MICROFILMED FEB 1 1980

I-270-5(17)114

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

1/292

FRANKLIN COUNTY
FRA.-270-22.99 N

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
FRA - 270 - 22.99 N
FRANKLIN COUNTY
CITY OF COLUMBUS
BLENDON AND MIFFLIN TOWNSHIPS
VILLAGE OF GAHANNA

ON MICROFILM BOX NO. 51A

I-20

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CENTER LINE
PROPERTY LINE — ℞ ℞
EXISTING RIGHT-OF-WAY
PROPOSED RIGHT-OF-WAY — R/W
PROPOSED LIMITED ACCESS — LA
PROPOSED LIMITED ACCESS & RIGHT-OF-WAY — LA-R/W
FENCE LINE (EXISTING, PROPOSED)
EXISTING GUARD RAIL
PROPOSED GUARD RAIL
POLE LINE (POWER, TELEPHONE)
EXISTING TREES, STUMPS
EXISTING TREES, STUMPS, TO BE REMOVED
TEMPORARY EASEMENT
CHANNEL EASEMENT
WORK LIMITS
EXISTING STORM SEWER — ST. S
EXISTING WATER LINE — W

INDEX OF SHEETS

Sht. No. 29 revised 9-11-69 H.E.D.
Sheet No. 251, 254 & 257 revised 9-12-69 EBL
Sheet No. 251, 253 & 257 revised 11-5-69 EBL
Sheet No. 264 revised 1-20-70 EBL

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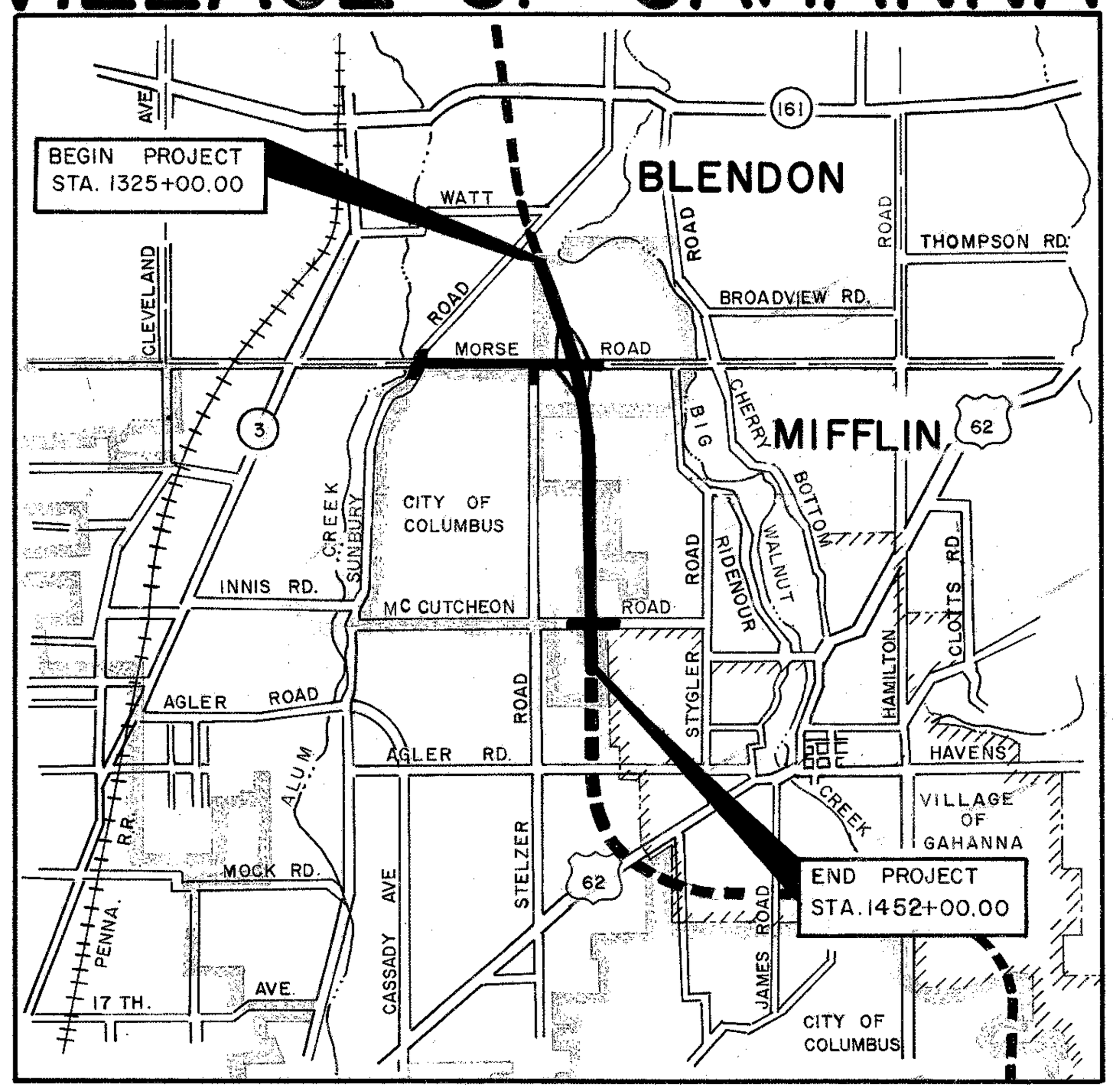
\# 228 NOT USED

LINE DATA

I-270		URBAN	RURAL
BEGIN PROJECT	1325+00.00		
COLUMBUS CORP. LINE	1373+37.12	4,837.12 LF	
COLUMBUS CORP. LINE	1396+48.98		2,311.86 LF
COLUMBUS CORP. LINE	1426+75.21	3,026.23 LF	
COLUMBUS CORP. LINE	1444+23.71		1,748.50 LF
END PROJECT	1452+00.00	776.29 LF	
NET TOTAL PROJECT		8,639.64 LF	4,060.36 LF
		1.636 MI.	0.769 MI.

GRAND TOTAL PROJECT URBAN & RURAL	12,700.00 L.F.	2.405 MI.
WORK ADDITIONS FROM SHEET NO. 2	* 8,104.46 LF	# 7,271.23 LF
NET LENGTH OF WORK	* 16,744.10 LF	# 11,331.59 LF
	3.171 MI.	2.146 MI.
GRAND TOTAL LENGTH OF WORK	28,075.69 L.F.	5.317 MI.

NOTE:
\# INCLUDES FRANKLIN COUNTY
* INCLUDES CITY OF COLUMBUS PARTICIPATION



LOCATION MAP

0 1 2 3
SCALE IN MILES

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

SCALES

PLAN	1"=50'	0' – 50'
PROFILE - HORIZONTAL	1"=50'	0' – 50'
PROFILE - VERTICAL	1"=5'	0' – 5'
CROSS SECTIONS	1'=10'	0' – 10'

STANDARD CONSTRUCTION DRAWINGS

DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE
SP-53	6-30-61	BP-1	6-1-65	CB-4	6-6-68			MC-1	10-1-67
MC-6	6-1-65	BP-2	12-1-68	CB-5	6-6-68	GR-2B	2-15-68	MC-3	11-1-68
L-1	6-1-65	BP-3	12-1-68	CB-458 A	6-6-68	GR-5	1-15-68	MC-4	6-1-65
		BP-4	12-1-68	CB-6	6-1-65			MC-7	10-1-68
		BP-5	6-1-65	F-1	3-10-69	GR-6	7-15-68	MC-8	12-1-67
		BP-6	6-1-65	F-2	3-10-69	HW-E	6-1-65	MH-1	10-1-68
		BP-7	1-1-66	F-3	3-10-69	HL-1	11-1-65	MH-1A	10-1-68
		BP-8	11-1-67	F-5	3-10-69	HL-2	11-1-65	AS-1-67	1-11-68
		CB-2-2A&B	6-1-65	F-6	10-1-66	HL-3	11-1-65	BR-1-65	11-24-65
		CB-2-3 & 2-4	6-1-65	FACI-1	9-15-67	HL-4	1-1-66	RB-1-55	2-2-59
		CB-3	6-1-65	FACI-2	6-1-65	I-2A	6-6-69	SD-1-65	11-8-65

SUPPLEMENTAL SPECIFICATIONS	
801	1-1-69
1001	1-1-69
815	1-1-69
816	1-1-69
808	1-1-69
811	1-1-69
825	1-1-69
806	1-1-69
804	1-1-69

LIMITED ACCESS

THE IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR OF HIGHWAYS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02, REVISED CODE OF OHIO.

1969 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THE 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 Frank W. Williams
DATE 1-20-69 DIVISION DEPUTY DIRECTOR

APPROVED C. H. Altvater
DATE 6-23-69 ENGINEER OF BRIDGES

APPROVED R. E. Catlin
DATE 6-23-69 ENGINEER OF LOCATION & DESIGN

APPROVED George J. Thormyer
DATE 6-23-69 DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED T H Bornee
DATE 6-27-69 DEPUTY DIRECTOR OF RIGHT-OF-WAY

APPROVED: Thomas M Major
DATE 6-27-69 DEPUTY DIRECTOR OF PLANNING & PROGRAMMING

APPROVED: F. W. Wilson
DATE: 6-27-69 CHIEF ENGINEER

APPROVED: P. E. Masheter
DATE: 6-27-69 DIRECTOR OF HIGHWAYS

APPROVED:
DATE: _____ SUPERINTENDENT, DIVISION OF ELECTRICITY, CITY OF COLUMBUS.

APPROVED: [illegible]
DATE 4/19/69 SUPERINTENDENT, DIVISION OF WATER, CITY OF COLUMBUS.

APPROVED: Carl W. Schrase
DATE: 4-17-69 CHIEF ENGINEER, SEWERAGE & DRAINAGE, CITY OF COLUMBUS.

APPROVED: Robert F. Werner
DATE: 6-20-69 CHIEF ENGINEER, DIVISION OF ENGINEERING & CONSTRUCTION CITY OF COLUMBUS.

APPROVED: [illegible]
DATE: 6-20-69 DIRECTOR OF PUBLIC SERVICE, CITY OF COLUMBUS.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER — DATE

Rev. 7-11-69

PREPARED AND RECOMMENDED BY
FRANKLIN ENGINEERING, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

FILE NO.	FRANKLIN COUNTY FRA.-270-22.99 N DATE OF LETTING _____ CONTRACT NO. _____

SCHEMATIC LAYOUT PLAN

INTERSTATE ROUTE 270

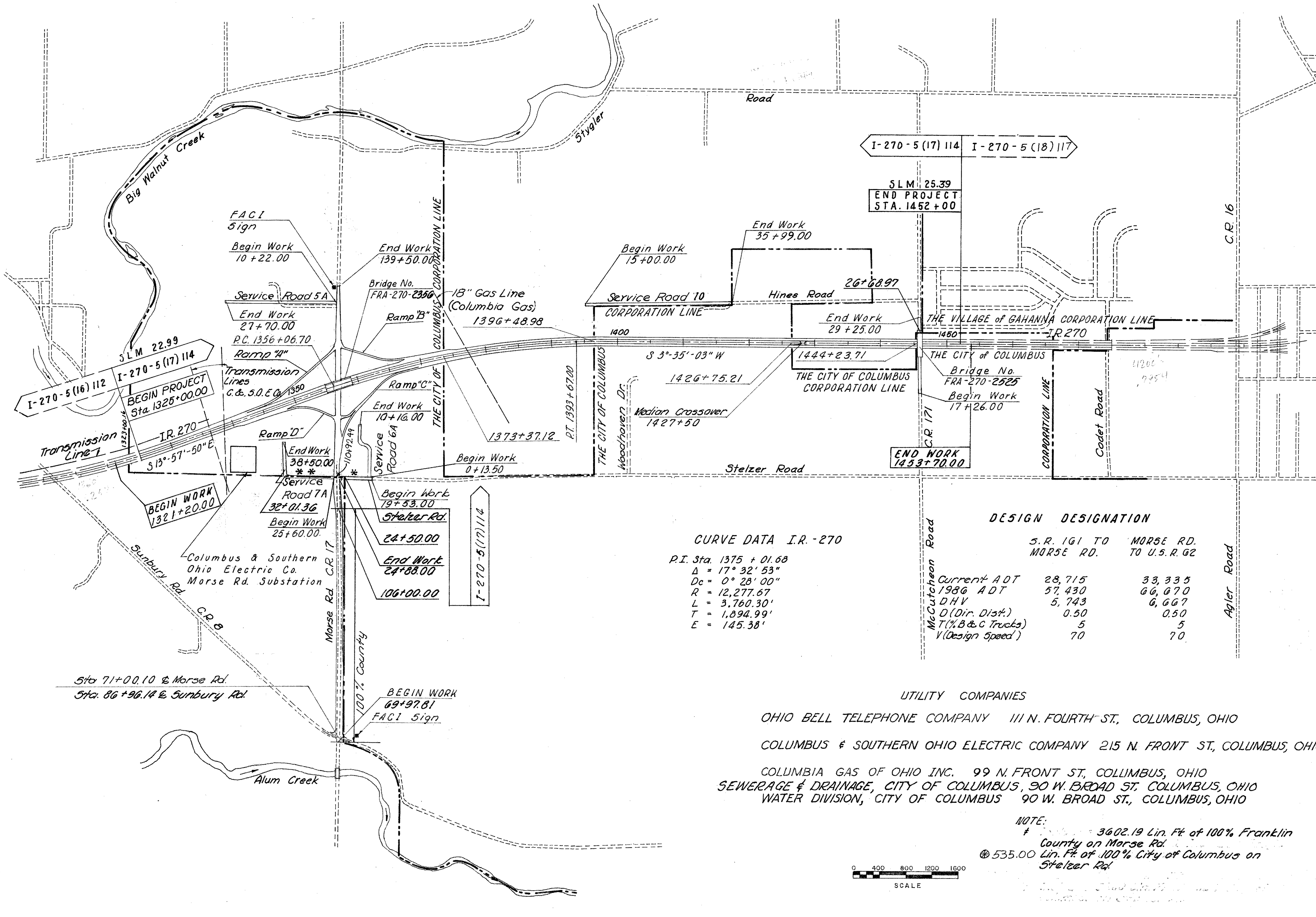
FRA - 270 - 22.99 N

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

FRANKLIN COUNTY
FRA-270-22.99 N

* 100% City Participation on Stelzer Rd.
Sta. 19+53.00 to Sta. 24+88.00

** 50% Urban, 50% Rural Participation on Service Rd 7-A
Sta. 25+60.00 to Sta. 32+01.36
100% Urban Participation on Service Rd 7-A
Sta. 32+01.36 to Sta. 38+50.00



CURVE DATA I.R.-270

P.I. Sta. 1375 + 01.68
Δ = 17° 32' 53"
Dc = 0° 28' 00"
R = 12,277.67
L = 3,760.30'
T = 1,894.99'
E = 145.38'

DESIGN DESIGNATION

	S.R. 161 TO MORSE RD.	MORSE RD. TO U.S.R. 62
Current ADT	28,715	33,335
1986 ADT	57,430	66,670
DHV	5,743	6,667
D (Dir. Dist.)	0.50	0.50
T (% B & C Trucks)	5	5
V (Design Speed)	70	70

UTILITY COMPANIES

OHIO BELL TELEPHONE COMPANY 111 N. FOURTH ST., COLUMBUS, OHIO

COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY 215 N. FRONT ST., COLUMBUS, OHIO

COLUMBIA GAS OF OHIO INC. 99 N. FRONT ST., COLUMBUS, OHIO
SEWERAGE & DRAINAGE, CITY OF COLUMBUS, 90 W. BROAD ST. COLUMBUS, OHIO
WATER DIVISION, CITY OF COLUMBUS 90 W. BROAD ST., COLUMBUS, OHIO

NOTE:
≠ 3602.19 Lin. Ft. of 100% Franklin County on Morse Rd.
⊛ 535.00 Lin. Ft. of 100% City of Columbus on Stelzer Rd.

LINE DATA

WORK ADDITIONS	URBAN	RURAL
I.R. 270		
1321+20.00 To 1323+00.16		180.16
1323+00.16 To 1325+00.00	199.84	
1452+00.00 To 1453+70.00	170.00	
MORSE ROAD		
69+97.81 To 106+00.00 ≠		≠3,602.19
106+00.00 To 110+92.49		492.49
110+92.49 To 139+50.00	2857.51	
STELZER ROAD ⊛		
19+53.00 To 24+50.00 ⊛	497.00	
24+50.00 To 24+88.00 ⊛	38.00	
McCUTCHEON ROAD		
17+26.00 To 26+68.97	942.97	
26+68.97 To 29+25.00		256.03
SERVICE RD. 5A		
10+22.00 To 27+70.00	1,748.00	
SERVICE RD. 6A		
0+13.50 To 10+16.00	1,002.50	
SERVICE RD. 7A **		
25+60.00 To 32+01.36		641.36
32+01.36 To 38+50.00	648.64	
SERVICE RD. 10		
15+00.00 To 35+99.00		2,099.00
TOTAL WORK ADDITIONS	8,104.46	7271.23

REV. 7-1-69

SCHEMATIC LAYOUT PLAN

TYPICAL SECTIONS

TYPE 451

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3/292

FRANKLIN COUNTY
FRA-270-22.99N

NORMAL SECTION

STATION 1325+00.00 TO STATION 1355+06.09

STATION 1357+39.97 TO STATION 1452+00.00

LEGEND

- (A) Standard Longitudinal Joint
- (1) Item 451, 8" Continuously Reinforced Concrete Pavement, as per plan. (See Note in Proposal)
- (2) Item 804, 4" Cement Stabilized Subbase (See Note in Proposal)
- (3) Item 301, Bituminous Aggregate Base, 702.01 (85-100) or 702.09, Rt-10 As Per Plan (See note in Proposal)
- (17) Item 409, Seal Coat using 702.09 RT 9 or RT-10 appled at a rate of 0.3 gal. per sq. yd. and 0.008 cu. yds. No. 8 aggregate per sq. yd.
- (5) Item 605, 6" Pipe Underdrain (See Typical Section for Depth)
- (6) Item 606, Guard Rail, Type 5
- (7) Item 659, Seeding & Mulching, as per plan, See General Notes.

NOTES

1. Sequence of Operations: (1) Install pipe underdrain on outside shoulder. (2) Place subbase out to inside edge of underdrain or to 18" beyond edge of pavement where no underdrain is present. (3) Construct Item 451. (4) Complete shoulder construction.
2. Standard Drawing MC-1 slope rounding is to be used on backslopes.
3. See Cross Sections for slope treatment
4. Adjacent to Speed Change Lane, use key joint Without Tiebars For Joint 24' From Median Edge of Pavement. (See Pavement Detail Sheets)
5. Shoulder Paving May be Placed in a Single Course.
6. For the 70:1 Taper from Sta. 1444+75 to Sta. 1452+00 use I.R. 270 Pavement, Subbase, and Shoulder design for the additional width.

IR 270 NORMAL
TYPICAL SECTION

TYPICAL SECTIONS
TYPE 451

LEGEND

- (A) Standard Longitudinal Joint
- (1) Item 451, 8" Continuously Reinforced Concrete Pavement, as per plan. (See Note in Proposal)
- (2) Item 804, 4" Cement Stabilized Subbase. (See Note in Proposal)
- (3) Item 301, Bituminous Aggregate Base, 702.01 (85-100) or 702.09, RT-10 As Per Plan, See Note in Proposal.
- (4) Item 409, Seal Coat Using 0.008 C.Y. No.8 Cover Aggregate per S.Y. & 0.30 gal. Bituminous Material per S.Y. (See Note in Proposal)
- (3-A) Item 301 Bituminous Aggregate Base : 702.01 (85-100) or 702.09, RT-11 or RT-12
- (6) Item 606 Guard Rail, Type 5
- (7) Item 659, Seeding & Mulching, as per plan. See General Notes.
- (8) Item 451, 9" Reinforced Portland Cement Concrete Pavement.
- (9) Item 304 Aggregate Base.
- 17 Item 409 Seal Coat using 0.008 cu. yds. No. 8 aggregate per sq. yd. and 0.30 gal. bituminous material per sq. yd. 702.09 RT-9 or RT-10

NOTES

- † 1/2" per foot Min. Slope or Same Slope as pavement.
- †† Same Slope as pavement.
- * See Pavement Details

1. Shoulder Paving may be placed in a single course
2. Standard Drawing MC-1 slope rounding is to be used on backslopes.
3. See Cross Section for slope treatment
4. The 11' shoulder is always on the right of traffic.

TYPICAL SECTIONS

TYPE 404

FRANKLIN COUNTY
FRA-270-22.99 N

LEGEND

(3A) Item 301, Bituminous Aggregate Base, 702.01 (85-100) or 702.09 RT-11 or RT-12.

(4) Item 409, Seal Coat Using 0.008 C.Y. No.8 Cover Aggregate per S.Y. & 0.30 gal. Bituminous Material per S.Y. (See Note in Proposal)

(4A) Item 409, Seal Coat using 0.008 C.Y. No.8 Cover Aggregate per S.Y. & 0.30 Gal. 702.09, RT-9, or RT-10, or 702.02, MC 800 or MC 3000 per S.Y.

(6) Item 606, Guard Rail, Type 5

(7) Item 659, Seeding & Mulching, as per plan, See General Notes.

(10) Item 310, Subbase.

(9) Item 304, Aggregate Base.

(11) Item 404, 1 1/4" Asphalt Concrete (70-85).

(12) Item 402, 1 3/4" Asphalt Concrete (70-85).

(13) Item 408, Bituminous Prime Coat - using 702.09 RT-2 or RT-3 applied at the rate of 0.4 gal. per S.Y.

(14) Item 605 Aggregate Drains.

(15) Item 609 Concrete Curb Standard Type "6".

(3)* Item 301 Variable thickness Bituminous Aggregate Base, 702.01 (85-100) or 702.09 RT. 11 or RT-12.

NOTES

‡ 1" per foot slope.

* Item 301 varies in thickness (3/4" to 5 1/4")

1. Standard Drawing MC-1 slope rounding is to be used on backslopes.
2. See Cross Sections for slope treatment.
3. Aggregate drains shall be placed at fifty (50) foot intervals on each side, At Alternate 25' Intervals Left & Right.
4. Shoulder Paving May be Placed in a Single Course
5. See Pavement details for median width variations. In areas of no median, pavement composition is contiguous for entire width.
6. Profile Grade is 24' from right edge of Pavement from Sta 106+00 to Sta 109+40

Ψ For Paved Median between Sta. 120+01.07 to 130+20.93 See Sheet No. 147 & 148

MORSE ROAD (C.R. 17)
TYPICAL SECTION

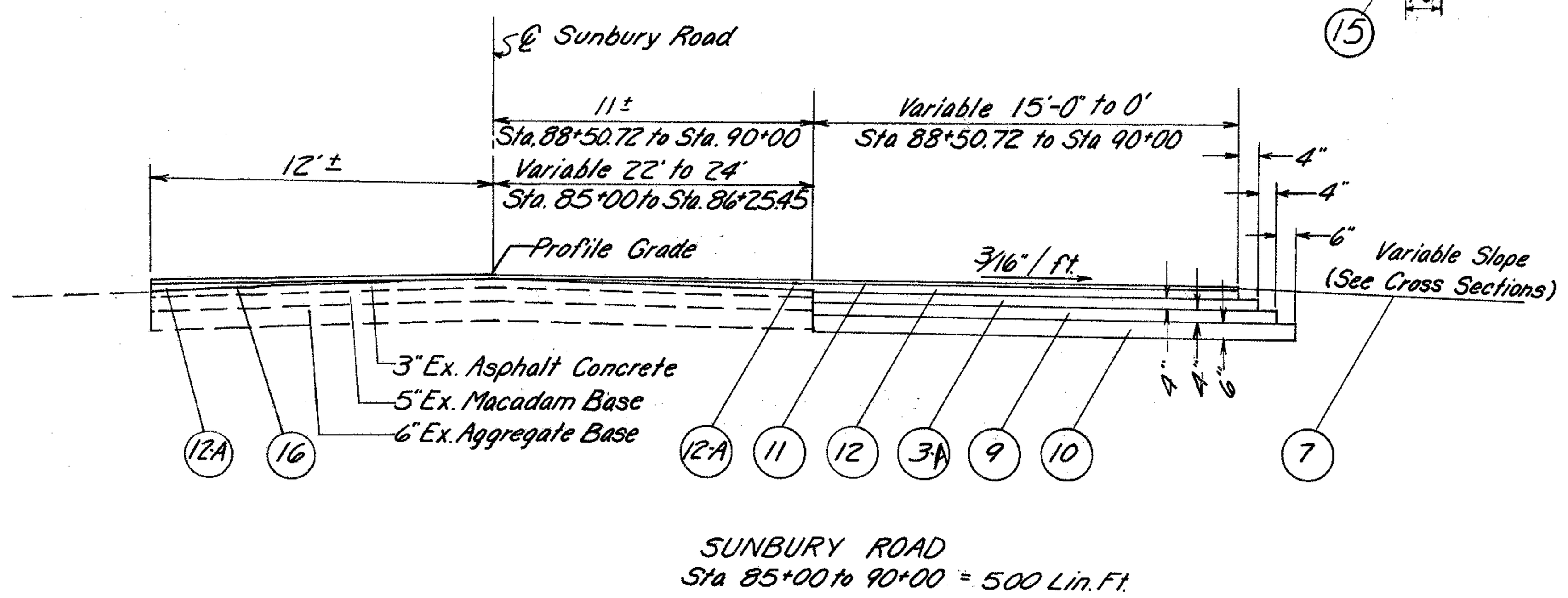
TYPICAL SECTIONS

TYPE 404

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

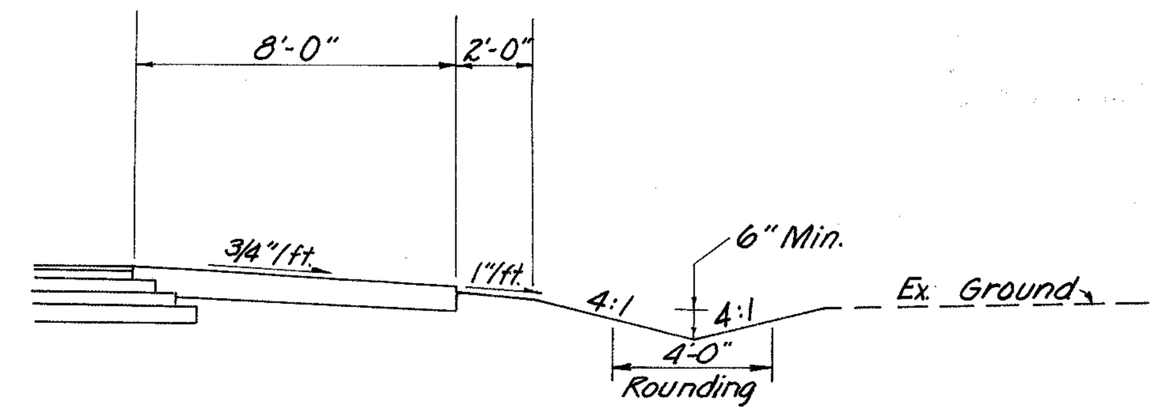
6
292

FRANKLIN COUNTY
FRA-270-22.99N



NOTES

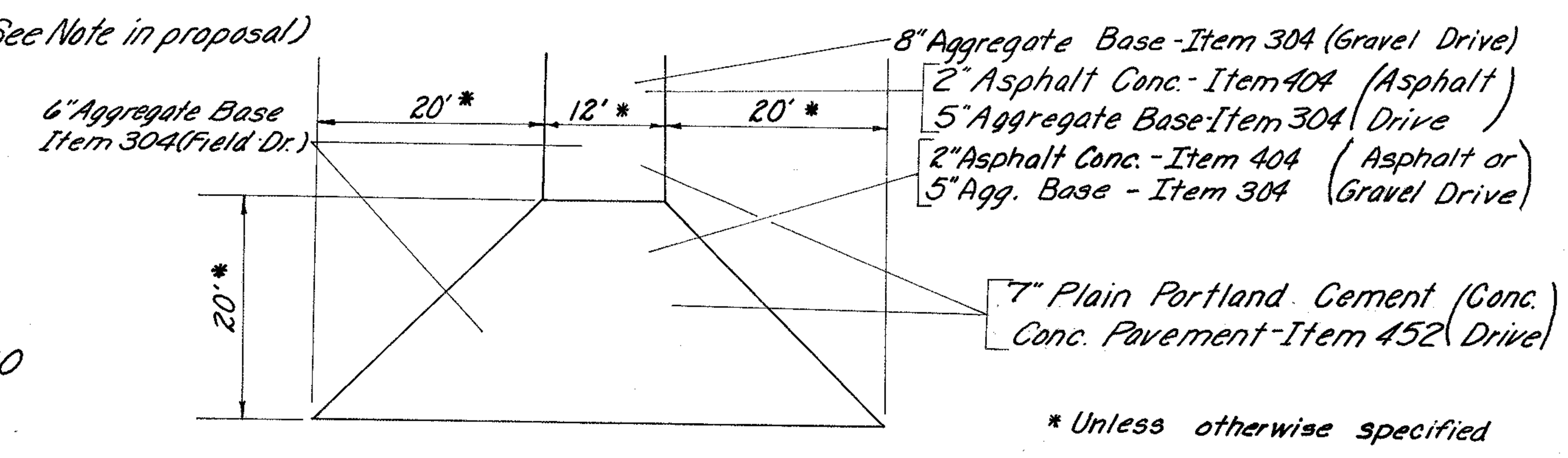
1. Standard Drawing MC-1 slope rounding is to be used on backslopes.
2. See Cross Sections for slope treatment & Guard Rail.
3. Aggregate drains shall be placed at fifty (50) foot intervals on each side, at Alternate 25' intervals, left & right, except for curb section.



YARD SECTION

LEGEND

- (3A) Item 301 4" Bituminous Aggregate Base, 702.01(85-100) or 702.09 RT-11 or RT-12.
- (4A) Item 409 Seal Coat using 0.008 C.Y. N° 8 Cover Aggregate per S.Y. and 0.30 Gal. 702.09, RT-9, or RT-10 or 702.02, MC 800 or MC 3000 per S.Y.
- (6) Item 606 Guard Rail, Type 5.
- (7) Item 659 Seeding and Mulching as per plan, See General Notes
- (9) Item 304 Aggregate Base, depth as shown
- (10) Item 310 6" Subbase
- (11) Item 404 1 1/4" Asphalt Concrete (70-85)
- (12) Item 402 1 3/4" Asphalt Concrete (70-85)
- (12A) Item 402 Asphalt Concrete Preleveling Course (70-85) (See Note in proposal)
- (13) Item 408 Bituminous Prime Coat: 702.09 RT-2 or RT-3 applied at the rate of 0.4 gal. per S.Y.
- (14) Item 605 Aggregate Drains
- (15) Item 609 Concrete Curb Standard Type 6
- (16) Item 407 Tack Coat: 702.04 MS-2 or RS-1; or 702.02 RC 70 or RC 250 applied at the rate of 0.1 gal. per Sq. Yd.



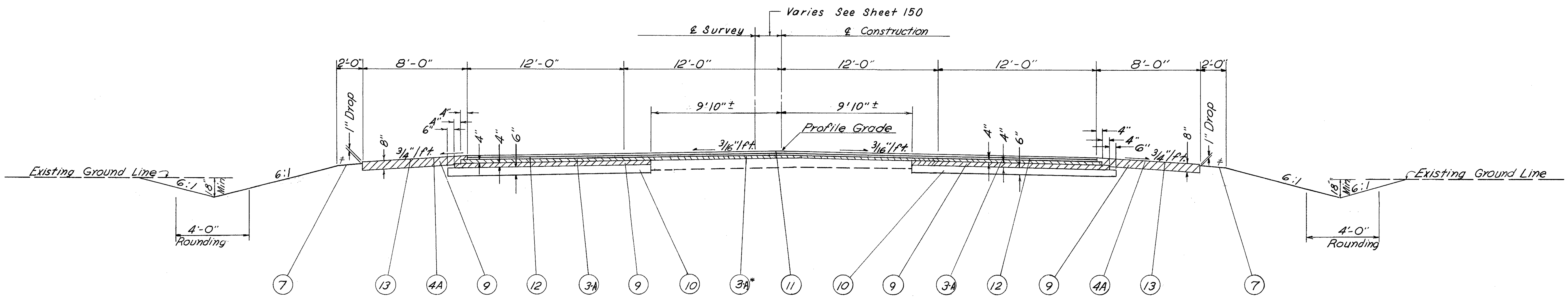
TYPICAL DRIVE

TYPICAL SECTION-MORSE ROAD

TYPICAL SECTION
TYPE 404

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA - 270 - 22.99 N



STELZER ROAD (C.R.177)

19+75.00 to 24+88.00

LEGEND

(3A)	Item 301 Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT 11 or RT-12.
(4A)	Item 409 Seal Coat Using 0.008 C.Y. No.8 Cover Aggregate per S.Y. & 0.30 Gal. 702.09, R.T.-9, or R.T.-10, or 702.02, MC800 or MC3000 per S.Y.
(7)	Item 659 Seeding & Mulching, as per plan, See General Notes
(9)	Item 304 Aggregate Base.
(10)	Item 310 Subbase.
(11)	Item 404 1¼" Asphalt Concrete (70-85)
(12)	Item 402 1¾" Asphalt Concrete (70-85)
(13)	Item 408 Bituminous Prime Coat Using 702.09 RT-2 or RT-3 Applied at the Rate of 0.4 Gal. per S.Y.
(3A)*	Item 301 Variable Thickness Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT-11 or RT-12

NOTES

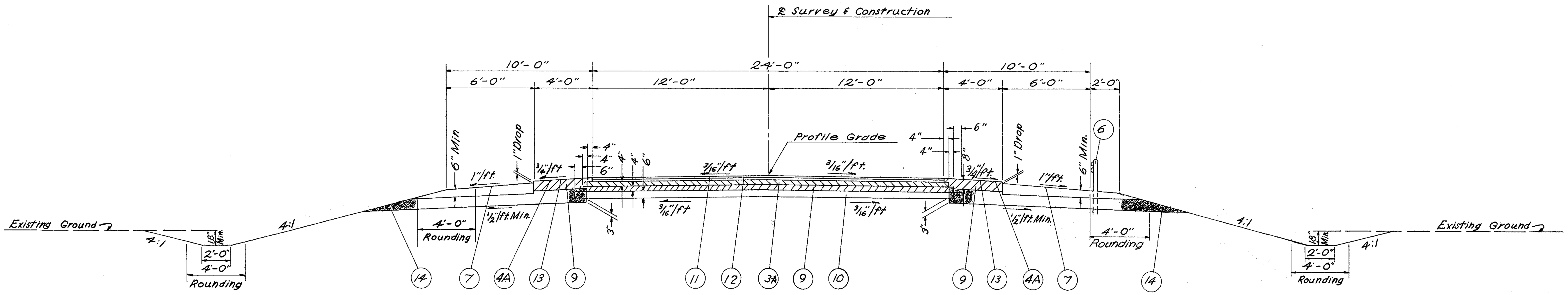
‡	1" per Foot Slope.
*	Item 301 Varies in Thickness (1¼" to 4¼")
1.	Standard Drawing MC-1 Slope Rounding is to be Used on Backslopes.
2.	See Cross Sections for Slope Treatment & Guard Rail.
3.	See Pavement Details for Variable Width
4.	℄ of Survey is ℄ of Right of Way.

TYPICAL SECTION

TYPE 404

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

FRANKLIN COUNTY
FRA-270-22.99 N



McCUTCHEON ROAD (C.R. 171)

17+50.00 TO 23+33.33
26+66.67 TO 29+25.00

LEGEND

(3A) Item 301, Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT 11 or RT-12.

(4A) Item 409, Seal Coat using 0.008 C.Y. No.8 Cover Aggregate per S.Y. & 0.30 gal. 702.09, RT-9 or RT-10 or 702.02, MC800 or MC 3000.

(6) Item 606, Guard Rail, Type 5

(7) Item 659, Seeding & Mulching, as per plan, See General Notes.

(10) Item 310, Subbase.

(9) Item 304, Aggregate Base.

(11) Item 404, 1¼" Asphalt Concrete (70-85).

(13) Item 408, Bituminous Prime Coat, using 702.09 RT-2 or RT-3 Applied at the rate of 0.4 gal. per Sq. Yd.

(14) Item 605, Aggregate Drains.

(12) Item 402 1¼" Asphalt Concrete. (70-85)

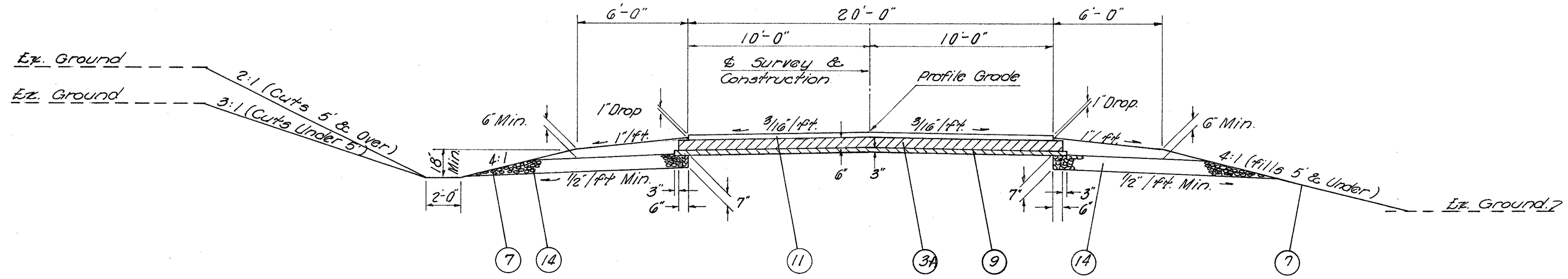
NOTES

1. Standard Drawing MC-1 slope rounding is to be used on backslopes.
2. See Cross Sections for slope treatment & guard rail.
3. Aggregate drains shall be placed at fifty (50) foot intervals on each side of normal crowned sections, at Alternate 25' Intervals Left & Right.

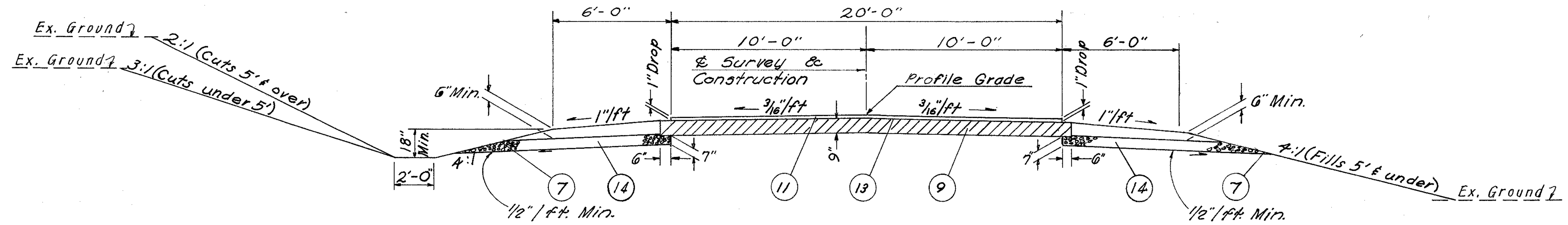
McCUTCHEON ROAD (C.R. 171)
TYPICAL SECTION

TYPICAL SECTION

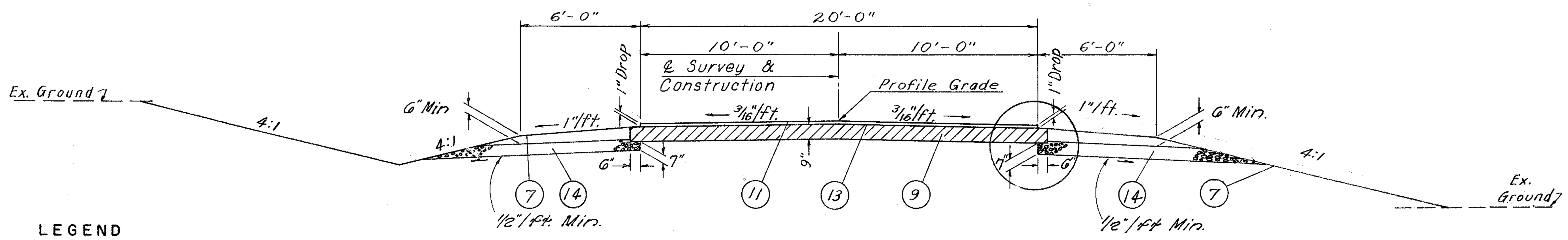
TYPE 404



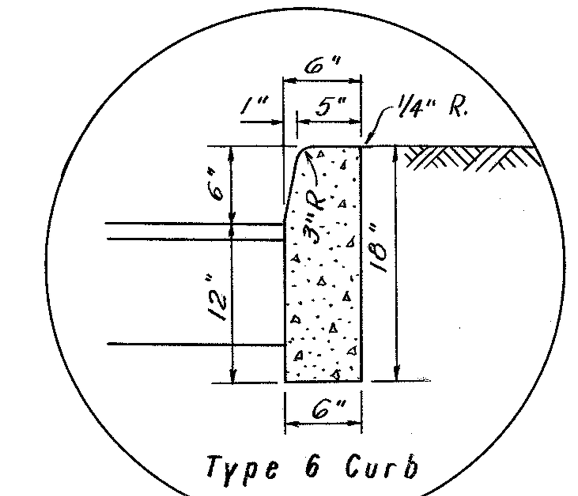
SERVICE ROAD 7A
7A 25+60 to 34+00



SERVICE ROAD 5A,7A,10
5A 10+22.00 to 27+50.00
7A 34+00.00 to 38+40.00
10 16+52.50 to 35+99.00



SERVICE ROAD 6A
6A- 0+13.50 to 8+00.00

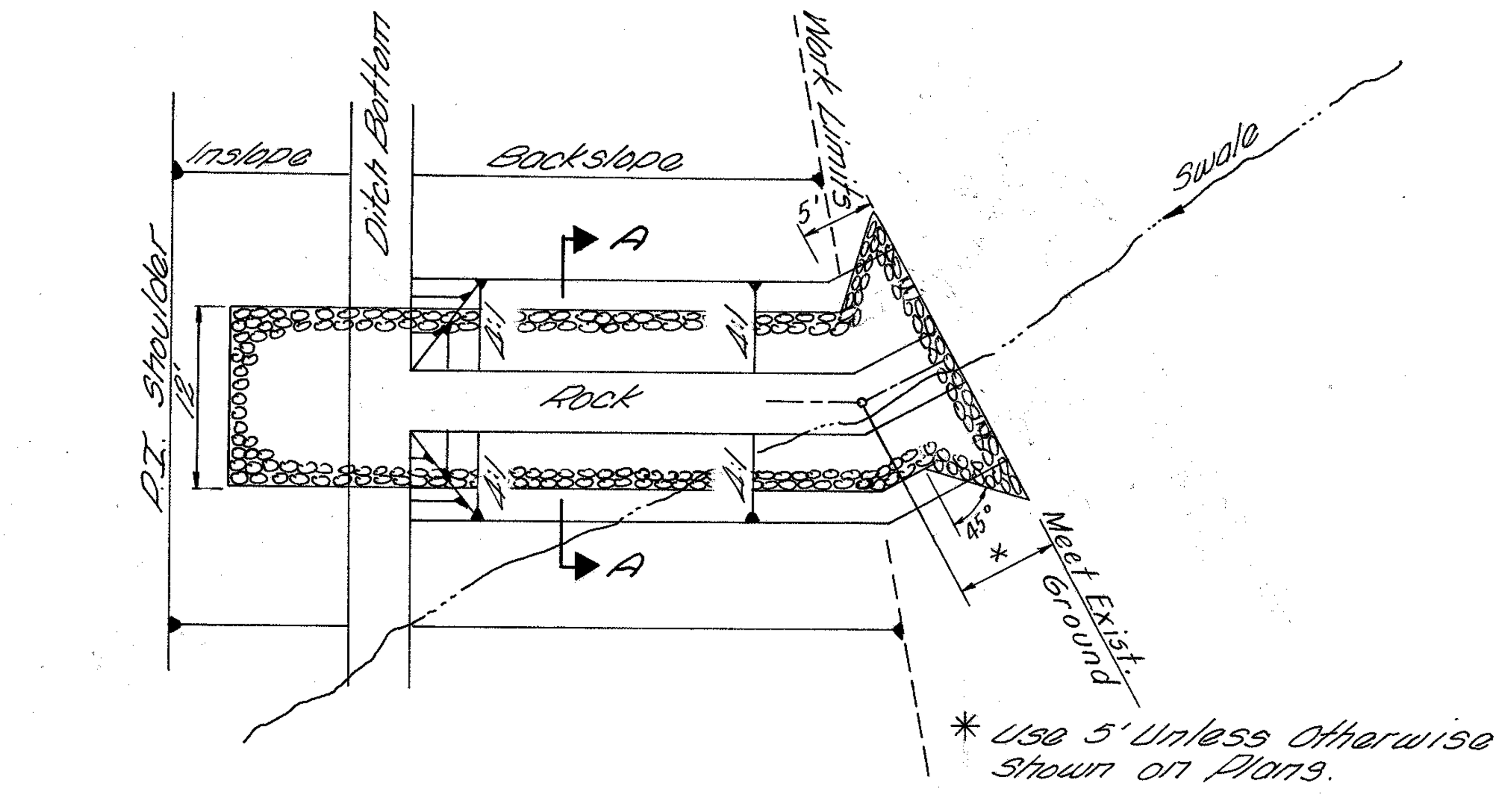


0+33 To 2+50
Service Road 6-A

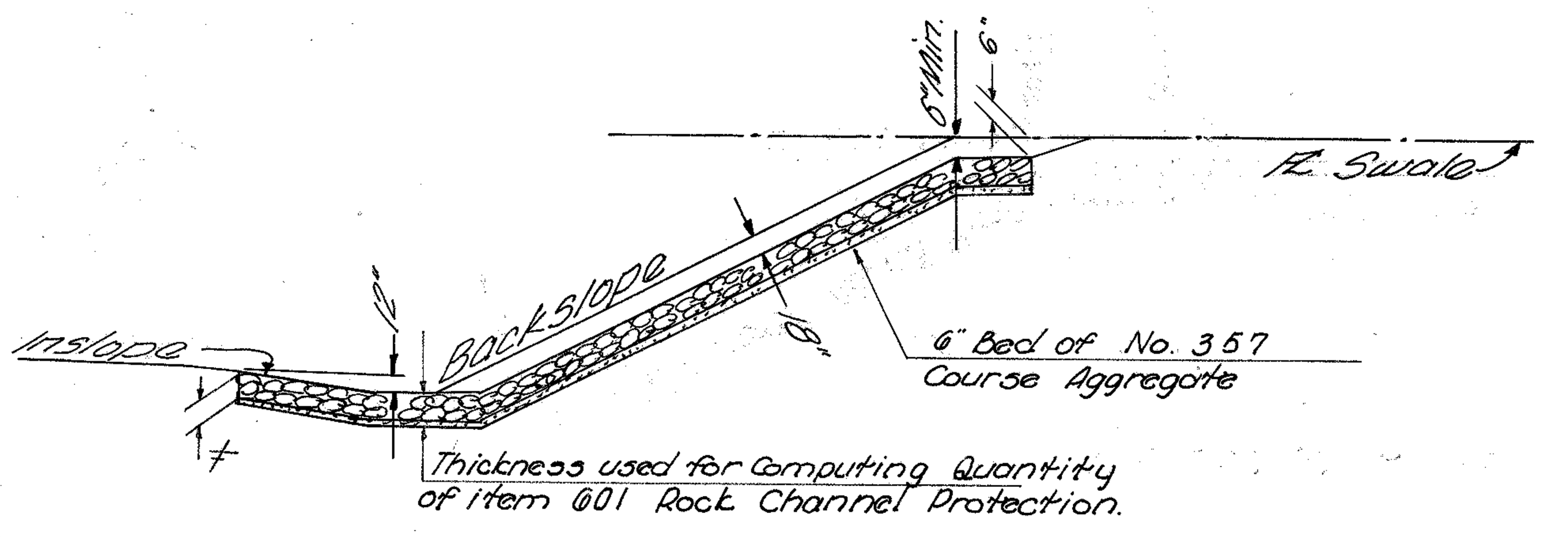
LEGEND

3A	Item 301	Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT-11 or RT-12.	
7	Item 659	Seeding & Mulching as per plan, See General Notes.	
9	Item 304	Aggregate Base.	
11	Item 404.	2" Asphalt Concrete. (85-100), placed in 2- 1" layers	
13	Item 408.	Bituminous Prime Coat, using 702.09 RT-2 or RT-3 applied at the rate of 0.4 gal. per Sq. Yd.	
14	Item 605	Aggregate Drains	

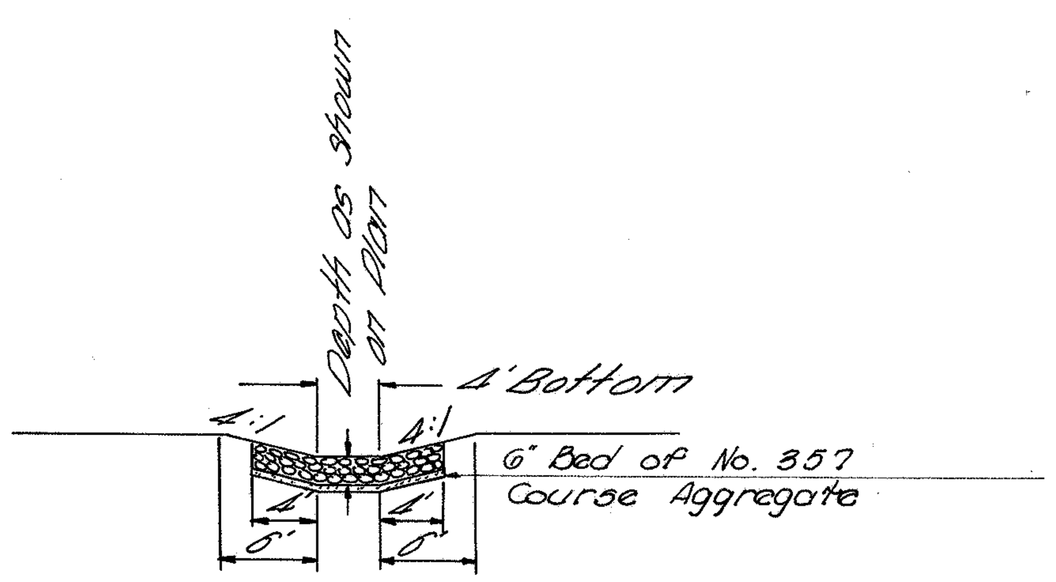
MISCELLANEOUS DETAILS



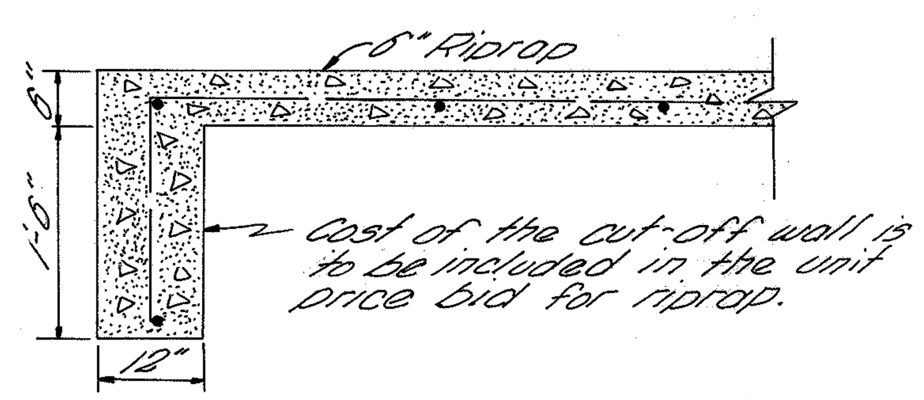
PLAN



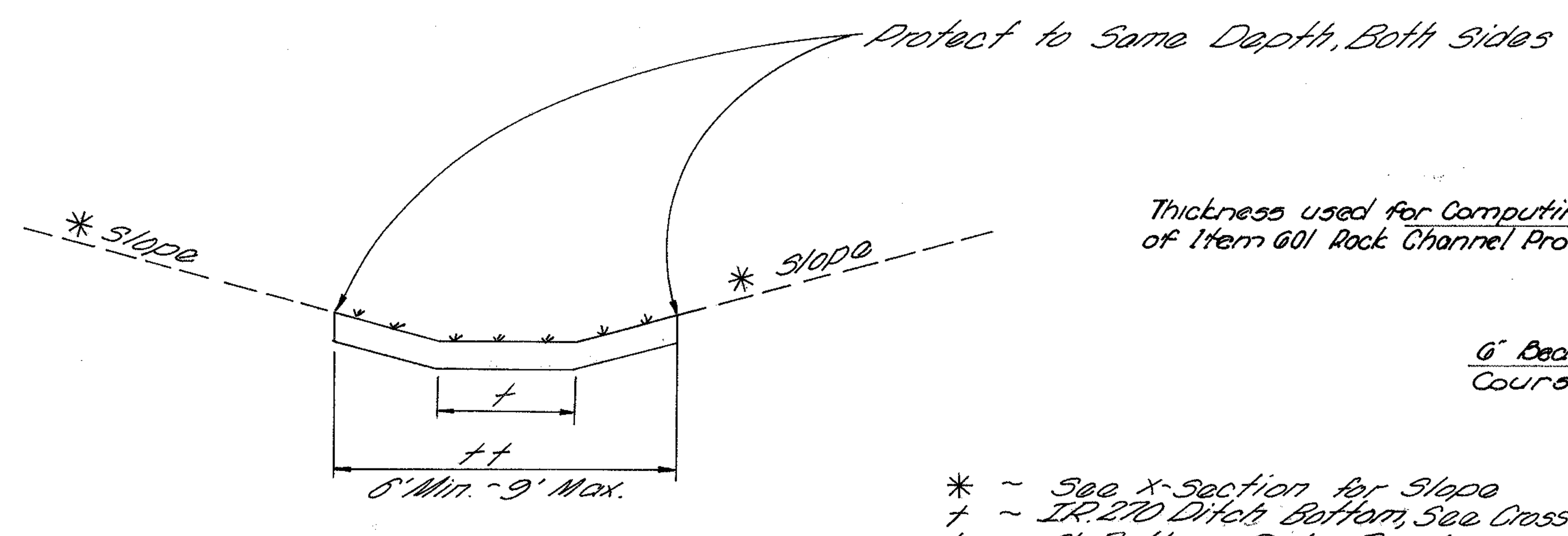
PROFILE



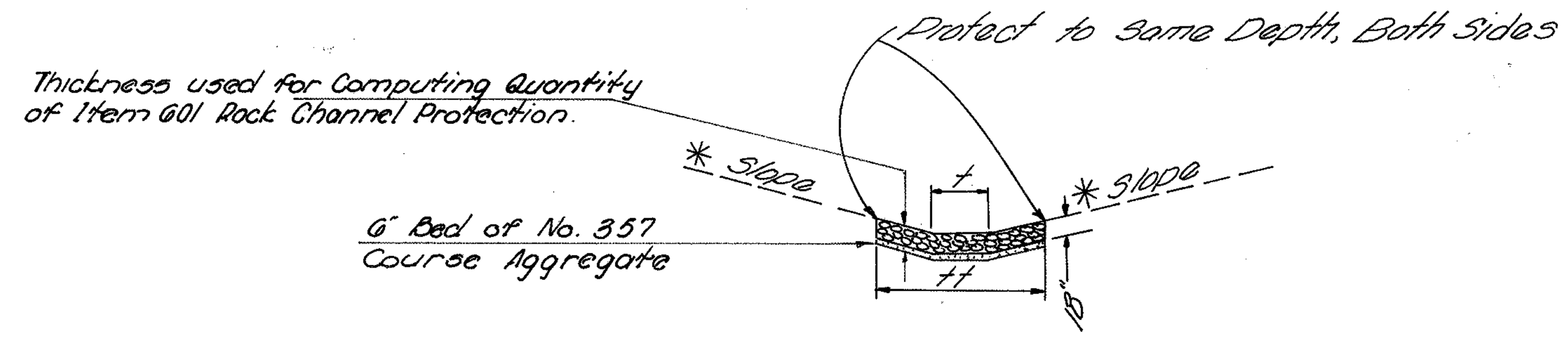
SECTION A-A
SWALE PROTECTION
(ROCK CHANNEL PROTECTION TYPE B)



RIPRAP CUT-OFF WALL

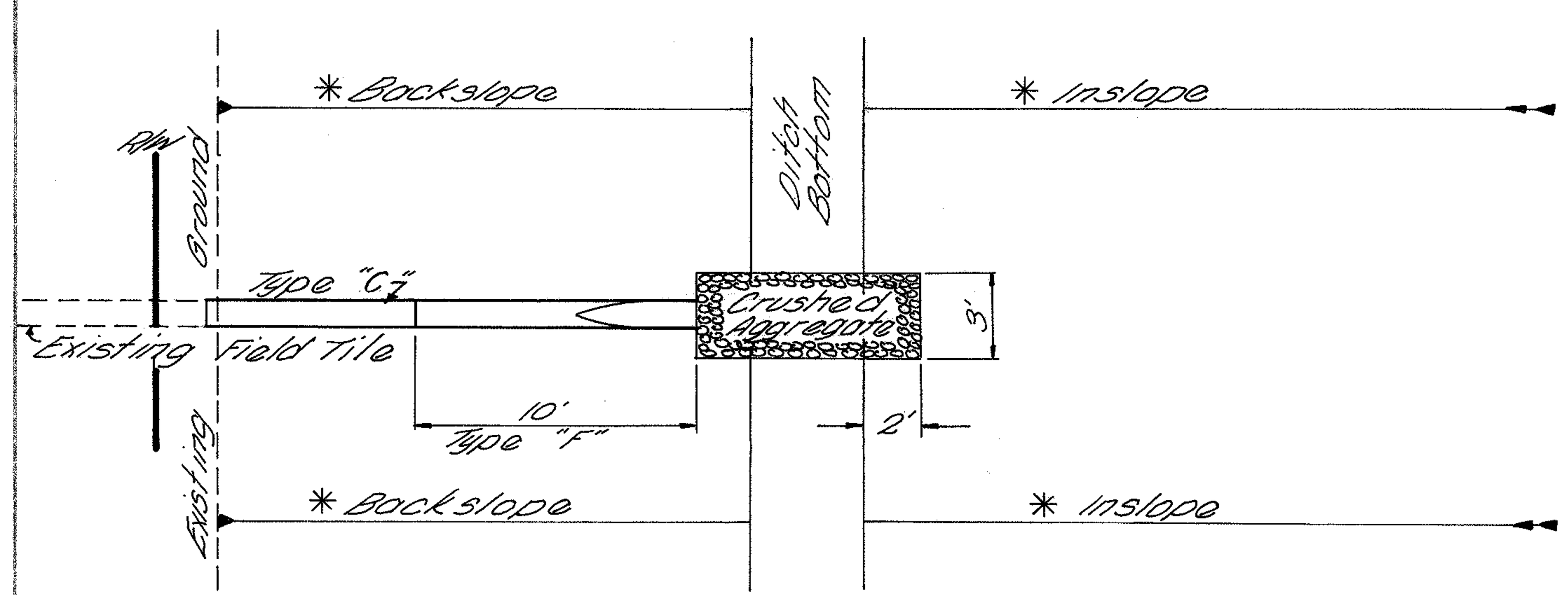


SOD DITCH PROTECTION

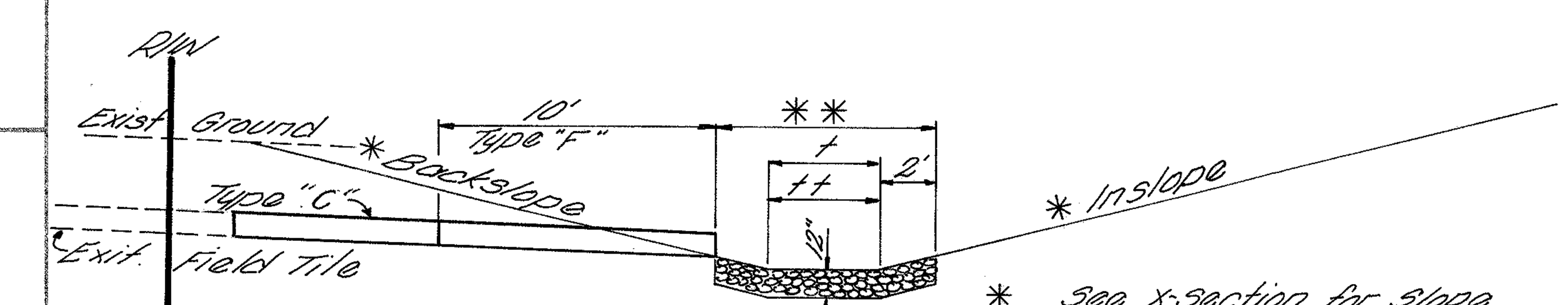


* ~ See X-Section for Slope
+ ~ I.R. 270 Ditch Bottom, See Cross Section for Width
+ ~ 2' Bottom, Side Roads
++ ~ See Plan & Profile for Width

ROCK CHANNEL PROTECTION TYPE B
(FOR DITCHES)



PLAN

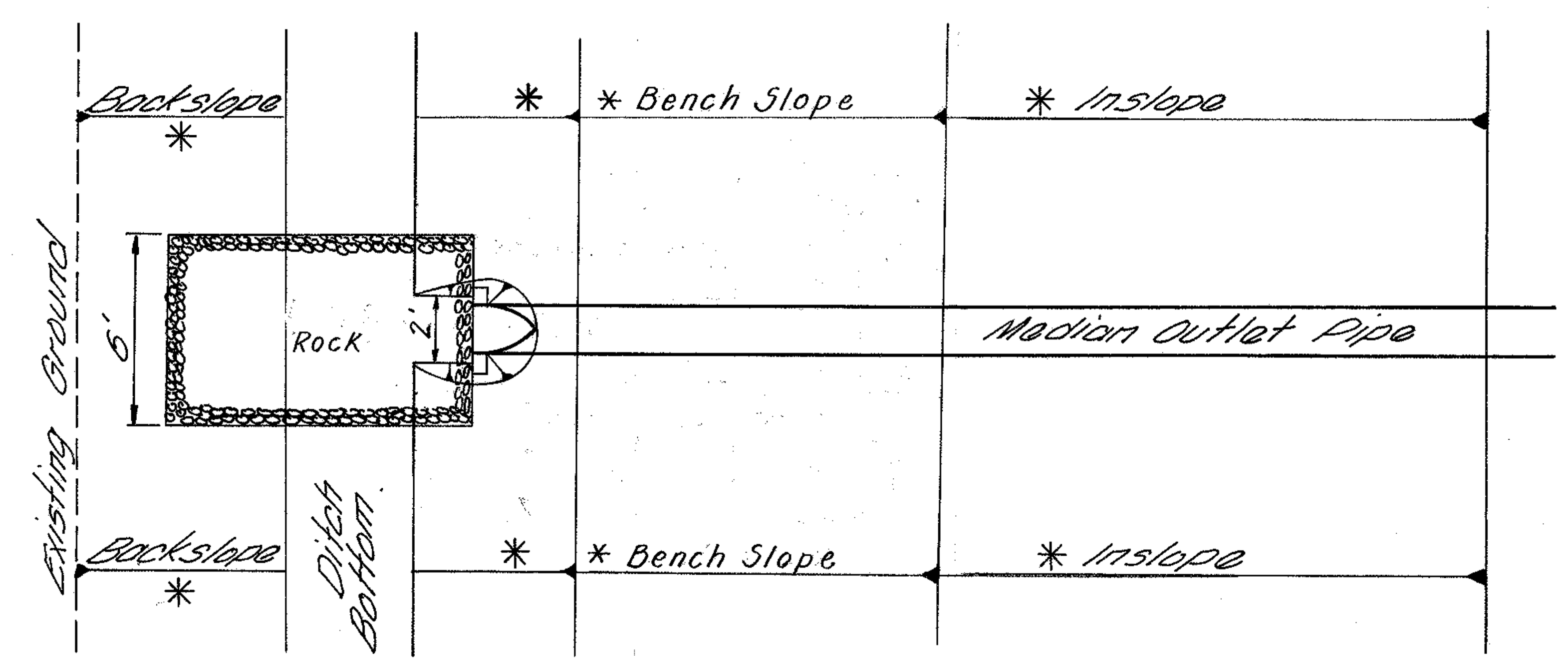


PROFILE

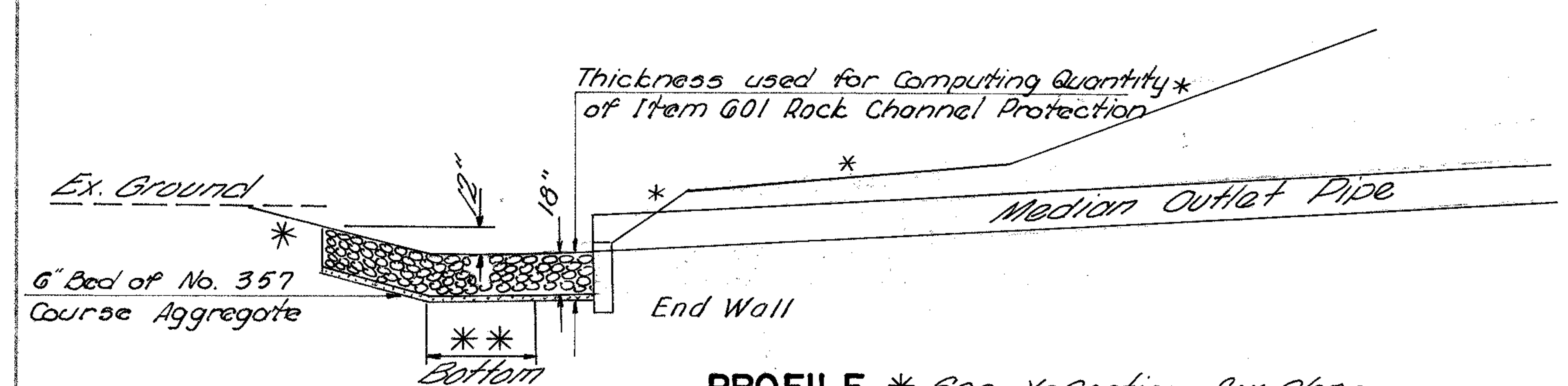
* See X-Section for Slope
** See Plan for Length
+ 2' Bottom, Side Roads
++ I.R. 270 Ditch Bottom, See Cross Sections for Width

(CRUSHED AGGREGATE)

FIELD TILE PROTECTION
(TILE GRADES LESS THAN 10%)



PLAN



PROFILE
* See X-Section for Slope
** See X-Section for Ditch Bottom Width

(ROCK CHANNEL PROTECTION TYPE B)

MEDIAN OUTLET PROTECTION

MISCELLANEOUS DETAILS

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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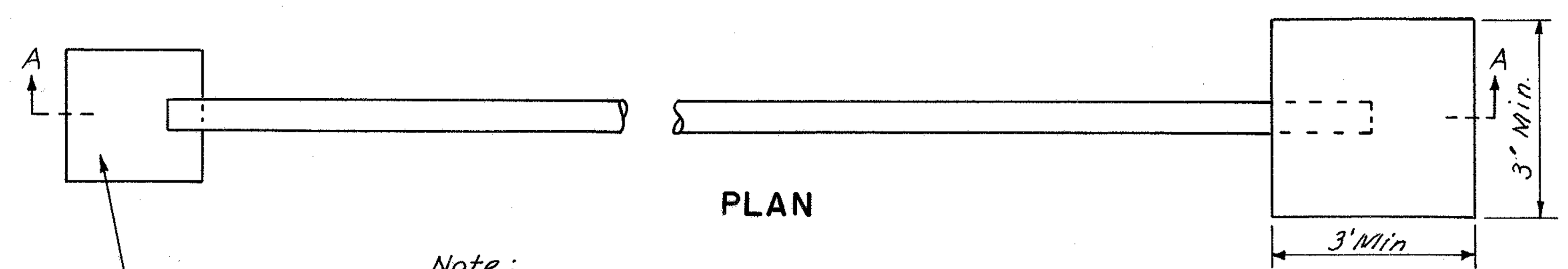
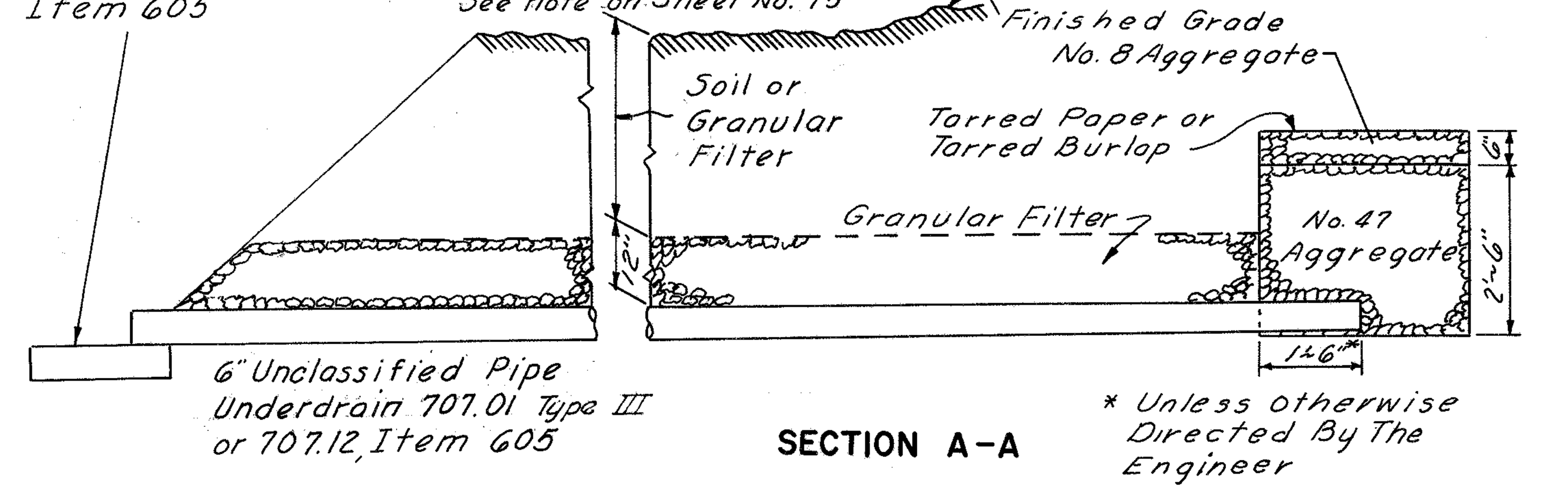


PLAN

Note :
Aggregates, tarred paper or tarred burlap, and necessary excavation for spring drain shall be included for payment in the unit price bid per Lin. Ft. for "Item 605, Aggregate Drains for Springs, as per plan."
The 6" Pipe 707.01 Type III or 707.12 shall be covered with granular filter material [605.03 (c)] to a height of one (1) foot above the top of the pipe. The remainder of the backfill for this item shall be soil or granular filter material placed in accordance with 603.08, Type "E."
Spring drains shall be built in reasonably close conformity with the detail shown above. The lengths and exact locations of the drains shall be determined by the Engineer.
See note on Sheet No. 15

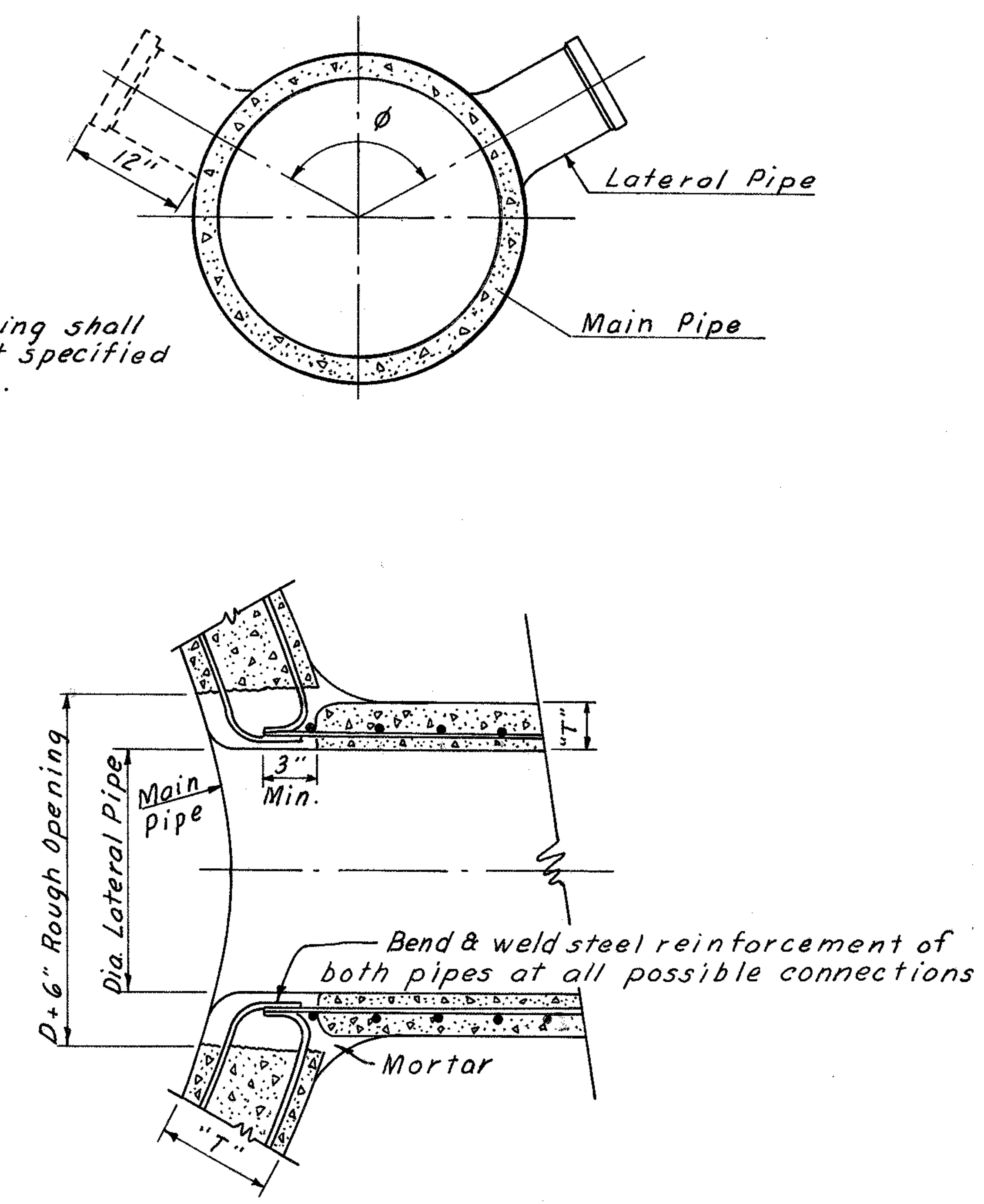
Erosion Control Pad as Per Std. Drwg. MC~4 to be Included For Payment in the Price Bid For 6" Pipe, Item 605



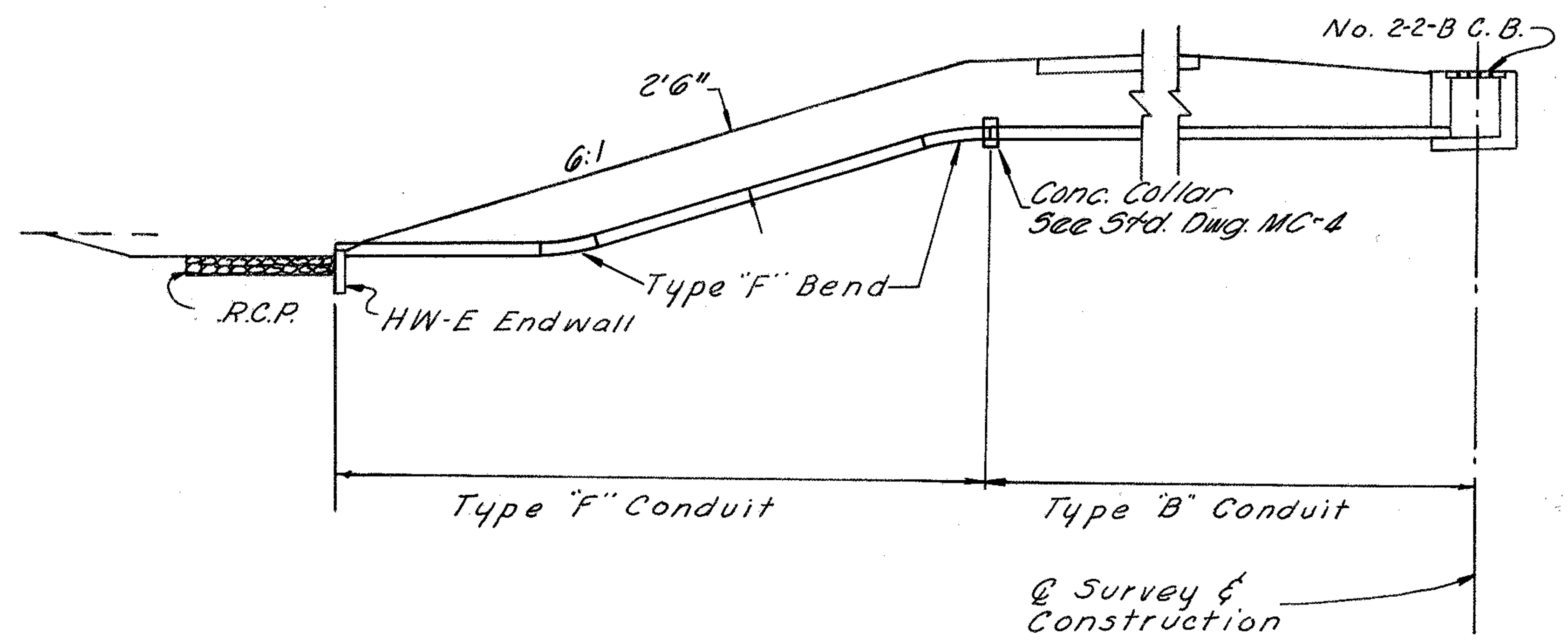
SECTION A-A

SPRING DRAIN DETAIL

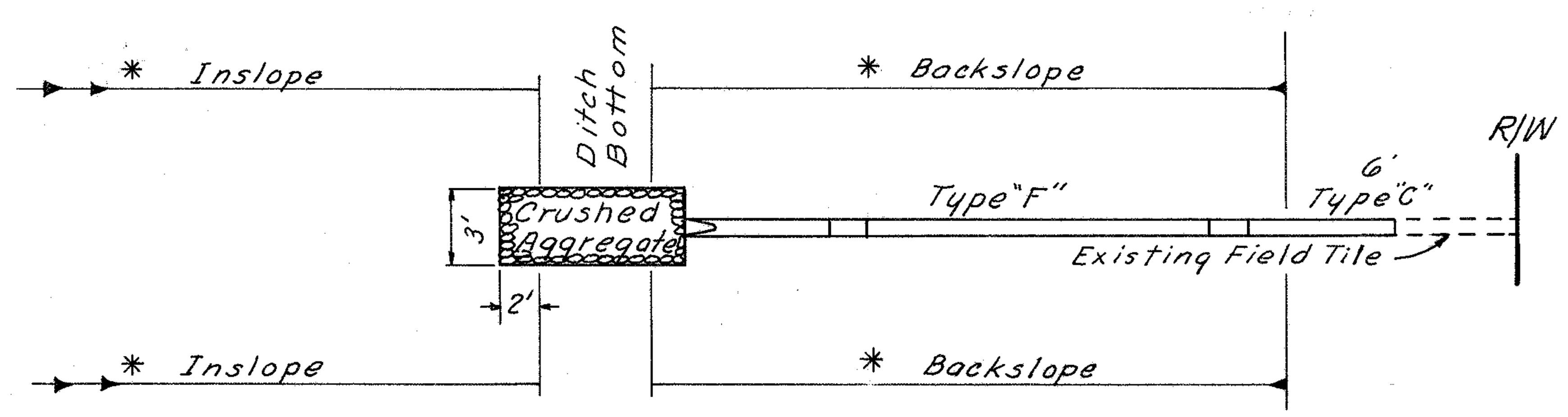
Note :
Concrete for grouting shall be the same as that specified for pertinent pipe.



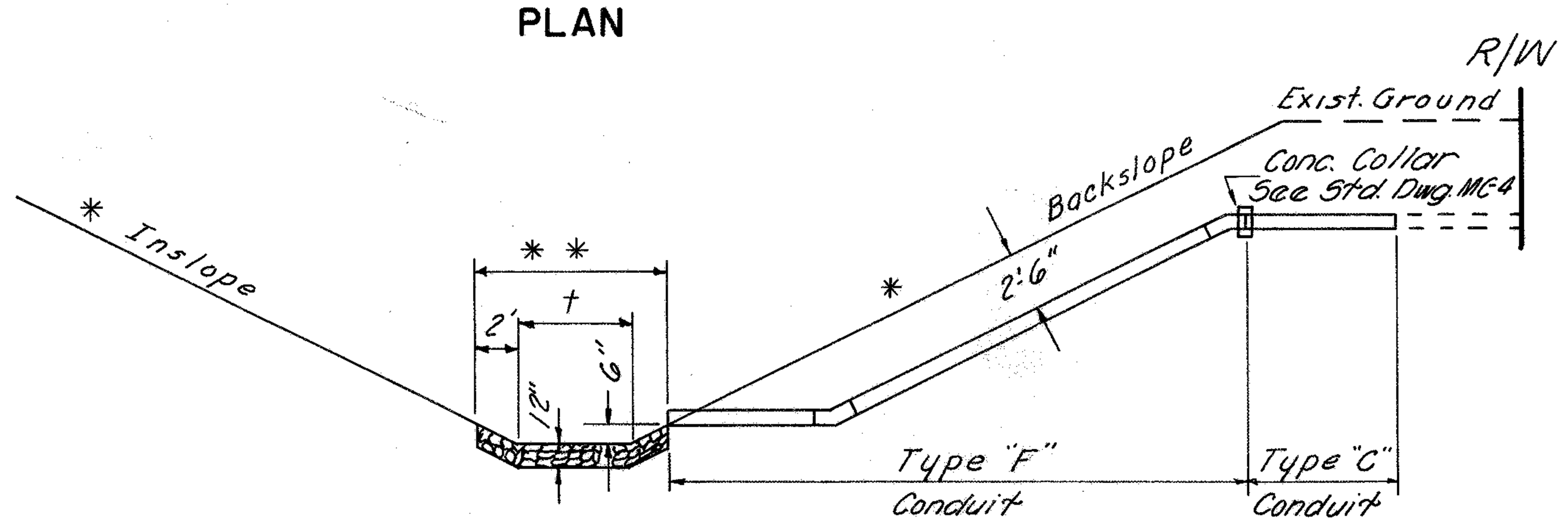
PRE-FABRICATED "T" CONNECTION



MEDIAN OUTLET DETAIL IN HIGH-FILL



PLAN



PROFILE

(CRUSHED AGGREGATE)

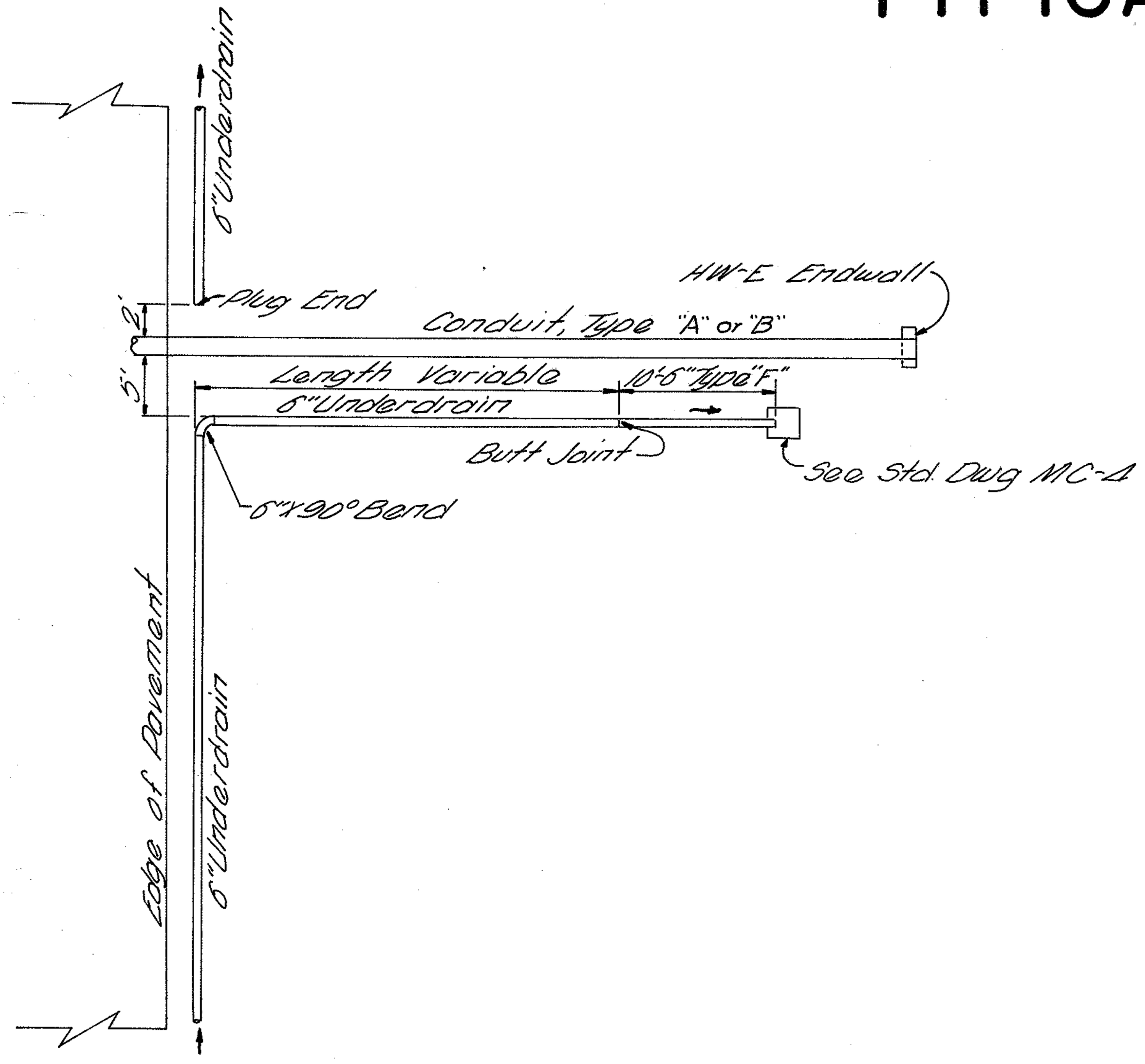
* See X-Section for Slope
** See Plan for Length
† See X-Section for Width

FIELD TILE OUTLET & PROTECTION
(TILE GRADES GREATER THAN 10%)

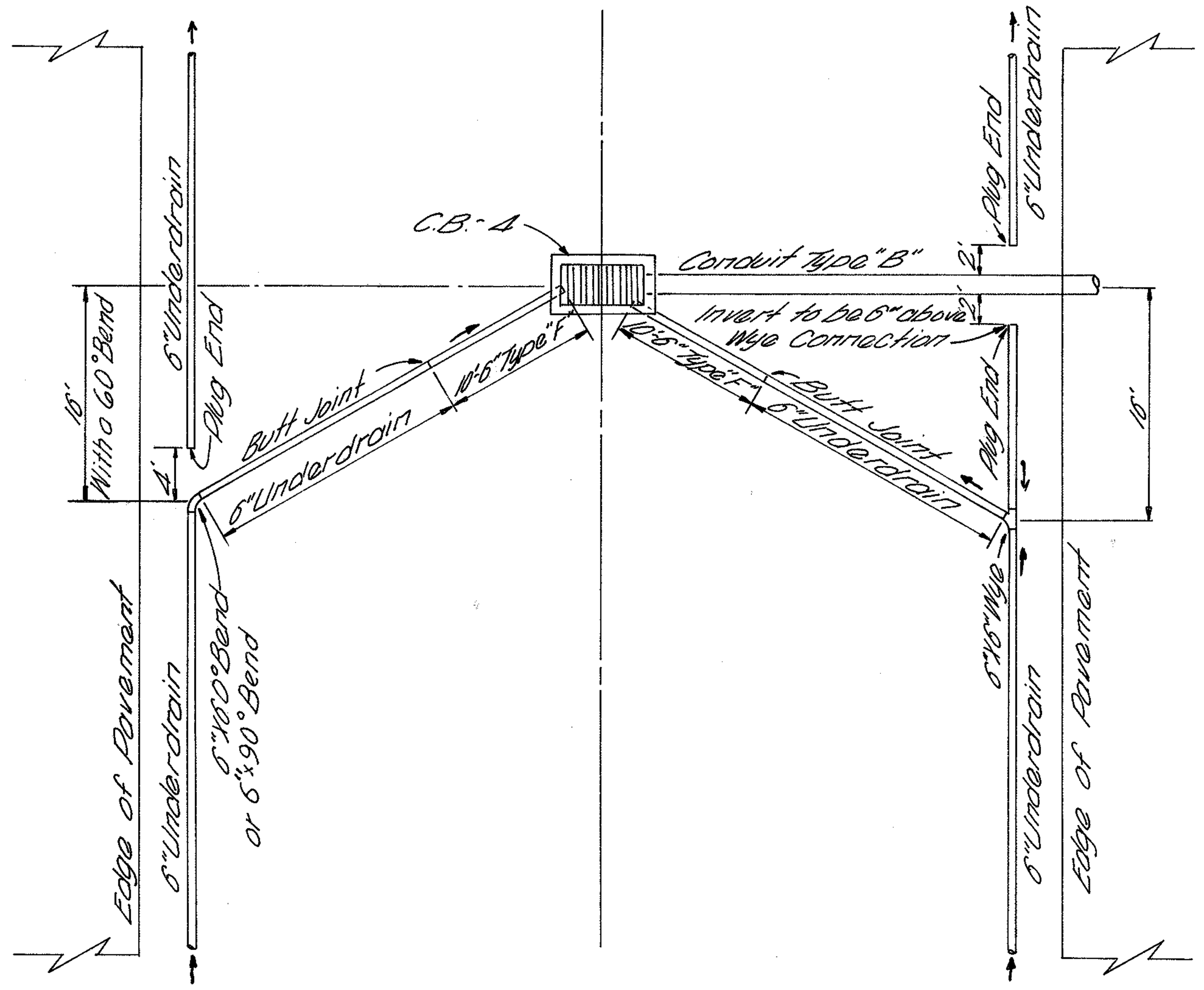
TYPICAL DETAILS OF UNDERDRAIN OUTLETS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

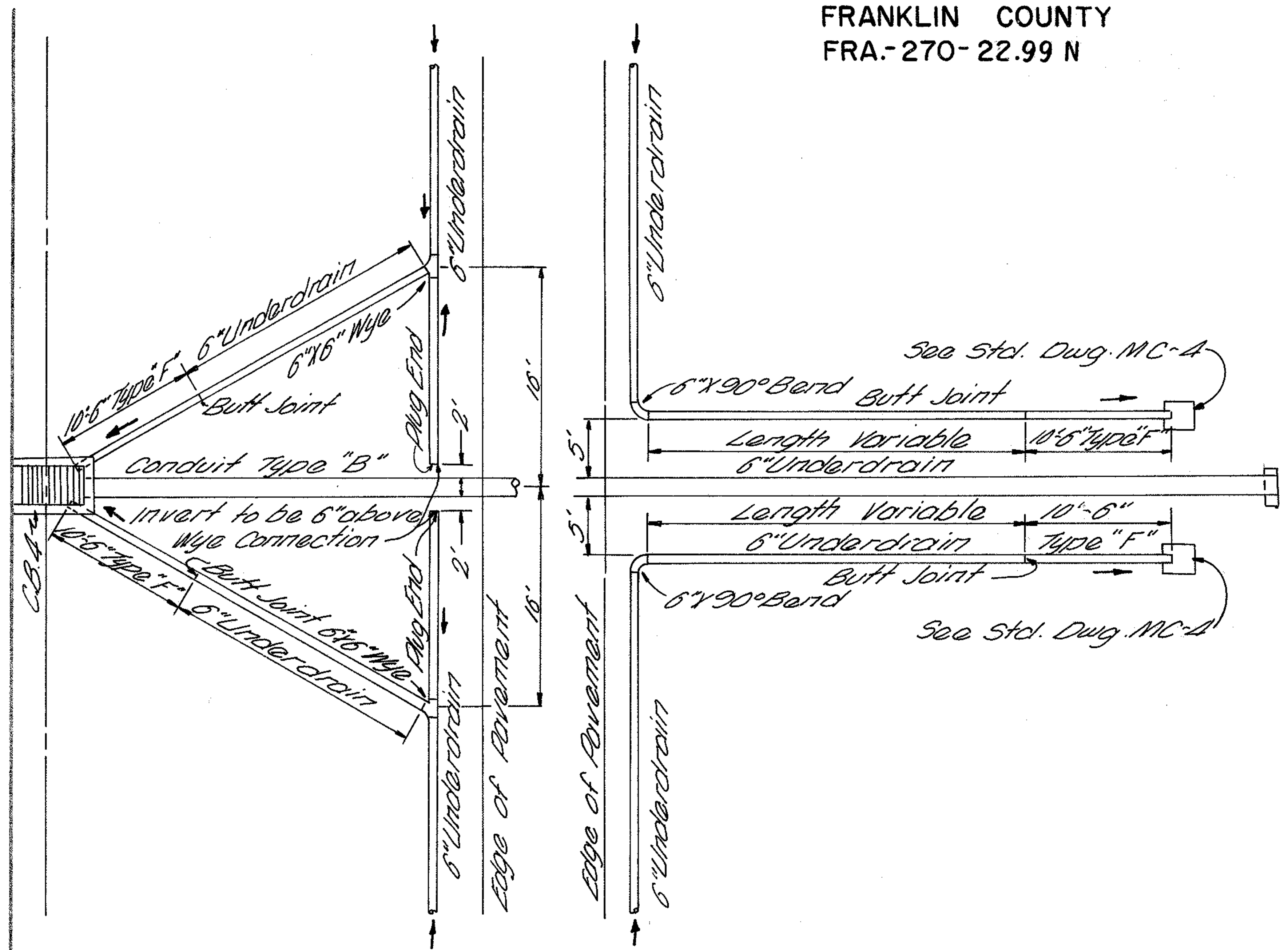
FRANKLIN COUNTY
FRA.-270-22.99 N



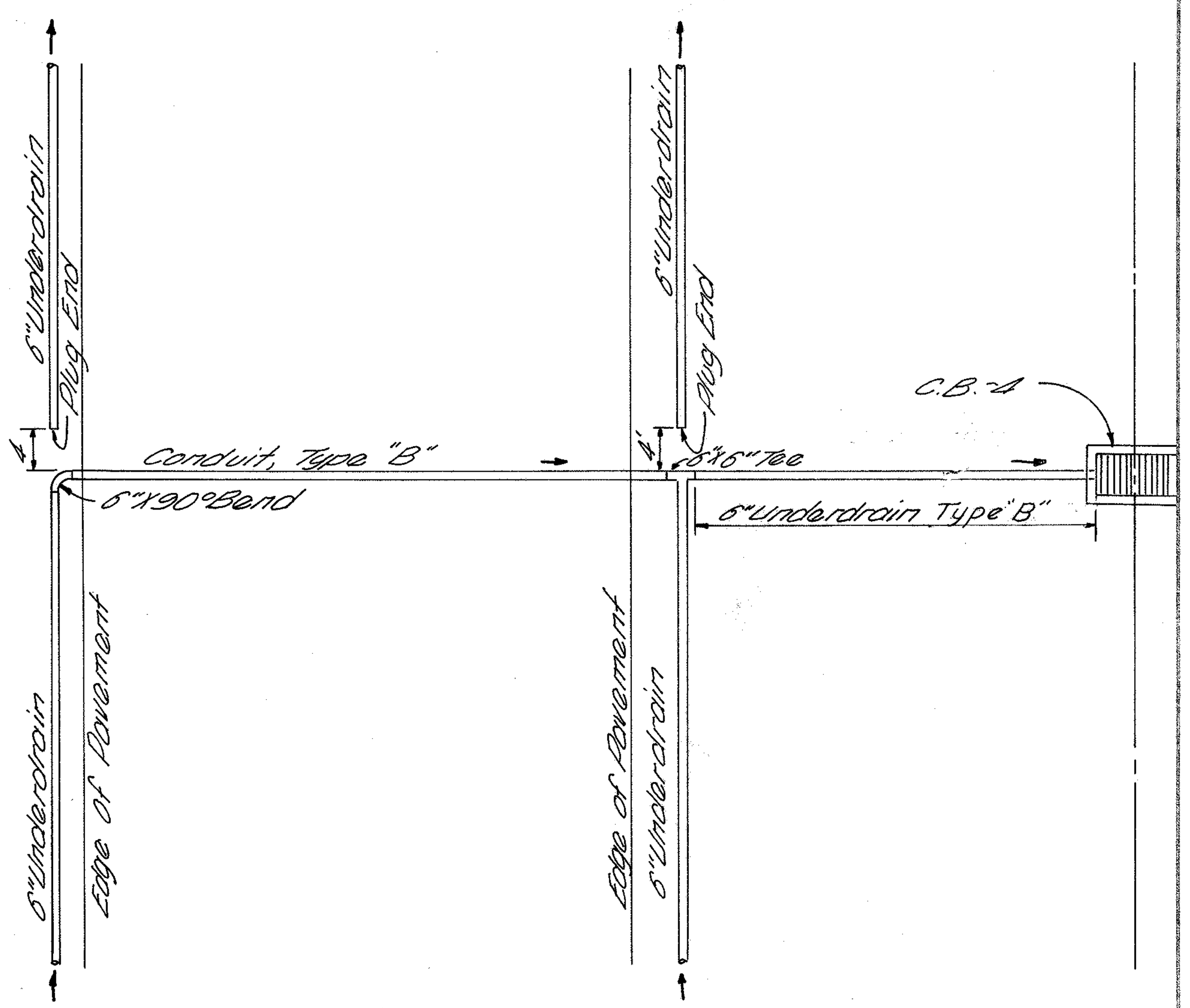
UNDERDRAIN OUTLET DETAIL "A"



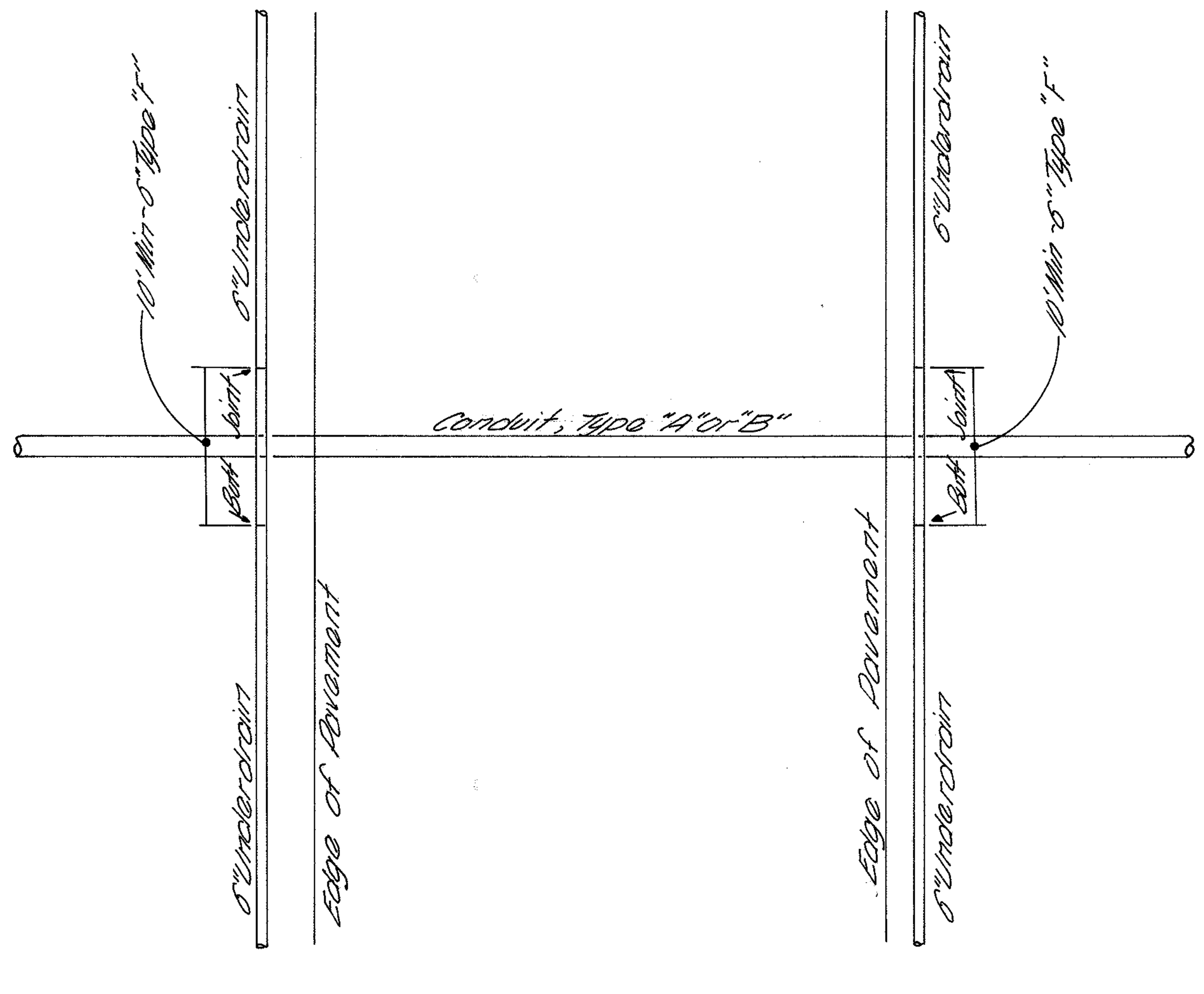
UNDERDRAIN OUTLET DETAIL "B"



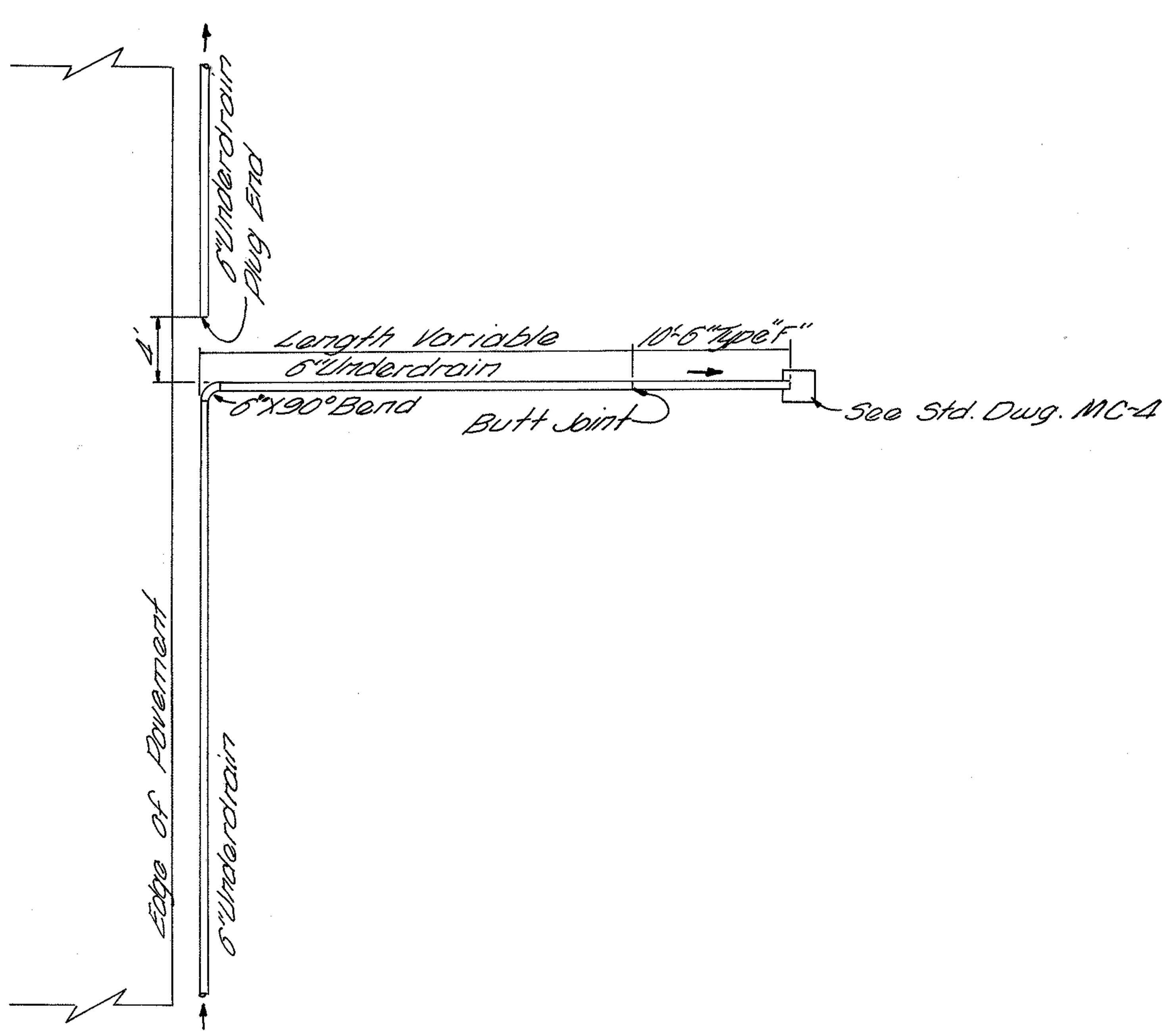
UNDERDRAIN OUTLET DETAIL "C"



UNDERDRAIN OUTLET DETAIL "D"



UNDERDRAIN OUTLET DETAIL "E"



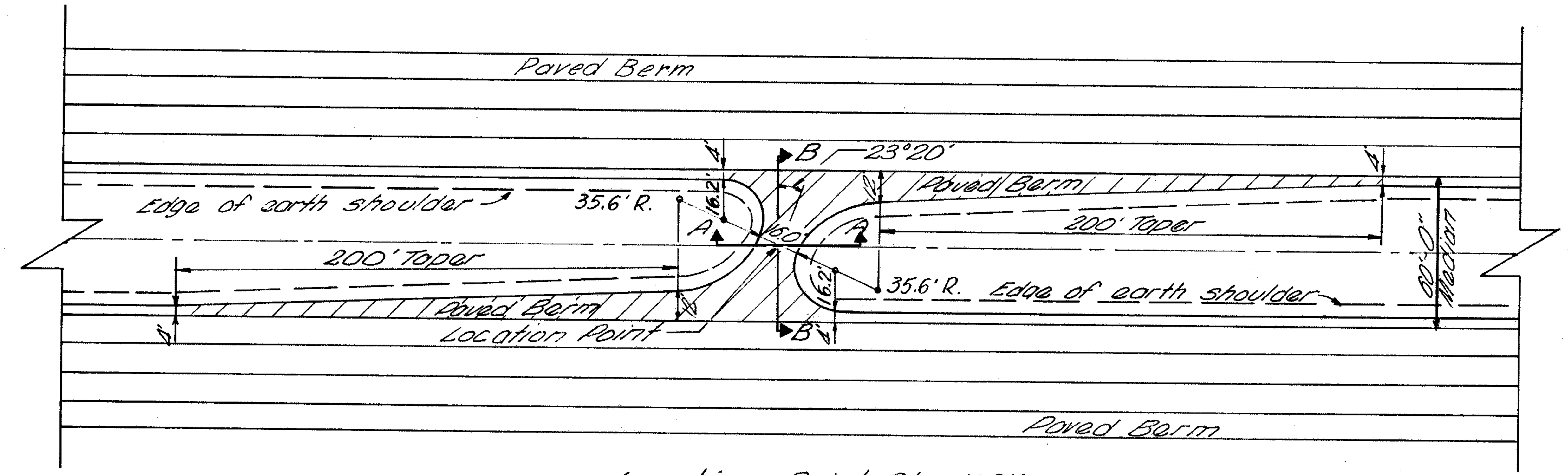
UNDERDRAIN OUTLET DETAIL "F"

MEDIAN CROSSOVER DETAILS

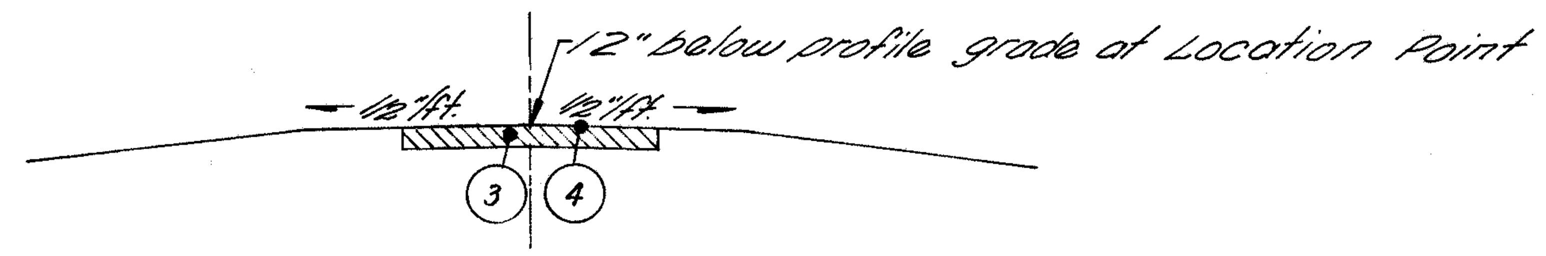
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

13
292

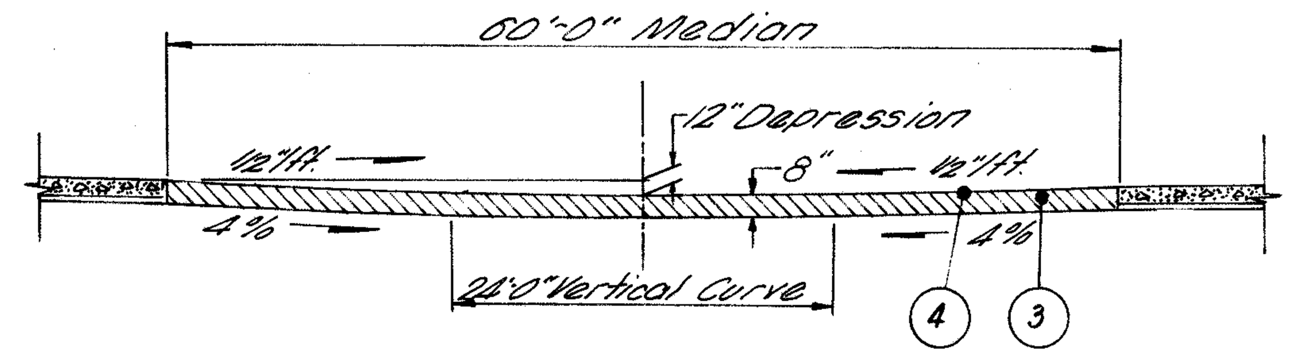
FRANKLIN COUNTY
FRA.-270-22.99 N



Location Point Sta. 1427+50
(60' Median)



SECTION A-A



SECTION B-B

(3) Item 301, Bituminous Aggregate Base, 702.01 (85-100) or 702.09 RT-10 As per plan, See note in proposal.

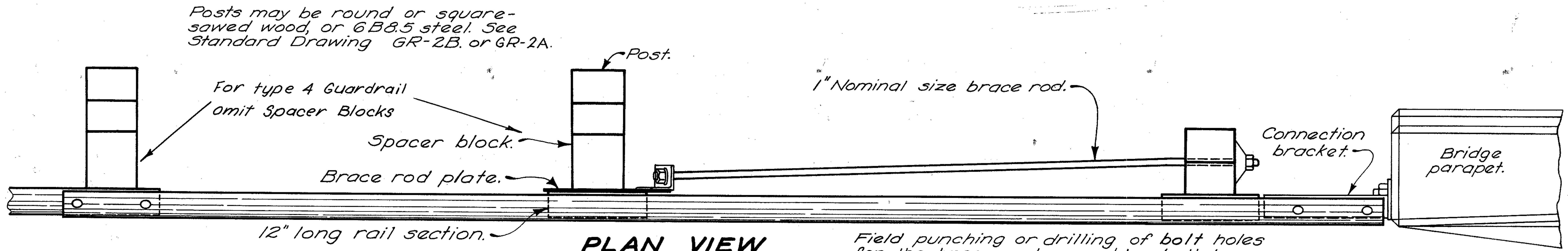
(4) Item 409, Seal Coat using 0.008 C.Y. No. 8 Cover Aggregate per S.Y. & 0.30 gal. Bituminous Material per S.Y. (See Note in Proposal)

NOTE: For Legend of Pavement Items See M. Typical Section, Sheet No. 3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

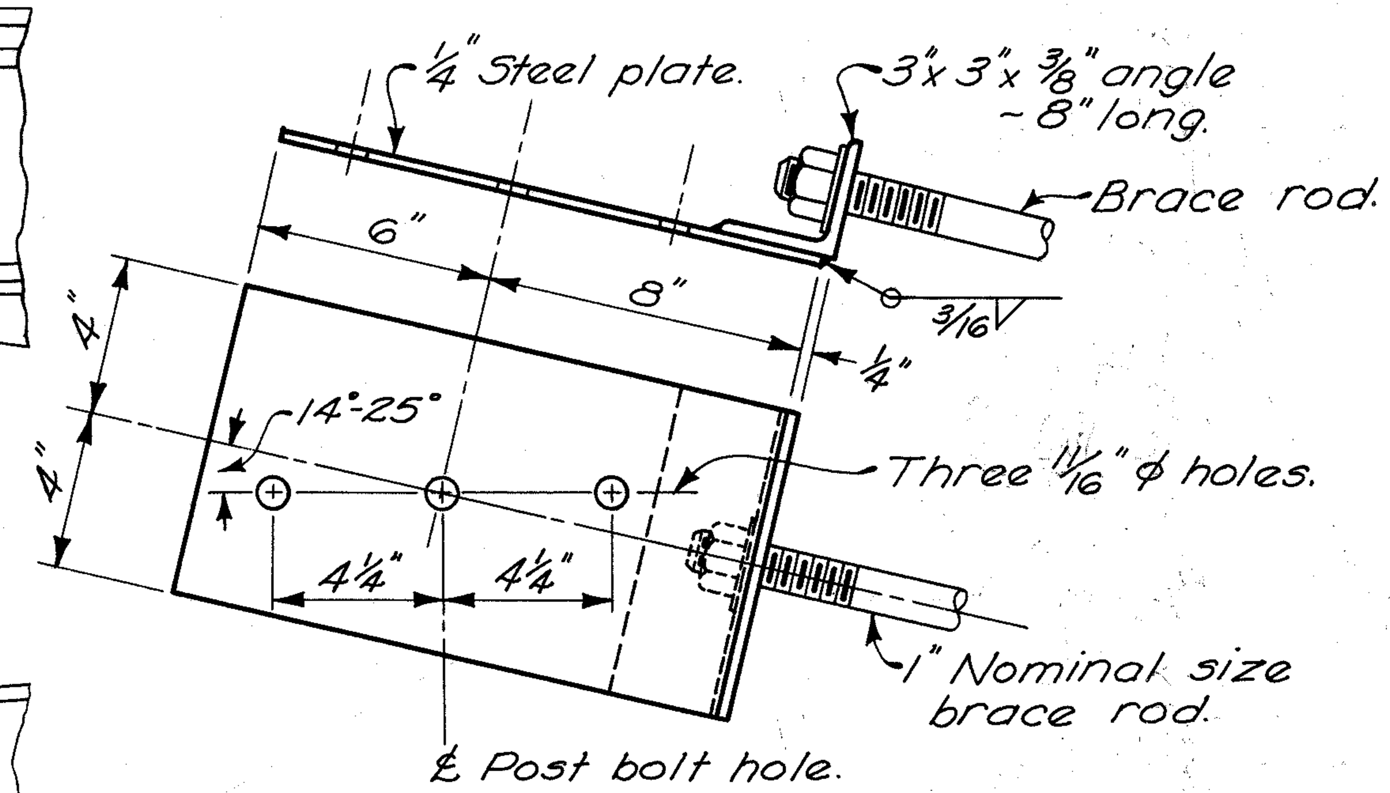
13A
292

FRA-270-22.94 N

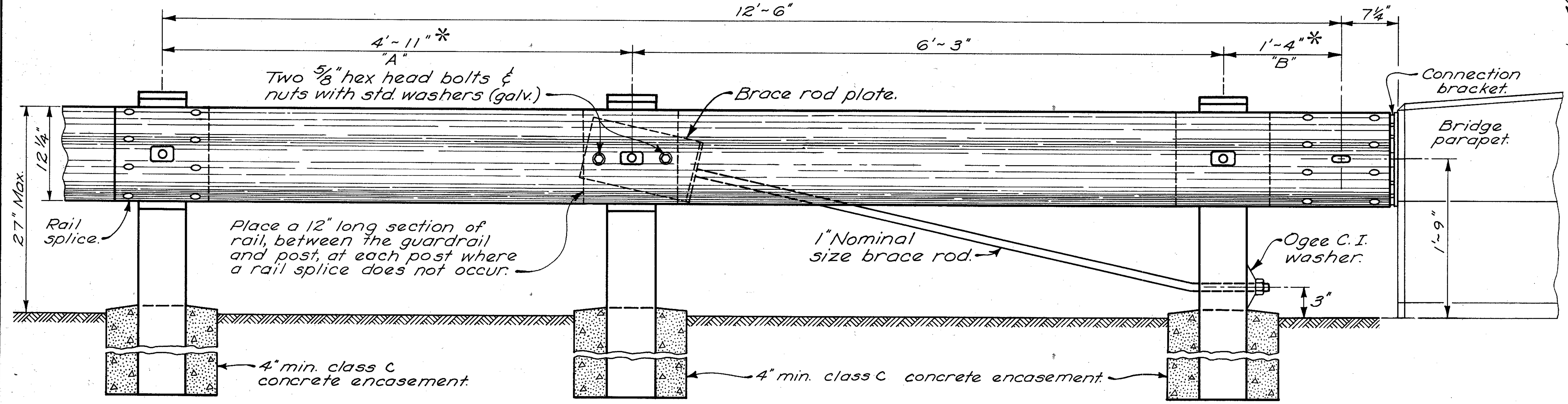


PLAN VIEW

Field punching or drilling of bolt holes for the brace rod assembly shall be accomplished as provided for in 606.04.



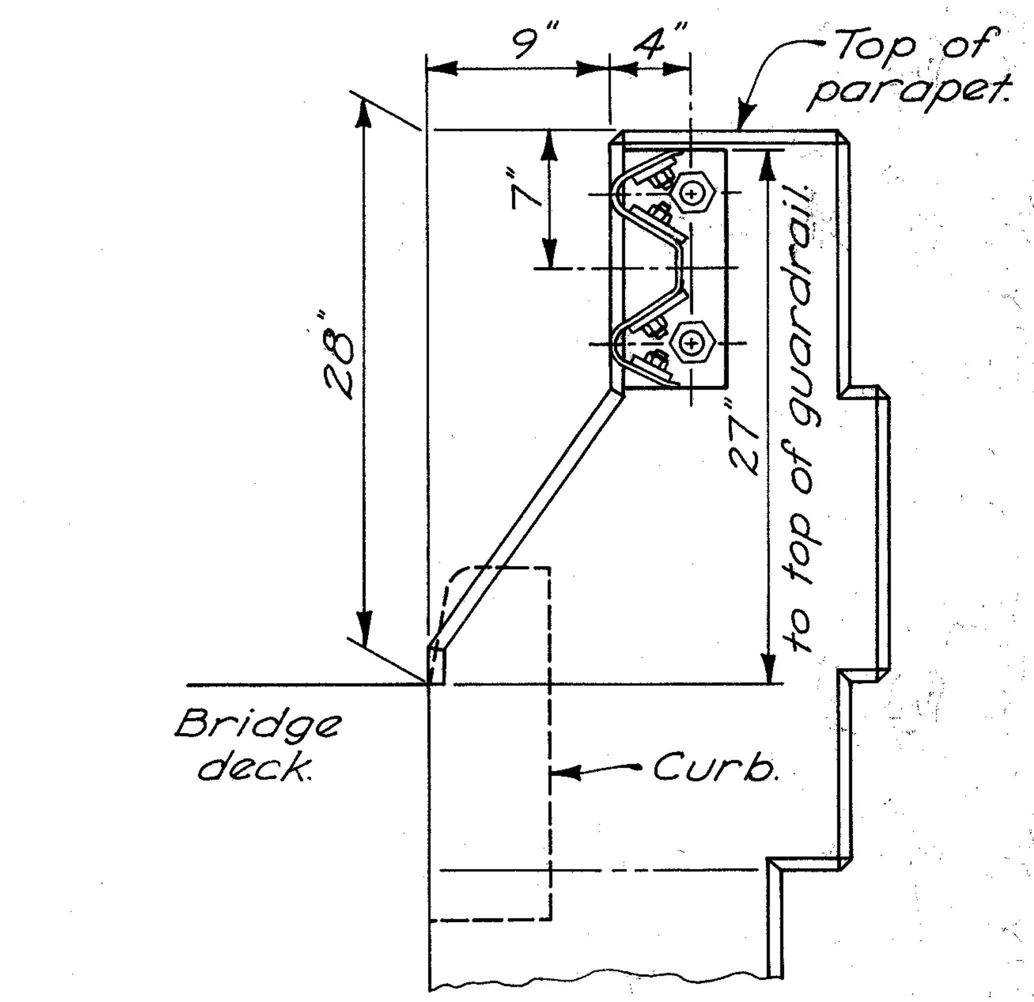
BRACE ROD PLATE



ELEVATION

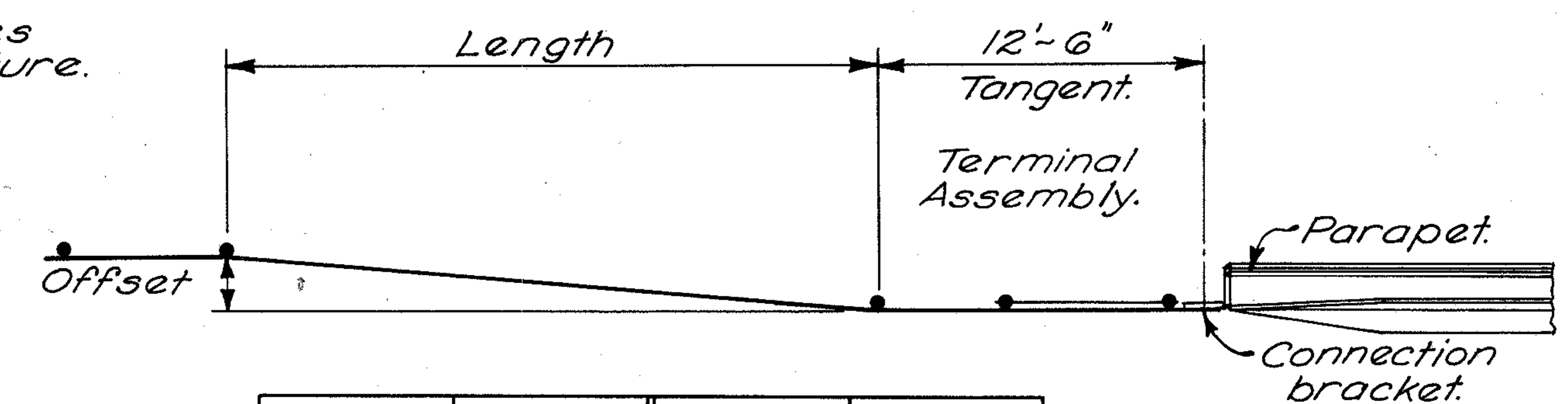
GUARDRAIL TERMINAL AT BRIDGE

* Dimension "A" shall decrease as dimension "B" increases to accommodate interference by the bridge substructure.



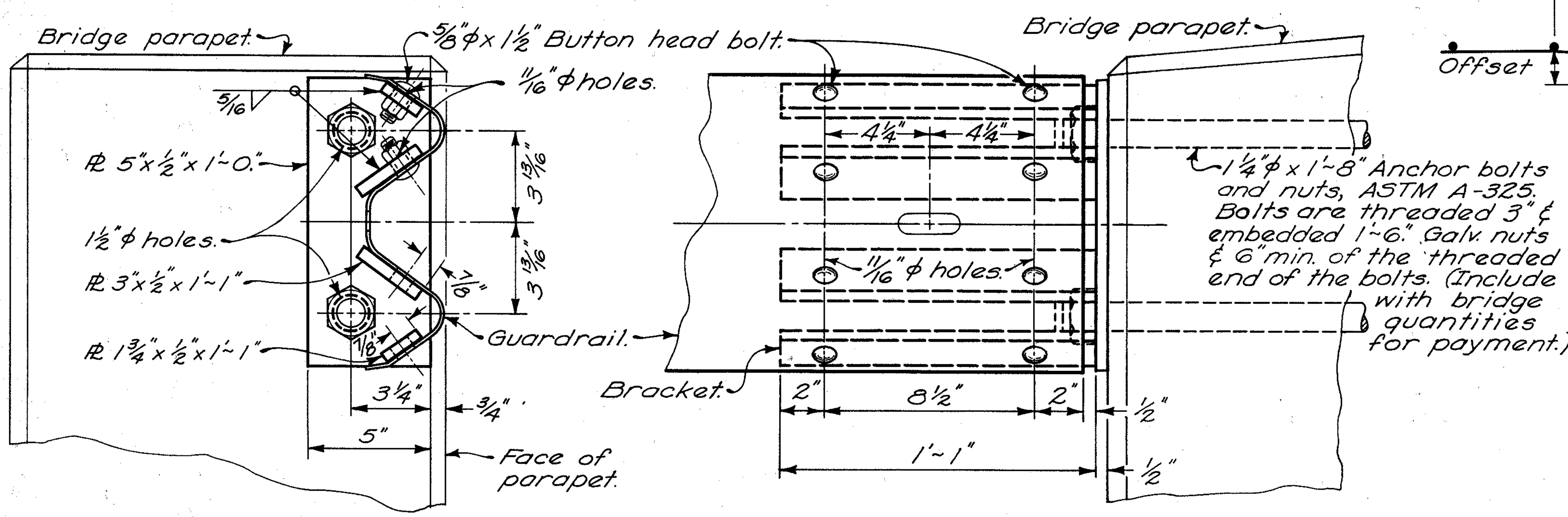
PARAPET APPROACH

For uncurbed approaches, guardrail shall be set 27" above ground line at face of rail. For curbed approaches guardrail shall be located 27" above gutter line and 9" behind the face of curb.



Offset	Length	Offset	Length
1'~0"	25.00'	5'~0"	100.00'
2'~0"	50.00'	6'~0"	100.00'
4'~0"	100.00'	7'~0"	100.00'

GUARDRAIL OFFSET DETAIL



CONNECTION BRACKET DETAIL

GUARDRAIL ~ BRIDGE CONNECTION

The connection bracket shall be galvanized after welding and shall be included with guardrail for payment.

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GR-3 : BRIDGE TERMINAL ASSEMBLY

FED RD DIVISION	STATE	PROJECT		
2	OHIO			

13B
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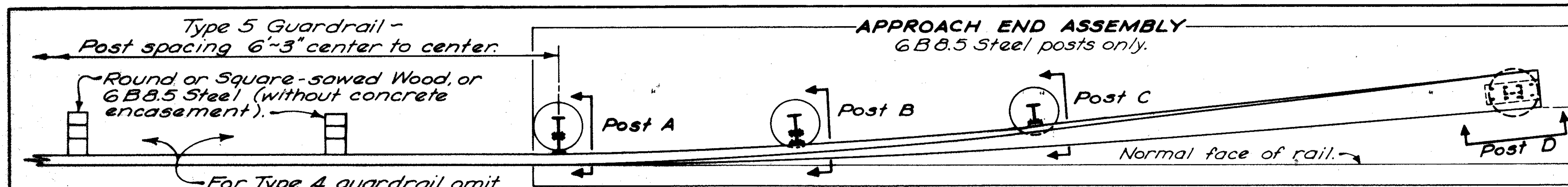
FRA-270-22.94 N

NOTES

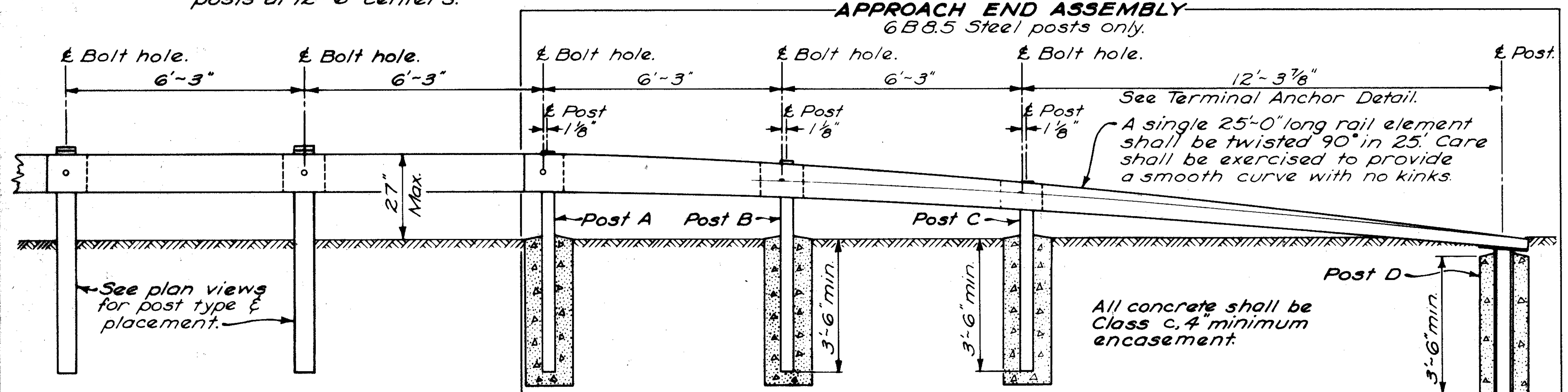
For details not shown, see Standard Drawings GR-2A and GR-2B.

All steel parts shall be galvanized in accordance with ASTM A123, A153 or A525, whichever may apply.

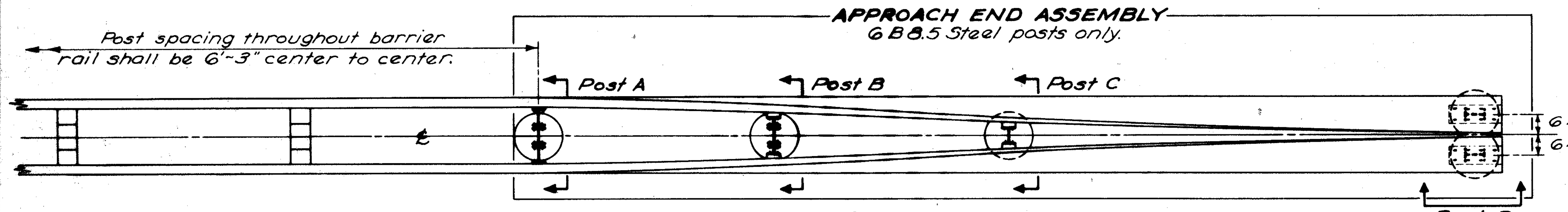
This drawing shall govern where a conflict arises.



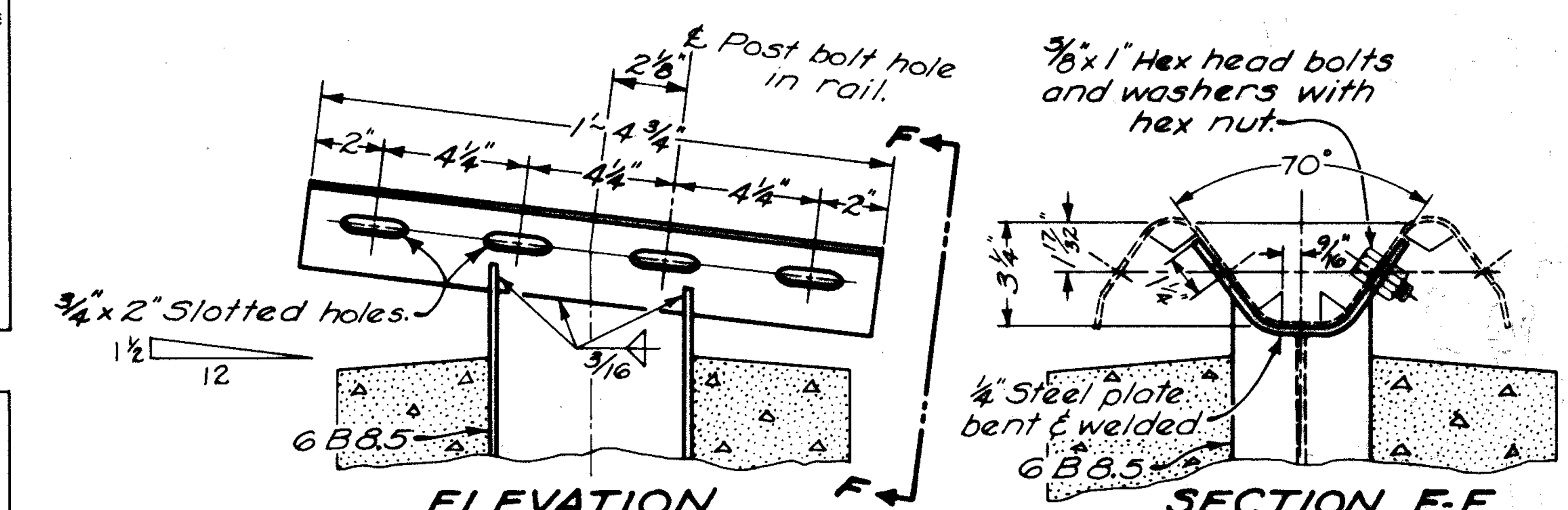
SINGLE RAIL ~ PLAN VIEW



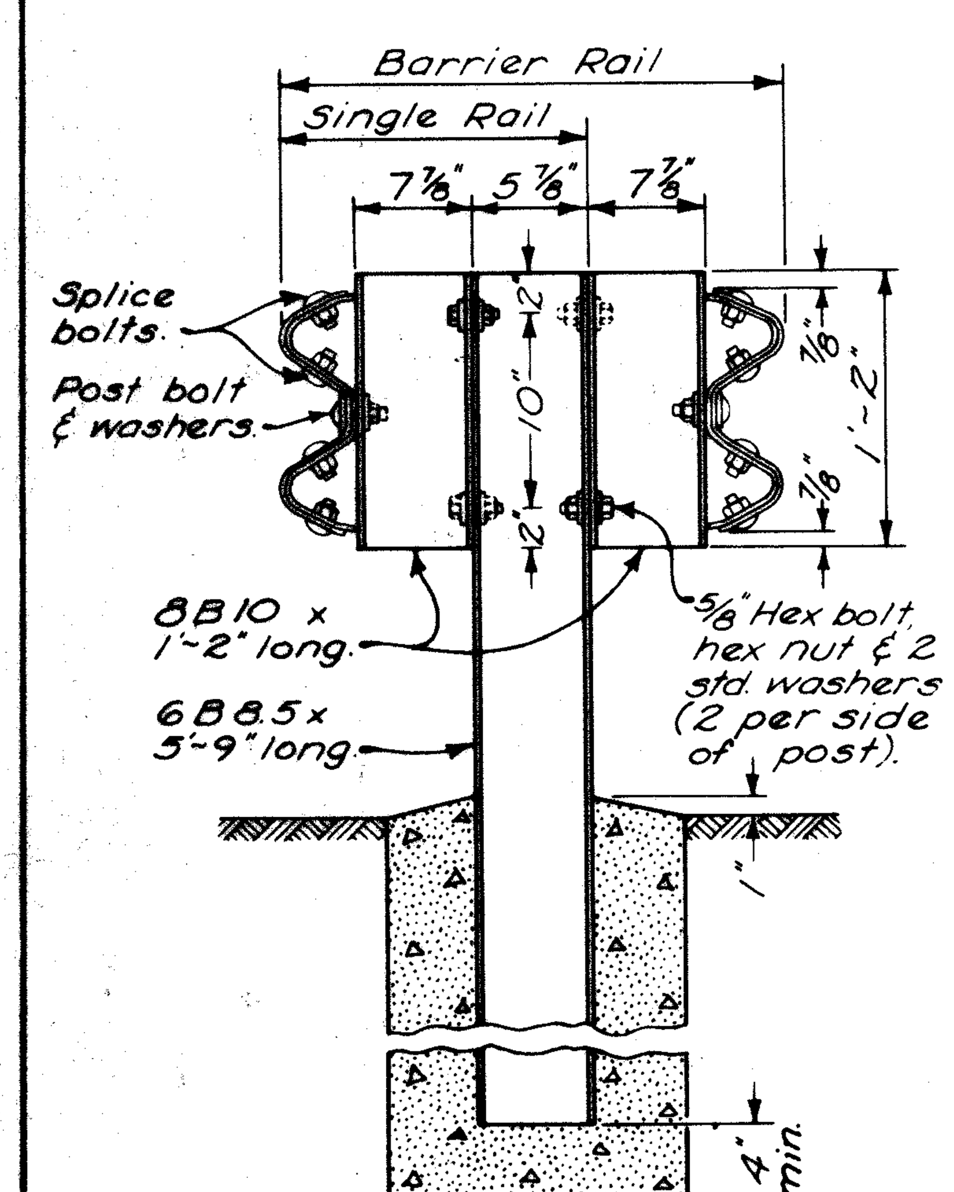
SINGLE & BARRIER RAIL ~ ELEVATION



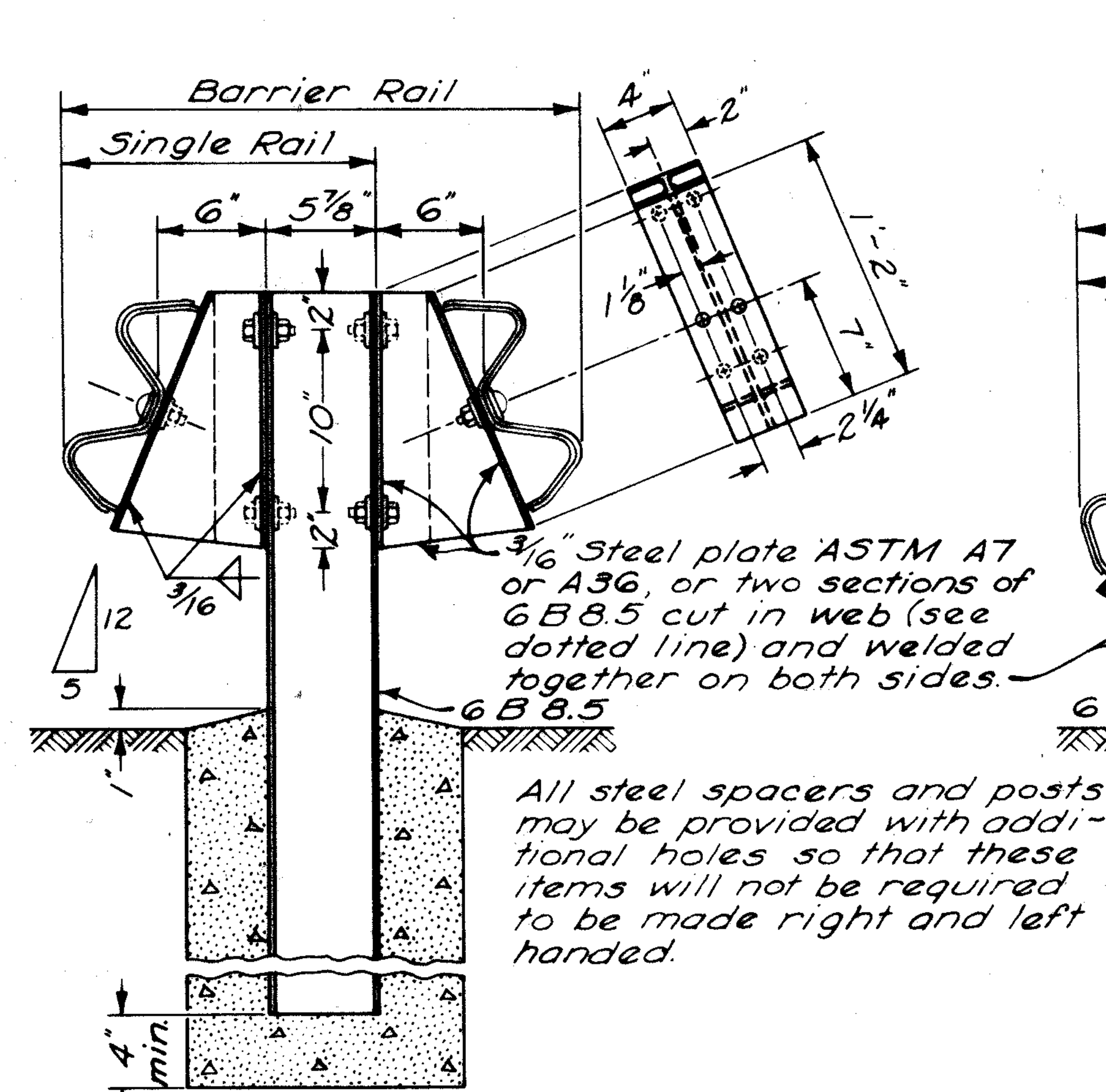
BARRIER RAIL ~ PLAN VIEW



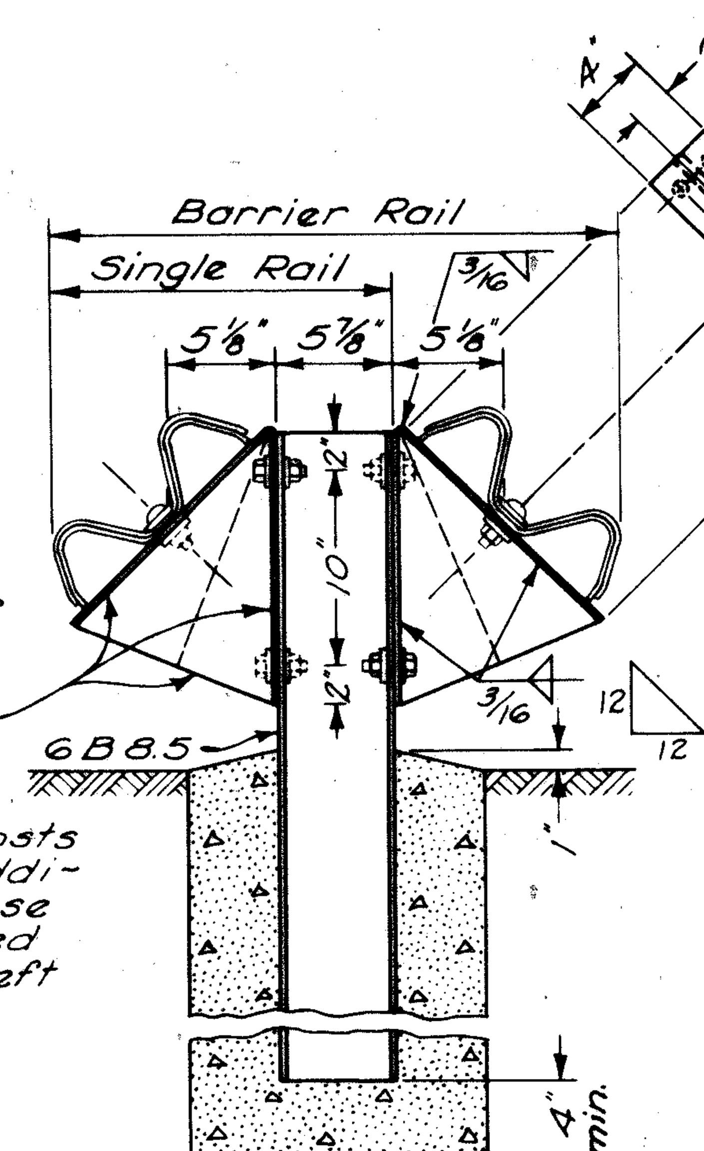
TERMINAL ANCHOR DETAIL



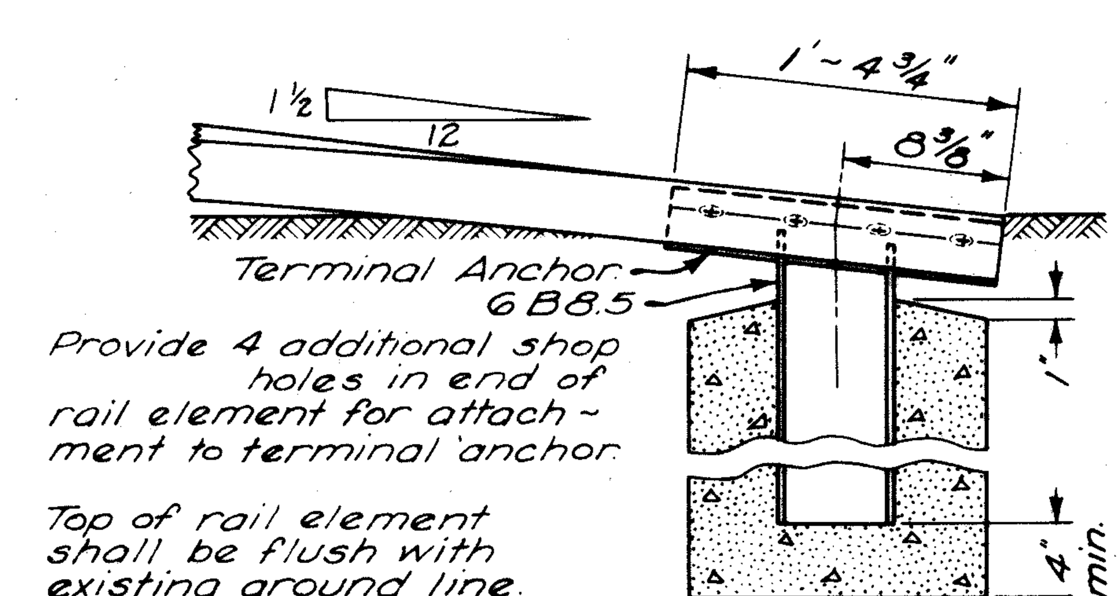
POST A



POST B



POST C



POST D

GR-4: GUARD RAIL ~ APPROACH END ASSEMBLY Rev. 2-15-68

GENERAL NOTES

FRANKLIN COUNTY
FRA - 270 - 22.99 N

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.

ELEVATION DATUM

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

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. See Sheet No. 2 for owner's names and addresses.

LOCATION AND SIZE OF PIPE

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

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on Standard Drawing MC-1, as modified by the typical sections, apply to all cross sections, even though otherwise shown on these plans.

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.

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.

CONSTRUCTION LAYOUT STAKES

See note in proposal describing the work included in this lump sum pay item.

REFERENCE MONUMENTS, AS PER PLAN

For locations, see Sheets No. 266 and 267.

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:

1) Morse Road Station 72+00± Rt.
2) Morse Road Station 139+00± Lt.

All FACI Signs shall be located 30' minimum from traveled lane.

Sign details shall be specified on Standard Drawing FACI-1, "Code N-55 (1) - 168 (4).

The signs shall be erected in accordance with Standard Drawing FACI-2. Additional requirements shall be in accordance with notes in the proposal.

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:

	Rural		Urban	
	Trees	Stumps	Trees	Stumps
18"	203	0	162	0
30"	16	0	47	0
48"	1	0	2	0
60"	0	0	0	0

	County		City	
	Trees	Stumps	Trees	Stumps
18"	15	0	0	0
30"	2	0	0	0
48"	1	0	0	0
60"	0	0	0	0

All trees within the right-of-way limits of this project and outside the work limits shall be reviewed by the Engineer subject to their salvage or removal.

The method for marking trees and shrubs to be removed shall be established by the Engineer. No work will be permitted in areas where trees are present prior to the staking, by the Contractor, of the work limits.

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.

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.

DRIVE LOCATIONS

The location of residence and field drives may be adjusted outside the limited access by the Engineer during construction, at no additional cost.

MAIL BOX APPROACHES

These shall be placed as directed by the Engineer. 16 approaches have been estimated for the following totals.

Rural		Urban	
404	304	404	304
11 C.Y.	28 C.Y.	13 C.Y.	32 C.Y.

County		City	
404	304	404	304
4 C.Y.	8 C.Y.	6 C.Y.	14 C.Y.

Item 404, Asphalt Concrete (85-100), 2 inches thick, (2-1 inch courses) and Item 304, Aggregate Base, 5 inches thick. These approaches shall be constructed as per Standard Drawing BP-6.

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. Provisions of expansion joints of all major structures and the maximum spacing between contraction joints shall in all cases be in accordance with Standard Construction Drawings and the specifications.

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, in accordance with Supplemental Specifications 801.

DUST CONTROL

An estimated amount of 616 (Calcium Chloride) and 616 (Water) has been provided for dust control, as directed by the Engineer as shown below:

	Urban	Rural
616 Calcium Chloride	10 Tons	5 Tons
616 Water	100 M Gal.	50 M Gal.

	County	City
616 Calcium Chloride	4 Tons	1 Ton
616 Water	45 M Gal.	5 M Gal.

GENERAL NOTES

310 UNDER APPROACH SLABS

The area between the subgrade and the bottom of the approach slab shall be backfilled with 6" of Item 310 Subbase.

RELOCATION OF REGIONAL PLANNING COMMISSION MONUMENTS

It is the Contractor's responsibility to relocate the Regional Planning Commission monuments and the Franklin County bench marks according to the Franklin County Regional Planning Commission requirements in cooperation with the Franklin County Engineer's office. The cost for these items shall be included in the unit price bid for Item 203. The following are the approximate locations of the existing regional monuments and Franklin County bench marks:

F.C.-BM A-3	**56.1' Lt. Sta. 72+00 Centerline Morse Road**
RPC-BM 8-57	**22.6' Rt. Sta. 78+95 Centerline Morse Road**
RPC-BM 9-57	**23' Rt. Sta. 95+87 centerline Morse Road**
F.C.-BM A-6	**68' Rt. Sta. 110+85 Centerline Morse Road**
RPC-BM 10-57	**31' Lt. Sta. 110+95 Centerline Morse Road**

ITEM 659 - LIMING

The area to be limed shall be determined by laboratory test prior to fertilizing, seeding and sodding, and after the finished grade has been established. The lime shall be applied at the standard rate to the areas as directed by the Engineer.

ITEM 659 - FERTILIZER

Fertilizer with the analysis of 18-46-0 shall be uniformly applied at the rate of fifteen (15) pounds per 1000 sq. ft. over the entire area to be seeded or sodded and worked into a depth of not less than three (3) inches.

ITEM 659 - SEEDING

(A) MORSE ROAD

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.

(B) MCCUTCHEON, STELZER ROAD & SERVICE ROADS

Quantities for seeding are calculated for the soil areas between the work limits, as shown on the cross sections.

(C) INTERSTATE ROUTE 270

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

All slopes 2:1 or Steeper:

60% Ky. 31 Fescue (Festuca Arundinacea "Ky. 31")
25% Ky. Bluegrass (Poa Pratensis)
10% Red Clover (Trifolium Pratensis)
5% Red Top (Agrostis Alba)

ITEM 659 - SEEDING (Continued)

All Other Areas to be Seeded:

50% Pennlawn Fescue (Festuca Rubra "Pennlawn")
35% Ky. Bluegrass (Poa Pratensis)
10% Alsike Clover (Trifolium Hybridum)
5% Red Top (Agrostis Alba)

When asphalt is used as a tie, it shall be applied at the rate of 100 gallons per ton of mulch.

No asphalt shall be applied when the temperature is below 40°F.

When straw is used as a mulch it shall be applied at such a rate as to insure a minimum two (2) inch depth loose measure, approximately ~~two (2)~~ tons per acre.

The actual operation of seeding shall not be performed between the dates of October 15 and February 14.

EROSION CONTROL

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

ITEM 604 WATER VAULTS ADJUSTED TO GRADE

A new casting will be required for each of the items under Item 604, Water Vaults Adjusted to Grade. The cost for the new casting should be included in the unit price bid for Item 604, Water Vaults Adjusted to Grade.

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 603 conduit item.

ITEM 605 AGGREGATE DRAINS - MORSE, MCCUTCHEON & SERVICE ROADS

Aggregate drains shall be placed at fifty (50) foot intervals on each side of normal crowned sections and at twenty-five (25) foot intervals on the low side only of superelevated sections, except where Item 605 Pipe Underdrains have been provided and except for curb sections.

An aggregate drain shall be placed at the low point of each sag vertical curve.

SPRING DRAINS

Reference is made to the detailed drawing on Sheet Number 11 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, 707.12 or 707.01 Type III, as per plan — 200 L.F.

Item 605 - Aggregate Drains for Springs, as per plan — 20 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.

FARM DRAINS

All farm drains which are encountered during construction shall be provided with unobstructed outlets under the direction of the Engineer. Existing collectors which are located below the roadway ditch elevations and which cross the roadway shall be replaced within the right-of-way limits by Item 603, Conduit, Type B, with one commercial size larger than existing conduit.

Existing collectors and isolated farm drains which are encountered above the elevation of the roadway ditches shall be outletted into the roadway ditch by 603 Type F Conduit. The optimum outlet elevation shall be, if possible, one foot above the flowline elevation of the ditch. Lateral field tile which cross the roadway shall be intercepted by 603 Type E Conduit and carried in a longitudinal direction to an adequate outlet or roadway crossing.

The location, type, size and grade of required replacements shall be determined by the Engineer during construction and payment shall be made on final measurements.

The following estimated quantities have been included in the General Summary for the work noted above.

		Urban	Rural	County
Item 603	6" Conduit, Type "B"	360 L.F.	240 L.F.	100 L.F.
Item 603	8" Conduit, Type "B"	360 L.F.	240 L.F.	100 L.F.
Item 603	12" Conduit, Type "B"	180 L.F.	120 L.F.	100 L.F.
Item 603	6" Conduit, Type "E"	300 L.F.	200 L.F.	100 L.F.
Item 603	8" Conduit, Type "E"	210 L.F.	140 L.F.	100 L.F.
Item 603	12" Conduit, Type "E"	300 L.F.	200 L.F.	100 L.F.
Item 603	6" Conduit, Type "F"	60 L.F.	40 L.F.	20 L.F.
Item 603	8" Conduit, Type "F"	42 L.F.	28 L.F.	20 L.F.
Item 603	12" Conduit, Type "F"	18 L.F.	12 L.F.	20 L.F.
Item 601	Crushed Aggregate Slope Protection	12 S.Y.	8 S.Y.	20 S.Y.
Item 604	Standard Number 2-2-B Catch Basin as Per Plan	1 Ea.	1 Ea.	0

All necessary bends and branches shall be included for payment with the conduit of which they become a part.

None of the above materials shall be ordered by the Contractor until requested by the Engineer.

GENERAL NOTES

SANITARY FLOW INTO LIMITED ACCESS HIGHWAY SYSTEMS

This plan makes no provision for connecting, nor shall the Engineer or Contractor connect, any existing or new drainage into the Interstate Limited Access drainage system when such drains carry flow from any plumbing fixtures including floor drains and sink drains or drains from live-stock lots or barns or polluted water of any kind.

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

TREATED SANITARY FLOW INTO NON-LIMITED ACCESS DRAINAGE SYSTEMS

Treated sanitary flow may be discharged into the county highway drainage system provided the owner has secured the approval of the local health authorities, no per mit will be required from the State.

The following estimated quantities have been included in the general summary, for use as directed by the Engineer. in making the above described connection:

Item 603 6" Conduit, Type C	100 L.F.
Item 604 Inspection Wells	2 Each

Any necessary pipe specials which shall be included for payment in the pertinent conduit item.

None of the above materials shall be ordered by the Contractor until authorized 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 any other means approved by the Engineer shall be included in the unit prices bid for the respective pipe items.

ITEM SPECIAL - CLEANING AND DISPOSING OF SEPTIC TANKS

This item shall include cleaning, backfilling and removal of all or any portion of existing septic tanks.

All septic tanks lying within the proposed right-of-way limits shall be cleaned and emptied. Material removed from these tanks shall be classified as unsuitable and disposed of outside the right-of-way or easement lines.

When the septic tanks are located above the finished pavement or ground lines, they shall be entirely removed and disposed of in accordance with 203.05.

When the tanks are located below the finished pavement or ground lines, the tops of the tanks shall be removed, and the walls shall be removed to a depth of 1 foot below the finished subgrade or ground lines. The removed material shall be disposed of as explained above. The tanks shall be back-filled with suitable soil or granular material in accordance with 203.02.

PAVING SCHEDULE

Unless otherwise approved in writing by the Director, no pavement base or surfacing shall be placed in the area south of station 1389+00 until the outfall storm sewer is completed on the projects to the south-east and functional to its outlet into Big Walnut creek, or until after July 1, 1971 which ever date comes first.

ITEM SPECIAL - CLEANING AND DISPOSING OF SEPTIC TANKS (Continued)

This item shall be paid for at the unit price bid per each for "Item Special - Cleaning and Disposing of Septic Tanks", which price and payment shall constitute full compensation for cleaning, removing and disposing of excess materials, backfilling and for all labor, tools, equipment and incidentals necessary to complete this item including incidental excavation.

DRILLED WELL ABANDONED

The existing concrete or stone slab well cover and pumping equipment shall be removed and disposed of. The casing shall be cut off at least two (2) feet below the proposed finished grade outside the proposed pavement areas or at least two (2) feet below the proposed subgrade elevation inside proposed pavement areas and capped with Class "C" concrete or a standard threaded pipe cap.

The unit price bid for each "Drilled Well Abandoned" shall include payment for all labor, tools, materials and incidentals necessary to complete this item.

NO. 2-2-B CATCH BASIN, AS PER PLAN

Eliminate the grating and replace with a 3/4" steel plate, 2' - 3½" x 2' - 3½". The top plate shall be a maximum of 6" above ground, and provided with a 1" dia. lift hole.

NO. 4 CATCH BASIN

The flow line of the grate is at the front edge of the grate at catch basin center line.

STANDARD NO. 6 CATCH BASIN, AS PER PLAN

Depress grate 2" in lieu of 1" as per Standard Drawing CB-6

The stationing as listed in the plans is to the center of the grate, and the elevation is on the grate.

ROCK CHANNEL PROTECTION

Rock channel protection at the outlet of pipes as shown on the plans shall be placed immediately after the pipe has been placed and the outlet channel is cut.

The location of rock channel protection at swales shall be adjusted by the Engineer during construction to fit the swale.

All rock channel protection shall be placed on a 6" thick bed of No. 357 coarse aggregate. The volume of the aggregate bed is included in the volume for rock channel protection.

ITEM SPECIAL, PUMPING

The outlet for permanent drainage at the south end of this project will be constructed as part of the adjoining projects, FRA-270-25.39N & FRA-270-26.84N. Temporary drainage outlets as required shall be provided by the Contractor for this project until such time as a permanent outlet is available on the adjacent projects. or until this entire project has been formally accepted by the OHIO HIGHWAY DEPARTMENT. Any additional cost required to provide the temporary drainage outlet, including pumping, shall be included in the lump sum bid for pumping. The south roadway ditch on McCutcheon Road will be cleaned and deepened, as indicated on the cross sections. Water from the Interstate may then be pumped into this ditch. The water shall not be permitted to pond to a depth greater than 3 foot at its deepest point. This depth shall be reduced to zero between storms.

TRAFFIC CONTROL DEVICES AND SIGNS - MORSE ROAD, STATION 71+00.10 TO STATION 106+00 AND SUNBURY ROAD

Maintaining, relocating and placing into service the traffic control devices including supports, signals, controllers, actuators and other items necessary to provide a complete signal system at Morse and Sunbury Road intersection shall be the responsibility of the Owner.

Maintaining, removing, relocating, replacing or providing additional signs along the project shall be the responsibility of the Owner.

The Contractor's attention is directed to Section 107.17 of the specifications to assure proper protection to the public and the project.

CONSTRUCTION SIGNS

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 Construction Traffic Maintained" signs and sign supports at the following approximate locations:

1. Morse Road west of Sunbury Road.
2. Sunbury Road north of Morse Road.
3. Sunbury Road south of Morse Road.

Sign erection and details shall be as specified on Standard Drawing MC-3. Additional requirements shall be in accordance with notes in the proposal.

Payment for providing, erecting, maintaining and removing signs and sign supports shall be included in the lump sum price bid for "Item 614 Maintaining Traffic".

PROFILE (RESURFACING AND SALVAGE PROJECTS)

Morse Road

Station 71+00.10 to Station 106+00

The profile of the proposed asphalt concrete shall be approximately four (4) inches above that of the existing pavement.

Sunbury Road

The profile of the proposed asphalt concrete shall be approximately 1½ inches above that of the existing pavement.

TRENCH FOR WIDENING - MORSE ROAD STATION 71+00.10 to STATION 106+00 AND SUNBURY ROAD

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

revised 7-1-69

GENERAL NOTES

TRAFFIC NOTES

General

The Contractor shall, before work is started on the project, submit to the Director, for approval, a schedule of operations.

In no case shall the stipulation of this traffic note waive the requirements of either the Construction and Material Specifications or the Manual of Uniform Traffic Control Devices.

Morse Road - County Road 17 (Station 106 to 139+00)

Two way traffic shall be maintained at all times on the existing pavement or the proposed pavement except for a period of thirty (30) calendar days while the connections are being made during which time two way traffic shall be maintained on the existing pavement, proposed pavement and/or the berm and ditch areas using Item 410 and 616 material.

An estimated quantity of 300 C.Y., Item 410 Type "A" or "B" & 6 cu. yds. 616 Calcium Chloride is provided for maintaining through traffic as per Item 614, Maintaining Traffic.

McCutcheon Road - County Road 171

Two way traffic shall be maintained at all times on the existing pavement, the proposed pavement, or the temporary runaround except for a period of thirty (30) calendar days while the connections are being made during which time two way traffic shall be maintained on the existing pavement, proposed pavement, and/or the berm and ditch areas using Item 410 and 616 material. An estimated quantity of 573 C.Y., Type "A" or "B" 15 Cu. Yds. 616 Calcium Chloride, & 615 Lump Sum Temporary Road is Provided for maintaining through traffic as per Item 614, and Item 615, under rural participation. The temporary runaround shall not be used during the winter months of December 1 to April 1.

Stelzer Road - County Road 177

Two way traffic shall be maintained at all times on the existing pavement or proposed pavement.

Sunbury Road

Two way traffic shall be maintained at all times except that one way traffic will be permitted for minimum periods of time between the hours of 9:00 a.m. and 3:00 p.m. for the purpose of road cut for storm sewer construction and for protection of completed asphalt concrete courses.

Morse Road (Station 71+00.10 to Station 106+00)

Two way traffic shall be maintained at all times by use of either the existing pavement or the proposed pavement except that one way traffic will be permitted for minimum periods of time between the hours of 9:00 a.m. and 3:00 p.m. for the prupose of road cut for storm sewer or water main construction.

Items 410 and 616 material shall be used to maintain traffic. An estimated quantity of 300 C.Y., Item 410, Type "A" or "B" and 6 cu. yds. 616 Calcium Chloride is provided for maintaining through traffic as per Item 614, Maintaining Traffic.

CALCULATIONS

CALC: WDB 7-11-68
CHK: R.E.H. 8-68

ITEM 451, 8" CONTINUOUS REINFORCED CONCRETE

Sta. 1325+00 to
Sta. 1354+74.59 = 2,974.59 L.F.
Sta. 1357+71.47 to
Sta. 1373+37 = 1,565.53 L.F.
Sta. 1396+49 to
Sta. 1426+75 = 3,026.00 L.F.
Sta. 1444+24 to
Sta. 1452+00 = 776.00 L.F.

Total (Urban) = 8,342.12 L.F.

Sta. 1373+37 to
Sta. 1396+49 = 2,312.00 L.F.
Sta. 1426+75 to
Sta. 1444+24 = 1,749.00 L.F.

Total (Rural) = 4,061.00 L.F.

A=(8342.12)(72)-4(1/2)(36)(11.55)=Urban Area= 599,801.04 S.F.
A=72(4061.00)=Rural Area = 292,392.00 S.F.

Ramp A
Sta. 1331+00 to Sta. 1343+00
A-1/2(1200)(25)= Urban Area = 15,000.00 S.F.

Ramp B
Sta. 1367+92.8 to Sta. 1372+50
A=(Planimetered) = 24.03 Sq. In.
(24.03)(400)= Urban Area = 9,612.00 S.F.
Sta. 1372+50 to Sta. 1373+49
to Sta. 1376+00
A-(12)(99)= Urban Area = 1,188.00 S.F.
A=(12)(151+).5(12)(100)=Rural Area = 2,412.00 S.F.

Ramp C
Sta. 1369+50 to Sta. 1373+24
to Sta. 1381+50
A=0.5(25+17.20)(374)=Urban Area = 7,891.40 S.F.
A=0.5(17.20)(826)=Rural Area = 7,103.60 S.F.

Ramp D
Sta. 1338+00 to Sta. 1341+50
(12)(250)+1/2(12)(100)= Urban Area = 3,600.00 S.F.
Sta. 1341+50 to Sta. 1346+04.7
A=Planimetered= 24.70 Sq. In.
(24.70)(400)= Urban Area = 9,880.00 S.F.

Mainline Taper
Sta. 1444+75 to Sta. 1452+00
A-0.5(10.35)(725)= Urban Area = 3,755.50 S.F.

Total Urban = 650,727.94 S.F.
Total Rural = 301,907.60 S.F.

V = (650,727.94)÷ 9 = Urban = 72,303.10 S.Y.
V = (301,907.60)÷ 9 - Rural = 33,545.28 S.Y.

To Sub Summary - Urban = 72,304 S.Y.

To General Summary - Rural = 33,546 S.Y.

ITEM 451, 9" REINFORCED CONCRETE PAVEMENT

Ramp A
Sta. A-1343+00 to Sta. A-1346+00
A = 0.5(14+16)(300) = 4,500.00 S.F.
Sta. A-1346+00 to Sta. A-1347+00
Cor. L = 100(963.43+954.93)= 100.89
A = 0.5(16+18)(100.89) = 1,715.13 S.F.
Sta. A-1347+00 to Sta. A-1351+16.50
Cor. L - 416.50(962.93+
954.93) = 419.98 L.F.
Sta. A-1351+16.50 to
Sta. A-1356+88.53 = 572.03 L.F.
Sta. A-1356+88.53 to
Sta. A-1358+18.84
Cor. L=130.31(241.11+
249.11) = 126.12 L.F.

Total = 1,118.13 L.F.
A=16(1,118.13) = 17,890.08 S.F.
Sta. A-1358+18.84 to Morse Road
A-(Planimetered) = 5.84 Sq. In.
(5.84)(400) = 2,336.00 S.F.

Ramp B
Morse Road to Sta. B-1357+50
A=(Planimetered) = 6.96 Sq. In.
(6.96)(400) = 2,784.00 S.F.
Sta. B-1357+50.00 to
Sta. B-1357+78.44 = 28.44 L.F.
Sta. B-1357+78.44 to
Sta. B-1360+24.32
Cor. L = 245.88(560.96+
572.96) = 240.73 L.F.
Sta. B-1360+24.32 to
Sta. 1361+75.00 = 150.68 L.F.

Total = 419.85 L.F.
A=24(419.85) = 10,076.40 S.F.
Sta. B-1361+75 to
Sta. B-1362+05.90 = 30.90 L.F.
Sta. B-1362+05.90 to
Sta. B-1363+25
Cor. L=119.10(970.93+
954.93) = 121.01 L.F.

Total = 151.91 L.F.
A=0.5(8)(151.91) = 607.64 S.F.
Sta. B-1361+75 to
Sta. B-1362+05.90 = 30.90 L.F.
Sta. B-1362+05.90 to
Sta. B-1366+91.22
Cor. L-485.32(962.93+
954.93) = 489.38 L.F.
Sta. B-1366+91.22 to
Sta. B-1367+91.22 = 100.00 L.F.

Total = 620.28 L.F.
A-16(620.28) = 9,924.48 S.F.

Ramp C
Sta. C-1351+88 to
Sta. C-1355+63.16
Cor. L-375.16(962.93+
954.93) = 378.30 L.F.
Sta. C-1355+63.16 to
Sta. C-1359+79.69 = 416.53 L.F.

ITEM 451, 9" REINFORCED CONCRETE PAVEMENT (Continued)

Ramp C (Continued)
Sta. C-1359+79.69 to
Sta. C-1365+50
Cor. L=570.31(962.93+
954.93) = 575.08 L.F.

Total = 1,369.91 L.F.
A=16(1369.91) = 21,918.56 S.F.
Sta. C-1365+50 to
Sta. C-1366+50
Cor. L-100(962.93+
954.93) = 100.83 L.F.
A=0.5(18+16)(100.83) = 1,714.11 S.F.
Sta. C-1366+50 to Sta. C-1369_50
A=0.5(16+14)(300) = 4,500.00 S.F.

Ramp C Connection
Morse Road to Sta. C-1356+75.98
A=Planimetered = 11.48 Sq. In.
11.48(400) = 4,592.00 S.F.
Sta. C-1356+76.98 to
Sta. C-1359+79.69 = 303.71 L.F.
Sta. C-1359+79.69 to
Sta. C-1362+75.98
Cor. L-296.29(970.93+
954.93) = 301.25 L.F.

Total = 604.96 L.F.
A=0.5(20)(604.96) = 6,049.60 S.F.

Ramp D
Sta. D-1346+03.1 to
Sta. D-1347+45.77
Cor. L-142.67(3827.72+
3819.72) = 142.96 L.F.
Sta. D-1347+45.77 to
Sta. D-1351+06.40
Cor. L = 360.63(724.20÷716.20) = 364.65 L.F.
Sta. D-1351+06.40 to
Sta. D-1354+91.45 = 385.05 L.F.

Total = 892.66 L.F.
A=16(892.66) = 14,282.56 S.F.
Sta. D-1354+91.45 to Morse Road
A=Planimetered = 4.00 Sq. In.
4.00(400) = 1,600.00 S.F.

Ramp Sub Total - Urban Area = 104,490.56 S.F.

End Taper Details
Mainline Ramps
Ramp A
A=0.5(2)(96) = 96.00 S.F.
Ramp B
A = 0.5(2)(16.67)-Rural = 16.67 S.F.
Ramp C
A=0.5(2)(96)= Rural Area = 96.00 S.F.
Ramp D
A = 0.5(2)(16.67) = 16.67 S.F.
Ramps
Ramp C
A=0.5(2)(60) = 60.00 S.F.
Ramp B
A=0.5(2)(37.50) = 37.50 S.F.
Morse Road
Ramp D
A=0.5(2)(12.5) = 12.50 S.F.
Ramp A
A=0.5(2)(20) = 20.00 S.F.
Ramp B
A = 0.5(2)(12.5) = 12.50 S.F.

CALCULATIONS

CALC: W.D.G. 7-13-68
CHK: R.E.H. 8-68

FRANKLIN COUNTY
FRA-270-22.99 N

ITEM 451, 9" REINFORCED CONCRETE PAVEMENT - Continued

Flange Beam Joints @ Morse Road Bridge
A=(4)(31.50)(36.00)+4(1/2)(11.55)(36)=
Urban Area = 5,367.60 S.F.

End Taper Details - Total Urban = 99,378.13 S.F.
Total Rural = 112.67 S.F.

A = (99,378.13)÷9 = Urban Area = 11,042.01 S.Y.
A = (112.67)÷ 9 = Rural Area = 12.51 S.Y.

To Sub Summary, Urban Area = 11,043 S.Y.
To General Summary, Rural Area - 13 S.Y.

ITEM 804 CEMENT STABILIZED SUBBASE

See Mainline Item 451 Continuous Reinforced Concrete

Urban Length 8342.12 + 2 (31.5)= 8,405.12 L.F.
Rural Length = 4,061.00 L.F.

Urban Area = 8,405.12(78) = 655,599.36 S.F.
Rural Area = 4,061.00(78) = 316,758.00 S.F.

See Item 451 Continuous Reinforced Concrete
For Ramp Transition Areas

Urban Area = 50,926.90 S.F.
Rural Area = 9,515.60 S.F.

See Item 451 Reinforced Concrete For
Ramp Areas

Urban Area = 104,490.56 S.F.

Ramp Shoulder Area's (Urban Area)
Ramp A
Sta. A-1343+00 to Sta. A-1346+00
A=300(8) = 2,400.00 S.F.
A=300(1.5) = 450.00 S.F.
Sta. A-1346+00 to Sta. A-1347+50
Cor. L-150(952.18÷954.93)= 149.13 L.F.
A=0.5(8+3)(149.13) = 820.22 S.F.
A=1.5(100)(972.68÷954.93) = 150.78 S.F.
A=0.5(2+3)(50)(972.18÷954.93) = 127.25 S.F.
Sta. A-1347+50 to Sta. A-1351+16.50
Cor. L=366.50(962.93÷954.93)= 369.57 L.F=
Sta. A-1351+16.50 to
Sta. A-1356+88.53 = 572.03 L.F.
Sta. A-1356+88.53 to
Sta. A-1358+18.84
Cor. L = See Item 451 = 126.21 L.F.

Total = 1,067.81 L.F.
A = 6(1,067.81) = 6,406.86 S.F.
Sta. A-1358+18.84 to
Morse Road
L = 101+62 = 163.00 L.F.
A = 3(163) = 489.00 S.F.
A = 0.5(3+8)(40) = 220.00 S.F.
Ramp B - Morse Road to
Sta. B-1357+50
L = 82.19+61.56 = 143.75 L.F.
A = 6(143.75) = 862.50 S.F.
A = (0.5)(3+8)(50) = 275.00 S.F.
Sta. B-1357+50 to Sta. B-1361+75
See Item 451 = L = 419.85 L.F.
A = 419.85 (6) = 2,519.10 S.F.
Sta. B-1361+75 to
Sta. B-1362+05.90 = 30.90 L.F.

ITEM 804 CEMENT STABILIZED SUBBASE - Continued

Sta. B-1362+05.90 to Sta. 1363+25
Cor. L=119.10(953.43÷
954.93) = 118.91 L.F.

Total = 149.81 L.F.
A=(149.81)(3) = 449.43 S.F.
Sta. B-1362+05.90 to Sta. B-1363+25
Cor. L-119.10(975.60÷954.93)= 121.67 L.F.
Sta. B-1361+75 to Sta. B-1362+05.90
L = 30.90 = 30.90 L.F.
A = (152.57)(3) = 457.71 S.F.
Sta. B-1363+25 to Sta. B-1366+91.22
Cor. L = 366.22 (962.93÷
954.93) = 369.28 L.F.
A = (369.28)(6) = 2,215.68 S.F.
Sta. B-1366+91.22 to Sta. B-1367+91.22
Cor. L=100(5747.08÷
5729.58) = 100.30 L.F.
A = (100.30)(3) = 300.90 S.F.
Cor. L=100(5724.08÷
5729.58) = 99.90 L.F.
A = (99.90)(0.5)(3+8) = 549.45 S.F.
Ramp C
Sta. C-1351+88 to C-1352+88
Cor.L=100(972.43÷954.93) = 101.83 L.F.
A = (101.83)(3) = 305.49 S.F.
Cor.L=100(949.43÷954.93) = 99.42 L.F.
A = (99.42)(0.5)(8+3) = 546.81 S.F.
Sta. C-1352+88 to Sta. C-1355+63.16
Cor.L=275.16(962.93÷954.93)= 277.46 L.F.
A = 277.46(6) = 1,664.76 S.F.
Sta. C-1355+63.16 to
Sta. C-1359+79.69 = 416.53 L.F.
Sta. C-1359+79.69 to Sta. C-1365+00.00
Cor.L=520.13(953.43÷954.93)= 519.49 L.F.

Total = 936.02 L.F.
A=(936.02)(3) Sub Total = 2,808.06 S.F.
Sta. C-1353+63.16 to Sta. C-1356+75.98
A = Planimetered = 2.29 Sq. In.
A = 2.29(400) = 916.00 S.F.
Ramp C Connection
Sta. C-1354+06 to Sta. C-1354+75.98
Cor.L=69.98(212.63÷204.63)= 72.71 L.F.
A = 72.71(6) = 436.26 S.F.
Sta. C-1354+75.98 to
Sta. C-1355+75.98 = 100.00 L.F.
A = 100(0.5)(3+2) = 250.00 S.F.
A = 69(1.5) = 103.50 S.F.
Sta. C-1355+75.98 to
Sta. C-1359+79.69 = 403.71 L.F.
A = 403.71(3) = 1,211.13 S.F.
Sta. C-1359+79.69 to Sta. C-1362+75.98
Cor.L-296.29(977.37÷954.63)= 303.25 L.F.
A = (3)(303.25) = 909.75 S.F.
Sta. C-1362+75.98 to Sta. C-1365+00
Cor.L=224.02(972.43÷954.93)= 228.12 L.F.
A = (3)(228.12) = 684.36 S.F.
A = (1.5)(50) Ramp C = 75.00 S.F.
Sta. C-1365+00 to Sta. C-1365+50
Cor.L=50(973.43÷954.93)+ 50.91 L.F.
A = 0.5(2+3)(50.91) = 127.27 S.F.
A = 50(1.5) = 75.00 S.F.
Sta. C-1365+00 to Sta. C-1366+50
Cor.L=150(949.43÷954.93) = 149.13 L.F.
A = 0.5(3+8)(149.13) = 820.21 S.F.
A = 1.5(100.00) = 150.00 S.F.
Sta. C-1366+50 to Sta. C-1369+50= 300.00 L.F.
A = 300(8) = 2,400.00 S.F.
A = 300(1.5) = 450.00 S.F.

ITEM 804 CEMENT STABILIZED SUBBASE - Continued

Ramp D
Morse Road to Sta. D-1354+91.45
A = 50(0.5)(8+3) = 275.00 S.F.
A = (3)(64+34) = 294.00 S.F.
Sta. D-1346+03.1 to Sta. D-1347+03.1
Cor.L=100(3814.22÷3819.72)= 99.85 L.F.
A = 0.5(8+3)(99.85) = 549.17 S.F.
A = (3)(100)(3837.22÷3819.72) = 301.35 S.F.
Sta. D-1347+03.10 to Sta. D-1347+45.77
Cor.L=42.67(3827.72÷3819.72)= 42.76 L.F.
A = (6)(42.76) = 256.53 S.F.
Sta. D-1347+45.77 to Sta. D-1351+06.40
See Item 451 = 364.65 L.F.
A = (6)(364.65) = 2,187.90 S.F.
Sta. D-1351+06.40 to
Sta. D-1354+91.45 = 385.05 L.F.
A = (6)(385.05) = 2,310.30 S.F.
Mainline End Taper Details
Rural = 112.67 S.F.
Mainline End Taper Details
Urban = 112.67 S.F.

Total Urban Area = 849,931.22 S.F.
Total Rural Area = 326,386.27 S.F.

Urban Quantities

V = 849,931.22÷ 9 = 94,436.80 S.Y.
Barrels = (94,436.80)(6)(4)÷ 376 = 6,027.89 BBLS.

To Sub Summary - V = 94,437 S.Y.
Barrels = 6,028 BBLS.

Rural Quantities

V = 326,386.27 ÷ 9 = 36,265.14 S.Y.
Barrels = (36,265.14)(6)(4)÷ 376 = 2,314.79 BBLS.

To General Summary - V = 36,266 S.Y.
Barrels = 2,315 BBLS.

ITEM 301 BITUMINOUS AGGREGATE BASE 702.01 (85-100) or 702.09 RT-10 As Per Plan.

Mainline & Ramp Transition Areas
Sta.1325+00 to
Sta. 1331+00 = 600.00 L.F.
A = 28(600)-Urban Area = 16,800.00 S.F.
Sta. 1331+00 to
Sta. 1338+00 = 700.00 L.F.
A = 26(700)-Urban Area = 18,200.00 S.F.
Sta. 1338+00 to Sta. 1339+00 (Rt.)
A = 0.5(10+8)(100)-Urban = 900.00 S.F.
Sta. 1338+00 to Sta. 1339+00
A = 16(100)-Urban Area = 1,600.00 S.F.
Sta. 1339+00 to Sta. 1343+00 (Lt.)
A = 400(12) - Urban Area = 4,800.00 S.F.
Sta. 1339+00 to Sta. 1341+50 (Rt.)
A = 250(12) - Urban Area = 3,000.00 S.F.
Sta. 1341+50 to Sta. 1346+03.1 (Rt.)
A = 453.10(8) - Urban Area = 3,624.80 S.F.
Sta. 1341+50 to Sta. 1346+04.70
A = 454.70(4) - Urban Area = 1,818.80 S.F.
Sta. 1343+00 to Sta. 1346+04.70 (Lt.)
A - 304.70(14) - Urban Area = 4,265.80 S.F.
Sta. 1343+00 to Sta. 1346+00 (Lt.)
A = 0.5(0+4.25)(300) - Urban = 637.50 S.F.
Sta. 1346+00 to Sta. 1347+08 (Lt.)
A = 0.5(425+10)(108) - Urban = 769.50 S.F.
Sta. 1346+04.70 to Sta. 1355+31.09
A - 926.39(28) - Urban = 25,938.92 S.F.
Sta. 1357+14 to Sta. 1367+92.80
A - 1077.83(28) - Urban Area = 30,179.24 S.F.

CALCULATIONS

CALC: W.O.G. 7-1968
CHK: R.E.H. 8-68

FRANKLIN COUNTY
FRA - 270 - 22.99 N

ITEM 301 BITUMINOUS AGGREGATE BASE - Continued

Sta. 1367+92.80 to Sta. 1372+50 (Lt.)		
A = 457.20(4) - Urban	=	1,828.80 S.F.
Sta. 1367+91.20 to Sta. 1372+50 (Lt.)		
A - 458.80(8) - Urban	=	3,670.40 S.F.
Sta. 1367+92.80 to Sta. 1369+50 (Rt.)		
A = 157.20(14) - Urban Area	=	2,200,80 S.F.
Sta. 1365+35 to Sta. 1366+50 (Rt.)		
A = 115(0.5)(10+4.25) - Urban	=	819.37 S.F.
Sta. 1366+50 to Sta. 1369+50 (Rt.)		
A = 300(0.5)(4.25+0) - Urban	=	637.50 S.F.
Sta. 1369+50 to Sta. 1372+50 (Rt.)		
A - 300(12) - Urban Area	=	3,600.00 S.F.
Sta. 1372+50 to Sta. 1373+37		
A = 87(24) - Urban Area	=	2,088.00 S.F.
Sta. 1373+37 to Sta. 1375+00		
A = 163(24) - Rural Area	=	3,912.00 S.F.
Sta. 1375+00 to Sta. 1376+00 (Lt.)		
A = 0.5(8+10)(100) - Rural Area	=	900.00 S.F.
Sta. 1375+00 to Sta. 1376+00		
A = 100(16) - Rural Area	=	1,600.00 S.F.
Sta. 1376+00 to Sta. 1381+50 (Rt.)		
A = 550(8) - Rural Area	=	4,400.00 S.F.
Sta. 1376+00 to Sta. 1381+50		
A = 550(18) - Rural Area	=	9,900.00 S.F.
Sta. 1381+50 to Sta. 1396+49		
A = (28)(1499) - Rural Area	=	41,972.00 S.F.
Sta. 1396+49 to Sta. 1426+75		
A = (28)(3026) - Urban Area	=	84,728.00 S.F.
Sta. 1426+75 to Sta. 1444+24		
A = (28)(1749) - Rural Area	=	48,972.00 S.F.
Sta. 1444+24 to Sta. 1452+00		
A = (28)(776) - Urban Area	=	21,728.00 S.F.
Deduct Mainline End Taper Details		
Ramp B - Rural Area	=	- 16.67 S.F.
Ramp D - Urban Area	=	- 16.67 S.F.
Total Mainline 301 Urban Area	=	233,818.76 S.F.
Total Mainline 301 Rural Area	=	111,639.33 S.F.
V = 233,818.76 (0.583) ÷ 27 - Urban Area	=	5,048.75 C.Y. (RT-10)
V = 111,639.33(0.583) ÷ 27 - Rural Area	=	2,410.58 C.Y. (RT-10)

Ramp Shoulder Areas
See Item 804 for Ramp

Shoulder Areas - Urban Area	=	38,800.10 S.F.
Deduct End Taper Details (All Except Mainline Ramps)-Urban Area	=	-142.50 S.F.
Total Ramp 301	=	38,657.60 S.F.
V = (38,657.60)(0.75) ÷ 27 - Urban	=	1,073.82 C.Y. (RT-10)

Morse Road Shoulders Inside Interchange Limits - Urban Area

Sta. 116+25.00 to Sta. 119+21.84 (Rt.)	=	296.84 L.F.
Sta. 119 45.50 to Sta. 130+74.50 (Rt.)	=	1,129.00 L.F.
Sta. 119+48.0 to Sta. 130+67.70 (Lt.)	=	1,119.70 L.F.
Total	=	2,545.54 L.F.

V = (2545.54)(8)(0.25) ÷ 27 - Urban	=	188.56 C.Y. (RT-11,12)
Ramp C Taper		
V = (423.53)(8)(.25) ÷ 27 - Urban	=	31.37 C.Y. (RT-11,12)

ITEM 301 BITUMINOUS AGGREGATE BASE - Continued

Morse Road Pavement Area		
Sta. 106+00 to Sta. 109+40		
A = 0.5(72+56.76)(340) Rural	=	21,889.20 S.F.
Sta. 109+40 to Sta. 110+92.49		
A - 152.49(72) Rural	=	10,979.28 S.F.
Sta. 110+92.49 to Sta. 131+78.63		
A = 2086.14(72) Urban	=	150,202.08 S.F.
Sta. 131+78.63 to Sta. 139+00		
A = 0.5(72+24)(721.37) Urban	=	34,625.76 S.F.
Sta. 139+00 to Sta. 139+50		
A = 0.5(24+18)(50) Urban	=	1,050.00 S.F.
Ramp C Exit Terminal		
A = 0.5(250)(12) Urban	=	1,500.00 S.F.
A = Planimetered = 9.41 Sq. In.		
A = (9.41)(400) Urban	=	3,764.00 S.F.
Deduct Median Areas (Urban)		
Sta. 111+47.5 to Sta. 113+97.5		
A = 0.5(3.142)(25)+250(10)	=	- 2,539.27 S.F.
Sta. 113+97.5 to Sta. 115+47.5		
A = 0.5(10+22)(750)	=	- 2,400.00 S.F.
Sta. 115+47.5 to Sta. 118+21.84		
A = 22(274.34)+0.5(3.142)(25)	=	- 6,074.75 S.F.
Sta. 120+06.07+122+51.02		
A = 0.5(3.142)(25)+244.95(10)	=	- 2,488.77 S.F.
Sta. 122+51.02 to Sta. 124+01.02		
A = 150(22)	=	- 3,300.00 S.F.
Sta. 124+01.02 to Sta. 126+20.93		
A = (219.91)(22)	=	- 4,838.02 S.F.
Sta. 126+20.93 to Sta. 127+70.93		
A = 0.5(22+10)(150)	=	- 2,400.00 S.F.
Sta. 127+70.93 to Sta. 130+15.93		
A = 245(10)+0.5(3.142)(25)	=	- 2,489.27 S.F.
Sta. 131+05.00 to Sta. 134+48.63		
A = 0.5(3.142)(25)+10(73.63)+ 0.5(95)(12)+0.5(10+8.58)(21.37)	=	- 1,544.10 S.F.
A = 0.5(20.58+4)(248.63)+ 0.5(3.142)(4)	=	- 3,061.94 S.F.
Total Urban Pavement Area	=	160,005.72 S.F.
Total Rural Pavement Area	=	32,868.48 S.F.

For Item 301 Deduct a Width of 18' and add in a width of 8", Total Width = 17.33'

Deduct Sta. 106+00 to Sta. 110+92.49		
492.49(17.33) Rural	=	- 8,534.85 S.F.
Deduct Sta. 110+92.49 to Sta. 139+50		
A = 17.33(2857.51) Urban	=	-49,520.65 S.F.
Deduct Int. Strips		
A = 0.33(1008) Urban	=	- 332.64 S.F.
Total Urban Area	=	110,152.43 S.F.
Total Rural Area	=	24,333.63 S.F.
V = (110,152.43)(0.333) ÷ 27 Urban	=	1,358.54 C.Y. (RT-11,12)
V = (24,333.63)(0.333) ÷ 27 Rural	=	300.11 C.Y. (RT-11,12)

Stelzer Road Pavement Area (City)		
Sta. 19+75 to Sta. 20+00		
A = 0.5(19.67+24)(25)	=	546.00 S.F.
Sta. 20+00 to Sta. 22+50		
A = 0.5(24+48)(250)	=	9,000.00 S.F.
Sta. 22+50 to Sta. 24+88		
A = 48(238)+[50(100)-0.5(3.142)(50^2)]	=	12,497.00 S.F.
Total Pavement Area	=	22,043.00 S.F.

ITEM 301 BITUMINOUS AGGREGATE BASE - Continued

For Item 301 Deduct a Width of 19'8" and add in a width of 8", Total Width = 19'-0"

Sta. 19+75 to Sta. 24+88		
A = 19(513)	=	- 9,747.00 S.F.
Total Area for 301	=	12,296.00 S.F.
V = (12,296.00)(0.33) ÷ 27 = City Area (RT-11,12)	=	150.28 C.Y.

McCutcheon Road (Urban Area)		
Sta. 17+50 to Sta. 18+00		
A = 0.5(17.97+24.67)(50)	=	1,066.00 S.F.
Sta. 18+00 to Sta. 23+33.33		
A = 24.67(533.33)	=	13,157.25 S.F.
Sta. 26+66.67 to Sta 28+75		
A = 24.67(208.33) Rural	=	5,139.50 S.F.
Sta. 28+75 to Sta. 29+25		
A - 0.5(24.67+17.57)(50) Rural	=	1,056.00 S.F.
Total Urban Area	=	14,223.25 S.F.
Total Rural Area	=	6,195.50 S.F.
V = (14,223.25)(0.333) ÷ 27 Urban (RT-11,12)	=	175.42 C.Y.
V = (6,195.50)(0.333) ÷ 27 Rural (RT-11,12)	=	76.41 C.Y.

Median Cross Over (Rural Area)		
A = Planimetered = 2.77 Sq. In.		
2.77(1600) - Rural Area	=	4,432.00 S.F.
V= (4432.00)(0.667) ÷ 27 - Rural Area (RT-11,12)	=	109.49 C.Y.
Urban Area		
A = Planimetered = 0.74 Sq. In.		
(0.74)(1600) Urban Area	=	1,184.00 S.F.
V = (1184.00)(0.007) ÷ 27 Urban Area (RT-11,12)	=	29.25 C.Y.

Deduct Variable Thickness Shoulder		
A = (2)263(4)-4(163.5)	=	1,450.00 S.F.
V = 1450.00(.583) ÷ 27 Rural Area (RT-11,12)	=	- 31.31 C.Y.
Urban Area		
A = (4)(163.5)(0.583) ÷ 27 Urban Area (RT-11,12)	=	- 14.12 C.Y.

Service Road "7A"		
Sta. 25+60 to Sta. 32+00 (50% Urban, 50% Rural)		
A = (640.00(21.0)+100(50)- 3.142(50)(50)(0.5) ÷ 9	=	1,612.50 S.Y.
V = (1612.50÷2)(0.50) ÷ 3 - Rural (RT-11,12)	=	134.37 C.Y.
V = (1612.50÷2)(0.50) ÷ 3 = Urban (RT-11,12)	=	134.37 C.Y.
Sta. 32+00 to Sta. 34+00 (Urban)		
V = 200.0(21.0)(0.5) ÷ 27 Urban (RT-11,12)	=	77.77 C.Y.
Service Road 7A Taper (50% Urban, 50% Rural)		
V = (2(50)0.50(2)(0.50 ÷ 27) ÷ 2 Rural (RT-11,12)	=	.92 C.Y.
V = (2(50)0.50(2)(0.50 ÷ 27) ÷ 2 Urban (RT-11,12)	=	.92 C.Y.

TOTAL 301 URBAN AREA 6122.57(RT-10); 1982.08(RT-11,12)	=	8,104,65 C.Y.
TOTAL 301 RURAL AREA 2410.58(RT-10); 589.99(RT-11,12)	=	3,000.57 C.Y.
TOTAL 301 CITY AREA (RT-11,12)	=	150.28 C.Y.

TO GENERAL SUMMARY - CITY AREA - 151 C.Y. (RT-11,12)
RURAL AREA - 2411 C.Y. (RT-10); 590 c.y. (RT-11,12)
TO SUB SUMMARY - URBAN AREA - 6123 C.Y. (RT-10); 1982 c.y. (RT-11,12)

CALCULATIONS

ITEM 409, SEAL COAT & 702.09

Area of 804 Subbase:

Urban A = 94,437 sq. yds.
Rural A = 36,266 sq. yds.

V = (94,437)(0.008)	Urban (to Subsummary)	=	755 cu. yds.
V = (94,437)(0.3)	Urban (to Subsummary)	=	28,331 gal.
V = (36,266)(0.008)	Rural (to Gen. Summary)	=	290 cu. yds.
V = (36,266)(0.3)	Rural (to Gen. Summary)	=	10,880 gal.

ITEM 409, SEAL COAT & BITUMINOUS MATERIAL

Morse Road Inside Interchange Limits and Ramp C Taper
See Item 301

A = Urban Area	= 2,969.07 L.F.		
A = 2969.07(8) Urban Area		=	23,752.56 S.F.
Total Urban Area		=	23,752.56 S.F.
V = (23,752.56 + 9)(.008) Urban		=	21.11 C.Y.
V = (23,752.56 + 9)(0.30) Urban		=	791.75 GAL.

TO SUB SUMMARY - URBAN 22 C.Y.
URBAN 792 GAL.

ITEM 409 SEAL COAT & 702.09 OR 702.02

Morse Road (RT)				
Sta. 106+00 to Sta. 108+50.50 Rural	=	250.50 L.F.		
Sta. 108+98.5 to Sta. 110+18 Rural	=	119.50 L.F.		
Sta. 111+66 to Sta. 112+00 Urban	=	34.00 L.F.		
Sta. 131+92 to Sta. 139+00 Urban	=	708.00 L.F.		
Morse Road (LT)				
Sta. 106+00 to Sta. 107+30 Rural	=	103.00 L.F.		
Sta. 107+54 to Sta. 108+75 Rural	=	121.00 L.F.		
Sta. 109+40 to Sta. 110+92.49 Rural	=	45.00 L.F.		
Sta. 111+43 to Sta. 118+41.94 Urban	=	698.94 L.F.		
Sta. 131+78.63 to Sta. 137+01 Urban	=	522.37 L.F.		
Sta. 137+95 to Sta. 138+75 Urban	=	80.00 L.F.		
Total Rural	=	639.00 L.F.		
Total Urban	=	2,043.31 L.F.		
A = (8)(693) - Rural			=	5,112.00 S.F.
A = (8)(2043.31) - Urban			=	16,346.48 S.F.
Sta. 138+75 to Sta. 139+50(Lt. & Rt.)				
A = 0.5(8+2)(50) - Urban			=	250.00 S.F.
A = 0.5(8+2)(50)+2(25) - Urban			=	300.00 S.F.
McCutcheon Road (Urban)				
Sta. 17+50 to Sta. 23+33.33				
A = 583.33(8) - Urban			=	4,666.64 S.F.
Deduct for Drives				
A = 4(48+48) - Urban			=	- 384.00 S.F.
Sta. 26+66.67 to Sta. 29+25 (Lt.)				
Deduct for Drive				
A = 4(48) Rural			=	- 192.00 S.F.
A = 258.33(4) Rural			=	- 1,033.32 S.F.
Sta. 26+66.67 to Sta. 29+25 (Rt.)				
A = 4(65+65) Rural			=	520.00 S.F.
Total Urban Area			=	21,179.12 S.F.
Total Rural Area			=	6,473.32 S.F.
V(Seal Coat) =(21,179.12+9)(0.008) Urban			=	18.83 C.Y.
V(702.09)=(21,179.12+9)(0.30) Urban			=	705.97 GAL.
V(Seal Coat)=(6473.32+9)(0.008) Rural			=	5.75 C.Y.
V(702.09)=(6473.32+9)(0.30) Rural			=	215.78 GAL.

TO SUB SUMMARY = 19 C.Y.
706 GAL.
TO GENERAL SUMMARY = 6 C.Y.
216 GAL.

ITEM 409 SEAL COAT & 702.09 OR 702.02 **- Continued**

Stelzer Road (Lt.) (City)				
Sta. 20+00 to Sta. 24+88	=	515.34 L.F.		
Stelzer Road (Rt.) (City)				
Sta. 20+71 to Sta. 21+11.5	=	40.50 L.F.		
Sta. 21+61 to Sta. 22+50	=	89.00 L.F.		
Sta. 22+98 to Sta. 24+88	=	218.55 L.F.		
Total	=	863.39 L.F.		
A = 863.39(8)			=	6,907.12 S.F.
Sta. 19+75 to Sta. 20+00				
A = 0.5(8)(25)			=	100.00 S.F.
Total			=	7,007.12 S.F.
V(Seal Coat)=(7007.12+9)(.008)			=	6.23 C.Y.
V(702.09)=(7007.12+ 9)(0.30)			=	233.57 GAL.

TO GENERAL SUMMARY - 7 C.Y.
234 GAL.

ITEM 408 BITUMINOUS PRIME COAT

See Item 409 for Morse and McCutcheon Road				
V-Urban (21,179.12+9)(0.40)			=	941.29 GAL.
V=Rural (6473.32+ 9)(0.40)			=	287.70 GAL.
Service Roads - See Item 404				
Rural	=	2,258.40 L.F.		
Urban	=	3,478.00 L.F.		
Deduct Sta. 25+60 to Sta. 32+00, Service Road 7A				
Urban	=	- 320.00 L.F.		
Rural	=	- 320.00 L.F.		
Area Urban				
A=[(3158.00)(21)+2(100)(50)-2(0.5)(3.142)(2500)]+ 9			=	7,607.06 S.Y.
Area Rural				
A=[(1938.40)(21)+(100)(50)-0.5(3.142)(2500)]+ 9			=	4,642.15 S.Y.
V-Urban = 7607.00(0.40)			=	3,042.80 GAL.
V-Rural = 4,642.15(0.40)			=	1,856.86 GAL.
TOTAL ITEM 408 URBAN			=	3,984.09 GAL.
RURAL			=	2,144.56 GAL.

TO SUB SUMMARY - URBAN 3,985 GAL.

TO GENERAL SUMMARY - RURAL 2,145 GAL.

ITEM 408 BITUMINOUS PRIME COAT (City)

See 409 Seal Coat & 702.09 of Stelzer Road	=	7,007.12 S.F.
V=(7007.12+ 9)(0.40)	=	311.42 GAL.

TO GENERAL SUMMARY - 312 GAL.

ITEM 404, 1-1/4" ASPHALT CONCRETE (70-85)

Morse Road		
Urban Area	=	160,005.72 S.F.
Rural Area	=	32,868.48 S.F.

ITEM 404, 1-1/4" ASPHALT CONCRETE (70-85)

McCutcheon Road		
Sta. 17+50 to Sta. 18+00		
A = 0.5(17.60+24)(50) Urban	=	1,040.00 S.F.
Sta. 18+00 to Sta. 23+33.33		
A = 24(533.33) Urban	=	12,799.92 S.F.
Sta. 26+66.67 to Sta. 28+75		
A = 24(208.33) Rural	=	4,999.92 S.F.
Sta. 28+75 to Sta. 29+25		
A = 0.5(24+16.9)(50) Rural	=	1,022.50 S.F.
Total Urban	=	13,839.29 S.F.
Total Rural	=	6,022.42 S.F.

ITEM 404, 1-1/4" ASPHALT CONCRETE (70-85) - Continued

TOTAL URBAN AREA	=	173,845.64 S.F.
TOTAL RURAL AREA	=	38,890.90 S.F.
V-Urban = (173845.64)(0.104)+ 27	=	669.63 C.Y.
V-Rural = (38890.90)(0.104)+ 27	=	149.80 C.Y.

TO GENERAL SUMMARY - RURAL 150 C.Y.
TO SUB SUMMARY - URBAN 670 C.Y.

ITEM 404, 1-1/4" ASPHALT CONCRETE (70-85) (City)

Stelzer Road		
See Item 301 for Pavement Area	=	22,043.00 S.F.
V=(22,043.00)(0.104)+ 27	=	84.91 C.Y.

TO GENERAL SUMMARY - 85 C.Y.

ITEM 402, 1-3/4" ASPHALT CONCRETE (70-85) URBAN

Morse Road, See Item 301 Pavement Area		
Urban	=	160,005.72 S.F.
Rural	=	32,868.48 S.F.
V-Urban=(0.1458)(160,005.72)+ 27	=	864.03 C.Y.
V-Rural=(0.1458)(32,868.48)+ 27	=	177.49 C.Y.

TO SUB SUMMARY - URBAN = 865 C.Y.
TO GENERAL SUMMARY - RURAL = 178 C.Y.

ITEM 402, 1-3/4" ASPHALT CONCRETE (70-85) CITY

Stelzer Road		
See Item 404 for Pavement Area	=	22,043.00 S.F.
V=(22,043.00)(0.1458)+ 27	=	119.03 C.Y.

TO GENERAL SUMMARY - 120 C.Y.

ITEM 402, 1-1/4" ASPHALT CONCRETE (70-85)

McCutcheon Road		
See Item 404 McCutcheon Road		
Urban Area	=	13,839.92 S.F.
Rural Area	=	6,022.42 S.F.
V-Urban=(0.1041)(13,839.92)+ 27	=	53.36 C.Y.
V-Rural=(0.1041)(6,022.42)+ 27	=	23.22 C.Y.

TO SUB SUMMARY - URBAN = 54 C.Y.
TO GENERAL SUMMARY - RURAL - 24 C.Y.

ITEM 404, 2" ASPHALT CONCRETE (85-100)

Service Road 7 A				
Sta. 25+60 to Sta. 32+00				
Urban	=	320.00 L.F.		
Rural	=	320.00 L.F.		
Sta. 32+00 to Sta. 38+40				
Urban	=	640.00 L.F.		
Service Road 6 A				
See Item 304 (Urban)	=	790.00 L.F.		
Service Road 5 A				
See Item 304 (Urban)	=	1,728.00 L.F.		
Service Road 10				
See Item 304 (Rural)	=	1,938.40 L.F.		
Total Urban	=	3,478.00 L.F.		
Total Rural	=	2,258.40 L.F.		
Cross Section Area of 404				
A = 20(0.167)			=	3.34 S.F.
Urban				
V=[3,478.00(3.34)+(2.5)(100)(50)-2.5(0.5)(3.142)(2500)(0.167)]+ 27			=	446.83 C.Y.

CALCULATIONS

CALC: W.O.G. 7-16-68
CHK: R.E.H. 8-68

FRANKLIN COUNTY
FRA-270-22.99 N

ITEM 404, 2" ASPHALT CONCRETE (85-100) - Continued

Service Road 7A Taper Urban
(50)(0.5)(2)(0.167)÷ 27 = 0.31 C.Y.
Service Road 7A Taper Rural
50(0.5)2(0.167)÷ 27 = 0.31 C.Y.
Rural
V = [2258.40(3.34)+(100)(50)(0.5)-
(0.5)0.5(3.142)(2500)(0.167)]÷ 27 = 279.70 C.Y.

TO SUB SUMMARY - URBAN 448 C.Y.

TO GENERAL SUMMARY - RURAL 281 C.Y.

ITEM 304, AGGREGATE BASE

Morse Road
See Item 301 for Pavement Area
Urban Area = 160,005.72 S.F.
Rural Area = 32,868.48 S.F.
For Item 304 Aggregare Base Deduct a Width of 18' and add in a width of 16", Total Width = 16.67'
Deduct 106+00 to Sta. 110+92.49
A - 16.67(492.49) Rural = - 8,209.81 S.F.
Deduct Sta. 110+92.49 to Sta. 139+50
A = 16.67(2857.51) Urban = -47,634.69 S.F.

Total Urban Area = 111,695.67 S.F.
Total Rural Area = 24,658.67 S.F.

V-Urban = (111,695.67)(0.33)÷ 27 = 1,377.58 C.Y.
V-Rural = (24,658.67)(0.33) ÷ 27 = 304.12 C.Y.

For Shoulder Areas Inside Interchange Limits and Ramp C Taper
See Item 301 = 2,969.07 L.F.
V=(2969.07)(7.67)(0.50)÷ 27 Urban = 421.72 C.Y.
Deduct for Step
V=(2969.07)(0.33)(0.167)÷ 27 Urban = - 6.12 C.Y.
For Shoulder Areas Outside of Interchange Limits
See Item 409
Rural Length = 639.00 L.F.
Urban Length = 2,043.31 L.F.
V=Urban (5.14)(2043.31)÷ 27 = 388.98 C.Y.
V=Rural (5.14)(639.00)÷ 27 = 121.65 C.Y.
McCutcheon Road
Sta. 17+50 to Sta. 18+00
A=(0.5)(18.93+25.33)(50) Urban = 1,106.50 S.F.
Sta. 18+00 to Sta. 23+33.33
A = 25.33(533.33) Urban = 13,509.25 S.F.
Sta. 26+66.67 to Sta. 28+75
A = 25.33(208.33) Rural = 5,277.00 S.F.
Sta. 28+75 to Sta. 29+25
A=0.5(25.33+18.23)(50) Rural = 1,089.00 S.F.

Total Urban Area = 14,615.75 S.F.
Total Rural Area = 6,366.00 S.F.
V-Urban (14615.75)(0.33)÷ 27 = 180.26 C.Y.
V-Rural (6366.00)(0.33)÷ 27 = 78.52 C.Y.
For Shoulders
Sta. 17+50 to Sta. 23+33.33
1166.66 L.F. - 96.0 (For Drives)
Urban = 1,070.66 L.F.
Sta. 26+66.67 to Sta. 29+25
258.33-48+65+65-Rural = 340.33 L.F.
Shoulder Cross Sectional Area
0.67(4.0)-(0.333)(0.333)-(0.67)(1.5)÷ 12 = 2,485.00 S.F.
(1070.66)(2,485)÷ 27 Urban = 98.54 C.Y.
(340.33)(2,485)÷ 27 Rural = 31.32 C.Y.
Service Road 7A (Urban)
Sta. 34+00.00 to Sta. 38+40= 440.00 L.F.
Service Road 6A (Urban)
Sta. 0+00 to 8+00 = 790.00 L.F.

ITEM 304, AGGREGATE BASE - Continued

Service Road 5A (Urban)
Sta. 10+00 to Sta. 27+50 = 1,728.00 L.F.
Service Road 10 (Rural)
Sta. 16+52.50 to Sta. 35+90.90= 1,938.40 L.F
Cross Section Area of 304
A = 21.0 (0.75) = 15.75 S.F.
Urban
V=[(2958)(15.75)+2(100)(50)-0.5
(3.142)(2500)(0.75)]÷ 27 = 1,785.00 C.Y.
Rural
V=(1938.40)(15.75)÷ 27 = 1,130.73 C.Y.
Sta. 25+60 to Sta. 32+00
A = 640.0(21.5)÷ 9 = 1,528.88 S.Y.
50% Rural, 50% Urban
V=0.5(1528.88)(0.25)÷3) Urban = 63.70 C.Y.
V=0.5(1528.88)(0.25)÷ 3) Rural = 63.70 C.Y.
V=0.5[(100.0)(50.0-0.5(3.142)2500]÷ 27
Urban = 4.97 C.Y.
V = See Above - Rural = 4.97 C.Y.
Sta. 32+00 to Sta. 34+00
V = 200(21.5)(0.25)÷ 27 Urban = 39.81 C.Y.
Deduct for Curbing - Service Road 6A
(.50)(0.75)(217)÷ 27 Urban = - 3.05 C.Y.
Service Road 7 A Taper
(50)(0.5)(2)(0.25)÷ 27 Urban = 0.46 C.Y.
(50)(0.5)(2)(0.25)÷ 27 Rural = 0.46 C.Y.

TOTAL ITEM 304 URBAN = 4,351.93 C.Y.
TOTAL ITEM 304 RURAL = 1,734.47 C.Y.

TO SUB SUMMARY - URBAN 4,352 C.Y.
TO GENERAL SUMMARY - RURAL 1,735 C.Y.

ITEM 304 AGGREGATE BASE (CITY)

Stelzer Road For Pavement Area See Item 301 = 22,043.00 S.F.
For Item 304 Deduct a Width of 19'-8" and Add in a Width of 1'4", Total 18'-4"
Deduct Sta. 19+75 to Sta. 24+88
A = 18.33 (513) = - 9,403.29 S.F.

Total = 12,639.71 S.F.
V=(12,639.71)(0.33)÷ 27 = 154.48 C.Y.

TO GENERAL SUMMARY - 155 C.Y.

ITEM 310 SUBBASE

Morse Road, See Item 301 for Pavement Area
Urban Area = 160,005.72 S.F.
Rural Area = 32,868.48 S.F.
Deduct Sta. 106+00 to Sta. 110+92.49
A = 13.33(492.49) Rural = - 6,564.89 S.F.
Deduct Sta. 110+92.49 to Sta 139+50
A = 13.33(2857.51) Urban = -38,090.61 S.F.
Total Urban Area = 121,915.00 S.F.
Total Rural Area = 26,303.59 S.F.

V - Urban (121,915.11)(0.50)÷ 27 = 2,257.68 C.Y.
V = Rural (26,303.59)(0.50)÷ 27 = 487.10 C.Y.
For Shoulder Area Inside Interchange Limits
See Item 301 = 2,969.07 S.F.
Cross Section of Shoulder Area
A = 0.5(0.25+0.67)(7.33)-(.5x.5) = 3.122 S.F.
V = 2969.07(3.122)÷ 27 Urban = 343.31 C.Y.
McCutcheon Road
Sta. 17+50 to Sta. 18+00
A = 0.5(19.93+26.33)(50) Urban = 1,156.50 S.F.
Sta. 18+00 to Sta. 23+33.33
A = 26.33 (533.33) Urban = 14,042.58 S.F.
Sta. 26+66 to Sta. 28+75
A = 26.33(208.33) Rural = 5,485.33 S.F.

ITEM 310 SUBBASE - Continued

Sta. 28+75 to Sta. 29+25
A = 0.5(26.33+18.23)(50) Rural = 1,114.00 S.F.
Total Urban Area = 15,199.08 S.F.
Total Rural Area = 6,599.33 S.F.

V-Urban (0.50)(15199.08)÷ 27 = 281.46 C.Y.
V-Rural (0.50)(6599.33)÷ 27 = 122.21 C.Y.

Approach Slabs - See Item 611
(572.11)(0.50)÷ 3 Urban = 95.35 C.Y.

TOTAL ITEM 310 URBAN = 2,977.80 C.Y.
TOTAL ITEM 310 RURAL = 609.31 C.Y.

TO SUB SUMMARY - URBAN 2,978 C.Y.
TO GENERAL SUMMARY - RURAL 610 C.Y.

ITEM 310 SUBBASE (CITY)

Stelzer Road
For Pavement Area See Item 301 = 22,043.00 S.F.
For Item 310 Deduct a Width of 19'-8" and Add a Width of 2'4", Total Width 17'4"
Deduct Sta. 19+75 to Sta. 24+88
A = 17.33(513) = - 8,890.29 S.F.

Total = 13,152.71 S.F.
V=(13,152.71)(0.50)÷ 27 = 243.56 C.Y.

TO GENERAL SUMMARY 244 C.Y.

ITEM 301 VARIABLE THICKNESS BITUMINOUS AGGREGATE BASE

Morse Road
Using Lt. Edge = 0.42
Using Centerline = 0.06
Using Rt. Edge = 0.09
Cross Section Area of Variable Thickness Course
A = 0.50(0.42+0.06)(9.0)+0.50
(0.06+0.09)(9.0) = 2.84 S.F.
Sta. 106+00 to Sta. 110+92.49
V - Rural (2.84)(492.49)÷ 27 (RT-11 or 12) = 51.80 C.Y.
V - Urban (2.84)(2857.51)÷ 27 (RT-11 or 12) = 300.57 C.Y.

TO GENERAL SUMMARY 52 C.Y. (RT-11 or 12) Rural
TO SUB SUMMARY 301 C.Y. (RT-11 or 12) Urban

ITEM 301 VARIABLE THICKNESS BITUMINOUS AGGREGATE BASE (CITY)

Stelzer Road
Using Lt. Edge = 0.21
Using Centerline = 0.12
Using Rt. Edge = 0.30
Cross Section of Variable Thickness Course
A = 0.5(0.21+0.12)(8.167)+0.5
(0.12+0.30)(11.50) = 3.78 S.F.
Sta. 19+75 to Sta. 24+85
V=(513)(3.78)÷ 27 (RT-11 or 12) = 71.82 C.Y.

TO GENERAL SUMMARY 72 C.Y. (RT-11 or 12) City

CALCULATIONS

CALC: W.O.M. 7-16-68
CHK: R.E.H. 8-68

ITEM 605 AGGREGATE DRAINS (URBAN)

Morse Road (Rural)		
13 @ (19.5)	=	253.50 L.F.
Morse Road (Urban)		
111 @ (19.5)	=	2,164.50 L.F.
McCutcheon Road (Rural)		
18 @ (15.5')	=	279.00 L.F.
McCutcheon Road (Urban)		
18 @(15.5')	=	279.00 L.F.
Service Road 5A (Urban)		
67 @(11.5)	=	770.50 L.F.
Service Road 6A (Urban)		
22 @(11.5)	=	253.00 L.F.
Service Road 7A (Urban)		
36 @(11.5)	=	414.00 L.F.
Service Road 7A (Rural)		
12 @(11.5)	=	138.00 L.F.
Service Road 10 (Rural)		
71 @(11.5)	=	816.50 L.F.
Total Rural	=	1,487.00 L.F.
Total Urban	=	3,881.00 L.F.

TO GENERAL SUMMARY - RURAL 1,487 L.F.
TO SUB SUMMARY - URBAN 3,881 L.F.

ITEM 611 APPROACH SLABS (URBAN)

Morse Road		
4(25)(36)÷ 9	=	400.00 S.Y.
McCutcheon Road		
2[(31.33)(25)-(1.33)(9.75)(0.67)]÷ 9	=	172.11 S.Y.
Total	=	572.11 S.Y.

TO SUB SUMMARY 573 S.Y.

ITEM 203 SUBGRADE COMPACTION

Mainline		
See Item 451 *" Cont. Reinforced Concrete		
Urban	=	72,899.50 S.Y.
Rural	=	33,545.28 S.Y.
Ramps		
See Item 451 9" Reinforced Concrete		
Urban	=	11,638.41 S.Y.
Rural	=	12.51 S.Y.
Mainline Shoulders		
See Item 301		
Urban = 233,818.76 ÷ 9	=	25,979.86 S.Y.
Rural = 111,639.33 ÷ 9	=	12,404.37 S.Y.
Ramp Shoulders, See Item 301		
Urban = 38,657.60 ÷ 9	=	4,295.28 S.Y.
Morse Road Shoulders, See Item 301		
Urban = 2,989.07(8)÷ 9	=	2,639.17 S.Y.
Morse Road Pavement, See Item 301 Urban		
A=[160,005.72-18(2857.51)]÷ 9	=	12,063.39 S.Y.
See Item 301 Rural		
A=[32,868.48-(492.49)]÷ 9	=	2,667.07 S.Y.
McCutcheon Road, See Item 404 Urban		
A = 13,839.92 ÷ 9	=	1,537.76 S.Y.
See Item 404 Rural		
A = 6,022.42 ÷ 9	=	669.15 S.Y.
Stelzer Road, See Item 402 City		
A = [22,043.00-19.67(613)]÷ 9	=	1,328.03 S.Y.
Service Road, See Item 404 Urban		
A = 448(3) ÷ 0.167	=	8,047.90 S.Y.
Rural		
A = 281(3) ÷ 0.167	=	5,047.90 S.Y.
Total Urban	=	139,101.27 S.Y.
Total Rural	=	54,346.28 S.Y.
Total City	=	1,328.03 S.Y.

ITEM 203 SUBGRADE COMPACTION - Continued

TO SUB SUMMARY - URBAN 139,102 S.Y.
TO GENERAL SUMMARY - RURAL 54,347 S.Y.
CITY 1,329 S.Y.

ITEM 203 PROOF ROLLING

See Item 203 Subgrade Compaction		
(Mainline and Ramp Pavement & Paved Shoulders)		
Urban = 114,813.05 ÷ 3000	=	38.271 HRS.
Rural = 45,962.16 ÷ 3000	=	15.32 HRS.

TO SUB SUMMARY - URBAN 39 HRS.
TO GENERAL SUMMARY - RURAL 16 HRS.

659 SEEDING & MULCHING

Urban - From Sub Summary			
Seeding & Mulching	=	314,347	S.Y.
Deduct 660 Sodding	=	- 866	S.Y.
Deduct Item 601	=	- 504	S.Y.
Deduct Item 667	=	- 2,370	S.Y.
Total Item 659	=	310,607	S.Y.

TO GENERAL SUMMARY - URBAN 310,607 S.Y.

Rural - From General Summary			
Seeding & Mulching	=	103,843	S.Y.
Deduct 660 Sodding	=	- 149	S.Y.
Deduct Item 601	=	- 287	S.Y.
Deduct Item 667	=	- 625	S.Y.
Total Item 659	=	102,782	S.Y.

TO GENERAL SUMMARY - RURAL 102,782 S.Y.

City - From General Summary			
Seeding & Mulching	=	1,757	S.Y.
Deduct Items 601, 660, 667	=	- 0	S.Y.
Total Item 659	=	1,757	S.Y.

TO GENERAL SUMMARY - CITY 1,757 S.Y.

659 COMMERCIAL FERTILIZER (18-46-0)

Urban			
See Item 659 Seeding & Mulching	=	310,607	S.Y.
Add Item 660	=	866	S.Y.
Add Item 667	=	2,370	S.Y.
Total	=	313,843	S.Y.
(313,843)(15)(9)÷(1000)(2000)	=	21.18	TONS

TO SUB SUMMARY - URBAN 21.18 TONS

Rural			
See Item 659 Seeding & Mulching	=	102,782	S.Y.
Add Item 660	=	149	S.Y.
Add Item 667	=	625	S.Y.
Total	=	103,556	S.Y.
(103,556)(15)(9)÷(1000)(2000)	=	6.99	TONS

TO GENERAL SUMMARY - RURAL 6.99 TONS

City			
See Item 659 Seeding & Mulching	=	1,757	S.Y.
Add Items 660 & 667	=	0	S.Y.
Total	=	1,757	S.Y.

659 COMMERCIAL FERTILIZER (18-46-0) - Continued

(1,757)(15)(9)÷(1000)(2000)	=	0.19 TONS

TO GENERAL SUMMARY - CITY 0.19 TONS

659 AGRICULTURAL LIMING

Urban		
For Area See 659 Fertilizer		
(313,483)(100)(9)÷(1000)(2000)	=	141.23 TONS

TO SUB SUMMARY - URBAN 141.23 TONS

Rural		
For Area See 659 Fertilizer		
(103,556)(100)(9)÷(1000)(2000	=	46.60 TONS

TO GENERAL SUMMARY - RURAL 46.60 TONS

City		
For Area See 659 Fertilizer		
(1757)(100)(9)÷(1000)(2000)	=	0.79 TONS

TO GENERAL SUMMARY - CITY 0.79 TONS

CALCULATIONS - (COUNTY)

CALC: R.A.S. 9/25/68
CHK: RBS 12/16/68

ITEM 301 BITUMINOUS AGGREGATE BASE 702.01(85-100); or 702.09, RT-11 or RT-12.

Sunbury Road	
Sta. 88+50.72 to Sta. 90+00	
A = 7.67(149.28)	= 1,144.98 S.F.
Sunbury & Morse Road Intersection	
A = Planimetered = 15.44 Sq. In.	
A = 15.44(400)	= 6,176.00 S.F.
Morse Road	
Sta. 72+55.69 to Sta. 77+50 (Lt. Side)	
A = 17(494.31)	= 8,403.27 S.F.
Sta. 71+49.41 to Sta. 82+00 (Rt. Side)	
A = 29(1050.59)	= 30,467.11 S.F.
Sta. 77+50 to Sta. 102+09.24 (Lt. Side)	
A = 15.33 (2,459.24)	= 37.700.15 S.F.
Sta. 82+00 to Sta. 85+00 (Rt. Side)	
A = 21.33 (300)	= 6,399.00 S.F.
Sta. 85+00 to Sta. 104+00 (Rt. Side)	
A = 15.33(1900)	= 29,127.00 S.F.
Sta. 102+09.24 to Sta. 105+90.34 (Lt. Side)	
A = 15(190.76)+21.34(190.34)+421.03	
A = 2861.40+4061.86+421.03	= 7,344.29 S.F.
Sta. 105+90.34 to Sta. 106+00 (Lt. Side)	
A = 28.33(9.66)	= 273.67 S.F.
Sta. 104+00 to Sta. 106+00 (Rt. Side)	
A = 13.11 (200)	= 2,622.00 S.F.
Total	= 129,657.47 S.F.
(129,657.47)0.333+ 27	= 1,600.71 C.Y.

TO GENERAL SUMMARY - 1,601 C.Y.

ITEM 304 AGGREGATE BASE

Sunbury Road	
Sta. 88+50.72 to Sta. 90+00	
A = 7.83(149.28)	= 1,168.86 S.F.
Sunbury Road & Morse Road Intersection	
A = Planimetered = 15.44 Sq. In.	
A = 15.44(400)	= 6,176.00 S.F.
Morse Road	
Sta. 72+55.69 to Sta. 77+50 (Lt. Side)	
A = 17(494.31)	= 8,403.27 S.F.
Sta. 71+49.41 to Sta. 82+00 (Rt. Side)	
A = 29(1050.59)	= 30,467.11 S.F.
Sta. 77+50 to Sta. 102+09.24 (Lt. Side)	
A = 15.67(2459.24)	= 38,536.29 S.F.
Sta. 82+00 to Sta. 85+00 (Rt. Side)	
A = 21.67 (300)	= 6,501.00 S.F.
Sta. 85+00 to Sta. 104+00 (Rt. Side)	
A = 15.67(1900)	= 29,773.00 S.F.
Sta. 102+09.24 to Sta. 105+90.34 (Lt. Side)	
A = 15(190.76)+21.34(190.34)+550.60	
A = 2861.40+4061.86+550.60	= 7,473.86 S.F.
Sta. 105+90.34 to Sta. 106+00 (Lt. Side)	
A = 28.67(9.66)	= 276.95 S.F.
Sta. 104+00 to Sta. 106+00 (Rt. Side)	
A = 13.45(200)	= 2,690.00 S.F.
Sub Total	= 131,466.34 S.F.
(131,466.34)0.333+ 27	= 1,623.04 C.Y.
Shoulder Area	
Morse Road	
Sta. 77+50 to Sta. 106+00 (Lt.)	
A = 8(2850)	= 22,800.00 S.F.
Sta. 82+00 to Sta. 106+00 (Rt.)	
A = 8(2400)	= 19,200.00 S.F.
Less Drive Areas	
A = 8(819)	= - 6,552.00 S.F.
Sub Total	= 35,448.00 S.F.
(35,448.00)0.667 + 27	= 875.70 C.Y.

TO GENERAL SUMMARY = 2,499 C.Y.

ITEM 310 SUBBASE

Sunbury Road	
Sta. 88+50.72 to Sta. 90+00	
A = 8.08(149.28)	= 1,206.18 S.F.
Sunbury Road & Morse Road Intersection	
A = Planimetered = 16.37 Sq. In.	
A = 16.37(400)	= 6,548.00 S.F.
Morse Road	
Sta. 72+55.69 to Sta. 77+50 (Lt. Side)	
A = 18.5(494.31)	= 9,144.73 S.F.
Sta. 71+ 49.41 to Sta. 82+00 (Rt. Side)	
A = 30.5(1050.59)	= 32,042.99 S.F.
Sta. 77+50 to Sta. 102+09.24 (Lt. Side)	
A = 16.17(2459.24)	= 39,765.91 S.F.
Sta. 82+00 to Sta. 85+00 (Rt. Side)	
A = 22.17(300)	= 6,651.00 S.F.
Sta. 85+00 to Sta. 104+00 (Rt. Side)	
A = 16.17 (1900)	= 30,723.00 S.F.
Sta. 102+09.24 to Sta. 105+90.34 (Lt. Side)	
A = 15(190.76)+21.34(190.34)+741.32	
A = 2861.40+4061.86+741.32	= 7,664.58 S.F.
Sta. 105+90.34 to Sta. 106+00 (Lt. Side)	
A = 29.17(9.66)	= 281.78 S.F.
Sta. 104+00 to Sta. 106+00 (Rt. Side)	
A = 13.95 (200)	= 2,790.00 S.F.
Total	= 136,818.17 S.F.
(136,818.17)0.5+ 27	= 2,533.67 C.Y.

TO GENERAL SUMMARY - 2,534 C.Y.

ITEM 402 ASPHALT CONCRETE

Sunbury Road	
Sta. 88+50.72 to Sta. 90+00	
A = 7.5(149.28)	= 1,119.60 S.F.
Sunbury Road & Morse Road Intersection	
A = Planimetered = 32.44 Sq. In.	
A = 32.44(400)	= 12,976.00 S.F.
Sub Total	= 14,095.60 S.F.
(14,095.60) .1467+ 27	= 76.13 C.Y.
Morse Road	
Sta. 72+55.69 to Sta. 77+50 (Lt. Side)	
A = 26(494.31)	= 12,852.06 S.F.
Sta. 71+49.41 to Sta. 82+00 (Rt. Side)	
A = 38(1050.59)	= 34,922.42 S.F.
Sta. 77+50 to Sta. 102+09.24 (Lt. Side)	
A = 24(2459.24)	= 59,021.76 S.F.
Sta. 82+00 to Sta. 85+00 (Rt. Side)	
A = 30(300)	= 9,000.00 S.F.
Sta. 85+00 to Sta. 104+00 (Rt. Side)	
A = 24(1900)	= 45,600.00 S.F.
Sta. 102+09.24 to Sta. 105+90.34 (Lt. Side)	
A = 24(190.76)+30.34(190.34)+295.07	
4578.24+5774.92+295.07	= 10,648.23 S.F.
Sta. 105+90.34 to Sta. 106+00 (Lt. Side)	
A = 37(9.66)	= 357.42 S.F.
Sta. 104+00 to Sta. 106+00 (Rt. Side)	
A = 21.78(200)	= 4,356.00 S.F.
Sub Total	= 181,757.89 S.F.
(181,757.89).1467+ 27	= 981.72 C.Y.

TO GENERAL SUMMARY - 1,058 C.Y.

ITEM 404 ASPHALT CONCRETE

Sunbury Road	
Sta. 85+00 to Sta. 86+25.45	
A=36(125.45)	= 4,516.20 S.F.
Sta. 86+25.45 to Sta. 88+50.72 (Lt.)	
A = 12(225.27)	= 2,703.24 S.F.
Sta. 88+50.72 to Sta. 90+00	
A = 31(149.28)	= 4,627.68 S.F.
Sunbury Road & Morse Road Intersection	
A = Planimetered = 32.44 Sq. In.	
A = 32.44(400)	= 12,976.00 S.F.
Sub Total	= 24,823.12 S.F.
(24,823.12).1042+ 27	= 95.77 C.Y.
Morse Road	
See Item 402 Asphalt Concrete - Morse Road	
(181,757.89).1042 + 27	= 701.23 C.Y.

TO GENERAL SUMMARY - 797 C.Y.

ITEM 407 TACK COAT

Sunbury Road	
Sta. 85+00 to Sta. 86+25.45	
A = 36(125.45)	= 4,516.20 S.F.
Sta. 86+25.45 to Sta. 88+50.72 (Lt. Side)	
A = 12(225.27)	= 2,703.24 S.F.
Sta. 88+50.72 to Sta. 90+00	
A = 23(149.28)	= 3,433.44 S.F.
Sunbury Road and Morse Road Intersection	
A = Planimetered = 17.00 Sq. In.	
A = 17.00(400)	= 6,800.00 S.F.
Morse Road	
Sta. 72+55.69 to Sta. 106+00 (Lt. Side)	
A = (3344.31)9	= 30,098.79 S.F.
Sta. 71+49.41 to Sta. 106+00 (Rt. Side)	
A = (3450.59)9	= 31,055.31 S.F.
Total	= 78,606.98 S.F.
(78606.98)+ 9	= 8,734.11 S.Y.
(8734.11)0.1	= 873.41 GAL.

TO GENERAL SUMMARY - 874 GAL.

ITEM 408 BITUMINOUS PRIME COAT

See Item 304 Aggregate Base - Shoulder Area	
A = (35,448.00)+ 9	= 3,938.67 S.Y.
(3938.67)0.4	= 1,575.47 GAL.

TO GENERAL SUMMARY - 1,576 GAL.

ITEM 409 SEAL COAT BITUMINOUS MATERIAL

See Item 304 Aggregate Base - Shoulder Area	
A = (35,448.00)+ 9	= 3,938.67 S.Y.
(3938.67)0.30	= 1,181.60 GAL.

TO GENERAL SUMMARY - 1,182 GAL.

ITEM 409 COVER AGGREGATE NO. 8

See Item 409 Seal Coat Bituminous Material	
(3938.67).008	= 31.51 C.Y.

TO GENERAL SUMMARY - 32 C.Y.

CALCULATIONS - (COUNTY)

CALC: R.A.S. 9/25/68
CHK: RBS 12/16/68

ITEM 605 AGGREGATE DRAINS

Morse Road			
Sta. 77+50 to Sta. 81+25 (Lt.) 8 At 16 L.F.	=	128	L.F.
Sta. 82+75 to Sta. 106+00 (Lt.) 47 At 16 L.F.	=	752	L.F.
Sta. 82+00 to Sta. 106+00 (Rt.) 50 At 16 L.F.	=	800	L.F.
Total	=	1,680	L.F.

TO GENERAL SUMMARY - 1,680 L.F.

ITEM 609 CONCRETE CURB STANDARD TYPE 6

Sunbury & Morse Road Intersection L = 127.16 + 76.66	=	203.82	L.F.
Morse Road			
Sta. 72+55.69 to Sta. 77+50 (Lt.)	=	494.31	L.F.
Sta. 71+49.41 to Sta. 82+00 (Rt.)	=	1,050.59	L.F.
Total	=	1,748.72	L.F.

TO GENERAL SUMMARY - 1,749 L.F.

ITEM 659 AGRICULTURAL LIMING

See General Summary Item 659 Seeding & Mulching*
19,722 SY x 100 x 9 ÷ (1000x2000) = 8.88 TONS

TO GENERAL SUMMARY = 8.88 TONS

ITEM 659 COMMERCIAL FERTILIZER (18-46-0)

See General Summary Item 659 Seeding & Mulching*
19,722 SY x 15 x 9÷(1000 x 2000) = 1.33 TONS

TO GENERAL SUMMARY = 1.33 TONS

*Deletions for Items 601 and 660 included in cross sections.

ITEM 203 SUBGRADE COMPACTION

Sunbury Road			
Sta. 88+50.72 to Sta. 90+00 A = 8.08(149.28)	=	1,206.18	S.F.
Sunbury Road & Morse Road Intersection A = Planimetered = 16.37 Sq. In. A = 16.37(400)	=	6,548.00	S.F.
Morse Road			
Sta. 72+55.69 to Sta. 77+50 (Lt. Side) A = 18.5 (494.31)	=	9,144.73	S.F.
Sta. 71+49.41 to Sta. 82+00 (Rt. Side) A = 30.5(1050.59)	=	32,042.99	S.F.
Sta. 77+50 to Sta. 102+09.24 (Lt. Side) A = 23(2459.24)	=	56,562.52	S.F.
Sta. 82+00 to Sta. 85+00 (Rt. Side) A = 29(300)	=	8,700.00	S.F.
Sta. 85+00 to Sta. 104+00 (Rt. Side) A = 23(1900)	=	43,700.00	S.F.
Sta. 102+09.24 to Sta. 105+90.34 (Lt. Side) A = 15(190.76)+21.34(190.34)+3344.28 A = 2861.40+4061.86+3344.28	=	10,267.54	S.F.
Sta. 105+90.34 to Sta. 106+00 (Lt. Side) A = 36(9.66)	=	347.76	S.F.
Sta. 104+00 to Sta. 106+00 (Rt. Side) A = 20.78(200)	=	4,156.00	S.F.
Total	=	172,675.72	S.F.
(172,675.72)÷ 9	=	19,186.19	S.Y.

TO GENERAL SUMMARY - 19,187 S.Y.

⊛ 702.01 (85-100) or 702.09 RT-10
* 702.01 (85-100) or 702.09 RT-11 or 12

SUB-SUMMARY OF URBAN ITEMS

CALC: W.O.G. 12-30-68
CHK: J.G. 1/7/68

FED RD DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA 270-22.99 N

	201	202		203				301	304	310	402	404		408	409			410	451		601			602
Sheet No.	Clearing and Grubbing	Pipe Removed 24" and Under	C.B. and/or Inlet Removed or Abandoned	Proof Rolling	Subgrade Compaction	Excavation not Including Emb. Construction	Embankment	Bituminous Aggregate Base	Aggregate Base	Subbase	Asphalt Concrete (70-85)	Asphalt Concrete (70-85)	Asphalt Concrete (85-100)	Bituminous Prime Coat, 702.09	Seal Coat Bit. Material	Seal Coat 702.09 or 702.02	Seal Coat Cover Aggregate No.8	Traffic Compacted Surface Type A or B	8" Cont. Reinf. Portland Cement Concrete Pavement	9" Cont. Reinf. Port. Cement Concrete Pavement	Riprap Using 6" Reinf. Concrete Slab	Crushed Aggre. Slope Protection	Rock Channel Prot. Type B	Concrete Masonry
	Lump	L.F.	Ea	Hour	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	Gal.	Gal.	Gal	C.Y.	C.Y.	S.Y.	S.Y.	S.Y.	S.Y.	C.Y.	C.Y.
									32				13					300				12		
14-17	Lump																							
18-23				39	139,102			*2283	4,352	2,978	919	670	448	3,985	792	706	796		72,304	11,043				
								⊛6123																
32						6,421	20,382														104		164	4.8
33						34,511	37															3	3	0.4
34						9,707	44,271															3	9	0.3
35						996	28,048																16	0.6
36						1,885	117,750															2	33	0.3
37						766	11,589																	
39						7,276	0																	
40						33,140	0																	
41						51,344	0															20		
42						34,308	0																	
44						65,844	0																	
45						38,856	0																	
92		789	4			3,912	2,052	*37															37	1.9
93		1000	12			2,946	1,687																	
94		991	3			3,114	1,524																	
120																								
121						3,967	11,876																	
125																								1.3
126						3,209	16,563																	
130																								1.3
131						3,467	20,584																	
136																								
137						3,481	7,380																	
149										703														
160		112				528	5,216		66				8											
161						10	162																	
166						554	1,675		31				4											1.0
167						926	2,849																	1.0
173						439	306		69				18									22	8	
177						170	435																	
178						59	731		63															
R/W																								
Total	Lump	2892	19	39	139,102	311,833	395,117	*2320 ⊛6123	4,613	3,681	919	670	491	3,985	792	706	796	300	72,304	11,043	104	62	270	12.9

	603															603								603	603			603			
	Type A 706.02 or 706.08	Type A 706.02 Class III	Type A 706.04	Type B									D 707.01 14 Gage	Type C				Class IV					Type D	Type E.			Type F.			
Sheet No.	27"	60"	38"x24"	6"	8"	12"	15"	18"	21"	27"	36"	42"	12"			15"	18"	27"	30"	36"	42"	54"	12"	6"	8"	12"	6"	8"	12"	15"
	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.			L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.
				360	360	180																		300	210	300	60	42	18	
14-17																														
18-23																														
32		314					110																				10			
33									136							100									6			28		
34							192																	5			20			
35							182																							206
36							211																			4			10	
37																														
39																	300													
40				68						91							700			300							10			
41																				700	300			62			108			
42																					675									
44																					576									
45										192											200	6								
92							32			151		139																		
93																		450	302											
94											104	325							40	456										
120																														
121																														
125			138																											
126																														
130	150							92																						
131																														
136																														
137																														
149																														
160													38										100							
161																														
166	68																													
167	86																													
173																							162							
177																														
178													54																	
R/W																														
Total	304	314	138	428	360	180	727	92	136	434	104	464	92			100	1,000	450	342	1,456	1,751	6	262	367	216	304	208	70	28	206

SUB-SUMMARY OF URBAN ITEMS

CALC: W.O.B. 12-30-68
CHK: J.G. 1/7/68

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA-270-22.99 N

	604										605				606					607		609			611	612	616		656	659			660		667	804		Special		409	Special
Sheet No.	No. 2-2 B Catch Basin	No. 2-2-B Catch Basin As per Plan	No. 4 Catch Basin	No. 5 Catch Basin with B Grate	No. 5A Catch Basin with B Grate	No. 6 Catch Basin As Per Plan	Inspection Well	M.H. Reconst. to Grade	Standard Ref. Monuments	Water Vaults Adj. to Grade	Aggregate Drains	Aggregate Drains for Springs	6" Deep Pipe Underdrains	6" Unclassified Pipe Underdrains	Guard Rail Type 5	Guard Rail Type 5 Barrier	Approach End Assembly	Anchor Assembly	Bridge Terminal Assembly	Fence Type C.L.	Fence Type 47	Standard Conc. Curb Type 6	Standard Conc. Curb Type 7	Standard Conc. Curb Type 8	Approach Slabs	Concrete Median	Calcium Chloride	Water	Roadside Cleanup	Seeding and Mulching	Commercial Fertilizer	Agricultural Liming	Special Berm & Slope Protection	Sodding	Seeding and Jute Matting	Cement Stabilized Subbase	Portland Cement	Removal and Disposal of Septic Tank	Drilled Well Abandoned	Seal Coat 702.09	Pumping
	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea	Ea.	Ea	L.F.	L.F.	L.F.	L.F.	L.F.	S.Y.	S.Y.	Tons	M Gal.	M.S.F.	S.Y.	Tons	Tons	S.Y.	S.Y.	S.Y.	S.Y.	Bbls.	Ea.	Ea.	Gal.	Lump
14-17		1																									16	100													Lump
18-23											3881														573						21.18	14.123				94,437	6,028			28,331	
32			1												150		1	1												16,027				168	125						
33			2																											23,741					250						
34			1			2									150		1	1												23,960					125						
35	2														500	150	6		4											28,292			453								
36			1			2									25			1												25,147				107	125						
37															125		1													7,959				347							
39			1										702																	6,730					125						
40			1		1								1996																	19,776					250						
41			1										2000																	20,990					125						
42													1350		150		1	1												14,256											
44															584	25	3	1												14,076											
45			1		2																									8,646					375						
92				1						5																				10,613								1	1		
93				2											1425	50	6	2												5,784					466			9			
94					4																									8,477					404						
120																													68												
121																														18,344											
125																													83												
126																														15,945											
130	1														150		1	1											58					140							
131																														16,828											
136																													49												
137																														10,872											
149																						4,135	258	921		1468															
160								2							250		2		2											4,257			66								
161															28				2											0			12	59							
166																														3834											
167																														4,375				45							
173																						217								2,873											
177																														1,065											
178																														1,480											
R/W									55											1341	18,446																				
Total	3	1	9	3	7	4		2	55	5	3881		6,048		3,537	225	22	8	8	1341	18,446	4352	258	921	573	1468	16	100	258	314,347	21.18	14.123	531	866	2370	94,437	6,028	10	1	28,331	Lump

KEY

Abbreviation	Participation
Rural	90% Federal, 10% State
Urban	90% Federal, 5% State, 5% City of Columbus
100% City	100% City of Columbus
100% Fra. Co.	100% Franklin County

GENERAL SUMMARY

CALC: W.O.B. 12-31-68
CHK: J.G. 1/7/68

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99 N

ITEM	RURAL																100% FRANKLIN COUNTY								100% CITY			Urban		SUB-TOTALS				ITEM	GRAND TOTAL	UNIT	DESCRIPTION
	SHEET NUMBER																																				
	14-17	18-23	37	38	39	42	43	44	91	92	161	177	182	183	R/W	238	14-17	R/W	88	89	90	91	156	24-25	153	14-17	18-23	26	27	100% CITY	100% FRA. CO.	RURAL	URBAN				
																																					ROADWAY CODE 7224
201	Lump																Lump									Lump		Lump		Lump	Lump	Lump	Lump	201	Lump	Lump	Clearing and Grubbing
202																			Lump												Lump			202	Lump	Lump	Existing structure removed
202																				Lump											Lump			202	Lump	Lump	Portion of existing structure removed
202				332					170	93									567	829	273	149	84		684			2892		684	1902	595	2892	202	6,073	L.F.	Pipe removed, 24" and under
202											64									31											31	64		202	95	S.Y.	Existing pavement removed and disposed of
202											726																					726		202	726	S.F.	Existing sidewalk removed and disposed of
202									125		55																					180		202	180	L.F.	Existing curb removed and disposed of
202										2									4	1			3		3			19		3	8	2	19	202	32	Ea.	Catch basin or inlet removed or abandoned
203			5,216	5,508	8,905	15,588	73,549	47,649	1,104	165	200	170	100	236					4,916	2,672	2,045	679	430		504			311,833		504	10,742	164,390	311,833	203	487,469	C.Y.	Excavation not including embankment construction, as per plan
203			2,914	13,525	0	0	0	0	544	55	828	435	2,377	2,776					308	4,775	577	481	62		222			395,117		222	6,203	23,454	395,117	203	424,996	C.Y.	Embankment
203		54,347																						19,187			1,329	139,102		1,329	19,187	54,347	139,102	203	213,965	S.Y.	Subgrade Compaction
203		16																										39				16	39	203	55	Hour	Proof Rolling
604															13			10											55		10	13	55	604	78	Ea.	reference monument
606					150			341			172									300									3537		300	663	3,537	606	4,500	L.F.	Guard rail, Type 5
606								25																					225			25	225	606	250	L.F.	Guard rail, Type 5, Barrier Design
606					1			1																					8			2	8	606	10	Ea.	Anchor assembly
606																													8				8	606	8	Ea.	Bridge terminal assembly
606					1			3			2									2									22		2	6	22	606	30	Ea.	Approach end assembly
607																40													40			40	40	607	80	L.F.	Fence, Type CL, modified as per plan
607																													1341				1341	607	1,341	L.F.	Fence, Type CL
607															8,190														18,446			8,190	18,446	607	26,636	L.F.	Fence, Type 47
607																1													1			1	1	607	2	L.F.	8' Gate, Type CL, modified as per plan
608											236																					236		608	236	S.F.	4" Concrete walk
615	Lump																															Lump		615	Lump	Lump	Temporary Roads
616	50																45										5		100	5	45	50	100	616	200	M.Gal.	Water
616	20																1.0										1		16	1	10	20	16	616	47	Tons	Calcium chloride
656																													258				258	656	258	M.S.F.	Roadside cleanup
Special								3	1																				10			4	10	Special	14	Ea.	Removal and disposal of septic tank
Special								1																					1			1	1	Special	2	Ea.	Drilled well abandoned
Special									Lump																							Lump		Special	Lump	Lump	Removal and disposal of existing underground storage tanks
																																					DRAINAGE CODE 7224
602			1.8	1.6					0.3					0.6						3.3								12.9			3.3	4.3	12.9	602	20.5	C.Y	Concrete Masonry
603														54																		54		603	54	L.F.	18" Conduit, Type A 706.01, 706.02 or 706.08
603																												304					304	603	304	L.F.	27" Conduit, Type A 706.02 or 706.08
603				256																												256		603	256	L.F.	42" Conduit, Type A 706.02
603			236																													236		603	236	L.F.	48" Conduit, Type A 706.02
603																												314					314	603	314	L.F.	60" Conduit, Type A 706.02 Class III
603																												138					138	603	138	L.F.	38"x24" Conduit, Type A 706.04 Class HE II
603	240					136											100											428			100	376	428	603	904	L.F.	6" Conduit, Type B Partial Farm drains - See sh. 15
603	240																100											360			100	240	360	603	700	L.F.	8" Conduit, Type B Farm drains
603	120																100											180			100	120	180	603	400	L.F.	12" Conduit, Type B Farm drains
603									126	100									67									727			67	226	727	603	1,020	L.F.	15" Conduit, Type B
603																												92					92	603	92	L.F.	18" Conduit, Type B
603																									100			136		100			136	603	236	L.F.	21" Conduit, Type B
603																			108												108			603	108	L.F.	24" Conduit, Type B
603																												434					434	603	434	L.F.	27" Conduit, Type B
603																												104					104	603	104	L.F.	36" Conduit, Type B
603						80				83																		464				163	464	603	627	L.F.	42" Conduit, Type B
603																				124											124			603	124	L.F.	24" Conduit, Type B, 706.02 Class III or 706.08
603																	100				10										110			603	110	L.F.	6" Conduit, Type C
603																			326				120		20					20	446			603	466	L.F.	12" Conduit, Type C
603			8	8			15	15																				100				46	100	603	146	L.F.	15" Conduit, Type C
603																			98	300		175									573			603	573	L.F.	15" Conduit, Type C 706.01 ES, 706.02 or 706.08 ES
603																												1000					1,000	603	1,000	L.F.	18" Conduit, Type C
603									90													200			368					368	200	90		603	658	L.F.	18" Conduit, Type C 706.01 ES, 706.02 706.08 ES or 707.13
603									164																							164		603	164	L.F.	21" Conduit, Type C 706.02 706.08 ES or 707.13

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99 N

GENERAL SUMMARY

★ 95% State, 5% City of Columbus

CALC: W.D.G. 12-31-68
CHK: J.G. 1/7/68

	RURAL															100% FRANKLIN COUNTY									100% CITY			Urban		SUB-TOTALS							
	SHEET NUMBER																																				
ITEM	14-17	18-23	37	38	39	42	43	44	91	92	161	177	182	183	R/W		14-17	R/W	88	89	90	91	156	24-25	153	14-17	18-23	27	26	100% CITY	100% FRA. CO.	RURAL	URBAN	ITEM	GRAND TOTAL	UNIT	DESCRIPTION
																																					DRAINAGE (Continued)
603																							52								52			603	52	L.F.	24" Conduit, Type C
603									148	36															322					322		184		603	506	L.F.	24" Conduit, Type C, 706.02 706.08 E.S. or 707.13
603																									54					54				603	54	L.F.	27" Conduit, Type C
603																													450				450	603	450	L.F.	27" Conduit, Type C, 706.02 Class IV
603																													342				342	603	342	L.F.	30" Conduit, Type C
603																													1456				1456	603	1,456	L.F.	36" Conduit, Type C
603						245	1000	424																					1751			1669	1,751	603	3,420	L.F.	42" Conduit, Type C
603																													6				6	603	6	L.F.	54" Conduit, Type C, As Per Plan.
603									44											114	228	76							262		418	44	262	603	724	L.F.	12" Conduit Type D
603													42																			42		603	42	L.F.	24" Conduit, Type D 707.01 14 Gage
														56						40	76	36							92		152	56	92	603	300	L.F.	12" Conduit Type D, 707.01 14 Gage
603	200																100												367		100	200	367	603	667	L.F.	6" Conduit, Type E
603	140		8	18													100												216		100	166	216	603	482	L.F.	8" Conduit, Type E
603	200																100												304		100	200	304	603	604	L.F.	12" Conduit, Type E
603	40			20													20					10							208		30	60	208	603	298	L.F.	6" Conduit, Type F
603	28		10	10													20												70		20	48	70	603	138	L.F.	8" Conduit, Type F
603	12																20												28		20	12	28	603	60	L.F.	12" Conduit, Type F
603																													206				206	603	206	L.F.	15" Conduit, Type F
604							1	1											2												2	2		604	4	Ea.	Standard No. 1 Manhole
604																			1				1								2			604	2	Ea.	Standard No. 2-A-14 Paved shoulder Inlet
604																			2												2			604	2	Ea.	Standard No. 2-A-16 Paved shoulder Inlet
604																				1		2									3			604	3	Ea.	Standard No. 2-2-A Catch Basin
604									3										1	1		2			4			3		4	4	3	3	604	14	Ea.	Standard No. 2-2-B Catch Basin
604	1																											1				1	1	604	2	Ea.	Standard No. 2-2-B Catch Basin, as per plan
604																				1			1								2			604	2	Ea.	Standard No. 2-3 Catch Basin
604																			1				2								3			604	3	Ea.	Standard No. 3 Catch Basin
604			1	1		1	1	1																				9				5	9	604	14	Ea.	Standard No. 4 Catch Basin
604										1																						1		604	1	Ea.	Standard No. 4 Catch Basin with E grate
604																									2			3		2			3	604	5	Ea.	Standard No. 5 Catch Basin with B grate
604																												7					7	604	7	Ea.	Standard No. 5-A Catch Basin with B grate
604																												4					4	604	4	Ea.	Standard No. 6 Catch Basin, as per plan
604																												4					4	604	4	Ea.	Water Vaults adjusted to grade (Code Y060)
604																	2														2			604	2	Ea.	Inspection Well,
605	200																															200		605	200	L.F.	6" Unclassified pipe underdrains, 707.01 Type III or 707.12, as per plan
605			1,100	980	1,098	50																						6,048				3228	6048	605	9,276	L.F.	6" Deep pipe underdrains
605		1487																										3,881				1487	3,881	605	5,368	L.F.	Aggregate drains
605	20																															20		605	20	L.F.	Aggregate drains for springs
																												★ Lump					★ Lump	Special	Lump	Lump	Pumping
																																					DRAINAGE CODE Y060
604																										(Sh. 161) 1		2		1			2	604	3	Ea.	Manhole reconstructed to grade
																																					PAVEMENT CODE 7224
301		642								11	21								9	3				1,601			223		2320	223	1,613	674	2320	301	4,830	C.Y.	Bituminous aggregate base: 702.01 (85-100) or 702.09, RT-11 or RT-12
301		2,411																											6,123			2411	6,123	301	8534	C.Y.	Bituminous aggregate base; 702.01 (85-100) or 702.09, RT-10 As per plan
304	28	1,735							132		37		34	30			8		7	80	88	92		2,499	33	14	155		4613	202	2,774	1,996	4,613	304	9,585	C.Y.	Aggregate base
310		610									32													2,534			244		3681	244	2,534	642	3,681	310	7,101	C.Y.	Subbase
402		202									7													1,058			120		919	120	1,058	209	919	402	2,306	C.Y.	Asphalt Concrete (70-85)
404		150									7													797			85		670	85	797	157	670	404	1,709	C.Y.	Asphalt Concrete (70-85)
404	11	281							37		5			8			4		2	27	27	29			14	6			491	20	89	342	491	404	942	C.Y.	Asphalt Concrete (85-100)
407																								874							874			407	874	Gal.	Tack coat: 702.04, MS-2 or RS-1; or 702.02, RC-70 or RC-250.
408		2,145																						1,576			312		3985	312	1,576	2,145	3,985	408	8,018	Gal.	Bituminous prime coat: 702.09, RT-2 or RT-3
409																								1,182					792		1,182		792	409	1,974	Gal.	Seal coat bituminous material, as per plan
409		296																						32			7		796	7	32	296	796	409	1,131	C.Y.	Seal coat cover aggregate No. 8
409		216																									234		706	234		216	706	409	1,156	Gal.	Seal coat bituminous material; 702.09, RT-9 or RT-10; or 702.02, MC-800 or MC-3000
409		10,880																										28,331				10,880	28,331	409	39,211	Gal.	Seal coat bituminous material; 702.09, RT-9 or RT-10
410	573																300												300		300	573	300	410	1,173	C.Y.	Traffic compacted surface, Type A or B
451		33,546																											72,304			33,546	72,304	451	105,850	S.Y.	8" Continuously reinforced portland cement concrete pavement
451		13																											11,043			13	11,043	451	11,056	S.Y.	9" Reinforced portland cement concrete pavement
452											93									86											86	93		452	179	S.Y.	7" Plain portland cement concrete pavement

Rev. 9-11-69 H.E.D. Rev. 7-1-69

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CALC: WDG 12-31-68
CHK: JG 1/7/69

FRANKLIN COUNTY
FRA-270-22.99 N

GENERAL SUMMARY

	RURAL — SHEET NUMBER																100% FRANKLIN COUNTY								100% CITY		TOTAL SEEDING AREA WITHOUT DEDUCTIONS TO CALCULATIONS				SUB-TOTALS							
ITEM	14-17	18-23	37	38	39	42	43	44	91	92	161	177	182	183	R/W		14-17	R/W	88	89	90	91	156	24-25	153	18-23	CITY	COUNTY	RURAL	URBAN Sh. 27	100% CITY	100% FRA. CO.	RURAL	URBAN (Sh. 26, 27)	ITEM	GRAND TOTAL	UNIT	DESCRIPTION
																																						PAVEMENT CODE 7224 (Continued)
609											55													1,749								1,749	55	4,352	609	6,156	L.F.	Concrete curb, Standard Type 6
609																																		258	609	258	L.F.	Concrete curb, Standard Type 7
609																																		921	609	921	L.F.	Concrete curb, Standard Type 8
611																																		573	611	573	S.Y.	Reinforced concrete approach slab (T=13")
612																																		1,468	612	1,468	S.Y.	Concrete median
804		36,266																															36,266	94,437	804	130,703	S.Y.	4" Cement stabilized subbase, as per plan
804		2,315																															2,315	6,028	804	8,343	BBLS.	Portland cement
																																						EROSION CONTROL CODE Y005
601			35	155																286												286	190	270	601	746	C.Y.	Rock channel protection, Type B
601	8		5	3													20			54												74	16	62	601	152	S.Y.	Crushed aggregate slope protection
601			14	19																													33	104	601	137	S.Y.	Riprap, using 6" reinforced concrete slab
659		6.99																						1.33	0.19						0.19	1.33	6.99	21.18	659	29.69	Tons	Commercial fertilizer (18-46-0) As per plan
659		46.60																						8.88	0.79						0.79	8.88	46.60	141.23	659	197.50	Tons	Agricultural liming
659			11,974	20,394	11,812	6,978	27,156	12,567	2,788	91	918	1,065	3,892	4,208					2,946	6,638	6,324	2,857	957		1,757		1,757	19,722	103,843	314,347	1,757	19,722	102,782	310,607	659	434,868	S.Y.	Seeding and mulching, as per plan
660											16																						16	531	660	547	S.Y.	Sodding for Special berm and slope protection, as per plan
660			85	5							59									412												412	149	866	660	1,427	S.Y.	Sodding
667			125	125		125	125	125																									625	2,370	667	2,995	S.Y.	Seeding and jute matting
																																						STRUCTURES OVER 20' SPAN
																																						I-270 Over Morse Road
																																						Bridge No. FRA-270-2356 N, L & R See Sheet No. 251
																																						I-270 Under McCutcheon Road
																																						Bridge No. FRA-270-2525 N See Sheet No. 259
																																						Water Lines - For Estimated Quantities, See Sheet No. 198
																																						Traffic Control - for Estimated Quantities See Sheet No. 202
																																						Traffic Signals - for Estimated Quantities See Sheet No. 231
																																						Lighting, for Estimated Quantities See Sheet No. 238
614																																			614	Lump	Lump	Maintaining traffic
																																				Lump	Lump	Construction layout stakes
619	Lump																																		619	Lump	Lump	Field Office
																																						BUILDING REMOVAL CODE 7224
202																																		Lump	202	Lump	Lump	Parcel No. 136A-WD-1 Removal of one frame barn.
202															Lump																		Lump		202	Lump	Lump	Parcel No. 139A-WD, and 139A-T Removal of one concrete block service station.
202																																		Lump	202	Lump	Lump	Parcel No. 145-WL, Removal of one 1½ story frame residence, one 1 story frame garage and shed

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

GENERAL SUMMARY

CALC: W.D.K. 12-31-68
CHK: J.G. 1/7/68

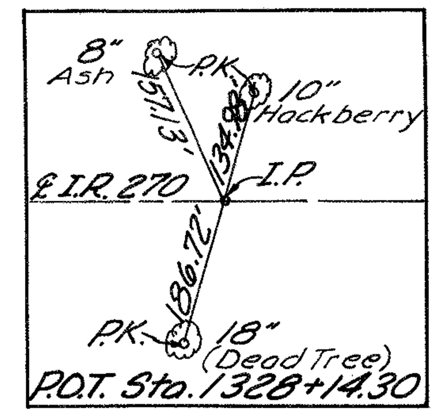
FRANKLIN COUNTY
FRA-270-22.99 N

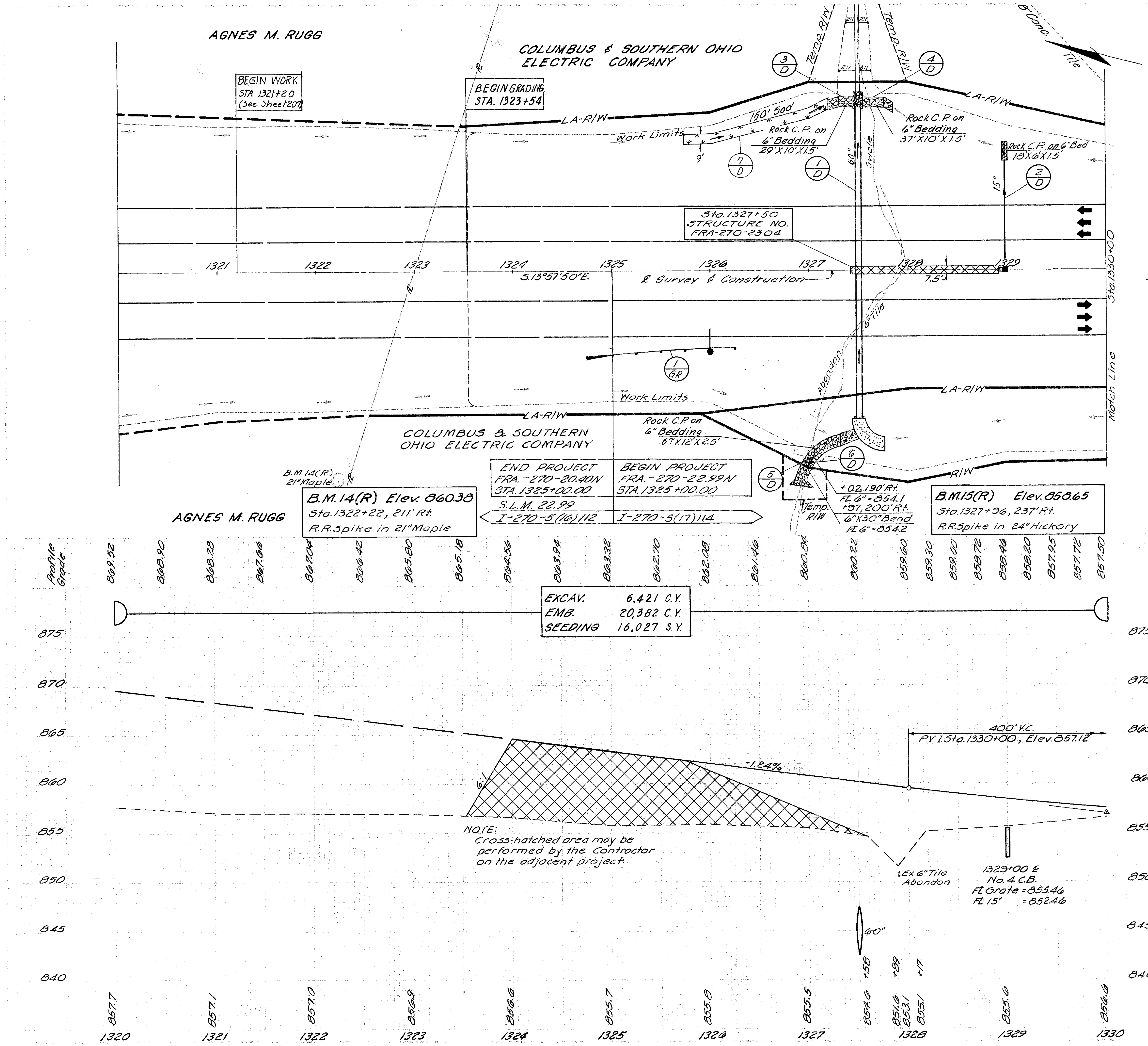
SHEET NUMBER

ITEM	14-17	18-23	37	38	39	42	43	44	91	92	161	177	182	183	R/W		14-17	R/W	88	89	90	91	156	24-25	153	14-17	18-23		100% CITY	100% FRA. CO.	RURAL	URBAN	ITEM	GRAND TOTAL	UNIT	DESCRIPTION
	RURAL																100% FRANKLIN COUNTY								100% CITY				SUB-TOTALS							
																																				BUILDING REMOVAL~CODE 7224 (Continued)
202																																Lump	202	Lump	Lump	Parcel No. 152-WL Removal of one tri-level stucco residence, with attached garage.
202															Lump																Lump		202	Lump	Lump	Parcel No. 160A-WD Removal of one frame garage.
202															Lump																Lump		202	Lump	Lump	Parcel No. 170-WL Removal of one 1 story stucco residence with attached garage.
202															Lump																Lump		202	Lump	Lump	Parcel No. 171-WL Removal of one 1 story frame residence with attached garage.
202															Lump																Lump		202	Lump	Lump	Parcel No. 172-WL Removal of one 1 story stucco. residence with attached garage.
202															Lump																Lump		202	Lump	Lump	Parcel No. 173-WL, 173-T Removal of one 1 story frame residence with attached garage.
202																		Lump												Lump			202	Lump	Lump	Parcel No. 133P-WD, 133P-T Removal of one 2 story frame residence.
202																		Lump												Lump			202	Lump	Lump	Parcel No. 134-WD, 134-T Removal of one 1 story frame residence.

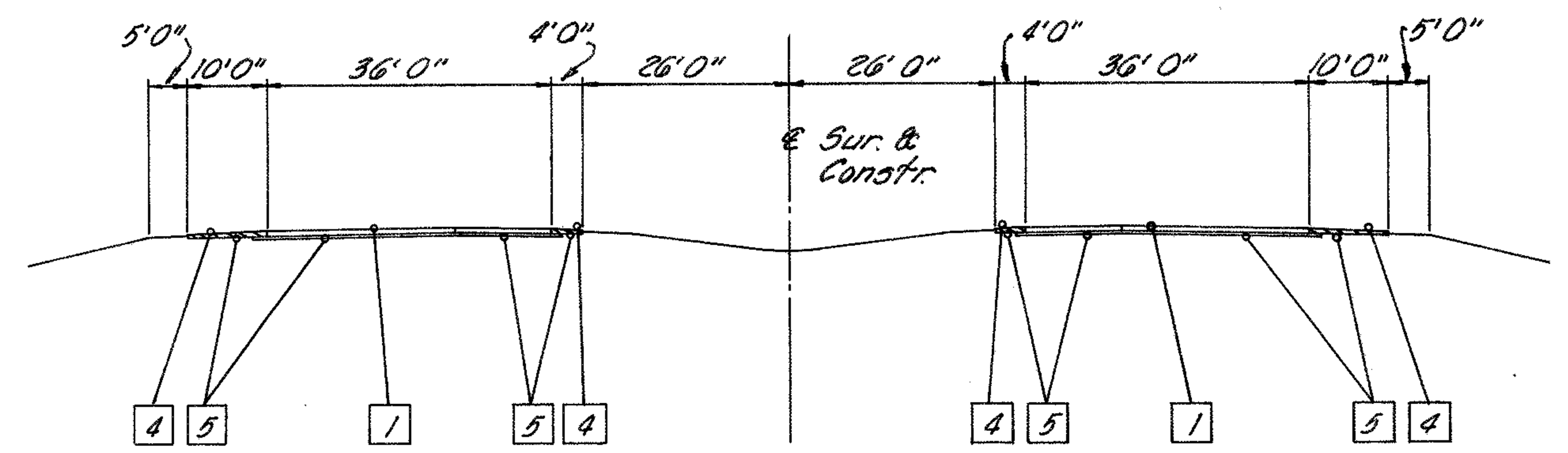
FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.O.G. 9/20/68
CHK: R.E.W. 10/1/68





TYPICAL SECTION FRA-270-22.40-N (Adjacent Proj.)



LEGEND

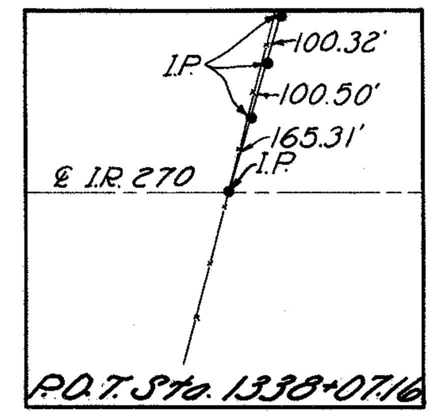
- 1 Item 451 8" Reinforced Cont. Concrete Pavement.
- 4 Item 409 Seal Coat & No. 8 Aggregate.
- 5 Item 301 Bituminous Aggregate Base.

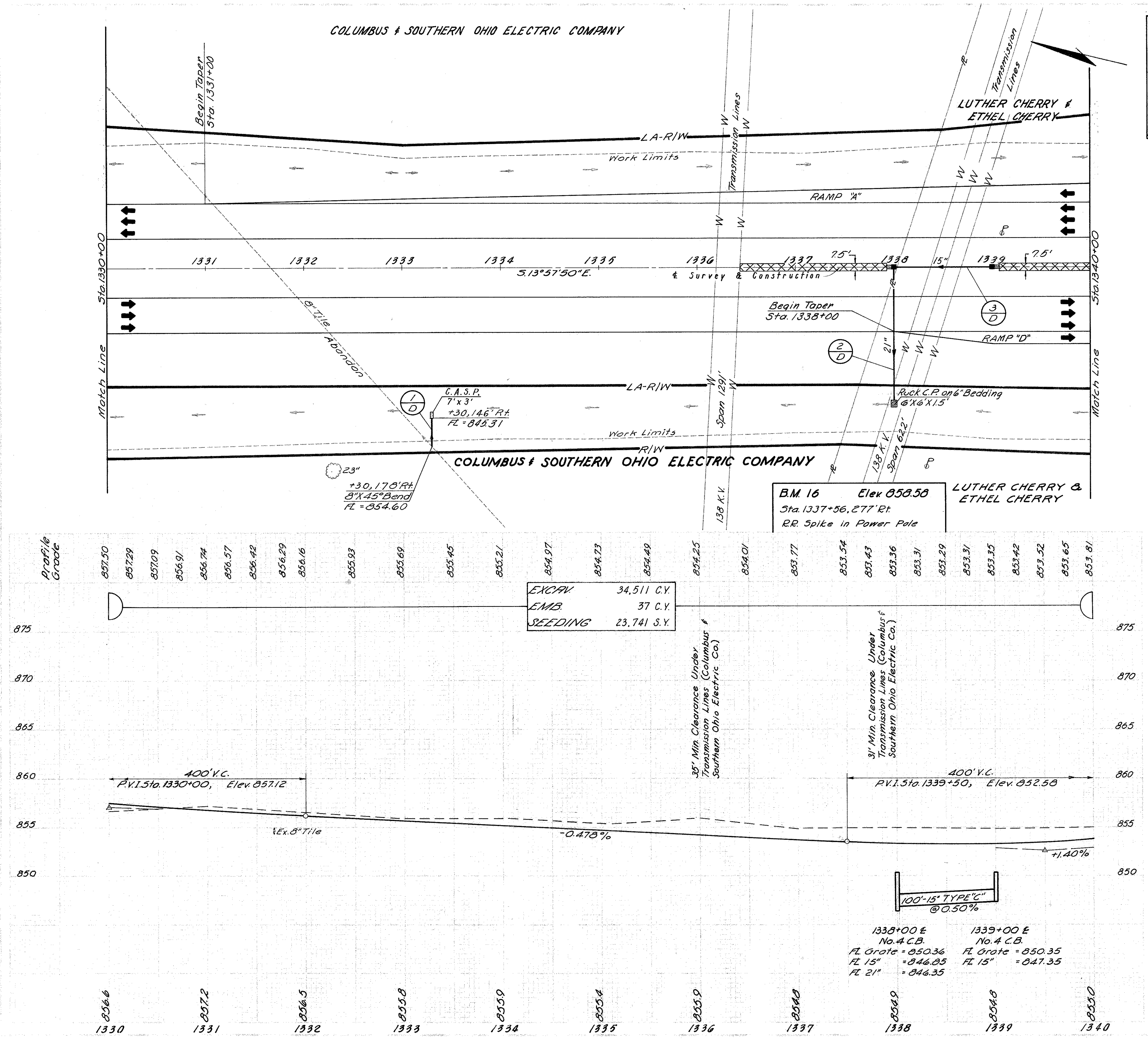
REF.	STATION TO STATION	SIDE	601 Rock C.P. Type 'B'	601	Rip Rap	602 Conc. Masonry	603 TYPE "A" 706.02 CLASS III	603 TYPE "B"	604 No. 4 CATCH BASIN	667 JUTE MATTING	660 Sodding	SEE DETAIL SHEET No.
							60"	15"				
			C.Y.		S.Y.	C.Y.	L.F.	L.F.	Ea.	S.Y.	S.Y.	
1-D	1327+50	℄	17		104	4.5	314				18	188
2-D	1329+00	Lt.	8			0.3		110	1	125		47
3-D	1327+20 to 1327+47	Lt.	21									
4-D	1327+52 to 1327+86	Lt.	28									
5-D	1327+90, 220' Rt. to 1327+30, 172' Rt.		90									47
7-D	1325+75 to 1327+20	Lt.									150	
TOTALS			164		104	4.8	314	110	1	125	168	

REF.	STATION TO STATION	SIDE				603 TYPE "F"	606 GUARD RAIL TYPE 5	APPR. END ASSEMBLY	ANCHOR. ASSEMBLY	BENDS & BRANCHES	SEE DETAIL SHEET No.
						6"	L.F.	Ea.	Ea.	6"	
						L.F.					
6-D	1326+97 to 1327+02	Rt.				10				1	
1-GR	1324+75 to 1326+25	Rt.					150	1	1		
TOTALS						10	150	1	1		

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W.O.L. 9/20/68
CHK: R.E.H. 10-1-68





NOTE:
1 For Ramp "A" Pavement Details, See Sheet No. 140
2 " " "D" " " , " " " 144

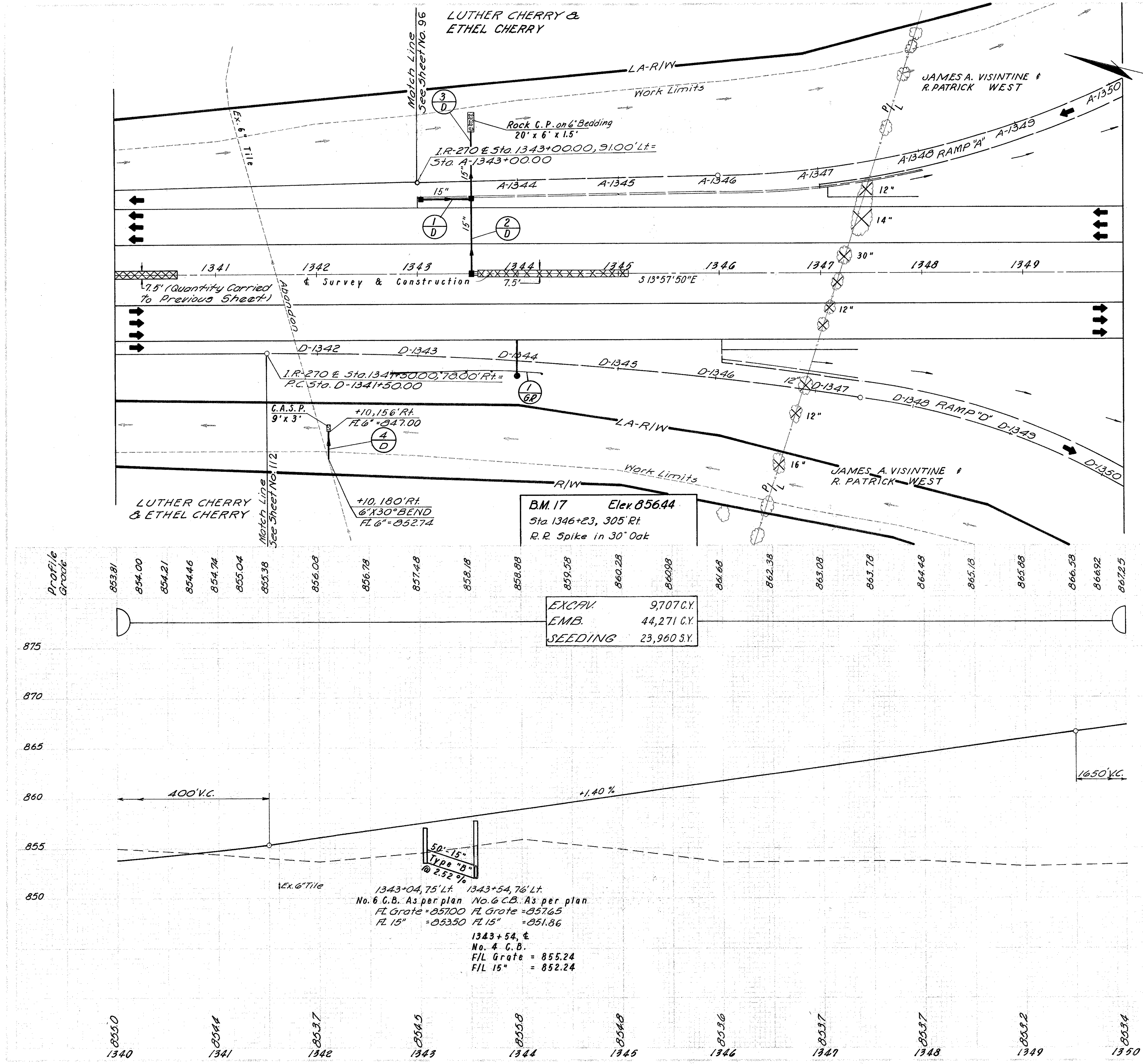
REF	STATION TO STATION	SIDE	601 Rock C.P. TYPE "B"	602 CONC. MASONRY	603 TYPE "B"	603 TYPE "C"	604 No. 4 CATCH BASIN	667 JUTE MATTING		SEE DETAIL SHEET No.
					21"	15"				
			C.Y.	C.Y.	L.F.	L.F.	Ea.	S.Y.		
2-D	1338+00	Rt.	3	0.4	136		1	125		50
3-D	1338+00 to 1339+00	℄				100	1	125		50
TOTALS			3	0.4	136	100	2	250		

REF.	STATION TO STATION	SIDE	601 CRUSHED AGGR.		603 TYPE E	603 TYPE "F"			BENDS & BRANCHES	SEE DETAIL SHEET No.
					8"	8"			8"	
			S.Y.		L.F.	L.F.				
1-D	1333+30	Rt.	3		6	28			3	49
TOTALS			3		6	28				

STA 1330+00 TO STA 1340+00

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W. O. B. 9/?/68
CHK: R. E. H. 10-1-68



℄ I.R. 270	I.P. (Buried)
	90°
	165.34'
	100.68'
I.P. (Buried)	100.73'
P.O.T. Sta. 1347+26.53	

NOTES:
1. For Ramp Geometric Layout, See Sheet No. 82
2. For Ramp "A" Plan, See Sheet No. 120
3. For Ramp "A" Profile, See Sheet No. 121
4. For Ramp "A" Pavement Details, See Sheet No. 140
5. For Ramp "D" Plan, See Sheet No. 136
6. For Ramp "D" Profile, See Sheet No. 137
7. For Ramp "D" Pavement Details, See Sheet No. 144

TREE REMOVAL

1340+00 to 1350+00		
SIZE	LEFT	RIGHT
12" to 24"	2	4
24" to 36"	1	
36" to 60"		
Over 60"		

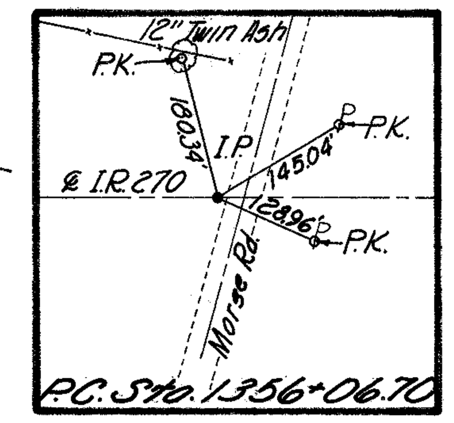
‡ As Per Plan

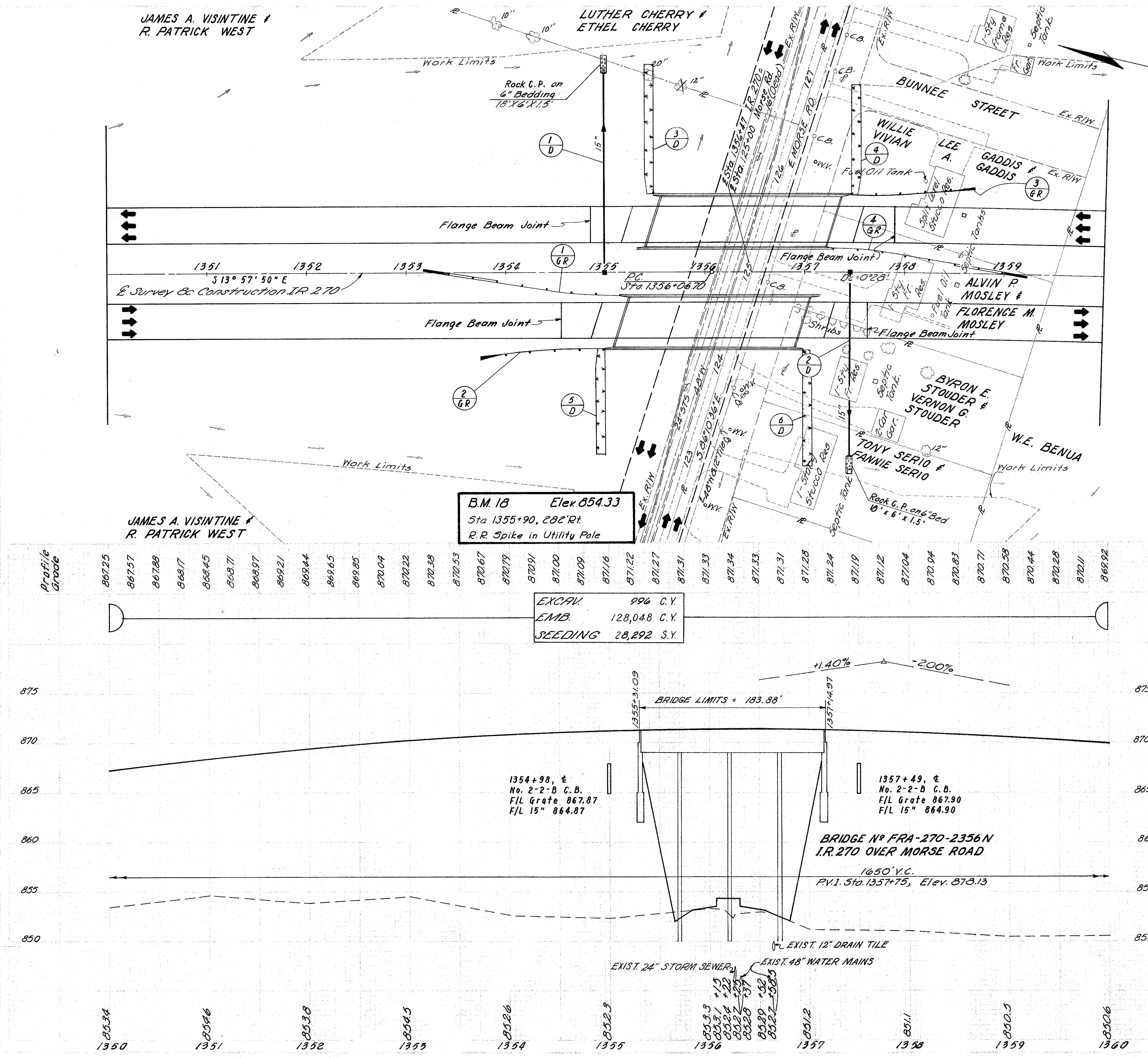
REF.	STATION TO STATION	SIDE	601 Rock C.P. TYPE 'B'	602 CONC. MASONRY	603 TYPE "B" 15"	604 No. 4 CATCH BASIN	604 No. 6 ‡ CATCH BASIN		667 JUTE MATTING	SEE DETAIL SHEET No.
			C.Y.	C.Y.	L.F.	Ea.	Ea.		S.Y.	
1-D	1343+04 to 1343+54	Lt.			50		1			51
2-D	1343+54	Lt.			76	1			125	51
3-D	1343+54	Lt.	9	0.3	66		1			51
	TOTALS		9	0.3	192	1	2		125	

REF.	STATION TO STATION	SIDE	601 CRUSHED AGGR.		603 TYPE E 6"	603 TYPE "F" 6"	606 GUARD RAIL TYPE 5	APPR. END ASSEMBLY	ANCHOR ASSEMBLY	BENDS & BRANCHES 6"	SEE DETAIL SHEET No.
			S.Y.		L.F.	L.F.	L.F.	Ea.	Ea.		
4-D	1342+10	Rt.	3		5	20				3	51
1-GR	1342+75 to 1344+25	Rt.					150	1	1		
	TOTALS		3		5	20	150	1	1		

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W.D.B. 9/20/68
CHK: R.E.H. 10-1-68





NOTES:
1. For Morse Road Plan & Profile, See Sheet No. 93

PROPOSED STRUCTURE

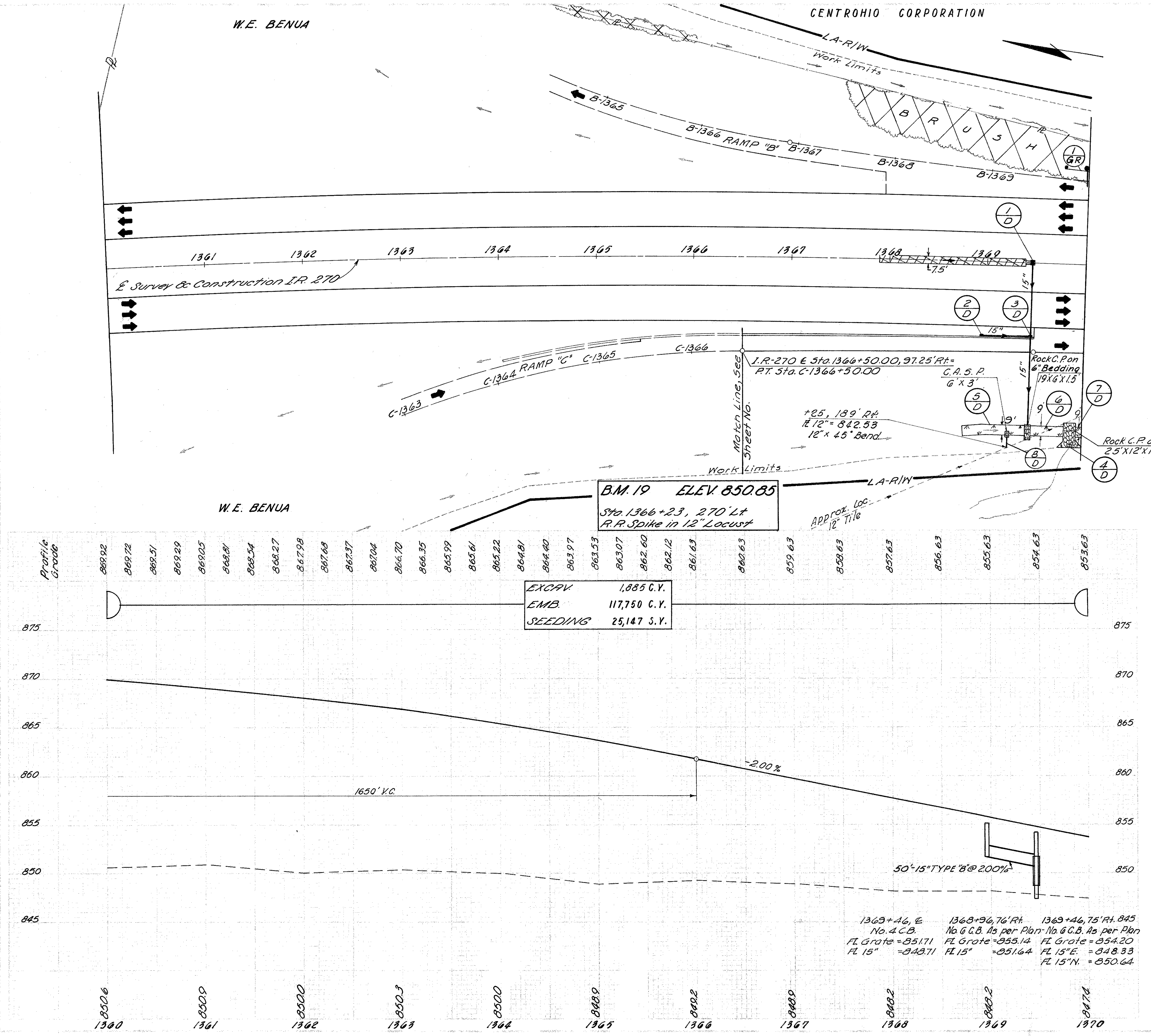
TYPE: Continuous reinforced concrete slab with reinforced concrete substructure
SPANS: 40'-0", 49'-11", 49'-11", 40'-0" @ tangent
ROADWAY: 53'-0" f/f parapets with 1'-0" safety curbs
LOAD FREQUENCY: HS20-44 adequate for AASHO alternate loading
WEARING SURFACE: 1" monolithic concrete
SKEW: 17°47'14" with tangent L.F.
APPROACH SLAB: AS-1-67 (25'-0" long)
ALIGNMENT: 0°28'00" Rt.
SUPERELEVATION: None
AVERAGE DAILY TRAFFIC: 67,340

REF.	STATION TO STATION	SIDE	601 Rock C.P. Type "B"	602 Conc. Mason.	603 Type 'B' 15"	603 Type 'F' 15"	604 2-2-B Catch Basin	606 Appr. End Assembly	606 Terminal Assembly	606 G. Rail Type "5" Std.	606 G. Rail Type "5" Bar.	Bends & Branches 15"		For Details See Sheet No.
			C.Y.	C.Y.	L.F.	L.F.	EA.	EA.	EA.	L.F.	L.F.			
1-D	1354+98	Lt.	8	0.3	90	112	1					2		55
2-D	1357+49	Rt.	8	0.3	92	94	1					2		56
1-GR	1353+16.1 to 1355+16.1	Rt.						2	1	125	75			
2-GR	1353+48.2 to 1354+98.2	Rt.						1	1	125				
3-GR	1357+47.2 to 1358+97.2	Lt.						1	1	125				
4-GR	1357+30.4 to 1359+30.4	Lt.						2	1	125	75			
TOTALS			16	0.6	182	206	2	6	4	500	150			

REF.	STATION TO STATION	SIDE	660 Spec. Berm & Slope Protect.
			S.Y.
3-D	1355+46	Lt.	128
4-D	1357+52	Lt.	106
5-D	1354+96	Rt.	104
6-D	1357+02	Rt.	115
TOTALS			453

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W.D.B. 9/21/68
CHK: R.E.H. 10-1-68



NOTES:

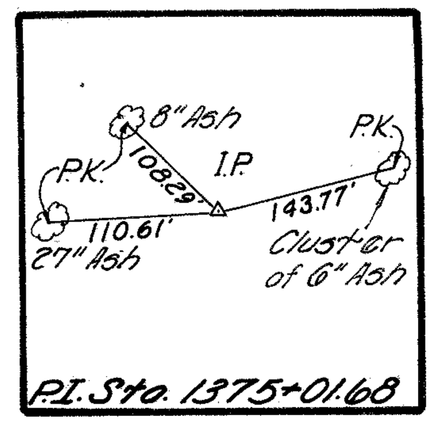
1. For Ramp Geometric Layout, See Sheet No. 83
2. For Ramp "B" Plan, See Sheet No. 125
3. For Ramp "B" Profile, See Sheet No. 126
4. For Ramp "B" Pavement Details, See Sheet No. 141
5. For Ramp "C" Plan, See Sheet No. 130
6. For Ramp "C" Profile, See Sheet No. 131
7. For Ramp "C" Pavement Details, See Sheet No. 143

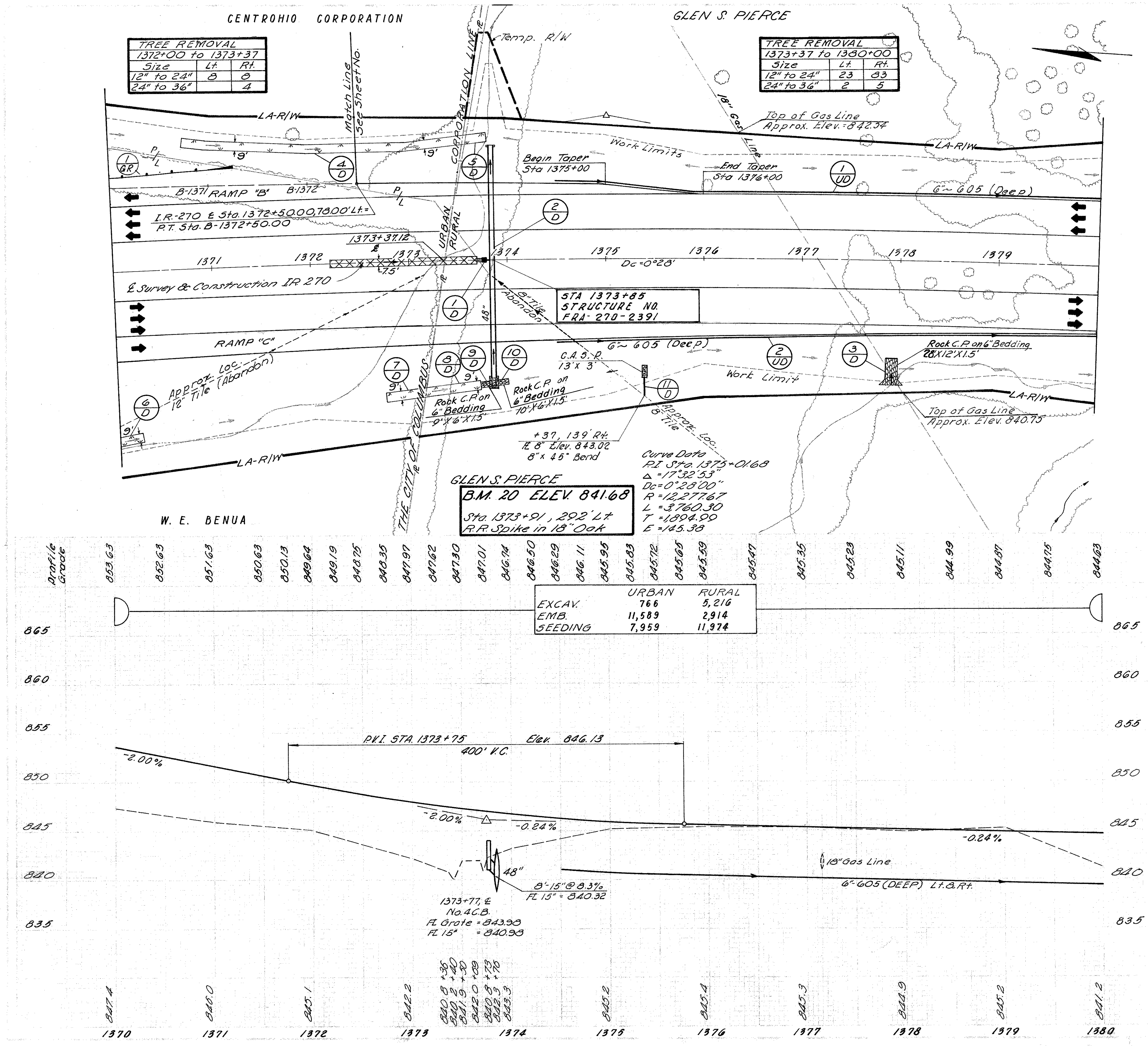
REF.	STATION TO STATION	SIDE	601 Rock C.P. TYPE 'B'	603 TYPE B	604 No. 4 CATCH BASIN	604 No. 6 C.B. AS PER PLAN	602 CONC. MASONRY	660 SODDING	667 JUTE MATTING	SEE DETAIL SHEET No.
				15"						
			C.Y.	L.F.	Ea.	Ea.	C.Y.	S.Y.	S.Y.	
1-D	1369+46	℄		75	1				125	60
2-D	1368+96 to 1369+46	Rt.		50		1				60
3-D	1369+46	Rt.	9	86		1	0.3			60
4-D	1369+89, 187' Rt. to 162'	Rt.	24							
5-D	1368+75 to 1369+43	Rt.						68		
6-D	1369+49 to 1369+83	Rt.						34		
7-D	1369+95 to 1370+00	Rt.						5		
TOTALS			33	211	1	2	0.3	107	125	

REF.	STATION TO STATION	SIDE	606 GUARD RAIL TYPE 5	601 C.A.S.P.	603 TYPE F	603 TYPE E	606 ANCHOR ASSEMBLY				See Detail Sheet No.
					12"	12"					
			L.F.	S.Y.	L.F.	L.F.	EA.				
1-GR	1369+75 to 1370+00	Lt.	25				1				
8-D	1369+25	Rt.		2	10	4					60
TOTALS			25	2	10	4	1				

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: WDK 9/2/68
CHK: REH 10-1-68





TREE REMOVAL		
1372+00 to 1373+37		
Size	Lt.	Rt.
12" to 24"	8	8
24" to 36"		4

TREE REMOVAL		
1373+37 to 1380+00		
Size	Lt.	Rt.
12" to 24"	23	33
24" to 36"	2	5

NOTES:
1 For Ramp Geometric Layout, See Sheet No. 83
2 For Ramp "B" Plan, See Sheet No. 125
3 For Ramp "B" Profile, See Sheet No. 126
4 For Ramp "B" Pavement Details, See Sheet No. 141
5 For Ramp "C" Plan, See Sheet No. 130
6 For Ramp "C" Profile, See Sheet No. 131
7 For Ramp "C" Pavement Details, See Sheet No. 142

‡ RURAL

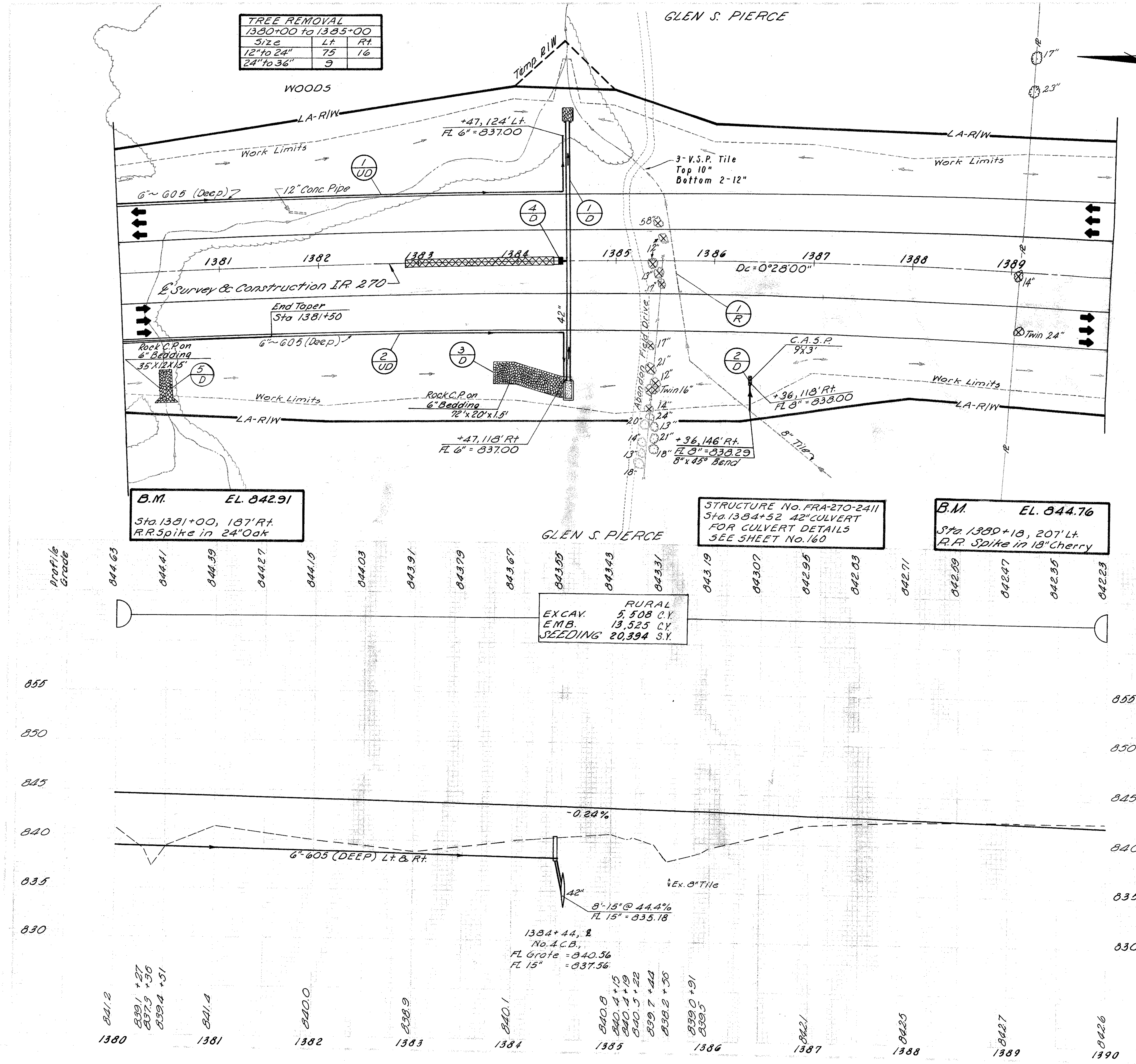
REF.	STATION TO STATION	SIDE	601 Riprap ‡	601 Rock C.P. Type "B" ‡	602 Conc. Masonry ‡	603 Type E ‡	603 Type "A" 706.02 ‡	604 No.4 Catch Basin ‡	660 Sodding ‡	660 Sodding	667 ‡ Jute Matting	Bends & Branches	See Detail Sheet No.
						15"	48"					48"	
			S.Y.	C.Y.	C.Y.	L.F.	L.F.	Ea.	S.Y.	S.Y.	S.Y.		
1-D	1373+77	℄				8		1			125	1	61
2-D	1373+85	℄	14		1.8		236		3				189
3-D	1377+93, 127' Rt. to 99' Rt.	Rt.		26									62
4-D	1370+75 to 1373+57	Lt.								282			
5-D	1373+57 to 1373+83	Lt.							26				
6-D	1370+00 to 1370+25	Rt.								25			
7-D	1372+75 to 1373+15	Rt.								40			
8-D	1373+15 to 1373+71	Rt.							56				
9-D	1373+71 to 1373+80	Rt.		4									
10-D	1373+90 to 1374+00	Rt.		5									
	TOTALS (RURAL)		14	35	1.8	8	236	1	85		125		
	TOTALS (URBAN)									347			

REF.	STATION TO STATION	SIDE	603 Type F ‡	603 Type C ‡	605 Deep ‡	606 Guard Rail Type 5	606 Appr. End Assembly	601 C.A.S.P. ‡
			8"	8"	6"			
			L.F.	L.F.	L.F.	L.F.	Ea.	S.Y.
1-UD	1374+50 to 1380+00	Lt.			550			
2-UD	1374+50 to 1380+00	Rt.			550			
1-GR	1370+00 to 1371+25	Lt.				125	1	
11-D	1375+37	Rt.	10	8				5
	TOTALS (RURAL)		10	8	1100			5
	TOTALS (URBAN)					125	1	

Ex. Ground
Profile
Topo.
B.M.
Ref.
Plotted
Ck.
Inked

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: [illegible] 9/21/68
CHK: R.E.H. 10-1-68



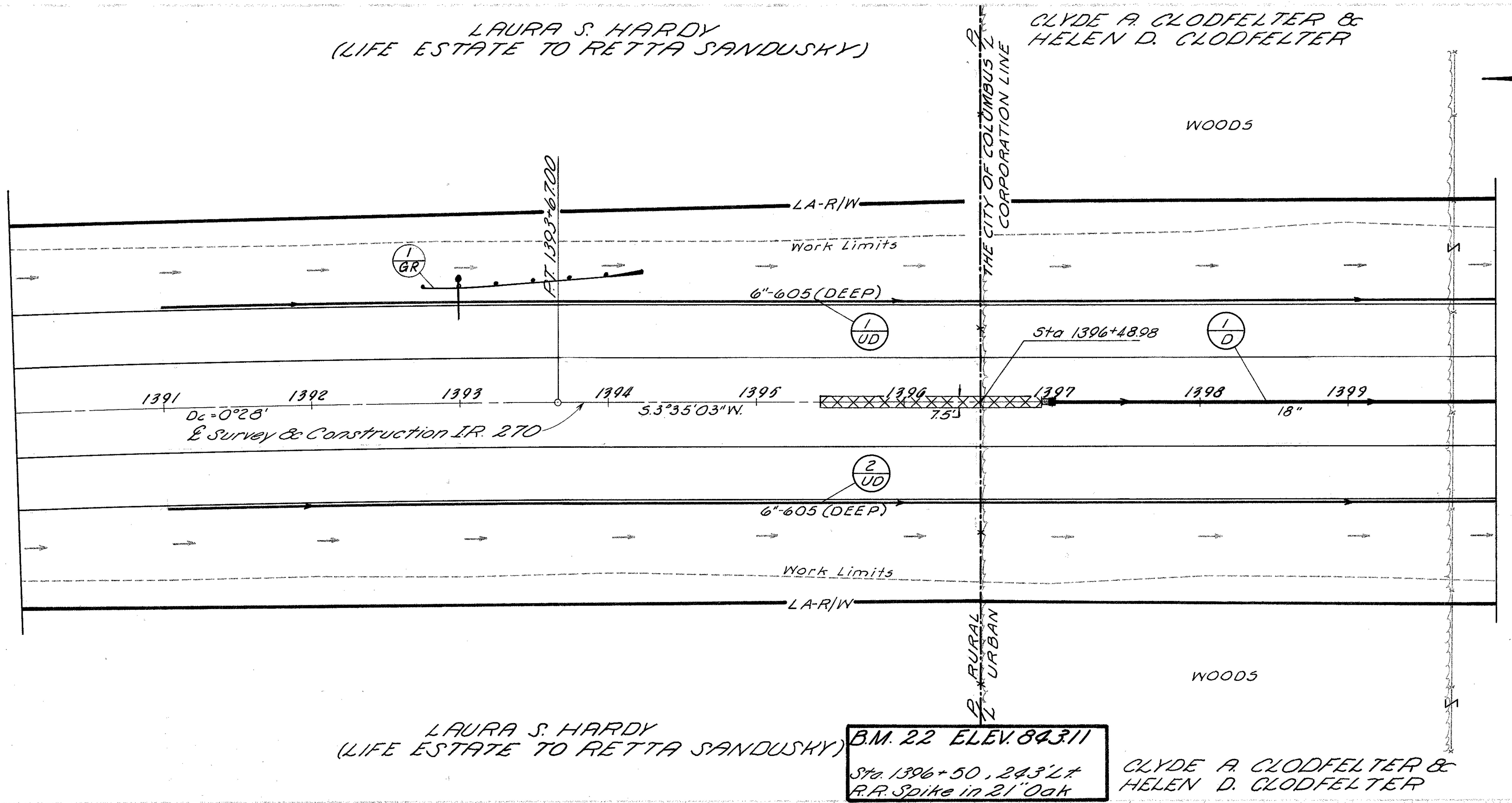
‡ RURAL

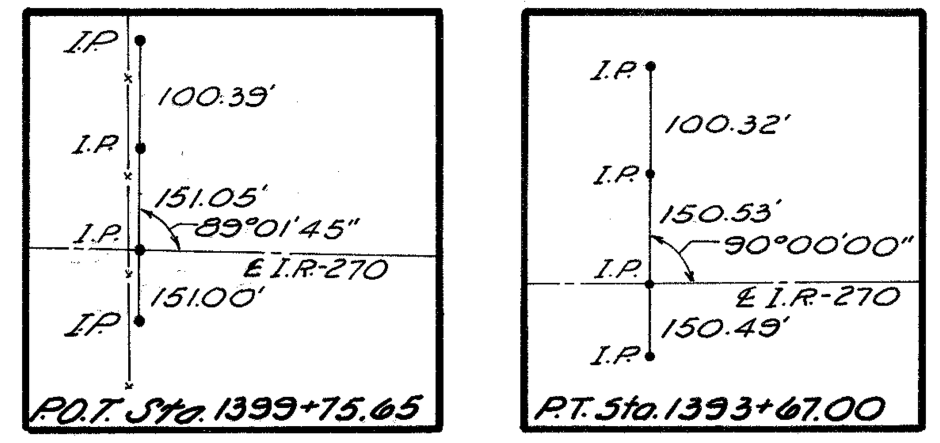
REF.	STATION TO STATION	SIDE	601 ‡ Rock C.P.	601 TYPE "B" ‡ RIP RAP	‡ C.A.S.P.	602 CONC. MASONRY ‡	603 TYPE "A" 706.02 ‡	603 TYPE E ‡	603 TYPE "F" ‡	603 TYPE "C" ‡	604 No. 4 CATCH BASIN ‡	660 SODDING ‡	667 JUTE MATTING ‡	BENDS & BRANCHES		SEE DETAIL SHEET No.
							42"	8"	8"	15"				42"	8"	
			C.Y.	S.Y.	S.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	Ea.	S.Y.	S.Y.			
1-D	1384+52	℄	15	19		1.6	256									
2-D	1386+36	Rt.			3							5		1		190
3-D	1383+75 to 1384+47	Rt.	107					18	10						1	65
4-D	1384+44	℄														
5-D	1380+41, 98' Rt. to 133' Rt.	Rt.	33							8	1		125			64
	TOTALS (RURAL)		155	19	3	1.6	256	18	10	8	1	5	125			

REF.	STATION TO STATION	SIDE	202 PIPE ‡ REMOVAL 24" & UNDER		603 TYPE "F" ‡	605 DEEP ‡			BENDS & BRANCHES	UNDER DRAIN OUTLET DETAIL
					6"	6"			6"	
			L.F.		L.F.	L.F.				
1-UD	1380+00 to 1384+47	Lt.			10	493			1	F
2-UD	1380+00 to 1384+47	Rt.			10	487			1	F
1-R	1385+15 to 1386+29	Lt. & Rt.	332							
	TOTALS (RURAL)		332		20	980				

FRANKLIN COUNTY
FRA - 270 - 22.99 N

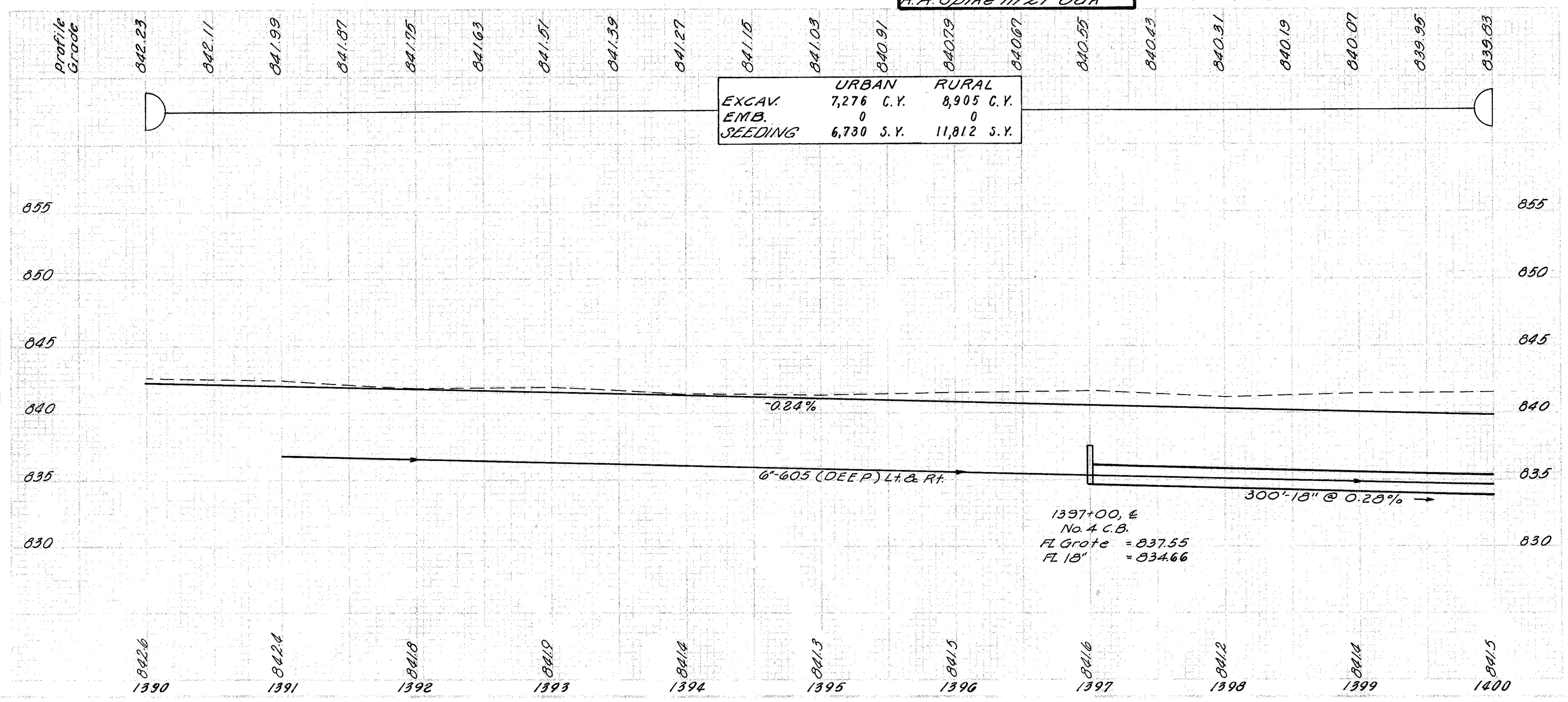
CALC: WOK 9/23/68
CHK: R.E.H. 10-1-68





TREE REMOVAL

1396+45 to 1399+70		
Size	Left	Right
12" to 24"	48	42
24" to 36"	19	8
36" to 60"		2
Over 60"		



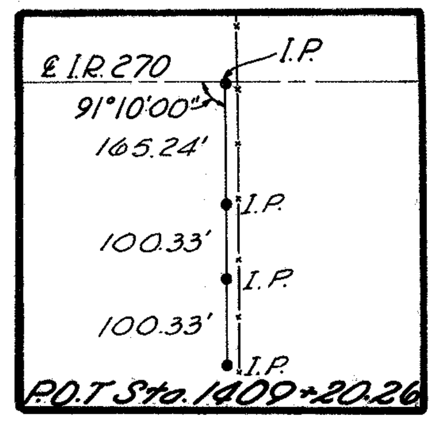
‡ RURAL

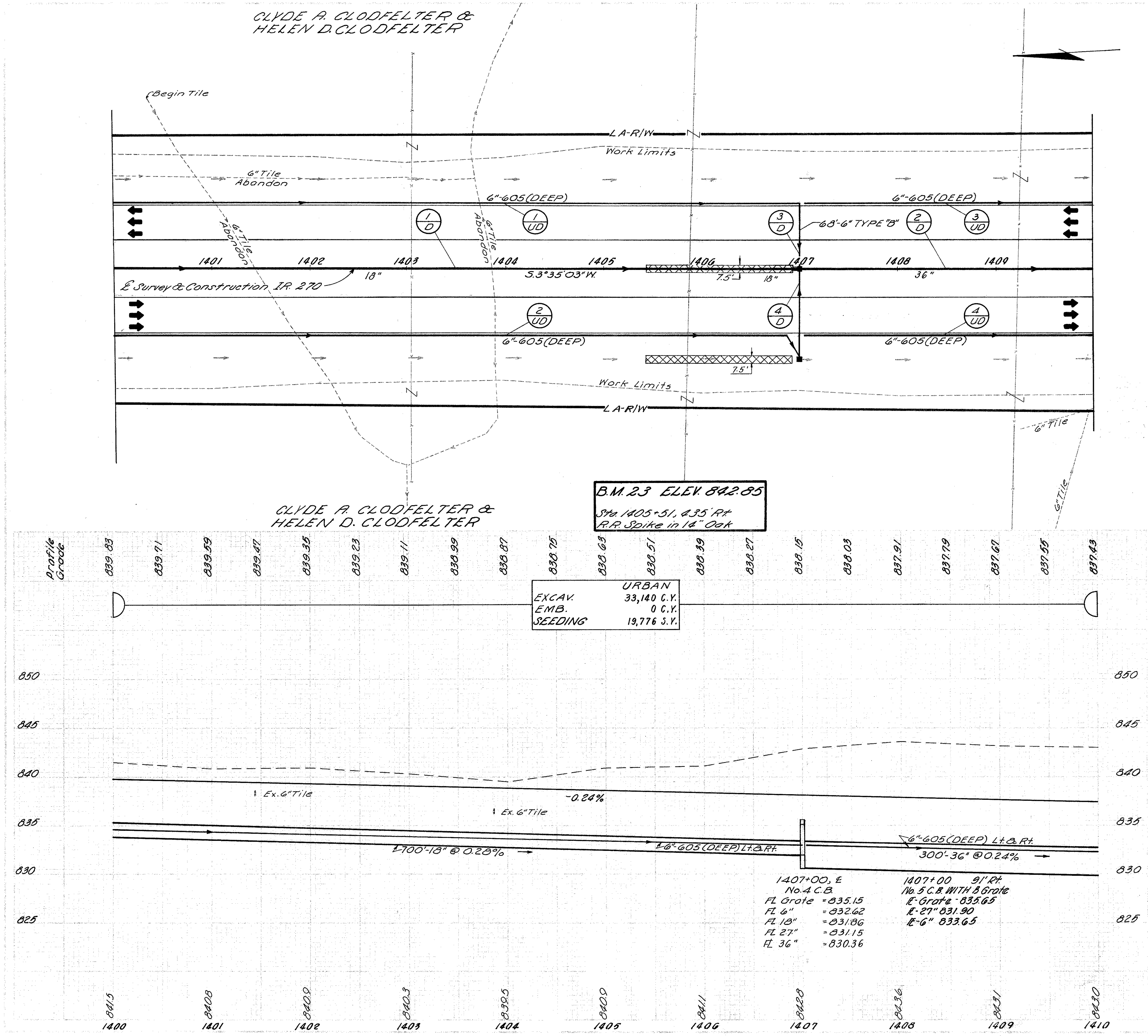
REF.	STATION TO STATION	SIDE		603 TYPE "C"				604 No. 4 CATCH BASIN	667 JUTE MATTING	SEE DETAIL SHEET No.
				18"						
				L.F.				Ea.	S.Y.	
1-D	1397+00 to 1400+00	℄		300				1	125	67-68
	TOTALS (URBAN)			300				1	125	

REF.	STATION TO STATION	SIDE		605 DEEP	605 DEEP ‡	606 GUARD RAIL TYPE 5	606 APPR. END ASSEMBLY	606 ANCHOR ASSEMBLY			
				6"	6"						
				L.F.	L.F.	L.F.	Ea.	Ea			
1-UD	1391+00 to 1400+00	Lt.		351	549						
2-UD	1391+00 to 1400+00	Rt.		351	549						
1-GR	1392+75 to 1394+25	Lt.				150	1	1			
	TOTALS (URBAN)			702							
	TOTALS (RURAL)				1098	150	1	1			

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W. D. B. 9/23/68
CHK: R. E. H. 10-1-68





** With "B" Grate

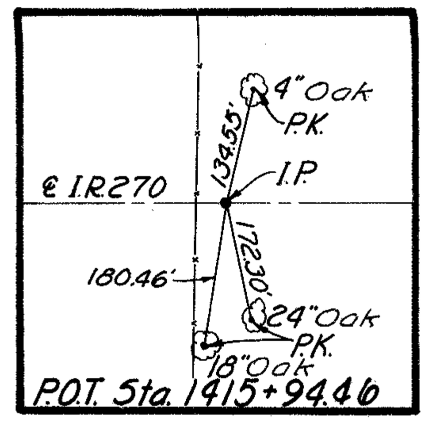
REF.	STATION TO STATION	SIDE	603 TYPE "C" 18" L.F.	603 TYPE "C" 36" L.F.	603 TYPE "B" 6" L.F.	603 TYPE "B" 27" L.F.	604 No. 4 C.B. Ea.	604 No. 5 C.B. ** Ea.	667 JUTE MATTING S.Y.	BENDS & BRANCHES 6"	SEE DETAIL SHEET No.
1-D	1400+00 to 1407+00	E	700								68-70
2-D	1407+00 to 1410+00	E		300			1		125		70
3-D	1407+00	Lt.			68						70
4-D	1407+00	Rt.				91		1	125		70
	TOTALS		700	300	68	91	1	1	250		

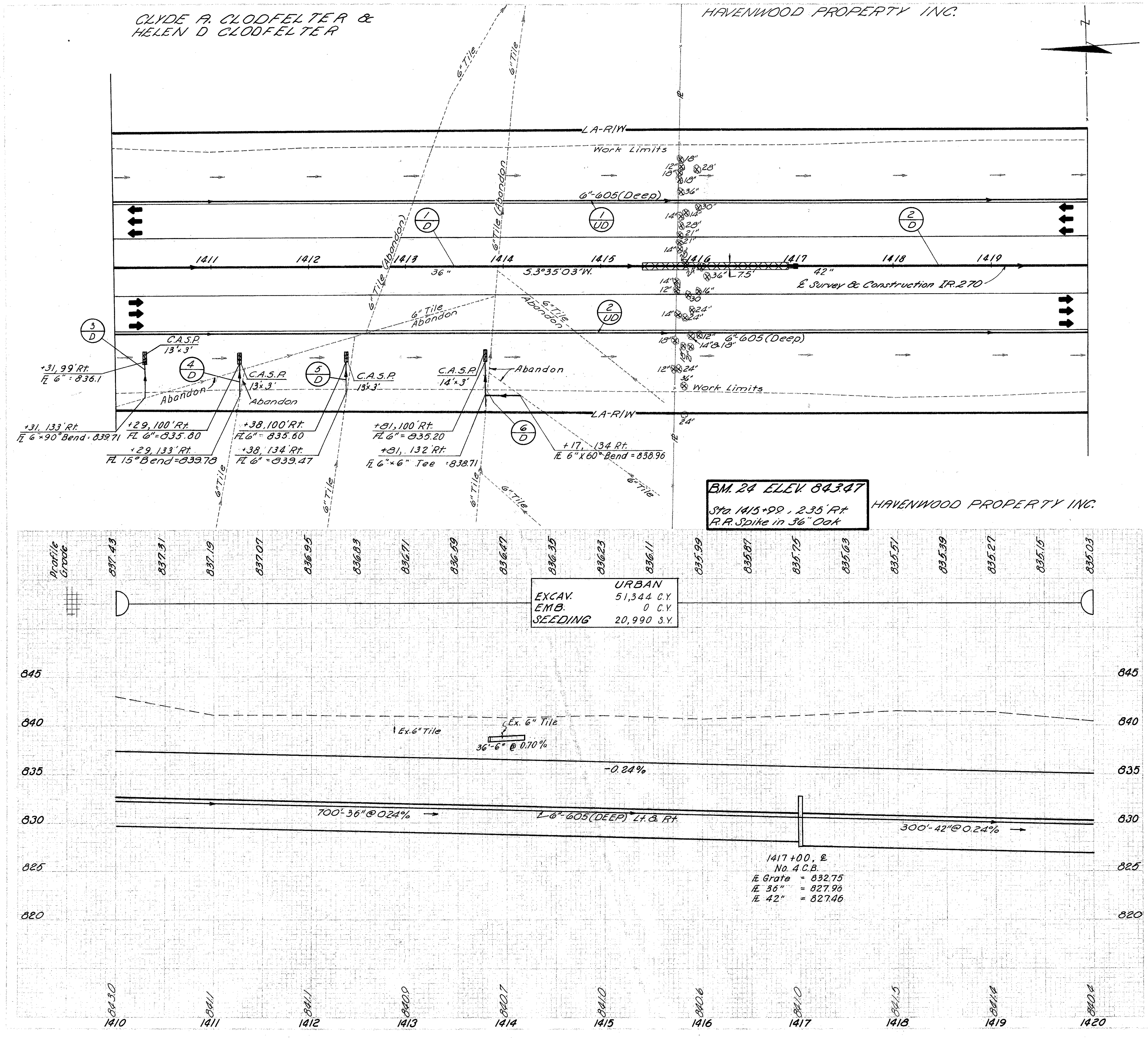
REF.	STATION TO STATION	SIDE	605 DEEP 6" L.F.	603 TYPE F 6" L.F.	BENDS & BRANCHES 6"	UNDERDRAIN OUTLET DETAIL
1-UD	1400+00 to 1407+00	Lt.	700		1	D
2-UD	1400+00 to 1407+00	Rt.	704	10	1	B
3-UD	1407+04 to 1410+00	Lt.	296			
4-UD	1407+04 to 1410+00	Rt.	296			
	TOTALS		1996	10		

STA 1400+00 TO STA 1410+00

FRANKLIN COUNTY
FRA-270-22.99 N

W.D.B. 9/23/68
CHK. R.E.W. 10-1-68





TREE REMOVAL

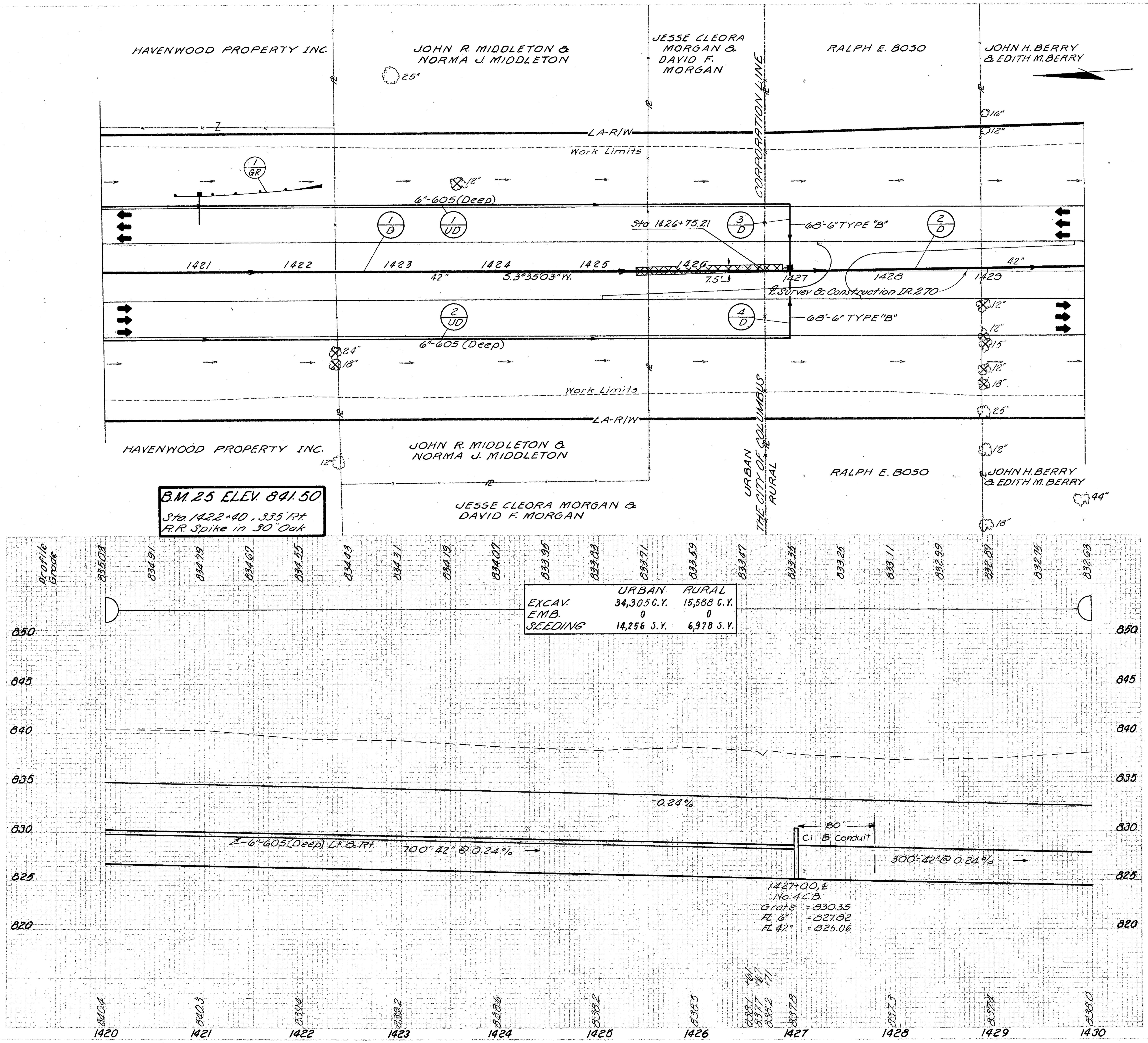
1410+00 to 1420+00		
Size	Lt.	Rt.
12" to 24"	9	15
24" to 36"	5	3
36" to 60"		
Over 60"		

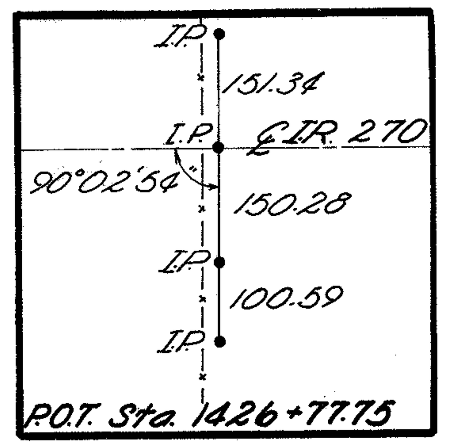
REF.	STATION TO STATION	SIDE	601 C.A.S.P.	603 TYPE "E"	603 TYPE "F"	603 TYPE "C"	603 TYPE "C"	604 No. 4 CATCH BASIN	667 JUTE MATTING	BENDS & BRANCHES	SEE DETAIL SHEET No.
				6"	6"	36"	42"			6"	
			S.Y.	L.F.	L.F.	L.F.	L.F.	Ea.	S.Y.		
1-D	1410+00 to 1417+00	℄				700					70-72
2-D	1417+00 to 1420+00	℄					300	1	125		72-73
3-D	1410+31	Rt.	5	8	26					3	70
4-D	1411+29	Rt.	5	6	27					3	71
5-D	1412+38	Rt.	5	6	28					2	71
6-D	1413+81	Rt.	5	42	27					4	71
	TOTALS		20	62	108	700	300	1	125		

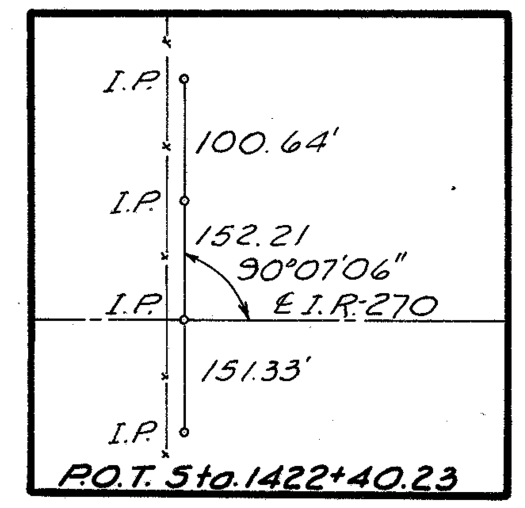
REF.	STATION TO STATION	SIDE	605 DEEP
			6"
			L.F.
1-UD	1410+00 to 1420+00	Lt.	1000
2-UD	1410+00 to 1420+00	Rt.	1000
	TOTALS		2000

FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D.B. 9/24/68
CHK: R.E.H. 10-1-68







TREE REMOVAL

1420+00 to 1430+00		
Size	Lt. of ℄	Rt. of ℄
12" to 24"	1	7
24" to 36"		
36" to 60"		
Over 60"		

NOTE: For Median Cross over Detail See Sheet No. 13

‡ RURAL

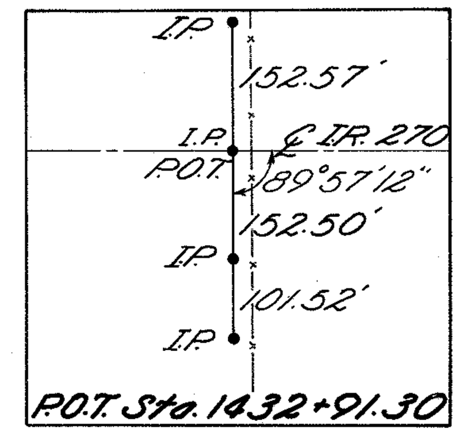
REF.	STATION TO STATION	SIDE		603 TYPE "B" ‡	603 TYPE "C"	603 TYPE "C" ‡	TYPE "B" ‡	604 No. 4 CATCH BASIN ‡	667 JUTE MATTING ‡	SEE DETAIL SHEET No.
				6"	42"	42"				
				L.F.	L.F.	L.F.		Ea.	S.Y.	
1-D	1420+00 to 1427+00	℄			675	25				73-75
2-D	1427+00 to 1430+00	Lt.				220	80	1	125	75
3-D	1427+00	Lt.		68						75
4-D	1427+00	Rt.		68						75
	TOTALS (URBAN)				675					
	TOTALS (RURAL)			136		245	80	1	125	

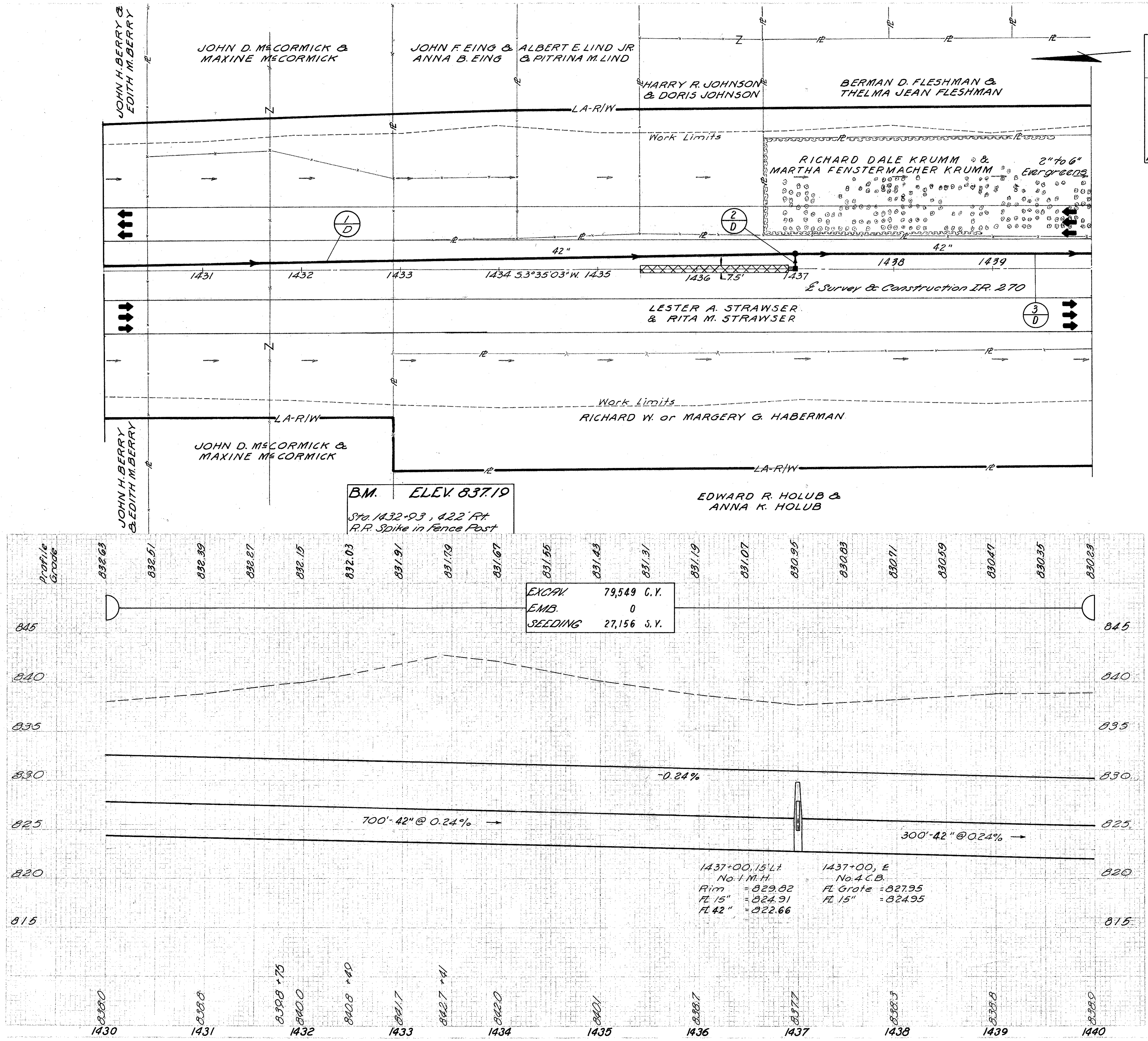
REF.	STATION TO STATION	SIDE		605 DEEP	605 DEEP ‡		606 GUARD RAIL TYPE 5	APPR. END ASSEMBLY	ANCHOR ASSEMBLY	BENDS & BRANCHES	UNDER DRAIN OUTLET DETAIL
				6"	6"					6"	
				L.F.	L.F.		L.F.	Ea.	Ea.		
1-UD	1420+00 to 1427+00	Lt.		675	25					1	D
2-UD	1420+00 to 1427+00	Rt.		675	25					1	D
1-GR	1420+75 to 1422+25	Lt.					150	1	1		
	TOTALS (URBAN)			1350			150	1	1		
	TOTALS (RURAL)				50						

FED. AID DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W.D.G. 9/24/68
CHK: R.E.H. 10-1-68





‡ RURAL

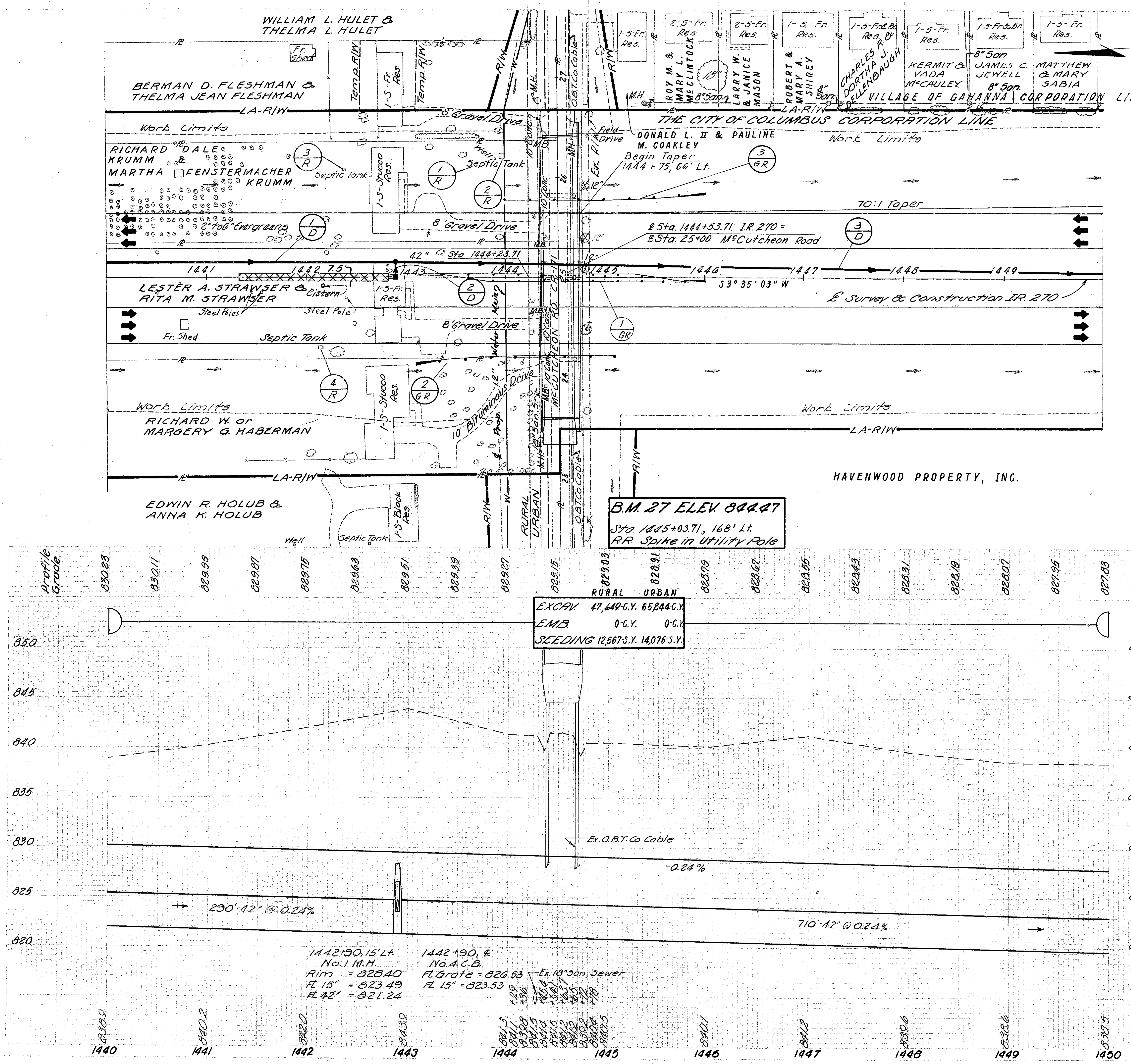
REF.	STATION TO STATION	SIDE		603 TYPE "C" ‡	603 TYPE "C" ‡		604 No. 1 MAN-HOLE ‡	604 No. 4 CATCH BASIN ‡	667 JUTE MATTING *	SEE DETAIL SHEET No.
				15"	42"					
				L.F.	L.F.		Ea.	Ea.	S.Y.	
1-D	1430+00 to 1437+00	Lt.			700					75-77
2-D	1437+00	℄		15				1	125	77
3-D	1437+00 to 1440+00	Lt.			300		1			77-78
	TOTALS (RURAL)			15	1000		1	1	125	

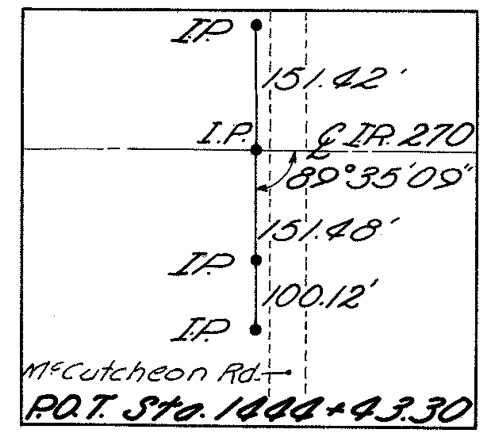
REF.	STATION TO STATION	SIDE								
	TOTALS									

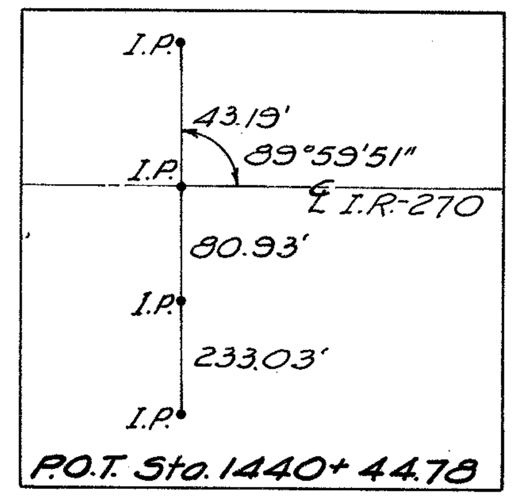
STA 1430+00 TO STA 1440+00

FRANKLIN COUNTY
FRA-270 - 22.99 N

CALC: [illegible] 9/25/68
CHK: REH 10-1-68







For McCutcheon Road Plan & Profile, 12" Water Main, and Cross Sections See Sheet No's 160-165

TREE REMOVAL 1440+00 to 1450+00		
SIZE	Lt.	Rt.
12" to 24"	3	
24" to 36"		
36" to 60"		
Over 60"		

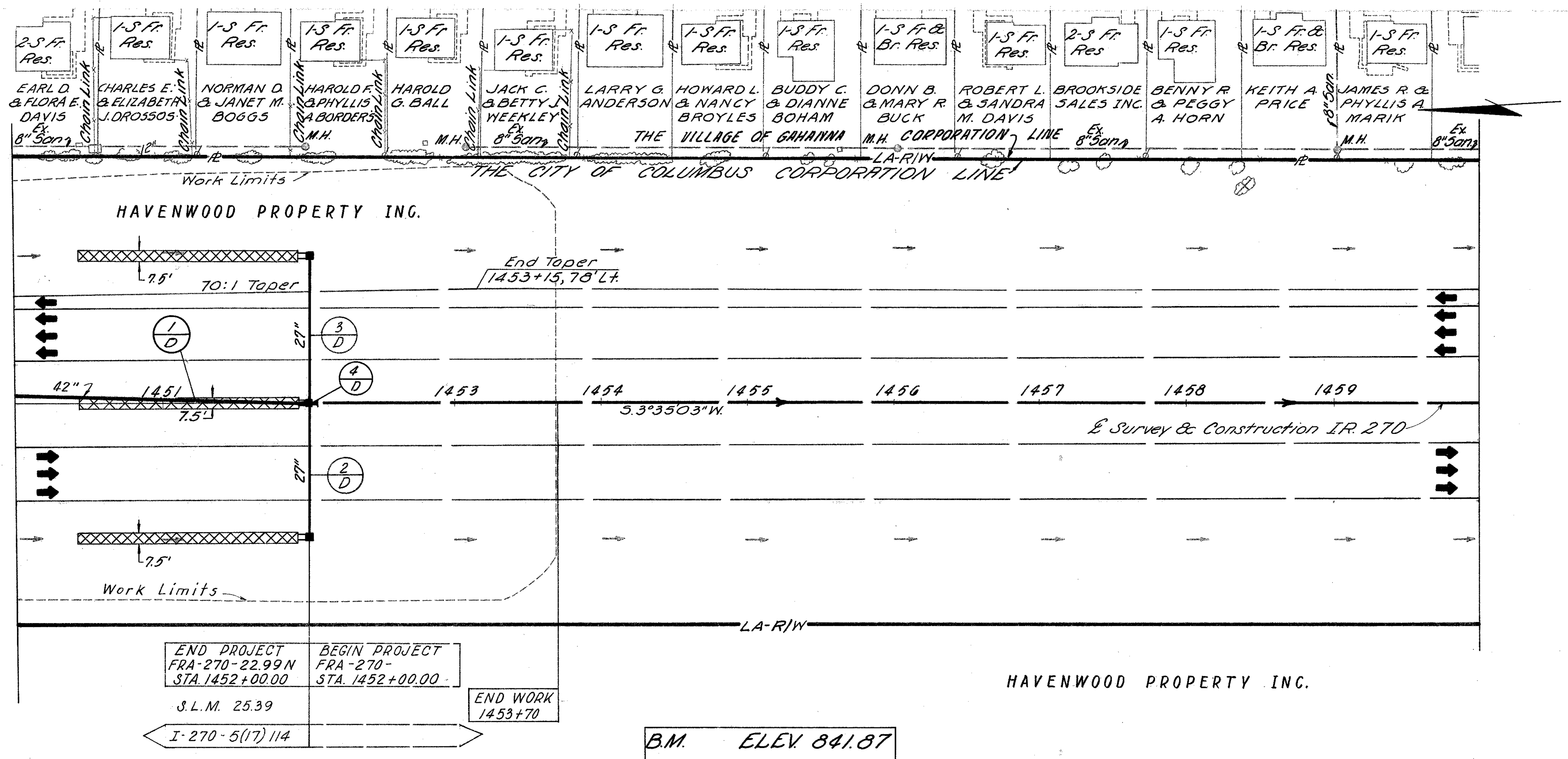
‡ RURAL

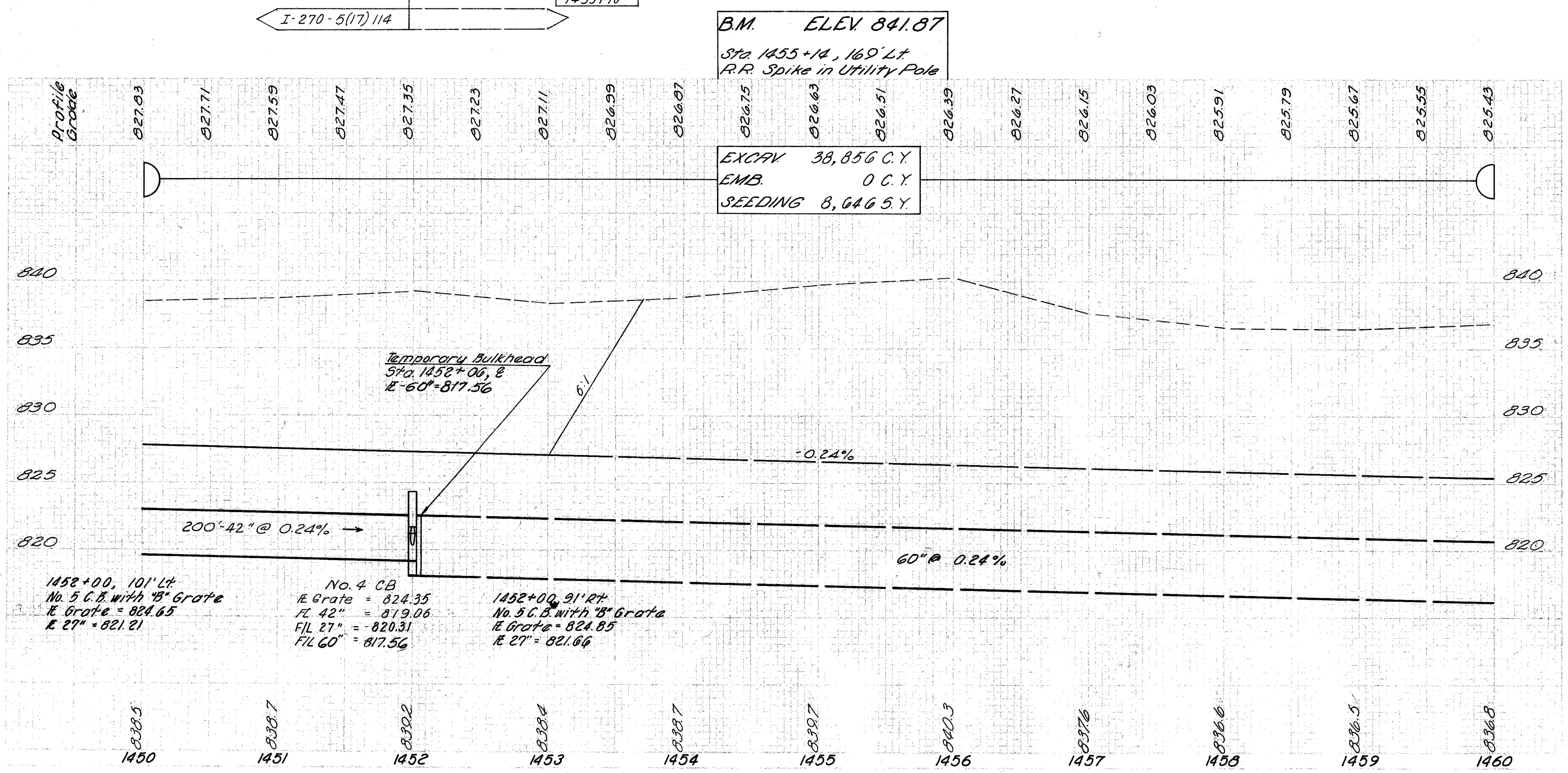
REF.	STATION TO STATION	SIDE		603 TYPE "C" ‡	603 TYPE "C" ‡	603 TYPE "C"	604 No. 1 MAN-HOLE ‡	604 No. 4 CATCH BASIN ‡	667 JUTE MATTING ‡	SEE DETAIL SHEET No.
				15"	42"	42"				
				L.F.	L.F.	L.F.	Ea.	Ea.	S.Y.	
1-D	1440+00 to 1442+90	Lt.			290					78-79
2-D	1442+90	℄		15				1	125	79
3-D	1442+90 to 1450+00	Lt.			134	576	1			79-80
TOTALS (URBAN)						576				
TOTALS (RURAL)				15	424		1	1	125	

REF.	STATION TO STATION	SIDE	SPECIAL DRILLED WELL ABANDON ‡	SPECIAL DISPOSAL REMOVAL SEPTIC TANK ‡		606 GUARD RAIL TYPE 5 ‡	606 GUARD RAIL TYPE 5	BAR. RAIL ‡	BAR. RAIL	APPR. END ASSEMBLY ‡	APPR. END ASSEMBLY	ANCHOR ASSEMBLY ‡	ANCHOR ASSEMBLY
			Ea.	Ea.		L.F.	L.F.			Ea.	Ea.	Ea.	Ea.
1-R	1443+90	Lt.	1										
2-R	1443+96	Lt.		1									
3-R	1442+39	Lt.		1									
4-R	1442+15	Rt.		1									
1-GR	1443+11 to 1445+98.5	℄				201	324	25	25	2	2		
2-GR	1443+11 to 1445+11	Rt.				115	85				1	1	
3-GR	1443+99 to 1445+99	Lt.				25	175			1			1
TOTALS (Rural)			1	3		341		25		3		1	
TOTALS (Urban)							584		25		3		1

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W.D.B. 9/25/68
CHK: R.E.H. 10-1-68





NOTES:

1. Cost for Temporary Bulkhead should be included in the unit price bid for Item 603-60" Conduit.
2. Typical Section on adjacent job will be similar to FRA-270-22.99 N.
3. Construct a Standard Construction Joint with protruding Steel protected as directed by the Engineer at Station 1452+00

* * With "B" Grate

REF	STATION TO STATION	SIDE		603 TYPE "B"	603 TYPE "C"	603 TYPE "C"	604 No. 4 CATCH BASIN	604 No. 5 CATCH BASIN * *	667 JUTE MATTING	SEE DETAIL SHEET No.
				27"	42"	60"				
				L.F.	L.F.				S.Y.	
1-D	1450+00 to 1452+00	Lt.			200		1		125	81
2-D	1452+00	Rt.		91				1	125	81
3-D	1452+00	Lt.		101				1	125	81
4-D	1452+00 to 1452+06	℄				6				81
	TOTALS			192	200	6	1	2	375	

REF	STATION TO STATION	SIDE								
	TOTALS.									

REV. 7-1-69

STA 1450+00 TO STA 1460+00

FRANKLIN COUNTY
FRA.-270-22.99N

CALC: 6-68
CHK: 6/68

STA. 1323+00 TO STA. 1325+00

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: [illegible] 6-68
CHK: [illegible] June '61

STRUCTURE No.	FRA-270-23.04
STA. 1327+50	60" CULVERT

See Sheet No. 188 for Culvert Details


48
292
FRANKLIN COUNTY
FRA-270-22.99 N
R/W @ 188'
MATCH LINE STA. 1333+00
C-273
844.2
LA-R/W
C-510
853.3
855.69
1333+00
855.8
MATCH LINE STA. 1332+00
CALC: 6-68
CHK: June '68
R/W
C-309
844.0
C-604
853.1
856.16
1332+00
856.5
MATCH LINE STA. 1331+00
C-344
843.8
C-572
852.8
856.74
1331+00
857.2
MATCH LINE STA. 1330+00
C-368
843.6
C-57
F-6
F-6
C-30
F-8
C-207
852.6
857.50
1330+00
856.6
1329+00
1329+00
MATCH LINE
2412
2544
2656
2856
783 0
3141 0
3387 0
913 0
916 0
2922 37
662 20
2242 633
549 322
STA 1330+00 TO STA 1333+00

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: R.Q. 6-68
CHK: J.P. June '68

FRANKLIN COUNTY
FRA-270-22.99 N

STA 1338+00 TO STA 1341+00

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: [illegible] 6-68
CHK: J.P. June '68


52
292
FRANKLIN COUNTY
FRA-270-22.99 N
CALC: [illegible] 6-68
CHK: [illegible] June '68
LA-R/W @ 250'
R/W @ 249'
MATCH LINE STA. 1347+00
C-60
F-35
849.0
F-65
C-170
847.0
LA-R/W
48:1
2:1
6:1
1347+00 Ahead 0 1415
Area Ahead
A-1347+00 Ramp "A"
I.R. 270
D-1346+98 Ramp "D"
F-354
F-1415
F-310
861.0
Area Back
MATCH LINE
863.08
1347+00
853.7
1347+00 Ahead
1347+00 Back
1347+00 Back 230 2179
65
345
LA-R/W @ 211'
R/W @ 230'
MATCH LINE STA. 1346+00
C-44
F-21
849.2
F-4
C-183
846.8
846 7324
3478
281
F-1751
861.68
1346+00
853.6
227 1776
LA-R/W @ 203'
R/W @ 210'
MATCH LINE STA. 1345+00
C-44
F-9
849.4
C-198
846.6
878 5548
3144
266
F-1211
C-5
860.28
1345+00
854.8
247 1220
2889
994 3322
1344+00
1344+00 290 574
254
STA 1345+00 TO STA 1347+00

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: [illegible] 6-68
CHK: J.P. June '69

Ex. Ground | Template | Plan | Earthwork Quant. | Seeding Quant.
Plotted | Ck | Inked

54
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: RA 6-68
CHK: JP June '68

STA 1351+00 TO STA 1353+00

STRUCTURE No. FRA-270-2356 N
IR 270 OVER MORSE ROAD

55
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: R.G. 4-6-68
CHK: J.P. June '68

Ex. Ground | Template | Plan. | Earthwork Quant. | Sanitary Quant.
Plotted | Ck. | Inked

STA 1354+00 TO STA 1354+85

FRANKLIN COUNTY
FRA-270-22.99 N

STA 1357+25 TO STA 1359+00

57
292
FRANKLIN COUNTY
FRA-270-22.99 N
CALC: Pd 6-68
CHK: J.P. June '68
I.R.270 RAMP "C"
MATCH LINE STA. 1362+00
F-140
F-64
856.0
F-4202
867.98
1362+00
850.0
+40 Ahead
MATCH LINE STA. 1361+00
C-23
848.9
F-183
+40 Back
F-204
852.3
1361+40 Ahead
1361+40 Back
F-4309
869.05
1361+00
850.9
MATCH LINE STA. 1360+00
C-20
849.3
F-198
F-237
F-4513
869.92
1360+00
850.6
1359+00
STA 1360+00 TO STA 1362+00

FRANKLIN COUNTY
FRA - 270 - 22.99 N

STA 1363+00 TO STA 1365+00

FRANKLIN COUNTY
FRA-270-22.99 N

STA 1366+00 TO STA 1368+00

60
292
FRANKLIN COUNTY
FRA-270-22.99 N
CALC: 6-68
CMK: June '68
LA-R/W @ 155'
LA-R/W @ 198'
MATCH LINE STA. 1371+00
C-23
6:1
845.3
F-1055
C-17
F-3
841.3
851.63
1371+00
846.0
LA-R/W @ 168'
C-20
845.5
MATCH LINE STA. 1370+00
LA-R/W @ 208'
Swale
F-18
C-25
841.5
MATCH LINE
C-11
F-1250
853.63
1370+00
847.4
75' 15" Type B @ 0.50%
1369+46 ℄
No. 4 C.B.
FL Grate = 851.71
FL 15" = 848.71
1369+46; 75' Rt.
No. 6 C.B. As Per Plan
FL Grate = 854.20
FL 15"E = 848.33
FL 15"N = 850.64
86' 15" Type B @ 6.20%
Rock C.P. on
6" Bedding
19'×6'×1 1/2'
842.4
FL 15" = 843.0
HW-E Endwall
LA-R/W @ 185'
C-52
845.7
MATCH LINE STA. 1369+00
1369+46
F-1631
1368+96; 76' Rt.
No. 6 C.B. As per plan.
FL Grate 855.14
FL 15" 851.64
855.63
1369+00
848.2
FL 12" = 842.5
+25-14"-12" @ 0.20%
LA-R/W @ 216'
F-19
C-54
C.A.S.P.
6×3'
842.5
1368+00
224
2511
228
2667
252
2694
233
40 1058
178 4307
56 1268
300 5407
106 1650
381 7993
100 2266
Ex. Ground
Template
Plan
Earthwork Quant.
Seeding Quant.
Plotted
Checked
STA 1369+00 TO STA 1371+00

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: F.A. 6-68
CHK: J.P. June 68

170		307 2
1984		817 846
187		134 455
		24 4
1346		300 1406
792		176 824
198		123 749
2256		283 2043
208		30 840
2400		129 3515
224		40 1058

62
292
FRANKLIN COUNTY
FRA-270-22.99 N
CALC: RA 6-68
CHK: JP June '68
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
142
850
840
LA-R/W
C-282
6:1
842.6
8:1
8:1
840.4
850
840
282 0
1616
844.87
1379+00
845.2
802 102
149
LA-R/W
C-136
F-55
8:1
C-15
6:1
842.9
8:1
840.8
6:1
18" Gas Line
LA-R/W
151 55
1694
845.11
1378+00
844.9
Swale
+93 Rock C.P.
on 6" Bedding
28'×12'×1½'
18" Gas Line
691 102
156
LA-R/W
C-60
C-162
6:1
8:1
843.1
18" Gas Line
8:1
843.0
6:1
222 0
1778
845.35
1377+00
845.3
880 0
164
LA-R/W
C-253
D/D
6:1
843.3
8:1
8:1
844.2
6:1
253 0
1856
845.59
1376+00
845.4
1037 4
170
1375+00
1375+00
307 2
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
Ex. Ground
Template
Plan
Earthwork Quant.
Seeding Quant.
Plotted
Ck'd
Inked
RGM
STA 1376+00 TO STA 1379+00

63
292

FRANKLIN COUNTY
FRA-270-22.99 N

STA 1380+00 TO STA 1383+00

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: J.J. June '68
CHK: 6-68

65
292

FRANKLIN COUNTY
FRA - 270 - 22.99N

CALC: JL June '68
CHK: [illegible] 6-68

STA. 1387+00 TO STA. 1390+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: J.P. June '68
CHK: 6-68

STA 1391+00 TO STA 1394+00

STA. 1395+00 TO STA. 1398+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: JP June '68
CHK: RB 6-68

STA. 1399+00 TO STA. 1402+00

FRANKLIN COUNTY
FRA-270-22.99N

STA. 1403+00 TO STA. 1406+00

70
292

FRANKLIN COUNTY
FRA.-270-22.99N

CALC: 6-68
CHK: 6-68

STA 1407+00 TO 1410+00

FRANKLIN COUNTY
FRA.-270-22.99N

CALC: 6-68
CHK: 6-68

FRANKLIN COUNTY
FRA-270-22.99N

CALC:
CHK:

STA. 1415+00 TO STA. 1418+00

STA. 1419+00 TO STA. 1422+00

76
292

FRANKLIN COUNTY
FRA. - 270 - 22.99N

CALC. JP June '68
CHK. RG 6-68

STA. 1423+00 TO STA. 1426+00

FRANKLIN COUNTY
FRA.-270 -22.99N

CALC: J.P. June '68
CHK: [illegible] 6-68

76
292

FRANKLIN COUNTY
FRA.-270-22.99N

CALC: J.F. June '68
CHK: R.A. 6-68

STA. 1431+00 TO STA. 1434+00

FRANKLIN COUNTY
FRA.-270-22.99N

STA. 1435+00 TO STA. 1438+00

78
292

FRANKLIN COUNTY
FRA.-270-22.99N

CALC: J.P. June '68
CHK: R.A. 6-68

STA. 1439+00 TO STA. 1442+00

FRANKLIN COUNTY
FRA.-270 - 22.99N

CALC: [illegible] 6-68
CHK: [illegible] 10/68

Ex. Ground
Template
Sfsn.
Earthwork Quant.
Seeding Quant.
Plotted
Ck.
Inked

STA. 1443+00 TO STA. 1446+00

FRANKLIN COUNTY
FRA.-270-22.99N

STA 1447+00 TO STA 1450+00

FRANKLIN COUNTY
FRA.-270 - 22.99 N

REV. 7-1-69

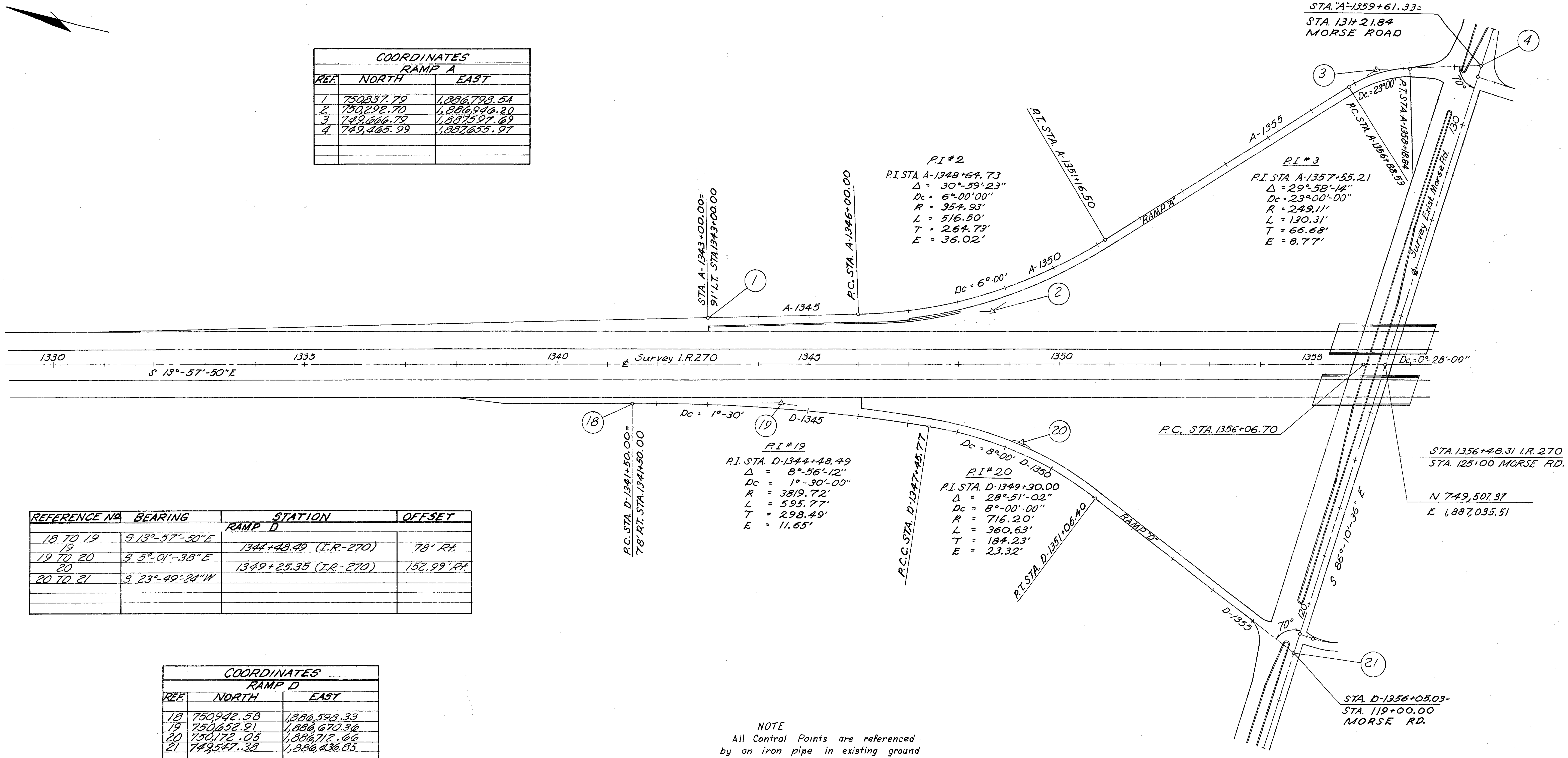
STA. 1451+00 TO STA. 1454+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA.270-22.99N

REFERENCE No	BEARING	STATION	OFFSET
		RAMP A	
1 TO 2	S 15°-09'-27" E		
2		1348+64.61 (I.R.-270)	102.76' Lt.
2 TO 3	S 46°-08'-50" E		
3		130+50.30 (MORSE RD.)	196.55' Lt.
3 TO 4	S 16°-10'-36" E		

COORDINATES		
RAMP A		
REF.	NORTH	EAST
1	750837.79	1,886,798.54
2	750,292.70	1,886,946.20
3	749,666.79	1,887,597.69
4	749,465.99	1,887,655.97



REFERENCE No	BEARING	STATION	OFFSET
		RAMP D	
18 TO 19	S 13°-57'-50" E		
19		1344+48.49 (I.R.-270)	78' Rt.
19 TO 20	S 5°-01'-38" E		
20		1349+25.35 (I.R.-270)	152.99' Rt.
20 TO 21	S 23°-49'-24" W		

COORDINATES		
RAMP D		
REF.	NORTH	EAST
18	750942.58	1886,598.33
19	750652.91	1,886,670.36
20	750,172.05	1,886,712.66
21	749,547.38	1,886,436.85

NOTE
All Control Points are referenced by an iron pipe in existing ground or M.S. in existing pavement.

MORSE ROAD INTERCHANGE

GEOMETRIC LAYOUT RAMPS "A" & "D"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

83/292

FRANKLIN COUNTY
FRA.270-22.99N

REFERENCE No.	BEARING	STATION	OFFSET
RAMP B			
5 To 6	S 3°-49'-24" W		
6		131+00.00 Morse Rd.	234.86' RT.
6 To 7	S 28°-24'-43" W		
7		1364+54.76 (I.R.270)	155.45' LT.
7 To 8	S 0°-42'-26" E		
8		1369+72.20 (I.R.270)	81.16' LT.
8 To 9	S 6°-17'-43" E		

COORDINATES		
RAMP B		
REF.	NORTH	EAST
5	749,467.36	1,887,634.18
6	749,233.02	1,887,618.52
7	748,745.35	1,887,354.70
8	748,217.75	1,887,361.21
9	747,939.82	1,887,391.87

REFERENCE No.	BEARING	STATION	OFFSET
RAMP C			
10 To 11	S 83°-25'-43" E		
11		117+31.83 (Morse Rd.)	37.53' RT.
11 To 12	S 50°-30'-26" E		
12		1362+97.75 (I.R.270)	99.52' RT.
12 To 13	S 10°-17'-20" E		
14 To 15	S 3°-49'-24" W		
15		119+37.84 (Morse Rd.)	85.11' RT.
15 To 16	S 27°-35'-54" E		
16 To 17	S 48°-35'-54" E		

COORDINATES		
RAMP C		
REF.	NORTH	EAST
10	749,553.44	1885,986.25
11	749,521.15	1886,266.55
12	748854.44	1887075.54
13	748510.44	1887,137.98
14	749,544.86	1886,474.60
15	749459.94	1886,468.93
16	749,364.04	1886,519.06
17	749,297.43	1886,594.60

NOTE
All Control Points are referenced by an iron pipe in existing ground or M.S. in existing pavement.

MORSE ROAD INTERCHANGE

GEOMETRIC LAYOUT RAMPS "B" & "C"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

84
292

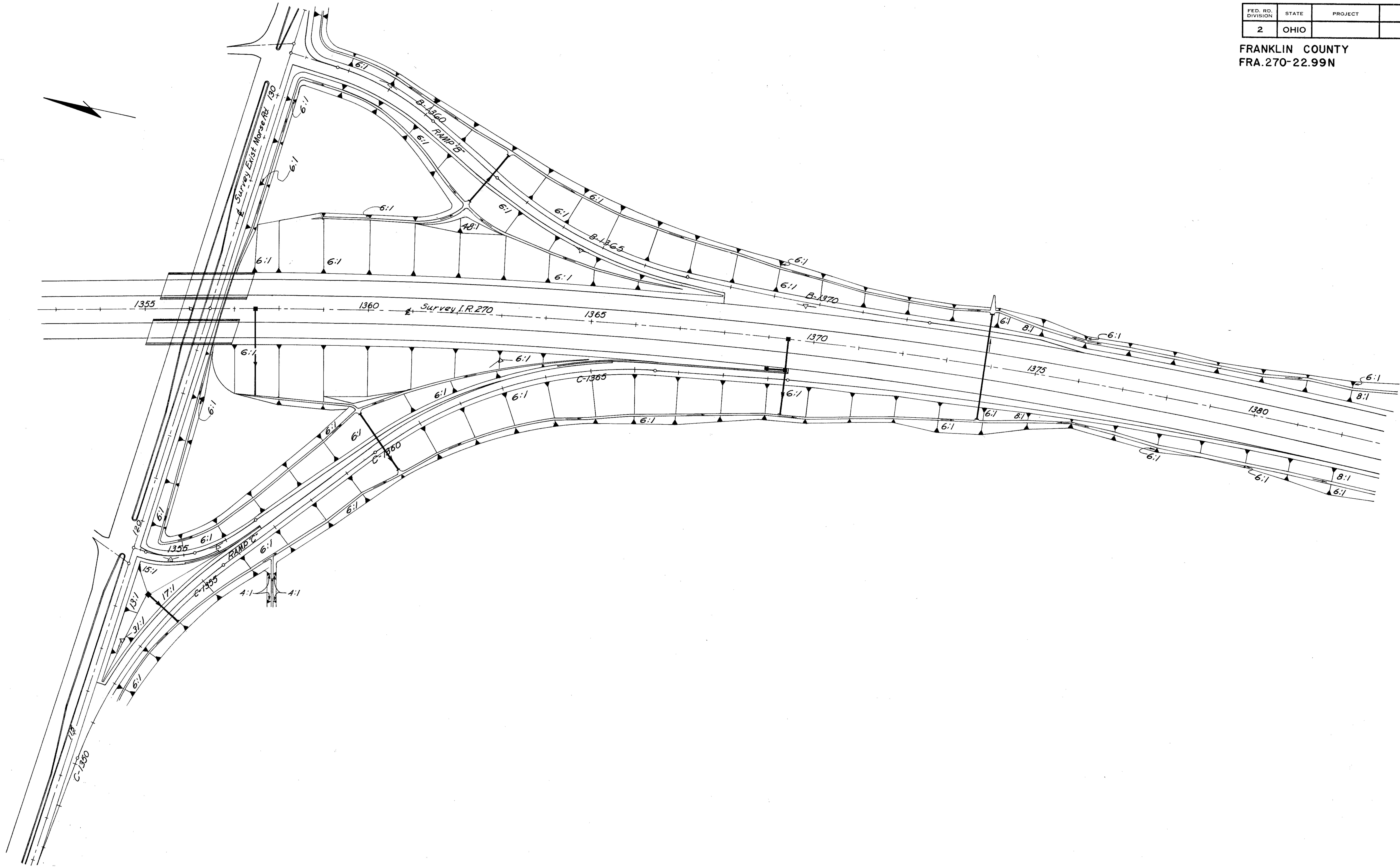
FRANKLIN COUNTY
FRA.270-22.99N

MORSE ROAD INTERCHANGE

GRADING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA.270-22.99N



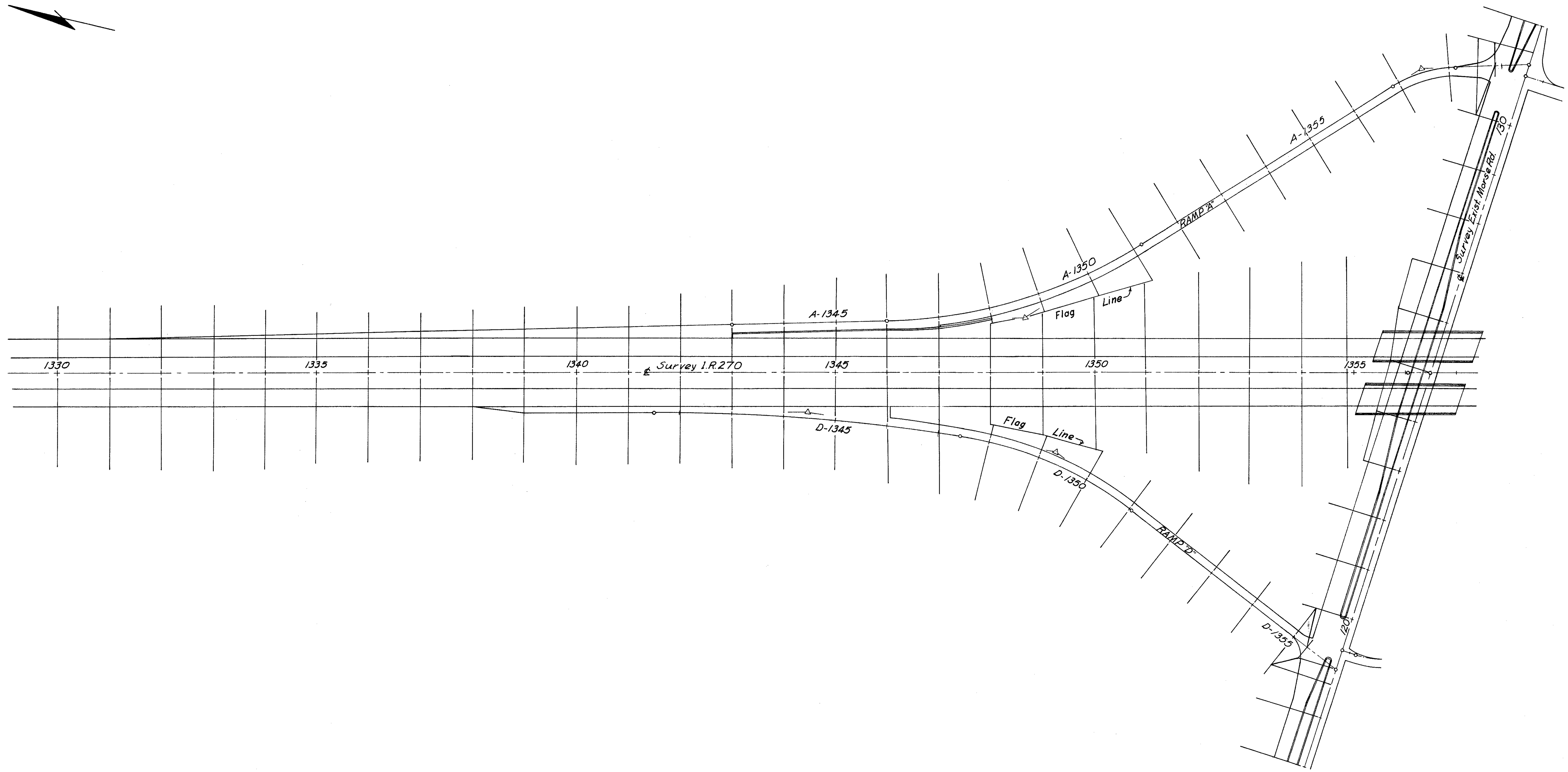
MORSE ROAD INTERCHANGE

GRADING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

86
292

FRANKLIN COUNTY
FRA.270-22.99N



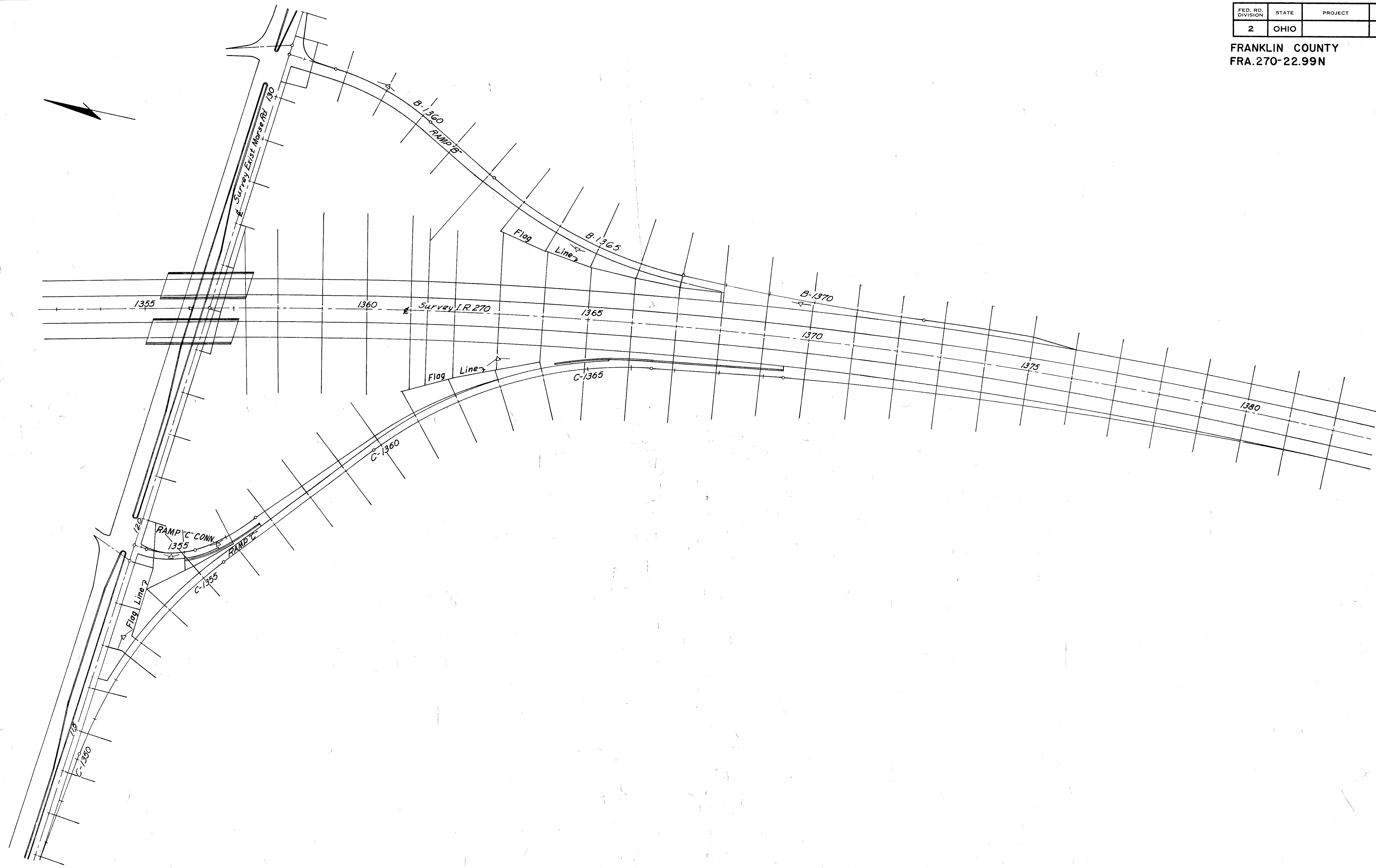
MORSE ROAD INTERCHANGE

CROSS SECTION LAYOUT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

87
292

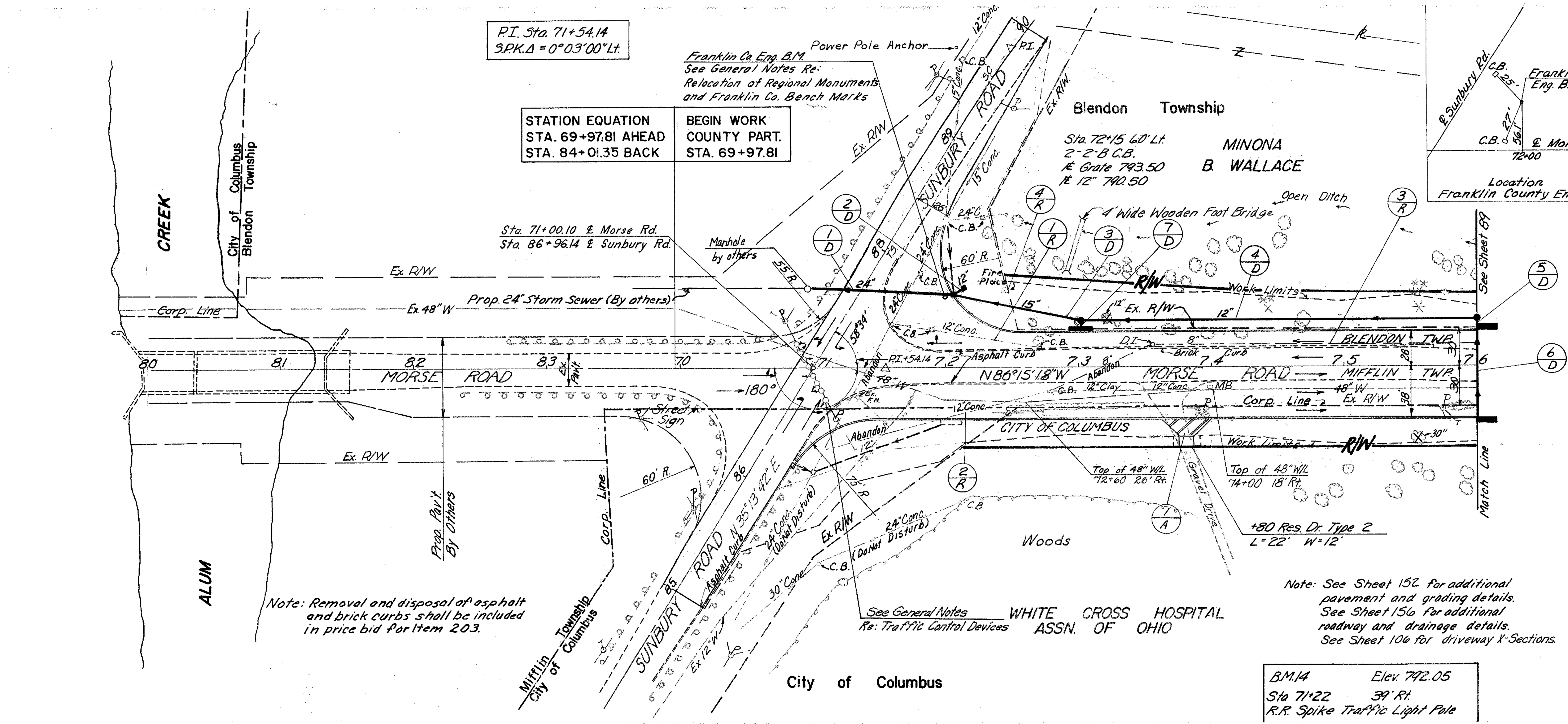
FRANKLIN COUNTY
FRA.270-22.99N

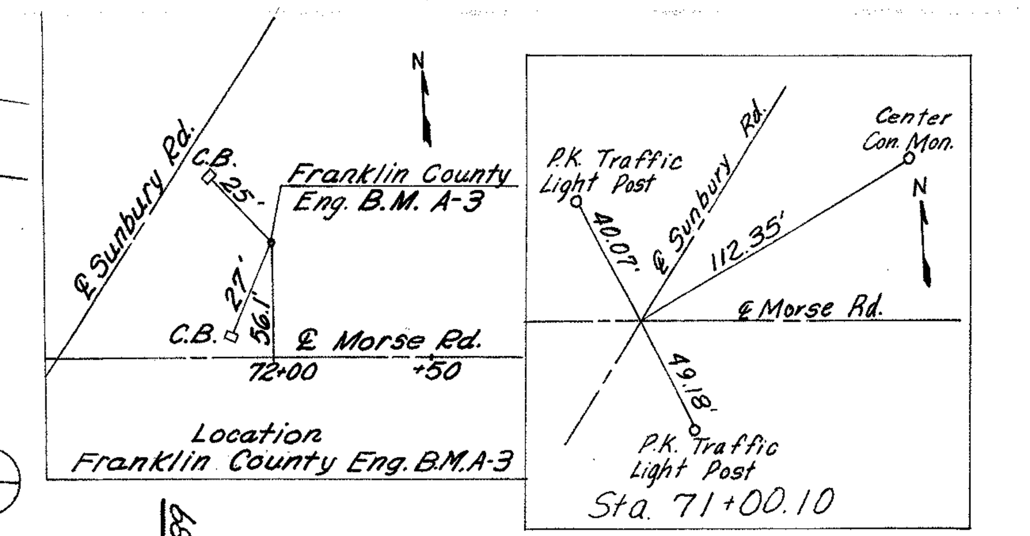


MORSE ROAD INTERCHANGE

CROSS SECTION LAYOUT

FRANKLIN COUNTY
FRA-270-22.99N





DRIVE LEGEND

- 2"~404 on 5"~304 (Res.)
- 2"~404 on 7"~304 (Comm.)
- 6"~304 (Field)
- 8"~304 (Res.)
- 7"~452 (Res.)

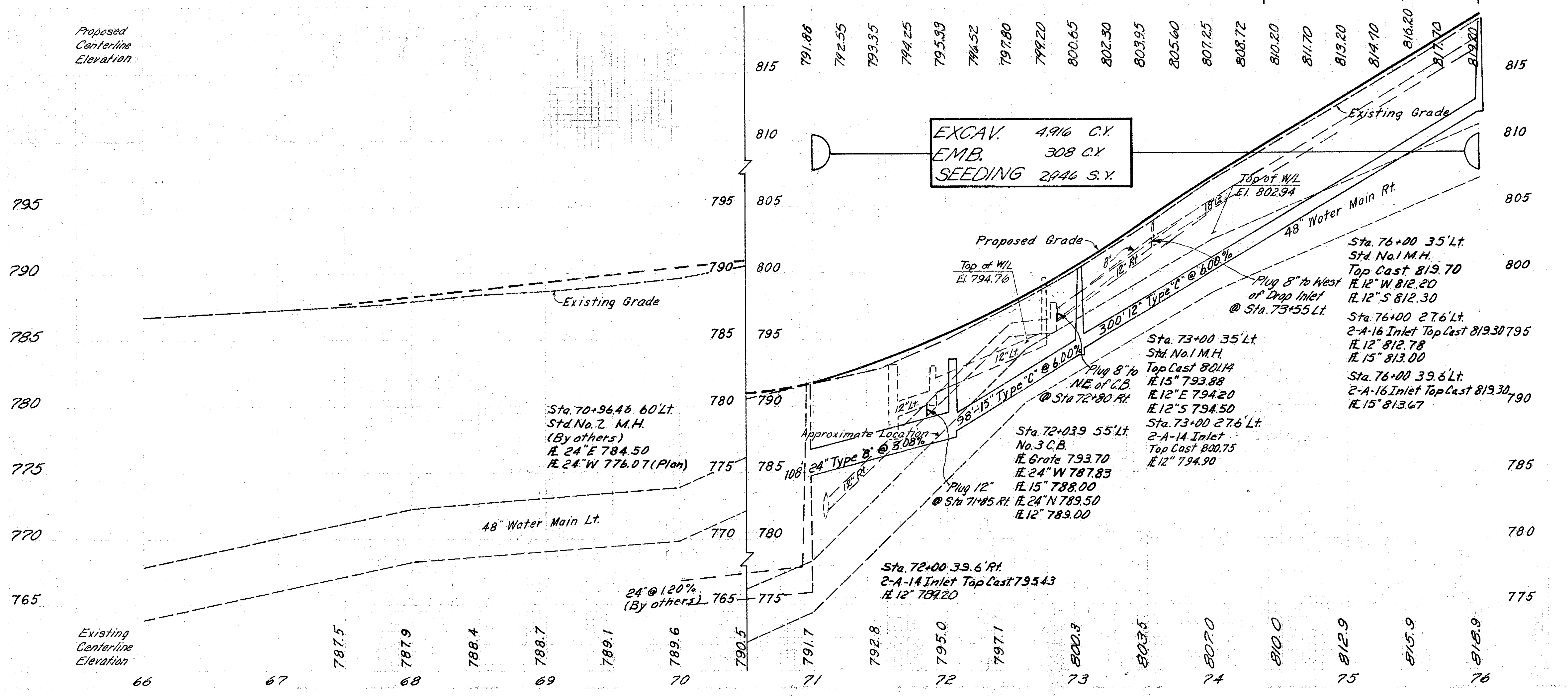
CALC:	R.A.S. 9/24/68
CHK:	RBS 12/19/68

REF.	STATION	SIDE

DRIVE CALCULATIONS

1A	[0.5(30+12) 15] 0.1667 ÷ 27 = 2.0 C.Y.	404
	[0.5(30+12)15] 0.4167 ÷ 27 = 4.9 C.Y.	304
	[(7)12] 0.667 ÷ 27 = 2.1 C.Y.	304

BM.14 Elev. 792.05
Sta. 71+22 39' Rt.
R.R. Spike Traffic Light Pole



REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	603 TYPE "B"	603 TYPE "B"	603 TYPE ☒ "C"	603 TYPE "C"	604 No. 2-2B C.B.	604 No. 3 C.B.	604 2-A-14 INLET	604 2-A-16 INLET	604 No. 1 M.H.	301 BITUMINOUS AGG. BASE			SEE SHEET No.
			24"	15"	15"	12"									
			L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	C.Y.			
1-D	70+96.46 to 72+03.9	LT.	108					1				6			
2-D	72+03.9 to 72+15	LT.				10	1								
3-D	72+03.9 to 73+00	LT.			98						1				
4-D	73+00 to 76+00	LT.				300					1				
5-D	76+00	LT.				8				1					97
6-D	76+00	LT.&R.		67						1		3			97
7-D	73+00	LT.				8			1						95
	TOTALS		108	67	98	326	1	1	1	2	2	9			

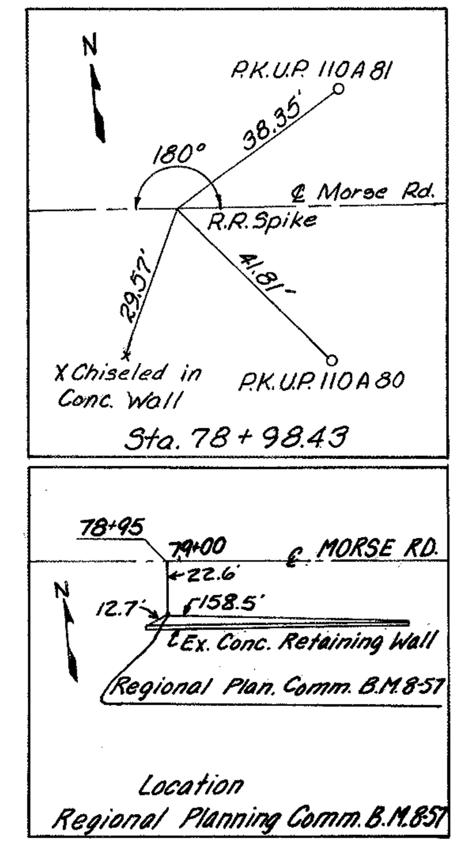
☒ 706.01 E.S., 706.02, 706.08 E.S.

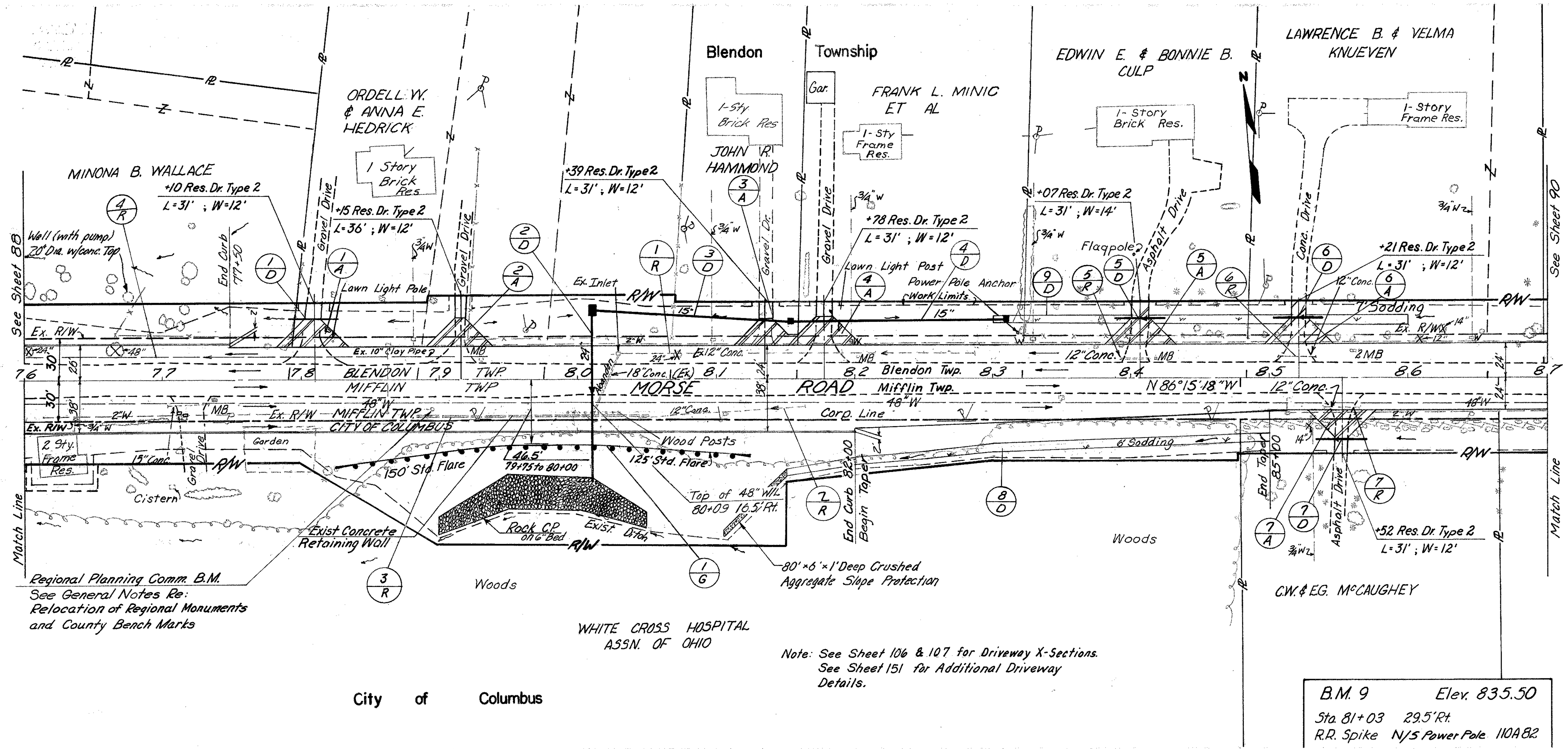
REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	304 AGGR. BASE	404 ASPH. CONC. 85-100	202 C.B. and/or INLET RE-MOVED	202 PIPE REMOVAL 24" & UNDER	202 EXIST. STRUCT. RE-MOVED			SEE SHEET No.
			C.Y.	C.Y.	EA.	L.F.	LUMP SUM			
1-A	73+80	RT.	7	2						151
1-R	71+59 to 72+71	LT.			2	112				
2-R	71+85 to 73+95	RT.			1	210				
3-R	73+55 to 76+00	LT.			1	245				
4-R	72+45	LT.					LUMP SUM			
	TOTALS		7	2	4	567	LUMP SUM			

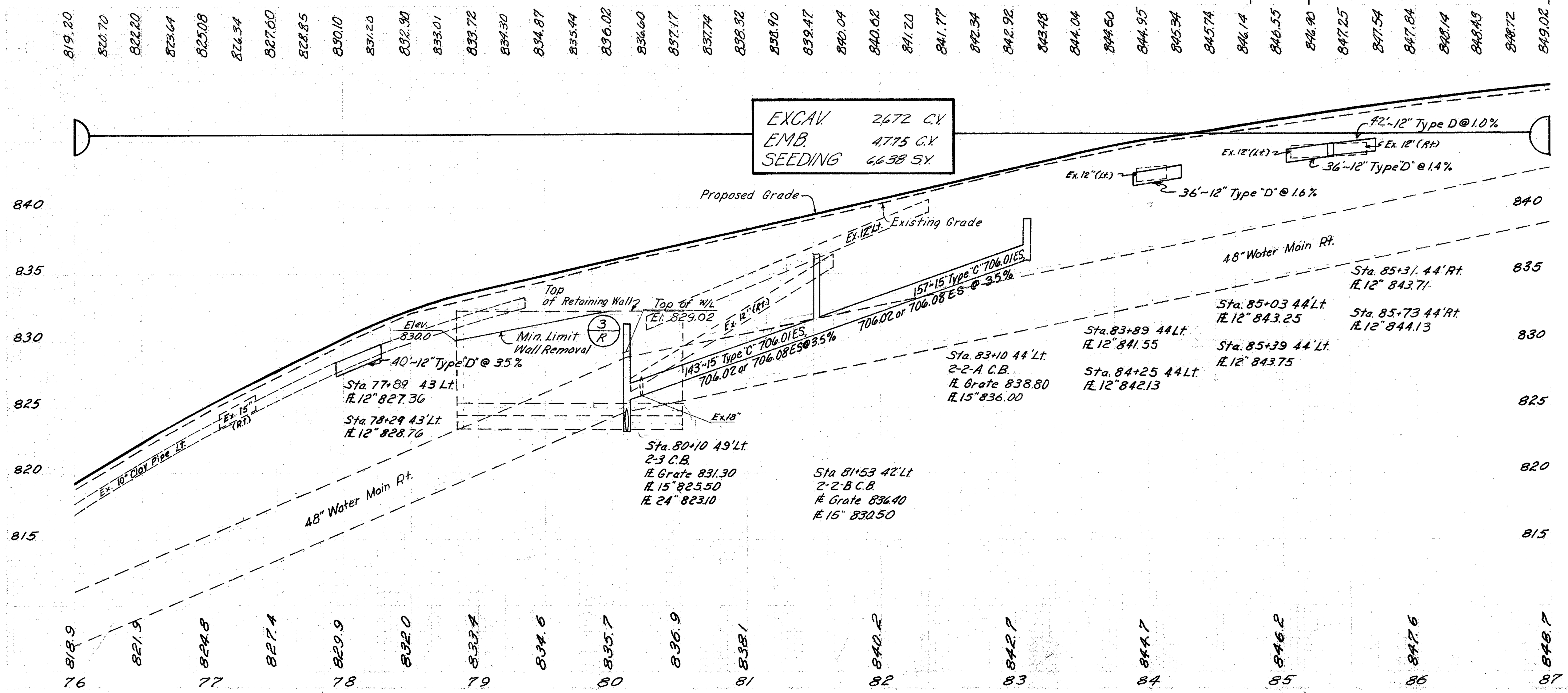
MORSE ROAD STA. 69+97.81 TO 76+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC.	R.A.S.	9/24/68
CHK.	RBS	12/19/68







DRIVE CALCULATIONS		
1A	[0.5(52+12)20] 0.1667 ÷ 27 = 4.0 C.Y.	404
	[0.5(52+12)20] 0.4167 ÷ 27 = 9.9 C.Y.	304
	[11(12)] 0.667 ÷ 27 = 3.3 C.Y.	304
2A	[0.5(52+12)20] 0.1667 ÷ 27 = 4.0 C.Y.	404
	[0.5(52+12)20] 0.4167 ÷ 27 = 9.9 C.Y.	304
	[16(12)] 0.667 ÷ 27 = 4.7 C.Y.	304
3A	[0.5(36+12)12+0.5(45.5+37.5)8] 0.1667 ÷ 27 = 3.8 C.Y.	404
	[0.5(36+12)12+0.5(45.5+37.5)8] 0.4167 ÷ 27 = 9.6 C.Y.	304
	[11(12)] 0.667 ÷ 27 = 3.3 C.Y.	304
4A	[0.5(36+12)12+0.5(45.5+37.5)8] 0.1667 ÷ 27 = 3.8 C.Y.	404
	[0.5(36+12)12+0.5(45.5+37.5)8] 0.4167 ÷ 27 = 9.6 C.Y.	304
	[11(12)] 0.667 ÷ 27 = 3.3 C.Y.	304
5A	[0.5(54+14)20 + 14(11)] 0.1667 ÷ 27 = 5.1 C.Y.	404
	[0.5(54+14)20+14(11)] 0.4167 ÷ 27 = 12.9 C.Y.	304
6A	[0.5(52+12)20 + 12(11)] ÷ 9 = 85.8 S.Y.	452
7A	[0.5(52+12)20 + 12(11)] 0.1667 ÷ 27 = 4.8 C.Y.	404
	[0.5(52+12)20+ 12(11)] 0.4167 ÷ 27 = 11.9 C.Y.	304

REF.	STATION	SIDE										

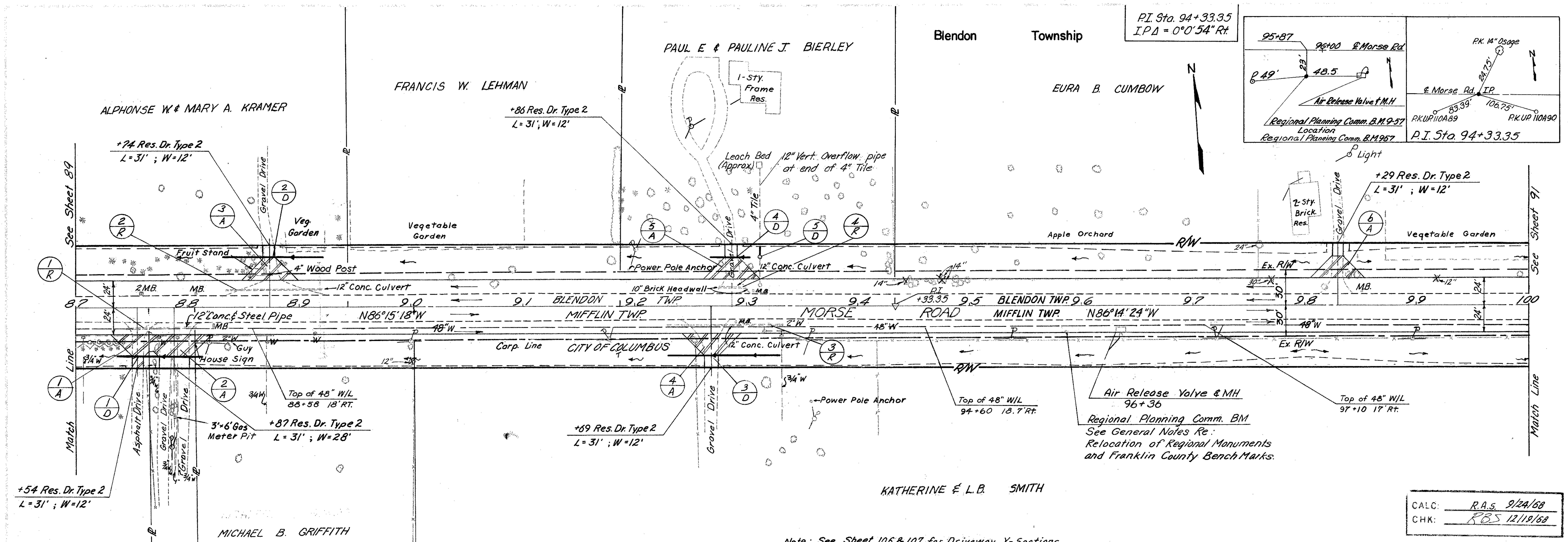
REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	601 Rock C.P. TYPE B	601 C.A.S.P.	602 CONC. MASONRY	603 TYPE "B" 706.02 Cl. III 706.08	603 TYPE "C" *	603 TYPE "D"	604 No. 2-3 C.B.	604 No. 2-2-A C.B.	660 SOD.	301 BITUM. AGG. BASE	604 No. 2-2-B C.B.	SEE SHEET No.
						24"	15"	12"						
			C.Y.	S.Y.	C.Y.	L.F.	L.F.	L.F.	EA.	EA.	S.Y.	C.Y.	EA.	
1-D	77+89 to 78+29	Lt.						40☒						
2-D	80+10	Lt. & Rt.	286		3.3	124			1			3		98 & 99
3-D	80+10 to 81+53	Lt.					143						1	
4-D	81+53 to 80+10	Lt.					157			1				
5-D	83+89 to 84+25	Lt.						36						
6-D	85+03 to 85+39	Lt.						36						
7-D	85+31 to 85+73	Rt.						42						
8-D	81+00 to 85+00	Rt.		54							234			
9-D	83+00 to 86+00	Lt.									178			
	TOTALS		286	54	3.3	124	300	154	1	1	412	3		

* 706.01 E.S., 706.02 or 706.08 E.S. ☒ 707.01, 14 Gage

ψ 24" & Under

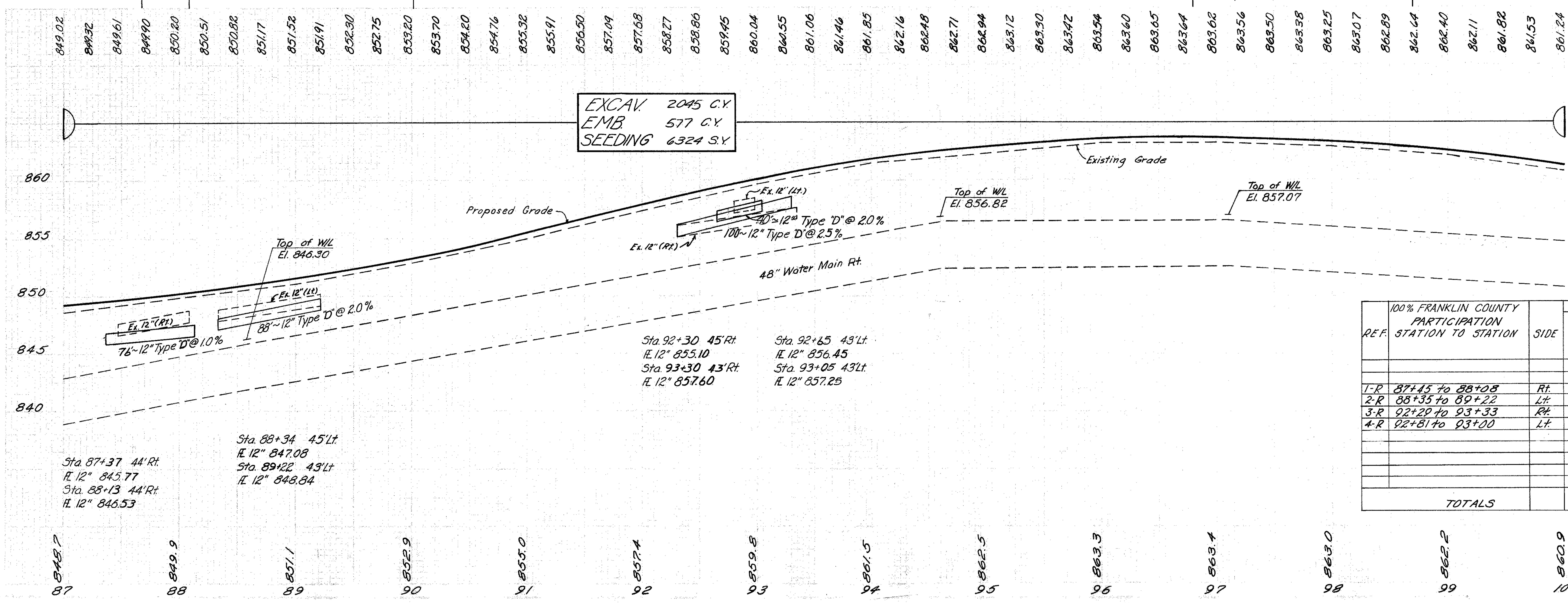
REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	304 AGGR. BASE	404 ASPH. CONC. 85-100	452 7" P.C. CONC. PAV'T.	202 PIPE ψ REMOVED	202 INLETS REMOVED	202 EXIST. PAV'T. REMOVED	202 PORTION EXIST. STRUCT. REMOVED	606 GUARD-RAIL TYPE 5	606 APPROACH END ASSY.
			C.Y.	C.Y.	S.Y.	L.F.	EA.	S.Y.	LUMP SUM	L.F.	EA.
1-A	78+10	Lt.	14	4							
2-A	79+15	Lt.	15	4							
3-A	81+39	Lt.	13	4							
4-A	81+78	Lt.	13	4							
5-A	84+07	Lt.	13	6							
6-A	85+21	Lt.			86			31			
7-A	85+52	Rt.	12	5							
1-R	80+26 to 82+86	Lt.				260	1				
2-R	80+12 to 81+64	Rt.				152					
3-R	78+84 to 80+00	Rt.							LUMP SUM		
4-R	76+00 to 79+35	Lt.				335					
5-R	83+91 to 84+13	Lt.				22					
6-R	85+06 to 85+39	Lt.				33					
7-R	85+38 to 85+65	Rt.				27					
1-G	78+25 to 81+25	Rt.								300	2
	TOTALS		80	27	86	829	1	31		300	2

FRANKLIN COUNTY
FRA-270-22.99N



CALC:	R.A.S. 9/24/68
CHK:	RBS 12/19/68

B.M. 6 Elev. 856.34
Sta. 91+78 29.5' Rt.
R.R. Spike N/S Power Pole 110A88



DRIVE CALCULATIONS		
1A	[0.5(38.5+25)13.5+0.5(25+12)6.5+11(12)]0.1667÷27=4.2 C.Y.	404
	[0.5(38.5+25)13.5+0.5(25+12)6.5+11(12)]0.4167÷27=10.5 C.Y.	304
2A	[0.5(54.5+41)13.5+0.5(41+28)6.5]0.1667÷27=5.4 C.Y.	404
	[0.5(54.5+41)13.5+0.5(41+28)6.5]0.4167÷27=13.4 C.Y.	304
	[11(28)] 0.667÷27 = 7.6 C.Y.	304
3A 4A	[0.5(52+12)20] 0.1667÷27 = 4.0 C.Y.	404
5A	[0.5(52+12)20] 0.4167÷27 = 9.9 C.Y.	304
6A	[11(12)] .667÷27 = 3.3 C.Y.	304

100 % FRAKLIN CO. PARTICIPATION

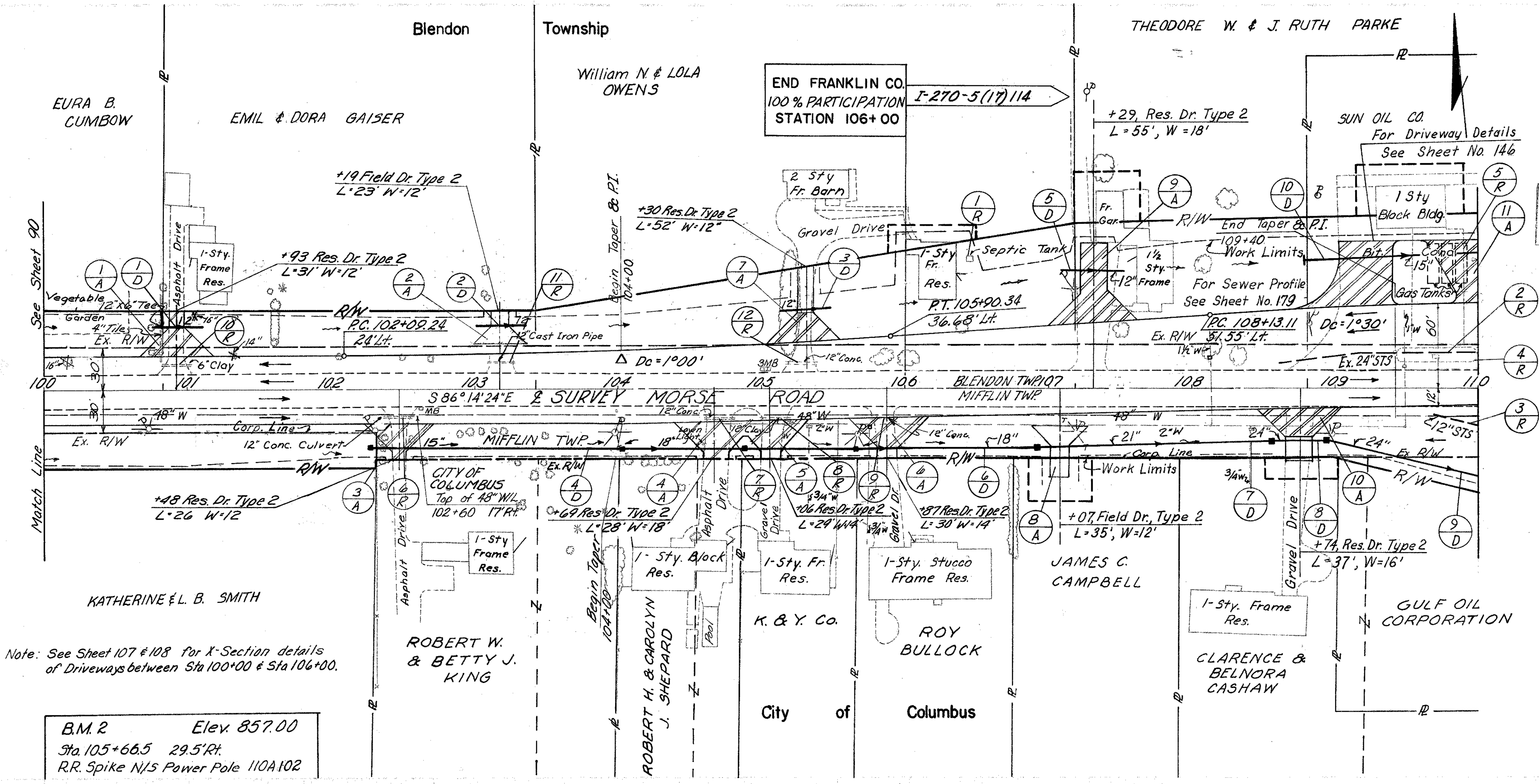
REF.	STATION	SIDE	304 AGGR. BASE	404 ASPHALT CONC. 85-100						SEE SHEET NO.
			C.Y.	C.Y.						
1-A	87+54	Rt.	11	5						151
2-A	87+87	Rt.	21	6						151
3-A	88+74	Lt.	14	4						
4-A	92+69	Rt.	14	4						
5-A	92+86	Lt.	14	4						
6-A	98+20	Lt.	14	4						
TOTALS			88	27						

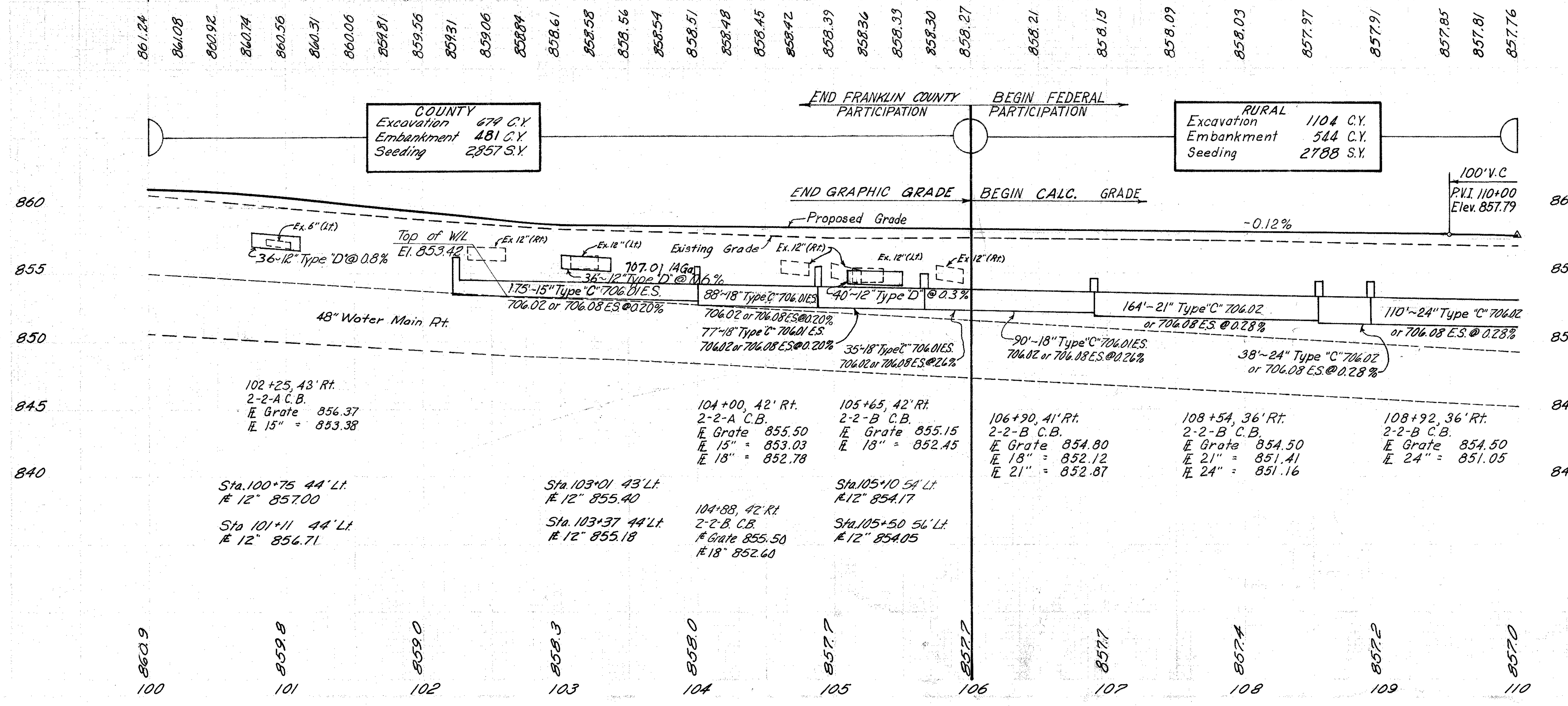
REF.	100% FRANKLIN CO. PARTICIPATION STATION TO STATION	SIDE	603 TYPE "D"	603 TYPE "C"	603 Type "D" 707.01 14 Ga.	SEE SHEET No.
			12"	6"	12"	
			L.F.	L.F.	L.F.	
1-D	87+37 to 88+13	Rt.			76	
2-D	88+34 to 89+22	Lt.	88			
3-D	92+30 to 93+30	Rt.	100			
4-D	92+65 to 93+05	Lt.	40			
5-D	93+13	Lt.		10		103
TOTALS			218	10	76	

REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE			202 PIPE REMOVAL 24" & UNDER					SEE SHEET No.
					L.F.					
1-R	87+45 to 88+08	Rt.			63					
2-R	88+35 to 89+22	Lt.			87					
3-R	92+29 to 93+33	Rt.			104					
4-R	92+81 to 93+00	Lt.			19					
TOTALS					273					

MORSE ROAD STA. 87+00 TO 100+00

FRANKLIN COUNTY
FRA-270-22.99N





NOTE:
For Pavement Details
See Sheet No. 146 & 151

County	
CALC:	R.A.S. 9/23/68
CHK:	RBS. 9-25-68

Federal	
CALC:	W. D. G. 9/26/68
CHK:	R.E.H. 10-7-68

DRIVE LEGEND
- (hatched) 2" ~ 404 on 5" ~ 304 (Res.); 2" ~ 404 on 7" ~ 304 (Comm.)
- (plain) 6" ~ 304 (Field); 8" ~ 304 (Res.)

DRIVE CALCULATIONS		
1A	[0.5(52+12)20+(12x11)]0.1667÷27=4.8C.Y.	404
	[0.5(52+12)20+(12x11)]0.4167÷27=11.9C.Y.	304
2A	[0.5(36+12)12+(12x11)]0.5÷27=7.8C.Y.	304
3A	[0.5(52+12)20+(12x6)]0.1667÷27=4.4C.Y.	404
	[0.5(52+12)20+(12x6)]0.4167÷27=11.0C.Y.	304
4A	[0.5(48.5+37.5)11+0.5(36+18)9+8(18)]0.1667÷27=5.3	404
	[0.5(48.5+37.5)11+0.5(36+18)9+8(18)]0.4167÷27=13.3	304
5A	[0.5(44.5+33.5)11+0.5(32+14)9]0.1667÷27=3.9	404
	[0.5(44.5+33.5)11+0.5(32+14)9]0.4167÷27=9.8	304
	[(9x14)0.667]÷27 = 3.1 C.Y.	304
6A	[0.5(14+54)20]0.1667÷27=4.2 C.Y.	404
	[0.5(14+54)20]0.4167÷27=10.5 C.Y.	304
	[10(14)]0.667÷27=3.5 C.Y.	304
7A	[0.5(52+12)20]0.1667÷27=4.0 C.Y.	404
	[0.5(52+12)20]0.4167÷27=9.9 C.Y.	304
	[12(32)]0.667÷27=9.5 C.Y.	304
8A	[0.5(36+12)x12+(12x23)]0.5÷27=10.4C.Y.	304
9A	0.5(61+18)x21+(18x34) = 1441.5 S.F.	
	1441.5 x 0.1667÷27 = 8.9 C.Y.	404
	1441.5 x 0.4167÷27 = 22.2 C.Y.	304
10A	[0.5(56+16)x20÷27]0.1667=4.5 C.Y.	404
	[0.5(56+16)20÷27]0.4167=11.1 C.Y.	304
	[(17x16).667]÷27 = 6.7 C.Y.	304
11A	Area by Planimeter = 3688 S.F.	
	3688 x 0.1667÷27 = 22.8 C.Y.	404
	3688 x 0.5833÷27 = 79.7 C.Y.	304

CITY OF COLUMBUS PARTICIPATION

REF.	STATION TO STATION	SIDE	202 PIPE REMOVAL 24" & UNDER
			L.F.
6-R	102+37 to 102+65	Rt.	28
7-R	104+60 to 104+80	Rt.	20
8-R	105+00 to 105+22	Rt.	22
9-R	105+75 to 105+95	Rt.	20
10-R	100+86 to 101+04	Lt.	18
11-R	103+09 to 103+27	Lt.	18
12-R	105+17 to 105+30	Lt.	23
	TOTALS		149

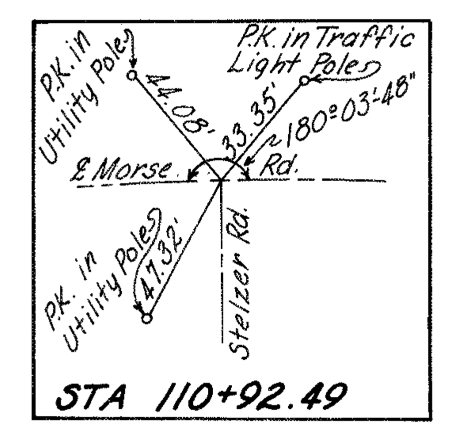
REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	304 AGGR. BASE	404 ASPH. CONC. 85-100	603 TYPE "C" *	603 TYPE "C" *	603 TYPE "D"	603 TYPE "F"	604 No. 2-2A C.B.	604 No. 2-2B C.B.	603 Type D 707.01 14 Ga.		SEE SHEET No.
					15"	18"	12"	6"			12"		
			C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	L.F.		
1-A	100+93	LT.	12	5									108
2-A	103+19	LT.	8										151
3-A	102+48	RT.	11	5									151
4-A	104+69	RT.	14	6									151
5-A	105+06	RT.	13	4									151
6-A	105+87	RT.	14	5									151
7-A	105+30	LT.	20	4									151
1-D	100+75 TO 101+11	LT.					36	10					105
2-D	103+01 TO 103+37	LT.									36		
3-D	105+10 TO 105+50	LT.					40						
4-D	102+25 TO 106+00	RT.			175	200			2	2			
	(COUNTY) TOTALS		92	29	175	200	76	10	2	2	36		

‡ Rural
* 706.01 E.S. (15" & 18" Dia. Only), 706.02 or 706.08 E.S., 707.13

REF.	FEDERAL PARTICIPATION STATION TO STATION	SIDE	304 AGGR. BASE ‡	404 ASPH. CONC. (85-100) ‡	602 CONC. MASONRY ‡	603 TYPE "B" ‡	603 TYPE "C" * ‡	603 TYPE "C" * ‡	603 TYPE "C" * ‡	603 TYPE "D" ‡	202 EXIST CURB REMOV. AND DISP. ‡	202 PIPE REMOV. 24" or UNDER ‡	604 ‡ No. 2-2-B C.B.	SPEC. Disposal/Removal of Septic Tank ‡	SPEC. Storage Tanks Removed	SEE SHEET No.
						15"	18"	21"	24"	12"					Lump	
			C.Y.	C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.		
8-A	107+07	Rt.	11													110
9-A	107+29	Lt.	23	9												110
10-A	108+74	Rt.	18	5												110
11-A	108+60 to 110+40	Lt.	80	23												146
5-D	107+07 to 107+51	Lt.								44						110
6-D	106+00 to 106+90	Rt.					90						1			109
7-D	106+90 to 108+54	Rt.						164					1			
8-D	108+54 to 108+92	Rt.							38				1			
9-D	108+92 to 110+00	Rt.							110							111
10-D	108+74 to 110+00	Lt.			0.3	126										179
1-R	106+45	Lt.												1		
2-R	108+63 to 110+00	Lt.										137				
3-R	109+68 to 110+00	Rt.										33				
4-R	109+42 to 110+00	Lt.									125					
5-R	109+80	Lt.													Lump	
	(RURAL) TOTALS		132	37	0.3	126	90	164	148	44	125	170	3	1		

MORSE ROAD STA. 100+00 TO 110+00

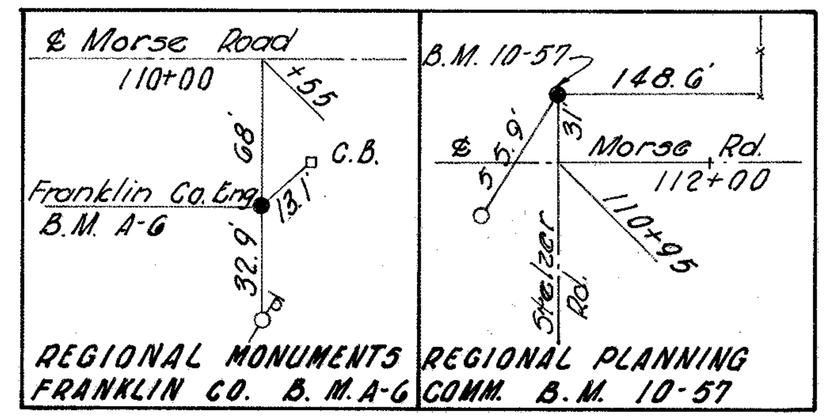
FRANKLIN COUNTY
FRA-270-22.99 N

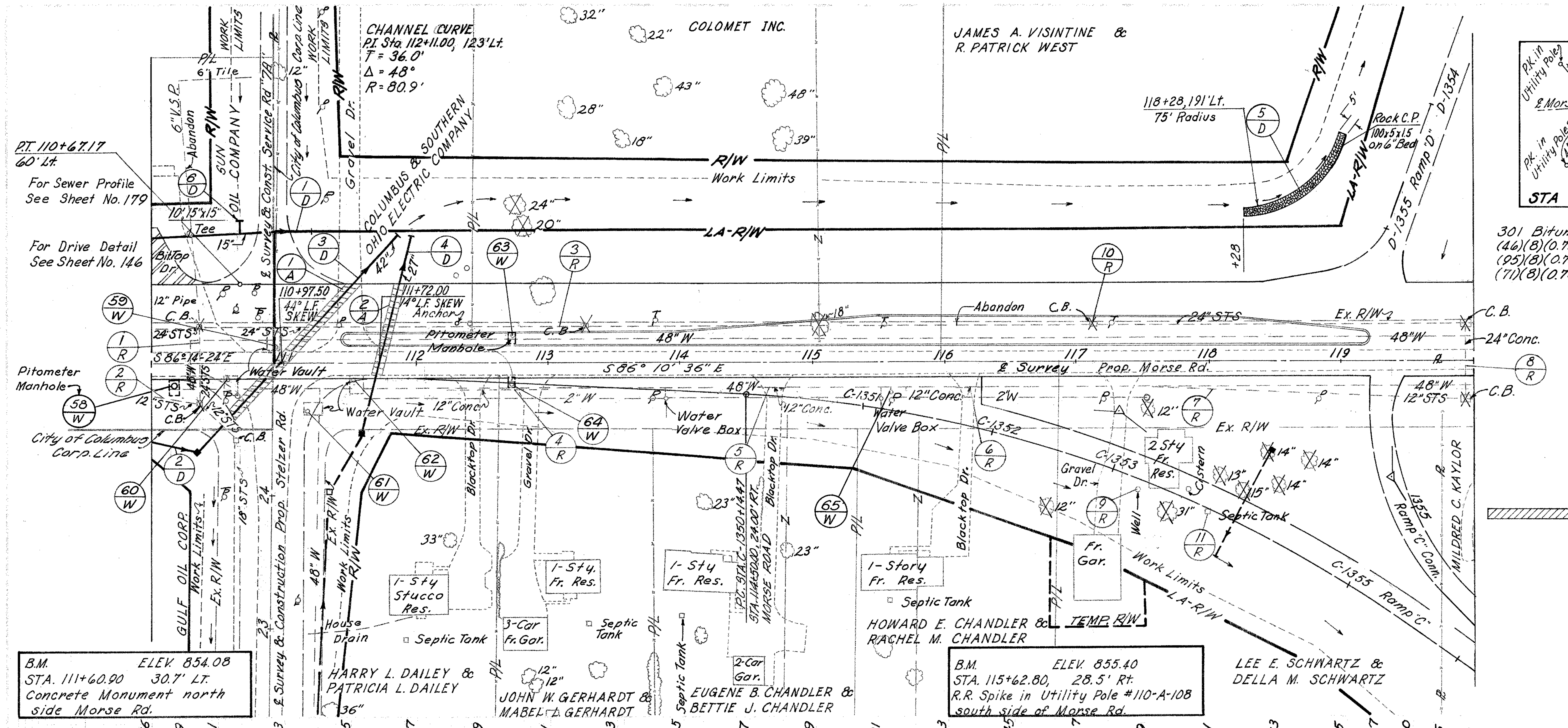


For Stelzer Rd. Plan & Profile See Sheet No. 153
For Service Rd. 7A Plan & Profile See Sheet No. 177
For Pavement & Curb Details See Sheet No. 146, 147
For Ramp "C" Plan & Profile See Sheet No. 130, 131
For Ramp "D" Plan & Profile See Sheet No. 136, 137
For Pipe Detail Sta. 110+97.5 See Sheet No. 111
For Pipe Detail Sta. 111+72 See Sheet No. 112

301 Bituminous Aggregate Base
(46)(8)(0.75) ÷ 27 = 11 C.Y.
(95)(8)(0.75) ÷ 27 = 22 C.Y.
(71)(8)(0.75) ÷ 27 = 15 C.Y.

TREES STA 110+00 To 120+00		
Size	Lt. of ℄	Rt. of ℄
12" to 24"	3	7
24" to 36"		1
36" to 60"		
Over 60"		





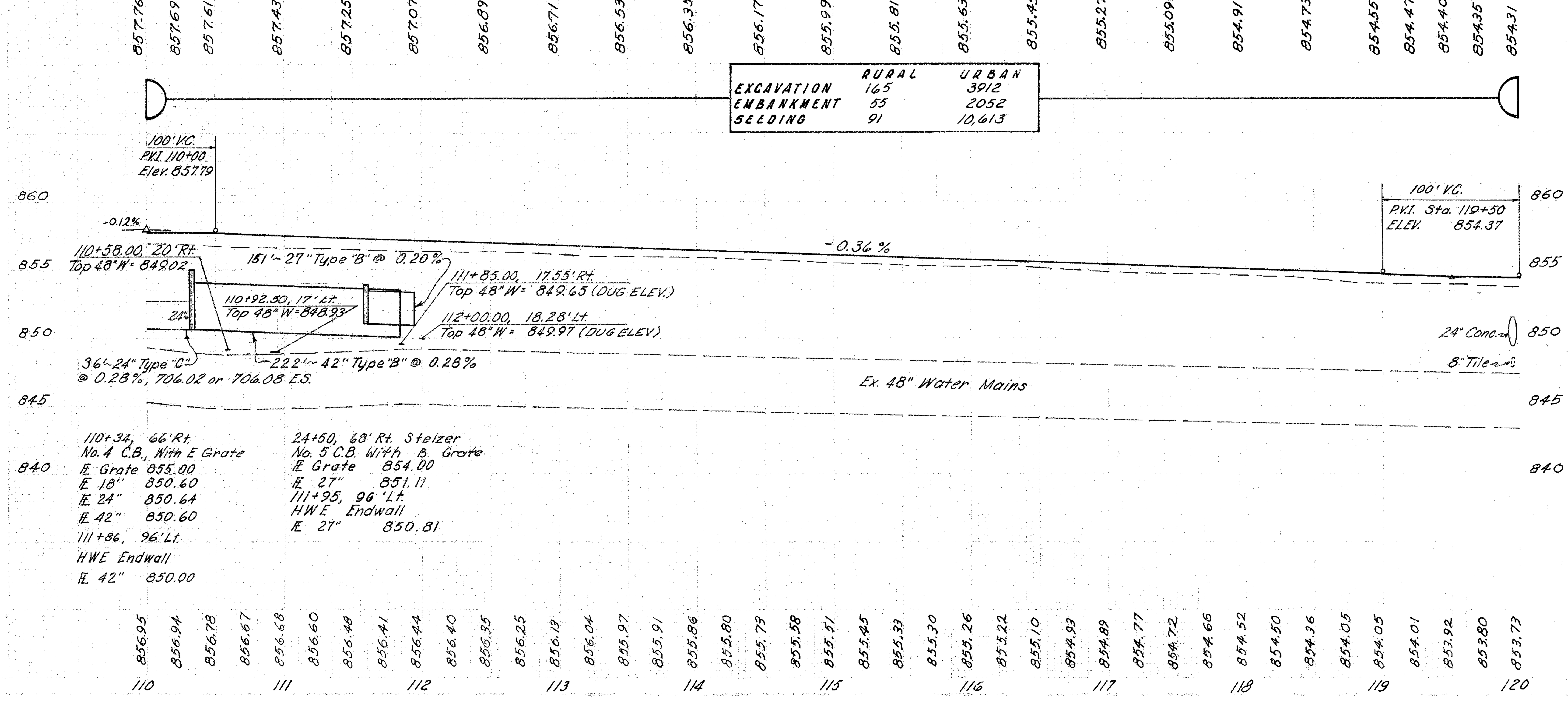
LEGEND

9"-301 Bituminous Aggregate Base

Rock C.P.
V = (100)(5)(2.0) ÷ 27 = 37 C.Y.

* As per plan
Ø With E Grate
** with B Grate
‡ Rural
Ψ 706.02 or 706.08 E.S.

CALC: W.O.G. 9/26/68
CHK: R.E.H. 10-8-68



REF.	STATION TO STATION	SIDE	603 TYPE B ‡ 15" L.F.	603 TYPE B 15" L.F.	603 TYPE C Ψ ‡ 24" L.F.	603 TYPE B 27" L.F.	603 TYPE B ‡ 42" L.F.	603 TYPE B 42" L.F.	604 No. 4 C.B. ‡Ø EA.	604 No 5 C.B. ** EA.	301 BIT. AGGR. BASE ‡	301 BIT. AGGR. BASE	604 WATER VAULT ADJ. TO GRADE Ea	604 WATER VAULT ADJ. TO GRADE ** Ea		601 Rock C.P. TYPE 'B' C.Y.		602 CONC. MASONRY C.Y.	BENDS & BRANCHES 15"
1-D	110+00 to 111+22	Lt.	90	32														0.3	1
2-D	110+00 to 110+36	Rt.			36														
3-D	110+36 to 111+86	R-L					83	139	1									0.8	
4-D	24+50 (Stelzer) to 111+95	R-L				151				1								0.5	
5-D	118+28 to 119+00	Lt.														37			
6-D	110+64	Lt.	10															0.3	
58 W	110+15.5	Rt.												1					
60W	110+58	Rt.												1					
59W	110+94	Lt.											1						
61W	111+18	Rt.												1−					
62W	111+53	Rt.											1						
63W	112+73	Lt.											1						
64W	112+73	Rt.											1						
1-A	110+60 to 111+52	L&R									11	22							
58W	110+15.51	Rt.																	
2-A	111+69 to 111+87	L&R										15							
(URBAN) TOTALS				32		151		139		1		37	4			37		1.9	
(RURAL) TOTALS			90		36		83		1		11			3*					

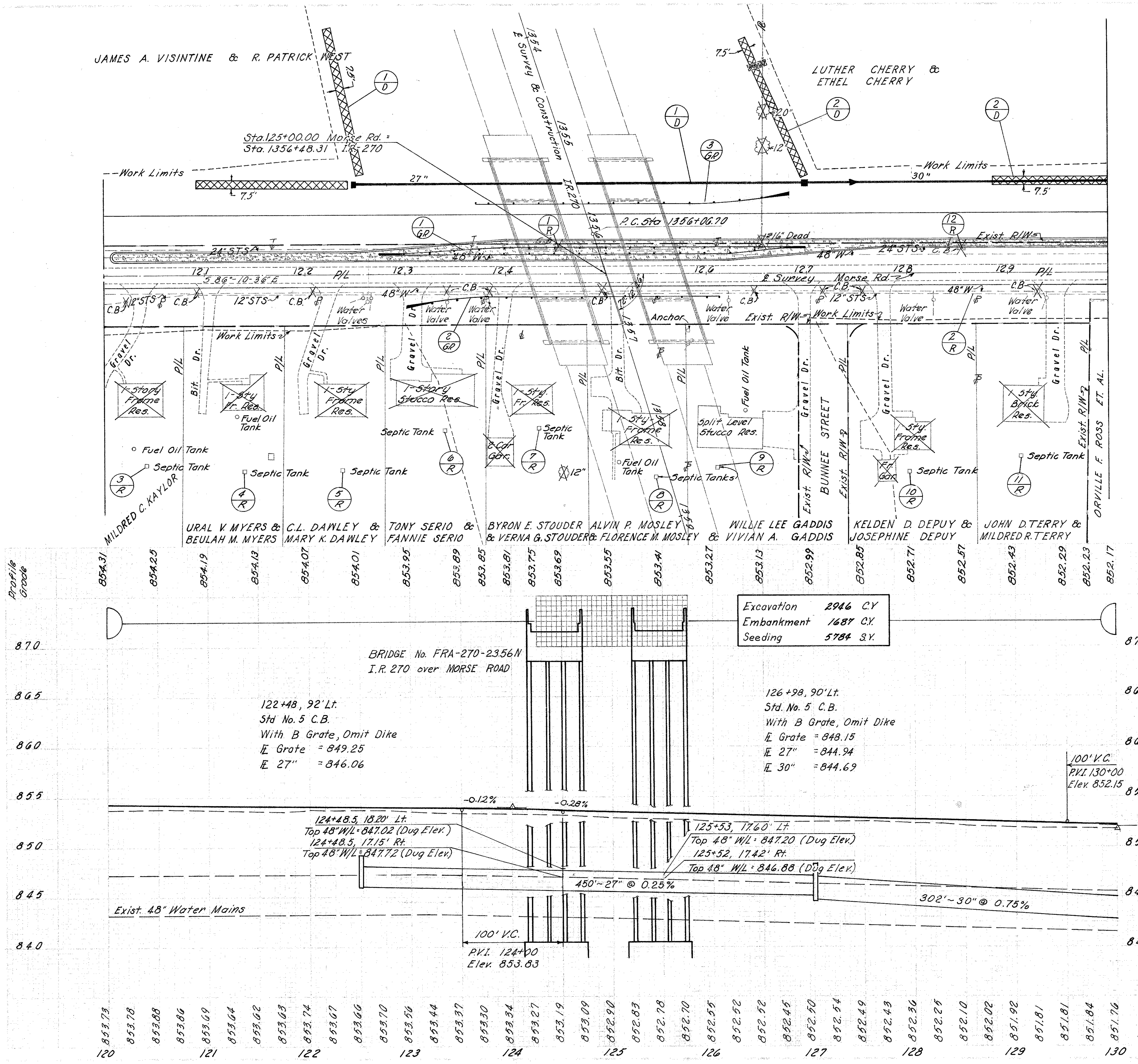
* Carried to sheet 198, 100% City

REF.	STATION TO STATION	SIDE	202 PIPE REMOVAL 24" & UNDER L.F.	202 PIPE REMOVAL 24" & UNDER ‡ L.F.	202 CATCH BASIN REMOVAL EA.	202 CATCH BASIN REMOVAL ‡ EA.	SPECIAL DRILLED WELL ABANDON EA.	SPECIAL DISPOSAL REMOVAL SEPTIC TANK EA.
1-R	110+36	℄		58		1		
2-R	110+00 to 110+36	Rt.		35		1		
3-R	110+00 to 113+29	Lt.	329		1			
4-R	112+22 to 113+00	Rt.	78					
5-R	114+57 to 114+81	Rt.	24					
6-R	116+08 to 116+29	Rt.	21					
7-R	117+20 to 120+00	Rt.	280		1			
8-R	119+94	℄	57		1			
9-R	117+45	Rt.					1	
10-R	117+13	Lt.			1			
11-R	117+99	Rt.						1
(URBAN) TOTALS			789		4		1	1
(RURAL TOTALS				93		2		

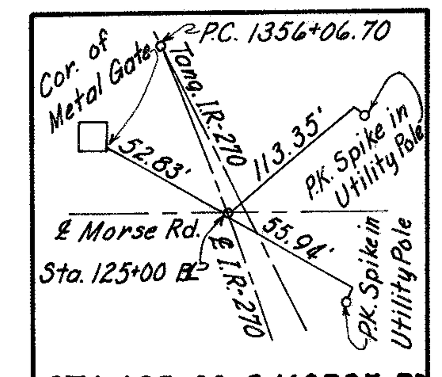
REV. 7-1-1969

STA. 110+00 TO STA. 120+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N



TREES	Sta. 120+00 to 130+00	
SIZE	Left Ⲉ	Right Ⲉ
12" to 24"	3	
24" to 36"		
36" to 60"		
Over 60"		



STA. 125+00 Ⲉ MORSE RD.

PROPOSED STRUCTURE

TYPE: Continuous reinforced concrete slab with reinforced concrete substructure
SPANS: 40'-0", 49'-11", 49'-11", 40'-0" @ tangent.
ROADWAY: 53'-0" f/f parapets with 1'-0" safety curb
LOAD FREQUENCY: HS 20-44 adequate for AASHO alternate loading
WEARING SURFACE: 1" monolithic concrete
SKEW: 17°47'14" with tangent L.F.
APPROACH SLAB: AS-1-67 (25'-0" long)
ALIGNMENT: 0°28'00" Rt.
SUPERELEVATION: none
AVERAGE DAILY TRAFFIC: 67,340

For Pavement, Curb, & Guard Rail Details ———— See Sheet No. 147 & 148
For I.R. 270 Plan & Profile —— See Sheet No. 35

CALC: W.O.G. 9/26/68
CHK: R.E.H. 10/8/68

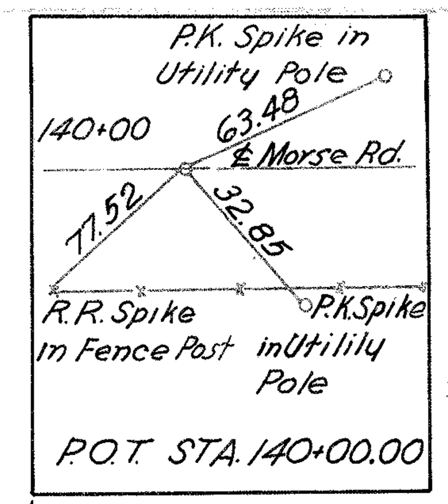
‡ With "B" Grate,

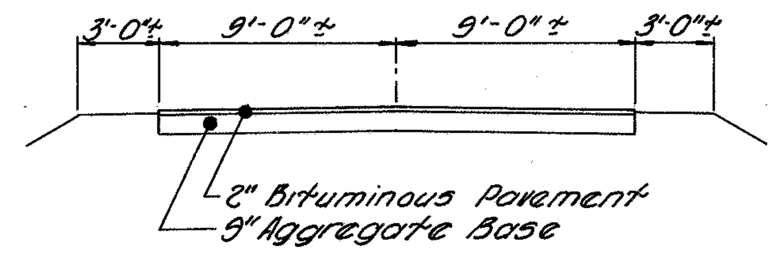
REF.	STATION TO STATION	SIDE	202 PIPE REMOVAL 24" & UNDER	202 CATCH BASIN REMOVAL	603 TYPE C CLASS IV	603 TYPE C	667 JUTE MATTING	604 No. 5 CATCH BASIN ‡	SPECIAL DISPOSE REMOVAL SEPTIC TANK	BENDS & BRANCHES	FOR DETAILS SEE SHEET No.
					27"	30"					
			L.F.	Ea.	L.F.		S.Y.	Ea.	Ea.		
1-D	122+48 to 126+98	Lt.			450		250	1			114-116
2-D	126+98 to 130+00	Lt.				302	216	1			114-116
1-R	124+50	Lt.		1							
2-R	120+00 to 130+00	Rt.	1000	10							
3-R	120+41	Rt.							1		
4-R	121+40	Rt.							1		
5-R	122+37	Rt.							1		
6-R	123+39	Rt.							1		
7-R	124+32	Rt.							1		
8-R	125+50	Rt.							1		
9-R	126+10	Rt.							1		
10-R	128+02	Rt.							1		
11-R	129+13	Rt.							1		
12-R	128+53	Lt.		1							
TOTALS			1000	12	450	302	466	2	9		

REF.	STATION TO STATION	SIDE	BARRIER RAIL TYPE 5	606 GUARD RAIL TYPE 5	APPR. END ASSEMBLY	ANCHOR ASSEMBLY	FOR DETAILS SEE SHEET NO.
			L.F.	L.F.	Ea.	Ea.	
1-GR	122+74 to 126+99	Lt.	50	800	4		147-148
2-GR	123+01 to 126+13.5	Rt.		312.5	1	1	
3-GR	123+71 to 126+83.5	Lt.		312.5	1	1	
TOTALS			50	1425	6	2	

STA. 120+00 TO STA. 130+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99 N



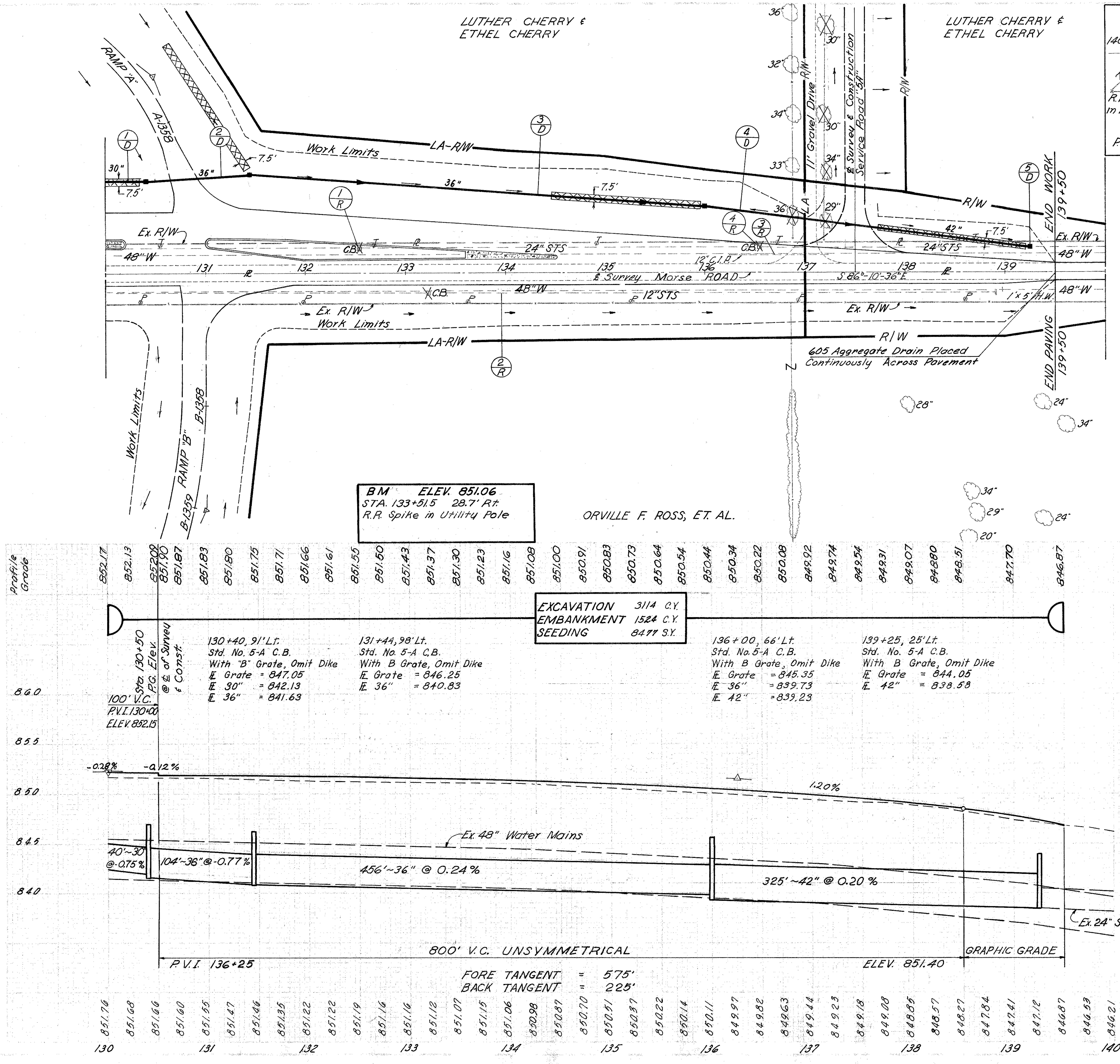


EXISTING TYPICAL SECTION
MORSE ROAD

TREES 130+00 TO 140+00		
SIZE	Lt of ℄	Rt. of ℄
12" to 24"	0	0
24" to 36"	2	0
36" to 60"	0	0
60" & Over	0	0

NOTES

1. For Details of Service Rd "5A" See Sheet No. 166
2. For Pavement & Curb Details See Sheet No. 148 - 149
3. For Ramp "A" Details See Sheet No. 120
4. For Ramp "B" Details See Sheet No. 125
5. Use Item 605 Aggregate Drain full width of pavement where proposed pavement adjoins existing pavement. For Quantities see Pavement Calculations



CALC:	W.O.G. 9/26/68
CHK:	R.E.H. 10-7-68

‡ With "B" Grate

REF.	STATION TO STATION	SIDE		603 TYPE C	603 TYPE B	603 TYPE C	603 TYPE B	604 No. 5-A CATCH BASIN ‡	667 JUTE MATTING	For Details See Sheet No.
				30"	36"	36"	42"			
				L.F.	L.F.	L.F.	L.F.	Ea.	S.Y.	
1-D	130+00 to 130+40	Lt.		40					29	116
2-D	130+40 to 131+44	Lt.			104			1		116
3-D	131+44 to 136+00	Lt.				456		1	125	116-118
4-D	136+00 to 139+25	Lt.					325	1	125	118
5-D	139+25	Lt.						1	125	118
	TOTALS			40	104	456	325	4	404	

REF.	STATION TO STATION	SIDE	202 PIPE REMOVAL 24" & UNDER	202 CATCH BASIN REMOVAL
			L.F.	Ea.
1-R	132+54	Lt.		1
2-R	130+00 to 138+91	Rt.	891	1
3-R	136+25 to 137+25	Lt.	100	
4-R	136+54	Lt.		1
	TOTALS		991	3

STA. 130+00 TO STA. 140+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

MORSE ROAD STA. 71+50 TO STA. 73+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK 9/17/68
CHK: R.A.S. 12/16/68

MORSE ROAD STA. 73+50 TO STA. 75+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK. 9/17/68
CHK: R.A.S. 12/16/68

MORSE ROAD STA. 75+50 TO STA. 77+00

MORSE ROAD STA. 77+50 TO STA. 79+00

99
292

FRANKLIN COUNTY
FRA-270-22.99N

MORSE ROAD STA. 79+50 TO STA. 81+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK 9/17/68
CHK: R.A.S. 12/16/68

MORSE ROAD STA. 81+50 TO STA. 83+00

101
292

FRANKLIN COUNTY
FRA-270-22.99N

CALC:	SRK 9/18/68
CHK:	R.A.S. 12/16/68

MORSE ROAD STA. 84+00 TO STA. 87+00

FRANKLIN COUNTY
FRA-270-22.99N

MORSE ROAD STA. 88+00 TO STA. 91+00

103
292

FRANKLIN COUNTY
FRA-270-22.99.N

CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68

MORSE ROAD STA. 92+00 TO STA. 95+00

104
292

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68

MORSE ROAD STA. 96+00 TO STA. 99+00

FRANKLIN COUNTY
FRA-270-22.99N

MORSE ROAD STA. 100+00 TO STA. 103+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC:	SRK 9/25/68
CHK:	R.A.S. 12/16/68

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

End Section, 78+10, 55'Lt.
add c=7
830
78+10, 51'Lt.
839.9
add c=7
830
4:1
40'-12" @ 3.5%
ded c=38
+89, 43'Lt.
℄ 12" = 827.36
78+10, 44'Lt.
830.0
+29, 43'Lt.
℄ 12" = 828.76
830
ded c=2
78+10, 34'Lt.
830.1
add c=12
add c=10
Zero Section
78+10, 24'Lt.

	Area		Vol.	
	Cut	Fill	Cut	Fill
55'Lt.	+7		+1	
51'Lt.	+7		-4	
44'Lt.	-38		-5	
34'Lt.	+10		+4	
24'Lt.	0			

Deduct C=4

R/W
-0.77%
4:1
828.0
6:1
Drive 78+10 Lt.

R/W
13.0%
Drive 73+80, Rt.

Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0			60'Rt.
+35	0	+5	0	53'Rt.
+30	-25	+8	-3	45'Rt.
+12	-21	+5	-6	38.5'Rt.

Add C=18
Deduct F=9

End Section
73+80, 60'Rt.
add c=35
3:1
73+80, 53'Rt.
805.6
805
add c=30
3:1
ded F=25
4:1
73+80, 46'Rt.
804.5
805
add C=12
ded F=21
73+80, 38.5'Rt.
805.5

End Section
79+15, 60'Lt.
add c=7
830
79+15, 54'Lt.
833.9
add c=7
add F=3
ded c=44
4:1
4:1
830
79+15, 44'Lt.
833.9
ded c=7
add c=2
830
79+15, 34'Lt.
833.8
Zero Section
79+15, 24'Lt.

	Area		Vol.	
	Cut	Fill	Cut	Fill
60'Lt.	+7			
54'Lt.	+7	0	+1	0
44'Lt.	-44	+3	-7	+1
34'Lt.	-5	0	-9	+1
24'Lt.	0		-1	0

Deduct C=16
Add F=2

R/W
+0.78%
4:1
831.6
6:1
Drive 79+15 Lt.

R/W
0.00%
4:1
843.9
25:1
Drive 85+52, Rt.

Area		Vol.		
Cut	Fill	Cut	Fill	
+7				55'Rt.
+7		+1	0	52'Rt.
-82		-11	0	44'Rt.
-4		-16	0	34'Rt.
0		-1	0	24'Rt.

Deduct C=27

End Section
85+52, 55'Rt.
850
85+52, 52'Rt.
846.0
add C=7
850
4:1
42'-12" @ 1.0%
4:1
85+73, 44'Rt.
℄ 12" = 844.13
85+52, 44'Rt.
846.8
85+31, 44'Rt.
℄ 12" = 843.71
850
85+52, 34'Rt.
846.8
ded C=4
Zero Section
85+52, 24'Rt.

End Section add C=7
81+39, 55'Lt.
840
81+39, 51'Lt.
838.2
add c=7
840
add F=1
ded c=34
4:1
4:1
81+39, 44' Lt.
838.4
15" @ 3.5%
+53, 42'Lt.
2-2-B C.B.
℄ Grate 836.40
℄ 15" 830.50
840
add F=2
ded F=3
81+39, 39'Lt.
838.6
add c=4
Zero Section
81+39, 24'Lt.

	Area		Vol.	
	Cut	Fill	Cut	Fill
55'Lt.	+7			
51'Lt.	+7	0	+1	0
44'Lt.	-34	+1	-4	0
34'Lt.	+4	-1	-6	0
24'Lt.	0	0	+1	0

Deduct C=8

R/W
-2.38%
4:1
836.2
4:1
Drive 81+39 Lt.

R/W
-6.07%
845.9
Drive 87+54 Rt.

Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0			55'Rt.
+7	0	+1	0	52'Rt.
-40	+15	-5	+1	44'Rt.
0	-19	-7	-3	34'Rt.
0	0	0	-4	24'Rt.

Deduct C=11
Deduct F=6

End Section
87+54, 55'Rt.
add C=7
850
87+54, 52'Rt.
847.6
add F=5
ded C=40
850
4:1
76'-12" @ 1.0%
87+37, 44'Rt.
℄ 12" = 845.77
87+54, 44'Rt.
848.1
850
87+54, 34'Rt.
848.7
ded F=19
Zero Section
87+54, 24'Rt.

End Section
81+78, 55'Lt.
add c=7
840
81+78, 47'Lt.
839.9
add c=7
840
add F=3
4:1
ded C=44
81+78, 39'Lt.
839.9
840
ded c=7
81+78, 34'Lt.
839.8
add c=3
Zero Section
81+78, 24'Lt.

	Area		Vol.	
	Cut	Fill	Cut	Fill
55'Lt.	+7	0		
47'Lt.	+7	0	+2	0
39'Lt.	-44	-3	-5	-1
34'Lt.	-4	+1	-4	0
24'Lt.	0	0	-1	0

Deduct C=8
Deduct F=1

R/W
+0.58%
838.0
Drive 81+78 Lt.

R/W
-6.84%
846.3
Drive 87+87, Rt.

Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0			55'Rt.
+17	0	+2	0	52'Rt.
-60	+1	-6	0	44'Rt.
0	-27	-11	-5	34'Rt.
0	0	0	0	24'Rt.

Deduct C=15
Deduct F=5

End Section
87+87, 55'Rt.
add C=17
850
87+87, 52'Rt.
847.8
add F=1
ded C=60
850
4:1
76'-12" @ 1.0%
88+13, 44'Rt.
℄ 12" = 846.53
87+87, 44'Rt.
848.3
850
87+87, 34'Rt.
849.0
ded F=27
Zero Section
87+87, 24'Rt.

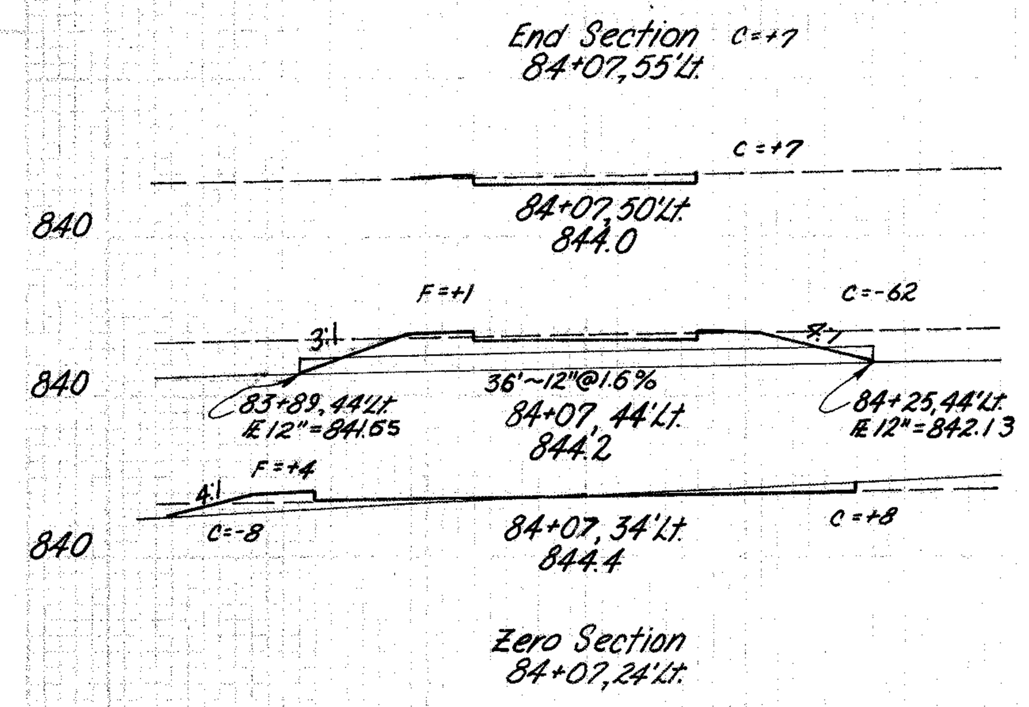
Note: Earthwork quantities carried to appropriate Morse Road X-Section Sheets.

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

CALC: SRK 9/25/68
CHK: R.A.S. 12/16/68

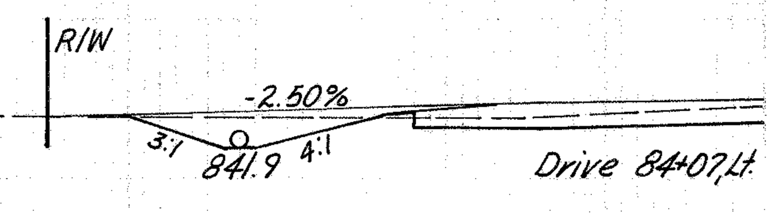
FRANKLIN COUNTY
FRA-270-22.99N

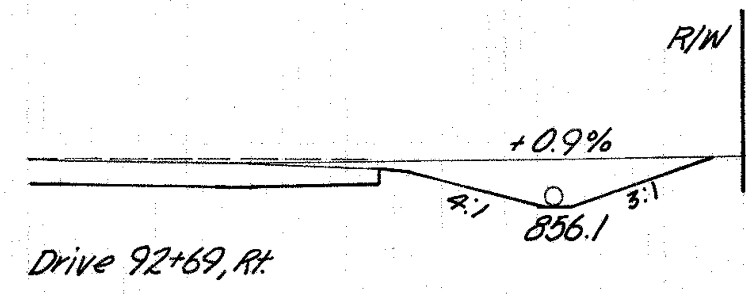
60 50 40 30 20 10 ℄ 10 20 30 40 50 60



Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	+1	0	55'Lt.
+7	0	-6	0	50'Lt.
-62	+1	-12	+1	44'Lt.
0	+4	0	+1	34'Lt.
0	0			24'Lt.

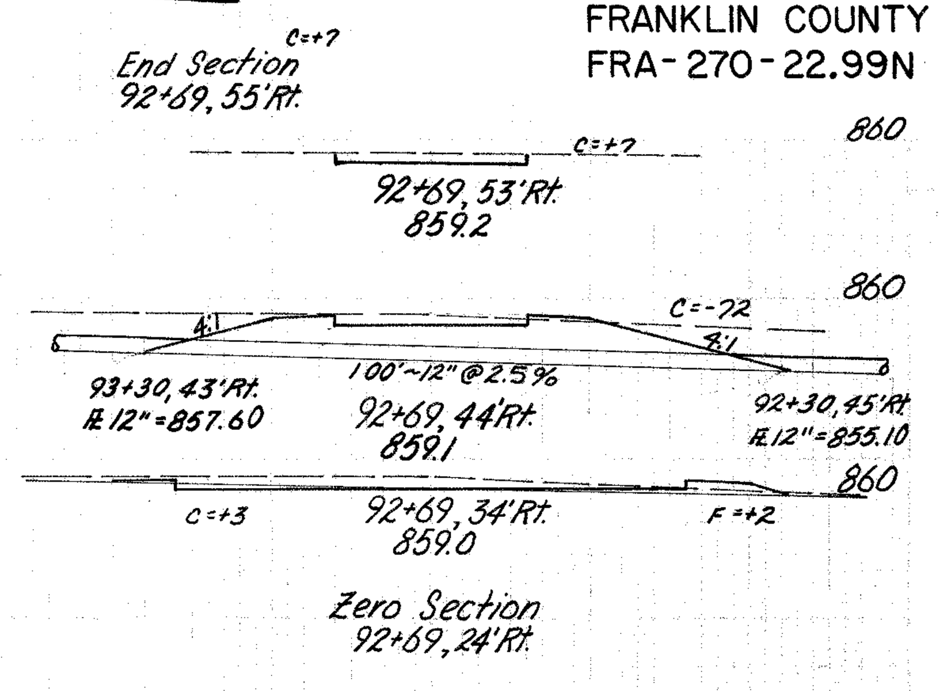
Add F=2
Deduct C=17

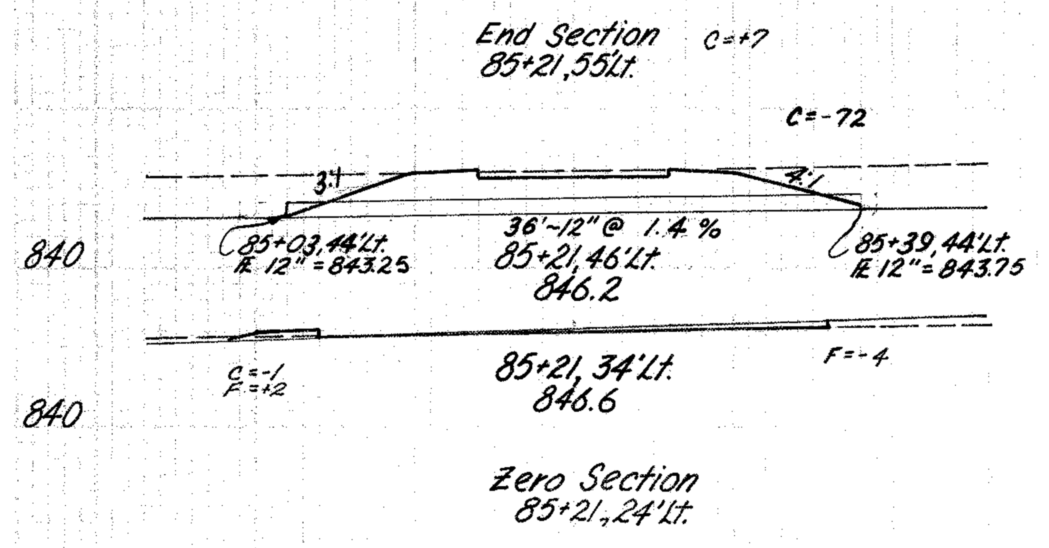




Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	+1	0	55'Rt.
+7	0	-11	0	53'Rt.
-72	0	-12	0	44'Rt.
+3	+2	+1	+1	34'Rt.
0	0			24'Rt.

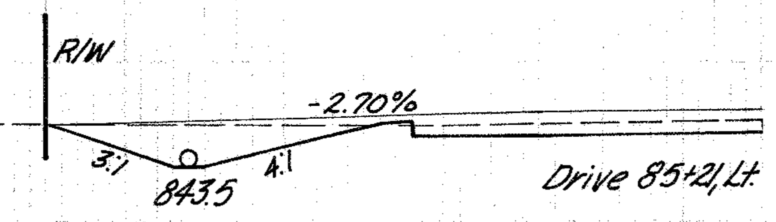
Deduct C=21
Add F=1

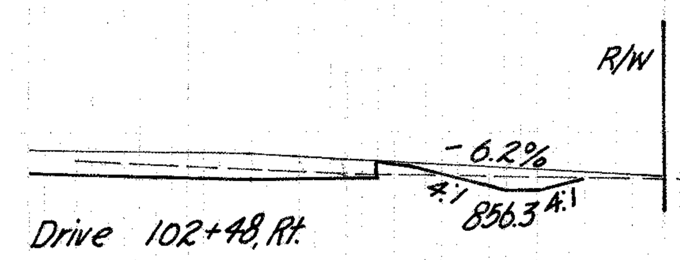




Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	-11	0	55'Lt.
-72	0	-14	-1	46'Lt.
-1	-2	0	0	39'Lt.
0	0			24'Lt.

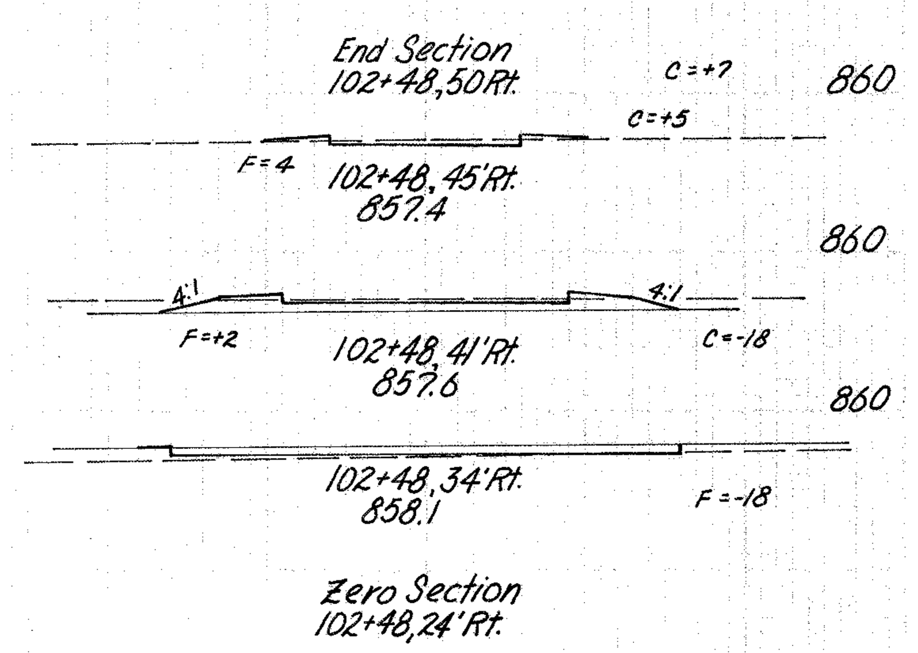
Deduct F=1
Deduct C=25

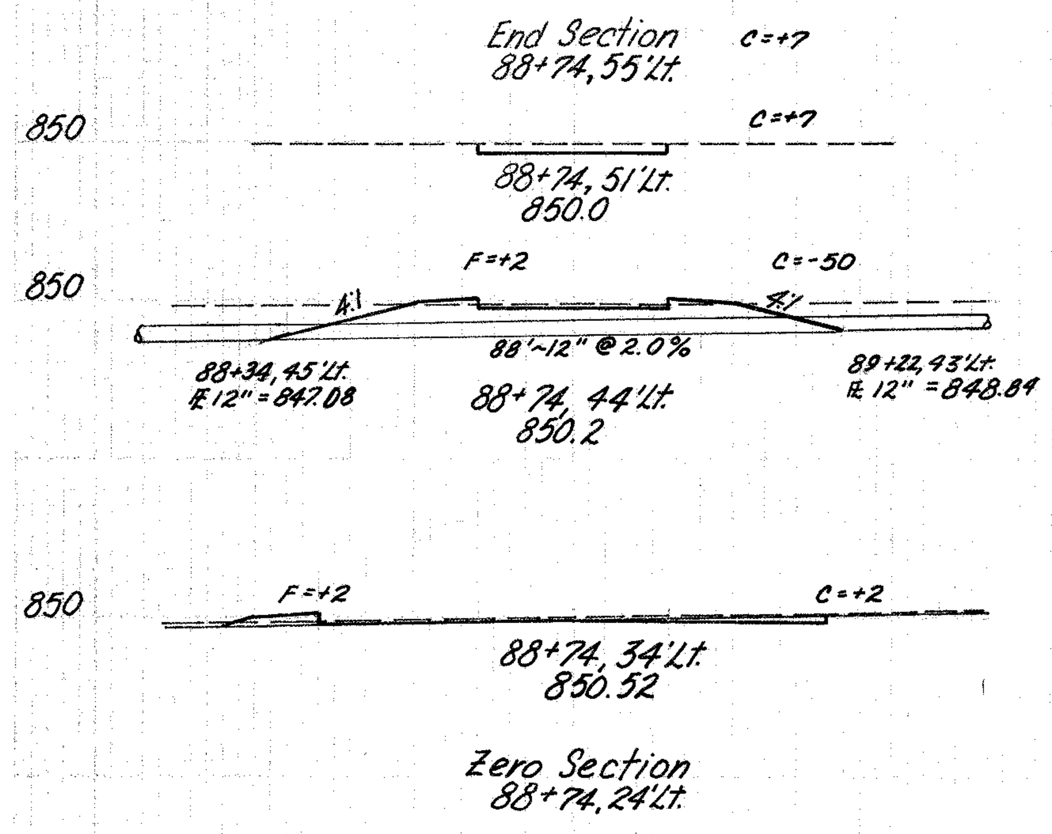




Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	+1	0	50'Rt.
+5	+1	-1	+1	45'Rt.
-18	+2	-2	-2	41'Rt.
0	-18	0	-3	34'Rt.
0	0			24'Rt.

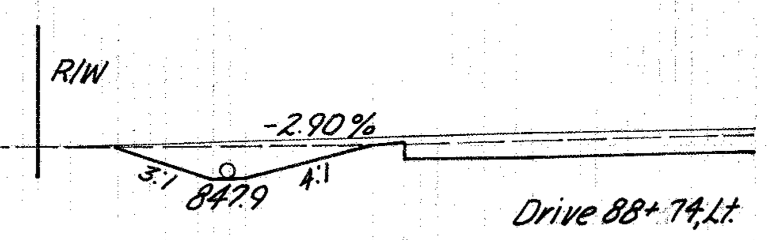
Deduct C=2
Deduct F=4

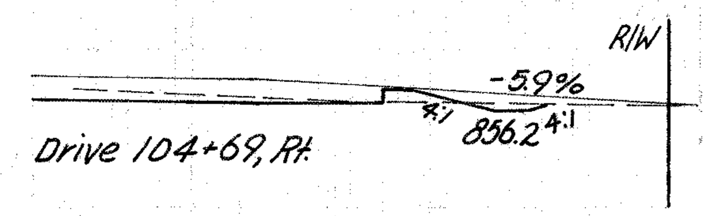




Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	+1	0	55'Lt.
+7	0	-6	0	51'Lt.
-50	+2	-9	+1	44'Lt.
+2	+2	+1	+1	34'Lt.
0	0			24'Lt.

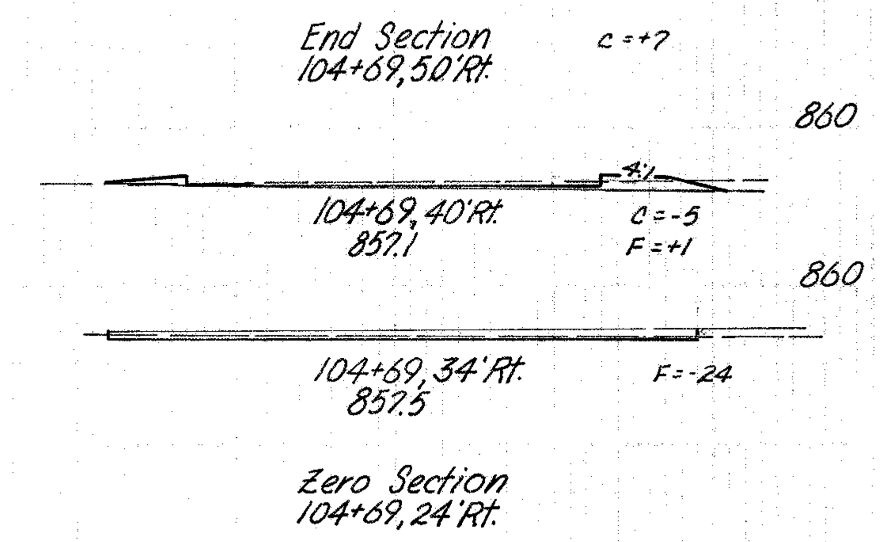
Add F=2
Deduct C=13

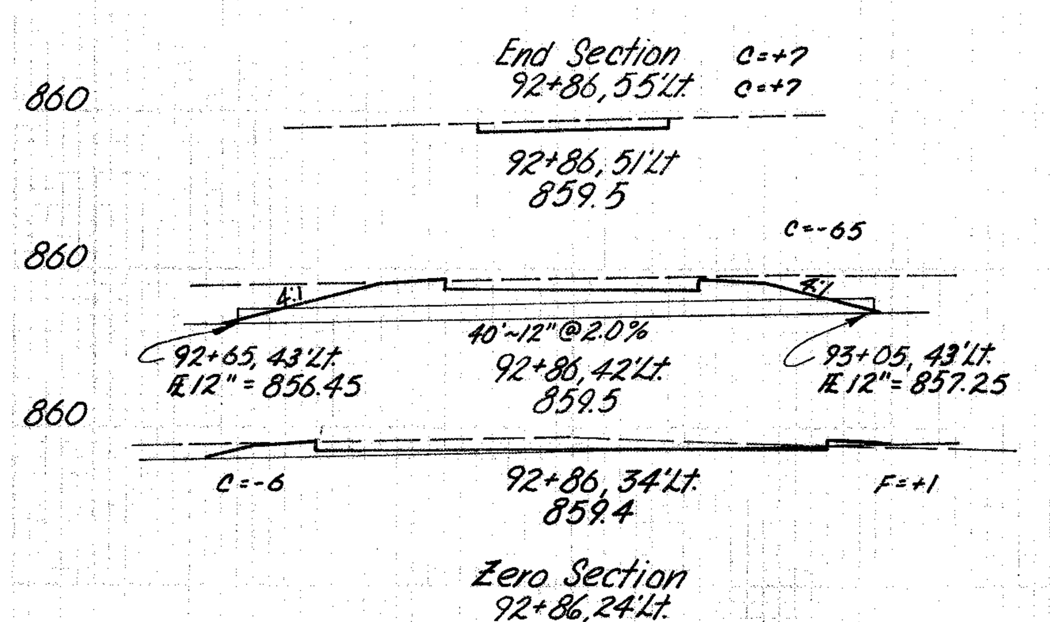




Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	+1	+1	50'Rt.
-5	+1	-1	-3	40'Rt.
0	-24	0	-4	34'Rt.
0	0			24'Rt.

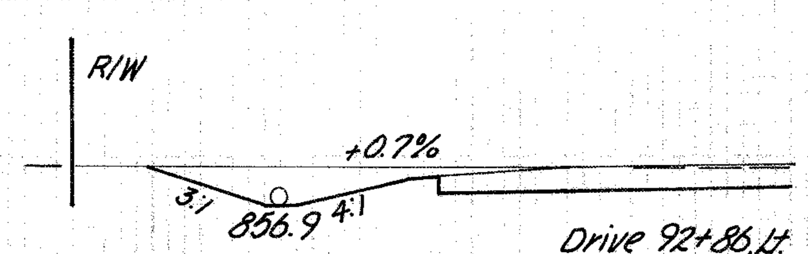
Deduct F=6

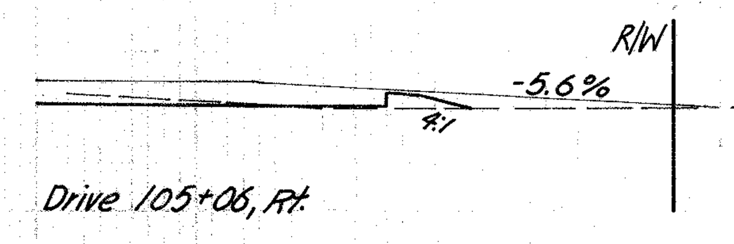




Area		Vol.		
Cut	Fill	Cut	Fill	
+7	0	+2	0	55'Lt.
+7	0	-10	0	51'Lt.
-65	0	-10	0	42'Lt.
-6	+1	-1	0	34'Lt.
0	0			24'Lt.

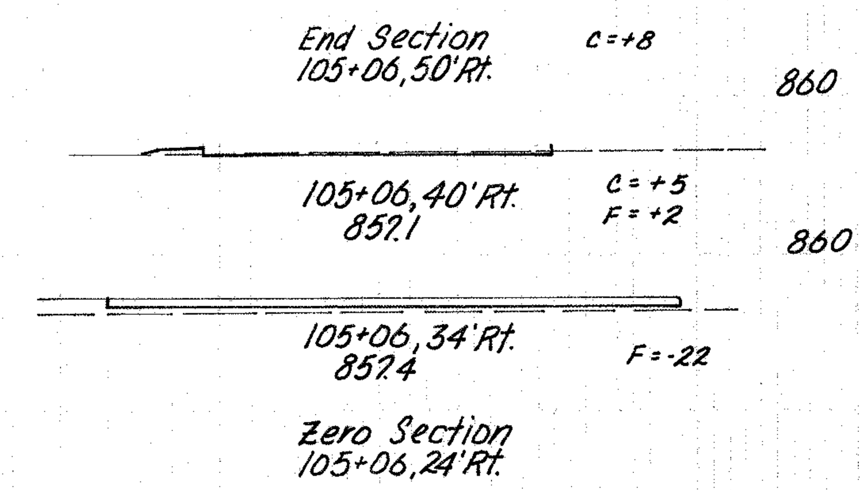
Deduct C=19





Area		Vol.		
Cut	Fill	Cut	Fill	
+8	0	+3	+1	50'Rt.
+5	+2	+1	-2	40'Rt.
0	-22	0	-4	34'Rt.
0	0			24'Rt.

Add C=4
Deduct F=5



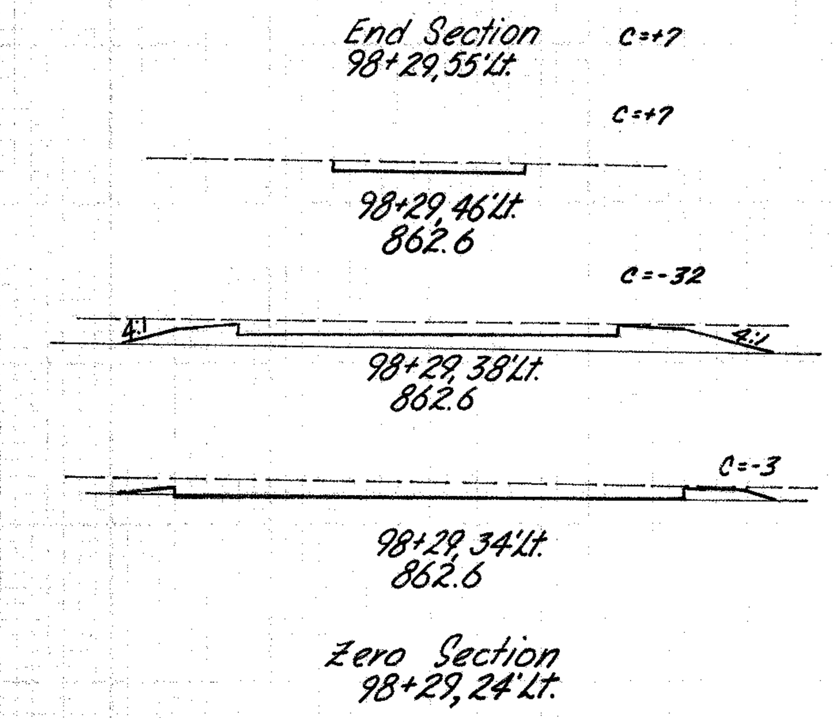
Note: Earthwork quantities carried to appropriate Morse Road X-Section Sheets.

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

FRANKLIN COUNTY
FRA-270-22.99N

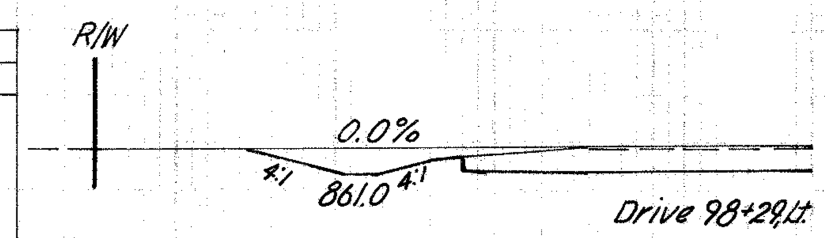
CALC: SRK 9/25/68
CHK: R.A.S. 12/16/68

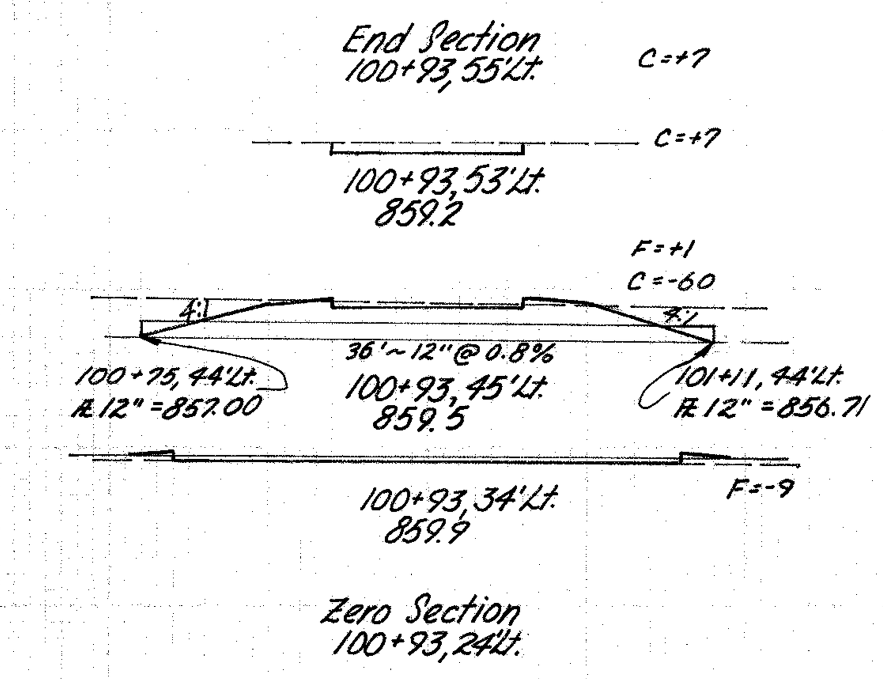
60 50 40 30 20 10 ℄ 10 20 30 40 50 60



	Area Cut	Area Fill	Vol. Cut	Vol. Fill
55'Lt.	+7	0		
			+2	0
46'Lt.	+7	0		
			-4	0
38'Lt.	-32	0		
			-3	0
34'Lt.	-3	0		
			-1	0
24'Lt.	0	0		

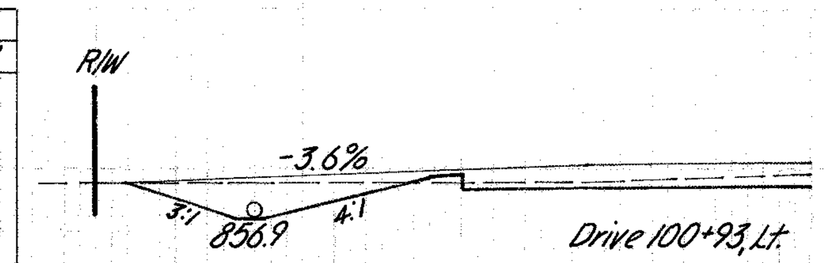
Deduct C=6

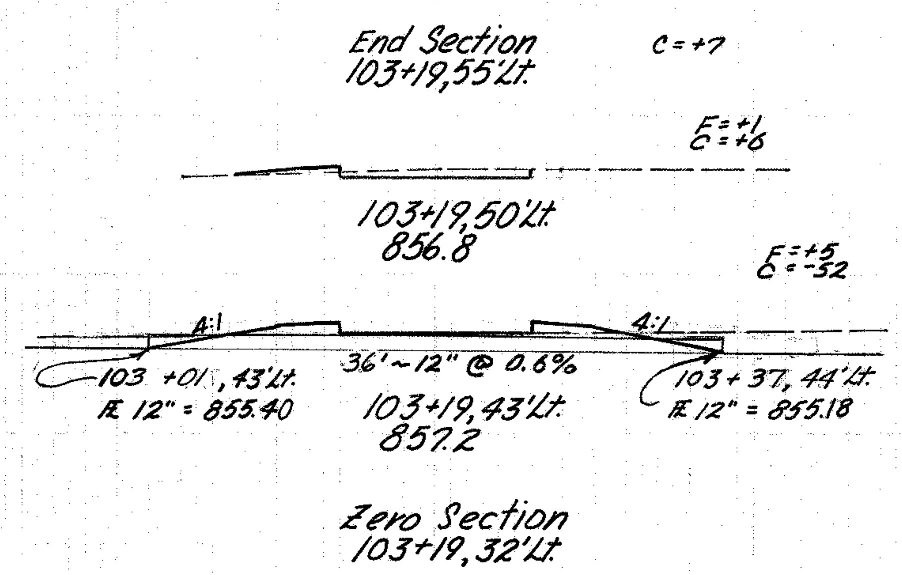




	Area Cut	Area Fill	Vol. Cut	Vol. Fill
55'Lt.	+7	0		
			+1	0
53'Lt.	+7	0		
			-8	0
45'Lt.	-60	+1		
			-12	-2
34'Lt.	0	-9		
			0	-2
24'Lt.	0	0		

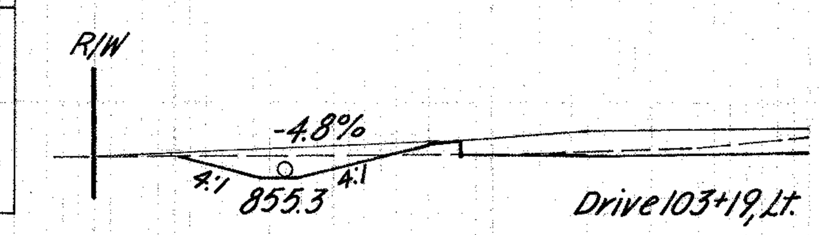
Deduct F=4
Deduct C=19

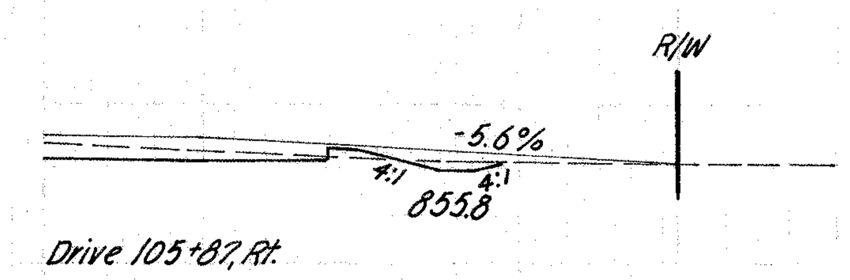




	Area Cut	Area Fill	Vol. Cut	Vol. Fill
55'Lt.	+7	0		
			+1	0
50'Lt.	+6	+1		
			-6	+1
43'Lt.	-52	+5		
			-11	+1
32'Lt.	0	0		

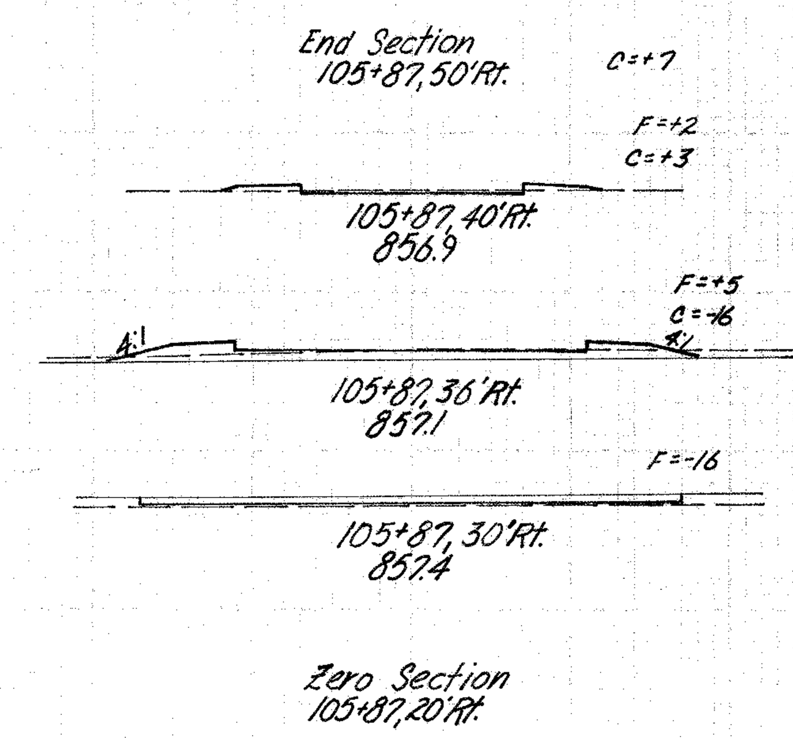
Add F=2
Deduct C=16





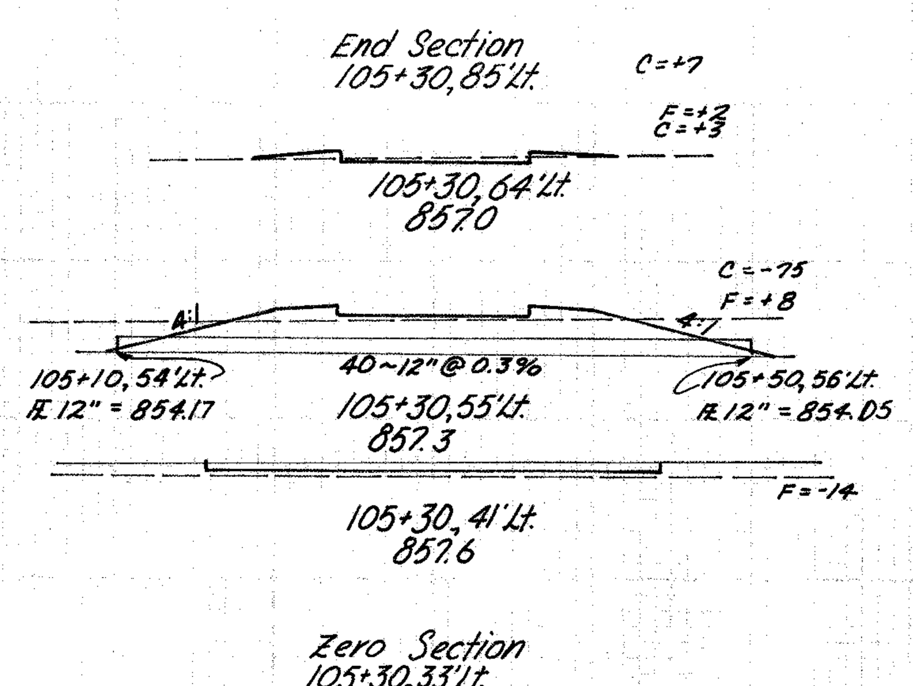
Area Cut	Area Fill	Vol. Cut	Vol. Fill	
+7	0			50'Rt.
		+2	+1	
+3	+2			40'Rt.
		-1	+1	
-16	+5			36'Rt.
		-2	-1	
0	-16			30'Rt.
		0	-3	
0	0			20'Rt.

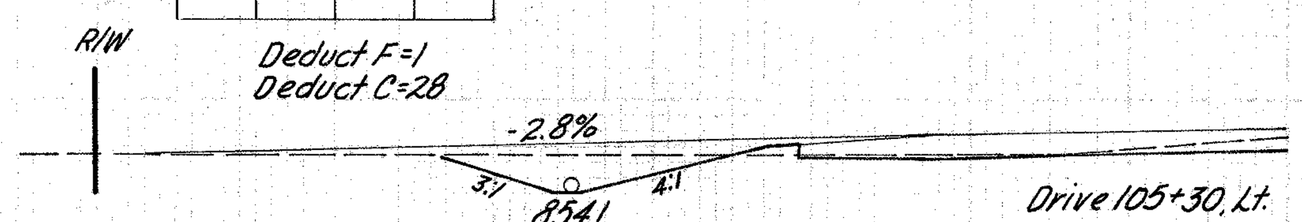
Deduct F=2
Deduct C=1



	Area Cut	Area Fill	Vol. Cut	Vol. Fill
85'Lt.	+7	0		
			+4	+1
64'Lt.	+3	+2		
			-12	+2
55'Lt.	-75	+8		
			-20	-2
41'Lt.	0	-14		
			0	-2
33'Lt.	0	0		

Deduct F=1
Deduct C=28





Note: Earthwork quantities carried to appropriate Morse Road X-Section Sheets.

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

FRANKLIN COUNTY
FRA-270-22.99N

MORSE ROAD STA. 104+00 TO STA. 107+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: J.P. Sept. 68
CHK: [illegible] 10-8-68

Add Fill

	Area	Vol.
108+74, 50' Rt.	0	
		1
108+74, 39' Rt.	2	
		1
108+74, 28' Rt.	4	
		1
108+74, 23' Rt.	0	
Total Add To Fill		3

Drive 108+74 -7 3

Deduct Cut

	Area	Vol.
108+74, 43' Rt.	0	
		3
108+74, 36' Rt.	26	
		4
108+74, 28' Rt.	0	
Total Deduct From Cut		7

870
860 99 13
850 274 81

Add For Basement
Sta 107+72 199

Drive 107+29 -57 15

Drive 107+07 -9 6

Add Fill

	Area	Vol.
107+07, 60' Rt.	0	
		2
107+07, 44' Rt.	5	
		3
107+07, 34' Rt.	9	
		1
107+07, 28' Rt.	0	
Total - Add To Fill		6

Deduct Cut

	Area	Vol.
107+29, 97' Lt.	0	
		26
107+29, 82' Lt.	92	
		31
107+29, 64' Lt.	0	
Total - Deduct From Cut		57

Add Fill

	Area	Vol.
107+29, 00' Lt.	0	
		5
107+29, 82' Lt.	3	
		7
107+29, 64' Lt.	19	
		3
107+29, 56' Lt.	0	
Total - Add To Fill		15

Deduct Cut

	Area	Vol.
107+07, 47' Rt.	0	
		4
107+07, 41' Rt.	36	
		5
107+07, 34' Rt.	0	
Total - Deduct From Cut		9

49 31

FRANKLIN COUNTY
FRA-270-22.99 N

STA 109+00 TO STA 111+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

STA. 112+00 TO STA. 115+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

STA. 116+00 TO STA. 119+00 MORSE ROAD

STA.-120+00 TO STA.-123+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

CALC:
CHK:

STA 124+00 TO STA 127+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

STA. 128+00 TO STA. 131+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

STA. 132+00 TO STA. 135+00 MORSE ROAD

118
292

FRANKLIN COUNTY
FRA-270-22.99N

STA. 136+00 TO STA. 139+00 MORSE ROAD

FRANKLIN COUNTY
FRA-270-22.99 N

CALC
CHK

STA. 140+00 TO STA. 142+00 MORSE ROAD

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

120/292

FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D.B. 9-24-68
CHK: R.E.H. 10-4-68

REF.	STATION TO STATION	SIDE	656 Roadside Cleanup M.S.F.							
1-A	A-1352+00 to A-1358+00	Rt.	68							
	TOTALS		68							

NOTES:
1 For Ramp Geometric Layout, See Sheet No. 82
2 For Ramp "A" Profile, See Sheet No. 121
3 For Ramp "A" Pavement Detail with I.R-270, See Sheet No. 140
4 For Ramp "A" Pavement Detail with Morse Rd., See Sheet No. 148
5 For Morse Rd. Plan & Profile, See Sheet No. 94
6 For I.R-270 Plan & Profile, See Sheet No. 34

TREES & STUMP REMOVAL
A-1343+00 to A-1348+00

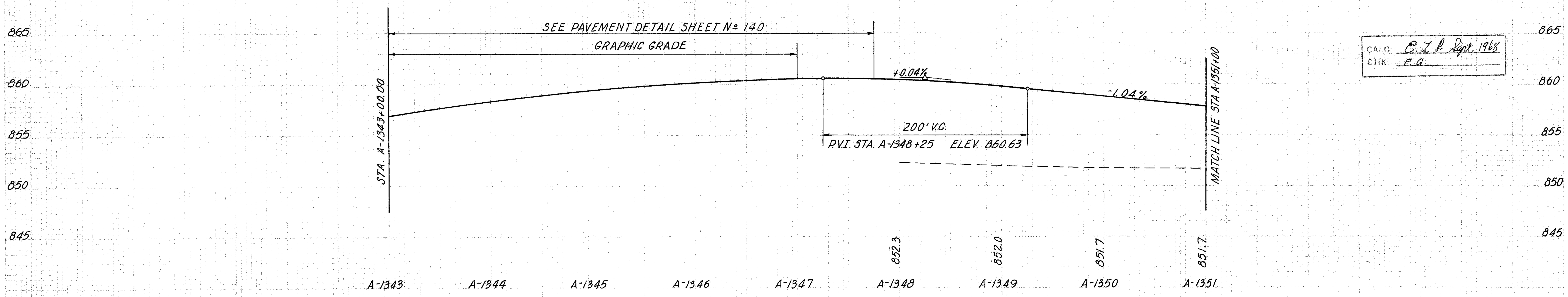
Size	Left	Right
12" to 24"	1	2
24" to 36"	0	0
36" to 60"	0	0
Over 60"	0	0

RAMP "A" MORSE ROAD

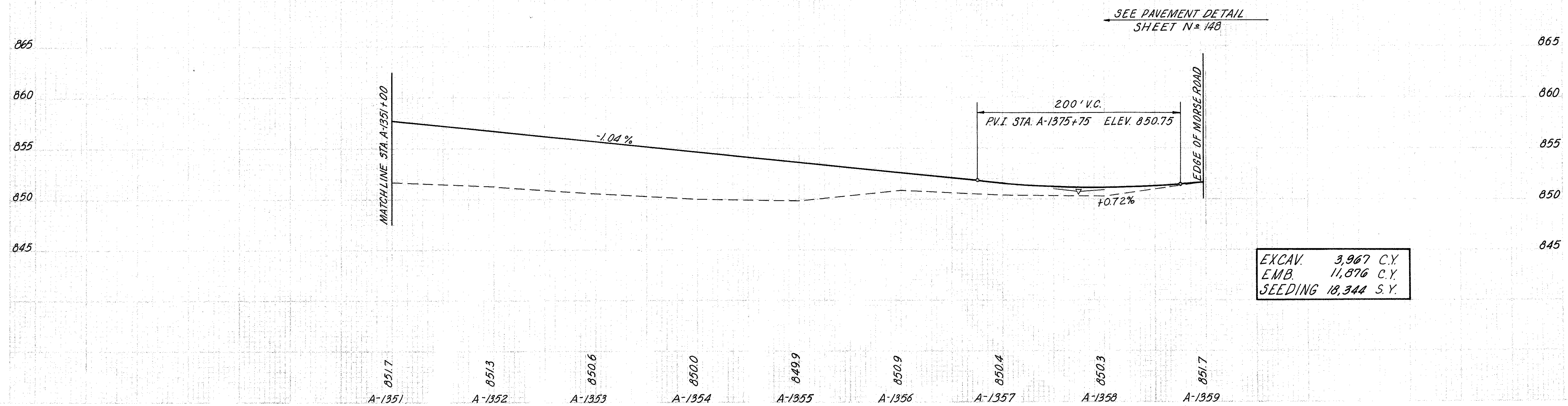
FRANKLIN COUNTY
FRA-270-22.99N

Profile Grade Left Edge	Profile Grade Right Edge
860.58	
860.59	
860.58	
860.54	
860.47	861.80
860.36	861.69
860.22	861.55
860.04	861.37
859.83	861.16
859.59	860.92
859.33	860.66
859.07	860.40
858.81	860.14
858.55	859.83
858.29	859.49
858.03	859.12
857.77	858.72

CALC: C.L.P. Sept. 1968
CHK: F.G.



Profile Grade Left Edge	Profile Grade Right Edge
857.77	858.05
857.51	858.29
857.25	857.87
856.99	857.45
856.73	857.07
856.47	856.75
856.21	856.46
855.95	856.20
855.69	855.94
855.43	855.68
855.17	855.42
854.91	855.16
854.65	854.90
854.39	854.64
854.13	854.38
853.87	854.12
853.61	853.86
853.35	853.59
853.09	853.31
852.83	852.97
852.57	852.63
852.31	852.26
852.05	851.87
851.79	851.45
851.56	851.06
851.38	850.76
851.26	850.60
851.19	850.58
851.18	
851.22	
851.32	
851.47	



EXCAV.	3,967	C.Y.
EMB.	11,876	C.Y.
SEEDING	18,344	S.Y.

PROFILE RAMP "A"

FRANKLIN COUNTY
FRA-270-22.99N

STA. A-1348+00 TO STA. A-1351+00 RAMP "A"

STA. A-1352+00 TO STA. A-1355+00 RAMP "A"

FRANKLIN COUNTY
FRA-270-22.99N

STA. A-1356+00 TO STA. A-1358+00 RAMP "A"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

125
292

FRANKLIN COUNTY

FRA-270-22.99N

CALC: W.D.G. 9-24-68
CHK: R.E.H. 10-4-68

REF.	STATION TO STATION	SIDE	602 CONC. MASONRY	603 TYPE "A" 706.04 38"x24"					656 Roadside Cleanup	For Details See Sheet No.
			C.Y.	L.F.					M.S.F.	
1-D	B-1362+00		1.3	138						191
1-A	B-1357+00 to B-1362+00	Rt.							81	
2-A	B-1362+00 to B-1363+00	Rt.							2	
TOTALS			1.3	138					83	

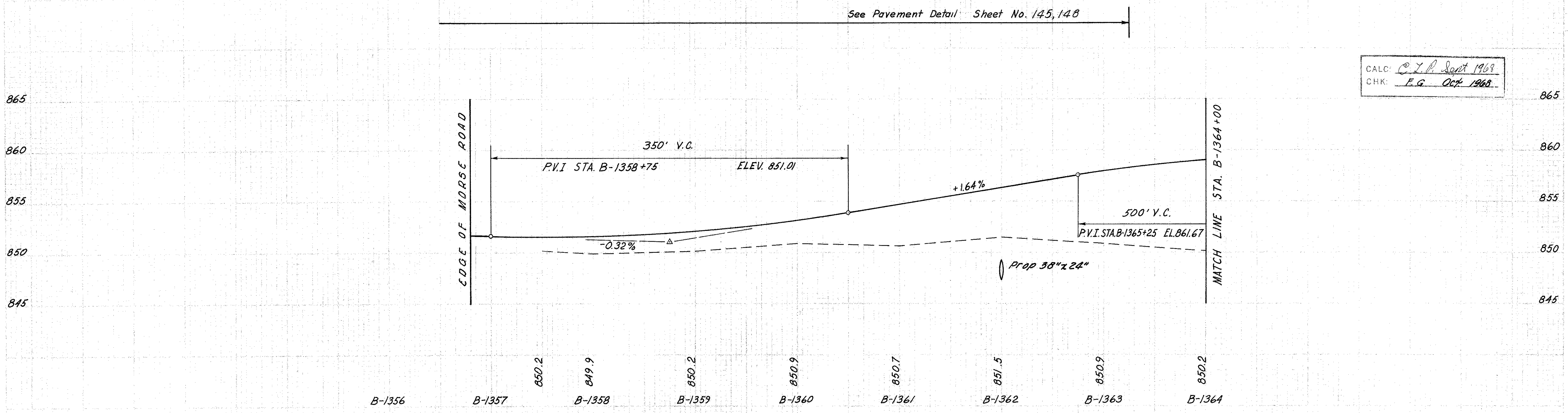
NOTES:
1 For Ramp Geometric Layout, See Sheet No. 83
2 For Ramp "B" Profile, See Sheet No. 126
3 For Ramp "B" Pavement Detail with I.R-270, See Sheet No. 141
4 For Ramp "B" Pavement Detail with Morse Rd., See Sheet No. 145, 148
5 For Morse Rd. Plan & Profile, See Sheet No. 94
6 For I.R-270 Plan & Profile, See Sheet No. 37

RAMP "B" MORSE ROAD

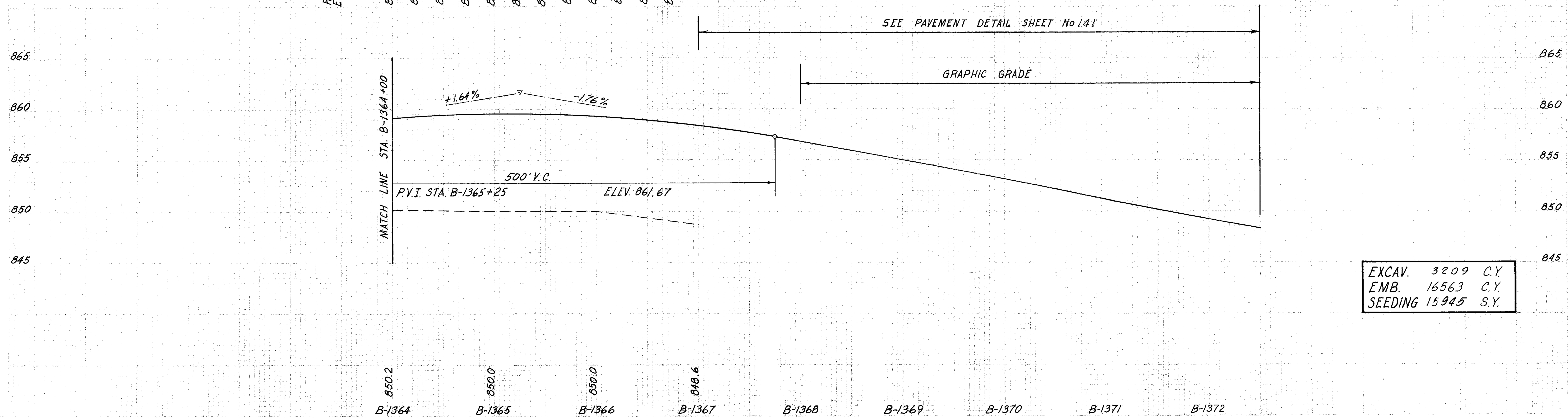
FRANKLIN COUNTY
FRA-270-22.99N

CALC: C.L.B. Sept 1968
CHK: F.G. Oct 1968

PROFILE GRADE LEFT EDGE	RIGHT EDGE
851.64	
851.57	
851.51	
851.48	
851.49	
851.53	
851.61	
851.72	
851.87	
852.05	
852.27	
852.52	
852.81	
853.13	
853.49	
853.88	
854.29	
854.70	
855.11	
855.52	
855.93	
856.34	
856.75	
857.16	
857.57	
857.96	
858.30	
858.61	859.94
858.87	859.20
859.09	860.42



PROFILE GRADE LEFT EDGE	RIGHT EDGE
859.09	860.42
859.26	860.59
859.40	860.73
859.49	860.82
859.54	860.87
859.54	860.87
859.51	860.84
859.43	860.74
859.31	860.56
859.14	860.31
858.94	859.95
858.69	859.54
858.40	
858.06	
857.69	
857.27	



EXCAV.	3209	C.Y.
EMB.	16563	C.Y.
SEEDING	15945	S.Y.

PROFILE RAMP "B"

FRANKLIN COUNTY
FRA-270-22.99N

STA. B-1357+22 TO STA. B-1360+00 RAMP "B"

128
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: ... June '68
CHK: ... June '68

STA. B-1361+00 TO STA. B-1364+00 RAMP "B"


129
292
FRANKLIN COUNTY
FRA-270-22.99 N
CALC:
CHK:
1368+00 Back 32 422
101 1368+00
1228
Ramp B | I.R. 270
117 2056
120
LA-R/W
C-31
6:1
F-668
24:1 48:1
859.0
31 668
6:1
846.1
858.40
B-1367+00
848.6
1361
C
L = 91.2'
V = 157
F
C = 99.4'
V = 2534
157 2534
Ramp B | I.R. 270
125
LA-R/W
C-62
6:1
F-702
6:1
858.3
6:1
6:1
846.3
859.31
B-1366+00
850.0
1456
C
L = 91.0'
V = 239
F
L = 100.6
V = 2748
239 2748
Ramp B | I.R. 270
137
LA-R/W
C-80
6:1
6:1
857.0
6:1
F-773
1644
6:1
846.5
859.54
B-1365+00
850.0
C
L = 91.3'
V = 254
F
L = 101.0
V = 2873
254 2873
159 C-1364+00
860
850
840
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140
STA. B-1365+00 TO STA. B-1367+00 RAMP "B"

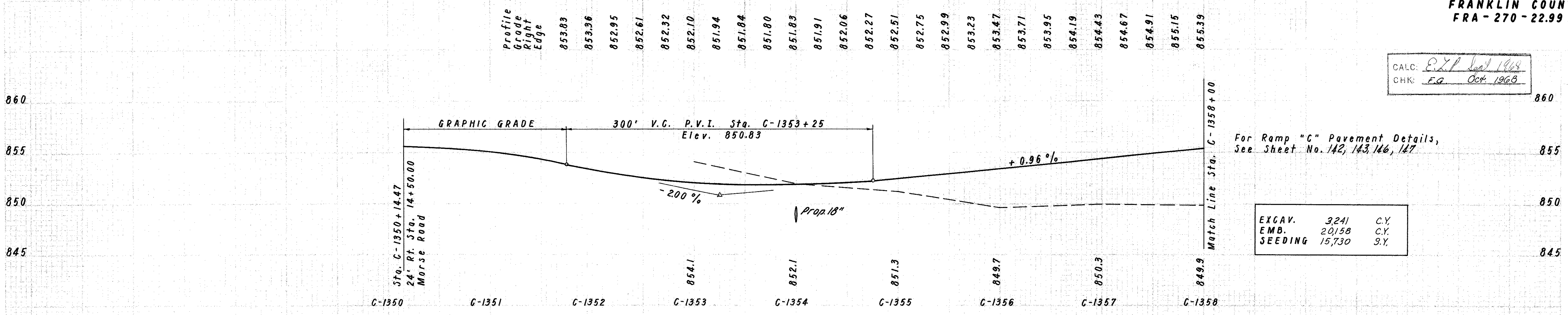
NOTES:

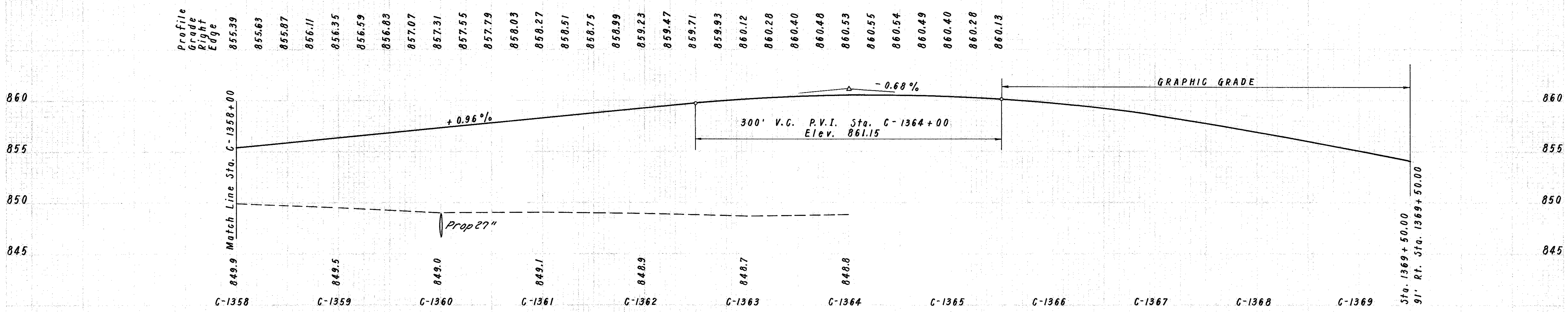
1. For Ramp Geometric Layout, See Sheet No. 83
2. For Ramp "C" Profile, See Sheet No. 131
3. For Ramp "C" Pavement Detail with I.R.-270, See Sheet No. 143
4. For Ramp "C" Pavement Detail with Morse Rd., See Sheet No. 146
5. For Ramp "C" Connection Pavement Detail, See Sheet No. 147
6. For Ramp "C" Connection Profile, See Sheet No. 131
7. For Morse Rd. Plan & Profile, See Sheet No. 92
8. For I.R.-270 Plan & Profile, See Sheet No. 37

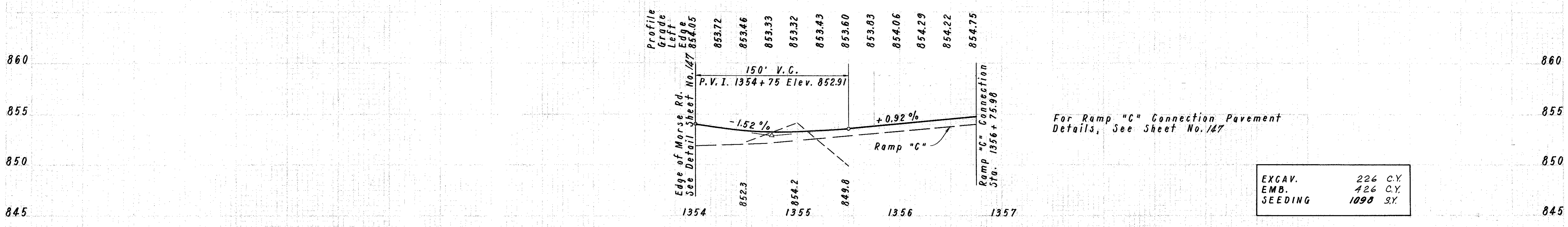
REF.	STATION TO STATION	SIDE	606 GUARD RAIL TYPE 5	606 APPR. END ASSY.	606 ANCHOR ASSY.	603 TYPE A 706.02 or 706.08	603 TYPE B	604 No. 2-2-B CATCH BASIN	660 SODDING	656 ROAD SIDE CLEAN UP	602 CONCRETE MASONRY	FOR DETAILS SEE SHEET
			L.F.	EA.	EA.	27"	18"					No.
						L.F.	L.F.	EA.	S.Y.	M.S.F.	C.Y.	
1-D	C-1363+75 to C-1365+25	RT							140			
2-D	C-1360+00	℄				150					1.0	192
3-D	C-1354+00	℄					92	1			0.3	133
1-A	C-1355+00 to C-1360+00	Lt.								58		
1-GR	C-1350+17 to 1351+67	Rt.	150	1	1							
	TOTALS		150	1	1	150	92	1	140	58	1.3	

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: E.Z.P. Sept 1968
CHK: F.G. Oct 1968







RAMP "C" CONNECTION PROFILE

PROFILE RAMP "C"
PROFILE RAMP "C" CONNECTION

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: JL June '68
CHK: 2? June 68

STA. C-CONN-1353+86.21 TO STA. C-CONN-1356+00 RAMP "C" CONNECTION

FRANKLIN COUNTY
FRA-270-22.99N

STA. C-1352+70 TO STA. C-1356+00 RAMP "C"

134
292

FRANKLIN COUNTY
FRA-270-22.99N

CALC: J.P. June '68
CHK: 24 June 68

STRUCTURE No.
STA. C-1360+00 27" CULVERT
See Sheet No. 192 for Culvert Details

STA. C-1357+00 TO STA. C-1360+00 RAMP "C"

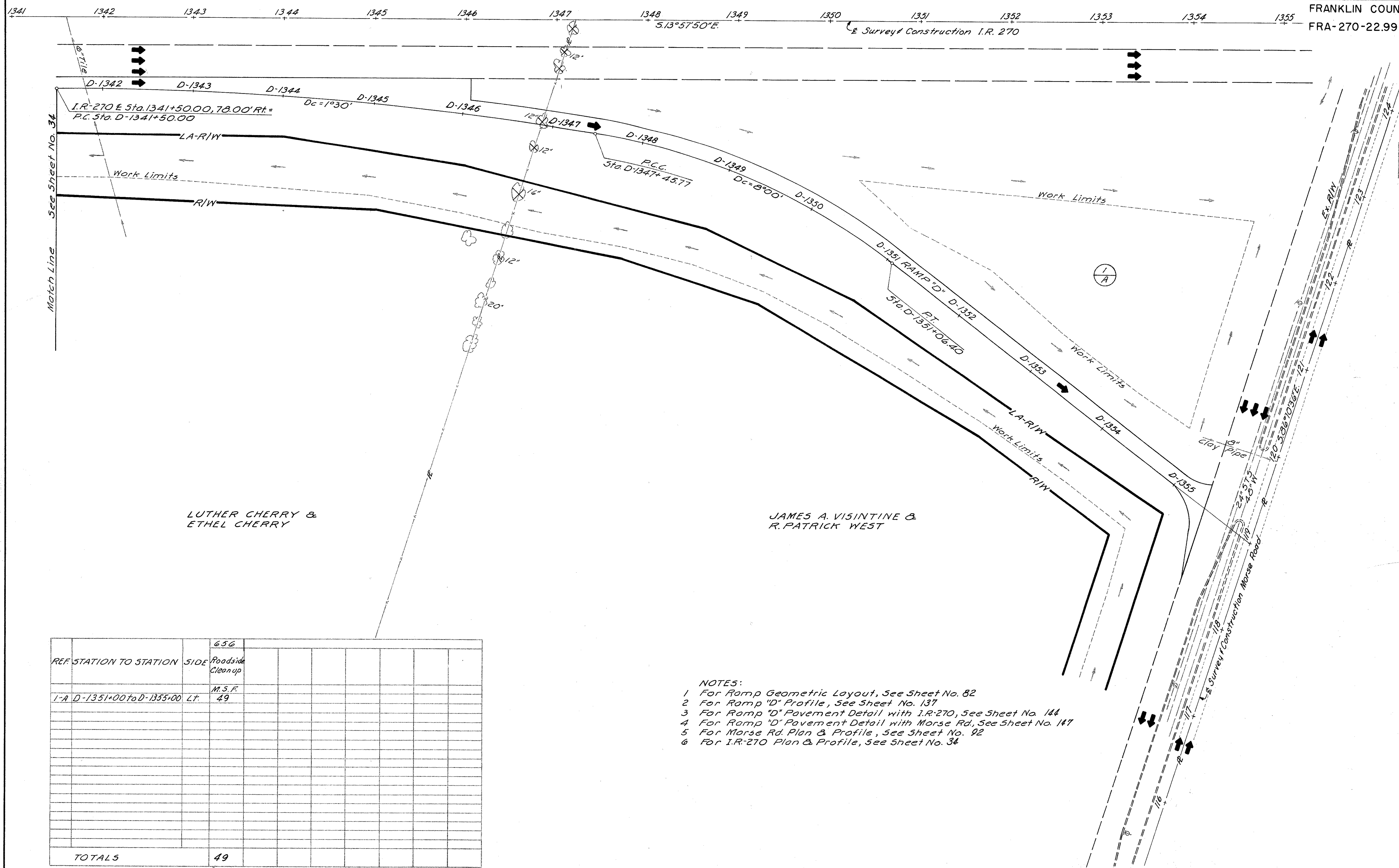
135
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: [signature] June '68
CHK: [signature] June '68

STA. C-1361+00 TO STA. C-1364+00 RAMP "C"

CALC: G.L.D.B. 9-24-68
CHK: R.C.H. 10-4-68

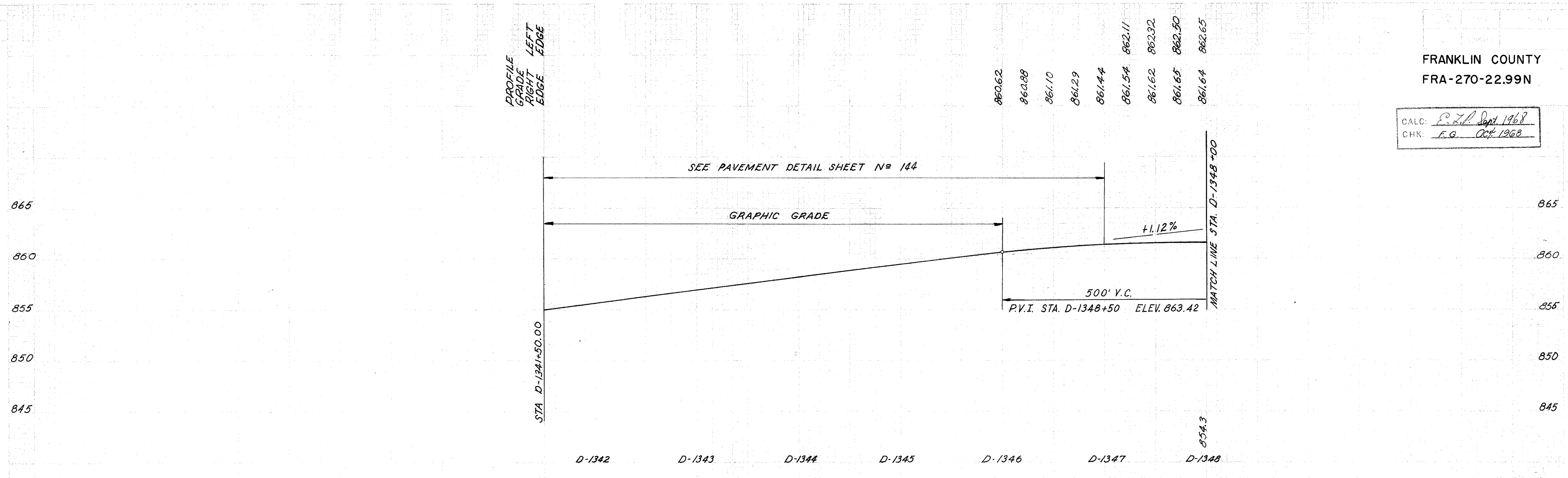


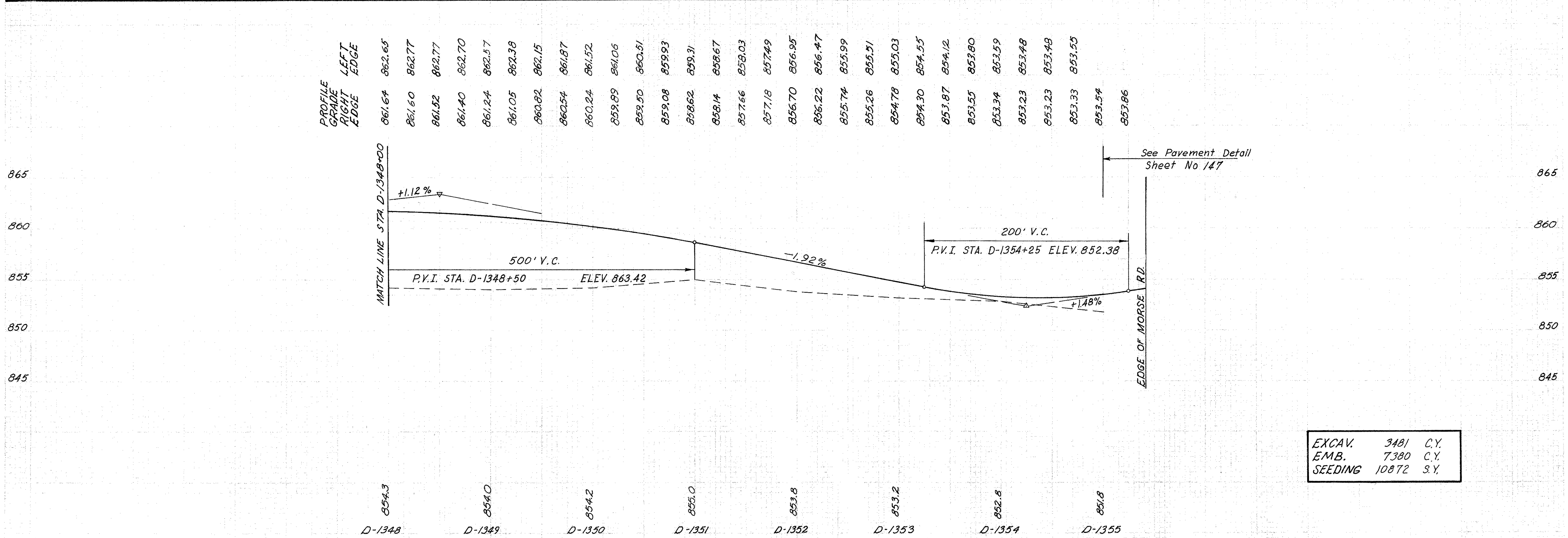
REF.	STATION TO STATION	SIDE	656 Roadside Clean up							
			M.S.F.							
1-A	D-1351+00 to D-1355+00	Lt.	49							
TOTALS			49							

NOTES:
1 For Ramp Geometric Layout, See Sheet No. 82
2 For Ramp "D" Profile, See Sheet No. 137
3 For Ramp "D" Pavement Detail with I.R.-270, See Sheet No. 144
4 For Ramp "D" Pavement Detail with Morse Rd., See Sheet No. 147
5 For Morse Rd. Plan & Profile, See Sheet No. 92
6 For I.R.-270 Plan & Profile, See Sheet No. 34

FRANKLIN COUNTY
FRA-270-22.99N

CALC: E.Z.P. Sept. 1968
CHK: F.G. Oct. 1968





EXCAV.	3481	C.Y.
EMB.	7380	C.Y.
SEEDING	10872	S.Y.

PROFILE RAMP "D"

FRANKLIN COUNTY
FRA-270-22.99N

STA. D-1348+00 TO STA. D-1351+00 RAMP "D"

139
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: [illegible] '68
CHK: [illegible] June 68

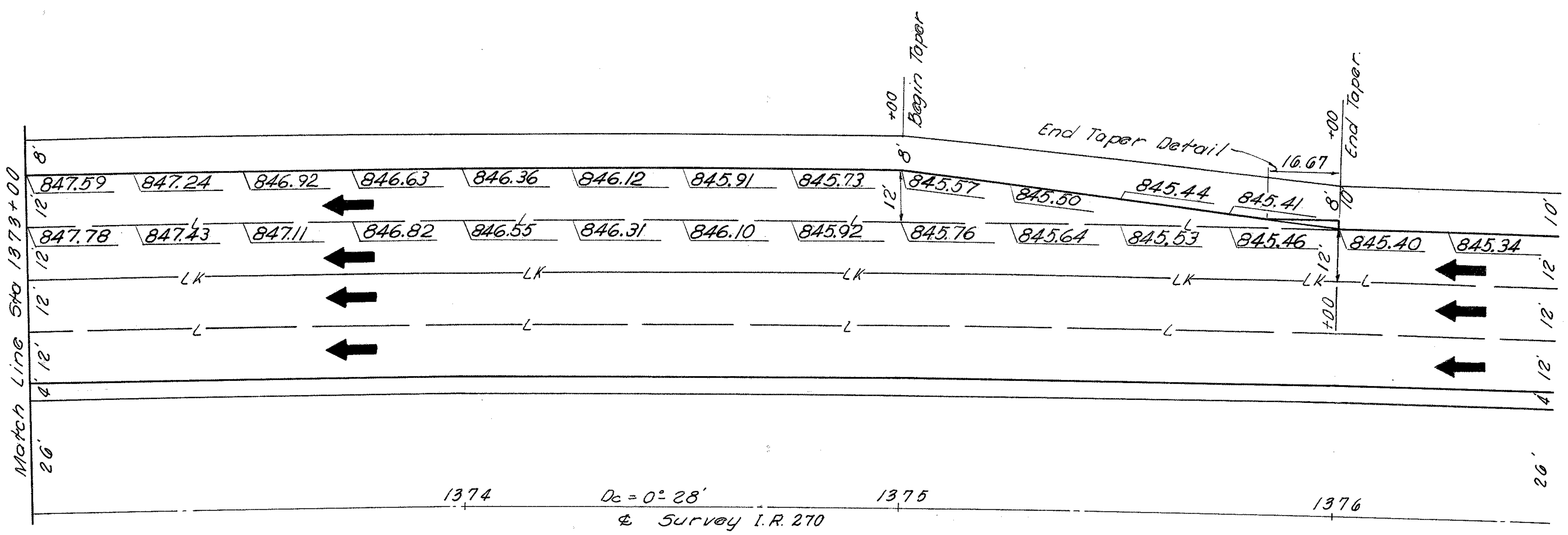
STA. D-1352+00 TO STA. D-1354+87 RAMP "D"

PAVEMENT DETAILS RAMP "A" & I.R. 270

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

141/292

FRANKLIN COUNTY
FRA-270-22.99 N



LEGEND

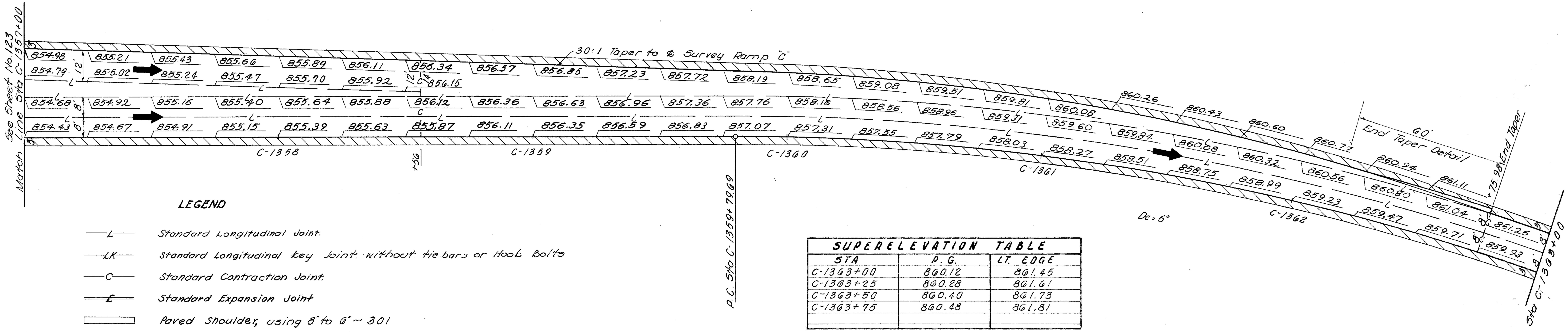
—L— Standard Longitudinal Joint.
—LK— Standard Longitudinal key Joint Without Tie Bars or Hook Bolts
—C— Standard Contraction Joint.
—E— Standard Expansion Joint.

Paved Shoulder using 8" to 6" ~ 301
Paved Shoulder using 9" ~ 301

PAVEMENT DETAILS RAMP "B" & I. R-270

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

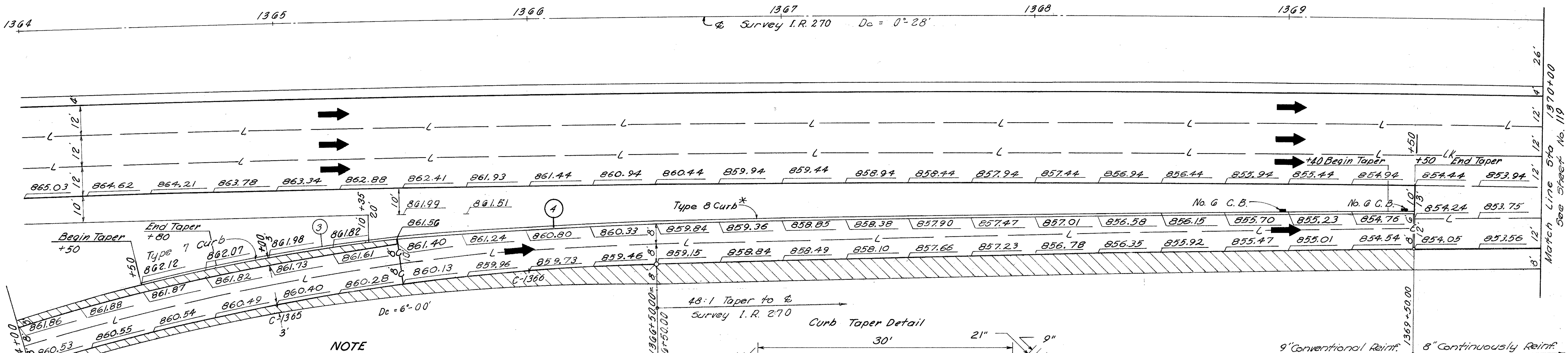
FRANKLIN COUNTY
FRA-270-22.99 N

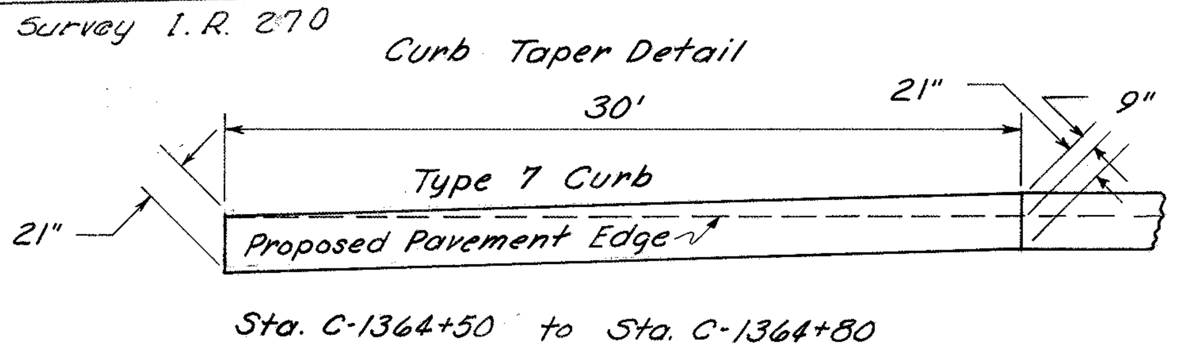


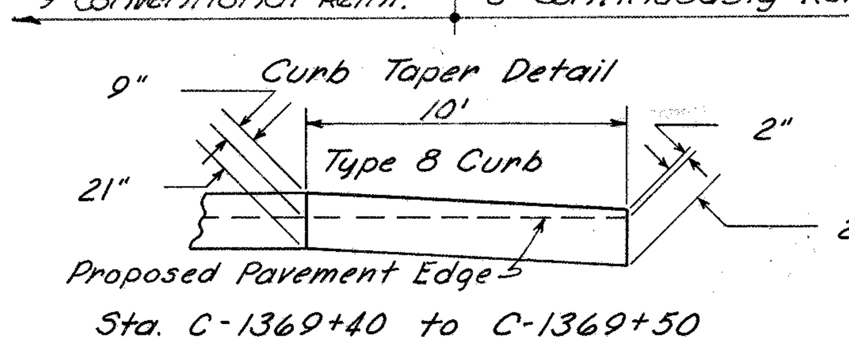
LEGEND

—L—	Standard Longitudinal Joint.
—LK—	Standard Longitudinal Key Joint without tie bars or Hook Bolts
—C—	Standard Contraction Joint.
—E—	Standard Expansion Joint
(open box)	Paved Shoulder, using 8" to 6" ~ 301
(hatched box)	Paved Shoulder using 9" ~ 301

SUPERELEVATION TABLE		
STA	P.G.	LT. EDGE
C-1363+00	860.12	861.45
C-1363+25	860.28	861.61
C-1363+50	860.40	861.73
C-1363+75	860.48	861.81







NOTE

*1 Paved Shoulder Along The Type 8 Curb Is At The Same Elevation As Ramp Pavement Adjacent To Curb.

2 Quantities Carried to Sheet No 125

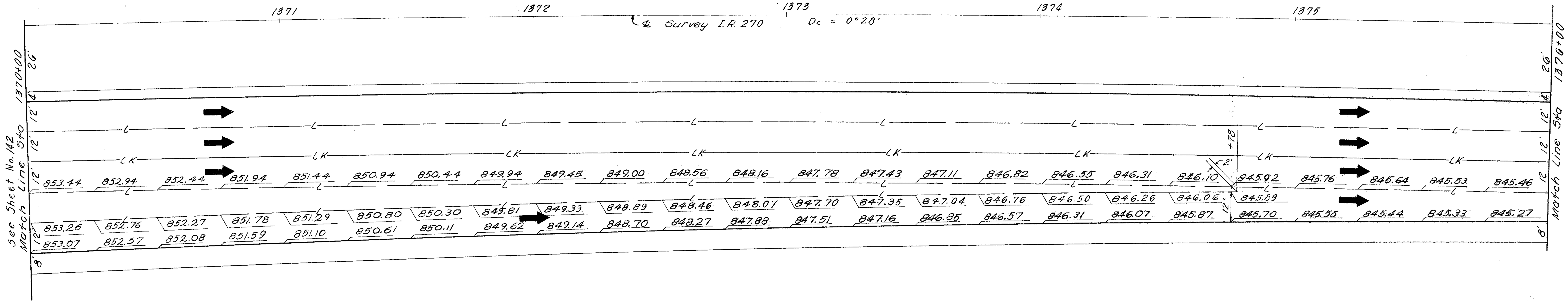
STA C-1357+00 TO STA 1370+00

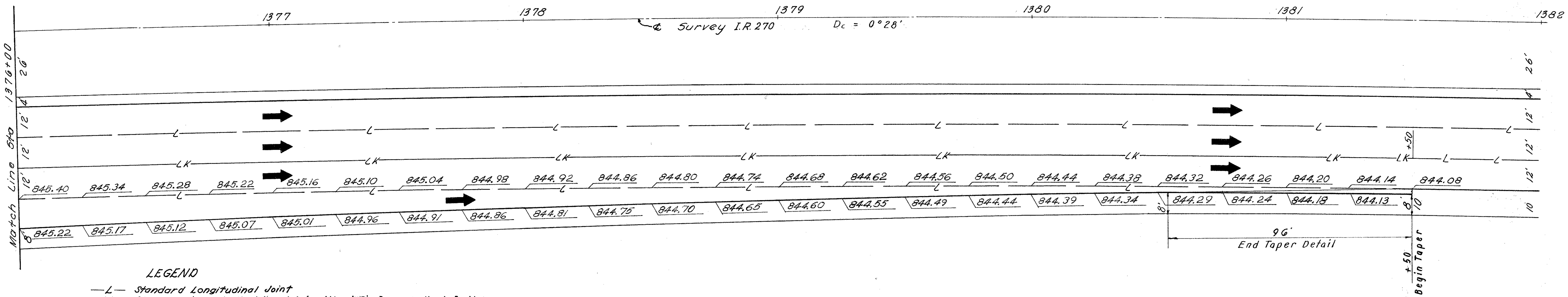
PAVEMENT DETAILS RAMP "C" & I.R-270

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

143/292

FRANKLIN COUNTY
FRA-270-22.99 N





LEGEND

—L— Standard Longitudinal Joint
—LK— Standard Longitudinal Key Joint without Tie Bars or Hook Bolts
—C— Standard Contraction Joint
═E═ Standard Expansion Joint

▭ Paved Shoulder using 8" to 6" - 301

STA. 1370+00 To STA. 1382+00

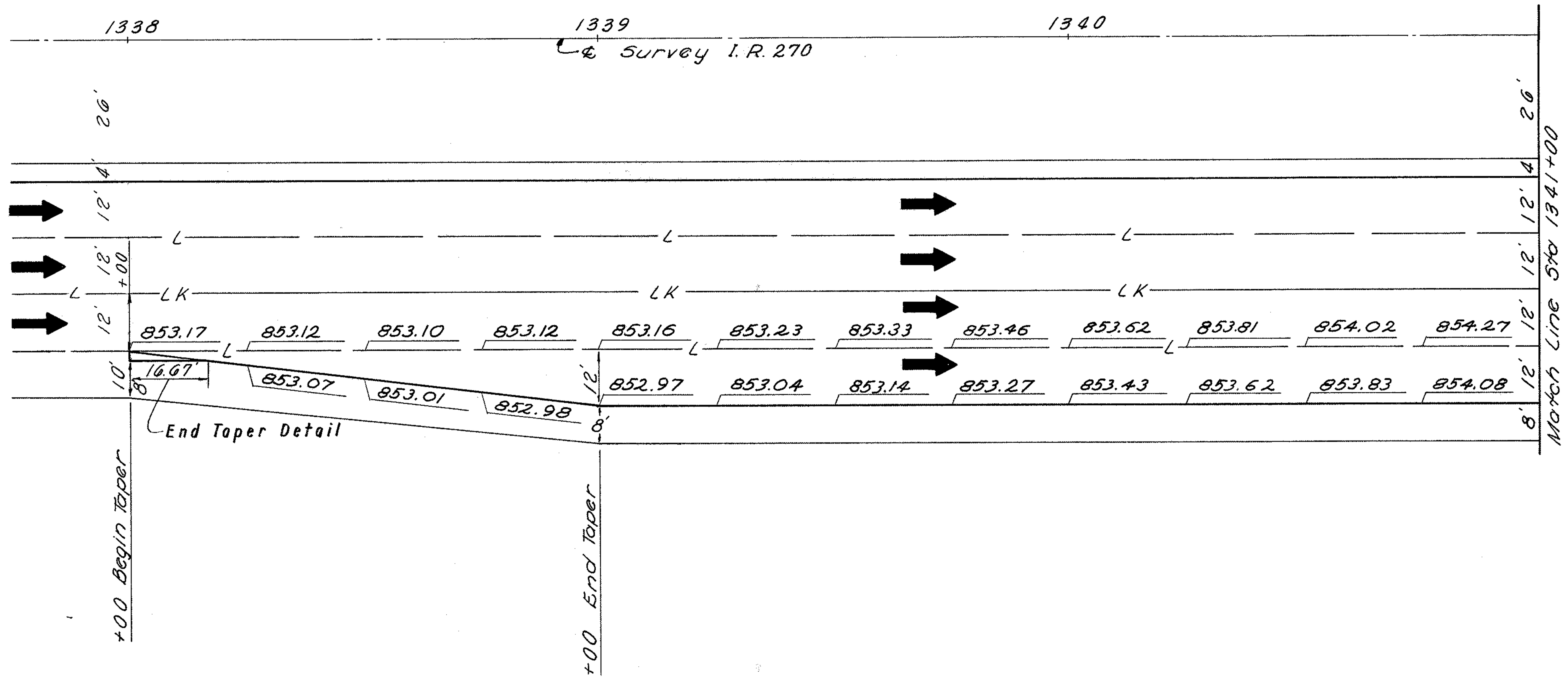
PAVEMENT DETAILS RAMP "C" & I.R. 270

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

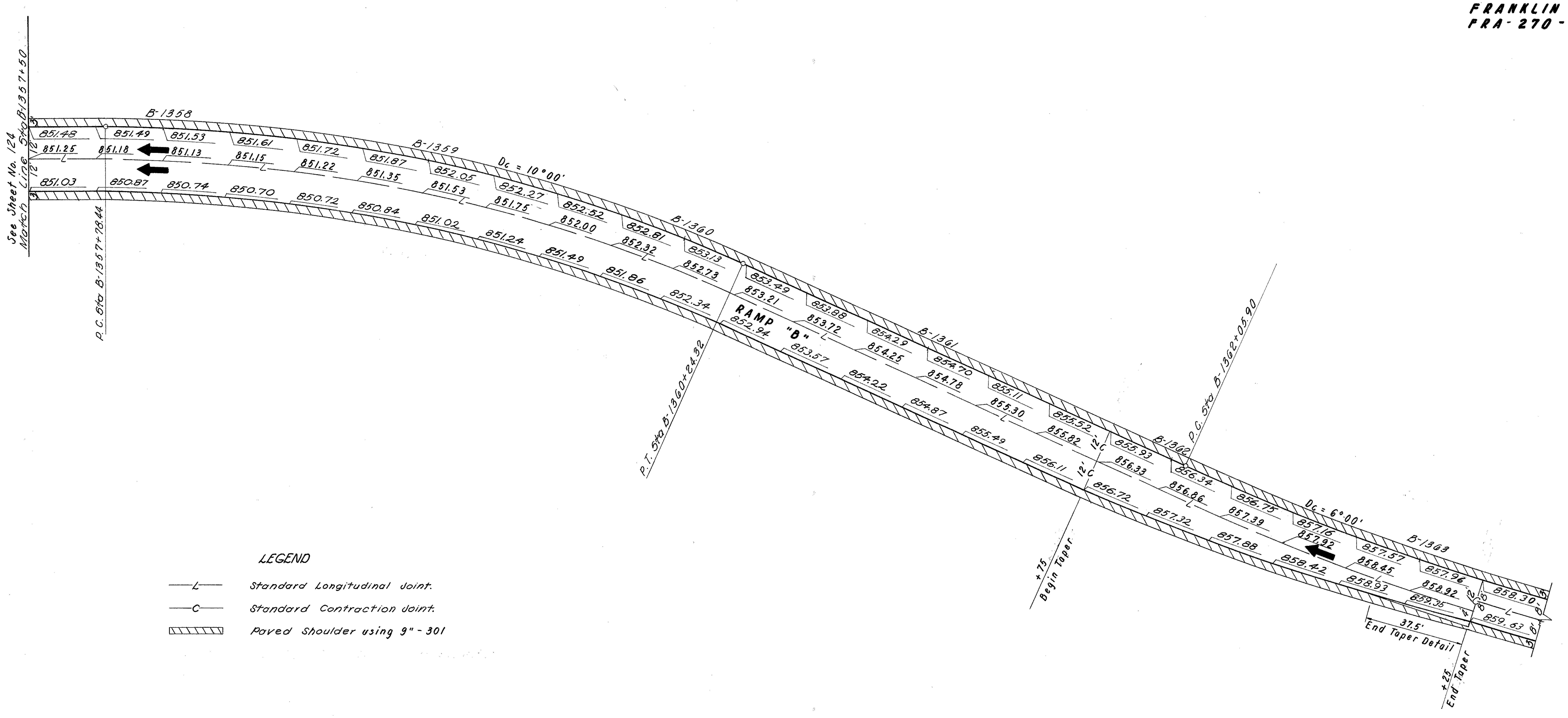
FRANKLIN COUNTY
FRA-270-22.99 N.

LEGEND

—L—	Standard Longitudinal Joint.
—LK—	Standard Longitudinal Key Joint Without Tie Bars or Hook Bolts
—C—	Standard Contraction Joint.
—E—	Standard Expansion Joint.
	Paved Shoulder using 8" to 6" -301
	Paved Shoulder using 9" -301



FRANKLIN COUNTY
FRA-270-22.99 N



LEGEND

—L— Standard Longitudinal Joint.

—C— Standard Contraction Joint.

▨ Paved Shoulder using 9" - 301

STA. B-1357+50 To STA. B-1363+25

MORSE ROAD PAVEMENT DETAILS - RAMP "B"

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

FRANKLIN COUNTY
FRA - 270 - 22.99N

LEGEND

- —L— Standard Longitudinal Joint.
- —C— Standard Contraction Joint.
- Paved Shoulder Detail using 8" ~ 304
- Paved Shoulder Detail using 9" ~ 301
- Paved Shoulder Detail using 3" ~ 301 on 6" ~ 304
- 2" ~ 404 on 7" ~ 304 (Comm)
  2" ~ 404 on 5" ~ 304 (Res.)
- 6" ~ 304 (Field)
  8" ~ 304 (Res.)

NOTE

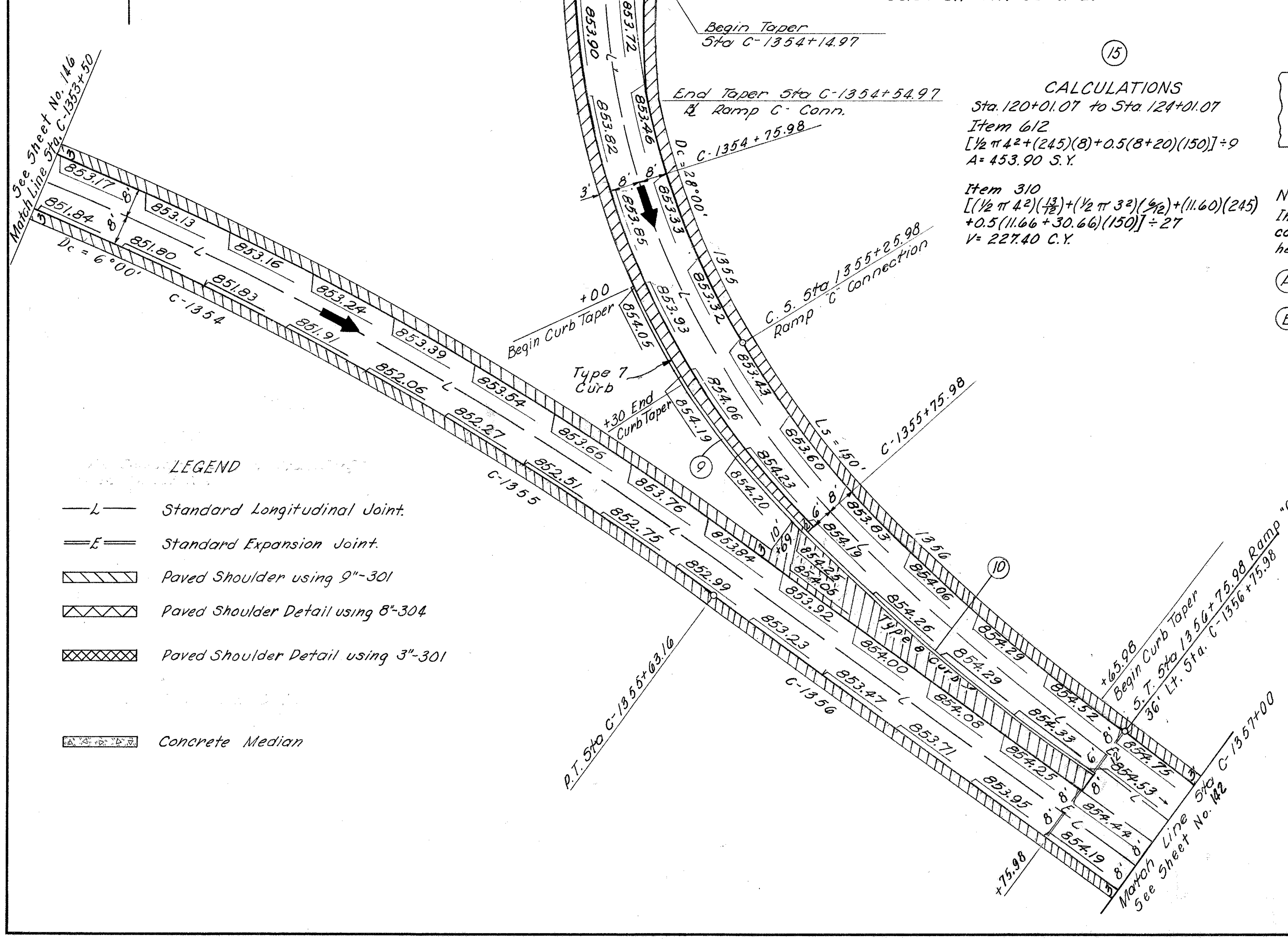
Curb Quantities Carried to Sheet No. 149

NOTE

For Elevations Ahead of Sta. C-1353+25 See Sheet No. 147

MORSE ROAD PAVEMENT DETAILS

FRANKLIN COUNTY
FRA-270-22.99 N



NOTE

Curb Quantities Carried to Sheet No. 149

CALCULATIONS

(15)

Sta. 120+01.07 to Sta. 124+01.07

Item 612

$[\frac{1}{2}\pi 4^2+(24.5)(8)+0.5(8+20)(150)]\div 9$

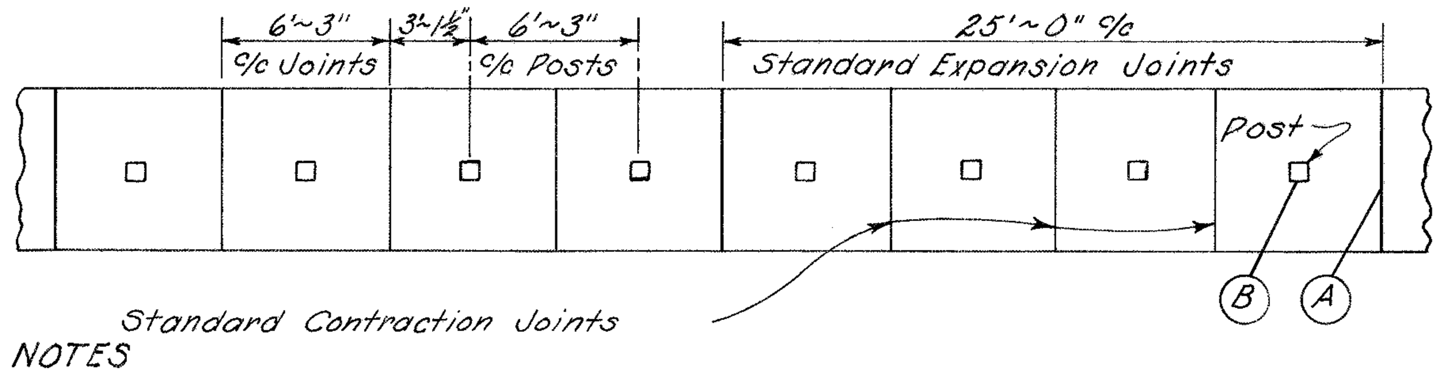
A= 453.90 S.Y.

Item 310

$[(\frac{1}{2}\pi 4^2)(\frac{13}{12})+(\frac{1}{2}\pi 3^2)(\frac{6}{12})+(11.60)(24.5)+0.5(11.66+30.66)(150)]\div 27$

V= 227.40 C.Y.

PAVED MEDIAN WITH GUARD RAIL



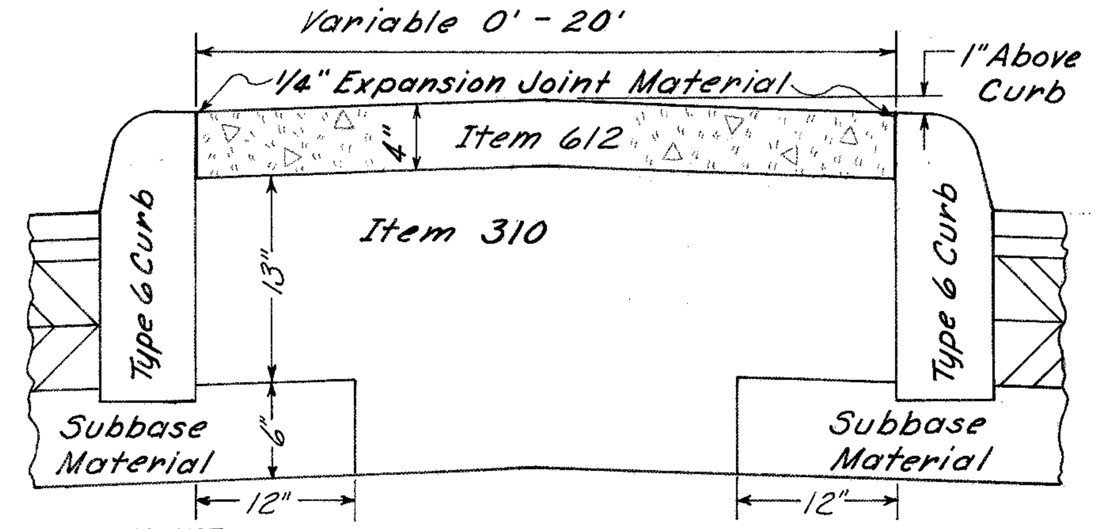
NOTES

In lieu of the spacing requirements of Standard Drawing MC-6, expansion and contraction joints shall be provided in the concrete median, as detailed hereon, whenever guardrail is required.

(A) ¼" 705.03 Expansion joint material, included in 612 for Payment.

(B) For square-sawed wood posts, ¼" 705.03 expansion joint material shall be used on all four sides for 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.

CONCRETE MEDIAN ITEM 612



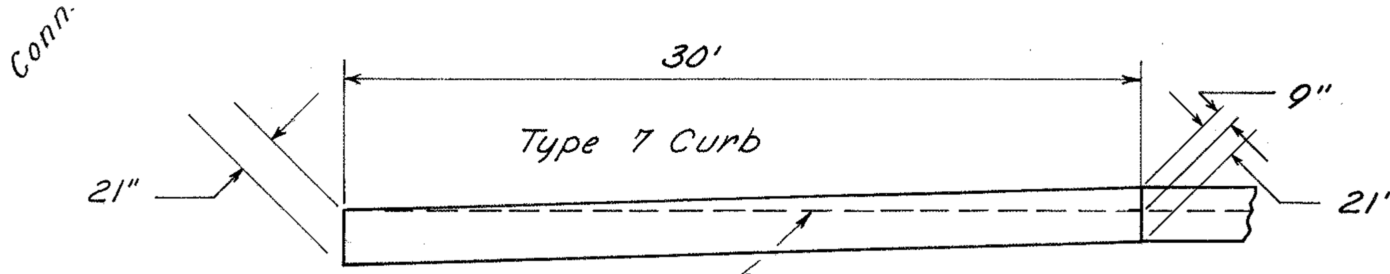
NOTES

Joints - ¼ inch Expansion Joints shall be constructed at 20' intervals. Metal separater plates or templates shall be used if necessary to hold the joint material in accurate position during the placing of the concrete. Separater plates or templates, if used, shall be removed as soon as the concrete is in place to insure the accurate retention of the joint material.

Expansion joint material shall meet the requirements of 705.03

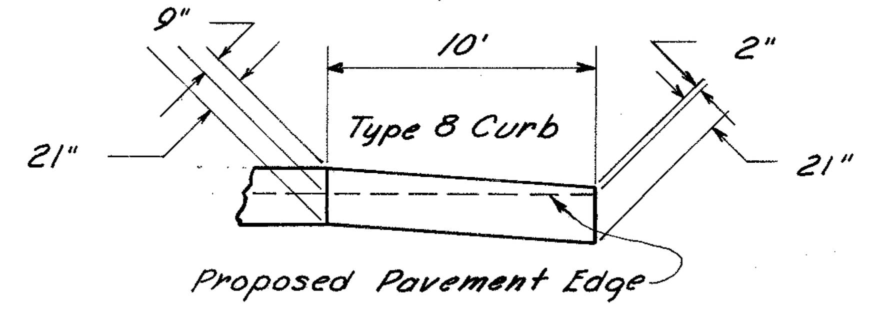
In addition to the ¼ inch expansion joints, Contraction joints, consisting of 1½ inch minimum depth impressed joint formed and sealed as per standard drawing BP-3, shall be placed in the concrete median at intervals not to exceed 10 feet.

Curb Taper Detail



Sta. C-1355+00 to C-1355+30

Curb Taper Detail



Sta. C1356+65.98 to Sta. 1357+00

LEGEND

— L — Standard Longitudinal Joint.

= E = Standard Expansion Joint.

Paved Shoulder using 9"-301

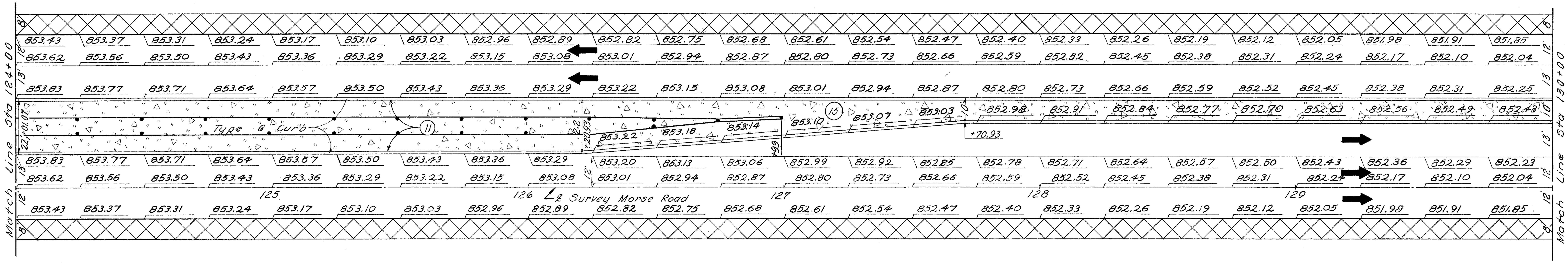
Paved Shoulder Detail using 8"-304

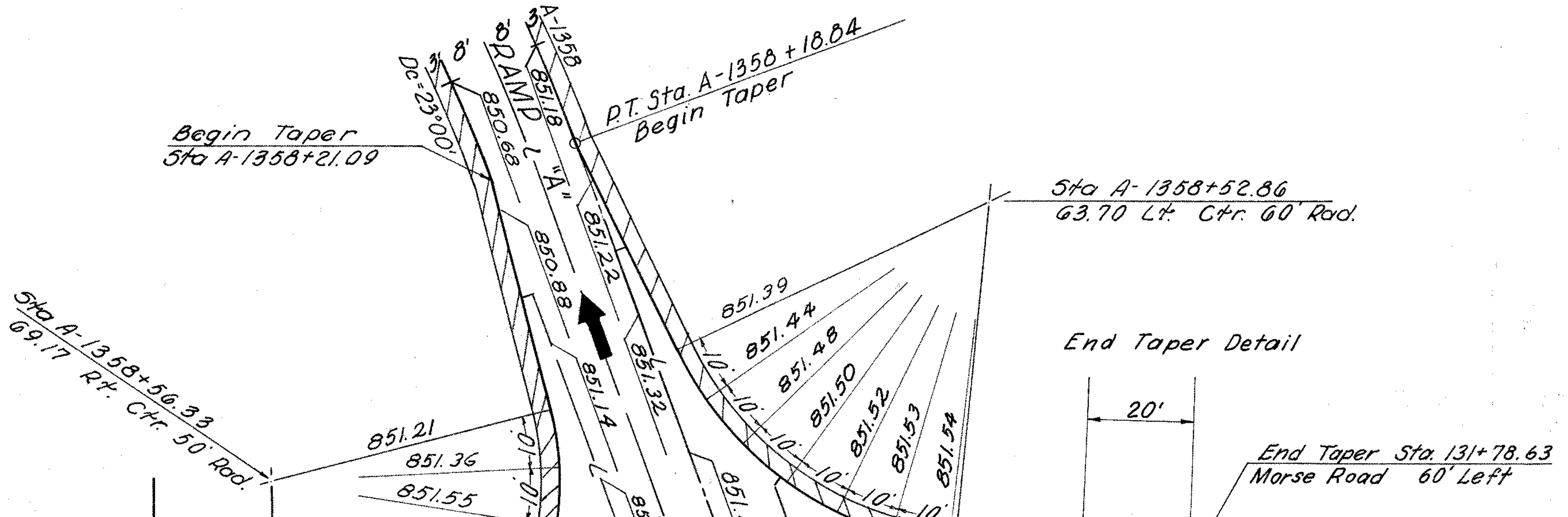
Paved Shoulder Detail using 3"-301

Concrete Median

RAMP "C" CONNECTION & RAMP "D"
STA. C-1353+50 TO STA. C-1357+00 RAMP "C"
STA. 118+00 TO STA. 124+00 MORSE ROAD

PAVEMENT DETAILS





(15)

CALCULATIONS

Sta. 124+01.07 to 130+17.93
Item 612

$[(20)(219.86)+0.5(20+8)(150)+8(245)+(\frac{1}{2}\pi 4^2)] \div 9$

A = 942.48 S.Y.

Item 310

$[(30.66)(219.86)+0.5(30.66+11.66)(150)+245(11.66)+(\frac{1}{2}\pi 4^2)(13/12)+(\frac{1}{2}\pi 4^2)(3^2)(6/12)] \div 27$

V = 474.29 C.Y.

LEGEND

- Paved Shoulder Detail using 9" 301
- Paved Shoulder Detail using 8" 304
- Paved Shoulder Detail using 3" 301
- —L— Standard Longitudinal Joint
- Concrete Median

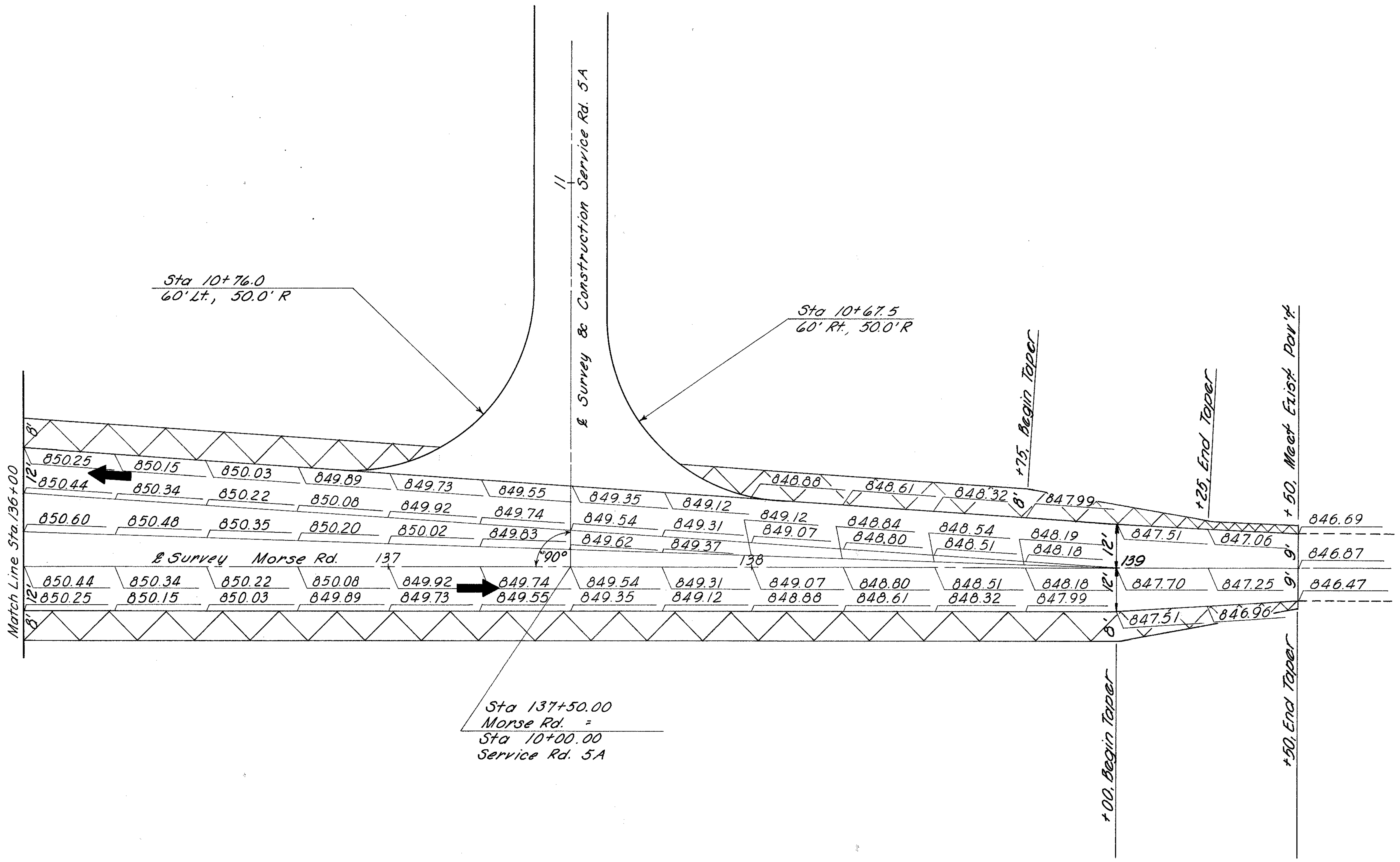
NOTE

Quantities Carried to Sheet No 125

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

149/292

FRANKLIN COUNTY
FRA - 270 - 22.99



Ref. No.	Sheet No.	609 TYPE 6	609 TYPE 7	609 TYPE 8	612 Conc. Median	310 SUB-BASE
		L.F.	L.F.	L.F.	S.Y.	C.Y.
1	116		96			
2	116			405		
3	118		89			
4	118			411		
5	122	111				
6	122	1200				
7	123	249				
8	123	804				
9	123		73			
10	123			105		
11	124	1200				
12	124	48				
13	124	523				
14	124				71	
15	123-124				1397	703
TOTALS		4135	258	921	1468	703

TOTAL Carried to Sub - Summary
See Sheet No. 27, 28

LEGEND

Paved Shoulder Detail using 8"~304

PAVEMENT DETAILS
MORSE ROAD

Paved Shoulder Detail using 8" 304

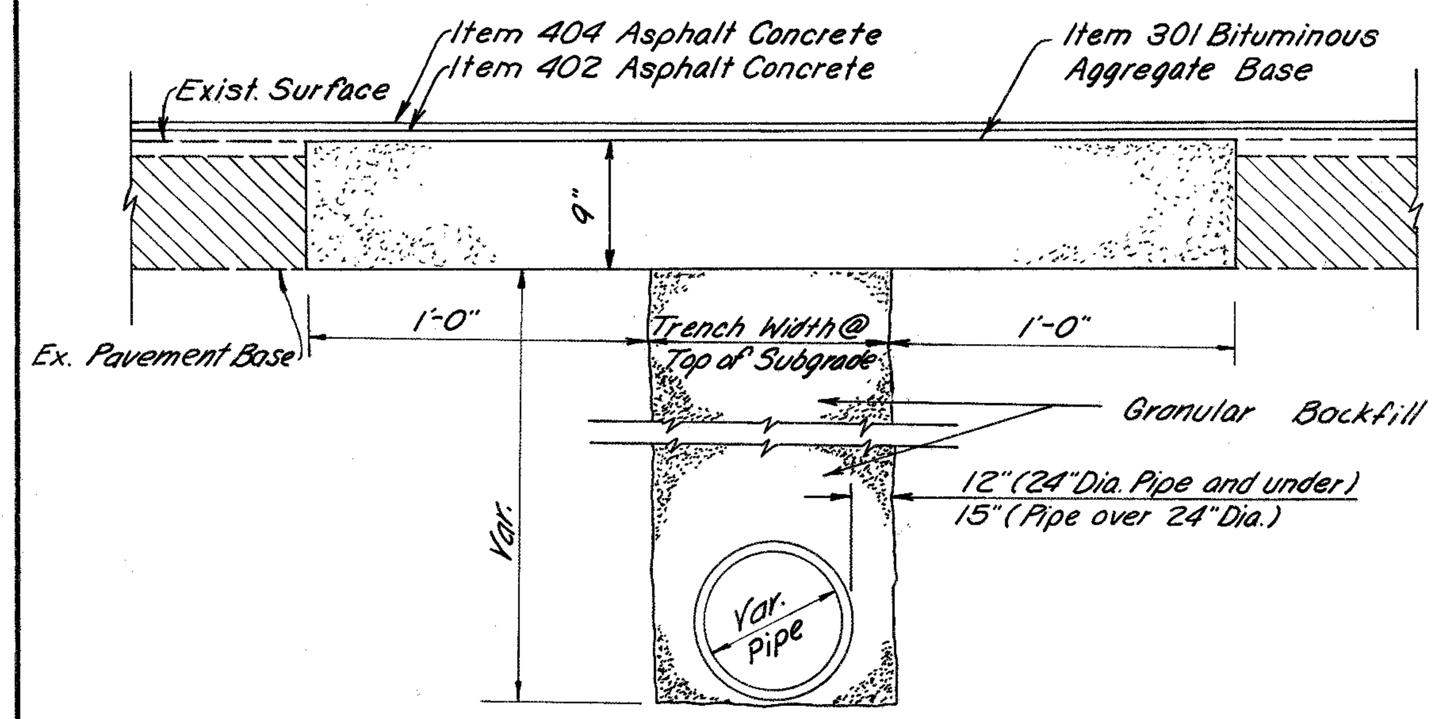
2" 404 on 5" 304

8" 304

NOTE:
For Drive Quantities
See Sheet No. 153

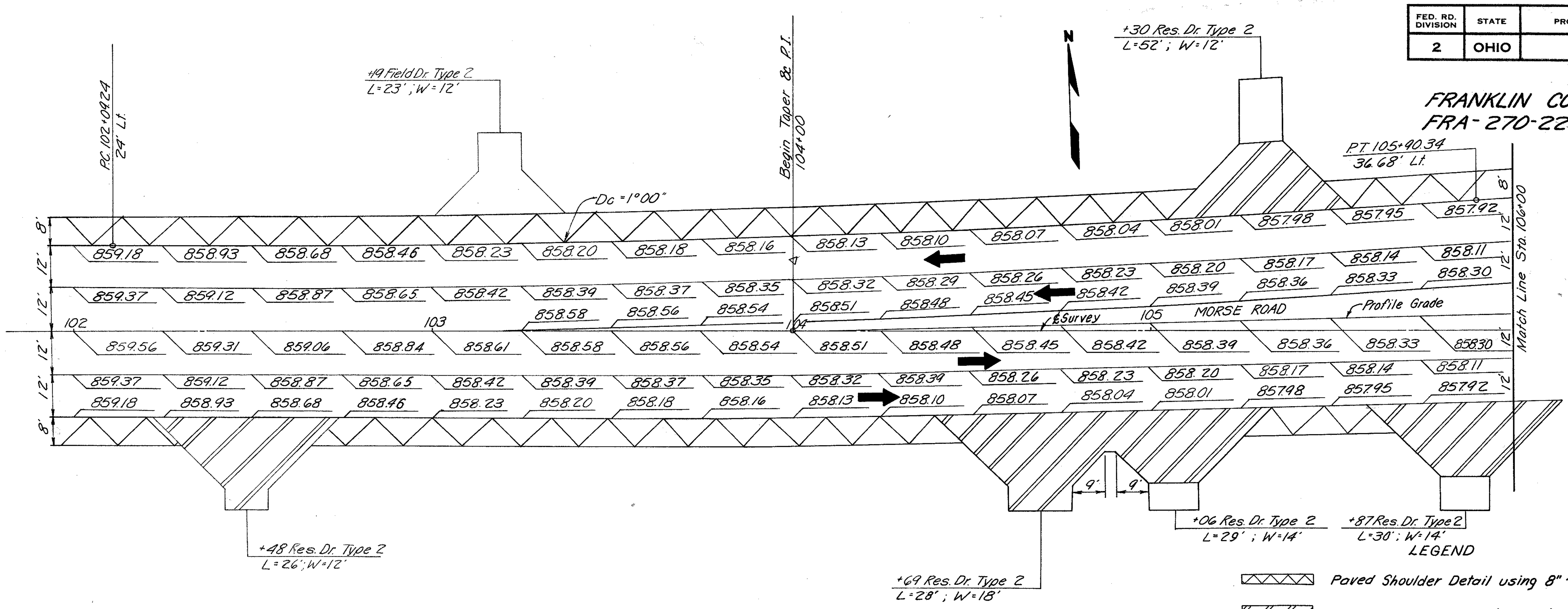
STELZER ROAD PAVEMENT DETAILS

FRANKLIN COUNTY
FRA-270-22.99N



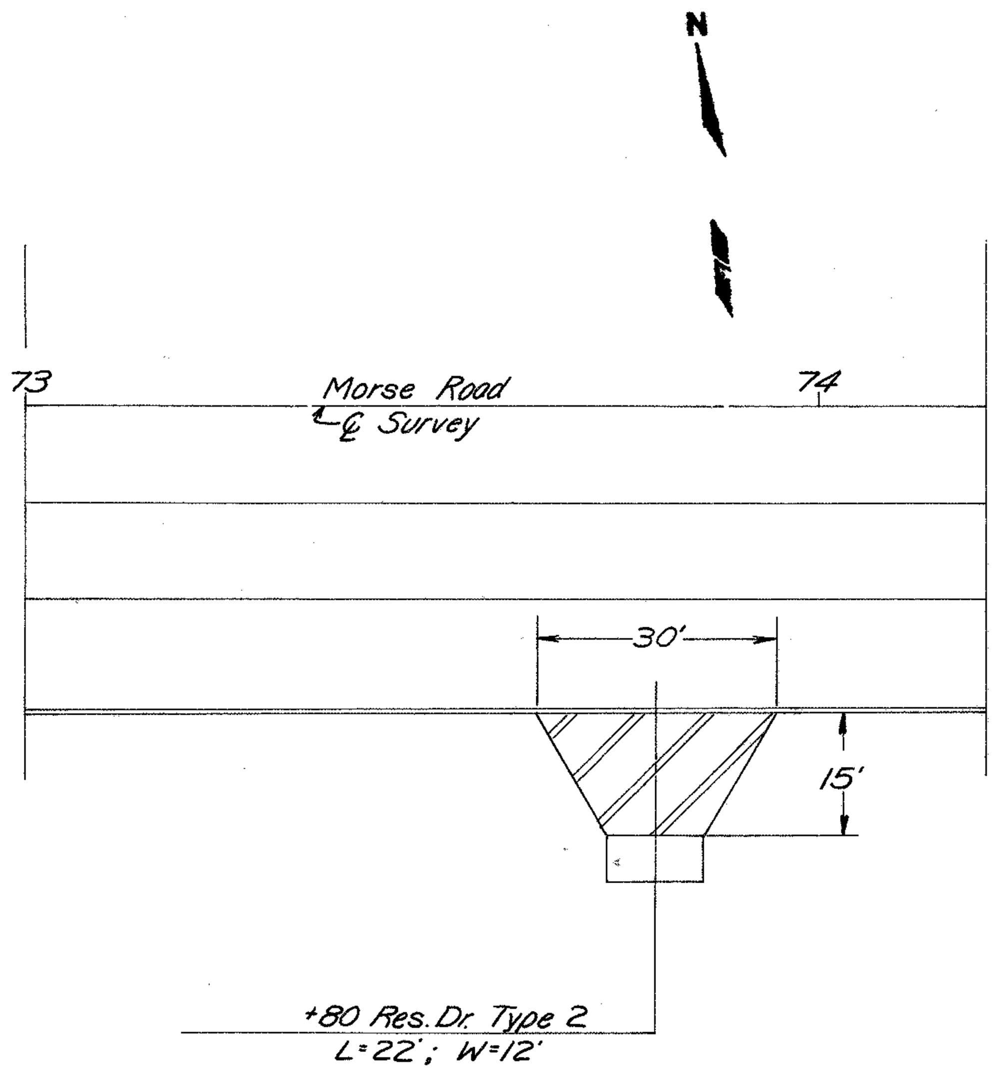
PAVEMENT REPLACEMENT DETAIL
PIPE CROSSINGS
RESURFACING AND SALVAGE PROJECTS

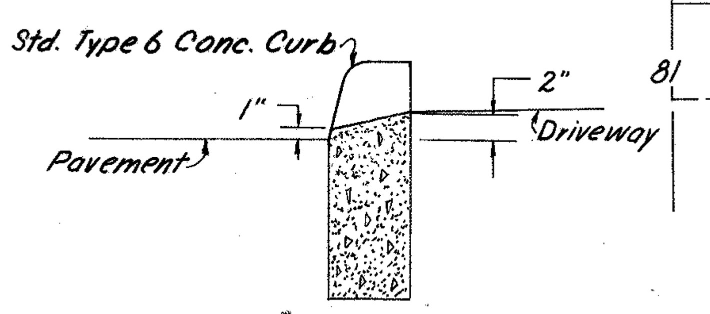
Note: The pavement replacement detail shown above shall be applied where and as directed by the Engineer. The elevation of the top of the 9" Bituminous Aggregate Base shall be 3" below the existing pavement to allow for construction of the 1 3/4" course of Item 402 Asphalt Concrete and the 1 1/4" course of Item 404 Asphalt Concrete.



LEGEND

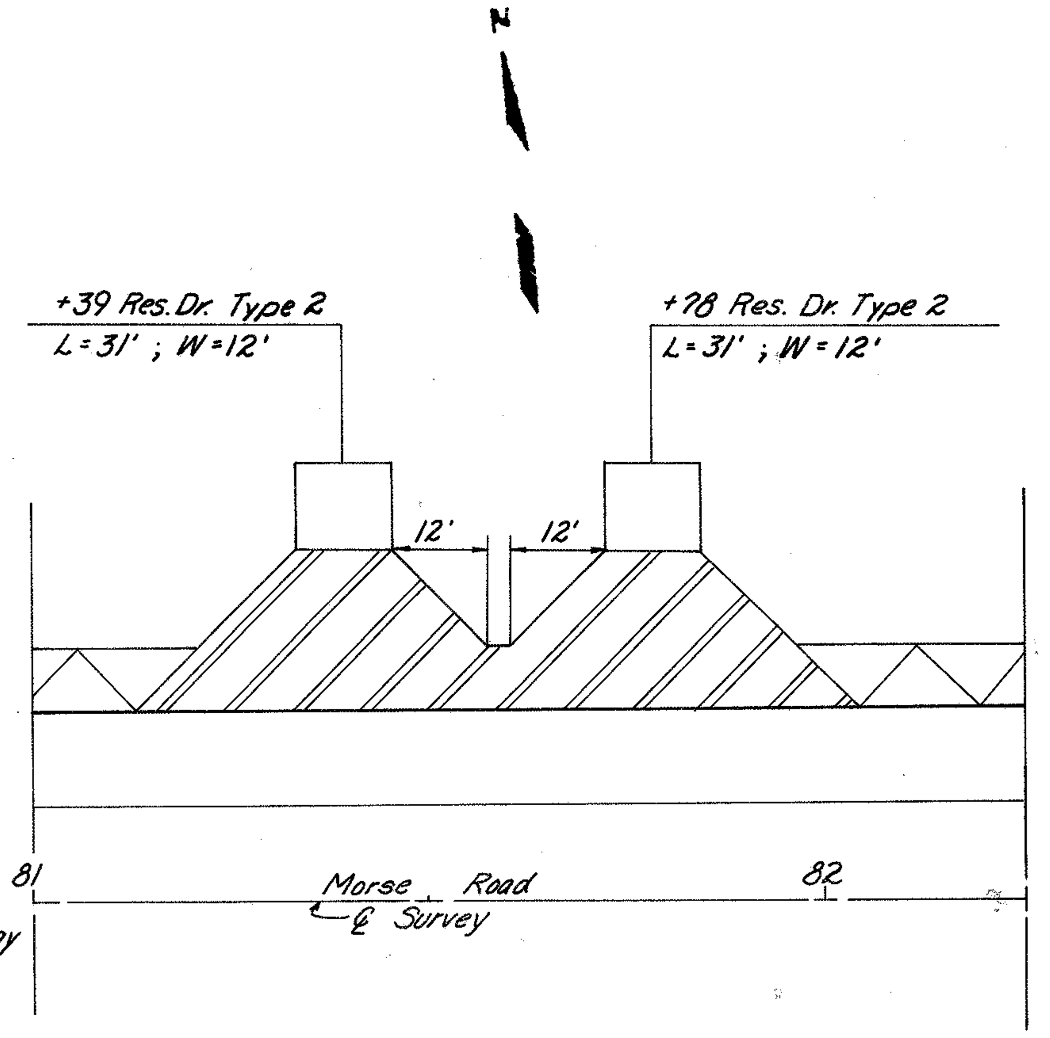
(triangle pattern)	Paved Shoulder Detail using 8" ~ 304
(hatched)	2"~404 on 7"~304 (Comm.) 2"~404 on 5"~304 (Res)
(blank)	6"~304 (Field) 8"~304 (Res.)

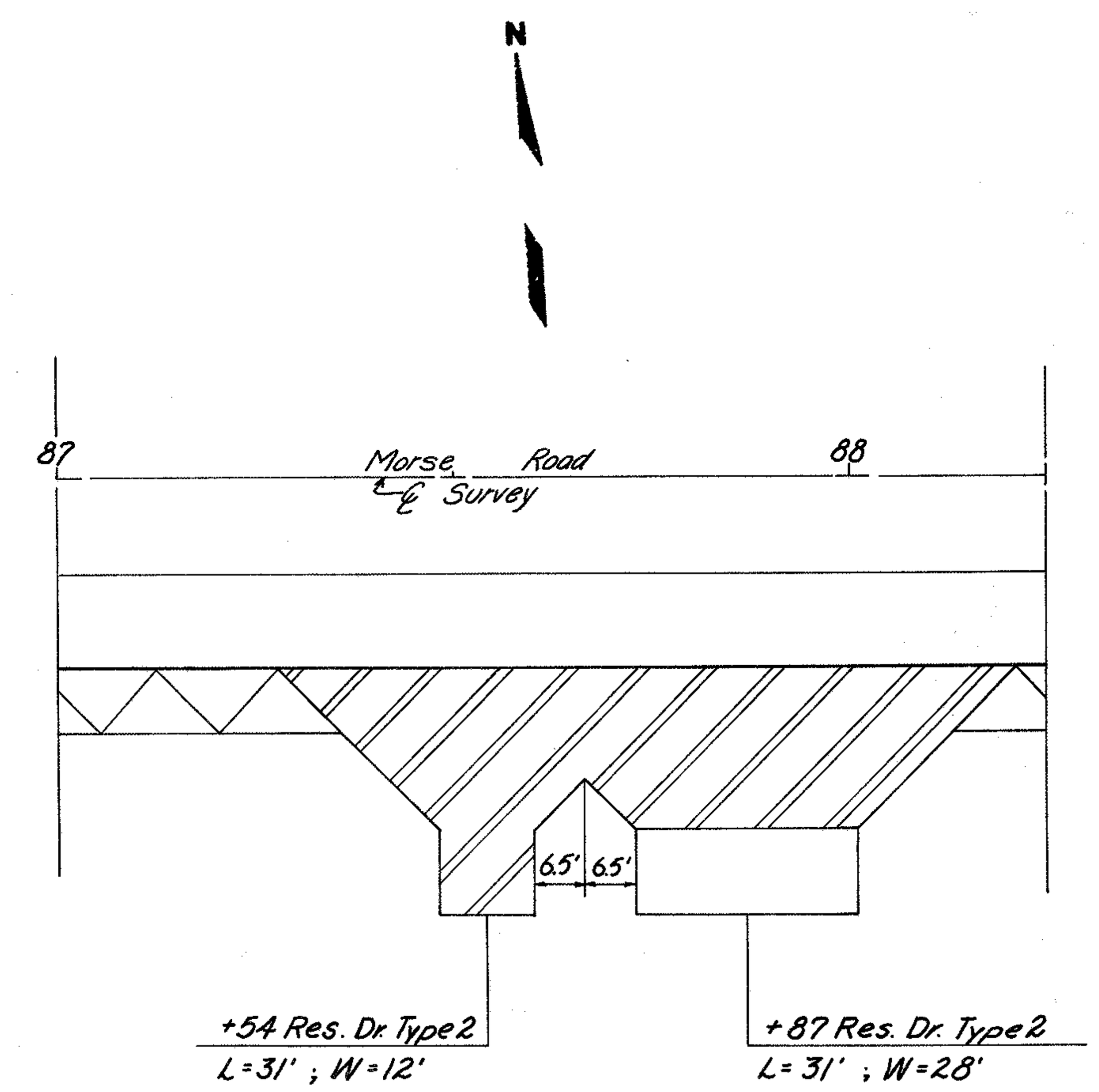




DROP CURB DETAIL
AT DRIVEWAY

NOTE: Transition from standard curb to dropcurb shall be made within 18" from driveway.



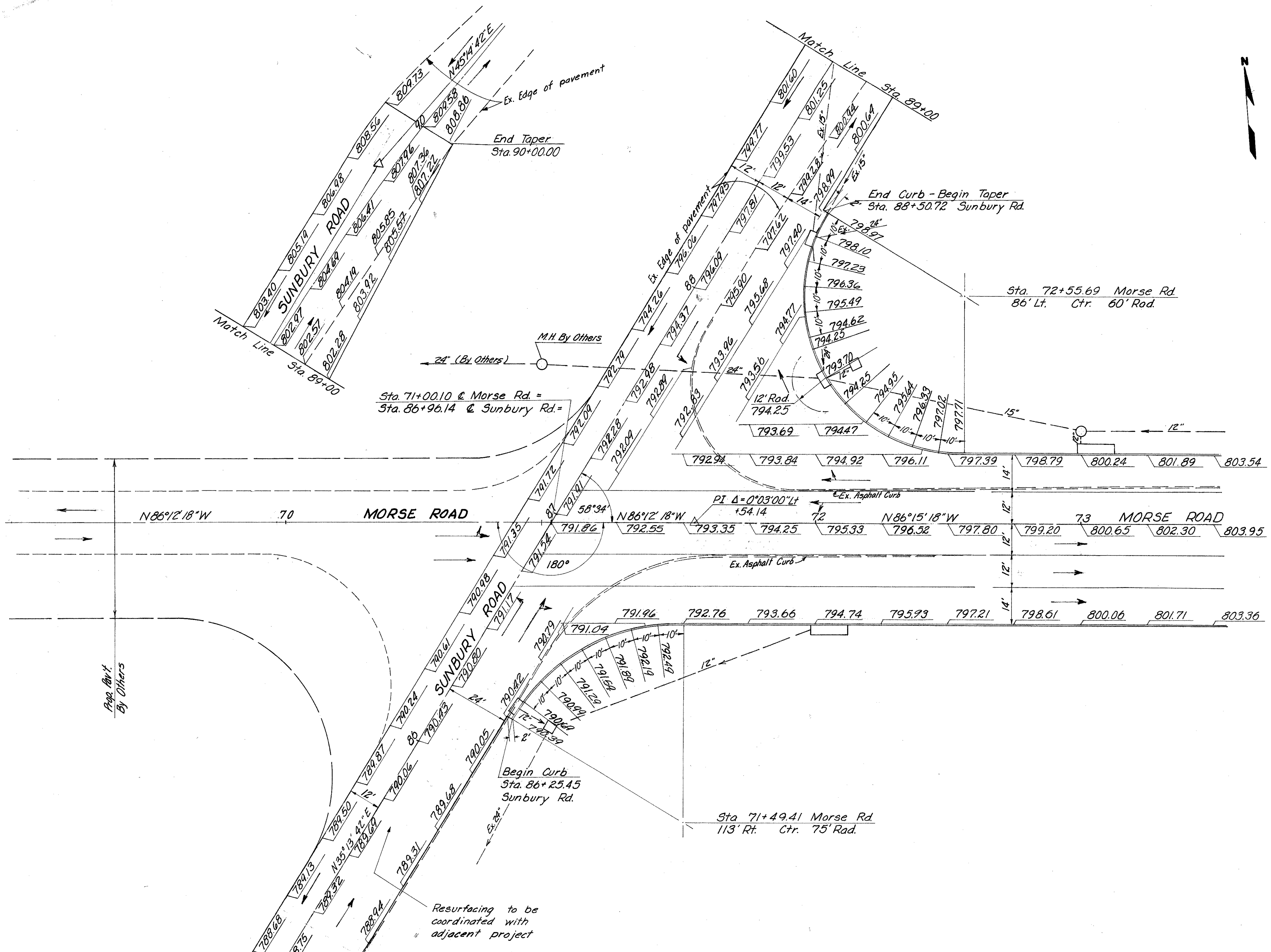


MORSE RD. DRIVEWAY & PAVEMENT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

152/292

FRANKLIN COUNTY
FRA-270 - 22.99 N

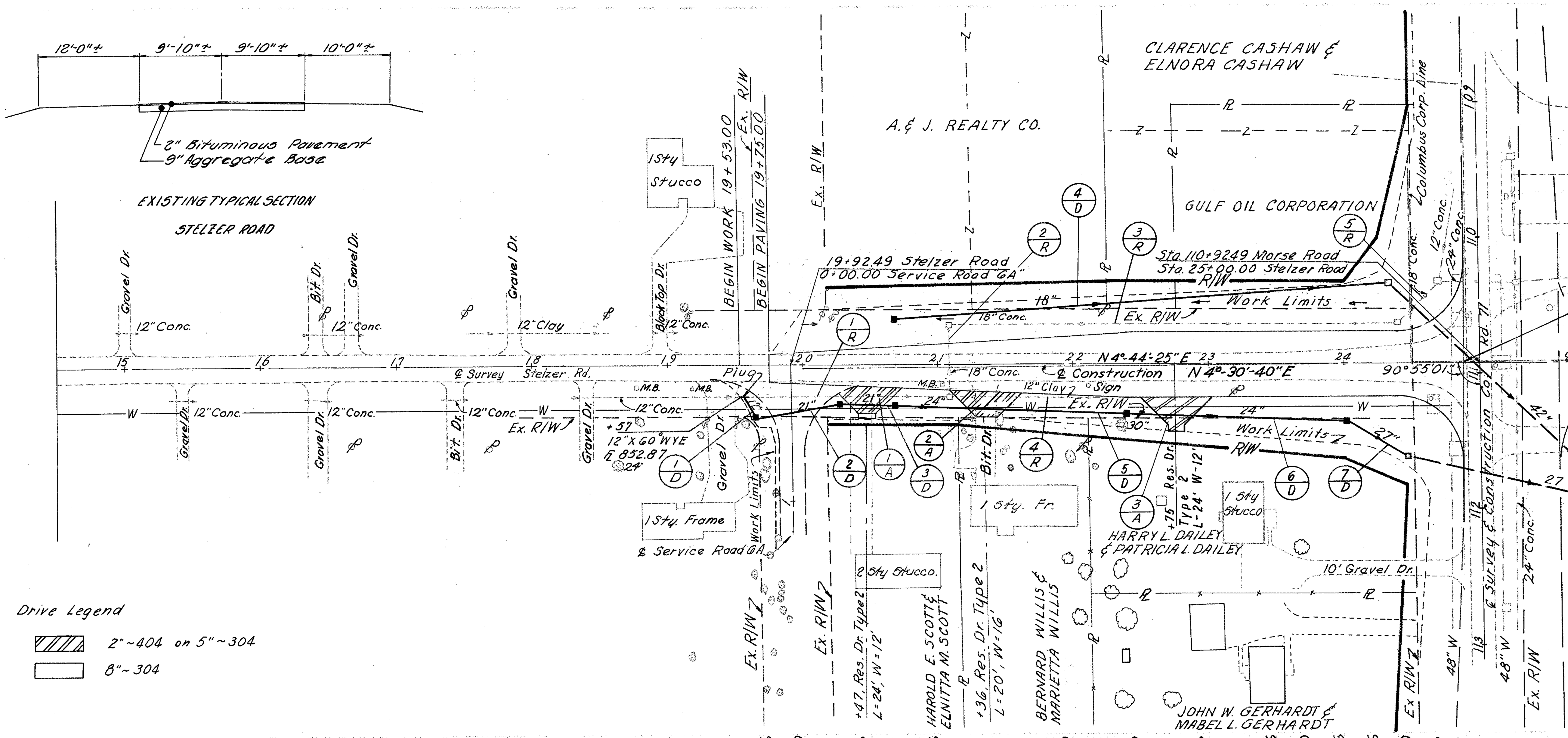


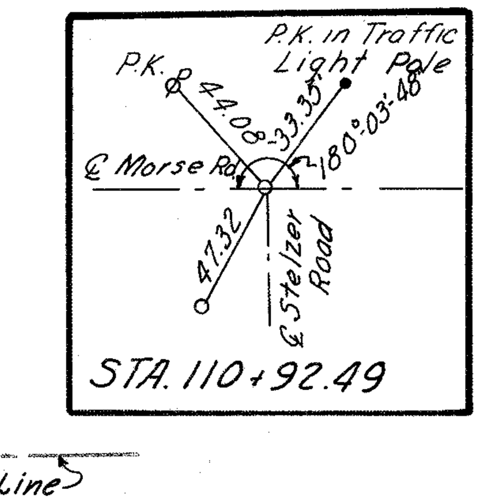
Note: All elevations shown are proposed pavement elevations.
The proposed pavement for Sunbury Rd. shall be the same as shown on Typical Sections Sheet 6.

0 10 20 30 40
SCALE

SUNBURY RD. & MORSE RD. Pavement Details

FRANKLIN COUNTY
FRA-270-22.99N





DRIVE CALCULATIONS

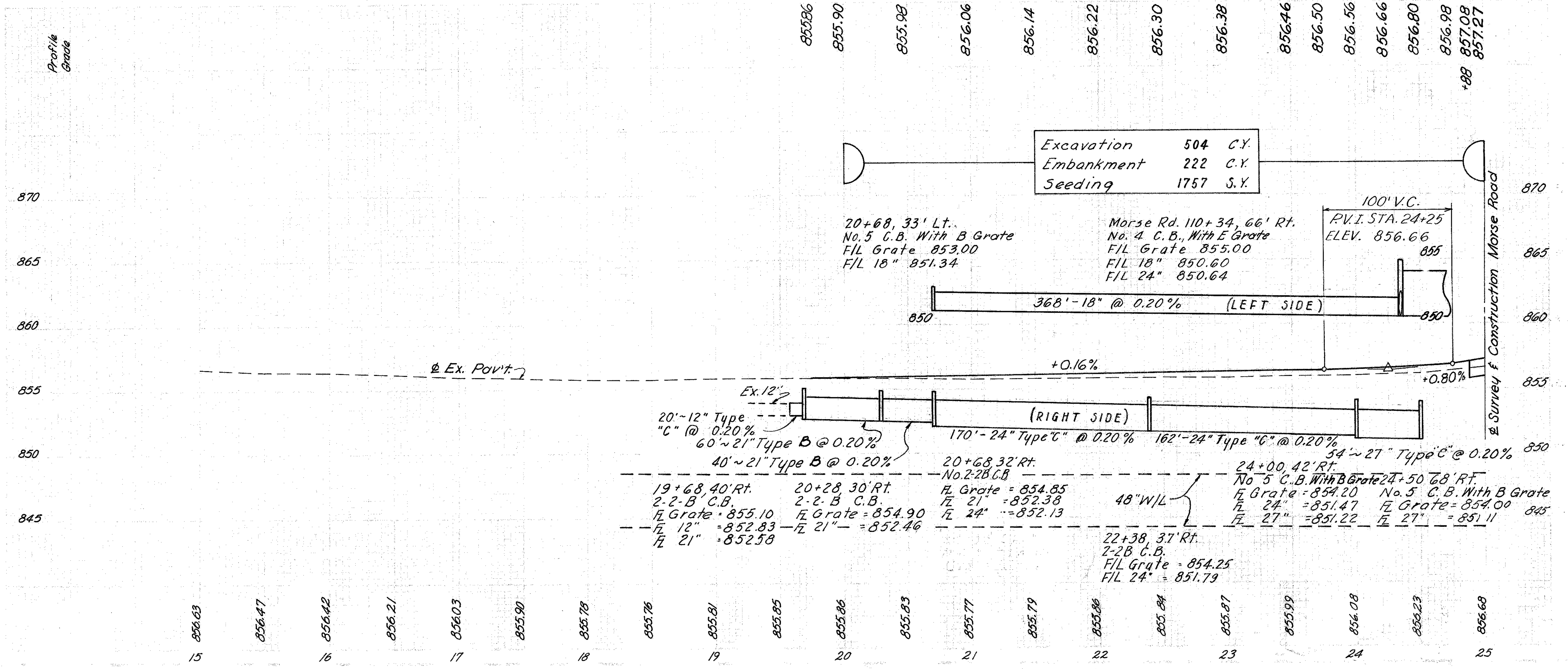
1-A	552 x 0.1667 ÷ 27	= 3.4 C.Y.	404
	552 x 0.4167 ÷ 27	= 8.5 C.Y.	304
	4x12 x 0.667 ÷ 27	= 1.2 C.Y.	304
2-A	(16+56)÷2 x 20 x 0.1667÷27	= 4.4 C.Y.	404
	(16+56)÷2 x 20 x 0.4167÷27	= 11.1 C.Y.	304
3-A	(20² + 24x12) x 0.1667 ÷ 27	= 4.3 C.Y.	404
	(20² + 24x12) x 0.4167 ÷ 27	= 10.6 C.Y.	304

For Morse Rd. Details See Sheet No. 92
For Service Rd. "6A" Details, See Sheet No. 173
For Stelzer Rd. Pav't Details See Sheet No. 150
For Service Rd. "7A" Details See Sheet No. 177

CALC. W.D.G. 9-28-68
CHK. R.E.H. 10-8-68

‡ WITH B GRATE
-X- 706.01 E.S, 706.02, 706.08 E.S. or 707.13

				603					604	
REF	STATION TO STATION	SIDE	BENDS & BRANCHES	TYPE "B" -X-	TYPE C	TYPE B	TYPE "C" -X-	TYPE "C"	No. 2-2 BCB	No. 5 C.B. ‡
				18"	12"	21"	24"	27"		
				L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.
1-D	19 + 57 to 19 + 68	Rt.	1		20				1	
2-D	19 + 68 to 20 + 28	Rt.				60			1	
3-D	20 + 28 to 20 + 68	Rt.				40			1	
4-D	20 + 68 to 24 + 34	Lt.		368						1
5-D	20 + 68 to 22 + 38	Rt.					170		1	
6-D	22 + 38 to 24 + 00	Rt.					162			1
7-D	24 + 00 to 24 + 50	Rt.						54		
TOTALS 100% CITY				368	20	100	332	54	4	2



			202		304	404		
REF	STATION TO STATION	SIDE	PIPE REMOVAL 24" & UNDER	CATCH BASIN REMOVAL	Aggr. Base	Asphalt Conc. (85-100)		
			L.F.	EA.	C.Y.	C.Y.		
1-R	19 + 59 to 21 + 09	Rt.	150	1				
2-R	21 + 09	℄	53	1				
3-R	21 + 09 to 24 + 40	Lt.	331	1				
4-R	21 + 09 to 22 + 19	Rt.	110					
5-R	24 + 40 to 24 + 70	Lt.	40					
1-A	20 + 47	Rt.			10	4		
2-A	21 + 36	Rt.			12	5		
3-A	22 + 75	Rt.			11	5		
TOTALS 100% CITY			684	3	33	14		

STA. 14+50 TO STA. 25+00 STELZER ROAD

FRANKLIN COUNTY
FRA-270-22.99N

CALC: [illegible] Sept. 68
CHK. [illegible] 10-8-68

	ADD FILL AREA	VOL.
21+36; 39' Rt.	0	
21+36; 33' Rt.	2	1
21+36; 29' Rt.	2	1
21+36; 26' Rt.	0	1
TOTAL - Add To Fill		3

	DEDUCT CUT AREA	VOL.
21+36; 37' Rt.	0	
21+36; 33' Rt.	10	1
21+36; 29' Rt.	0	1
TOTAL Deduct From Cut		2

	ADD FILL AREA	VOL.
20+47; 38' Rt.	0	
20+47; 27' Rt.	2	1
20+47; 22' Rt.	0	1
TOTAL - Add To Fill		2

	DEDUCT CUT AREA	VOL.
20+47; 47' Rt.	0	
20+47; 30' Rt.	17	5
20+47; 27' Rt.	0	1
TOTAL Deduct From Cut		6

20+40 AHEAD
20+40 BACK
20+00
19+75

STA. 19+00 TO STA. 22+00 STELZER ROAD

155
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: R.B.M. Sept.-68
CHK: 10-8-68

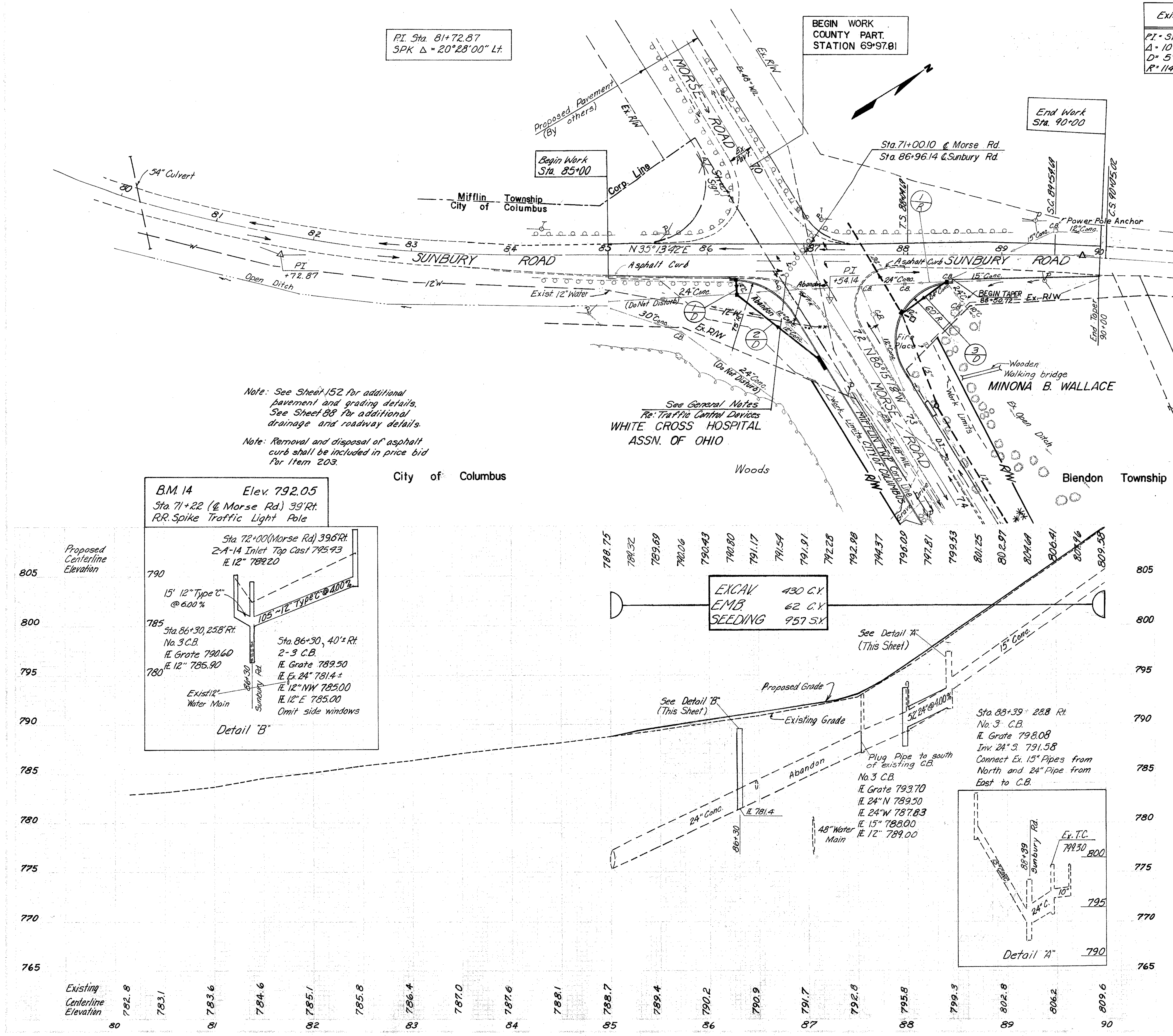
DEDUCT CUT	
AREA	VOL.
18	
	9
62	
	14
0	23

Total Deduct from Cut

FRANKLIN COUNTY
FRA-270-22.99N

CALC: R.A.S. 9/23/68
CHK: RBS 9/25/68

Existing Curve Data	
P.I. = Sta. 89+80.18	L_S = 150'
Δ = 10°01' Rt.	T_S = 175.99'
D = 5°00'	E_S = 5.2'
R = 1145.92'	



REF	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	603 TYPE "C"	603 TYPE "C"	604 No. 2-3 C.B.	604 No. 3 C.B.	604 No. 2-A-14 INLET
			24"	12"			
			L.F.	L.F.	EA.	EA.	EA.
1-D	86+30	RT.		15	1	1	
2-D	86+30 to 72+00 (MORSE)	RT.		105			1
3-D	87+97 to 88+39	RT.	52			1	
	TOTALS		52	120	1	2	1

‡ 24" & Under

REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	202 ‡ PIPE REMOVED	202 INLETS and/or C.B. REMOVED
			L.F.	EA.
1-R	87+55 to 88+39	RT.	84	3
	TOTALS		84	3

SUNBURY ROAD STA. 81+00 TO 90+00

FRANKLIN COUNTY
FRA-270-22.99 N

CALC:	SRK 9/18/68
CHK:	R.B.S. 12/17/68

SUNBURY ROAD STA. 84+00 TO STA. 85+50

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68

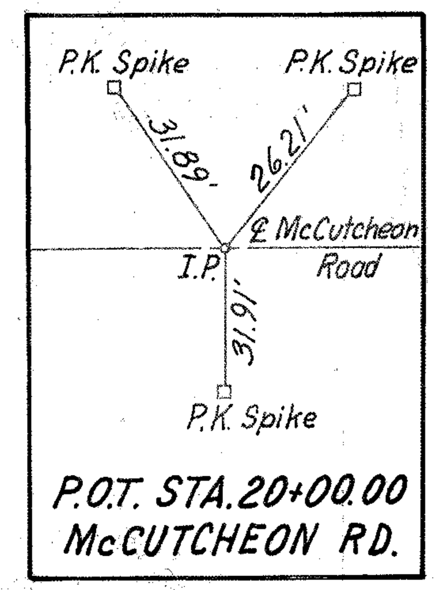
SUNBURY ROAD STA. 86+00 TO STA. 87+50

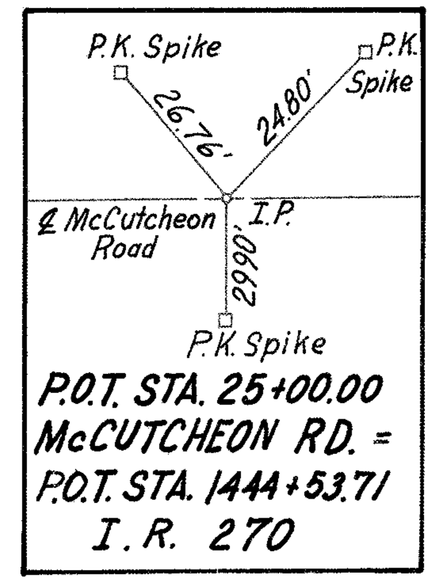
FRANKLIN COUNTY
FRA-270-22.99N

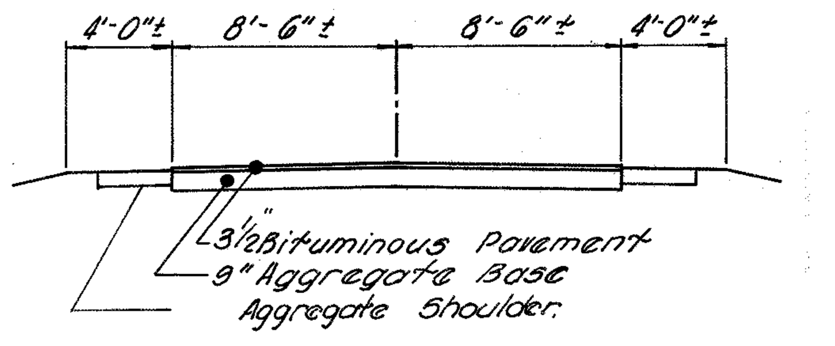
CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68

SUNBURY ROAD STA. 88+00 TO 90+00

FRANKLIN COUNTY
FRA-270-22.99N





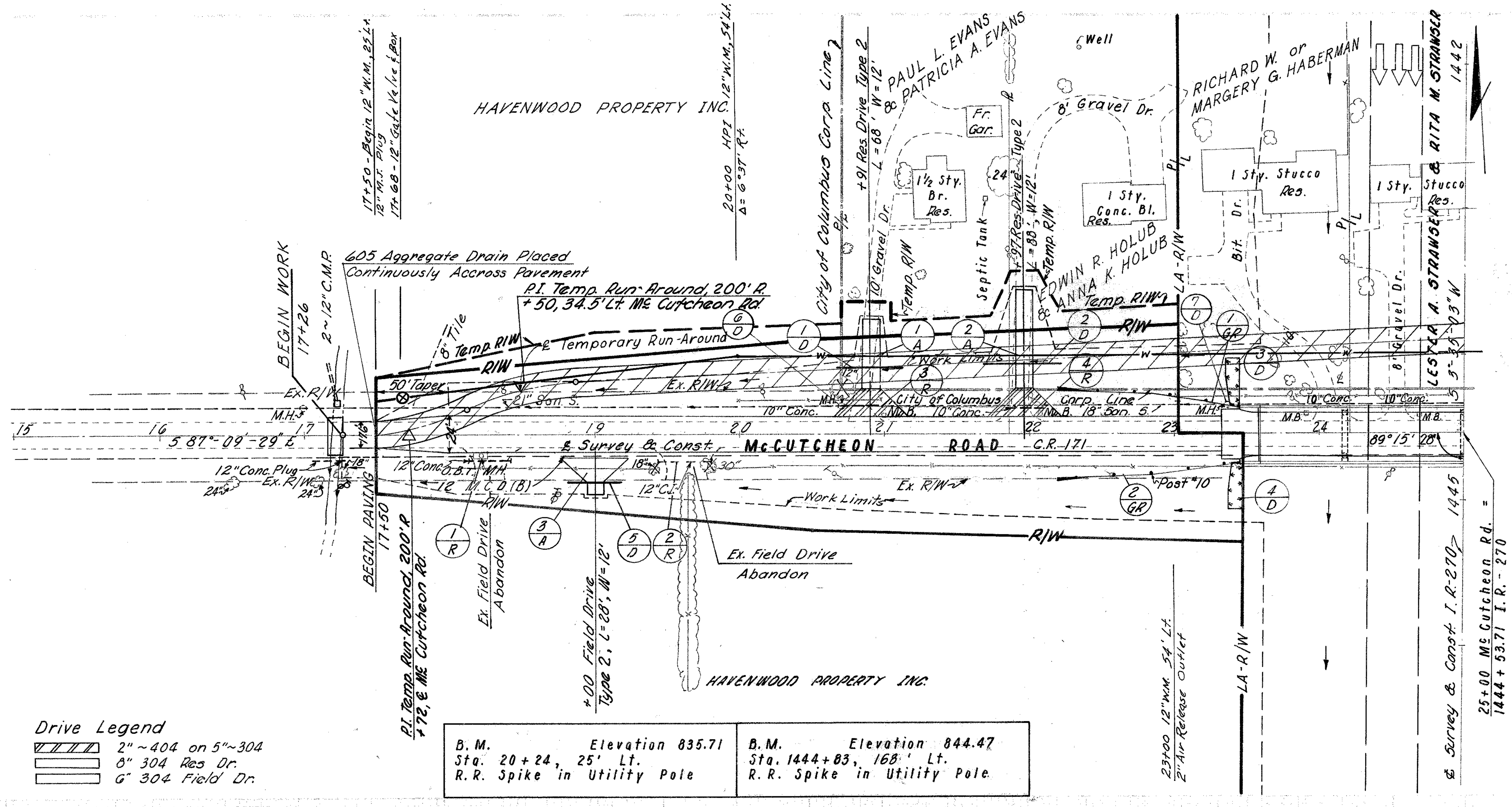


EXISTING TYPICAL SECTION

McCUTCHEON ROAD

CALC: W.O.K. 10-1-68
CHK: R.C.H. 10-8-68

TREES STA. 17+50 To 25+00		
Size	Lt. of ℄	Rt. of ℄
12" to 24"	1	2
24" to 36"		1
36" to 60"		
Over 60"		



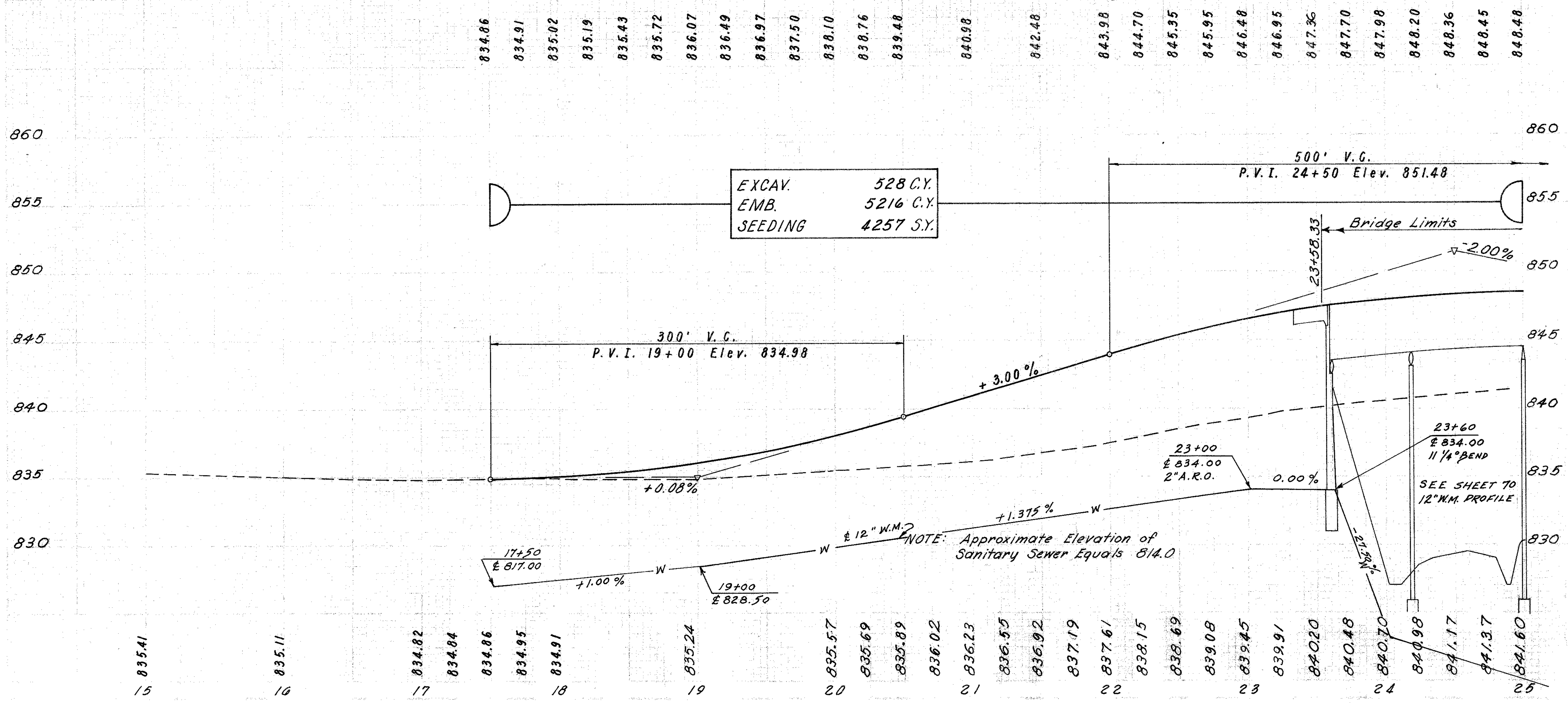
B.M. Elevation 835.71	B.M. Elevation 844.47
Sta. 20+24, 25' Lt.	Sta. 1444+83, 168' Lt.
R.R. Spike in Utility Pole	R.R. Spike in Utility Pole

PROPOSED STRUCTURE
TYPE: Continuous steel beam with reinforced concrete deck & substructure
SPANS: 57'-5", 82'-0", 82'-0", 57'-5"
ROADWAY: 30'-0" f/f curb w/2'-0" safety curb & 5'-0" sidewalk
LOAD FREQUENCY: AASHO HS-20-44
WEARING SURFACE: 1" Monolithic concrete
APPROACH SLAB: AS-1-67 mod. (25'-0" long)
SKEW: NONE:
ALIGNMENT: Tangent
SUPERELEVATION: None
AVERAGE DAILY TRAFFIC: 8040 (1986)

NOTES

1. Use Item 605 Aggregate Drain full width of pavement where proposed pavement adjoins existing pavement. For Quantities see Pavement Calculations
2. For I-270 Plan & Profile, See Sheet No. 44
3. See Sheet 198 For Water Line Quantities

Drive Calculations			
1/A	0.5(52+12) x 20 x 0.1667 ÷ 27	= 4.0 Cu. Yd.	404
	0.5(52+12) x 20 x 0.4167 ÷ 27	= 9.9 Cu. Yd.	304
	48 x 12 x 0.667 ÷ 27	= 14.2 Cu. Yd.	304
2/A	0.5(52+12) x 20 x 0.1667 ÷ 27	= 4.0 Cu. Yd.	404
	0.5(52+12) x 20 x 0.4167 ÷ 27	= 9.9 Cu. Yd.	304
	68 x 12 x 0.667 ÷ 27	= 20.1 Cu. Yd.	304
3/A	[256+(12)(24)](0.50) ÷ 27	= 10.1 Cu. Yd.	304

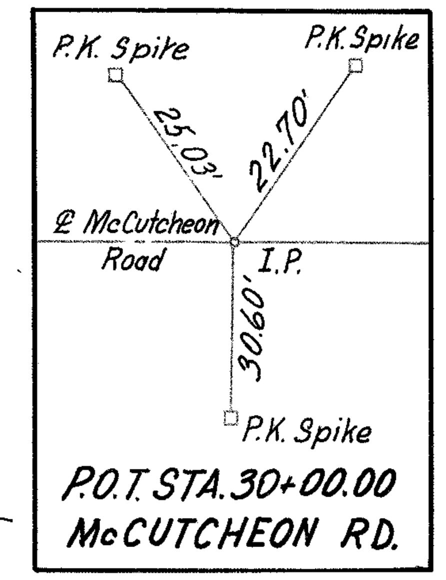


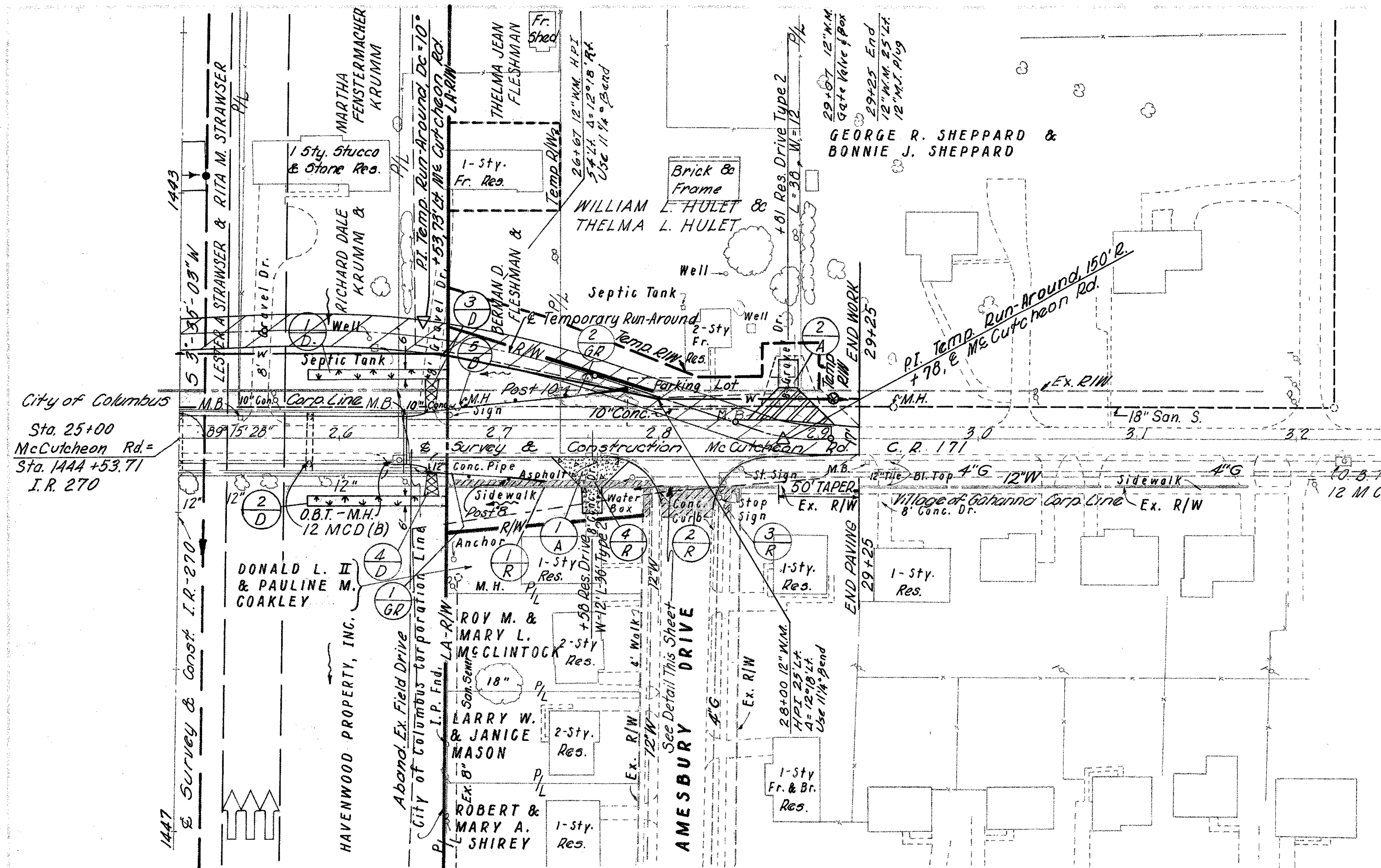
REF.	STATION TO STATION	SIDE	202 PIPE REMOV. 24" & UNDER	304 AGGR. BASE	404 ASPH. CONC. (85-100)	604 MH Re-Const. To Grade	603 Type D 12"	603 707.01 14 Ga.	606 GUARD RAIL TYPE 5	606 APPR. ASSEMBLY	606 TERMINAL ASSEMBLY	660 SPEC. BERM & SLOPE PROTECT.	FOR DETAILS SEE SHEET NO.
			L.F.	C.Y.	C.Y.	Ea	L.F.		L.F.			S.Y.	
1-D	20 + 67 to 21 + 13	Lt.					46						163
2-D	21 + 69 to 22 + 23	Lt.					54						163
3-D	23+44	Lt.										35	
4-D	23+44	Rt.										31	
1-A	20 + 91	Lt.		25	4								
2-A	21 + 97	Lt.		30	4								
3-A	19 + 00	Rt.		11									
1-GR	23+21.6 to 23+46.6	Lt.							125	1	1		
2-GR	21+96.6 to 23+46.6	Rt.							125	1	1		
5-D	18+84 to 19+22	Rt.						38					162
6-D	20+70	Lt.				1							163
7-D	23+37	Lt.				1							163
1-R	18+14 to 18+43	Rt.	29										
2-R	19+43 to 19+81	Rt.	38										
3-R	20+79 to 20+96	Lt.	17										
4-R	21+82 to 22+10	Lt.	28										
	TOTALS (URBAN)		112	66	8	2	100	38	250	2	2	66	

STA. 15+00 TO STA. 25+00 McCUTCHEON ROAD

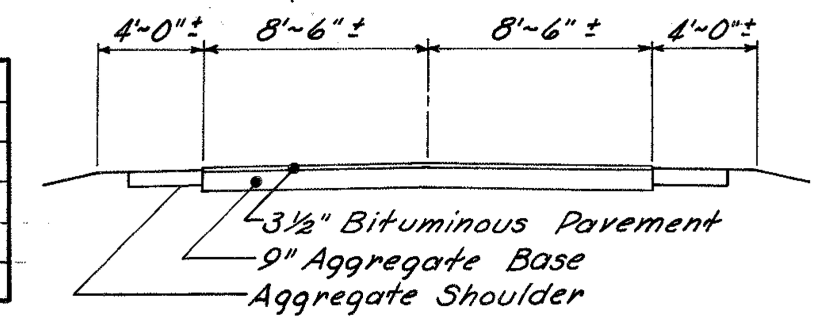
FRANKLIN COUNTY
FRA-270-22.99 N

CALC: W.O.K. 10-1-68
CHK: R.E.H. 10-7-68

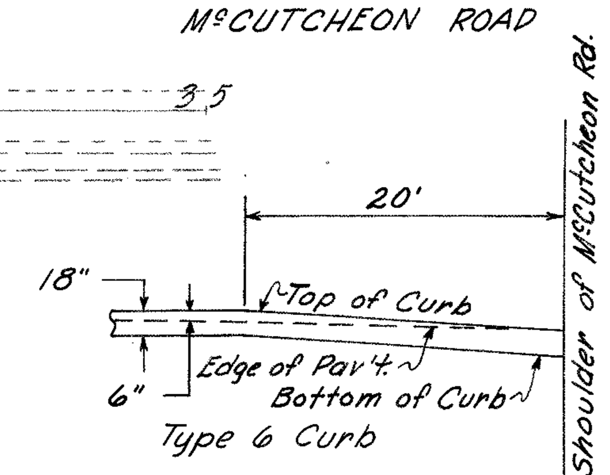




TREES STA. 25+00 To 29+25		
Size	Lt of ℄	Rt. of ℄
12" to 24"		
24" to 36"		
36" to 60"		
Over 60"		



EXISTING TYPICAL SECTION
McCUTCHEON ROAD



(A) DEPRESSED CURB DETAIL

Drive Legend
- 2" ~ 404 on 5" ~ 304
- 6" ~ 304 (Field)
- 8" ~ 304 (Res.)
- 7" ~ 452

REMOVAL:

Drive Calculations	
1-A	(36 x 12 + 20 x 20) ÷ 9 = 92.5 S.Y. 452
2-A	(.5(52 +12) 20 + .5 x 20 x 3) 0.1667 ÷ 27 = 4.1 Cu.Yd. 404 (.5(52 +12) 20 + .5 x 20 x 3) 0.4167 ÷ 27 = 10.4 Cu.Yd. 304 12 x 18 x 0.667 ÷ 27 = 5.3 Cu.Yd. 304

AMESBURY DRIVE CALCULATIONS

Area	=	$32 \times 37 + 2(35^2) - \frac{\pi \times 35^2}{2}$	= 1709.77 S.F.
404	=	1446.89 × 0.10 ÷ 27	= 6.3 C.Y.
403	=	1446.89 × 0.10 ÷ 27	= 6.3 C.Y.
301	=	1446.89 × 0.33 ÷ 27	= 20.9 C.Y.
304	=	1446.89 × 0.33 ÷ 27	= 20.9 C.Y.
310	=	1446.89 × 0.50 ÷ 27	= 31.7 C.Y.
608	=	59 × 4	= 236 S.F.
609	=	Type 6 Curb	= 55 L.F.

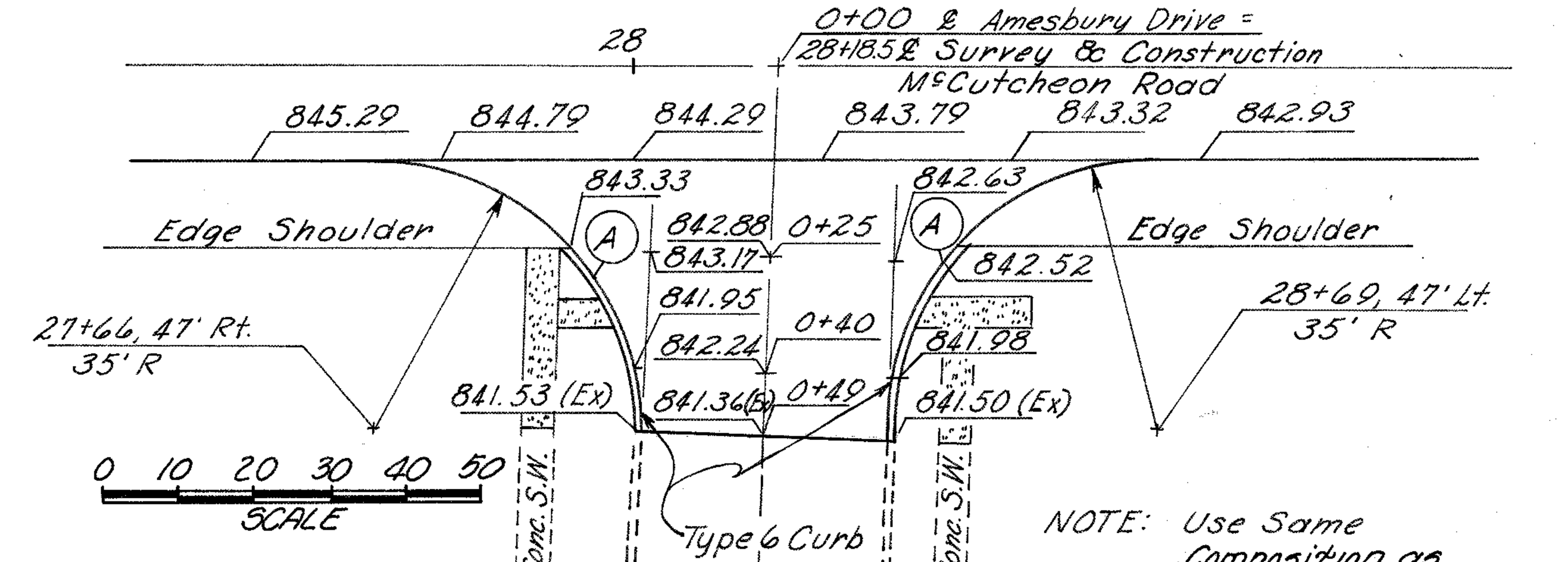
Item (1-P)

B.M.	Elevation 842.78
Sta. 30+24, 28' Rt	
West Bolt of Fire Hydrant	

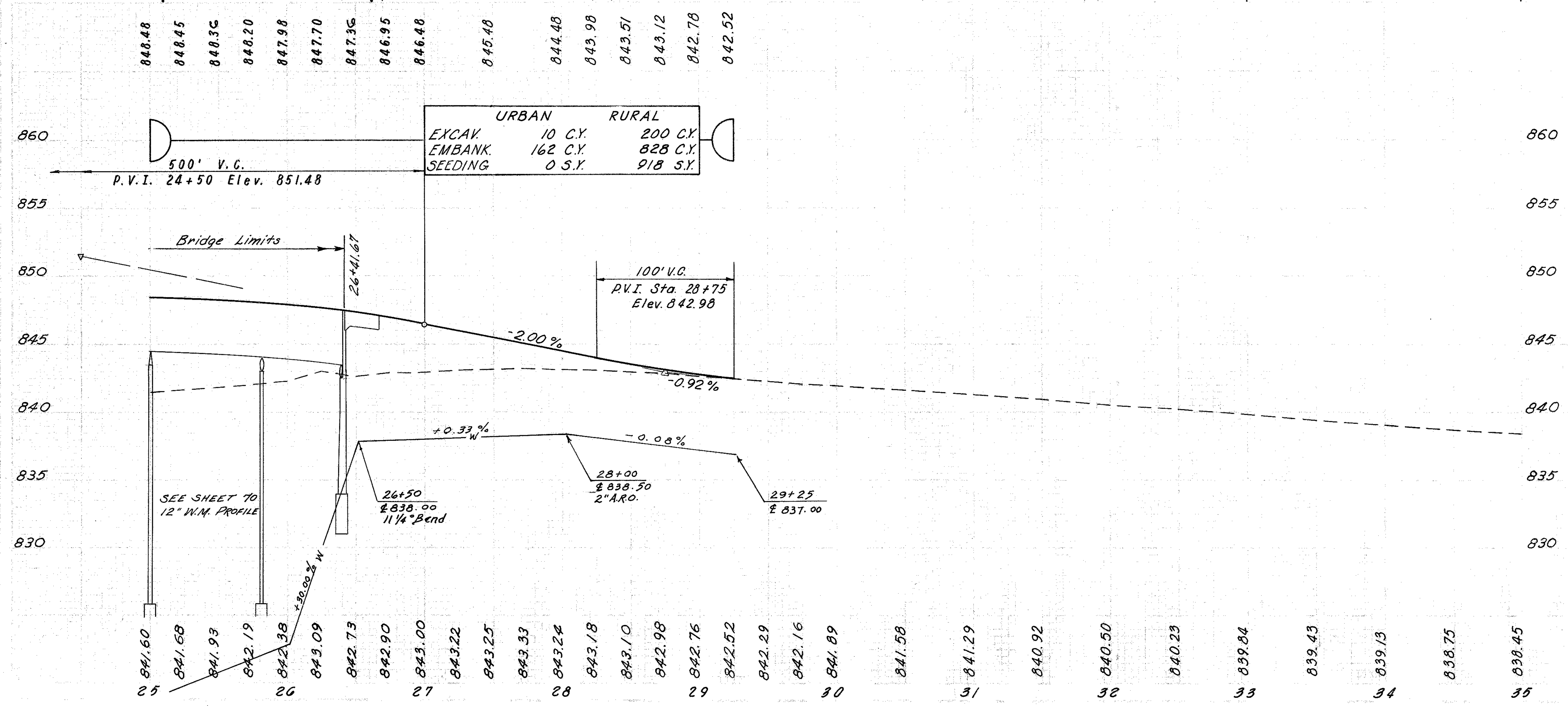
NOTES

1. For Man Hole Reconstruction Sta. 26+77 Details, See Sheet No. 164
2. For I-270 Plan & Profile, See Sheet No. 44
3. See Sheet 198 For Water Line Quantities

AMESBURY DRIVE DETAIL



NOTE: Use Same Composition as McCutcheon Rd.



‡ RURAL
⊕ 100% City

REF.	STATION TO STATION	SIDE	606 GUARDRAIL TYPE 5 ‡ L.F.		202 EX. PAV'T REM. & DIS. ‡ S.Y.	202 EX. S.W. REMOVED ‡ S.F.	452 PL. PORT. CEMENT ‡ S.Y.	202 EX. CURB REMOVED ‡ L.F.	604 M.H. RECONST. TO GRADE ⊕ Ea.	301 BIT. AGGR. BASE ‡ C.Y.	304 AGGR. BASE ‡ C.Y.	310 SUB-BASE ‡ C.Y.	403 ASPH. CONC. 70-85 ‡ C.Y.	404 ASPH. CONC. 70-85 ‡ C.Y.	404 ASPH. CONC. 85-100 ‡ C.Y.	608 CONC. WALK ‡ S.F.	609 CURB TYPE 6 ‡ L.F.	660 SODDING ‡ S.Y.		660 SPEC. BERM & SLOPE PROT. ‡ S.Y.		606 APPR. ASSY. ‡ Ea.	606 TERM. ASSY. Ea.
1-D	25+80 to 26+67	Lt.																59					
2-D	25+81 to 26+67	Rt.																	59				
3-D	26+56	Lt.																		16			
4-D	26+56	Rt.																			12		
5-D	26+77	Lt.							1														
1-A	27 + 58	Lt.					93																
2-A	28 + 81	Rt.									16				5								
1-R	26+72 to 27+96	Rt.				595																	
2-R	28+01 to 28+33	Rt.			64			55															
3-R	28+36 to 28+51	Rt.				97																	
4-R	27+54 to 27+62	Rt.				34																	
1-P	28+19	Rt.								21	21	32	7	7		236	55						
1-GR	26+53.42 to 27+28.42	Rt.	61	14																		1	1
2-GR	26+53.42 to 28+03.42	Lt.	111	14																		1	1
	TOTALS (RURAL)		172		64	726	93	55		21	37	32	7	7	5	236	55	59		16		2	
	TOTALS (URBAN)			28					1⊕										59		12		2

REV. 7-1-

STA. 25+00 TO STA. 35+00 McCUTCHEON ROAD

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292

FRANKLIN COUNTY
FRA-270-22.99N

		ADD FILL AREA	VOL.
19+00,	40' RT.	0	
			5
19+00,	27' RT.	20	
			2
19+00,	22' RT.	0	
TOTAL			7

		DEDUCT CUT AREA	VOL.
19+00,	39' RT.	0	
			4
19+00,	33' RT.	35	
			4
19+00,	27' RT.	0	
TOTAL			8

Ex. Ground	Template	Plan.	Earthwork Quant.	Seeding Quant.
Plotted		Checked	Inked	
		R.A.M.	R.A.M.	

STA. 17+00 TO STA. 19+00 McCUTCHEON ROAD

163
232

FRANKLIN COUNTY
FRA-270-22.99N

	DEDUCT CUT AREA	VOL.
21+97; 56' Lt.	0	
		10
21+97; 49' Lt.	80	
		10
21+97; 42' Lt.	0	
TOTAL		20

	ADD FILL AREA	VOL.	END WIDTH	AREA	
21+97; 100' Lt.	0		4		21+97; 100' Lt.
		100		84	
21+97; 42' Lt.	93	35			
21+97; 22' Lt.	0		32		21+97; 58' Lt.
TOTAL		135		84	

	DEDUCT CUT AREA	VOL.	END WIDTH	AREA	
20+91; 52' Lt.	0	5	4		20+91; 80' Lt.
20+91; 47' Lt.	54	9	28	43	20+91; 56' Lt.
20+91; 38' Lt.	0				
TOTAL		14		43	

	ADD FILL AREA	VOL.
20+91; 80' Lt.	0	61
20+91; 38' Lt.	78	24
20+91; 22' Lt.	0	
TOTAL		85

STA. 20+00 TO STA. 23+00 McCUTCHEON ROAD

STA. 24+00 TO STA. 27+00 McCUTCHEON ROAD

FRANKLIN COUNTY
FRA-270-22.99N

CALC: JLG 10-7-68
CHK: 10-8-68

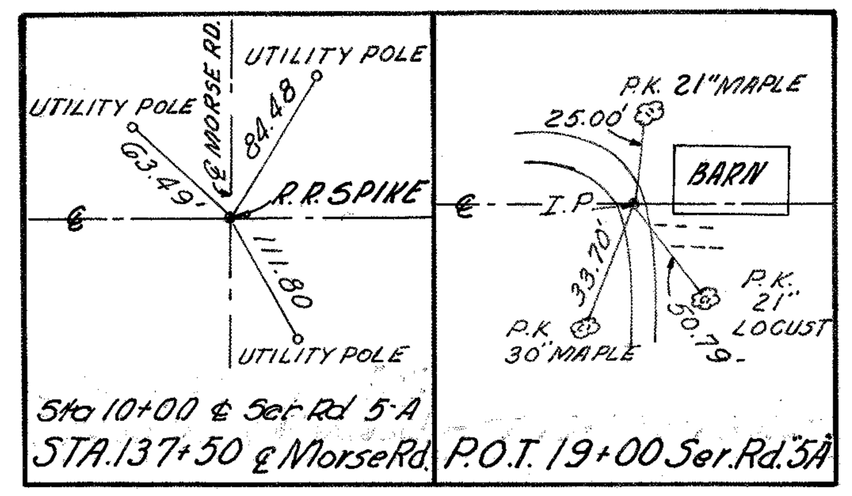
	END AREA		VOLUME		END WIDTH	AREA	
	CUT	FILL	CUT	FILL			
0+49	0	0					0+49
			10	6	4		
0+25	21	13				72	
			17	3	49		
0+12	50	0					0+22
TOTALS			27	9		72	

	ADD CUT		END WIDTH	AREA
	AREA	VOL.		
28+81; 49' Lt.	12		4	
		26		33
28+81; 22' Lt.	41		23	
TOTAL		26		33

STA. 28+00 TO STA. 30+00 McCUTCHEON ROAD

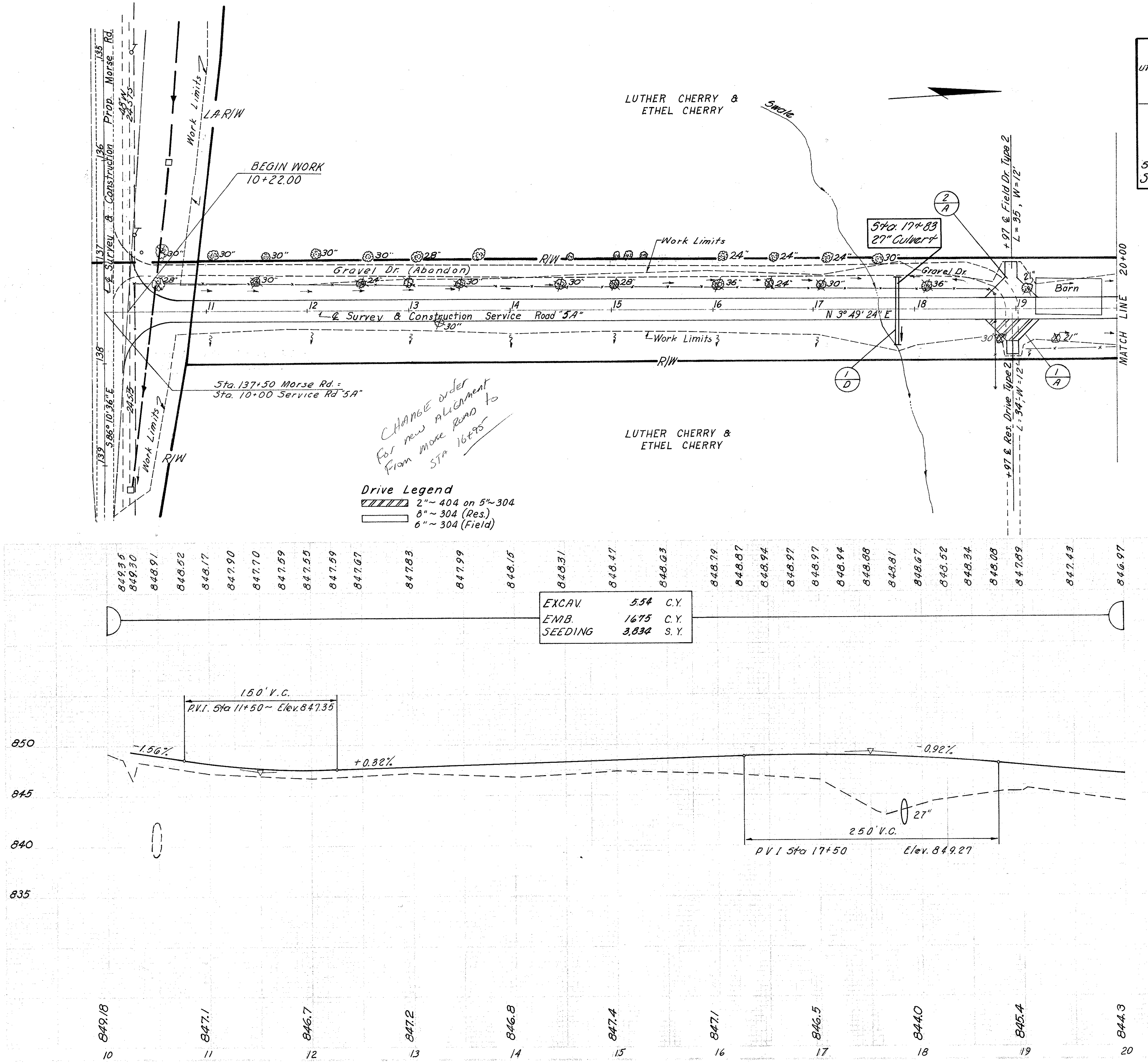
FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D.L. 9/27/68
CHK: R.E.H. 10/8/68



TREES 10+00 TO 20+00		
SIZE	Lt. of ℄	Rt. of ℄
12" to 24"	4	0
24" to 36"	6	1
36" to 60"	0	0
60" & Over	0	0

DRIVE CALCULATIONS	
1/A	((20 x 12) + 400) 0.1667 ÷ 27 = 3.9 C.Y. 404
	((20 x 12) + 400) 0.4167 ÷ 27 = 9.9 C.Y. 304
	(14 x 12) 0.667 ÷ 27 = 4.2 C.Y.
2/A	((35 x 12) + 400) 0.50 ÷ 27 = 15.2 C.Y. 304



NOTES

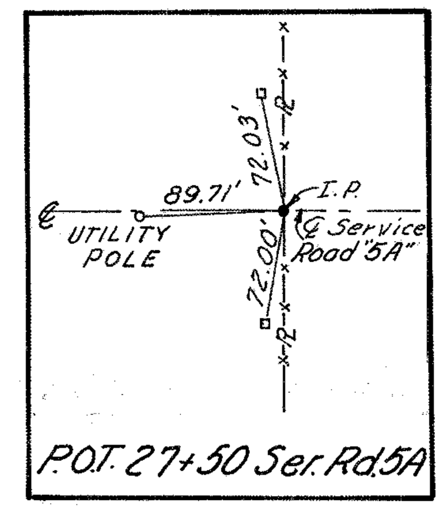
For Morse Road Plan & Profile Details See Sheet No. 94
For Morse Road Pavement Details See Sheet No. 149

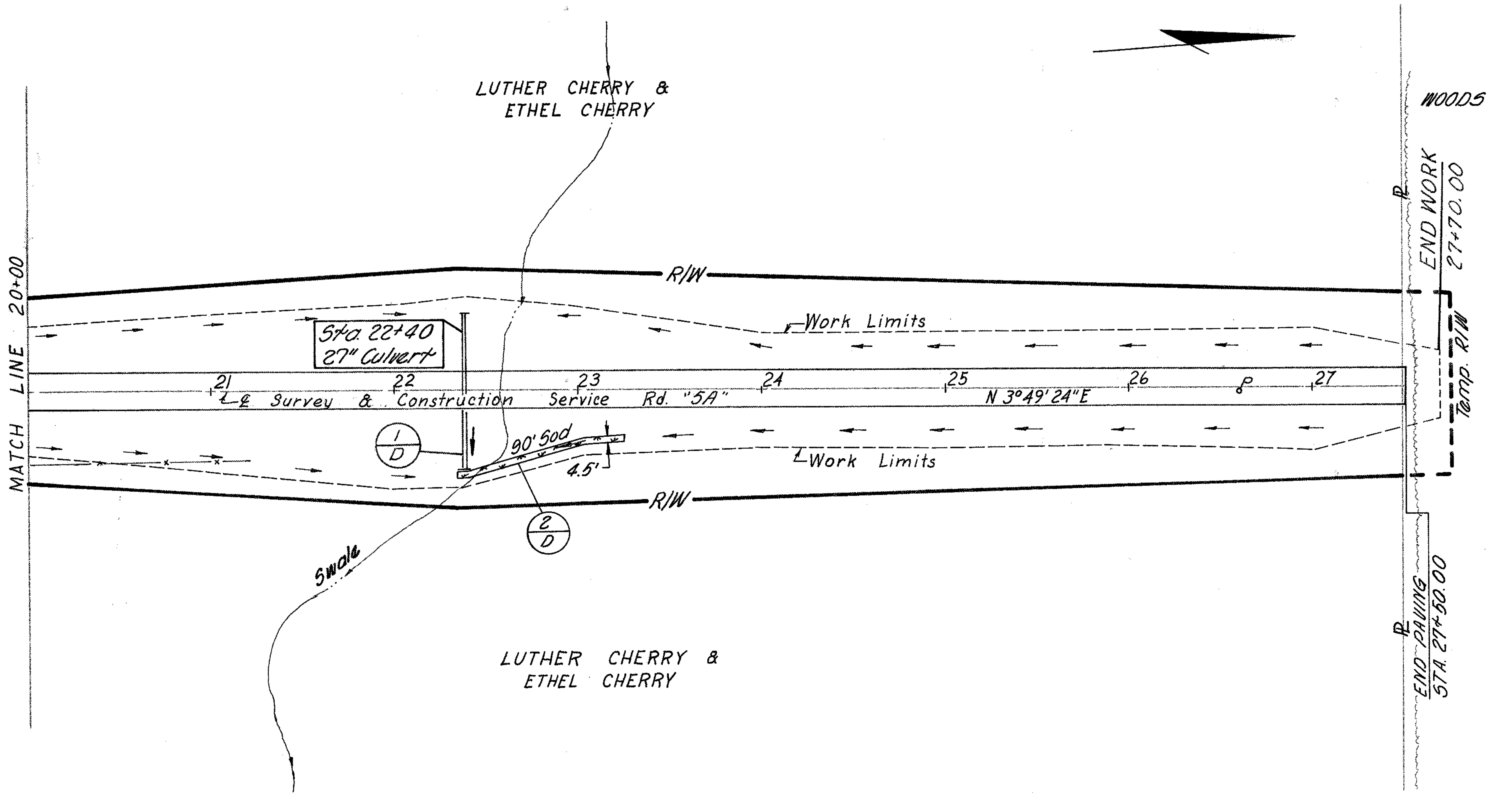
REF.	STATION TO STATION	SIDE		602 CONC. MASONRY	603 TYPE "A" 706.02 or 706.08	304 AGGR. BASE	404 ASPH. CONC. (85-100)		FOR DETAILS SEE SHEET NO.
				C.Y.	27" L.F.	C.Y.	C.Y.		
1-D	17+83	℄		1.0	68				193
1-A	18+97	Rt				15	4		170
2-A	18+97	Lt				16			170
	URBAN TOTALS			1.0	68	31	4		

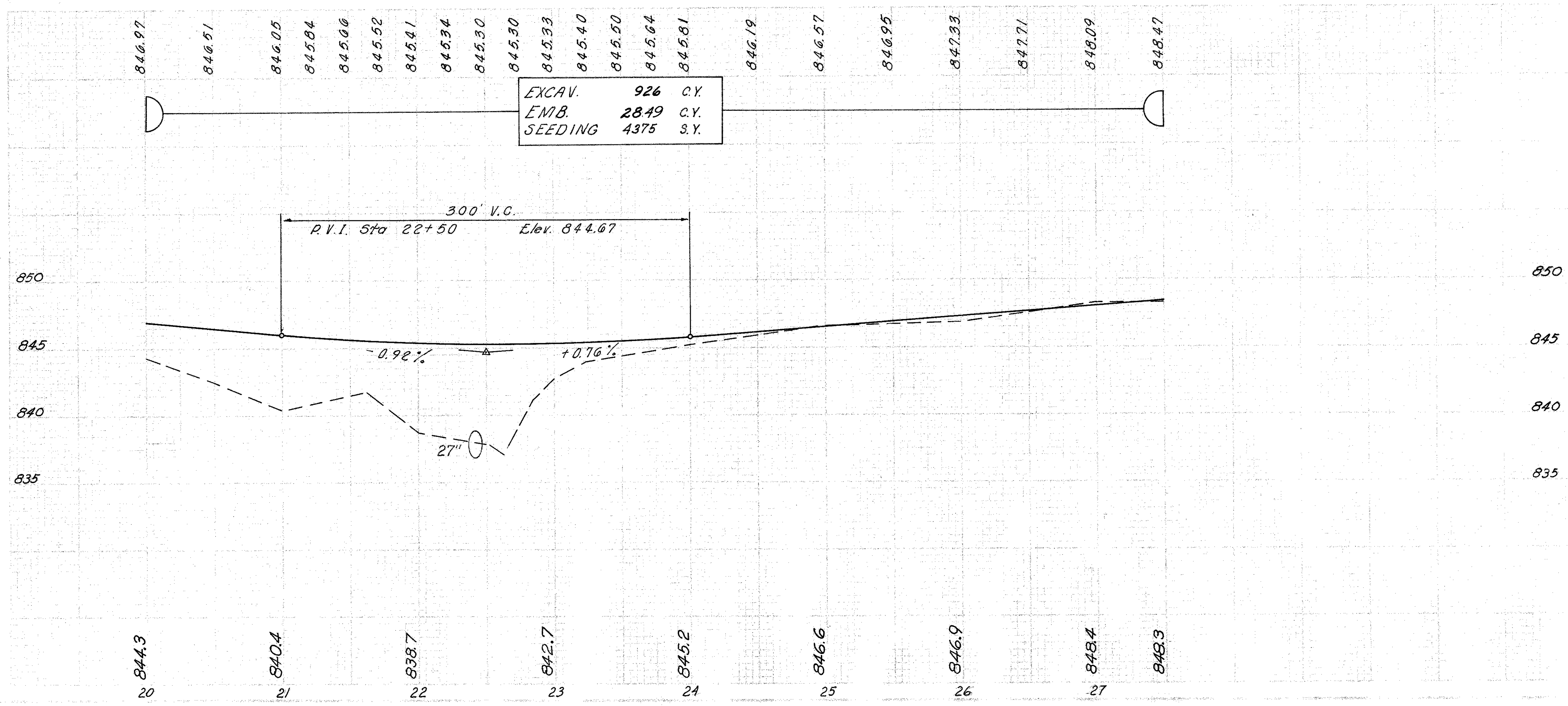
STA. 10+00 TO STA. 20+00 SERVICE ROAD

FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D.B. 9/27/68
CHK: R.E.H. 10/8/68







REF.	STATION TO STATION	SIDE		602 CONC. MASONRY	603 TYPE "A" 706.02 or 706.08 27"		660 SODDING	FOR DETAILS SEE SHEET NO.
				C.Y.	L.F.		S.Y.	
1-D	22+40	℄		1.0	86			194
2-D	22+35 to 23+25	Rt.					45	
	URBAN TOTALS			1.0	86		45	

STA. 20+00 TO STA. 27+50 SERVICE ROAD "5A"

168
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: R.N.M. Sept. 68
CHK: [illegible] 10-8-68

STA 10+00 TO STA 13+00 SERVICE ROAD 5A

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: R.H.M. Sept 68
CHK: [illegible] 10-8-68

STA 14+00 TO STA 17+00 SERVICE ROAD "5A"

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: RAM Sept. 68
CHK: [illegible] 10-8-68

EARTHWORK	END AREA	VOL.
18+97, 45' Lt.	0	
		3
18+97, 22' Lt.	7	
		1
18+97, 16' Lt.	0	
TOT.		4

EARTHWORK	END AREA	VOL.
18+97 44' Rt.	0	
		4
18+97 25' Rt.	12	
		2
18+97 16' Rt.	0	
TOT.		6

Inked	Ck.	Plotted
RAM RAM	RAM RAM	

Ex. Ground
Template
Inked Quant.
Seeding Quant.

STA 18+00 TO STA 21+00 SERVICE ROAD "5A"

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: R.M. Sept 68
CHK: 10-8-68

STA 22+00 TO STA 25+00 SERVICE ROAD "5A"

FRANKLIN COUNTY
FRA-270- 22.99 N

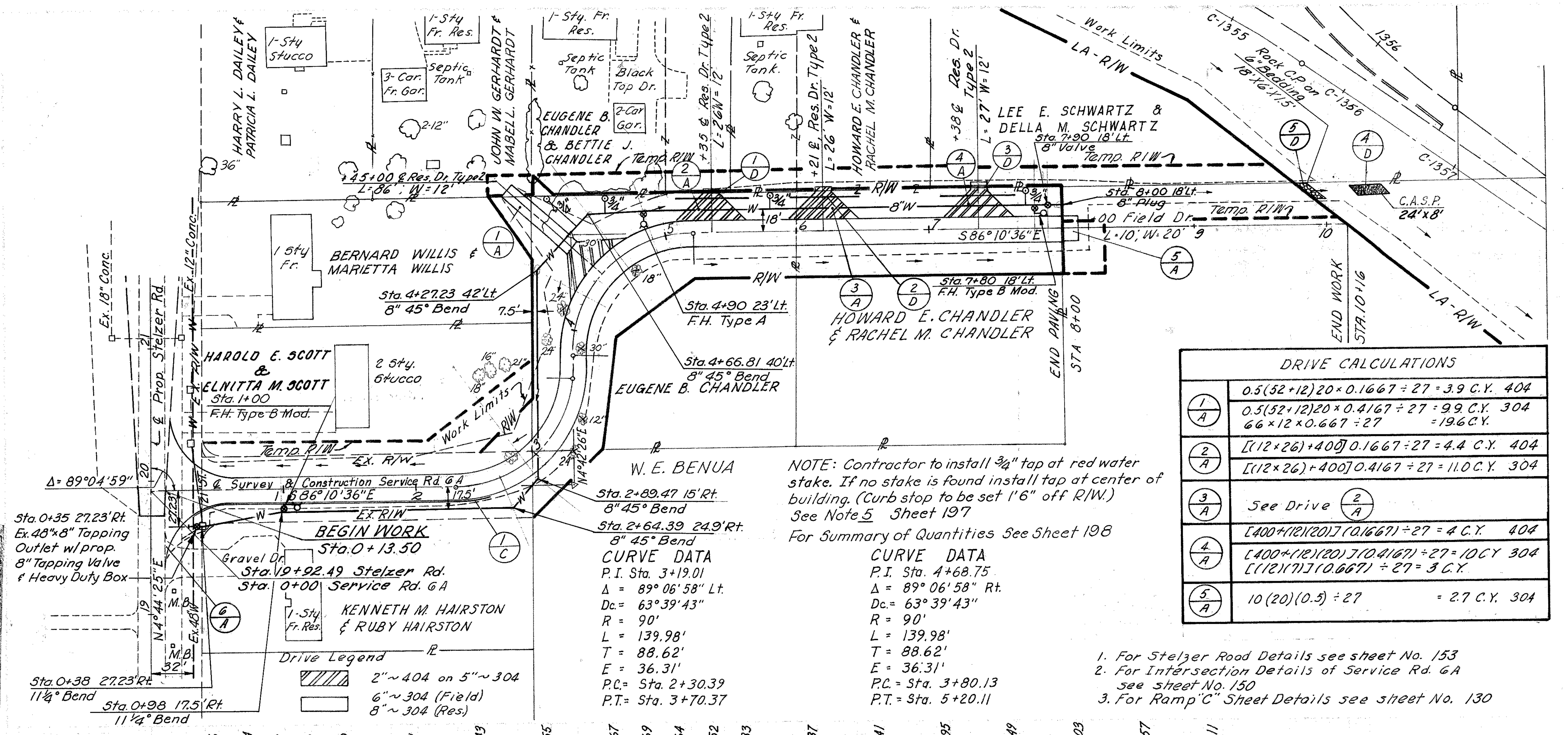
CALC: R.H.M. Sept 68
CHK: [illegible] 10-8-68

Ex. Ground Template Plan. Earthwork Quant. Seeding Quant.	Plotted	Ck.	Inked
		R.H.M. R.H.M.	R.H.M. R.H.M.

STA 26+00 TO STA 27+50 SERVICE ROAD "5A"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D.K. 10-1-68
CHK: R.E.H. 10-8-68



NOTE: Contractor to install 3/4" tap at red water stake. If no stake is found install tap at center of building. (Curb stop to be set 1'6" off R/W.)
See Note 5 Sheet 197
For Summary of Quantities See Sheet 198

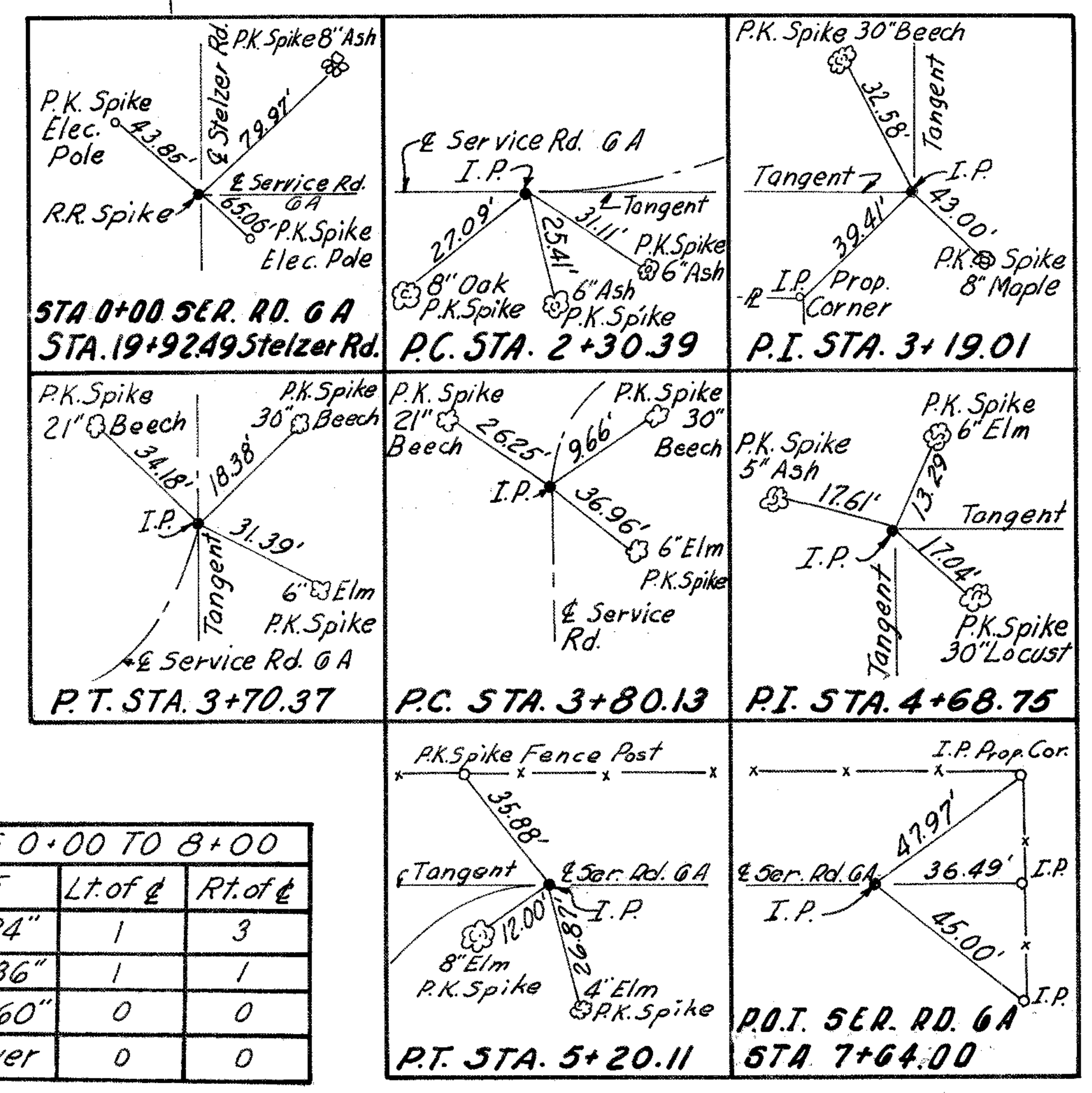
CURVE DATA	CURVE DATA
P.I. Sta. 3+19.01	P.I. Sta. 4+68.75
Δ = 89° 06' 58" Lt.	Δ = 89° 06' 58" Rt.
Dc = 63° 39' 43"	Dc = 63° 39' 43"
R = 90'	R = 90'
L = 139.98'	L = 139.98'
T = 88.62'	T = 88.62'
E = 36.31'	E = 36.31'
P.C. = Sta. 2+30.39	P.C. = Sta. 3+80.13
P.T. = Sta. 3+70.37	P.T. = Sta. 5+20.11

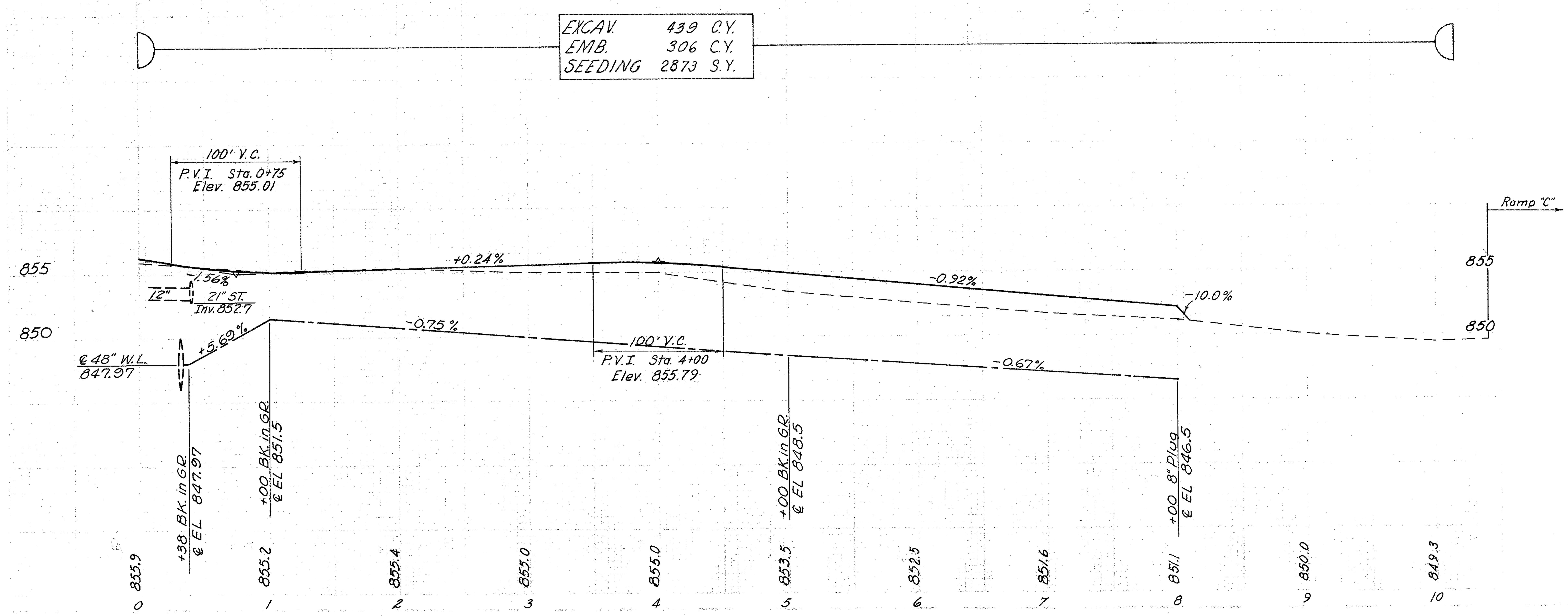
DRIVE CALCULATIONS

1/A	0.5(52+12)20×0.1667 ÷ 27 = 3.9 C.Y. 404
	0.5(52+12)20×0.4167 ÷ 27 = 9.9 C.Y. 304 66×12×0.667 ÷ 27 = 19.6 C.Y.
2/A	[(12×26)+400] 0.1667 ÷ 27 = 4.4 C.Y. 404
	[(12×26)+400] 0.4167 ÷ 27 = 11.0 C.Y. 304
3/A	See Drive 2/A
4/A	[400+(12)(20)] (0.1667) ÷ 27 = 4 C.Y. 404
	[400+(12)(20)] (0.4167) ÷ 27 = 10 CY 304 [(12)(7)] (0.667) ÷ 27 = 3 C.Y.
5/A	10(20)(0.5) ÷ 27 = 2.7 C.Y. 304

1. For Stelzer Road Details see sheet No. 153
2. For Intersection Details of Service Rd. GA see sheet No. 150
3. For Ramp "C" Sheet Details see sheet No. 130

TREES 0+00 TO 8+00		
SIZE	Lt. of ℄	Rt. of ℄
12" to 24"	1	3
24" to 36"	1	1
36" to 60"	0	0
60" & Over	0	0





REF	STATION TO STATION	SIDE	601 C.A.S.P.	601 Rock C.P. TYPE 'B'	603 TYPE D 12"	609 CURB TYPE 6			FOR DETAILS SEE SHEET NO.
			S.Y.	C.Y.	L.F.	L.F.			
1-D	5+10 TO 5+64	LT.			54'				175
2-D	5+96 TO 6+48	LT.			52'				175
3-D	7+10 TO 7+66	LT.			56'				175
4-D	10+35	LT.	22						176
5-D	9+85 TO 9+91	LT.		8					
1-C	0+33 to 2+50	Rt.				217			
TOTALS			22	8	162	217			

REF	STATION TO STATION	SIDE		304 AGGR. BASE	404 ASPH. CONC. (85-100)				FOR DETAILS SEE SHEET NO.
				C.Y.	C.Y.				
1-A	4+45	Lt.		30	4				174
2-A	5+35	Lt.		11	5				175
3-A	6+21	Lt.		11	5				175
4-A	7+38	Lt.		13	4				175
5-A	8+00 to 8+10	Lt.-Rt.		3					
6-A	0+00	Rt.		1					
URBAN TOTALS				69	18				

STA. 0+00 TO STA. 10+16 SERVICE ROAD GA

FRANKLIN COUNTY
FRA-270-22.99N

CALC: [illegible] Sept 68
CHK: [illegible] 10-8-68

EARTHWORK

	End Area Cut	End Area Fill	Volume Cut	Volume Fill
4+45; 96' Lt.	7	0		
			14	5
4+45; 16' Lt.	2	3		
TOTAL			14	5

	End Width	Area
4+45; 96' Lt.	4	79
4+45; 17' Lt.	14	
Total		79

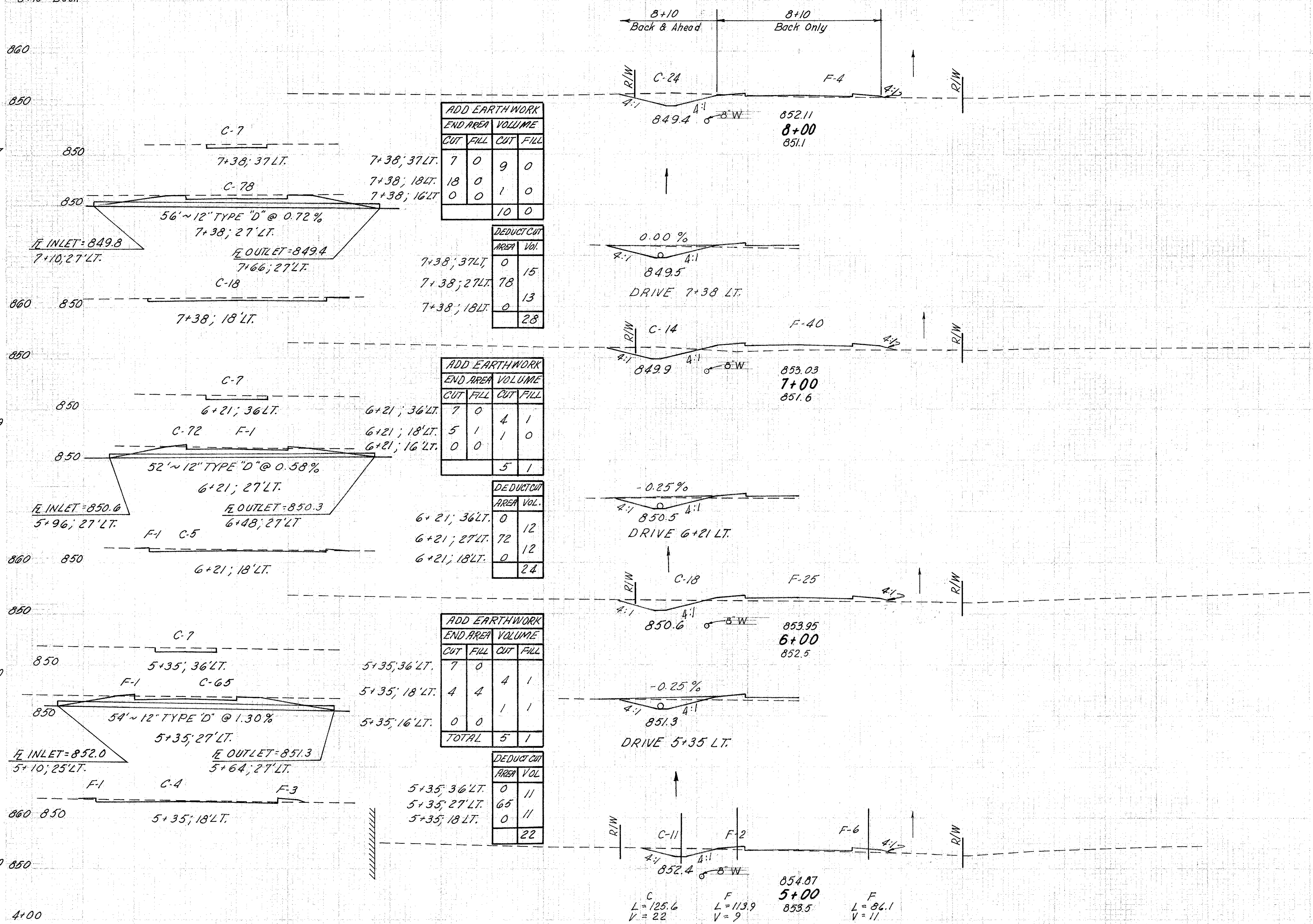
Ex. Ground	Template	Plan	Earthwork & Seeding &
Inked	R.A.M.	R.A.M.	
Ck	R.A.M.	R.A.M.	
Plotted			

STA. 1+00 TO STA. 4+00 SERVICE ROAD 6A

FRANKLIN COUNTY
FRA-270-22.99N

CALC: [illegible]
CHK: [illegible] 10-68

END PAVING 8+00.00



ADD EARTHWORK	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
7+38; 37 LT.	7	0	9	0
7+38; 18 LT.	18	0	1	0
7+38; 16 LT.	0	0		
			10	0

DEDUCT CUT	AREA	VOL.
7+38; 37 LT.	0	15
7+38; 27 LT.	78	13
7+38; 18 LT.	0	
		28

ADD EARTHWORK	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
6+21; 36 LT.	7	0	4	1
6+21; 18 LT.	5	1	1	0
6+21; 16 LT.	0	0		
			5	1

DEDUCT CUT	AREA	VOL.
6+21; 36 LT.	0	12
6+21; 27 LT.	72	12
6+21; 18 LT.	0	
		24

ADD EARTHWORK	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
5+35; 36 LT.	7	0	4	1
5+35; 18 LT.	4	4	1	1
5+35; 16 LT.	0	0		
TOTAL			5	1

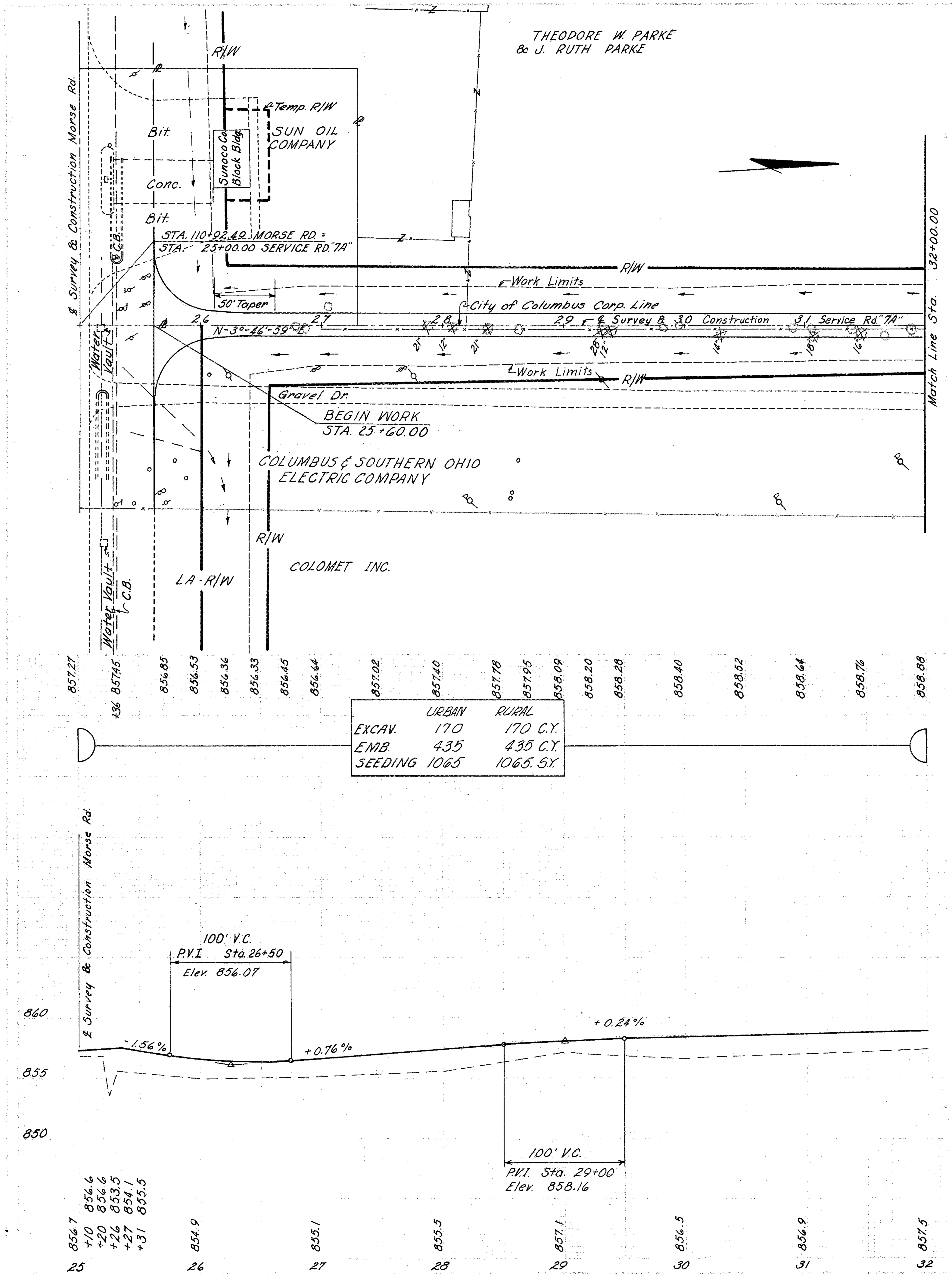
DEDUCT CUT	AREA	VOL.
5+35; 36 LT.	0	11
5+35; 27 LT.	65	11
5+35; 18 LT.	0	
		22

8+10 Back	24	0
	9	1
	24	4
	70	81
7+38 LT. DRIVE	10	0
7+38 LT. DEDUCT	-28	
	14	40
	59	120
6+21 LT DRIVE	5	1
6+21 LT DEDUCT	-24	
	18	25
	54	61
5+35 LT. DRIVE	5	1
5+35 LT. DEDUCT	-22	0
	11	8
	22	20


176
292
FRANKLIN COUNTY
FRA-270-22.99N
CALC: RHM Sept 68
CHK: 10-68
12+00
850.3
11+00
849.8
END WORK 10+16
10+16
C.A.S.P.
24"x8'
6:1
847.5
C-1356+50
℄ Prop. Ditch
C-4
848.4
10+00
849.3
C-5
849.2
9+00
850.0
8+10 AHEAD
Ex. Ground
Template
Plan
Earthwork
Inked
Ck
STA. 9+00 TO STA. 10+16 SERVICE ROAD GA

FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.O.G. 10-1-68
CHK: R.E.H. 10-8-68



	URBAN	RURAL
EXCAV.	170	170 C.Y.
EMB.	435	435 C.Y.
SEEDING	1065	1065 S.Y.

TREES Sta. 26+00 to 32+00		
SIZE	Left ℄	Right ℄
12" to 24"		7
24" to 36"		1
36" to 60"		
Over 60"		

P.K. Spikes in Guard Posts
℄ Service Rd.
R.R. Spike
23.88'
15.39'
22.44'
P.K.
110+92.49 MORSE RD = 25+00.00 SER. RD. "7A"

NOTES

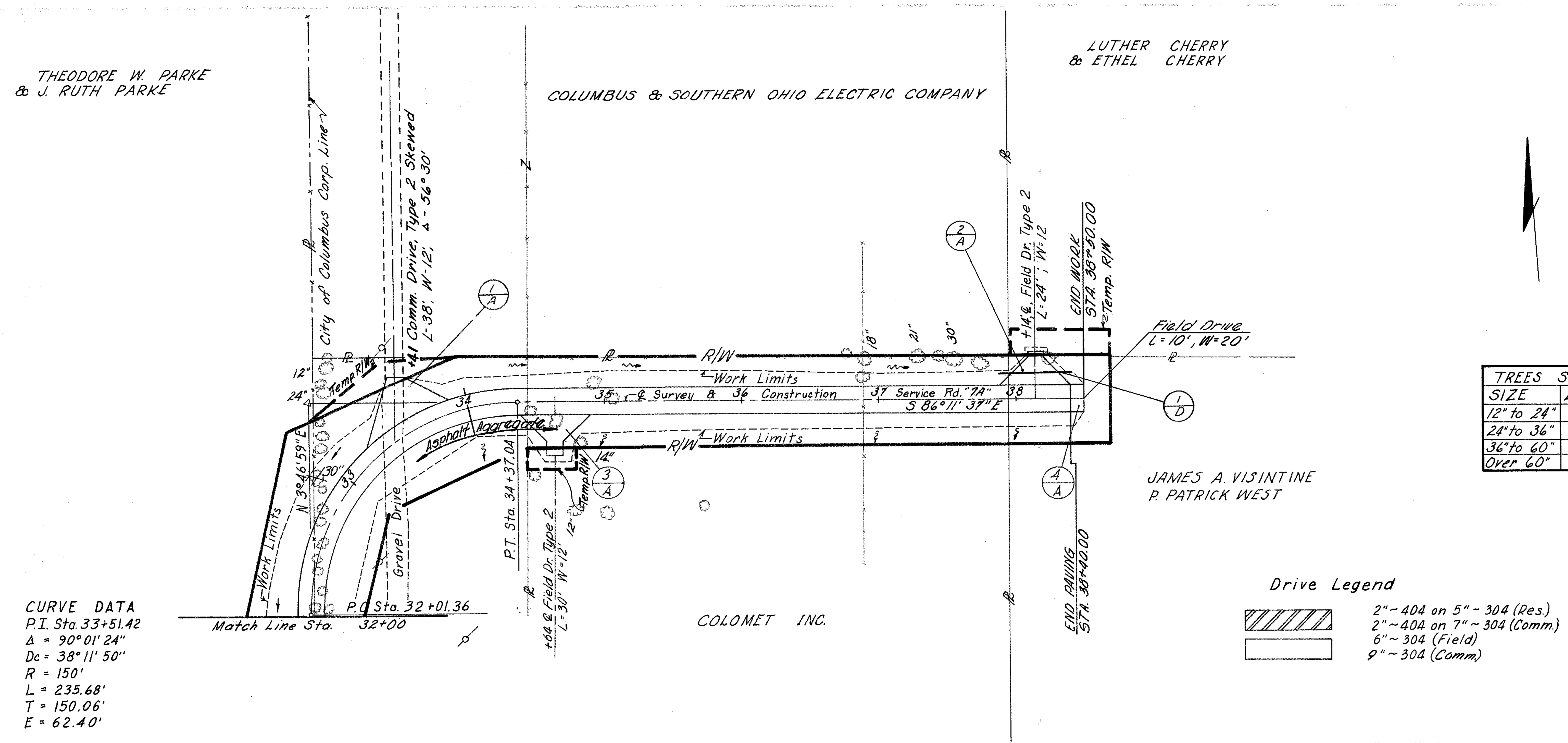
For Morse Road Plan & Profile Details See Sheet No. 92
For Morse Road Pavement Details See Sheet No. 146

Quantities - 50% Urban & 50% Rural.

REF.	STATION TO STATION	SIDE								FOR DETAILS SEE SHEET NO.
	TOTALS									

STA. 25+00 TO STA. 32+00 SERVICE ROAD "7A"

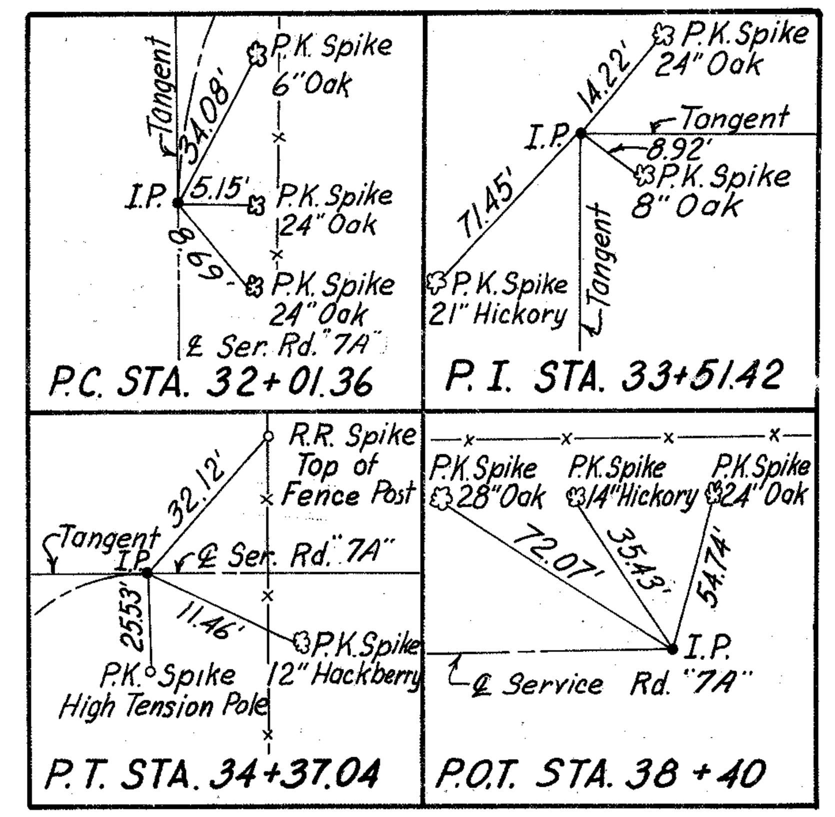
FRANKLIN COUNTY
FRA-270-22.99N



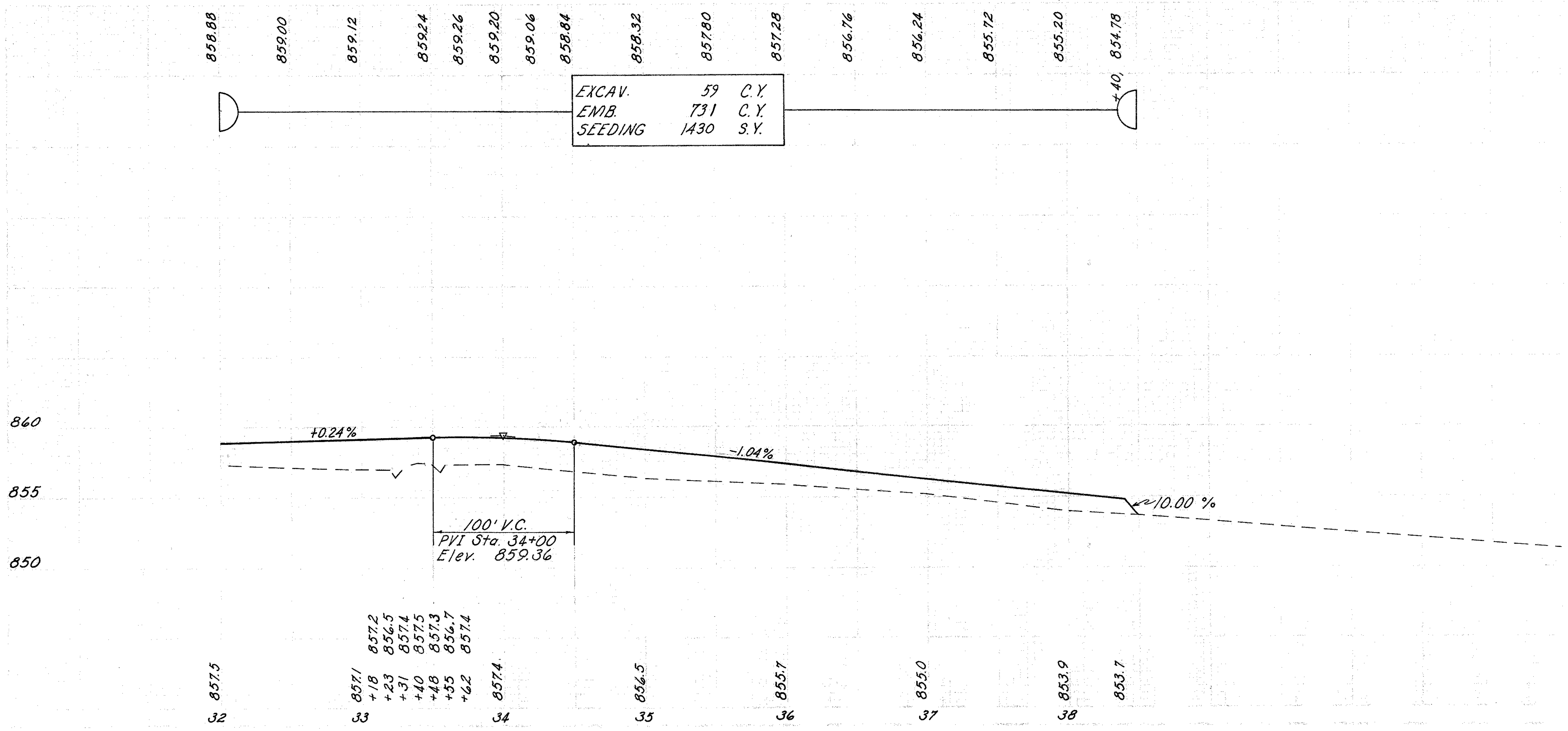
CURVE DATA
P.I. Sta. 33+51.42
Δ = 90° 01' 24"
Dc = 38° 11' 50"
R = 150'
L = 235.68'
T = 150.06'
E = 62.40'

TREES Sta. 32+00 to 38+50		
SIZE	Left ℄	Right ℄
12" to 24"		
24" to 36"	1	
36" to 60"		
Over 60"		

Drive Legend
2" ~ 404 on 5" ~ 304 (Res.)
2" ~ 404 on 7" ~ 304 (Comm.)
6" ~ 304 (Field)
9" ~ 304 (Comm.)



CALC. W.D.H. 10-1-68
CHK. R.E.H. 10-8-68



DRIVE CALCULATIONS	
1/A	Area by Planimeter = 1,100 S.F. 304 1,100 × 0.75 ÷ 27 = 30.8 C.Y.
2/A	(24 x 12 + 20 x 20) 0.50 ÷ 27 = 12.7 C.Y. 304
3/A	(30 x 12 + 400) 0.50 ÷ 27 = 14.1 C.Y. 304
4/A	(10 x 20 x 0.5) ÷ 27 = 3.7 C.Y 304

REF.	STATION TO STATION	SIDE		304 AGGR. BASE C.Y.		603 TYPE "D" 707.01 14 GA. 12" L.F.					FOR DETAILS SEE SHEET NO.
1-A	33 + 41	Lt.		31							
2-A	38 + 14	Lt.		13							
3-A	34 + 64	Rt.		15							
4-A	37 + 40 to 37 + 50	℄		4							
1-D	37 + 87 to 38 + 41	Lt.				54					181
TOTALS 100% URBAN				63		54					

STA. 32+00 TO STA. 38+40 SERVICE ROAD "7A"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: R.H.M. Sept. 68
CHK: [illegible] 10-8-68

ADD CUT AREA	ADD CUT VOL.
0	4
37	46
40	12
0	
	62

STA. 26+00 TO STA. 30+00 SERVICE ROAD "7A"

FRANKLIN COUNTY
FRA-270-22.99N

EARTHWORK

	End Area CUT	End Area FILL	Volume CUT	Volume FILL
33+41; 48'Lt.	12	0		
			13	0
33+41; 31'Lt.	24	2		
			9	8
33+41; 10'Lt.	0	20		
TOTAL			22	8

EARTHWORK

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
34+64; 40'Rt.	12	0		
			3	1
34+64; 30'Rt.	6	4		
			1	2
34+64; 16'Rt.	0	9		
TOTALS			4	3

STA. 31+00 TO STA. 35+00 SERVICE ROAD "7A"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: R.H.M. Sept.68
CHK: [illegible] 10-8-68

END WORK
38+50

END PAVING
38+40

F-7
4:1
854.78
38+40
853.7

38+14; 34'Lt.

3:1
℄ Inlet 853.8
37+87; 18'Lt.
54' ~ 12" Type "D" @ 0.20%
38+14; 18'Lt.
℄ Outlet 853.8
38+41; 18'Lt.

38+14; 10'Lt.
ZERO EARTHWORK

-7.20% 0.00%
DRIVE 38+14 LT.

R/W
F-11
855.20
38+00
853.9

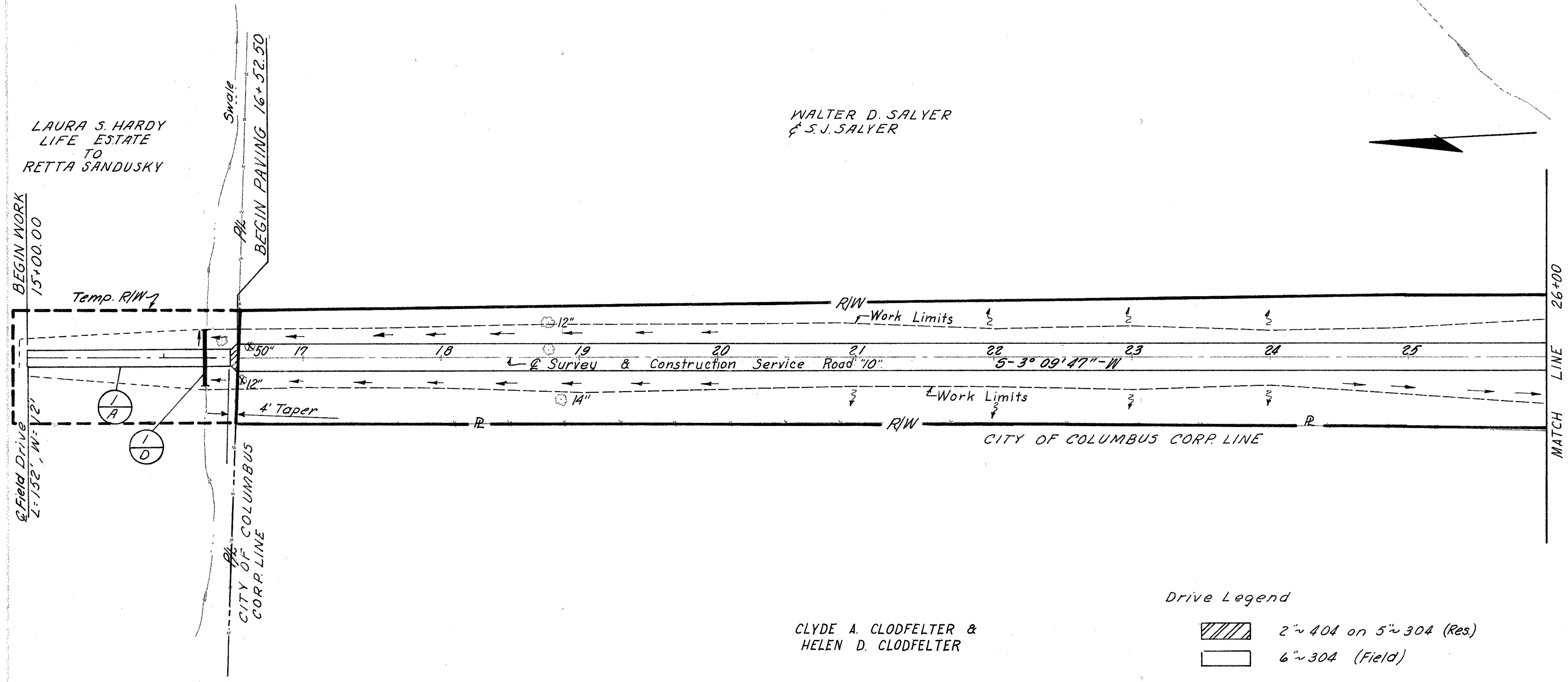
EARTHWORK				
	End Area		Volume	
	CUT	FILL	CUT	FILL
38+14; 34'Lt.	6	0		
			2	9
38+14; 18'Lt.	0	29		
			0	4
38+14; 10'Lt.	0	0		
TOTAL			2	13

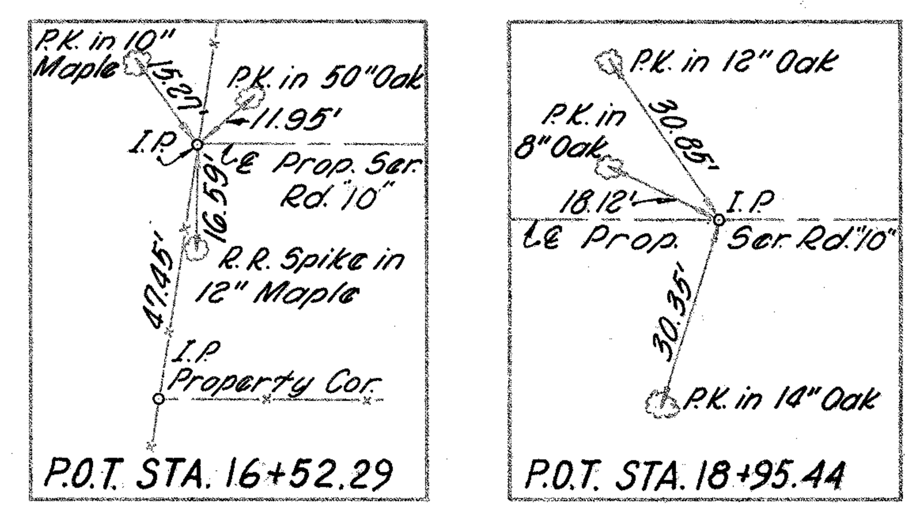
F-12
856.24
37+00
855.0

F-29
857.28
36+00
855.7

38+50			0	0
			0	1
38+40	12		0	7
	57		0	13
DRIVE 38+14 LT.			2	13
38+00	14		0	11
	156		0	43
37+00	14		0	12
	183		0	76
36+00	19		0	29
	217		0	130
35+00	20		0	41

FRANKLIN COUNTY
FRA-270-22.99 N

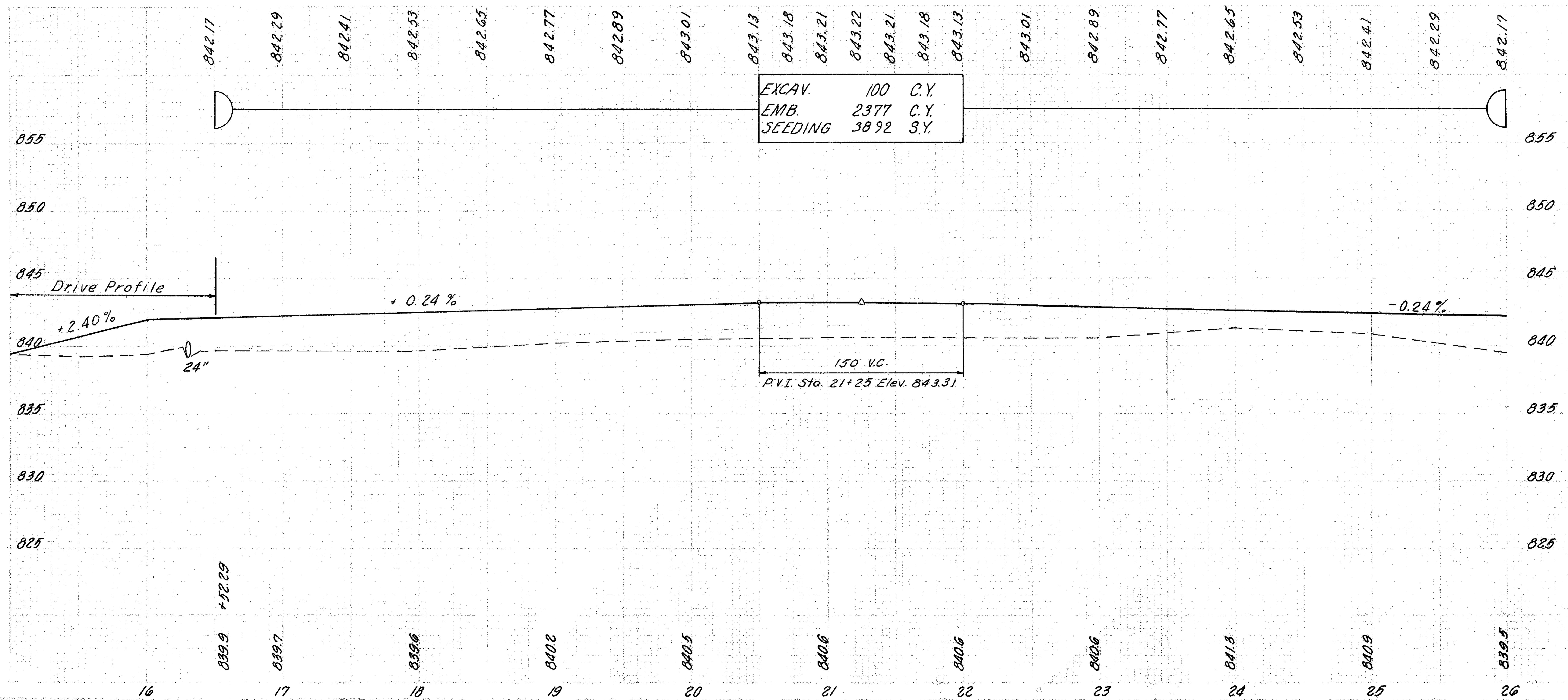




TREES 16+50 TO 26+00		
SIZE	Lt. of ℄	Rt. of ℄
12" to 24"		1
24" to 36"	0	0
36" to 60"	1	0
60" & Over	0	0

CALC: W.D.S. 10-1-68
CHK: R.E.H. 10-8-68

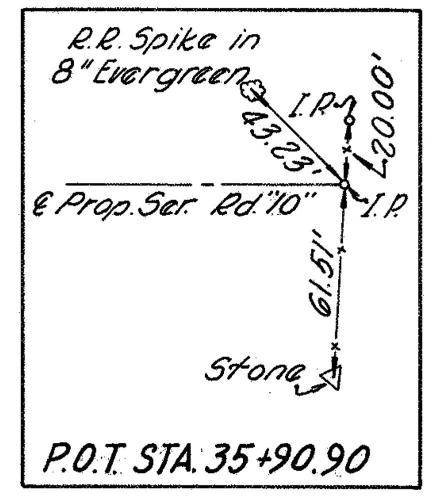
DRIVE CALCULATIONS	
1/A	(0.5(20+12)4+12 X 14.8)0.5 ÷ 27 = 34 C.Y. 304



≠-Rural

REF.	STATION TO STATION	SIDE		304 AGGR. BASE ≠ C.Y.		603 Type D 707.01 14 Ga. ≠ 24" L.F.					FOR DETAILS SEE SHEET NO.
1-A	15+00 TO 16+52.50	℄		34							184
1-D	16+30	Lt. & Rt.				42					184
RURAL TOTALS				34		42					

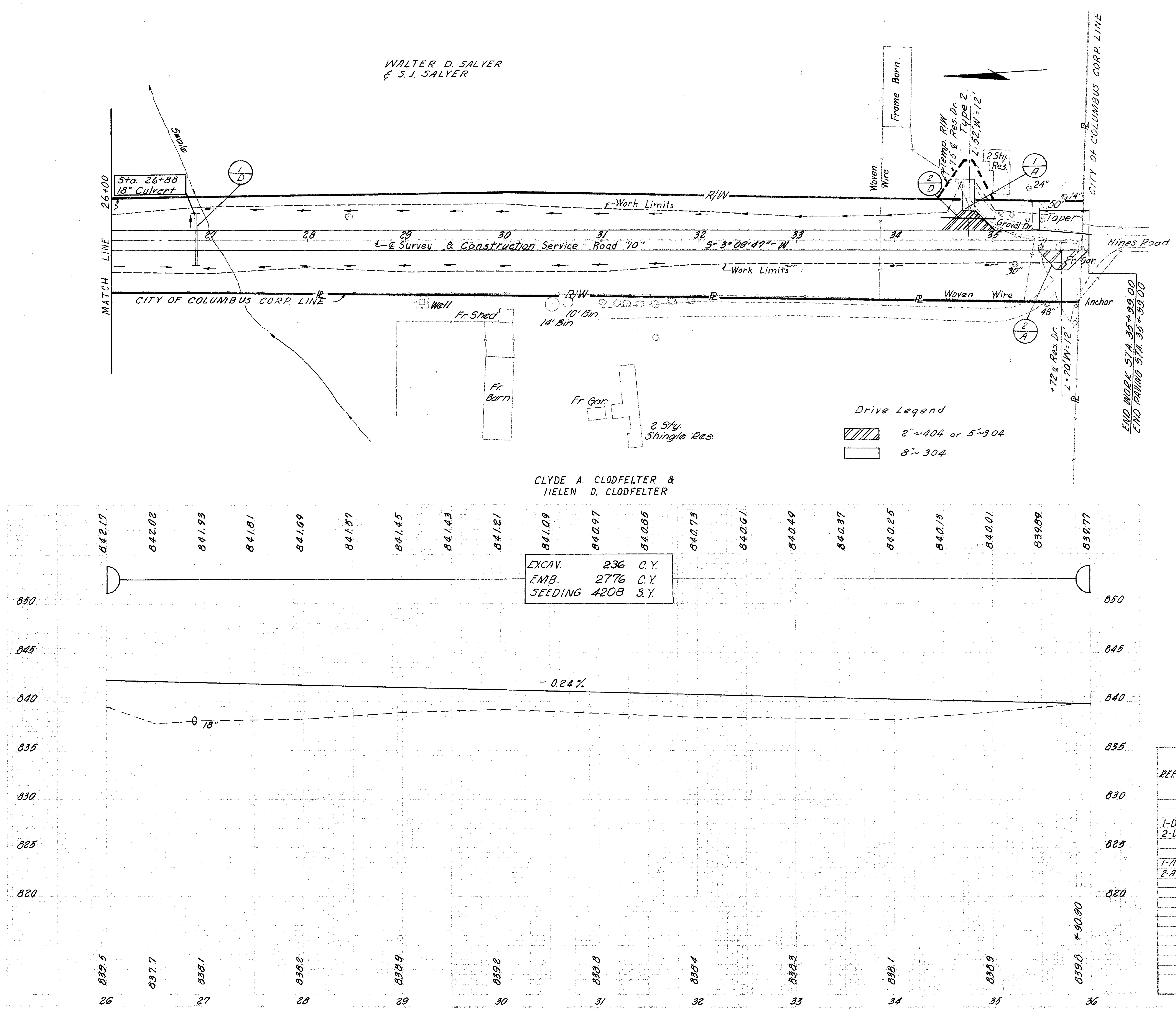
FRANKLIN COUNTY
FRA-270-22.99N



CALC: W.O.G. 10-1-68
CHK: R.E.H. 10-7-68

TREES 26+00 TO 36+00		
SIZE	Lt. of ℄	Rt. of ℄
12" to 24"	0	0
24" to 36"	0	0
36" to 60"	0	0
60" & Over	0	0

DRIVE CALCULATIONS	
1/A	0.5(12+52)20×0.1667÷27 = 3.9 C.Y. 404
	0.5(12+52)20×0.4167÷27 = 9.9 C.Y. 304 12×32×0.667÷27 = 9.5 C.Y. 304
2/A	See Item 1-A = 3.9 C.Y. 404
	See Item 1-A = 9.9 C.Y. 304



NOTE:

1. Existing Typical of Hines Road is 1" Macadam buildup on 6" Aggregate Base.

ǂ RURAL

REF.	STATION TO STATION	SIDE	602 CONC. MASONRY ǂ C.Y.	603 TYPE A 706.01 706.02 or 706.08 18" ǂ L.F.	603 TYPE "D" 707.01 14 Ga. 12" ǂ L.F.	304 AGGR. BASE ǂ C.Y.	404 ASPH. CONC. (85-100) ǂ C.Y.				FOR DETAILS SEE SHEET NO.
1-D	26+88	℄	.6	54							195
2-D	34+47 TO 35+03	Lt.			56						187
1-A	34+75	Lt.				20	4				187
2-A	35+72	Rt.				10	4				187
RURAL	TOTALS		.6	54	56	30	8				

STA. 26+00 TO STA. 36+00 SERVICE ROAD "10"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: RSM Sept 68
CHK: B 10-8-68

	EARTHWORK				SEEDING	
	END AREA		VOLUME		END	AREA
	CUT	FILL	CUT	FILL	WIDTH	S.Y.
16+52.3	5	73			35	
			2	58		87
16+30	0	67			35	
			0	64		107
16+00	0	48			29	
			0	89		161
15+00	0	0			0	
TOTALS			2	211		355

STA. 16+52.25 TO STA. 20+00 SERVICE ROAD "10"

185
232

FRANKLIN COUNTY
FRA-270-22.99N

CALC: RKM Sept.68
CHK: EA 10-8-68

STA. 21+00 TO STA. 25+00 SERVICE ROAD "10"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: R.M.M. Sept. 68
CHK: [illegible] 10-8-68

STA. 26+00 TO STA. 30+00 SERVICE ROAD "10"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: R.H.M. Sept '68
CHK: [illegible] 10-8-68

END WORK
STA. 35+99.00

	ADD EARTHWORK				END WIDTH	AREA
	END AREA		VOLUME			
	CUT	FILL	CUT	FILL		
34+75; 62'Lt.	12	0	9	23	4	74
34+75; 21'Lt.	0	30	0	12		
34+75; 11'Lt.	0	36			30	
TOTALS			9	35		74

	DEDUCT CUT	
	AREA	VOL.
34+75; 24'Lt.	0	1
34+75; 21'Lt.	6	0
34+75; 18'Lt.	0	
		1

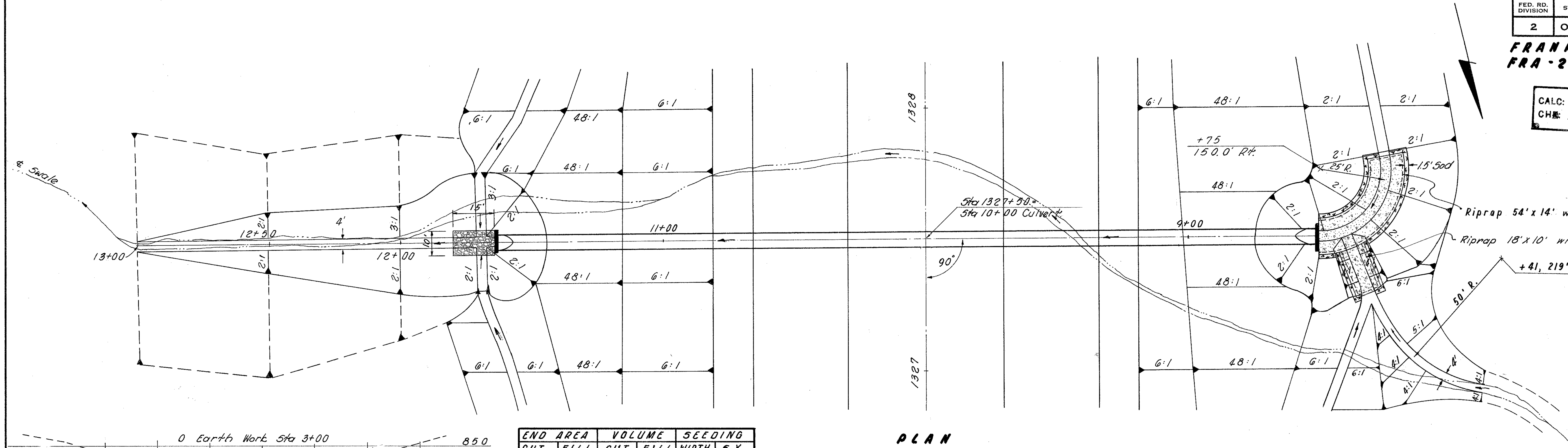
	ADD EARTHWORK			
	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
35+72; 30'Rt.	8	0	9	0
35+72; 16'Rt.	26	0		
TOTALS			9	0

STA. 31+00 TO STA. 35+99.00 SERVICE ROAD "10"

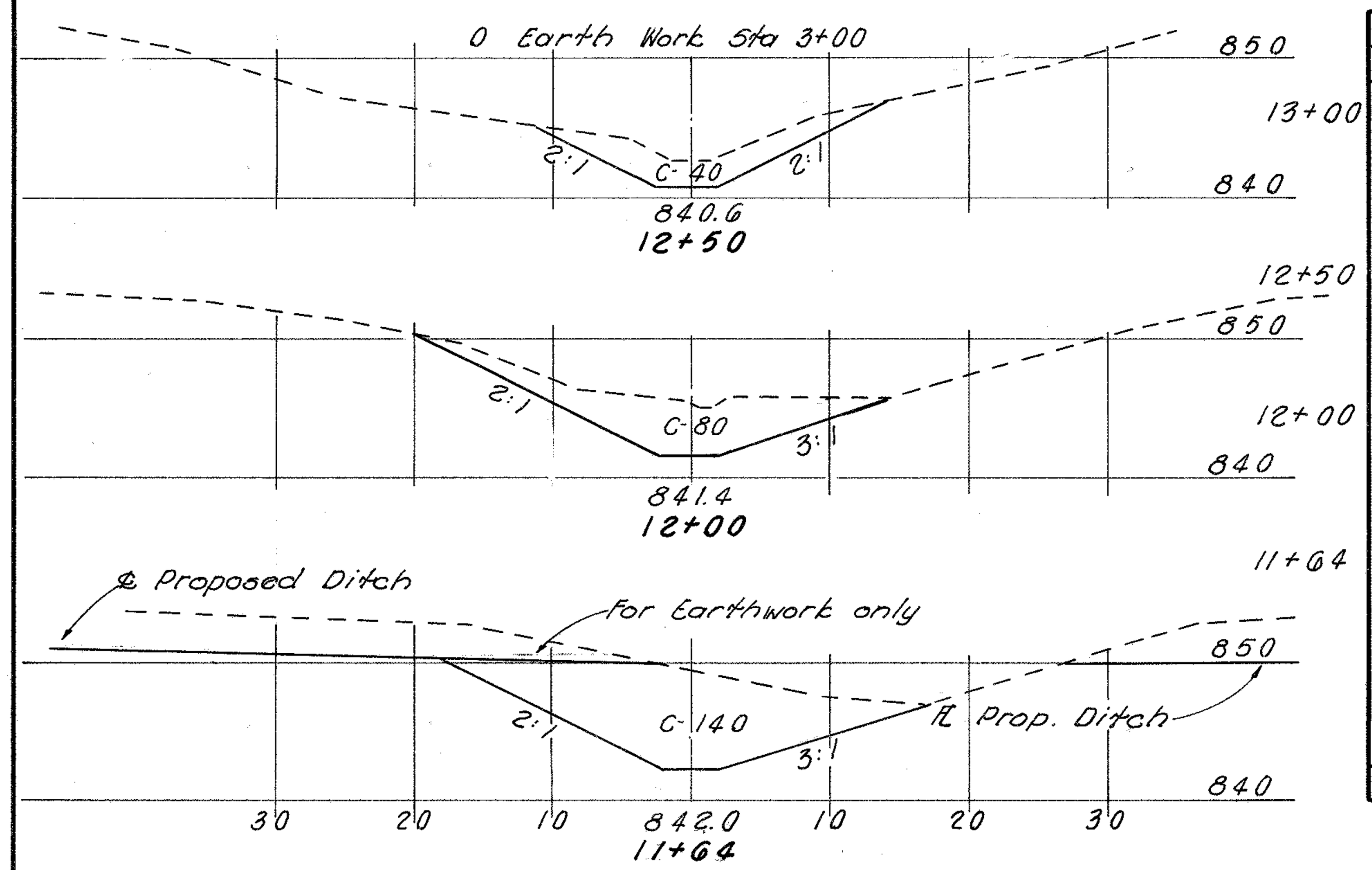
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: WDB 9-24-68
CHK: REH 10-1-68



PLAN



	END AREA		VOLUME		SEEDING		
	CUT	FILL	CUT	FILL	WIDTH	S.Y.	
13+00	0	0		0	0		13+00
			37			56	
12+50	40	0		0	20		12+50
			111			145	
12+00	80	0			32		12+00
			147			36	
11+64	140	0		0	32		11+90
	TOTAL		295	0		237	

Drainage Area = 161 Ac.
Q 50 = 170 cfs.

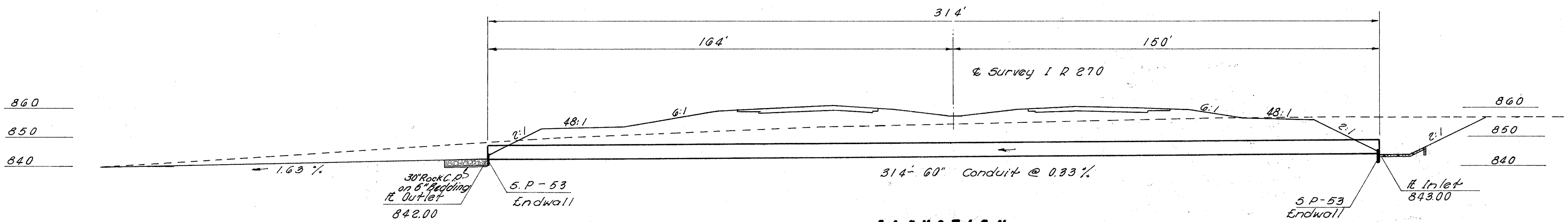
CALCULATIONS	
601 Rock C. P.	10 (15) (3) ÷ 27 = 17 C. Y.
601 Riprap	54 (14) ÷ 9 = 84 S. Y. 18 (10) ÷ 9 = 20 S. Y.
660 Sodding	[2(54)+17-12] ÷ 9 = 12.65 Y. [2(19)+2+2] ÷ 9 = 4.7 S. Y.

ESTIMATED QUANTITIES

602	Concrete Masonry	4.5 C.Y.
603	60" Conduit Type A, 706.02 Class III	314 L.F.
* 203	Excavation	295 C.Y.
* 659	Seeding	237 S.Y.
601	Rock Channel Protection Type B	17 C.Y.
601	Riprap, using 6" Reinforced Concrete Slab	104 S.Y.
660	Sodding	18 S.Y.

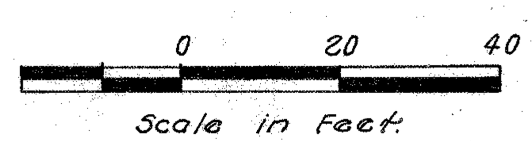
NOTES

*Items 203 and 659 carried to Sheet No. 47



ELEVATION

SP-53 ENDWALL		
L	H	H/3
10'-0"	5'-6"	1'-10"

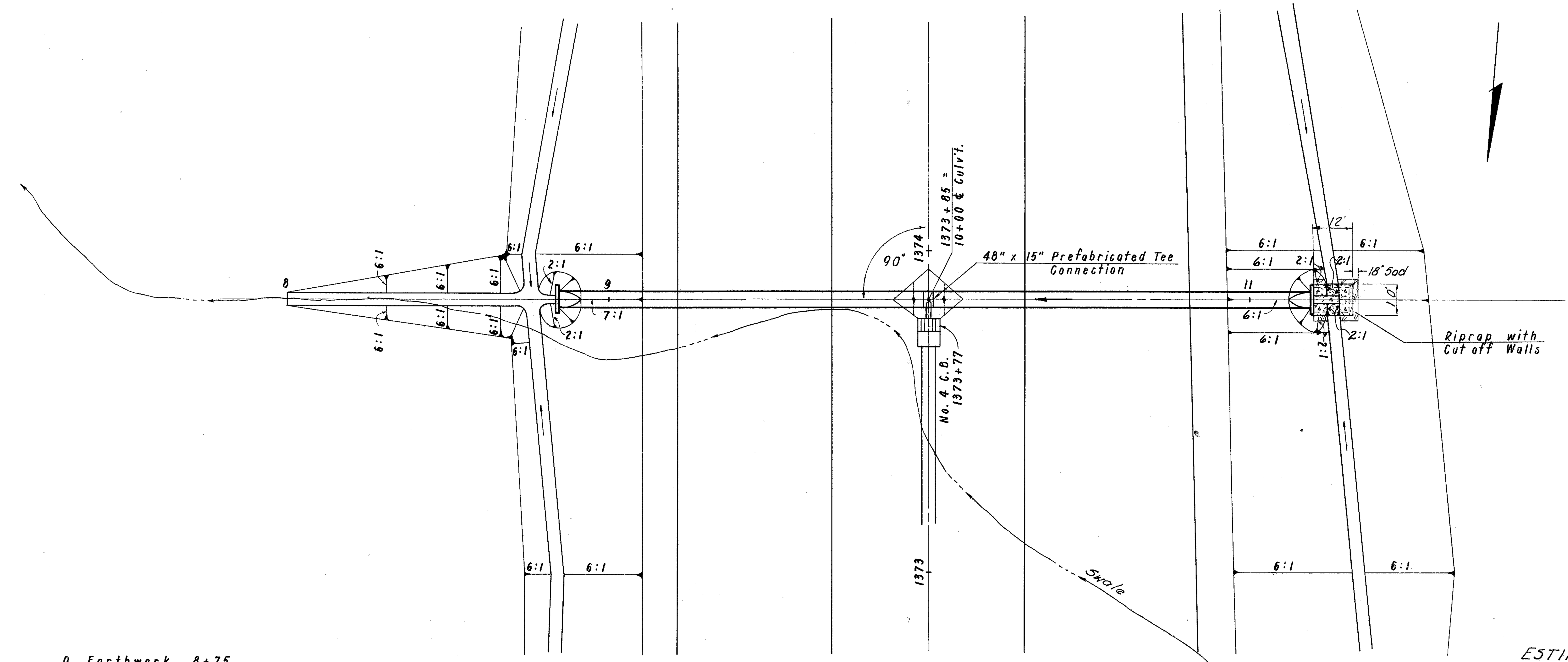


STRUCTURE NO. - FRA-270-23.04N

STA 1327+50 CULVERT DETAIL

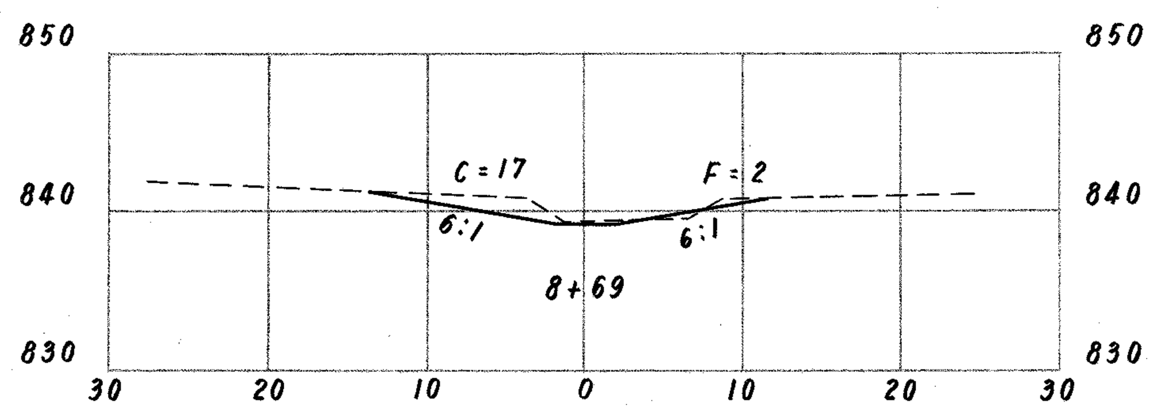
FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W.D.B. 9-25-68
CHK: REH 10-1-68



PLAN

Drainage Area = 49 Acres
Q 50 76 cfs



	End Area		Volume		Seeding		
	Cut	Fill	Cut	Fill	Width	S.Y.	
8+75	0	0					
			4	1			
8+64	17	2			23		8+55
			20	3		71	
8+00	0	0			0		8+00
	Total		24	4		71	

CALCULATIONS	
601 Riprap	(10)(12) ÷ 9 = 13.3 S.Y.
660 Sodding	[2(12)+13-2(6)]÷9=2.8 S.Y.

ESTIMATED QUANTITIES

601	Riprap, using 6" Reinforced Concrete Slab	14.0	S.Y.
602	Concrete Masonry	1.8	C.Y.
603	48" Type A Conduit 706.02	236	L.F.
‡ 203	Excavation	24	C.Y.
‡ 203	Embankment	4	C.Y.
‡ 659	Seeding	71	S.Y.
‡ 660	Sodding	3	S.Y.

NOTES:

‡ 203 & 659 Carried to Sheet No. 61

ELEVATION

* NOTE
Proposed 48" Culvert to be 0.60' lower than inlet and outlet of ditch, allowing culvert to silt up. The Contractor will not be responsible for cleaning out this culvert.

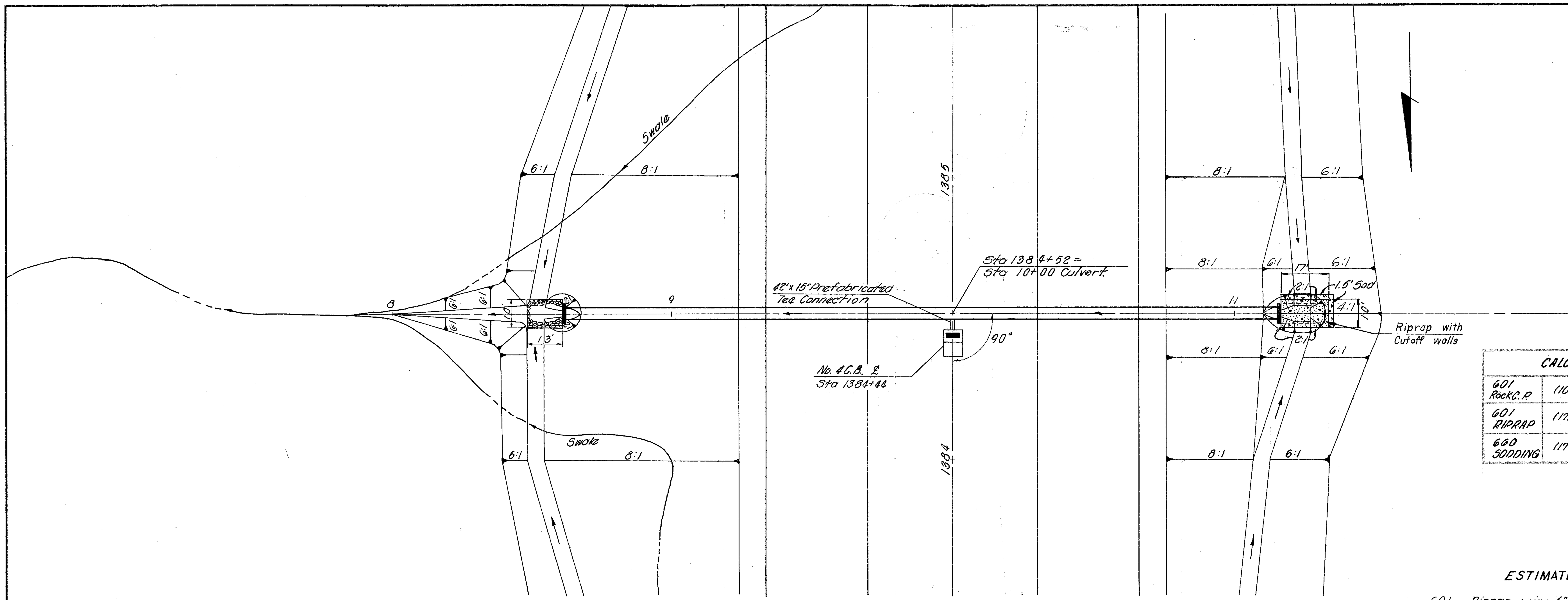
0 20 40
Scale in Feet

STRUCTURE No. FRA - 270 - 2391
STA. 1373 + 85 CULVERT DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

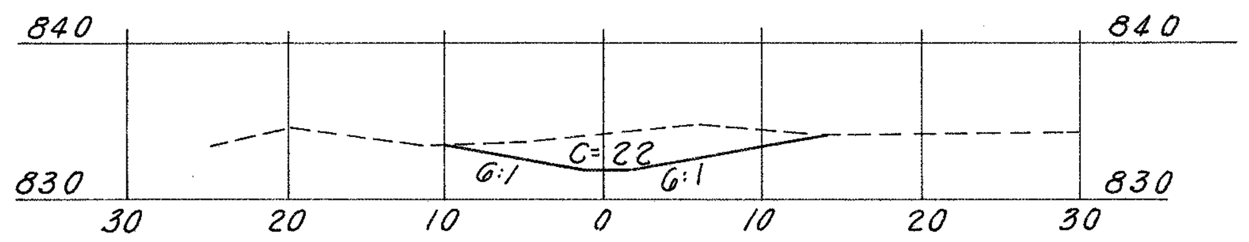
FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W. O.B. 9-25-68
CHK. R.E.H. 10-3-68



CALCULATIONS	
601 Rock C.P.	(10)(13)(3) ÷ 27 = 14.5 C.Y.
601 RIPRAP	(17)(10) ÷ 9 = 18.9 S.Y.
660 SODDING	(17+11.5)(1.5) ÷ 9 = 4.85 S.Y.

PLAN



Drainage Area = 71 Acres
Q 50 95 cfs

	END AREA		VOLUME		SEEDING		
	CUT	FILL	CUT	FILL	WIDTH	S.Y.	
8+49	0	0					
			4	0			
8+39	22	0			21		8+30
			16	0		35	
8+00	0	0			0		8+00
TOTAL			20	0		35	

ESTIMATED QUANTITIES

601 - Riprap, using 6" Reinforced Concrete Slab	19	S.Y.
601 - Rock Channel Protection Type B.	15	C.Y.
602 - Concrete Masonry	1.6	C.Y.
603 - 42" Type A Conduit 706.02	256	L.F.
* 203 - Excavation	20	C.Y.
* 659 - Seeding	35	S.Y.
660 - Sodding	5	S.Y.

NOTES
* Items 203 and 659 carried to Sheet No. 64

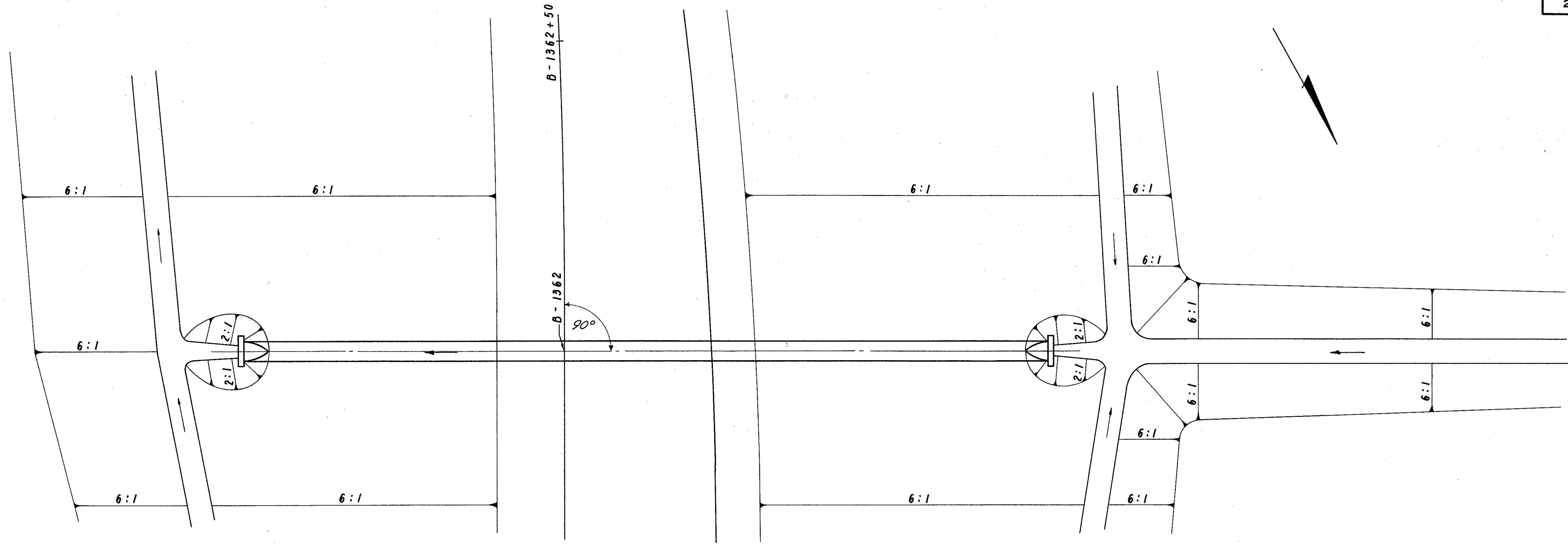
ELEVATION

Scale in Feet

STRUCTURE NO. FRA-270-2411
STA 1384+52 CULVERT DETAILS

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: WDG 9-25-68
CHK: R.E.H. 10-7-68

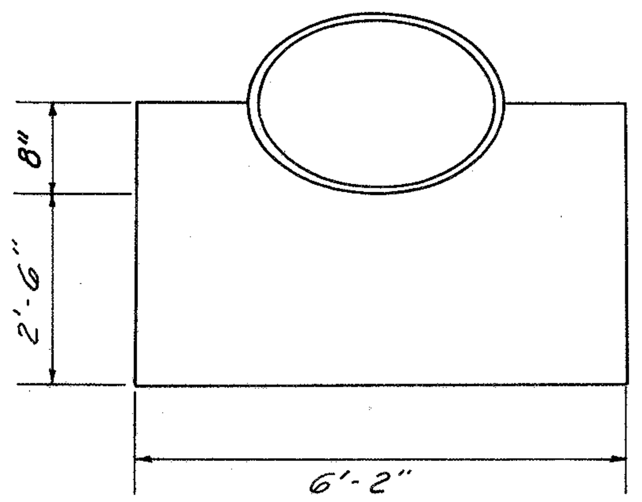


PLAN

ESTIMATED QUANTITIES

602	Concrete Masonry	1.3	C.Y.
603	38"×24" Type A Conduit, 706.04	138	L.F.

Drainage Area	= 7 Acres
Q_{50}	= 25 c.f.s.



HW-E ENDWALL DETAIL

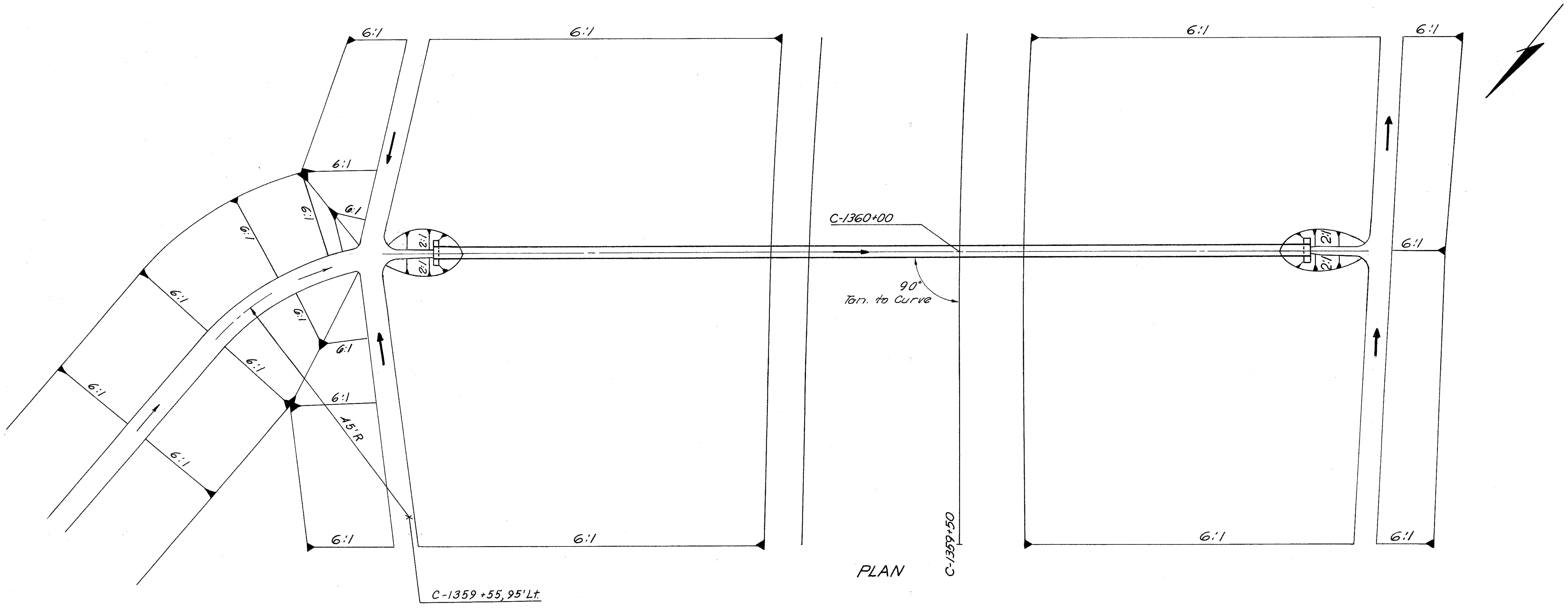
VOLUME OF ONE ENDWALL
3.17'×6.17'×1.0' (THICKNESS OF ENDWALL)
=19.56 Cu. Ft.
DEDUCT ELLIPTICAL PIPE
Internal Area @ D/3 = 1.67 S.F.
Perimeter in Concrete = 3.87 L.F.
Pipe Thickness = 3 3/4"
1.67+(3.87(3.75)÷12) = 2.88 C.F.
VOLUME OF CONCRETE = 16.67÷27 = 0.62 Cu. Yd.

ELEVATION

0 10 20
Scale in Feet

FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D.B. 9-25-68
CHK: R.E.H. 10-4-68



PLAN

Drainage Area	= 7 Acres
Q50	= 26 cfs

ESTIMATED QUANTITIES

602	Concrete Masonry	1.0 C.Y.
603	27" Conduit Type A, 706.02 or 706.08	150 L.F.

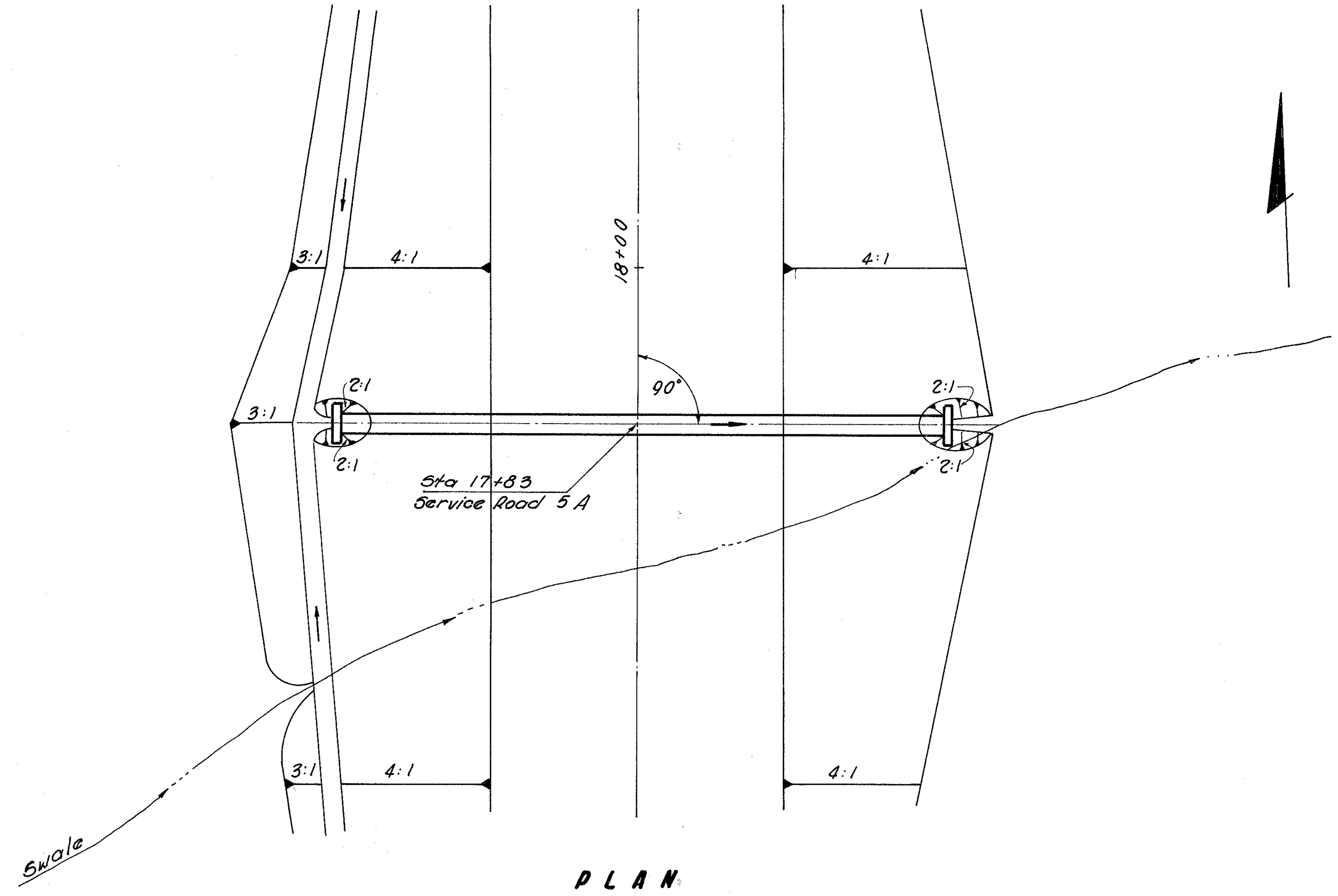
ELEVATION

SCALE

STRUCTURE NO. FRA-270-23.65N

C-1360+00 CULVERT DETAIL

CALC: W.D.G. 9-25-68
CHK: R.E.H. 10-9-68

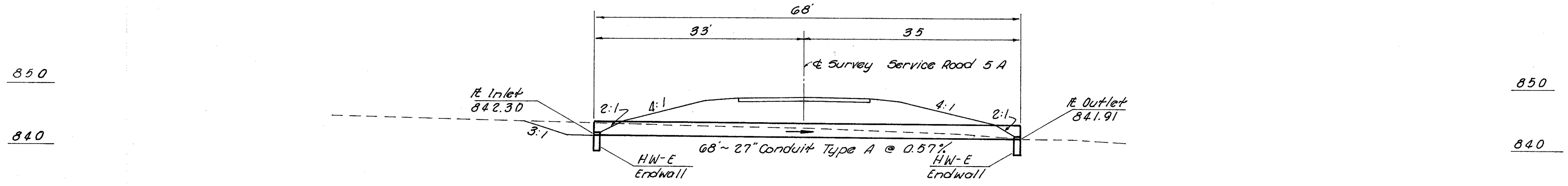


PLAN

Drainage Area = 16 Ac.
Q10 = 25 cfs.

ESTIMATED QUANTITIES

602	Concrete Masonry	1.0 C.Y.
603	27" Type A 706.02 or 706.08	68 L.F.

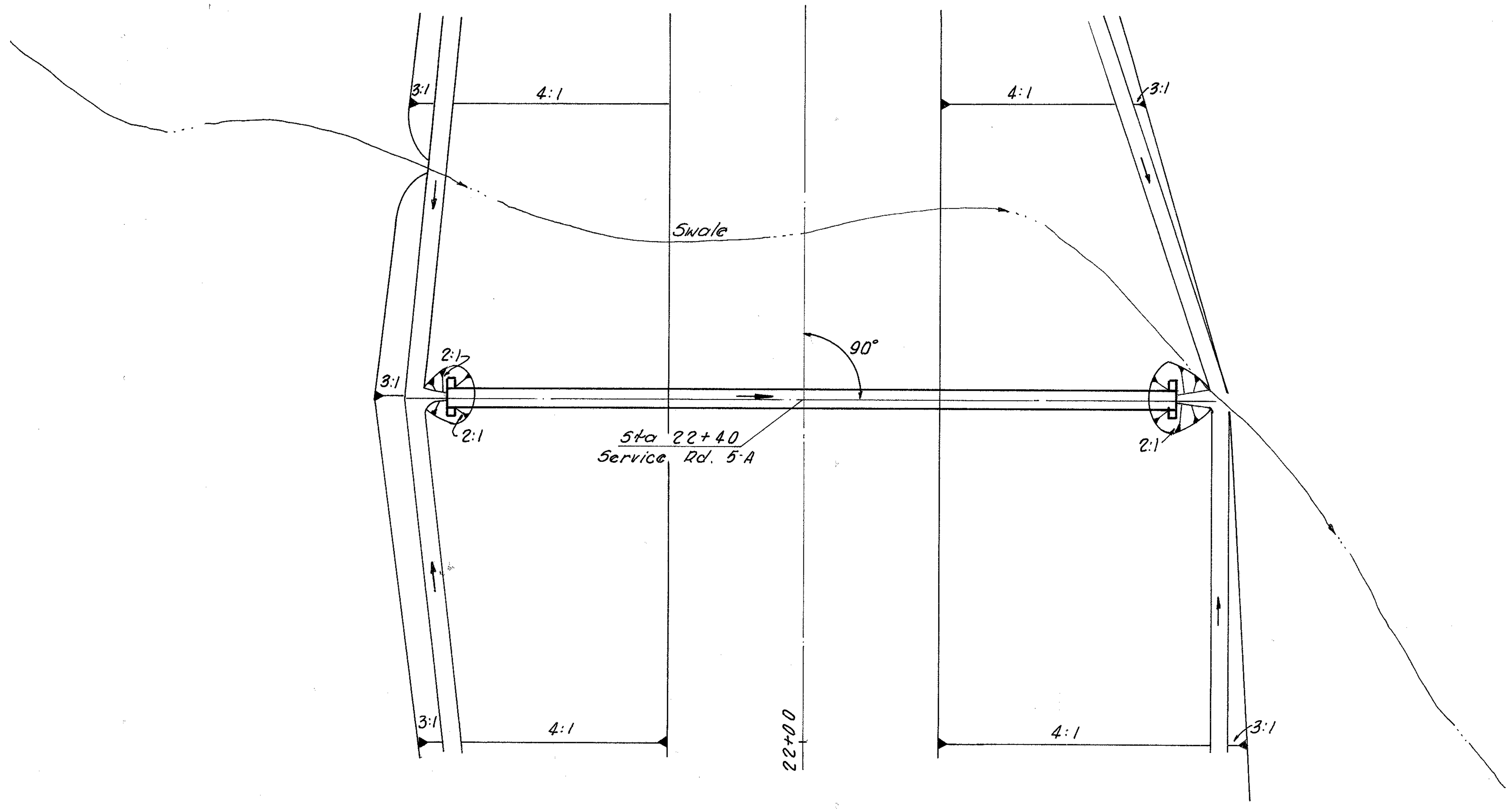


ELEVATION

0 10 20
Scale in Feet

FRANKLIN COUNTY
FRA 270 - 22.99 N

CALC: W.D.G. 9-25-68
CHK: R.E.H. 10-4-68

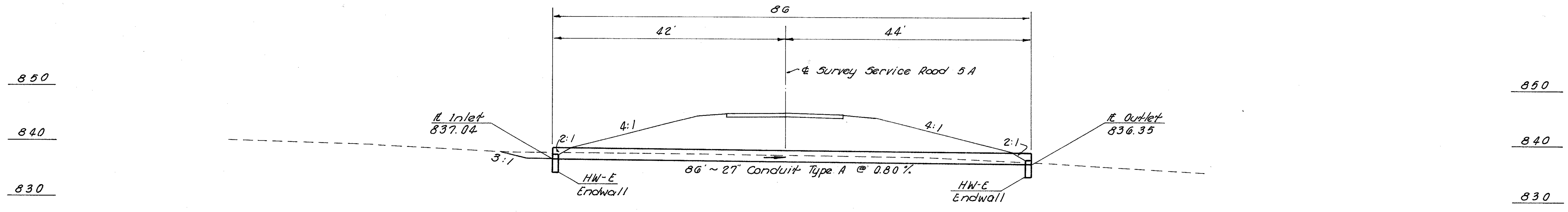


PLAN

Drainage Area = 21 Acres.
Q_{10} = 31 cfs.

ESTIMATED QUANTITIES

602	Concrete Masonry	1.0 C.Y.
603	27" Conduit Type A 706.02 or 706.08	86 L.F.



ELEVATION

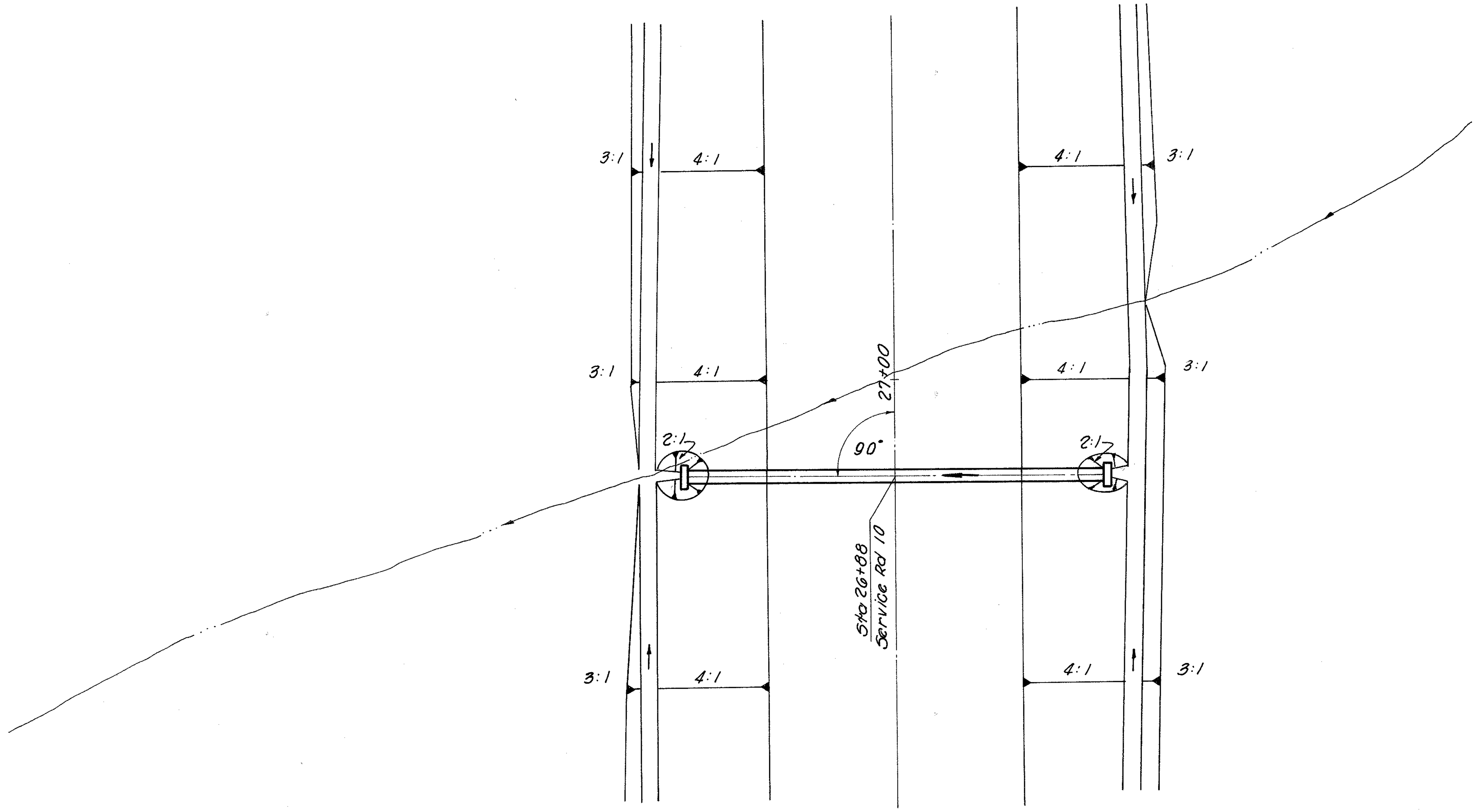
0 10 20
Scale in Feet.

SERVICE ROAD 5 A
CULVERT DETAILS STA 22+40

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA 270 - 22.99 N

CALC: W. O. Y. 9-25-68
CHK: R. E. H. 10-4-68

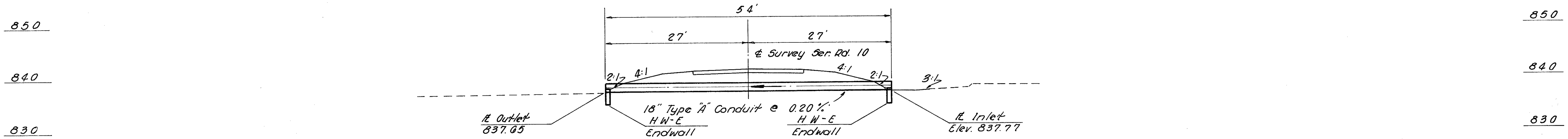


PLAN

Drainage Area = 3 Acres
Q 10 = 8 cfs.

ESTIMATED QUANTITIES

602	Concrete Masonry	0.60 C.Y.
603	18" Type A Conduit, 706.01, 706.02 or 706.08	54 L.F.



ELEVATION

0 10 20
Scale in Feet

SERVICE ROAD 10
CULVERT DETAILS STA 26+88

FRANKLIN COUNTY
FRA-270-22.99N

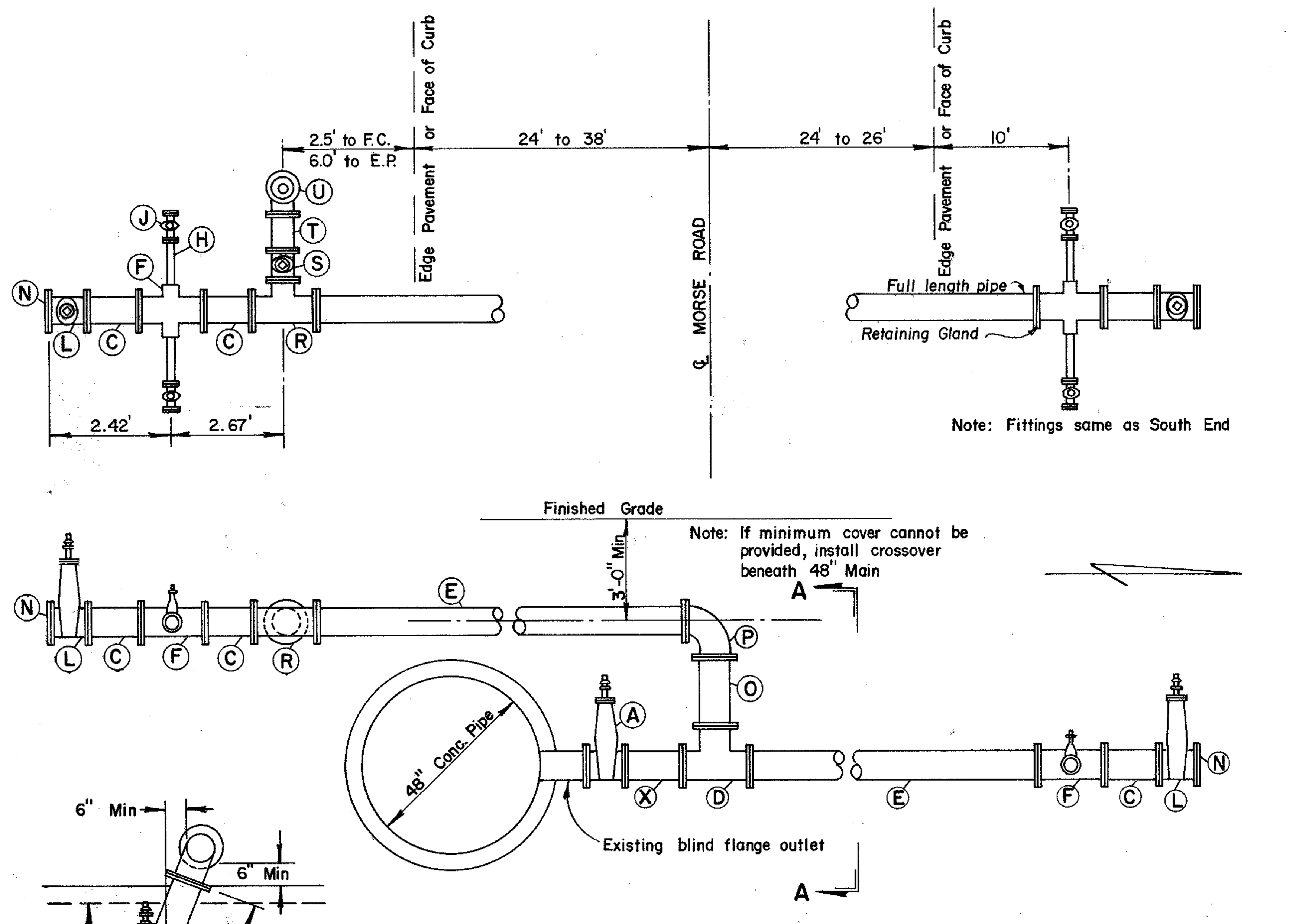
For details of 8" Crossovers see sheet 197.

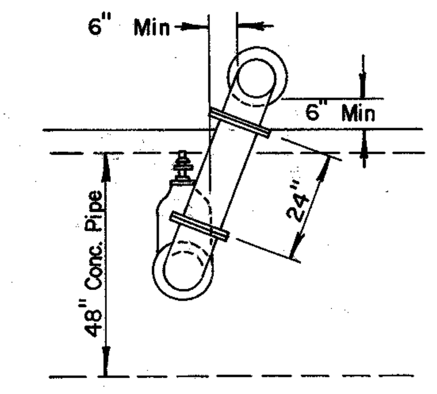
For details of 2" Water Line Connections and Service Box Relocation see sheet 198.

For summary of quantities see sheet 198.

This sheet prepared by City of Columbus Division of Water

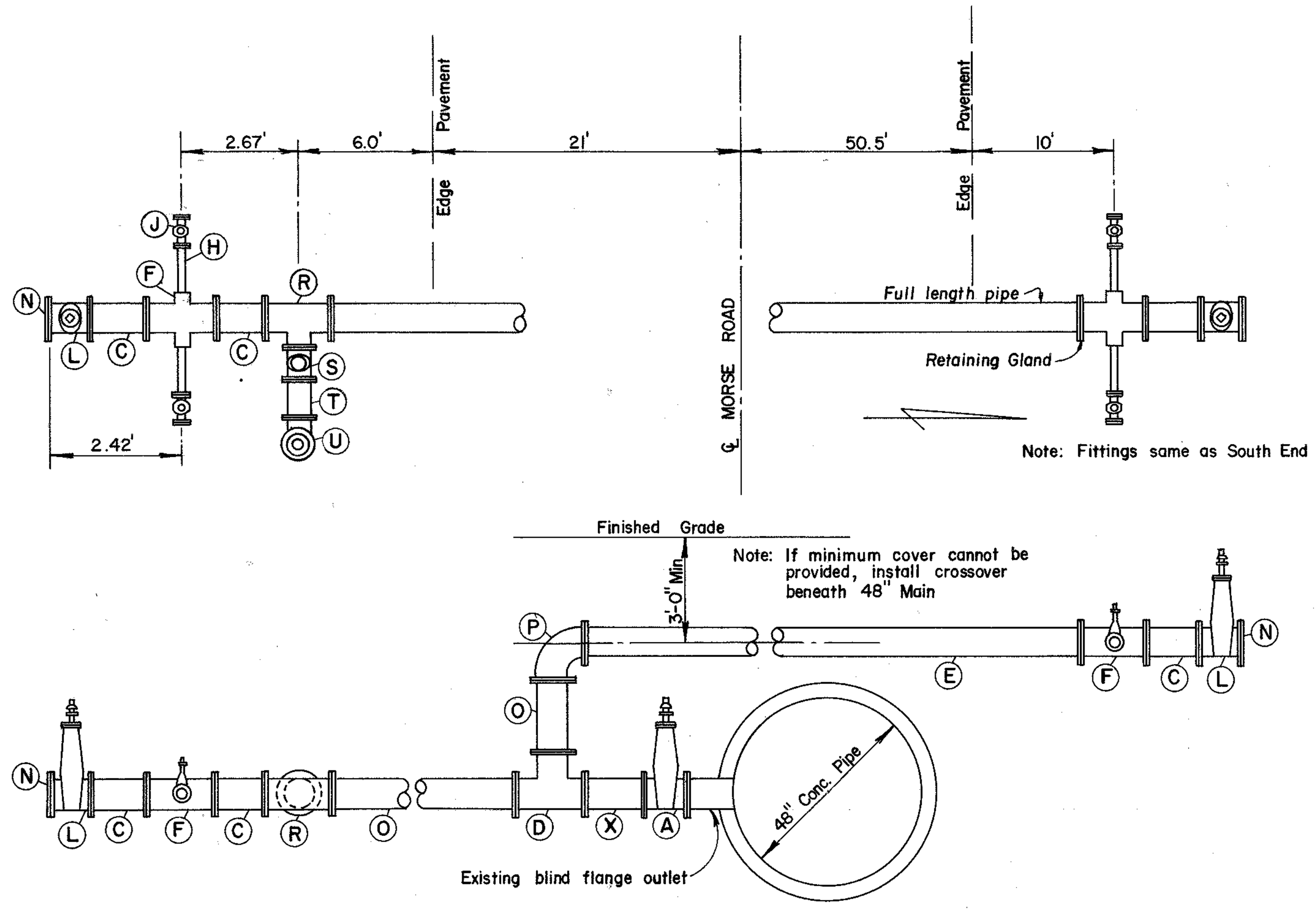
WATER LINE WORK SUMMARY





SECTION A–A
(TYPICAL)

TYPICAL WATER MAIN & HYDRANT INSTALLATION
STA. 77+19 to STA. 97+22



TYPICAL WATER MAIN & HYDRANT INSTALLATION
STA. 105+24

FRANKLIN COUNTY
FRA-270-22.99N

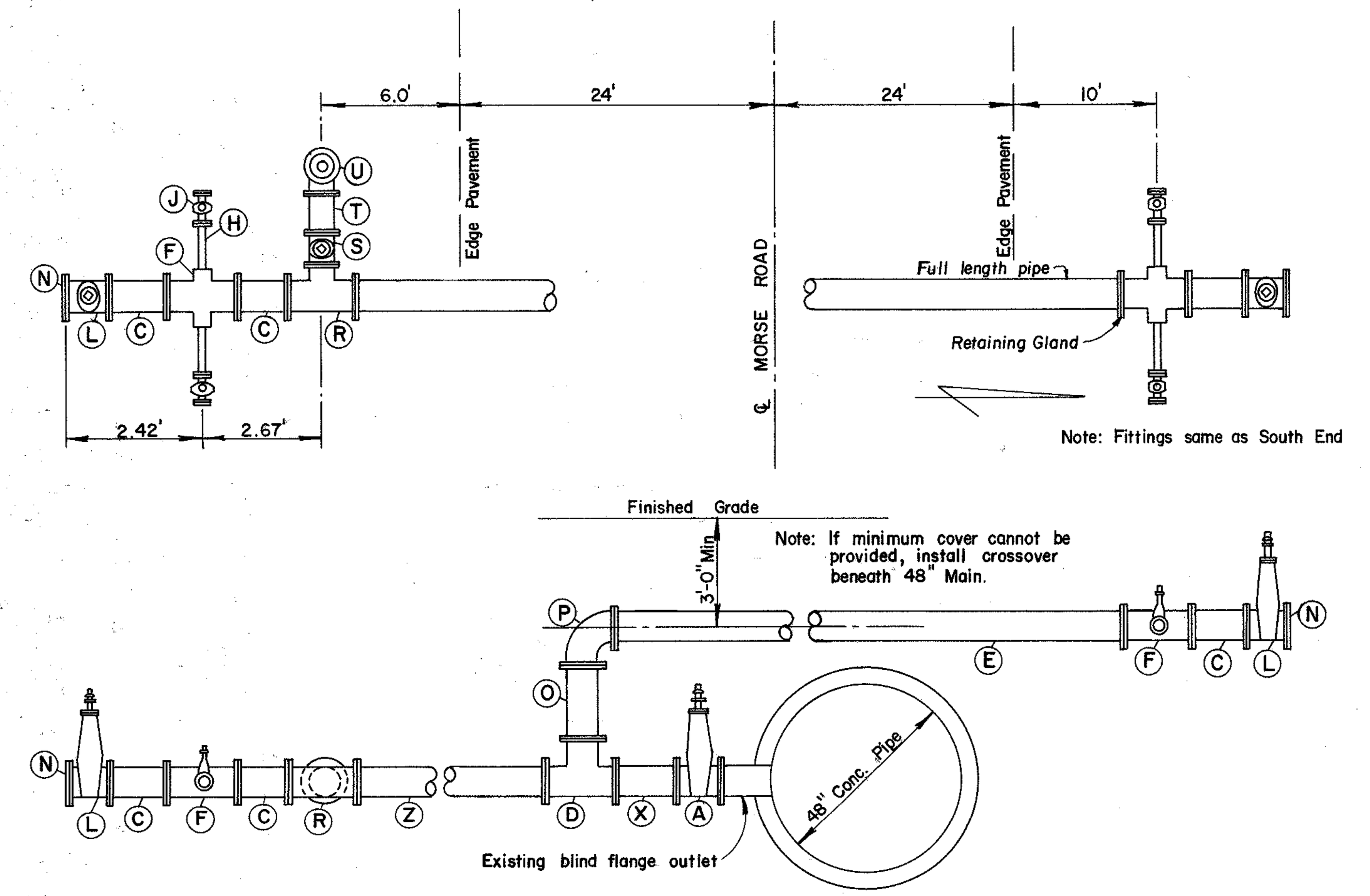
GENERAL NOTES

1. All materials and installations shall be in accordance with the current Standard Construction and Material Specifications of the City of Columbus, Ohio.
2. *The following Standard Detail Drawings of the City of Columbus, Division of Water shall be considered as part of this project :

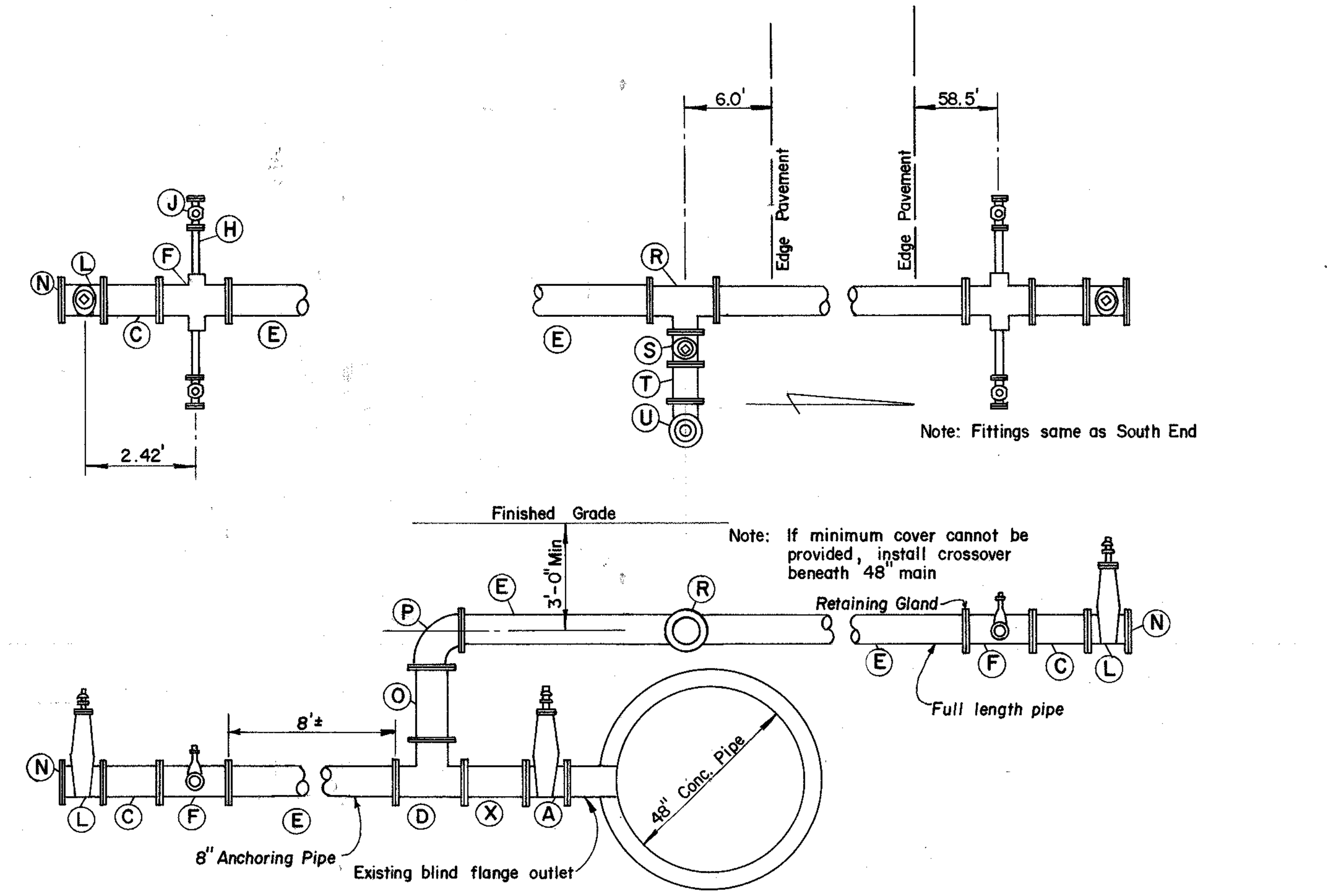
L-6306	Concrete Valve Supports	L-6409	Type B Hydrant Setting
L-6309	Typical Trench	L-6637	Type A Hydrant Setting
L-6311	Backing for Bends	L-6638	6"-90° Anchoring Bend
L-6312	Backing for Tees	L-6653	Anchoring Tee
L-6316	Heavy Duty Valve Box		

3. The contractor shall notify The Division of Water, Water Engineers Office, at least 48 hours prior to construction.
4. All materials and installations shall be inspected for approval by the Division of Water, City of Columbus.
5. The new 8" water main (including 3/4" services) in Service Road 6A shall be tested and chlorinated prior to abandonment of 2" water line in Morse Road (Item 65 W).
6. The new 12" Water Main in Mc Cutcheon Rd. shall not be laid until the temporary run around has been removed. This main shall be tested in accordance with section 801, but shall not be chlorinated.
7. Upon completion and acceptance all water mains and appurtenances shall become the property of the City of Columbus

* Drawings are on file in the Office of Contract Sales, Ohio Department of Highways, and copies are available from the City of Columbus, Division of Water.



TYPICAL WATER MAIN & HYDRANT INSTALLATION
STA. 101+02



TYPICAL WATER MAIN & HYDRANT INSTALLATION
STA. 109+24

REFERENCE MARK		A 8" M.J. Tapping Valve Clow F-5200 or equal	B Columbus Standard Valve Box Standard Detail Drawing L-6316	C 8" Anchoring Coupling Clow F-1215 or equal	D 8" x 8" M.J. Tee Clow F-940 or equal	E 8" D.I. Pipe, ASA Class 21 (lin. ft.) Clow F-172 or F-122 or equal	F 8" x 2" Tapped Cross or Tee Clow F-1228 or 1225 or equal.	H 2" Brass Nipple - 1'-0" Long	J 2" Curb Stop and Plug Mueller H-10291 and H-10035	K 3" Curb Box Mueller H-10346 or equal	L 8" M.J. Gate Valve Clow F-5225 or equal	M 6" Valve Box Clow F-2450 or equal	N 8" M.J. Plug Clow F-1035 or equal	O 8" Anchoring Pipe - 2'-0" Long Clow F-1216 or equal	P 8" M.J. 90° Bend Clow F-925 or equal	R 8" x 6" Anchoring Tee Clow F-1217 or equal	S 6" M.J. Gate Valve Clow F-5225 or equal	T 6" D.I. Nipple — 1'-6" Long ASA Class 21	U Columbus Standard Type Fire Hydrant	X 8" Anchoring Pipe — 18" Long Clow F-1216 or equal	Z 8" Anchoring Pipe, (lin. ft.) Clow F-1216 or equal
77+19	NORTH	1	1	1	1	46	1	2	2	2	1	1	1	0	0	0	0	0	0	1	0
	SOUTH	0	0	2	0	29	1	2	2	2	1	2	1	1	1	1	1	1	1	0	0
81+19	NORTH	1	1	1	1	44	1	2	2	2	1	1	1	0	0	0	0	0	0	1	0
	SOUTH	0	0	2	0	27	1	2	2	2	1	2	1	1	1	1	1	1	1	0	0
85+20	NORTH	1	1	1	1	44	1	2	2	2	1	1	1	0	0	0	0	0	0	1	0
	SOUTH	0	0	2	0	16	1	2	2	2	1	2	1	1	1	1	1	1	1	0	0
89+21	NORTH	1	1	1	1	44	1	2	2	2	1	1	1	0	0	0	0	0	0	1	0
	SOUTH	0	0	2	0	16	1	2	2	2	1	2	1	1	1	1	1	1	1	0	0
93+21	NORTH	1	1	1	1	44	1	2	2	2	1	1	1	0	0	0	0	0	0	1	0
	SOUTH	0	0	2	0	10	1	2	2	2	1	2	1	1	1	1	1	1	1	0	0
97+22	NORTH	1	1	1	1	44	1	2	2	2	1	1	1	0	0	0	0	0	0	1	0
	SOUTH	0	0	2	0	16	1	2	2	2	1	2	1	1	1	1	1	1	1	0	0
101+02	SOUTH	1	1	2	1	0	1	2	2	2	1	2	1	0	0	1	1	1	1	1	5
	NORTH	0	0	1	0	56	1	2	2	2	1	1	1	1	1	0	0	0	0	0	0
105+24	SOUTH	1	1	2	1	0	1	2	2	2	1	2	1	1	0	1	1	1	1	1	0
	NORTH	0	0	1	0	83	1	2	2	2	1	1	1	1	1	0	0	0	0	0	0
109+24	SOUTH	1	1	1	1	0	1	2	2	2	1	2	1	0	0	0	1	0	1	1	8
	NORTH	0	0	1	0	89	1	2	2	2	1	1	1	1	1	1	0	1	0	0	0
	TOTALS	9	9	26	9	612	18	36	36	36	18	27	18	10	9	9	9	9	9	9	13

SUMMARY OF 8" CROSSOVERS
(INCLUDED IN GENERAL SUMMARY SHEET NO. 198)

This sheet prepared by
City of Columbus
Division of Water

FRANKLIN COUNTY
FRA-270-22.99N

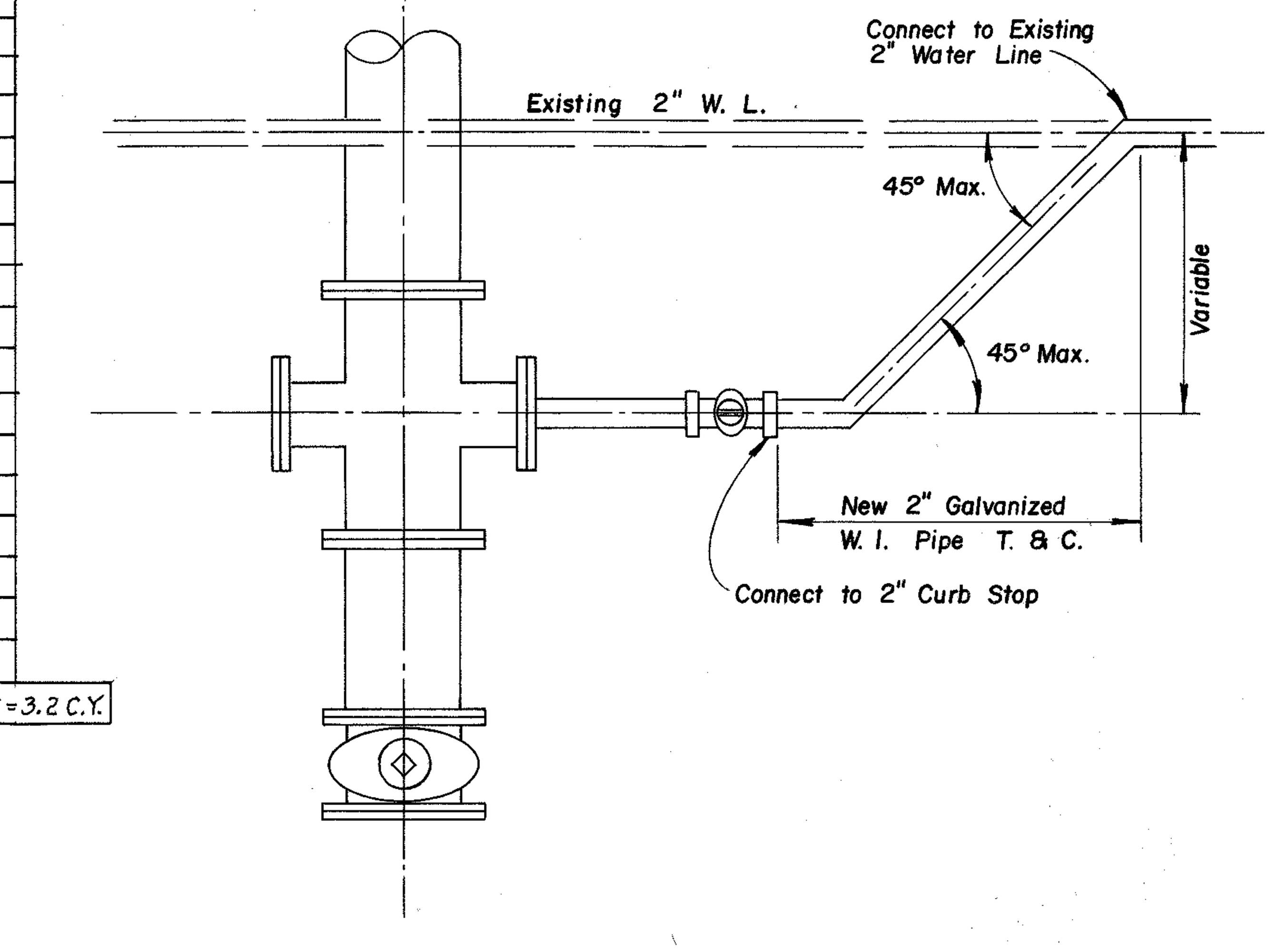
CODE	STATION AND LOCATION		8" M.J. Tapping Valve Clow F-5200 or equal.	Columbus Standard Valve Box Std. Detail Drawing L-6316	8" Anchoring Coupling Clow F-1215 or equal	8"x8" M.J. Tee Clow F-940 or equal	8" D.I. Pipe, ASA Cl. 21 Clow F-172 or F-122 or equal.	8"x2" Tapped Cross or Tee as Req'd. Clow F-1228 or F-1225 or equal.	2" Brass Nipple 1'-0" Long	2" Curb Stop & 2" Plug Mueller H-10291 & H-10035	3" Curb Box Mueller H-10346 or equal	6" M.J. Gate Valve Clow F-5225 or equal.	6" Valve Box Clow F-2450 or equal	6" M.J. Plug Clow F-1035 or equal	6" Anchoring Pipe 2'-0" Long Clow F-1216 or equal.	8" M.J. 90° Bend Clow F-925 or equal.	8"x6" Anchoring Tee Clow F-1217 or equal.	6" M.J. Gate Valve Clow F-5225 or equal	6" D.I. Nipple 1'-6" Long ASA Cl. 21	Columbus Standard Type Fire Hydrant	8" Anchoring Pipe 18" Long Clow F-1216 or equal.	8" Anchoring Pipe 5'-0" Long Clow F-1216 or equal	Relocate 3/4" Curb Stop & Box	Relocate 1" Curb Stop & Box	Relocate 1 1/2" Curb Stop & Box	Abandon Exist. 2" Water Line	Connect Exist. 2" W.L. to 8" Extensions (Galv. W.I. Pipe)	Adjust 2" Curb Box to Grade	Relocate Exist. Fire Hydrant	Adjust Valve Vault M.H. to Grade	Adjust Valve Box to Final Grade	6" D.I. Pipe ASA Cl. 21 Clow F-172 or F-122 or equal.	6" M.J. 90° Bend Clow F-925 or equal	8" M.J. 45° Bend Clow F-930 or equal	8" M.J. 11 1/4° Bend Clow F-937 or equal.	6" Anchoring Elbow Clow F-1218 or equal.	8"x6" M.J. Tee Clow F-940 or equal.	3/4" Corporation Cock Mueller H-15000 or equal.	3/4" Copper Water Service	3/4" Curb Stop Mueller H-15201 or equal.	Curb Box Mueller H-10350 or equal
	REFERENCE SPEC.		803	804	801	801	801	801	805	805	804	802	804	801	801	801	801	802	801	809	801	801	823	823	823	808	801	807	809	*604	807	801	801	801	801	801	801	805	805	805	805
	UNIT		Ea.	Ea.	Ea.	Ea.	Ln.Ft	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ln.Ft.	Ea.	Ea.	Ea.	Ea.	Ln.Ft.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ln.Ft.	Ea.	Ea.
1W	71+33	22' Rt.																											1			10	1								
2W	71+71	27' Rt.																													1										
3W	71+74	22' Rt																													1										
4W	76+16(27'Rt.)to 78+62(26'Lt.)																									1															
5W	77+19	Lt.	1	1	1	1	46	1	2	2	2	1	1	1							1																				
6W	77+19	Rt.			2		27	1	2	2	2	1	2	1	1	1	1	1	1	1																					
7W	77+19(36'Lt.)to 78+62(26'Lt.)																										145														
8W	78+62	26'Lt.																										1													
9W	78+82	29'Lt.																					1																		
10W	80+98	29'Lt.																					1																		
11W	81+19	Lt.																									12														
13W	81+19	Lt.	1	1	1	1	44	1	1	1	1	1	1	1							1																				
14W	81+19	Rt.			2		27	1	2	2	2	1	2	1	1	1	1	1	1	1																					
15W	81+96	27'Lt																					1																		
16W	83+29	28'Lt.																					1																		
17W	85+14	27'Rt.																										1													
18W	85+20	Lt	1	1	1	1	44	1	1	1	1	1	1	1							1																				
19W	85+20	Rt.			2		16					1	2	1	1	1	1	1	1	1																					
21W	85+20	Lt.																									12														
22W	85+32	29'Rt.																					1																		
23W	86+44	26'Lt.																					1																		
24W	86+45	25'Lt.								1	1																														
25W	87+06	26'Rt.																					1																		
26W	87+74	25'Rt.																					1																		
27W	87+86	26'Rt.																					1																		
28W	87+86.5	26'Rt.																						1																	
29W	87+87	26'Rt.																					1																		
30W	88+70	33'Rt.																					1																		
31W	88+83	24'Rt.																									40														
32W	89+20	Lt.	1	1	1	1	44	1	2	2	2	1	1	1							1																				
33W	89+20	Rt.			2		16	1	2	2	2	1	2	1	1	1	1	1	1	1																					
34W	93+14	24'Rt																										1													
35W	93+21	Lt.	1	1	1	1	44	1	2	2	2	1	1	1							1																				
36W	93+21	Rt.			2		16	1	2	2	2	1	2	1	1	1	1	1	1	1																					
37W	93+31	26'Rt.																					1																		
38W	96+36																													1											
39W	97+22	Lt.	1	1	1	1	44	1	2	2	2	1	1	1							1																				
40W	97+22	Rt.			2		16	1	2	2	2	1	2	1	1	1	1	1	1	1																					
41W	101+02	Lt	1	1	2	1		1	2	2	2	1	2	1			1	1	1	1	1	1																			
42W	101+02	Rt.			1		56	1	2	2	2	1	1	1	1	1																									
43W	105+16	25'Rt.																										1													
44W	105+17	23'Rt.																										1													
45W	105+18	25'Rt.																										1													
46W	105+24	Lt.	1	1	2	1		1	2	2	2	1	2	1	1		1	1	1	1	1																				
47W	105+24	Rt.			1		83	1	2	2	2	1	1	1	1	1																									
48W	105+33	26'Rt.																					1																		
49W	105+75	27'Rt.																					1																		
50W	108+13	23'Lt.																							1																
51W	108+42	28'Rt.																					1																		
52W	109+24	Lt.	1	1	1	1	4	1	2	2	2	1	2	1				1		1	1																				
53W	104+75	Rt.							1	1																	40														
54W	109+24	Rt.			1		89	1	2	2	2	1	1	1	1	1																									
55W	109+24	Rt.																									10														
56W	109+50	15'Lt.																						1																	
57W	109+50	28'Rt.								1	1																														
	58W, 60W, 61W (Sht. 92)																													3											
65W	113+40(26'Rt)to117+54(27'Rt)																									1															
	SERVICE ROAD 6A		1	1			842					1	4	1			1	3		3												11		4	2	2	2	4	70	4	4
	TOTALS		10	10	26	9	1458	17	35	39	36	19	31	19	10	9	9	12	8	12	9	1	15	2	1	2	269	6	1	4	2	21	1	4	2	2	2	4	70	4	4

McCUTCHEON ROAD QUANTITIES

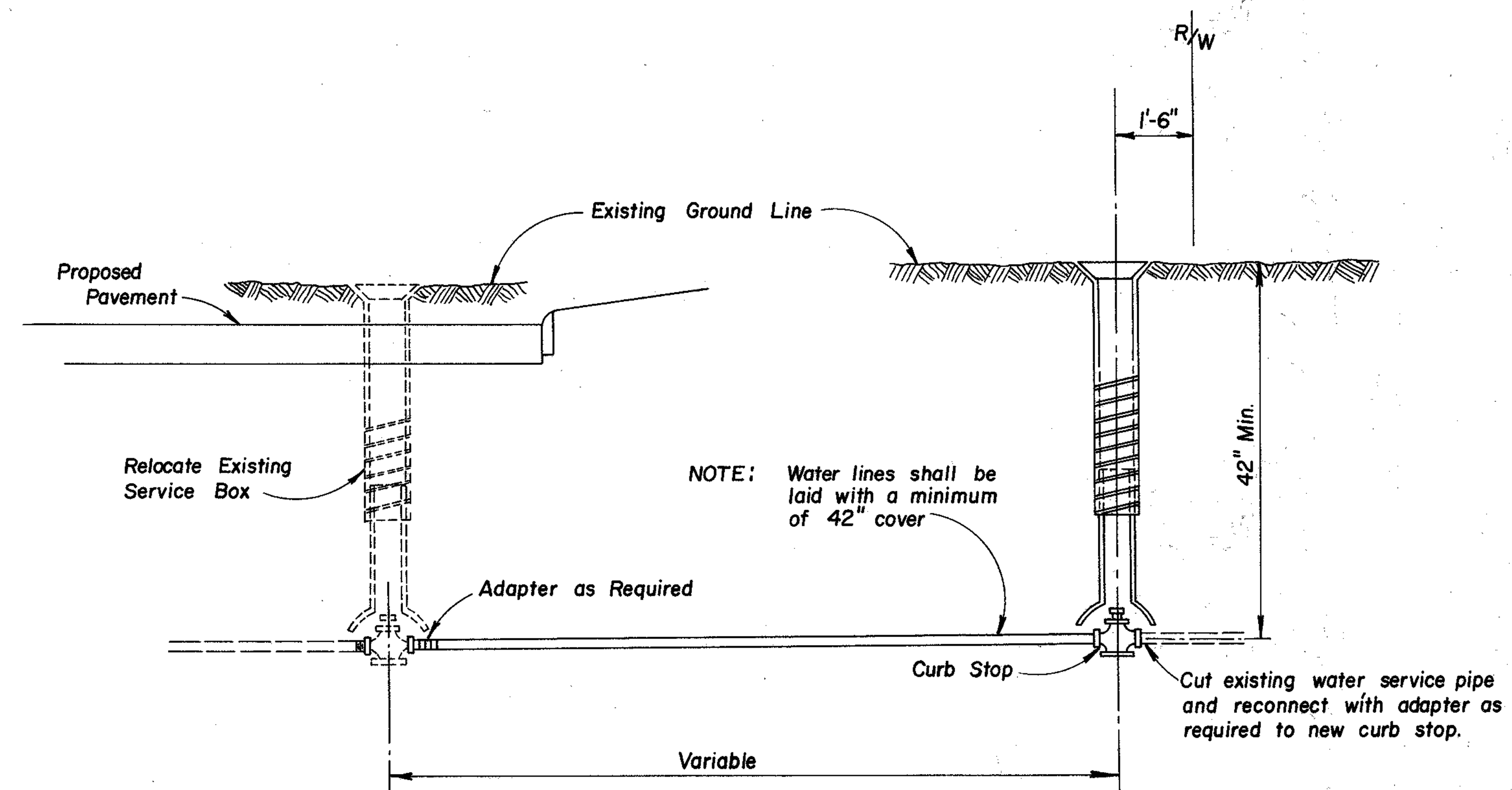
	12" D.I.P. ASA Class 21	12" M.J. Plug w/2" Tapped Outlet	12" M.J. Gate Valve & Box	12" M.J. 11-1/4° Bend	2" Permanent Air Release outlet	Concrete Backing, Class E
	801	801	802	801	814	801
	L.F.	Ea.	Ea.	Ea.	Ea.	C.F.
17+50 to 29+25	1185					
17+50		1				
17+68			1			0.5
23+00					1	
23+60				1		0.75
24+00				1		21.0
26+00				1		21.0
26+50				1		21.0
26+67				1		21.0
28+00				1	1	0.75
29+07			1			0.5
29+25		1				
TOTALS	1185	2	2	6	2	86.5 C.F.=3.2 C.Y.

Participation ~ 100% City
Type Code ~ Y060

* *Ohio Dept. of Highways Construction and Materials Specifications*



TYPICAL DETAIL FOR CONNECTING EXISTING 2" WATER LINES TO PROPOSED 8" EXTENSIONS



DETAIL OF WATER SERVICE EXTENSION AND CURB BOX RELOCATION

This sheet prepared by City of Columbus Division of Water

REV-7-1-69

WATER LINE QUANTITIES AND DETAILS

GENERAL NOTES

MATERIALS - GENERAL

Materials to be furnished may be specified in the plans by a given manufacturer's catalog number or type. This is for descriptive purposes only and the Contractor may assume that approved equal materials may be furnished.

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 number 18 & 19.

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 (for installation under 816 concrete for overhead sign support foundations), and for furnishing and installing each overhead sign support structure shown on sheets 12 thru — 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 2" and 3/4" 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, BY TYPE

The Contractor shall erect sign panels furnished by others as noted on the schematic signing layout sheet numbers 7 thru 11 . The panels shall be mounted on the brackets or beam supports provided in the plans.

All sign material and accessories will be furnished and transported to a designated delivery point, on or near the subject project by others. The Contractor shall be responsible for the handling and storage of the sign panels and accessories from the time of arrival at the delivery point.

Work shall include assembly of sign panels and attachment of overlays furnished by others in conformance with the schematic plan.

The Contractor shall submit a schedule for sign erection to the Division Traffic Engineer, and the Engineer, Bureau of Traffic, 450 East Town Street, Columbus, Ohio, 120 calendar days prior to the start of any scheduled erection work. The schedule shall include proposed dates, time, sign numbers and delivery point.

The price bid per square foot for, "Item 815, Sign Erection, By Type", shall include all necessary equipment, manpower and tools to store, assemble and erect the signs noted.

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, 1969.

625 SIGN SERVICE

This item shall consist of the completion of the electrical system and components connecting the connectors in the pull box (included within the roadway lighting quantities) with 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 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 RHH, 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.

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 21 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 of work.

625 TRANSFORMER, BY TYPE

This item of work shall consist of furnishing and installing transformers as detailed and specified on sheet 20.

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 20.

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 5.

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.

GENERAL NOTES

625 GROUND RODS

This item of work shall consist of furnishing and installing ground rod and cable as detailed and specified on sheet 21.

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 19 & 20.

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 aiming 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.

625 INSPECTION AND TESTING OF SIGN LIGHTING (Continued)

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.

CERTIFICATION AND APPROVAL OF SIGN SUPPORT, TRAFFIC SIGNAL & SIGN LIGHTING ITEMS.

The Contractor shall submit through proper channels the drawings, information, & samples as required below:

A. 8 copies of shop drawings & material lists for approval:
   1. Overhead Sign & Traffic Signal Supports.
   2. Sign lighting layout plan & details for wiring, conduit size and placement from sign disconnect switch to fixture.
   3. Traffic signal controller equipment, signal heads, support and conductor cable (see additional requirements sheets 229+230).

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 referred to in the plans as "Bagged" 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 the 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 368.2 sq. ft. referred to in the plans, an additional quantity of 500 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, Bureau of Traffic, 450 East Town Street, Columbus, Ohio 43216.

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

This work shall consists 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

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 27.

Square seamless tubular post material shall be mild steel conforming to ASA 1020 steel, minimum yield strength 35,000 PSI, ultimate yield 55,000 PSI.

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.

620 INTERIM 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.

GENERAL NOTES

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, lifiting 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 markins.

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 of priming surfaces shall be incidental to the cost of various items included in Item 615, Temporary Roads, as per plan.

INTERIM PAVEMENT MARKING, BY TYPE (Continued)

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.

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 stake out 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.

TEMPORARY BEAM RAIL, AS PER PLAN

All barrels required for temporary beam rail shall be reflectorized with an 8" wide yellow stripe around its complete circumfernce. Material will be reflective sheeting, Type E, in accordance with Supplemental Specification 815.

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.

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.

For details of 6 and 8 pound beams see sheet 26.

The cost of the concrete used for embendment will be a separate pay item.

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" x 8" 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.

815 ERECTION OF INTERIM SIGN OVERLAYS

This item of work shall consist of the assembly and erection of interim aluminum sheet overlay signs furnished by others to be placed over existing sign panels at lcoations shown in the plans.

Method of attachment shall be by rivets on periphery and entire surface area sheeting at a maximum spacing of 2'-6".

Contractor's responsibility for overlays furnished by others shall be similar to those specified in the "Sign Erection By Type" item contained in these plans.

Basis of payment shall be at the contract bid price per square foot for erection of interim sign overlays including all equipment, labor, materials incidental to this item of work.

Rev. 7-11-69

TRAFFIC CONTROL GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

202/292

4/29

CALC: C.D. 7-12-68
CHK: R.G.M.
Revised 12-13-68

ITEM	Sheet No. 2	Sheet No. 7	Sheet No. 5	Sheet No. 6	Sheet No. 15	Sheet No. 17	100% City of Columbus	100% Franklin County	SUB-TOTAL RURAL	SUB-TOTAL URBAN	ITEM	TOTAL	UNIT	DESCRIPTION TYPE CODE 7224
815			1043						169	874	815	1043	Sq. Ft.	Sign Erection, Extrusheet Type
815		94	335				15	37	60	317	815	429	Sq. Ft.	Sign Erection, Flat Sheet Type
815			182						91	91	815	182	Sq. Ft.	Interim Sign Overlay
815	500		368						78	790	815	868	Sq. Ft.	Interim Covering for Signs
816			271				14	47	30	180	816	271	Lin. Ft.	Structural Supports 4# Drive Post
816			309				16	33	49	211	816	309	Lin. Ft.	Structural Supports 6# Beam
816			56							56	816	56	Lin. Ft.	Structural Supports 6# Beam as per plan
816			66							66	816	66	Lin. Ft.	Structural Supports 8# Beam
816		165							22	143	816	165	Lin. Ft.	Interim Steel Drive Posts, 4 lbs. per ft., as per plan
816			2							2	816	2	Each	Combination Support No. 12.24 Design 1 Modified 16'-0" Arm
816			6						2	4	816	6	Each	Overhead Sign Support No. 12.24 Design 4 20'-0" Arms
816			1							1	816	1	Each	Overhead Sign Support No. 12.24 Design 1 Modified 20'-0" Arm
816			1							1	816	1	Each	Overpass Structure Mounted Sign Support (Flat)
816			4.8				0.2	0.6	0.6	3.4	816	4.8	Cu. Yds.	Concrete for Ground Mounted Sign Support Foundations
816			27.2						6.4	20.8	816	27.2	Cu. Yds.	Concrete for Overhead Sign Support Foundations
816			2							2	816	2	Each	Overpass Structure Mounted Sign Support (Skewed)
625			12						2	10	625	12	Each	Sign Service
625			10						2	8	625	10	Each	Sign Wired Complete
625			3							3	625	3	Each	Structure Mounted Sign Wired, as per plan
625			12						2	10	625	12	Each	Disconnect Switch with Type Y Enclosure
625			6							6	625	6	Each	Switch Enclosure Mounting Bracket, as per plan
625			12						2	10	625	12	Each	Ground Rod
625			6							6	625	6	Each	Ballast Type A
625			6						2	4	625	6	Each	Ballast Type B
625			1							1	625	1	Each	Ballast Type D
625			18						4	14	625	18	Each	72" Lighting Fixture with HO Lamp
625			1							1	625	1	Each	72" Lighting Fixture with SHO Lamp
625			1							1	625	1	Each	96" Lighting Fixture with SHO Lamp
625			4							4	625	4	Each	Transformer, Type I
625			7						2	5	625	7	Each	Transformer, Type II
625			1							1	625	1	Each	Transformer, Type III
620		14							2	12	620	14	Each	Interim Delineators, as per plan
620				113					49	64	620	113	Each	Delineator, Type A-1 Post Mounted
620				2						2	620	2	Each	Delineator, Type A-1 Bracket Mounted
620				133					12	121	620	133	Each	Delineator, Type C-2 Post Mounted
621				13.68	0.20	1.43	0.20	1.43	3.24	10.44	621	15.31	Miles	4" Edge Line
621				0.47	0.03	.57	0.03	0.57	0.07	0.40	621	1.07	Miles	4" Lane Line
621				3.89					1.15	2.74	621	3.89	Miles	6" Lane Line
621				5474	207	1051	207	1051	993	4481	621	6732	Lin. Ft.	8" Channelizing Line
621		3740							180	3560	621	3740	Lin. Ft.	Interim 4" Edge Line
621				1595		352		352	572	1023	621	1947	Lin. Ft.	Broad Transverse Stripes
621				5478						5478	621	5478	Lin. Ft.	Curb Marking
621				1893	984	7660	984	7660	895	998	621	10537	Lin. Ft.	6" Barrier Line
621				275	33	95	33	95	40	235	621	403	Lin. Ft.	24" Stop Line
621						4		4			621	4	Each	Lane Arrows
606		3060							180	2880	606	3060	Lin. Ft.	Temporary Beam Rail

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

203 / 292

FRANKLIN COUNTY
FRA-270-22.99N

5 / 29

SIGNING SUB-SUMMARY

CALC: C.D. 2-12-68
CHK: R.G.M.
Revised 12-13-68

Item 815

SHEET	LOCATION	REFERENCE	STATION	7'x2'	7'x6'	8'x5'	8'x6'	6'x5'	9'x5'	10'x10'6"	12'x6'6"	12'x7'	12'x10'6"	17'x9'	13'x7'	W-53-36	Sign Area Extrusheet	R-31-MOD	IM-17-24	IM-37-36	IM-38-36	W-52-36	M-5-24-3	M-5-36-3	D-11-72	R-2-48	R-10-24	R-10-48	R-15-30	R-16-48	R-19-18	R-23-36	R-37A-24	R-38-24	R-41-36	R-43R-36	R-43L-36	D-35-24	W-49-36	W-49-48	W-60-36	Sign Area Flat Sheet	D-3-24-G 8'x2'6"
																	S.F.																									S.F.	
	Mainline																																										
9	SB	501	1326+00												1		91																										
9	NB		1326+00																	1				1																		15.0	
7	SB	502	1344+00									1					84																										
7	SB		1349+00																					1																		10.5	
7	NB		1349+00																																					1		16.0	
8	SB		1364+00																																					1		16.0	
7	SB		1346+30					1									30																										
8	NB		1365+00																					1																		10.5	
8	NB	503	1370+00									1					84																										
9	SB		1386+00																		1*			1*																		15.0*	
9	NB	504	1393+00												1*		91*																										
9	SB		1396+50																									1		1												36.0	
8	N.B.		1367+65					1									30																										
9	NB	505	1421+00												1		91																										
9	Median		1427+00																													1*										12.0*	
9	Median		1427+38																												1*											1.5*	
9	Median		1427+62																												1*											1.5*	
9	Median		1428+00																													1*										12.0*	
7			D-1350+00	1													14																										
10	SB	506	FRA-270-25.25N											1			153																										
8			B-1362+50	1													14																										
7	Ramp"A"Lt.		A-1358+00																										1													6.3	
8	Ramp"B"Lt.		B-1357+10																																1							9.0	
8	Ramp"B"Rt.		B-1357+10																																1	1	1					15.0	
11	E.B.	509	114+40			1											40																										
8	Ramp"C"Rt.		C-1352+00																										1													6.3	
8	Ramp"C"Rt.		C-1355+00																																				1			9.0	
8	Ramp"Cn"Rt.		Cn-1354+25																										1													6.3	
8	Ramp"Cn"Rt.		Cn-1355+20																							1																6.9	
7	Ramp"D"Lt.		D-1355+20																																1	1	1					15.0	
7	Ramp"D"Rt.		D-1355+20																																1							9.0	
11	E B	508	107+91								1*						78*																										
11	W B		107+00																								1*															5.0*	
9	S.B.	463	1306+00												1*																												
11	Median		111+55																														1									5.0	
11	E B	510	119+75		1												42																										
11	Median		120+05																														1									5.0	
11	W B	513	FRA-270-23.56N			1											40																										
11	E B	514	FRA-270-23.56N						1								45																										
11	Median		130+15																														1									5.0	
11	W B	511	130+40(b)				1										48																										
11		511	130+40(a)				1										48																										
11	E B		132+00																																						1	9.0	
11	Median		133+50																														1									5.0	
11	E B		135+00																															1								4.0	
11	W B	512	138+00														20																										1
11	W B		141+00																1				1																			7.2	
16	E.B.		72+25																																			1•				5.0•	
16	E.B.		75+00																								1•															5.0•	
16	W.B.		76+10																					1•																		9.0•	
16	E.B.		78+00													1•																										9.0•	
16	E.B.		81+00																																						1	9.0•	
11	E.B.		133+25																			1																				9.0	
11	N.B. Stelzer		22+25															1°																								6.3°	
11	S.B. Stelzer		22+50																																						1°	9.0°	
	Sub-	total	City																																							15.3	
	Sub-	total	County																																							37.0	
	Sub-	total	Rural														169																									47.0	
	Sub-	total	Urban														874																									236.0	
			Totals														1043																									3353	

Item 816 (12.24 Des. 1 through Conc. for Ground Mounted Signs), Item 625 (Wattage Rating through Sign Service), Item 815 (Interim Sign Overlay, Interim Covering for Signs)

SHEET	LOCATION	REFERENCE	STATION	12.24 Des. 1 Mod. 20' Arm	12.24 Des. 4 20' Arms	Comb. 12.24 Des. 1 Mod. 16' Arms	Overpass Str. Mtd. Sign Support Flat	Skew	4 Pound Post	6 Pound Beam	6 Lb. Beam as per plan	8 Pound Beam	Concrete for Overhead Signs	Conc. for Ground Mounted Signs	Wattage Rating	Ballast Type "A"	Ballast Type "B"	Ballast Type "C"	Ballast Type "D"	Lamps 72" SHO	Lamps 72" HO	Lamps 96" SHO	Lamps 96" HO	KVA Rating	Transformer Type I	Transformer Type II	Transformer Type III	Disconnect Switch with Type "Y" Enclosure	Special Switch Encl. Mounting Brackets, as per plan	Ground Rod	Sign Wired Complete	Structure Mounted Sign Wired, as per plan	Sign Service	Interim Sign Overlay	Interim Covering for Signs
				Ea.	Ea.	Ea.			L.F.	L.F.	L.F.	L.F.	C.Y.	C.Y.	Watts	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	KVA	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	S.F.	S.F.
	Mainline																																		
9	SB	501	1326+00		1								3.2		250		1				2			0.50		1		1		1	1		1	91.0	
9	NB		1326+00							16.5				0.1																					
7	SB	502	1344+00		1								3.2		250		1				2			0.50		1		1		1	1		1		
7	SB		1349+00							14.75				0.1																					
7	NB		1349+00							17.5				0.1																					
8	SB		1364+00							17.5				0.1																					
7	SB		1346+30							17.0 17.5				0.2																					
8	NB		1365+00							14.75				0.1																					
8	NB	503	1370+00		1								3.2		250		1				2			0.50		1		1		1	1		1		
9	SB		1386+00							16.5*				0.1*																					
9	NB	504	1393+00		1*								3.2*		250*		1*				2*			0.50*		1*		1*		1*	1*		1*		
9	SB		1396+50									18.25 18.75		0.2																					
8	N.B.		1367+65							17.0 17.5				0.2																					
9	NB	505	1421+00		1								3.2		250		1				2			0.50		1		1		1	1		1		
9	Median		1427+00							16.25*				0.1*																					
9	Median		1427+38						8.0*					0.1*																					
9	Median		1427+62						8.0*					0.1*																					
9	Median		1428+00							16.25*				0.1*																					
7			D-1350+00						13.5 14.0					0.2																					
10	SB	506	FRA-270-25.25N				1								425				1	1		1		0.75			1	1	2	1		1	1		
8			B-1362+50						13.5 14.0					0.2																					
7	Ramp"A"Lt.		A-1358+00						14.0					0.1																					
8	Ramp"B"Lt.		B-1357+10								13.5			0.1																					
8	Ramp"B"Rt.		B-1357+10								14.5			0.1																					
11	E.B.	509	114+40	1									2.7		190	1					1			0.25	1			1		1	1		1		40
8	Ramp"C"Rt.		C-1352+00						14.0					0.1																					
8	Ramp"C"Rt.		C-1355+00							15.75				0.1																					
8	Ramp"Cn"Rt.		Cn-1354+25						14.0					0.1																					
8	Ramp"Cn"Rt.		Cn-1355+20						15.0					0.1																					
7	Ramp"D"Lt.		D-1355+20								14.5			0.1																					
7	Ramp"D"Rt.		D-1355+20								13.5			0.1																					
11	E B	508	107+91		1*								3.2*		250*		1*				2*			0.50*		1*		1*		1*	1*		1*		78*
11	W B		107+00						14.25*					0.1*																					
9	S.B.	463	1306+00																															91.0*	
11	Median		111+55						13.0					0.1																					
11	E B	510	119+75			1							2.6		190	1					1			0.25	1			1		1	1		1		42
11	Median		120+05						13.0					0.1																					
11	W B	513	FRA-270-23.56N					1							190	1					1			0.25	1			1	2	1		1	1		40
11	E B	514	FRA-270-23.56N					1							190	1					1			0.25	1			1	2	1		1	1		45
11	Median		130+15						13.0					0.1																					
11	W B	511	130+40(b)			1							2.7		190	1					1			0.50		1		1		1	1		1		48
11		511	130+40(a)												190	1					1										1				48
11	E B		132+00							16.25				0.1																					
11	Median		133+50						13.0					0.1																					
11	E B		135+00						16.0					0.1																					
11	W B	512	138+00									14.25 15.00		0.2																					20
11	W B		141+00							14.75				0.1																					7.2
16	E.B.		72+25						14.0•					0.1•																					
16	E.B.		75+00						11.5•					0.1•																					
16	W.B.		76+10						10.5 11.0•					0.2•																					
16	E.B.		78+00							16.25•				0.1•																					
16	E.B.		81+00							16.25•				0.1•																					
11	E.B.		133+25							14.5				0.1																					
11	N.B. Stelzer		22+25						14.0°					0.1°																					
11	S.B. Stelzer		22+50							16.25°				0.1°																					
	Sub-	total	City						14.0	16.25				0.2																					
	Sub-	total	County						47.0	32.50				0.6																					
	Sub-	total	Rural		2				30.25	49.00			6.4	0.6			2				4					2		2		2	2		2	91.0	78.0
	Sub-	total	Urban	1	4	2	1	2	180.0	211.25	56.0	66.25	20.8	3.4		6	4		1	1	14	1			4	5	1	10	6	10	8	3	10	91.0	290.2
			Totals	1	6	2	1	2	271.25	309.0	56.0	66.25	27.2	4.8		6	6		1	1	18	1			4	7	1	12	6	12	10	3	12	182.0	368.2

• 100% County
° 100% City
* Rural

DELINEATOR & PAVEMENT MARKING QUANTITIES

ITEM 620 DELINEATORS

STATION From	STATION To	SIDE	Interval Spacing Ft.	A-1 Post Each RURAL	A-1 Post Each URBAN	A-1 Bracket Each RURAL	A-1 Bracket Each URBAN	C-2 Post Each RURAL	C-2 Post Each URBAN
1325 +00	1329 +00	Lt.	200		3				
1346 +90	1366 +90	Lt.	200		11		1		
1378 +00	1462 +00	Lt.	200	24	19				
1325 +00	1337 +00	Rt.	200		7				
1347 +05	1367 +05	Rt	200		11		1		
1383 +50	1461 +50	Rt.	200	25	15				
1331 +00	A-1346 +00	Lt.	100						16
A-1346 +00	A-1347 +00	Rt.	100						2
A-1347 +60	A-1350 +00	Rt.	60						5
A-1351 +00	A-1357 +00	Lt.	100						7
A-1357 +60		Lt.	60						1
A-1357 +90	A-1358 +97	Lt.	30						5
B-1357 +00	B-1359 +50	Lt.	50						6
B-1360 +20		Lt.	70						2
B-1361 +20	B-1362 +20	Lt.	100						2
B-1362 +20	B-1366 +40	Rt.	60						8
B-1367 +00		Rt.	70						1
B-1367 +00	B-1376 +00	Lt.	100					3	7
1338 +00	D-1347 +00	Rt.	100						10
D-1347 +00		Lt.	100						1
D-1347 +80		Lt.	80						1
D-1348 +30	D-1349 +30	Lt.	50						3
D-1350 +10		Lt.	80						1
D-1351 +10		Lt.	100						1
D-1351 +10	D-1355 +42	Rt.	100						6
112 +00	C-1350 +00	Rt.	100						2
C-1350 +60	C-1353 +00	Rt.	60						5
C-1353 +00	C-1355 +40	Lt.	60						5
C-1355 +40	C-1356 +00	Rt.	60						2
C-1357 +00	C-1360 +00	Rt.	100						4
C-1360 +00	C-1364 +80	Lt.	60						9
C-1365 +50		Lt.	70						1
C-1365 +50	C-1381 +50	Rt.	100					9	8
TOTALS				49	64		2	12	121

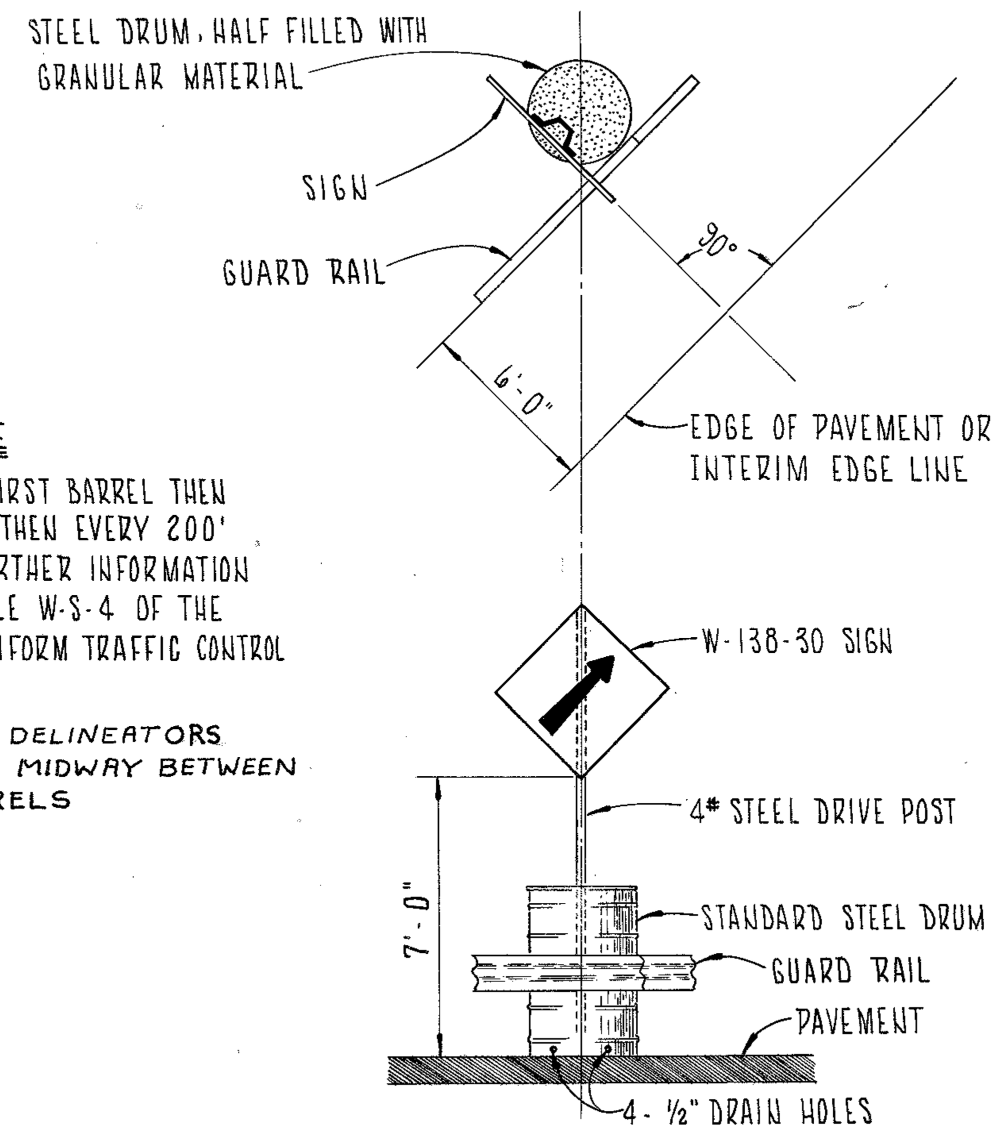
ITEM 621 PAVEMENT MARKING

STATION From	STATION To	SIDE	4" Edge Line L.F. RURAL	4" Edge Line L.F. URBAN	4" Lane Line L.F. RURAL	4" Lane Line L.F. URBAN	6" Lane Line L.F. RURAL	6" Lane Line L.F. URBAN	8" Channel Line L.F. RURAL	8" Channel Line L.F. URBAN	Broad Transverse Stripes L.F. RURAL	Broad Transverse Stripes L.F. URBAN	Curb Marking L.F. RURAL	Curb Marking L.F. URBAN	6" Barrier Lane L.F. RURAL	6" Barrier Lane L.F. URBAN	24" Stop Line L.F. RURAL	24" Stop Line L.F. URBAN
1325 +00	1343 +00	Lt.		1800														
~~1337+75~~	1367 +92	Lt.		~~3023~~														
1337 +75	1340 +75	Lt.				300												
1340 +75	1343 +00	Lt.								450								
1367 +92	1370 +70	Lt.								556								
1367 +92	1370 +70	Lt.										341						
1370 +70	1372 +85	Lt.				215												
1372 +50	1462 +00	Lt	4061	4889														
1325 +00	1462 +00	Lt.					4061	9639										
1325 +00	1462 +00	Lt.					4061	9639										
1325 +00	1462 +00	Lt.	4061	9639														
1325 +00	1462 +00	Rt.	4061	9639														
1325 +00	1462 +00	Rt.					4061	9639										
1325 +00	1462 +00	Rt.					4061	9639										
1325 +00	1341 +50	Rt.		1650														
1341 +07	1343 +15	Rt.				208												
1343 +15	1346 +05	Rt								580								
1343 +15	1346 +05	Rt.										340						
1347 +05	1374 +75	Rt.		2770														
1369 +50	1371 +90	Rt.								480								
1371 +90	1374 +75	Rt.			138	147												
1369 +50	1462 +00	Rt.	4061	5189														
A-1343 +00	A-1359 +00	℄		1660														
A-1343 +00	A-1348 +00	Rt.												500				
A-1347 +00	A-1359 +00	Rt.		1200														
B-1356 +68	B-1372 +50	℄		1582														
B-1356 +80	B-1367 +92	Rt.		1112														
B-1357 +05		Rt.																48
B-1357 +05	B-1361 +75	Rt.				470												
D-1346 +03	D-1355 +41	Lt.		938														
D-1341 +50	D-1355 +41	℄		1391														
D-1355 +10		Lt.																20
Cn-1353 +85	Cn-1356 +76	℄		291														
Cn-1353 +85	Cn-1355 +90	Rt.		205														
Cn-1355 +00	Cn-1356 +76	Rt.												176				
C-1351 +81	C-1355 +88	Lt.		407														
C-1355 +88	C-1358 +25	Lt.								486								
C-1358 +25	C-1358 +55	Lt.				30												
C-1356 +76	C-1365 +45	Lt.		869														
C-1364 +50	C-1369 +50	Lt.												500				
C-1350 +14	C-1369 +50	℄		1936														
106 +00	110 +33	Lt.	433															
111 +52	118 +42	Lt.		690														
119 +47	130 +68	Lt.		1121														
131 +79	139 +50	Lt.		771														
110 +40		Rt.															40	
111 +47		Lt.																37
119 +17		Rt.																25
120 +06		Lt.																37
130 +16		Rt.																25
131 +05		Lt.																43
106 +00	110 +40	Lt.			440													
111 +47	119 +17	Lt.				770												
120 +06	130 +16	Lt.				1010												
131 +05	134 +49	Lt.				344												
106 +00	110 +44	Lt.							893		572				895			
111 +47	113 +98	Lt.								251								
120 +06	122 +51	Lt.								245								
111 +42	119 +22	Lt.												1560				
120 +01	130 +21	Lt.												2040				
131 +00	134 +51	Lt.												702				
134 +51	138 +75	Lt.								850		230						
134 +51	139 +50	Lt.														998		
109 +40	110 +40	Lt.							100									
127 +71	130 +16	Lt.								245								
107 +00	110 +40	Rt.			340													
111 +47	119 +17	℄				770												
120 +06	130 +16	℄				1010												
131 +05	134 +49	℄				344												
106 +00	110 +18	Rt.	437															
111 +66	114 +58	Rt.		284														
114 +50	115 +07	Rt.				57												
115 +07	117 +25	Rt.								338		112						
117 +25	119 +22	Rt.		197														
119 +47	130 +74	Rt.		1127														
131 +92	139 +50	Rt.		738														
TOTALS		Lin Ft.	17114	55118	918	5675	16244	38556	993	4481	572	1023		5478	895	998	40	235
		15/40 x Lin. Ft.			344	2115	6095	14452										
		Miles	3.24	10.44	.07	.40	1.15	2.74										

TEMPORARY GUARD RAIL QUANTITIES

FROM SHEET No.	LOCATION		606 TEMPORARY BEAM RAIL	620 INTERIM DELINEATORS, AS PER PLAN	621 INTERIM 4" EDGE LINE	815 SIGN ERECTION, FLAT SHEET TYPE	816 INTERIM STEEL DRIVE POST 4 LB. PER FT., AS PER PLAN
			L.F.	EA.	L.F.	S.F.	L.F.
9	1321+20	1323+00	180.0 *	2 *	180 *	12.50 *	22 *
9	1323+00	1330+00	700.0	4	700	25.00	44
7	1330+00	1338+00	800.0	4	800	25.00	44
7	1338+00	1346+17.5	817.5	4	1635	31.25	55
7	1343+05		50.0				
11	112+00 MORSE RD.	116+25 MORSE RD.	425.0		425		
11	B-1357+08		50.0				
11	C-1354+08		37.5				
	TOTAL RURAL		180.0	2	180	12.50	22
	TOTAL URBAN		2880.0	12	3560	81.25	143

* RURAL

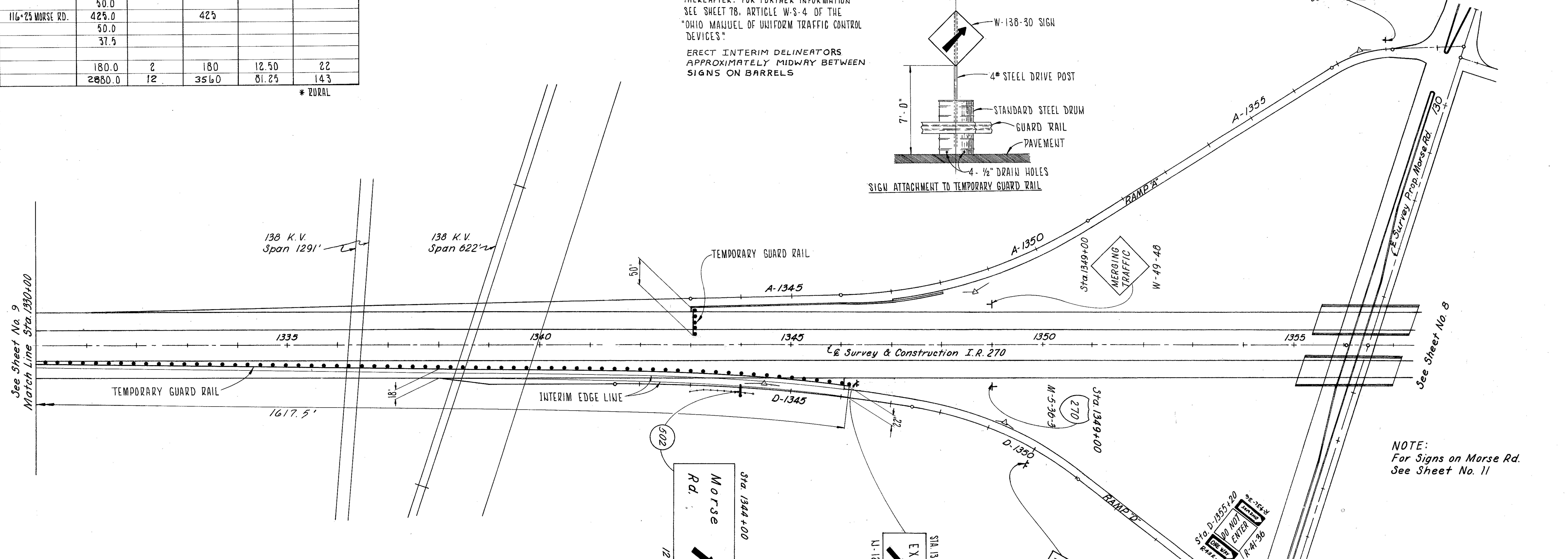


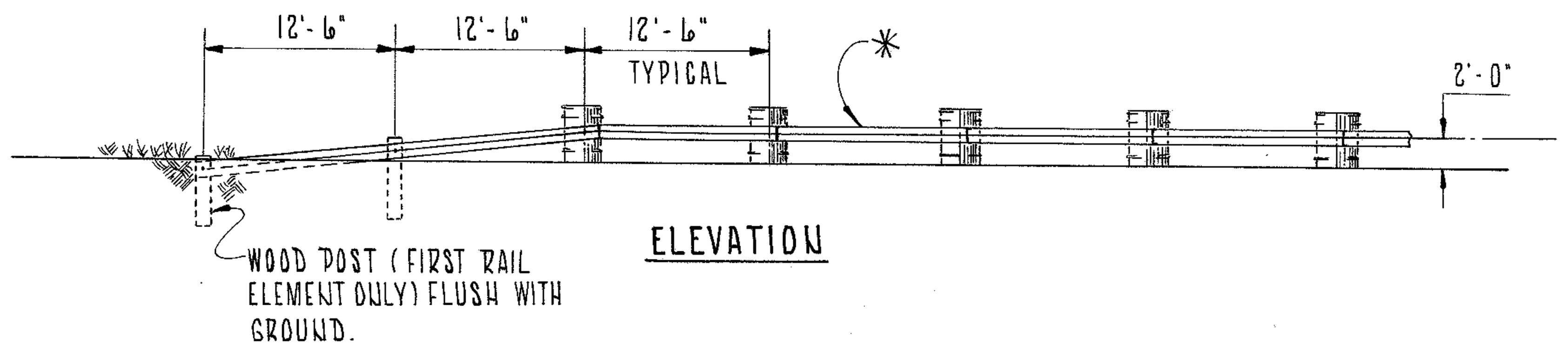
SIGN ATTACHMENT TO TEMPORARY GUARD RAIL

NOTE

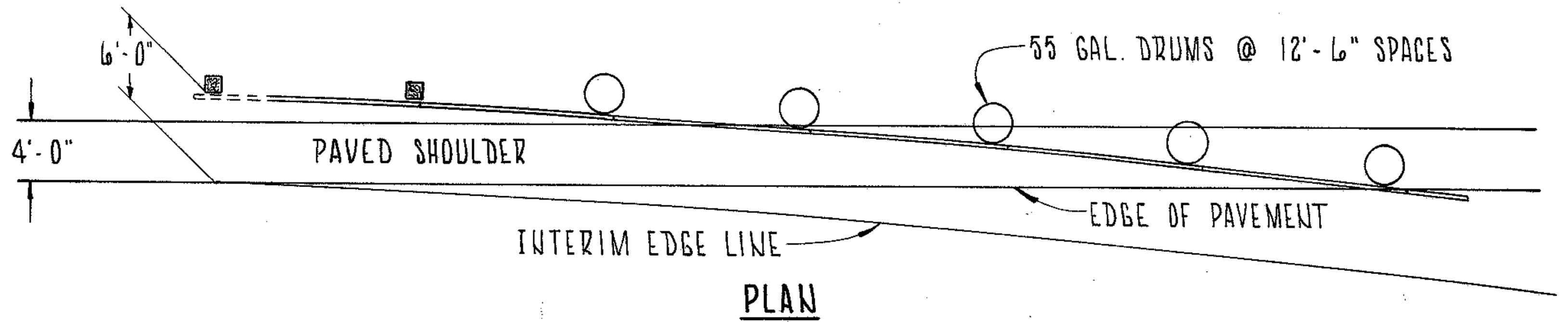
W-138-30 SIGN ON FIRST BARREL THEN EVERY 100' FOR 300' THEN EVERY 200' THEREAFTER. FOR FURTHER INFORMATION SEE SHEET 78, ARTICLE W-S-4 OF THE "OHIO MANUEL OF UNIFORM TRAFFIC CONTROL DEVICES".

ERECT INTERIM DELINEATORS APPROXIMATELY MIDWAY BETWEEN SIGNS ON BARRELS





ELEVATION

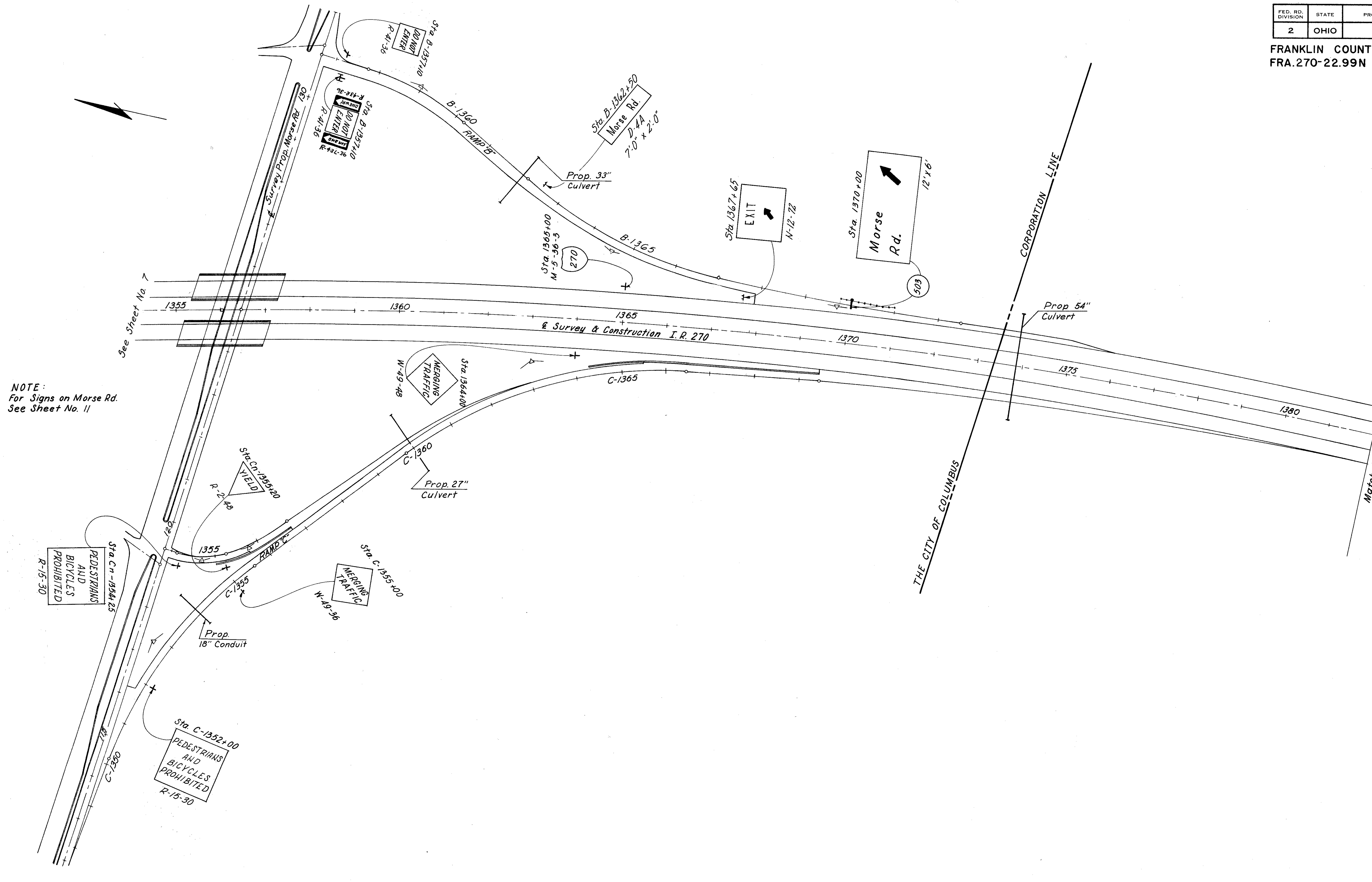


PLAN

ANCHOR DETAIL FOR TEMPORARY GUARD RAIL

SIGNING LAYOUT PLAN   MORSE ROAD INTERCHANGE

STA. 1330+00 TO STA. 1357+00



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

206/292

8/29

FRANKLIN COUNTY
FRA.270-22.99N

SIGNING LAYOUT PLAN MORSE ROAD INTERCHANGE

STA. 1355+00 TO STA. 1382+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

207/292

9/29

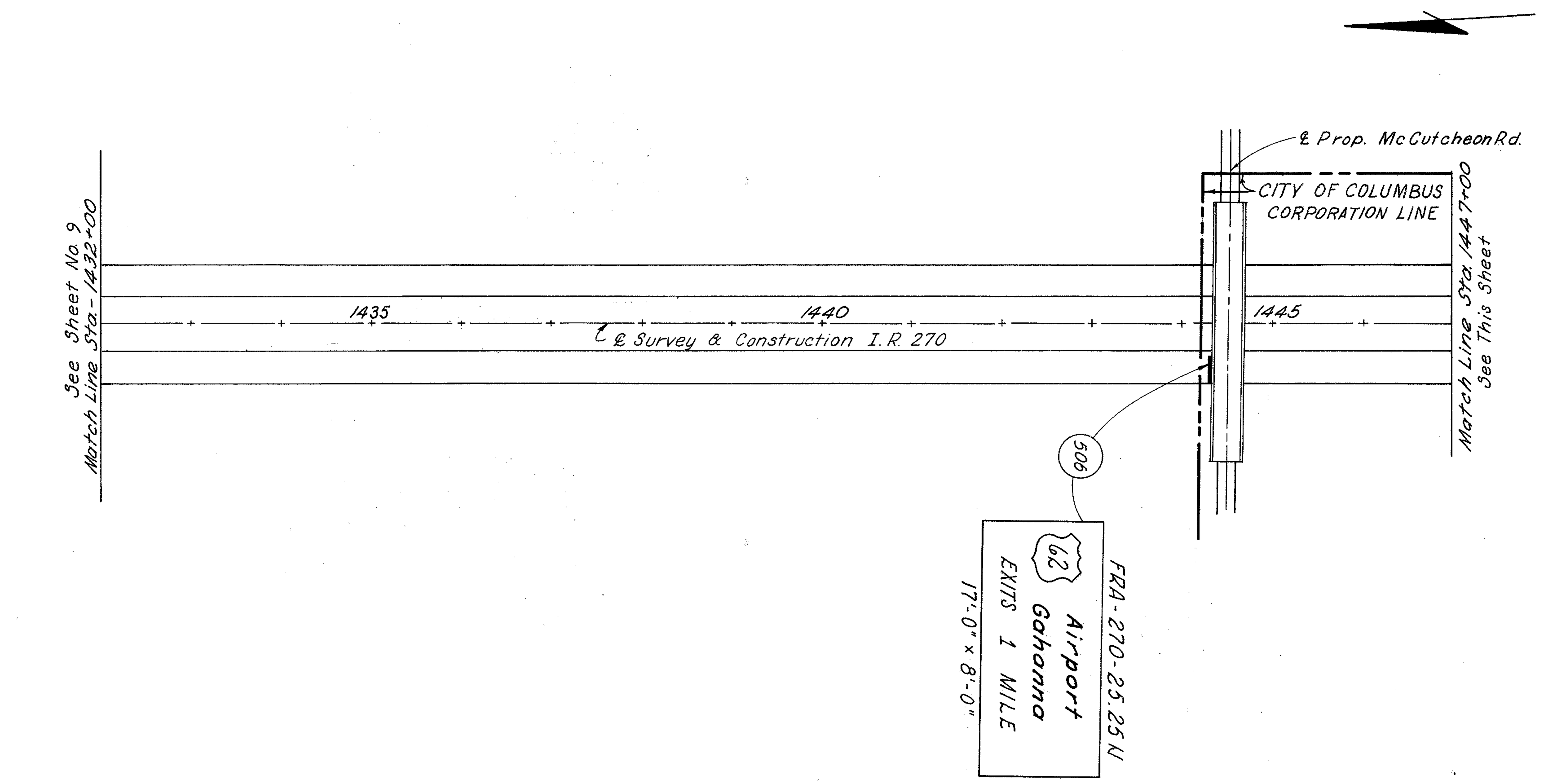
FRANKLIN COUNTY
FRA-270-22.99N

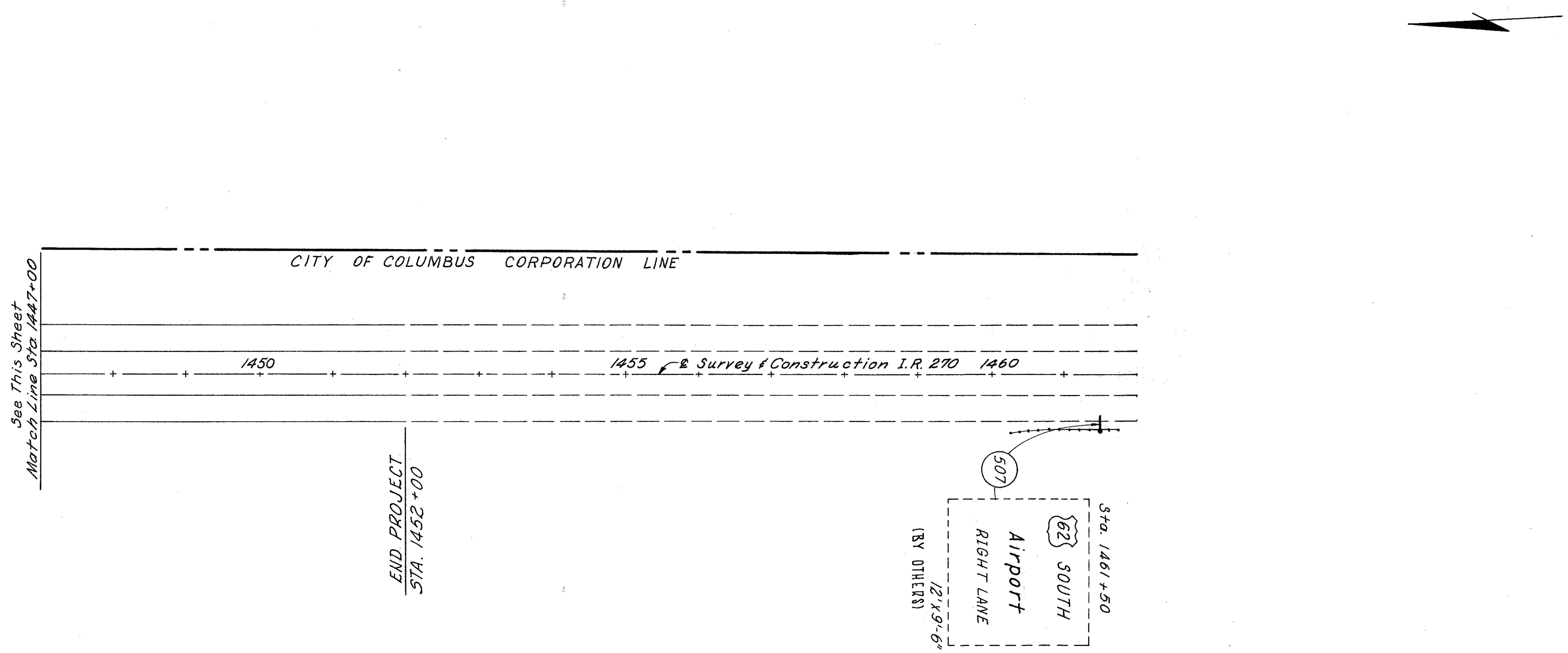
SIGNING LAYOUT PLAN

STA. 1325+00 to STA. 1330+00 & STA. 1382+00 to STA. 1432+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA- 270 - 22.99 N



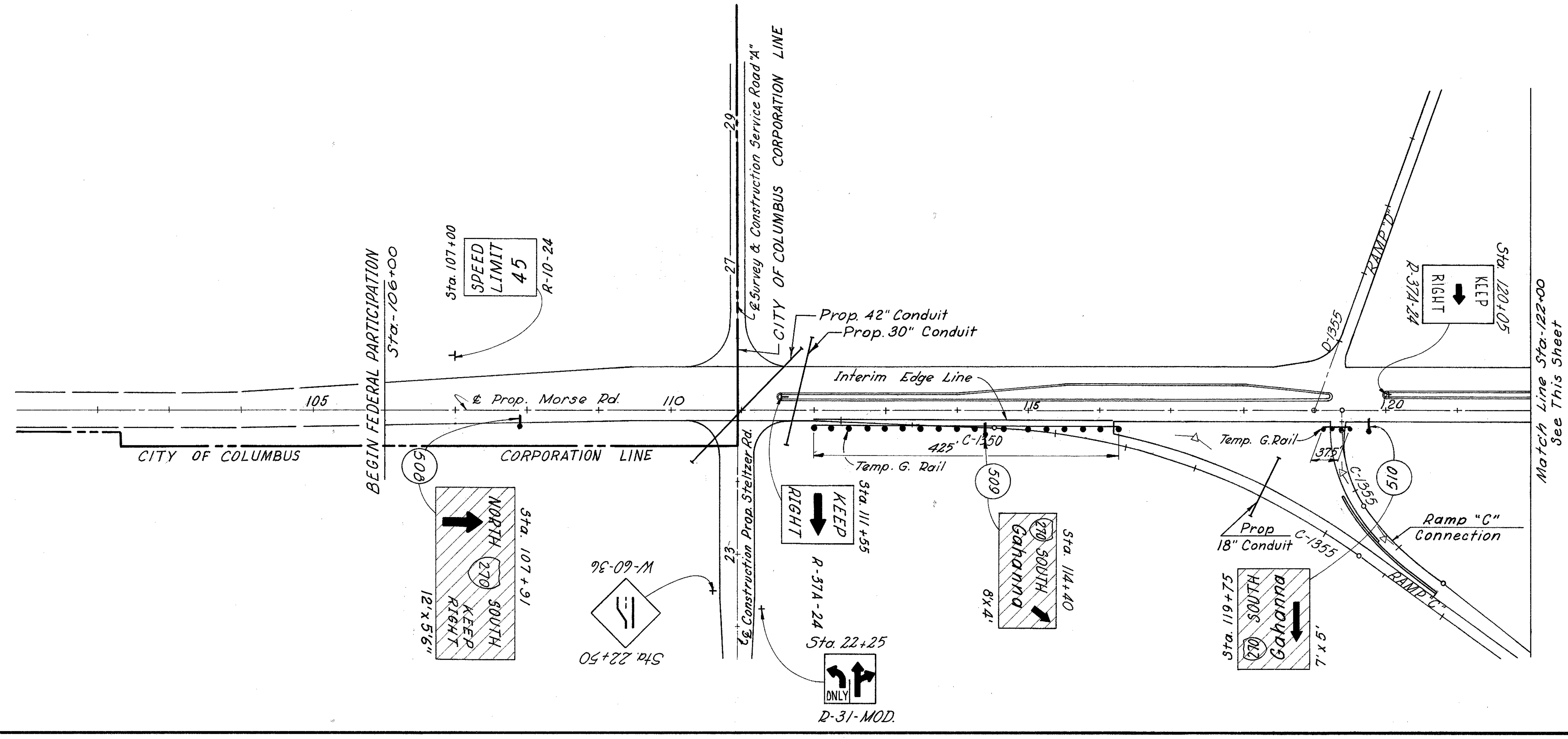


SIGNING LAYOUT PLAN

STA. 1432+00 to STA. 1462+0

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA-270-22.99N

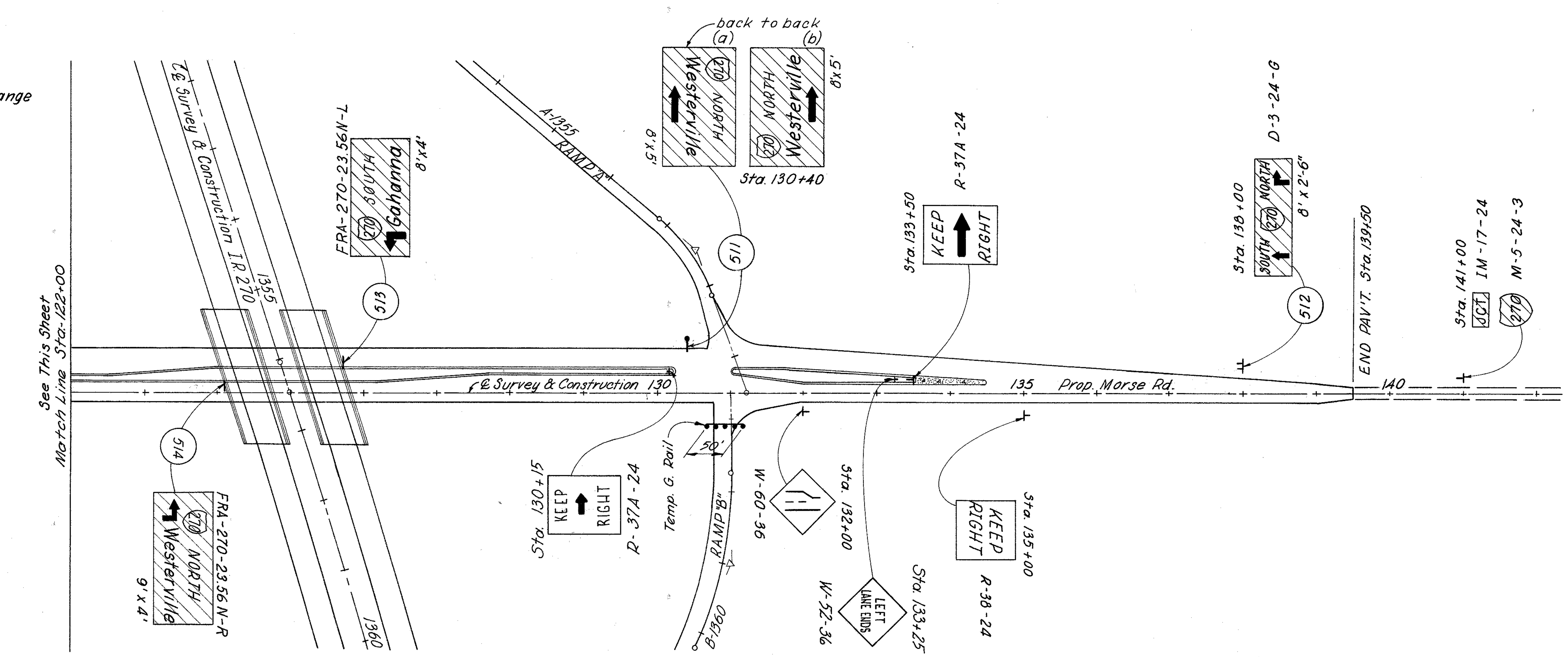


NOTE:
For Signs on Morse Rd. Interchange See Sheet No. 7 & 8.

NOTE:
For Signs on Morse Rd. Interchange See Sheet No. 7 & 8.

For Temp. Beam Rail Details see sheet no. 7.

Signs cross-hatched are to be "Bagged."



SIGNING LAYOUT PLAN MORSE RD.

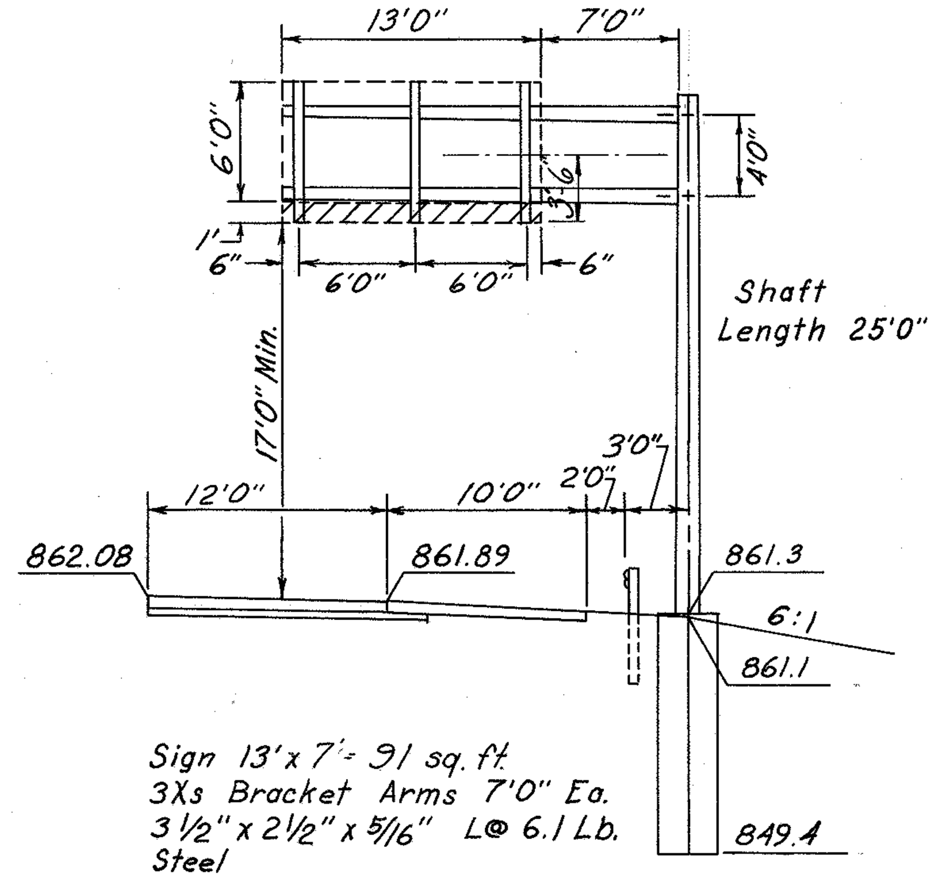
STA. 106+00 to STA. 141+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

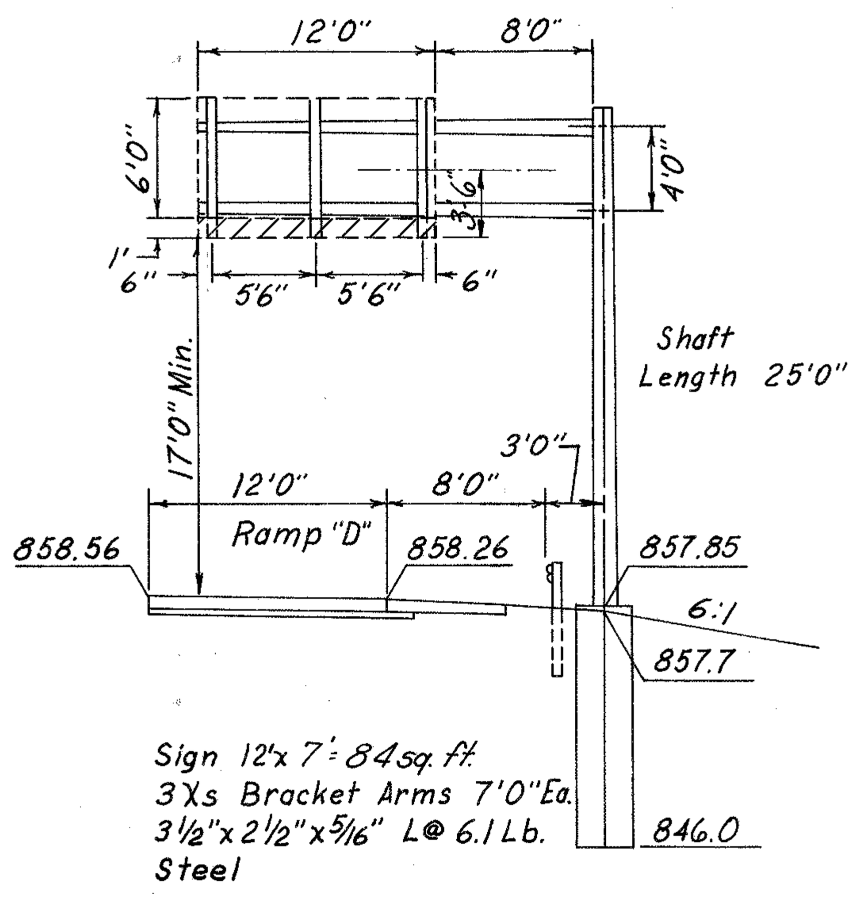
210/292

FRANKLIN COUNTY
FRA-270-22.99 N

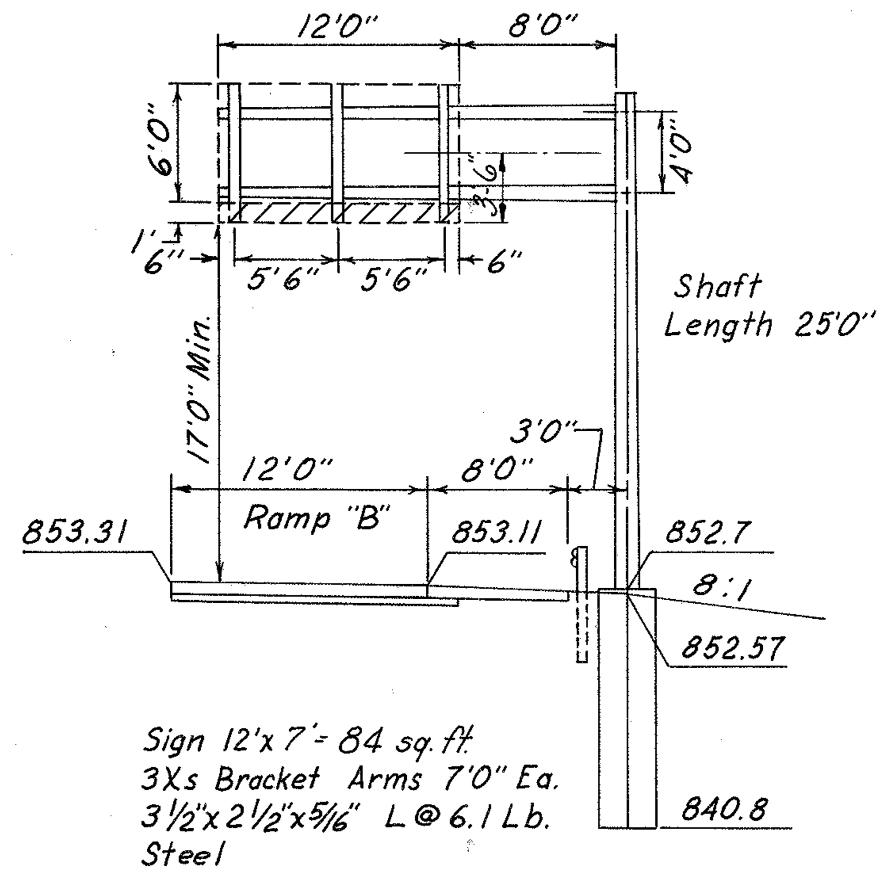
12/29



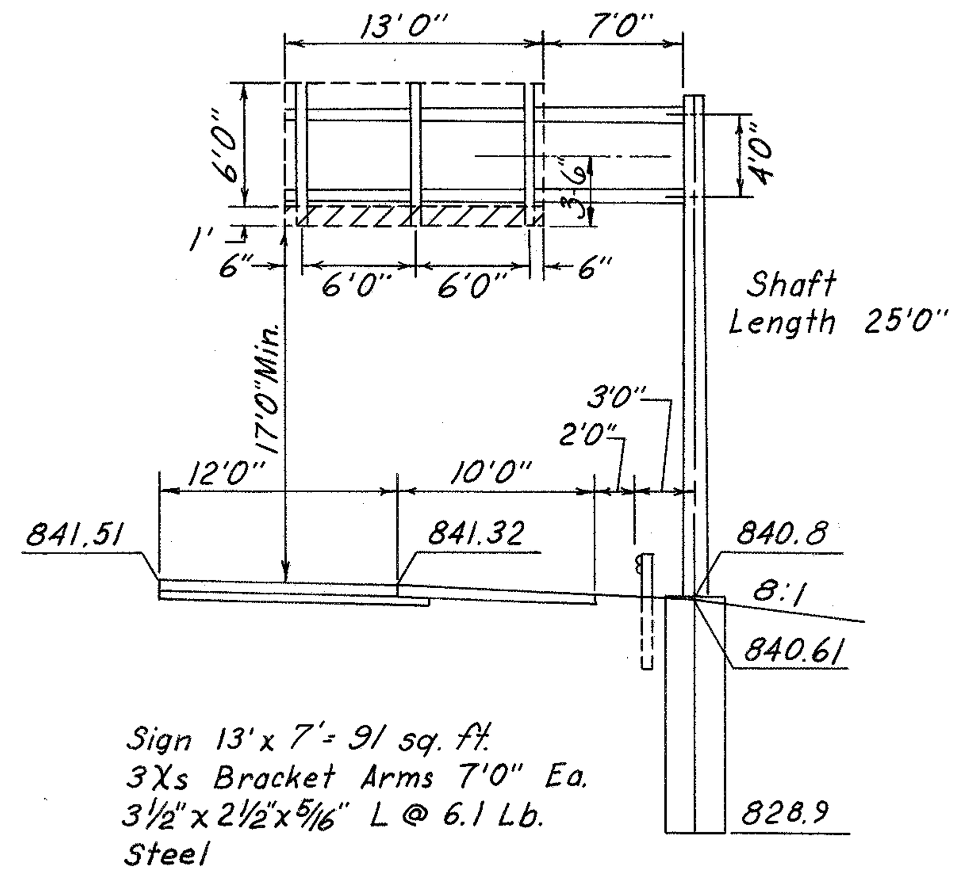
OVERHEAD SIGN SUPPORT NO. 501
STA. 1326+00 SOUTHBOUND IR-270
816 No. 12.24 Design No 4
Arms: 20' 0"



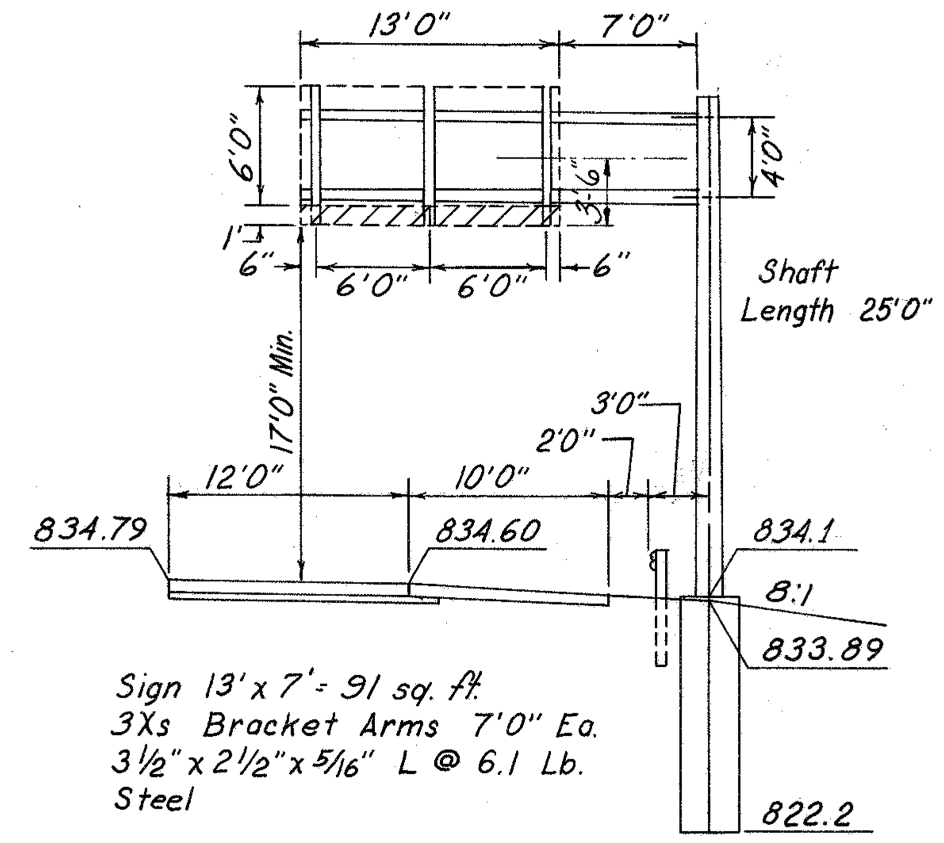
OVERHEAD SIGN SUPPORT NO. 502
STA. 1344+00 SOUTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



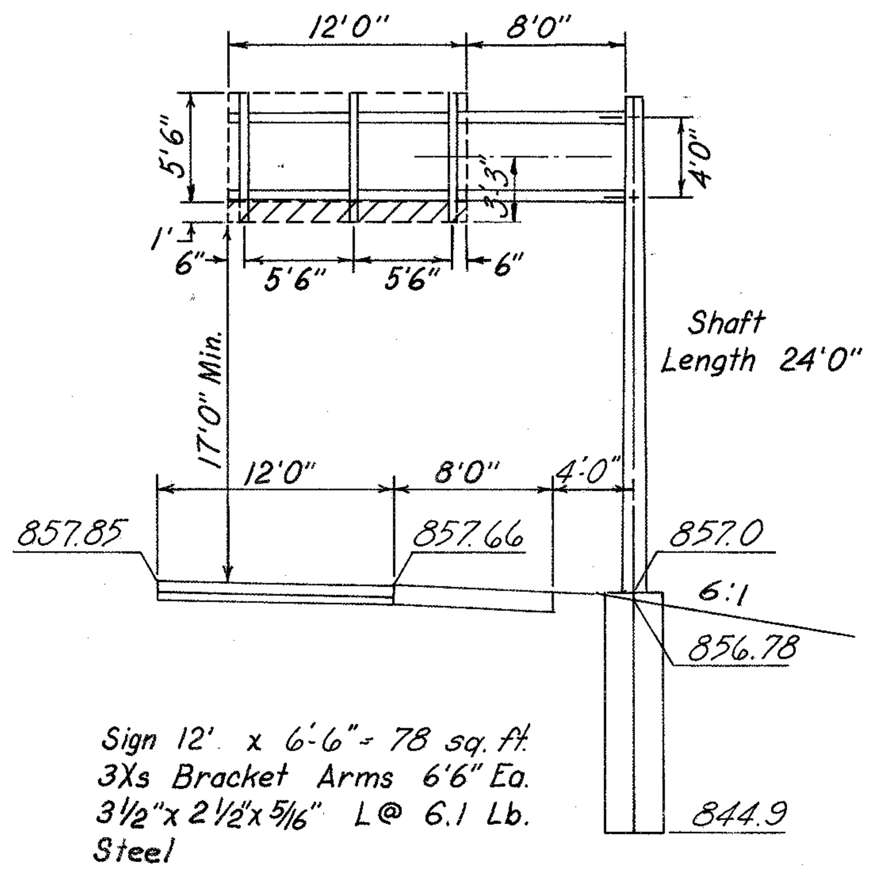
OVERHEAD SIGN SUPPORT NO. 503
STA. 1370+00 NORTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



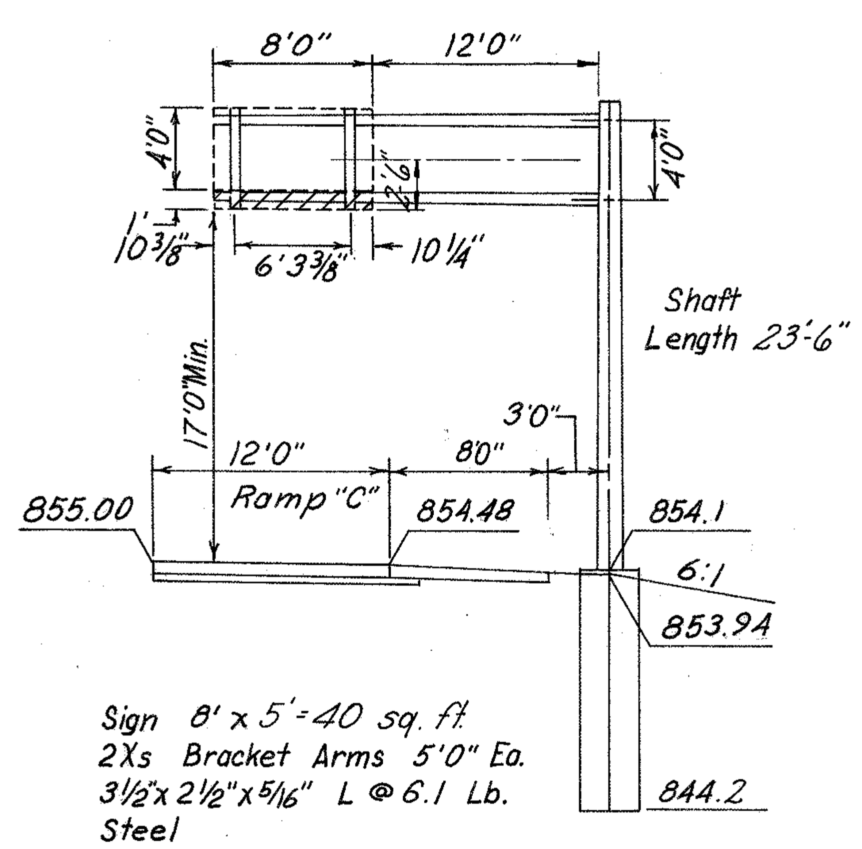
OVERHEAD SIGN SUPPORT NO. 504
STA. 1393+00 NORTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



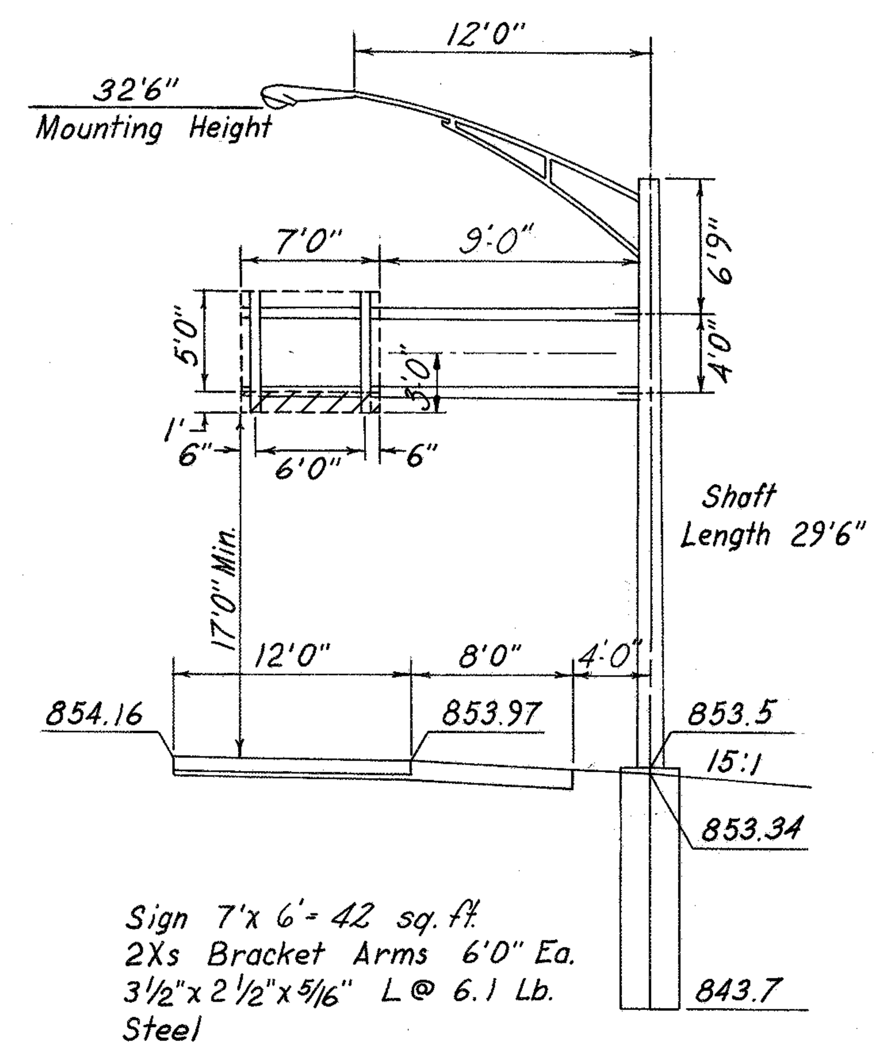
OVERHEAD SIGN SUPPORT NO. 505
STA. 1421+00 NORTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



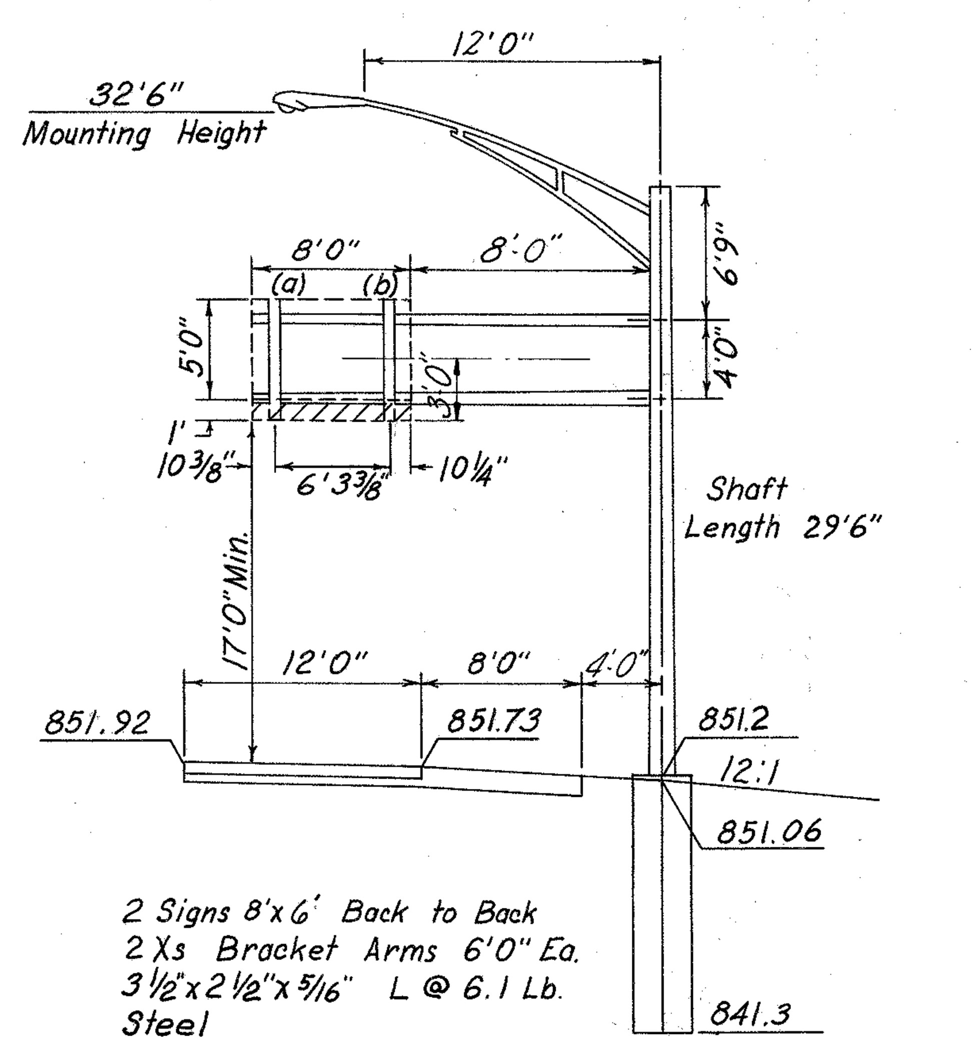
OVERHEAD SIGN SUPPORT NO. 508
STA. 107+91 EASTBOUND MORSE RD.
816 No. 12.24 Design No. 4
Arms: 20'0"



OVERHEAD SUPPORT NO. 509
STA. 114+40 EASTBOUD MORSE RD.
816 No. 12.24 Design No. 1 Modified
Arms: 20'0"

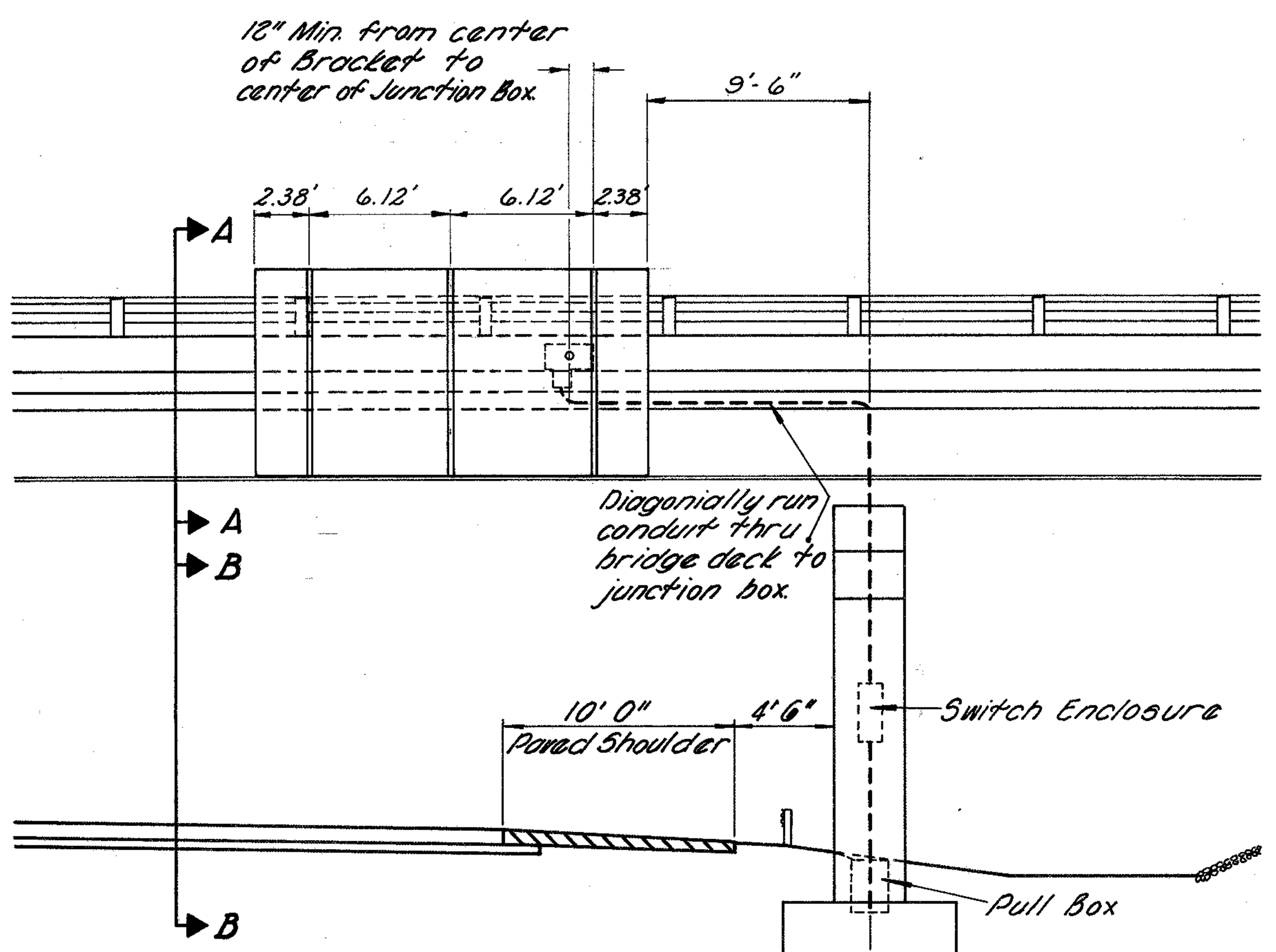


COMBINATION SUPPORT NO. 510
STA. 119+75 EASTBOUND MORSE RD.
816 No. 12.24 Design No. 1 Modified
Arms: 16'-0"

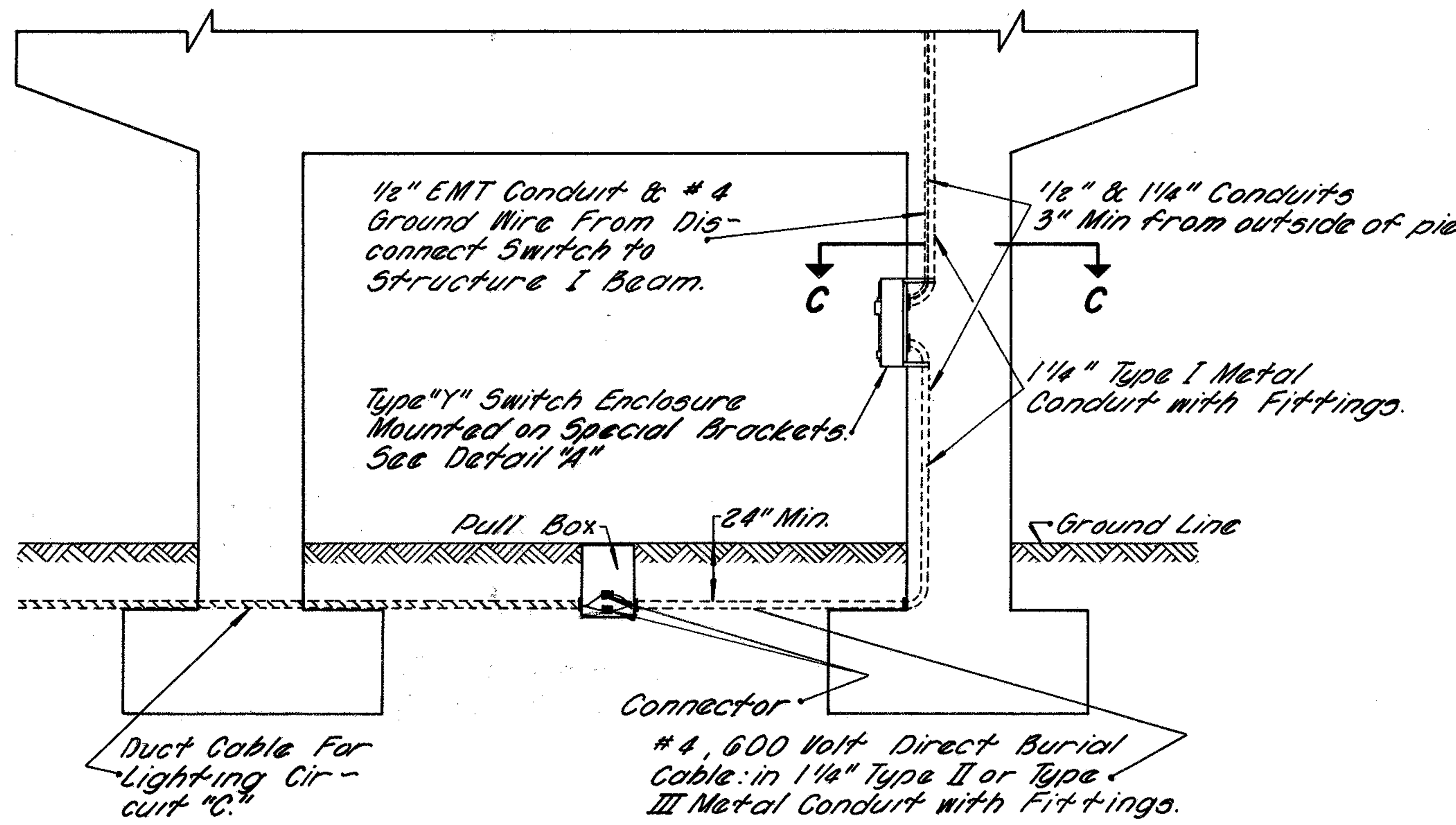


COMBINATION SUPPORT NO. 511
STA. 130+40 WESTBOUND MORSE RD.
816 No. 12.24 Design No. 1 Modified
Arms: 16'-0"

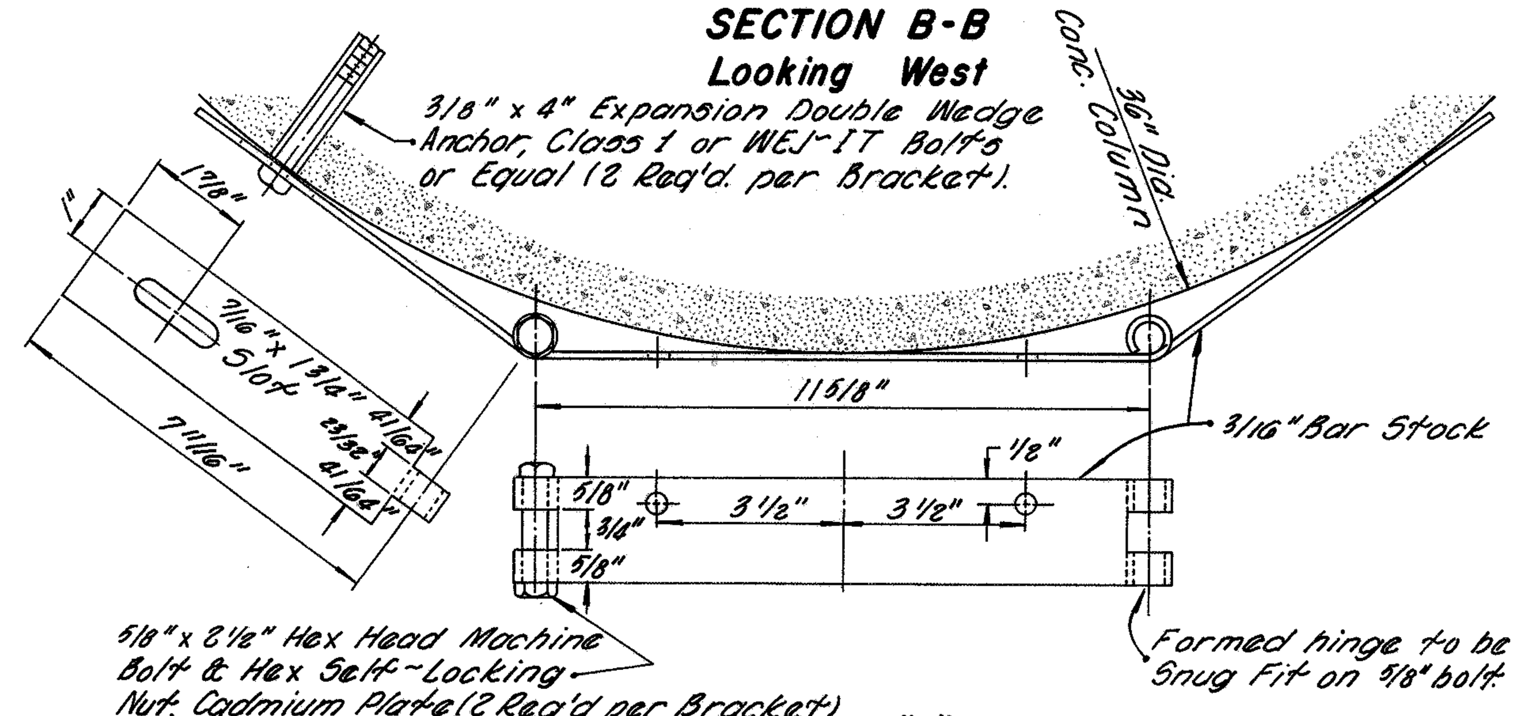
OVERHEAD SIGN & COMBINATION SUPPORT DETAILS



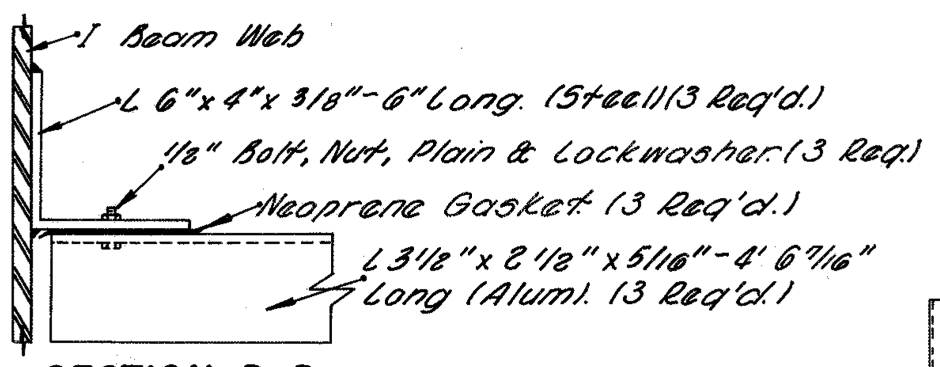
OVERHEAD SIGN SUPPORT No. 506
MOUNTED ON STRUCTURE No. FRA-270-2525 N
OVER SOUTHBOUND I. R. 270
3 Brackets Req'd, See SECTION A-A & Details



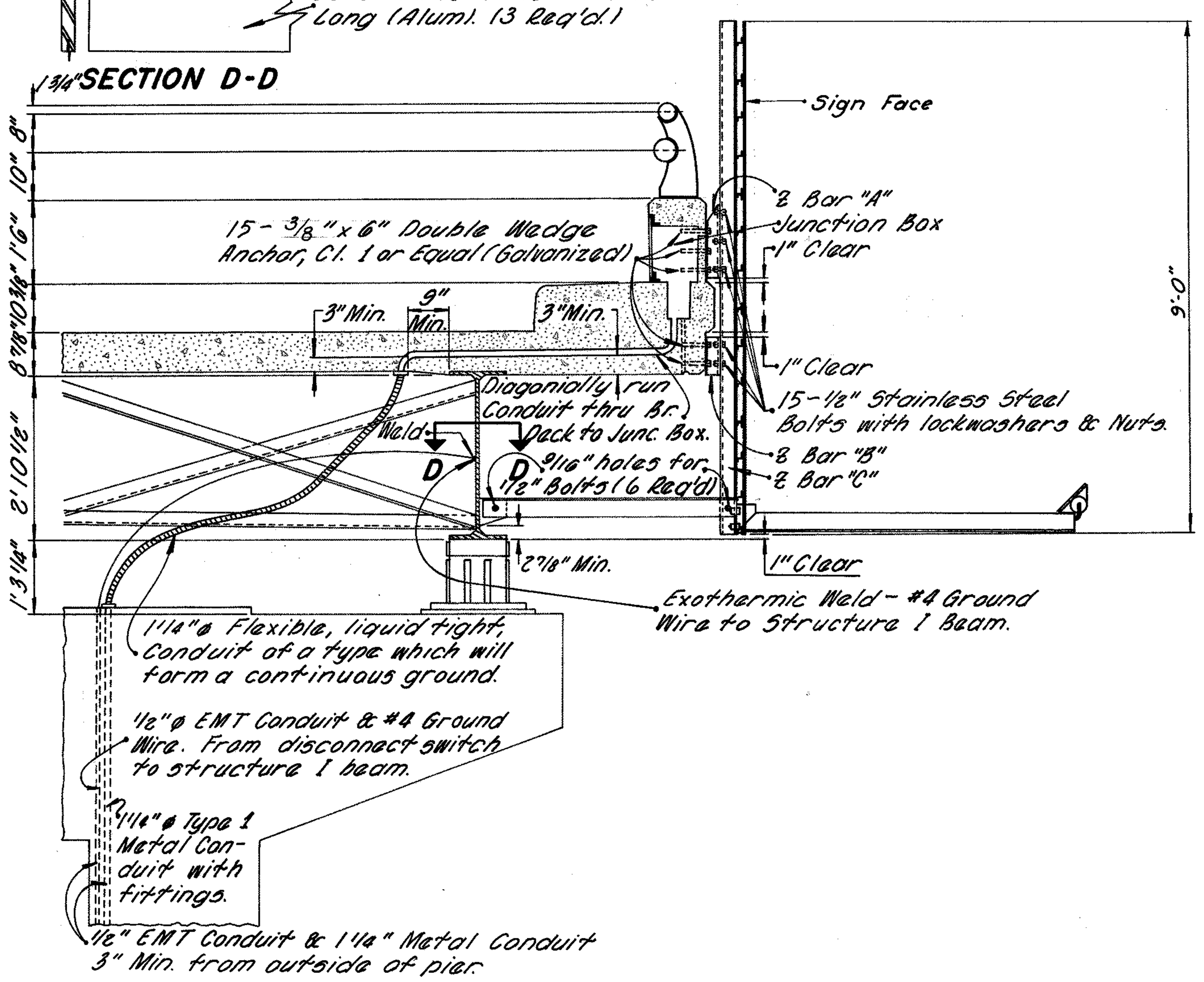
SECTION B-B
Looking West



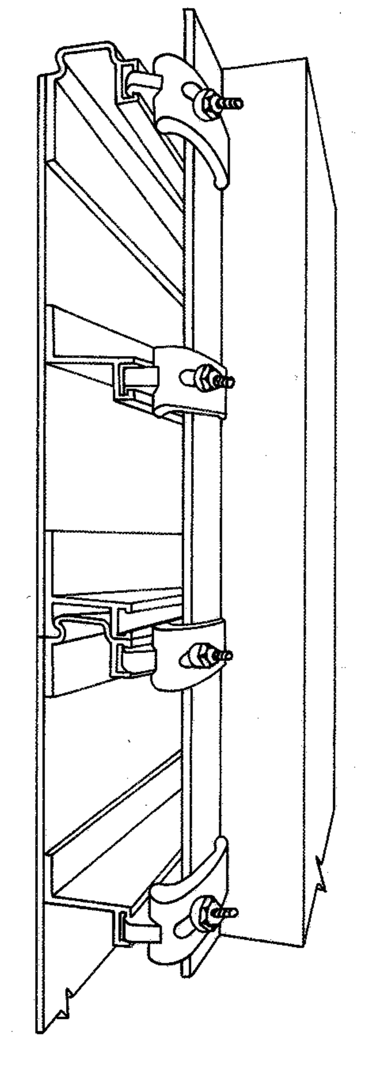
DETAIL "A"
ENCLOSURE MOUNTING BRACKET
(2 Required)



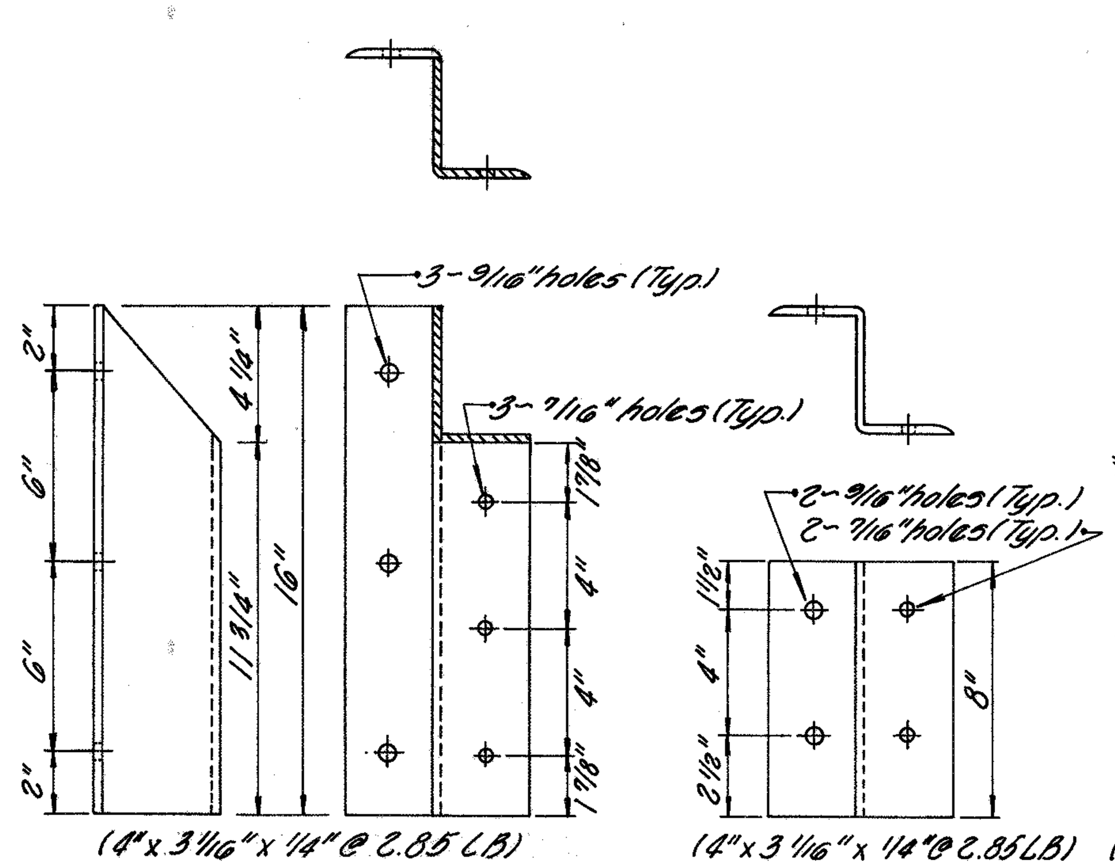
SECTION D-D



SECTION A-A



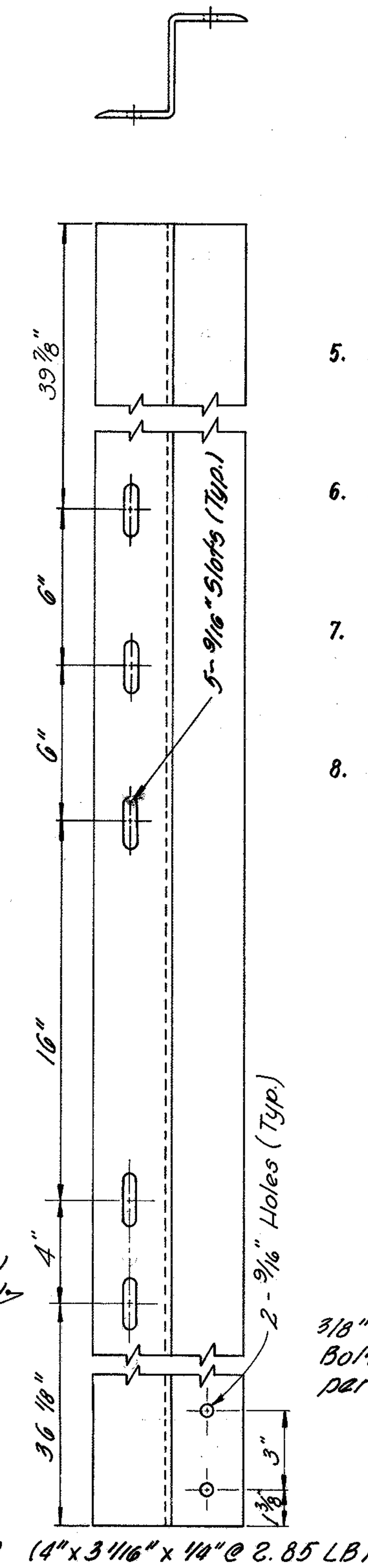
CLAMP ASSEMBLY



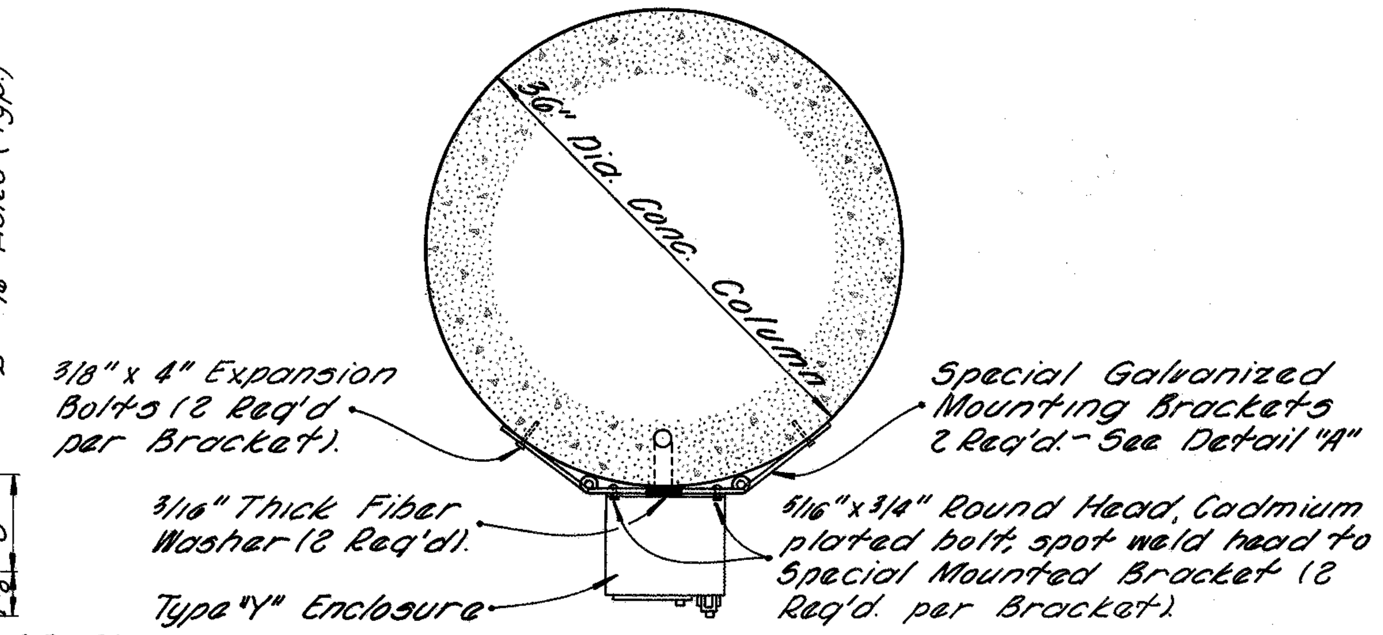
Z BAR "A"
(3 Required)

Z BAR "B"
(3 Required)

STRUCTURE CONNECTION



Z BAR "C"
(3 Required)
SIGN BRACKET



SECTION C-C
Turned 90°

For structure details, see structural drawings for FRA-270-2356N L.&R. & FRA-270-2525N. For structure pull box details and structure grounding notes, see Standard Construction Drawings HL-4. For sign mounting details, including fixture support arm details, wiring details, including ballast, junction boxes, conduit, condulets and all related parts, see sheets EI-1 and EI-2. For details of the Type "Y" switch enclosure see sheet ES-3A.

BASIS OF PAYMENT FOR STRUCTURE SIGNS No. 506, 513 & 514

The pay items of work required for the construction of an illuminated sign mounted on Structure No. FRA-270-2525N, FRA-270-2356N, L.& R. are listed separately under the Traffic Control Items. These pay items are described as follows:

1. Sign Erection:
   Same as described in the General Notes.
2. Special Structural Connection:
   Payment for this item shall be made at the contract unit price bid and payment shall constitute full compensation for furnishing and and installing the aluminum fixture support arms, aluminum Z bar sign brackets, Z bar structure connections, aluminum and steel angle connections to the structure, together with the required anchor bolts and bolted and welded connections
3. 30 Ampere Fused Disconnect Switch with Type "Y" Enclosure As Per Plan:
   Same as described in the General Notes except mounted on special brackets.
4. Structure Mounted Sign Wired As Per Plan:
   This item shall consist of the furnishing and/or installing the electrical sign lighting system componets from the connectors in the pull box (included in the Lighting Quantities) to the light fixtures.
   Work shall include installation of light fixtures and ballast, and the furnishing and installation (including trenching and backfilling) of the 1 1/4" Type II or Type III metal conduit and fittings from the pull box to the structure foundation, the 1 1/4" Type I metal conduit and fittings leading from the structure foundation to the disconnect switch, the #4, 600 volt, direct burial cable from the connectors to the disconnect switch, the 1/2" EMT conduit and #4 ground wire leading from the structure beam to the disconnect switch and from the disconnect switch to the loop beneath the pier, the furnishing and installation of all other items beyond the switch enclosure including rigid and flexible conduit, condulets, junction boxes, pull boxes, wire fasteners, hardware and all other items required to energize the sign lighting system. Basis of payment shall be of 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.
5. Switch Enclosure Mounting Bracket, As Per Plan:
   This item shall consist of furnishing and installing the special brackets as detailed on this sheet. Basis of payment shall be at the contract unit price per each which shall be full compensation for all labor, material and equipment required for this complete item of work.
6. Sign Ballast, By Type, As per plan:
   Sign No. 506, Type D
   Sign No. 513, Type A
   Sign No. 514, Type A
   Same as described in the General Notes.
7. 72" & 96" Lighting Fixture, with HO or SHO Lamps, As per plan:
   Sign No. 506; 1-96" & 1-72" Ligting Fixture, with SHO lamps
   Sign No. 513; 1-72" Lighting Fixture, with HO Lamp
   Sign No. 514; 1-72" Lighting Fixture, with HO Lamp
   Same as described in the General Notes.
8. Transformer By Type, As Per Plan:
   Sign No. 506, Type III
   Sign No. 513, Type I
   Sign No. 514, Type I

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99 N

Note:
All members shall be 6061-T6 unless otherwise noted.

SKEWED STRUCTURE MOUNTED SIGN SUPPORT DETAIL

CALC: C.P. 7-12-68
CHK: R.G.M.

LEGEND

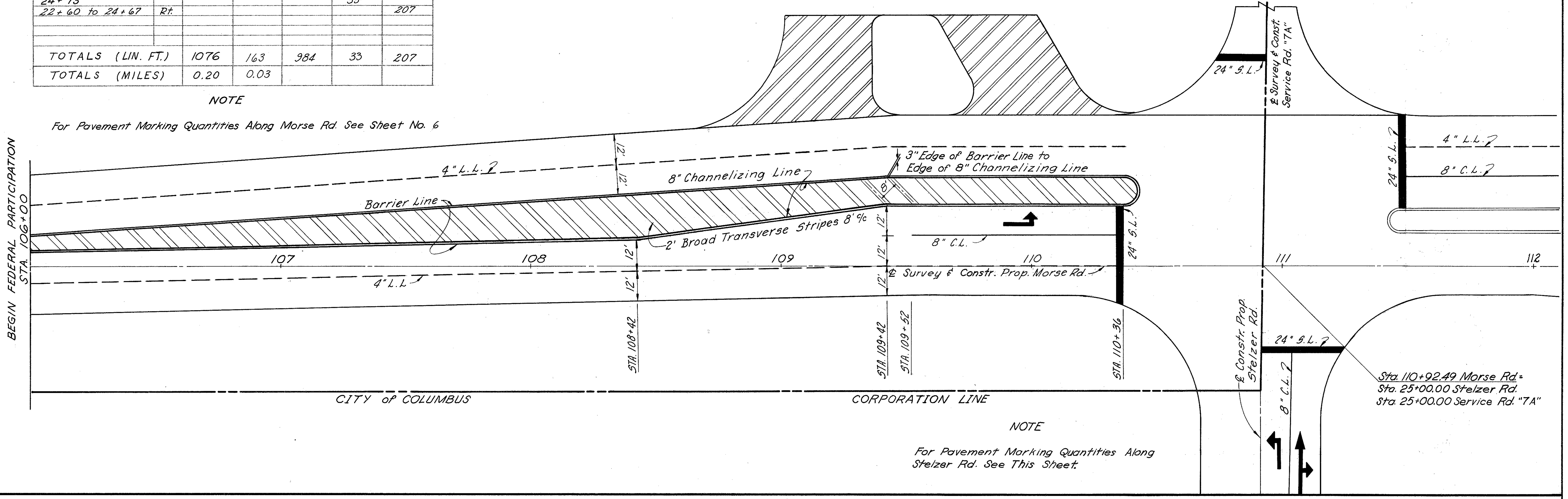
C.L. = CHANNELIZING LINE
L.L. = LANE LINE
S.L. = STOP LINE

PAVEMENT MARKING QUANTITIES
100% City of Columbus (Stelzer Road)

STATION TO STATION	SIDE	4" EDGE LINE	4" LANE LINE	BARRIER LINE	24" STOP LINE	8" CHANNELIZING LINE
19+75 to 24+67	℄			984		
19+75 to 24+88	Lt.	538				
19+75 to 24+88	Rt.	538				
22+50 to 24+67	Lt		217			
22+50 to 24+67	Rt.		217			
24+73					33	
22+60 to 24+67	Rt.					207
TOTALS (LIN. FT.)		1076	163	984	33	207
TOTALS (MILES)		0.20	0.03			

NOTE

For Pavement Marking Quantities Along Morse Rd. See Sheet No. 6

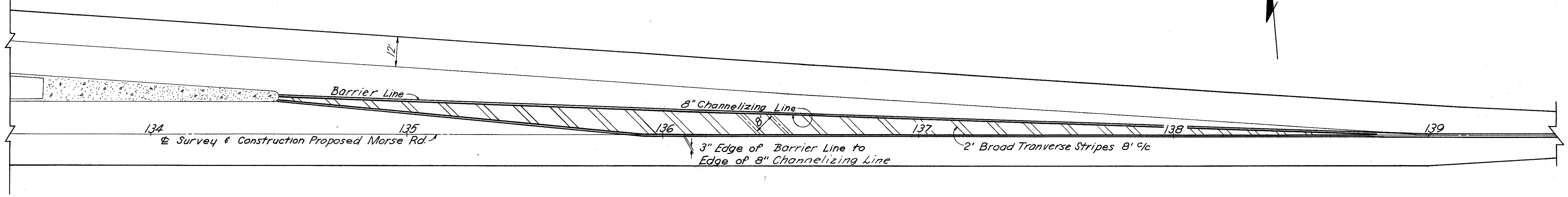


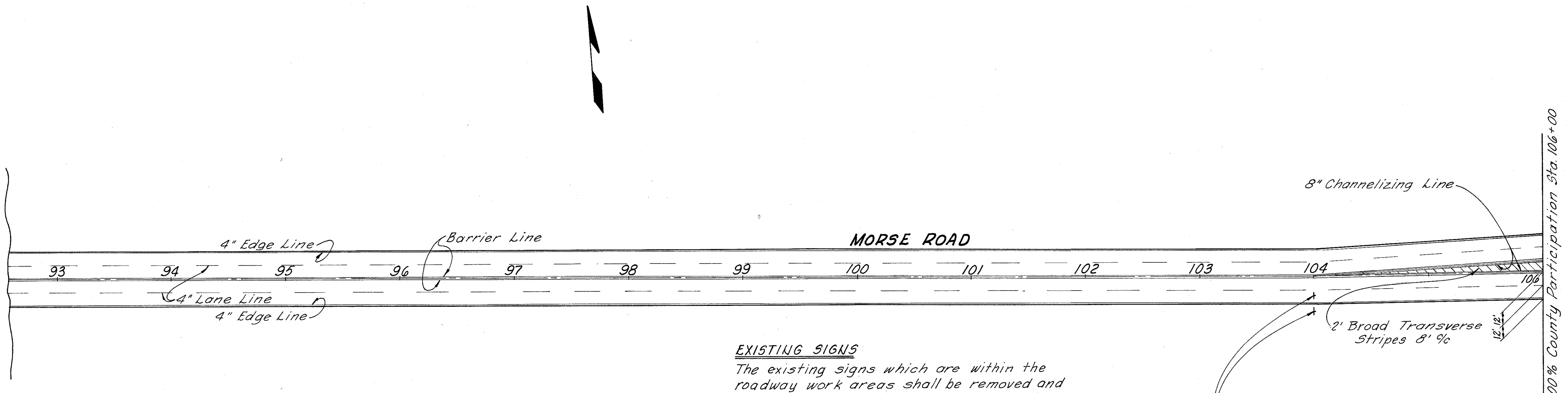
NOTE

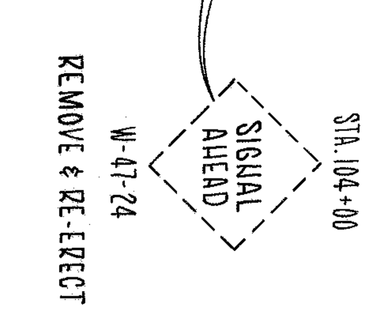
For Pavement Marking Quantities Along Stelzer Rd. See This Sheet.

NOTE

For Pavement Marking Quantities Along Morse Rd. See Sheet No. 6







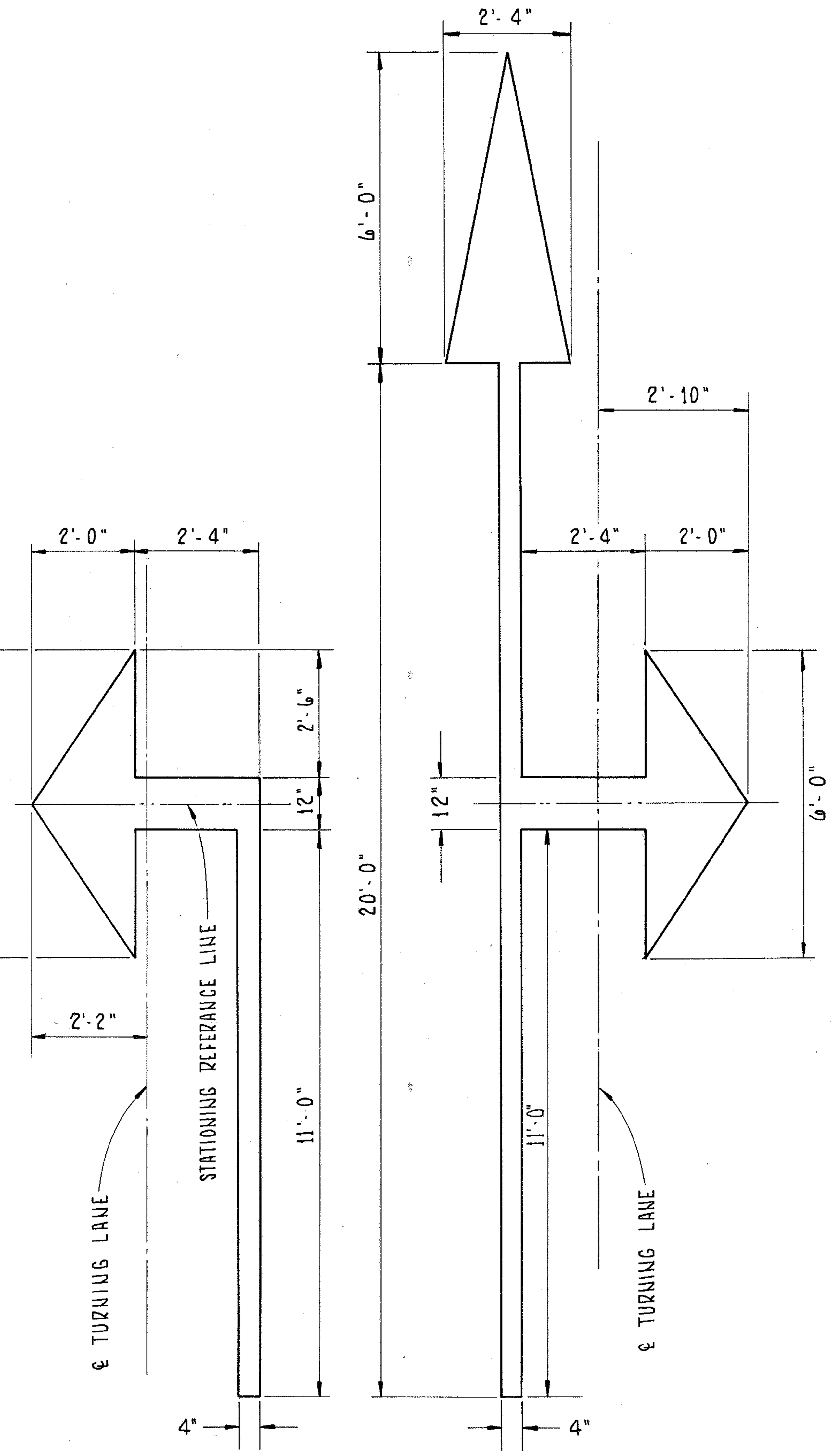
EXISTING SIGNS

The existing signs which are within the roadway work areas shall be removed and re-erected in the locations indicated by the plans. "Stop" signs will be maintained at all times while traffic is maintained. The cost of relocating these signs 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 center line of support on the P.I. of the shoulder.

NOTES

1. Length of Lane Line and length of Lane Line Space are not to scale.
2. For stationing at the beginning and end of each marking see Sub-Summary Pavement Marking.

PAVEMENT MARKING DETAILS — MORSE ROAD AND SUNBURY ROAD



LANE ARROW DETAILS

PARTICIPATION	ROADWAY	STATION	TO STATION	4" EDGE LINE L.F.	4" LANE LINE L.F.		8" CHAN. LINE L.F.	BARRIER LINE L.F.	BROAD TRANSVERSE STRIPES L.F.			LANE ARROW EA.	24" STOP LINE L.F.	
		MORSE ROAD												
100% COUNTY	E.B.	71 + 13	106 + 00	3487										
		71 + 29	82 + 00		1071									
		71 + 29	106 + 00		3471									
		71 + 60	106 + 00					3440						
		104 + 00	106 + 00				200							
	E.B.	104 + 00	106 + 00						150					
	W.B.	106 + 00	72 + 02	3408										
		106 + 00	71 + 60		3440									
		106 + 00	71 + 60					3440						
		106 + 00	104 + 00				200							
		71 + 98	71 + 48				150		202					
	W.B.	71 + 60											46	
		SUNBURY ROAD												
	N.B.	85 + 00	86 + 63	163										
		85 + 49	86 + 39				90							
		85 + 00	86 + 39					139						
		85 + 94										2		
		86 + 39											25	
		87 + 97	90 + 00	215										
		87 + 49	90 + 00					251						
	N.B.	88 + 30	90 + 00				170							
	S.B.	90 + 00	87 + 49	251										
		88 + 20	87 + 49				71							
		90 + 00	87 + 49					251						
		90 + 00	88 + 30				170							
		87 + 84										2		
		87 + 49											24	
		86 + 39	85 + 00					139						
100% COUNTY		85 + 42	85 + 00	42										
		TOTAL IN LIN. FT.		7566	7982		1051	7660	352			4	95	
		15/40 x LIN. FT.			2993									
		TOTAL IN MILES		1.43	.57									
		GRAND TOTALS		1.43	.57		1051	7660	352			4	95	

PAVEMENT MARKINGS HAVE BEEN SELECTED TO INDICATE THE PATTERNS ESTABLISHED BY PAVEMENT MARKING DETAILS. EACH SECTION OF MAINLINE PAVEMENT LISTED INCLUDES 4" EDGE LINE AND/OR 8" CHANNELIZING LINE AS APPLICABLE FOR BOTH SIDES OF PAVEMENT, AND 4" LANE LINES AS REQUIRED FOR THE NUMBER OF LANES.

621-PAVEMENT MARKING

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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FRANKLIN COUNTY
FRA-270-22.99N

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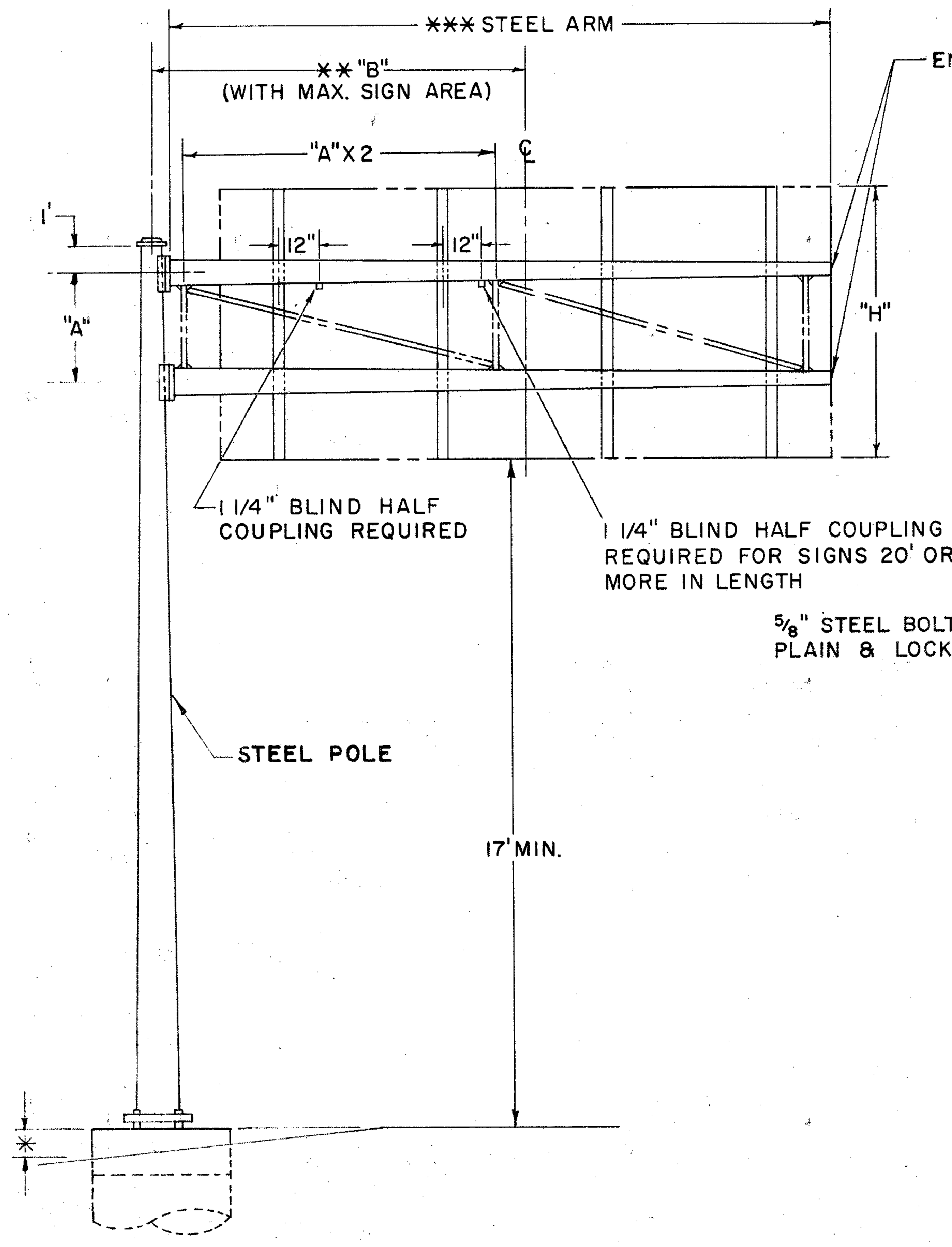
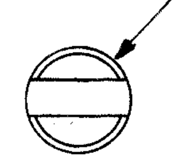
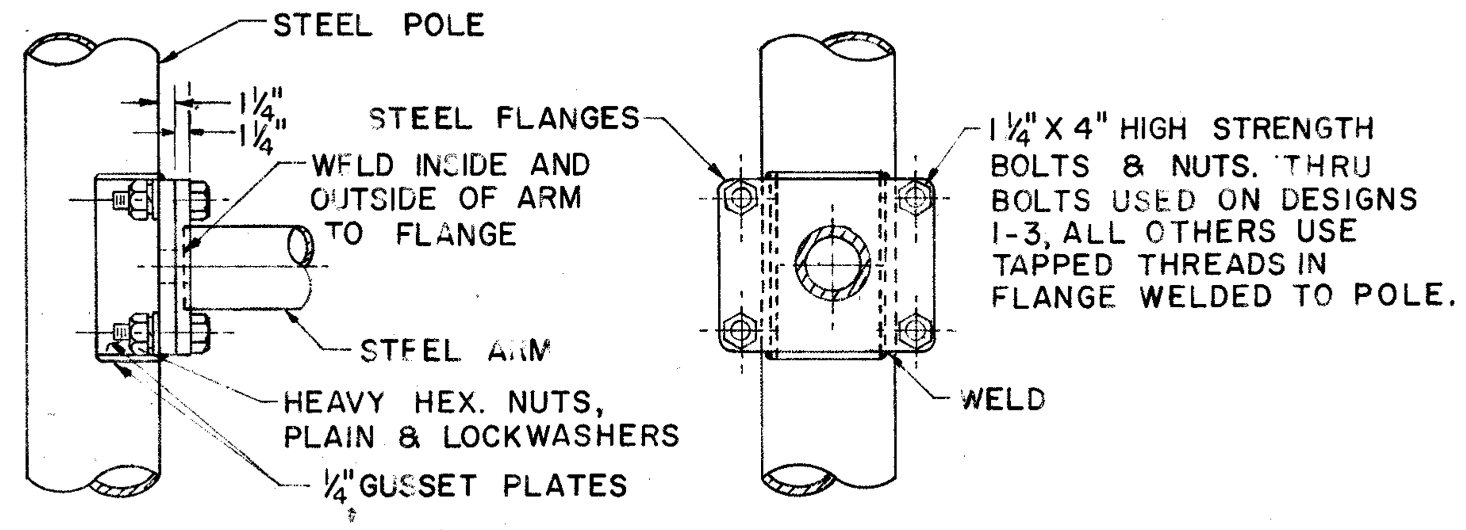
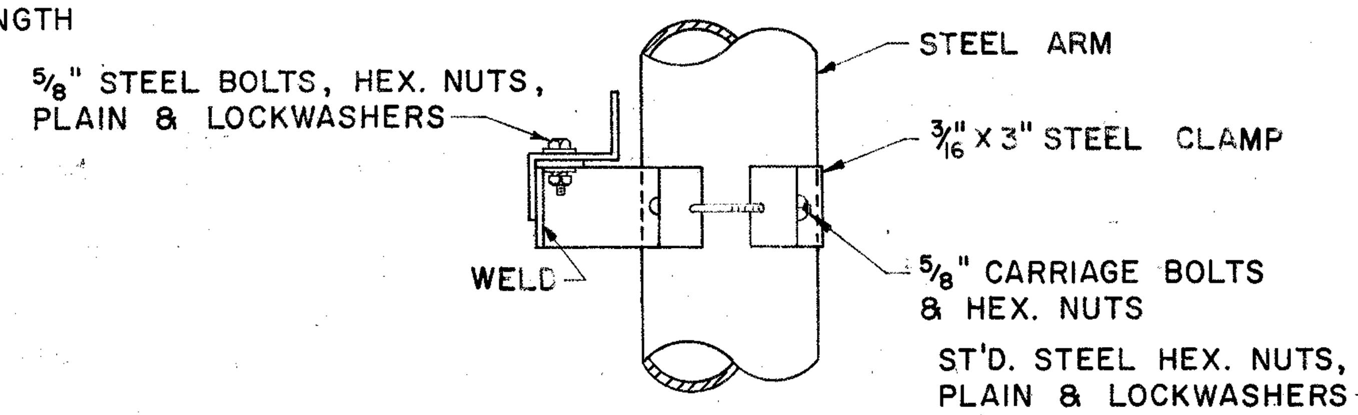
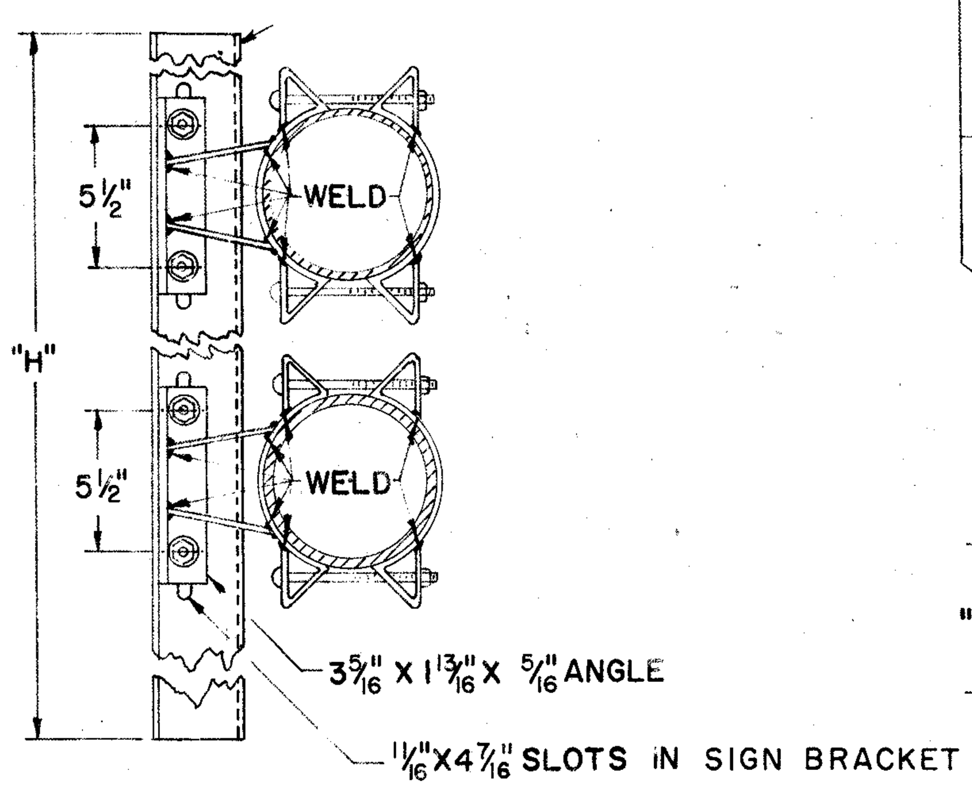


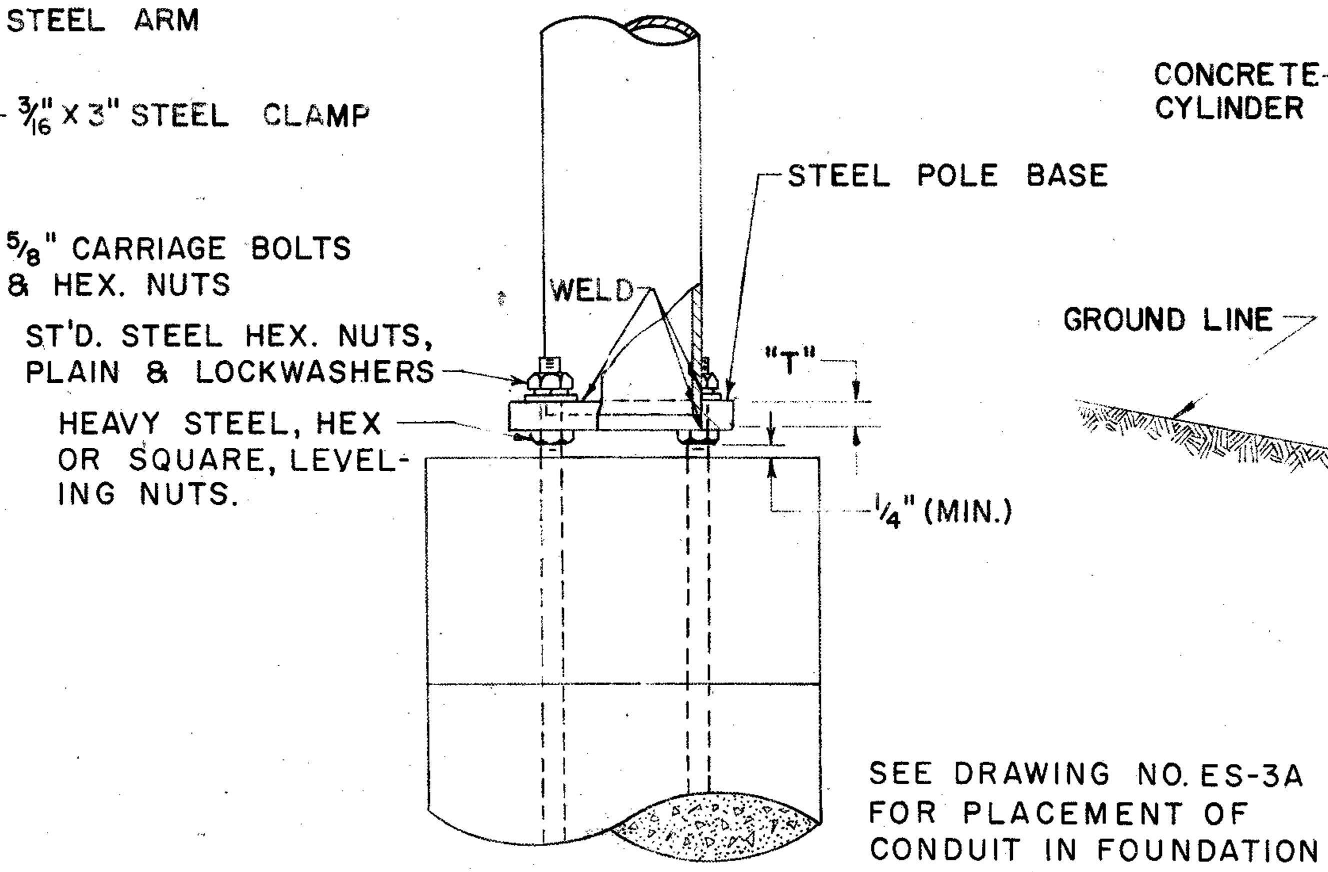


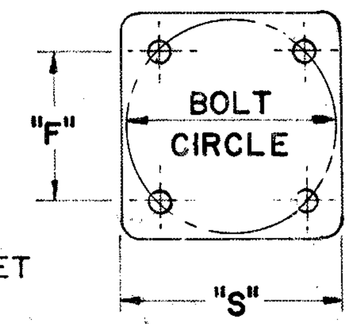


ARM ATTACHMENT

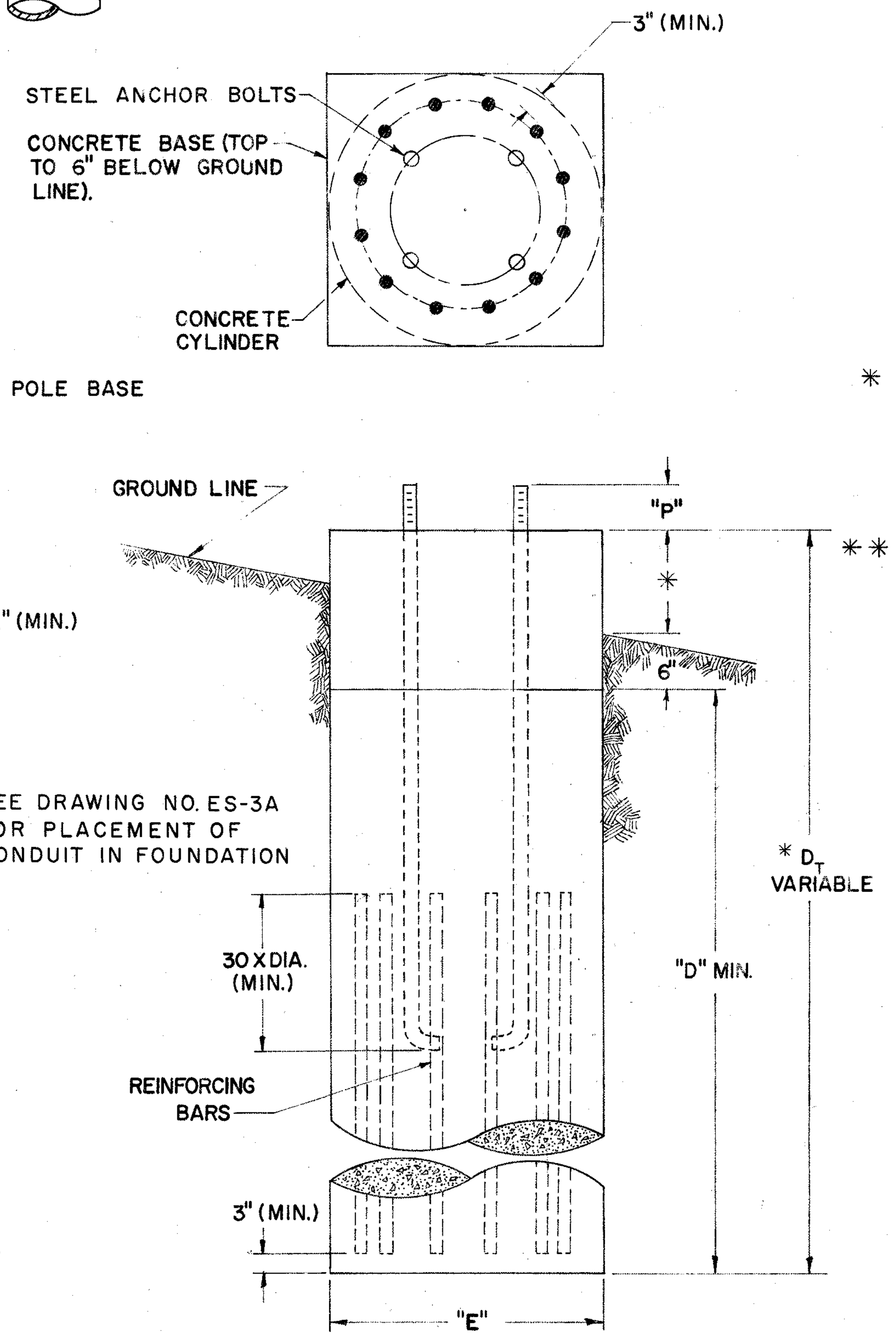








POLE BASE DETAIL



FOUNDATION DETAIL

NOTE:
THE 12" DIMENSION SHOWN FOR BLIND HALF COUPLINGS MAY BE INCREASED OR DECREASED WHEN NECESSARY TO TO PREVENT INTERFERENCE WITH OTHER MEMBERS.

SIGN ATTACHMENT 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"	7 3/4"	17"	2"	16"	1 3/4" X 90"	80	3/4"	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"	7 3/4"	17"	2"	16"	1 3/4" X 90"	80	3/4"	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"	15 1/2"	8 3/8"	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"	16 5/8"	8 3/8"	24 1/2"	2"	23 1/2"	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"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 120"	180	1 1/8"	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"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 120"	180	1 1/8"	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"	9 3/4"	26 1/2"	2 1/2"	25 1/2"	2 1/2" X 144"	240	1 1/4"	12
8	2 PLY 1/4", 18" X 14.36" X 26'-0"	3 Ga, 12.5" X 8.58" X 28'-0"	6'	18'	15'	3'-0"	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 144"	240	1 1/4"	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 3/8" 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 A 193 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.

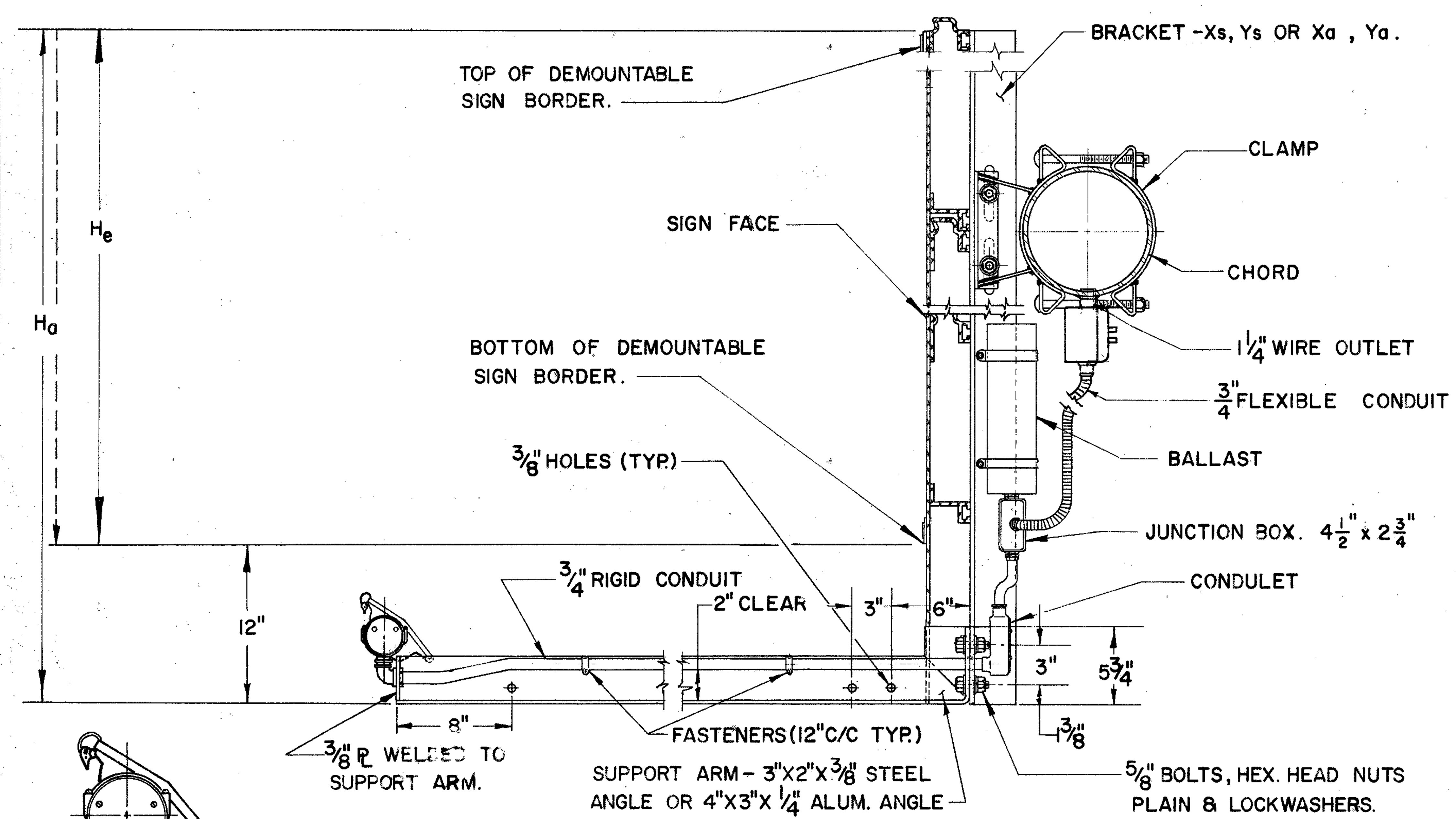
DESIGN

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.

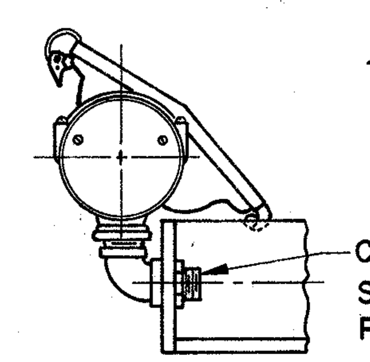
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT	816 No. 12.24	DATE 8-18-61 4-11-62 4-18-67

APPROVED Robert E. Conner
ENGINEER OF TRAFFIC



STANDARD FIXTURE LOCATION (BELOW)



FIXTURE CONNECTION WHERE WIRING CONDUIT IS NOT NEEDED.

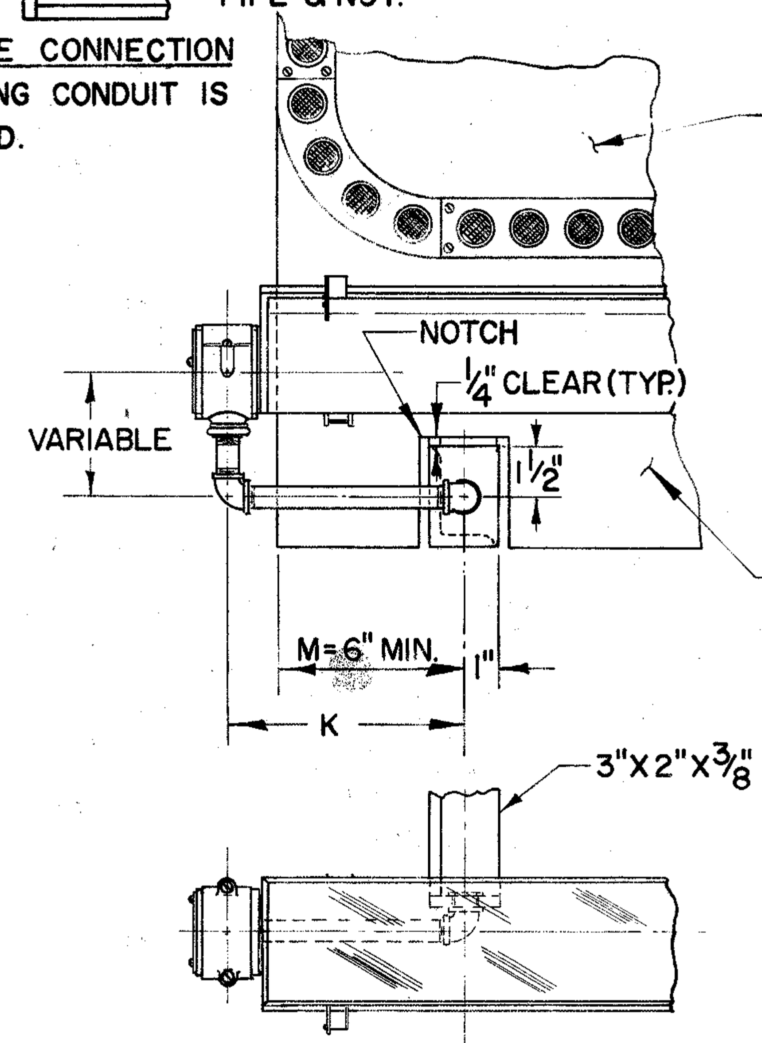
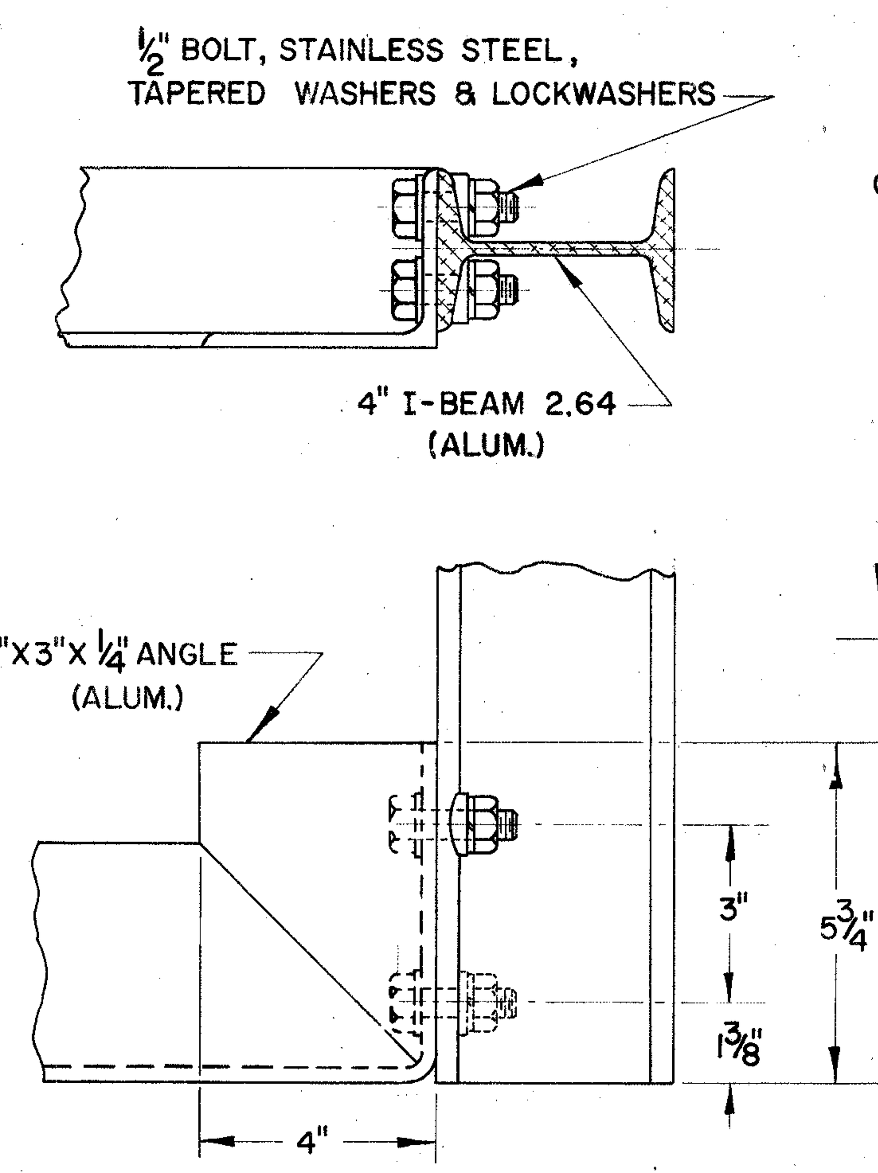


TABLE III.

L	K
6'-0"	7 11/16"
7'-0"	1 11/16"
12'-0"	9 3/8"
13'-0"	3 3/8"

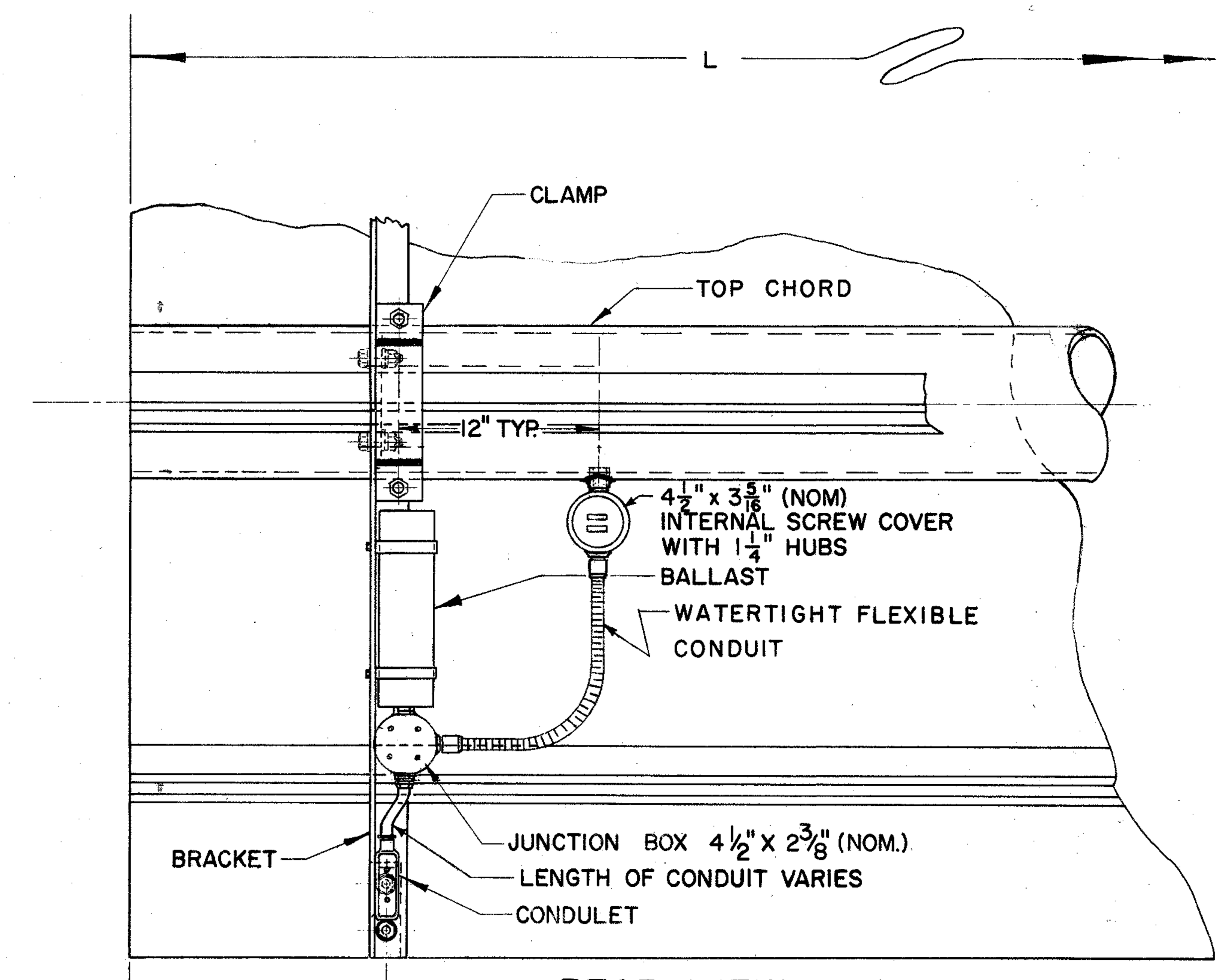
ALTERNATE FIXTURE CONNECTIONS FOR SIGN 6', 7', 12' & 13' IN LENGTH.

DETAIL A.

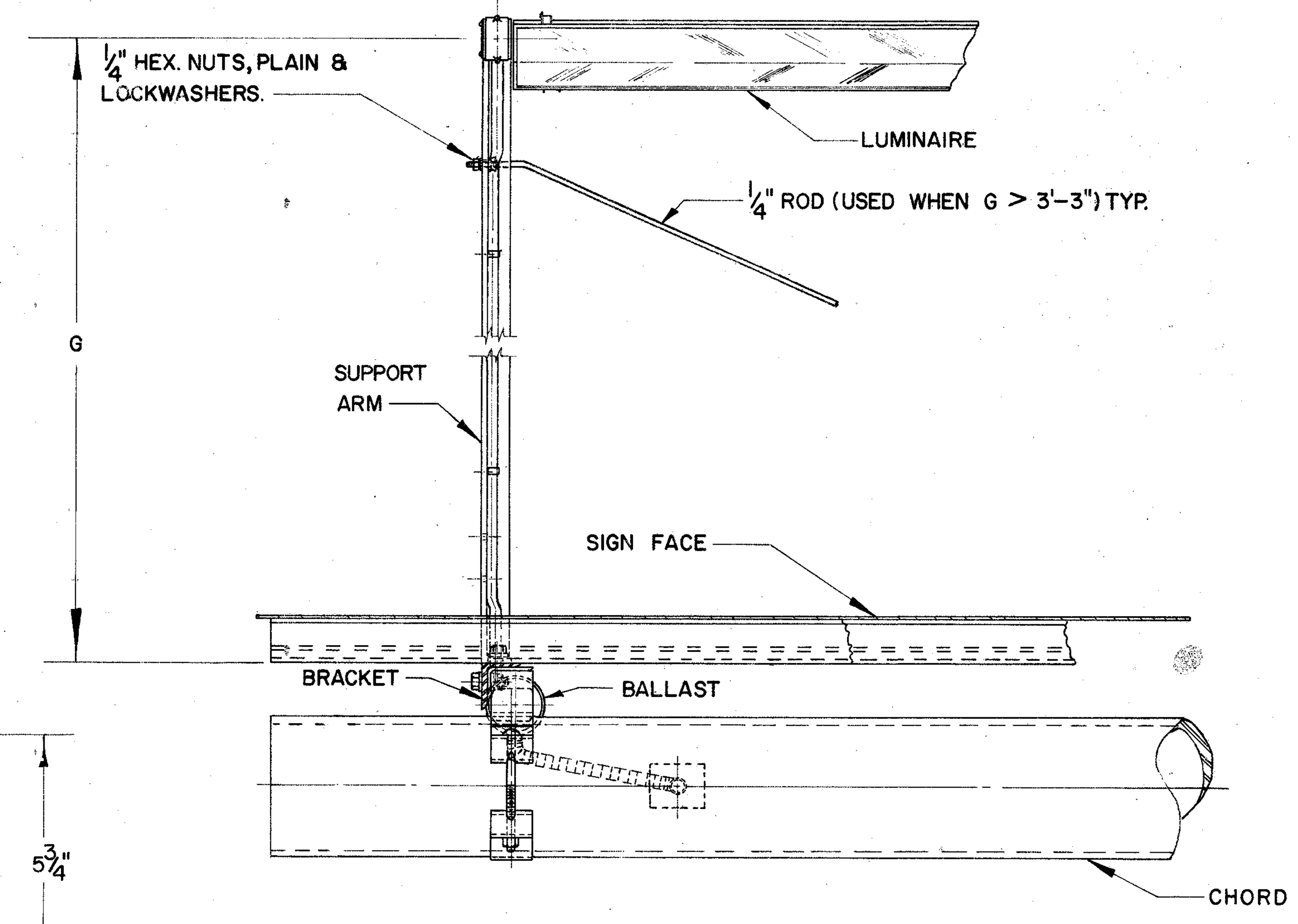


FOR SUPPORTS 7.2-7.6

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 A	"L" SIGN LENGTH B	NUMBER OF FIXTURES 75⅜	NUMBER OF FIXTURES 99⅜	"M" EDGE DISTANCE A LT.	A RT.	B LT.	B RT.	NO. BALLAST
6'-0"	7'-0"	1		6"	6"	6"	6"	1
8'-0"	9'-0"	1		10⅜	10¼	16⅜	16¼	1
10'-0"	11'-0"		1	10⅜	10¼	16⅜	16¼	1
12'-0"	13'-0"	2		6"	6	6	6	1
14'-0"	15'-0"	2		8⅝	8⅝	14⅝	14⅝	1
16'-0"	17'-0"	1	1	8⅝	8⅝	14⅝	14⅝	1
18'-0"	19'-0"		2	8⅝	8⅝	14⅝	14⅝	1
20'-0"	21'-0"	3		7"	6⅞	13	12⅞	2
22'-0"	23'-0"	2	1	7"	6⅞	13	12⅞	2
24'-0"	25'-0"	1	2	7"	6⅞	13	12⅞	2
26'-0"	27'-0"		3	7"	6⅞	13	12⅞	2

Sn = Nominal Fixture Length, 72" & 96" respectively.
Sa = Actual Fixture Length, for mounting purposes, 75⅜" and 99⅜" 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: SINGLE TUBE, DOUBLE TUBE LESS 36" C/C	9.24, 10.48, 12.24, 14.5, 15.8, 7.2 to 7.6: DOUBLE TUBE C/C 36"-42"	DOUBLE TUBE C/C 48"-54"	DOUBLE TUBE 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 = 3½" X 2½" X 5/16" — L @ 6.1 LB. STEEL } 9.12, 10.48, 11.08,
Ys = 4" X 3 1/16" X ¼" — Z @ 8.2 LB. STEEL } 12.24, 14.5 & 15.8
Xa = 3" X 2 11/16" X ¼" — Z @ 2.33 LB. ALUM. } 7.2 Thru 7.6
Ya = 4" X 2 21/32" X 3/16" — I @ 2.64 LB. ALUM.

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"X¼" 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

APPROVED Fred C. Tarbox
ENGINEER OF TRAFFIC

STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

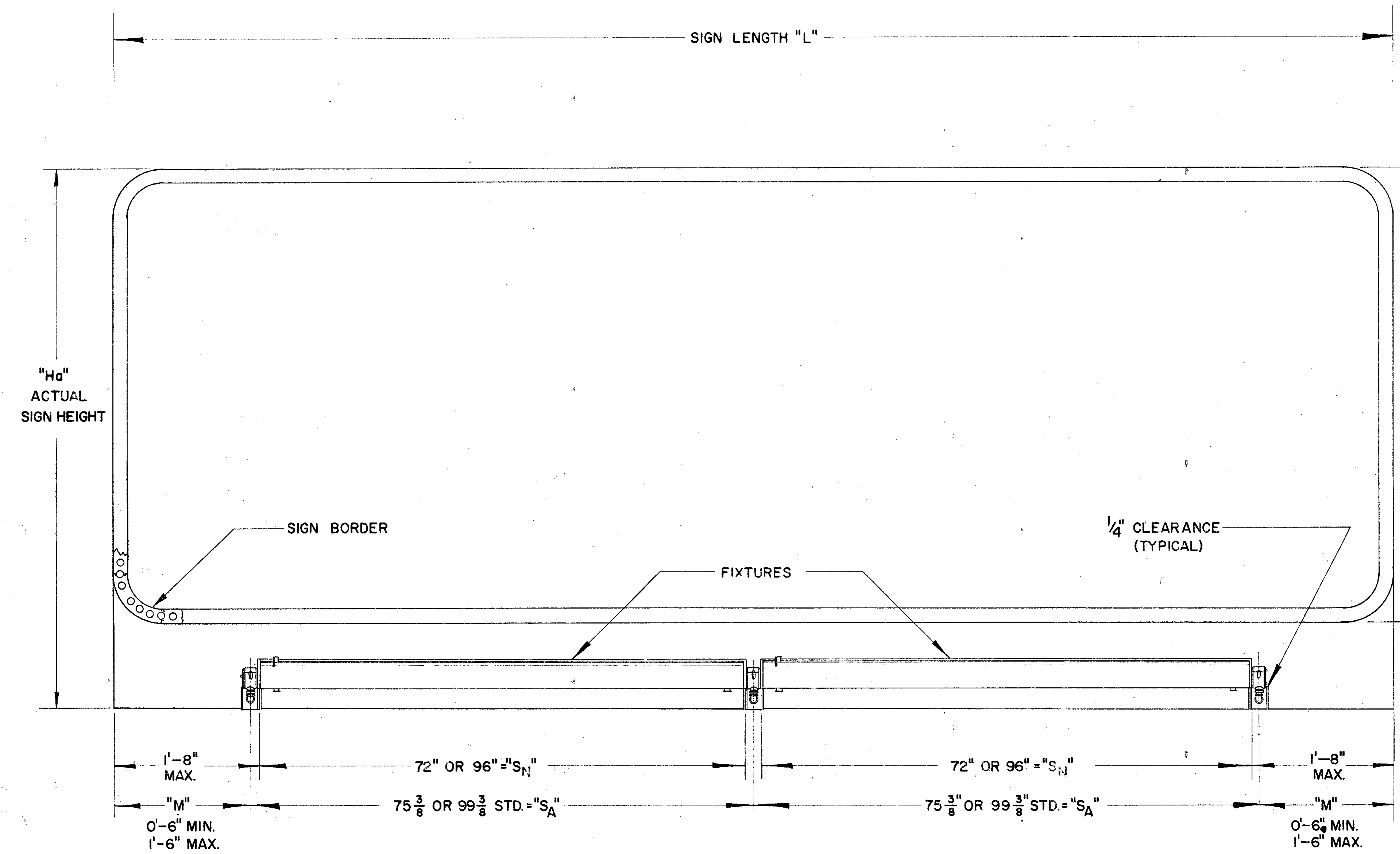
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

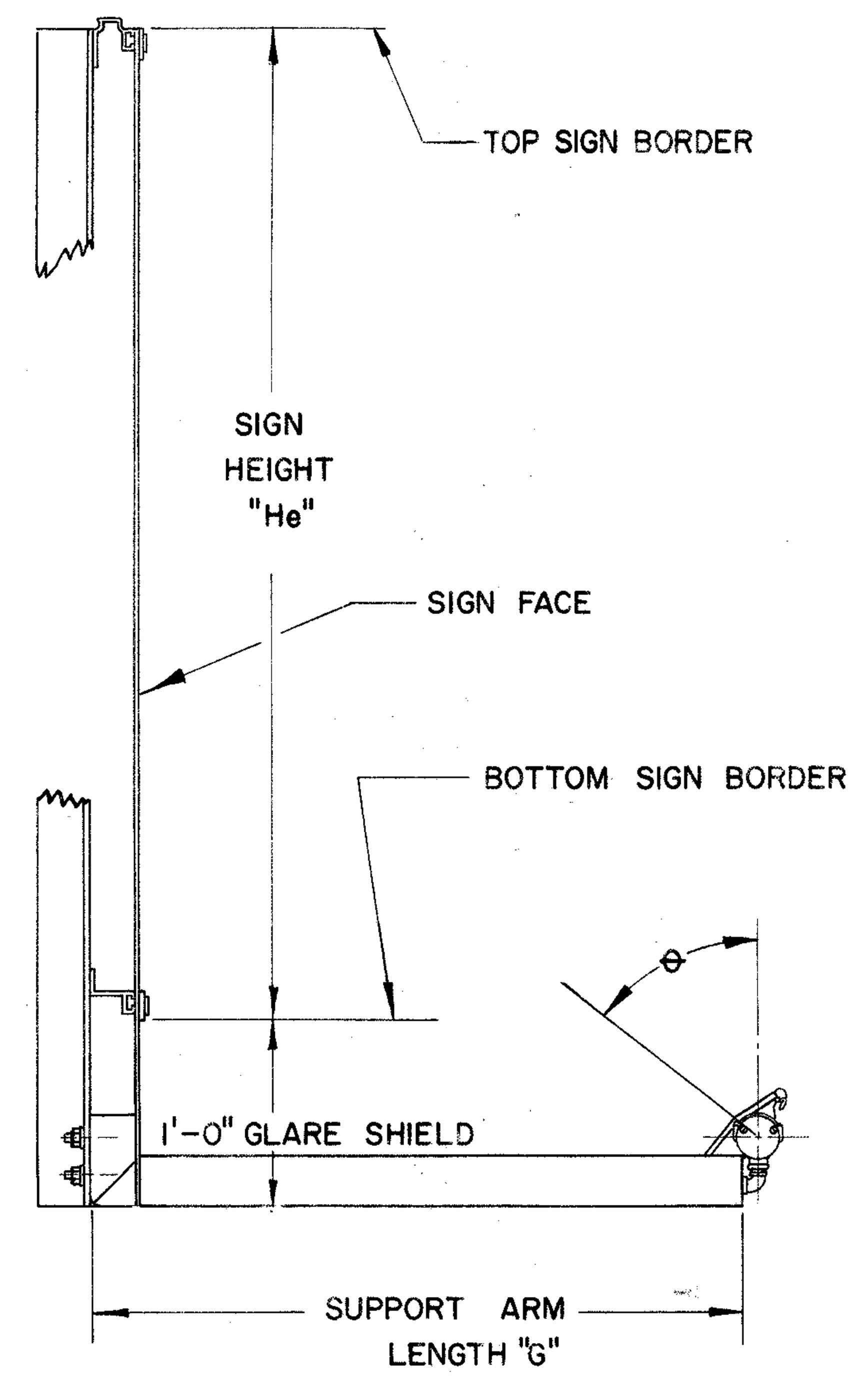
218/292

FRANKLIN COUNTY
FRA - 270 - 22.99N

20/29

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-PG17/CW 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	220-241	.25	Y
II	9T51Y8	220-251	.50	Y
III	9T51Y9	220-261	.75	Y
IV	9T51Y10	220-071-100	1.00	Z
V	9T51Y11	220-081-100	1.50	Z
VI	9T51Y12	220-091-100	2.00	Z
VII	9T51Y13	221-102	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

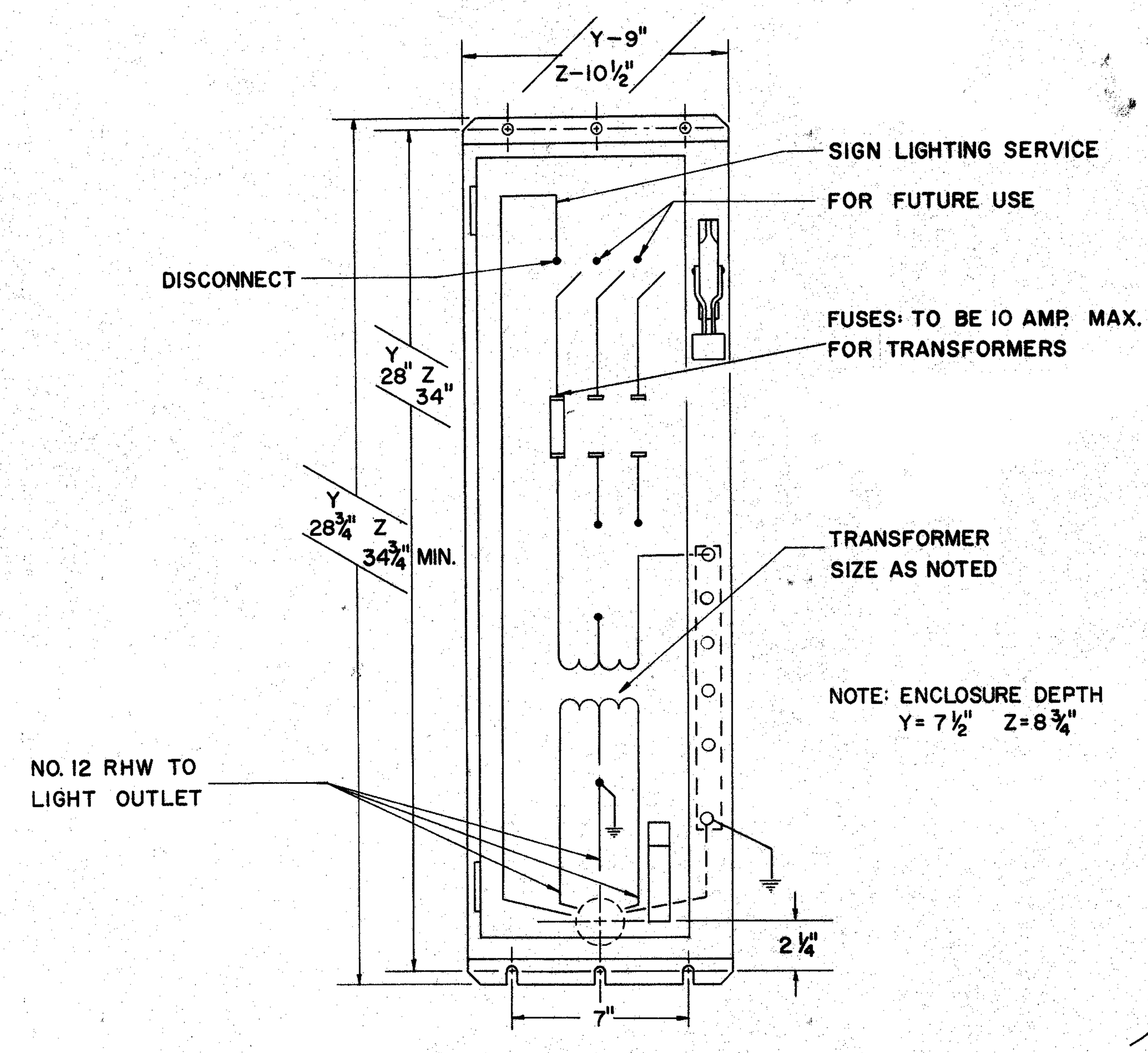
APPROVED Fred C. Talbot
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

219 / 292

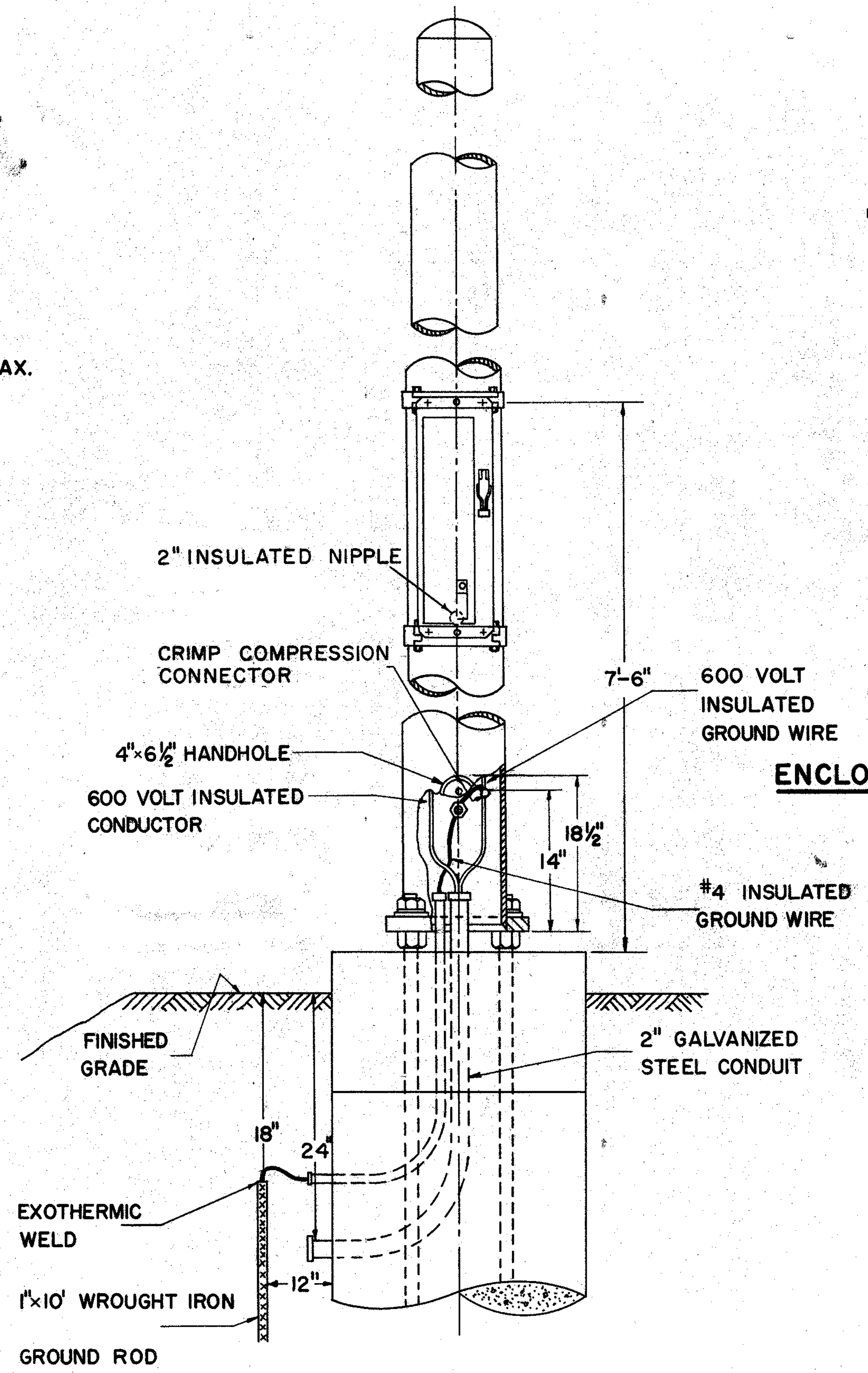
FRA-270-22.99 N

21 / 29

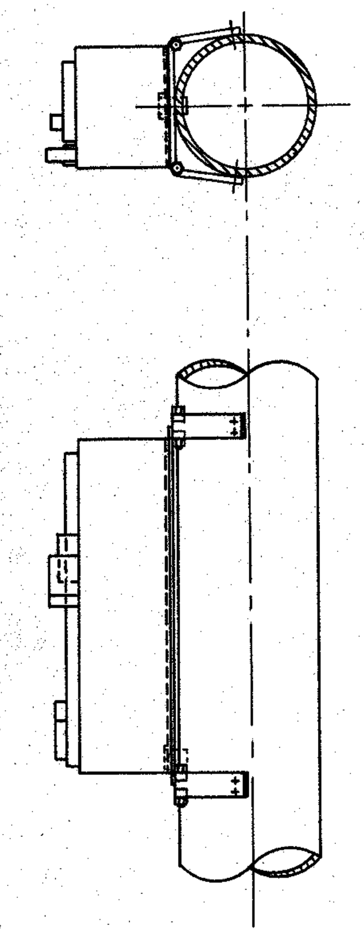


TYPICAL ENCLOSURE DETAIL

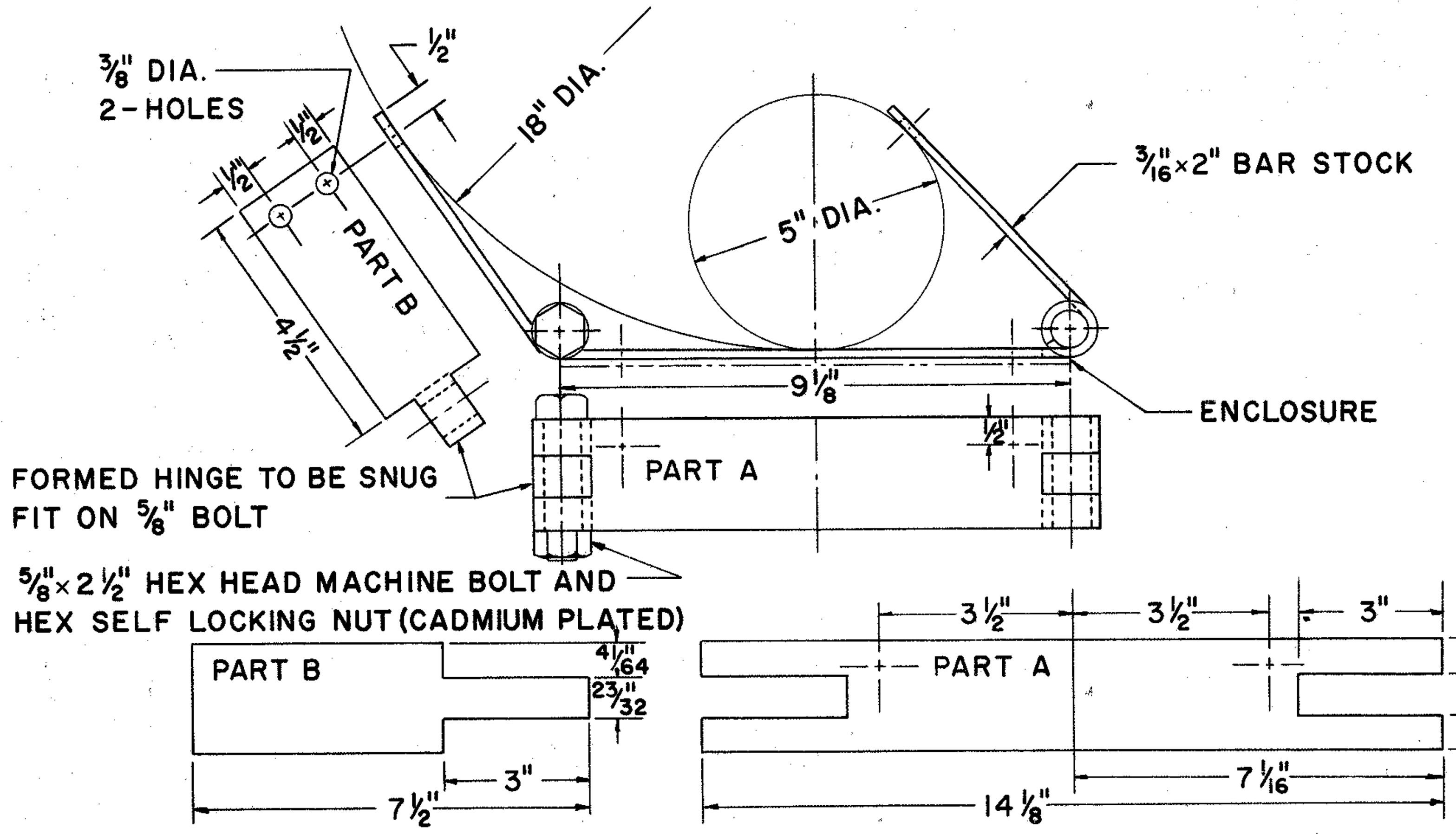
480 VOLT SIGN LIGHTING SERVICE



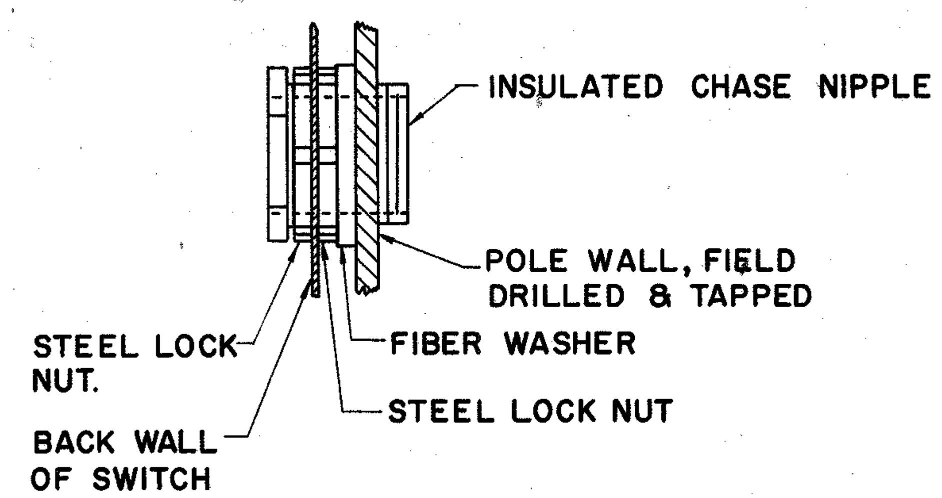
SIGN SUPPORT DETAIL FOR ILLUMINATED SIGNS



ENCLOSURE MOUNTING DETAIL



ENCLOSURE MOUNTING BRACKET



INSULATED CHASE NIPPLE ASSEMBLY

AS MANUFACTURED BY THOMAS BETTS, APPELTON, STEEL CITY OR EQUAL

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 2 1/4" 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 5/16-18×3/4" 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 UP TO AND INCLUDING #4 SHALL COMPLY WITH FAA TYPE A SPECIFICATIONS. #2 OR LARGER WIRE OR CABLE SHALL BE G.E. 58006 OR ANACONDA AP-10711, OR EQUAL. ALL WIRE AND CABLE SHALL BE 600 VOLT.

GROUNDING

EACH SIGN SUPPORT OR STRUCTURE SHALL BE GROUNDED WITH A #4 RUBBER INSULATION AND NEOPRENE JACKETED CONDUCTOR. THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE SWITCH THEN TO THE COMPRESSION CONNECTOR IN THE SIGN SUPPORT THEN TO A 1"×10' SOLID WROUGHT IRON 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.

TRANSFORMERS

TYPE	MANUFACTURERS		OUTPUT K.V.A.	SWITCH TRANSFORMER ENCLOSURE
	G.E.	JEFFERSON		
I	9T51Y7	220-241	.25	Y
II	9T51Y8	220-251	.50	Y
III	9T51Y9	220-261	.75	Y
IV	9T51Y10	220-071-100	1.00	Z
V	9T51Y11	220-081-100	1.50	Z
VI	9T51Y12	220-091-100	2.00	Z
VII	9T51Y13	221-102	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

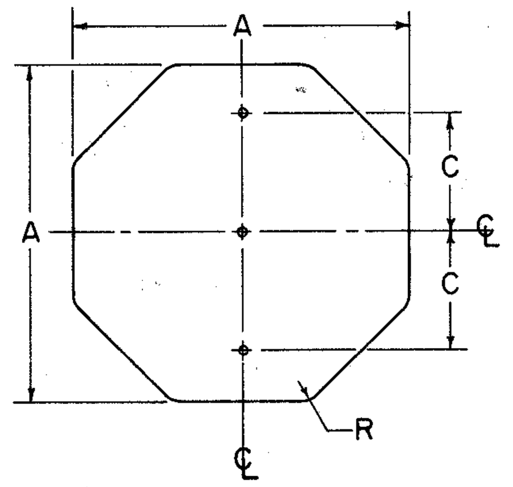
APPROVED ____________
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

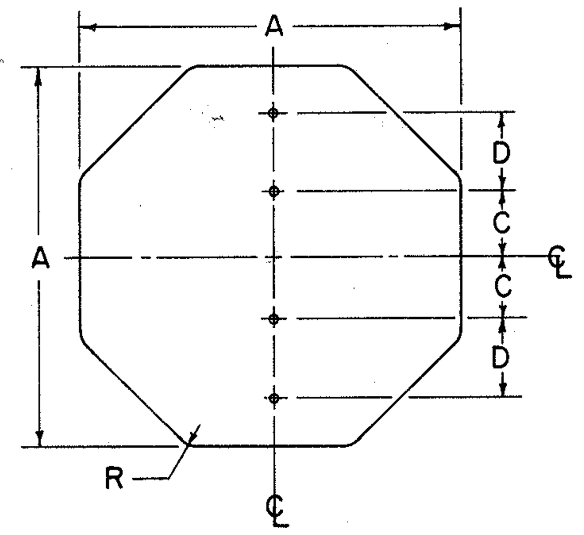
220/292

FRANKLIN COUNTY
FRA-270-22.99N

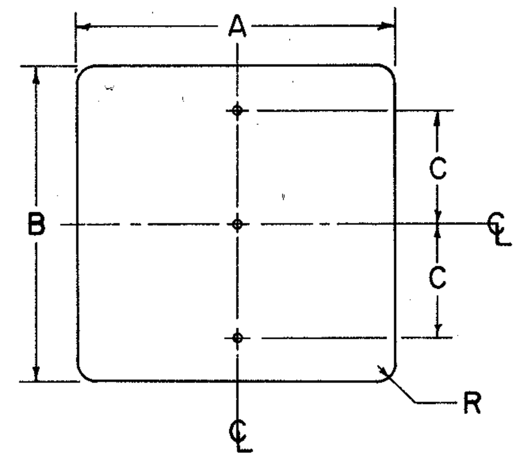
22/29



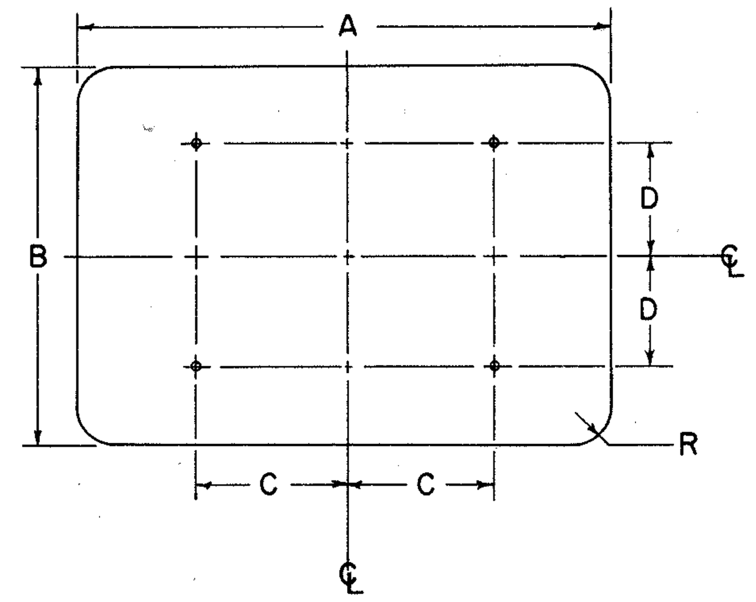
A	C	R	GAUGE
30	8	1 1/2	.080
36	8	1 1/2	.080



A	C	D	R	GAUGE
48	8	10	1 1/2	.100

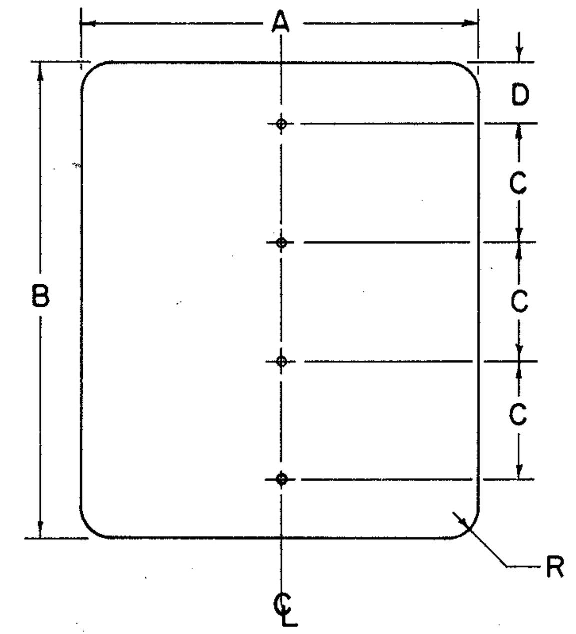


A	B	C	R	GAUGE
30	42	12	1 1/2	.080
36	36	11	1 1/2	.080
36	42	15	1 1/2	.080
36	48	15	1 1/2	.080
48	24	10	3	.100
48	36	13	3	.100

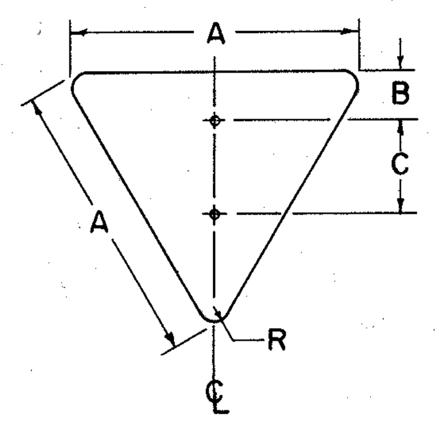


A	B	C	D	R	GAUGE
48	48	22	16	3	.100
48	60	22	22	3	.100

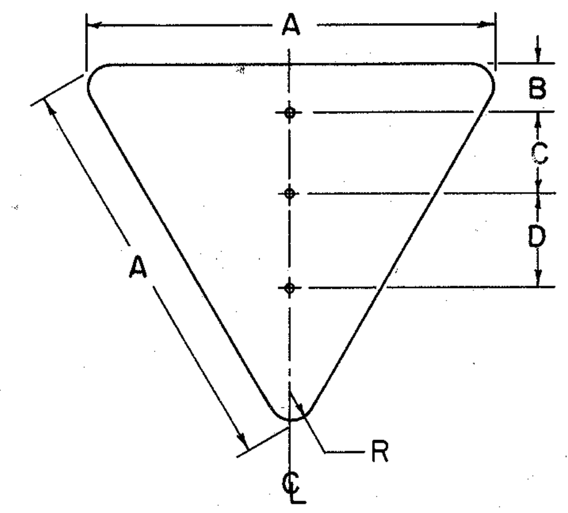
SPEED LIMIT SIGNS ON TWO SUPPORTS



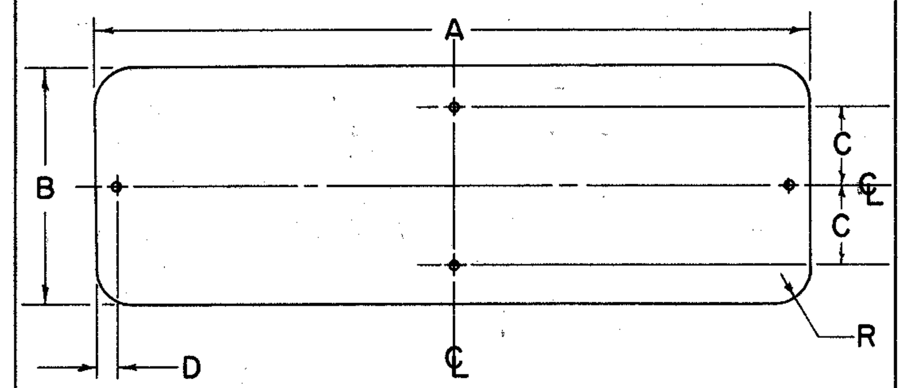
A	B	C	D	R	GAUGE
48	48	12	6	3	.100
48	60	15	7 1/2	3	.100



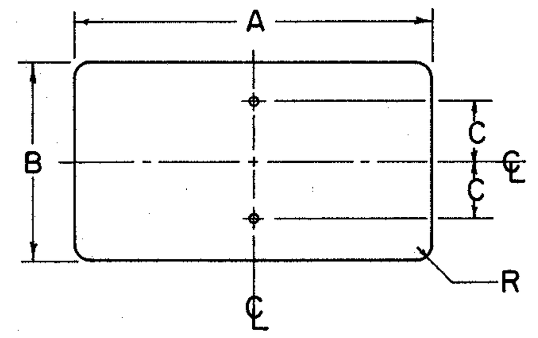
A	B	C	R	GAUGE
36	3	16	2 1/2	.080



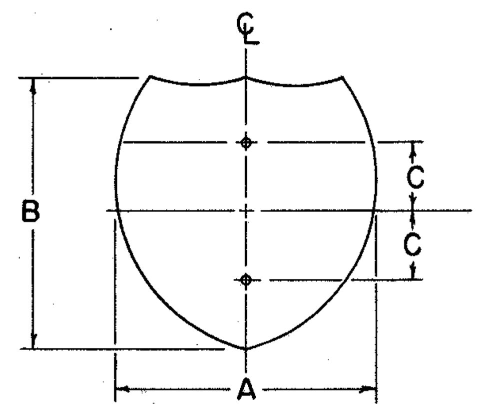
A	B	C	D	R	GAUGE
48	4	10	15	3	.100
60	5	10	15	4	.100



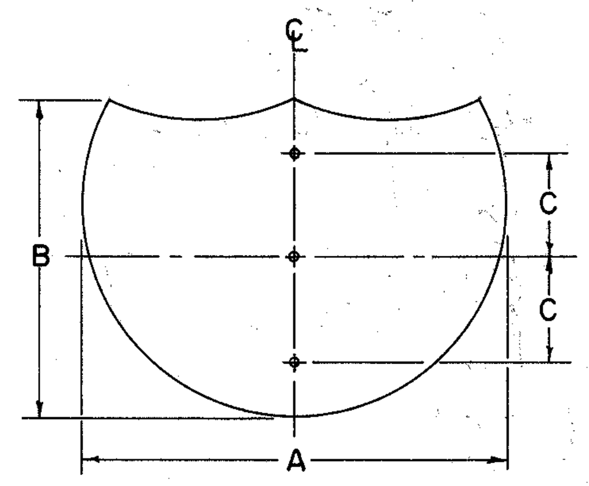
A	B	C	D	R	GAUGE
36	12	4	1	1 1/2	.080



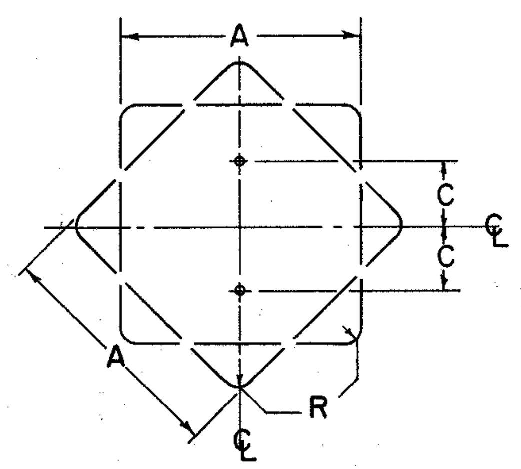
A	B	C	R	GAUGE
12	6	3	1 1/2	.063
20	15	6	1 1/2	.063
24	12	4 1/2	1 1/2	.063
24	18	15	1 1/2	.063
24	30	8	1 1/2	.063
24	48	10	1 1/2	.100
30	36	10 1/2	1 1/2	.080
36	18	7 1/2	1 1/2	.080



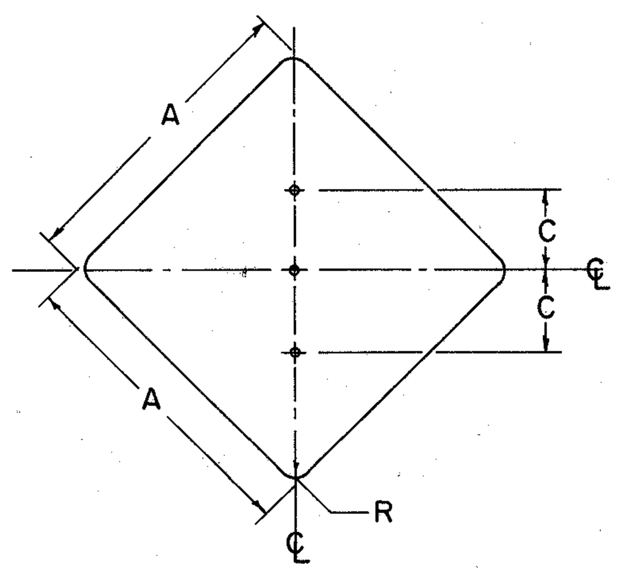
A	B	C	GAUGE
24	24	8	.063
30	24	8	.080



A	B	C	GAUGE
36	36	11	.080
48	36	11	.100

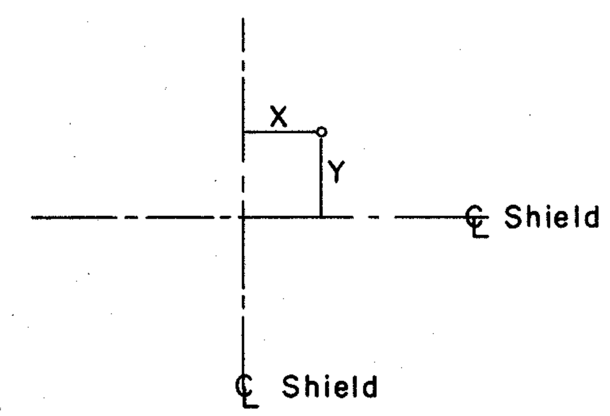


A	C	R	GAUGE
18	7 1/2	1 1/2	.063
24	8	1 1/2	.063
30	8	1 1/2	.080



A	C	R	GAUGE
36	12	3	.080
48	14	3	.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 DEMENSIONS 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.

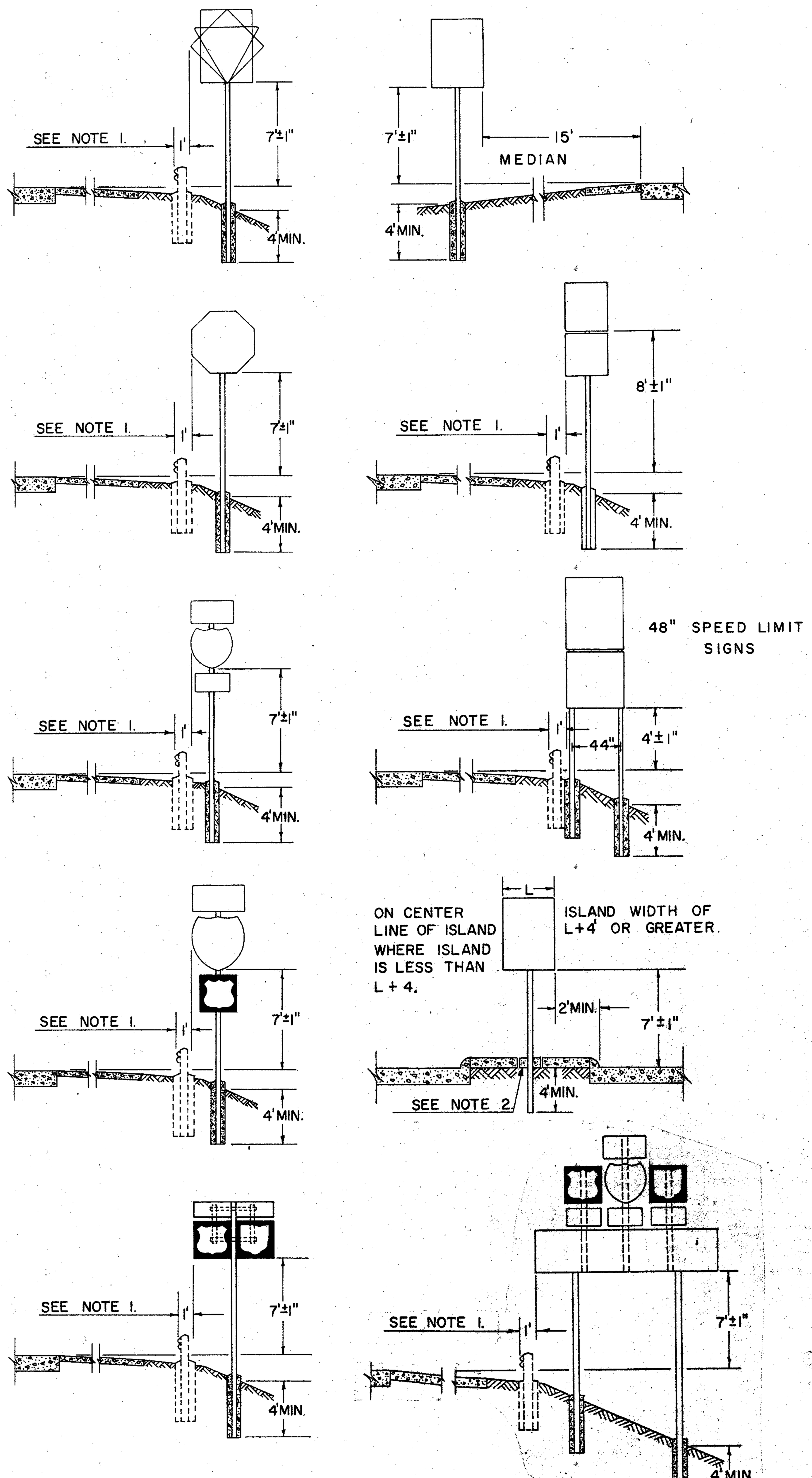
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

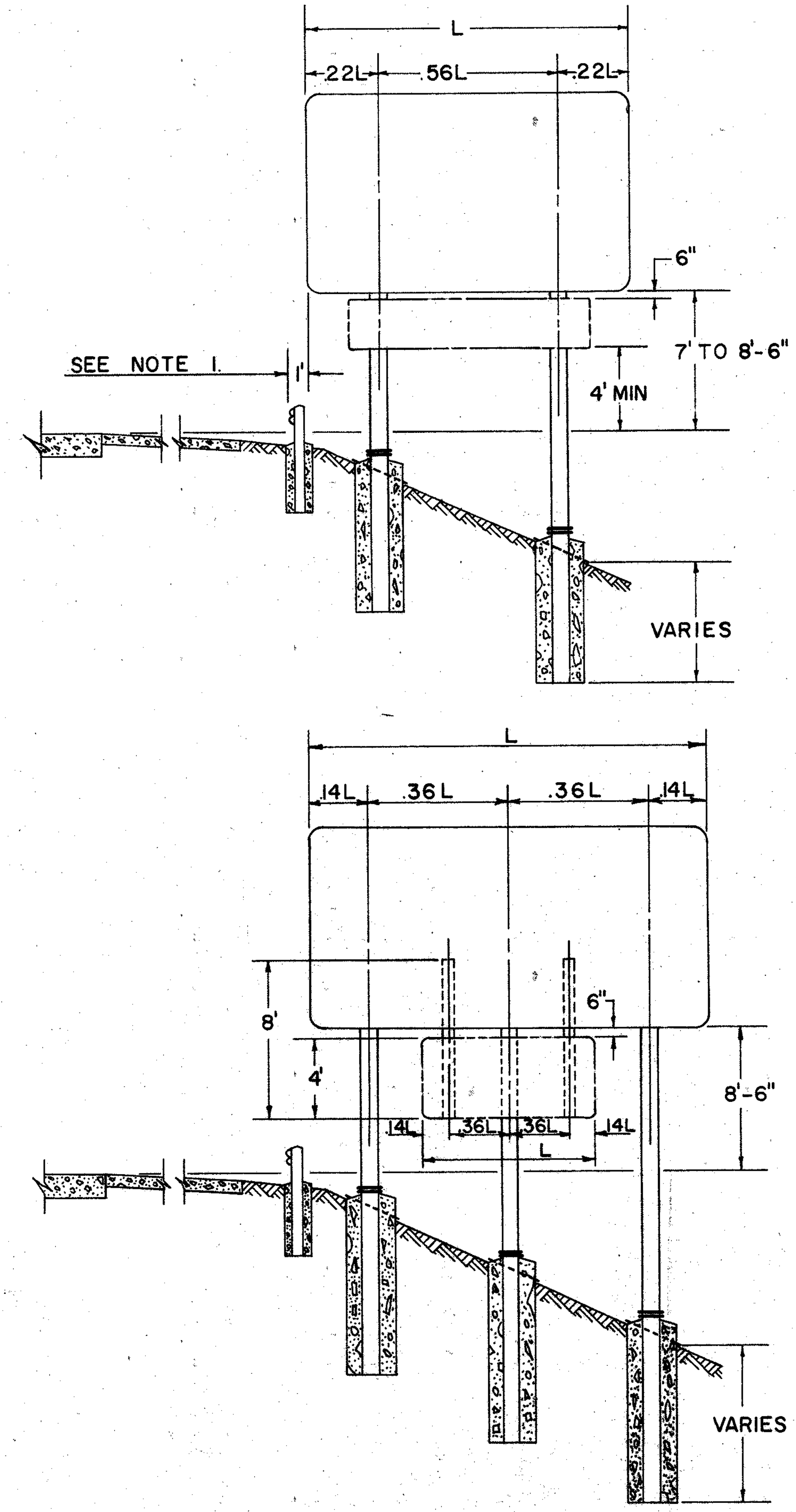
SIGN BLANK DETAILS

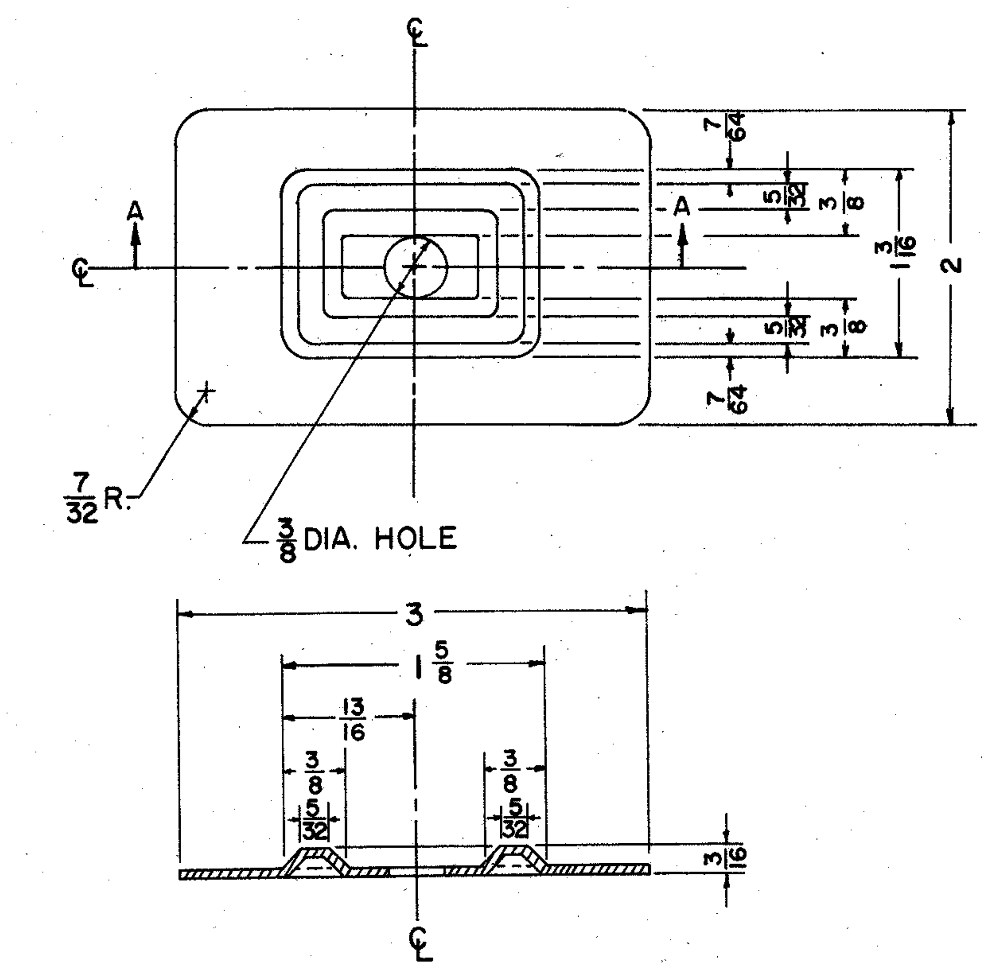
SBD

DATE 4-14-67

APPROVED____________
ENGINEER OF TRAFFIC

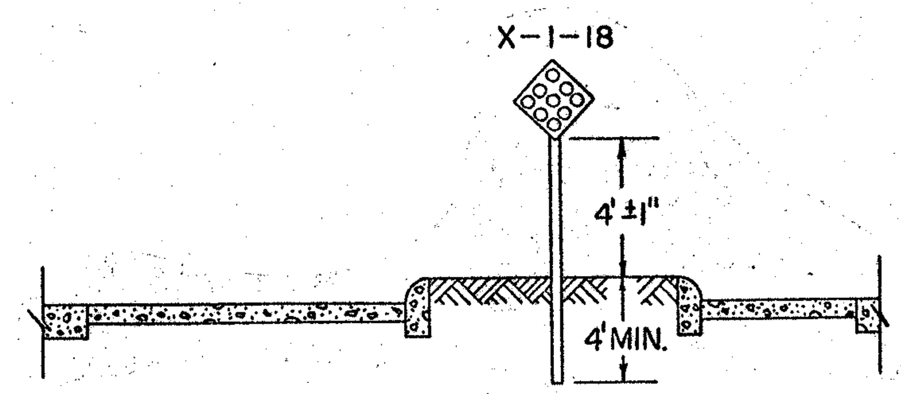






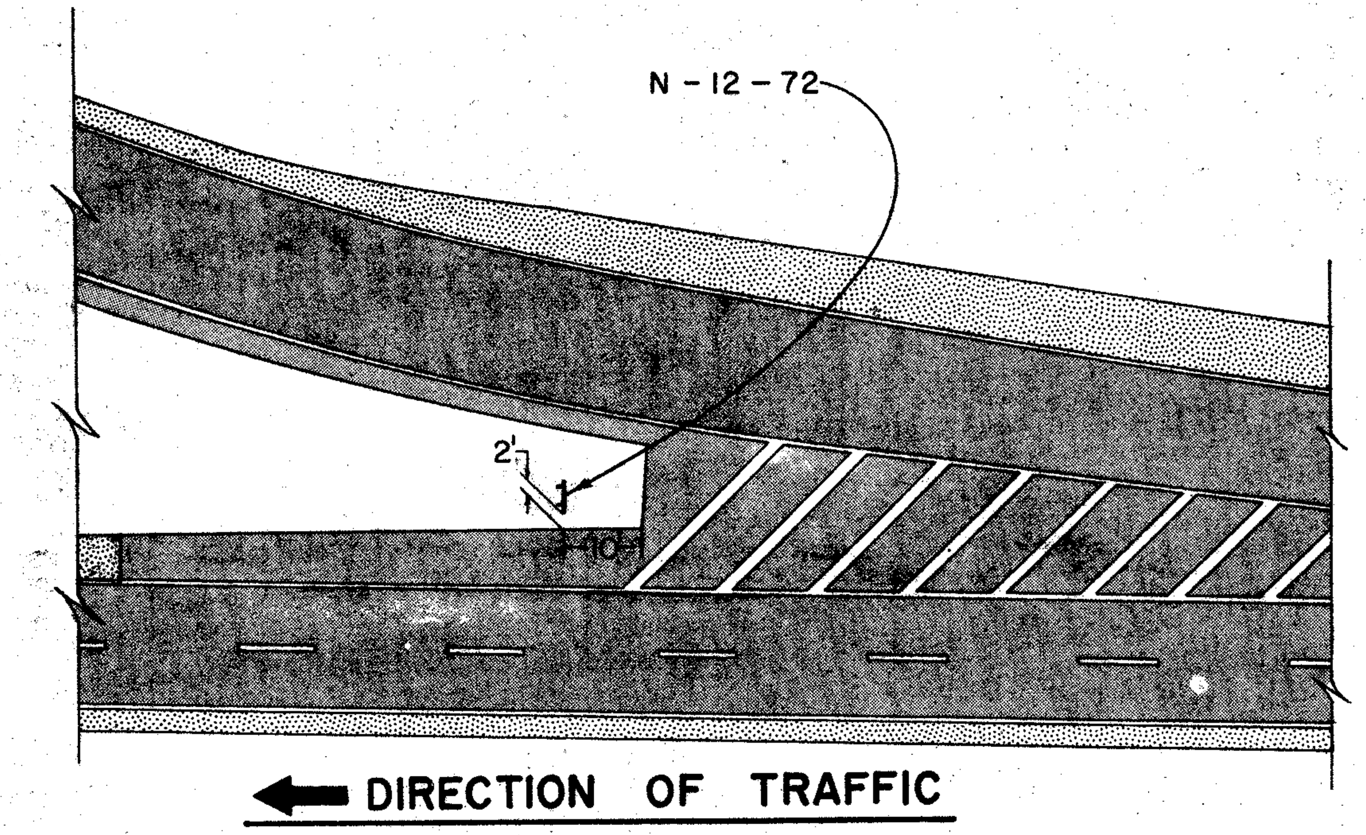
NOTE:
THE PLATE IS SYMMETRICAL ABOUT EITHER CENTERLINE.
METAL SHALL BE 16 GAUGE STEEL.
ALL DIMENSIONS ARE IN INCHES.

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 ONE FOOT (1') 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 ONE FOOT (1') 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) ONE FOOT (1') 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 ASPHALT OR PORTLAND 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.

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS		
TYPICAL PLACEMENT OF SIGNS	TPS-1	DATE 9-27-67 7-12-68
APPROVED ______ ENGINEER OF TRAFFIC		

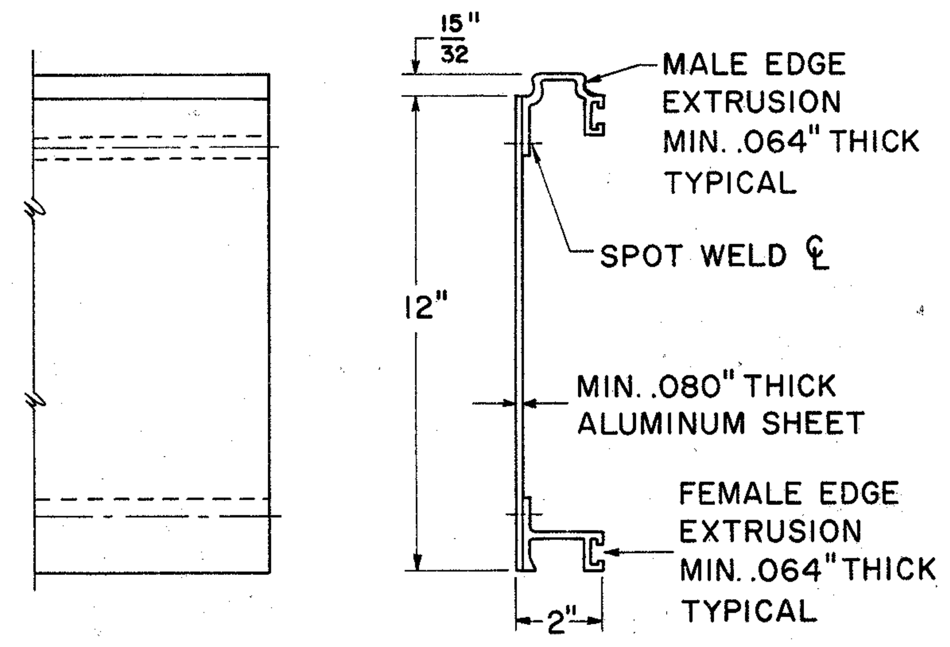
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

222/292

FRANKLIN COUNTY
FRA-270-22.99N

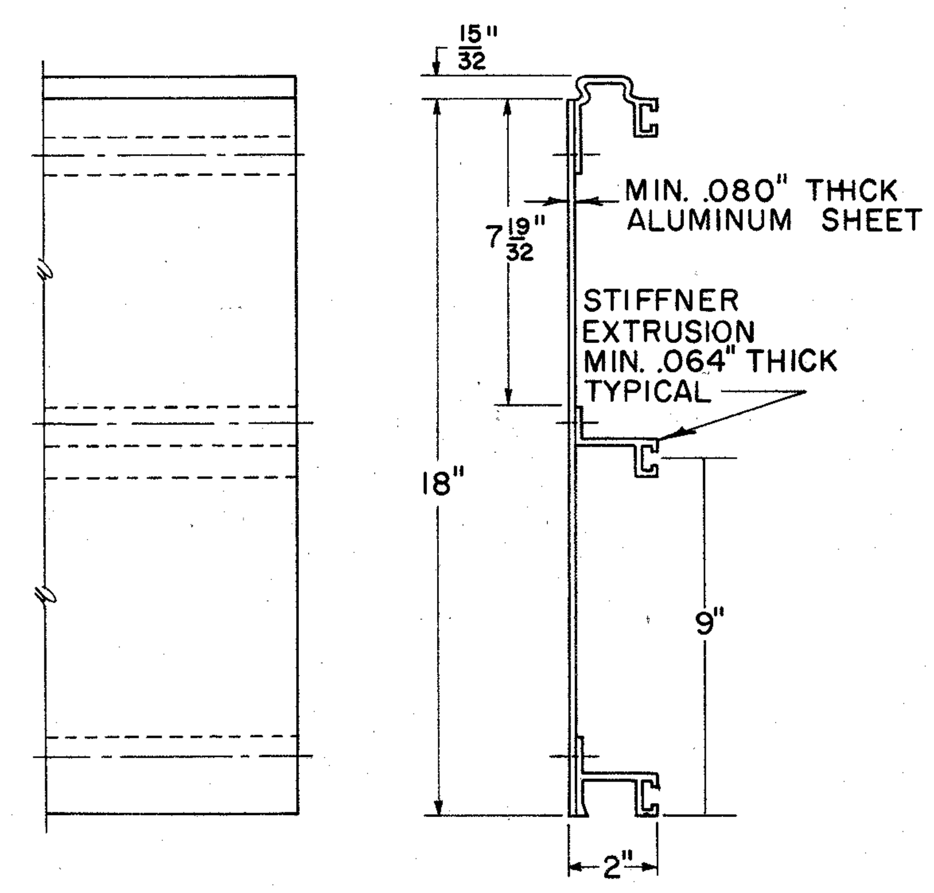
24/29

12" EXTRUSHEET PANEL



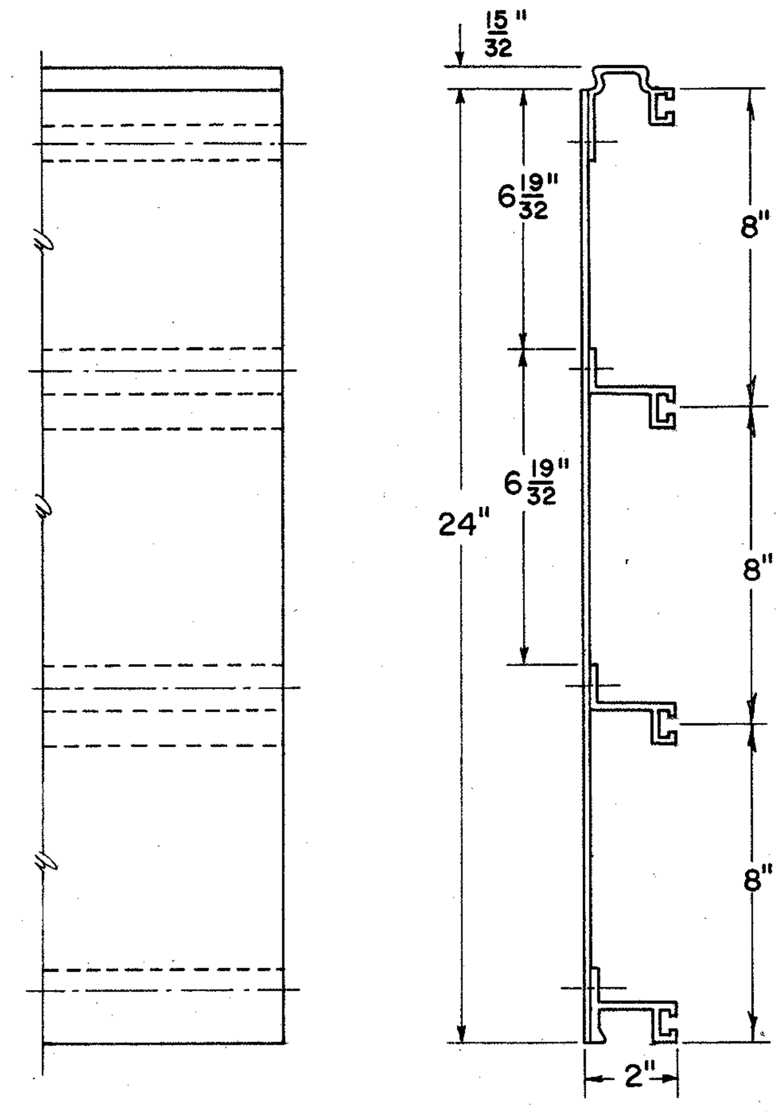
FRONT VIEW SIDE VIEW

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.

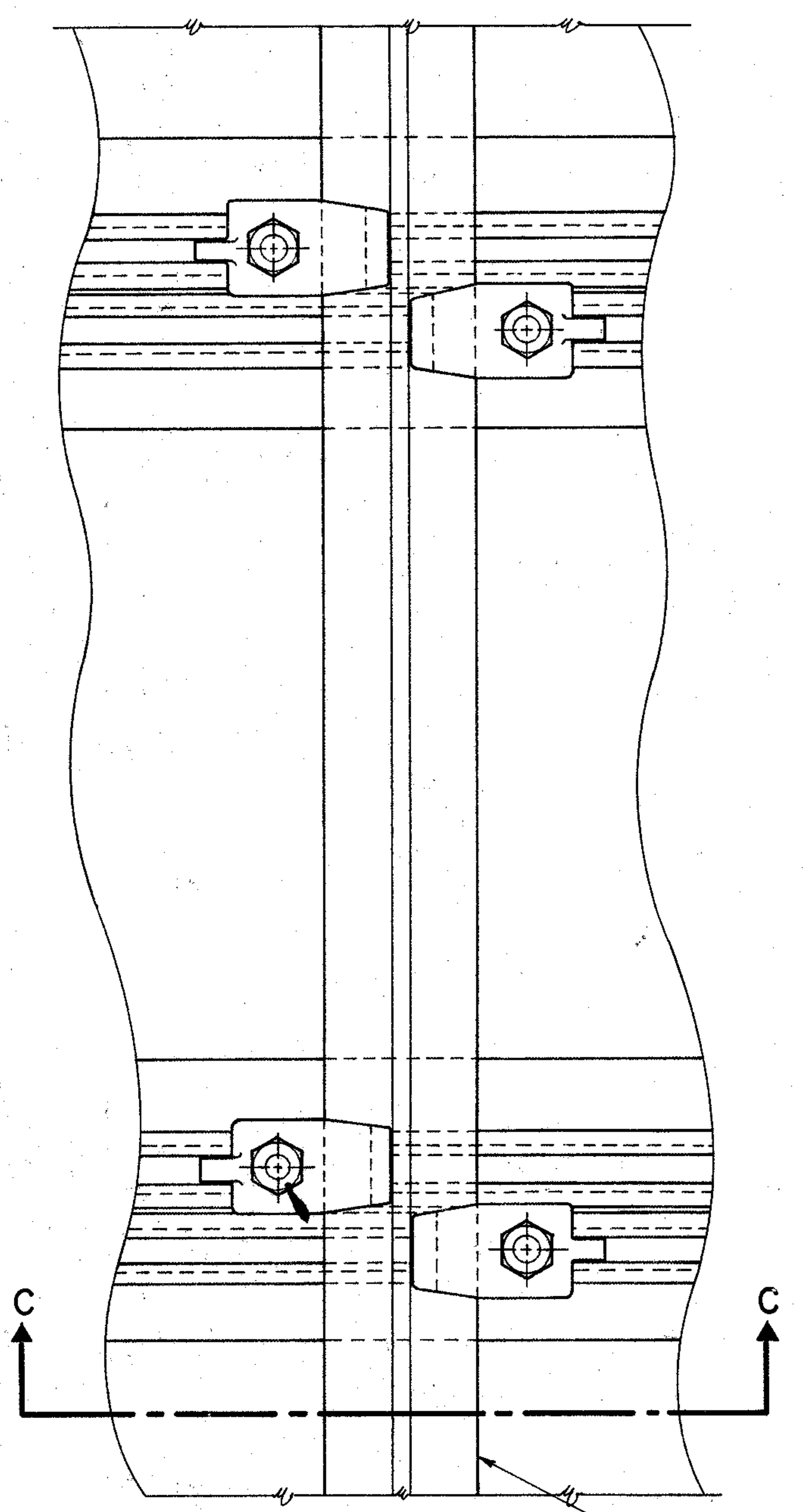
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN WITH NO SPLICES.

PANELS SHALL BE INTERLOCKED AND ERECTED WITH THE MALE EXTRUSION LOCATED AT THE TOP EDGE OF THE SIGN.

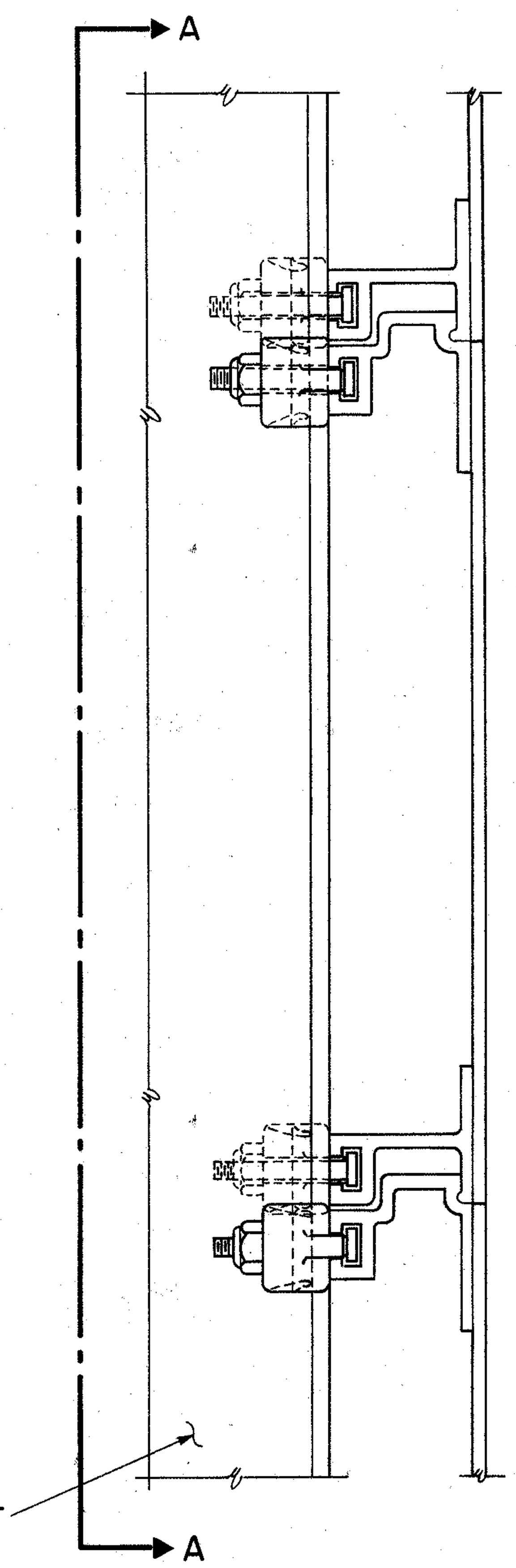
EXTRUSHEET PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND ON BOTH SIDES AT TOP AND BOTTOM EDGE OF SIGN.

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".

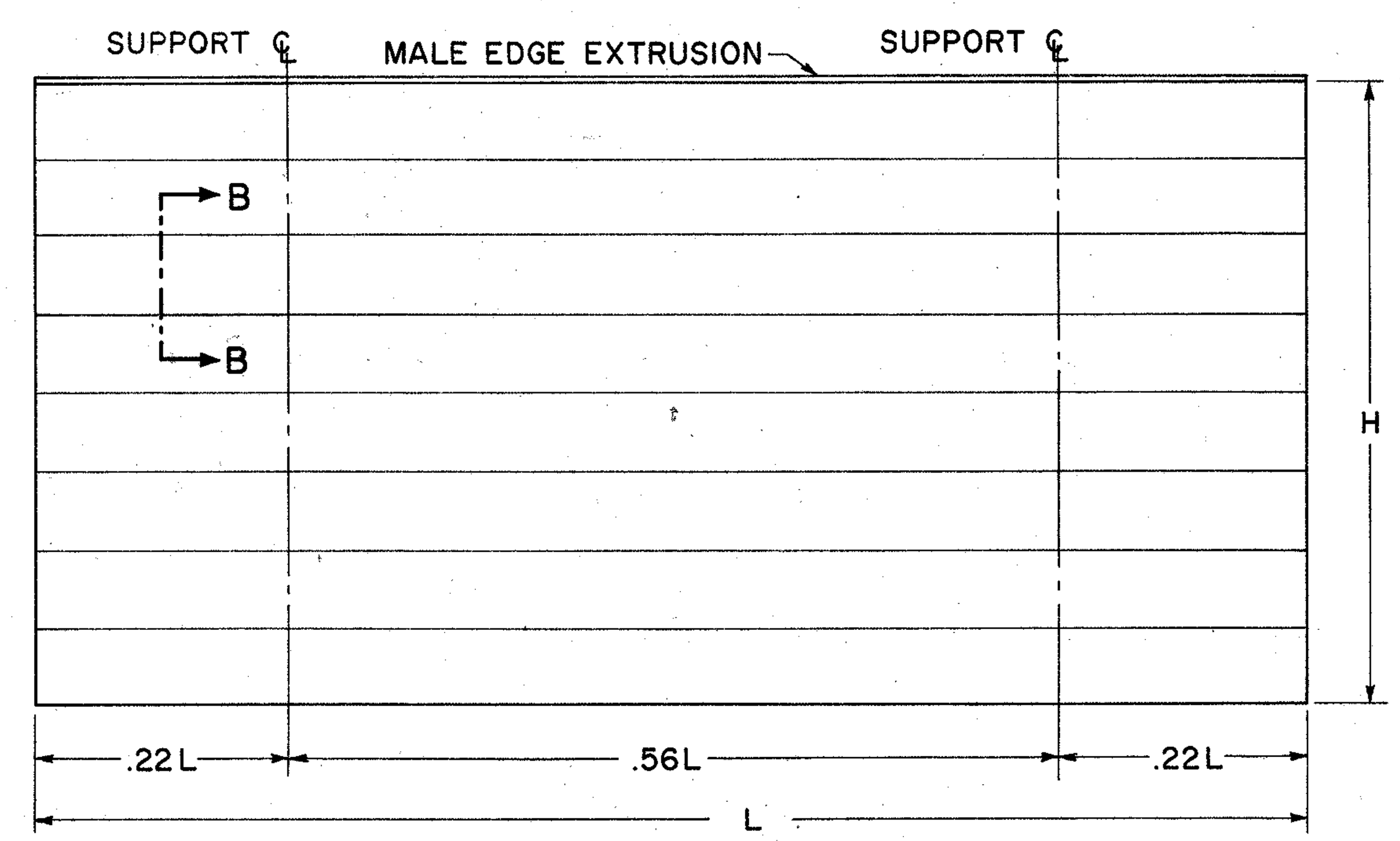


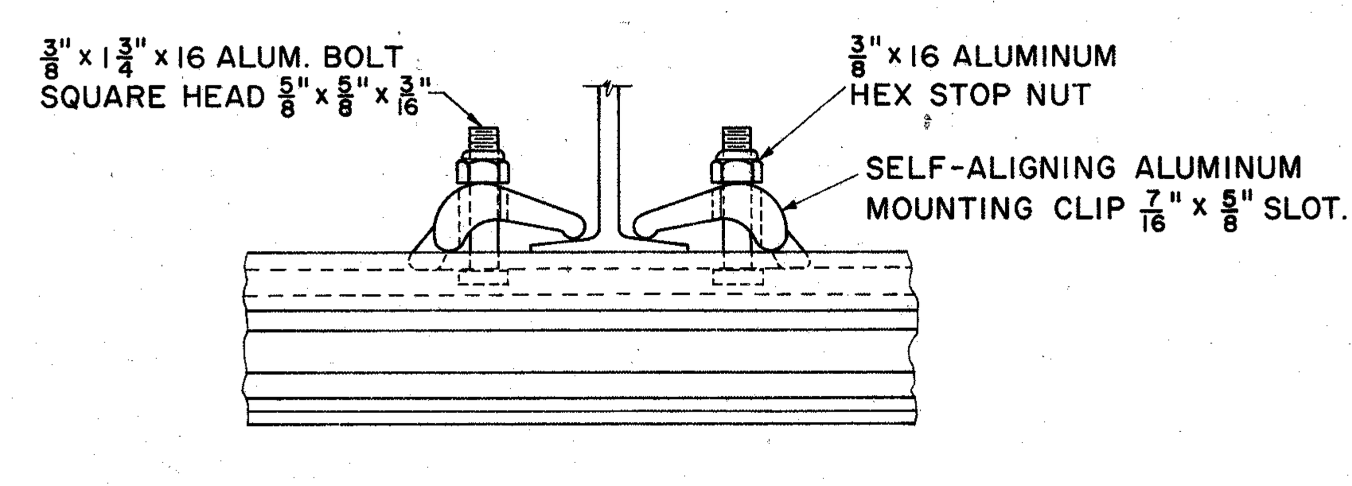
SECTION A-A



SECTION B-B

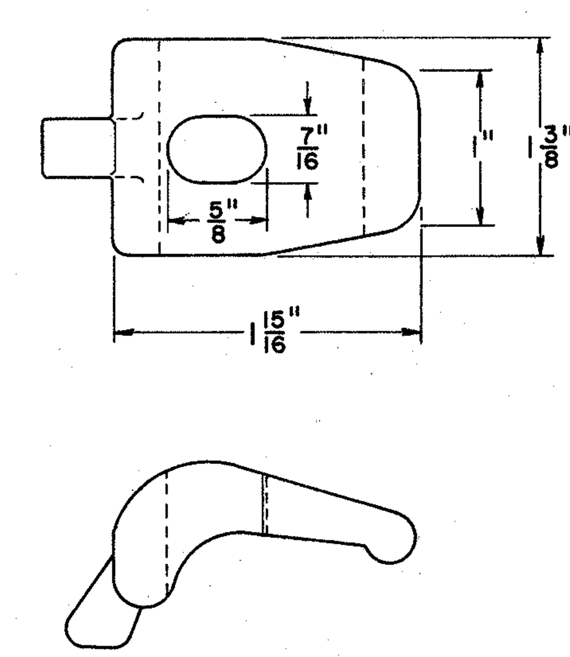
GENERAL ARRANGEMENT





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 DEPAPTMENT OF HIGHWAYS

ALUMINUM EXTRUSHEET PANEL SIGN

ECD 1

DATE
9-25-63
5-19-64
10-21-65

APPROVED Fred C. Lurbys
ENGINEER OF TRAFFIC

ALUMINUM EXTRUSHEET PANEL SIGN

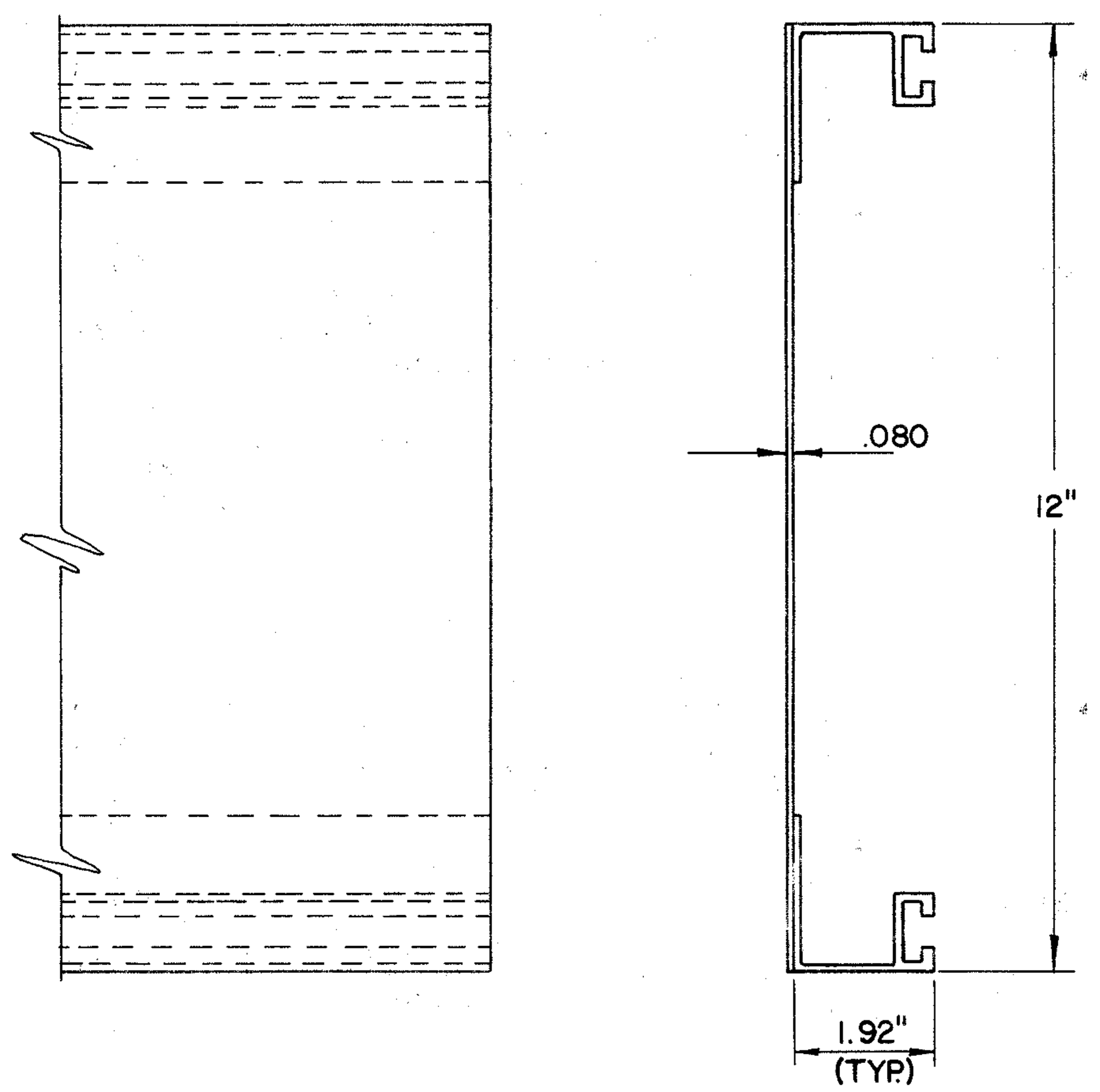
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

223/292

FRANKLIN COUNTY
FRA-270-22.99N

25/29

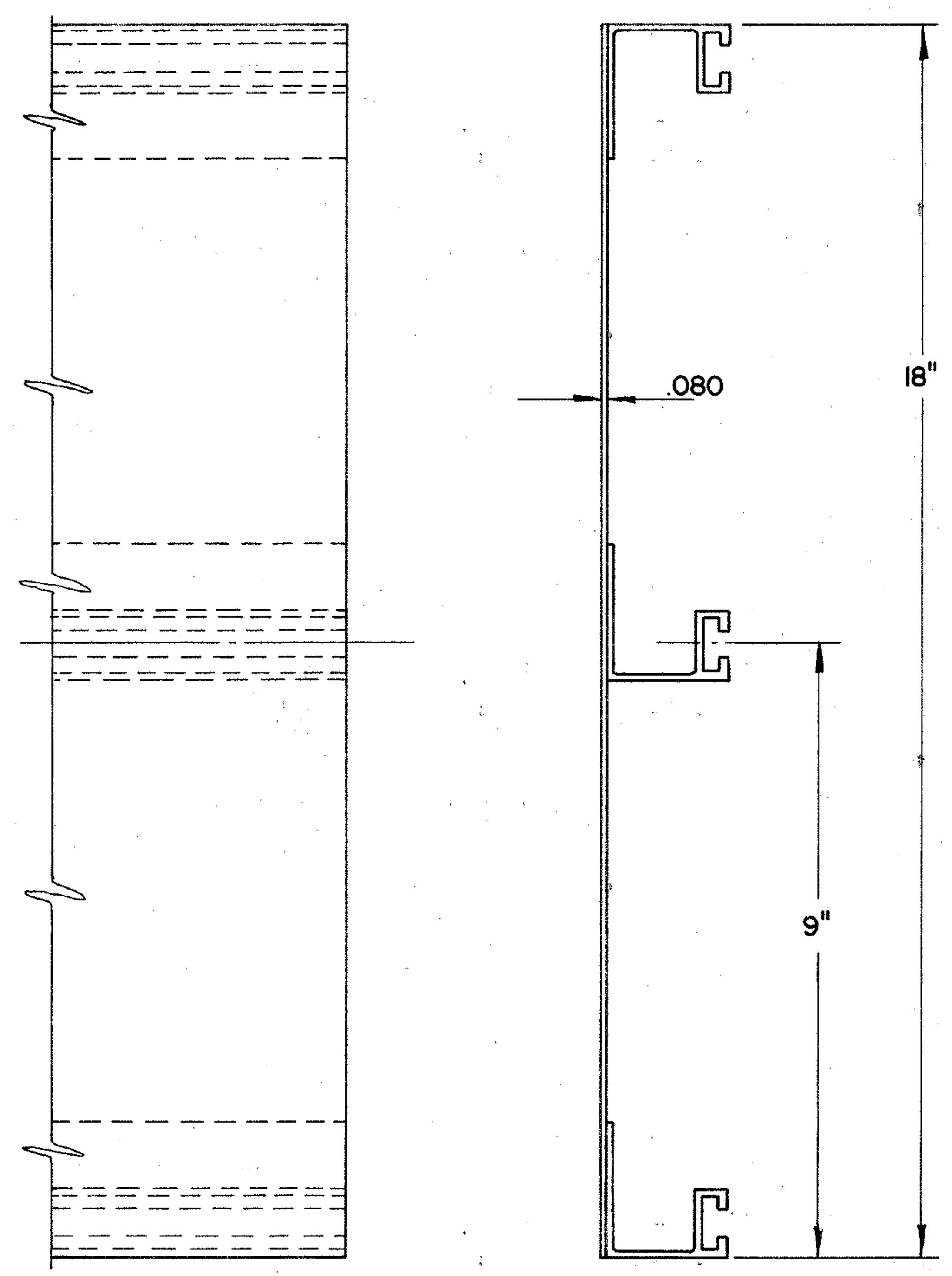
12" BOLTED-EXTRUSHEET PANEL



FRONT VIEW

SIDE VIEW

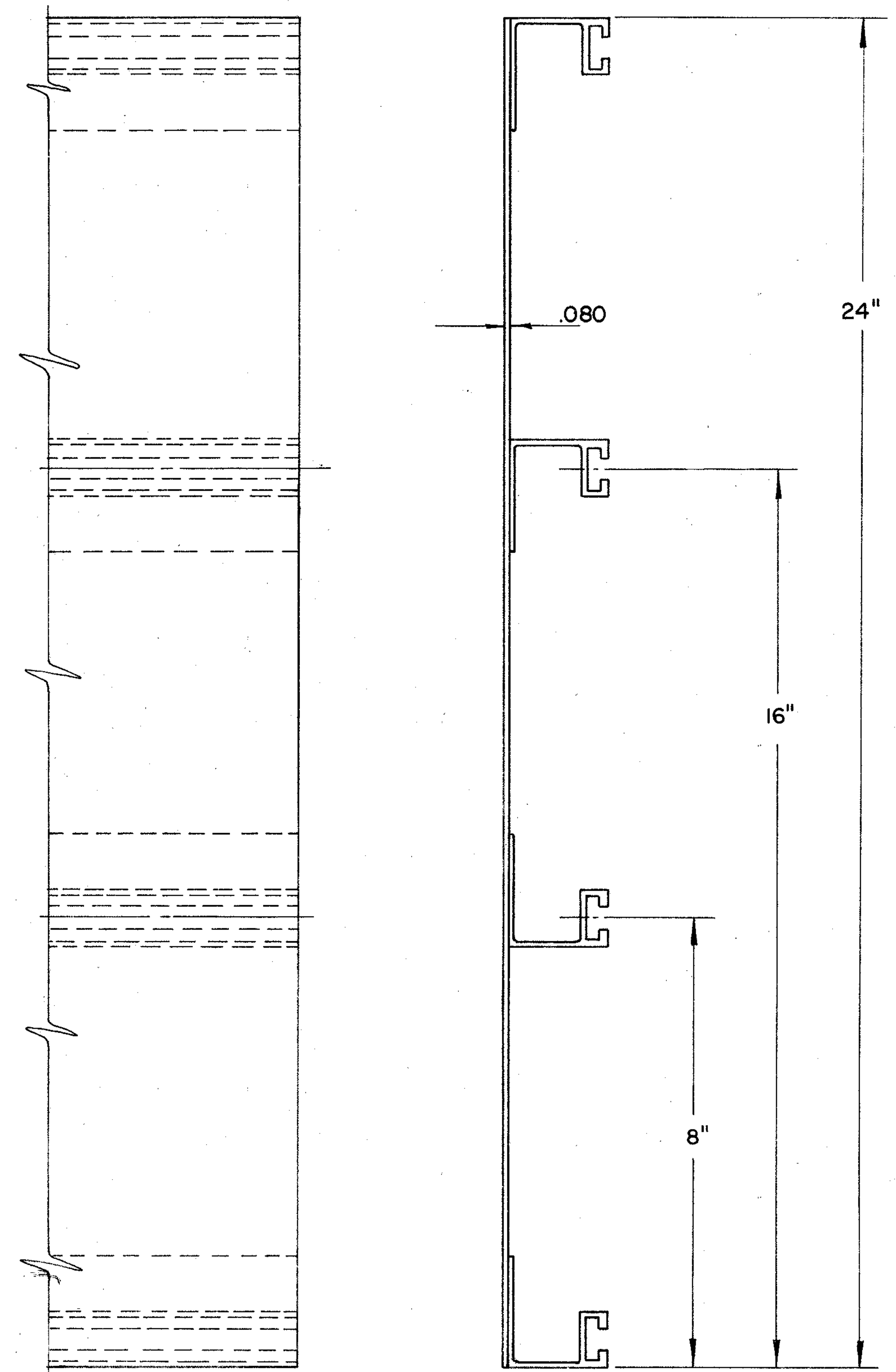
18" BOLTED-EXTRUSHEET PANEL



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.

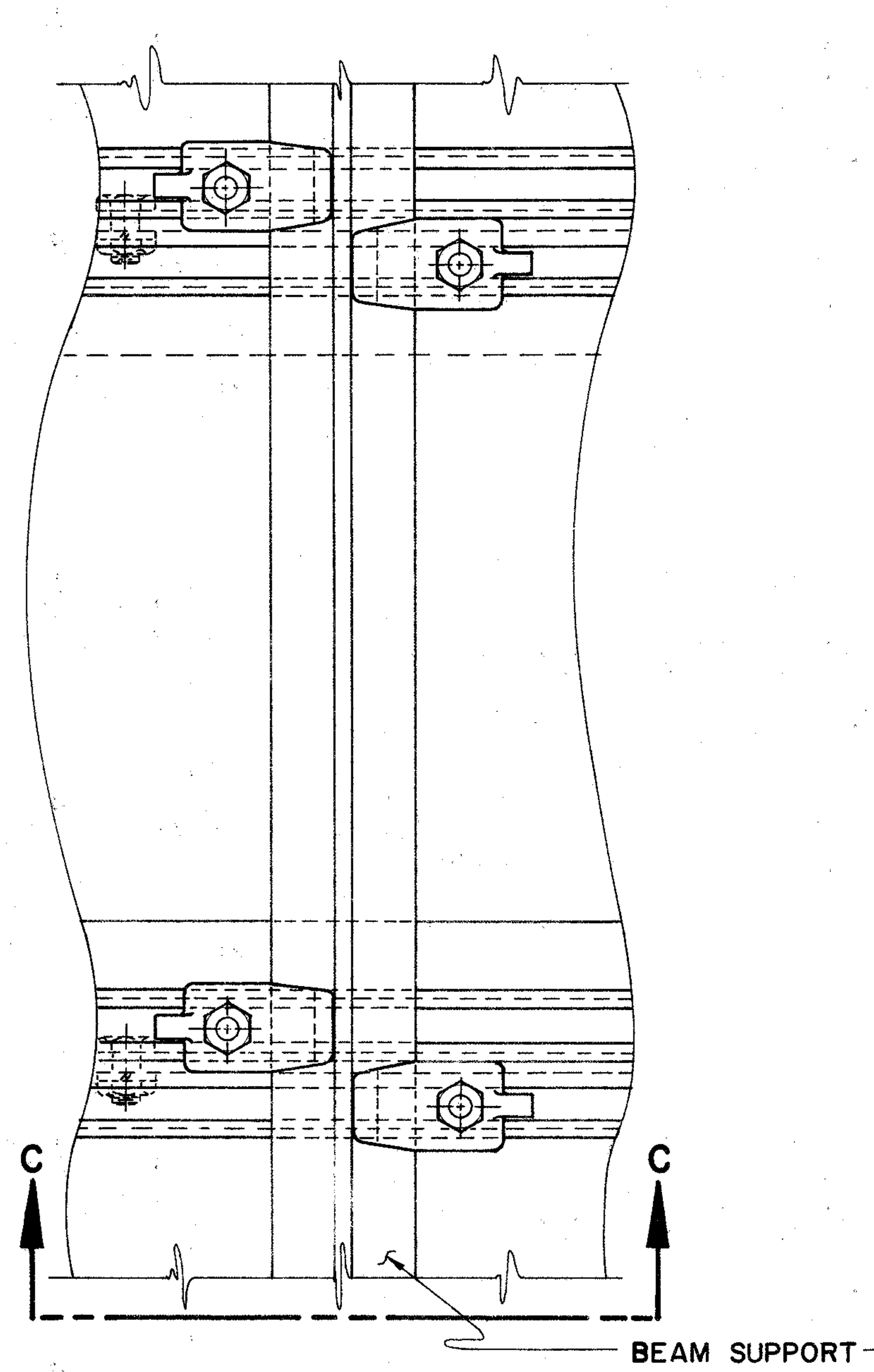
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN, WITH NO SPLICES.

THE PANELS SHALL BE ERECTED HORIZONTALLY AND BOLTED ON 24" CENTERS.

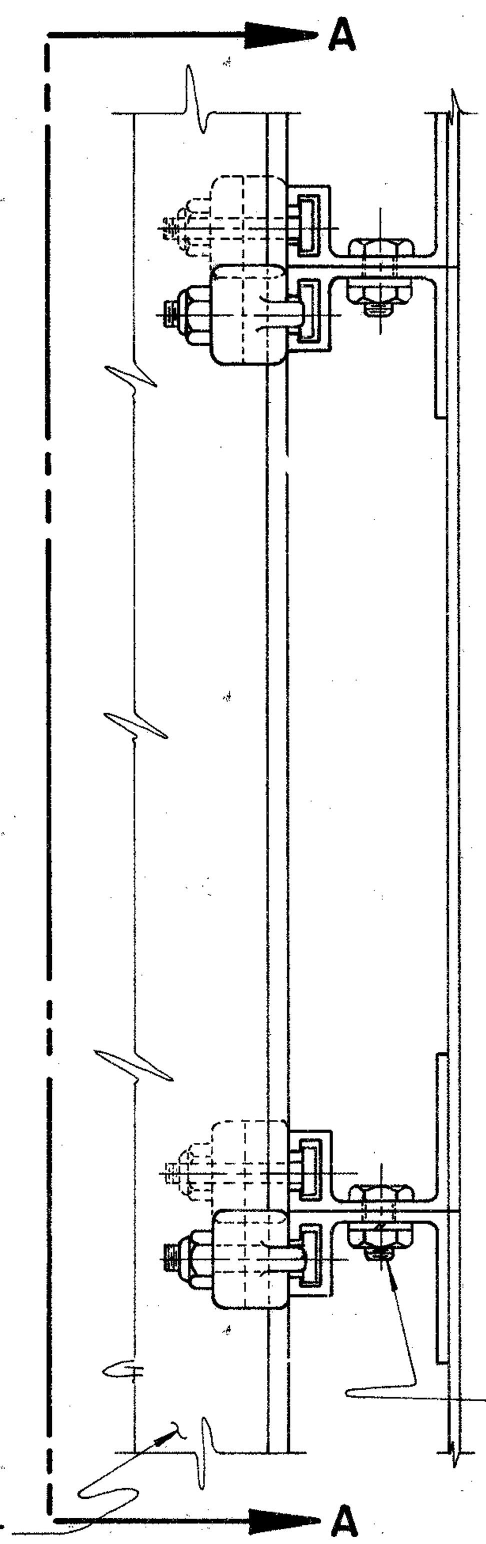
THE PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND BOTH SIDES AT TOP AND BOTTOM EDGES OF SIGN.

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.

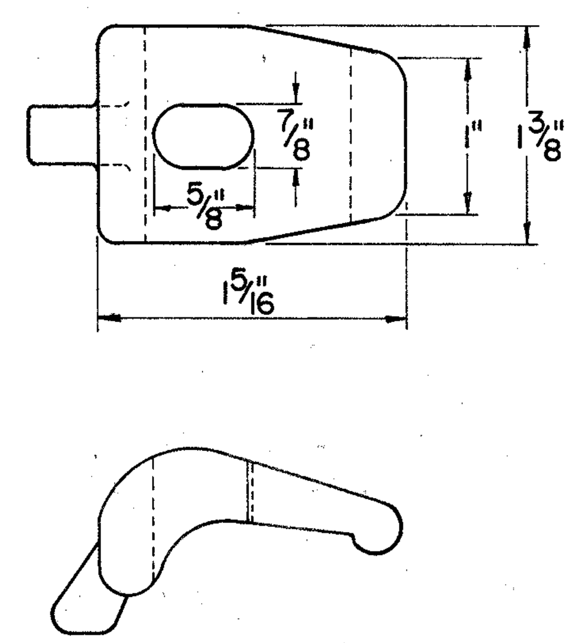
THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0". THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".



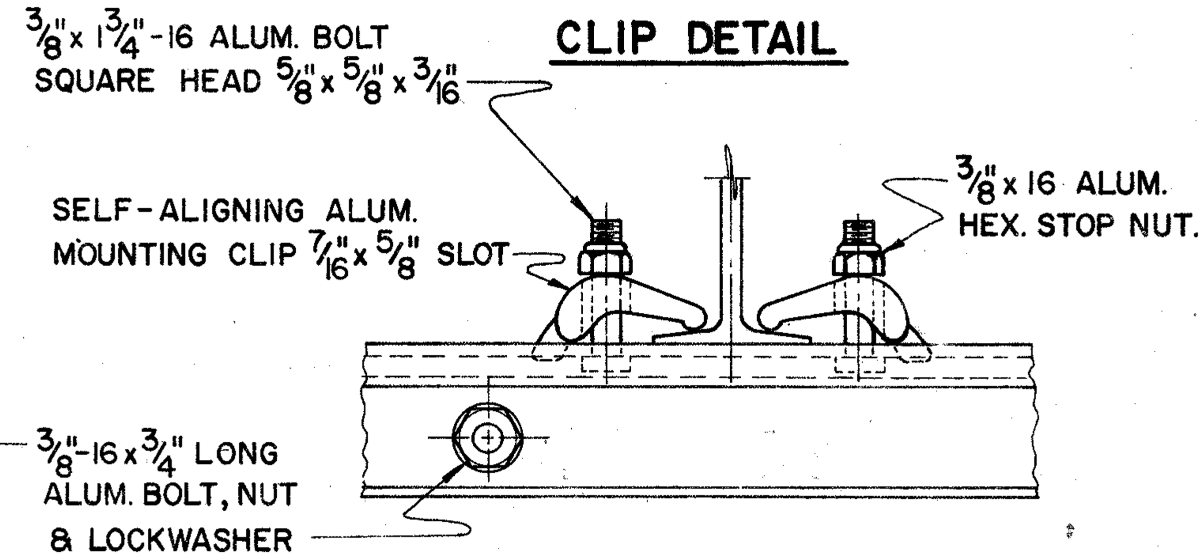
SECTION A-A



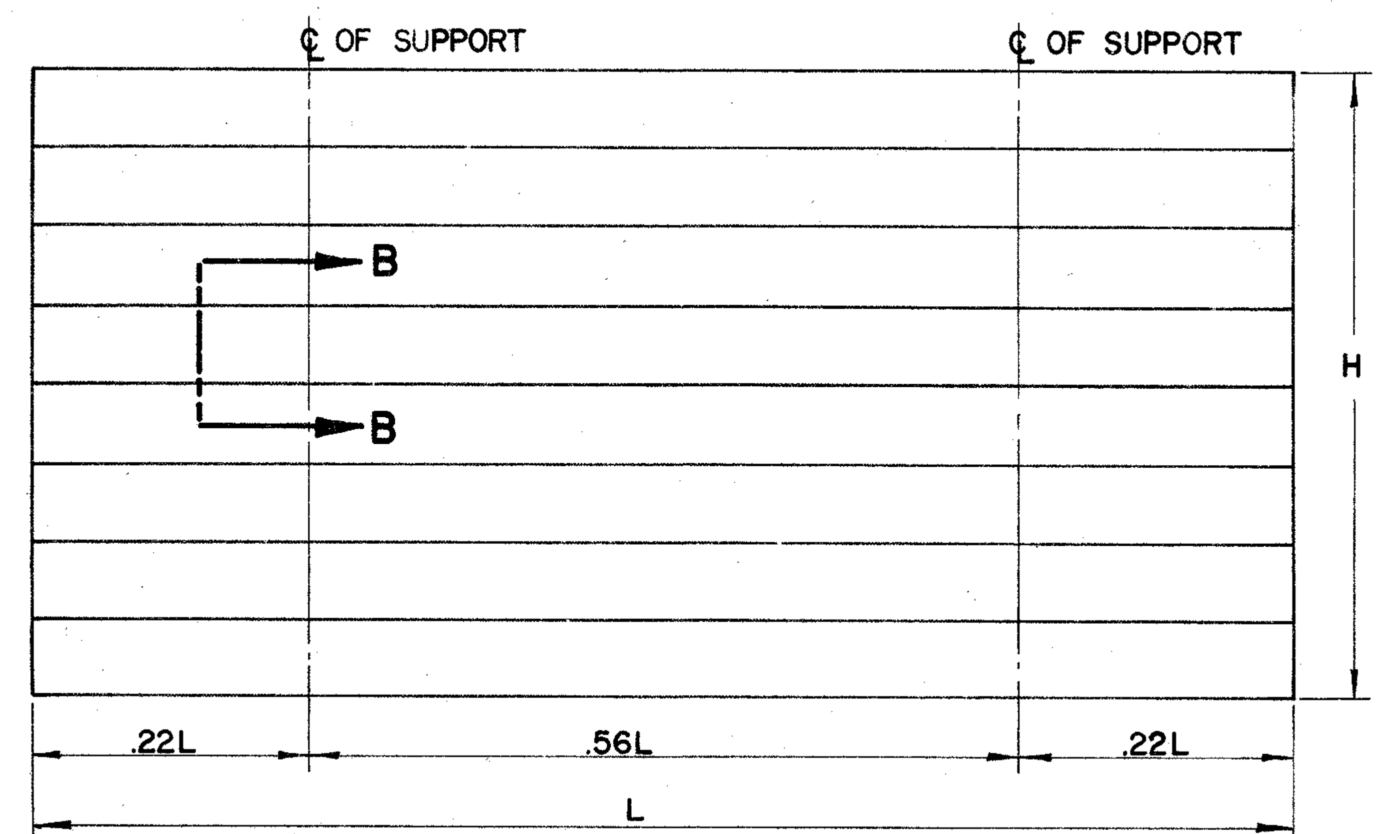
SECTION B-B



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. Talbot
ENGINEER OF TRAFFIC

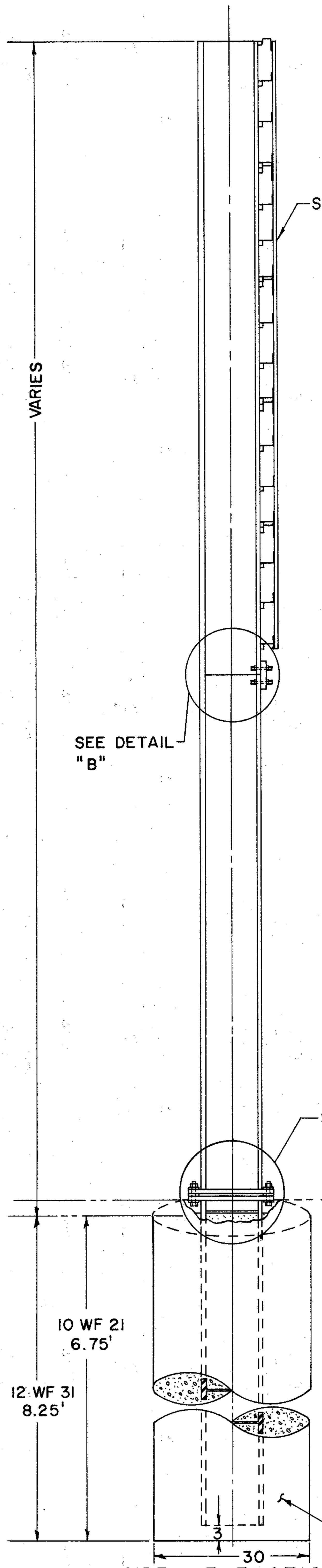
ALUMINUM BOLTED-EXTRUSHEET PANEL SIGN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

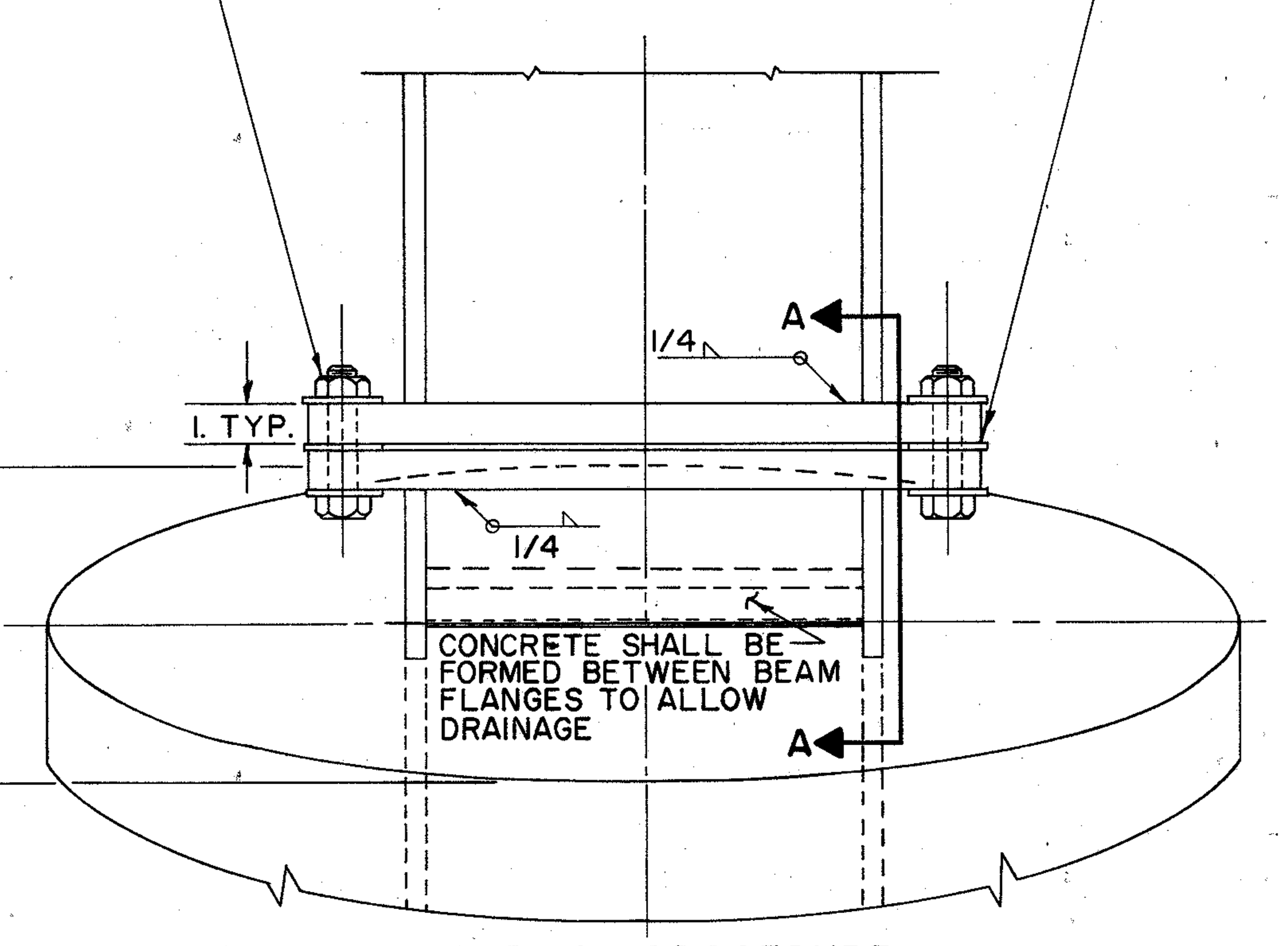
224/292

26/29

FRANKLIN COUNTY
FRA-270-22.99N



SIDE ELEVATION

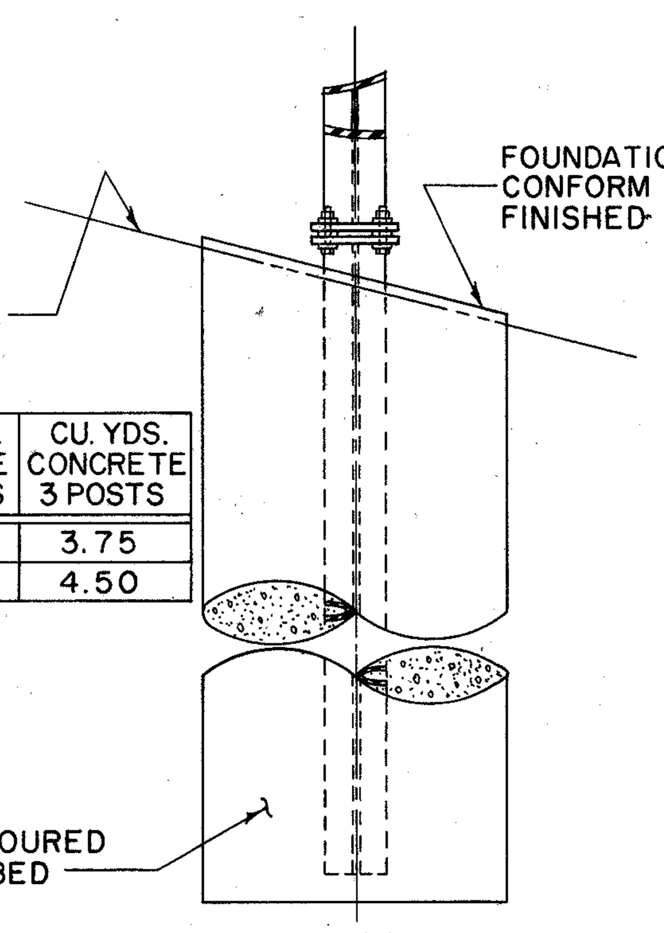


BOLTING PROCEDURE

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

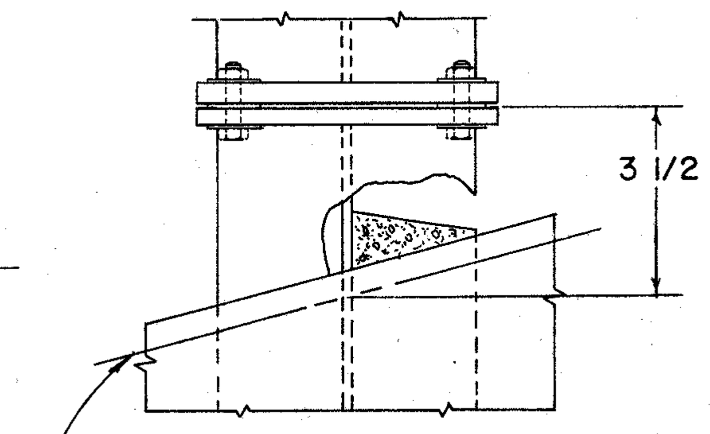
VIEW "A" ROTATED 180°



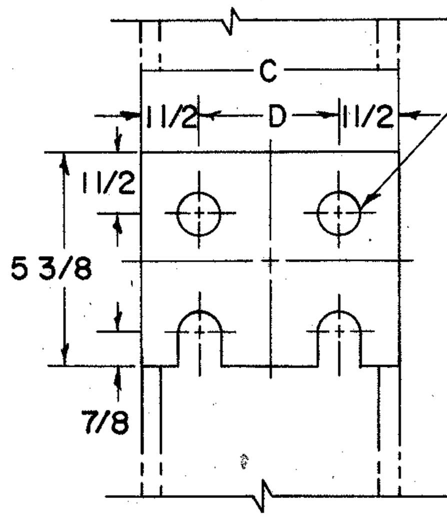
FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
10 WF 21	2.50	3.75
12 WF 31	3.00	4.50

FRONT ELEVATION

BREAK-AWAY SUPPORT

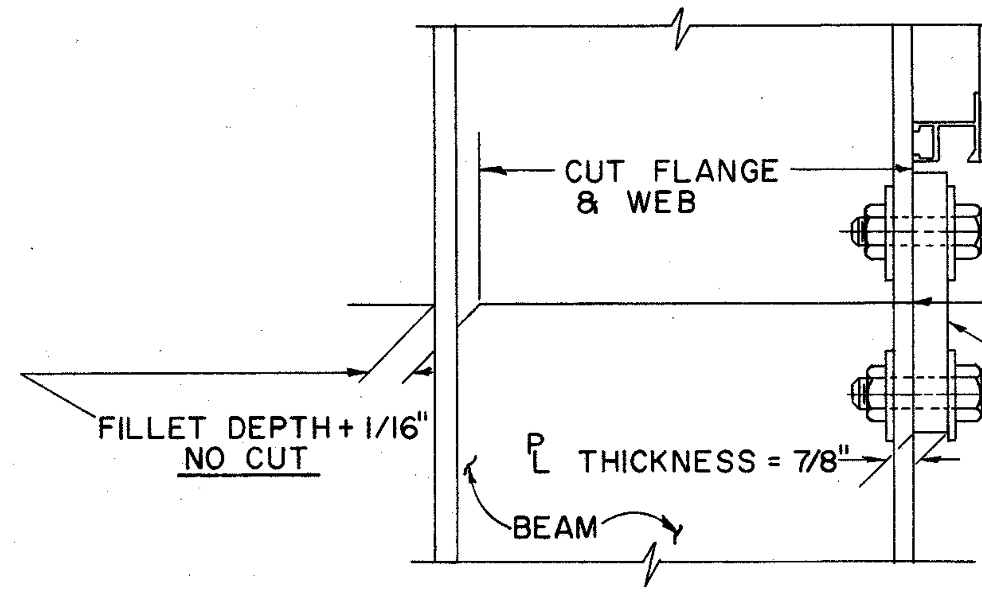


SECTION A-A



BEAM SIZE	C	D
10 WF 21	5 3/4	2 3/4
12 WF 31	6 1/2	3 1/2

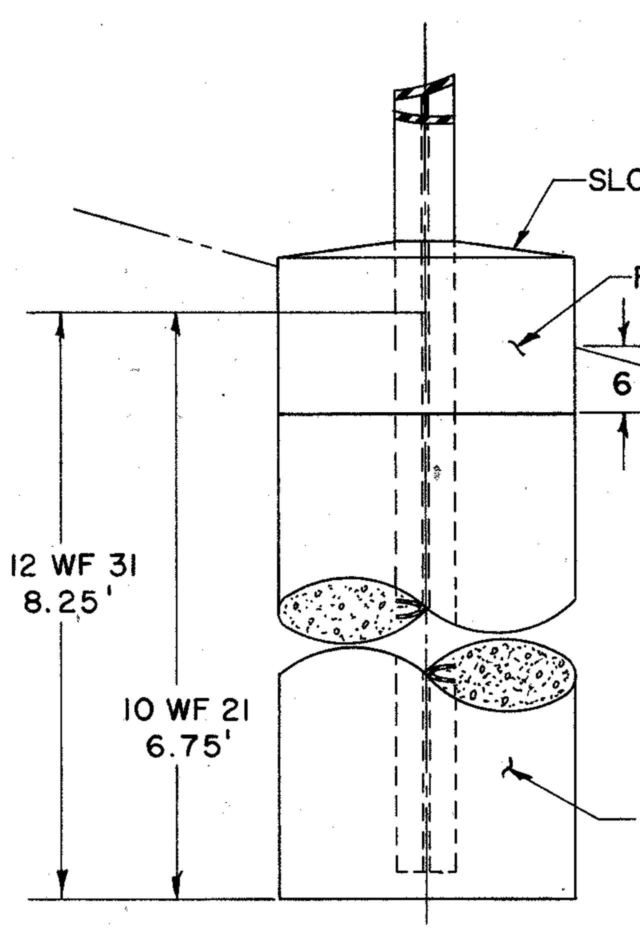
FUSE PLATE DETAIL



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"

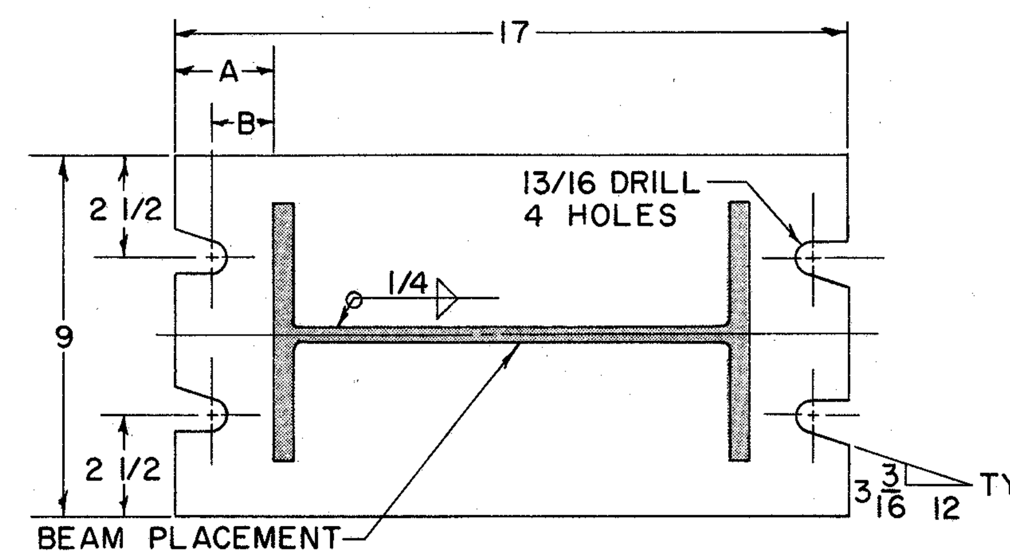


FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
10 WF 21	2.50	3.75
12 WF 31	3.00	4.50

FRONT ELEVATION

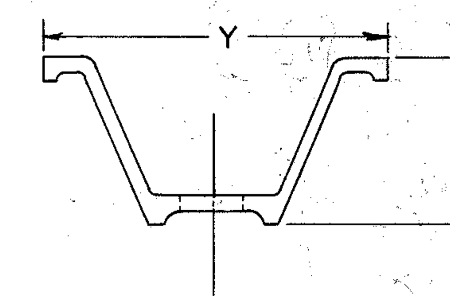
STANDARD SUPPORT

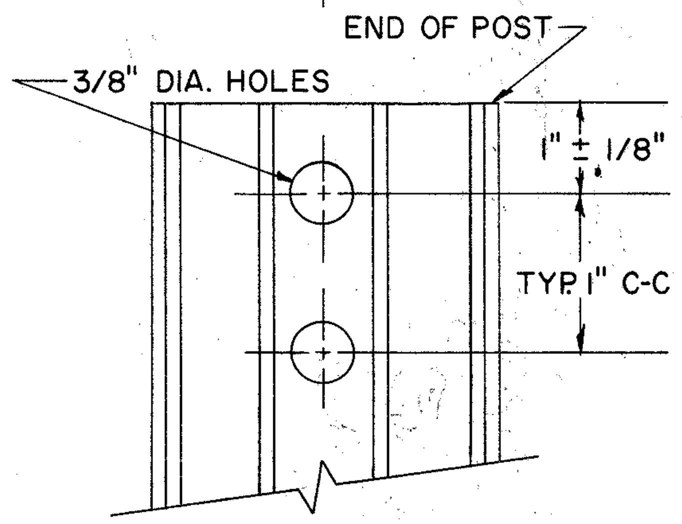
STRUCTURAL SUPPORTS



BEAM SIZE	A	B
10 WF 21	3 1/2	2 5/8
12 WF 31	2 1/2	1 5/8

BASE PLATE DETAIL

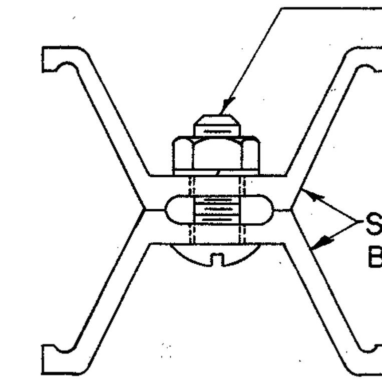


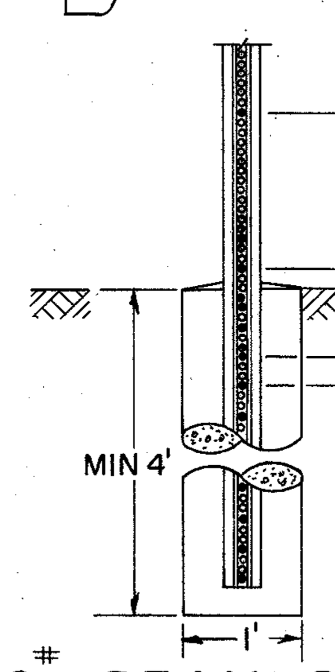


WEIGHT PER FOOT	X ± 3/32"	Y ± 1/8"
2.00 #	1 15/32"	3 1/16"
3.00 #	1 7/8"	3 1/2"
4.00 #	2"	3 5/8"

DRIVE POST DETAIL

NOTE: THE FOUNDATION FOR 4# DRIVE POST IS SIMILAR TO THE FOUNDATION SHOWN FOR 6# & 8# BEAM





6# & 8# BEAM DETAIL

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

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GROUND MOUNTED SIGN SUPPORTS

DATE
5-10-68
7-12-68

GMSS

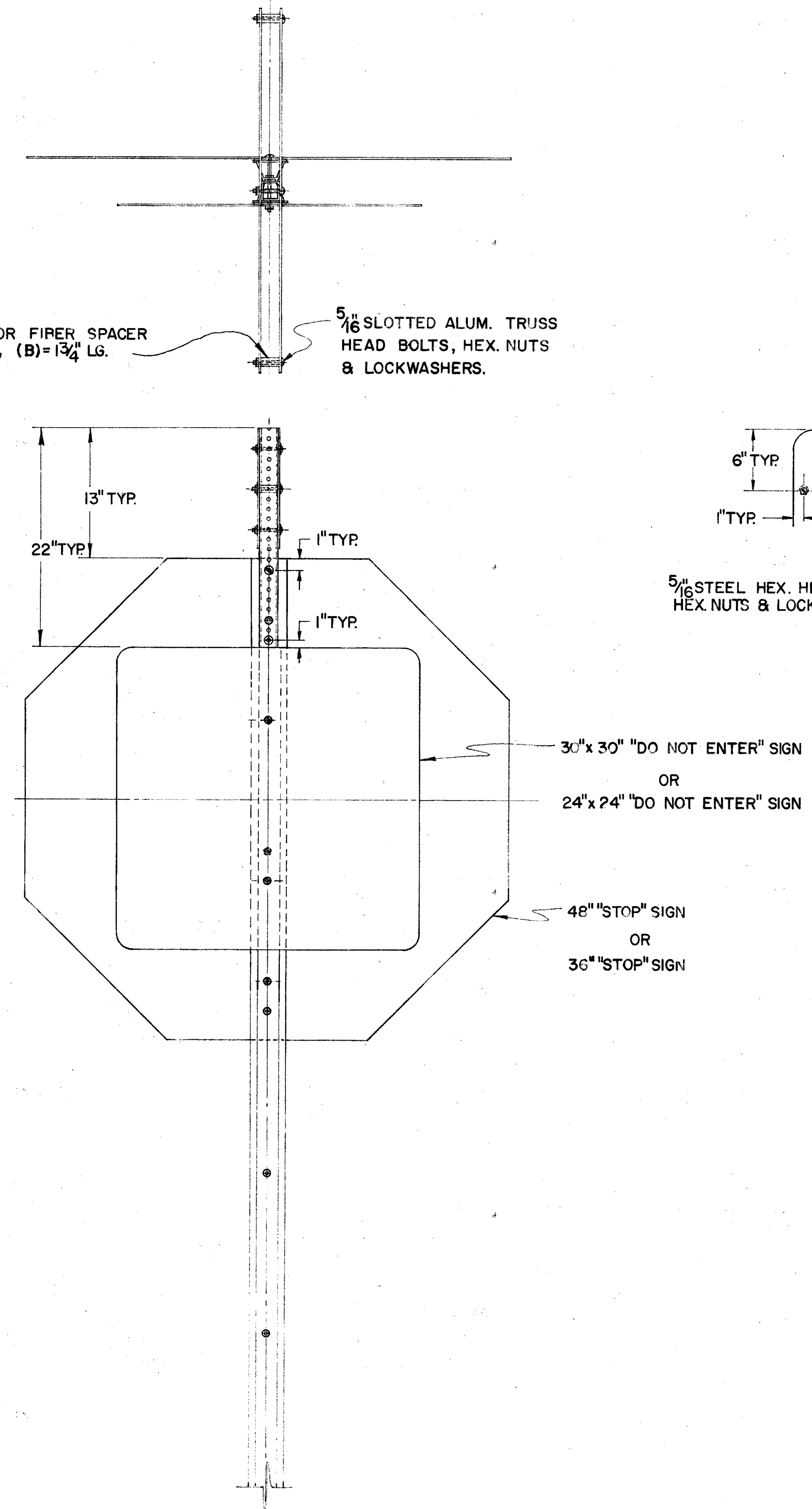
APPROVED ____________
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

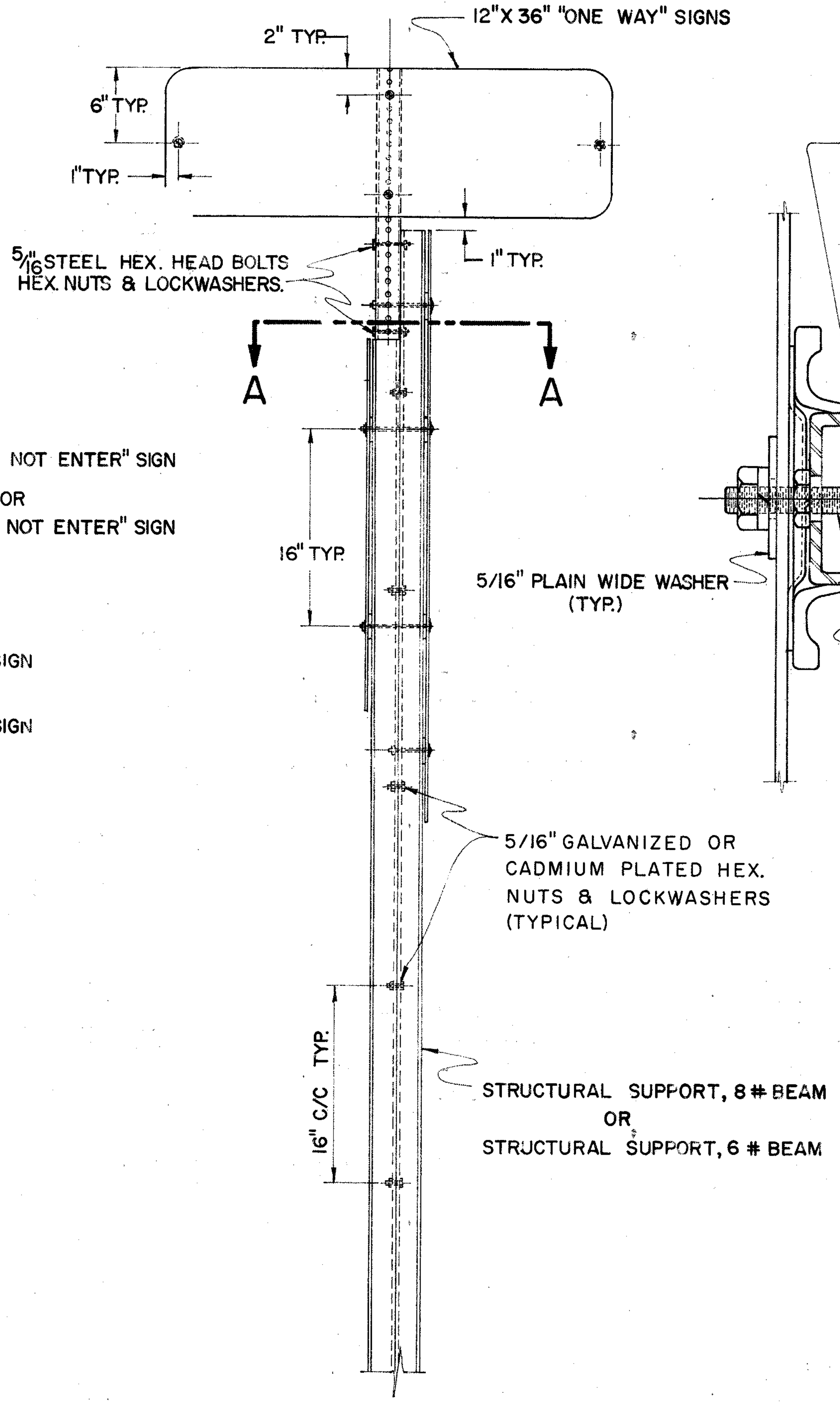
225/292

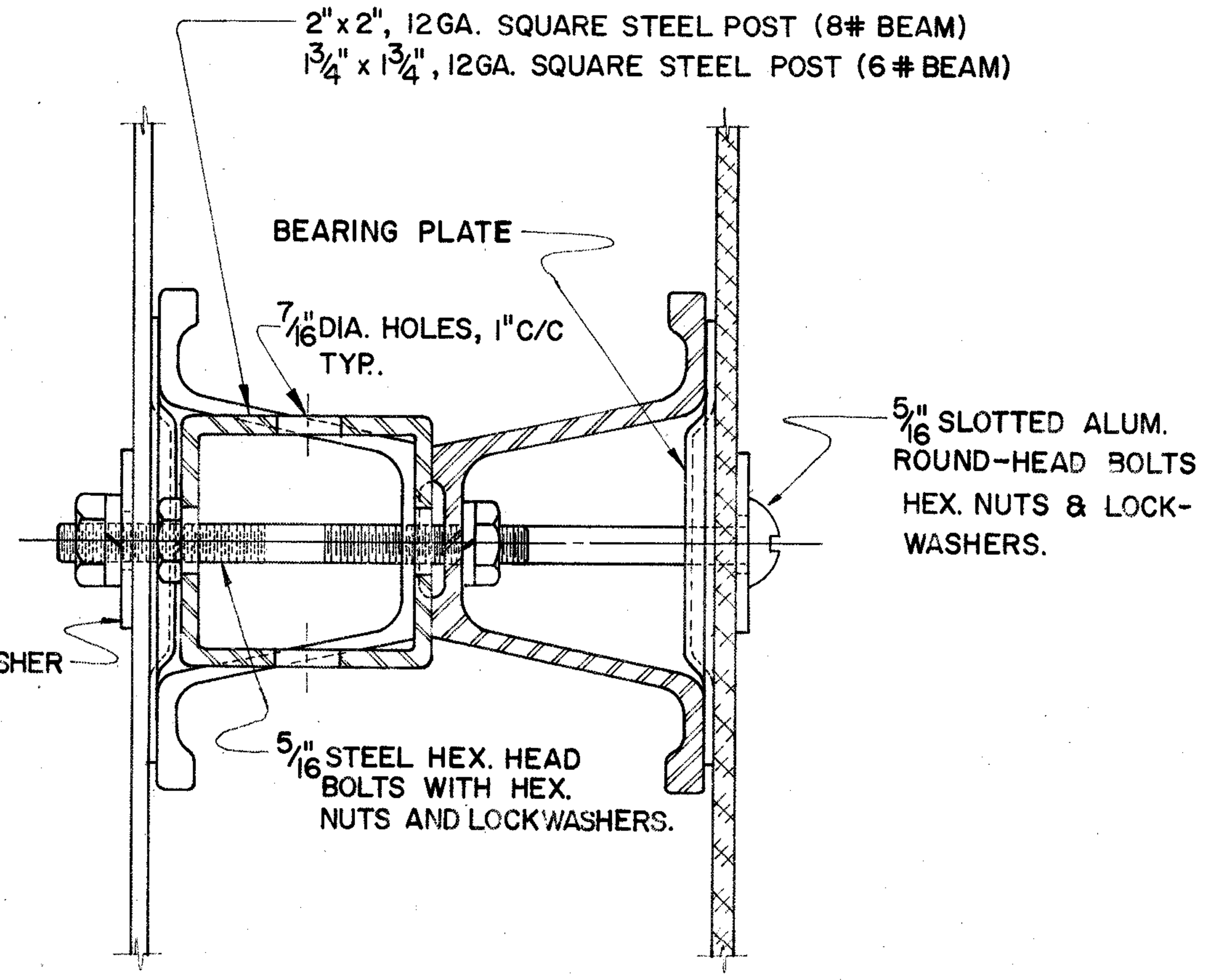
FRANKLIN COUNTY
FRA-270-22.99N

27/29



"ONE WAY", "STOP", "DO NOT ENTER", SIGN INSTALLATION.





SECTION A-A

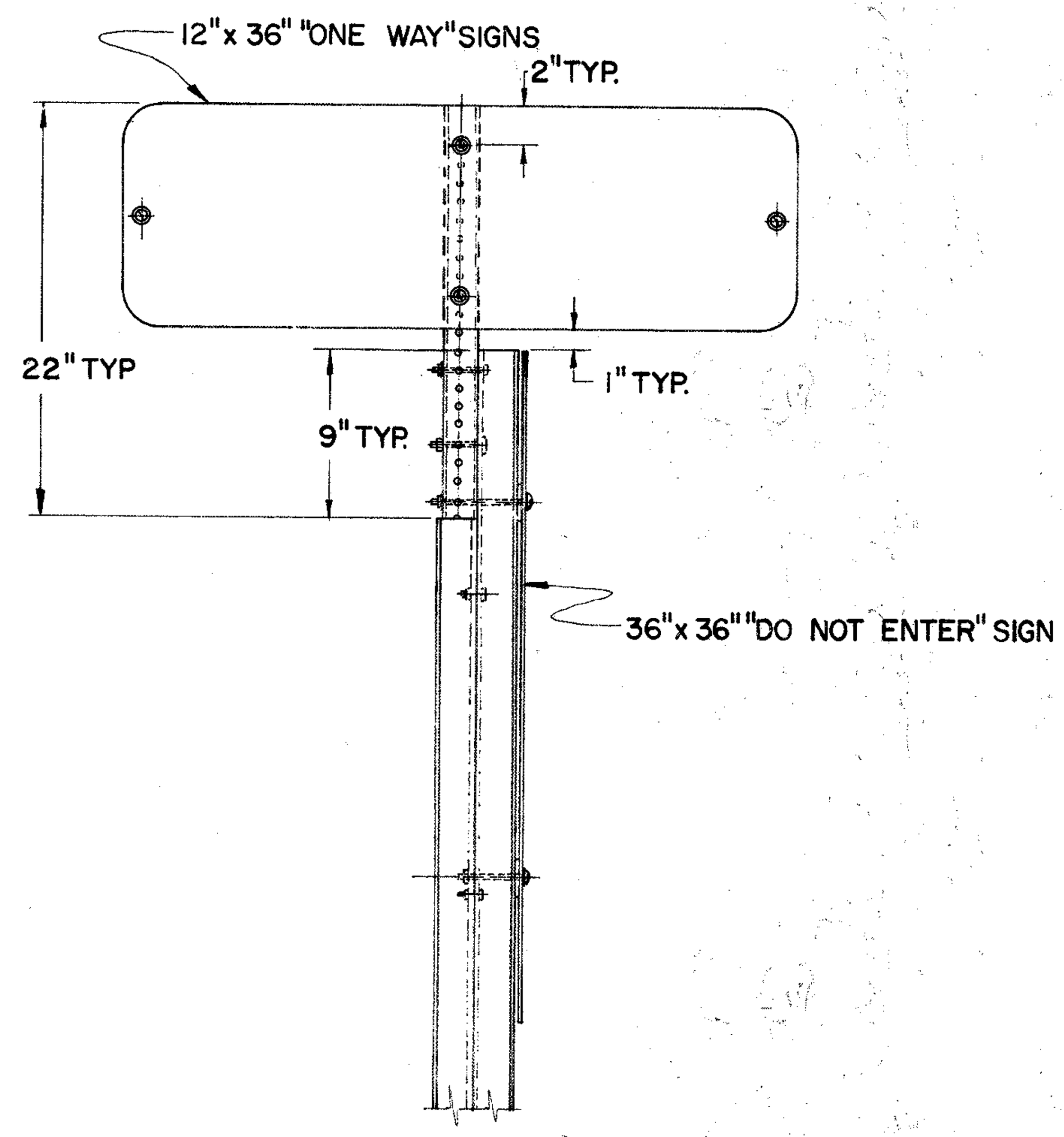
NOTES

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

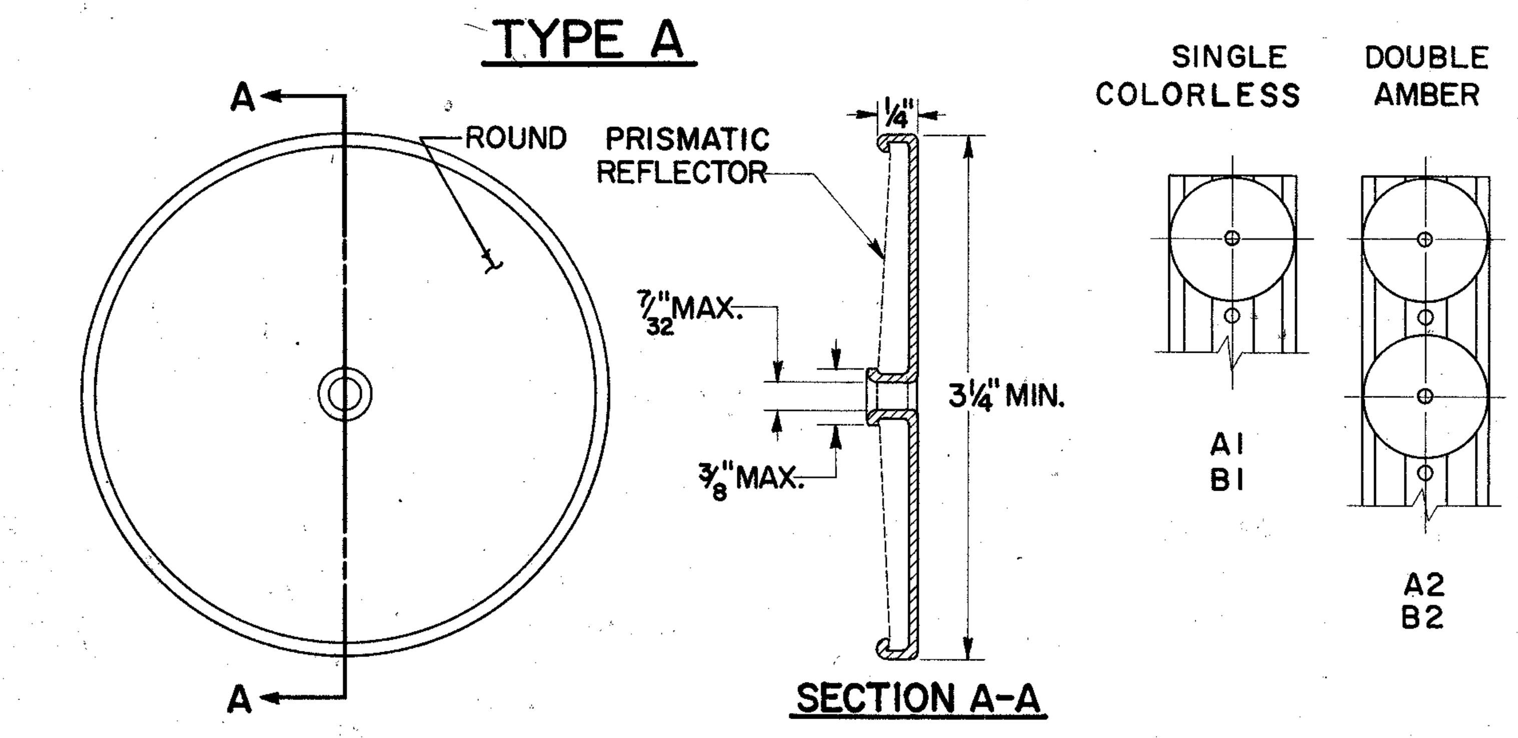
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

226/292

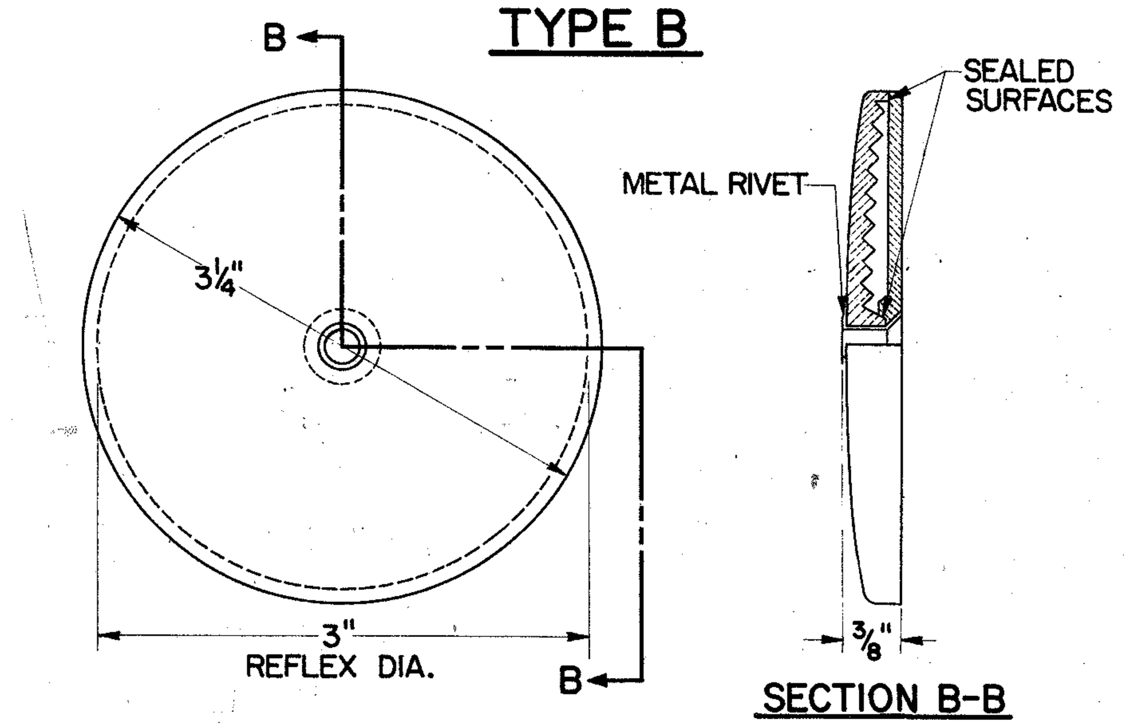
28/29

FRANKLIN COUNTY
FRA-270-22.99N

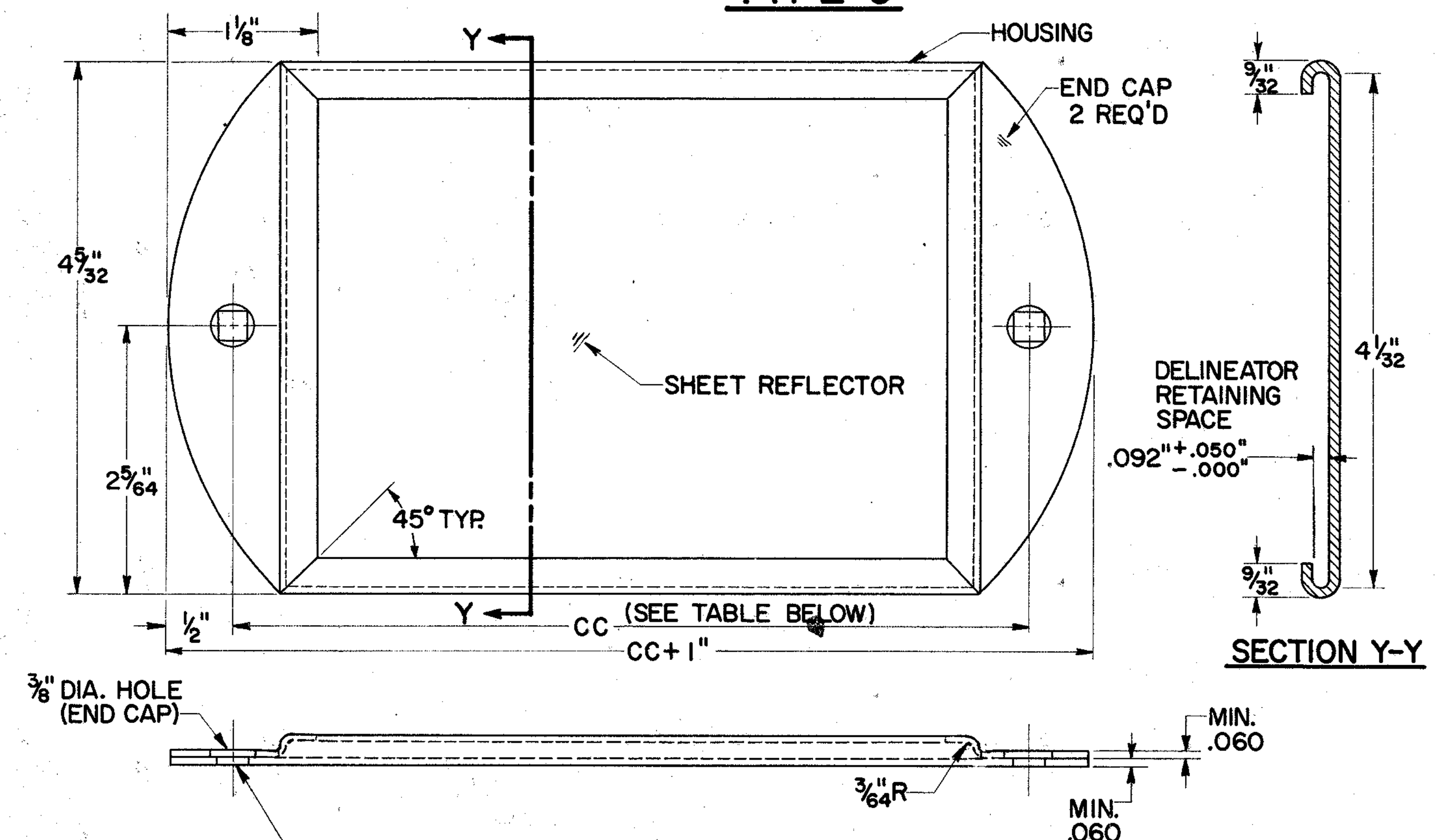
TYPE A



TYPE B

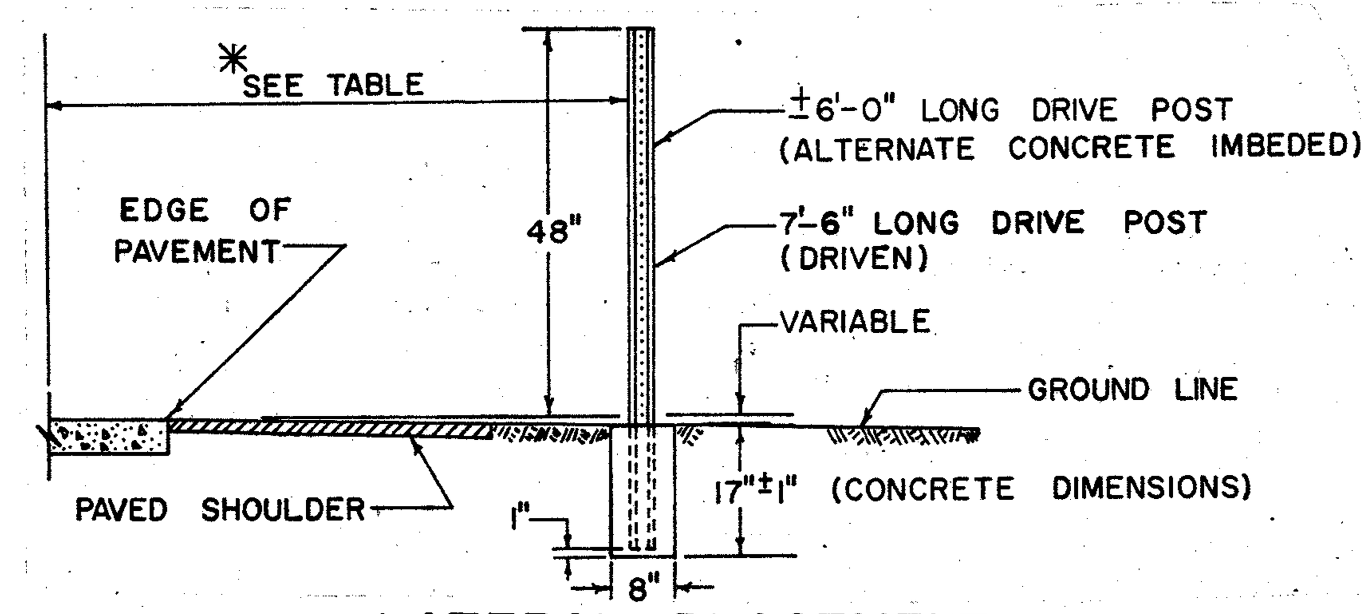


TYPE C



TYPE	DIM. CC
C1 – SINGLE COLORLESS	6"
C2 – DOUBLE AMBER	11"

LATERAL PLACEMENT OF DELINEATORS



* TABLE

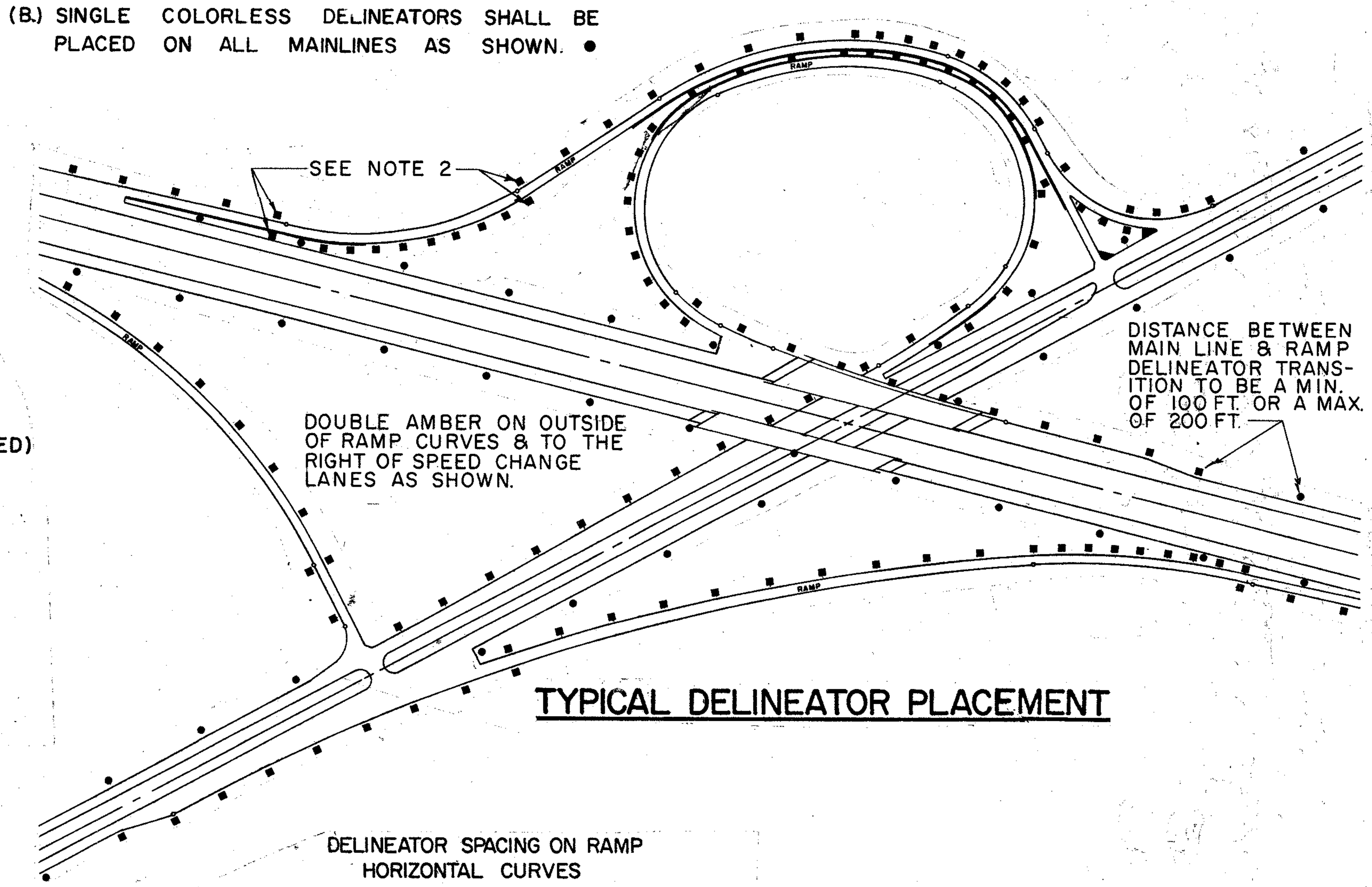
TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE COLORLESS	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE

** 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	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.

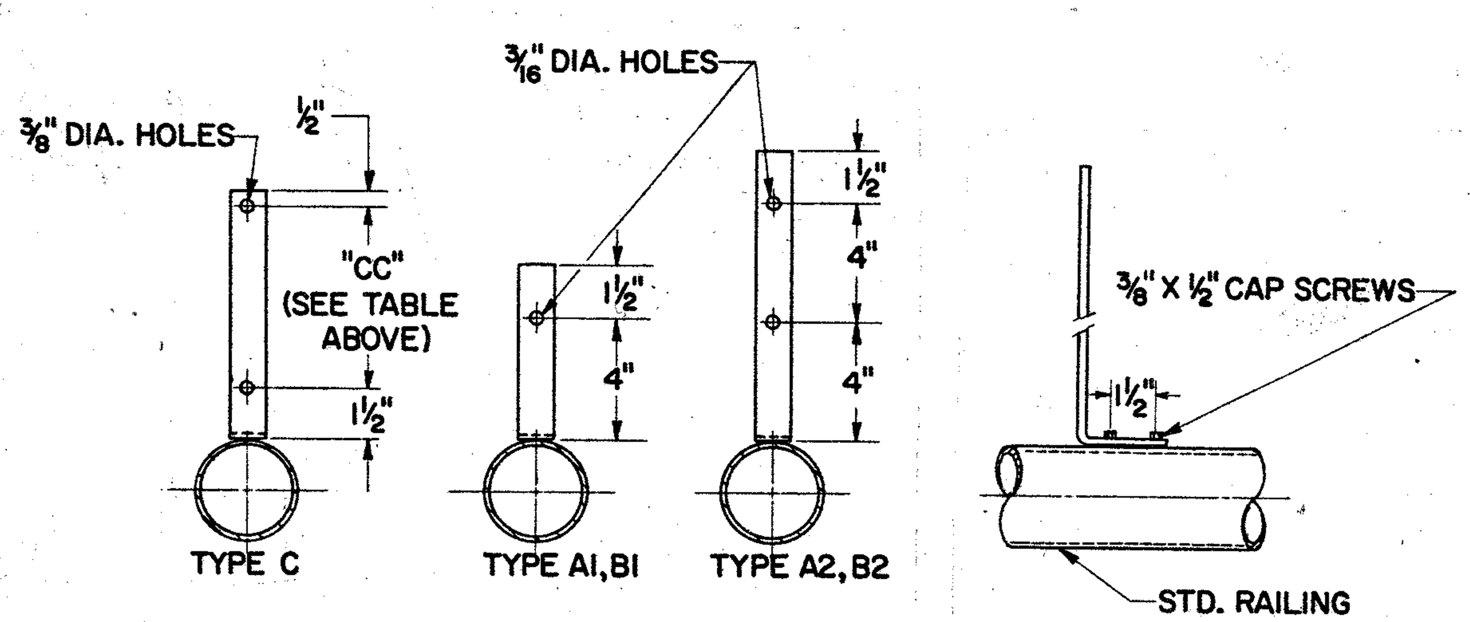
NOTES

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.

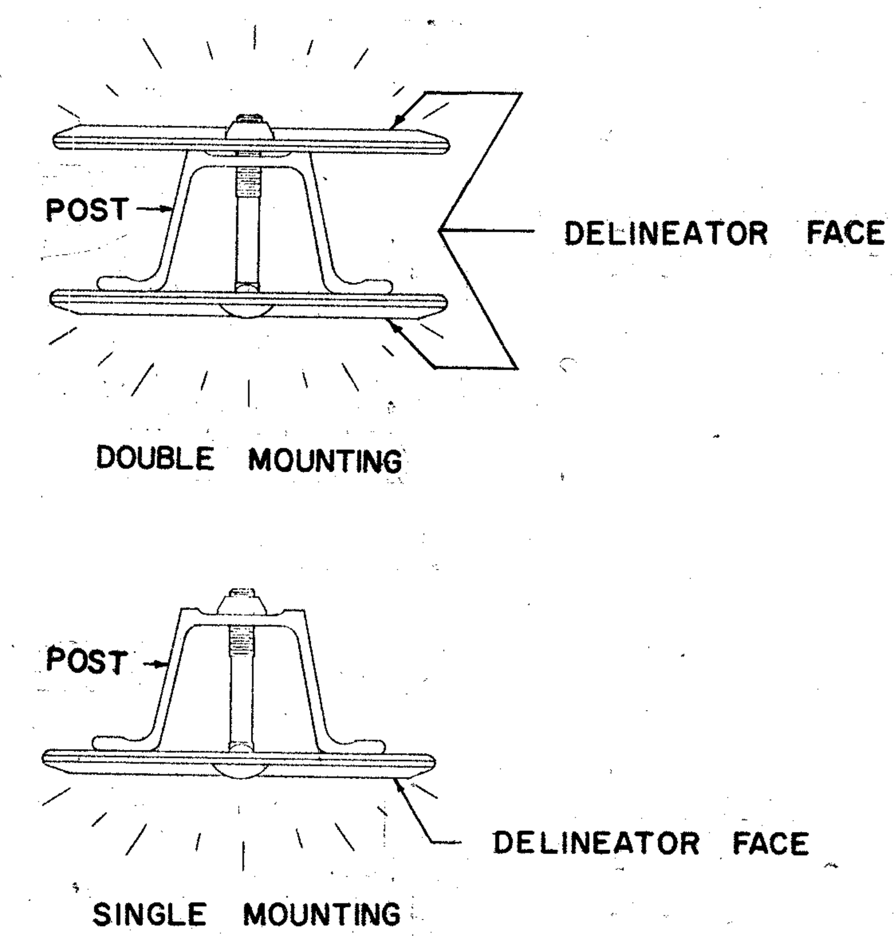
3. NO DELINEATORS ARE TO BE PLACED IN PAVED BERM.

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.

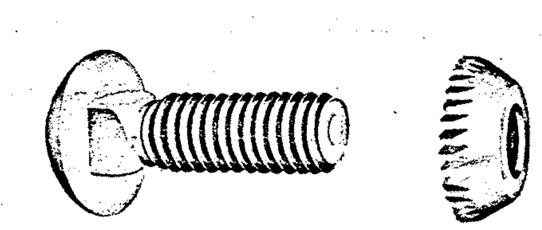


ALL BRACKETS 1/4" x 1 1/4" STAINLESS STEEL

BRIDGE RAIL BRACKET

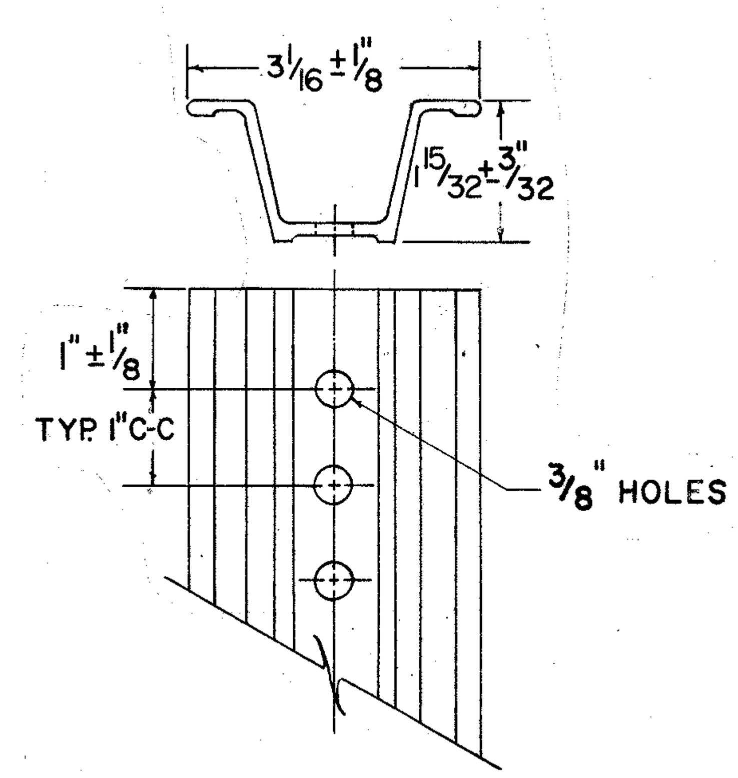


DELINEATOR MOUNTING



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. Lomax
ENGINEER OF TRAFFIC

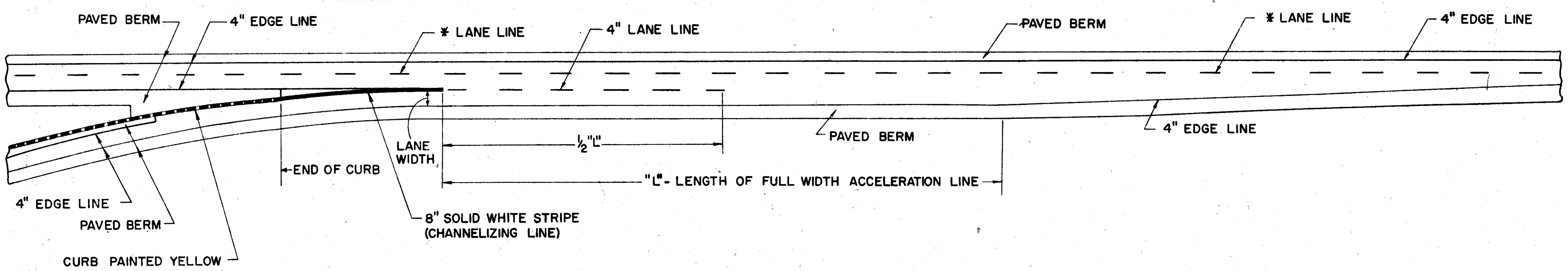
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

227/292

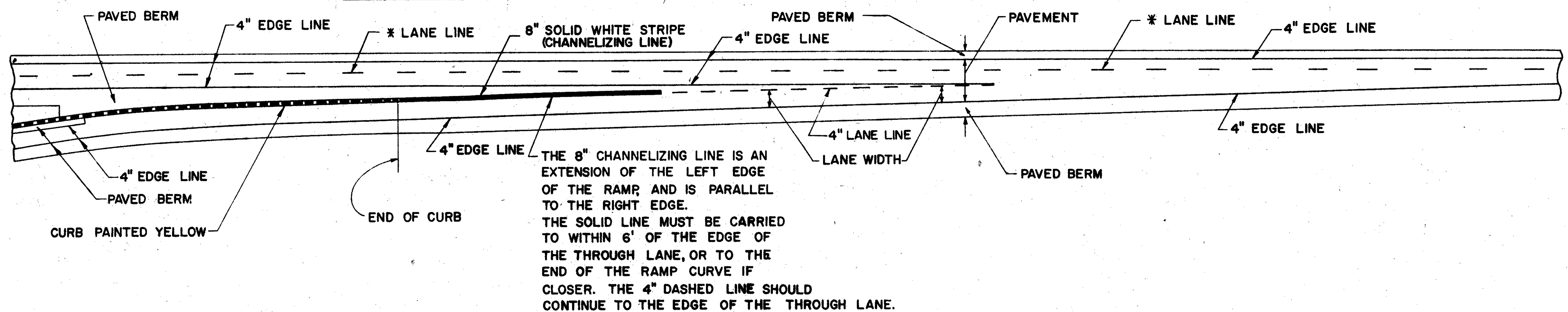
FRANKLIN COUNTY
FRA-270-22.99N

29/29

ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



ENTRANCE TERMINAL - TAPERED ACCELERATION LANE

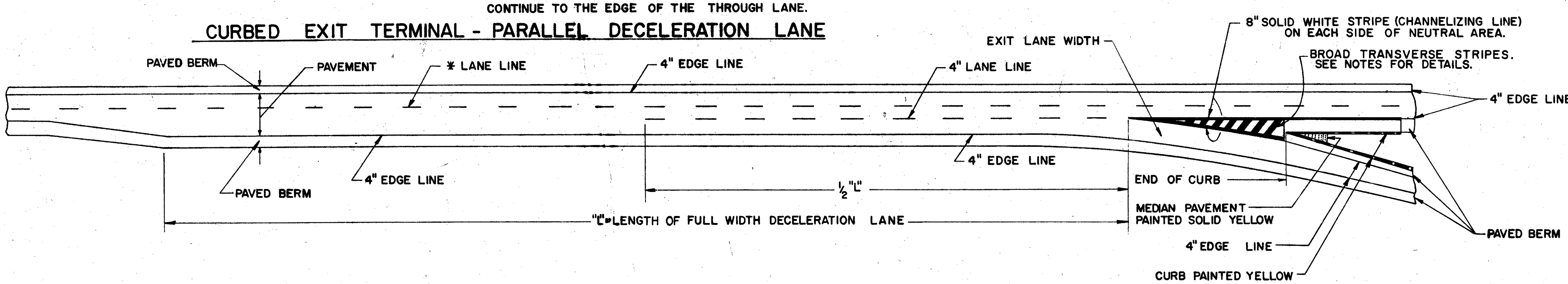


NOTES

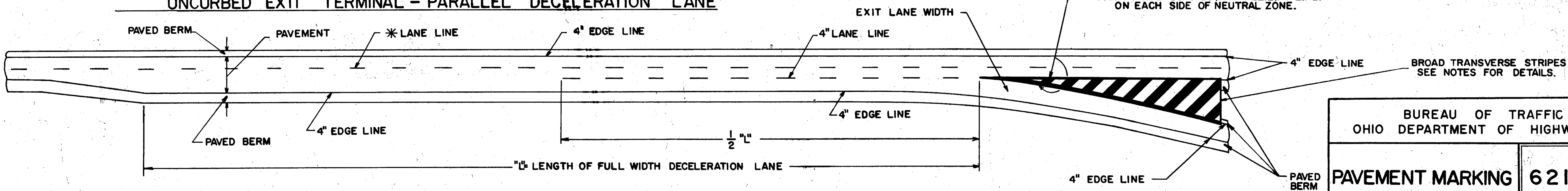
DIAGONAL STRIPES AT EXIT RAMPS SHALL BE 24" BROAD TRANSVERSE STRIPES, 621.11, WITH A 6' SPACE BETWEEN STRIPES.

✱ 6" LANE LINE ON INTERSTATE HIGHWAYS ONLY.
4" LANE LINE ON ALL OTHER HIGHWAYS.

CURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



UNCURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING	621	DATE 7-17-61 4-6-62 5-24-65 9-29-67 4-17-68

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

TRAFFIC SIGNAL SPECIFICATIONS

I. GENERAL

A. SCOPE OF WORK

THE CONTRACTOR SHALL INSTALL TRAFFIC ACTUATED, MULTI-PHASE TRAFFIC SIGNALS AT THE INTERSECTIONS OF MORSE ROAD AND RAMPS "A" AND "B," MORSE ROAD AND RAMPS "C" AND "D," AND MORSE ROAD AND STELZER ROAD. 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 OF A TRAFFIC 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 WORKMANSHIP.

II. SIGNAL SPECIFICATIONS

A. INSTALLATION - GENERAL

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 THROUGH THE CITY OF COLUMBUS, DIVISION OF ELECTRICITY, OR THE COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY. THE COST OF OBTAINING THE POWER SHALL BE INCLUDED IN THE BID PRICE FOR "<u>POWER CABLE WITH ACCESSORIES</u>."

4. TRAFFIC SIGNAL CABLE SHALL ENTER THE CONTROLLER CABINETS AND RUN CONTINUOUSLY FROM SIGNAL HEAD TO SIGNAL HEAD WITHOUT SPLICES. <u>NO SPLICES SHALL BE PERMITTED AT ANY LOCATION IN THE CABLE</u>. 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, PEDESTRIAN UNITS, INTERCONNECT EQUIPMENT AND ALL MISCELLANEOUS EQUIPMENT.

6. ALL SPLICES AND PULL BOXES SHALL BE OF THE WEATHER-PROOF POURED TYPE.

B. EQUIPMENT

1. GENERAL

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

2. CONTROLLERS AND CABINETS

A. TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, FOUR PHASE, MODULAR TYPE A.

THE CONTRACTOR SHALL FURNISH AND INSTALL A FULLY ACTUATED FOUR PHASE TRAFFIC SIGNAL CONTROLLER BY TYPE. THE CONTROLLER SHALL CONSIST OF COMPLETELY INTERCHANGEABLE PHASE MODULES AS TABULATED. IT SHALL BE CAPABLE OF PROVIDING THE BASIC SIGNAL SEQUENCE IN ACCORDANCE WITH THE SIGNAL OPERATION DRAWINGS.

THE CONTROLLER SHALL BE ONE MODUVAC MULTI-PHASE TRAFFIC SIGNAL CONTROLLER CONTAINED IN ONE COMPLETELY WIRED TYPE EL-400 CABINET AS MANUFACTURED BY EAGLE SIGNAL COMPANY, A DIVISION OF E. W. BLISS COMPANY, DAVENPORT, IOWA OR ONE TRAF-O-MATIC MULTI-PHASE TRAFFIC SIGNAL CONTROLLER CONTAINED IN ONE COMPLETELY WIRED M CABINET AS MANUFACTURED BY AUTOMATIC SIGNAL COMPANY, A DIVISION OF LABORATORIES FOR ELECTRONICS, INC., NORWALK, CONNECTICUT, OR AN APPROVED EQUAL.

CONTROLLER CABINETS SHALL BE AS SPECIFIED ABOVE AND SHALL BE MANUFACTURED BY THE CONTROLLER SUPPLIER. THE CABINET SHALL BE PREWIRED AT THE FACTORY. THE CABINET SHALL BE EQUIPPED WITH SCREENED VENTS AND LARGE (6 INCH MINIMUM DIAMETER) FANS WITH THERMOSTATIC CONTROL. THE CABINETS SHALL CONTAIN A SEPARATE JACK MOUNTED FLASHING UNIT COMPLETE WITH EXTERNAL JACK MOUNTED LOAD RELAYS, RADIO INTERFERENCE FILTER AND FUSE CUTOUT SWITCH. THE CABINETS SHALL BE INSTALLED WITH NECESSARY EQUIPMENT TO INSURE THAT CONFLICTING GREEN INDICATIONS CANNOT OCCUR.

THE LARGE CABINET DOORS SHALL BE FITTED WITH A SMALLER DOOR WHICH SHALL CONTAIN A MAIN ON-OFF SWITCH AND AN AUTOMATIC FLASH SWITCH. THE LOCK ON THE LARGE CABINET DOOR SHALL BE KEYED TO THE CITY OF COLUMBUS MASTER. THE LOCK ON THE SMALL DOOR SHALL BE KEYED TO THE CITY OF COLUMBUS POLICE MASTER. TWO KEYS SHALL BE FURNISHED WITH EACH LOCK. ALL EQUIPMENT REQUIRED FOR A SATISFACTORY OPERATION SHALL BE FURNISHED COMPLETELY INSTALLED.

TWO COATS OF ALUMINUM PAINT SHALL BE APPLIED TO THE TRAFFIC SIGNAL CONTROLLER CABINET. CABINETS SHALL BE PAINTED AFTER INSTALLATION. TWENTY-FOUR HOURS SHALL ELAPSE BEFORE THE SECOND COAT OF PAINT IS APPLIED TO ANY EQUIPMENT. PAYMENT FOR PAINTING SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE. THE CONTRACTOR SHALL EXERCISE DUE CAUTION TO PROTECT VEHICLES DURING APPLICATION OF PAINT AND SHALL ERECT AND REMOVE "FRESH PAINT" SIGNS ON EQUIPMENT AS REQUIRED.

PAYMENT FOR ITEM 625 "<u>TRAFFIC SIGNAL CONTROLLER WITH CABINET</u>" WILL BE MADE AT THE CONTRACT PRICE FOR EACH CONTROLLER BY INTERSECTION AND TYPE COMPLETE AND IN PLACE, INCLUDING PREWIRED CABINET, ALL CONNECTIONS AND TESTING.

B. TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, THREE PHASE, MODULAR, TYPE B.

THE CONTRACTOR SHALL FURNISH AND INSTALL A FULLY ACTUATED THREE PHASE TRAFFIC SIGNAL CONTROLLER BY TYPE. THE CONTROLLER SHALL CONSIST OF COMPLETELY INTERCHANGEABLE PHASE MODULES AS TABULATED. IT SHALL BE CAPABLE OF PROVIDING THE BASIC SIGNAL SEQUENCE IN ACCORDANCE WITH SIGNAL OPERATION DRAWINGS.
THE CONTROLLER SHALL BE ONE MODUVAC MULTI-PHASE TRAFFIC SIGNAL CONTROLLER CONTAINED IN ONE COMPLETELY WIRED TYPE EL-400 CABINET AS MANUFACTURED BY EAGLE SIGNAL COMPANY, A DIVISION OF E. W. BLISS COMPANY, DAVENPORT, IOWA OR ONE TRAF-O-MATIC MULTI-PHASE TRAFFIC SIGNAL CONTROLLER CONTAINED IN ONE COMPLETELY WIRED M CABINET AS MANUFACTURED BY AUTOMATIC SIGNAL COMPANY, A DIVISION OF LABORATORIES FOR ELECTRONICS, INC., NORWALK, CONNECTICUT, OR AN APPROVED EQUAL.

CONTROLLER CABINETS SHALL BE AS SPECIFIED ABOVE AND SHALL BE MANUFACTURED BY THE CONTROLLER SUPPLIER. THE CABINET SHALL BE PREWIRED AT THE FACTORY. THE CABINET SHALL BE EQUIPPED WITH SCREENED VENTS AND LARGE (6 INCH MINIMUM DIAMETER) FANS WITH THERMOSTATIC CONTROL. THE CABINETS SHALL CONTAIN A SEPARATE JACK MOUNTED FLASHING UNIT COMPLETE WITH EXTERNAL JACK MOUNTED LOAD RELAYS, RADIO INTERFERENCE FILTER AND FUSE CUTOUT SWITCH. THE CABINETS SHALL BE INSTALLED WITH NECESSARY EQUIPMENT TO INSURE THAT CONFLICTING GREEN INDICATIONS CANNOT OCCUR.

THE LARGE CABINET DOORS SHALL BE FITTED WITH A SMALLER DOOR WHICH SHALL CONTAIN A MAIN ON-OFF SWITCH AND AN AUTOMATIC FLASH SWITCH. THE LOCK ON THE LARGE CABINET DOOR SHALL BE KEYED TO THE CITY OF COLUMBUS MASTER. THE LOCK ON THE SMALL DOOR SHALL BE KEYED TO THE CITY OF COLUMBUS POLICE MASTER. TWO KEYS SHALL BE FURNISHED WITH EACH LOCK. ALL EQUIPMENT REQUIRED FOR A SATISFACTORY OPERATION SHALL BE FURNISHED COMPLETELY INSTALLED.

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PAYMENT FOR ITEM 625 "<u>TRAFFIC SIGNAL CONTROLLER WITH CABINET</u>" WILL BE MADE AT THE CONTRACT PRICE FOR EACH CONTROLLER BY INTERSECTION AND TYPE COMPLETE AND IN PLACE, INCLUDING PREWIRED CABINET, ALL CONNECTIONS AND TESTING.

C. CONCRETE FOUNDATIONS FOR CONTROLLER CABINETS

EACH CONTROLLER CABINET SHALL BE MOUNTED ON A CONCRETE FOUNDATION SECURED BY ANCHOR BOLTS, CONTAIN A COPPER WELD GROUND ROD AND A 36" X 36" X 4" CONCRETE SLAB AS SHOWN ON THE TYPICAL INSTALLATION DETAIL.

PAYMENT FOR ITEM 816 "<u>CONCRETE FOUNDATION FOR CONTROLLER CABINETS</u>" WILL BE MADE PER CUBIC YARD COMPLETED AND SHALL INCLUDE CONCRETE, FITTINGS, WROUGHT IRON GROUND ROD, CONDUIT, ANCHOR BOLTS, CONCRETE SLAB AND TWO ADDITIONAL UNUSED AND CAPPED 1-1/2" CONDUITS FROM THE CONTROLLER CABINET TO 1 FOOT ABOVE THE GROUND AT THE NEAREST STEEL STRAIN POLE.

3. LOOP DETECTOR AMPLIFIERS

LOOP DETECTOR AMPLIFIERS SHALL BE MODEL EW-65 AS MANUFACTURED BY EAGLE SIGNAL COMPANY OR MODEL LD-1 AS MANUFACTURED BY AUTOMATIC SIGNAL COMPANY OR AN APPROVED EQUAL.

PAYMENT FOR ITEM 625 "<u>LOOP DETECTOR AMPLIFIERS</u>" WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH DETECTOR AMPLIFIER, BY TYPE, COMPLETELY WIRED AND INSTALLED IN CONTROLLER CABINET.

4. LOOP DETECTOR WIRE AND CABLE

LOOP DETECTORS SHALL BE CONSTRUCTED WITH #14 UF OR #14 TW WIRE. EACH LOOP SHALL BE THE SIZE SHOWN ON THE PLAN AND PLACED 1-1/2 INCHES TO 2-1/2 INCHES BELOW THE PAVEMENT SURFACE BY SAW CUTTING IN ACCORDANCE WITH TYPICAL LOOP DETECTOR INSTALLATION DETAIL. EACH LOOP SHALL CONSIST OF THE NUMBER OF TURNS AS REQUIRED BY THE MANUFACTURER OF THE LOOP DETECTOR. FROM THE LOOP TO THE PULL BOX, THE LEAD IN WIRE SHALL BE TWISTED THREE TURNS PER FOOT. THE LOOP WIRE SHALL BE TERMINATED IN THE PULL BOX AND CONNECTED TO A #14 AWG TWO CONDUCTOR UF WIRE WHICH SHALL RUN TO THE CONTROLLER CABINET. THE WIRE SHALL BE CONNECTED WITH A SOLDERED WATERPROOF POURED SPLICE. SHIELDED CABLES SHALL BE PROVIDED IF REQUIRED BY THE DETECTOR MANUFACTURER TO ELIMINATE OUTSIDE INTERFERENCE OR FALSE CALLING OF DETECTORS. THE LOOP WIRE SHALL BE PROTECTED WITH POLYETHYLENE OR POLYVINYL JACKET AS SHOWN ON THE DETAIL.

PAYMENT FOR ITEM 625 "<u>LOOP DETECTOR WIRE</u>" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT IN PLACE OF #14 THW WIRE AND SHALL INCLUDE DETECTOR WIRE, INSTALLATION, JACKET, SPLICES, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION. THE ESTIMATED QUANTITIES OF LOOP DETECTOR WIRES SHOWN ON THE PLANS IS BASED ON THE ANTICIPATED NUMBER OF TURNS SHOWN. PAYMENT WILL BE MADE ON THE ACTUAL LINEAL FEET REQUIRED AS THIS IS CONTROLLED BY THE DETECTOR MANUFACTURER REQUIREMENT.

PAYMENT FOR ITEM 625 "<u>LOOP DETECTOR LEAD-IN CABLE</u>" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT IN PLACE OF #14 AWG TWO CONDUCTOR UF WIRE, INCLUDING SOLDERED WATERPROOF SPLICE AND SHIELDING, IF REQUIRED BY THE DETECTOR MANUFACTURER.

5. LOOP DETECTOR PAVEMENT CUTTING

LOOP DETECTOR PAVEMENT CUTTING SHALL CONSIST OF A 1-1/2 INCH TO 2-1/2 INCH X 1/4 INCH WIDE SAW CUT IN ACCORDANCE WITH TYPICAL LOOP DETECTOR INSTALLATION DETAIL. THE SAW CUT SHALL BE FILLED WITH A JOINT SEALER AFTER THE WIRE HAS BEEN INSTALLED. THE JOINT SEALER SHALL CONFORM TO THE REQUIREMENTS OF STANDARD SPECIFICATIONS 705.02.

PAYMENT FOR ITEM 625 "<u>LOOP DETECTOR PAVEMENT CUTTING</u>" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR SAW CUTTING AND TREATMENT INCLUDING JOINT SEALER.

6. 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 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 625 "<u>TRAFFIC SIGNAL HEADS</u>" 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 A TYPICAL SIGNAL INSTALLATION DETAIL, WIRED IN ACCORDANCE WITH TYPICAL SIGNAL HEAD WIRING DIAGRAM, TESTED AND ACCEPTED.

7. PULL BOXES, 18" CIRCULAR, 713.08, AS PER PLAN

PULL BOXES SHALL BE 18" DEEP WITH 12" GRAVEL DRAIN. PULL BOX COVER SHALL BE AS DETAILED ON SHEET AS PER PLAN

PAYMENT FOR ITEM 625 "<u>PULL BOXES, 18" CIRCULAR, 713.08, AS PER PLAN</u>" WILL BE MADE FOR EACH PULL BOX INSTALLED AND SHALL INCLUDE THE CIRCULAR BITUMINOUS PULL BOX, PULL BOX LID, 12 INCH GRAVEL DRAIN AND ALL EXCAVATION AND BACKFILL AS REQUIRED.

TRAFFIC SIGNAL SPECIFICATIONS CONT'D.

8. SIGNAL STRAIN POLES

THE STEEL STRAIN POLES SHALL CONSIST OF A CONTINUOUS ROUND TAPERED GALVANIZED STEEL SHAFT HAVING A CAST STEEL ANCHOR BASE, HAND HOLE WITH COVER, CAST STEEL TOP ADAPTER, POLE TOP AND ANCHOR BOLTS AND NUTS. THE ROUND TAPERED SHAFT SHALL BE 13" 0 GAUGE, 30' LONG, 1 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 48,000 P.S.I. THE SHAFT SHALL BE MADE FROM ONE LENGTH OF STEEL SHEET.

A 4" X 8" HAND HOLE SHALL BE WELDED INTO THE SHAFT AS SHOWN ON THE DETAIL DRAWING 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 ACCOMMODATING 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 ON THE INSIDE AT THE TOP OF THE BASE. THE TWO WELDS SHALL BE NOT LESS THAN 2 INCHES APART AND 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 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.
FOUR HIGH GRADE STEEL ANCHOR BOLTS EACH FITTED WITH TWO HEXAGON NUTS SHALL BE FURNISHED. EACH ANCHOR BOLT SHALL HAVE AN 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 2" IN DIAMETER AND 96" LONG.

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

9. CONCRETE FOUNDATION FOR SIGNAL STRAIN POLES

TRAFFIC SIGNAL POLE FOUNDATIONS SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS. THE CONTRACTOR SHALL STAKE THE LONGITUDINAL AND LATERAL LOCATION AND THE ELEVATION OF 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 SIDEWALKS 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, 1969. 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 WITHIN 6 INCHES BELOW GROUND LEVEL. NO GROUTING OF CONCRETE SHALL BE PERMITTED BETWEEN THE FOUNDATION AND THE STEEL POLE. THE POLES SHALL BE INSTALLED AND ADJUSTED TO THE PROPER RAKE SO THAT THE WEIGHT OF THE SIGNAL INSTALLATION WILL NOT CAUSE THE POLES TO BE OFF VERTICAL ALIGNMENT BY MORE THAN 1%.

PAYMENT FOR ITEM 816 "CONCRETE FOUNDATIONS FOR SIGNAL STRAIN POLES" SHALL BE MADE PER CUBIC YARD FOR EACH FOUNDATION CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL FOUNDATION DETAILS AND SHALL INCLUDE CONCRETE, REINFORCING STEEL, EXCAVATION AND BACKFILL.

10. MESSENGER WIRE WITH ACCESSORIES

MESSENGER WIRE SHALL BE ALUMINUM CLAD STEEL, MEETING ASTM DESIGNATION B415-64T, B416-64T. IT SHALL CONSIST OF SEVEN STRAND #7 AWG WITH A BREAKING LOAD OF 19,800 LBS. ALUMINUM CLAD 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 ALUMINUM CLAD PREFORMED GUY GRIP DEAD ENDS 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 3%.

PAYMENT FOR ITEM 625 "MESSENGER WIRE WITH ACCESSORIES" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT COMPLETELY ASSEMBLED IN ACCORDANCE WITH THE TYPICAL SIGNAL INSTALLATION DETAILS AND SHALL INCLUDE MESSENGER WIRE, LASHING RODS, STRAIN INSULATORS, GUY CLAMPS, DEAD ENDS, ETC., AS DESCRIBED ABOVE AND SHOWN ON THE DETAIL, AND SHALL INCLUDE CABLE CLAMPS AND SUSPENSION FITTINGS FOR EACH SIGNAL HEAD.

11. TRAFFIC SIGNAL CABLE (STRANDED)

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 19-1-1962.

PAYMENT FOR ITEM 625 "TRAFFIC SIGNAL CABLE (STRANDED)" WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT BY SIZE, IN PLACE, COMPLETED AND ACCEPTED, INCLUDING WIRING, TERMINALS, CONNECTIONS, SPLICING, TESTING, AND ALL INCIDENTALS NECESSARY.

12. POWER CABLE

POWER CABLE SHALL BE WEATHERPROOF AND SHALL BE 3 CONDUCTOR AWG #8 RHW STRANDED COPPER. POWER CABLE SHALL BE INSTALLED FROM THE CONTROLLER CABINET THROUGH THE APPROPRIATE CONDUIT, SIGNAL POLE, AND WEATHERHEAD SHALL BE ATTACHED 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.

13. SERVICE CABLE WITH ACCESSORIES

SERVICE CABLE WILL BE PROVIDED TO THE TOP OF THE SIGNAL STRAIN POLE AT THE SOUTHEAST CORNER OF MORSE ROAD AND STELZER ROAD BY THE COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY. THE CONTRACTOR SHALL CONTACT THE ELECTRIC COMPANY TO ARRANGE THE DATE OF INSTALLATION OF SERVICE CABLE TO THIS POLE. THE CONTRACTOR SHALL FURNISH AND INSTALL SERVICE CABLE FROM THE INTERSECTION OF MORSE ROAD AND STELZER ROAD TO THE INTERSECTIONS OF MORSE ROAD AND RAMPS "A" AND "B" AND MORSE ROAD AND RAMPS "C" AND "D" THROUGH UNDERGROUND CONDUIT ADJACENT TO AND IN THE SAME TRENCH WITH THE TRAFFIC SIGNAL INTERCONNECT CABLE. THE SERVICE CABLE SHALL BE THREE CONDUCTORS OF #2 COPPER THW 600V INSULATED IN 1½" CONDUIT. PULL BOXES SHALL BE PROVIDED AT NOT MORE THAN 200FT INTERVALS.

III. MAINTAINING EXISTING TRAFFIC SIGNALS

EXISTING TRAFFIC SIGNALS AT THE INTERSECTION OF MORSE ROAD AND STELZER ROAD SHALL BE MAINTAINED BY THE CONTRACTOR, AT ALL TIMES DURING CONSTRUCTION UNTIL THE NEW SIGNALS ARE COMPLETE AND ACCEPTED.

PAYMENT FOR ITEM 625 "MAINTAINING EXISTING TRAFFIC SIGNALS" WILL BE ON A LUMP SUM BID AND WILL INCLUDE ALL TEMPORARY POLES, SPAN WIRES AND ACCESSORIES, AND ALL LABOR NECESSARY TO RELOCATE AND MAINTAIN THE SIGNALS TO PROPERLY CONTROL INTERSECTION TRAFFIC.

IV. REMOVAL OF EXISTING SIGNAL EQUIPMENT, AS PER PLAN

WHEN THE NEW SIGNAL INSTALLATIONS ARE COMPLETE AND READY FOR THE TEST PERIOD (SEE SECTION V), THE EXISTING SIGNAL HEADS SHALL BE REMOVED BY THE CONTRACTOR AND TAKEN TO STORAGE AREAS OR LOCATIONS WITHIN THE PROJECT LIMITS AS DESIGNATED BY THE ENGINEER. ALL THE REMAINING SIGNAL EQUIPMENT SHALL REMAIN IN PLACE DURING THE TEST PERIOD.

WHEN THE NEW SIGNAL INSTALLATIONS ARE ACCEPTED, THE CONTRACTOR SHALL REMOVE THE REMAINDER OF THE EXISTING SIGNAL EQUIPMENT AND TAKE IT TO STORAGE AREAS DESIGNATED ABOVE.

ALL EQUIPMENT SHALL BE PROTECTED FROM DAMAGE AND ALL OF THE EQUIPMENT CONTAINED IN THE EXISTING CONTROLLER CABINET SHALL BE FURTHER PROTECTED FROM WEATHER.

ALL SIGNAL EQUIPMENT REMOVED SHALL REMAIN THE PROPERTY OF THE POLITICAL SUBDIVISION THAT HAS OWNERSHIP OF SAID EQUIPMENT AT THE TIME THAT THE EQUIPMENT IS REMOVED.

PAYMENT FOR ITEM 202 "REMOVAL OF EXISTING SIGNAL EQUIPMENT, AS PER PLAN" SHALL BE IN A LUMP SUM BASIS AND SHALL INCLUDE THE REMOVAL OF ALL TRAFFIC SIGNALS, POLES, CONTROLLERS, SPAN WIRES AND ACCESSORIES.

V. EQUIPMENT TESTING

ALL THE ELECTRONIC TRAFFIC CONTROL EQUIPMENT, INCLUDING CONTROLLERS, DETECTORS AND CABINETS SHALL BE DELIVERED TO THE CITY OF COLUMBUS, TRAFFIC ENGINEERING ELECTRONICS SHOP, 515 SHORT STREET, COLUMBUS, OHIO 43215 FOR TESTING BEFORE ANY SUCH EQUIPMENT IS INSTALLED AT THE INTERSECTION.

THE CONTRACTOR SHALL FURNISH ALL PERSONNEL, EQUIPMENT AND APPLIANCES REQUIRED TO SUCCESSFULLY FIELD 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 FROM ANY OTHER CIRCUIT. THE CONTRACTOR SHALL TEST EACH UNDERGROUND CIRCUIT AND SPARE 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 TO ALL MEGOHM RATINGS OF EACH CIRCUIT AND SPARE CONDUCTORS AND 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. THE CONTRACTOR SHALL RECORD EACH FAULT AND THE METHOD AND DATE OF CORRECTION.

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 ATTRIBUTED TO POOR WORKMANSHIP OR DEFECTIVE MATERIAL PRIOR TO ACCEPTANCE AND AFTER ANY DEFECTIVE PARTS HAVE BEEN REPLACED AND ALL FAULTS CORRECTED. DURING THE TESTING, THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY FOR MAINTAINING ALL TRAFFIC CONTROL EQUIPMENT.

THE COST OF CONDUCTING TESTS BY THE CONTRACTOR SHALL BE INCLUDED IN THE BID PRICE FOR THE ITEM TESTED.

VI. SIGNAL COORDINATION

THE TRAFFIC SIGNAL AT MORSE ROAD AND RAMPS "A" AND "B," AND MORSE ROAD AND STELZER ROAD SHALL LEAVE THE PHASE "A" GREEN ONLY AFTER RELEASE BY THE PHASE "A" AMBER AT MORSE ROAD AND RAMPS "C" AND "D."
A TIMER, ADJUSTABLE FROM 0 SECONDS TO A MINIMUM OF 60 SECONDS, SHALL BE INSTALLED AT MORSE ROAD AND RAMPS "C" AND "D." THE TIMER SHALL START AT THE BEGINNING OF THE PHASE "A" GREEN AT MORSE ROAD AND RAMPS "C" AND "D" AND IT SHALL GIVE A STEADY RELEASE TO MORSE ROAD AND RAMPS "A" AND "B" AND MORSE ROAD AND STELZER ROAD UPON EXPIRATION OF ITS TIME SETTING. THE TIMER SHALL BE RESET TO ZERO BY THE PHASE "A" AMBER AT MORSE ROAD AND RAMPS "C" AND "D."

VII. HOURS OF WORK

HOURS OF WORK ON THE SIGNALIZATION CONSTRUCTION SHALL BE LIMITED TO 8:30 A.M. TO 4:00 P.M. AND 6:00 P.M. TO 7:00 A.M. WEEKDAYS, OR AS APPROVED BY THE ENGINEER AFTER COORDINATION WITH THE DIVISION TRAFFIC ENGINEER.

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GENERAL SUMMARY
TRAFFIC SIGNALS

INTERSECTION									
		Morse Rd Sheets 6,7&8	SHEET NO 6 MORSE RD & STELLER RD	SHEET NO 8 MORSE RD RAMPS C-D	SHEET NO 7 MORSE RD RAMPS A-B	ITEM	QUANTITY	UNIT	Participation ~ URBAN TYPE CODE 7224 DESCRIPTION
			10	7	7	625	24	ea.	TRAFFIC SIGNAL HEADS, 12" LENS 3 SECTION 1 WAY
			6	5	1	625	12	ea.	PULL BOXES, 18" CIRCULAR, 713.08, as per plan
			4	4	4	816	12	ea.	SIGNAL STRAIN POLE, 0 GAUGE 13"X 28'
			10	10	10	816	30	CU. YD.	CONCRETE FOUNDATIONS FOR SIGNAL STRAIN POLES
			3	3	2	625	8	ea.	LOOP DETECTOR AMPLIFIER
			1.2	1.2	1.2	816	3.6	CU. YD.	CONCRETE FOUNDATIONS FOR CONTROLLER CABINETS
			400	250	335	625	985	LIN FT.	MESSENGER WIRE WITH ACCESSORIES
			600	590	190	625	1380	LIN FT.	LOOP DETECTOR WIRE 1/C # 14 AWG THW STRANDED
			200	165	106	625	471	LIN FT.	LOOP DETECTOR PAVEMENT CUTTING
			525	520	140	625	1185	LIN FT.	LOOP DETECTOR LEAD-IN CABLE 2/C #14 AWG THW STRANDED
			185	250	450	625	885	LIN FT.	TRAFFIC SIGNAL CABLE - STRANDED 5/C #14 AWG, 600 VOLT IMSA NO: 19-1-62
			370	160	100	625	630	LIN FT.	TRAFFIC SIGNAL CABLE - STRANDED 7/C #14 AWG, 600 VOLT IMSA NO: 19-1-62
		2500				625	2500	LIN FT.	INTERCONNECT CABLE 2/C # 14 AWG, 600 VOLT IMSA NO: 19-1-62
			25	20	20	625	65	LIN FT	1/C # 4 AWG 600 VOLTS RUBBER INSULATED AND NEOPRENE JACKETED AND GROUND WIRE
			120	90	50	625	260	LIN FT	CONDUIT, 1½" 713.04 TYPE II OR III
			270	210	140	625	620	LIN FT	CONDUIT, 2" 713.04 TYPE II OR III
			25	20	20	625	65	LIN FT	CONDUIT, ½" 713.04 TYPE II OR III
		2700				625	2700	LIN FT	POWER CABLE 3 CONDUCTORS # 8 COPPER RHW 600 VOLTS INSULated stranded
			1			625	1	ea.	FULLY ACTUATED 4 PHASE SIGNAL CONTROLLER W/CABINET TYPE A as per plan
				1	1	625	2	ea.	FULLY ACTUATED 3 PHASE SIGNAL CONTROLLER W/CABINET TYPE B as per plan
			415	320	210	625	945	LIN FT.	TRENCH
			5	4	4	625	13	ea.	GROUND ROD
			LUMP			625	LUMP	Lump	REMOVAL OF EXISTING SIGNAL EQUIPMENT, AS PER PLAN
			LUMP			625	LUMP	Lump	MAINTAINING EXISTING TRAFFIC SIGNAL

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FRANKLIN COUNTY
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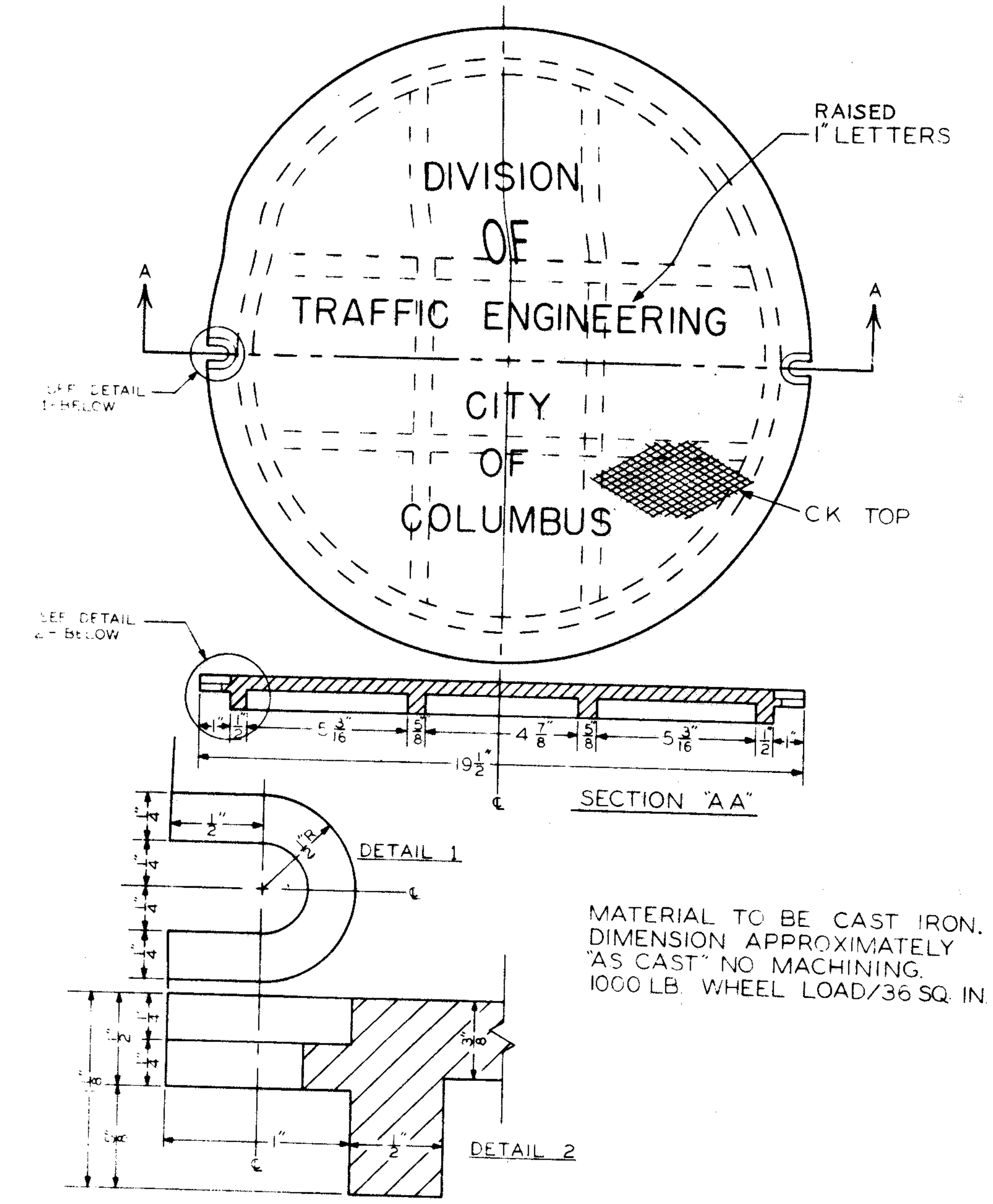
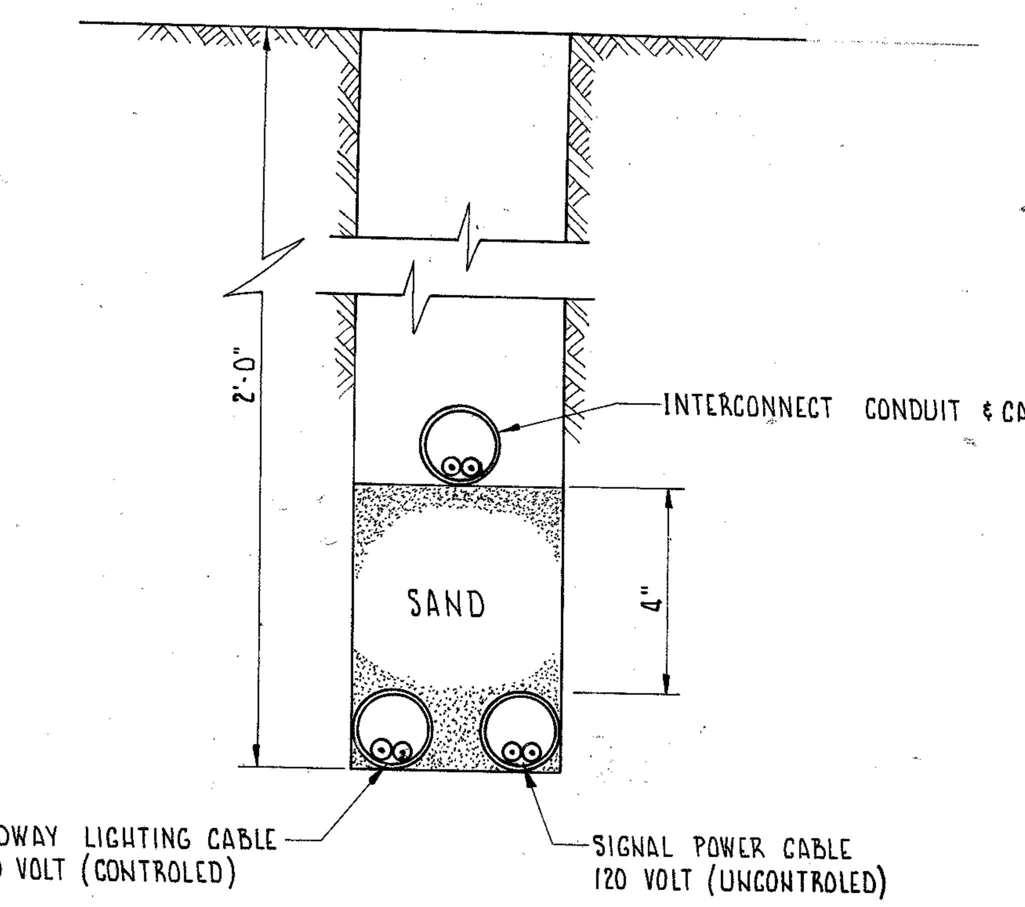
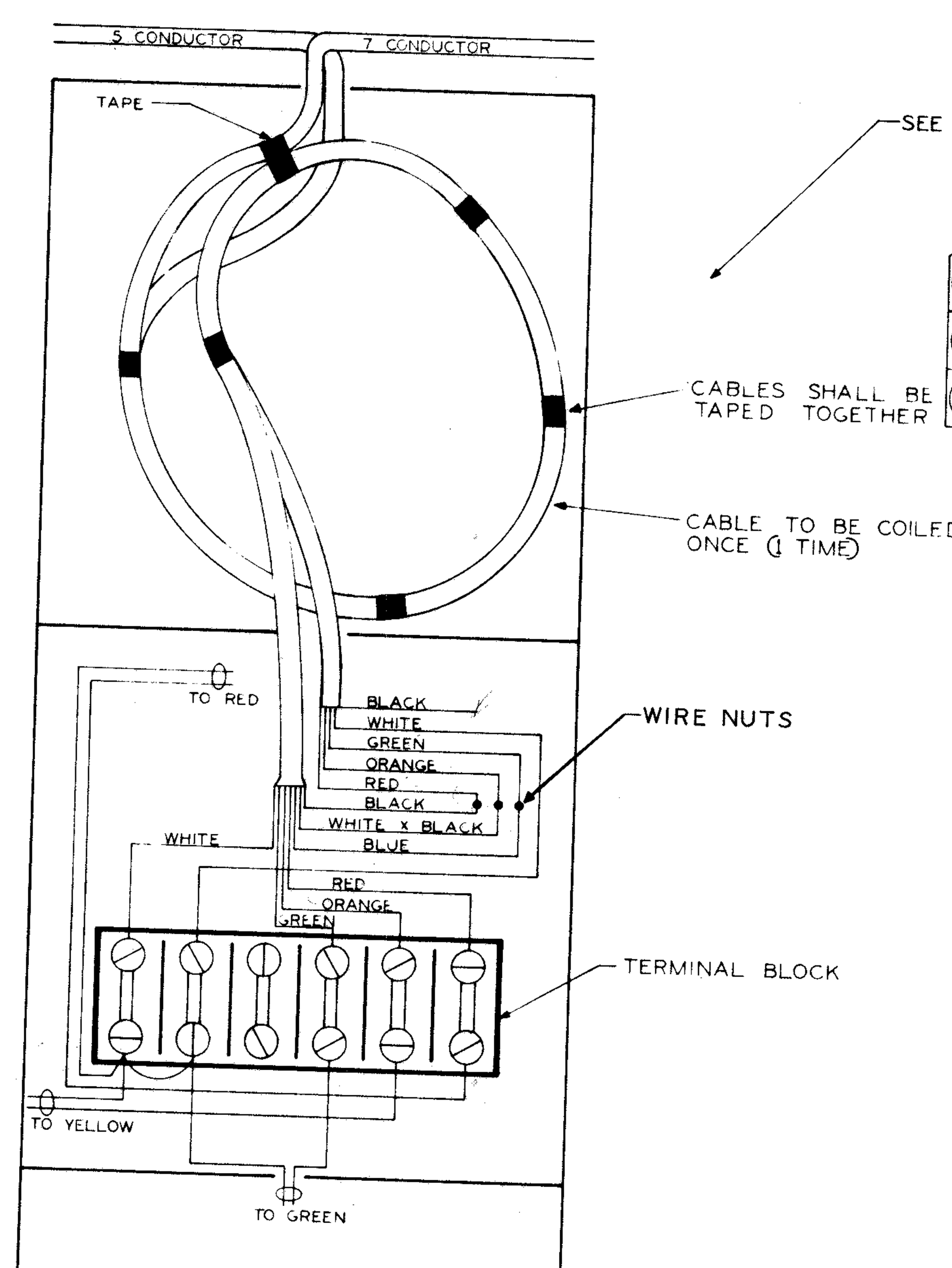
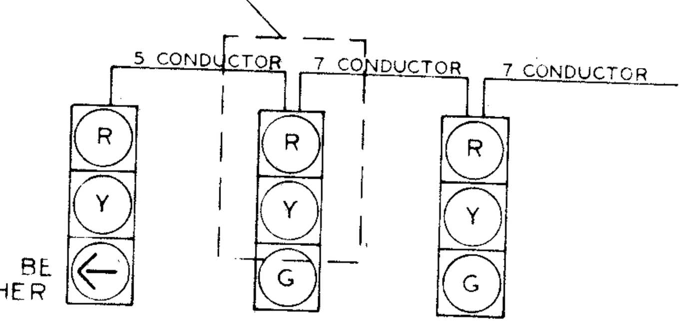


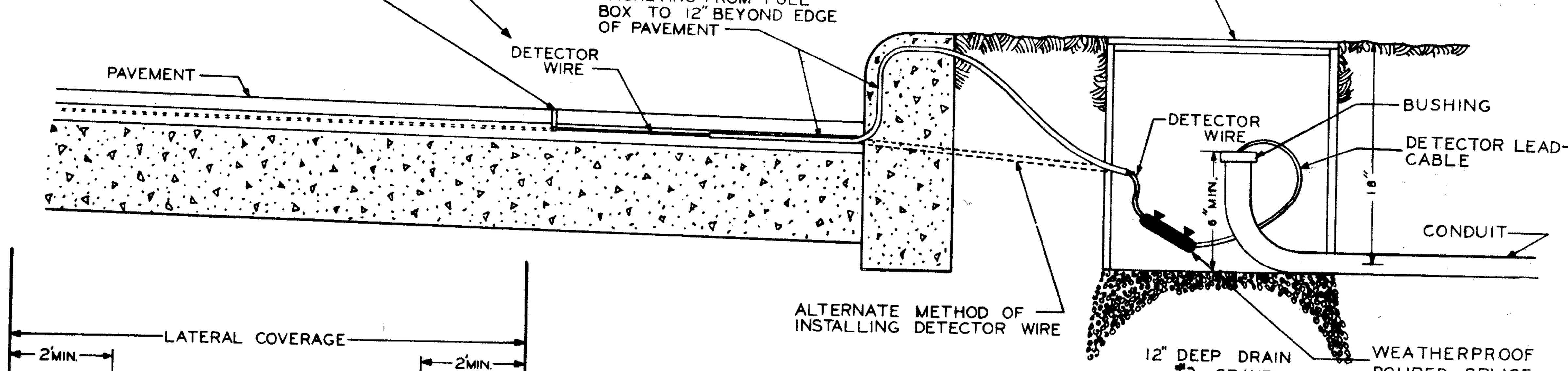
MATERIAL TO BE CAST IRON.
DIMENSION APPROXIMATELY
"AS CAST" NO MACHINING.
1000 LB. WHEEL LOAD/36 SQ. IN.

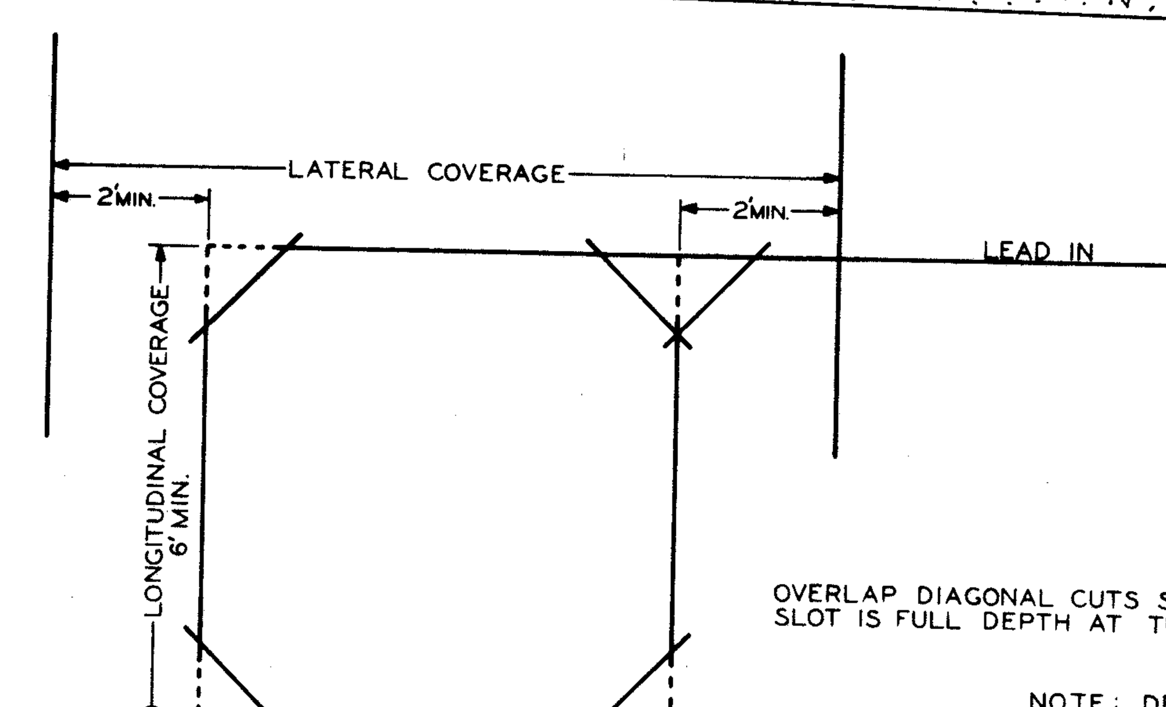


CABLE IN TRENCH ARRANGEMENT



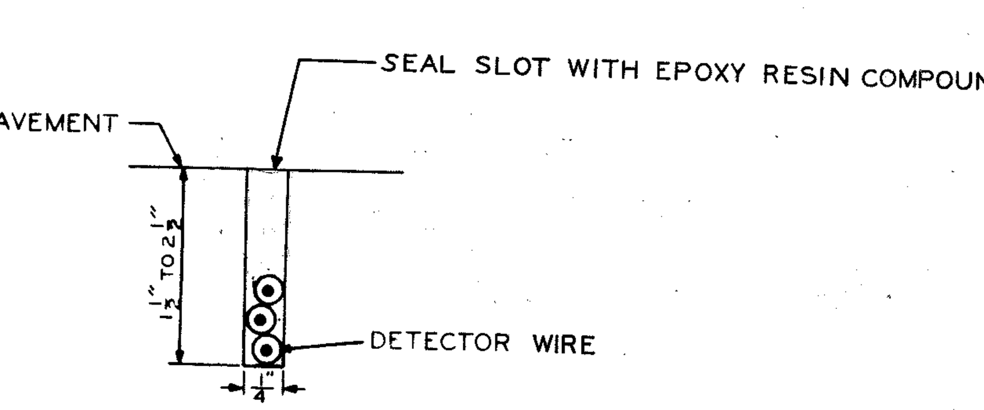






OVERLAP DIAGONAL CUTS SO THAT SLOT IS FULL DEPTH AT TURN POINTS

LOOP SLOT CONSTRUCTION
SOLID LINES SHOW SAW CUTS USED TO ACCOMODATE ROADWAY WIRE LOOP.
DASHED LINES SHOW UNUSED SAW CUTS



SAW SLOT DETAIL

NOTE: DETECTOR AND DETECTOR LEAD IN CABLE SHALL BE OF THE TYPE RECOMMENDED BY THE MANUFACTURER OF THE LOOP DETECTOR & SHOULD BE SHIELDED IF REQUIRED.

SIGNAL INSTALLATION DETAILS	DR	3-12-69	R.E.M.
DEPARTMENT OF PUBLIC SAFETY DIVISION OF TRAFFIC ENGINEERING AND PARKING CITY OF COLUMBUS, OHIO	APP'D	REVISED	BY
	SCALE	DATE 11-15 68	NO. F93

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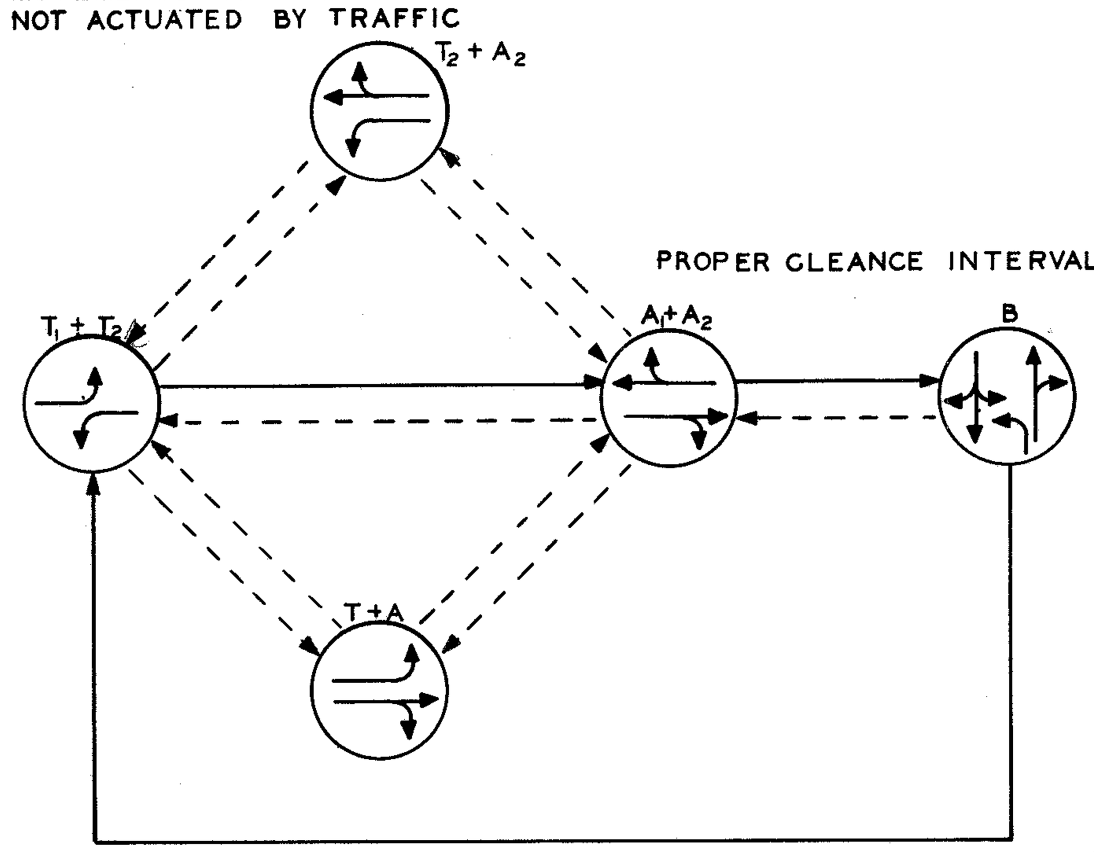
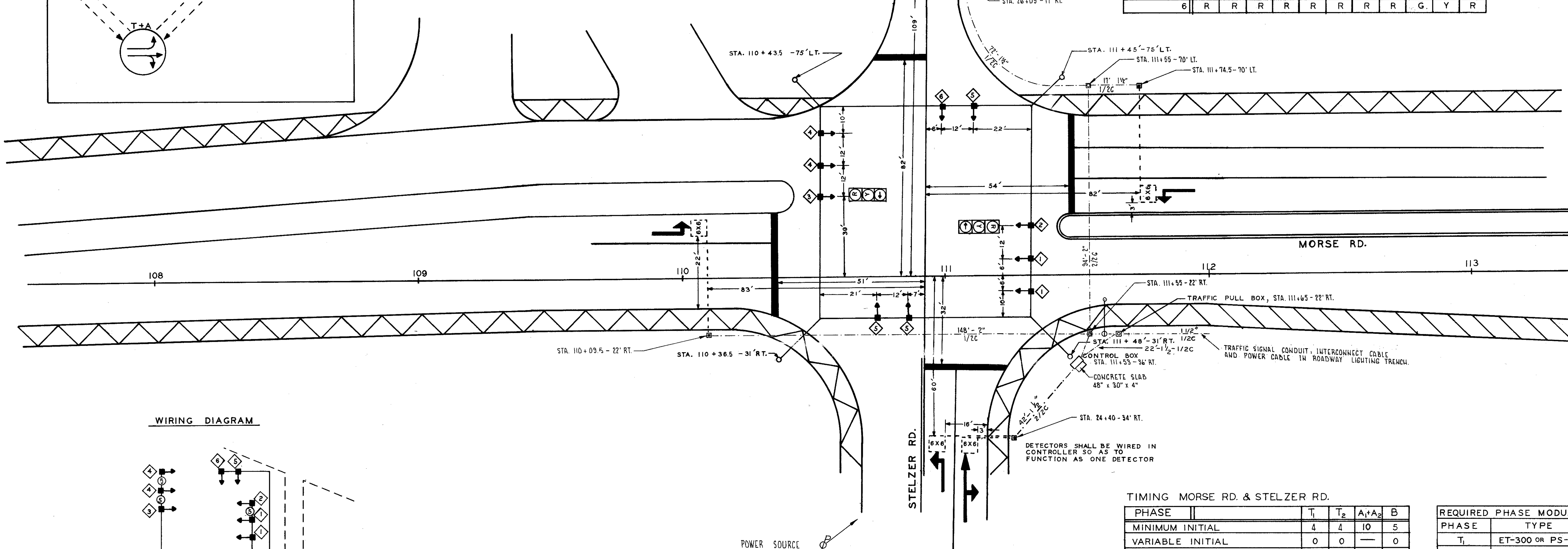
DUAL LEFT TURN APPLICATION PROVIDES FOR ANY TWO NON-CONFLICTING MOVEMENTS OF TRAFFIC AT A GIVEN TIME AND SHALL SKIP MOVEMENTS NOT ACTUATED BY TRAFFIC



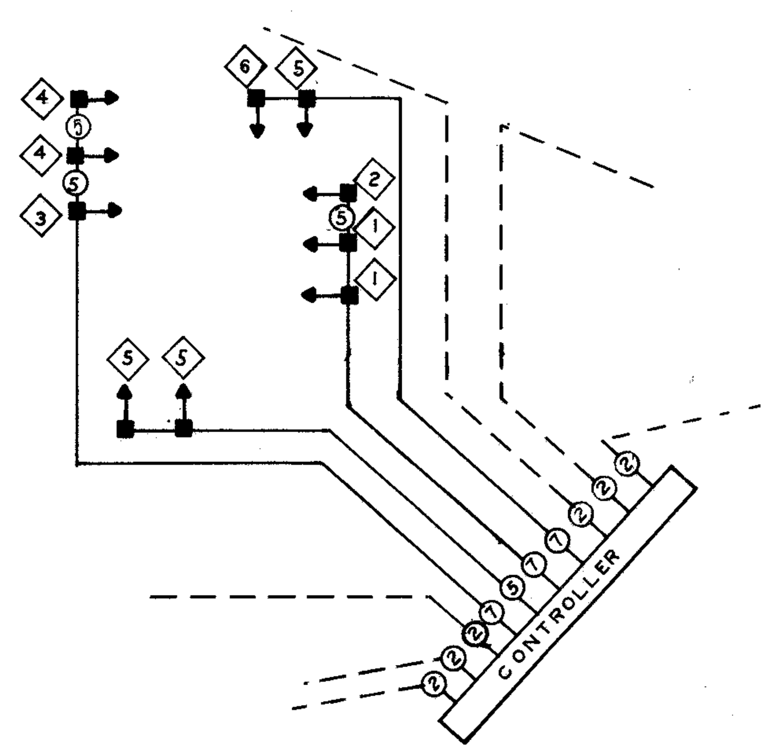
PROPER GLEANCE INTERVALS SHALL BE PROVIDED



SIGNAL DISPLAY SCHEDULE

PHASE	T_1+T_2		T_1+A_1		T_2+A_2		A_1+A_2		B		
MOVEMENT	R/W	C	R/W	C	R/W	C	R/W	C	R/W	C	FLASH
SIGNAL 1	R	R	G	Y	R	R	G	Y	R	R	Y
2	←	Y	←	Y	R	R	R	R	R	R	Y
3	←	Y	R	R	←	Y	R	R	R	R	Y
4	R	R	R	R	G	Y	G	Y	R	R	Y
5	R	R	R	R	R	R	R	R	G	Y	R
6	R	R	R	R	R	R	R	R	G	Y	R

WIRING DIAGRAM



TIMING MORSE RD. & STELZER RD.

PHASE	T_1	T_2	A_1+A_2	B
MINIMUM INITIAL	4	4	10	5
VARIABLE INITIAL	0	0	—	0
UNIT EXTENSION	4	4	—	5
EXTENSION LIMIT	20	20	—	30
VEHICLE CLEARANCE	3.5	3.5	3.5	3.5
ALL RED	0	0	1	1
RECALL	OFF	OFF	OFF	OFF

REQUIRED PHASE MODULES

PHASE	TYPE
T_1	ET-300 OR PS-30R
T_2	ET-300 OR PS-30R
A_1+A_2	ET-305 OR PS 10R
B	ET-300 OR PS 30R

MORSE RD. & STELZER RD.	DR. R.E.M.	3-13-69	J.L.T.
DEPARTMENT OF PUBLIC SAFETY	APP'D	REVISED	BY
DIVISION OF TRAFFIC ENGINEERING AND PARKING	SCALE 1" = 20'	DATE 11-15-68	NO. F-93
CITY OF COLUMBUS, OHIO			

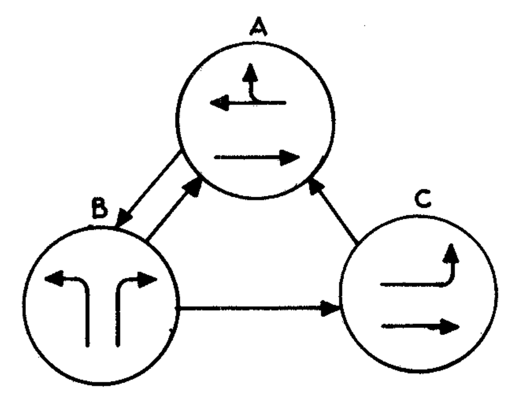
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

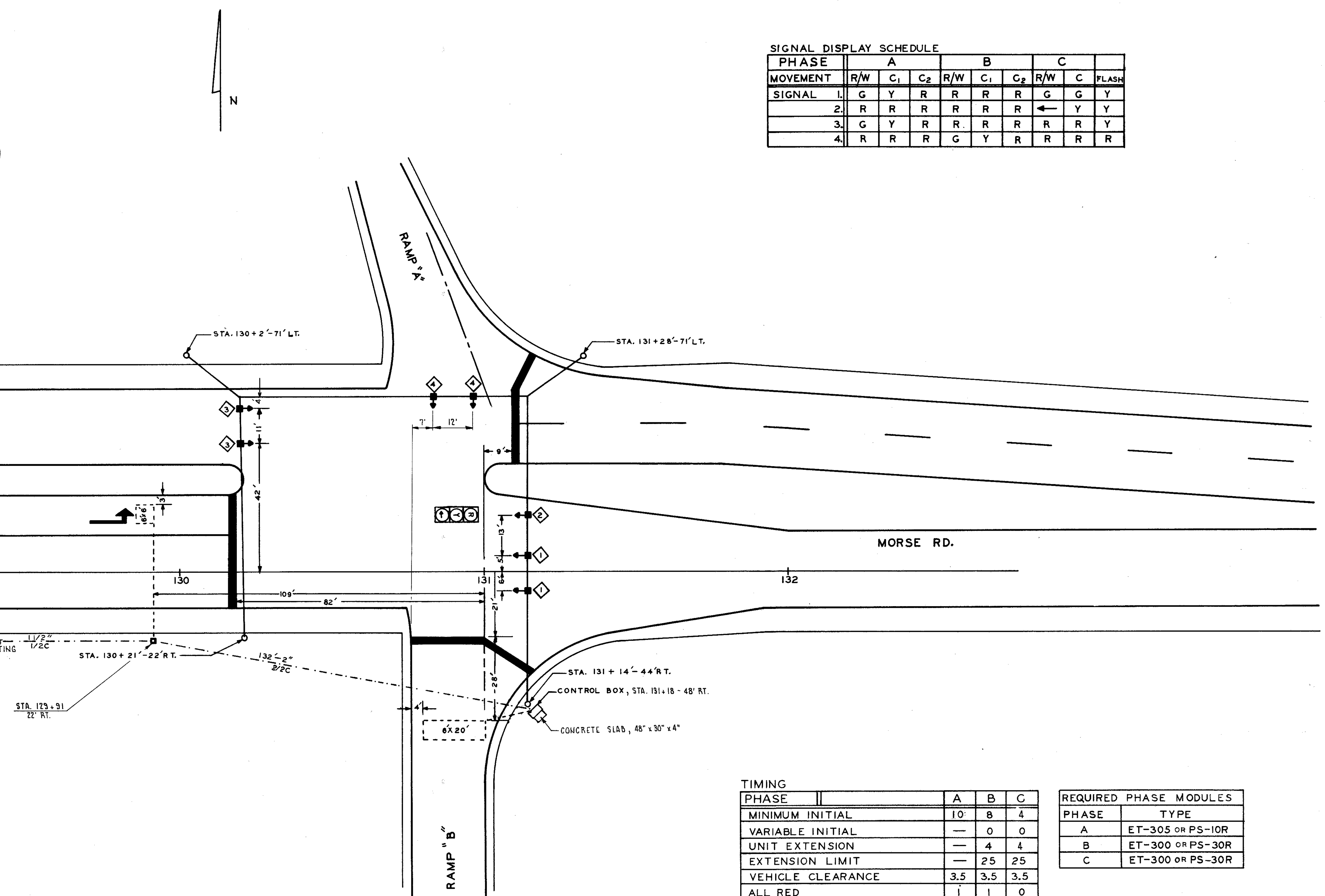
235/292

FRANKLIN COUNTY
FRA-270-22.99N

7/8

SIGNAL PHASING

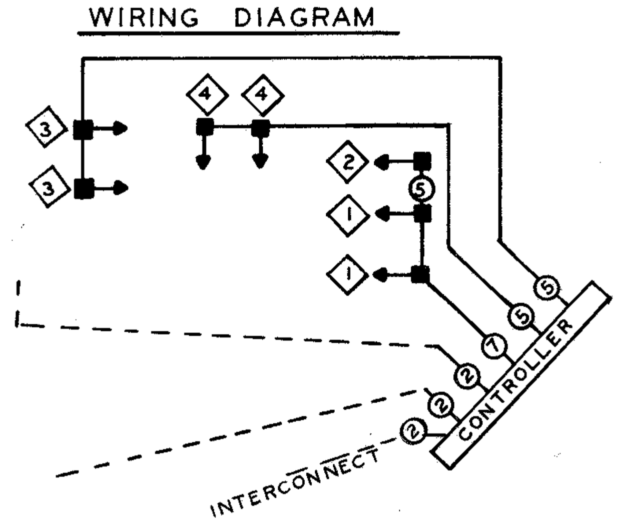




SIGNAL DISPLAY SCHEDULE

PHASE	A			B			C		
MOVEMENT	R/W	C_1	C_2	R/W	C_1	C_2	R/W	C	FLASH
SIGNAL 1.	G	Y	R	R	R	R	G	G	Y
2.	R	R	R	R	R	R	←	Y	Y
3.	G	Y	R	R.	R	R	R	R	Y
4.	R	R	R	G	Y	R	R	R	R

WIRING DIAGRAM



TIMING

PHASE	A	B	C
MINIMUM INITIAL	10	8	4
VARIABLE INITIAL	—	0	0
UNIT EXTENSION	—	4	4
EXTENSION LIMIT	—	25	25
VEHICLE CLEARANCE	3.5	3.5	3.5
ALL RED	1	1	0
RECALL	OFF	OFF	OFF

REQUIRED PHASE MODULES	
PHASE	TYPE
A	ET-305 OR PS-10R
B	ET-300 OR PS-30R
C	ET-300 OR PS-30R

MORSE RD. & I-270 RAMPS A & B	DR. R.E.M.	3-13-69	J.L.T.
DEPARTMENT OF PUBLIC SAFETY DIVISION OF TRAFFIC ENGINEERING AND PARKING CITY OF COLUMBUS, OHIO	APP'D. [illegible]	REVISED	BY
	SCALE 1"=20'	DATE 11-15-68	NO. F-93 7/8

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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FRANKLIN COUNTY
FRA-270-22.99N

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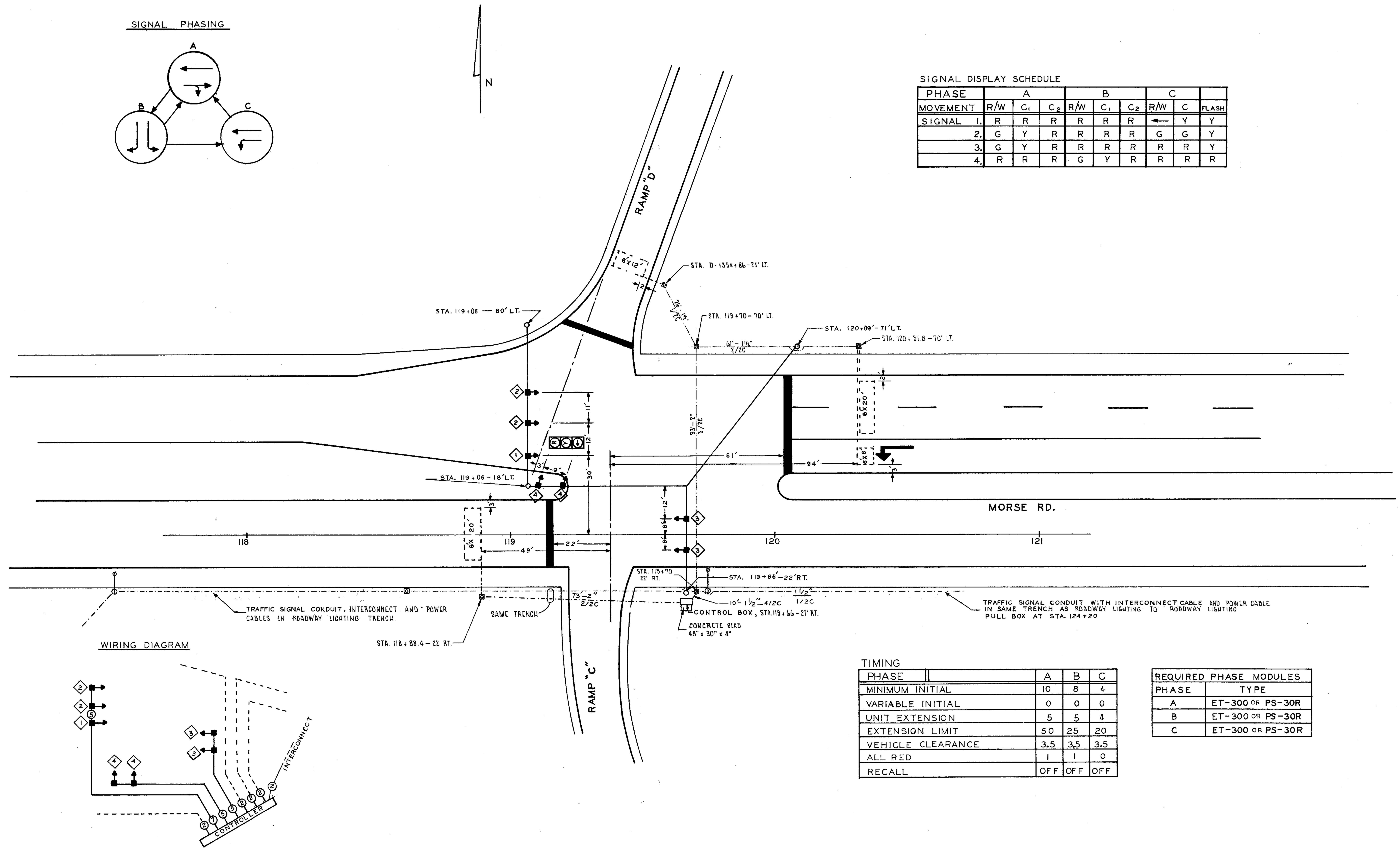
SIGNAL PHASING



SIGNAL DISPLAY SCHEDULE

PHASE	A			B			C		
MOVEMENT	R/W	C_1	C_2	R/W	C_1	C_2	R/W	C	FLASH
SIGNAL 1.	R	R	R	R	R	R	←	Y	Y
2.	G	Y	R	R	R	R	G	G	Y
3.	G	Y	R	R	R	R	R	R	Y
4.	R	R	R	G	Y	R	R	R	R

WIRING DIAGRAM

TIMING

PHASE	A	B	C
MINIMUM INITIAL	10	8	4
VARIABLE INITIAL	0	0	0
UNIT EXTENSION	5	5	4
EXTENSION LIMIT	50	25	20
VEHICLE CLEARANCE	3.5	3.5	3.5
ALL RED	1	1	0
RECALL	OFF	OFF	OFF

REQUIRED PHASE MODULES	
PHASE	TYPE
A	ET-300 OR PS-30R
B	ET-300 OR PS-30R
C	ET-300 OR PS-30R

MORSE RD. & I-270 RAMP C & D	DR. R.E.M.	3-13-69	J.L.T.
DEPARTMENT OF PUBLIC SAFETY DIVISION OF TRAFFIC ENGINEERING AND PARKING CITY OF COLUMBUS, OHIO	APP'D. [illegible]	REVISED	BY
	SCALE 1"=20'	DATE 11-15-68	NO. F-93 8/8

GENERAL NOTES

625.03 - GENERAL

The electrical power required will be supplied by the Columbus and Southern Ohio Electric Company, 215 North Front Street, Columbus, Ohio - 43215.

625.05 - LIGHT POLES

As each pole is erected on its foundation the handhole cover and transformer base door shall be installed and closed to prevent dirt and debris from entering.

625.06 - LIGHT POLE FOUNDATIONS

The maximum projection of foundation above finished grade at the edge facing the roadway shall be 1 inch as shown on sheet number 4 (RL-SK-186) in lieu of the dimension shown on Standard Construction Drawing HL-1.

All light pole foundations on speed change lanes are to be 12'-0" from edge of pavement.

625.07 - LUMINAIRES

713.11 Pole-Bracket-Arm mounted luminaries *shall be mercury vapor with integral regulator ballast and designed to furnish light distribution patterns equivalent to U.S. A.S.I.-I.E.S. types called for on the plans. These luminaires shall be General Electric M400 and M1000W/700W ballast, Westinghouse OV-25 and OV-50 or McGraw-Edison unistyle 400W and unistyle 1000W or approved equal. Ballast for 700 watt luminaires shall be single-voltage rated 480 volts whereas ballast for 400 watt luminaires shall be dual voltage rated at 240/480 volts.*

Luminaires predominately illuminating a main line roadway shall be positioned perpendicularly thereto.

625.12 - TRENCH

Without prior approval of the Engineer, excavations for trenches shall not exceed 12 inches in width.

625.13 - 713.04 - CONDUIT

All rigid ferrous metal conduit shall be type II or type III except for foundation conduit which may be type I.

All conduit on 2:1 slopes shall be encased in a minimum of 3" of Class "C" Concrete.

625.14 - 625.15 - CABLE AND DUCT CABLE

All cables, except structure grounding system cable, entering an accessible enclosure such as a pull box, junction box, light pole base, devise housing, etc., for the purpose of being terminated or connected to another cable shall be identified in such enclosure with the material or devices specified in 713.18. Payment for cable identification shall be included in the unit price bid for cable and duct cable.

625.14 - 625.15 - CABLE AND DUCT CABLE - Continued

All cables shall be without splices between termination, except that exothermically welded joints in structure grounding cable shall not be considered as splices for this purpose.

625.13 - 625.15 - CONDUIT AND DUCT CABLE

Conduit and duct-cable terminals must be sealed as specified in 625.13 and 625.15 immediately upon completion of each individual installation. When the installation of conduit and duct-cable is intermittent, they shall be protected by temporary sealing or capping throughout the progress of the work. This may vary from overnight, between work days, to extended periods of time when partial installations are left dormant before final completion.

Empty conduits shall be capped immediately after installation and remain capped until insertion of pull wire or cable. All cable connector kits and exposed cable ends shall be adequately protected by being enclosed in plastic bags, by taping or by other approved means until final connections are made. Payment forall protective sealing, taping, bagging, etc., both temporary and final shall be included in the bid price for the respective item involved.

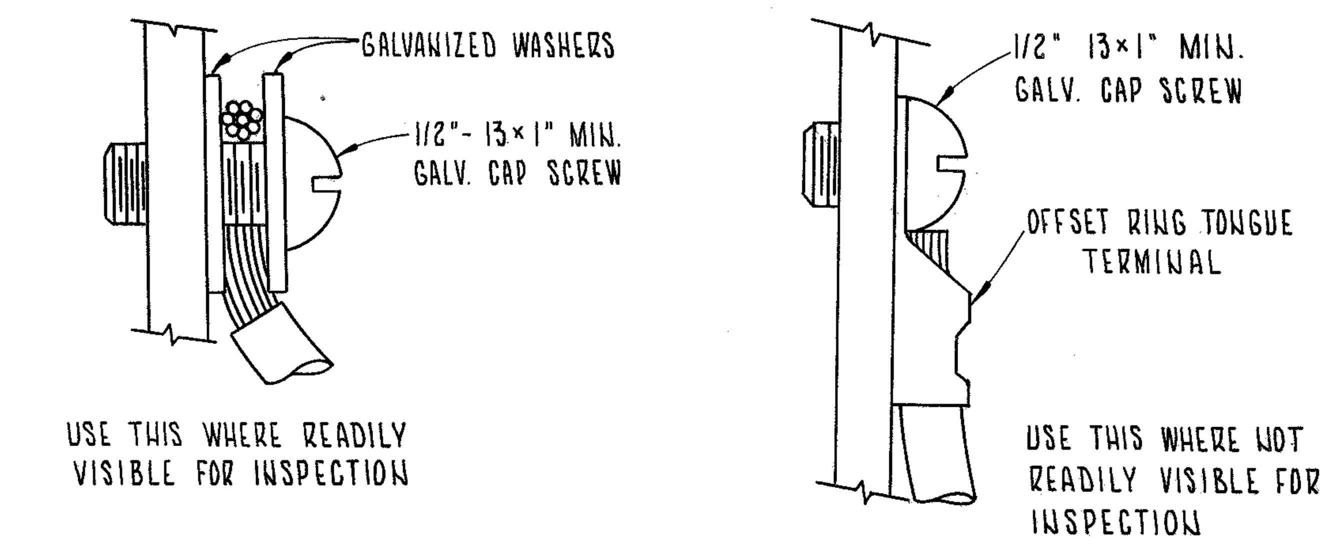
713.14 LAMPS FOR LUMINAIRES

Mercury lamps shall be General Electric "Bonus Line", Westinghouse "Lifeguard", Sylvania "Rough Service" or other approved equal. *Lamps for pole, bracket arm mounted luminaires shall be 400 watt and 700 watt per lighting plan.*

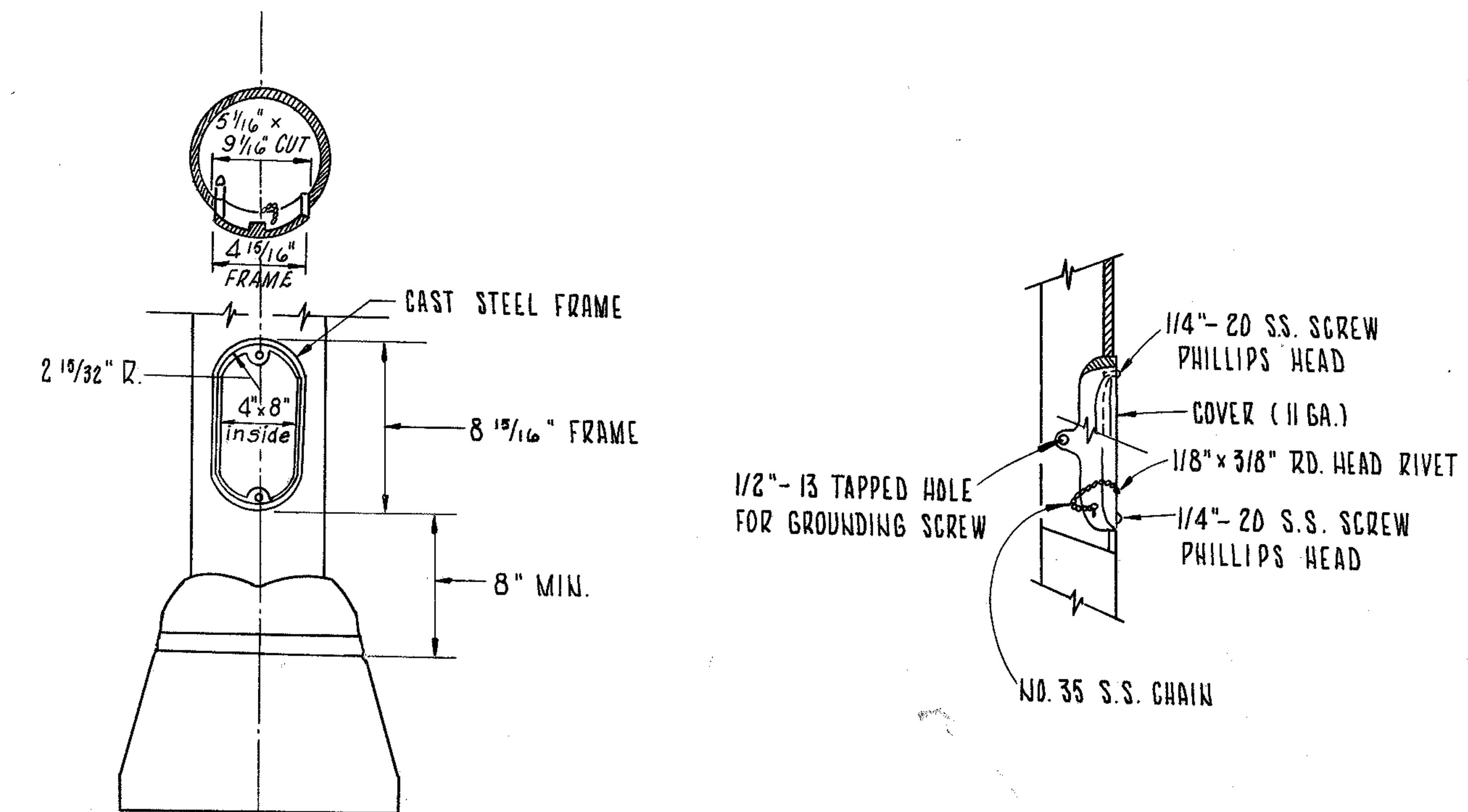
MECHANICAL PROPERTIES FOR LIGHT POLES																	
REFERENCE LETTER	POLE DESIGN NUMBER	SHAFT SIZE	TAPER INCHES / FT.	GUAGE	FOUNDATION ANCHOR BOLTS			ARM LENGTH	NOMINAL MOUNTING HEIGHT	ELASTIC DEF'L RATE INCH PER 100 / LBS.	AT 2/3 OF YIELD STRESS			AT YIELD STRESS			TRANSFORMER BASE SIZE
					SIZE	DIA. BOLT CIRCLE	PROJ. ABOVE FOUNDATION				LOAD 18" DOWN FROM TOP	TOTAL DEF'L INCHES	PERM. SET INCHES	LOAD 18" DOWN FROM TOP	TOTAL DEF'L INCHES	PERM. SET INCHES	
R	11 AT 10 B 34.2	8"×3.87"×29'-6"	.14	11	1"×40"	15"	3½"	10'-0"	34.2	3.32	517	17.66	.50	776	28.84	3.08	AT-A
P	11 AT 12 B 34.2	9"×4.87"×29'-6"	.14	11	1"×40"	15"	3½"	12'-0"	34.2	2.16	659	14.73	.50	989	24.00	2.64	AT-A
Z	7 AT 12 B 41.7	9"×5.65×33'-6"	.10	7	1"×40"	17¼"	3½"	12'-0"	41.7	1.96	859	17.40	.50	1289	28.30	3.00	AT-C
X	7 AT 15 B 41.7	9"×5.65×33'-6"	.10	7	1"×40"	17¼"	3½"	15'-0"	41.7	1.96	859	17.40	.50	1289	28.30	3.00	AT-C

625.11-713.09- PULL BOXES

The pull box airbell shall be anchored by four (4) polypropylane ropes entering the pull box through equally spaced holes around the circumference of the box and below the top of the bell in place. One end of each rope shall be knotted just outside the pull box. The inner ends of each two ropes entering from opposite sides of the pull box shall be tied together to hold the bell firmly in place. In addition, a steel or aluminum pin at least 30 inches long and 3/8" in diameter, or a treated wooden stake of at least 1"x1" stock approved by the Engineer, shall be driven in the center of the pull box. The connector kits in the box shall be taped to the pin or stake so that no part of the kits shall be less than 6 inches above the bottom of the bell in place, nor less than 6 inches above the top of any notch in the bell, if notching is required for duct cable clearance.



GROUND WIRE TERMINAL



4×8 CURVED HANDHOLE FRAME AND COVER DETAIL

625.11-713.09- PULL BOXES CONT'D

Pull boxes shall be the 18" diameter, circular corrugated metal type and have a maximum projection of 1 inch above finished grade on the side facing the roadway.

Rev. 7-11-69

GENERAL LIGHTING QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

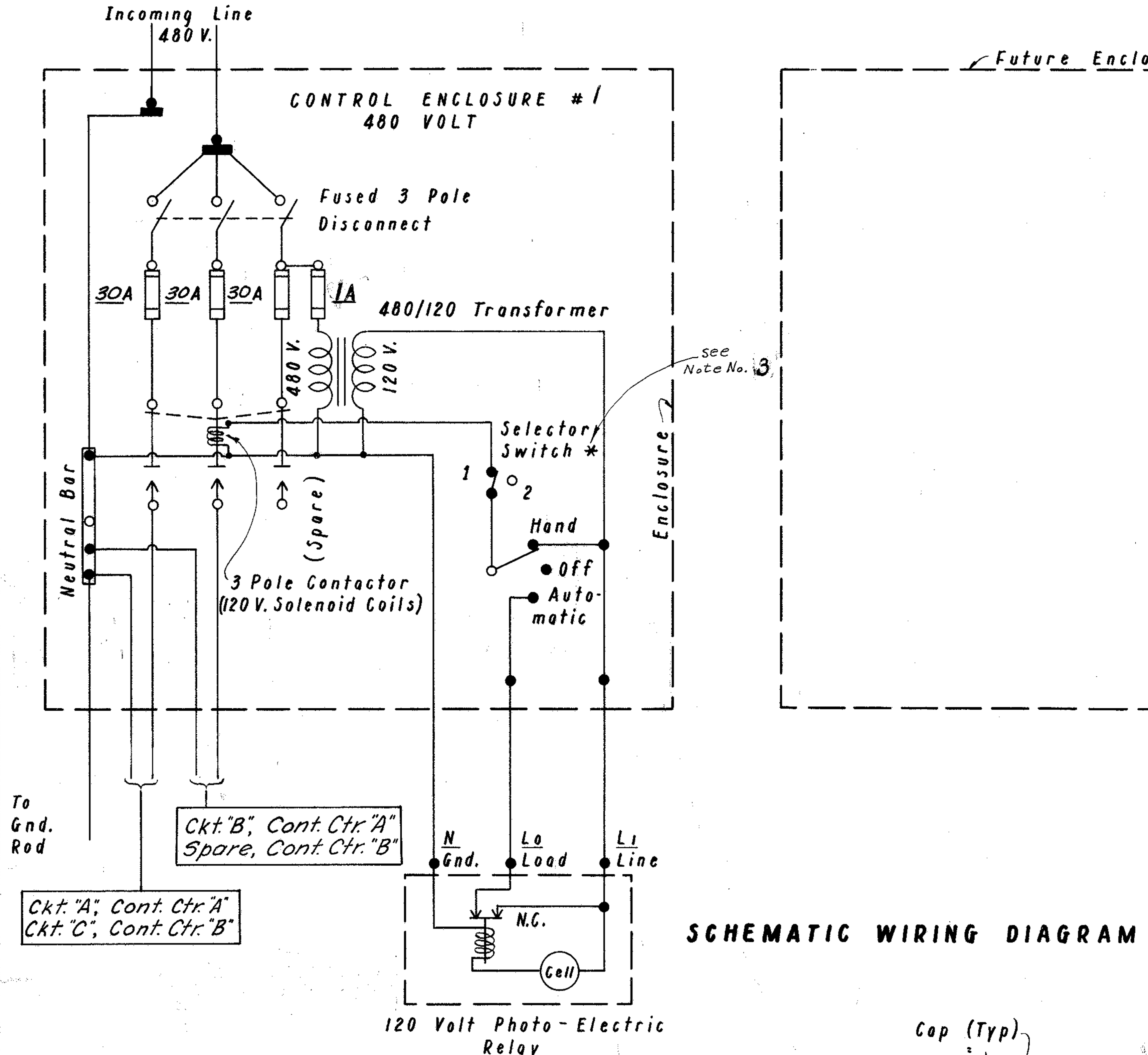
238 / 292

FRANKLIN COUNTY
FRA-270-22.99 N

2 / 12

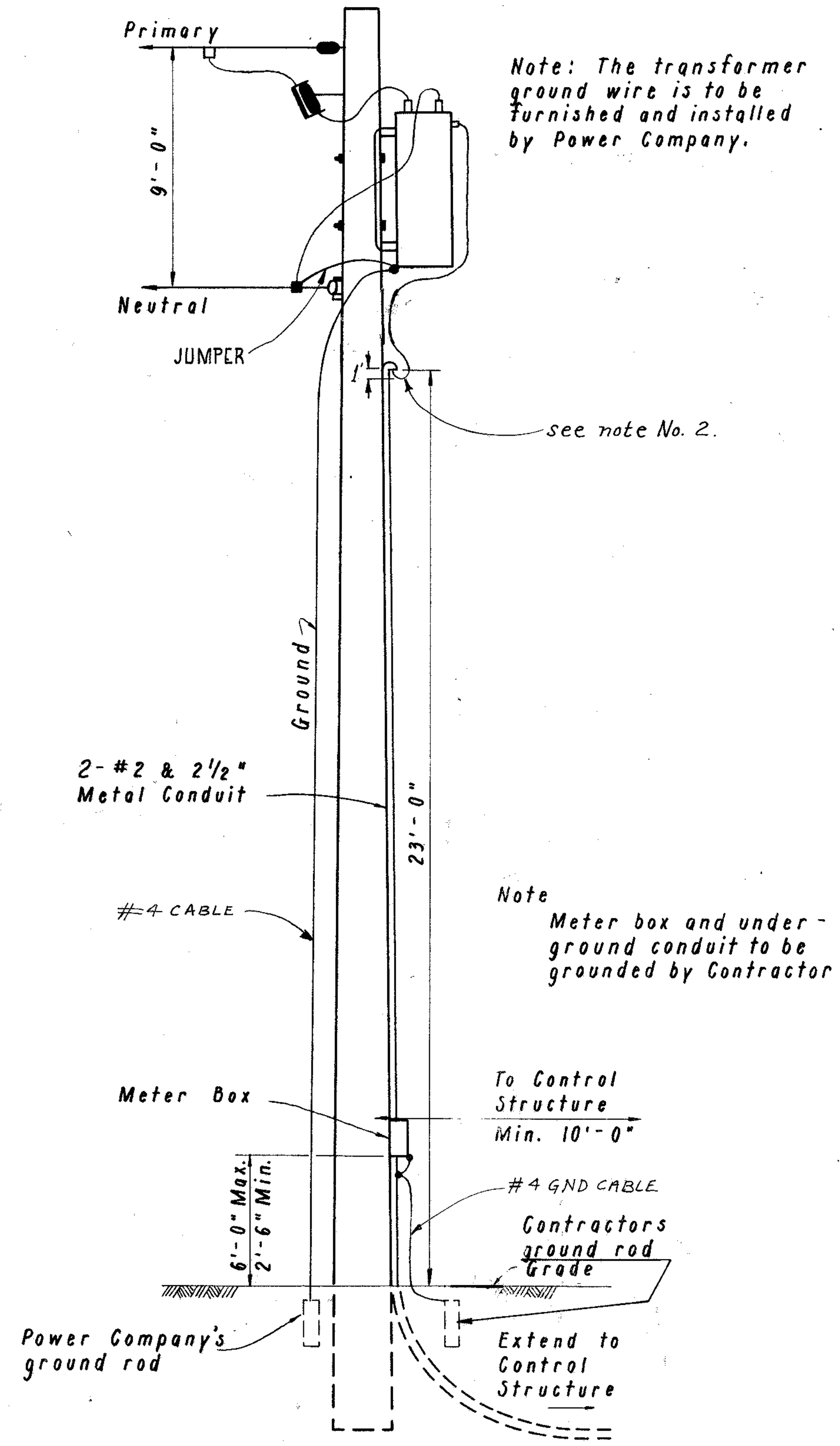
CALC:
CHK: R.G.M.

LINE NO.	ITEM	STRUCTURE FRA-270-2356 N L/R			ROADWAY														Sub-Total		TOTAL PROJECT	UNIT	ITEM	DESCRIPTION
SHEET NO.			7 Urban	8 Urban	6 Rural	6 Urban	7 Rural	7 Urban	8 Rural	8 Urban	9 Rural	9 Urban	10 Rural	10 Urban	11 Rural	11 Urban	12 Rural	12 Urban	URBAN	RURAL				TYPE CODE 7224
1	625							1		3		1							5		5	Ea.	625	Light Pole Design 11AT 12B 34.2
2	625																							
3	625									3		1		1					5		5	Ea.	625	Light Pole Design 11AT 10B 34.2
4	625											1		1					2		2	Ea.	625	Light Pole Design 7AT 15B41.7
5	625					5							3	2					7	3	10	Ea.	625	Light Pole Design 7AT 12B41.7
6	625							1		1									2		2	Ea.	625	12' Bracket Arm for combination light & sign pole
7																								
8	625							1		7		2		1					11		11	Ea.	625	Light Pole Foundation, 24" x 6' Deep
9	626					5						1	3	3					9	3	12	Ea.	625	Light Pole Foundation, 24" x 8' Deep
10																								
11																								
12	625									3		1		1					5		5	Ea.	625	Luminaire, Type II, 400 Watt Mercury, W/400 Watt Ballast, 713.11
13	625							2		5		1							8		8	Ea.	625	Luminaire, Type III, 400 Watt Mercury, W/400 Watt Ballast, 713.11
14	625					5						1	3	3					9	3	12	Ea.	625	Luminaire, Type III, 1000 Watt Mercury, W/700 Watt Ballast, 713.11
15																								
16																								
17	625							2		8		2		1					13		13	Ea.	625	Mercury Vapor Lamp 400 Watt (H33-ICDE), 713.14
18	625					5						1	3	3					9	3	12	Ea.	625	Mercury Vapor Lamp 700 Watt (H35-18NA), 713.14
19																								
20																								
21																								
22	625					5		1		6		3	3	4					19	3	22	Ea.	625	Ground Rod
23	625					6		4	2	7		2		3	5	2	3	6	30	10	40	Ea.	625	Pull Box, 18" Circular 713.09
24																								
25																								
26	625					2778		1553	292	2351		1035	1200	1598	2166	584	1022	1023	10,922	4,680	15602	L.F.	625	Trench 24" Deep
27	625					382				606				160					1148		1148	L.F.	625	Trench 4'6" Deep
28																								
29	625																	90	90		90	L.F.	625	Conduit, 3" 713.04 Type II or Type III, Concrete Encased
30	625					192		210	67	280		130		258				160	1230	67	1297	L.F.	625	Conduit, 3" 713.04 Type II or Type III
31	625		300	300															600		600	L.F.	625	Conduit, 2" 713.04 Type II or Type III,
32																								
33																								
34	625					490		162		623			322	417					1692	322	2,014	L.F.	625	600 Volt Single Conductor No 10 AWG Pole & Bracket Cable
35	625					3058		1421	225	2529		940	1227	1590	2211	599	1052	813	10,950	4,715	15665	L.F.	625	1 1/2" duct cable with two No 4 AWG 600 Volt cables
36																								
37	625					424		344	144	620		290		556				540	2,774	144	2918	L.F.	625	No 4 AWG 600 Volt distribution Circuit Cable
38																								
39																								
40																								
41																								
42																								
43	625					2			2	4							2	6	12	4	16	Ea.	625	Cable Connector Kit, Type I,
44	625					5		2		9		3	3	4					23	3	26	Ea.	625	Cable Connector Kit, Type II,
45	625					5		2		9		3	3	4					23	3	26	Ea.	625	Cable Connector Kit, Type III,
46	625					6		4	2	10		2		8	2	2		4	36	4	40	Ea.	625	Cable Connector Kit, Type VII,
47																								
48																								
49	625																							
50																								
51	625									Lump									Lump		Lump	Lump	625	Control Center A
52																	Lump			Lump	Lump	Lump	625	Control Center B
53										40							40		40	40	*80	L.F.	607	Fence type CL, modified as per plan
54										1							1		1	1	*2	Ea	607	8' gate type CL, modified as per plan
55																								
56																								
57																								
58																								
59																								
60																								
61																								
62																								
63																								
64																								
65																								
66																								*Carried forward to sheet No. 28
67																								
68																								



SCHEMATIC WIRING DIAGRAM

Control Center "A" shall be at Sta. C-1356+24 - 75' Rt.
Control Center "B" shall be at Sta. 27+55 Mc Cutcheon Rd. - 37' Lt.



TRANSFORMER POLE

NOTES

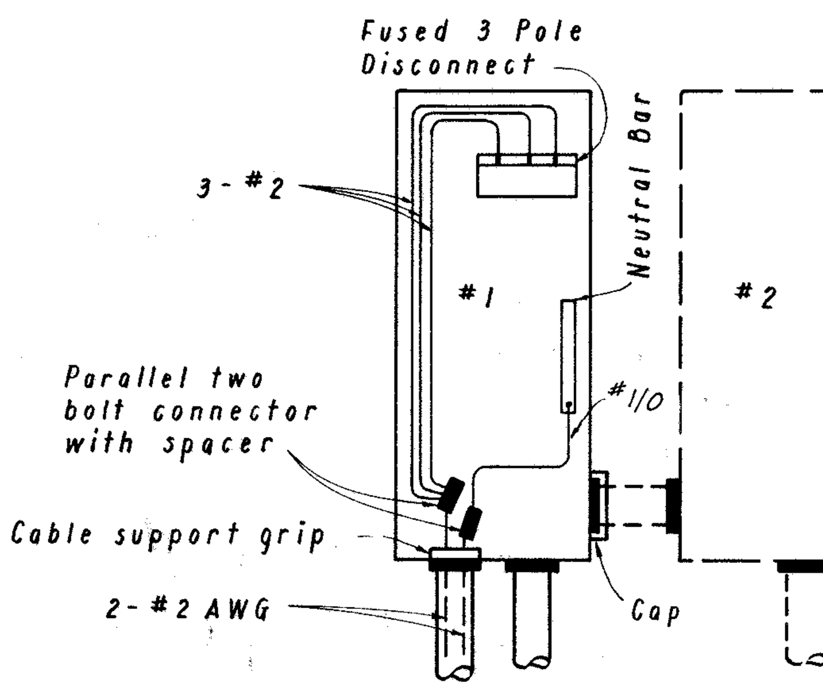
1. POWER SOURCE
Power will be supplied by the Columbus & Southern Ohio Electric Company. The Transformer Pole will be located at approximately as shown on sheets number 8 & 12.

2. TRANSFORMER POLE
The Electric Company will furnish and install Transformer Pole, including the Transformer, and meter box for installation by the Contractor. The Electric Company will furnish and install the wire connecting the meter. The Contractor will furnish and install the weatherhead and 2½" Conduit shown on the pole. The 2½" Conduit shall extend down the pole & to the Control Center. In the 2½" Conduit furnish and install two #2 AWG wires leading from the Control Structure thru the weatherhead leaving 5'-0" of free cable above the weatherhead for connection to the Transformer by the Electric Company. Cut or notch cable insulation at <u>bottom of drip loop</u> in order to prevent syphoning of water into Control Center.

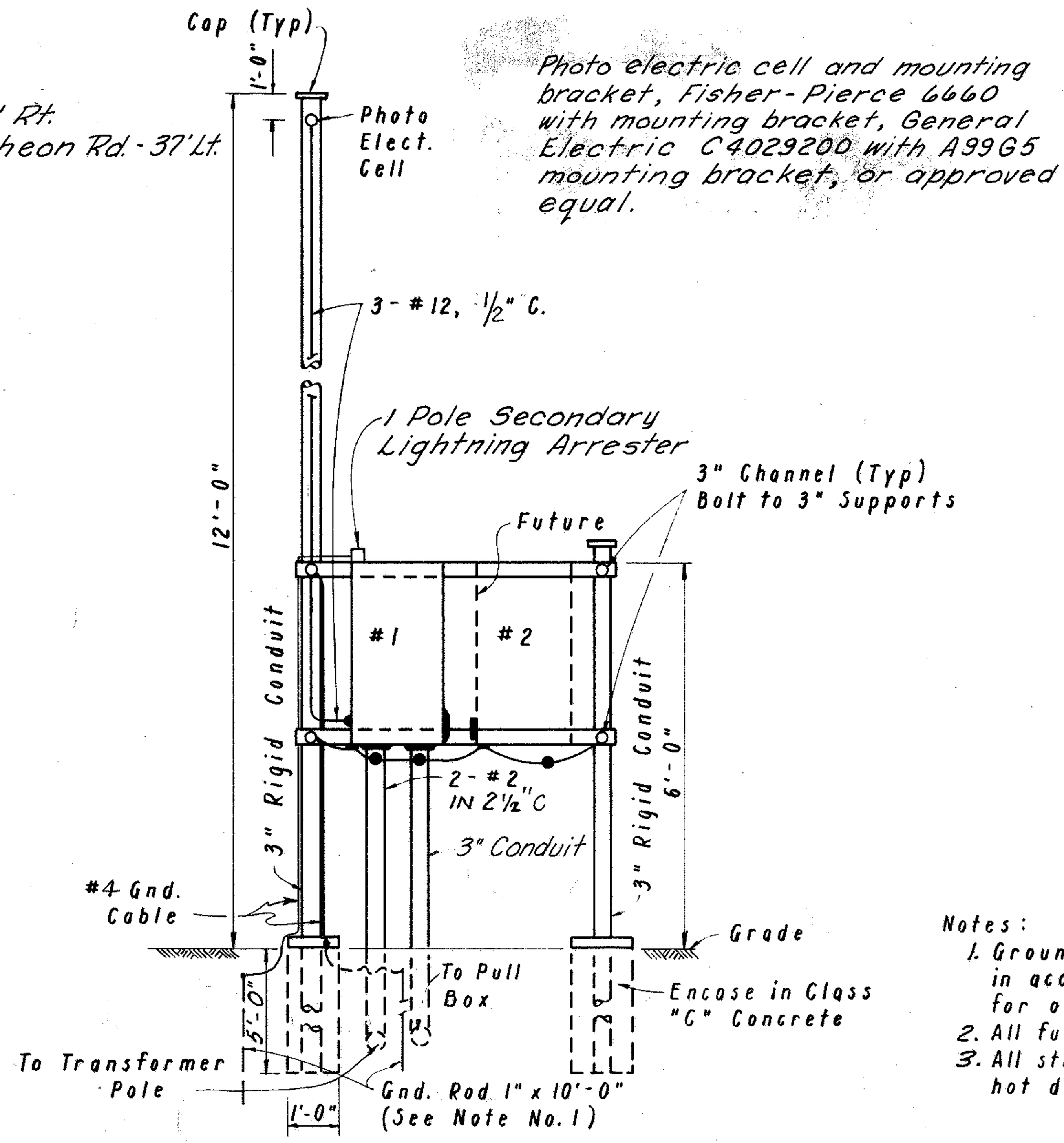
3. LIGHT CONTROLLER
Light Controller is to be a combination across the line Magnetic Contactor, Square "D" Class 8903 & Type W939FA609A, Columbus Electric Works CEW175S4630, TWYCO # T3303055 or approved equal.
* 1-Two position Selector Switch Enclosure (one unit only).
1-Set of cable lugs required - See Wiring Diagram.

4. Fence about Control Center
12' Square fenced enclosure and 8' wide double gate. Chain link fence and gate shall be 8' high plus 1.5' 45° arm w/ 3 strand barbed wire as per 710.01 at top. Material and installation shall conform to item 607, lock to be provided by City of Columbus.
Double gate location shall be determined on site at time of construction or as directed by the Engineer.

5. BASIS OF PAYMENT
The Contract Lump Sum price bid for Item 625 "Control Center" shall be full compensation for furnishing all materials and performing all labor indicated for the Contractor in Item 2 above, furnishing all materials and equipment shown on the Detailed Drawing for the Control Center and called for in Item 3 above, for furnishing and installing all conduit and cable required the Control Center to the Transformer Pole and to the Pull Box shown on Sheets No. 8 and 12, and for furnishing and installing all incidentals necessary to make a complete workable installation. Pullbox included with Roadway Item.

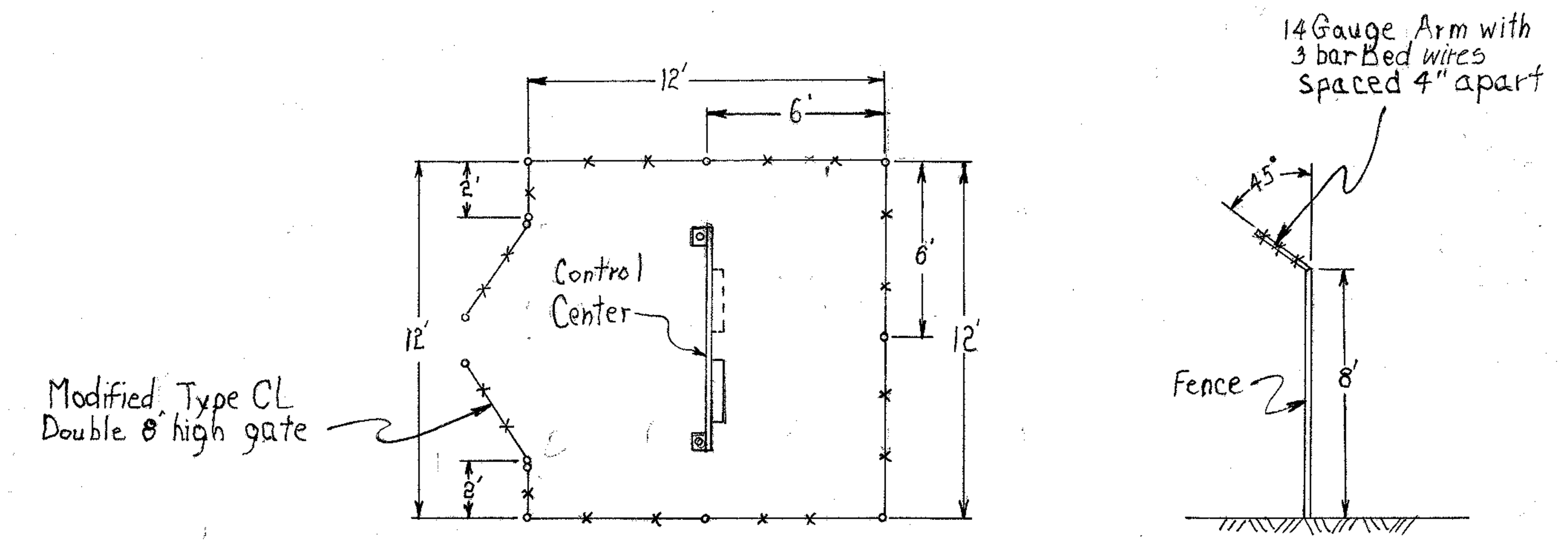


DETAIL OF FEED LINE CONNECTION



CONTROL CENTER

Notes:
1. Grounding shall be accomplished in accordance with details called for on Std. Dwg. HL-1.
2. All fuses shall be delayed action.
3. All structural members shall be hot dipped galvanized.



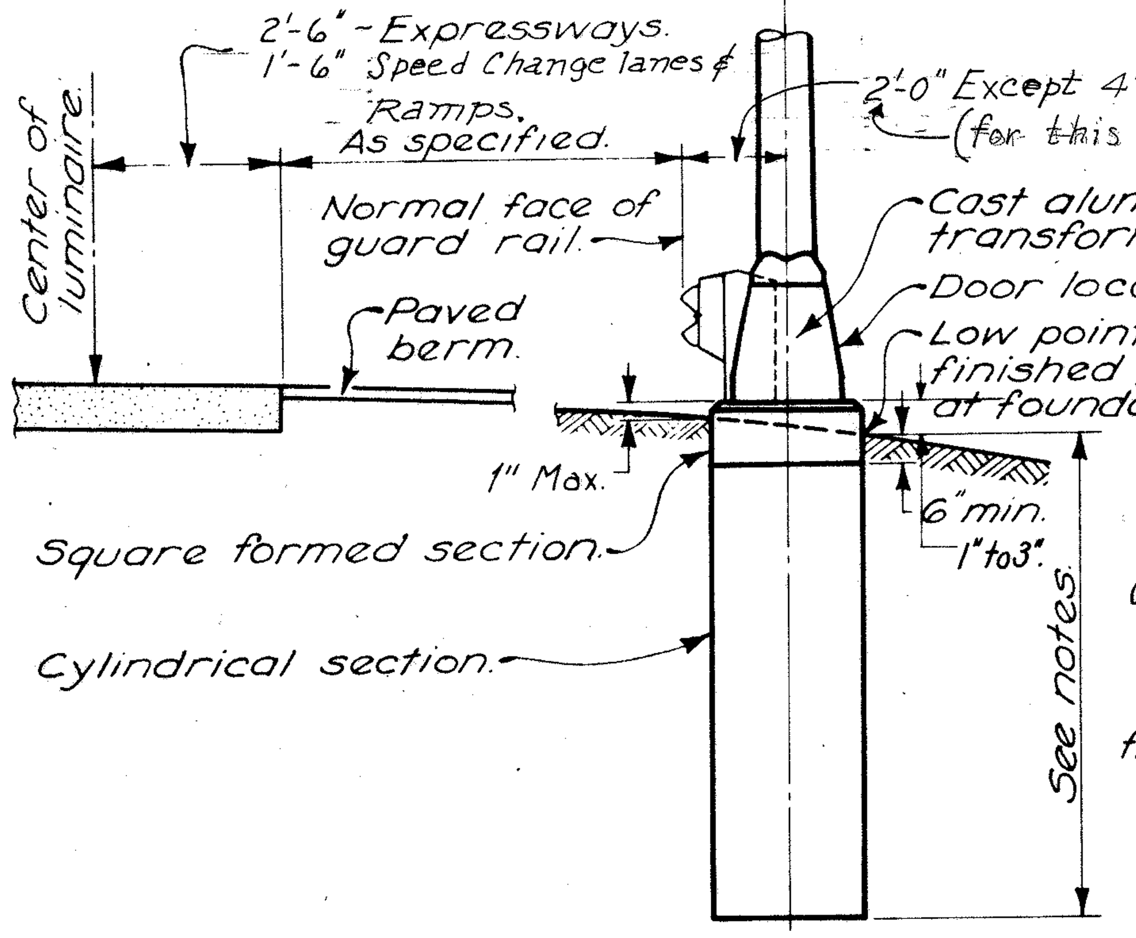
Typical Fence Diagram
Modified Type CL

CONTROL CENTER
480 Volt Service

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

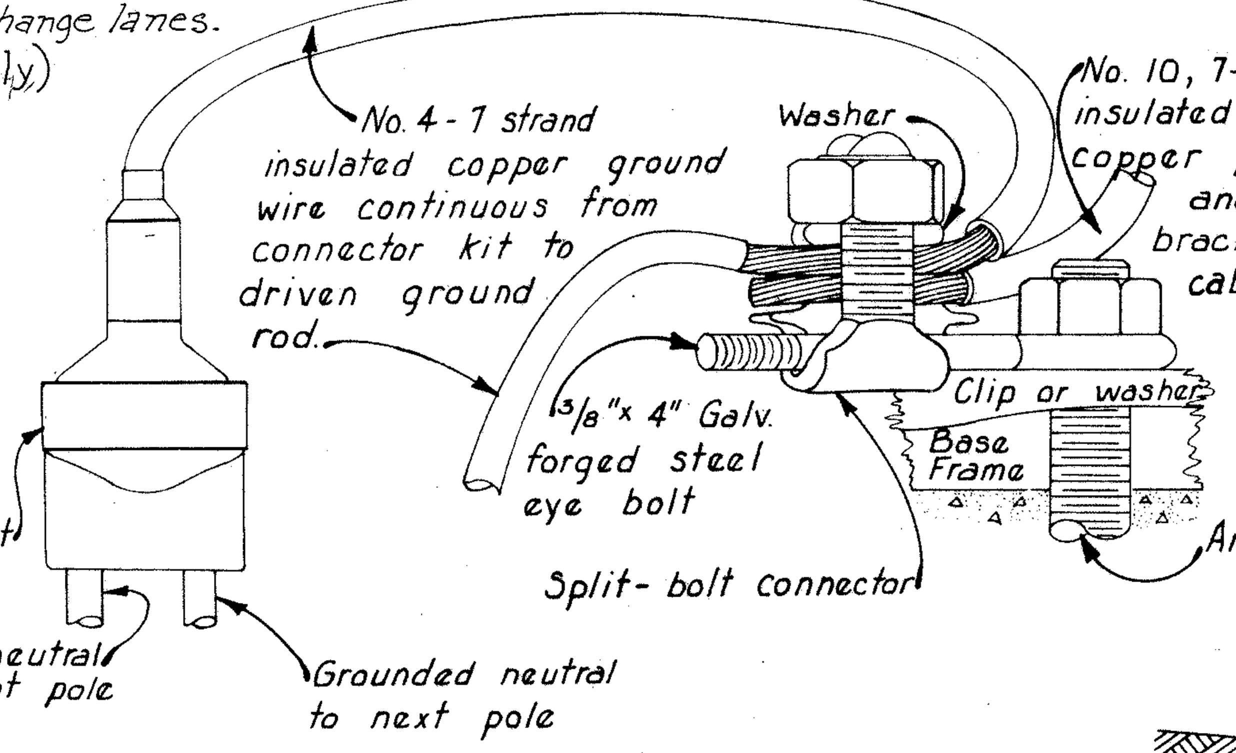
FRANLIN COUNTY
FRA-270-22.99N

NOTE: Split-bolt Connector shall be made of tin plated copper alloy with tin plated spacer. Acceptable models are: Blackburn #10HPS, Burndy #KSU-25, Line Material #DK-5B-10, Kearney #118109-02 or an approved equal.



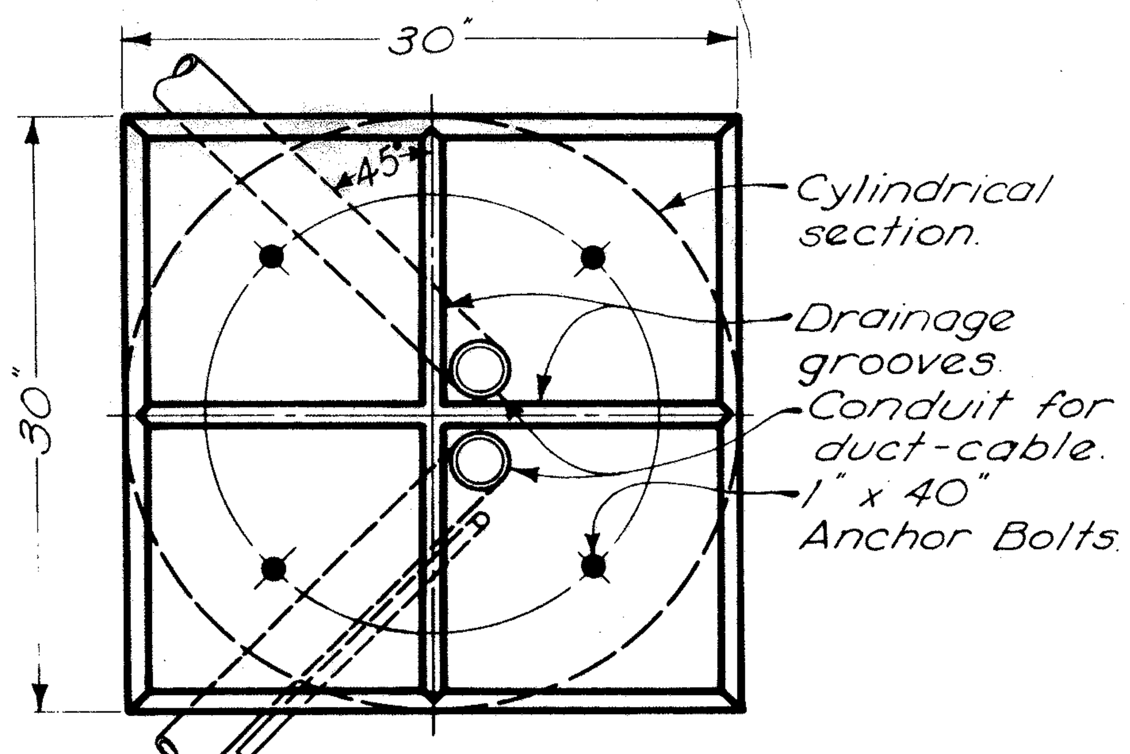
LOCATION OF POLE WITH OR WITHOUT ALUMINUM TRANSFORMER BASES

(Supersedes "Location of Light Pole Foundation" shown on Standard Drawing HL-1).

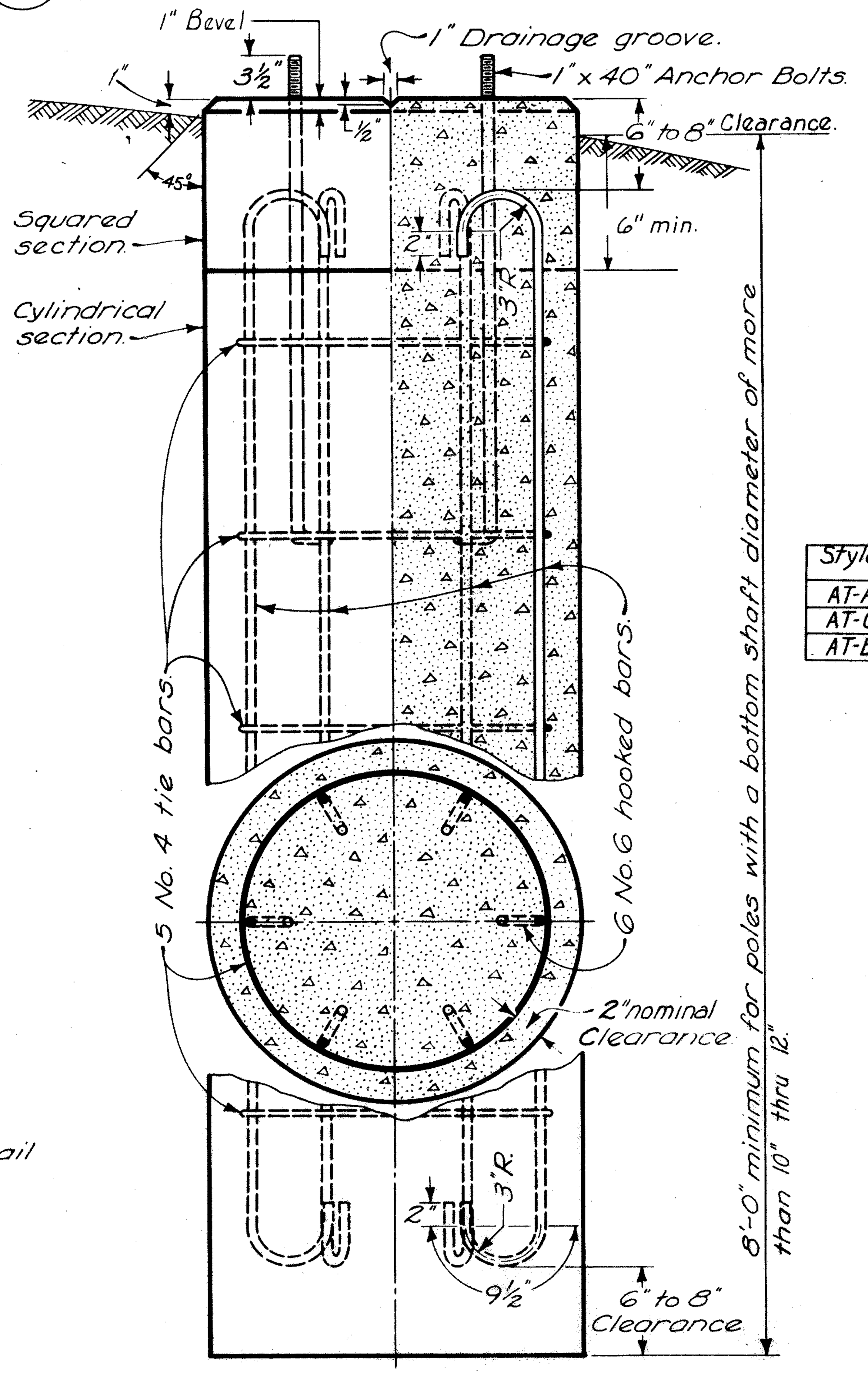


POLE GROUNDING DETAIL

(2-Wire Grounded Neutral System Only)

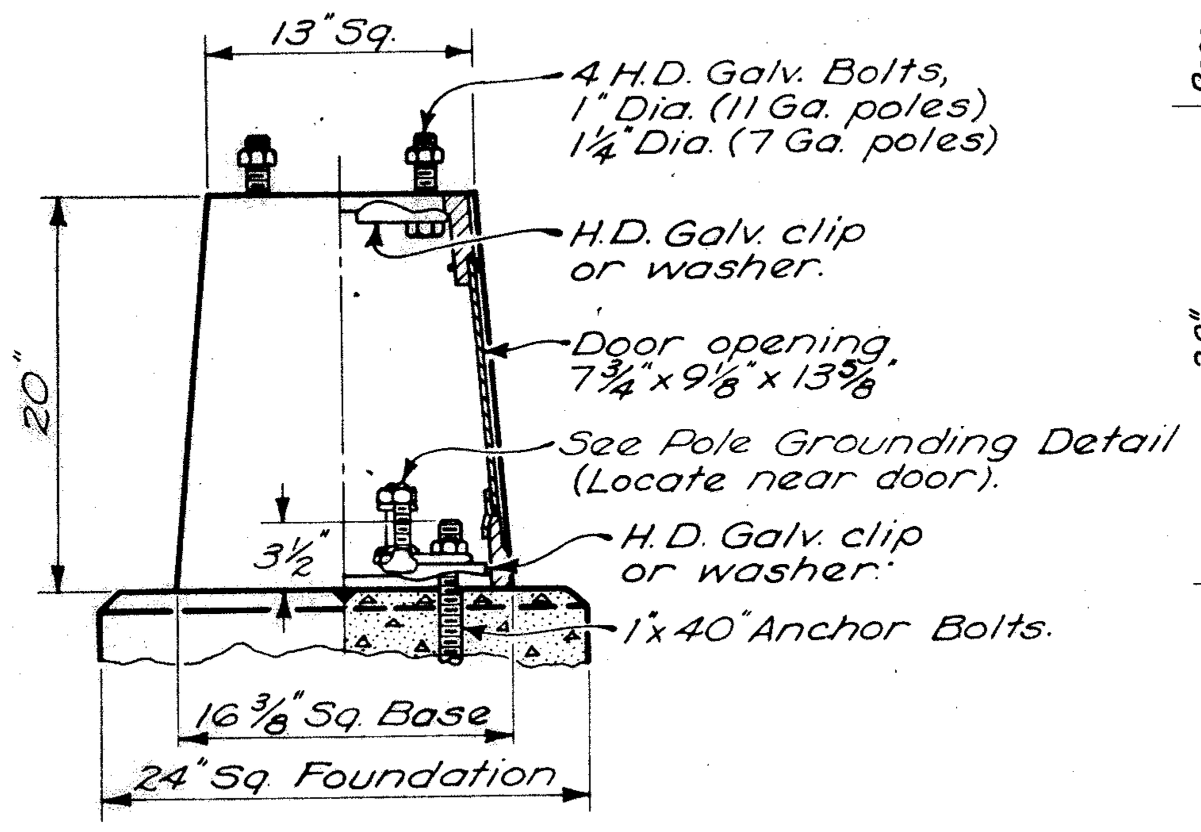


PLAN

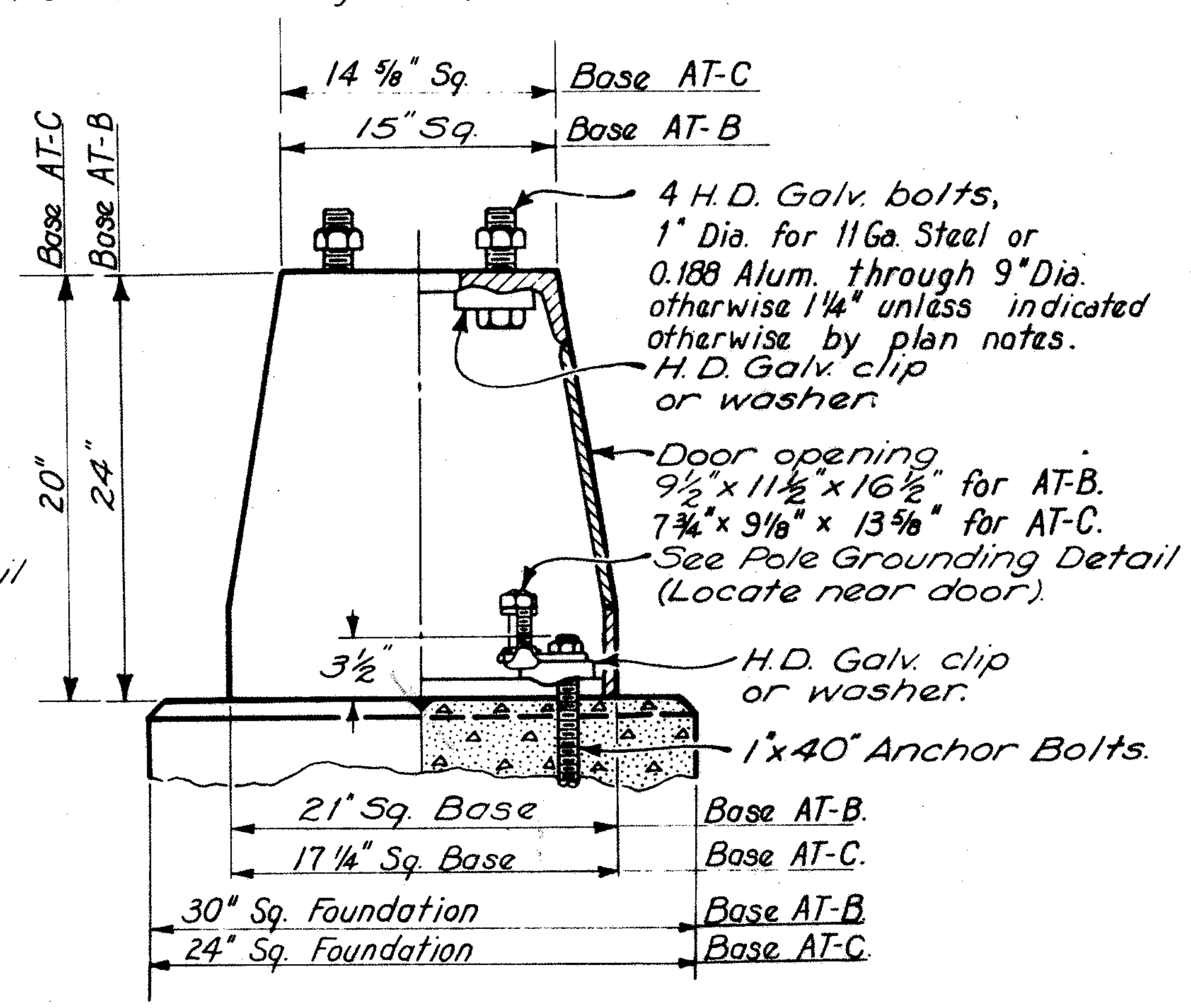


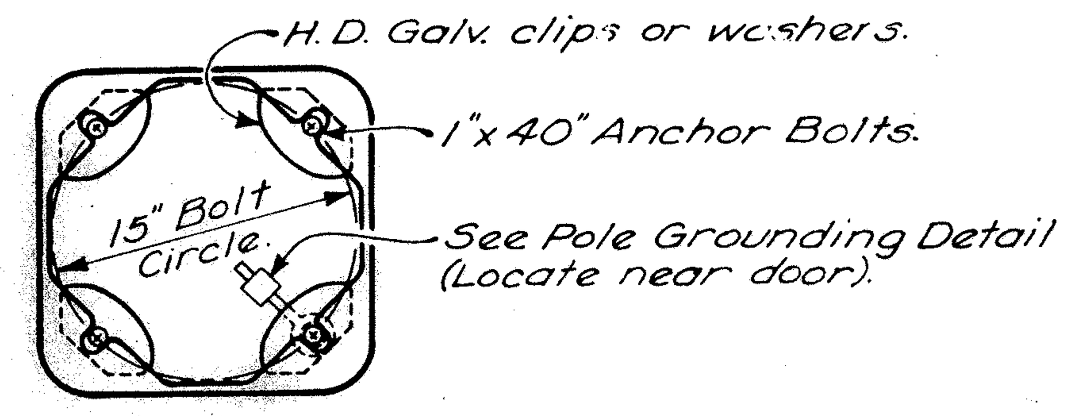
ELEVATION

30" FOUNDATION



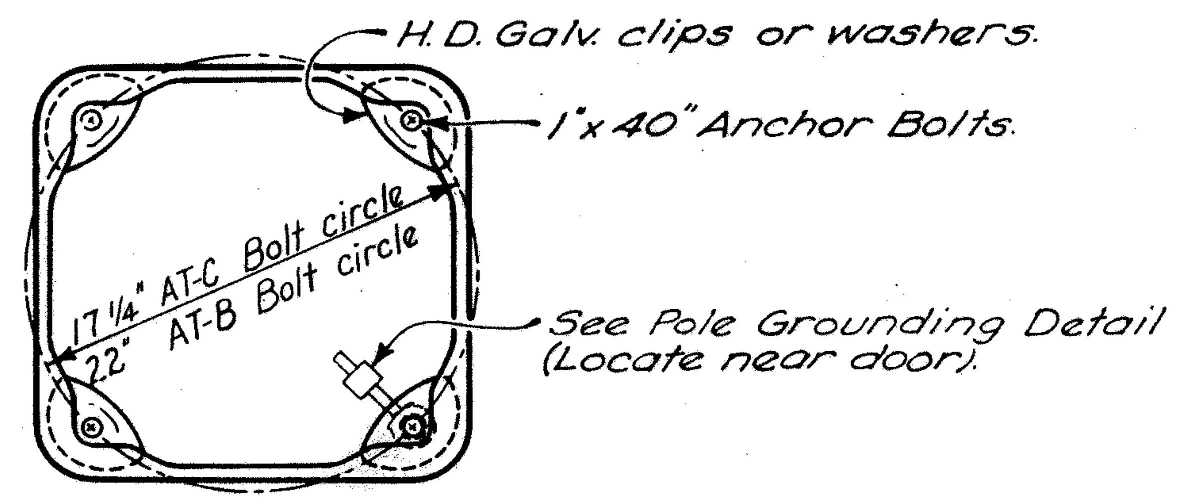
ELEVATION





BASE FRAME

BASE AT-A



BASE FRAME

BASES AT-B AND AT-C

CAST ALUMINUM TRANSFORMER BASES

NOTES

FOUNDATION: Foundations for light poles shall be poured-in-place concrete (vibrated and spaded 511.09). Each foundation must meet minimum depths as specified, but additional depth may be required by the Engineer because of existing soil conditions. The 30" foundation (detailed hereon) shall be used for light poles having a bottom shaft diameter of more than 10" through 12". The 24" foundation (detailed on Standard Drawing HL-1) shall be used for all light poles having a bottom shaft diameter of 6.0" through 10". See HL-1 for Foundation depth. Rotate reinforcing bars to clear conduit.

Drainage grooves on foundation top, as detailed hereon, shall be required on all foundations even though they do not appear on Standard Drawing HL-1.

ALUMINUM TRANSFORMER BASES: All bases shall be cast from ASTM B-26 or B-108 Alloy SG 70A-T6.

Base AT-A shall be used with anchor base poles of 6" through 9.2" dia. inclusive, thru 34'-6" Mtg. Hgt. Base AT-B shall be used for anchor base poles above 10" through 12" diameter. Base AT-C shall be used for anchor base poles with bottom diameter 9" through 10".*

The transformer bases shall be capable of resisting the following moments in foot pounds applied to the top of the base without collapsing or rupturing.

Style	Bolt Circle	Base Height	Moment-Foot Pounds	Arm Length
AT-A	15"	20"	37,000	15' Max.
AT-C	17¼"	20"	56,000	10' to 25'
AT-B	22"	24"	52,000	10' to 25'

Both the bottom of the cast steel pole base and the top of the aluminum transformer base shall be coated or painted with a heavy film of zinc rich paint (Federal Specification TT-P-641-Type II) to reduce galvanic action between the two dissimilar metals.

PAYMENT: 30" Light Pole Foundations shall be paid for at the unit price bid per each foundation.

Aluminum base complete with hardware, eye bolt and connector, zinc rich paint, and installation shall be included with ground-mounted poles for payment.

* AT-C Base can be used with 8" or 8½" dia. base poles, if desired, in order to reduce maintenance items.

Revised: 5-16-68
Issued: 11-6-67

Design Services Sketch No. RL-SK-186

ALUMINUM TRANSFORMER BASE DETAILS

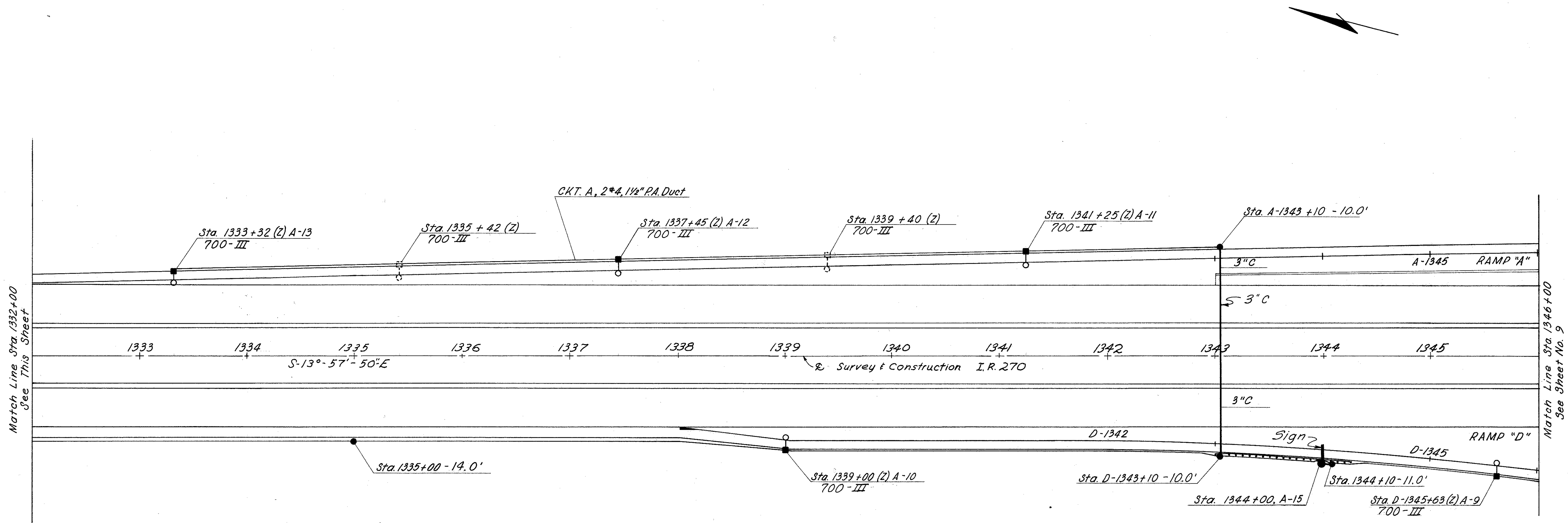
CIRCUIT WIRING DIAGRAM FOR MORSE ROAD INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

242 / 292

FRANKLIN COUNTY
FRA-270-22.99N

6 / 12



LEGEND

(P) Denotes Light Pole Design No. 11AT12B34.2 (11Ga) 9.0" x 4.87" x 29'-6"

(R) Denotes Light Pole Design No. 11AT10B34.2 (11 Ga.) 8.0" X 3.87" X 29'-6"

(X) Denotes Light Pole Design No. 7AT15B41.7 (7Ga) 9.0" X 5.65" X 33'-6"

(Z) Denotes Light Pole Design No. 7AT12B41.7 (7Ga) 9.0" x 5.65" x 33'-6"

Light Pole & Luminaire

Pole Location, (Pole Type) Circuit, Pole Number
Wattage, Luminaire Type

Future Lighting

Pull Box

Service Pole

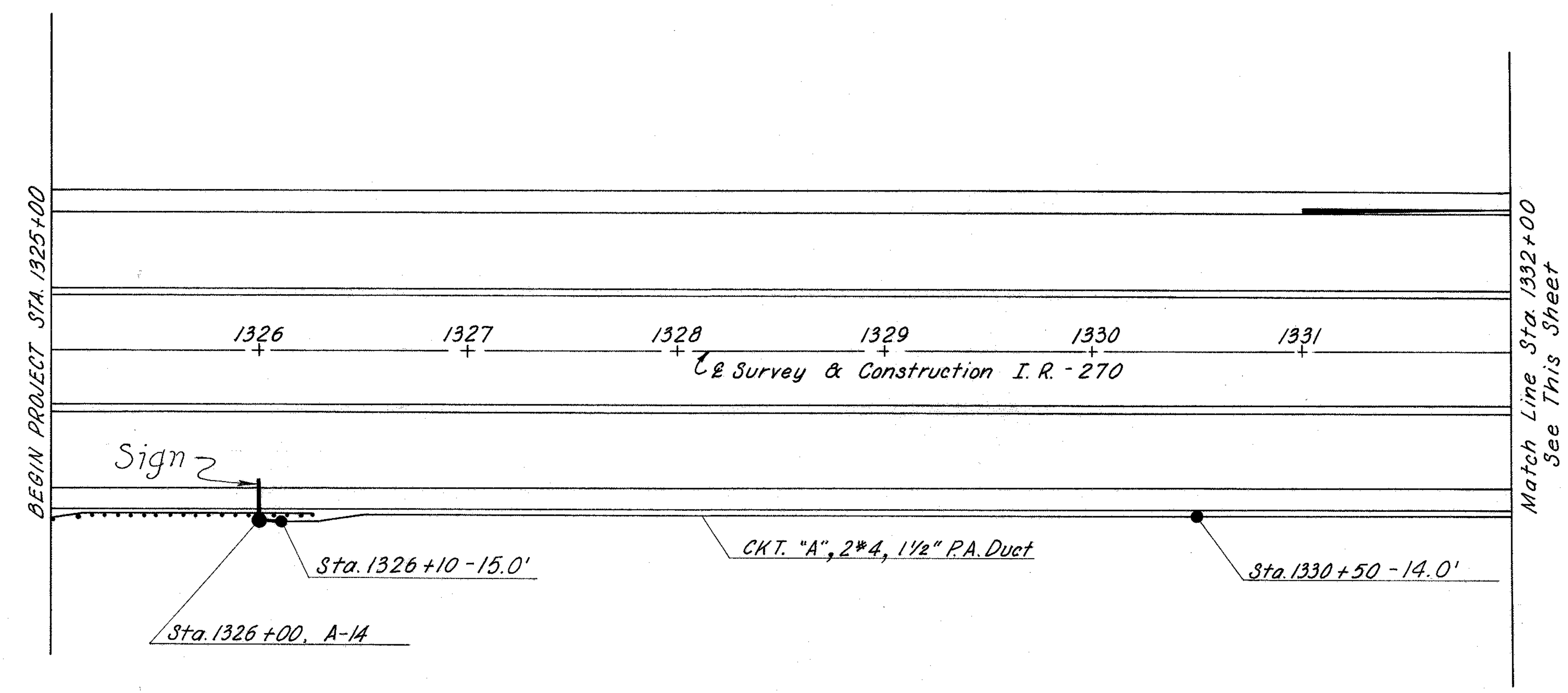
C Metal Conduit

Circuit, Number & Size of Cable
P.A. Duct = Preassembled Duct - Cable

Conduit

Sign

CONTROL CENTER



LIGHTING LAYOUT PLAN

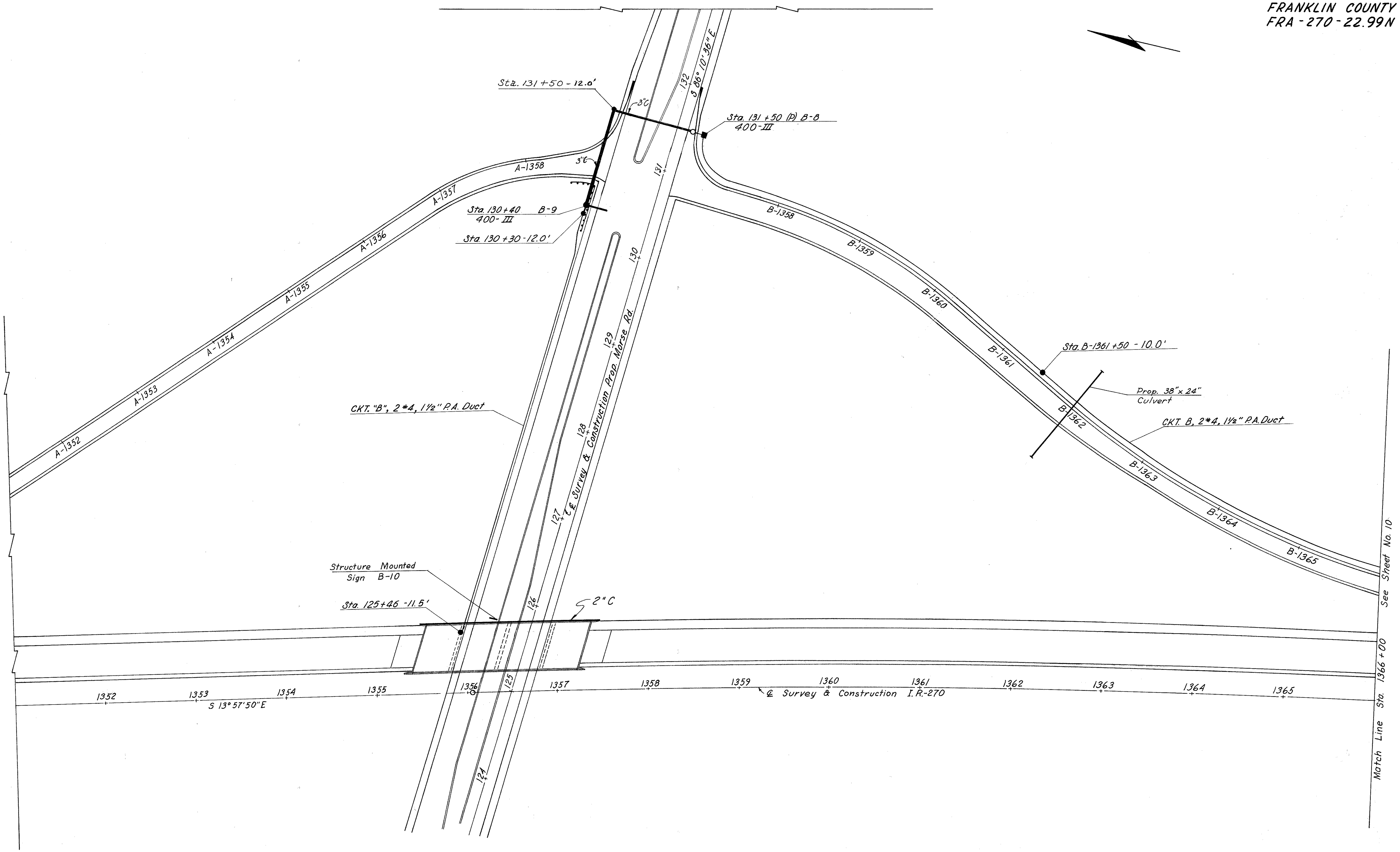
STA. 1335+00 TO STA. 1345+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

243/292

FRANKLIN COUNTY
FRA-270-22.99N

7/12



LIGHTING LAYOUT PLAN

RAMP "A" & RAMP "B" MORSE ROAD INTERCHANGE

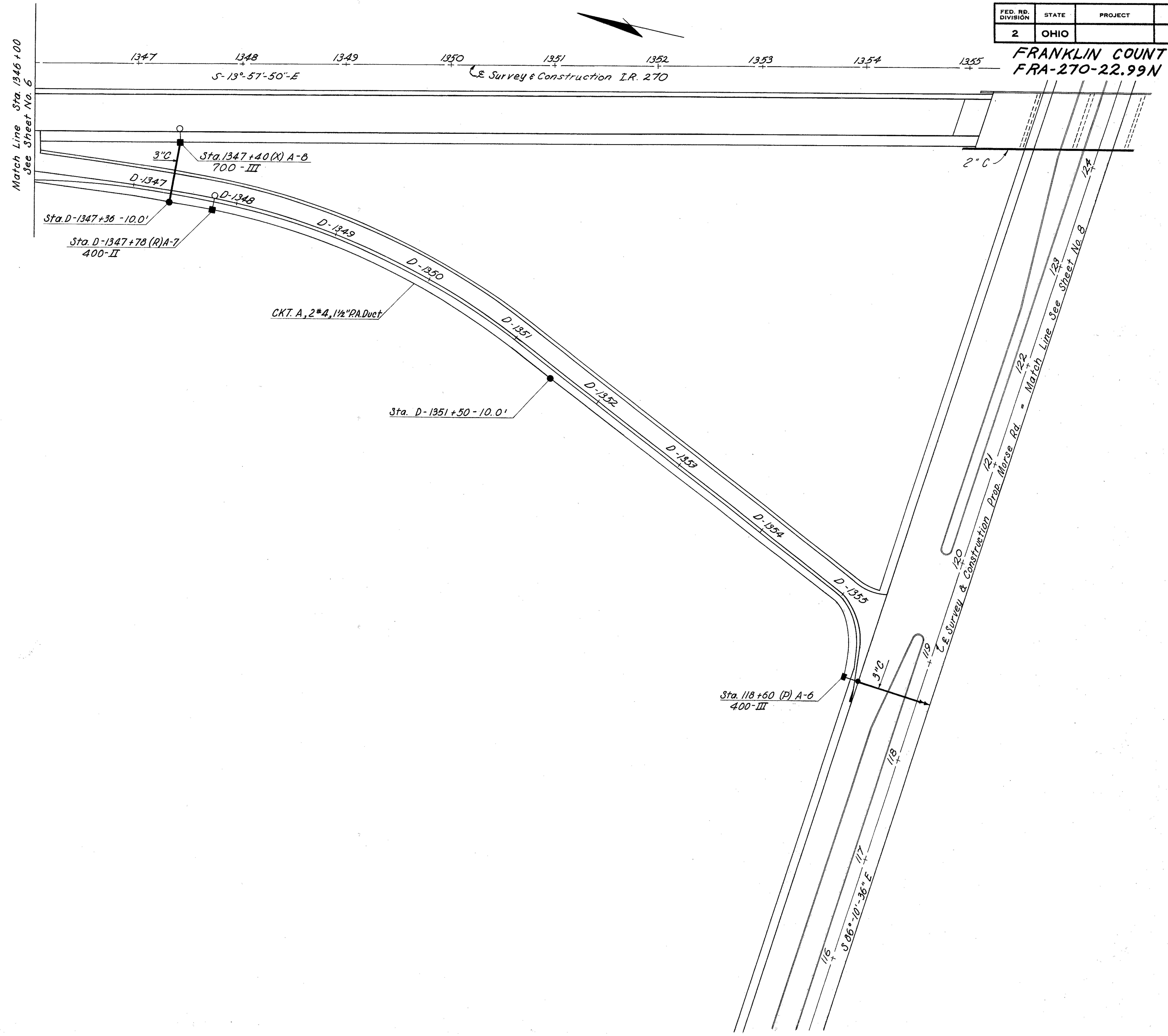
RAMP "C" MORSE ROAD INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

245/292

9/12

FRANKLIN COUNTY
FRA-270-22.99N



LIGHTING LAYOUT PLAN

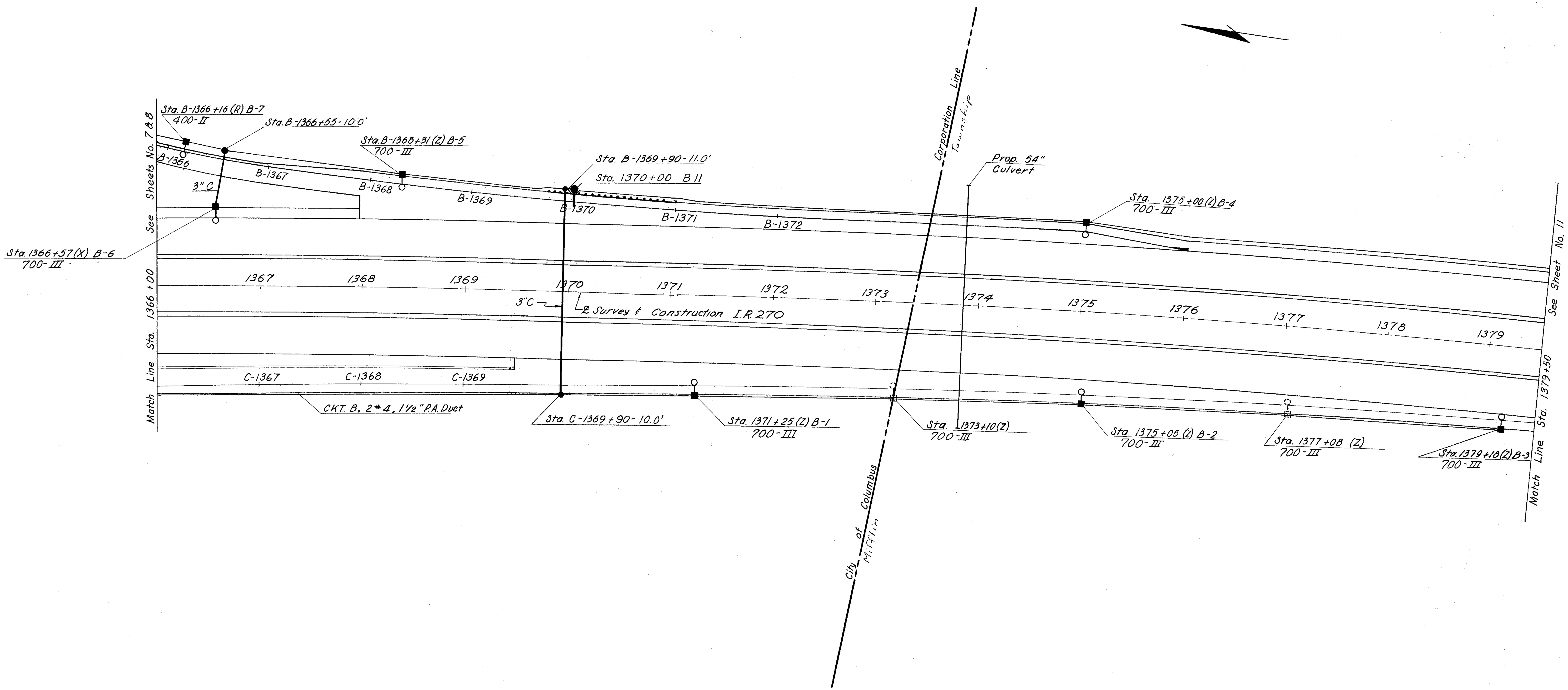
RAMP "D" MORSE ROAD INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

246/292

FRANKLIN COUNTY
FRA.-270-22.99N

10/12



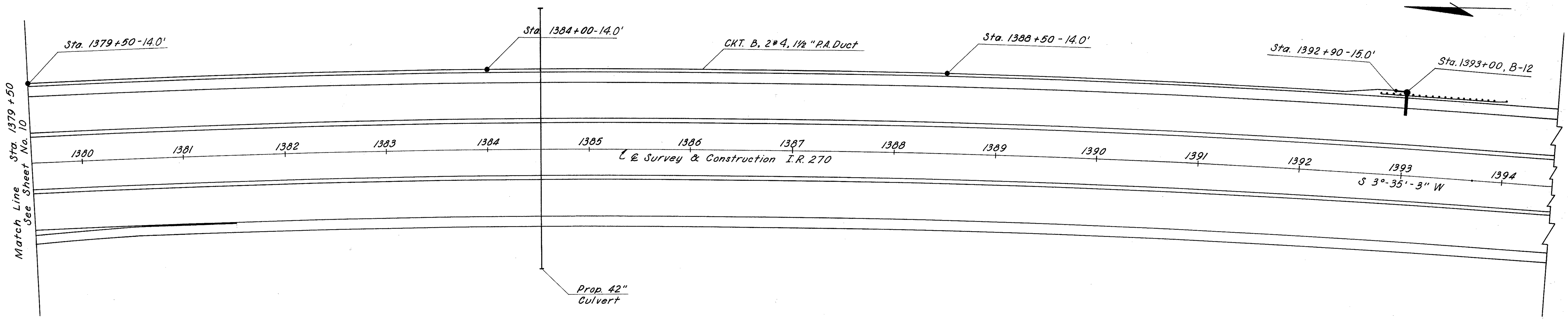
LIGHTING LAYOUT PLAN
STA. 1366+00 TO STA. 1379+50

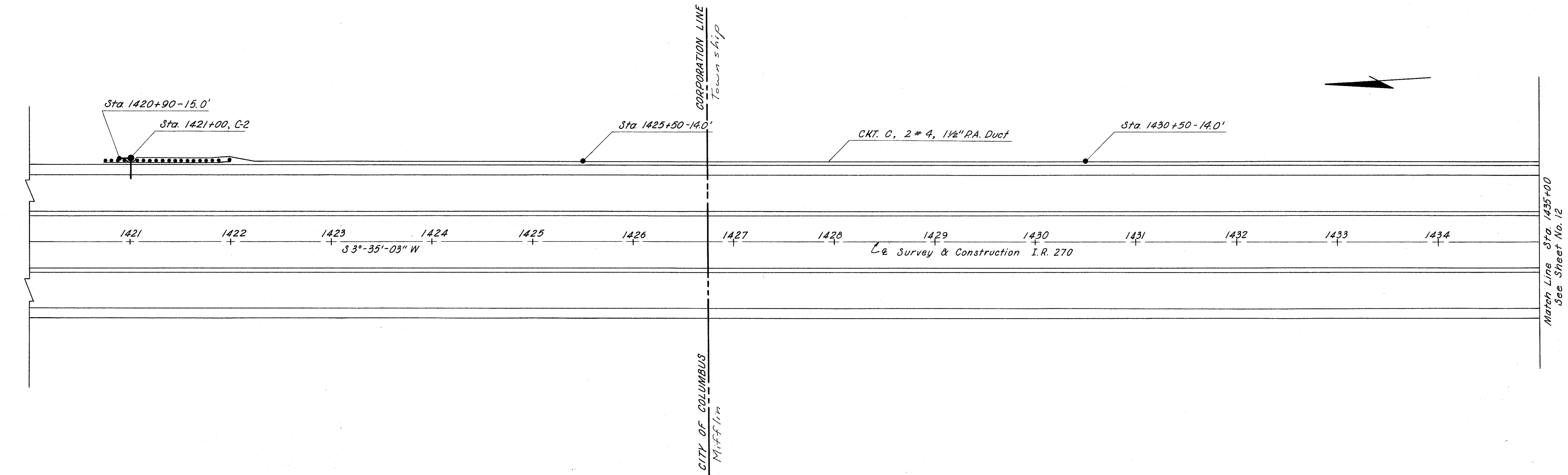
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

247/292

11/12

FRANKLIN COUNTY
FRA-270-22.99N





LIGHTING LAYOUT PLAN

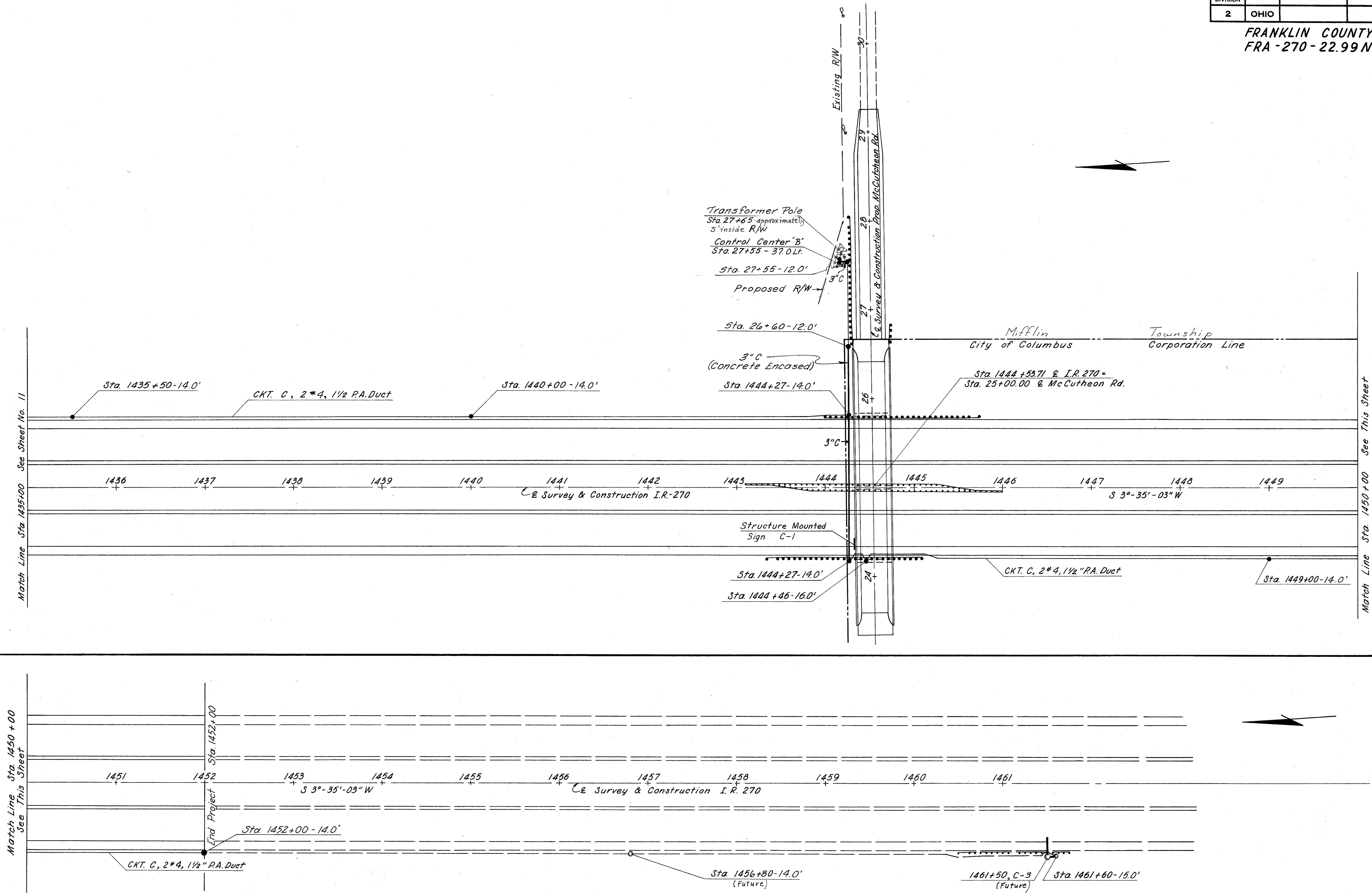
STA. 1379+50 TO STA. 1394+50 & STA. 1420+00 TO STA. 1435+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

248/292

FRANKLIN COUNTY
FRA-270-22.99N

12/12

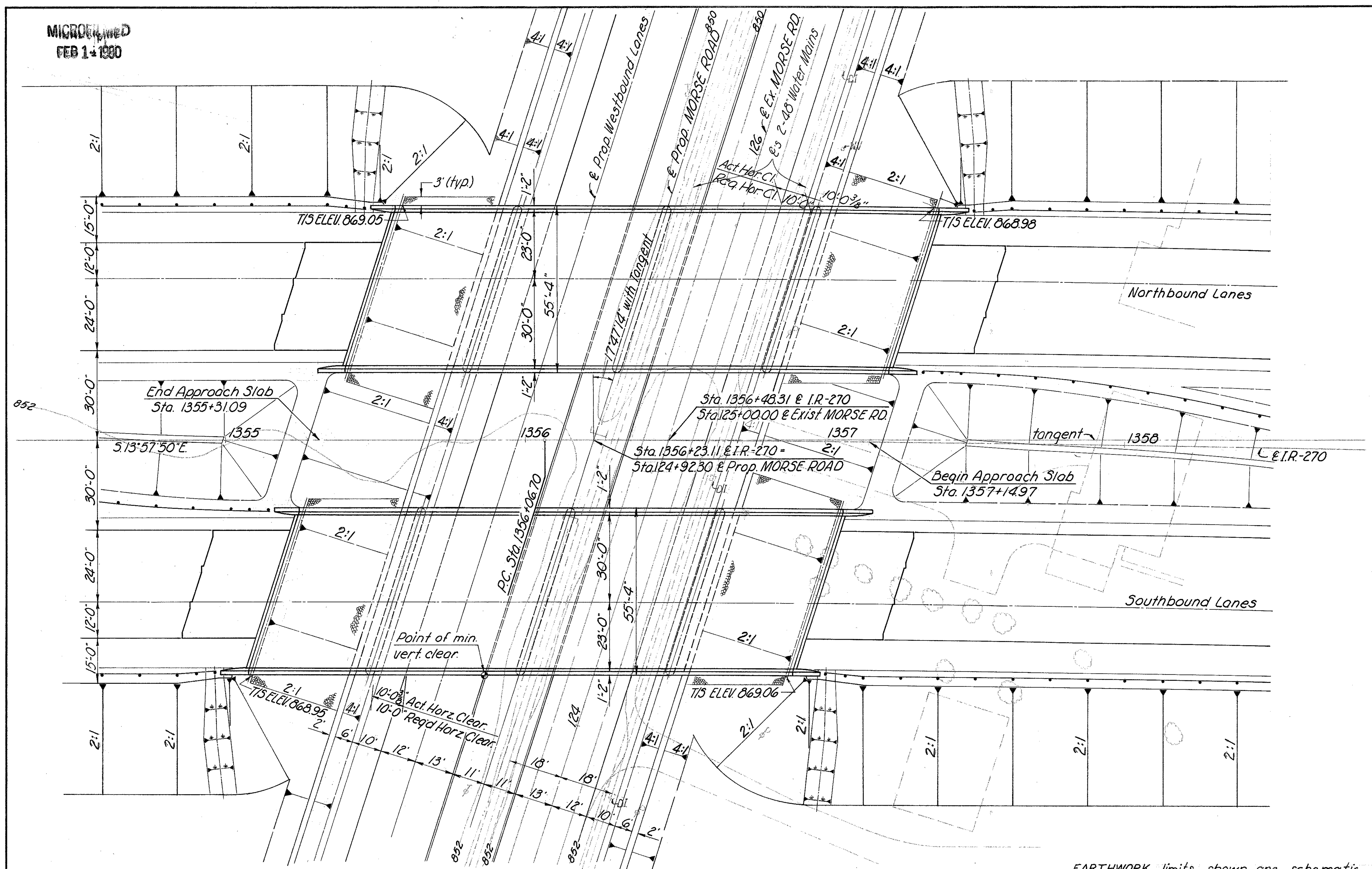


LIGHTING LAYOUT PLAN

STA. 1435+00 TO STA. 1462+00

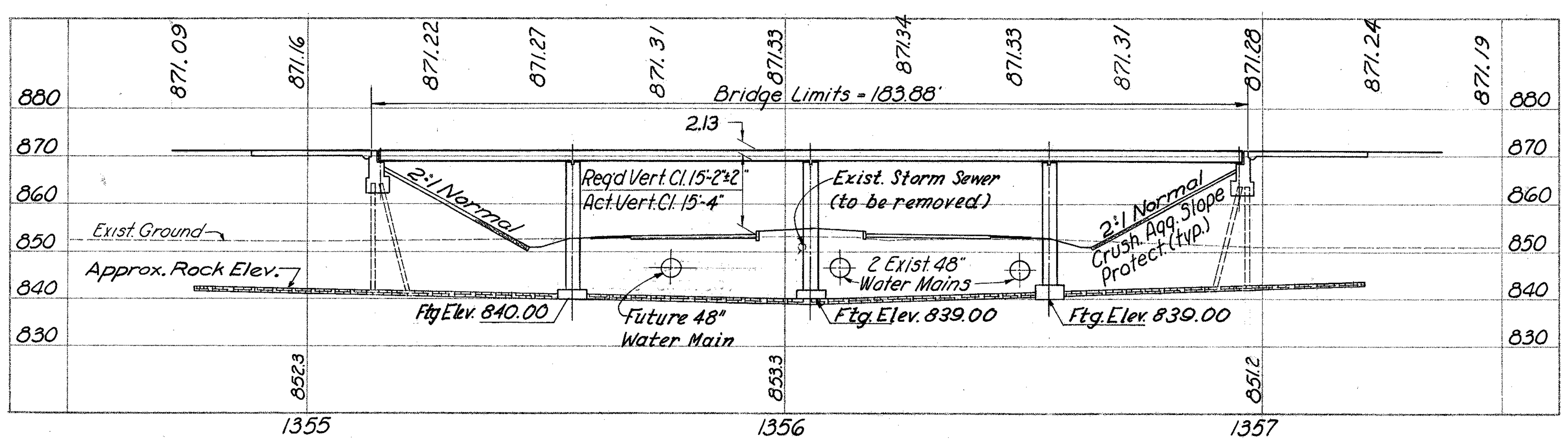
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

FRA. 270-22.99 N



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

PLAN



PROFILE ALONG ℄ SOUTHBOUND LANES

Abutment Piles: 10BP42 Piles with 35 ton min. bearing capacity. Estimated pay length 23'.

HORIZ. CURVE DATA
P.I. Sta. 1375+01.68
Δ = 17°32'53"
D_c = 0°28'00" Rt.
R = 12,277.67'
L = 3760.30'
T = 1894.98'
E = 145.38'

VERT. CURVE DATA
P.V.I. Sta. 1357+75.00
Elev. 878.13
G_1 = +1.40%, G_2 = -2.00%
Length V.C. = 1650'

PROPOSED STRUCTURE

TYPE: Continuous reinforced concrete slab with reinforced concrete substructure
SPANS: 40'-0", 49'-11", 49'-11", 40'-0" @ tangent
ROADWAY: 53'-0" f/f parapets with 1'-0" safety curbs
LOAD FREQUENCY: HS 20-44 adequate for AASHO alternate loading
WEARING SURFACE: 1" monolithic concrete
SKEW: 17°47'14" with tangent L.F.
APPROACH SLAB: AS-1-67 (25'-0" long)
ALIGNMENT: 0°28'00" Rt.
SUPERELEVATION: None
AVERAGE DAILY TRAFFIC: 67,340

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

SITE PLAN
BRIDGE No. FRA-270-2356 N, L&R
OVER MORSE ROAD

FRANKLIN COUNTY I.R. 270
Sta. 1355+09.32

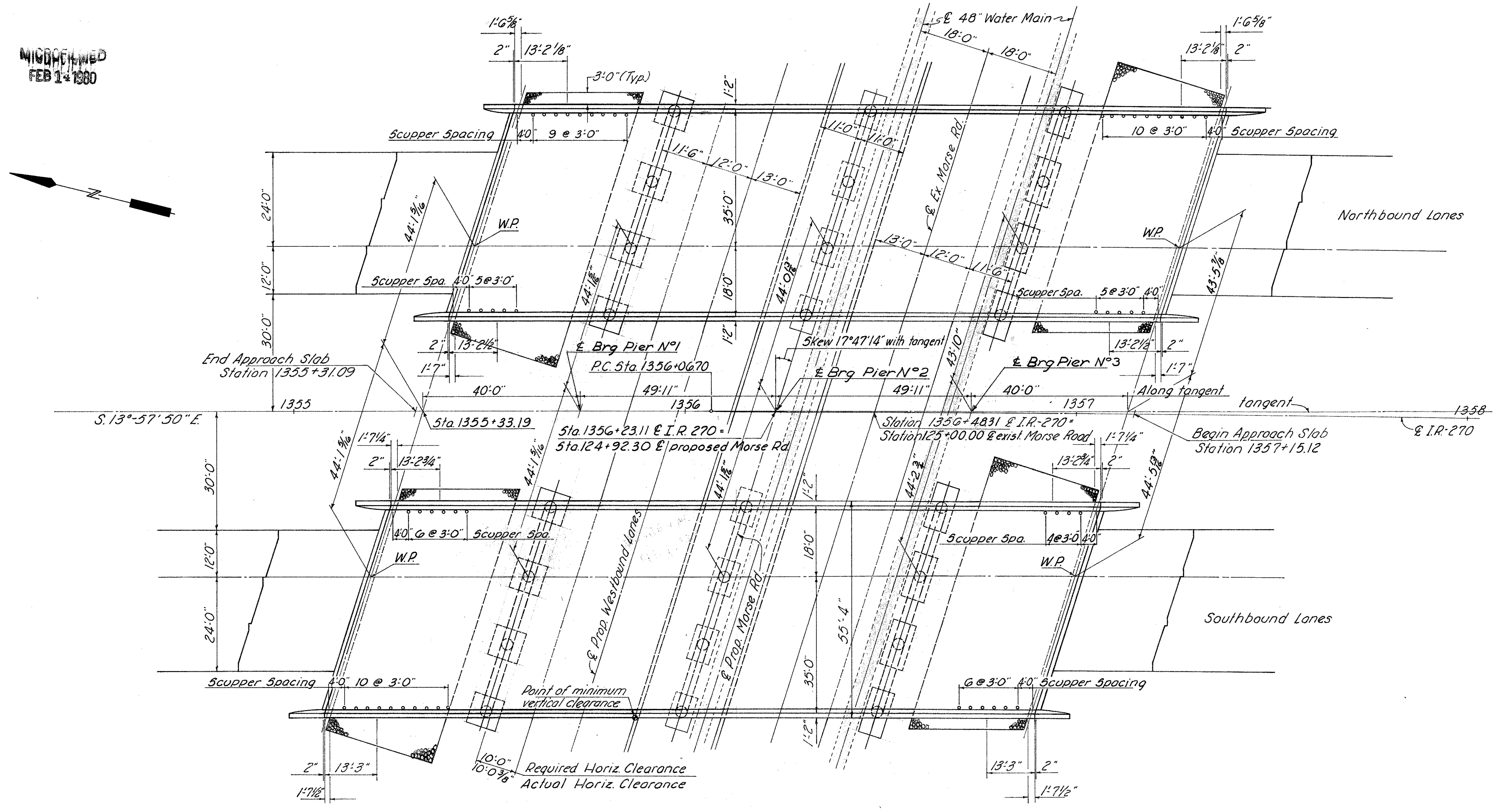
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG	[illegible]		HM	JS	5/26/67	

MICROFILMED
FEB 14 1980

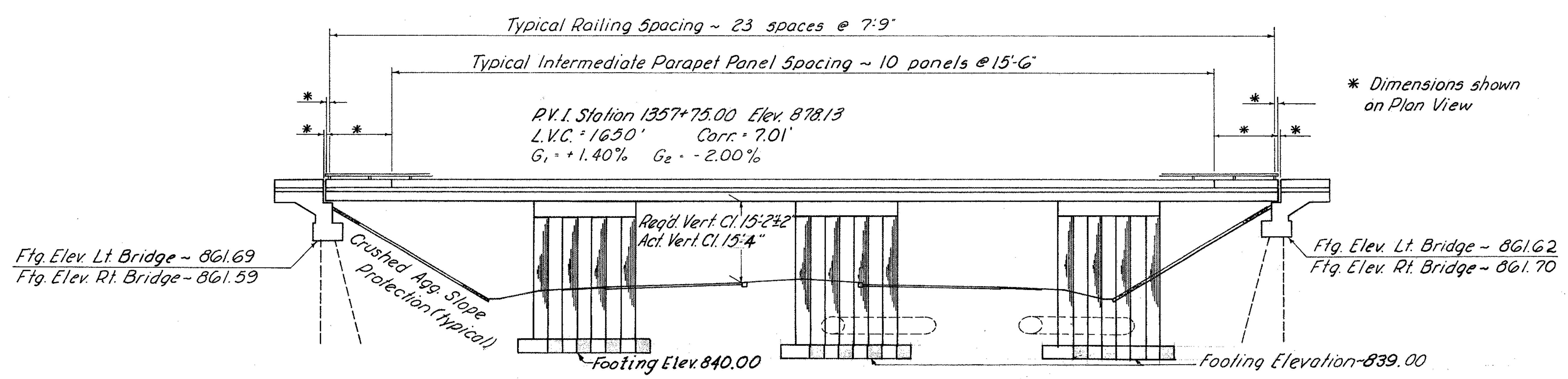
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

FRA 270-22.99 N

250
292



GENERAL PLAN



ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-67 (rev. 1-11-68) and BR-1-65 (rev. 11-24-65). Supplemental Specifications 808 (1-1-69), 825 (1-1-69)

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications For Highway Bridges" adopted by the American Association of State Highway Officials, 1965, including the Ohio "Supplement" to these specifications.

DESIGN DATA:
Design Loading-HS 20-44 and the Interstate Alternate Loading.
Concrete Class C-unit stress 1200 p.s.i. for superstructure
unit stress 1333 p.s.i. for substructure
Structural Steel-ASTM A36-unit stress 20,000 p.s.i.
Reinforcing Steel-ASTM, A615, A616, A617, Deformed, Intermediate or Hard Grade. Unit stress 20,000 p.s.i. except that spiral reinforcement may be plain bars, A306 or A499 with minimum ultimate strength of 58,000 p.s.i.

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 piles driven.

PILES: The pile design load is 35 tons per pile.

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with rock. If the length of penetration is approximatly 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 Piles:
50 tons per pile using an 11,000 ft. lb. hammer.
43 tons per pile using a 15,000 ft. lb. hammer.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5 tons per sq. ft.

FIRST TEST PILE: Payment will be made for only one first test pile. It may be driven for either the right or left bridge.

SLAB THICKNESS is 1'-10" which includes 1" monolithic wearing surface.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

MACHINE FINISH: The concrete deck shall be finished by the use of a finishing machine.

POROUS BACKFILL 1'-6" thick, full length of abutment and wings shall extend up to the underside of the approach slab or to the finished ground surface.

STAINLESS STEEL FASTENERS shall be properly passivated to remove surface impurties and shall be finished with a lustrous finish.

EXCAVATION OF PIER FOOTINGS: Special care shall be taken not to damage or disturb the 2 existing 48" water mains.

FOOTINGS shall extend a minimum of 3 inches into bedrock for Pier 1, 1'-0" for Pier 2 and Pier 3. If necessary the footings should be lowered. However, if the low point of the surface of the bedrock occurs 2 feet or more above plan elevation, the footings may be raised, after approval by the Director, but to an elevation not higher than 846.00, for Pier No. 1 and 840.00 for Piers No. 2 & 3. Stepping of individual footings will not be permitted.

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Consulting Engineers
COLUMBUS, OHIO

GENERAL PLAN, GENERAL NOTES

BRIDGE No FRA-270-2356 N, L & R
OVER MORSE ROAD

FRANKLIN COUNTY — I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G	NF		HM	JA	9/12-67	

ESTIMATED QUANTITIES - TWO BRIDGES

ITEM	TOTAL BOTH BR.	TOTALS		UNIT	DESCRIPTION	SUPERSTR.		ABUTMENTS		PIERS		GENERAL	
		Left Br.	Right Br.			Left Br.	Right Br.	Left Br.	Right Br.	Left Br.	Right Br.	Left Br.	Right Br.
503	1686	843	843	Cu.Yds.	Unclassified Excavation, including rock			249	249	594	594		
505	Lump	—	Lump	Sum	First Test Pile			—	Lump				
507	1280	640	640	Lin.Ft.	Steel H-Piles, 10BP42			640	640				
503	Lump	—	Lump	Sum	Cofferdams, cribs & sheeting				Lump				
509	471,086	235,543	235,543	lbs.	Reinforcing Steel	168,669	168,669	11,347	11,347	55527	55527		
471,594	470,774	235,387	235,387		235,797			11,757	11,757	55371	55371		
511	1404	702	702	Cu.Yds.	Class "C" Concrete, Superstructure	702	702						
511	244	122	122	Cu.Yds.	Class "C" Concrete, Piers above footing					122	122		
511	134	67	67	Cu.Yds.	Class "C" Concrete, Pier Footing					67	67		
511	328	164	164	Cu.Yds.	Class "C" Concrete, Abutments			164	164				
516	65.5	32.75	32.75	Sq.ft.	1/4" Rolled Phosphor Bronze Sliding Plates			32.75	32.75				
516	20,220	10,110	10,110	Lbs.	Structural expansion and contractional joints, including painting	10,110	10,110						
516	214	107	107	Sq.Ft.	1/4" Preformed Expansion Joint Filler			107	107				
517	798.35	399.08	399.27	Lin.Ft.	Bridge Railing, Type 1	362.77	362.96	36.31	36.31				
518	55	29	26	Each	Scuppers, 6" Ø Cast Iron or Wrought Iron Pipe	29	26						
518	62	31	31	Cu.Yds.	Porous Backfill			31	31				
518	120	60	60	Lin.Ft.	6" Ø Helical C.M.P. (707.01) Non-perforated			60	60				
518	218	109	109	Lin.Ft.	6" Ø Perf. Helical C.M.P. (707.01) Incl. spec.			109	109				
601	1126	563	563	Sq.Yds.	Crushed Aggregate Slope Protection							563	563
808	1404	702	702	Units	Water-reducing, Set-retarding Admixture	702	702						
825	2418	1209	1209	Sq.Yds.	Concrete Surface Treatment	1191	1191	18	18				

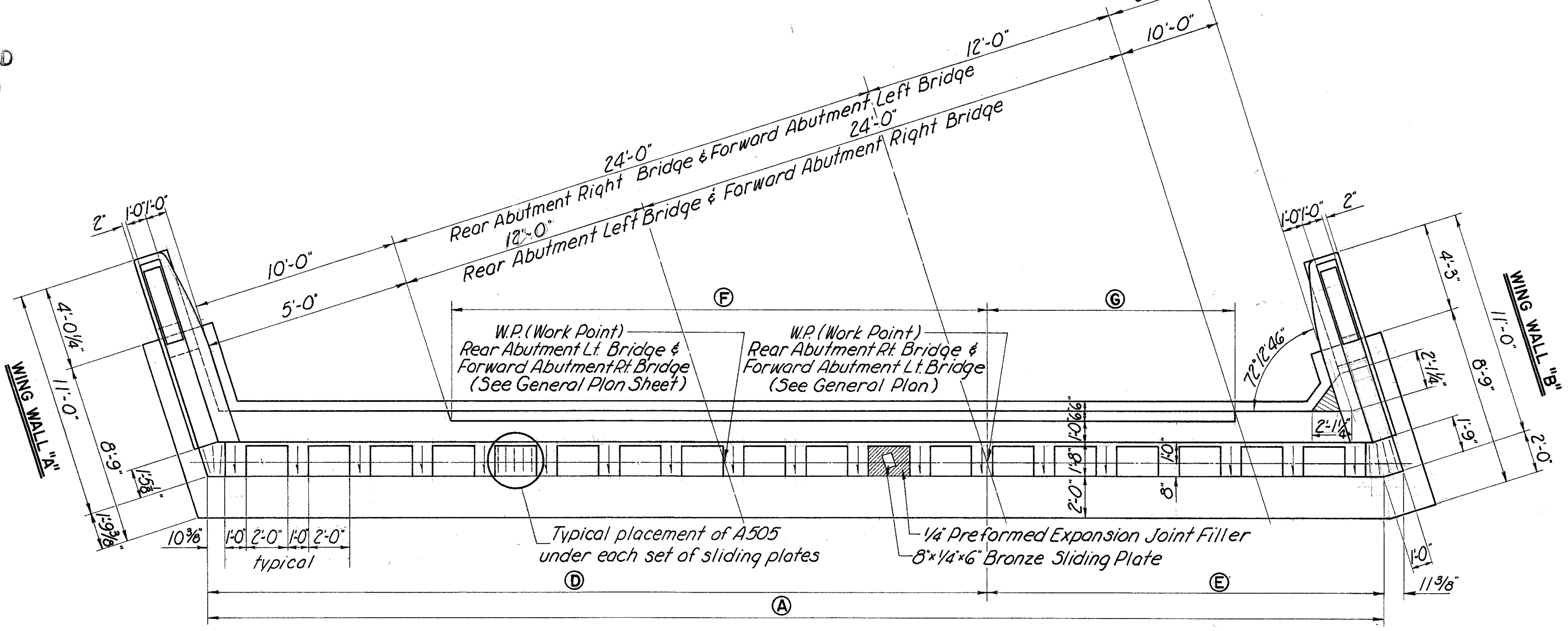
FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

ESTIMATED QUANTITIES

BRIDGE No. FRA-270-2356 N, L&R
OVER MORSE ROAD

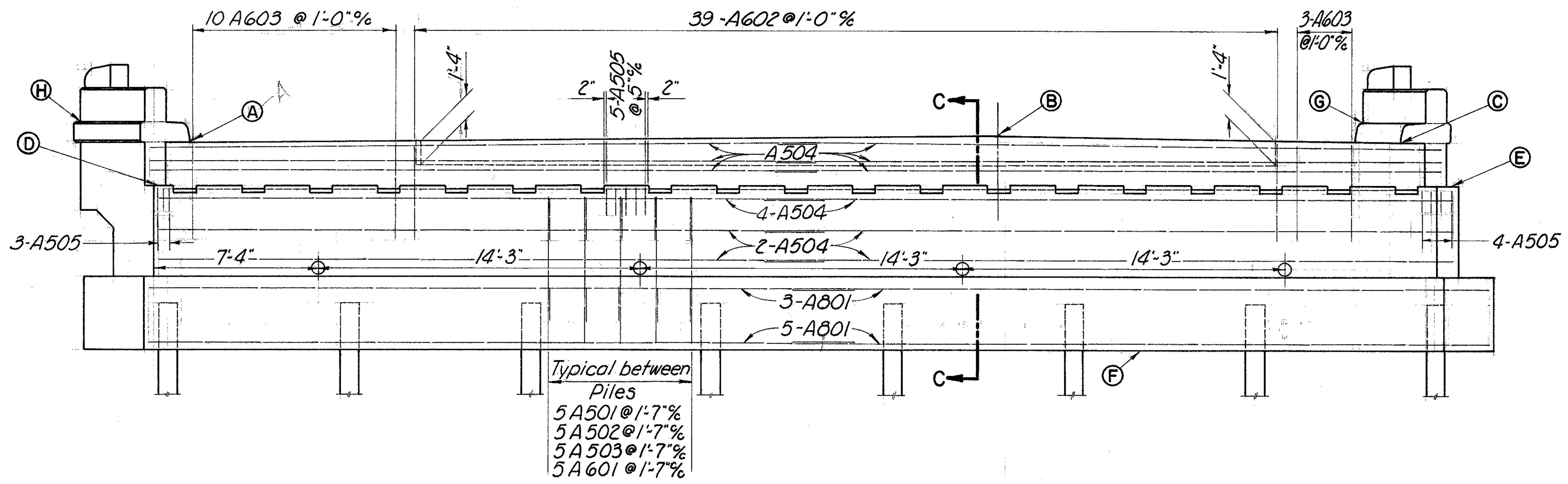
FRANKLIN COUNTY — I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HH 9-12-67	NF		9-12-67	JA	9/12-67	9-12-69 11-5-69

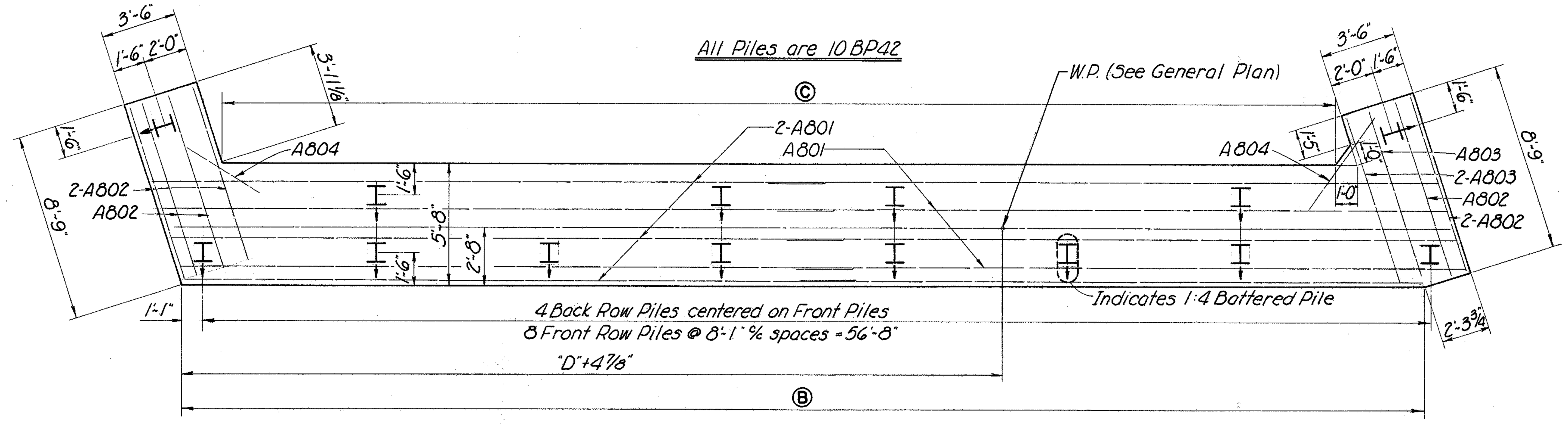


PLAN (Rear Abutment - Right Bridge Shown)

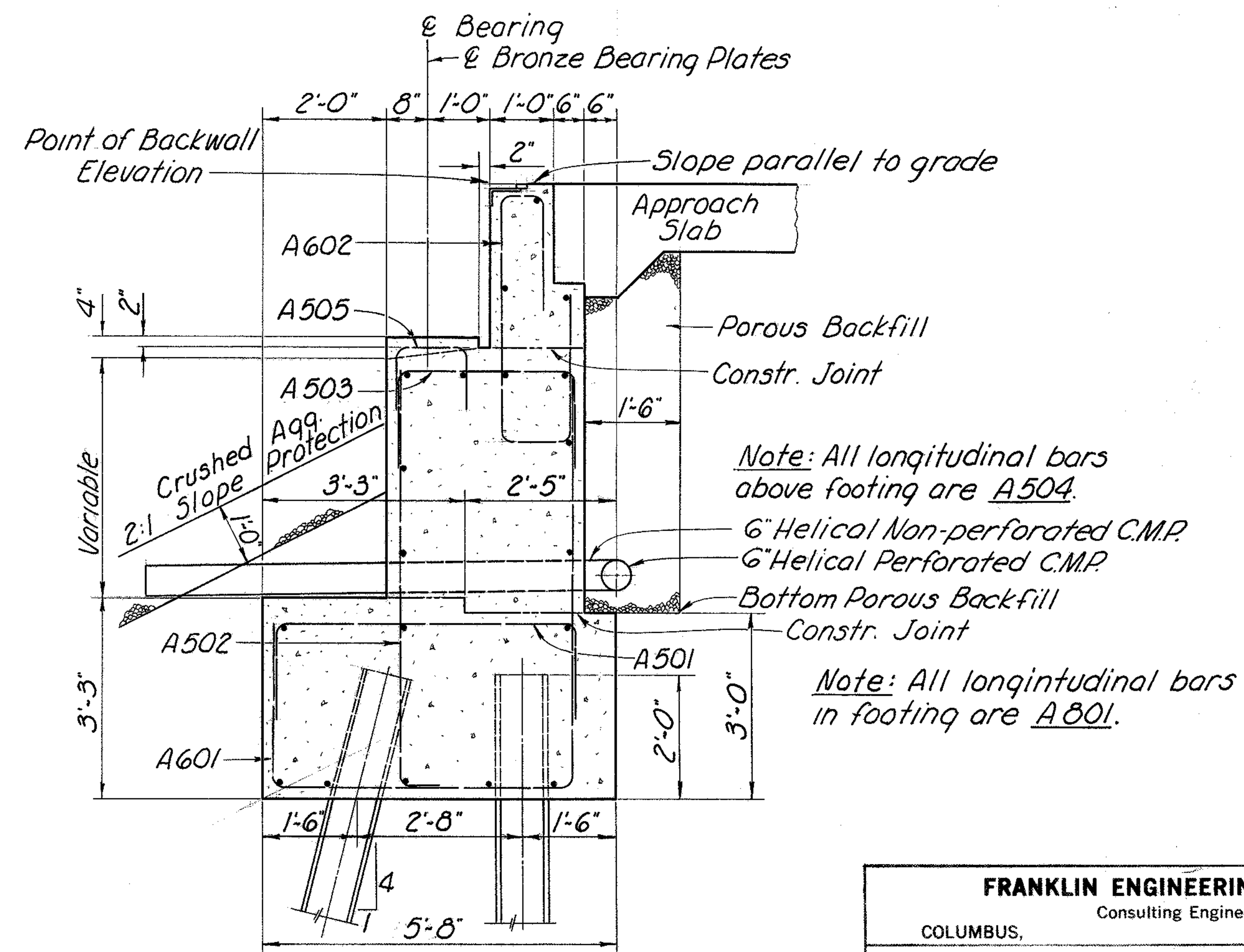
Structures	Dimensions							Elevations							
	A	B	C	D	E	F	G	A	B	C	D	E	F	G	H
Rear Abutment Left Bridge	56'-8½"	57'-5⅛"	51'-6⅛"	19'-8⅞"	36'-11⅝"	13'-2⅞"	24'-4¾"	871.18	871.45	870.94	869.29	869.05	861.69	871.78	872.01
Rear Abutment Right Bridge	56'-8½"	57'-5⅛"	51'-6⅛"	37'-7⅛"	19'-1⅜"	25'-10⅛"	11'-9⅝"	870.84	871.40	871.14	868.95	869.25	861.59	871.98	871.67
For'd Abutment Left Bridge	56'-6½"	57'-3⅛"	51'-4⅛"	37'-5¾"	19'-0¾"	25'-9¼"	11'-9⅛"	870.87	871.43	871.17	868.98	869.28	861.62	872.01	871.70
For'd Abutment Right Bridge	56'-7"	57'-3⅝"	51'-4⅝"	19'-8⅜"	36'-10⅝"	13'-2⅝"	24'-4⅛"	871.20	871.47	870.95	869.31	869.06	861.70	871.80	872.04



ELEVATION



FOOTING PLAN



SECTION C-C

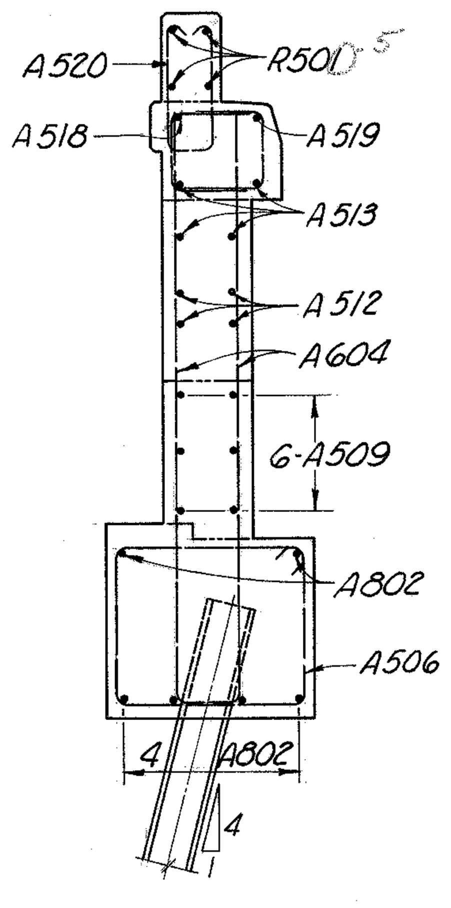
FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

ABUTMENT DETAILS

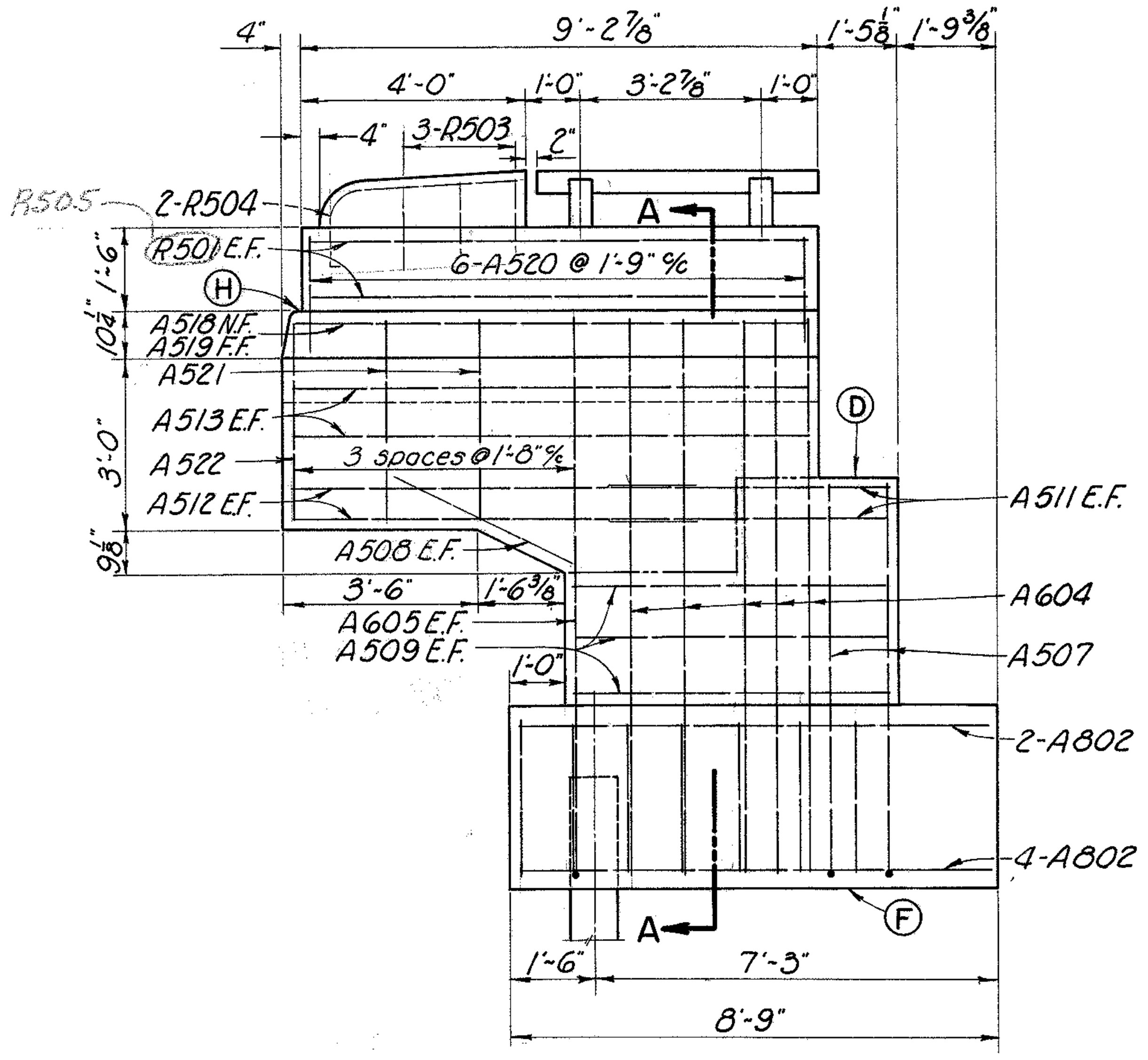
BRIDGE No. FRA-270-2356 N L&R
over MORSE ROAD

FRANKLIN COUNTY I.R.-270
Sta. 1355+09.32

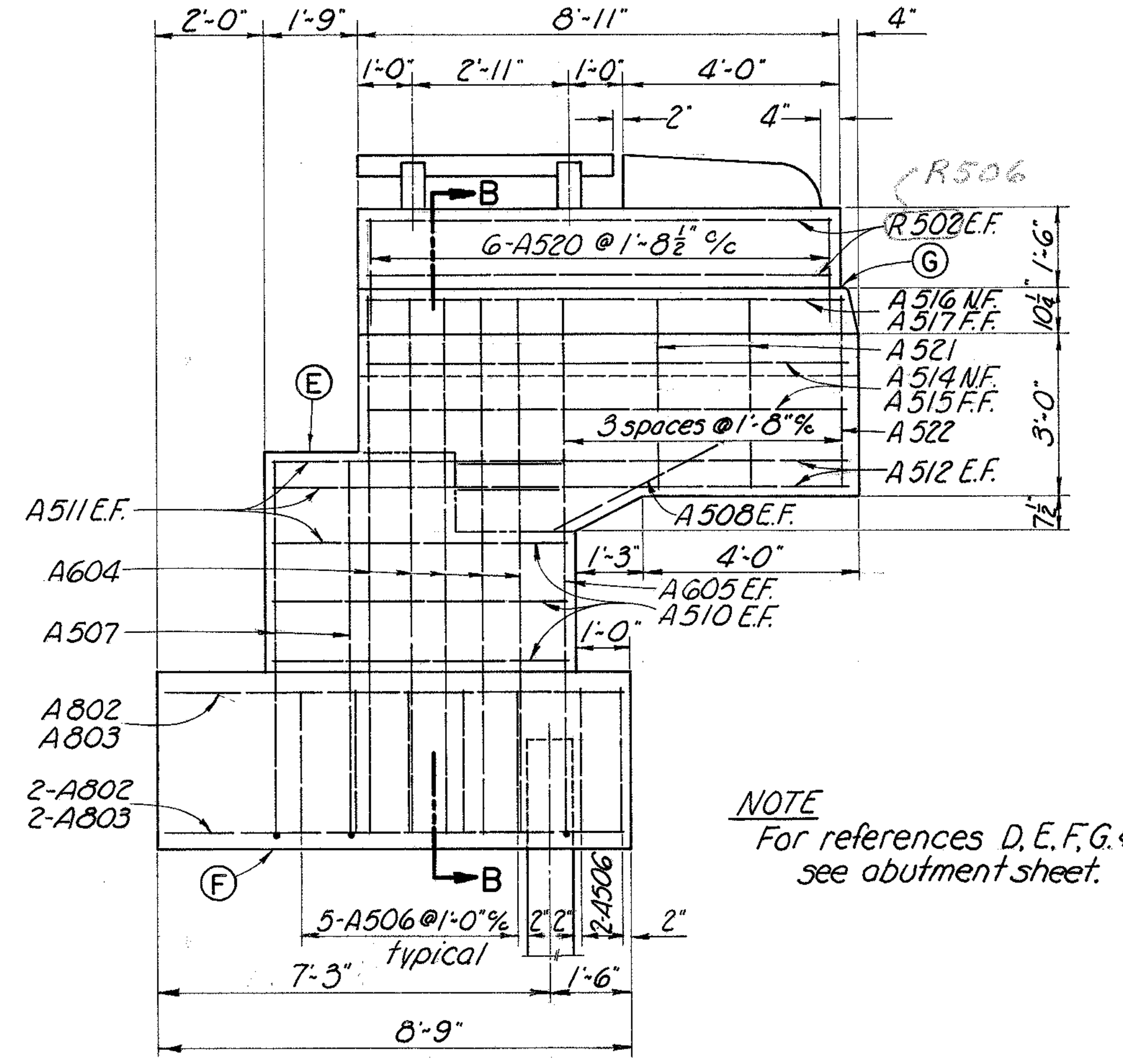
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.	[illegible]		HM	[illegible]	9/12-67	



SECTION A-A

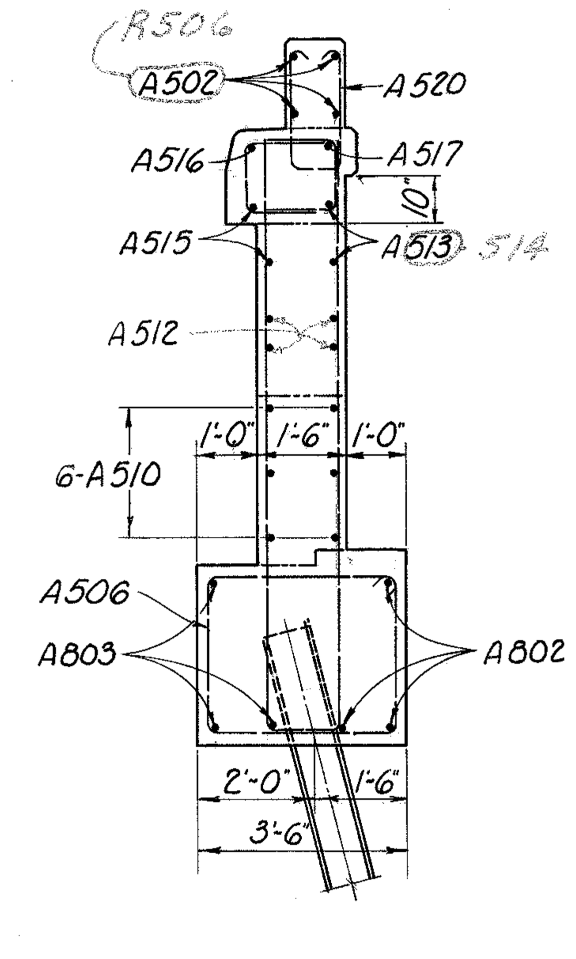


WING WALL "A"

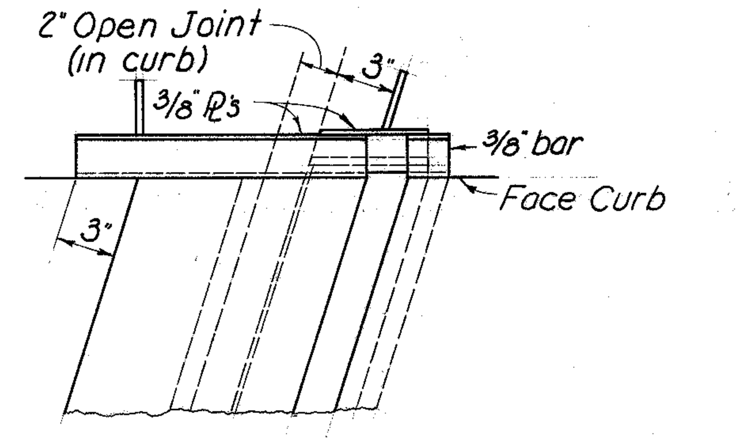


NOTE
For references D, E, F, G & H. see abutment sheet.

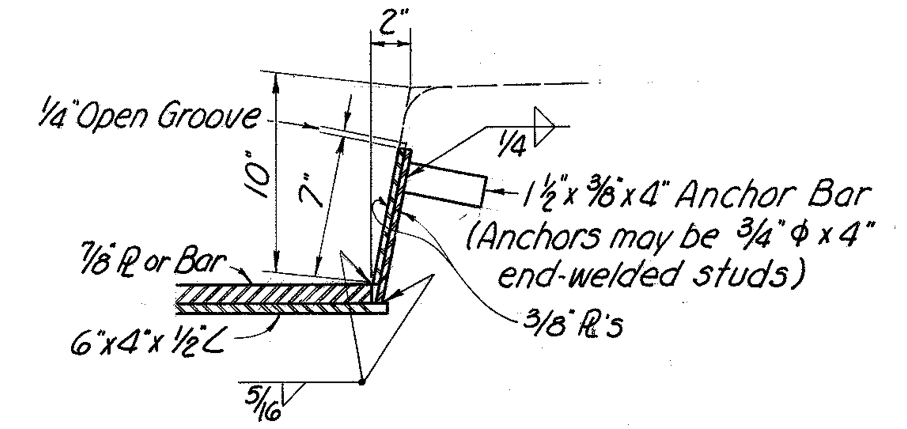
WING WALL "B"



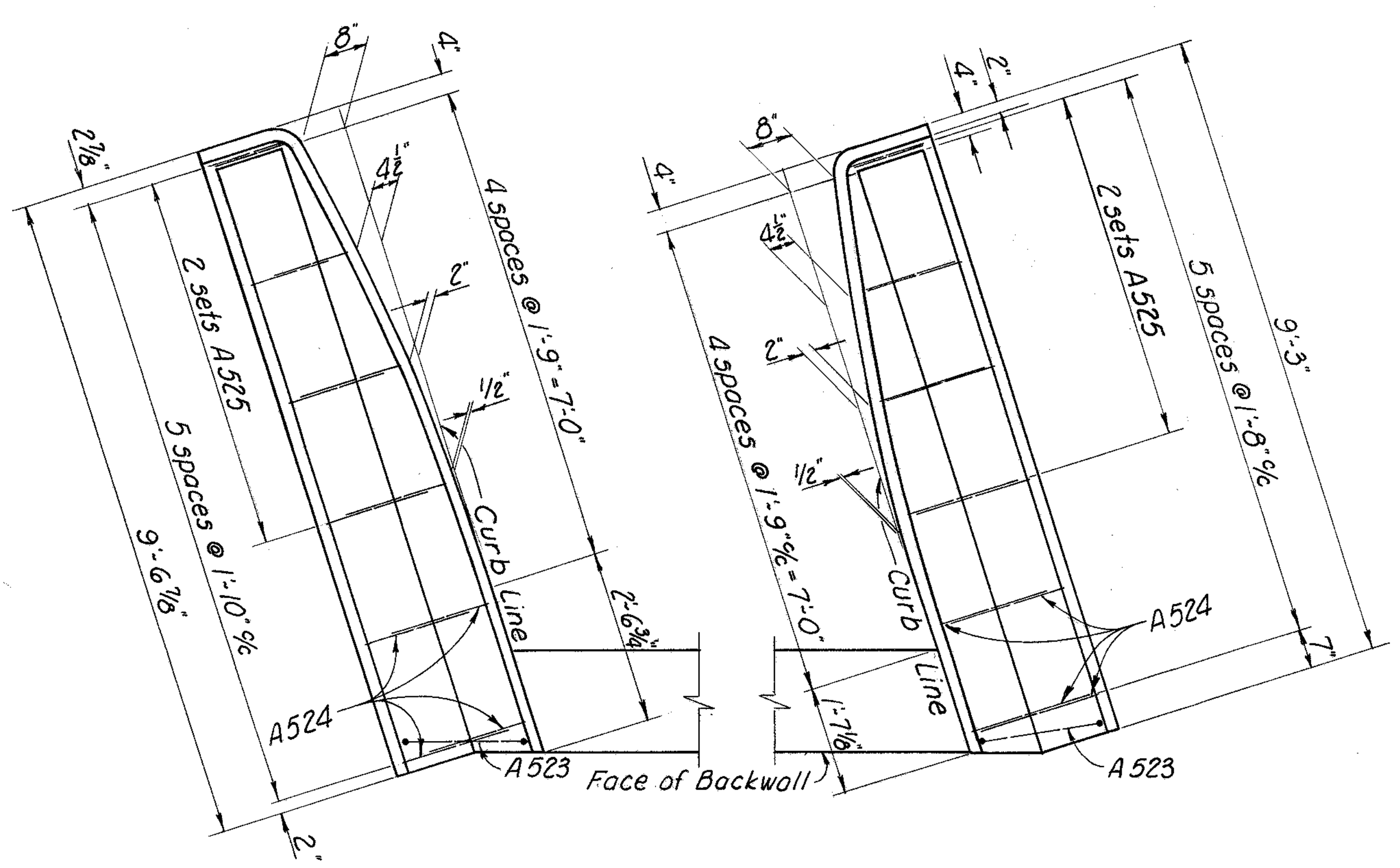
SECTION B-B



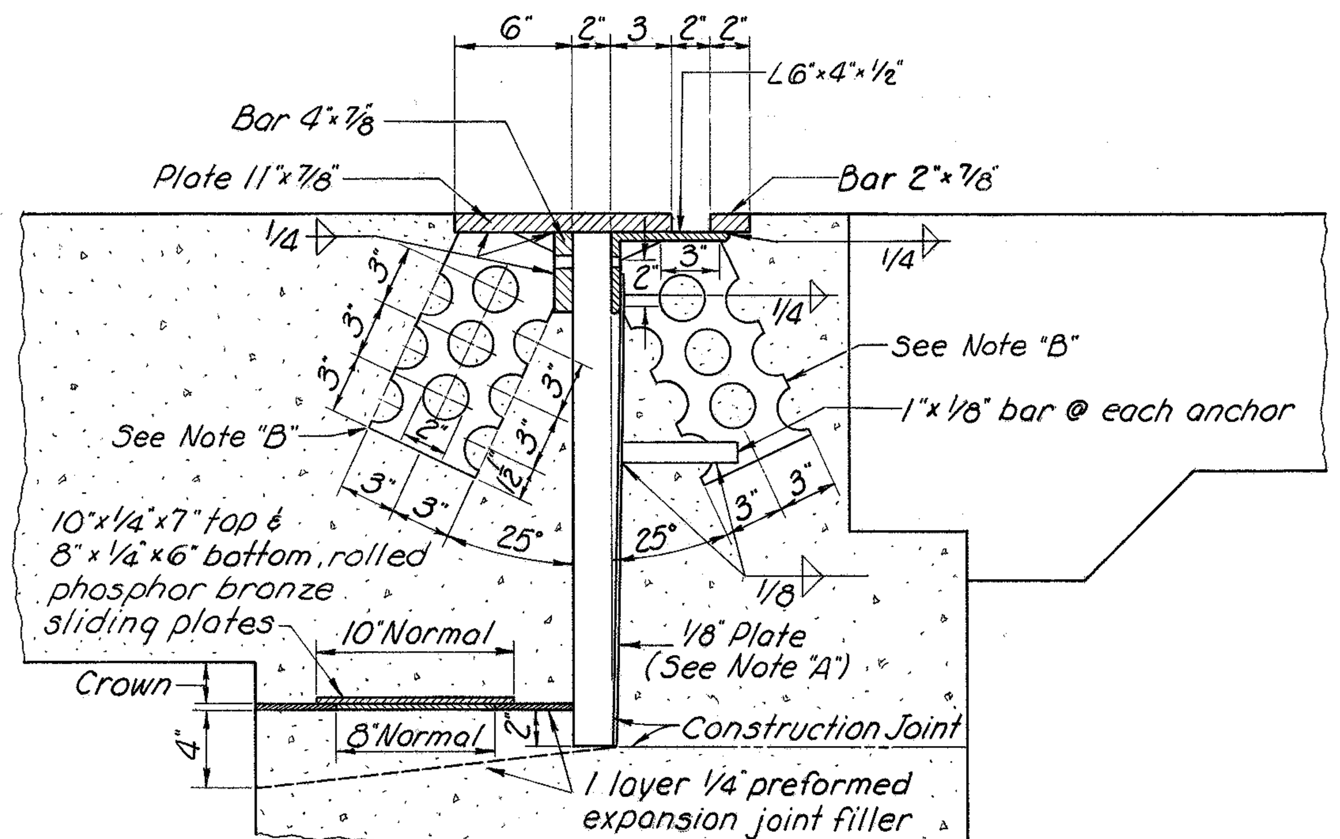
PLAN



SECTION
CURB PLATE DETAILS

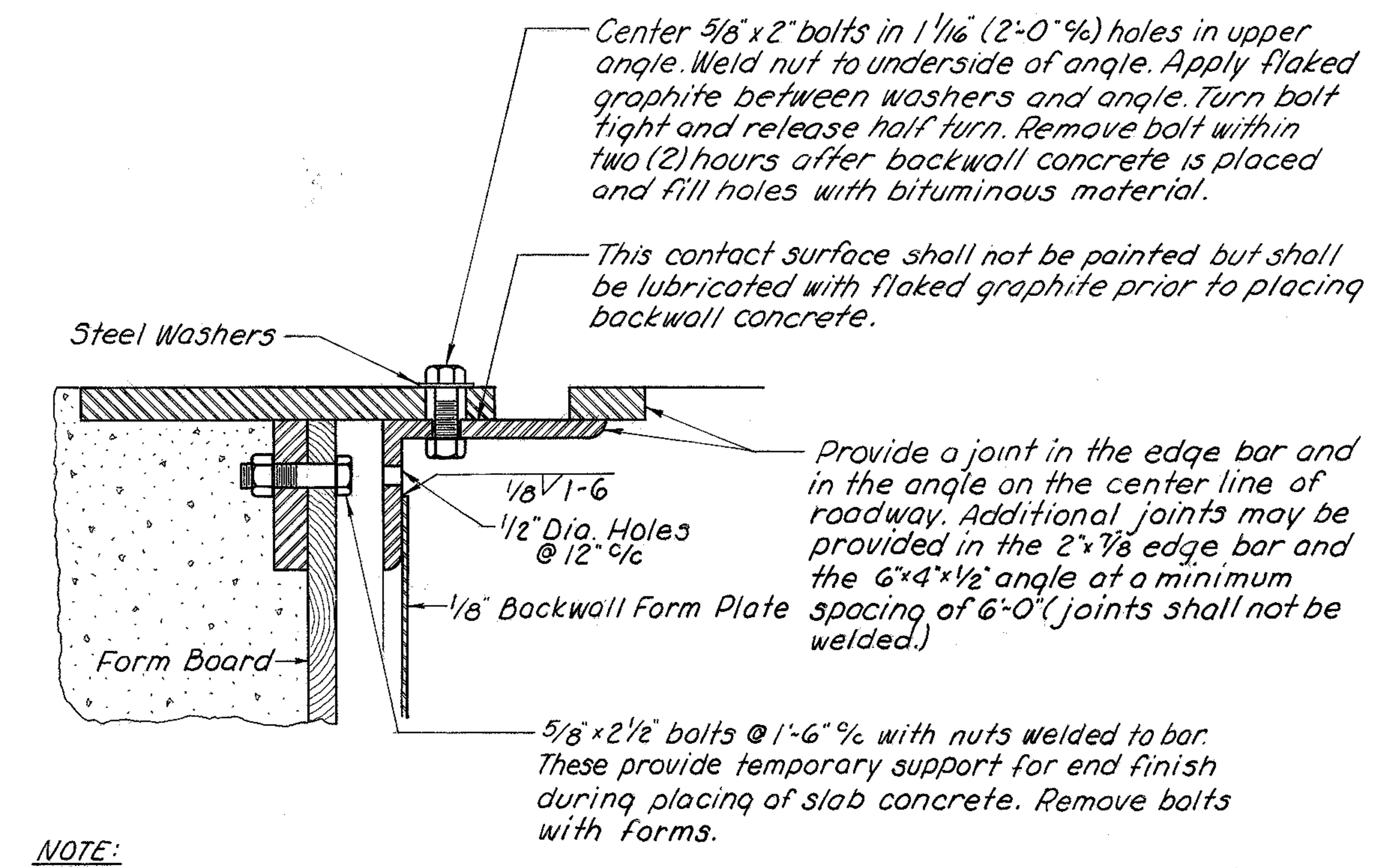


CURB PLAN



Notes:
A: ⅛" Backwall Form Plate shall be provided in lengths not to exceed 6'-0"; joints between lengths shall be tightly butted and no joints shall be placed opposite drainage slots in bridge seat; plates shall be notched to fit around anchor plates.
B: 6" x ½" x 12" Plate spaced at approximately 15" c/c except near joints in the angle where plates shall be within 6" of each side of the joint.

ROADWAY END FINISH



NOTE:
Omit shop coat on end finish. Clean all area not in contact with concrete or steel and apply the shop coat as well as two (2) field coats in the field.

END FINISH DETAILS

FRANKLIN ENGINEERING, LIMITED
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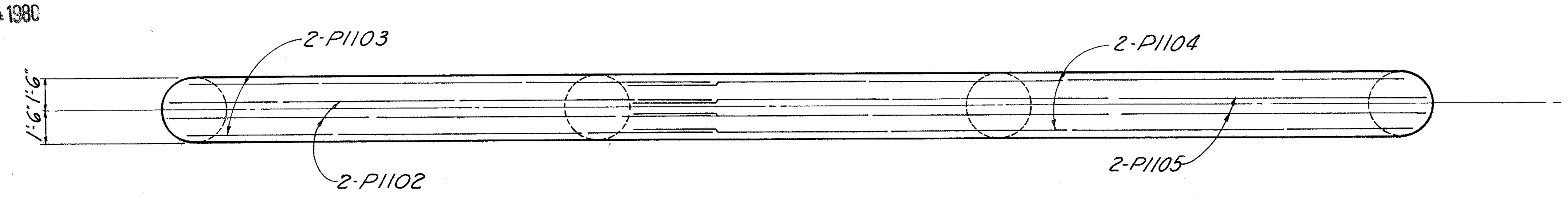
COLUMBUS, OHIO

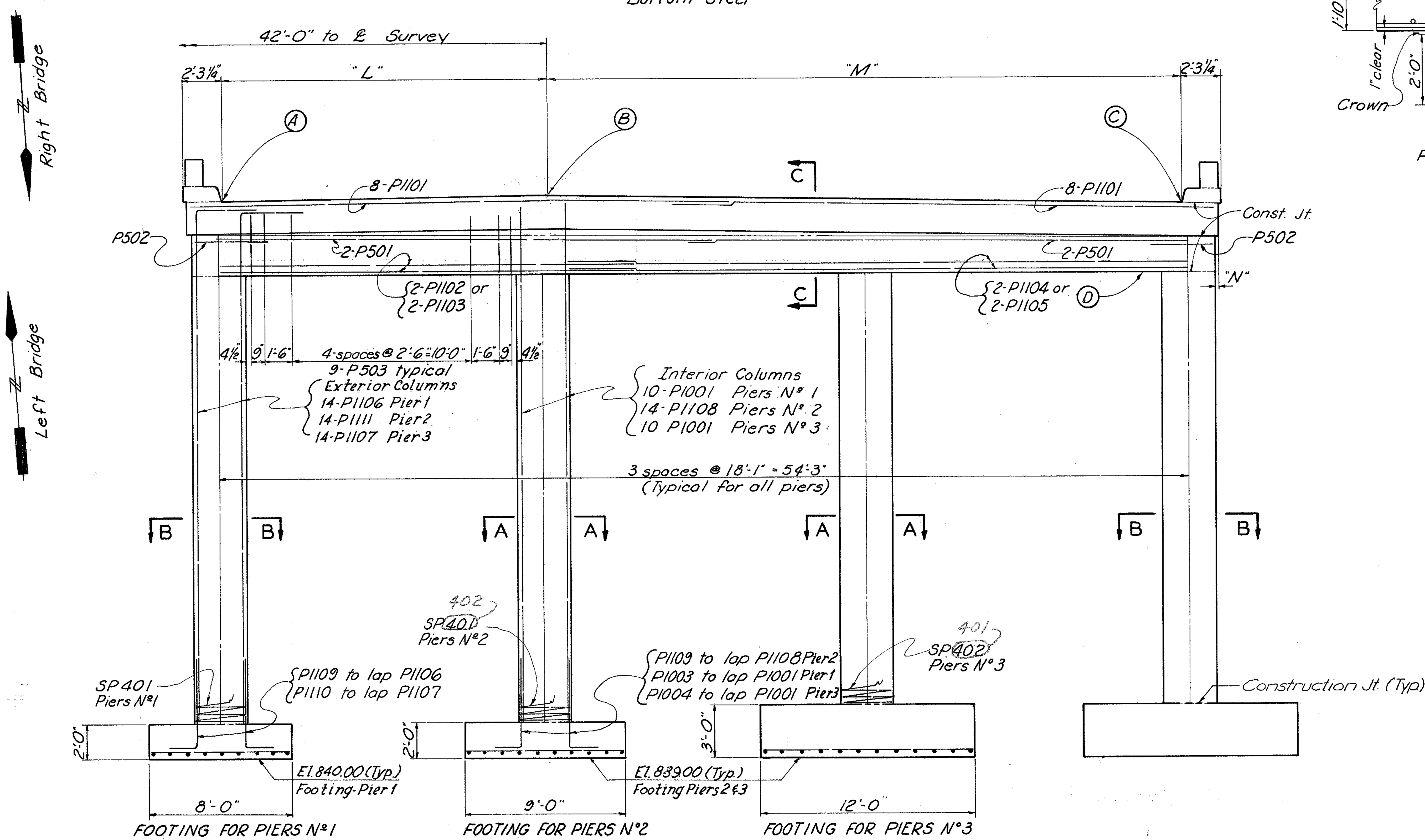
WING WALLS and END FINISH DETAILS
BRIDGE No. FRA-270-2356 N L&R
over MORSE ROAD

FRANKLIN COUNTY — I.R.-270
Sta. 1355+09.32

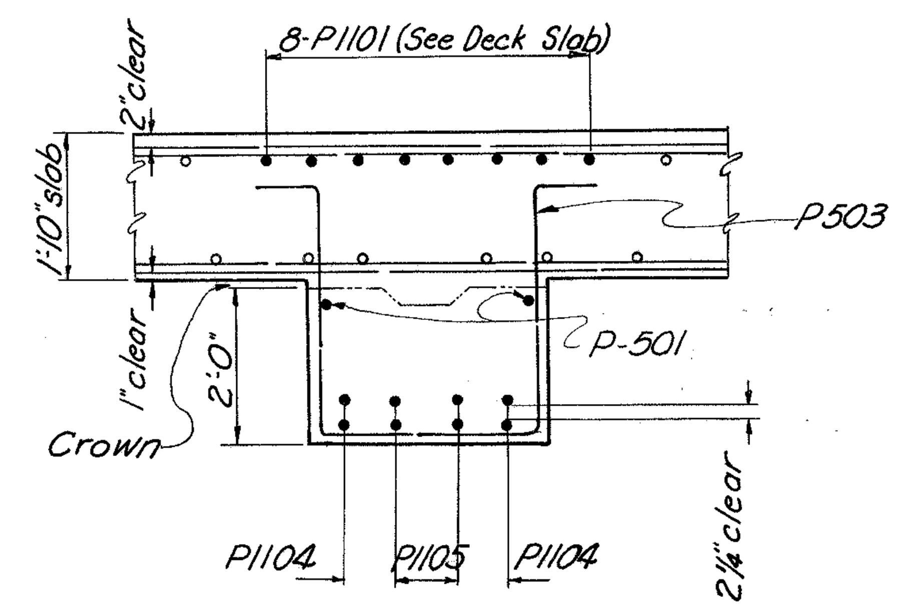
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.	[illegible]		HM	JY	9/12-67	11-5-69



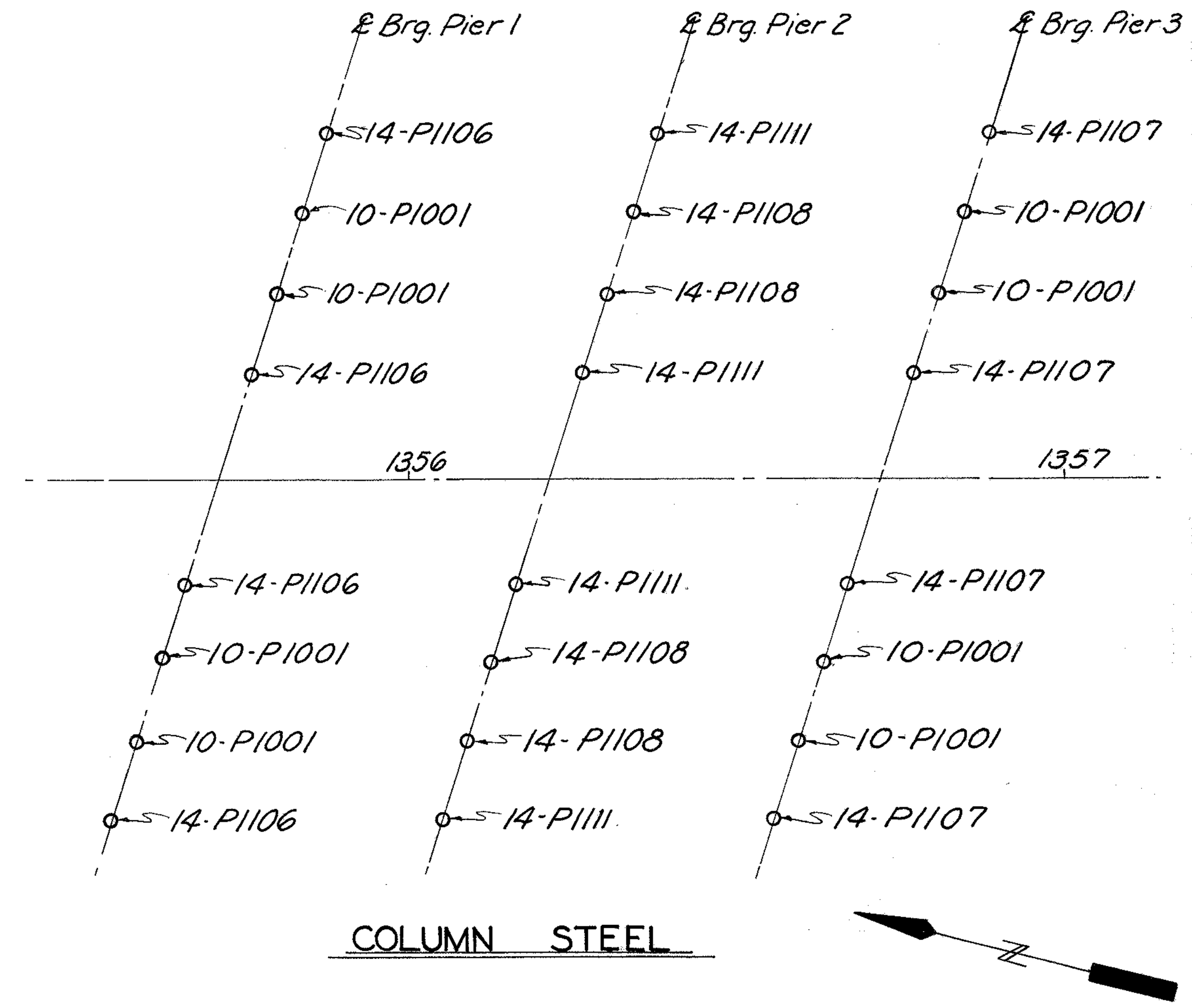
PLAN
Bottom Steel



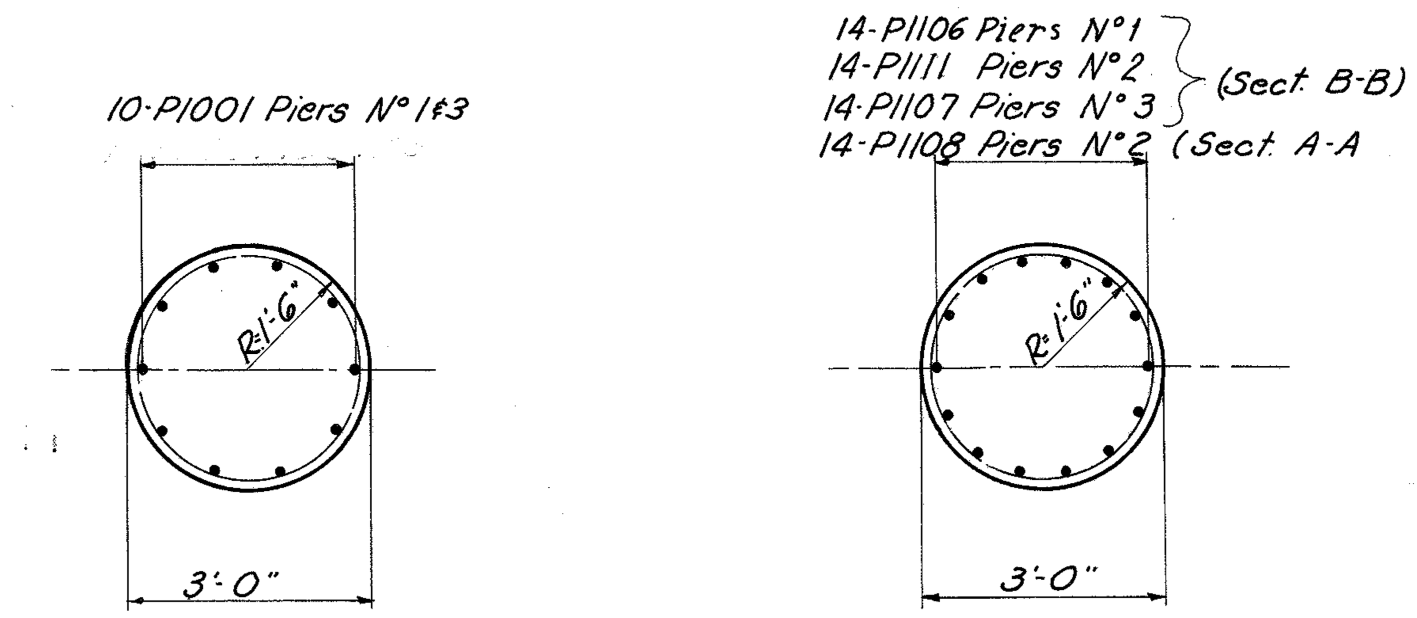
ELEVATION



SECTION-C-C

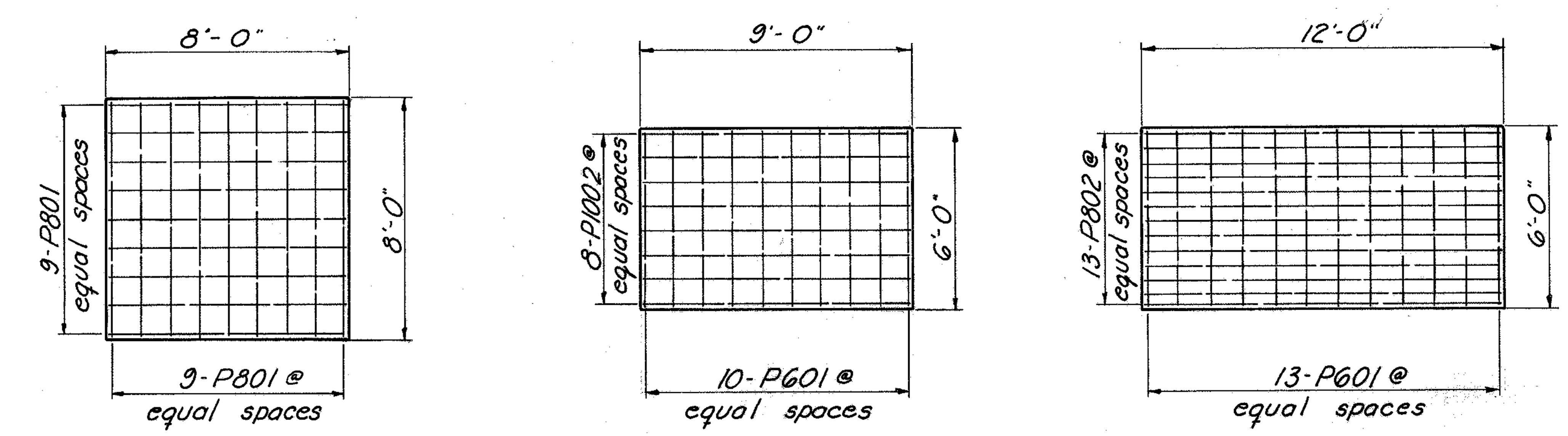


COLUMN STEEL



SECTION-A-A
(Piers Nº 1 & 3)

SECTION-A-A (Piers 2)
SECTION-B-B (All Piers)



PIERS Nº 1
PIERS Nº 2
PIERS Nº 3

TYPICAL FOOTINGS

	A	B	C	D	"L"	"M"	"N"
Pier Nº1 Lt. Bridge	871.23	871.51	870.98	867.15	17'-10¼"	35'-8½"	0'-3"
Pier Nº1 Rt. Bridge	871.22	871.47	870.93	867.10	17'-10¼"	35'-8½"	0'-3"
Pier Nº2 Lt. Bridge	871.26	871.52	870.99	867.16	17'-10⅛"	35'-8⅛"	0'-2¾"
Pier Nº2 Rt. Bridge	871.26	871.52	870.99	867.16	17'-10¼"	35'-8½"	0'-3"
Pier Nº3 Lt. Bridge	871.23	871.49	870.94	867.11	17'-9⅞"	35'-7½"	0'-2¼"
Pier Nº3 Rt. Bridge	871.25	871.51	870.99	867.16	17'-10"	35'-8"	0'-2⅝"

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

PIER DETAILS
BRIDGE Nº FRA-270-2356 N, L & R
OVER MORSE ROAD

FRANKLIN COUNTY I.R. 270

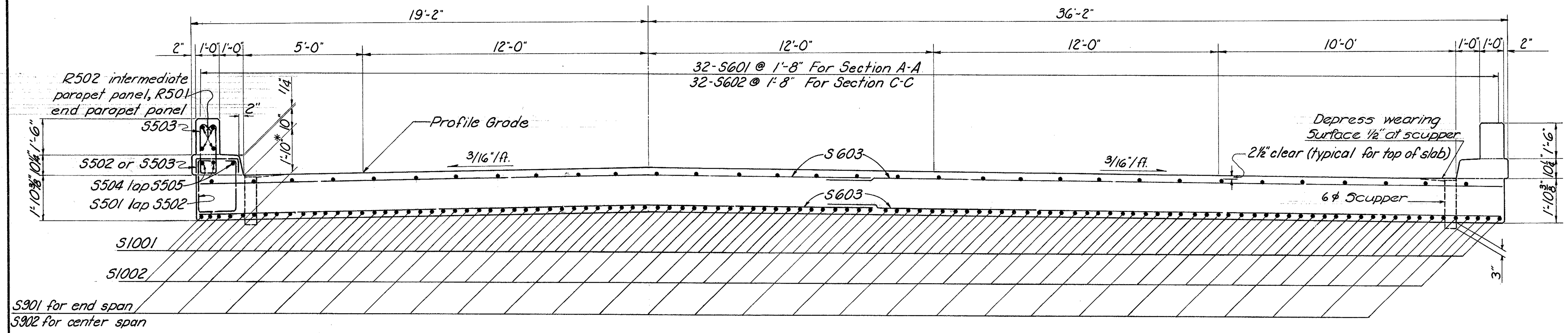
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.	ℱ		HM	JY	9/12/67	9-12-69

*Which includes wearing surface 1" monolithic

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

255/292

FRA-270-22.99 N



SECTION A-A & SECTION C-C

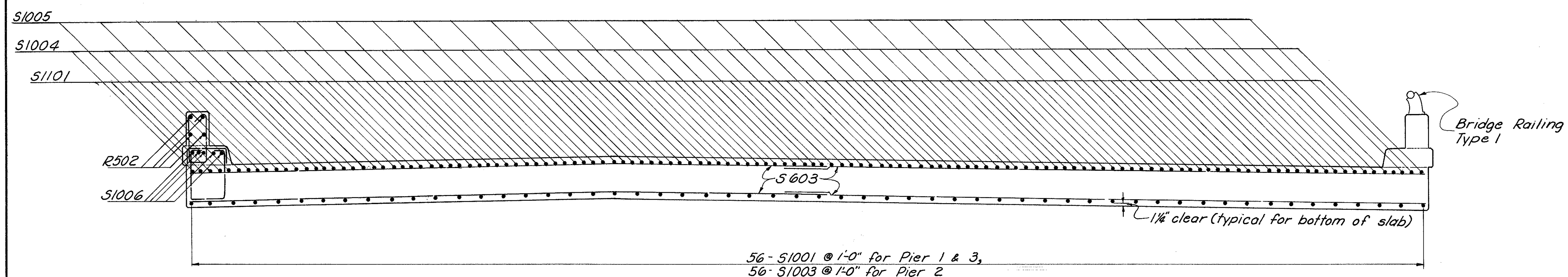
NOTES

CONCRETE shall be class "C"

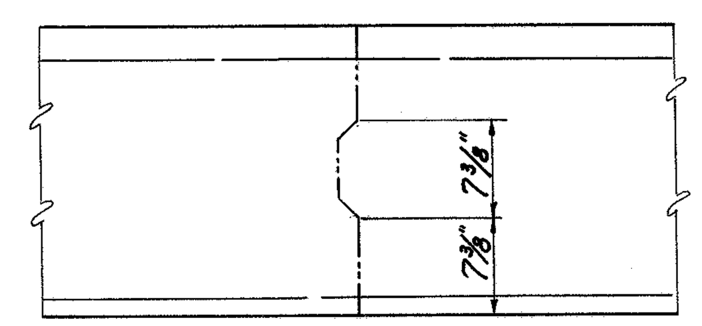
CONSTRUCTION JOINTS: One construction joint in bridge slab shall be placed on transverse center line of middle spans or 1'-0"± off transverse center line if necessary to miss railing posts and transverse reinforcing bars. One longitudinal joint will be permitted, along crown of roadway.

CAMBER of 1/800 of the span shall be provided in each span (in addition to that required for conformance with the profile of the highway) to allow for dead load deflection. This is the amount of camber required before falsework is released. To obtain this proper allowance shall be made for the deflection of falsework members. See AASHO specs. paragraph 2.4-18 falsework and centering

CURBS shall be placed after shoring under the slab has been released sufficiently to permit the slab spans to attain full dead load deflection.



SECTION B-B & SECTION D-D



CONSTRUCTION JOINT

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

TRANSVERSE SECTIONS
DECK SLAB

BRIDGE NO FRA-270-2356 N. L&R.
over MORSE ROAD

FRANKLIN COUNTY IR-270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.					9/12-67	

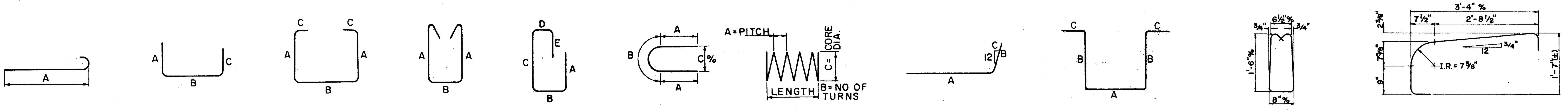
FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

DECK SLAB PLAN

BRIDGE NO FRA-270-2356 N. L&R
under MORSE ROAD

FRANKLIN COUNTY IR-270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.					9/12-67	



TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5 TYPE 6 TYPE 7 TYPE 8 TYPE 9 TYPE 10 TYPE 11

ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A801	64	31'-1"	Str						5311
A802	36	8'-5"	Str.						809
A803	12	8'-0"	Str						256
A804	8	4'-0"	Str						85
A601	140	13'-11"	2	2'-10"	4'-10"	6'-7"			2926
A602	156	9'-2"	5	2'-4"	1'-2"	3'-11"	8"	1'9"	2148
A603	52	8'-8"	2	3'-11"	1'-2"	3'-11			677
A604	40	19'-10"	2	9'-6"	1'-2"	9'-6"			1192
A605	16	10'-0"	2	9'-6"	8"	0"			240
A501	140	7'-9"	2	1'-7"	4'-10"	1'-7"			1132
A502	140	7'-1"	2	8"	6'-7"	0"			1034
A503	140	6'-3"	2	1'-10"	2'-10"	1'-10"			933-913
A504	88	29'-5"	Str.						2700
A505	388	2'-11"	2	1'-0"	1'-2"	1'-0"			1180
A506	56	11'-10"	12	2'-7"	3'-2"	2'-7"	3'-2"		691
A507	16	7'-3"	2	6"	6'-11"	0"			121
A508	16	3'-6"	Str						58
A509	24	5'-8"	Str						142
A510	24	5'-5"	Str.						136
A511	40	5'-0"	Str.						209
A512	32	7'-2"	Str						239
A513	16	9'-3"	Str						154
A514	8	8'-11"	Str						74
A515	8	8'-8"	Str.						71
A516	4	8'-9"	Str.						37
A517	4	8'-5"	Str.						35
A518	4	8'-10"	Str.						37
A519	4	9'-2"	Str.						38
A520	48	5'-7"	4	2'-2"	8"				280
A521	16	7'-9"	2	3'-5"	1'-2"	3'-5"			129
A522	8	6'-2	2	3'-5"	1'-2"	1'-10"			51
A523	8	3'-11"	2	1'-4"	1'-6"	1'-4"			33
A524	32	4'-3"	2	1'-7"	1'-4"	1'-7			142
A525	16 Sets of 4	(2)	2	(1)	1'-4"	(1)			234
R503	24	4'-2"	10						*
R504	16	5'-4	11						*
R505	8-16	8'-11"	Str.						*
R506	8-16	8'-7"	Str.						*
								TOTAL	22,694 23,514

(1) Varies from 1'-7" to 10" by 3" Incr.
(2) Varies from 4'-3" to 2'-9 by 6" Incr.

PIERS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1101	96	30'-8"	Str.						15,642
P1102	24	23'-0"	Str.						2933
P1103	24	24'-3"	Str.						3092
P1104	24	34'-10"	Str.						4442
P1105	24	36'-1"	Str.						4601
P1106	56	31'-8"	2	3'-7"	28'-5"	0"			9,422
P1107	56	31'-30'-8"	2	3'-7"	27'-5" 28'	0		~~9422~~	9,124
P1108	56	29'-5"	Str.						8,752
P1109	168	6'-5"	2	1'-6"	5'-3"	0			5728
P1110	56	7'-5"	2	1'-6"	6'-3"	0			2207
P1111	56	32'-8"	2	3'-7	29'-5"	0			9719
P1001	80	28'-5"	Str.						9782
P1002	64	8'-8"	Str.						2387
P1003	40	6'-0"	2	1'-5"	4'-11"	0"			1033
P1004	40	7'-0"	2	1'-5"	5'-11"	0"			1205
P801	144	7'-8"	Str.						2948
P802	104	11'-8"	Str.						3240
									1566
P601	184	5'-8"	Str.						
P501	24	28'-0"	Str.						701
P502	12	7'-4"	6	1'-7"	4'-2"	2'-8"			92
P503	162	10'-0"	9	3'-3"	2'-8"	0'-8"			1690
SP401	16	25'-1"	7	4½	70	32			7270
SP402	8	24'-1" 26'	7	4½	67 73	32			3478 3868
								TOTAL	111,742 111,054

SUPERSTRUCTURES

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
S1101	384	32'-0"	Str.						65,286
S1001	448	40'-0"	Str.						77,110
S1002	112	32'-5"	1	31'-0"					15,623
S1003	112	34'-2	Str.						16,466
S1004	198	14'-0"	Str.						11,928
S1005	192	8'-0"	Str.						6609
S1006	60	28'-0"	Str.						7229
S1007	112	31'-0"	Str.						14,940
S901	108	27'-3"	1	26'-0					10,007
S902	108	21'-0"	Str.						7,711
S601	128	26'-7"	Str						5111
S602	128	21'-9"	Str.						4182
S603	1832	29'-8"	Str.						81,634
S501	800	6'-5"	3	2'-3"	1'-6"	0'-6"			5354
S502	800	2'-7"	2	0'-8"	1'-6"	0'-8"			2155
S503	800	5'-7"	4	2'-2"	0'-8"				4658
S504	24	28'-3"	Str						707
S505	24	25'-1"	Str.						628
							TOTAL		337,338
R501	32	12'-11"	Str						*
R502	160	15'-2"	Str.						*

REPLACEMENT BARS

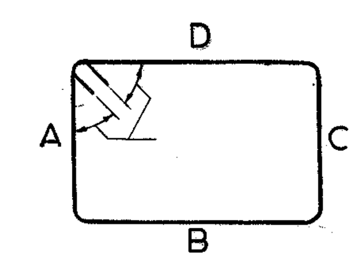
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
RE1101	8	8'-7"	Str						
RE1001	9	8'-3"	Str						
RE901	1	7'-10"	Str						
RE801	1	7'-6"	Str						
RE601	5	6'-11"	Str						
RE501	2	6'-7"	Str						
RE401	1	6'-3"	13						

NOTES:

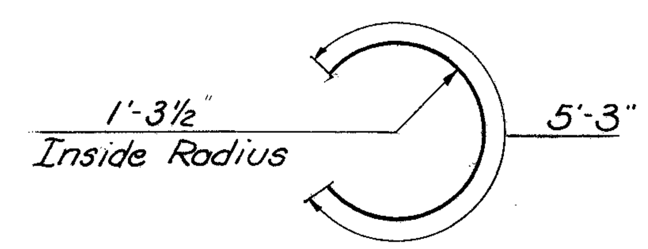
BAR SIZE: The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is a No.5 size bar and P1101 is a No.11 size bar.

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 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformation 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 spacers, 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.

* Included with railing for payment.



TYPE 12



TYPE 13

FRANKLIN ENGINEERING, LIMITED 9/9
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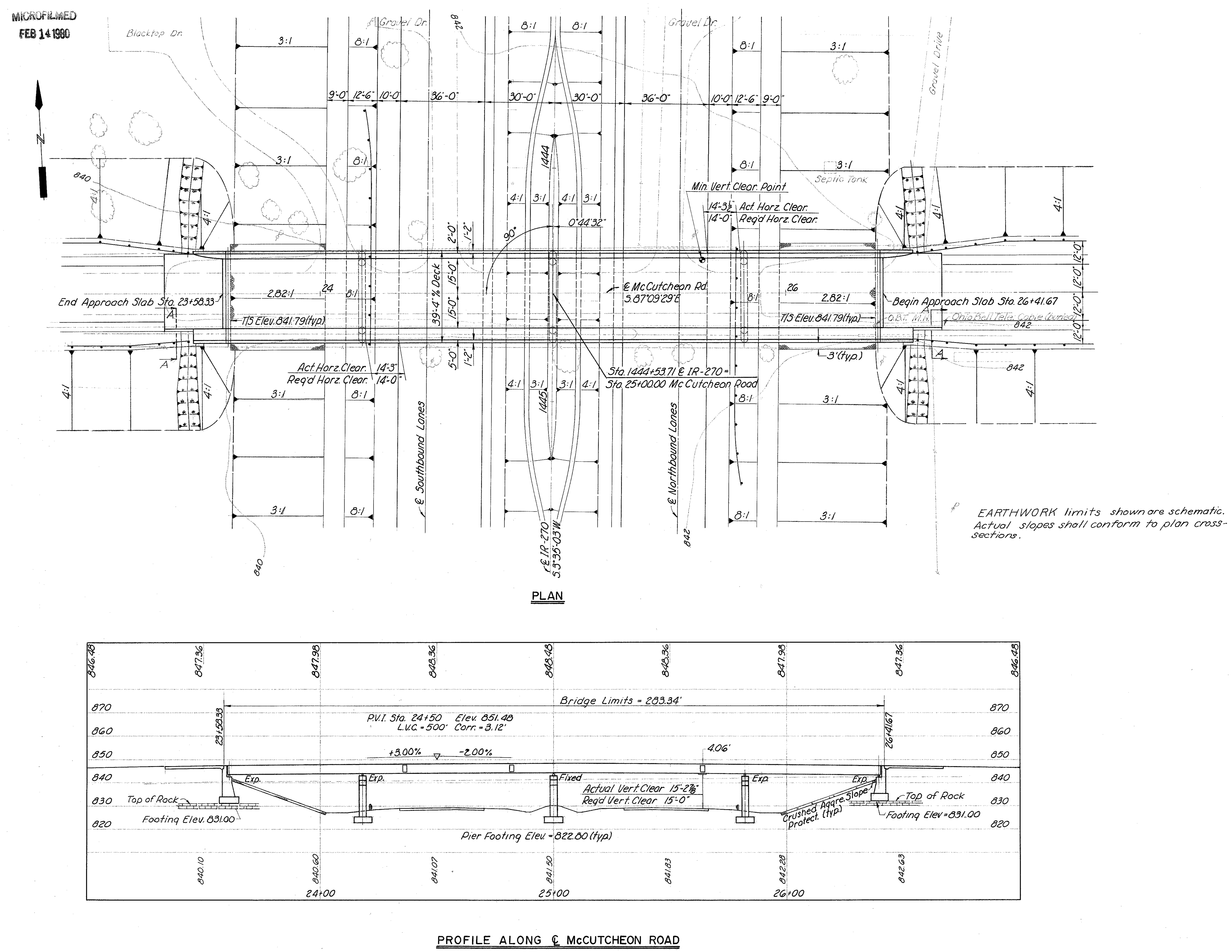
REINFORCING STEEL

BRIDGE N° FRA-270-2356N L&R

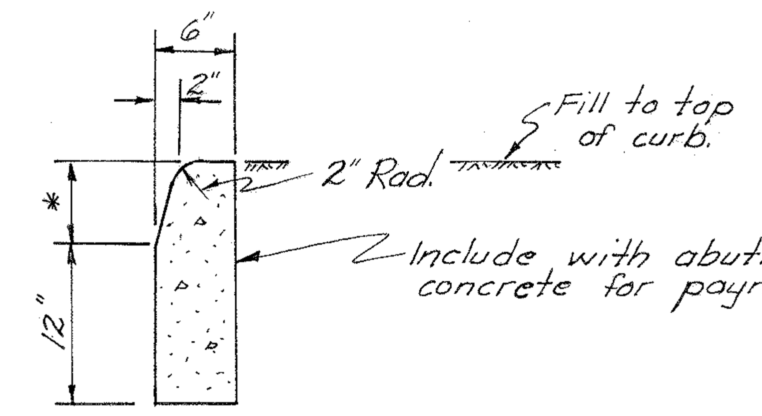
OVER MORSE ROAD

FRANKLIN COUNTY IR 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Z	Z		HM	JA	9/12-67	9-12-69 11-5-69



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



* Varies from 10" at sidewalk to 2" at end of approach slab.

SEC. A-A

PROPOSED STRUCTURE

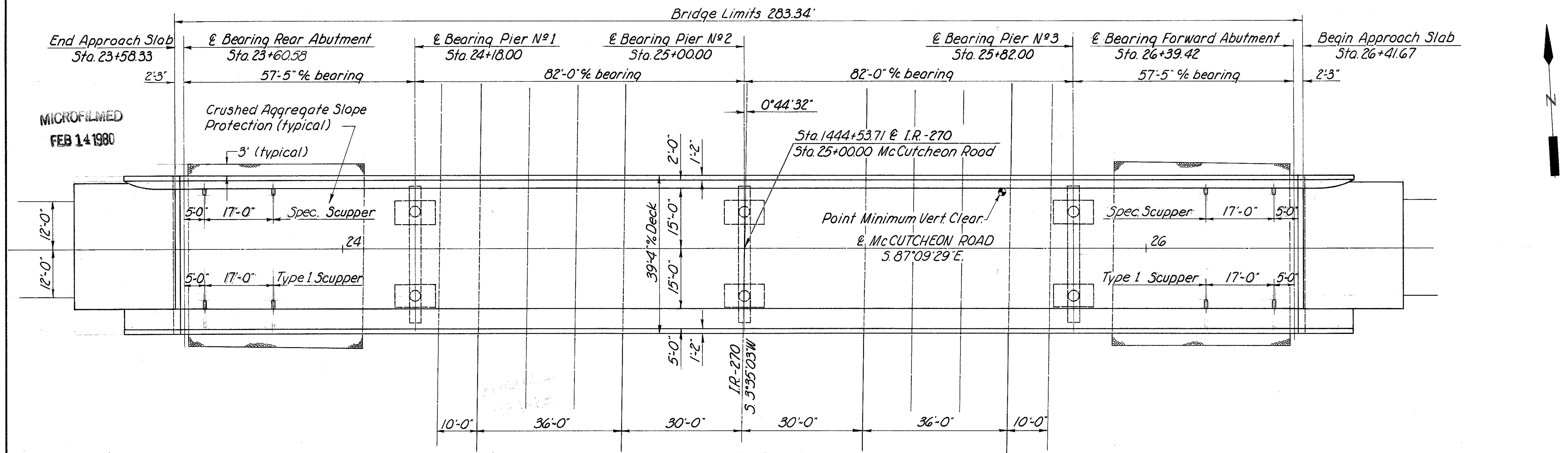
TYPE: Continuous steel beam with reinforced concrete deck & substructure
SPANS: 57'-5", 82'-0", 82'-0", 57'-5"
ROADWAY: 30'-0" f/f curb w/2'-0" safety curb & 5'-0" sidewalk
LOAD FREQUENCY: AASHO HS-20-44
WEARING SURFACE: 1" monolithic concrete
APPROACH SLAB: AS-1-67 mod. (25'-0" long)
SKEW: None
ALIGNMENT: Tangent
SUPERELEVATION: None
AVERAGE DAILY TRAFFIC: 8040 (1986)

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

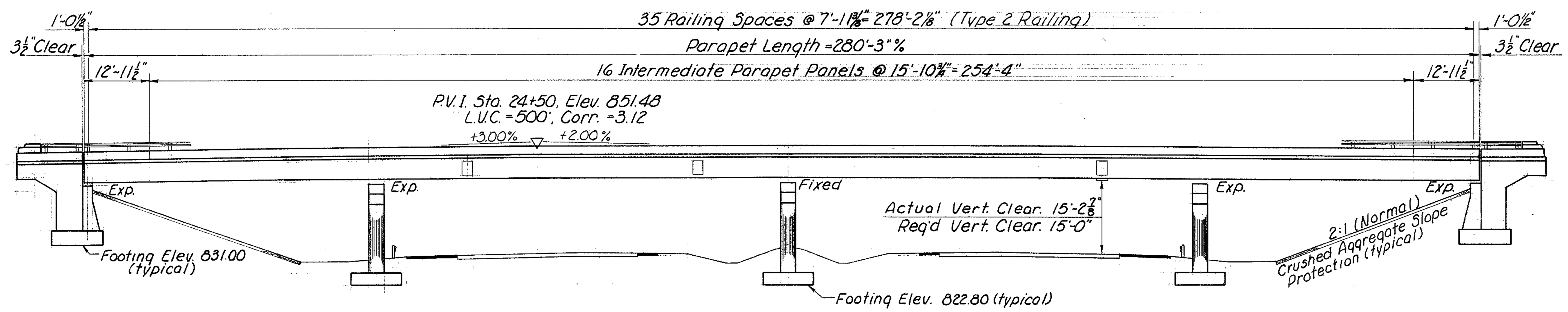
SITE PLAN
BRIDGE No. FRA-270-2525 N
UNDER Mc CUTCHEON ROAD

FRANKLIN COUNTY — I.R.-270
Sta.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBC	[signature]			[initials]	5/26/67	7-17-69



GENERAL PLAN



GENERAL ELEVATION

ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	PIERS	ABUT'S	GEN'L		
503	71	Cu. Yds.	Rock Excavation		71				
503	267	Cu. Yds.	Unclassified Excavation			267			
511	138	Cu. Yds.	Class "C" Concrete, Abutments			138			
511	64	Cu. Yds.	Class "C" Concrete, Piers above Footings		64				
511	38	Cu. Yds.	Class "C" Concrete, Pier Footings		38				
511	350	Cu. Yds.	Class "C" Concrete, Superstructure	350					
509	117,208	Lbs.	Reinforcing Steel	85,041	20,713	11,454			
513	265,860	Lbs.	Structural Steel	265,860					
514	265,860	Lbs.	Field Painting of Structural Steel	265,860					
517	612.36	Lin. Ft.	Bridge Railing, type 2	561.69		50.67			
518	4	Each	Scuppers, including supports (type 1)	4					
518	4	Each	Scuppers, including supports (special)	4					
518	26	Cu. Yds.	Porous Backfill			26			
518	31	Lin. Ft.	6" Helical Corrugated Metal Pipe (707.01), non-perforated			31			
518	62	Lin. Ft.	6" Helical Perforated Corrugated Metal Pipe (707.01) incl. spec.			62			
601	439	Sq. Yds.	Crushed Aggregate Slope Protection				439		
808	350	Units	Water-reducing, set-retarding admixture	350					
825	1345	Sq. Yds.	Concrete Surface Treatment				1345		

<u>JOINT SEALER</u>: Item 828 joint sealer including bond breaker, shown in Section A-A of Std. Dwg. SD-1-65, sheet No. 1, shall be omitted.

<u>Stainless Steel Fasteners</u> shall be properly passivated to remove surface impurties and shall be finished with a lustrous finish.

ABUT. FOOTINGS: "Footings shall extend a minimum of 3 inches into bedrock. If necessary, the footings should be lowered. However, if the low point of the surface of the bedrock occurs 2 feet or more above plan elevation, the footings may be raised, after approval by the Director, but to an elevation not higher than 834.00. Stepping of individual footings will not be permitted unless shown on the plans."

REFERENCE shall be made to Std. Drawings AS-1-67 (rev. 1-11-68), BR-1-65 (rev. 11-24-65) sheet 2 of 2, RB-1-55 (rev. 2-2-59), SD-1-65 (dated 11-8-65) sheets 1, 2 and 3 of 3; and Supplemental Specifications 808 (dated 1-1-69), 811 (dated 1-1-69), 825 (dated 1-1-69).

<u>DESIGN DATA</u>: Designed for HS-20-44 loading in accordance with 1965 AASHO specifications including the Ohio Supplement to these specifications.

<u>UNIT STRESSES</u>:

Concrete Class C: Basic unit stress for superstructure 1,200 p.s.i. Basic unit stress for substructure 1,333 p.s.i. Structural Steel: ASTM A36, basic unit stress 20,000 p.s.i. Reinforcing Steel: ASTM, A15, A516, A517, deformed, intermediate or hard grade. Basic unit stress 20,000 p.s.i. Except, spiral reinforcement shall be plain, A306 or A499 grade with basic unit stress of 18,000 psi.

<u>EXCAVATION QUANTITY</u> includes the removal of fill material required for construction of the abutments.

<u>FOUNDATION BEARING PRESSURE</u>: Abutment footings are designed for a maximum bearing pressure of 5½ tons per sq. ft. Pier footings are designed for a maximum bearing pressure of 6 tons per sq. ft.

<u>PIER FOOTINGS</u> shall be placed in bedrock at the elevation shown.

<u>MACHINE FINISH</u>: The concrete bridge deck shall be finished by the use of a finishing machine.

<u>UTILITY LINES</u>: All expenses in relocation (installing) the affected utility lines shall be borne by the owner. The contractor and owner are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

<u>WELDED ATTACHMENTS</u>: No attachments shall be made by welding to the top flanges of the beams within a distance of .10 of the span length on either side of the interior supports. Welding for the attachments to the top flanges at other parts of the span shall be at least 2" from the flange.

<u>WELDS</u> on Non-stress carring members are shown thus:

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

GENERAL PLAN, GENERAL NOTES and ESTIMATED QUANTITIES
BRIDGE Nº FRA-270-2525 N
under McCUTCHEON ROAD

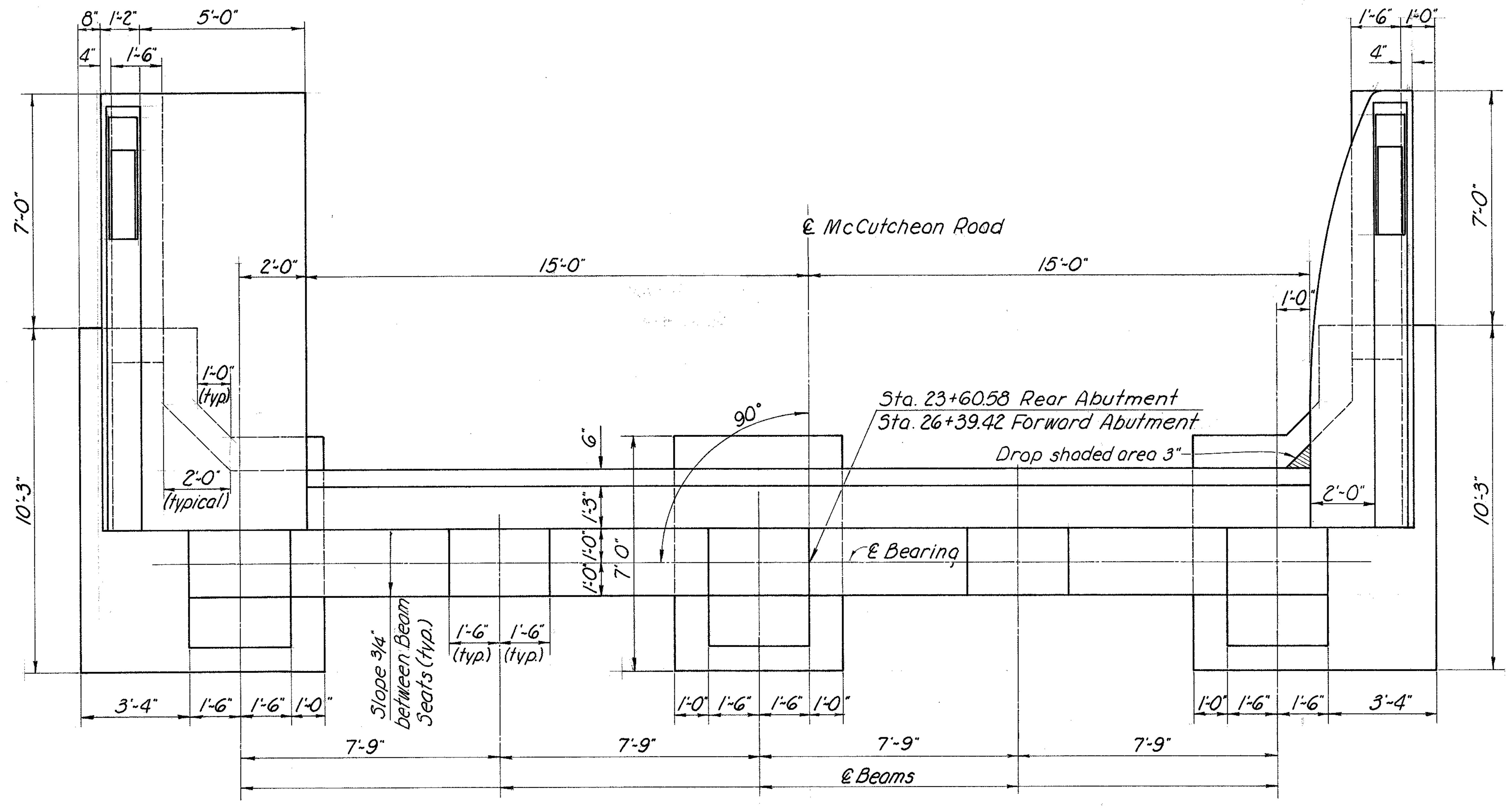
FRANKLIN COUNTY IR-270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG 8-23-67			HT 8-28-67		9/12/67	

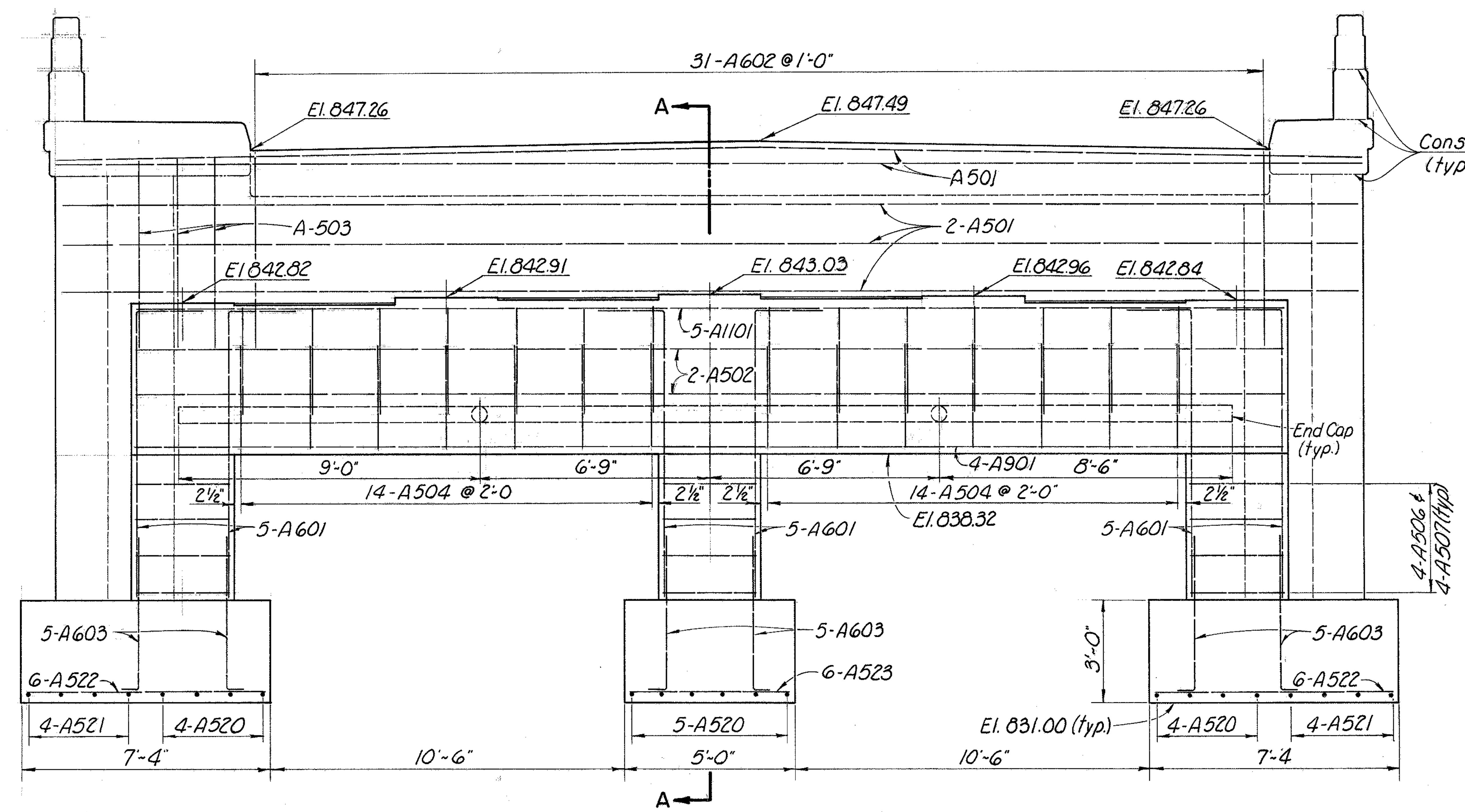
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

260 / 292

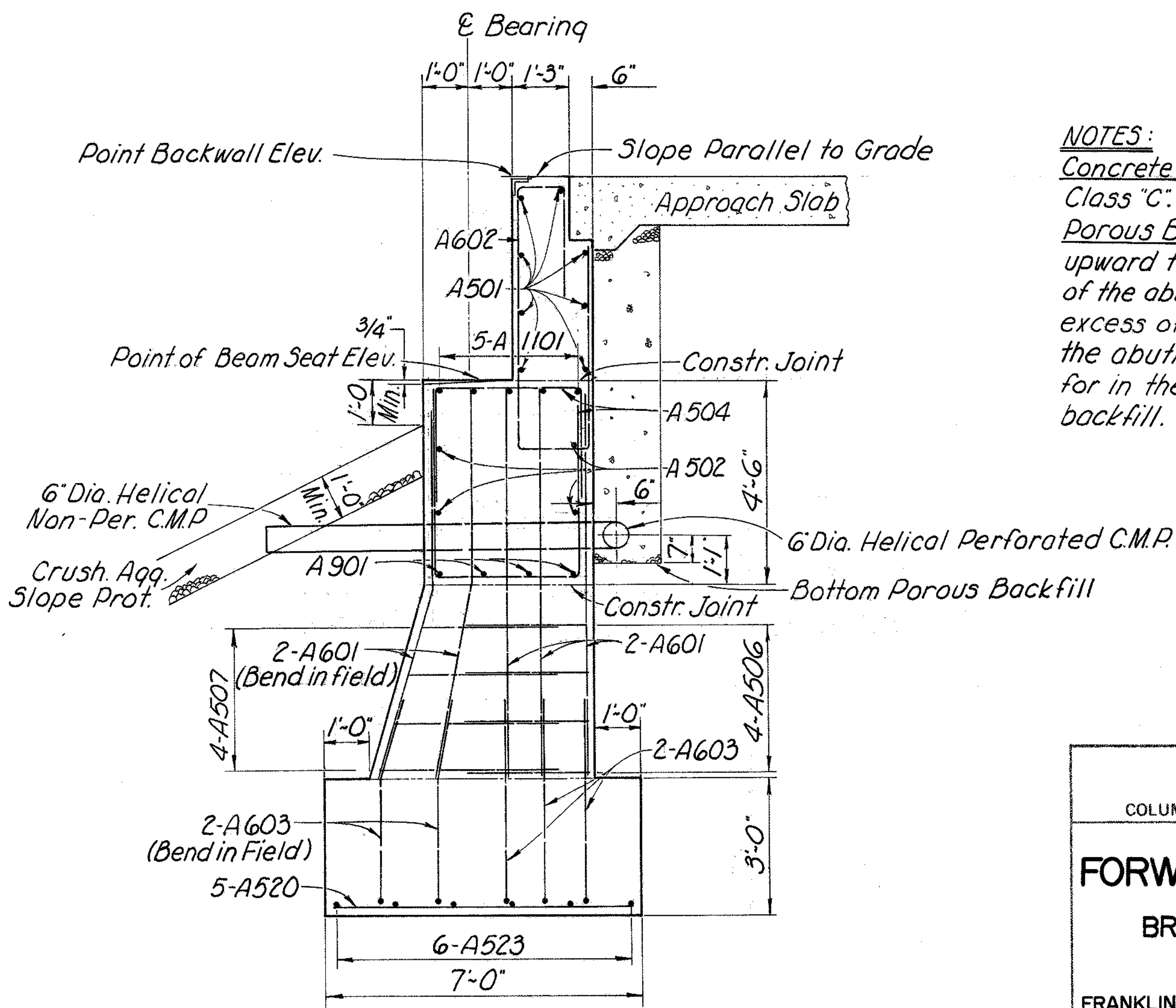
FRA-270-22.99 N.



PLAN (Rear Abutment Shown; Forward Abutment, Opposite Hand)



ELEVATION (Rear Abutment Shown; Forward Abutment, Opposite Hand)



SECTION A-A

NOTES:
Concrete - All abutment concrete shall be Class "C".
Porous Backfill - 1'-6" thick and shall extend upward to the approach slab for the full length of the abutment. Excavation therefore in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cubic yard of porous backfill.

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

FORWARD & REAR ABUTMENTS

BRIDGE No. FRA-270-2525 N
under McCUTCHEON ROAD

FRANKLIN COUNTY — I.R. 270

Sta. 1355+09.32

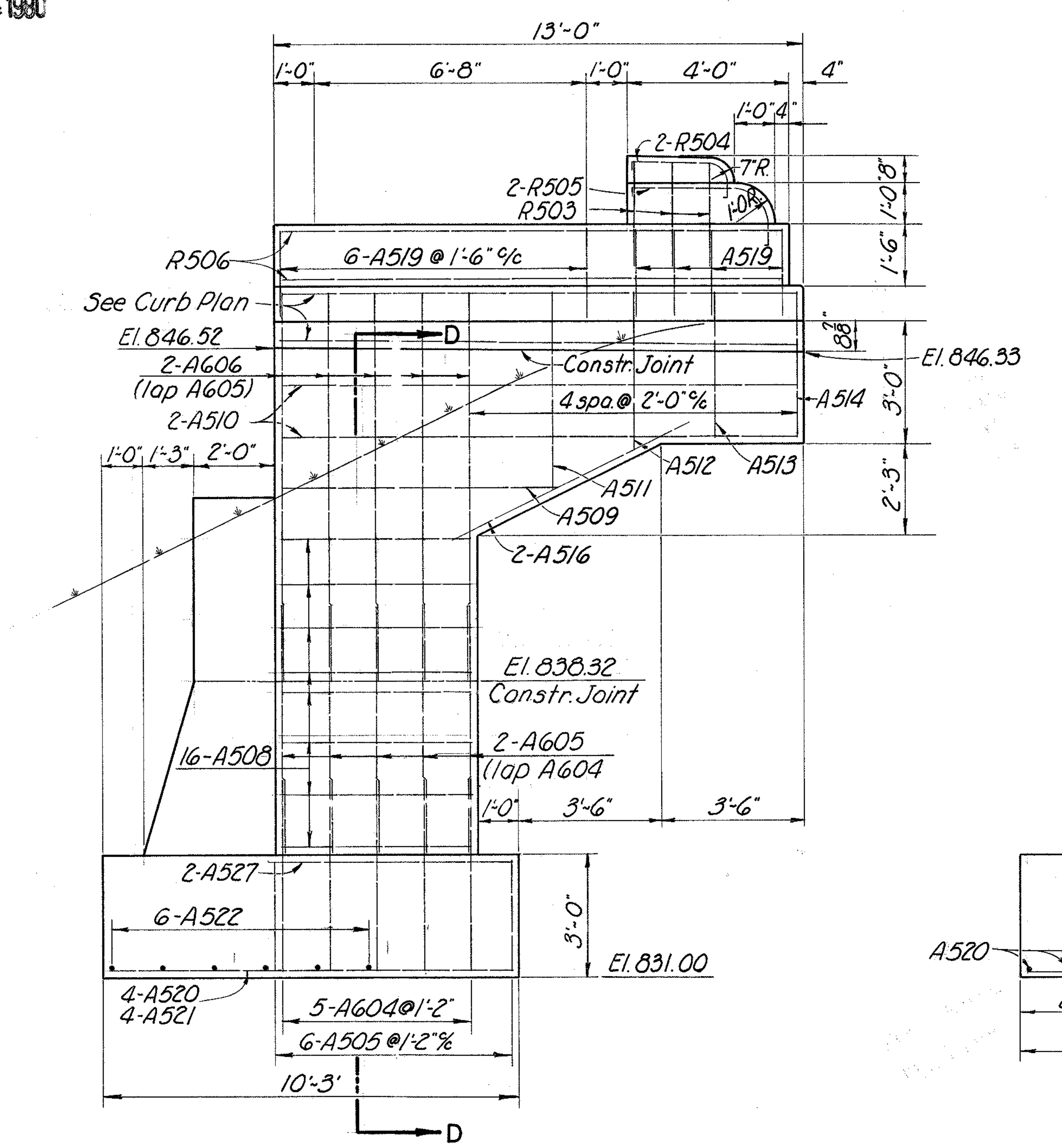
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG	[illegible]		HM	[illegible]	9/12-67	

MICROFILMED
FEB 14 1980

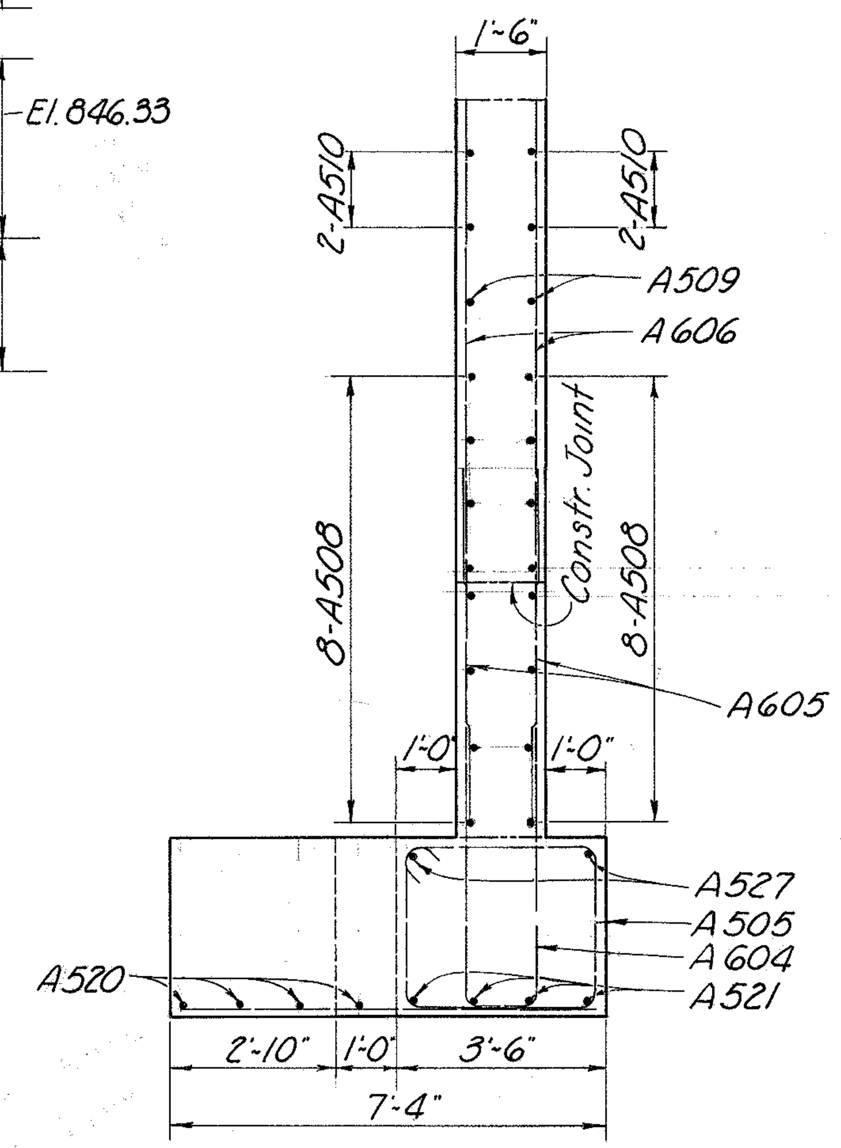
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

261
292

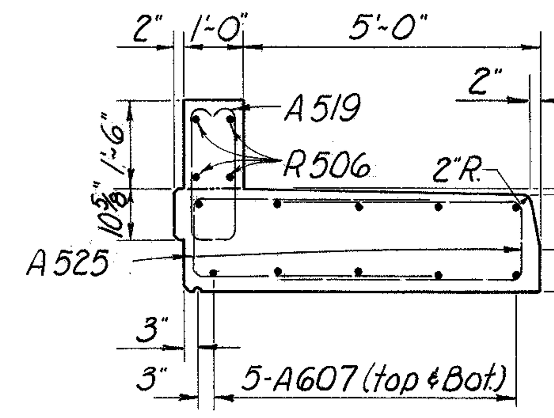
FRA-270-22.99 N.



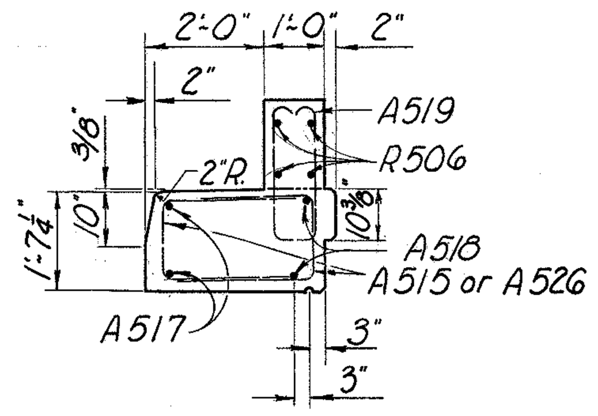
TYPICAL WING WALL



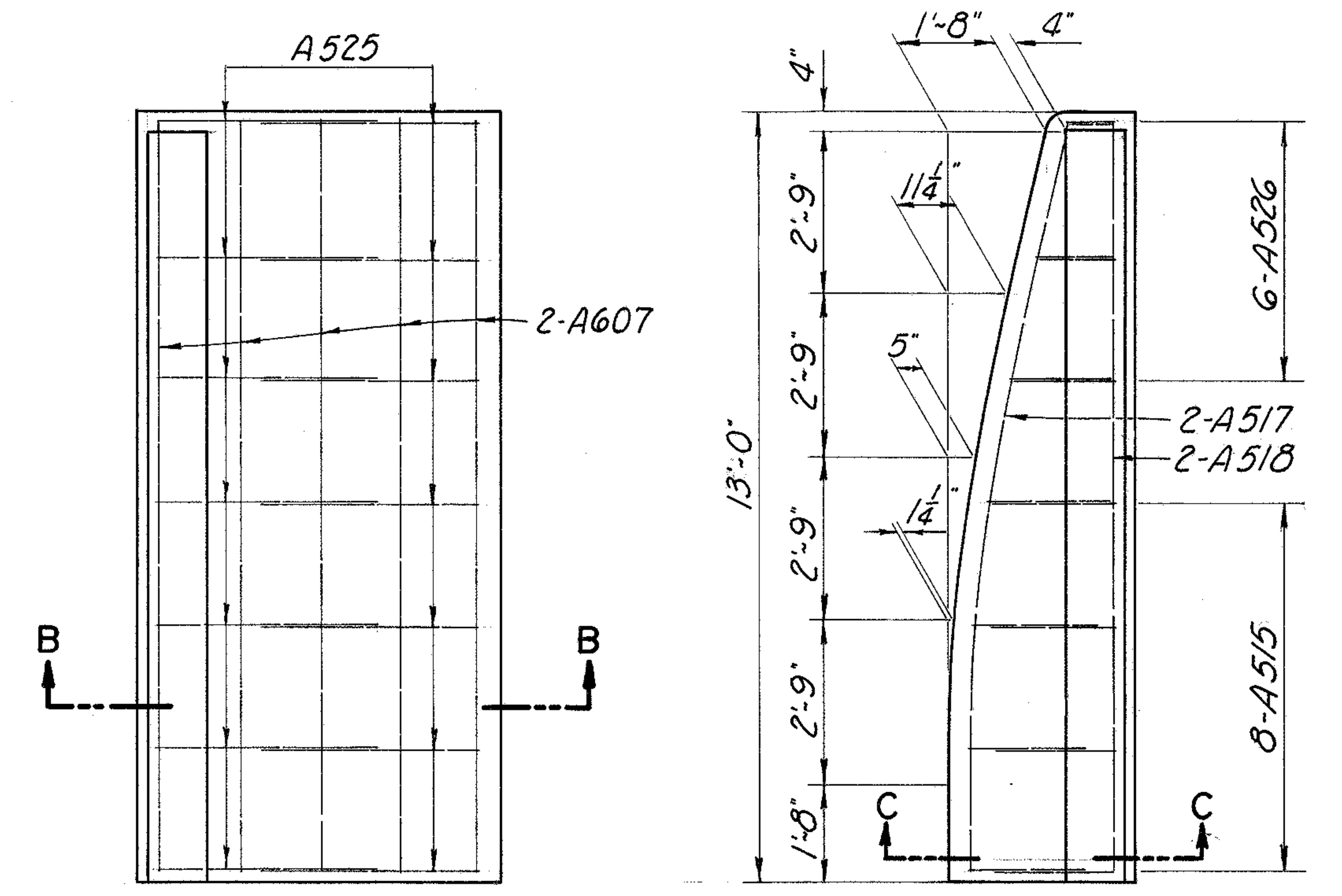
SECTION D-D



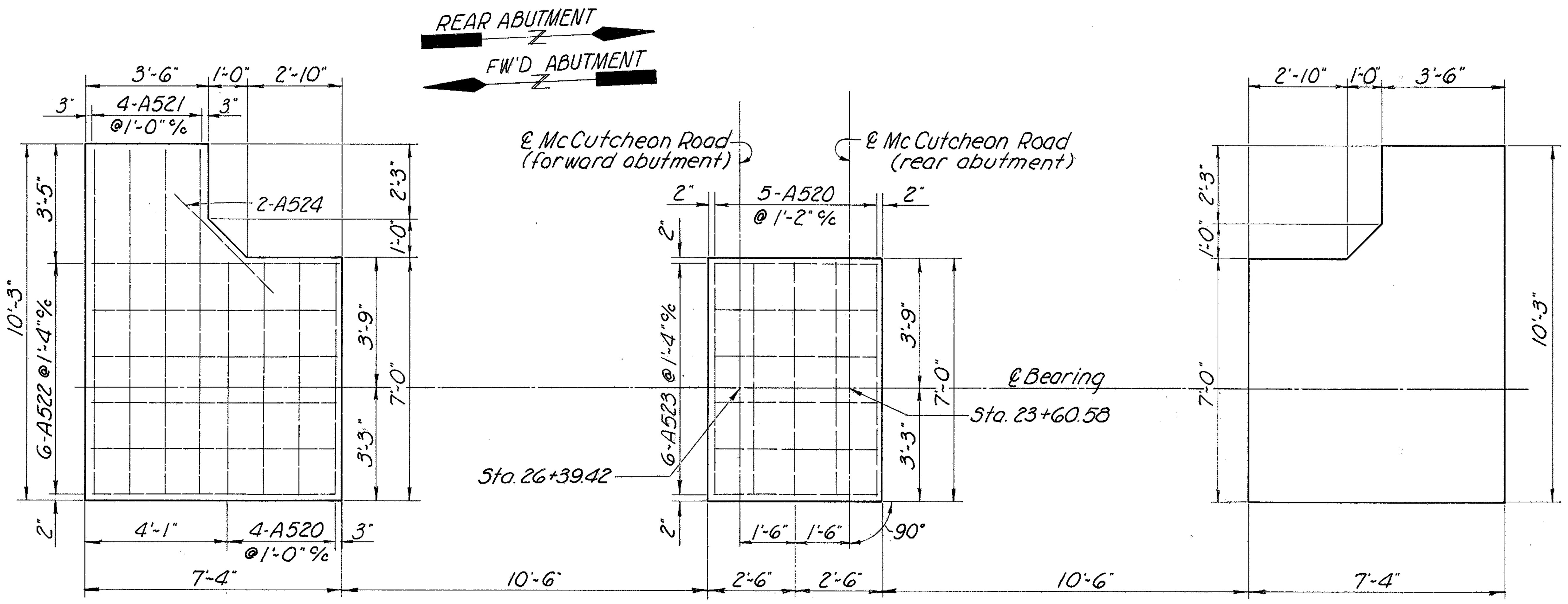
SECTION B-B



SECTION C-C



CURB PLAN



FOOTING PLAN

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

WING WALL DETAILS

BRIDGE Nº FRA-270-2525 N
under McCUTCHEON ROAD

FRANKLIN COUNTY IR-270

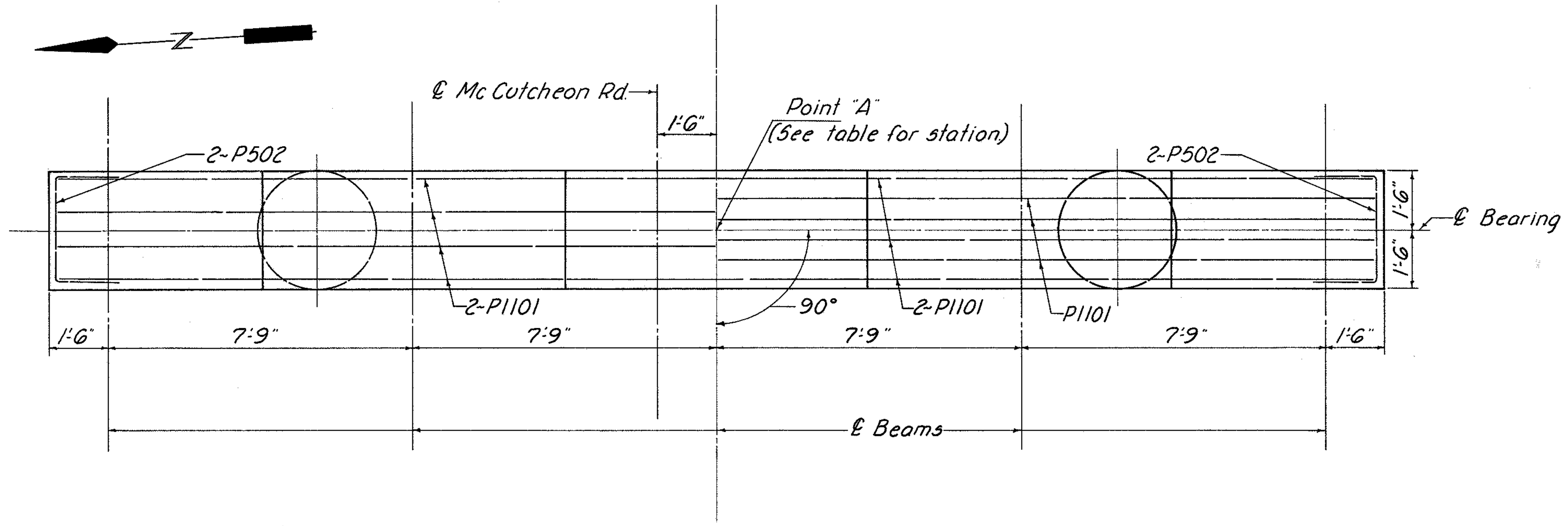
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.			HM		9/12-67	

MICROFILMED
FEB 14 1980

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

FRA-270-22.99 N

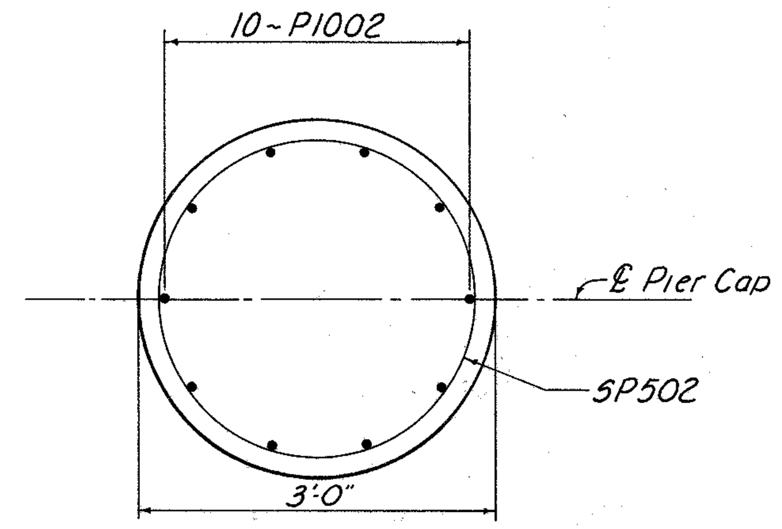
TABLE OF ELEVATIONS								STATION POINT "A"
	A	B	C	D	E	F	G	
Pier No.1	842.95	843.07	843.15	843.03	842.90	838.90	822.80	24+18.00
Pier No.2	843.15	843.27	843.35	843.23	843.10	839.10	822.80	25+00.00
Pier No.3	842.95	843.07	843.15	843.03	842.90	838.90	822.80	25+82.00



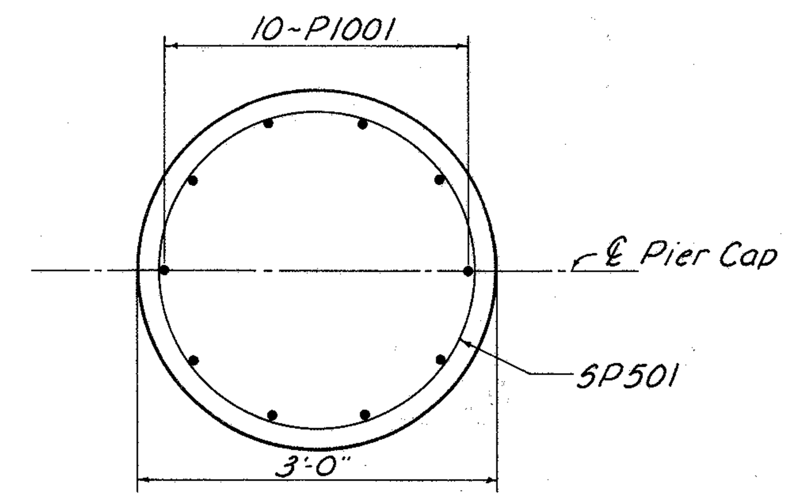
HALF PLAN PIERS №1 & 3

HALF PLAN PIER №2

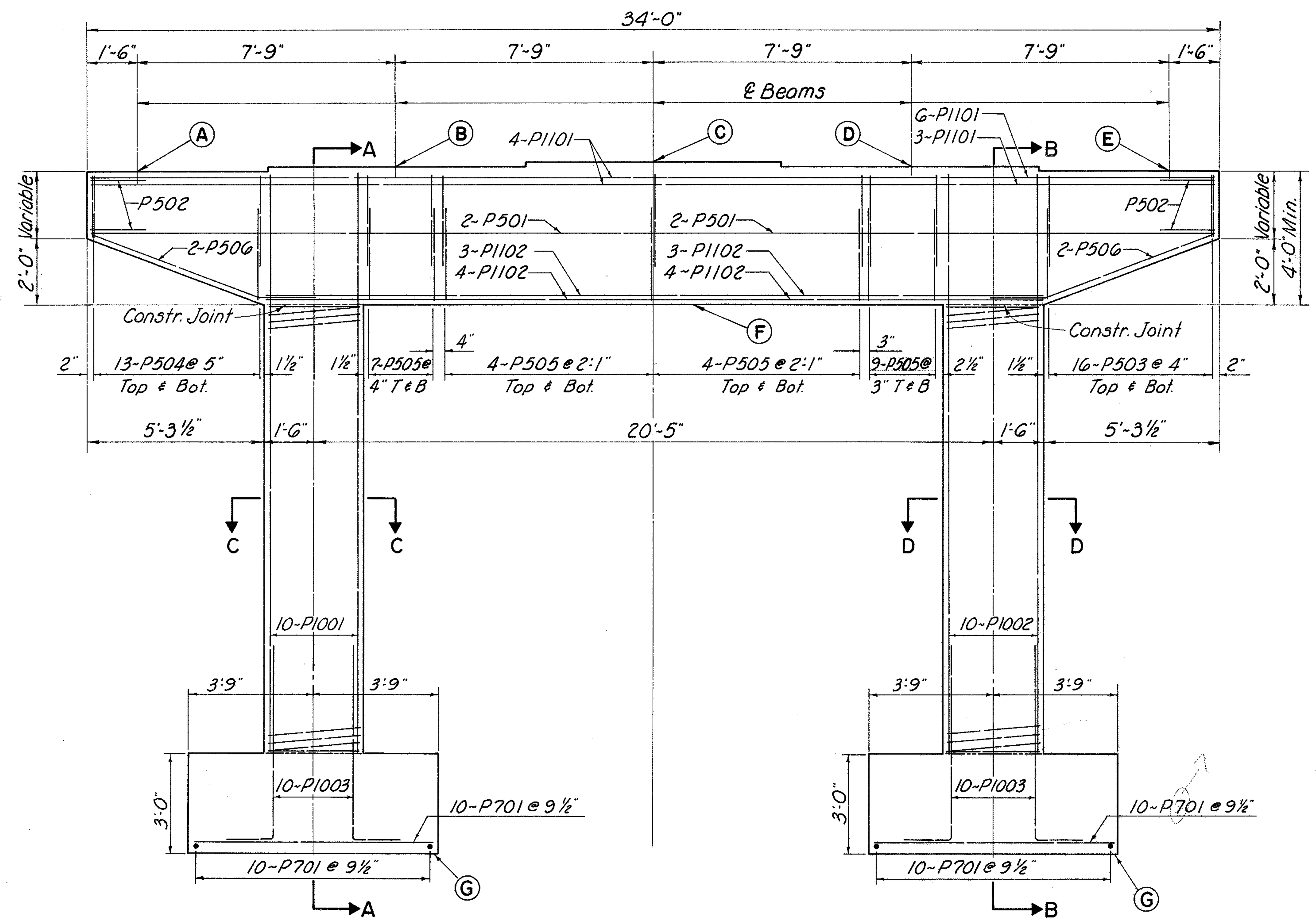
NOTE: PIER №2, only
BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.



SECTION D-D, PIER №2

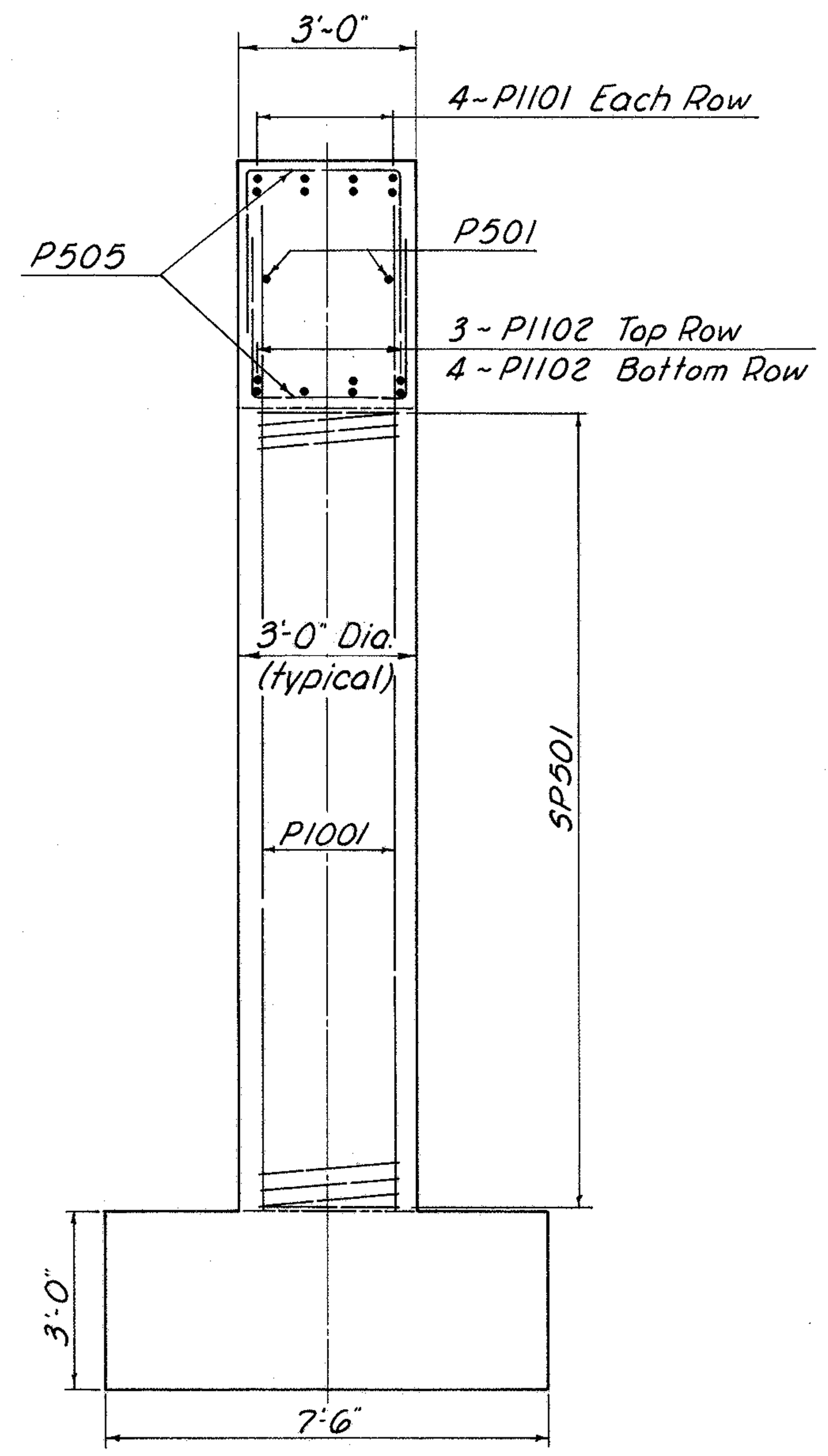


SECTION C-C, PIERS №1 & 3

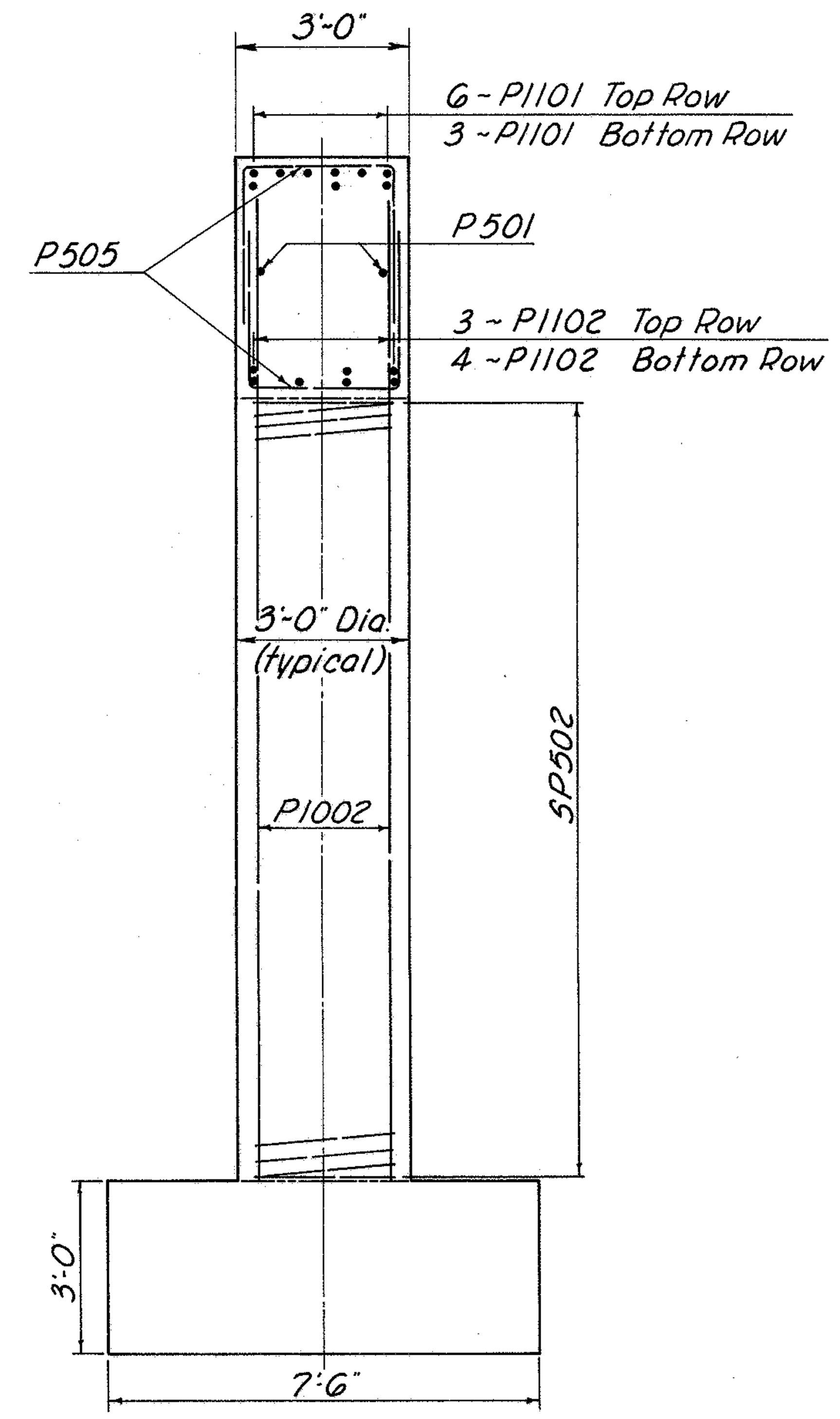


HALF ELEVATION PIERS №1 & 3

HALF ELEVATION PIER №2



SECTION A-A, PIERS №1 & 3



SECTION B-B, PIER №2

NOTES:
CONCRETE: All concrete for Piers shall be Class "C".
GENERAL NOTES: See "GENERAL PLAN".

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

PIERS

BRIDGE № FRA-270-2525 N
under McCUTCHEON ROAD

FRANKLIN COUNTY IR-270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG			HH		9/12-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRA.-270-22.99 N.

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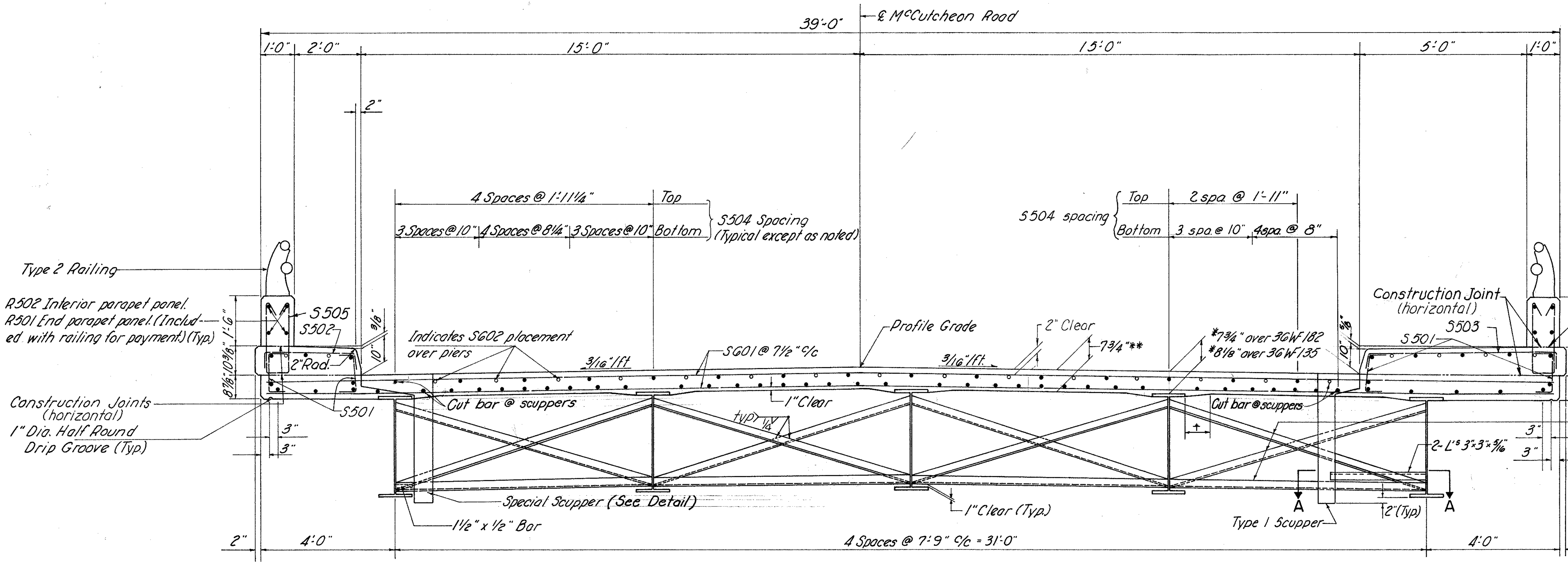


TRANSVERSE SECTION

Class 'C' concrete above this construction joint is included with railing for payment.

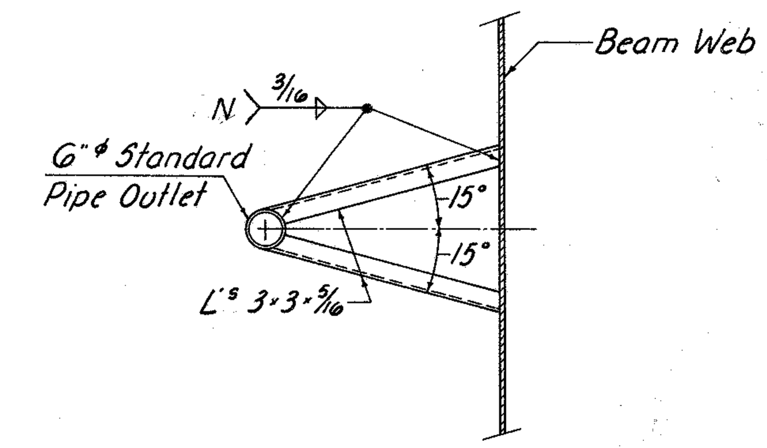
All longitudinal bars S504 except as otherwise shown. Lap S504 bars 1'-7" minimum.

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

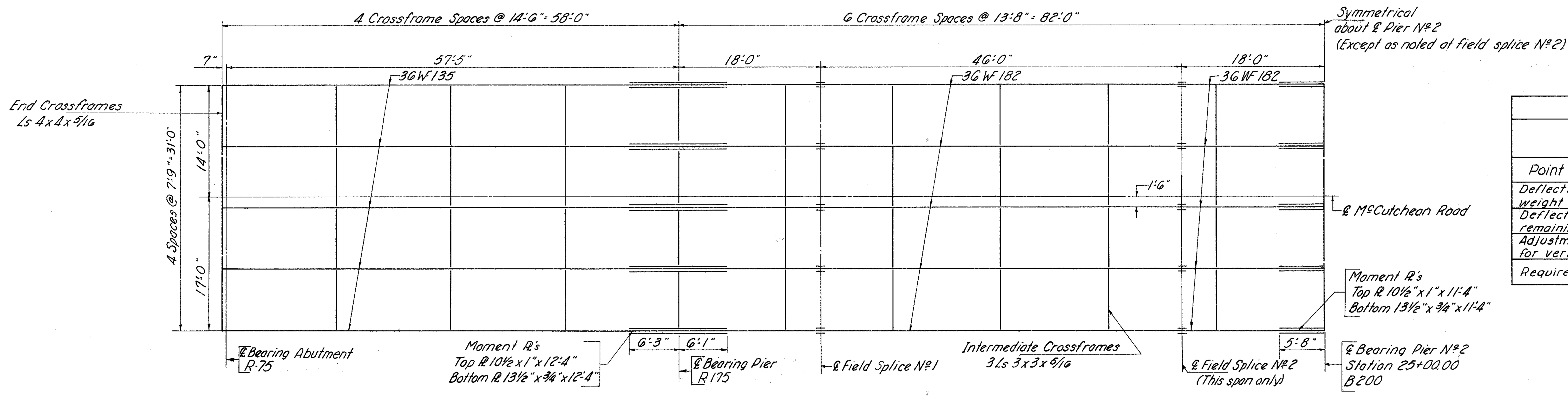
** Slab Thickness includes 1" monolithic wearing surface.

Intermediate crossframe angles 3×3×5/16. Weld both sides of the vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

+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.



VIEW A-A



FRAMING PLAN

DEFLECTION AND CAMBER												
	INTERIOR BEAMS						EXTERIOR BEAMS					
	End Span			Mid. Span			End Span			Mid. Span		
Point on Span	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4
Deflection due to weight of steel.	0	0	0	1/8	1/8	1/16	0	0	0	1/8	1/8	1/16
Deflection due to remaining dead load.	1/4	1/4	1/16	3/8	9/16	5/16	3/8	3/8	1/8	9/16	7/8	7/16
Adjustment required for vertical curve.	3/8	1/2	3/8	3/4	1	3/4	3/8	1/2	3/8	3/4	1	3/4
Required Shop Camber	5/8	3/4	7/16	1 1/4	1 11/16	1 1/8	3/4	7/8	1/2	1 7/16	2	1 1/4

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

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SUPERSTRUCTURE

BRIDGE No. FRA-270-2525 N
UNDER McCUTCHEON ROAD

FRANKLIN COUNTY — I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG	NF			JH	9/12-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRA. 270-22.99 N

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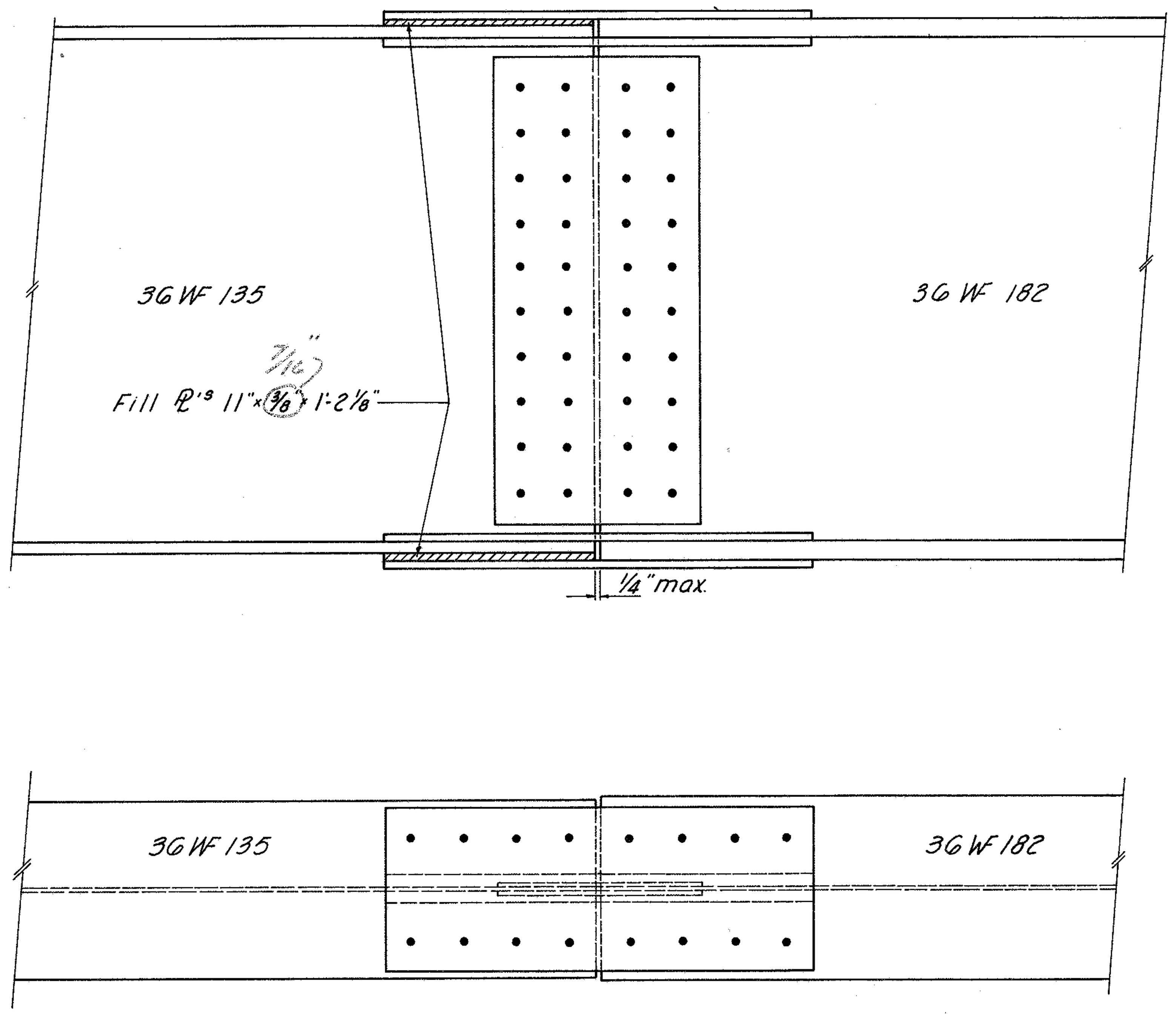
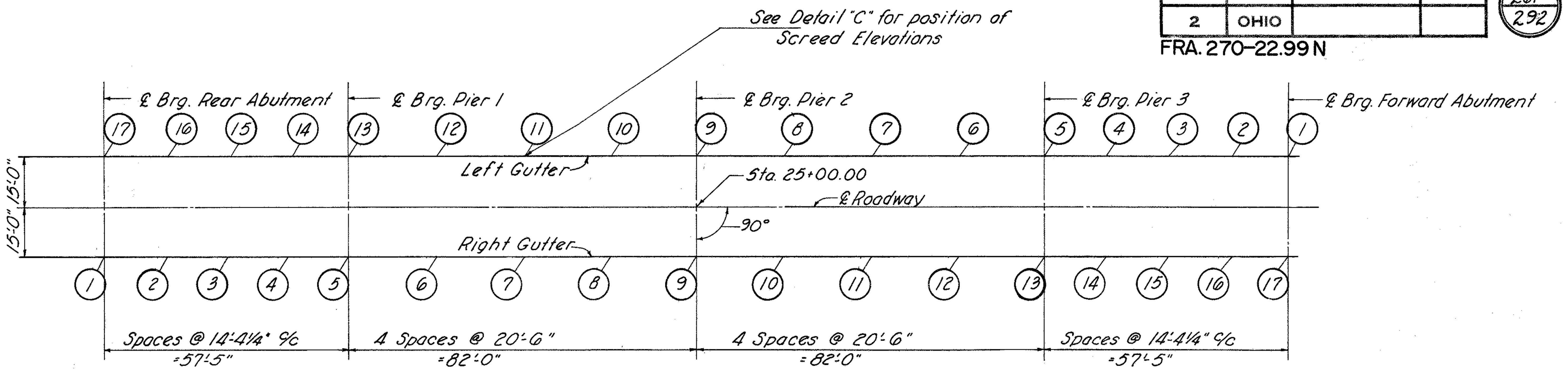
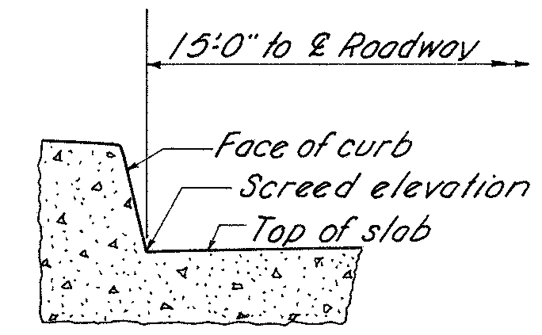
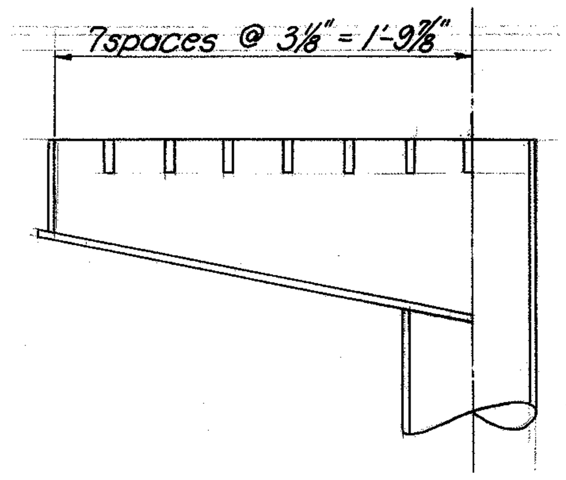


STANDARD 36WF 135 BEAM SPLICE
WITH FILL PLATES





DETAIL "C"



SPECIAL SCUPPER
(4 required)

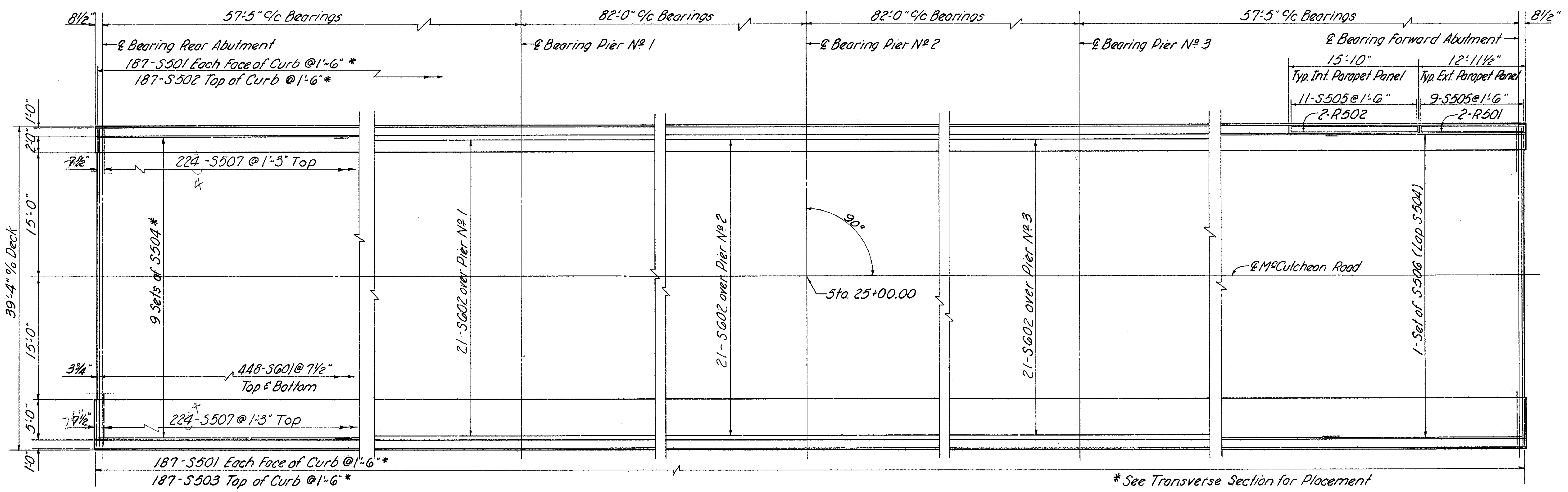
For additional dimensions and Scuppers Type I see Std Drawing SD-1-65, sheet No. 2 (11-8-65)

TABLE OF SCREED ELEVATIONS

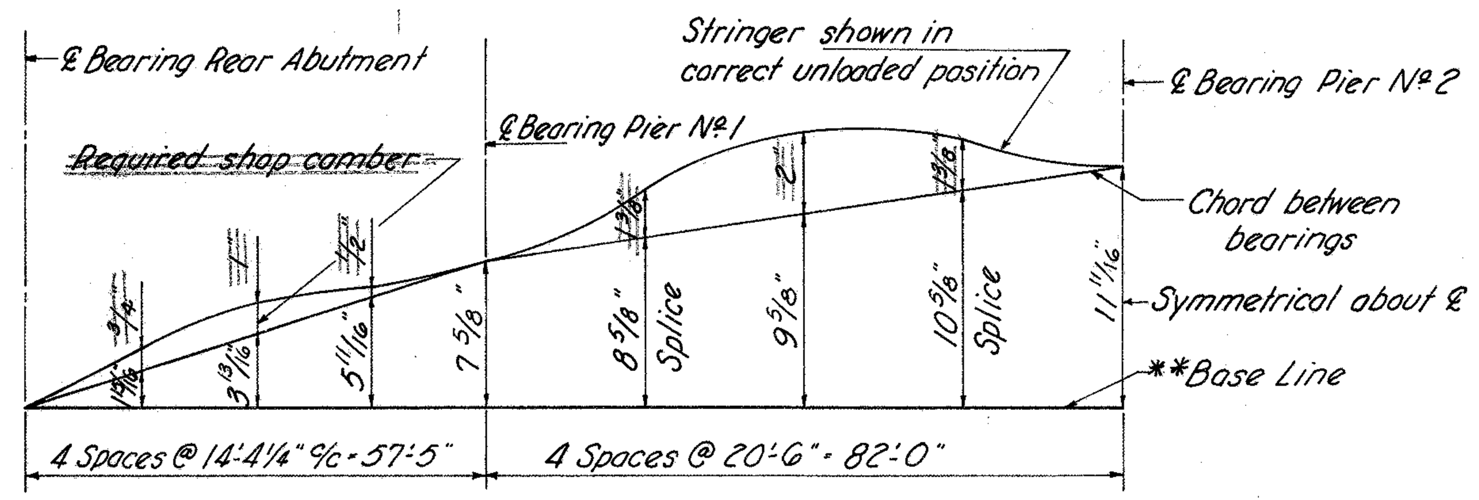
POINT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ELEVATION	847.27	847.49	847.66	847.79	847.91	848.10	848.23	848.26	848.25	848.26	848.23	848.10	847.91	847.79	847.66	847.49	847.27

Note: Elevations include concrete dead load deflection

For Beam Cambers see table on sheet 263.



SLAB PLAN



LAYOUT DIAGRAM

** Base Line is a line from centerline of beam at ℄ bearing rear abutment to centerline of beam at ℄ bearing forward abutment.

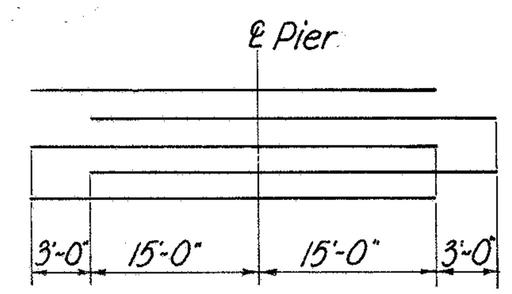


Diagram Showing the Staggering of S-602 Bars over Piers

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

SUPERSTRUCTURE
BRIDGE No FRA-270-2525 N
UNDER McCUTCHEON ROAD

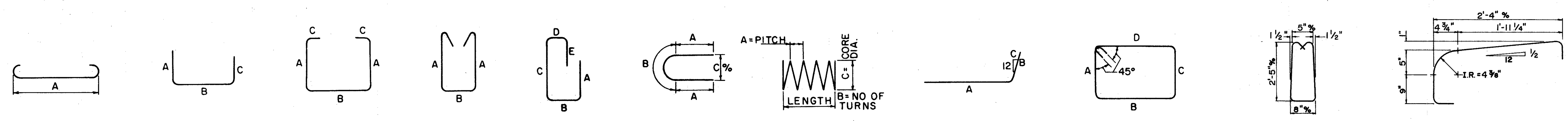
FRANKLIN COUNTY — I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
JBG	NF			JH 9/12-67	1-20-70

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

265
292

FRA. 270-22.99 N



TYPE 1 · TYPE 2 · TYPE 3 · TYPE 4 · TYPE 5 · TYPE 6 · TYPE 7 · TYPE 8 · TYPE 9 · TYPE 10 · TYPE 11

ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A1101	10	33'-8"	Str.						1789
A901	8	33'-8"	Str.						916
A601	60	9'-3"	2	10"	8'-7"	0"			834
A602	62	14'-10"	5	4'-8"	1'-5"	6'-0"	11"	2'-6"	1381
A603	60	5'-4"	2	10"	4'-8"	0"			481
A604	20	10'-2"	2	4'-8"	1'-2"	4'-8"			305
A605	40	6'-3"	Str.						376
A606	40	9'-7"	Str.						576
A607	20	12'-8"	Str.						381
A501	16	38'-4"	Str.						640
A502	8	33'-8"	Str.						281
A503	6	13'-2"	2	6'-0"	1'-5"	6'-0"			82
A504	56	9'-4"	2	3'-1"	3'-5"	3'-1"			545
A505	24	11'-11"	9	2'-7"	3'-2"	2'-7"	3'-2"		298
A506	24	7'-9"	2	2'-8"	2'-8"	2'-8"			194
A507	24	(1)	2	(2)	2'-8"	(2)	(6 sets	of 4)	227
A508	64	4'-8"	Str.						312
A509	8	6'-11"	Str.						58
A510	16	12'-8"	Str.						211
A511	4	10'-5"	2	4'-9"	1'-2"	4'-9"			43
A512	4	8'-5"	2	3'-9"	1'-2"	3'-9"			35
A513	4	7'-11"	2	3'-6"	1'-2"	3'-6"			33
A514	4	6'-4"	2	3'-6"	1'-2"	1'-11"			26
A515	16	5'-3"	2	2'-1"	1'-4"	2'-1"			88
A516	8	6'-6"	Str.						54
A517	4	12'-8"	Str.						53
A518	4	12'-6"	Str.						52
A519	40	5'-7"	4	2'-2"	8"				233
A520	26	6'-8"	Str.						181
A521	16	9'-11"	Str.						165
A522	24	7'-0"	Str.						175
A523	12	4'-8"	Str.						58
A524	8	4'-0"	Str						33
A525	28	8'-3"	2	3'-7"	1'-4"	3'-7"			241
A526	12	(3)	2	(4)	1'-4"	(4)	(4 sets	of 3)	47
A527	8	6'-0"	Str.						50
								TOTAL	11454
R503	12	6'-1"	10						*
R504	8	4'-2"	11						*
R505	8	5'-5"	12						*
R506	16	12'-4"	Str.						*

(1) Varies from 8'-1" to 10'-1" in 6" increments.
(2) Varies from 2'-10" to 3'-10" in 3" increments.
(3) Varies from 4'-9' to 2'-9" in 1'-0" increments.
(4) Varies from 1'-10" to 10" in 6" increments.

PIERS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1101	25	33'-8"	Str.						4472
P1102	21	23'-1"	Str.						2575
P1001	40	16'-11"	Str.						2912
P1002	20	17'-1"	Str.						1470
P1003	60	7'-1"	2	1'-5"	6'-0"	0"			1829
P701	120	7'-2"	Str.						1758
P501	6	33'-8"	Str.						211
P502	12	5'-7"	2	1'-7"	2'-8"	1'-7"			70
P503	64	(2)	2	(1)	2'-8"	(1)	(4 sets	of 16)	457
P504	104	(4)	2	(3)	2'-8"	(3)	(8 sets	of 13)	732
P505	134	7'-9"	2	2'-8"	2'-8"	2'-8"			1083
P506	12	6'-10"	8	1'-7"	5'-3"	4 1/2"			86
5P501	4	13'-1"	7	3"	55	2'-8"			2026
5P502	2	13'-3"	7	3"	56	2'-8"			1032
								TOTAL	20,713

(1) Varies from 1'-8" to 2'-9 1/8" in 7/8" increments.
(2) Varies from 5'-9" to 7'-11 1/4" in 1 3/4" increments.
(3) Varies from 1'-8" to 2'-8" in 1" increments.
(4) Varies from 5'-9" to 7'-9" in 2" increments.

SUPERSTRUCTURE

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
5601	896	38'-8"	Str.						52037
5602	63	33'-0"	Str.						3123
5501	748	2'-2"	2	7"	1'-3"	7"			1690
5502	187	3'-5"	2	7"	2'-6"	7"			666
5503	187	6'-5"	2	7"	5'-6"	7"			1252
5504	630	30'-0"	Str.						19713
5505	388	5'-7"	4	2'-2"	8"	2'-2"			2259
5506	70	24'-3"	Str.						1770
5507	448	5'-5"	Str.						2531
								TOTAL	85,041
R501	16	12'-7"	Str.						*
R502	128	15'-6"	Str.						*

REPLACEMENT BARS

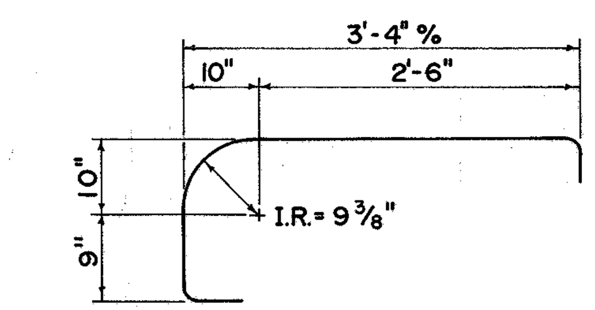
MARK	NO.	LENGTH	TYPE
RE501	1	6'-7"	Bend
RE502	2	6'-7"	Str.
RE601	3	6'-11"	Str.
RE701	1	7'-3"	Str.
RE901	1	7'-10"	Str.
RE1001	1	8'-3"	Str.
RE1101	1	8'-7"	Str.

NOTES:

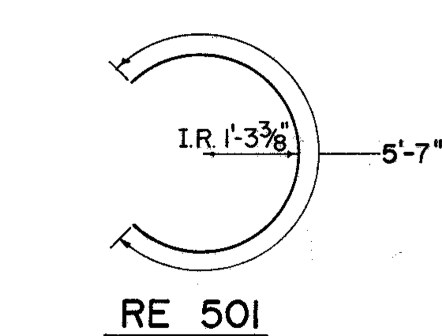
BAR SIZE: The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is a No. 5 size bar and P1101 is a No. 11 size bar.

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 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformation but shall in other respects conform to Item 509. 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 spacers, 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.

* Included with railing for payment.



TYPE 12



RE 501

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

8/8

REINFORCING STEEL

BRIDGE Nº FRA.-270-2525N
under McCUTCHEON ROAD

FRANKLIN COUNTY IR-270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG	G	~	HM	JJ	9/12-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

266
292

FRANKLIN COUNTY
FRA-270-22.99 N.
LIMITED ACCESS
I-270-5(7) R/W ONLY

1
27

1 of 2

CENTERLINE SURVEY PLAT

INTERSTATE ROUTE 270 SECTION 22.99N
CITY OF COLUMBUS
FRANKLIN COUNTY, OHIO
BLENDON TWP., R.17W., T.2N., SEC'S. 3&4
MIFFLIN TWP., R17W., T1N., SEC. I
UNITED STATES MILITARY LANDS

0 500 1000 1500 2000
SCALE IN FEET

RAMP "A" CURVE DATA
P.I. Sta. A-1348+64.73
Δ = 30°59'23"
D_c = 6°00 00
R = 954.93'
L = 516.50'
T = 264.73'
E = 36.02'
P.C. 1346+00.00
P.T. 1351+16.50

RAMP "A" CURVE DATA
P.I. Sta. A-1357+55.21
Δ = 29°58'14"
D_c = 23°00 00
R = 249.11'
L = 130.31'
T = 66.68'
E = 8.77'
P.C. 1356+88.53
P.T. 1358+18.84

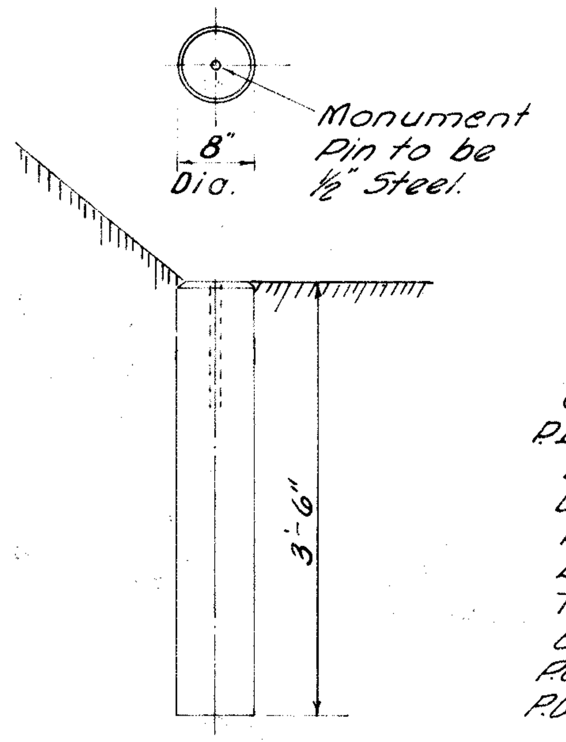
RAMP "B" CURVE DATA
P.I. Sta. B-1359+03.30
Δ = 24°35'18"
D_c = 10°00'00"
R = 572.96'
L = 245.88'
T = 124.86'
E = 13.45'
P.C. 1357+78.44
P.T. 1360+24.32

RAMP "B" CURVE DATA
P.I. Sta. B-1364+53.92
Δ = 29°07'09"
D_c = 6°00'00"
R = 954.93'
L = 485.32
T = 248.02'
E = 31.68'
P.C. 1362+05.90
P.C.C. 1366+91.22

RAMP "B" CURVE DATA
P.I. Sta. B-1369+70.83
Δ = 5°35'16"
D_c = 1°00'00"
R = 5729.58'
L = 558.78'
T = 279.61'
E = 6.82'
P.C.C. 1366+91.22
P.T. 1372+50.00

Received________________196__
Recorded________________196__
Book________ Page________

____
County Recorder



DETAIL OF CONCRETE MONUMENT

SERVICE ROAD "7A" CURVE DATA
P.I. Sta 33+51.42
Δ = 90°01'24"
D_c = 38°11'50"
R = 150.00'
L = 235.68'
T = 150.06'
E = 62.40'
P.C. 32+01.36
P.T. 34+37.04

SEE SHEET 2 of 2

SERVICE ROAD "6A" CURVE DATA
P.I. Sta. 3+19.01
Δ = 89°06'58" Lt.
D_c = 63°39'43"
R = 90.00'
L = 139.98'
T = 88.62'
E = 36.31'
P.C. = 2+30.39
P.T. = 3+70.37

SERVICE ROAD "6A" CURVE DATA
P.I. Sta 4+68.75
Δ = 89°06'58" Rt.
D_c = 63°39'43"
R = 90.00'
L = 139.98'
T = 88.62'
E = 36.31'
P.C. 3+80.13
P.T. 5+20.11

RAMP "C" CURVE DATA
P.I. Sta. C-1352+96.62
Δ = 32°55'17"
D_c = 6°00 00
R = 954.93'
L = 548.69'
T = 282.15'
E = 40.81'
P.C. 1350+14.47
P.T. 1355+63.16

RAMP "C" CURVE DATA
P.I. Sta C-1363+29.32
Δ = 40°13'06"
D_c = 6°0000
R = 954.93'
L = 670.31'
T = 349.63'
E = 61.99'
P.C. 1359+79.69
P.T. 1366+50.00

RAMP "D" CURVE DATA
P.I. Sta. D-1344+48.49
Δ = 8°56'12"
D_c = 1°30'00"
R = 3819.72'
L = 595.77'
T = 298.49'
E = 11.65
P.C. 1341+50.00
P.C.C. 1347+45.77

RAMP "D" CURVE DATA
P.I. Sta. D-1349+30.00
Δ = 28°51'02"
D_c = 8°00'00"
R = 716.20'
L = 360.63'
T = 184.23'
E = 23.32'
P.C.C. 1347+45.77
P.T. 1351+06.40

I-270 CURVE DATA
P.I. Sta 1375+01.68
Δ = 17°-32'-53" Rt.
D = 0°-28'
R = 12,277.67
L = 3,760.30'
T = 1894.99'
E = 145.38'

LEGEND
City of Columbus
● Concrete Monuments.

CONCRETE MONUMENTS TO BE PLACED ON CENTERLINE AT FOLLOWING LOCATIONS DURING CONSTRUCTION (I.R.-270)	
P.O.T. Sta 1332+00.00	P.O.T. Sta 1430+00.00
P.O.T. Sta 1341+00.00	P.O.T. Sta 1439+00.00
P.O.T. Sta 1350+00.00	P.O.T. Sta 1448+00.00
P.O.C. Sta 1359+00.00	
P.O.C. Sta 1368+00.00	C.R. 17 & C.R. 171
P.O.C. Sta 1377+00.00	C.R. 17 Sta. 112+00, 15' Rt. & Lt.
P.O.C Sta 1386+00.00	C.R. 17 Sta. 139+00, 15' Rt. & Lt.
P.T. Sta 1393+67.00	C.R. 171 Sta. 20+00, 15' Rt. & Lt.
P.O.T. Sta 1403+00.00	C.R. 171 Sta. 27+00, 15' Rt. & Lt.
P.O.T. Sta 1412+00.00	
P.O.T. Sta 1421+00.00	

CONCRETE MONUMENTS AS SHOWN FOR SERVICE ROADS
Ser. Rd. 10, 18+00, 13' Rt. & Lt.
Ser. Rd. 10, 24+00, 13' Rt. & Lt.
Ser. Rd. 10, 30+00, 13' Rt. & Lt.
Ser. Rd. 5A, 16+00, 13' Rt. & Lt.
Ser. Rd. 5A, 26+00, 13' Rt. & Lt.
Ser. Rd. 7A, 32+01.36, 13' Rt. & Lt.
Ser. Rd. 7A, 34+37.04, 13' Rt. & Lt.

CONCRETE MONUMENTS AS SHOWN FOR RAMPS
Ramp "A" 1346+00.00, 10' Lt. & 73' Rt.
Ramp "A" 1351+16.50, 5' Lt. & 21' Rt.
Ramp "A" 1356+88.53, 5' Lt. & 21' Rt.
Ramp "A" 1358+18.84, 5' Lt. & 21' Rt.
Ramp "B" 1357+78.44, 5' Lt. & 29' Rt.
Ramp "B" 1360+24.32, 5' Lt. & 29' Rt.
Ramp "B" 1362+05.90, 5' Lt. & 28' Rt.
Ramp "B" 1366+91.22, 5' Lt. & 21' Rt.
Ramp "B" 1372+50.00, 10' Lt. & 54' Rt.
Ramp "C" 1350+14.47, 40' Lt. & 10' Rt.
Ramp "C" 1355+63.16, 21' Lt. & 5' Rt.
Ramp "C" 1359+79.69, 31' Lt. & 5' Rt.
Ramp "C" 1366+50.00, 73' Lt. & 10' Rt.
Ramp "D" 1341+50.00, 54' Lt. & 10' Rt.
Ramp "D" 1347+45.77, 21' Lt. & 5' Rt.
Ramp "D" 1351+06.40, 21' Lt. & 5' Rt.

This improvement has been declared a Limited Access Highway from Station 1325+00.00 to Station 1452+00.00 by action of the Director of Highways on ______ and Recorded in Volume 50 Page 88 of the Directors Journal, Pursuant to Law

I hereby certify that this Plat is a true Delineation of a survey made for the Ohio Department of Highways in 1968 by Franklin Engineering Limited, Columbus, Ohio.
Date [illegible]
Reg. Sur. No. 673

Signed [signature]
Frank M. Williams
Date 9-26-68 Division Deputy Director

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

267/292

FRANKLIN COUNTY
FRA-270-22.99N.

I-270-5(7) R/W ONLY

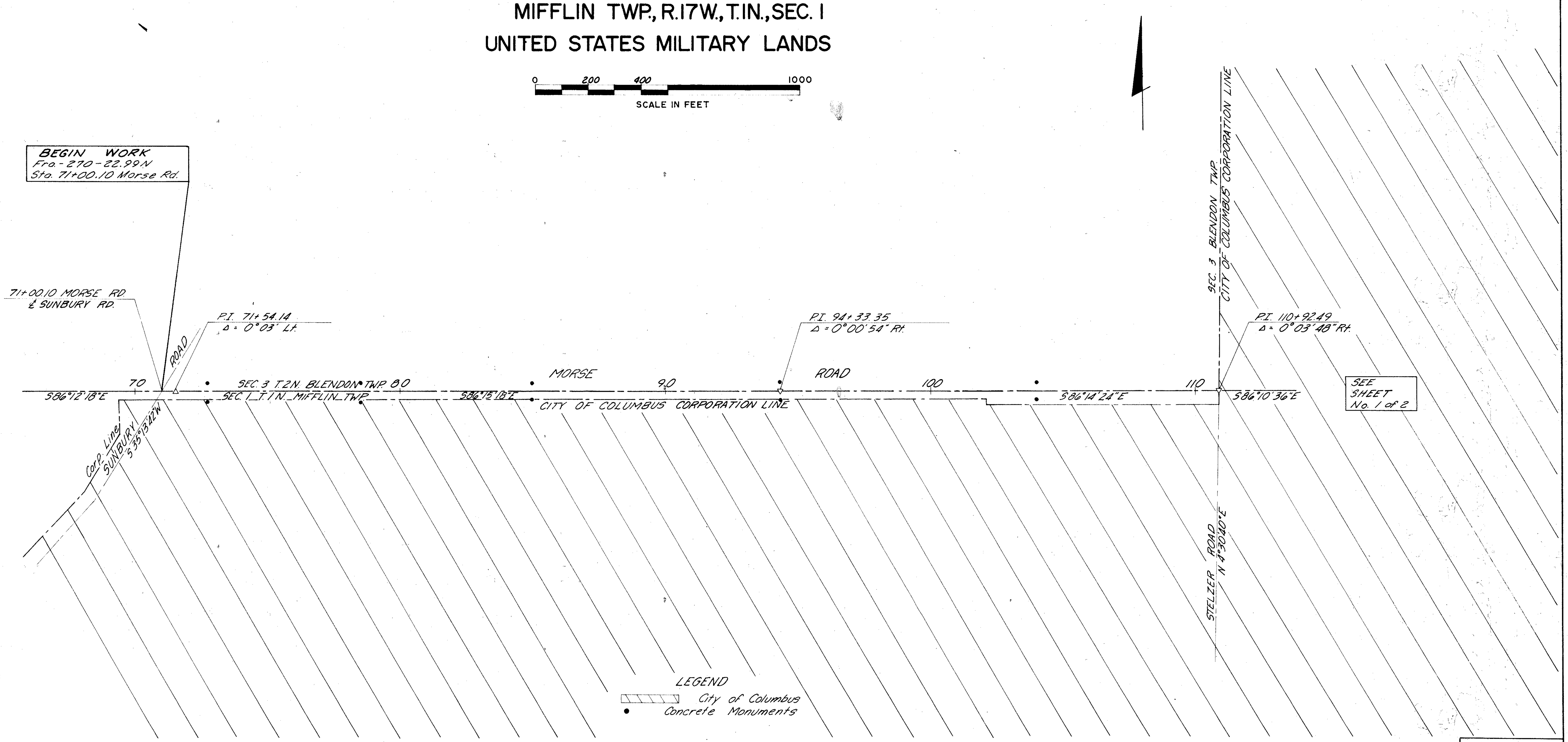
2/27

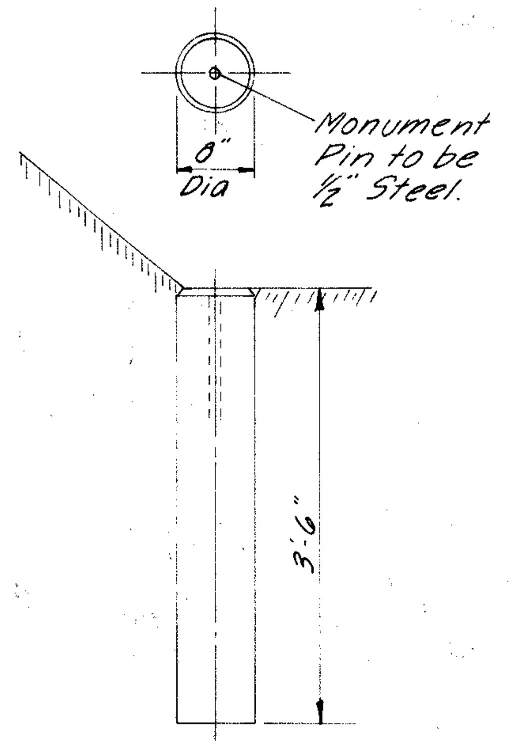
CENTERLINE SURVEY PLAT

INTERSTATE ROUTE 270 SECTION 22.99N
CITY OF COLUMBUS
FRANKLIN COUNTY, OHIO
BLENDON TWP, R.17W., T.2N., SEC. 3
MIFFLIN TWP., R.17W., T.1N., SEC. 1
UNITED STATES MILITARY LANDS

Received ____________ 196__
Recorded ____________ 196__
Book ______ Page ______

County Recorder





DETAIL OF CONCRETE MONUMENT

CONCRETE MONUMENTS AS SHOWN FOR MORSE ROAD
Sta 72+75, 32' Lt., 40' Rt.
Sta 78+50, 32' Lt., 40' Rt.
Sta 85+00, 32' Lt. & Rt.
Sta 94+33.35, 32' Lt. & Rt.
Sta 104+00, 32' Lt. & Rt.

I hereby certify that this Plat is a true Delineation of a survey made for the Ohio Department of Highways in 1968 by Franklin Engineering Limited, Columbus, Ohio
Signed [signature] Date ______
Reg. Sur. No. 673

Signed [signature]
Frank M. Williams
Date 3-26-68 Division Deputy Director

PROPERTY MAP

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

268/292

FRANKLIN COUNTY
FRA-270-22.99N
LIMITED ACCESS
I-270-5(7) R/W ONLY

3/27

0 500 1000 1500 2000
SCALE IN FEET

UTILITY COMPANIES

OHIO BELL TELEPHONE COMPANY 111 N. FRONT ST. COLUMBUS OHIO
COLUMBUS & SOUTHERN OHIO ELECTRIC Co. 215 N. FRONT ST. COLUMBUS OHIO
COLUMBIA GAS OF OHIO INC. 99 N. FRONT ST. COLUMBUS OHIO
CITY OF COLUMBUS, WATER DIVISION 90 W. BROAD ST. COLUMBUS OHIO
CITY OF COLUMBUS, SEWERAGE & DRAINAGE 90 W. BROAD ST. COLUMBUS OHIO

(133A) SUN OIL COMPANY
(140A) HARRY L. DAILEY & PATRICIA L. DAILEY
(141) JOHN W. GERHARDT & MABEL L. GERHARDT
(142) EUGENE B. CHANDLER & BETTIE J. CHANDLER
(143) EUGENE B. CHANDLER
(144) HOWARD E. CHANDLER & RACHEL M. CHANDLER
(145) LEE E. SCHWARTZ & DELLA M. SCHWARTZ
(146) MILDRED C. KAYLOR
(147) URAL V. MYERS & BEULAH M. MYERS
(148) C.L. DAWLEY & MARY K. DAWLEY
(149) TONY SERIO & FANNIE SERIO
(150) BRYON E. STOUDER & VERNA G. STOUDER
(151) ALVIN P. MOSLEY & FLORENCE M. MOSLEY
(152) WILLIE LEE GADDIS & VIVIAN A. GADDIS
(153) KELDEN D. DEPUY & MILDRED R. DEPUY

(154) JOHN D. TERRY & MILDRED R. TERRY
(161A) NATHAN WHEELER
(162) JOHN R. MIDDLETON & NORMA J. MIDDLETON
(163) JESSIE CLEORA MORGAN & DAVID F. MORGAN
(164) RALPH E. BOSO
(165) JOHN H. BERRY & EDITH M. BERRY
(166) JOHN D. McCORMICK & MAXINE McCORMICK
(167) JOHN F. EING & ANNA B. EING
(168) ALBERT E. LIND & PITRINA M. LIND
(169) HARRY R. JOHNSON & DORIS JOHNSON
(170) RICHARD W. or MARGERY HABERMAN
(171) LESTER A. STRAWSER & RITA M. STRAWSER
(172) RICHARD D. KRUMM
(173) BERMAN D. FLESHMAN & THELMA JEANNE FLESHMAN

(125) BERNARD WILLIS & MARIETTA WILLIS
(126) HAROLD E. SCOTT & ELNITTA SCOTT
(127) STANDARD OIL INC.
(128A) GULF OIL CORPORATION
(129) CLARENCE CASHAW & ELNORA CASHAW
(130) JAMES C. CAMPBELL
(131A) ROY BULLOCK

(176) EDWIN R. HOLUB & ANNA K. HOLUB
(177) PAUL L. EVANS & PATRICIA A. EVANS
(178) DONALD L. II & PAULINE M. COAKLEY
(179) WILLIAM L. HULET & THELMA L. HULET
(180) GEORGE R. SHEPPARD & BONNIE J. SHEPPARD

REV.	DATE	DESCRIPTION
	10-18-68	ADDED PARTICIPATION LIMITS EAST END MORSE RD.
	10-18-68	REVISED "L.A." PARCEL 121WL-1 & NAME 127WD
	11-13-68	Revised Residues Parcels 121 & 136

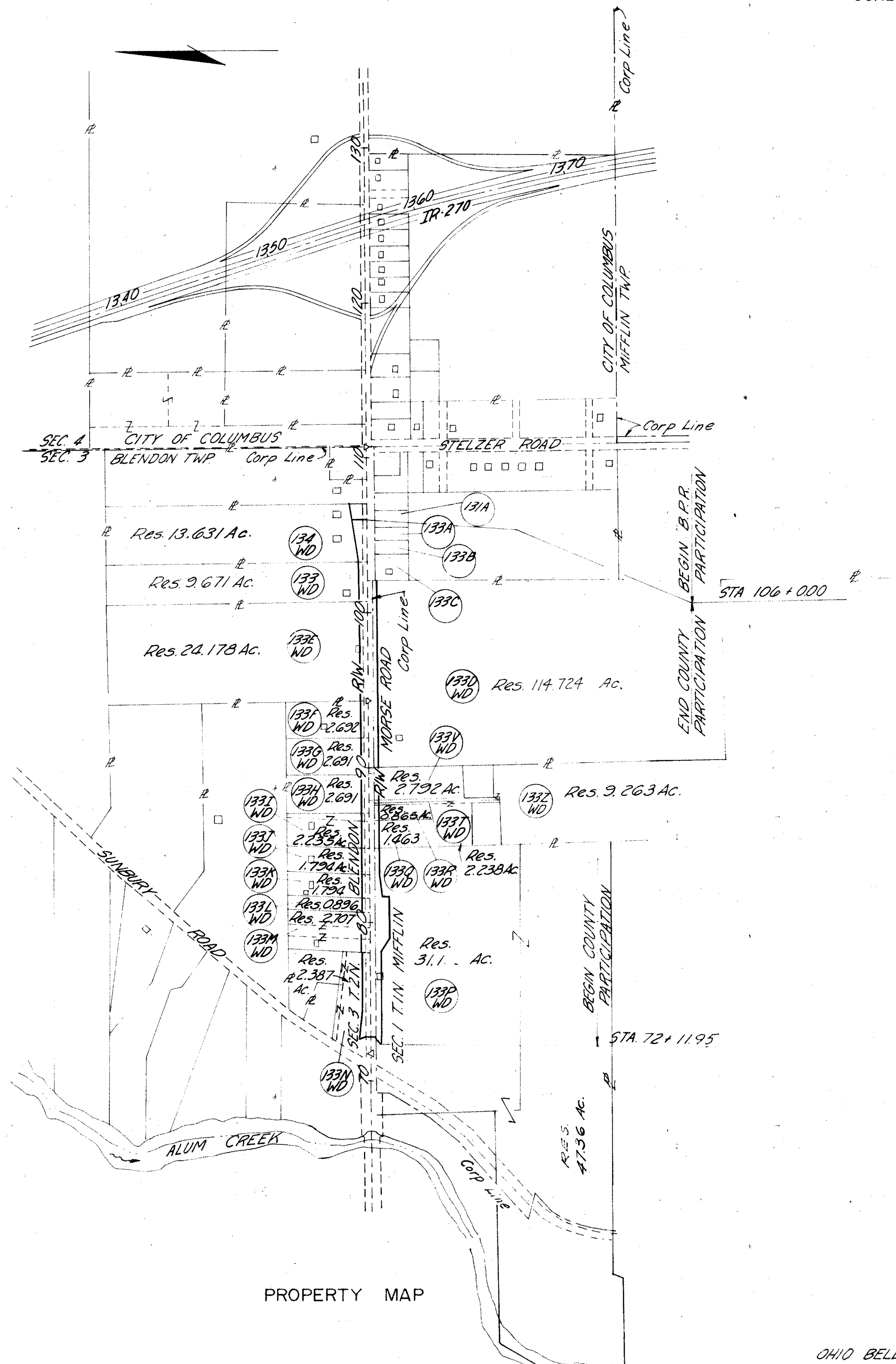
TYPE FUND	
I & CO.	

FRANKLIN COUNTY
FRA-270-22.99N

I-270-5(7) R/W ONLY

PROPERTY MAP

0 500 1000 1500 2000
SCALE IN FEET



PROPERTY MAP

LIST OF PARCEL OWNERS

- 131A ROY BULLOCK
- 133 WD EMIL GAISER & DORA GAISER
- 133A K. & Y. Co.
- 133B ROBERT H. SHEPARD & CAROLYN J. SHEPARD
- 133C ROBERT W. KING & BETTY J. KING
- 133D WD KATHERINE L.B. SMITH
- 133E WD EURA B. CUMBOW
- 133F WD PAUL E. BIERLEY & PAULINE J. BIERLEY
- 133G WD FRANCIS W. LEHMAN
- 133I WD LAWRENCE B. KNUEVEN & VELMA KNUEVEN
- 133J WD EDWIN E. CULP & BONNIE B. CULP
- 133K WD FRANK L. MINIC, BERNADETTE MINIC & ELIZABETH ANN MINIC
- 133H WD ALPHONSE W. KRAMER & MARY A. KRAMER
- 133L WD CARL & JANET MORGAN
- 133M WD ORDELL W. HEDRICK & ANNA E. HEDRICK
- 133N WD MINONA B. WALLACE
- 133P WD THE WHITE CROSS HOSPITAL ASSOCIATION OF OHIO
- 133Q WD CHARLES W. McCAUGHEY & EDITH G. McCAUGHEY
- 133R WD CHARLES DAVID McCAUGHEY & LYNDA MOSS McCAUGHEY
- 133T WD RICHARD A. FREEMAN & KATHRYN A. FREEMAN
- 133V WD MICHAEL B. GRIFFITH (TR.)
- 133Z WD JAMES A. & FRANCIS C. WHITE
- 134 WD WILLIAM N. OWENS & LOLA OWENS

UTILITY COMPANIES

OHIO BELL TELEPHONE COMPANY 111 N. FRONT ST. COLUMBUS, OHIO
COLUMBUS & SOUTHERN OHIO ELECTRIC Co. 215 N. FRONT ST. COLUMBUS, OHIO
COLUMBIA GAS OF OHIO INC. 99 N. FRONT ST. COLUMBUS, OHIO
CITY OF COLUMBUS, WATER DIVISION 90 W. BROAD ST. COLUMBUS, OHIO
CITY OF COLUMBUS, SEWERAGE & DRAINAGE 90 W. BROAD ST. COLUMBUS, OHIO

All parcels this sheet are 100% Franklin County participation except as noted for parcel 134 WD

REV	DATE	DESCRIPTION
	11-13-68	Rev. Res. Pcl 133D-WD

TYPE FUND
CO.

JOB No. 06792

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17) 114	

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

NO. OF PROPERTIES-- 118
NO. OF STRUCTURE PARCELS---20

PARCEL NO.	OWNER	AUDITORS PARCEL NO.	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS
121-WL	COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY	83,251	I	1811 1811 2550 2590 2612	478 482 577 553 572	113.315	0.103	9.482	——	9.482	—	74.510	26.035	9 & 10	
121-WL-1	" " " " " "		I					0.225	0.068	0.157	—			23	
121-WD	" " " " " "		I					1.792	——	1.792	—			9 & 10	
121-WD-1	" " " " " "		I					1.271	0.035	1.236	—			23 & 25	
121-T	" " " " " "		I					0.158	——	0.158	—			9	To Adjust Ditch to Grade
121-T1	" " " " " "		I					0.023	——	0.023	—			25	Construct Driveway
121-T2	" " " " " "		I					0.057	——	0.057	—			26	Construct Service Road "5A"
121-T3	" " " " " "		I					0.034	——	0.034	—			9	TO GRADE DITCH
125-WD	BERNARD WILLIS & MARIETTA WILLIS		I	2,489	25	23,880 S.F.	——	867 S.F.	——	867 S.F.	—	——	22,138 S.F.	23	
125-WD1	" " " " "		I					875 S.F.	——	875 S.F.	—			25	
126-WD	HAROLD E. SCOTT & ELNITTA SCOTT		I	2,524	71	23,832 S.F.	——	405 S.F.	——	405 S.F.	—	——	22.627 S.F.	23	
126-WD1	" " " " " "							800 S.F.	——	800 S.F.	—			25	
126-T	" " " " " "							5155 S.F.	——	5155 S.F.	—			25	Construct Service Road "6A"
127-WD	STANDARD OIL INC.		I	2908	669	53,884 S.F.	——	3,630 S.F.	——	3,630 S.F.	—	——	50,254 S.F.	23	
128A-WD	GULF OIL CORPORATION		I	2,055	438	26,128 S.F.	——	5891 S.F.	——	5891 S.F.	—	——	20,237 S.F.	23	
129-WD	CLARENCE CASHAW & ELNORA CASHAW		I	2,437	612	32,372 S.F.	——	1,012 S.F.	——	1,012 S.F.	—	——	31,360 S.F.	23	
129-T	" " " " "							781 S.F.	——	781 S.F.	—			23	Construct Driveway
130-T	JAMES C. CAMPBELL		I	2,523	504	25,875 S.F.	——	1,366 S.F.	——	1,366 S.F.	—	——	25,875 S.F.	23	Construct Driveway
135-WD	THEODORE W. PARKE & J. RUTH PARKE		I	1855	441	*13.252	0.111	0.430	0.111	0.319	YES	——	12.184	23	* Calculates 13.206 Ac.
135-WD-1	" " " " " " "		I					0.592	——	0.592	—			23 & 25	
135-T	" " " " " " "		I					0.038	——	0.038	YES			23	To Remove Building
136A-WL	SUMMER and Co.	233	I	MORTGAGE 2990	RECORD 517	* 90.88	1.299	6.712	——	6.712	—	65.988	5.408	10	*As Surveyed by Harry Greene (REG. SURVEYOR)
136A-WL-1	" " " " "		I					6.394	0.721	5.673	—			11 & 24	
136A-WD	" " " " "		I&Co.*					4.662	0.275	4.387	YES			24 & 26	*0.383Ac. Co. PART. 4.279 Ac. B.P.R. PART.
136A WD1	" " " " "		I					1.413	——	1.413	—			10	
136A-T	" " " " "		I					0.032	——	0.032	—			25	Construct Driveway
137-WL	JAMES A. VISINTINE & R. PATRICK WEST	252	I	2429	54	* 21.505	0.730	13.806	0.730	13.076	—	0.537(LL)	5.754	10, 11, 12, 23	* Calculates 21.473 Ac.
137-WD	" " " " " " "		I					1.267	——	1.267	—			10, 12 & 23	
137-WD-1	" " " " " " "		I					0.109	——	0.109	—			25	
138-WL	COLOMET, INC.	399	I	2576	59	* 7.090	0.241	0.804	0.241	0.563	—	——	5.345	23	* Calculates 7.112 Ac.
138-WD	" "		I					0.431	——	0.431	—			23	
138-WD-1	" "		I					0.532	——	0.532	—			25	
138-T	" "		I					0.012	——	0.012	—			25	Construct Driveway
139A-WD	SUN OIL COMPANY		I	2602	522	1.130	0.147	0.704	0.147	0.557	YES	——	0.425	23	
139A-T	" " "		I					0.063	——	0.063	YES			23	To Remove Building
140A-WL	HARRY L. DAILEY & PATRICIA L. DAILEY	4143	I	2149	352	30,869 S.F.	——	2567 S.F.	——	2567 S.F.	—	——	24,286 S.F.	23	
140A-WD	" " " " " " "		I					4,016 S.F.	——	4,016 S.F.	—			23	
141-WL	JOHN W. GERHARDT & MABEL L. GERHARDT	4144	I	2105	55	28,852 S.F.	——	1,700 S.F.	——	1,700 S.F.	—	——	27,152 S.F.	23	
141-T	" " " " " " "		I					527 S.F.	——	527 S.F.	—			25	Construct Driveway

FUNDS
I = Interstate & State
I & City = Interstate, State & City
Co. = County

REV.	DATE	DESCRIPTION
	10-18-68	REVISED 121WL-1 & 121WD-1 &
	"	FUNDING BREAKDOWN 136AWD
	"	NAME CHANGED 127WD
	10-30-68	Rev. Res. Pcl. 126 WD
	11-13-68	Rev. Res. Pcl. 121 & 136
	2-11-69	Changed name Pcl. 136AWL

JOB No. 06792

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17) 114	

271/292

FRANKLIN COUNTY
FRA-270-22.99N
LIMITED ACCESS
I-270-5(7) R/W ONLY

6/27

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

NO. OF PROPERTIES--
NO. OF STRUCTURE PARCELS---

PARCEL NO.	OWNER	AUDITORS PARCEL NO.	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS
142-WL	EUGENE B. CHANDLER & BETTIE J. CHANDLER	4145	I	1961 2171	479 595	36,065 S.F.	—	3,644 S.F.	—	3,644 S.F.	—	—	32,308 S.F.	23	
142-WD	" " " " " " "						—	113 S.F.	—	113 S.F.	—			25	
142-T	" " " " " " "						—	2,138 S.F.	—	2,138 S.F.	—			25	Construct Service Rd. "6A"
143-WD	EUGENE B. CHANDLER	4794	I	1961	484	* 0.902	—	0.497	—	0.497	—	—	0.385	25	* Calculates 0.882 Ac.
144-WL	HOWARD E. CHANDLER & RACHEL M. CHANDLER	4147, 4911 4912	I	2245, 2109 2245	428, 664 430	36,063 S.F. & 0.902 Ac.*	—	8,436 S.F.	—	8436 S.F.	—	—	27,629 S.F. & 0.384 Ac.	23	* Calculates 0.882 Ac.
144-WD	" " " " " " "						—	0.298	—	0.298	—			25	
144-T	" " " " " " "						—	2,250 S.F.	—	2,250 S.F.	—			25	Construct Service Rd. "6A"
145-WL	LEE E. SCHWARTZ & DELLA M. SCHWARTZ	3145	I	1647 2533	465 526	2.000	0.344	1.437	0.344	1.093	Yes	—	0.559	12 & 23	
145-X	" " " " " " "						—	0.091	—	0.091	—			12 & 25	
145-T	" " " " " " "							0.086	—	0.086	YES			12 & 23	To Remove 1 Sty. Fr. Garage
146-WL	MILDRED C. KAYLOR	4148	I	1851, 2644 2650	281, 206 311	24,043 S.F.	—	24,043 S.F.	—	24,043 S.F.	Yes	—	—	12	
147-WL	URAL V. MYERS & BEULAH M. MYERS	4149	I	1768	49	24,043 S.F.	—	24,043 S.F.	—	24,043 S.F.	Yes	—	—	12	
148-WL	C.L. DAWLEY & MARY K. DAWLEY	4150	I	1832	530	24,043 S.F.	—	24,043 S.F.	—	24,043 S.F.	Yes	—	—	12	
149-WL	TONY SERIO & FANNIE SERIO	4151	I	2295	356	24,043 S.F.	—	24,043 S.F.	—	24,043 S.F.	Yes	—	—	12	
150-WL	BYRON E. STOUDER & VERNA G. STOUDER	4152	I	1828	310	24,043 S.F.	—	24,043 S.F.	—	24,043 S.F.	Yes	—	—	12	
151-WL	ALVIN P. MOSLEY & FLORENCE M. MOSLEY	4153	I	2609	415	24,043 S.F.	—	24,043 S.F.	—	24,043 S.F.	Yes	—	—	11 & 12	
152-WL	WILLIE LEE GADDIS & VIVIAN A. GADDIS	4154	I	2482	542	26,447 S.F.	—	26,447 S.F.	—	26,447 S.F.	Yes	—	—	11	
153-WL	KELDEN D. DePUY & JOSEPHINE DePUY	4155	I	2638	687	31,460 S.F.	—	31,460 S.F.	—	31,460 S.F.	Yes	—	—	11	
154-WL	JOHN D. TERRY & MILDRED R. TERRY (FEE) & JAMES E. & E. RUTH RICHARDS (LAND CONTRACT)	4156	I	1853 MISC. REC. 123	347 291	26,464 S.F.	—	26,464 S.F.	—	26,464 S.F.	Yes	—	—	11	
155-WL	W. E. BENUA	4902	I	2060	51	*47.703	—	15.694	—	15.694	—	—	32.089	11, 12, 13 & 24	* Computes 47.813 Ac.
155-WD1	" " "						—	0.030	—	0.030	—			25	
155-X	" " "						—	0.109	—	0.109	—			12	
155-T	" " "						—	0.028	—	0.028	—			12	
*															
157A-WL	GLEN S. PIERCE	144, 162 237, 2556	I	1013, 1095 1097	122, 242 623	148.295	1.815	10.285	- -	10.285	—	75.086	61.109	13 & 14	
157-A-T								0.062	—	0.062	—			13	Clean Channel
157-A-T1								0.055	—	0.055	—			14	Clean Channel
158-WL	LAURA S. HARDY (LIFE ESTATE TO RETTA SANDUSKY	174	I	1475	405	62.544	0.345	4.468	—	4.468	—	27.296	30.435	14 & 15	
158-T	" " " " " " " "		I					0.302	—	0.302	—			27	Construct Service Road "10"
159A-WL	CLYDE A. CLODFELTER & HELEN D. CLODFELTER	2657	I	1258	585	46.420	—	12.401	—	12.401	—	21.268	12.751 (LL)	15 & 16	
160-T	HAVENWOOD PROPERTY INC.			2337 2838 2838 2838 2868 2868	100 158 161 163 485 487			0.081	—	0.081	—			24	Temporary Runaround
160-WL-1	HAVENWOOD PROPERTY INC.	141, 2741 111, 112, 121 2392, 2562						15.607	0.220	15.387	—			18 & 19	
160-WL	HAVENWOOD PROPERTY INC.		I			232.329	—	4.398	—	4.398	—			16	
160-WD	" " "							1.241	0.634	0.607	—			18 & 24	
160A-WD	WALTER D. SALYER & S. J. SALYER		I	1244	156	62.50	—	4.339	- -	4.339	YES	58.161	—	27	
160A-T	" " " " " " "		I					0.028	—	0.028	—			27	To Construct a Driveway
161A-WL	NATHAN WHEELER	259	I	2237	496	2.000								16	Not Required

FUNDS
I = Interstate & State
I & City = Interstate, State & City
Co = County

REV.	DATE	DESCRIPTION

SUMMARY OF ADDITIONAL RIGHT OF WAY

JOB No. 06792

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-270-5(17)114

272/292

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

7/27

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

NO. OF PROPERTIES--
NO. OF STRUCTURE PARCELS ---

PARCEL NO.	OWNER	AUDITORS PARCEL NO.	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS
162-WL	JOHN R. MIDDLETON & NORMA J. MIDDLETON	2712	I	2065 2218	159 29	4.670	0.055	2.112	—	2.112	—	2.038	0.465(L.L.)	16 & 17	
163-WL	JESSIE CLEORA MORGAN & DAVID F. MORGAN	2718	I	2101	60	4.670	0.055	0.794	—	0.794	—	1.470	2.351(L.L.)	16 & 17	
164-WL	RALPH E. BOSO	132	I	2474	139	5.670	0.101	1.476	—	1.476	—	2.683	1.410(L.L.)	17	
165-WL	~~JOHN H. BERRY & EDITH M. BERRY~~ LOUIS FORTIN	2688	I	1710 2684	80 377	3.849	0.068	1.019	—	1.019	—	1.809	0.953(L.L.)	17	
166-WL	JOHN D. McCORMICK & MAXINE McCORMICK	850	I	1806 2492	291 584	6.461	0.115	1.741	—	1.741	—	3.015	1.590(L.L.)	17	
167-WL	JOHN F. EING & ANNA B. EING	131	I	2124	224	1.922	0.057	0.367	—	0.367	—	1.498	—	17	
168-WL	ALBERT E. LIND JR. & PITRINA M. LIND	2487	I	1636	474	1.922	0.057	0.371	—	0.371	—	1.494	—	17	
169-WL	HARRY R. JOHNSON & DORIS JOHNSON	2670	I	2266	623	1.922	0.057	0.371	—	0.371	—	1.494	—	17	
170-WL	RICHARD W. or MARGERY G. HABERMAN	145	I	1749	323	3.116	0.080	3.116	0.080	3.036	Yes	—	—	17 & 18	
171-WL	LESTER A. STRAWSER & RITA M. STRAWSER	2671	I	1678	507	3.113	0.080	3.113	0.080	3.033	Yes	—	—	17 & 18	
172-WL	RICHARD DALE KRUMM & MARTHA FENSTERMACHER KRUMM	2561	I	1637	297	1.800	0.069	1.800	0.069	1.731	Yes	—	—	17 & 18	
173-WL	BERMAN D. FLESHMAN & THELMA JEANNE FLESHMAN	2707	I	2545	539	1.798	0.069	0.546	0.021	0.525	Yes	1.157	—	17 & 18	
173-WD	" " " " " " "		I					0.095	0.048	0.047	—			18	
173-T	" " " " " " "		I					0.087	—	0.087	Yes			18	To Remove 1 Story Frame Residence
173-T1	" " " " " " "		I					0.040	—	0.040	—			18	Temporary Runaround
176-WD	EDWIN R. HOLUB & ANNA K. HOLUB	130	I	1693	357	3.119	0.080	0.193	0.080	0.113	—	—	2.926	18	
176-T	" " " " " " "		I					0.029		0.029	—			18	Construct Driveway &
176 T-1			I					0.025		0.025				18	Temporary Runaround
177-WD	PAUL L. EVANS & PATRICIA A. EVANS	1770	I	2576	216	2.986	0.081	0.181	0.081	0.100	—	—	2.805	18	
177-T	" " " " " " "		I					0.018	—	0.018		—		18	Construct Driveway &
177 T-1	" " " " " " "		I					0.008	—	0.008				18	Temporary Runaround
178-WD	DONALD L. II. & PAULINE M. COAKLEY	3501	I	2746	188	8548 SF		2737 SF	—	2737 SF	—	5811 SF	—	18	
179-WD	WILLIAM L. HULET & THELMA L. HULET	2553	I	1636	471	1.832	0.103	0.117	0.103	0.014	—	1.715	—	18	
179-T	" " " " " " "		I					0.016	—	0.016	—			18	Construct Driveway &
179 T-1	" " " " " " "		I					0.051	—	0.051				18	Temporary Runaround
180-T	GEORGE R. SHEPPARD & BONNIE J. SHEPPARD		I	1895	648	1.397		0.009	—	0.009	—	1.397	—	18	Construct Driveway
*156A-WL	CENTROHIO CORP.	156	I	2895	462	64.596	1.258	4.026	0.495	3.531	—	59.532	—	11, 13 & 24	
*156A-WD	" "		I					0.519	0.244	0.275	—			24	
*177 T-2	PAUL L. EVANS & PATRICIA A. EVANS		I					0.017	—	0.017				18	

FUNDS
I = Interstate & State
I & City = Interstate, State & City
CO = County

REV.	DATE	DESCRIPTION
	1-21-69	Rev. & Addit. T Parcels 176, 177 & 179

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

FRANKLIN COUNTY
FRA-270-22.99N
I-270-5(7) R/W ONLY

SUB TOTAL- COUNTY PARTICIPATION
NO. OF PROPERTIES-- 70
NO. OF STRUCTURE PARCELS-- 20

PARCEL NO.	OWNER	AUDITOR PCL. NO.	TYPE FUND	RECORDED BOOK	RECORDED PAGE	DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE LAND	NET TAKE BLDG.	NET RESIDUE LEFT	NET RESIDUE RIGHT	SHEET NO.	REMARKS
131A	ROY BULLOCK		Co.											23	Not Affected
133-WD	EMIL GAISER & DORA GAISER	51	Co.	1915 886	292 619	10 Ac.	.179 Ac.	.329 Ac.	.179 Ac.	.150 Ac.	—	9.671 Ac.	—	22 & 23	
133A	K & Y Co.		Co.											23	Not Affected
133B	ROBERT H. SHEPARD & CAROLYN J. SHEPARD		Co.											23	Not Affected
133C	ROBERT W. KING & BETTY J. KING		Co.											23	Not Affected
133D-WD	KATHERINE L.B. SMITH	146558 146532	Co.	*461	243	118 Ac.	2.570 Ac.	1.554 Ac.	.848 Ac.	.706 Ac.	—	—	114.724 Ac.	21, 22 & 23	*Also Afdt. Bk. 22 Pg. 56
133E-WD	EURA B. CUMBOW & JAMES CUMBOW	53	Co.	1779 1779	559 560	25 Ac.	.449 Ac.	.822 Ac.	.449 Ac.	.373 Ac.	—	24.178 Ac.	—	22	
133F-WD	PAUL E. BIERLEY & PAULINE J. BIERLEY	892	Co.	2561	231	3 Ac.	.168 Ac.	.308 Ac.	.168 Ac.	.140 Ac.	—	2.692 Ac.	—	22	
133G-WD	FRANCIS W. LEHMAN	890	Co	1641	505	3 Ac.	.169 Ac.	.309 Ac.	.169 Ac.	.140 Ac.	—	2.691 Ac.	—	21 & 22	
133H-WD	ALPHONSE W. KRAMER & MARY A. KRAMER	893	Co.	1641	557	3 Ac.	.169 Ac.	.309 Ac.	.169 Ac.	.140 Ac.	—	2.691 Ac.	—	21	
133I-WD	LAWRENCE B. KNUEVEN & VELMA KNUEVEN	891 925	Co.	1759	634	2.506 Ac.	.148 Ac.	.271 Ac.	.148 Ac.	.123 Ac.	—	2.235 Ac.	—	21	
133J-WD	EDWIN E. CULP & BONNIE B. CULP	926	Co.	1978	192	2 Ac.	.112 Ac.	.206 Ac.	.112 Ac.	.094 Ac.	—	1.794 Ac.	—	21	
133K-WD	FRANK L. MINIC, BERNADETTE MINIC, & ELIZABETH ANN MINIC	889	Co.	1818	476	2 Ac.	.112 Ac.	.206 Ac.	.112 Ac.	.094 Ac.	—	1.794 Ac.	—	21	
133L-WD	CARL & JANET MORGAN	49	Co.	2902	530	1.010 Ac.	.063 Ac.	.114 Ac.	.063 Ac.	.051 Ac.	—	.896 Ac.	—	21	
133M-WD	ORDELL W. HEDRICK & ANNA E. HEDRICK	2940 2941 2942	Co.	1995	549	3.084 Ac.	.189 Ac.	.377 Ac.	.189 Ac.	.188 Ac.	—	2.707 Ac.	—	20 & 21	
133N-WD	MINONA B. WALLACE	1520	Co.	1208	2	3.105 Ac.	.715 Ac.	.718 Ac.	.371 Ac.	.347 Ac.	—	2.043 Ac.	—	20	
133P-WD	THE WHITE CROSS HOSPITAL ASSOCIATION OF OHIO	146551	Co.	2676	690	81.933 Ac.	3.649 Ac.	2.140 Ac.	.844 Ac.	1.296 Ac.	YES	—	76.988 Ac.	20 & 21	
133P-T	" " " " " "			2915	534			.037 Ac.		.037 Ac.	YES			20	Removal of Structure
133Q-WD	CHARLES W. McCAUGHEY & EDITH G. McCAUGHY	146556	Co.	1279	487	1.699 Ac.	.129 Ac.	.236 Ac.	.129 Ac.	.107 Ac.	—	—	1.463 Ac.	21	
133R-WD	CHARLES DAVID McCAUGHEY & LYNDA MOSS McCAUGHEY	146722	Co.	2470	585	.991 Ac.	.069 Ac.	.126 Ac.	.069 Ac.	.057 Ac.	—	—	.865 Ac.	21	
133T-WD	RICHARD A. FREEMAN & KATHRYN A. FREEMAN	146571	Co.	2822	671	2.263 Ac.	.014 Ac.	.025 Ac.	.014 Ac.	.011 Ac.	—	—	2.238 Ac.	21	
133V-WD	MICHAEL B. GRIFFITH (TR.)	146562	Co.	2873	230	3.040 Ac.	.135 Ac.	.248 Ac.	.135 Ac.	.113 Ac.	—	—	2.792 Ac.	21	
133Z-WD	JAMES A. & FRANCIS C. WHITE	146543	Co.	1341	351	9.288 Ac.	.014 Ac.	.025 Ac.	.014 Ac.	.011 Ac.	—	—	9.263 Ac.	21	
134-WD	WILLIAM N. OWENS & LOLA OWENS	493	*I & Co.	2678	204	14.362 Ac.	.258 Ac.	.731 Ac.	.258 Ac.	0.473 Ac.	YES	13.631 Ac.	—	23	*0.446 Ac. Co. Part. 0.285 Ac. BPR Part.
134-T	" " " "		I					.022 Ac.		0.022 Ac.	YES			23	*Removal of Structure

All parcels this sheet are 100% Franklin County participation except as noted for 134 WD

REV.	DATE	DESCRIPTION
	11-15-68	Rev. Ac. Pcl. 133D-WD
	1-23-69	Rev. Deed Area Pcl. 133P

STA. 1320+00 TO STA. 1335+00 R/W

REV.	DATE	DESCRIPTION
	11-13-68	Rev. W. Line Pcl. 136

STA 1335+00 TO STA 1350+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(7)114	

276/292

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

11/27

REV.	DATE	DESCRIPTION

TYPE FUND: I

STA 1350+00 TO STA 1365+00 LT. R/W

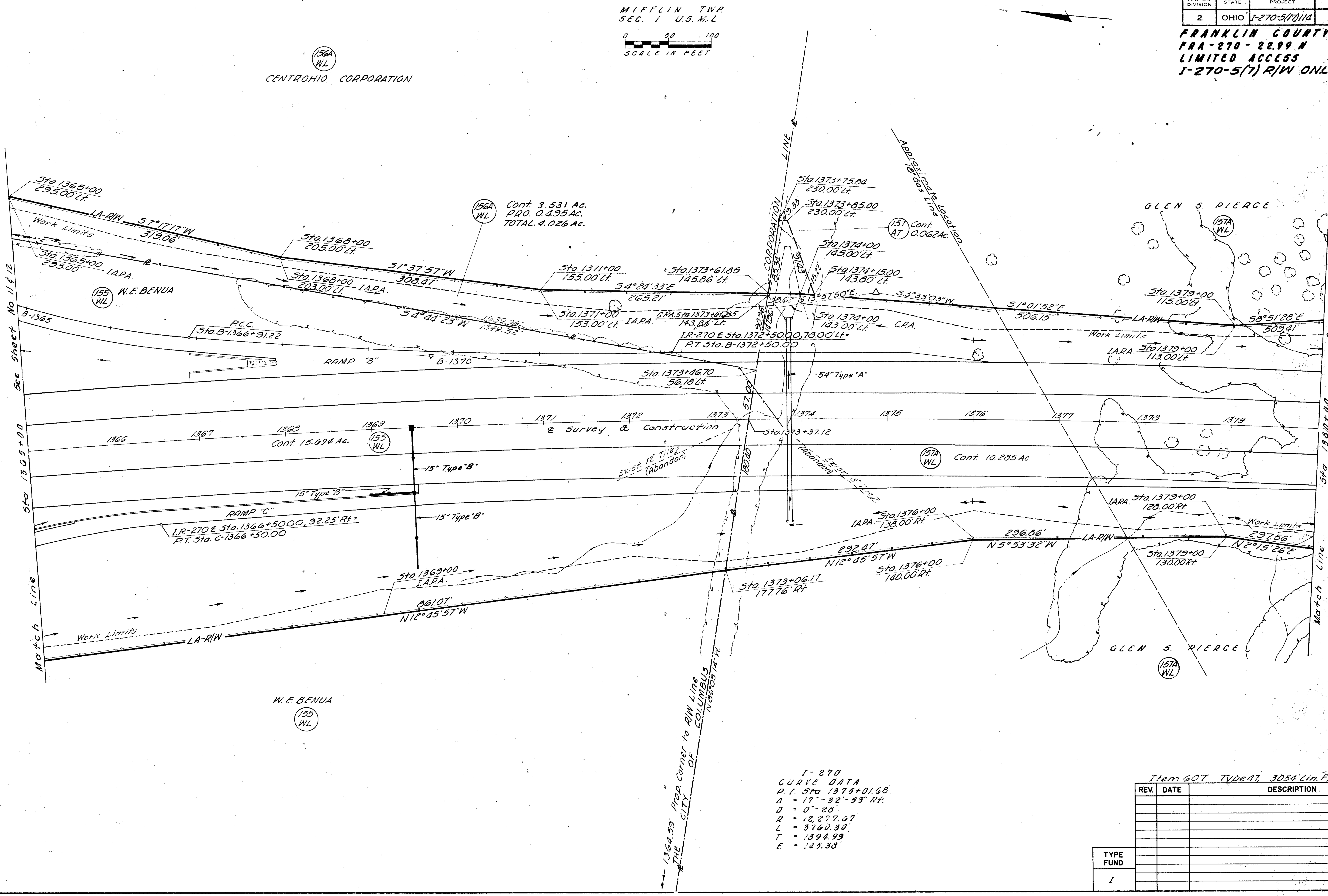
STA 1350+00 TO STA 1365+00 RT. R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

278/292

13/27

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY



I-270
CURVE DATA
P.I. Sta 1375+01.68
Δ = 17°-32'-53" Rt.
D = 0°-28'
R = 12,277.67
L = 3760.30
T = 1894.99
E = 145.38

Item 607 Type 47, 3054 Lin. Ft.

REV.	DATE	DESCRIPTION

TYPE FUND
I

STA 1365+00 TO STA 1380+00 R/W

STA 1380+00 TO STA 1395+00 R/W

STA 1395+00 TO STA 1410+00 R/W

STA 1410+00 TO STA 1425+00 R/W

STA 1425+00 TO STA 1440+00 R/W

FED. RD. DIVISION 2
STATE OHIO
PROJECT I-270-5(17)114
283
292
FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY
18
27
T.1N., R.17W.
MIFFLIN TWP.
SEC. 1 U.S.M.L.
SCALE IN FEET
0 50 100
AMESBURY DRIVE
GEORGE R. SHEPPARD & BONNIE J. SHEPPARD
WILLIAM L. HULET & THELMA L. HULET
BERMAN D. FLESHMAN & THELMA JEANNE FLESHMAN
RICHARD DALE KRUMM & MARTHA FENSTERMACHER KRUMM
LESTER A. STRAWSER & RITA M. STRAWSER
RICHARD W. or MARGERY G. HABERMAN
EDWIN R. HOLUB & ANNA K. HOLUB
PAUL L. EVANS & PATRICIA A. EVANS
HAVENWOOD PROPERTY INC.
VILLAGE OF GAHANNA
THE CITY OF COLUMBUS CORPORATION LINE
McCUTCHEON ROAD
Match Line
See Sheet No. 17
See Sheet No. 19
See Sheet No. 24
Sta. 1440+00
Sta. 1455+00
€ Survey & Const.
S 3°35'03" W
I.R.-270 € Sta. 1444+53.71 = C.R.-171 € Sta. 25+00.00
Cont. 15.387 Ac. P.R.O. 0.220 Ac. TOTAL 15.607 Ac.
Cont. 0.607 Ac. P.R.O. 0.634 Ac. TOTAL 1.241 Ac.
END WORK 1453+70
END PROJECT FRA.-270-22.99 N. STA. 1452+00.00
BEGIN PROJECT FRA.-270- STA. 1452+00.00
Item 607 Type CL 733' Lin. Ft.
Item 607 Type 47 1603' Lin. Ft.
REV. DATE DESCRIPTION
1-21-69 Rev. & added 179T, 179T-1, 176T, 176T-1, 177T, T-1 & T-2
TYPE FUND I

T.1N, R.17W.
MIFFLIN TWP.
SEC. 1, U.S.M.L.
0 50 100
SCALE IN FEET
T.1N, R.17W.
FED. RD. DIVISION
2
STATE
OHIO
PROJECT
I-270-5(17)114
284/292
19/27
FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY
Ex. R/W
AMESBURY DRIVE
#458
CHARLES C. & JANICE FRYE
#459
CHARLES W. Sr. & NELLIE K. RITTER
PAUL W. & MARGIE L. HOISINGTON
#460
CHARLES P. & JOAN VINING
#461
JESSIE R. VASSAUX
#462
JAMES F. & RUTH F. ELLESSOR
#463
ROBERT E. & NIKKI SCOFIELD
#464
JOHN S. & PATRICIA A. THOMPSON
#465
BROOKSIDE SALES INC.
#466
BROOKSIDE SALES INC.
#467
JAMES R. & PHYLLIS A. MARIK
#468
KEITH A. PRICE
#469
BENNY R. & PEGGY A. HORN
#470
BROOKSIDE SALES INC.
#471
ROBERT L. & SANDRA M. DAVIS
#472
DONN B. & MARY R. BUCK
#473
BUDDY C. & DIANNE BOHAM
#474
#475
1-S-Fr. Res.
1-S-Fr. & Br. Res.
2-S-Fr. Res.
1-S-Fr. & Br. Res.
2-Car Bk. Gar.
END ACQUISITION
FRA-270-22.99 N.
STA. 1466+06.59
A PORTION OF I-270-5(7) R/W ONLY
BEGIN ACQUISITION
FRA-270-25.84 N.
Sta. 1466+06.59
A PORTION OF I-270-5(7) R/W ONLY
Sta. 1466+04.75
160.64' Lt.
Stone Fnd.
LA-R/W LINE
THE VILLAGE OF GAHANNA
THE CITY OF COLUMBUS CORPORATION LINE
S.3°52'39"W.
1597.48'
6" Oak
8" Hickory
6" Oak
7" W. Cherry
3-6" Oaks
Bush
21" Hickory
10" Lynn
12" Lynn
10" Hickory
26" Hickory
21" Hickory
40" Oak
Br. 15"
BROOKSIDE SALES, INC.
160.65'
1456 1457 1458 1459 1460 1461 1462 1463 1464 1465 1466 1467 1468 1469
℄ Survey & Const.
S 3°-35'-03" W
Sta. 1466+06.59
90.98'
160 WL1
Cont. 15.387 Ac.
PRO. 0.220 Ac.
Total 15.607 Ac.
I.P. Fnd.
S.3°52'10"W.
150.01'
Sta. 1466+07.64
90.97' Rt.
2153.04'
S 3°35'03"W
LA-R/W
Sta 1466+08.31
150.00' Rt.
170.69'
S 87°04'23"E
HAVENWOOD PROPERTY INC.
160 WL1
IDA MAY WHITE
Match Line Sta 1455+00 Sec Sheet No 18
Item 607 Type CL Lin. Ft.
Item 607 Type 47 Lin. Ft.
REV.
DATE
DESCRIPTION
TYPE FUND
I
STA 1455+00 TO STA 1470+00 R/W

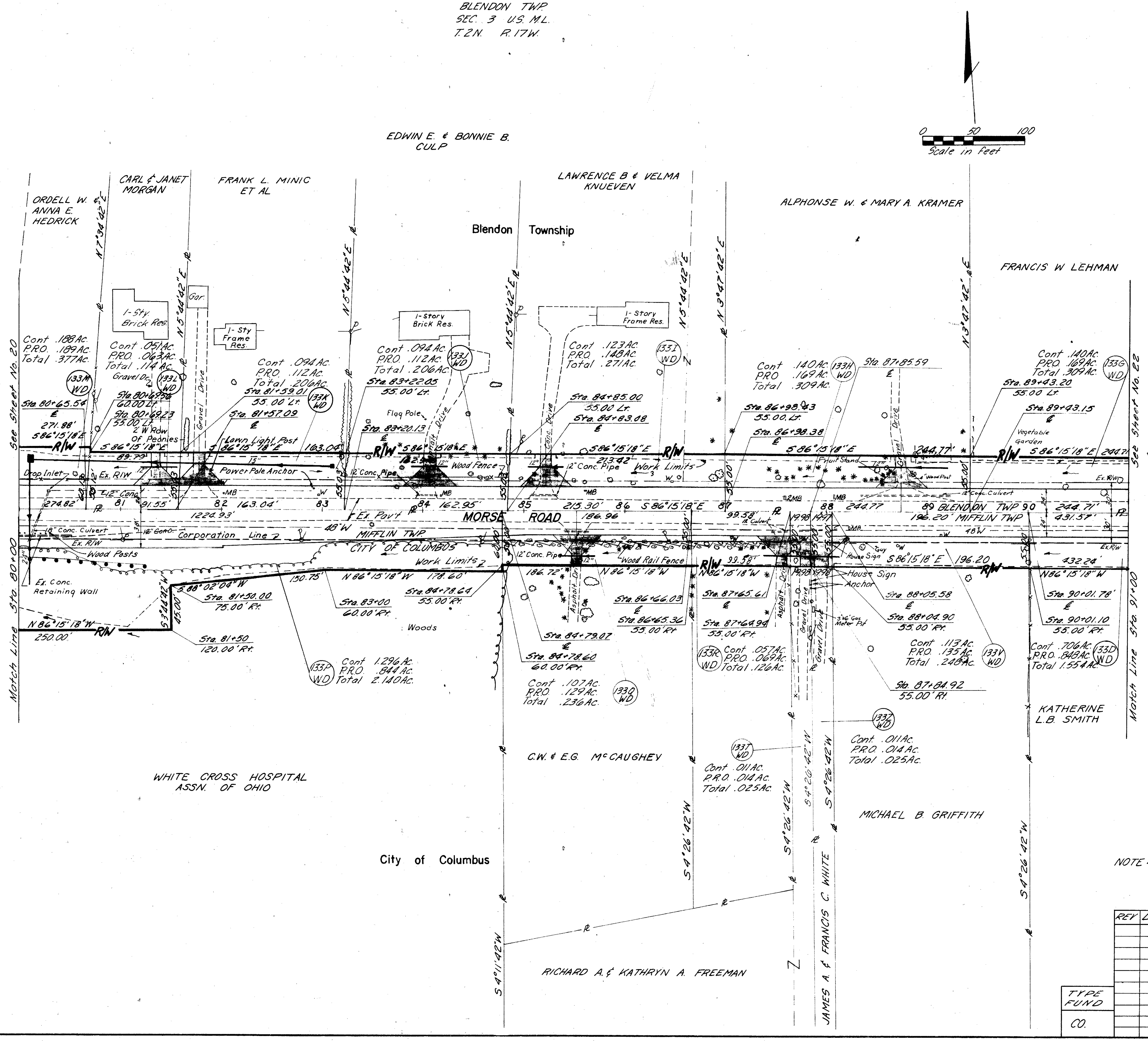
MORSE ROAD STA. 66+00 TO STA. 80+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

286
292

FRANKLIN COUNTY
FRA-270-22.99N
I-270-5(7) R/W ONLY

21
27



NOTE: All Stationing and Offsets are Referenced to ℄ Survey and Construction

REV	DATE	DESCRIPTION

TYPE FUND

CO.

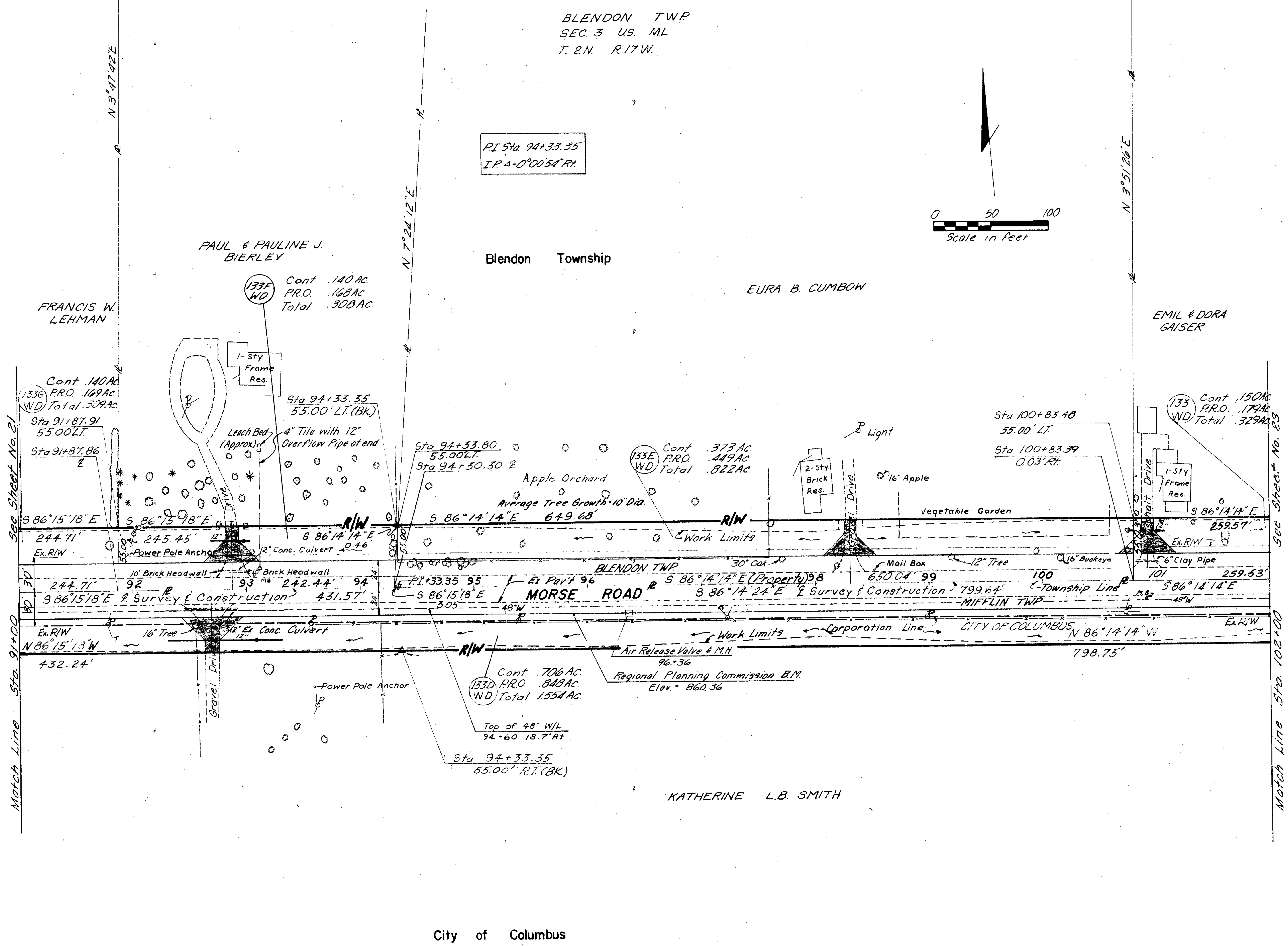
MORSE ROAD STA. 80+00 TO STA. 91+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

287/292

22/27

FRANKLIN COUNTY
FRA-270-22.99N
I-270-5(7) R/W ONLY



NOTE: All Stationing and Offsets are Referenced to Survey and Construction.

REV.	DATE	DESCRIPTION

TYPE FUND
CO.

MORSE ROAD STA. 91+00 TO STA. 102+00 R/W

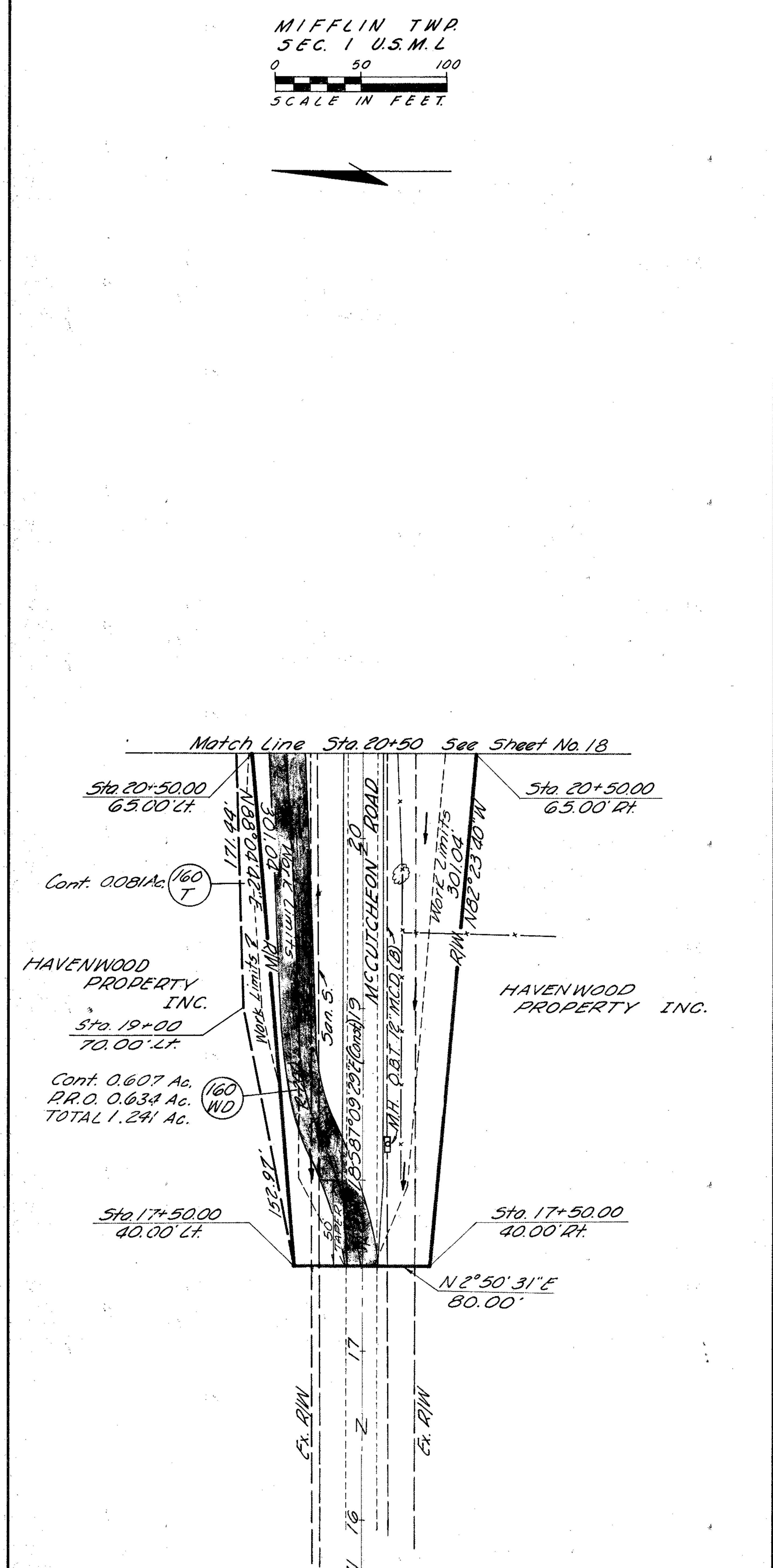
MORSE ROAD STA. 102+00 TO STA 117+00 R/W

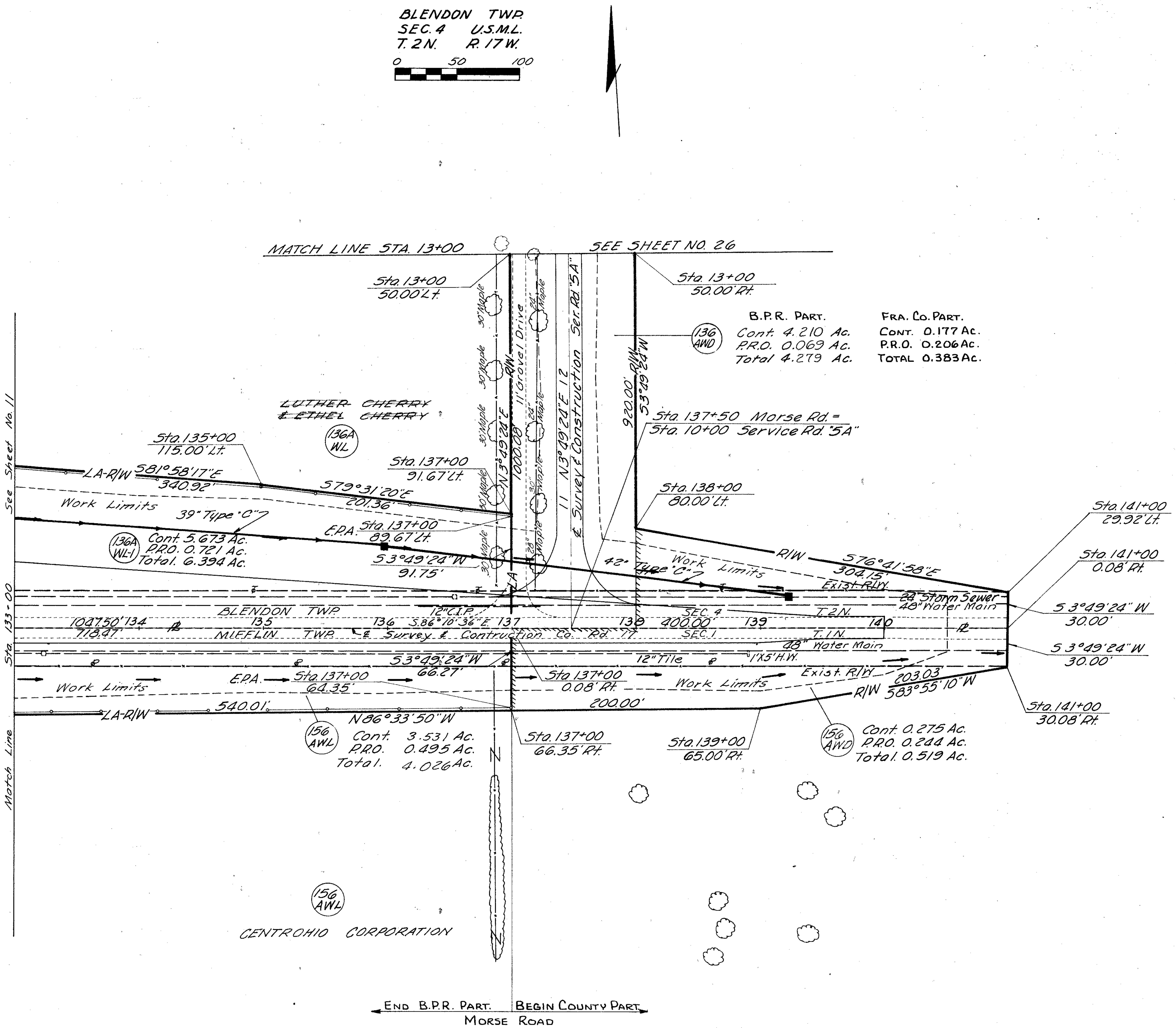
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

289/292

FRANKLIN COUNTY
FRA.-270-22.99 N.
LIMITED ACCESS
I-270-5(7) R/W ONLY

24/27





MIFFLIN TWP.
SEC. 1 U.S.M.L.
T. 1 N. R. 17 W.

Item 607 Type 47, 804 Lin. Ft.

REV.	DATE	DESCRIPTION
	10-18-68	ADDED PARTICIPATION LINE & BREAKDOWN TO 136AWD.

TYPE FUND
I & CO.

MORSE ROAD STA. 133+00 to STA. 140+00 R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

290/292

FRANKLIN COUNTY
FRA-270-22.99 N
I-270-5(7) R/W ONLY

25/27

SERVICE ROAD "7A"
CURVE DATA
P.I. Sta. 33+51.42
Δ = 90° 01' 24"
D_c = 38° 11' 50"
R = 150'
L = 235.68'
T = 150.06'
E = 62.40'
P.C. = 32+01.36
P.T. = 34+37.04

SERVICE ROAD "6A"
CURVE DATA
P.I. Sta. 3+19.01
Δ = 89° 06' 58" Lt.
D_c = 63° 39' 43"
R = 90.00'
L = 139.98'
T = 88.62'
E = 36.31'
P.C. = Sta. 2+30.39
P.T. = Sta. 3+70.37

SERVICE ROAD "6A"
CURVE DATA
P.I. Sta. 4+68.75
Δ = 89° 06' 58" Rt.
D_c = 63° 39' 43"
R = 90.00'
L = 139.98'
T = 88.62'
E = 36.31'
P.C. = Sta. 3+80.13
P.T. = Sta. 5+20.11

REV.	DATE	DESCRIPTION
	10-18-68	REVISED AREA 121WD-1
	11-13-68	Rev. Bearing W. Line Pcl. 136

TYPE FUND
I

SERVICE ROADS 6A & 7A R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-270-5(17)114	

291/292

FRANKLIN COUNTY
FRA-270-22.99N
I-270-5(7) R/W ONLY

26/27

BLENDON TWP.
SEC. 4 U.S.M.L.
T. 2 N. R. 17 W.

REV.	DATE	DESCRIPTION

TYPE FUND
I

SERVICE ROAD "5A" R/W

SERVICE ROAD "10" R/W

GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF 2.4 MILES OF IR 270, BEGINNING 0.6 MILE NORTH OF MORSE ROAD, 0.3 MILE EAST OF SUNBURY ROAD, EXTENDING SOUTHWARD, AND TERMINATING 0.6 MILE SOUTH OF MCCUTCHEON ROAD, 0.4 MILE EAST OF STELZER ROAD. INCLUDED IN THIS REPORT ARE PROFILES OF MORSE AND MCCUTCHEON ROADS.

PROPOSED GRADES INDICATE MAXIMUM 15-FOOT CUTS AND 20-FOOT FILLS ON IR 270, AND MAXIMUM 3-FOOT FILL ON MCCUTCHEON ROAD. EXISTING GRADE OF MORSE ROAD IS TO BE MAINTAINED.

GEOLOGY OF THE PROJECT

THE ALIGNMENT TRAVERSES A FLAT PORTION OF THE GLACIATED MISSISSIPPI VALLEY PLAIN, IN AN AREA WHERE SHALLOW TO MODERATELY DEEP DRIFT OVERLIES SHALE BEDROCK, OF DEVONIAN AGE.

EXPLORATION

BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER ON APRIL 13, 14, 17, AND 18, 1967. INCLUDED IN THIS REPORT ARE LOGS OF BORINGS FROM THE STRUCTURE FOUNDATION INVESTIGATIONS ON THE PROJECT.

INVESTIGATIONAL FINDINGS

MATERIALS OCCURRING IMMEDIATELY BELOW PROPOSED GRADES CONSIST PREDOMINANTLY OF SILT CLAYS (A-6a AND A-6b) AND CLAYS (A-7-6), HAVING MOISTURE CONTENTS GENERALLY IN THE LOWER PORTIONS OF, OR BELOW THE PLASTIC RANGE, AS WELL AS SHALE BEDROCK.

SHALE BEDROCK IS ANTICIPATED IN THE EXCAVATIONS AT THE FOLLOWING STATIONS:

STATIONS 1433+00 TO 1441+00 - IN THE DITCHES AND POSSIBLY AT BOTH GRADES.

STATIONS 1441+00 TO 1462+00 - AT BOTH GRADES AND IN THE DITCHES AND LOWER TO MID-PORTIONS OF THE BACKSLOPES.

ELASTIC CLAY (A-7-5) WAS ENCOUNTERED AT GRADE AT MCCUTCHEON ROAD STATION 29+00.

EMBANKMENT FOUNDATION MATERIALS COMPRISE SANDY SILTS (A-4a), SILT CLAYS (A-6a), AND CLAYS (A-7-6), HAVING MOISTURE CONTENTS IN THE LOWER PORTIONS OF, AND BELOW THE PLASTIC RANGE.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS— 125 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL WITH SAND	A-1-b(0)	A-1-b	59	12	8	10	11	NP	NP	15	1
GRAVEL OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4(0)	A-2-4	44	15	11	15	15	26	7	10	5
STONE FRAGMENTS WITH SAND, SILT, AND CLAY	A-2-6(1)	A-2-6	49	8	10	14	19	40	16	17	1
SANDY SILT	A-4(3)	A-4a	30	7	14	26	23	25	7	14	17
SILT	A-4(8)	A-4b	2	1	21	61	15	NP	NP	17	2
SILT AND CLAY	A-6(7)	A-6a	18	5	12	30	35	33	13	18	34
SILTY CLAY	A-6(10)	A-6b	14	4	10	29	43	38	16	21	18
ELASTIC CLAY	A-7-5(10)	A-7-5	14	3	8	32	43	44	14	23	1
CLAY	A-7-6(13)	A-7-6	16	2	7	28	47	45	20	22	23
WEATHERED SHALE			VISUAL CLASSIFICATION								1
SHALE			VISUAL CLASSIFICATION								22
BOULDERY ZONE			VISUAL CLASSIFICATION								-
VARIOUS OTHER MATERIALS			VISUAL CLASSIFICATION								-

SOD AND/OR TOPSOIL=X'=APPROXIMATE DEPTH.

AUGER BORING-PLAN VIEW.

DRIVE SAMPLE-CORE BORING-PLAN VIEW.

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.

DRIVE SAMPLE-CORE BORING PLOTTED TO VERTICAL SCALE ONLY.

W 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.

B INDICATES BROKEN ROCK INTERVAL.

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT.E.G. *15*

SOIL PROFILE

1/16

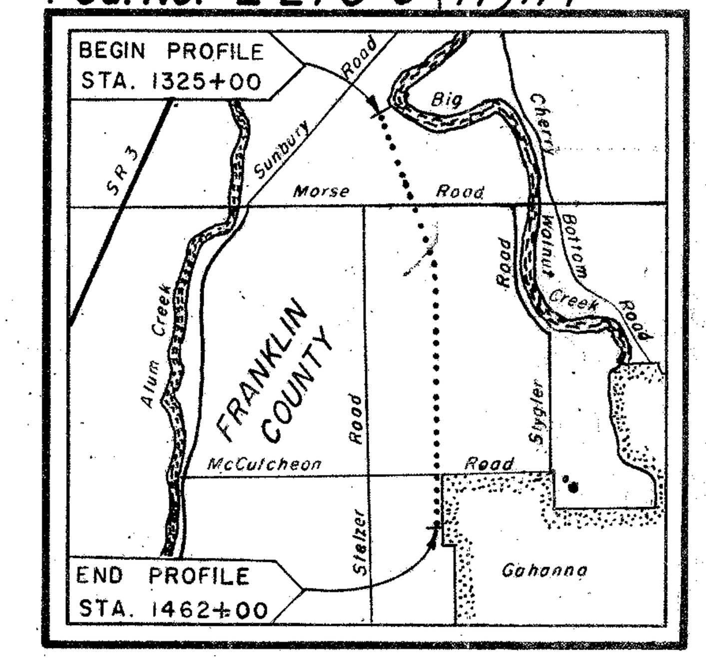
FRANKLIN COUNTY
FRA-270-22.99N

1/8

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. I-270-5 (17) 114



LOCATION MAP

Recon – J.S.M. – 1/9/67 – 1/10/67
Drilling – F.J.R., L.M.D. – 4/13/67 to 4/18/67
Drafting – R.G.M.

SOIL PROFILE

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FRANKLIN COUNTY
FRA-270-22.99N

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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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.

IR 270

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
1328+00	CL	0.5-2.0	11	5	13	29	42	32	11	17	A-6a
		2.0-4.0	(56	3	7	18	16			14)	
		GRAY BROKEN SHALE									VISUAL
		4.0-5.0	(61	8	8	7	16			16)	
		GRAY BROKEN SHALE									VISUAL
1331+00	CL	0.5-3.0	24	1	6	32	37	41	16	22	A-7-6 *
		3.0-6.0	16	8	15	31	30	30	11	15	A-6a
		6.0-7.5	30	8	13	27	22	28	10	11	A-4a
1335+00	CL	0.5-4.0	10	4	10	30	46	40	16	21	A-6b
		4.0-8.0	(65	8	7	9	11			9)	
		GRAY BROKEN SHALE									VISUAL
		8.0-10.0	(74	6	5	7	8			15)	
		GRAY BROKEN SHALE									VISUAL
1338+00	CL	0.5-5.0	5	4	13	34	44	42	18	23	A-7-6
		5.0-7.0	31	5	9	26	29	40	16	17	A-6b
		7.0-11.0	(35	12	10	20	23			22)	
		GRAY BROKEN SHALE									VISUAL
1342+00	CL	0.5-5.0	0	3	10	32	55	43	16	20	A-7-6
		5.0-7.0	26	7	15	27	25	25	9	10	A-4a
1346+00	CL	0.5-4.0	33	2	7	21	37	44	19	24	A-7-6
		4.0-6.0	25	6	11	27	31	32	13	17	A-6a
1349+00	CL	0.5-4.0	10	3	9	29	49	41	18	20	A-7-6
		4.0-5.0	36	4	9	24	27	30	13	15	A-6a
1352+00	CL	0.5-5.0	15	3	9	28	45	41	15	21	A-6a
		5.0-7.0	29	4	10	26	31	33	12	17	A-6a
		7.0-12.0	40	13	12	20	15	26	9	7	A-2-4
		12.0-13.0	(49	11	9	16	15			15)	
		GRAY BROKEN SHALE									VISUAL
1360+00	CL	0.5-4.0	16	1	7	31	45	45	20	23	A-7-6
		4.0-8.0	15	6	14	29	36	30	11	16	A-6a
1364+00	CL	0.5-3.0	18	2	8	20	52	46	23	23	A-7-6
		3.0-7.5	7	5	14	33	41	29	11	20	A-6a
1368+00	CL	0.5-3.0	23	3	6	25	43	48	23	22	A-7-6
		3.0-6.0	29	4	12	28	27	28	11	18	A-6a
		6.0-10.0	18	17	18	22	25	25	7	21	A-4a
		10.0-13.0	25	3	26	33	13	NP	NP	17	A-4a
		13.0-14.5	0	1	11	71	17	NP	NP	17	A-4b
1373+50	CL	0.5-5.0	0	3	11	29	57	40	16	21	A-6b
		5.0-7.0	26	27	13	18	16	24	5	13	A-2-4
		7.0-12.0	4	2	30	51	13	NP	NP	17	A-4b
		12.0-13.0	41	7	13	24	15	21	5	10	A-4a
1378+00	CL	0.5-3.0	0	1	6	39	54	39	16	26	A-6b *
		3.0-6.0	12	5	13	31	39	33	12	15	A-6a
		6.0-7.0	52	3	8	19	18	28	11	14	A-6a
		7.0-10.0	27	13	13	29	18	25	6	16	A-4a
1383+00	CL	0.5-4.0	13	1	3	40	43	41	20	21	A-7-6
		4.0-7.0	0	8	22	33	37	30	11	24	A-6a
		7.0-10.0	14	8	16	31	31	25	8	14	A-4a
1387+00	CL	0.5-4.0	6	5	13	30	46	35	13	18	A-6a
		4.0-7.0	8	5	25	19	43	37	15	21	A-6a
		7.0-10.0	39	6	11	27	17	24	8	12	A-4a
1390+00	CL	0.5-5.0	22	2	8	36	32	40	15	25	A-6a *
		5.0-8.0	10	4	13	39	34	27	11	17	A-6a
		8.0-10.0	34	8	15	22	21	25	8	15	A-4a
1395+00	CL	0.5-4.0	25	2	7	25	41	42	17	21	A-7-6 *
		4.0-6.0	25	4	14	21	36	33	13	19	A-6a *
		6.0-9.0	30	5	15	26	24	27	9	20	A-4a
		9.0-11.0	48	4	8	23	17	21	6	12	A-4a
1400+00	CL	0.5-5.0	25	2	7	29	37	39	17	23	A-6b *
		5.0-9.0	42	5	10	18	25	26	9	16	A-4a
		9.0-12.0	11	7	14	34	34	22	6	11	A-4a
1403+00	CL	0.5-3.0	0	3	12	30	55	39	17	22	A-6b
		3.0-8.0	12	7	14	30	37	31	11	15	A-6a *
		8.0-11.0	59	12	8	10	11			15	A-1-b
		11.0-14.0	54	7	8	16	15	23	7	9	A-2-4
1406+00	CL	0.5-5.0	6	3	9	29	53	38	16	22	A-6b *
		5.0-8.0	32	9	12	22	25	28	9	16	A-4a *
		8.0-10.0	54	13	9	10	14	30	9	11	A-2-4
		10.0-11.5	(80	7	4	3	6			17)	
		GRAY BROKEN SHALE									VISUAL
1409+25	CL	0.5-5.0	25	6	13	25	31	27	11	14	A-6a *
		5.0-8.0	27	5	12	27	29	27	8	17	A-4a *
		8.0-10.0	47	15	10	13	15	27	6	12	A-2-4
		10.0-13.5	(70	11	6	6	7	30	7	15)	
		GRAY BROKEN SHALE									VISUAL
1415+70	CL	0.5-5.0	0	2	9	34	55	41	16	22	A-7-6 *
		5.0-9.0	49	8	10	14	19	40	16	17	A-2-6 *
		9.0-10.0	(84	5	3	4	4			12)	
		GRAY BROKEN SHALE									VISUAL
1422+50	CL	0.5-5.0	5	2	9	26	58	41	17	21	A-7-6
		5.0-7.0	49	3	8	18	22	38	12	18	A-6a *
		7.0-8.0	(65	8	8	8	11			17)	
		GRAY BROKEN SHALE									VISUAL *
1428+00	CL	0.5-5.0	0	4	12	32	52	39	18	20	A-6b
		5.0-8.0	(71	4	6	9	10			19)	
		GRAY SHALE FRAGMENTS WITH SOIL									VISUAL *
		8.0-10.0	(55	3	5	17	20			16)	
		BROWN & GRAY CLAY & SHALE FRAGMENTS									VISUAL
		10.0-15.0	24	8	16	26	26	24	8	12	A-4a
1433+35	100' Rt	0.5-6.0	27	4	11	26	32	31	11	21	A-6a
		6.0-8.0	38	6	11	24	21	25	8	9	A-4a
		8.0-10.5	(78	7	5	4	6			5)	
		GRAY BROKEN SHALE									VISUAL *
1437+00	90' Rt	0.5-5.0	36	2	5	20	37	48	21	27	A-7-6
		5.0-7.0	(60	13	7	9	11			19)	
		GRAY SHALE FRAGMENTS & SOIL									VISUAL *
		7.0-10.5	(80	8	4	4	4			15)	
		GRAY BROKEN SHALE									VISUAL *
1440+00	96' Rt	0.5-5.0	22	3	9	29	37	42	18	21	A-7-6
		5.0-8.0	(69	8	6	9	8			11)	
		GRAY SHALE FRAGMENTS AND SOIL									VISUAL *
		8.0-12.0	(80	5	4	5	6			18)	
		GRAY BROKEN SHALE									VISUAL *
		12.0-13.0	(65	8	7	10	10			10)	
		GRAY WEATHERED SHALE									VISUAL
1449+00	CL	0.5-4.0	35	2	6	22	35	41	18	22	A-7-6
		4.0-6.0	0	1	1	28	70	53	24	25	A-7-6
		6.0-9.0	(77	5	3	8	7			12)	
		GRAY BROKEN SHALE									VISUAL
		9.0-11.5	(84	5	3	4	4			14)	
		GRAY BROKEN SHALE									VISUAL *
1454+00	CL	0.5-5.0	3	3	12	31	51	32	11	19	A-6a *
		5.0-9.0	(50	6	6	20	18			14)	
		GRAY SHALE FRAGMENTS AND SOIL									VISUAL
		9.0-11.2	(80	6	4	5	5			12)	
		GRAY BROKEN SHALE									VISUAL
1458+00	CL	0.5-5.0	23	2	9	25	41	40	17	17	A-6b *
		5.0-8.0	(72	7	5	8	8			13)	
		GRAY BROKEN SHALE									VISUAL
		8.0-11.5	(75	7	4	7	7			9)	
		GRAY BROKEN SHALE									VISUAL
1461+50	CL	0.5-6.0	12	3	12	52	21	37	16	20	A-6b *
		6.0-8.0	(68	11	6	7	8			15)	
		GRAY BROKEN SHALE									VISUAL
		8.0-11.2	(69	6	5	9	11			20)	
		GRAY BROKEN SHALE									VISUAL

MC CUTCHEON ROAD

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
20+00	15' Lt	0.0-2.0	10	4	15	30	41	37	16	21	A-6b *
		2.0-3.0	20	2	8	29	41	38	14	22	A-6a
		3.0-8.0	0	2	9	52	37	34	13	23	A-6a
		8.0-12.0	25	1	7	26	41	44	24	22	A-7-6
29+00	15' Lt	0.0-2.5	14	3	8	32	43	44	14	23	A-7-5 *
		2.5-8.0	0	4	12	27	57	39	16	25	A-6b *
		8.0-11.5	(45	14	9	15	17	32	10	20)	
		GRAY BROKEN SHALE									VISUAL

MORSE ROAD

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
12+60	60' Lt	0.5-5.0	11	5	12	32	40	36	14	17	A-6a *
		5.0-9.0	20	6	13	28	33	31	12	16	A-6a
		9.0-10.0	(55	11	8	13	13			19)	
		GRAY BROKEN SHALE									VISUAL
17+00	45' Lt	0.5-2.0	0	2	8	39	51	44	18	22	A-7-6 *
		2.0-7.0	18	2	7	33	40	39	18	22	A-6b *
		7.0-9.0	9	5	14	34	38	32	12	18	A-6b
		9.0-10.0	31	4	10	30	25	26	11	13	A-6a
21+00	45' Lt	0.5-2.0	0	2	10	41	47	45	17	24	A-7-6*
		2.0-5.0	28	1	7	25	39	46	21	25	A-7-6*
		5.0-7.0	28	3	10	24	35	39	17	14	A-6b
		7.0-8.0	39	2	2	18	39	44	16	16	A-7-6
		8.0-9.0	36	4	4	20	36	40	17	17	A-6b
		9.0-10.0	0	1	0	15	84	51	26	18	A-7-6
28+00	45' Lt	0.5-5.0	0	2	7	39	52	38	15	24	A-6a *
		5.0-10.0	19	8	16	25	32	31	13	17	A-6a
32+00	45' Lt	0.5-1.0	0	3	8	39	50	39	15	20	A-6a *
		1.0-4.0	0	3	7	42	48	52	29	20	A-7-6*
		4.0-6.0	14	7	17	22	40	37	16	29	A-6b
		6.0-7.0	26	6	14	21	33	37	17	20	A-6b
36+00	45' Lt	0.5-2.0	0	4	10	49	37	38	14	21	A-6a *
		2.0-7.0	16	4	12	32	36	34	13	12	A-6a *
		7.0-9.0	4	5	14	37	40	35	15	15	A-6a
		9.0-10.0	48	10	9	18	15	34	13	12	A-6a

DRIVE SAMPLE SOIL TEST DATA

IR 270

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
1335+04	40'Rt	5.0-6.0	0	7	16	30	47	37	18	27	A-6b
		7.5-8.5	0	15	15	29	41	31	10	17	A-4a

MC CUTCHEON ROAD

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
26+35	40'Rt	5.0-6.0	0	8	12	37	43	31	10	18	A-4a

SOIL PROFILE

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FRANKLIN COUNTY
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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SOIL PROFILE

FRANKLIN COUNTY
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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SOIL PROFILE 5/16

FRANKLIN COUNTY
FRA-270-22.99N

OHIO STATE HIGHWAY TESTING LABORATORY 5/8
1620 W. BROAD ST COLUMBUS 23, OHIO

SOIL PROFILE

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FRANKLIN COUNTY
FRA-270-22.99N

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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SOIL PROFILE
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FRANKLIN COUNTY
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO
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Cultivated
¢, Proposed I R 270.
Tree row
1453
1455
1460
1462
N
Residential
Sta. 25+00, ¢, Proposed McCutcheon Road = Sta. 1444+53.71, ¢, Proposed I R 270.
¢, Proposed McCutcheon Road.
Existing McCutcheon Road.
¢, Proposed I R 270.
Amesbury Drive
1442
1445
1447
14 Gray shale fragments and soil.
Refusal
TS = 0.5'
15' Lt.
40' Rt.
22 Loamy
Proposed grade I R 270
Top of Rock.
Shale, dark-gray, firm, carbonaceous, fissile, very badly broken in top 12.0', jointed. Core loss 2%.
Proposed McCutcheon Road.
1453 1454 1455 1456 1457 1458 1459 1460 1461 1462
18 19 20 21 22 23 24 25 26 27 28 29 30

SOIL PROFILE

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FRANKLIN COUNTY
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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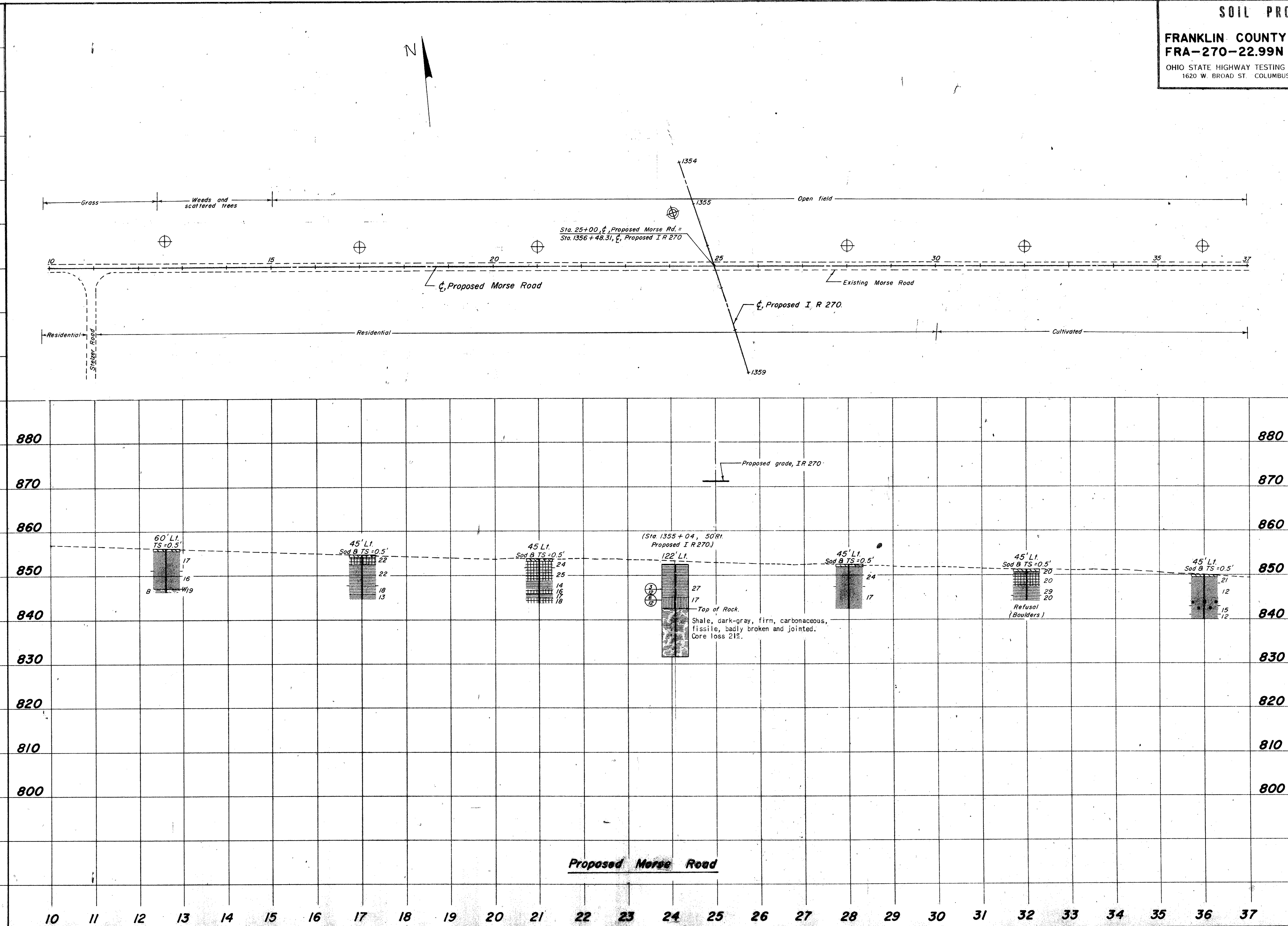


GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF WIDENING AND RESURFACING MORSE ROAD, BEGINNING AT SUNBURY ROAD, EXTENDING EASTWARD AND TERMINATING 0.68 MILE EAST OF SUNBURY ROAD, IMMEDIATELY WEST OF THE IR-270 INTERCHANGE.

GEOLOGY OF THE PROJECT

THE PROJECT IS LOCATED ON A GENTLY ROLLING PORTION OF THE GLACIATED MISSISSIPPI VALLEY PLAIN, IN AN AREA WHERE THIN GLACIAL DRIFT OVERLIES SHALE BEDROCK, OF DEVONIAN AGE.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER ON MARCH 6, 1968.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT WERE PREDOMINANTLY COMPRISED OF CLAY (A-7-6), WITH SOME SILT CLAYS (A-6a AND A-6b) AND OCCASIONAL SANDY GRAVELS (A-2-4 AND A-2-6), GENERALLY HAVING MOISTURE CONTENTS BELOW THE PLASTIC RANGE.

POSSIBLY SOME SHALE BEDROCK WILL BE ENCOUNTERED IN THE DITCHES BETWEEN STATIONS 72+00 AND 81+00.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS — 29 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT	A-2-4(0)	A-2-4	47	10	10	15	18	33	8	16	2
GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY	A-2-6(1)	A-2-6	59	3	5	12	21	40	15	14	2
SILT AND CLAY	A-6(5)	A-6a	30	5	8	25	32	34	11	15	7
SILTY CLAY	A-6(7)	A-6b	23	6	13	27	31	36	17	18	2
CLAY	A-7-6(14)	A-7-6	8	4	7	28	53	48	21	24	13
WEATHERED SHALE	VISUAL CLASSIFICATION										3

BERM MATERIAL.

AUGER BORING-PLAN VIEW.

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.

W FREE WATER.

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT.E.G. *15*

SUMMARY OF SOIL TEST DATA

✱ DENOTES SAMPLE TAKEN AT OR NEAR GRADE

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
72+00	20'Lt	0.0-3.0	37	7	9	22	25	35	16	17	A-6b *
		3.0-6.0	8	4	9	30	49	44	19	23	A-7-6
		6.0-8.5	(61	9	6	10	14	38	11	16)	
			GRAY WEATHERED SHALE								VISUAL
75+00	34'Lt	0.0-4.0	0	1	1	20	78	60	31	26	A-7-6
		4.0-8.0	39	10	5	18	28	36	11	14	A-6a
77+80	CL	0.8-5.0	2	3	5	26	64	48	23	22	A-7-6*
		5.0-8.0	35	5	4	20	36	40	12	17	A-6a
		8.0-9.5	48	8	9	16	19	31	9	9	A-2-4
81+50	CL	1.0-5.0	9	6	16	32	37	37	17	19	A-6b *
		5.0-8.0	9	5	13	31	42	31	11	17	A-6a
		8.0-10.8	61	0	5	14	20	41	17	12	A-2-7
86+00	12'Lt	1.0-5.0	16	5	14	31	34	28	11	16	A-6a *
		5.0-8.0	4	3	5	29	59	44	18	22	A-7-6
		8.0-10.0	54	1	5	18	22	39	12	13	A-6a
		10.0-11.0	46	1	3	25	25	34	11	11	A-6a

STATION	OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
90+00	12'Lt	1.0-4.0	3	7	9	32	49	46	17	27	A-7-6*
		4.0-9.0	4	1	3	17	75	62	33	23	A-7-6
		9.0-10.0	57	5	5	11	22	38	13	16	A-2-6
94+00	12'Lt	1.0-5.0	4	3	9	31	53	43	21	22	A-7-6*
		5.0-7.0	30	8	9	26	27	43	14	26	A-7-6
		7.0-10.5	46	11	11	15	17	34	7	22	A-2-4
98+50	12'Lt	1.0-5.0	5	2	8	30	55	49	22	24	A-7-6*
		5.0-8.5	11	5	15	33	36	27	11	16	A-6a
102+00	12'Lt	1.0-5.0	5	2	6	29	58	56	29	28	A-7-6*
		5.0-8.5	23	9	12	27	29	43	15	22	A-7-6
		8.5-11.0	(69	15	5	5	6	32	9	14)	
			GRAY WEATHERED SHALE								VISUAL
106+25	12'Lt	0.8-3.0	3	0	10	36	51	41	16	22	A-7-6*
		3.0-7.0	9	5	11	26	49	44	19	25	A-7-6
		7.0-11.0	(44	8	10	18	20	41	13	20)	
			BROWN WEATHERED SHALE								VISUAL

SOIL PROFILE
FRANKLIN COUNTY
FRA-270-22.99 N
MORSE ROAD

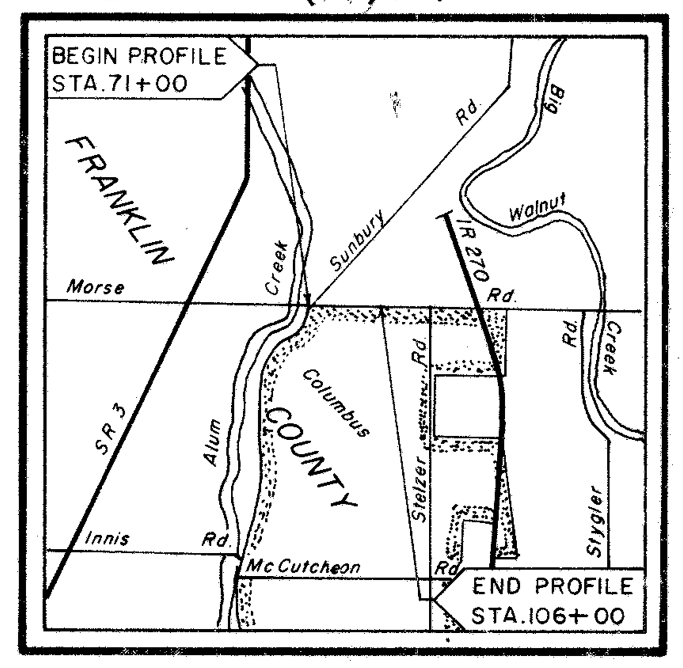
9/16

1/2

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.

I-270-5(17)114



LOCATION MAP

Recon – J.S.M. – 3/7/68

Drilling – Auger – L.M.D. – 3/6/68

Drafting – K.J.S. – 4/16/68


SOIL PROFILE
FRANKLIN COUNTY
FRA-270-22.99 N
MORSE ROAD
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO 43223
10/16
2/2
Sunbury Rd.
Residential
Woods
℄ Proposed Morse Rd.
Existing Morse Rd.
Line "A"
Match
N
20' Lt.
34' Lt.
12' Lt.
Refusal
Refusal (Boulders)
W
870
860
850
840
830
820
810
800
790
780
71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97
98 99 100 101 102 103
103 104 105 106 107

FRANKLIN COUNTY
FRA-270-22.99N

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED ON THE GLACIATED MISSISSIPPI VALLEY PLAIN, ON THE UPLAND PORTION ADJACENT TO ALUM CREEK AND BIG WALNUT CREEK, IN AN AREA WHERE SHALLOW GLACIAL DRIFT OVERLIES SHALE BEDROCK, OF DEVONIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF THREE DRIVE SAMPLE-CORE BORINGS, MADE ON DECEMBER 13 AND 14, 1966, AND TEN DRIVE ROD PENETRATION TESTS, MADE BETWEEN JANUARY 4 AND 9, 1967.

INVESTIGATIONAL FINDINGS
THE BORINGS DISCLOSED THAT RELATIVELY FLAT-LYING BEDROCK SURFACE, ENCOUNTERED AT 10 AND 11-FOOT DEPTHS, ELEVATIONS 843 AND 841 FEET, IS OVERLAIN BY DENSE SANDY SILTS AND SILTY SANDS. THE BORINGS WERE TERMINATED AT 21 AND 22-FOOT DEPTHS, ELEVATIONS 832 AND 831 FEET, AFTER PENETRATING 10 AND 11 FEET BELOW BEDROCK SURFACE.

THE ROD SOUNDINGS ENCOUNTERED GENERALLY RAPID INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED UPON ENCOUNTER WITH RATHER ABRUPT REFUSAL AND NEAR-REFUSAL TO PENETRATION, AT 11 TO 13-FOOT DEPTHS, ELEVATIONS 840 TO 838 FEET, CONSIDERED TO BE SLIGHTLY BELOW BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

NO FREE WATER WAS ENCOUNTERED IN ANY OF THE ROD SOUNDING HOLES.

IF IT IS THE INTENTION TO FOUND 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. IT IS FURTHER SUGGESTED THAT THE AREA OF THE FOOTING CONTACT NOT BE SUBJECTED TO PROLONGED ATMOSPHERIC EXPOSURE, AND THAT THE EXCAVATIONS BE KEPT DRAINED AT ALL TIMES, DUE PARTICULARLY TO THE FACT THAT WHILE THIS SHALE BEDROCK IS GENERALLY FIRM IN PLACE, IT IS SUSCEPTIBLE TO DISINTEGRATION UPON EXPOSURE TO THE ATMOSPHERE AND WATER.

UNCONFINED COMPRESSION TESTS ON SIMILAR SHALE BEDROCK INDICATES A CRUSHING STRENGTH ON THE ORDER OF 100 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

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

8"	3"	2.0mm	0.42mm	0.074mm	0.005mm	
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
		No. 10 sieve	No. 40 sieve	No. 200 sieve		

LOG OF BORING

Date Started 12-13-66 Sampler Type SS Dia. 1 3/8" Water Elev.
Date Completed 12-13-66 Casing: Length Dia.
Boring No. B-1 Station & Offset 1355+04, 50' Rt. (Rear Abutment) Surface Elev. 852.5'

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.
852.5	0														
847.5	6	3/12			Brown and Gray Sandy Clay	1	0	7	16	30	47	37	18	27	A-6b
845.0	8	6/12			Brown and Gray Sandy Silt	2	0	15	15	29	41	31	10	17	A-4a
842.5	10				TOP OF ROCK										
	14		2.9	2.1	Shale, dark-gray, firm, carbonaceous, fissile, badly broken and jointed. Core Loss 21%.										
831.5	20		5.0	0.0	BOTTOM OF BORING										

LOG OF BORING

Date Started 12-14-66 Sampler Type SS Dia. 1 3/8" Water Elev.
Date Completed 12-14-66 Casing: Length Dia.
Boring No. B-8 Station & Offset 1355+96, 75' Lt. (Rear Pier) Surface Elev. 852.0'

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.
852.0	0														
847.0	6	8/9			Brown Clayey Silt with Shale Fragments	1	-	-	-	-	-	28	9	18	-
844.5	8	13/22			Brownish-Gray Gravelly Sandy Silt	2	19	7	32	24	18	NP	NP	17	A-4a
842.0	10														
841.0		12/19			Gray Shale Fragments with Silty Sand	3	57	17	9	8	9	24	6	11	
	12				TOP OF ROCK										
	14		4.5	0.5	Shale, dark-gray, firm, carbonaceous, fissile, badly broken and jointed. Core Loss 7%.										
831.0	20		4.8	0.2	BOTTOM OF BORING										

LOG OF BORING

Date Started 12-14-66 Sampler Type SS Dia. 1 3/8" Water Elev.
Date Completed 12-14-66 Casing: Length Dia.
Boring No. B-17 Station & Offset 1356+95, 84' RT. (Forward Abutment) Surface Elev. 852.5'

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.
852.5	0														
847.5	6	10/12			Brown Sandy Silt	1	0	11	18	30	41	28	10	18	A-4a
845.0	8	11/14			Brown and Gray Gravelly Sandy Silt	2	26	18	15	17	24	26	6	17	A-4a
842.5	10														
841.5		25/30			Gray Silty Sand and Shale and Stone Fragments	3	37	20	14	14	15	24	6	8	A-2-4
	12		2.9	0.1	TOP OF ROCK										
	16				Shale, dark-gray, carbonaceous, fissile, firm, very badly broken and jointed. Core Loss 6%.										
	18		7.5	0.5											
830.5	22				BOTTOM OF BORING										

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. FRA-270-2356 N
OVER MORSE ROAD
SEC. FRA-270-22.99N

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	1/18/67

TE - 119
1000 - 4 - 66

FRA - 270 - 22.99 N

12/16

2/3

SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. FRA - 270 - 2356 N
OVER MORSE ROAD
SEC. FRA - 270 - 22.99 N

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.D.	L.N.L.	R.D.R.	1/18/67

13/16

FRA-270-22.99N (3/3)

Test Location No. ______
Station & Offset ______
Surface Elev. ______ 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. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition ______

Test Location No. 1
Station & Offset 1355+04, 76' RT.
REAR ABUTMENT
Surface Elev. 851.9' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. 3
Station & Offset 1355+36, 25' LT.
REAR ABUTMENT
Surface Elev. 851.1' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. 6
Station & Offset 1355+63, 26' RT.
REAR PIER
Surface Elev. 851.1' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. 8
Station & Offset 1355+06, 74' LT.
REAR PIER
Surface Elev. 850.6' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. 9
Station & Offset 1355+91, 75' RT.
CENTER PIER
Surface Elev. 851.8' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. ______
Station & Offset ______
Surface Elev. ______ 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. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition ______

Test Location No. 11
Station & Offset 1356+26, 26' LT.
CENTER PIER
Surface Elev. 851.3' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. 14
Station & Offset 1356+67, 26' RT.
FORWARD PIER
Surface Elev. 850.7' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition ______

Test Location No. 16
Station & Offset 1356+98, 75' LT.
FORWARD PIER
Surface Elev. 849.9' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

Test Location No. 17
Station & Offset 1356+95, 76' RT.
FORWARD ABUTMENT
Surface Elev. 851.0' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition ______

Test Location No. 19
Station & Offset 1357+26, 25' LT.
FORWARD ABUTMENT
Surface Elev. 849.8' Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. FRA - 270 - 2356 N
OVER MORSE ROAD
SEC. FRA - 270 - 22.99 N

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	1/18/67

TE - 118
600 - 4 - 66

MICROFILMED
FEB 14 1980

FRANKLIN COUNTY
FRA - 270 - 22.99 N

14/16

1/3

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED ON THE GLACIATED MISSISSIPPI VALLEY PLAIN, ON THE UPLAND PORTION ADJACENT TO ALUM CREEK AND BIG WALNUT CREEK, IN AN AREA WHERE SHALLOW GLACIAL DRIFT OVERLIES SHALE BEDROCK, OF DEVONIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS, MADE ON DECEMBER 16 AND 19, 1966, AND FIVE DRIVE ROD PENETRATION TESTS, MADE ON JANUARY 5 AND 6, 1967.

INVESTIGATIONAL FINDINGS

THE BORINGS DISCLOSED THAT RELATIVELY FLAT-LYING BEDROCK SURFACE, ENCOUNTERED AT 10-FOOT DEPTH, ELEVATIONS 832 AND 831 FEET, IS OVERLAIN BY DENSE SANDY CLAYEY SILT. THE BORINGS WERE TERMINATED AT 26 AND 30-FOOT DEPTHS, ELEVATIONS 815 AND 812 FEET, AFTER PENETRATING 16 AND 20 FEET BELOW BEDROCK SURFACE.

THE ROD SOUNDINGS ENCOUNTERED GENERALLY RAPID INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED UPON RATHER ABRUPT NEAR-REFUSAL TO PENETRATION AT 8 TO 11-FOOT DEPTHS, ELEVATIONS 832 TO 830 FEET, CONSIDERED TO BE SLIGHTLY BELOW BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

NO FREE WATER WAS ENCOUNTERED IN ANY OF THE ROD SOUNDING HOLES.

IF IT IS THE INTENTION TO FOUND 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. IT IS FURTHER SUGGESTED THAT THE AREA OF THE FOOTING CONTACT NOT BE SUBJECTED TO PROLONGED ATMOSPHERIC EXPOSURE, AND THAT THE EXCAVATIONS BE KEPT DRAINED AT ALL TIMES, DUE PARTICULARLY TO THE FACT THAT WHILE THIS SHALE BEDROCK IS GENERALLY FIRM IN PLACE, IT IS SUSCEPTIBLE TO DISINTEGRATION UPON EXPOSURE TO THE ATMOSPHERE AND WATER.

UNCONFINED COMPRESSION TESTS ON SIMILAR SHALE BEDROCK INDICATES A CRUSHING STRENGTH ON THE ORDER OF 100 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

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

LOG OF BORING

Date Started 12-19-66 Sampler Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 12-19-66 Casing: Length ____ Dia. ____
Boring No. B-1 Station & Offset 23+65, 15' Lt. (Rear Abutment) Surface Elev. 840.6'

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.
840.6	0														
835.6	6	4/4			Brownish-Gray Clayey Silt	1	0	4	14	28	54	36	10	26	A-4a
830.6	10				TOP OF ROCK										
	14		5.3	0.7											
	20		4.2	0.8	Shale, dark-gray, firm, carbonaceous, fissile, very badly broken in top 10.0', broken and jointed in remainder, with few clay seams. Core Loss 9%.										
	24		5.0	0.0											
814.6	26				BOTTOM OF BORING										

LOG OF BORING

Date Started 12-16-66 Sampler Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 12-19-66 Casing: Length ____ Dia. ____
Boring No. B-10 Station & Offset 26+35, 40' Rt. (Forward Abutment) Surface Elev. 842.0'

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.
842.0	0														
837.0	6	6/13			Brown Sandy Silt	1	0	8	12	37	43	31	10	18	A-4a
832.0	10				TOP OF ROCK										
	12	50* (0.1)													
	14		4.5	0.5											
	20		6.0	0.0	Shale, dark-gray, firm, carbonaceous, fissile, very badly broken in top 12.0', jointed. Core Loss 2%.										
	26		9.0	0.0											
812.0	30				BOTTOM OF BORING										

*Refusal

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. FRA - 270 - 2525 N
UNDER Mc CUTCHEON RD.
SEC. FRA - 270 - 22.99 N

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	1/18/67

SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. FRA - 270 - 2525 N
UNDER McCUTCHEON RD.
SEC. FRA - 270 - 22.99 N

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.D.	L.N.L.	R.D.R.	1/18/67

16/16

FRA-270-22.99N 3/3

Test Location No.	Station & Offset	Surface Elev.	Water Elev.	Piling	Hammer	Formula	Reference	Rod Condition
1	23+68, 14' LT REAR ABUTMENT	840.1'						GOOD
4	24+17 21' RT REAR PIER	839.3'						GOOD
5	25+00, 14' LT CENTER PIER	840.9'						GOOD
8	25+82 18' RT FORWARD PIER	840.0'						GOOD
9	26+35 13' LT FORWARD ABUTMENT	842.4'						GOOD

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. FRA-270-2525 N
UNDER McCUTCHEON RD.
SEC. FRA-270-22.99

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	1/18/67