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I-270-5(17)114

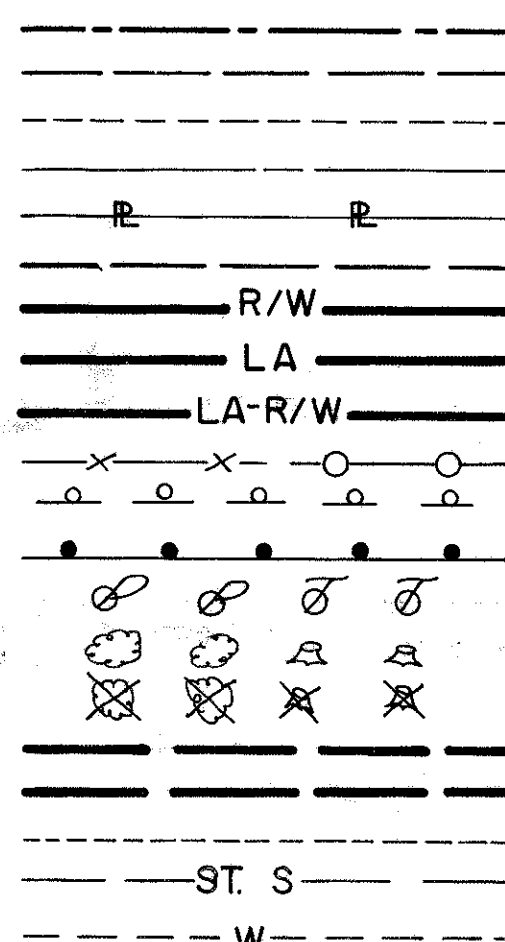
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-270-5(17)114

1
292

FRANKLIN COUNTY
FRA-270-22.99 N

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CENTER LINE
PROPERTY LINE
EXISTING RIGHT-OF-WAY
PROPOSED RIGHT-OF-WAY
PROPOSED LIMITED ACCESS
PROPOSED LIMITED ACCESS & RIGHT-OF-WAY
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
EXISTING WATER LINE



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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

LINE DATA

I-270		URBAN	RURAL
BEGIN PROJECT	1325+00.00	4,837.12 LF	
COLUMBUS CORP. LINE	1373+37.12		2,311.86 LF
COLUMBUS CORP. LINE	1396+48.98		
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

GRAND TOTAL LENGTH OF WORK 28,075.69 L.F. 5.317 MI.

NOTES:

- * INCLUDES FRANKLIN COUNTY
- * INCLUDES CITY OF COLUMBUS PARTICIPATION

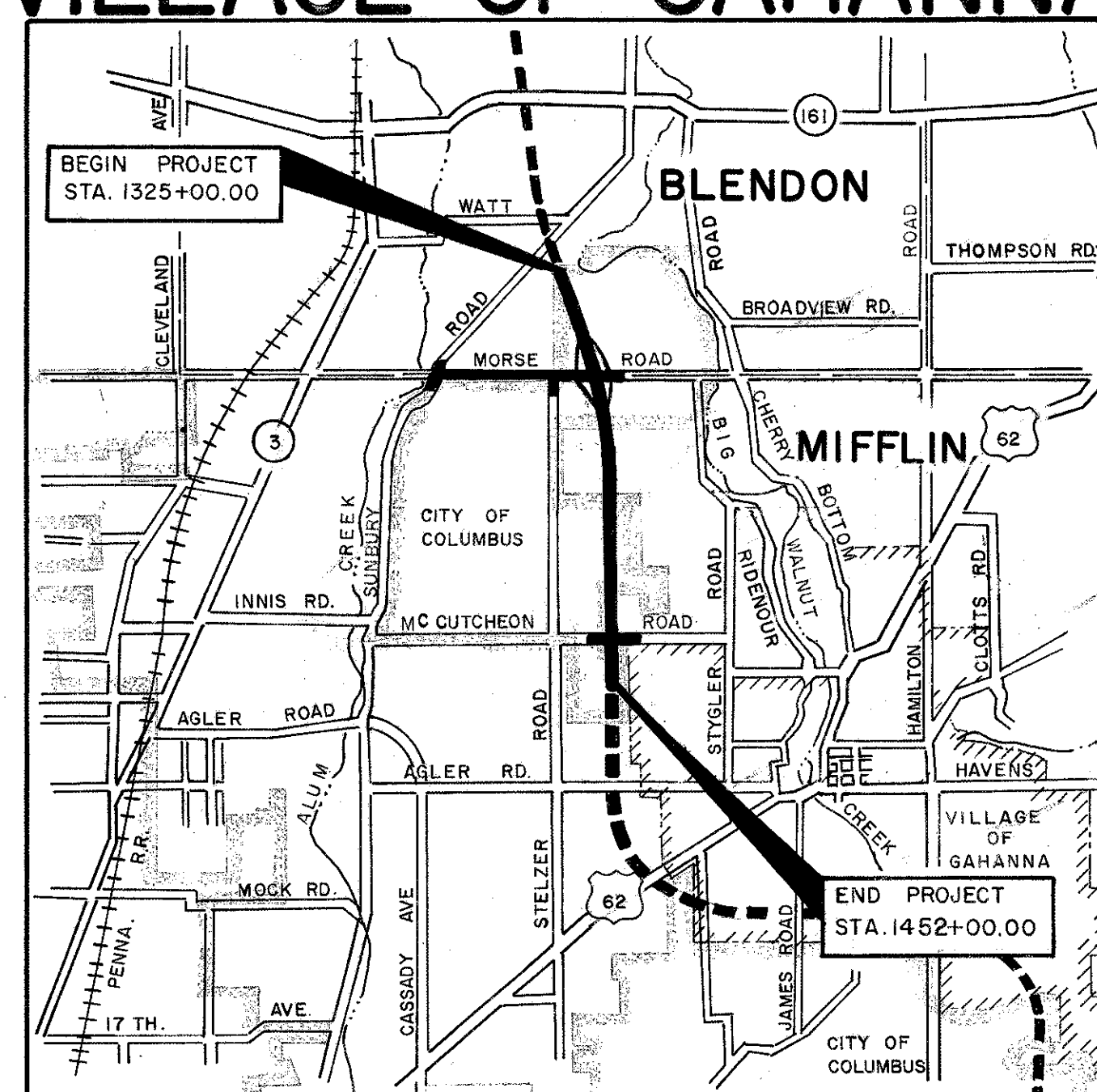
PREPARED AND RECOMMENDED BY
FRANKLIN ENGINEERING, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

STATE OF OHIO

DEPARTMENT OF HIGHWAYS

FRA - 270 - 22.99 N

FRANKLIN COUNTY CITY OF COLUMBUS BLENDON AND MIFFLIN TOWNSHIPS VILLAGE OF GAHANNA



LOCATION MAP



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

PLAN
PROFILE - HORIZONTAL
PROFILE - VERTICAL
CROSS SECTIONS

SCALES

1" = 50' 0" 50'
1" = 50' 0" 50'
1" = 5' 0" 5'
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	MC-1	10-1-68
		BP-7	1-1-66	F-3	3-10-69	HL-1	11-1-65	MC-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

DWG. NO.	DATE	DWG. NO.	DATE
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	7-1-69		

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER

DATE

Rev. 7-11-69

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
DATE: 1-20-69 DIVISION DEPUTY DIRECTOR

APPROVED
DATE: 6-23-69 ENGINEER OF BRIDGES

APPROVED
DATE: 6-23-69 ENGINEER OF LOCATION & DESIGN

APPROVED
DATE: 6-23-69 DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED
DATE: 6-27-69 DEPUTY DIRECTOR OF RIGHT-OF-WAY

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

APPROVED
DATE: 6-27-69 CHIEF ENGINEER

APPROVED
DATE: 6-27-69 DIRECTOR OF HIGHWAYS

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

APPROVED
DATE: SUPERINTENDENT, DIVISION OF WATER, CITY OF COLUMBUS.

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

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

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

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SCHEMATIC LAYOUT PLAN

INTERSTATE ROUTE 270

FRA - 270 - 22.99 N

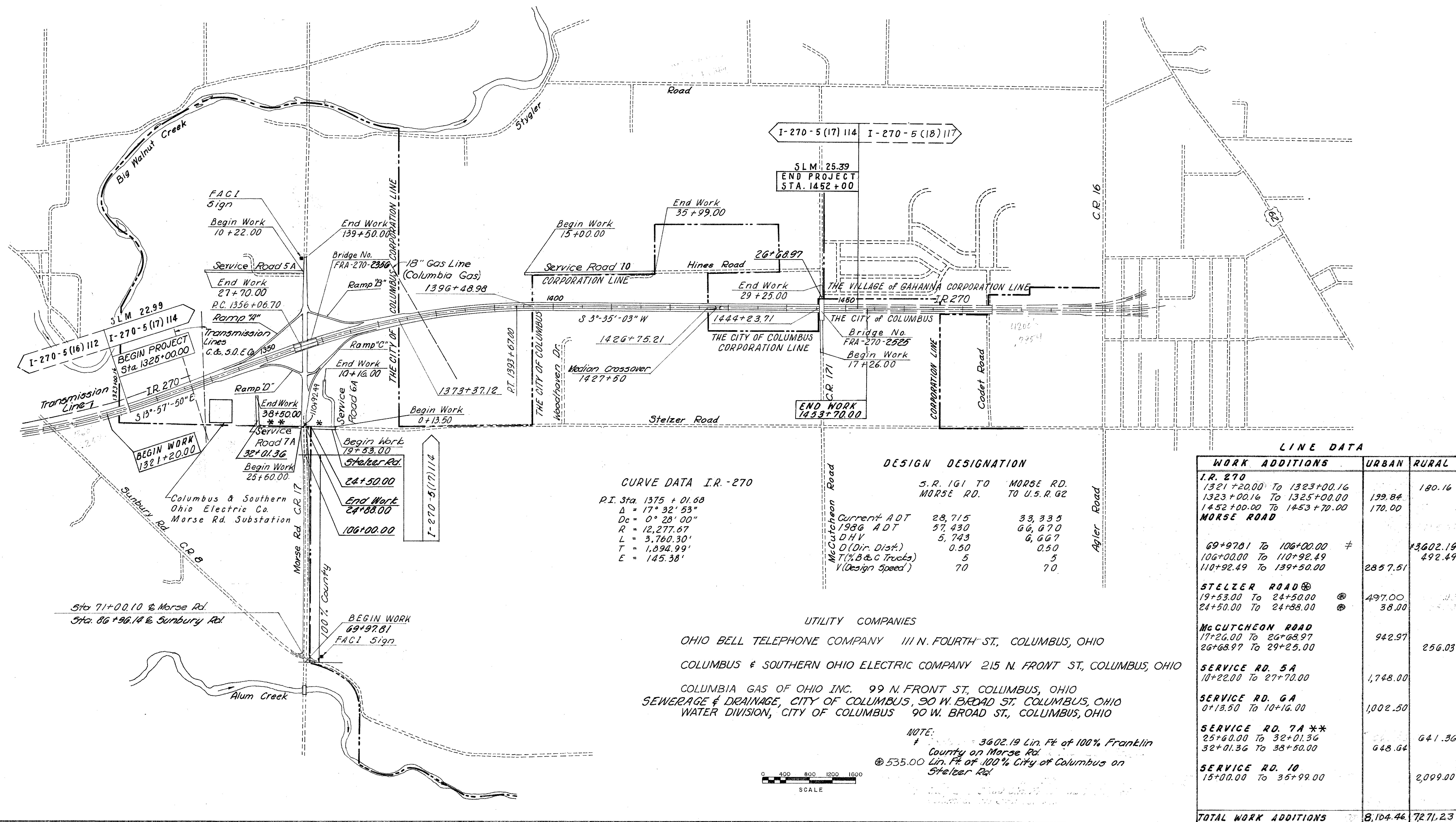
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

2
292

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 35+50.00



SCHEMATIC LAYOUT PLAN

REV. 7-1-69

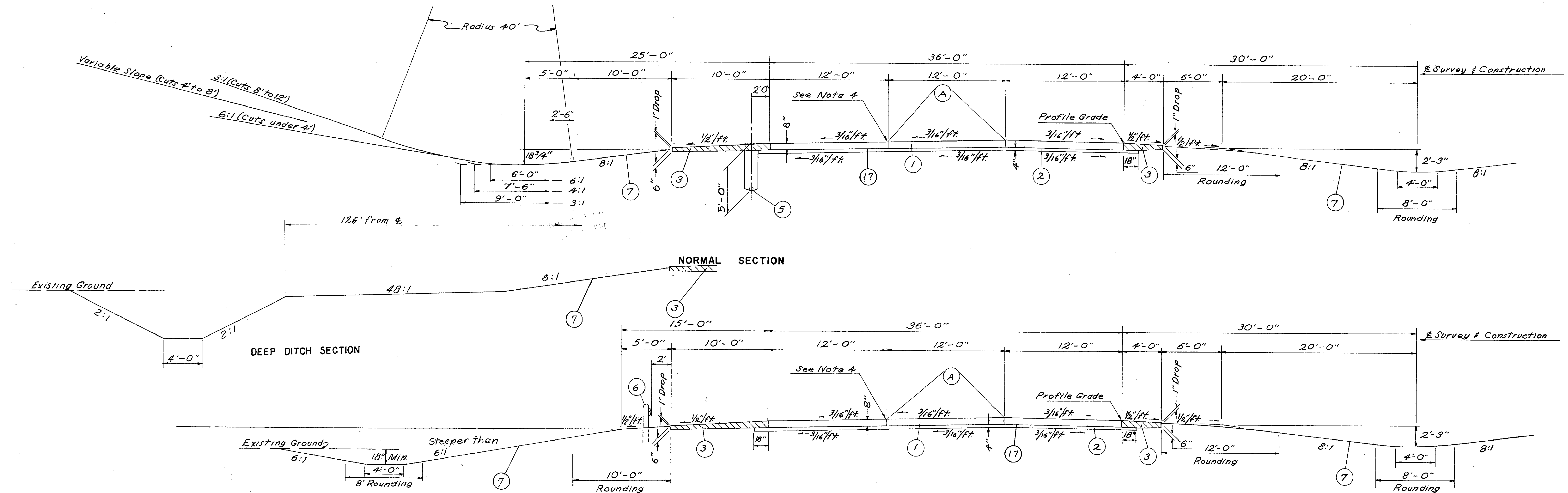
TYPICAL SECTIONS

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 applied 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 backslaps.
3. See Cross Sections for slope treatment.
4. Adjacent to Speed Change Lane, use key joint Without Tiebars For Joint 2' 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.

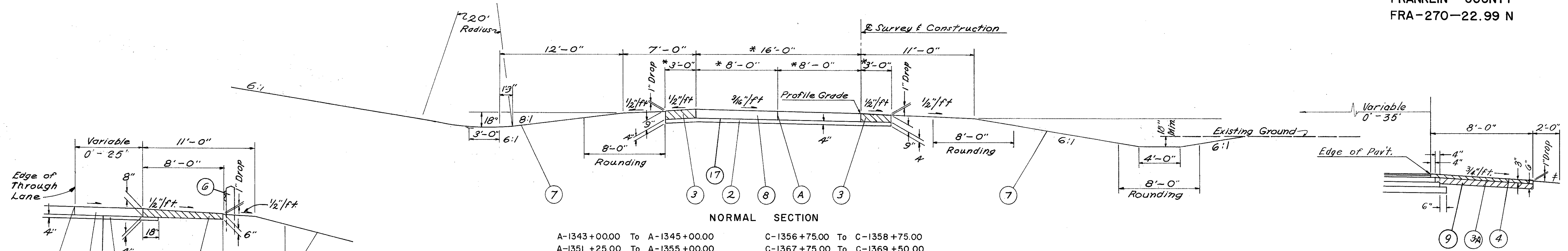
TYPICAL SECTIONS

TYPE 451

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

4
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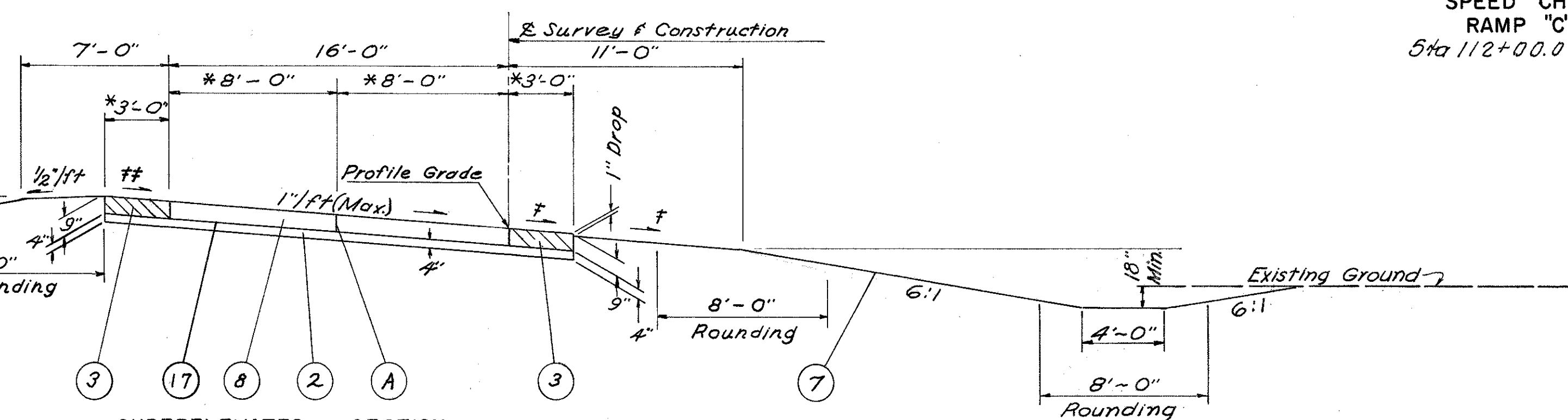
FRANKLIN COUNTY
FRA-270-22.99 N



NORMAL SECTION

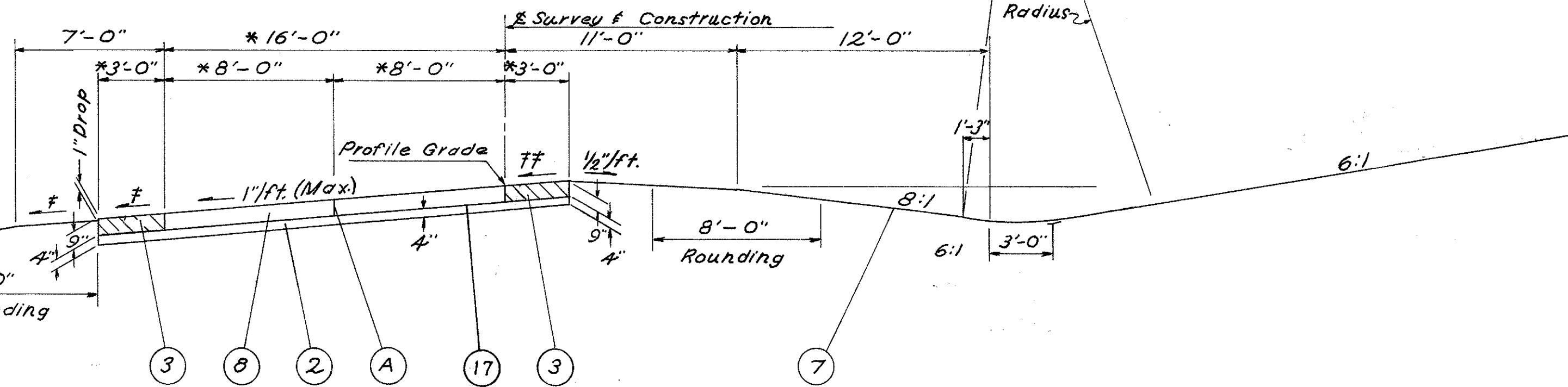
A-1343+00.00 To A-1345+00.00 C-1356+75.00 To C-1358+75.00
A-1351+25.00 To A-1355+00.00 C-1367+75.00 To C-1369+50.00
D-1352+00.00 To D-1354+50.00

SPEED CHANGE LANE SECTION
RAMP "C" AT MORSE ROAD
Sta 112+00.00 To Sta 116+25.00



SUPERELEVATED SECTION

A-1345+00.00 To A-1351+25.00 D-1346+03.10 To D-1352+00.00
B-1361+56.44 To B-1367+91.20 D-1354+50.00 To D-1355+41.00
C-1351+88.00 To C-1356+75.00 C-CONN-1353+98.21 To C-CONN-1356+75.98
C-1358+75.00 To C-1367+75.00



SUPERELEVATED SECTION

A-1355+00.00 To A-1358+97.00
B-1356+56.44 To B-1361+00.00

NOTES

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

- # 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.

RAMPS

TYPICAL SECTION

404



TYPICAL SECTION



- (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.

- # 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
 2" For Paved Median between Sta. 120+01.07 to 130+20.93 See Sheet No. 147 & 148

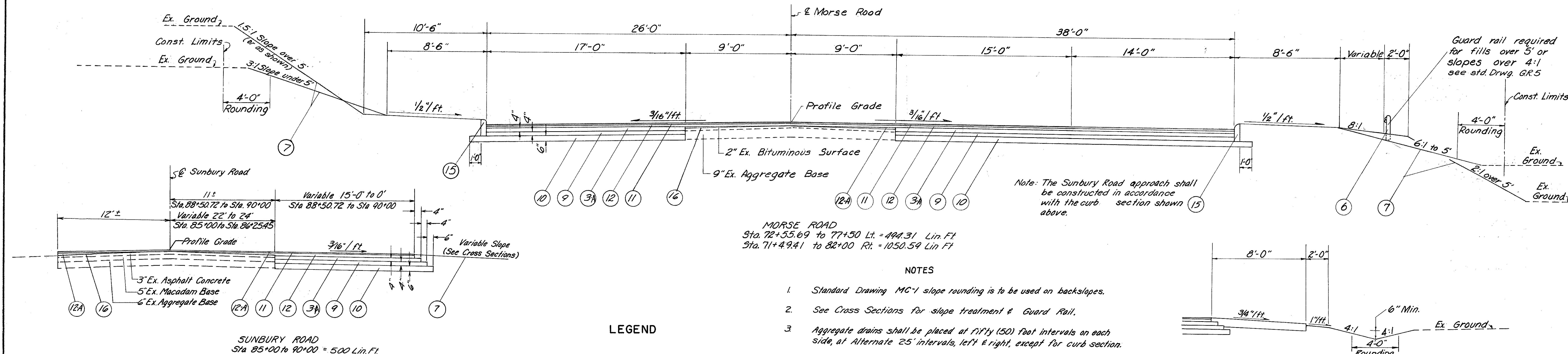
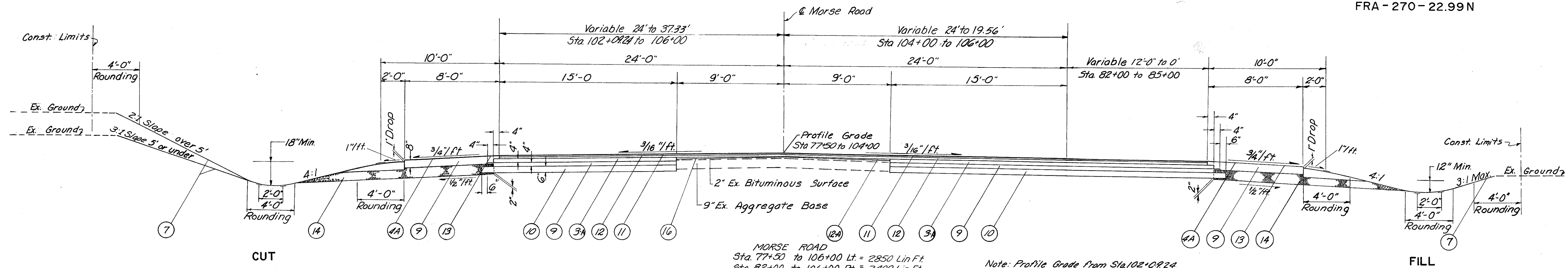
TYPICAL SECTIONS

TYPE 404

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA - 270 - 22.99 N

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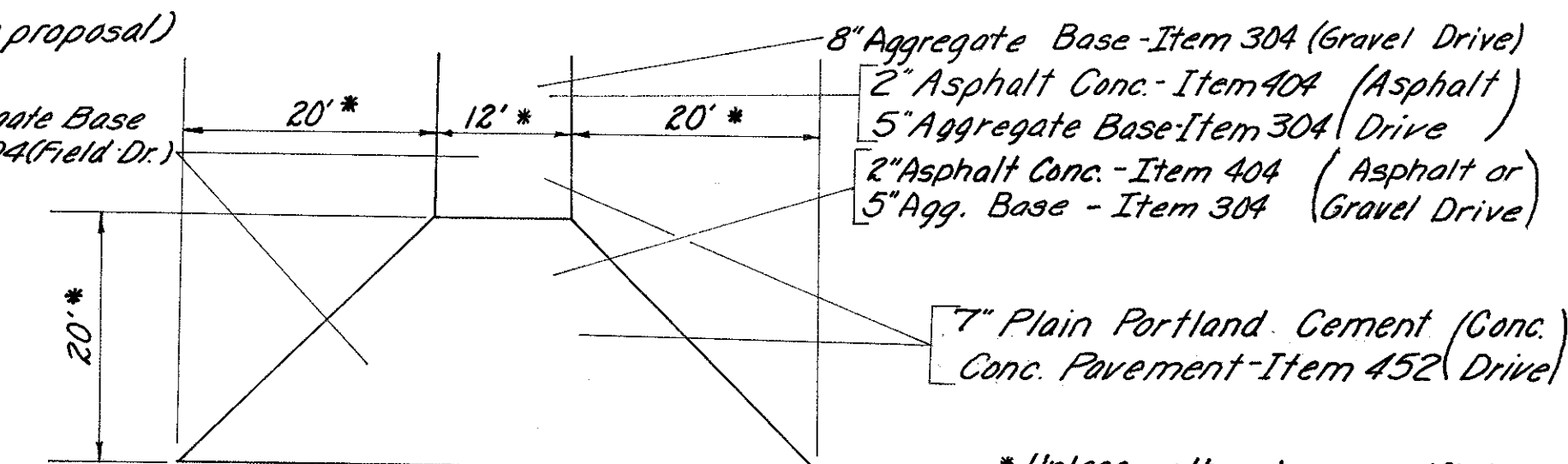
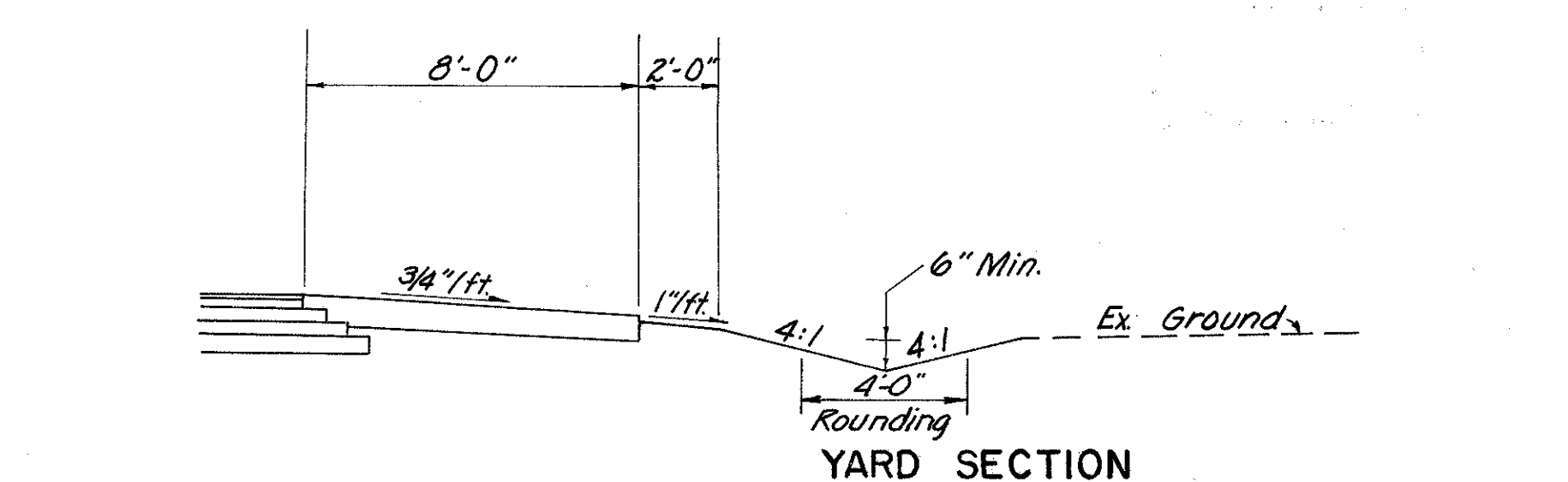
NOTES

- Standard Drawing MC-1 slope rounding is to be used on backslopes.
- See Cross Sections for slope treatment & Guard Rail.
- Aggregate drains shall be placed at fifty (50) foot intervals on each side, at Alternate 25' intervals, left & right, except for curb 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 1/4" 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.



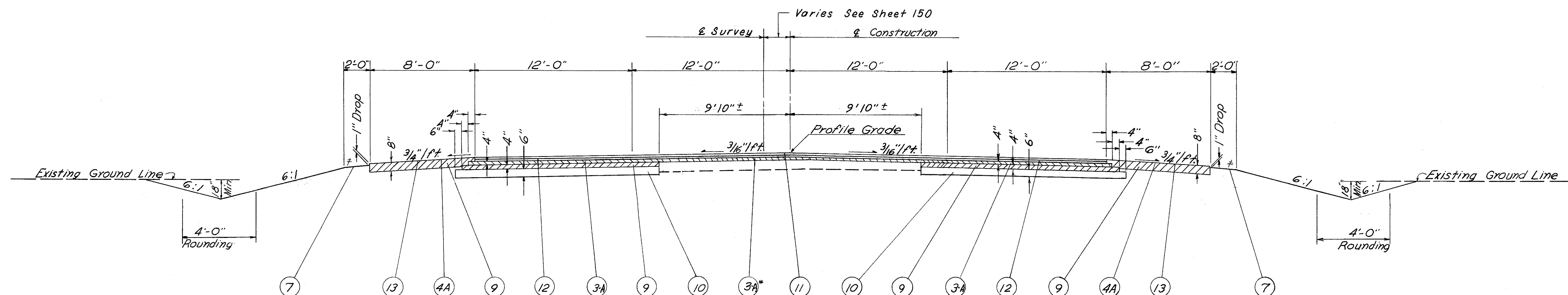
TYPICAL SECTION

TYPE 404

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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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 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.
- 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 (1 1/4" to 4 1/4")
- 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. E of Survey is E of Right of Way.

STELZER ROAD (C.R.177)
TYPICAL SECTION

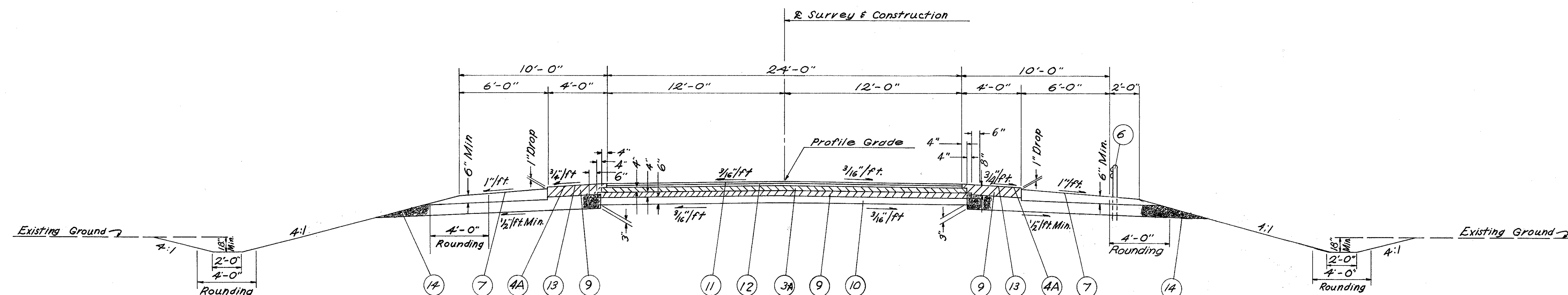
TYPICAL SECTION

TYPE 404

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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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. | 9 Item 304, Aggregate Base. |
| 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, MCB00 or MC3000. | 11 Item 404, 1 1/4" Asphalt Concrete (70-85). |
| 6 Item 606, Guard Rail, Type 5 | 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. |
| 7 Item 659, Seeding & Mulching, as per plan, See General Notes. | 14 Item 605, Aggregate Drains. |
| 10 Item 310, Subbase. | 12 Item 402 1 1/4" Asphalt Concrete. (70-85) |

NOTES

- Standard Drawing MC-1 slope rounding is to be used on backslopes.
- See Cross Sections for slope treatment & guard rail.
- 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

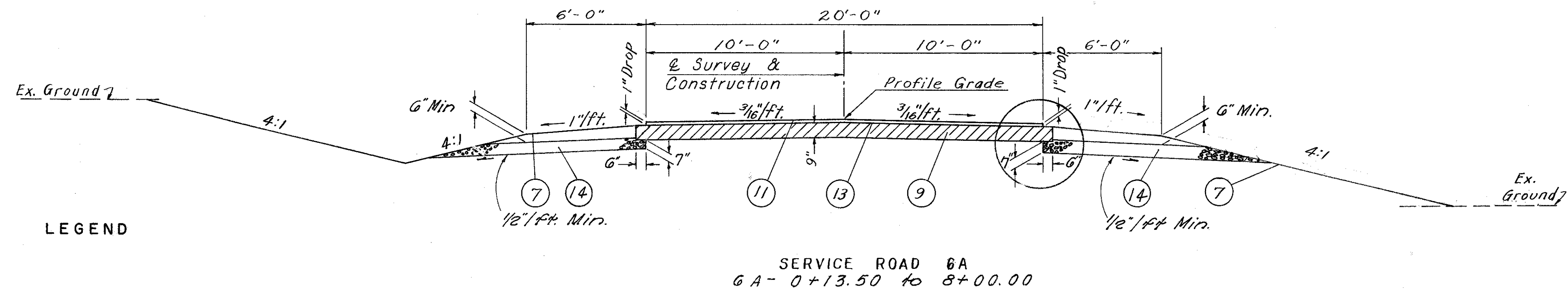
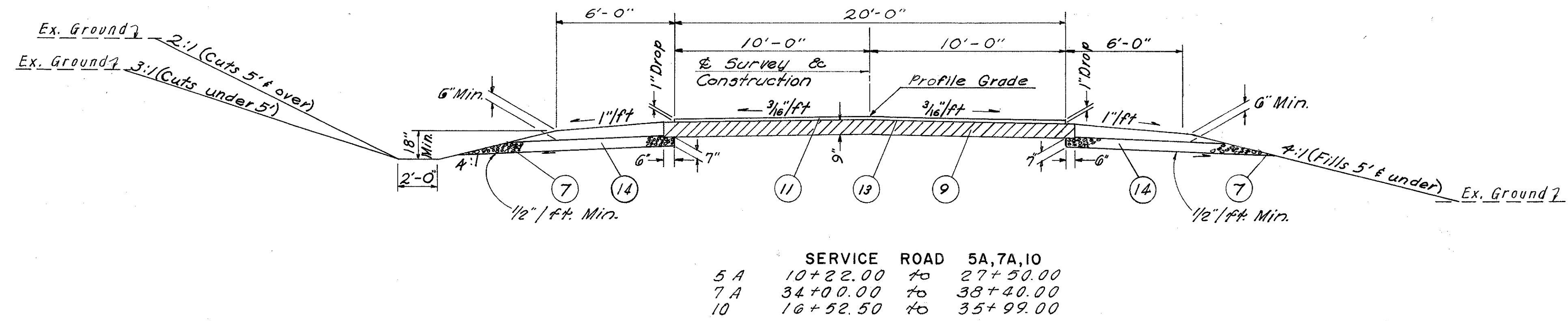
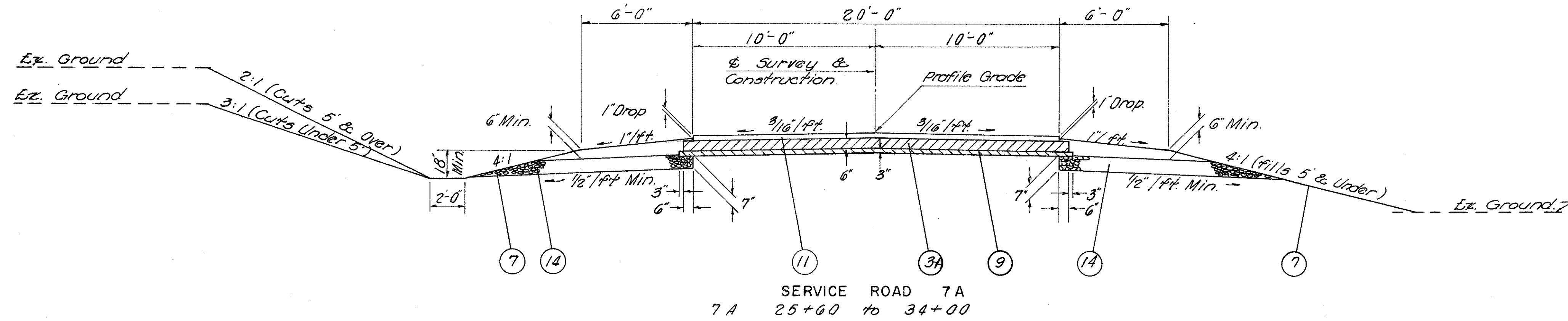
TYPICAL SECTION

TYPE 404

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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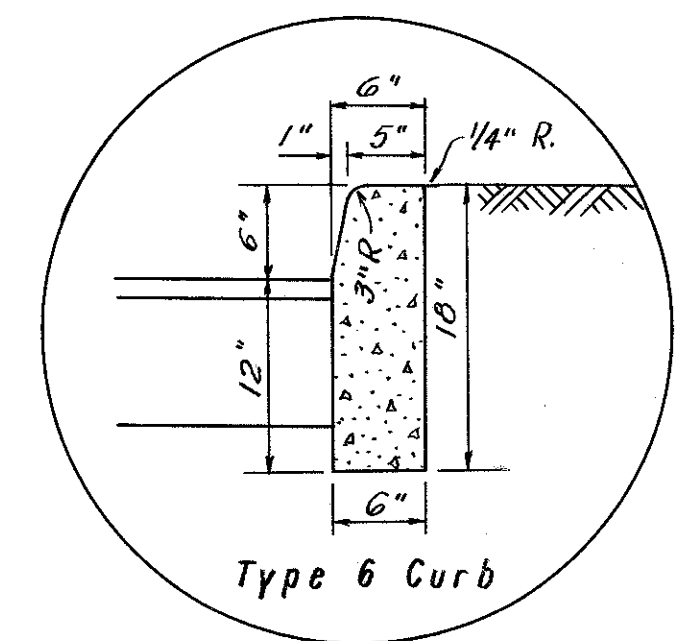
FRANKLIN COUNTY
FRA-270-22.99 N



LEGEND

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



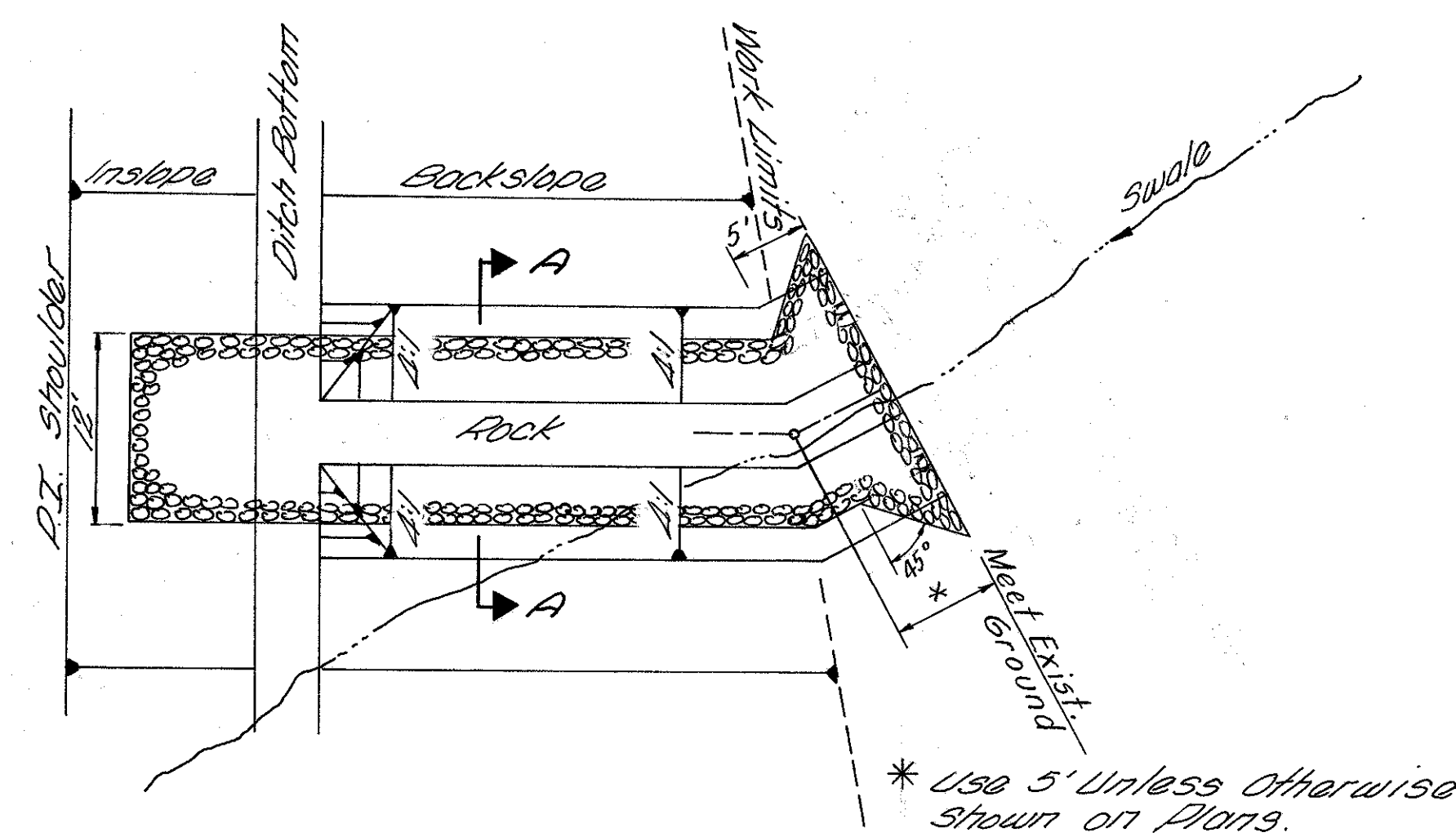
0+33 To 2+50
Service Road 6-A

SERVICE ROAD
TYPICAL SECTION

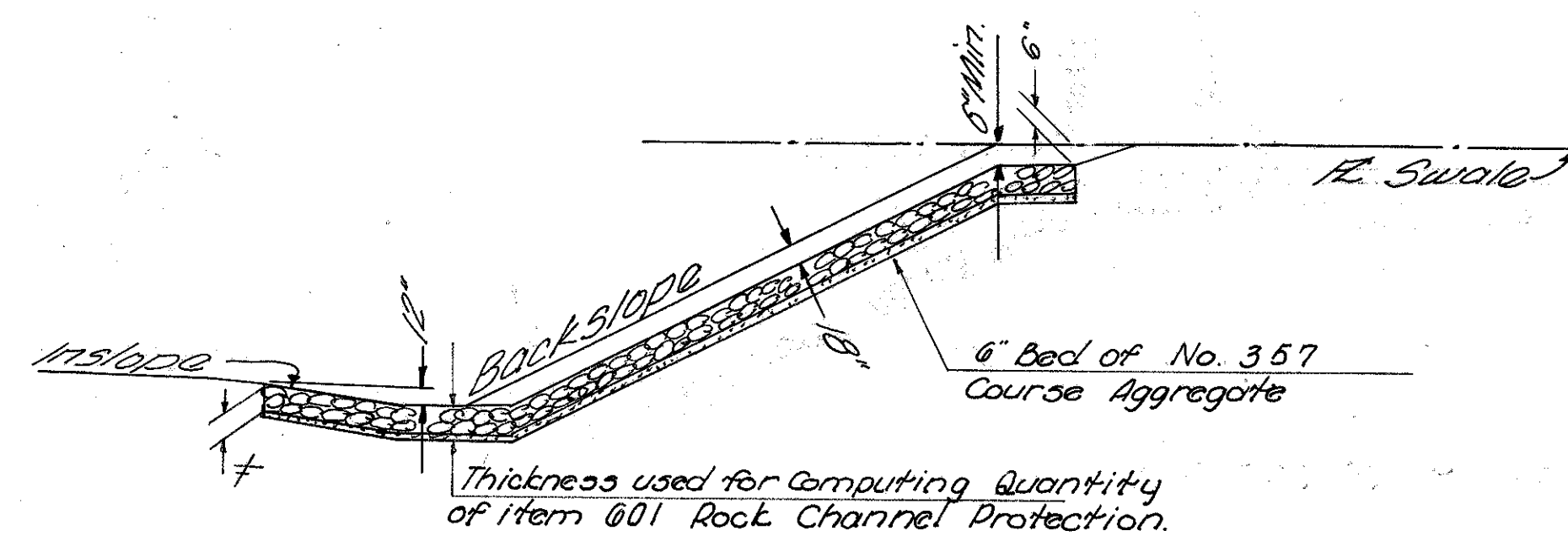
MISCELLANEOUS DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		10 292

FRANKLIN COUNTY
FRA-270-22.99 N

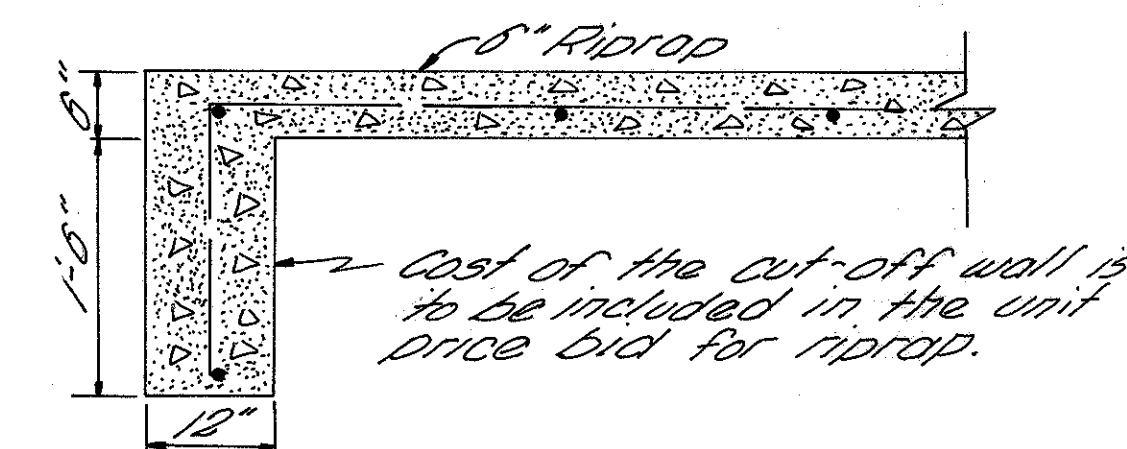


PLAN

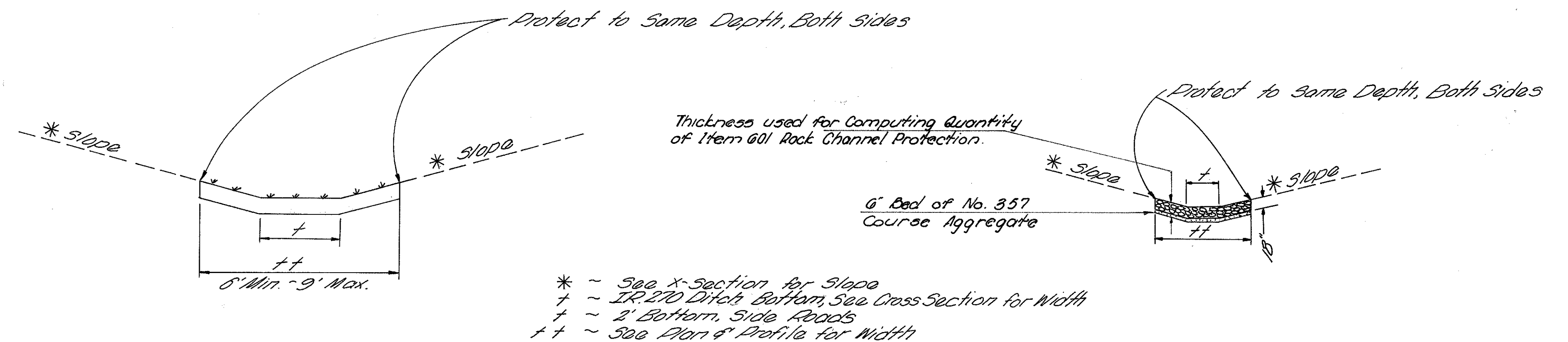


PROFILE

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

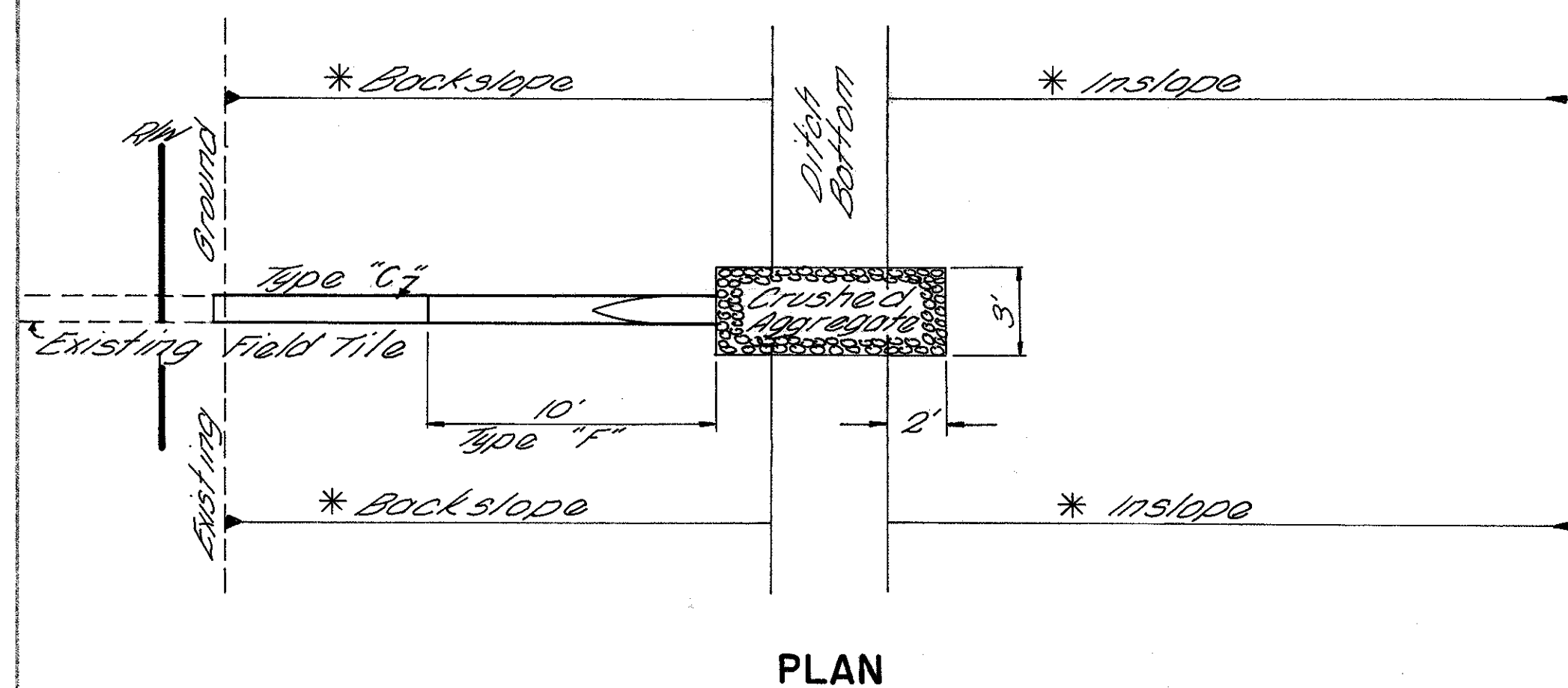


RIPRAP CUT-OFF WALL

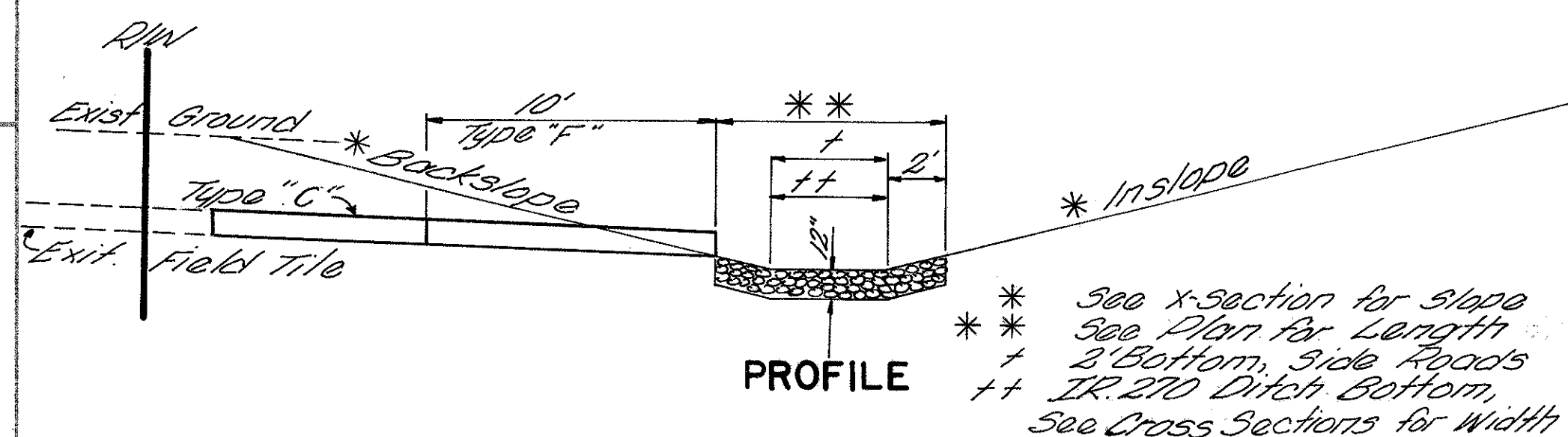


SOD DITCH PROTECTION

ROCK CHANNEL PROTECTION TYPE B
(FOR DITCHES)



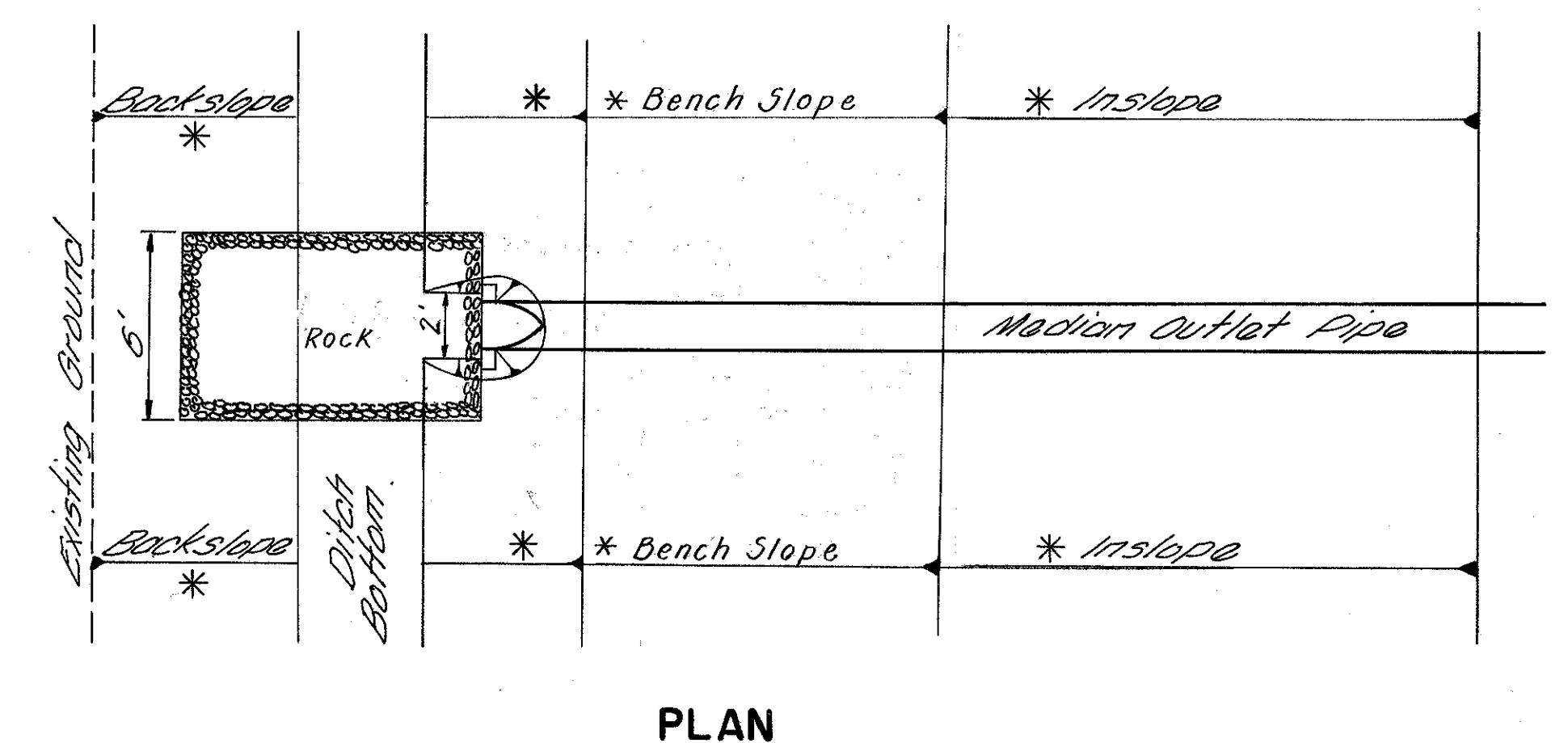
PLAN



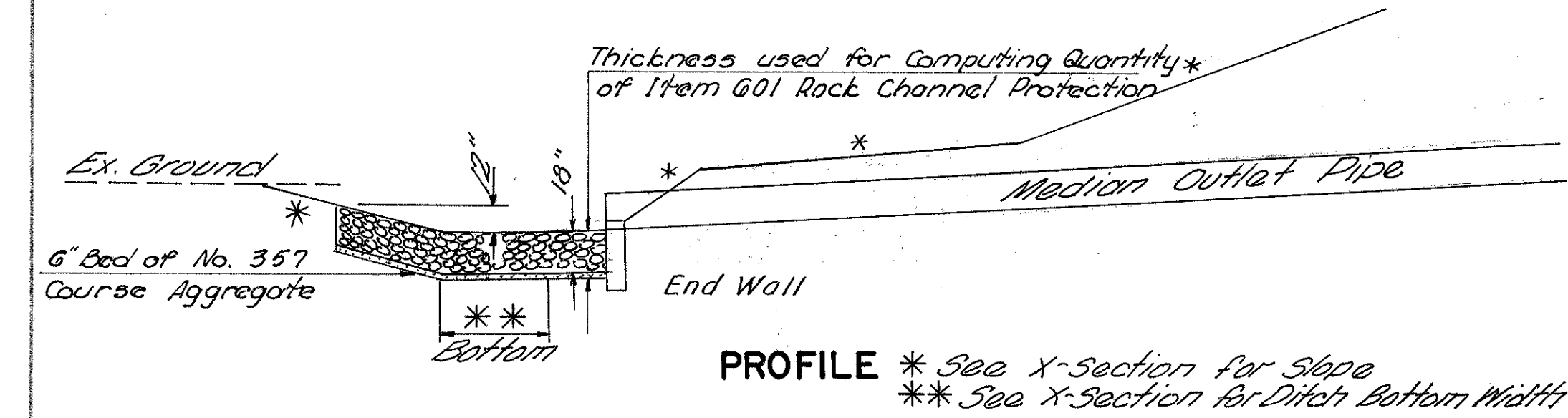
PROFILE

(CRUSHED AGGREGATE)

FIELD TILE PROTECTION
(TILE GRADES LESS THAN 10%)



PLAN



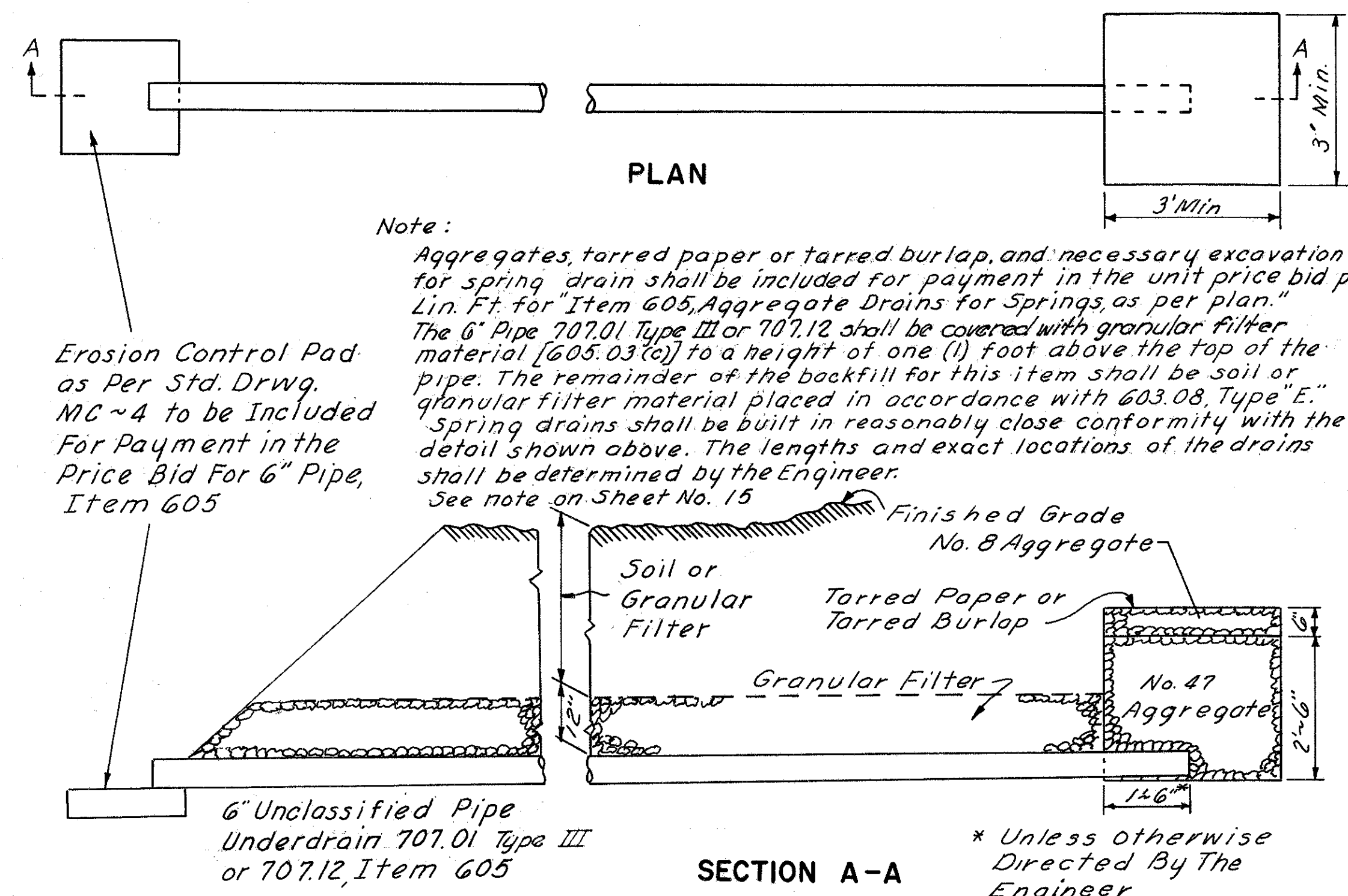
PROFILE

(ROCK CHANNEL PROTECTION TYPE B)
MEDIAN OUTLET PROTECTION

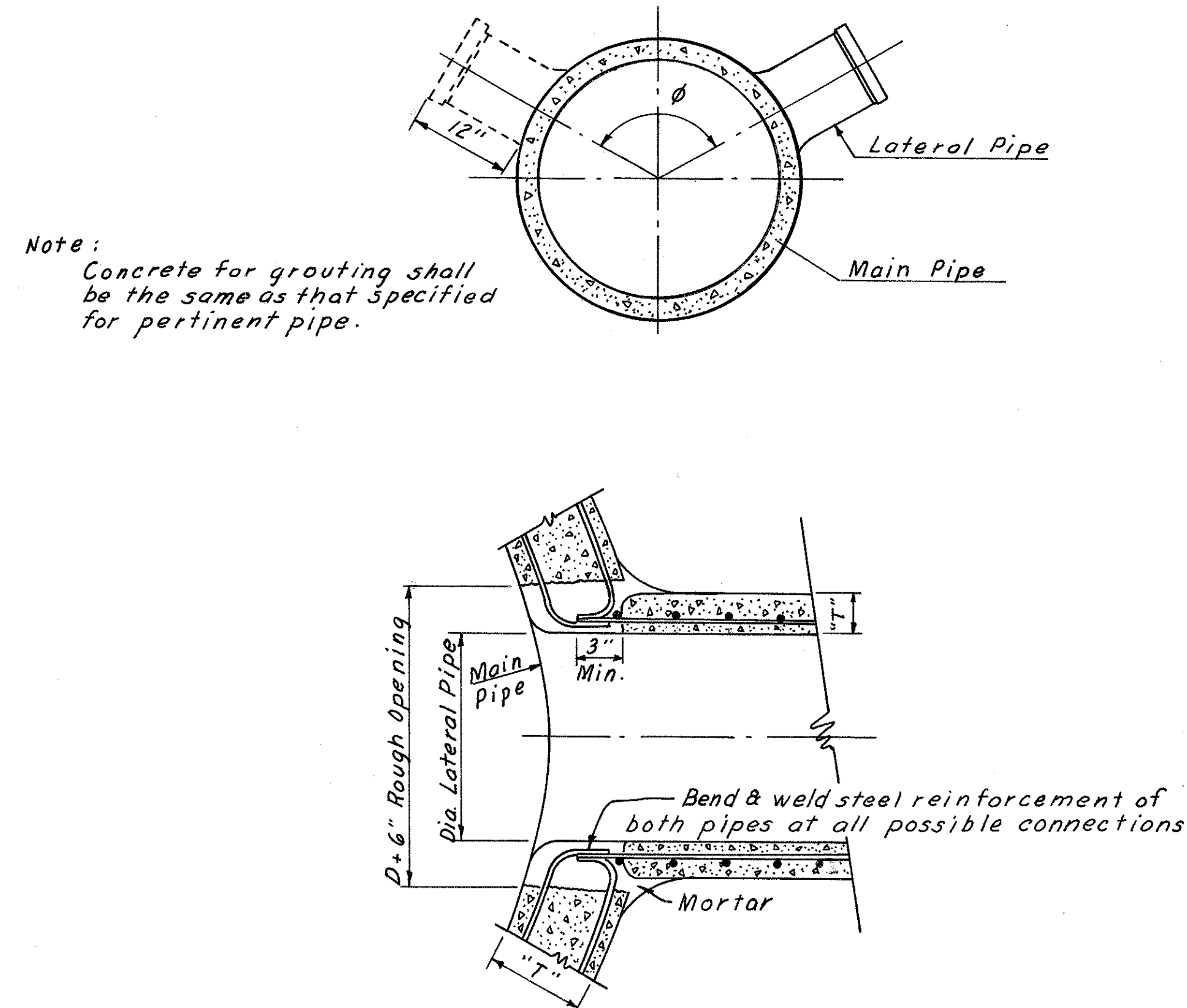
MISCELLANEOUS DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		11/292

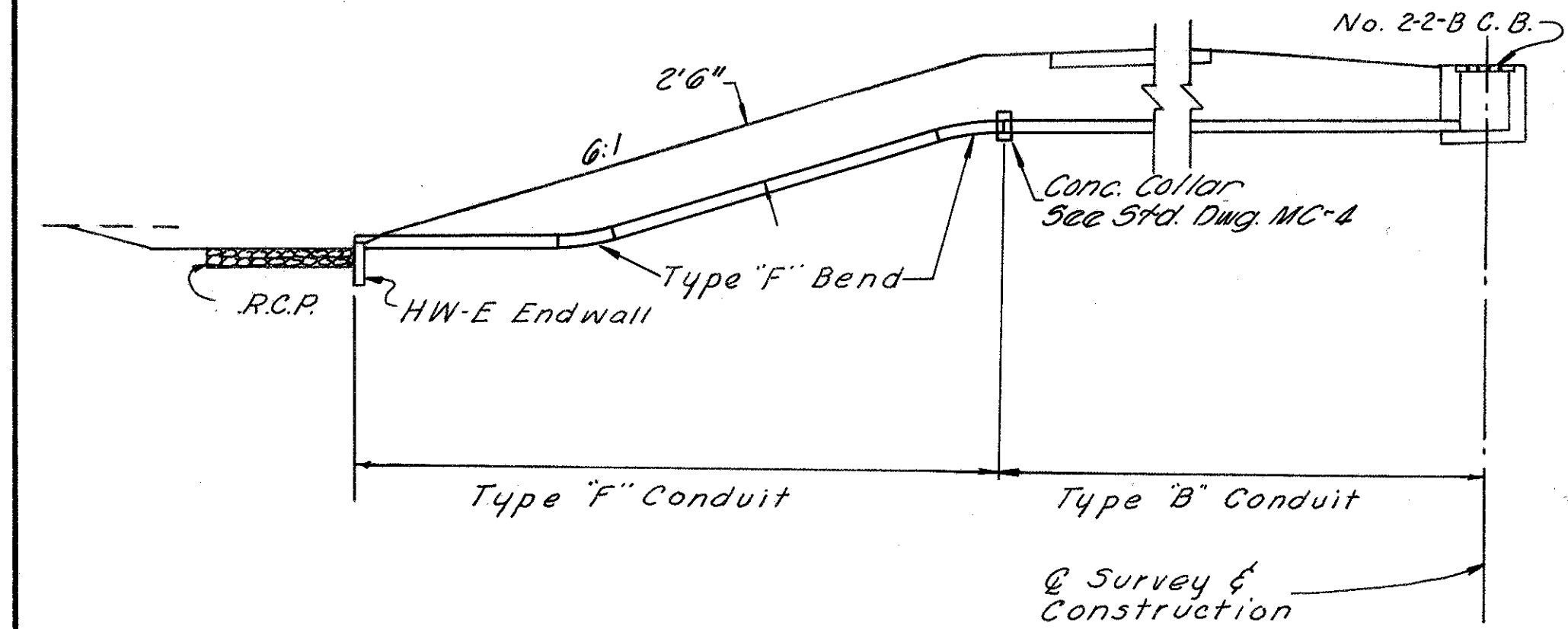
FRANKLIN COUNTY
FRA-270-22.99N



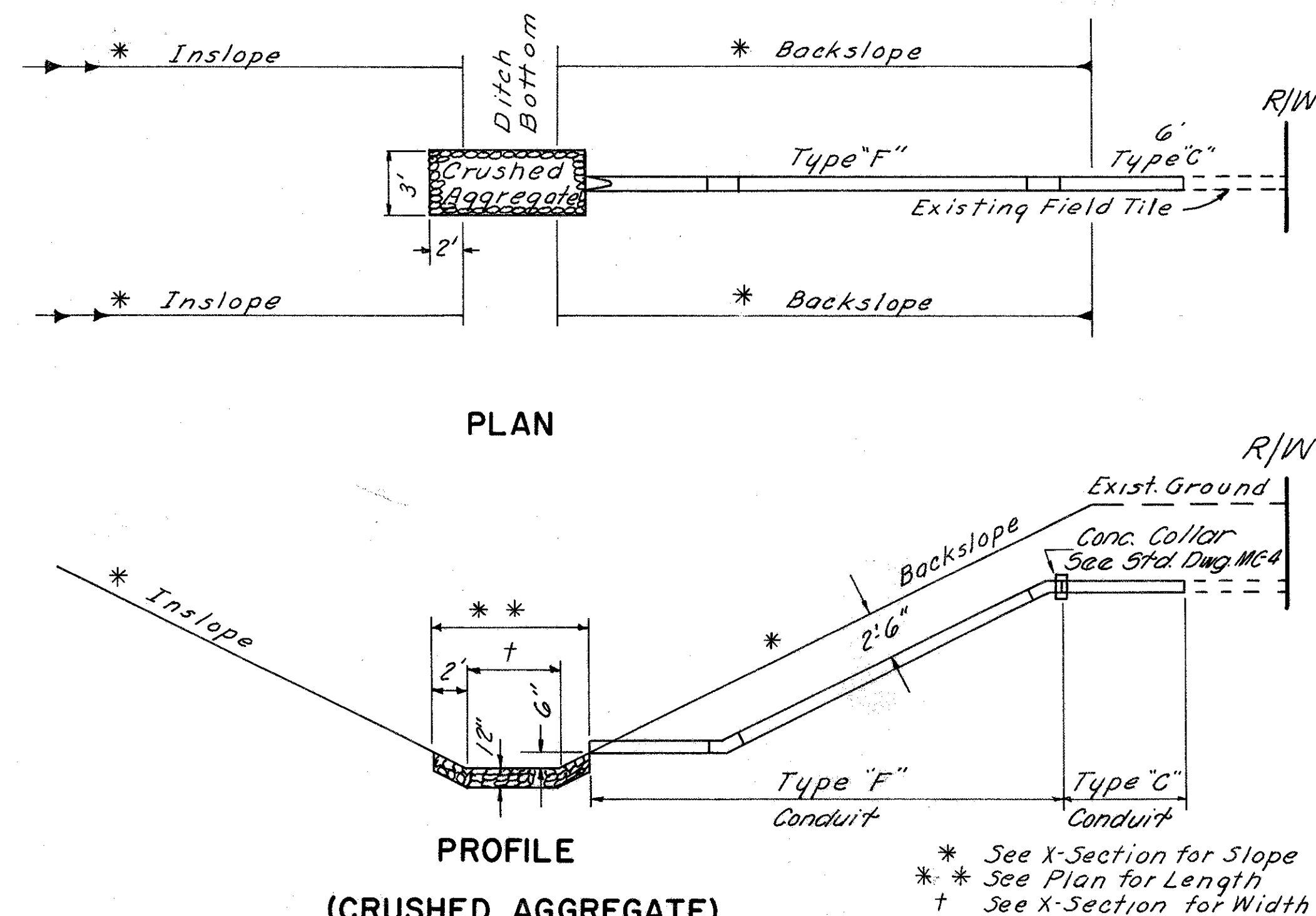
SPRING DRAIN DETAIL



PRE-FABRICATED "T" CONNECTION



MEDIAN OUTLET DETAIL IN HIGH-FILL



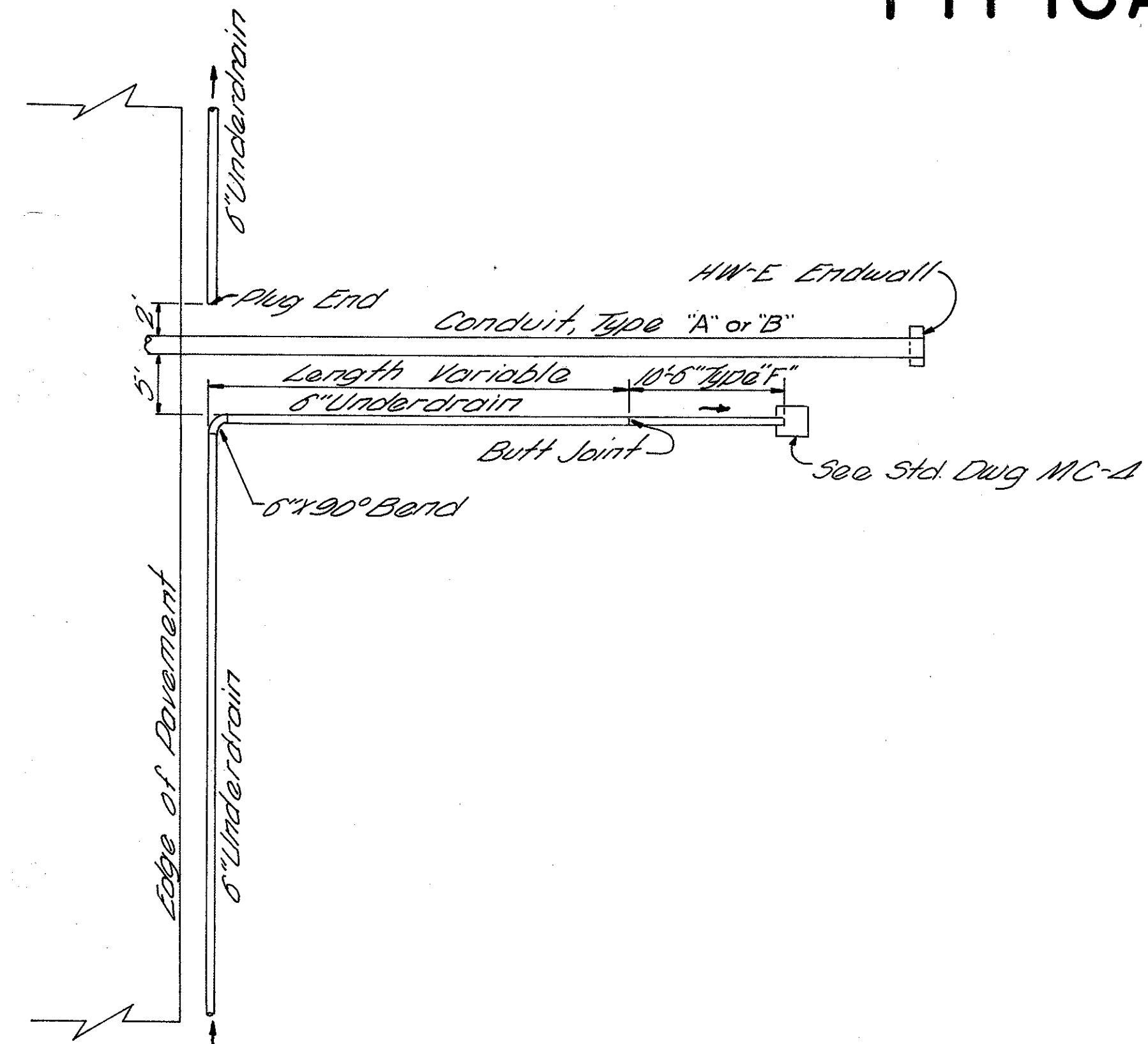
FIELD TILE OUTLET & PROTECTION
(TILE GRADES GREATER THAN 10%)

TYPICAL DETAILS OF UNDERDRAIN OUTLETS

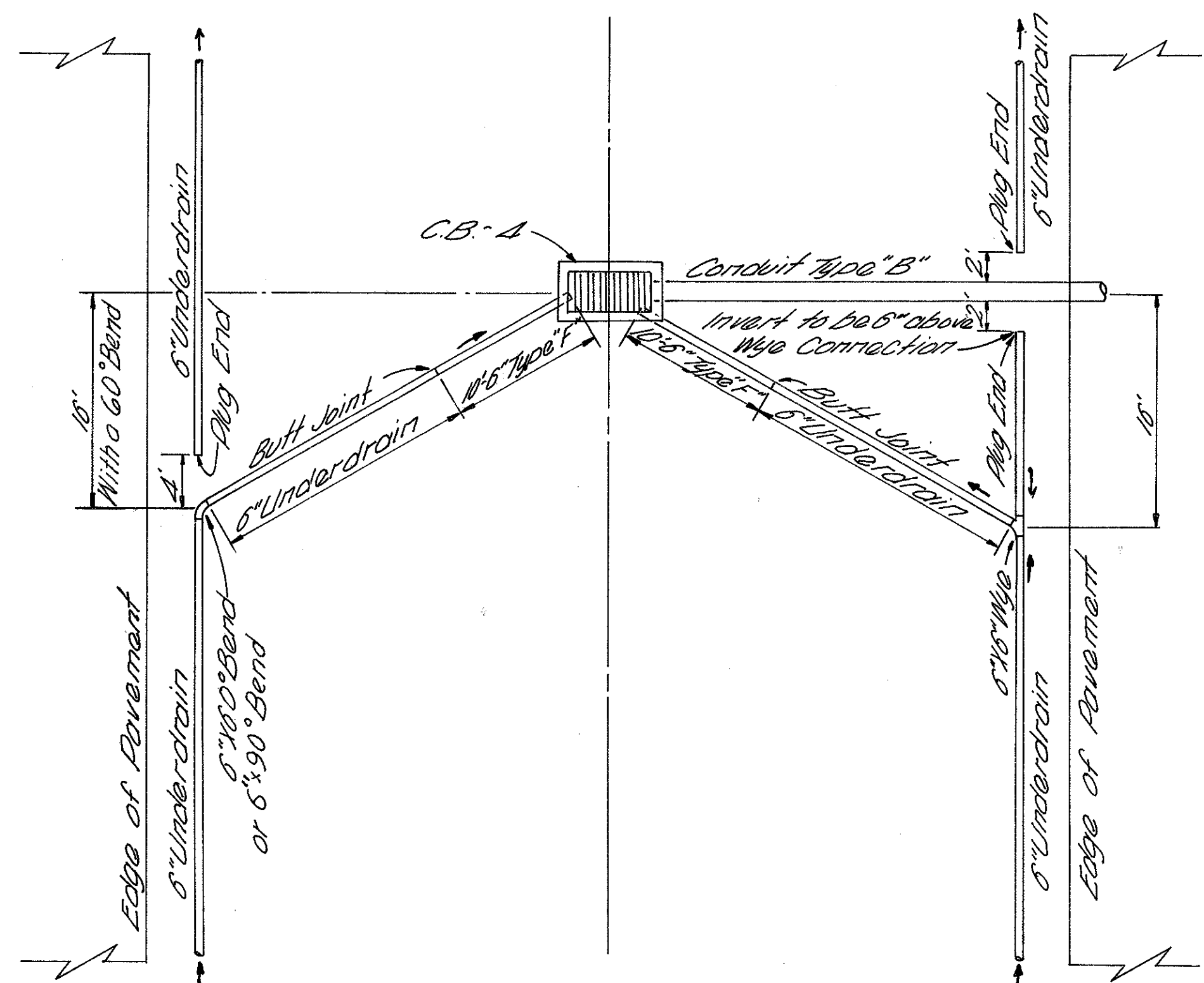
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

12
292

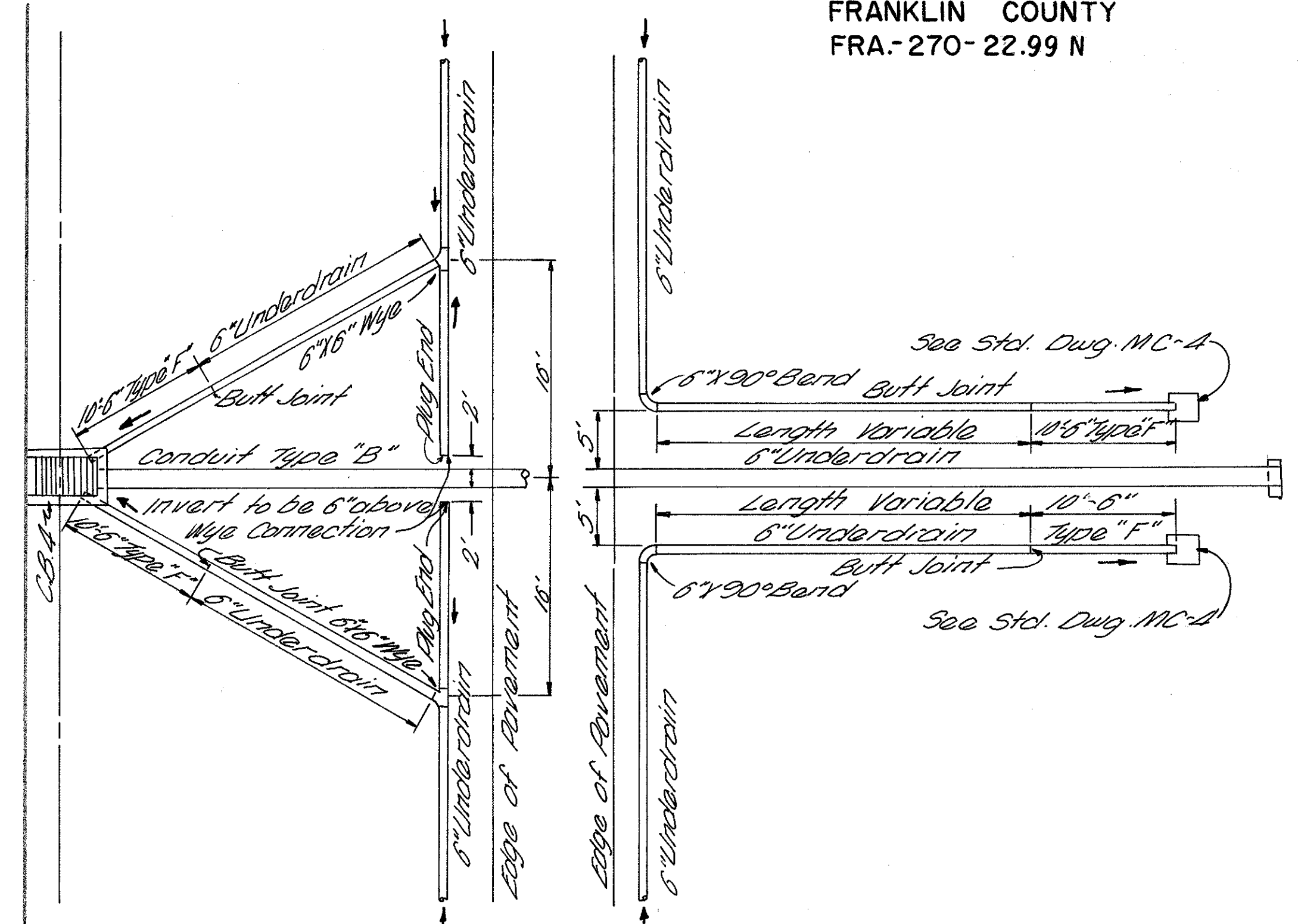
FRANKLIN COUNTY
FRA-270-22.99 N



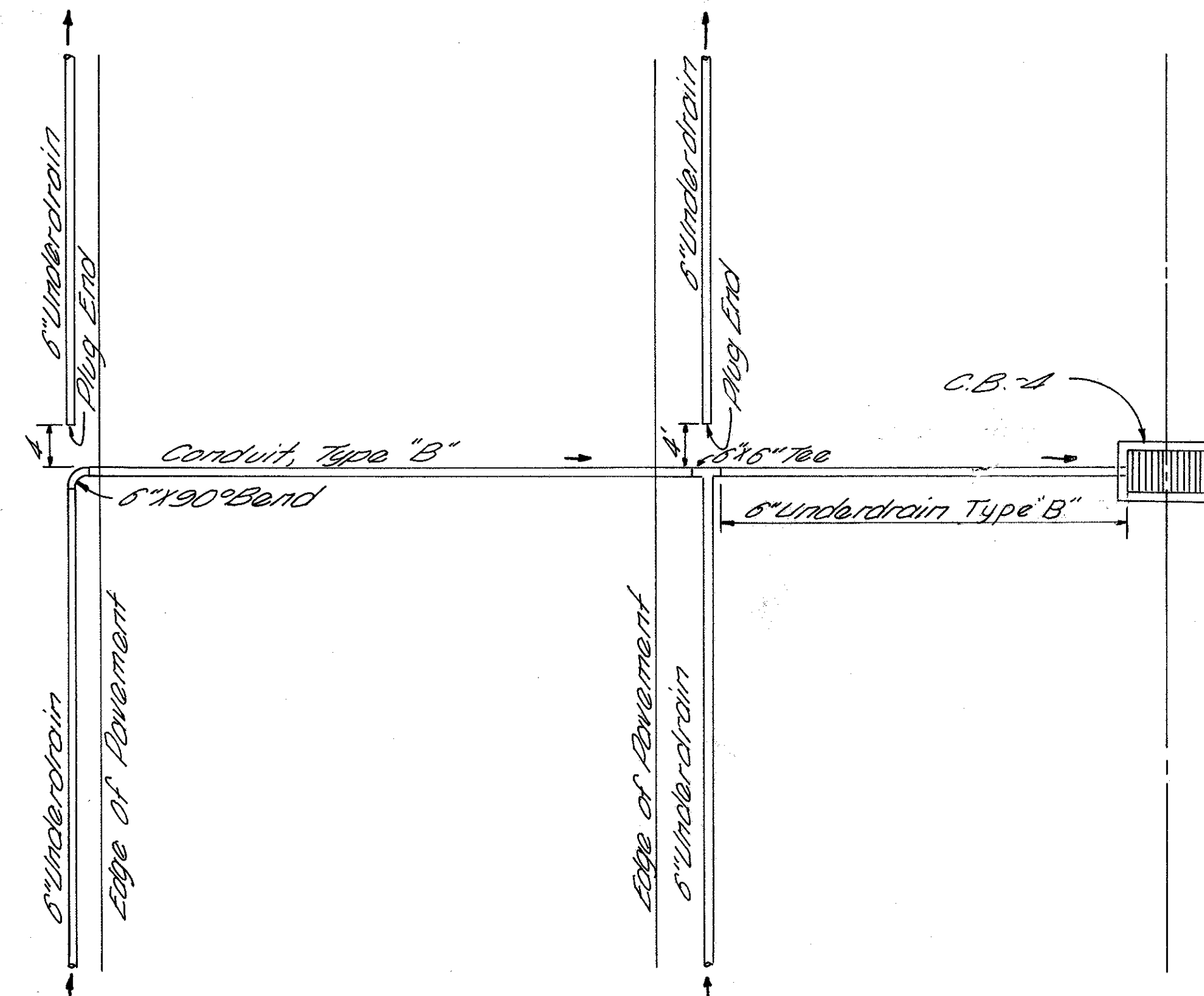
UNDERDRAIN OUTLET DETAIL "A"



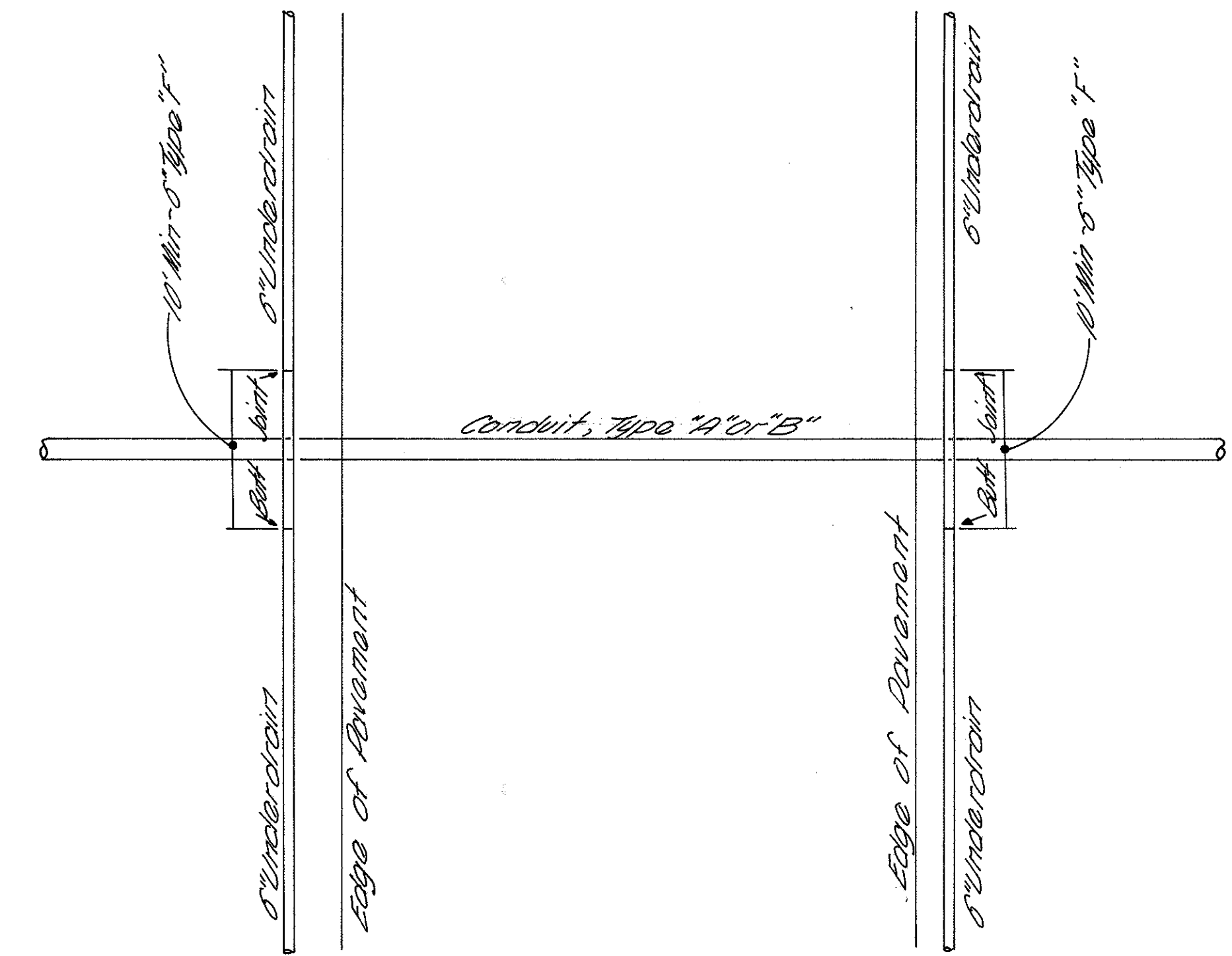
UNDERDRAIN OUTLET DETAIL "B"



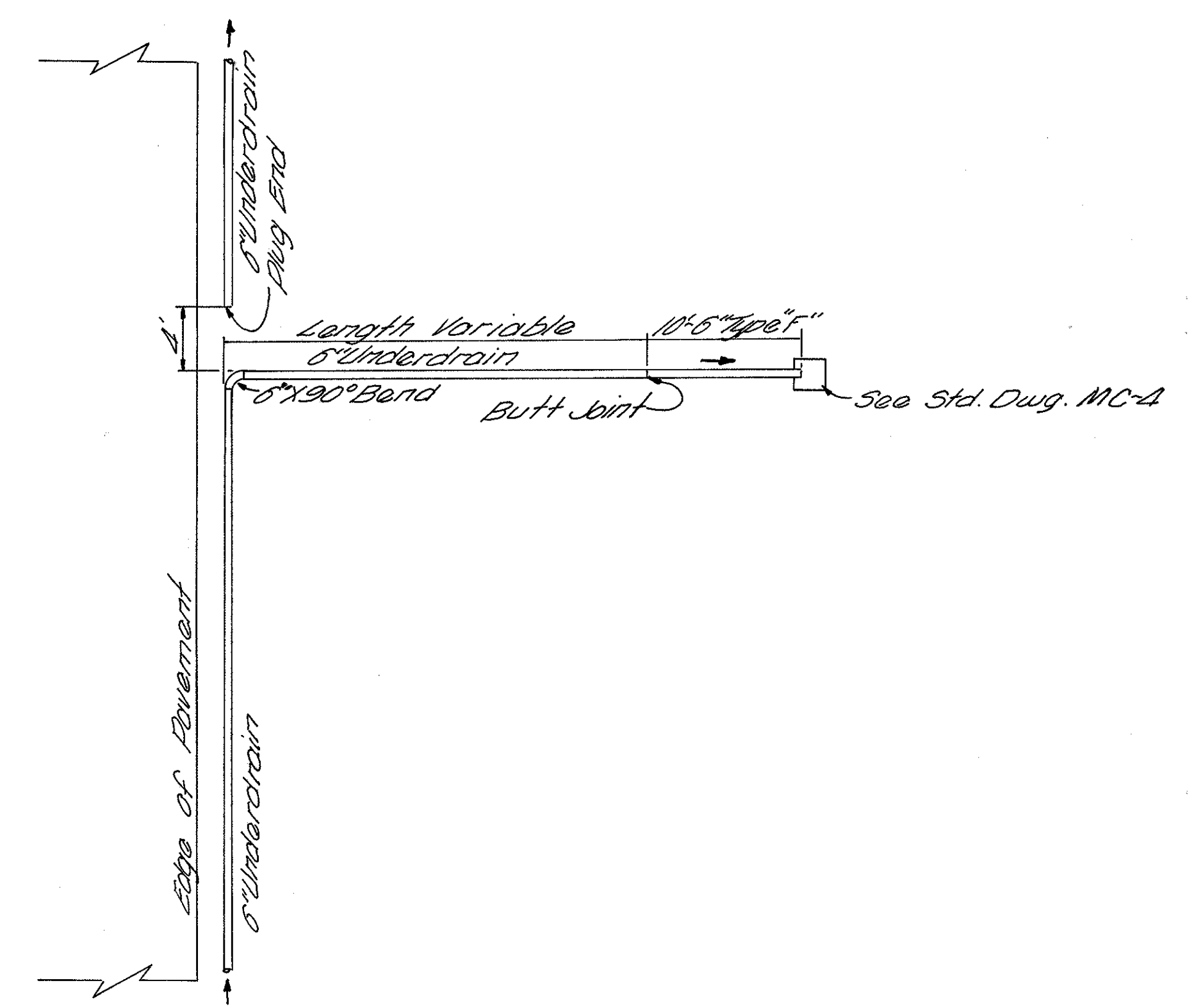
UNDERDRAIN OUTLET DETAIL "C"



UNDERDRAIN OUTLET DETAIL "D"



UNDERDRAIN OUTLET DETAIL "E"



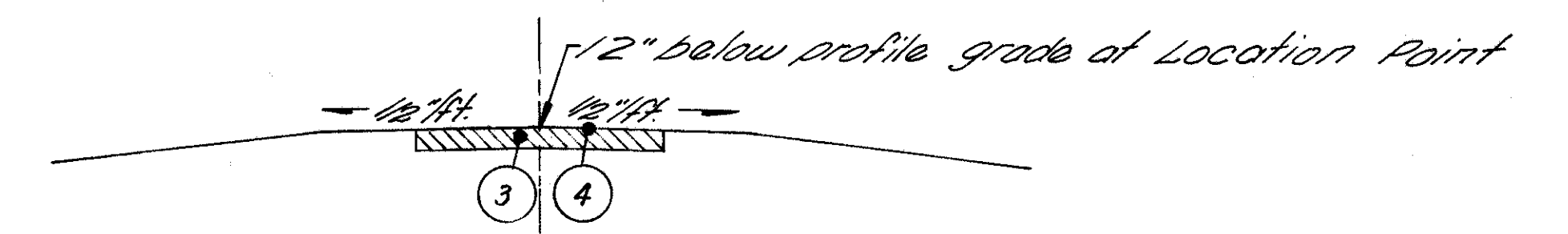
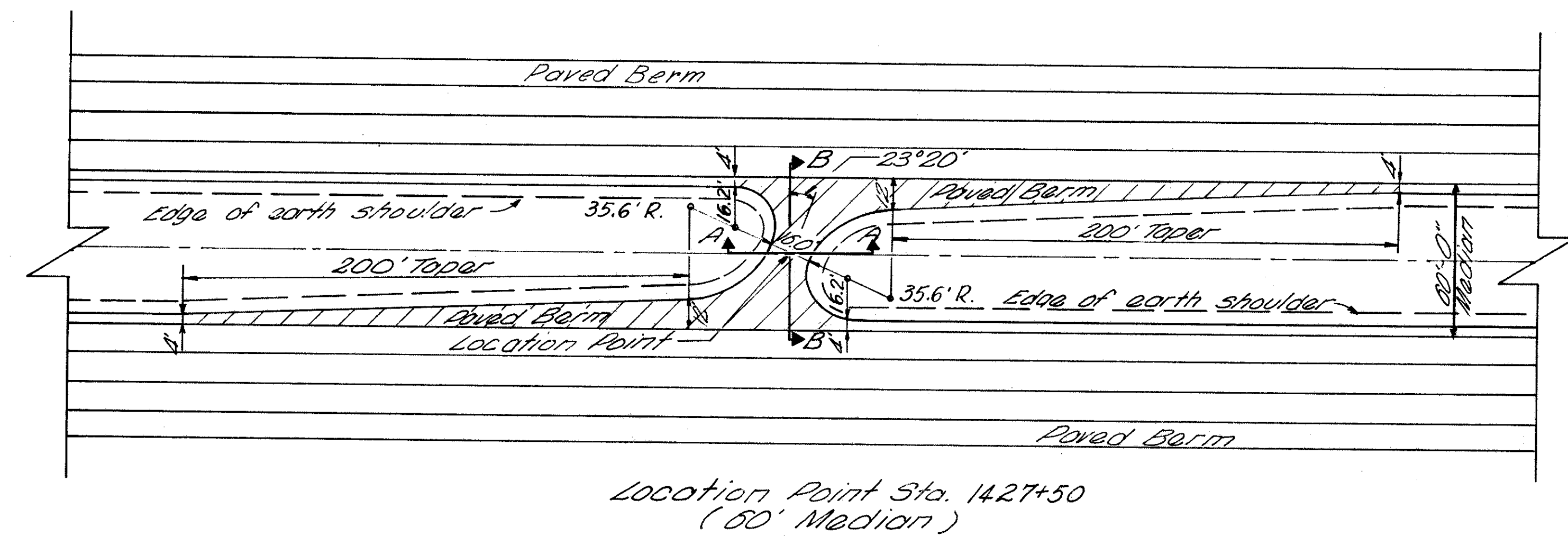
UNDERDRAIN OUTLET DETAIL "F"

MEDIAN CROSSOVER DETAILS

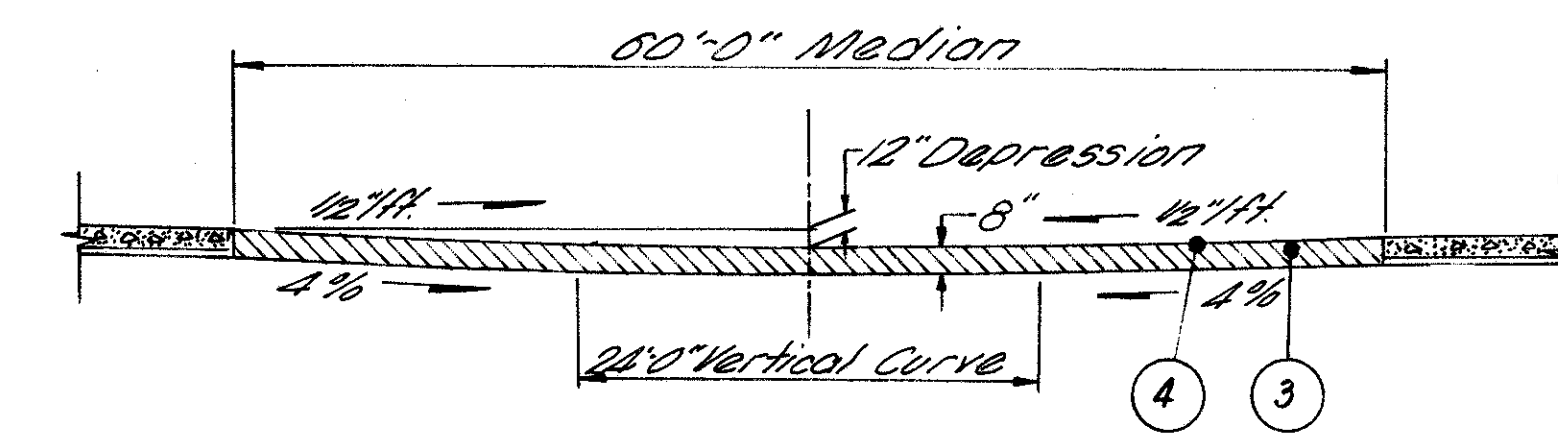
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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292

FRANKLIN COUNTY
FRA-270-22.99 N



SECTION A-A

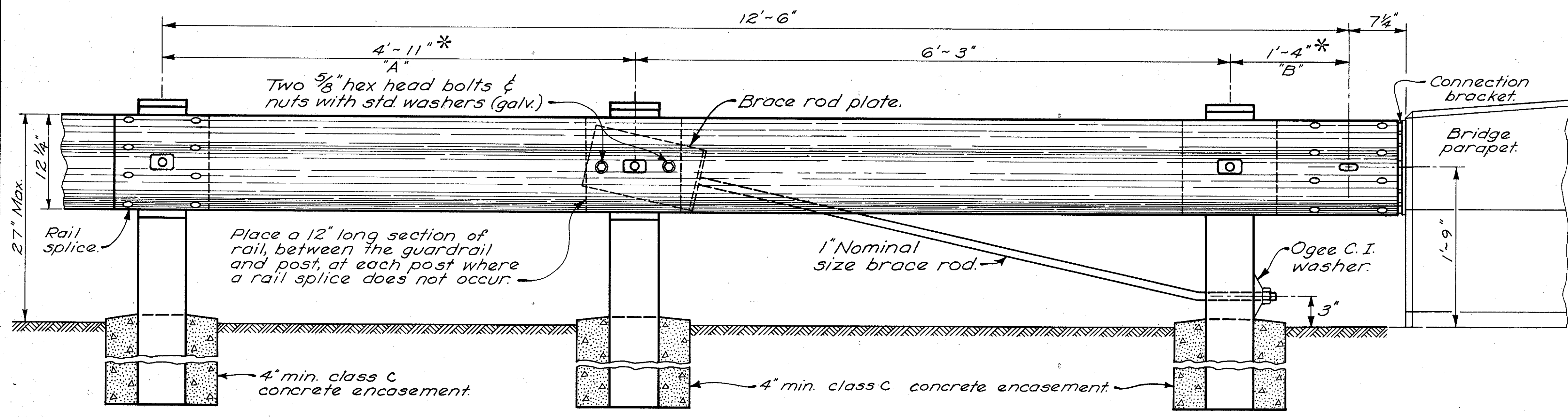
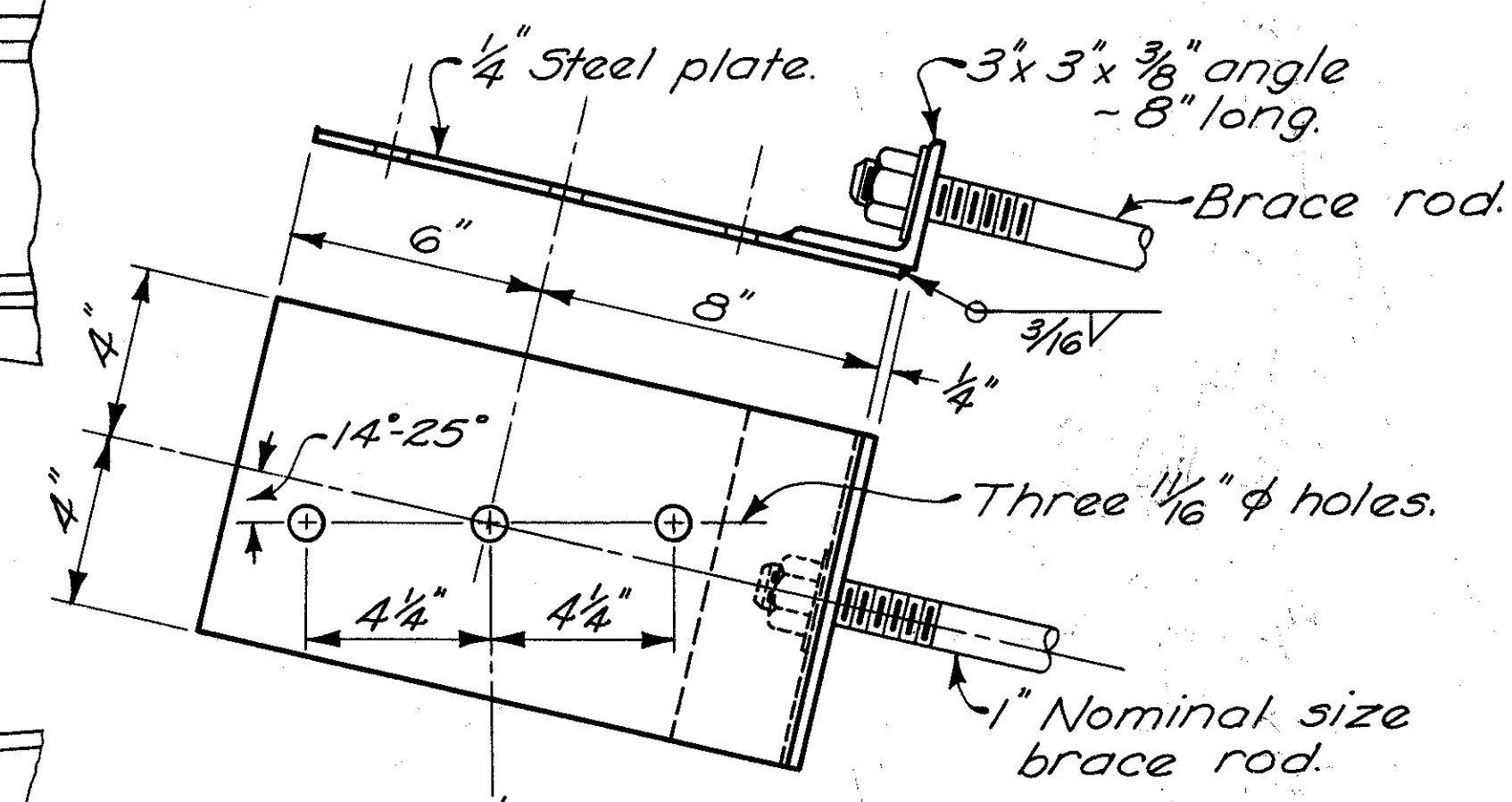
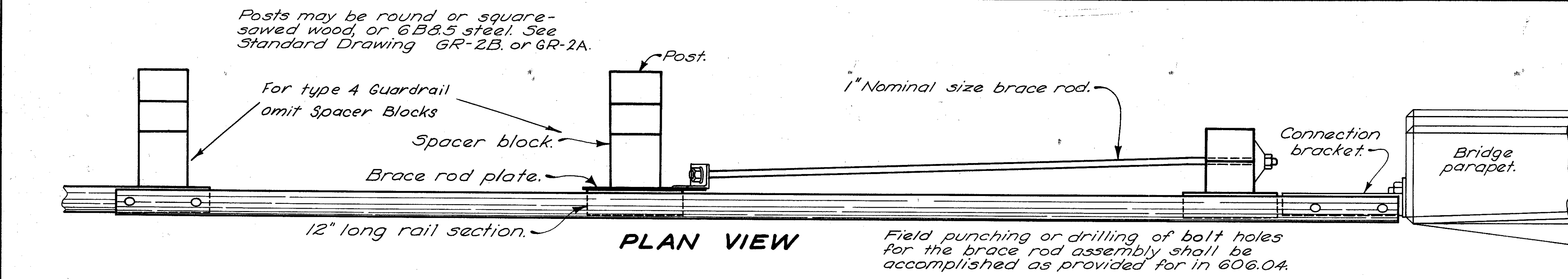


SECTION B-B

- 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)

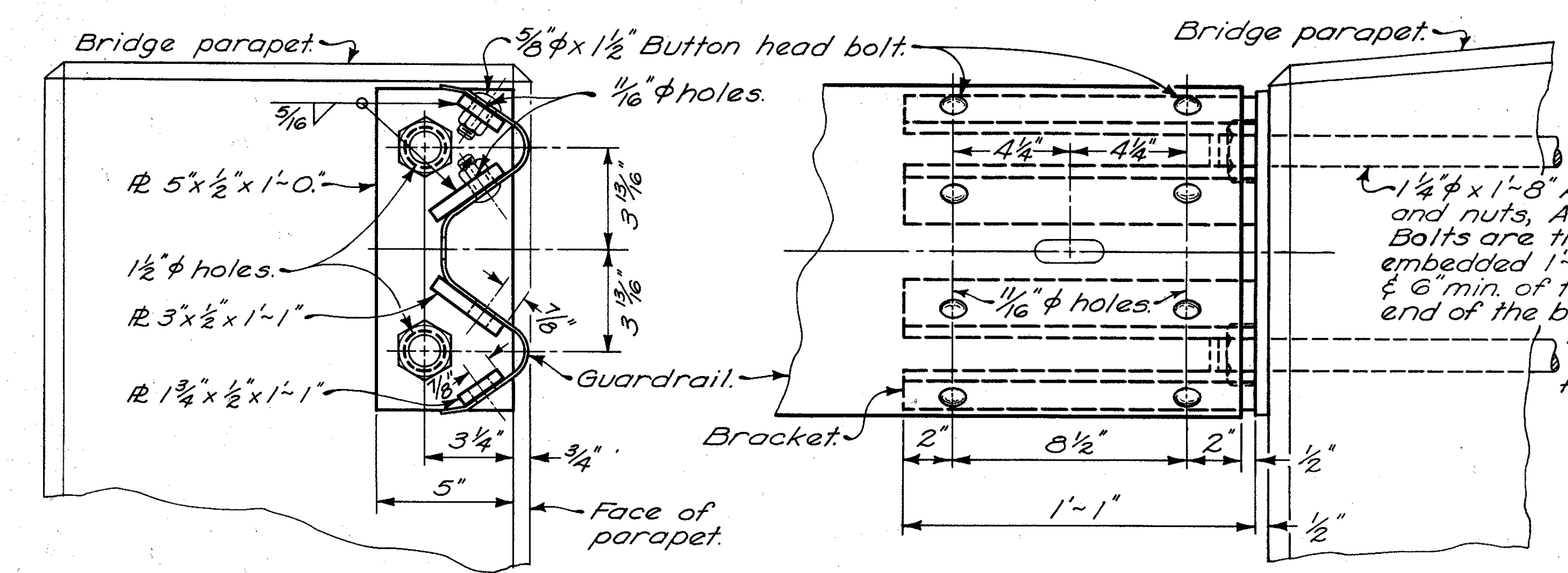
NOTE: For Legend of Pavement Items
See M Typical Section, Sheet NO. 3

FRA-270-22.94 N



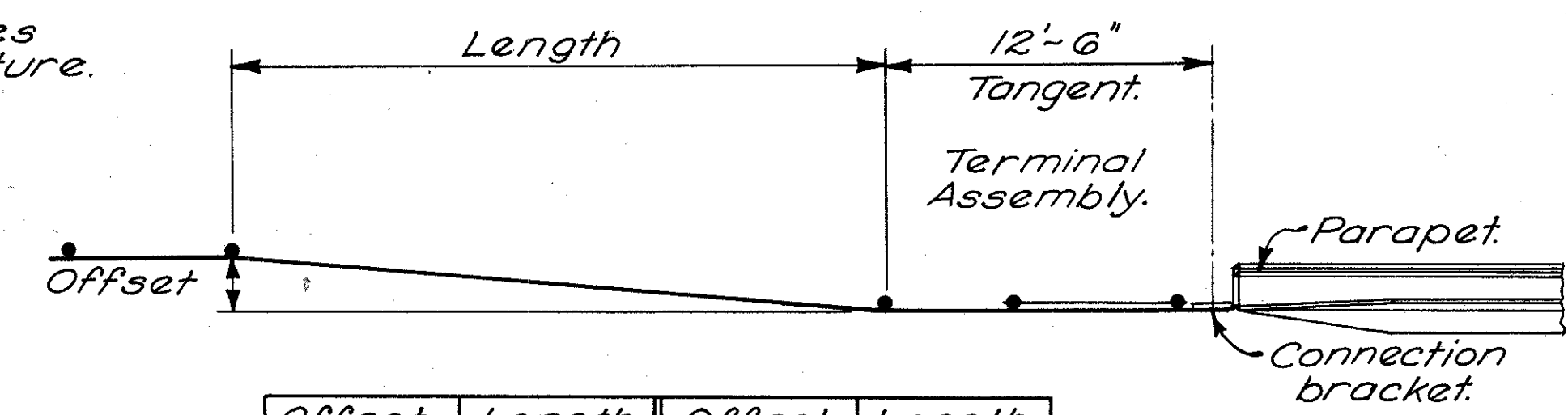
GUARDRAIL TERMINAL AT BRIDGE

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

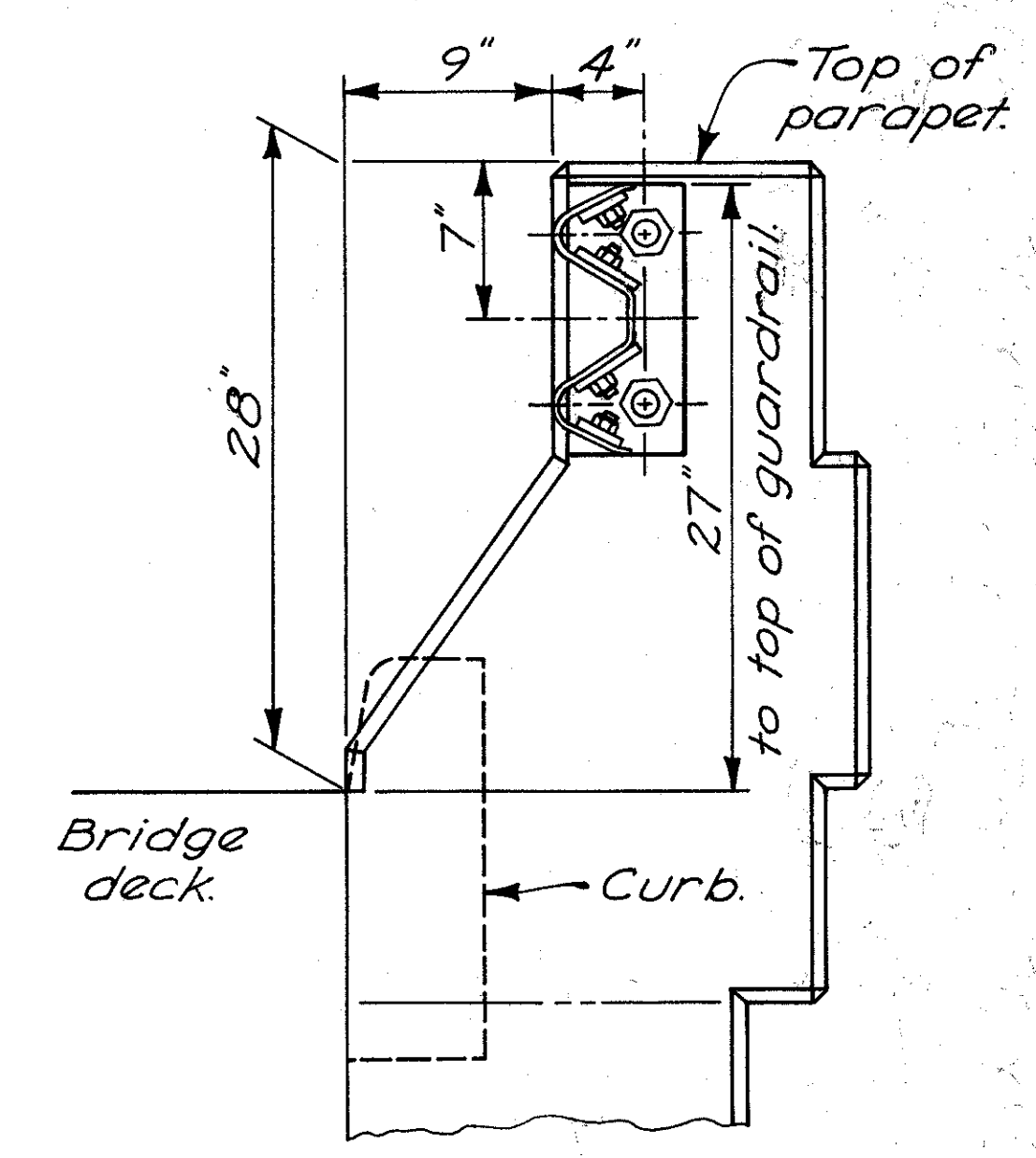


GUARDRAIL ~ BRIDGE CONNECTION

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



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'



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.

GENERAL NOTES

ITEM 619 FILLD 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) - 16B (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, (2-1/2 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
	10 Tons	5 Tons
616 Calcium Chloride	100 M Gal.	50 M Gal.
616 Water		

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

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 BRAINS

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 permit 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' - 3 1/4" x 2' - 3 1/4". 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 1 1/2 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.

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 purpose 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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: 9/10/82 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	=	15,000.00 S.F.
Ramp B		
Sta. 1367+92.8 to Sta. 1372+50	=	9,612.00 S.F.
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	=	1,188.00 S.F.
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	=	7,891.40 S.F.
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	=	3,600.00 S.F.
(12)(250)+1/2(12)(100)= Urban Area	=	3,600.00 S.F.
Sta. 1341+50 to Sta. 1346+04.7	=	9,880.00 S.F.
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	=	3,755.50 S.F.
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	=	4,500.00 S.F.
A = 0.5(14+16)(300)	=	4,500.00 S.F.
Sta. A-1346+00 to Sta. A-1347+00	=	1,715.13 S.F.
Cor. L = 100(963.43+954.93)= 100.89	=	1,715.13 S.F.
A = 0.5(16+18)(100.89)	=	1,715.13 S.F.
Sta. A-1347+00 to Sta. A-1351+16.50	=	419.98 L.F.
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	=	572.03 L.F.
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	=	2,336.00 S.F.
A=(Planimetered) = 5.84 Sq. In. (5.84)(400)	=	2,336.00 S.F.
Ramp B		
Morse Road to Sta. B-1357+50	=	2,784.00 S.F.
A=(Planimetered) = 6.96 Sq. In. (6.96)(400)	=	2,784.00 S.F.
Sta. B-1357+50.00 to Sta. B-1357+76.44	=	28.44 L.F.
Sta. B-1357+76.44 to Sta. B-1360+24.32	=	240.73 L.F.
Cor. L = 245.88(560.96+572.96)	=	240.73 L.F.
Sta. B-1360+24.32 to Sta. B-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	=	30.90 L.F.
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	=	489.38 L.F.
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	=	378.30 L.F.
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	=	575.08 L.F.
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	=	100.83 L.F.
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	=	4,500.00 S.F.
A=0.5(16+14)(300)	=	4,500.00 S.F.
Ramp C Connection		
Morse Road to Sta. C-1356+75.98	=	4,592.00 S.F.
A=Planimetered = 11.48 Sq. In. 11.48(400)	=	4,592.00 S.F.
Sta. C-1356+75.98 to Sta. C-1359+79.69	=	303.71 L.F.
Sta. C-1359+79.69 to Sta. C-1362+75.98	=	303.71 L.F.
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	=	142.96 L.F.
Cor. L=142.67(3827.72+3819.72)	=	142.96 L.F.
Sta. D-1347+45.77 to Sta. D-1351+06.40	=	364.65 L.F.
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	=	1,600.00 S.F.
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	=	96.00 S.F.
A=0.5(2)(96)	=	96.00 S.F.
Ramp B	=	16.67 S.F.
A = 0.5(2)(16.67)-Rural	=	16.67 S.F.
Ramp C	=	96.00 S.F.
A=0.5(2)(96)= Rural Area	=	96.00 S.F.
Ramp D	=	16.67 S.F.
A = 0.5(2)(16.67)	=	16.67 S.F.
Ramps		
Ramp C	=	60.00 S.F.
A=0.5(2)(60)	=	60.00 S.F.
Ramp B	=	37.50 S.F.
A=0.5(2)(37.50)	=	37.50 S.F.
Morse Road		
Ramp D	=	12.50 S.F.
A=0.5(2)(12.5)	=	12.50 S.F.
Ramp A	=	20.00 S.F.
A=0.5(2)(20)	=	20.00 S.F.
Ramp B	=	12.50 S.F.
A = 0.5(2)(12.5)	=	12.50 S.F.

CALCULATIONS

FRANKLIN COUNTY
FRA-270-22.99 N

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

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 $8342.12 + 2(315) = 8,405.12$ 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
 $Cor. L = \text{See Item 451} = 126.21$ 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.

Sta. B-1367+91.22 to Sta. B-1368+91.22
 $Cor. L = 100(5724.08 + 5729.58) = 99.90$ 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.

Sta. C-1352+88 to Sta. C-1355+63.16
 $Cor. L = 100(949.43 + 954.93) = 99.42$ L.F.
 $A = (99.42)(0.5)(8+3) = 546.81$ S.F.

Sta. C-1355+63.16 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.
 $A = (936.02)(3) \text{ Sub Total} = 2,808.06$ S.F.

Sta. C-1353+63.16 to Sta. C-1356+75.98
 $A = \text{Planimetered} = 2.29$ 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.

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.
 $A = (1.5)(50) \text{ Ramp C} = 75.00$ 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.
 $A = 28(600) \text{ - Urban Area} = 16,800.00$ S.F.

Sta. 1331+00 to
Sta. 1338+00 = 700.00 L.F.
 $A = 26(700) \text{ - Urban Area} = 18,200.00$ S.F.

Sta. 1338+00 to Sta. 1339+00 (Rt.)
 $A = 0.5(10+8)(100) \text{ - Urban} = 900.00$ S.F.

Sta. 1338+00 to Sta. 1339+00
 $A = 16(100) \text{ - Urban Area} = 1,600.00$ S.F.

Sta. 1339+00 to Sta. 1343+00 (Lt.)
 $A = 400(12) \text{ - Urban Area} = 4,800.00$ S.F.

Sta. 1339+00 to Sta. 1341+50 (Rt.)
 $A = 250(12) \text{ - Urban Area} = 3,000.00$ S.F.

Sta. 1341+50 to Sta. 1346+03.1 (Rt.)
 $A = 453.10(8) \text{ - Urban Area} = 3,624.80$ S.F.

Sta. 1341+50 to Sta. 1346+04.70
 $A = 454.70(4) \text{ - Urban Area} = 1,818.80$ S.F.

Sta. 1343+00 to Sta. 1346+04.70 (Lt.)
 $A = 304.70(14) \text{ - Urban Area} = 4,265.80$ S.F.

Sta. 1343+00 to Sta. 1346+00 (Lt.)
 $A = 0.5(0+4.25)(300) \text{ - Urban} = 637.50$ S.F.

Sta. 1346+00 to Sta. 1347+08 (Lt.)
 $A = 0.5(425+10)(108) \text{ - Urban} = 769.50$ S.F.

Sta. 1346+04.70 to Sta. 1355+31.09
 $A = 926.39(28) \text{ - Urban} = 25,938.92$ S.F.

Sta. 1357+14 to Sta. 1367+92.80
 $A = 1077.83(28) \text{ - Urban Area} = 30,179.24$ S.F.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

20
292

CALC: W.O.L. 7-1468
CHK: R.F.N. 8-68

FRANKLIN COUNTY
FRA - 270 - 22.99 N

ITEM 301 BITUMINOUS AGGREGATE BASE - Continued

Sta. 1367+92.80 to Sta. 1372+50 (Lt.)	=	1,828.80 S.F.
A = 457.20(4) - Urban	=	
Sta. 1367+91.20 to Sta. 1372+50 (Lt.)	=	3,670.40 S.F.
A = 458.80(8) - Urban	=	
Sta. 1367+92.80 to Sta. 1369+50 (Rt.)	=	2,200.80 S.F.
A = 157.20(14) - Urban Area	=	
Sta. 1365+35 to Sta. 1366+50 (Rt.)	=	819.37 S.F.
A = 115(0.5)(10+4.25) - Urban	=	
Sta. 1366+50 to Sta. 1369+50 (Rt.)	=	637.50 S.F.
A = 300(0.5)(4.25+0) - Urban	=	
Sta. 1369+50 to Sta. 1372+50 (Rt.)	=	3,600.00 S.F.
A = 300(12) - Urban Area	=	
Sta. 1372+50 to Sta. 1373+37	=	2,088.00 S.F.
A = 87(24) - Urban Area	=	
Sta. 1373+37 to Sta. 1375+00	=	3,912.00 S.F.
A = 163(24) - Rural Area	=	
Sta. 1375+00 to Sta. 1376+00 (Lt.)	=	900.00 S.F.
A = 0.5(8+10)(100) - Rural Area	=	
Sta. 1375+00 to Sta. 1376+00	=	1,600.00 S.F.
A = 100(16) - Rural Area	=	
Sta. 1376+00 to Sta. 1381+50 (Rt.)	=	4,400.00 S.F.
A = 550(8) - Rural Area	=	
Sta. 1376+00 to Sta. 1381+50	=	9,900.00 S.F.
A = 550(18) - Rural Area	=	
Sta. 1381+50 to Sta. 1396+49	=	41,972.00 S.F.
A = (28)(1499) - Rural Area	=	
Sta. 1396+49 to Sta. 1426+75	=	84,728.00 S.F.
A = (28)(3026) - Urban Area	=	
Sta. 1426+75 to Sta. 1444+24	=	48,972.00 S.F.
A = (28)(1749) - Rural Area	=	
Sta. 1444+24 to Sta. 1452+00	=	21,728.00 S.F.
A = (28)(776) - Urban Area	=	
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	=	21,889.20 S.F.
A = 0.5(72+56.76)(340) Rural	=	
Sta. 109+40 to Sta. 110+92.49	=	10,979.28 S.F.
A = 152.49(72) Rural	=	
Sta. 110+92.49 to Sta. 131+78.63	=	150,202.08 S.F.
A = 2086.14(72) Urban	=	
Sta. 131+78.63 to Sta. 139+00	=	34,625.76 S.F.
A = 0.5(72+24)(721.37) Urban	=	
Sta. 139+00 to Sta. 139+50	=	1,050.00 S.F.
A = 0.5(24+18)(50) Urban	=	
Ramp C Exit Terminal	=	1,500.00 S.F.
A = 0.5(250)(12) Urban	=	
A = Planimetered = 9.41 Sq. In.	=	3,764.00 S.F.
A = (9.41)(400) Urban	=	
Deduct Median Areas (Urban)	=	
Sta. 111+47.5 to Sta. 113+97.5	=	- 2,539.27 S.F.
A = 0.5(3.142)(25)+250(10)	=	
Sta. 113+97.5 to Sta. 115+47.5	=	- 2,400.00 S.F.
A = 0.5(10+22)(750)	=	
Sta. 115+47.5 to Sta. 118+21.84	=	- 6,074.75 S.F.
A = 22(274.34)+0.5(3.142)(25)	=	
Sta. 120+06.07+122+51.02	=	- 2,488.77 S.F.
A = 0.5(3.142)(25)+244.95(10)	=	
Sta. 122+51.02 to Sta. 124+01.02	=	- 3,300.00 S.F.
A = 150(22)	=	
Sta. 124+01.02 to Sta. 126+20.93	=	- 4,838.02 S.F.
A = (219.91)(22)	=	
Sta. 126+20.93 to Sta. 127+70.93	=	- 2,400.00 S.F.
A = 0.5(22+10)(150)	=	
Sta. 127+70.93 to Sta. 130+15.93	=	- 2,489.27 S.F.
A = 245(10)+0.5(3.142)(25)	=	
Sta. 131+05.00 to Sta. 134+48.63	=	- 1,544.10 S.F.
A = 0.5(3.142)(25)+10(73.63)+	=	
0.5(95)(12)+0.5(10+8.58)(21.37)	=	
A = 0.5(20.58+4)(248.63)+	=	- 3,061.94 S.F.
0.5(3.142)(4)	=	
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	=	- 8,534.85 S.F.
492.49(17.33) Rural	=	
Deduct Sta. 110+92.49 to Sta. 139+50	=	-49,520.65 S.F.
A = 17.33(2857.51) Urban	=	
Deduct Int. Strips	=	- 332.64 S.F.
A = 0.33(1008) Urban	=	
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	=	546.00 S.F.
A = 0.5(19.67+24)(25)	=	
Sta. 20+00 to Sta. 22+50	=	9,000.00 S.F.
A = 0.5(24+48)(250)	=	
Sta. 22+50 to Sta. 24+88	=	12,497.00 S.F.
A = 48(238)+[50(100)-0.5(3.142)(50 ²)]	=	
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	=	- 9,747.00 S.F.
A = 19(513)	=	
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	=	1,066.00 S.F.
A = 0.5(17.97+24.67)(50)	=	
Sta. 18+00 to Sta. 23+33.33	=	13,157.25 S.F.
A = 24.67(533.33)	=	
Sta. 26+66.67 to Sta. 28+75	=	5,139.50 S.F.
A = 24.67(208.33) Rural	=	
Sta. 28+75 to Sta. 29+25	=	1,056.00 S.F.
A = 0.5(24.67+17.57)(50) Rural	=	
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 cy. (RT-11,12)	=	
TO SUB SUMMARY - URBAN AREA - 6123 C.Y. (RT-10); 1982 cy. (RT-11,12)	=	

ITEM 409, SEAL COAT & 702.09

Area of 804 Subbase:

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

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.	
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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.

CALCULATIONS

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.	
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Sta. 19+75 to Sta. 20+00			
A = 0.5(8)(25)	=	100.00 S.F.	

Total	=	7,007.12 S.F.	
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V(Seal Coat) = (7007.12+9)(.008)	=	6.23 C.Y.	
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V(702.09) = (7007.12+9)(0.30)	=	233.57 GAL.	
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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.	
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Area Urban

A = [(3158.00)(21)+2(100)(50)-2(0.5)(3.142)(2500)]+9	=	7,607.06 S.Y.	
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Area Rural

A = [(1938.40)(21)+(100)(50)-0.5(3.142)(2500)]+9	=	4,642.15 S.Y.	
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V-Urban = 7607.00(0.40)	=	3,042.80 GAL.	
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V-Rural = 4,642.15(0.40)	=	1,856.86 GAL.	
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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.	
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Total Rural	=	6,022.42 S.F.	
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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: W.D.L. 7-15-68
CHK: R.E.H. 8-68

21
292

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.B. 7-16-68
CHK: R.E.H. 8-68

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

Service Road 7A Taper Urban = 0.31 C.Y.
(50)(0.5)(2)(0.167)+ 27
Service Road 7A Taper Rural = 0.31 C.Y.
50(0.5)2(0.167)+ 27
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 Aggregate 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.F.
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-II or I2) = 51.80 C.Y.
V - Urban (2.84)(2857.51)+ 27 (RT-II or I2) = 300.57 C.Y.

TO GENERAL SUMMARY 52 C.Y. (RT-II or I2) Rural
TO SUB SUMMARY 301 C.Y. (RT-II or I2) 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+88
V=(513)(3.78)+ 27 (RT-II or I2) = 71.82 C.Y.

TO GENERAL SUMMARY 72 C.Y. (RT-II or I2) City

CALCULATIONS

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

23
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: W.D. 7-16-68
CHK: R.E.N. 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.
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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.
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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.
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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
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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
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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
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TO GENERAL SUMMARY - CITY	0.19 TONS
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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
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Rural		
For Area See 659 Fertilizer (103,556)(100)(9)+(1000)(2000)	=	46.60 TONS

TO GENERAL SUMMARY - RURAL	46.60 TONS
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City		
For Area See 659 Fertilizer (1757)(100)(9)+(1000)(2000)	=	0.79 TONS

TO GENERAL SUMMARY - CITY	0.79 TONS
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CALCULATIONS - (COUNTY)

CALC: R.A.S. 9/25/68
CHK: R.B.S. 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 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 = 15.33(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
A = 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)

FED. RD DIVISION	STATE	PROJECT
2	OHIO	

25
292

FRANKLIN COUNTY
FRA-270-22.99 N

CALC:	R.A.S.	9/25/68
CHK:	R.B.S.	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.

FRANKLIN COUNTY
FRA 270- 22.99 N

[illegible]

CALC: <u>W.D.B. 12-30-68</u> CHK: <u>LG 1/7/68</u>	FED. RD DIVISION 2	STATE OHIO	PROJECT 	
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27

292

FRANKLIN COUNTY

FRA-270 - 22.99 N

SUB-SUMMARY

296

GENERAL SUMMARY

★ 95% State, 5% City of Columbus

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

29
292

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

GENERAL SUMMARY

CALC: W.D.G. 12-31-68
CHK: J.G. 1/7/69

FRANKLIN COUNTY
FRA-270-22.99 N

RURAL										100% FRANKLIN COUNTY										100% CITY		CITY COUNTY RURAL URBAN		SUB-TOTALS				CHK: 26 1/7/68		FRA-270-22.99 N						
ITEM	SHEET NUMBER																TOTAL SEEDING AREA WITHOUT DEDUCTIONS TO CALCULATIONS	100% CITY	100% FRA. CO.	RURAL	URBAN (Sh. 26, 27)	ITEM	GRAND TOTAL	UNIT	DESCRIPTION											
	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		
609										55												1,749				Sh. 27		1,749	55	4,352	609	6,156	L.F.	PAVEMENT CODE 7224 (Continued)		
609																													258	609	258	L.F.	Concrete curb, Standard Type 6			
609																													921	609	921	L.F.	Concrete curb, Standard Type 7			
611																													573	611	573	S.Y.	Concrete curb, Standard Type 8			
612																													1,468	612	1,468	S.Y.	Reinforced concrete approach slab (7-13")			
804		36,268																											36,268	94,437	804	130,703	S.Y.	Concrete median		
804		2,315																											2,315	6,028	804	8,343	BBLs.	4" Cement stabilized subbase, as per plan		
601			35	155															286										286	190	270	601	746	C.Y.	EROSION CONTROL CODE Y005	
601	8		5	3												20		54											74	16	62	601	152	S.Y.	Rock channel protection, Type B	
601			14	19																										33	104	601	137	S.Y.	Crushed aggregate slope protection	
659		6.99																				1.33	0.19						0.19	1.33	6.99	21.18	659	29.69	Tons	Riprap, using 6" reinforced concrete slab
659		48.60																				8.88	0.79						0.79	8.88	48.60	141.23	659	197.50	Tons	Commercial fertilizer (18-46-0) As per plan
659			11,974	20,394	11,812	6,978	27,156	12,567	2,788	91	918	1,065	3,892	4,208				2,948	6,638	6,324	2,857	957		1,757	19,722	103,843	314,347	1,757	19,722	102,782	310,607	659	434,868	S.Y.	Agricultural liming	
660																			16											16	531	660	547	S.Y.	Seeding and mulching, as per plan	
660			85	5														412											412	149	866	660	1,427	S.Y.	Sodding for Special berm and slope protection, as per plan	
667			125	125		125	125	125																						625	2,370	667	2,995	S.Y.	Sodding	
																																		</		

31
292

FRANKLIN COUNTY
FRA-270-22.99 N

GENERAL SUMMARY

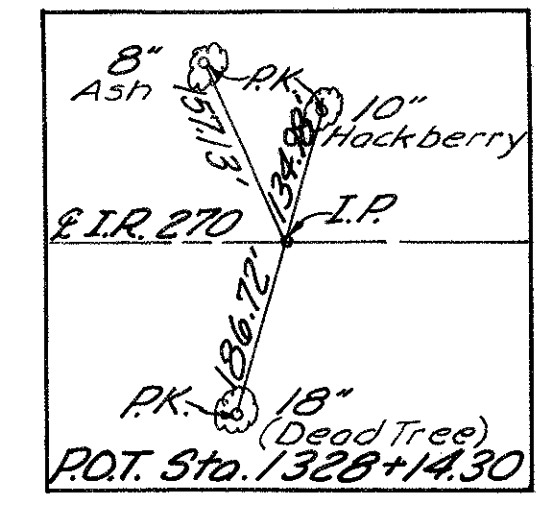
AGNES M. RUGG

COLUMBUS & SOUTHERN OHIO
ELECTRIC COMPANY

BEGIN WORK
STA 1321+20
(See Sheet 207)

BEGIN GRADING
STA. 1323+54

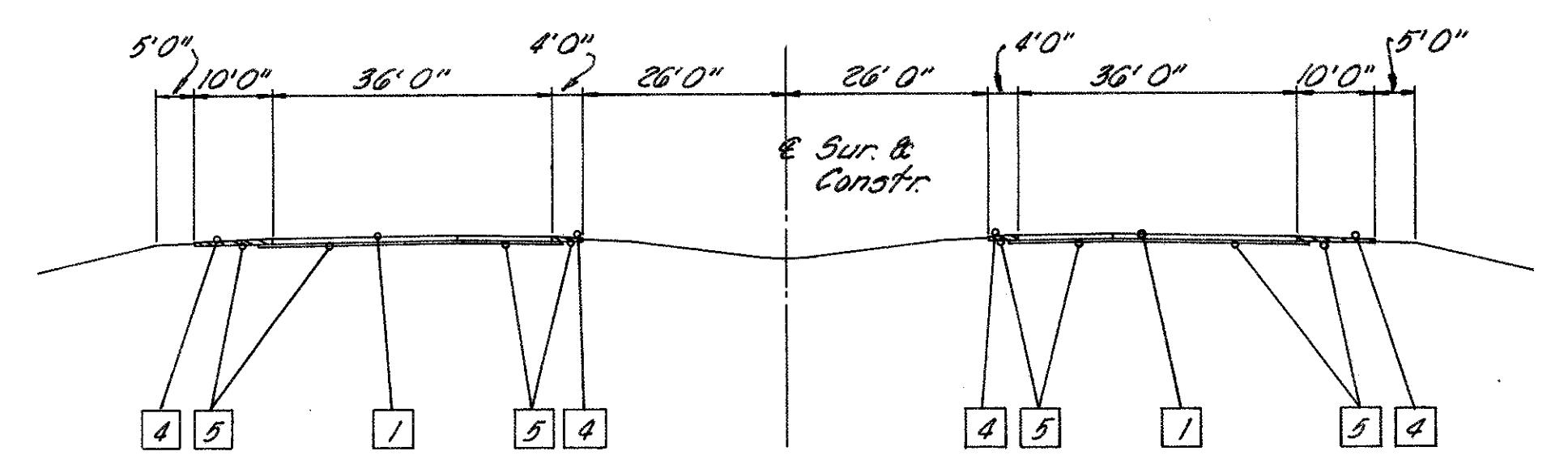
Sta. 1327+50
STRUCTURE NO.
FRA-270-2304



FRANKLIN COUNTY
FRA-270-22.99N

CALC: W.D. 9/10/68
CHK: R.E. 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.

AGNES M. RUGG

B.M. 14(R) Elev. 860.38
Sta. 1322+22, 211' Rt.
R.R. Spike in 21" Maple

END PROJECT
FRA-270-20.40N
Sta. 1325+00.00
S.L.M. 22.99
I-270-5(16)112

BEGIN PROJECT
FRA-270-22.99N
Sta. 1325+00.00
I-270-5(17)114

B.M. 15(R) Elev. 858.65
Sta. 1327+96, 237' Rt.
R.R. Spike in 24" Hickory

EXCAV. 6,421 C.Y.
EMB. 20,382 C.Y.
SEEDING 16,027 S.Y.

NOTE:
Cross-hatched area may be
performed by the Contractor
on the adjacent project.

1329+00 E
No. 4 C.B.
FL Grate = 855.46
FL 15" = 852.46

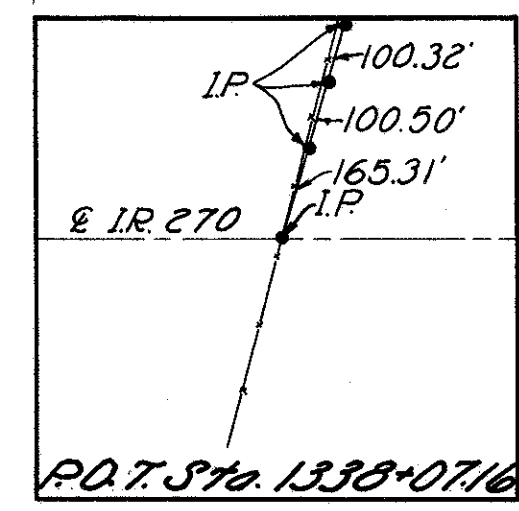
REF. STATION TO STATION SIDE	Rock C.P. Type B	Rip Road Type B	601 Rip Road Type B	602 Conc. Masonry	603 TYPE A TO 602 CLASS III	604 No. 4 CATCH BASIN	606 JUTE MATTING	607 Sodding	SEE DETAIL SHEET NO.
1-D 1327+50	E	17	104.45	0.3	314	110	1	125	188
2-D 1329+00	Lt.	8							47
3-D 1327+20 to 1327+47	Lt.	21							
4-D 1327+52 to 1327+86	Lt.	28							
5-D 1327+90 to 1327+30172' Rt.	90								47
7-D 1325+75 to 1327+20	Lt.							150	
TOTALS		164	104.48	314	110	1	125	168	

REF. STATION TO STATION SIDE					603 TYPE "F"	606 GUARD RAIL TYPE 5	APPEND ANCHOR ASSEMBLY	BENDS OR BRANCHES	SEE DETAIL SHEET NO.
6-D 1326+97 to 1327+02	Rt.				6"	L.F.			
16R 1324+75 to 1326+25	Rt.				10			1	
TOTALS					10	150	1	1	

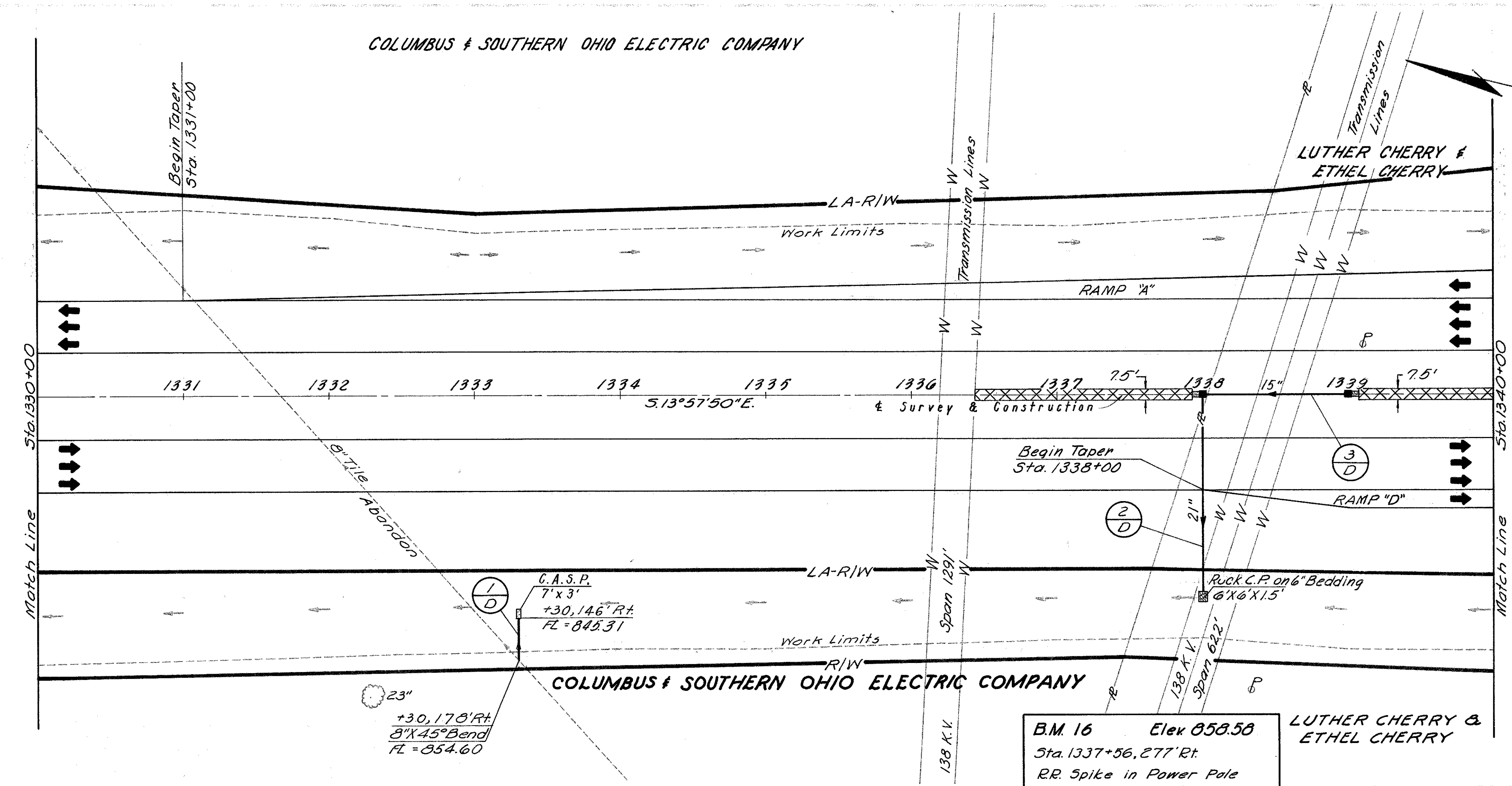
STA. 1320+00 TO STA. 1330+00

FRANKLIN COUNTY
FRA - 270 - 22.99 N

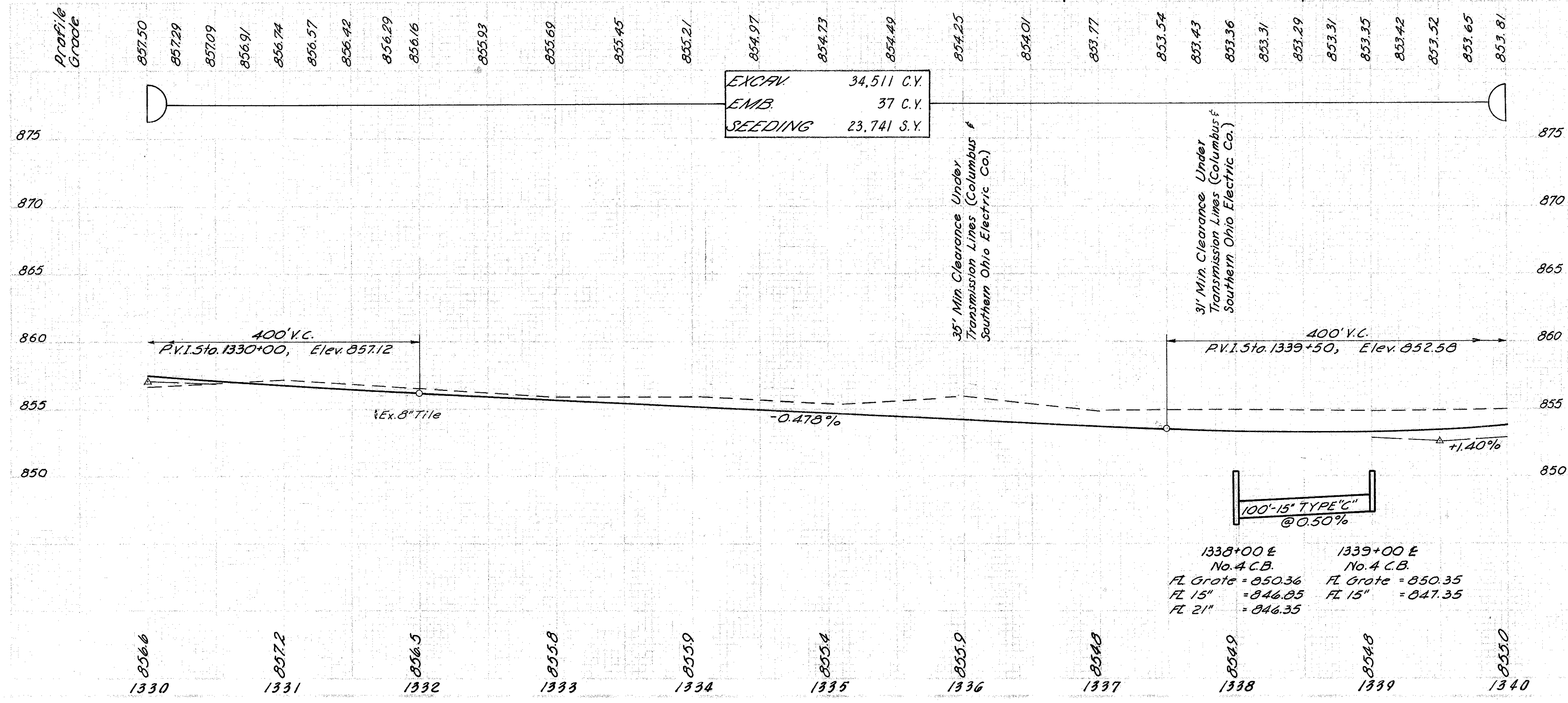
CALC: W.D.B. 7/30/68
CHK: R.E.H. 10-1-68



Exist. Ground	Profile	Inlet
Propo.	Topo.	Ch.
S.M.	Ref.	



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

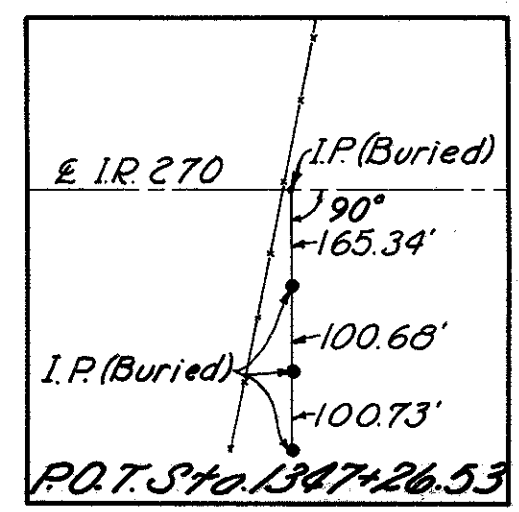


REF. STATION TO STATION	SIDE	601 Rock C.P. TYPE 'B'	602 CONC. MASONRY	603 TYPE "B"	604 TYPE "C"	605 No. 4 CATCH BASIN	606 JUTE MATTING	SEE DETAIL SHEET No.
2-D 1338+00	Rt.	C.Y. 3	C.Y. 0.4	21" L.F. 136	15" L.F. 100	Eg. 1	5Y. 125	50
3-D 1338+00 to 1339+00	E					1	125	50
TOTALS		3	0.4	136	100	2	250	

REF. STATION TO STATION	SIDE	601 GRUSHED AGGR.	603 TYPE "E"	604 TYPE "F"	BENDS & BRANCHES	SEE DETAIL SHEET No.
1-D 1333+30	Rt.	S.Y. 3	8" L.F. 6	8" L.F. 28	3	49
TOTALS		3	6	28		

FRANKLIN COUNTY
FRA - 270 - 22.99 N

CALC: W. D. G. 9/28/68
CHK: R. E. H. 10-1-68



- 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

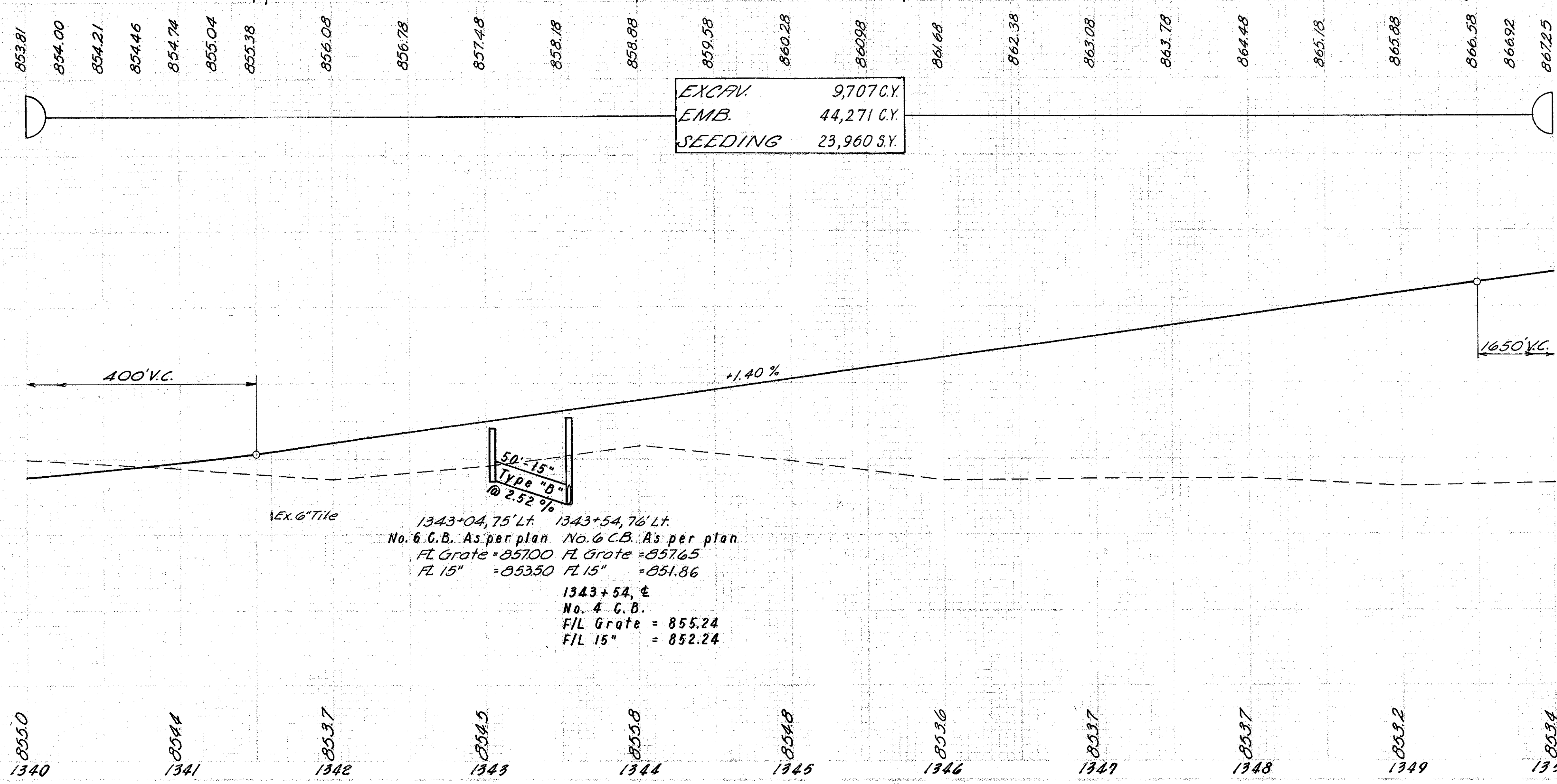
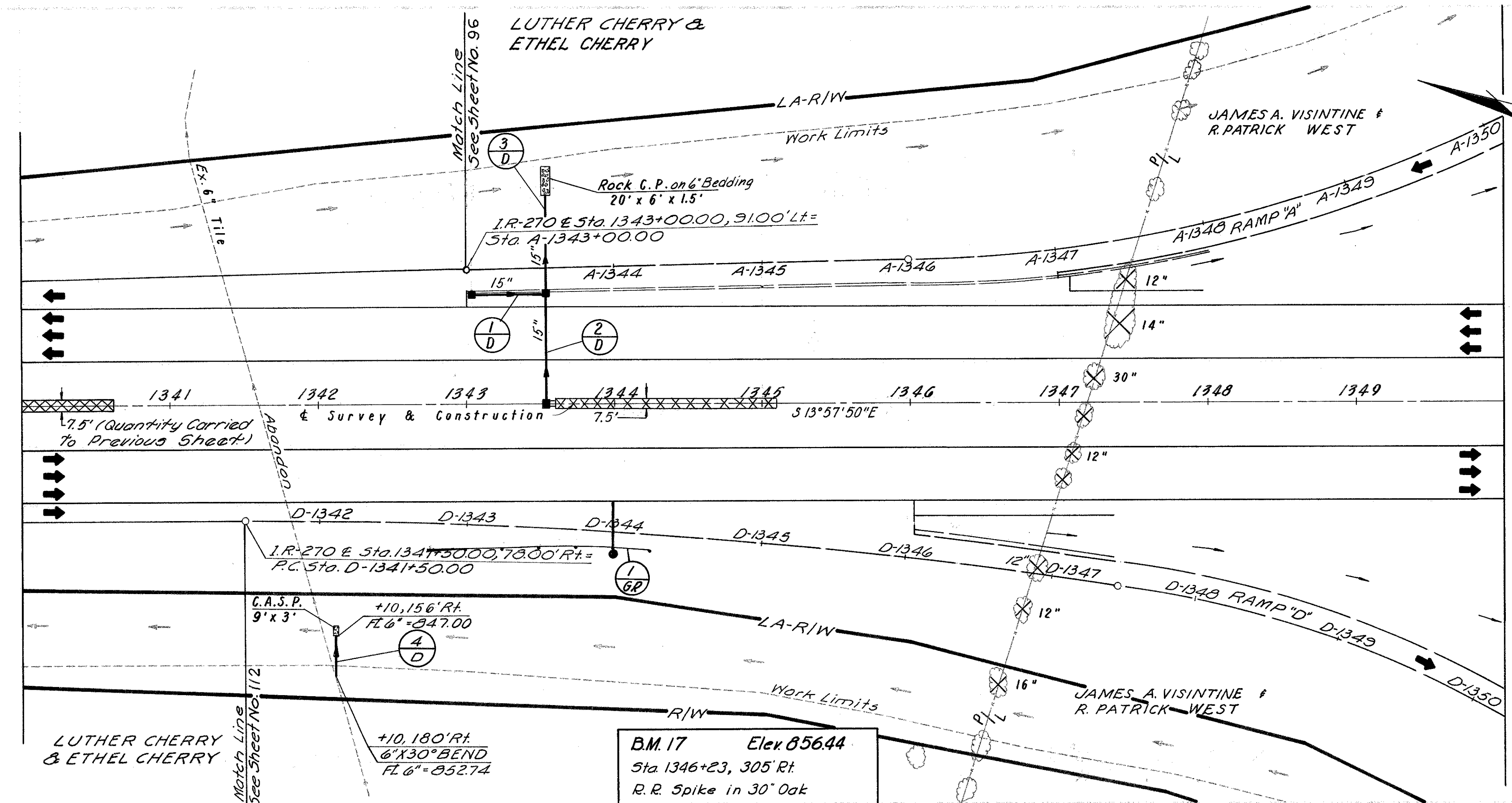
SIZE	LEFT	RIGHT
12" to 24"	2	4
24" to 36"	1	
36" to 60"		
Over 60"		

As Per Plan

REF. STATION TO STATION	SIDE	601 Rock C.P. TYPE 'B'	602 CONC. MASONRY	603 TYPE "B"	604 No. 4 CATCH BASIN	606 No. 6 CATCH BASIN	607 JUTE MATTING	SEE DETAIL SHEET No.
1-D 1343+04 to 1343+54	Lt.	C.Y.	C.Y.	15" L.F. 50	Ea. 1	Ea. 1	3.Y.	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"	603 TYPE "F"	606 GUARD RAIL TYPE 'B'	APPROPRIATE ANCHOR ASSEMBLY	BENDS & BRANCHES	SEE DETAIL SHEET No.
4-D 1342+10	Rt.	S.Y. 3	6" L.F. 5	6" L.F. 20	L.F. 150	Ea. 1	Ea. 1	3 51
1-GR 1342+75 to 1344+25	Rt.							
TOTALS		3	5	20	150	1	1	

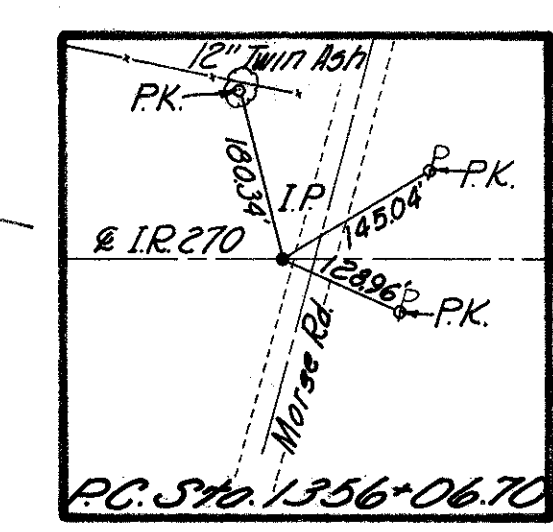
STA 1340+00 TO STA 1350+00



EXCAV. 9,707 C.Y.
EMB. 44,271 C.Y.
SEEDING 23,960 S.Y.

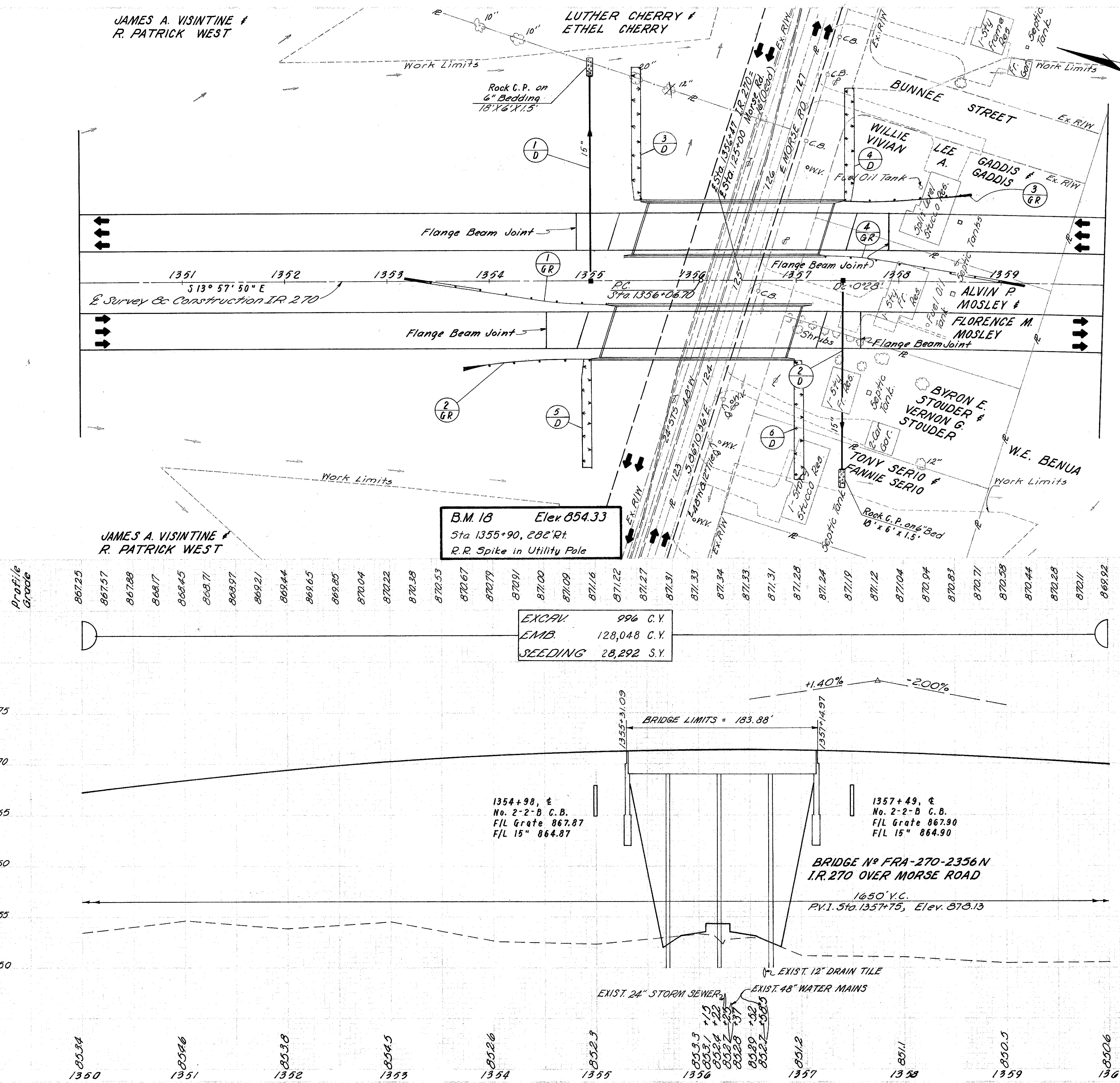
1343+04, 75' Lt. 1343+54, 76' Lt.
No. 6 C.B. As per plan No. 6 C.B. As per plan
FL Grate = 857.00 FL Grate = 857.65
FL 15" = 853.50 FL 15" = 851.86
1343+54, E
No. 4 C.B.
FL Grate = 855.24
FL 15" = 852.24

CALC: 9w.D.G. 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: H320-44 adequate for AA5HO alternate loading WEARING SURFACE: 1" monolithic concrete SKEW: 17°47'14" with tangent L.F. APPROACH SLAB: A5-1-67 (25'-0" long) ALIGNMENT: 0°28'00" RA SUPERELEVATION: None AVERAGE DAILY TRAFFIC: 67,340

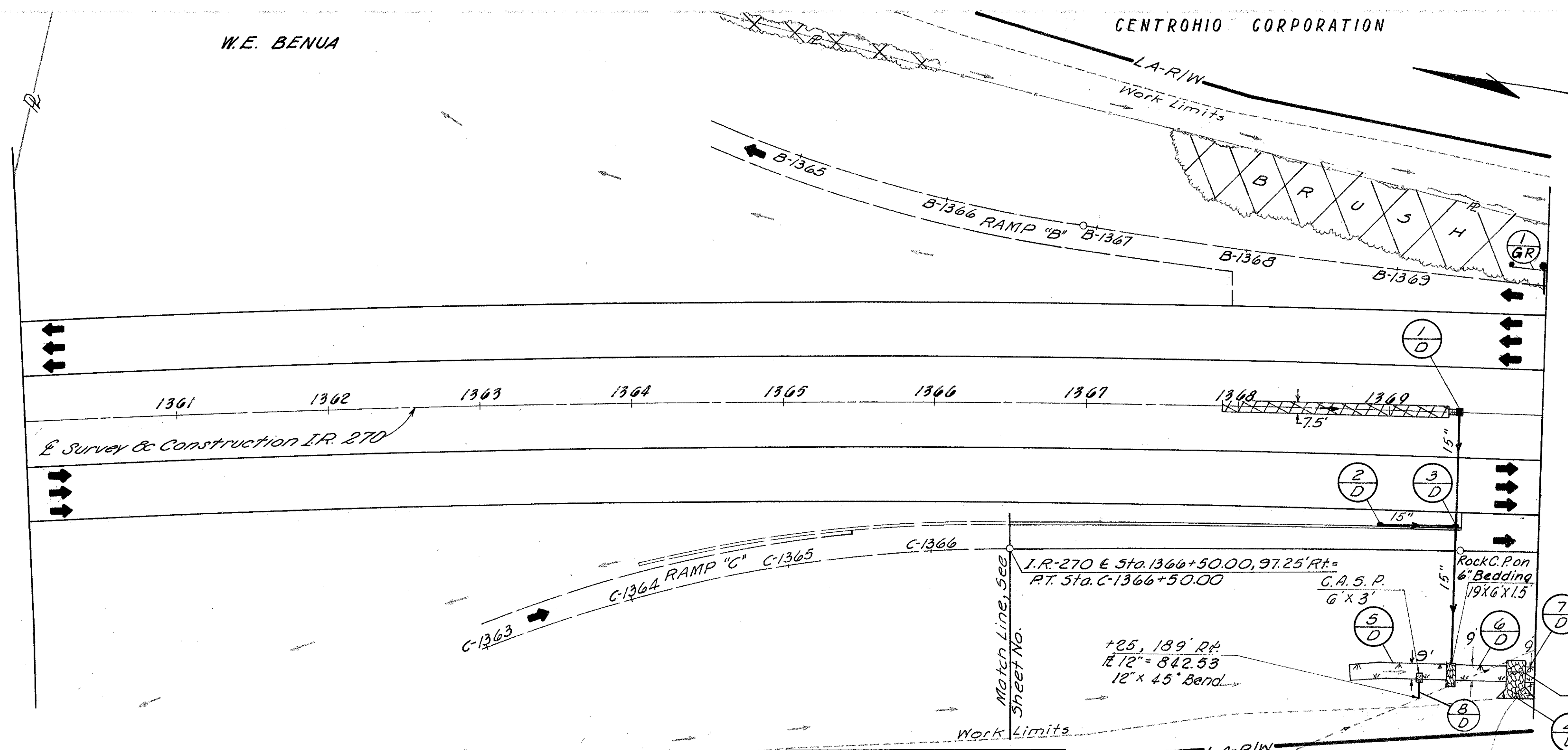


REF.	STATION TO STATION	SIDE	601	602	603	604	APPR. END ASSEMBLY	606 TERMINAL ASSEMBLY	606	STD. BAR	BENDS & BRANCHES	FOR DETAILS SEE SHEET No.
			Rock C.P. TYPE "B"	GONG. MASON.	TYPE "B" TYPE "F"	2-2-B CATCH BASIN			G. RAIL TYPE "S"			
1-D	1354+98	Lt.	8	0.3	90	112	1				2	55
2-D	1357+49	Rt.	8	0.3	92	94	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	

[illegible]

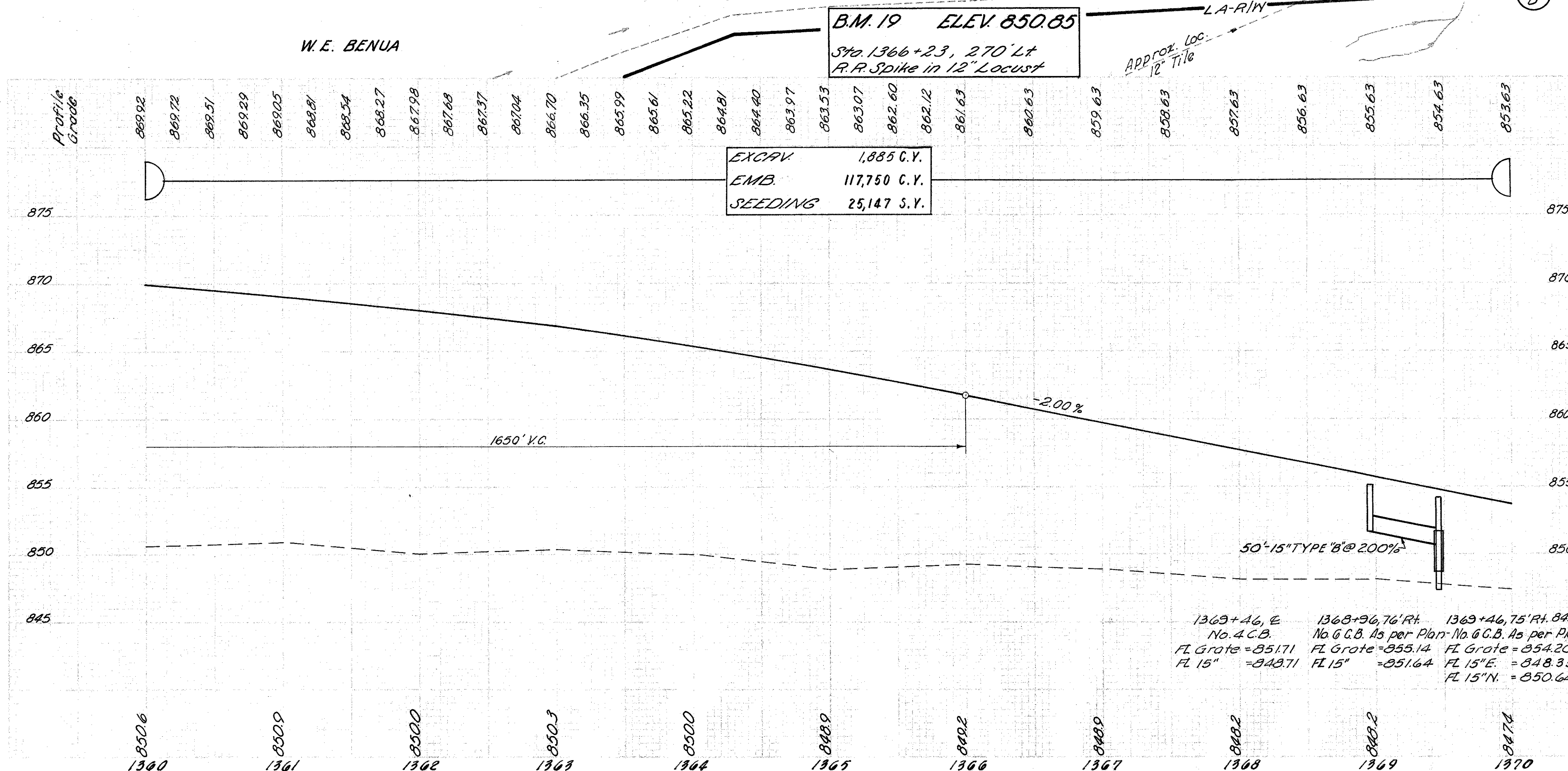
FRANKLIN COUNTY
FRA-270-22.99N

CALC: W D H 9/21/6
CHK: R. E. H. 10-1-6



NOTES:

- 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



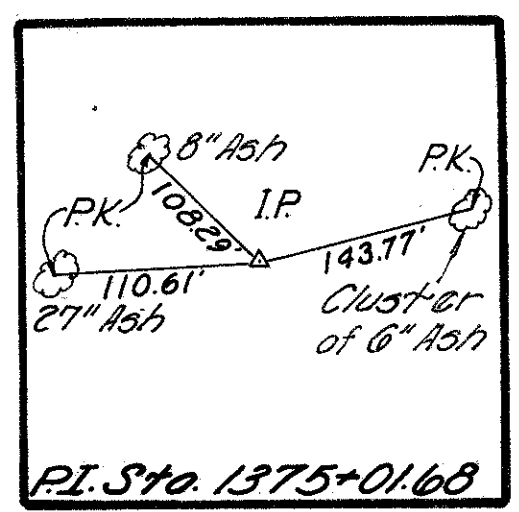
REF.	STATION TO STATION	SIDE	601 Rock C.P TYPE 'B'	603 TYPE B	604 No.4 CATCH BASIN	606 C.B. AS PER PLAN	602 CONC. MASONRY	660 SODDING	667 JUTE MATTING	SEE DETAIL SHEET No.
				15" L.F.	Ea.	Ea.	C.Y.	S.Y.	S.Y.	
1-D	1369+46	E	C.Y.	75	1				125	60
2-D	1368+96 to 1369+46	R+		50		1				60
3-D	1369+46	R+	9	86		1	03			60
4-D	1369+89, 187 R+ to 162	R+	24							
5-D	1369+75 to 1369+43	R+						60		
6-D	1369+49 to 1369+83	R+						34		
7-D	1369+95 to 1370+00	R+						5		
TOTALS			33	211	1	2	0.3	107	125	

REF	STATION TO STATION	SIDE	606	601	603		606				See Detail Sheet No.
			GUMPD RAIL TYPE B	C.A.S.R.	TYPE F	TYPE E	ANCHOR ASSEMBLY				
			L.F.	5.Y.	12" L.F.	12" L.F.	E.A. 1				
1-6R	1369+75 to 1370+00	Lt	25								
8-D	1369+25	Rt.		2	10	4					60
TOTALS			25	2	10	4	1				

STA 1360+00 TO STA 1370+00

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: W.D. 9/2/68
CHK: REN 10-1-68



TREE REMOVAL
1372+00 to 1373+37

Size	Lt	Rt
12" to 24"	8	8
24" to 36"	0	4

TREE REMOVAL
1373+37 to 1380+00

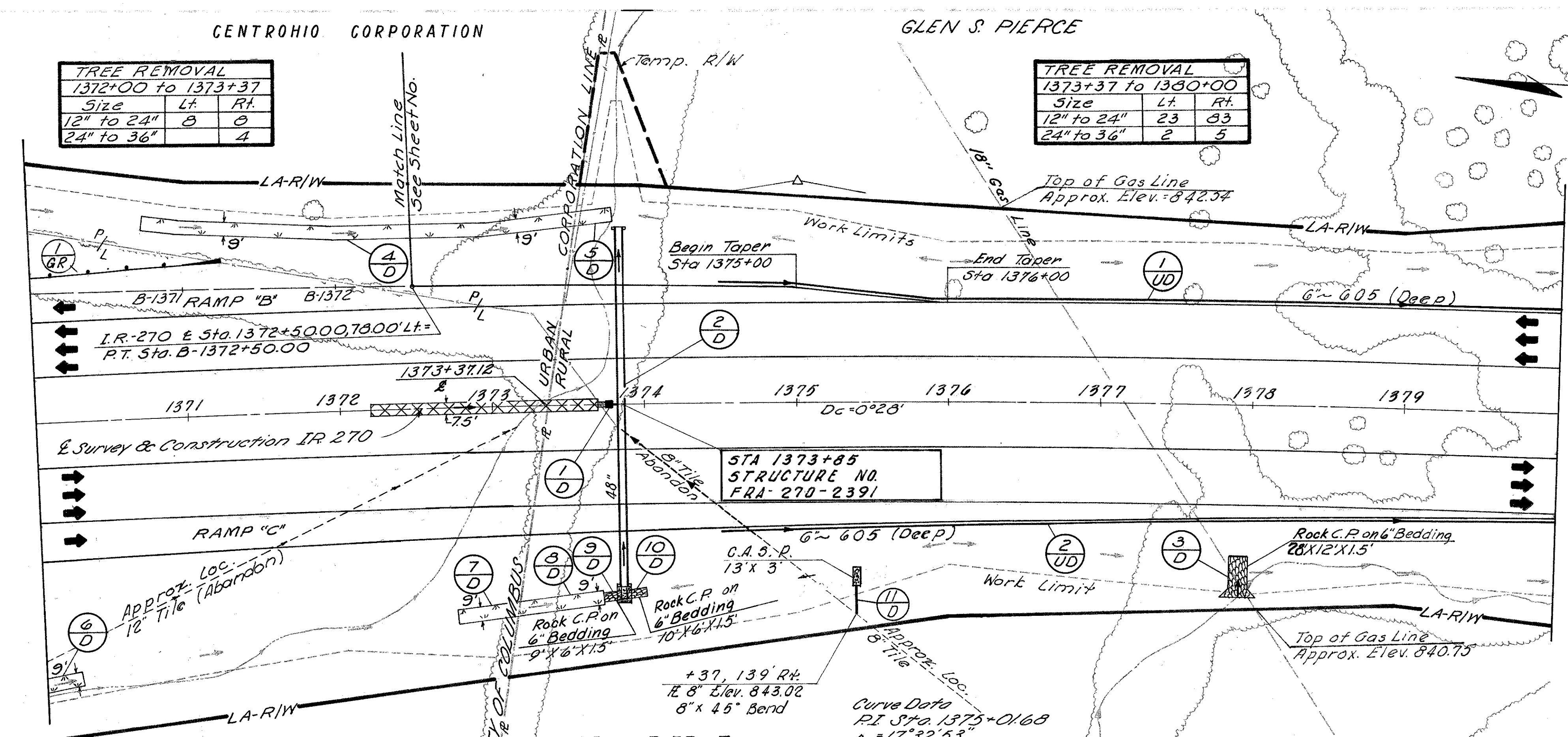
Size	Lt	Rt
12" to 24"	23	83
24" to 36"	2	5

Ex. Ground
Profile
Taper
3 ft.
Ref.

Plotted

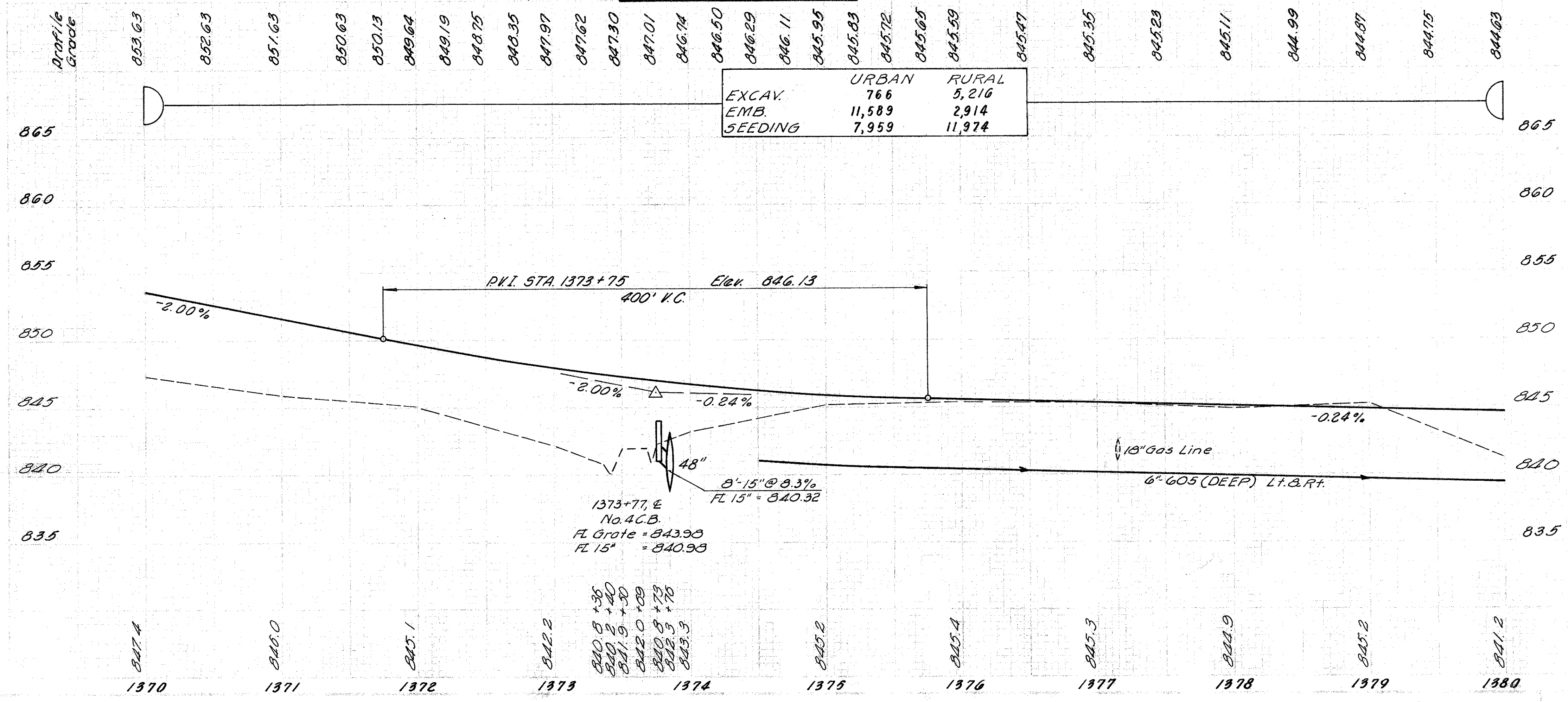
Chk

Entered



GLEN S. PIERCE
B.M. 20 ELEV. 841.68
Sta 1373+91, 292' Lt
R.R. Spike in 18" Oak

W. E. BENUA



- 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 Ramp #	602 Rock C.P. #	603 TYPE "A"	604 No. 4 CATCH BASIN	605 SODDING #	606 JUTE MATTING #	607 BRANCHES #	SEE DETAIL SHEET No.
1-D 1373+77	E	5X	C.Y.	15"	48"	1	5X	5X	61
2-D 1373+85	E	14	26	1.8	236	1	3	125	189
3-D 1377+93, 127' Rt to 99' Rt	Rt						292		62
4-D 1370+75 to 1373+57	Lt						26		
5-D 1373+57 to 1373+83	Lt						25		
6-D 1370+00 to 1370+25	Rt						40		
7-D 1372+75 to 1373+15	Rt						56		
8-D 1373+15 to 1373+71	Rt								
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		

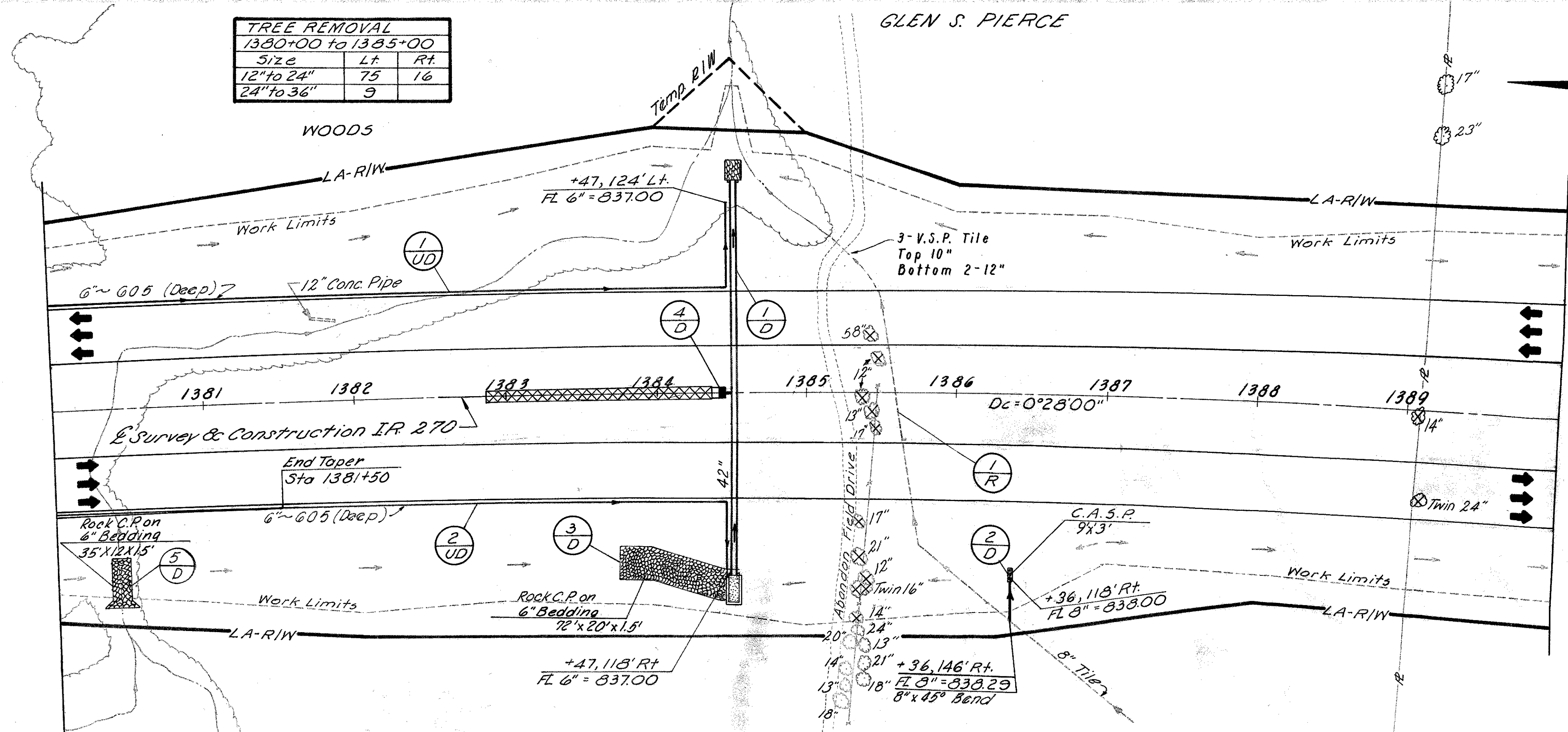
REF. STATION TO STATION	SIDE	603 TYPE F	605 TYPE C	606 DEEP #	607 GUARD RAIL TYPE 5	608 APPLY ASSEMBLY	609 GA.S.P. #
1-D 1374+50 to 1380+00	Lt	8"	8"	6"	L.F.	Eq.	5.Y.
2-D 1374+50 to 1380+00	Rt	L.F.	L.F.	L.F.	L.F.	Eq.	5.Y.
1-D 1370+00 to 1371+25	Lt						125
11-D 1375+37	Rt	10	8				5
TOTALS (RURAL)		10	8	1100			5
TOTALS (URBAN)							

STA 1370+00 TO STA 1380+00

FRANKLIN COUNTY
FRA - 270 - 22.99 N

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

TREE REMOVAL		
1380+00 to 1385+00		
Size	Lt	Rt
12" to 24"	75	16
24" to 36"	9	



B.M. EL. 842.91
Sta 1381+00, 137' Rt.
R.R. Spike in 24" Oak

STRUCTURE No. FRA-270-2411
Sta 1384+52 42" CULVERT
FOR CULVERT DETAILS
SEE SHEET No. 160

B.M. EL. 844.76
Sta 1389+18, 207' Lt.
R.R. Spike in 18" Cherry

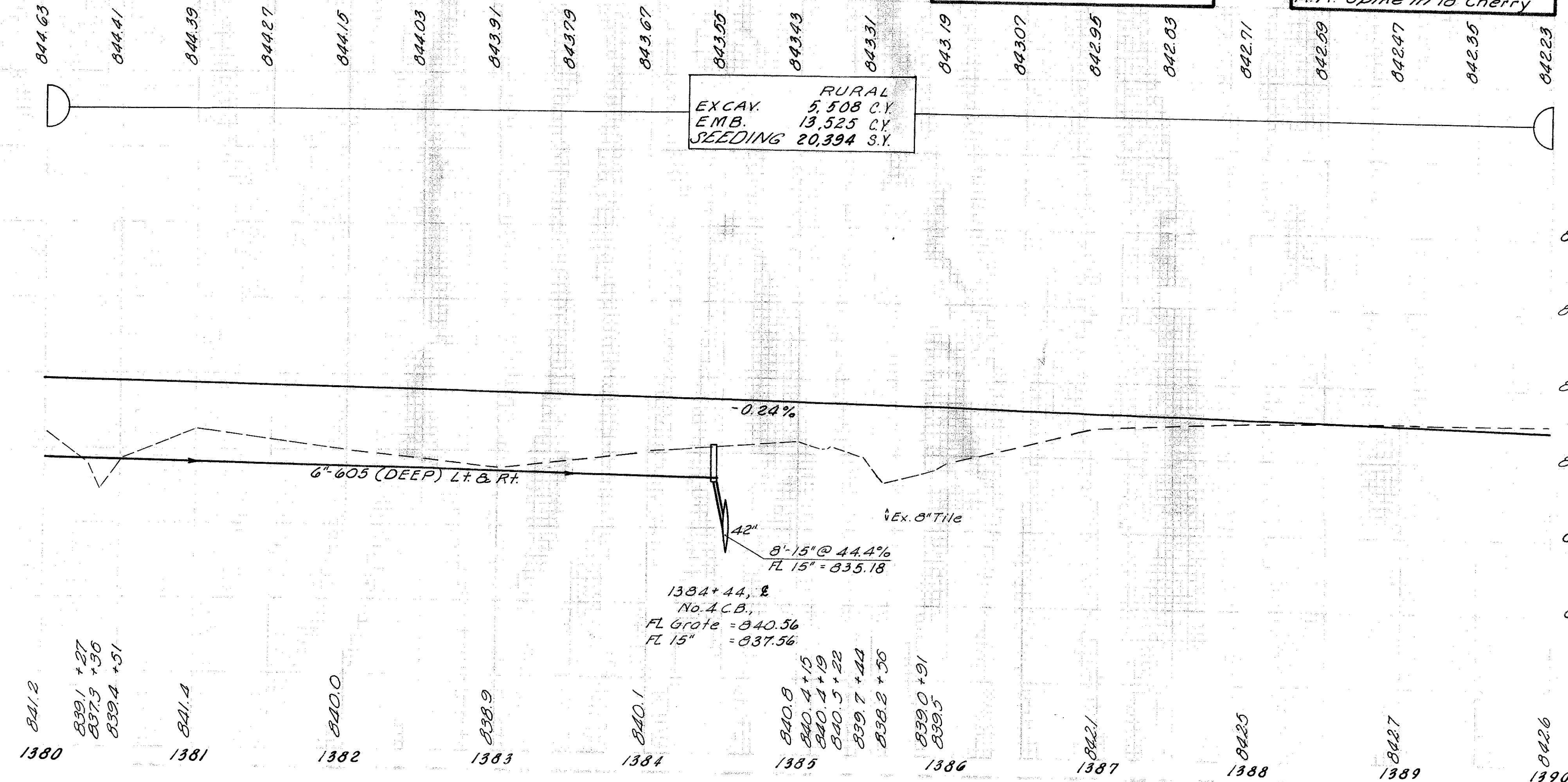
GLEN S. PIERCE

RURAL
EXCAV. 5,508 C.Y.
EMB. 13,525 C.Y.
SEEDING 20,394 S.Y.

* RURAL

REF. STATION TO STATION	SIDE	601		602		603				604		SEE DETAIL SHEET NO.
		TYPE "B"	TYPE "C"	TYPE "B"	TYPE "C"	TYPE "A"	TYPE "E"	TYPE "F"	TYPE "G"	TYPE "H"	TYPE "I"	
1-D 1384+52	E	C.Y.	S.Y.	S.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	EO.	S.Y.	190
2-D 1386+36	Rt	15	19	3	1.6	256	18	10	8	1	5	65
3-D 1383+75 to 1384+47	Rt	107										64
4-D 1384+44	Rt											
5-D 1380+41, 98' Rt. to 133' Rt.	Rt	33										
TOTALS (RURAL)		155	19	3	1.6	256	18	10	8	1	5	125

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

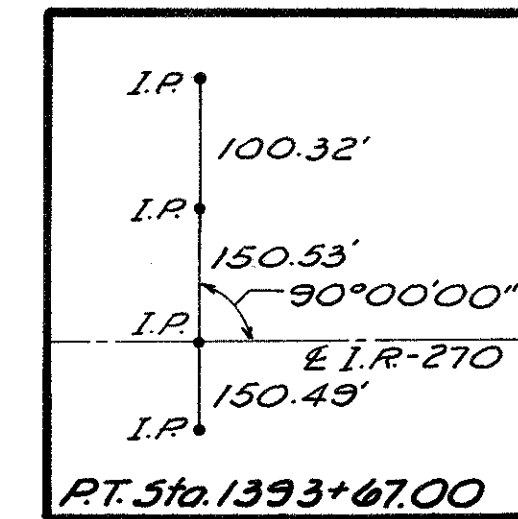
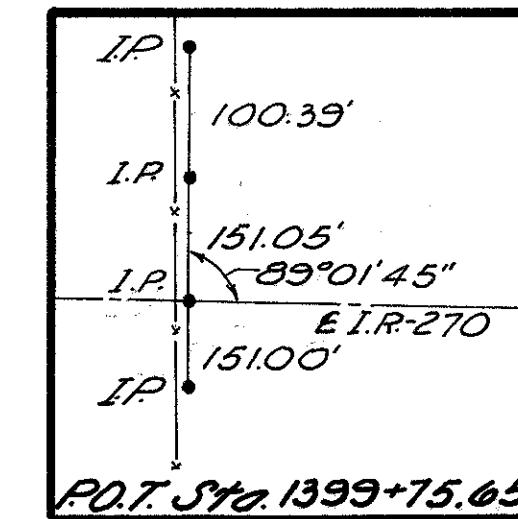
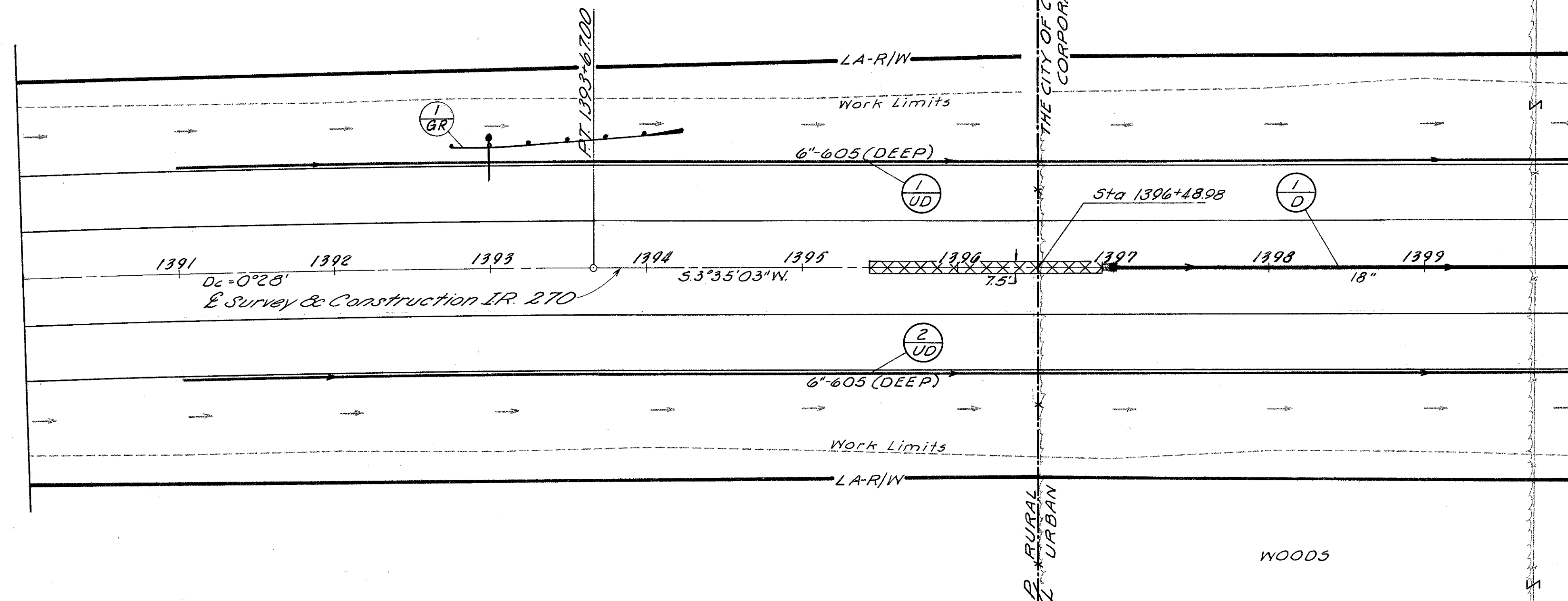


LAURA S. HARDY
(LIFE ESTATE TO RETTA SANDUSKY)

CLYDE A. CLODFELTER &
HELEN D. CLODFELTER

FRANKLIN COUNTY
FRA - 270 - 22.99 N

30
292



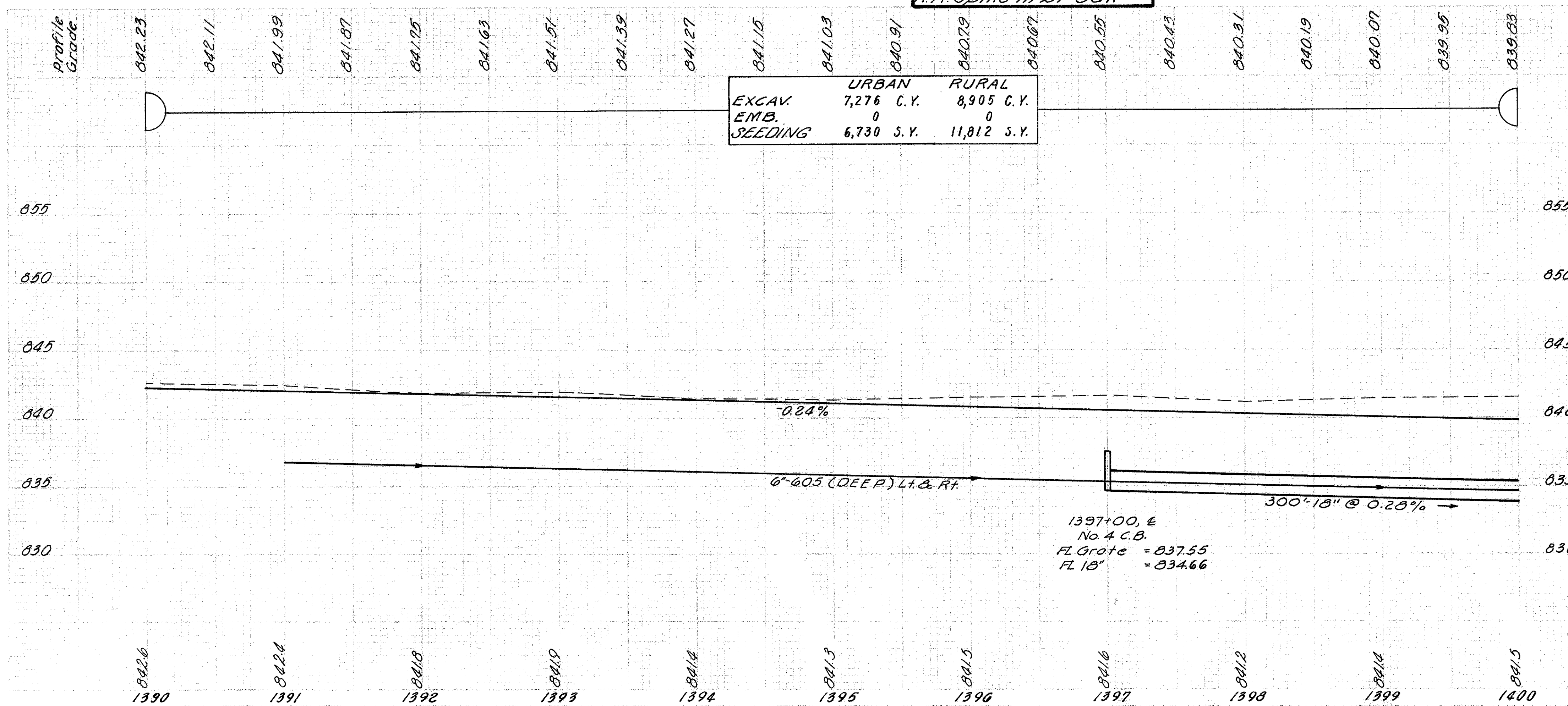
CALC: W.D. 9/23/68
CHK: R.E.H. 10-1-68

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"		

LAURA S. HARDY
(LIFE ESTATE TO RETTA SANDUSKY)

B.M. 22 ELEV. 843.11
Sta 1396+50.243 Lt
R.R. Spike in 21' Oak

CLYDE A. CLODFELTER &
HELEN D. CLODFELTER



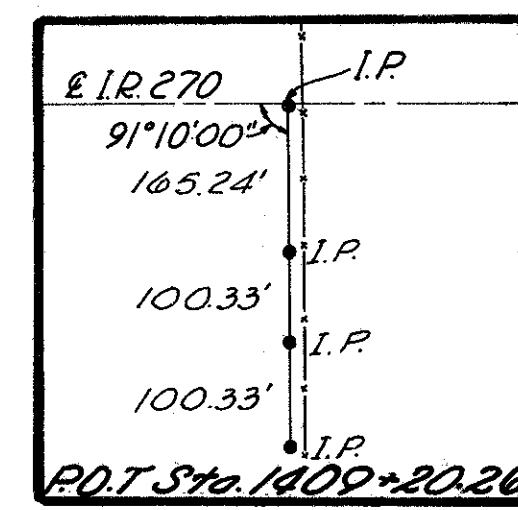
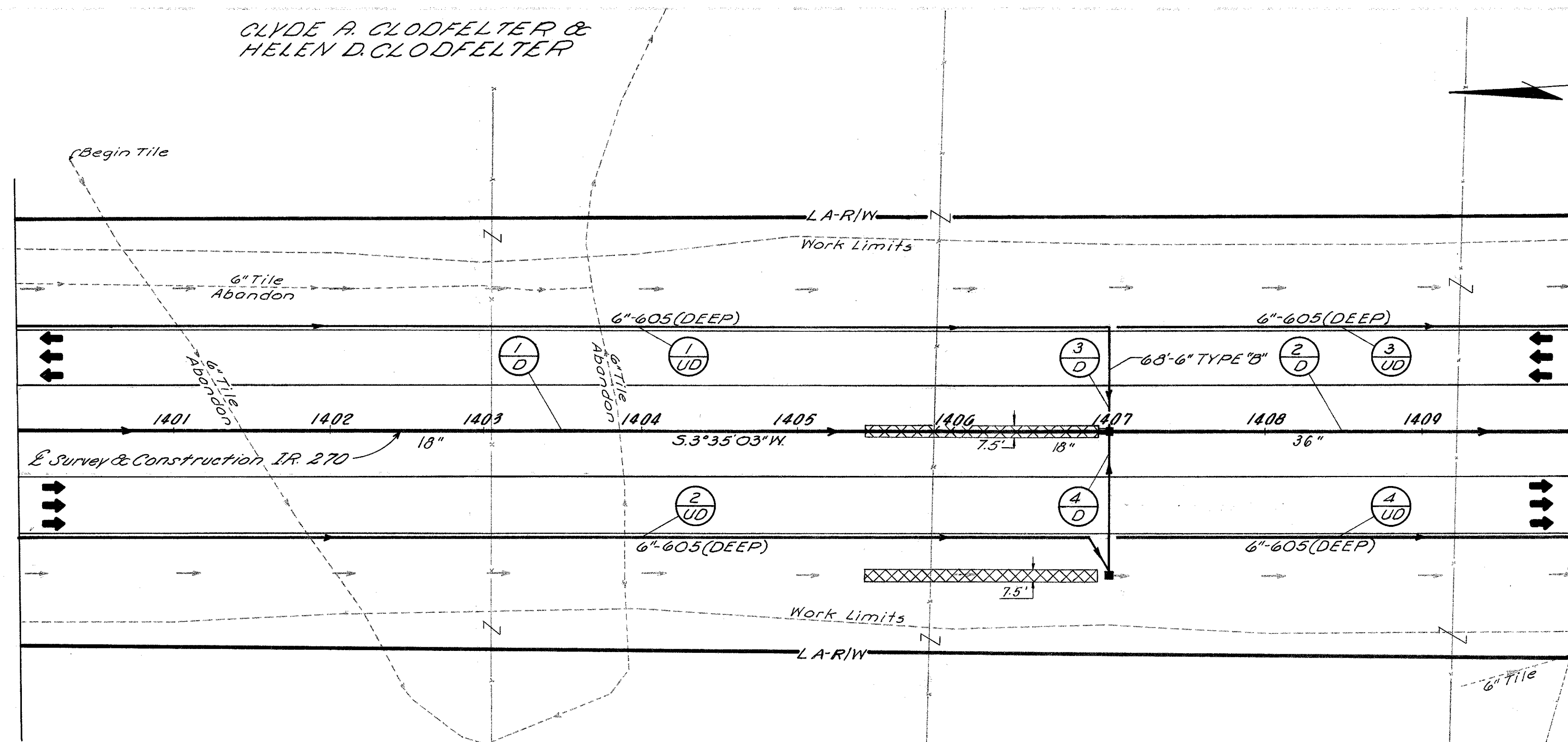
† RURAL

REF. STATION TO STATION	SIDE	603 TYPE "C"	604 No. 4 CATCH BASIN	667 JUTE MATTING	SEE DETAIL SHEET No.
1-D 1397+00 to 1400+00	E	18" L.F. 300	Ea. 1	5.Y. 125	67-68
TOTALS (URBAN)		300	1	125	

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

STA 1390+00 TO STA 1400+00

CLYDE A. CLODFELTER &
HELEN D. CLODFELTER



FRANKLIN COUNTY
FRA-270-22.99 N

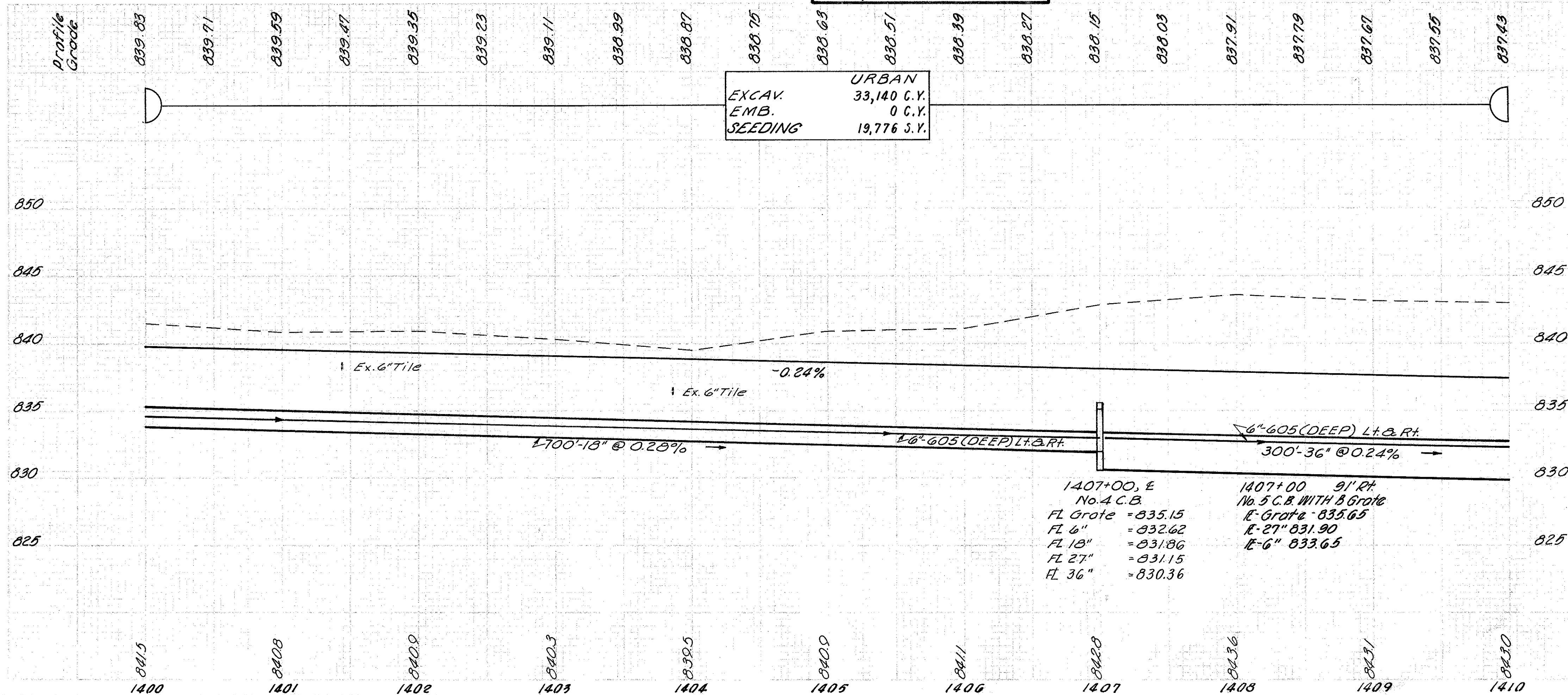
CALC: W.D.G. 9/23/68
CHK: R.E.H. 10-1-68

40
292

CLYDE A. CLODFELTER &
HELEN D. CLODFELTER

B.M. 23 ELEV. 842.85
Sta. 1405+51, 435' R+
RR Spike in 14" Oak

URBAN
EXCAV. 33,140 C.Y.
EMB. 0 C.Y.
SEEDING 19,776 S.Y.



** With "B" Grate

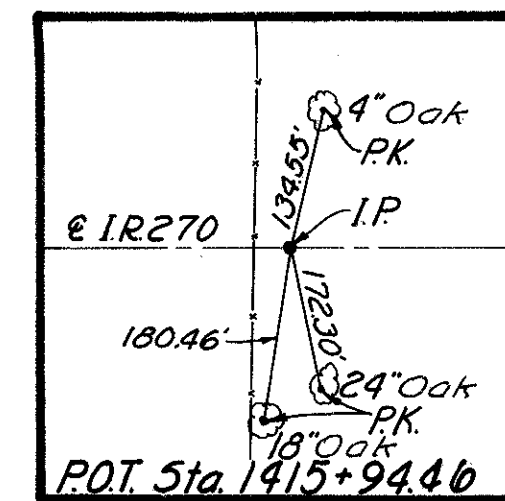
REF. STATION TO STATION	SIDE	603			604		667	BENDS & BRANCHES	SEE DETAIL SHEET NO.
		TYPE 'C'	TYPE 'C'	TYPE 'B'	No. 4 G.B.C.B. **	No. 5 G.B.C.B. **			
1-0 1400+00 to 1407+00	E	18"	36"	6" 27"	1	1	125	68-70	70
2-0 1407+00 to 1410+00	E	18"	36"	6" 27"	1	1	125	70	70
3-0 1407+00	Lt.			68	91	1	125		
4-0 1407+00	Rt.								
TOTALS		700	300	68 91	1	1	250		

REF. STATION TO STATION	SIDE	603		603	TYPE F	DEEP	BENDS & BRANCHES	UNDER DRAIN OUTLET DETAIL
		6"	6"					
1-0 1400+00 to 1407+00	Lt.	6"	6"	1				D
2-0 1400+00 to 1407+00	Rt.	6"	6"	1				B
3-0 1407+04 to 1410+00	Lt.	6"	6"					
4-0 1407+04 to 1410+00	Rt.	6"	6"					
TOTALS		1996	10					

STA 1400+00 TO STA 1410+00

CLYDE A. CLODFELTER &
HELEN D. CLODFELTER

HAVENWOOD PROPERTY INC.

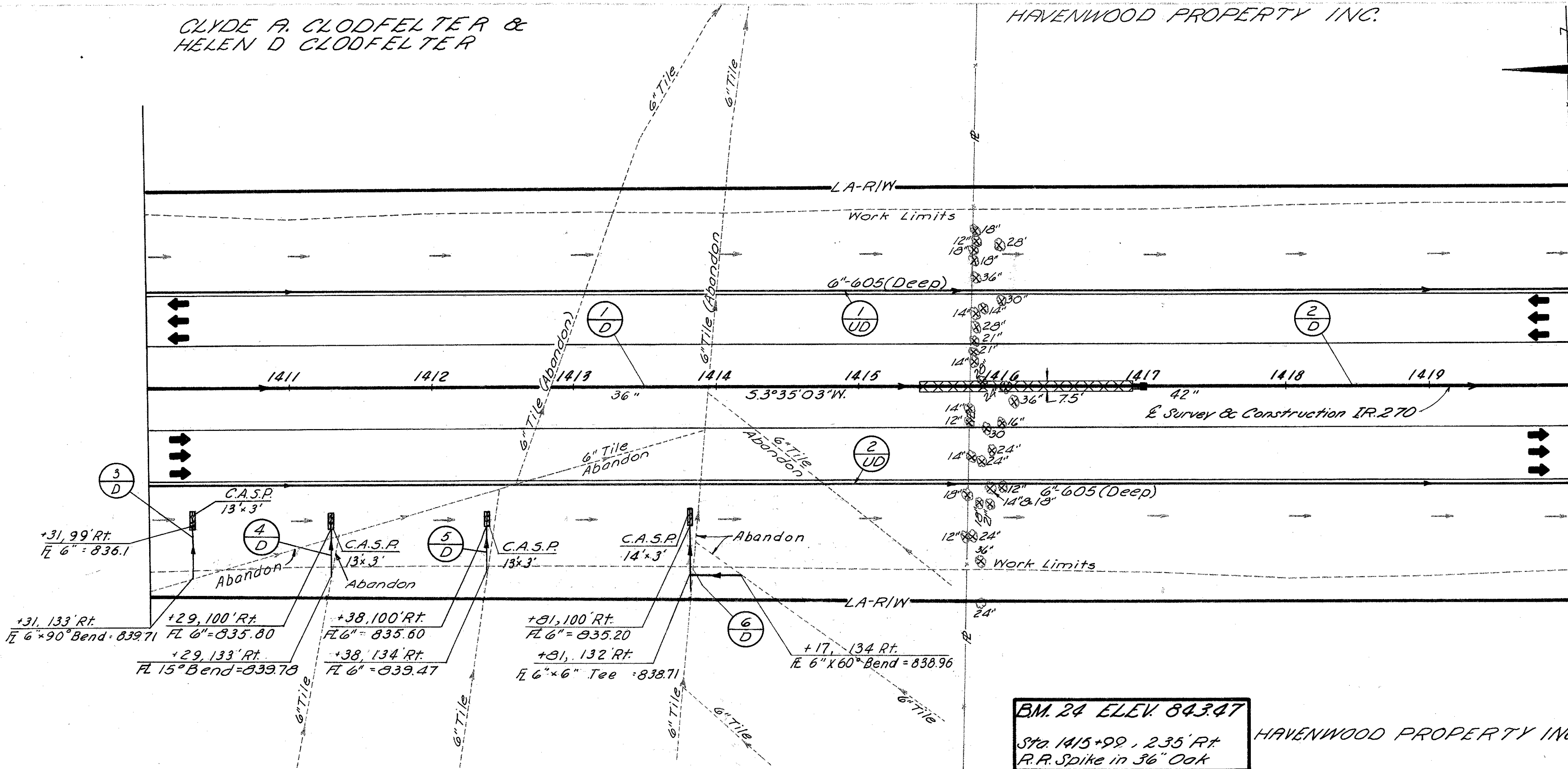


FRANKLIN COUNTY
FRA-270-22.99 N

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

TREE REMOVAL

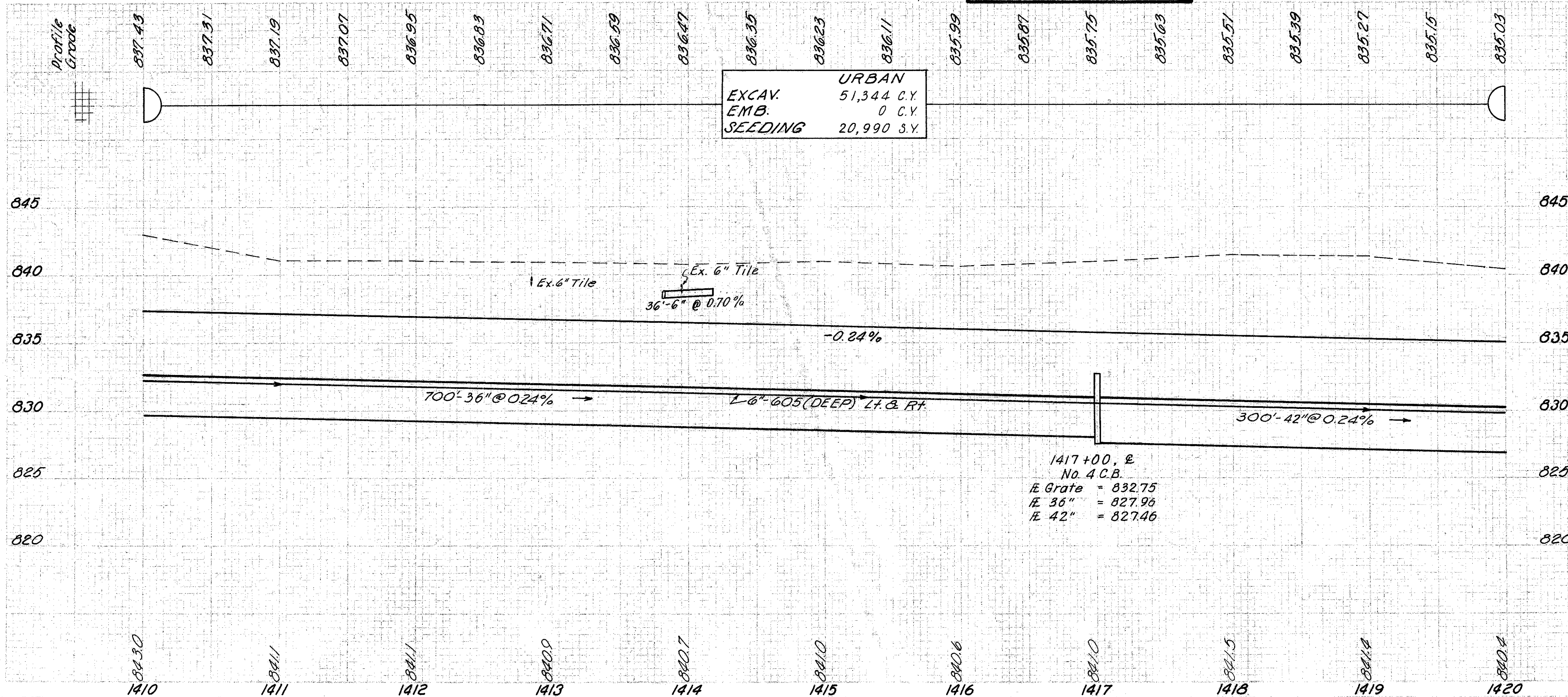
Size	Lt.	Rt.
12" to 24"	9	15
24" to 36"	5	3
36" to 60"		
Over 60"		



BM. 24 ELEV 843.47

Sta 1415+99, 2.35' Rt.
R.R. Spike in 36" Oak

HAVENWOOD PROPERTY INC.



REF. STATION TO STATION	SIDE	601	603	604	607	BENDS	SEE
		C.A.S.P.	TYPE	TYPE	TYPE	TYPE	DETAIL
		E	E	F	C	C	SHEET
		S.Y.	L.F.	L.F.	L.F.	L.F.	NO.
1-D 1410+00 to 1417+00	E						70-72
2-D 1417+00 to 1420+00	E						72-73
3-D 1410+31	Rt.	5	8	26			70
4-D 1411+29	Rt.	5	6	27			71
5-D 1412+38	Rt.	5	6	28			71
6-D 1413+81	Rt.	5	42	27			71
TOTALS		20	62	108	700	300	125

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

STA 1410+00 TO STA 1420+00

HAVENWOOD PROPERTY INC.

JOHN R. MIDDLETON &
NORMA J. MIDDLETON

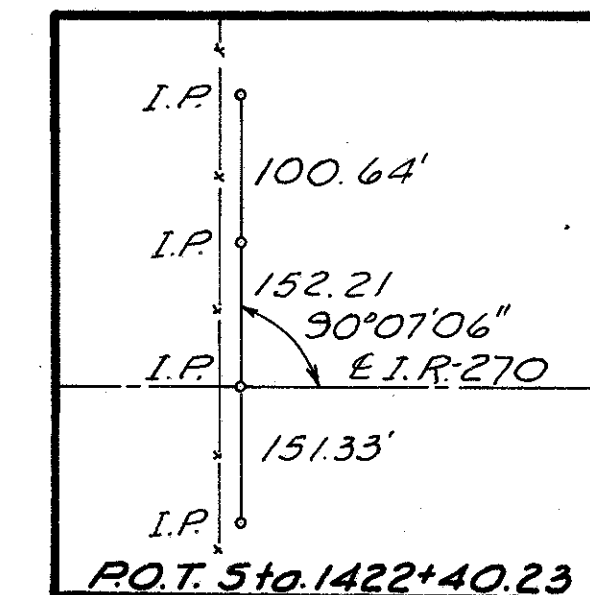
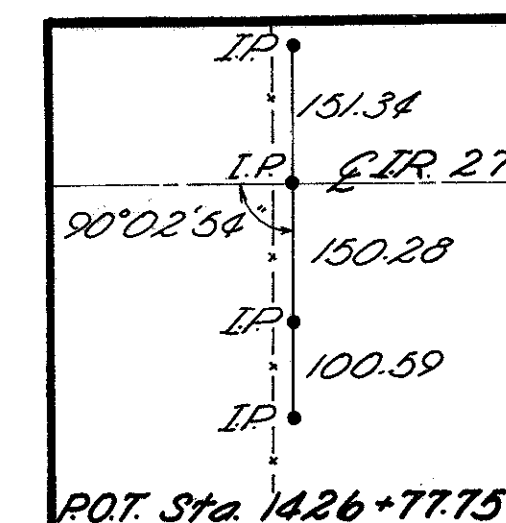
JESSE CLEORA
MORGAN &
DAVID F.
MORGAN

RALPH E. BOSO

JOHN H. BERRY
& EDITH M. BERRY

FRANKLIN COUNTY
FRA-270-22.99N

CALC: JWD 6/24/68
CHK: R.E.H. 10-1-68



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

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

B.M. 25 ELEV 841.50
Sta 1422+40.335 Rt.
R.R. Spike in 30' Oak

JESSE CLEORA MORGAN &
DAVID F. MORGAN

RALPH E. BOSO

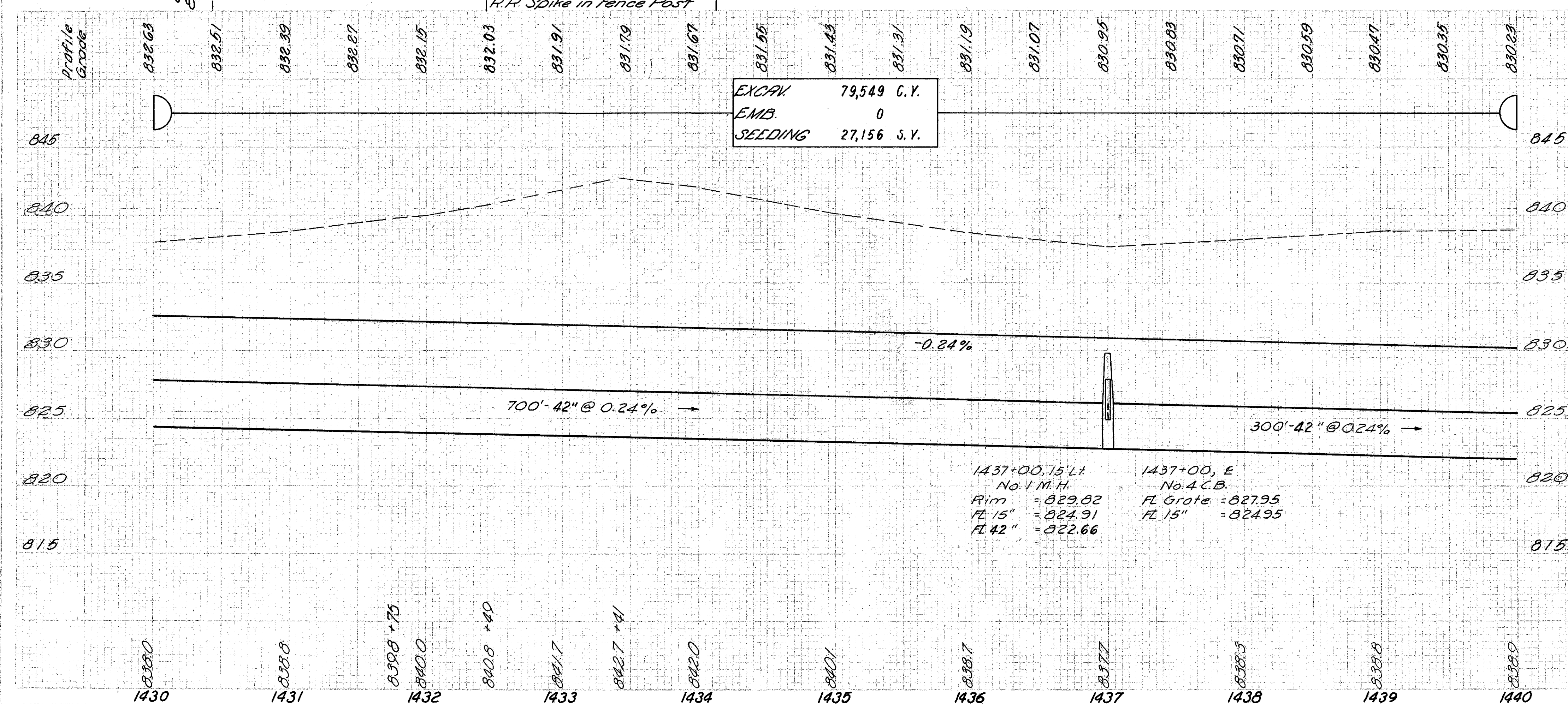
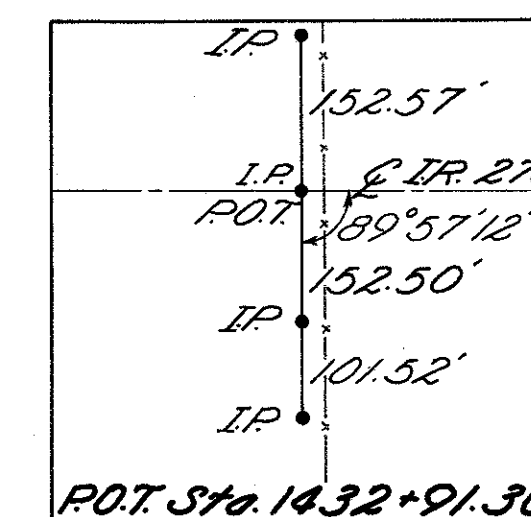
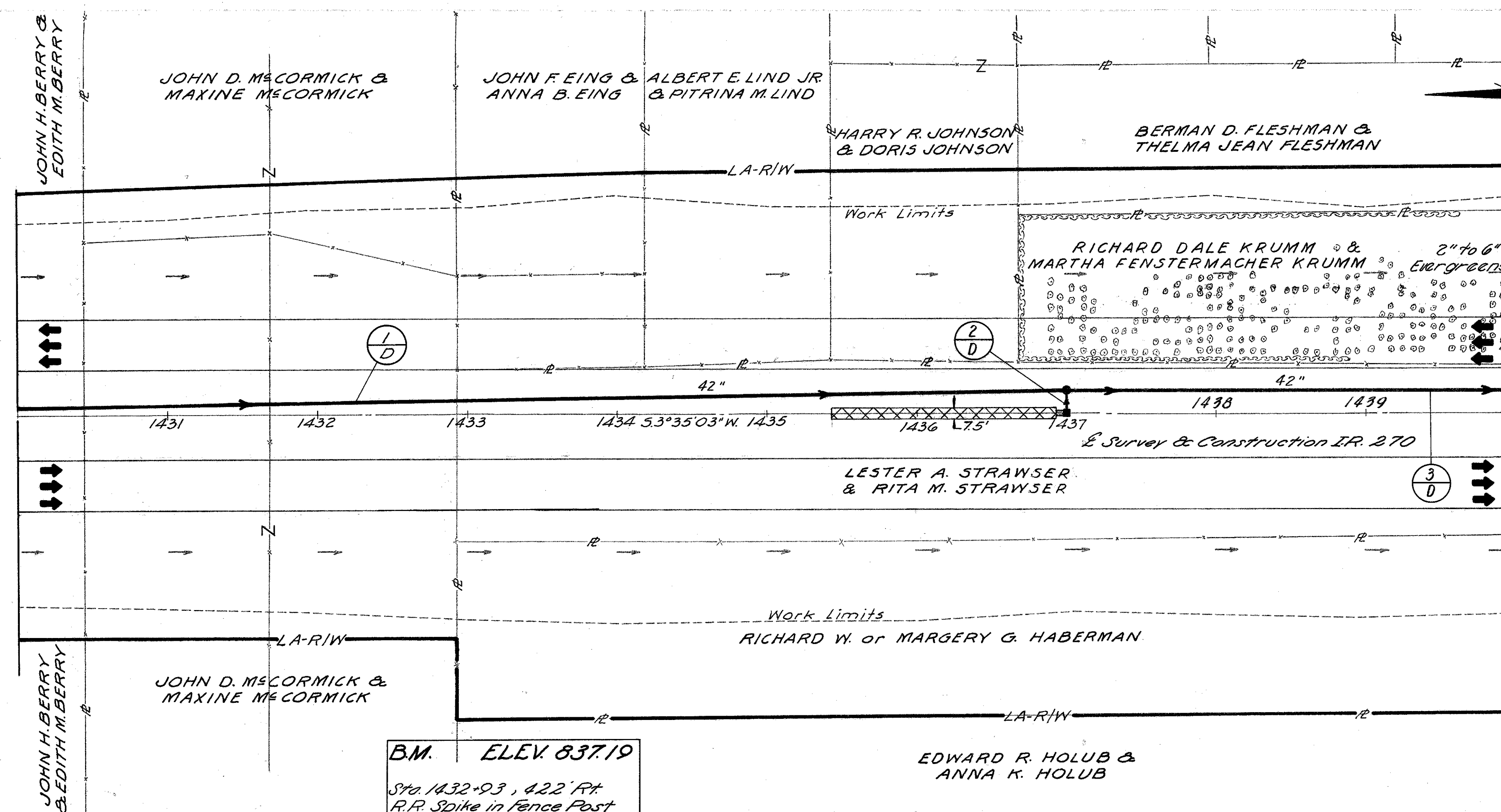
JOHN H. BERRY
& EDITH M. BERRY

* RURAL

REF. STATION TO STATION	SIDE	603				604 No. 4 CATCH BASIN ±	607 JULIE MATING ±	SEE DETAIL SHEET No.
		TYPE "B" ±	TYPE "C" ±	TYPE "C" ±	TYPE "B" ±			
1-D 1420+00 to 1427+00	E	6"	42"	42"				73-75
2-D 1427+00 to 1430+00	Lt.	L.F.	L.F.	L.F.	25			75
3-D 1427+00	Lt.	63	675	220	80	1	125	75
4-D 1427+00	Rt.	63						75
TOTALS (URBAN)			675					
TOTALS (RURAL)		136		245	80	1	125	

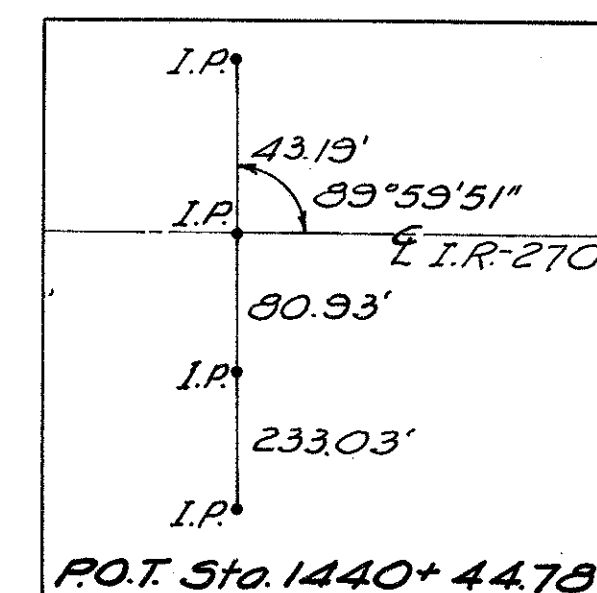
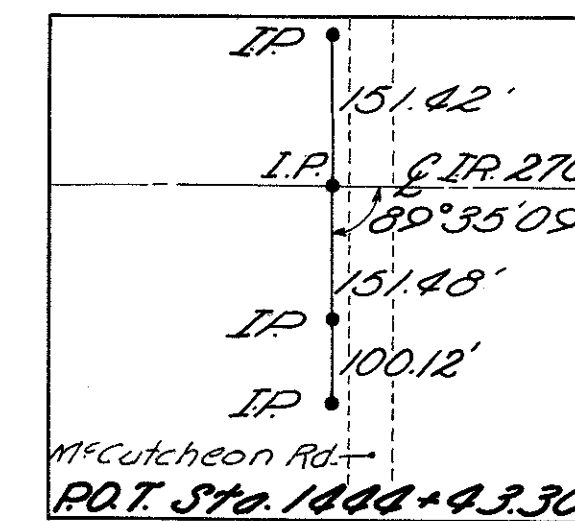
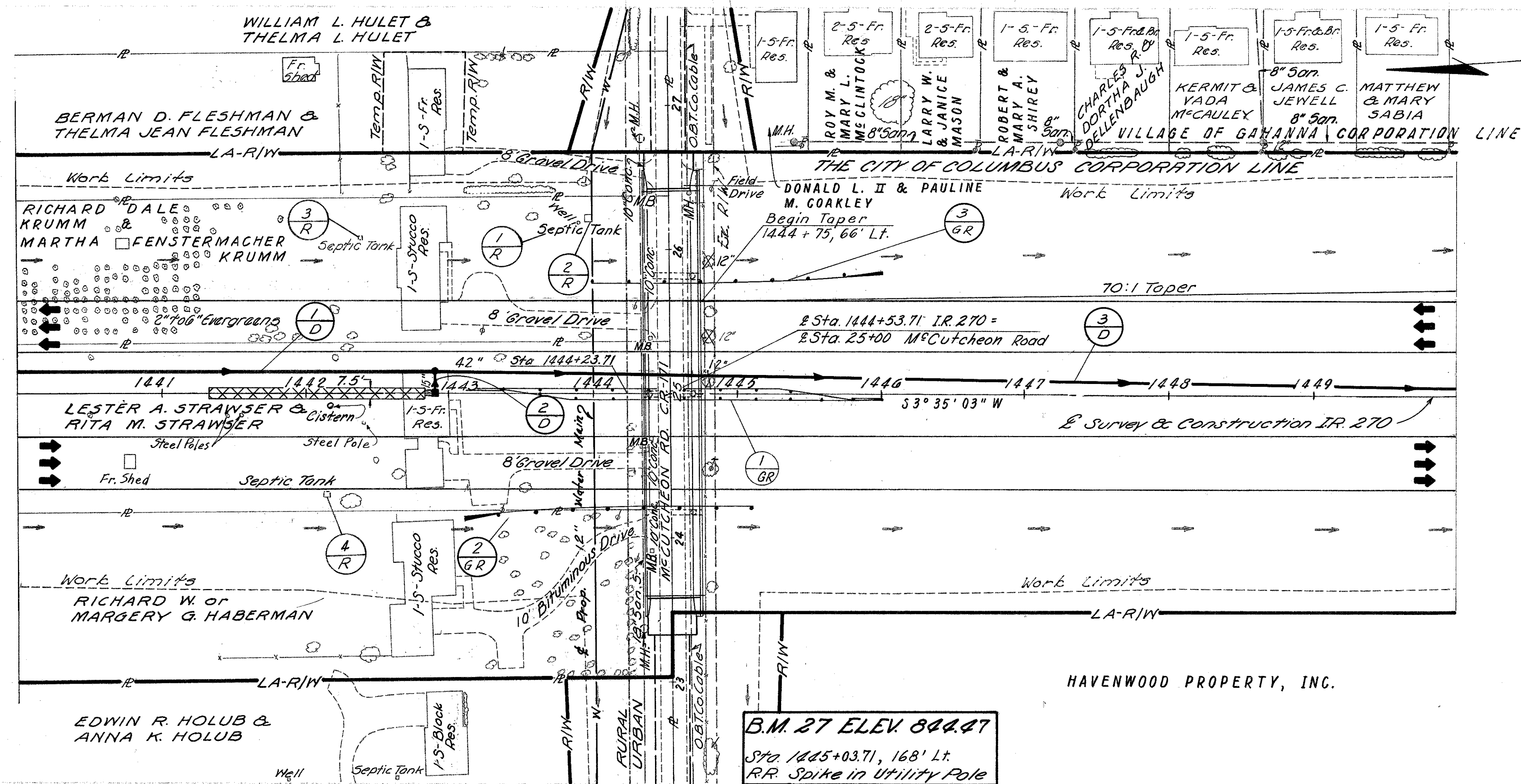
REF. STATION TO STATION	SIDE	605		606 GUARD RAIL TYPE 5		BENDS ANCHOR ASSEMBLY ANCHOR ASSEMBLY	BENDS ANCHOR ASSEMBLY ANCHOR ASSEMBLY	UNDER DRAIN OUTLET DETAIL
		DEEP	DEEP ±	DEEP	DEEP ±			
1-D 1420+00 to 1427+00	Lt.	6"	6"	L.F.	L.F.			D
2-D 1420+00 to 1427+00	Rt.	675	25	675	25			D
1-GR 1420+75 to 1422+25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

STA 1420+00 TO STA 1430+00



REF. STATION TO STATION		SIDE	TYPE "C" ‡	TYPE "C" ‡	603	No.1 MAN- HOLE ‡	604 No.4 CATCH BASIN ‡	667 JUTE MATTING *	SEE DETAIL SHEET NO.
1-D	1430+00 to 1437+00	Lt.	15" L.F.	42" L.F.		Ea.	Ea.	5Y.	75-7
2-D	1437+00	E	15	700			1	125	77-7
3-D	1437+00 to 1440+00	Lt.		300		1			
TOTALS (RURAL)			15	1000		1	1	125	

[illegible]



FRANKLIN COUNTY
FRA-270 - 22.99 N

CALC: W.D.H. 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			604		667	JUTE MATTING #	SEE DETAIL SHEET No.
			TYPE "C" #	TYPE "C" #	TYPE "C" #	No.1 MAN- HOLE #	No.4 CATCH BASIN #			
			15" L.F.	42" L.F.	42" L.F.	Eq.	Eq.	5.Y.	78-79	
1-D	1440+00 to 1442+90	Lt.		290					79	
2-D	1442+90	E	15				1	125	79-80	
3-D	1442+90 to 1450+00	Lt.		134	576	1				
TOTALS (URBAN)					576					
TOTALS (RURAL)			15	424		1	1	125		

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

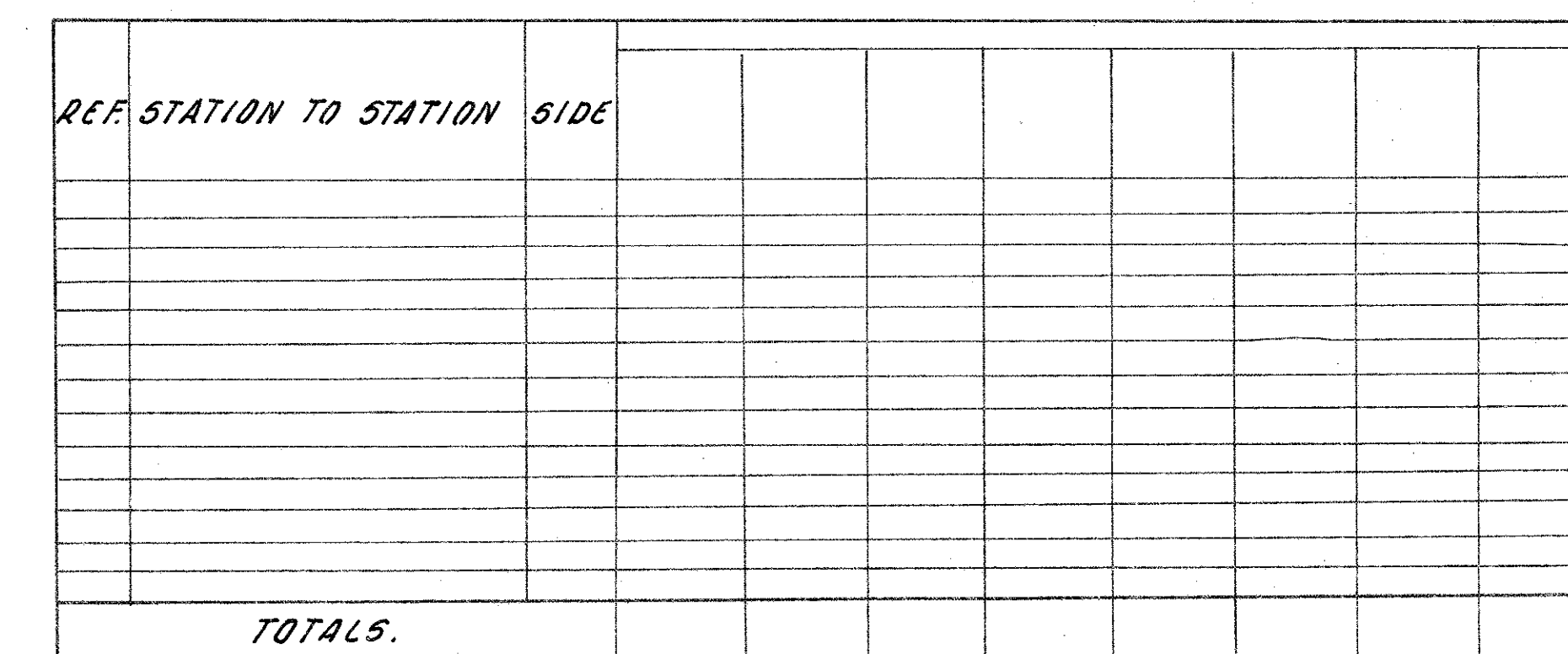
STA 1440+00 TO STA 1450+00

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



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 FRN-270-22.99 M.
3. Construct a Standard Construction Joint with protruding Steel protected as directed by the Engineer at Station 1452+00

REF	STATION TO STATION	SIDE		603 TYPE "B"	603 TYPE "C"	604 TYPE "C"	604 No. 4 CATCH BASIN	604 No. 5 CATCH BASIN **	667 JUTE MATTING	SEE DETAIL SHEET No.
				27" L.F.	42" L.F.	60"			3Y	
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	e				6				81
TOTALS				192	200	6	1	2	375	

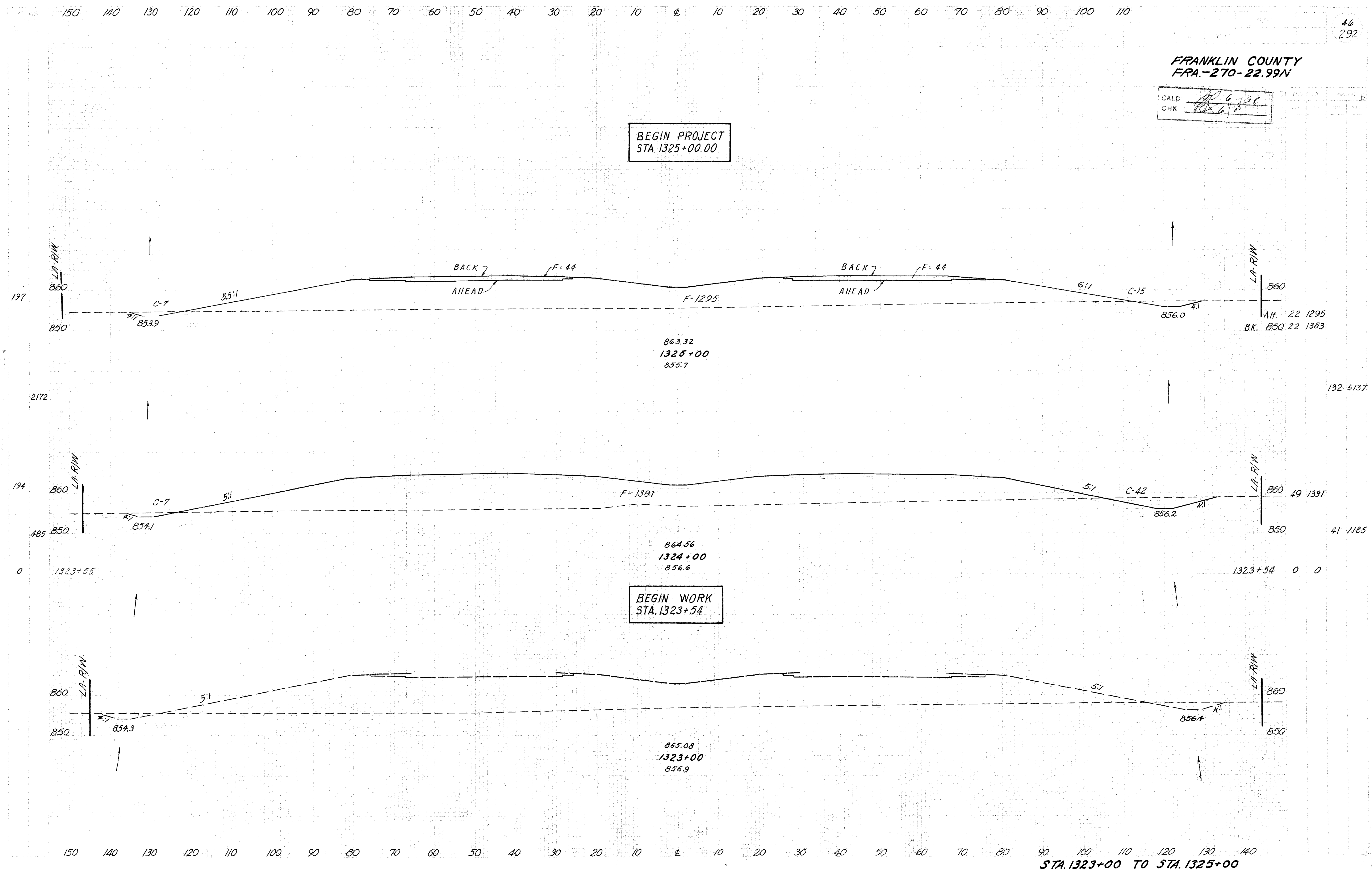


STA 1450+00 TO STA 1460+00

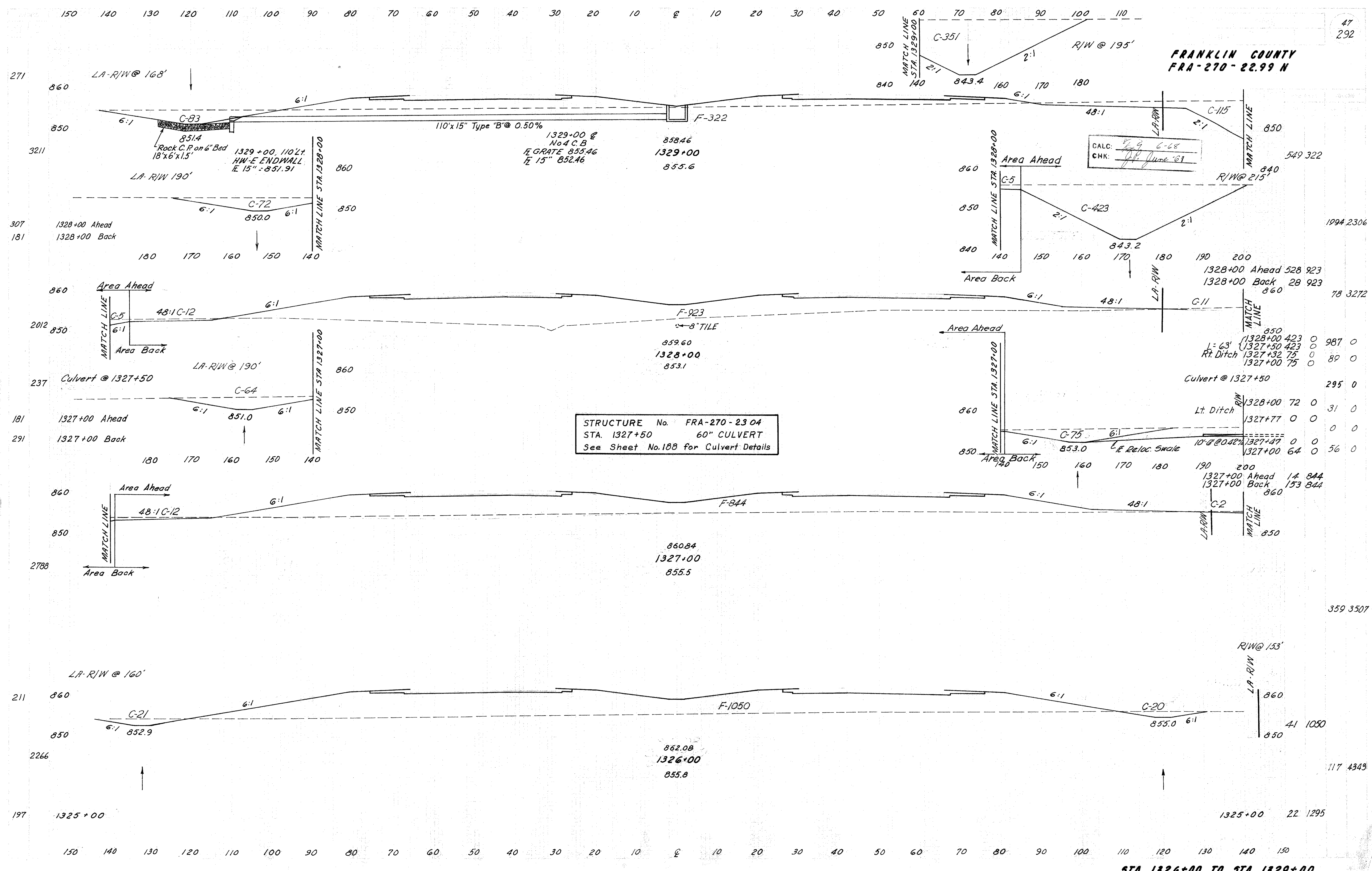
FRANKLIN COUNTY
FRA.-270-22.99N

CALC: 6786
CHK: 6786

BEGIN PROJECT
STA. 1325+00.00



FRANKLIN COUNTY
FRA-270-22.99 N

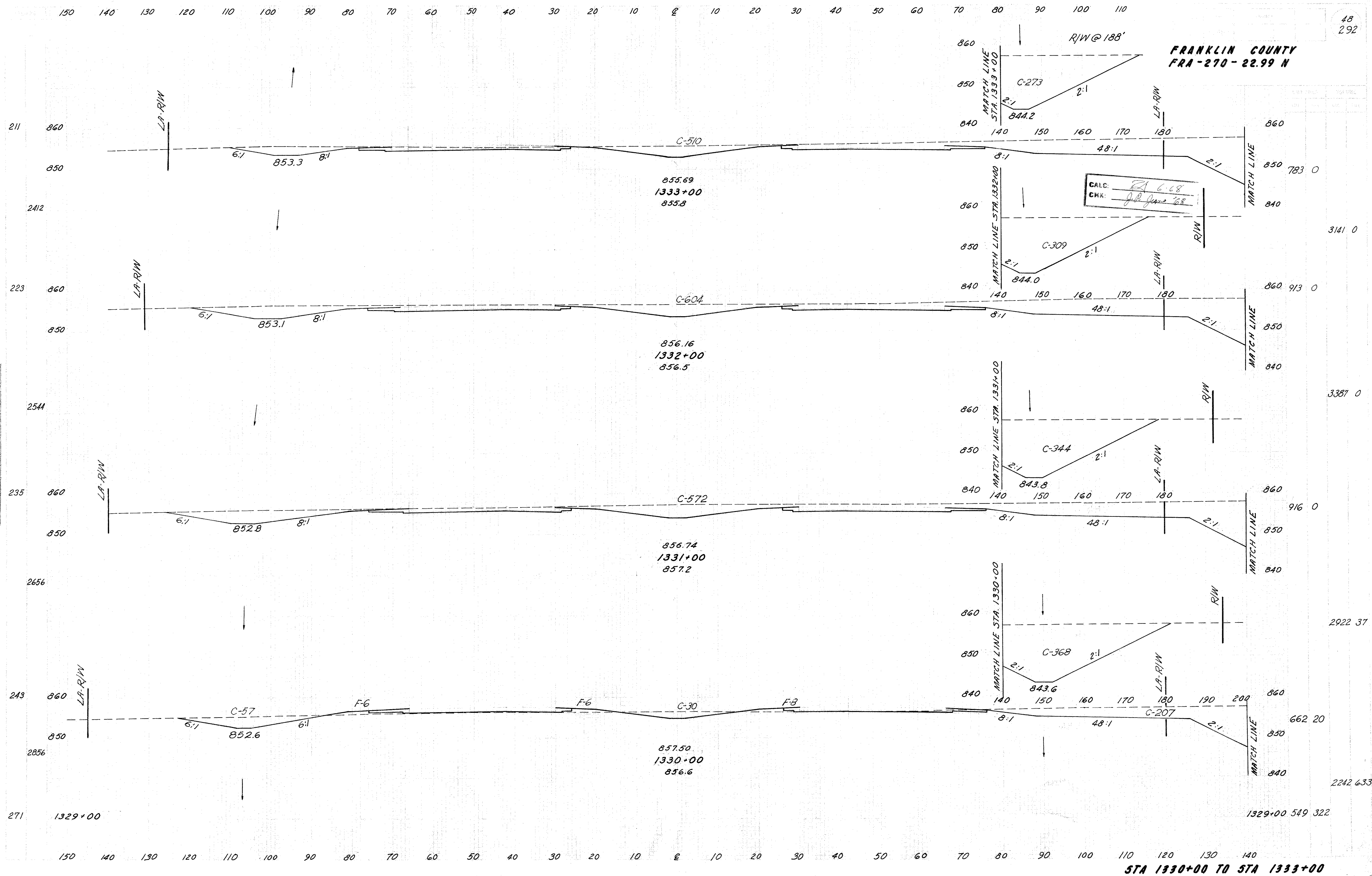


CALC: 6-68
CHK: 6-68

STRUCTURE No. FRA-270-23 04
STA. 1327+50 60" CULVERT
See Sheet No. 108 for Culvert Details

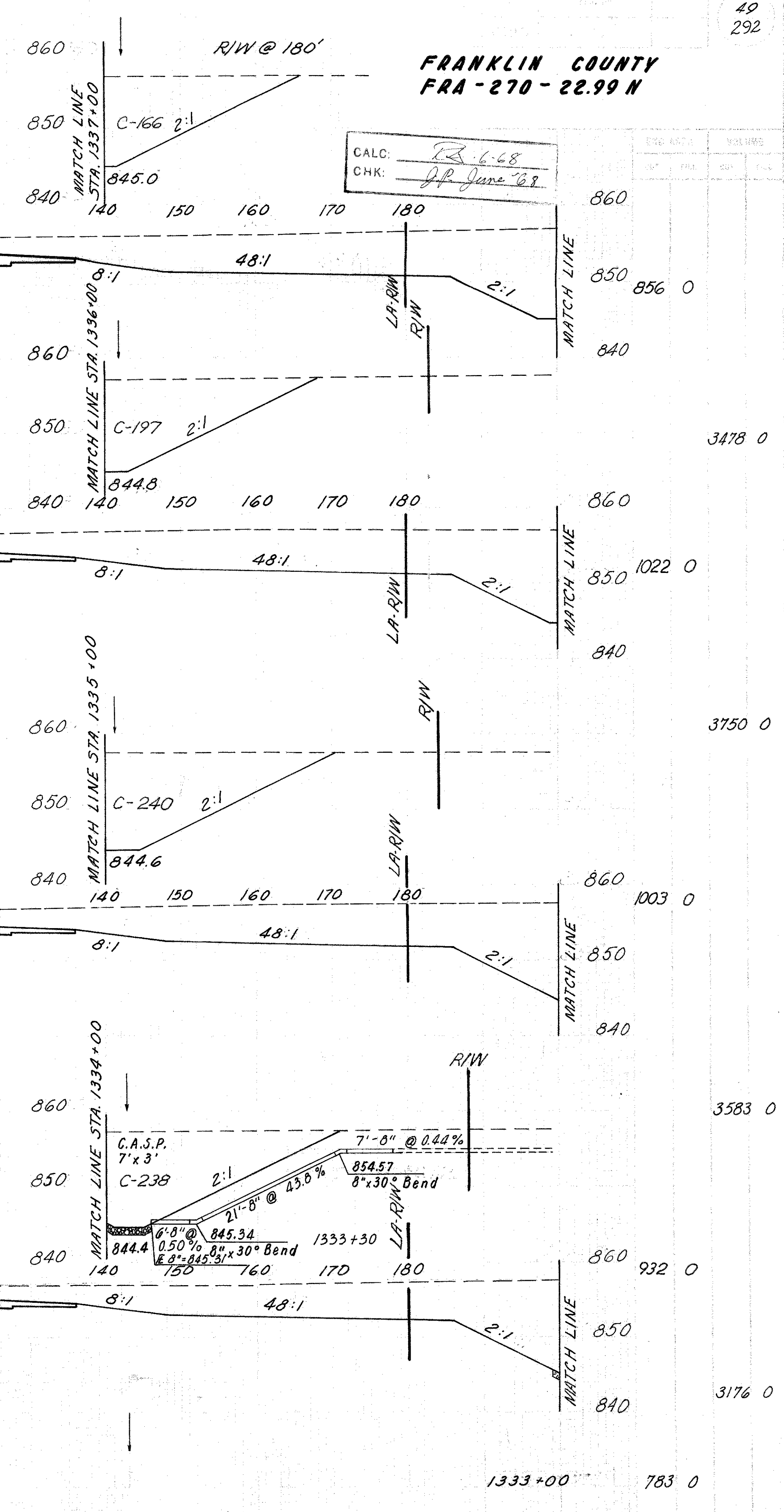
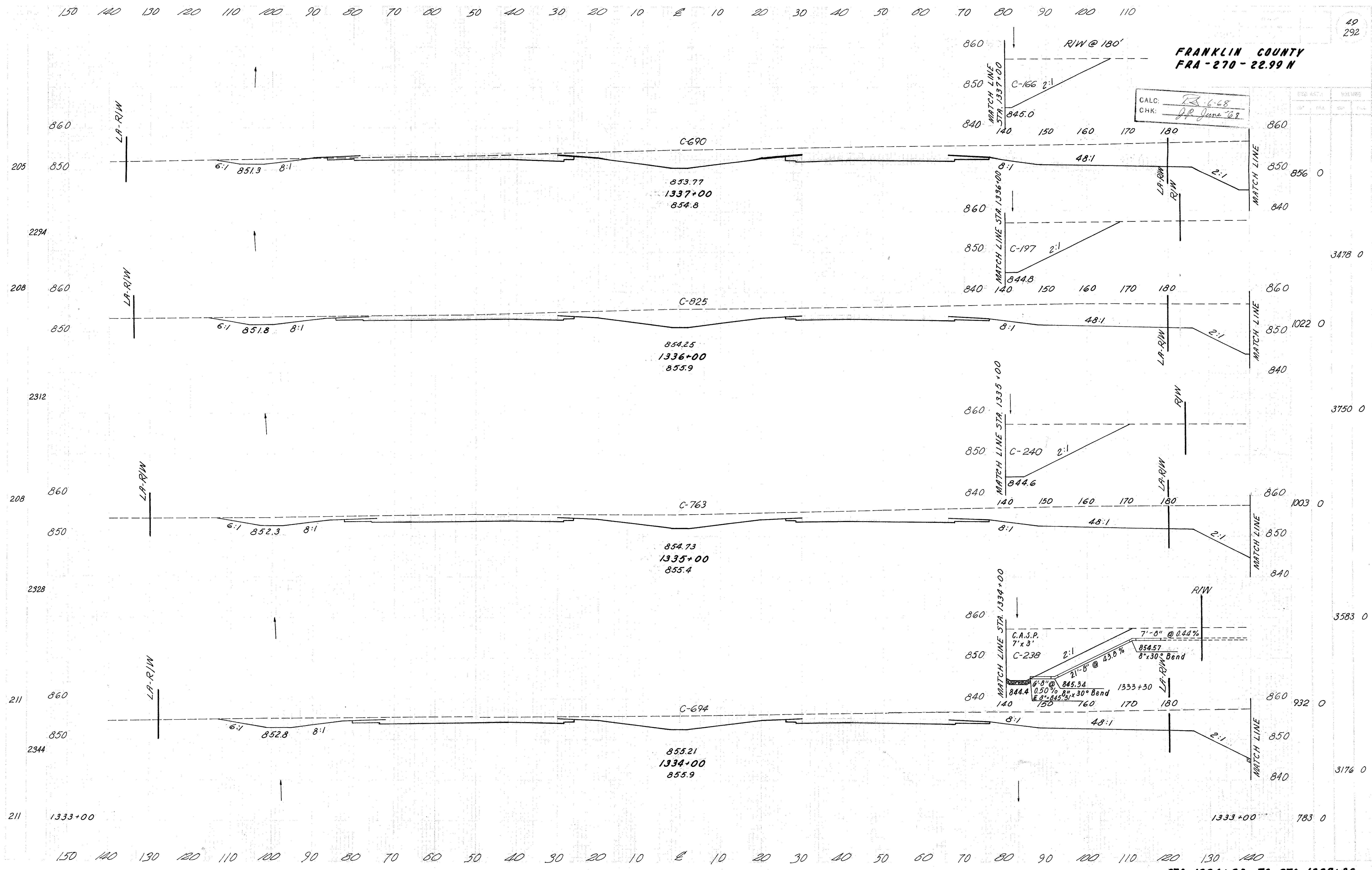
1328+00	423	0	987	0
1327+50	423	0	89	0
1327+32	75	0	89	0
1327+00	75	0	89	0
Culvert @ 1327+50			295	0
1328+00	72	0	31	0
1327+77	0	0	0	0
1327+47	0	0	0	0
1327+00	64	0	56	0

1327+00	Ahead	14	844
1327+00	Back	153	844

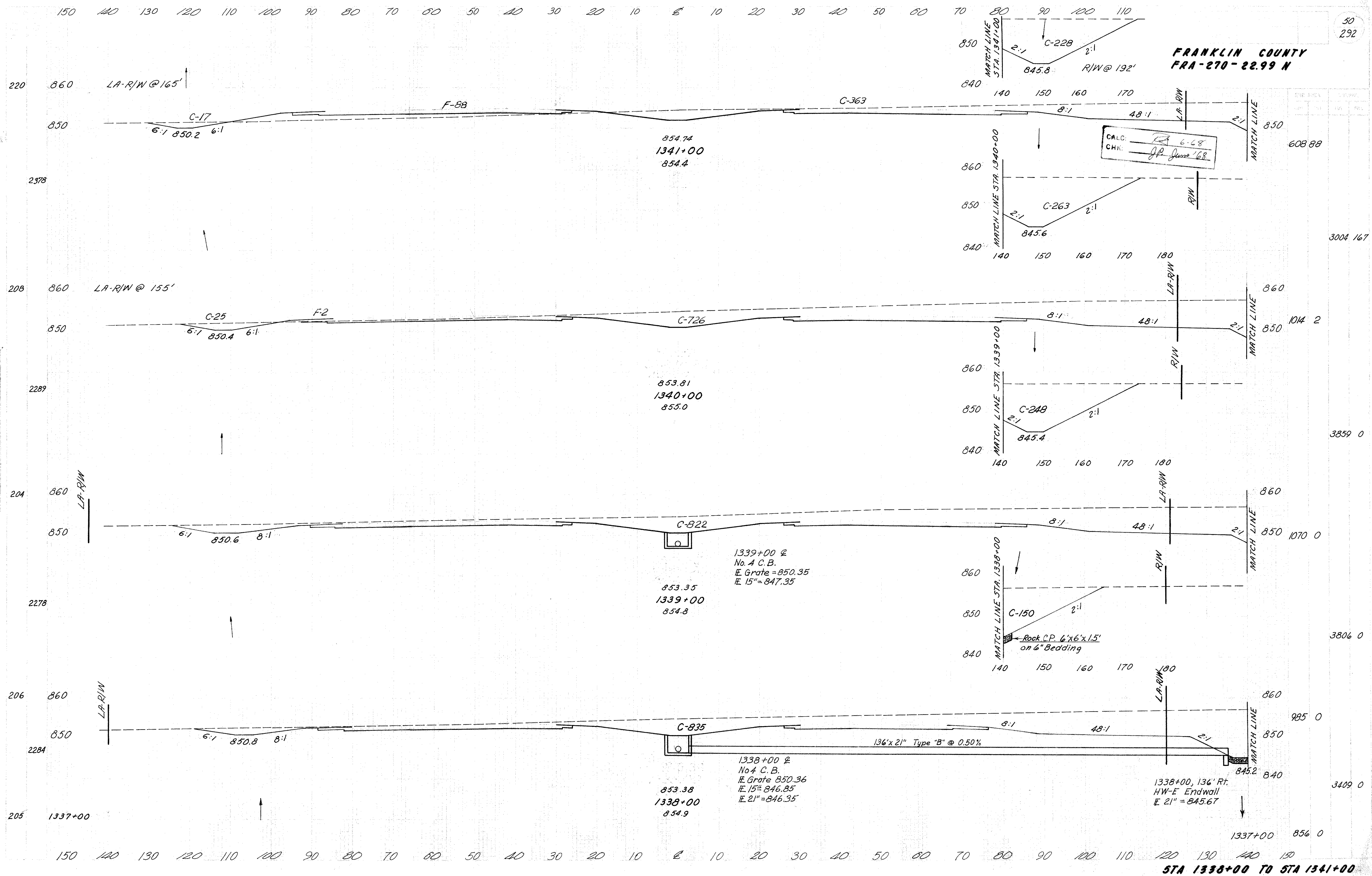


FRANKLIN COUNTY
FRA-270-22.99 N

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

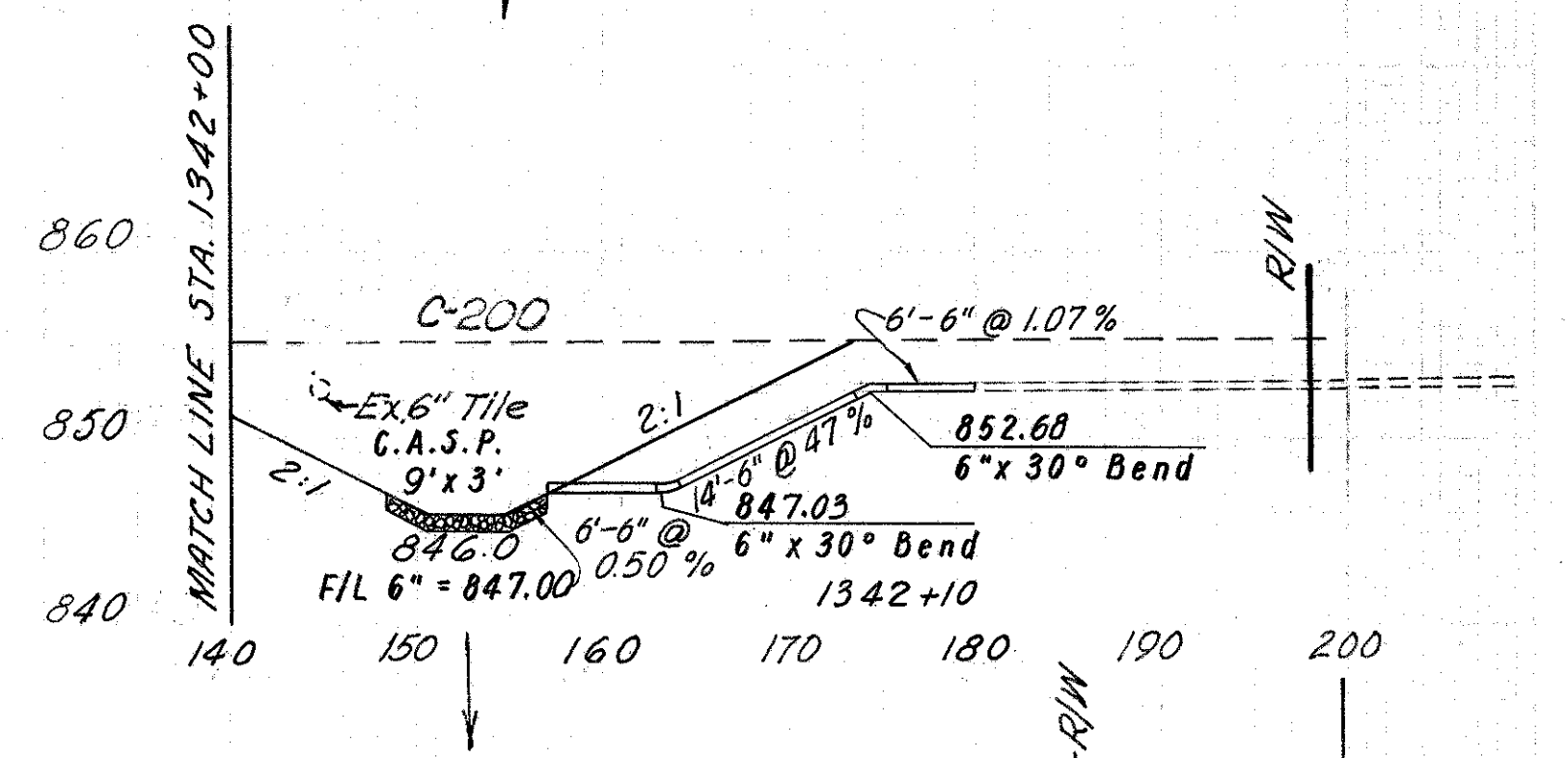
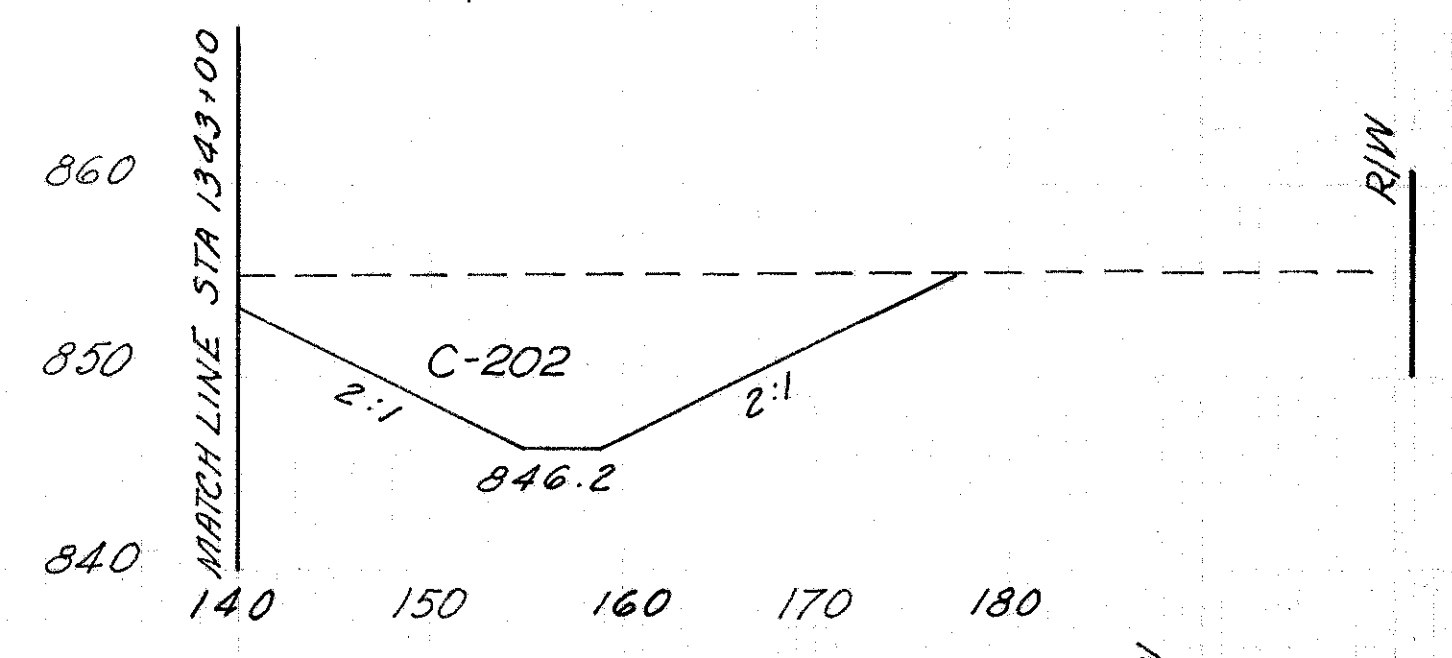
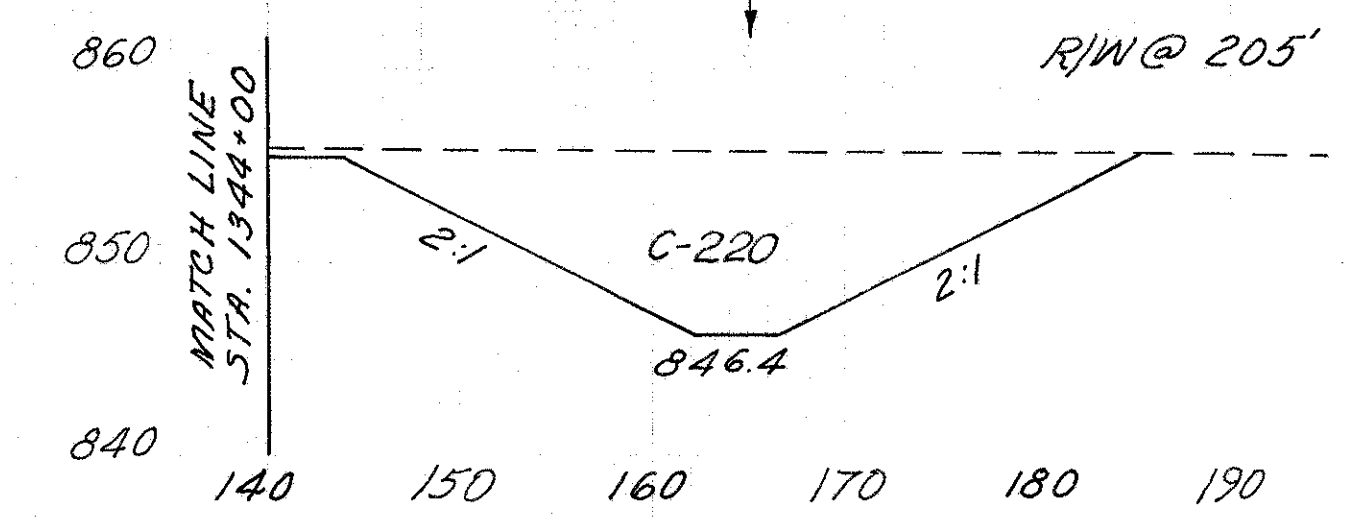
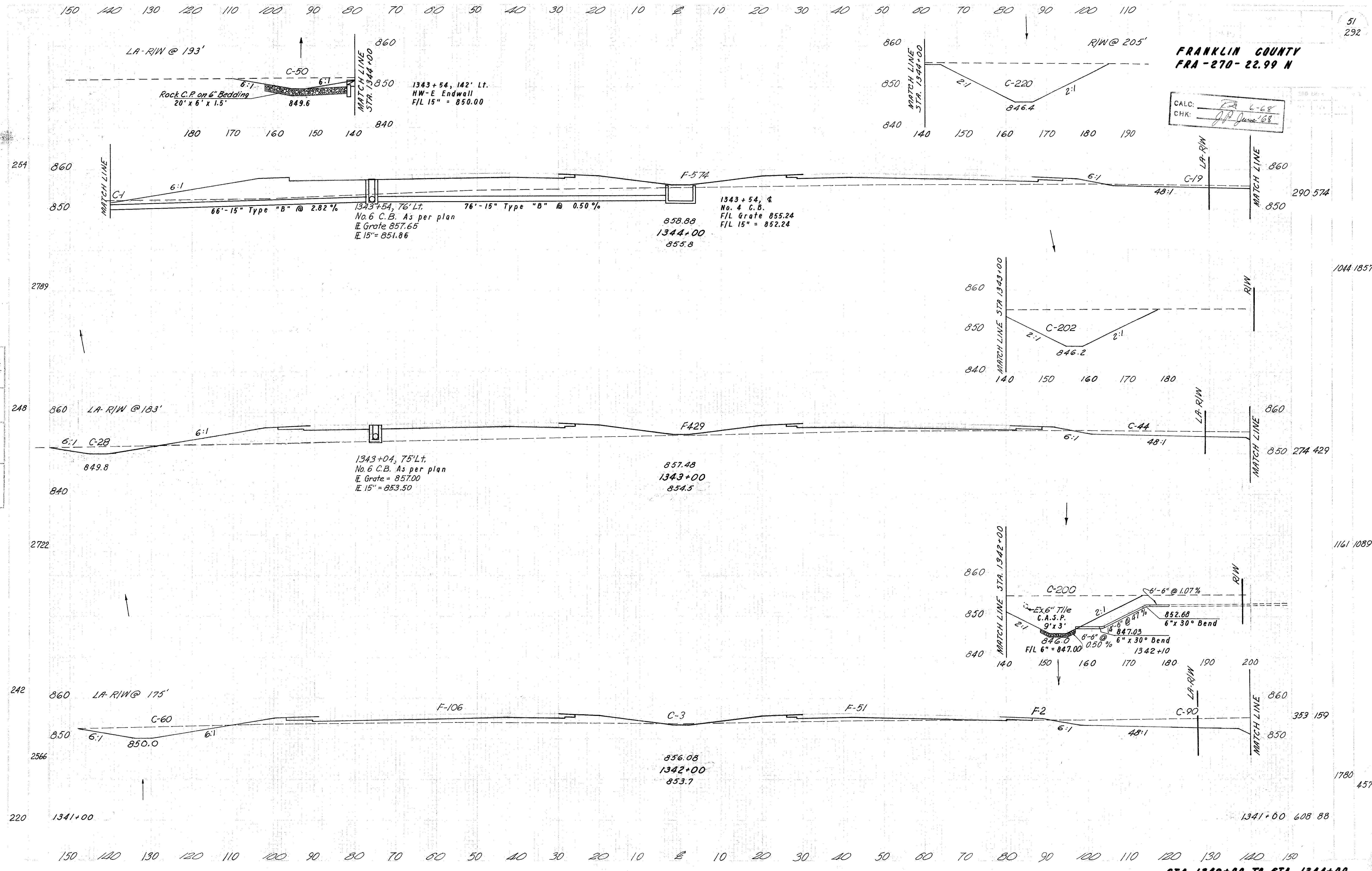


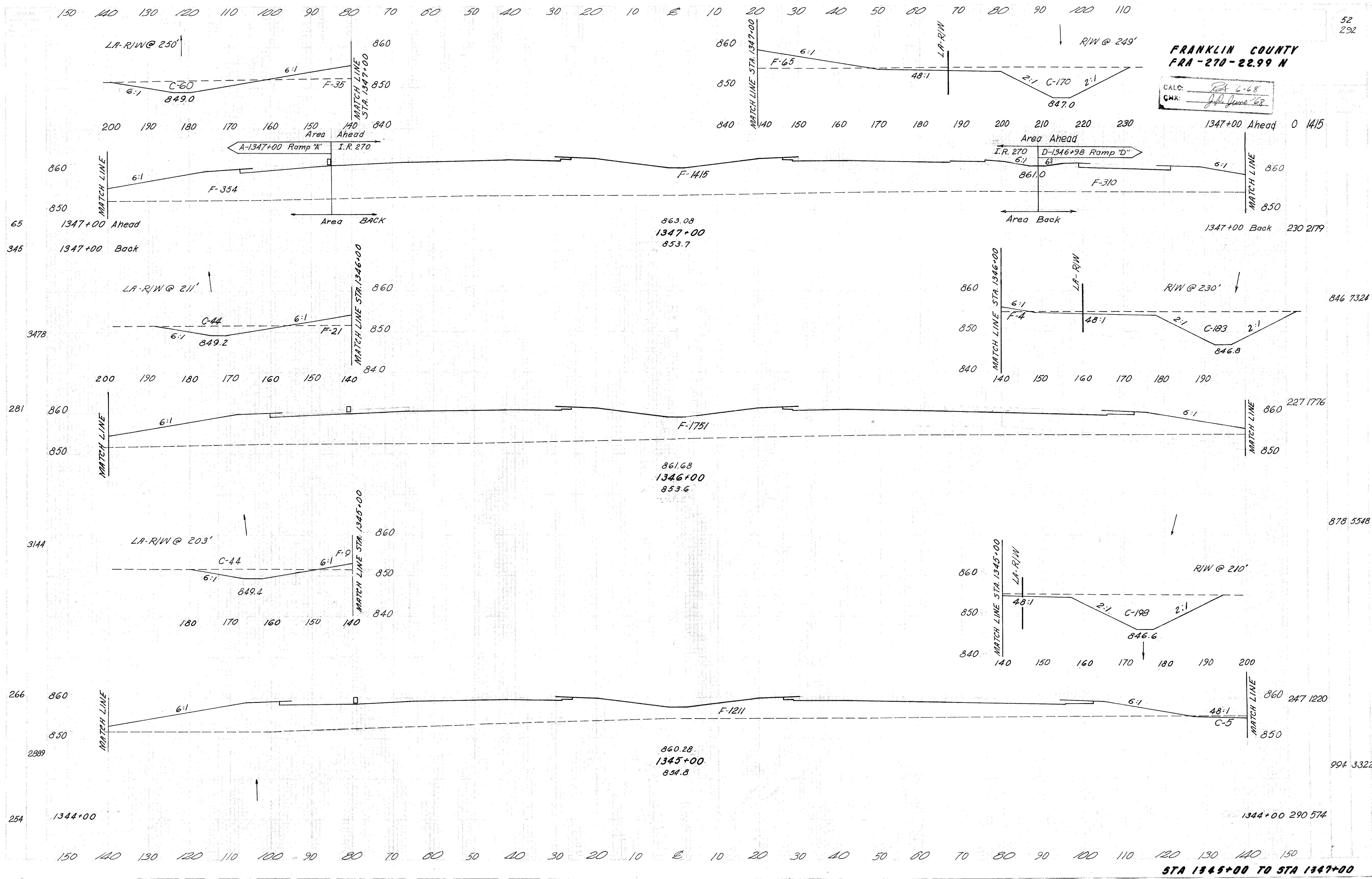
Ex. Grand	Initial
Calculate	Co.
Plan	Sheet
Profile	Stationing
Section	Quantity



FRANKLIN COUNTY
FRA-270-22.99 N

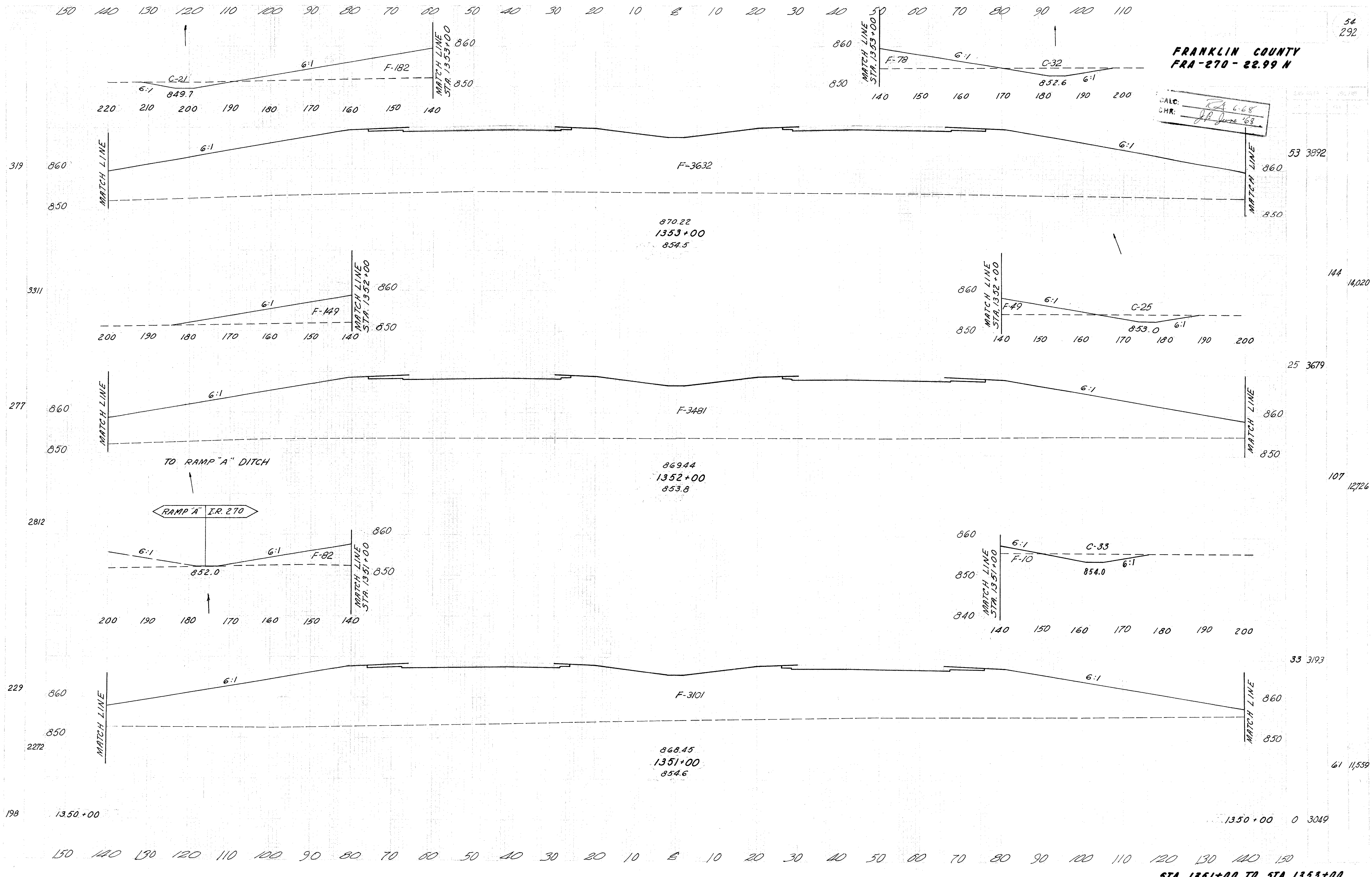
CALC: FB 6-68
CHK: J.P. Jones '68





Plotting	Ch	Island
1. Ground template 2. 1/4 in. Softwork Quant. Tackling Quant.	R 2 1/2 R 2 1/2	R 2 1/2 R 2 1/2

Index	12900
City	Franklin
Plotted	
Ex. Ground Complete Plan Section Quant.	



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

55
292

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

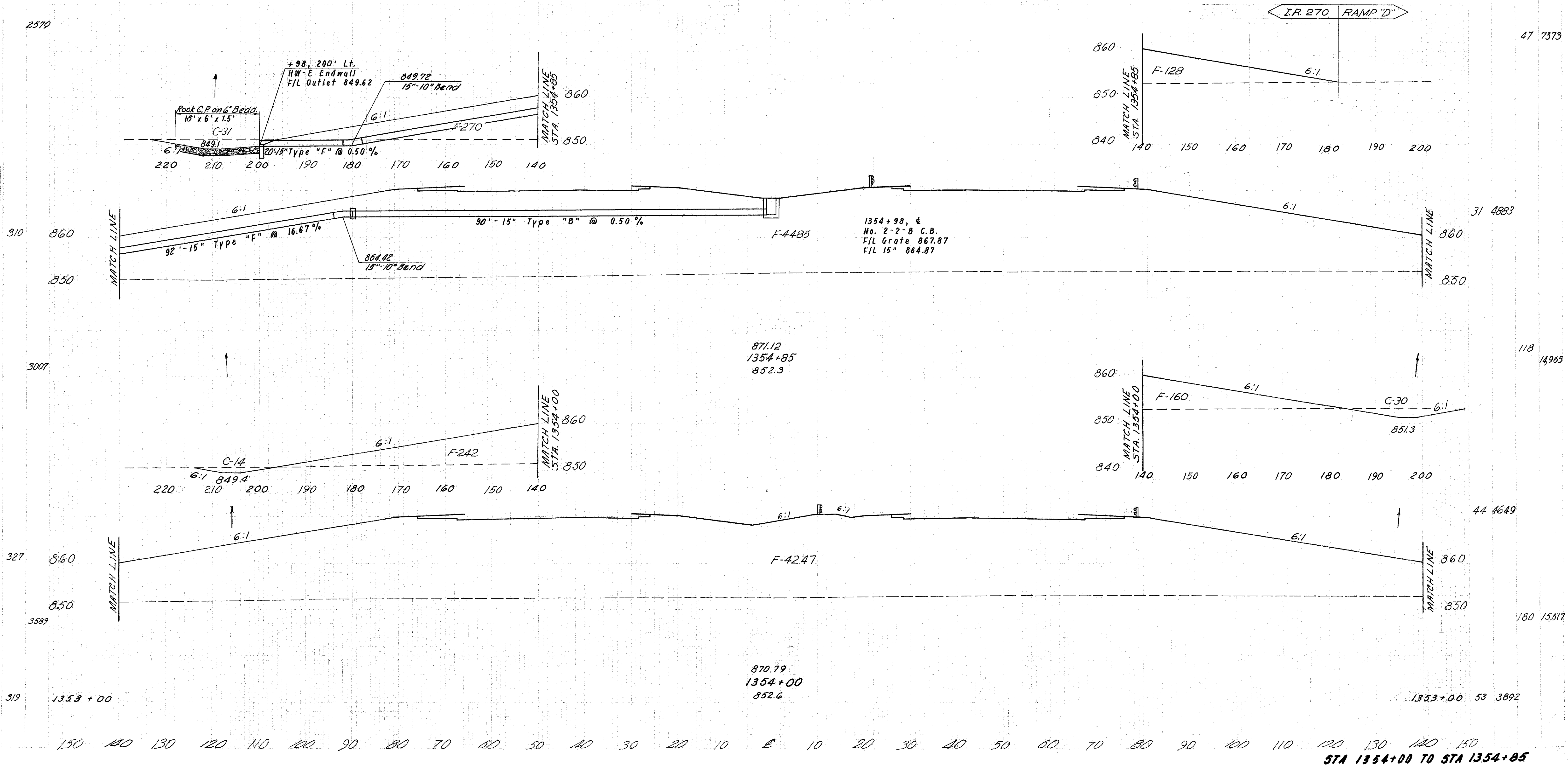
FRANKLIN COUNTY
FRA-270-22.99 N

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

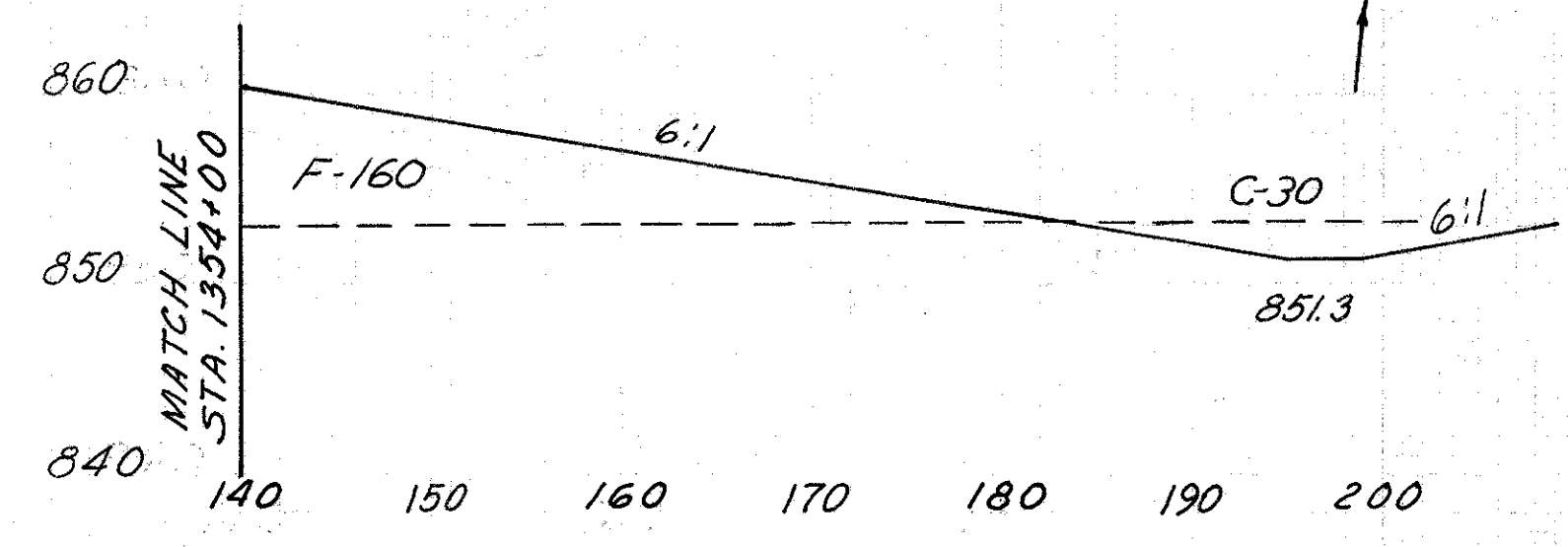
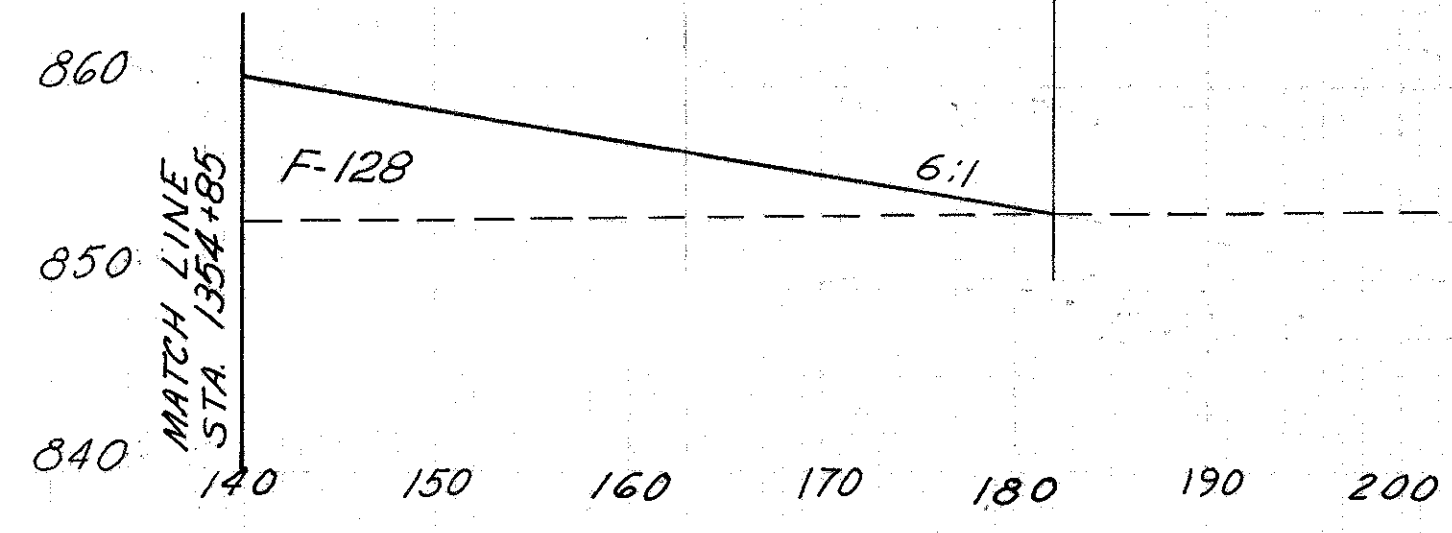
1355+67 Back 0 0

310 1355+60 Last Full Section

Cal. Ground
Template
Plan
Elevation
Selling Quant.



I.R. 270 RAMP 'D'



319 1353+00

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STA 1354+00 TO STA 1354+85

47 7373

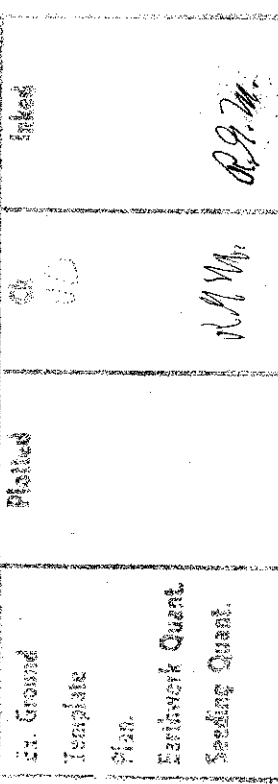
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118 14965

44 4649

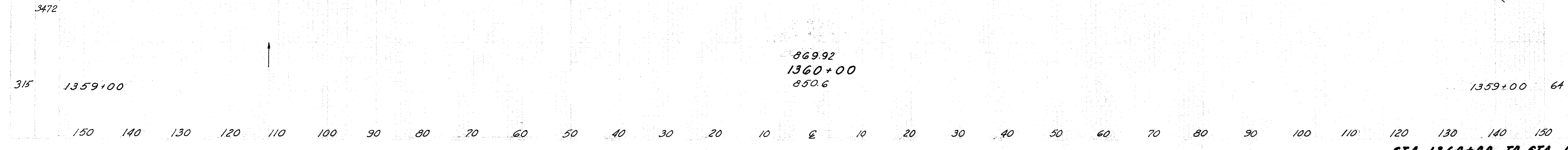
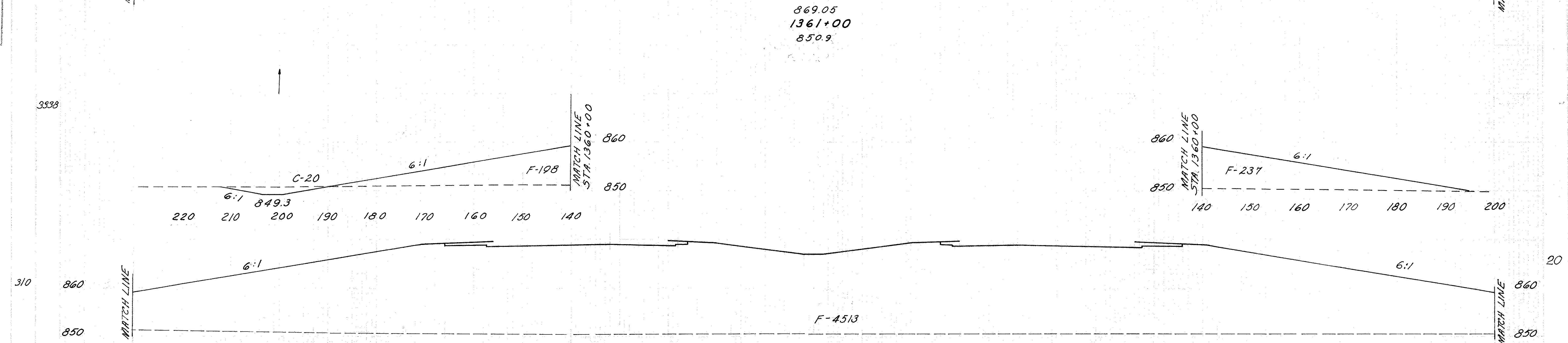
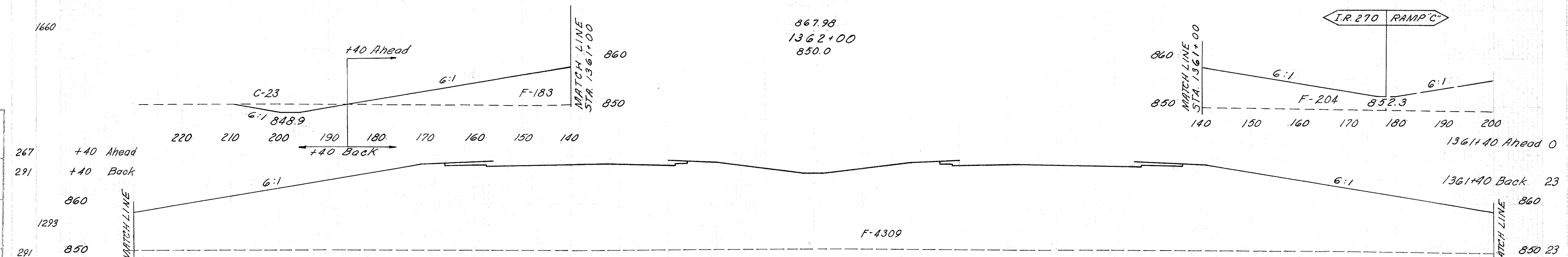
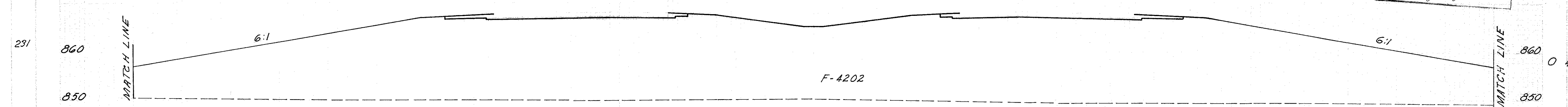
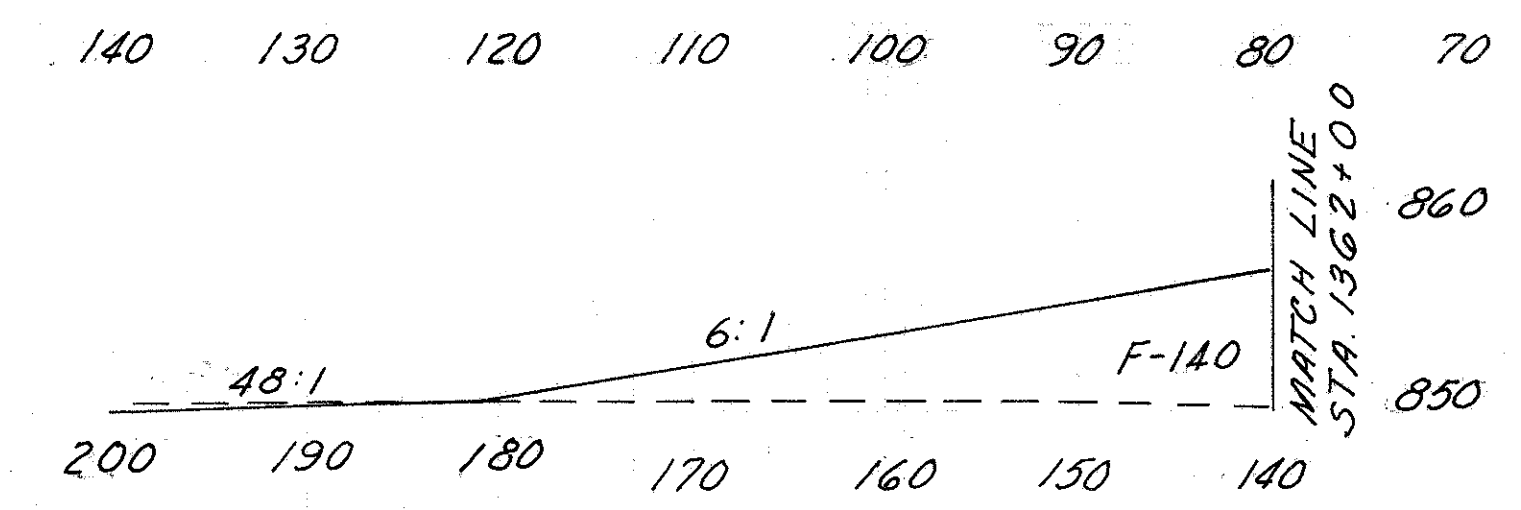
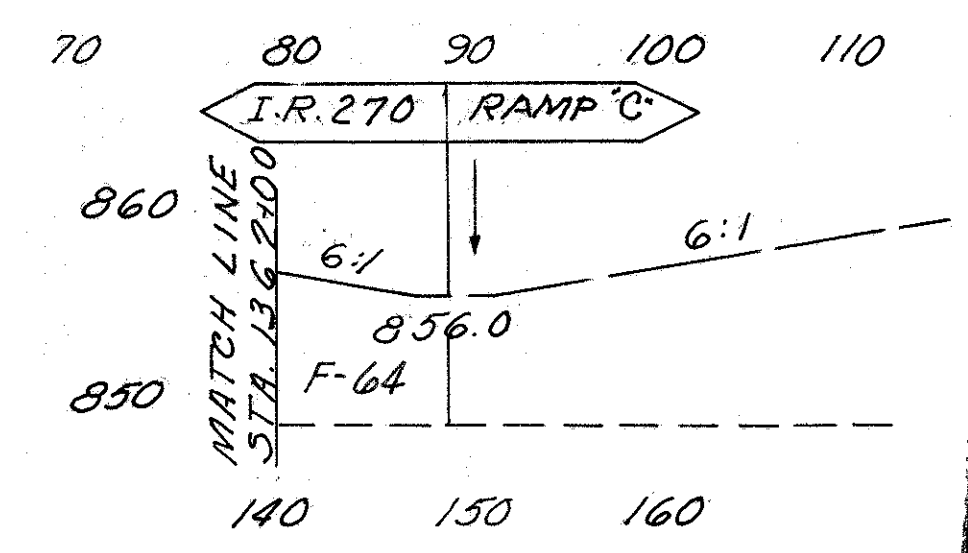
180 15817

1353+00 53 3892

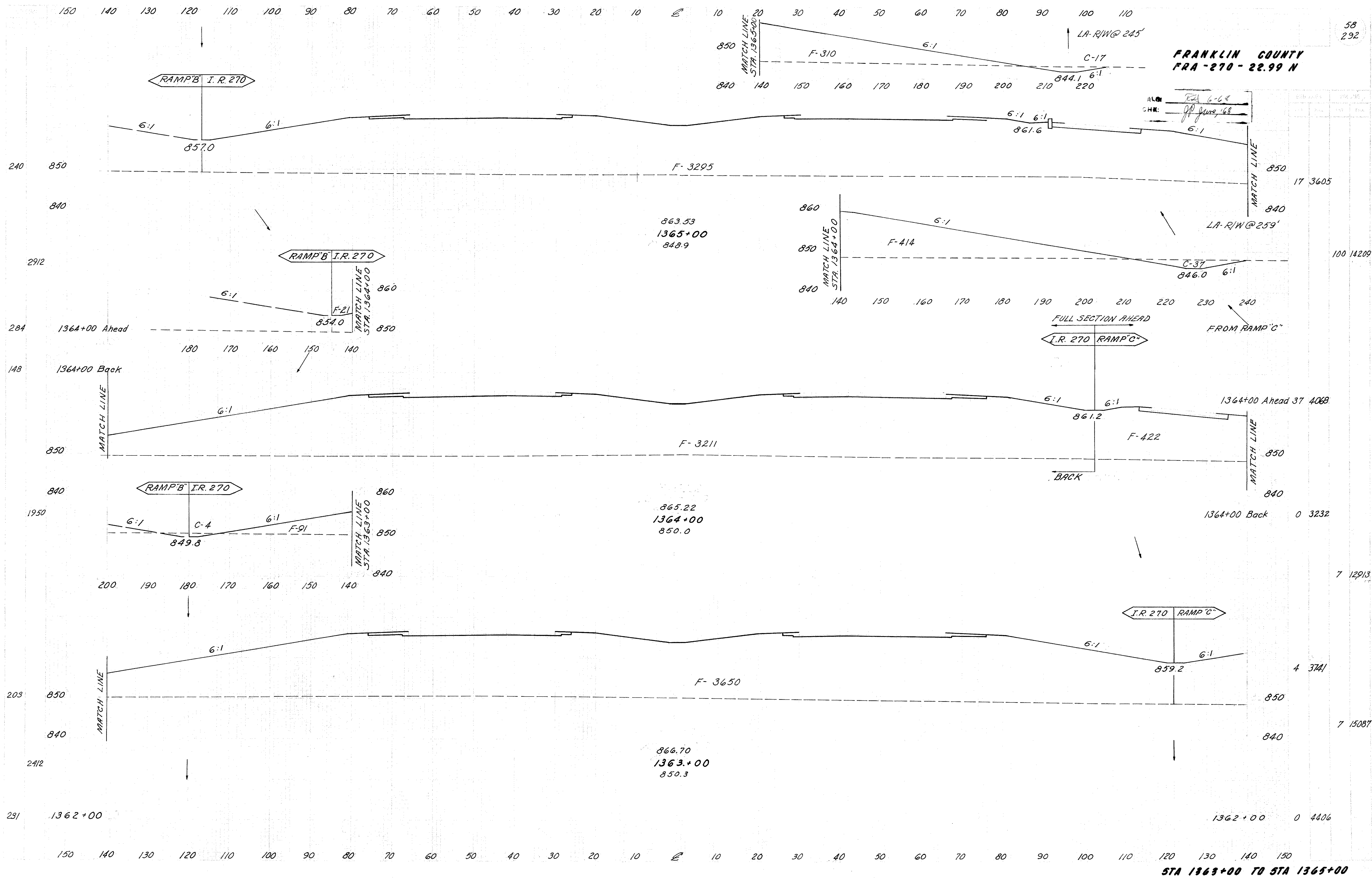


FRANKLIN COUNTY
FRA-270-22.99 N

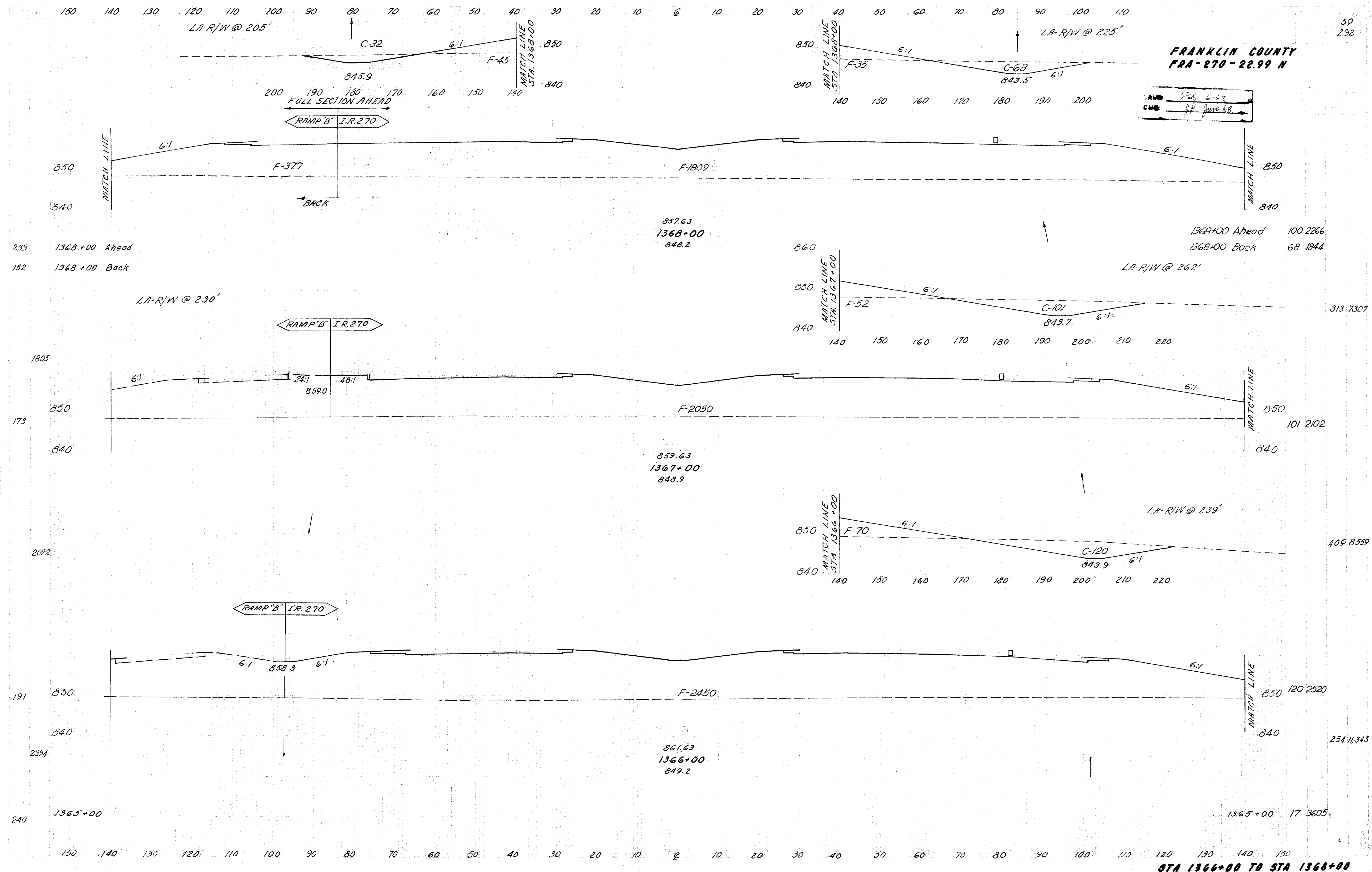
CALC: FD 6-68
CHK: J.P. June '68



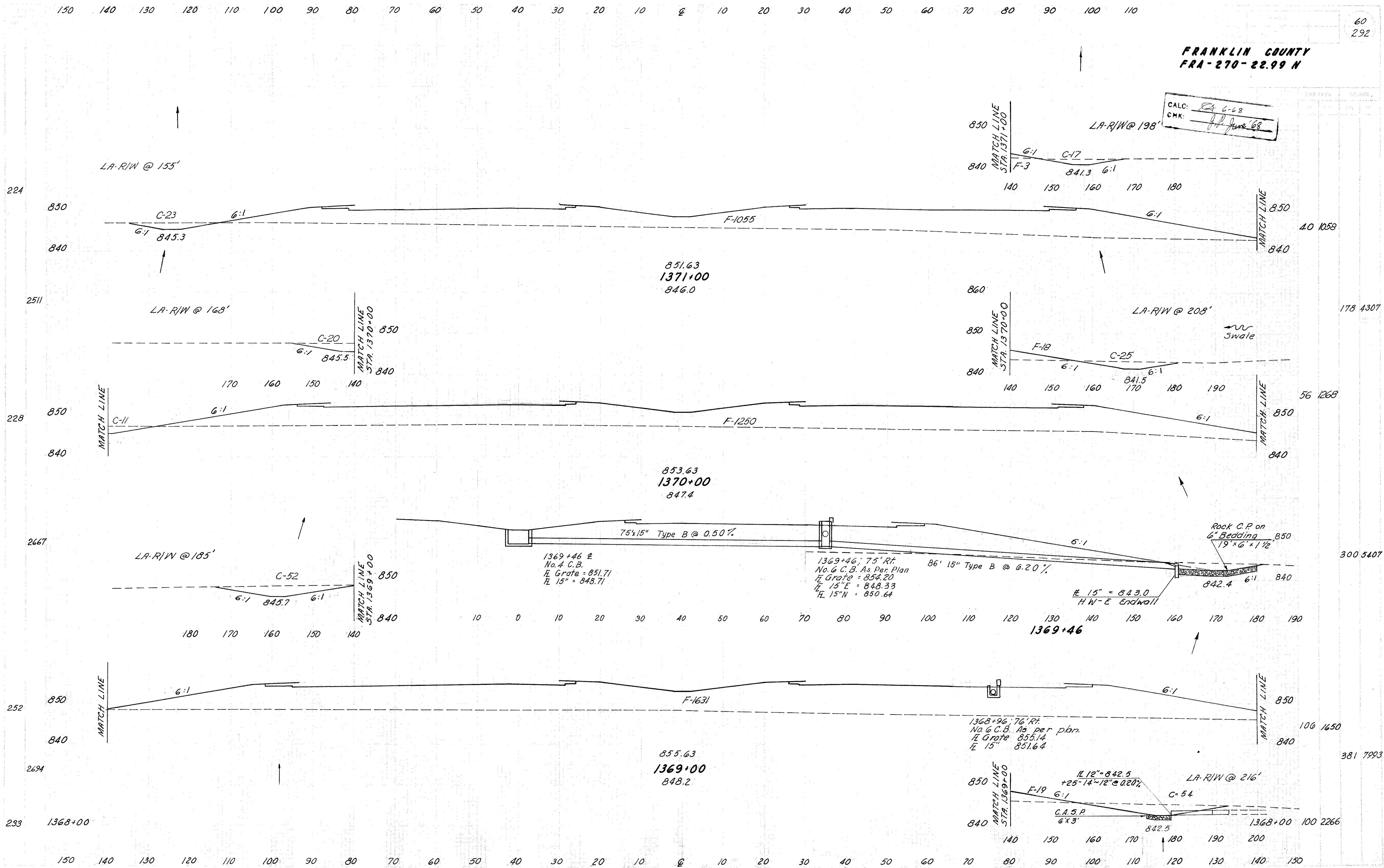
1. Ground	2. Proposed	3. Elevation	4. Stationing
5. Slope	6. Width	7. Height	8. Area
9. Volume	10. Weight	11. Cost	12. Notes



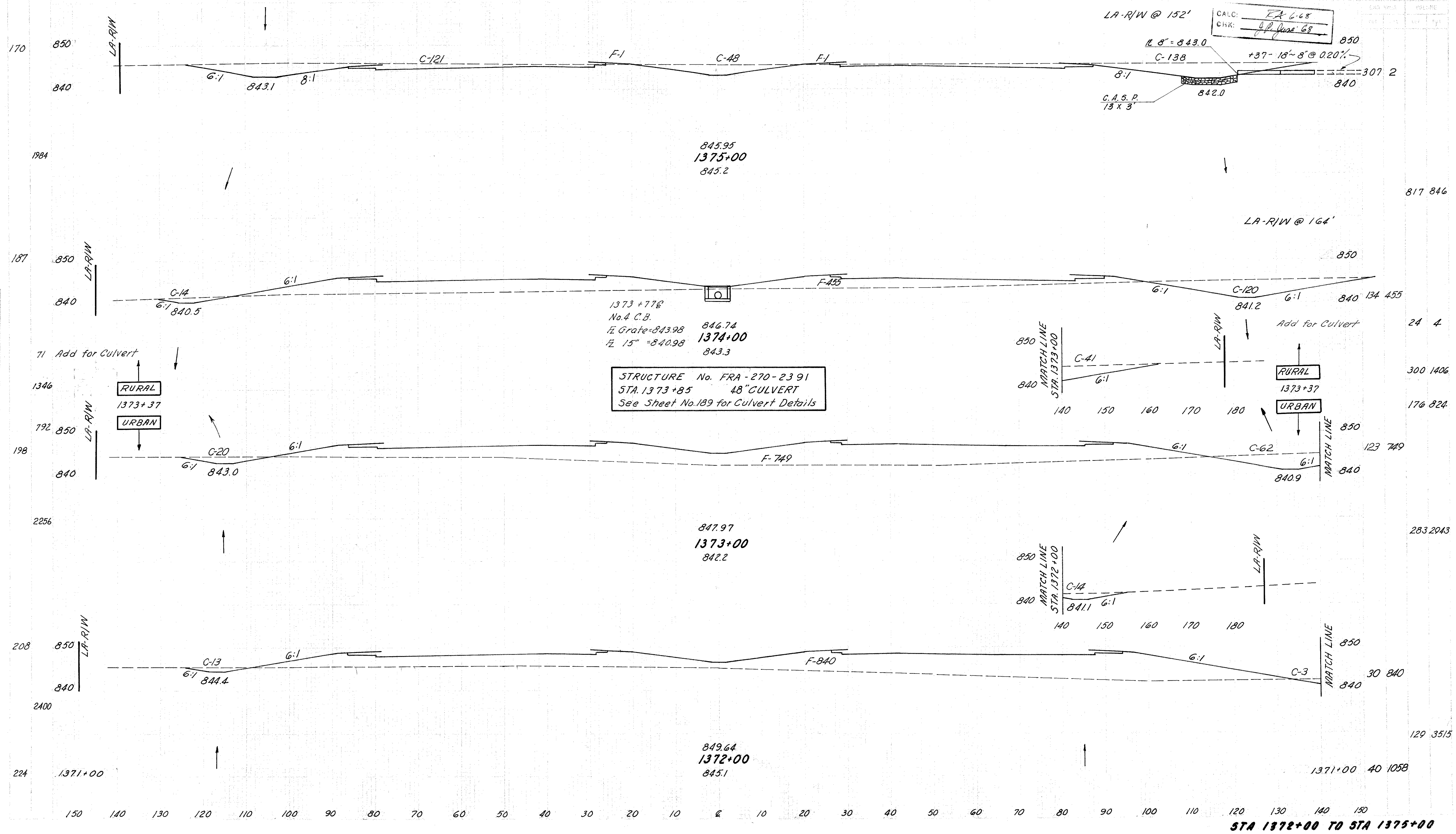
St. Ground	Proposed	Rem.
Topo	Plan	Plan
Embark Quant.	Landmark Quant.	Landmark Quant.



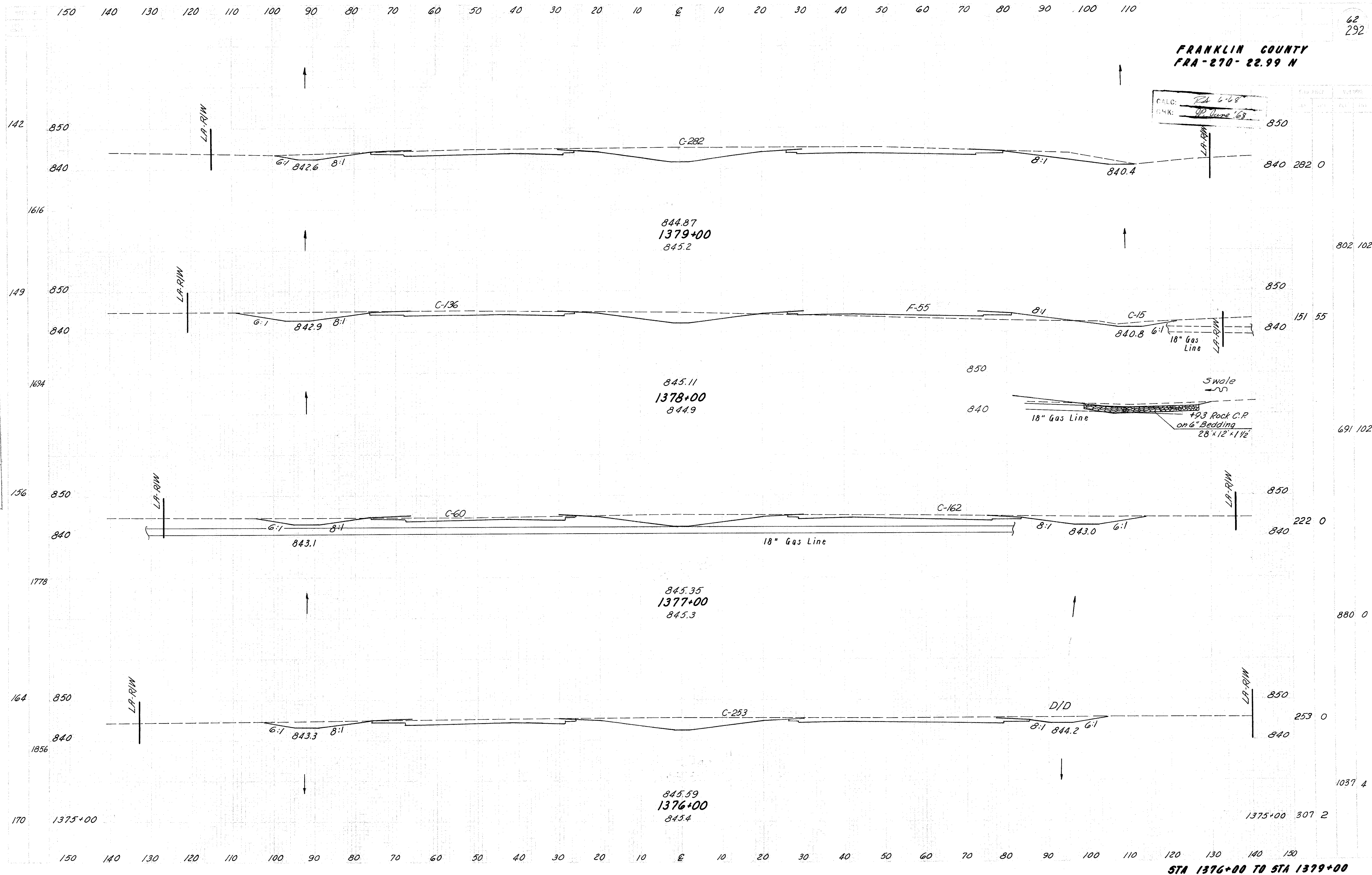
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CHK: *J.P. June 68*



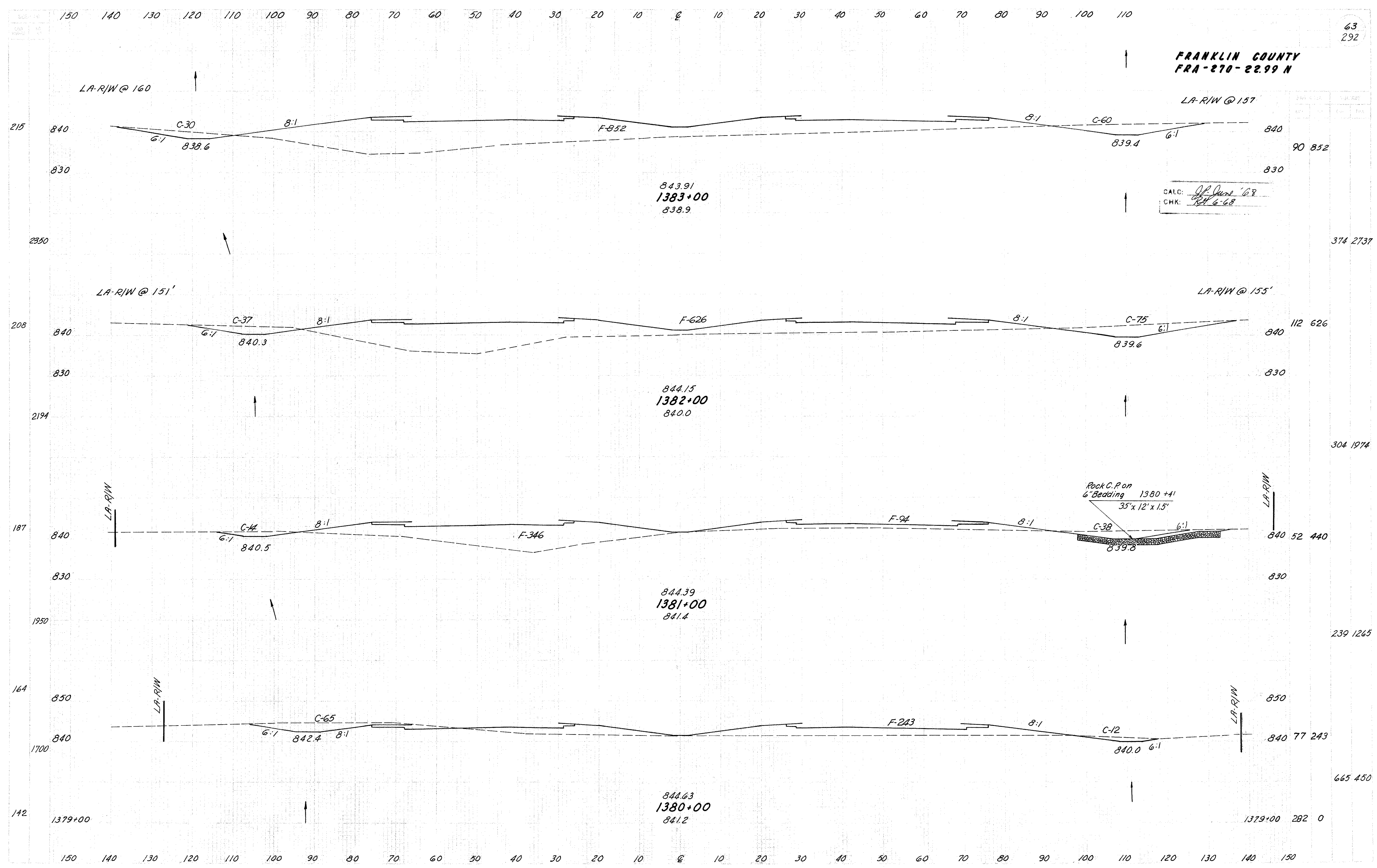
FRANKLIN COUNTY
FRA-270-22.99 N



CALC: Rs 6.68
CHK: JP. June '68



FRANKLIN COUNTY
FRA-270-22.99 N

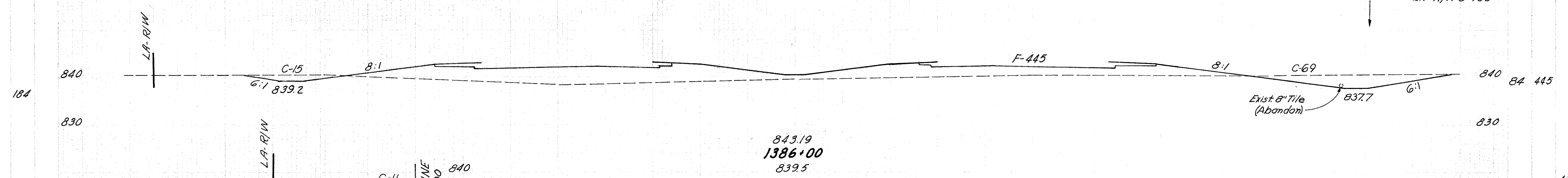


STA 1380+00 TO STA 1383+00

FRANKLIN COUNTY
FRA-270-22.99 N

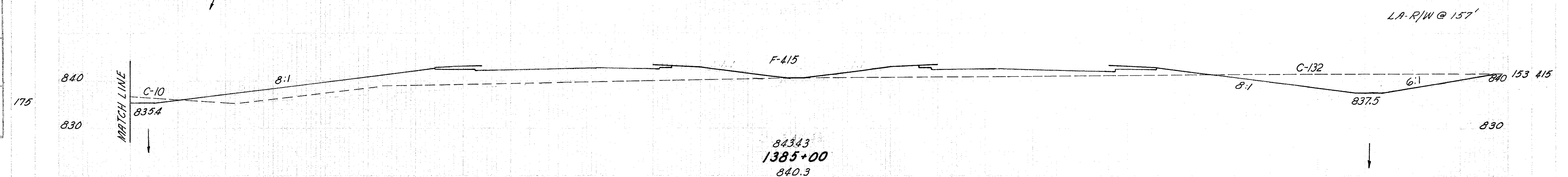
CALC: *JP June '68*
CHK: *JP 6-68*

LA-R/W @ 155'



843.19
1386+00
839.5

LA-R/W @ 157'

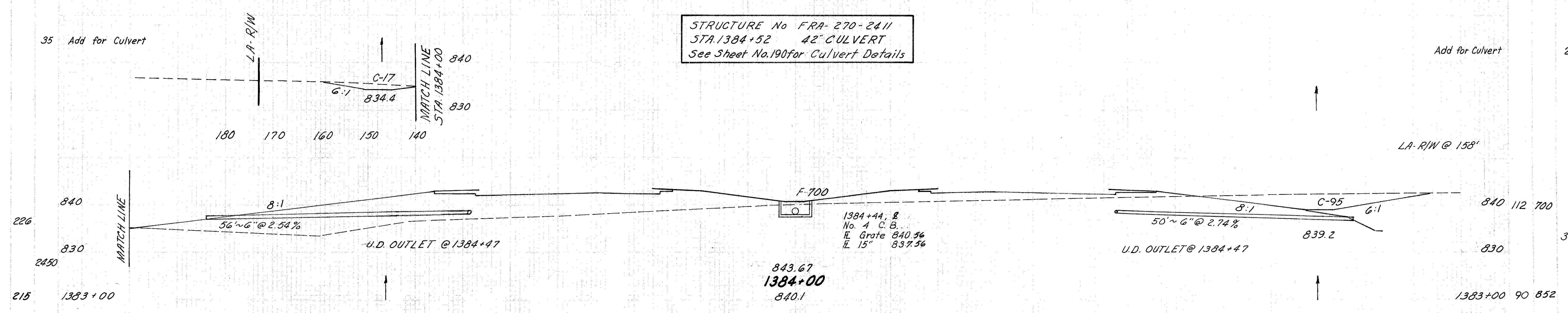


843.43
1385+00
840.3

STRUCTURE No FRA-270-2411
STA 1384+52 42" CULVERT
See Sheet No. 190 for Culvert Details

Add for Culvert

LA-R/W @ 158'



843.67
1384+00
840.1

1384+44, 8
No. 4 C.B.
E Grate 840.56
E 15" 837.56

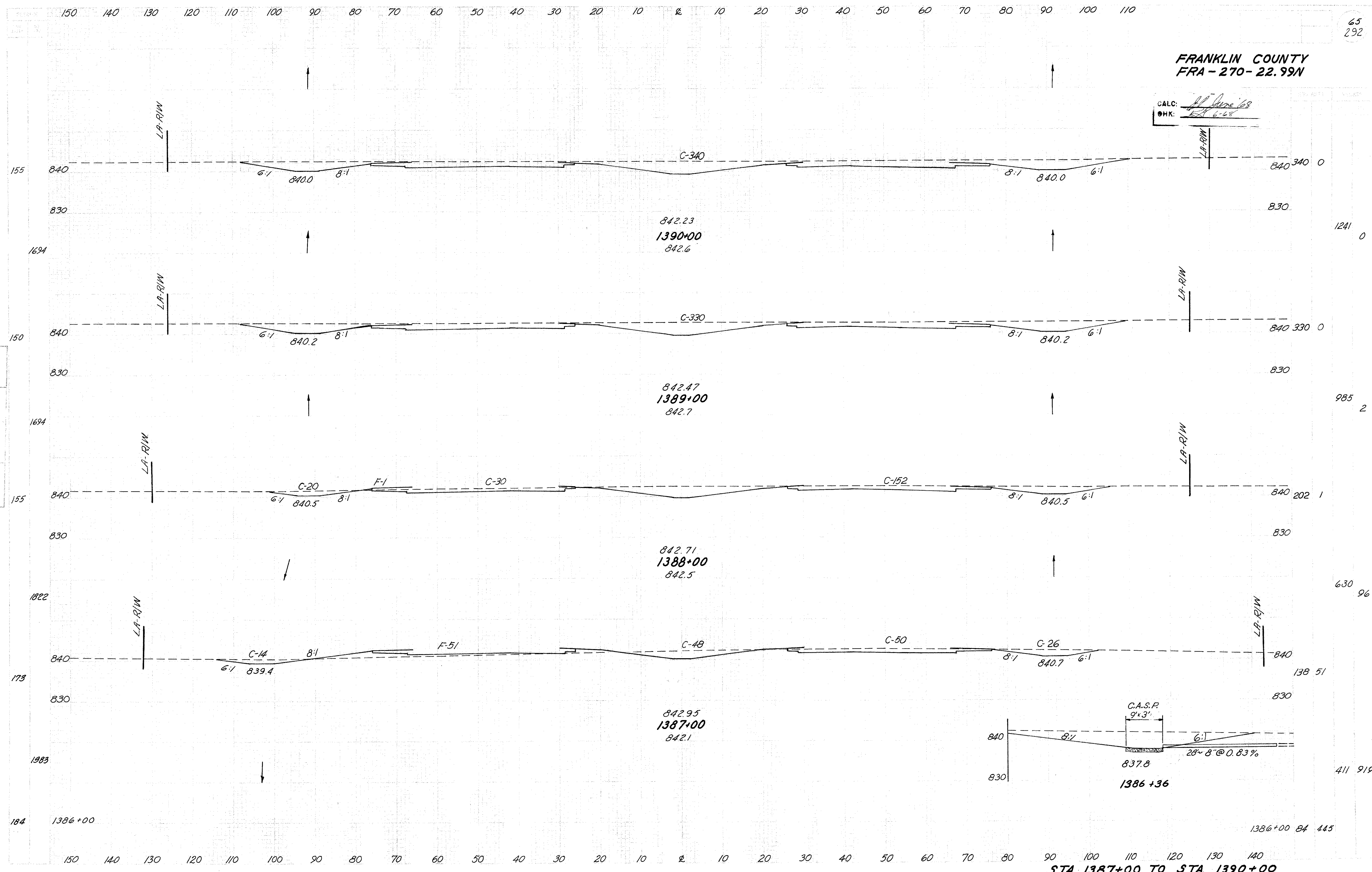
U.D. OUTLET @ 1384+47

1383+00 90 852

STA 1384+00 TO STA 1386+00

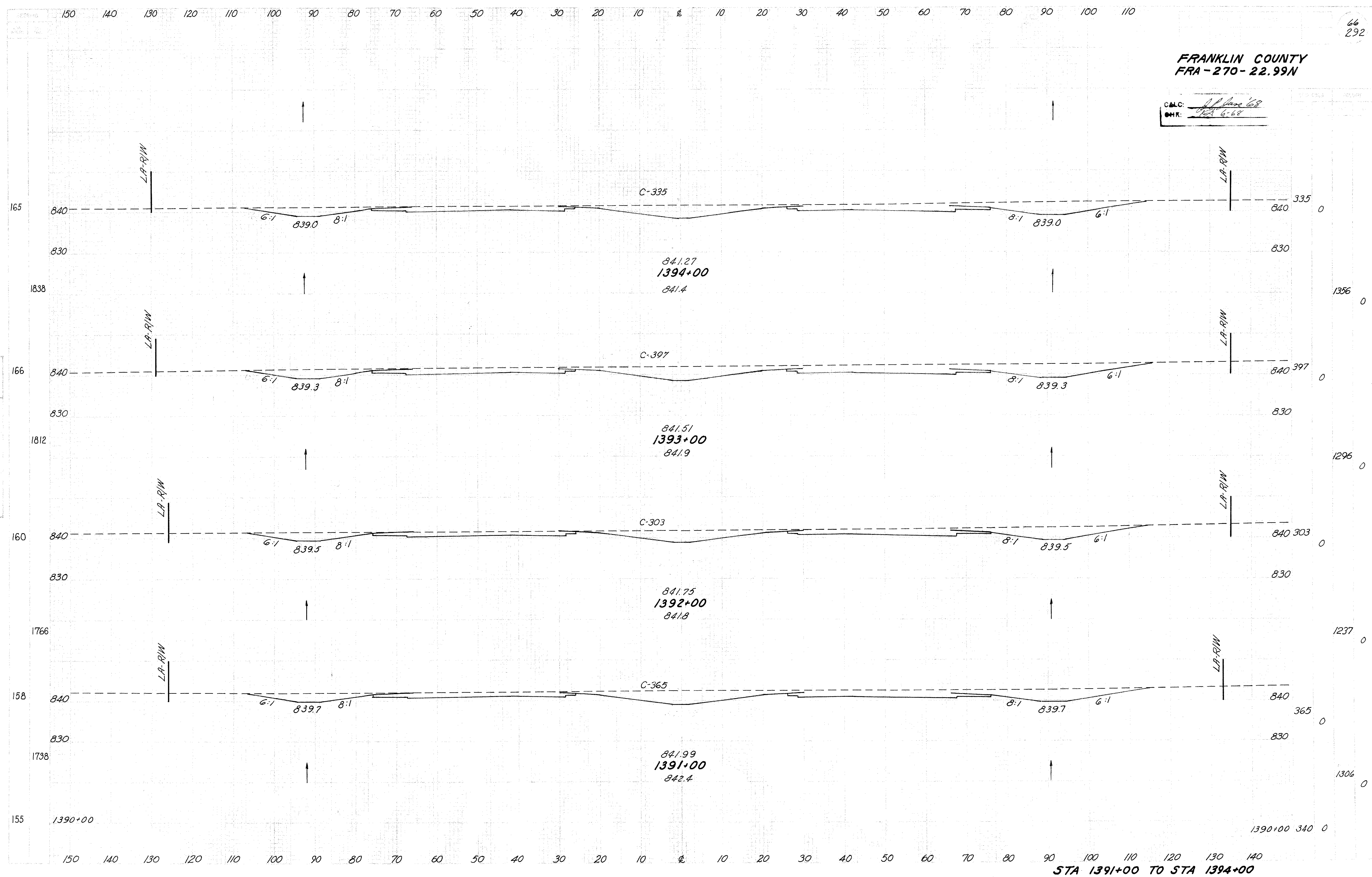
FRANKLIN COUNTY
FRA - 270-22.99N

CALC: *6/6/68*
CHK: *6-68*



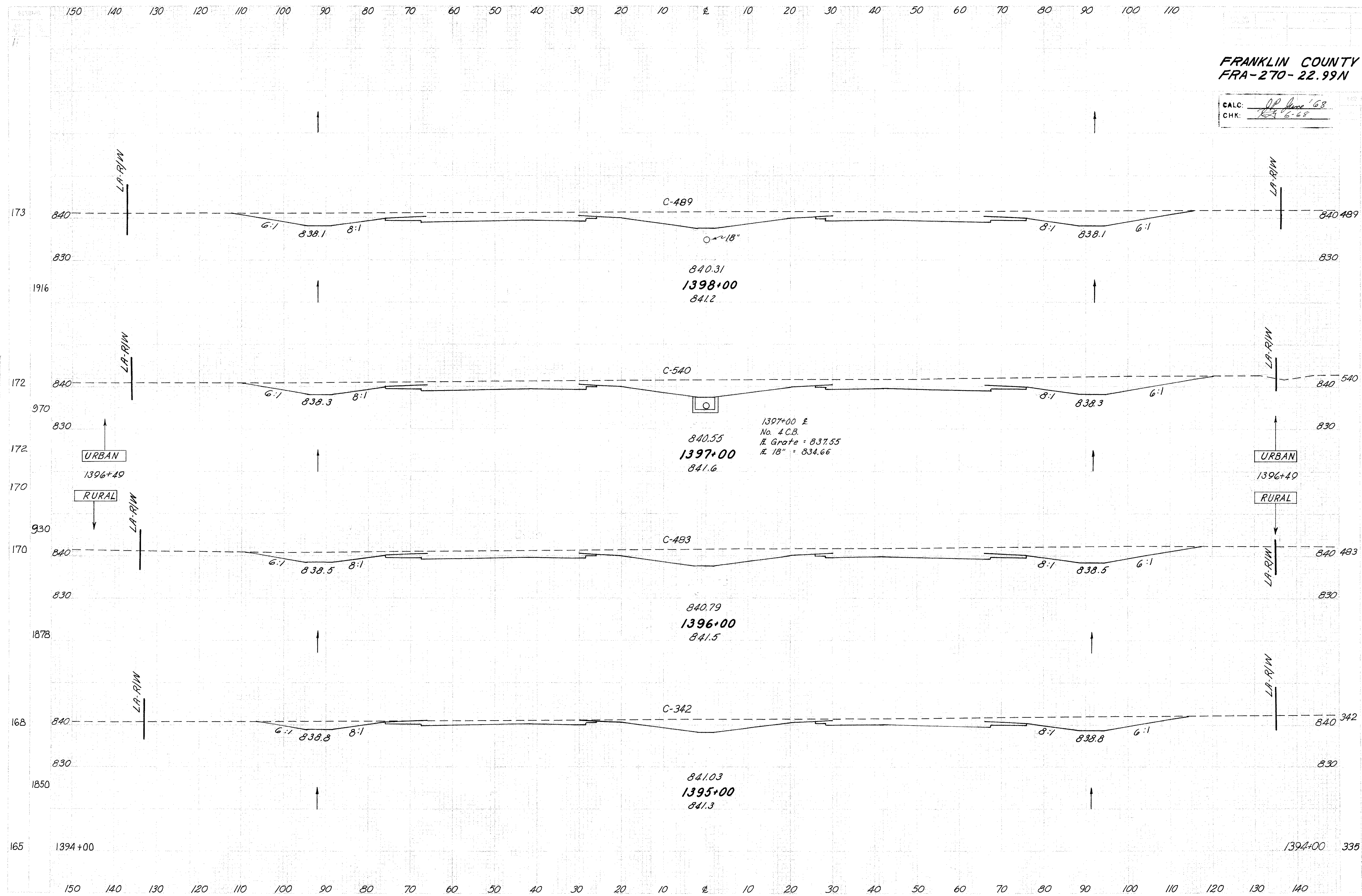
FRANKLIN COUNTY
FRA-270-22.99N

CALC: *J.P. Jones '68*
CHK: *6-68*



FRANKLIN COUNTY
FRA-270-22.99N

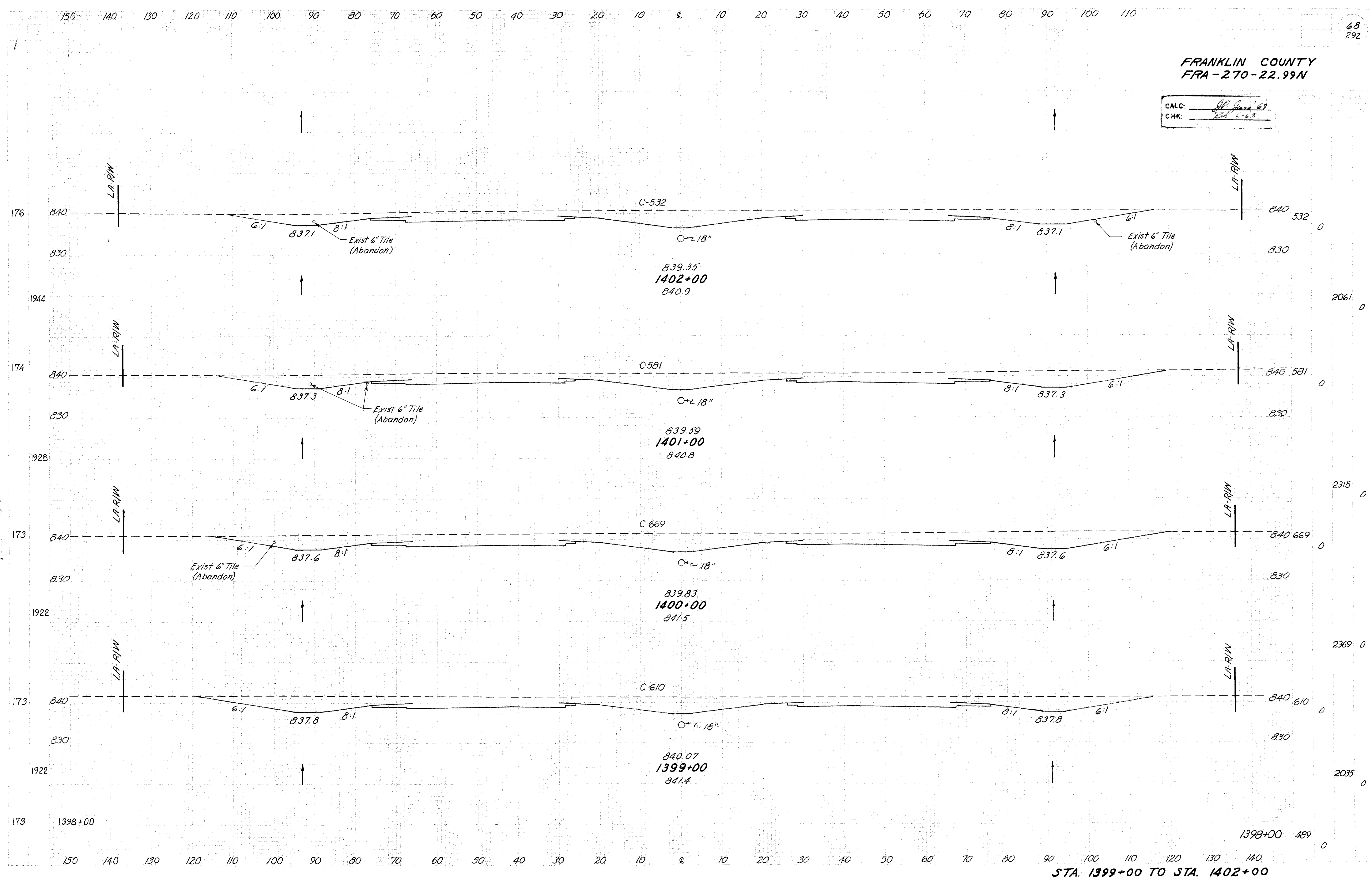
CALC: JP June '68
CHK: 6-68



STA. 1395+00 TO STA. 1398+00

FRANKLIN COUNTY
FRA-270-22.99N

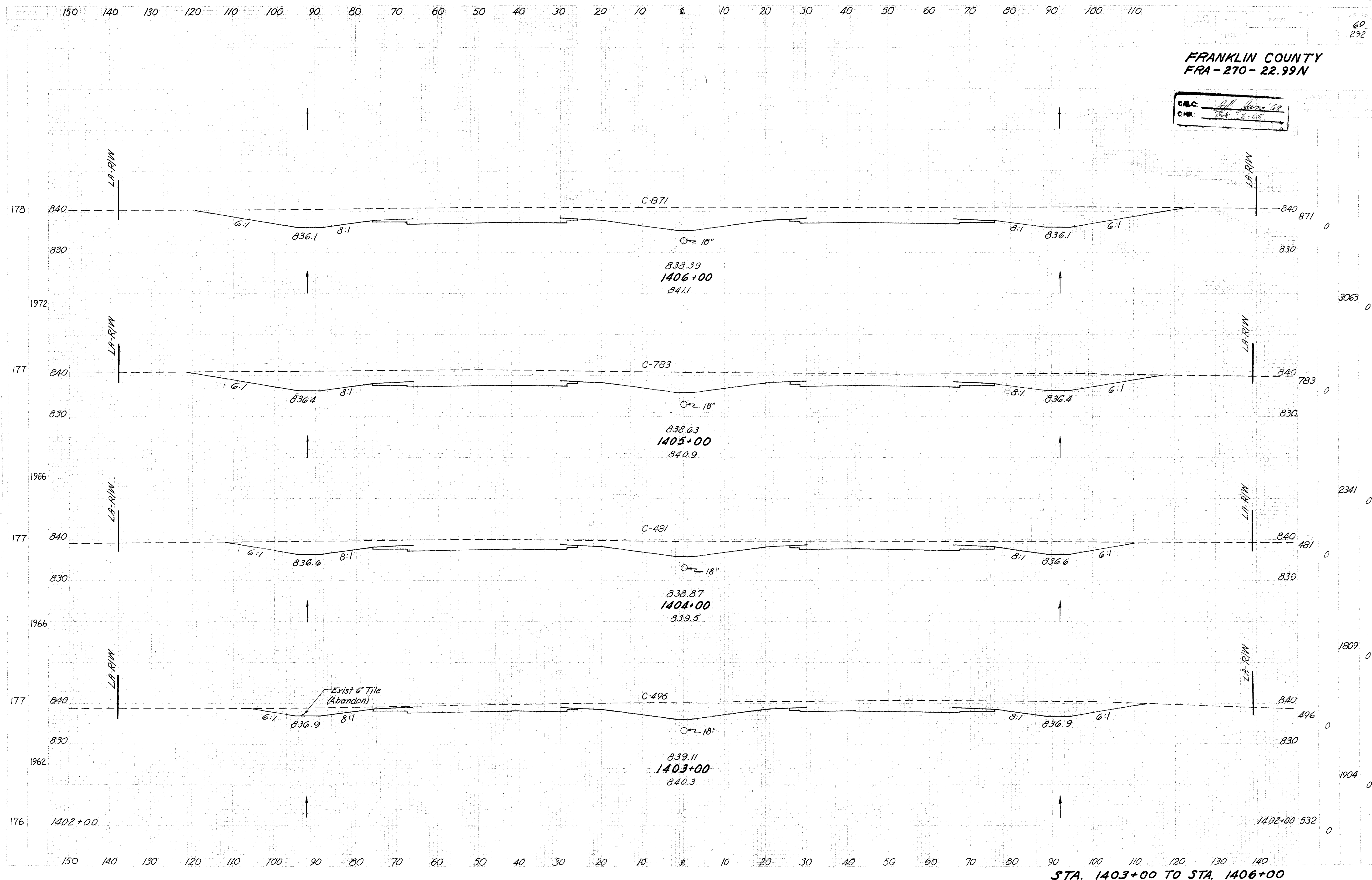
CALC: JP June '68
CHK: EB 6-68



FRANKLIN COUNTY
FRA-270-22.99N

C.M.C. *APR June '68*
C.M.C. *June 6-68*

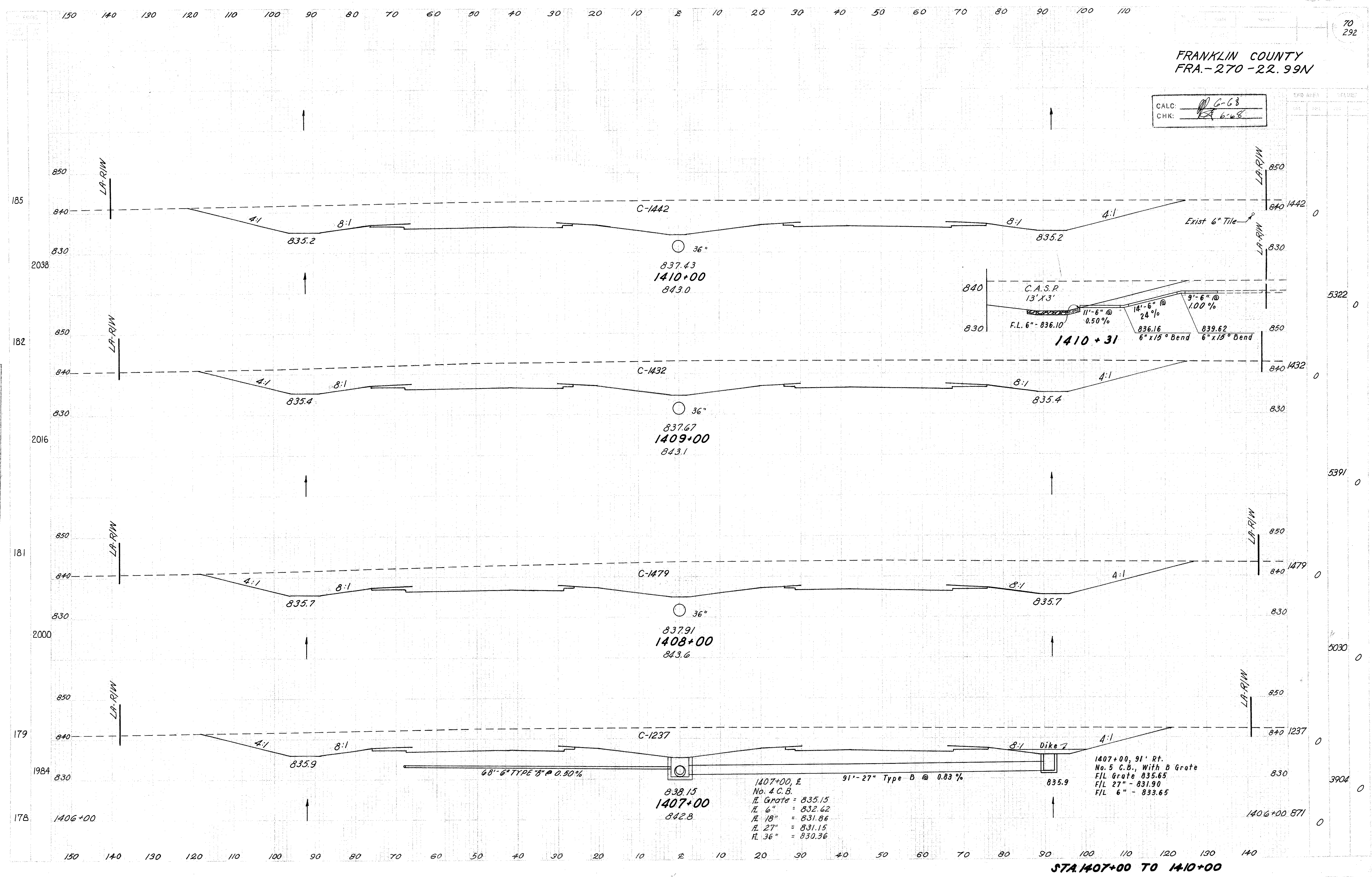
69
292



FRANKLIN COUNTY
FRA.-270-22.99N

CALC: 6-68
CHK: 6-68

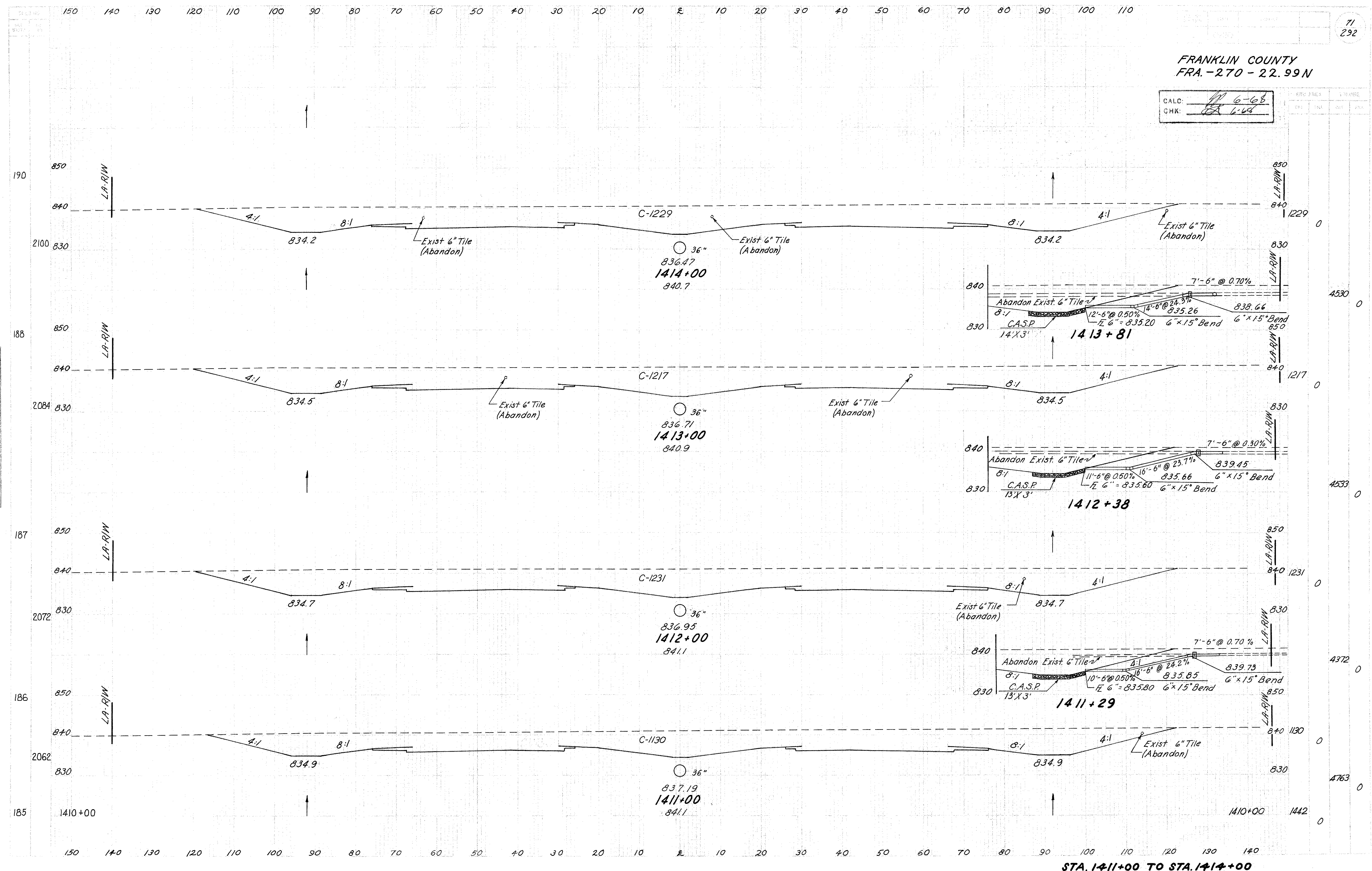
Initial	Revised
2/2/78	6/2/78
Checked	Approved
Ex. Ground	Earthwork Quant.
Template	Seeding Quant.
Plan	
Earthwork Quant.	
Seeding Quant.	



FRANKLIN COUNTY
FRA.-270-22.99N

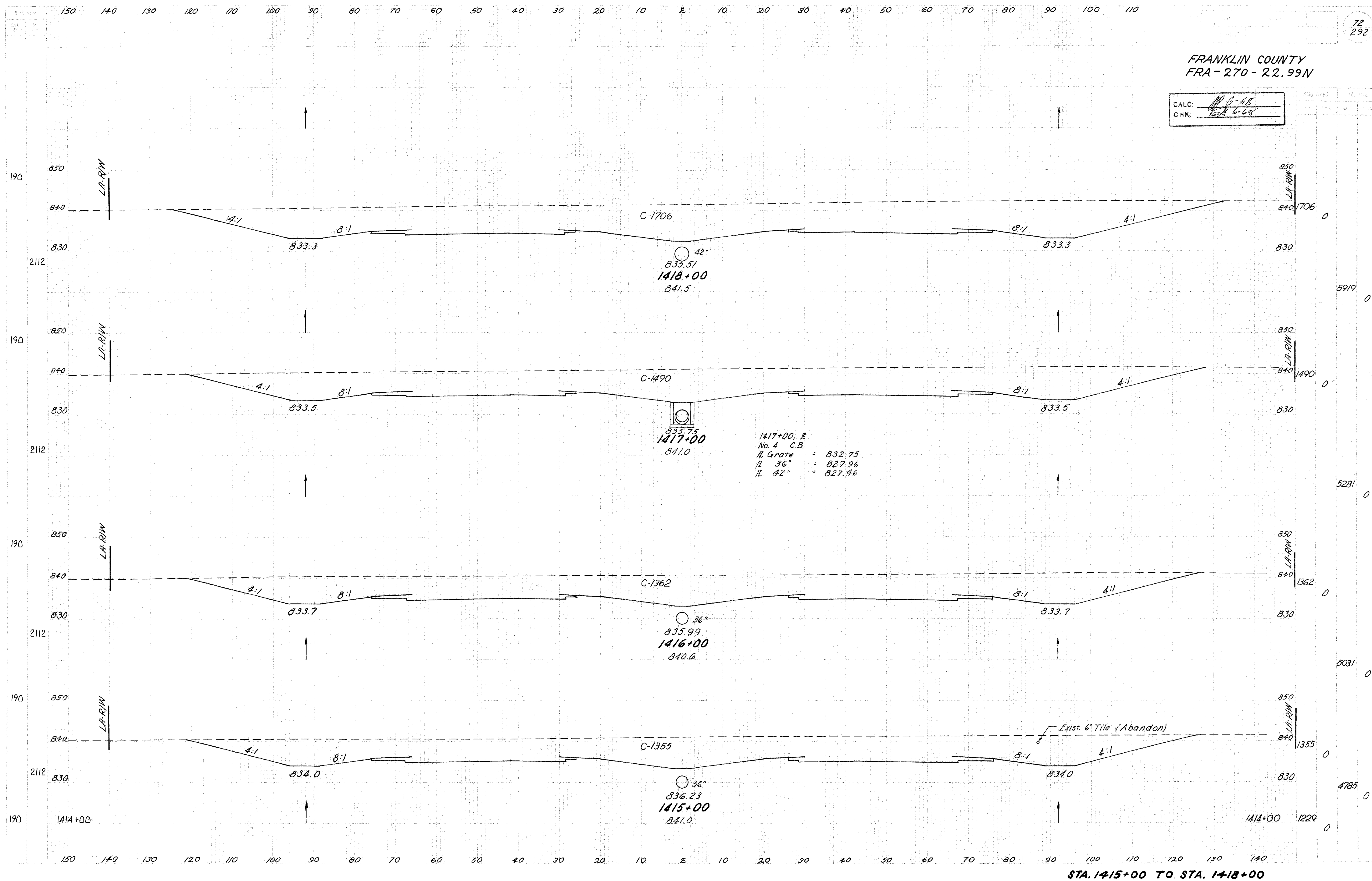
CALC: 6-68
CHK: 6-68

Label	RCN
City	ALM
Plotted	
As Ground	
Topography	
Other	
Seeding	
Planting	



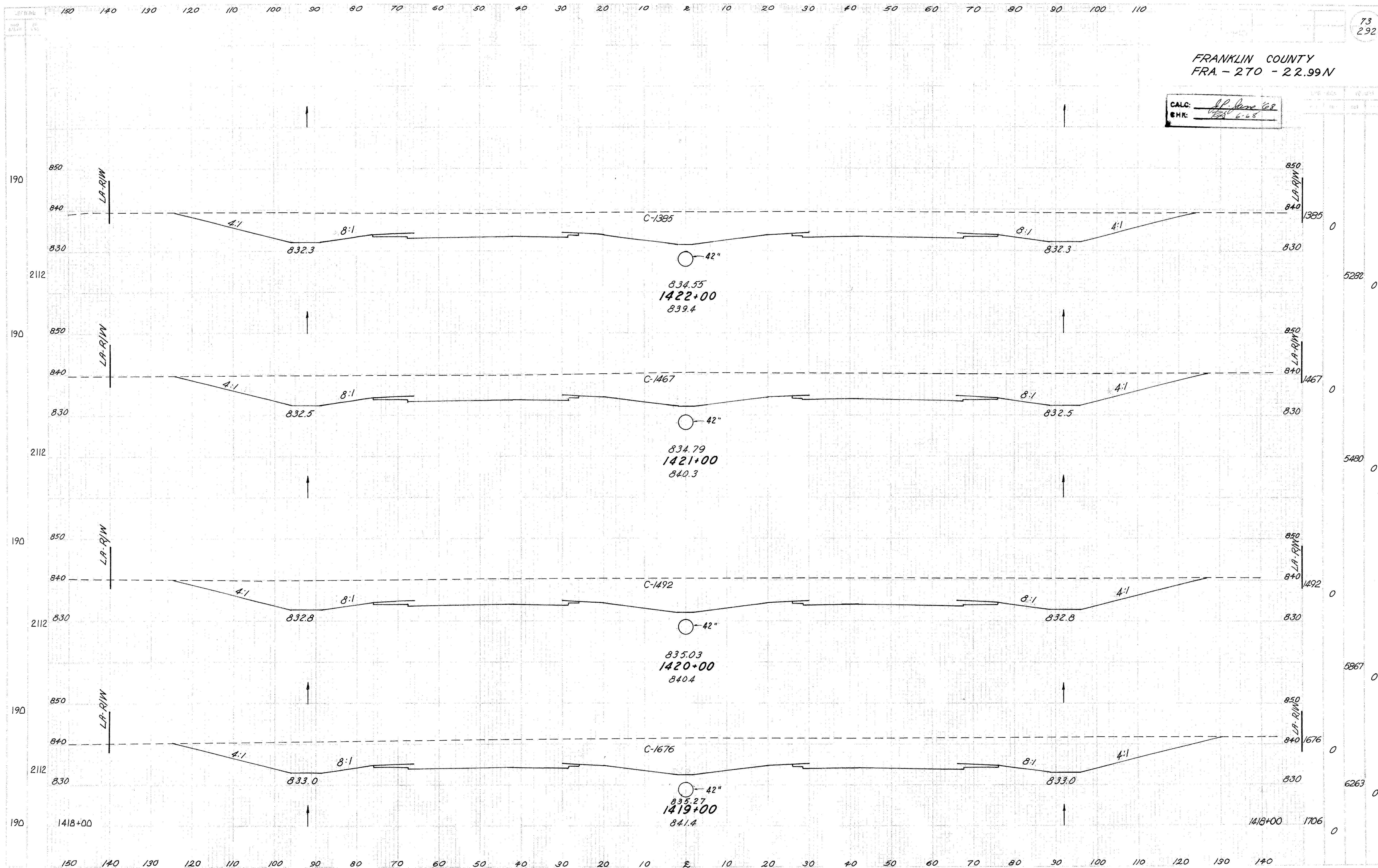
STA. 1411+00 TO STA. 1414+00

1417+00, £
No. 4 C.B.
Æ Grote = 832.75
Æ 36" = 827.96
Æ 42" = 827.46



FRANKLIN COUNTY
FRA. - 270 - 22.99N

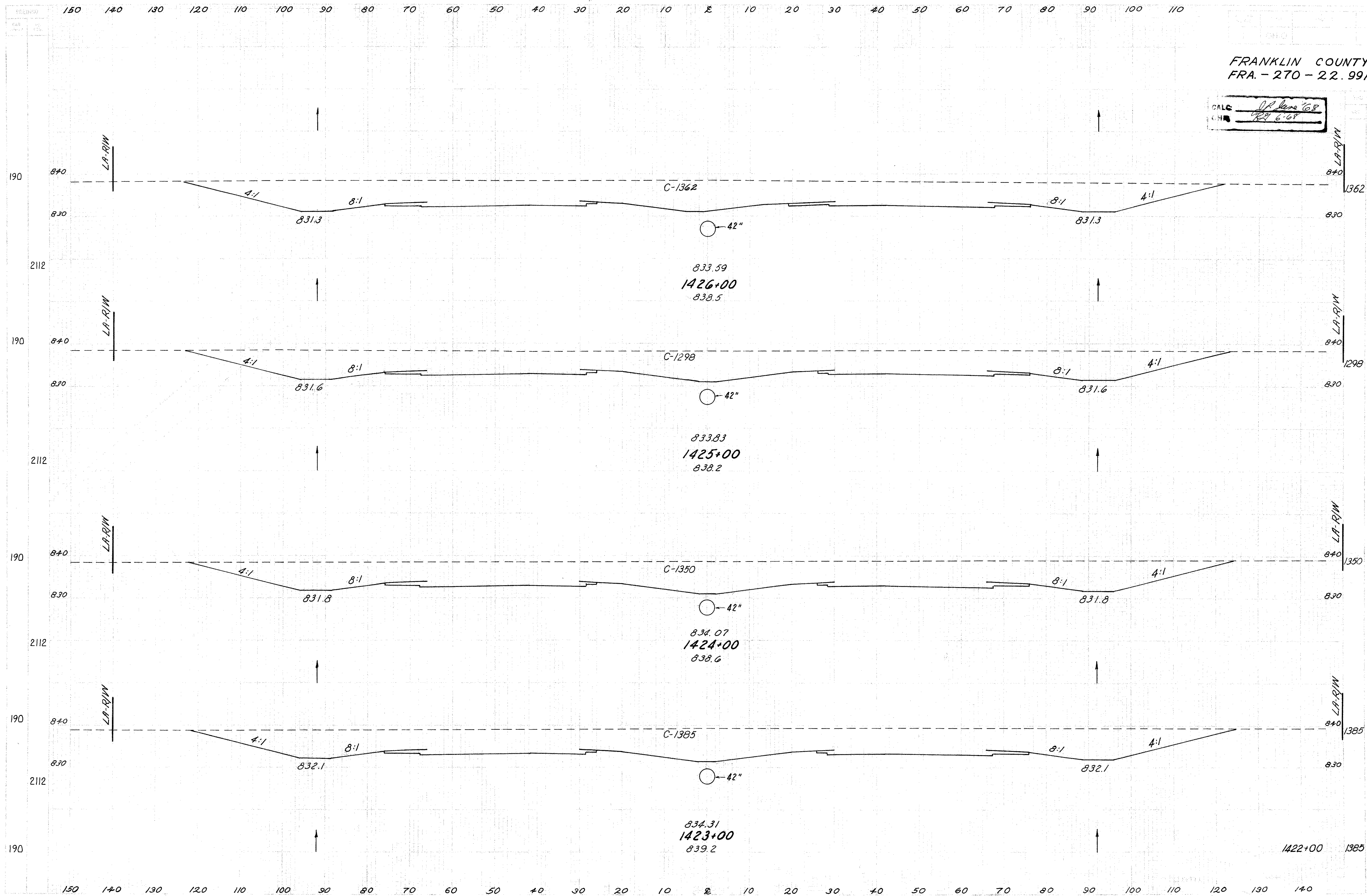
CALC: J.P. June '68
CHK: TS 6-68



STA. 1419+00 TO STA. 1422+00

FRANKLIN COUNTY
FRA. - 270 - 22.99N

CALC JP. June 68
CHK JP. 6-68

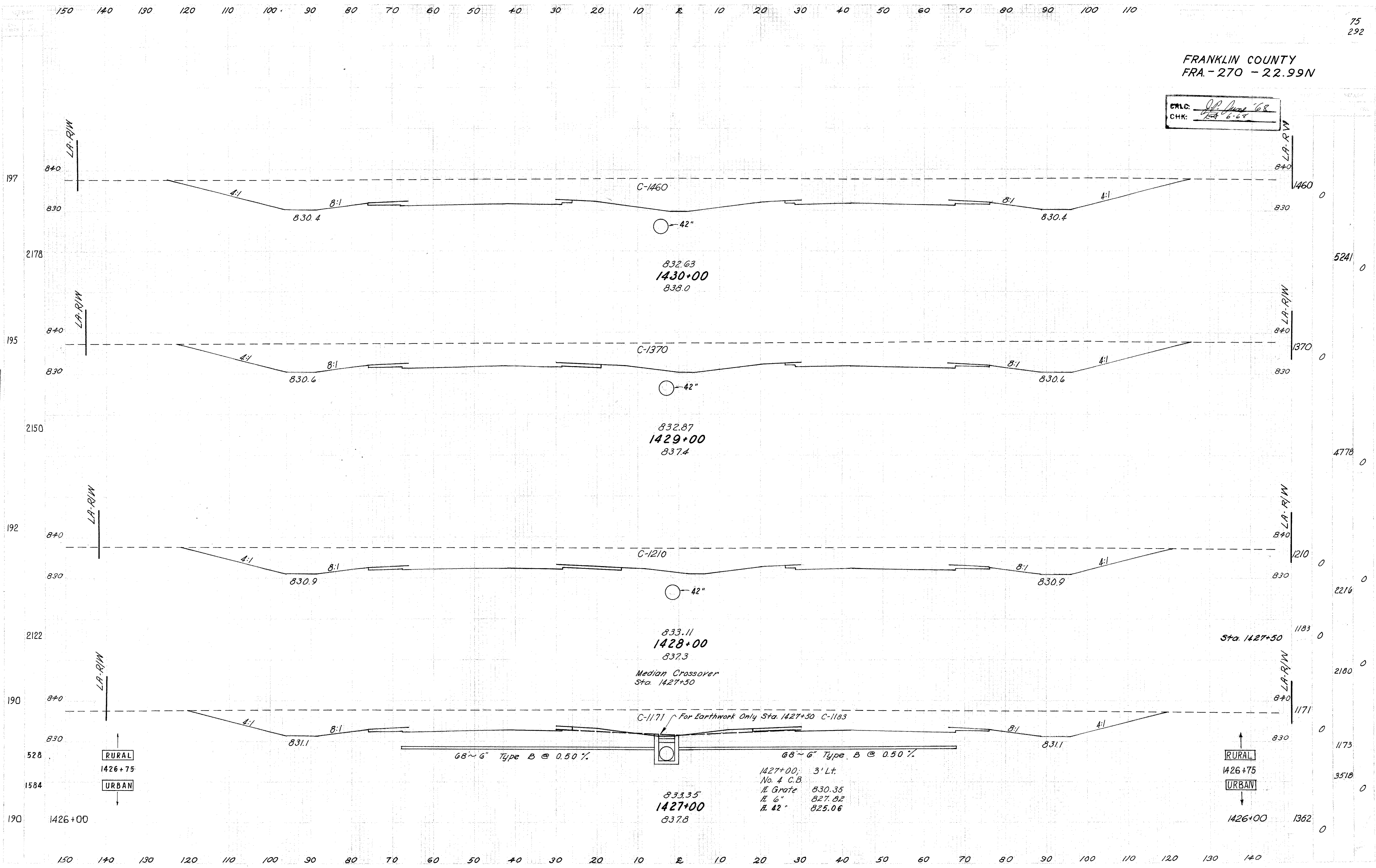


STA. 1423+00 TO STA. 1426+00

FRANKLIN COUNTY
FRA-270-22.99N

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

Ex. General	Label	R/L
Template	CL	R/L
Plan	Profile	
Earthwork Quant.	Stationing Quant.	



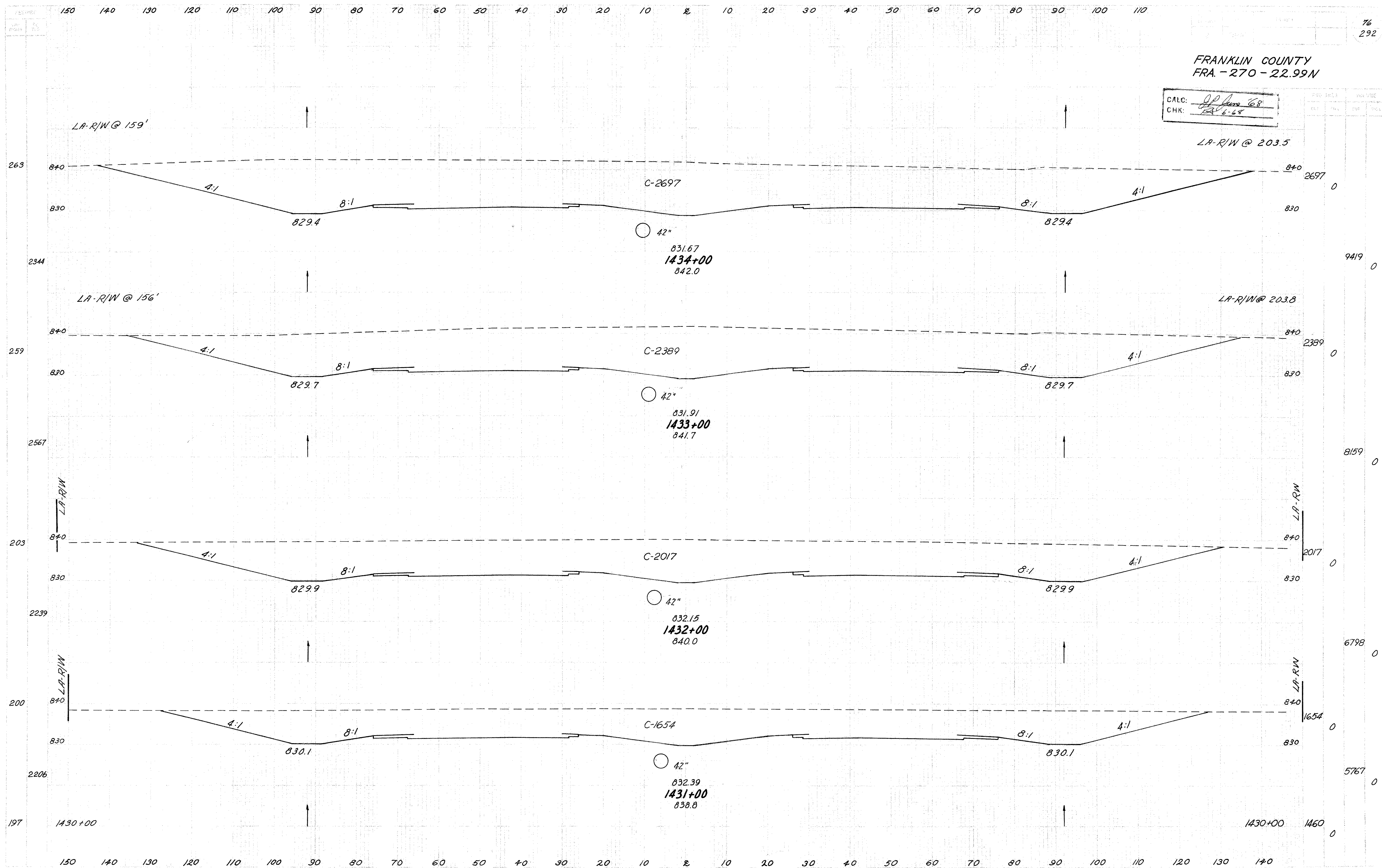
1427+00: 3' Lt.
No. 4 C.B.
16 Grate 830.35
16 6" 827.82
16 42" 825.06

STA. 1427+00 TO STA. 1430+00

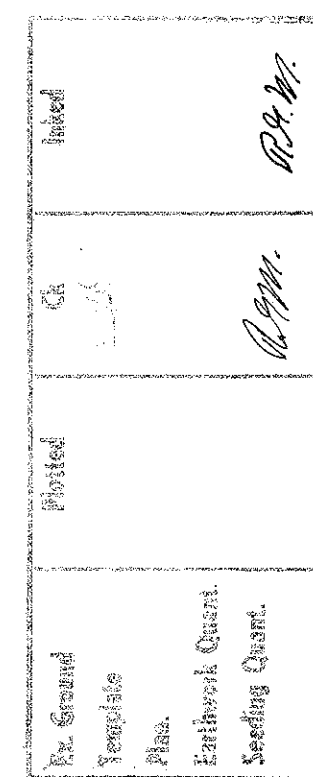
FRANKLIN COUNTY
FRA - 270 - 22.99N

CALC: *JP June 68*
CHK: *BA 6-68*

As Ground	Revised	Revised	Revised
Template	Ca	Ca	Ca
Plan	Plan	Plan	Plan
Section	Section	Section	Section
Profile	Profile	Profile	Profile
Grading	Grading	Grading	Grading
Quant	Quant	Quant	Quant



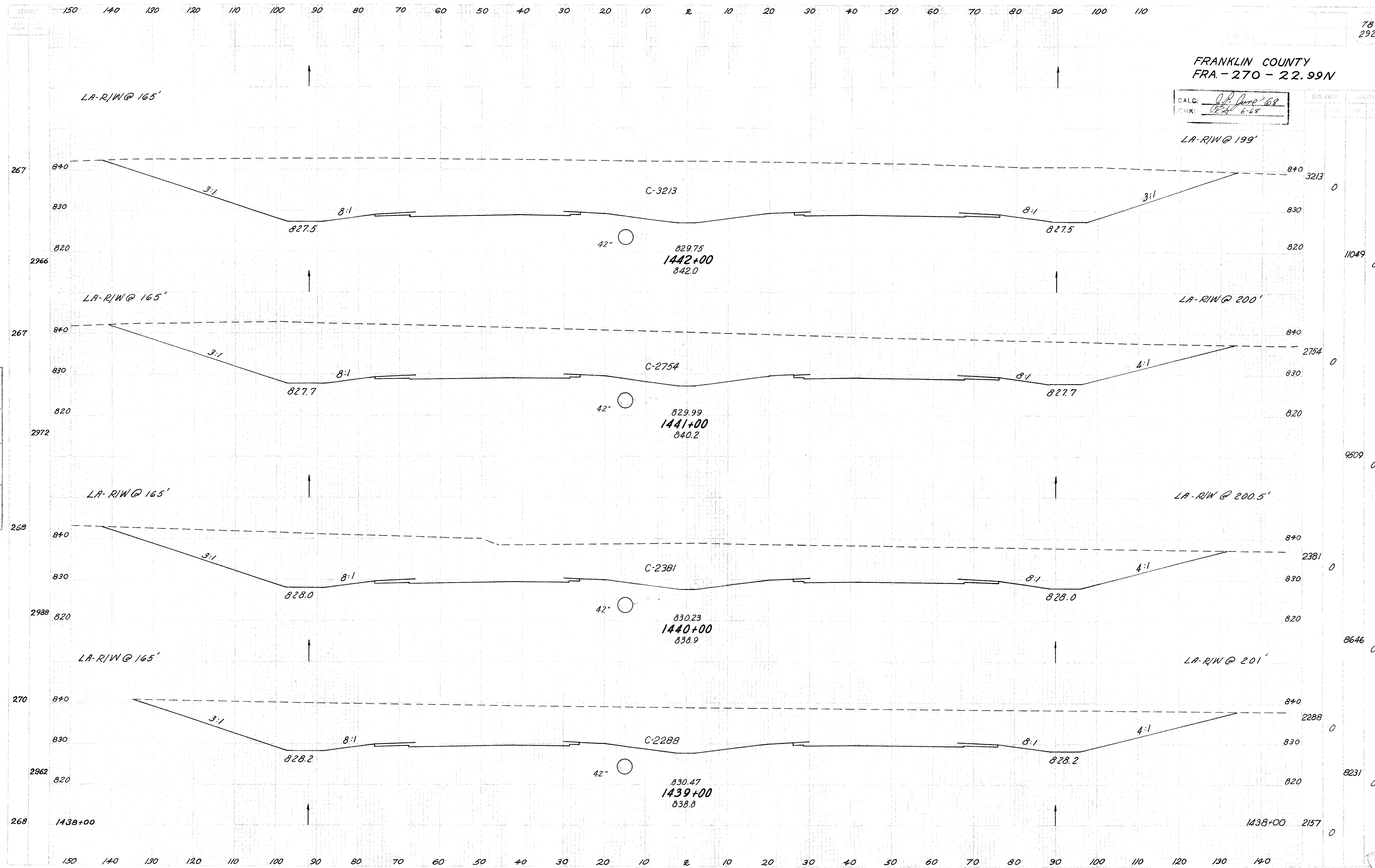
JP, June '68
R 6.68



FRANKLIN COUNTY
FRA - 270 - 22.99N

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

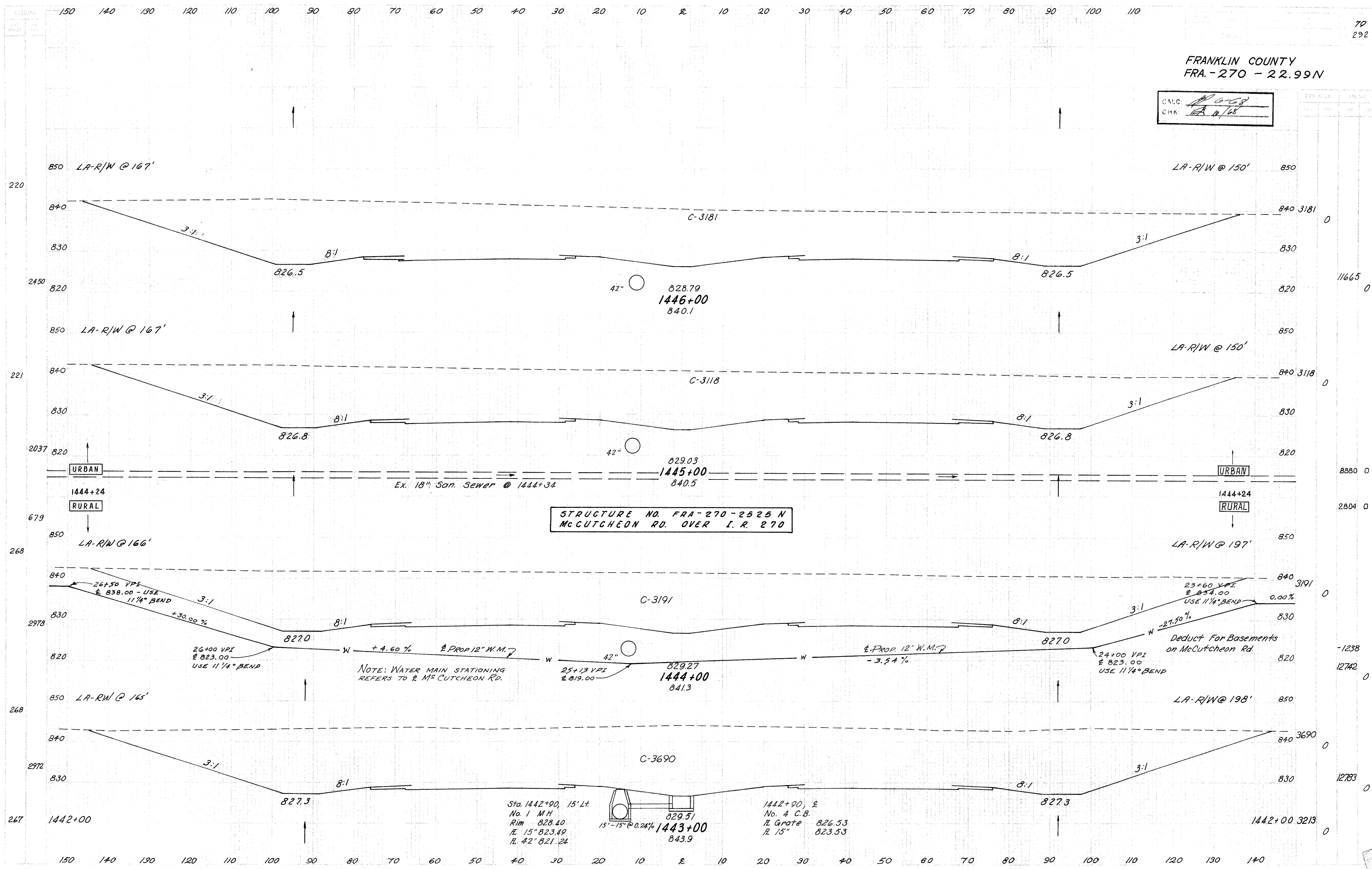
As Ground	1438+00
Template	1439+00
Plan	1440+00
Endmark Quant.	1441+00
Setting Quant.	1442+00



FRANKLIN COUNTY
FRA-270 - 22.99N

CALC: 068
CHK: 0/68

Final	Rev.	By	Date
Final	0	RM	06/68
Final	0	RM	06/68
Final	0	RM	06/68



STRUCTURE NO. FRA-270-2525 N
McCUTCHEON RD. OVER I. R. 270

Sta. 1442+90, 15' Lt.
No. 1 M.H.
Rim 828.40
R. 15" 823.49
R. 42" 821.24

1442+90, R.
No. 4 C.B.
R. Grote 826.53
R. 15" 823.53

FRANKLIN COUNTY
FRA.-270-22.99 N

LA-R/W @ 150'

CALC: 6-68
CHK: 6/68

C-3002

42" 827.83
1450+00
838.5

C-2953

42" 828.05
1449+00
838.6

C-2984

42" 828.31
1448+00
839.6

C-3265

42" 828.55
1447+00
841.2

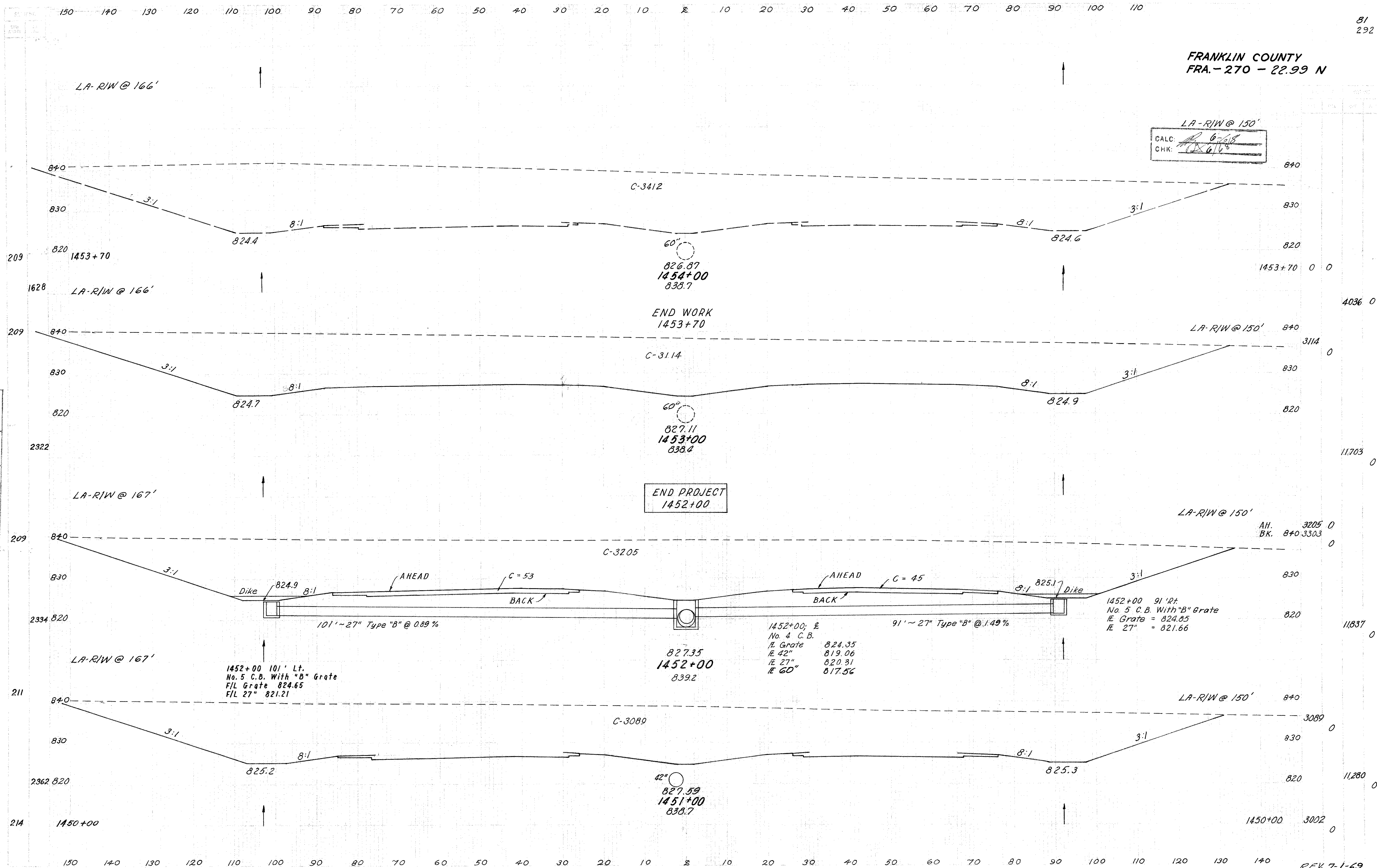
1446+00 3.81

STA 1447+00 TO STA 1450+00

Ex. General Template Plan.	Plotted	Checked	Approved

FRANKLIN COUNTY
FRA.-270-22.99 N

LA-R/W @ 150'
CALC: 0.768
CHK: 0.768



MICROFILMED
FEB 14 1980

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

82
292

FRANKLIN COUNTY
FRA. 270-22.99N

REFERENCE NO.	BEARING	STATION	OFFSET
1 TO 2	S 15°-09'-27"E	RAMP A	
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		

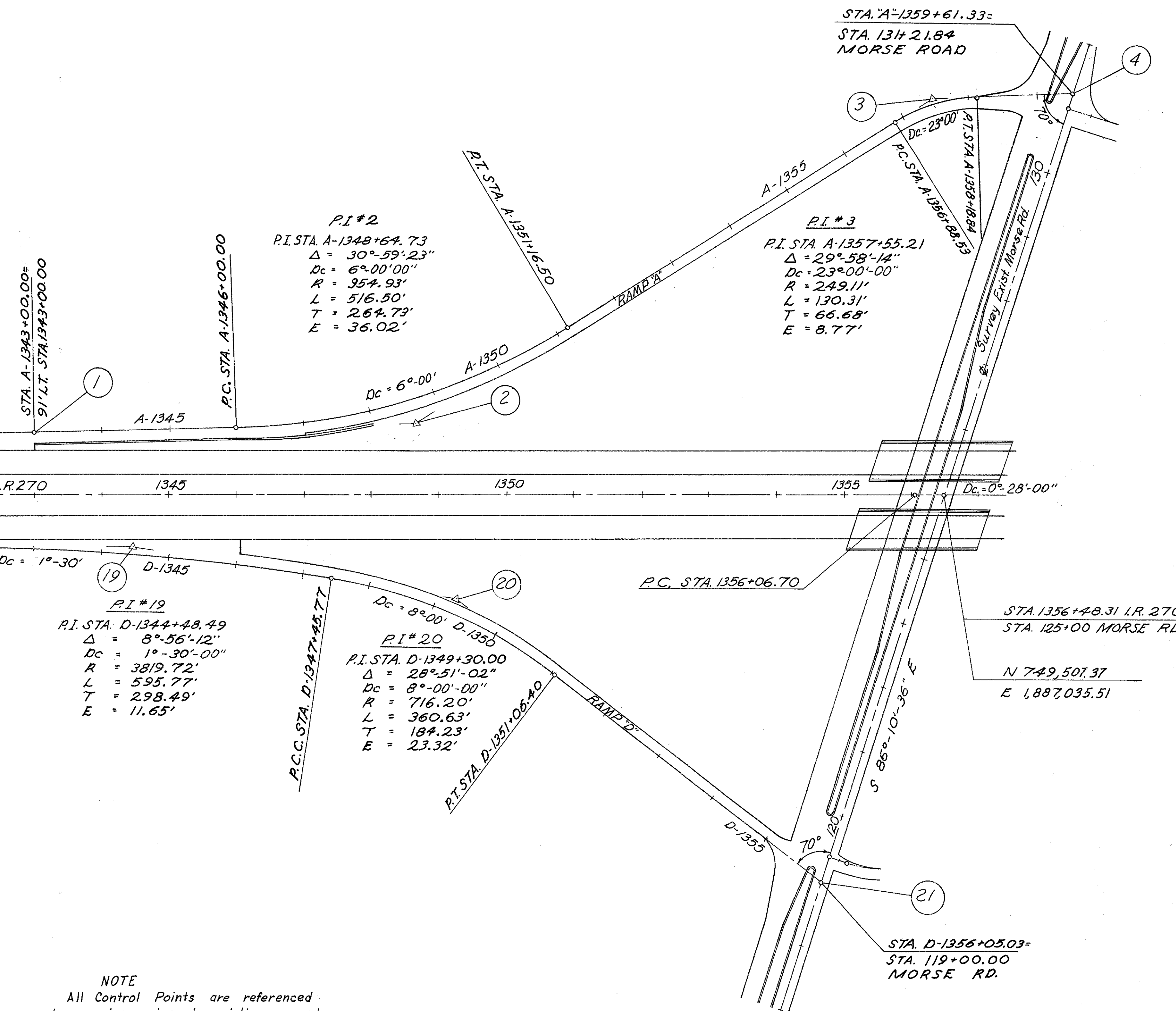
COORDINATES RAMP A		
REF.	NORTH	EAST
1	750837.79	1,886,798.54
2	750,292.70	1,886,946.20
3	749,666.79	1,887,597.69
4	749,465.99	1,887,655.97

1330 + S 13°-57'-50"E 1335 1340 1345 1350 1355

REFERENCE NO.	BEARING	STATION	OFFSET
18 TO 19	S 13°-57'-50"E	RAMP D	
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	1,886,598.33
19	750,652.91	1,886,670.36
20	750,172.05	1,886,712.66
21	749,547.38	1,886,836.85

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



MORSE ROAD INTERCHANGE

GEOMETRIC LAYOUT RAMP "A" & "D"

P.I. #6
 P.I. STA. B-1359+03.30
 $\Delta = 24^{\circ} 35' 18''$
 $D_c = 10^{\circ} 00' 00''$
 $R = 572.96'$
 $L = 245.88$
 $T = 124.86$
 $E = 13.45'$

P.I. # 7
P.I. STA B-1364+53.92
 $\Delta = 29^{\circ} 07' 09''$
 $D_c = 6^{\circ} 00' 00''$
 $R = 954.93'$
 $L = 485.32'$
 $T = 248.02'$
 $E = 31.68'$

REFERENCE NO	BEARING	STATION	OFFSET
		RAMP B	
5 TO 6	S 32°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)	8116' LT.
8 TO 9	S 6°-17'-43"E		

COORDINATES		
RAMP B		
REF.	NORTH	EAST
5	749,467.36	1887,634.18
6	749,233.02	1887,618.52
7	749,746.35	1887,354.70
8	749,217.75	1887,361.21
9	747,939.82	1887,391.87

P.I. #8
P.I. STA. B 1369+70.83
 $\Delta = 5^{\circ} 35' 16''$
 $Dc = 1^{\circ} 00' 00''$
 $R = 5729.58'$
 $L = 558.78'$
 $T = 279.61'$
 $E = 6.82'$

P.I. STA. 1375+01.68
 $\Delta = 17^{\circ} 32' 53''$
 $D_c = 0^{\circ} 28' 00''$
 $R = 12,277.67'$
 $L = 3,760.30'$
 $T = 1894.98'$
 $E = 145.38'$

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA.270-22.99N

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292

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 49°-35'-54"E		

COORDINATES		
RAMP C		
REF.	NORTH	EAST
10	749,553.44	1885,986.25
11	749,521.15	1886,266.55
12	748,954.44	1887,075.54
13	748,510.44	1887,137.98
14	749,544.86	1886,474.60
15	749,459.94	1886,468.93
16	749,364.04	1886,519.06
17	749,297.63	1886,504.60

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

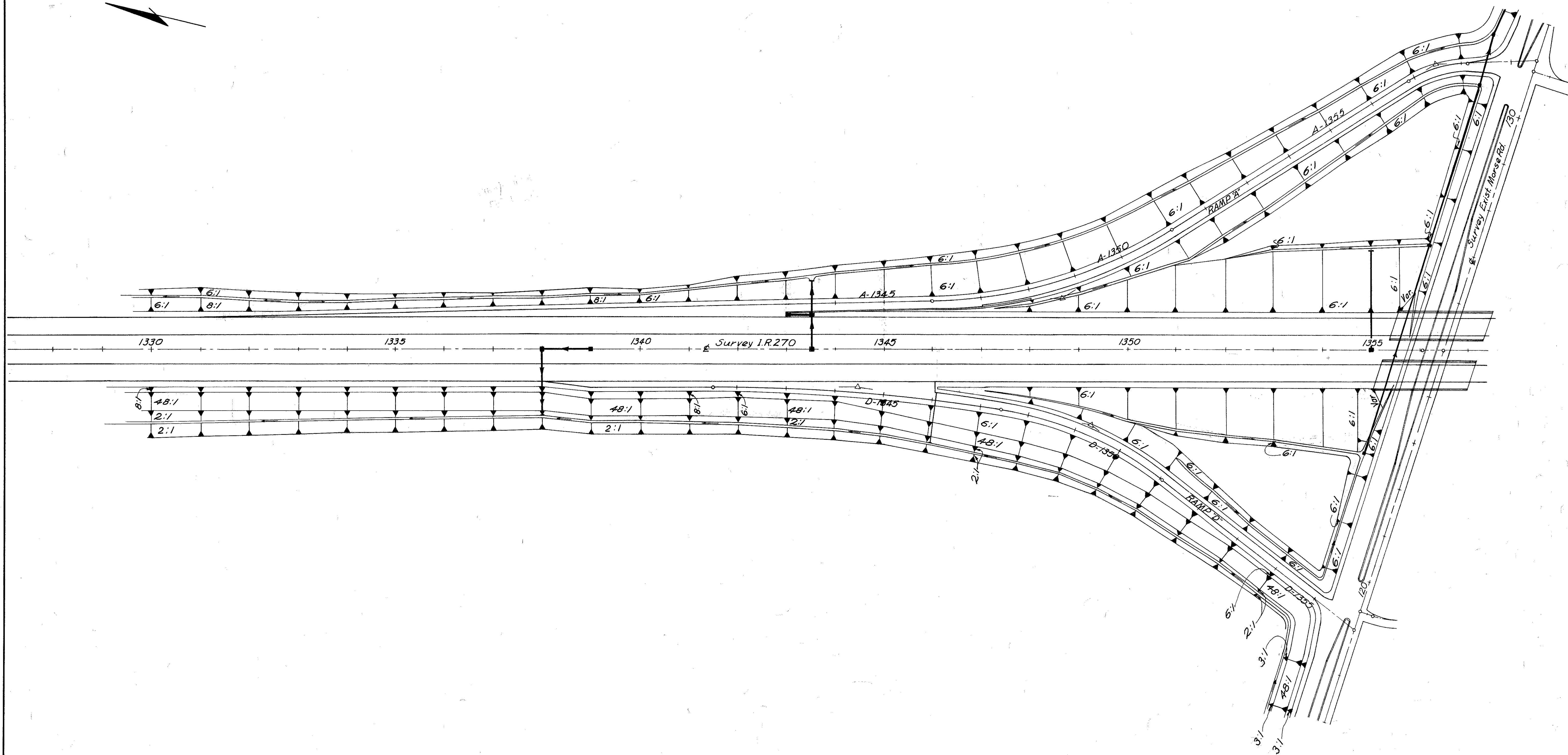
MORSE ROAD INTERCHANGE

GEOMETRIC LAYOUT RAMPS "B" & "C"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

84
292

FRANKLIN COUNTY
FRA.270-22.99N



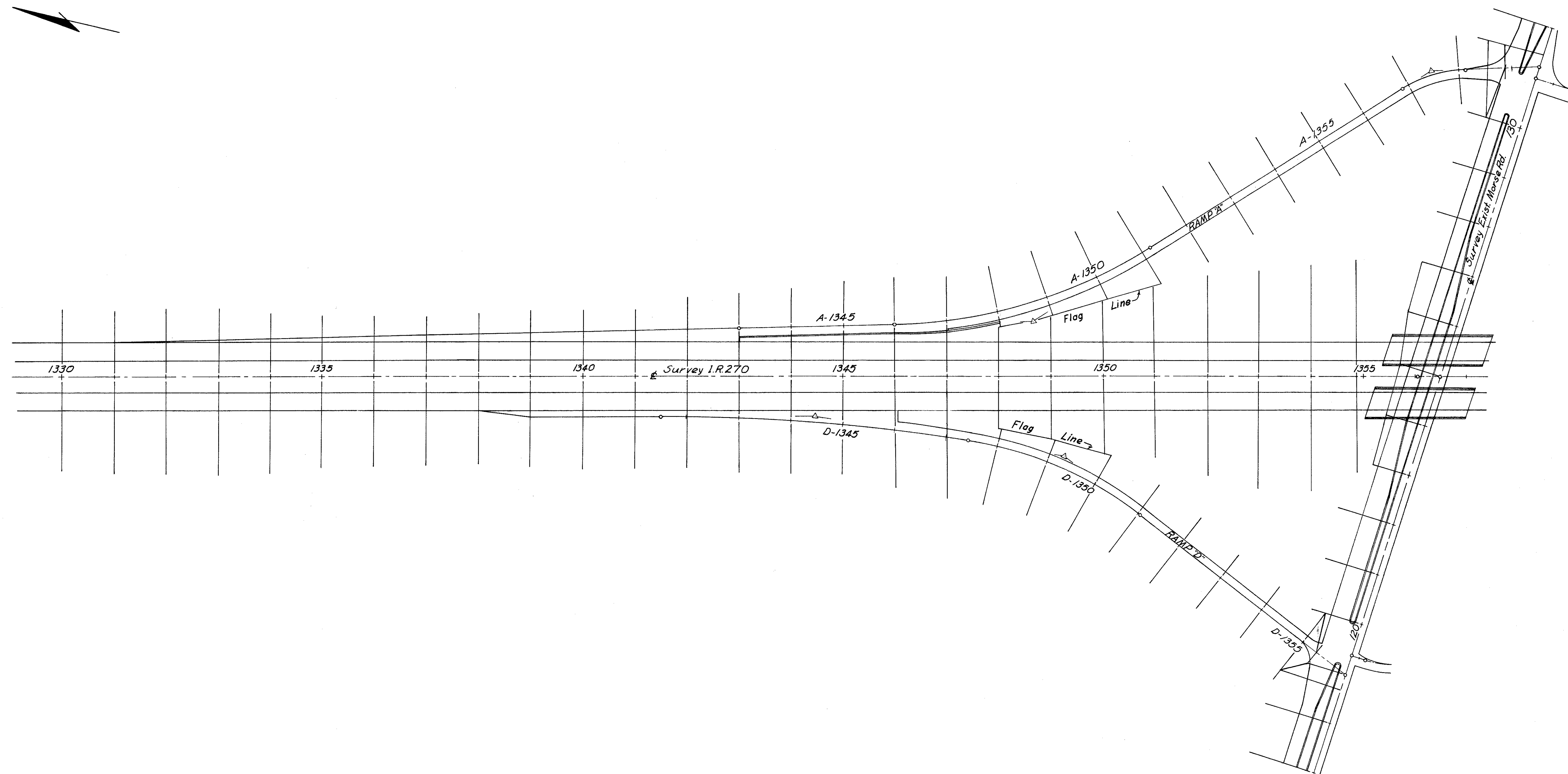
MORSE ROAD INTERCHANGE

GRADING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

86
292

FRANKLIN COUNTY
FRA. 270-22.99N



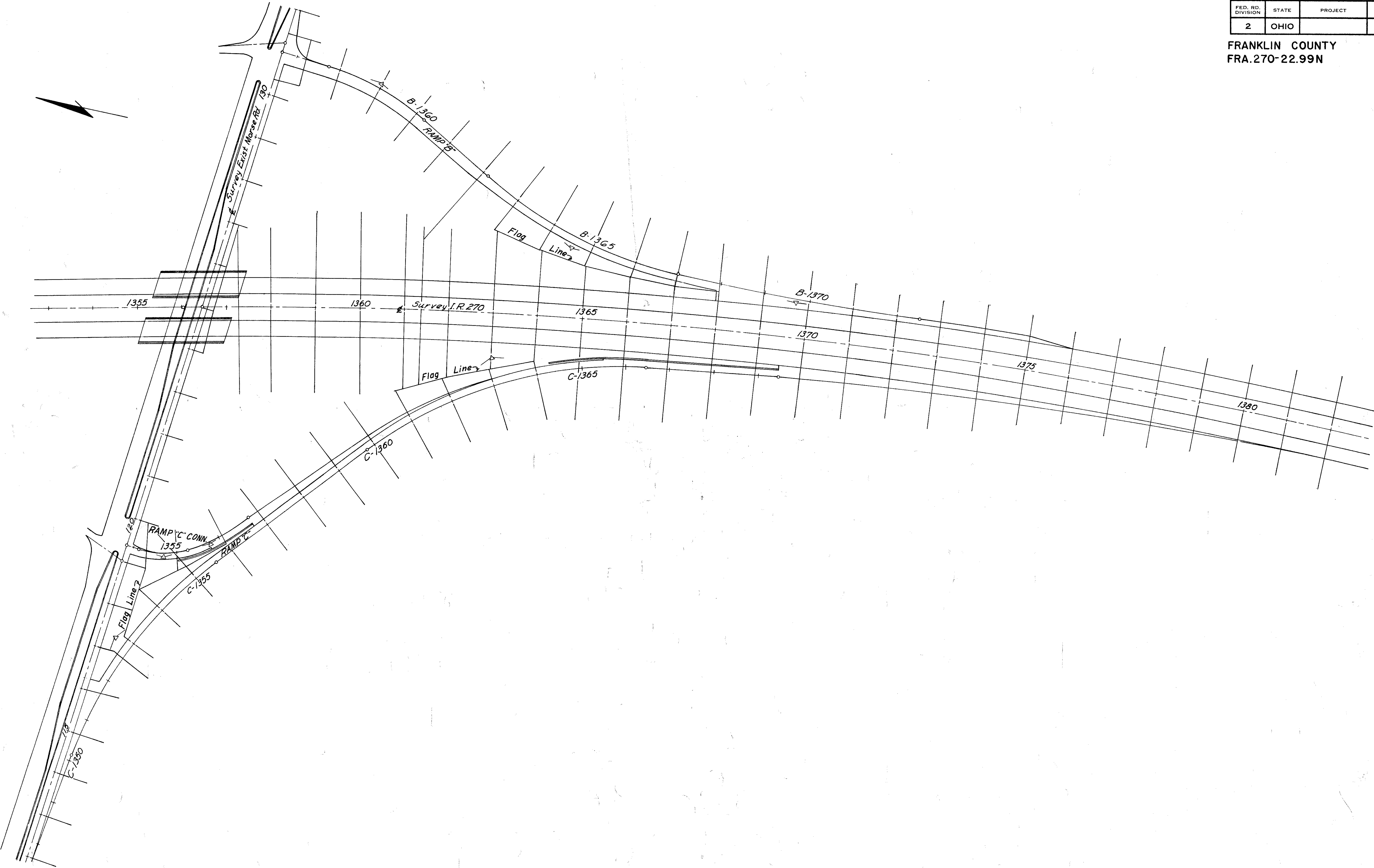
MORSE ROAD INTERCHANGE

CROSS SECTION LAYOUT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

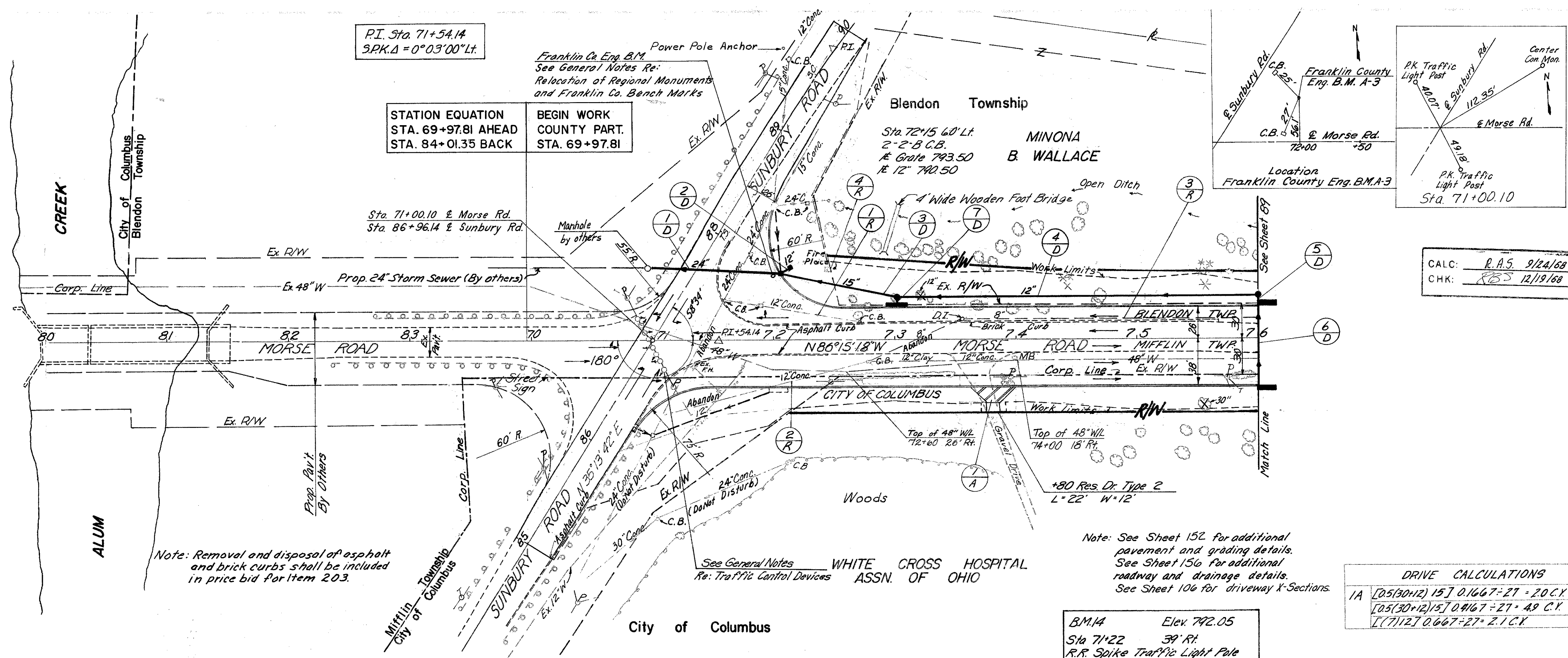
87
292

FRANKLIN COUNTY
FRA.270-22.99N



MORSE ROAD INTERCHANGE

CROSS SECTION LAYOUT

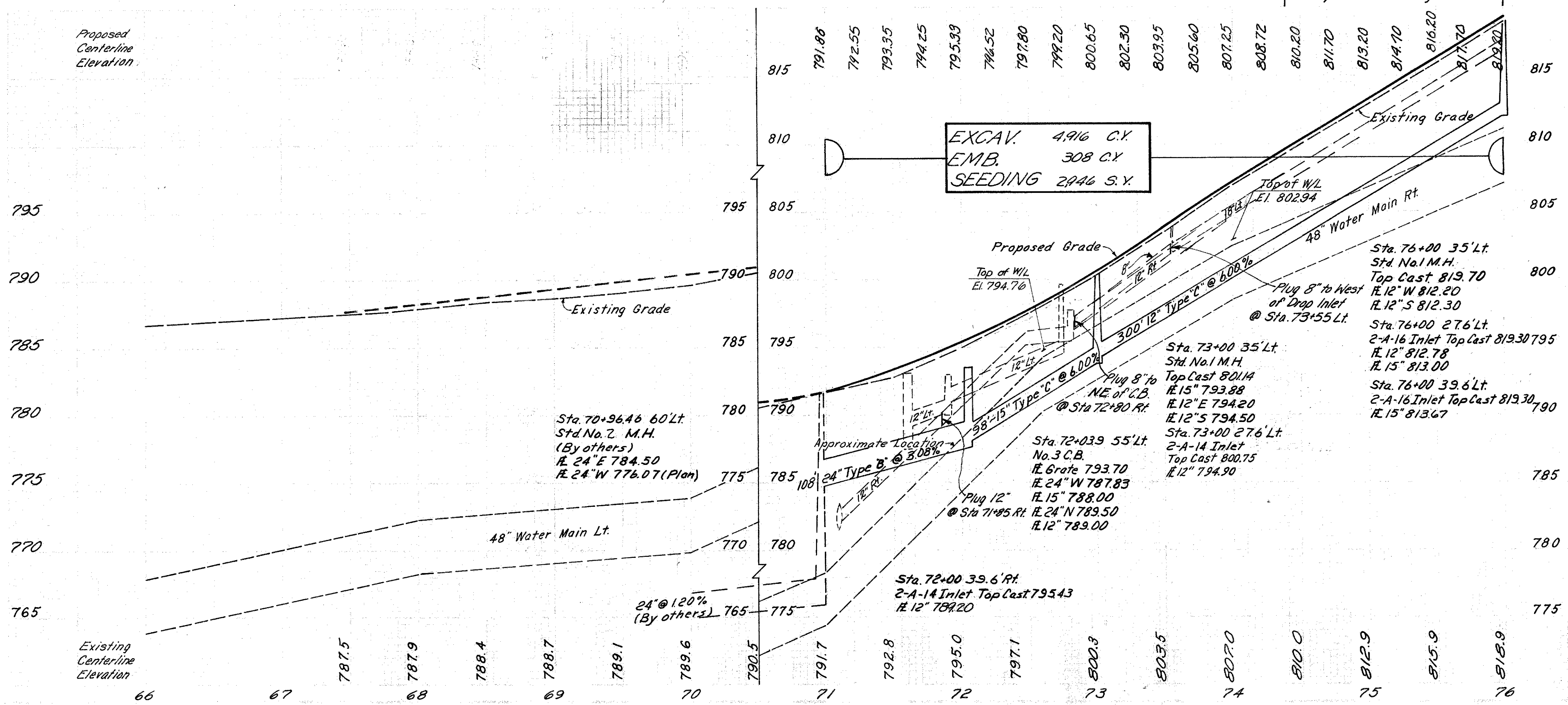


DRIVE LEGEND

	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

DRIVE CALCULATIONS		
1A	$[0.5(30+12)] 15 \div 0.1667 \div 27 = 20 \text{ C.Y.}$	404
	$[0.5(30+12)] 15 \div 0.4167 \div 27 = 49 \text{ C.Y.}$	304
	$[(7) / 12] 0.667 \div 27 = 2.1 \text{ C.Y.}$	304

[illegible]

REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	603				60A				301	SEE SHEET No	
			TYPE 8" LF	TYPE 8" LF	TYPE 8" LF	TYPE 8" LF	Na 228 GB	Na 3 GB	Na 2A-14 INLET	Na 2A-16 INLET	Na 1 MH		BITUMINUS ACCR. BASE
			24" LF	15" LF	15" LF	12" LF	EA	EA	EA	EA	CY		
1-D	70+46.46 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							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 ES, 706.02, 706.08 E.S.													

REF.	100% FRANKLIN COUNTY PARTICIPATION STATION TO STATION	SIDE	304 ASBR BASE	404 ASPH. CONC. 85-100	202 C&G or Inlet RE- MOVED	PIPE REMOVAL 24" & UNDER	EXIST. STRUCT. RE- MOVED		SEE SHEET No.
I-A	73+80	RT.	CY 7	CY 2	E.A.	L.F.	LUMP SUM		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

DRIVE CALCULATIONS			
1A	[0.5(20.5+25.135)+0.5(25.135+11.112)]/0.667=27.42 C.Y.	ADA	
2A	[0.5(20.5+25.135)+0.5(25.135+11.112)]/0.667=27.42 C.Y.	ADA	
3A	[0.5(24.5+41.113)+0.5(41.113+28.65)]/0.667=27.54 C.Y.	ADA	
4A	[0.5(24.5+41.113)+0.5(41.113+28.65)]/0.667=27.54 C.Y.	ADA	
5A	[11.112]/0.667=27.76 C.Y.	ADA	
6A	[11.112]/0.667=27.76 C.Y.	ADA	

100% FRANKLIN CO. PARTICIPATION						
REF.	STATION	SIDE	AGGR. BASE	ASPHALT CONC.		SEE SHEET NO.
1A	87+54	Rt.	11	5		151
2A	87+87	Rt.	21	6		151
3A	88+74	Lt.	14	4		
4A	92+69	Rt.	14	4		
5A	92+86	Lt.	14	4		
6A	98+20	Lt.	14	4		
TOTALS			88	27		

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

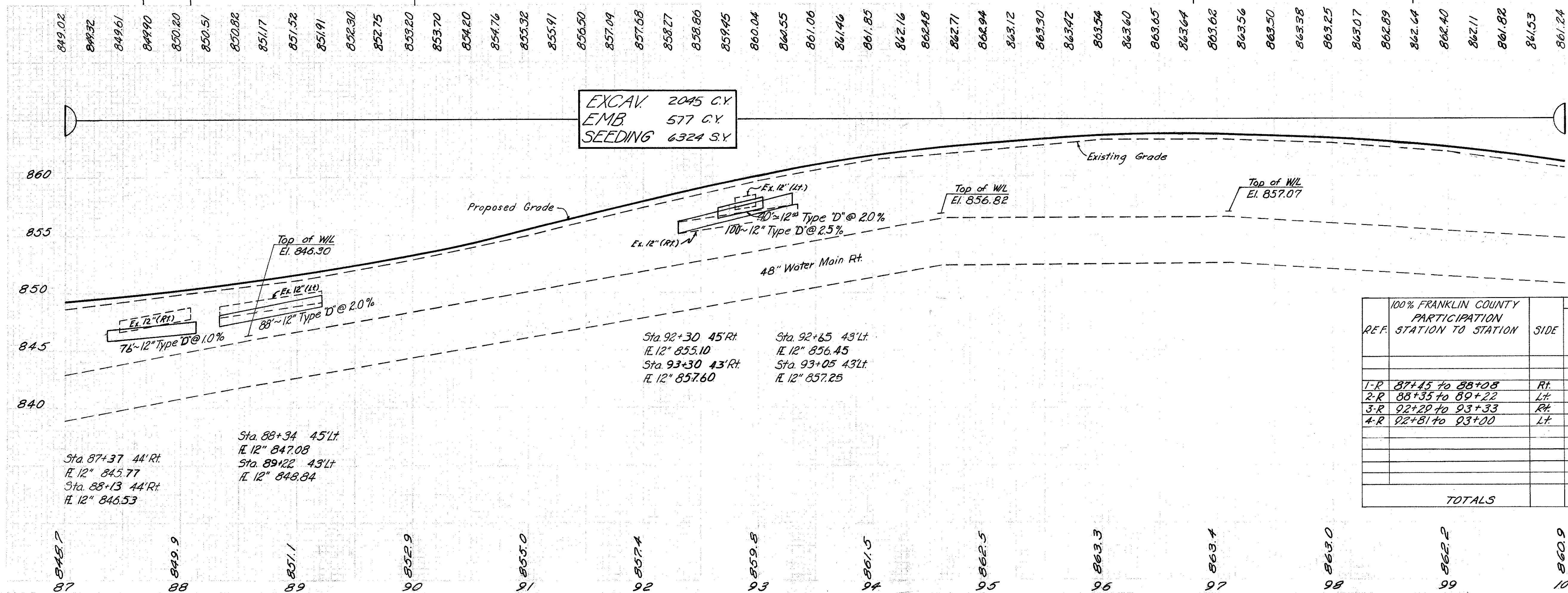
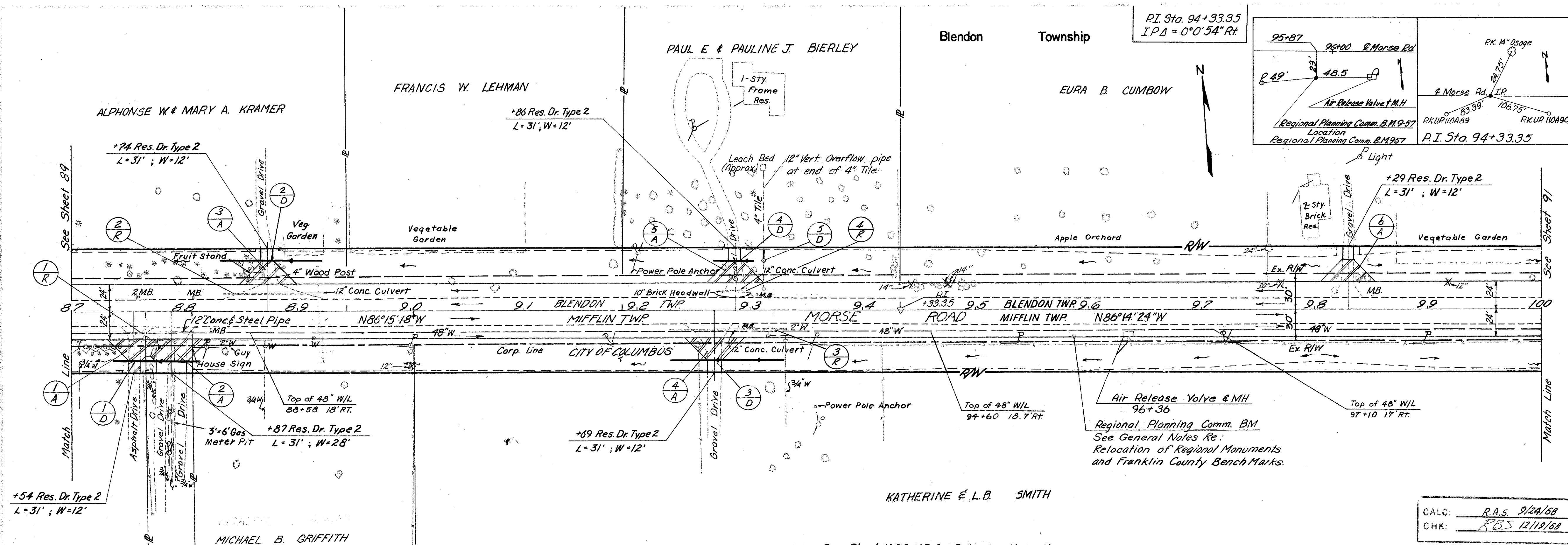
B.M. 6 Elev. 856.34
Sta. 91+78 29.5' Rt.
R.R. Spike N/S Power Pole 110A88

Note: See Sheet 106 & 107 for Driveway X-Sections.

100% FRANKLIN CO. PARTICIPATION		603		603		SEE SHEET No.
REF.	STATION TO STATION	SIDE	TYPE "D"	TYPE "C"	TYPE "D"	
1-D	87+37 to 88+13	Rt.	12"	6"	707.01	
2-D	88+34 to 89+22	Lt.	L.F.	L.F.	14.62	
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	

100% FRANKLIN COUNTY PARTICIPATION		202		SEE SHEET No.
REF.	STATION TO STATION	SIDE	PIPE REMOVAL 24" & UNDER	
1-R	87+45 to 88+08	Rt.	L.F.	
2-R	88+35 to 89+22	Lt.	63	
3-R	92+20 to 93+33	Rt.	87	
4-R	92+81 to 93+00	Lt.	104	
TOTALS			273	

MORSE ROAD STA. 87+00 TO 100+00



EXCAV. 2045 C.Y.
EMB. 577 C.Y.
SEEDING 6324 S.Y.

FRANKLIN COUNTY
FRA-270-22.99N

NOTE:
For Pavement Details
See Sheet No. 146
County

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

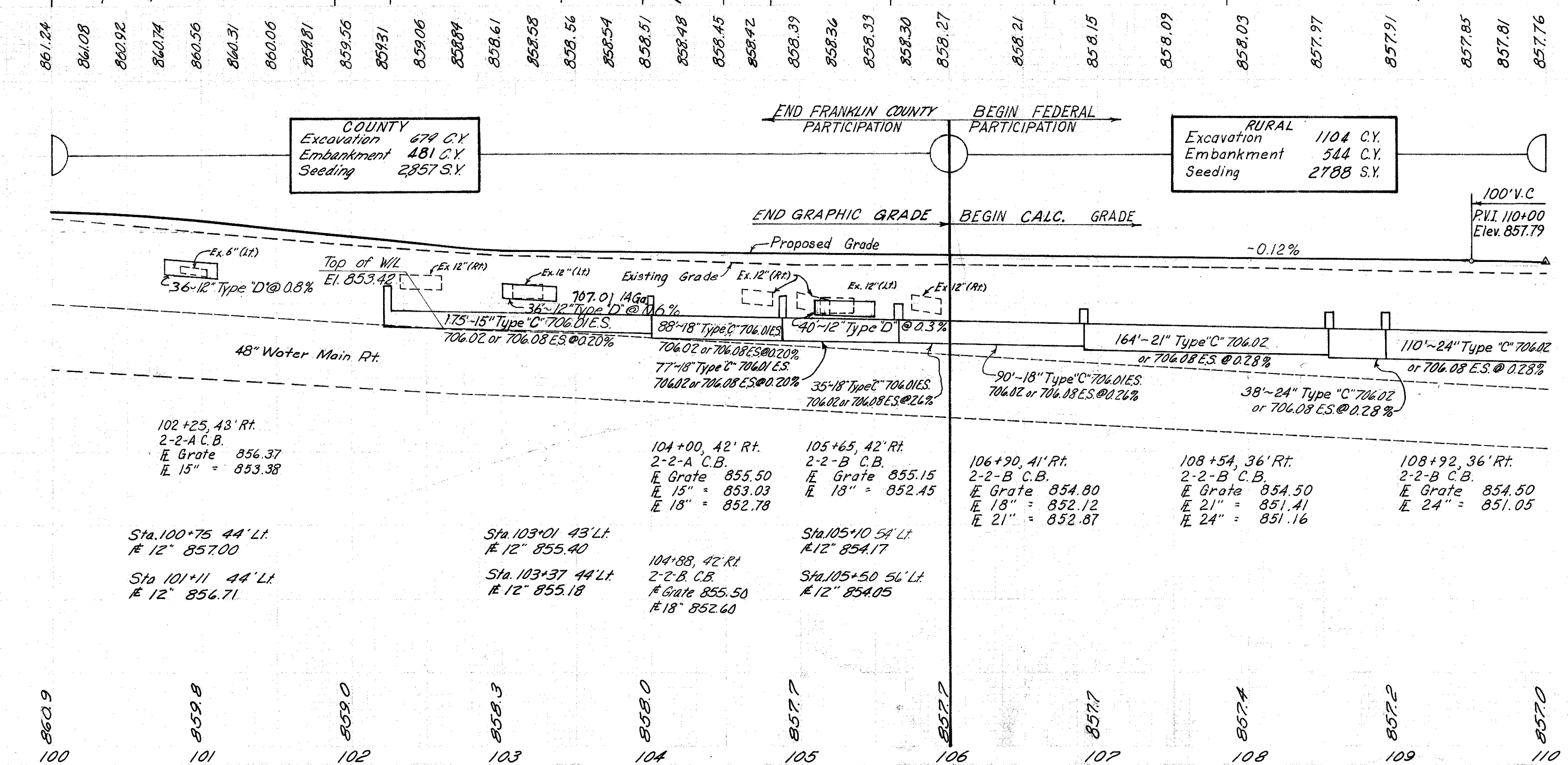
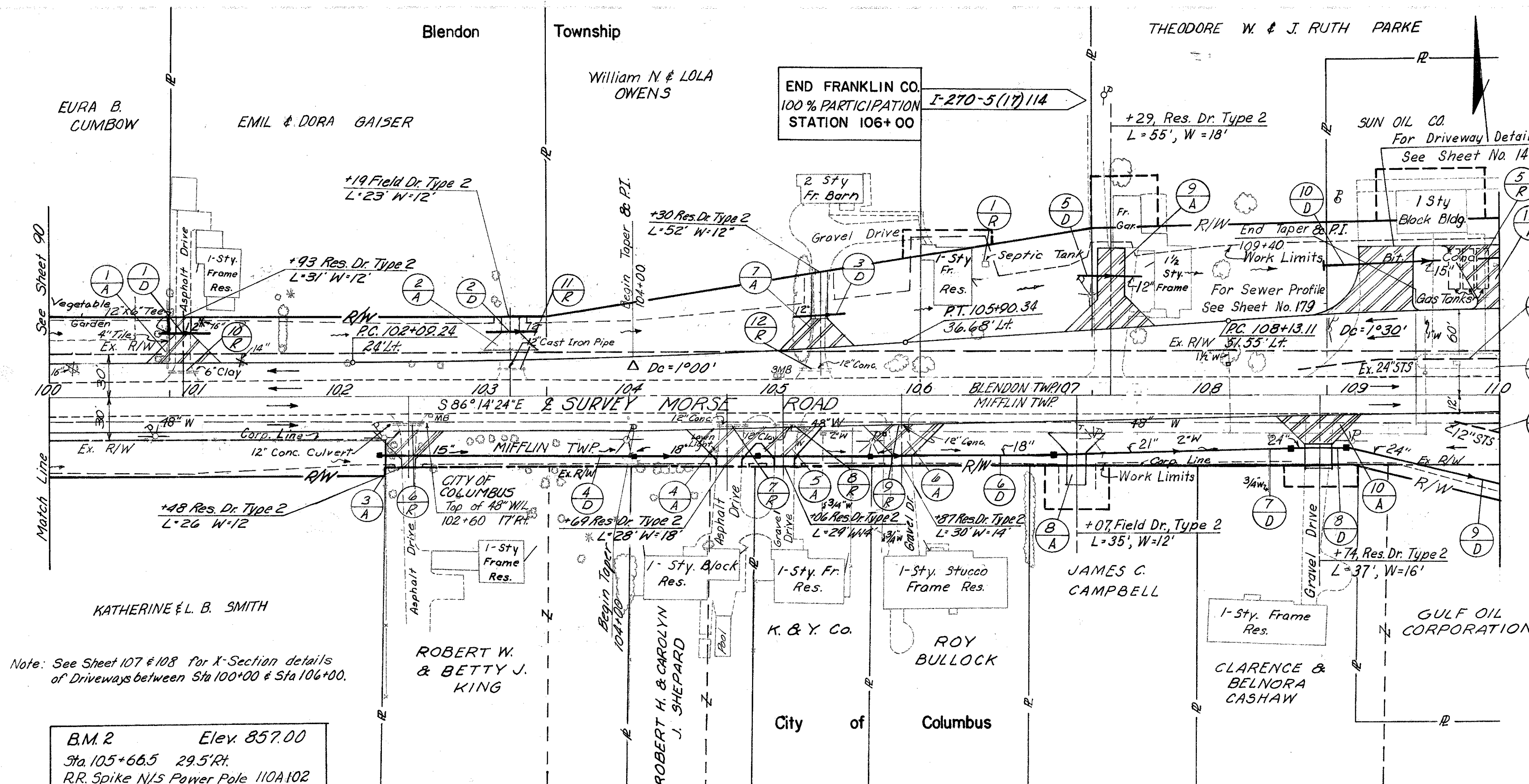
DRIVE LEGEND
2"~404 on 5"~304 (Res.)
2"~404 on 7"~304 (Comm.)
6"~304 (Field)
8"~304 (Res.)

DRIVE CALCULATIONS

1A	[0.5(52+12)20 + (12+11)0.1667-27-4.8C.Y.] 404
2A	[0.5(52+12)20 + (12+11)0.1667-27-11.9C.Y.] 304
3A	[0.5(52+12)20 + (12+11)0.1667-27-4.4C.Y.] 404
4A	[0.5(52+12)20 + (12+11)0.1667-27-11.0C.Y.] 304
5A	[0.5(52+12)20 + (12+11)0.1667-27-5.3C.Y.] 404
6A	[0.5(52+12)20 + (12+11)0.1667-27-1.3C.Y.] 304
7A	[0.5(52+12)20 + (12+11)0.1667-27-3.9C.Y.] 404
8A	[0.5(52+12)20 + (12+11)0.1667-27-9.8C.Y.] 304
9A	[0.5(52+12)20 + (12+11)0.1667-27-3.1C.Y.] 404
10A	[0.5(52+12)20 + (12+11)0.1667-27-4.2C.Y.] 304
11A	[0.5(52+12)20 + (12+11)0.1667-27-10.5C.Y.] 404
12A	[0.5(52+12)20 + (12+11)0.1667-27-3.5C.Y.] 304
13A	[0.5(52+12)20 + (12+11)0.1667-27-4.0C.Y.] 404
14A	[0.5(52+12)20 + (12+11)0.1667-27-9.9C.Y.] 304
15A	[0.5(52+12)20 + (12+11)0.1667-27-9.5C.Y.] 404
16A	[0.5(52+12)20 + (12+11)0.1667-27-10.4C.Y.] 304
17A	[0.5(52+12)20 + (12+11)0.1667-27-14.1S.F.] 404
18A	[0.5(52+12)20 + (12+11)0.1667-27-8.9C.Y.] 304
19A	[0.5(52+12)20 + (12+11)0.1667-27-22.2C.Y.] 404
20A	[0.5(52+12)20 + (12+11)0.1667-27-4.5C.Y.] 304
21A	[0.5(52+12)20 + (12+11)0.1667-27-11.1C.Y.] 404
22A	[0.5(52+12)20 + (12+11)0.1667-27-6.7C.Y.] 304
23A	[0.5(52+12)20 + (12+11)0.1667-27-36.88S.F.] 404
24A	[0.5(52+12)20 + (12+11)0.1667-27-22.8C.Y.] 304
25A	[0.5(52+12)20 + (12+11)0.1667-27-79.7C.Y.] 404

CITY OF COLUMBUS PARTICIPATION

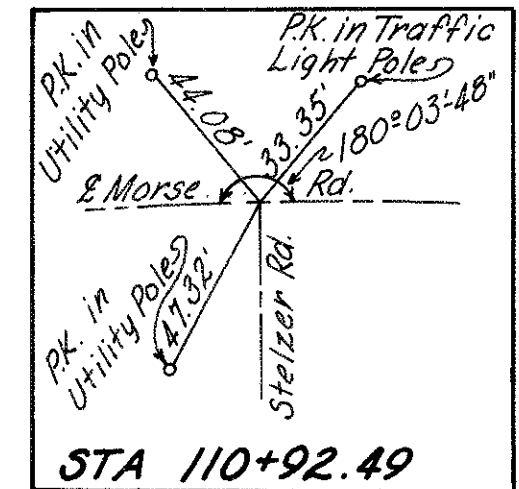
REF.	STATION TO STATION	SIDE	PIPE REMOVAL 24" & UNDER
6-R	102+37 to 102+65	Rt	28
7-R	104+60 to 104+80	Rt	20
8-R	105+00 to 105+22	Rt	22
9-R	105+75 to 105+95	Rt	20
10-R	100+86 to 101+04	Lt	18
11-R	103+09 to 103+27	Lt	18
12-R	105+17 to 105+30	Lt	23
TOTALS			149



100% FRANKLIN COUNTY PARTICIPATION			304		404		603		704		803		SEE SHEET No.
REF.	STATION TO STATION	SIDE	AGGR. BASE	ASPH. CONC.	TYPE C	TYPE C	TYPE D	TYPE F	No. 22A	No. 22B	Type D 707.01 14 Ga.		
				85-100					C.B.	C.B.			
			C.Y.	C.Y.	15"	18"	12"	6"			12"		
1-A	100+93	L.T.	12	5	L.F.	L.F.	L.F.	L.F.	E.A.	E.A.	L.F.		108
2-A	103+19	L.T.	8										151
3-A	102+48	R.T.	11	5									151
4-A	104+69	R.T.	14	6									151
5-A	105+06	R.T.	13	4									151
6-A	105+87	R.T.	14	5									151
7-A	105+30	L.T.	20	4									151
1-D	100+75 TO 101+11	L.T.						36	10				105
2-D	103+01 TO 103+37	L.T.									36		
3-D	105+10 TO 105+50	L.T.						40					
4-D	102+25 TO 106+00	R.T.			175	200				2	2		
(COUNTY) TOTALS			92	29	175	200	76	10	2	2	36		

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FRANKLIN COUNTY
FRA-270-22.99 N



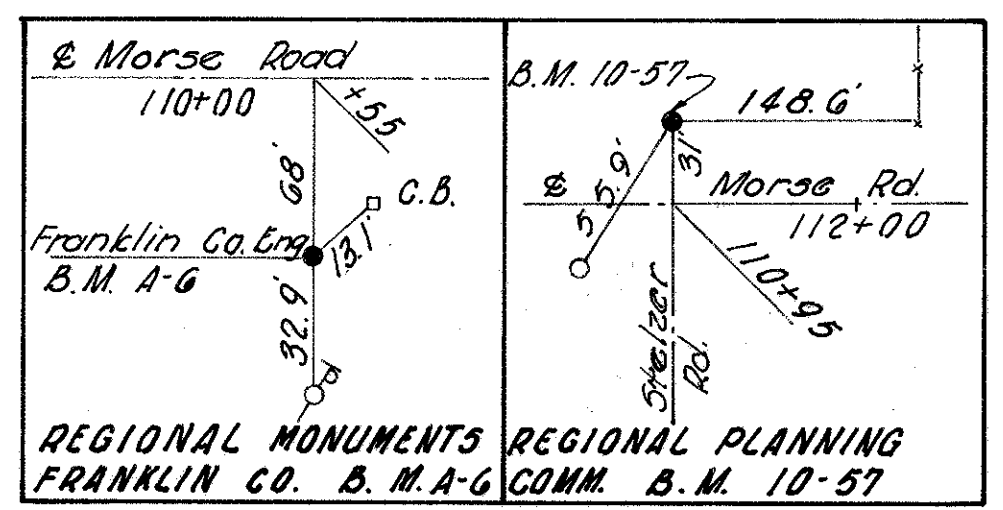
301 Bituminous Aggregate Base
(46)(8)(0.75) ÷ 27 = 11 C.Y.
(95)(8)(0.75) ÷ 27 = 22 C.Y.
(71)(8)(0.75) ÷ 27 = 15 C.Y.

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

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

LEGEND

- 9"-301 Bituminous Aggregate Base
- Rock C.P.
 $V = (100)(5)(20) ÷ 27 = 37 \text{ C.Y.}$
- * As per plan
- Ø With E Grate
- ** With B Grate
- ± Rural
- W 706.02 or 706.08 E.S.



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

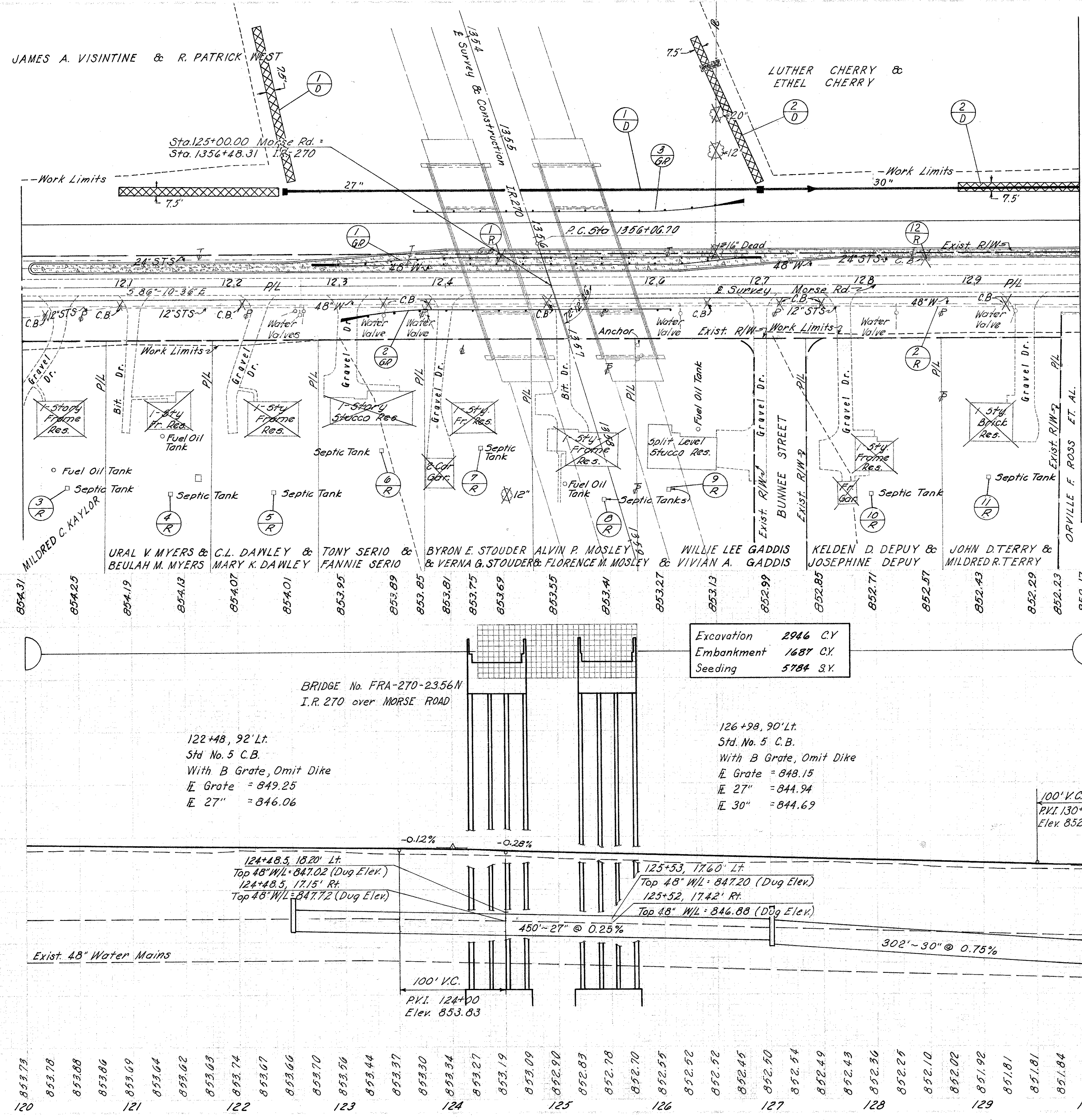
	RURAL	URBAN
EXCAVATION	165	3912
EMBANKMENT	55	2052
SEEDING	91	10,613

REF.	STATION TO STATION	SIDE	603 TYPE					No. 604	No. 301	No. 604	No. 601	No. 602
			B	B	C	B	B					
			#	#	#	#	#					
			15"	15"	24"	27"	42"	EA	EA	EA	CY	CY
1-D	110+00 to 111+22	Lt.	90	32								0.3
2-D	110+00 to 110+36	Rt.			36							0.8
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							0.8
5-D	118+28 to 119+00	Lt.									37	0.3
6-D	110+64	Lt.	10									
58W	110+15.5	Rt.								1		
60W	110+53	Rt.								1		
59W	110+94	Lt.								1		
61W	111+13	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		

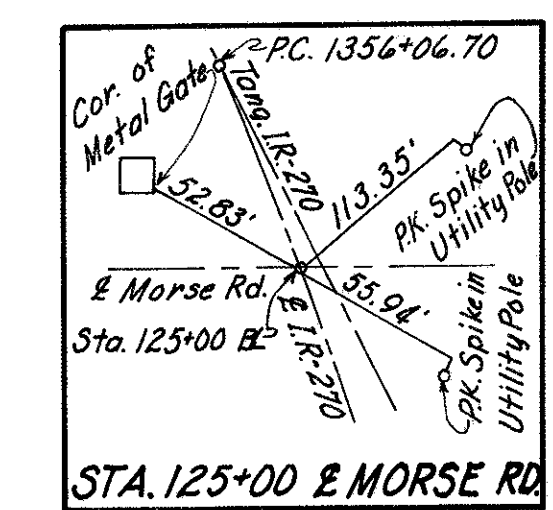
REF.	STATION TO STATION	SIDE	202 SPECIAL					No. 604	No. 301	No. 604	No. 601	No. 602
			PIPE REMOVAL	CATCH BASIN REMOVAL	DRILLED DISPOSAL	WELL REMOVAL	ABANDONED SEPTIC TANK					
			#	#	#	#	#					
1-R	110+36	E	58									
2-R	110+00 to 110+36	Rt.	35									
3-R	110+00 to 113+29	Lt.	329									
4-R	112+22 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									
8-R	119+94	E	57									
9-R	117+45	Rt.										
10-R	117+13	Lt.										
11-R	117+99	Rt.										
(URBAN) TOTALS			789	4		1	1					
(RURAL) TOTALS			93	2								

JAMES A. VISINTINE & R. PATRICK WEST

FRANKLIN COUNTY
FRA-270-22.99N



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



PROPOSED STRUCTURE
TYPE: Continuous reinforced concrete slab with reinforced concrete substructure
SPANS: 40'-0", 49'-11", 49'-11", 40'-0" @ tangent.
ROADWAY: 53'-0" T/F parapets with 1'-0" safety curb
LOAD FREQUENCY: HS 20-44 adequate for AASHTO 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.D.B. 9/26/68
CHK: R.E.H. 10/8/68

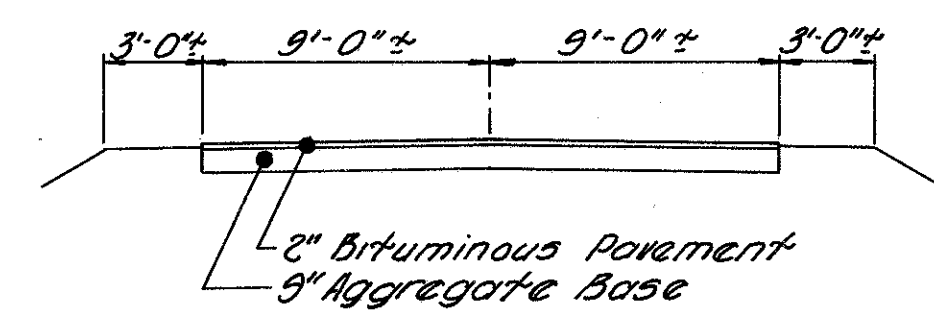
* With "B" Grate,

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

REF. STATION TO STATION	SIDE	BARRIER RAIL TYPE	GUARD RAIL TYPE	APPROX. END ASSEMBLY	ANCHOR ASSEMBLY	FOR DETAILS SEE SHEET NO.
		5	5	5	5	
1-GR 122+74 to 126+99	Lt.	L.F.	L.F.	Eq.	Eq.	147-148
2-GR 123+01 to 126+13.5	Rt.			312.5	1	
3-GR 123+71 to 126+83.5	Lt.			312.5	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

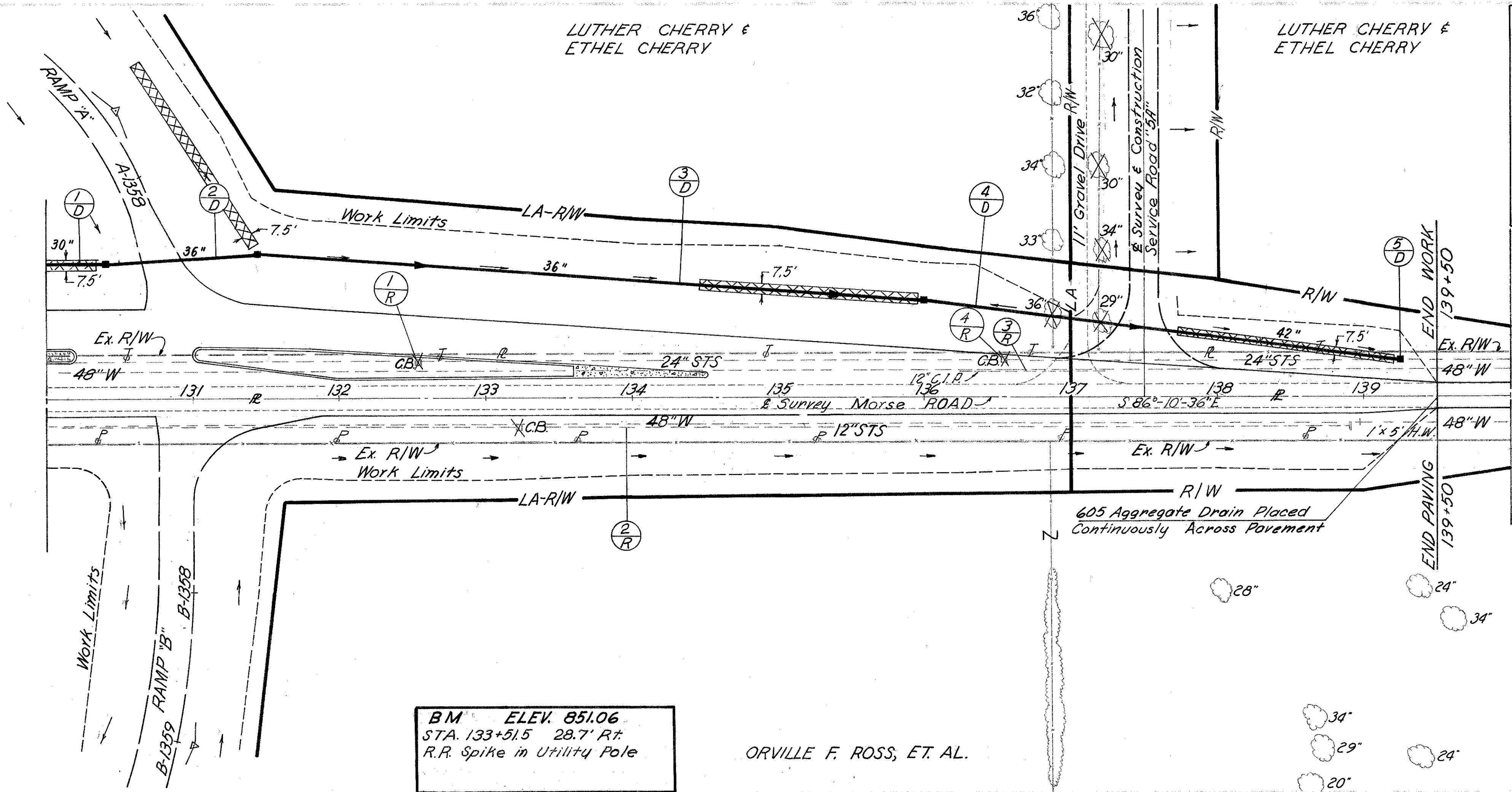
TREES 130+00 TO 140+00

SIZE	Lt of E	Rt of E
12" to 24"	0	0
24" to 36"	2	0
36" to 60"	0	0
60" & Over	0	0

NOTES

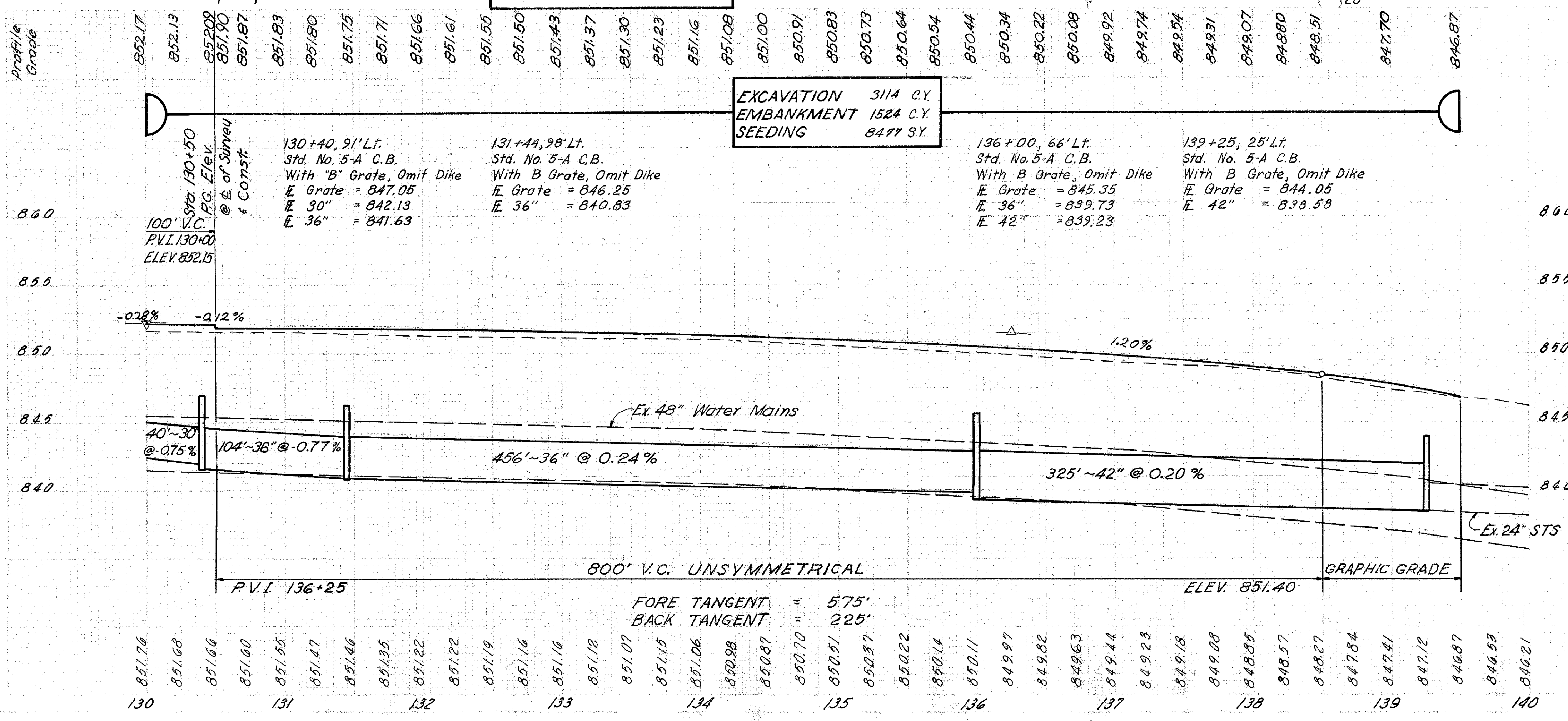
1. For Details of Service Rd 5A" See Sheet No. 166
2. For Pavement & Curb Details See Sheet No. 148-149
3. For Ramp "A" Details See Sheet No. 120
4. For Ramp "B" Details See Sheet No. 125
5. Use Item 605 Aggregate Drain full width of pavement where proposed pavement adjoins existing pavement. For Quantities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

CALC: W.D. 9/26/68
CHK: R.C.H. 10-7-68



BM ELEV. 851.06
STA. 133+51.5 28.7' R+
R.R. Spike in Utility Pole

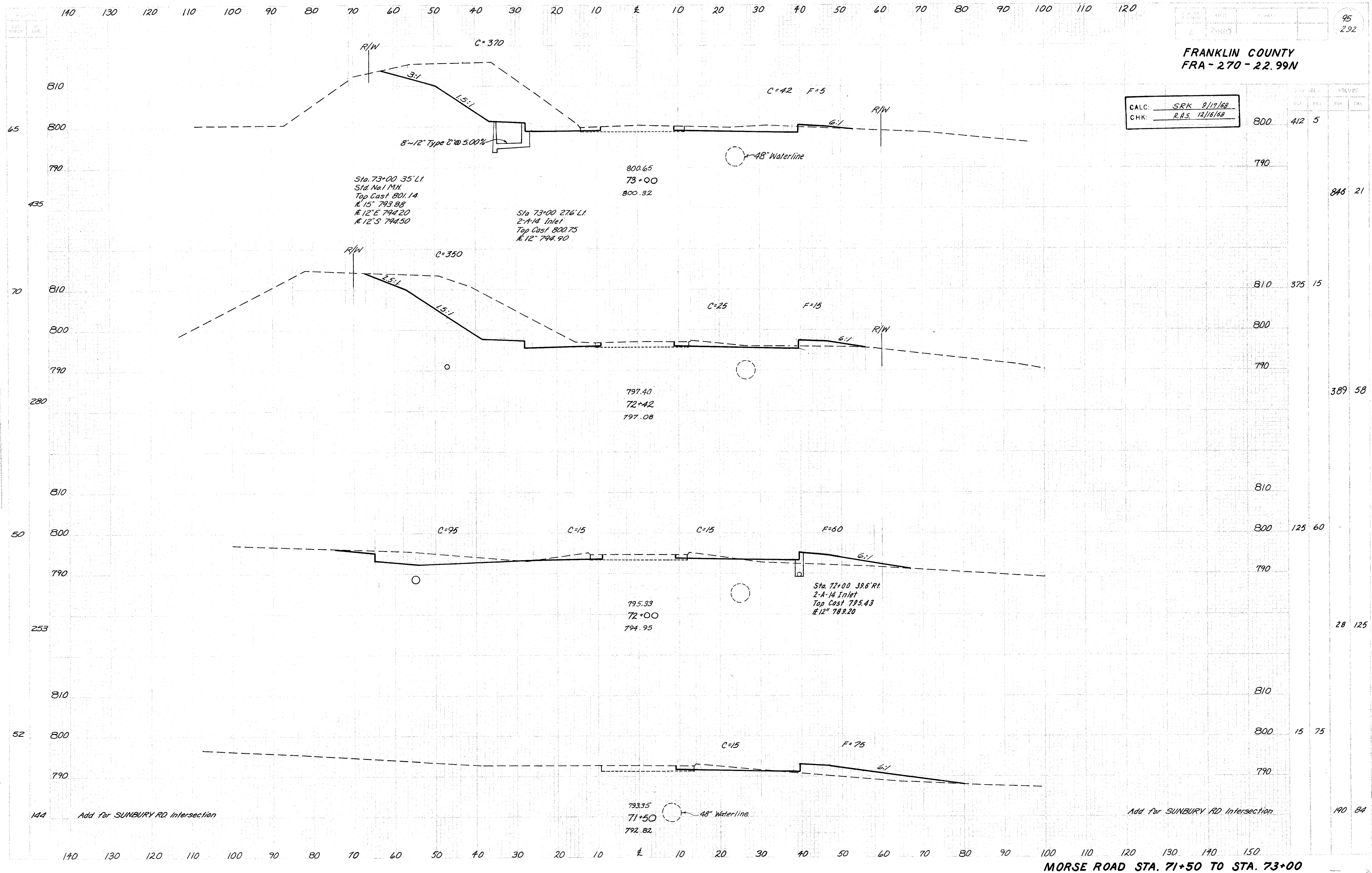
ORVILLE F. ROSS, ET. AL.



EXCAVATION 3114 C.Y.
EMBANKMENT 1524 C.Y.
SEEDING 8477 S.Y.

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

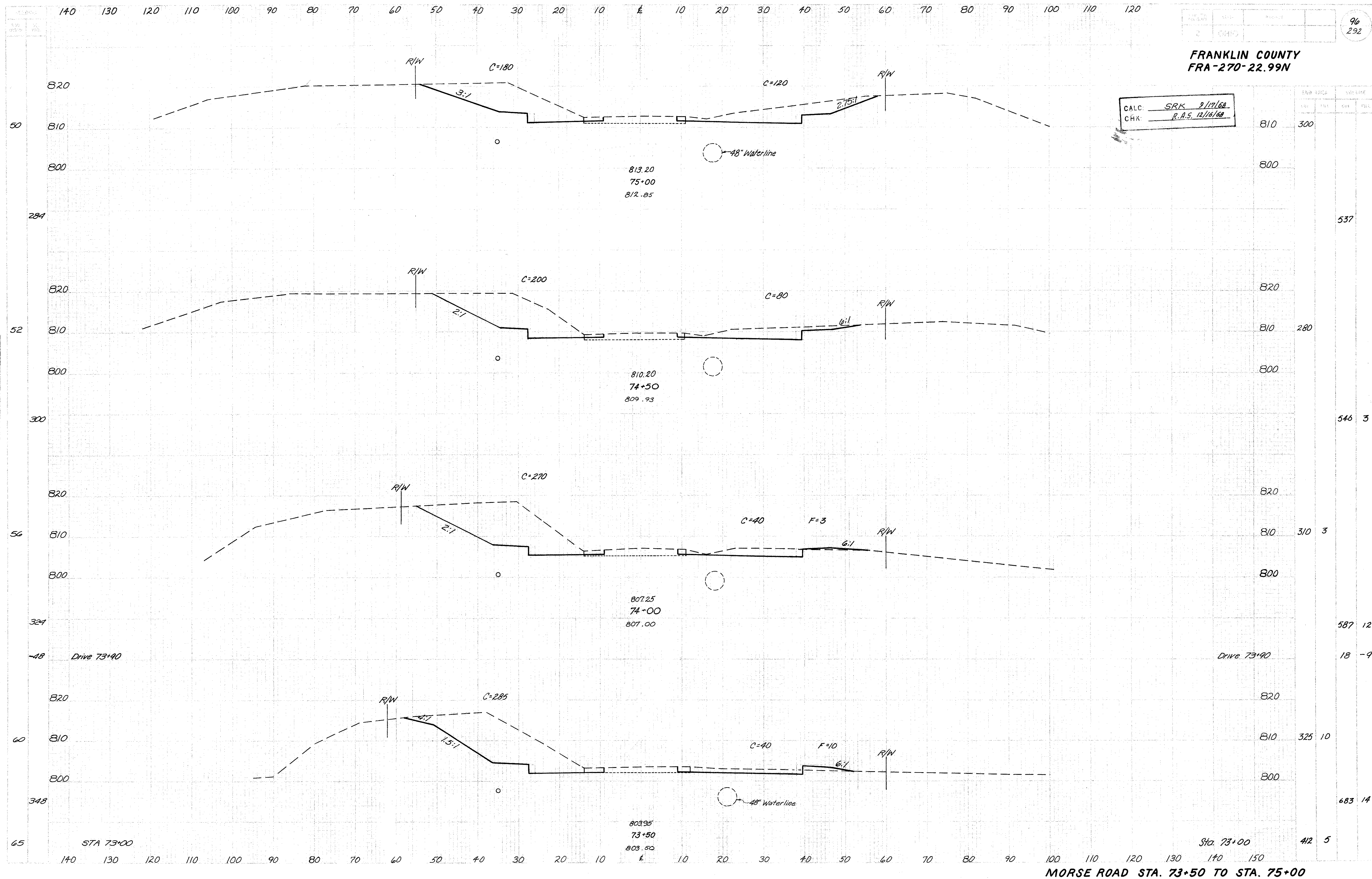
REF.	STATION TO STATION	SIDE	202																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK 8/17/68
CHK: R.A.S. 12/16/68

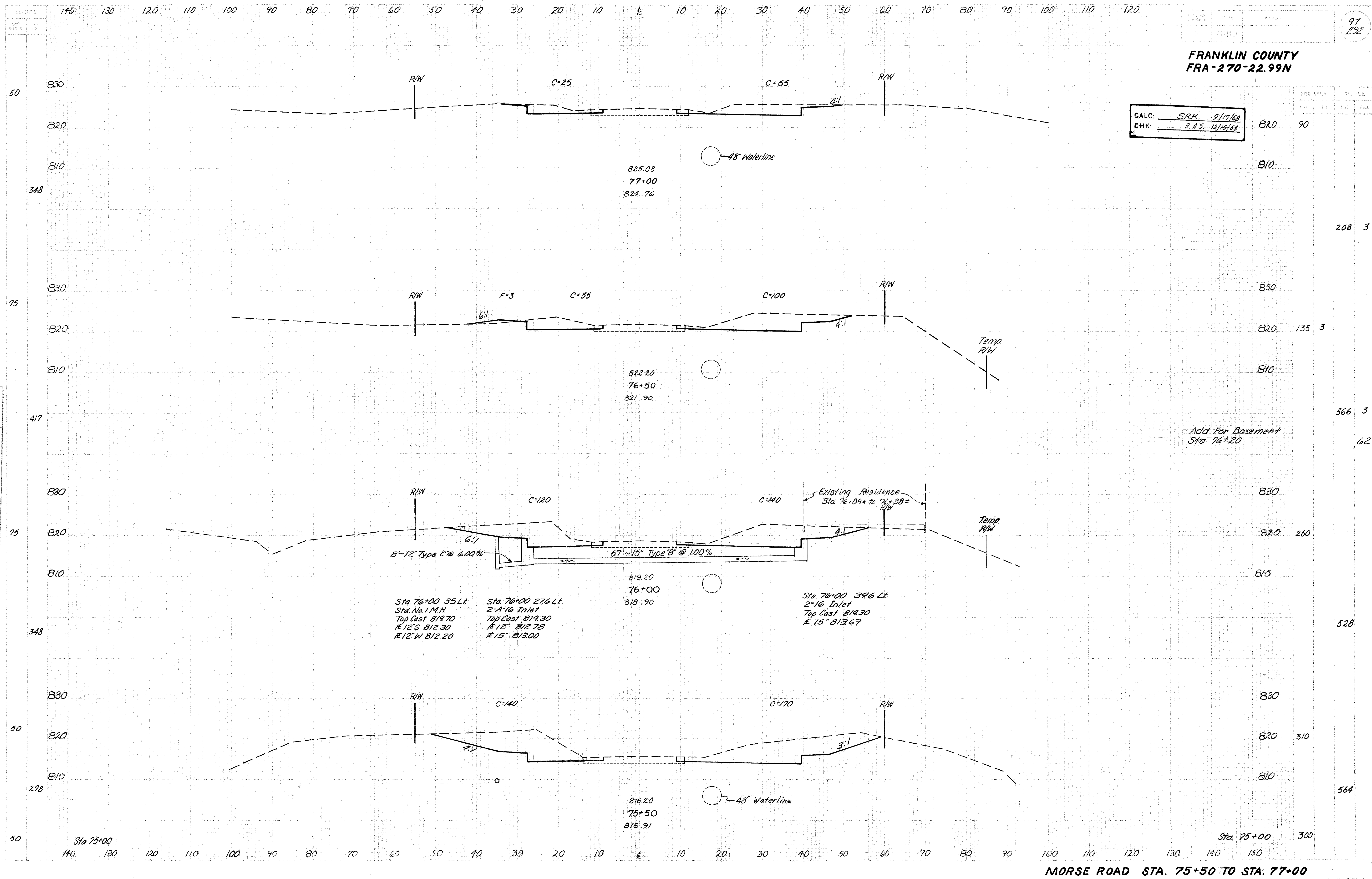
96
292

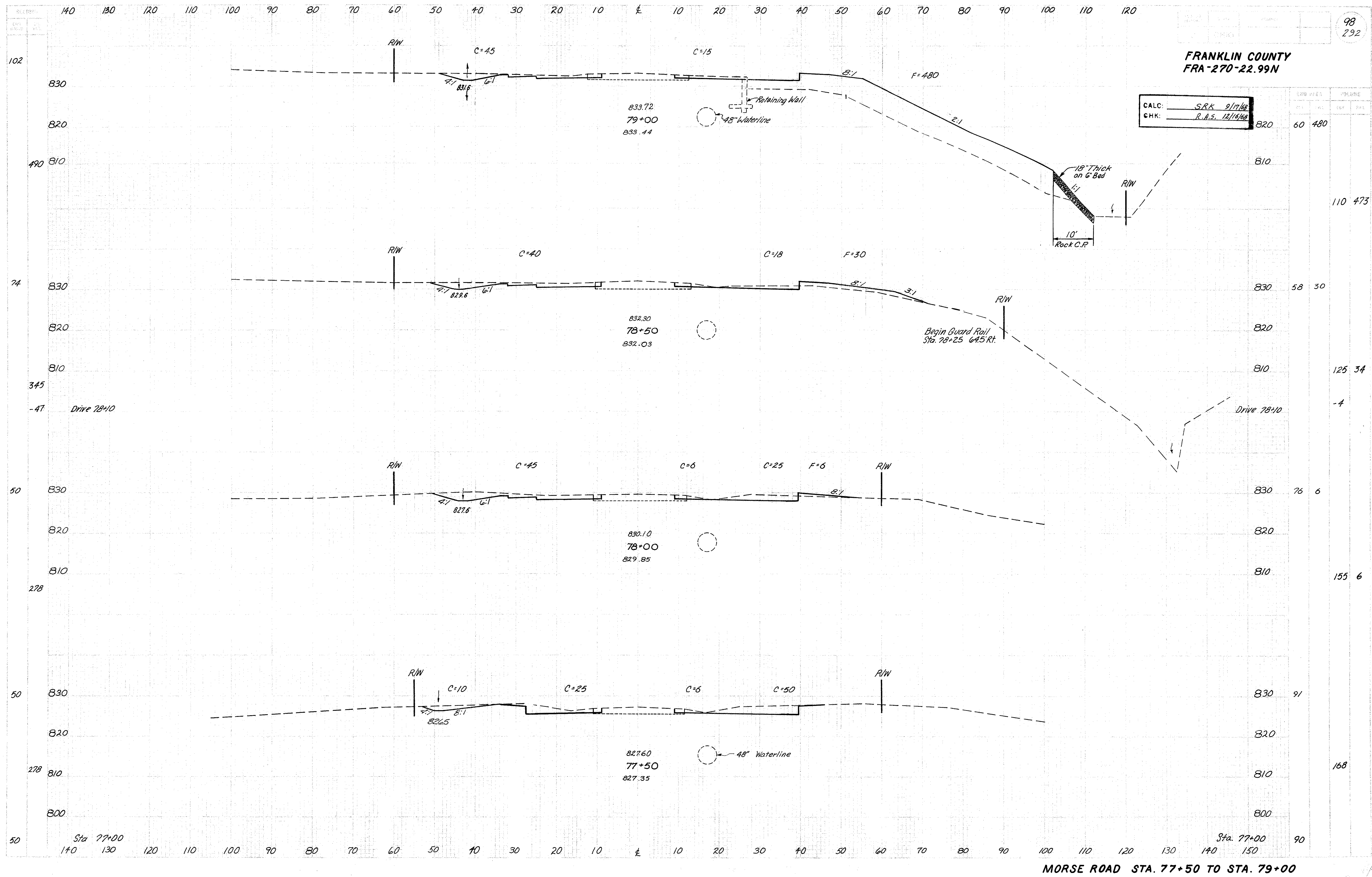


FRANKLIN COUNTY
FRA-270-22.99N

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

97
292





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

99
292

FRANKLIN COUNTY
FRA-270-22.99N

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

STATION	AREA	PERCENT
22	175	

34 514

15 380

46 1152

35 865

67 1135

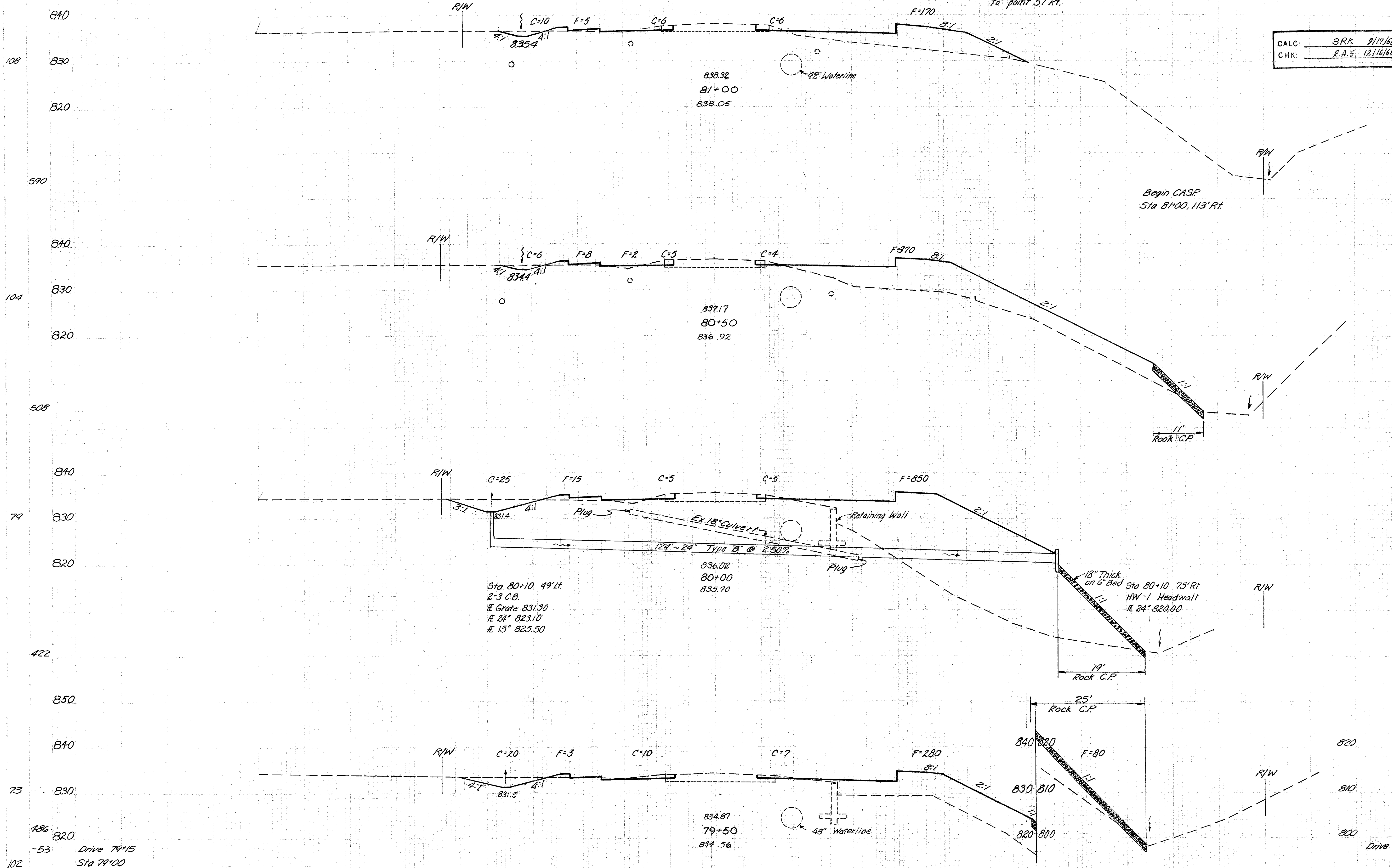
37 363

90 780
-16 2

60 480

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

Sub Grade	Proposed	Final
Traverse		
Station		
Embankment		
Grading		



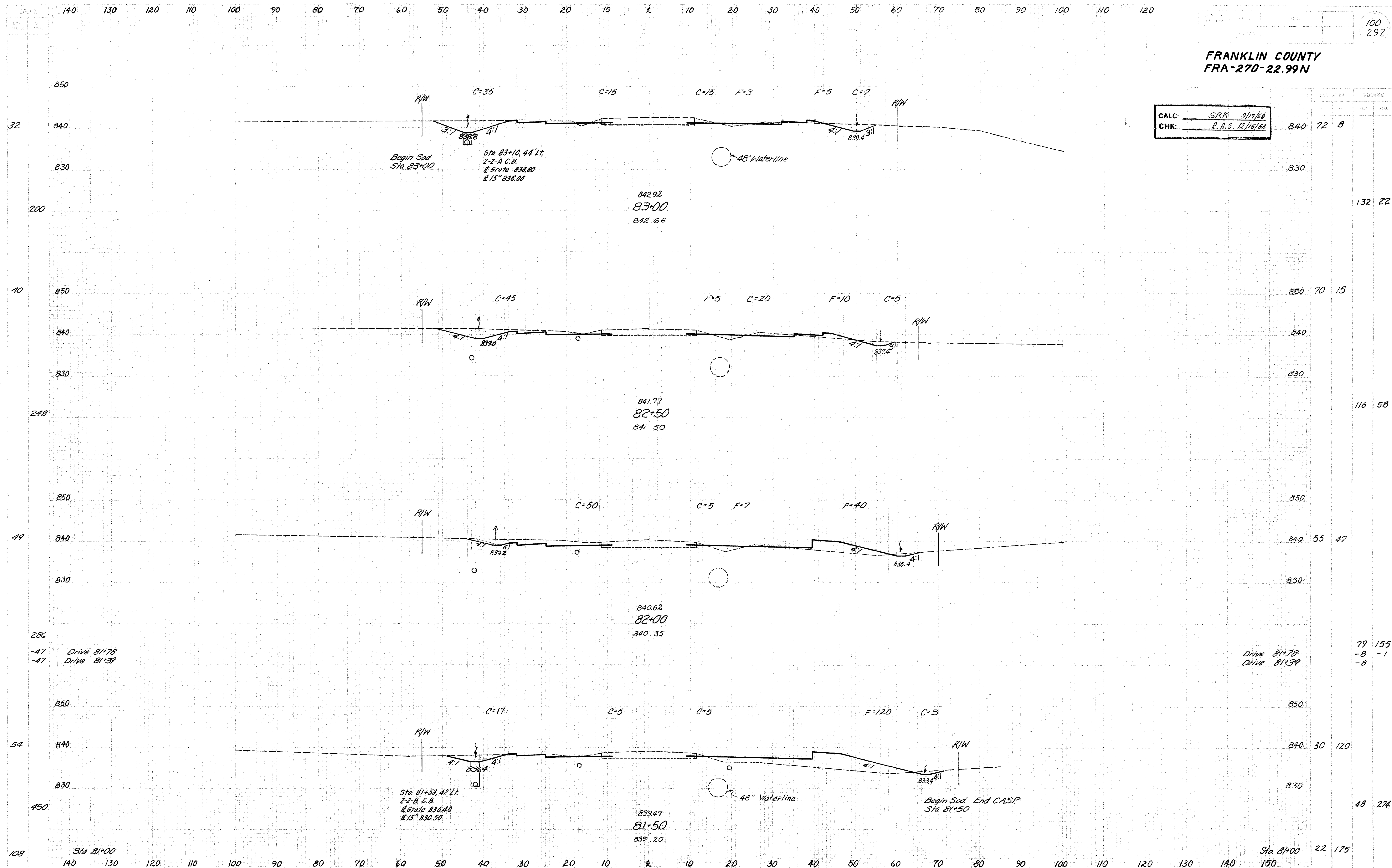
836 820
-53 Drive 79+15
Sta 79+00

820
Drive 79+15
Sta 79+00

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK 9/17/88
CHK: R.A.S. 12/16/88

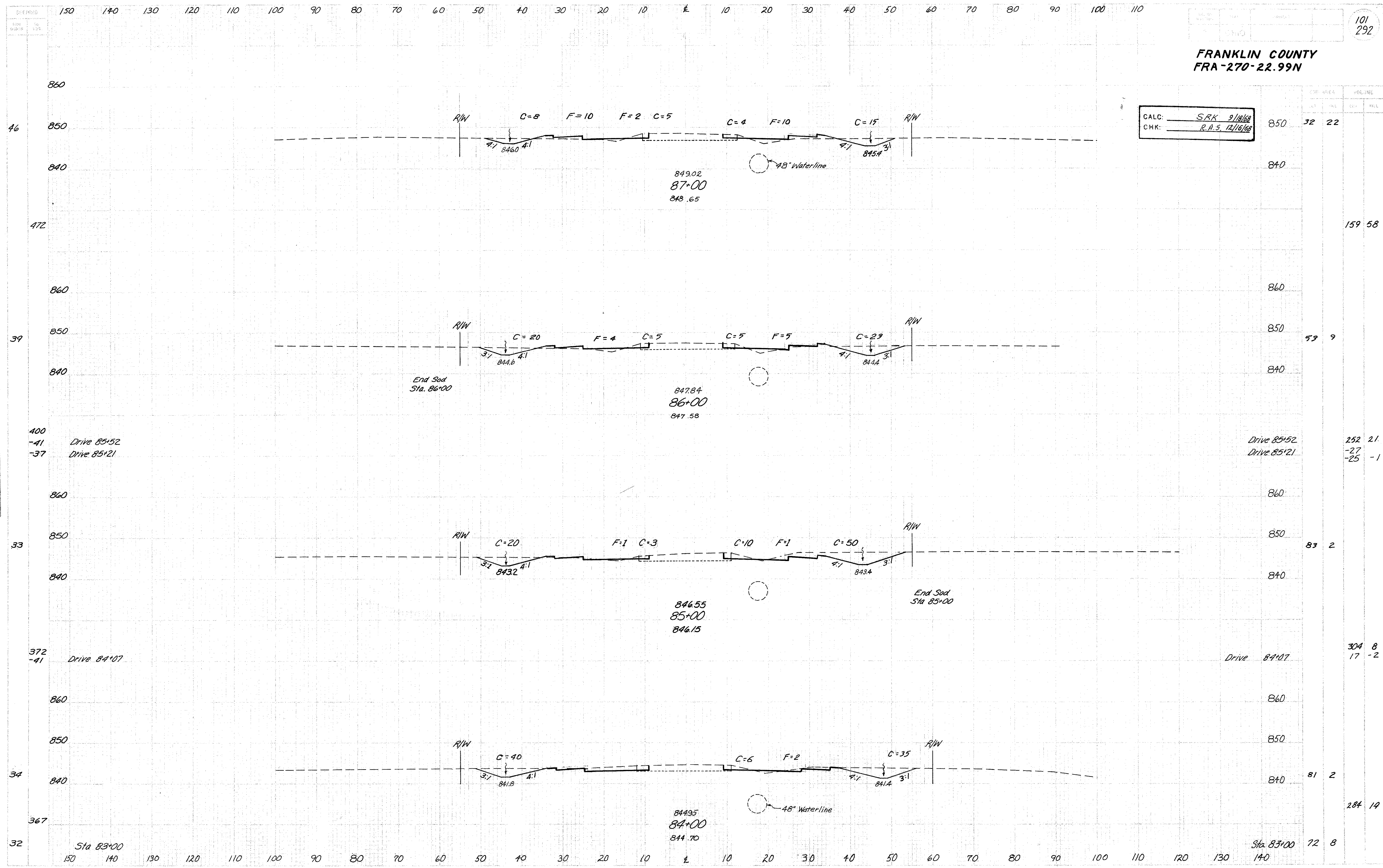
100
292



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

FRANKLIN COUNTY
FRA-270-22.99N

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



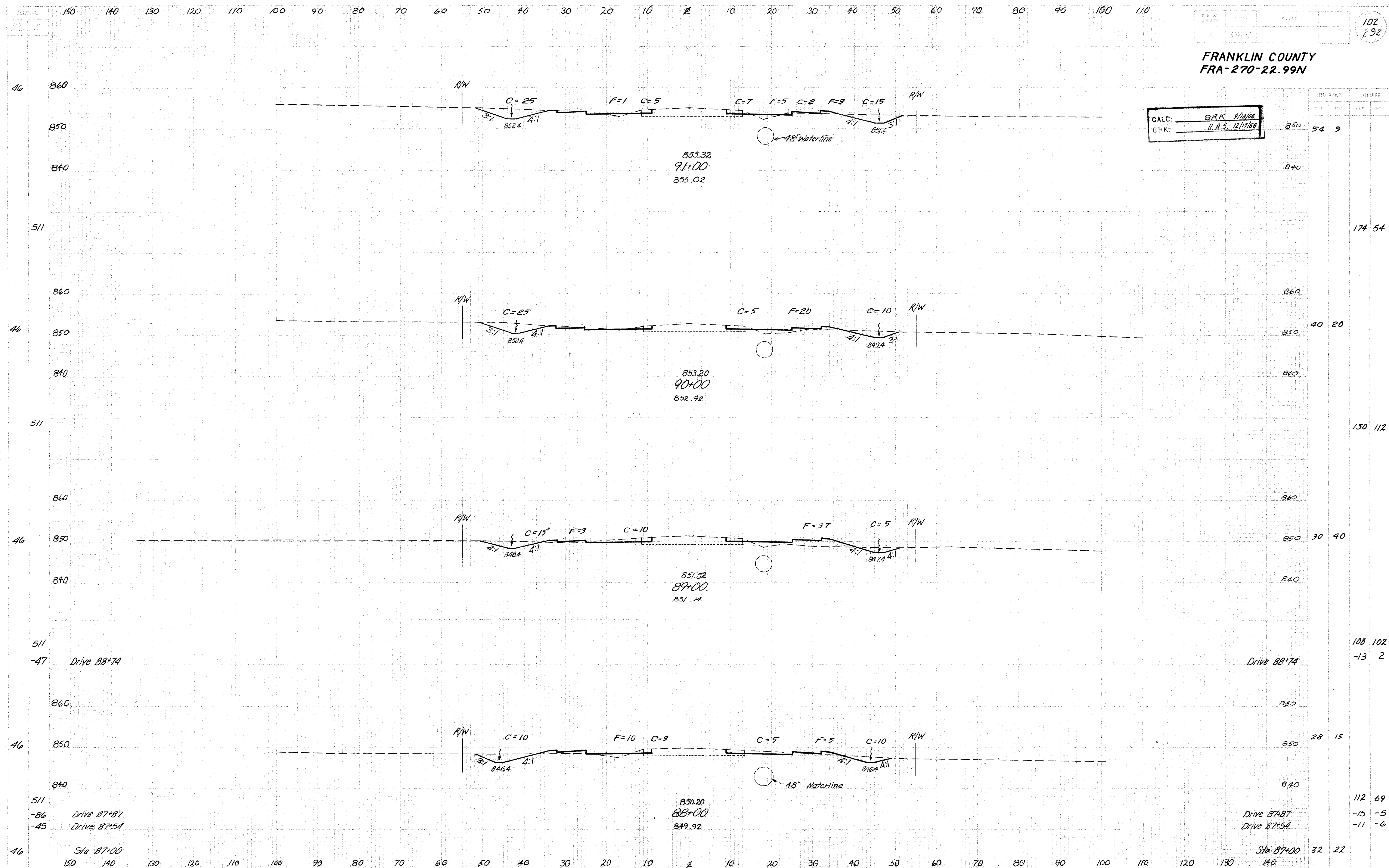
Ex. Ground
Proposed
Template
Plan
Earthwork Quant.
Setback Quant.

AREA	VOLUME
159 58	
59 9	
252 21	
-27 -1	
83 2	
304 8	
17 -2	
81 2	
284 19	
72 8	

FRANKLIN COUNTY
FRA-270-22.99N

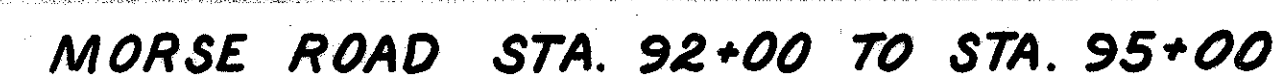
CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68

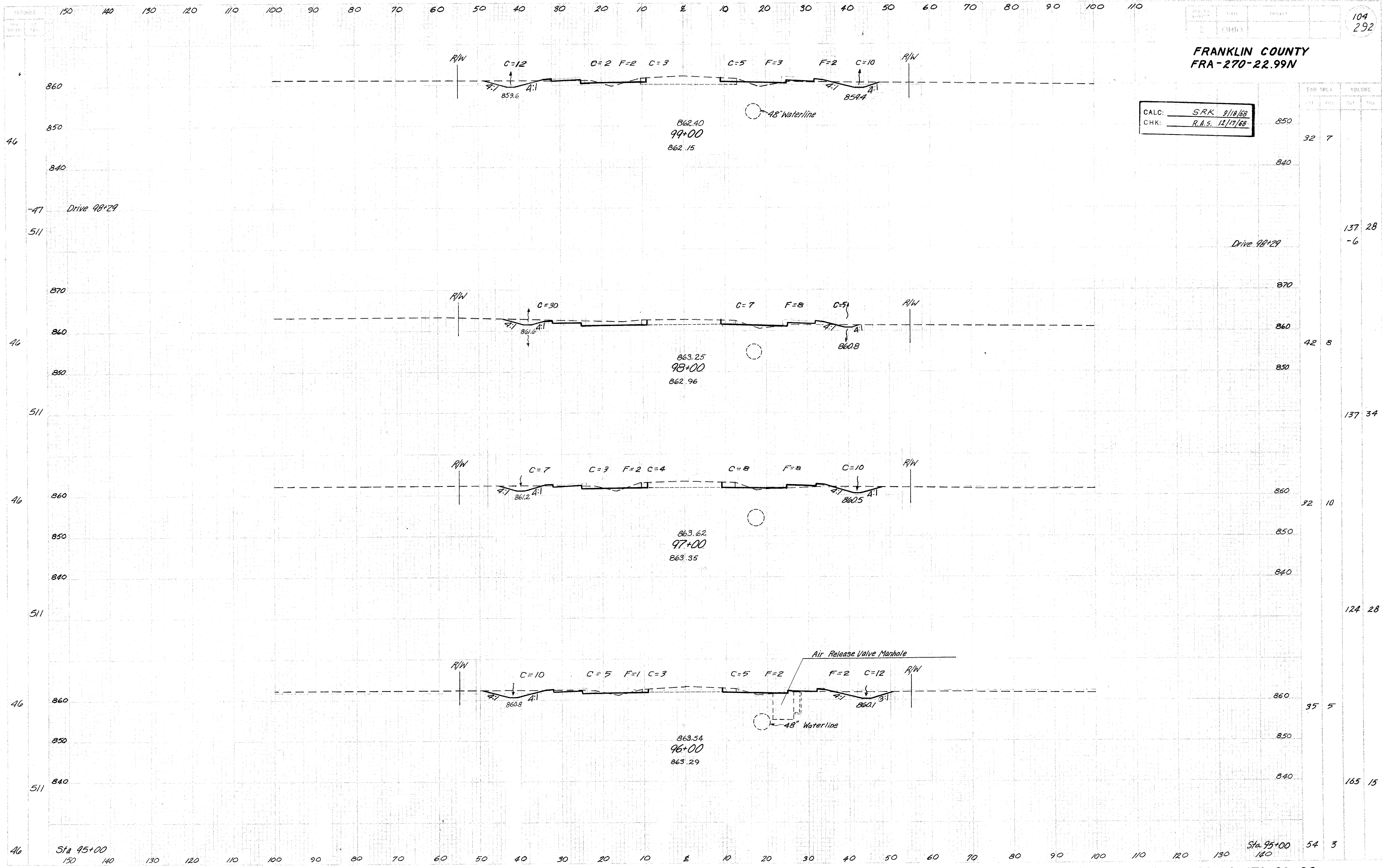
102
292



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

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





FRANKLIN COUNTY
FRA-270-22.99N

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

104
292

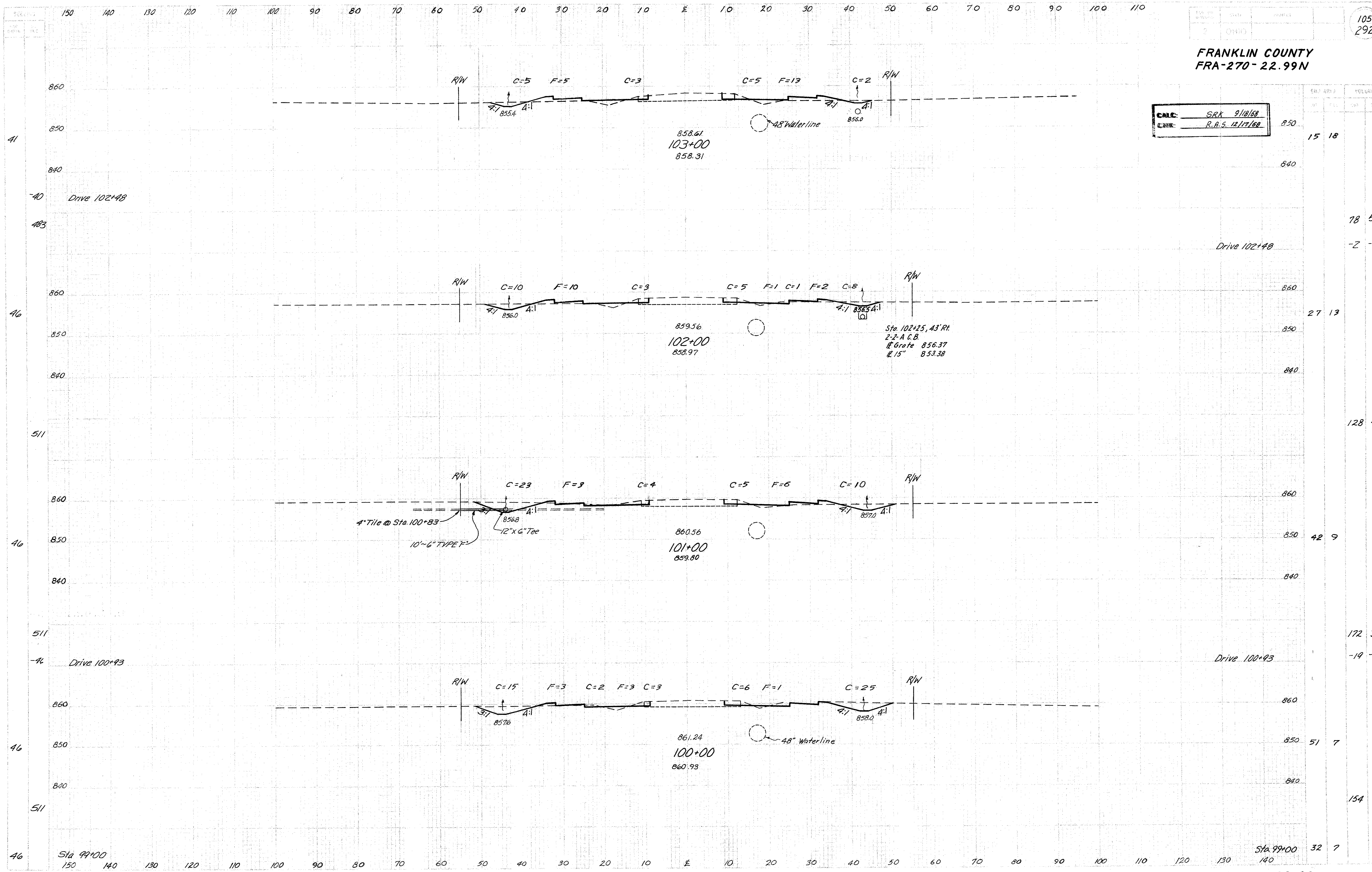
FROM STA.		VOLUME	
1	2	3	4
32	7		
137	28		
-6			
42	8		
137	34		
32	10		
124	28		
95	5		
165	15		
54	3		

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

FRANKLIN COUNTY
FRA-270-22.99N

105
292

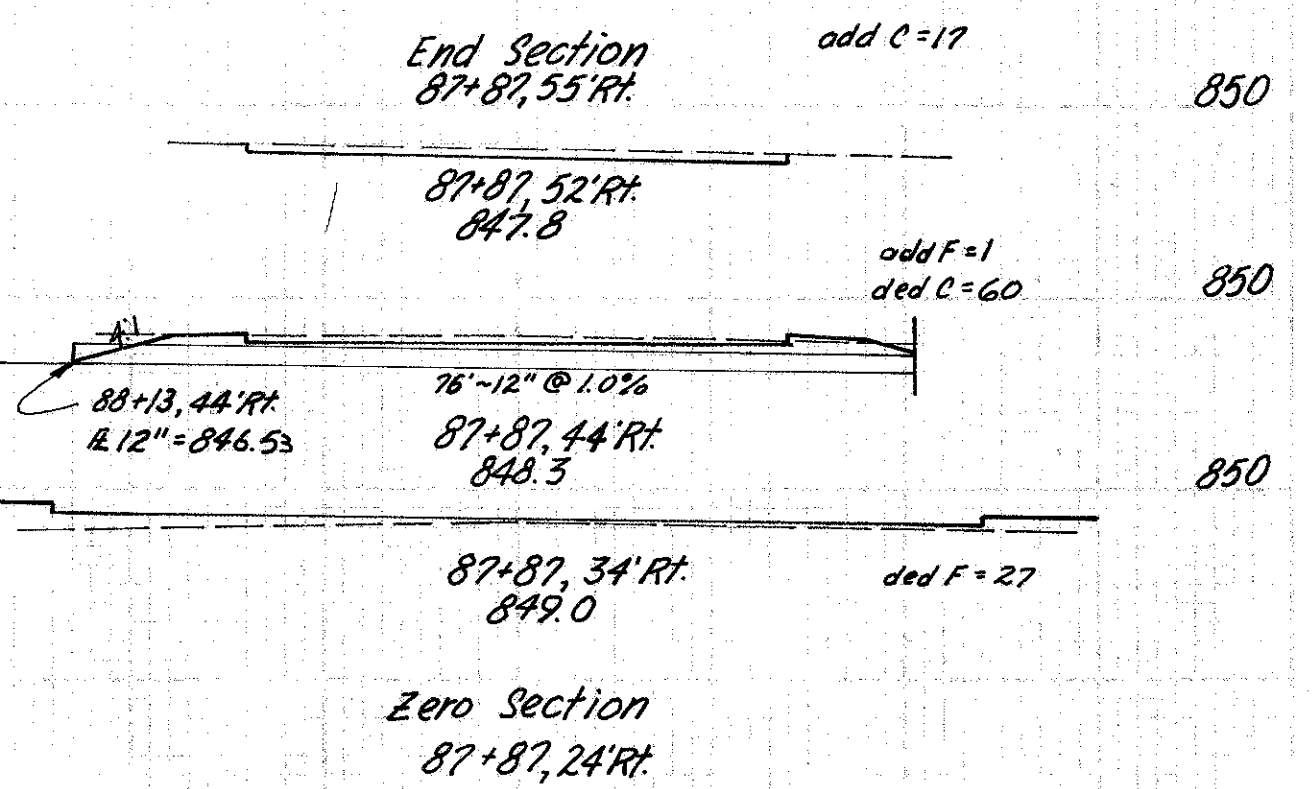
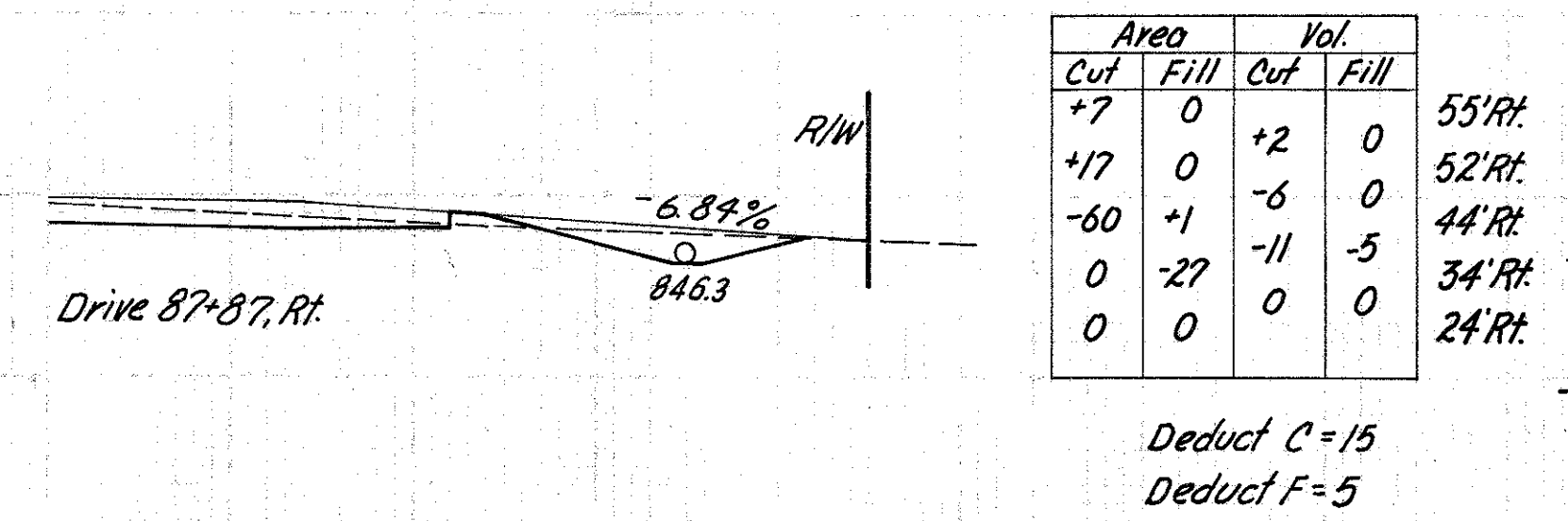
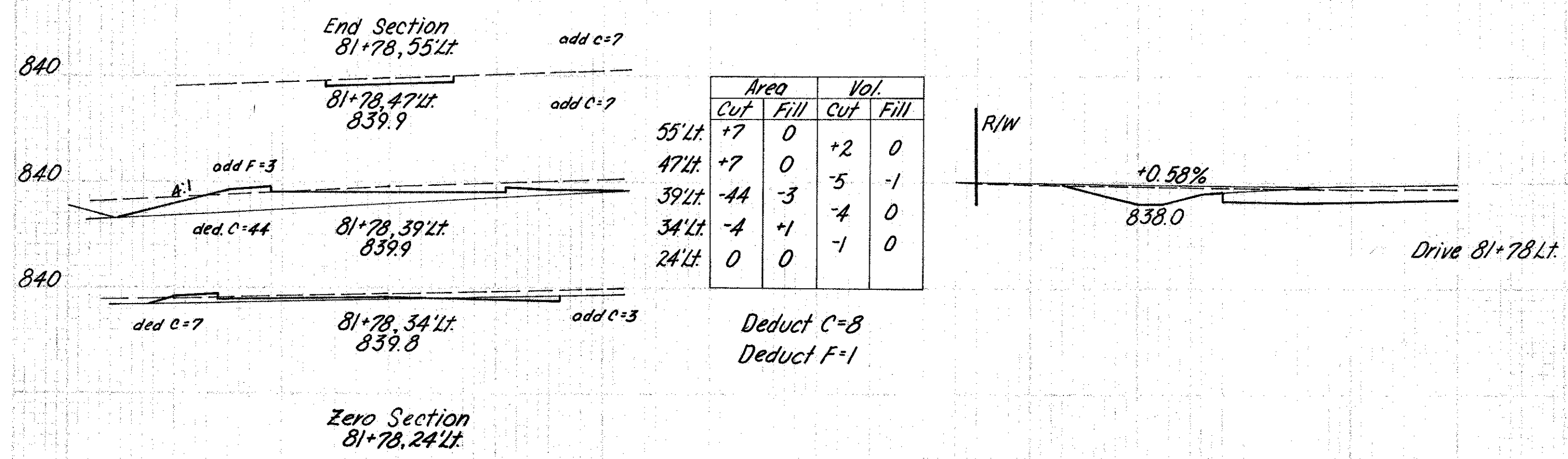
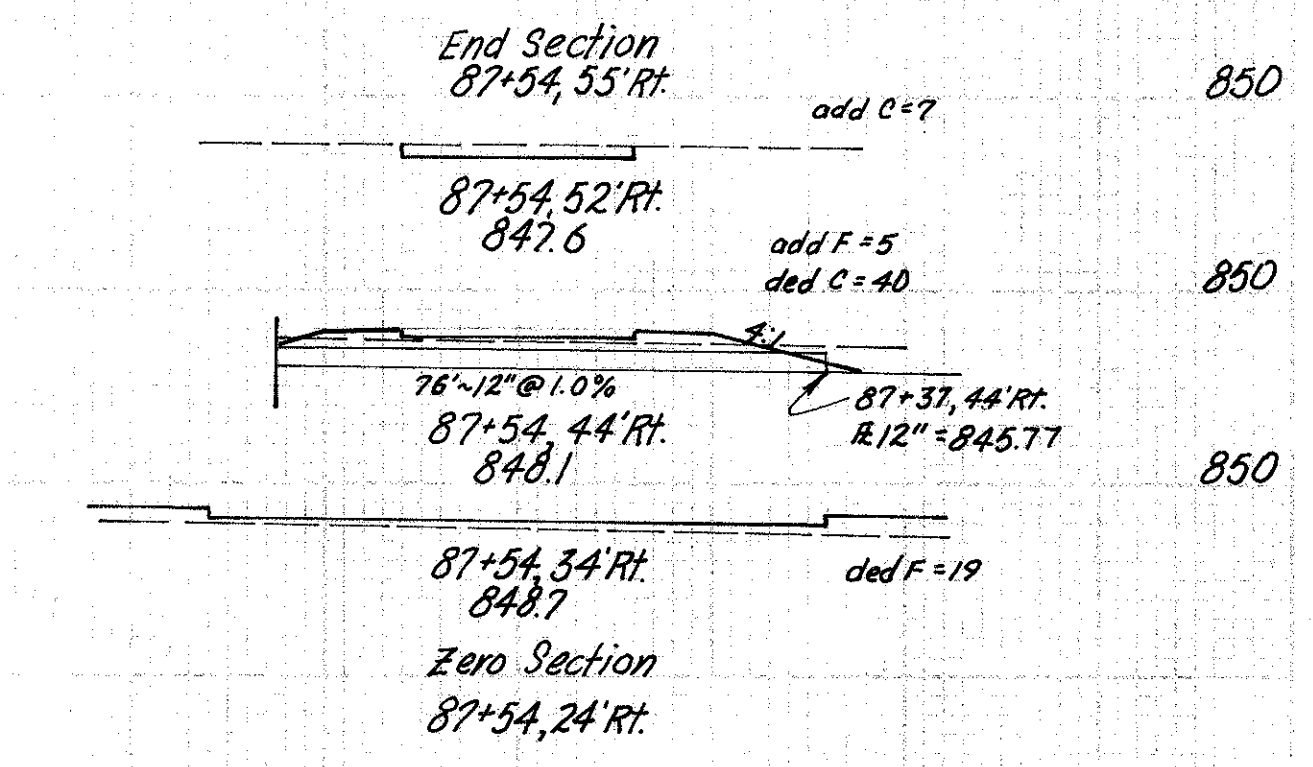
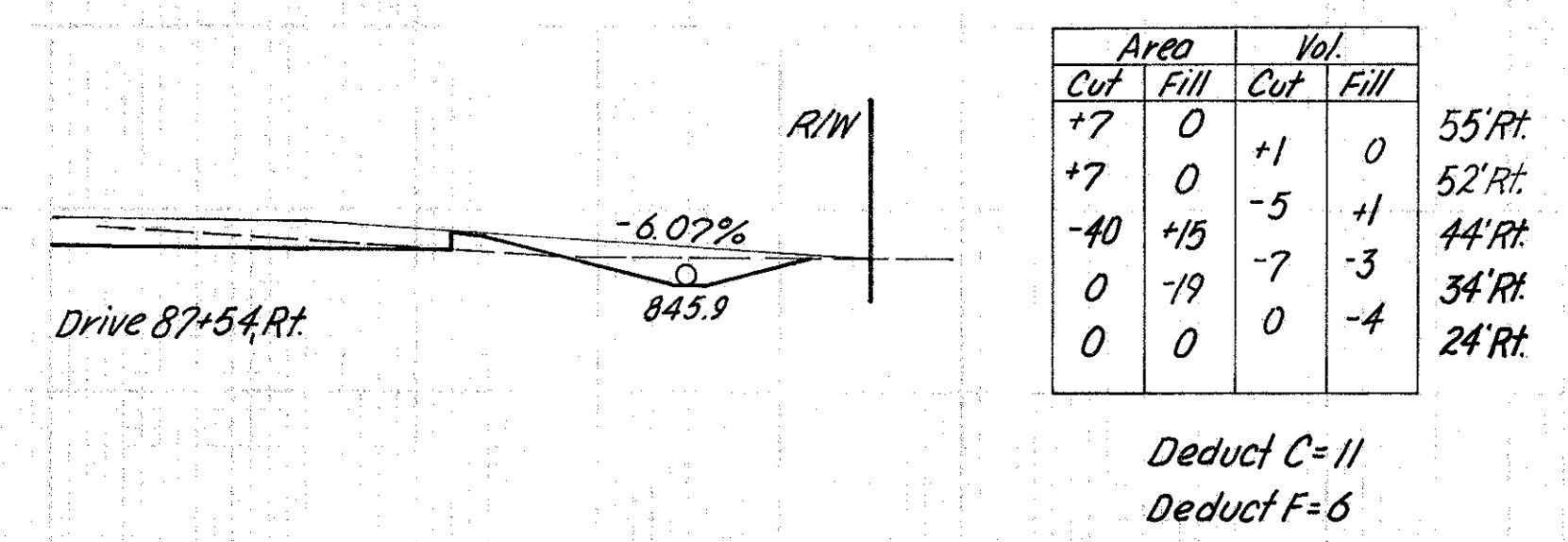
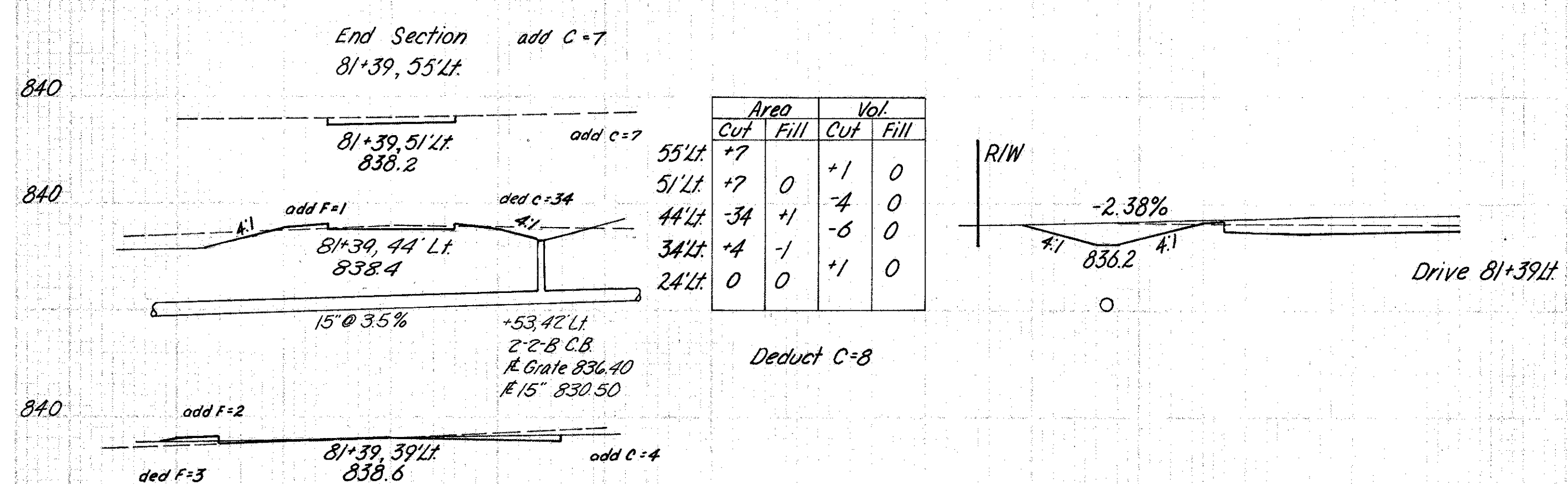
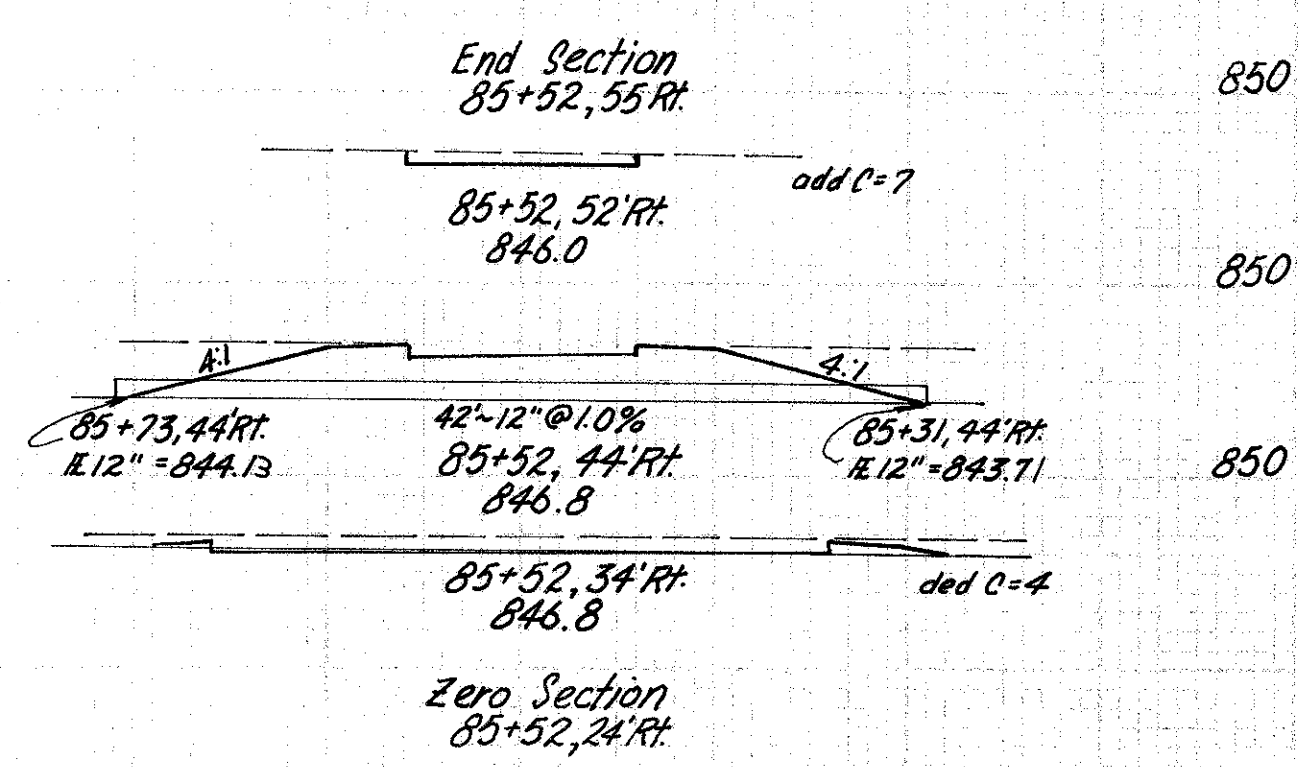
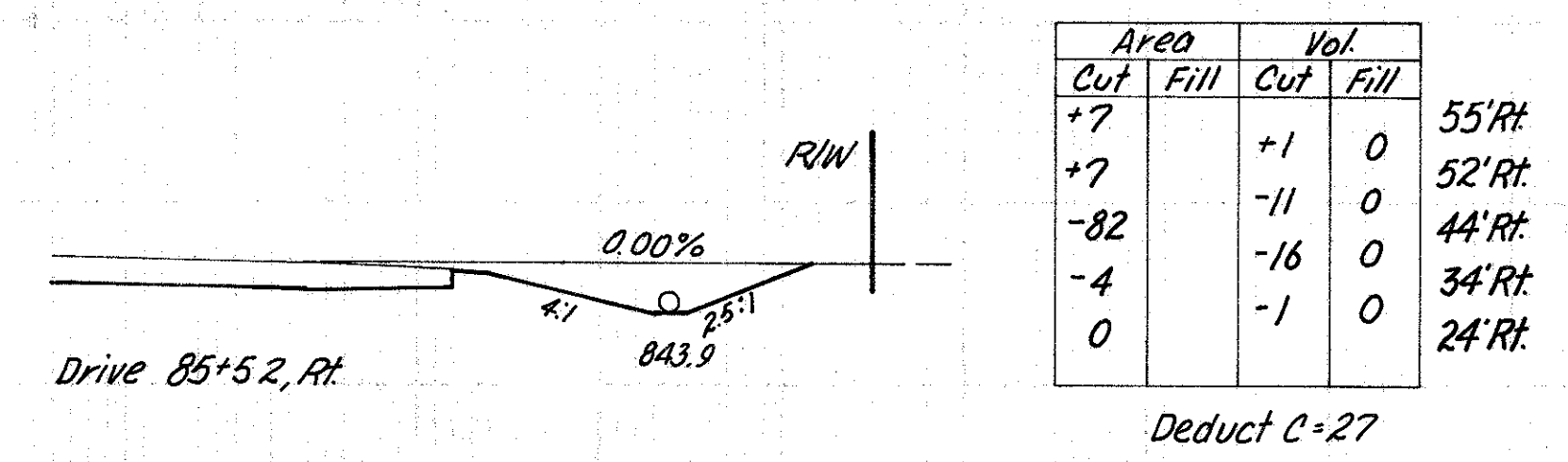
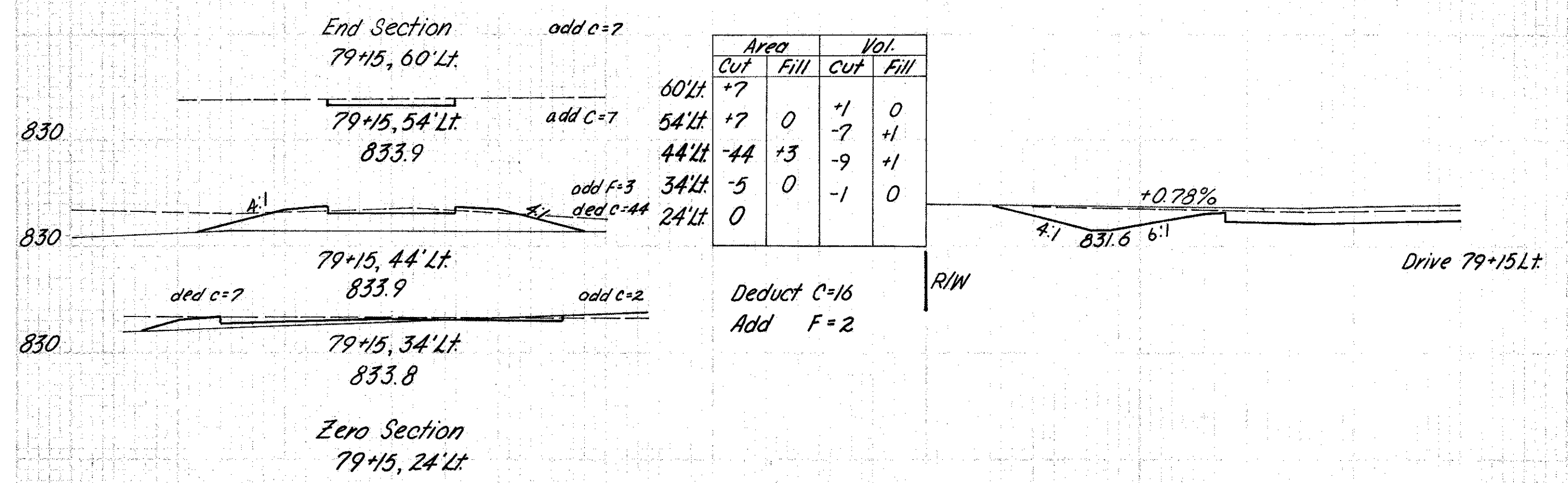
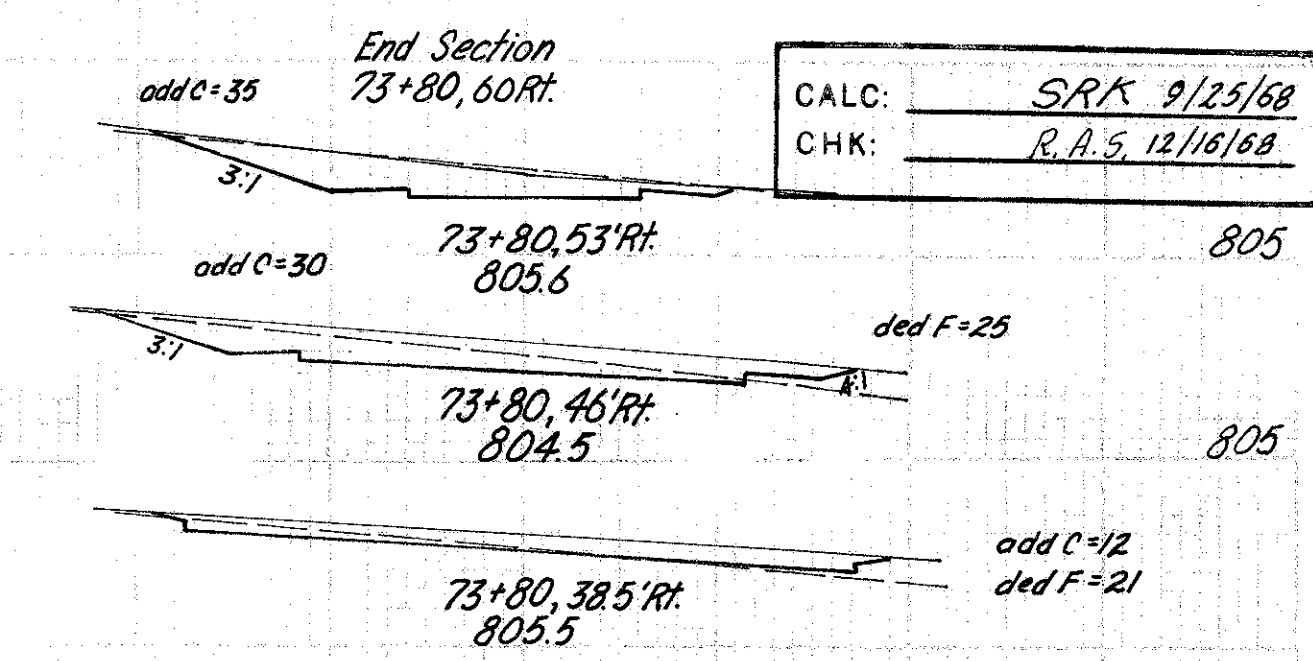
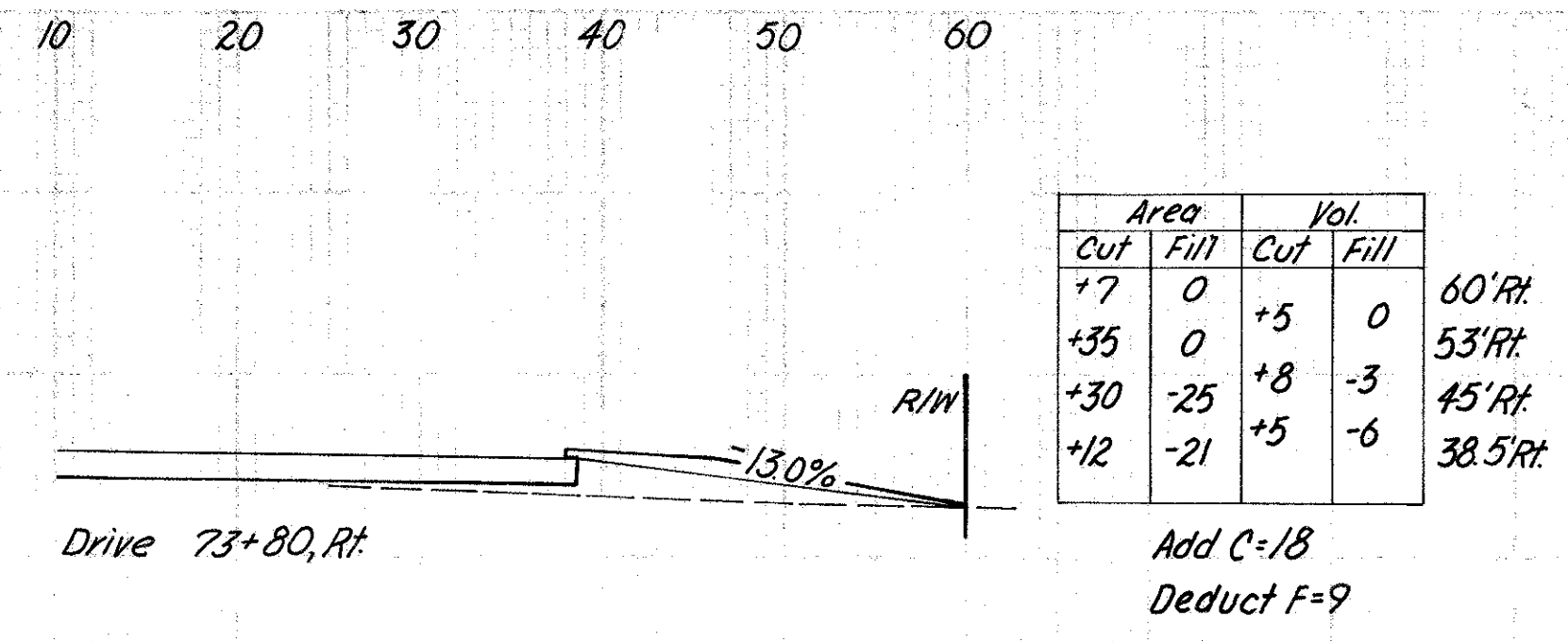
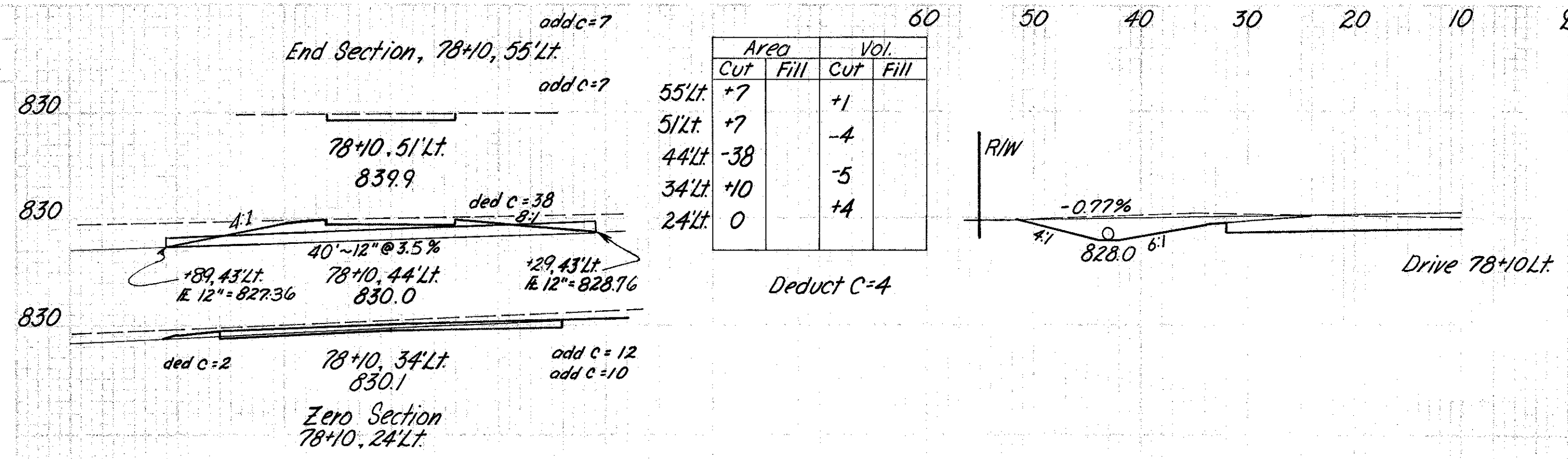
CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68



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

FRANKLIN COUNTY
FRA-270-22.99N

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

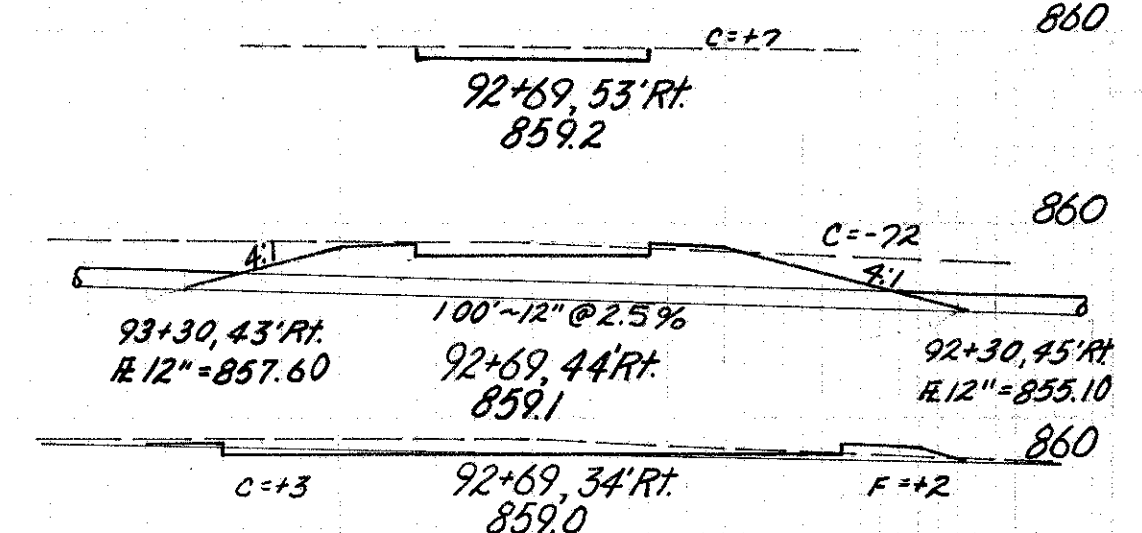


Note: Earthwork quantities carried to
appropriate Morse Road X-Section Sheets.

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

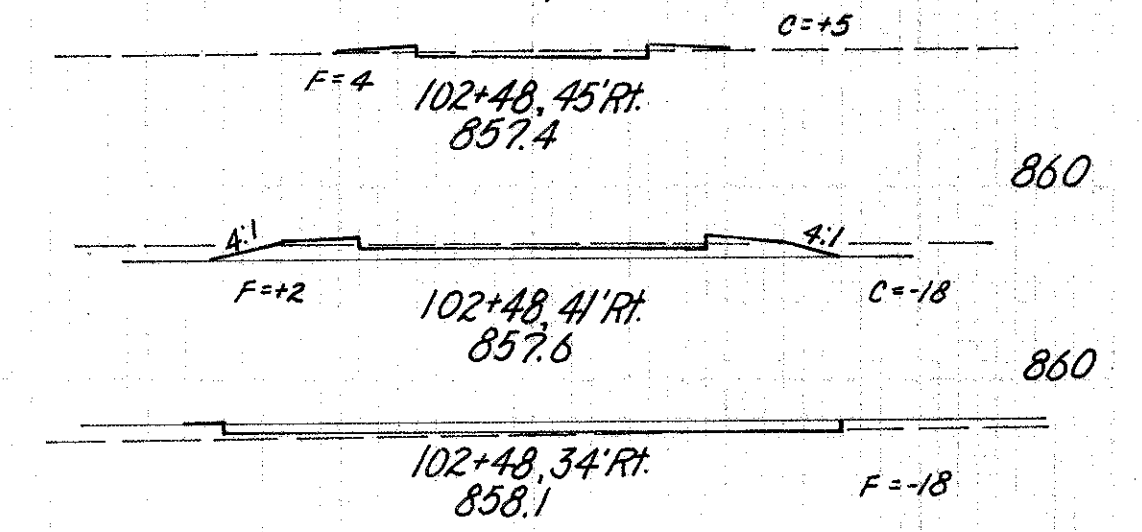
FRANKLIN COUNTY
FRA-270-22.99N

End Section C=+7
92+69, 55' Rt.



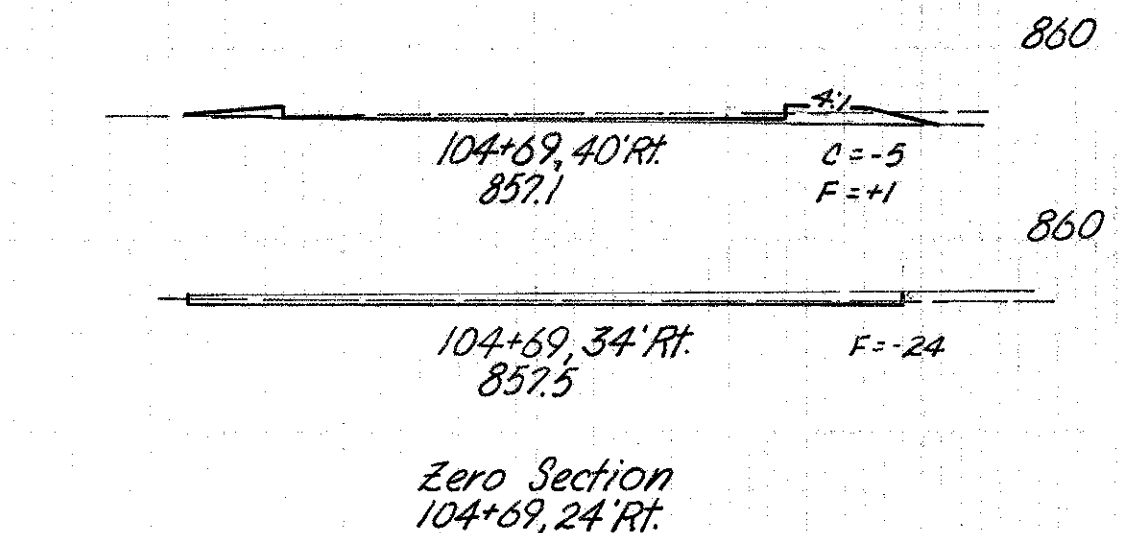
Zero Section
92+69, 24' Rt.

End Section C=+7
102+48, 50' Rt.



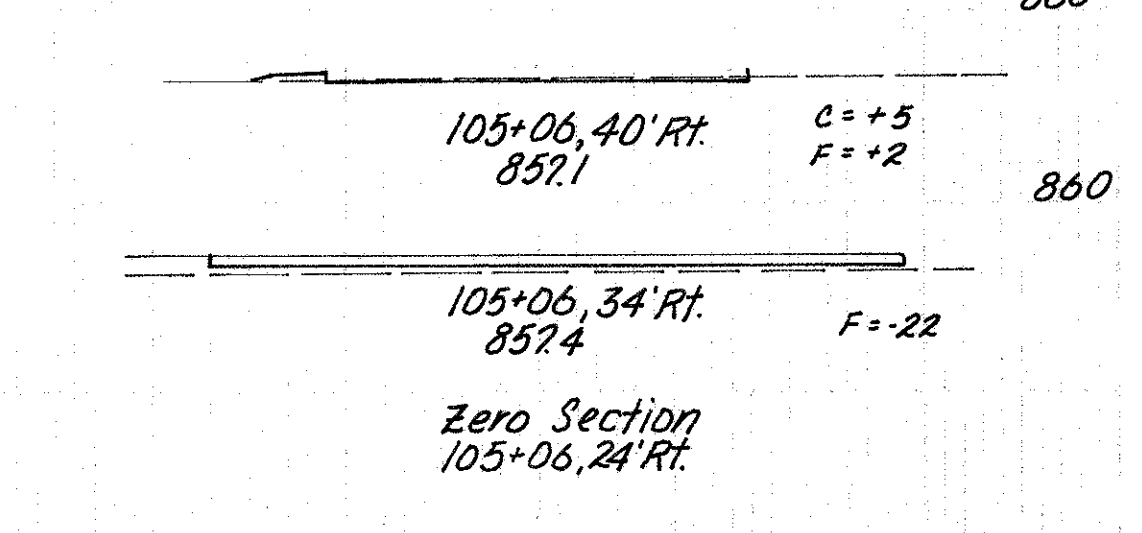
Zero Section
102+48, 24' Rt.

End Section C=+7
104+69, 50' Rt.



Zero Section
104+69, 24' Rt.

End Section C=+8
105+06, 50' Rt.



Zero Section
105+06, 24' Rt.

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

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

Add F=2
Deduct C=17

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

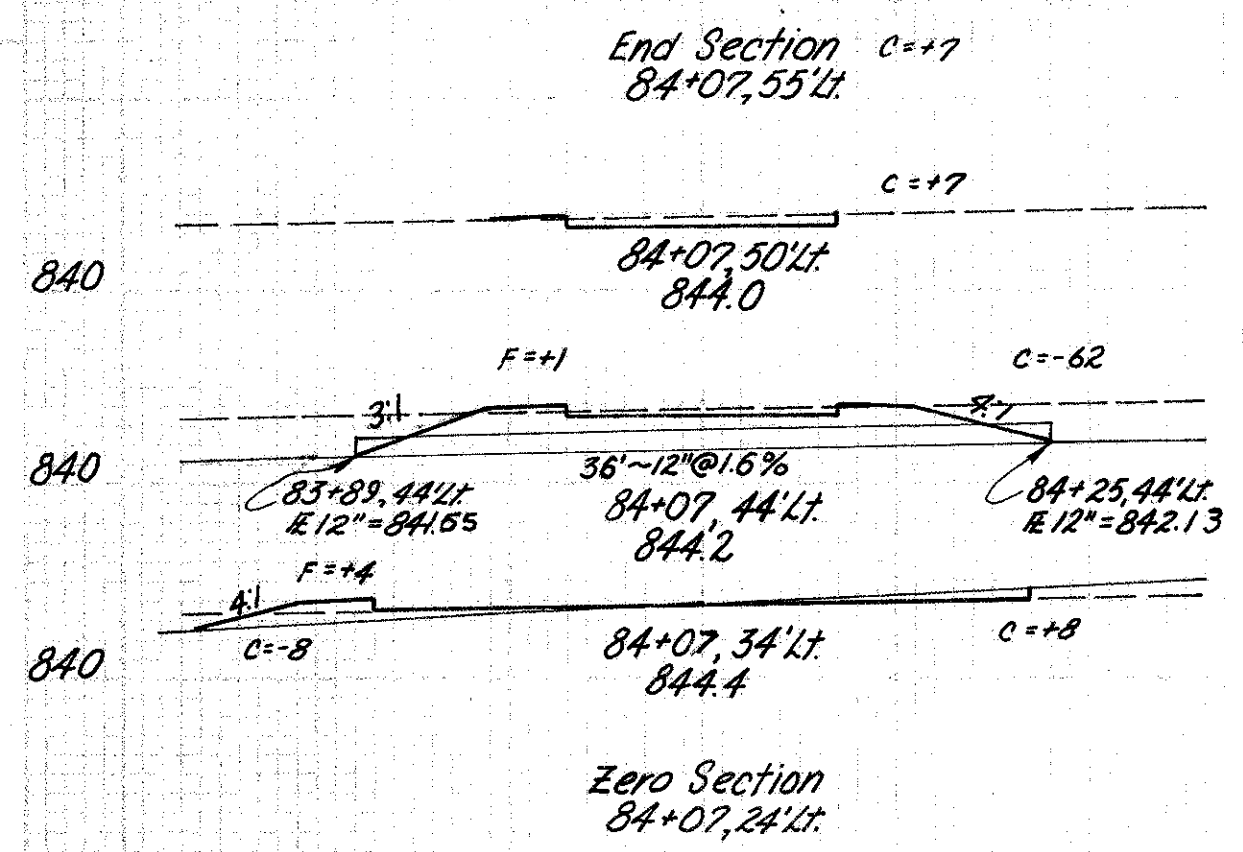
Deduct F=1
Deduct C=25

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

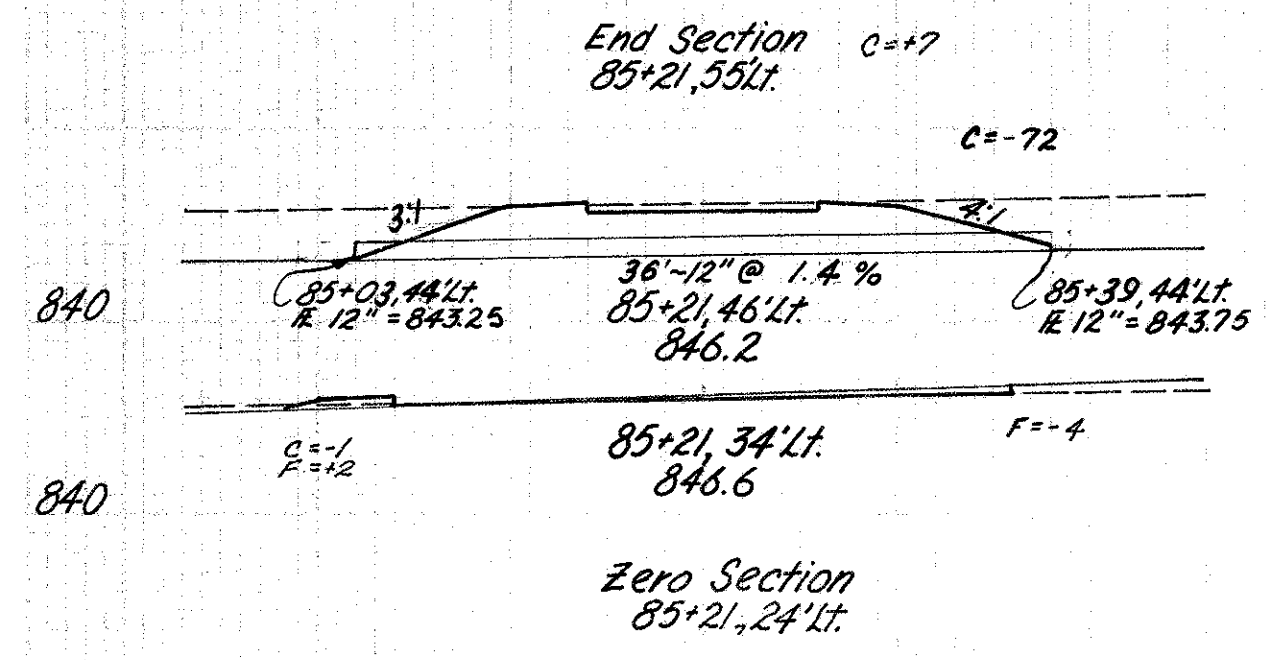
Add F=2
Deduct C=13

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

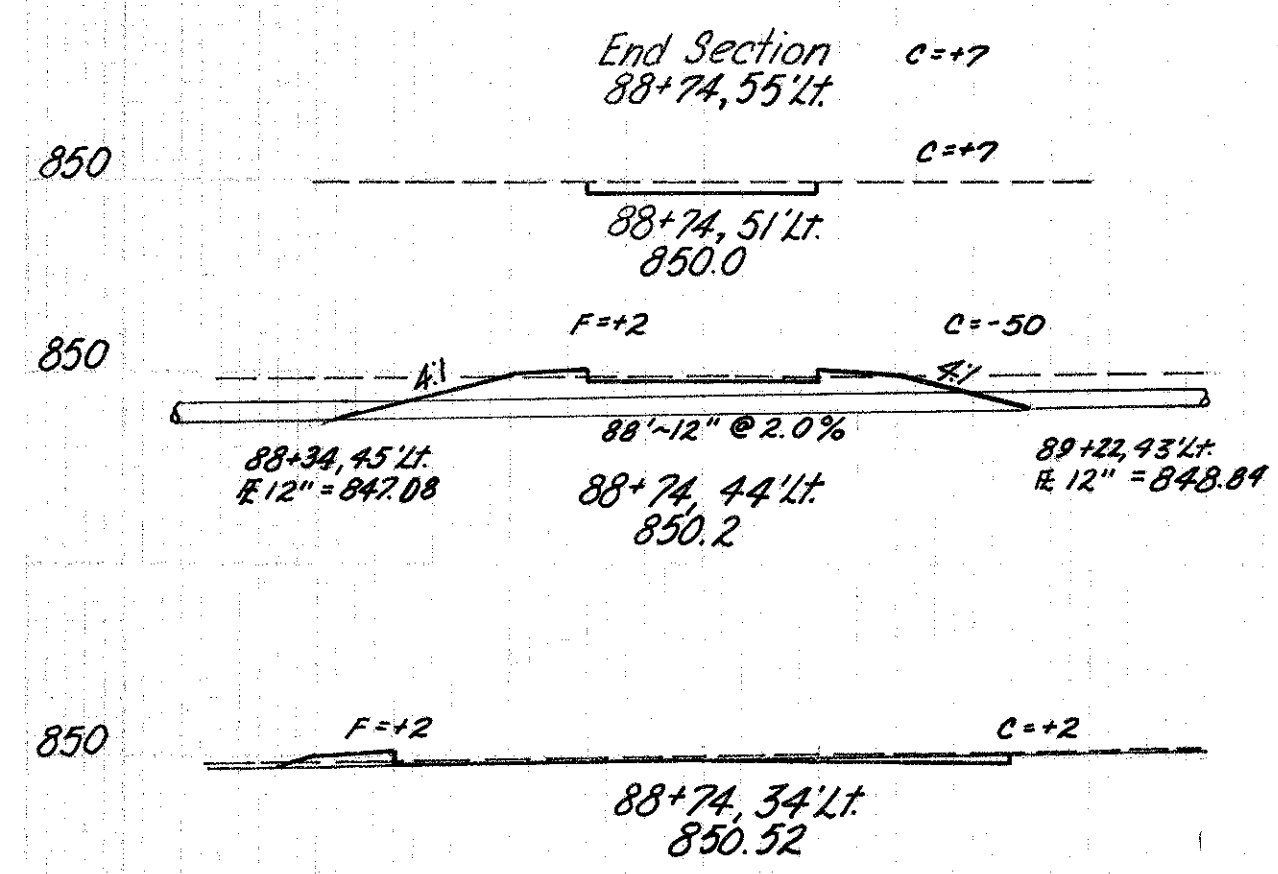
Deduct C=19



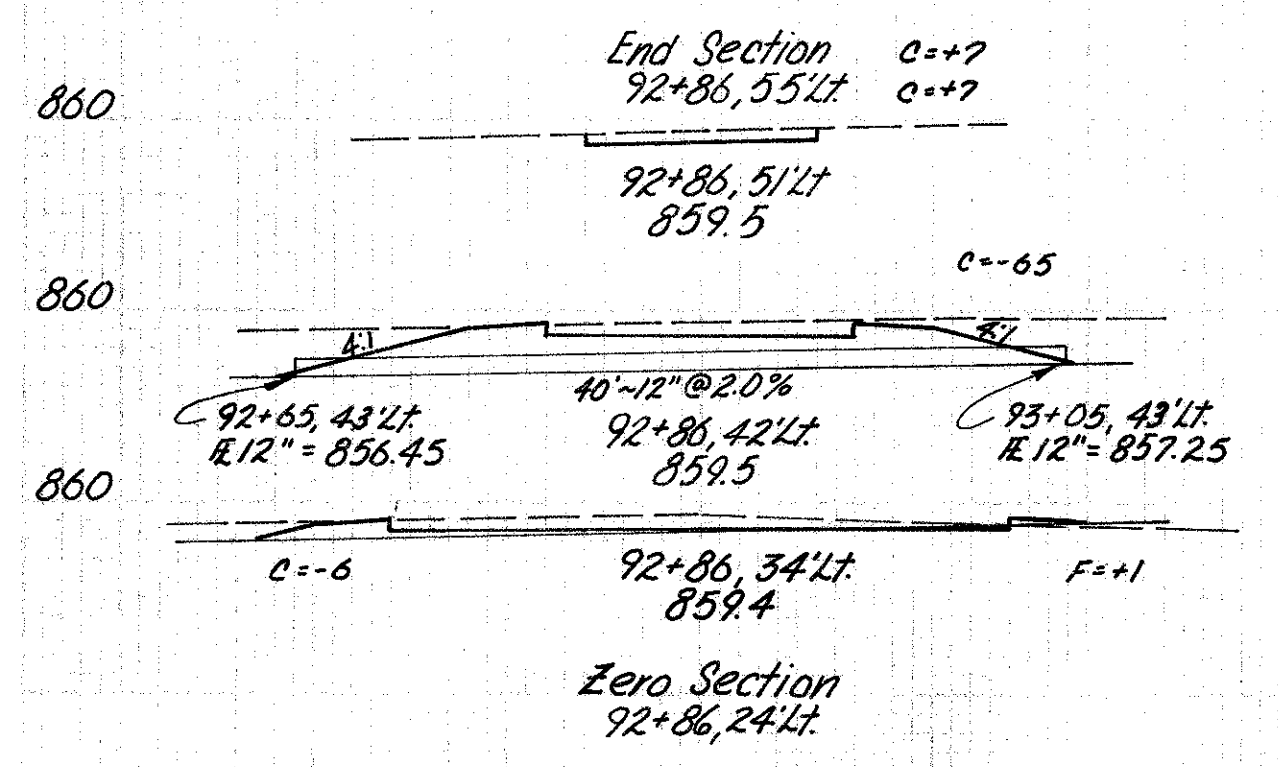
Zero Section
84+07, 24' Lt.



Zero Section
85+21, 24' Lt.



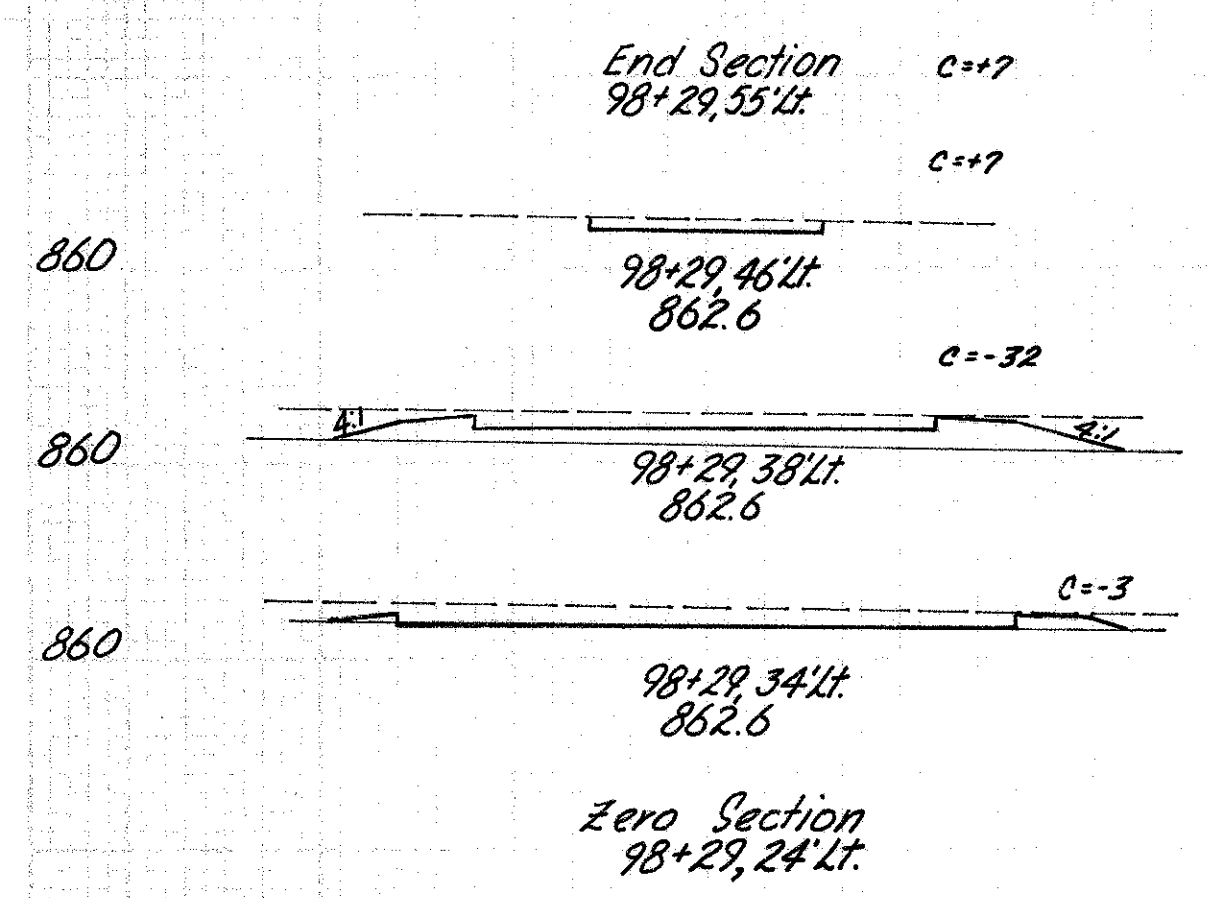
Zero Section
88+74, 24' Lt.



Zero Section
92+86, 24' Lt.

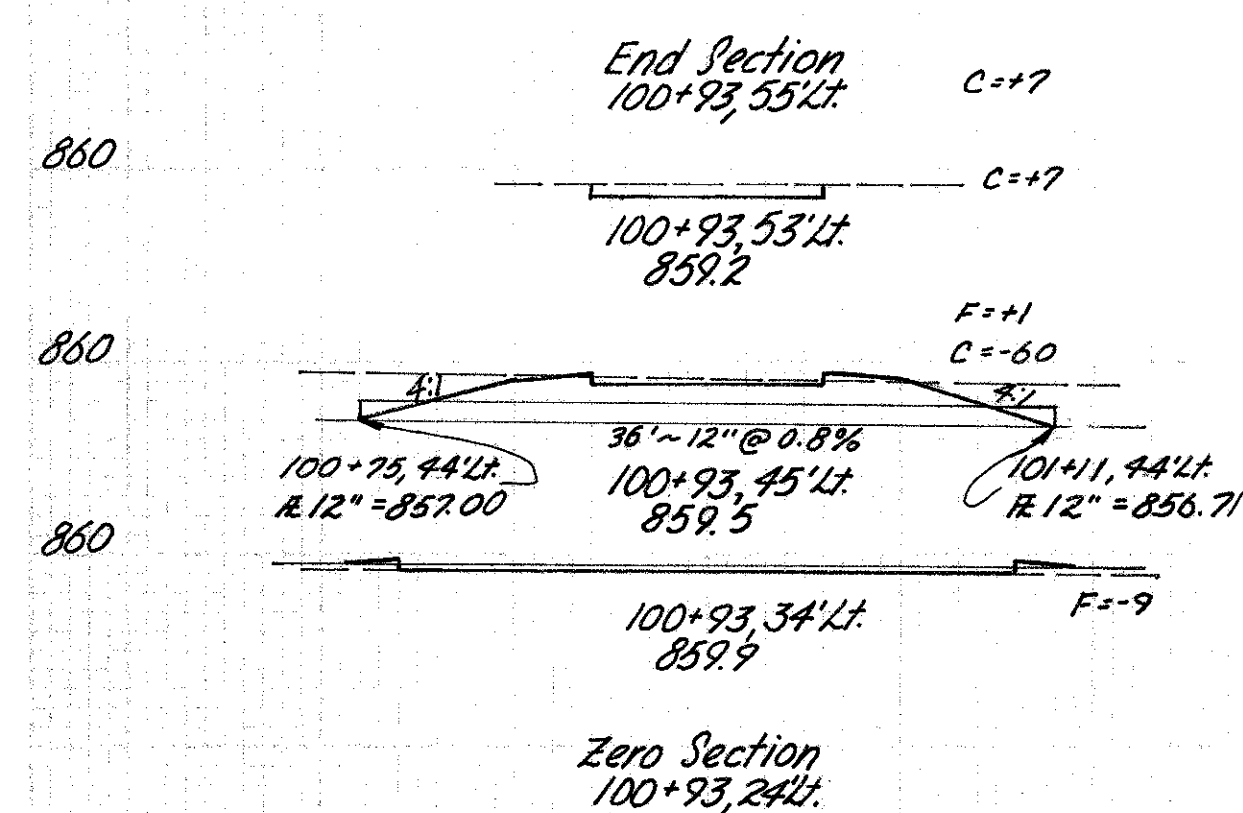
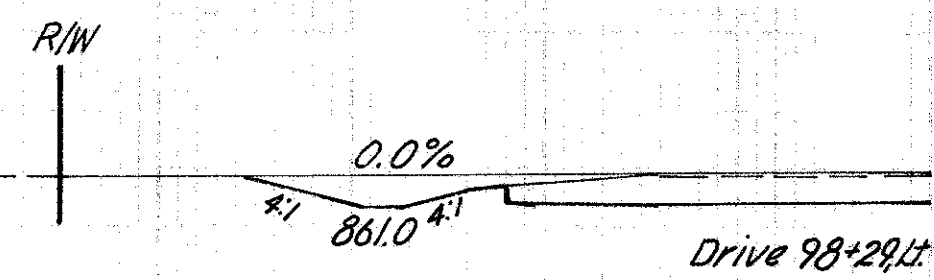
FRANKLIN COUNTY
FRA-270-22.99N

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



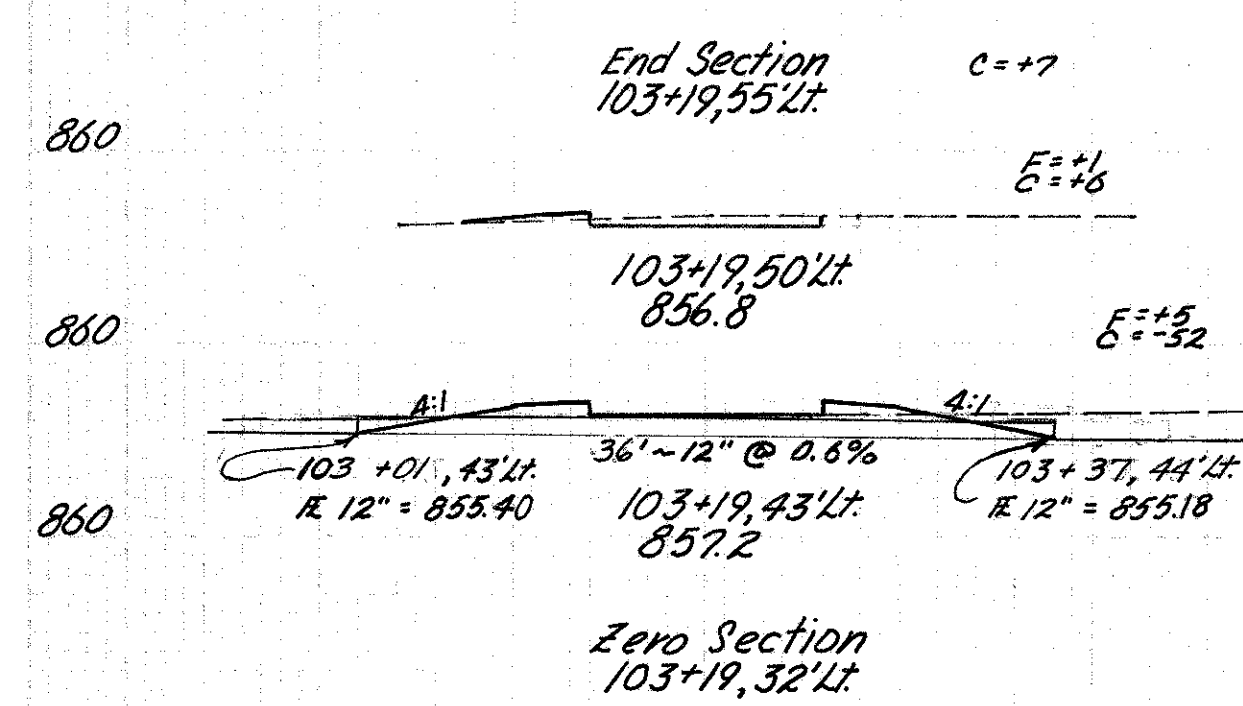
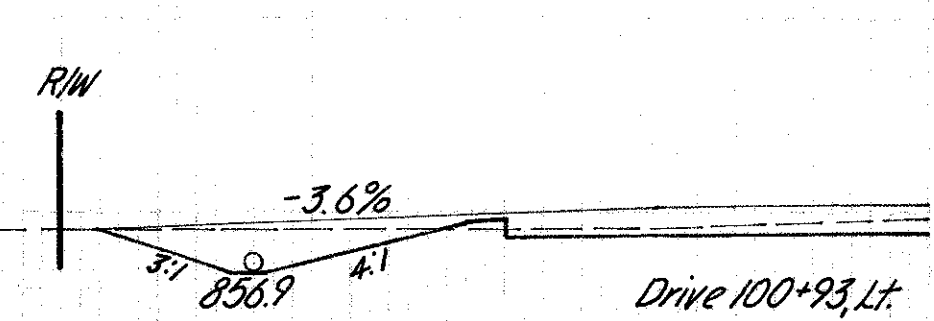
Area		Vol.	
Cut	Fill	Cut	Fill
55' Lt.	+7	0	+2
46' Lt.	+7	0	-4
38' Lt.	-32	0	-3
34' Lt.	-3	0	-1
24' Lt.	0	0	0

Deduct C=6



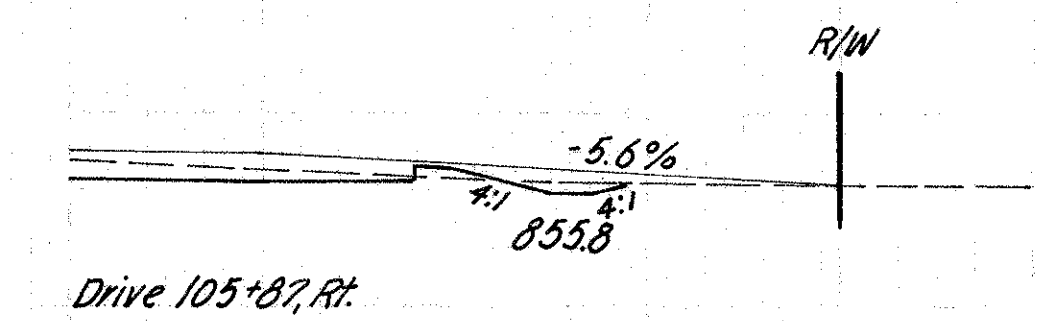
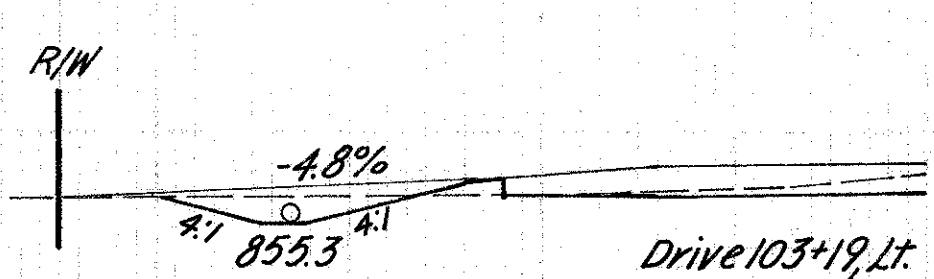
Area		Vol.	
Cut	Fill	Cut	Fill
55' Lt.	+7	0	+1
53' Lt.	+7	0	-8
45' Lt.	-60	+1	-12
34' Lt.	0	-9	0
24' Lt.	0	0	-2

Deduct F=4
Deduct C=19



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

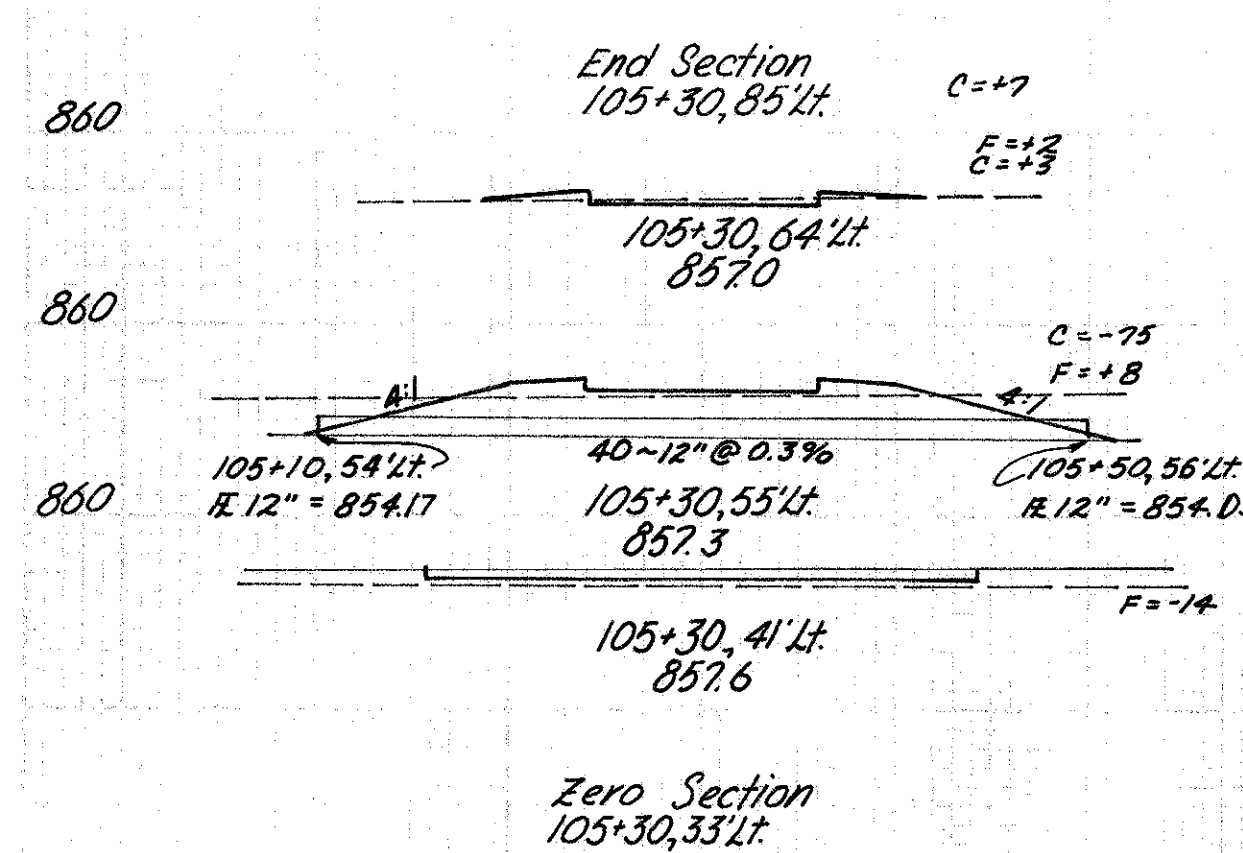
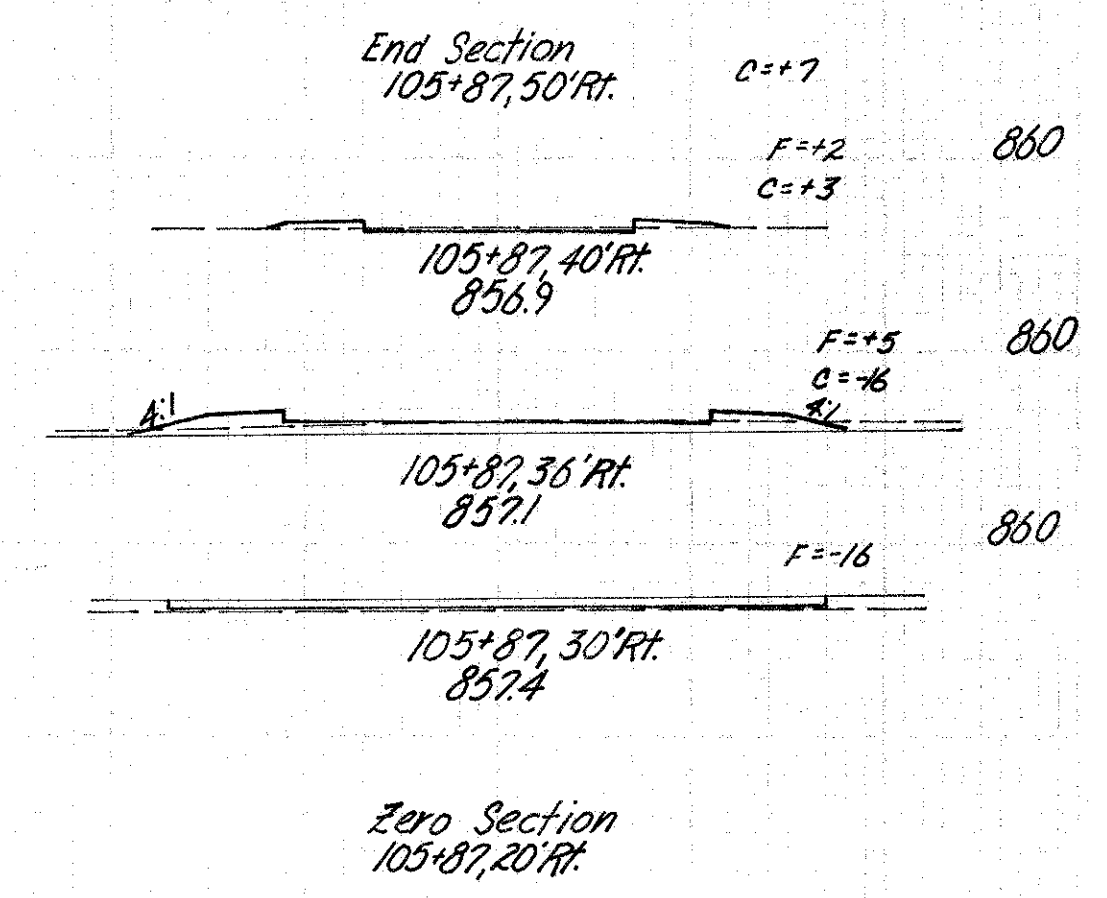
Add F=2
Deduct C=16



Area		Vol.	
Cut	Fill	Cut	Fill
+7	0	+2	+1
+3	+2	-1	+1
-16	+5	-2	-1
0	-16	0	-3
0	0	0	0

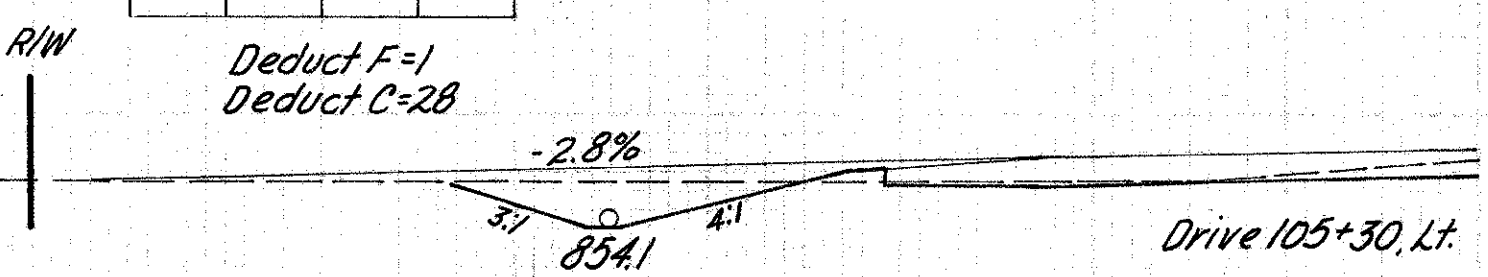
50' Rt.
40' Rt.
36' Rt.
30' Rt.
20' Rt.

Deduct F=2
Deduct C=1



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

Deduct F=1
Deduct C=28



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

FRANKLIN COUNTY
FRA-270-22.99N

CALC: SRK Dec 69
CHK: R.A.S. 12/17/68

Sta. 106+90, 41' Rt.
2-2-B C.B.
E Grate 854.80
E 18" = 852.12
E 21" = 851.87

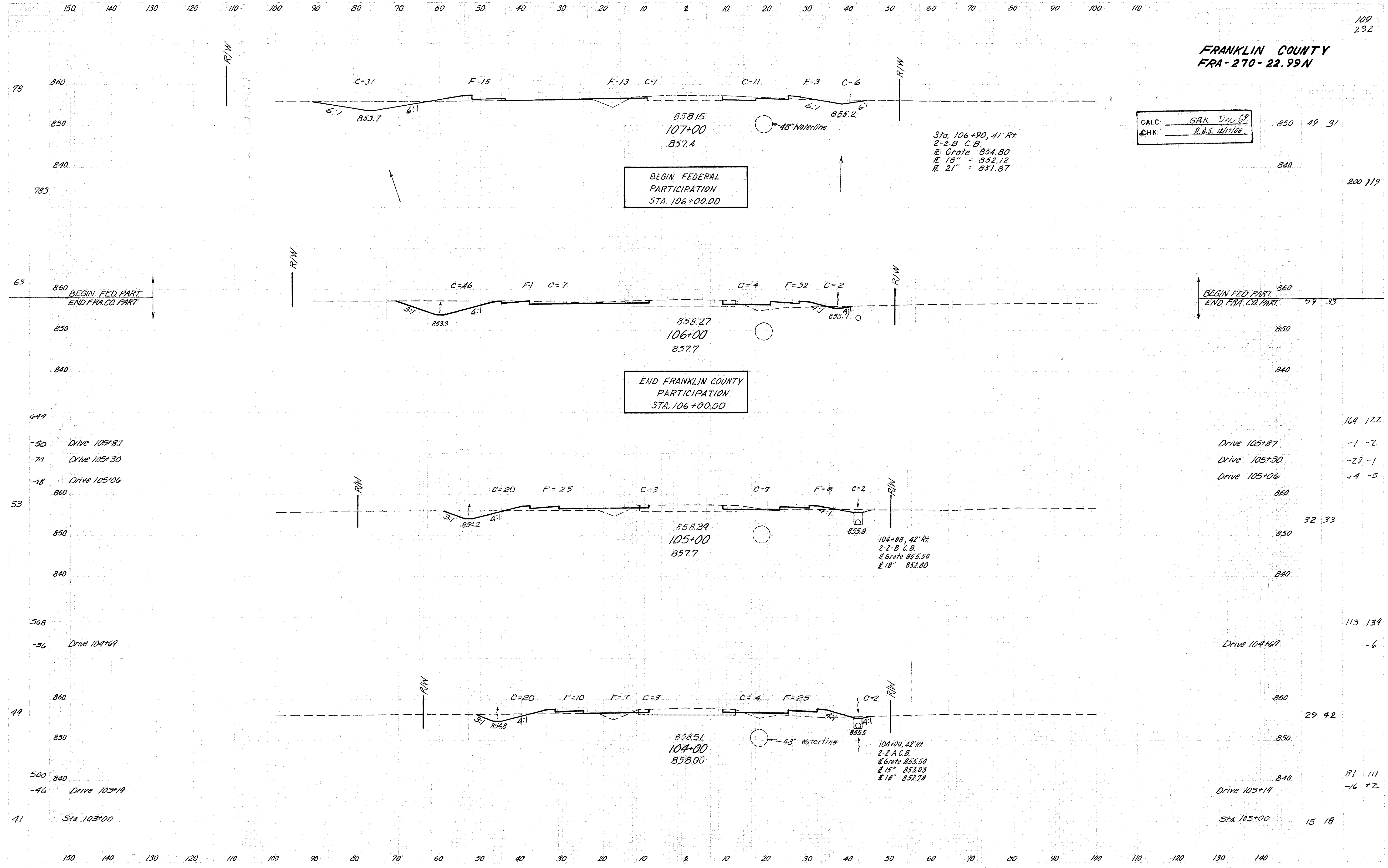
BEGIN FEDERAL
PARTICIPATION
STA. 106+00.00

END FRANKLIN COUNTY
PARTICIPATION
STA. 106+00.00

104+88, 42' Rt.
2-2-B C.B.
E Grate 855.50
E 18" 852.60

104+00, 42' Rt.
2-2-A C.B.
E Grate 855.50
E 15" 853.03
E 18" 852.78

St. Ground	land
Template	ok
Notes	
Entirement Quant.	
Setting Quant.	



BEGIN FED. PART
END FRA. CO. PART

Drive 105+87
Drive 105+30
Drive 105+06

Drive 104+69

Drive 103+19

Sta. 103+00

CALC: J.P. Sept. 68
CHK: ~~BA~~ 10-8-68

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

Total
Add To Fill

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

Total
Deduct
From Cut

Add For Basement
Sta 107+72

Drive 107+29

Drive 107+07

2-2 B CB

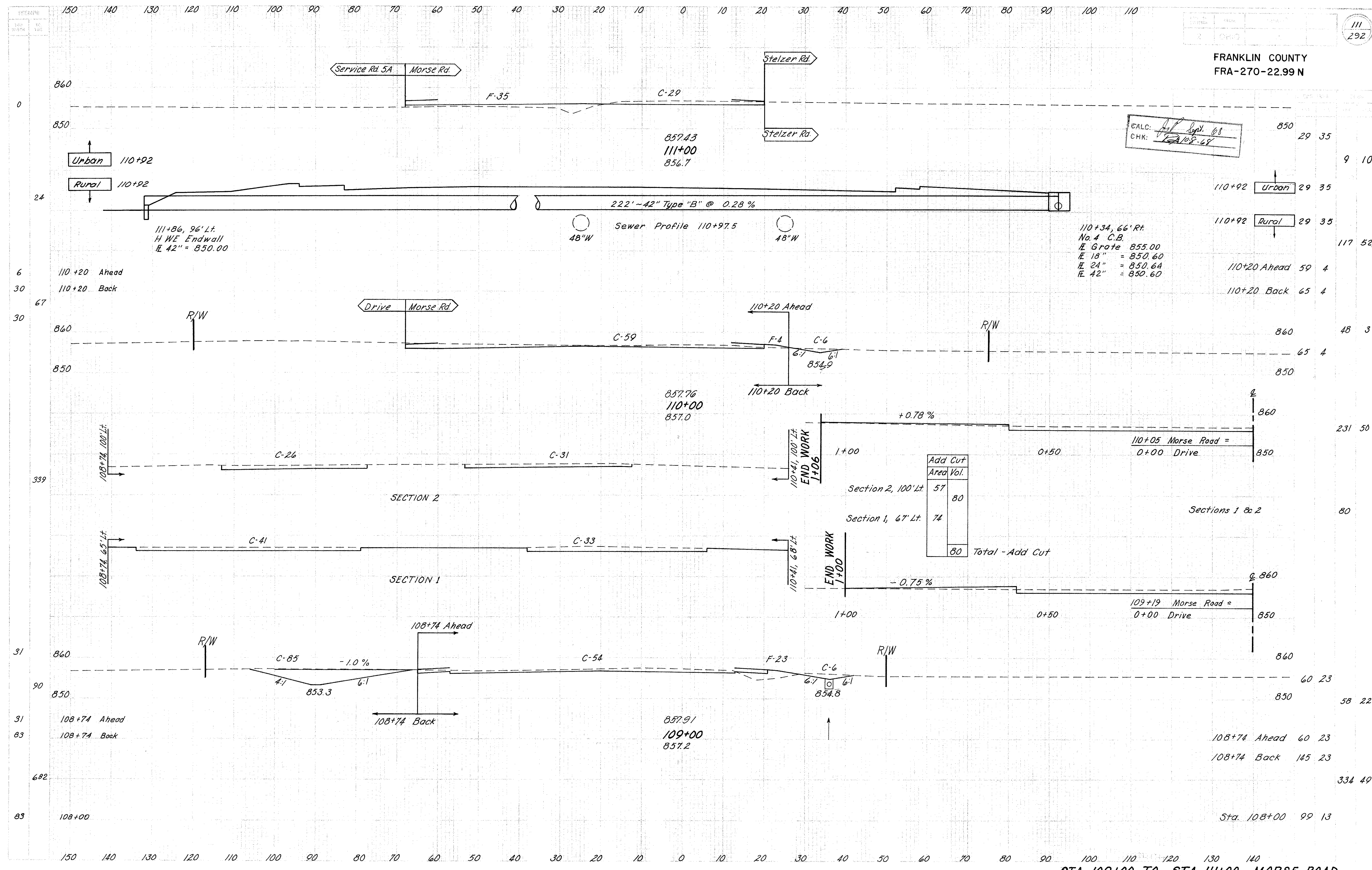
Add Fill	
Area	Vol.
107+07, 60' Rt.	0
107+07, 44' Rt.	5
107+07, 34' Rt.	9
107+07, 28' Rt.	0
	6

Total - Add To Fill

Deduct Cut	
Area	Vol.
107+07, 47' Rt.	0
107+07, 41' Rt.	36
107+07, 34' Rt.	0
	9

Total - Deduct From Cut

107+00 49 31



FRANKLIN COUNTY
FRA-270-22.99 N

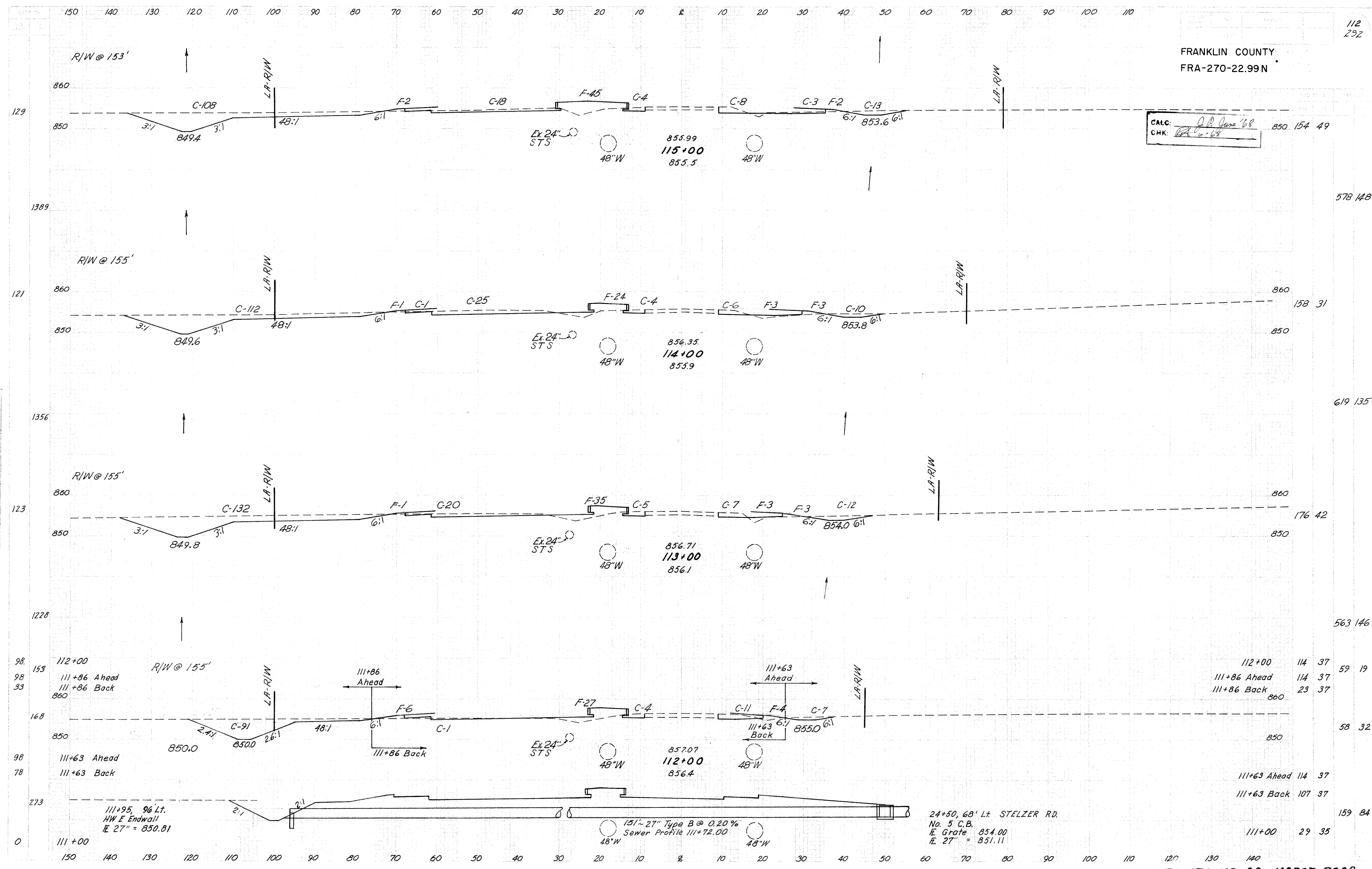
CALC: *[Signature]* Sep. 68
CHK: *[Signature]* Sep. 68

Add Cut	Area Vol.
Section 2, 100' Lt.	57
Section 1, 67' Lt.	74
Total - Add Cut	80

STA 109+00 TO STA 111+00 MORSE ROAD

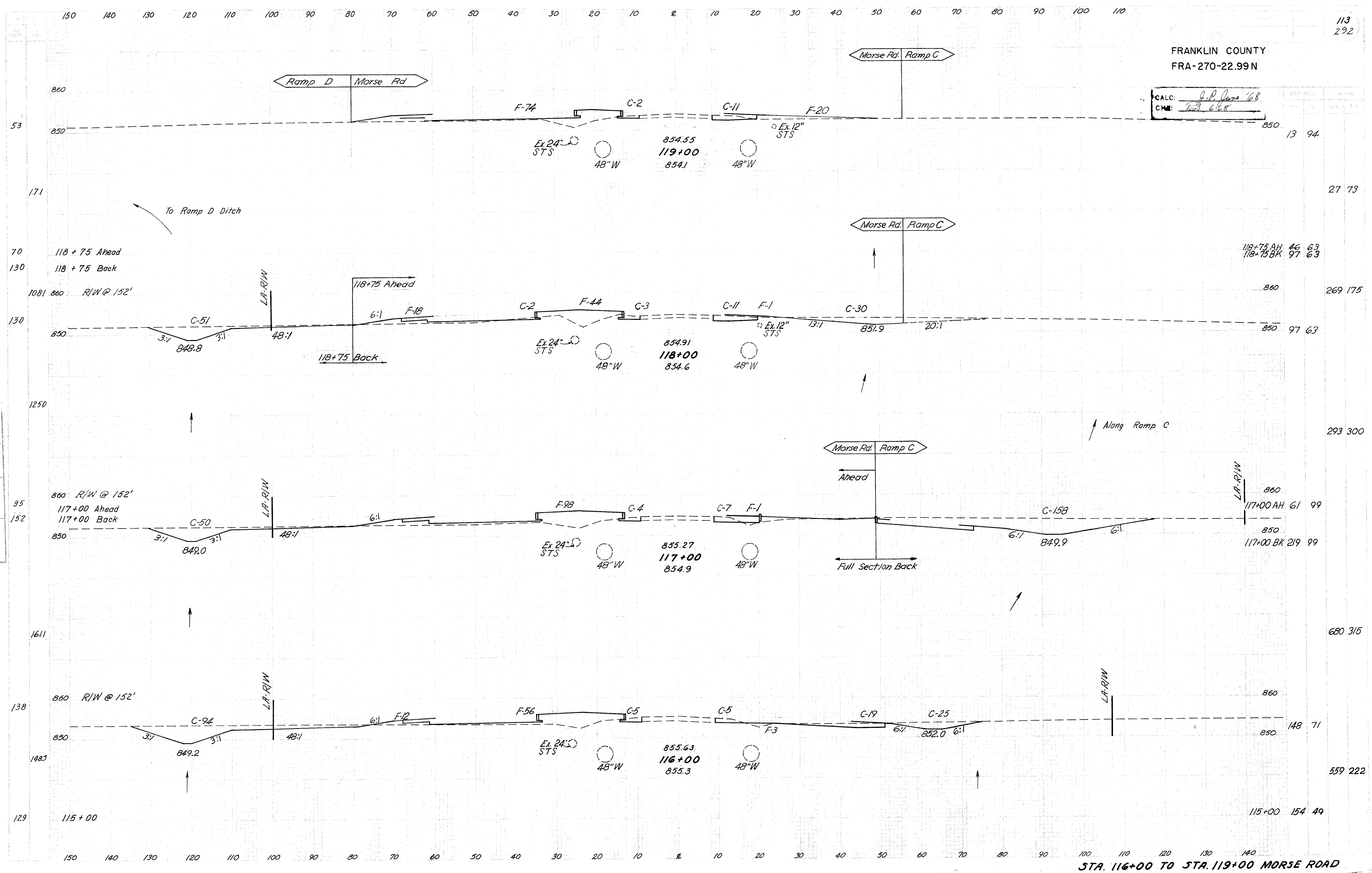
FRANKLIN COUNTY
FRA-270-22.99N

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



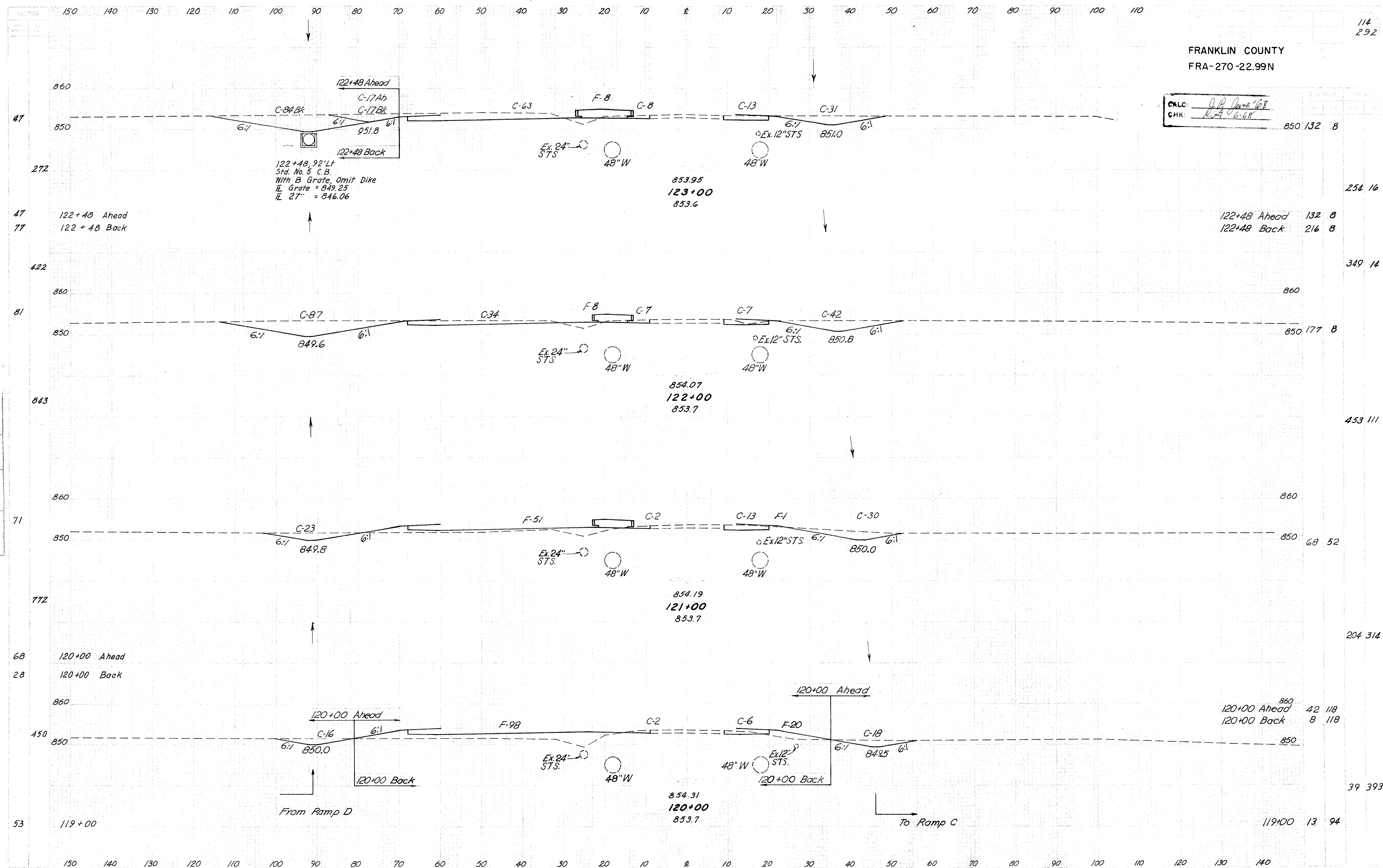
FRANKLIN COUNTY
FRA-270-22.99N

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

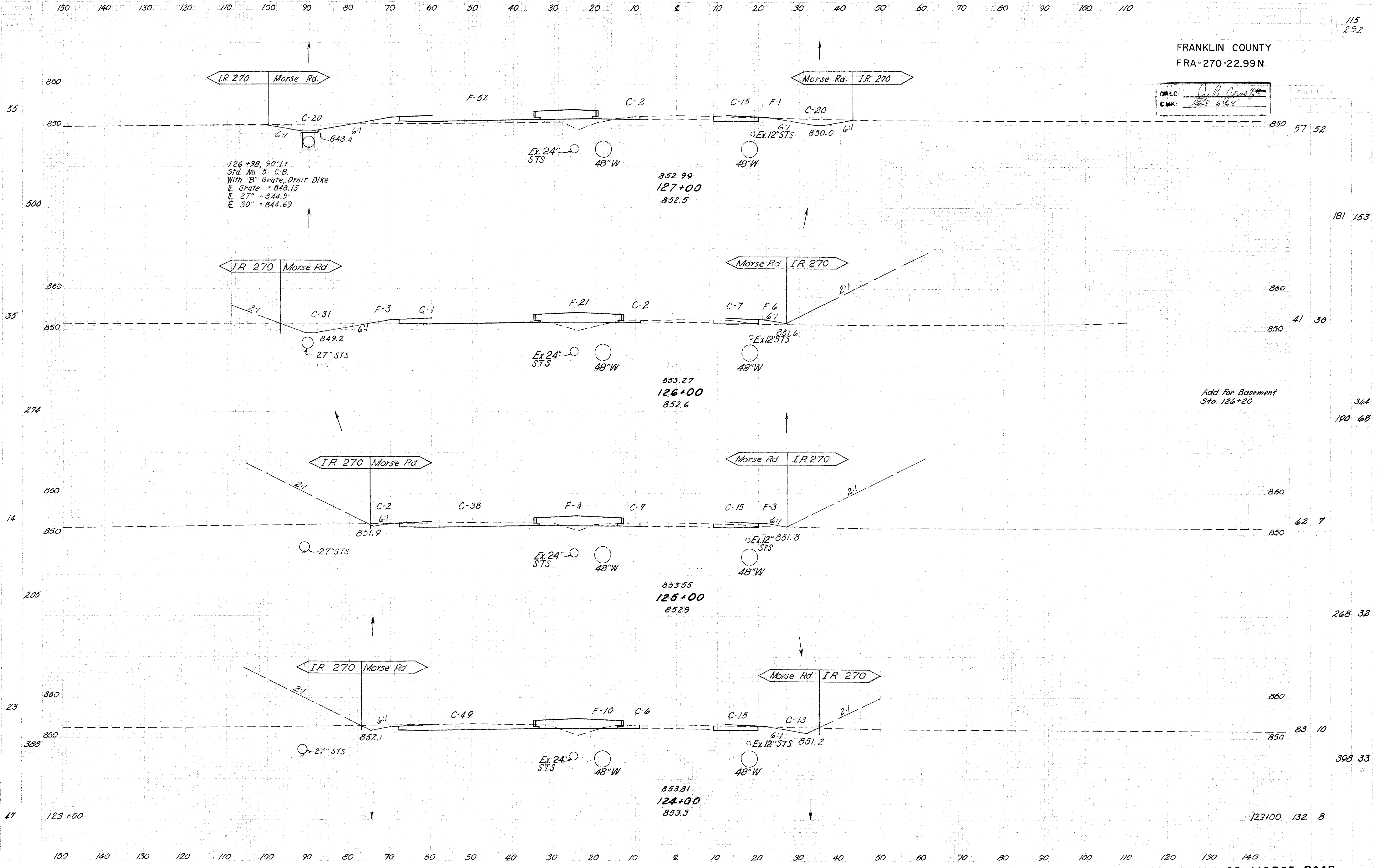


113
292

FRANKLIN COUNTY
FRA-270 -22.99N

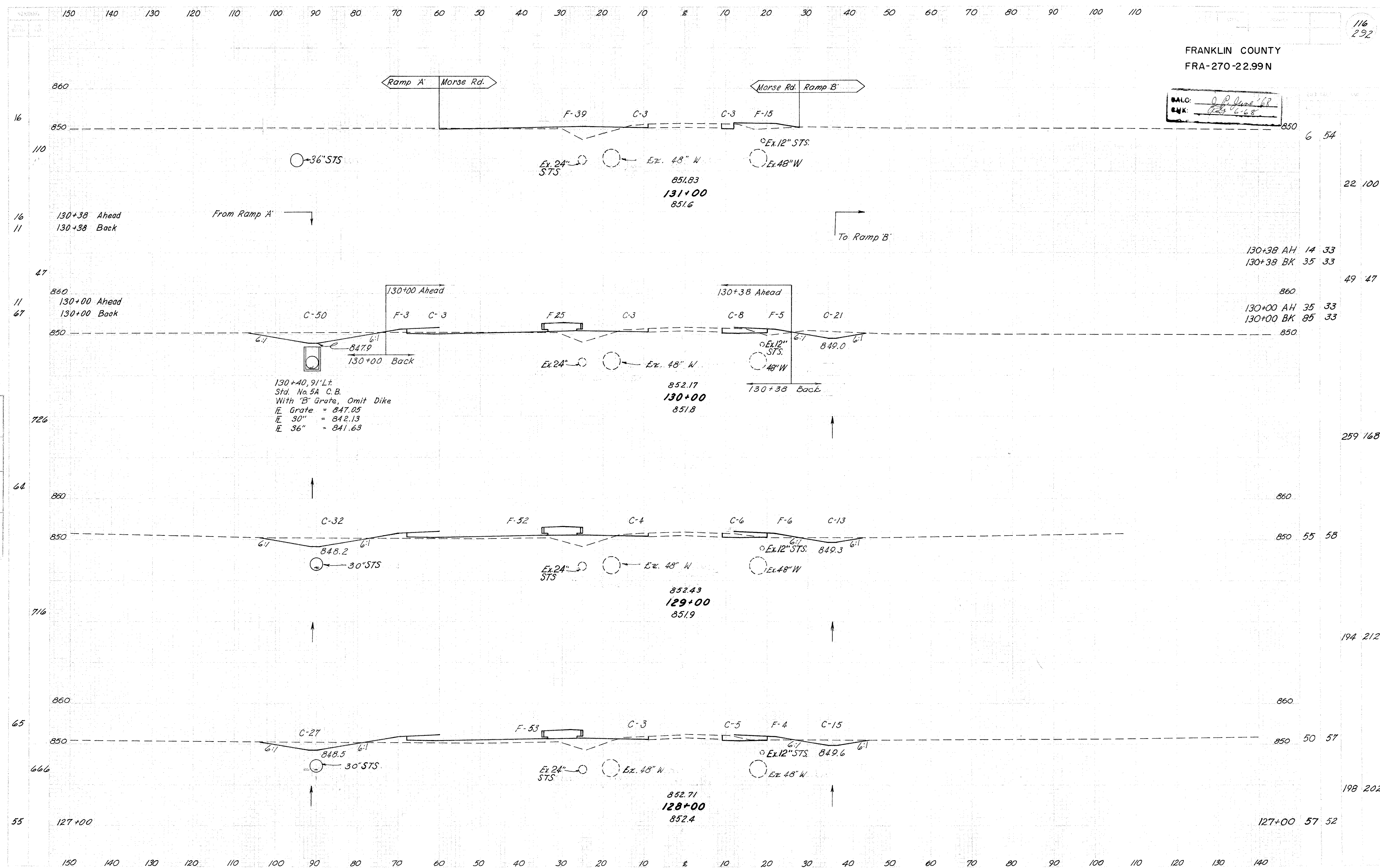


STA.-120+00 TO STA.-123+00 MORSE ROAD



FRANKLIN COUNTY
FRA-270-22.99N

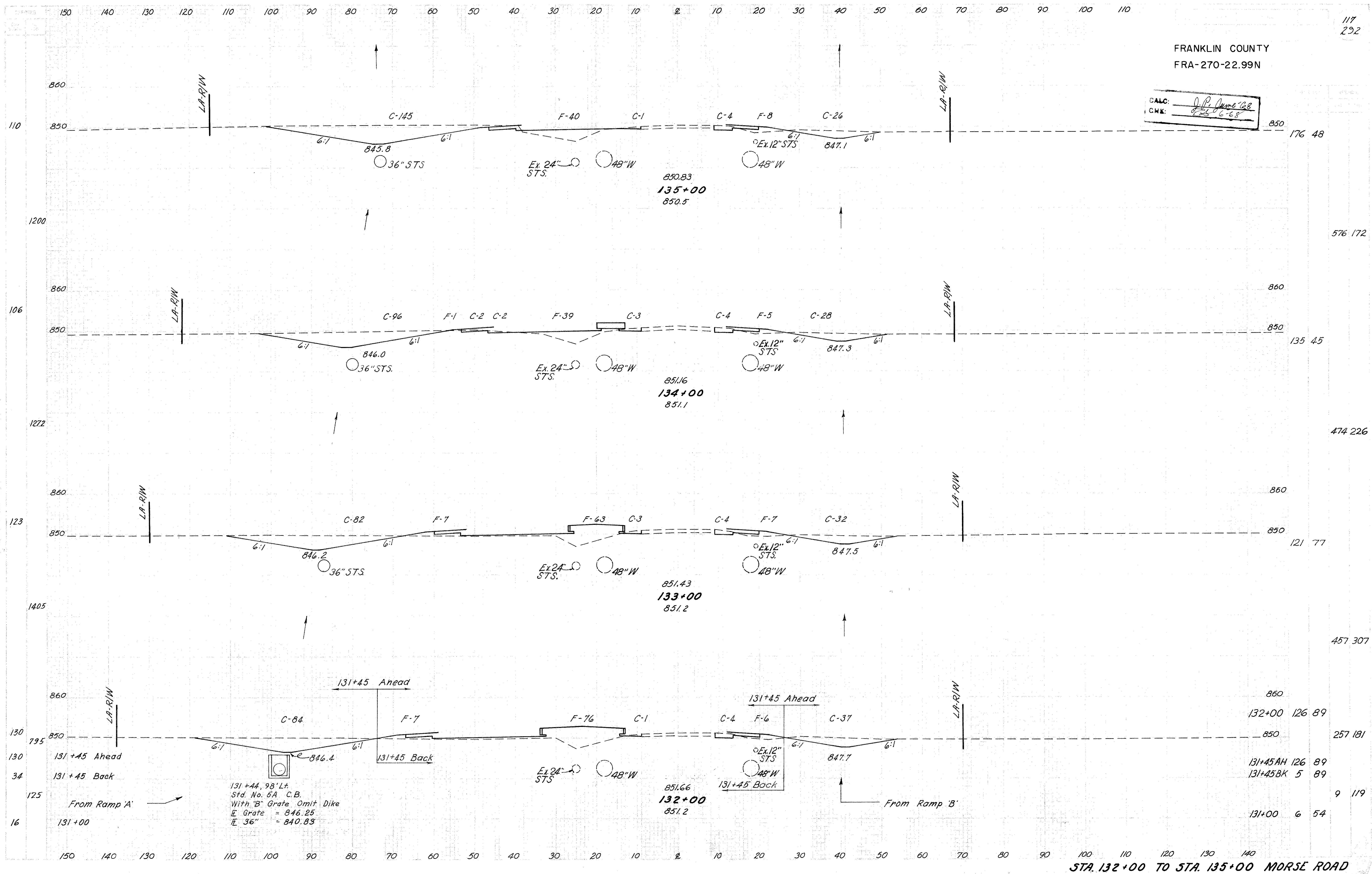
SCALE: *J.P. June '68*
BY: *6-6-68*



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

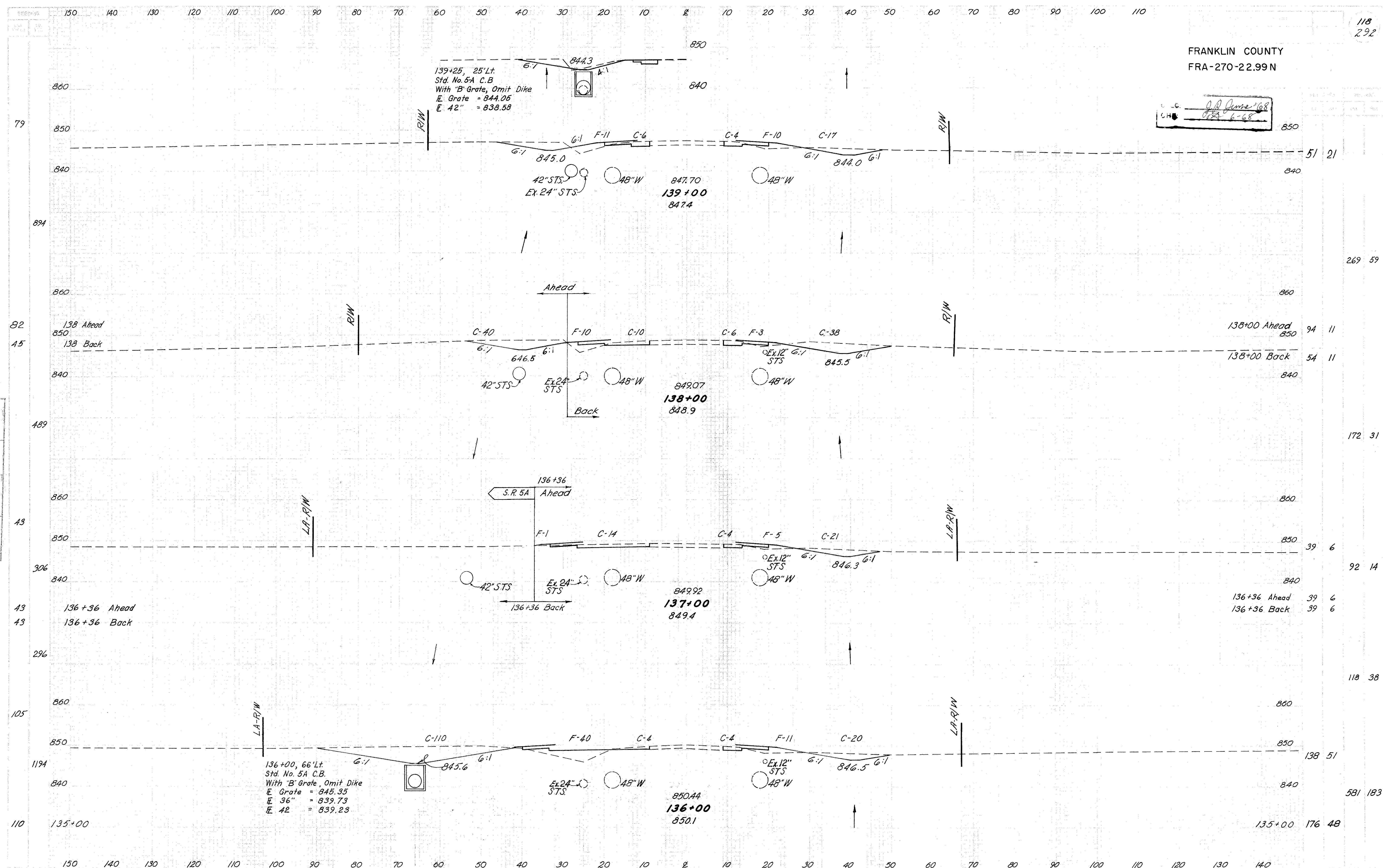
FRANKLIN COUNTY
FRA-270-22.99N

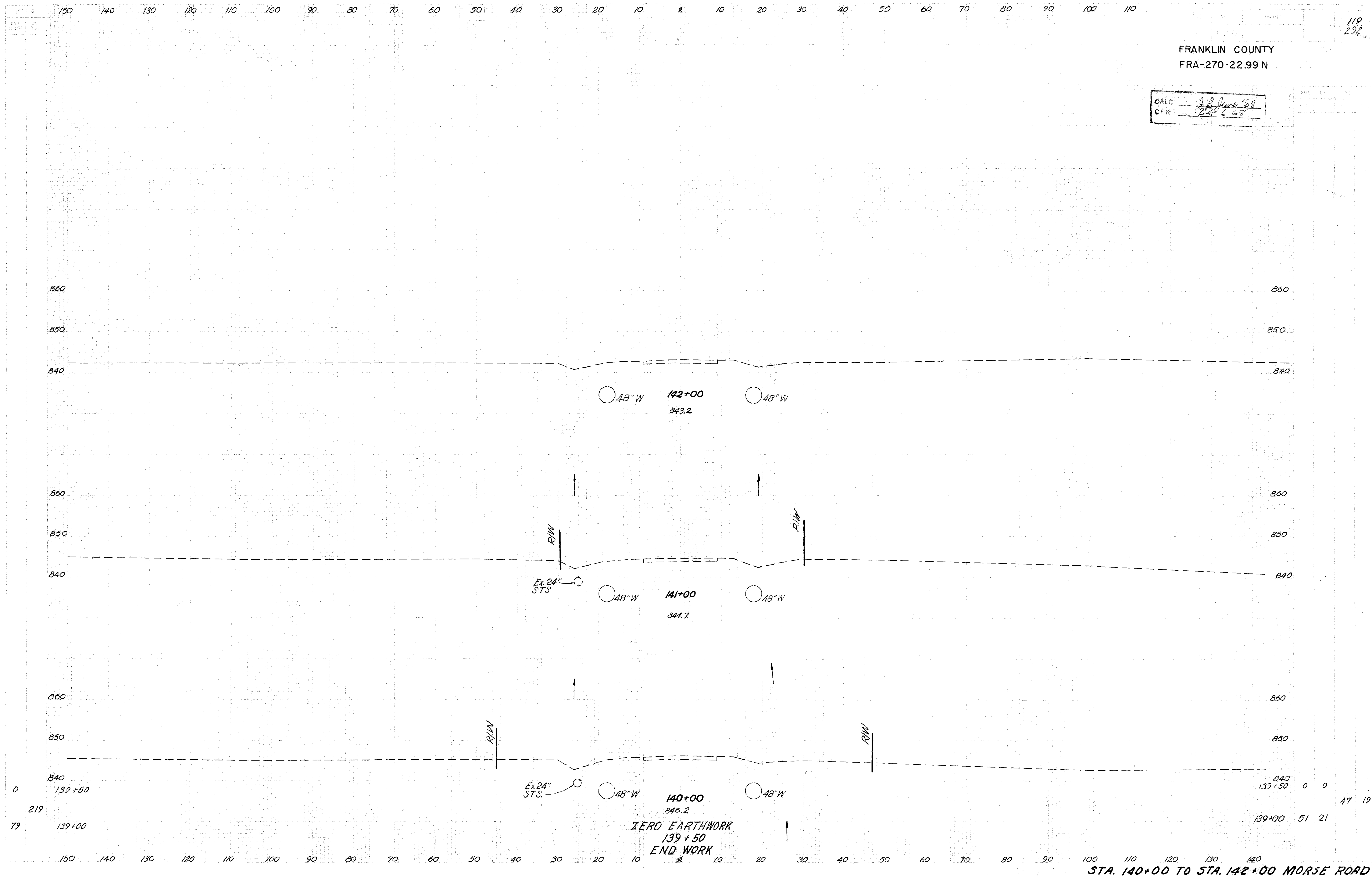
CALC: J. P. June '68
CHK: 25 6-68



FRANKLIN COUNTY
FRA-270-22.99 N

C.G. J.D. June 1968
CH 6-68





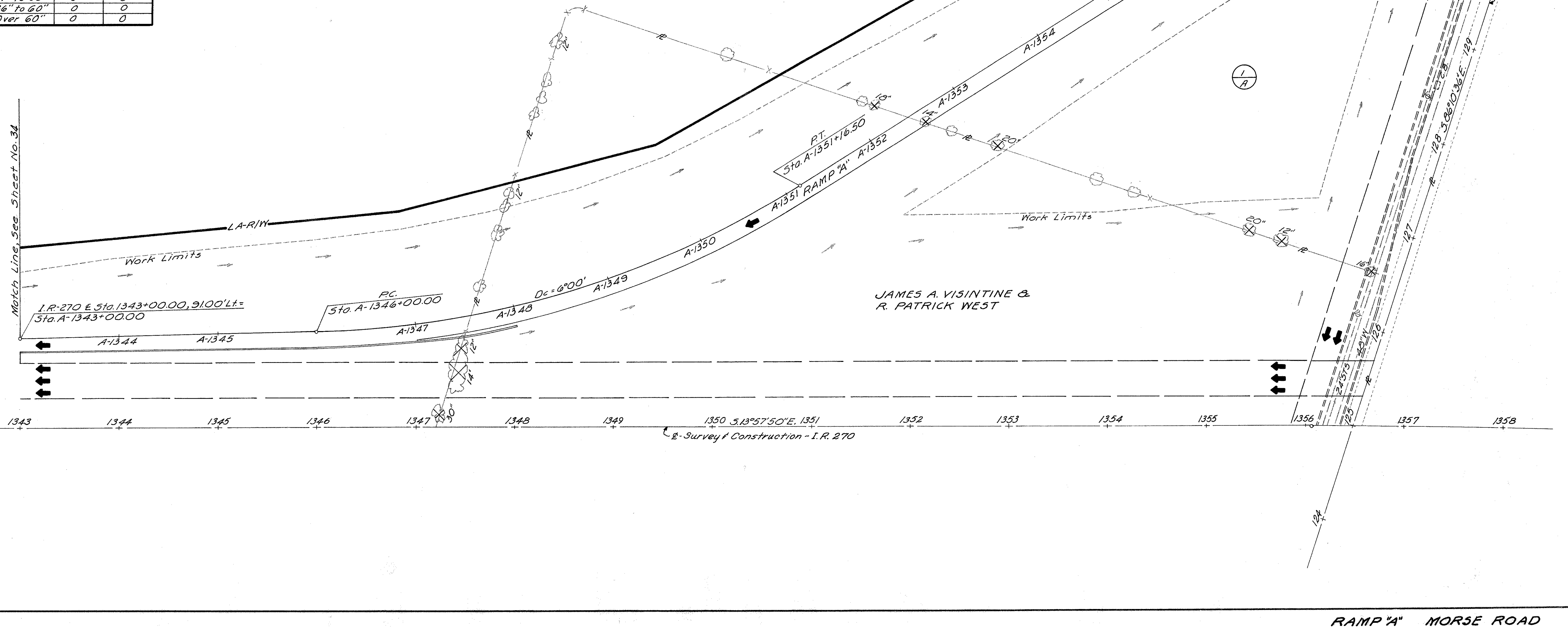
CALC: W.D.H. 9-24-68
CHK: R.E.H. 10-4-68

[illegible]

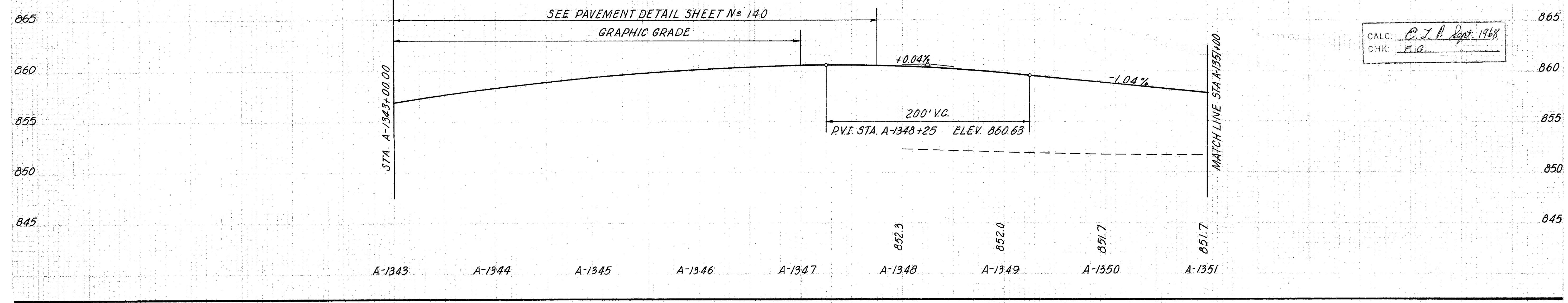
NOTES:

- 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

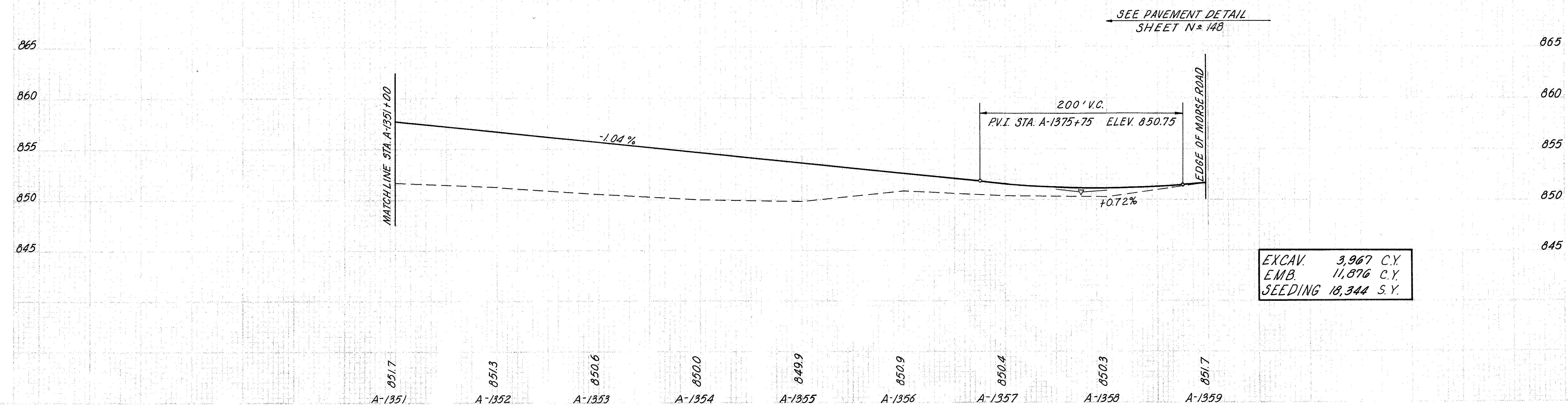
A-1343+00 to A-1348+00		
Size	Left	Right
12" to 24"	1	2
24" to 36"	0	0
36" to 60"	0	0
Over 60"	0	0



CALC: C. J. P. Sept. 1968
CHK: F.O.



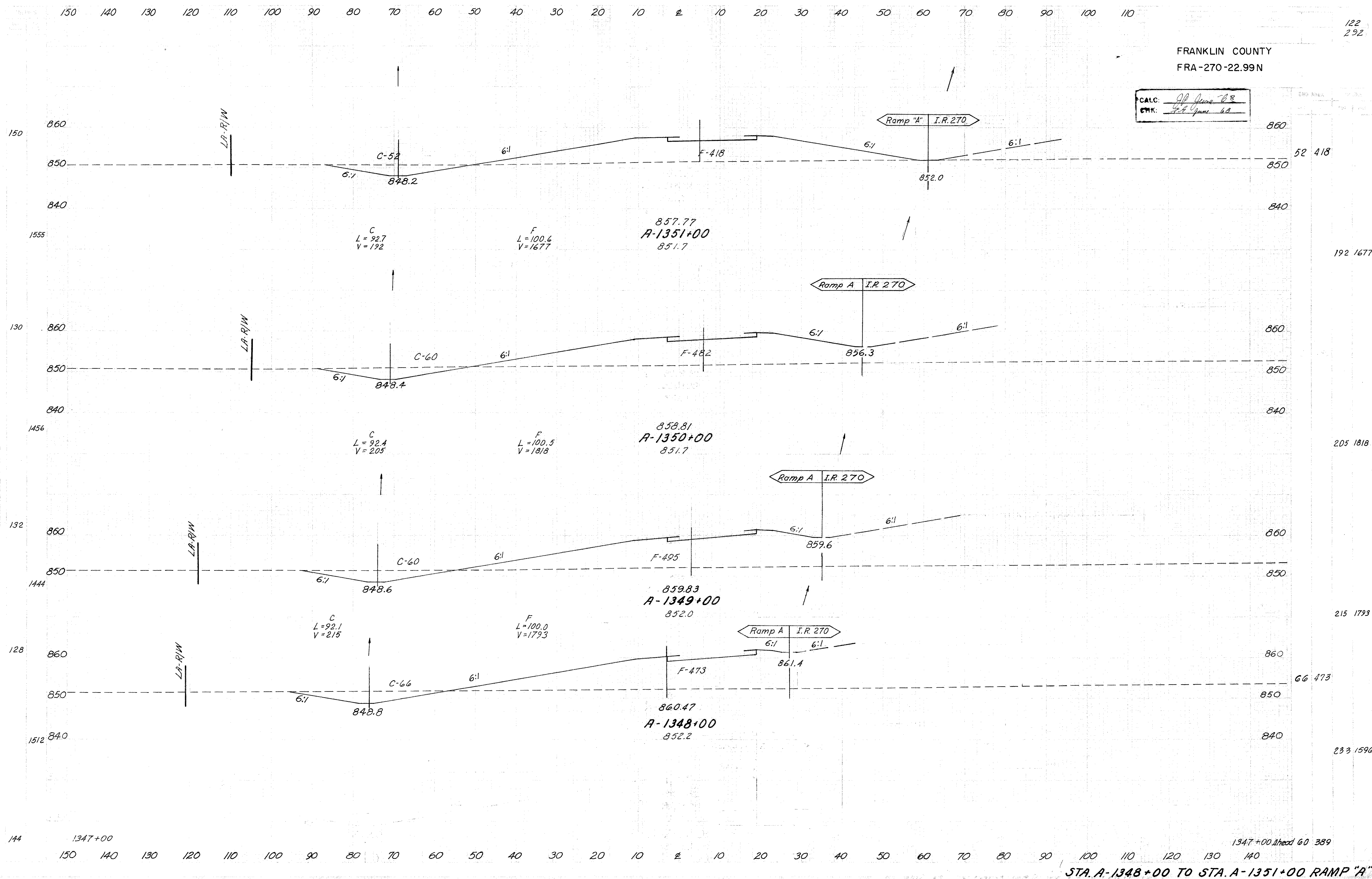
Profile Grade	Right Edge	Left Edge
858.05	858.29	857.77
857.87	857.87	857.25
857.45	857.45	856.99
857.07	857.07	856.73
856.75	856.75	856.47
856.46	856.46	856.21
856.20	856.20	855.95
855.94	855.94	855.69
855.68	855.68	855.43
855.42	855.42	855.17
855.16	855.16	854.91
854.90	854.90	854.65
854.64	854.64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



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

FRANKLIN COUNTY
FRA-270-22.99N

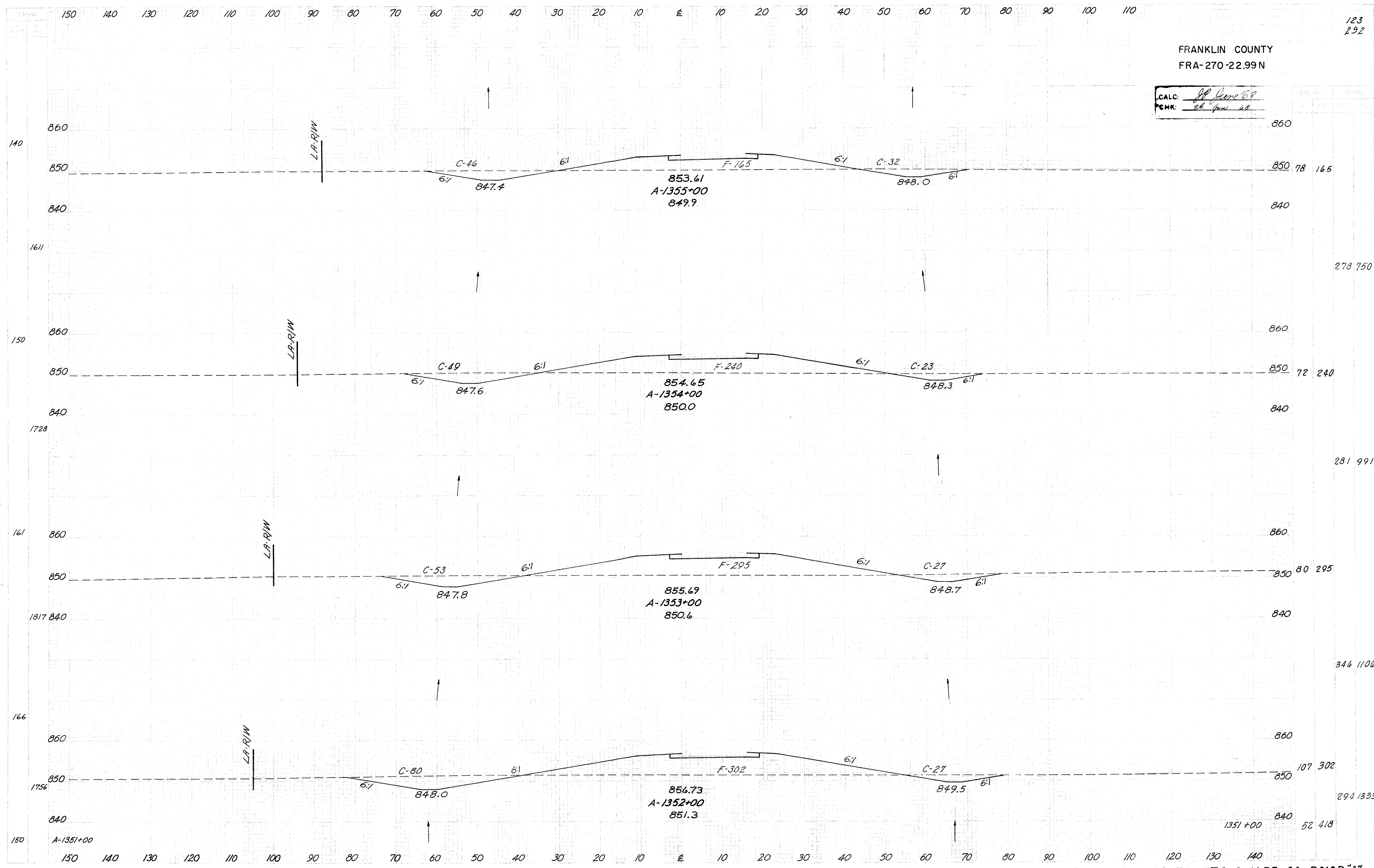
CALC: JP June 68
CHK: JP June 68



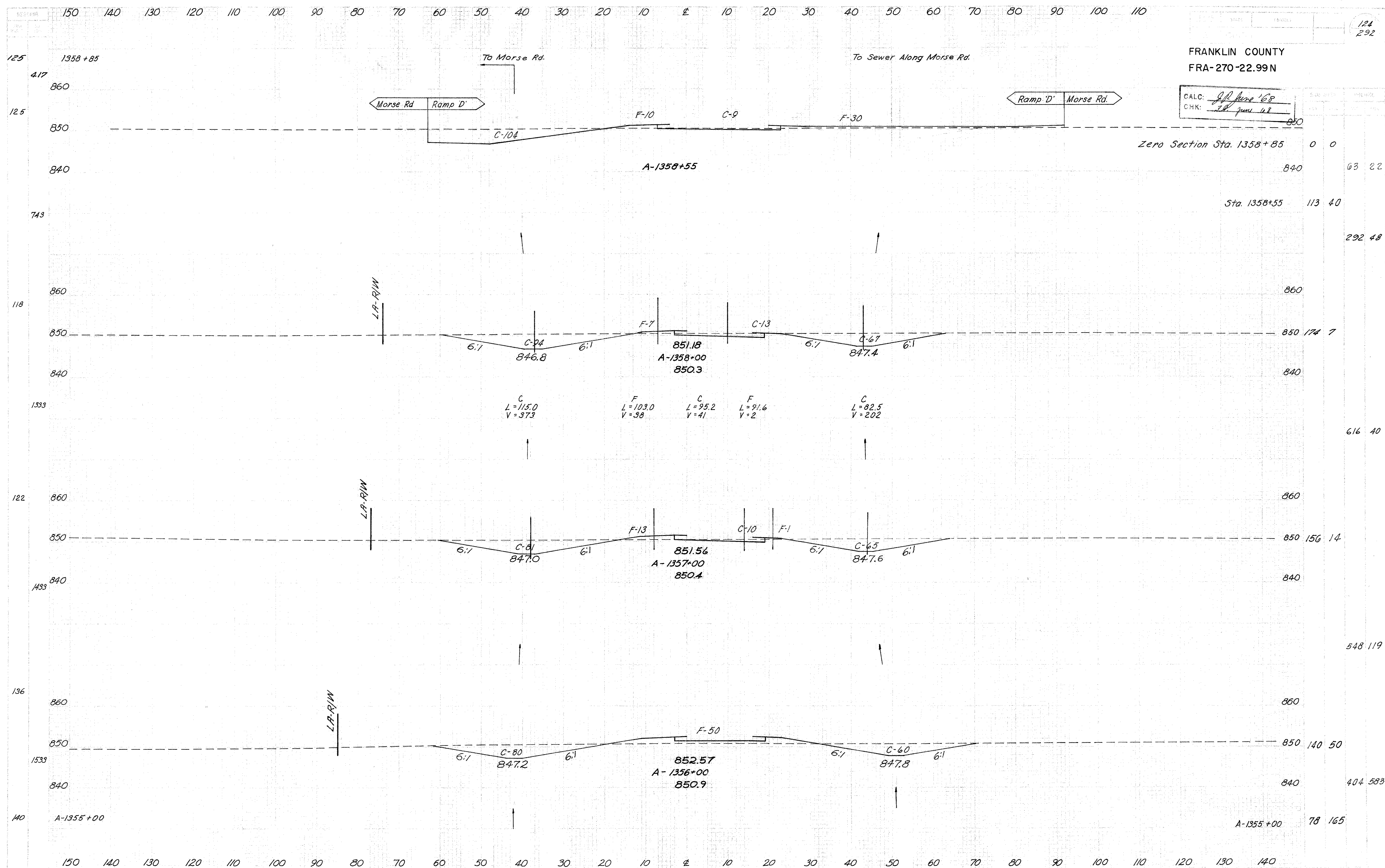
123
292

FRANKLIN COUNTY
FRA-270-22.99N

CALC: *JP June 68*
CHK: *28 June 68*



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



FRANKLIN COUNTY
FRA-270-22.99N

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

Zero Section Sta. 1358+85 0 0

Sta. 1358+55 113 40

292 48

616 40

548 119

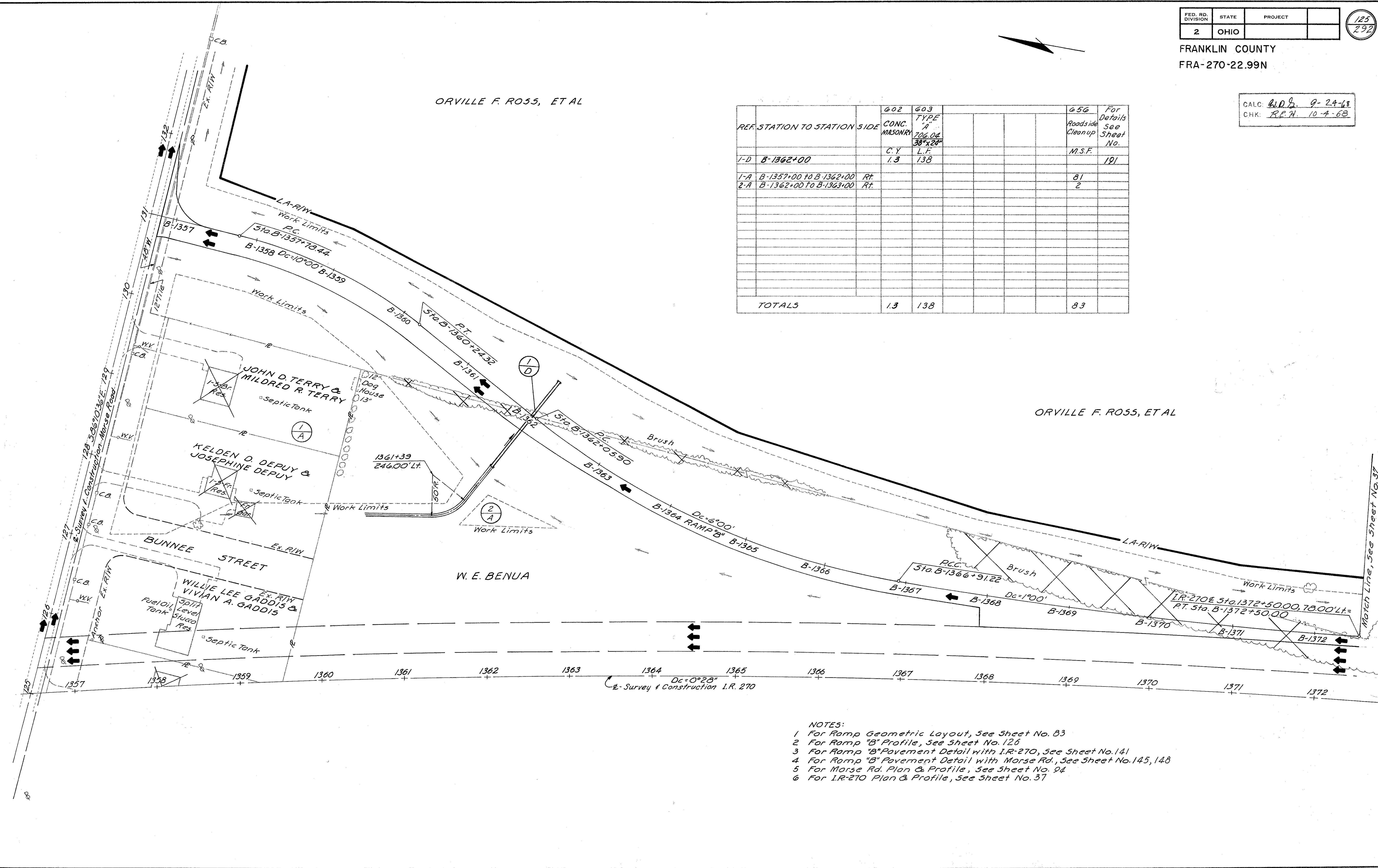
404 583

A-1355+00 78 165

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

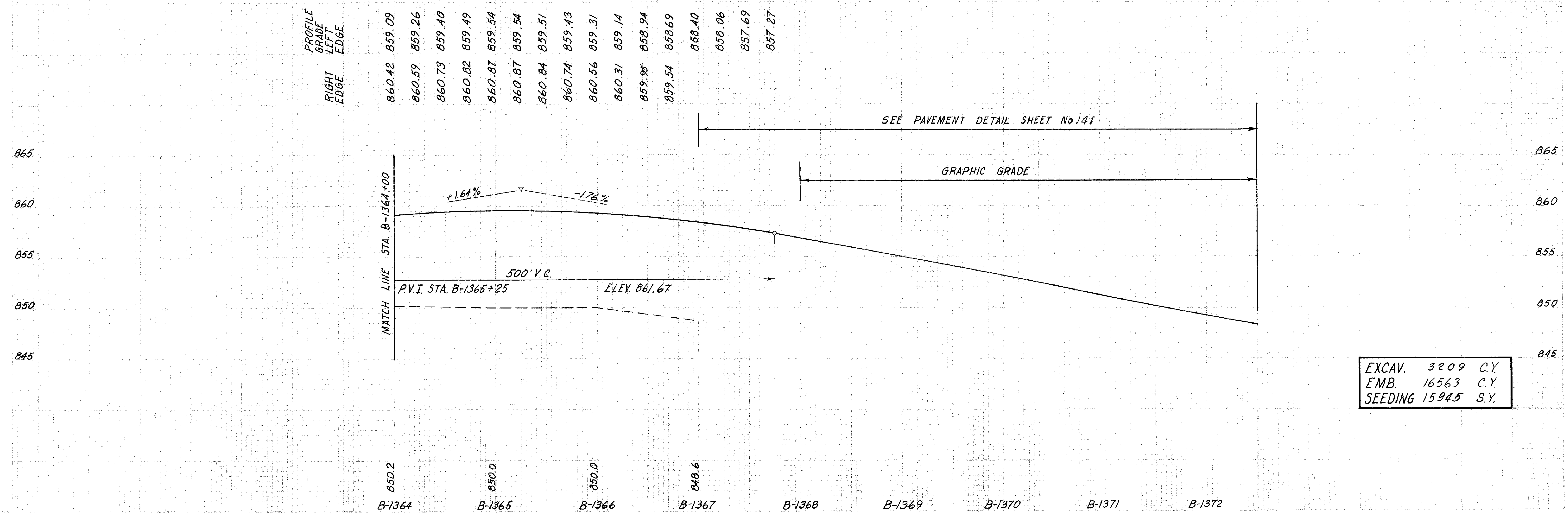
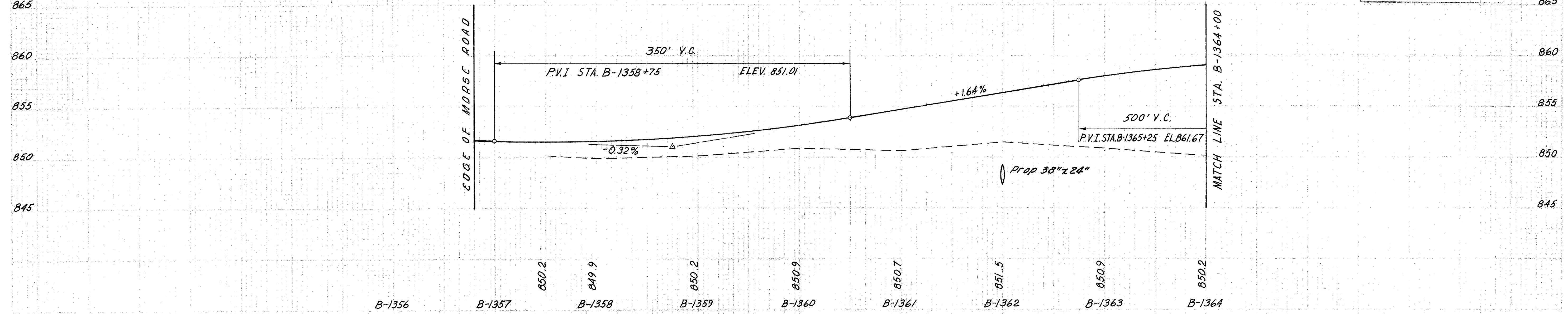
CALC: A.D.S. 9-24-68
CHK: R.P.H. 10-7-68

REF. STATION TO STATION	SIDE	602 CONC. MASONRY	603 TYPE "A" 706.04 38"x28"	656 Roadside Cleanup M.S.F.	For Details See Sheet No.
1-D B-1362+00		C.Y. 1.3	L.F. 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

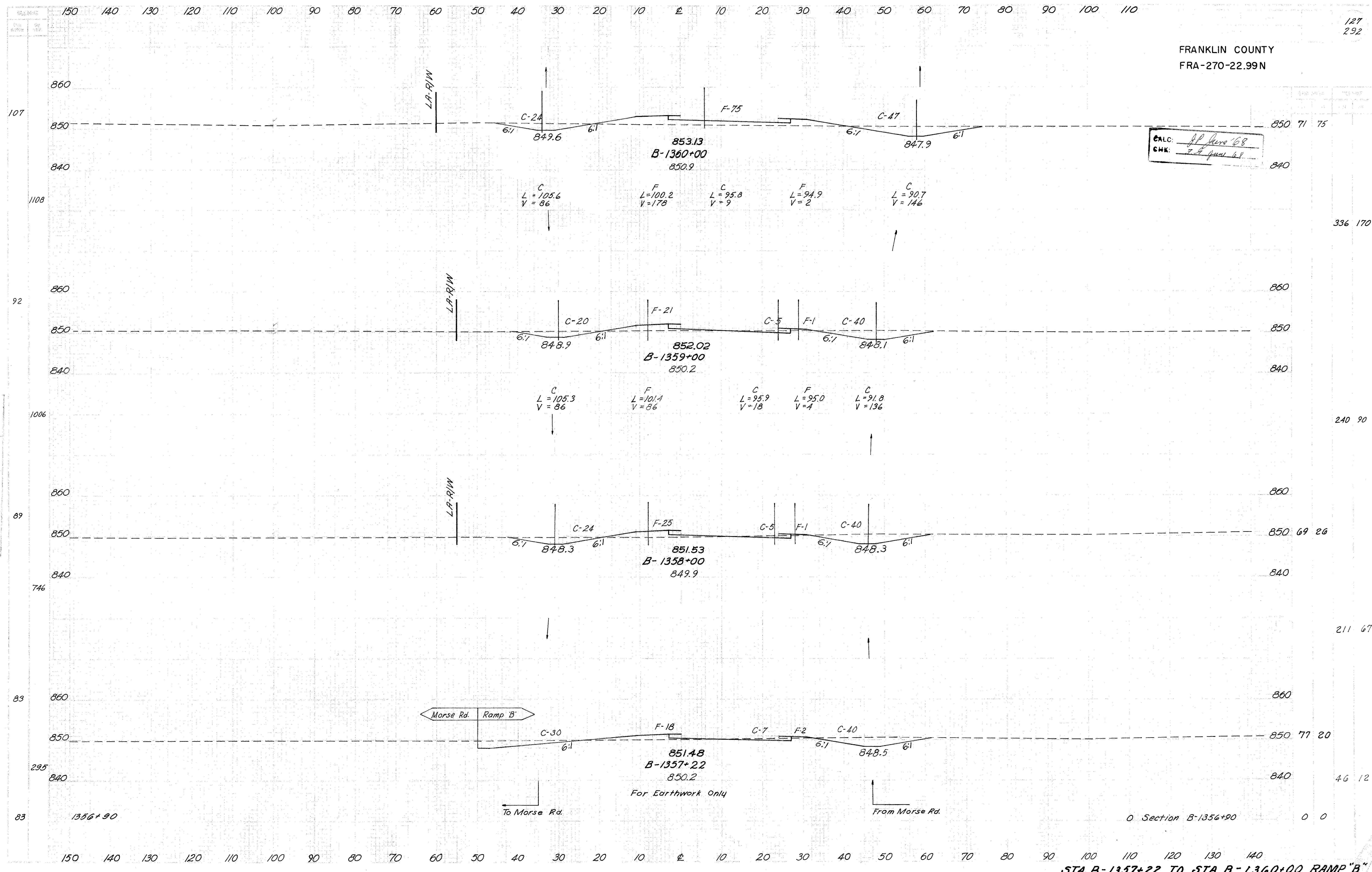
CALC: *C. L. A. Sept 1968*
CHK: *E. G. Oct 1968*

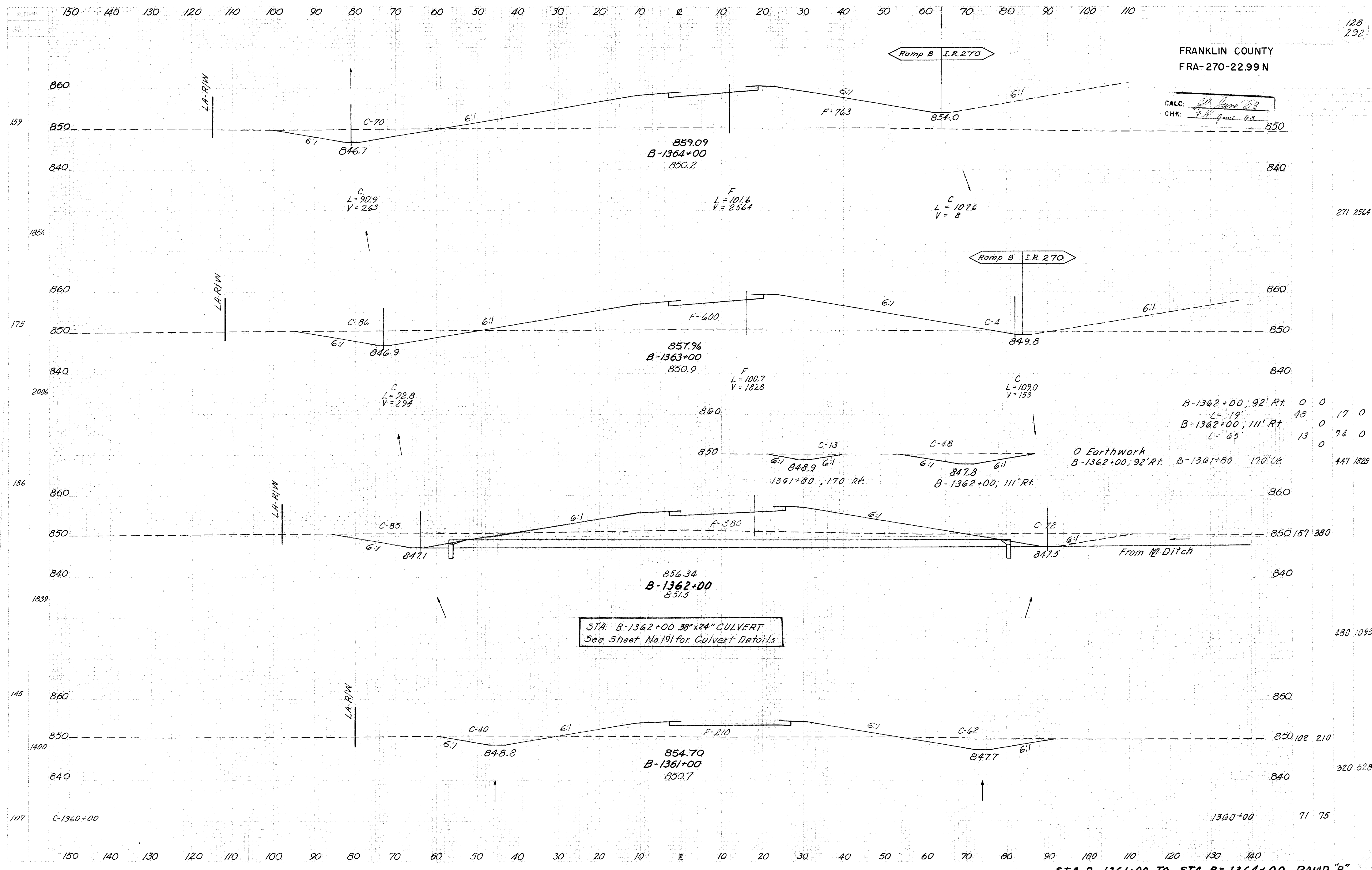


EXCAV. 3209 C.Y.
EMB. 16563 C.Y.
SEEDING 15945 S.Y.

FRANKLIN COUNTY
FRA-270-22.99N

CALC: *JP June 68*
CHK: *7.4 June 68*





FRANKLIN COUNTY
FRA-270-22.99 N

CALC: *[Signature]*
CHK: *[Signature]*

STA. B-1362+00 38"x24" CULVERT
See Sheet No.191 for Culvert Details

B-1362+00; 92' Rt. 0 0
L=19' 48 17 0
B-1362+00; 111' Rt. 0 0
L=65' 13 74 0
0 Earthwork
B-1362+00; 92' Rt. B-1361+80 170' Lt. 447 1828

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

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: *H. Jones '62*
CHK: *F. Jones '68*

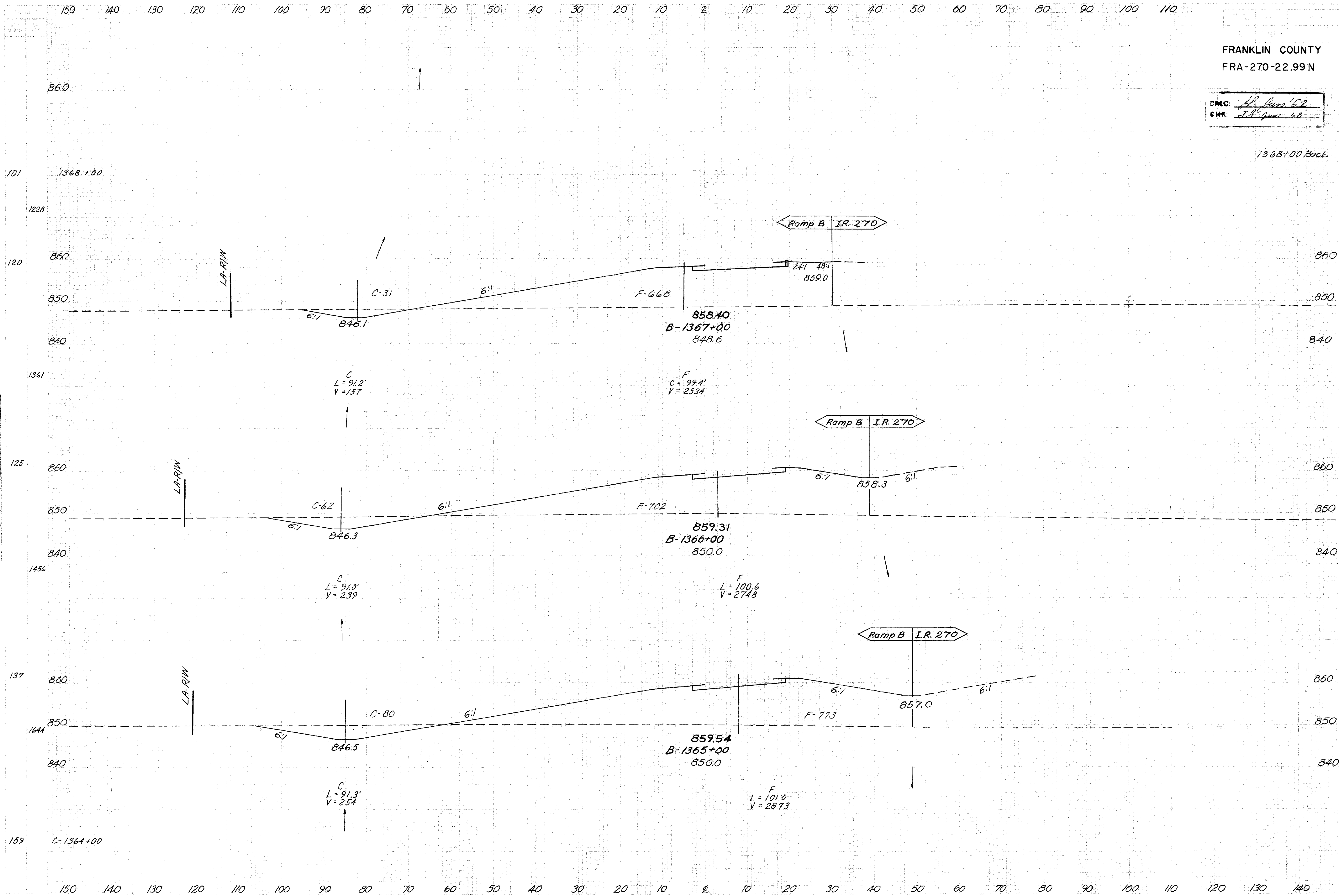
1368+00 Back 32 422

117 2056

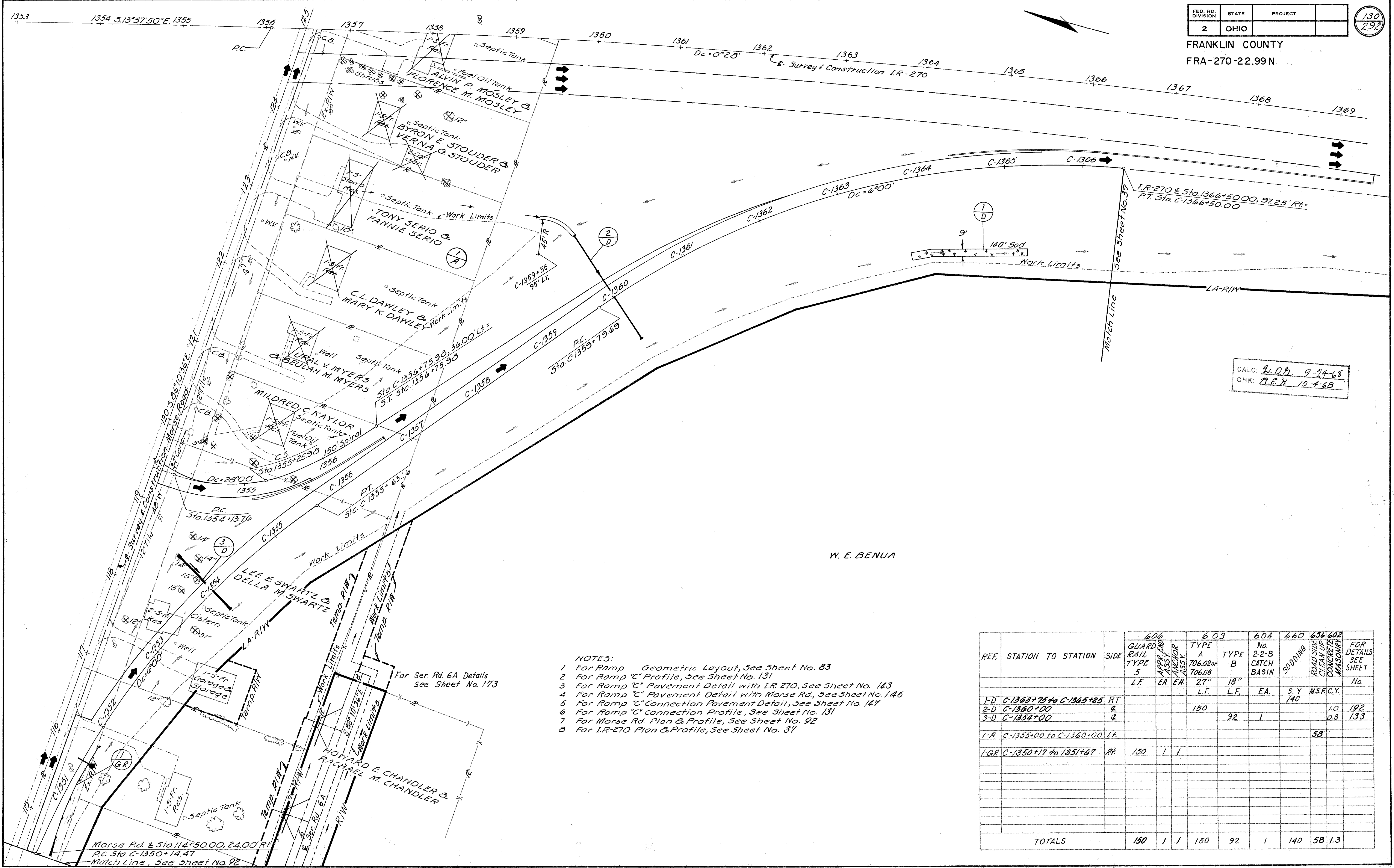
157 2534

239 2748

254 2873



STA. B-1365+00 TO STA. B-1367+00 RAMP "B"



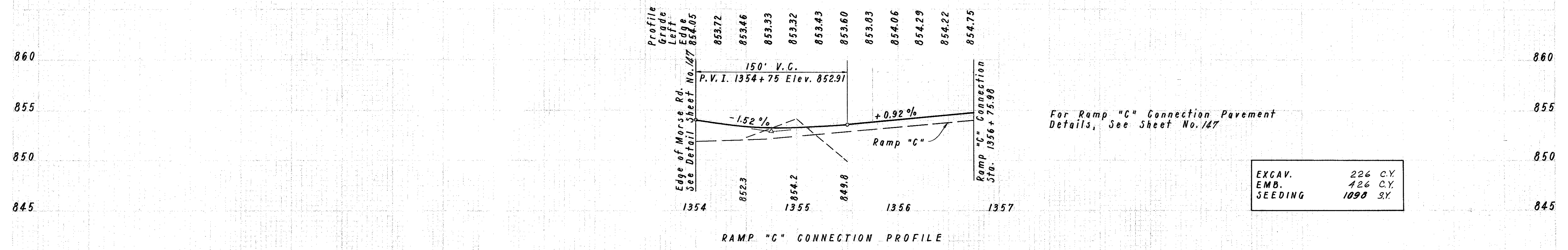
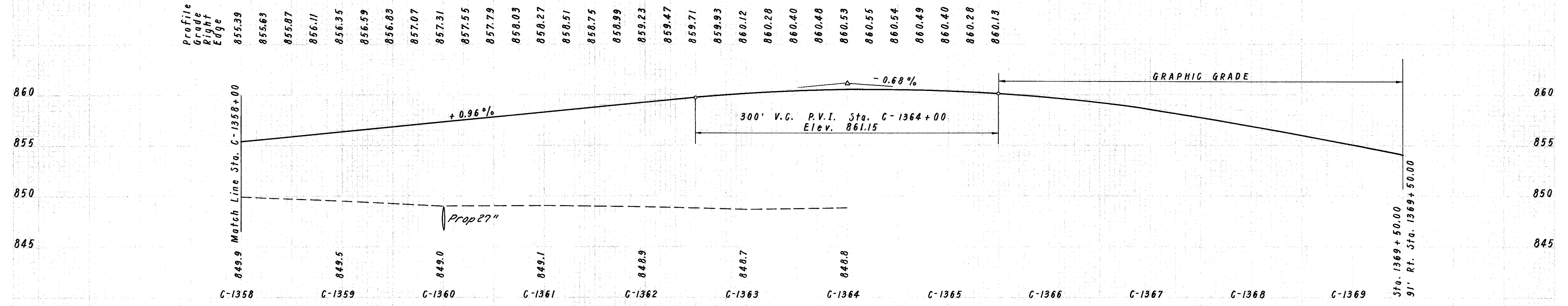
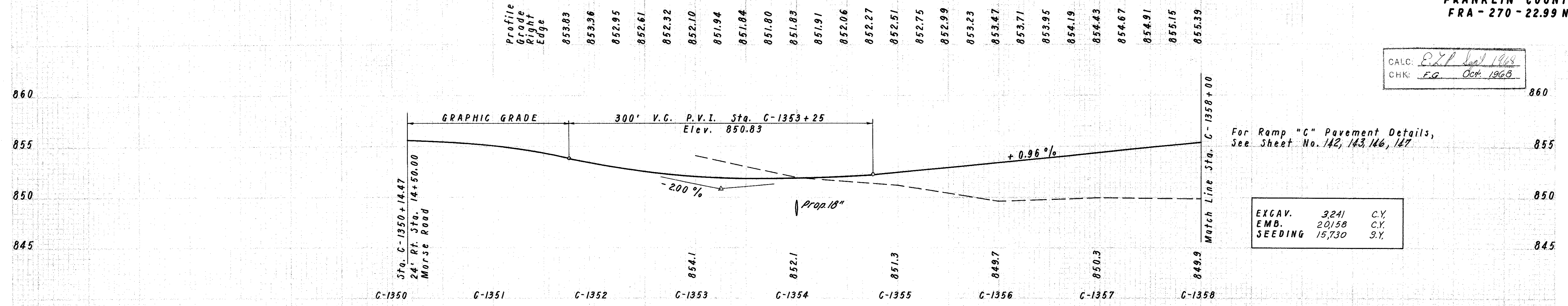
CALC: G.D.H. 9-24-68

CHK: R.E.H. 10-4-68

- NOTES:
- For Ramp "C" Geometric Layout, See Sheet No. 83
 - For Ramp "C" Profile, See Sheet No. 131
 - For Ramp "C" Pavement Detail with I.R-270, See Sheet No. 143
 - For Ramp "C" Pavement Detail with Morse Rd., See Sheet No. 146
 - For Ramp "C" Connection Pavement Detail, See Sheet No. 147
 - For Ramp "C" Connection Profile, See Sheet No. 131
 - For Morse Rd. Plan & Profile, See Sheet No. 92
 - For I.R-270 Plan & Profile, See Sheet No. 37

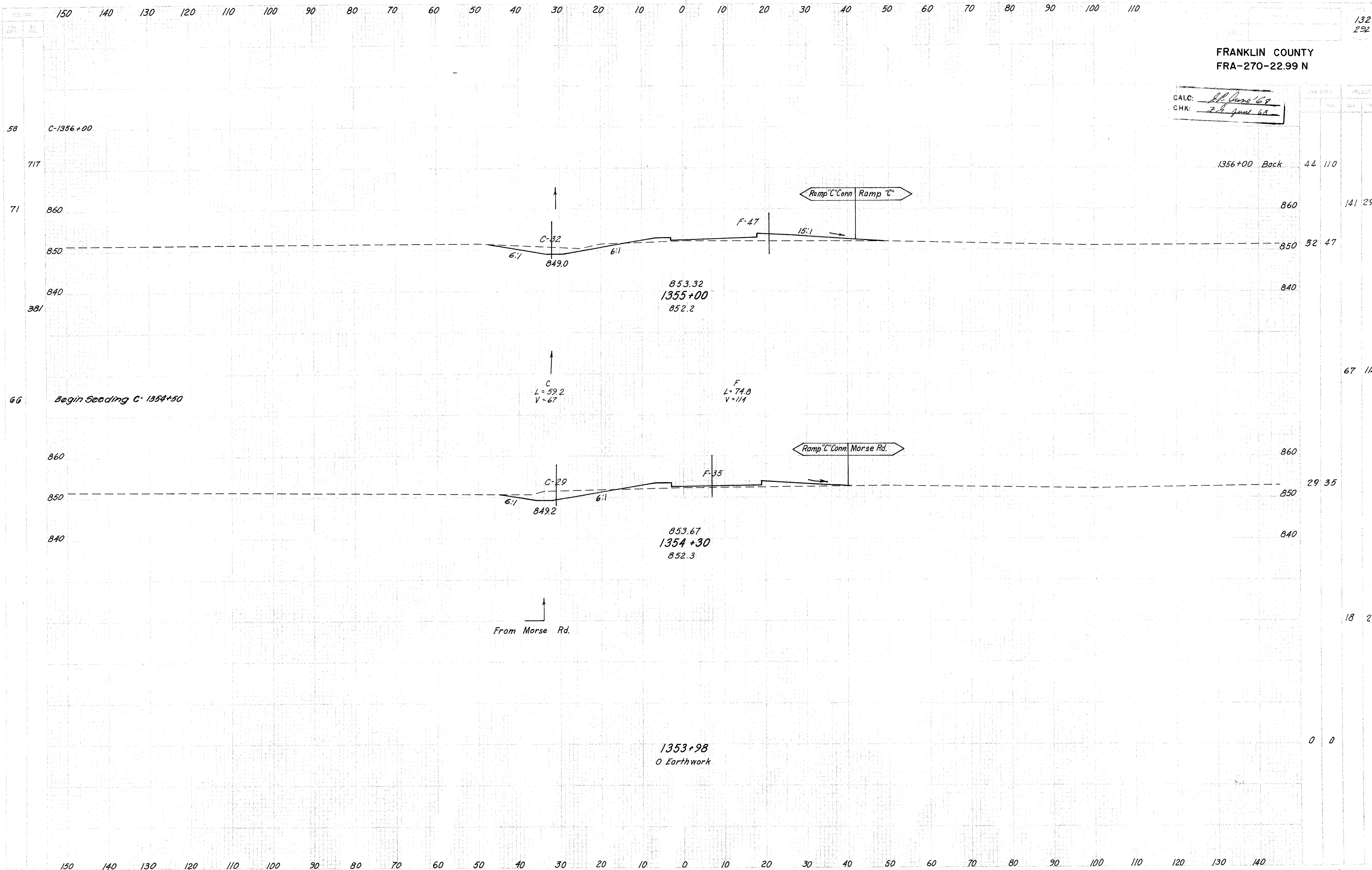
REF.	STATION TO STATION	SIDE	606		603		604	660	656	602	FOR DETAILS SEE SHEET
			GUARD RAIL TYPE 5	APP. END LASSY EA	ANCHOR ASSY EA	TYPE A 706.02 706.08	TYPE B 18"	2-2-B CATCH BASIN	SODDING	ROAD SIDE CLEAN UP CONCRETE MASONRY	
1-D	C-1363+75 to C-1365+25	RT	L.F.			27"	18"	EA.	S.Y.	M.S.F.C.Y.	No.
2-D	C-1360+00					150	92	1			1.0 192
3-D	C-1354+00										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

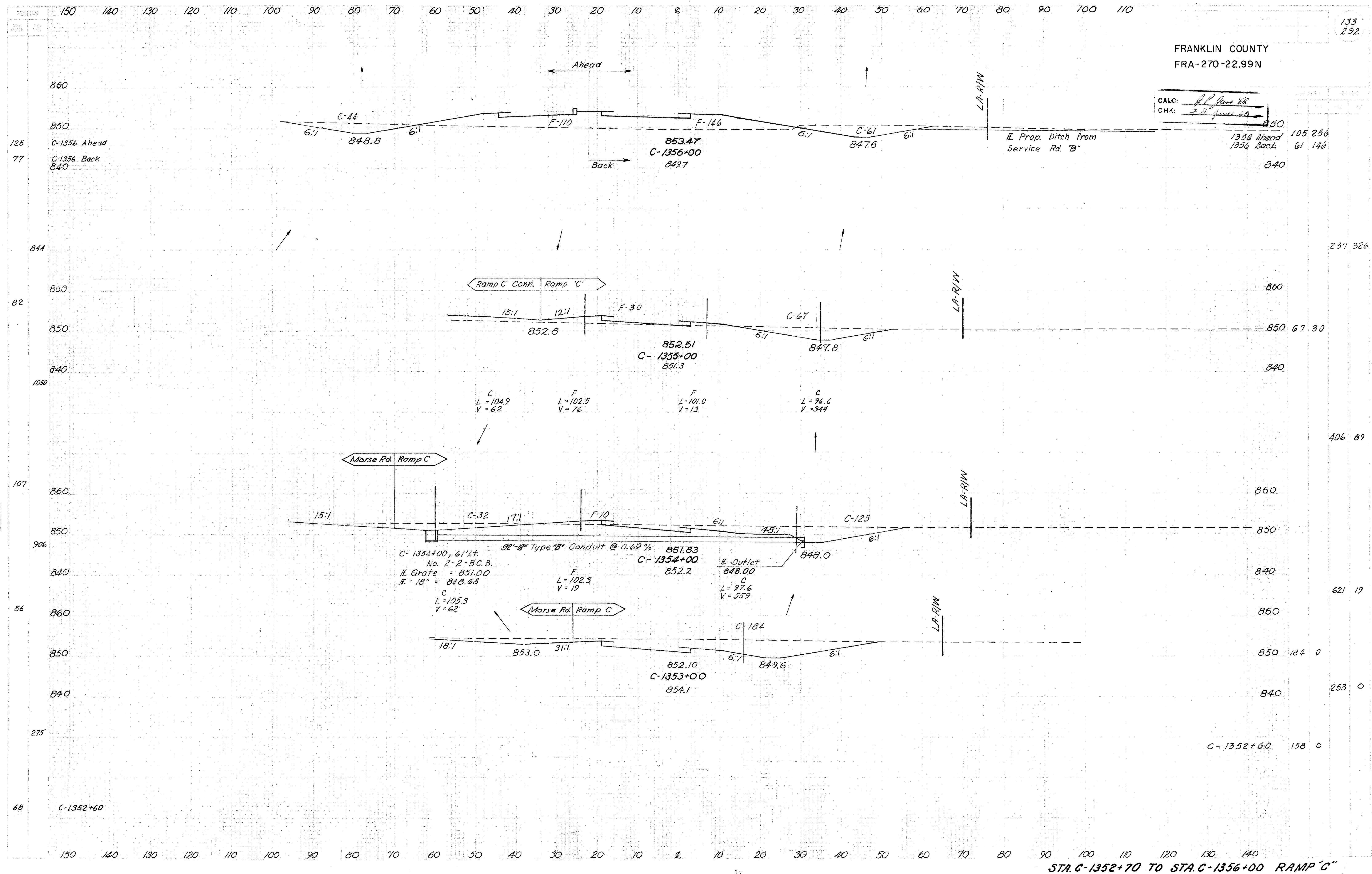
CALC: E.L.P. Sept 1968
CHK: E.G. Oct. 1968

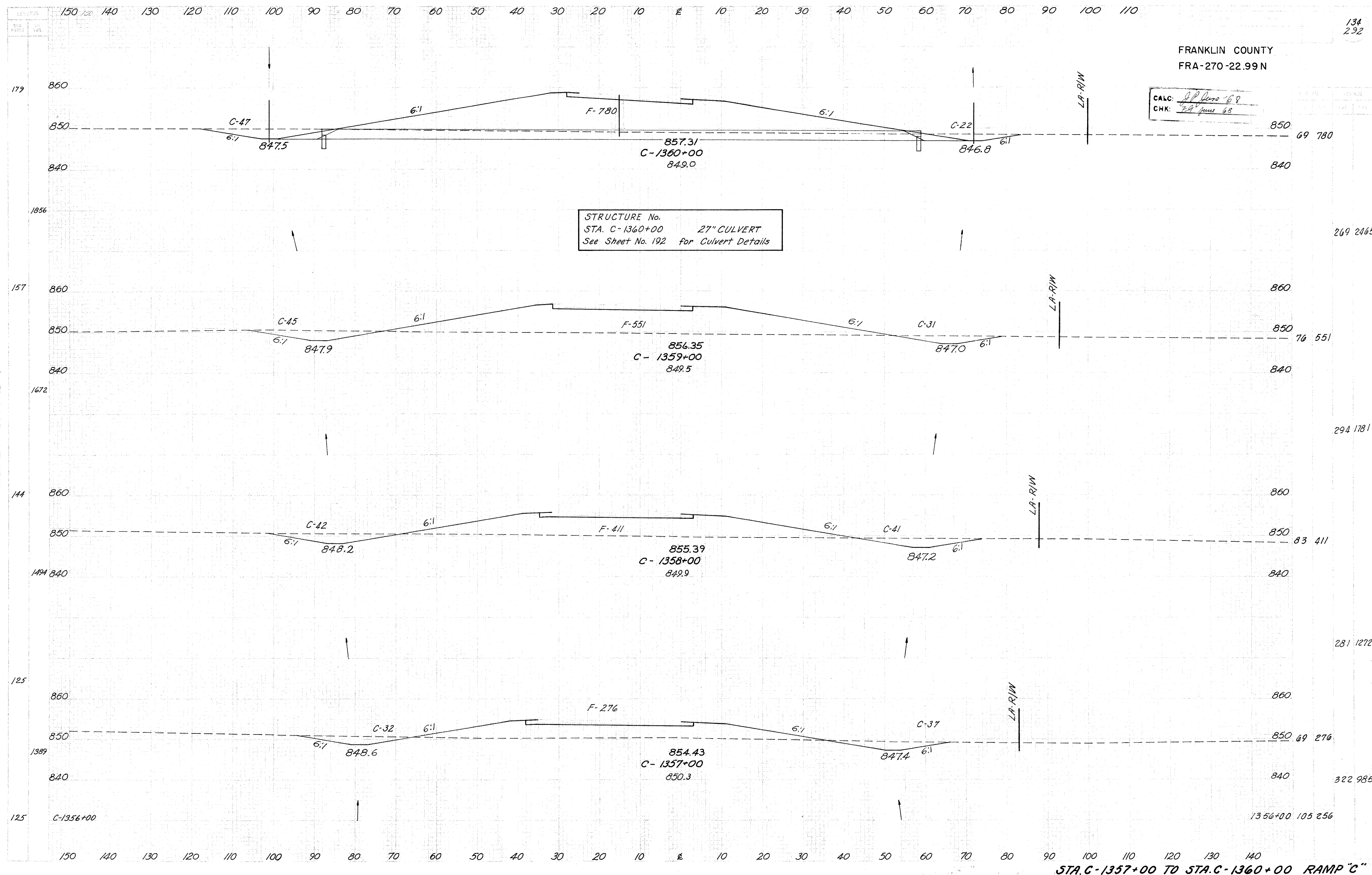


FRANKLIN COUNTY
FRA-270-22.99 N

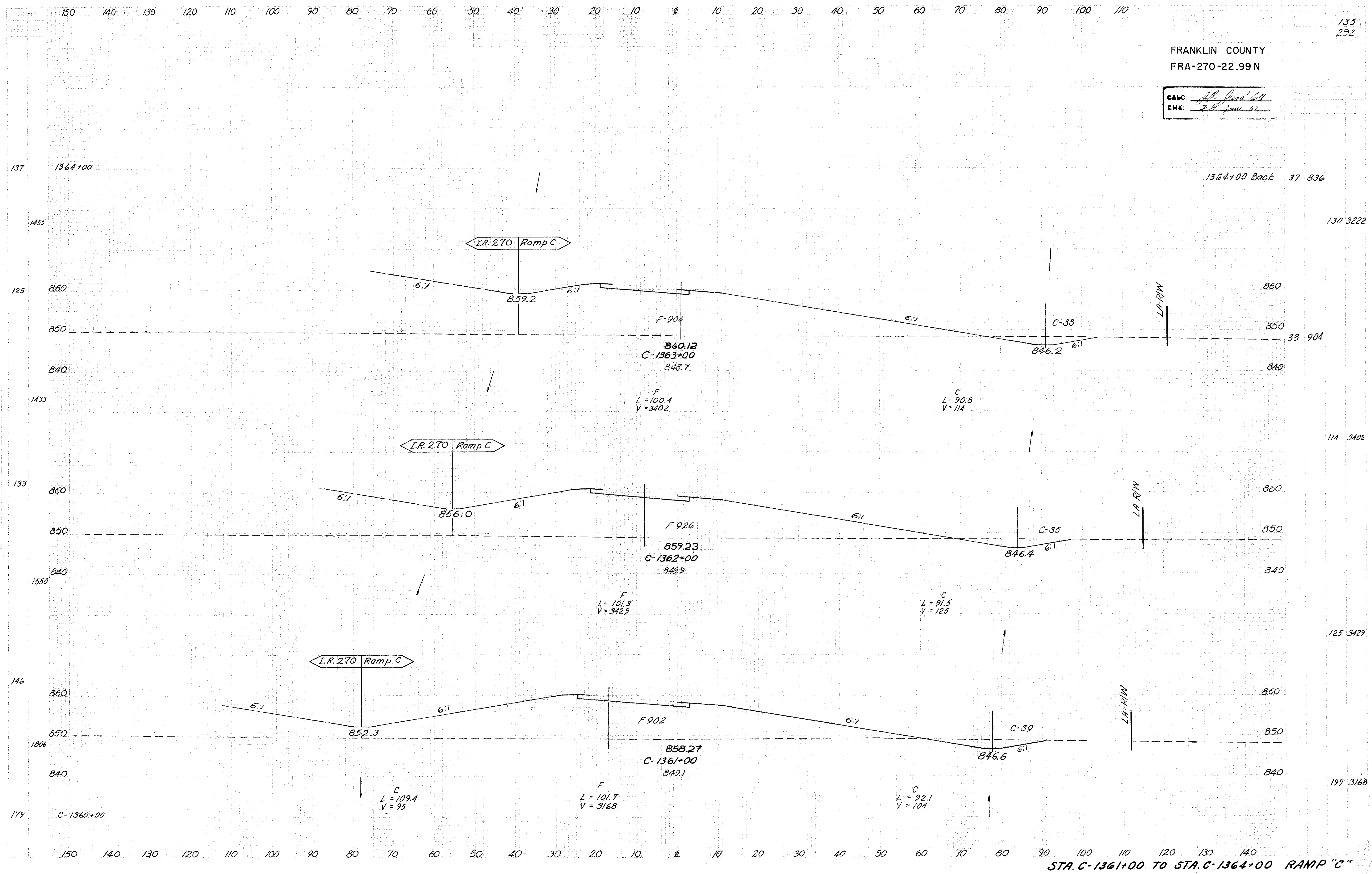
CALC: AP June '68
CHK: 24 June '68



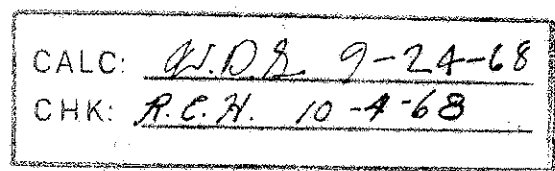




CALC: 2.2 June '68
CHK: 7.9 June 68



FRANKLIN COUNTY
FRA-270-22.99N

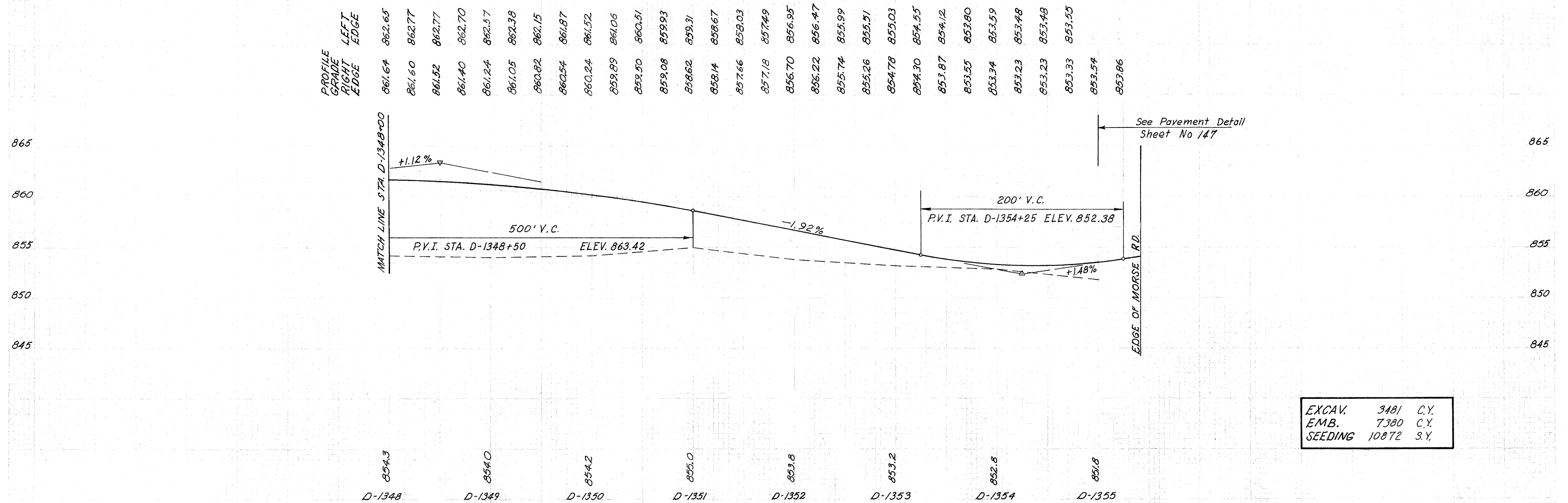
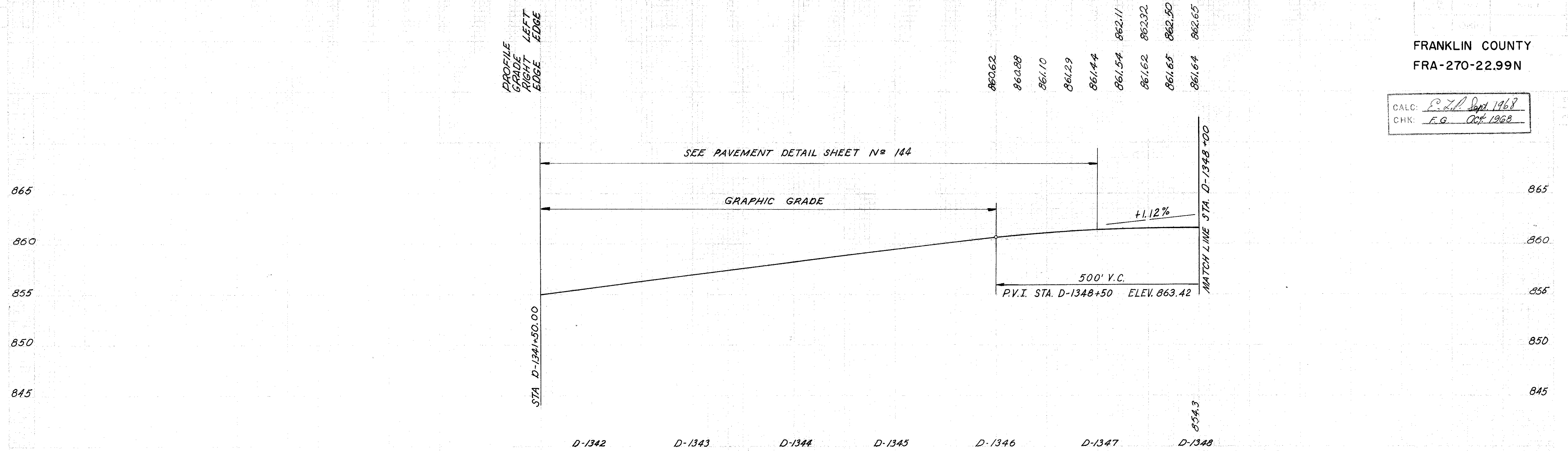


NOTES:

- 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

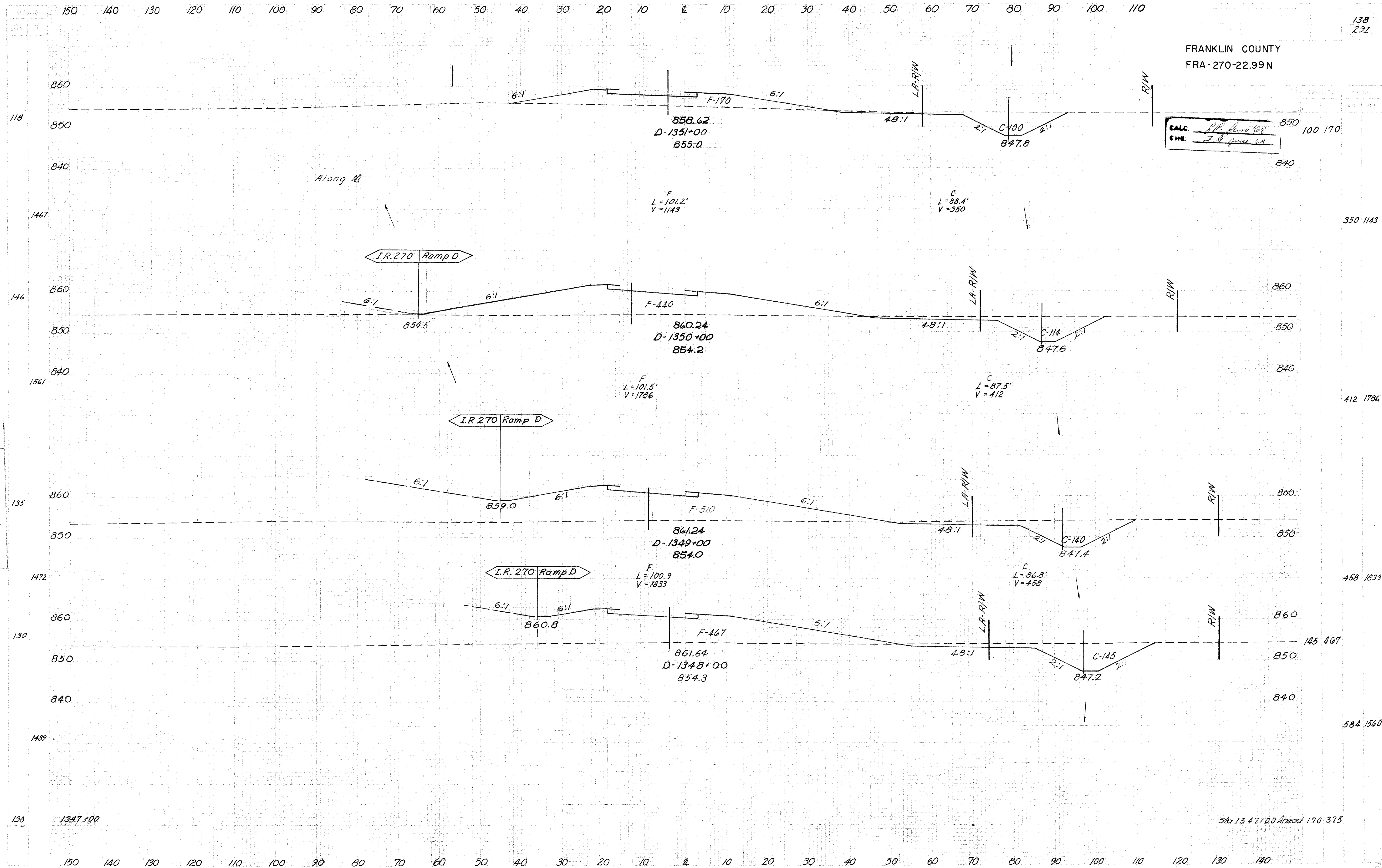
CALC: E. Z. P. Sept. 1968
CHK: F. G. Oct. 1968



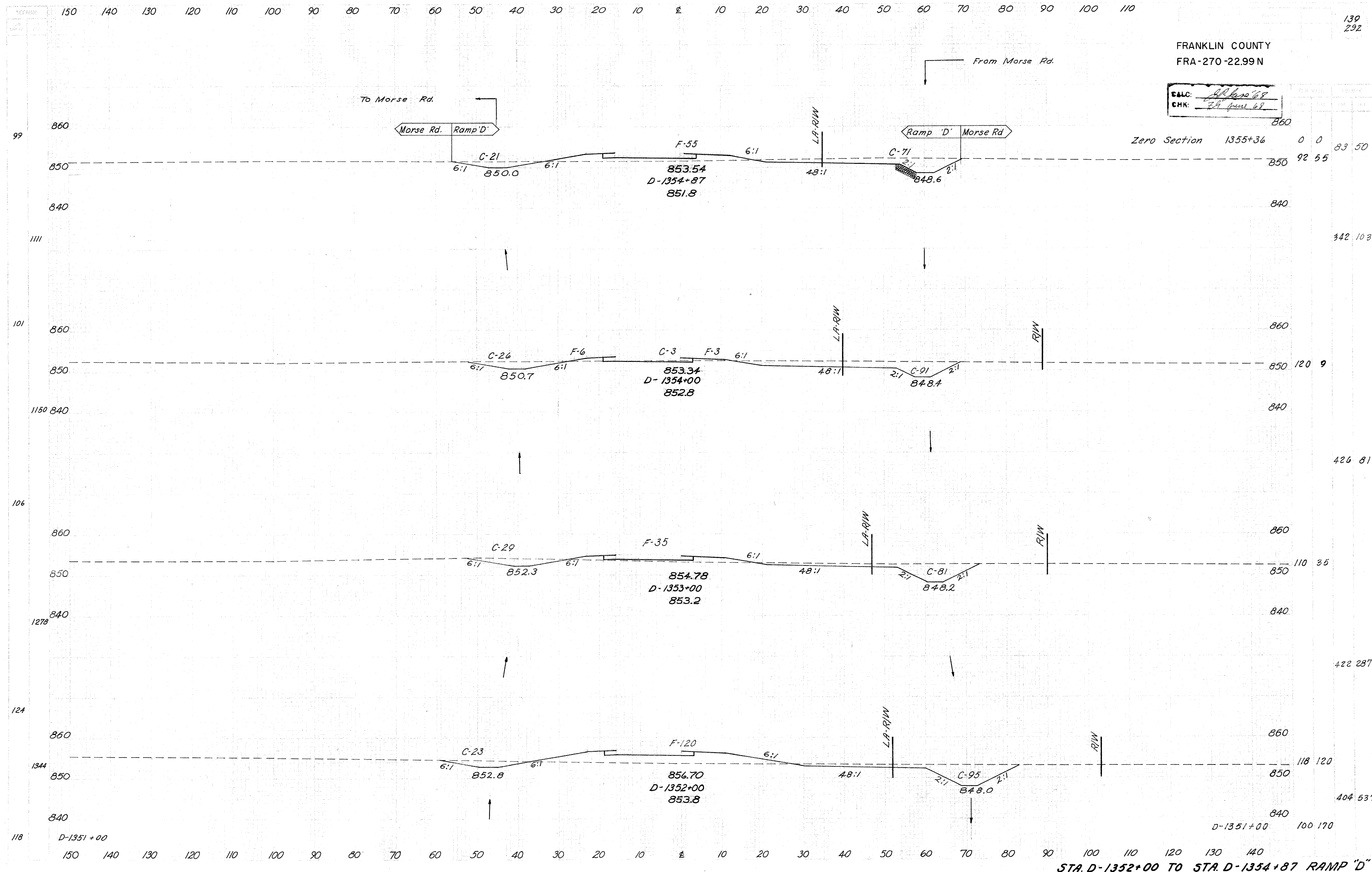
EXCAV.	3481	C.Y.
EMB.	7380	C.Y.
SEEDING	10872	S.Y.

FRANKLIN COUNTY
FRA-270-22.99N

CALC: *JP June 68*
CHK: *F. H. Jones 68*



Checked
By
Printed
Date
Scale
Notes



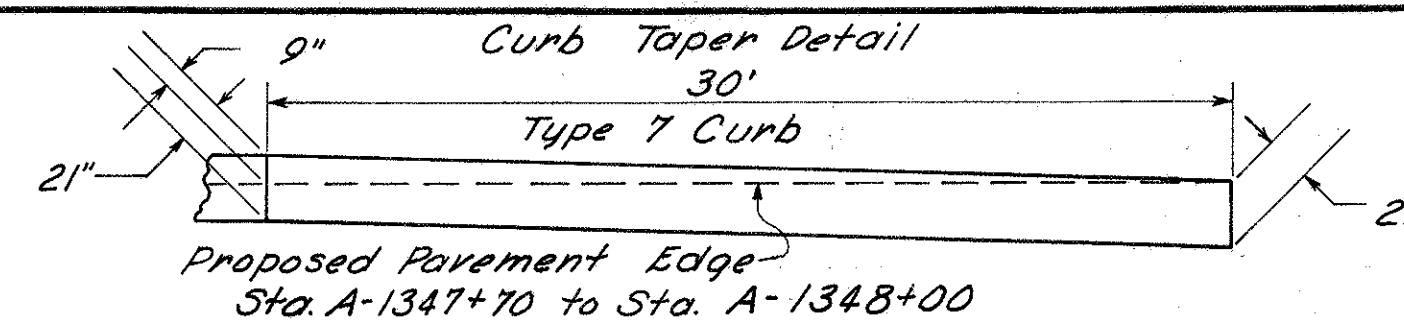
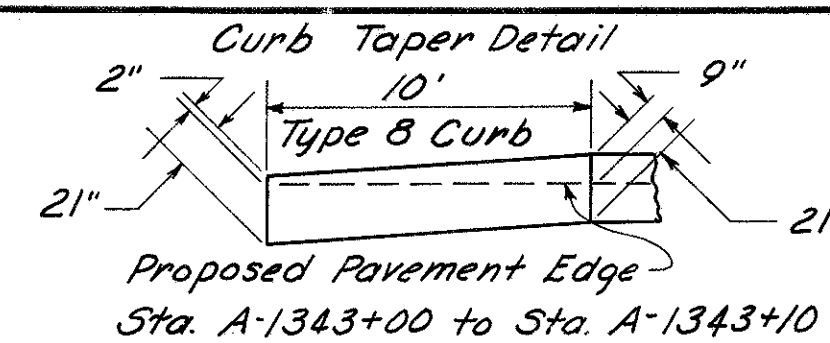
FRANKLIN COUNTY
FRA-270-22.99 N

CALC: J. H. Jones 68
CHK: J. H. Jones 68

Zero Section 1355+36 0 0 83 50 92 55 342 103

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

- NOTES
- * 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. 149

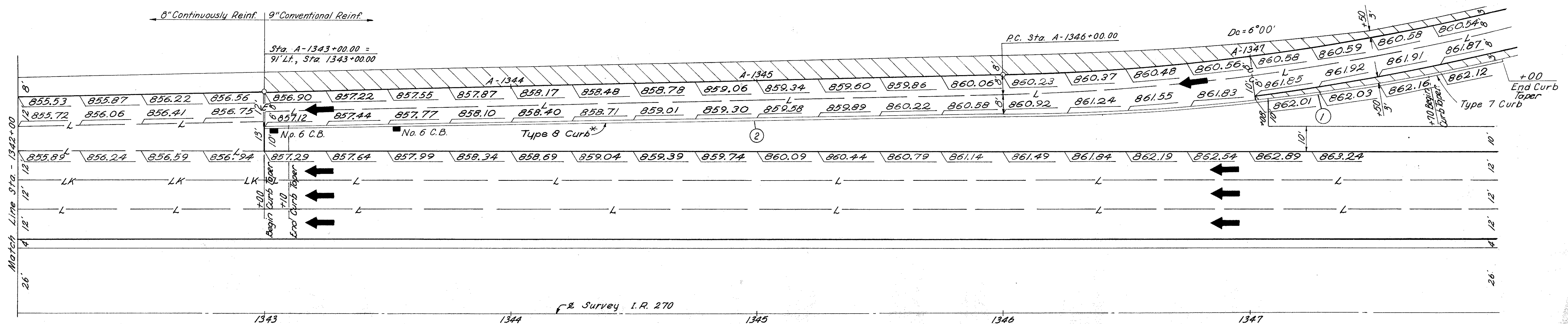
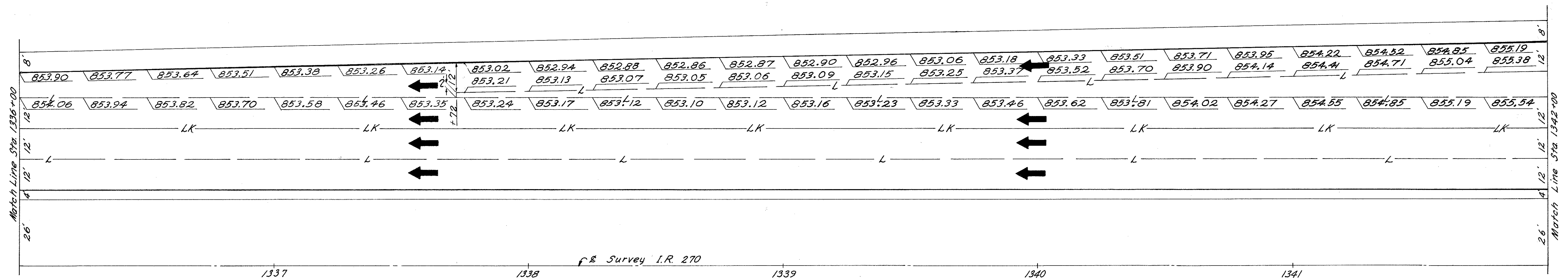
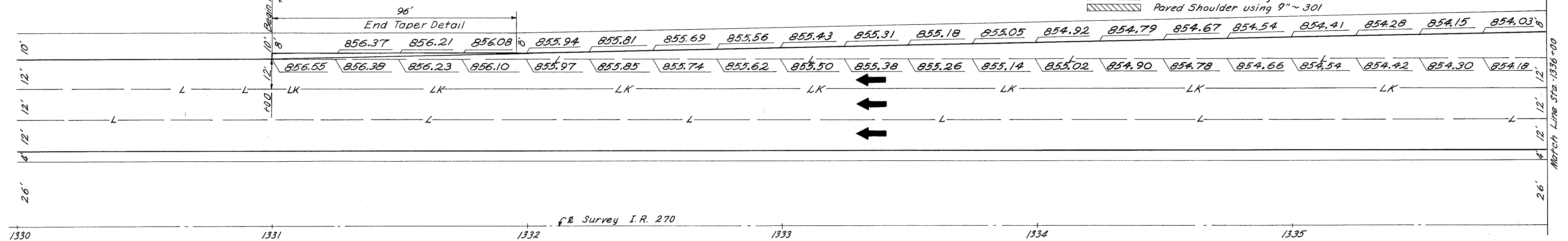


- LEGEND
- L — Standard Longitudinal Joint.
 - LK — Standard Longitudinal Key Joint — Without Tie Bars or Hook Bolts.
 - C — Standard Contraction Joint.
 - E — Standard Expansion Joint.
 - ▨ Paved Shoulder using 8" to 6" ~ 301
 - ▨ Paved Shoulder using 9" ~ 301

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

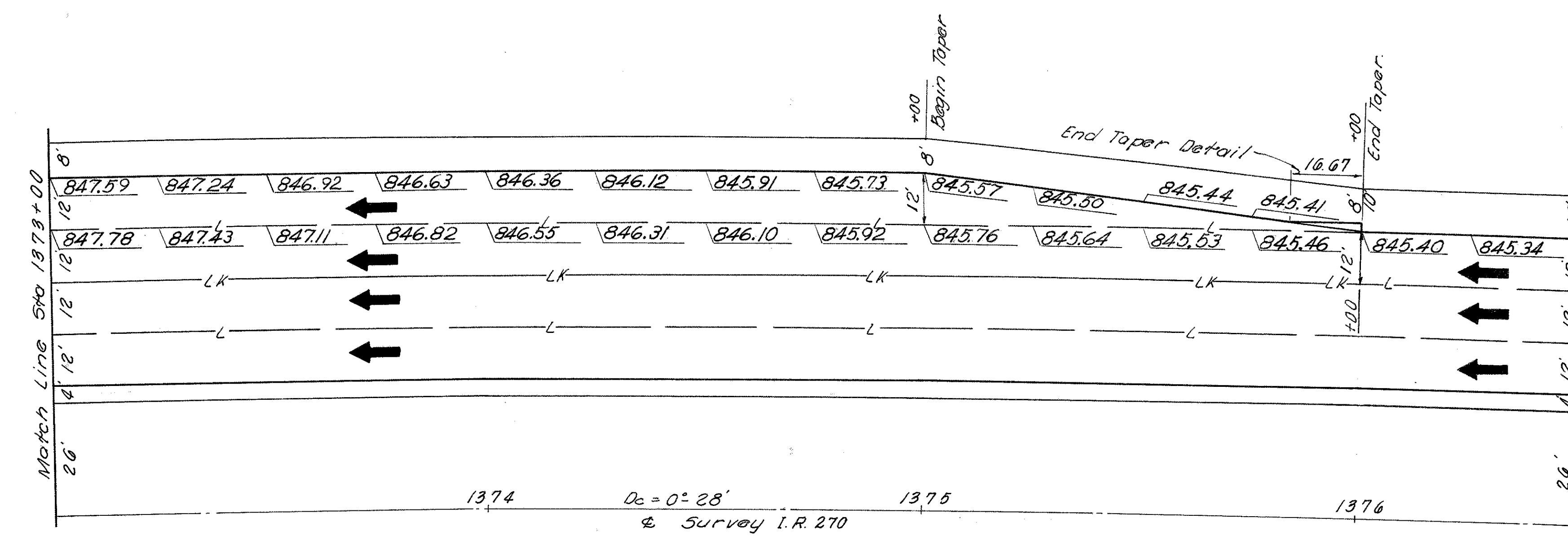
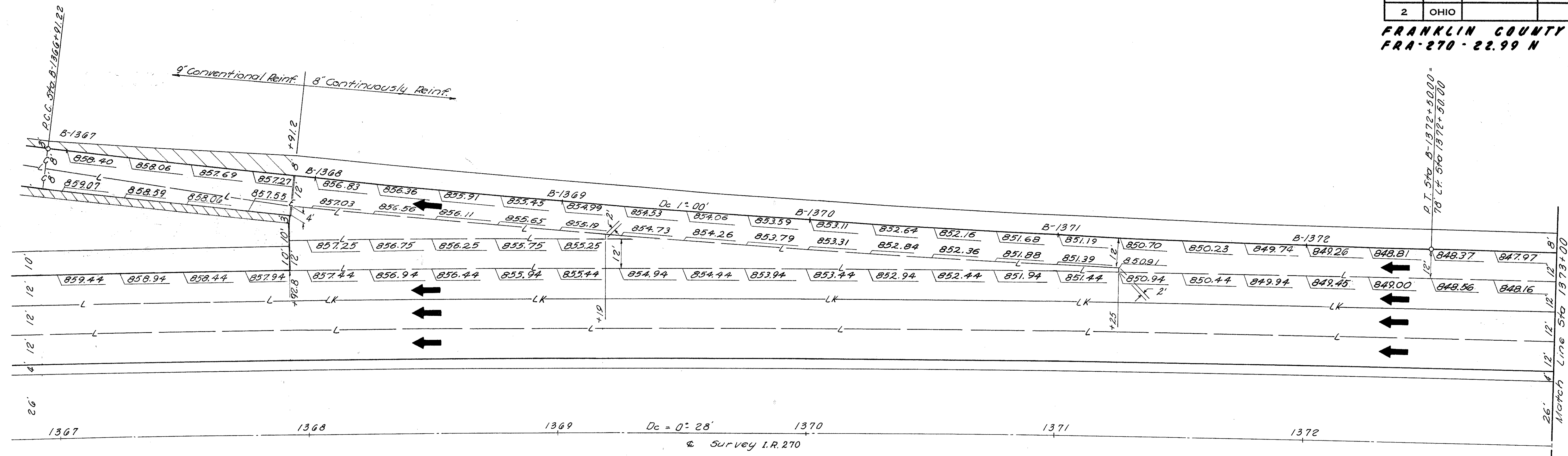
FRANKLIN COUNTY
FRA - 270 - 22.99 N

140
292

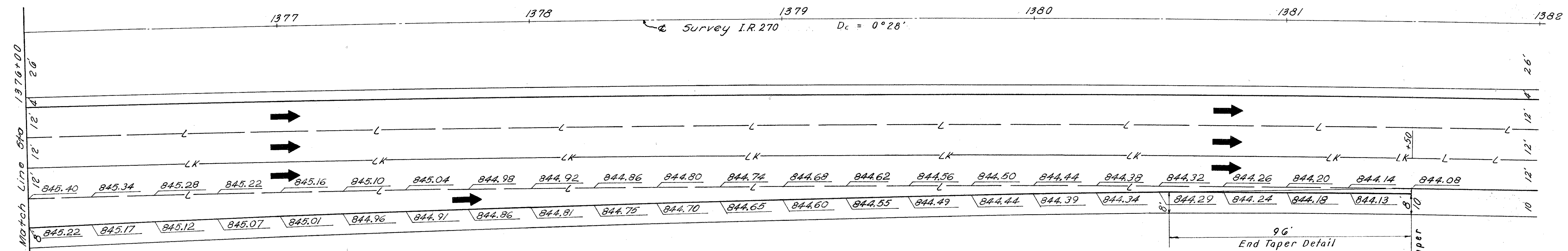
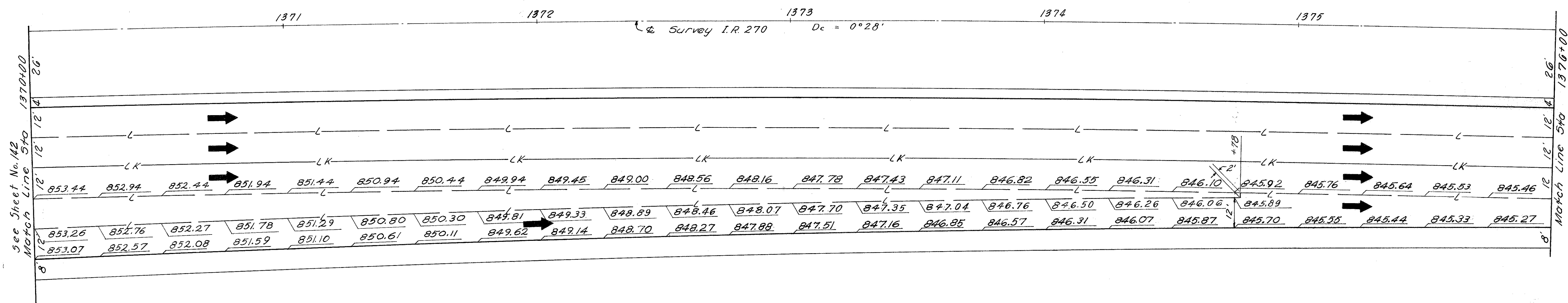


PAVEMENT DETAILS RAMP "A" I.R. 270

FRANKLIN COUNTY
FRA-270-22.99 N



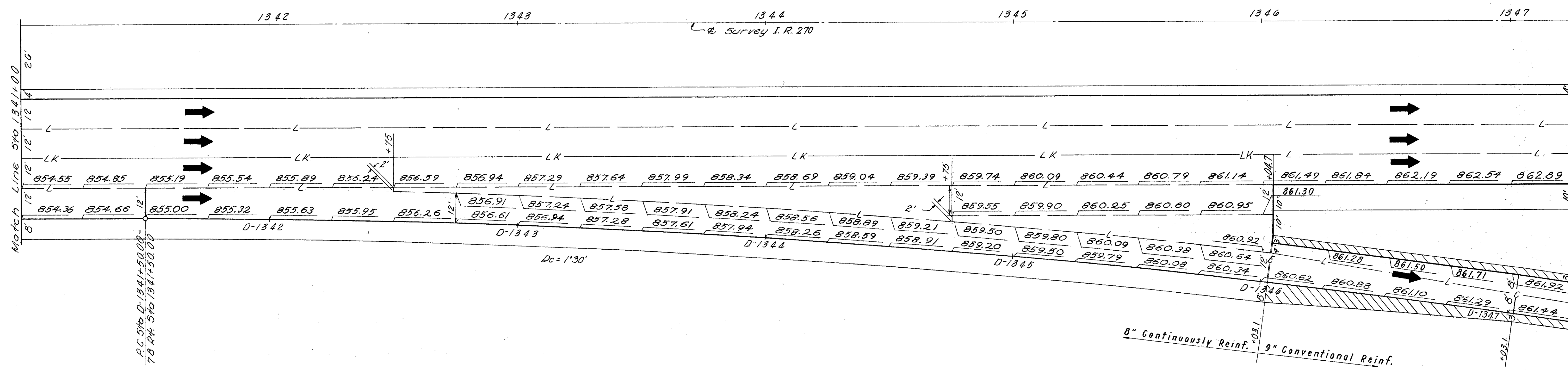
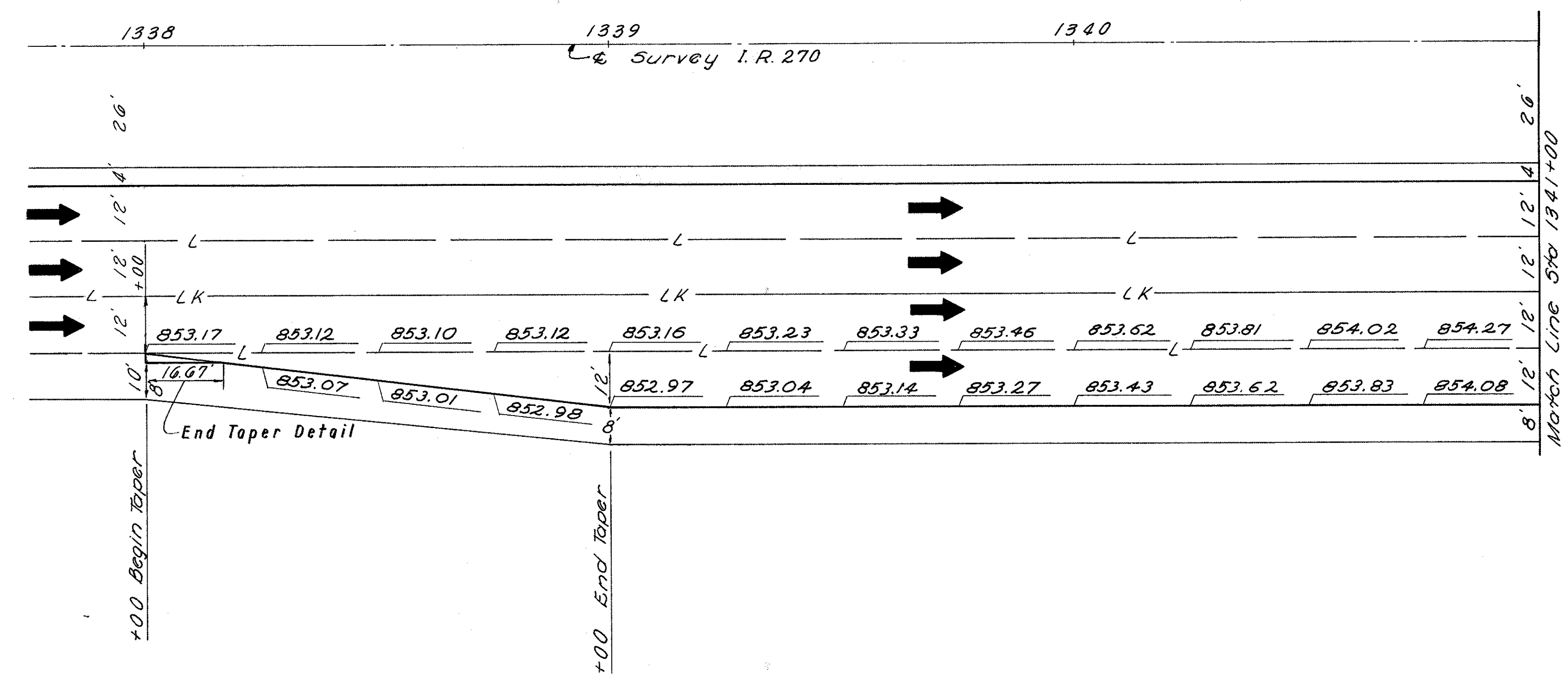
- LEGEND
- L — Standard Longitudinal Joint.
 - LK — Standard Longitudinal Key Joint Without Tie Bars or Hook Bolts
 - C — Standard Contraction Joint.
 - E — Standard Expansion Joint.
 - Paved Shoulder using 8" to 6" ~ 301
 - Paved Shoulder using 9" ~ 301



- 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

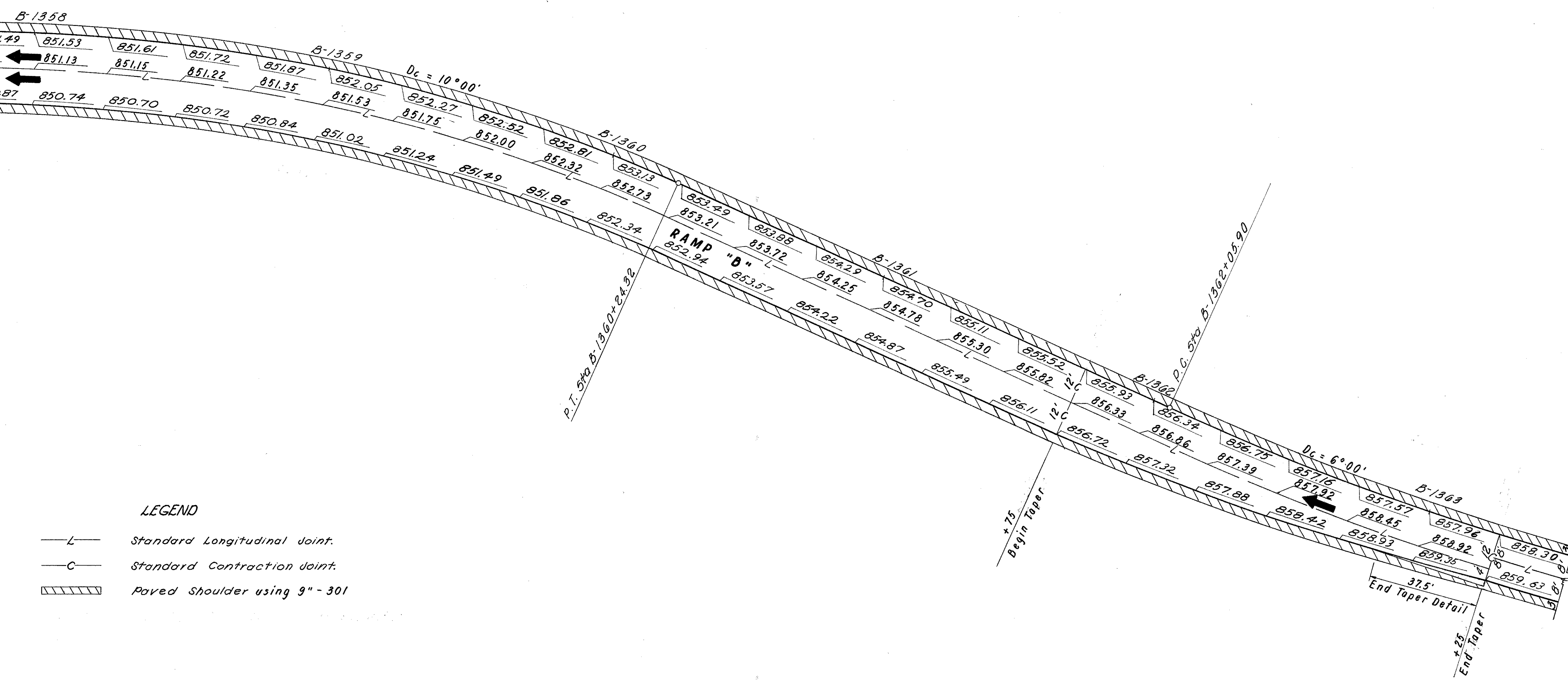
LEGEND

- 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



See Sheet No. 124
MORSE LINE STA. B-1357+50

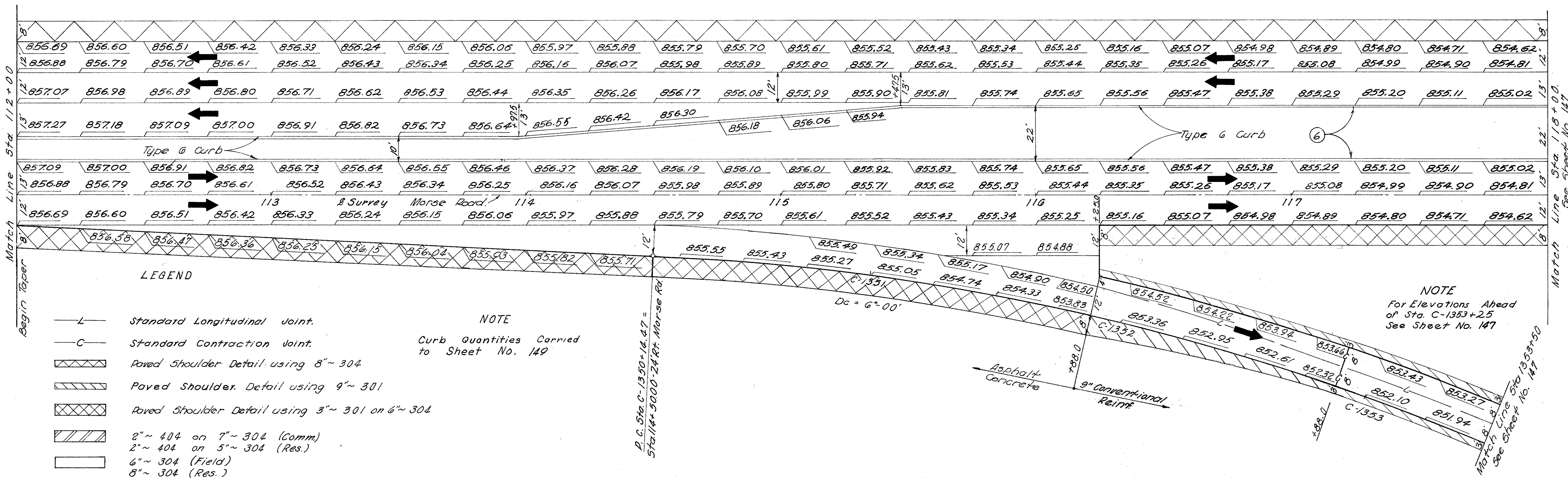
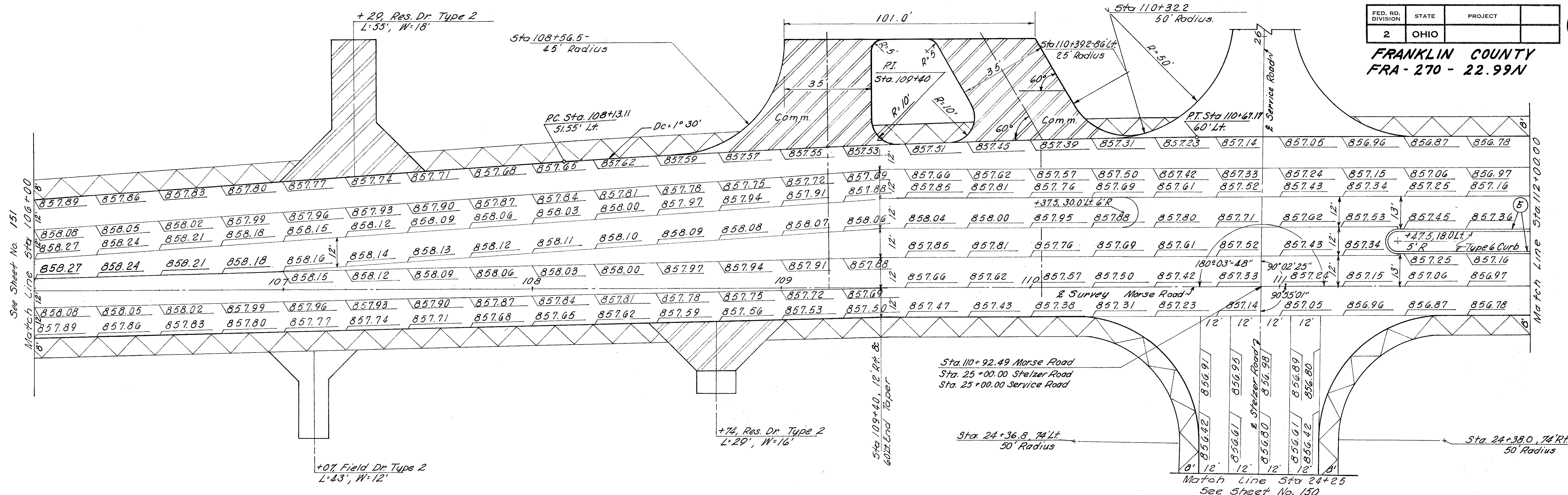
P.C. 670 B-1357+78.44



LEGEND

- L— Standard Longitudinal Joint.
- C— Standard Contraction Joint.
- ▨ Paved Shoulder using 9"-301

FRANKLIN COUNTY
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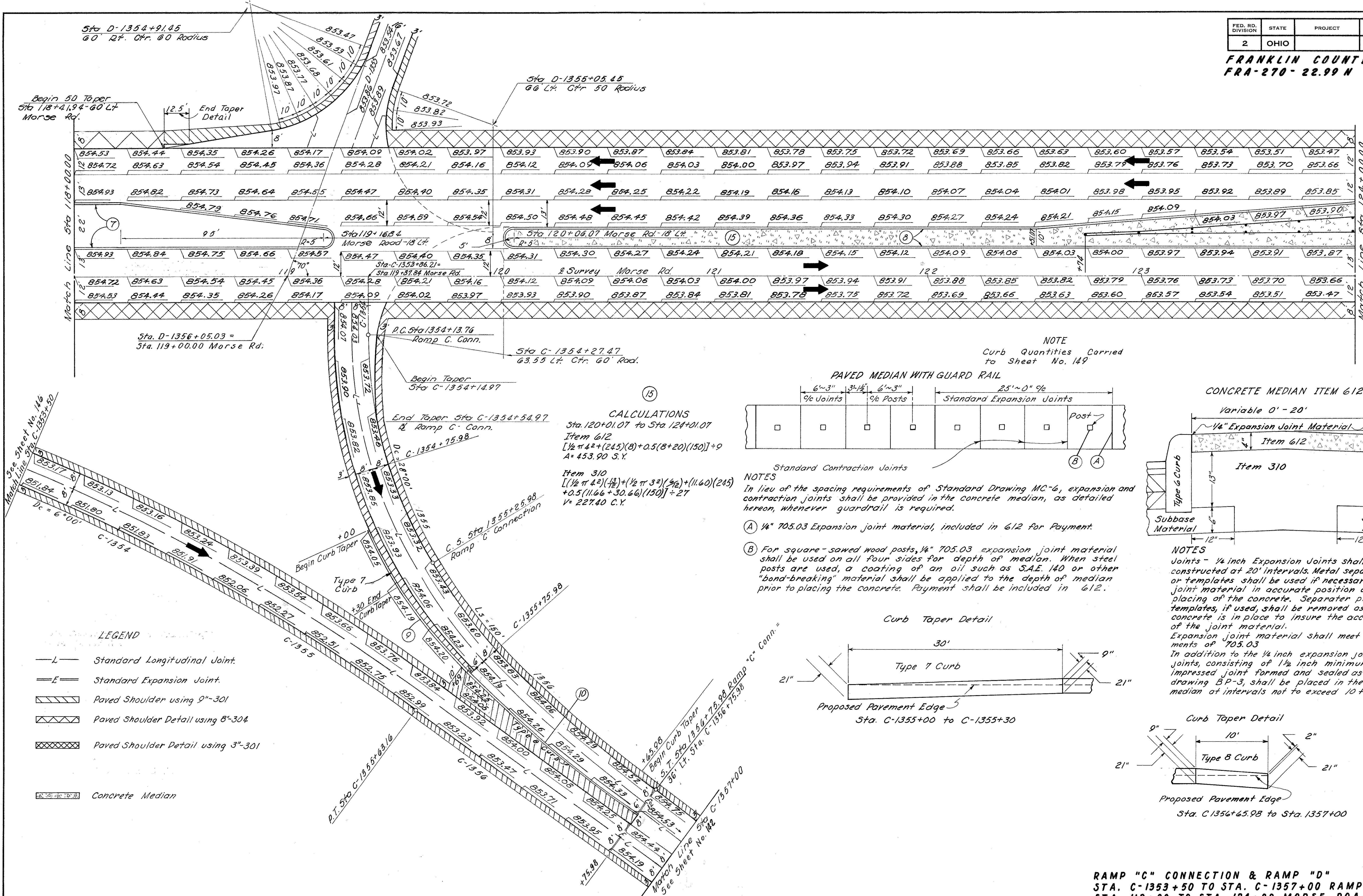
LEGEND

- L — Standard Longitudinal Joint.
- C — Standard Contraction Joint.
-
-
-
-
-
-
-

NOTE

Curb Quantities Carried to Sheet No. 149

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



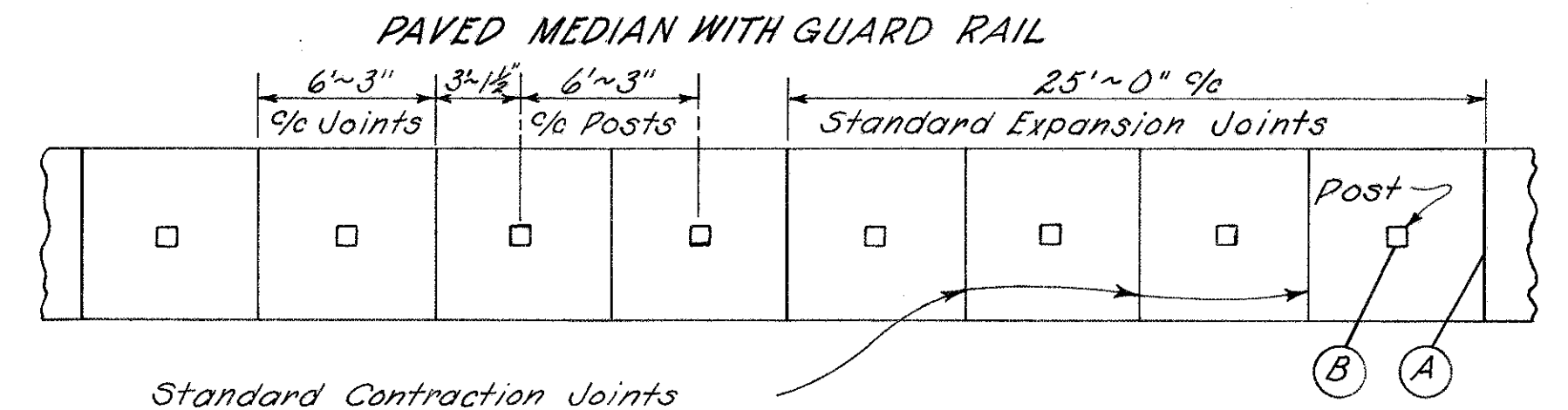
Sta. D-1356+05.03 =
Sta. 119+00.00 Morse Rd.

P.C. Sta. 1354+13.76
Romp C. Conn.
Sta. C-1354+27.47
63.55 L.T. Ctr. 60' Rad.

Begin Taper
Sta. C-1354+14.97
End Taper Sta. C-1354+54.97
Romp C. Conn.

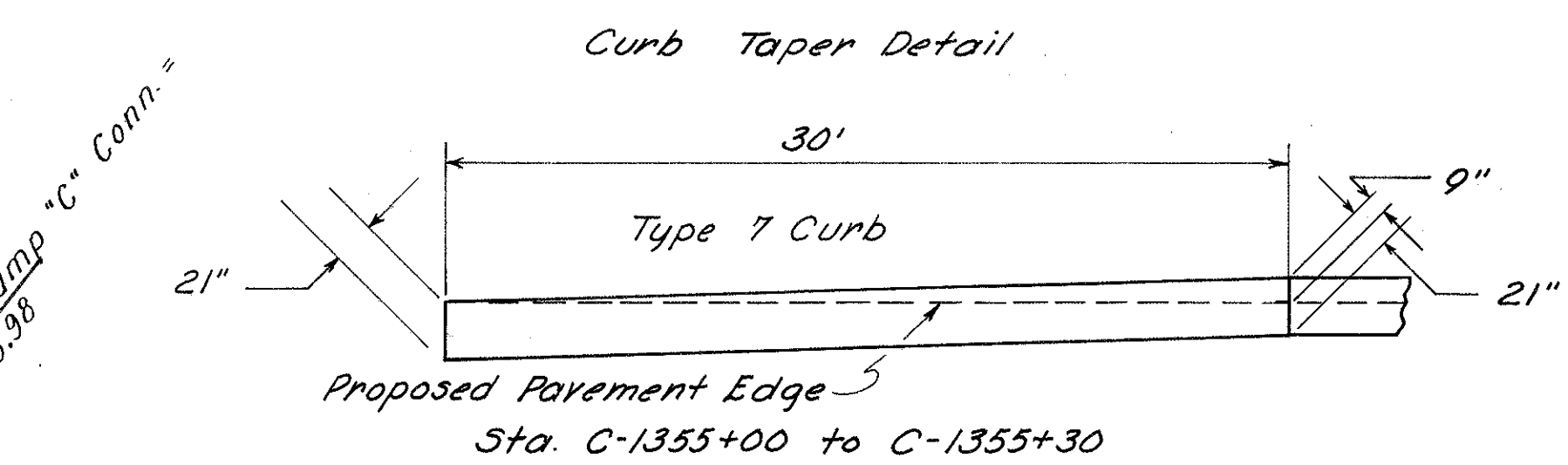
CALCULATIONS
Sta. 120+01.07 to Sta. 124+01.07
Item 612
 $[\frac{1}{2} \pi 4^2 + (245)(8) + 0.5(8+20)(150)] \div 9$
A = 453.90 S.Y.
Item 310
 $[(\frac{1}{2} \pi 4^2)(\frac{1}{4}) + (\frac{1}{2} \pi 3^2)(\frac{1}{4}) + (11.60)(245) + 0.5(11.66 + 30.66)(150)] \div 27$
V = 227.40 C.Y.

NOTE
Curb Quantities Carried to Sheet No. 149

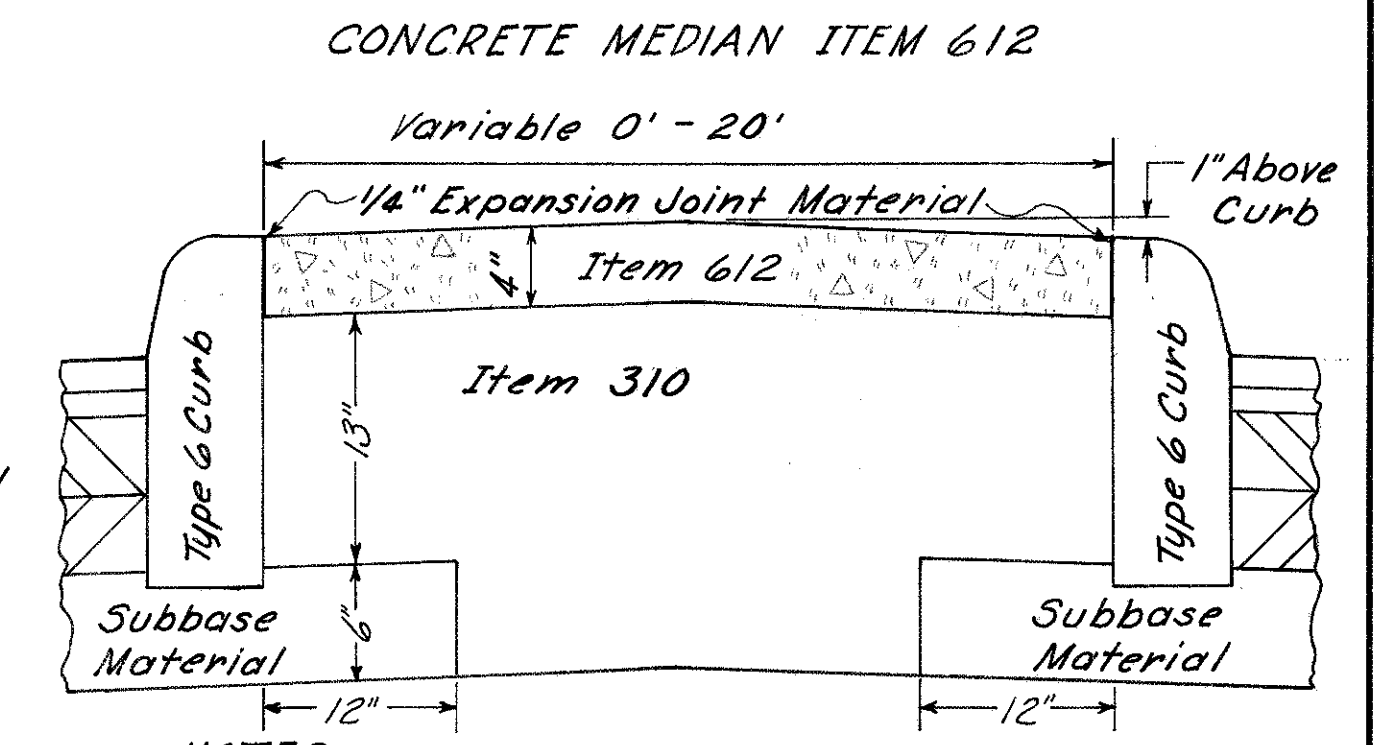


NOTES
In lieu of the spacing requirements of Standard Drawing MC-6, expansion and contraction joints shall be provided in the concrete median, as detailed hereon, whenever guardrail is required.

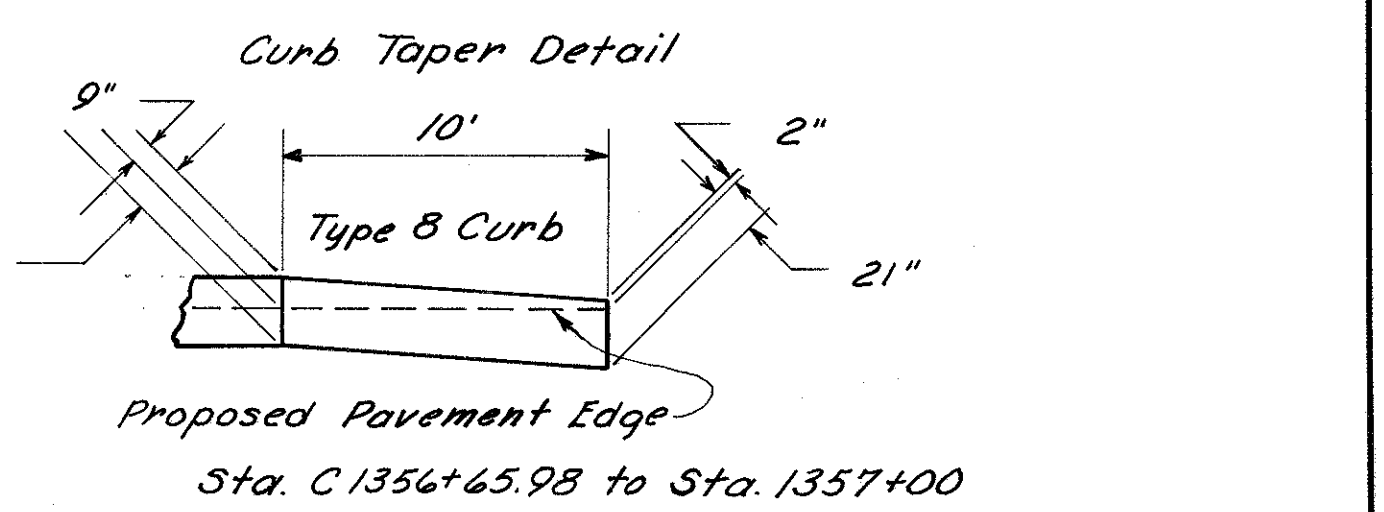
- (A) 1/4" 705.03 Expansion joint material, included in 612 for Payment.
- (B) For square-sawed wood posts, 1/4" 705.03 expansion joint material shall be used on all four sides for depth of median. When steel posts are used, a coating of an oil such as S.A.E. 140 or other "bond-breaking" material shall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



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



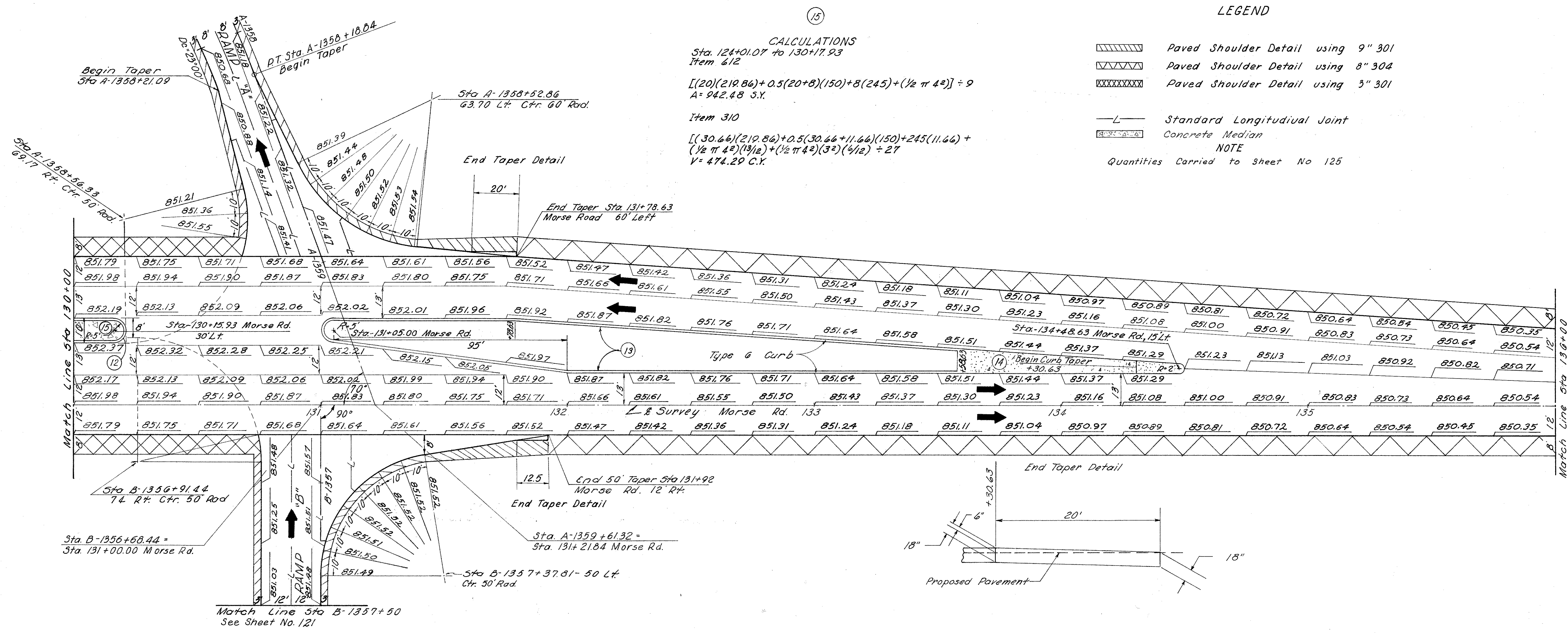
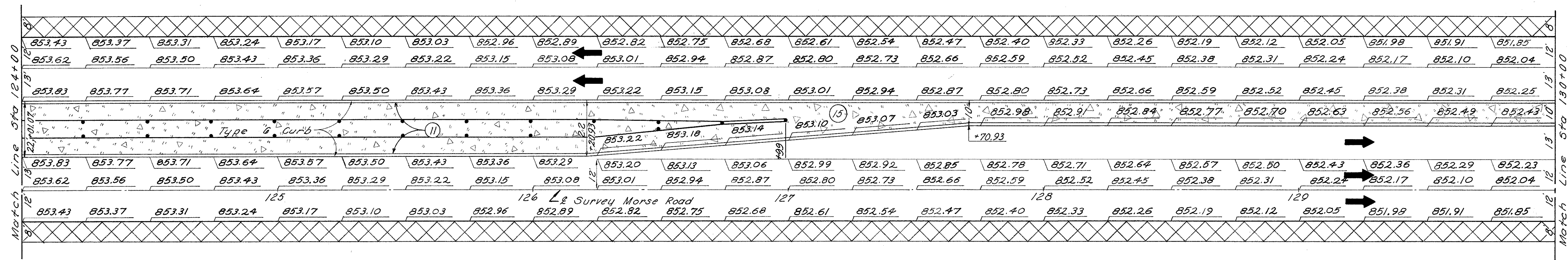
NOTES
Joints - 1/4 inch Expansion Joints shall be constructed at 20' intervals. Metal separator plates or templates shall be used if necessary to hold the joint material in accurate position during the placing of the concrete. Separator plates or templates, if used, shall be removed as soon as the concrete 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 1/4 inch expansion joints, contraction joints, consisting of 1/2 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.



Sta. C-1356+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



CALCULATIONS
 Sta. 124+01.07 to 130+17.93
 Item 612

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

$$A = 942.48 \text{ S.Y.}$$

 Item 310

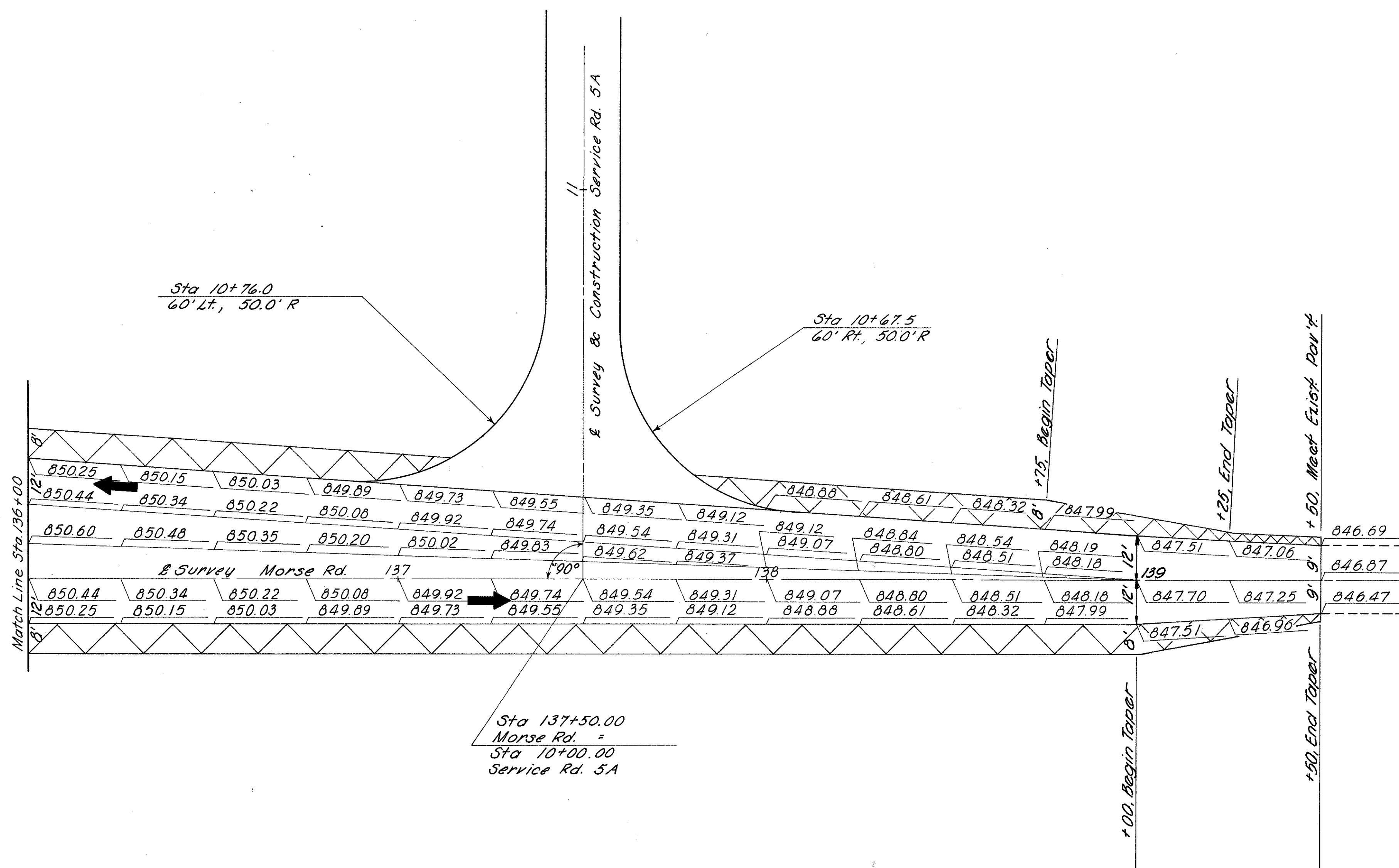
$$[(30.66)(219.86) + 0.5(30.66+11.66)(150) + 245(11.66) + (\frac{1}{2}\pi 4^2)(\frac{13}{12}) + (\frac{1}{2}\pi 4^2)(\frac{3}{2})(\frac{1}{12})] \div 27$$

$$V = 474.29 \text{ C.Y.}$$

LEGEND

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

NOTE
 Quantities Carried to Sheet No 125

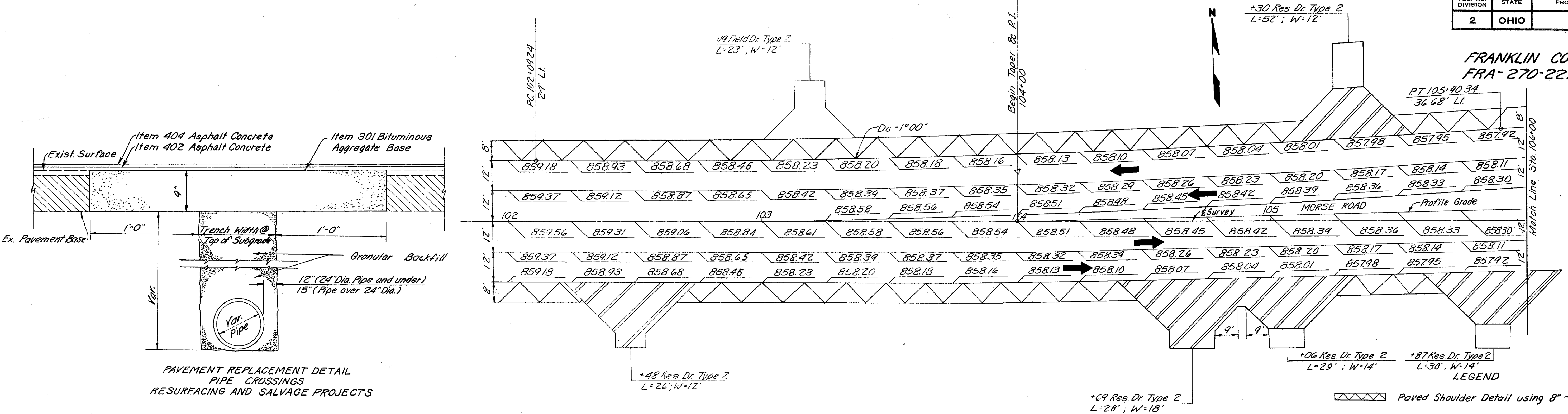


Ref. No.	Sheet No.	609			612	310
		TYPE 6	TYPE 7	TYPE 8	Conc. Median	SUB-BASE
		L.F.	L.F.	L.F.	S.Y.	C.Y.
1	116		96	105		
2	116					
3	118		89			
4	118			111		
5	122	111				
6	122	1200				
7	123	249				
8	123	804				
9	123		73			
10	123			105		
11	124	1200				
12	124	48				
13	124	523				
14	124				71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

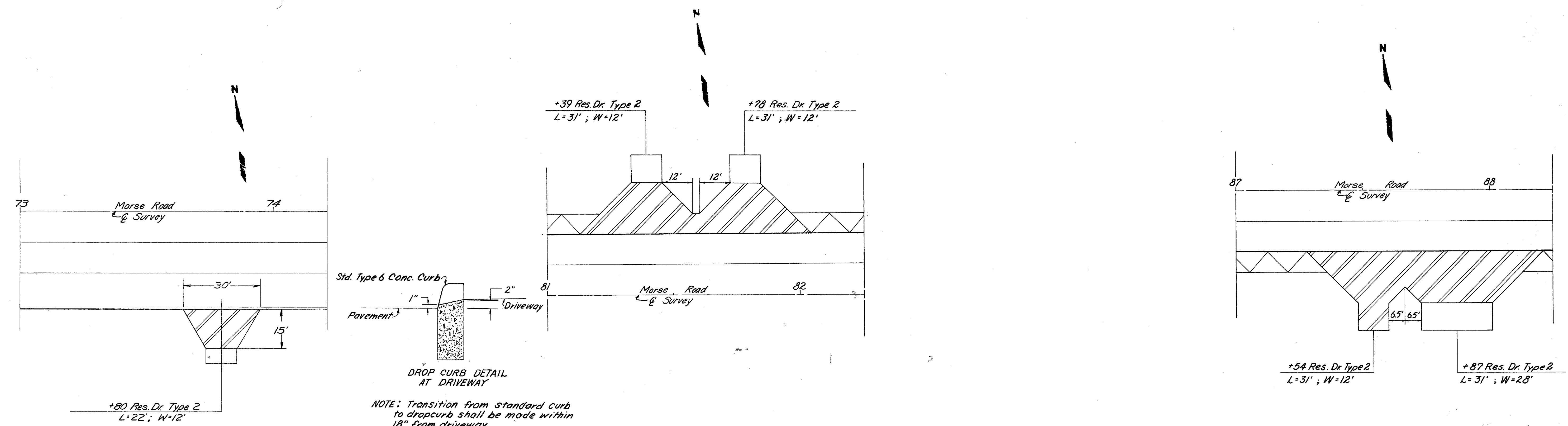
FRANKLIN COUNTY
FRA-270-22.99N



PAVEMENT REPLACEMENT DETAIL
PIPE CROSSINGS
RESURFACING AND SALVAGE PROJECTS

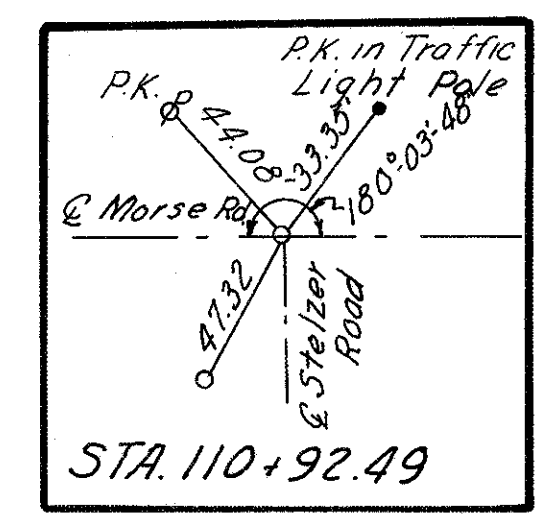
Note: The pavement replacement detail shown above shall be applied where and as directed by the Engineer. The elevation of the top of the 4" Bituminous Aggregate Base shall be 3" below the existing pavement to allow for construction of the 1 3/4" course of Item 402 Asphalt Concrete and the 1 1/4" course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

- LEGEND
- Paved Shoulder Detail using 8" ~ 304
 - 2" ~ 404 on 7" ~ 304 (Comm.)
 - 2" ~ 404 on 5" ~ 304 (Res)
 - 6" ~ 304 (Field)
 - 8" ~ 304 (Res.)



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

FRANKLIN COUNTY
FRA-270-22.99N



DRIVE CALCULATIONS				
1	552 x 0.1667 ÷ 27	= 3.4 C.Y.	404	
A	552 x 0.4167 ÷ 27	= 8.5 C.Y.	304	
	4 x 12 x 0.667 ÷ 27	= 1.2 C.Y.	304	
2	(16+56) ÷ 2 x 20 x 0.1667 ÷ 27	= 4.4 C.Y.	404	
A	(16+56) ÷ 2 x 20 x 0.4167 ÷ 27	= 11.1 C.Y.	304	
3	(20 ² + 24 x 12) x 0.1667 ÷ 27	= 4.3 C.Y.	404	
A	(20 ² + 24 x 12) x 0.4167 ÷ 27	= 10.6 C.Y.	304	

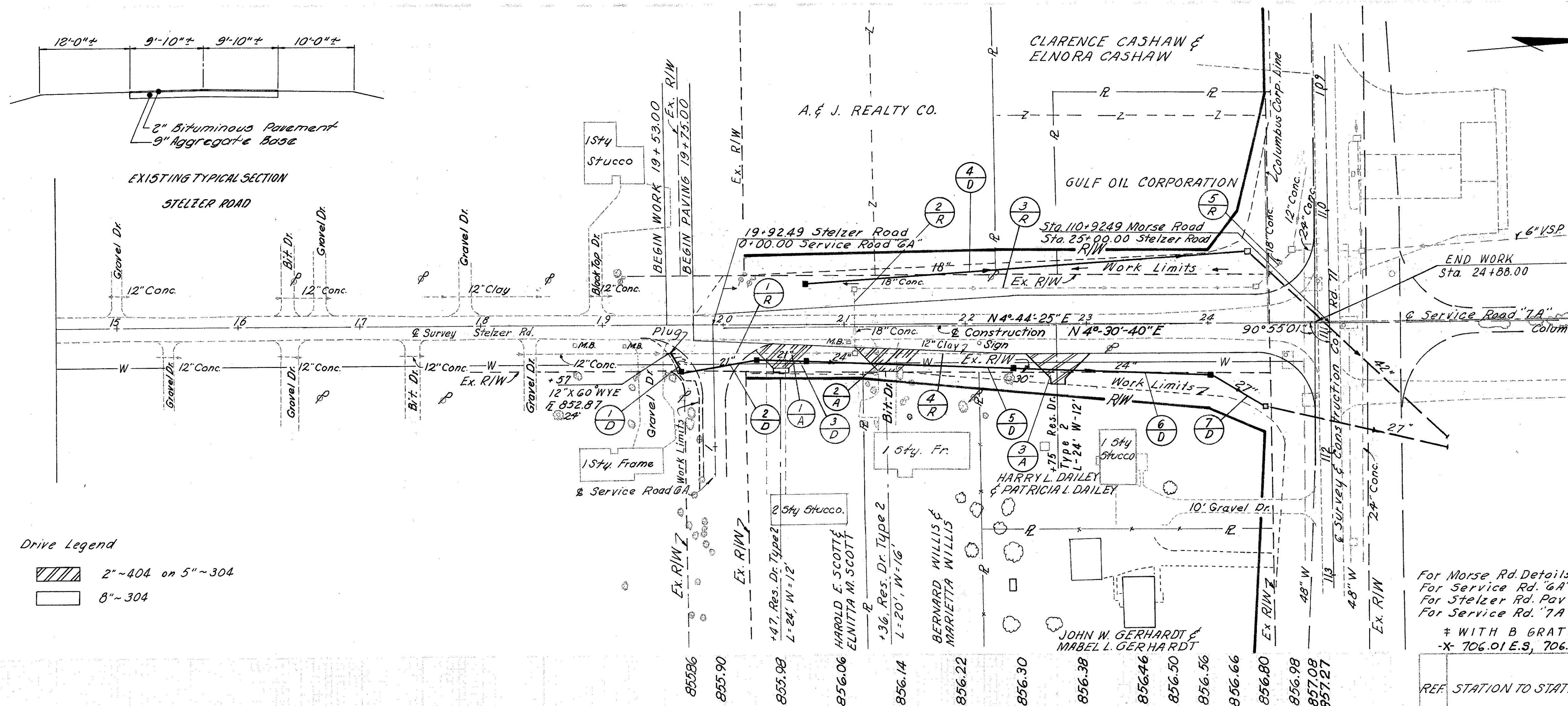
For Morse Rd. Details See Sheet No. 92
For Service Rd. "6A" Details See Sheet No. 173
For Stelzer Rd. Pav't Details See Sheet No. 150
For Service Rd. "7A" Details See Sheet No. 177

CALC. 9/20/68 9-28-68
CHKD. R.E.H. 10-8-68

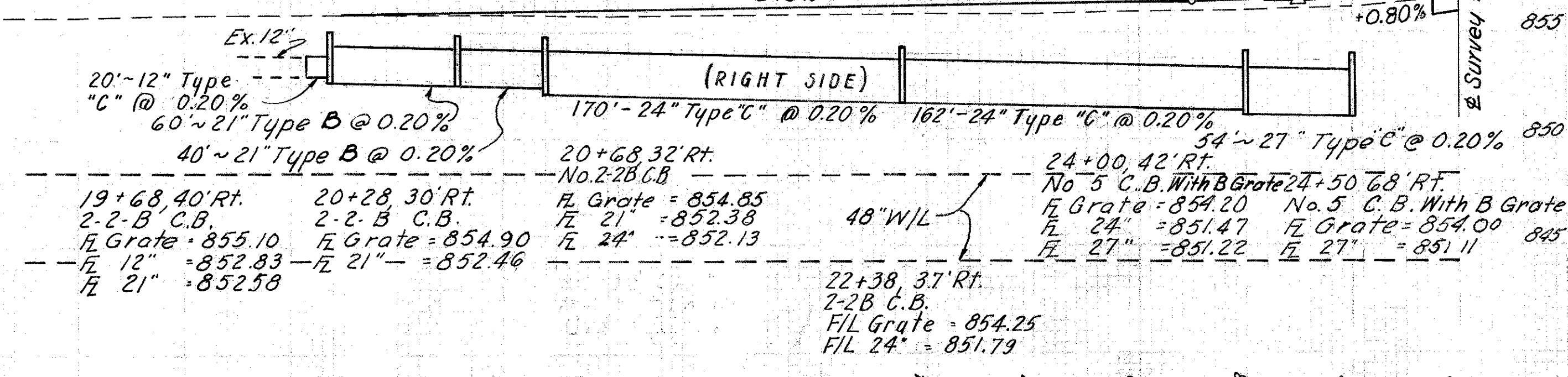
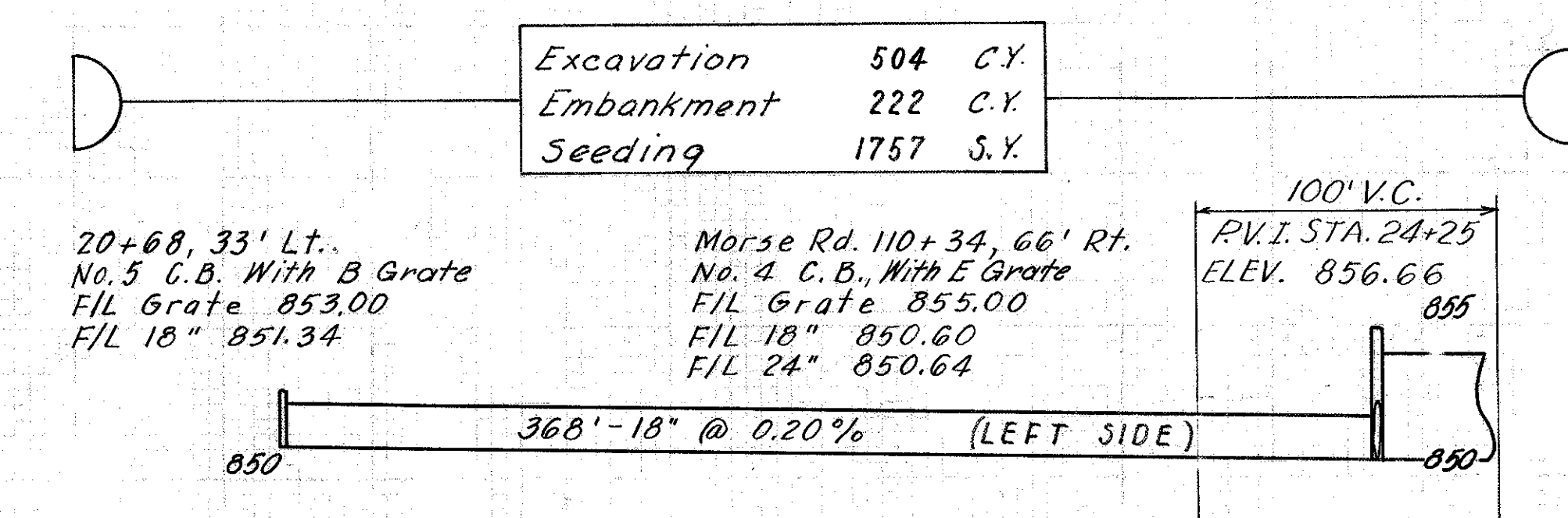
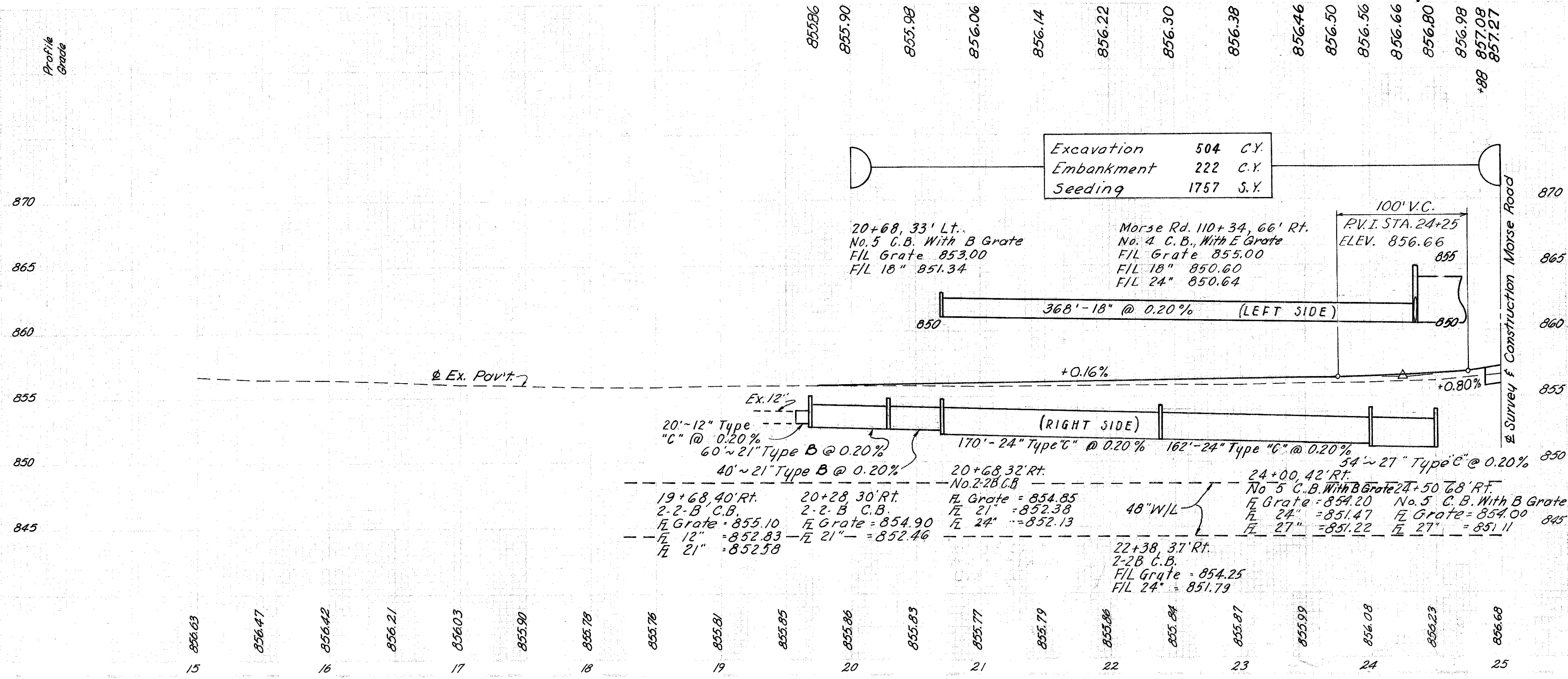
* WITH B GRATE
-X- 706.01 E.S., 706.02, 706.08 E.S. or 707.13

REF	STATION TO STATION	SIDE	BENDS & BRANCHES	603				604	
				TYPE "B" -X-	TYPE "C" -X-	TYPE "C" -X-	TYPE "C" -X-	No. 2-2	No. 5
				C B	C B	C B	C B	800 C.B.	+
1-D	19 + 57 to 19 + 68	Rt.	1	18" L.F.	12" L.F.	24" L.F.	27" L.F.	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			170		1	1
5-D	20 + 68 to 22 + 38	Rt.				162			
6-D	22 + 38 to 24 + 00	Rt.					54		1
7-D	24 + 00 to 24 + 50	Rt.							
TOTALS				368	20/100	332	54	4	2
100% CITY									

REF	STATION TO STATION	SIDE	PIPE REMOVAL 24" & UNDER	202		304		404	
				CATCH BASIN REMOVAL	Aggr. Base	Asphalt Conc. (85-100)			
				L.F.	C.Y.	C.Y.			
1-R	19 + 59 to 21 + 09	Rt.	150	1					
2-R	21 + 09	Rt.	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				684	3	33	14		
100% CITY									

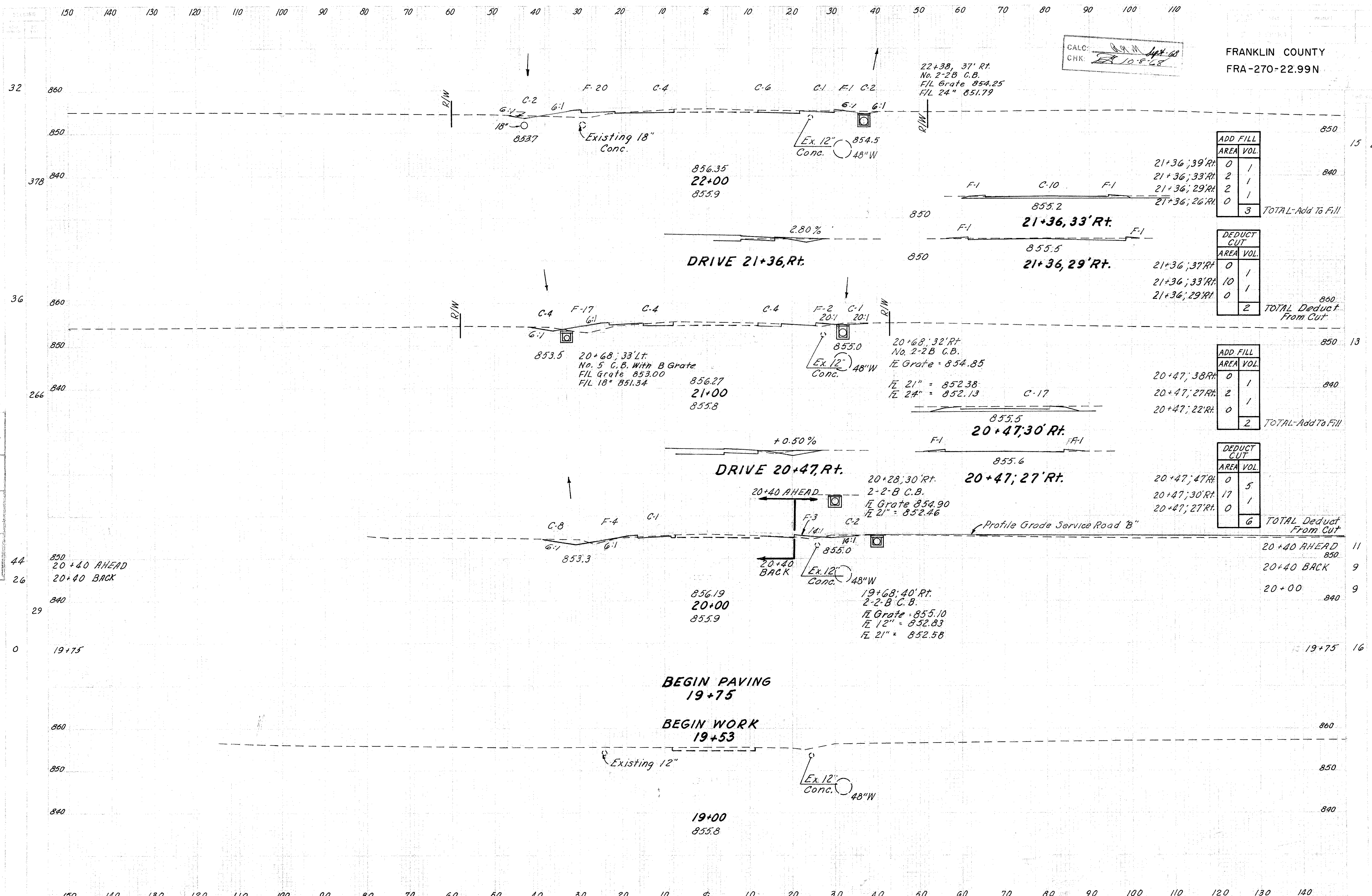


Drive Legend
2"-404 on 5"-304
8"-304



CALC: *Q.M. 10-8-68*
CHK: *10-8-68*

FRANKLIN COUNTY
FRA-270-22.99N



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

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

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

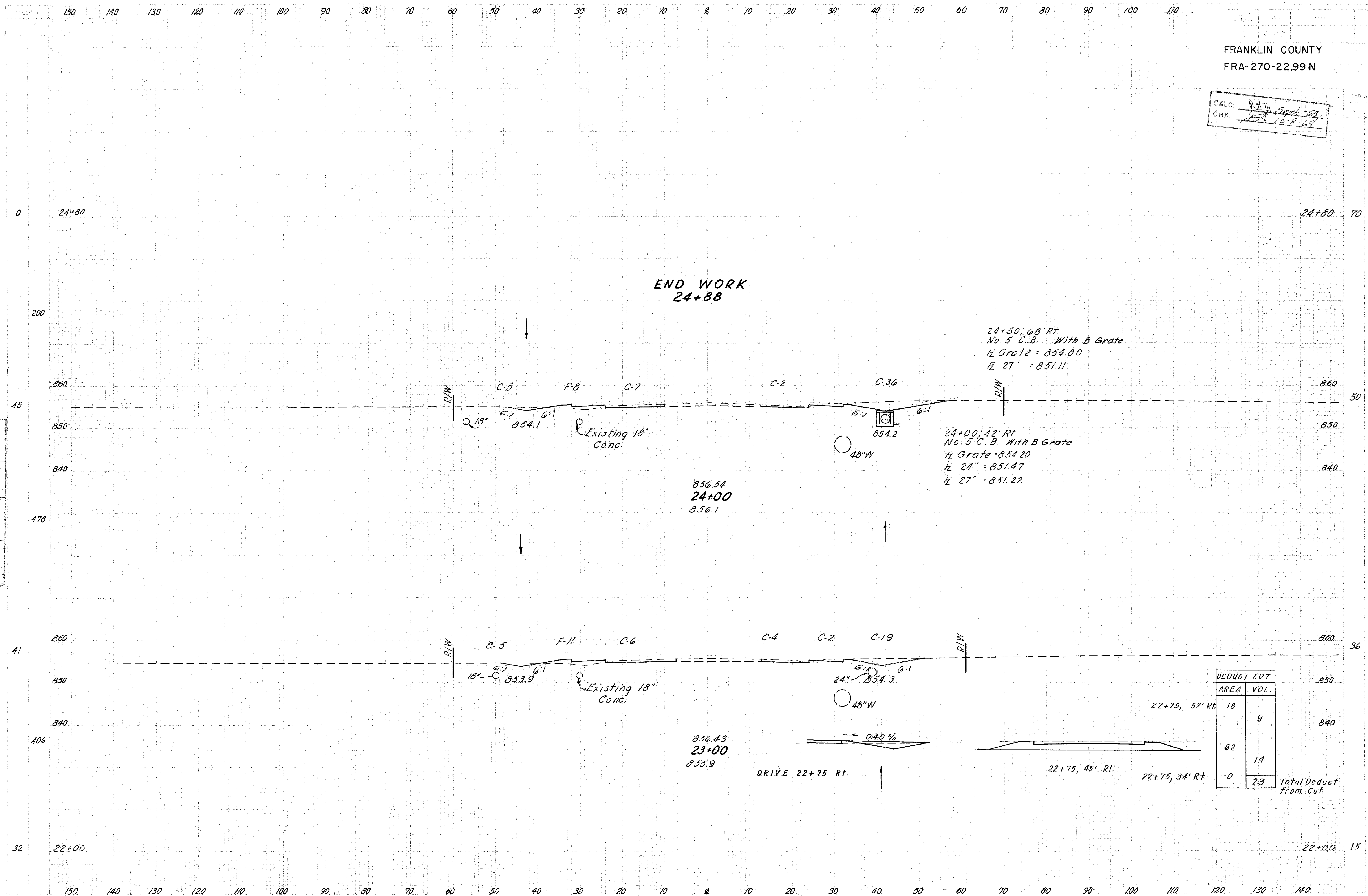
DEDUCT CUT	
AREA	VOL.
20+47; 47' Rt.	0 5
20+47; 30' Rt.	17 1
20+47; 27' Rt.	0 6
TOTAL Deduct From Cut	

20+40 AHEAD	11 7
20+40 BACK	9 4
20+00	9 4

FRANKLIN COUNTY
FRA-270-22.99 N

CALC: *R. Smith Sept. 68*
CHK: *[Signature] 10-8-68*

155
2.92

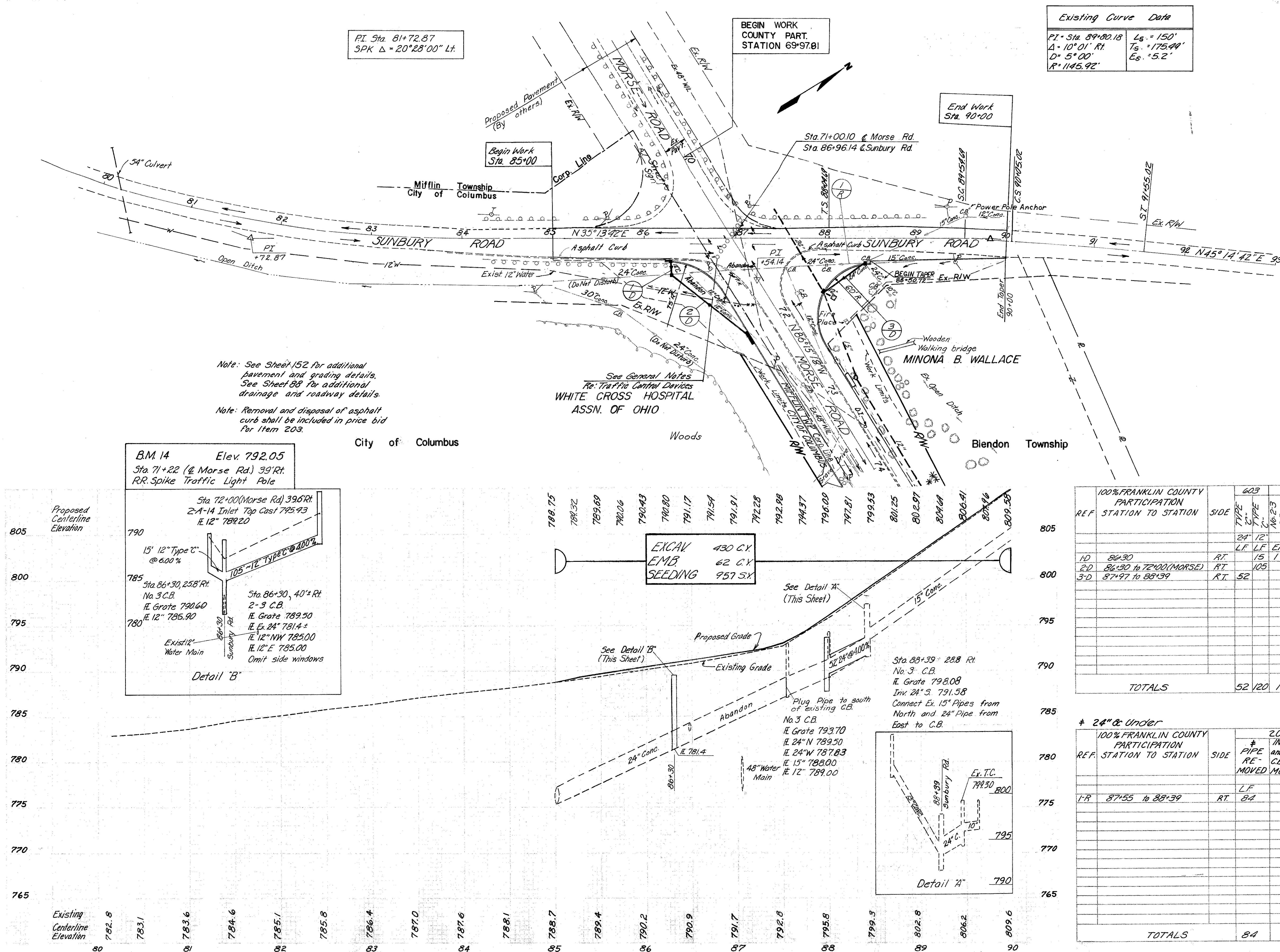


DEDUCT CUT	
AREA	VOL.
18	9
62	14
0	23
Total Deduct from Cut	

STA. 23+00 TO STA. 24+00 STELZER ROAD

FRANKLIN COUNTY
FRA-270-22.99N

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



SUNBURY ROAD STA. 81+00 TO 90+00

FRANKLIN COUNTY
FRA-270-22.99 N

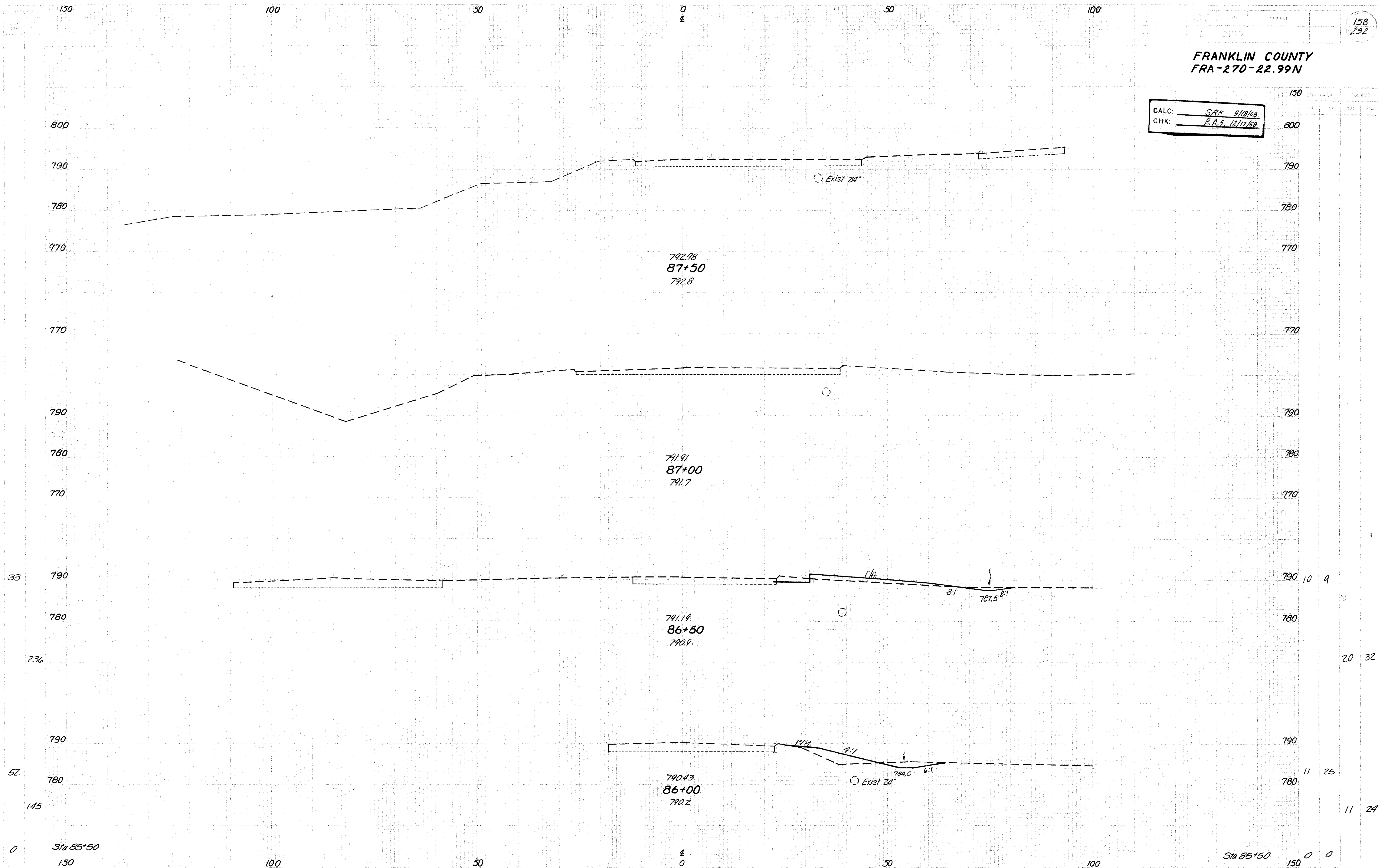
CALC: SRK 9/18/88
CHK: R.H.S. 12/17/88



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

FRANKLIN COUNTY
FRA-270-22.99N

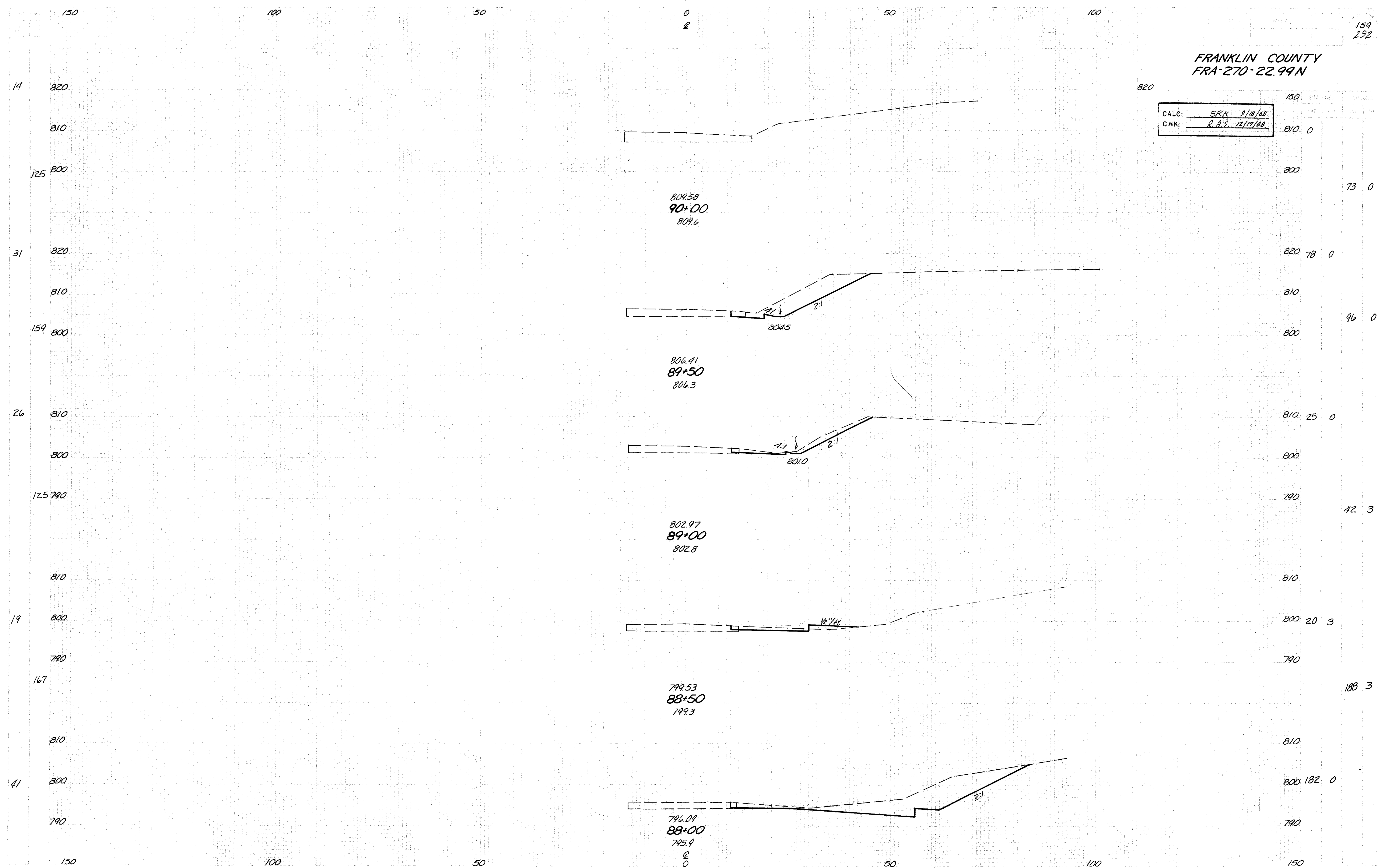
CALC: SRK 9/18/68
CHK: R.A.S. 12/17/68



159
292

FRANKLIN COUNTY
FRA-270-22.99N

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

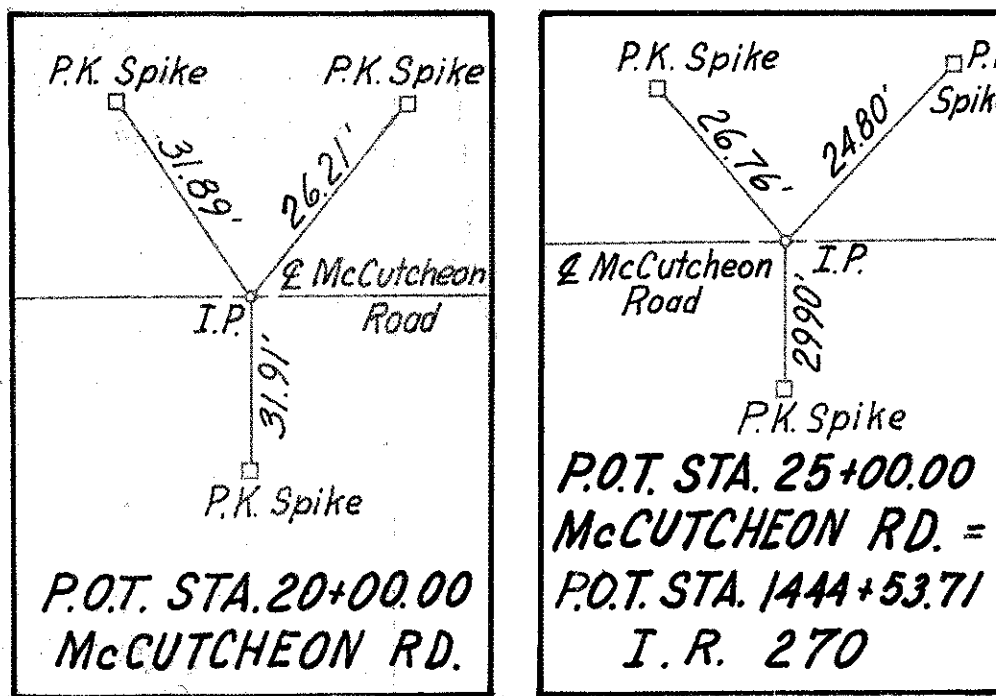
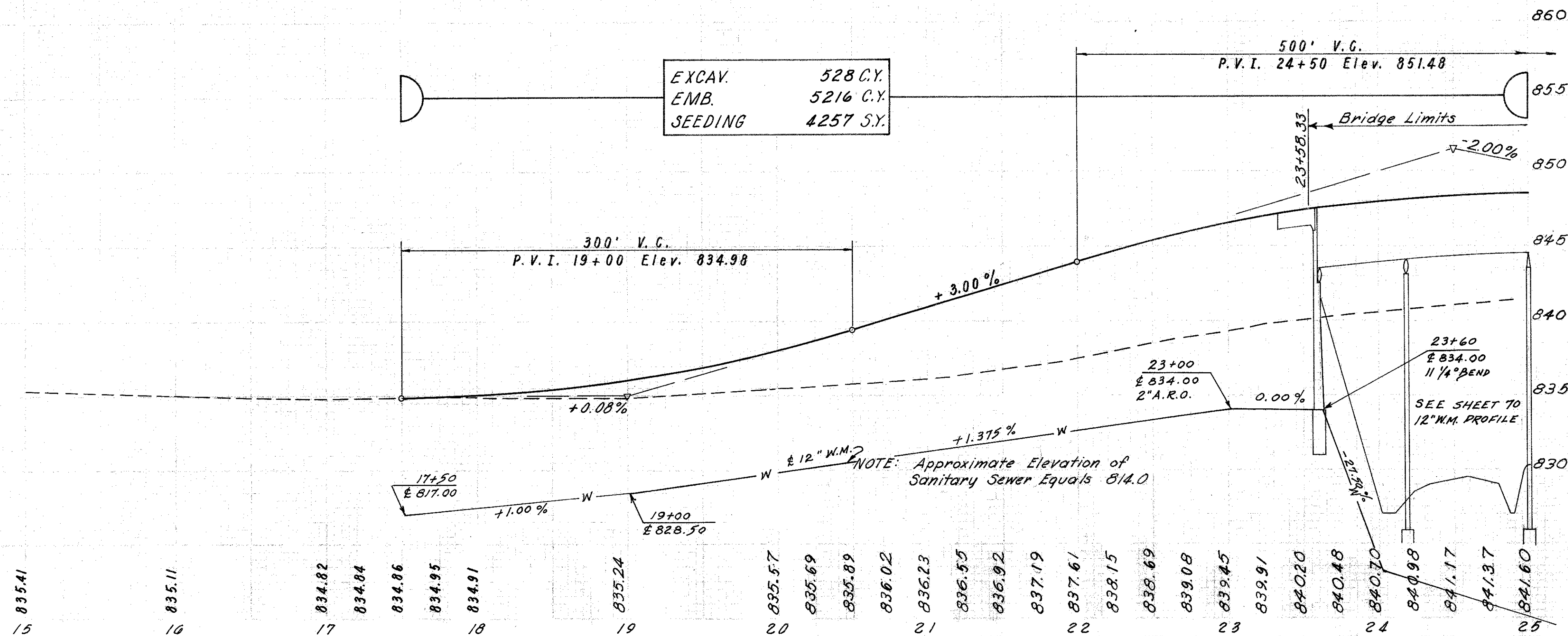


SUNBURY ROAD STA. 88+00 TO 90+00

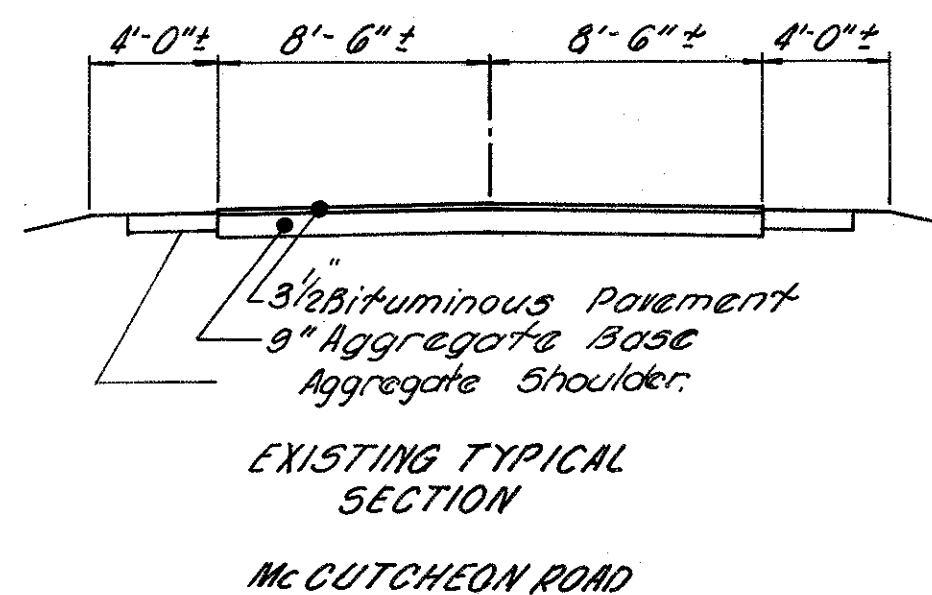
1. General
2. Profile
3. Plan
4. Section
5. Detail
6. Notes
7. Drive Legend
8. Drive Calculations
9. Drive Details
10. Drive Assembly
11. Drive Terminal
12. Drive Slope
13. Drive Protection
14. Drive Sheet No.

Drive Legend
2"~404 on 5"~304
8" 304 Res Dr.
6" 304 Field Dr.

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



FRANKLIN COUNTY
FRA-270-22.99N



Size	Lt of E	Rt of E
12" to 24"	1	2
24" to 36"		1
36" to 60"		
Over 60"		

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)

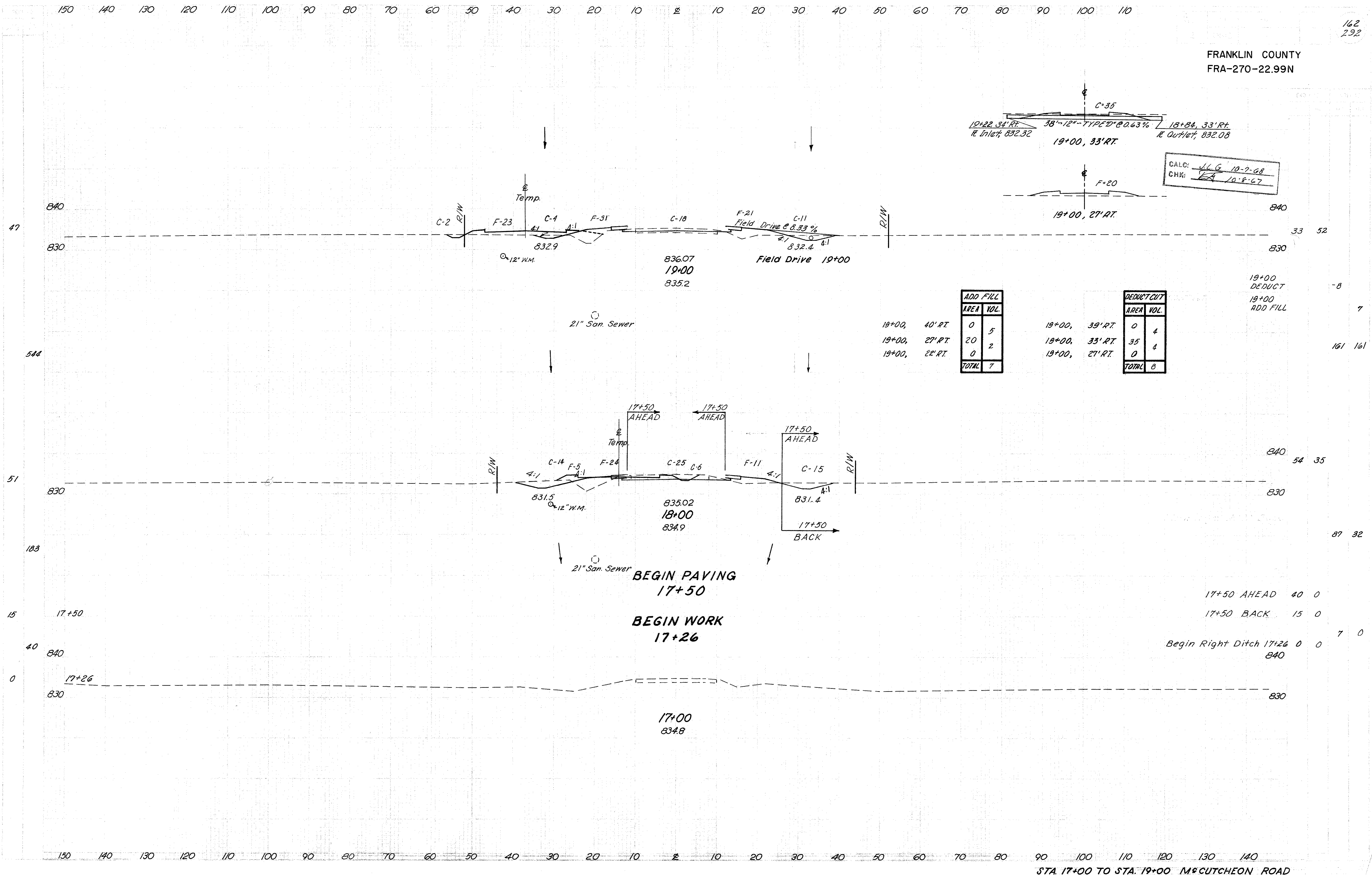
- NOTES**
- Use Item 605 Aggregate Drain full width of pavement where proposed pavement adjoins existing pavement.
For Quantities see Pavement Calculations
 - For I-270 Plan & Profile, See Sheet No. 44
 - See Sheet 198 For Water Line Quantities

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

REF.	STATION TO STATION	SIDE	203	304	404	504	606	606	660	FOR DETAILS SEE SHEET NO.		
			PIPE REMAINING 24" UNDER	AGGR. BASE	ASPH. CONC. (85-100)	MH Re-Const. To Grade	Type D	GUARD RAIL TYPE 5	APPR. ASSEMBLY		TERMINAL ASSEMBLY	SPEC. BERM & SLOPE PROTECTION
							12"					
1-D	20 + 67 to 21 + 13	Lt.	L.F.	C.Y.	C.Y.	Eq	L.F.	L.F.		5.Y	163	
2-D	21 + 69 to 22 + 23	Lt.					46				163	
3-D	23+44	Lt.					54					
4-D	23+44	Rt.								35		
1-A	20 + 91	Lt.		25	4					31		
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-270-22.99N



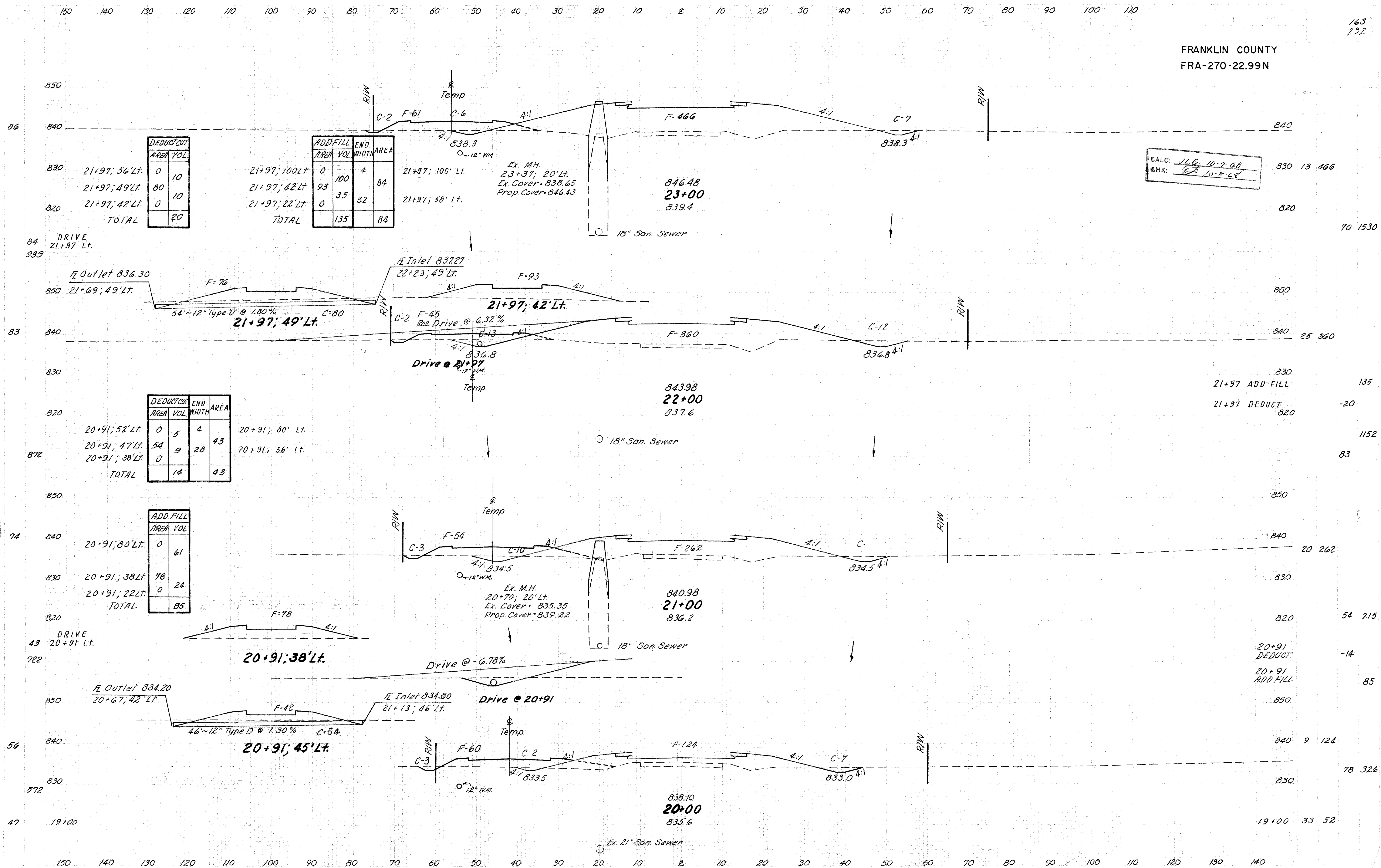
CALC: J.L.G. 10-7-68
CHK: J.A. 10-8-67

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

19+00 DEDUCT -8
19+00 ADD FILL 7
161 161

17+50 AHEAD 40 0
17+50 BACK 15 0
Begin Right Ditch 17+26 0 0
840



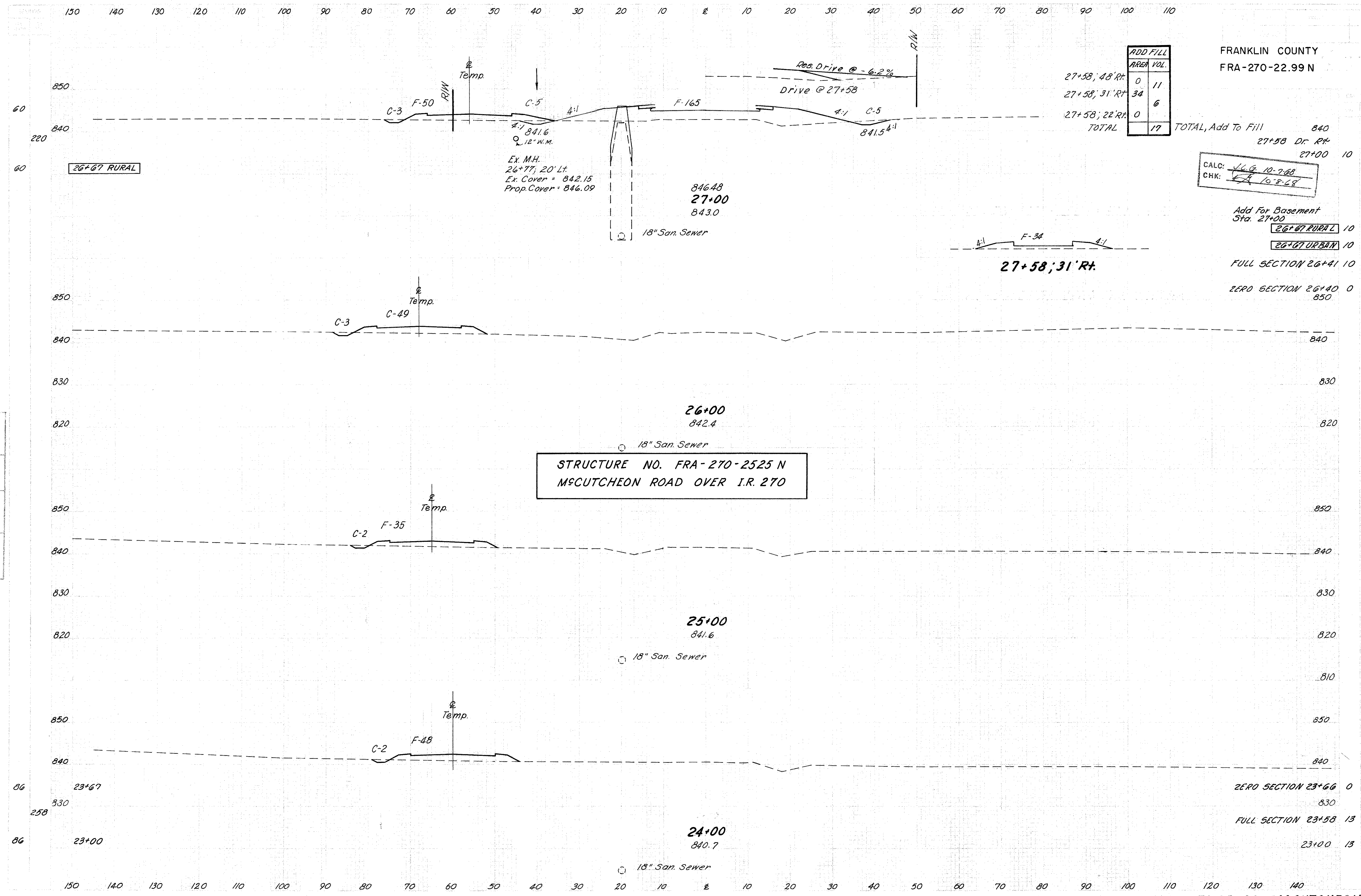
STA. 20+00 TO STA. 23+00 M^cCUTCHEON ROAD

FRANKLIN COUNTY
FRA-270-22.99 N

ADD FILL	
AREA	VOL.
27+58; 48' Rt	0
27+58; 31' Rt	34
27+58; 22' Rt	0
TOTAL	17

TOTAL, Add To Fill	840		
27+58 Dr. Rt			+17
27+00	10	165	
ADD FOR BASEMENT			
Sta. 27+00			
26+67 RURAL	10	165	347
26+67 URBAN	10	165	
FULL SECTION 26+41	10	165	10 159
			0 3
ZERO SECTION 26+40	0	0	
850			

CALC: 16.6 10-7-68
CHK: 10-8-68

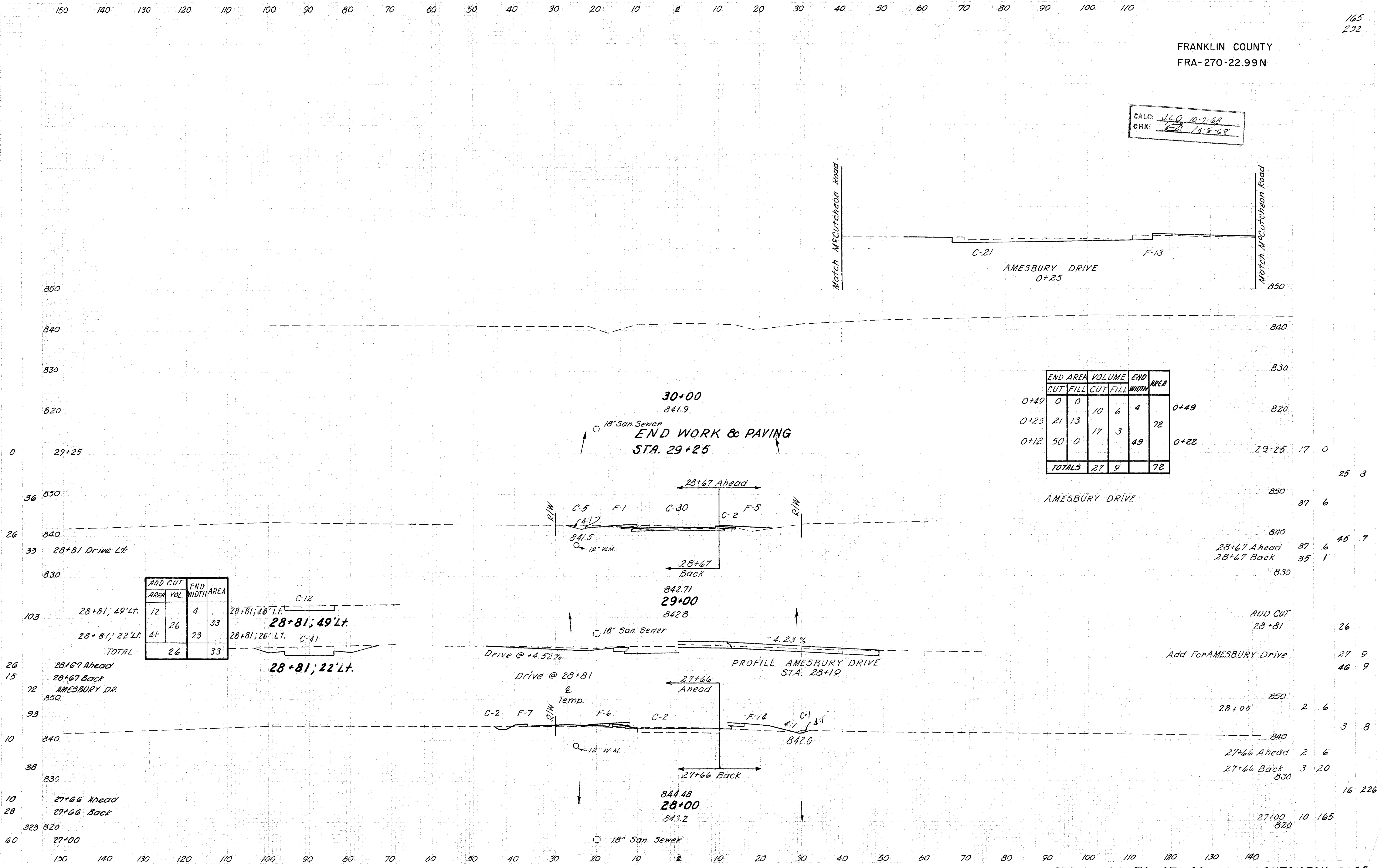


By: JWH
Date: 10-7-68
Check: JWH
Date: 10-8-68
Title: McCUTCHEON ROAD OVER I.R. 270

FRANKLIN COUNTY
FRA-270-22.99N

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

Plan
Profile
Cross Section
Side View
Top View
Bottom View
Front View
Back View
Left View
Right View
Isometric View
Perspective View
Orthographic View
Technical Drawing
Engineering Drawing
Architectural Drawing
Mechanical Drawing
Electrical Drawing
Civil Engineering Drawing
Surveying Drawing
Geological Drawing
Agricultural Drawing
Marine Drawing
Aeronautical Drawing
Astronomical Drawing
Medical Drawing
Biological Drawing
Chemical Drawing
Physics Drawing
Mathematics Drawing
Statistics Drawing
Economics Drawing
History Drawing
Literature Drawing
Art Drawing
Music Drawing
Dance Drawing
Sports Drawing
Hobby Drawing
Miscellaneous Drawing



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

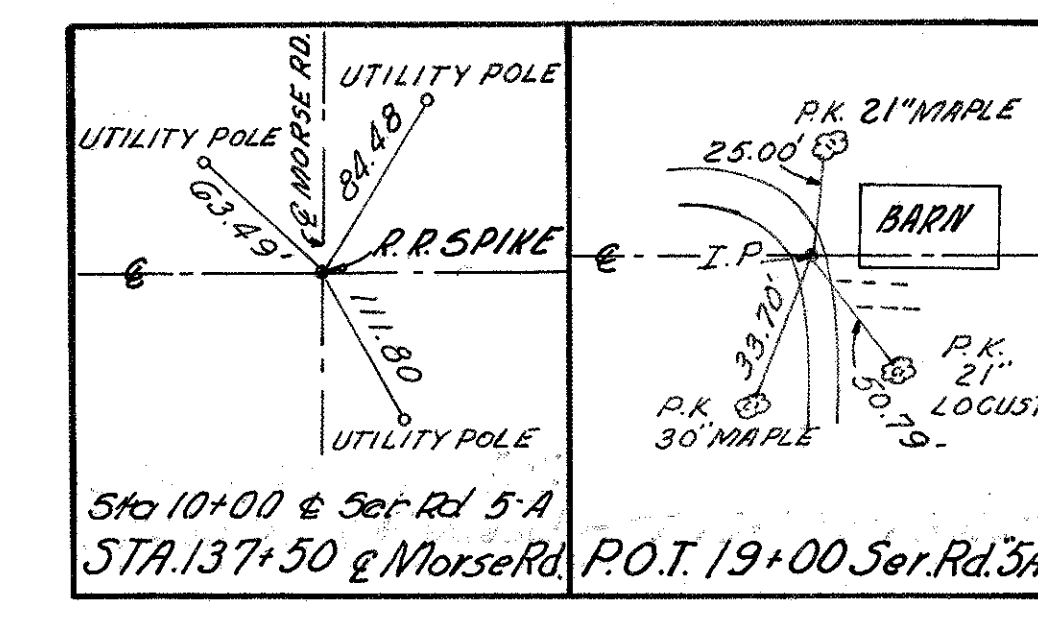
ADD CUT	END AREA		VOLUME		END AREA	
	AREA	WIDTH	AREA	WIDTH	AREA	WIDTH
28+81; 49' Lt.	12		4		28+81; 48' Lt.	
28+81; 22' Lt.	41		26		28+81; 26' Lt.	
TOTAL	26		33			

28+81	26			
Add For Amesbury Drive	27	9		
28+00	2	6		
27+66 Ahead	2	6		
27+66 Back	3	20		
27+00	10	165		

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

FRANKLIN COUNTY
FRA-270-22.99N

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

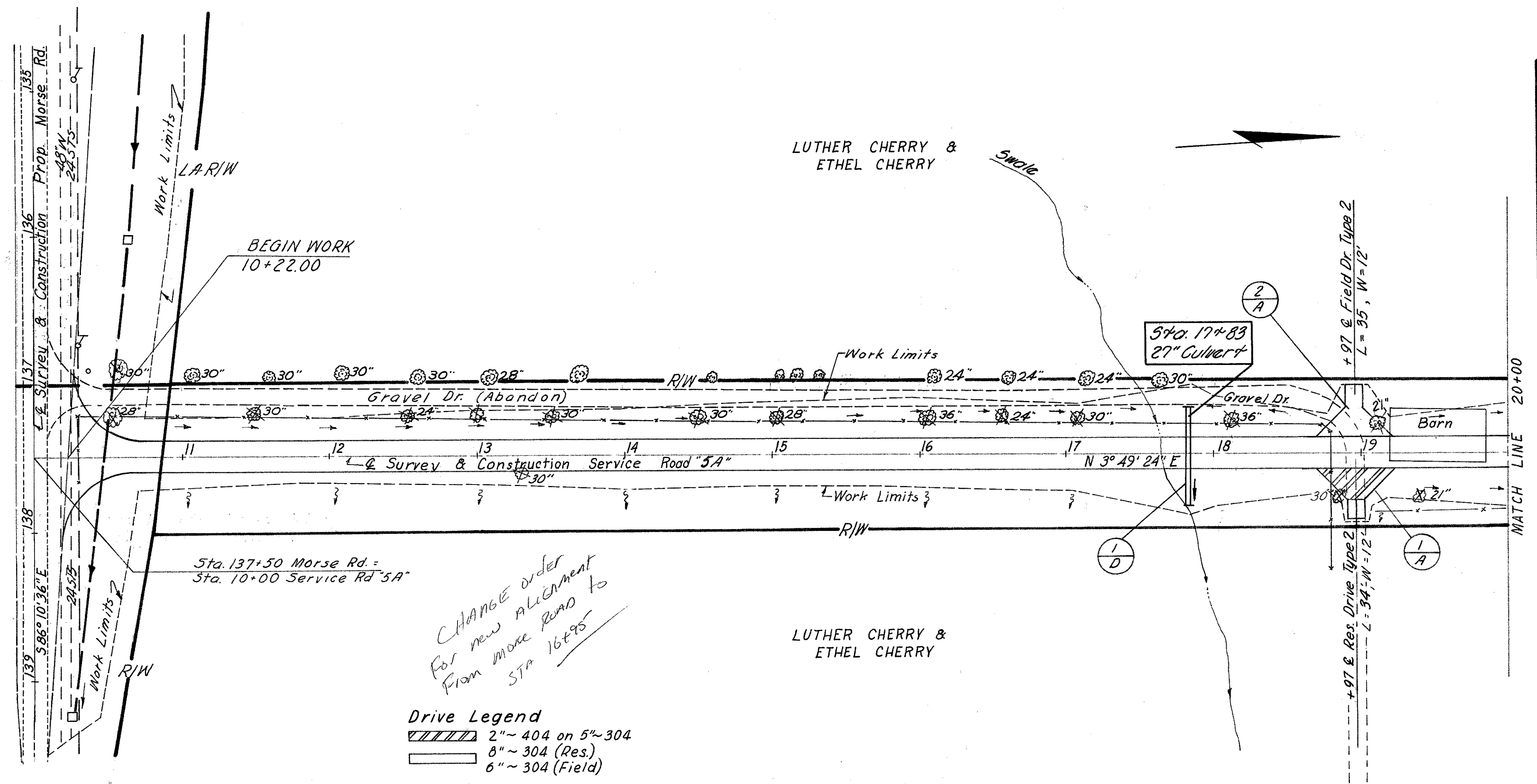


TREES 10+00 TO 20+00		
SIZE	Lt. of @	Rt. of @
12" to 24"	4	0
24" to 36"	6	1
36" to 60"	0	0
60" & Over	0	0

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

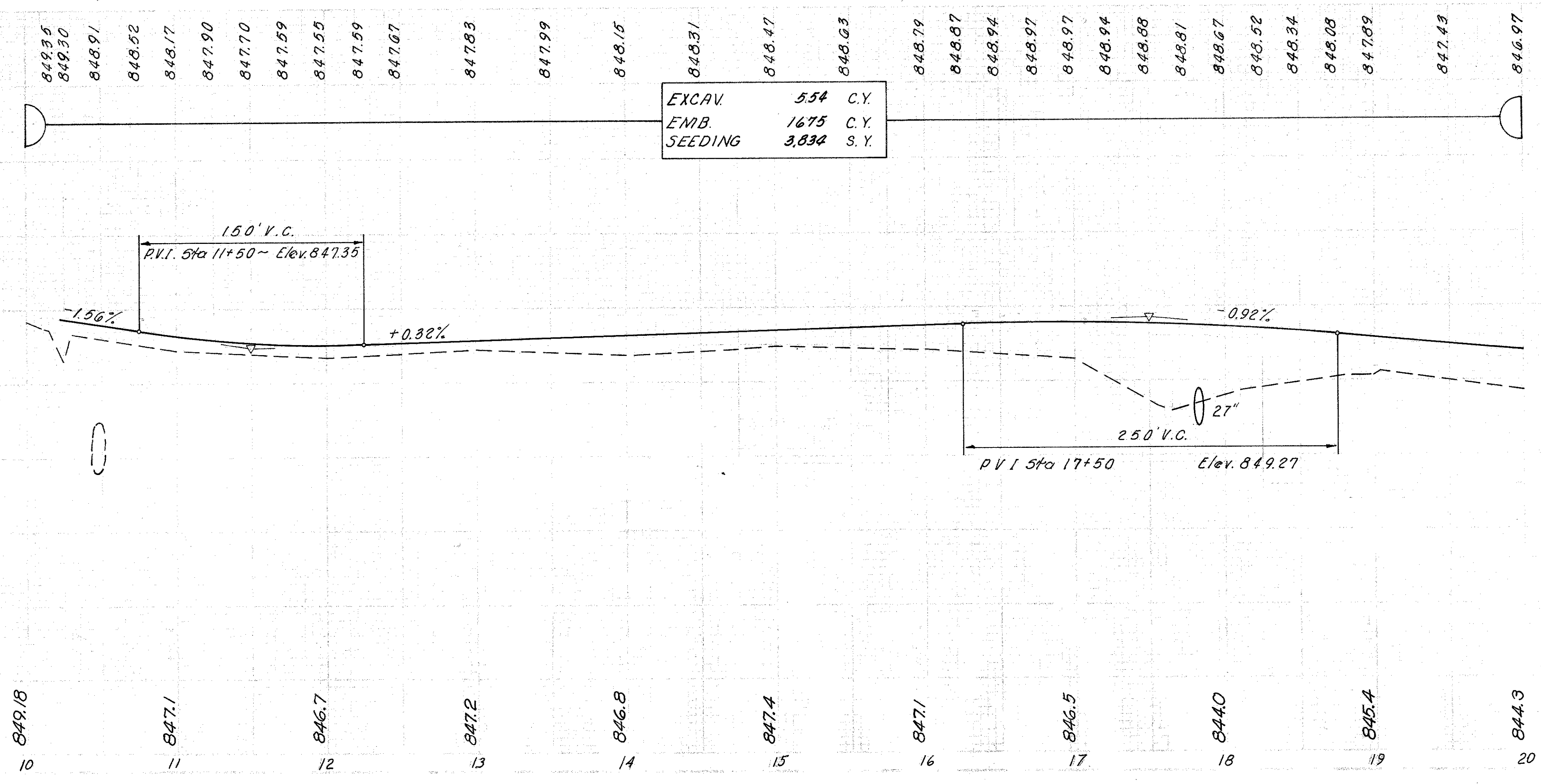
NOTES

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



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

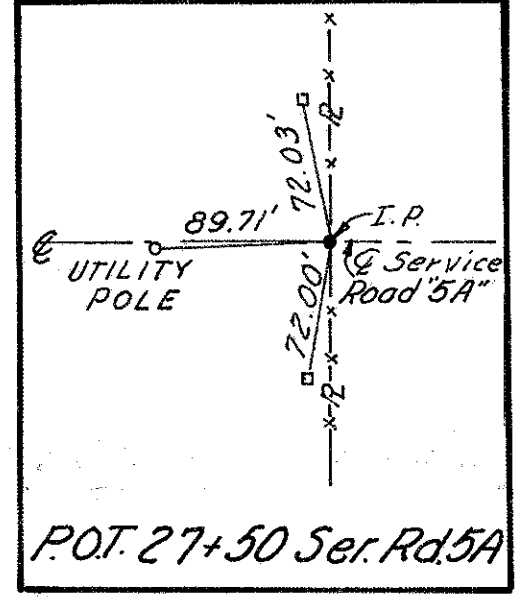
CHANGE order
For new alignment
From Morse Road to
Sta 10+95



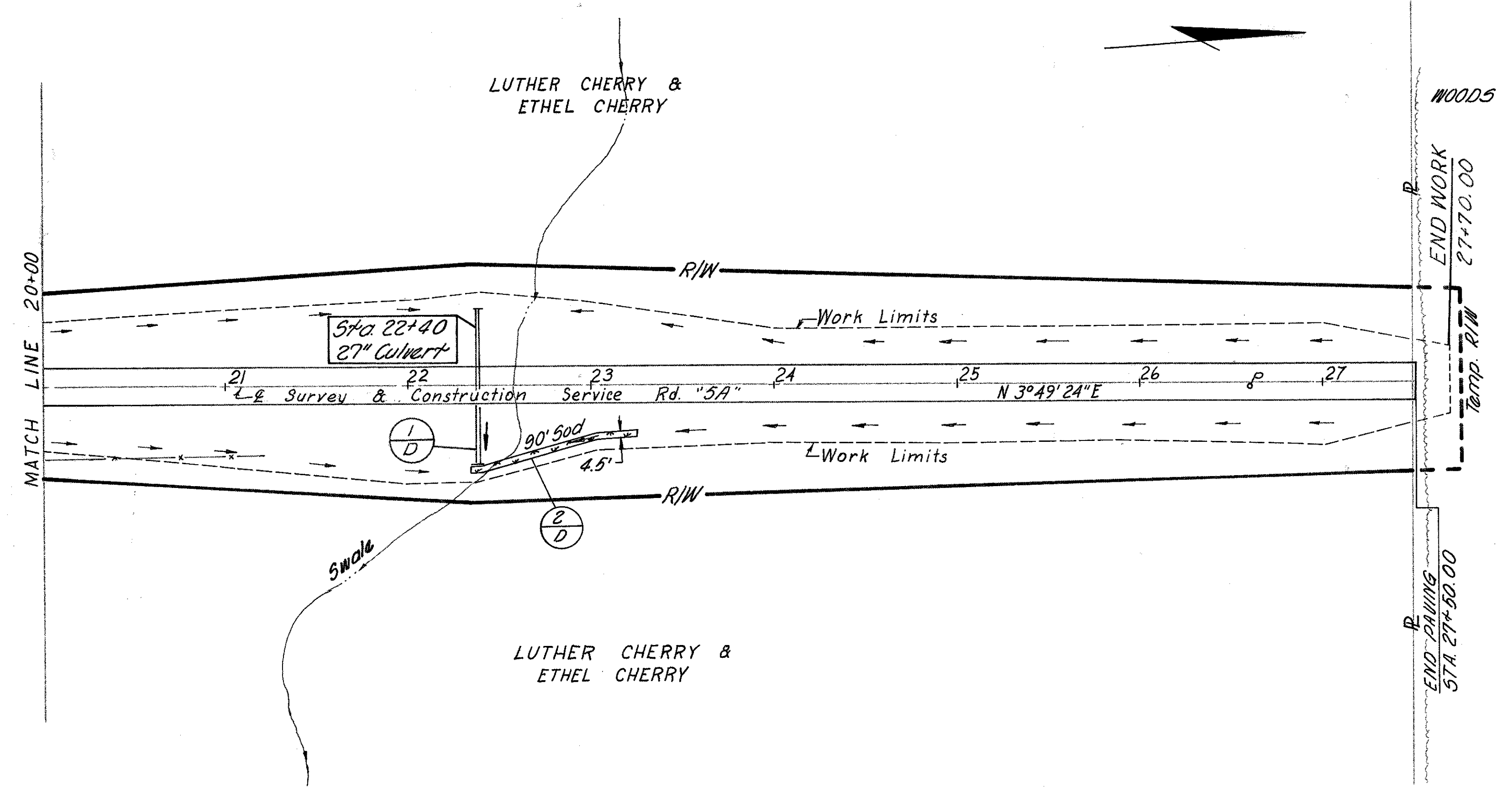
REF	STATION TO STATION	SIDE	602 CONC. MASONRY	603 TYPE "A" 706.02 or 706.08 L.F.	304 AGGR. BASE	404 ASPH. CONC. (85-100)	FOR DETAILS SEE SHEET NO.
1-D	17+83	E	C.Y. 1.0	27" 68	C.Y.	C.Y.	103
1-A	18+97	Rt			15	4	170
2-A	18+97	Lt			16		170
URBAN TOTALS			1.0	68	31	4	

FRANKLIN COUNTY
FRA-270-22.99N

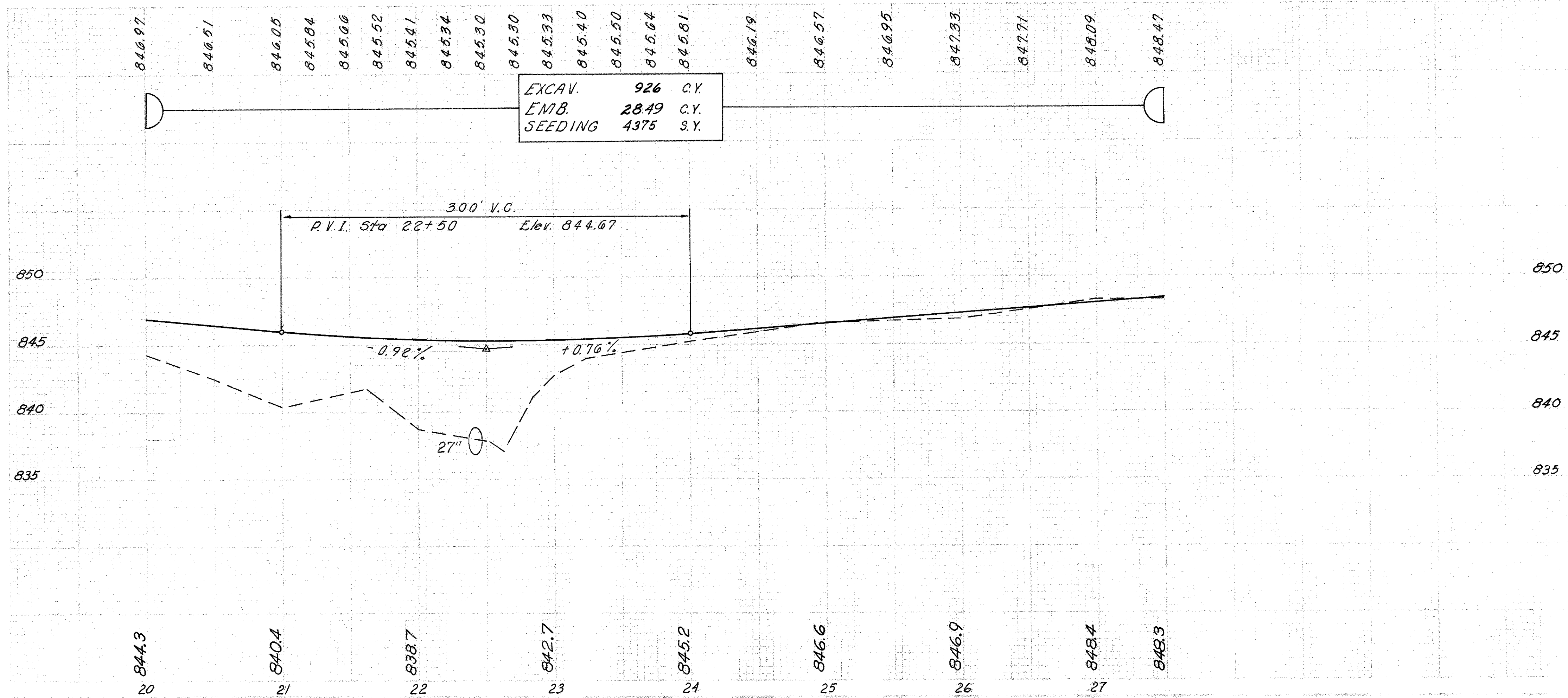
CALC: W.D.B. 9/27/68
CHK: R.E.H. 10/8/68



COLUMBUS & SOUTHERN OHIO
ELECTRIC COMPANY



Ex. 1000	1000
Profile	Profile
Type	Type
B.M.	B.M.
Ref.	Ref.

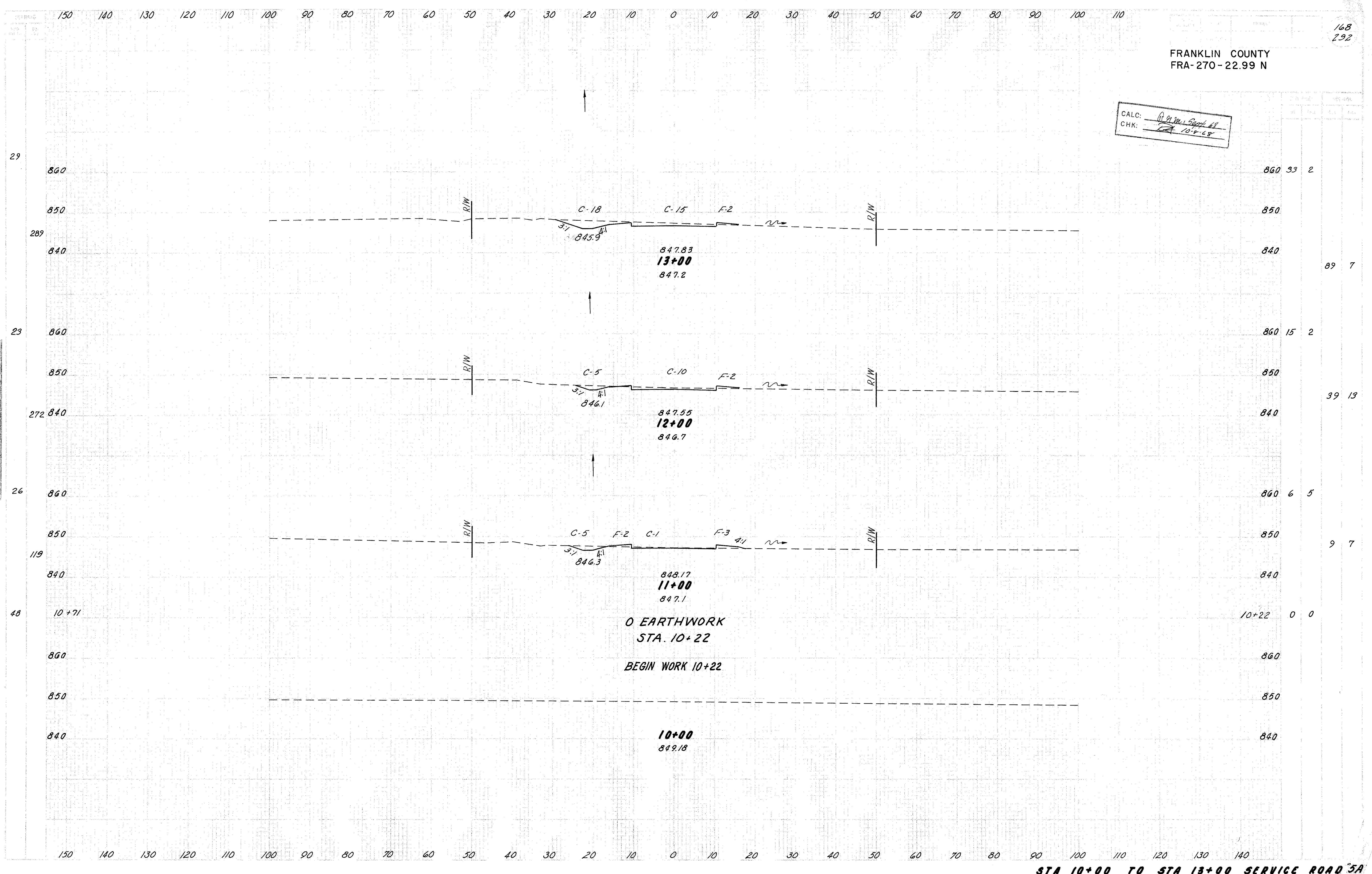


REF.	STATION TO STATION	SIDE	602 CONC. MASONRY	603 TYPE 'A' 706.02 or 706.08 27" L.F.	660 SEEDING	FOR DETAILS (SEE SHEET NO.)
1-D	22+40	E	C.Y.	1.0	86	104
2-D	22+35 to 23+25	RF			45	
URBAN TOTALS			1.0	86	45	

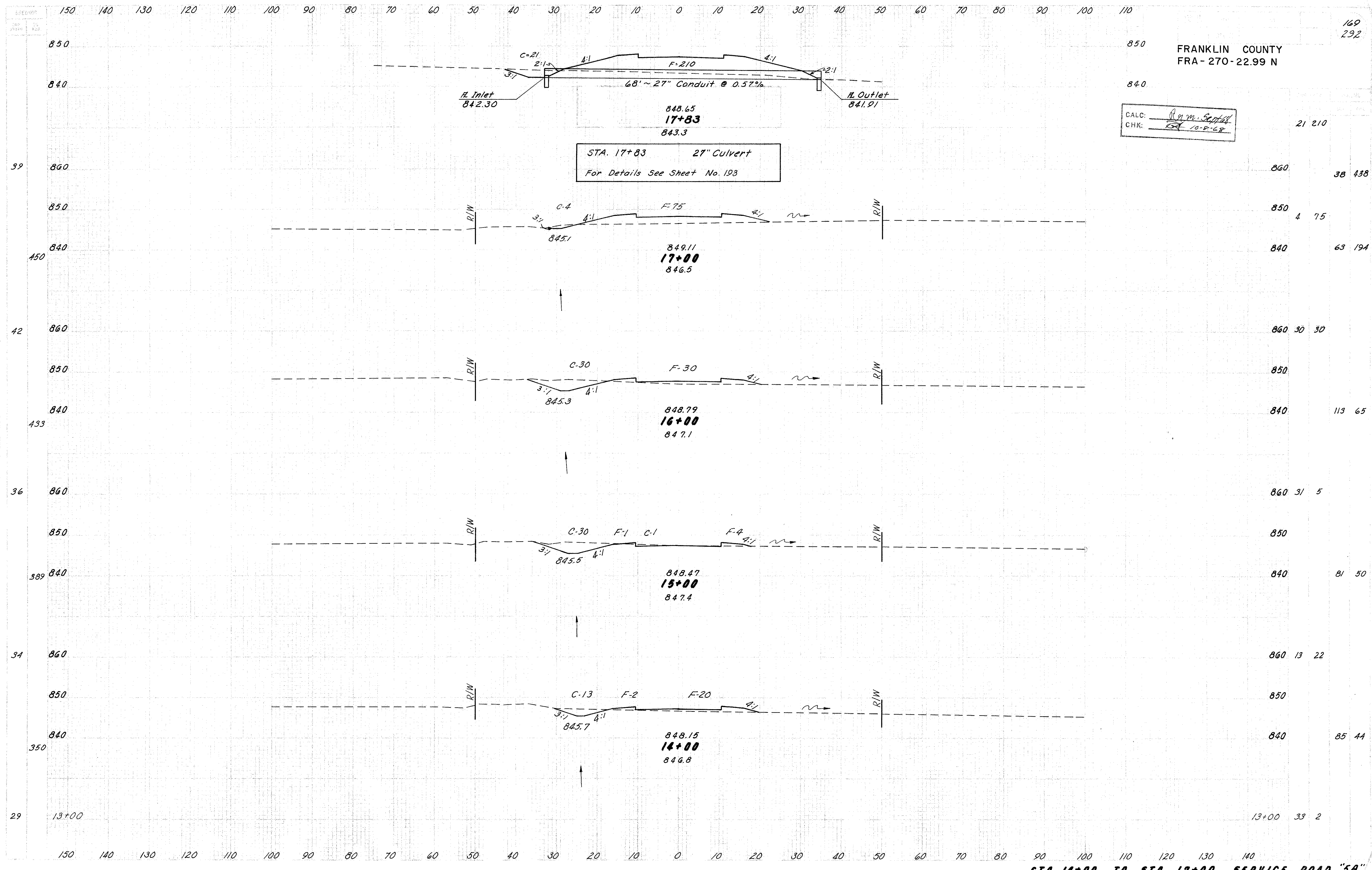
CALC: *R.M. Sept 68*
CHK: *10-8-68*

168
292

Checked	<i>R.M.</i>
CL	<i>R.M.</i>
Plotted	
Ground	



1/4" Ground	1/4" Plan	1/4" Profile
Template	Template	Template
Substrate Quant.	Substrate Quant.	Substrate Quant.
Grading Quant.	Grading Quant.	Grading Quant.

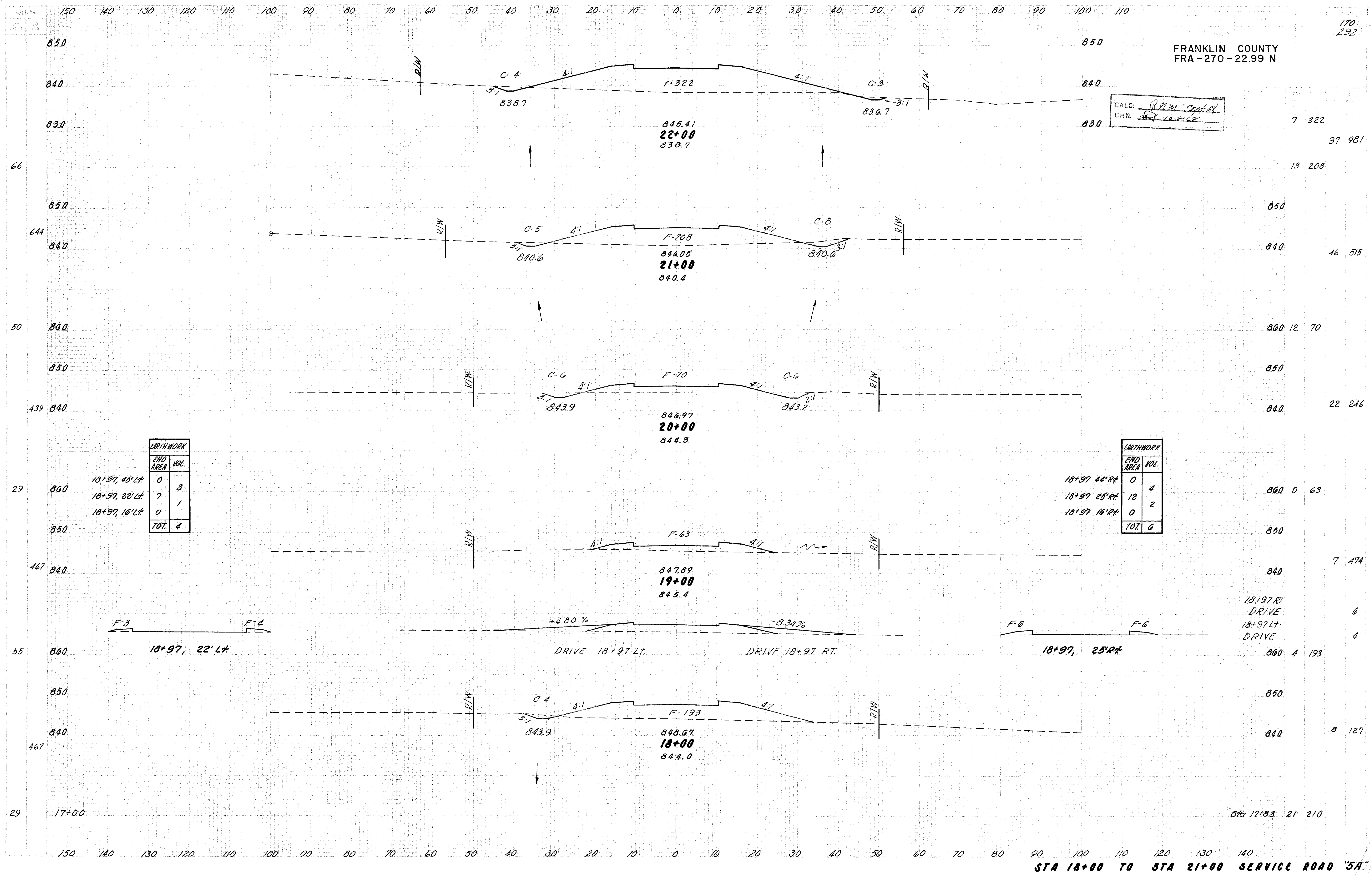


CALC: *R. M. Smith*
CHK: *10-8-68*

STA. 17+83 27" Culvert
For Details See Sheet No. 193

FRANKLIN COUNTY
FRA-270-22.99 N

STA 14+00 TO STA 17+00 SERVICE ROAD "SA"

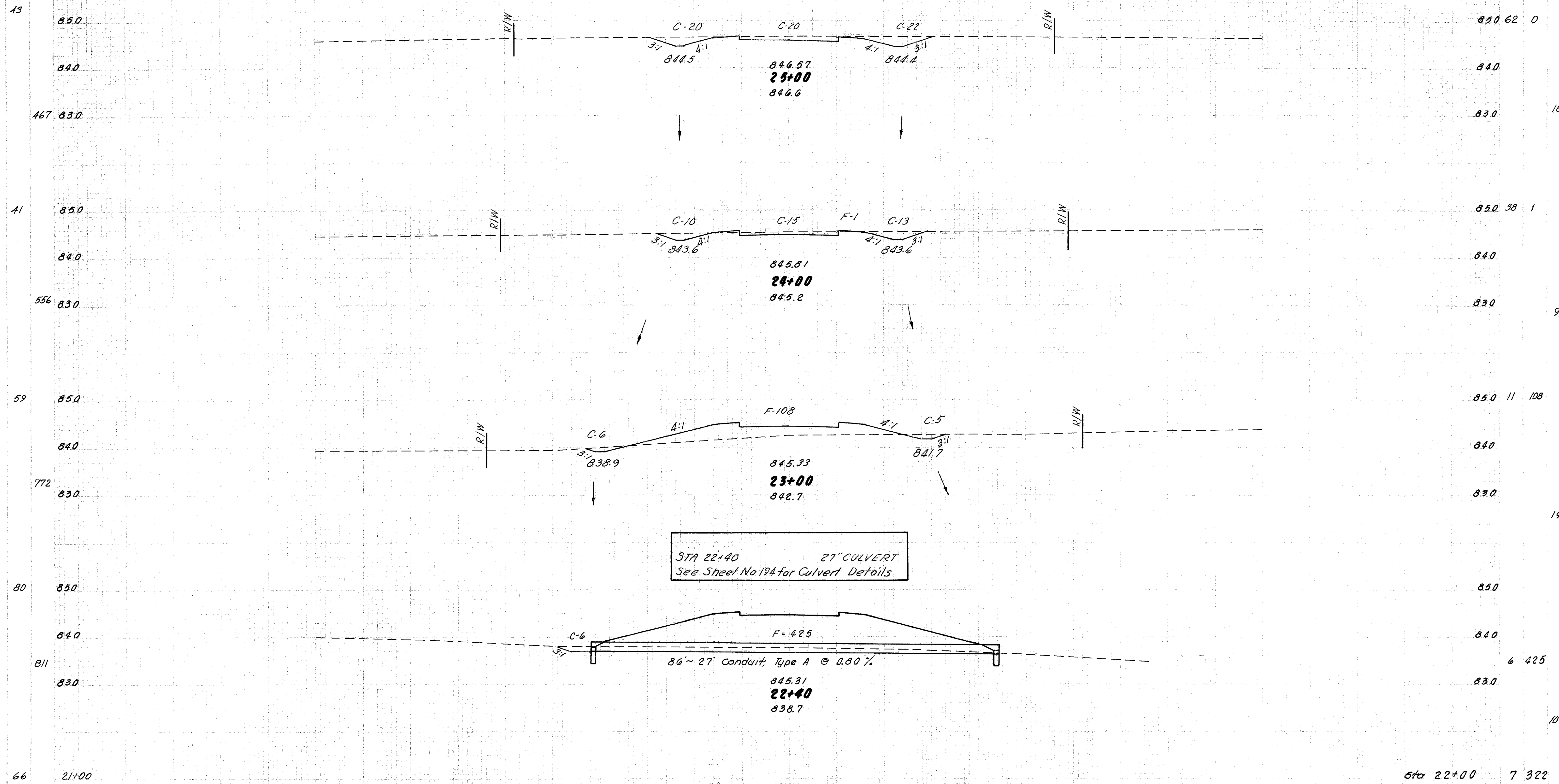


EARTHWORK	
END AREA	VOL.
0	3
7	1
0	
TOT.	4

EARTHWORK	
END AREA	VOL.
0	4
12	2
0	
TOT.	6

FRANKLIN COUNTY
FRA-270-22.99 N

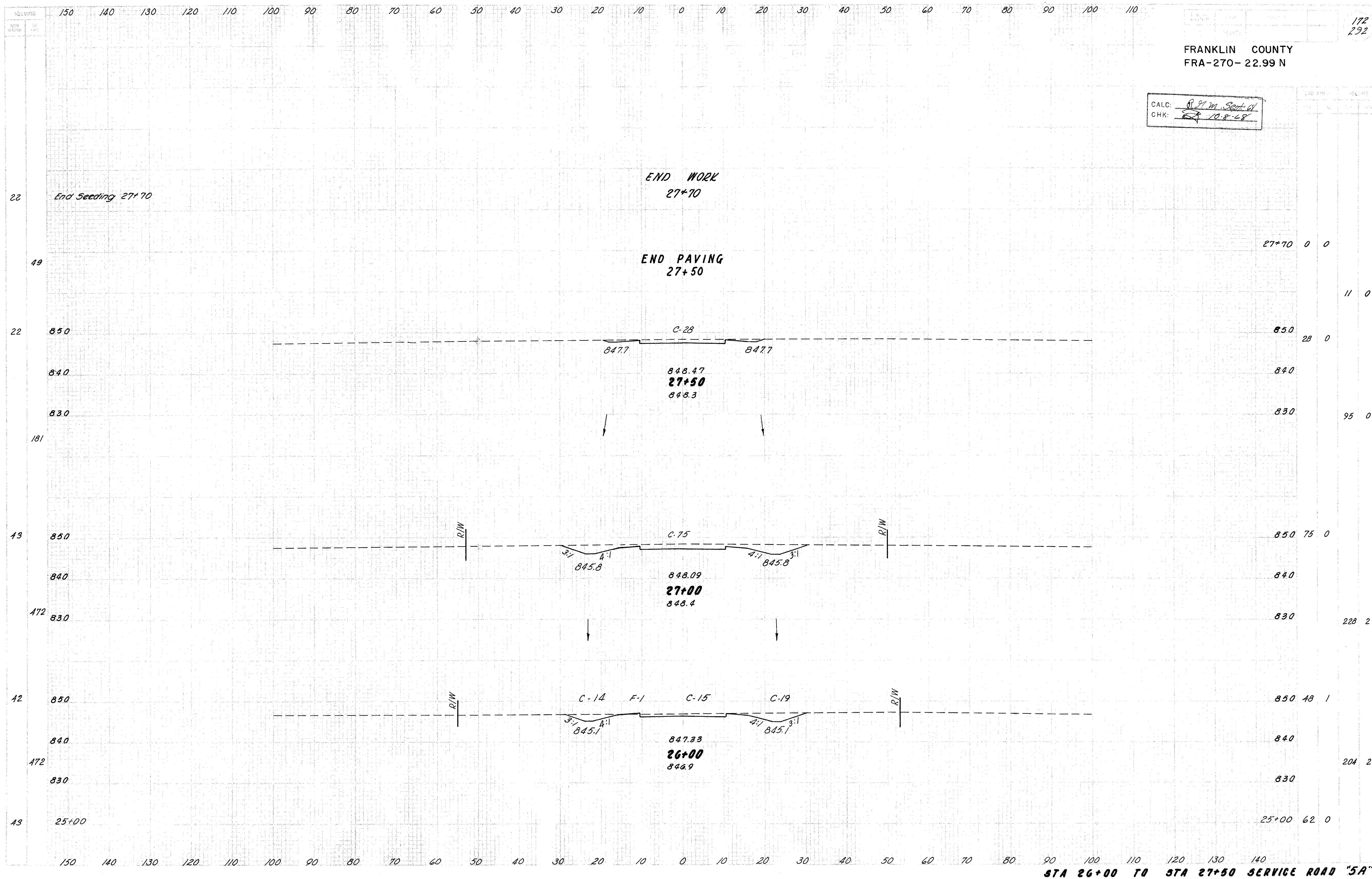
CALC: *10-11-50-168*
CHK: *10-8-68*

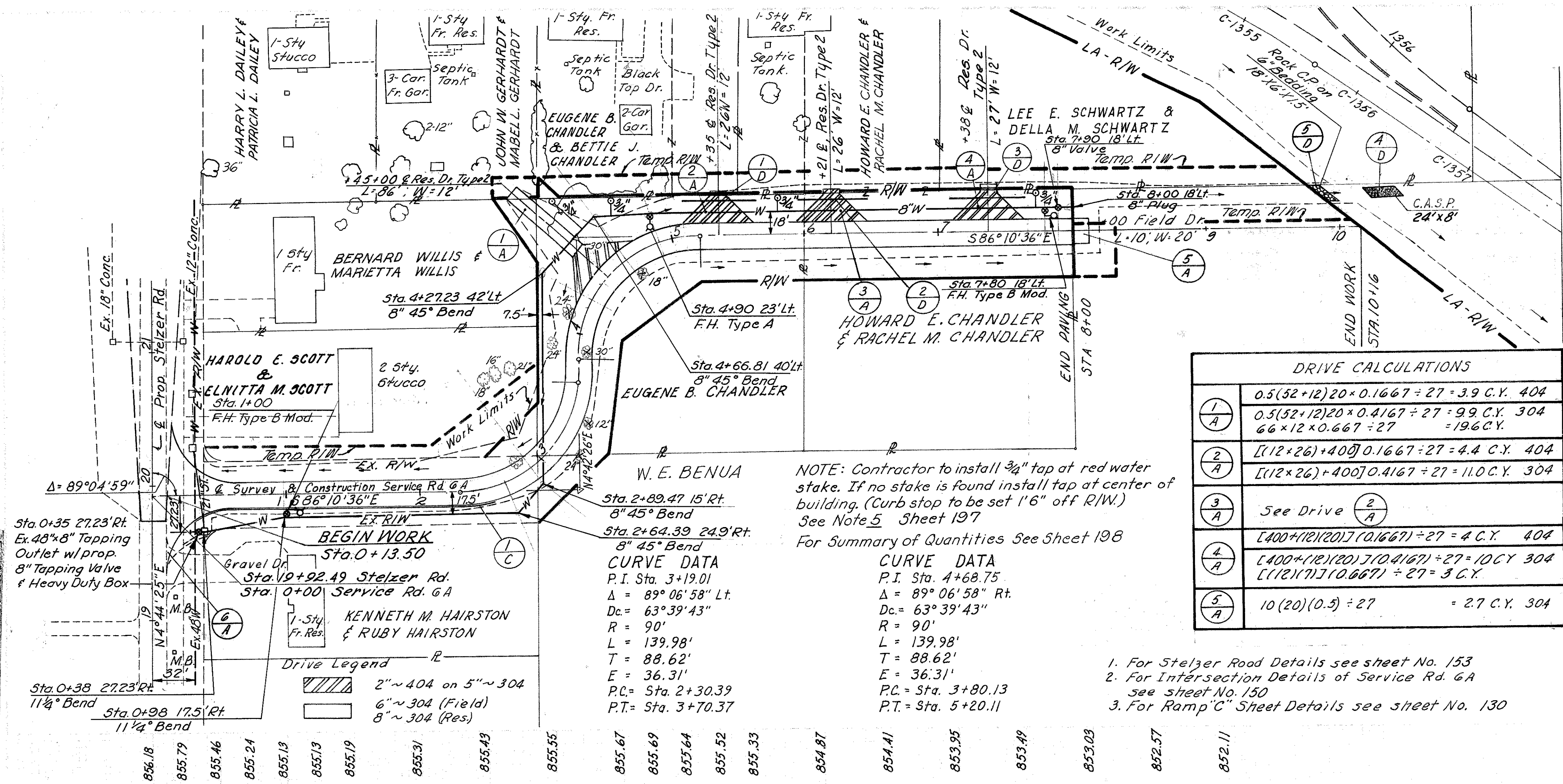


FRANKLIN COUNTY
FRA-270- 22.99 N

CALC: R. J. M. Sept
CHK: [Signature] 10-8-48

Ex. Ground Template Plan.	Plotted	Clk	Inked
Eachwork Quant.		<i>R. B. M.</i>	<i>R. B. M.</i>
Seeding Quant.		<i>R. B. M.</i>	<i>R. B. M.</i>

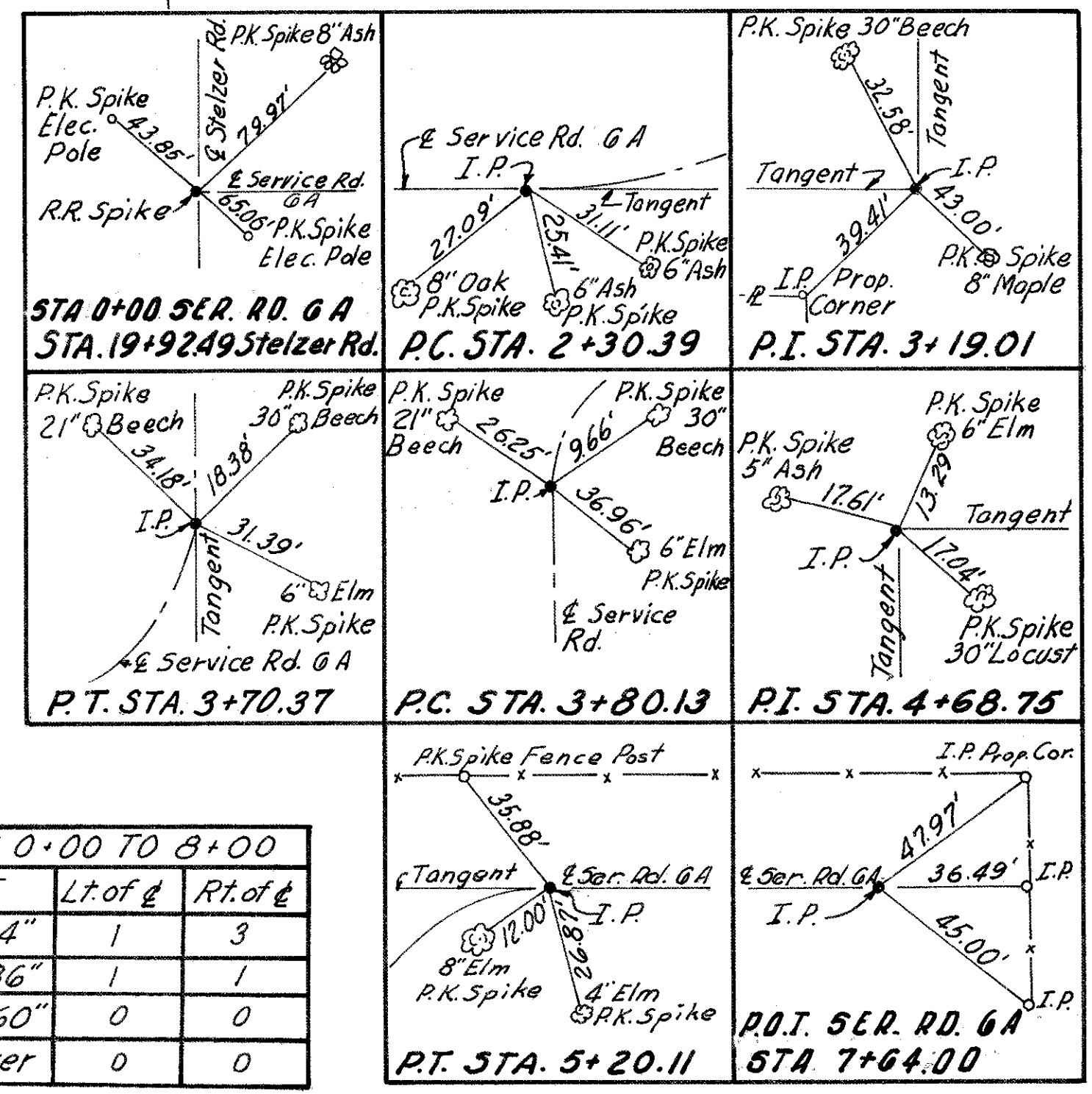




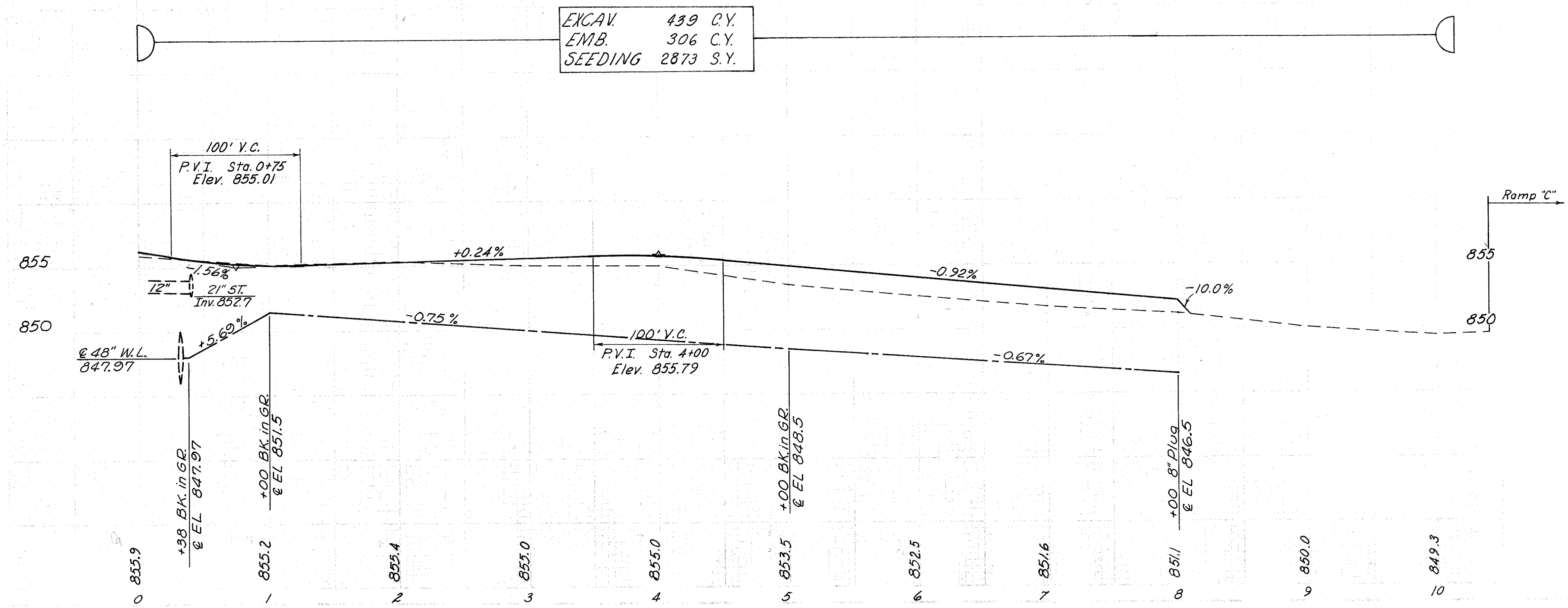
DRIVE CALCULATIONS	
$\frac{1}{A}$	$0.5(52+12)20 \times 0.1667 = 27 = 3.9 \text{ C.Y. } 404$
$\frac{2}{A}$	$0.5(52+12)20 \times 0.4167 \div 27 = 9.9 \text{ C.Y. } 304$ $66 \times 12 \times 0.667 \div 27 = 19.6 \text{ C.Y.}$
$\frac{2}{A}$	$[(12+26)+400] \cdot 0.1667 \div 27 = 4.4 \text{ C.Y. } 404$ $[(12+26)+400] \cdot 0.4167 \div 27 = 11.0 \text{ C.Y. } 304$
$\frac{3}{A}$	See Drive $\frac{2}{A}$
$\frac{4}{A}$	$[400+(12)(20)](0.1667) \div 27 = 4 \text{ C.Y. } 404$ $[400+(12)(20)](0.4167) \div 27 = 10 \text{ C.Y. } 304$ $[(12)(7)](0.667) \div 27 = 3 \text{ C.Y.}$
$\frac{5}{A}$	$10(20)(0.5) \div 27 = 2.7 \text{ C.Y. } 304$

NOTE: Contractor to install $\frac{3}{4}$ " 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

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	C.A.S.P.	Rock C.P. TYPE B	601	603	609			FOR DETAILS SEE SHEET No.
					TYPE D	CURB TYPE 6				
			S.Y.	G.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		B						
1-C	0+33 to 2+50	Rt.				217				
TOTALS			22	8	162	217				

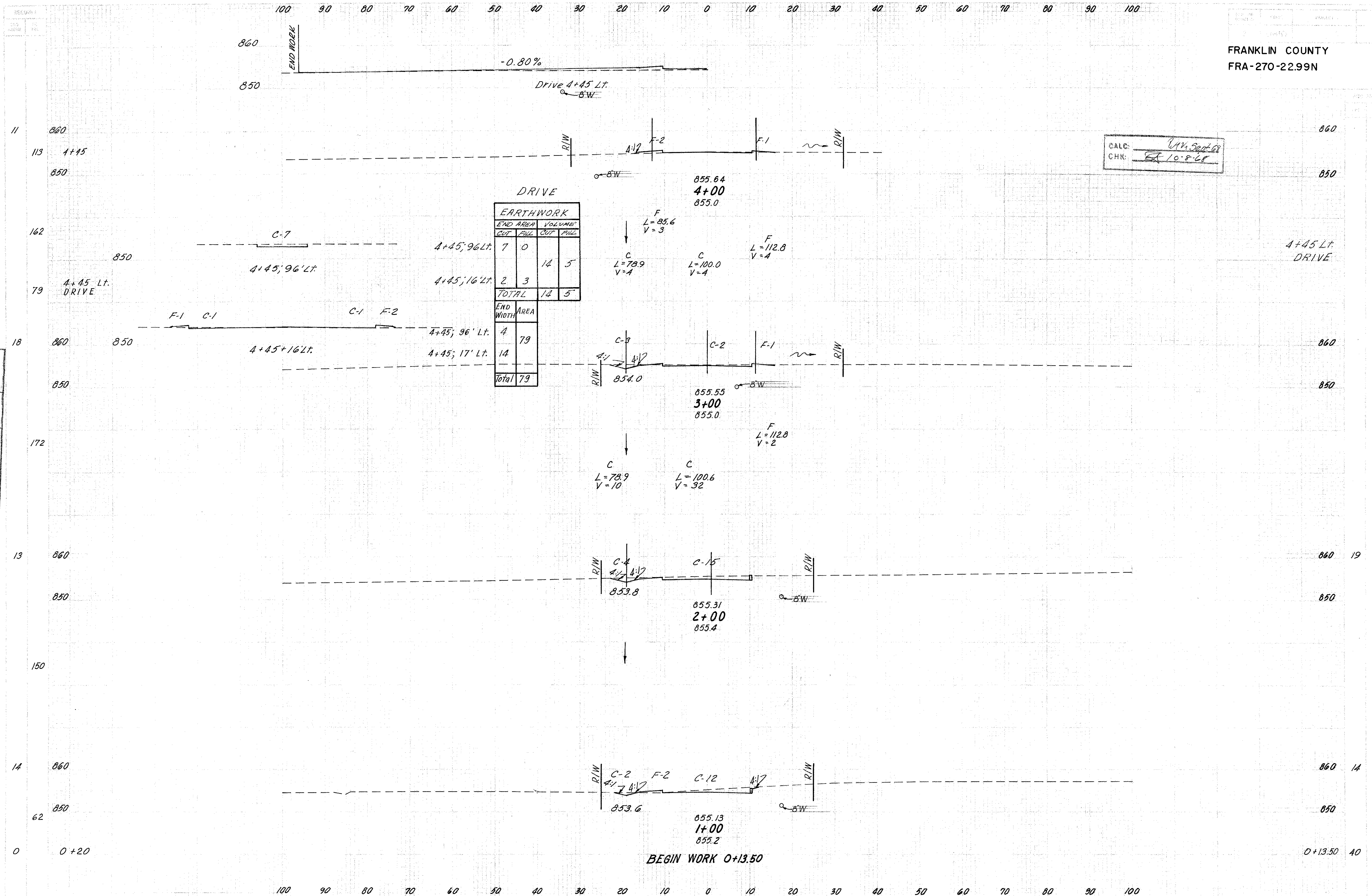
[illegible]

STA. 0+00 TO STA. 10+16 SERVICE ROAD 6A

CALC: *10/13/68*
CHK: *10/8/68*

DRIVE EARTHWORK					
END AREA		VOLUME			
CUT	FILL	CUT	FILL	CUT	FILL
7	0			14	5
2	3				
TOTAL		14	5		
END WIDTH	AREA				
4	79				
14					
Total	79				

Ex. Ground
Top of
Plym.
Earthwork &
Sealing &

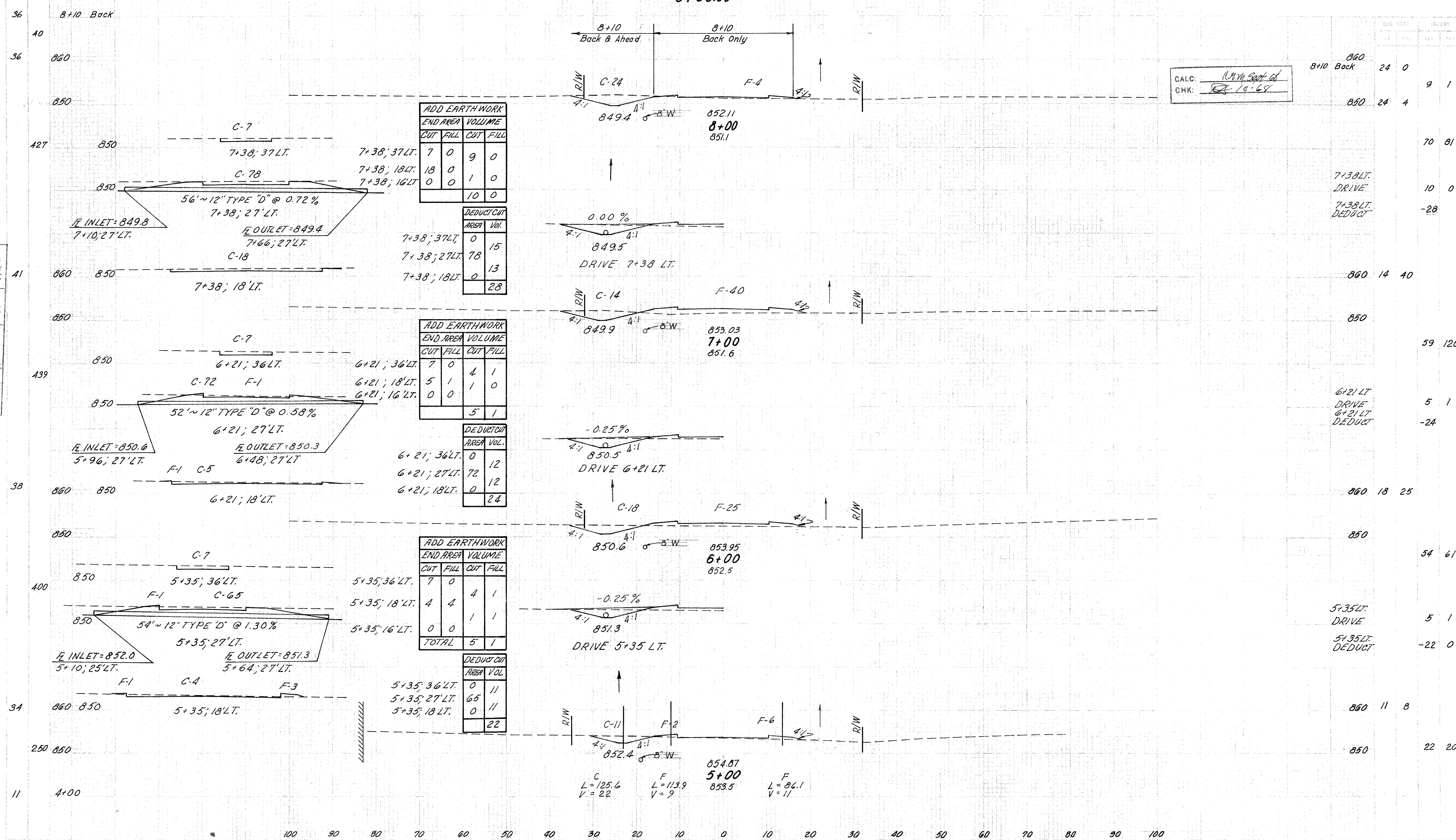


BEGIN WORK 0+13.50

END PAVING
8+00.00

CALC: *R.M. Scott*
CHK: *10-68*

By Ground
Topog. Plan
Faint
Stake 9



ADD EARTHWORK			
END AREA		VOLUME	
CUT	FILL	CUT	FILL
7	0	9	0
18	0	1	0
0	0	10	0

DEDUCT CUT	
AREA	VOL.
7+38, 37' LT.	0
7+38, 27' LT.	15
7+38, 18' LT.	13
7+38, 16' LT.	28

ADD EARTHWORK			
END AREA		VOLUME	
CUT	FILL	CUT	FILL
7	0	4	1
5	1	1	0
0	0	5	1

DEDUCT CUT	
AREA	VOL.
6+21, 36' LT.	0
6+21, 27' LT.	12
6+21, 18' LT.	12
6+21, 16' LT.	24

ADD EARTHWORK			
END AREA		VOLUME	
CUT	FILL	CUT	FILL
7	0	4	1
4	4	1	1
0	0	5	1
TOTAL		5	1

DEDUCT CUT	
AREA	VOL.
5+35, 36' LT.	0
5+35, 27' LT.	11
5+35, 18' LT.	11
5+35, 16' LT.	22

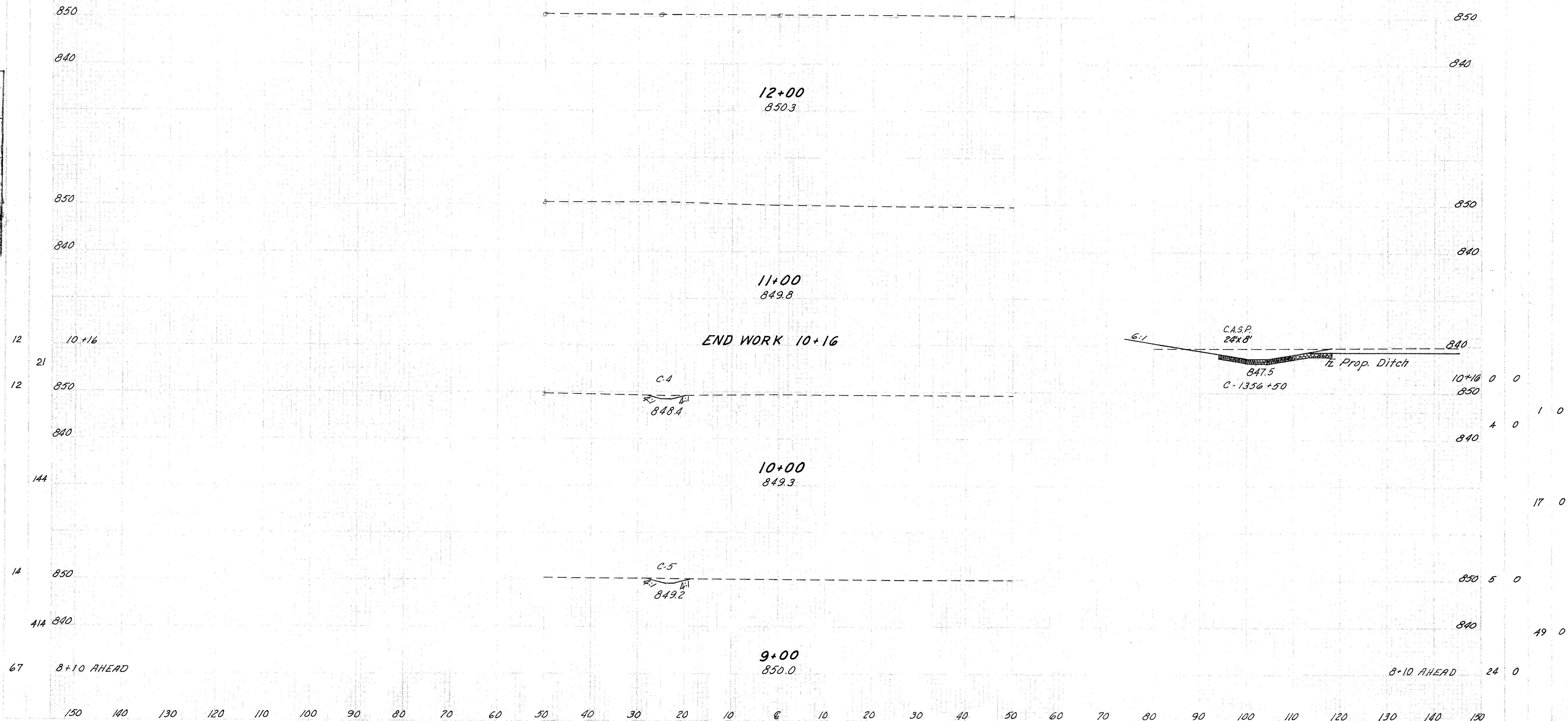
C L=125.6 V=22
F L=113.9 V=9
F L=84.1 V=11

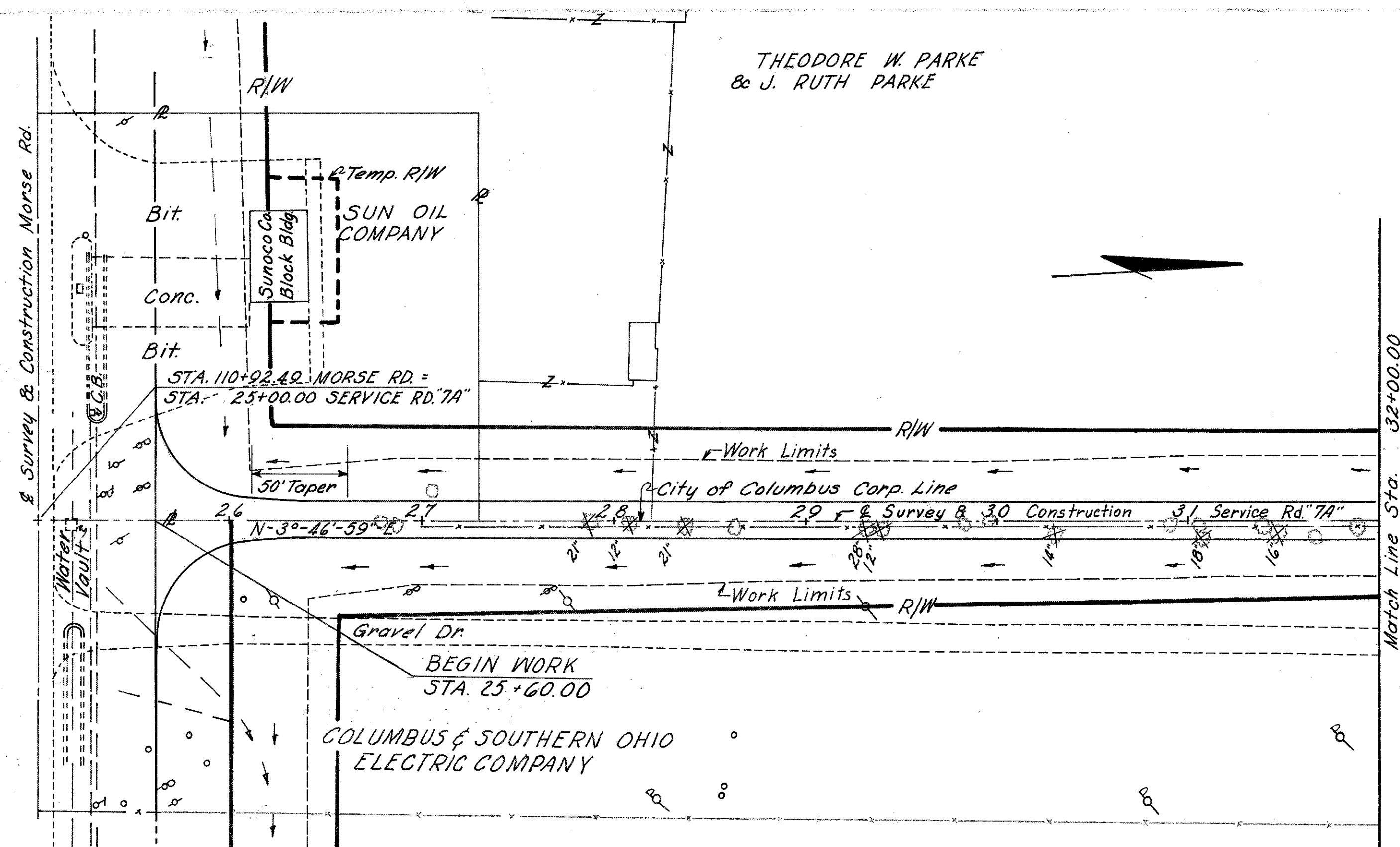
FRANKLIN COUNTY
FRA-270-22.99N

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292

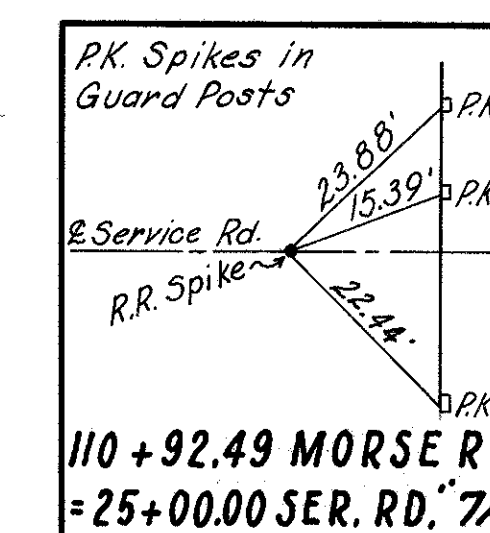
CALC: Plan Sept 68
CHK: Test 10-68

Ex. Ground	Prop. Plan	Existing	Prop. Plan
10+16	10+16	10+16	10+16





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

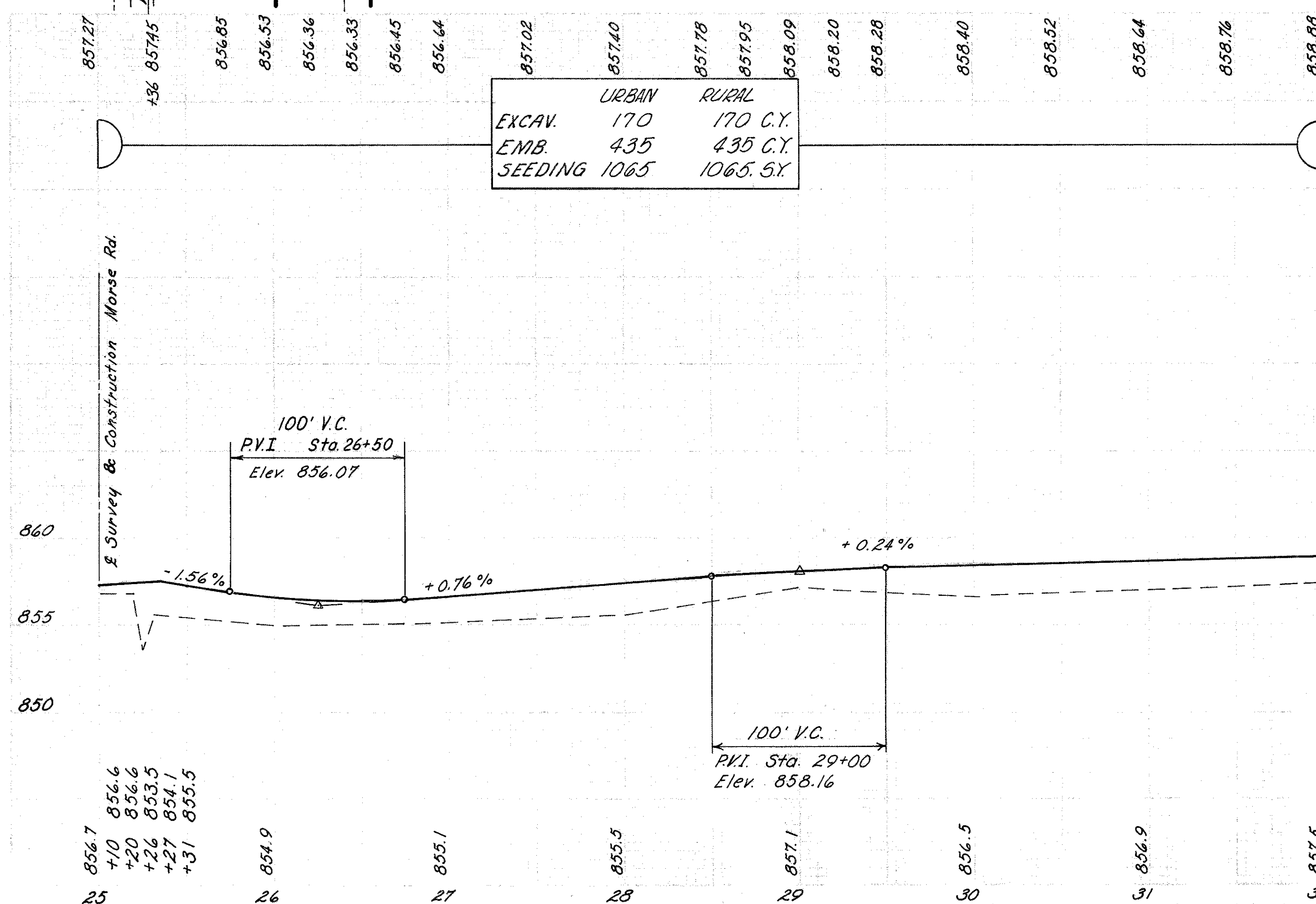


CALC: W. O. G. 10-1-6
CHK: R. C. H. 10-3-68

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.

[illegible]

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

THEODORE W. PARKE
& J. RUTH PARKE

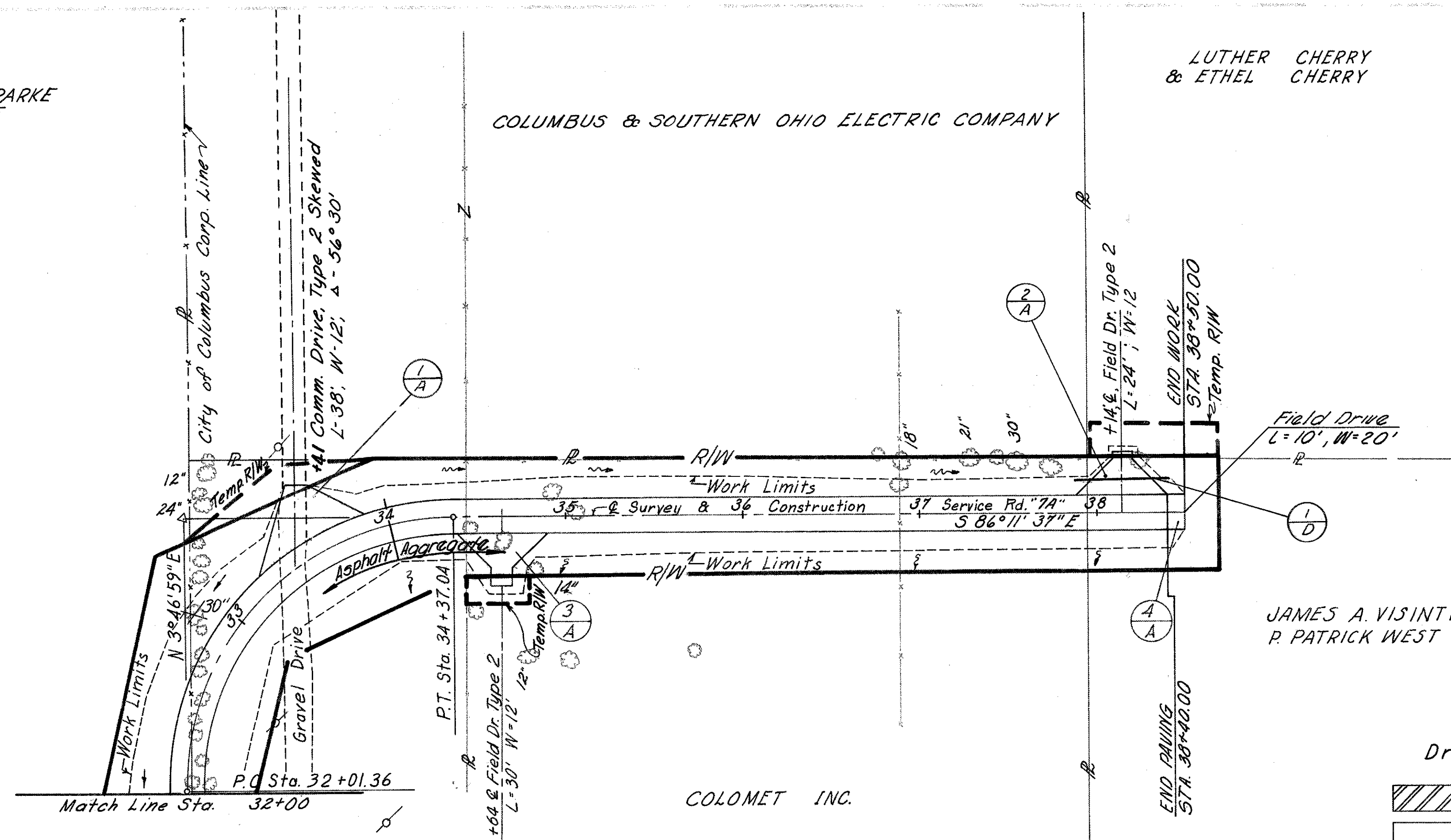
COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY

LUTHER CHERRY
& ETHEL CHERRY

FRANKLIN COUNTY
FRA-270-22.99N

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292

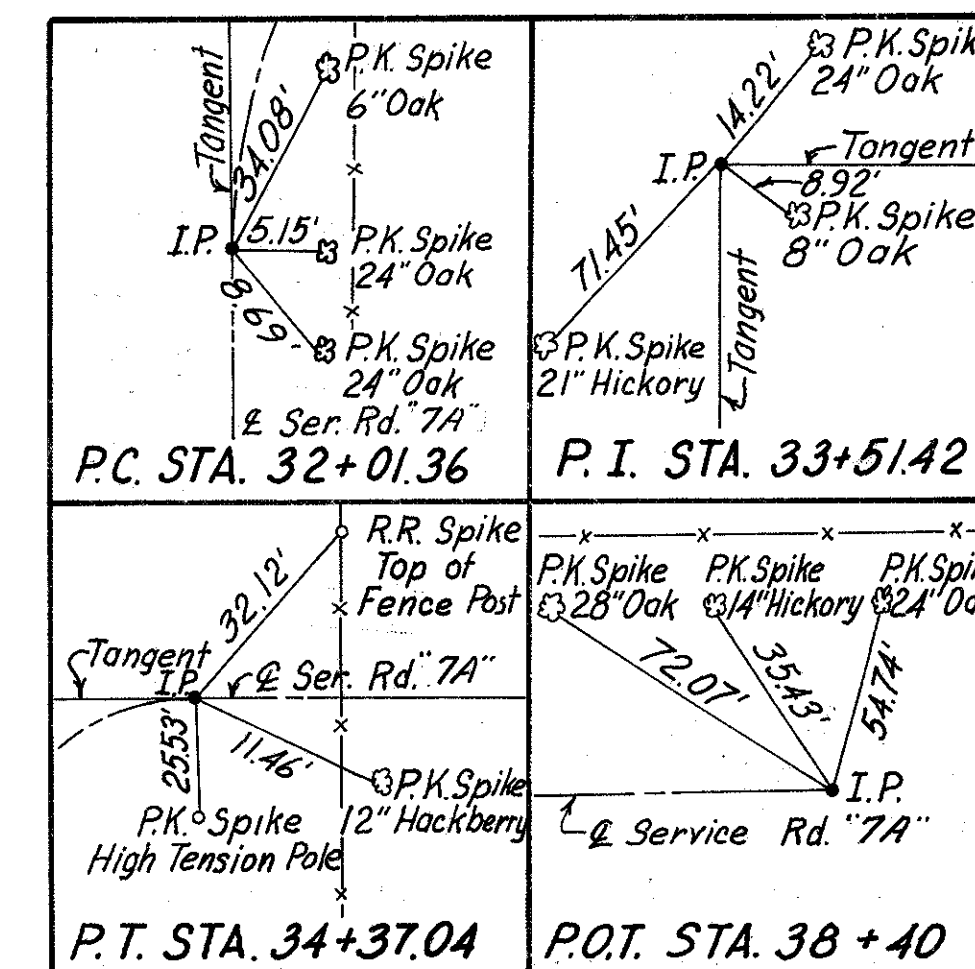
CURVE DATA
P.I. Sta. 33+51.42
 $\Delta = 90^\circ 01' 24''$
 $D_c = 38^\circ 11' 50''$
 $R = 150'$
 $L = 235.68'$
 $T = 150.06'$
 $E = 62.40'$



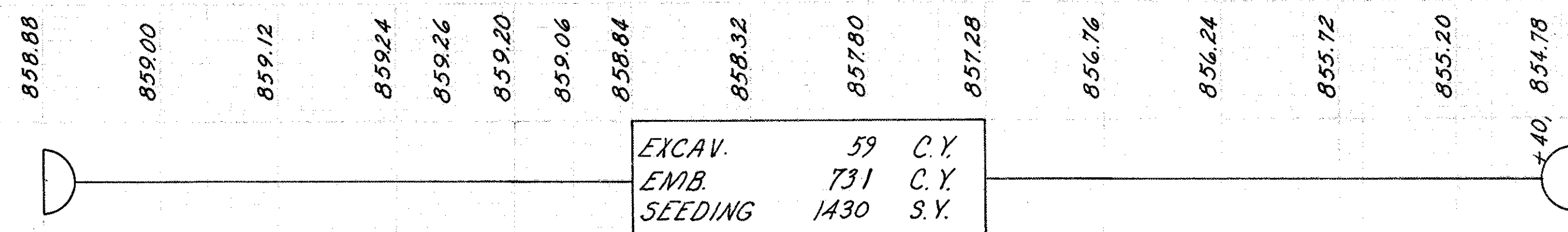
Drive Legend

	2" - 404 on 5" - 304 (Res.)
	2" - 404 on 7" - 304 (Comm.)
	6" - 304 (Field)
	9" - 304 (Comm.)

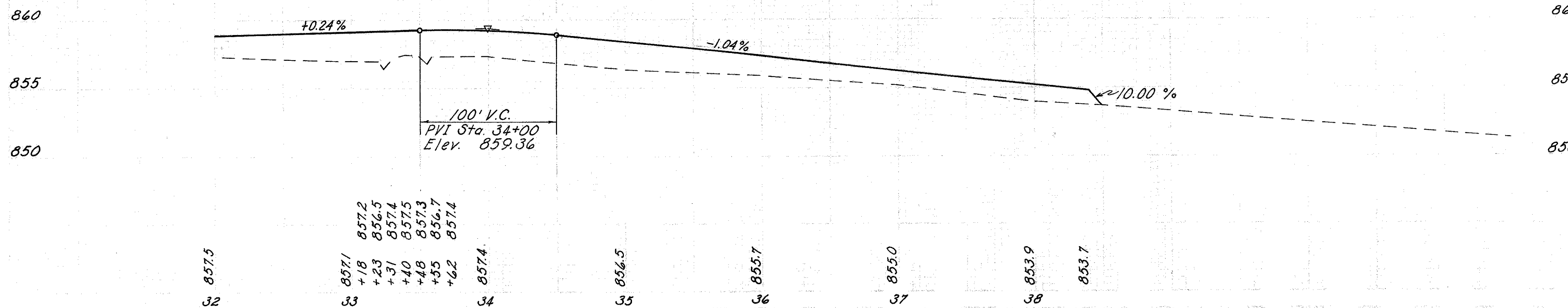
TREES Sta. 32+00 to 38+50	Left E	Right E
12" to 24"		
24" to 36"	1	
36" to 60"		
Over 60"		



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



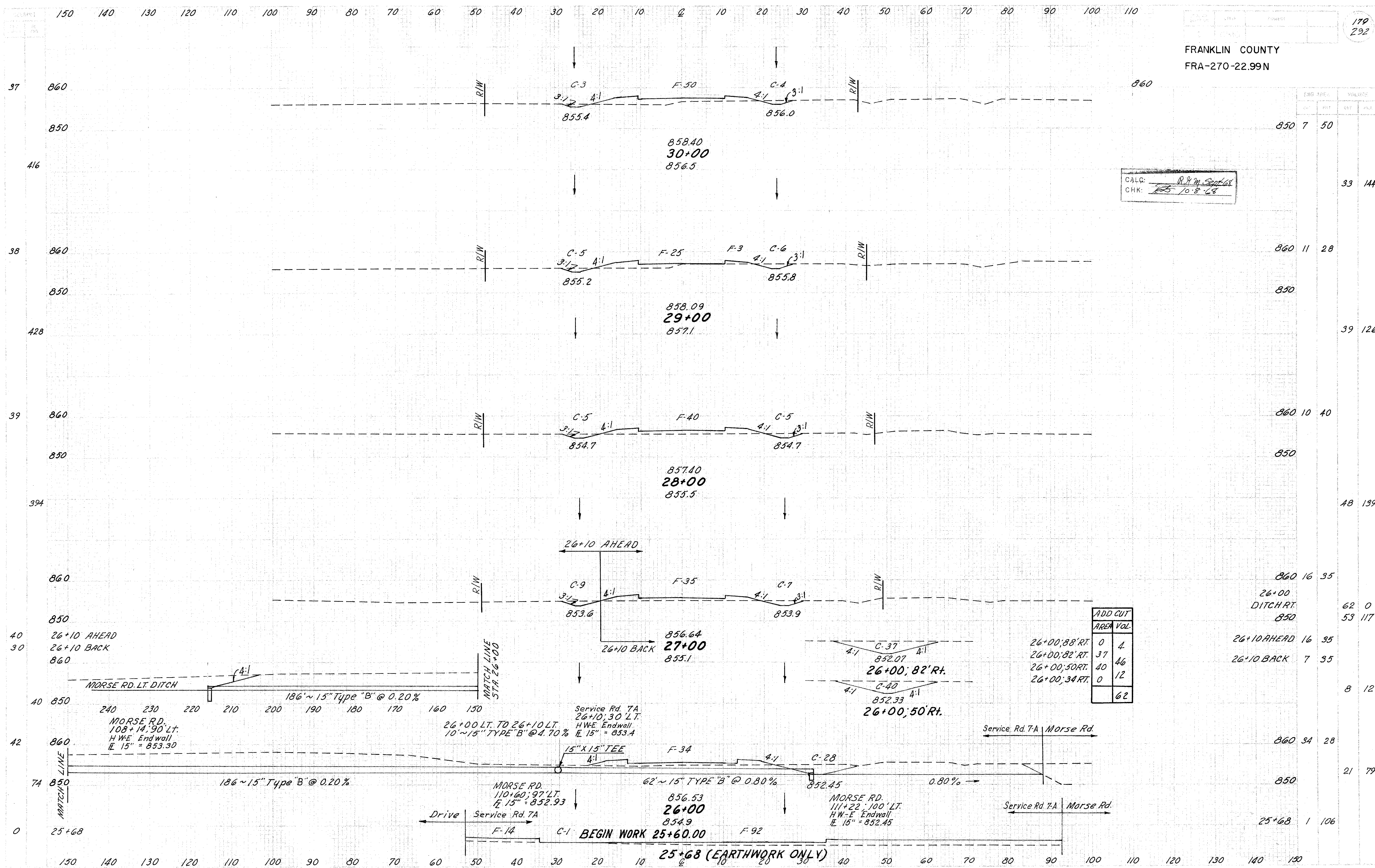
DRIVE CALCULATIONS	
$\frac{1}{A}$	Area by Planimeter = 1,100 S.F. 304 $1,100 \times 0.75 \div 27 = 30.8$ C.Y.
$\frac{2}{A}$	$(24 \times 12 + 20 \times 20) 0.50 \div 27 = 12.7$ C.Y. 304
$\frac{3}{A}$	$(30 \times 12 + 400) 0.50 \div 27 = 14.1$ C.Y. 304
$\frac{4}{A}$	$(10 \times 20 \times 0.5) \div 27 = 3.7$ C.Y. 304



REF.	STATION TO STATION	SIDE	304 AGGR BASE	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	E	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"

Inv'd 1/1/6	R.M. R.M.
Ct. J.C.	R.M. R.M.
Plat'd 11/2/6	
Acc. Ground Complete	Entirety of Cont. Selling Quant.



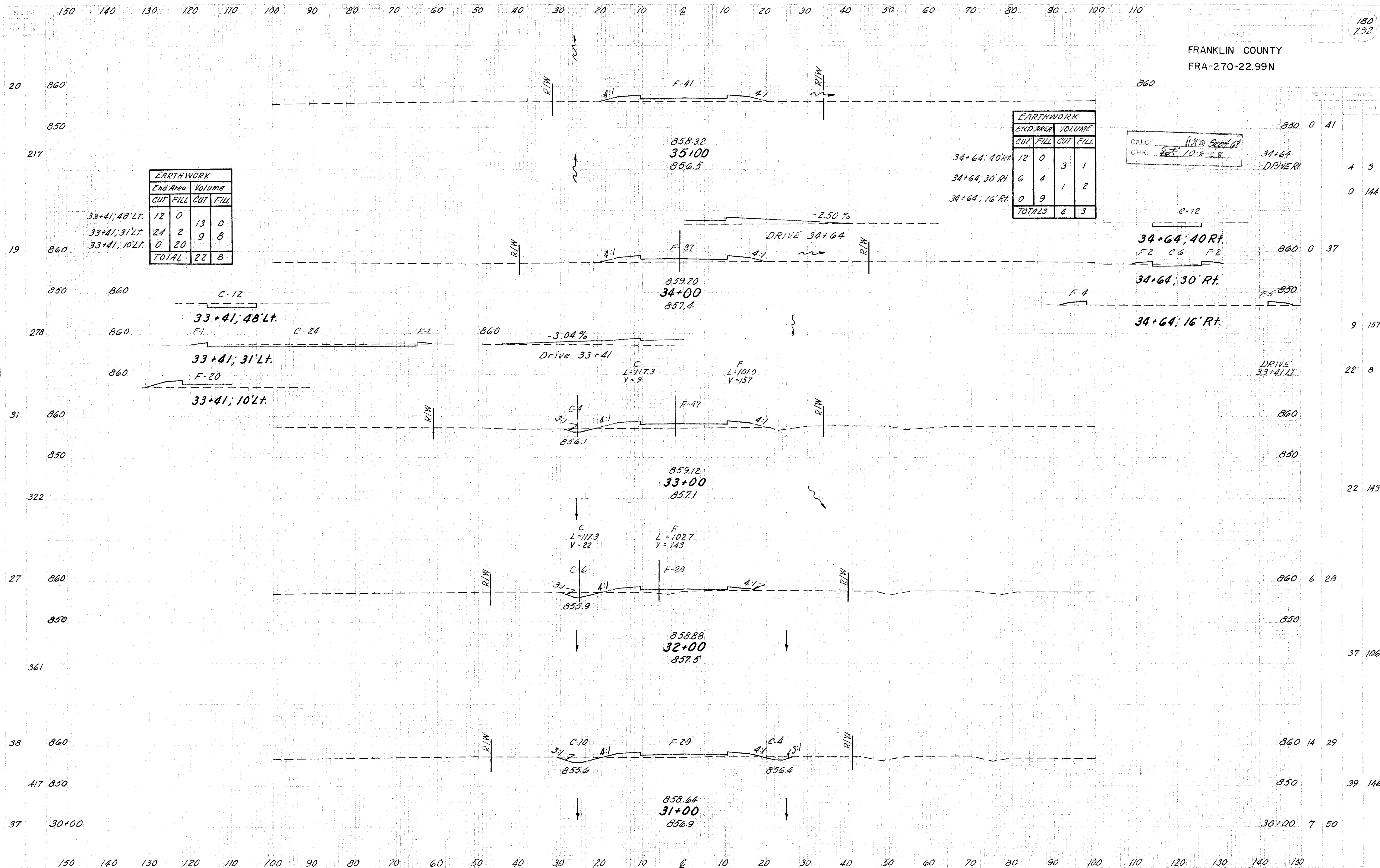
CALC: R.M. Sept 68
CHK: 10-8-68

ADD CUT	AREA	VOL.
26+00, 88' RT.	0	4
26+00, 82' RT.	37	46
26+00, 50' RT.	40	12
26+00, 34' RT.	0	12
	62	62

860	16	35
26+00		
DITCH RT.		
850		
26+10 AHEAD	16	35
26+10 BACK	7	35
860	34	28
850		
25+68	1	106

EARTHWORK			
END AREA		VOLUME	
CUT	FILL	CUT	FILL
12	0	3	1
6	4	1	2
0	9		
TOTALS		4	3

CALC: RRM Sept. 68
CHK: ES 10-8-68



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

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

END WORK
38+50

END PAVING
38+40

854.78
38+40
853.7

855.20
38+00
853.9

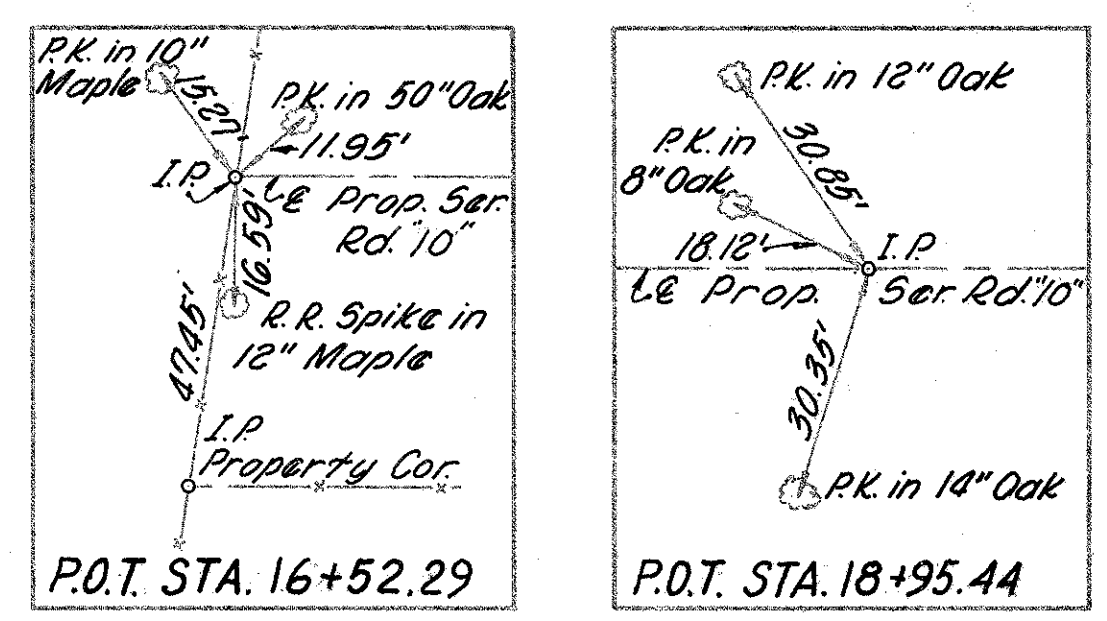
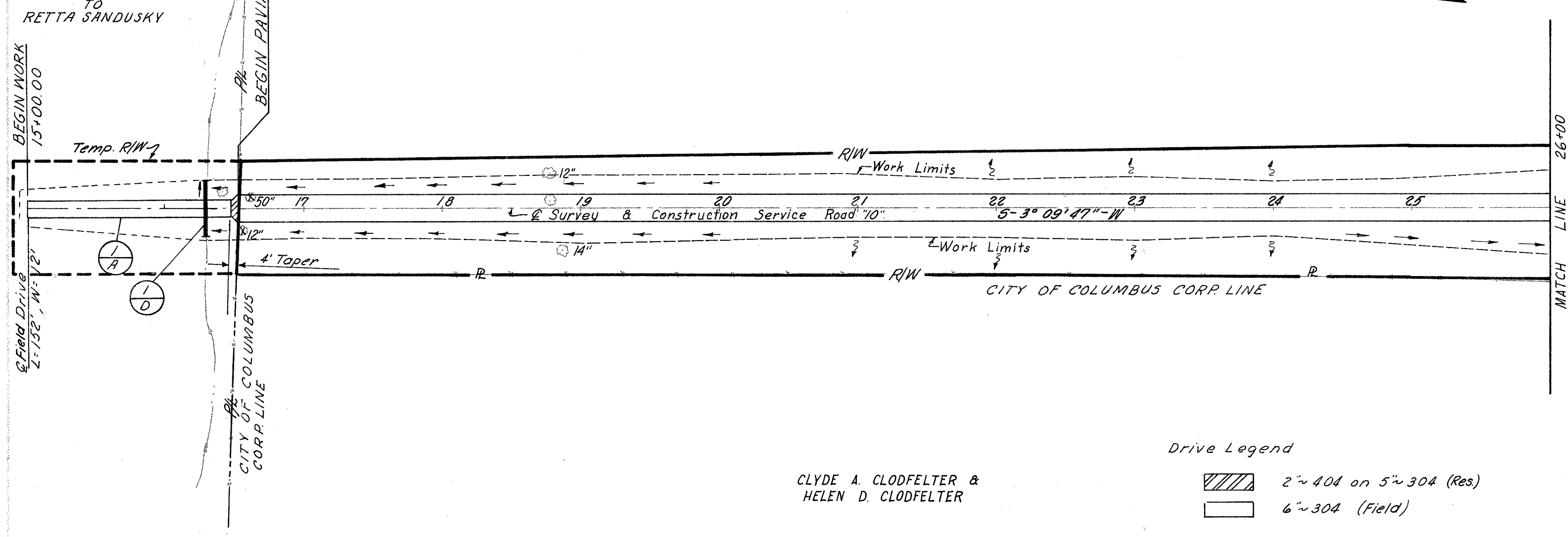
856.24
37+00
855.0

857.28
36+00
855.7

FRANKLIN COUNTY
FRA-270-22.99 N

LAURA S. HARDY
LIFE ESTATE
TO
RETTA SANDUSKY

WALTER D. SALYER
& S.J. SALYER



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

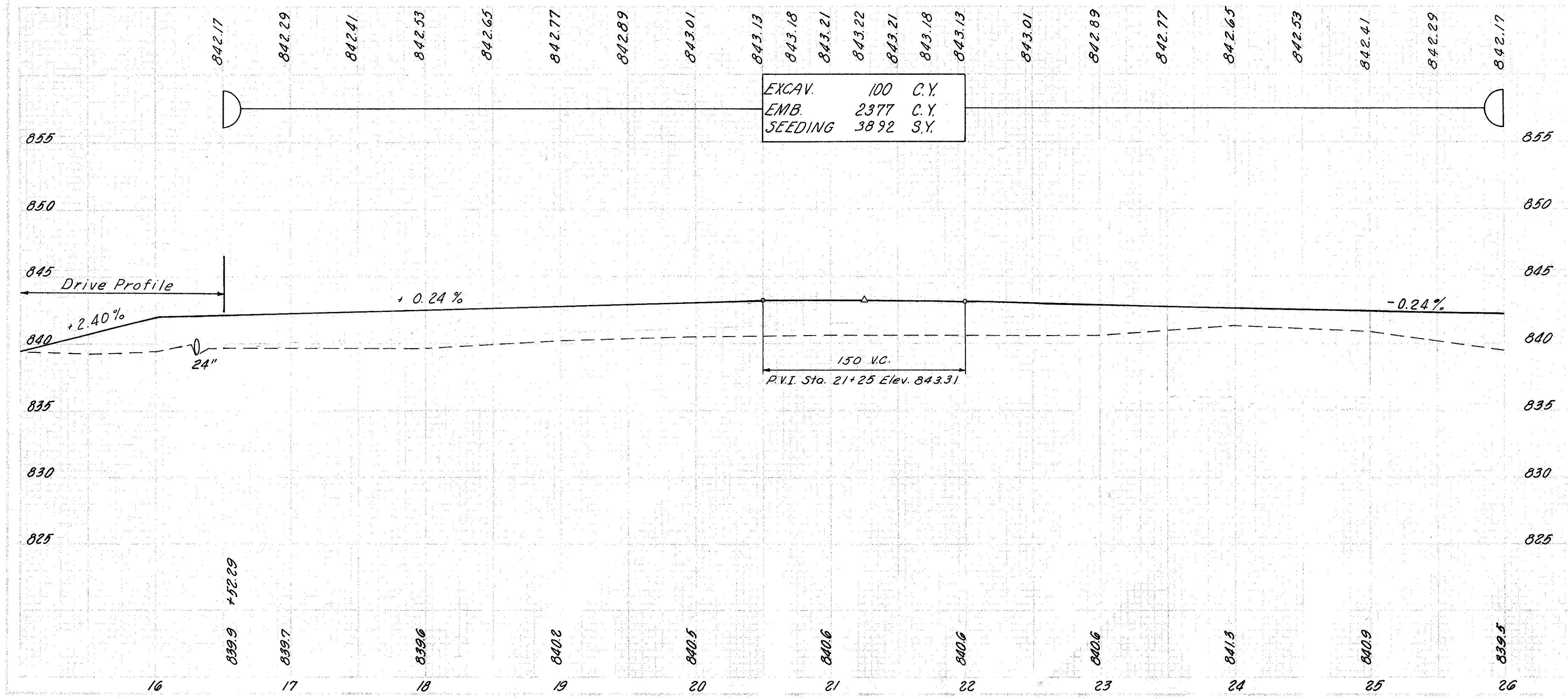
CALC: W.D.S. 10-1-68
CHK: R.E.H. 10-8-68

Drive Legend

- 2"~404 on 5"~304 (Res)
- 6"~304 (Field)

CLYDE A. CLODFELTER &
HELEN D. CLODFELTER

DRIVE CALCULATIONS	
$\frac{1}{A}$	$(0.5(20+12)4 + 12 \times 148) 0.5 \div 27 = 34 \text{ C.Y. } 304$



Rural		304	603	Type D		Type D		FOR DETAILS SEE SHEET NO.
REF	STATION TO STATION	SIDE	AGGR BASE #	C.Y.	34	42	184	
I-A	15+00 TO 16+52.50	E						
I-D	16+30	WEST						
RURAL TOTALS				34	42			

FRANKLIN COUNTY
FRA-270-22.99N

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

P.O.T. STA. 35+90.90

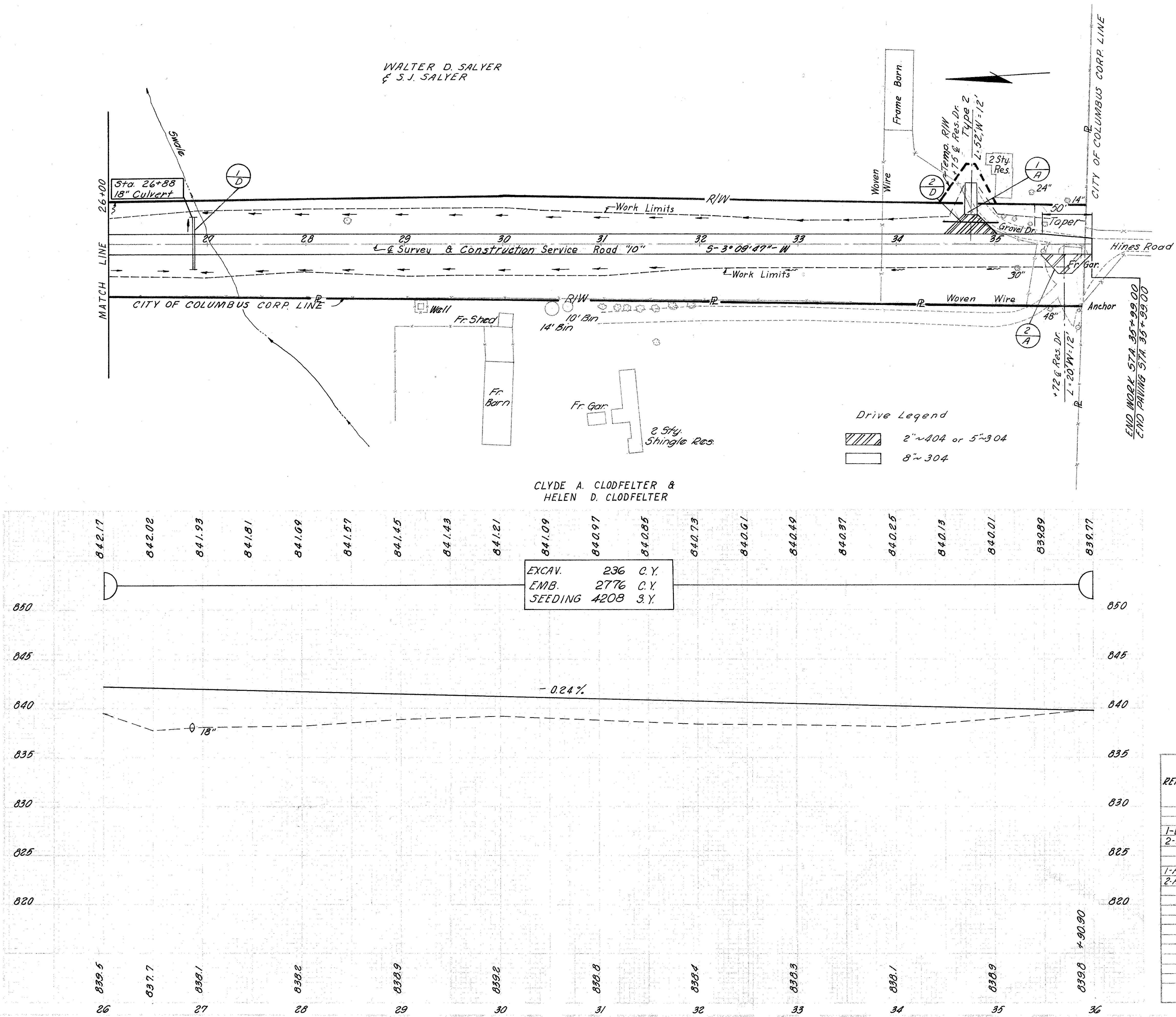
TREES 26*00 TO 36*00		
SIZE	Lt. of g	Rt. of g
12" to 24"	0	0
24" to 36"	0	0
36" to 60"	0	0
60" & Over	0	0

DRIVE CALCULATIONS	
1 A	$0.5(12+52)20 \times 0.1667 \div 27 = 3.9C.Y.404$ $0.5(12+52)20 \times 0.167 \div 27 = 9.9C.Y.304$ $12 \times 32 \times 0.667 \div 27 = 9.5C.Y.304$
2 A	See Item 1-A : 3.9C.Y.404 See Item 1-A : 9.9C.Y.304

NOTE:

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

7 RURAL

[illegible]

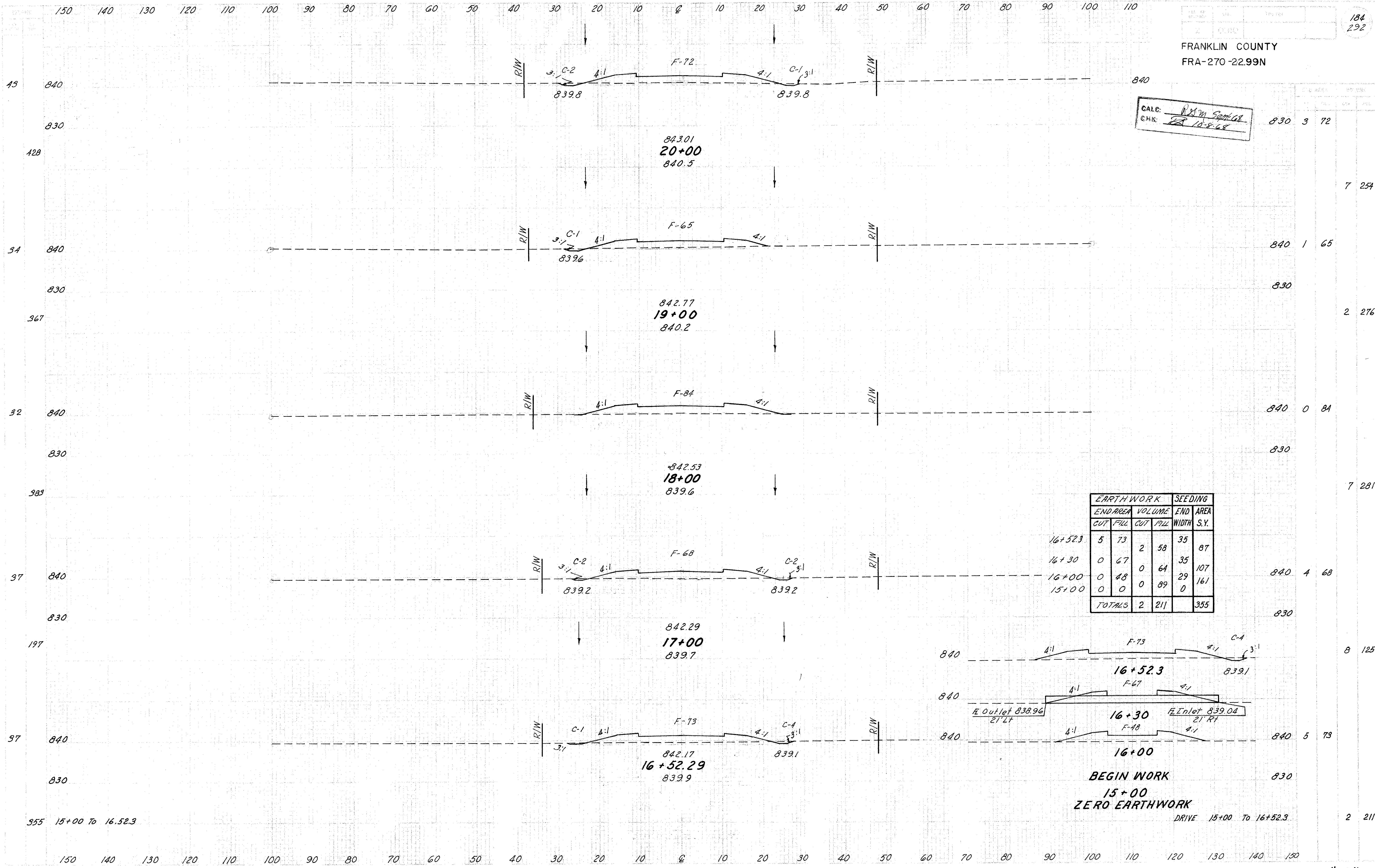
FRANKLIN COUNTY
FRA-270-22.99N

CALC: *R.M. Smith*
CHK: *10-8-68*

184
292

Ex. Ground
Template
Plan
Seeding Quant.

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

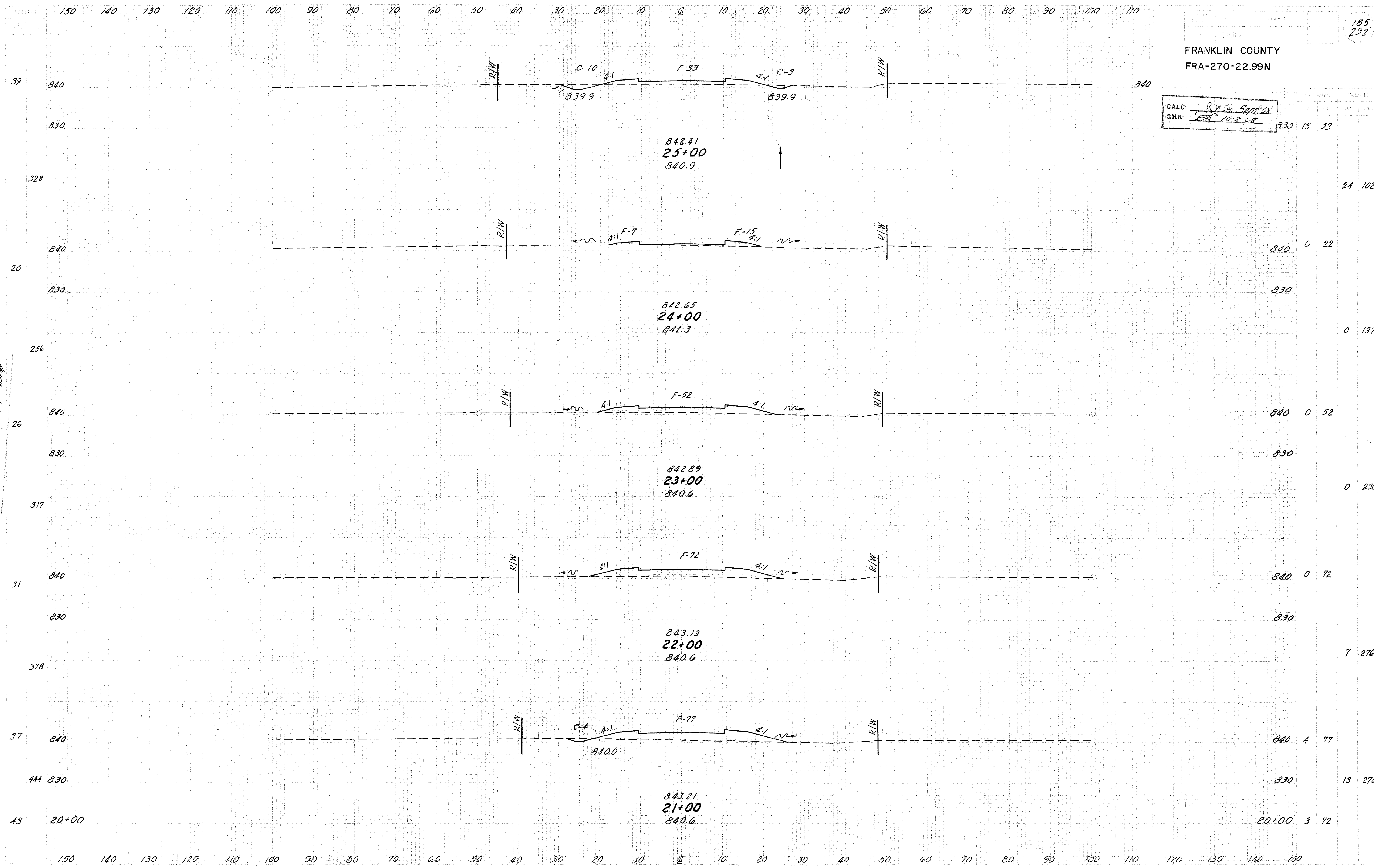


STA. 16+52.25 TO STA. 20+00 SERVICE ROAD "10"

FRANKLIN COUNTY
FRA-270-22.99N

CALC: *R.M. Smith*
CHK: *10-8-68*

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232



STA. 21+00 TO STA. 25+00 SERVICE ROAD "10"

FRANKLIN COUNTY
FRA-270-22.99N

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292

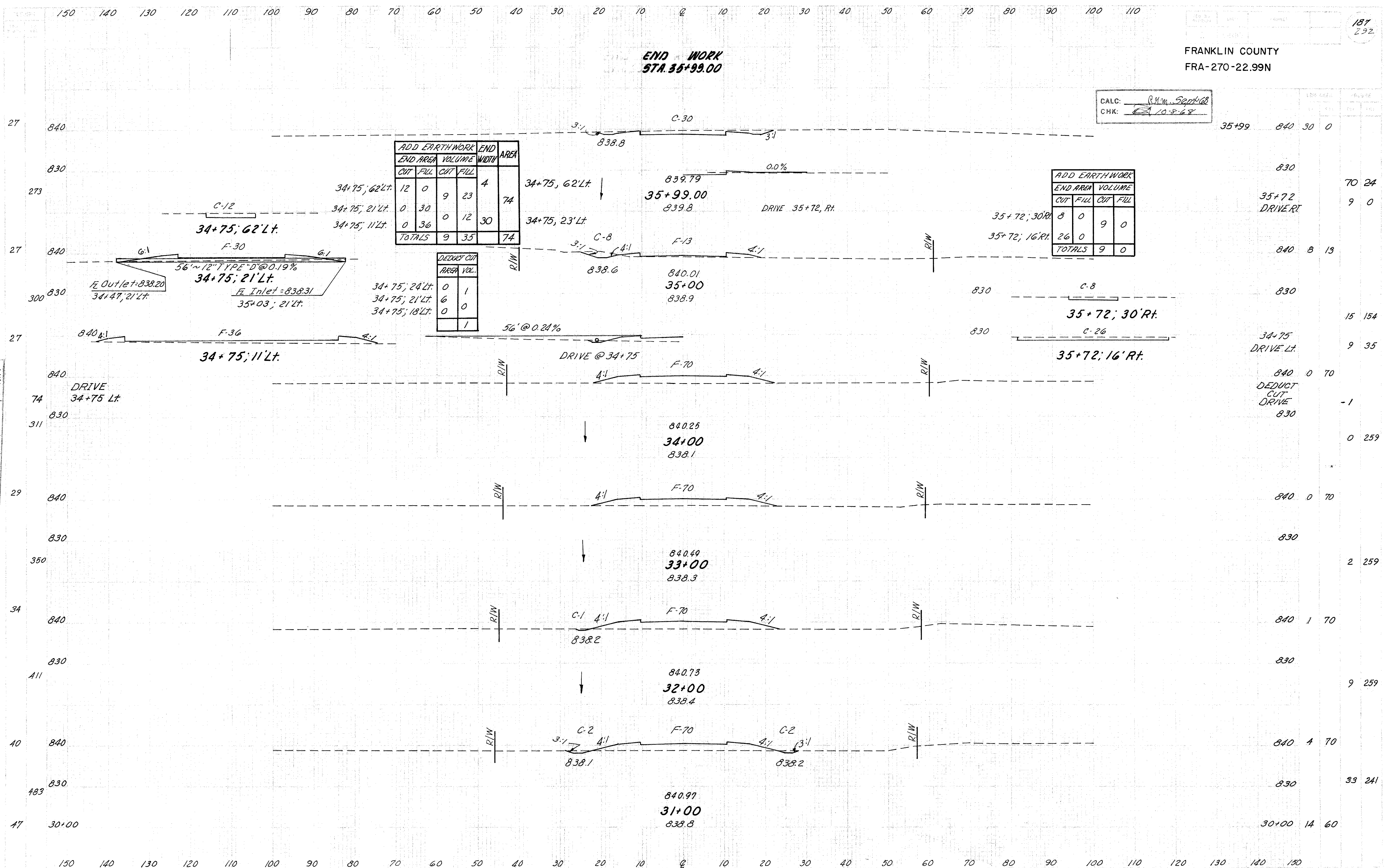
CALC: R.M. Smith
CHK: 10-8-68

STATION	DATE	BY	CHK	DATE
830	14	60		
46	243			
840	11	71		
830				
28	369			
840	4	128		
830				
9	511			
840	1	148		
830				
7	422			
840	3	80		
830				
30	209			
25+00	13	33		

STA 26+88 18" CULVERT
See Sheet No. 195 for Culvert Details

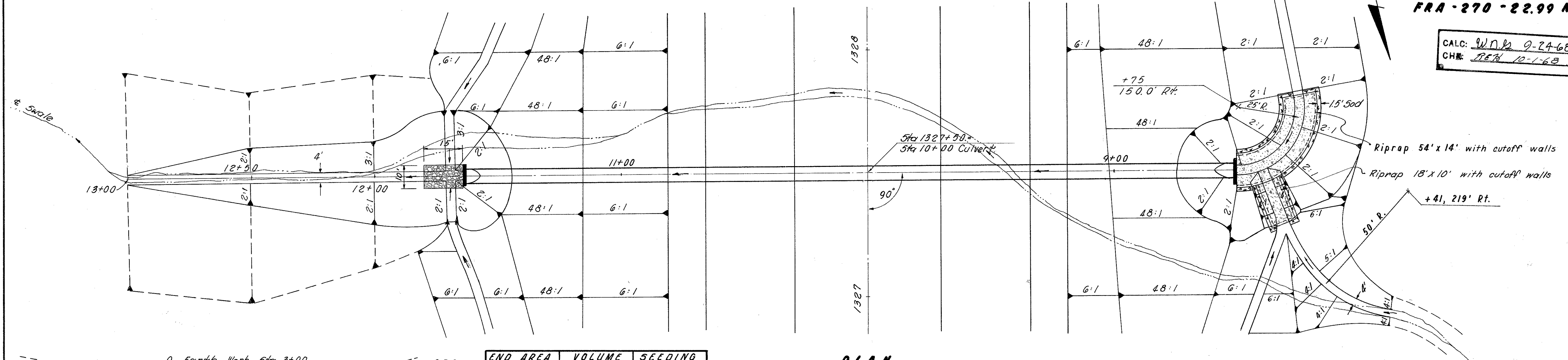
FRANKLIN COUNTY
FRA-270-22.99N

CALC: RM. Sept 68
CHK: ~~10~~ 10-8-68



STA. 31+00 TO STA. 35+99.00 SERVICE ROAD "10"

CALC: WNB 9-24-68
CHK: REB 10-1-68



PLAN

Drainage Area = 161 Ac.
Q 50 = 170 cfs.

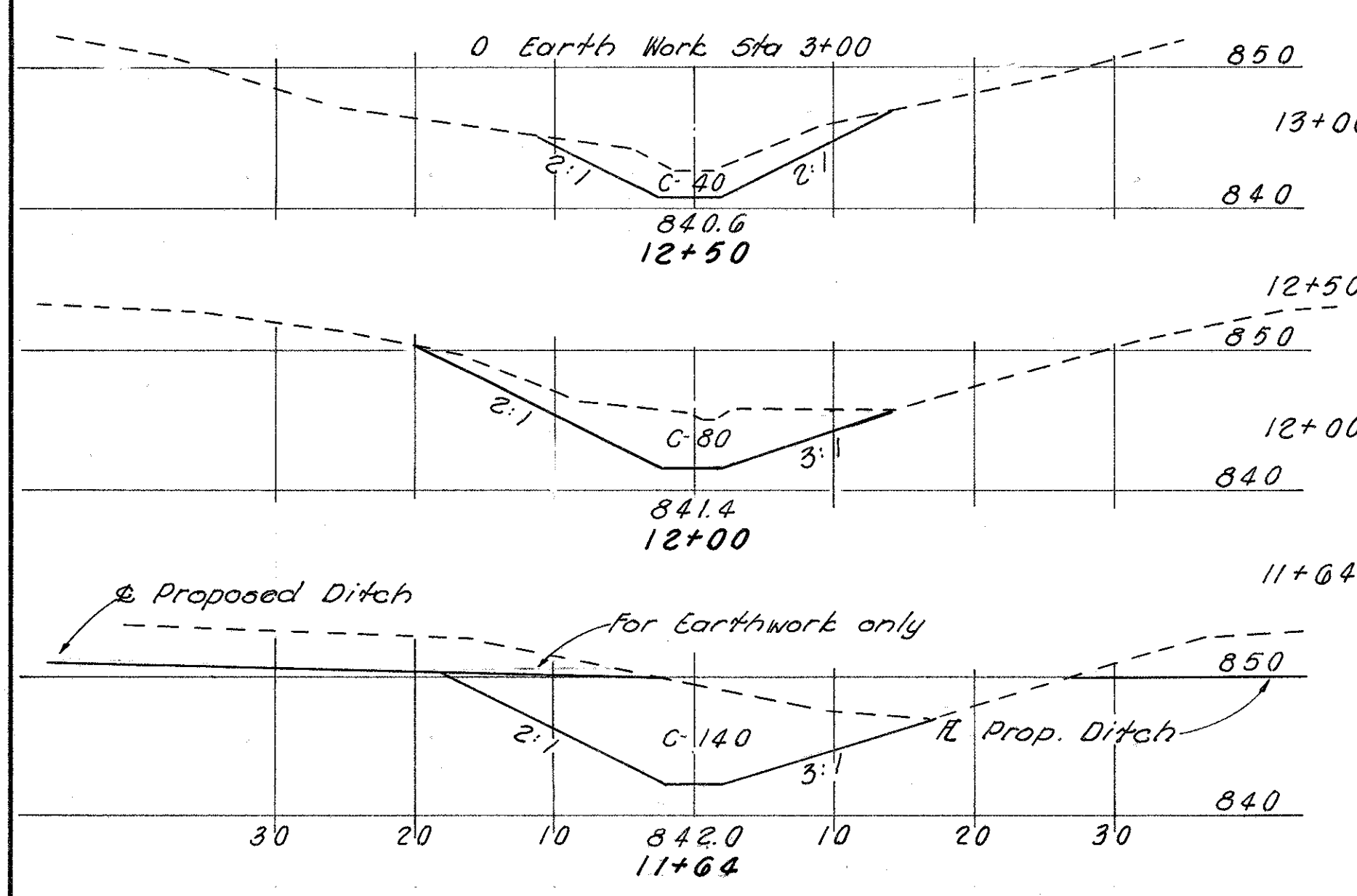
CALCULATIONS		
601 Rock C. P.	$10(15)(3) \div 27 = 17 \text{ C.Y.}$	
601 Riprap	$54(14) \div 9 = 84 \text{ S.Y.}$ $18(10) \div 9 = 20 \text{ S.Y.}$	
600 Sodding	$[2(54) + 17 - 12.7] \div 9 = 12.6 \text{ S.Y.}$ $[2(19) + 2 + 27] \div 9 = 4.7 \text{ S.Y.}$	

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.
600 Sodding	18 S.Y.

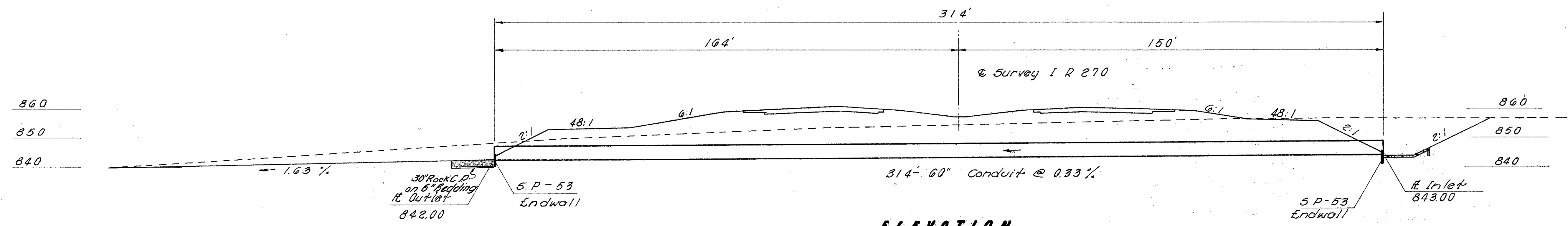
NOTES

* Items 203 and 659 carried to Sheet No. 477

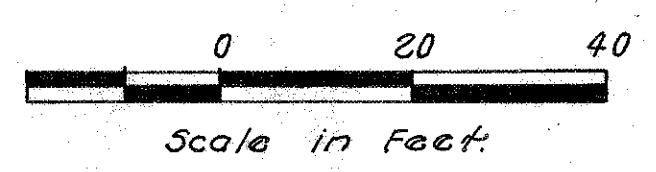


END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	WIDTH	S.Y.
13+00	0	0	0	0	56
12+50	40	0	0	20	145
12+00	80	0	0	32	36
11+64	140	0	0	32	
TOTAL		295	0		237

ELEVATION

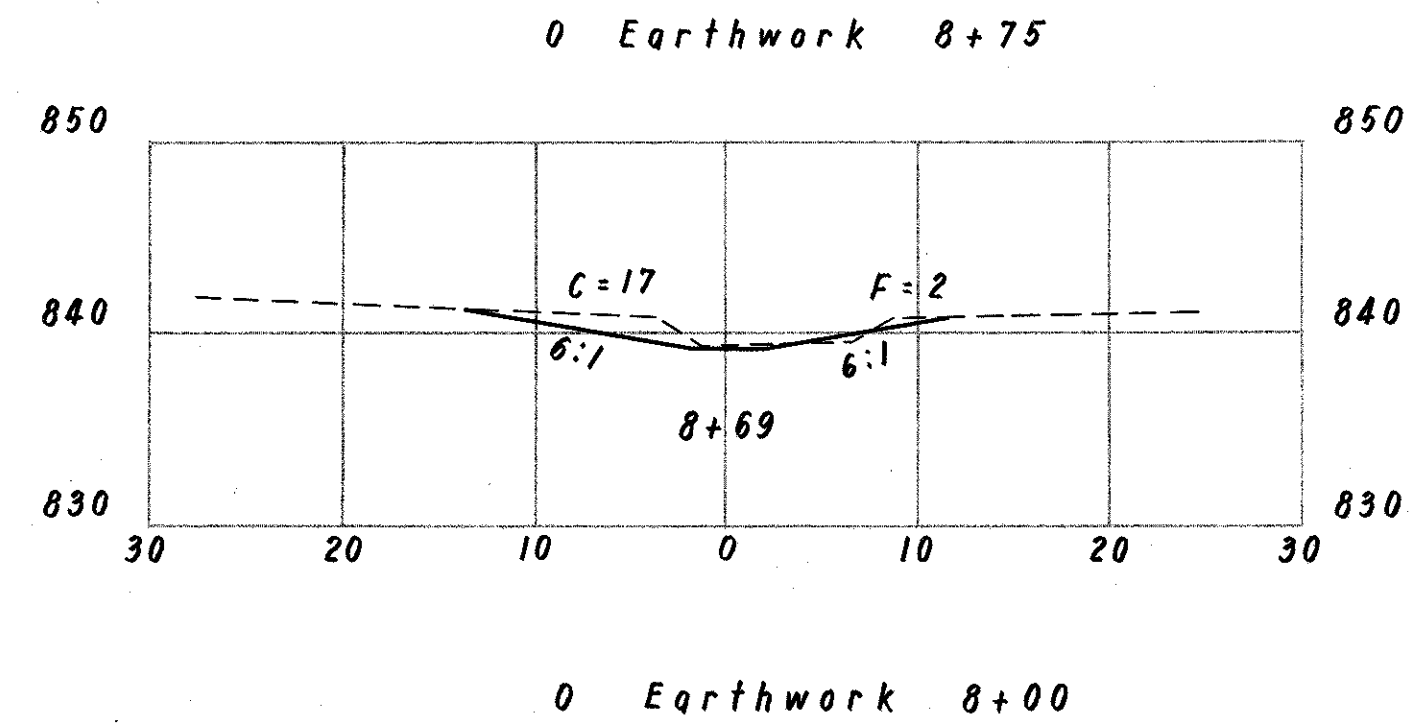
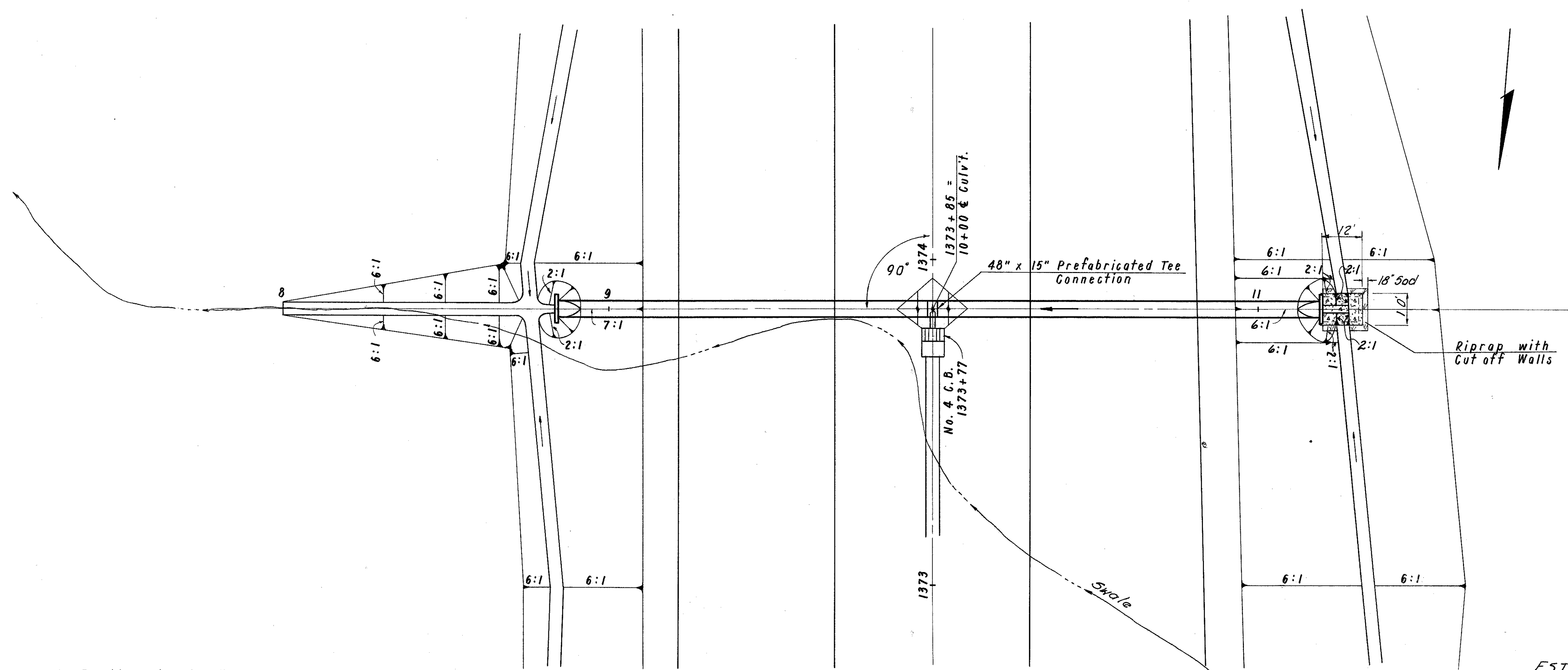


S P-53 ENDWALL		
L	H	H/3
10'-0"	5'-6"	1'-10"



FRANKLIN COUNTY
FRA -270 -22.99 N

CALC: W.D.B. 9-25-68
CHK: BEH 10-1-68



	End Area		Volume		Seeding	
	Cut	Fill	Cut	Fill	Width	S.Y.
8+75	0	0	4	1		
8+64	17	2			23	
			20	3		71
8+00	0	0			0	
	Total		24	4		71

PLAN

Drainage Area = 49 Acres
Q 50

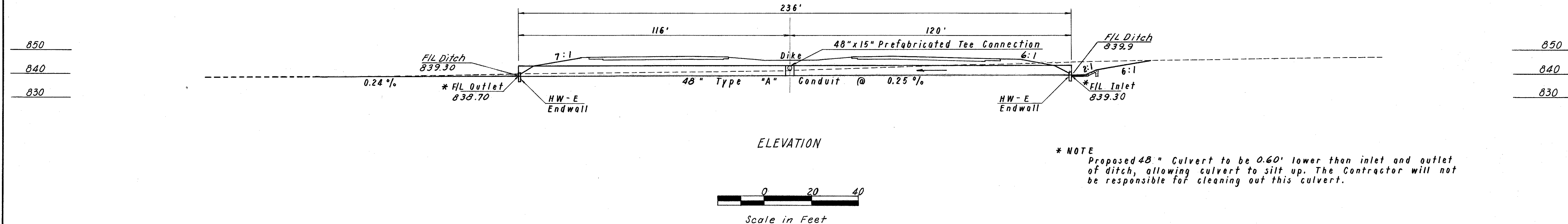
CALCULATIONS	
601 Riprap	$(10)(12) \div 9 = 13.3 \text{ S.Y.}$
600 Sodding	$[2(12)+13-2(6)] \div 9 = 2.8 \text{ S.Y.}$

ESTIMATED QUANTITIES

601	Riprap, using 6" Reinforced Concrete Slab	14.0	S.Y.
602	Concrete Masonry	1.8	G.Y.
603	48" Type A Conduit	706.02	
# 203	Excavation	236	L.F.
# 203	Embankment	24	G.Y.
# 659	Seeding	71	S.Y.
# 660	Sodding	3	S.Y.

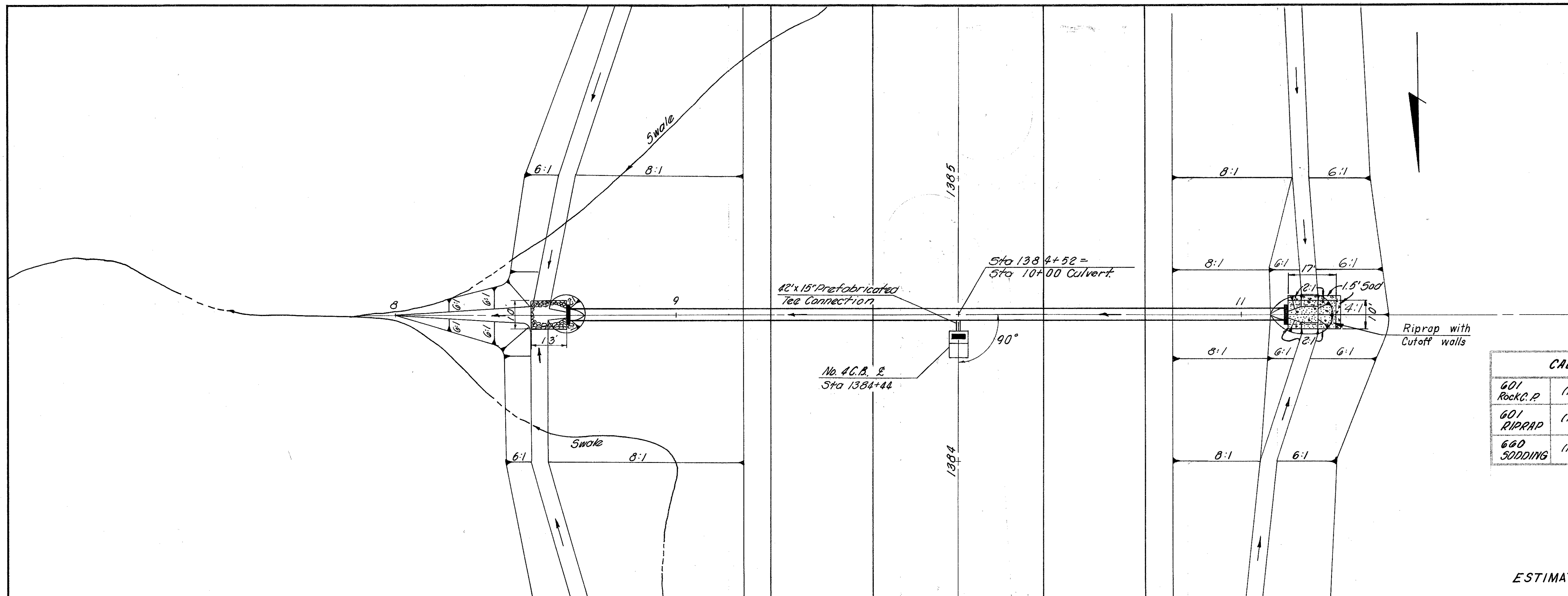
NOTES:

203 & 659 Carried to Sheet No. 61



* 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.



CALCULATIONS		
601 Rock C.P.	$(110)(113)(13) \div 27$	= 14.5 C.Y.
601 RIPRAP	$(17)(10) \div 9$	= 18.9 S.Y.
660 SODDING	$(117+11.5)(11.5) \div 9$	= 4.8 S.Y.

ESTIMATED QUANTITIES

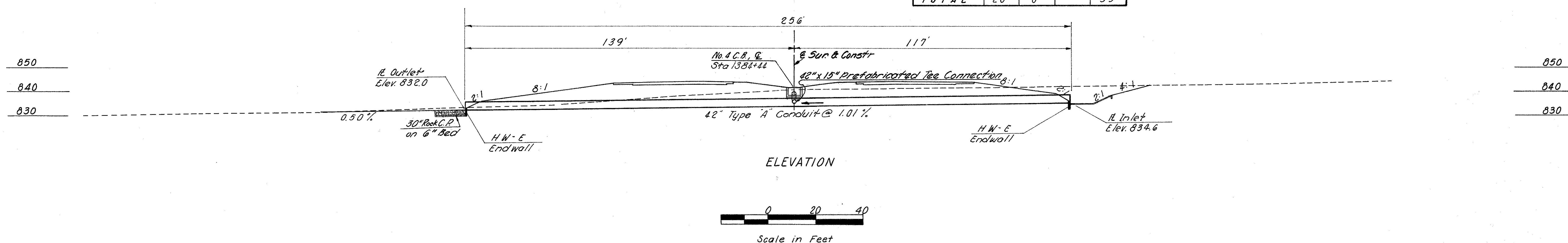
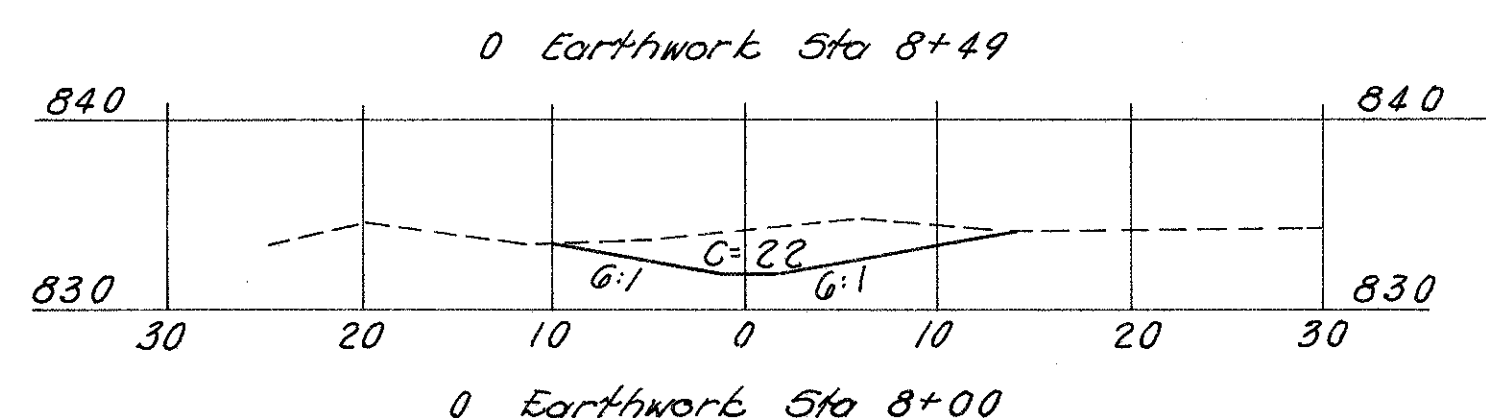
601 - Riprap, using 6" Reinforced Concrete Slab	19 S.Y.
601 - Rock Channel Protection Type B	15 C.Y.
602 - Concrete Masonry	1.6 C.Y.
603 - 42" Type A Conduit 706.02	256 L.F.
* 203 - Excavation	20 C.Y.
* 659 - Seeding	35 S.Y.
660 - Sodding	5 S.Y.

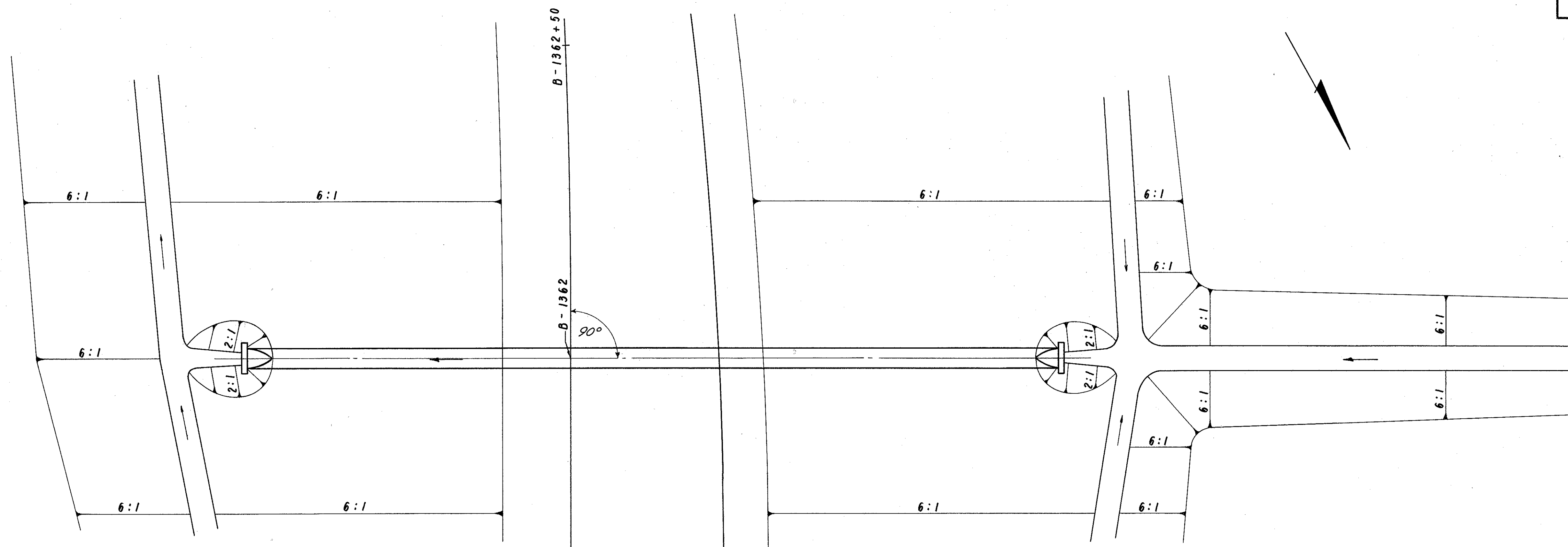
NOTES
* Items 203 and 659 carried to Sheet No. 64

PLAN

Drainage Area = 71 Acres
Q 50 95 cfs

	END AREA		VOLUME		SEEDING	
	CUT	FILL	CUT	FILL	WIDTH	S.Y.
8+49	0	0				
8+39	22	0	4	0	21	
8+00	0	0	16	0	35	
TOTAL	22	0	20	0	35	

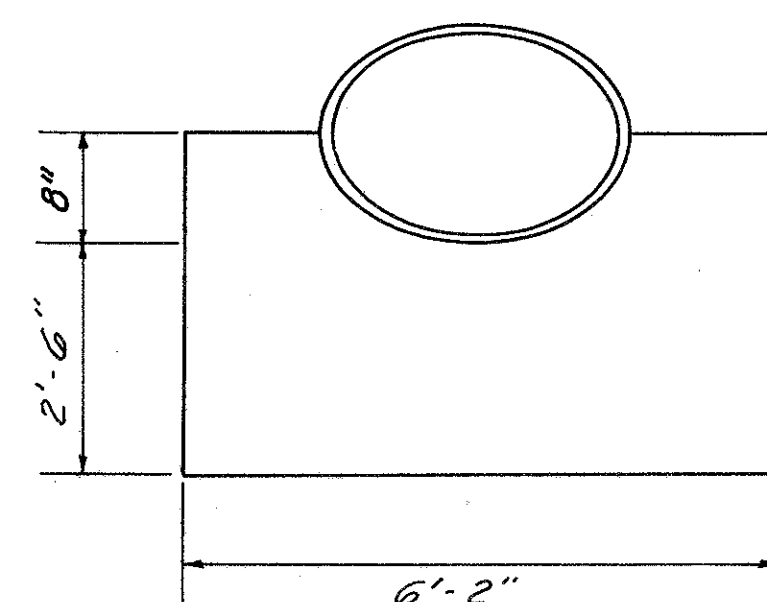




PLAN

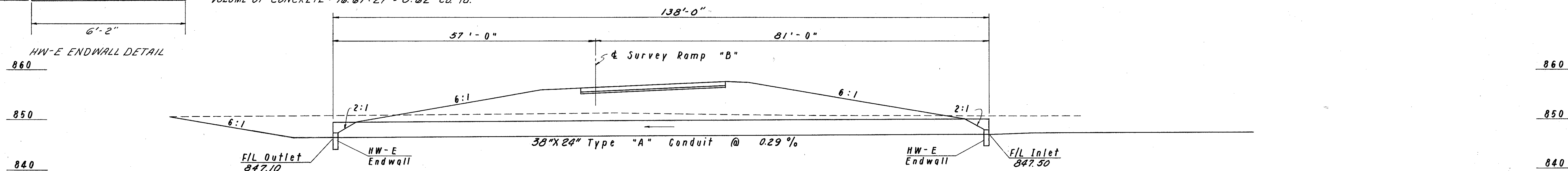
Drainage Area = 7 Acres
Q₅₀ = 25 C.F.S.

ESTIMATED QUANTITIES
602 Concrete Masonry 1.3 C.Y.
603 38"x24" Type A Conduit, 706.04 138 L.F.



HW-E ENDWALL DETAIL

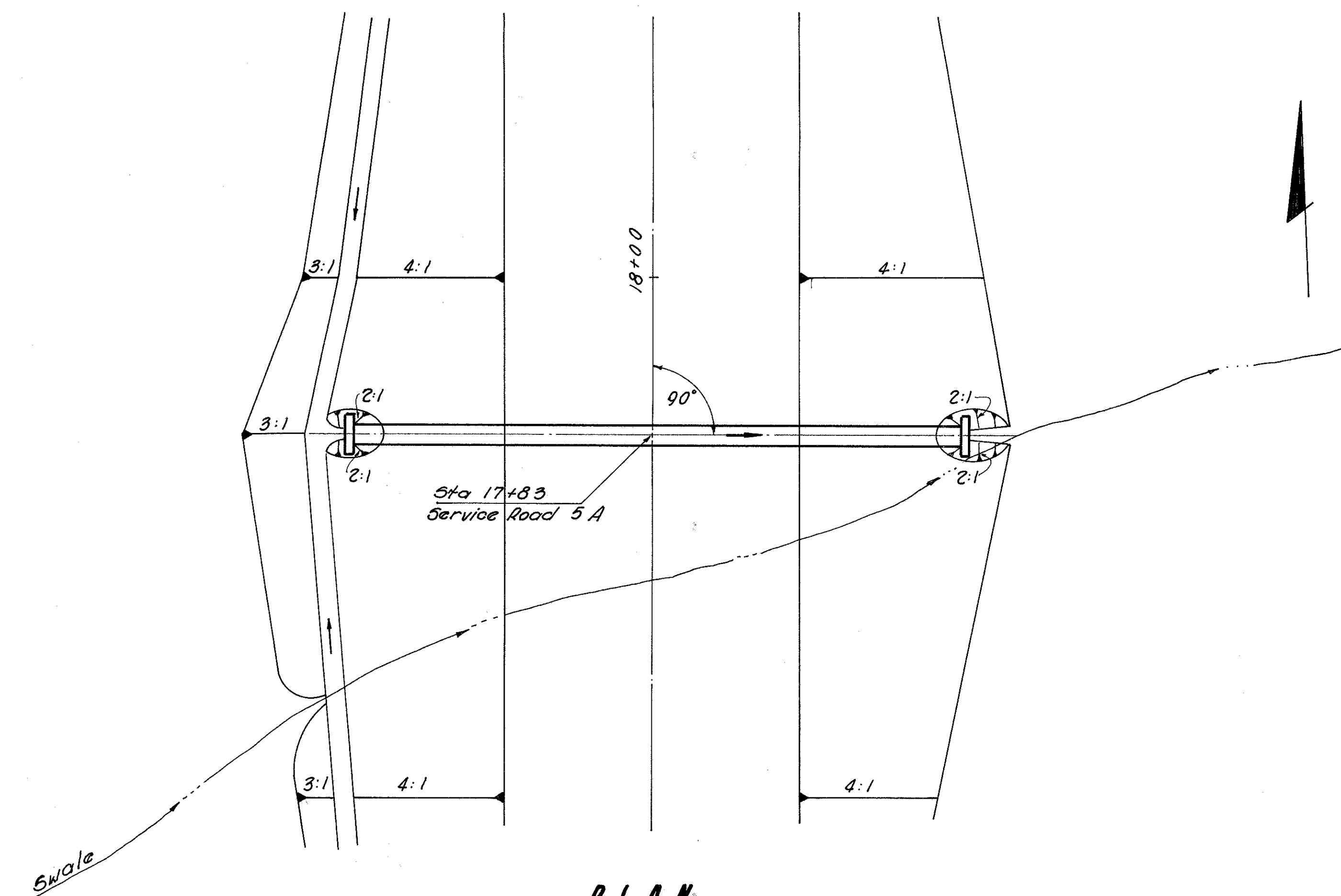
VOLUME OF ONE ENDWALL
3.17' x 6.17' x 1.0' (THICKNESS OF ENDWALL)
= 19.55 Cu. Ft.
DEDUCT ELLIPTICAL PIPE
Internal Area @ D/3 = 1.67 S.F.
Perimeter in Concrete = 3.87 L.F.
Pipe Thickness = 3 3/4"
1.67 + (3.87 (3.75) ÷ 12) = 2.88 C.F.
VOLUME OF CONCRETE = 19.55 - 2.88 = 16.67 ÷ 27 = 0.62 Cu. Yd.



ELEVATION



CALC: W.D. & 9-25-68
CHK: R.E. H. 10-4-68



PLAN

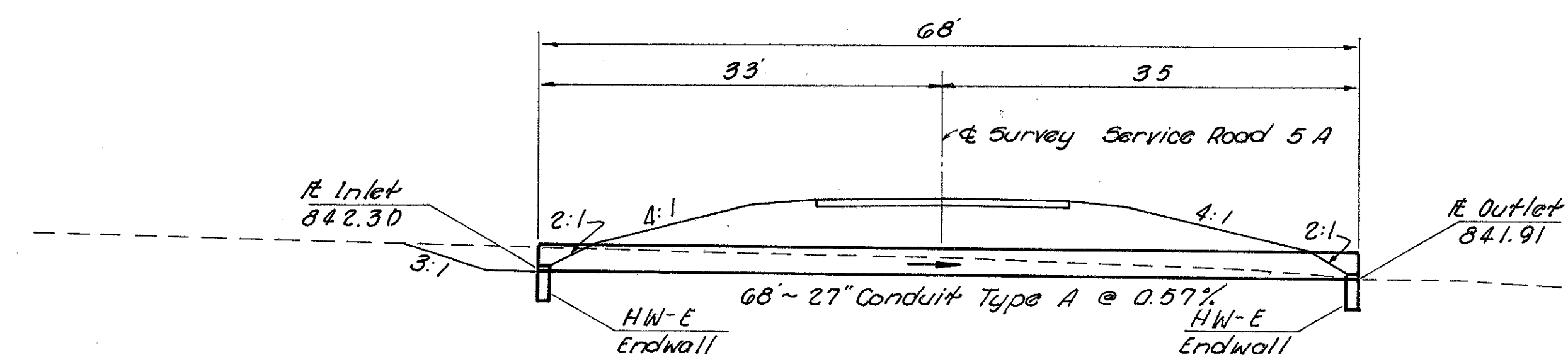
Drainage Area = 16 Ac.
Q₁₀ = 2.5 cfs.

ESTIMATED QUANTITIES

602	Concrete Masonry	1.0 C.Y.
603	27" Type A	68 L.F.
	706.02 or 706.08	

850

840



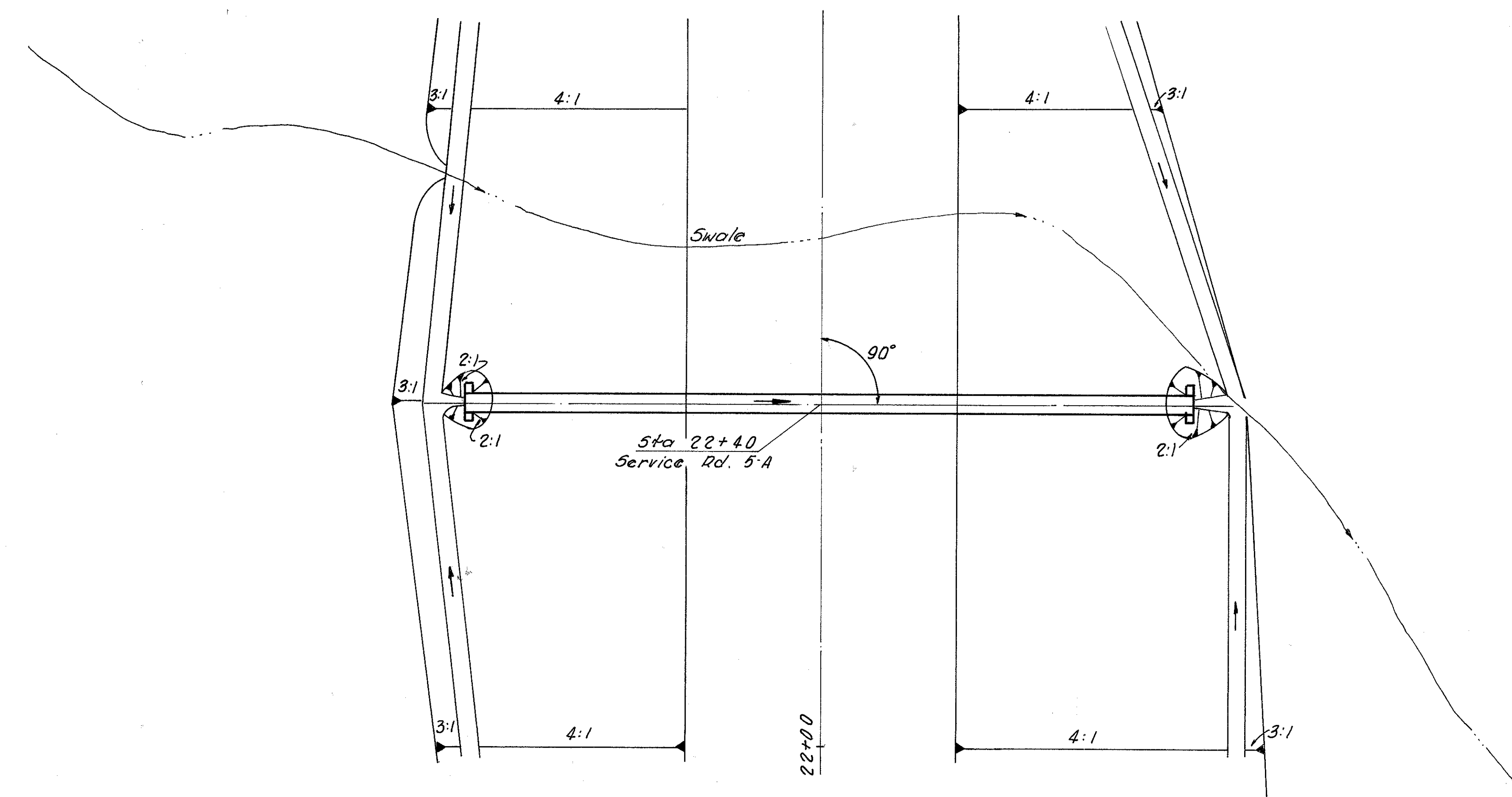
ELEVATION

0 10 20
Scale in Feet

850

840

CALC: W.D.H. 9-25-68
CHK: R.E.H. 10-4-68

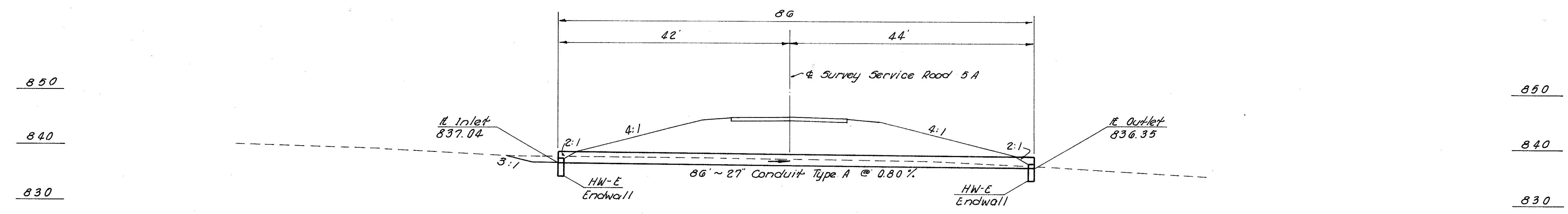


PLAN

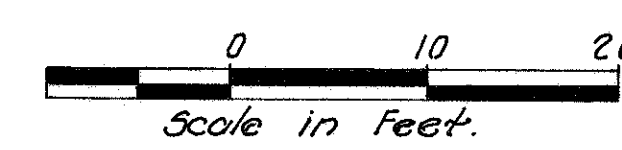
Drainage Area = 21 Acres.
 $Q_{10} = 31 \text{ cfs.}$

ESTIMATED QUANTITIES

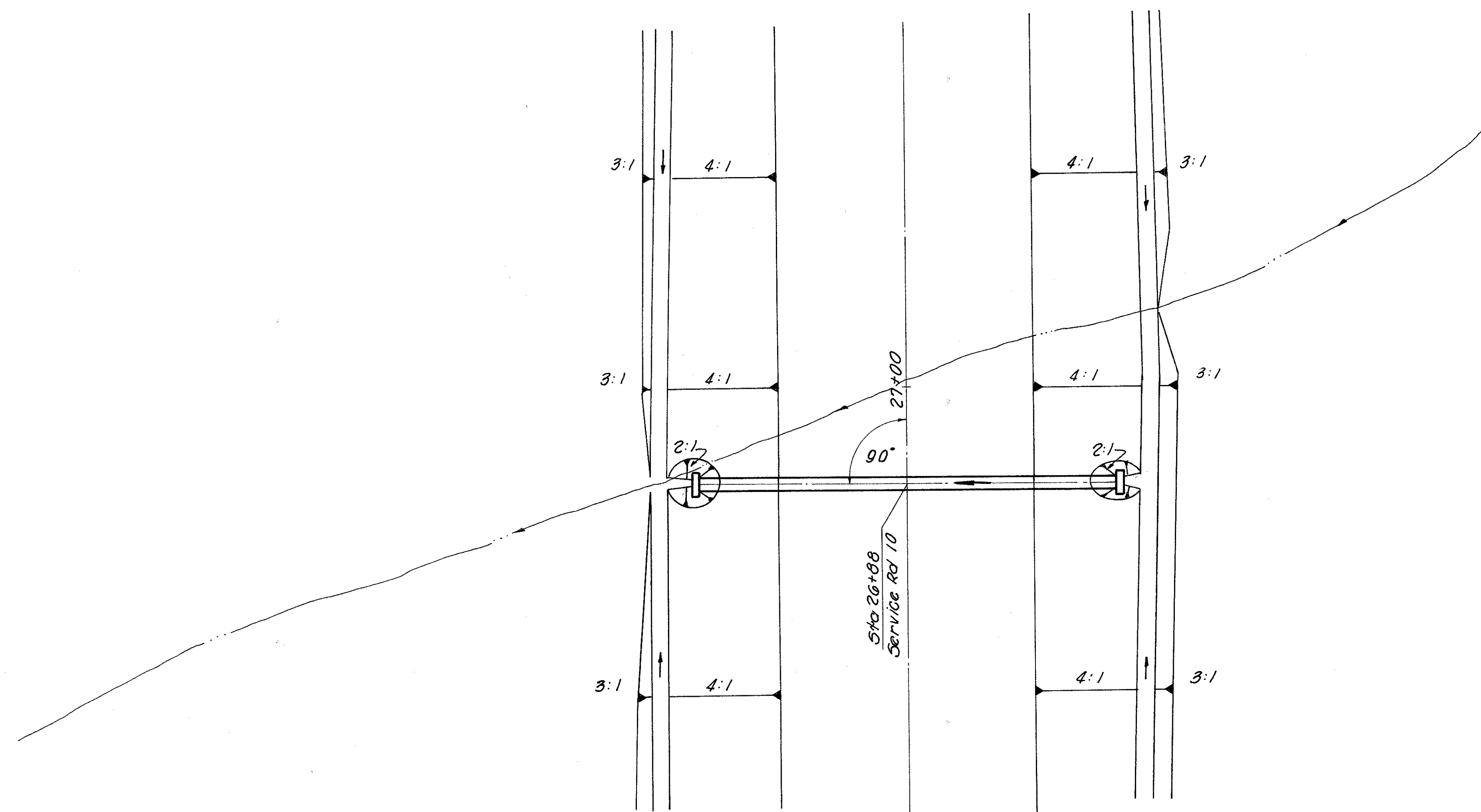
602	Concrete Masonry	1.0 C.Y.
603	27" Conduit Type A	86 L.F.
	706.02 or 706.08	



ELEVATION



CALC: W.O.H. 9-25-68
CHK: R.E.H. 10-4-68



ESTIMATED QUANTITIES

602	Concrete Masonry	0.60 C.Y.
603	18" Type A Conduit, 706.01, 706.02 or 706.03	54 L.F.

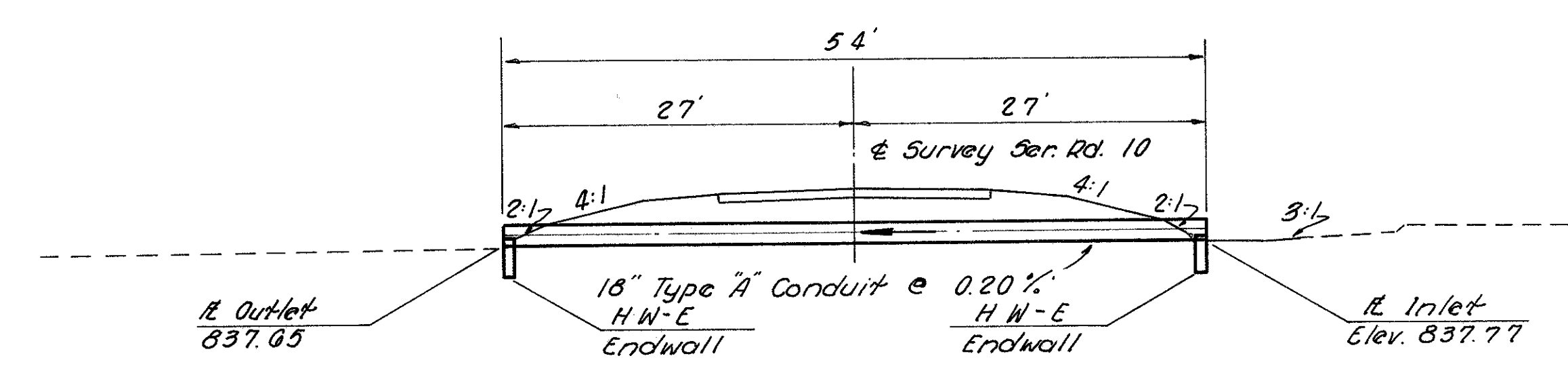
PLAN

Drainage Area = 3 Acres
Q₁₀ = 8 cfs.

850

840

830



850

840

830

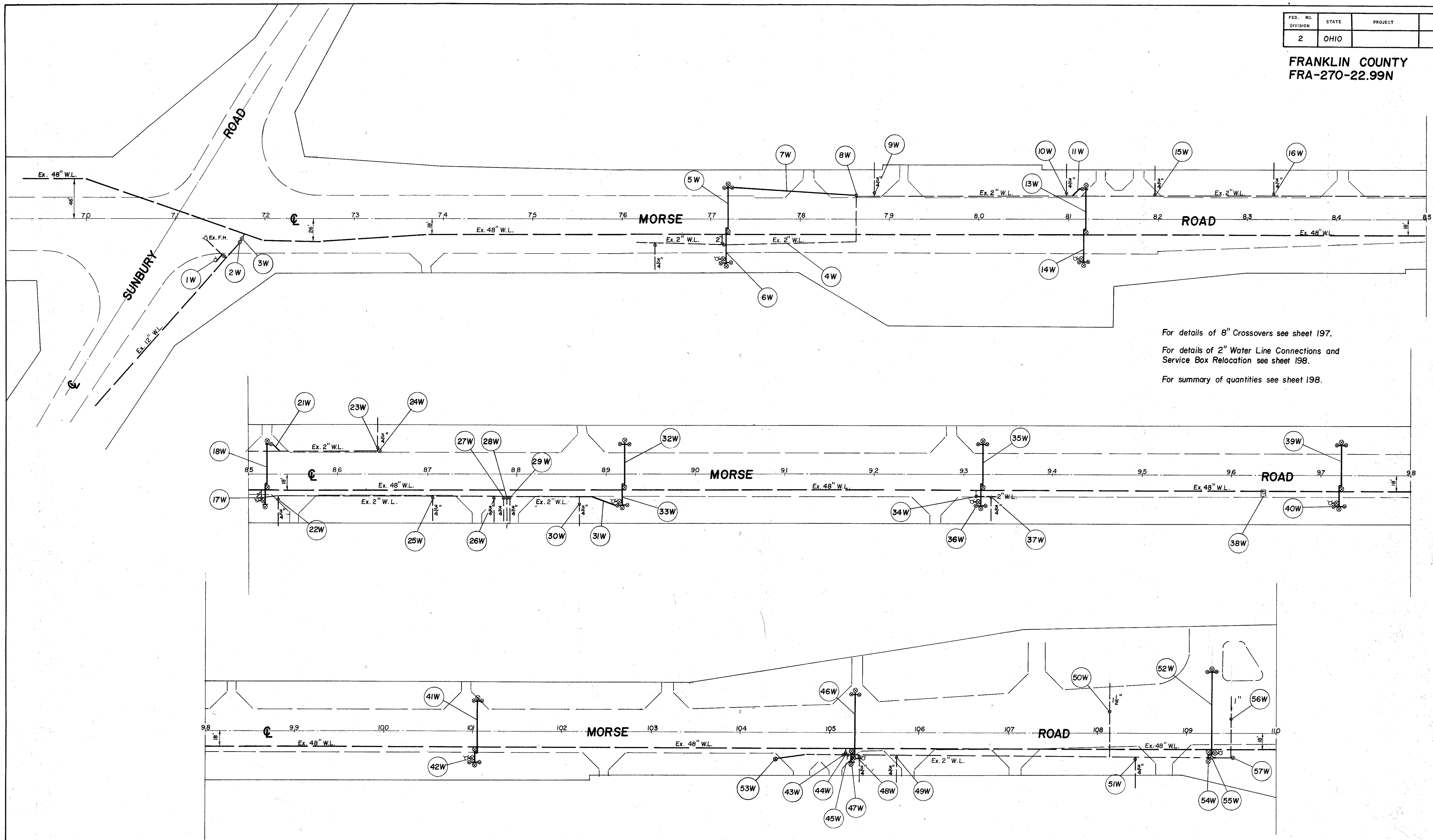
ELEVATION

0 10 20
Scale in Feet.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

196
292

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*

FRANKLIN COUNTY
FRA-270-22.99N

GENERAL NOTES

- All materials and installations shall be in accordance with the current Standard Construction and Material Specifications of the City of Columbus, Ohio.
- *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- 6309 Typical Trench

L- 6311 Backing for Bends

L- 6312 Backing for Tees

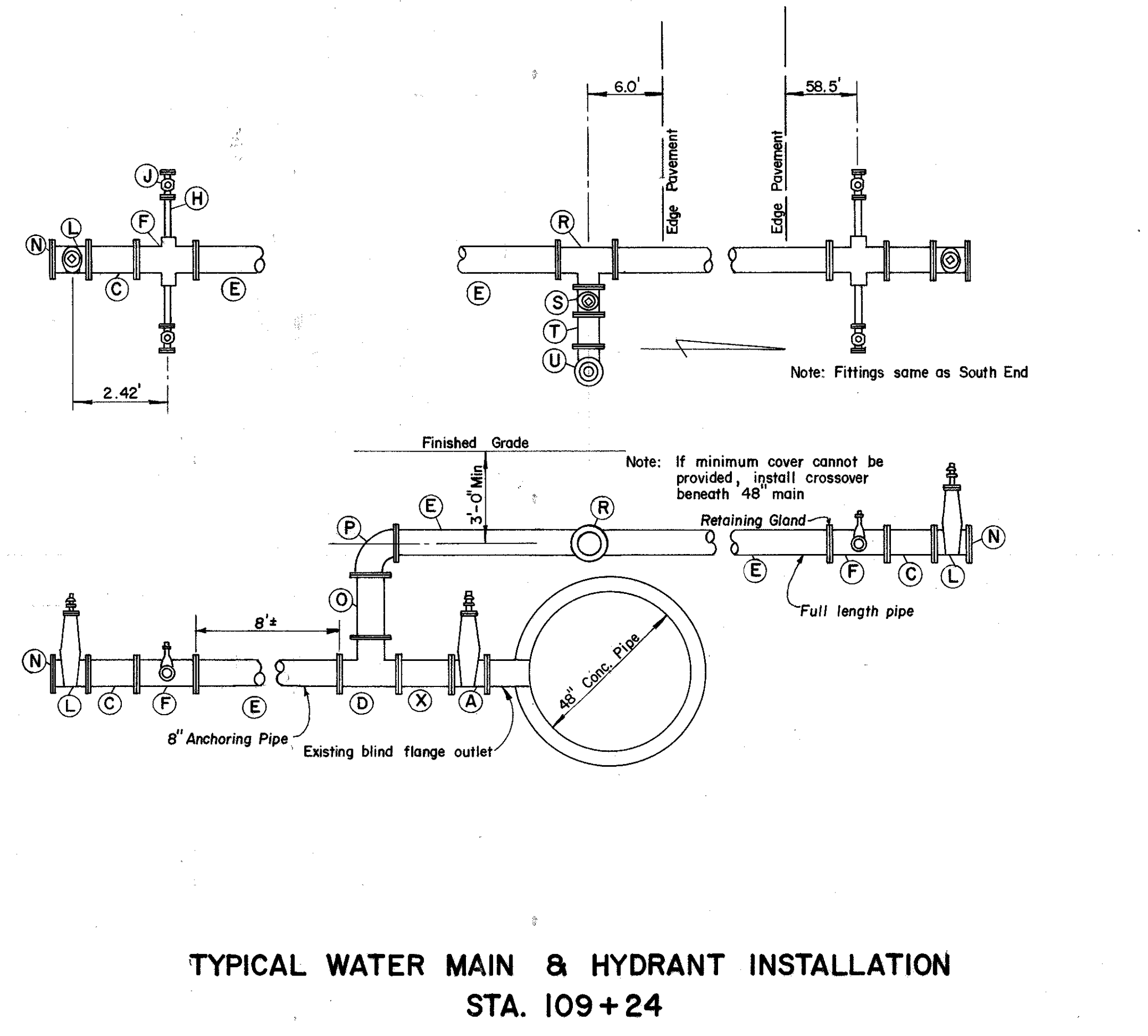
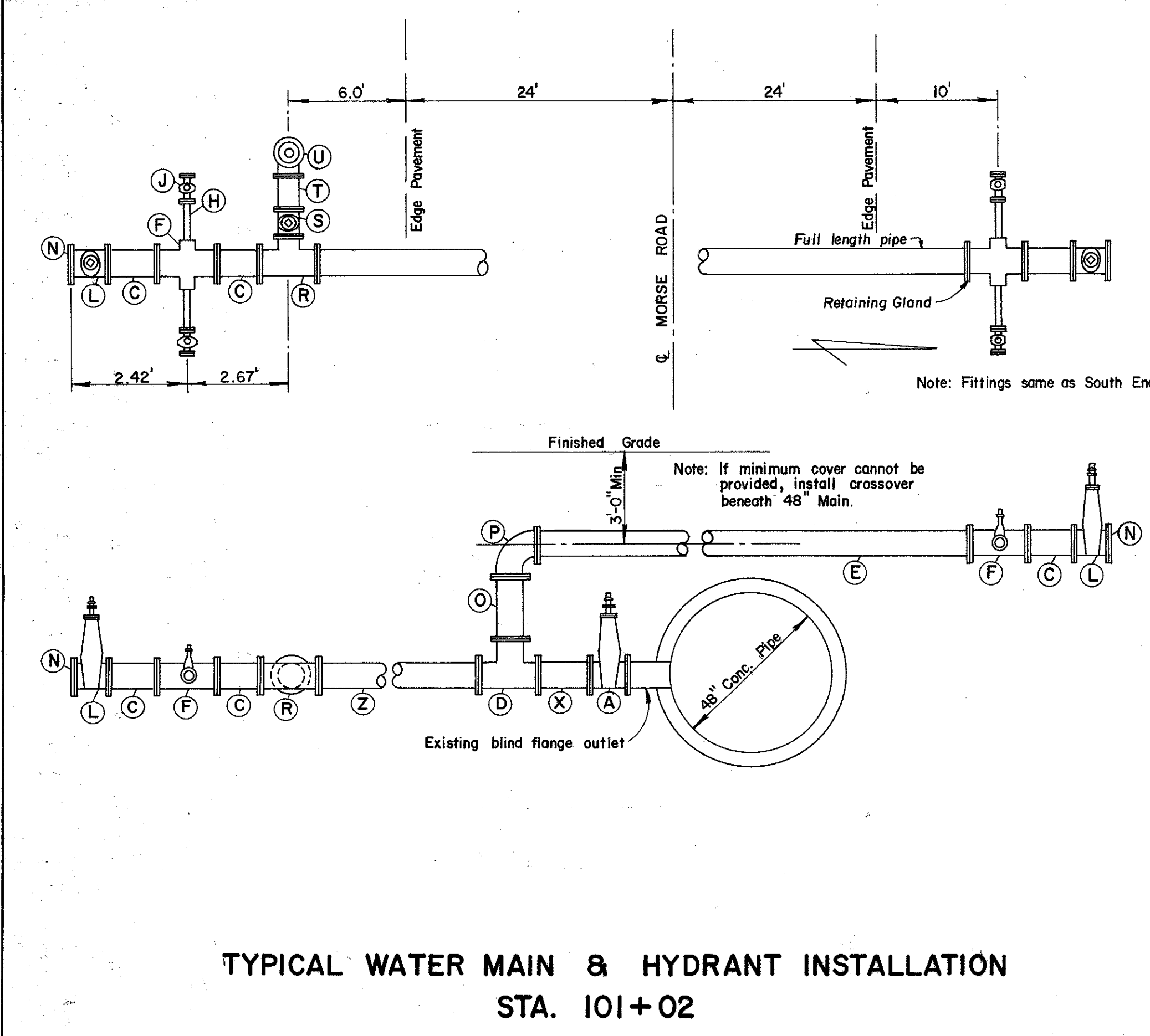
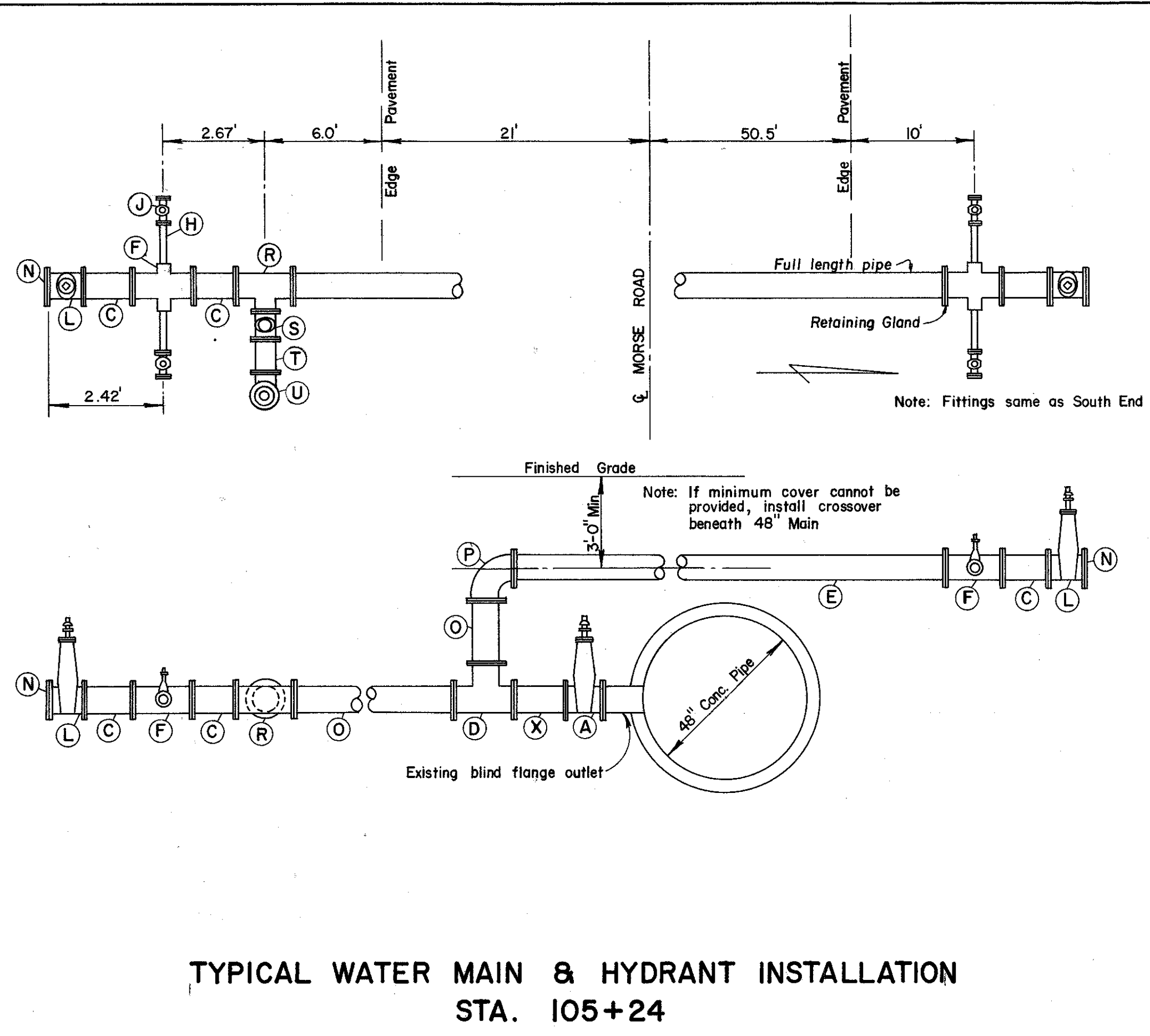
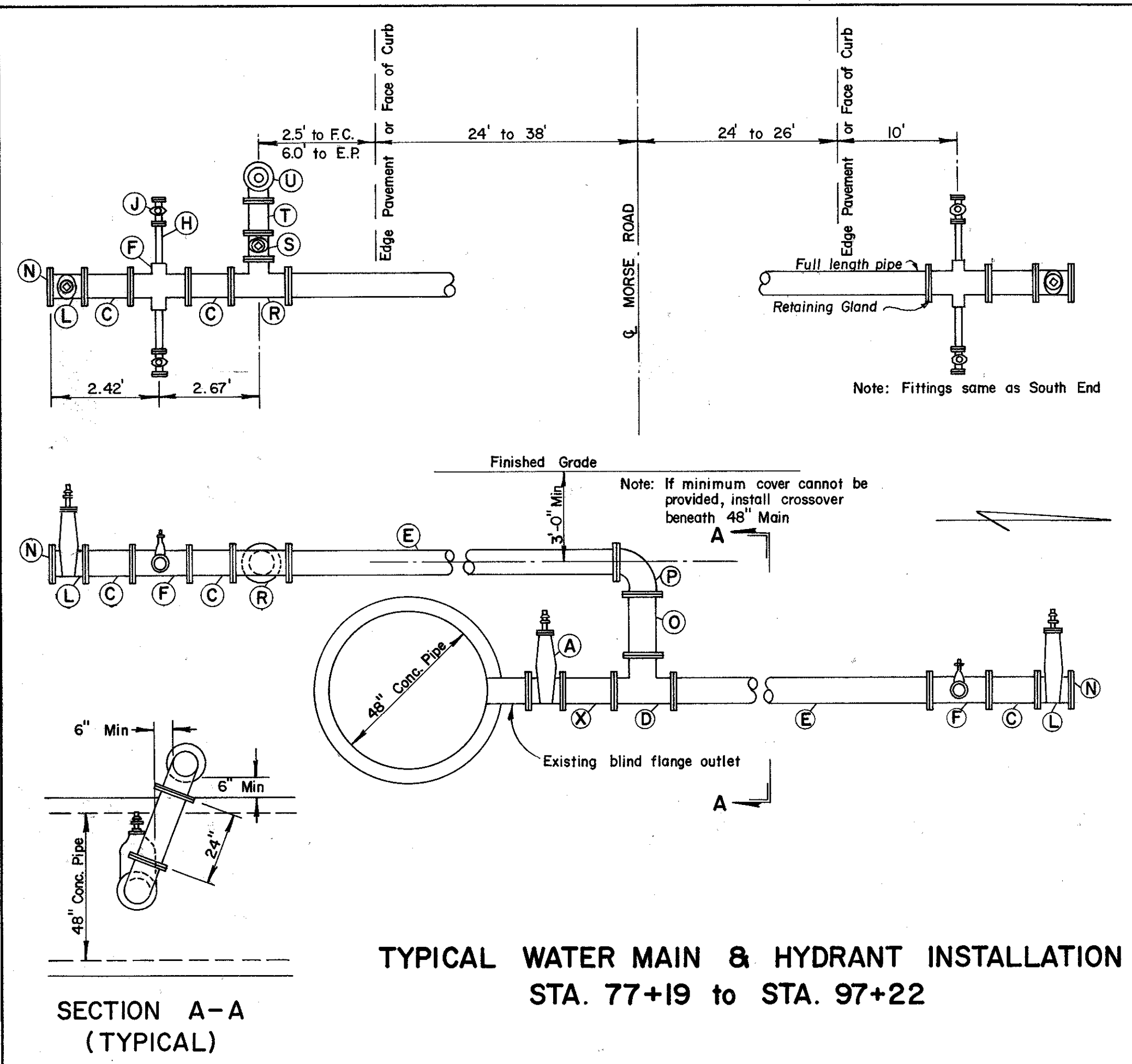
L- 6316 Heavy Duty Valve Box

L- 6409 Type B Hydrant Setting

L- 6637 Type A Hydrant Setting

L- 6638 6"- 90° Anchoring Bend

L- 6653 Anchoring Tee
- The contractor shall notify The Division of Water, Water Engineers Office, at least 48 hours prior to construction.
- All materials and installations shall be inspected for approval by the Division of Water, City of Columbus.
- 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).
- The new 12" Water Main in McCutcheon 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.
- 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.



		8" M.J. Tapping Valve Columbus Standard Valve Box Standard Detail Drawing L-6316 8" Anchoring Coupling 8" F-1215 or equal 8" x 8" M.J. Tee 8" F-940 or equal 8" D.I. Pipe, ASA Class 21 (lin. ft) 8" F-172 or F-122 or equal 8" x 2" Tapped Cross or Tee 8" F-1228 or 1225 or equal. 2" Brass Nipple -- 1'-0" Long 2" Curb Stop and Plug Mueller H-10291 and H-10035 3" Curb Box 8" M.J. Gate Valve 8" F-5225 or equal 6" Valve Box 8" F-2450 or equal 8" M.J. Plug 8" F-1035 or equal 8" Anchoring Pipe -- 2'-0" Long 8" F-1216 or equal 8" M.J. 90° Bend 8" F-925 or equal 8" x 6" Anchoring Tee 8" F-1217 or equal 6" M.J. Gate Valve Columbus F-5225 or equal 6" D.I. Nipple -- 1'-6" Long ASA Class 21 Columbus Standard Type Fire Hydrant 8" Anchoring Pipe -- 18" Long 8" F-1216 or equal 8" Anchoring Pipe, (lin. ft) 8" F-1216 or equal																									
REFERENCE MARK	A	B	C	D	E	F	H	J	K	L	M	N	O	P	R	S	T	U	X	Z							
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	1	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	1	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	1	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

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 14 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 ellis 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:

- Concrete foundations for overhead sign supports, per cubic yard.
- 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 meggering 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 subsidiary 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:

- 8 copies of shop drawings & material lists for approval:
 - Overhead Sign & Traffic Signal Supports.
 - Sign lighting layout plan & details for wiring, conduit size and placement from sign disconnect switch to fixture.
 - Traffic signal controller equipment, signal heads, support and conductor cable (see additional requirements sheets 229 & 230).
- 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.
- Certifications and/or samples for all material which have been approved above under "A" and "B"
- Approval of items under "A" and "B" shall be in the hand of the Contractor prior to any purchase or installation.
- 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 1920 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:

- 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.
- 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.
- CONFORMABILITY** - The striping material shall be thin, flexible, formable, and following application, shall remain conformed to the texture of the pavement surface.
- REMOVABILITY** - The striping material backing shall permit removal without requiring sandblast, solvent, or grinding methods.
- 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.
- GENERAL** - The striping material as supplied shall be of good appearance, free from cracks, and edges shall be true, straight, and unbroken. The striping material shall be supplied in rolls and there shall be no more than 3 splices per 60 yards of length.

The striping material shall be prepared for delivery in standard commercial containers so constructed as to insure acceptance by the carrier and prevent damage during proper shipment and storage.

The Contractor shall store the material in a cool, dry location where temperature will not exceed 100 degrees F. prior to application of marking on roadway surfaces.

2. ROAD SURFACE PREPARATION

The road surface must be clean and dry, free of oils and grease, dust or dirt. All surfaces must be primed.

Concrete pavement shall be surface treated in accordance with Section 621.04. Surface shall then be generously flushed with clean water and allowed to dry thoroughly prior to application of primer and interim markings.

3. PRIMING

Method of priming shall be as approved by the Engineer. The Contractor shall submit a proposal for type of priming to be used. Cost 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 circumference. 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 embedment 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 locations 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.

TRAFFIC CONTROL GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA-270-22.99N

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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		ITEM	TOTAL	UNIT	DESCRIPTION
									RURAL	URBAN				
														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 V 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

CALC: C.D. 7-12-68
CHK: R.G.M.
Revised 12-13-68 J.T.

SIGNING SUB - SUMMARY

DELINEATOR & PAVEMENT MARKING QUANTITIES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99 N

204
292

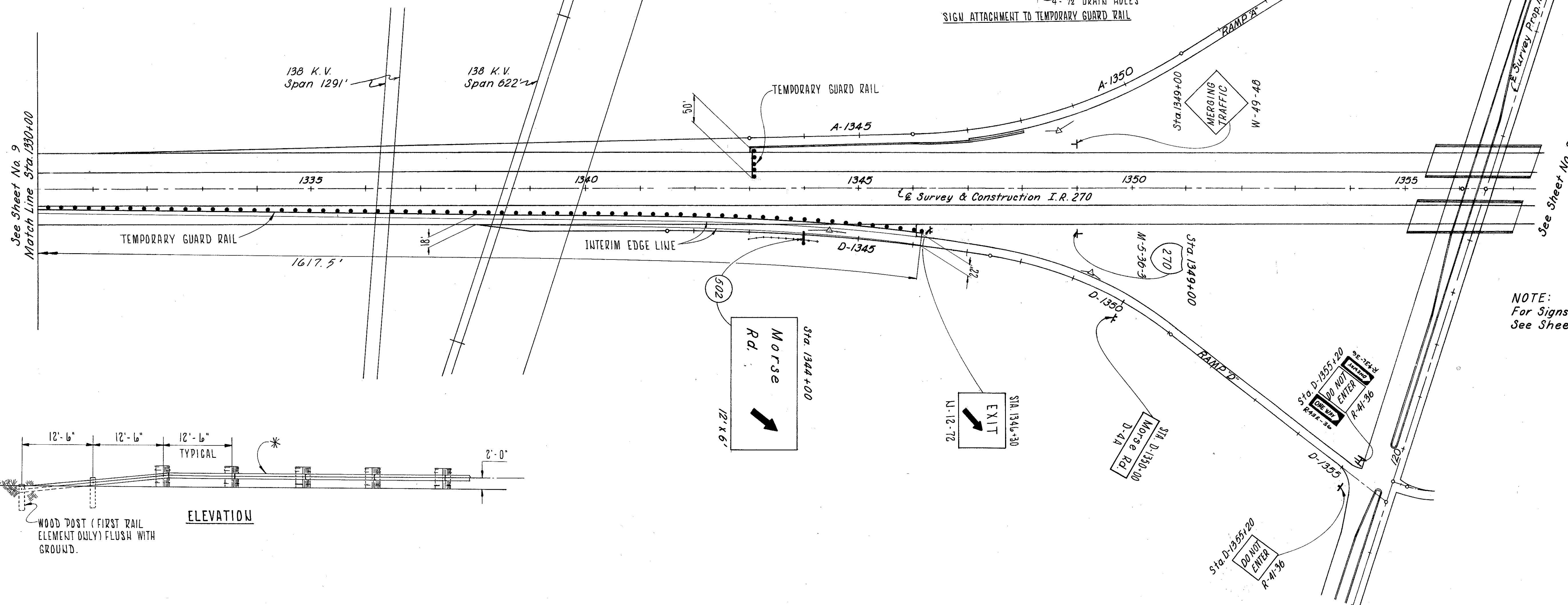
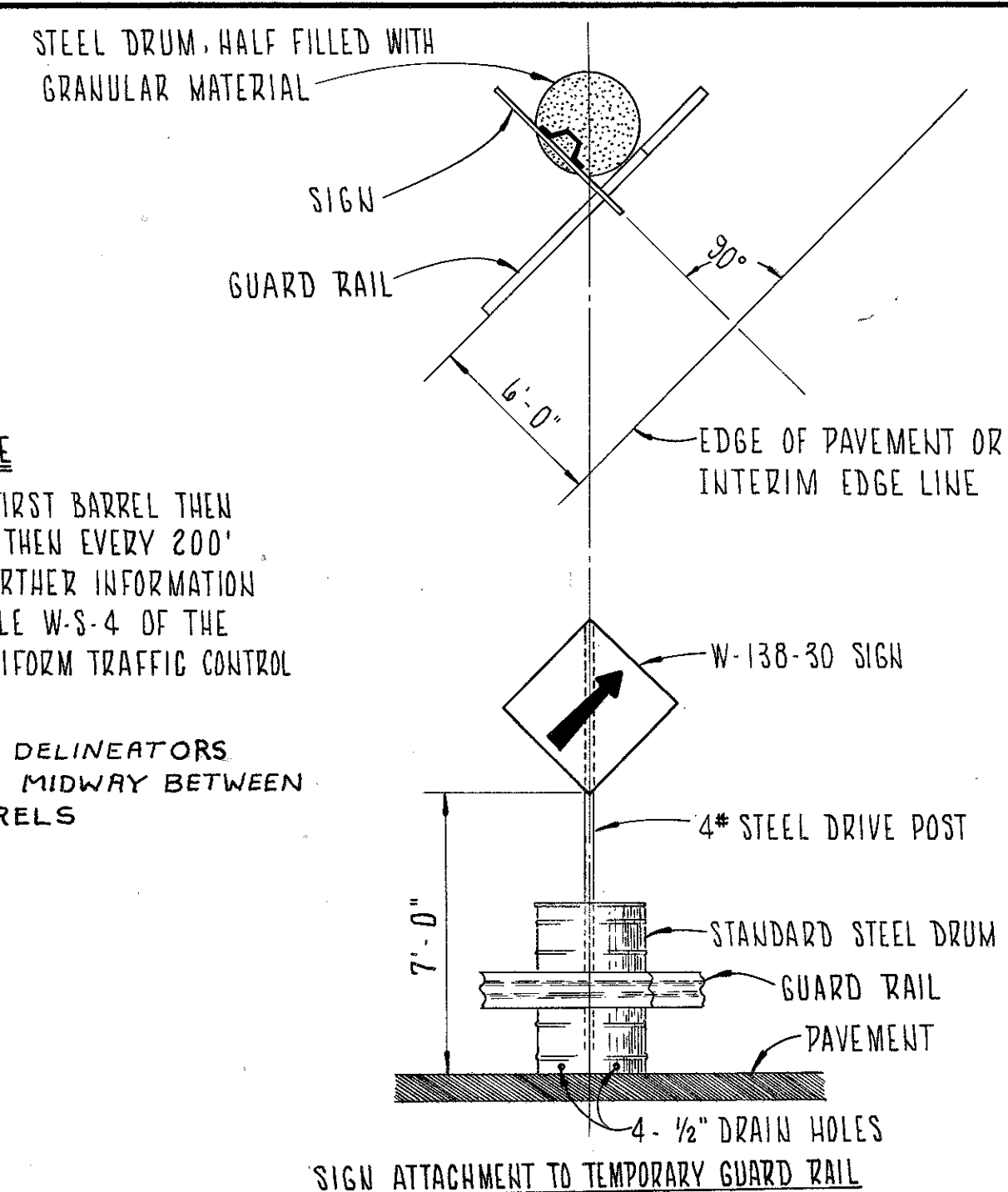
6
29

ITEM 620 DELINEATORS											
STATION		SIDE	Interval Spacing Ft.	A-1 Post Each		A-1 Bracket Each		C-2 Post Each		RURAL	URBAN
From	To			Each	Each	Each	Each	Each	Each		
1325 +00	1329 +00	Lt.	200	3							
1346 +90	1366 +90	Lt.	200	11							
1378 +00	1462 +00	Lt.	200	24	19						
1325 +00	1337 +00	Rt.	200	7							
1347 +05	1367 +05	Rt.	200	11							
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		

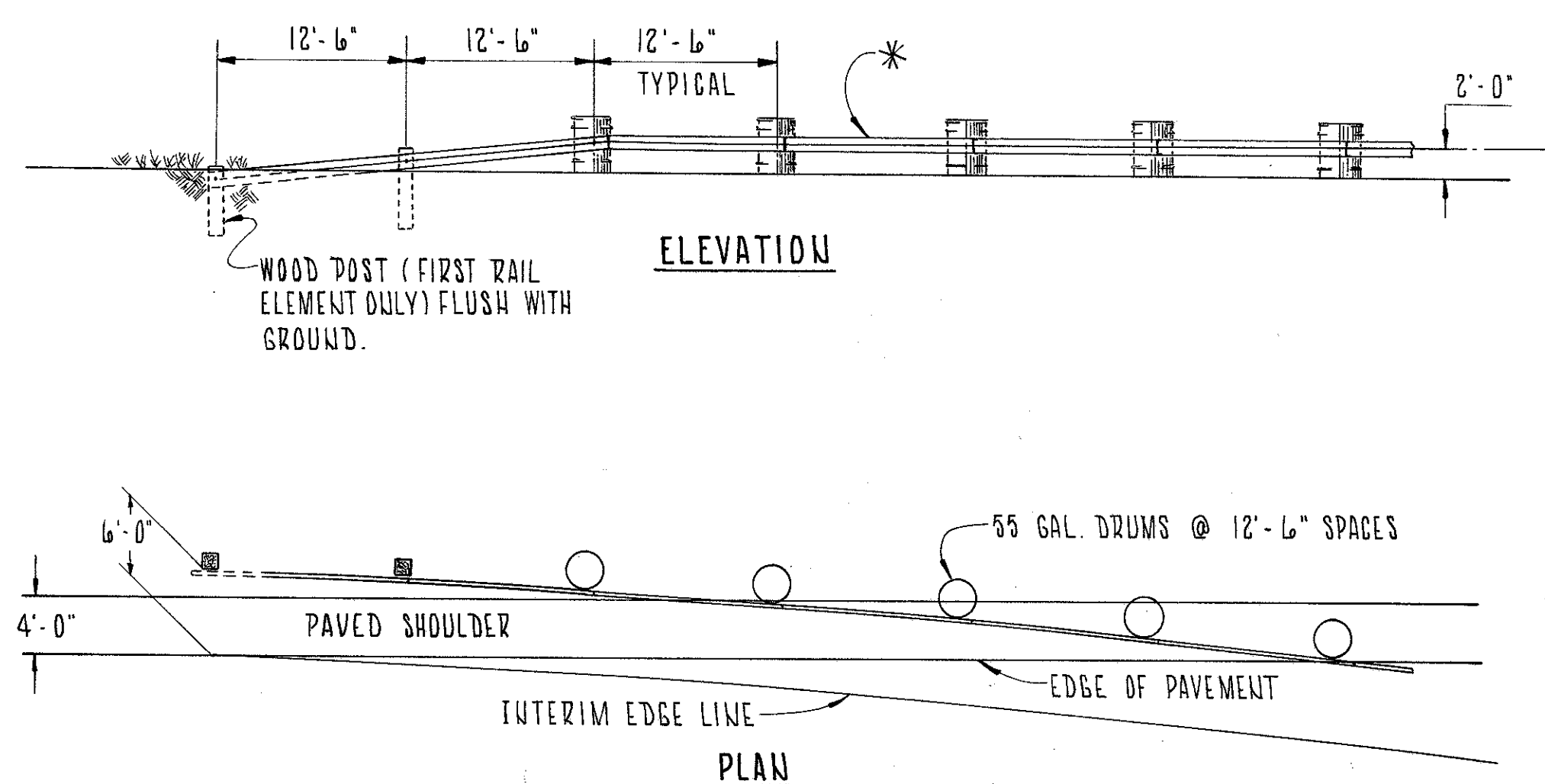
ITEM 621 PAVEMENT MARKING																	
STATION		SIDE	4"	4"	6"	8"	Broad		Curb		6"		24"				
From	To		Edge Line L.F.	Lane Line L.F.	Lane Line L.F.	Channel Line L.F.	Transverse Stripes L.F.	Marking L.F.	Barrier Lane L.F.	Stop Line L.F.							
			RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	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	B.		1660													
A-1343 + 00	A-1348 + 00	Rt.							500								
A-1347 + 00	A-1359 + 00	Rt.		1200													
B-1356 + 68	B-1372 + 50	B.		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	B.		1391													
D-1355 + 10		Lt.												20			
Cn-1353 + 85	Cn-1356 + 76	B.		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	B.		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					998				
109 + 40	110 + 40	Lt.															
127 + 71	130 + 16	Lt.					245										
107 + 00	110 + 40	Rt.			340												
111 + 47	119 + 17	B.				770											
120 + 06	130 + 16	B.				1010											
131 + 05	134 + 49	B.				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. 1340 x Lin. Ft. Miles	17114 55118 3.24	918 344 1044	5675 2115 .07	16244 6095 .40	38556 14452 1.15	993 2.74	4481	572	1023	5478	895	998	40	235

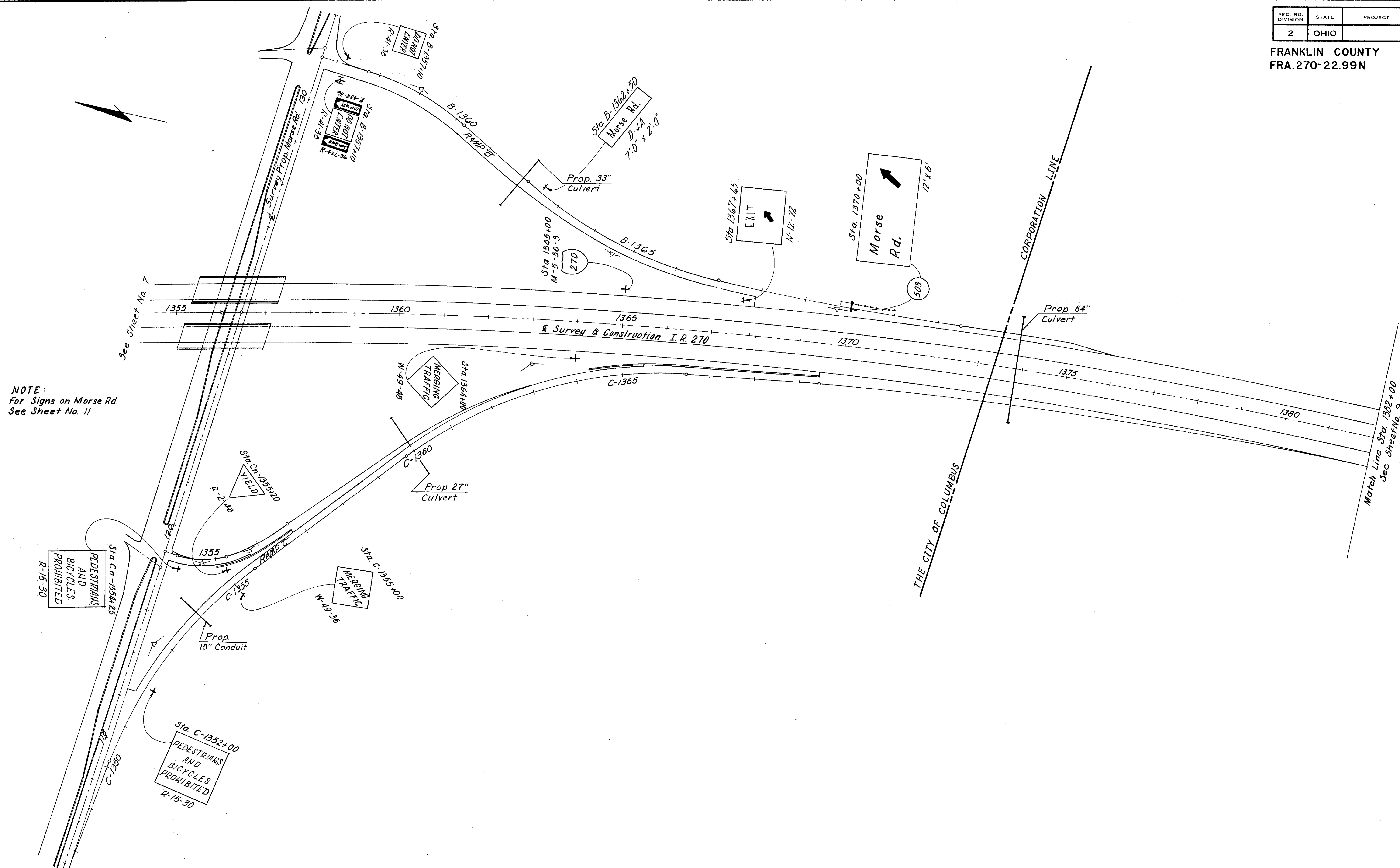
TEMPORARY GUARD RAIL QUANTITIES							
FROM SHEET No.	LOCATION		606	620	621	815	816
			TEMPORARY BEAM RAIL	INTERIM DELINEATORS, AS PER PLAN	INTERIM 4" EDGE LINE	SIGN ERECTION, FLAT SHEET TYPE	INTERIM STEEL DRIVE POST 4 LB. PER FT., AS PER PLAN
			L.F.	E.A.	L.F.	S.F.	L.F.
9	1321 + 20	1323 + 00	180.0 *	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		2080.0	12	3560	81.25	143

* RURAL



NOTE:
For Signs on Morse Rd.
See Sheet No. 11





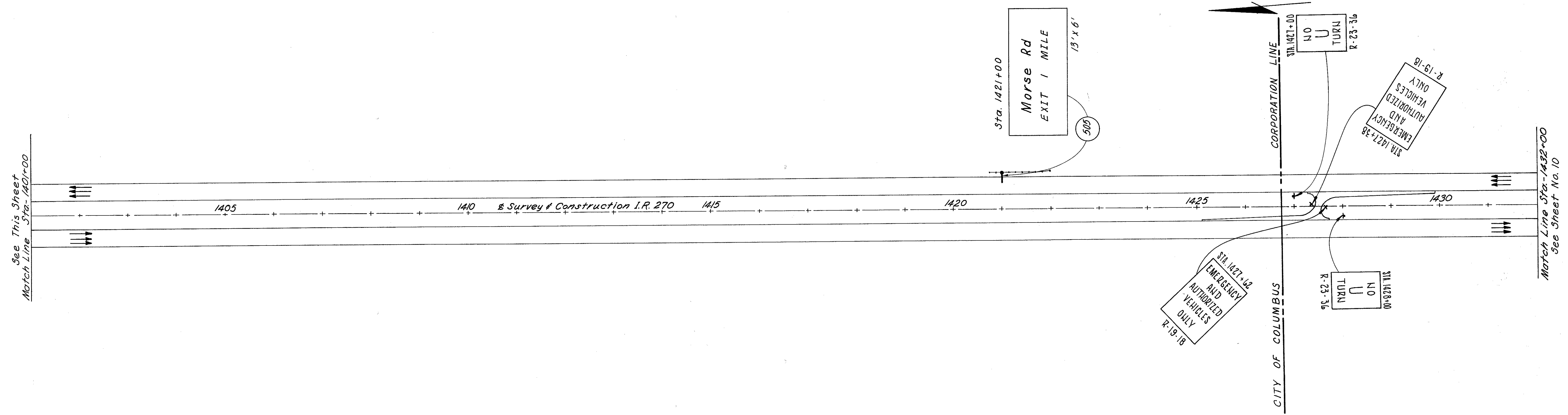
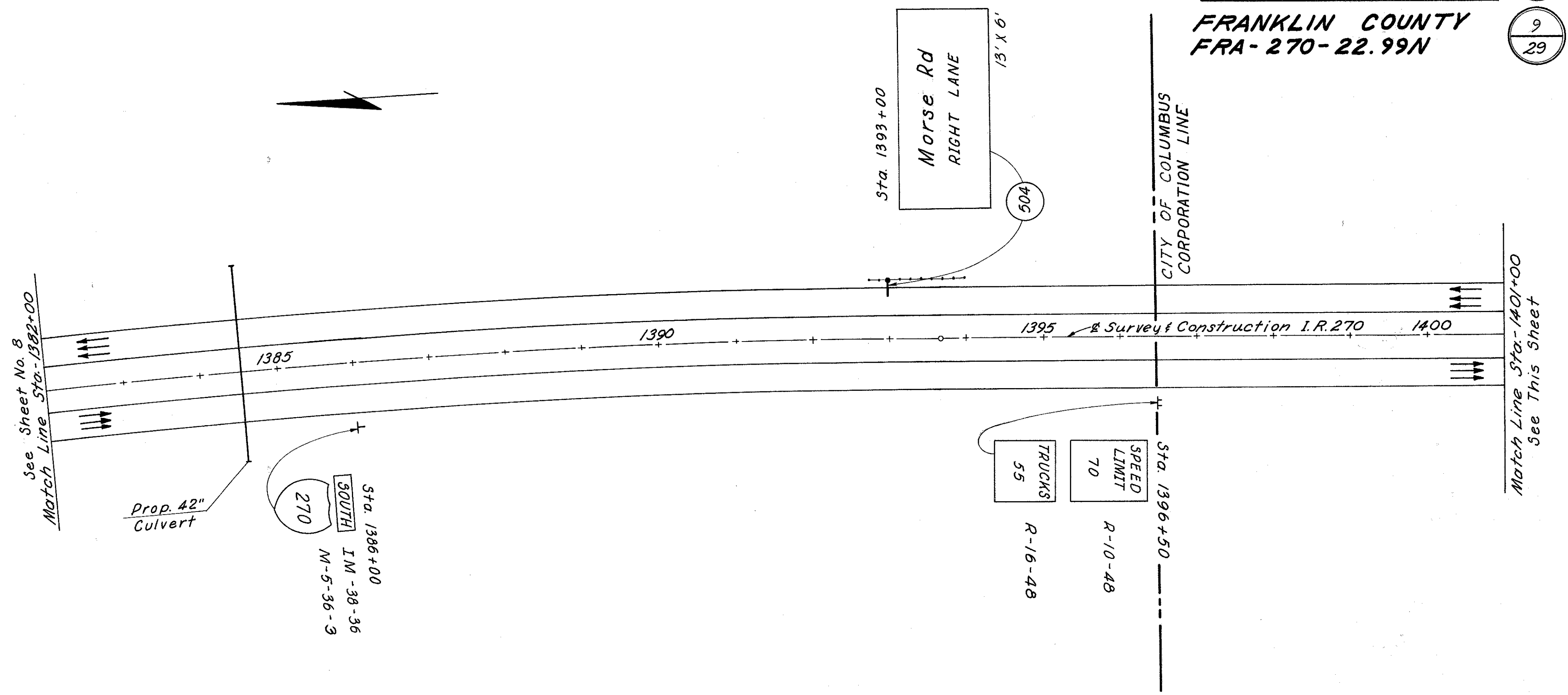
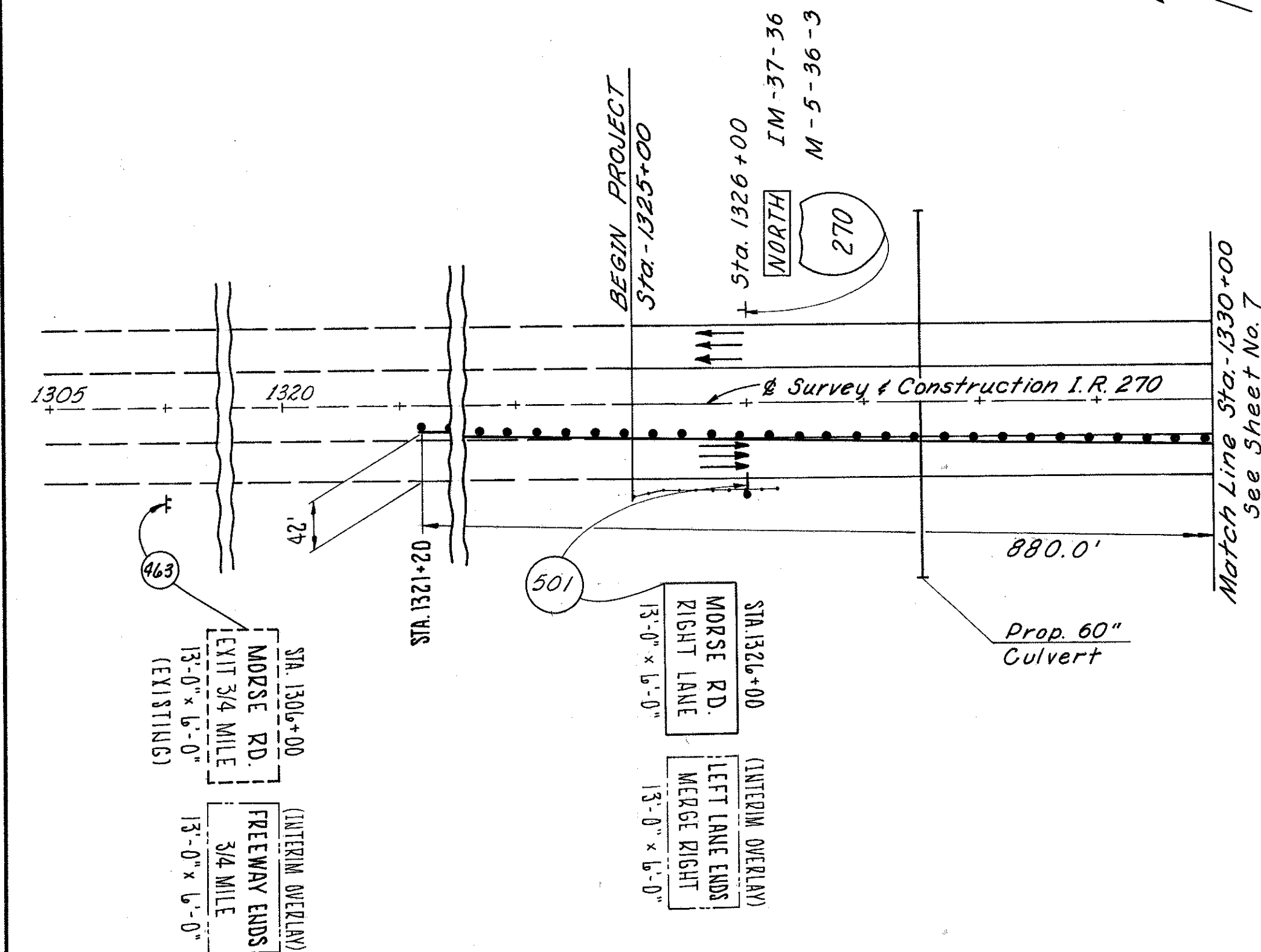
NOTE:
For Signs on Morse Rd.
See Sheet No. 11

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

207
292

9
29



SIGNING LAYOUT PLAN

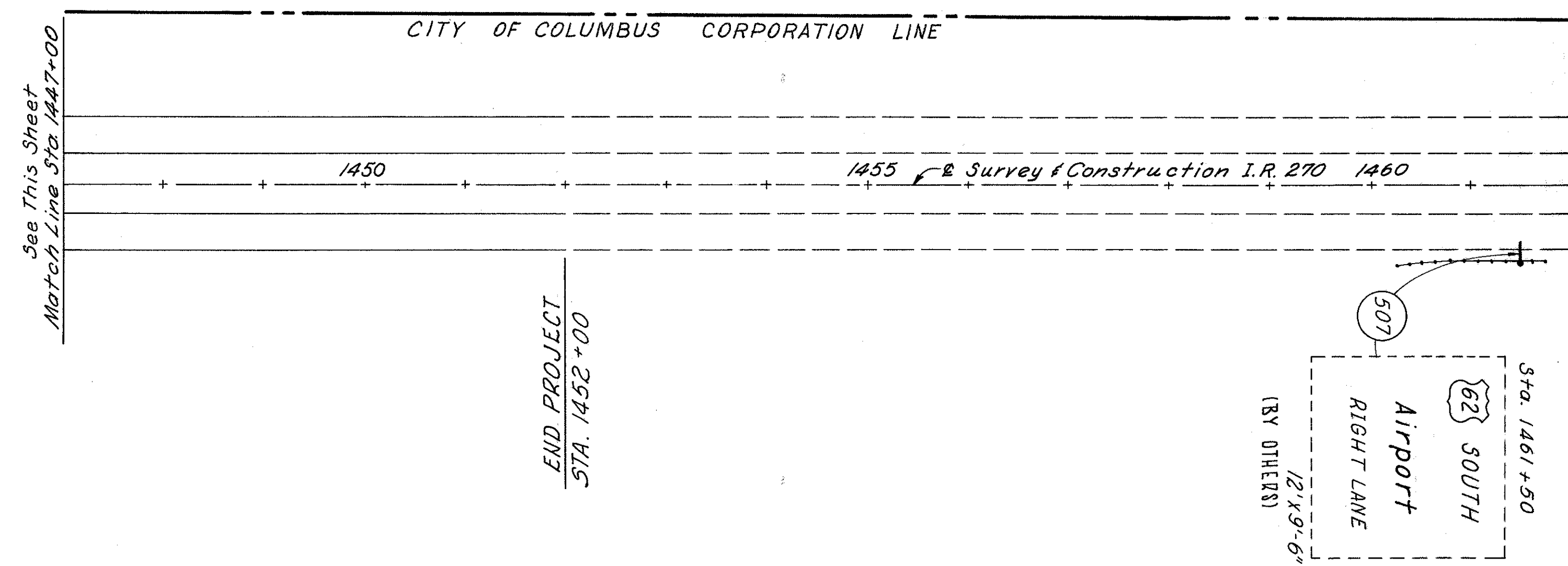
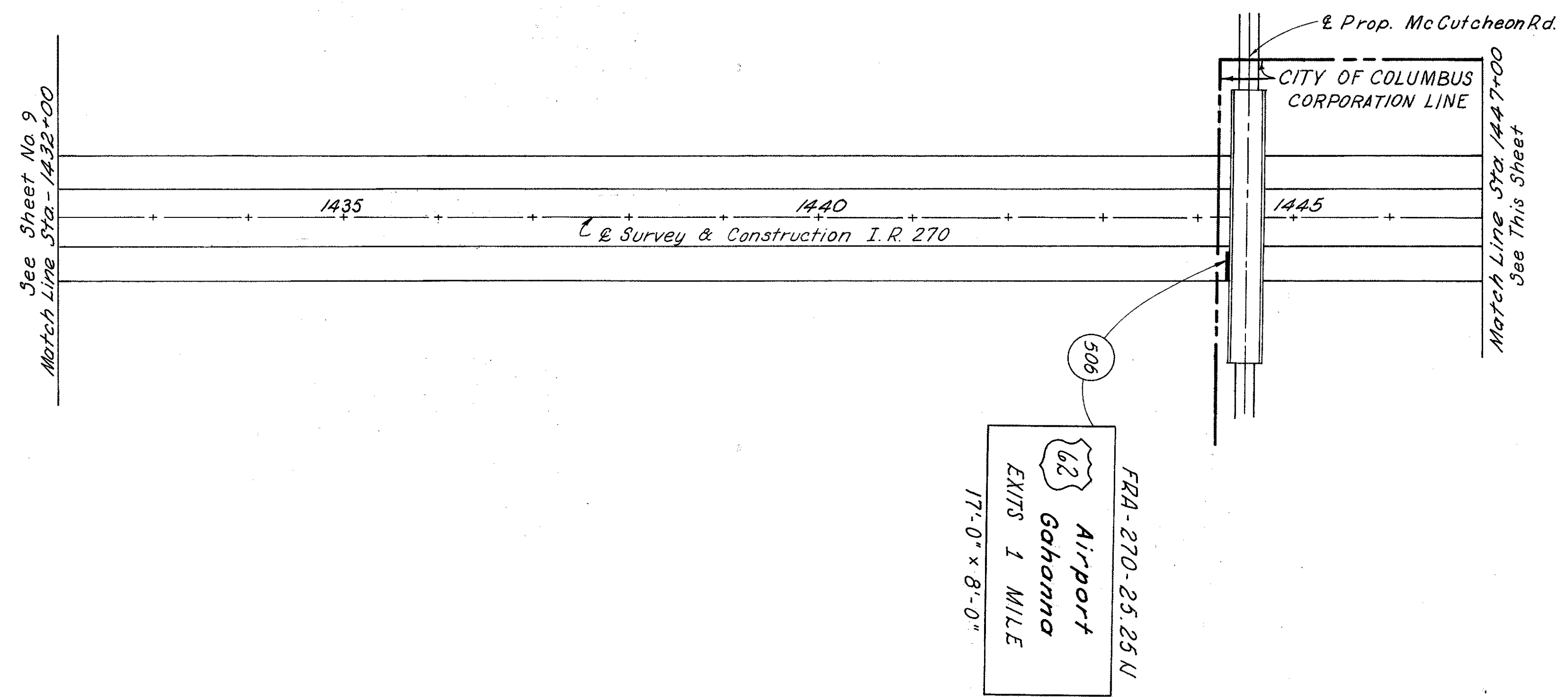
STA. 1325+00 to STA. 1330+00 & STA. 1382+00 to STA. 1432+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

208
292

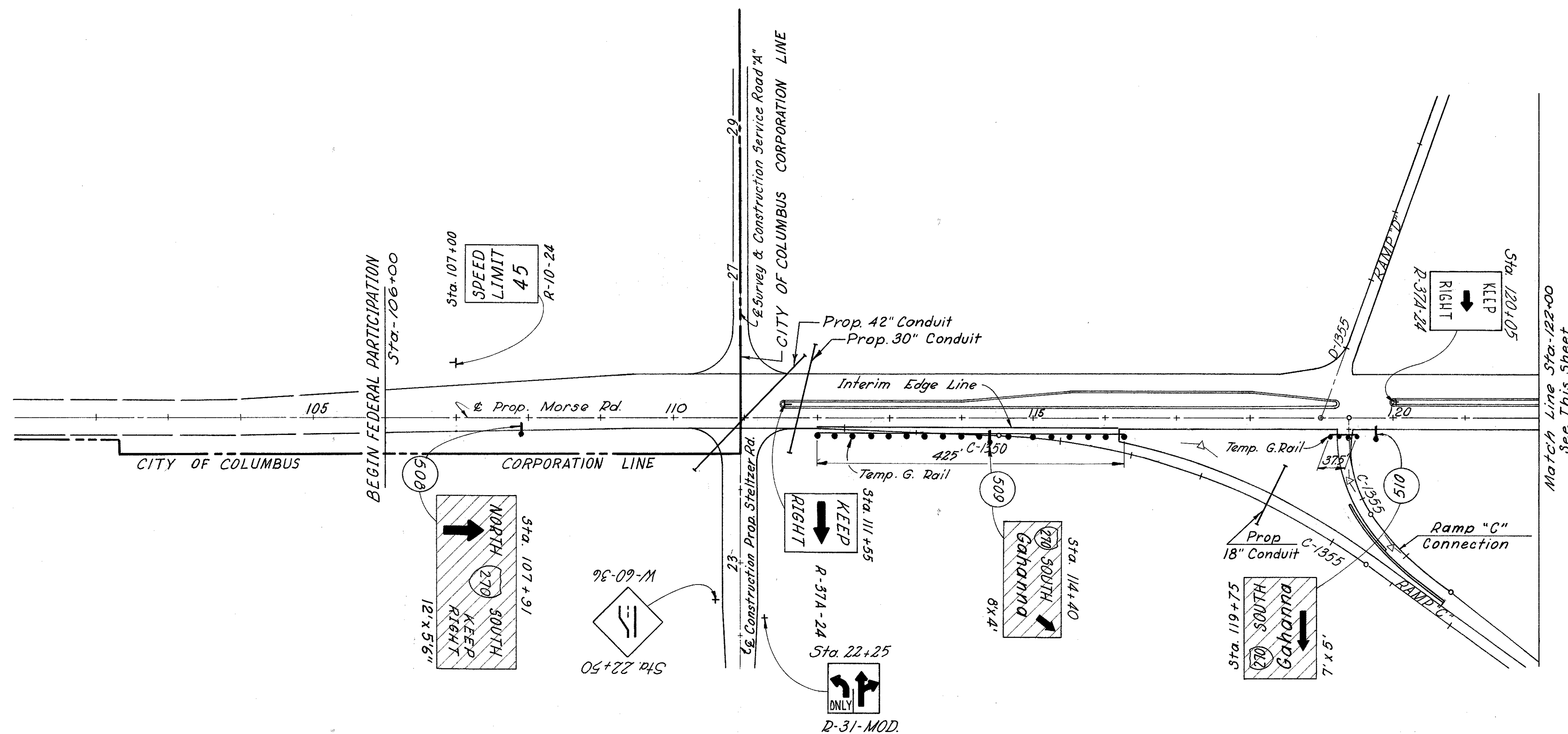
FRANKLIN COUNTY
FRA-270-22.99 N

10
29



SIGNING LAYOUT PLAN

STA. 1432+00 to STA. 1462+0

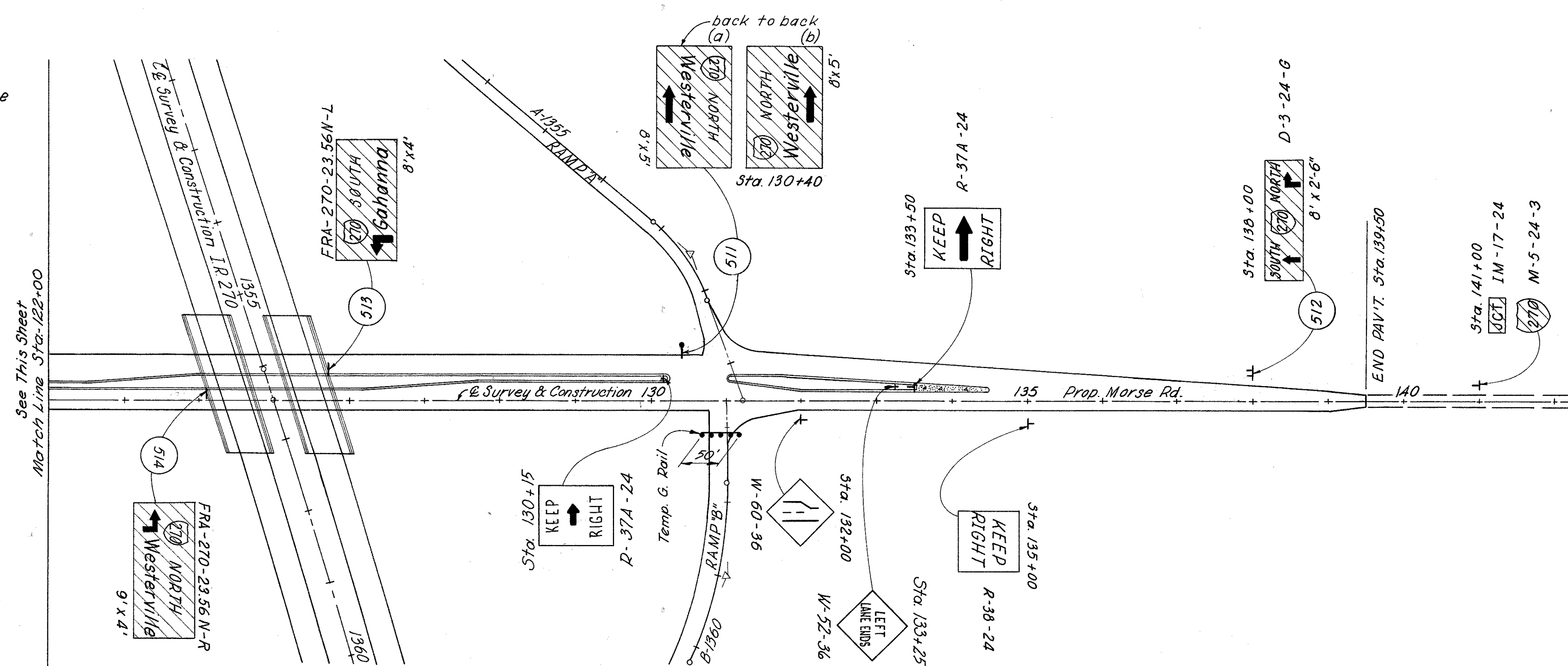


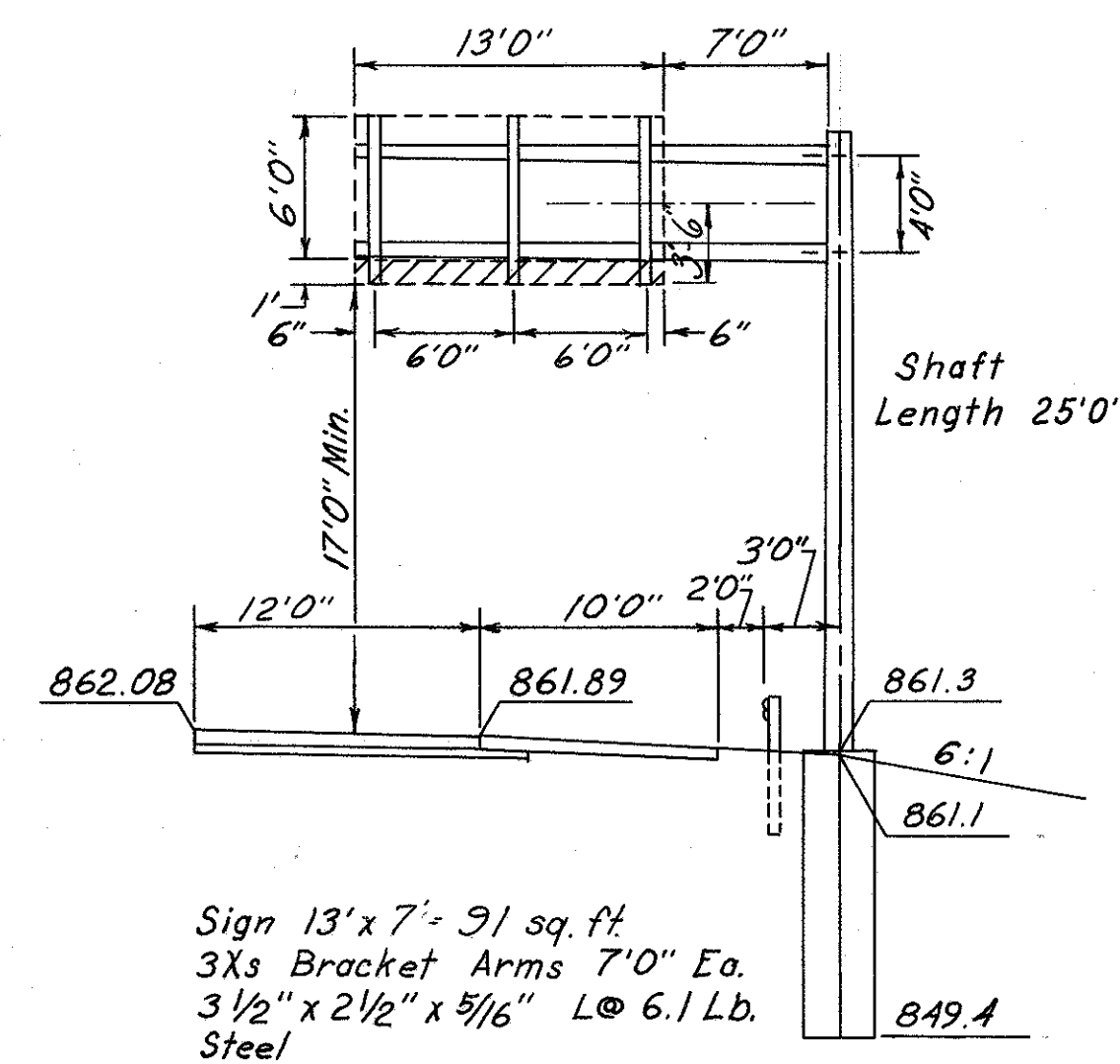
NOTE:
For Signs on Morse Rd. Interchange
See Sheet No. 7 & 8.

NOTE:
For Signs on Morse Rd. Interchange
See Sheet No. 7 & 8.

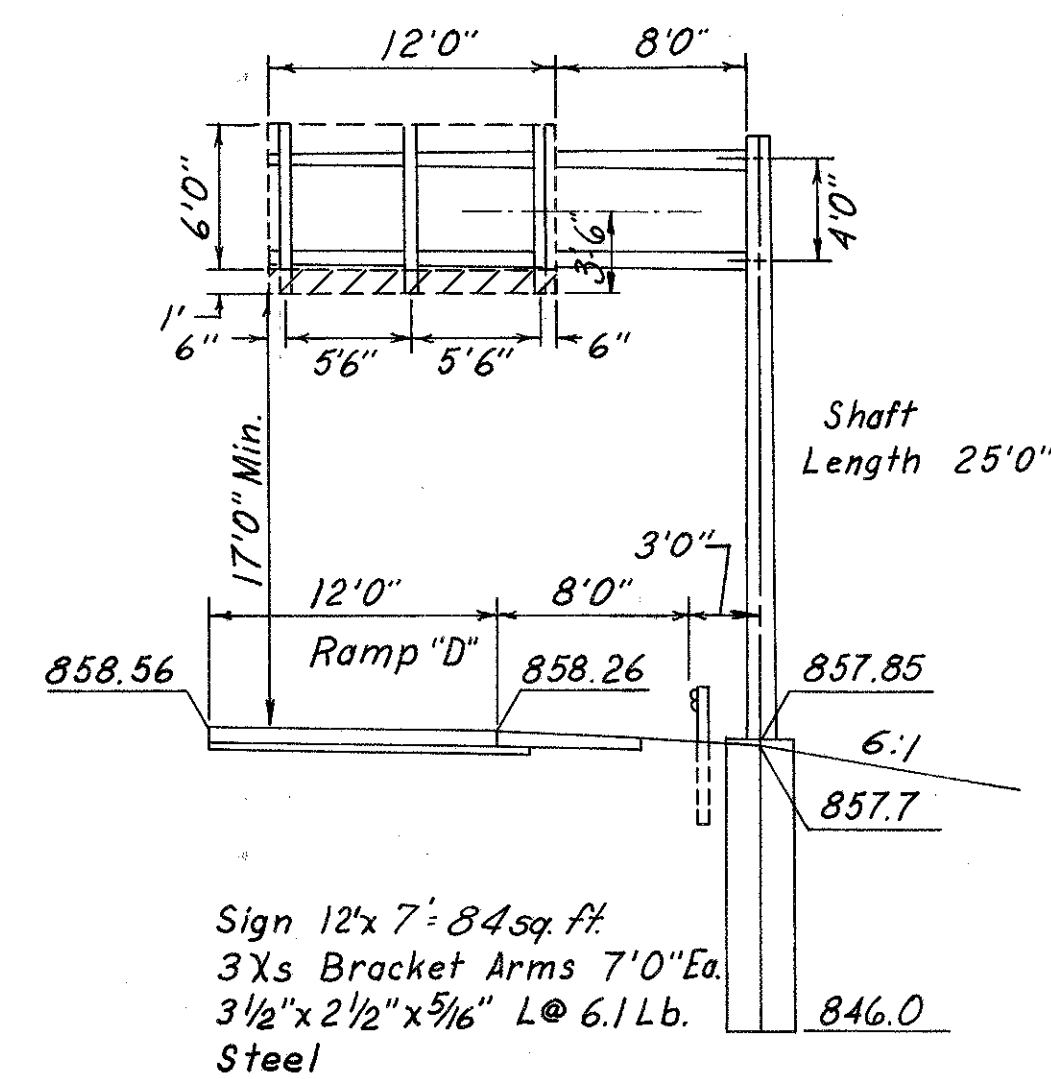
For Temp. Beam Rail Details
see sheet no. 7

Signs cross-hatched are to
be "Bagged."

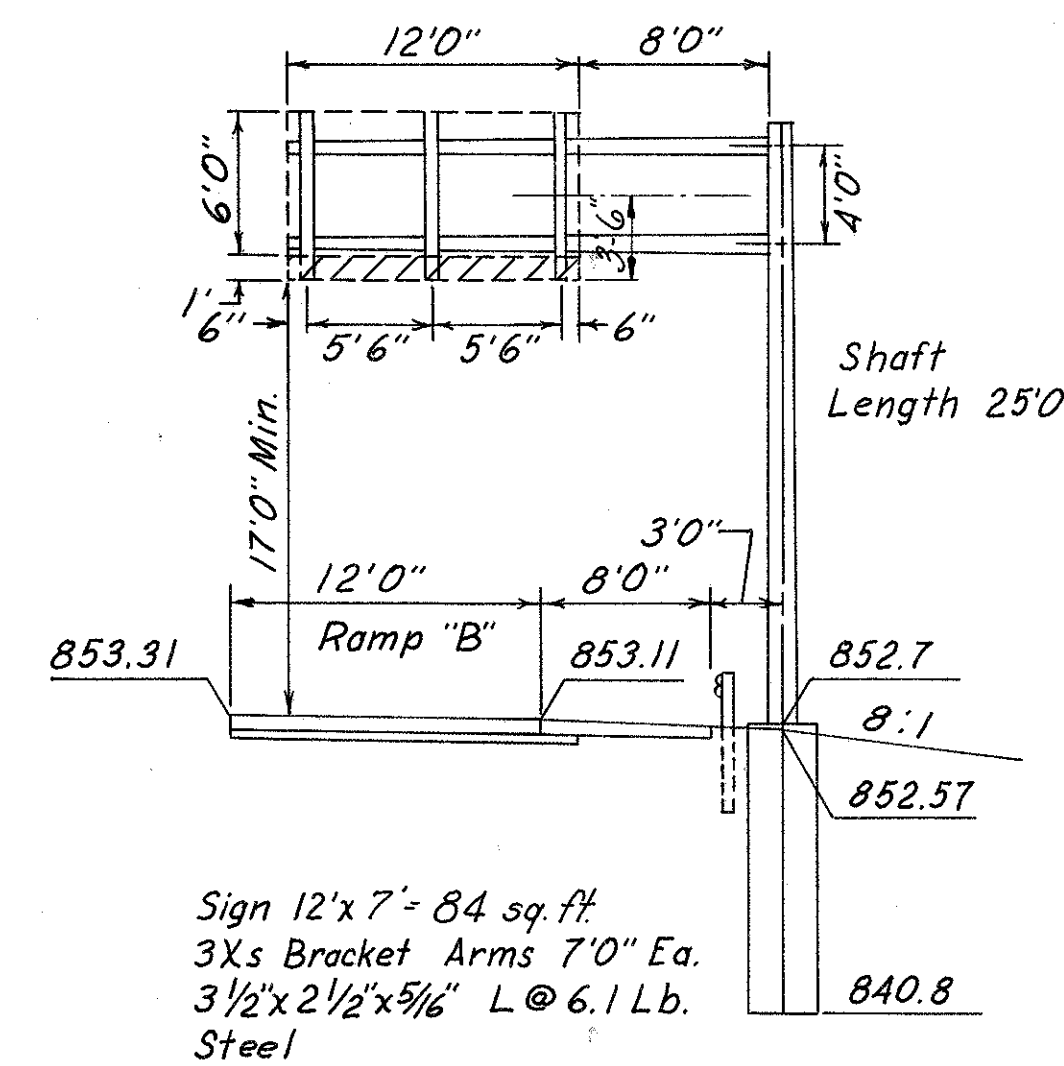




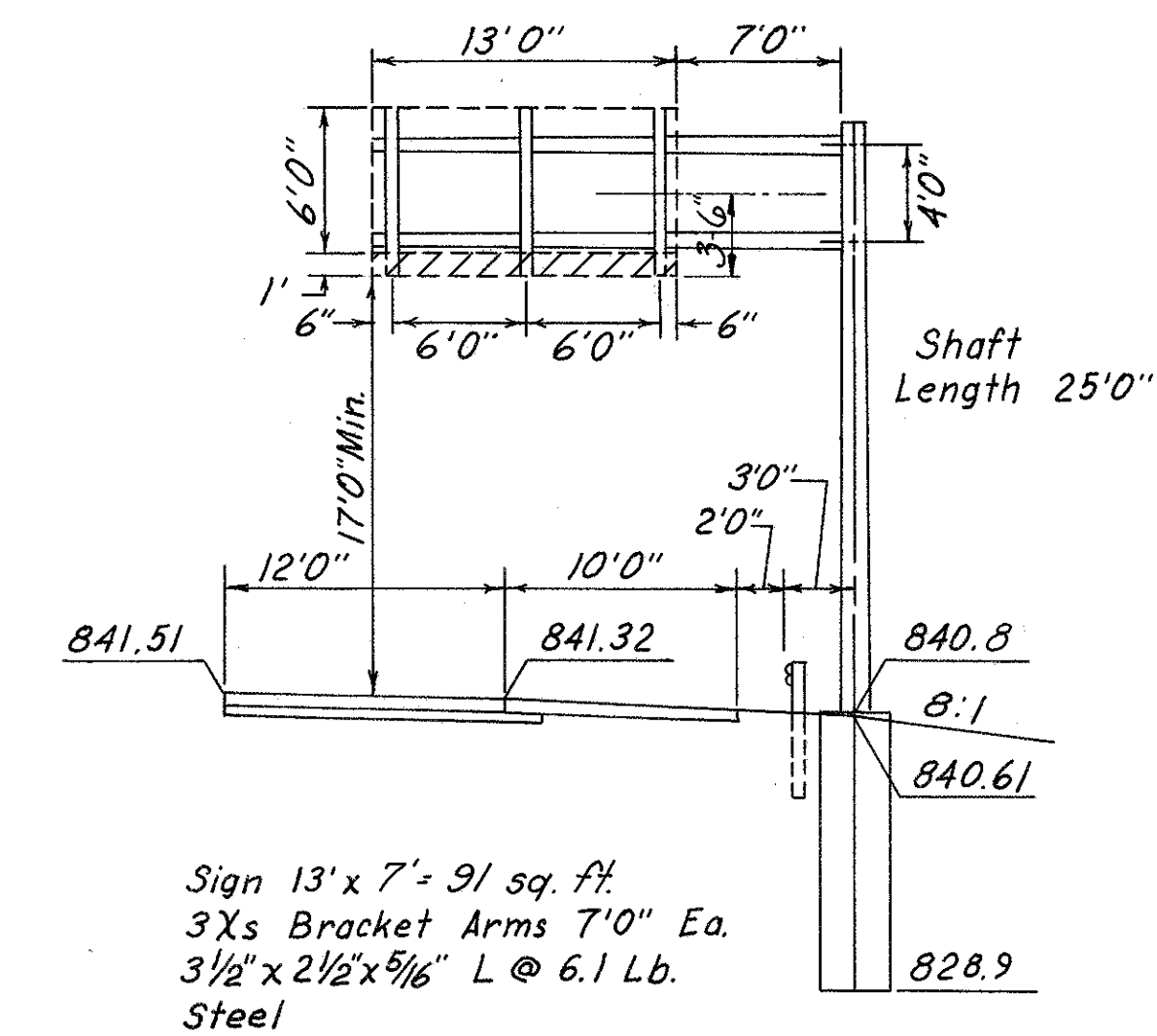
OVERHEAD SIGN SUPPORT NO. 501
STA. 1326+00 SOUTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



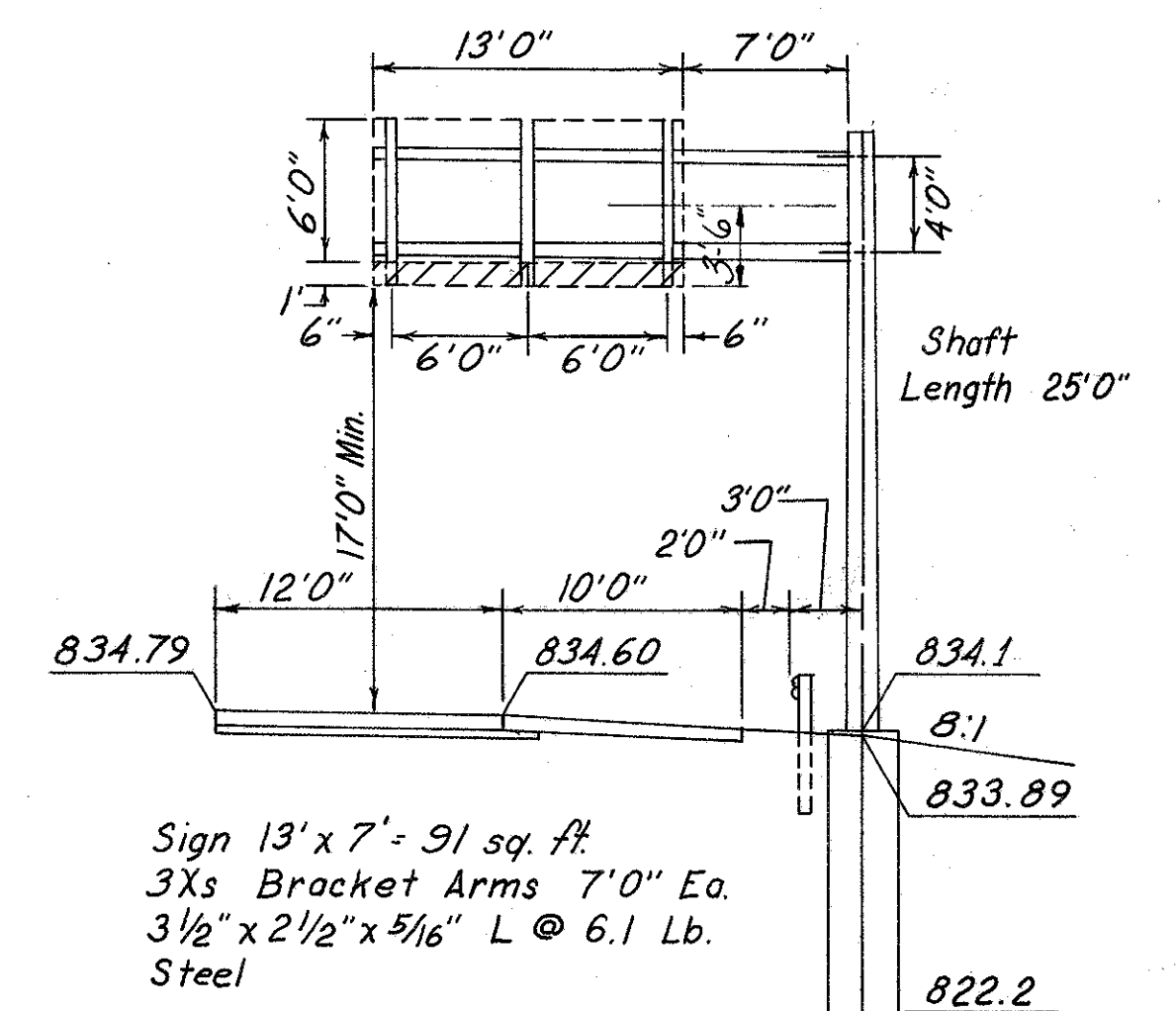
OVERHEAD SIGN SUPPORT NO. 502
STA. 1344+00 SOUTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



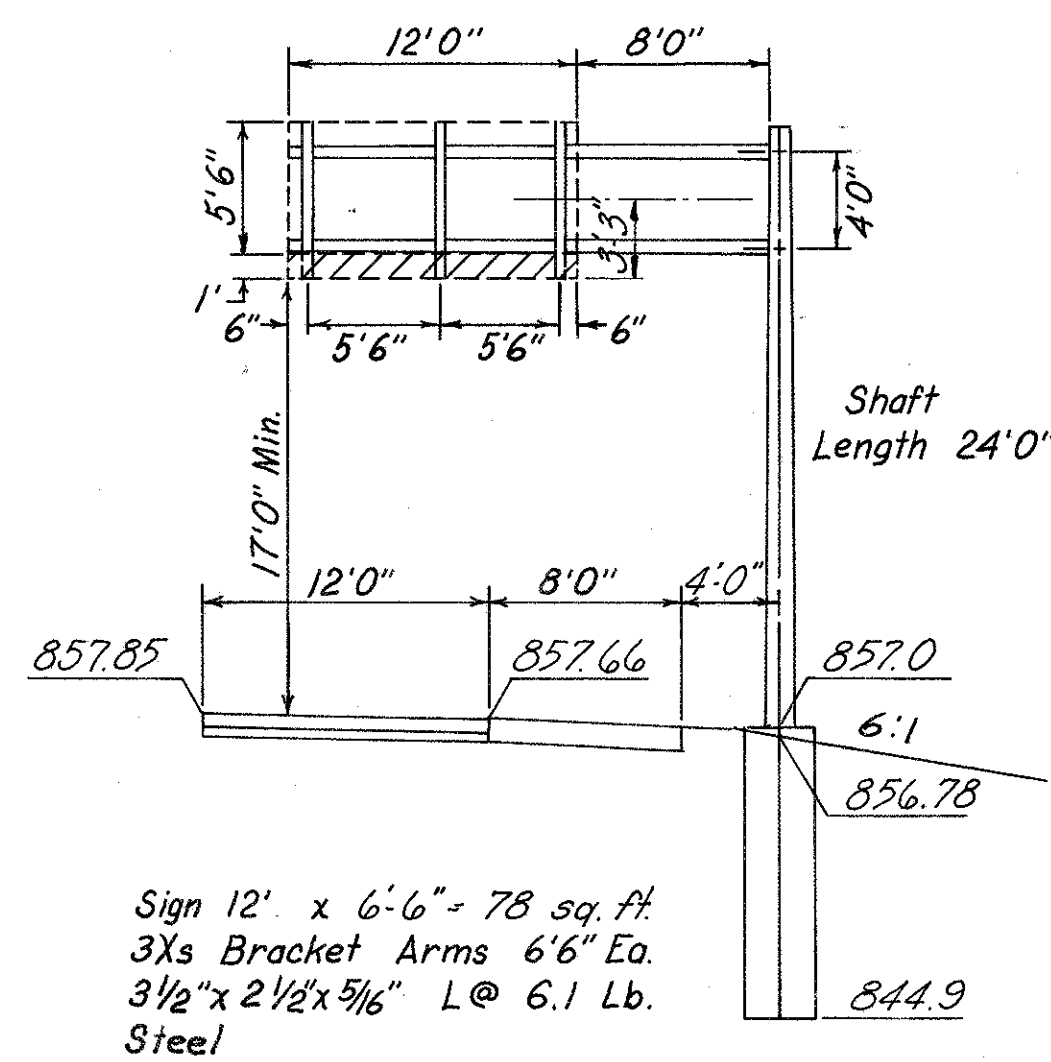
OVERHEAD SIGN SUPPORT NO. 503
STA. 1370+00 NORTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



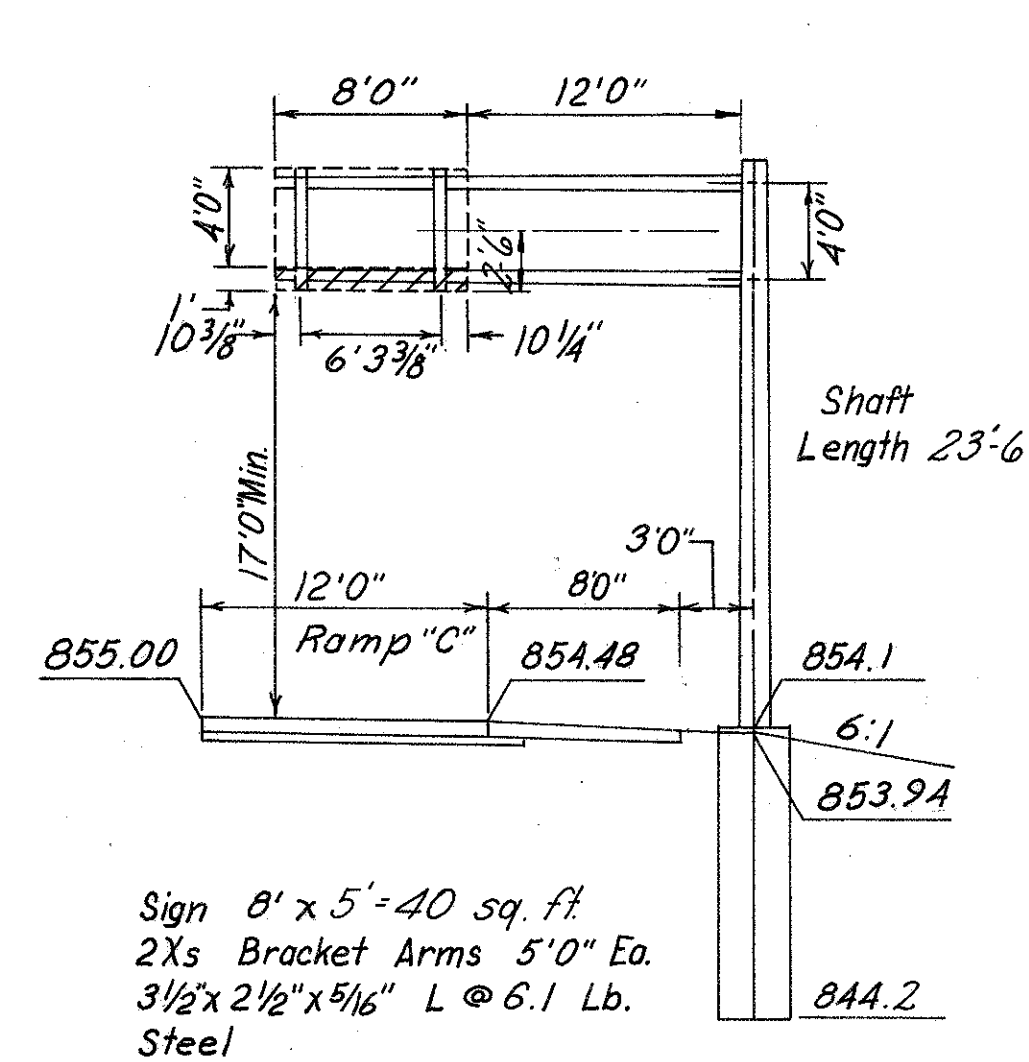
OVERHEAD SIGN SUPPORT NO. 504
STA. 1393+00 NORTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



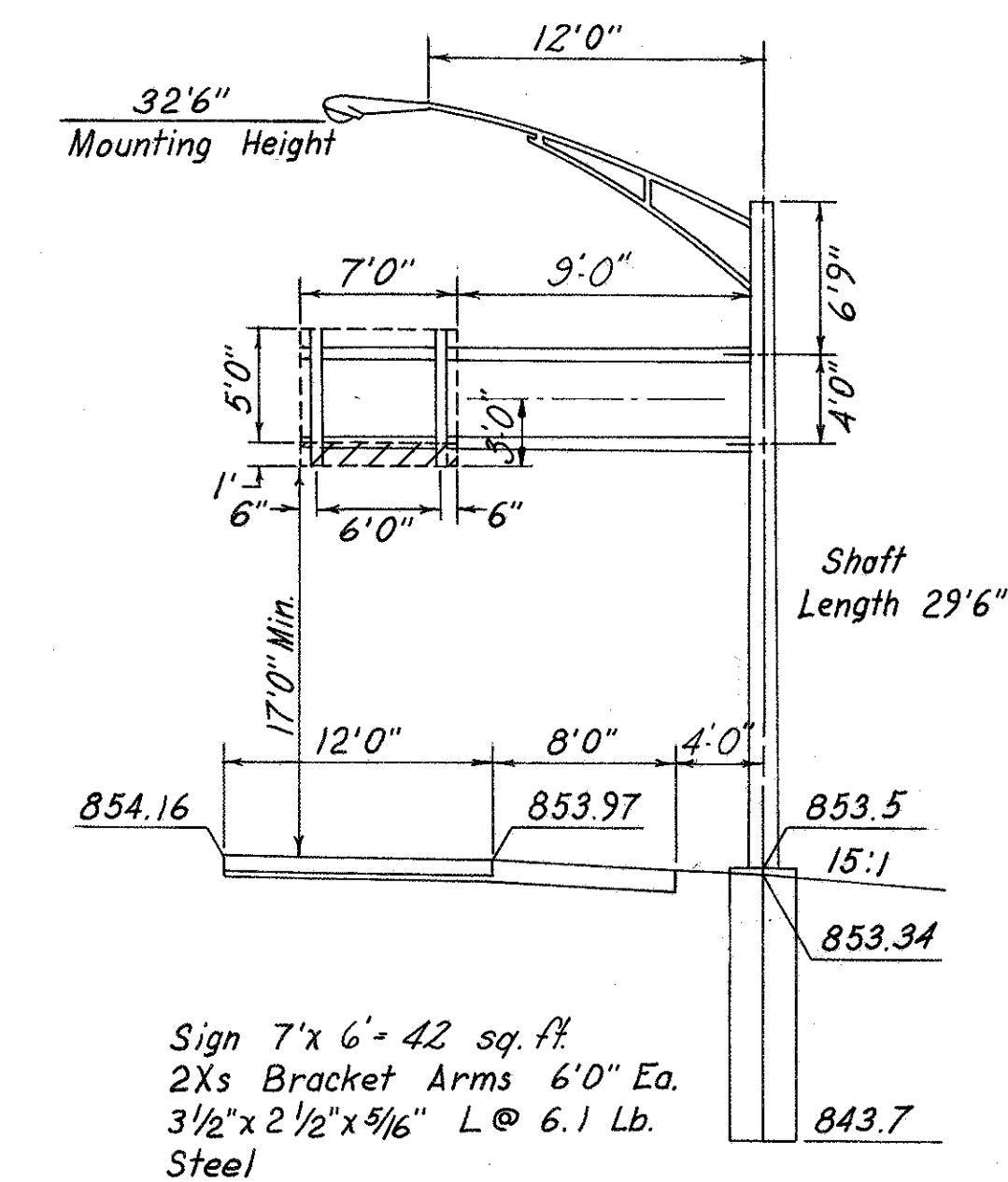
OVERHEAD SIGN SUPPORT NO. 505
STA. 1421+00 NORTHBOUND IR-270
816 No. 12.24 Design No. 4
Arms: 20' 0"



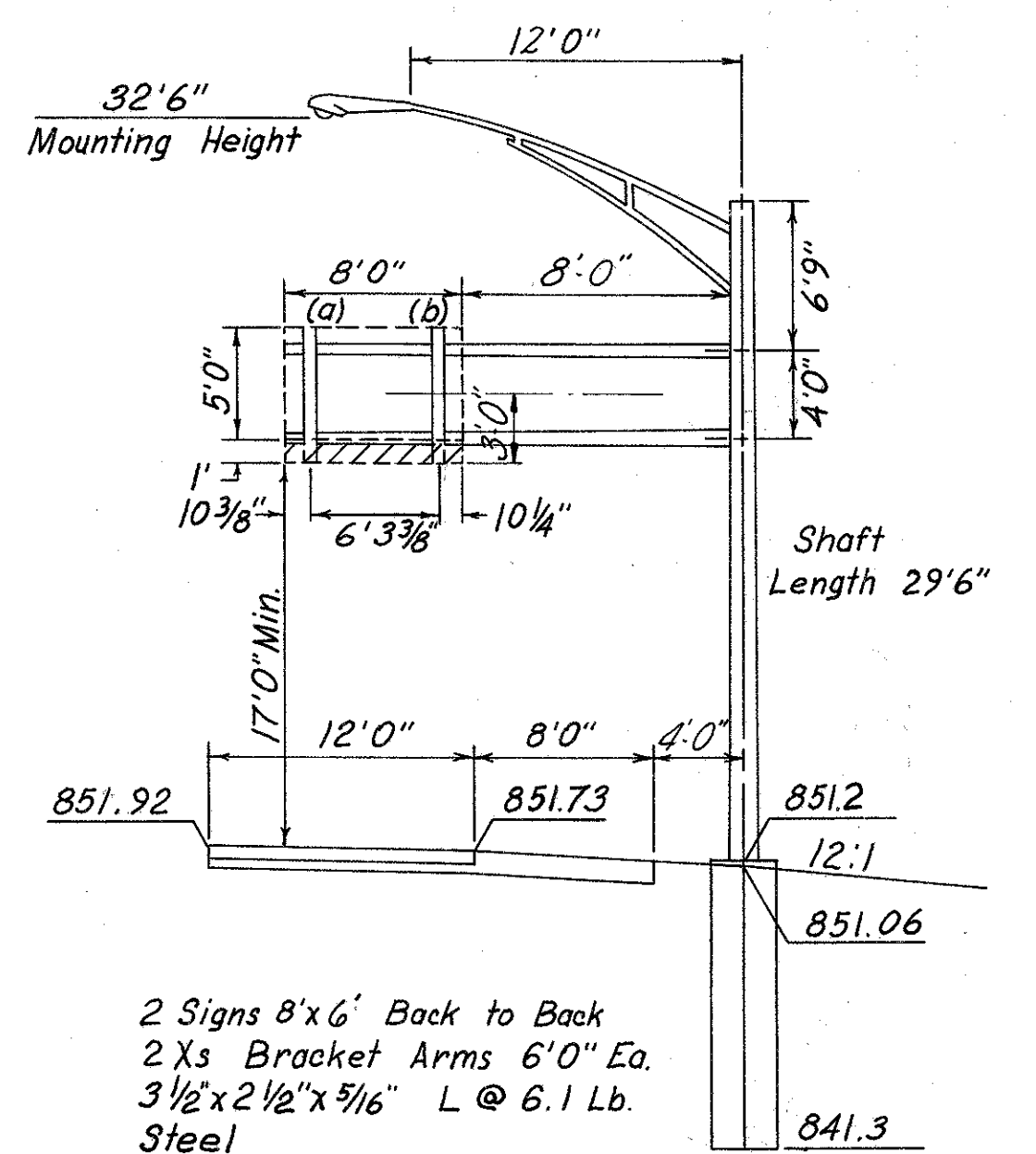
OVERHEAD SIGN SUPPORT NO. 508
STA. 107+91 EASTBOUND MORSE RD.
816 No. 12.24 Design No. 4
Arms: 20' 0"



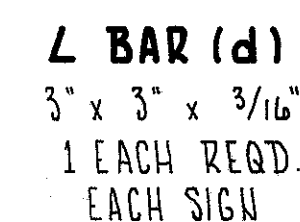
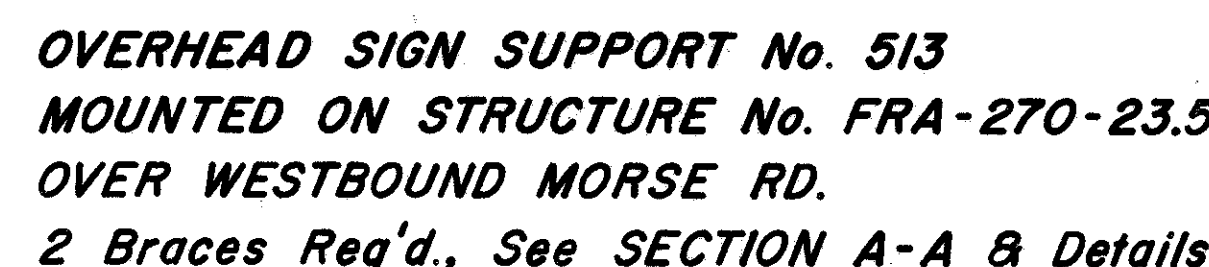
OVERHEAD SUPPORT NO. 509
STA. 114+40 EASTBOUND MORSE RD.
816 No. 12.24 Design No. 1 Modified
Arms: 20' 0"



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"



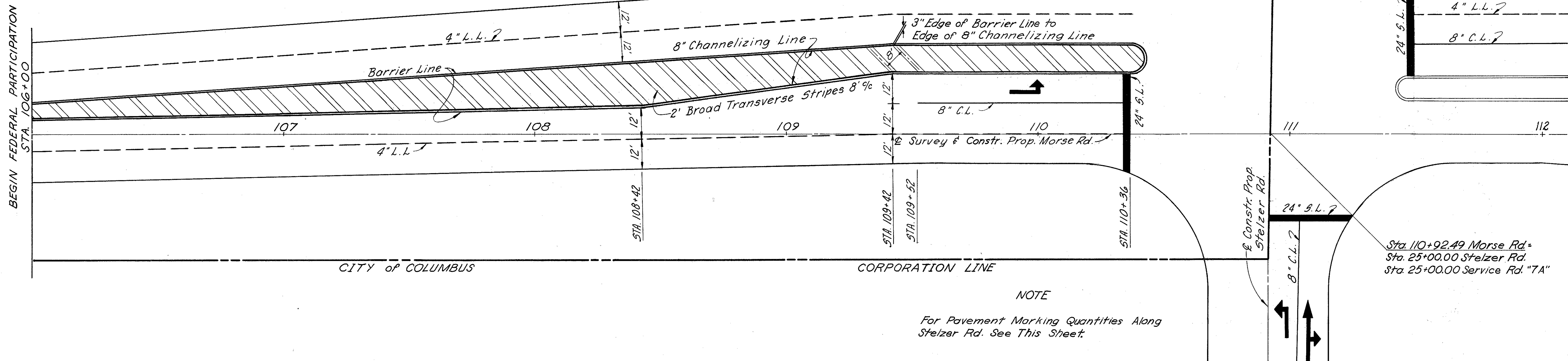
Note:
All members shall be 6061-T6
unless otherwise noted.

CALC: C.P. 7-12-68
CHK: R.G.M.

PAVEMENT MARKING QUANTITIES 100% City of Columbus (Stelzer Road)					
STATION TO STATION	SIDE	4" EDGE LINE	4" LANE LINE	BARRIER LINE	24" STOP 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
TOTALS (MILES)		0.20	0.03		

NOTE

For Pavement Marking Quantities Along Morse Rd. See Sheet No. 6

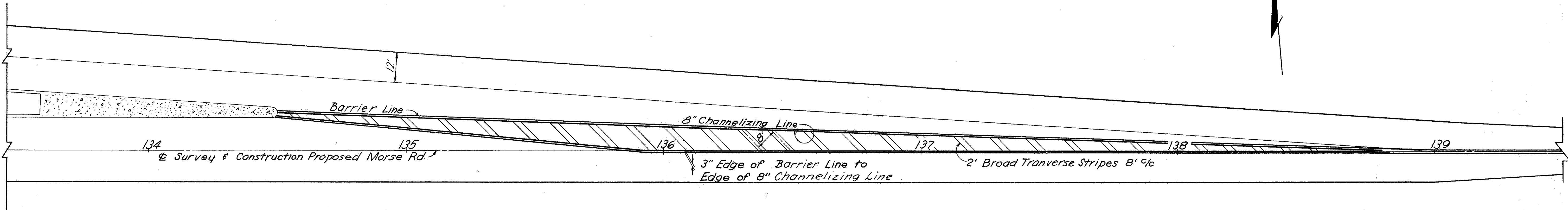


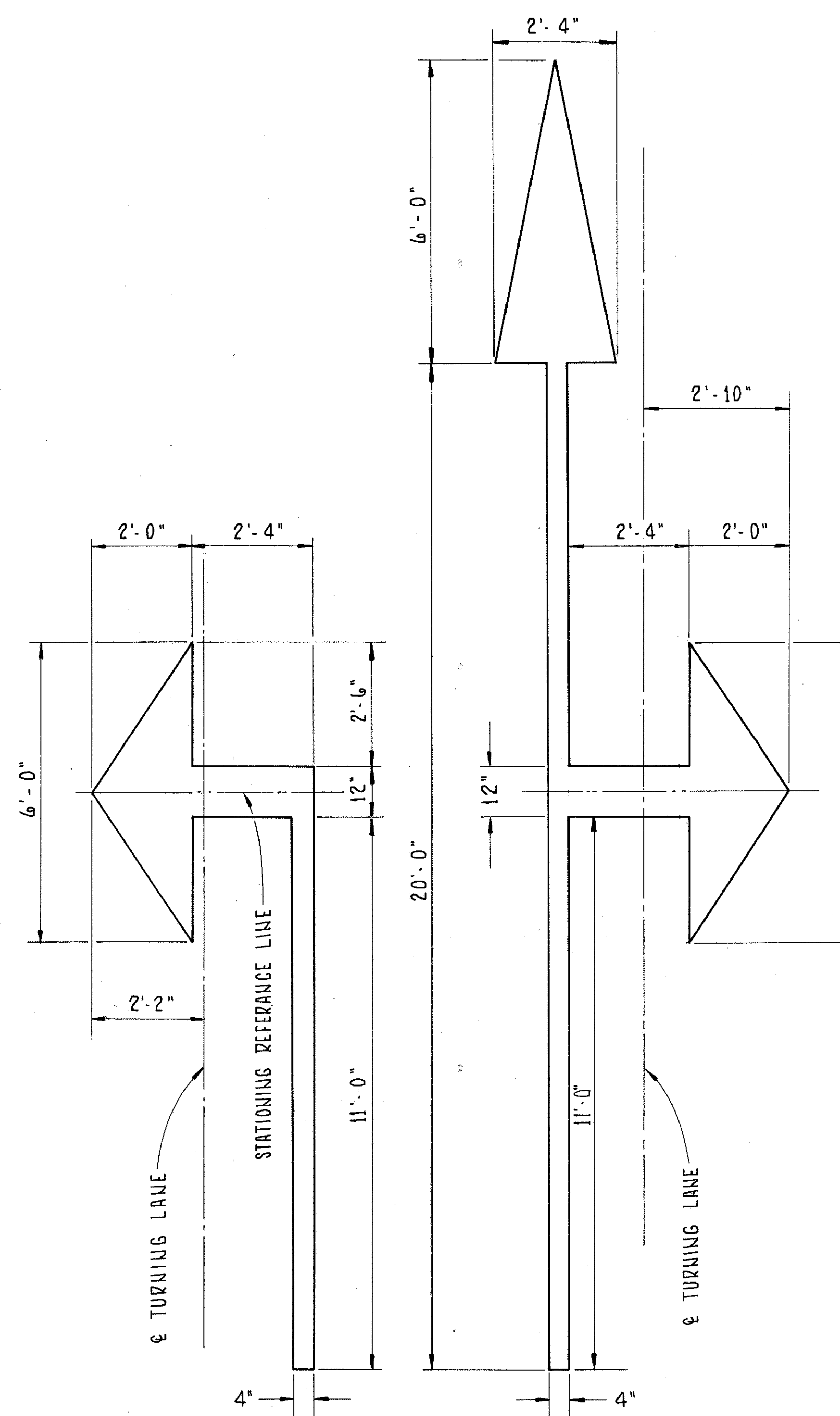
NOTE

For Pavement Marking Quantities Along Stelzer Rd. See This Sheet.

NOTE

For Pavement Marking Quantities Along Morse Rd. See Sheet No. 6





LANE ARROW DETAILS

PARTICIPATION	ROADWAY	STATION TO	STATION	4"	4"	8"	BARRIER LINE	BROAD TRANSVERSE STRIPES		LANE ARROW	24"	
				EDGE LINE	LANE LINE	CHAN. 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
		1 5/40 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

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 C OF POLE TO C OF SIGN DOES NOT EXCEED THE MAX. SIGN AREA TIMES "B".

*** ARMS 20' LONG OR LONGER ARE TO BE TRUSS TYPE WITH 3"x3"x3/8" 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 A193 GRADE B7 AFTER FABRICATION TAPERED POLES AND ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS-THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL-REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D" 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.

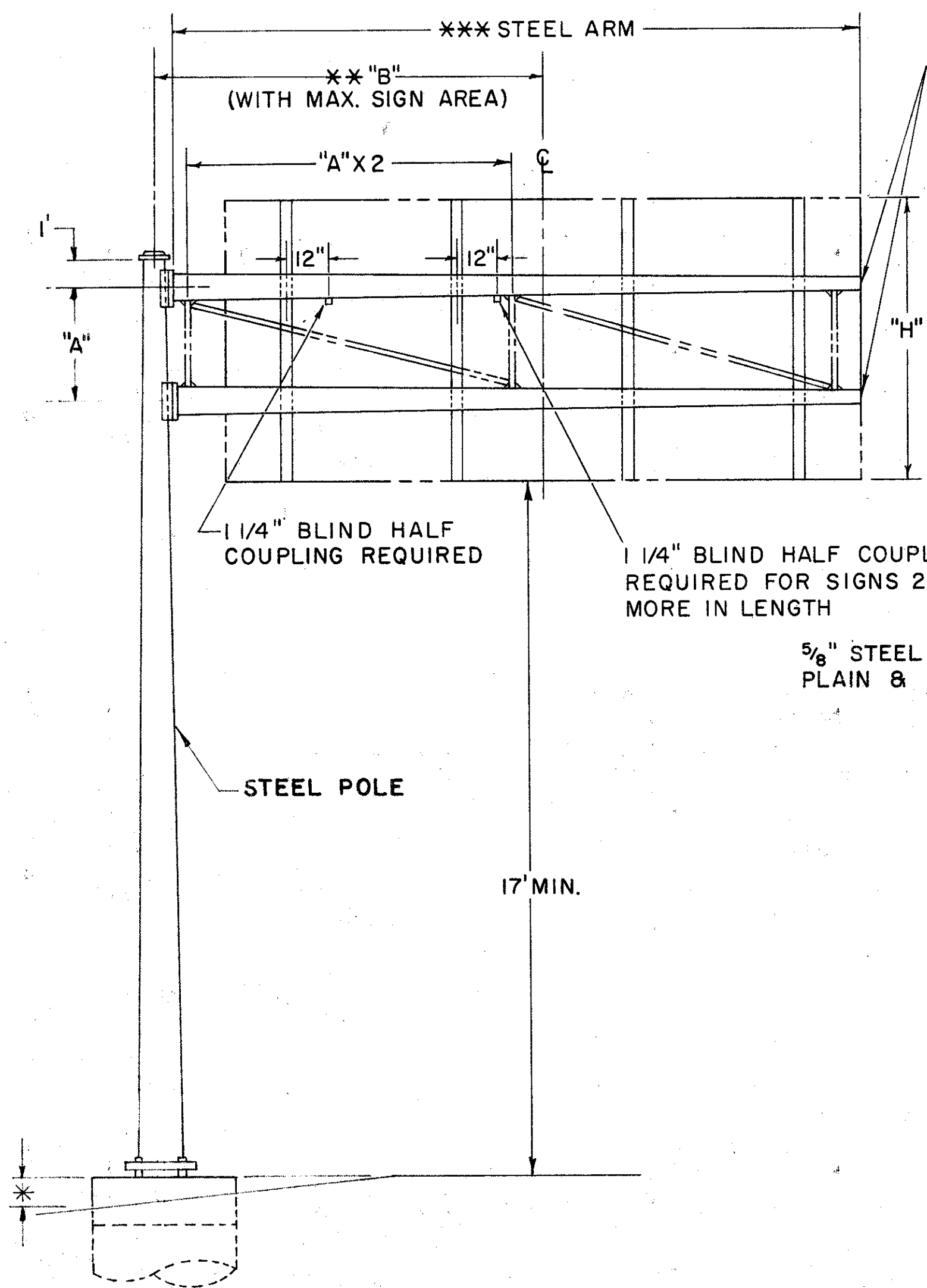
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD
SIGN SUPPORT

816
No. 12.24

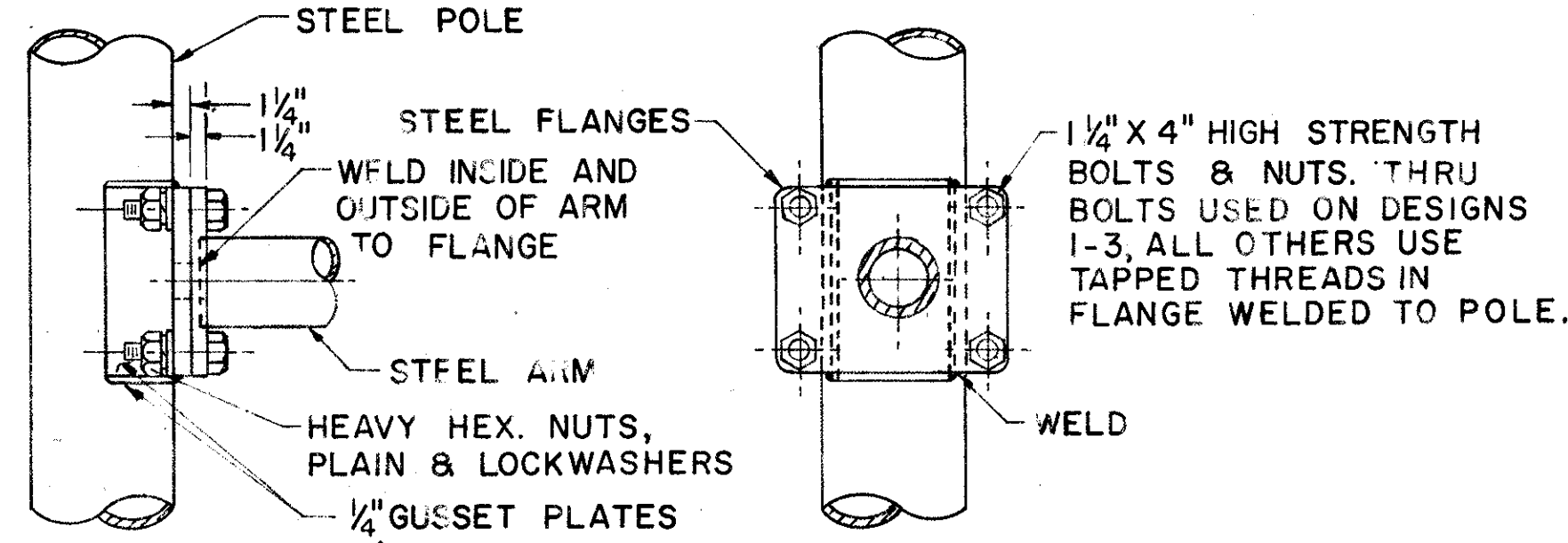
DATE
8-18-61
4-11-62
4-18-67

APPROVED *Robert E. Comer*
ENGINEER OF TRAFFIC

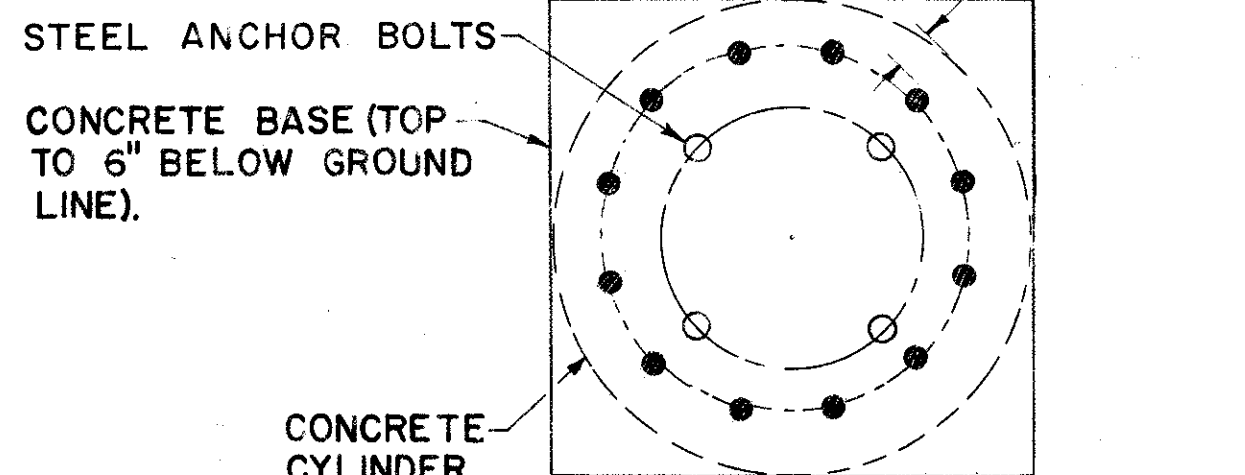


NOTE:

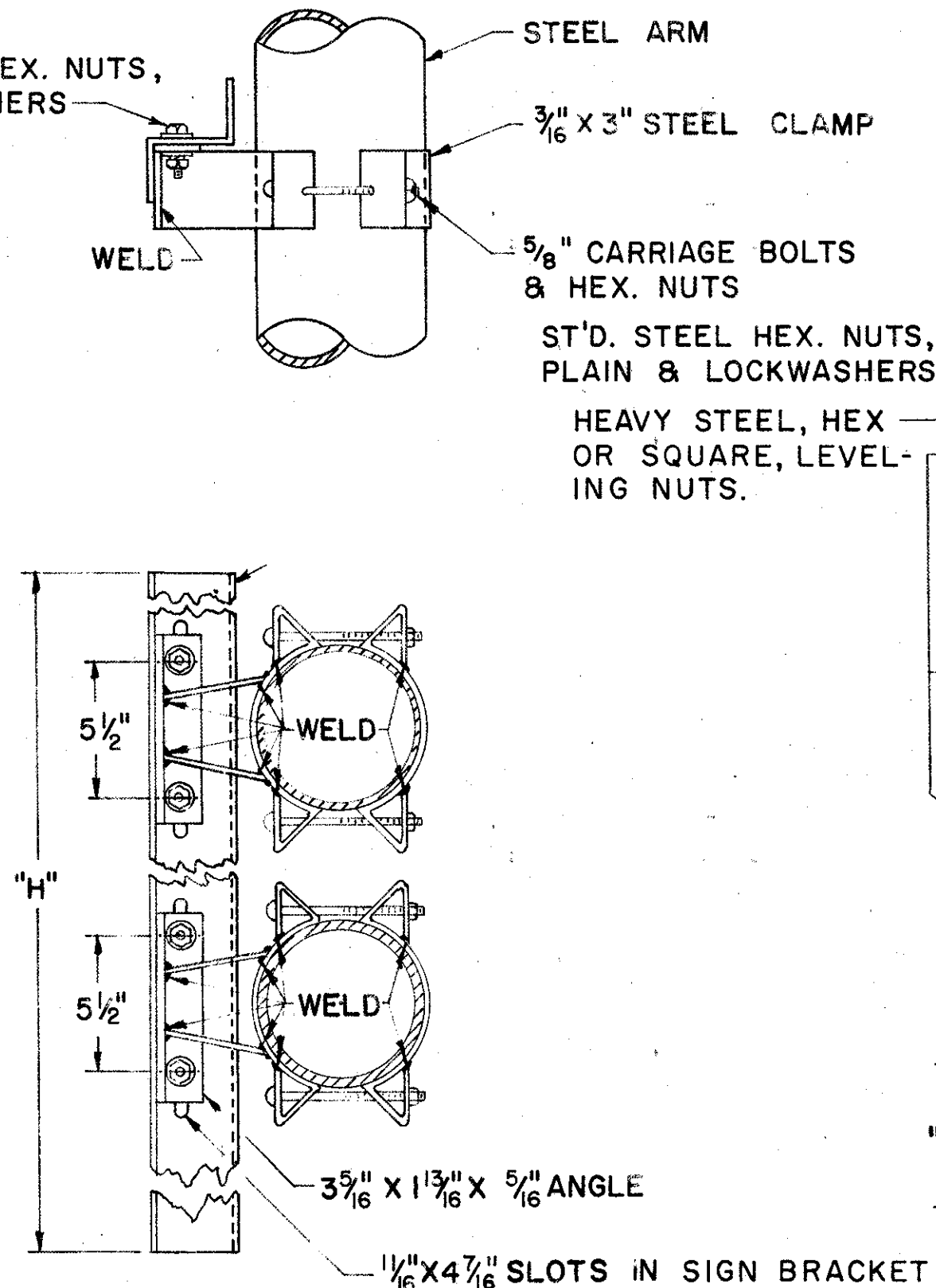
THE 12" DIMENSION SHOWN FOR BLIND HALF COUPLINGS MAY BE INCREASED OR DECREASED WHEN NECESSARY TO PREVENT INTERFERENCE WITH OTHER MEMBERS.



ARM ATTACHMENT



POLE BASE DETAIL



SIGN ATTACHMENT DETAIL

DESIGN NO.	POLE SIZE	*** ARM SIZE	DIM A	DIM ** B	DIM "D" MIN.	DIM F	DIM F	DIM P	DIM S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	REINF. SIZE	BARS # REQ'D
1	3 Ga, 12" X 8.78" X 23'-0"	7 Ga, 6.9" X 4.66" X 16'-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 8.56" 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

FOUNDATION DETAIL

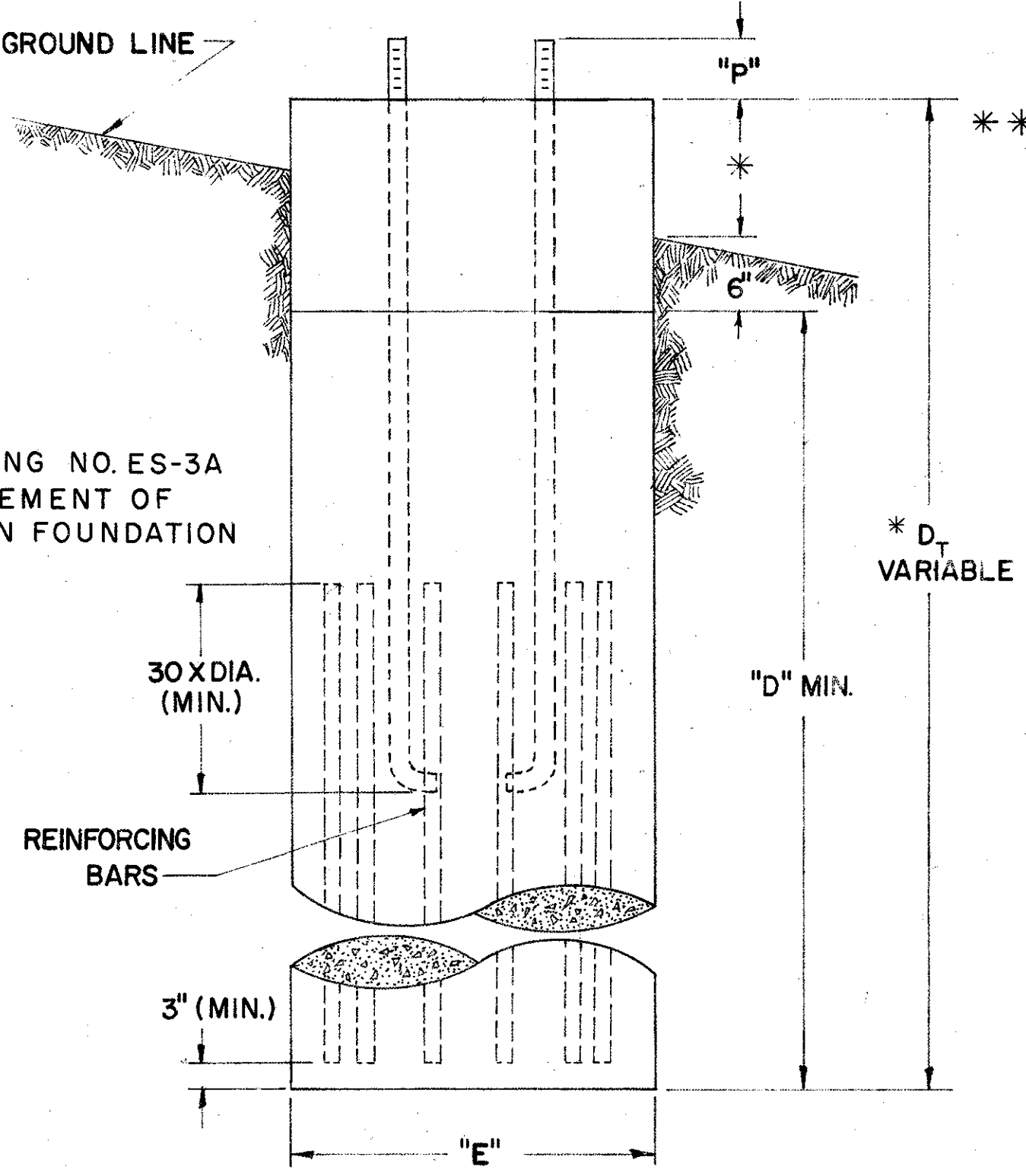


TABLE I.

"L" SIGN LENGTH	FIXTURES NUMBER	EDGE DISTANCE A	B	NO. BALLAST	S _n = Nominal Fixture Length, 72" & 96" respectively. S _a = Actual Fixture Length, for mounting purposes, 75 3/8" and 99 3/8" respectively. (Slight variation for different manufacturers.) M = Distance from edge of sign to C 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.
6'-0"	1	6"	6"	1	
8'-0"	1	10 3/8"	16 3/8"	1	
10'-0"	1	10 3/8"	16 3/8"	1	
12'-0"	2	6"	6"	1	
14'-0"	2	8 5/8"	14 5/8"	1	
16'-0"	1	8 5/8"	14 5/8"	1	
18'-0"	2	8 5/8"	14 5/8"	1	
20'-0"	3	7"	13 1/2"	2	
22'-0"	2	7"	13 1/2"	2	
24'-0"	1	7"	13 1/2"	2	
26'-0"	3	7"	13 1/2"	2	

TABLE II.

ACTUAL SIGN HEIGHT "H _a "	SUPPORT TYPES		
	9.12, 11.08, 13.2, 7.2	9.24, 10.48, 12.24, 14.5, 15.8, 7.2 to 7.6	
	SINGLE TUBE DOUBLE TUBE LESS 36" C/C	DOUBLE TUBE C/C 36"-42" C/C 48"-54" C/C 60"-72"	
	MAXIMUM BRACKET SPACING		
to 5'-0"	6'-4" with X 8'-4" with Y	8'-4" with X	8'-4" with X 8'-4" with X
5'-6" to 8'-0"	6'-4" with Y	4'-2" with X 6'-4" with Y	6'-4" with X 8'-4" with 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

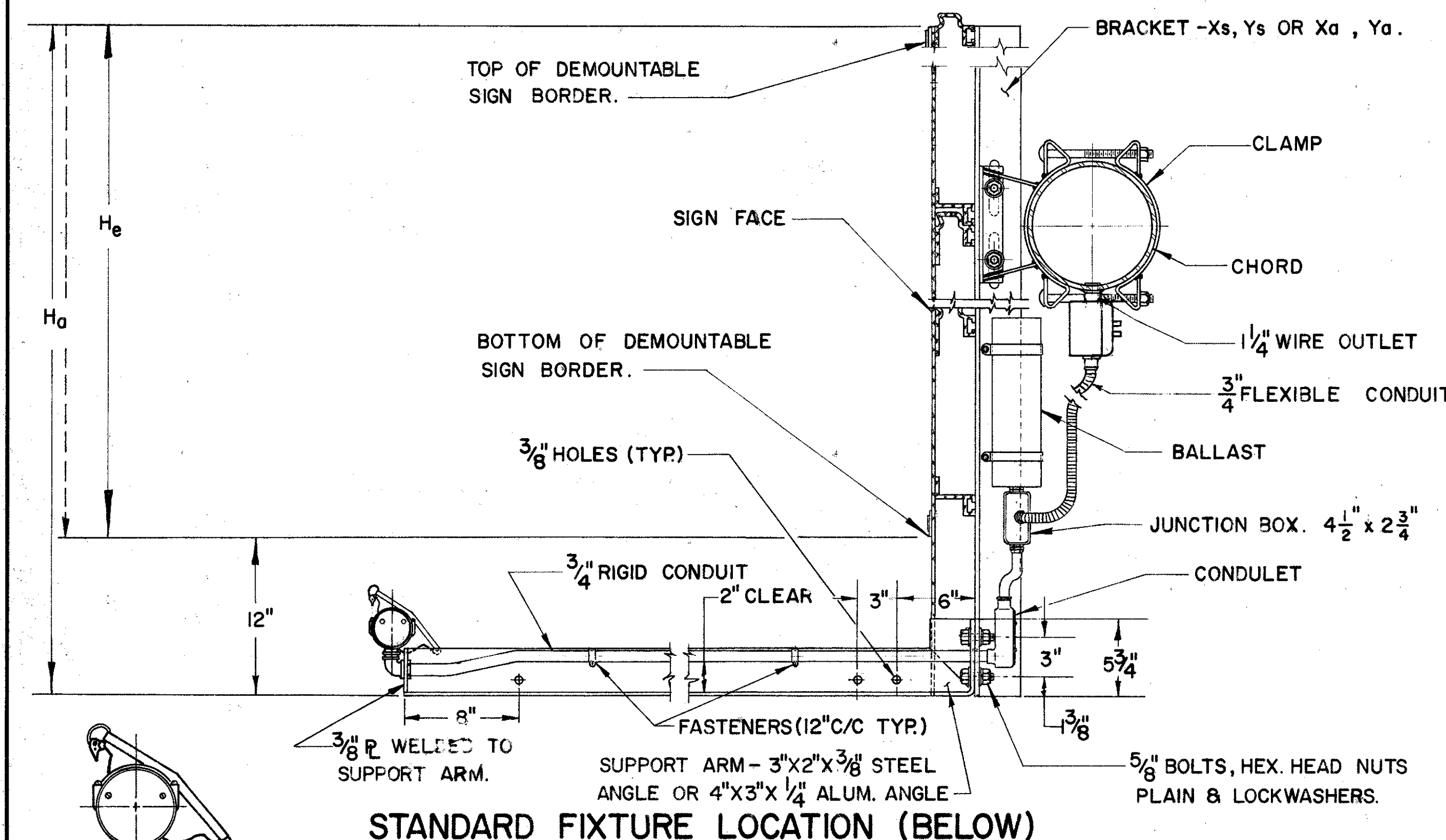
H_a = ACTUAL SIGN HEIGHT

H_e = EFFECTIVE SIGN HEIGHT

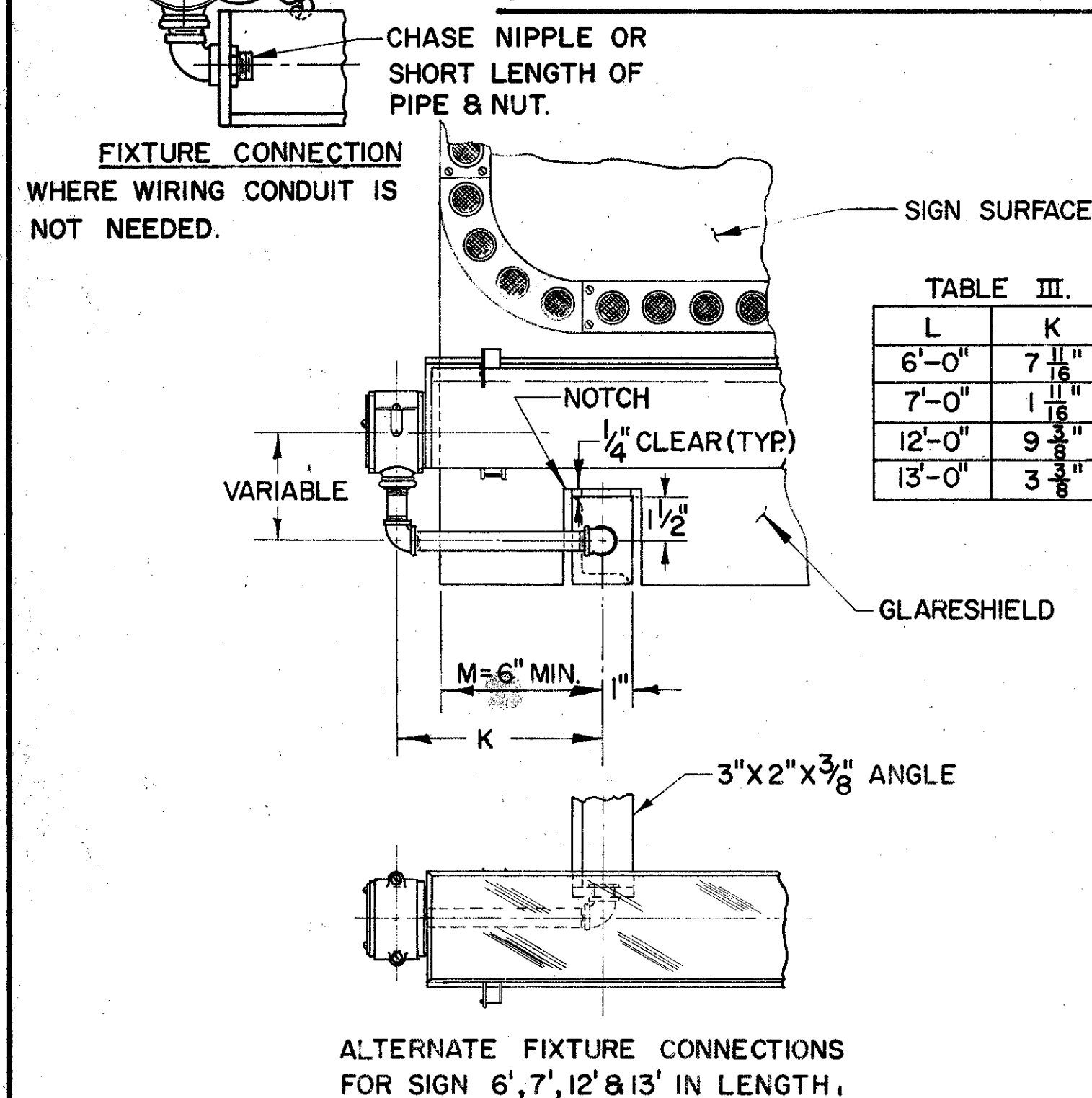
BRACKET SIZE: X_s = 3 1/2" X 2 1/2" X 5/16" - L @ 6.1 LB. STEEL } 9.12, 10.48, 11.08,
Y_s = 4" X 3 1/4" X 1/4" - Z @ 8.2 LB. STEEL } 12.24, 14.5 & 15.8
X_a = 3" X 2 1/16" X 1/4" - Z @ 2.33 LB. ALUM. }
Y_a = 4" X 2 3/32" X 3/16" - I @ 2.64 LB. ALUM. } 7.2 Thru 7.6

WHEN MAX. ALLOWABLE SPACING IS LESS THAN ACTUAL FIXTURE LENGTHS, S_a, ADDITIONAL STANDARD BRACKETS MUST BE FURNISHED, EQUAL IN HEIGHT TO "H_a".

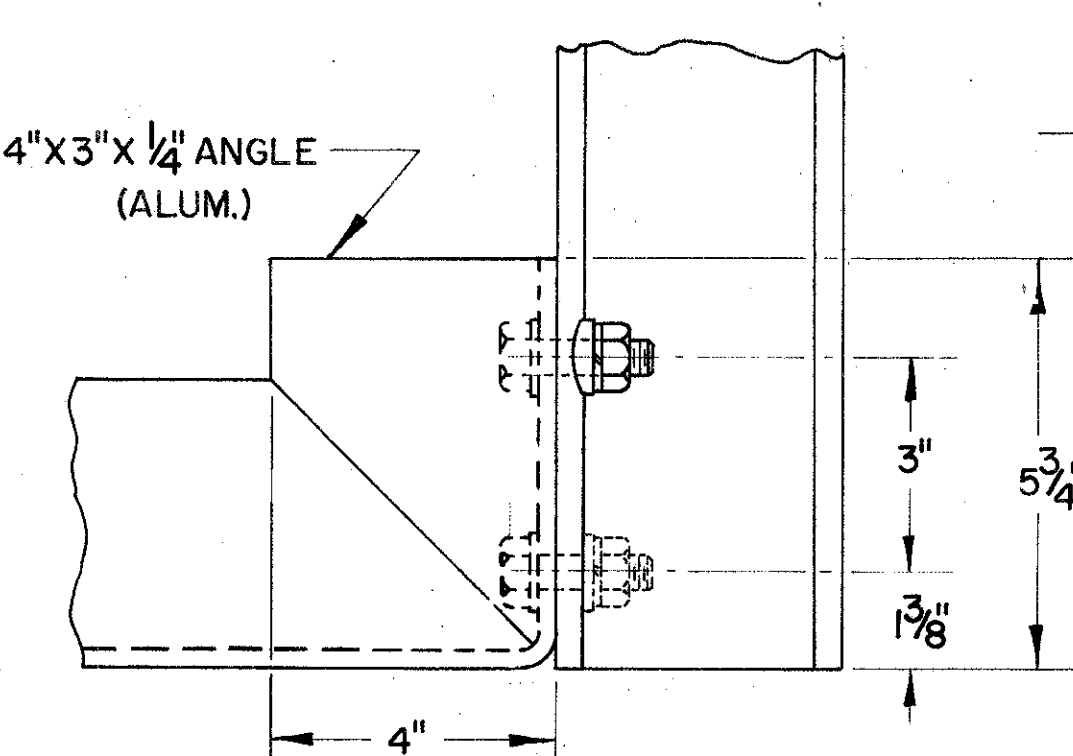
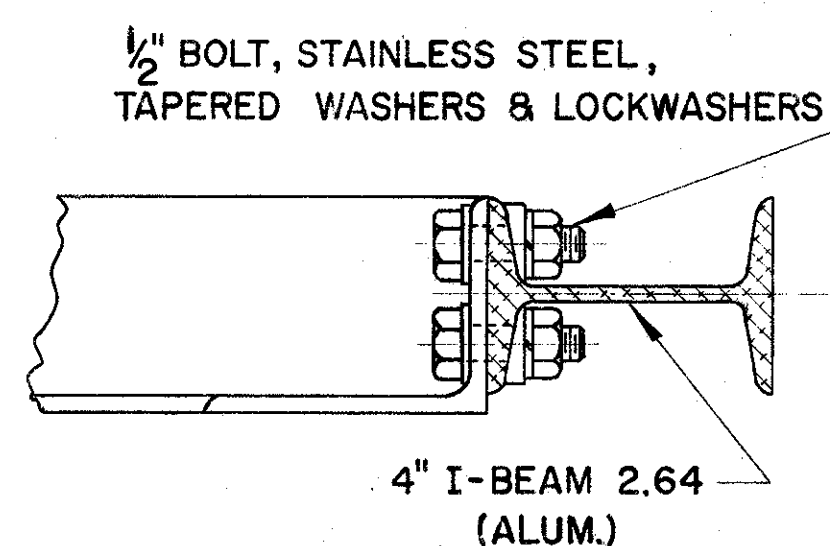
SUPPORTS 7.2 THROUGH 7.6 SHALL HAVE AN ALUMINUM FIXTURE ARM, 4" X 3" X 1/4" ANGLE. SEE DETAIL B. BOLTS AND ACCESSORIES SHALL BE STAINLESS STEEL.



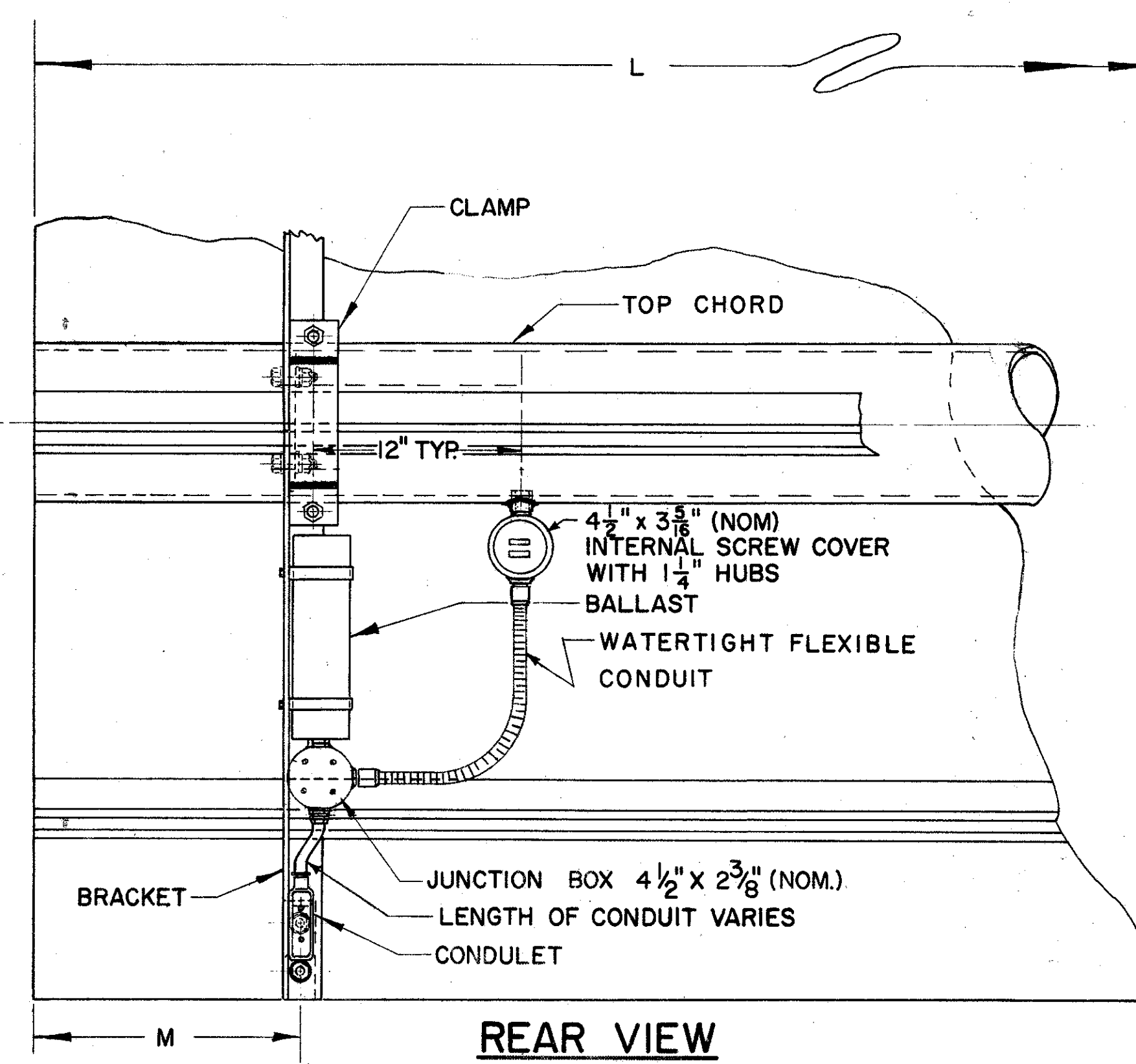
STANDARD FIXTURE LOCATION (BELOW)



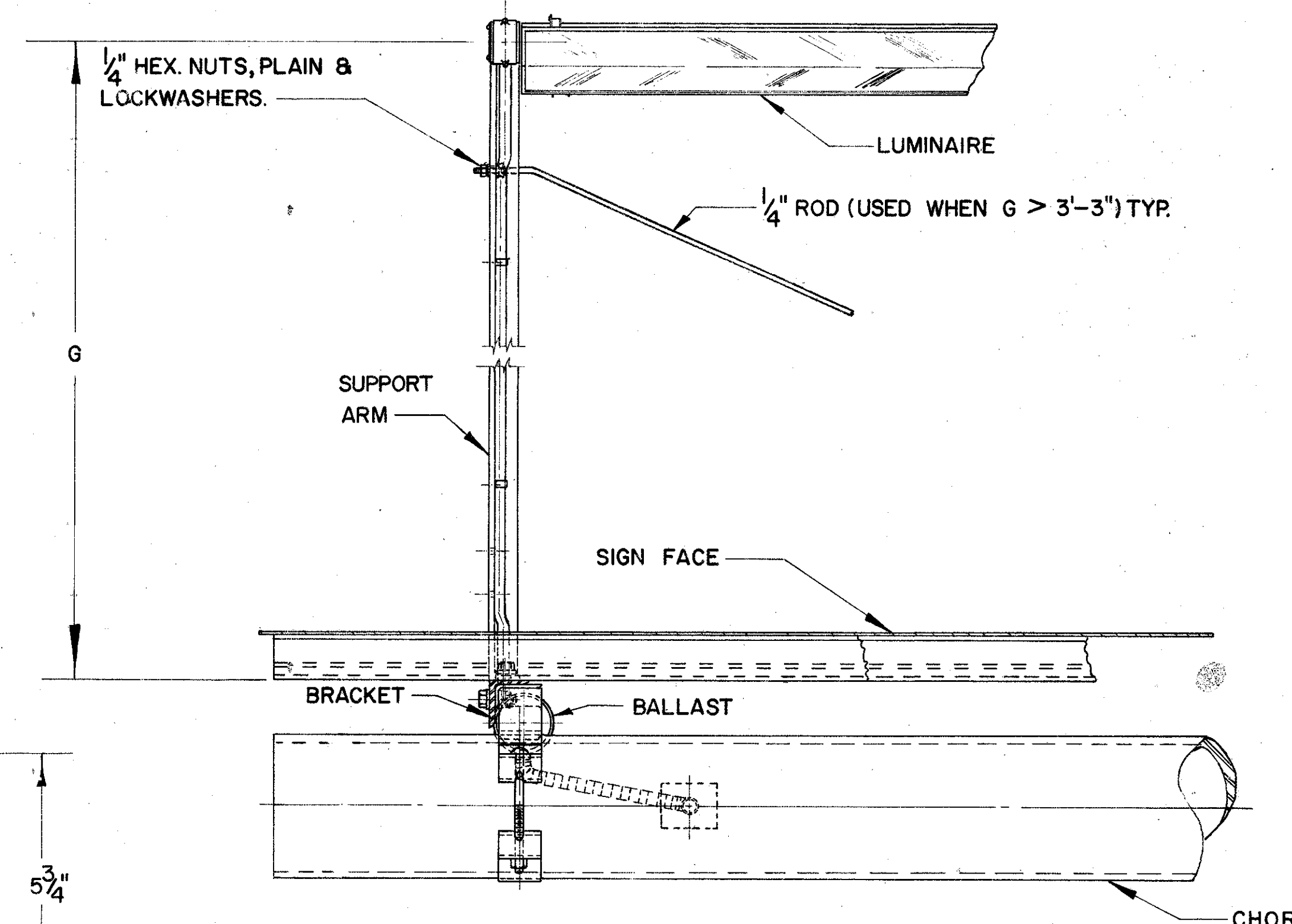
DETAIL A.



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

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS	EI-1
APPROVED <i>Frank C. Taylor</i> ENGINEER OF TRAFFIC	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

218
292

FRANKLIN COUNTY
FRA 210-22.99N

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-P617/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.

TRANSFORMERS

TYPE	MANUFACTURERS G.E.	OUTPUT K.V.A.	SWITCH TRANSFORMER ENCLOSURE
I	9T51Y7	220-241	.25
II	9T51Y8	220-251	.50
III	9T51Y9	220-261	.75
IV	9T51Y10	220-271-100	1.00
V	9T51Y11	220-281-100	1.50
VI	9T51Y12	220-291-100	2.00
VII	9T51Y13	221-102	3.00

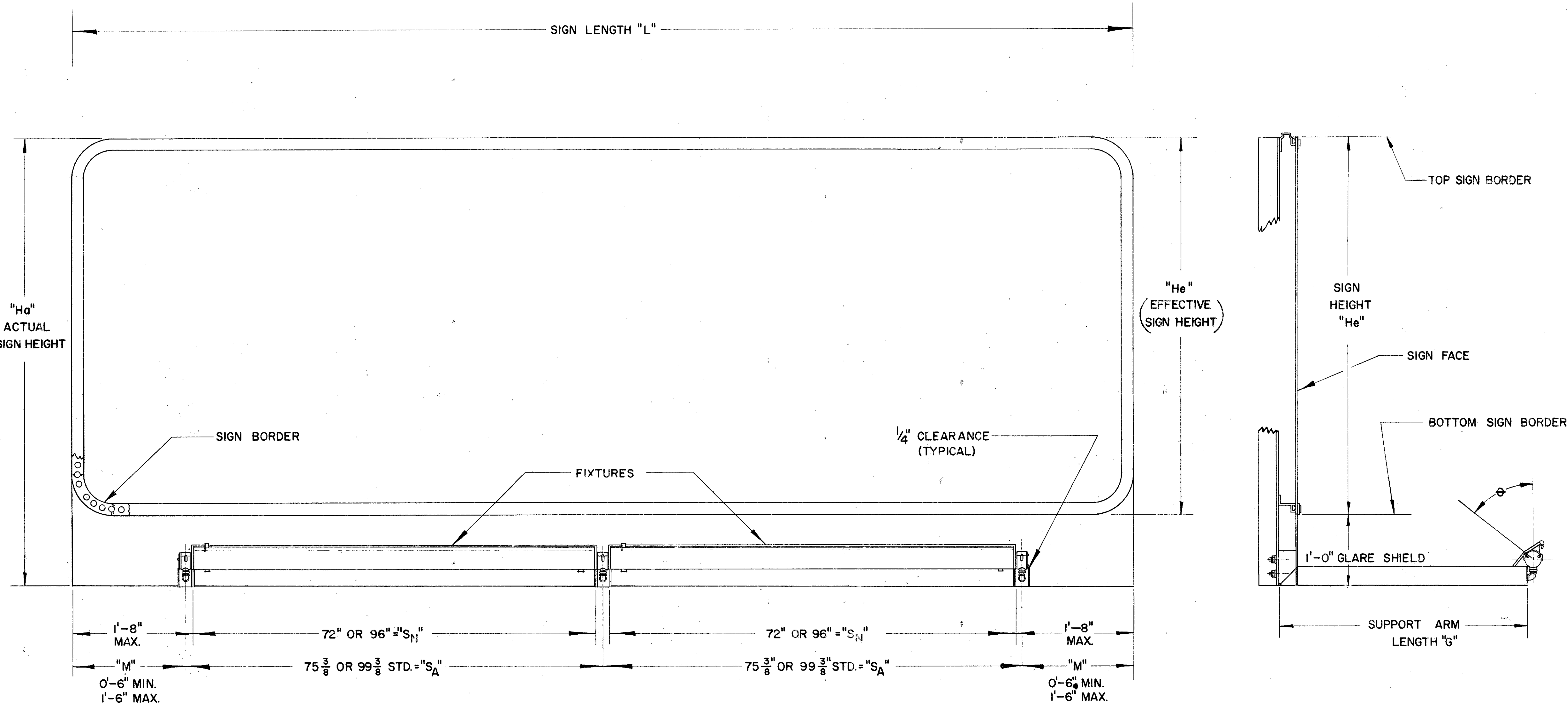
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL DETAILS
FOR EXTERNALLY
ILLUMINATED SIGNS

EI-2

APPROVED *John C. Taylor*
ENGINEER OF TRAFFIC

DATE
10-31-63
5-6-64
10-29-64
03-29-67



EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE ϕ
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		H _e = 3'-0" to 6'-6" LAMP = T12/cw/ho			H _e = 7'-0" to 13'-0" LAMP = T12/cw/sho		
	72	96	BALLAST NO. TYPE	WATTAGE PER SIGN		BALLAST NO. 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		WATTAGE
	G.E.	JEFFERSON	
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.

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, PANALIS 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"-18x3/4" HEX HEAD CADMIUM PLATED MACHINE BOLTS. ENCLOSURES SHALL BE TYPE Y OR Z AS SPECIFIED AND DIMENSIONED ON THIS SHEET.

ENCLOSURE MOUNTING BRACKET

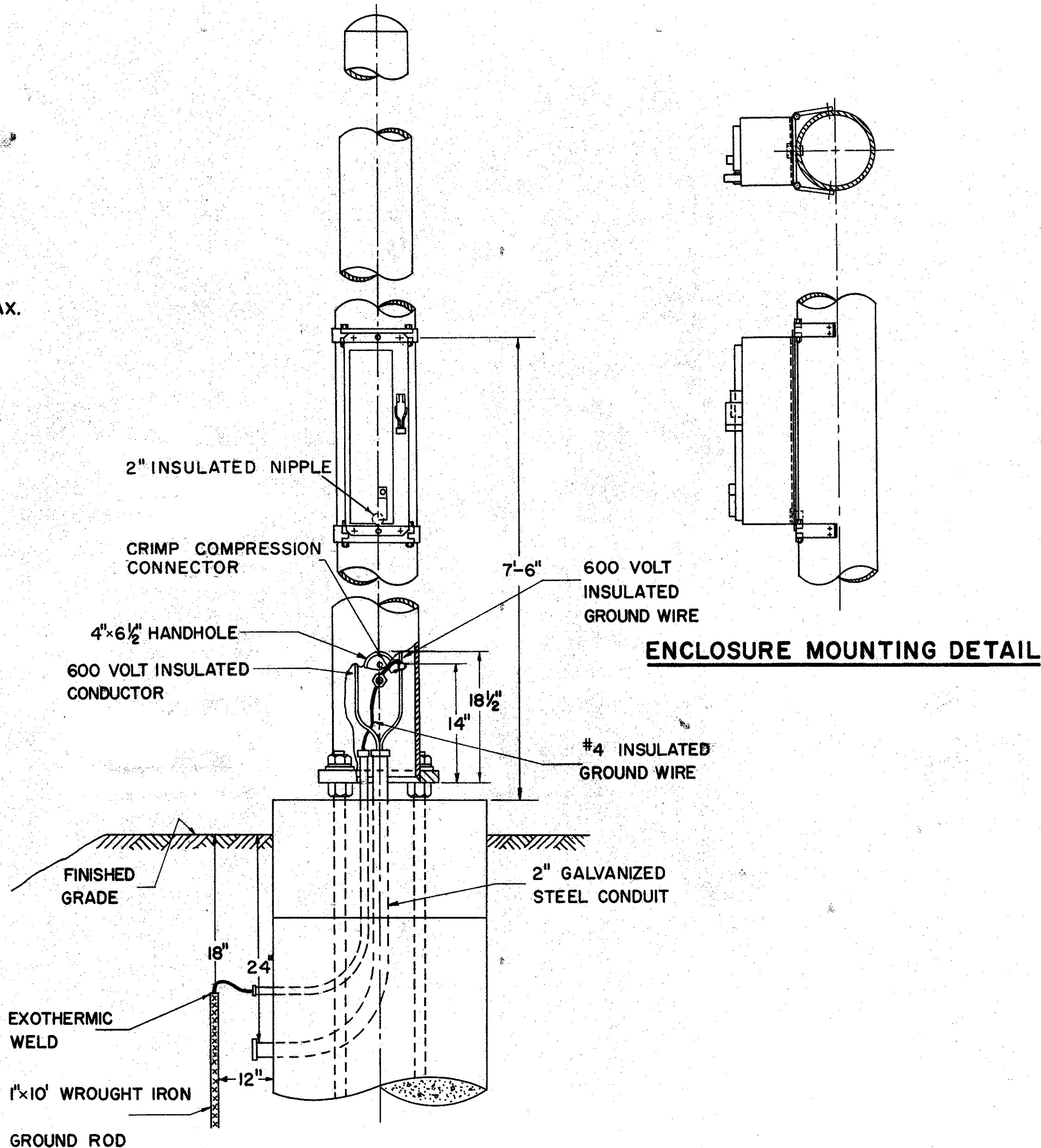
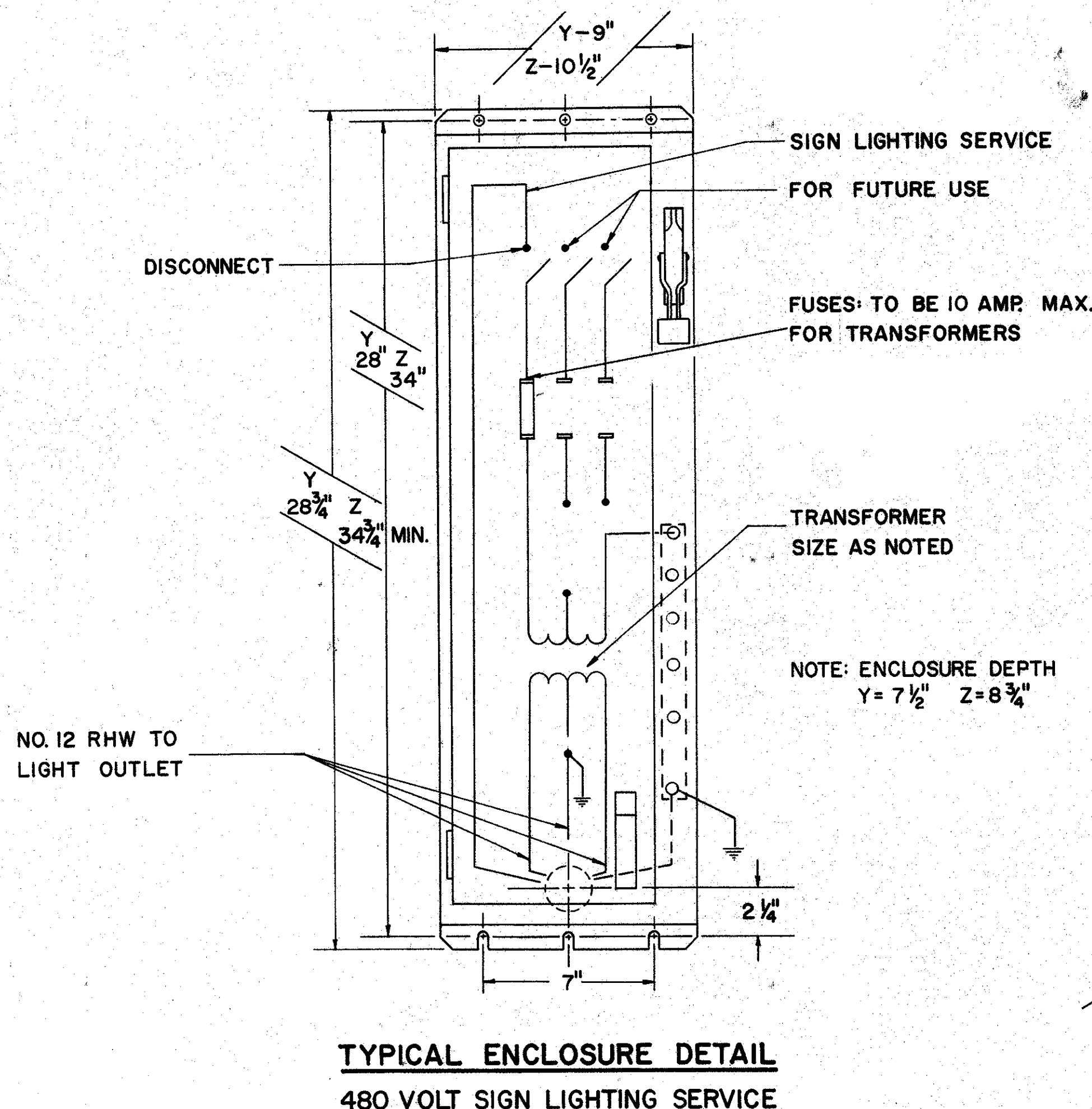
THE ENCLOSURE MOUNTING BRACKET SHALL BE FABRICATED THEN GALVANIZED BEFORE ASSEMBLY. THE BRACKET SHALL BE FIELD MOUNTED WITH 5/16" HEX HEAD SELF TAPPING CADMIUM PLATED SCREWS. THE SIGN SUPPORT SHALL BE FIELD DRILLED, AS PER DETAIL.

WIRE AND CABLE

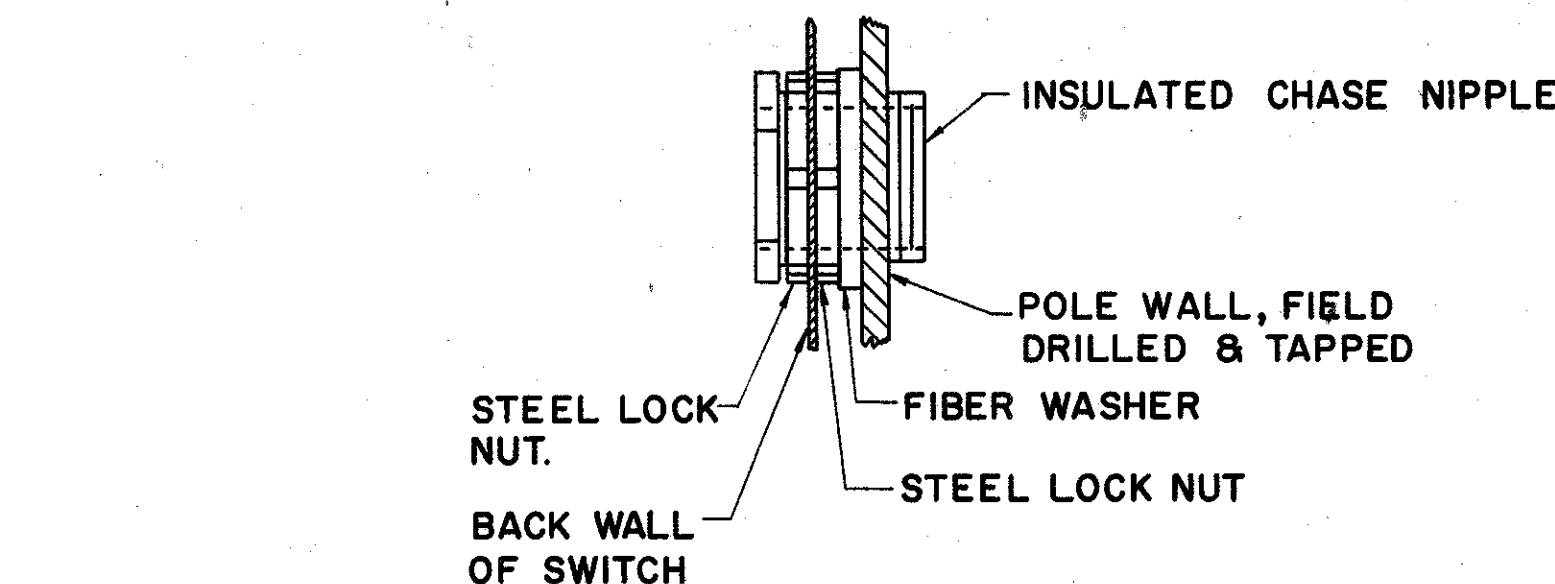
ALL WIRE AND CABLE UP TO AND INCLUDING #4 SHALL COMPLY WITH FAA TYPE A SPECIFICATIONS. #2 OR LARGER WIRE OR CABLE SHALL BE G. E. 58006 OR ANACONDA AP-10711, OR EQUAL. ALL WIRE AND CABLE SHALL BE 600 VOLT.

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"x10" 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.



SIGN SUPPORT DETAIL FOR ILLUMINATED SIGNS

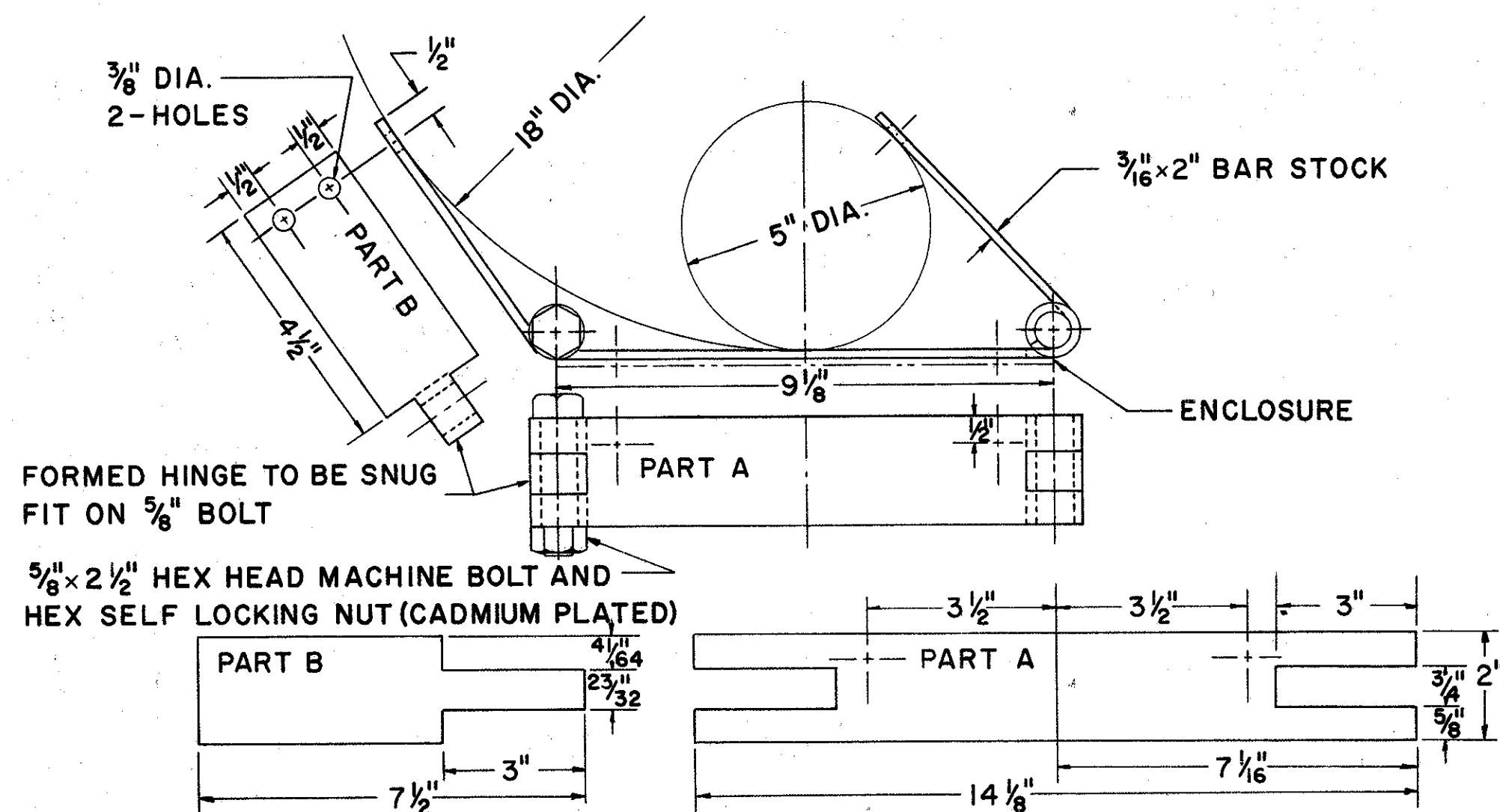


INSULATED CHASE NIPPLE ASSEMBLY

AS MANUFACTURED BY THOMAS BETTS, APPELTON, STEEL CITY OR EQUAL

TRANSFORMERS

TYPE	MANUFACTURERS G.E. 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



ENCLOSURE MOUNTING BRACKET

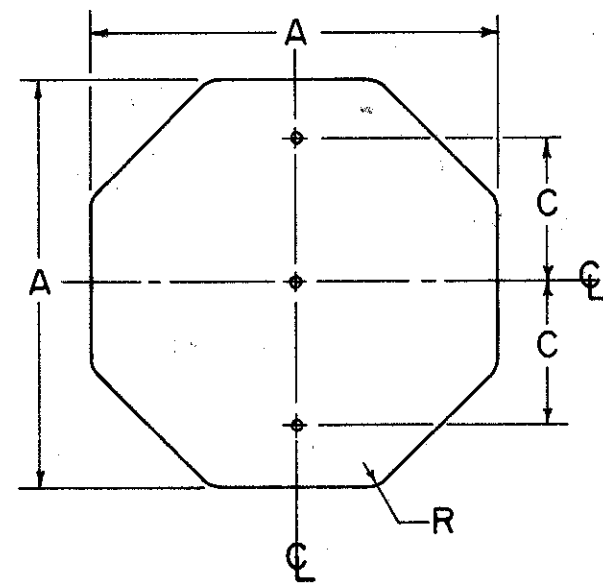
BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ELECTRICAL SIGN
SERVICE DETAILS
480 VOLT SYSTEM

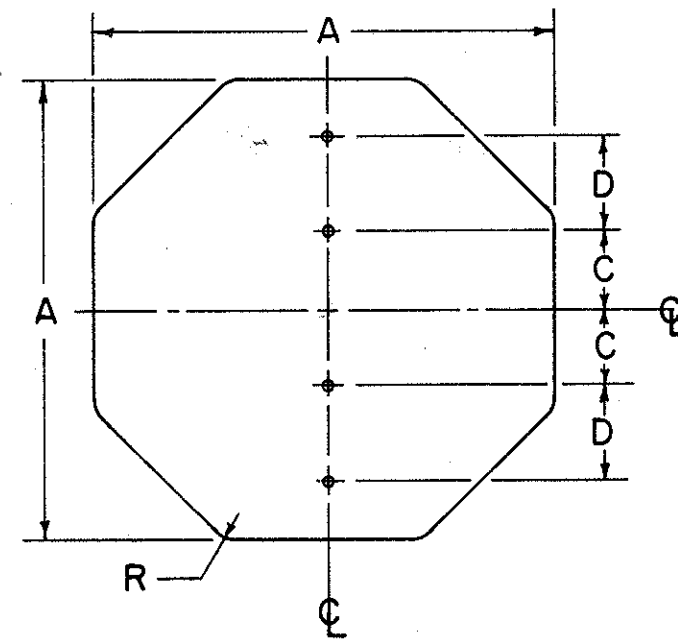
ES-3A

DATE
6-18-64
9-15

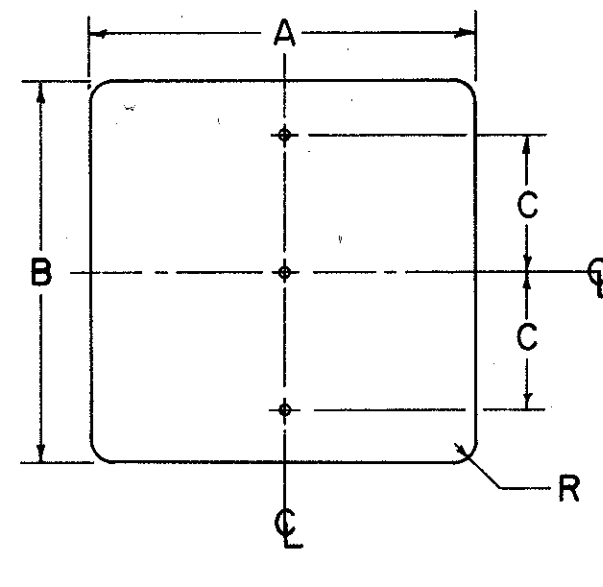
APPROVED _____
ENGINEER OF TRAFFIC



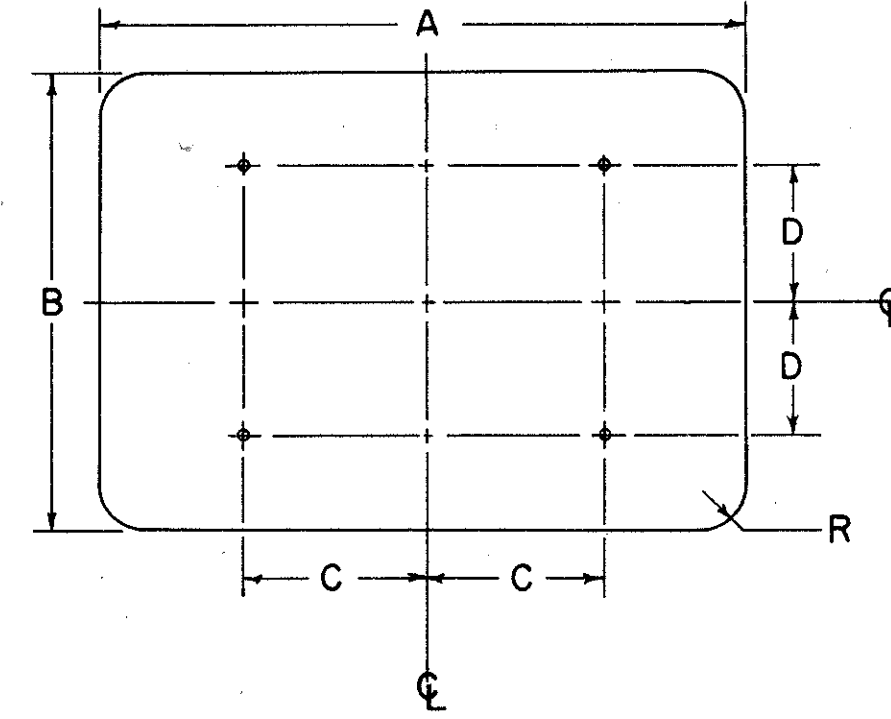
A	C	R	GAUGE
30	8	1 1/2	.080
36	8	1 1/2	.080



A	C	D	R	GAUGE
48	8	10	1 1/2	.100

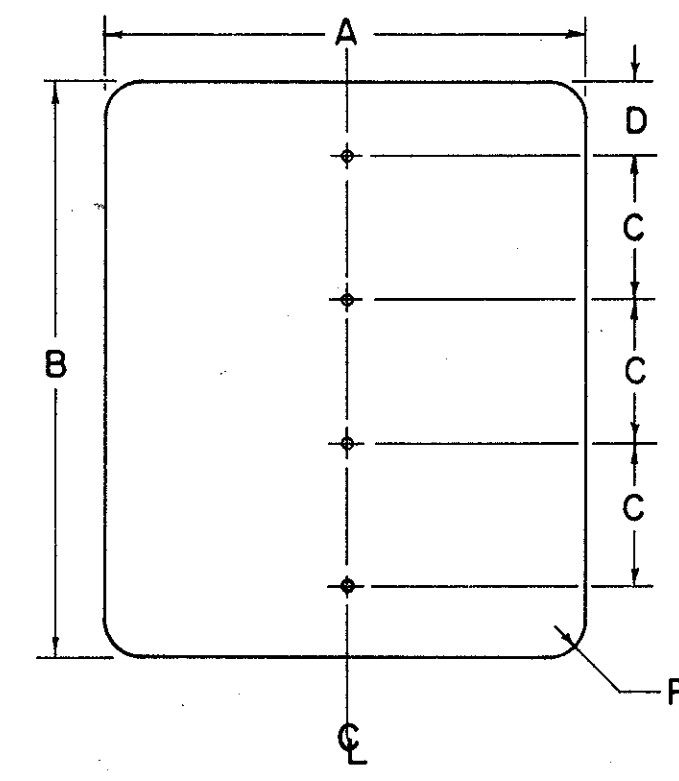


A	B	C	R	GAUGE
30	42	12	1 1/2	.080
36	36	11	1 1/2	.080
36	42	15	1 1/2	.080
36	48	15	1 1/2	.080
48	24	10	3	.100
48	36	13	3	.100

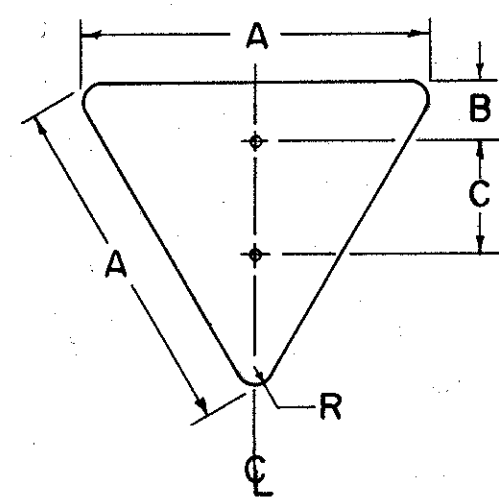


A	B	C	D	R	GAUGE
48	48	22	16	3	.100
48	60	22	22	3	.100

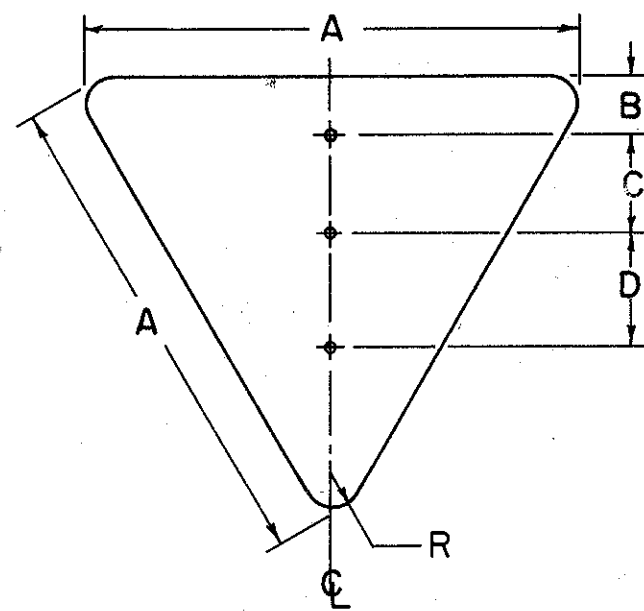
SPEED LIMIT SIGNS ON TWO SUPPORTS



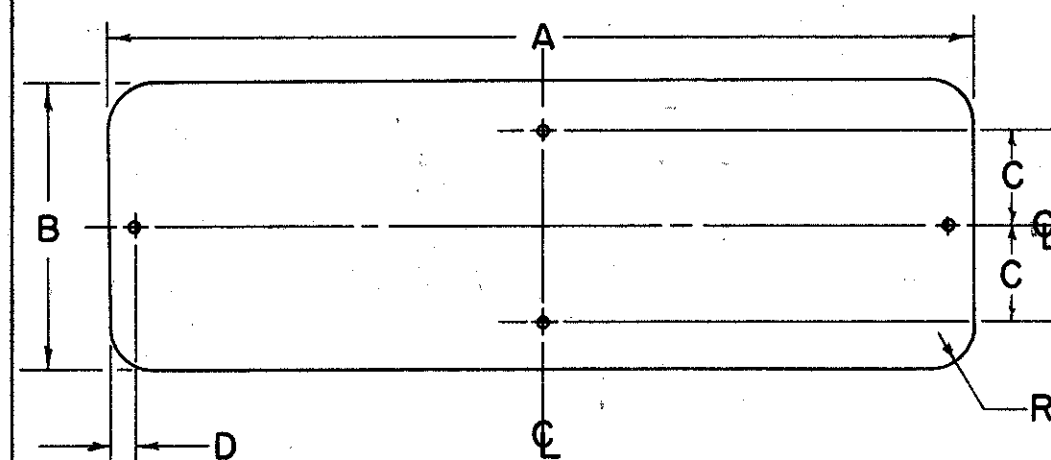
A	B	C	D	R	GAUGE
48	48	12	6	3	.100
48	60	15	7 1/2	3	.100



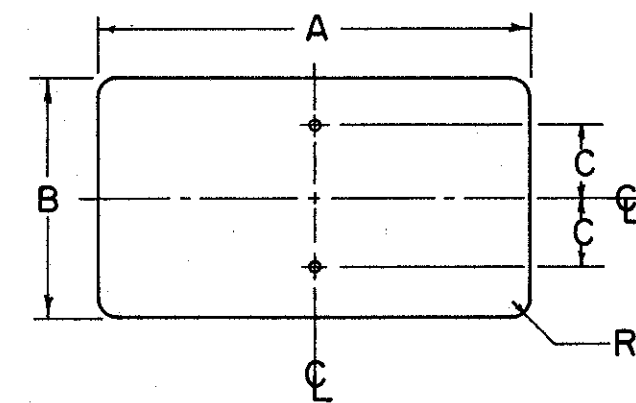
A	B	C	R	GAUGE
36	3	16	2 1/2	.080



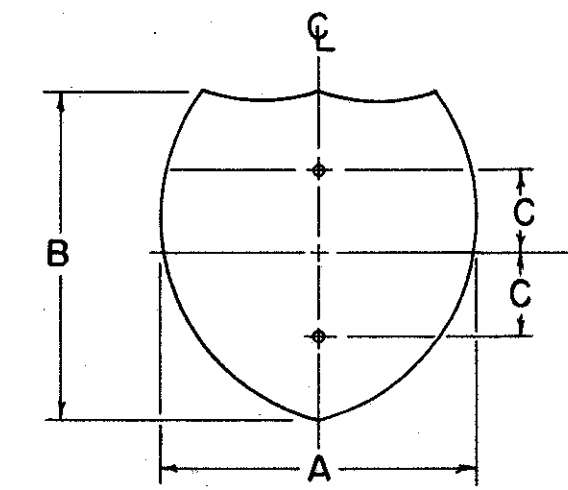
A	B	C	D	R	GAUGE
48	4	10	15	3	.100
60	5	10	15	4	.100



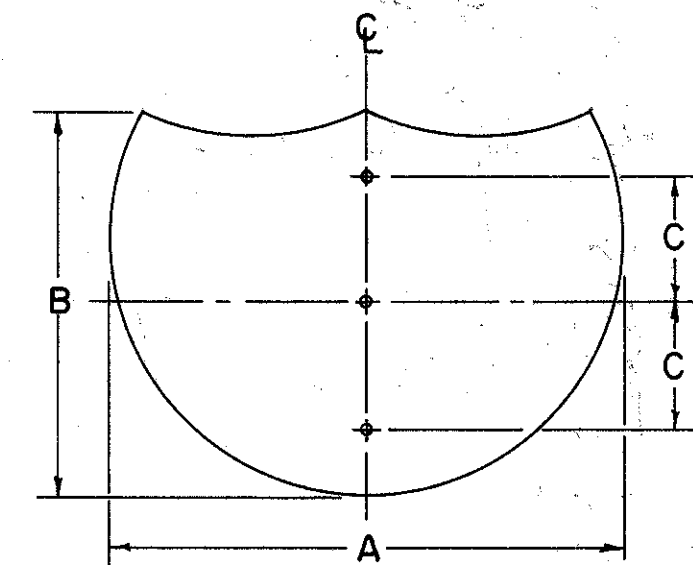
A	B	C	D	R	GAUGE
36	12	4	1	1 1/2	.080



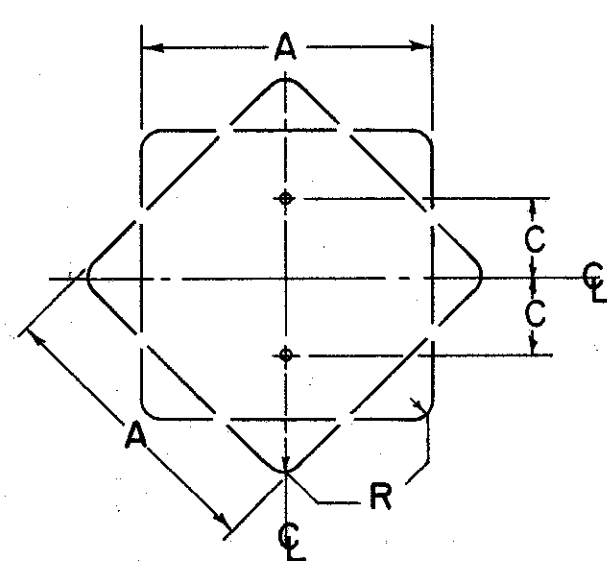
A	B	C	R	GAUGE
12	6	3	1 1/2	.063
20	15	6	1 1/2	.063
24	12	4 1/2	1 1/2	.063
24	18	15	1 1/2	.063
24	30	8	1 1/2	.063
24	48	10	1 1/2	.100
30	36	10 1/2	1 1/2	.080
36	18	7 1/2	1 1/2	.080



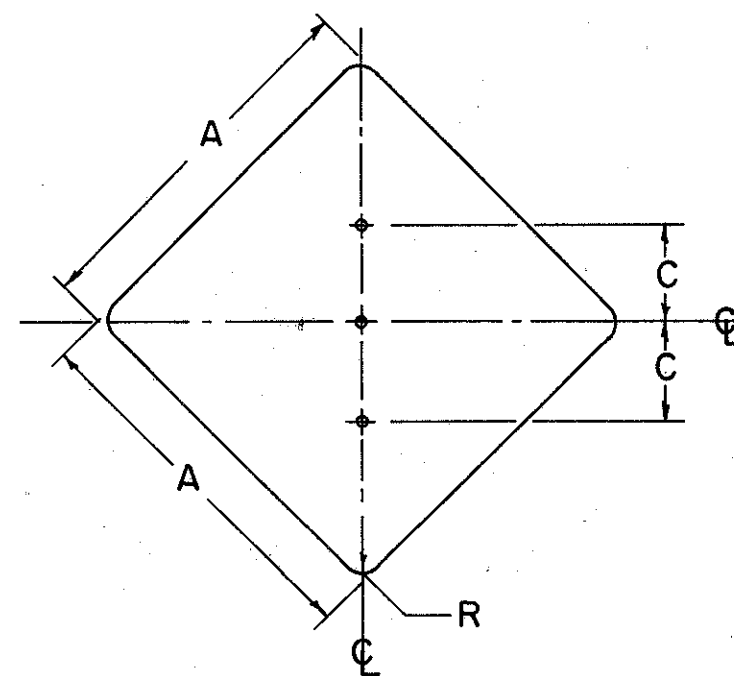
A	B	C	GAUGE
24	24	8	.063
30	24	8	.080



A	B	C	GAUGE
36	36	11	.080
48	36	11	.100

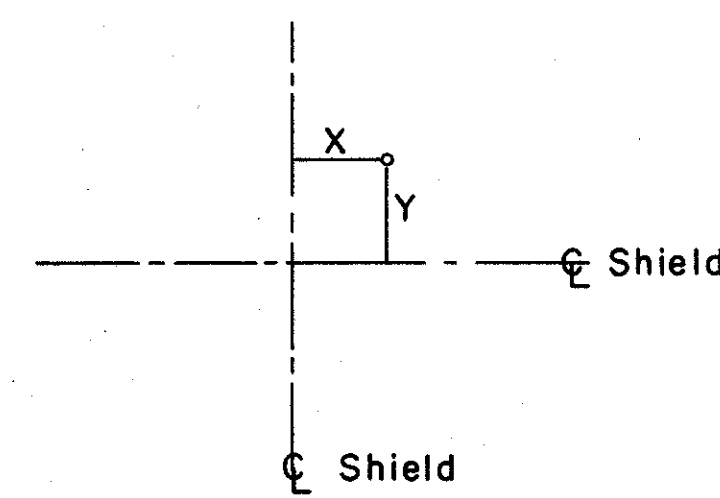


A	C	R	GAUGE
18	7 1/2	1 1/2	.063
24	8	1 1/2	.063
30	8	1 1/2	.080



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, GSIIA-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

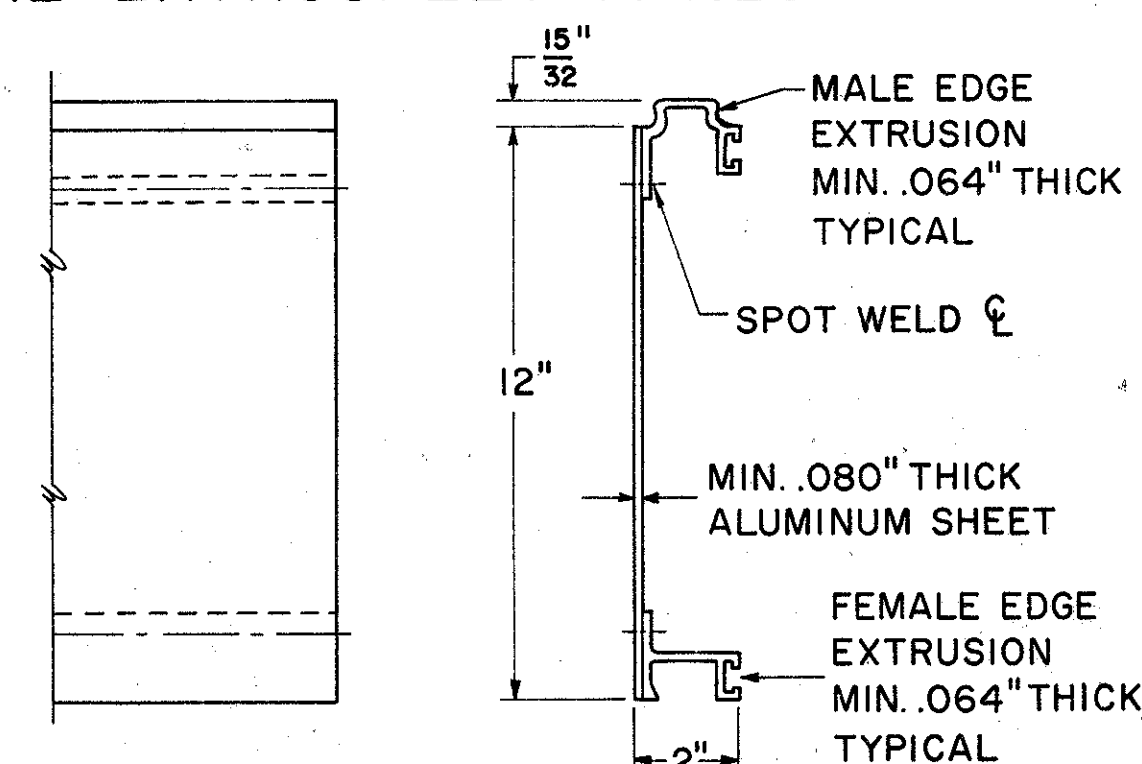
SIGN BLANK
DETAILS

SBD

APPROVED _____
ENGINEER OF TRAFFIC

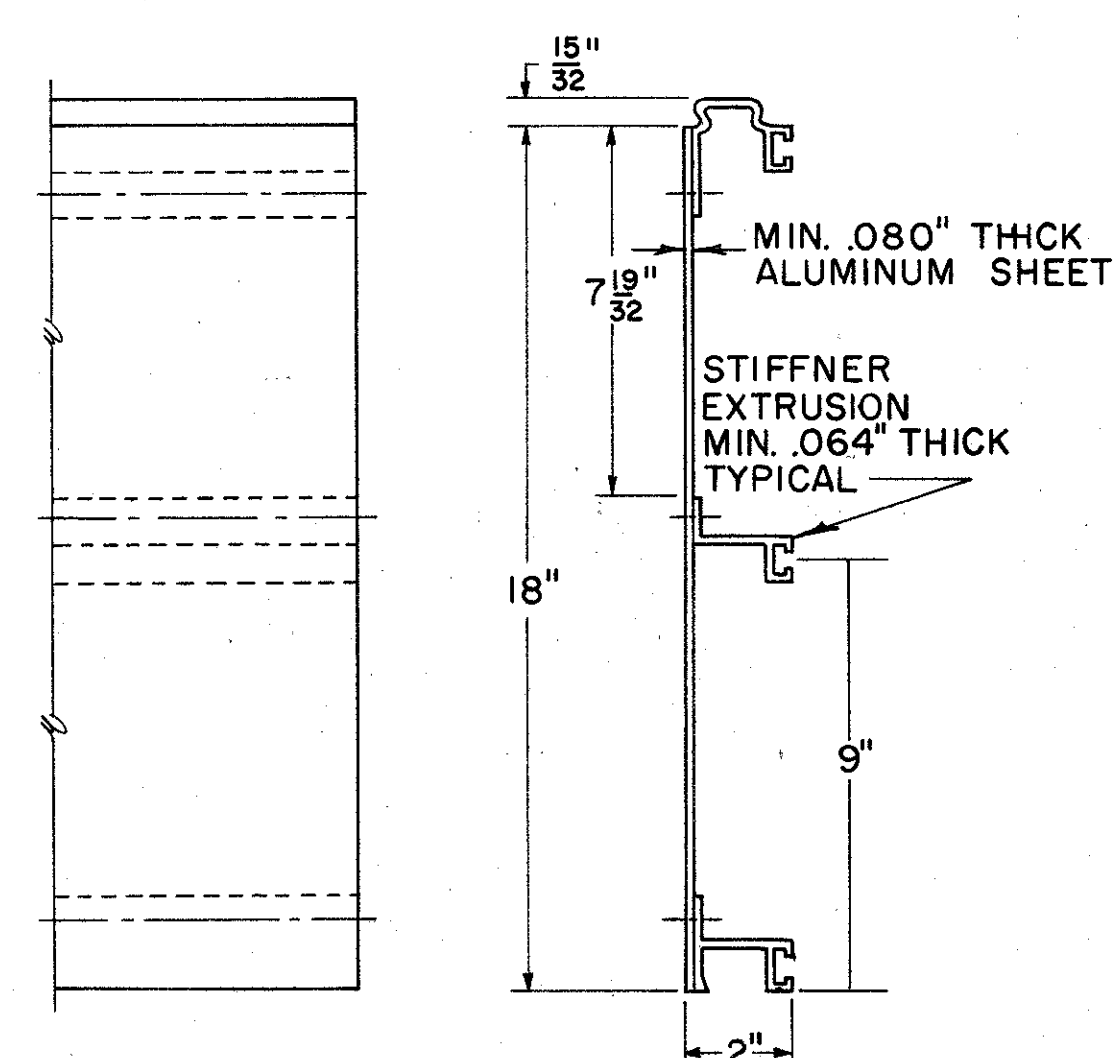
DATE
4-14-67

12" EXTRUSHEET PANEL



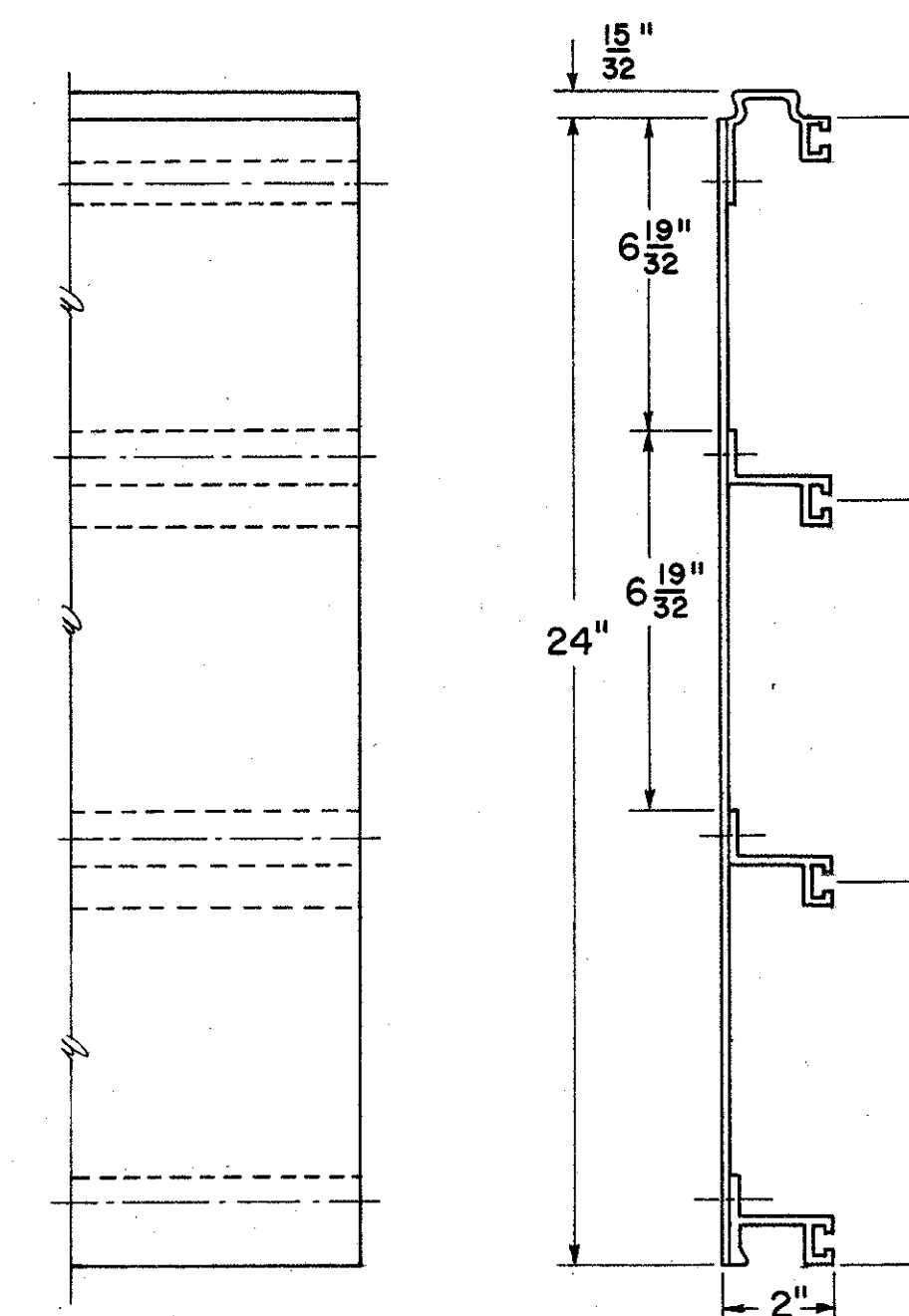
FRONT VIEW SIDE VIEW

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.

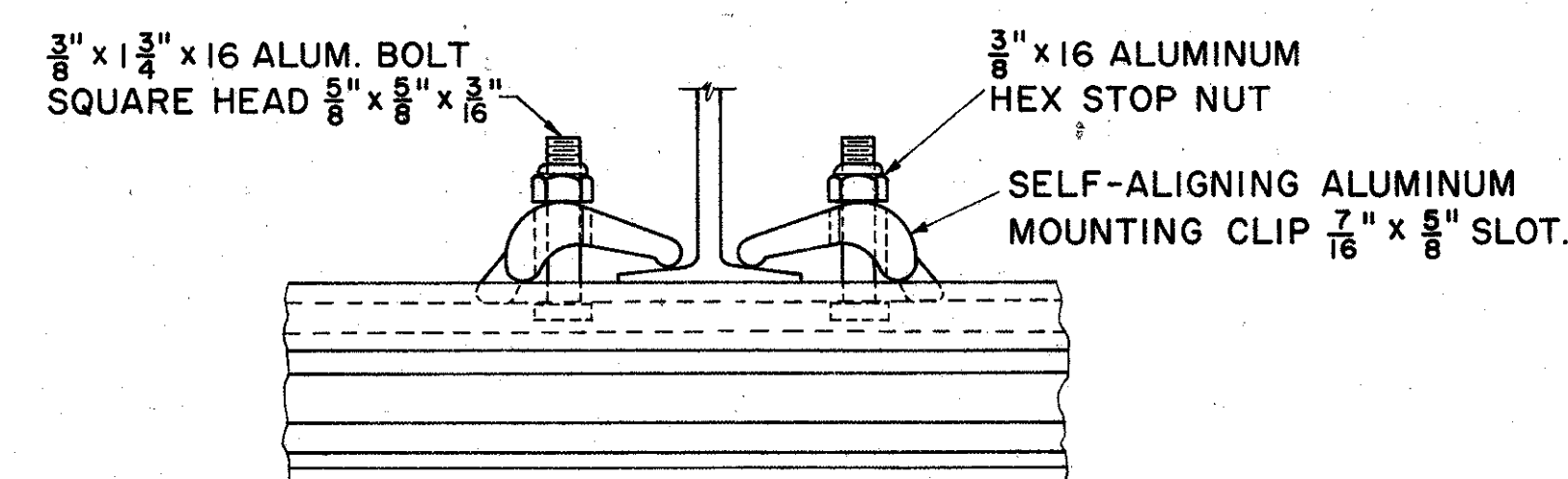
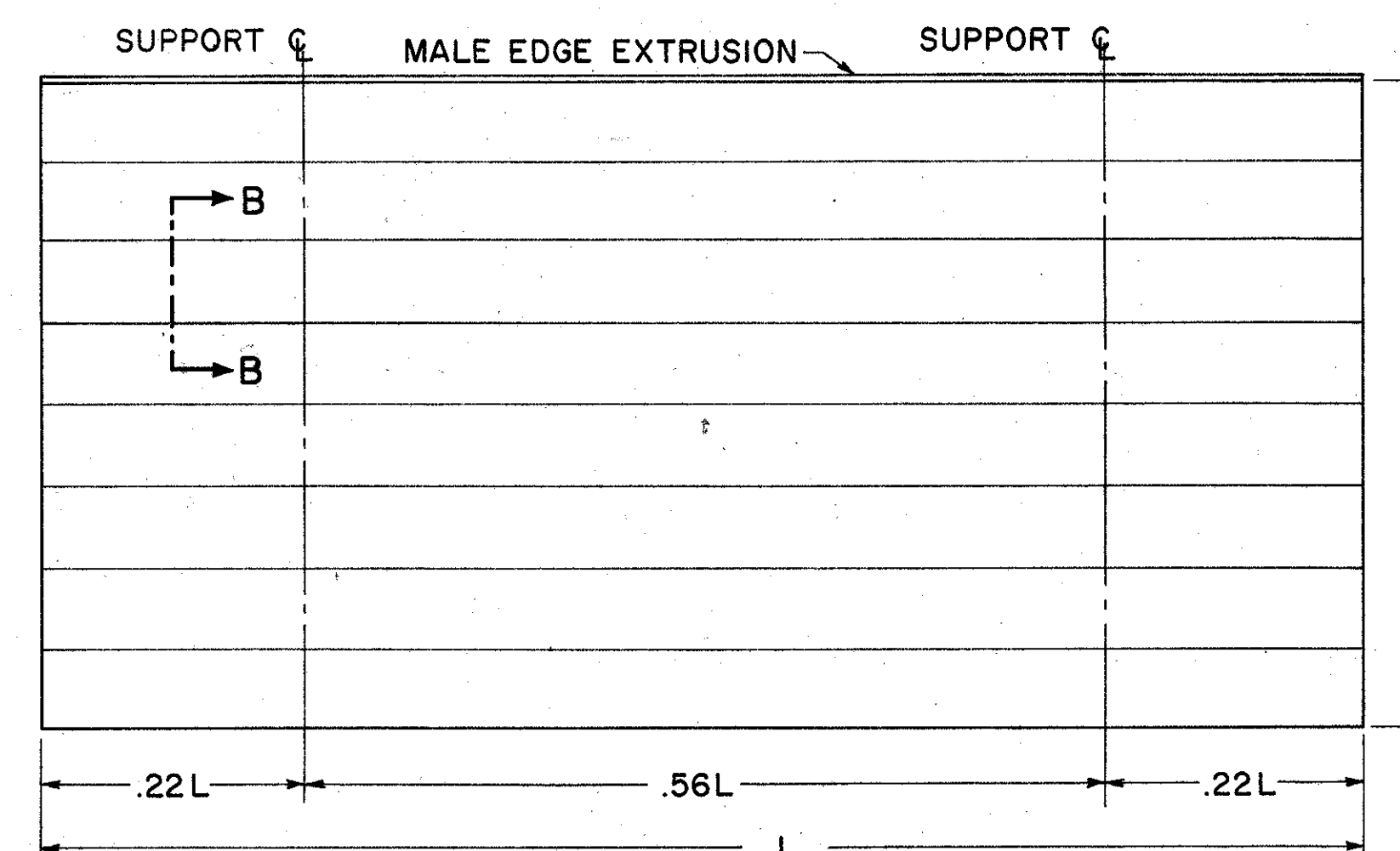
PANELS SHALL BE INTERLOCKED AND ERECTED WITH THE MALE EXTRUSION LOCATED AT THE TOP EDGE OF THE SIGN.

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.

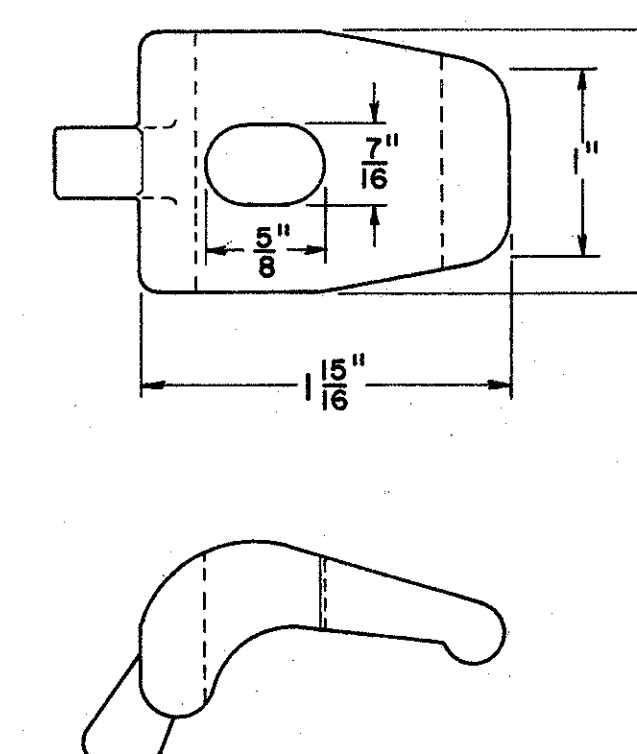
THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0".
THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".

GENERAL ARRANGEMENT



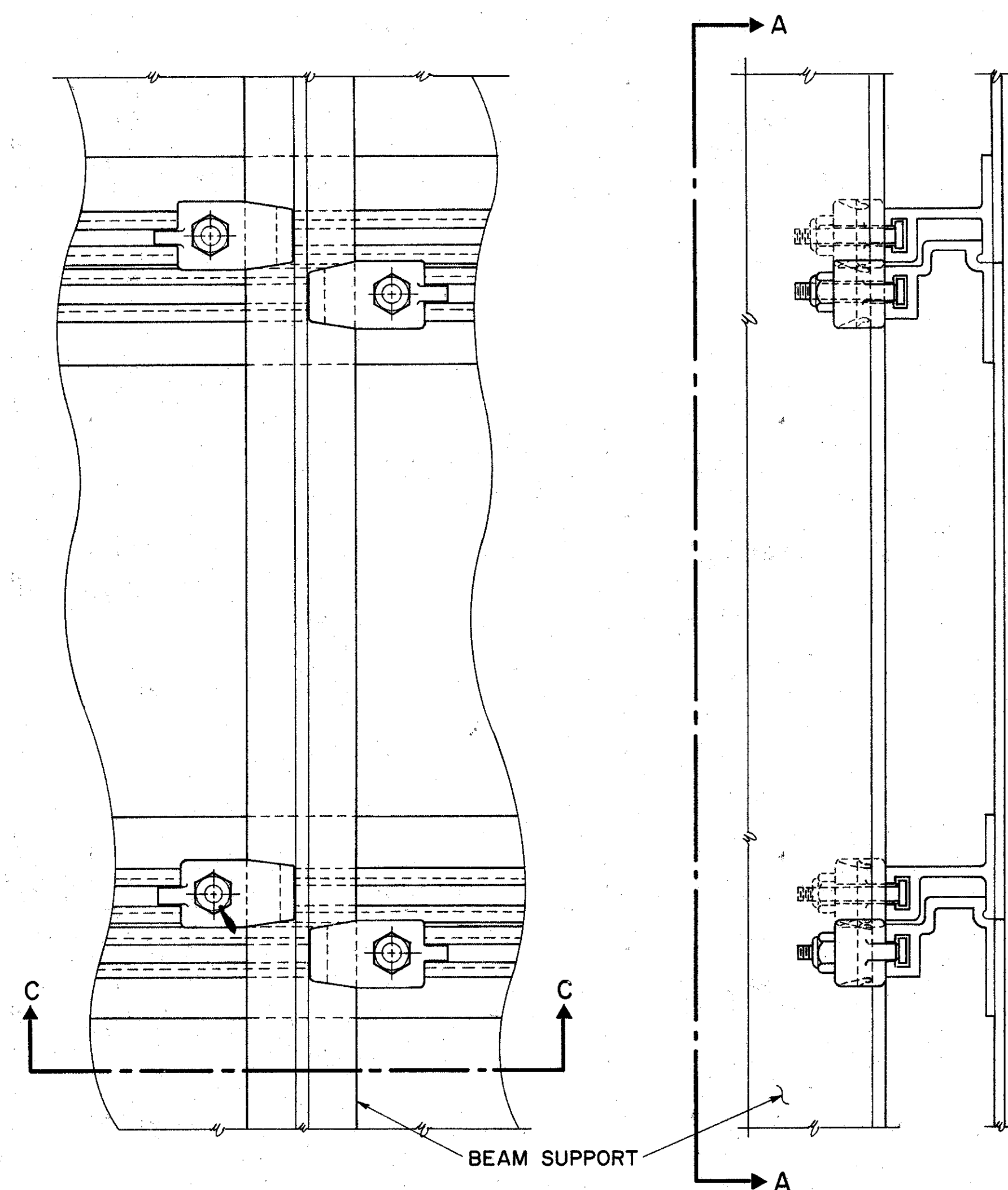
SECTION C-C

CLIP DETAIL



SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING CENTER TO CENTER BETWEEN ROWS	
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH



SECTION A-A

SECTION B-B

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

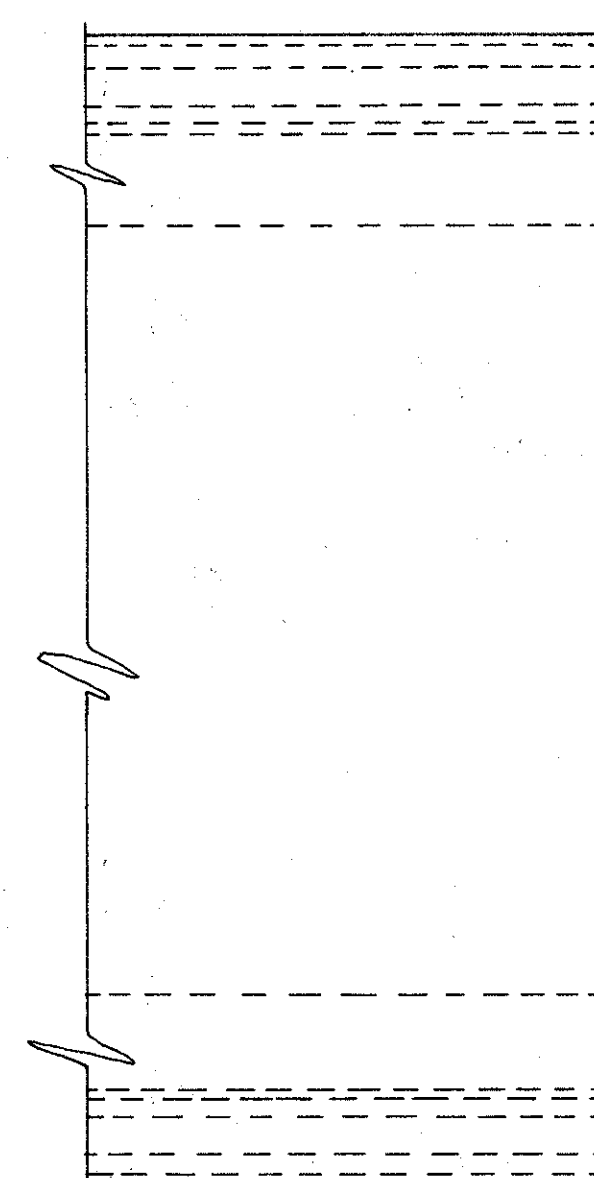
ALUMINUM
EXTRUSHEET
PANEL SIGN

ECD
I

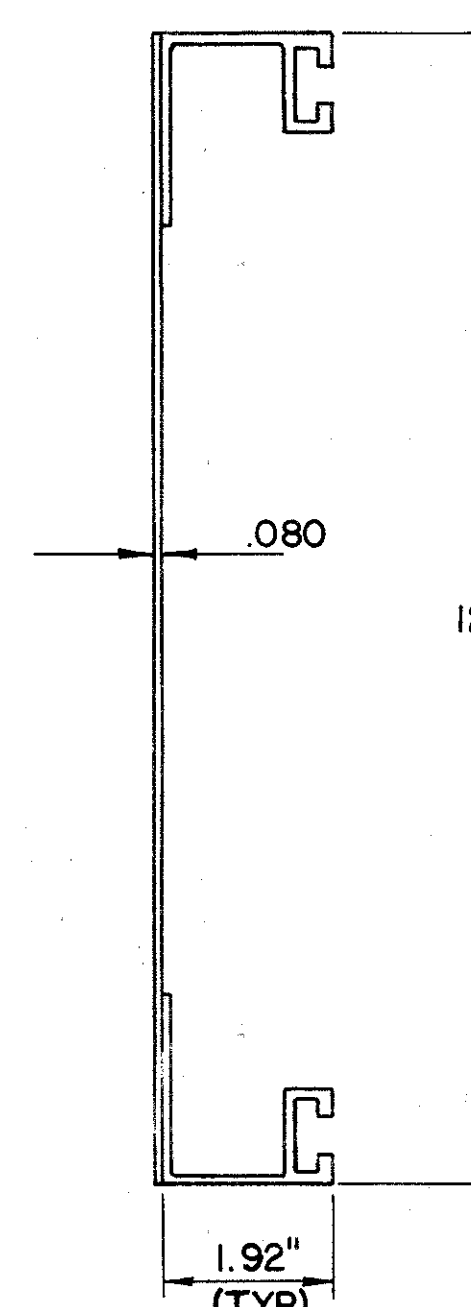
DATE
9-25-63
5-19-64
10-21-65

APPROVED *Fred C. Taylor*
ENGINEER OF TRAFFIC

12" BOLTED-EXTRUSHEET PANEL

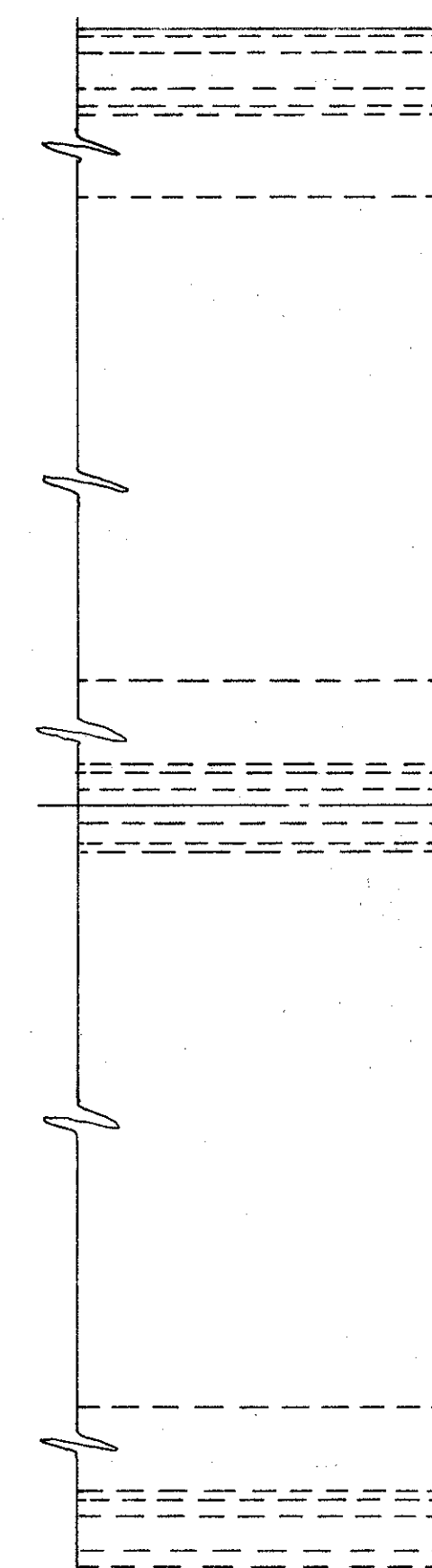


FRONT VIEW

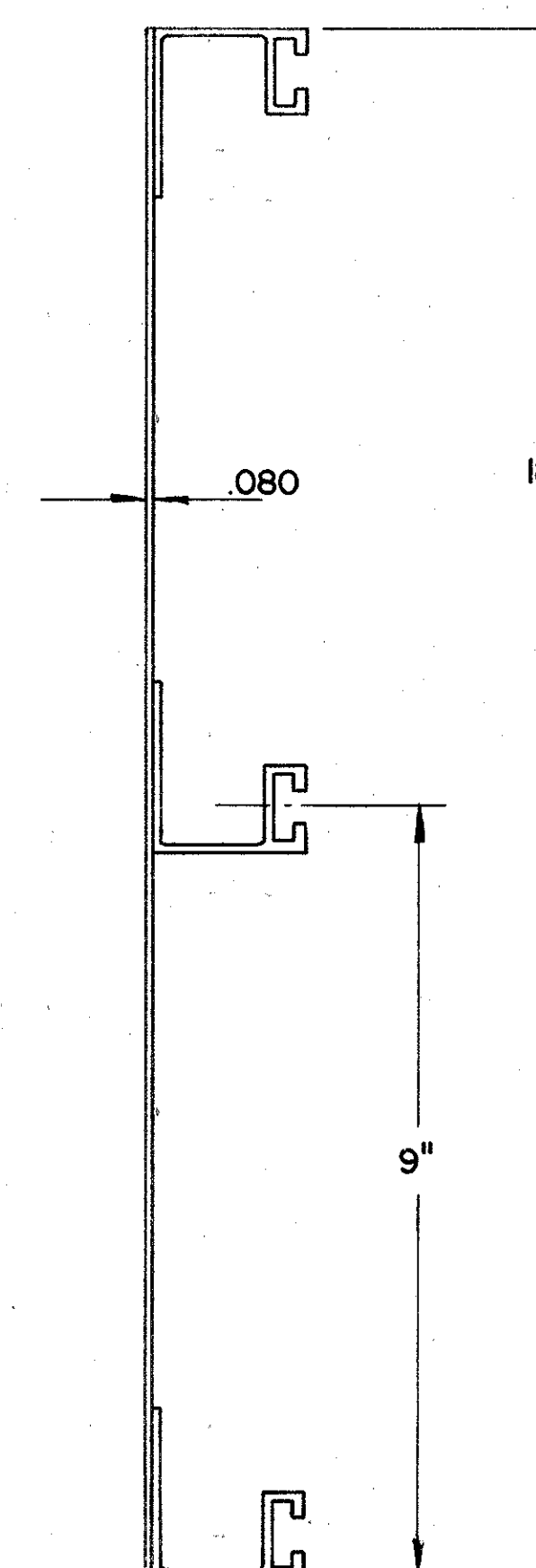


SIDE VIEW

18" BOLTED-EXTRUSHEET PANEL

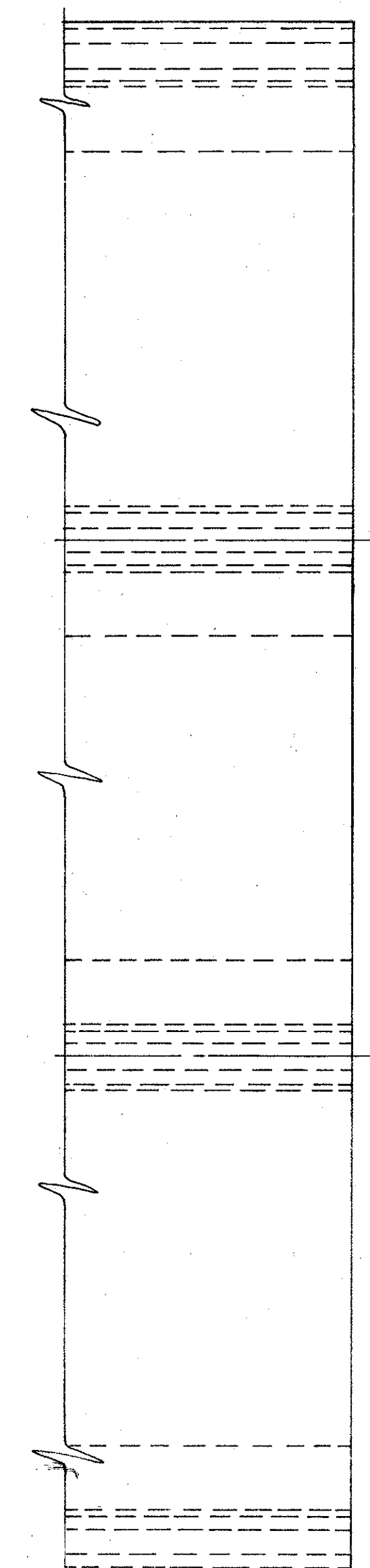


FRONT VIEW

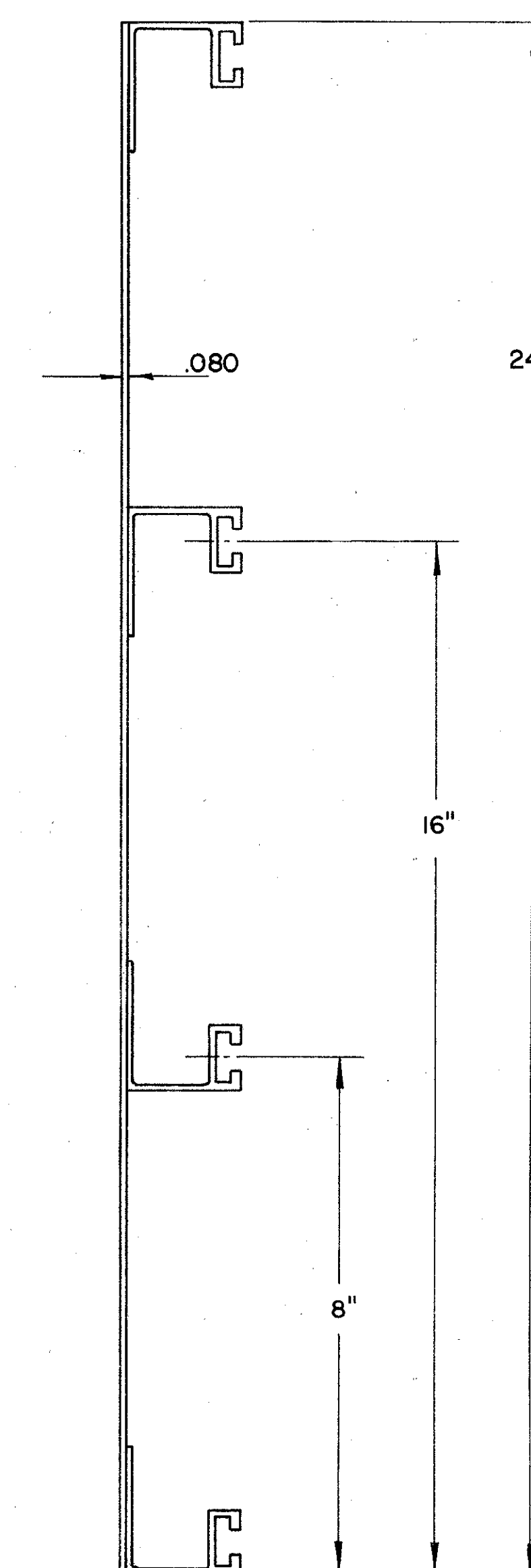


SIDE VIEW

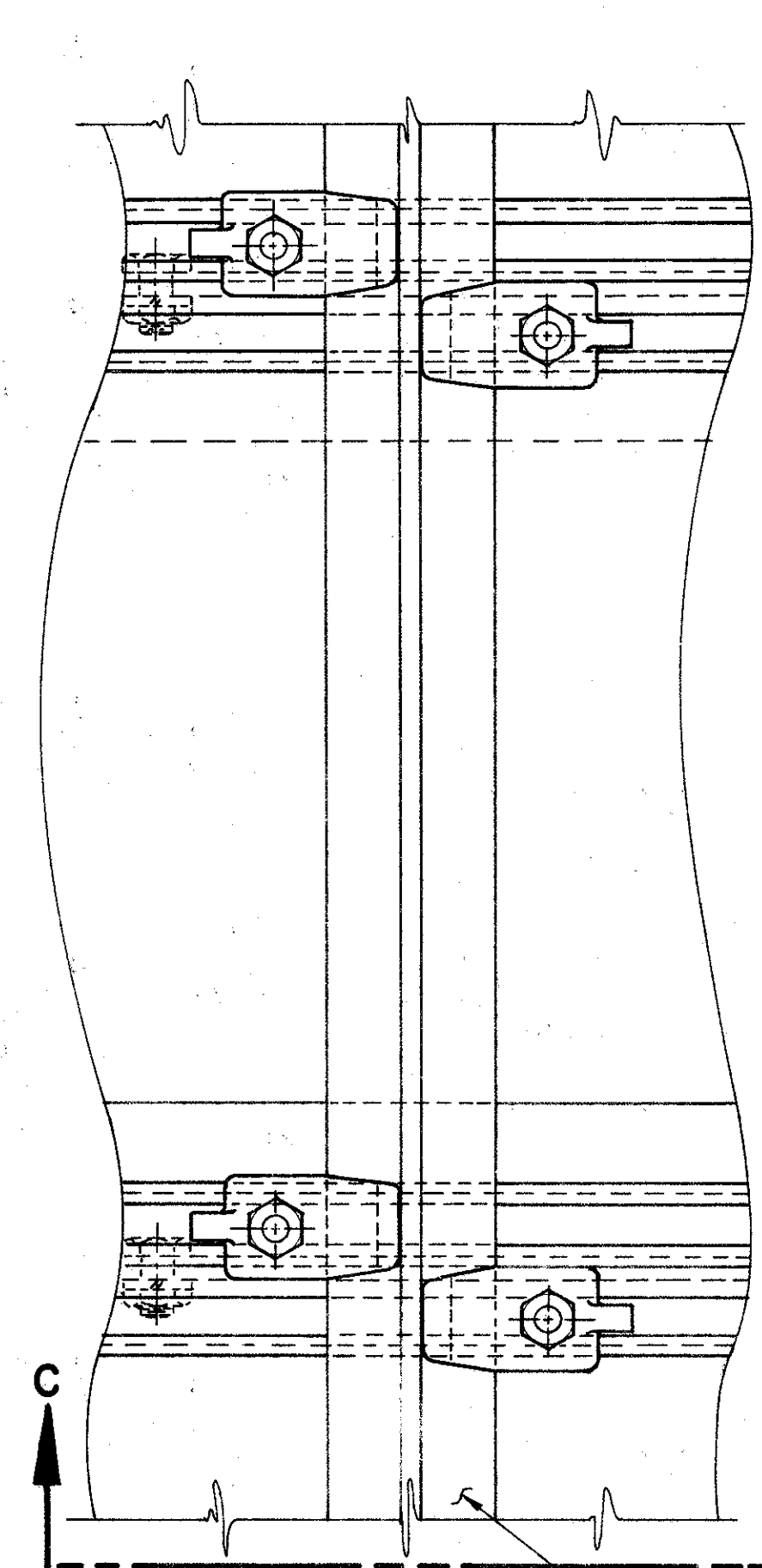
24" BOLTED-EXTRUSHEET PANEL



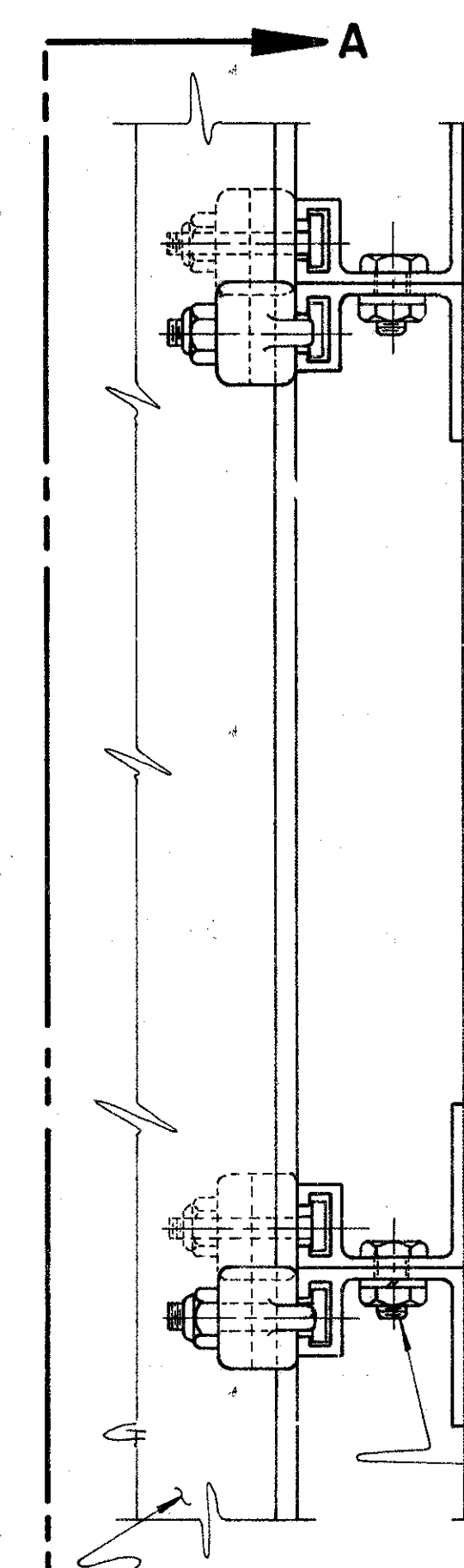
FRONT VIEW



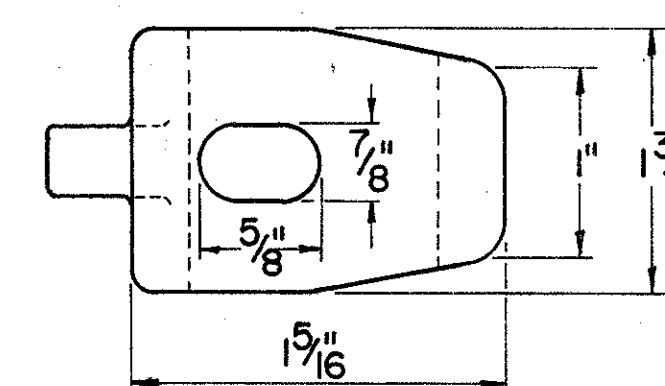
SIDE VIEW



SECTION A-A



SECTION B-B



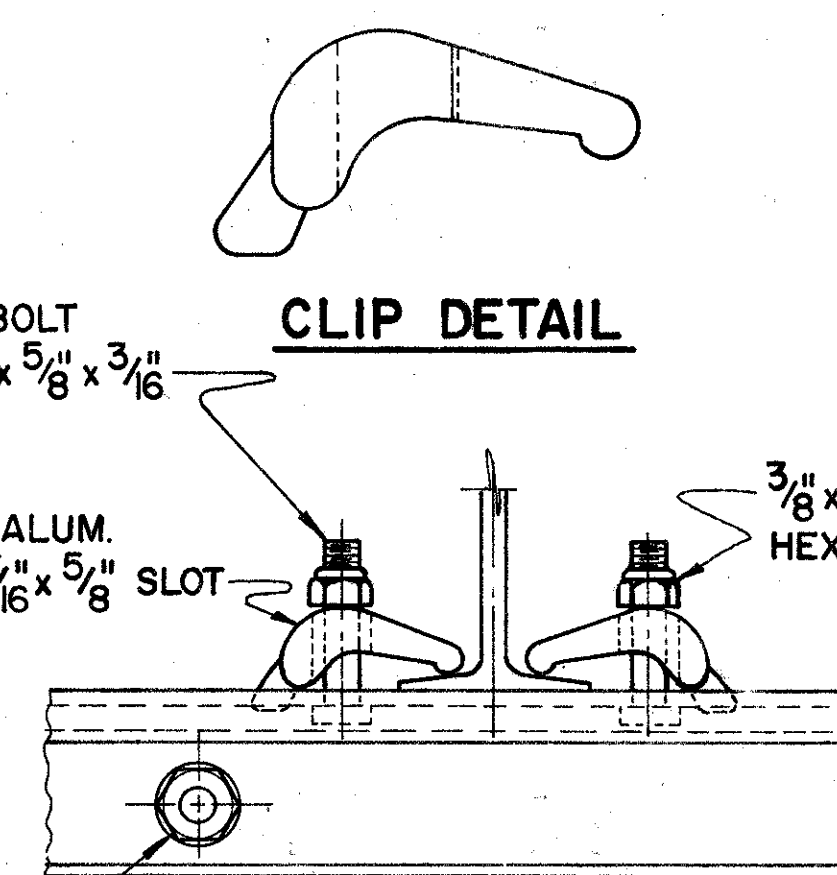
CLIP DETAIL

3/8" x 1 3/4" -16 ALUM. BOLT
SQUARE HEAD 5/8" x 5/8" x 3/16"

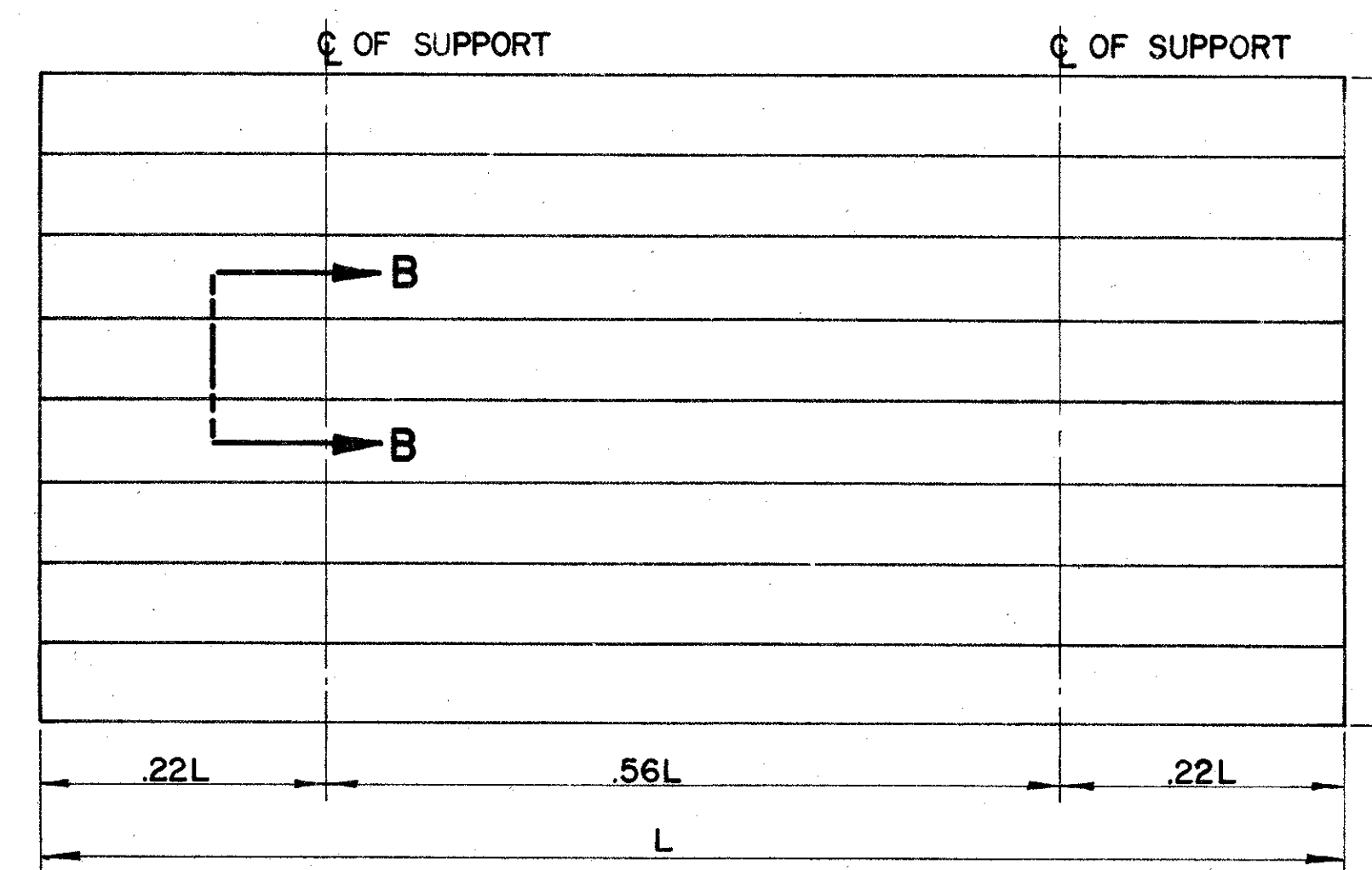
SELF-ALIGNING ALUM.
MOUNTING CLIP 7/16" x 5/8" SLOT

3/8" -16 x 3/4" LONG
ALUM. BOLT, NUT
& LOCKWASHER

3/8" x 16 ALUM.
HEX. STOP NUT.



SECTION C-C



GENERAL ARRANGEMENT

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".

SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING CENTER TO CENTER BETWEEN 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 *Ed C. Taylor*
ENGINEER OF TRAFFIC

ALUMINUM BOLTED-EXTRUSHEET PANEL SIGN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA - 270 - 22.99N

225
292

27
29

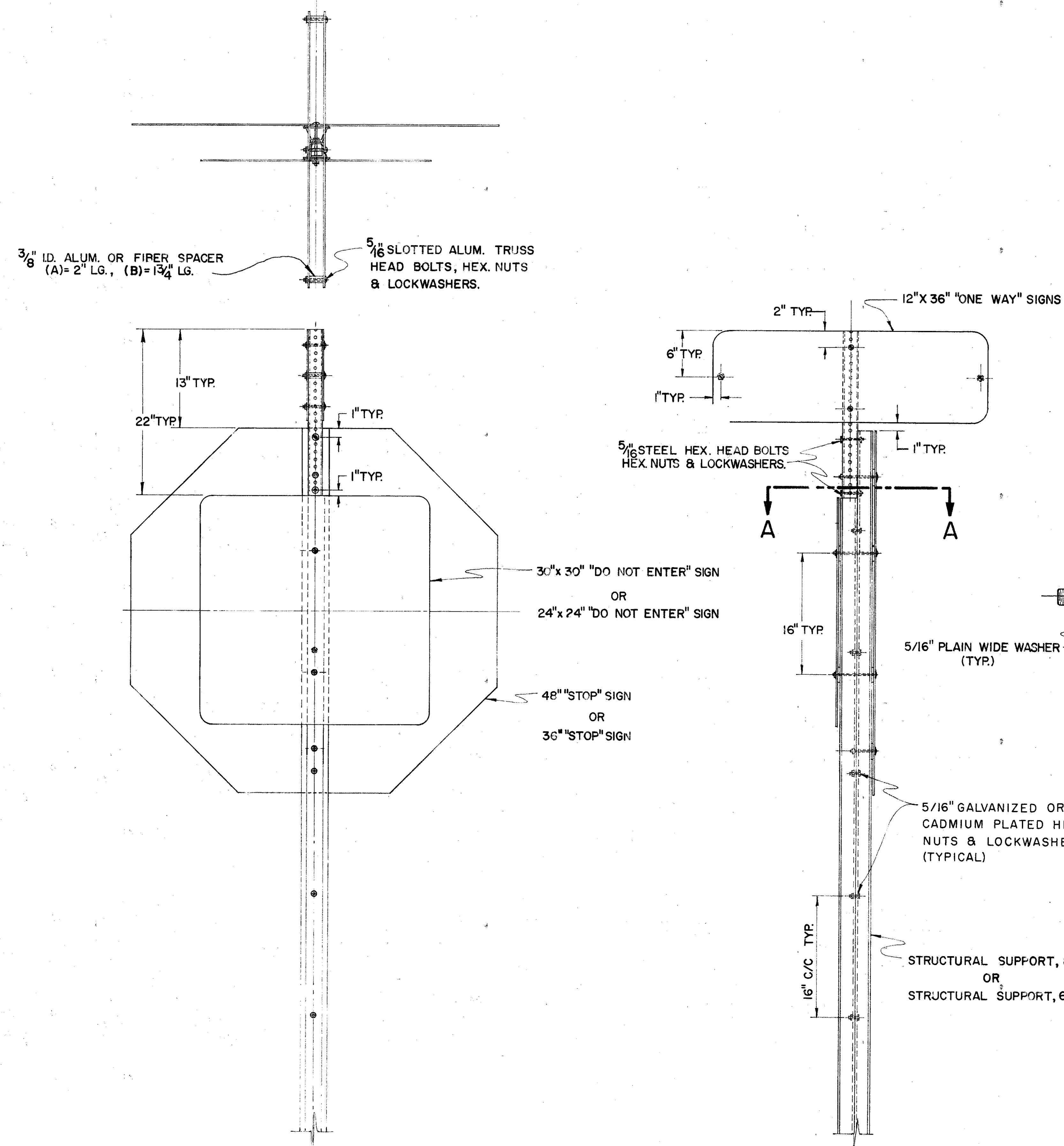
NOTES

MATERIALS

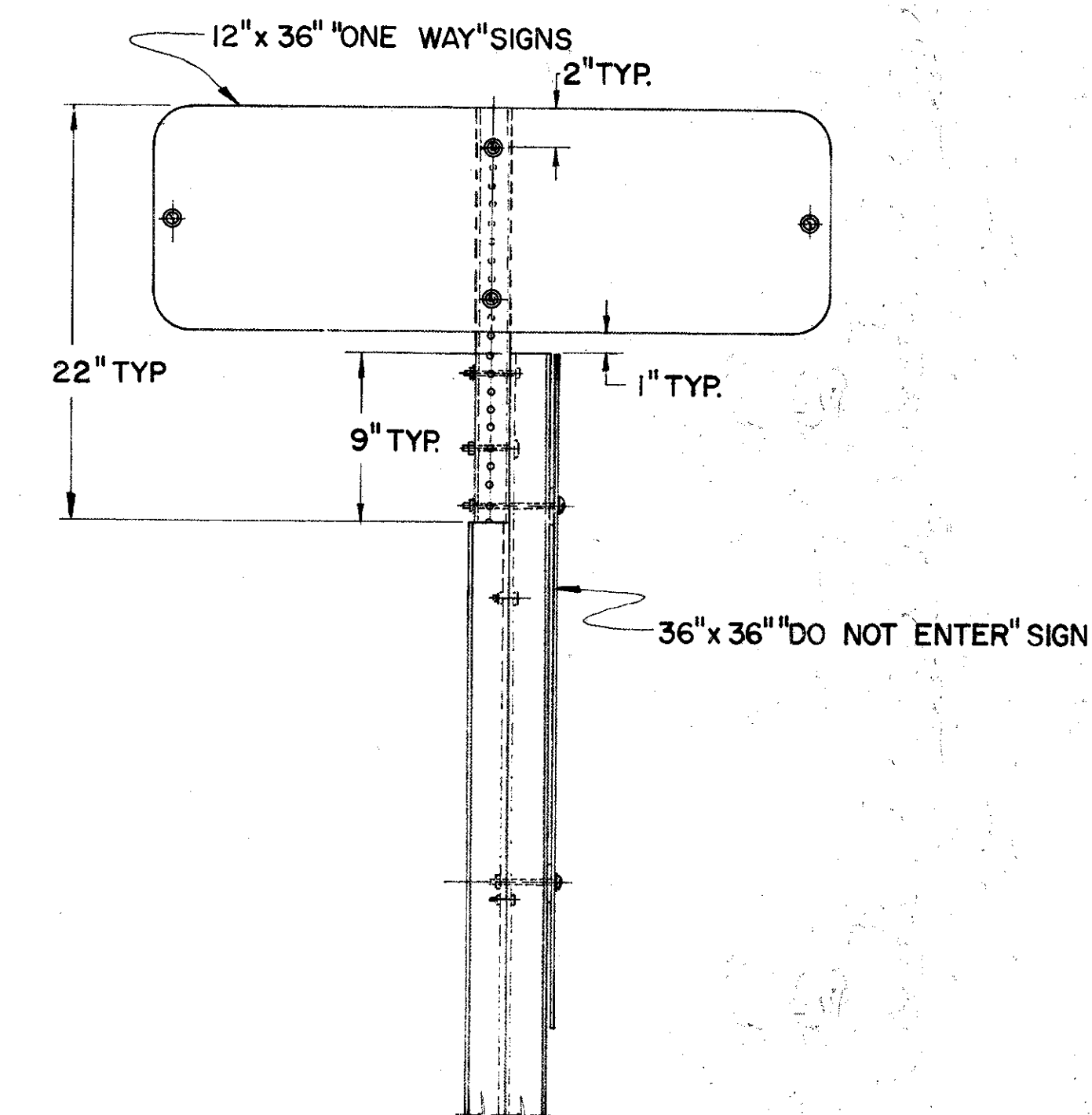
ALL SIGN MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 815.

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", "STOP", "DO NOT ENTER",
SIGN INSTALLATION.



"ONE WAY", "DO NOT ENTER"
SIGN INSTALLATION

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

SPECIAL
"ONE WAY" SIGN
SUPPORT DETAILS

SOW

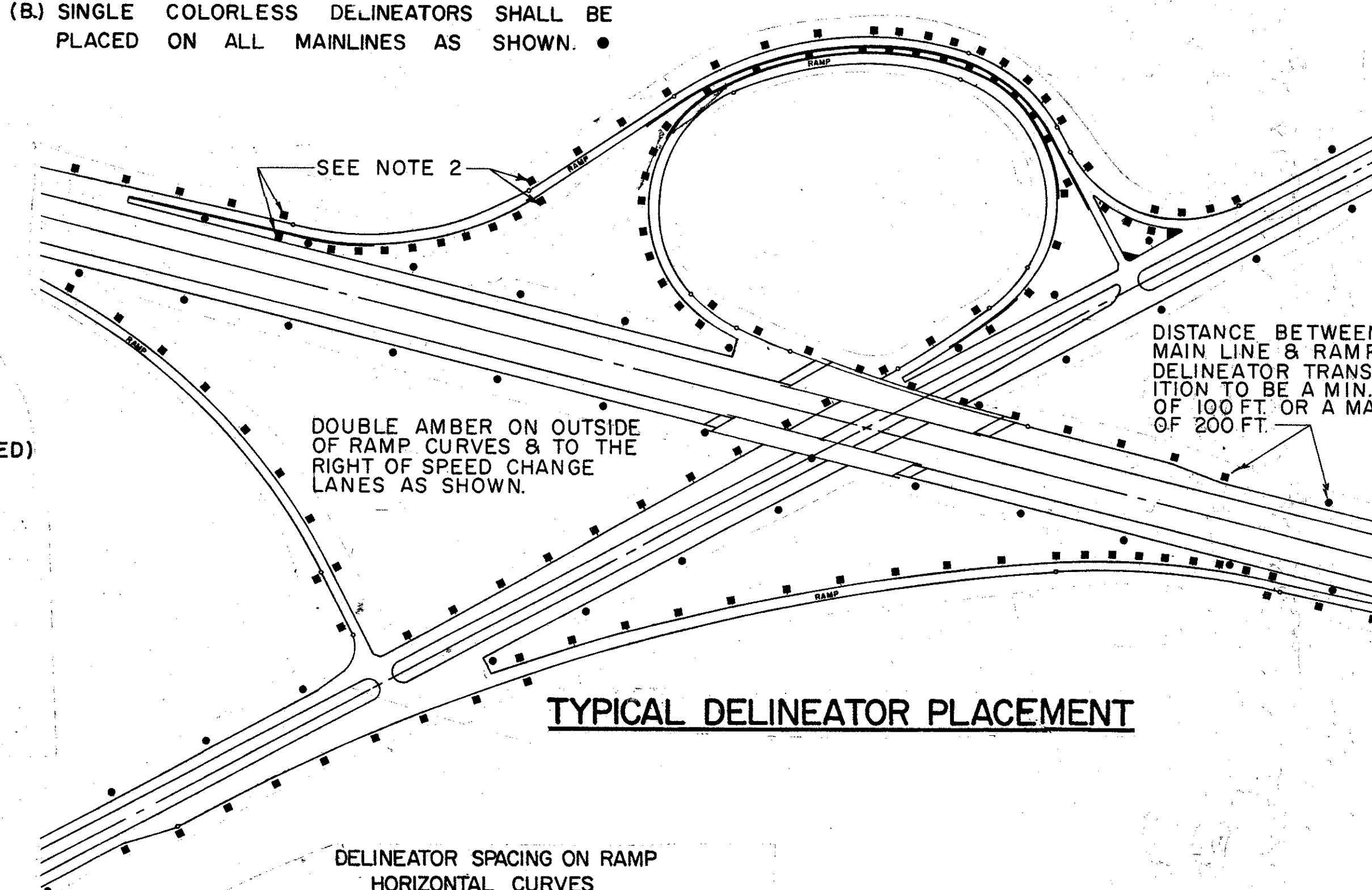
DATE
2-7-66
4-18-67

APPROVED
ENGINEER OF TRAFFIC

SPECIAL "ONE WAY" SIGN SUPPORT DETAILS

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. ●



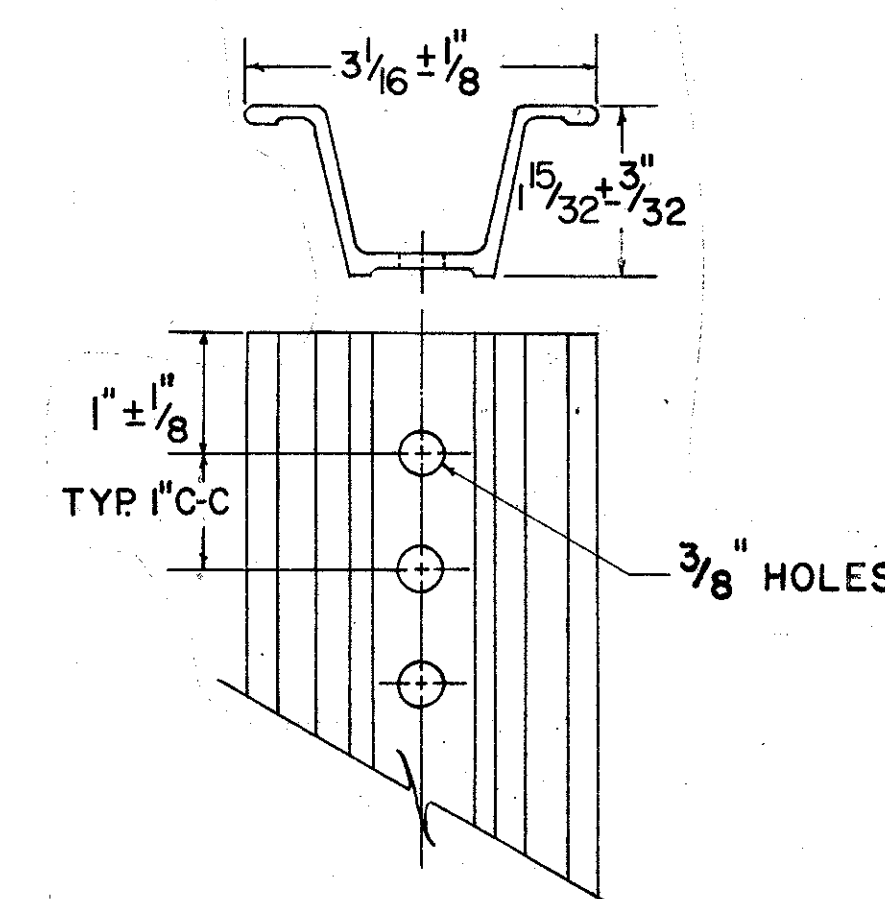
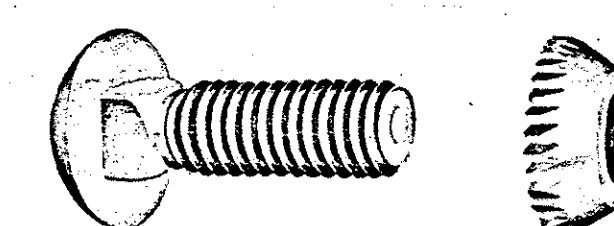
TYPICAL DELINEATOR PLACEMENT

RADI, FT.		SPACING ON CURVE	* TRANSITION SPACING	
FROM	TO			
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'

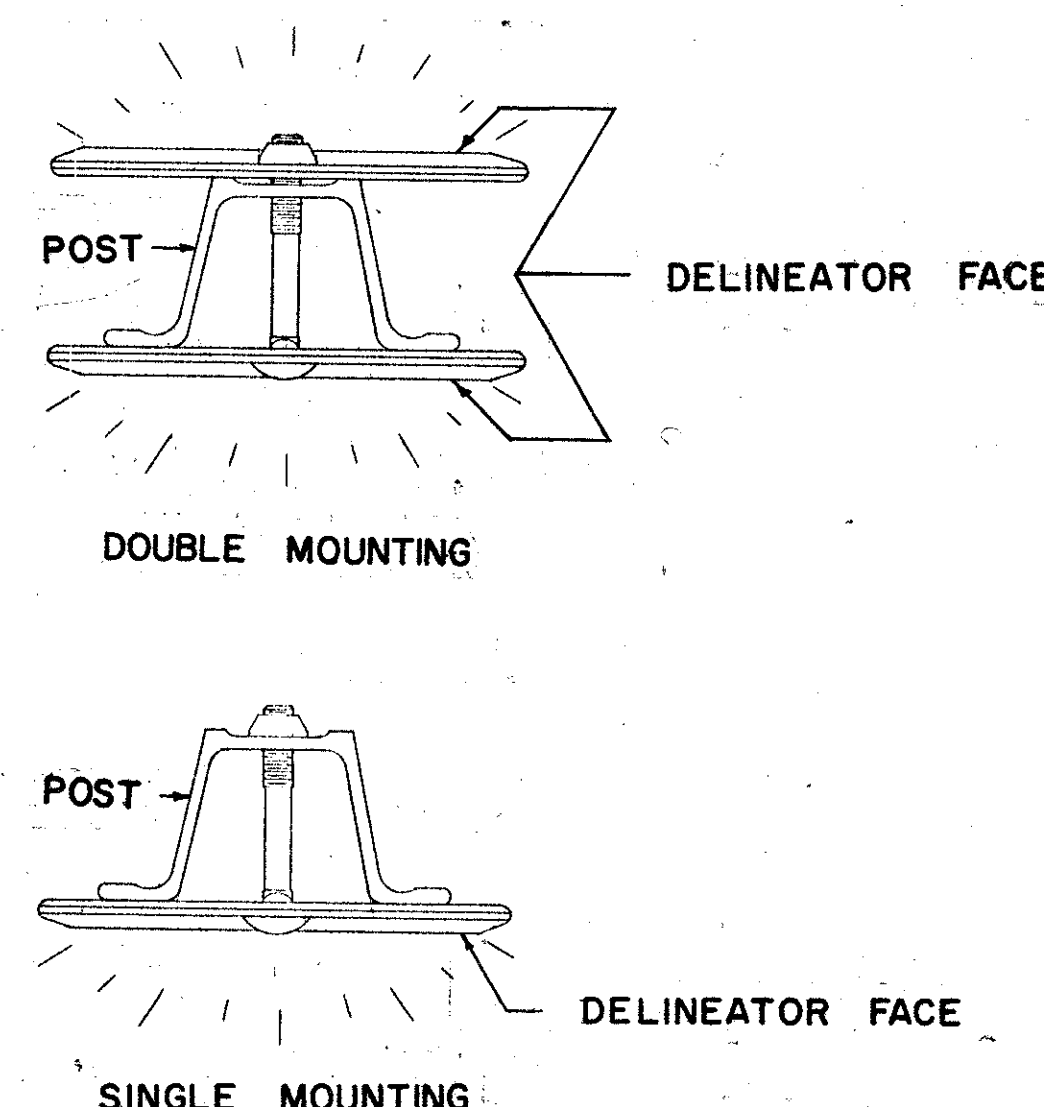
* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

NOTES

- TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES.
- 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.
- NO DELINEATORS ARE TO BE PLACED IN PAVED BERM.
- WHEN RADII OF CURVE ON RAMPS REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.


2 LB./FT.
DELINEATOR DRIVE POST


TAMPER RESISTANT FASTENERS SHALL BE USED TO FASTEN DELINEATORS TO POST AS/OR SIMILAR TO ONE SHOWN ABOVE.

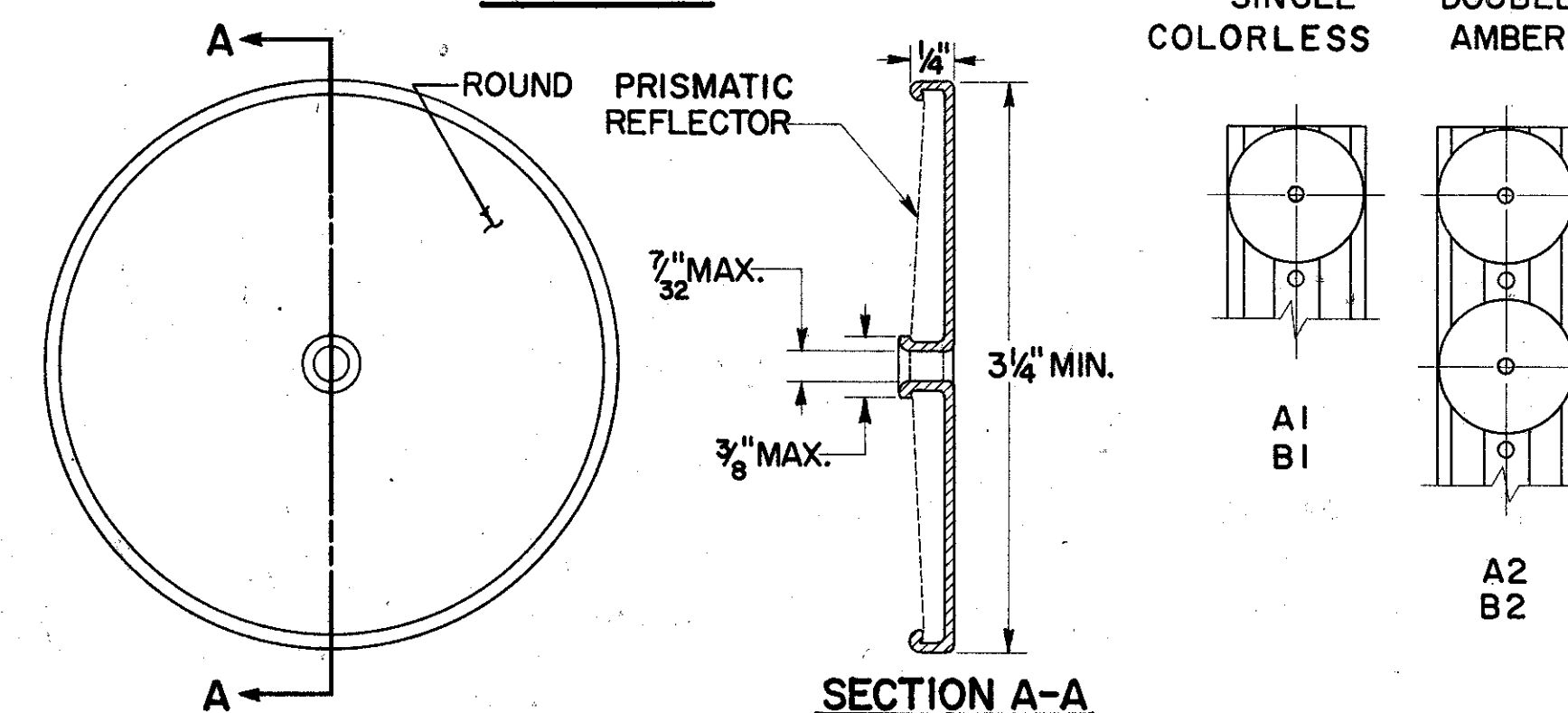


DELINEATOR MOUNTING

TAMPER RESISTANT FASTENERS

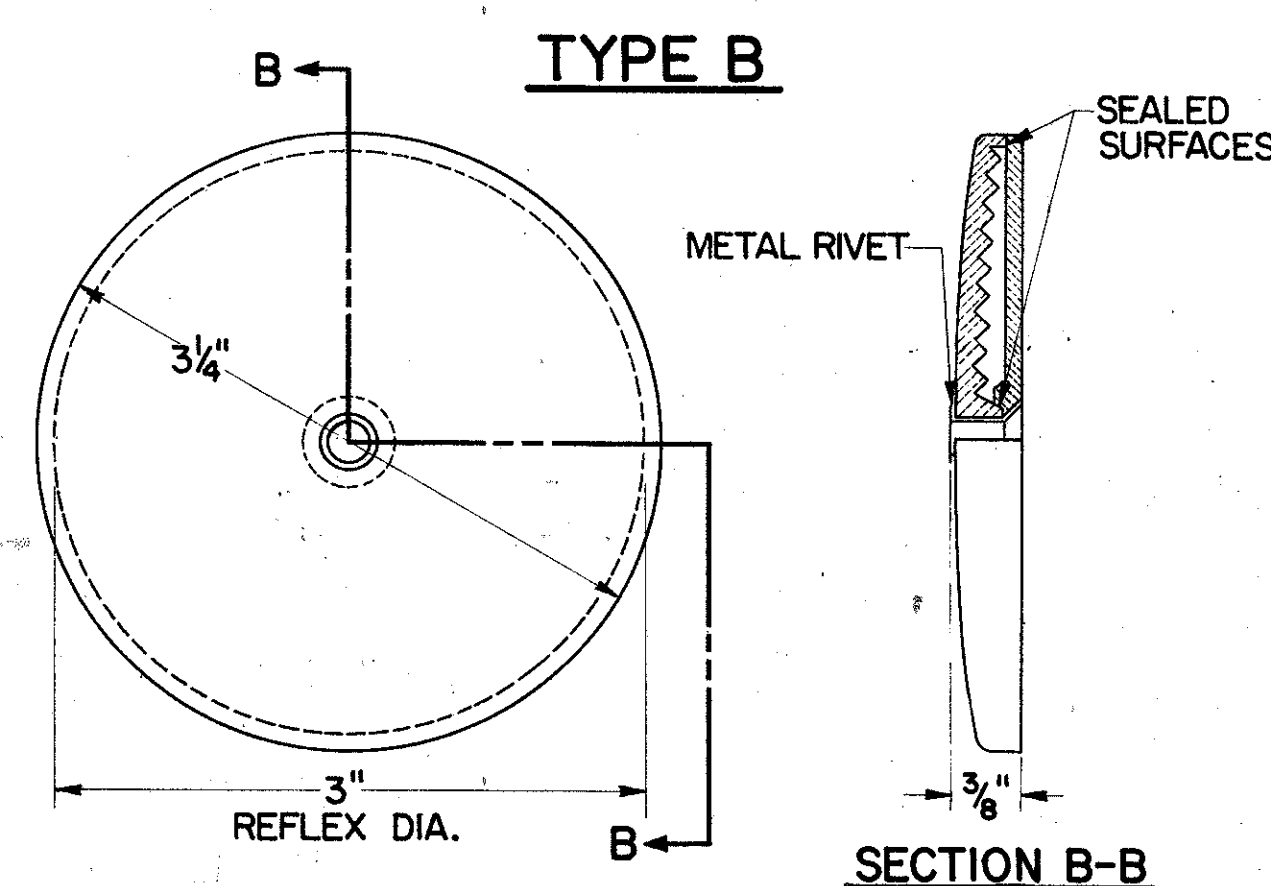
DELINEATOR DRIVE POST

TYPE A



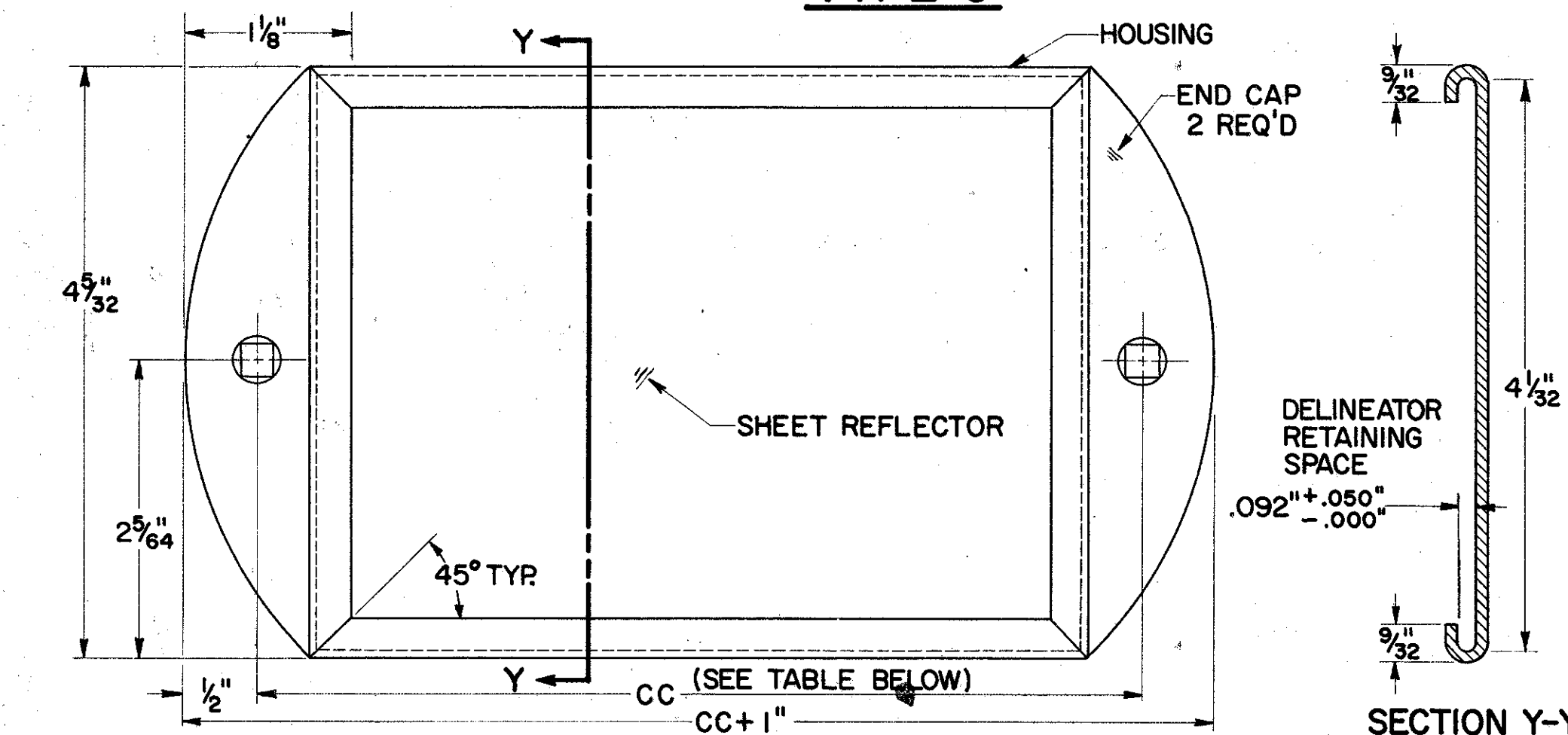
SECTION A-A

TYPE B



SECTION B-B

TYPE C



SECTION Y-Y

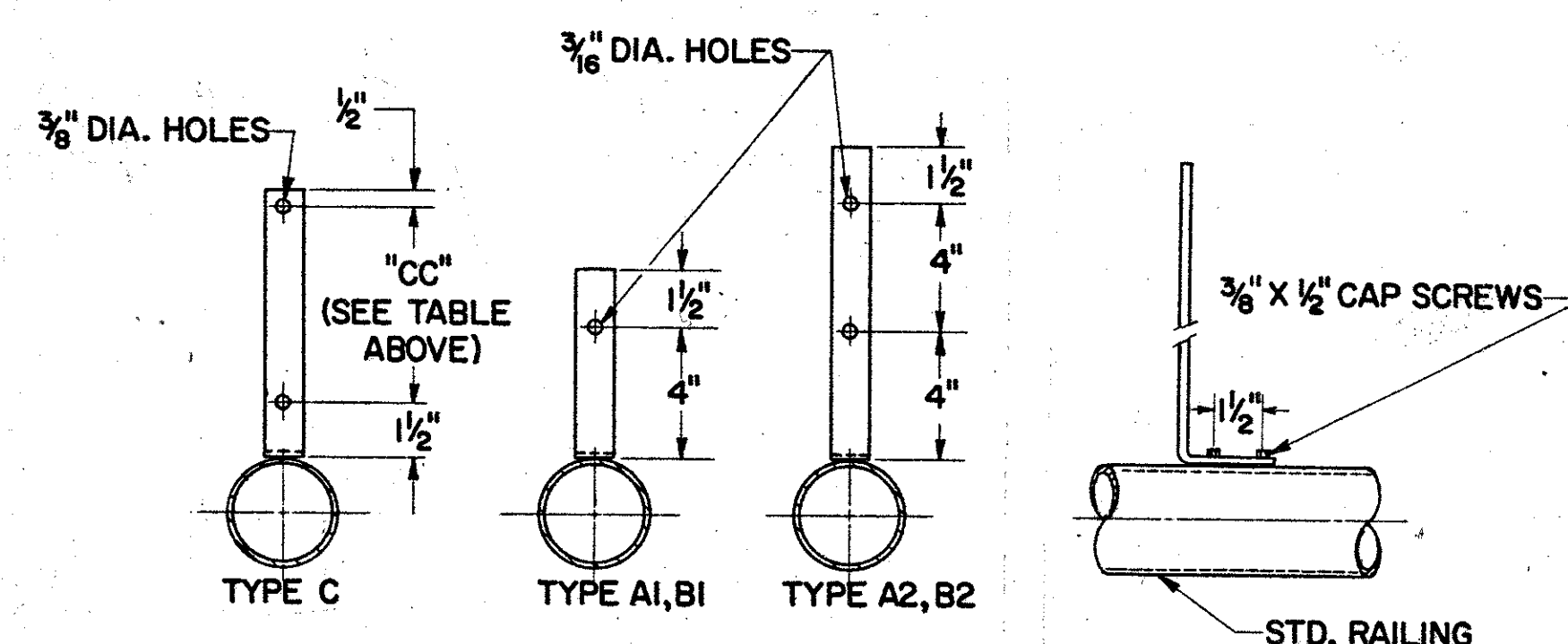
TYPE	DIM. CC
C1 - SINGLE COLORLESS	6"
C2 - DOUBLE AMBER	11"

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.


ALL BRACKETS 1/4 x 1/4 inch STAINLESS STEEL
BRIDGE RAIL BRACKET

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR
DETAILS

620

APPROVED *Robert Clamer*
ENGINEER OF TRAFFIC

DATE
9-25-62
5-24-65
9-12-67

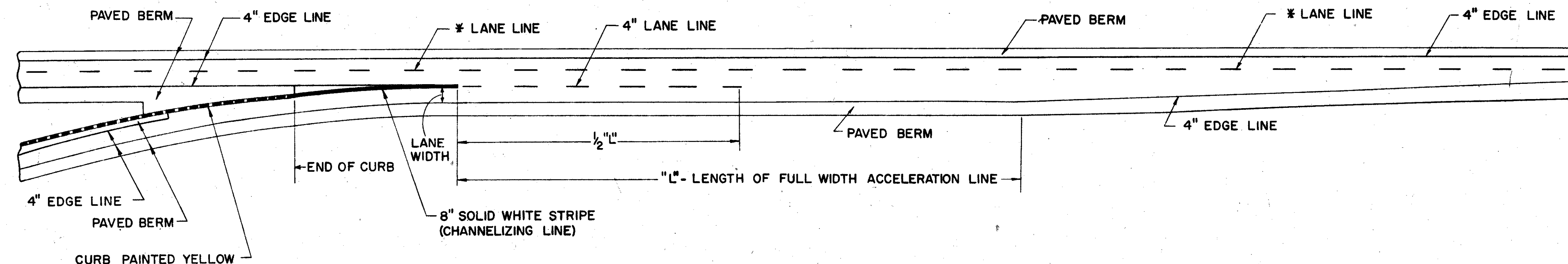
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

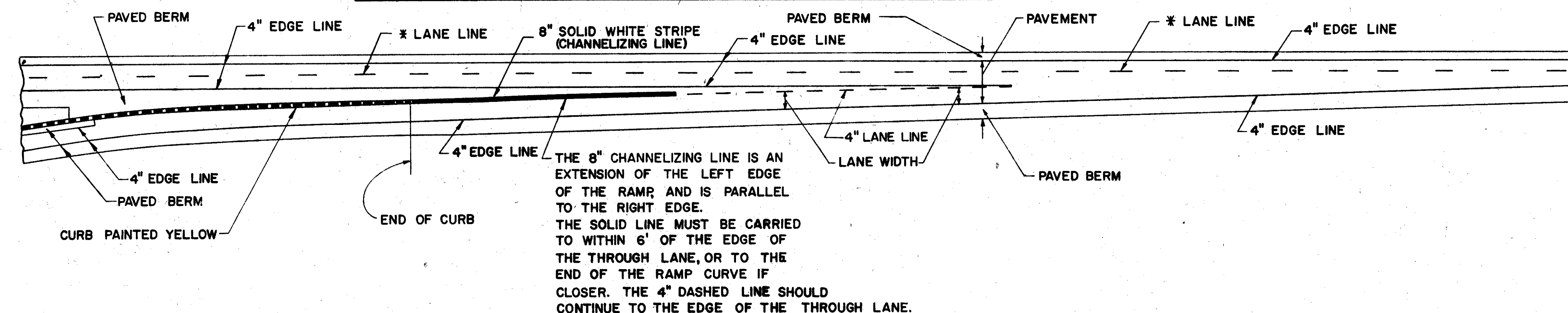
227
292

29
29

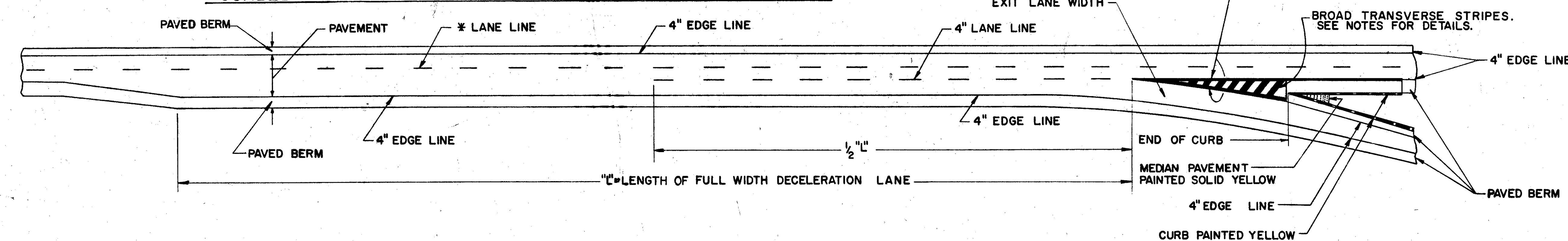
ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



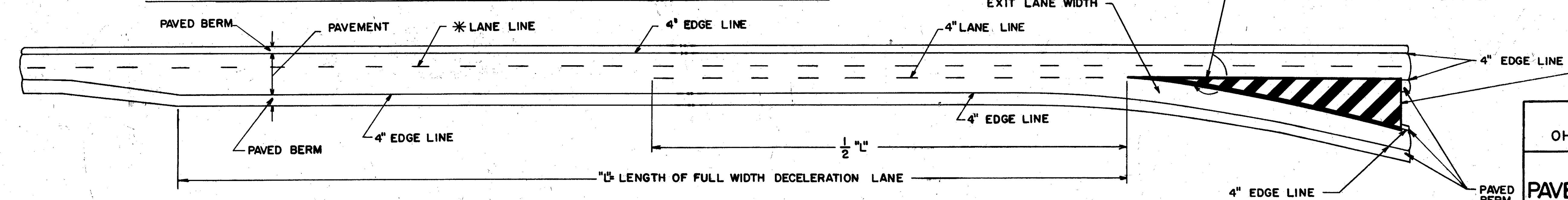
ENTRANCE TERMINAL - TAPERED ACCELERATION LANE



CURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



UNCURBED EXIT TERMINAL - PARALLEL DECELERATION LANE



NOTES

DIAGONAL STRIPES AT EXIT RAMP
SHALL BE 24" BROAD TRANSVERSE STRIPES,
621.11, WITH A 6' SPACE BETWEEN STRIPES.

* 6" LANE LINE ON INTERSTATE HIGHWAYS
ONLY.
4" LANE LINE ON ALL OTHER HIGHWAYS.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING 621

APPROVED *Robert E. Lower*
ENGINEER OF TRAFFIC

DATE
7-17-61
4-6-62
5-24-65
9-2-67
4-17-68

TRAFFIC SIGNAL SPECIFICATIONS

FED. RD. DIVISION	STATE		
2	OHIO		

229
282

FRANKLIN COUNTY
FRA. 270-22.99N

1
8

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 "POWER CABLE WITH ACCESSORIES."
4. TRAFFIC SIGNAL CABLE SHALL ENTER THE CONTROLLER CABINETS AND RUN CONTINUOUSLY FROM SIGNAL HEAD TO SIGNAL HEAD WITHOUT SPLICES. NO SPLICES SHALL BE PERMITTED AT ANY LOCATION IN THE CABLE. 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 CUTOFF 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 "TRAFFIC SIGNAL CONTROLLER WITH CABINET" 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 CUTOFF 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 "TRAFFIC SIGNAL CONTROLLER WITH CABINET" 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 "CONCRETE FOUNDATION FOR CONTROLLER CABINETS" 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 "LOOP DETECTOR AMPLIFIERS" 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 "LOOP DETECTOR WIRE" 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 "LOOP DETECTOR LEAD-IN CABLE" 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 "LOOP DETECTOR PAVEMENT CUTTING" 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 "TRAFFIC SIGNAL HEADS" WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH SIGNAL HEAD BY TYPE COMPLETELY ASSEMBLED, MOUNTED IN PLACE BY USE OF FITTINGS SHOWN ON 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 "PULL BOXES, 18" CIRCULAR, 713.08, AS PER PLAN" 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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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FRANKLIN COUNTY
FRA. 270-22.99N

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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" O 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 #8MM 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 1 1/2" 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.

GENERAL SUMMARY

TRAFFIC SIGNALS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

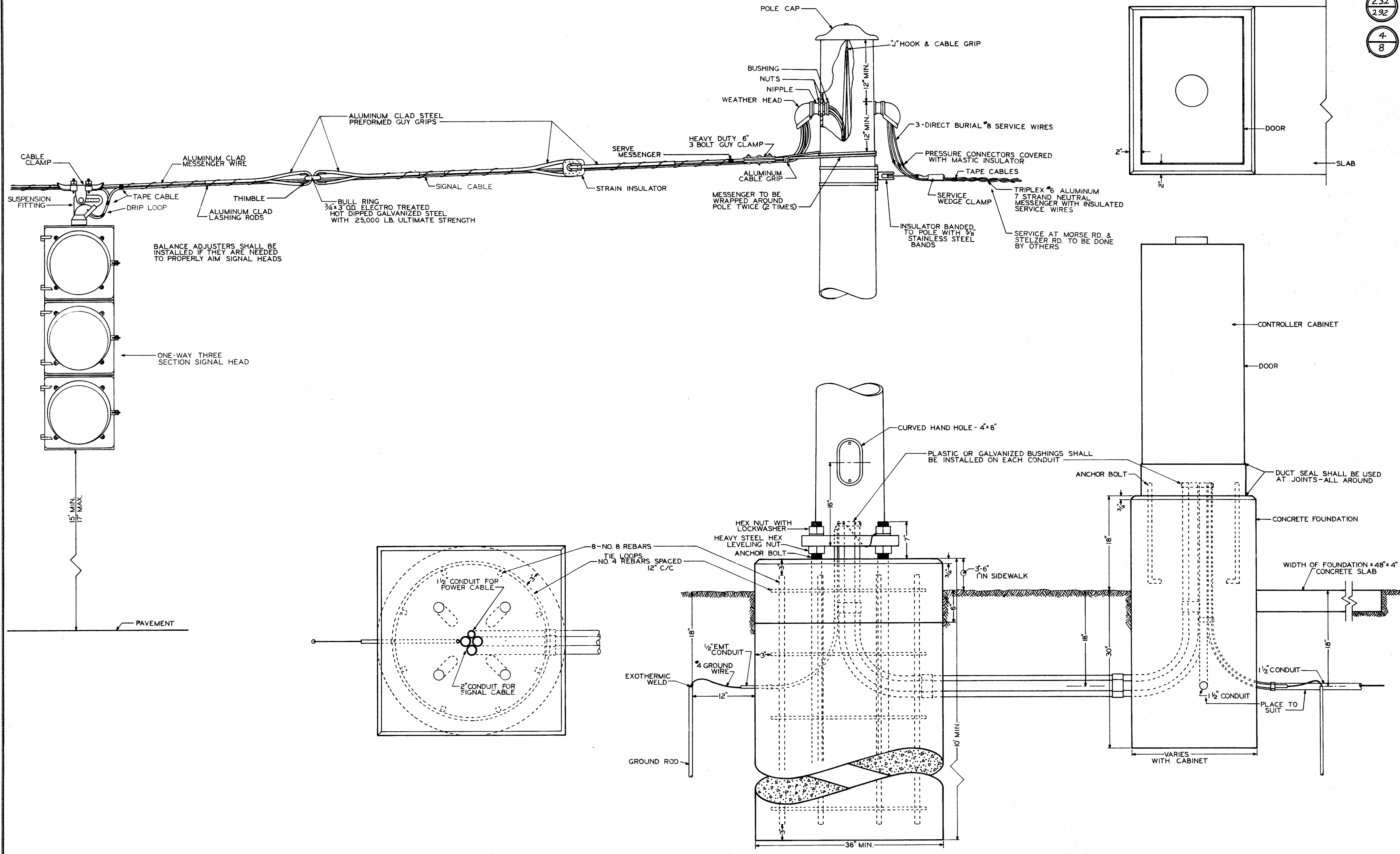
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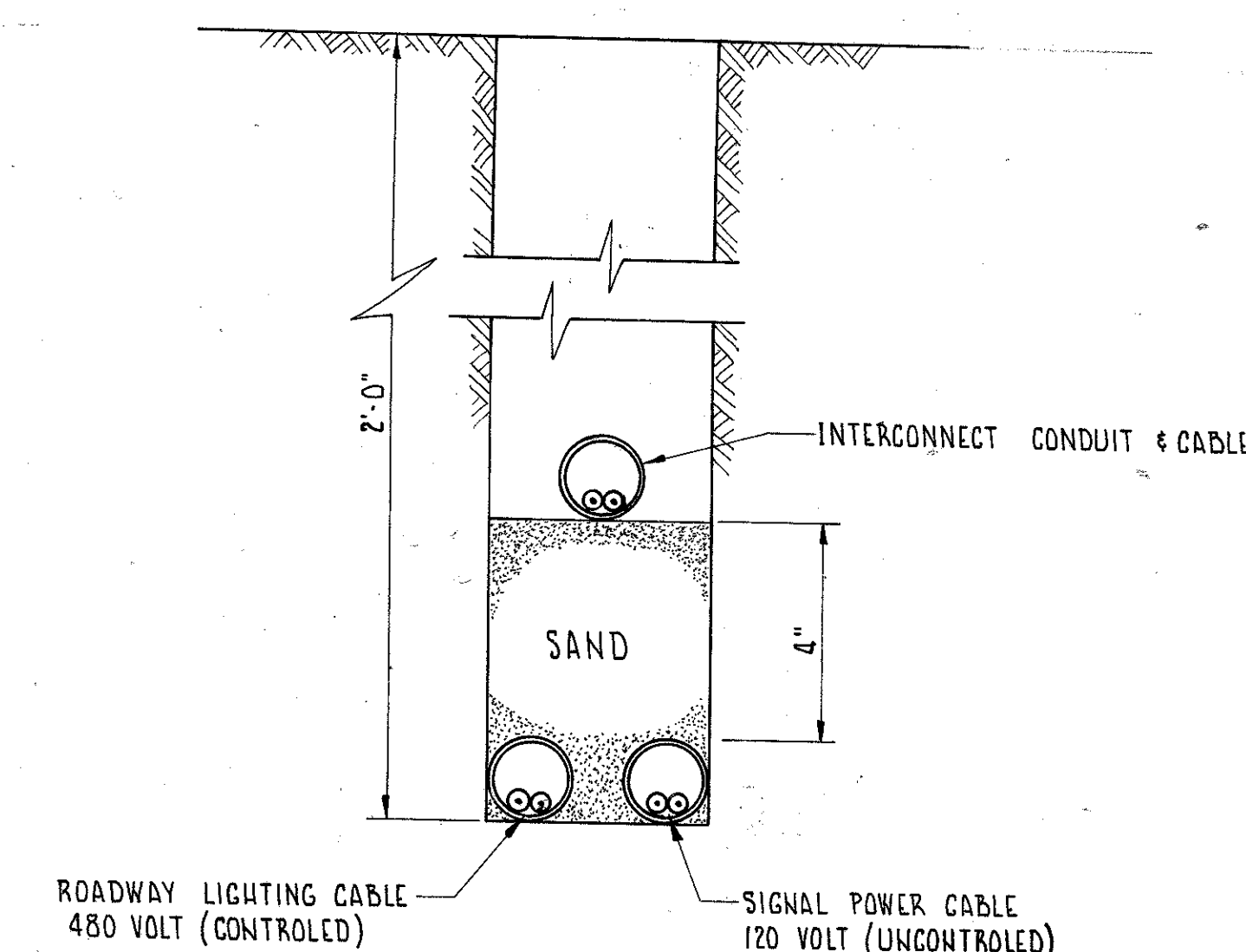
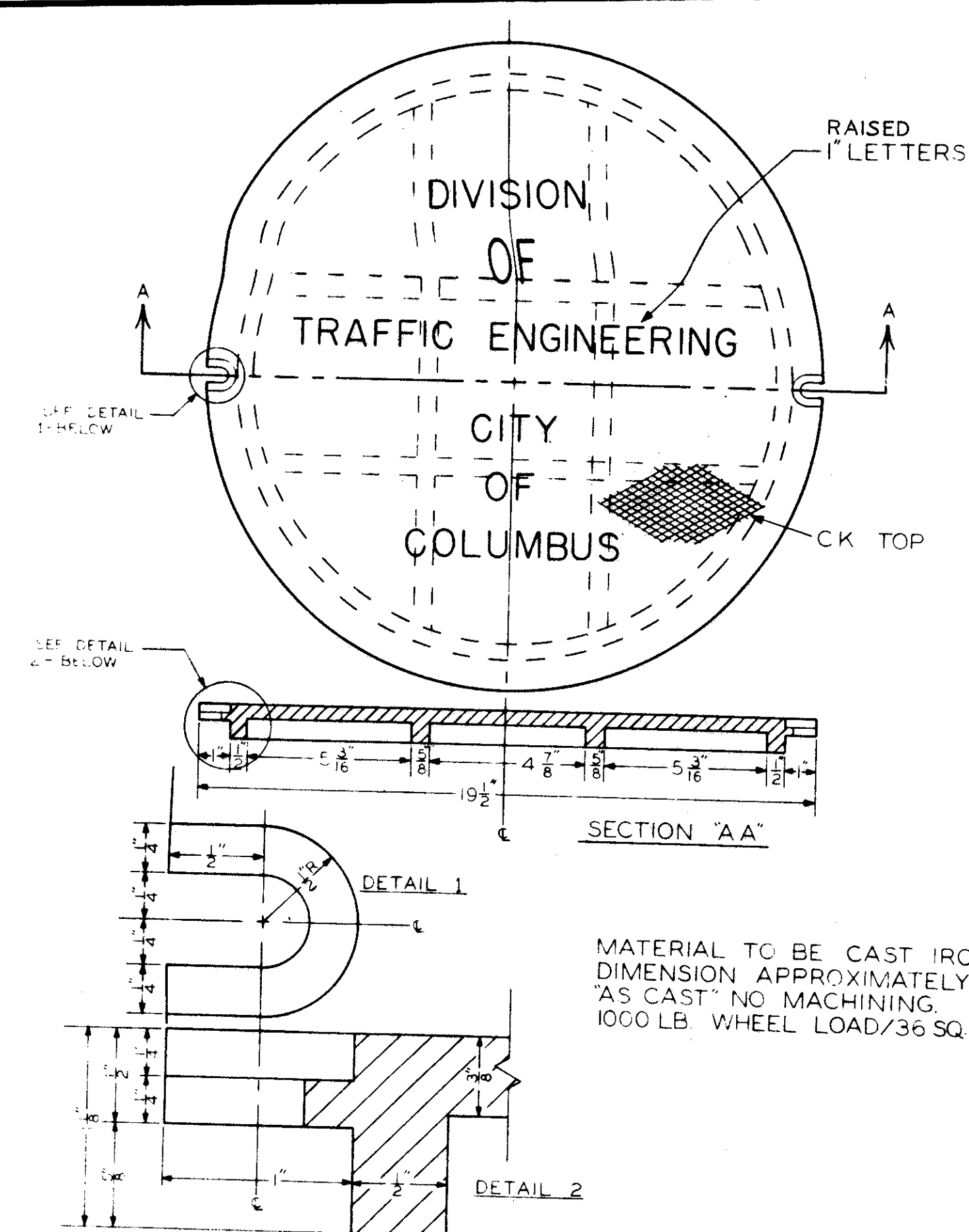
INTERSECTION								Participation ~ URBAN TYPE CODE 7224		DESCRIPTION
	Morse Rd Sheets 6,7,8	SHEET NO 6 MORSE RD STELLER RD	SHEET NO 8 MORSE RD RAMPS C-D	SHEET NO 7 MORSE RD RAMPS A-B	ITEM	QUANTITY	UNIT			
		10	7	7	625	24	ea.		TRAFFIC SIGNAL HEADS, 12" LENS 3 SECTION 1 WAY	
		6	5	1	625	12	ea.		POLL BOXES, 18" CIRCULAR, 713.08, as per plan	
		4	4	4	816	12	ea.		SIGNAL STRAIN POLE, 0 GAUGE 13"X28'	
		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, 1 1/2" 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, 1 1/2" 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	
	</									

REV. 7-1-69

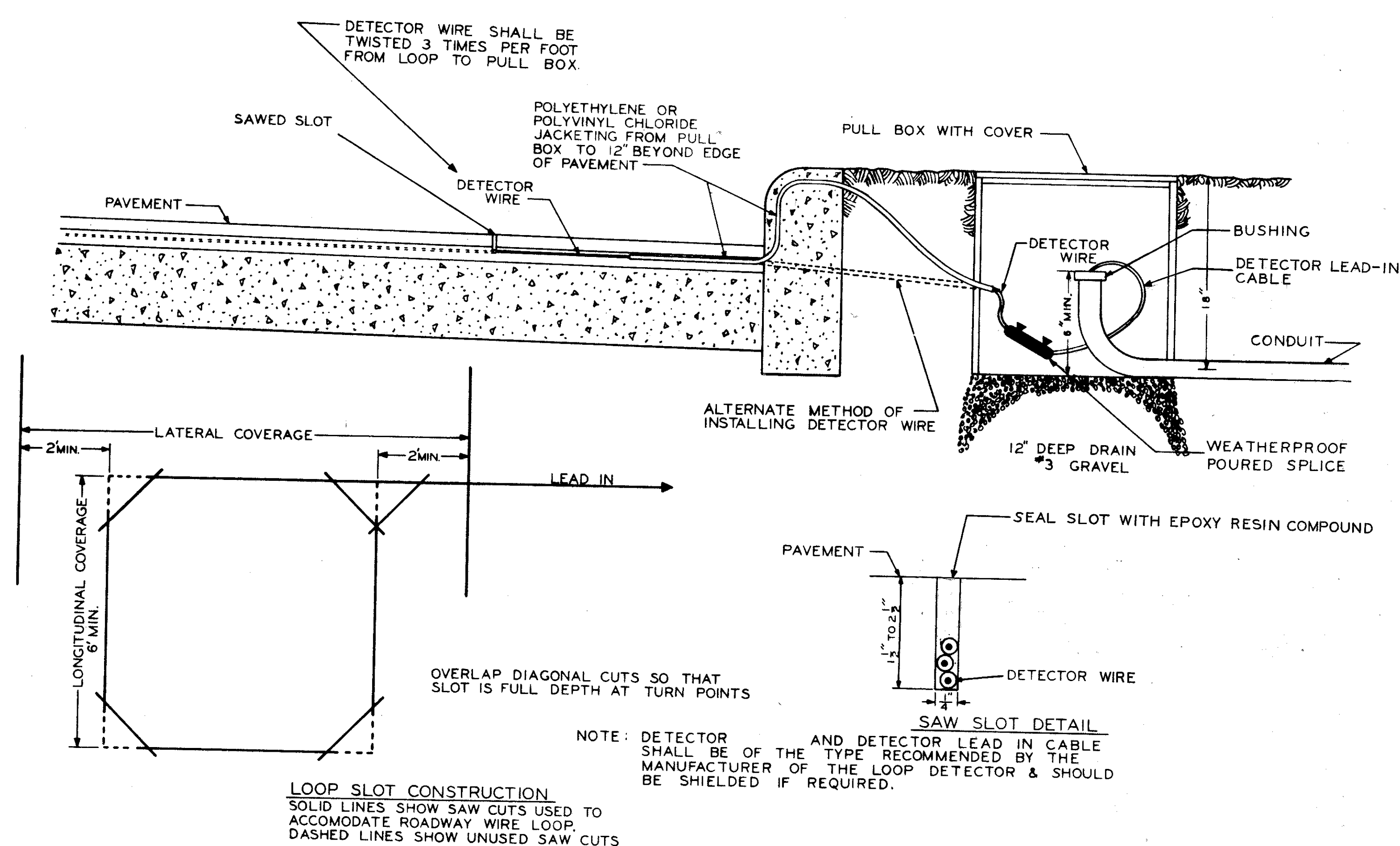
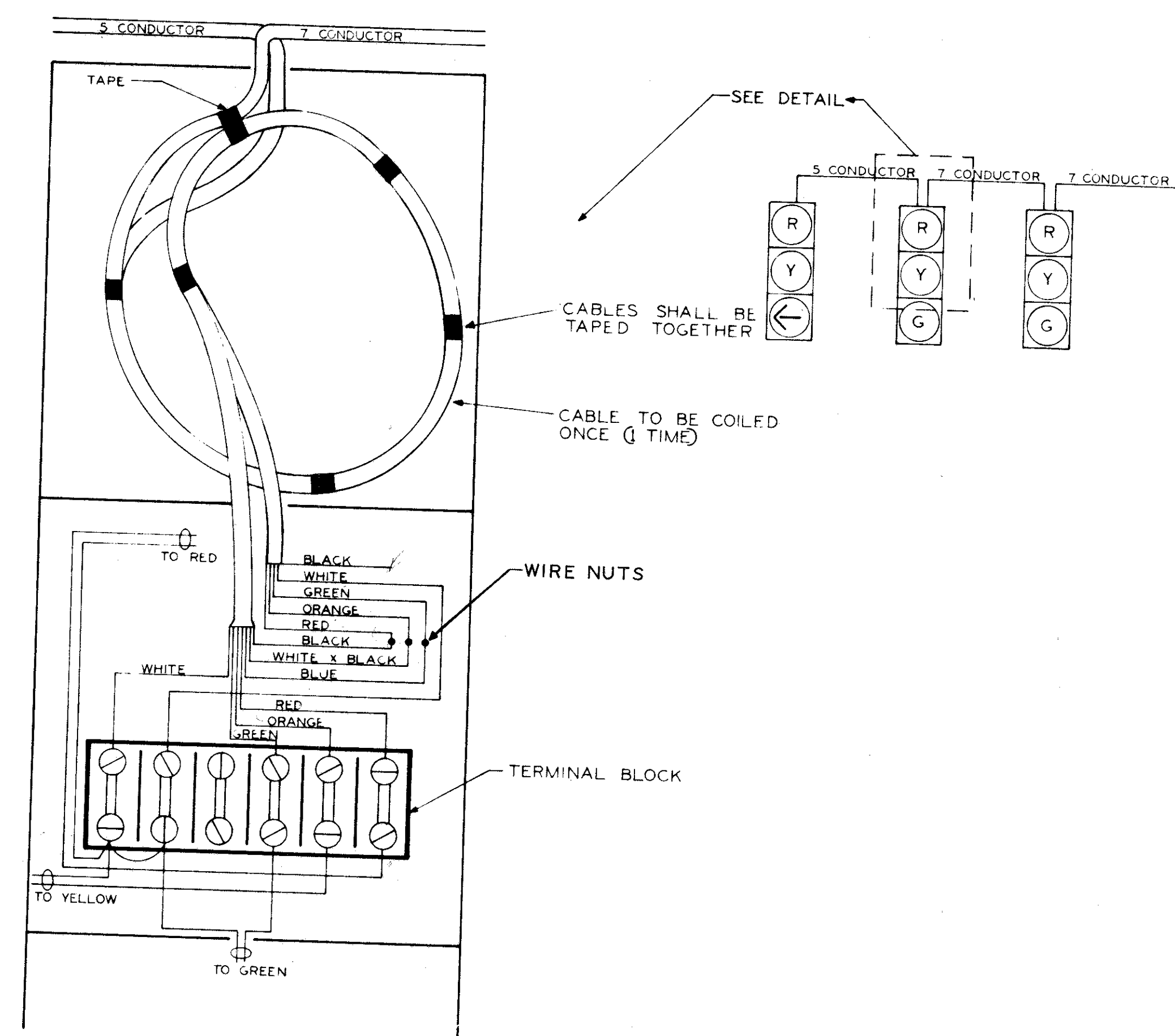
GENERAL SUMMARY - TRAFFIC

GENERAL SUMMARY F-31

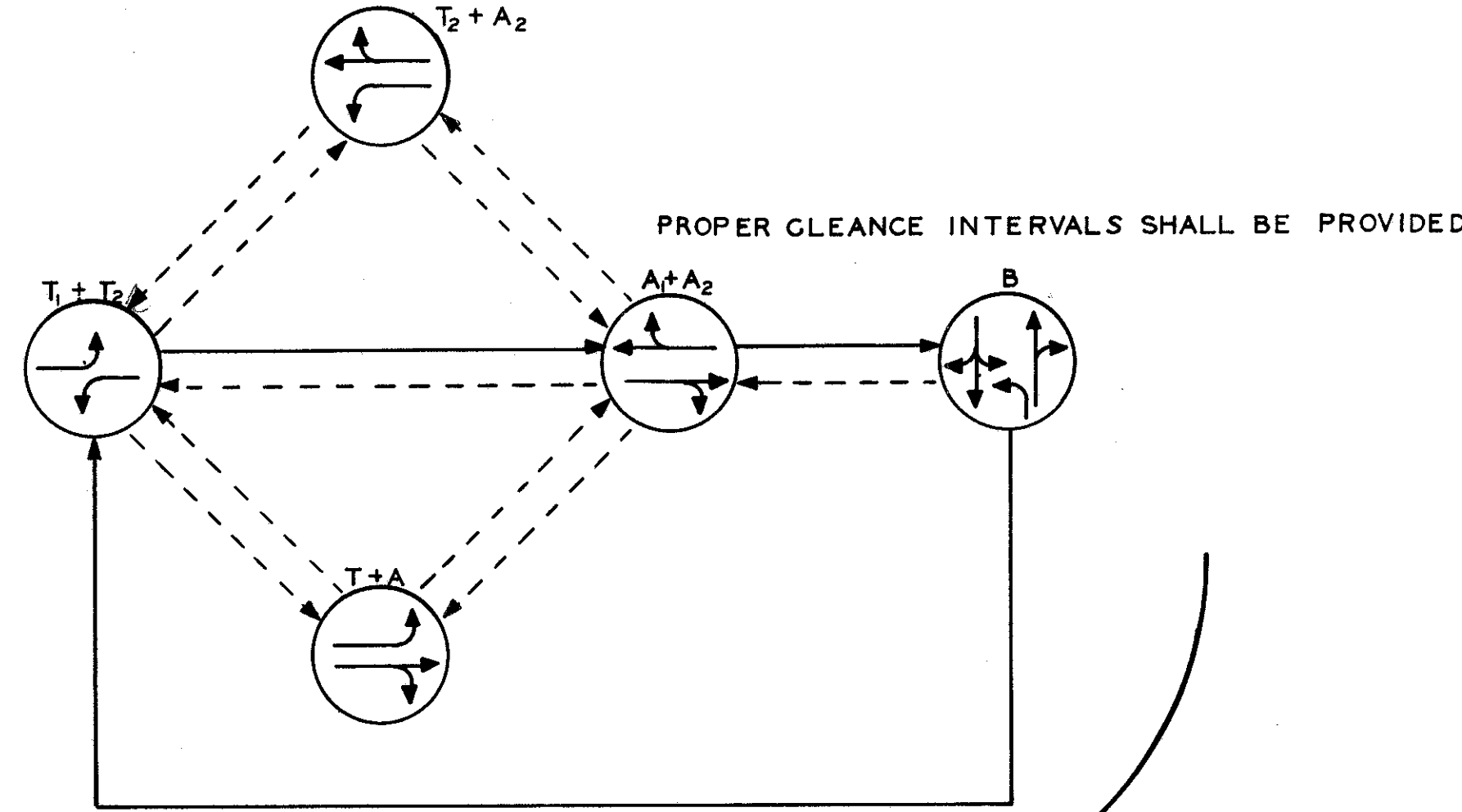




CABLE IN TRENCH ARRANGEMENT

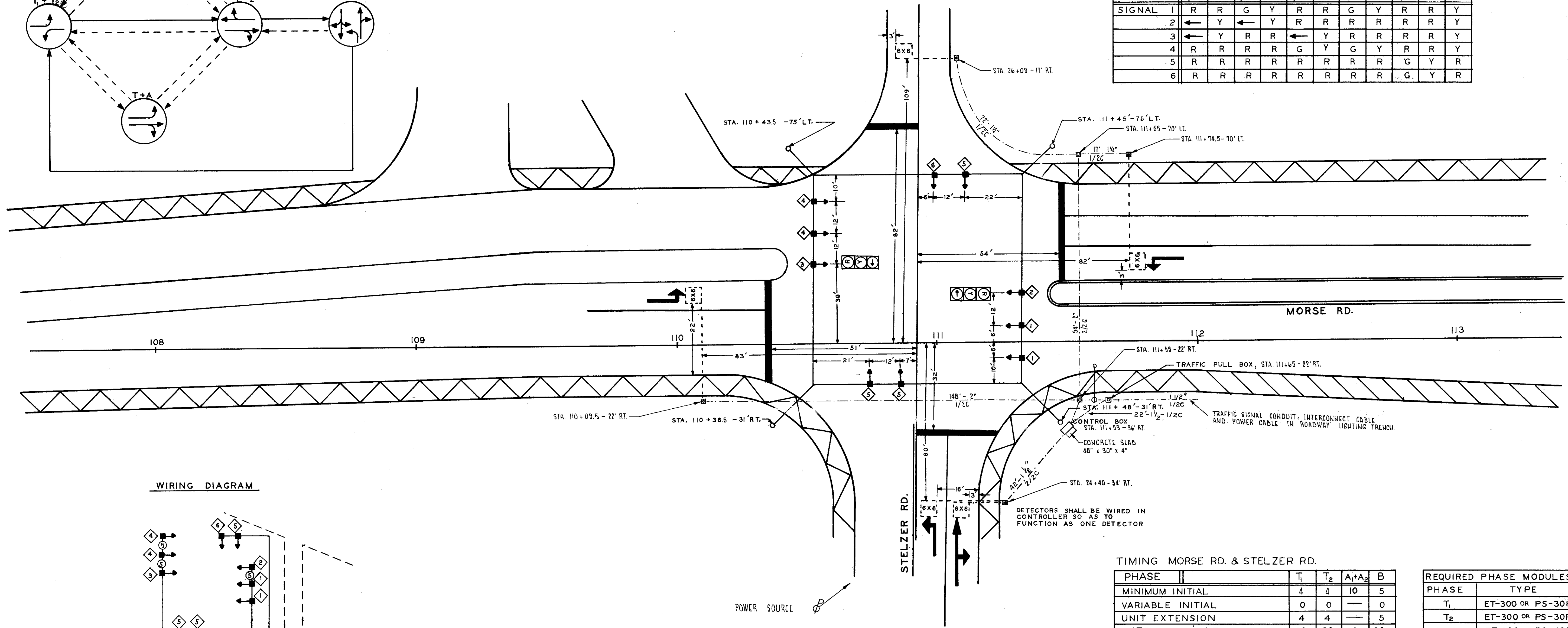


DUAL LEFT TURN APPLICATION PROVIDES FOR ANY TWO NON-CONFLICTING MOVEMENTS OF TRAFFIC AT A GIVEN TIME AND SHALL SKIP MOVEMENTS NOT ACTUATED BY TRAFFIC

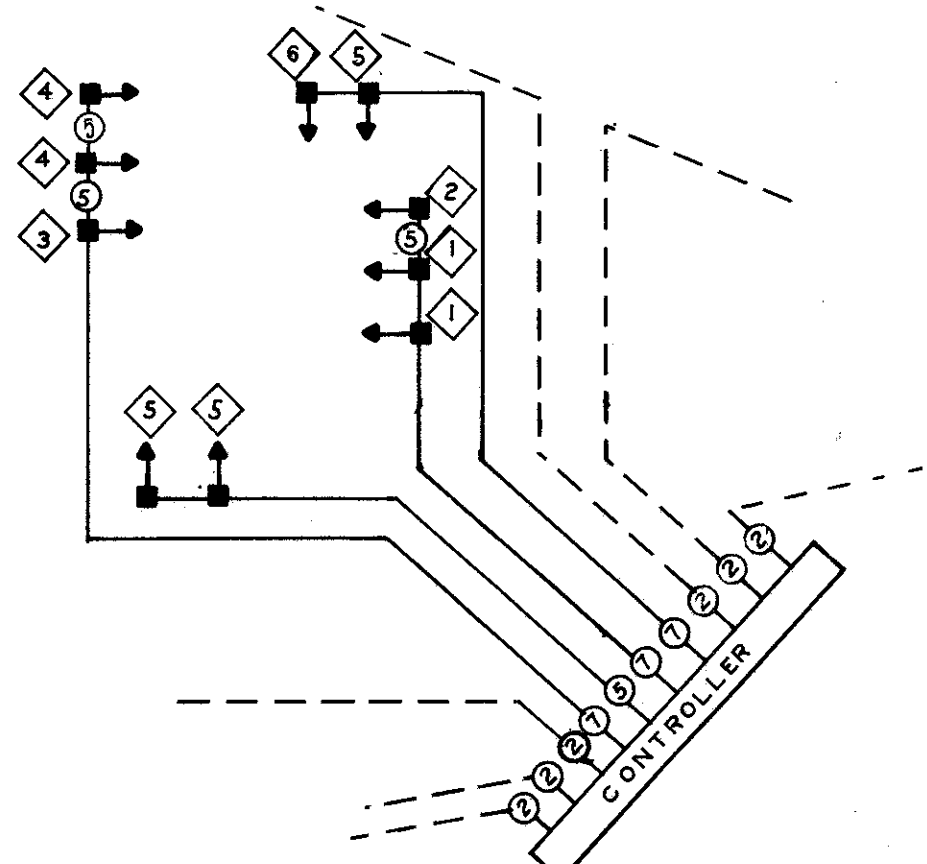


SIGNAL DISPLAY SCHEDULE

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	Y	Y	R	R	R	R	R	R	Y
3	Y	Y	R	R	Y	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	R	R	Y
6	R	R	R	R	R	R	R	R	G	Y	R



WIRING DIAGRAM

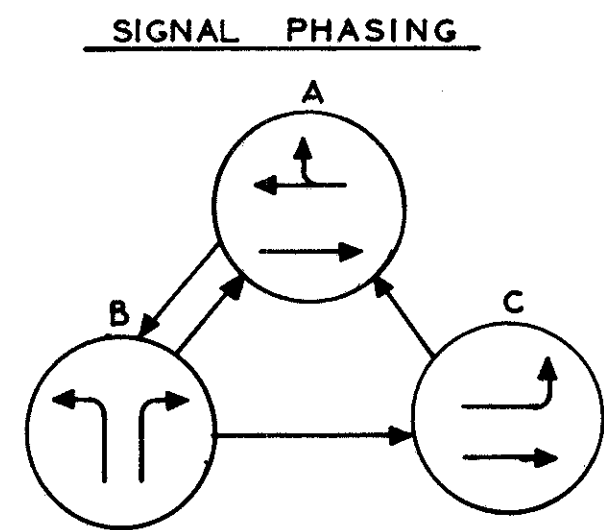


TIMING MORSE RD. & STELZER RD.

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

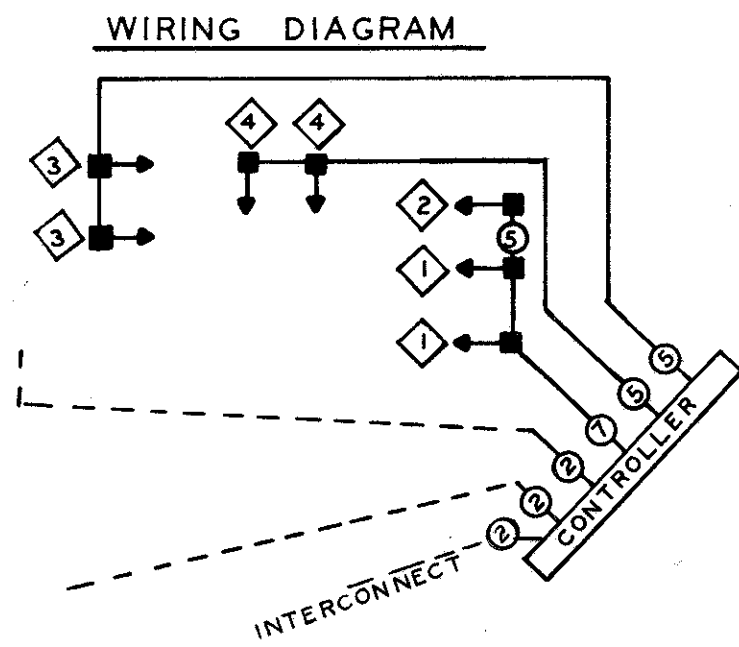
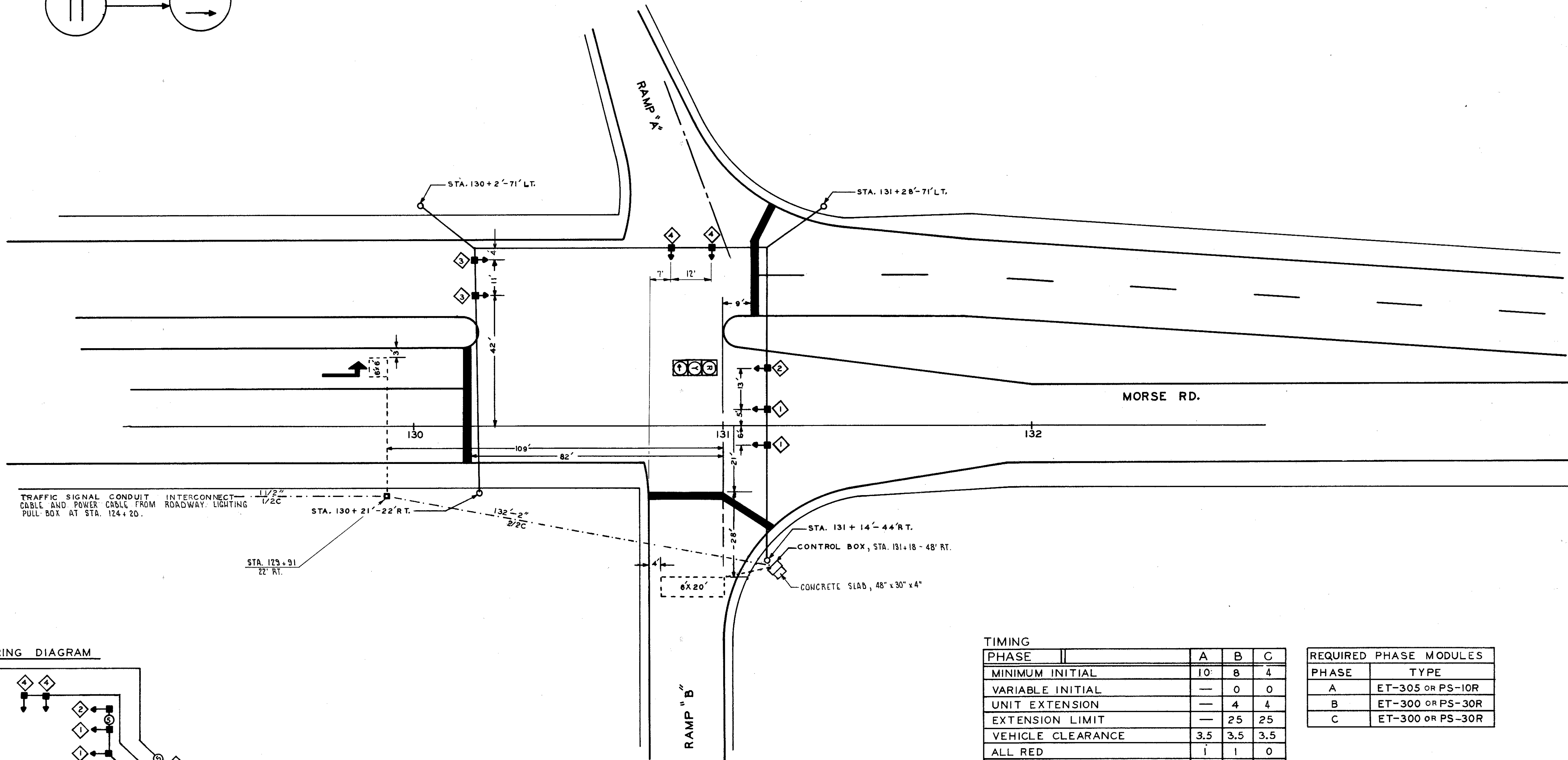
REQUIRED PHASE MODULES

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



SIGNAL DISPLAY SCHEDULE

PHASE	A			B			C		
MOVEMENT	R/W	C ₁	C ₂	R/W	C ₁	C ₂	R/W	C	FLASH
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



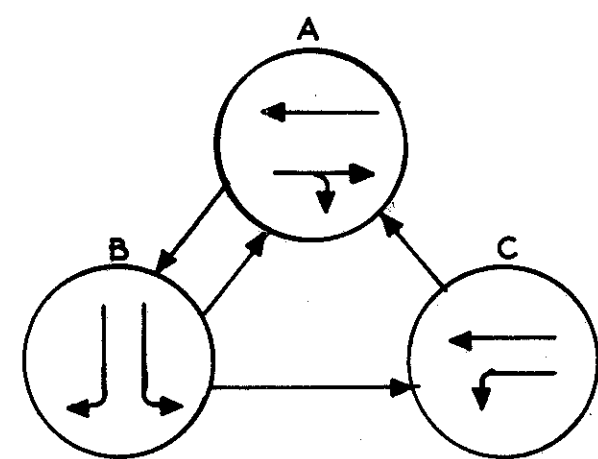
TIMING

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

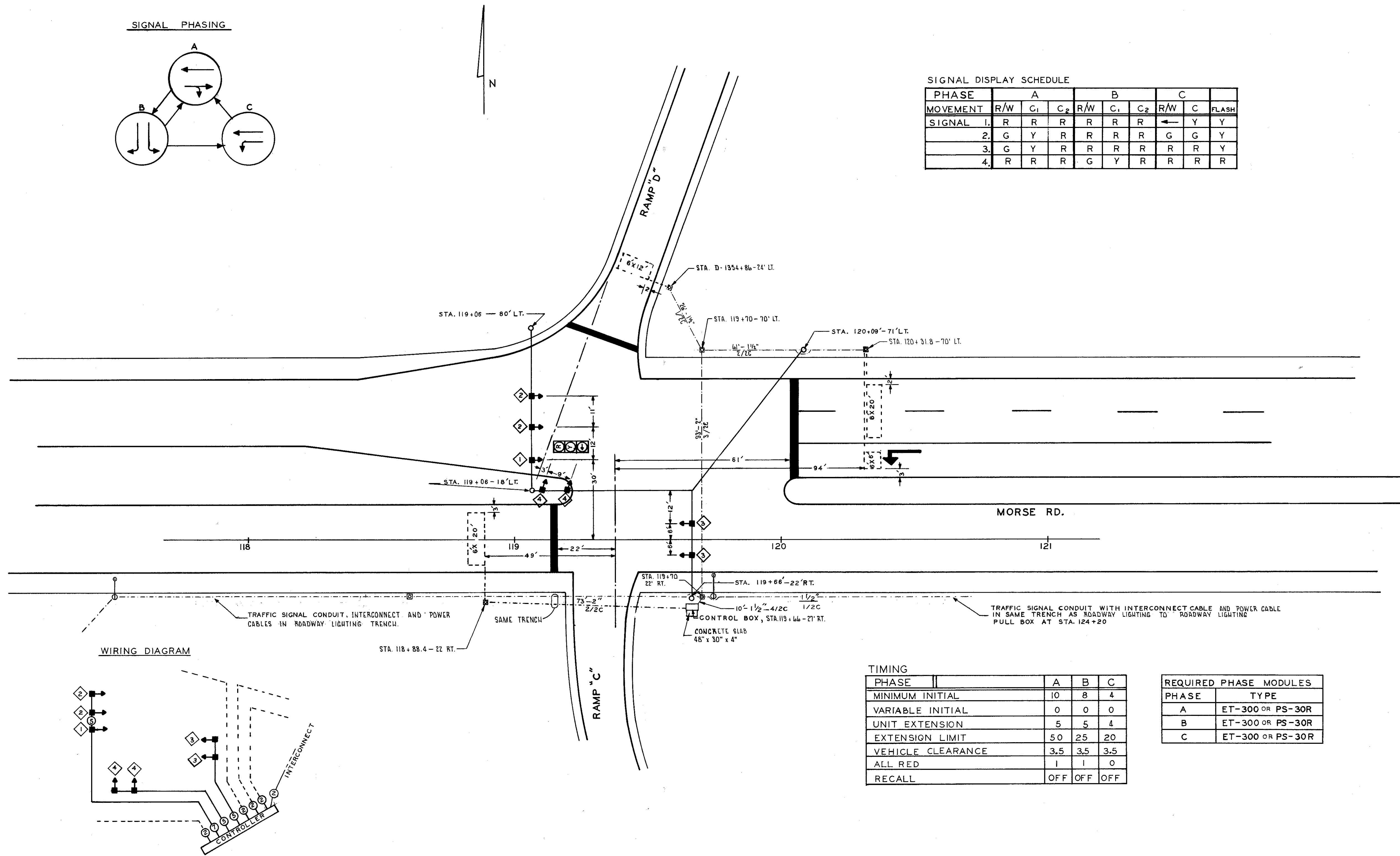
PHASE	TYPE
A	ET-305 OR PS-10R
B	ET-300 OR PS-30R
C	ET-300 OR PS-30R

SIGNAL PHASING

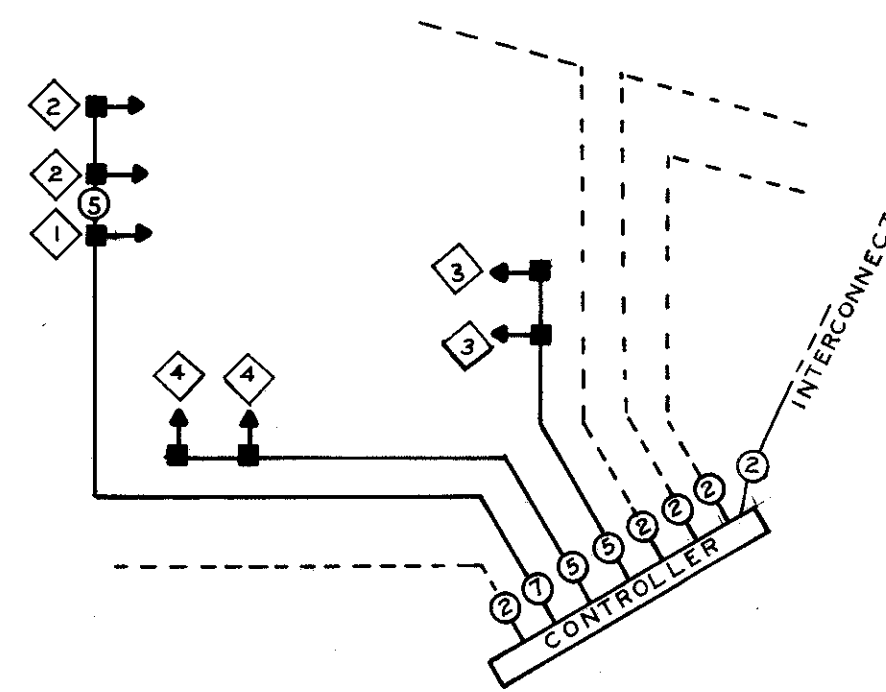


SIGNAL DISPLAY SCHEDULE

PHASE	A			B			C		
MOVEMENT	R/W	C1	C2	R/W	C1	C2	R/W	C	FLASH
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

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 luminaires 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, device 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.

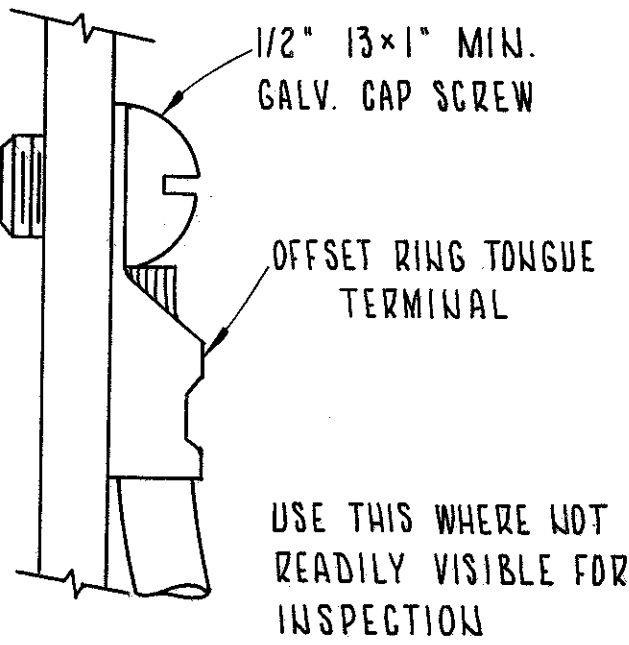
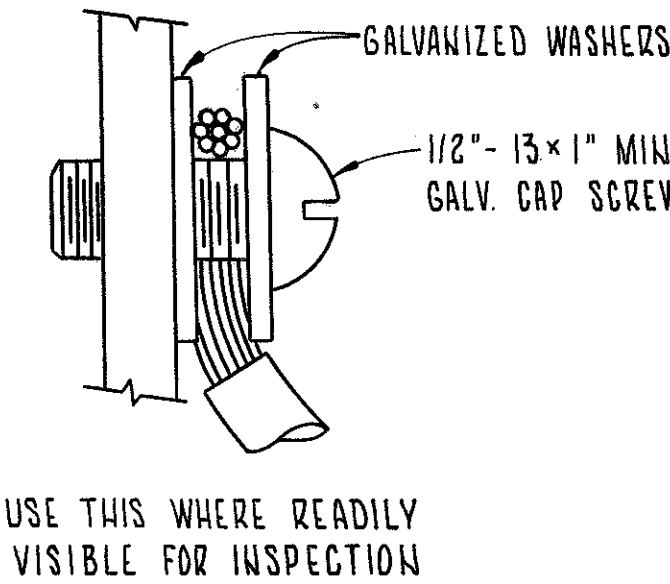
625.13 - 625.15 - CONDUIT AND DUCT CABLE

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.

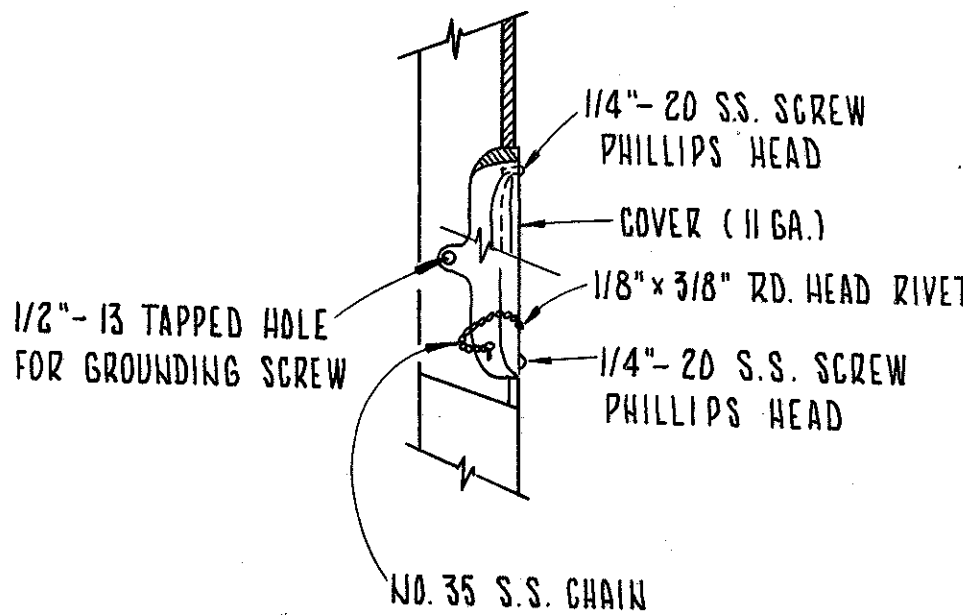
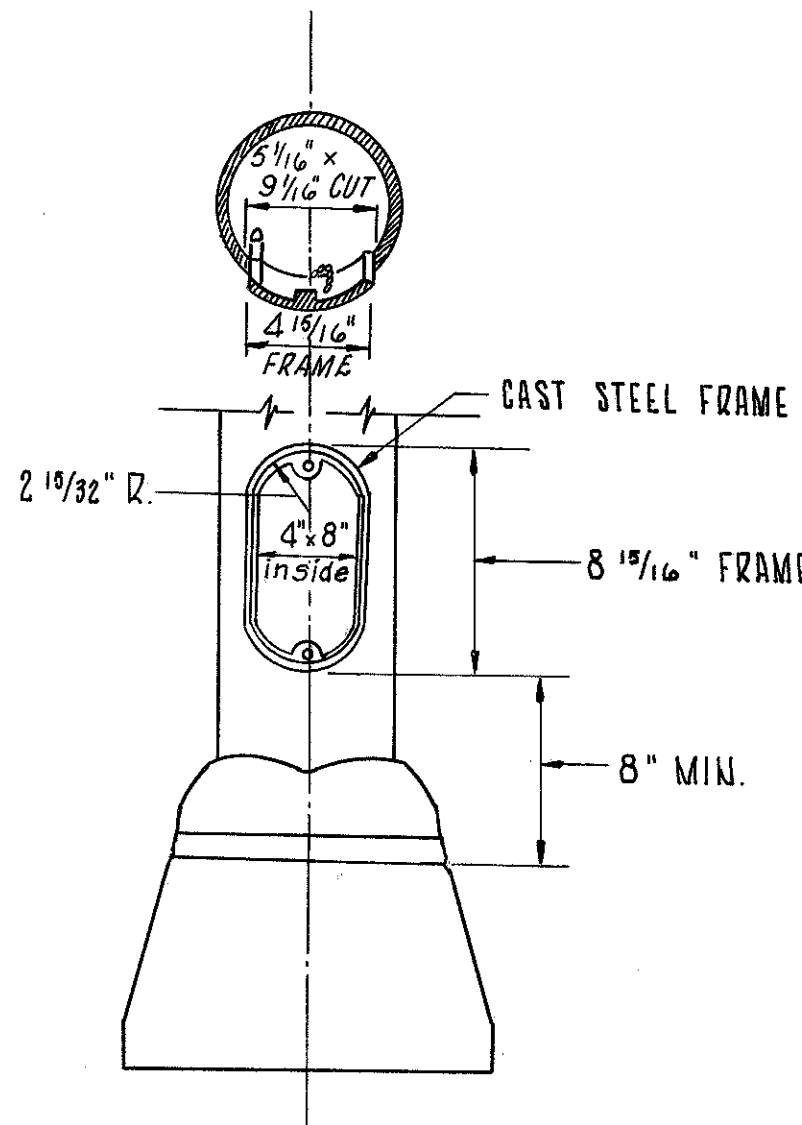
Empty conduits shall be capped immediately after installation and remain capped until insertion of pull wire or cable. All cable connector kits and exposed cable ends shall be adequately protected by being enclosed in plastic bags, by taping or by other approved means until final connections are made. Payment for all 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.



GROUND WIRE TERMINAL



4x8 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.

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	11AT10B 34.2	8" 3.87' 23'-6"	.14	11	1" x 40"	15"	3 1/2"	10'-0"	34.2	3.32	517	17.66	.50	776	28.84	3.08	AT-A
P	11AT12B 34.2	9" 4.87' 23'-6"	.14	11	1" x 40"	15"	3 1/2"	12'-0"	34.2	2.16	659	14.73	.50	989	24.00	2.64	AT-A
Z	7AT12B 41.7	9" 5.65' 33'-6"	.10	7	1" x 40"	17 1/4"	3 1/2"	12'-0"	41.7	1.96	859	17.40	.50	1289	28.30	3.00	AT-C
X	7AT15B 41.7	9" 5.65' 33'-6"	.10	7	1" x 40"	17 1/4"	3 1/2"	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) polypropylene 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.

GENERAL LIGHTING QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
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LINE NO.	ITEM	STRUCTURE		ROADWAY																DESCRIPTION				
		FRA-270-2356 N L/R																Sub-Total						
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	TOTAL PROJECT	UNIT	ITEM		
1	625						1		3		1							5		5	Ea.	625	Light Pole Design 11AT 12B 34.2	
2	625																	5		5	Ea.	625	Light Pole Design 11AT 10B 34.2	
3	625								3		1		1					2		2	Ea.	625	Light Pole Design 7AT 15B 41.7	
4	625																	7	3	10	Ea.	625	Light Pole Design 7AT 12B 41.7	
5	625				5							3	2					2		2	Ea.	625	12' Bracket Arm for combination light & sign pole	
6	625						1		1															
7																								
8	625						1		7		2		1					11		11	Ea.	625	Light Pole Foundation, 24" x 6' Deep	
9	625				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		1036	1200	1598	2166	584	1022	1023	10922	4680	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	2014	L.F.	625	600 Volt Single Conductor N#10 AWG Pole & Bracket Cable	
35	625				3058		1421	225	2529		940	1227	1590	2211	599	1052	813	10950	4715	15665	L.F.	625	1 1/2" duct cable with two N#4 AWG 600 Volt cables	
36																								
37	625				424		344	144	620		290		556				540	2774	144	2918	L.F.	625	N#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 III,	
47																								
48																								
49	625																							
50																								
51	625								Lump									Lump		Lump	Lump	625	Control Center A	
52																			Lump	Lump	Lump	625	Control Center B	
53									40									40	40	*80	L.F.	607	Fence type CL, modified as per plan	
54									1									1	1	*2	Ea.	607	8' gate type CL, modified as per plan	
55																								
56																								
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64																								
65																								
66																								
67																								
68																								
																							*Carried forward to sheet No. 28	

*Carried forward to sheet No. 28

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 5G 70A-T6.

Base AT-A shall be used with anchor base poles of 6" through 9.2" dia. inclusive, thru 34' 6" Mfg. 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	17 1/4"	20"	56,000	10' to 25'
AT-B	22"	24"	52,000	10' to 25'

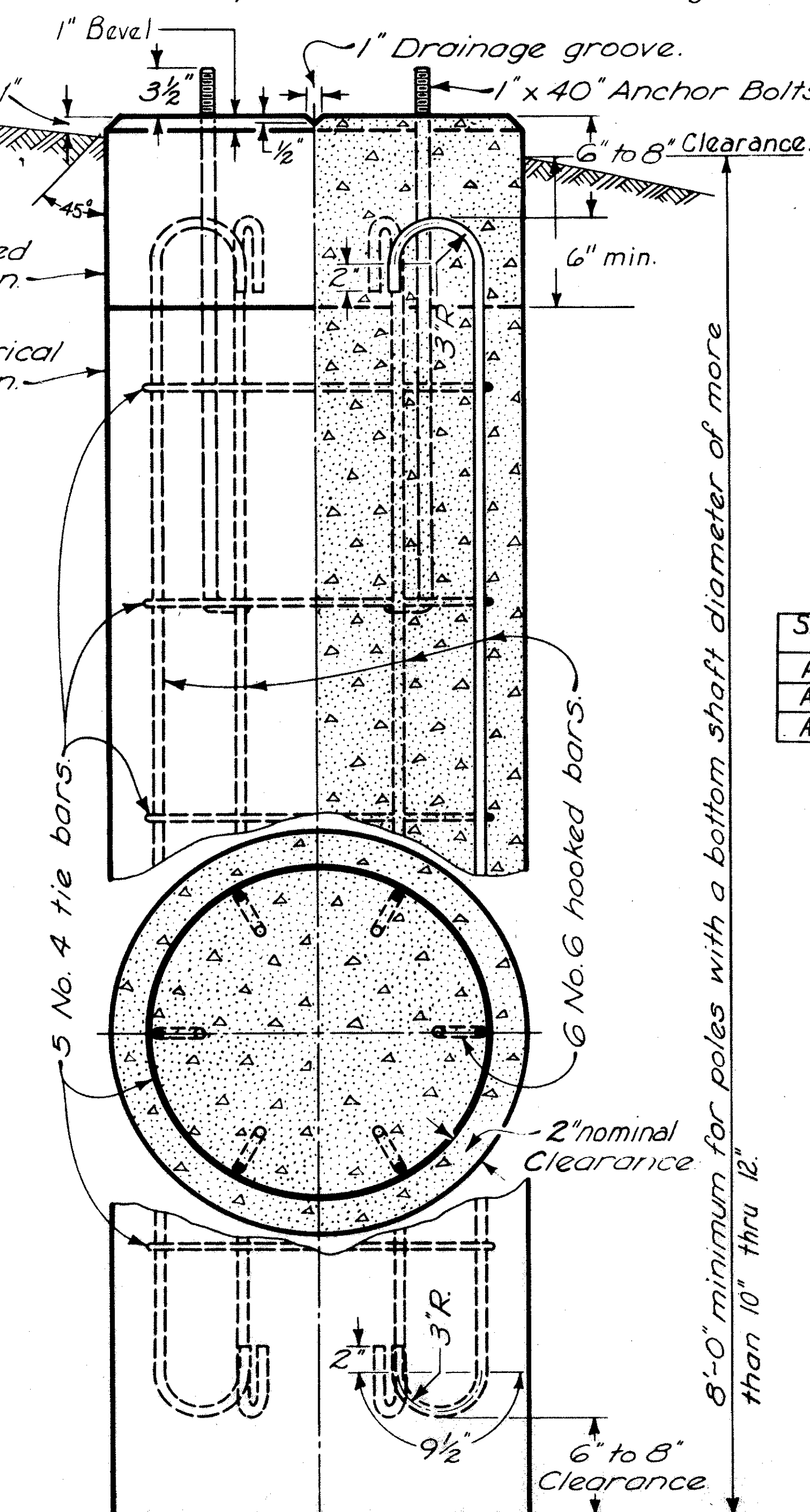
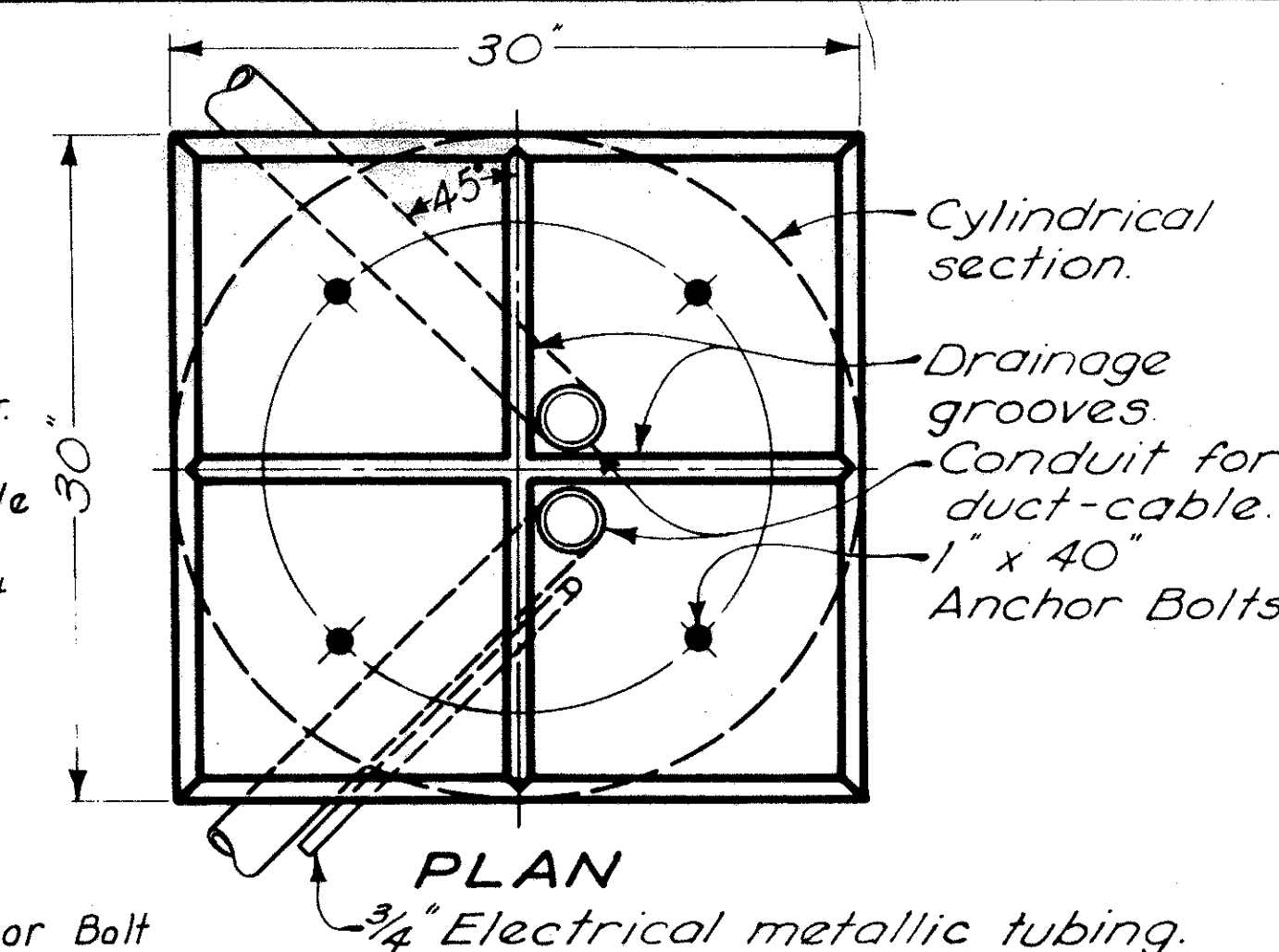
Both the bottom of the cast steel pole base and the top of the aluminum transformer base shall be coated or painted with a heavy film of zinc rich paint (Federal Specification TT-P-641-Type II) to reduce galvanic action between the two dissimilar metals.

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.

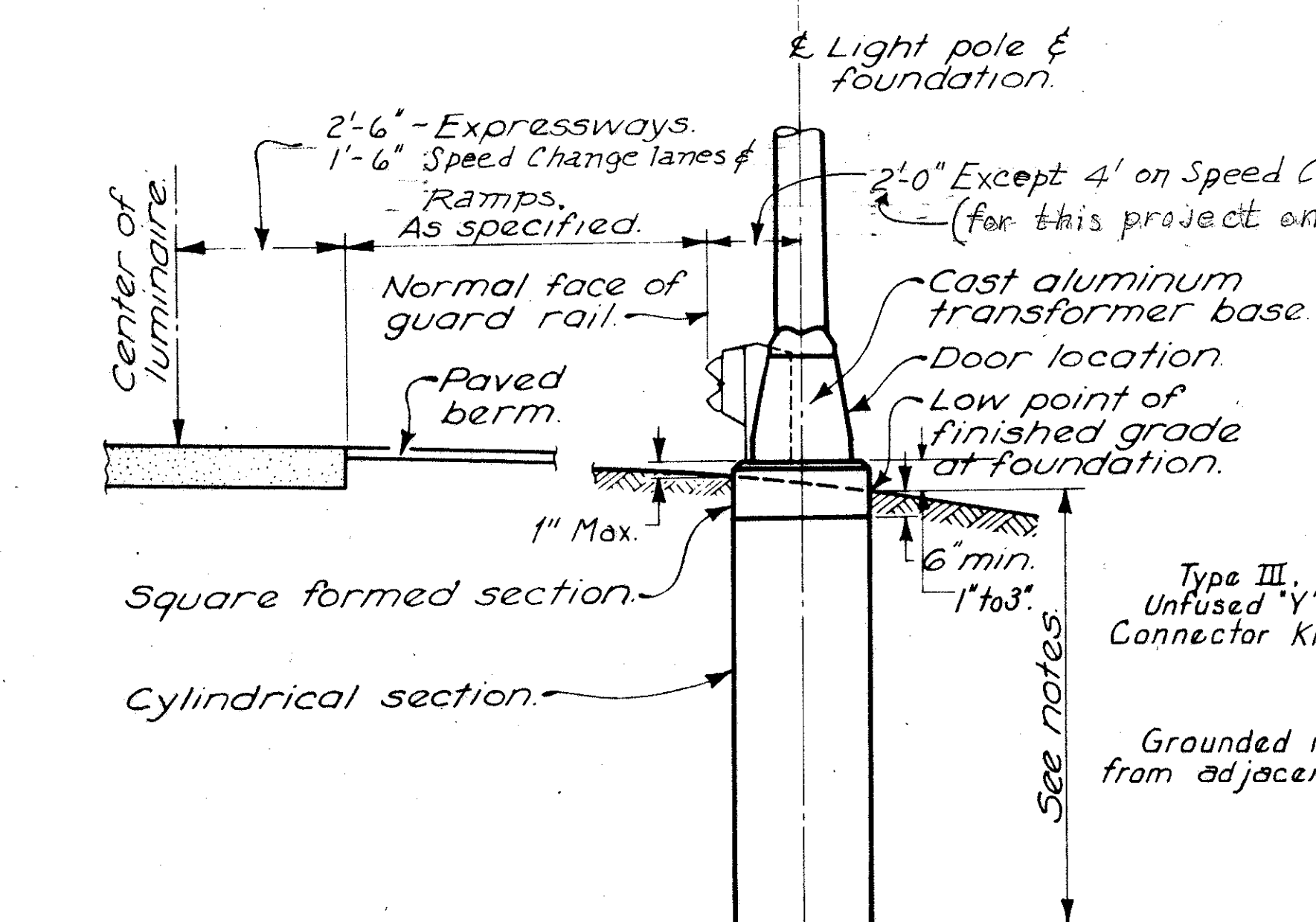
* AT-C Base can be used with 8" or 8 1/2" dia. base poles, if desired, in order to reduce maintenance items.

NOTE: Split-bolt Connector shall be made of tin plated copper alloy with tin plated spacer. Acceptable models are: Blackburn #10HPS, Burndy #K5U-25, Line Material #DK-5B-10, Kearney #118109-02 or an approved equal.

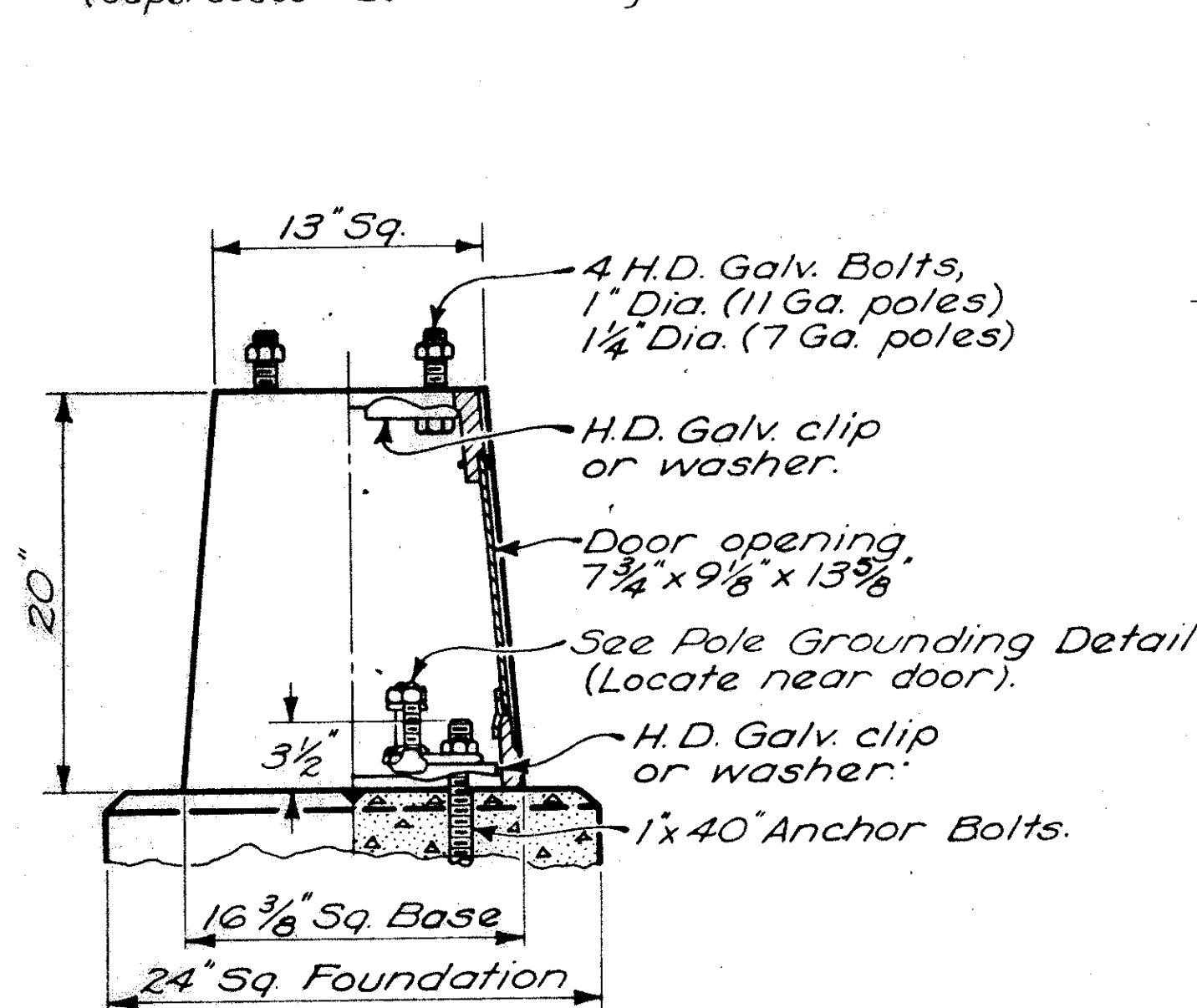


ELEVATION
30" FOUNDATION

ALUMINUM TRANSFORMER BASE DETAILS

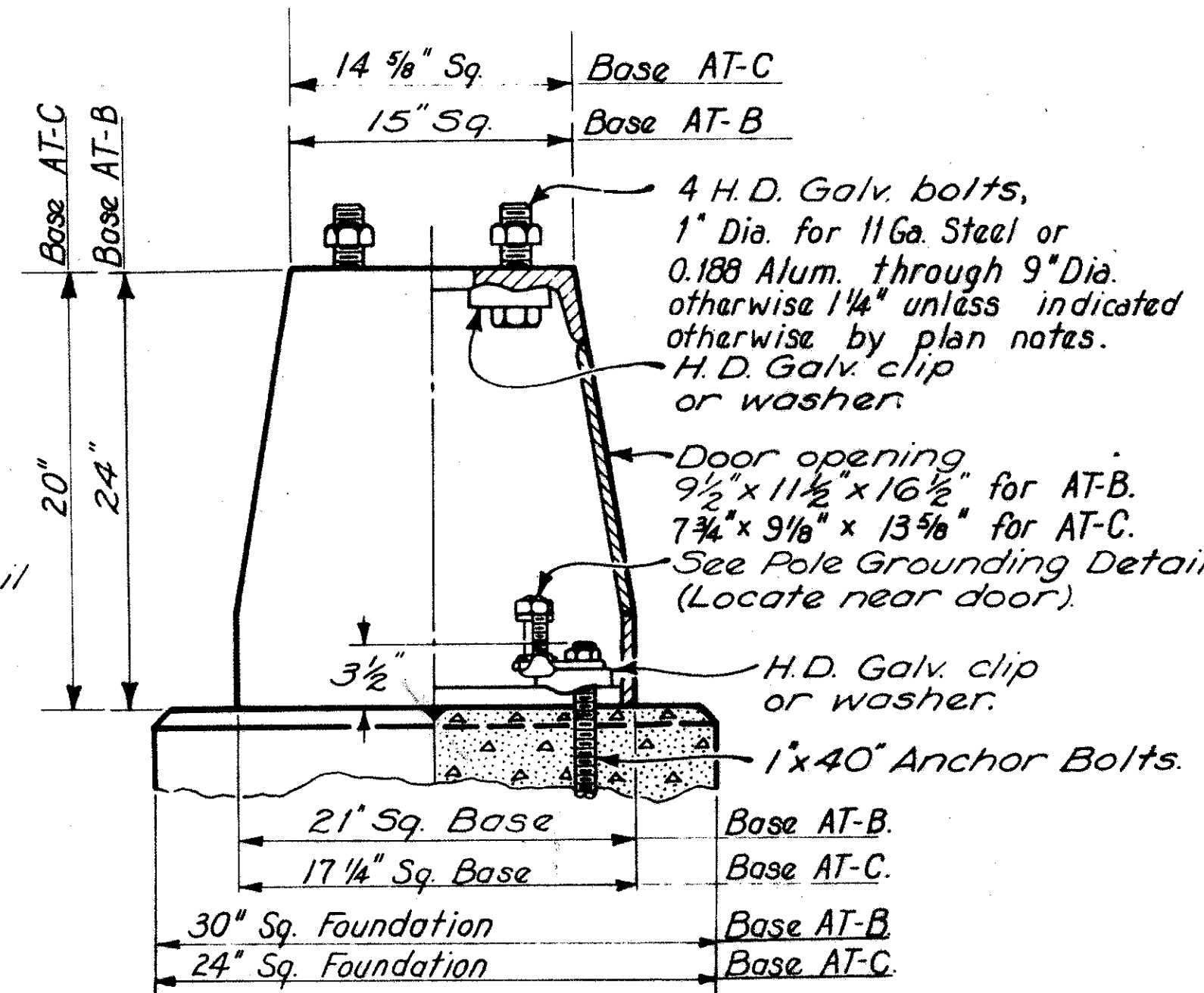


LOCATION OF POLE WITH OR WITHOUT
ALUMINUM TRANSFORMER BASES
(Supersedes "Location of Light Pole Foundation" shown on Standard Drawing HL-1).

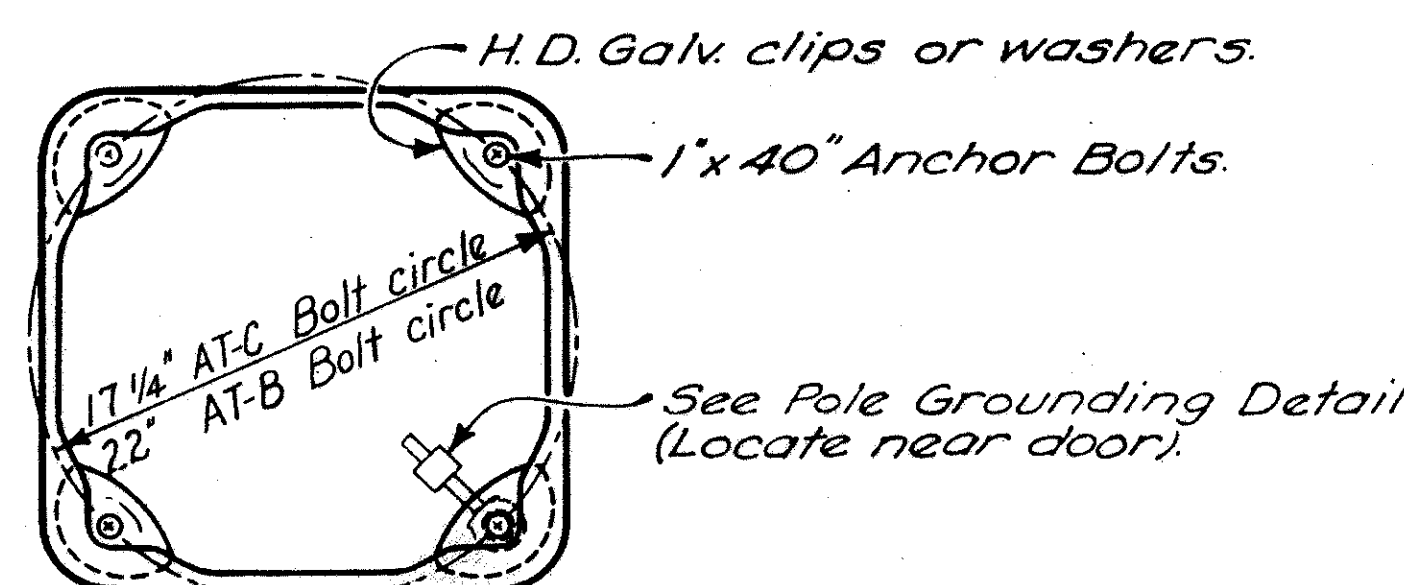
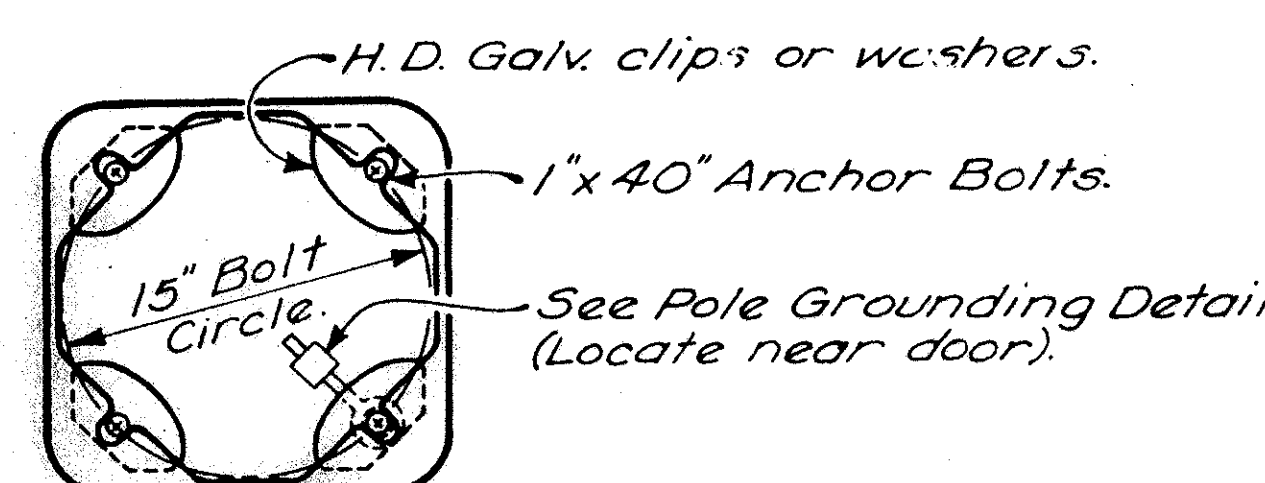


ELEVATION

BASE FRAME
BASE AT-A



BASE FRAME
BASES AT-B AND AT-C



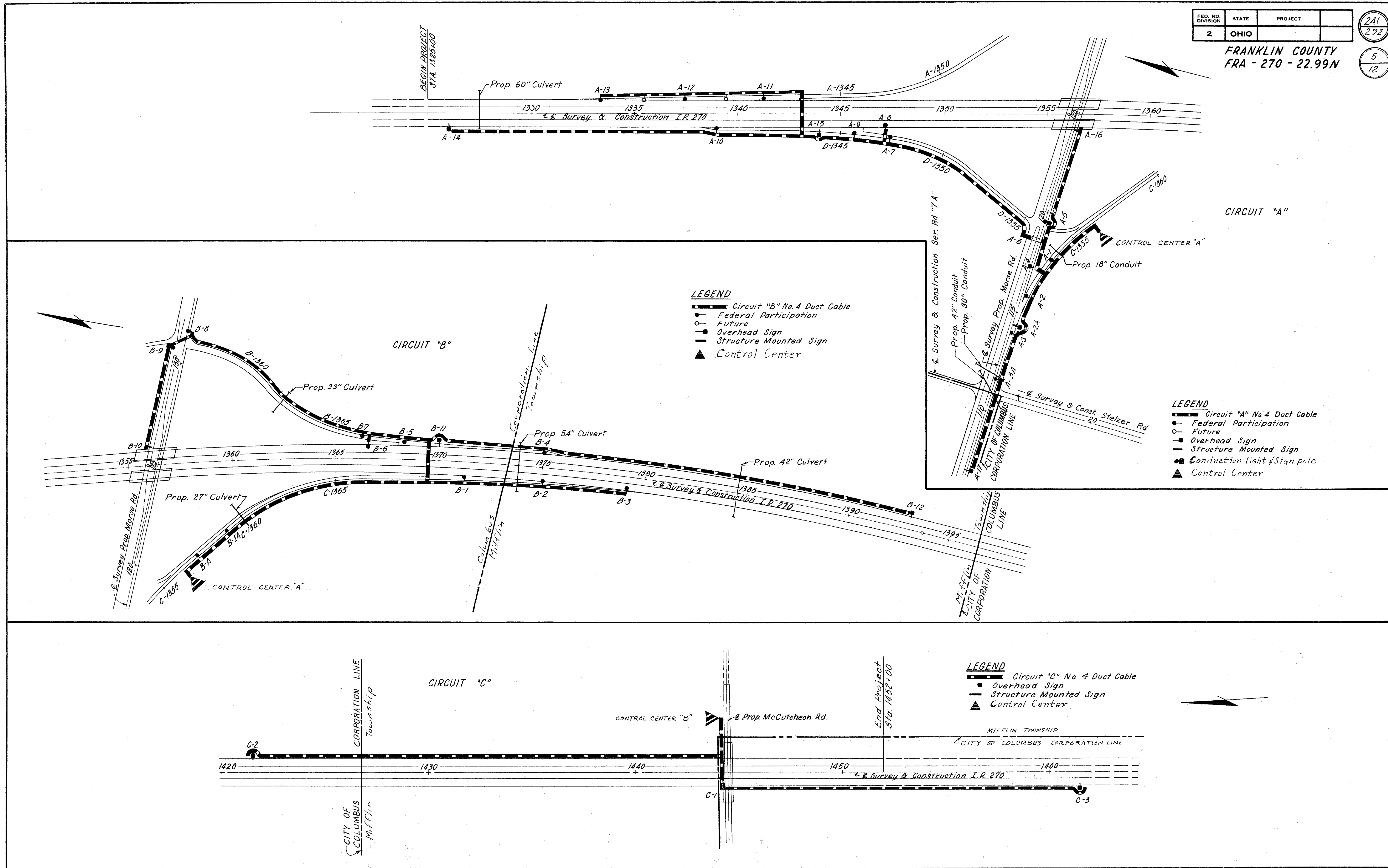
CAST ALUMINUM TRANSFORMER BASES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

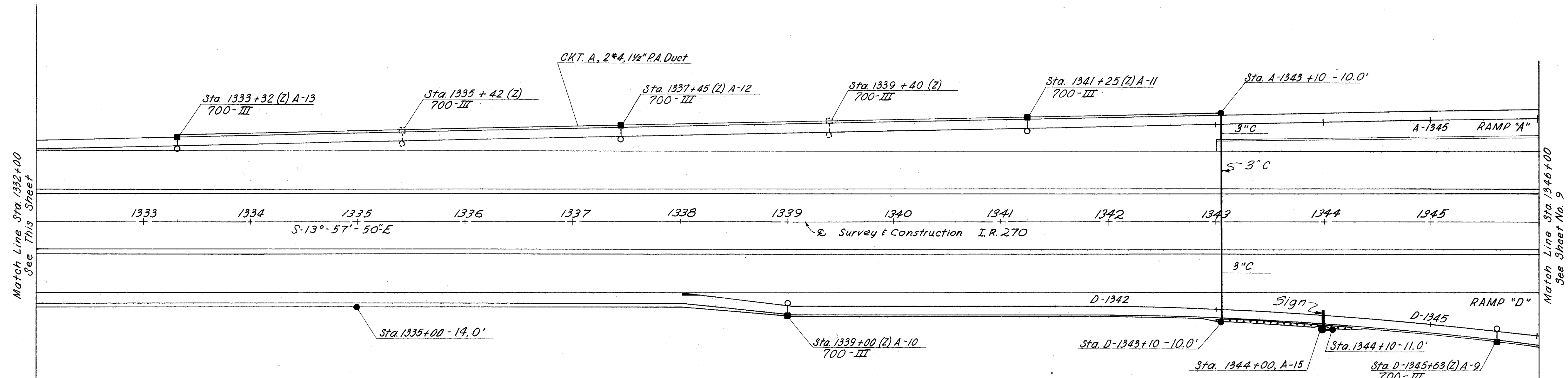
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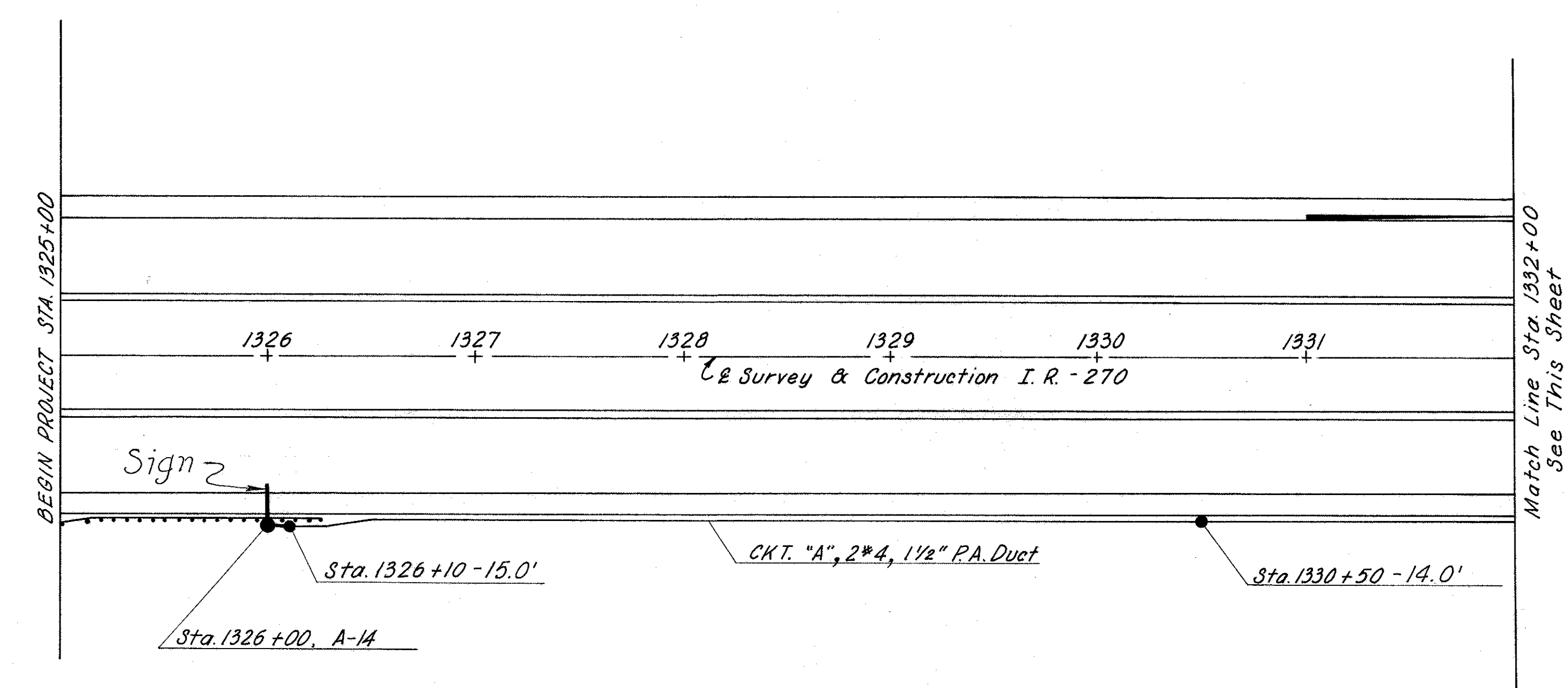


CIRCUIT WIRING DIAGRAM FOR MORSE ROAD INTERCHANGE



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 (11Ga) 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

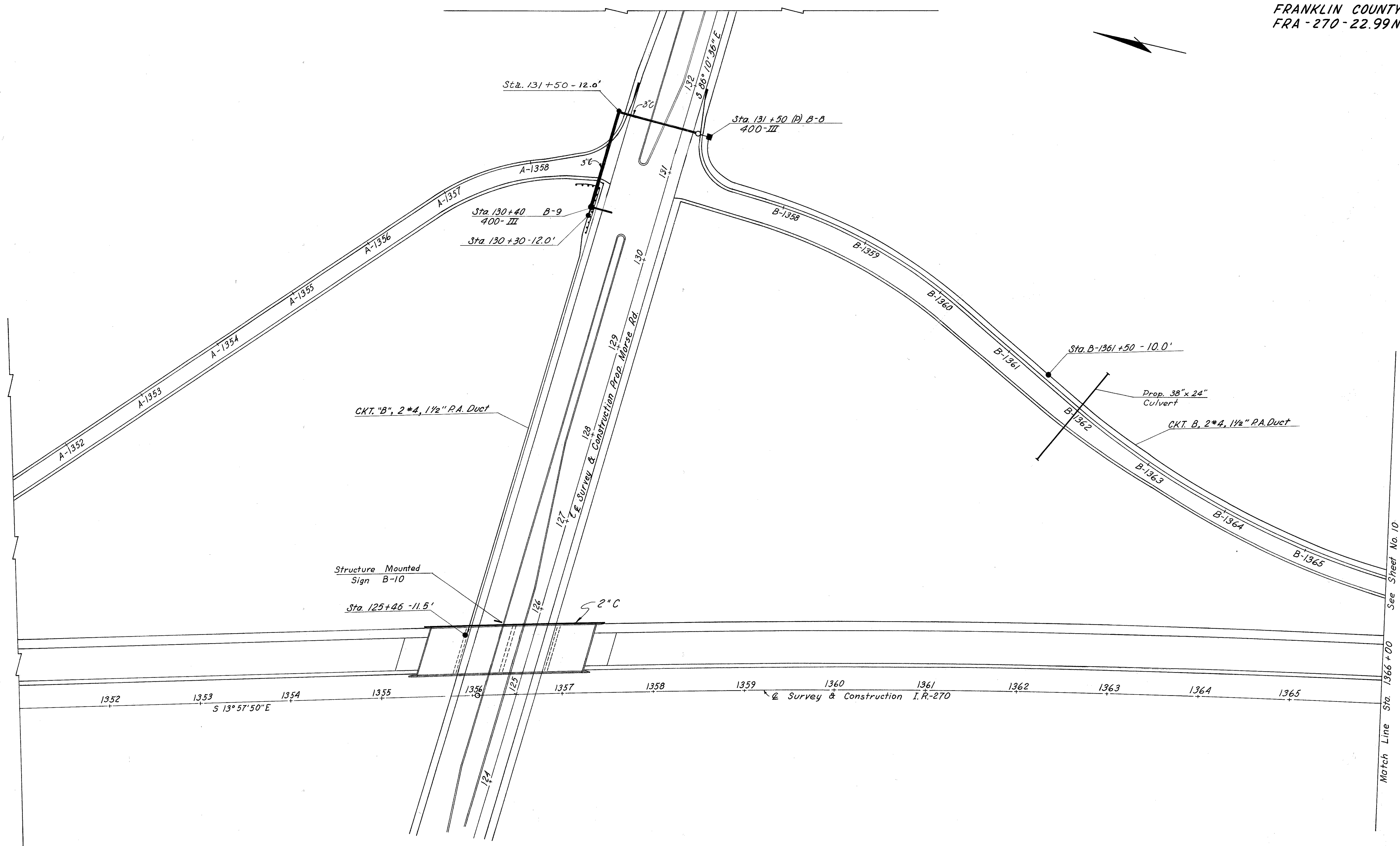


FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

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LIGHTING LAYOUT PLAN

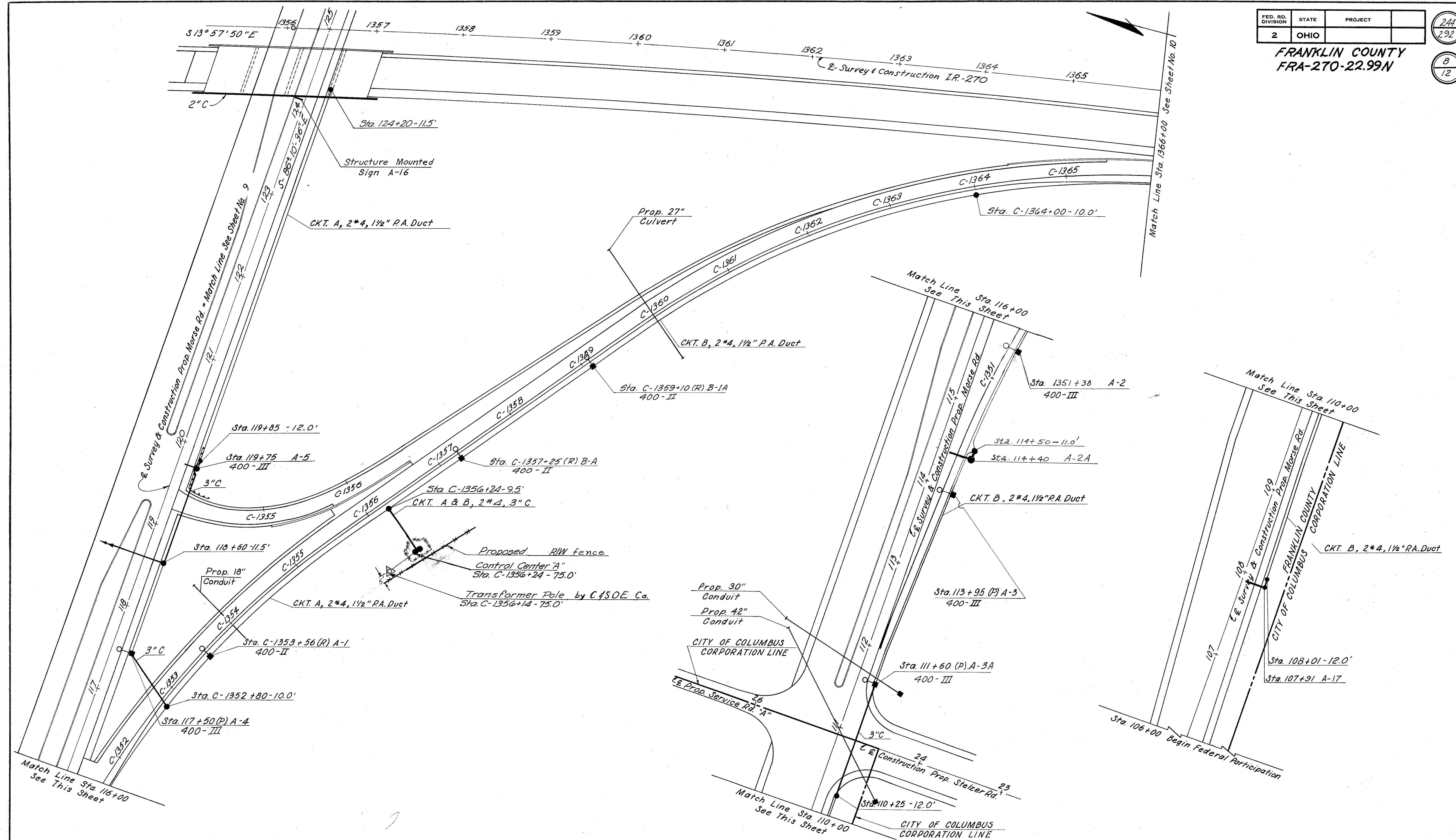
RAMP "A" & RAMP "B" MORSE ROAD INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

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292

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12



LIGHTING LAYOUT PLAN

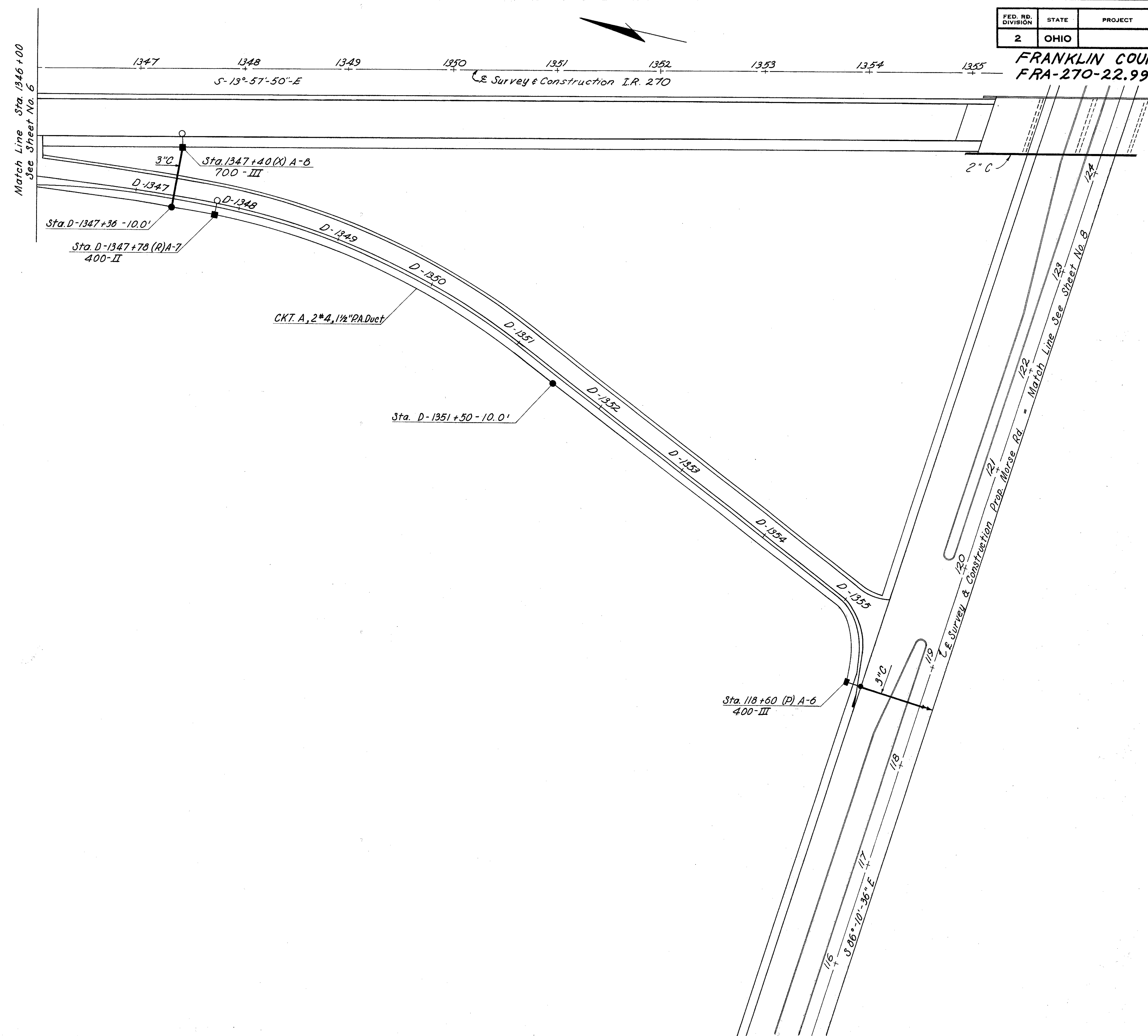
RAMP "C" MORSE ROAD INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

245
292

9
12



LIGHTING LAYOUT PLAN

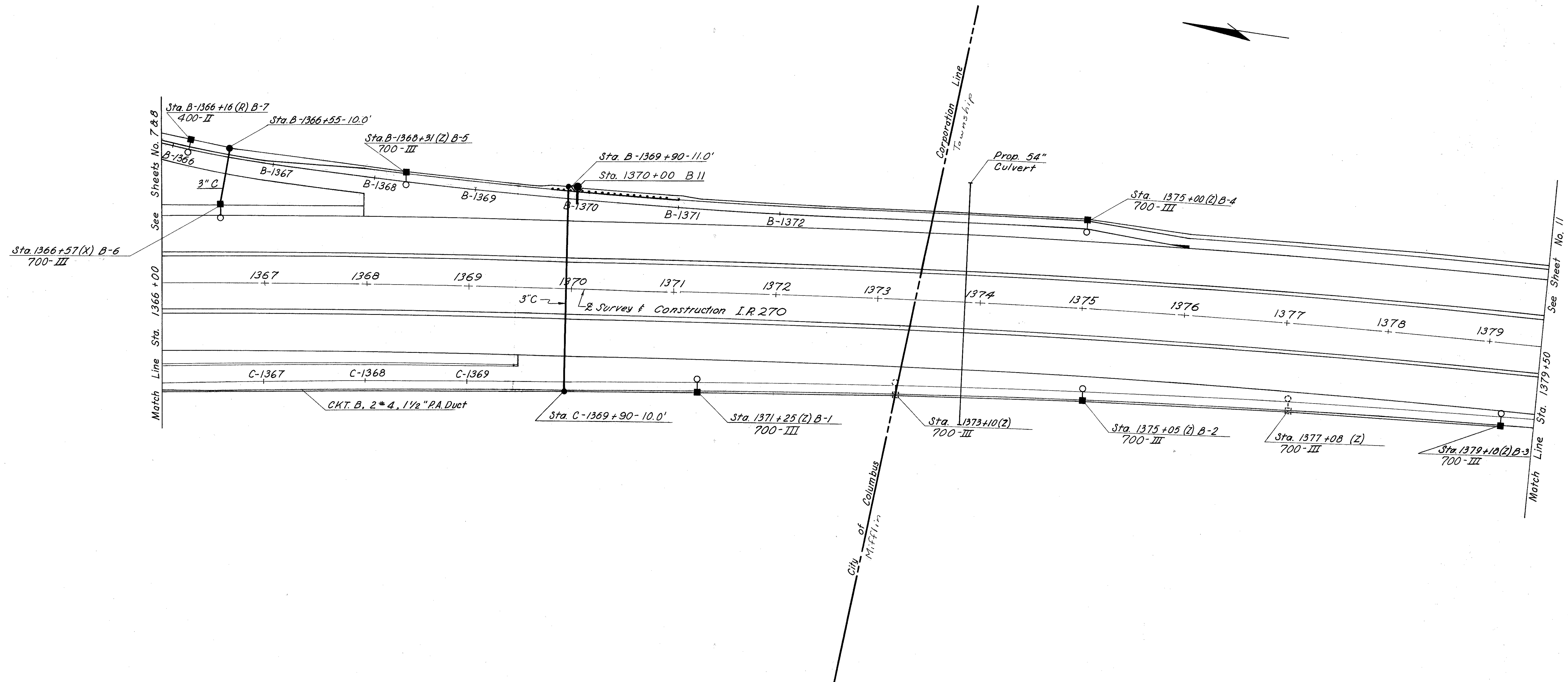
RAMP "D" MORSE ROAD INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

246
292

10
12



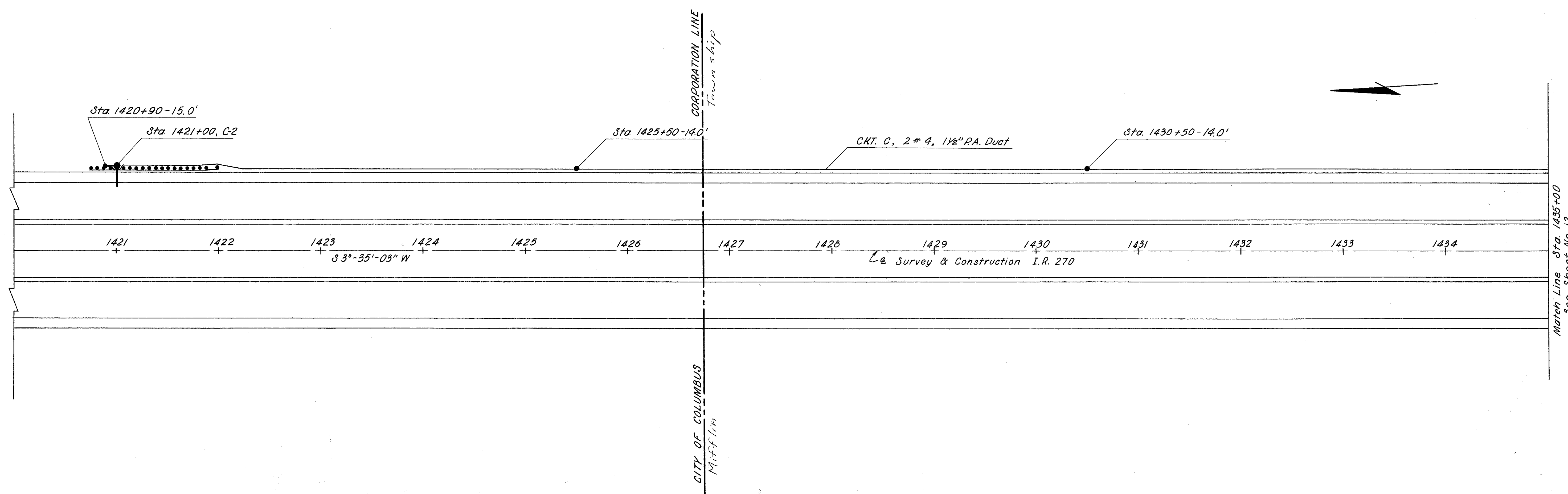
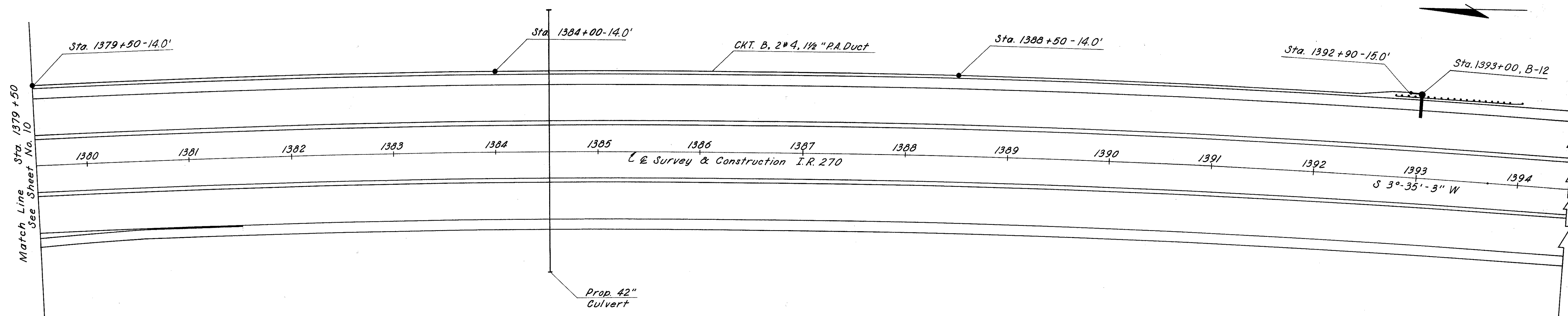
LIGHTING LAYOUT PLAN
STA. 1366+00 TO STA. 1379+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N

247
292

11
12



LIGHTING LAYOUT PLAN

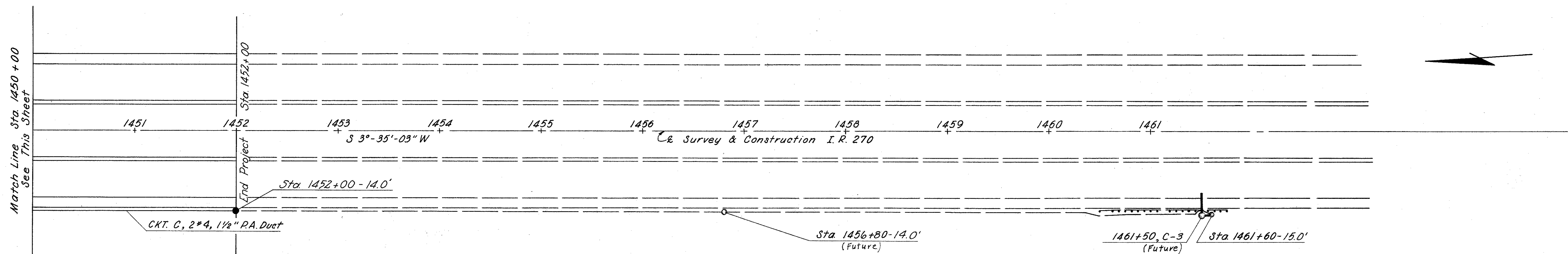
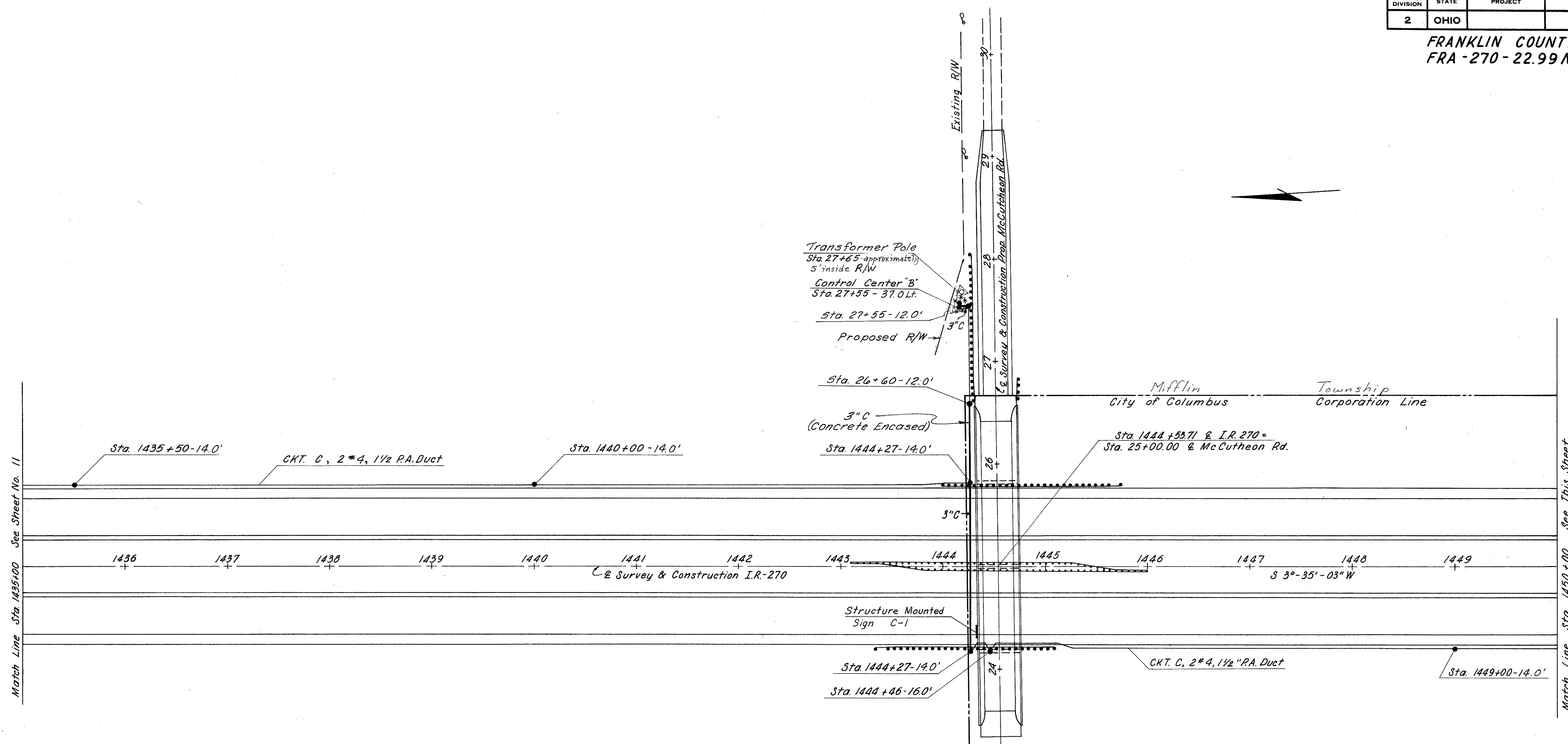
STA. 1379+50 TO STA. 1394+50 & STA. 1420+00 TO STA. 1435+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRANKLIN COUNTY
FRA -270-22.99 N

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292

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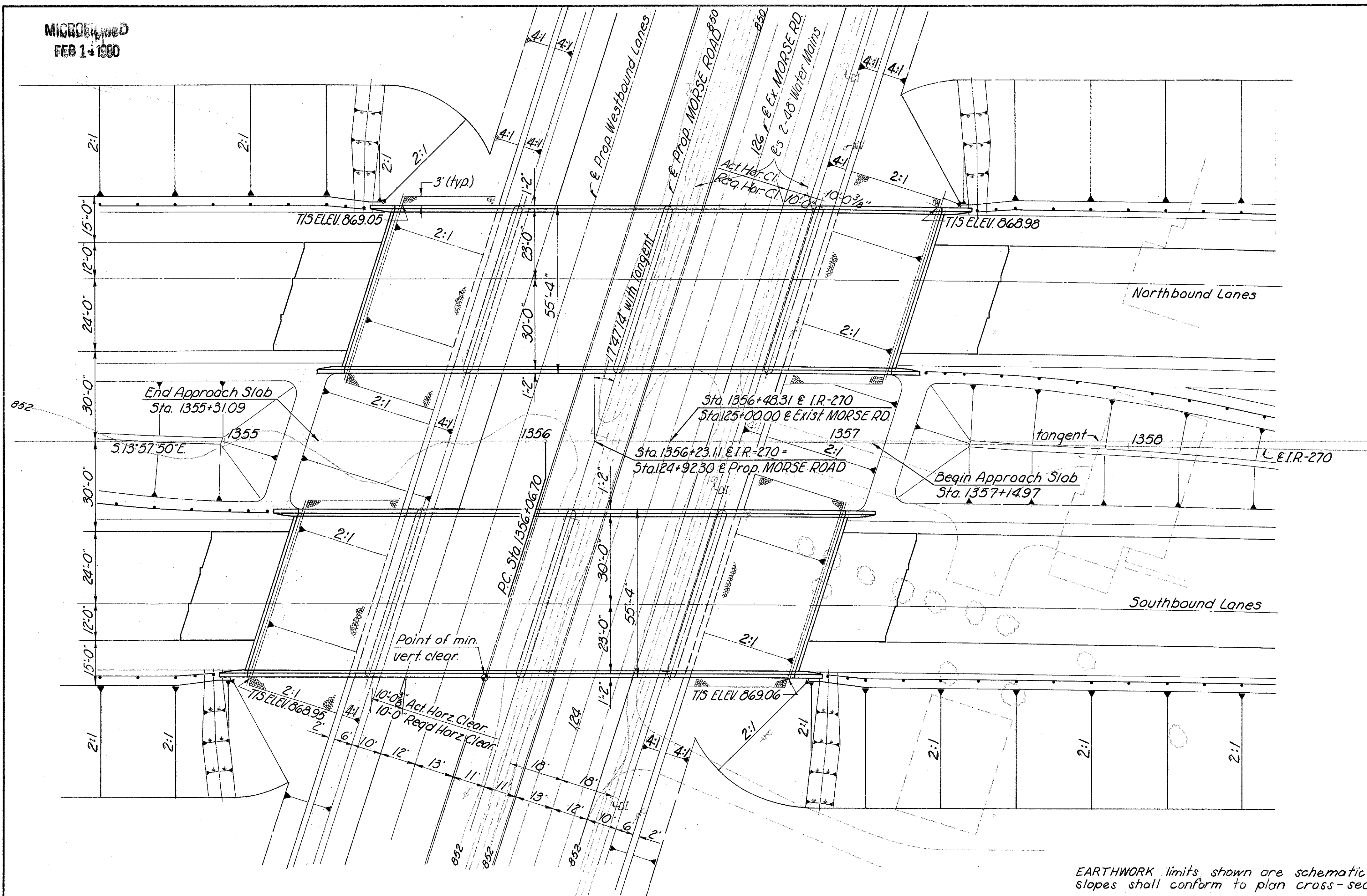
LIGHTING LAYOUT PLAN
STA. 1435+00 TO STA. 1462+00

MICROFILMED
FEB 14 1980

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

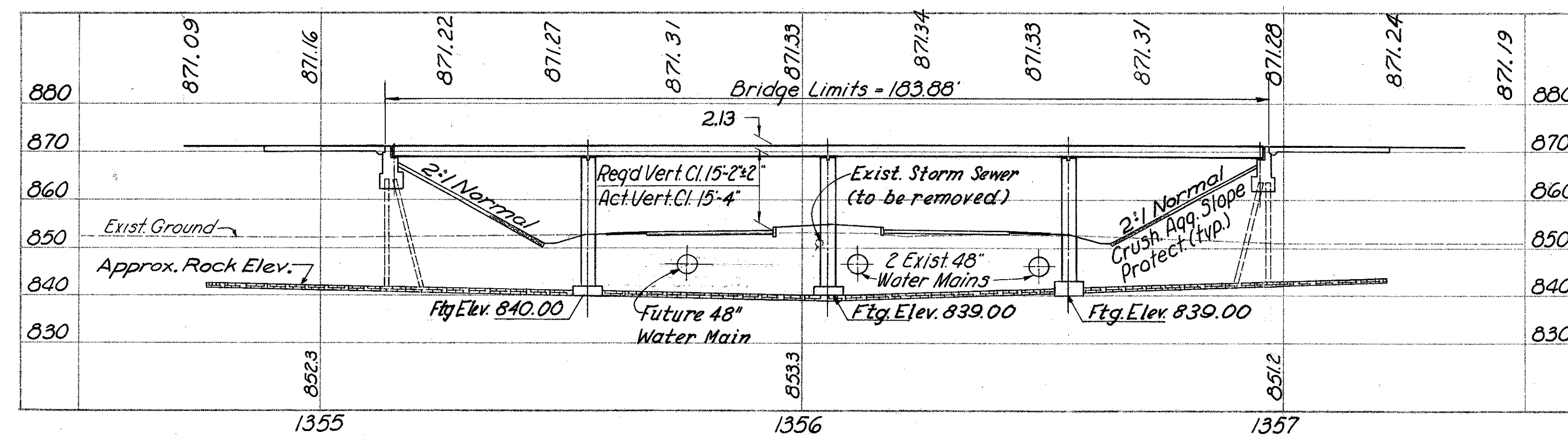
FRA. 270-22.99 N

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292



PLAN

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



PROFILE ALONG S. SOUTHBOUND LANES

HORIZ. CURVE DATA

Pt. Sta. 1375+01.68
 $\Delta = 17^{\circ}32'53''$
 $D_c = 0^{\circ}28'00''$ 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 U.C. = 1650'

Abutment Piles: 10BP42 Piles with 35 ton min. bearing capacity. Estimated pay length 23'.

PROPOSED STRUCTURE

TYPE: Continuous reinforced concrete slab with reinforced concrete substructure
SPANS: 40'-0", 49'-11", 49'-11", 40'-0" @ tangent
ROADWAY: 53'-0" w/ parapets with 1'-0" safety curbs
LOAD FREQUENCY: H5 20-44 adequate for AA540 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 Sta. 1355+09.32 I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBG	WLB		AM	JA	9/26/67	

MICROFILMED
FEB 14 1980

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRA 270-22.99 N

250
292

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 approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 507.05 is not less than the following value for a pile hammer of the indicated energy rating.

For The Abutment 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 impurities 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.

FRANKLIN ENGINEERING, LIMITED

COLUMBUS, OHIO

GENERAL PLAN, GENERAL NOTES

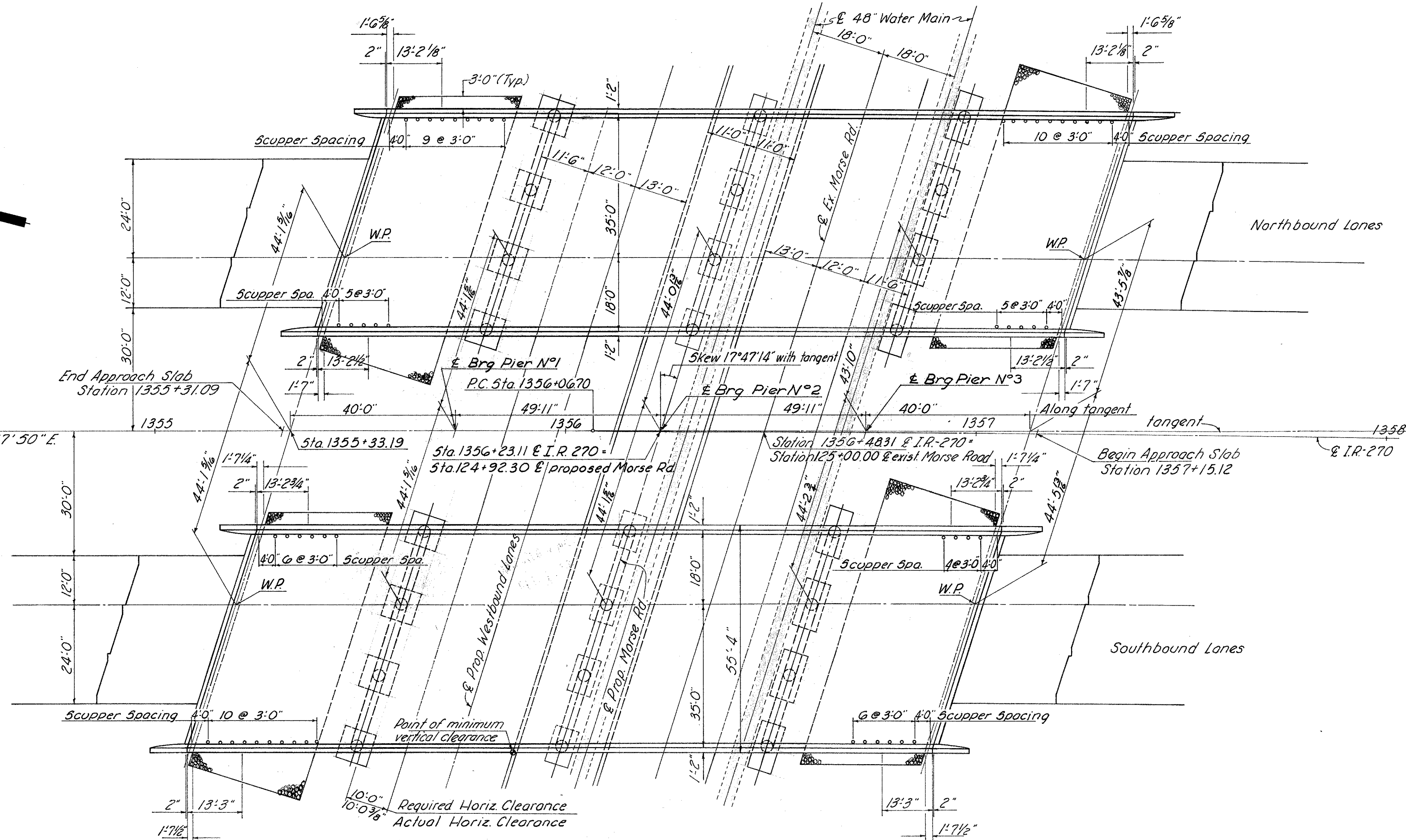
BRIDGE N° FRA-270-2356 N, L & R

OVER MORSE ROAD

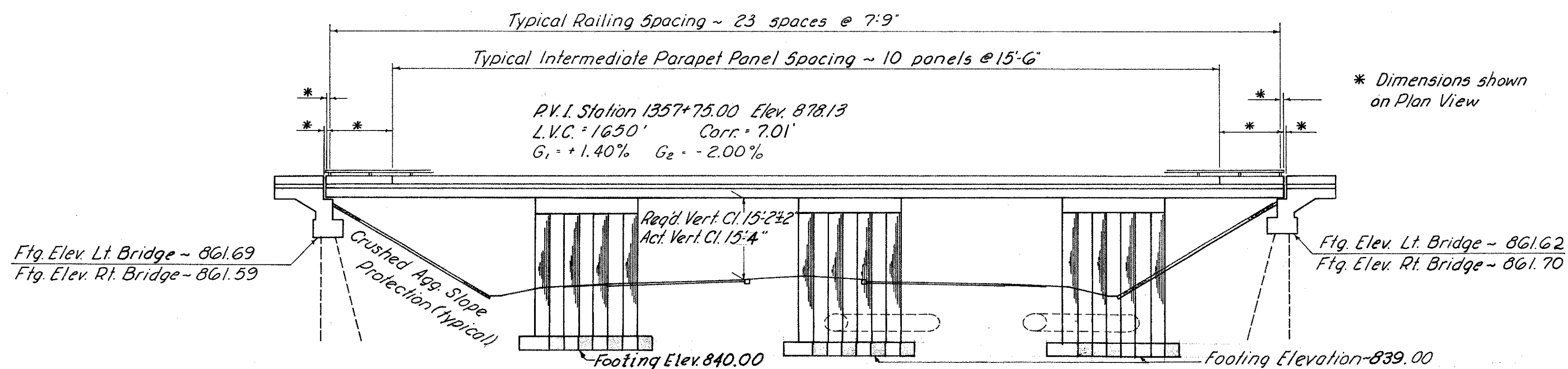
FRANKLIN COUNTY

I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G	NF		HY	EF	9/12-67	



GENERAL PLAN



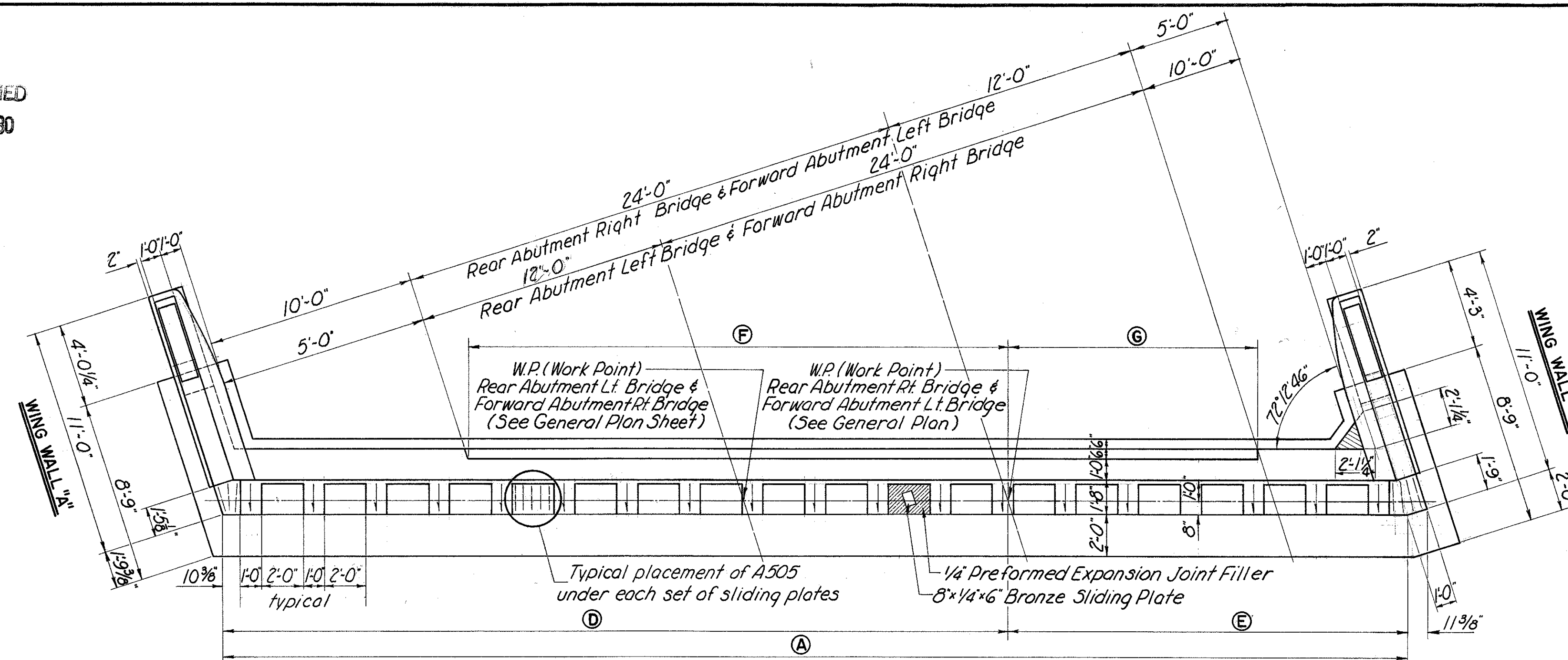
ELEVATION

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FEB 14 1980

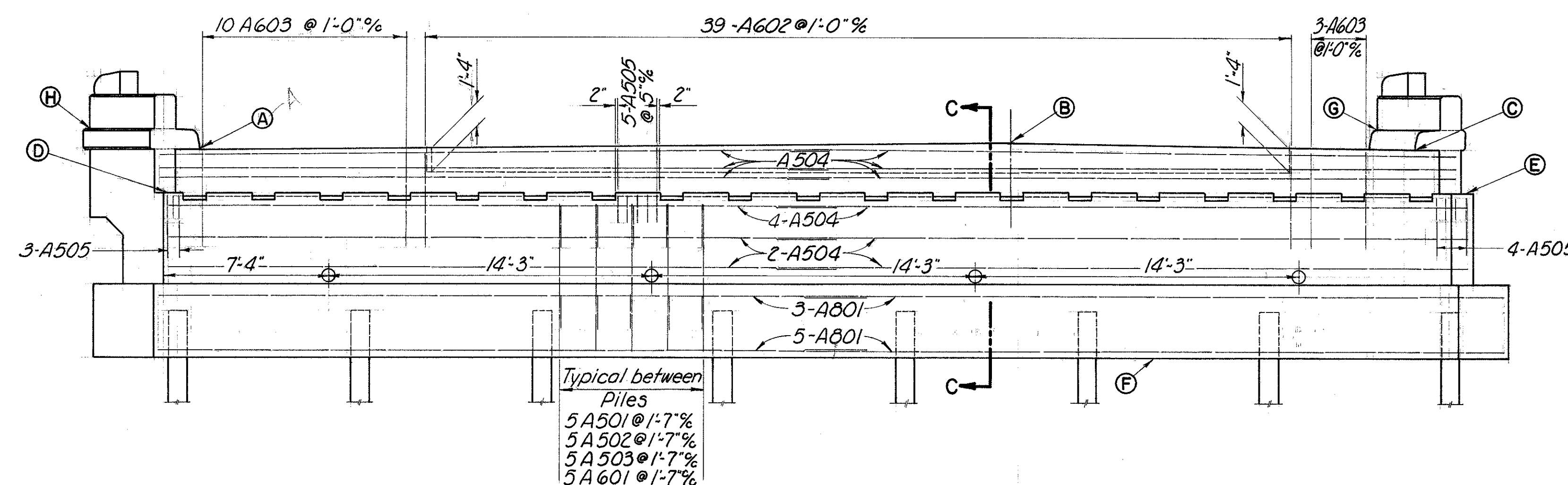
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRA-270-22.99N

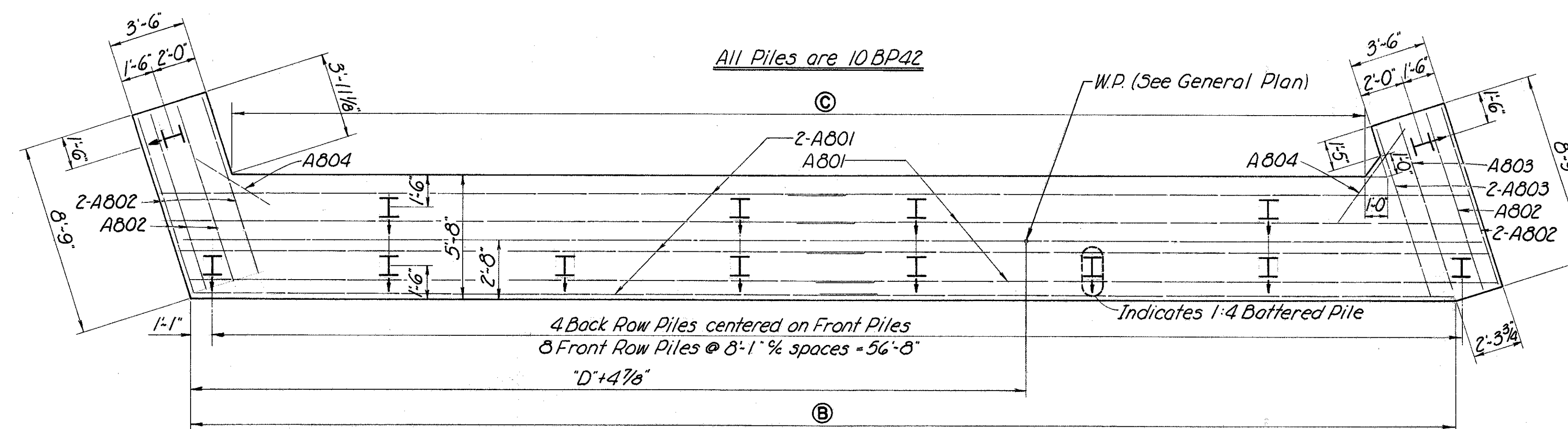
252
292



PLAN (Rear Abutment - Right Bridge Shown)

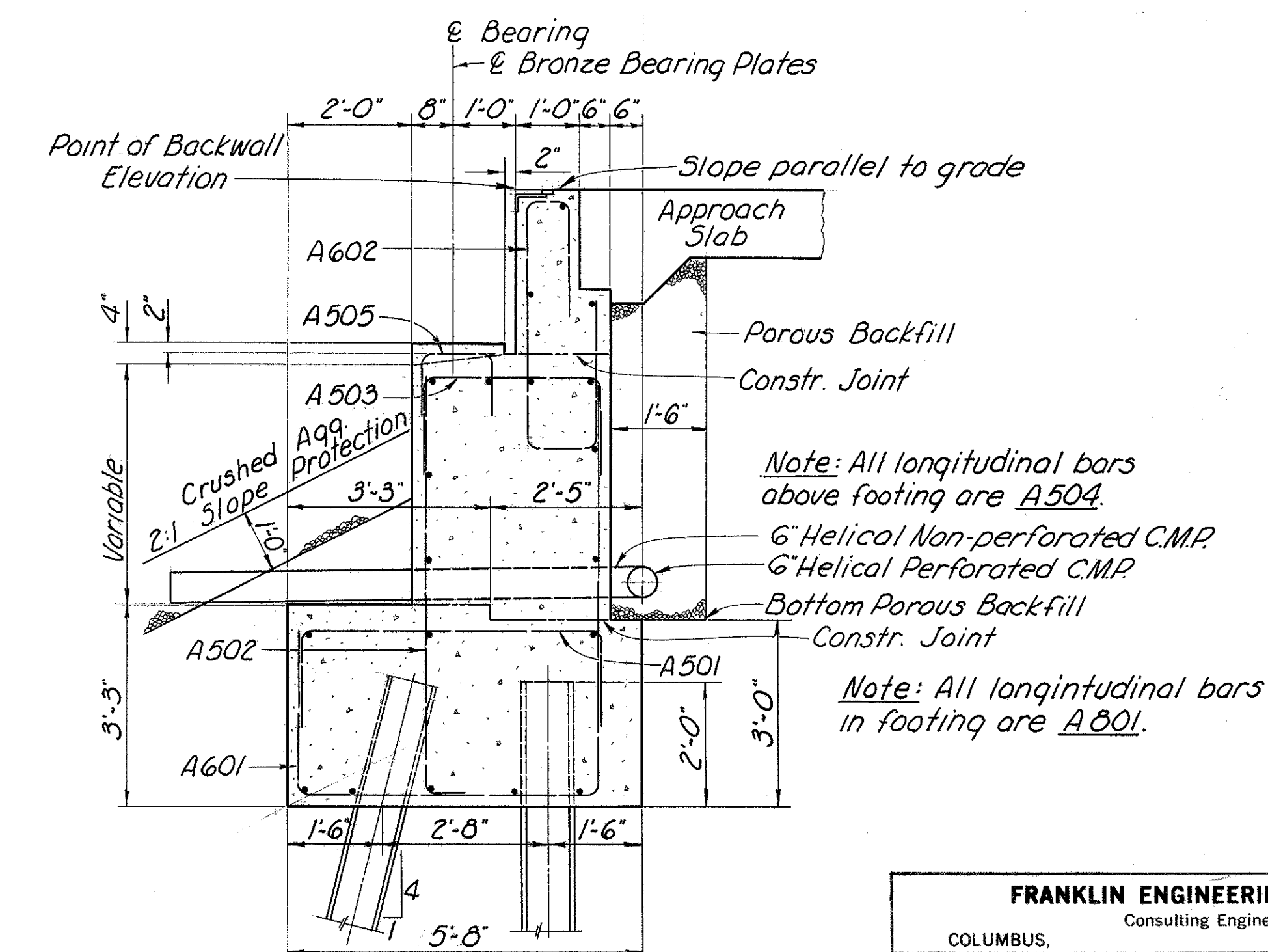


ELEVATION



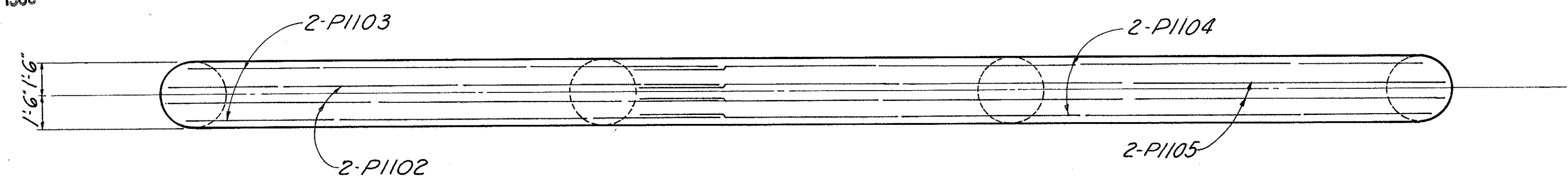
FOOTING PLAN

Structures	Dimensions							Elevations							
	A	B	C	D	E	F	G	A	B	C	D	E	F	G	H
Rear Abutment Left Bridge	56'-8 1/2"	57'-5 1/8"	51'-6 1/8"	19'-8 3/8"	36'-11 3/8"	13'-2 7/8"	24'-4 1/4"	871.18	871.45	870.94	869.29	869.05	861.69	871.78	872.01
Rear Abutment Right Bridge	56'-8 1/2"	57'-5 1/8"	51'-6 1/8"	37'-7 1/8"	19'-1 3/8"	25'-10 1/8"	11'-9 3/8"	870.84	871.40	871.14	868.95	869.25	861.59	871.98	871.67
For'd Abutment Left Bridge	56'-6 1/2"	57'-3 1/8"	51'-4 1/8"	37'-5 3/4"	19'-0 3/4"	25'-9 1/4"	11'-9 1/4"	870.87	871.43	871.17	868.98	869.28	861.62	872.01	871.70
For'd Abutment Right Bridge	56'-7"	57'-3 3/8"	51'-4 3/8"	19'-8 3/8"	36'-10 3/8"	13'-2 3/8"	24'-4 1/4"	871.20	871.47	870.95	869.31	869.06	861.70	871.80	872.04

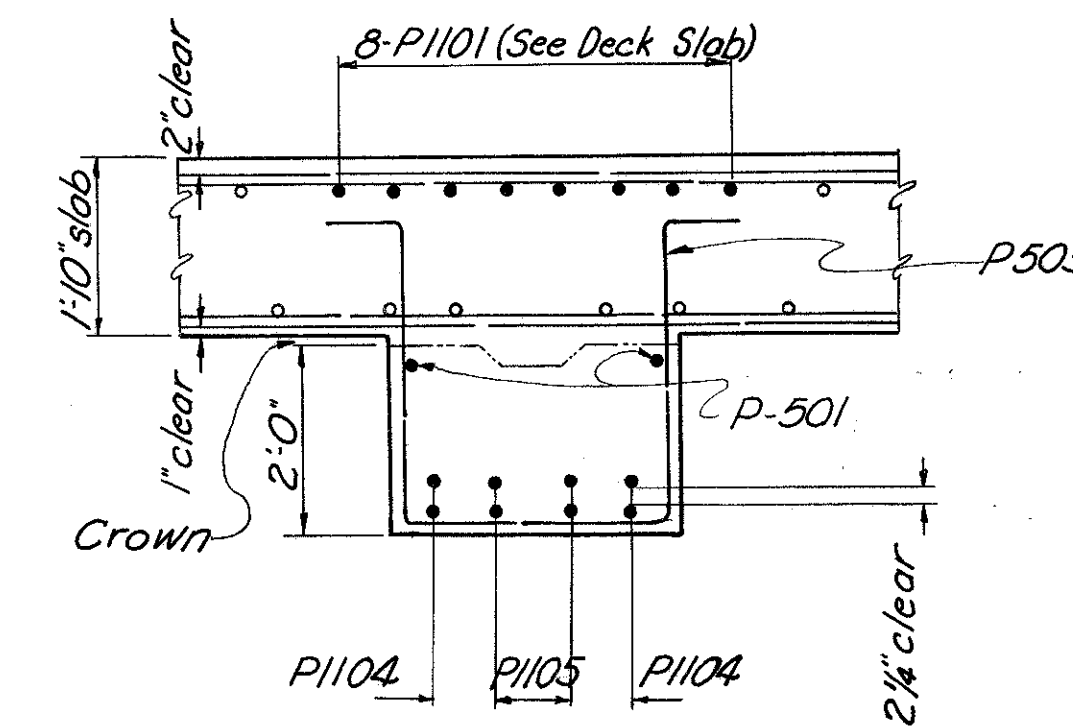


SECTION C-C

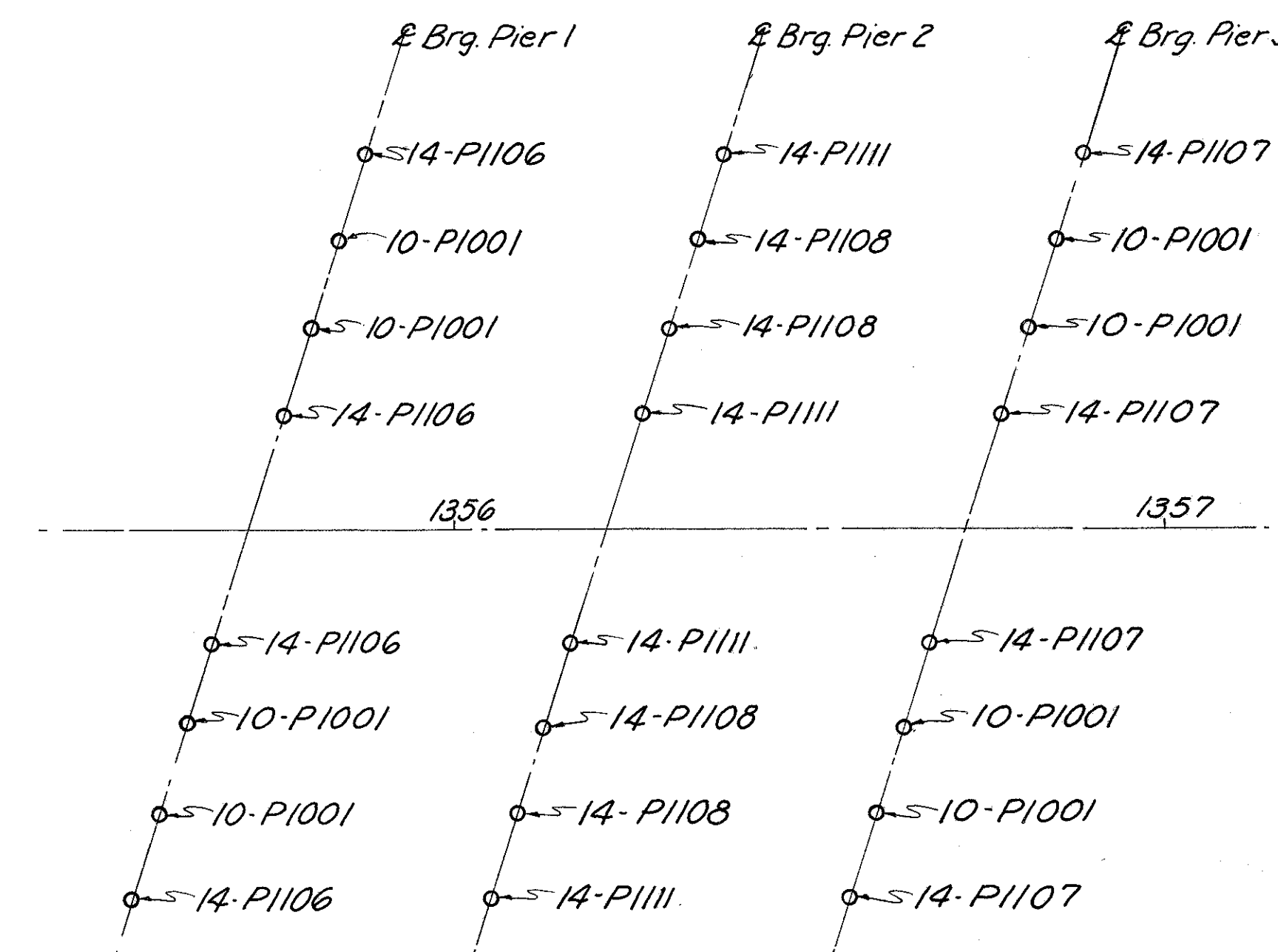
FRANKLIN ENGINEERING, LIMITED					
COLUMBUS,			Consulting Engineers		
			OHIO		
ABUTMENT DETAILS					
BRIDGE NO. FRA-270-2356 N.L.&					
over MORSE ROAD					
FRANKLIN COUNTY			Sta. 1355+09.32		I.R.-2
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
J.B.G.	W.L.B.		MM	SE	7/12-67



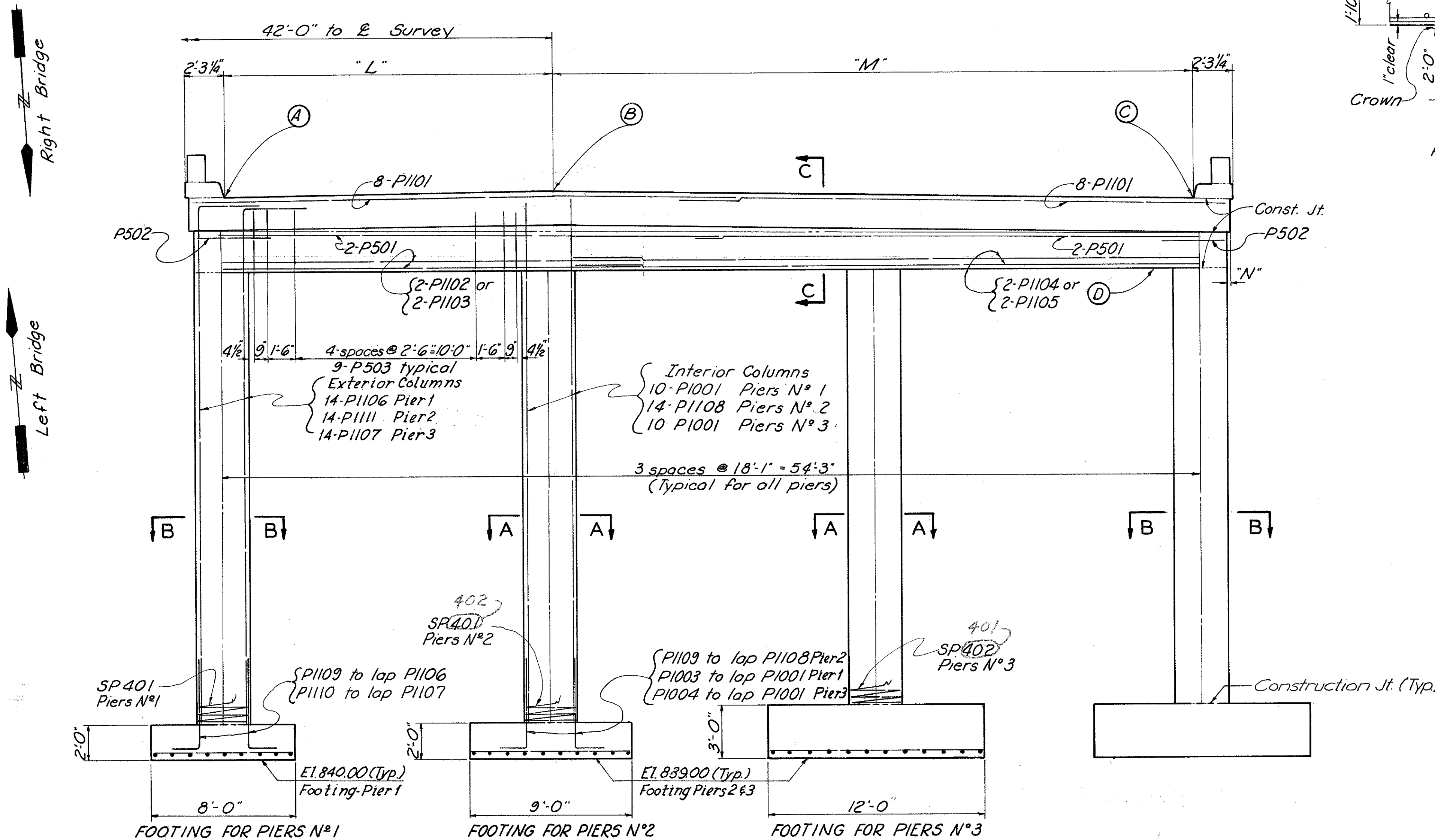
PLAN
Bottom Steel



SECTION-C-C

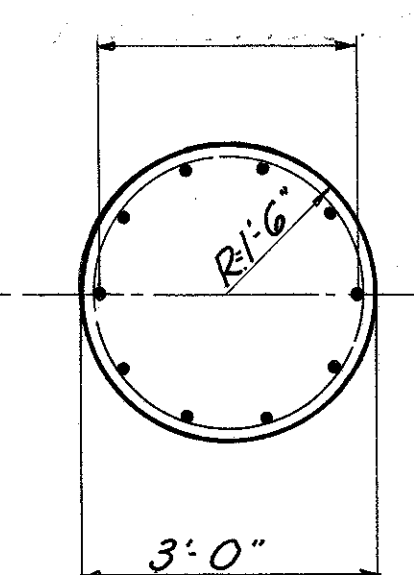


COLUMN STEEL



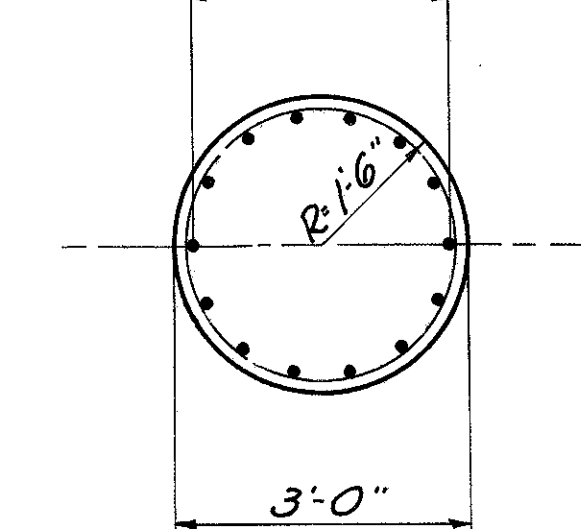
ELEVATION

10-P1001 Piers N°1&3

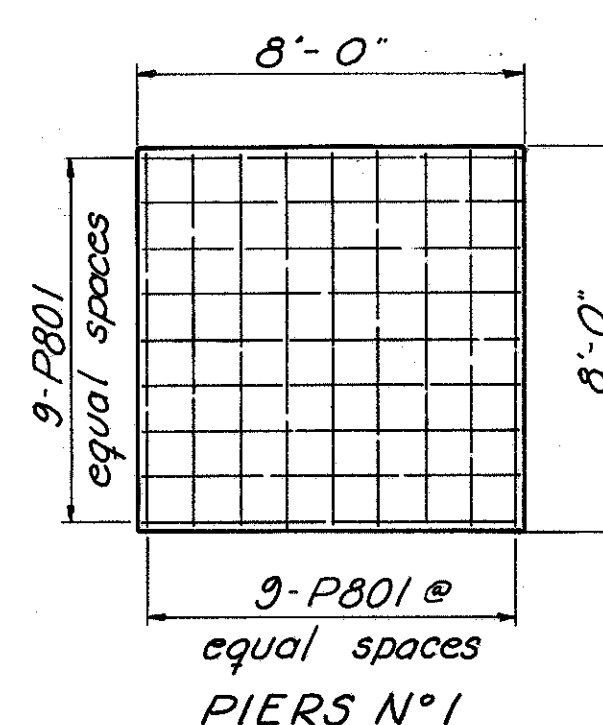


SECTION-A-A
(Piers N°1&3)

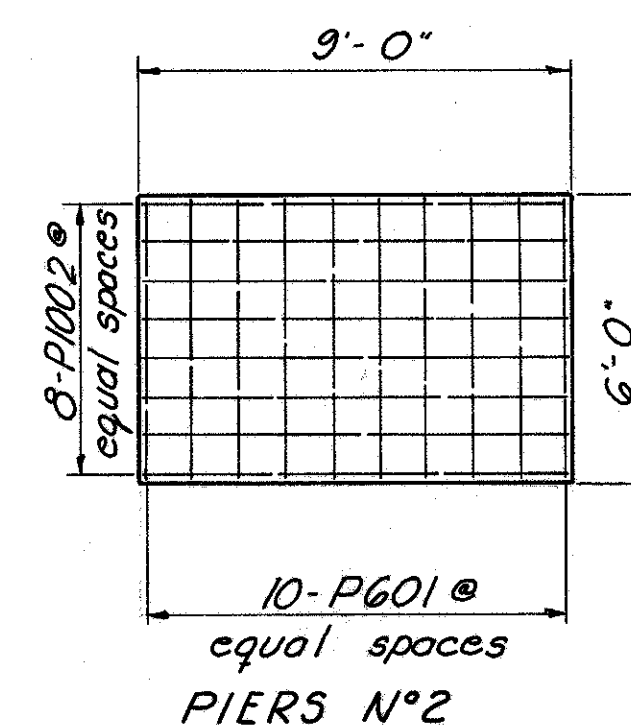
14-P1106 Piers N°1
14-P1111 Piers N°2
14-P1107 Piers N°3
14-P1108 Piers N°2 (Sect. A-A)



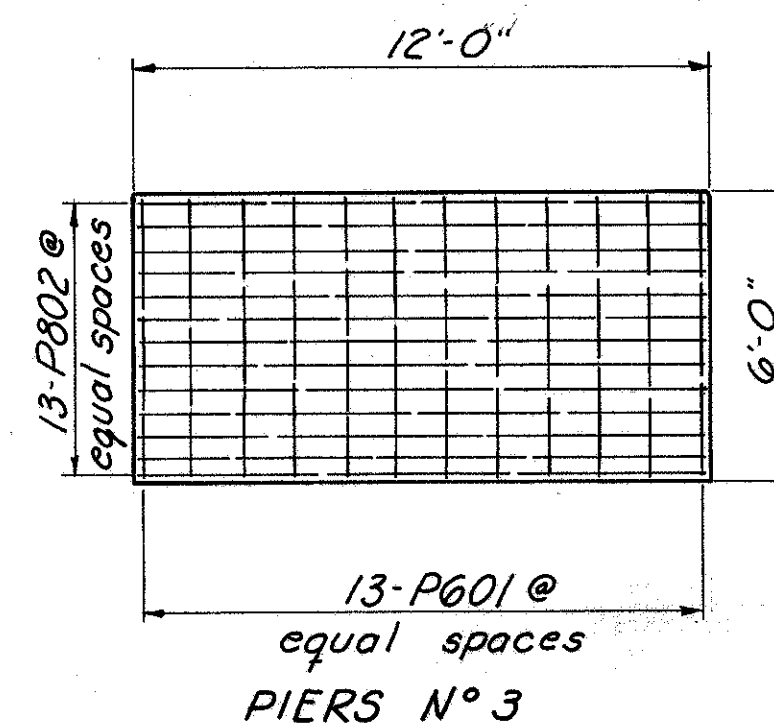
SECTION-A-A (Piers 2)
SECTION-B-B (All Piers)



PIERS N°1



PIERS N°2



PIERS N°3

TYPICAL FOOTINGS

	A	B	C	D	"L"	"M"	"N"
Pier N°1 Lt. Bridge	871.23	871.51	870.98	867.15	17'-10 1/4"	35'-8 1/2"	0'-3"
Pier N°1 Rt. Bridge	871.22	871.47	870.93	867.10	17'-10 1/4"	35'-8 1/2"	0'-3"
Pier N°2 Lt. Bridge	871.26	871.52	870.99	867.16	17'-10 1/4"	35'-8 1/2"	0'-2 1/4"
Pier N°2 Rt. Bridge	871.26	871.52	870.99	867.16	17'-10 1/4"	35'-8 1/2"	0'-3"
Pier N°3 Lt. Bridge	871.23	871.49	870.94	867.11	17'-9 3/4"	35'-7 1/2"	0'-2 1/4"
Pier N°3 Rt. Bridge	871.25	871.51	870.99	867.16	17'-10"	35'-8"	0'-2 1/4"

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

PIER DETAILS
BRIDGE N° FRA-270-2356N, L & R
OVER MORSE ROAD

FRANKLIN COUNTY I.R. 270

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.B.G.	J.B.G.		HM	J.B.G.	9/12/67	9-12-69

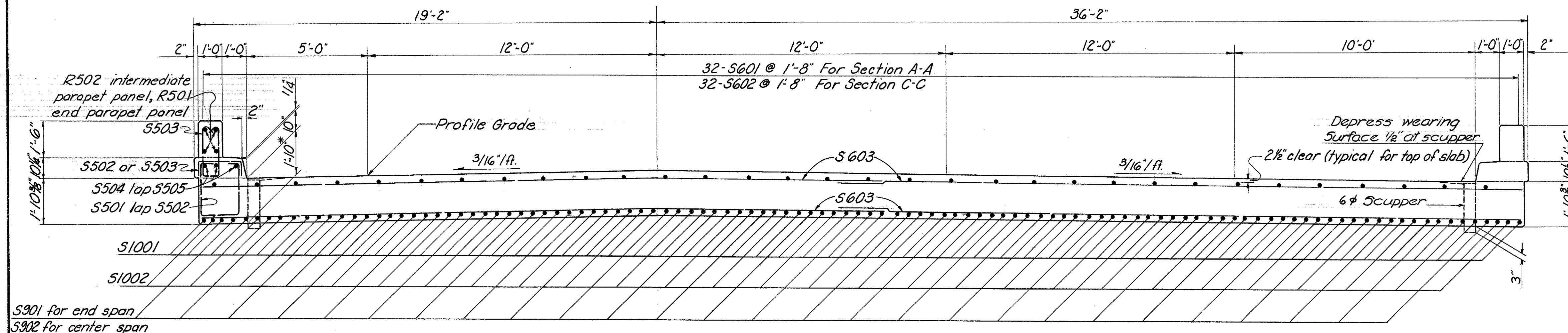
MICROFILMED
FEB 14 1980

*Which includes wearing
surface 1" monolithic

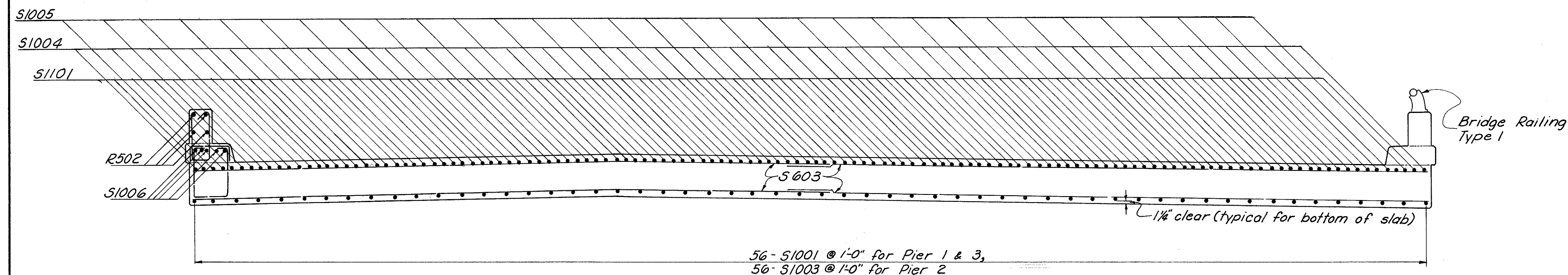
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRA-270-22.99 N

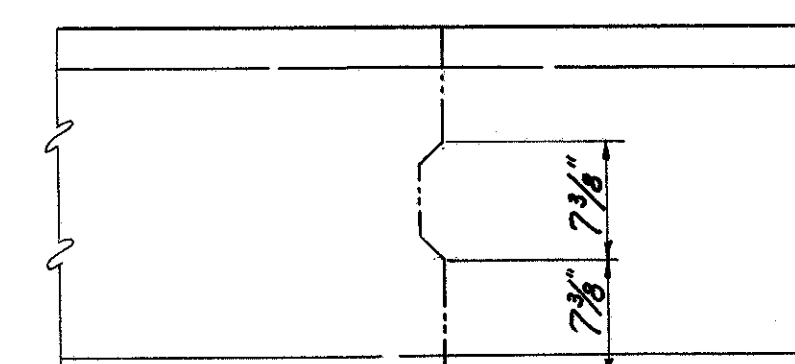
255
292



SECTION A-A & SECTION C-C



SECTION B-B & SECTION D-D



CONSTRUCTION JOINT

NOTES

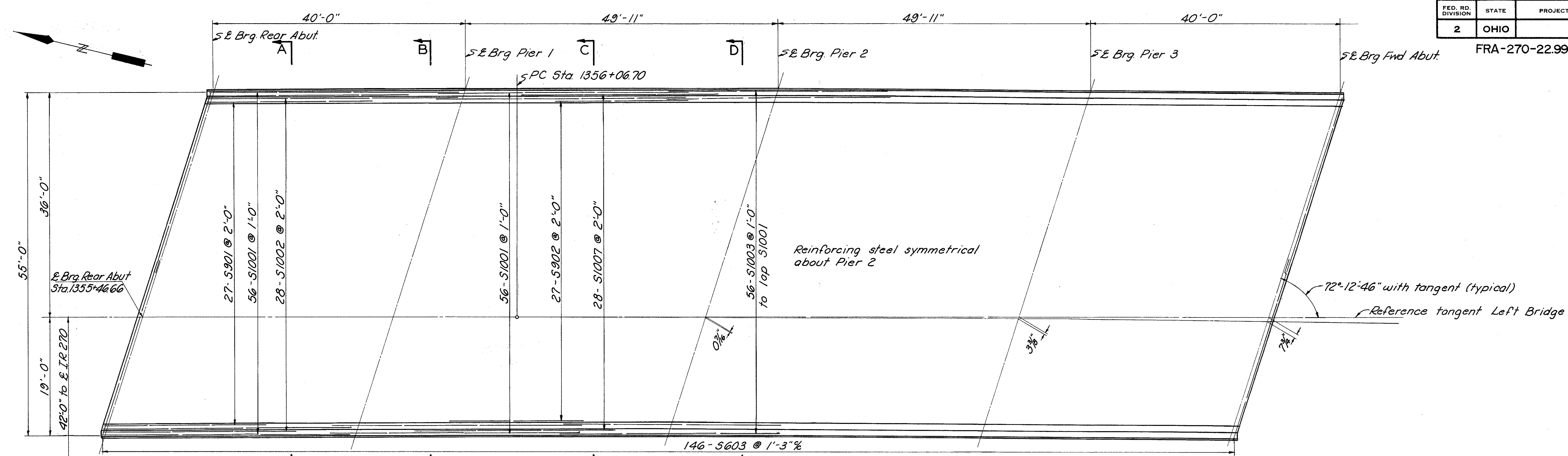
CONCRETE shall be class "C"

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 1/80 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 AASHTO specs. paragraph 2.4-18 falsework and centering

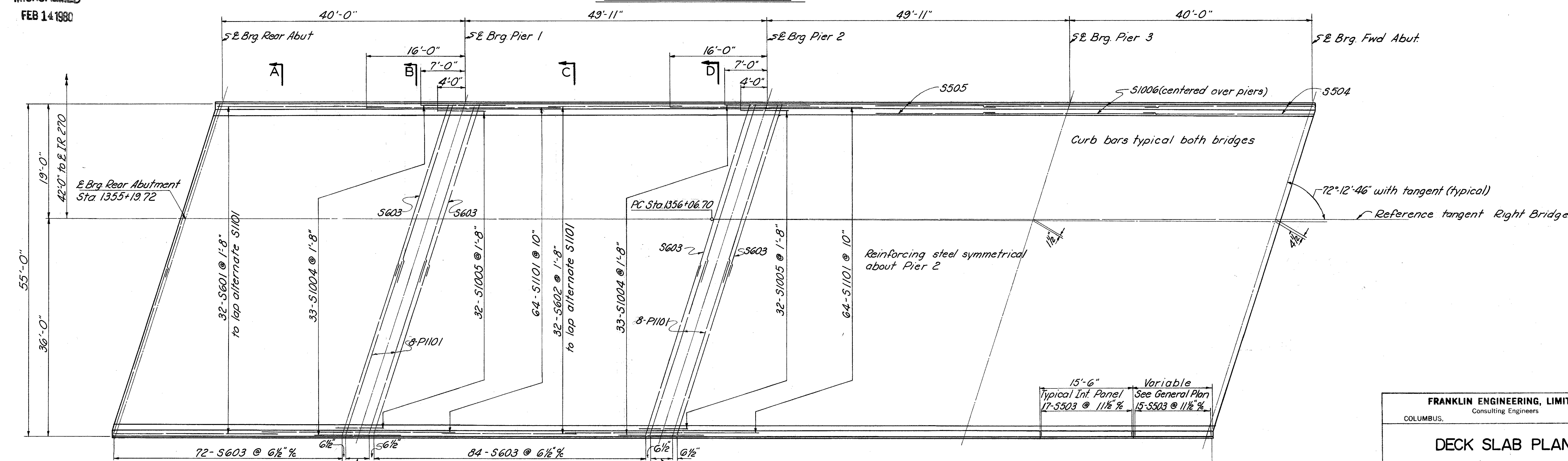
CURBS shall be placed after shoring under the slab has been released sufficiently to permit the slab spans to attain full dead load deflection.

FRANKLIN ENGINEERING, LIMITED						7
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.	J.F.		J.F.	J.F.	1/12-67	



PLAN VIEW LEFT BRIDGE

Reinforcing steel shown, bottom steel, same both bridges.

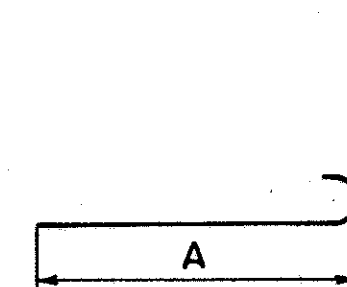


PLAN VIEW RIGHT BRIDGE

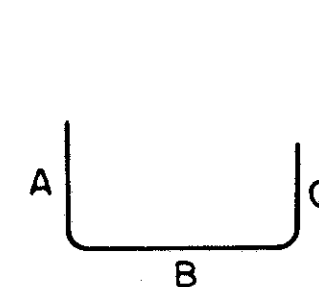
Reinforcing steel shown, top steel, same both bridges

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.	J		JF	JF	9/12/67	

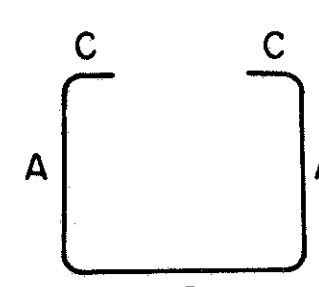
FRA 270-22.99N



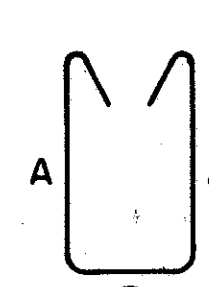
TYPE I



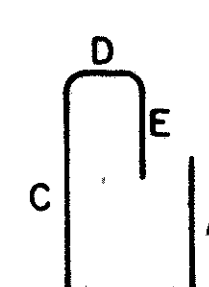
TYPE 2



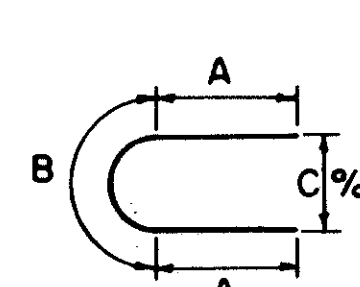
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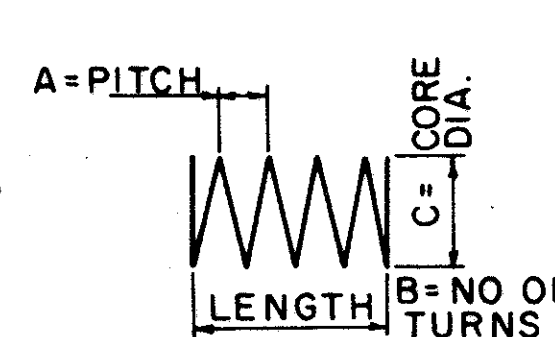
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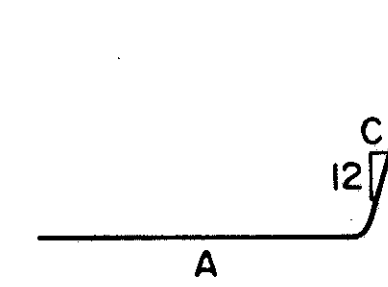
TYPE 5



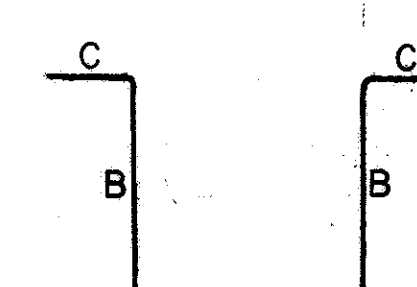
TYPE 6



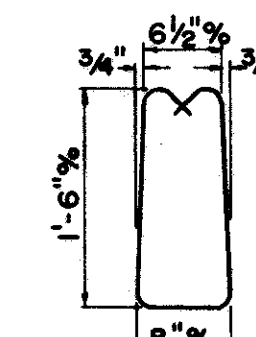
TYPE 7



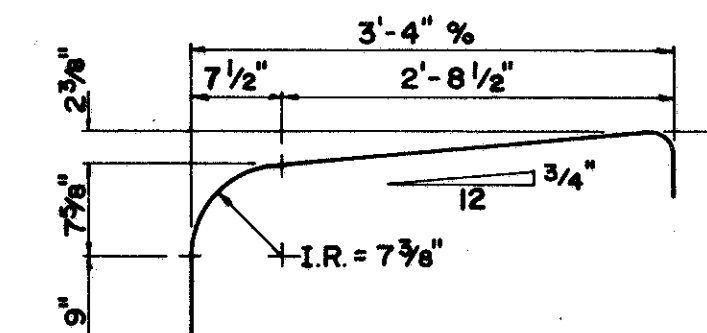
TYPE 8



TYPE 9



TYPE 10



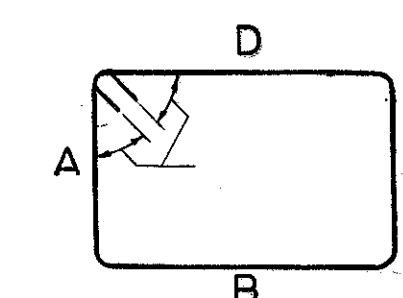
TYPE II

NOTES:

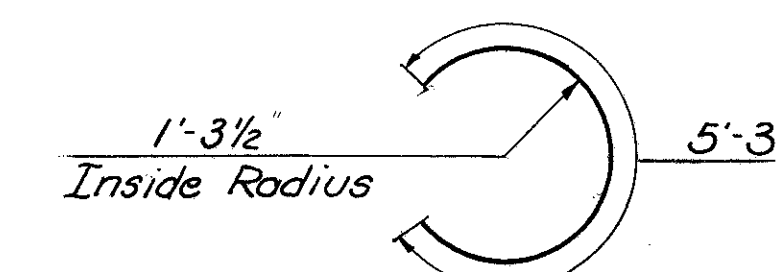
BAR SIZE: The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is a No.5 size bar and P1101 is a No.11 size bar.

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. 1V2 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

ABUTMENTS										PIERS										SUPERSTRUCTURES									
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A801	64	31'-1"	Str						5311											S1101	384	32'-0"	Str.						65,286
A802	36	8'-3"	Str.						809																				
A803	12	8'-0"	Str						256																				
A804	8	4'-0"	Str						85	P1101	96	30'-8"	Str.						15,642										
										P1102	24	23'-0"	Str.						2,933	S1001	448	40'-0"	Str.						77,110
										P1103	24	24'-3"	Str.						3,092	S1002	112	32'-5"	I	31'-0"					15,623
A601	140	13'-11"	2	2'-10"	4'-10"	6'-7"			2,926	P1104	24	34'-10"	Str.						4,442	S1003	112	34'-2"	Str.						16,466
A602	156	9'-2"	5	2'-4"	1'-2"	3'-11"	8"	1'9"	2,148	P1105	24	36'-1"	Str.						4,601	S1004	198	14'-0"	Str.						11,928
A603	52	8'-8"	2	3'-11"	1'-2"	3'-11"			677	P1106	56	31'-8"	2	3'-7"	28'-5"	O"		9,422	S1005	192	8'-0"	Str.						6,609	
A604	40	19'-10"	2	9'-6"	1'-2"	9'-6"			1,192	P1107	56	31'-8"	2	3'-7"	27'-5"	O"		9,122	S1006	60	28'-0"	Str.						7,229	
A605	16	10'-0"	2	9'-6"	8"	0"			240	P1108	56	29'-5"	Str.					8,752	S1007	112	31'-0"	Str.						14,940	
										P1109	168	6'-5"	2	1'-6"	5'-3"	O"		5,728											
										P1110	56	7'-5"	2	1'-6"	6'-3"	O"		2,207											
										P1111	56	32'-8"	2	3'-7"	29'-5"	O"		9,719											
A501	140	7'-9"	2	1'-7"	4'-10"	1'-7"			1,132											S901	108	27'-3"	I	26'-0"					10,007
A502	140	7'-1"	2	8"	6'-7"	0"			1,034											S902	108	21'-0"	Str.						7,711
A503	140	6'-3"	2	1'-10"	2'-10"	1'-10"			913																				
A504	88	29'-5"	Str.						2,700																				
A505	388	2'-11"	2	1'-0"	1'-2"	1'-0"			1,180																				
A506	56	11'-10"	12	2'-7"	3'-2"	2'-7"	3'-2"		691																				
A507	16	7'-3"	2	6"	6'-11"	0"			121	P1001	80	28'-5"	Str.						9,782										
A508	16	3'-6"	Str						58	P1002	64	8'-8"	Str.						2,387	S601	128	26'-7"	Str						5,111
A509	24	5'-8"	Str						142	P1003	40	6'-0"	2	1'-5"	4'-11"	O"			1,033	S602	128	21'-9"	Str.						4,182
A510	24	5'-5"	Str.						136	P1004	40	7'-0"	2	1'-5"	5'-11"	O"			1,205	S603	1832	29'-8"	Str.						81,634
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											S501	800	6'-5"	3	2'-3"	1'-6"	0'-6"			5354
A516	4	8'-9"	Str.						37											S502	800	2'-7"	2	0'-8"	1'-6"	0'-8"			2,155
A517	4	8'-5"	Str.						35											S503	800	5'-7"	4	2'-2"	0'-8"			4,658	
A518	4	8'-10"	Str.						37	P801	144	7'-8"	Str.						2,948	S504	24	28'-3"	Str						707
A519	4	9'-2"	Str.						38	P802	104	11'-8"	Str.						3,240	S505	24	25'-1"	Str.						628
A520	48	5'-7"	4	2'-2"	8"				280																				
A521	16	7'-9"	2	3'-5"	1'-2"	3'-5"			129										1,566										
A522	8	6'-2"	2	3'-5"	1'-2"	1'-10"			51	P601	184	5'-8"	Str.																
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 3'-5 1/2 2'-2	②	2	①	1'-4"	①			234																				
										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"			16,90										
R503	24	4'-2"	10						*											R501	32	12'-11"	Str						*
R504	16	5'-4"	11						*											R502	160	15'-2"	Str.						*
R505	8 1/16	8'-11"	Str.						*																				
R506	8 1/16	8'-7"	Str.						*																				
										SP401	16	25'-1"	7	4 1/2	70	32			7,270										
										SP402	8	24'-1"	7	4 1/2	67	32			3,478	RE1101	8	8'-7"	Str						
																			3,868	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						
																		</											

- ① Varies from 1'-7" to 10" by 3" Incr.
- ② Varies from 4'-3" to 2'-9" by 6" Incr.

[illegible]

RE1101	8	8'-7"	3
RE1001	9	8'-3"	3
RE901	1	7'-10"	3
RE801	1	7'-6"	3
RE601	5	6'-11"	3
RE501	2	6'-7"	3
RE401	1	6'-3"	1

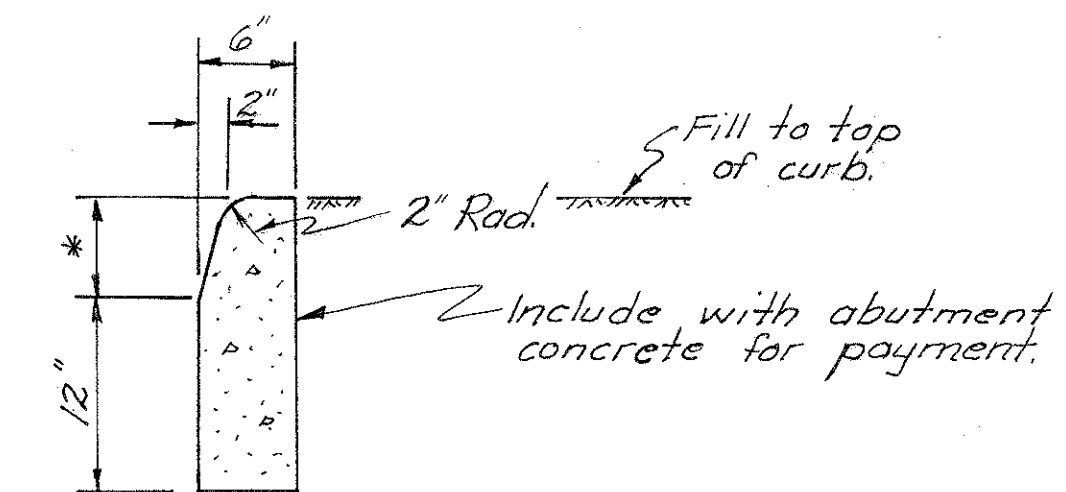
FRANKLIN ENGINEERING, LIMITED						9/4
Consulting Engineers						
COLUMBUS,						OHIO
REINFORCING STEEL BRIDGE N° FRA-270-2356N L&R OVER MORSE ROAD						
FRANKLIN COUNTY						IR 270
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
<i>[Signature]</i>	<i>[Signature]</i>		<i>HM</i>	<i>JK</i>	9/12-67	9/12-67 11-5-67

MICROFILMED
FEB 14 1990

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

FRA.270-22.99 N

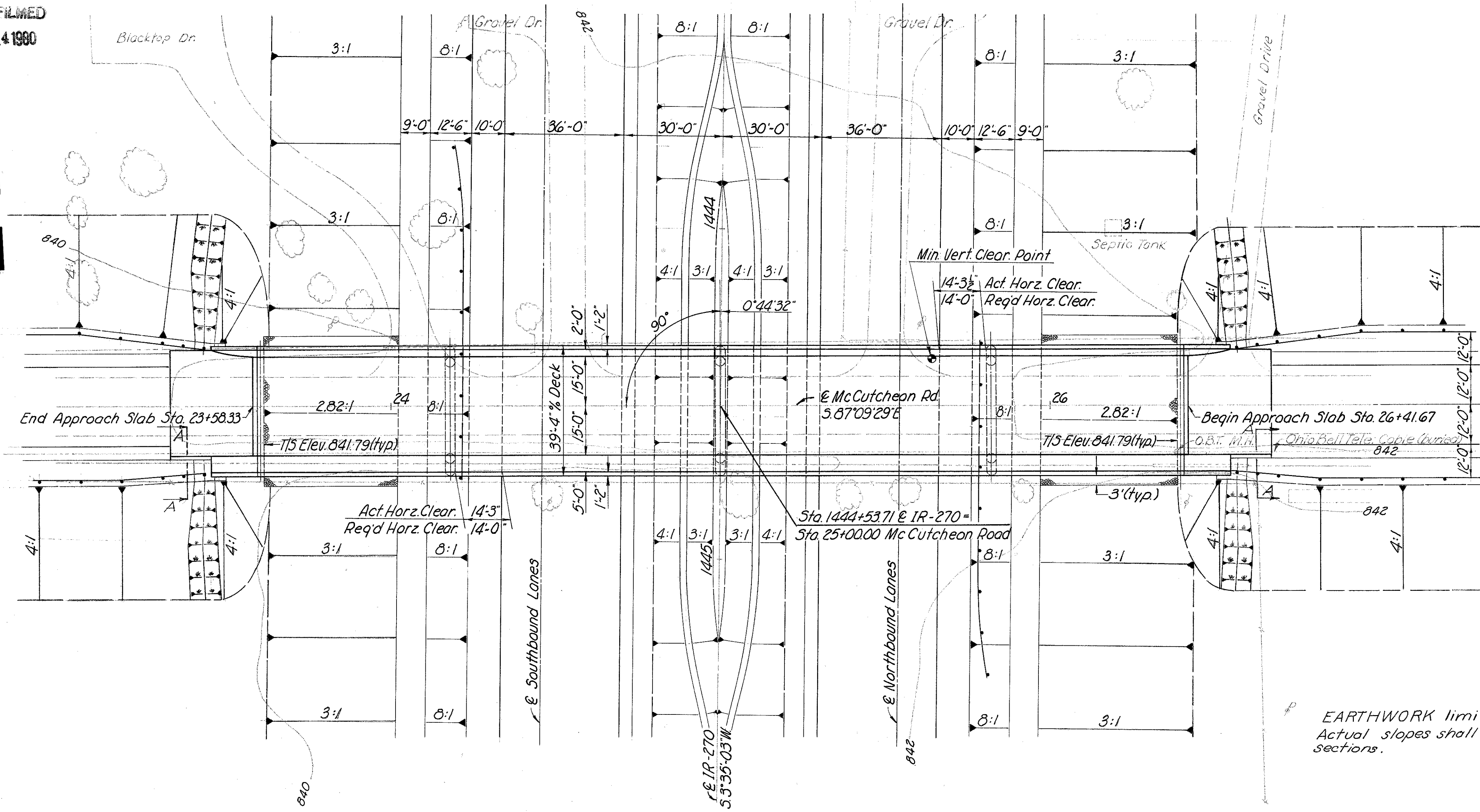
258
292



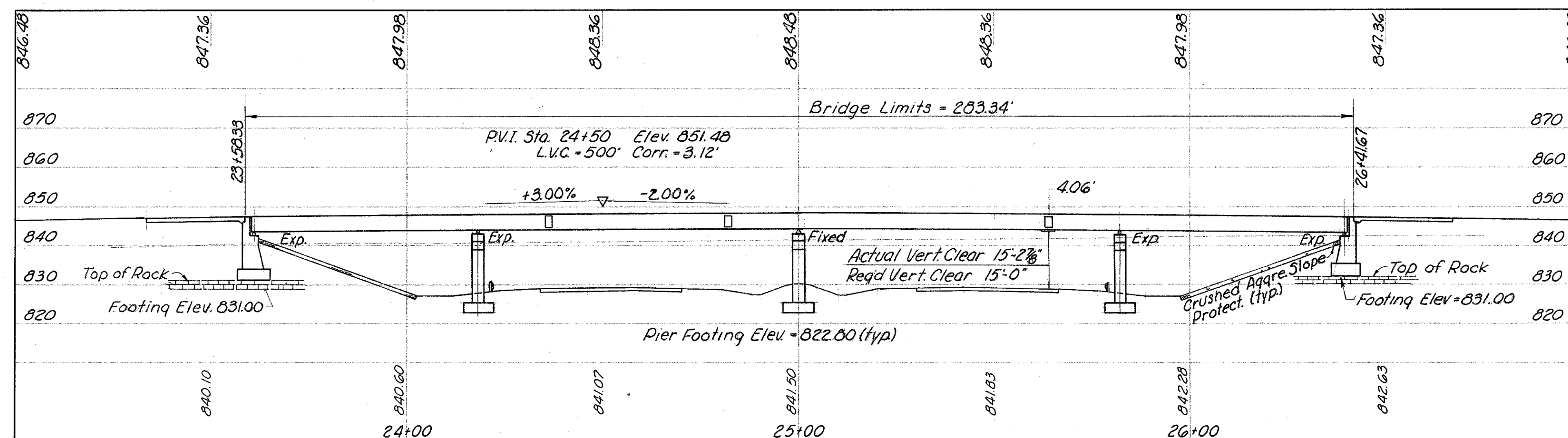
* Varies from 10" at sidewalk to 2" at end of approach slab.

SEC. A-A

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



PLAN



PROFILE ALONG McCUTCHEON ROAD

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck & substructure
SPANS: 57'-5", 82'-0", 82'-0", 57'-5"
ROADWAY: 30'-0" fl/curb w/2'-0" safety curb & 5'-0" sidewalk
LOAD FREQUENCY: AASHTO 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

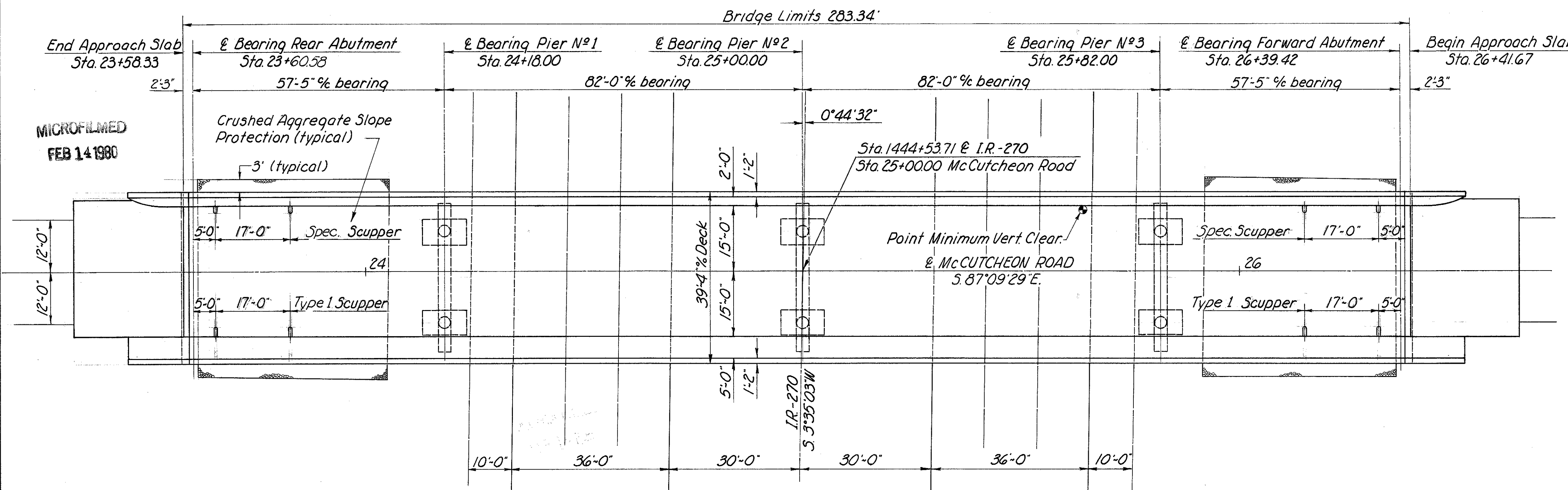
Consulting Engineers COLUMBUS, OHIO

SITE PLAN

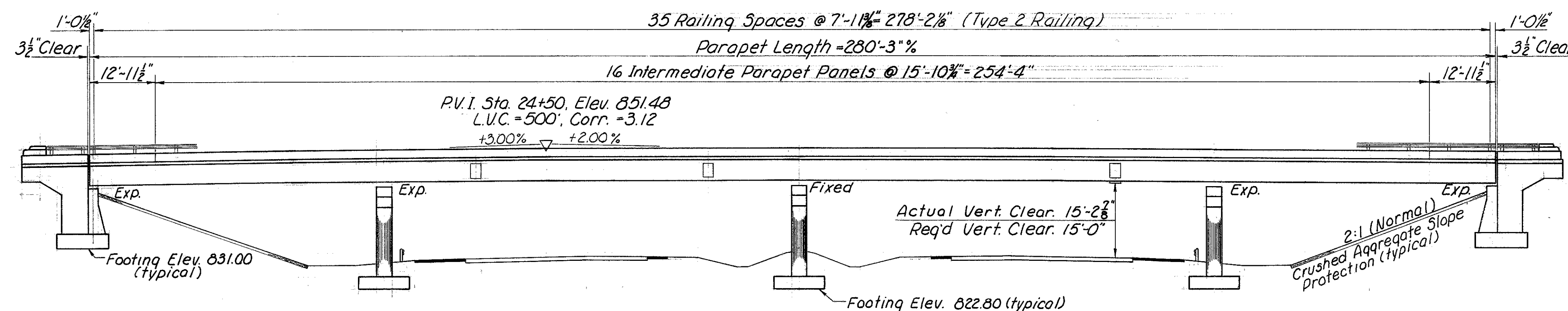
BRIDGE No. FRA-270-2525 N
UNDER McCUTCHEON ROAD

FRANKLIN COUNTY Sta. I.R.-270

DESIGNED	DRAWN	TRACED	CHECKED	DATE	REVISED
JBC	WLC			5/26/87	7/17/87



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 (70701), non-perforated			31
518	62	Lin. Ft.	6" Helical Perforated Corrugated Metal Pipe (70701) 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

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).

DESIGN DATA: Designed for HS-20-44 loading in accordance with 1965 AASHTO specifications including the Ohio Supplement to these specifications.

UNIT STRESSES:

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, A515, 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 p.s.i.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 5 1/2 tons per sq. ft. Pier footings are designed for a maximum bearing pressure of 6 tons per sq. ft.

PIER FOOTINGS shall be placed in bedrock at the elevation shown.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

UTILITY LINES: 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.

WELDED ATTACHMENTS: 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.

WELDS on Non-stress carrying members are shown thus:

JOINT SEALER: Item 828 joint sealer including bond breaker, shown in Section A-A of Std. Dwg. SD-1-65, sheet No. 1, shall be omitted.

Stainless Steel Fasteners shall be properly passivated to remove surface impurities 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.

FRANKLIN ENGINEERING, LIMITED				
COLUMBUS,		Consulting Engineers		OHIO
GENERAL PLAN, GENERAL NOTES and ESTIMATED QUANTITIES				
BRIDGE NO FRA-270-2525 N under McCUTCHEON ROAD				
FRANKLIN COUNTY			IR-270	
DESIGNED JBG 8-23-67	DRAWN JBG 11/1/67	TRACED	CHECKED HM 8-28-67	REVIEWED JA 9/16/67
DATE				
REVISED				

[illegible][illegible]

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.

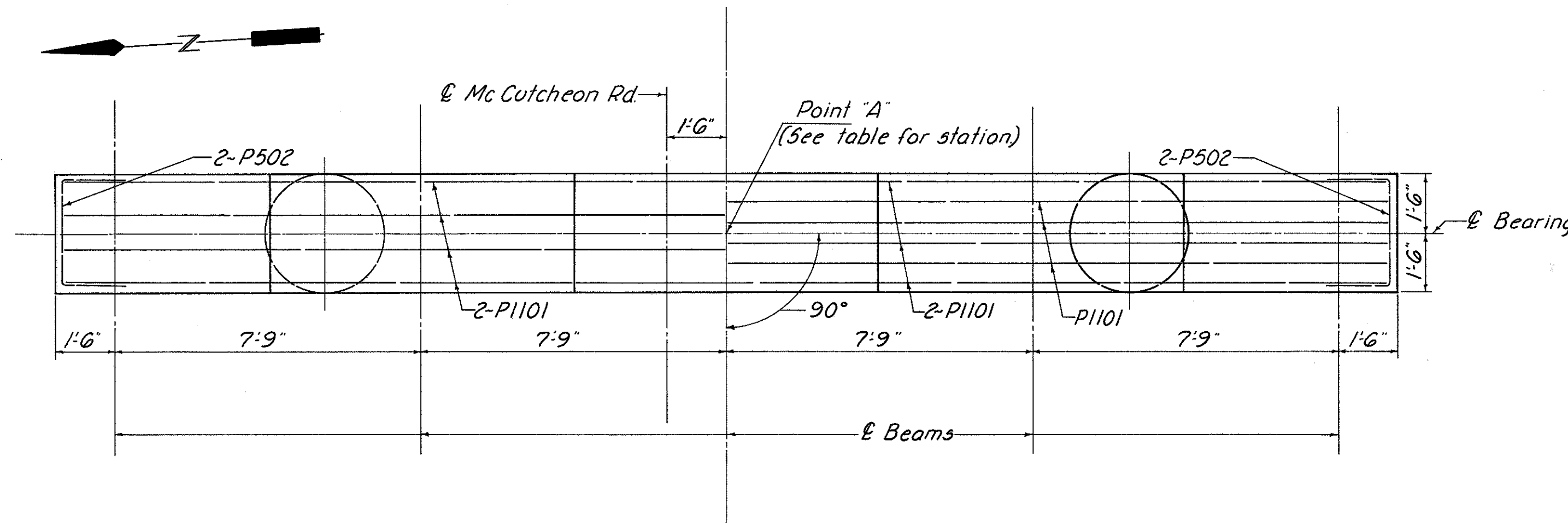
MICROFILMED
FEB 14 1980

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

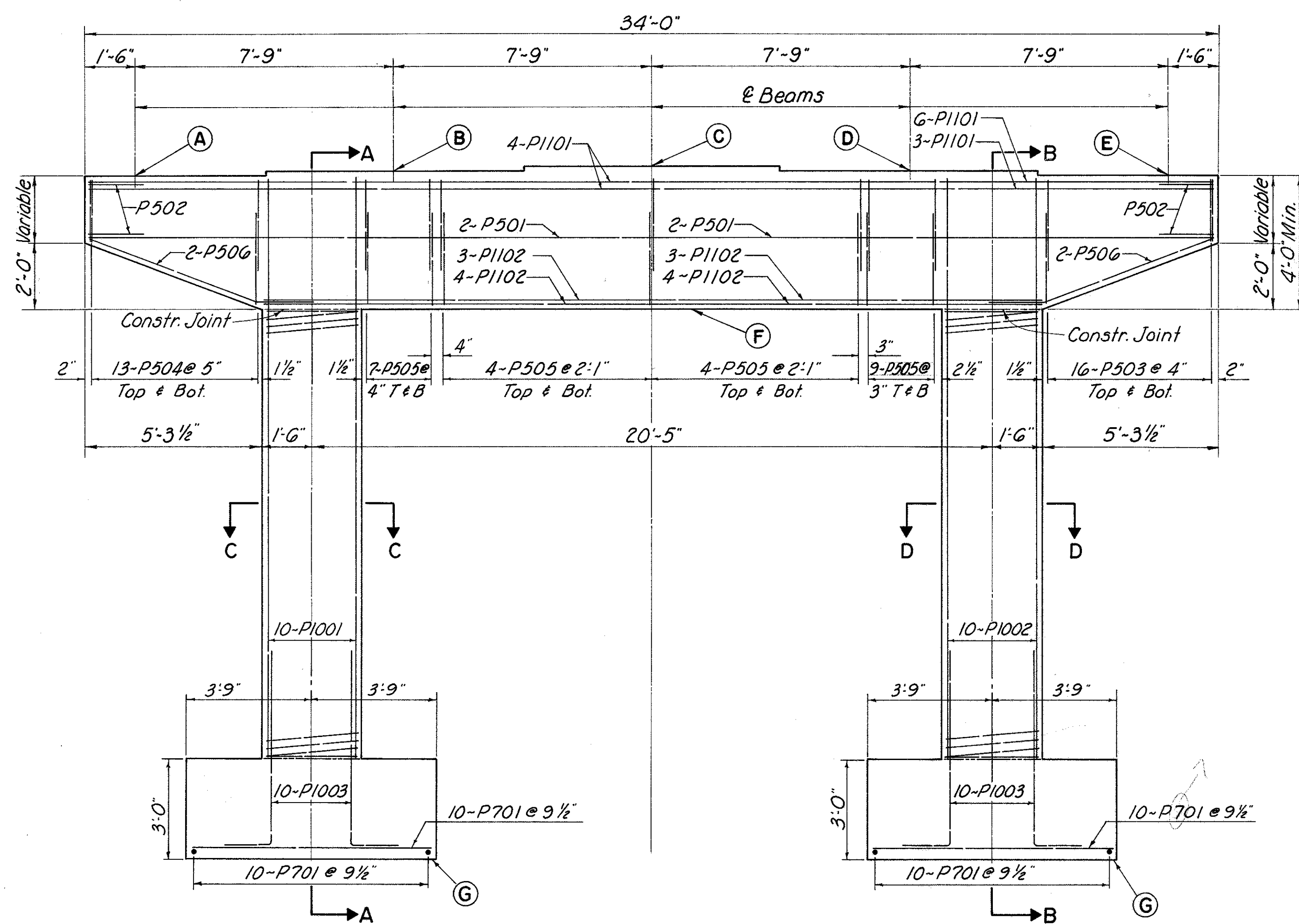
FRA-270-22.99 N

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HALF PLAN PIERS NO 1 & 3

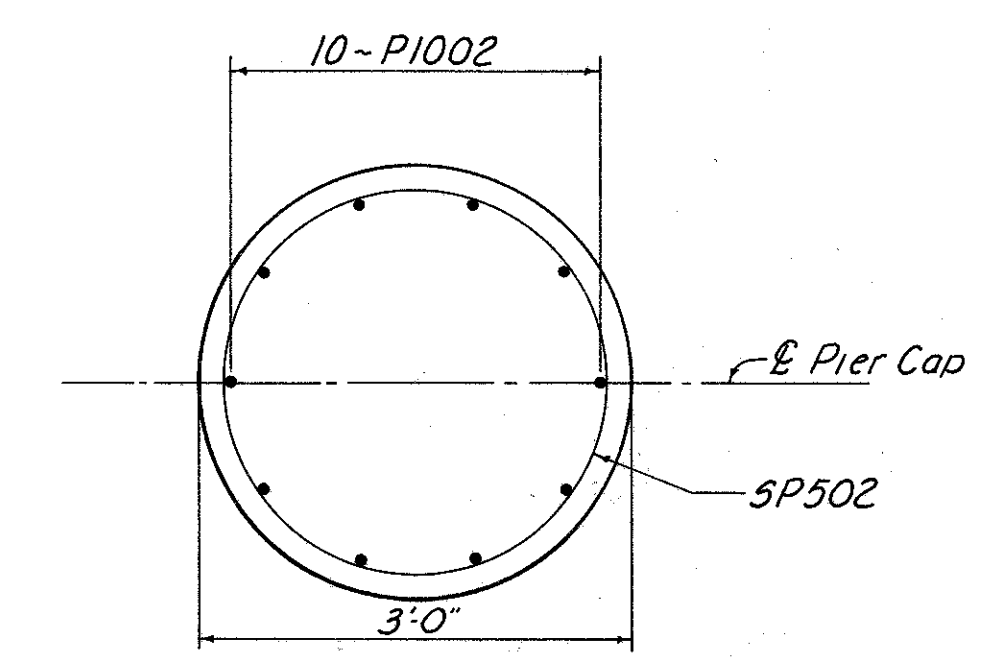
HALF PLAN PIER NO 2



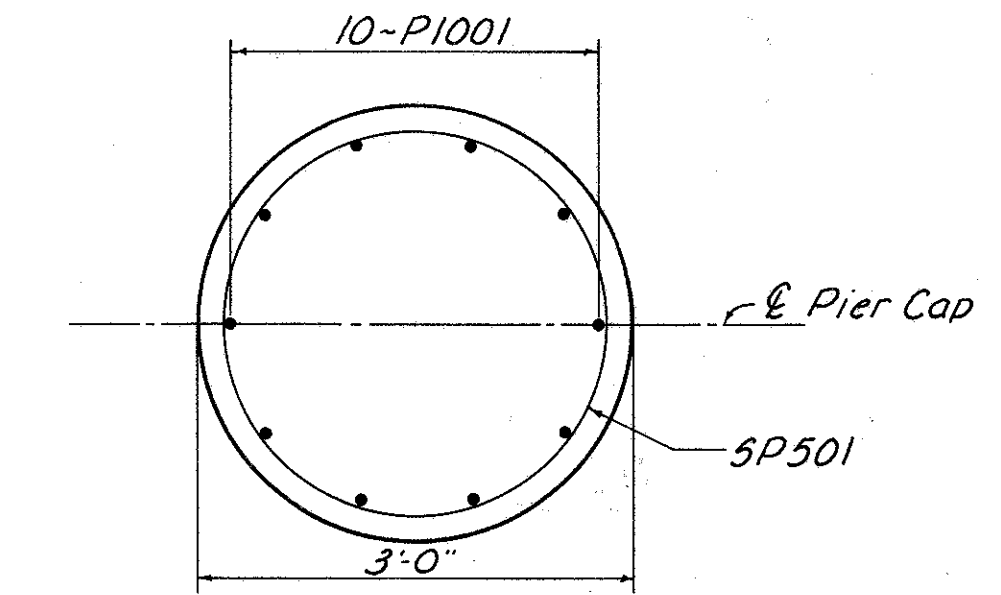
HALF ELEVATION PIERS NO 1 & 3

HALF ELEVATION PIER NO 2

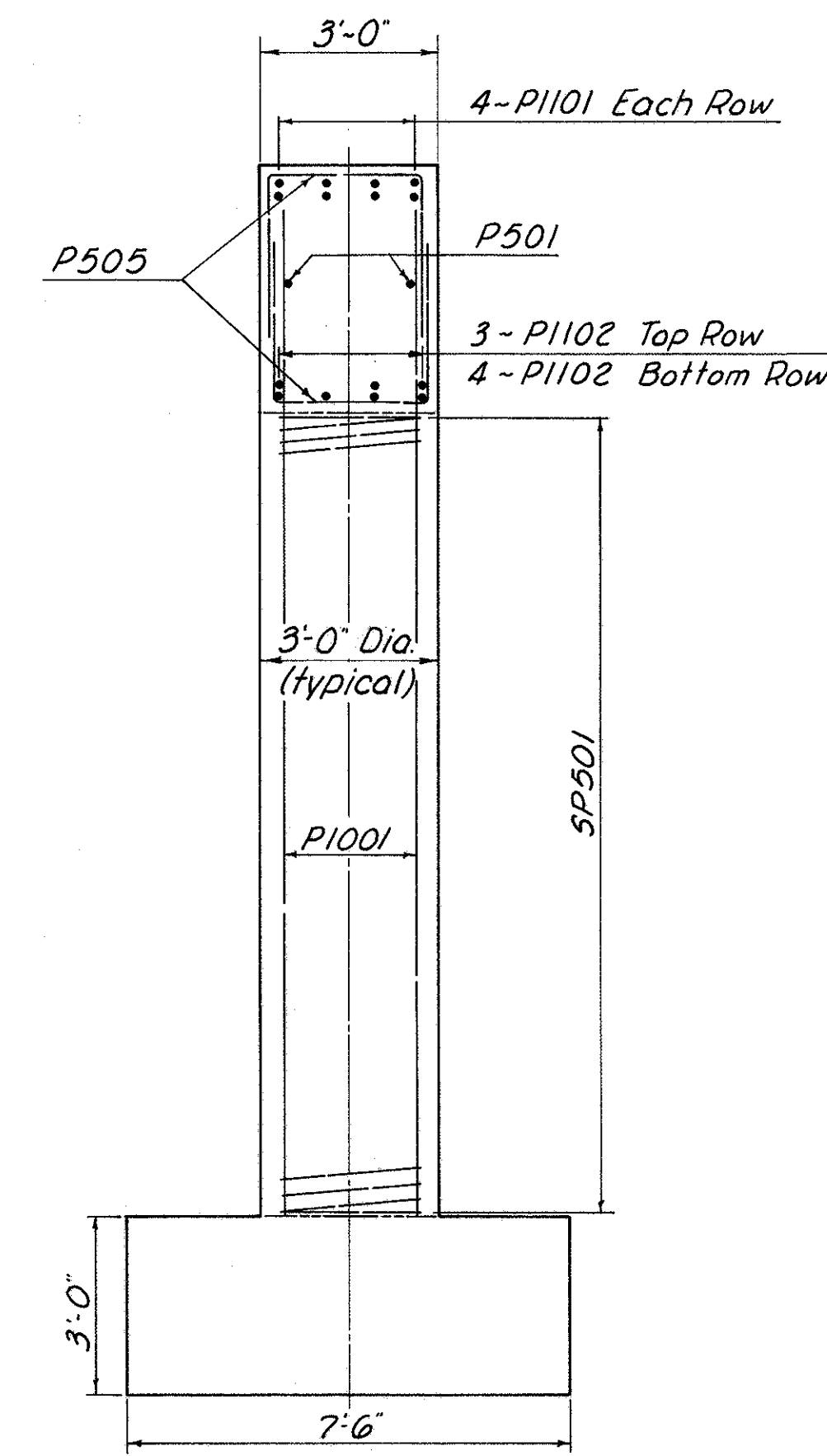
NOTE: PIER NO 2, only
BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.



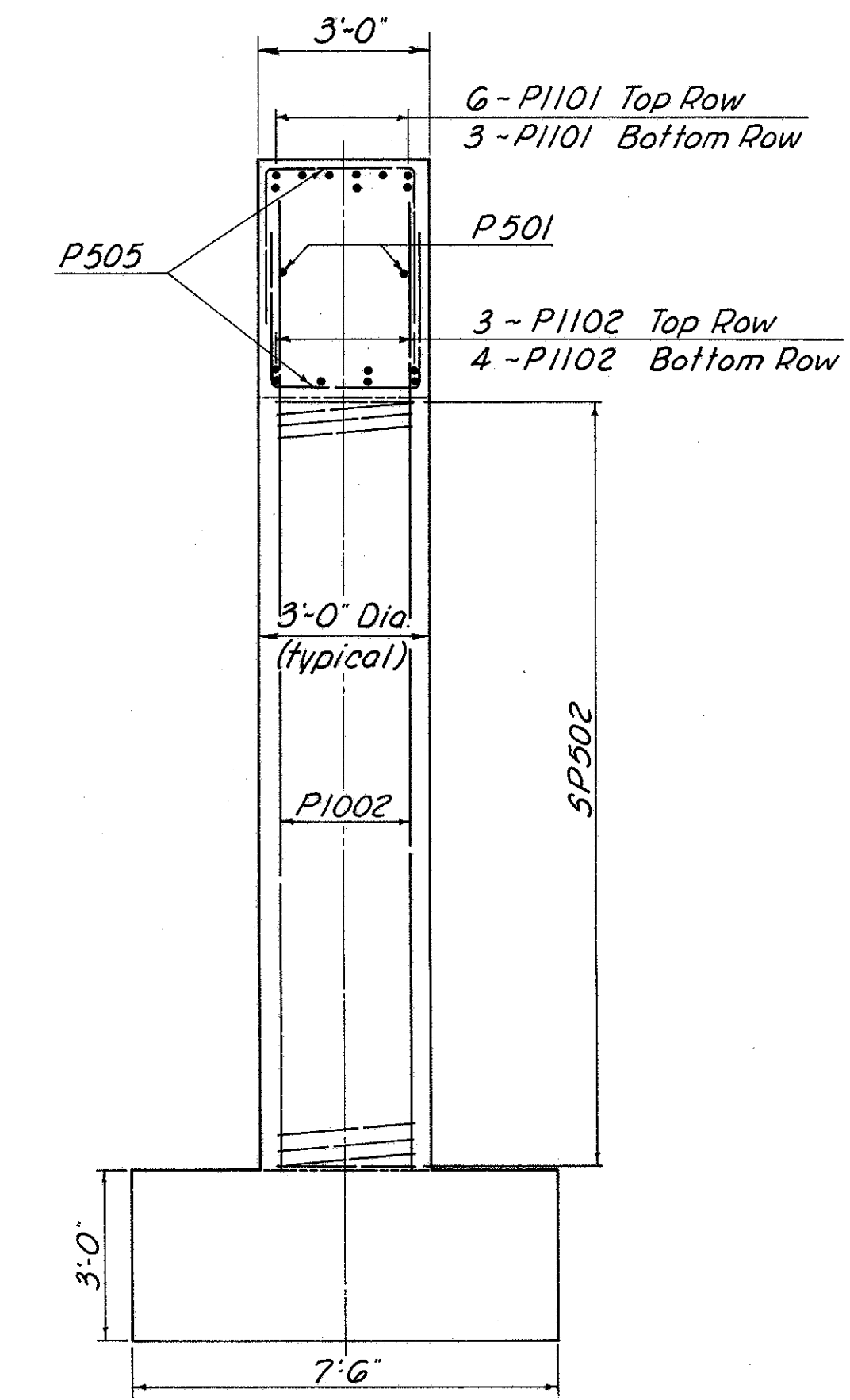
SECTION D-D, PIER NO 2



SECTION C-C, PIERS NO 1 & 3



SECTION A-A, PIERS NO 1 & 3



SECTION B-B, PIER NO 2

NOTES:
CONCRETE: All concrete for Piers shall be Class "C".
GENERAL NOTES: See "GENERAL PLAN"

FRANKLIN ENGINEERING, LIMITED						5
Consulting Engineers				OHIO		
COLUMBUS,						
PIERS						
BRIDGE NO FRA-270-2525 N						
under McCUTCHEON ROAD						
FRANKLIN COUNTY				IR-270		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
JBG	APB g		MM	54	9/12/67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

263

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- Class "C" concrete above this construction joint is included with railing for payment.

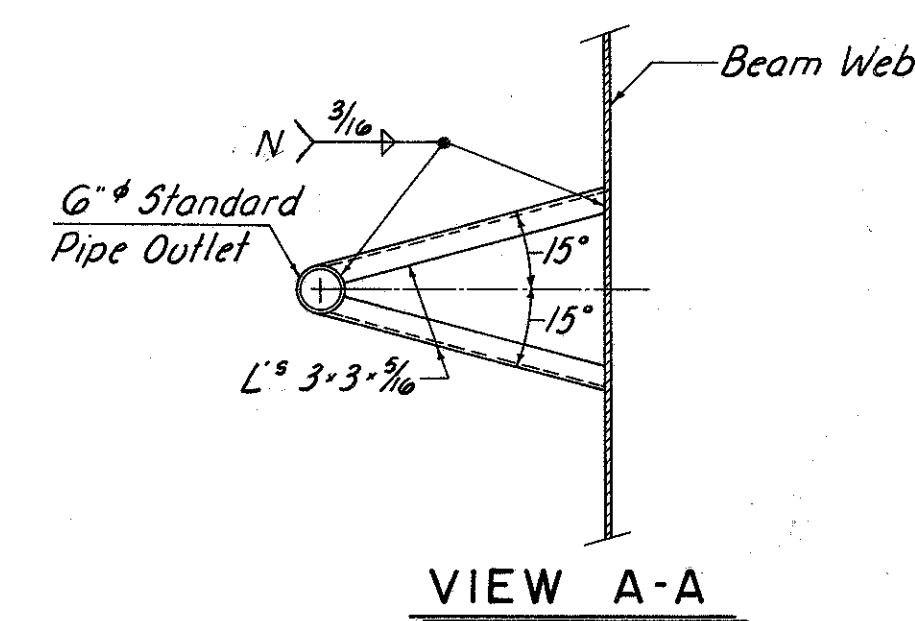
All longitudinal bars S504 except as otherwise shown. Top S504 bars 1'-7" minimum.

**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. 5.11.9 of the "Construction and Material Specifications."*

**** Slab Thickness includes 1" monolithic wearing surface.**

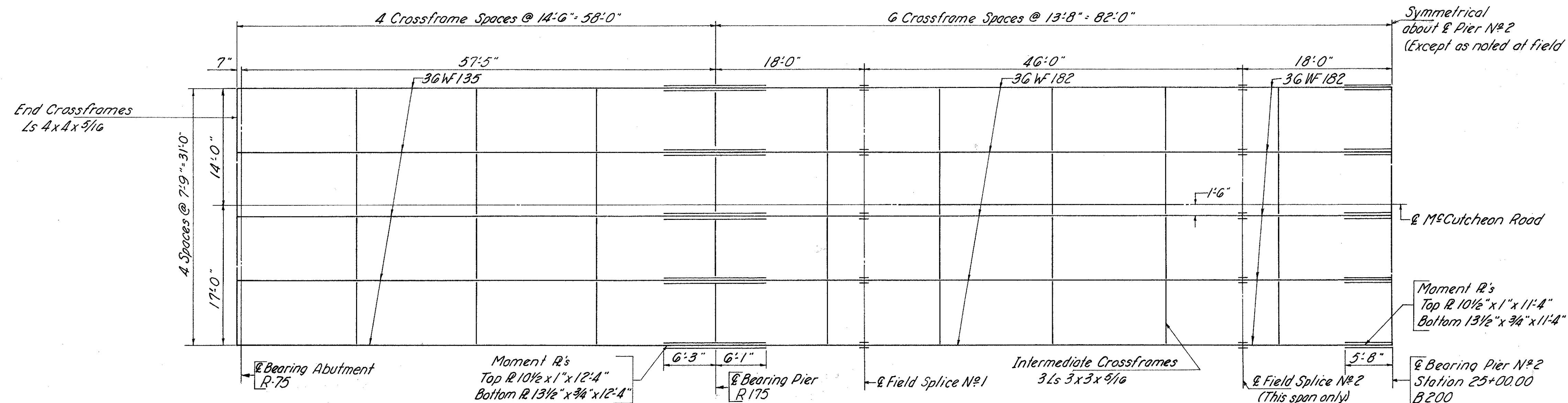
—Intermediate crossframe angles $3 \times 3 \times \frac{3}{8}$. Weld both sides of the vertical leg and top side of horizontal leg to beam with $\frac{1}{4}$ " continuous fillet weld.

* 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

TRANSVERSE SECTION



FRAMING PLAN

DEFLECTION AND CAMBER

	INTERIOR BEAMS						EXTERIOR BEAMS					
	End Span			Mid. Span			End Span			Mid. Span		
<i>Point on Span</i>	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$
<i>Deflection due to weight of steel.</i>	0	0	0	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{16}$	0	0	0	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{16}$
<i>Deflection due to remaining dead load.</i>	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{16}$	$\frac{3}{8}$	$\frac{9}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{8}$	$\frac{9}{16}$	$\frac{7}{8}$	$\frac{7}{16}$
<i>Adjustment required for vertical curve.</i>	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1	$\frac{3}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1	$\frac{3}{4}$
<i>Required Shop Camber</i>	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{16}$	$\frac{1}{4}$	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{16}$	2	$\frac{1}{4}$

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers

SUPERSTRUCTURE

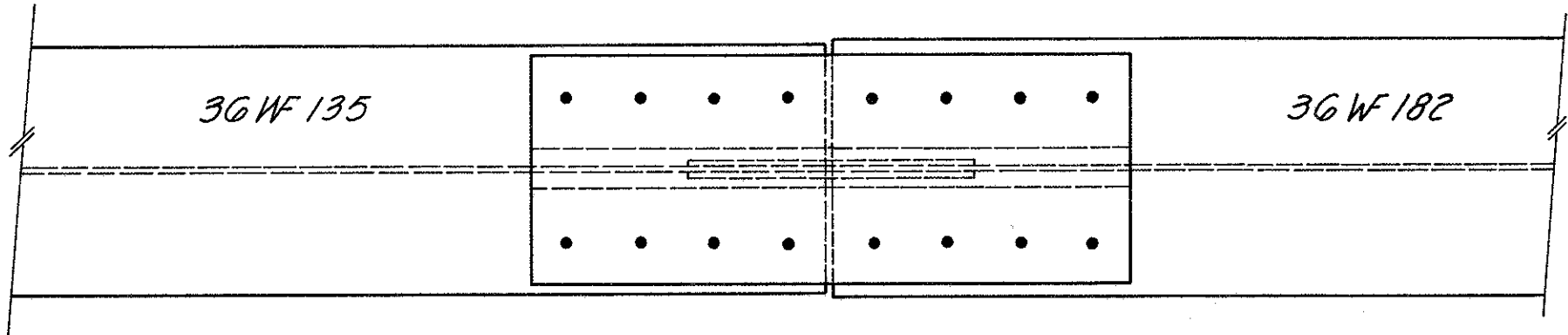
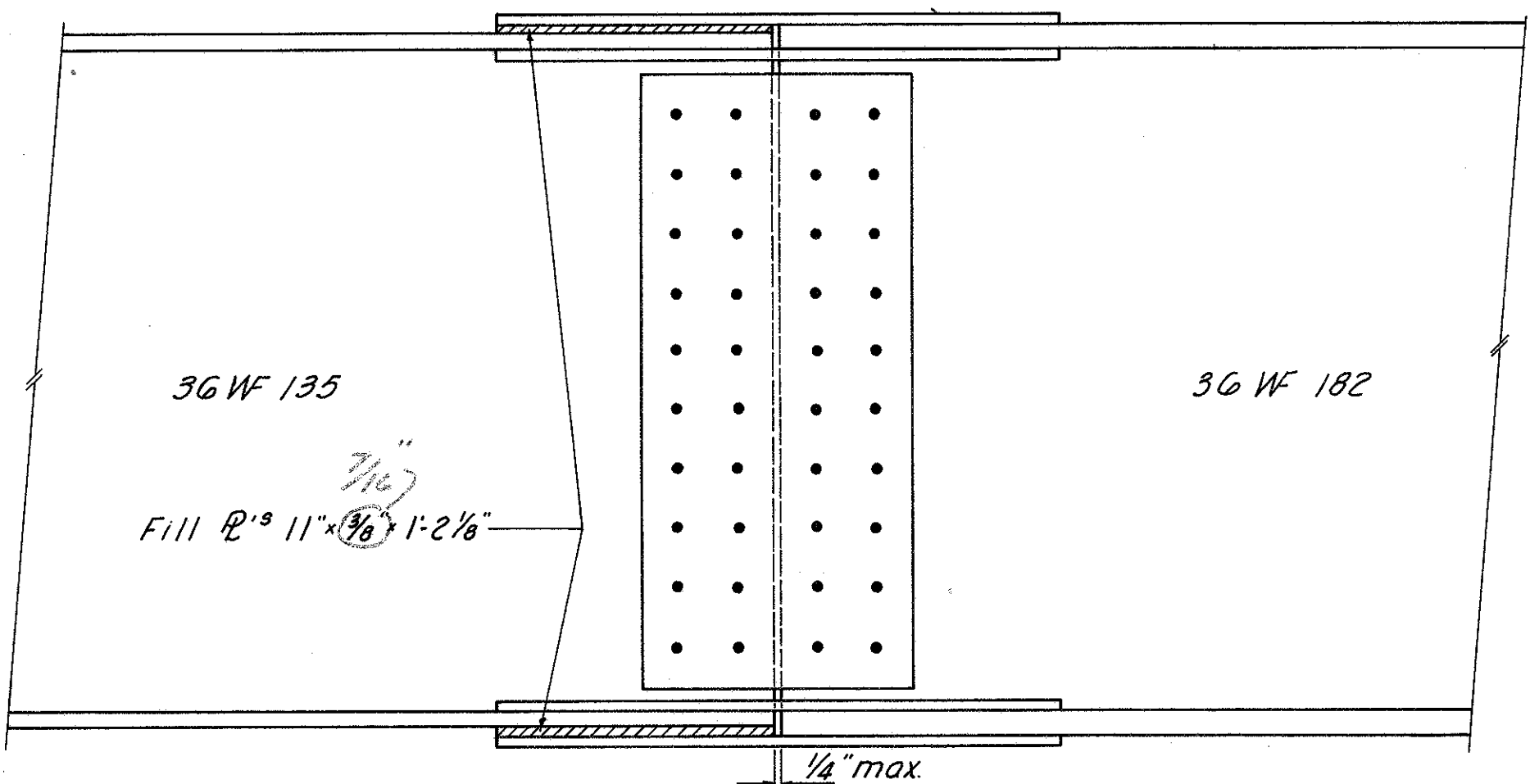
BRIDGE No. FRA-270-2525 N
UNDER McCUTCHEON ROAD

FRANKLIN COUNTY

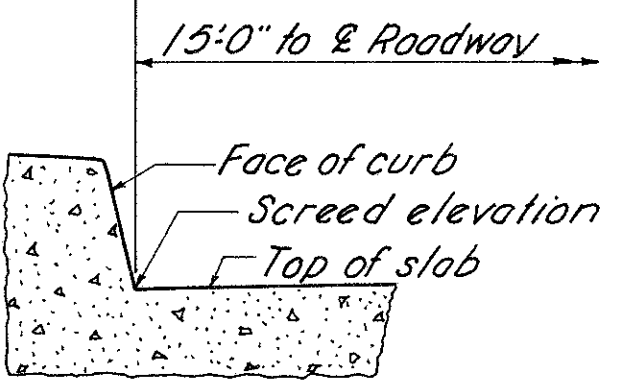
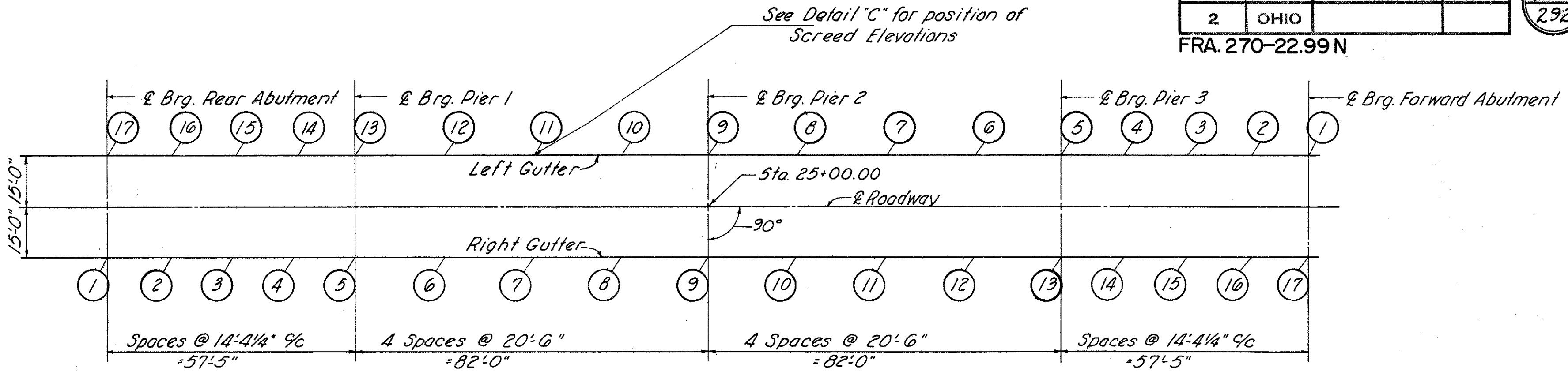
I.R. 270

DESIGNED JBG	DRAWN NF	TRACED	CHECKED	REVIEWED JF 9/12-67	DATE	REVISIONS
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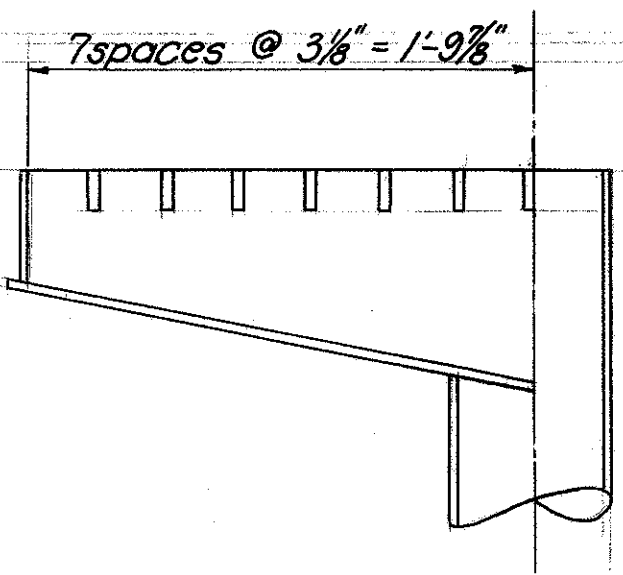
MICROFILMED
FEB 14 1980



STANDARD 36WF 135 BEAM SPLICE
WITH FILL PLATES



DETAIL "C"



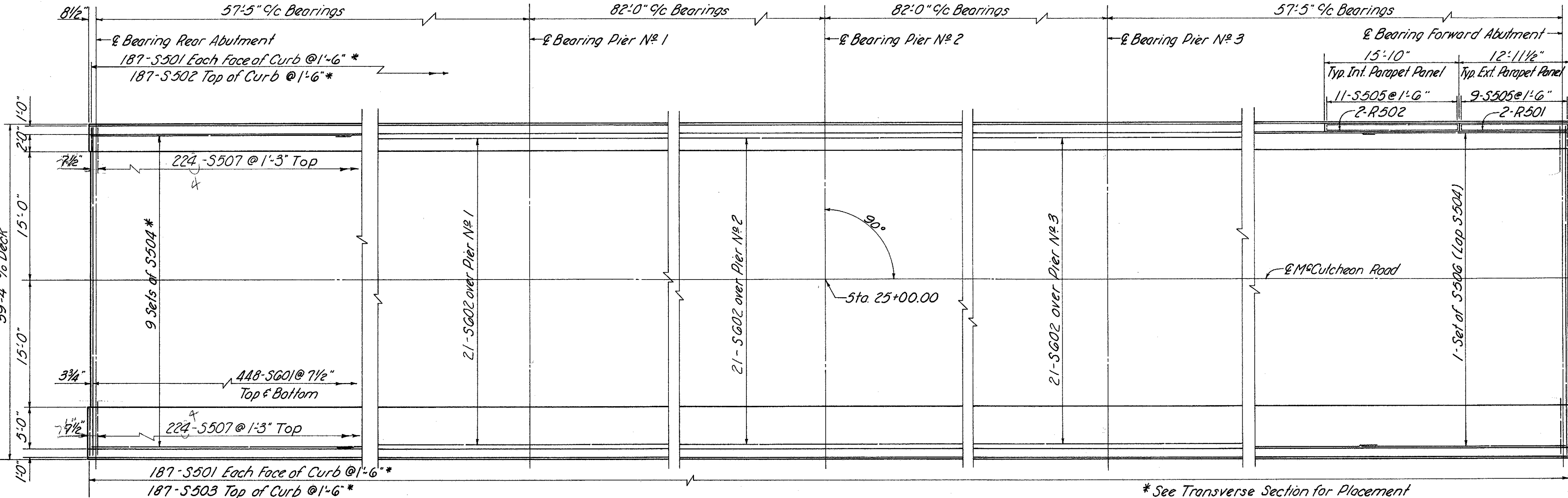
SPECIAL SCUPPER
(4 required)

For additional dimensions and Scuppers Type 1
see Std Drawing SD-165, sheet No 2 (11-8-65)

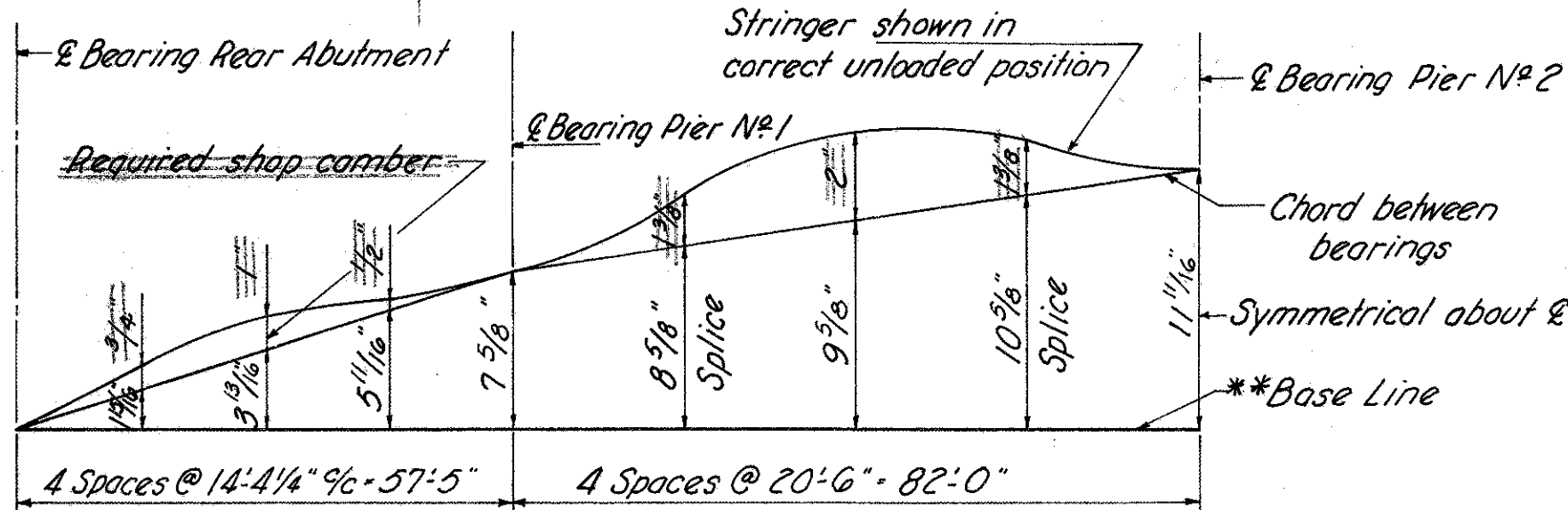
TABLE OF SCREED ELEVATIONS																	
POINT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ELEVATION	847.27	847.49	847.66	847.79	847.91	848.10	848.23	848.26	848.25	848.26	848.23	848.10	847.91	847.79	847.66	847.49	847.27

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.

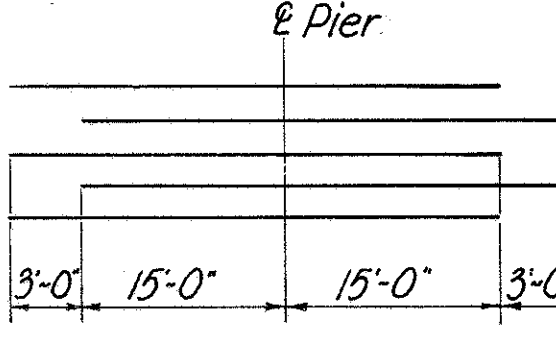
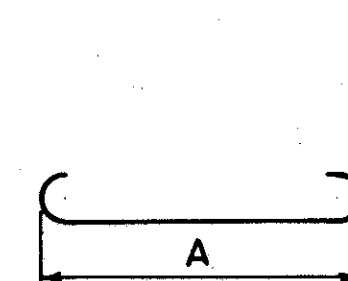


Diagram Showing the Staggering
of S-602 Bars over Piers

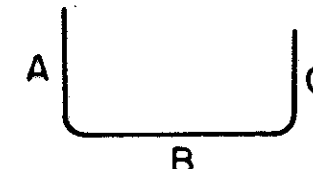
FEB 14 1980

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292

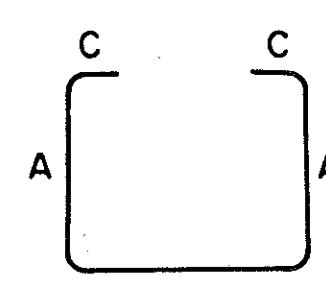
FRA. 270-22.99 N



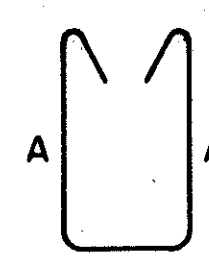
TYPE I



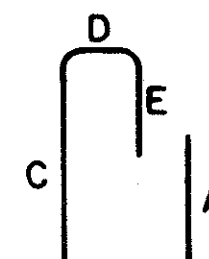
TYPE 2



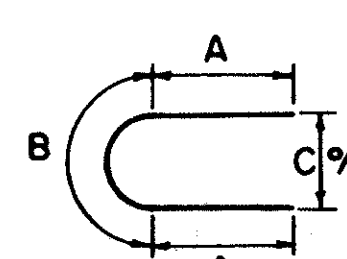
TYPE 3



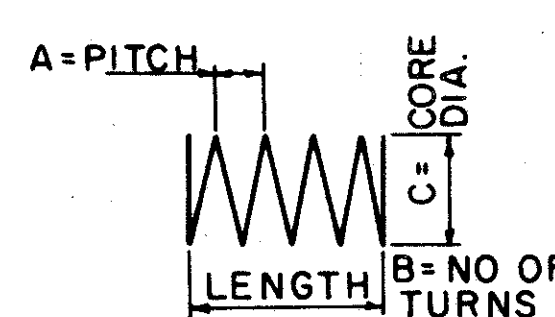
TYPE 4



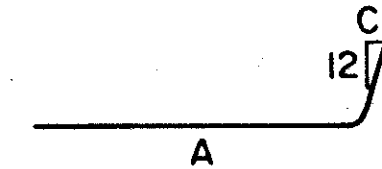
TYPE 5



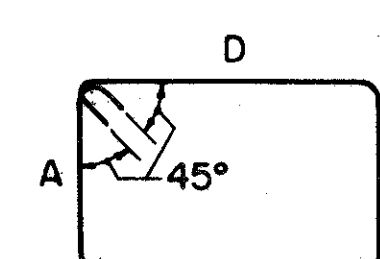
TYPE 6



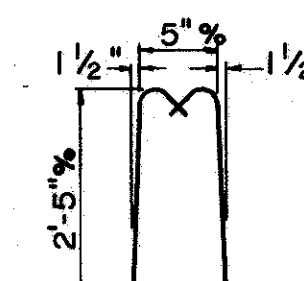
TYPE 7



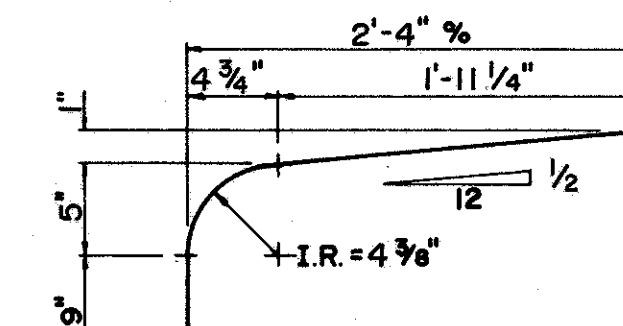
TYPE 8



TYPE 9



TYPE 10



TYPE II

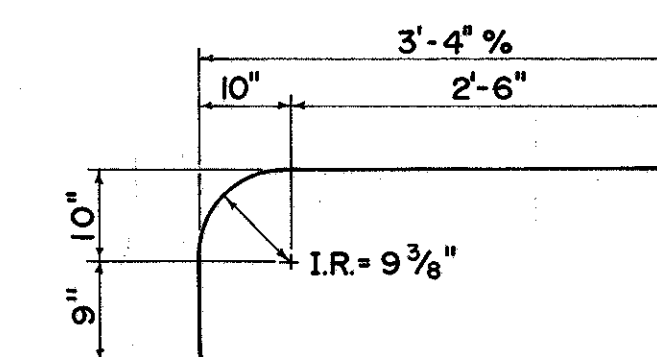
ABUTMENTS										PIERS										SUPERSTRUCTURE									
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A1101	10	33'-8"	Str						1789	P1101	25	33'-8"	Str						4472	S601	896	38'-8"	Str						52037
										P1102	21	23'-1"	Str						2575	S602	63	33'-0"	Str						3123
A901	8	33'-8"	Str						916																				
										P1001	40	16'-11"	Str						2912	S501	748	2'-2"	2	7"	1'-3"	7"			1690
										P1002	20	17'-1"	Str						1470	S502	187	3'-5"	2	7"	2'-6"	7"			666
AG01	60	9'-3"	2	10"	8'-7"	0"			834	P1003	60	7'-1"	2	1'-5"	6'-0"	0"			1829	S503	187	6'-5"	2	7"	5'-6"	7"			1252
AG02	62	14'-10"	5	4'-8"	1'-5"	6'-0"	11"	2'-6"	1381											S504	630	30'-0"	Str						19713
AG03	60	5'-4"	2	10"	4'-8"	0"			481											S505	388	5'-7"	4	2'-2"	8"	2'-2"			2259
AG04	20	10'-2"	2	4'-8"	1'-2"	4'-8"			305	P701	120	7'-2"	Str						1758	S506	70	24'-3"	Str						1770
AG05	40	6'-3"	Str						376											S507	448	5'-5"	Str						2531
AG06	40	9'-7"	Str						576																				
AG07	20	12'-8"	Str						381	P501	6	33'-8"	Str						211								TOTAL	85,041	
										P502	12	5'-7"	2	1'-7"	2'-8"	1'-7"			70										
A501	16	38'-4"	Str						640	P503	64	(2)	2	(1)	2'-8"	(1)	(4 sets of 16)		457	R501	16	12'-7"	Str						*
A502	8	33'-8"	Str						281	P504	104	(4)	2	(3)	2'-8"	(3)	(8 sets of 13)		732	R502	128	15'-6"	Str						*
A503	6	13'-2"	2	6'-0"	1'-5"	6'-0"			82	P505	134	7'-9"	2	2'-8"	2'-8"	2'-8"		1083											
A504	56	9'-4"	2	3'-1"	3'-5"	3'-1"			545	P506	12	6'-10"	8	1'-7"	5'-3"	4'-1/2"		86											
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	SP501	4	13'-1"	7	3"	55	2'-8"		2026											
A508	64	4'-8"	Str						312	SP502	2	13'-3"	7	3"	56	2'-8"		1032											
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									TOTAL	20,713										
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	(1) Varies	from 1'-8" to 2'-9 1/8" in 1/8" increments.																		
A516	8	6'-6"	Str						54	(2) Varies	from 5'-9" to 7'-11 1/4" in 1 3/4" increments.																		
A517	4	12'-8"	Str						53	(3) Varies	from 1'-8" to 2'-8" in 1" increments.																		
A518	4	12'-6"	Str						52	(4) Varies	from 5'-9" to 7'-9" in 2" increments.																		
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						*																				

NOTES:

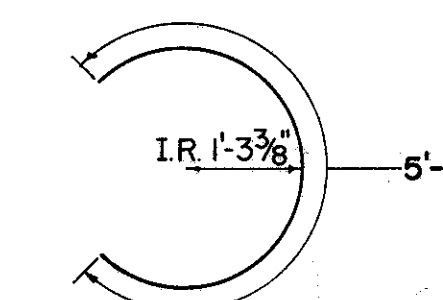
BAR SIZE: The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is a No.5 size bar and P1101 is a No.11 size bar.

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. 1/2 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							3/8
Consulting Engineers							
COLUMBUS,				OHIO			
REINFORCING STEEL							
BRIDGE NO FRA-270-2525N							
under McCUTCHEON ROAD							
FRANKLIN COUNTY				IR-270			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION	
JBG	G	~	HY	JL	1/12-67		

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

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N.

I-270-5(7) R/W ONLY

267
292

2
27

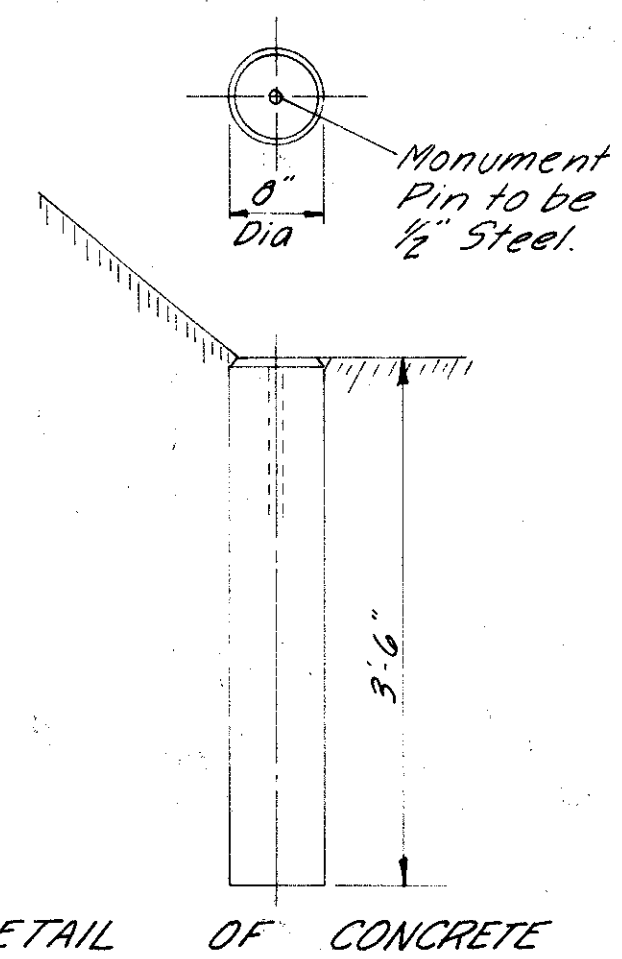
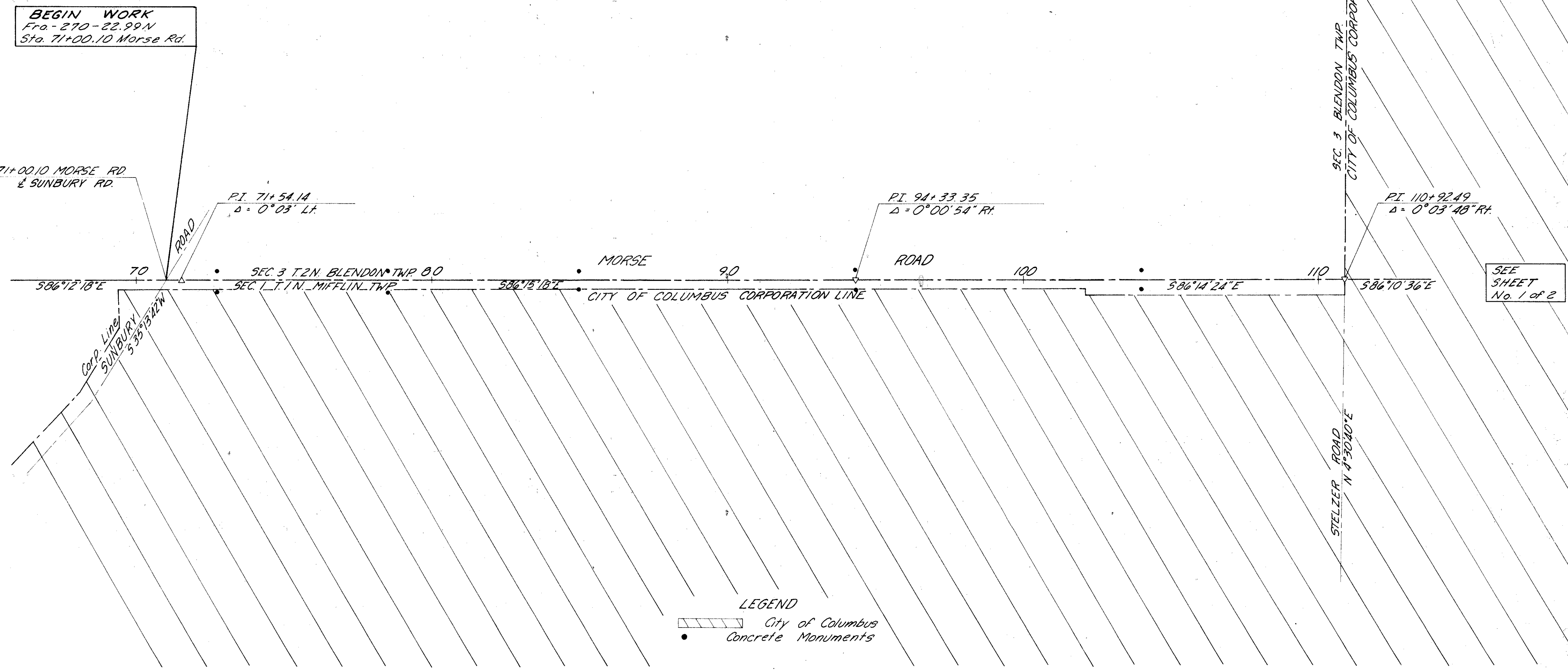
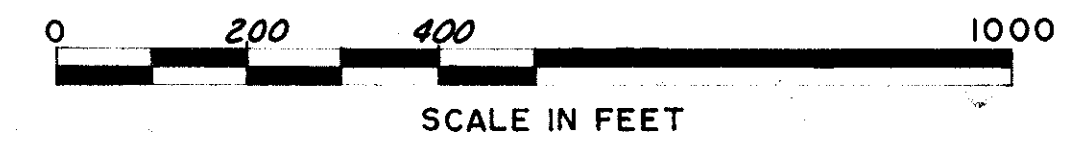
2 of 2

Received _____ 196

Recorded _____ 196

Book _____ Page _____

County Recorder



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 _____ Date _____
Reg. Sur. No. 673

Signed Frank M. Williams
Frank M. Williams
Date 3-26-68 Division Deputy Director

PROPERTY MAP



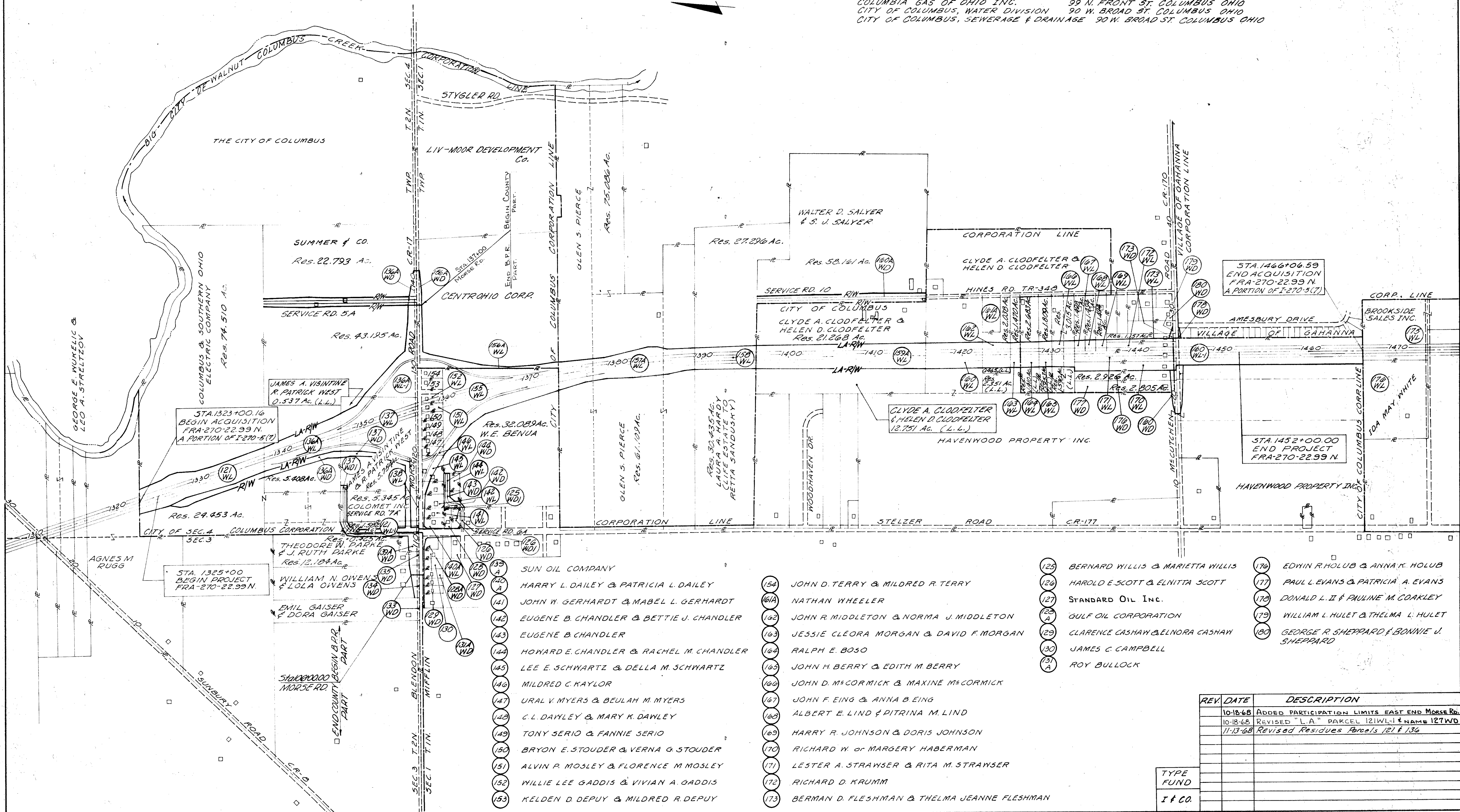
UTILITY COMPANIES

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

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

FRANKLIN COUNTY
FRA-270-22.99N
LIMITED ACCESS
I-270-5(7) R/W ONLY

268
292
3
27



0 500 1000 1500 2000

SCALE IN FEET

FRANKLIN COUNTY
FRA-270-22.99N

269
292

4
27



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
133H WD LAWRENCE B. KNUEVEN & VELMA KNUEVEN
133I WD EDWIN E. CULP & BONNIE B. CULP
133J WD FRANK L. MINIC, BERNADETTE MINIC & ELIZABETH ANN MINIC
133K 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
133O WD THE WHITE CROSS HOSPITAL ASSOCIATION OF OHIO
133P WD CHARLES W. McCAUGHEY & EDITH G. McCAUGHEY
133Q 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

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

[illegible]

PROPERTY MAP STA. 70+00 TO STA. 106+00 MORSE RD. R/W

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		DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE		NET RESIDUE		SHEET NO.	REMARKS
				BOOK	PAGE					LAND	BLOG	LEFT	RIGHT		
121-WL	COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY	83,251	I	1811	478	113.315	0.103	9.482	---	9.482	---	74.510	26.035	9 & 10	
121-WL-1	" " " " " "		I	1811	482			0.225	0.068	0.157	---			23	
121-WD	" " " " " "		I	1811	482			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	2489	25	23,880 SF	---	867 SF	---	867 SF	---	22,138 SF		23	
125-WD1	" " " " " "		I					875 SF	---	875 SF	---			25	
126-WD	HAROLD E. SCOTT & ELNITTA SCOTT		I	2524	71	23,832 SF	---	405 SF	---	405 SF	---	22,627 SF		23	
126-WD1	" " " " " "							800 SF	---	800 SF	---			25	
126-T	" " " " " "							51,555 SF	---	51,555 SF	---			25	Construct Service Road "6A"
127-WD	STANDARD OIL INC.		I	2908	669	53,884 SF	---	3,630 SF	---	3,630 SF	---	50,254 SF		23	
128A-WD	GULF OIL CORPORATION		I	2055	438	26,128 SF	---	5891 SF	---	5891 SF	---	20,237 SF		23	
129-WD	CLARENCE CASHAW & ELNORA CASHAW		I	2437	612	32,372 SF	---	1,012 SF	---	1,012 SF	---	31,360 SF		23	
129-T	" " " " " "							781 SF	---	781 SF	---			23	Construct Driveway
130-T	JAMES C. CAMPBELL		I	2523	504	25,875 SF	---	1,366 SF	---	1,366 SF	---	25,875 SF		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 2390	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	* 0.383 Ac. 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(4L)	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 SF	---	2567 SF	---	2567 SF	---	---	24,286 SF	23	
140A-WD	" " " " " "		I					4,016 SF	---	4,016 SF	---			23	
141-WL	JOHN W. GERHARDT & MABEL L. GERHARDT	4144	I	2105	55	28,852 SF	---	1700 SF	---	1700 SF	---	---	27,152 SF	23	
141-T	" " " " " "		I					527 SF	---	527 SF	---			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
10-20-68		REV. RES. P. 1, 126 WD
11-15-68		REV. RES. P. 1, 121 & 136
2-11-69		Changed name P. 1 136AWL

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

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

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(?) R/W ONLY

271
292

6
27

NO. OF PROPERTIES--
NO. OF STRUCTURE PARCELS---

PARCEL NO.	OWNER	AUDITORS PARCEL NO.	TYPE FUND	RECORDED		DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE		NET RESIDUE		SHEET NO.	REMARKS
				BOOK	PAGE					LAND	BLDG.	LEFT	RIGHT		
142-WL	EUGENE B. CHANDLER & BETTIE V. CHANDLER	4145	I	1941	484	36065.5F	---	3,644.5F	---	3,644.5F	---	---	32,308.5F	23	
142-WD	" " " " " " "						---	113 SF	---	113 SF	---	---		25	
142-T	" " " " " " "						---	2,138 SF	---	2,138 SF	---	---		25	Construct Service Rd. "6A"
143-WD	EUGENE B. CHANDLER	4794	I	1941	484	* 0.902	---	0.497	---	0.497	---	---	0.385	25	* Calculates 0.882 Ac.
144-WL	HOWARD E. CHANDLER & RACHEL M. CHANDLER	4147, 4911	I	2245, 2109	428, 430	36065.5F	---	8,436 SF	---	8,436 SF	---	---	27,629.5F	23	* Calculates 0.882 Ac.
144-WD	" " " " " " "	4812		2245		20,202 Ac.	---	0.298	---	0.298	---	---	0.584 Ac.	25	
144-T	" " " " " " "						---	2,250 SF	---	2,250 SF	---	---		25	Construct Service Rd. "6A"
145-WL	LEE E. SCHWARTZ & DELLA M. SCHWARTZ	3145	I	1487	2533	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	1831, 2644	281, 311	24,043 SF	---	24,043 SF	---	24,043 SF	Yes	---	---	12	
147-WL	URAL V. MYERS & BEULAH M. MYERS	4149	I	1768	49	24,043 SF	---	24,043 SF	---	24,043 SF	Yes	---	---	12	
148-WL	C.L. DAWLEY & MARY K. DAWLEY	4150	I	1832	530	24,043 SF	---	24,043 SF	---	24,043 SF	Yes	---	---	12	
149-WL	TONY SERIO & FANNIE SERIO	4151	I	2295	356	24,043 SF	---	24,043 SF	---	24,043 SF	Yes	---	---	12	
150-WL	BYRON E. STODDER & VERNA G. STODDER	4152	I	1828	310	24,043 SF	---	24,043 SF	---	24,043 SF	Yes	---	---	12	
151-WL	ALVIN R. MOSLEY & FLORENCE M. MOSLEY	4153	I	2609	415	24,043 SF	---	24,043 SF	---	24,043 SF	Yes	---	---	11 & 12	
152-WL	WILLIE LEE GADDIS & VIVIAN A. GADDIS	4154	I	2482	542	26,447 SF	---	26,447 SF	---	26,447 SF	Yes	---	---	11	
153-WL	KELDEN D. DePUY & JOSEPHINE DePUY	4155	I	2638	687	31,460 SF	---	31,460 SF	---	31,460 SF	Yes	---	---	11	
154-WL	JOHN D. TERRY & MILDRED R. TERRY (FEE) & JAMES E. & E. RUTH RICHARDS (LAND CONTRACT)	4156	I	1853	347	26,464 SF	---	26,464 SF	---	26,464 SF	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	I	1013, 1015	122, 242	148,295	1.815	10,285	---	10,285	---	75.086	61.109	13 & 14	
157A-T	" " " " " " "	237, 259		1017	623		---	0.062	---	0.062	---	---		13	Clean Channel
157A-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	---	27.294	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(24)	15 & 16	
160-T	HAVENWOOD PROPERTY INC.			2331	700		---	0.081	---	0.081	---	---		24	Temporary Runaround
160-WL1	HAVENWOOD PROPERTY INC.			2332	158		---	15.407	0.220	15.387	---	---		13 & 19	
160-WL	HAVENWOOD PROPERTY INC.	141, 2741	I	2332	161	232,329	---	4,398	---	4,398	---	---		16	
160-WD	" " " " " " "	2192, 2582		2332	237		---	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

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

272
292

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		DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE		NET RESIDUE		SHEET NO.	REMARKS
				BOOK	PAGE					LAND	BLDG.	LEFT	RIGHT		
162-WL	JOHN R. MIDDLETON & NORMA J. MIDDLETON	2712	I	2045 2210	159 24	4.670	0.055	2.112	---	2.112	---	2.038	0.465(2L)	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(2L)	16 & 17	
164-WL	RALPH E. BOZO	132	I	2474	139	5.670	0.101	1.476	---	1.476	---	2.683	1.410(2L)	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(2L)	17	
166-WL	JOHN D. MCCORMICK & MAXINE MCCORMICK	850	I	1786 2492	231 384	6.461	0.115	1.741	---	1.741	---	3.015	1.590(2L)	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	2286	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 KRUM & MARTHA FENSTERMACHER KRUM	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-T1	" " " " " " " "		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-T1	" " " " " " " "		I					0.008	---	0.008	---	---	---	18	Temporary Runaround
178-WD	DONALD L. II. & PAULINE M. COAKLEY	3501	I	2746	188	8.548 SF		2737.5F	---	2737.5F	---	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-T1	" " " " " " " "		I					0.051	---	0.051	---	---	---	18	Temporary Runaround
180-T	GEORGE R. SHEPPARD & BONNIE J. SHEPPARD		I	1895	643	1.397		0.009	---	0.009	---	1.397	---	18	Construct Driveway
*156A-WL	CENTROHIO CORP.	156	I	2895	442	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
If 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

SUB TOTAL- COUNTY PARTICIPATION
NO. OF PROPERTIES- 70
NO. OF STRUCTURE PARCELS- 20

FED. NO. DIVISION	STATE	PROJECT
2	OHIO	

FRANKLIN COUNTY
FRA-270-22.99N
I-270-5(7) R/W ONLY

273
292

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PARCEL NO.	OWNER	AUDITOR PCL. NO.	TYPE FUND	RECORDED		DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. IN TAKE	NET TAKE		NET RESIDUE		SHEET NO.	REMARKS
				BOOK	PAGE					LAND	BLDG.	LEFT	RIGHT		
131A	ROY BULLOCK		Co.											23	Not Affected
133-WD	EMIL GAISER & DORA GAISER	51	Co.	1915 886	292 619	10 Ac.	.179Ac.	.329Ac.	.179Ac.	.150Ac.	—	.9671Ac.	—	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.	2.570Ac.	1.554Ac.	.848Ac.	.706Ac.	—	—	114.724Ac.	21, 22 & 23	*Also ACH. Bk 22 Pg. 56
133E-WD	EURA B. CUMBOW & JAMES CUMBOW	53	Co.	1779 1779	559 560	25Ac.	.449Ac.	.822Ac.	.449Ac.	.373Ac.	—	24.178Ac.	—	22	
133F-WD	PAUL E. BIERLEY & PAULINE J. BIERLEY	892	Co.	2561	231	3Ac.	.168Ac.	.308Ac.	.168Ac.	.140Ac.	—	2.692Ac.	—	22	
133G-WD	FRANCIS W. LEHMAN	890	Co.	1641	505	3Ac.	.169Ac.	.309Ac.	.169Ac.	.140Ac.	—	2.691Ac.	—	21 & 22	
133H-WD	ALPHONSE W. KRAMER & MARY A. KRAMER	893	Co.	1641	557	3Ac.	.169Ac.	.309Ac.	.169Ac.	.140Ac.	—	2.691Ac.	—	21	
133I-WD	LAWRENCE B. KNUVEEN & VELMA KNUVEEN	891 925	Co.	1759	634	2.506Ac.	.148Ac.	.271Ac.	.148Ac.	.123Ac.	—	2.235Ac.	—	21	
133J-WD	EDWIN E. CULP & BONNIE B. CULP	926	Co.	1978	192	2Ac.	.112Ac.	.206Ac.	.112Ac.	.094Ac.	—	1.794Ac.	—	21	
133K-WD	FRANK L. MINIC, BERNADETTE MINIC, & ELIZABETH ANN MINIC	889	Co.	1818	476	2Ac.	.112Ac.	.206Ac.	.112Ac.	.094Ac.	—	1.794Ac.	—	21	
133L-WD	CARL & JANET MORGAN	49	Co.	2902	530	1.010Ac.	.063Ac.	.114Ac.	.063Ac.	.051Ac.	—	.896Ac.	—	21	
133M-WD	ORDELL W. HEDRICK & ANNA E. HEDRICK	2940 2941 2942	Co.	1995	549	3.084Ac.	.189Ac.	.377Ac.	.189Ac.	.188Ac.	—	2.707Ac.	—	20 & 21	
133N-WD	MINONA B. WALLACE	1520	Co.	1208	2	3.105Ac.	.715Ac.	.718Ac.	.371Ac.	.347Ac.	—	2.043Ac.	—	20	
133P-WD	THE WHITE CROSS HOSPITAL ASSOCIATION OF OHIO	146551	Co.	2676	690	81.933 Ac.	3.649 Ac.	2.140Ac.	.844Ac.	1.296Ac.	YES	—	76.988 Ac.	20 & 21	
133P-T	" " " "			2915	534			.037Ac.		.037Ac.	YES			20	Removal of Structure
133Q-WD	CHARLES W. MCCAUGHEY & EDITH G. MCCAUGHEY	146556	Co.	1279	487	1.699Ac.	.129Ac.	.236Ac.	.129Ac.	.107Ac.	—	—	1.463Ac.	21	
133R-WD	CHARLES DAVID MCCAUGHEY & LYNDA MOSS MCCAUGHEY	146722	Co.	2470	585	.991Ac.	.069Ac.	.126Ac.	.069Ac.	.057Ac.	—	—	.865Ac.	21	
133T-WD	RICHARD A. FREEMAN & KATHRYN A. FREEMAN	146571	Co.	2822	671	2.263Ac.	.014Ac.	.025Ac.	.014Ac.	.011Ac.	—	—	2.238Ac.	21	
133V-WD	MICHAEL B. GRIFFITH (T.R.)	146562	Co.	2873	230	3.040Ac.	.135Ac.	.248Ac.	.135Ac.	.113Ac.	—	—	2.792Ac.	21	
133Z-WD	JAMES A. & FRANCIS C. WHITE	146543	Co.	1341	351	9.288 Ac.	.014Ac.	.025Ac.	.014Ac.	.011Ac.	—	—	9.263Ac.	21	
134-WD	WILLIAM N. OWENS & LOLA OWENS	493	*13 Co.	2678	204	14.362Ac.	.258Ac.	.731Ac.	.258Ac.	.0473Ac.	YES	13.631Ac.	—	23	*2446Ac. Co. Part. 0.285Ac. BPR Part.
134-T	" " " "		I					.022Ac.		.022Ac.	YES			23	*Removal of Structure

All parcels this sheet are 100% Franklin County participation except as noted for 134 WD

REV. DATE	DESCRIPTION
11-18-68	Rev. Ac. PCL 133D-WD
1-23-69	Rev. DEED AREA PCL 133P

SUMMER & CO



BLENDON TWP. SEC. 4 U.S.M.L. T2N, R17W.
MIFFLIN TWP. SEC. 1 U.S.M.L. 100 T1N, R17W.

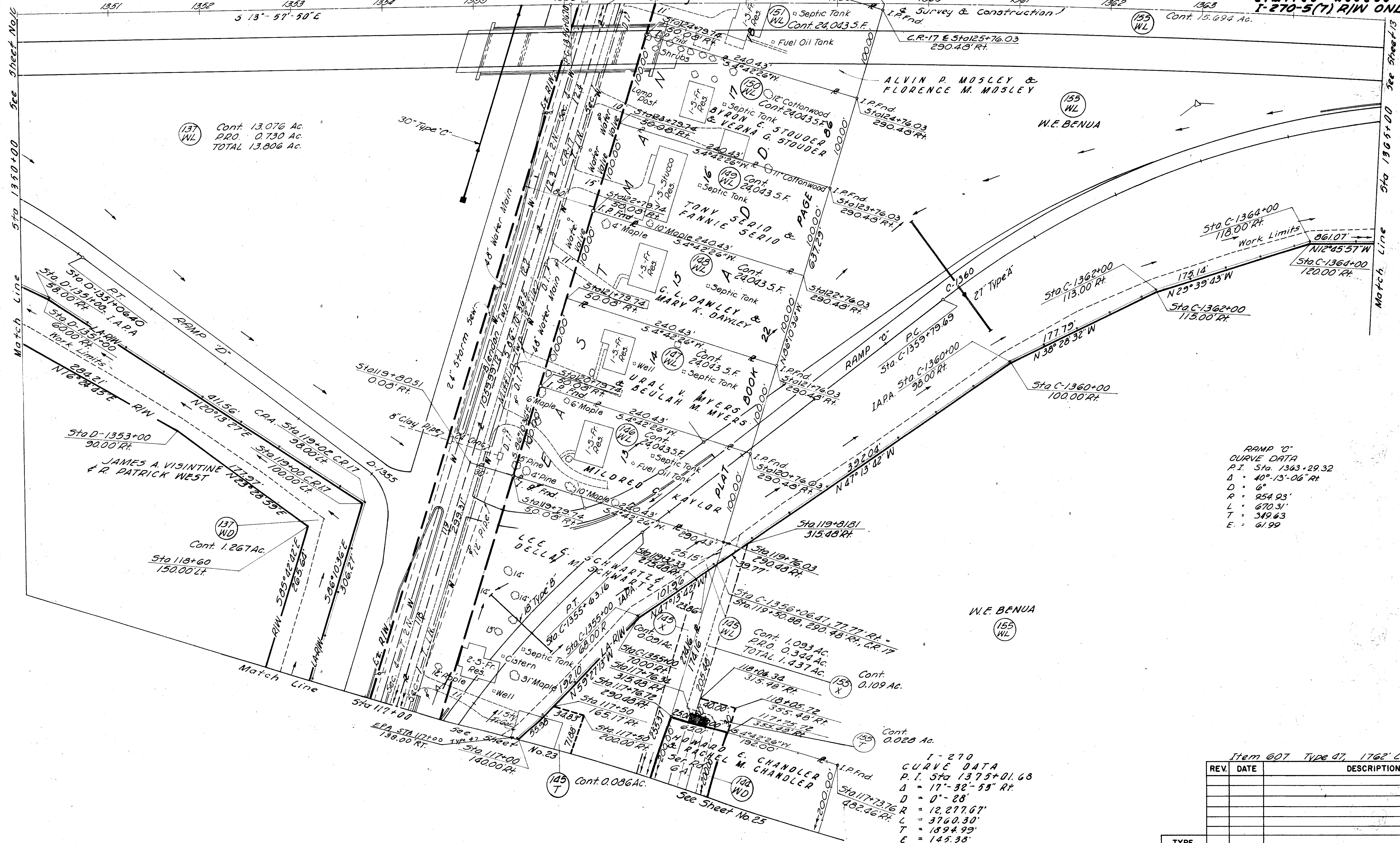
SCALE IN FEET
0 50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-270-5(7)/14

277
292

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

12
27



RAMP "D"
CURVE DATA
P.T. Sta. 1363+29.32
Δ = 40°-13'-06" Rt.
D = 6"
R = 254.93'
L = 670.31'
T = 349.63
E = 61.99

I-270
CURVE DATA
P.T. Sta. 1375+01.68
Δ = 17°-32'-55" Rt.
D = 0'-28"
R = 12,277.67'
L = 3760.30'
T = 1894.99'
E = 145.38'

Item 607 Type 47, 1762' Lin. Ft.

REV.	DATE	DESCRIPTION

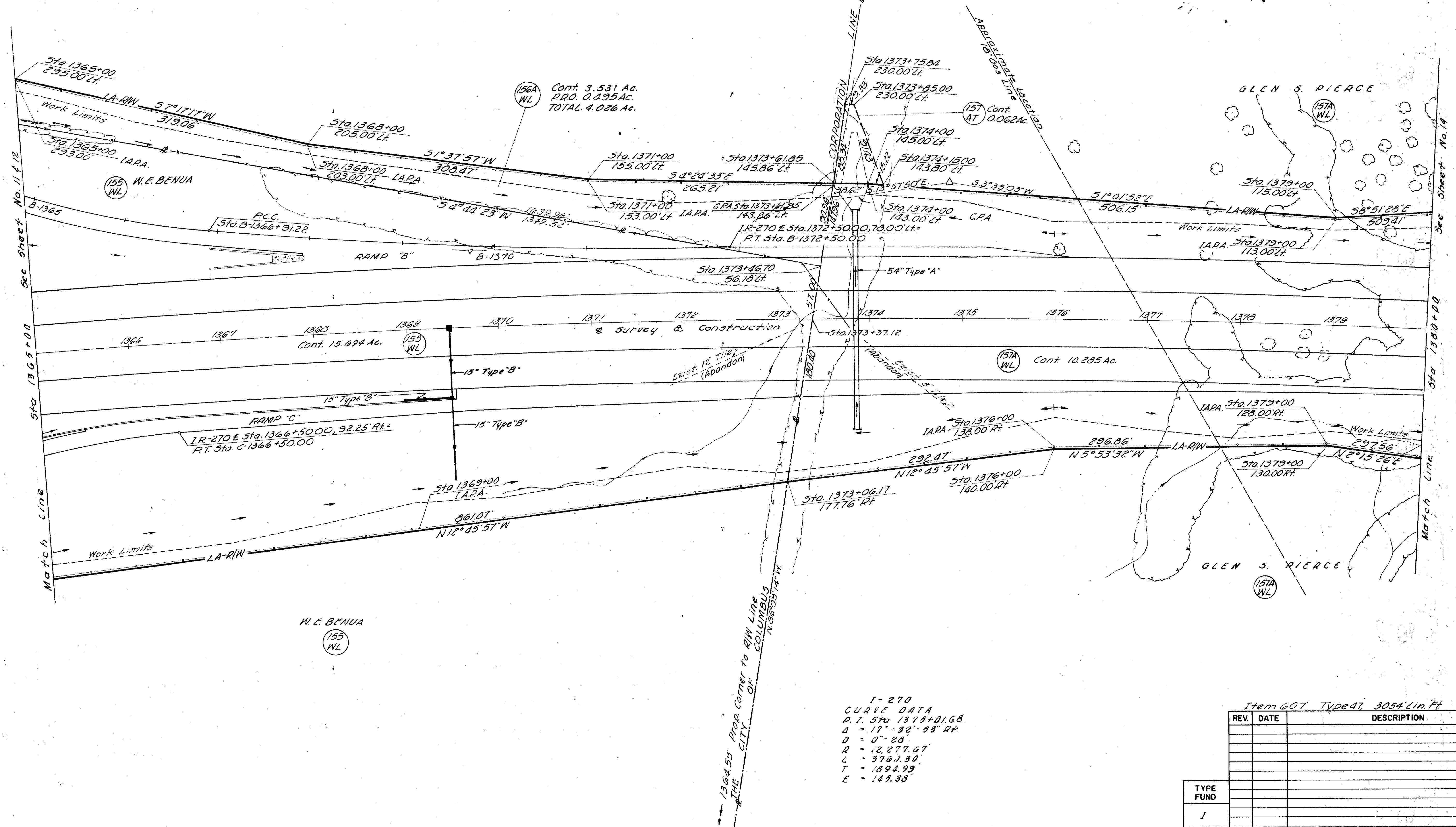
TYPE	FUND
I	

STA 1350+00 TO STA 1365+00 RT. R/W

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

CENTROHIO CORPORATION



I - 270
CURVE DATA
P.I. 57+ 1375+01.68
 $\Delta = 17^{\circ}-32'-53''$ Rt.
D = 0'-28"
R = 12,277.67'
L = 3760.30'
T = 1894.99'
E = 145.38'

Item 607 Type 47, 3054' Lin. Ft.

[illegible]

STA 1365+00 TO STA 1380+00 R/W

T.1N., R.17W.

MIFFLIN TWP.
SEC. 1 U.S.M.L.

0 50 100
SCALE IN FEET

T.1N., R.17W.

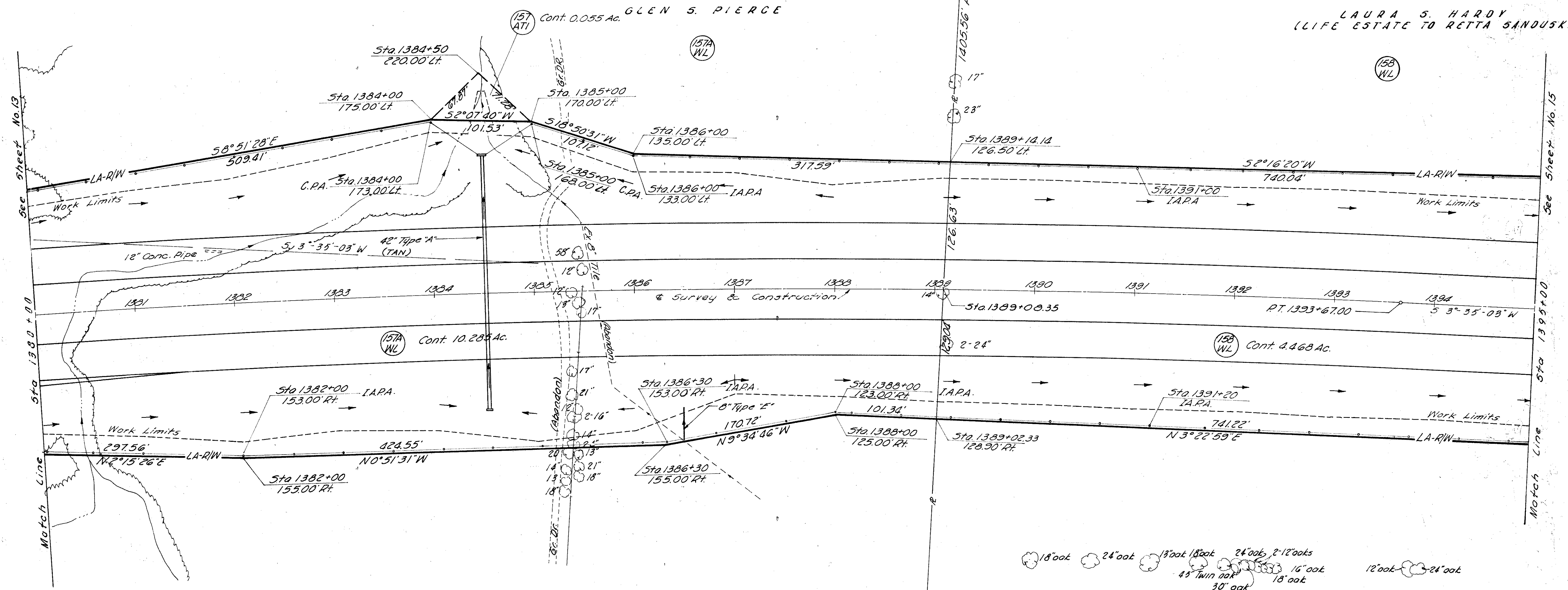
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-270-5(7)114

279
292

14
27

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

LAURA S. HARDY
(LIFE ESTATE TO RETTA SANDUSKY)



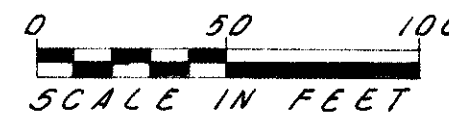
GLEN S. PIERCE

LAURA S. HARDY
(LIFE ESTATE TO RETTA SANDUSKY)

I-270
CURVE DATA
P.I. Sta 1375+01.68
Δ = 17°32'53\"/>

Item 607 Type 47, 3029 Lin. Ft.		REV.	DATE	DESCRIPTION
TYPE FUND	I			

STA 1380+00 TO STA 1395+00 R/W



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

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

280
292



CLYDE A. CLODFELTER
& HELEN D. CLODFELTER

159A
WL

LAURA S. HARDY
(LIKE ESTATE TO RETTA SANDUSKY)

158
7M
WL

COLUMBUS CORPORATION LINE

$$\begin{array}{r} 5101396 + 49.43 \\ \hline 135.00' \text{ Lt.} \end{array}$$

Work Limits

570.1397+60
I.A.P.A.

53°26'09"W
1931.47'

6" Tile
Abandon

Sta. 1404+20
I.A.P.A.

LA-R/W

Work Limits

See Sheet No. 14

See Sheet No. 16

542 1395+00

(158) Cont. 4.468 Ac.
WL

158
WL

135.00

$$-5 + 0.1396 + 48.98$$

Sta. 1397+
I.A.P.A.

Survey & Construction

159A Cont. 12.40/Ad
W/1

159A
WL

5+0.1404+40
I.A.P.A.

— 6" Type "B"

24" Type "C"—

6" Type "B"

Match Line

LAURA S. HARDY
(LIFE ESTATE TO RETTA SANDOZSKY)

7M
W/L
158

THE CITY OF I.F. 5.86°13'30"E.

209.58 Prop. Corner to R/W Line

$$\frac{5 \text{ to } 1396 + 47.56}{424.52' \text{ Rt.}}$$

2 Fnd.

1926.99'
N 4° 01' 49" E

CLYDE A. CLODFELTER
 & HELEN D. CLODFELTER
 12.751 Ac. Land/locked

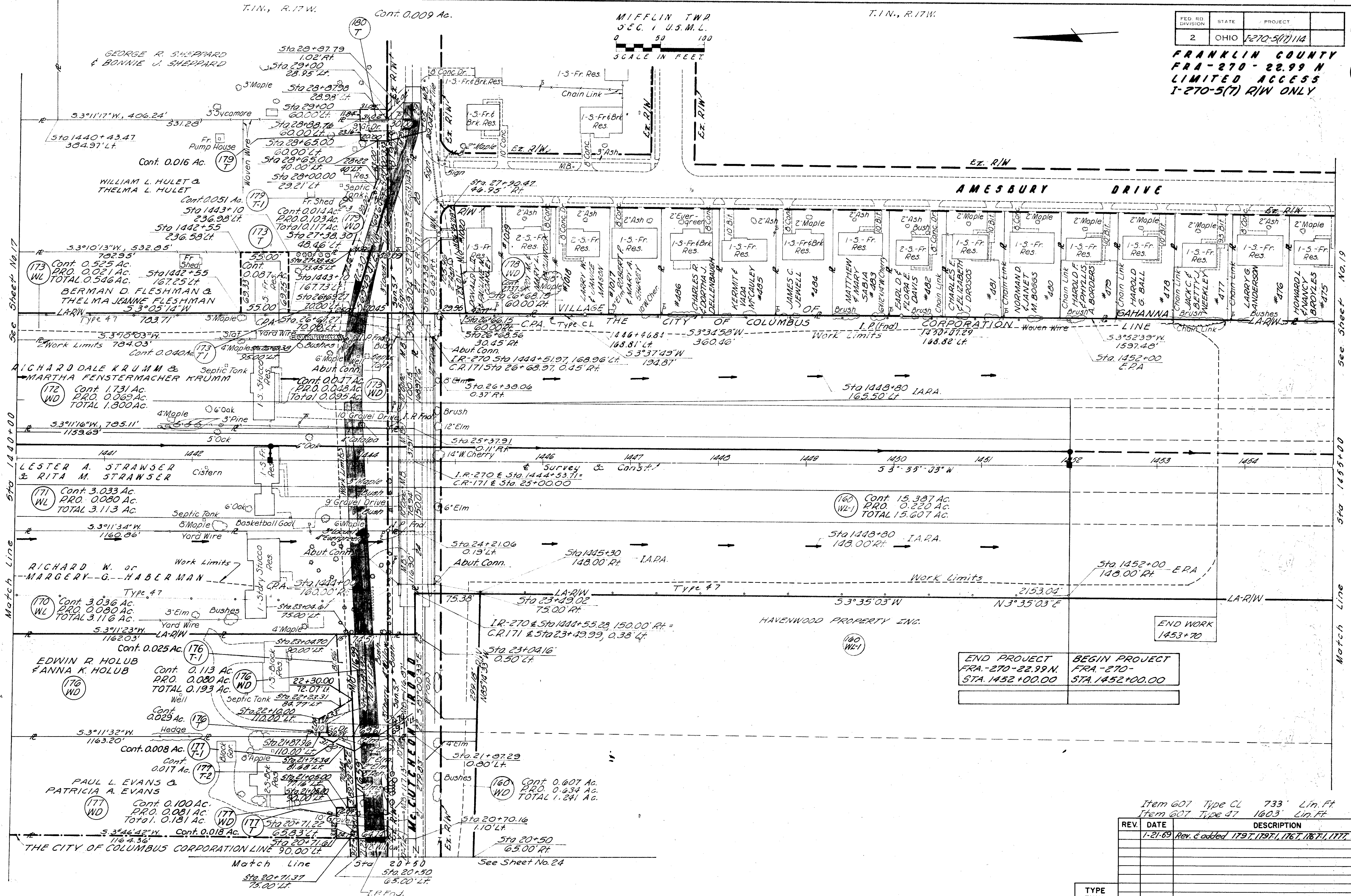
CLYDE A. CLODFELTER &
HELEN D. CLODFELTER

159A
WL

I. P. End

[illegible]

STA 1395+00 TO STA 1410+00 R/W



END PROJECT FRA-270-22.99 N STA. 1452+00.00	BEGIN PROJECT FRA-270- STA. 1452+00.00
---	--

REV.	DATE	DESCRIPTION
1-21-69	Rev. C added	179T, 179T, 176T, 176T, 177T, T-1672

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	STATE	PROJECT
2	OHIO	I-270-5(17)1A

FRANKLIN COUNTY
FRA-270-22.99 N
LIMITED ACCESS
I-270-5(7) R/W ONLY

284
292

19
27

EZ. R/W

EZ. R/W

AMESBURY DRIVE

EZ. R/W

EZ. R/W

1-5- Fr.
Res.

1-5- Fr. &
Br. Res.

1-5- Fr.
Res.

2-5- Fr.
Res.

1-5- Fr.
Res.

1-5- Fr. &
Br. Res.

1-5- Fr.
Res.

2-5- Fr.
Res.

1-5- Fr.
Res.

1-5- Fr.
Res.

1-5- Fr.
Res.

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Res.

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Res.

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Res.

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Res.

2-5- Fr.
Res.

BUDDY C. &
DIANNE BOHAM

DOWN B. &
MARY R. BUCK

ROBERT L. &
SANDRA M. DAVIS

BROOKSIDE
SALES INC.

BENNY R. &
PEGGY A. HORN

KEITH A. &
PRICE VILLAGE

JAMES R. &
PHYLLIS A. MARK

BROOKSIDE
SALES INC.

BROOKSIDE
SALES INC.

JOHN S. &
PATRICIA A. THOMPSON

ROBERT E. &
FRANK SCOTFIELD

JAMES F. &
RUTH F. ELLISSOR

JESSIE R. &
VASSAUX

CHARLES P. &
JOAN VINING

PAUL W. &
MARGIE L. HOISINGTON

20' &
BLVD

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6' Oak
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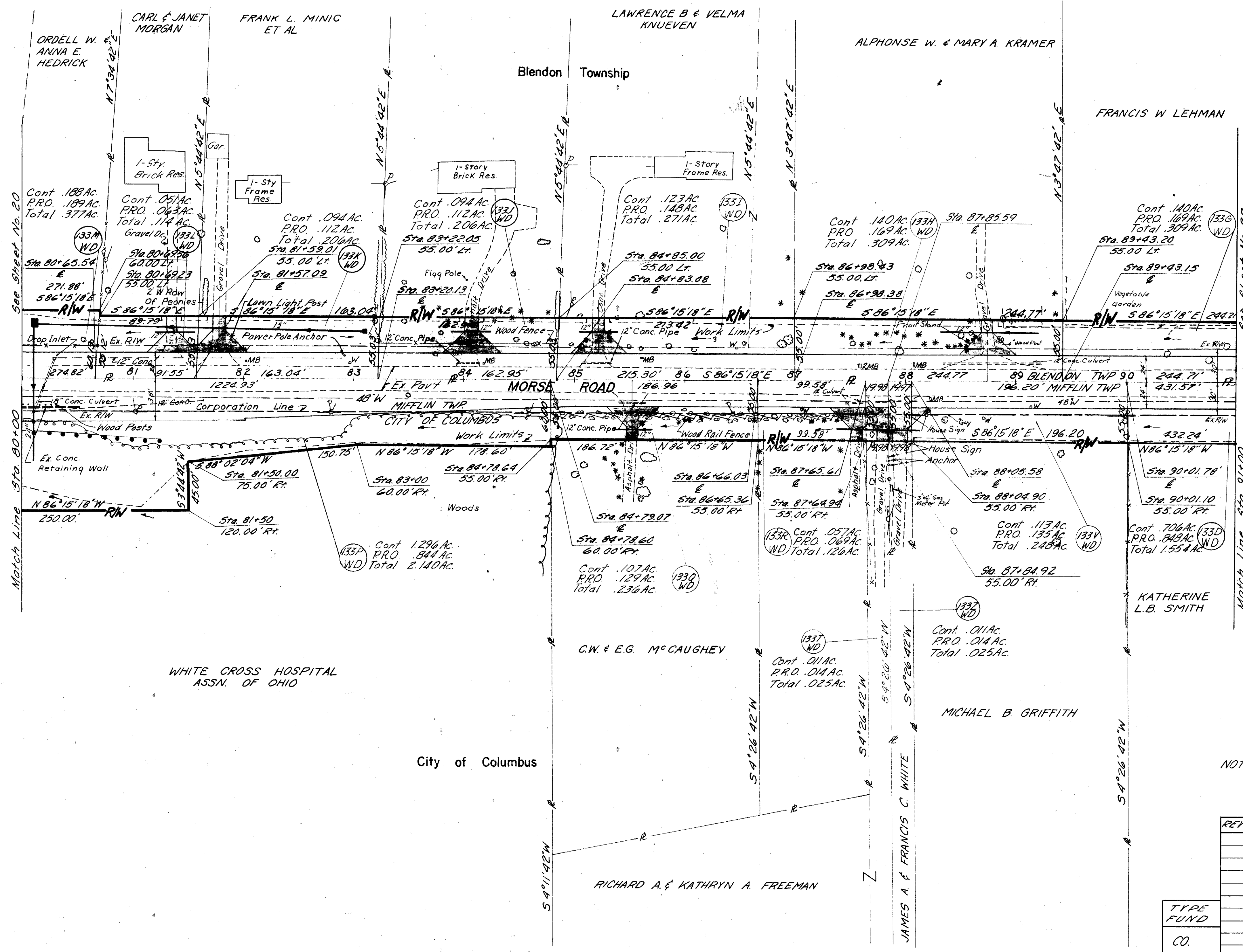
6' Oak
LA-R/W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

286
292

21
27

0 50 100
Scale in feet



NOTE: All Stationing and Offsets are Referenced to $\pm$ Survey and Construction

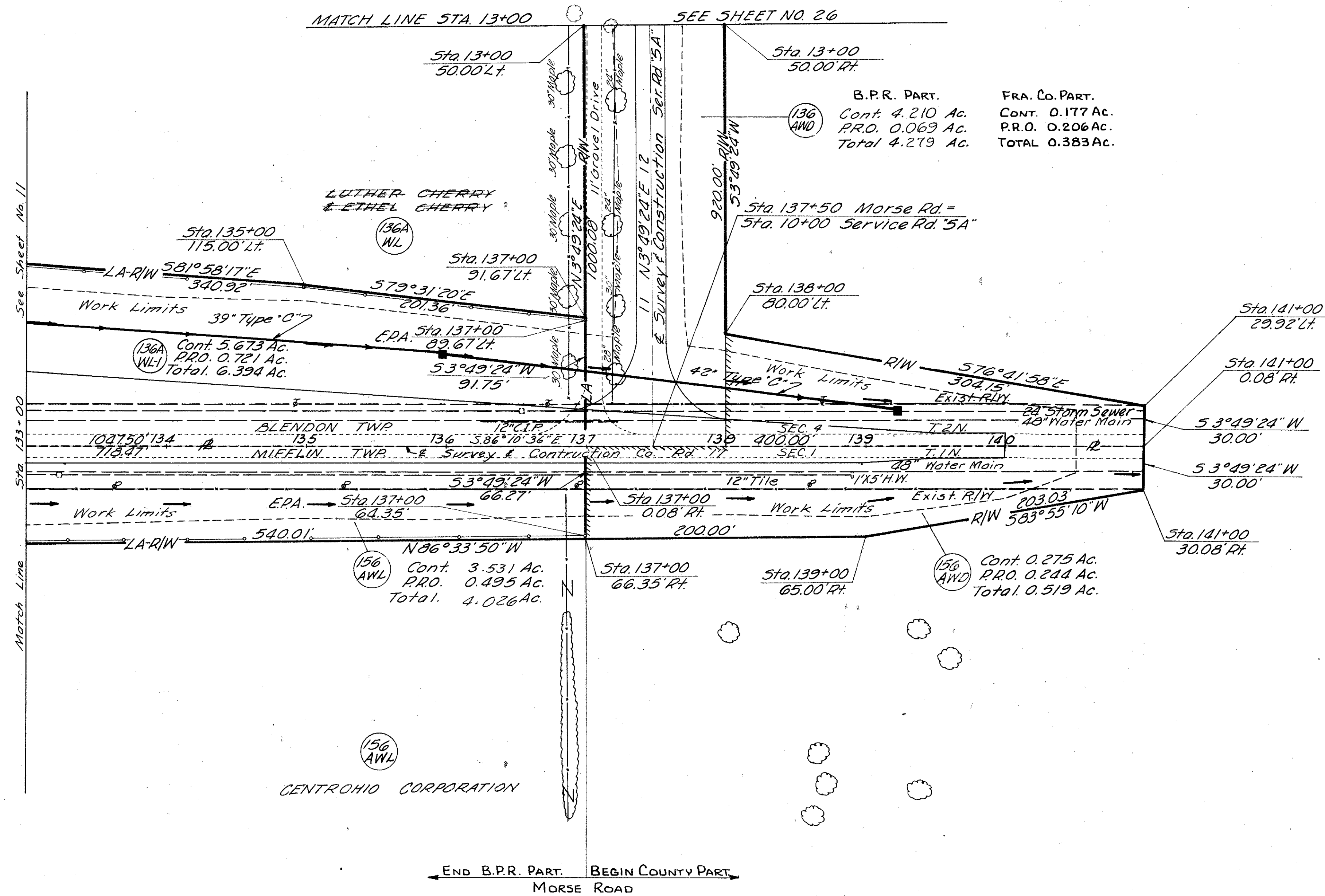
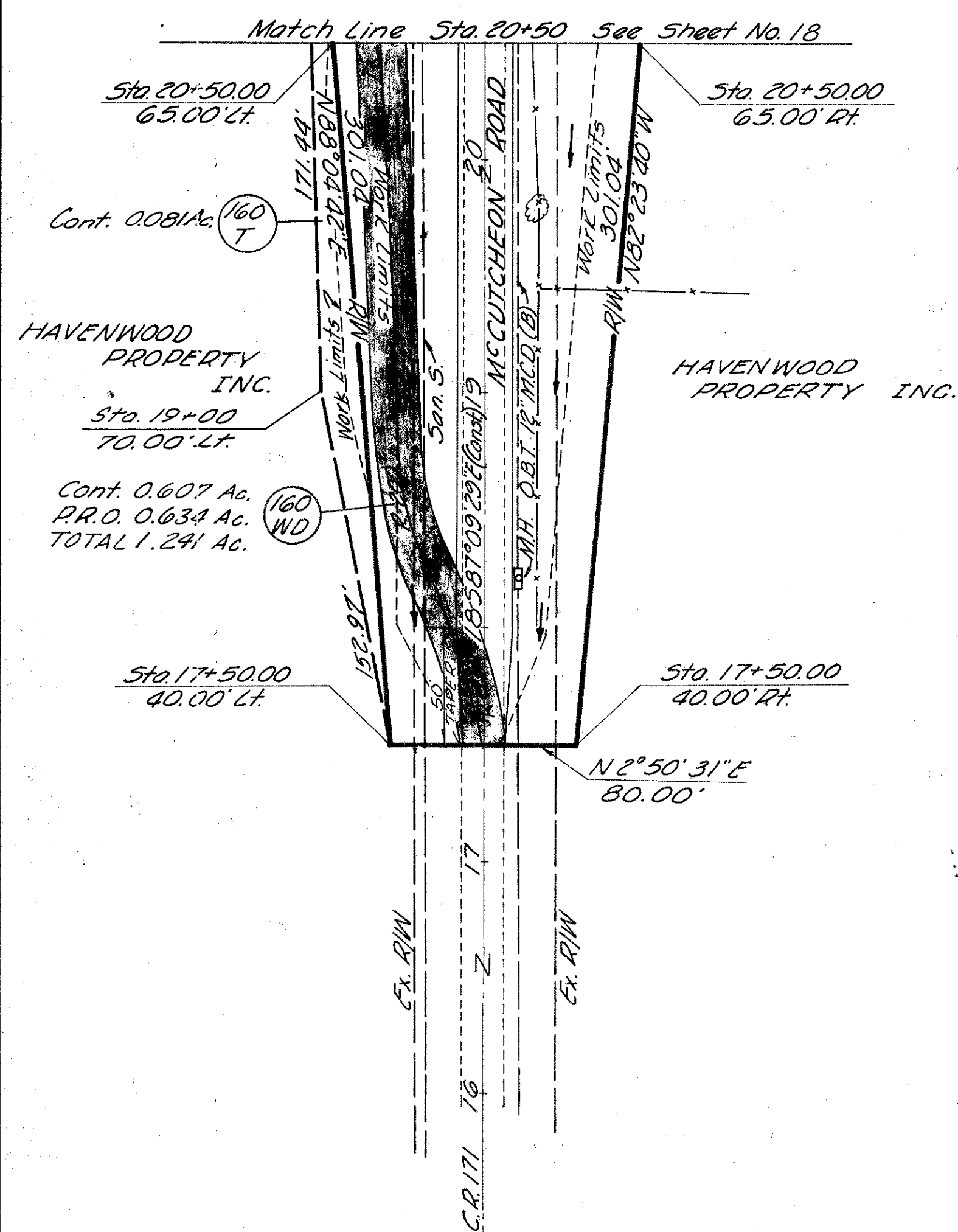
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MORSE ROAD STA. 80+00 TO STA. 91+00 R/W

0 50 100
SCALE IN FEET.

289
292

24
27

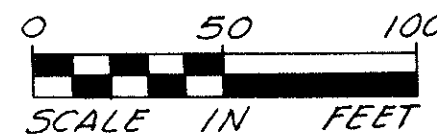


MIFFLIN TWP.
SEC. 1 U.S.M.L.
T. 1 N. R. 17 W.

[illegible]

MORSE ROAD STA. 133+00 to STA. 140+00 R/W

0 50 100
SCALE IN FEET



COLUMBUS & SOUTHERN OHIO
ELECTRIC COMPANY

Q N3003-544F
LUTHER CHERRY
ETHEL CHERRY

Cont. 0.032 Ac.

103°17"E
R
JAMES A. VISINTINE
& R. PATRICK WEST

Cont. 0.109 Ac.

SERVICE ROAD "7A"
CURVE DATA
PI = 5+0.33+51.42
 $\Delta = 90^{\circ} 01' 24''$
 $D_c = 38^{\circ} 11' 50''$
 $R = 150'$
 $L = 235.68'$
 $T = 150.06'$
 $E = 62.40'$
 $PC = 32+01.36$
 $PT = 34+37.04$

MIFFLIN TWP.
 SEC. 1 U.S.M.L.
 T. 1 N. R. 17 W.
 0 50 100
 SCALE IN FEET

MIFFLIN TWP.
 SEC. 1 U.S.M.L.
 T. 1 N. R. 17 W.
 0 50 100
 SCALE IN FEET

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

FRANKLIN COUNTY
FRA-270-22.99 N
I-270-5(7) R/W ONLY

HOWARD F. CHANDLER
F. RACHEL M. CHANDLER

KEEF E. SCHWARTZ
DELLA M. SCHWARTZ

Cont. .09/ Ac.

36
54
29

HARRY L. DAILEY
PATRICIA L. DAILEY

JOHN W. GERHARDT
MABEL C. GERHARDT

Cont. 5275

(141)
T

26" E

EUGENE B. CHANDLER
BETTIE J. CHANDLER

15	Fr	10.00
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sty.
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pac

ERNARD V
ARIETTA V

WILLIS
WILLIS

5,

Year	Number of people (millions)
1980	20
1985	22
1990	25
1995	28
2000	30
2005	32
2010	34
2015	35
2020	35

5.01.6
Sta. 115

7
+75.72

586°10'36"E

89 65.01

117+75.72

BURNB

586° 10' 3"

ROAD
36"E 2
uction Ser

20.64

Sta. 114+26.
482.46 Rt. 0

76 586°10
CR.17

36"E

12 = 55.5

Figure 1 is a line graph showing the percentage of respondents who believe that the use of force is justified in various circumstances. The x-axis represents the percentage of respondents who believe that the use of force is justified in the given circumstance, ranging from 0 to 100. The y-axis represents the percentage of respondents who believe that the use of force is justified in the given circumstance, ranging from 0 to 100. The graph shows a positive correlation between the two variables, with a regression line and a confidence interval.

57
48

2.46' RT CRI

SERVICE ROAD 'GA'
CURVE DATA
P.I. 570.3+19.01
 $\Delta = 89^{\circ}06'58''$ Lt.
 $\Delta = 63^{\circ}39'43''$
 $R = 90.00'$
 $L = 139.98'$
 $T = 88.62'$
 $E = 36.31'$
 $P.C. = 570.2+30.39$
 $P.T. = 570.3+70.37$

SERVICE ROAD "GA"
CURVE DATA
P.I. 540.4+68.75
 $\Delta = 89^{\circ}06'58''$ RT.
Q = $63^{\circ}39'43''$
R = 90.00'
L = 139.98'
T = 88.62'
E = 36.31'
PC = 540.3+80.13
PT = 540.5+20.11

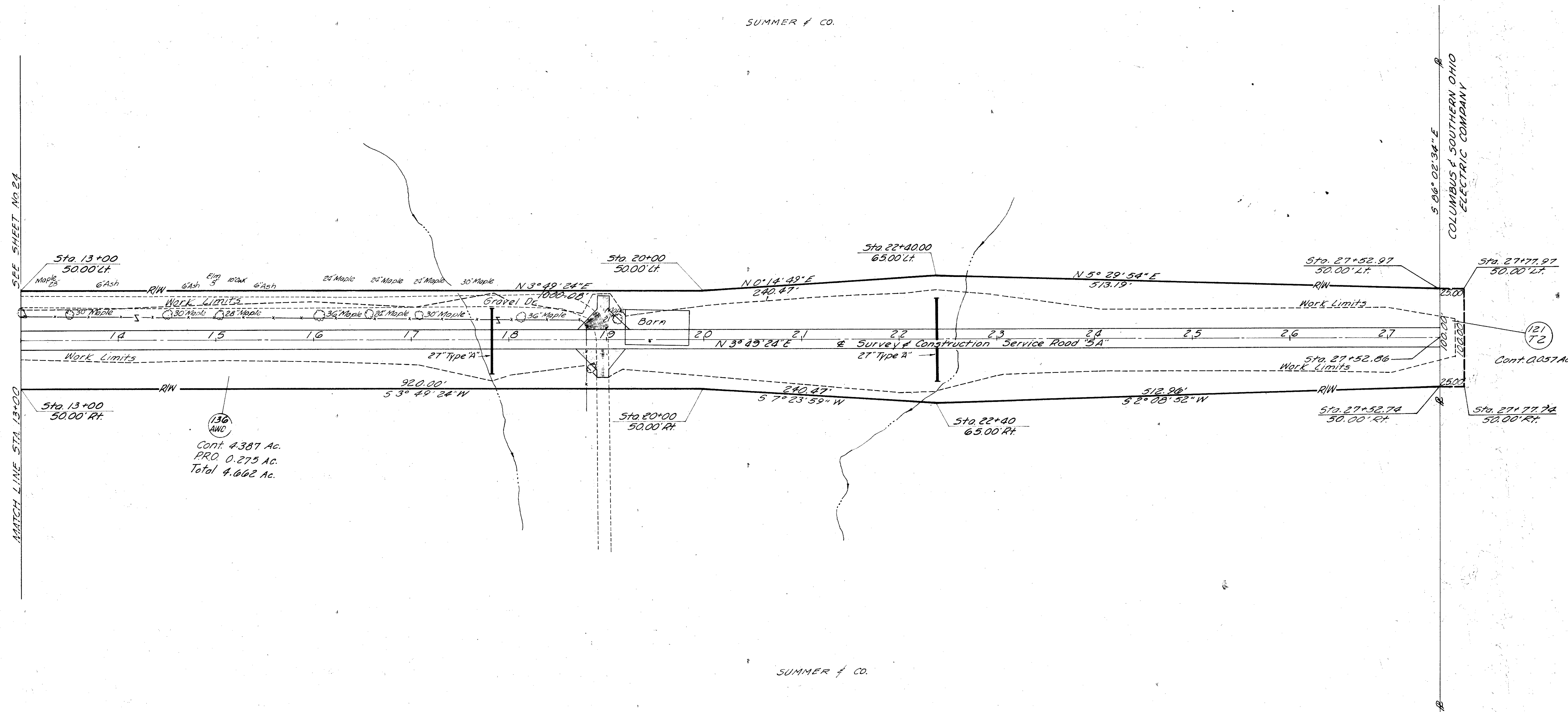
[illegible]

SERVICE ROADS 6A & 7A R/W

FRANKLIN COUNTY
FRA-270-22.99 N
I-270-5(7) R/W ONLY

26
27

SUMMER & CO.



SUMMER & CO.

[illegible]

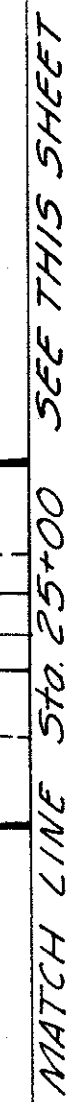
SERVICE ROAD "5A"

R/W

27/27

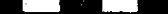


160A
W.D. Cont. 4.339 Ac.



MIFFLIN TWP.
SEC. 1 U.S.M.L
T. 1 N. R. 17 W.

0 50 100



Cont. 4.339 Ac.



CLYDE A. CLODFELTER
HELEN D. CLODFELTER

TYPE FUND
I

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 8-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 22+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	13	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											1
SHALE											22
BOULDERY ZONE											-
VARIOUS OTHER MATERIALS											-
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.											
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.											
INDICATES BROKEN ROCK INTERVAL.											

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. E.G. 15

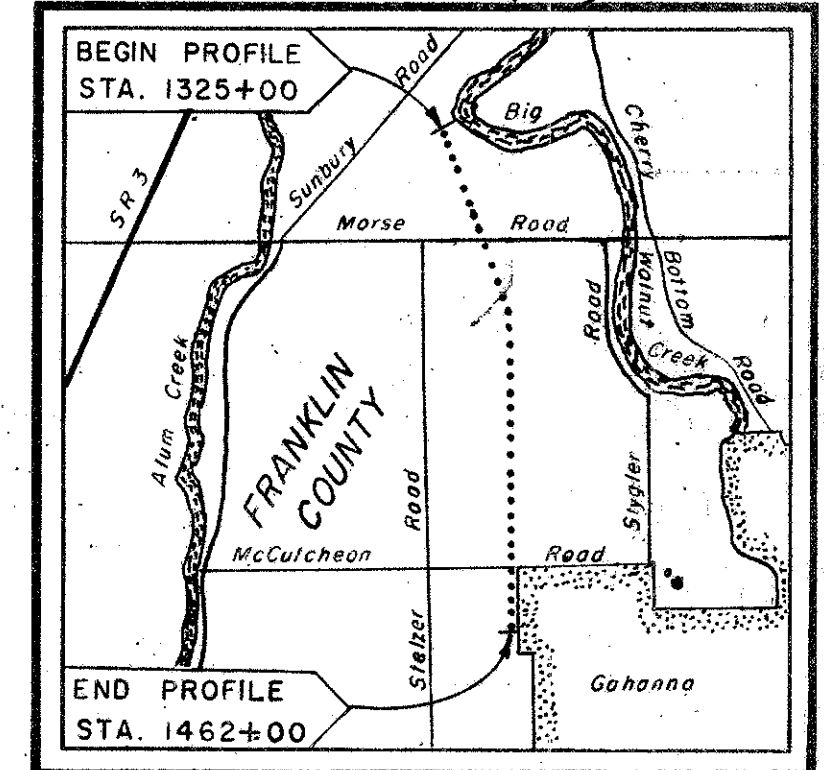
SOIL PROFILE

FRANKLIN COUNTY
FRA-270-22.99N

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.

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.

STATION & OFFSET		DEPTH	AGG.	C.S.	F.S.	SILT	CLAY	L.L.	P.I.	W.C.	SHTL	STATION & OFFSET		DEPTH	AGG.	C.S.	F.S.	SILT	CLAY	L.L.	P.I.	W.C.	SHTL	STATION & OFFSET		DEPTH	AGG.	C.S.	F.S.	SILT	CLAY	L.L.	P.I.	W.C.	SHTL				
		FROM TO									CLASS			FROM TO								CLASS			FROM TO										CLASS				
IR 270																																							
1328+00	CL	0.5-2.0	11	5	13	29	42	32	11	17	A-6a	1409+25	CL	0.5-5.0	25	6	13	25	31	27	11	14	A-6a *	21+00	45' Lt	0.5-2.0	0	2	10	41	47	45	17	24	A-7-6 *				
		2.0-4.0	(56	3	7	18	16			14	VISUAL			5.0-8.0	27	5	12	27	29	27	8	17	A-4a *			2.0-5.0	28	1	7	25	39	46	21	25	A-7-6 *				
		4.0-5.0	(61	8	8	7	16			16	VISUAL			8.0-10.0	47	15	10	13	15	27	6	12	A-2-4			5.0-7.0	28	3	10	24	35	39	17	14	A-6b				
														10.0-13.5	(70	11	6	6	7	30	7	15	VISUAL			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				
1331+00	CL	0.5-3.0	24	1	6	32	37	41	16	22	A-6 *	1415+70	CL	0.5-5.0	0	2	9	34	55	41	16	22	A-7-6 *	28+00	45' Lt	0.5-5.0	0	2	7	39	52	38	15	24	A-6a *				
		3.0-6.0	16	8	15	31	30	30	11	15	A-6a			5.0-9.0	49	8	10	14	19	40	16	17	A-2-6 *			5.0-10.0	19	8	16	25	32	31	13	17	A-6a *				
		6.0-7.5	30	8	13	27	22	28	10	11	A-4a			9.0-10.0	(84	5	3	4	4		12		VISUAL																
1335+00	CL	0.5-4.0	10	4	10	30	46	40	16	21	A-6b	1422+50	CL	0.5-5.0	5	2	9	26	58	41	17	21	A-7-6	32+00	45' Lt	0.5-1.0	0	3	8	39	50	39	15	20	A-6a *				
		4.0-8.0	(65	8	7	9	11			9	VISUAL			5.0-7.0	49	3	8	18	22	38	12	18	A-6a *			1.0-4.0	0	3	7	42	48	52	29	20	A-7-6 *				
		8.0-10.0	(74	6	5	7	8			15	VISUAL			7.0-8.0	(65	8	8	8	11		17		VISUAL *			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				
1338+00	CL	0.5-5.0	5	4	13	34	44	42	18	23	A-7-6	1428+00	CL	0.5-5.0	0	4	12	32	52	39	18	20	A-6b	36+00	45' Lt	0.5-2.0	0	4	10	49	37	38	14	21	A-6a *				
		5.0-7.0	31	5	9	26	29	40	16	23	A-6b			5.0-8.0	(71	4	6	9	10		19		VISUAL *			2.0-7.0	16	4	12	32	36	34	13	12	A-6a *				
		7.0-11.0	(35	12	10	20	23			22	VISUAL			8.0-10.0	(55	3	5	17	20		16		VISUAL			7.0-9.0	4	5	14	37	40	35	15	15	A-6a *				
														10.0-15.0	24	8	16	26	26	24	8	12	A-4a			9.0-10.0	48	10	9	18	15	34	13	12	A-6a *				
1342+00	CL	0.5-5.0	0	3	10	32	55	43	16	20	A-7-6	1433+35	100' Rt	0.5-6.0	27	4	11	26	32	31	11	21	A-6a	DRIVE SAMPLE SOIL TEST DATA															
		5.0-7.0	26	7	15	27	25	25	9	10	A-4a			6.0-8.0	38	6	11	24	21	25	8	9	A-4a	IR 270															
1346+00	CL	0.5-4.0	33	2	7	21	37	44	19	24	A-7-6			8.0-10.5	(78	7	5	4	6		5		VISUAL *	1355+04	40' Rt	5.0-6.0	0	7	16	30	47	37	18	27	A-6b				
		4.0-6.0	25	6	11	27	31	32	13	17	A-6a															7.5-8.5	0	15	15	29	41	31	10	17	A-4a				
1349+00	CL	0.5-4.0	10	3	9	29	49	41	18	20	A-7-6	1437+00	90' Rt	0.5-5.0	36	2	5	20	37	48	21	27	A-7-6	MC CUTCHEON ROAD															
		4.0-5.0	36	4	9	24	27	30	13	15	A-6a			5.0-7.0	(60	13	7	9	11		19		VISUAL *	26+35	40' Rt	5.0-6.0	0	8	12	37	43	31	10	18	A-4a				
1352+00	CL	0.5-5.0	15	3	9	28	45	41	15	21	A-6a			7.0-10.5	(80	8	4	4	4		15		VISUAL *																
		5.0-7.0	29	4	10	26	31	33	12	17	A-6a	1440+00	96' Rt	0.5-5.0	22	3	9	29	37	42	18	21	A-7-6																
		7.0-12.0	40	13	12	20	15	26	9	7	A-2-4			5.0-8.0	(69	8	6	9	8		11		VISUAL *																
		12.0-13.0	(49	11	9	16	15			15	VISUAL			8.0+12.0	(80	5	4	5	6		18		VISUAL *																
														12.0-13.0	(65	8	7	10	10		10		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	1449+00	CL	0.5-4.0	35	2	6	22	35	41	18	22	A-7-6																
		3.0-7.5	7	5	14	33	41	29	11	20	A-6a			4.0-6.0	0	1	1	28	70	53	24	25	A-7-6																
1368+00	CL	0.5-3.0	23	3	6	25	43	48	23	22	A-7-6			6.0-9.0	(77	5	3	8	7		12		VISUAL																
		3.0-8.0	29	4	12	28	27	28	11	18	A-6a			9.0-11.5	(84	5	3	4	4		14		VISUAL *																
		8.0-10.0	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	1454+00	CL	0.5-5.0	3	3	12	31	51	32	11	19	A-6a *																
		5.0-7.0	26	27	13	18	16	24	5	13	A-2-4			5.0-9.0	(50	6	6	20	18		14		VISUAL																
		7.0-12.0	4	2	30	51	13	NP	NP	17	A-4b			9.0-11.2	(80	6	4	5	5		12		VISUAL																
		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 *	1458+00	CL	0.5-5.0	23	2	9	25	41	40	17	17	A-6b *																
		3.0-6.0	12	5	13	31	39	33	12	15	A-6a			5.0-8.0	(72	7	5</																						

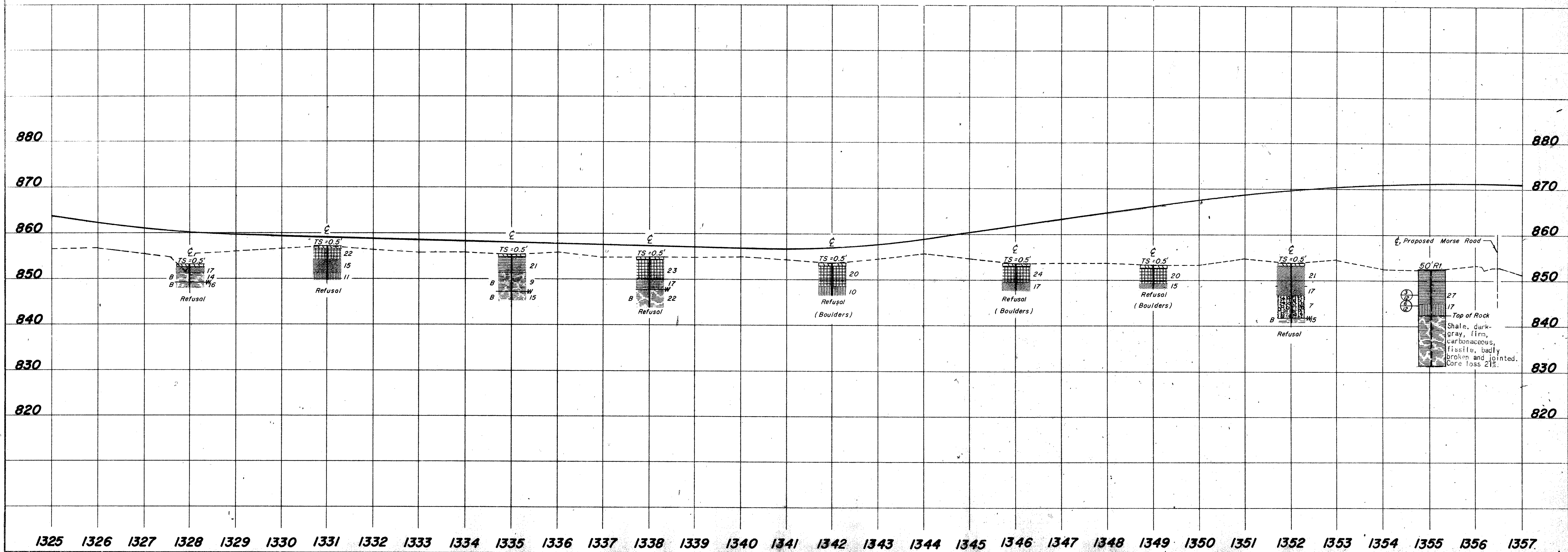
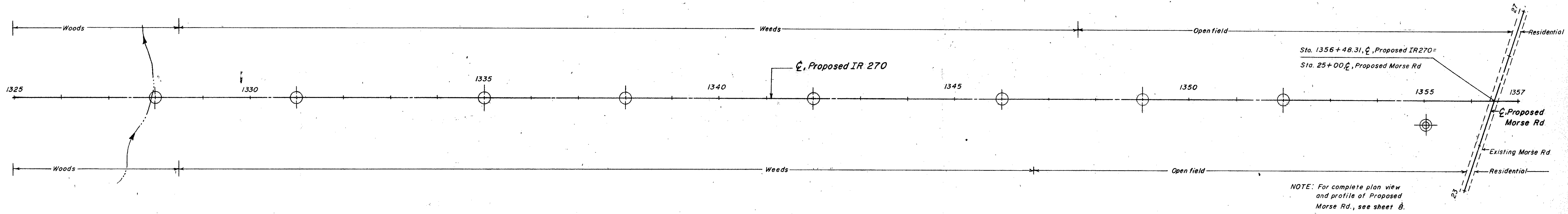
SOIL PROFILE

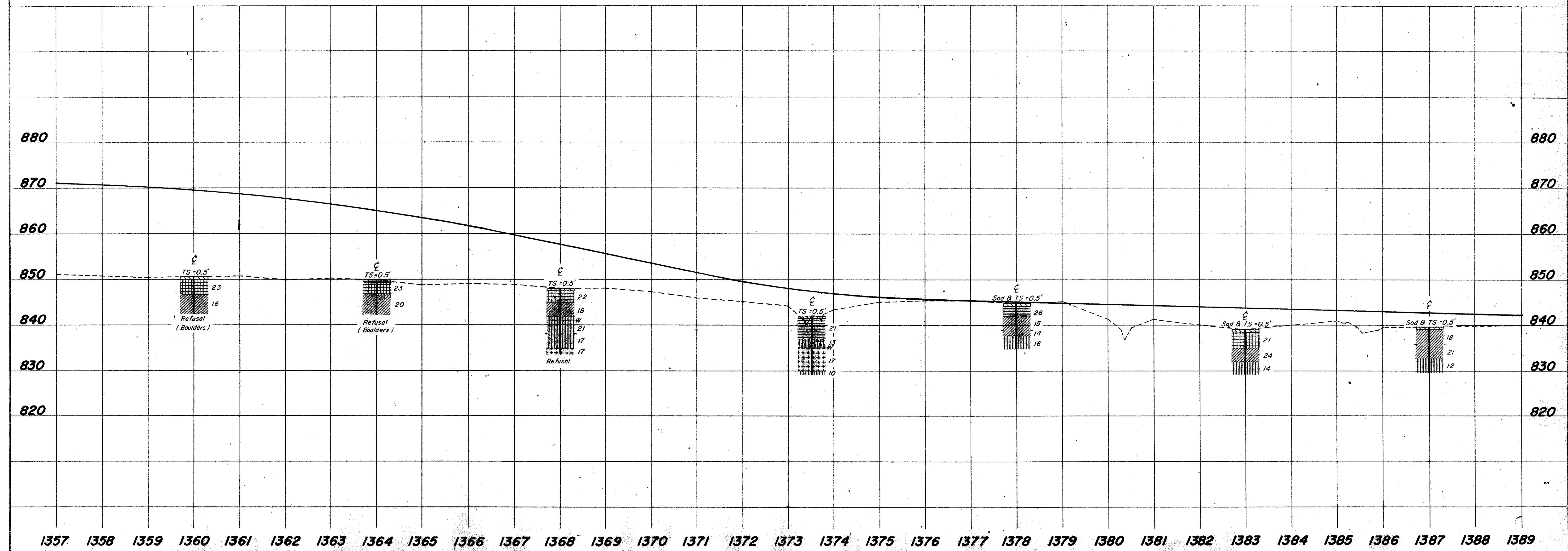
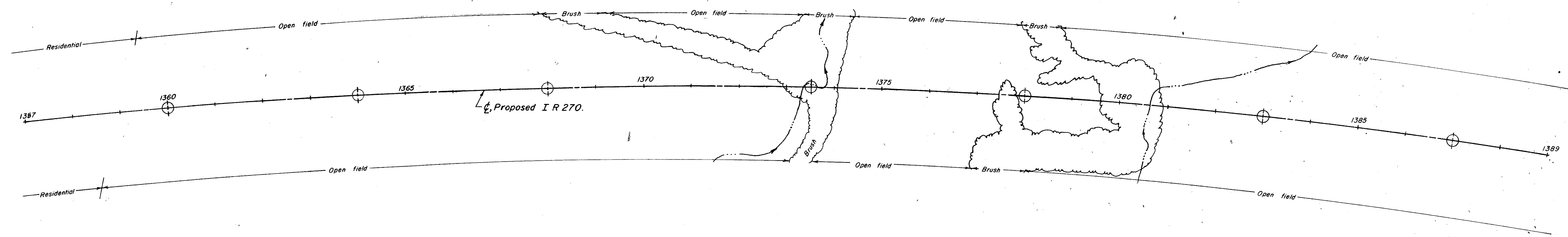
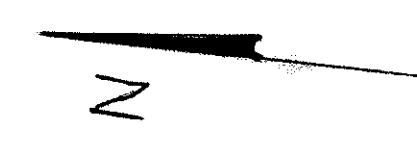
FRANKLIN COUNTY
FRA-270-22.99N

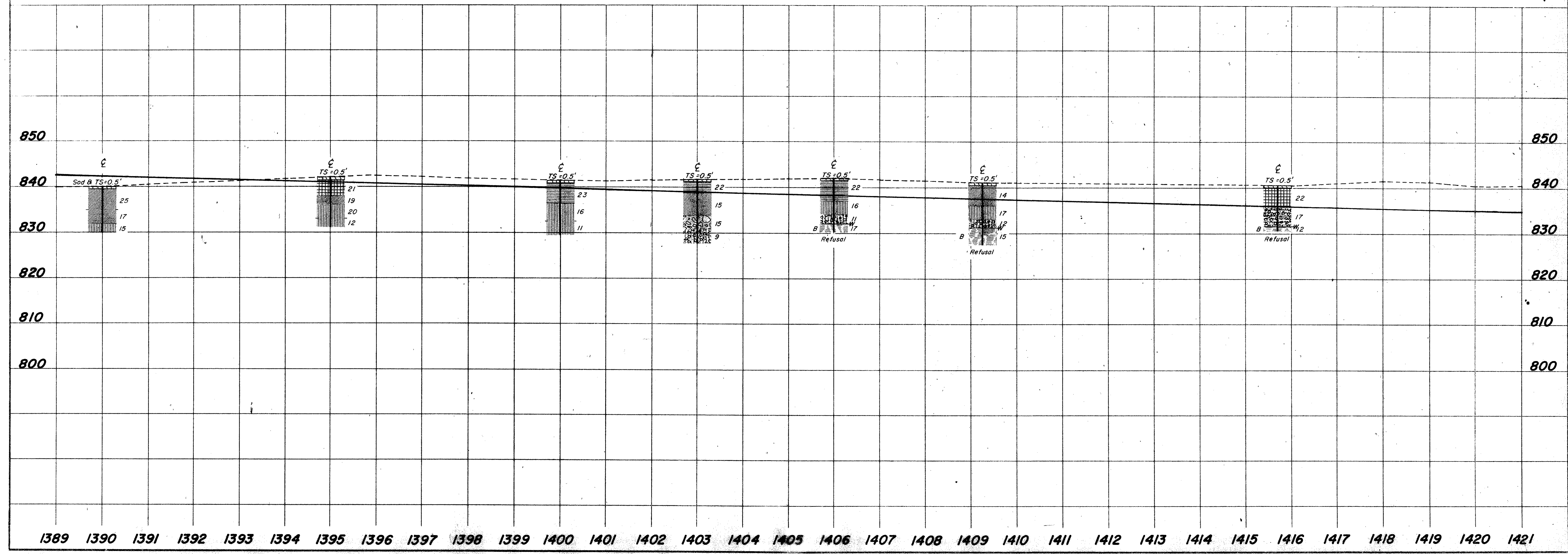
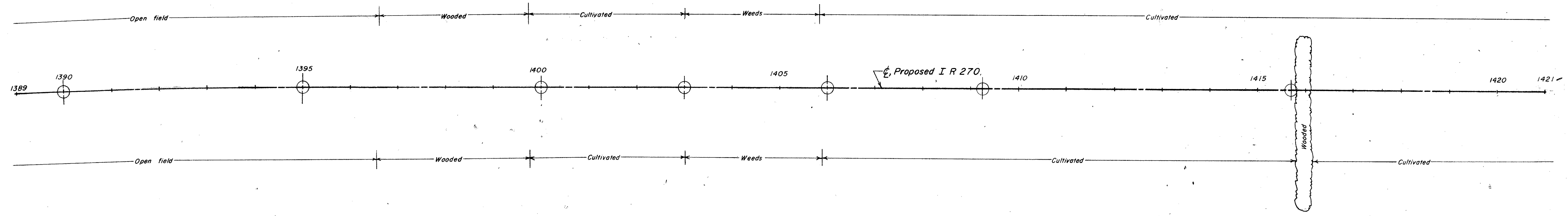
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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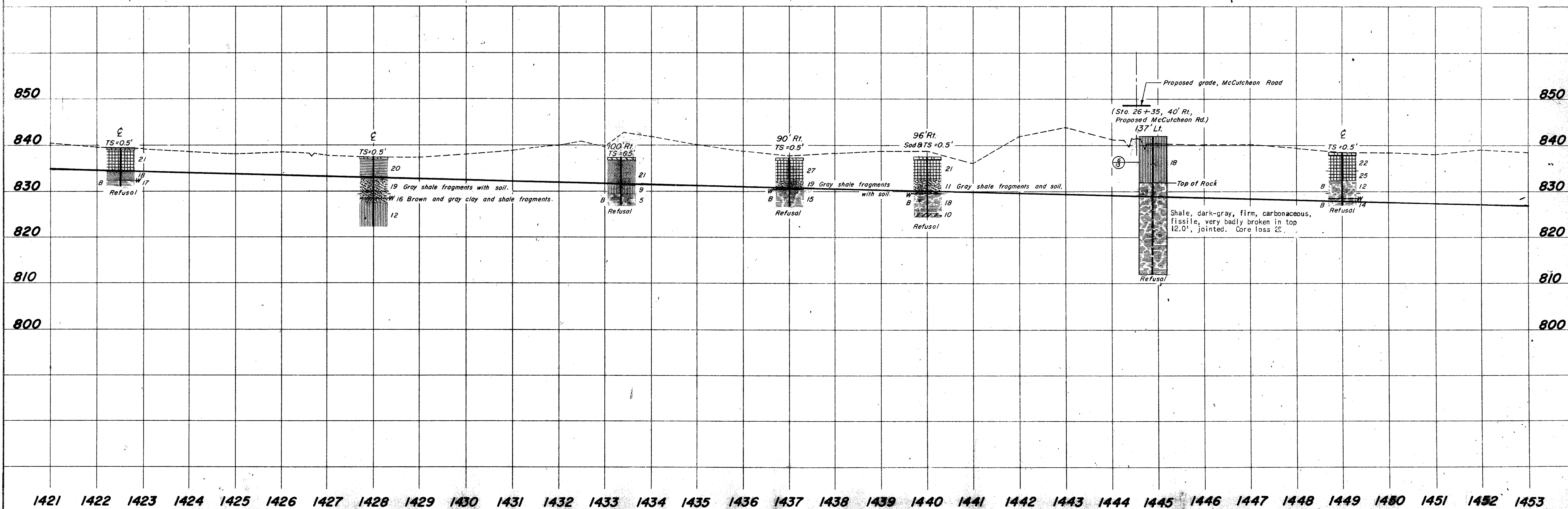
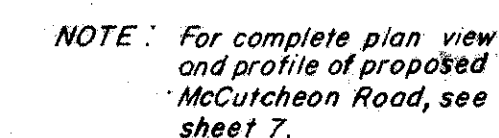






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Abstract



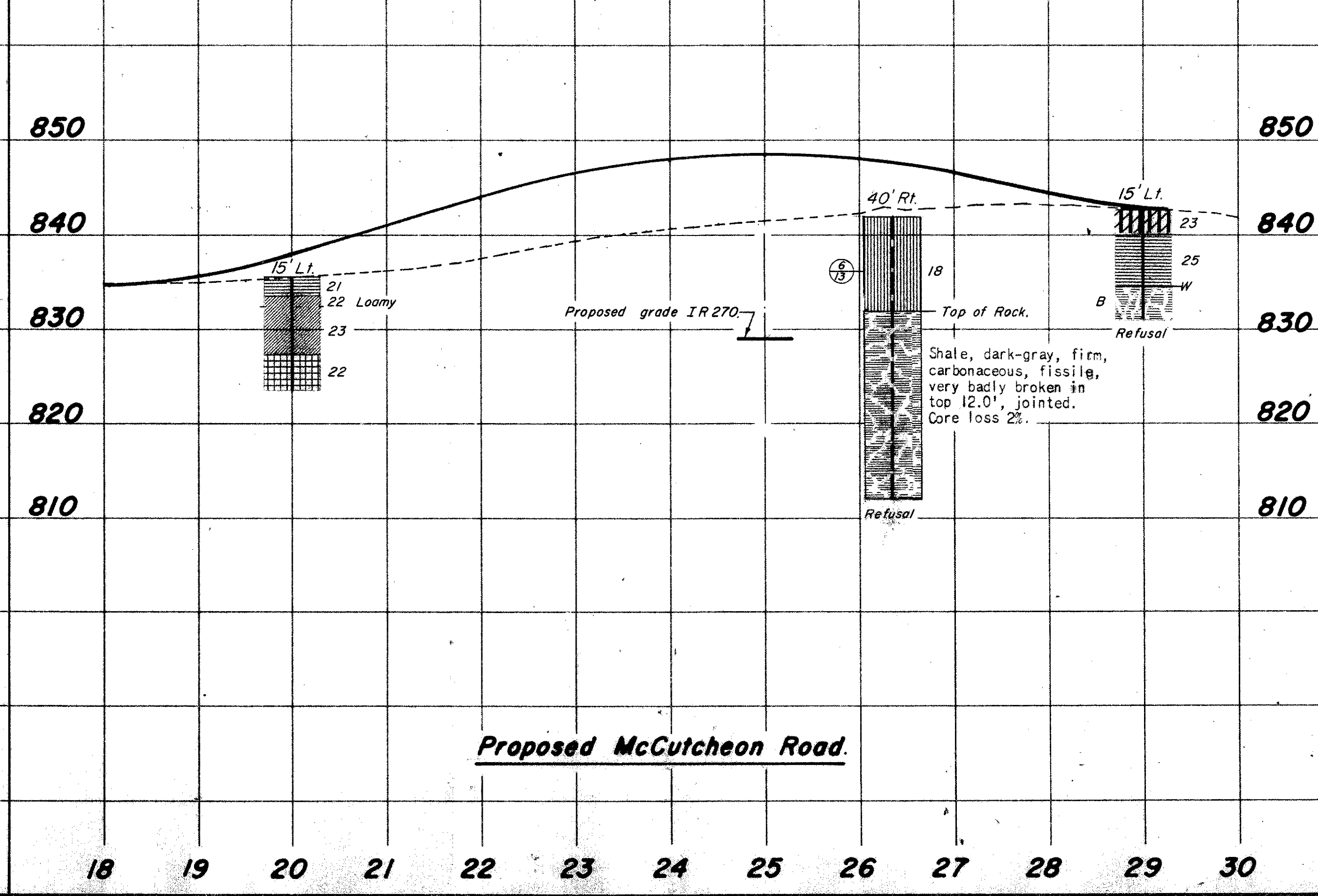
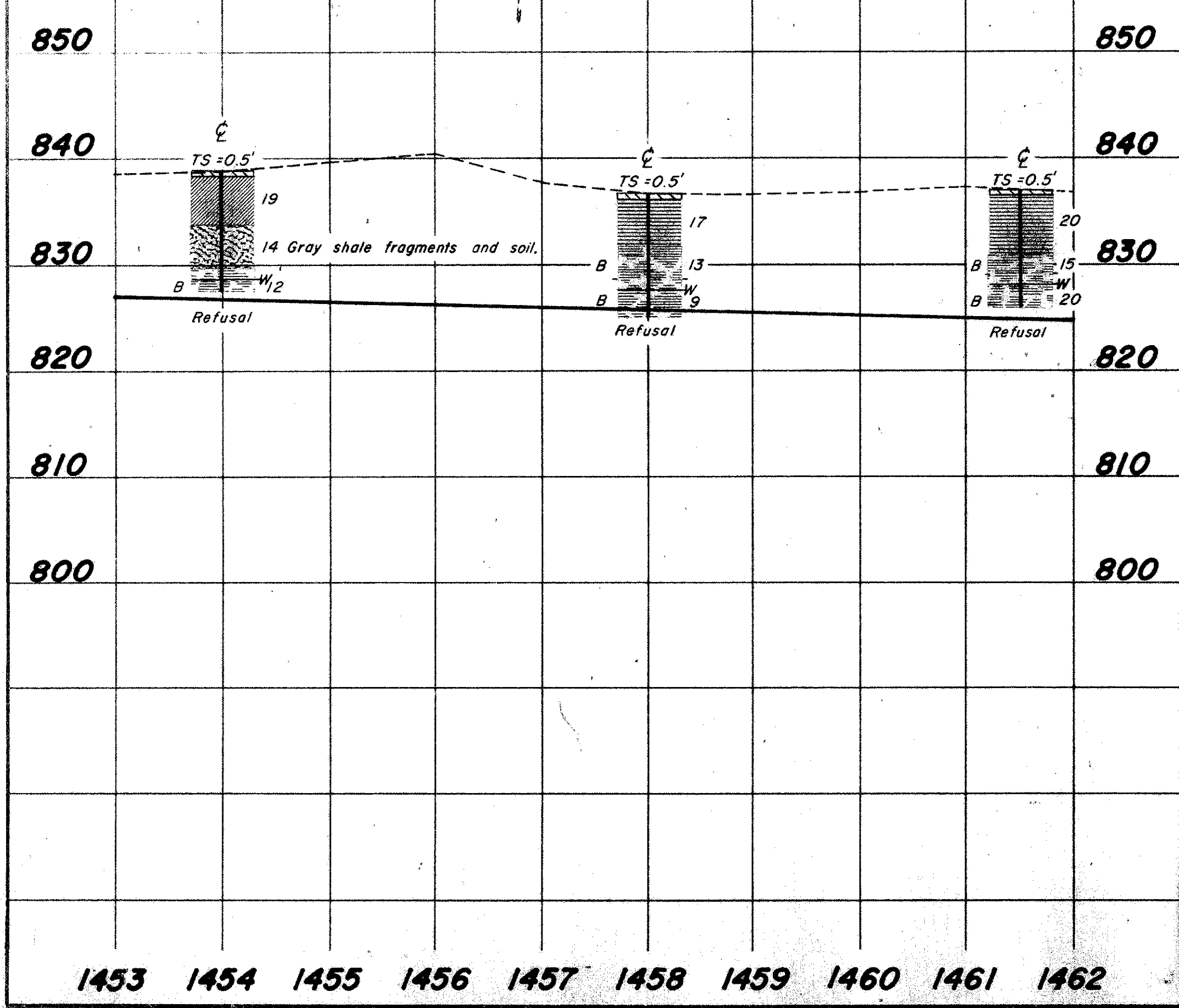
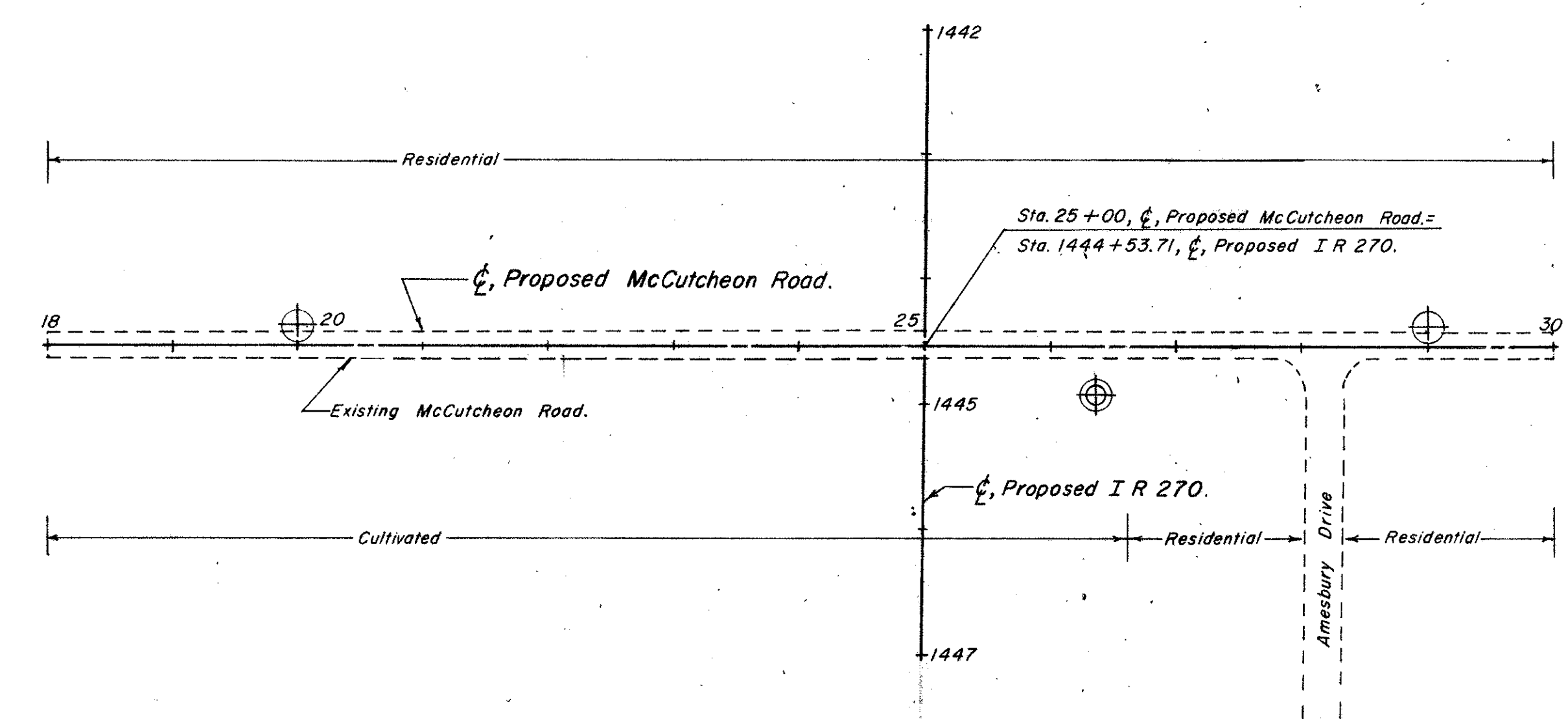
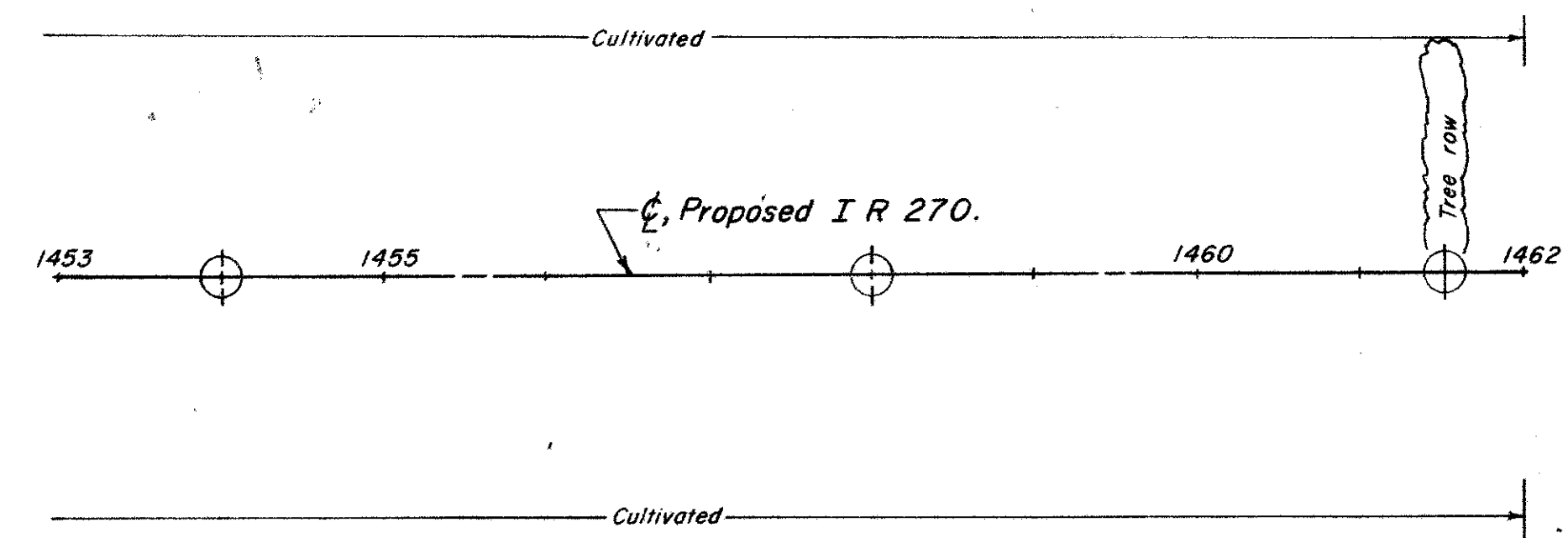
SOIL PROFILE

FRANKLIN COUNTY
FRA-270-22.99N

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST COLUMBUS 23, OHIO

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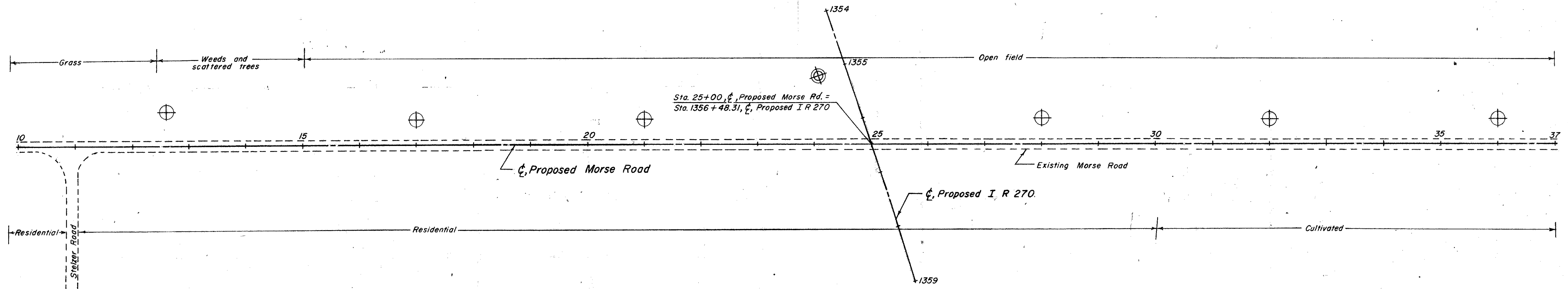
SOIL PROFILE

FRANKLIN COUNTY
FRA-270-22.99N

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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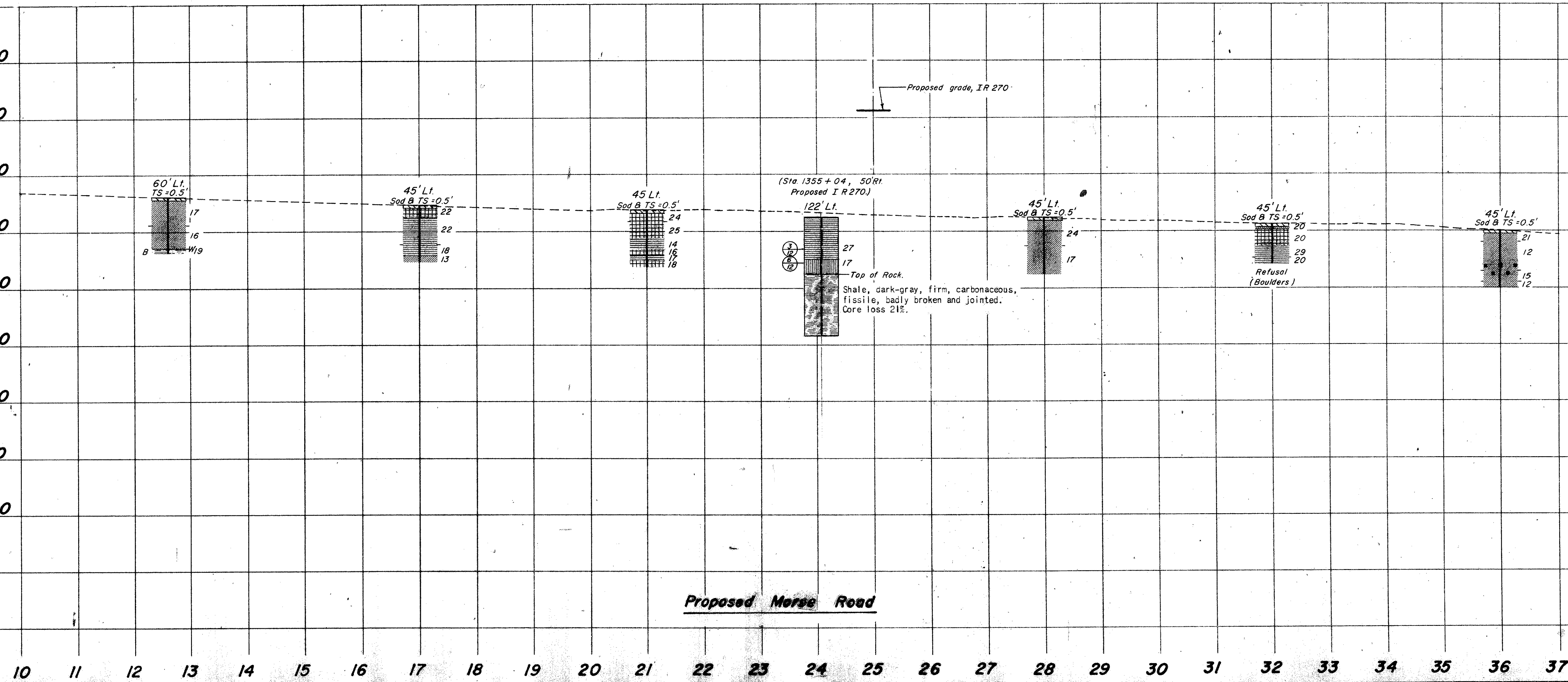
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Proposed Morse Road

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

INTRODUCTION

GEOLOGY OF THE PROJECT

EXPLORATION

INVESTIGATIONAL FINDINGS

POSSIBLY SOME SHALE BEDROCK WILL BE ENCOUNTERED IN THE DITCHES BETWEEN STATIONS 72+00 AND 81+00.

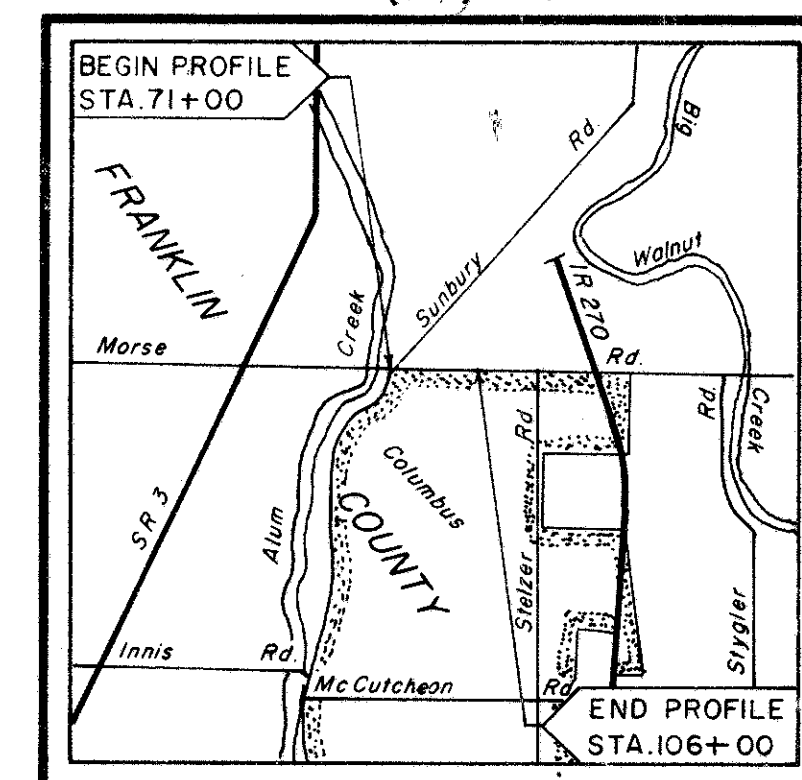
DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT	A-2-4(0)	A-2-4	47	10	10	15	18	33	9	16	2
GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY	A-2-6(1)	A-2-6	59	3	5	12	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											3
VISUAL CLASSIFICATION											
BERM MATERIAL.											
AUGER BORING-PLAN VIEW.											
AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.											
FREE WATER.											
NOTE:	FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT.E.G./5										

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

STATION & OFFSET		DEPTH FROM TO	% TO AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
72+00	20'Lt	0.0-3.0 3.0-6.0 6.0-8.5	37 8 (61)	7 4 9	9 9 6	22 30 10	25 49 14	35 44 38	16 19 11	17 23 (16)	A-6b * A-7-6 VISUAL
GRAY WEATHERED SHALE											
75+00	34'Lt	0.0-4.0 4.0-8.0	0 39	1 10	1 5	20 18	78 28	60 36	31 11	26 14	A-7-6 A-6a
77+30	CL	0.8-5.0 5.0-8.0 8.0-9.5	2 35 43	3 5 8	5 4 9	26 36 16	64 20 19	48 36 31	23 12 9	22 17 9	A-7-6 * A-6a A-2-4
81+50	CL	1.0-5.0 5.0-8.0 8.0-10.8	9 0 61	6 13 0	16 31 5	32 42 14	37 42 20	37 31 41	17 11 17	19 17 12	A-6b * A-6a A-2-7
86+00	12'Lt	1.0-5.0 5.0-8.0 8.0-10.0 10.0-11.0	16 4 54 46	5 3 1 1	14 5 5 3	31 29 22 25	34 59 30 34	29 41 30 12	11 18 12 11	16 22 13 11	A-6a * A-7-6 A-6a A-6a
GRAY WEATHERED SHALE											
106+25	12'Lt	0.8-3.0 3.0-7.0 7.0-11.0	3 9 44	0 5 8	10 11 10	36 26 18	51 49 20	41 44 41	16 19 13	22 25 20	A-7-6 * A-7-6 VISUAL
BROWN WEATHERED SHALE											

FRA-270-22-99 N
MORSE ROAD
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

I-270-5(17)114

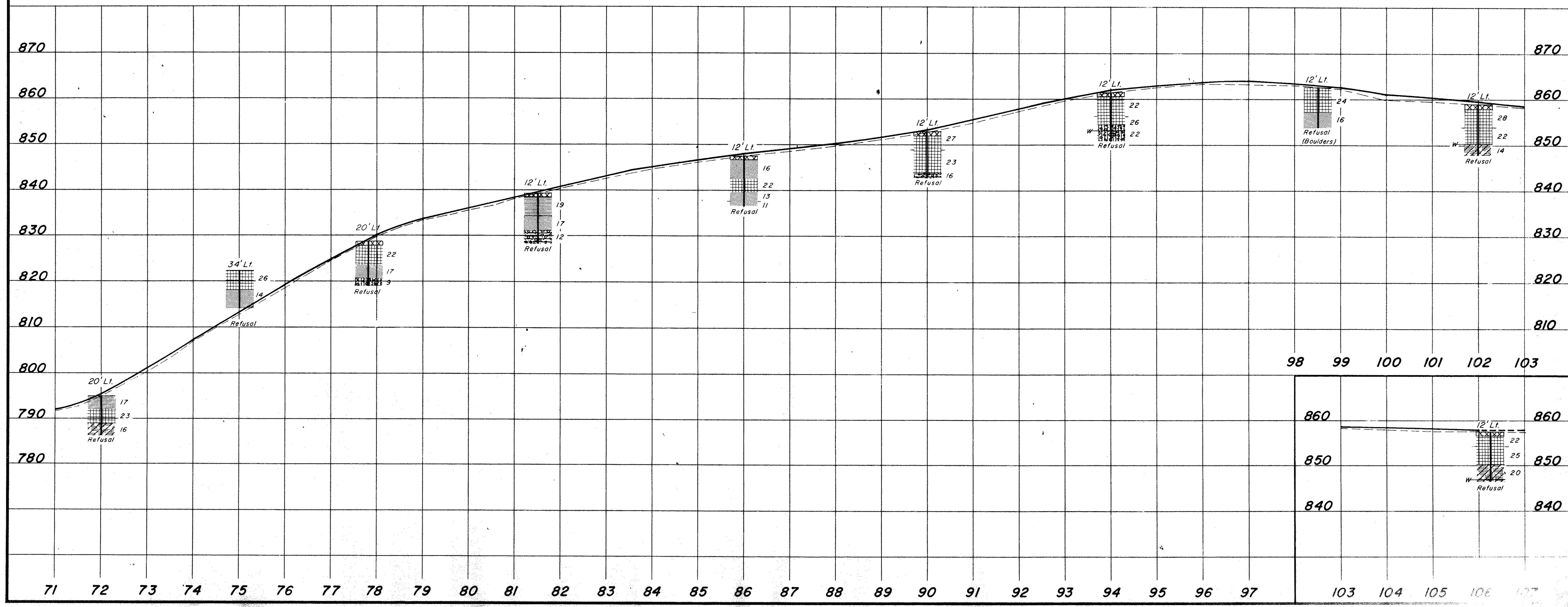
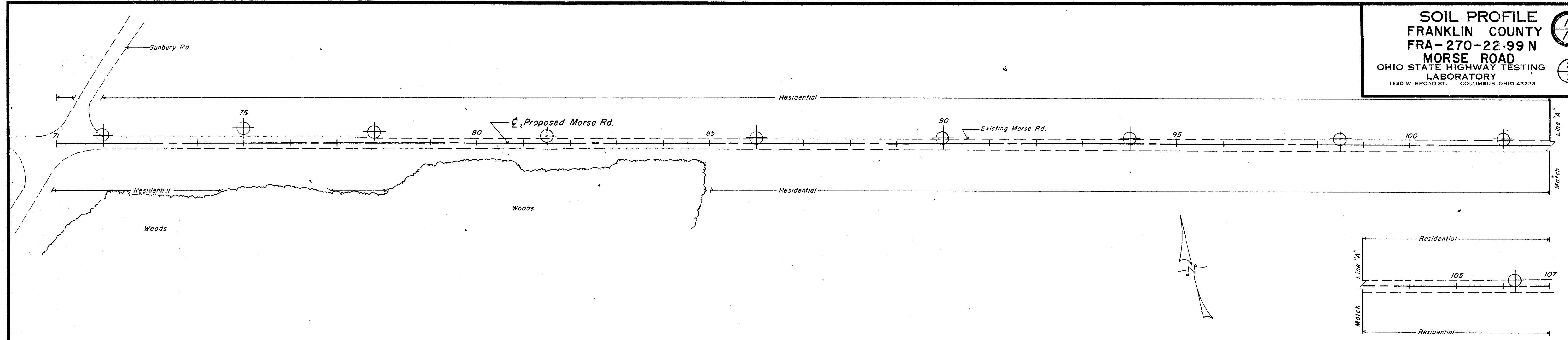


LOCATION MAP

Recon - J.S.M. - 3/7/68

Drilling-Auger-L.M.D. - 3/6/68

Drafting - K.J.S. - 4/16/68



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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 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

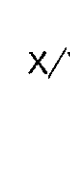
THE BORINGS DISCLOSED THAT RELATIVELY FLAT-LYING BEDROCK SURFACE, ENCOUNTERED AT 10 AND 11-FOOT DEPTHS, ELEVATIONS 843 AND 841 FEET, IS overlain BY DENSE SANDY SILTS AND SILTY SANDS. THE BORINGS WERE TERMINATED AT 21 AND 22-FOOT DEPTHS, ELEVATIONS 832 AND 831 FEET, AFTER PENETRATING 10 AND 11 FEET BELOW 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 Top of Rock Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken. 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.

 Indicates Final Measurement of Penetration, in Inches. 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.

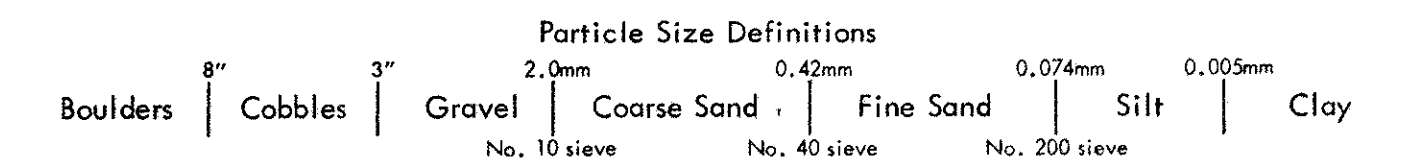
Drive Sample Borings - Drive-Press Sample Borings

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.



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														
	2														
	4														
847.5	6	3/12			Brown and Gray Sandy Clay	1	0	7	16	30	47	37	18	27	A-6b
845.0	8														
842.5	10	6/12			Brown and Gray Sandy Silt	2	0	15	15	29	41	31	10	17	A-4a
	12				TOP OF ROCK										
	14		2.9	2.1	Shale, dark-gray, firm, carbonaceous, fissile, badly broken and jointed. Core Loss 21%.										
	16														
	18														
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														
	2														
	4														
847.0	6	8/9			Brown Clayey Silt with Shale Fragments	1	-	-	-	-	28	9	18	-	
844.5	8														
	10	13/22			Brownish-Gray Gravelly Sandy Silt	2	19	7	32	24	18	NP	NP	17	A-4a
842.0	12														
841.0	12/19				Gray Shale Fragments with Silty Sand	3	57	17	9	8	9	24	6	11	
	14				TOP OF ROCK										
	16		4.5	0.5	Shale, dark-gray, firm, carbonaceous, fissile, badly broken and jointed. Core Loss 7%.										
	18														
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 1355+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														
	2														
	4														
847.5	6	10/12			Brown Sandy Silt	1	0	11	18	30	41	28	10	18	A-4a
845.0	8														
	10	11/14			Brown and Gray Gravelly Sandy Silt	2	26	18	15	17	24	26	6	17	A-4a
842.5	12														
841.5	25/30				Gray Silty Sand and Shale and Stone Fragments	3	37	20	14	14	15	24	6	8	A-2-a
	14		2.9	0.1	TOP OF ROCK										
	16				Shale, dark-gray, carbonaceous, fissile, firm, very badly broken and jointed. Core Loss 6%.										
	18														
	20		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
FRA - 270 - 22.99N

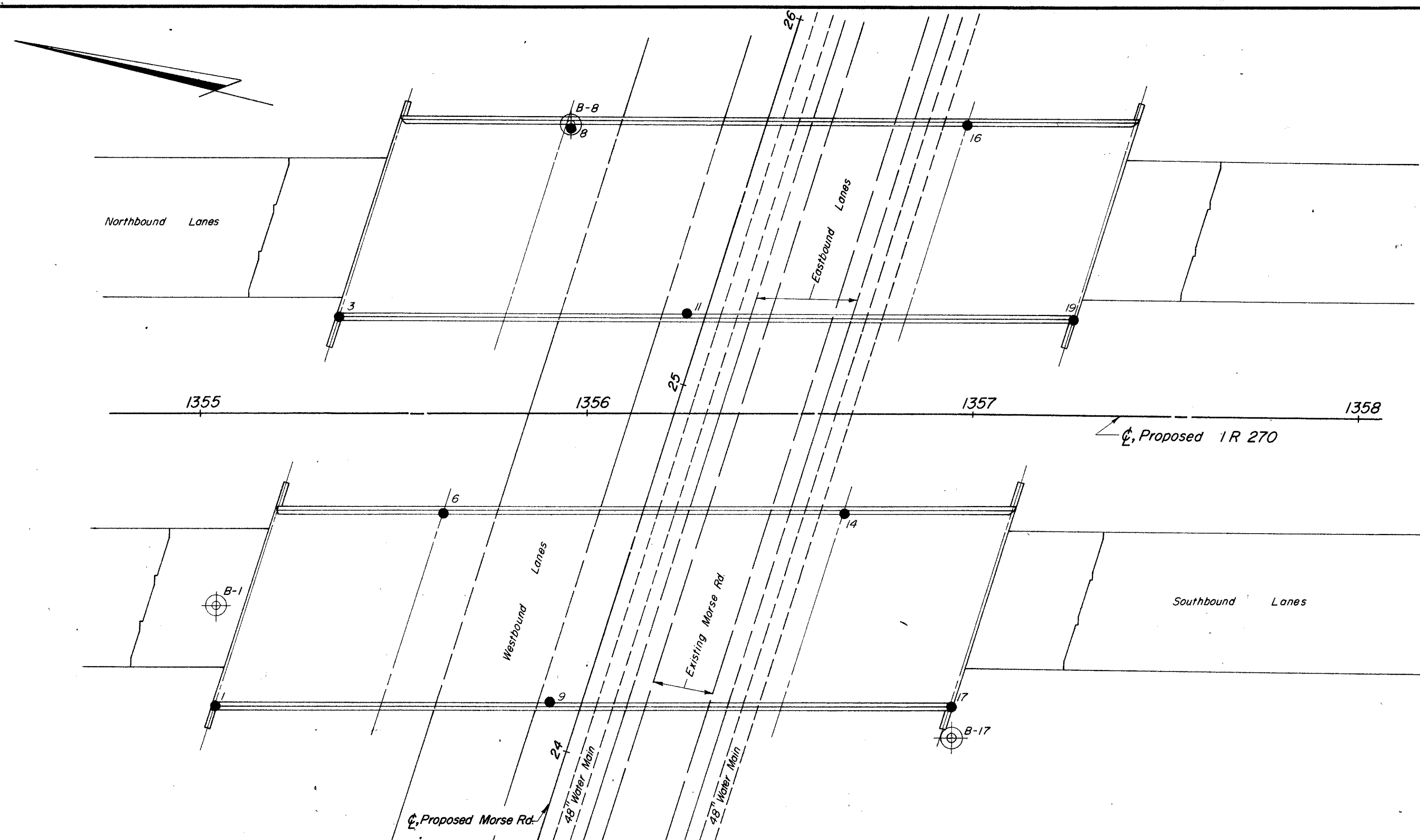
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CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 1/18/67
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FEB 14 1990

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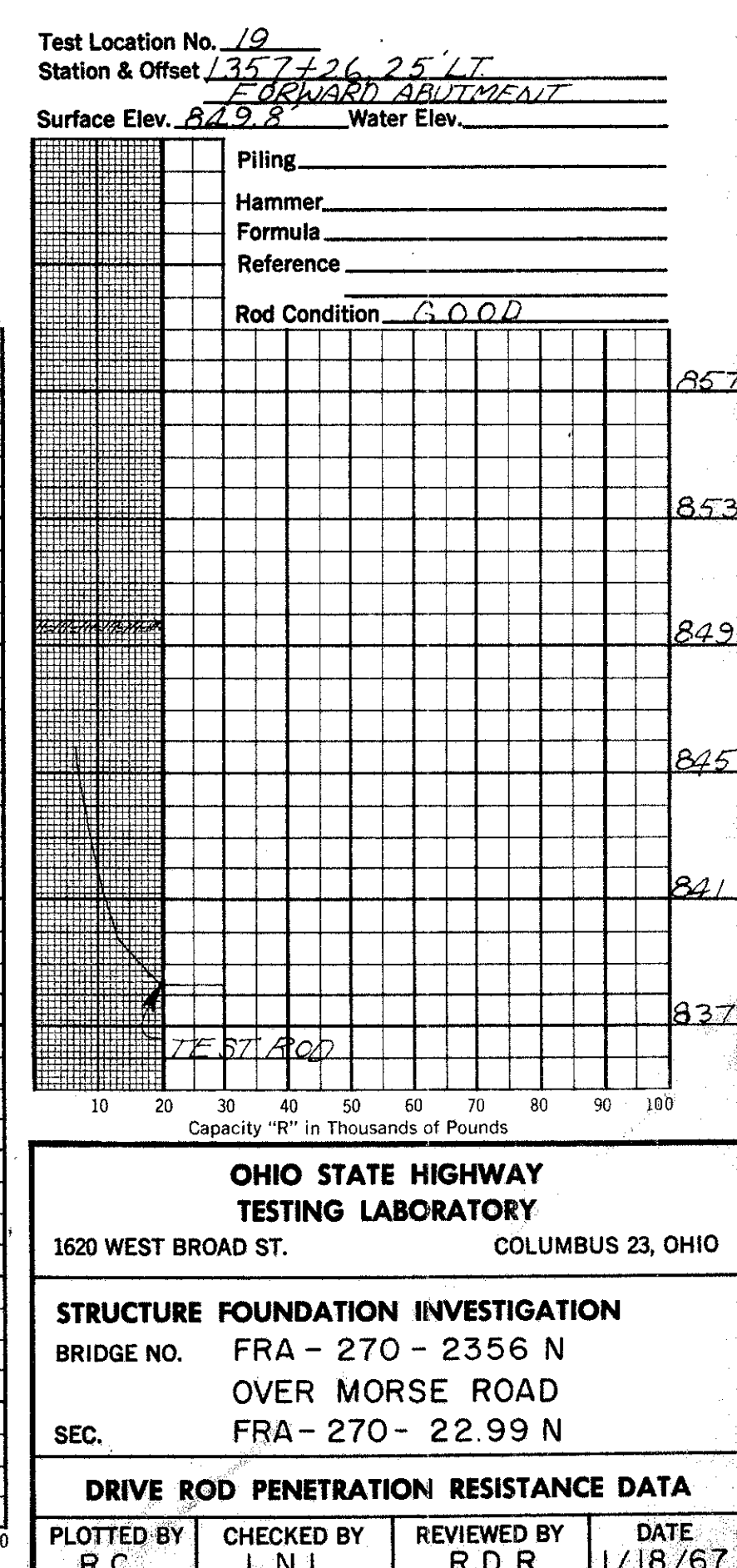
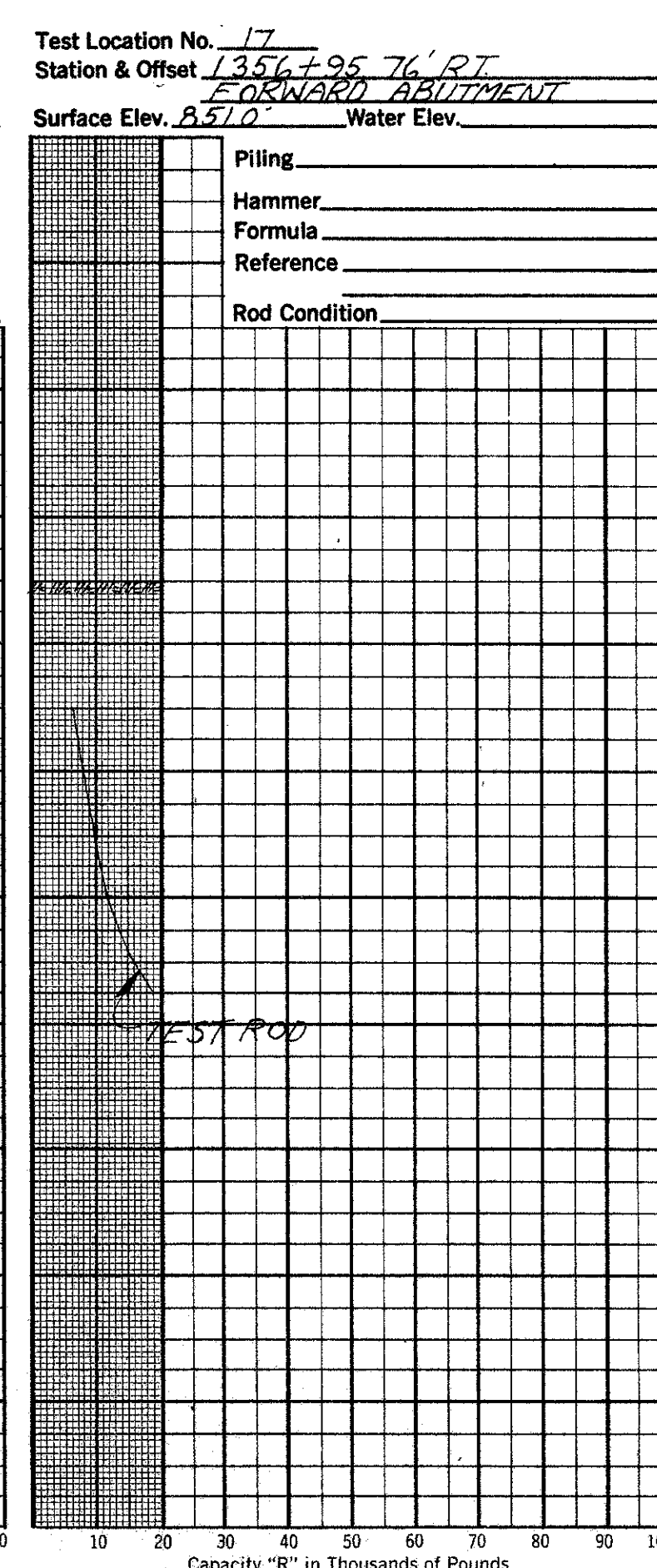
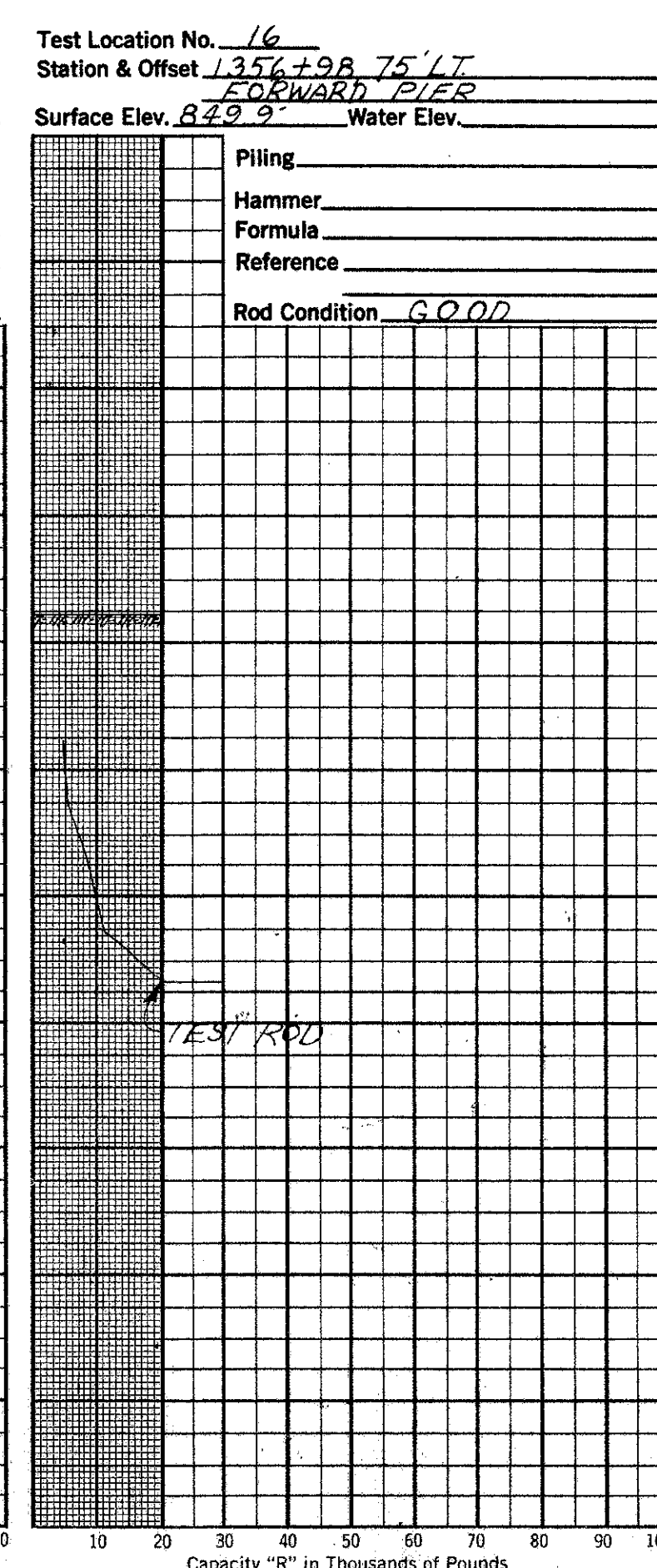
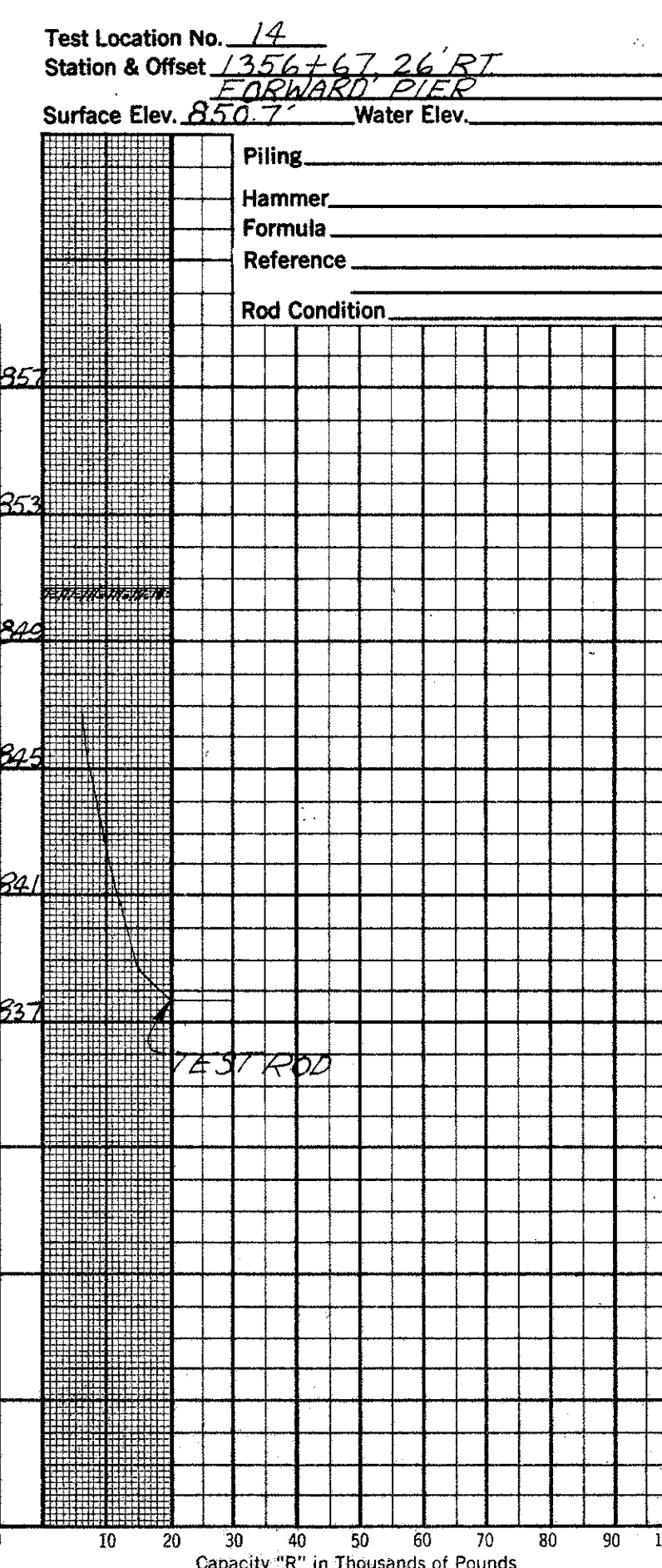
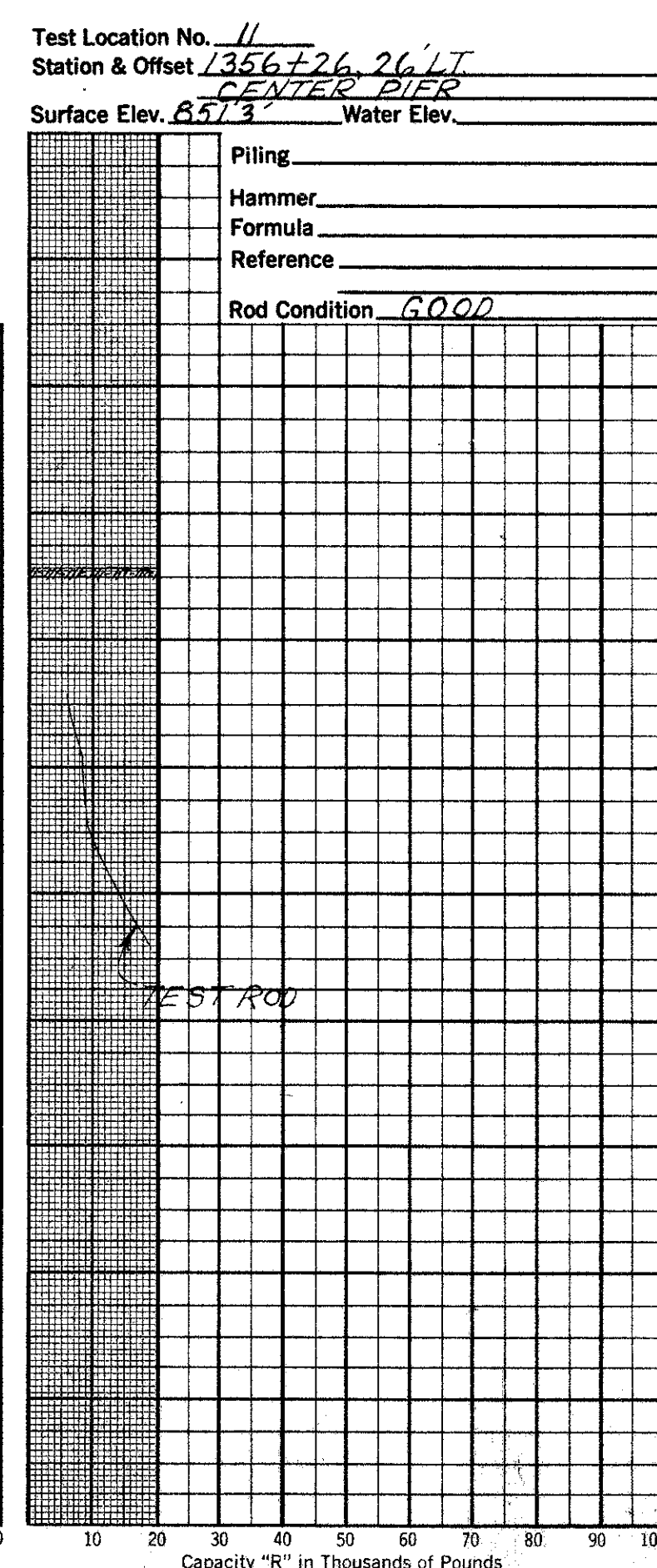
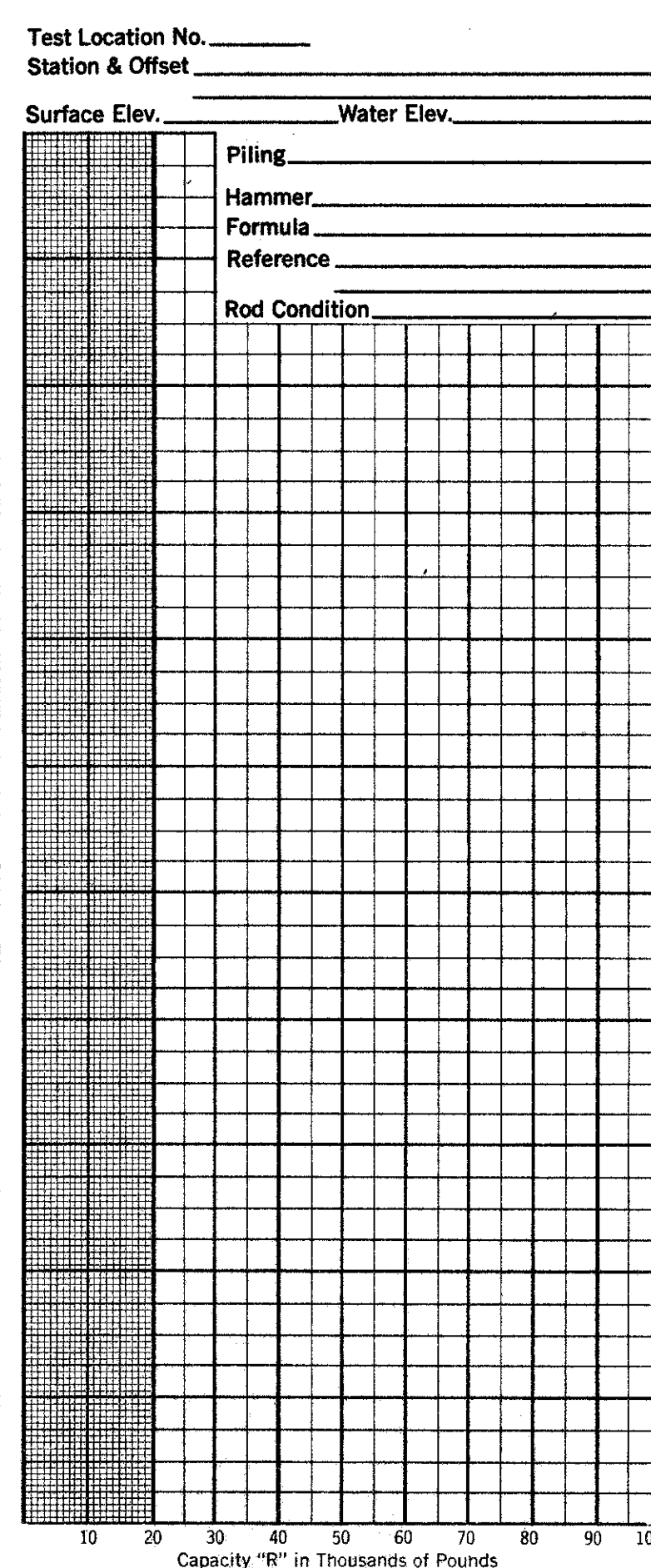
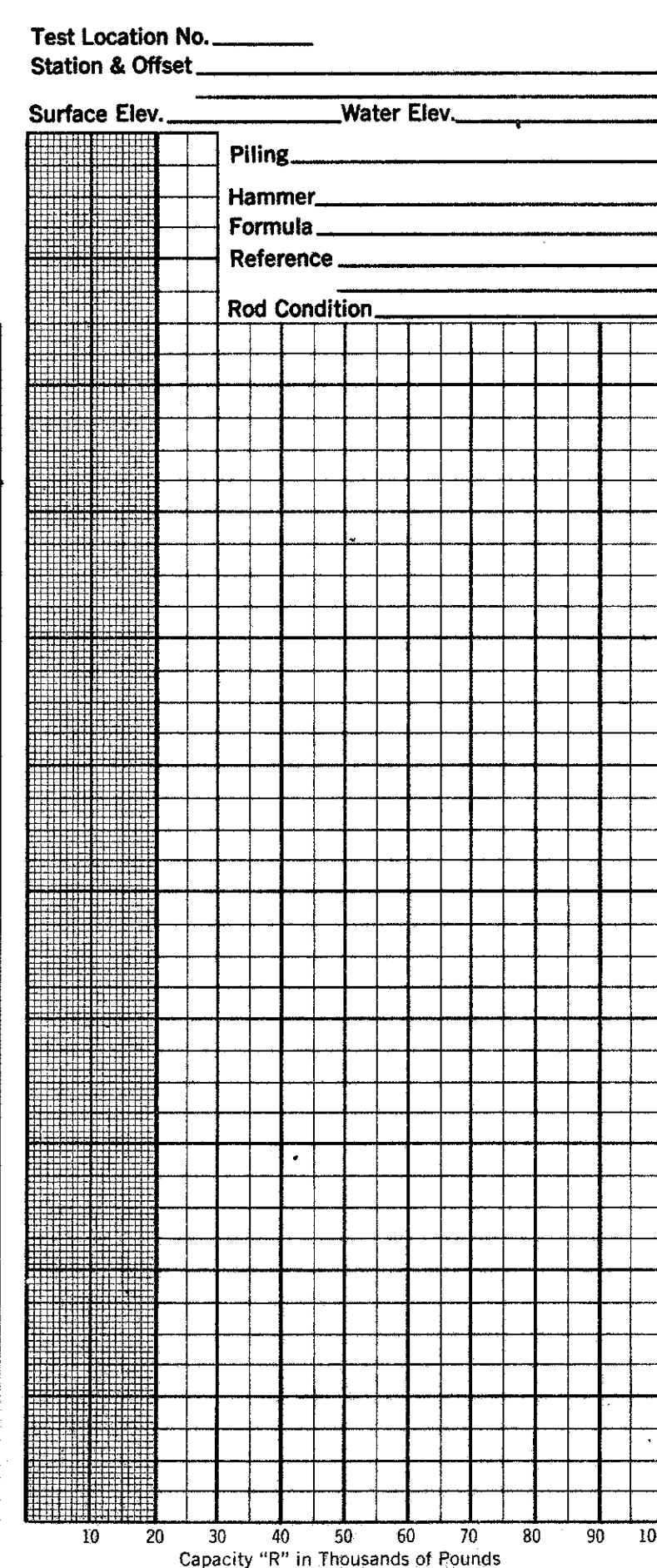
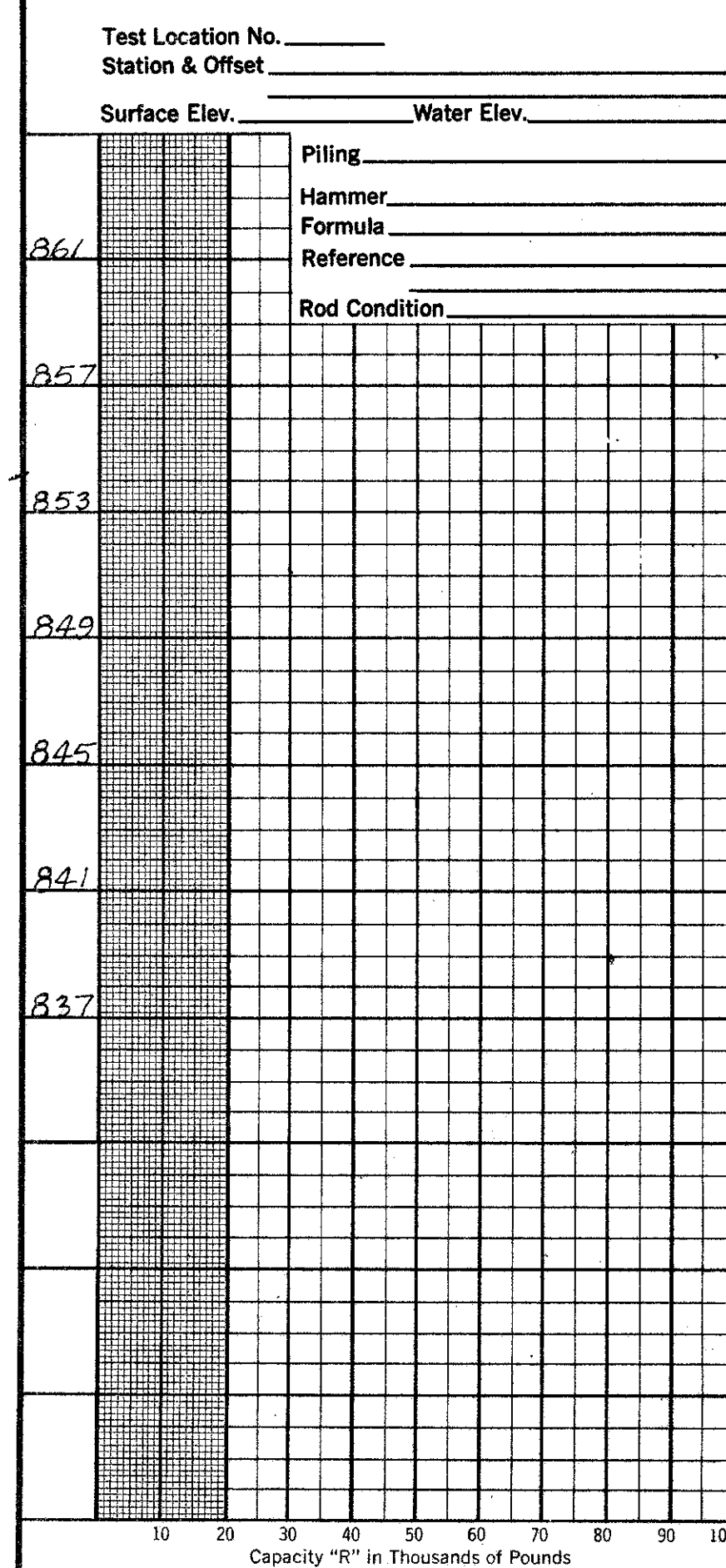
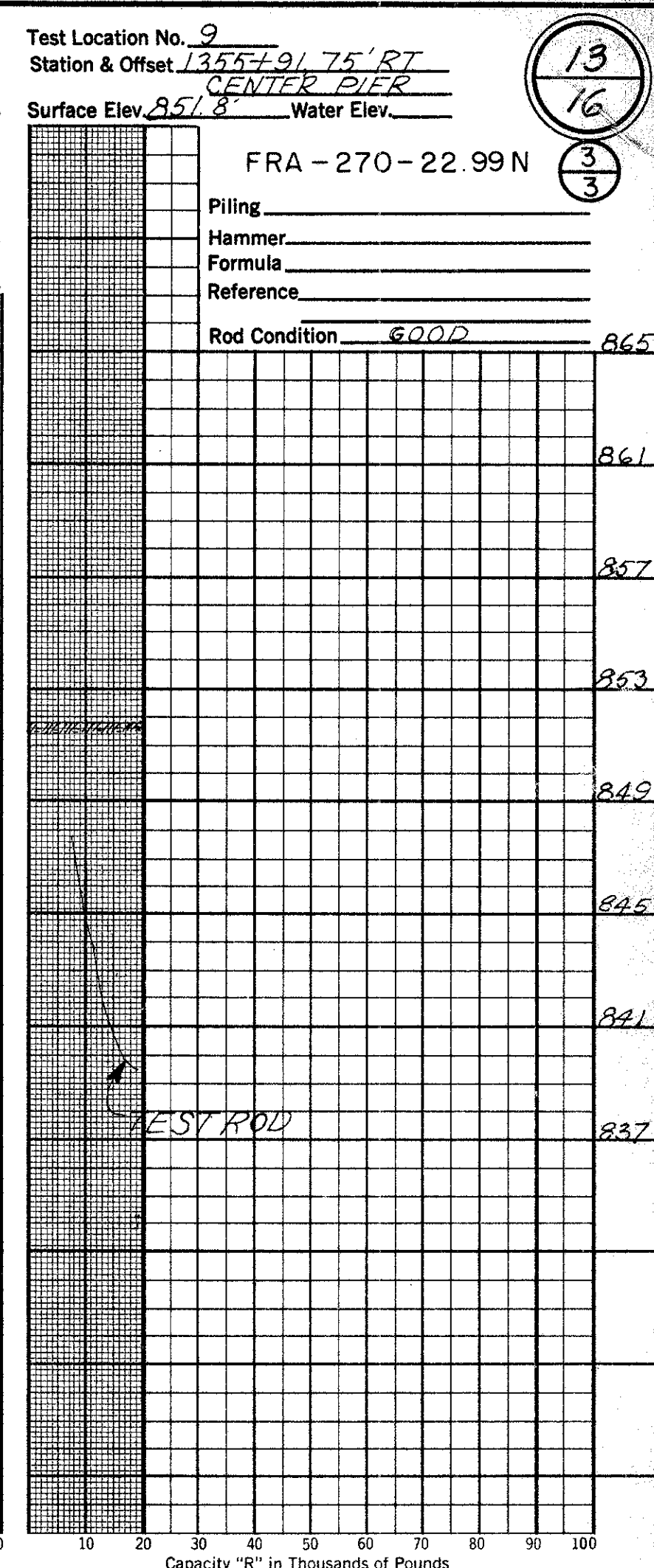
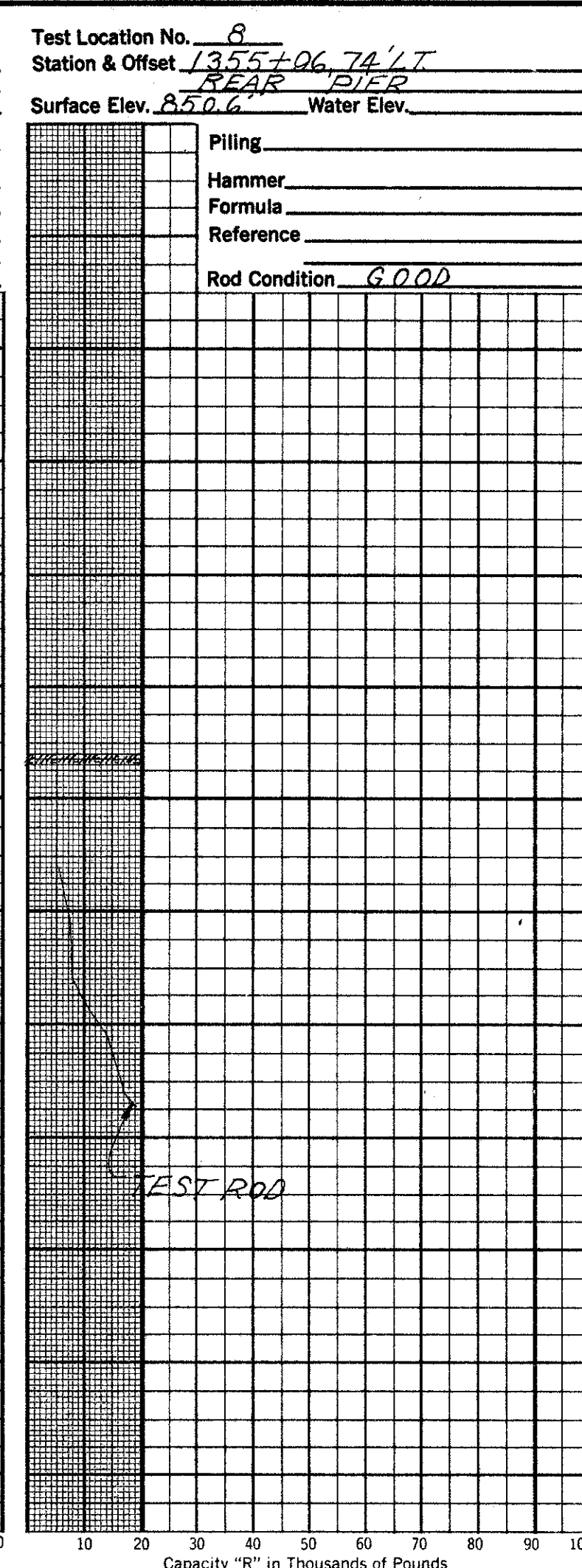
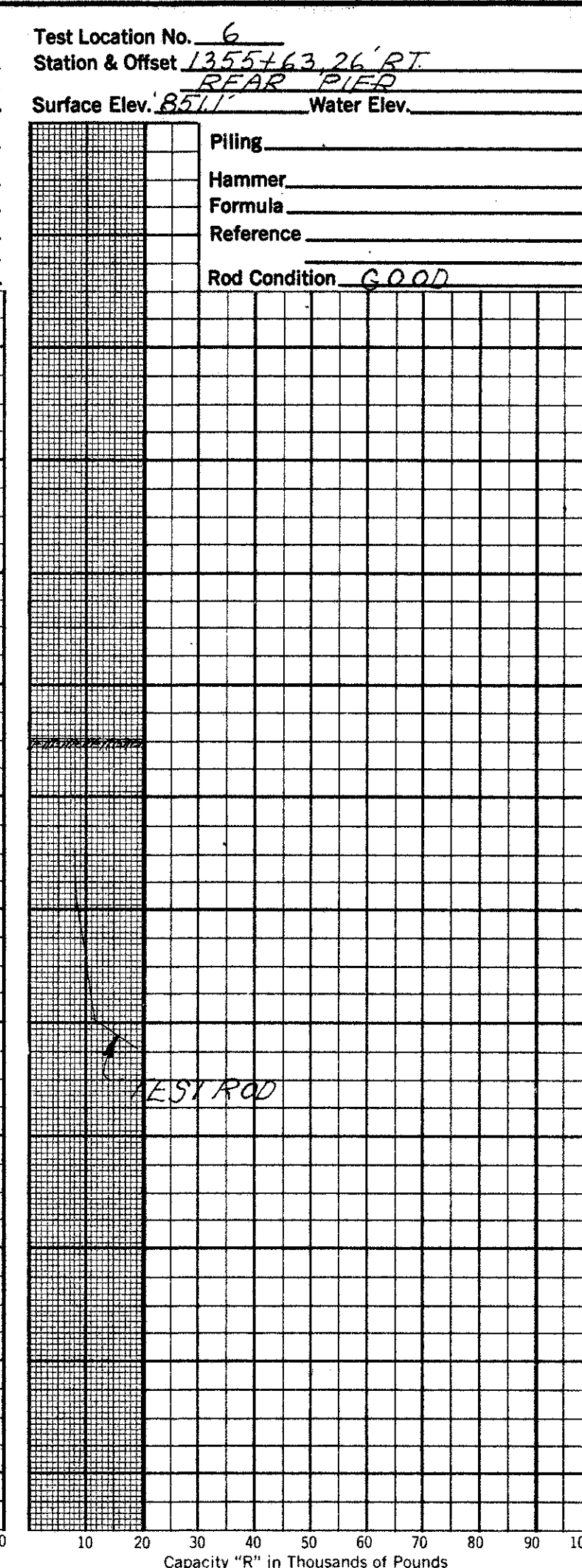
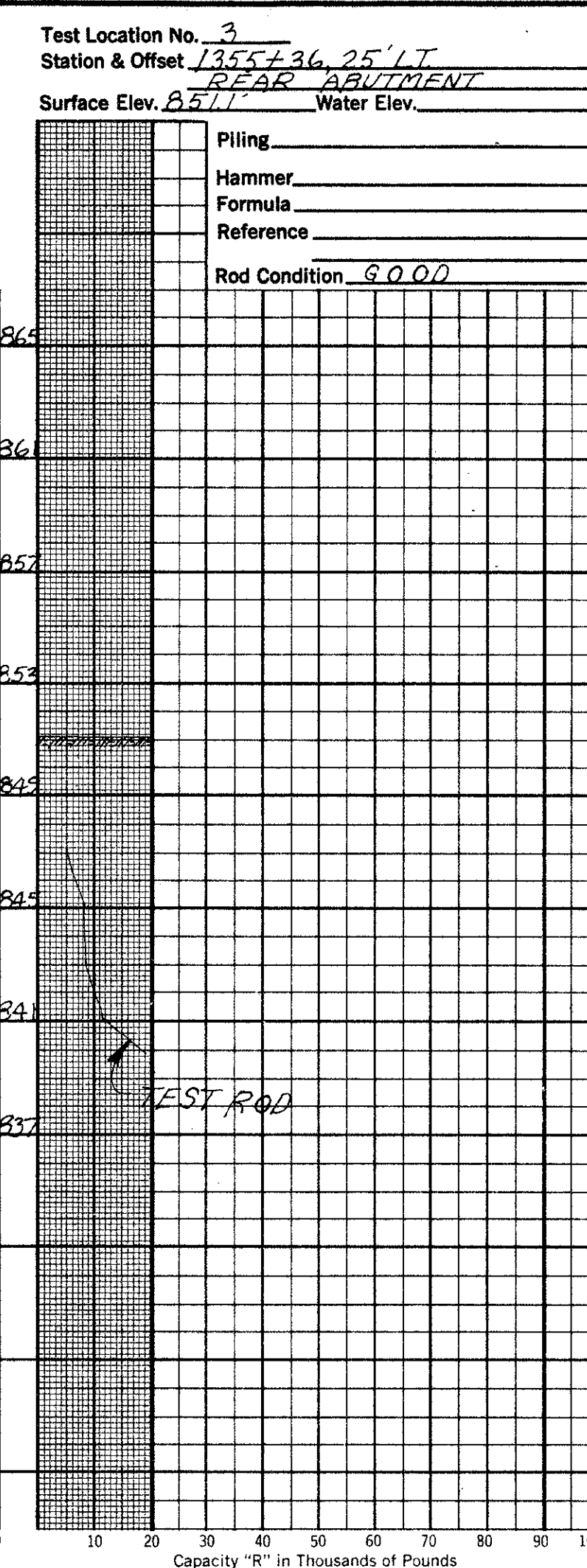
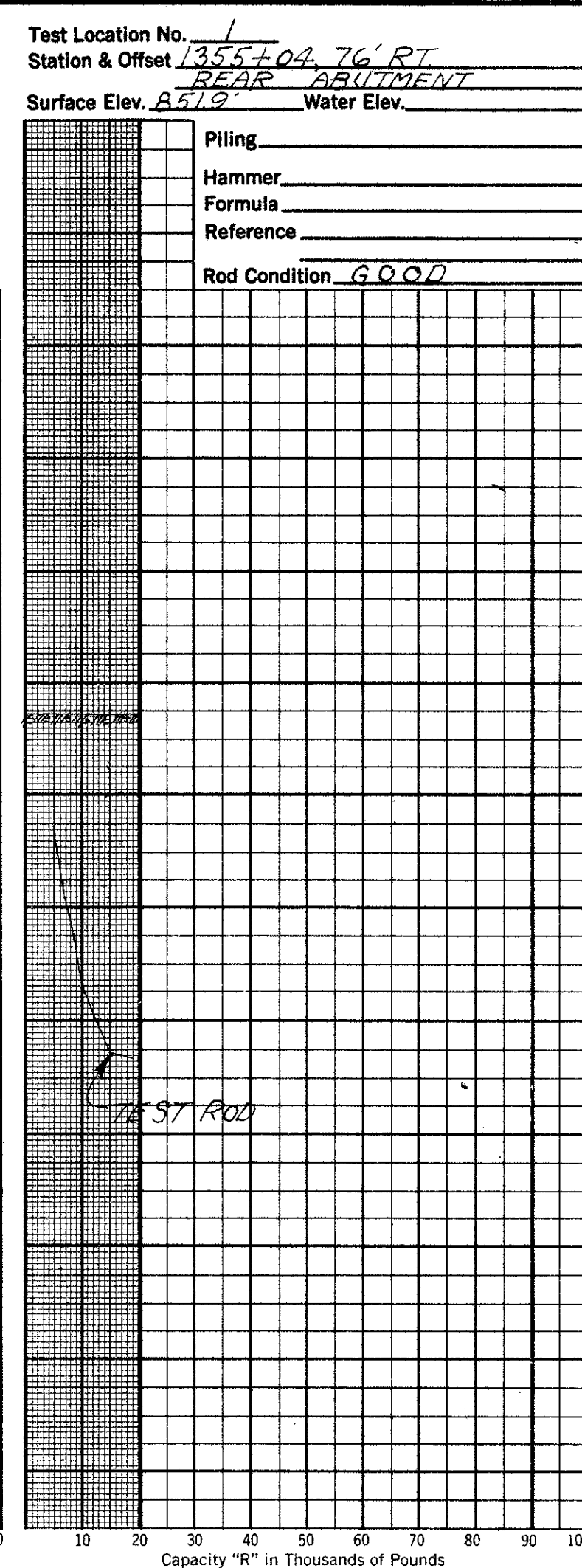
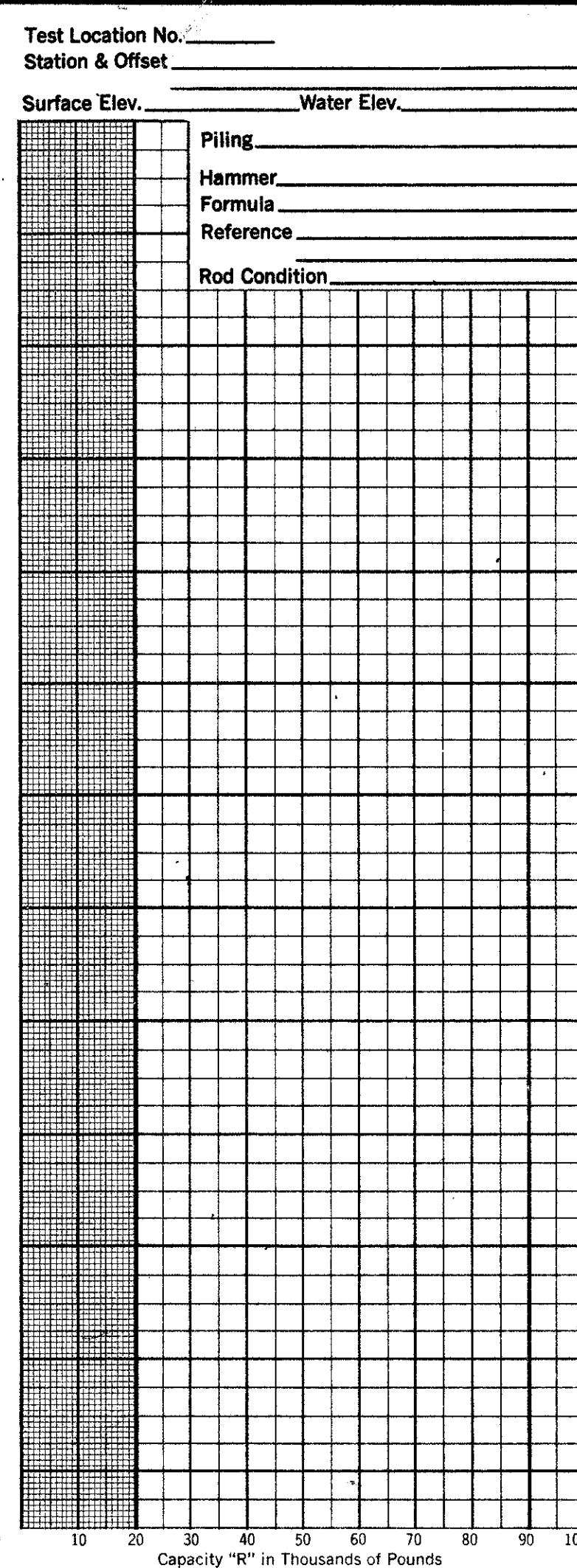
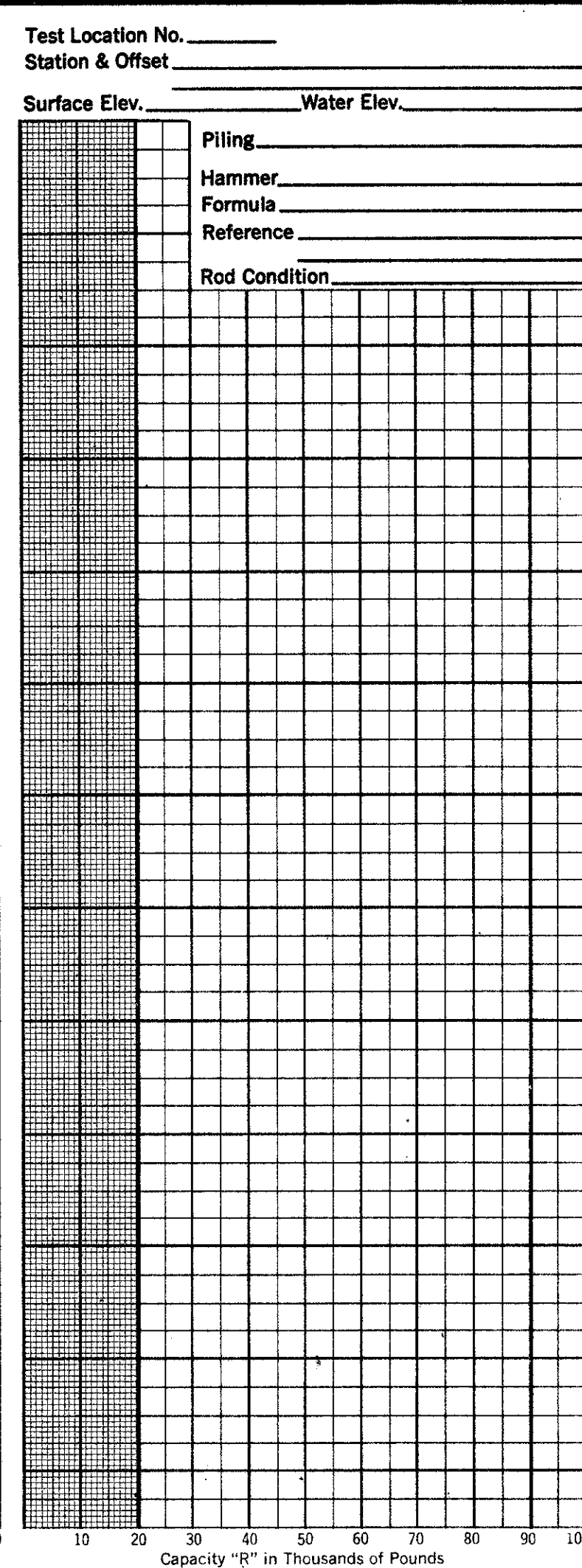
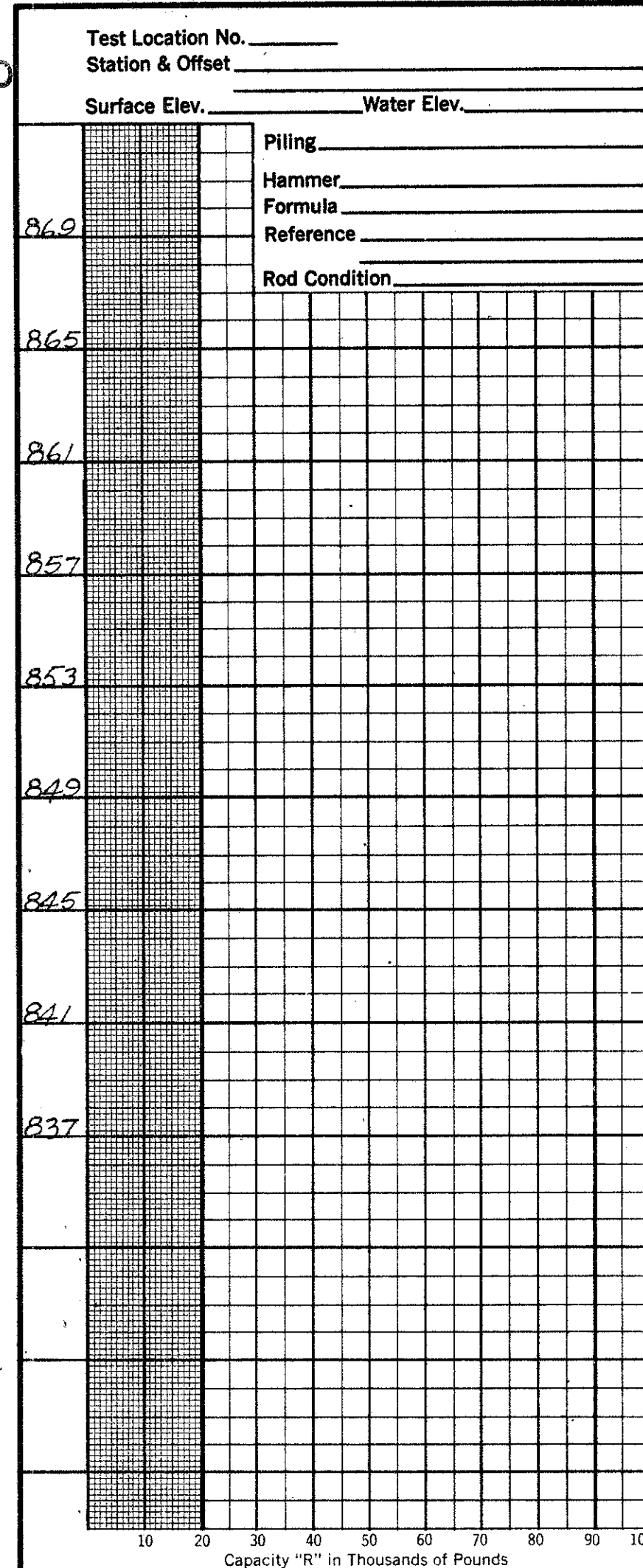
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OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. FRA-270-2356 N OVER MORSE ROAD			
SEC. FRA-270-22.99 N			
PLAN AND PROFILE			
DRAWN BY R.L.D.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 1/18/67

SCALE: 1" = 20'

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FEB 14 1980



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FEB 14 1980FRANKLIN COUNTY
FRA - 270-22.99 N14
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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.

- ⊕ 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

- Coal
- ▨ Weathered Indurated Clay
- ▧ Indurated Clay
- ▩ Weathered Shale
- Shale
-

LEGEND

- ⊥ 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

- ▨ 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.



LOG OF BORING																	
Date Started <u>12-19-66</u>				Sampler Type <u>SS</u>				Dia. <u>1 3/8"</u>				Water Elev. _____					
Date Completed <u>12-19-66</u>				Casing Length _____				Dia. _____									
Boring No. <u>B-1</u>				Station & Offset <u>23+65, 15' Lt. (Rear Abutment)</u>												Surface Elev. <u>840.6'</u>	
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics								SHTL Class.		
840.6	0						% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.			
	2																
	4																
835.6	6	4/4			Brownish-Gray Clayey Silt	1	0	4	14	28	54	36	10	26	A-4a		
	8																
830.6	10																
	12				TOP OF ROCK												
	14		5.3	0.7													
	16																
	18																
	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%.												
	22																
	24		5.0	0.0													
814.6	26				BOTTOM OF BORING												

LOG OF BORING															
Date Started <u>12-16-66</u>				Sampler Type <u>SS</u>				Dia. <u>1 3/8"</u>				Water Elev. _____			
Date Completed <u>12-19-66</u>				Casing Length _____				Dia. _____				Surface Elev. <u>842.0'</u>			
Boring No. <u>B-10</u>				Station & Offset <u>26+25, 40' Rt. (Forward Abutment)</u>											
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics								SHTL Class.
842.0	0	6/13			Brown Sandy Silt	1	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	A-4a
	2														
	4														
837.0	6														
	8														
832.0	10	50* (0.1)	4.5	0.5	TOP OF ROCK										
	12														
	14														
	16														
	18		6.0	0.0	Shale, dark-gray, firm, carbonaceous, fissile, very badly broken in top 12.0', jointed. Core Loss 2%.										
	20														
	22														
	24														
	26														
	28														
812.0	30	9.0	0.0	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-270-2525 N

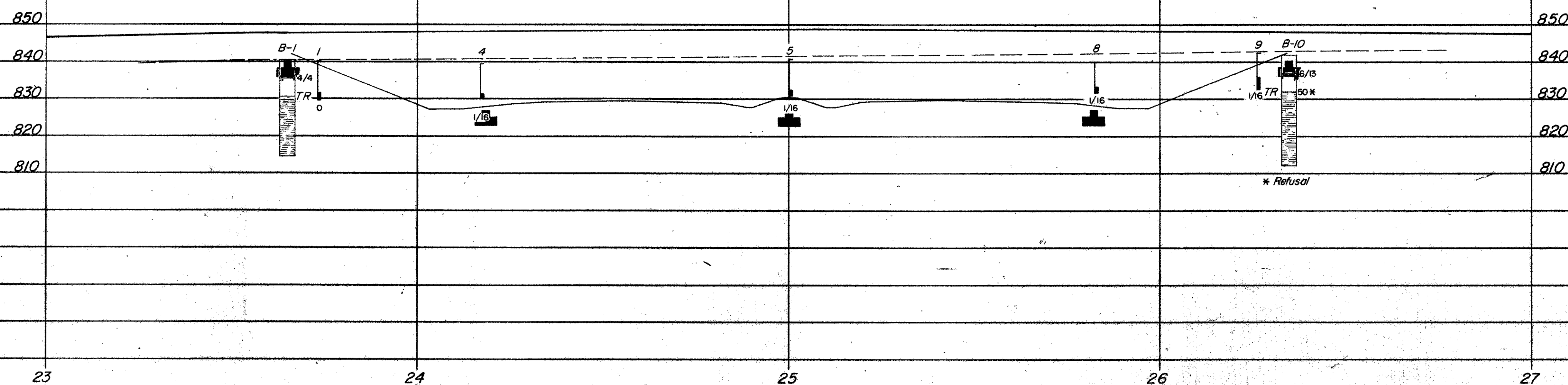
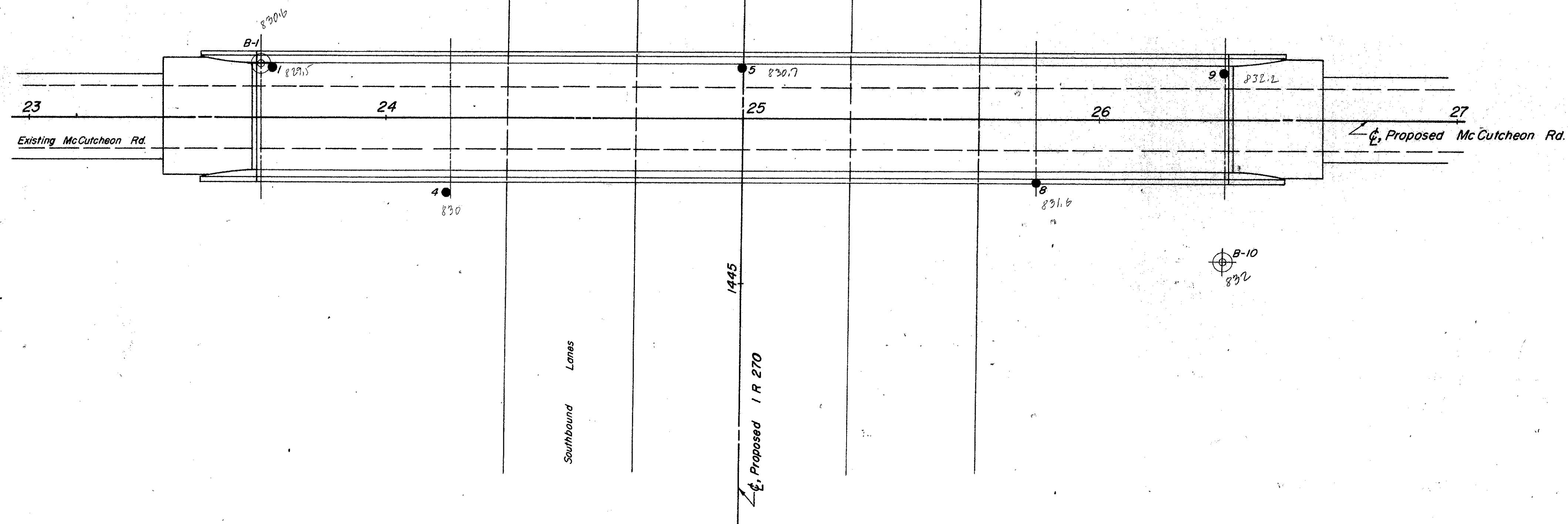
UNDER McCUTCHEON RD.
SEC. FRA-270-22.99 N

CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 1/18/67
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FEB 14 1980

FRA - 270 - 22.99 N

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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 R.L.D.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 1/18/67

SCALE: 1" = 20'

[illegible]