

LINE DATA

LOR-254-408-B U 1115(1)		LOR-90-11.90 I 90-1(39) 02	
BEGIN PROJECT STA. 422+00 TO	14571.32 L.F.	STA. 585+00 E.B. LANES TO	182691 L.F.
PC STA. 567+71.32 TO		PT. STA. 603+26.91 E.B. LANE	
FROM STA. 567+71.32 TO		STA. 602+37.98 TO	
STA. 585+00 E.B. LANE	172868 L.F.	END PROJECT STA. 653+17	507902 L.F.
TOTAL FOR PROJECT U-1115(1) = 16,300.00 L.F. or 3.087 Mi.		TOTAL FOR PROJECT I-90-1(39)02 = 6905.93 L.F. or 1.307 Mi.	
ADD FOR APPROACH STA. 419+75 TO 422+00	225.00 L.F.	ADD FOR APPROACH STA. 653+17 TO 654+53	136.00 L.F.
FROM SIDE ROADS (SEE SHEET 2)	6061.00 L.F.	TOTAL LENGTH OF WORK I-90-1(39)02 = 7041.93 L.F. or 1.333 Mi.	
TOTAL LENGTH OF WORK U 1115(1) = 22586.00 L.F. or 4.277 Mi.			
LORAIN COUNTY ROAD 204, LAKE AVENUE SU-1484(2)			
BEGIN PROJECT STA. 67+00 TO END PROJECT STA. 73+00	600.00 L.F.		
TOTAL FOR PROJECT SU-1484(2) = 600.00 L.F. or 0.113 Mi.			
ADD FOR APPROACHES STA. 65+00-67+00, 73+00-74+50	350.00 L.F.		
TOTAL LENGTH OF WORK SU-1484(2) = 950.00 L.F. or 0.179 Mi.			
TOTAL LENGTH OF PROJECTS U 1115(1), I 90-1(39)02 & SU 1484(2) = 23805.93 L.F. or 4.508 Mi.			
TOTAL LENGTH OF WORK U 1115(1), I 90-1(39)02 & SU 1484(2) = 30577.93 L.F. or 5.791 Mi.			

CONVENTIONAL SIGNS

COUNTY LINE	-----
TOWNSHIP LINE	-----
LOT LINE	-----
CORPORATION LINE	-----
CENTER LINE	-----
FENCE LINE	-x-x-x-
POLE LINE	o-o-o-o
RAILROAD	=====   =====   =====
GUARD RAIL	o-o-o-o
DRAIN PIPE	-----
RIGHT OF WAY LINE	---R/W---
LIMITED ACCESS LINE	---LA---
LIMITED ACCESS & RIGHT OF WAY LINE	---LA R/W---

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Revised sheet nos. 266, 277 & 278 - 8-24-66

# STATE OF OHIO DEPARTMENT OF HIGHWAYS

## LOR-254-4.08-B LOR-90-11.90

### LORAIN COUNTY AMHERST & ELYRIA TOWNSHIPS GRADE SEPARATION WITH THE BALTIMORE & OHIO RAILROAD CO. AND NORFOLK AND WESTERN RAILWAY CO.

U-1115(1)  
I-90-1(39)02  
SU 1484(2)

NOTE: THE PROJECT DE-  
SIGNATION LOR-254-4.08B  
& LOR-90-11.90 AS  
SHOWN ON THIS SHEET  
APPLIES TO ALL  
SHEETS IN THESE PLANS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	U-1115(1) I-90-1(39)02 SU-1484(2)

323

LORAIN COUNTY  
LOR-254-4.08-B  
LOR-90-11.90

1963 SPECIFICATIONS

LIMITED ACCESS

THIS 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 OF THE REVISED CODE OF OHIO.

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF HIGHWAYS, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

THE RIGHT-OF-WAY FOR THIS IMPROVEMENT WILL BE PROVIDED BY THE STATE OF OHIO.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED: D.A. Commey  
DATE: 9-9-64 DIVISION DEPUTY DIRECTOR

APPROVED: C.W. Altrates  
DATE: 5-28-65 ENGINEER OF BRIDGES

APPROVED: R.N. Lickito  
DATE: 6-28-65 ENGINEER OF LOCATION & DESIGN

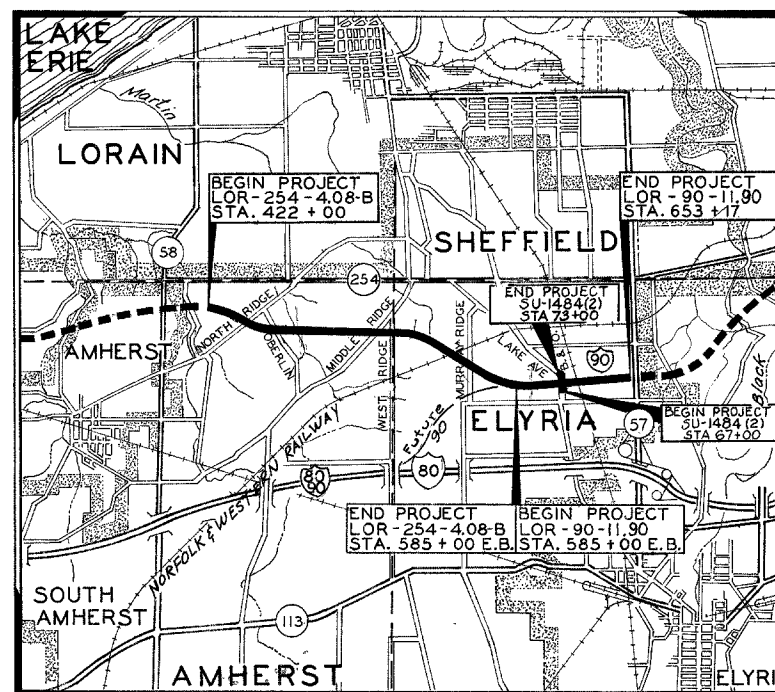
APPROVED: R.E. Shultz  
DATE: 6-28-65 DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED: T.H. Board  
DATE: 7-13-65 DEPUTY DIRECTOR OF RIGHT-OF-WAY

APPROVED: F.W. Wilson  
DATE: 7-13-65 DEPUTY DIRECTOR OF PLANNING & PROGRAMMING

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_ FIRST ASSISTANT DIRECTOR

APPROVED: P.B. Mashuta  
DATE: 7/14/65 DIRECTOR OF HIGHWAYS



DELIVERY POINT AVERAGE HAUL FROM SIDING ELYRIA 4.5 MILES

LOCATION MAP  
SCALE IN MILES

PORTION TO BE IMPROVED  
STATE HIGHWAYS  
OTHER ROADS  
DETOURS

SCALES

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

SUPPLEMENTAL SPECIFICATIONS

CE-101.04	5-22-56
I-125 R	6-26-61
I-124 R	3-20-61
I-127 R	1-15-62
M-106.6(d) R	4-1-58

PREPARED AND RECOMMENDED BY  
**SHAFFER PARRETT & ASSOCIATES**  
CONSULTING ENGINEERS  
MANSFIELD OHIO WOOSTER

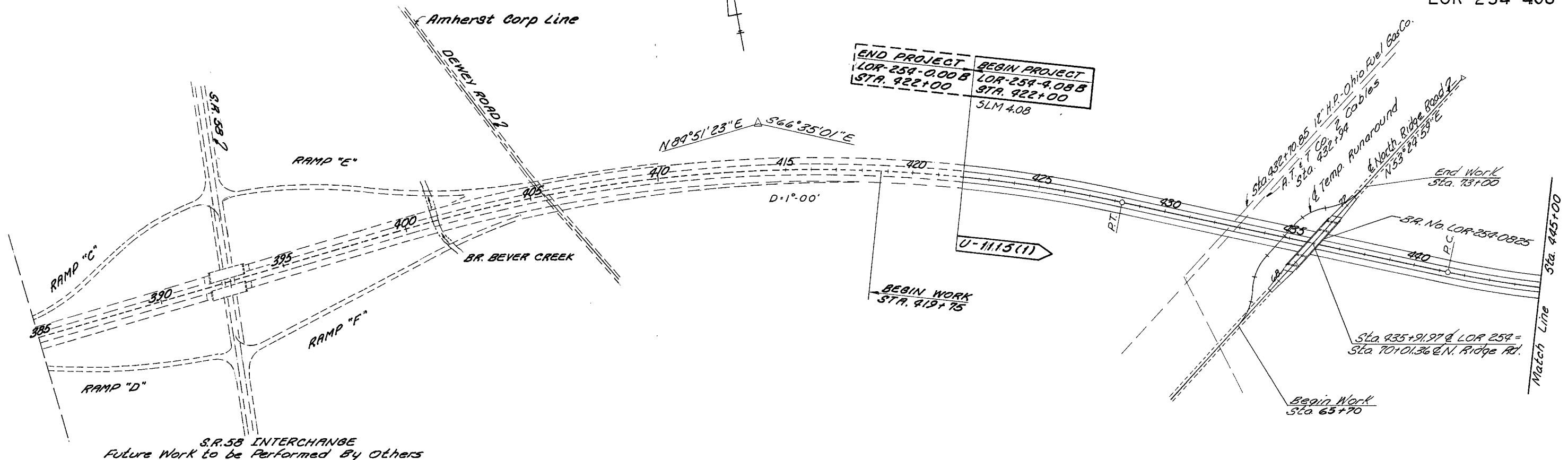
DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED \_\_\_\_\_  
DIVISION ENGINEER DATE \_\_\_\_\_

FILE NO.	LOR-254-408-B LOR-90-11.90
DATE OF LETTING	_____
CONTRACT NO.	_____

STANDARD DRAWINGS													
		HW-A&B	7-15-57	I-8 CB NO. 6	2-1-63	I-12	2-1-63	L-3-A	4-1-50	FACI-1	2-25-64	I-129 R	4-5-61
		HW-C	7-15-57	I-8 CB NO. 7	2-1-63	I-14 G	1-22-52	L.J. NO.1	7-1-55	FACI-2	2-25-64	T-335	10-28-63
B-T-70-71	11-15-60	HW-E	2-1-63	I-8 CB NO. 8	2-1-63	I-15 NO.1	11-15-60	RI-1	9-1-64	AS-1-54	7-5-62	M-107.18 R	4-3-61
B-T-71 R	3-2-53	I-1	11-15-60	I-8 I NO. 2	2-1-63	I-15 NO.2-A	8-17-60	RI-2	9-1-64	AR-1-57	4-2-62		
I-15 N <sup>o</sup> 6	2-1-63	F-2	2-1-63	I-8 CB NO. 4	2-1-63	I-15 NO.5-B	2-1-63	SP-53	6-30-61	SD-1-63		L-120 R	1-2-62
DR-1	1-3-55	F-3	2-1-63	I-8 M.H. NO.1	2-1-63	I-21-23	8-1-56	T-35	1-2-56	SHEETS-1-4 OF 4	11-12-63	S-101	7-12-62
G-707	4-1-64	I-8CB 2-2A&B	2-1-63	I-8 M.H. NO.1-A	2-1-63	L-1	4-1-50	T.J.	9-12-60	FSB-1-62	1-15-63	S-307	10-1-64
		I-8CB 2-3&2-4	2-1-63			L-3	4-1-50			SD-2-64	11-25-64		

Scale: 1" = 200'

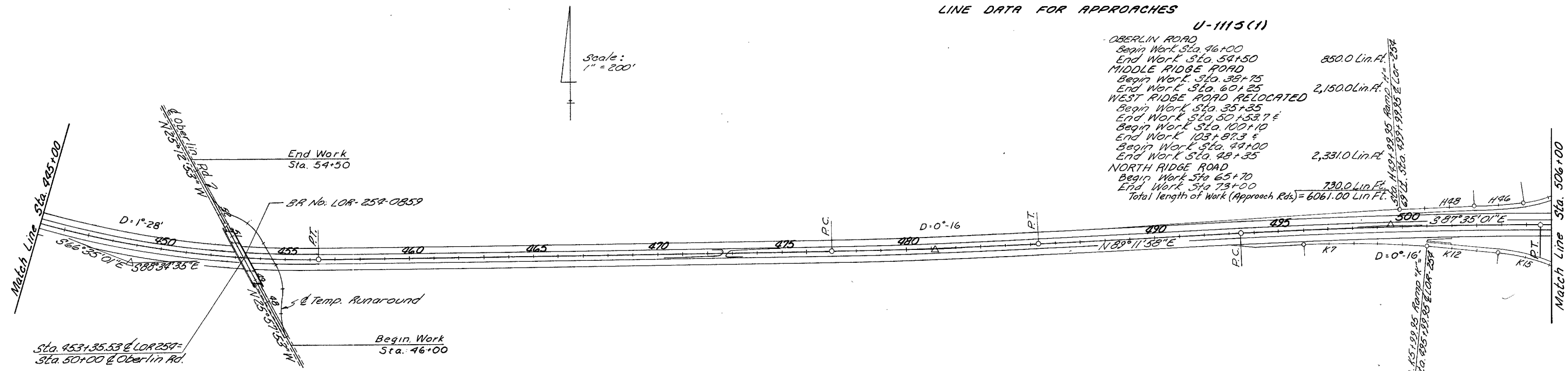


S.R. 58 INTERCHANGE  
Future Work to be Performed By Others

LINE DATA FOR APPROACHES

U-1115(1)

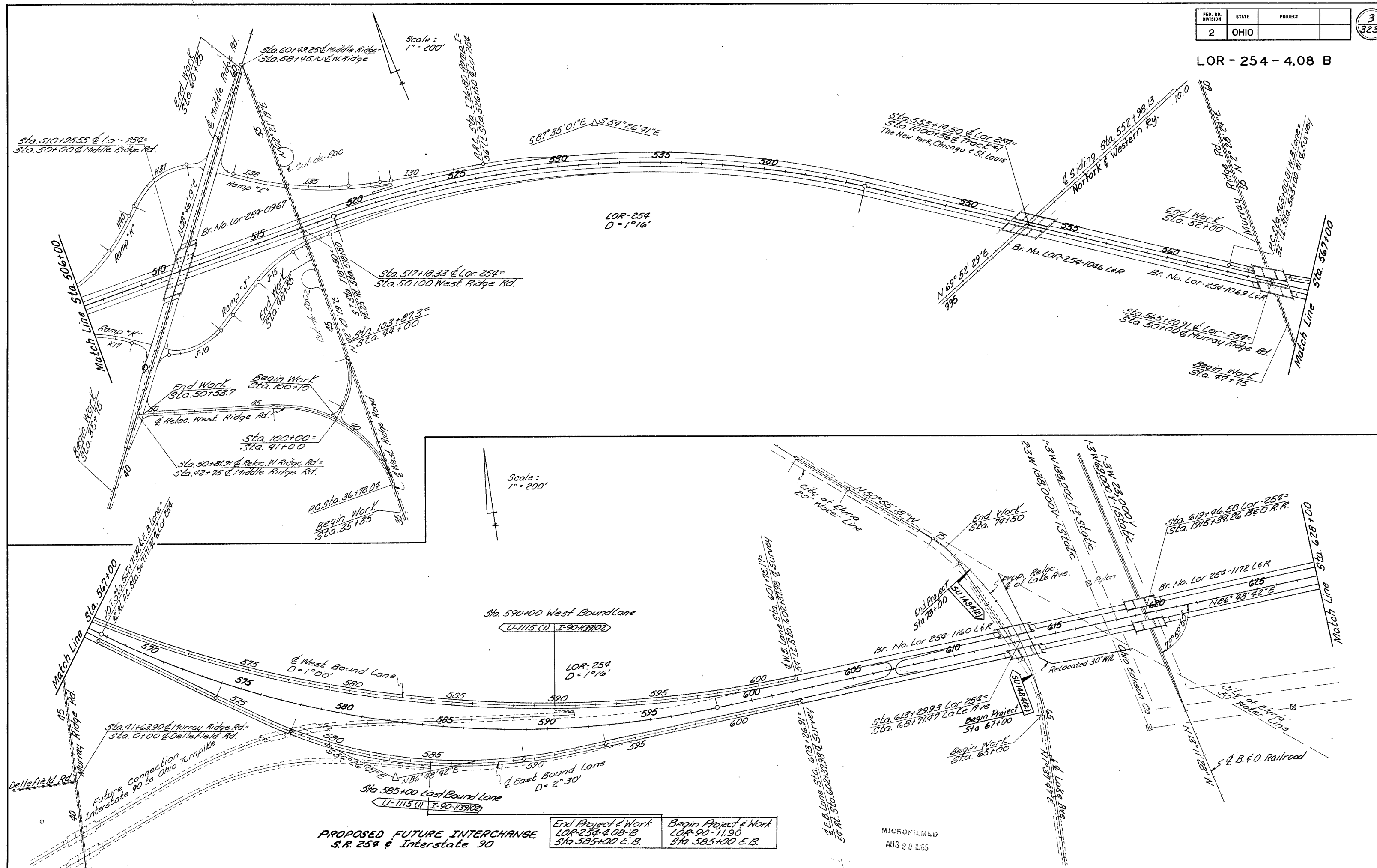
- OBERLIN ROAD  
Begin Work Sta. 46+00  
End Work Sta. 54+50 850.0 Lin. Ft.
- MIDDLE RIDGE ROAD  
Begin Work Sta. 38+75  
End Work Sta. 60+25 2,150.0 Lin. Ft.
- WEST RIDGE ROAD RELOCATED  
Begin Work Sta. 35+35  
End Work Sta. 50+53.7 ±  
Begin Work Sta. 100+10  
End Work Sta. 103+87.3 ±
- NORTH RIDGE ROAD  
Begin Work Sta. 44+00  
End Work Sta. 48+35 2,331.0 Lin. Ft.
- 730.0 Lin. Ft.
- Total length of Work (Approach Rds) = 6061.00 Lin. Ft.

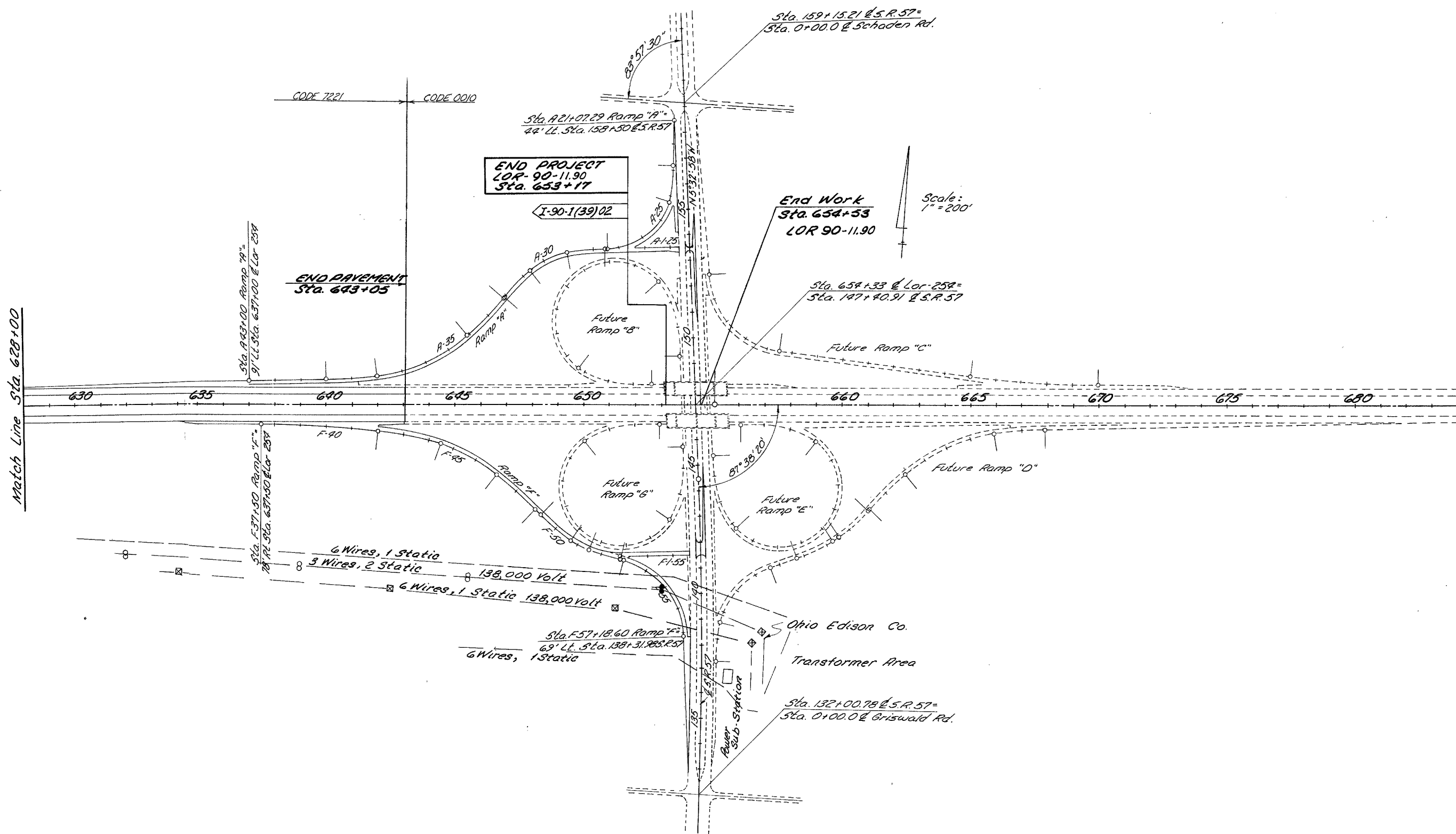


UTILITY COMPANIES

Ohio Edison Co. 97 North Main St. Akron 8, Ohio	City of Amherst Water Department Amherst Ohio	Lorain County Water Department Elyria, Ohio
Lorain Telephone Co. 203 Ninth Street Lorain, Ohio	Ohio Bell Telephone Co. 820 West Superior Ave. Cleveland 13, Ohio	The B & O Railroad Co. 1003 Grant Building Pittsburgh 19, Penn.
Ohio Fuel Gas Co. 99 North Front Street Columbus 15, Ohio	City Engineer Water Department Elyria, Ohio	Elyria Telephone Co. Telephone Building Elyria, Ohio
The N.Y.C. & S.L. Railroad Co. P.O. Box 6119 Cleveland 1, Ohio	American Telephone & Telegraph 1014 Vine Street Cincinnati, Ohio	

MICROFILMED  
AUG 20 1959



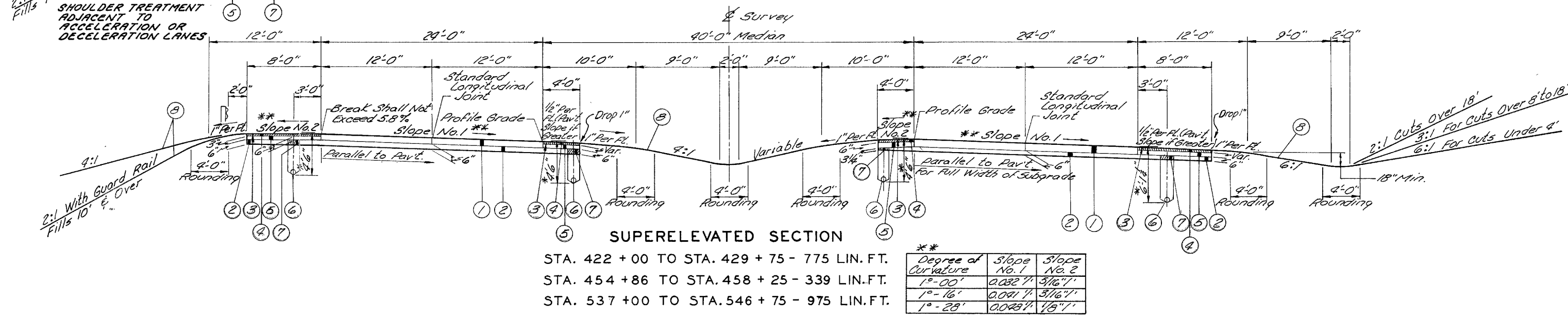
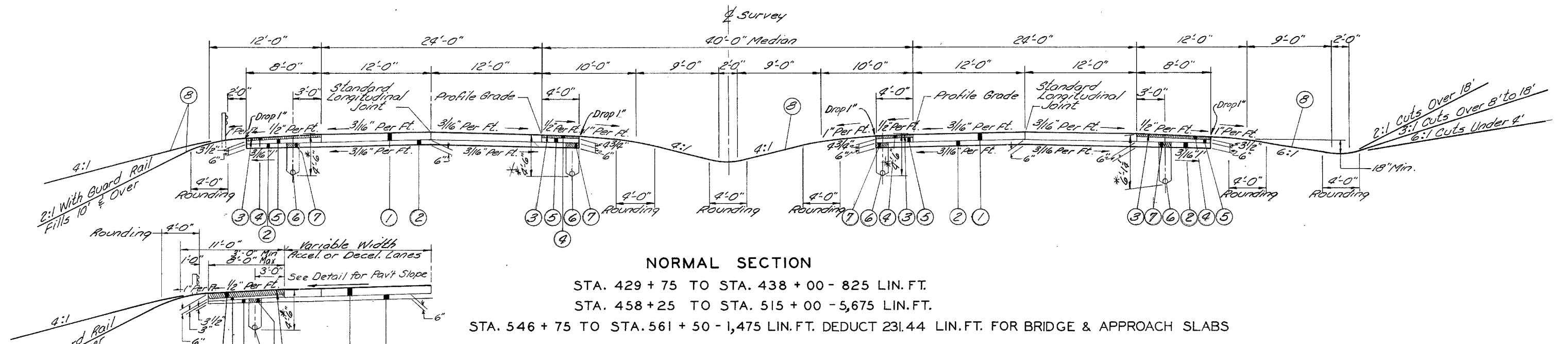


MICROFILMED  
AUG 20 1985

# TYPICAL SECTIONS

TYPE T-71  
SCALE  $\frac{3}{16}'' = 1'-0''$

\* Unless otherwise shown elsewhere in plans  
NOTE: For Details Not Shown See Standard Drawing RI-1



**LEGEND**

- ① T-71 9" Reinforced Portland Cement Concrete Pavement
- ② I-22 Subbase, Grading A or B As Per Plan (Depth as Shown)
- ③ T-31 Bituminous Surface Treatment Using 0.008 Cu. Yds. No. 6 Aggregate Per Sq. Yd. & 0.25 Gal. Bituminous Material Per Sq. Yd. (See Note in Proposal)
- ④ B-21# 3" Waterproofed Aggregate Base Course (Type "A" T-35 or T-335 may be Used in Construction of This Course See Note in Proposal)
- ⑤ B-19 Aggregate Base Course (Depth as Shown)
- ⑥ I-1 6" Pipe, Class I-3
- ⑦ Remove Subbase for Width of Item I-1 Trench & Replace with Type 3 Backfill Immediately Prior to Placing the Item B-19 Aggregate Base Course. Cost Shall be Included in Price Bid Per Lin. Ft. for Item I-1.
- ⑧ L-9 Seeding & Protecting, As Per Plan

# Thickness Shown is "Designed" Thickness as Described in Section B-21.01

# TYPICAL SECTIONS

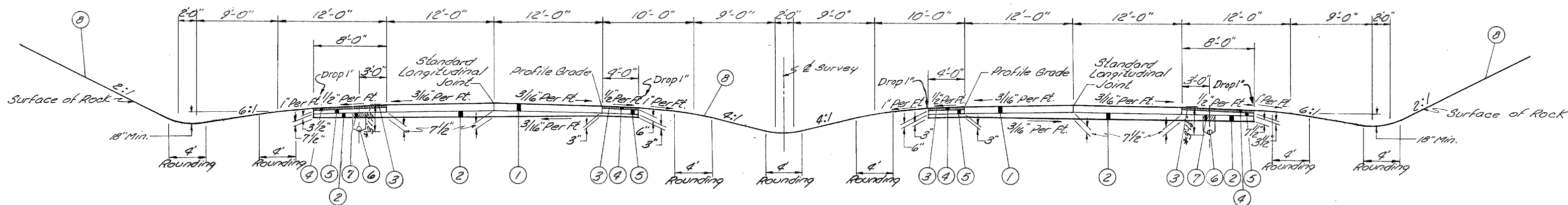
LOR - 254 - 4.08 B

\* Unless otherwise shown elsewhere in plans  
NOTE: For Details Not Shown  
See Standard Drawing RI-1

## TYPE T-71

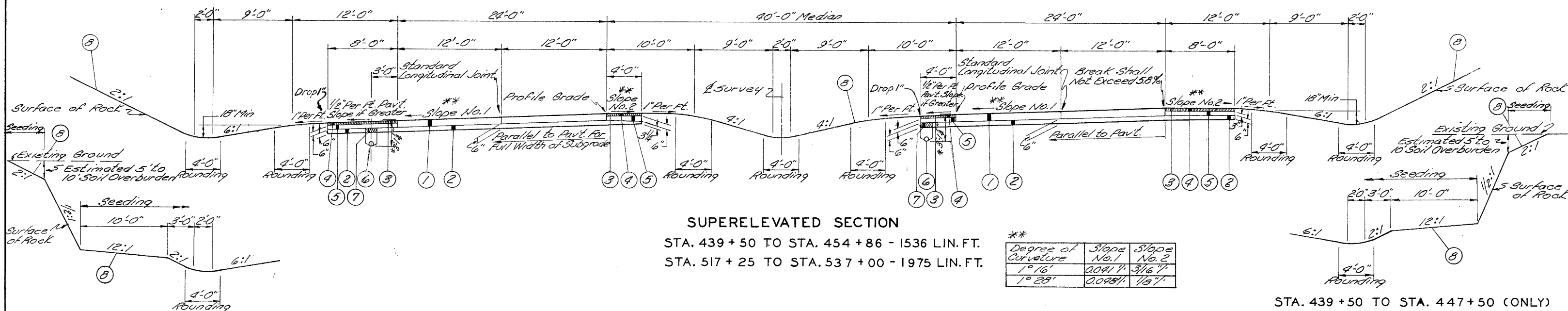
SCALE:  $\frac{3"}{16} = 1'-0"$

### ROCK CUT



### NORMAL SECTION

STA. 438 + 00 TO STA. 439 + 50 - 150 LIN. FT.  
STA. 515 + 00 TO STA. 517 + 25 - 225 LIN. FT.



### SUPERELEVATED SECTION

STA. 439 + 50 TO STA. 454 + 86 - 1536 LIN. FT.  
STA. 517 + 25 TO STA. 537 + 00 - 1975 LIN. FT.

Degree of Curvature	Slope No. 1	Slope No. 2
1° 16'	0.041 1/4"	3/16"
1° 28'	0.078 1/4"	1/8"

STA. 439 + 50 TO STA. 447 + 50 (ONLY)

STA. 439 + 50 TO STA. 447 + 50 (ONLY)

### LEGEND

- ① T-71 9" Reinforced Portland Cement Concrete Pavement
- ② I-22 Subbase, Grading A or B As Per Plan (Depth as Shown)
- ③ T-31 Bituminous Surface Treatment Using 0.008 Cu. Yds. No. 6 Aggregate Per Sq. Yds. & 0.25 Gal. Bituminous Material Per Sq. Yd. (See Note in Proposal)
- \* ④ B-21 3" Waterproofed Aggregate Base Course (Type "A" T-35 or T-335 May be Used in Construction of this Course, See Note in Proposal)
- ⑤ B-19 Aggregate Base Course (Variable Thickness)
- ⑥ I-1 6" Pipe Class I-3, Sec. M-6.9(1)
- ⑦ Remove Subbase for Width of Item I-1 Trench & Replace with Type 3 Backfill Immediately Prior to Placing the Item B-19 Aggregate Base Course. Cost Shall be included in Price Bid Per Lin. Ft. for Item I-1.
- ⑧ L-9 Seeding & Protecting, As Per Plan.

# Thickness Shown is "Designed" Thickness as Described in Section B-21.01.

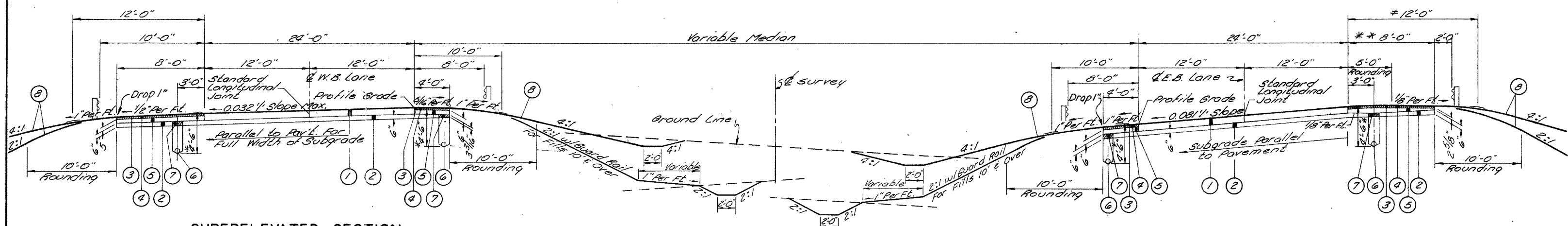
# TYPICAL SECTIONS

LOR-254-4.08-B

TYPE T-71  
SCALE  $\frac{3}{16}'' = 1'-0''$

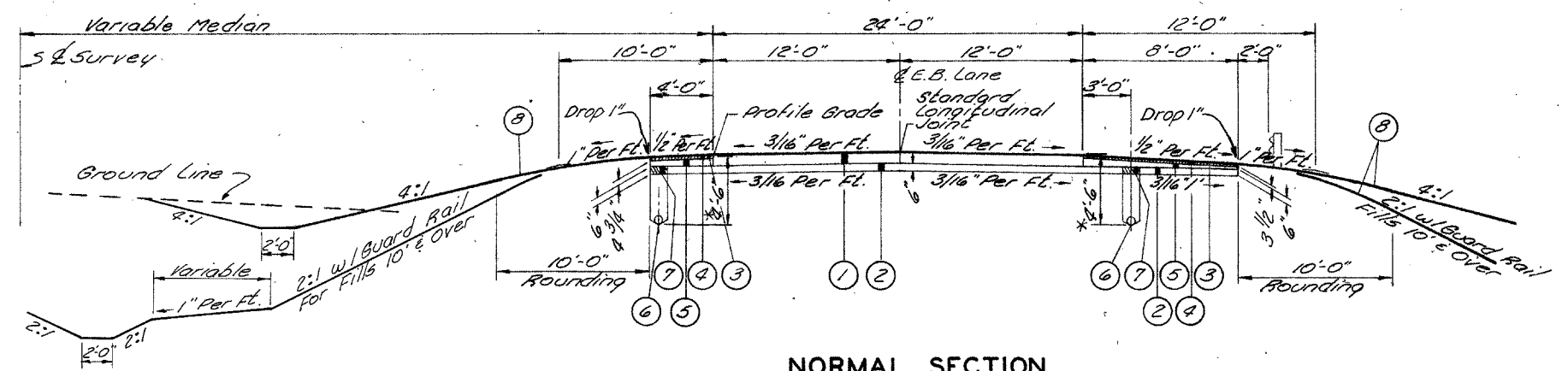
\* Unless otherwise shown elsewhere in plans  
NOTE: For Details not Shown  
See Standard Drawing RI-1

‡ 12' TO 15' STA 579 + 00 TO STA 580 + 00  
\*\* 8' TO 10' STA 579 + 00 TO STA 580 + 00



**SUPERELEVATED SECTION  
WEST BOUND LANE**  
STA 561 + 50 TO STA 580 + 00 - 1850 LIN. FT.  
(DEDUCT 199.26 LIN. FT. FOR BRIDGE & APPROACH SLABS)

**SUPERELEVATED SECTION  
EAST BOUND LANE**  
STA 573 + 75 TO STA 580 + 00 - 625 LIN. FT.



**NORMAL SECTION  
EAST BOUND LANE**  
STA 561 + 50 TO STA 573 + 75 - 1225 LIN. FT.  
(DEDUCT 199.38 LIN. FT. FOR BRIDGE & APPROACH SLABS)

**LEGEND**

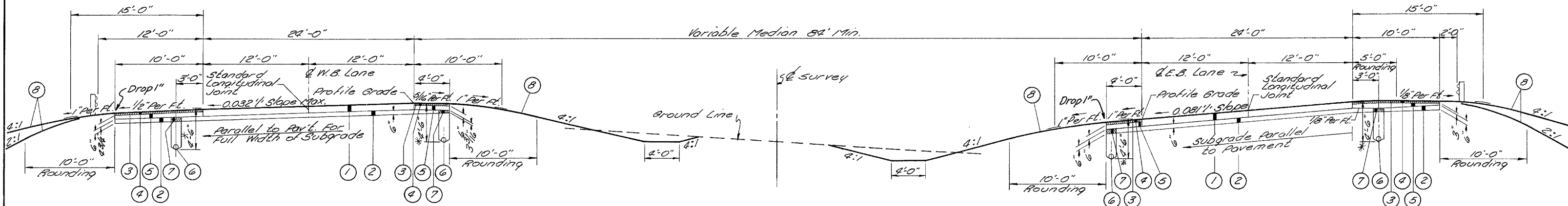
- ① T-71 9" Reinforced Portland Cement Concrete Pavement.
- ② I-22 Subbase, Grading A or B As Per Plan (Depth as Shown)
- ③ T-31 Bituminous Surface Treatment Using 0.008 Cu. Yds. No. 6 Aggregate Per Sq. Yds. and 0.25 Gal. Bituminous Material Per Sq. Yd. (See Note in Proposal)
- \* ④ B-21 3" Waterproofed Aggregate Base Course (Type "A" T-35 or T-335, May be Used in Construction of This Course, See Note in Proposal)
- ⑤ B-19 Aggregate Base Course (Variable Thickness)
- ⑥ I-1 6" Pipe Class I-3
- ⑦ Remove Subbase for Width of Item I-1 Trench and Replace with Type 3 Backfill Immediately Prior to Placing the Item B-19 Aggregate Base Course. Cost Shall be Included in Price Bid Per Lin. Ft. for Item I-1.
- ⑧ L-9 Seeding and Protecting, As Per Plan.

‡ Thickness shown is "Designed" Thickness as Described in Section B-21.01.

# TYPICAL SECTIONS

TYPE T-71  
SCALE  $\frac{3}{16}'' = 1'-0''$

\* Unless otherwise shown elsewhere in plans  
NOTE: For Details not shown  
See Standard Drawing R1-1

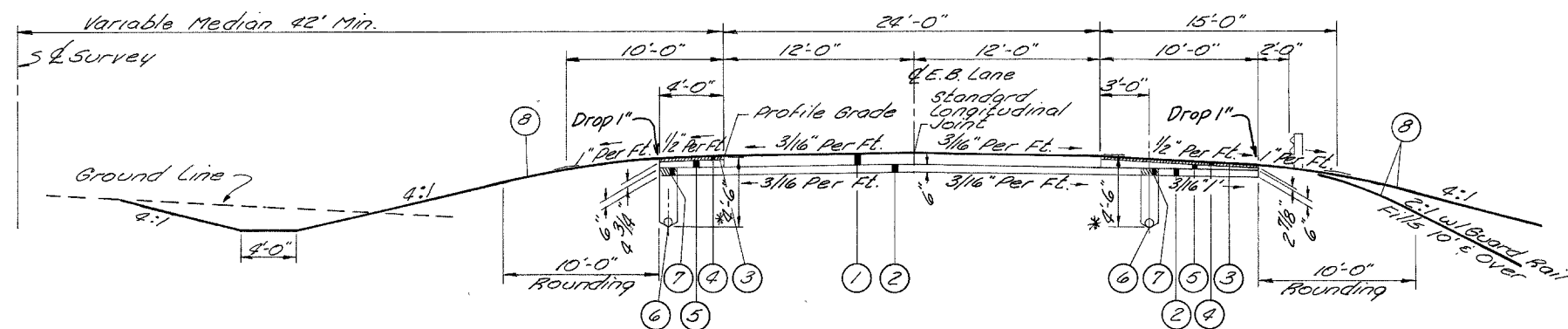


## SUPERELEVATED SECTION

WEST BOUND LANE  
STA 580 + 00 TO STA 601 + 75.17 BACK (EQUATION)  
STA 602 + 37.98 AHEAD ON Q SURVEY TO  
STA 603 + 87.81 ON Q SURVEY - 2325 LIN. FT.

## SUPERELEVATED SECTION

EAST BOUND LANE  
STA 580 + 00 TO STA 593 + 75 - 1375 LIN. FT.



## NORMAL SECTION

EAST BOUND LANE  
STA 593 + 75 TO STA 603 + 26.91 BACK (EQUATION) =  
STA 602 + 37.98 AHEAD ON Q SURVEY TO  
STA 603 + 87.81 ON Q SURVEY - 1101.74 LIN. FT.

### LEGEND

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>① T-71 9" Reinforced Portland Cement Concrete Pavement.</li> <li>② I-22 Subbase, Grading A or B As Per Plan (Depth as Shown)</li> <li>③ T-31 Bituminous Surface Treatment Using 0.008 Cu. Yds. No. 6 Aggregate Per Sq. Yds. and 0.25 Gal. Bituminous Material Per Sq. Yd. (See Note in Proposal)</li> <li>* ④ B-21 3" Waterproofed Aggregate Base Course (Type "A" T-35 or T-335 May be Used in Construction of This Course, See Note in Proposal)</li> </ul> | <ul style="list-style-type: none"> <li>⑤ B-19 Aggregate Base Course (Variable Thickness)</li> <li>⑥ I-1 6" Pipe Class I-3</li> <li>⑦ Remove Subbase for Width of Item I-1 Trench and Replace with Type 3 Backfill Immediately Prior to Placing the Item B-19 Aggregate Base Course. Cost shall be Included in Price Bid Per Lin. Ft. for Item I-1.</li> <li>⑧ L-9 Seeding and Protecting, As Per Plan.</li> </ul> |
|--|---|

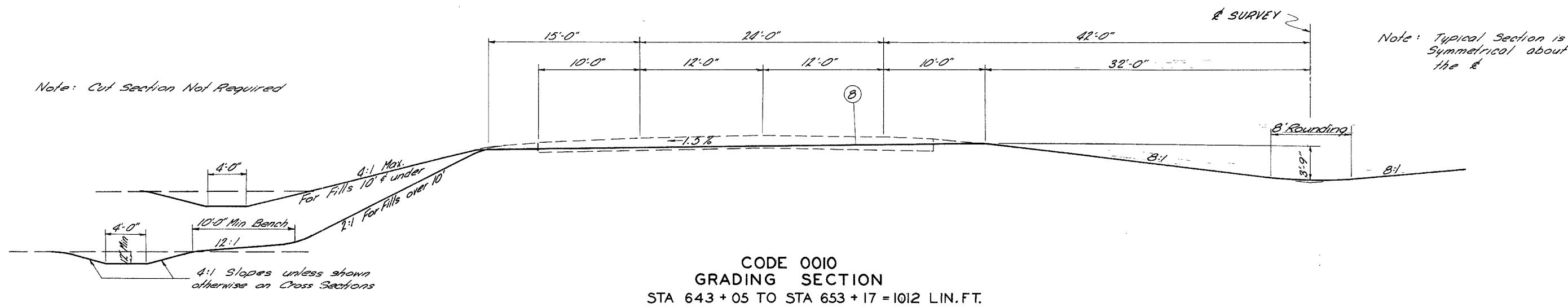
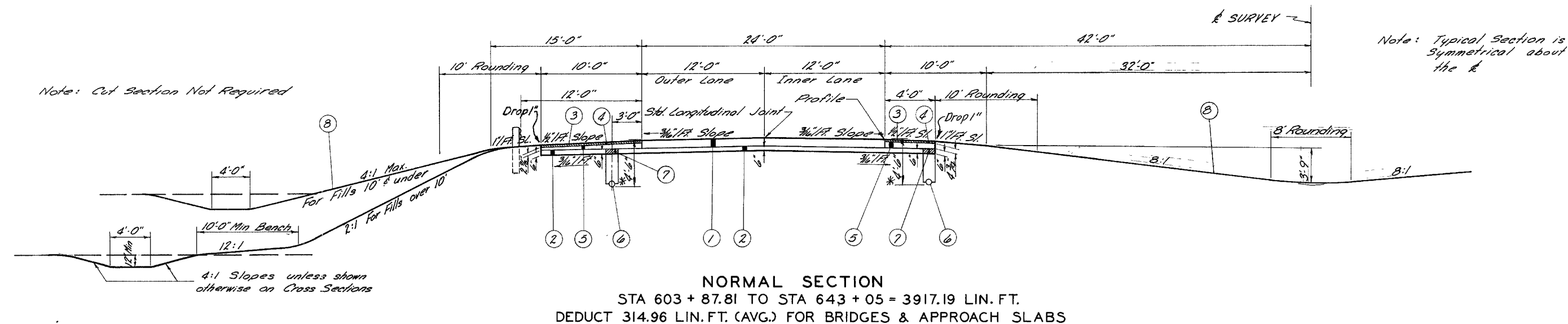
\* Thickness shown is "Designed" thickness as described in Section B-21.01.



# TYPICAL SECTIONS

TYPE T-71  
SCALE  $\frac{3}{16}'' = 1'-0''$

\* Unless otherwise shown elsewhere in plans  
Note: For Details Not Shown See Standard Drawing R1-1



## LEGEND

- |  |  |
|--|--|
| ① T-71 9" Reinforced Portland Cement Concrete Pavement   | ⑤ B-19 Aggregate Base Course (Depth as Shown)  |
| ② I-22 Subbase, Grading A or B As per Plan (Depth as Shown)  | ⑥ I-1 6" Pipe Class I-3  |
| ③ T-31 Bituminous Surface Treatment Using, 0.008 Cu Yd. No. 6 Aggregate Per Sq Yd. & 0.25 Gal. Bituminous Material Per Sq Yd. (See Note in Proposal) | ⑦ Remove Subbase for Width of Item I-1 Trench & Replace with Type 3 Backfill Immediately Prior to Placing the Item B-19 Aggregate Base Course. Cost Shall be included in Price Bid Per Lin. Ft. For Item I-1 |
| ④ B-21* 3" Waterproffed Aggregate Base Course (Type "A" T-35 or T-335 may be Used in Construction of This Course (See Note in Proposal))             | ⑧ L-9 Seeding & Protecting as per Plan.  |

\* Thickness Shown is "Designed" Thickness as Described in Section B-21.01

# TYPICAL SECTIONS

## TYPE T - 71 & T - 70\*\*

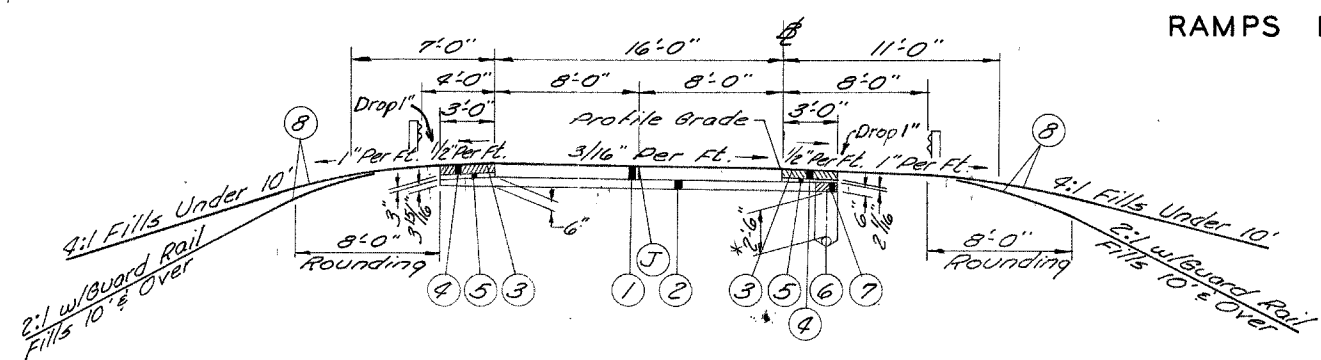
SCALE: 3/16" = 1' - 0"

RAMPS A, A-1, F, & F-1\*\*

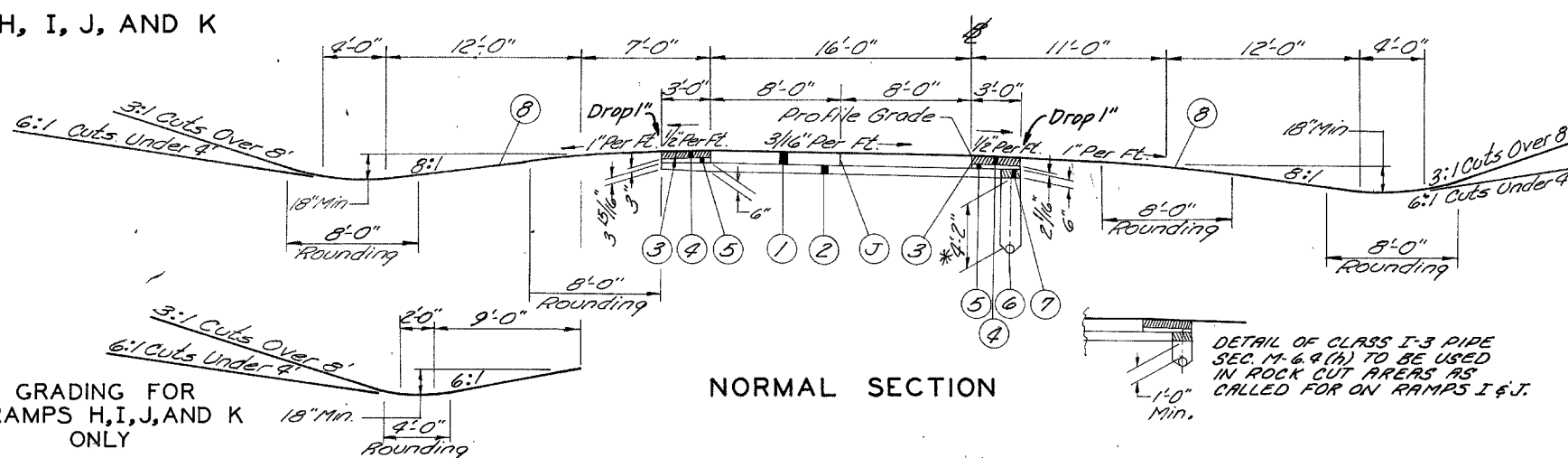
RAMPS H, I, J, AND K

\* Unless otherwise shown elsewhere in plans

NOTE: For Details Not Shown See Std. Drawing R1-1



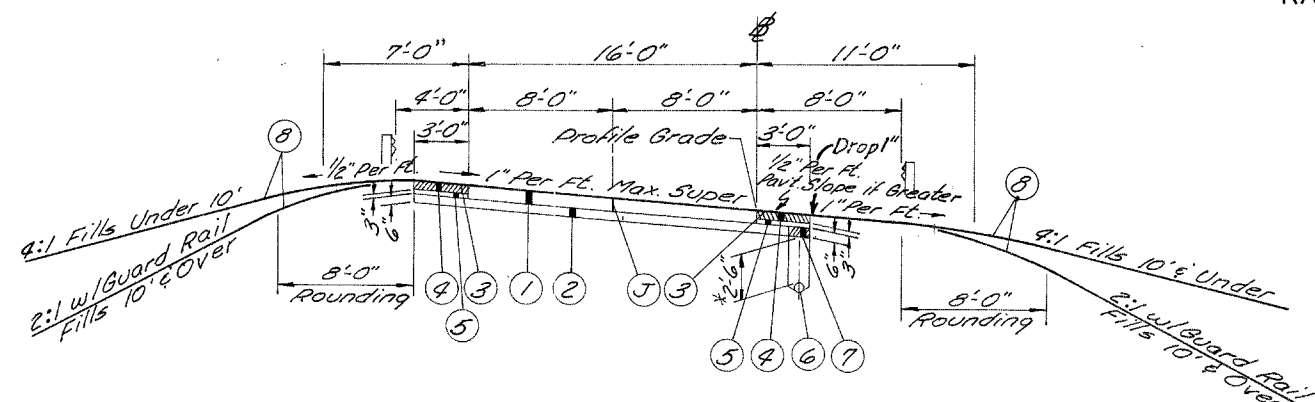
NORMAL SECTION



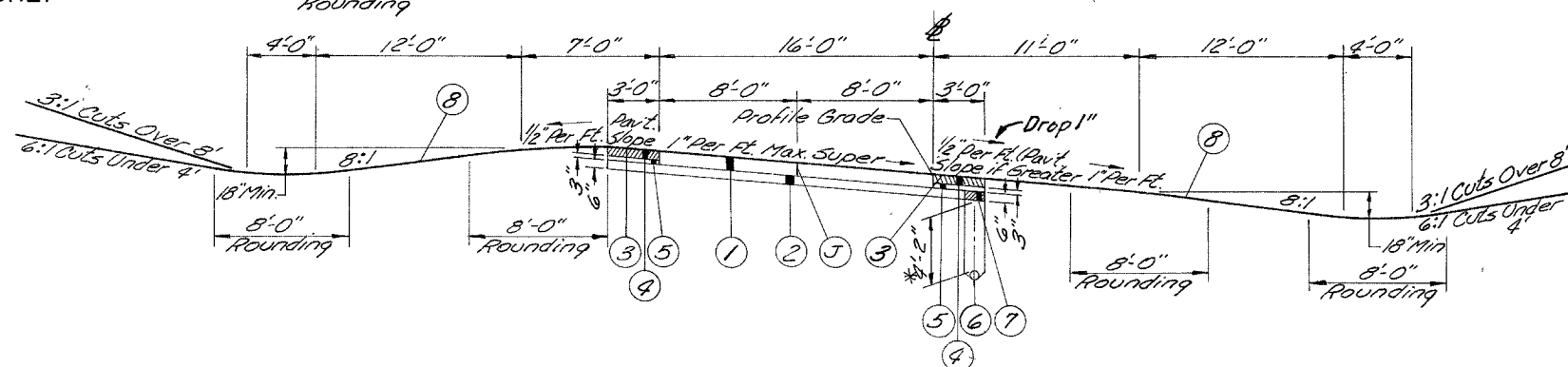
NORMAL SECTION

GRADING FOR RAMPS H, I, J, AND K ONLY

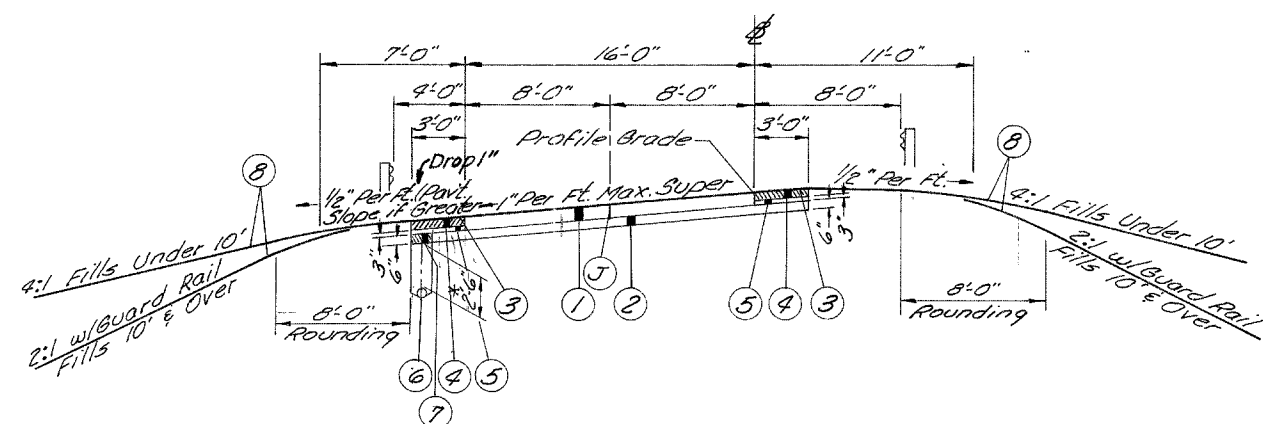
DETAIL OF CLASS I-3 PIPE SEC. M-6.9 (H) TO BE USED IN ROCK CUT AREAS AS CALLED FOR ON RAMPS I & J.



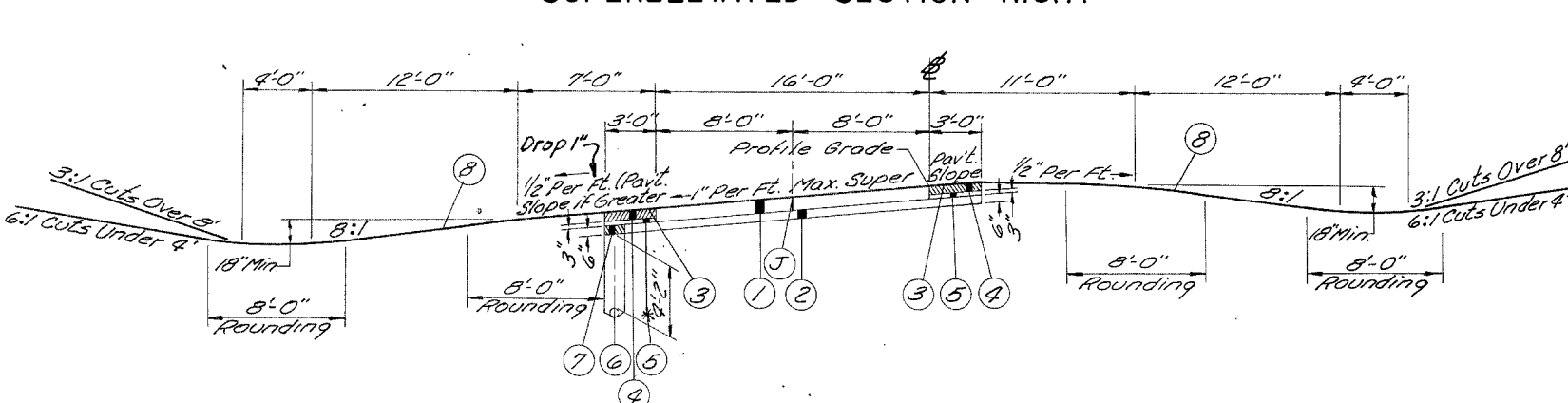
SUPERELEVATED SECTION RIGHT



SUPERELEVATED SECTION RIGHT



SUPERELEVATED SECTION LEFT



SUPERELEVATED SECTION LEFT

### LEGEND

- \*\* ① T-71 9" Reinforced Portland Cement Concrete Pavement.
- ② I-22 Subbase, Grading A or B As Per Plan (Depth as Shown)
- ③ T-31 Bituminous Surface Treatment Using 0.008 Cu. Yd No. 6 Aggregate Per Sq. Yd. and 0.25 Gal. Bituminous Material Per Sq. Yd. (See Note in Proposal)
- # ④ B-21 6" Waterproofed Aggregate Base Course (Type "A" T-35 or T-335 may be Used in Construction of This Course See Note in Proposal)
- \*\* For Ramp F-1 Only, the Pavement Shall be Item T-70 9" Portland Cement Concrete Pavement.
- # Thickness Shown is "Designed" Thickness as Described in Section B-21.01.

- ⑤ B-19 Aggregate Base Course (Depth as Shown)
- ⑥ I-1 6" Pipe, Class I-3
- ⑦ Remove Subbase For Width of Item I-1 Trench and Replace with Type 3 Backfill Immediately Prior to Placing the Item B-19 Aggregate Base Course. Cost shall be Included in Price Bid Per Lin. Ft. For Item I-1.
- ⑧ L-9 Seeding and Protecting (As Per Plan)
- J Standard Longitudinal Joint

# TYPICAL SECTIONS

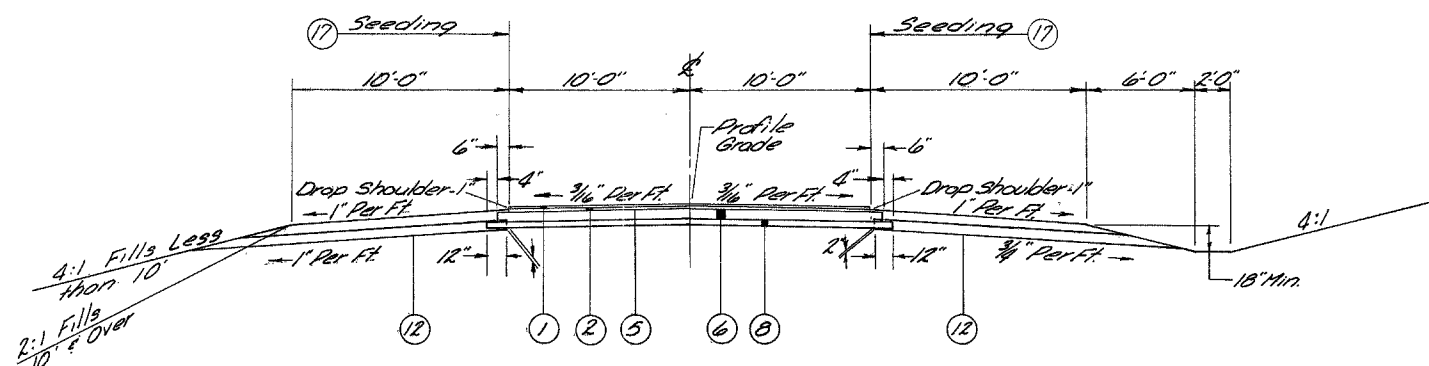
## TYPE T-35 ON B-19

SCALE:  $\frac{3}{16}'' = 1'-0''$

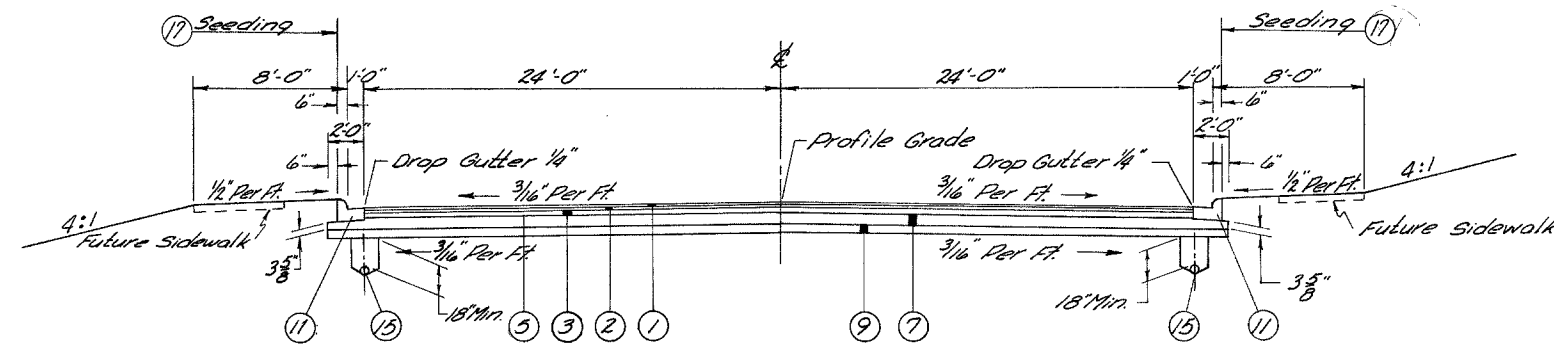
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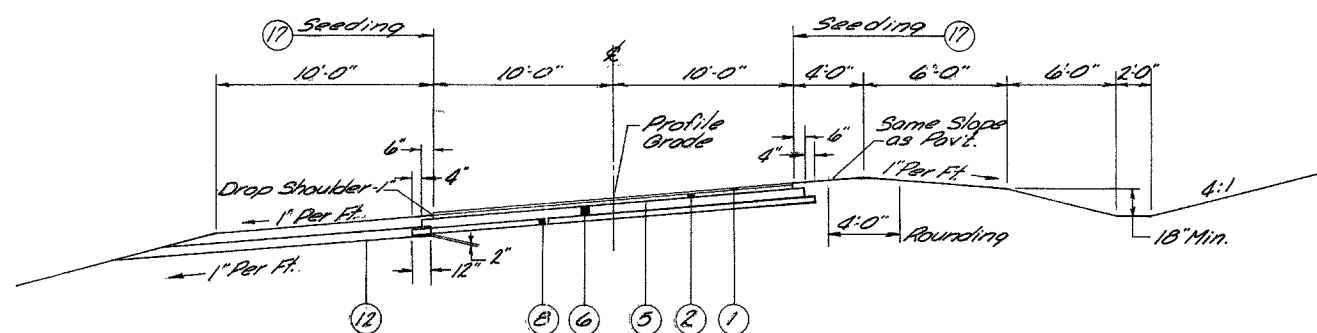
NOTE: For Details Not Shown  
See Standard Drawing RI-1



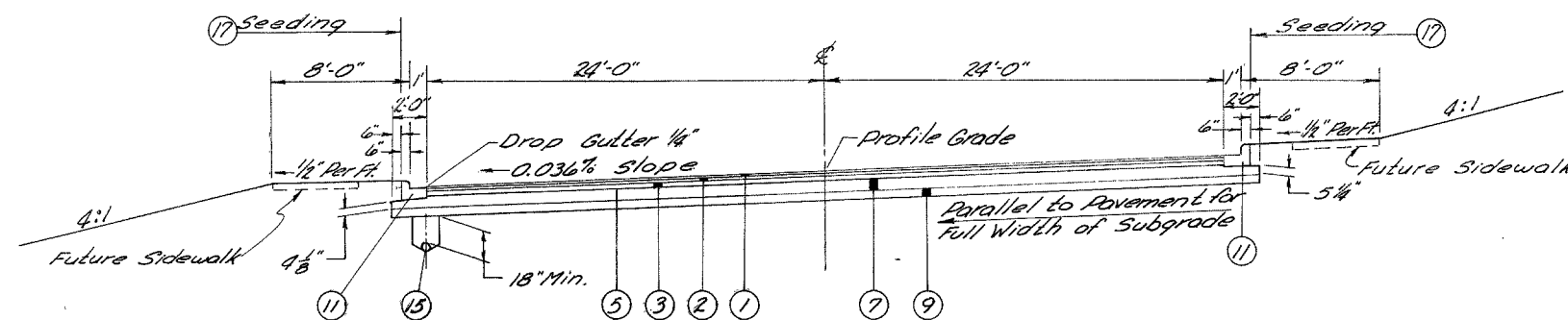
**NORMAL SECTION**  
**WEST RIDGE ROAD**  
STA. 45+40 TO STA. 50+53.70 = 513.70 LIN. FT.



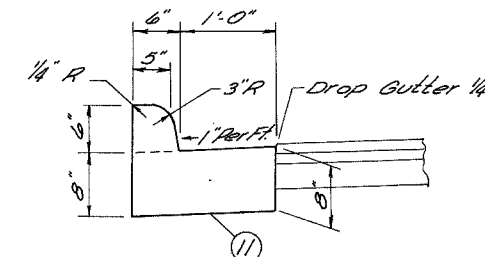
**NORMAL SECTION**  
**LAKE AVE.**  
FOR INFORMATION ONLY



**SUPERELEVATED SECTION**  
**WEST RIDGE ROAD**  
STA. 35+60 TO STA. 45+40 = 980 LIN. FT.  
STA. 100+10 TO STA. 103+87.31 = 377.31 LIN. FT.



**SUPERELEVATED SECTION**  
**LAKE AVE.**  
STA. 67+00 TO STA. 73+00 = 600 LIN. FT.



**STANDARD COMBINATION CURB & GUTTER TYPE 2 (MODIFIED) AS PER PLAN**

### LEGEND

- ① †T-35 1" Asphaltic Concrete Surface Course Type C (70-85)
- ② †B-35 1 1/2" Asphaltic Concrete Leveling Course (70-85)
- ③ †B-35 3" Asphaltic Concrete Base Course (70-85)
- ⑤ T-30 Bituminous Prime Coat Using Sec. M-5.7 RT-2 or 3 Applied at the Rate of 0.4 Gal. Per Sq. Yds.
- ⑥ B-19 6" Aggregate Base Course
- ⑦ B-19 8" Aggregate Base Course

- ⑧ I-22 4" Subbase
- ⑨ I-22 6" Subbase
- ⑪ I-12 Standard Combination Curb & Gutter Type 2 (Modified) As Per Plan
- ⑫ I-9 Stone Underdrain No 2
- ⑬ I-1 6" Pipe Class I-3
- ⑰ L-9 Seeding and protecting (as Per Plan)

† Thicknesses Shown are "Designed" Thicknesses as Described in Sections T-35.01, B-35.01

# TYPICAL SECTIONS

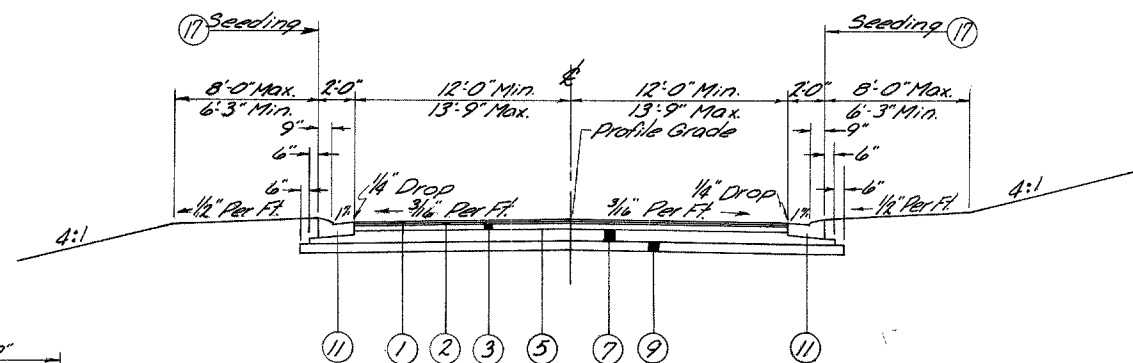
## TYPE T-35 ON B-19

SCALE:  $\frac{3}{16}'' = 1'-0''$

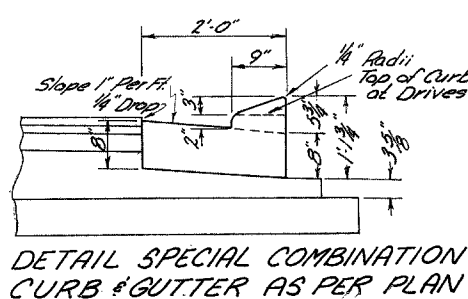
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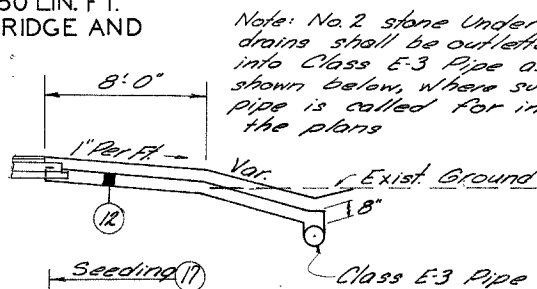
NOTE: For Details Not Shown See Standard Dwg. RI-1



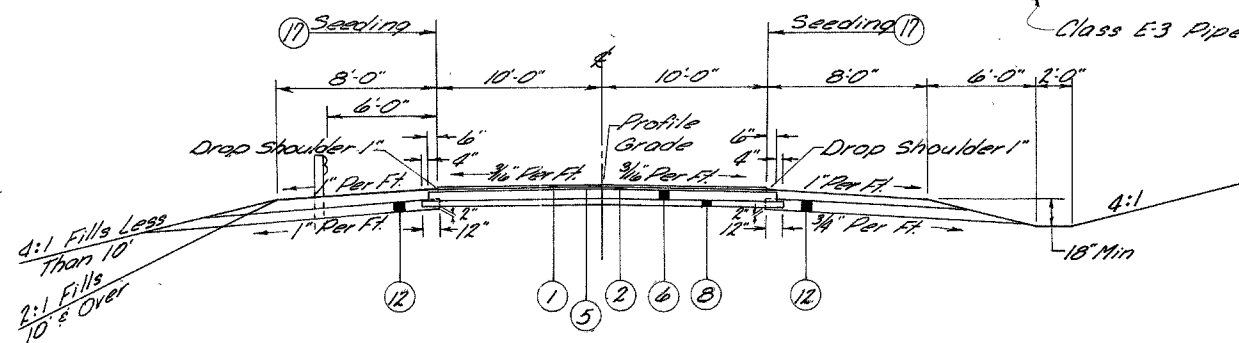
**NORTH RIDGE ROAD**  
STA. 67+50 TO STA. 72+50 = 550 LIN. FT.  
DEDUCT 281.20 LIN. FT. FOR BRIDGE AND APPROACH SLABS



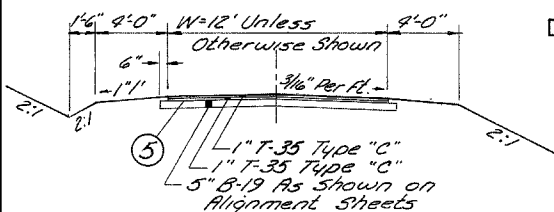
DETAIL SPECIAL COMBINATION CURB & GUTTER AS PER PLAN



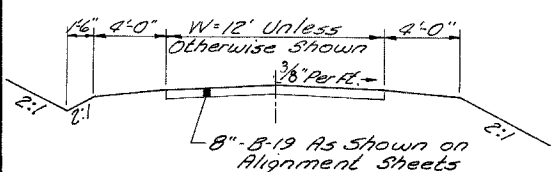
Note: No. 2 stone Under drains shall be outletted into Class E-3 Pipe as shown below, where such pipe is called for in the plans



**OBERLIN ROAD**  
STA. 46+35 TO STA. 54+00 = 765 LIN. FT.  
DEDUCT 289.79 LIN. FT. FOR BRIDGE AND APPROACH SLABS



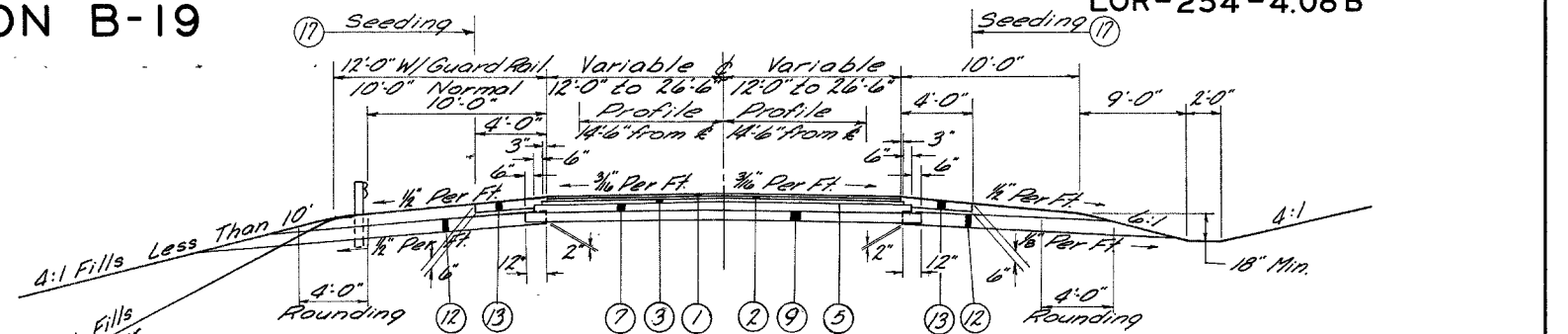
TYPICAL DRIVE SECTION T-35 TYPE "C" ON B-19



TYPICAL AGGREGATE DRIVE SECTION

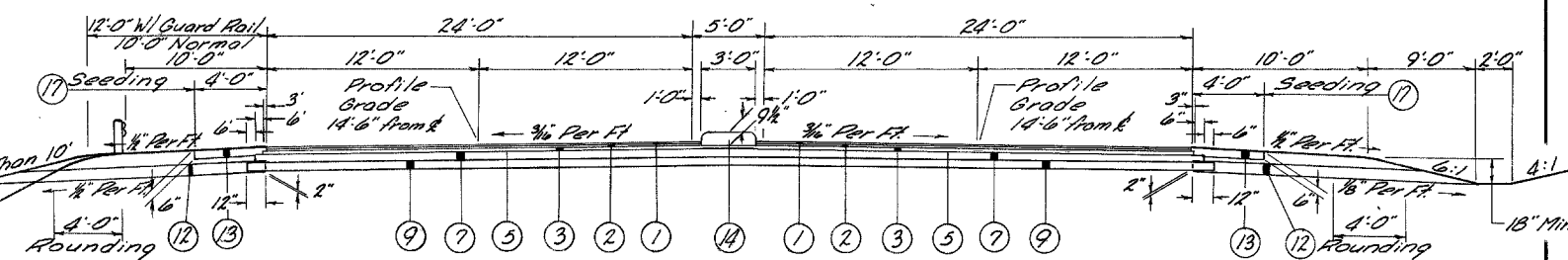
- ① T-35 1" Asphaltic Concrete Surface Course Type C (70-85)
- ② T-35 1 1/2" Asphaltic Concrete Leveling Course (70-85)
- ③ T-35 3" Asphaltic Concrete Base Course (70-85)
- ④ T-35 1 3/4" Asphaltic Concrete Surface Course Type C (70-85) Placed in two courses
- ⑤ T-30 Bituminous Prime Coat Using Sec. M-5.7 RT-2 or 3 Applied at the Rate of 0.4 Gal. Per Sq. Yd.
- ⑥ B-19 6" Aggregate Base Course
- ⑦ B-19 8" Aggregate Base Course
- ⑧ I-22 4" Subbase

\* Thicknesses Shown are "Designed" Thicknesses as Described in Sections T-35.01 & B-35.01

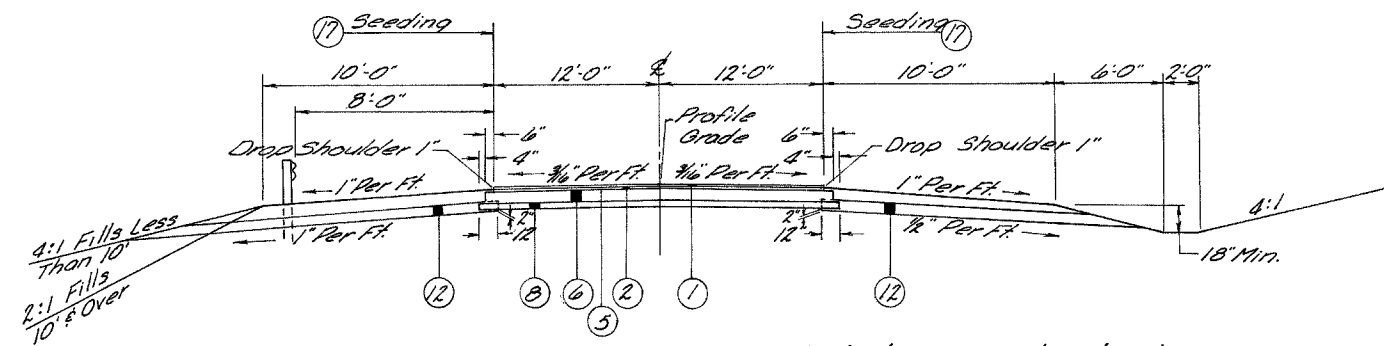


**MIDDLE RIDGE ROAD**  
STA. 41+00 TO STA. 45+00 = 400 LIN. FT.  
STA. 56+25 TO STA. 60+00 = 475 LIN. FT.

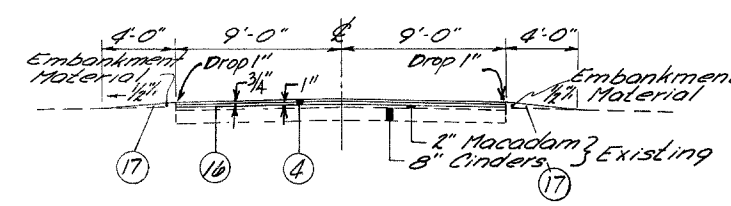
NOTE: Precast Concrete Traffic Dividers where called for on the plans shall be constructed in accordance with Standard Drawing I-21-23



**MIDDLE RIDGE ROAD**  
STA. 45+00 TO STA. 56+25 = 1125 LIN. FT.  
DEDUCT 303.59 LIN. FT. FOR BRIDGE & APPROACH SLABS



**MURRAY RIDGE ROAD (Future Construction)**



**MURRAY RIDGE ROAD (Present Construction)**  
STA. 48+25 TO STA. 51+60 = 335 LIN. FT.

### LEGEND

- ⑨ I-22 6" Subbase
- ⑪ I-12 Special Combination Curb & Gutter As Per Plan
- ⑫ I-9 Stone Underdrain No. 2
- ⑬ I-18 Stabilized Crushed Aggregate Shoulders and Approaches (For additional Stabilization With Calcium Chloride in the Upper 3" of this Item. See Note in Proposal)
- ⑭ I-21 Concrete Median Pavement, Standard Type 2
- ⑮ T-30 Bituminous Tack Coat, Sec. M-5.5, MS-2 or RS-1; or Sec. M-5.2, RC-1 or RC-2, as per Sec. T-30.02 Applied at the Rate of 0.1 gal. per Sq. Yd.
- ⑰ L-9 Seeding and protecting (as Per Plan)



I Code 0010	SU Code 6201	
25	3	12" to 18" Trees
9	1	18" to 24" Trees
2	0	24" to 30" Trees

# GENERAL NOTES

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REMOVAL OF TREES AND STUMPS: ALL TREES AND STUMPS LYING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM E-9, REMOVAL OF TREES AND STUMPS, EXCEPT THAT THOSE TREES AND STUMPS FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED. THE TREES IN THE VARIABLE WIDTH MEDIAN BETWEEN STA. 576+00 AND 595+00 SHALL NOT BE REMOVED. SEE GENERAL NOTE ON L-6 ROADSIDE CLEANUP FOR THIS AREA. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

NUMBER AND SIZES OF TREES AND STUMPS IS ESTIMATED BELOW FOR U 1115(1) (Code 7221)

	12" TO 18"	18" TO 24"	24" TO 30"	30" TO 38"	38" TO 42"	42" TO 48"	OVER 48"
TREES	1206	160	72	55	26	8	-
STUMPS	121	20	24	14	-	-	-

NUMBER AND SIZES OF TREES AND STUMPS IS ESTIMATED BELOW FOR 1-90-1(39)02 (Code 7221)

	12" TO 18"	18" TO 24"	24" TO 30"	30" TO 38"	38" TO 42"	42" TO 48"	OVER 48"
TREES	182	182	85-85	14-14	-	-	-
STUMPS	-	-	-	-	-	-	-

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE 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 E-9, REMOVAL OF TREES AND STUMPS.

ROADSIDE CLEANUP: THE WOODS AND THicket IN THE VARIABLE WIDTH MEDIAN BETWEEN STATIONS 576+00 AND 595+00 SHALL BE CLEANED UP UNDER ITEM L-6 ROADSIDE CLEANUP. IN ADDITION TO THE WORK COVERED BY THIS ITEM, ALL ELM TREES AND STUMPS SHALL BE REMOVED. THE ESTIMATED QUANTITY FOR THE ABOVE WORK IS:

ITEM L-6 ROADSIDE CLEANUP 259 UNITS

ITEM 1-9 STONE UNDERDRAINS, NO. 2: WHERE THE BASE MATERIAL IS DRAINED BY 1-9 STONE UNDERDRAINS, THEY SHALL BE PLACED AS DIRECTED BY THE ENGINEER. QUANTITIES ARE CALCULATED FOR 50' INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS AT TWENTY-FIVE (25) FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS. IN THE FINAL FINISHING, SEEDING AND MULCHING OF SLOPES AND DITCHES, CARE SHALL BE EXERCISED TO ASSURE THAT THE AGGREGATE OUTLET ENDS OF THE 1-9 STONE UNDERDRAINS ARE PROTECTED AND CLEAN. AN UNDERDRAIN SHALL BE PLACED AT THE LOW POINT IN EACH SAG VERTICAL CURVE.

CONSTRUCTION IDENTIFICATION SIGNS: THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE TRAFFIC AND CONSTRUCTION IDENTIFICATION SIGNS AT EACH OF THE FOLLOWING LOCATIONS: Exact locations will be determined by the Engineer.

1. S.R. 57 ~ At either side of construction
2. N. Ridge Road ~ At either side of construction
3. Middle Ridge Road ~ At either side of construction
- 4.

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FAC-1, USING CODE AS INDICATED ABOVE, AND THE SIGNS SHALL BE ERECTED IN ACCORDANCE WITH STANDARD DRAWING FAC-2. ADDITIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH NOTES IN THE PROPOSAL. Code N-55(1)-120(2)

ITEM E-12 REMOVAL OF PIPE FOR STORAGE: WHERE THIS ITEM IS CALLED FOR ON THE PLANS, CLEANING OF THE PIPE WILL NOT BE REQUIRED.

ITEM S. S. CE-101.04 COMPACTION USING HEAVY PNEUMATIC TIRE ROLLER: AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE IN PROOF ROLLING OF SUBGRADE ON THE MAINLINE AND RAMP PAVEMENTS AS DIRECTED BY THE ENGINEER. PROOF ROLLING WILL NOT BE REQUIRED WHERE ROCK OR SHALE OCCURS IN SUBGRADE AND IN AREAS WHERE SUBGRADE HAS BEEN THICKENED TO REPLACE FROST SUSCEPTIBLE SILTS. IN LIEU OF THE REQUIREMENTS OF CE-101.04, A MINIMUM OF ONE COVERAGE WILL BE REQUIRED TO CHECK THE SUBGRADE. MOISTURE CONTENT OF THE TOP 12" OF SUBGRADE SHALL NOT EXCEED OPTIMUM AT THE TIME OF PROOF ROLLING. TIRE PRESSURE AND TOTAL LOAD SHALL BE VARIED AS DIRECTED BY THE ENGINEER WITHIN THE LIMITS PROVIDED IN CE-101.04.

## SEQUENCE OF CONSTRUCTION OPERATIONS (PAVING)

AFTER THE SURFACE OF THE SUBBASE IN THE SHOULDER AREA IS IN PLACE AND COMPACTED AS SPECIFIED, AND IMMEDIATELY PRIOR TO PLACING THE AGGREGATE BASE COURSE, THE MATERIAL LOCATED ABOVE AND WITHIN THE UNDERDRAIN TRENCH SHALL BE REMOVED TO THE DEPTH NECESSARY TO EXPOSE CLEAN CLASS 3 BACKFILL. THE TRENCH SO EXCAVATED SHALL BE BACKFILLED WITH NEW CLASS 3 BACKFILL MATERIAL, OR IF THE CONTRACTOR SO ELECTS, HE MAY SUBSTITUTE MATERIAL MEETING THE REQUIREMENTS OF ITEM B-19 AGGREGATE BASE COURSE.

## SEQUENCE OF CONSTRUCTION OPERATIONS (CONTINUED)

IF, AFTER TESTING THE SUBBASE MATERIAL FOR COMPOSITION, IT IS FOUND THAT REMOVAL OF CONTAMINATED MATERIAL FROM THE SURFACE IS NECESSARY, SUCH MATERIAL SHALL BE REPLACED WITH MATERIAL MEETING THE REQUIREMENTS OF ITEM B-19 AGGREGATE BASE COURSE, AT THE EXPENSE OF THE CONTRACTOR. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE PERTINENT ITEMS AFFECTED.

REINFORCED ENDS ON CORRUGATED METAL PIPE: REINFORCED ENDS WILL BE REQUIRED ON ALL CORRUGATED METAL CLASS F-4, SEC. M-6.4(C) PIPE FOR DRIVEWAYS AND UNDERDRAIN OUTLETS IF THE PIPE ENDS ARE UNPROTECTED BY HEADWALLS, CATCH BASINS OR MANHOLES.

## COOPERATION:

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT A PROJECT IS NOW UNDER CONSTRUCTION AT THE WEST END OF THIS PROJECT AND TO THE PROBABILITY THAT A CONTRACT WILL BE AWARDED FOR THE CONSTRUCTION OF A PROJECT ADJACENT TO AND OVERLAPPING THE EAST END OF THIS PROJECT. THE CONTRACTOR SHALL COOPERATE TO THE FULLEST EXTENT WITH CONTRACTORS ON ADJACENT PROJECTS AND WITH THOSE CONTRACTORS OF THE UTILITY COMPANIES INVOLVED WITH THIS PROJECT IN A MANNER THAT WILL RESULT IN A MINIMUM OF INTERFERENCE WITH OTHER CONTRACTORS.

## APPROACH SLAB LONGITUDINAL JOINT

LONGITUDINAL IMPRESSED OR SAWED JOINTS SHALL BE PROVIDED BETWEEN LANE ELEMENTS, ON ALL APPROACH SLABS, IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING L.J.N#1. PAYMENT FOR THESE JOINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM I-7 REINFORCED CONCRETE APPROACH SLABS AS PER PLAN.

## ITEM I-5 PIPE SPECIALS

PIPE WITHOUT PERFORATIONS WILL BE PERMITTED FOR USE ON THIS PROJECT FOR ALL ITEM I-5 PIPE SPECIALS

## DISPOSITION OF PRIVY VAULTS AND SEPTIC TANKS

PRIVY VAULTS SHALL BE CLEANED AND FILLED WITH SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER. MATERIAL REMOVED FROM THESE VAULTS SHALL BE CLASSIFIED AS UNSUITABLE AND DISPOSED OF OUTSIDE THE LIMITS OF RIGHT OF WAY OR EASEMENT LINES. SEPTIC TANKS ARE TO BE CLEANED AND REMOVED OR FILLED AS CONDITIONS REQUIRE. PAYMENT FOR PERFORMING ALL THE REQUIREMENTS OF THIS WORK INCLUDING ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY, BACKFILLING, AND FOR DISPOSAL OF UNSUITABLE MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION.

## SEALING OF PIPE JOINTS

WHERE CONNECTIONS ARE MADE BETWEEN RIGID AND FLEXIBLE PIPE SECTIONS OR BETWEEN PIPE SECTIONS OF DIFFERENT KIND OR TYPE OF END FABRICATION, WHETHER REQUIRED BY THE PLANS, ARISING FROM PERMISSIBLE USE OF OPTIONAL MATERIALS, OR ENCOUNTERED IN CONNECTION TO EXISTING FACILITIES, THE JOINT SHALL BE SEALED BY MEANS OF A CLASS "E" CONCRETE COLLAR HAVING A MINIMUM THICKNESS OF 6 INCHES AND A MINIMUM LENGTH OF 12 INCHES. PAYMENT FOR SEALING AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

## CONTRACTION AND EXPANSION JOINTS

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

## GUARD RAIL FLARES

WHERE PROPOSED GUARD RAIL FLARES ARE CONSTRUCTED OF RAIL ELEMENTS WHICH HAVE NOT BEEN FABRICATED EXACTLY TO FIT THE CURVATURE SHOWN ON THE PLANS, THE TWO END POSTS OF EACH FLARED SECTION SHALL BE ENCASED IN A MINIMUM 4-INCH THICKNESS OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF POST BELOW THE GROUND LINE. PAYMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.

## ITEM I-8 DRAIN VAULT RECONSTRUCTED TO GRADE AS PER PLAN

THIS ITEM SHALL CONSIST OF THE CAREFUL REMOVAL OF THE EXISTING DRAIN VAULT DOWN TO THE ELEVATION NECESSARY, AND RECONSTRUCTING THE DRAIN VAULT TO THE NEW GRADE, CONFORMING AS NEARLY AS PRACTICABLE TO THE EXISTING DIMENSIONS AND TYPE OF CONSTRUCTION AND USING THE SALVAGED DRAIN VAULT FRAME AND COVER.

## ITEM E-12 PIPE REMOVED

ON THIS PROJECT THE CONTRACTOR WILL BE PERMITTED TO EXPOSE AND COLLAPSE OR BREAK-DOWN PIPE TO BE REMOVED AND DISPOSED OF, TO THE SATISFACTION OF THE ENGINEER, PRIOR TO BACKFILLING IN LIEU OF ACTUALLY REMOVING THE PIPE UNDER E-12.

## MAINTENANCE OF TRAFFIC

NORTH RIDGE ROAD: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. AN S-15 TEMPORARY RUNAROUND USING A CLASS "A" PAVEMENT 24 FOOT WIDE WITH 3 FOOT WIDE BERMS SHALL BE PROVIDED AS SHOWN ON THE PLANS.

OBERLIN ROAD: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. AN S-15 TEMPORARY RUNAROUND USING A CLASS "A" PAVEMENT SHALL BE PROVIDED AS SHOWN ON THE PLANS.

MIDDLE RIDGE ROAD AND WEST RIDGE ROAD: THE RELOCATION OF WEST RIDGE ROAD WESTERLY TO MIDDLE RIDGE ROAD SHALL BE CONSTRUCTED BEFORE ANY WORK IS STARTED IN THE VICINITY OF THE STRUCTURE ON MIDDLE RIDGE CROSSING OVER PROPOSED LOR-254. WEST RIDGE ROAD SHALL REMAIN OPEN UNTIL ALL WORK ON THE APPROACHES AND STRUCTURE ON MIDDLE RIDGE ROAD IS COMPLETED AND OPEN TO TRAFFIC. AT THIS TIME, WEST RIDGE ROAD CAN BE PERMANENTLY CLOSED AND CUL DE SACS CONSTRUCTED AS SHOWN ON THE PLANS.

MURRAY RIDGE ROAD: TWO-WAY TRAFFIC SHALL BE MAINTAINED DURING THE CONSTRUCTION OF THE STRUCTURE ON LOR-254 OVER MURRAY RIDGE ROAD. ONE-WAY TRAFFIC SHALL BE PERMITTED DURING ACTUAL RESURFACING OPERATIONS ON MURRAY RIDGE ROAD WITHIN THE LIMITS OF THE R/W OF LOR-254.

LAKE AVENUE: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY THE FOLLOWING METHOD: THE EXISTING ROAD SHALL BE LEFT IN USE UNTIL THE WORK ON THE NORTHBOUND LANES OF THE PROPOSED RELOCATION OF LAKE AVENUE AND THE CONSTRUCTION OF THE TRANSITIONS FROM THE OLD PAVEMENT TO THE NEW PAVEMENT IS COMPLETED. THE TWO NORTHBOUND LANES WILL BE OPENED TO TWO-WAY TRAFFIC WHILE THE OLD ROAD IS REMOVED AND THE CONSTRUCTION OF THE SOUTHBOUND LANES ON RELOCATED LAKE AVENUE IS COMPLETED.

S. R. 57: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON S. R. 57.

LOCAL TRAFFIC: THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR MAINTAINING LOCAL TRAFFIC:

T-10	300 CU. YDS.
I-4	6 TONS

LIGHTS, SIGNS AND BARRICADES: THE CONTRACTOR SHALL, IN CONJUNCTION WITH THE GENERAL REQUIREMENTS OF SEC. 1-3 MAINTAINING TRAFFIC ON THIS PROJECT, PERFORM THE FOLLOWING:

- (A) PROVIDE, ERECT AND MAINTAIN MOVEABLE GATES ON INTERSECTING ROADS CLOSED TO TRAFFIC AT ALL POINTS WHERE LOCAL TRAFFIC TERMINATES.
- (B) PROVIDE, ERECT AND MAINTAIN LIGHTS, SIGNS AND BARRICADES AT THE WORK LIMITS ON ALL INTERSECTING ROADS WHICH REMAIN OPEN TO TRAFFIC.
- (C) PROVIDE, ERECT AND MAINTAIN STANDARD 48" X 30" SIZE "ROAD CLOSED" SIGNS, SIGN SUPPORTS AND LIGHTS AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:
  1. MIDDLE RIDGE ROAD AT STATION 43+50 AND STATION 60+25.
  2. WEST RIDGE ROAD AT STATION 38+50 AND STATION 58+00.

LIGHTS, BARRICADES AND DANGER AND WARNING SIGNS SHALL BE PROVIDED AT LOCATIONS SHOWN ABOVE IN ACCORDANCE WITH SEC. G-7.07. BARRICADES AND GATES SHALL BE AS DETAILED ON STANDARD CONSTRUCTION DRAWING NO. G-7.07. SIGN SUPPORTS AND LIGHTS FOR "ROAD CLOSED" SIGNS SHALL BE AS DETAILED IN THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES."

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING BARRICADES, GATES, LIGHTS, SIGNS AND SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MAINTAINING TRAFFIC."

PROTECTION OF TRAFFIC (OVERHEAD BRIDGE CONSTRUCTION): THE CONTRACTOR SHALL SAFEGUARD THE TRAVELING PUBLIC ON MURRAY RIDGE ROAD AND LAKE AVENUE BY PROVIDING PLATFORMS, NETS OR OTHER SUITABLE PROTECTION ABOVE THE TRAVELED LANES. THE CONTRACTOR SHALL MAINTAIN A MINIMUM LATERAL CLEARANCE OF 13'-8". PAYMENT FOR THIS PROTECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 1-3 MAINTAINING TRAFFIC.

# GENERAL SUMMARY

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\* Type Code Y005

ITEM NO.	CODE 7221		OOIO	SU CODE 6201		LAKE AVE	GRAND TOTAL	UNIT	DESCRIPTION	SHT.
	U	I		I	AVE					
	ROADWAY									
E-1	758,143	23,443	4,911	2,535	789,032	Cu. Yds.		Roadway Excavation Method "B" As Per Plan	22	
E-1	130,470	60,484		4,394	195,348	Sq. Yds.		Compacted Subgrade	19	
E-9		367,087	100,498		467,585	Cu. Yds.		Borrow	19	
E-9	2,749				2,749	Cu. Yds.		Borrow using Granular Material including the cost of excavation of unsuitable material, as per plan	22	
E-8	18				18	Sq. Yds.		Removal and Disposal of Existing Pavement	22	
E-8	65				65	Sq. Ft.		Removal and Disposal of Existing Sidewalk	22	
E-8	1000				1000	Lin. Ft.		Removal and Disposal of Existing Curb and Butler	22	
E-9	Lump	Lump	Lump	Lump	Lump	Lump		Removal of Trees and Stumps	13	
E-11	2758	2,371	491	14	5634	M. Gals.		Water	19	
E-12	624	297			921	Lin. Ft.		Pipe Removed, Over 15" As Per Plan	21	
I-9	750	100		150	1000	M. Gals.		Water For Dust Control	15	
I-9	4	1.5		0.5	6	Tons		Calcium Chloride For Dust Control	13	
I-8	9			2	11	Each		Standard Monument Assemblies	290	
I-8	29	7			36	Each		Center Line Reference Monuments, As Per Plan	290	
I-13	60				60	Lin. Ft.		Concrete Steps Standard Type A as per plan	21	
I-13		555			555	Sq. Ft.		4" Concrete Sidewalk	21	
I-15	8146.5	7741.0			15,887.5	Lin. Ft.		Guard Rail Steel Beam Standard Type (Deep)	21	
I-15	407.5	437.5			845.0	Lin. Ft.		Guard Rail Steel Beam Barrier Type (Deep)	21	
I-15		1050.0			1050.0	Lin. Ft.		Temporary Guard Rail, As Per Plan	21	
I-25	22,672	17,150			39,822	Lin. Ft.		Woven Wire Fence Type #7	297	
L-6	172	87			259	Units		Roadside Clean up, as per plan	13	
* L-9	380,340	188,238	65,151	3,013	636,742	Sq. Yds.		Seeding and Protecting, As Per Plan	22	
* L-9	34.60	16.90	5.92	0.27	57.69	Tons		Commercial Fertilizer (12-12-12)	19	
* L-10	4,038	88			4,126	Sq. Yds.		Sodding	21	
* L-10	130	141			271	Sq. Yds.		Sodding For Special Berm and Slope Protection, as per plan	21	
* L-120		990			990	Sq. Yds.		Jute Matting	21	
S-15	Lump				Lump	Lump		Temporary Run around Road using Class A Pavement As Per Plan.	14	
S-21	Lump				Lump	Lump		Removal of Existing Structures	22	
T-10	250	40		10	300	Cu. Yds.		Traffic Compacted Surface Course For Maintaining Traffic	13	
Special	3				3	Each		Drilled Wells Abandoned	20	
Special			Lump		Lump	Lump		Removal and Disposal of Existing Underground Storage Tank	22	
SS 25/10/04	40	16			56	Hours		Compaction Using Heavy Pneumatic Tired Roller	15	

	CODE 7221		LAKE AVE	GRAND TOTAL	UNIT	DESCRIPTION	SHT.
	U	I					
	TRAFFIC CONTROL						
I-125	14.21	5.78		19.99	Miles	4" Edge Line	28c
I-125	0.03	0.02		0.05	Mile	4" Lane Line	28c
I-125	2.35	0.79		3.14	Miles	6" Lane Line	28c
I-125	0.54	0.25		0.79	Mile	B" Channelizing Line	28c
I-125	Lump	Lump		Lump	Lump	Diagonal Stripes	28c
I-125	Lump	Lump		Lump	Lump	Curb and Island Marking	28c
I-129	682	613		1295	Sq. Ft.	Sign Erection, Guide Type, Ground Mounted Signs	30A
I-129	108	26		134	Sq. Ft.	Sign Erection, Flat Sheet Type,	30A
I-129	30			30	Lin. Ft.	Steel Drive Post, 2 lbs Per Foot	30A
I-129	221	54		275	Lin. Ft.	Steel Drive Post, 9 lbs Per Foot	30A
I-129		57		57	Lin. Ft.	Structural Supports, Steel Beam 12 WF 27 As Per Plan	30A
I-129	200	35		235	Lin. Ft.	Structural Supports, 81b Beam As Per Plan	30A
I-129	37			37	Lin. Ft.	Structural Supports, Steel Beam 10B11.5, As Per Plan	30A
I-129	206			206	Lin. Ft.	Structural Supports, Steel Beam 10B17, As Per Plan	30A
I-129		52		52	Lin. Ft.	Structural Supports, Steel Beam 12B22, As per plan	30A
I-129		1		1	Each	Overhead Sign Support No. 74 Design 1 75' Span	30B
I-129		9.2		9.2	Cu. Yd.	Concrete For Overhead Sign Support Foundations	30B
S-25		1		1	Each	Sign Support Ground Rod and Wire Connection As Per Plan	30B
I-129	15.8	6.0		21.8	Cu. Yd.	Concrete For Ground Mounted Sign Support Foundations	30A
I-15		50		50	Lin. Ft.	Guard Rail Steel Beam Standard Type Deep, As Per Plan	30B
I-127	18			18	Each	Delineators, Type A-1, Post Mounted	28A
I-127	132	96		228	Each	Delineators, Type C-2, Post Mounted	28A
I-127	2	1		3	Each	Delineators, Type C-3, Post Mounted	28A
REMOVAL OF BUILDINGS							
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 82A & 82 WL) 1 Frame Barn and 2 Frame Sheds	298
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 87 WL) 2 Story Frame Residence, 1 Two-car Frame Garage & 1 Frame Tool Shed	298
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 110 WL) 2 Frame Sheds	301
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 90 WL) 1 Frame Shed	298
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 111 WL) 1 Log Platform, 2 Frame Sheds 1 Outhouse & 1 Metal Corn Crib	303
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 114F-3) 2 Story Frame Residence	303
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 112 & 112 WL) 1 Frame Barn, Concrete silo, & stone milkhouse	302
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 111F-9) 1 Tile Garage	303
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 113 & 113 WL) 1 Story Brick Residence, Two Garages, 3 Frame Sheds, and 1 Two-Story Frame Residence	302
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 115A) 1-2 Story Frame Residence	303
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 124 WL) 1-2 Story Frame Residence 1 Frame Shed and 1 Frame Garage	307
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 125 WL) 1-1 1/2 Story Frame Residence 1 Frame Garage, 4 Frame Sheds & 1 outhouse	307
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 134 WL) 1-1 Story Brick Residence & 1 Frame Shed	310
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 141 WL) 1 3/4 Frame Garage & 1 Frame Bldg.	310
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 145 WL) 1-2 Story Frame Residence 1 Frame Shed & 1 Frame 2-car Garage	310
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 147 WL) 1-1/2 Story Frame Residence 1-Frame Shed and 1 Concrete Block and Frame horse barn	310
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 152A WL) 1 Story Block Building -	315
E-10	Lump			Lump	Lump	Removal of Buildings (Parcel No. 157 WL) 1-story Concrete Block Shop building & one frame shed	312

# GENERAL SUMMARY

LOR - 254 - 4.08 B

ITEM NO	SU CODE 6201		LAKE AVE	GRAND TOTAL	UNIT	DESCRIPTION	SHT.
	CODE 7221 U	I					
DRAINAGE							
E-2		65		65	Cu. Yds.	Excavation For Structures	23
E-3	2,478	15,363		17,841	Cu. Yds.	Channel Excavation	21
I-1	79			79	Lin. Ft.	18" Pipe Class A-1	23
I-1		8		8	Lin. Ft.	24" Pipe Class A-1 Sec. M-6.6(a)	20
I-1	244	80		324	Lin. Ft.	42" Pipe Class A-1 Sec. M-6.6(a)	23
I-1		58		58	Lin. Ft.	48" Pipe Class A-1 Sec. M-6.6(a)	20
I-1		64		64	Lin. Ft.	84" Pipe Class A-1 Sec. M-6.6(a)	23
I-1		380		380	Lin. Ft.	66" Pipe Class A-1 Sec. M-6.6(b)	23
I-1		248		248	Lin. Ft.	60" Pipe Class A-1 Sec. M-6.6(d)	23
I-1	236			236	Lin. Ft.	96" Pipe Class A-1 Sec. M-106.6(d)	23
I-1		50		50	Lin. Ft.	18" Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)	23
I-1	74			74	Lin. Ft.	24" Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)	23
I-1	242			242	Lin. Ft.	30" Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)	23
I-1	174	250		424	Lin. Ft.	36" Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)	23
I-1							
I-1	216	78	6	300	Lin. Ft.	6" Pipe Class A-1 Sec. M-6.6(b) or M-6.8(b)	13
I-1	216	78	6	300	Lin. Ft.	8" Pipe Class A-1 Sec. M-6.6(b) or M-6.8(b)	13
I-1		104		104	Lin. Ft.	24" Pipe Class A-1 Sec. M-6.6(b) or M-6.8(b)	23
I-1	144	36		200	Lin. Ft.	8" Pipe Class E-1	13
I-1	293	333	14	640	Lin. Ft.	12" Pipe Class E-1	20
I-1	257		70	1,027	Lin. Ft.	15" Pipe Class E-1	20
I-1	1,654	288		1,942	Lin. Ft.	18" Pipe Class E-1	20
I-1	512			512	Lin. Ft.	21" Pipe Class E-1	20
I-1	340			340	Lin. Ft.	27" Pipe Class E-1	20
I-1	107			107	Lin. Ft.	30" Pipe Class E-1	20
I-1	1,310			1,310	Lin. Ft.	33" Pipe Class E-1	20
I-1	281			281	Lin. Ft.	12" Pipe Class E-3	20
I-1	442	228		670	Lin. Ft.	6" Pipe Class F-4	20
I-1	56			56	Lin. Ft.	8" Pipe Class F-4	20
I-1	494	186		680	Lin. Ft.	12" Pipe Class F-4	20
I-1	55	56		111	Lin. Ft.	15" Pipe Class F-4	20
I-1	386	208		594	Lin. Ft.	8" Pipe Class F-4 Sec. M-6.4(c)	20
I-1	156			156	Lin. Ft.	106"x68" Pipe Class B-1 Sec. M-6.7(a)	23
I-1	208	56		264	Lin. Ft.	8" Pipe Class H-2	20
I-1	144	56		200	Lin. Ft.	12" Pipe Class H-2	13
I-1	50,288	26,838	590	77,716	Lin. Ft.	6" Pipe Class I-3	20
I-1	10,133	70		10,203	Lin. Ft.	6" Pipe Class I-3 Sec. M-6.4(h)	20
I-1	598	98		696	Lin. Ft.	6" Pipe Class J-1	20
I-1	384	518		902	Lin. Ft.	12" Pipe Class J-1	20
I-1	536	287		823	Lin. Ft.	15" Pipe Class J-1	20
I-1	260	138		398	Lin. Ft.	18" Pipe Class J-1	20
I-1	568	354		922	Lin. Ft.	21" Pipe Class J-1	20
I-1	79			79	Lin. Ft.	24" Pipe Class J-1	20
I-1	83			83	Lin. Ft.	27" Pipe Class J-1	20
I-1	112			112	Lin. Ft.	36" Pipe Class J-1	20
I-1	39			39	Lin. Ft.	2" Pipe Sec. M-6.9 Standard Wt. Galvanized With Type 4 Backfill As Per Plan	20
I-2	52	144		196	Cu. Yds.	Masonry	20

ITEM NO	SU CODE 6201		LAKE AVE	GRAND TOTAL	UNIT	DESCRIPTION	SHT.
	CODE 7221 U	I					
DRAINAGE							
I-5	3	1		4	Each	6" Pipe Specials Class A-1 Sec. M-6.6(b) or M-6.8(b)	13
I-5	3	1		4	Each	8" Pipe Specials Class A-1 Sec. M-6.6(b) or M-6.8(b)	13
I-5		1		1	Each	36" Pipe Specials Class A-1 Sec. M-6.6(a) or M-6.8(b)	23
I-5	7	3		10	Each	8" Pipe Specials Class E-1	13
I-5			1	1	Each	15" Pipe Specials Class E-1	21
I-5	4			4	Each	12" Pipe Specials Class E-3	21
I-5	2			2	Each	8" Pipe Specials Class F-4	21
I-5	6	6		12	Each	12" Pipe Specials Class F-4	21
I-5	2	4		6	Each	15" Pipe Specials Class F-4	21
I-5	3	1		4	Each	8" Pipe Specials Class H-2	13
I-5	3	1		4	Each	12" Pipe Specials Class H-2	13
I-5	53	32	2	87	Each	6" Pipe Specials Class I-3	21
I-5	2			2	Each	6" Pipe Specials Class I-3 Sec. M-6.4(h)	21
I-5	24	6		30	Each	6" Pipe Specials Class J-1	21
I-5	3	1		4	Each	12" Pipe Specials Class J-1	13
I-8	22	4		26	Each	Standard No. 2-2A Catch Basin	20
I-8	5			5	Each	Standard No. 2-2-B Catch Basin	20
I-8	4			4	Each	Standard No. 2-3 Catch Basin Modified As Per Plan	20
I-8		5		5	Each	Standard No. 4 Catch Basin	20
I-8	2	5		7	Each	Standard No. 6 Catch Basin	20
I-8	4			4	Each	Standard No. 6 Catch Basin Modified As Per Plan	20
I-8		3		3	Each	Standard No. 8 Catch Basin	20
I-8		1		1	Each	Standard No. 2-6 Median Inlet	20
I-8		2		2	Each	Standard No. 2-14 Median Inlet	20
I-8	4	2		6	Each	Standard No. 7 Side Ditch Catch Basin	20
I-8	7			7	Each	Standard No. 1 Manhole	20
I-8		1		1	Each	Standard No. 1-A Manhole	22
I-9	11	4		15	Lin. Ft.	Stone Underdrains No. 1, As Per Plan	13
I-9	2,370			2,370	Lin. Ft.	Stone Underdrains No. 2	21
* I-10	338	144		482	Cu. Yds.	Dumped Rock Channel Protection	21
* I-10		13		13	Sq. Yds.	Rip Rap, 6" Reinforced Concrete Slab, as per plan	23
* I-14	20			20	Lin. Ft.	Paved Gutter Standard Type 1	23
* I-14	280	20		300	Lin. Ft.	Paved Gutter Standard Type I Modified As Per Plan	21
I-16		1		1	Each	Catch Basin Abandoned	21
S-1		17		17	Cu. Yds.	Concrete For Structures Class C	23
S-4		2,262		2,262	Lbs.	Reinforcing Steel	23
S-9		59		59	Sq. Ft.	1/2" Preformed Expansion Joint Filler Type I	23
I-8		1		1	Each	Std. No. 2-25 Gate Furnished and Placed	23



# GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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ITEM NO.	CODE 7221		LAKE GRAND AVE TOTAL		UNIT	DESCRIPTION	SHT
	U	I					
						PAVEMENT	
B-19	10018	2457	1,007	13482	Cu. Yds.	Aggregate Base Course	22
B-21	4,482	2,041		6,523	Cu. Yds.	Waterproofed Aggregate Base Course, as per plan	18
B-35	593		162	755	Cu. Yds.	Asphaltic Concrete Leveling Course (70-85)	22
B-35	748		325	1,073	Cu. Yds.	Asphaltic Concrete Base Course (70-85)	22
B-70	10			10	Sq. Yds.	8" Portland Cement Concrete Base Course	22
I-7	1,207	534		1,741	Sq. Yds.	Reinforced Concrete Approach Slabs (7x13") As Per Plan	21
I-12			1,220	1,220	Lin. Ft.	Standard Combination Curb and Butler Type 2 Modified	21
I-12	436			436	Lin. Ft.	Special Combination Curb and Butler As Per Plan	21
I-12	911	917		828	Lin. Ft.	Standard Concrete Curb Type 6	21
I-12	278	637		915	Lin. Ft.	Standard Concrete Curb Type 7	21
I-12	825	182		1007	Lin. Ft.	Standard Concrete Curb Type 8	21
I-18	207	37		244	Cu. Yds.	Stabilized Crushed Aggregate Shoulders and Approaches	22
I-21	23	29		52	Sq. Yds.	Concrete Median Pavement Standard Type 1	22
I-21	159			159	Sq. Yds.	Concrete Median Pavement Standard Type 2	22
I-22	2,213	174	703	3,090	Cu. Yds.	Subbase	22
I-22	24,711	5,209		29,920	Cu. Yds.	Subbase Grading A or B As Per Plan	19
I-23	53			53	Each	Precast White Portland Cement Concrete Traffic Dividers	22
T-30	6,883		1,758	8,641	Bals.	Bituminous Prime Coat Sec. M-5.7 RT-2 or RT-3	22
T-30	115		47	162	Bals.	Bituminous Tack Coat, Sec. M-5.5, M5-2 or RS-1; or sec. M-5.2 RC-1 or RC-2, as per sec. T-30.02	22
T-31	378	157		535	Cu. Yds.	Bituminous Surface Treatment No. 6 Aggregate As Per Plan	18
T-31	11,818	4,903		16,721	Bals.	Bituminous Surface Treatment Bituminous Material As Per Plan	18
T-35	607		148	755	Cu. Yds.	Asphaltic Concrete Surface Course Type C (70-85)	22
T-70		832		832	Sq. Yds.	9" Portland Cement Concrete Pavement	22
T-71	10,369	33,038		140,907	Sq. Yds.	9" Reinforced Portland Cement Concrete Pavement	18
I-3	Lump	Lump	Lump	Lump	Lump	Field Office	13
I-3	Lump	Lump	Lump	Lump	Lump	Maintaining Traffic	13
I-3	Lump	Lump	Lump	Lump	Lump	Construction Layout Stakes	13

ITEM NO.	CODE Y060			GRAND TOTAL	UNIT	DESCRIPTION	SHT
	U 100% Amherst	I	U Normal Participation				
						WATER WORK	
I-8			1	1	Each	Drain Vault Reconstructed to Grade, as per plan	42
I-124	310			310	Lin. Ft.	6" New Water Main Insulated, as per plan	23
I-124	280			280	Lin. Ft.	10" New Water Main Insulated, as per plan	23
I-124	408			408	Lin. Ft.	6" New Water Main As Per Plan (Temporary)	23
I-124	432			432	Lin. Ft.	10" New Water Main As Per Plan (Temporary)	23
I-124			182	182	Lin. Ft.	8" New Water Main	23
I-124		1003		1003	Lin. Ft.	30" New Water Main AWWA C-301 Pipe, As Per Plan	23
I-124	2			2	Each	6" Gate Valve and Box	23
I-124	2			2	Each	10" Gate Valve and Box	23
I-124	4			4	Each	Fitting, 6" 45° Bend	23
I-124			4	4	Each	Fitting, 8" 45° Bend	23
I-124	4			4	Each	Fitting, 10" 45° Bend	23
I-124	5			5	Each	Fitting, 6" Cut-in Sleeve	23
I-124			2	2	Each	Fitting, 8" Cut-in Sleeve	23
I-124	3			3	Each	Fitting, 10" Cut-in Sleeve	23
I-124	1			1	Each	Fitting, 10" Tee	23
I-124	1			1	Each	Fitting, 10" Plug	23
I-124	2			2	Each	Fitting, 10" 45° Wye	23
I-124	2			2	Each	Fitting, 6" 45° Branch	23
I-124	2			2	Each	Existing Fire Hydrant and Valve Removed and Reset	23
I-124		2		2	Each	30" Butterfly Valves with Victaulic Ends	23
I-124	1			1	Each	Fitting 30"x40" 45° Bend	23
I-124	1			1	Each	Fitting 30"x35" 22° Bend	23
I-124	2			2	Each	Fitting 30"x37" 30° Bend	23
I-124	2			2	Each	Fitting Follow Ring 30"x3'	23
I-124	2			2	Each	Fitting Adapter 30" Spigot to Follow Ring Flange to Dresser Coupling	23
I-124	2			2	Each	Fitting Spigot to Spigot 30"x3'	23
I-124	2			2	Each	Corporation Stop 1"	23
E-2		218		218	Cu. Yds.	Excavation For Structures	23
E-12		136		136	Lin. Ft.	Pipe Removed Over 15"	23
S-1		9		9	Cu. Yds.	Concrete For Structures Class "C"	23
S-1		52		52	Cu. Yds.	Concrete For Structures Class "C" As Per Plan	23
S-1	1.8	21.4	1.20	24.4	Cu. Yds.	Concrete For Structure Class "E"	23
S-3		153		153	Sq. Yds.	Waterproofing, Type B	23
S-9		13,756		13,756	Lbs.	Reinforcing Steel	23
S-7		212		212	Lbs.	Structural Steel Sliding Bearing Plates	23
S-9		90		90	Sq. Ft.	1/2" Preformed Expansion Joint Filler Type I	23
						STRUCTURES OVER 20' SPAN	
						Structure No. LOR-254-0825, Quantities Listed on Sheet No. 237	
						Structure No. LOR-254-0859, Quantities Listed on Sheet No. 243	
						Structure No. LOR-254-0967, Quantities Listed on Sheet No. 250	
						Structure No. LOR-254-1096 L&R Quantities Listed on Sheet No. 258	
						Structure No. LOR-254-1069 L&R Quantities Listed on Sheet No. 265	
						Structure No. LOR-254-1160 L&R Quantities Listed on Sheet No. 276	
						Structure No. LOR-254-1172 L&R Quantities Listed on Sheet No. 285	







# SUMMARY OF TABLES

LOR-254 - 4.08 B

Carried From Sheet Number	Station		I-5												I-10	E-3	E-12	L-10	L-120	L-10	I-9	I-16	I-12				I-13		I-14		I-15		I-7																				
			Pipe Specials Class I-3				Pipe Specials Class F-4				Pipe Specials Class I-3	Pipe Specials Class E-1	Pipe Specials Class E-3	Pipe Specials Class J-1									Dumped Rock Channel Protection	Channel Excavation	Pipe Removal	Sodding	Jute Matting	Special Berm & Slope Protection	Stone Under-drain No. 2	Abandon Catch Basin	Special Comb. Curb & Gutter As Per Plan	Standard Concrete Curb			Sidewalk	Concrete Steps	Standard Paved Gutter Type 1 Modified As Per Plan	Guard Rail Steel Beam Standard Type (Deep)	Guard Rail Steel Beam Barrier Type (Deep)	Temp. Guard Rail As Per Plan	Reinforced Concrete Approach Slabs T-13												
			6" 45' 6" Bend	6" 60' 6" Bend	6" 20' 6" Wye	6" 20' 6" Tee	8" 20' Bend	12" 10' Bend	12" 15' Bend	12" 25' Bend																						6" 60' 6" Bend		6" 60' 6" Wye								15" Tee	12" 12' Tee	12" 60' Tee	6" 60' 6" Bend	6" 60' 6" Wye	Cu. Yds.	Cu. Yds.	Lin. Ft.	Sq. Yds.	Sq. Yds.	Sq. Yds.	Each
13	General Notes														50.0																																						
23	Structure Table														59.0	1,202	237	288																																			
Plan & Profiles:																																																					
33	413+00	424+00													10.0	321																																					
34	424+00	435+00	1	4													14.0															90	20.0																				
35	435+00	446+00	2	1																											30	355.0	50.0																				
36	446+00	457+00	1																											20	350.0	50.0																					
37	457+00	468+00	1	4													22.0															10	232.0																				
38	468+00	479+00	2													2.2															10	43.0																					
39	479+00	490+00	3	1													2.2															10	190.0																				
40	490+00	501+00	2	5													4.4															10	160.0																				
41	501+00	512+00	2	3																											30	463.5	50.0																				
42	512+00	523+00	1																											20	36.5																						
43	523+00	534+00	1																											20																							
44	534+00	545+00	4													5.9															10	491.0																					
45	545+00	556+00			4	2													9.9															10	1979.0	125.0			266.8														
46	556+00	567+00	1			2													29.0	1,346															10	2051.5	67.0			266.1													
47	567+00	578+00			3													5.6	303																	266.0	25.5																
48	578+00	589+00			2																											103.0																					
49	589+00	600+00			6	2													1.6															597.0																			
51	600+00	611+00			2													2.2															1802.5	150.0																			
52	611+00	622+00	3	3	1	6													11.0	1,255	624	16	191															2109.0	175.0			533.6											
53	622+00	633+00	3	1			2													2.2	3,727															2198.5	112.5	100.0															
54	633+00	644+00			3													2.2	605															107.5			250.0																
Middle Ridge Rd. Interchange																																																					
61	Grading Plan																																																				
64	35+00	45+00																																																			
65	45+00	56+00																											102	900.0																							
66	56+00	65+00																											60			10	600.0			390.82																	
Ramps:																																																					
71	134+145.84	140+00			1																																																
72	140+00	150+00			3																											177.65	325.0																				
76	126+50	130+00			1	1	2																											206.04			20																
81	171+63.69	178+50			1	1	1	1	1	1	1	1	1	1	1	130															100.04	500.0			30																		
85	116+00	116+00			1																											209.63																					
86	116+00	118+08.76																																																			
S.R. 57 Interchange:																																																					
95	Grading Plan																																																				
99	131+00	142+00			1																											10	175.0																				
100	142+00	153+00																													10																						
101	153+00	164+00																																																			
Ramps:																																																					
106	143+00	143+00			3																											3,405			477.5	76.4			162.5														
107	143+00	142+78.92	2	2																											5,617	60															211.87			175.0			
113	1124+14.50	1124+50.82			1																																																
115	F37+50	F48+50			1	1																											204.94			137.5																	
116	F48+50	F57+18.60			1																											159.59	125.03			162.5																	
119	F151+51	F156+11			1																																																
Local Roads:																																																					
124	North Ridge Rd.				2																													436			300.0			171.64													
129	Oberlin Road																														28	156.0			60	250.0			161.88														
133	Reloc. West Ridge																																1,312.5																				
134	Reloc. West Ridge																																		50.0																		
135	West Ridge Road																																		555																		
141	Murray Ridge Rd																																1220			555																	
146	Lake Avenue		1	24	63	1	9	2	2	10	6	1	1	1	2	2	11	19	243.10	17,841	921	4,126	990	271	2,368.50	1	436	1220	82748.94	541006.93	555	60	300	15,512.5	845.0	1050.0	1,740.84																



# STRUCTURE TABLE 20' SPAN & UNDER

Carried From Sheet No.	Structure No.	Station	Type	Size	Length	E-2	E-3	I-2	L-10	I-10		I-14	E-12	I-8	I-5	Class A-1 Pipe								Class B/ 10 1/2" x 8 1/2" Elliptical Rein. Pipe Sec. M-6.7a	Concrete for Structures Class "C"	Std. No. & P.B. Grade Furnished and Placed	Reinforcing Steel	Expansion Joint Filler Type 1				
						Excavation For Structures	Channel Excavation	Masonry	Scabbling	Dumped Rock Channel Protection	Rip Rap 6" Rein. Forced Conc. Slab	Paved Gutter Sid. Type 1	Pipe Removal Over 15"	Std. No. 1-A Manhole	Pipe Special Class (A) Sec. M-6.6(a) or (b) or 36"x15" Tee	Sec. M-6.6(a)	Sec. M-6.6(b)	Sec. M-6.6(a)		Sec. M-6.6(a) or Sec. M-6.6(b)		Sec. M-6.6(b)	Sec. M-6.6(b)						Sec. M-6.6(b)	Sec. M-6.6(b)	Class "C"	Cu Yds.
Inches	Feet	Cu Yds.	Cu Yds.	Cu Yds.	Sq Yds.	Cu Yds.	Sq Yds.	Lin. Ft.	Lin. Ft.	Each	Each	18"	60"	66"	42"	84"	36"	18"	24"	30"	24"	96"	Lin. Ft.	Cu Yds.	Each	Lbs.	Sq. Ft.					
153	LOR-254-0885	467+12	Ell. Pipe	48x106	156		70	75	72	17																156						
153	LOR-254-0928	490+05	Pipe	42	156		14	1.6	20	2				20																156		
154	LOR-254-1087	552+65	Pipe	30	242		13	10	11																				242			
155	LOR-254-1063	541+06	Pipe	96	236		37	10.3	50	8																			236			
156	LOR-254-1089L	575+00WB	Pipe	36	82		65	1.2	10																				82			
156	LOR-254-1089R	575+10 E.B.	Pipe	36	92		72	1.2	10																				92			
157	LOR-254-1116	589+06WB	Pipe	42	88		38	22.0	7	8																			88			
157	LOR-254-1118	590+42 E.B.	Pipe	42	80		336	22.0	17			13																	80			
158	LOR-254-1155	640+02	Pipe	60	248		62	44.0	12					233															248			
159	LOR-254-1214	641+00	Pipe	36	250		16	16.0	8	14					1														250			
160	Lake Ave.	70+28.5	Pipe	66	380		117	5.9	32	8				1															380			
159	Ramp "A"	A25+34	Pipe	84	64		187	35.0	8																				64			
161	Ramp "A"	A30+00	Pipe	24	104		33	10.2	6																				104			
161	Ramp "F"	F49+00	Pipe	18	50		3	6.3	5																				50			
162	Ramp "H"	H41+00	Pipe	24	74		2	0.8	10	2																			74			
162	Rebar W. Ridge	48+00	Pipe	18	74		77	0.6	10																				74			
154	Pipe Outlet	503+50		36			60																									
163	Junction Box	A25+34					65							4																		
<b>Totals</b>							65	1202	185.6	288	59	13	20	237	1	1	74	248	380	324	64	424	50	74	242	104	236	156	17	1	2262	59

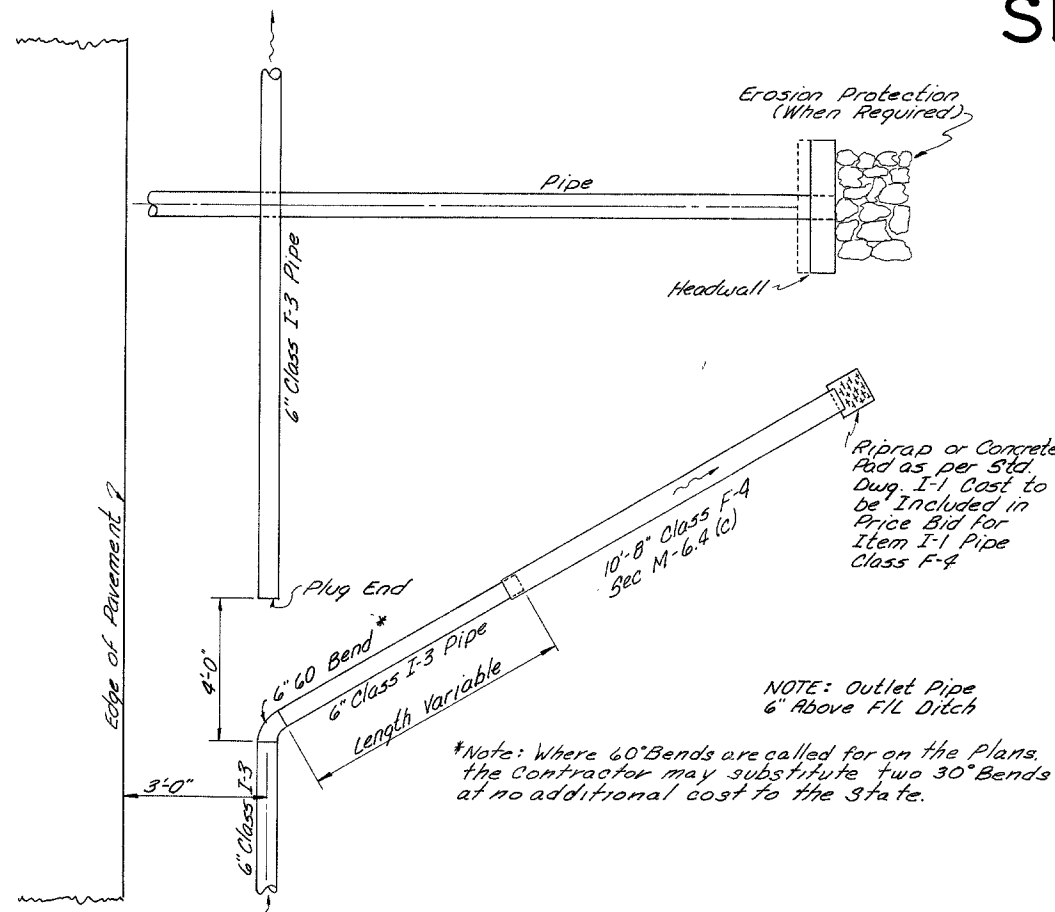
## SUMMARY OF TABLES NEW WATER LINE QUANTITIES

Carried From Sheet No.	Station	E-2	E-12	S-1			S-3	S-4	S-7	S-9	New Water Main				Gate Valve Boxes	Fitting					Exist. Fire Hydrant & Valve Removed & Reset	I-124					Valves 30" Butterfly Valves w/ Hydraulic Ends	Fitting 30" x 90" Bend	Fitting 30" x 35" Bend	Fitting 30" x 37" Bend	Fitting Follow Ring 30" x 3'	Fitting Reducer Ring 30" Spigot to Follow Ring Flange to Dresser Coupling	Fitting Spigot to Spigot 30" x 3'	Corporation Stop "
		Excavation For Structures	Removal of Pipe Over 15"	Concrete Structure Class "C" As Per Plan	Concrete Structure Class "C" As Per Plan	Concrete Structure Class "E" As Per Plan	Waterproofing	Reinforcing Steel	Structural Steel Sliding Bearing Plates	Preformed Expansion Joint Filler Type 1	New Water Main Insulated	New Water Main As Per Plan	New Water Main 8"	New Water Main 30" AWWA Pipe As Per Plan		Bends	Cut-in Sleeve			10" x 95" Wye		10" Tee	10" Plug	6" x 95" Wye Branch										
		Cu. Yds.	Lin. Ft.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.	Lbs.	Lbs.	Lbs.	Sq. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each		
124	North Ridge Rd					.90					290	432		2		4			3	1	2	1								1				
129	Oberlin Rd					.90					310	408		2	4		5			1										1				
141	Murray Ridge Rd					1.20							182			4		2																
229	30" Water Line	218	136	9	52.02	21.9	1529	3756	212	90			1003.92												2	1	1	2	2	2	2			
<b>Totals</b>		218	136	9	52.02	24.90	1529	3756	212	90	310	290	408	432	182	1003.92	2	2	4	4	4	5	2	3	2	2	1	1	2	2	2	2		

# SPECIAL CONSTRUCTION DETAILS

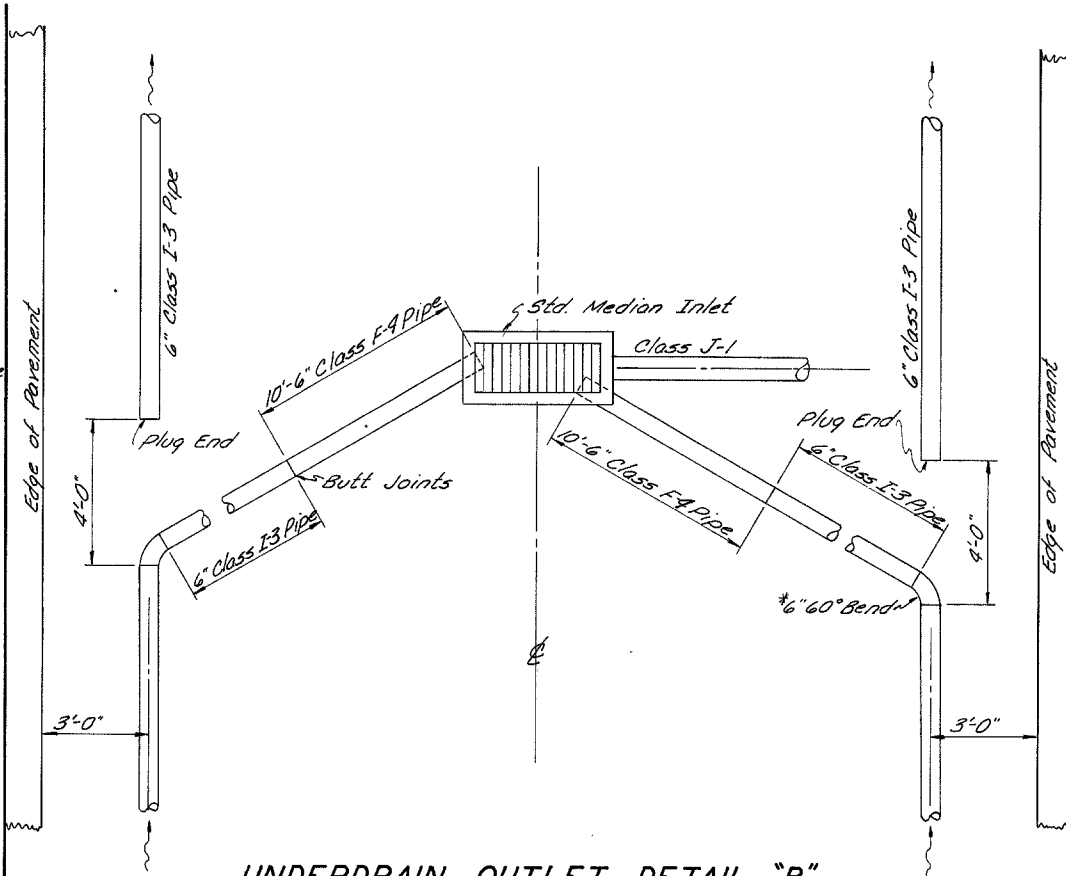
FED. RD. DIVISION	STATE	PROJECT	24 323
2	OHIO		

LOR - 254 - 4.08 B

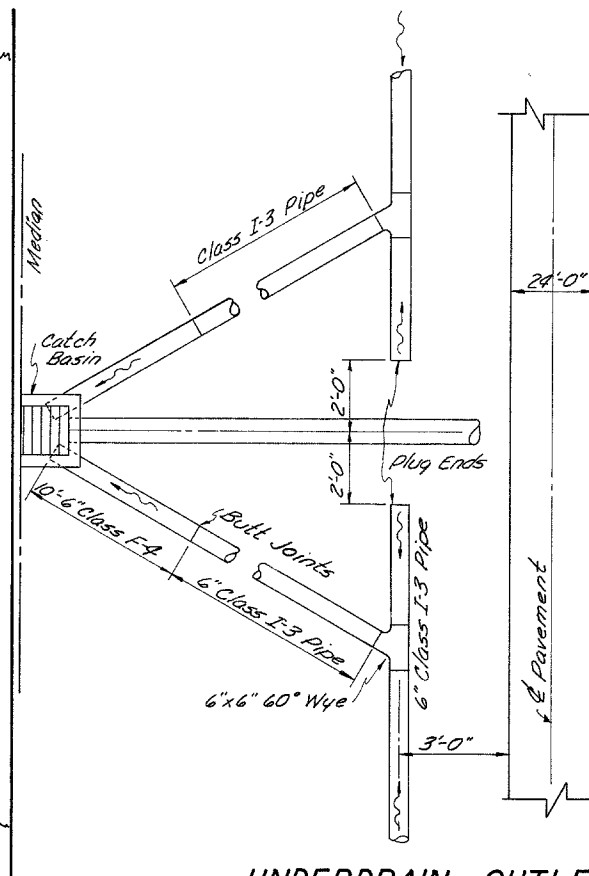


UNDERDRAIN OUTLET DETAIL "A"

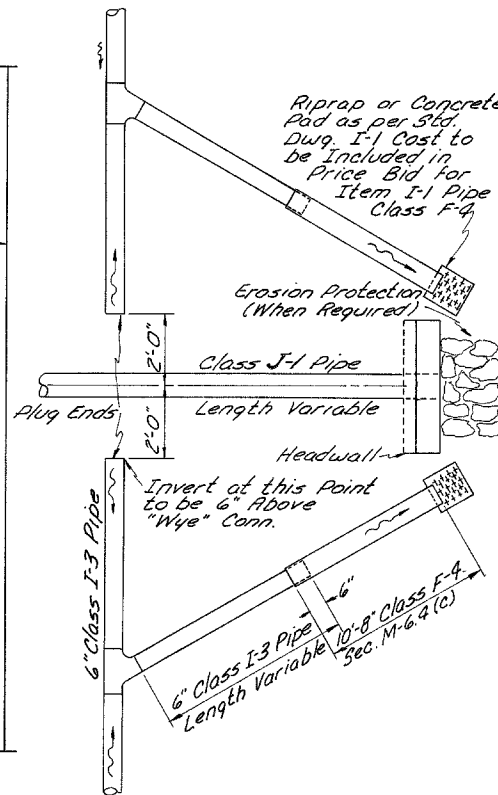
NOTE: Outlet Pipe 6" Above F.I.L. Ditch  
 \*Note: Where 60° Bends are called for on the Plans, the Contractor may substitute two 30° Bends at no additional cost to the State.



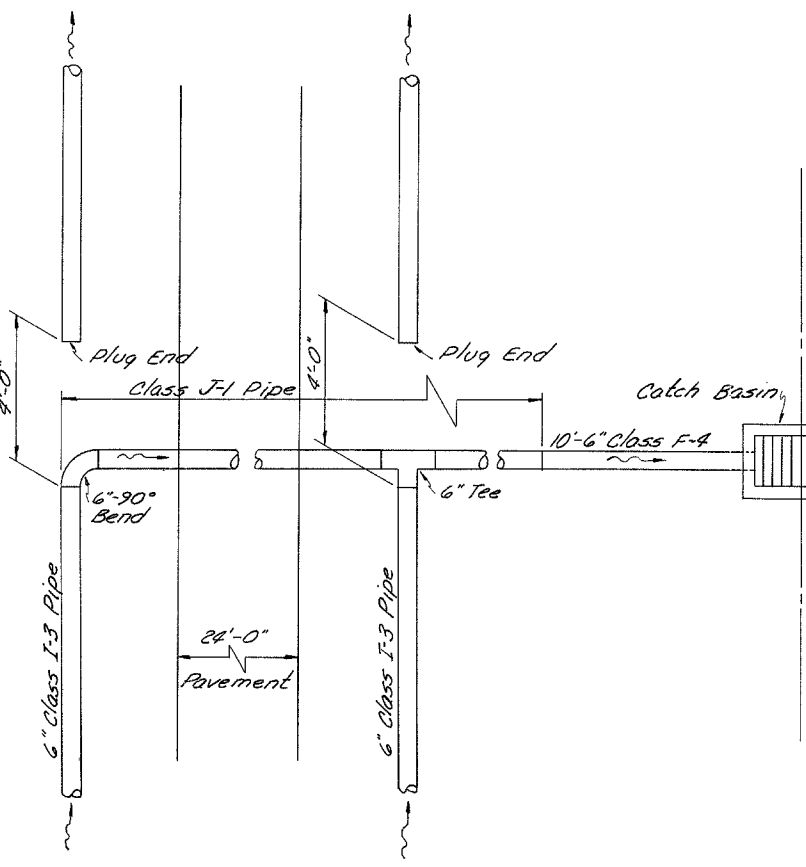
UNDERDRAIN OUTLET DETAIL "B"



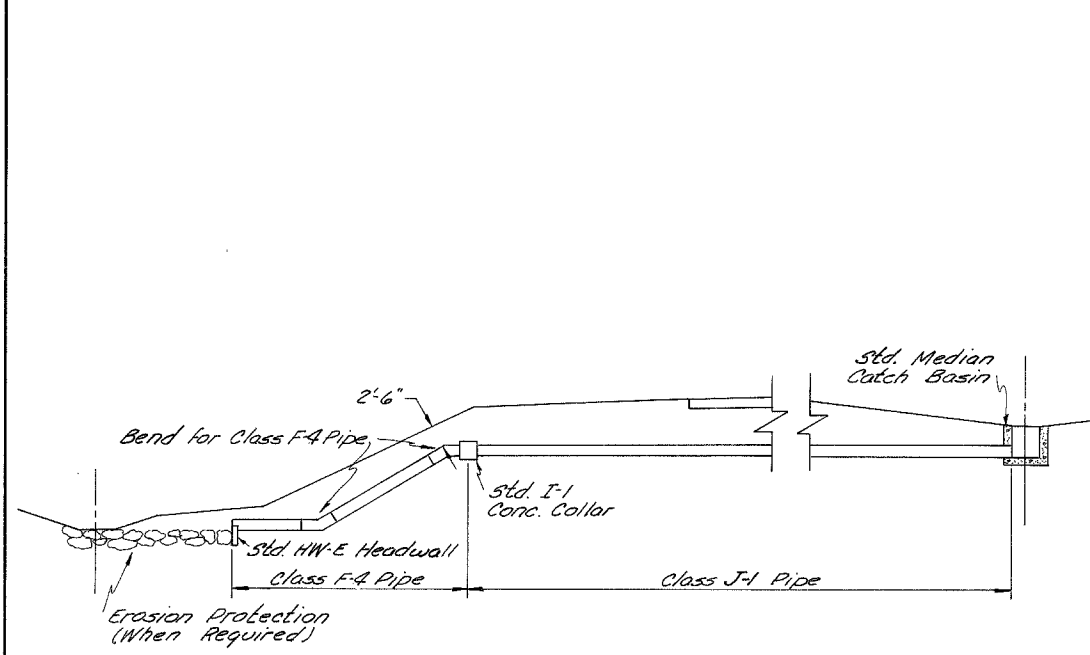
UNDERDRAIN OUTLET DETAIL "C"



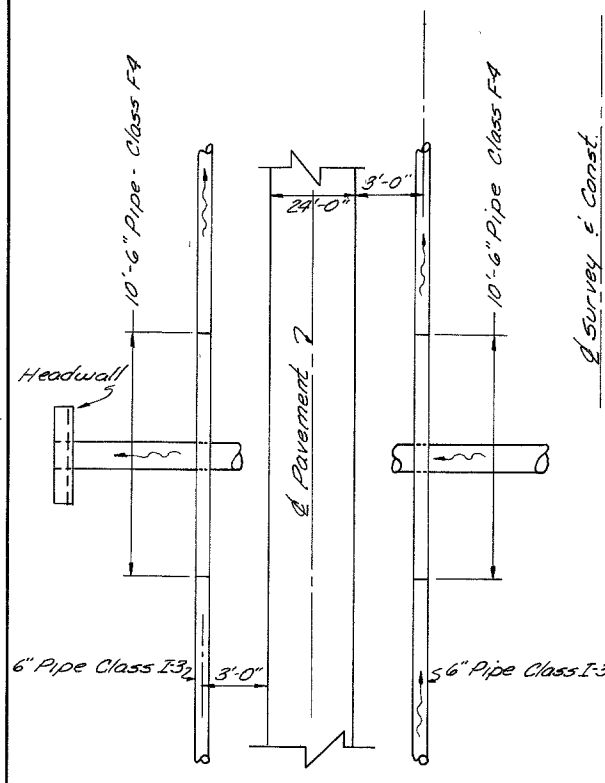
SPECIAL CONSTRUCTION DETAIL



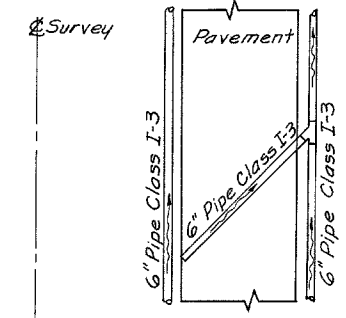
UNDERDRAIN OUTLET DETAIL "D"



MEDIAN OUTLET DETAIL IN HIGH FILL



UNDERDRAIN DETAIL "E"



NOTE:  
 The location of these pipes which are noted on the Plan & Profile Sheets are approximate. This section of 6" Class I-3 Pipe is to be located at the point where the I-22 intersects the existing ground.

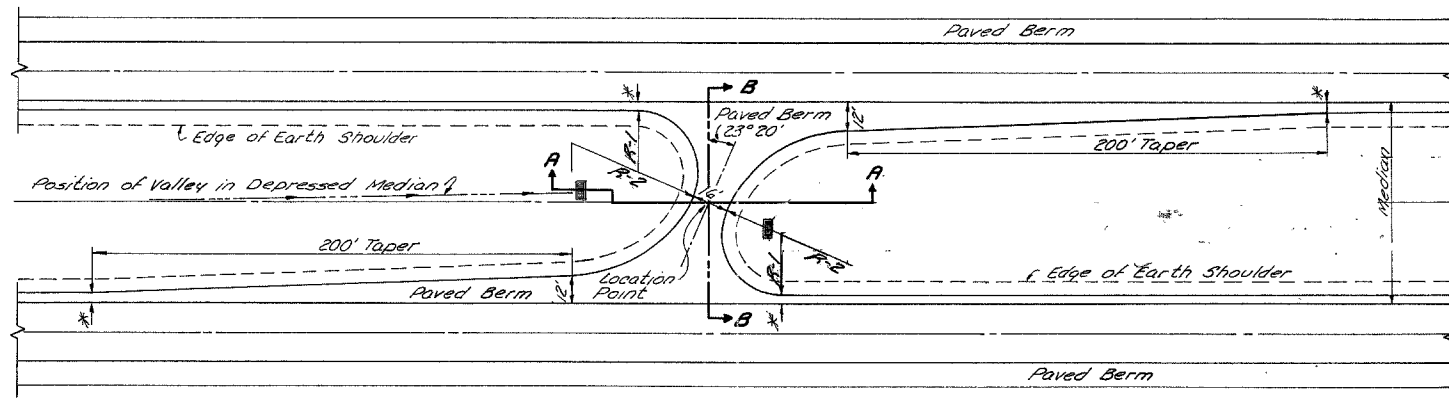
TRANSVERSE UNDERDRAIN DETAIL "F"



# SPECIAL CONSTRUCTION DETAILS

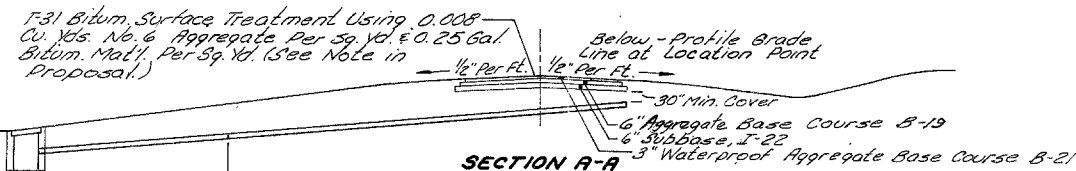
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		25 323

LOR-254-408 B

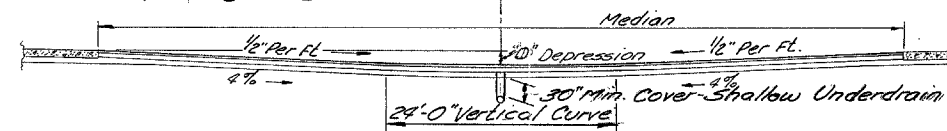


\*Normal Paved Shoulder Width

TYPICAL CROSSOVER

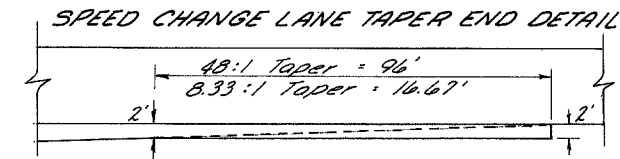


DIMENSIONS			
M	D	R-1	R-2
40'	7'	8.8	18.9
84'	18'	242	53.2

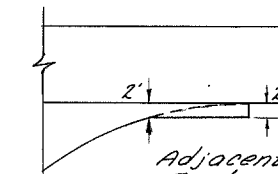


SECTION B-B

STANDARD U-TURN MEDIAN OPENINGS



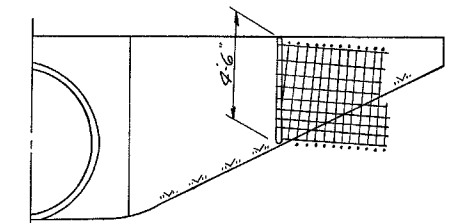
INTERSECTION RETURN TAPER END DETAIL



Adjacent to Flexible Pavement or Existing Concrete, or For At-Grade Intersection on Main-line Pavement.

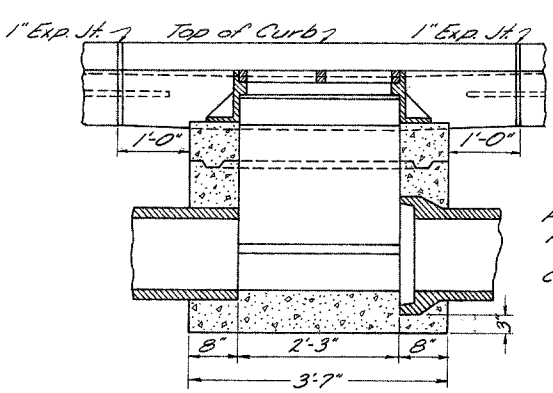
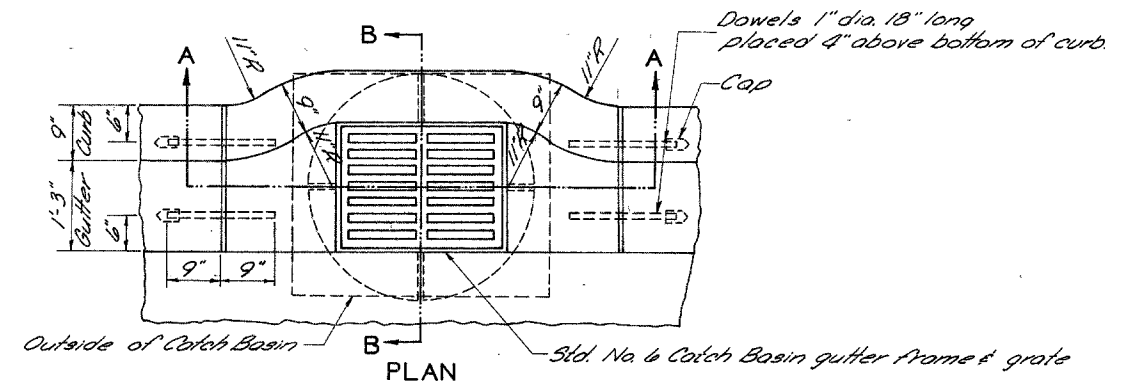
Note: Shaded area shall be constructed to an elevation 1/2" lower than the adjacent pavement and surfaced with T-31 and No. 6 aggregate. The shaded area shall be paid for as full depth T-71 and the surface treatment shall be paid for as T-31.

Provide Same Post & Anchors as for Connection to Abutments - Locate at Point of 54" Clearance.

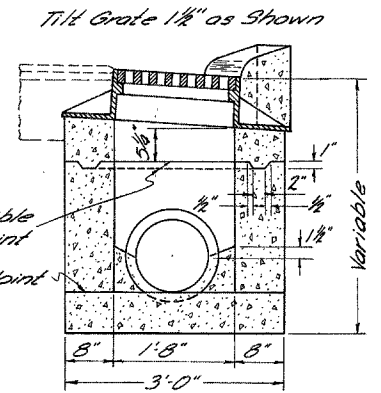


Headwall Connection for Full Height Headwall

FENCE ARRANGEMENT AT PIPE CULVERT

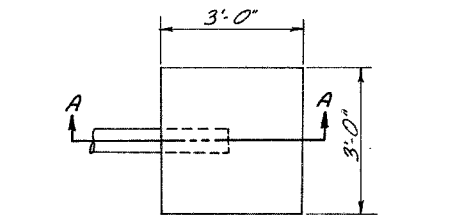


SECTION A-A

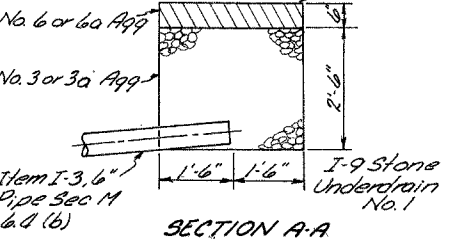


SECTION B-B

DETAIL No. 6 CATCH BASIN MODIFIED



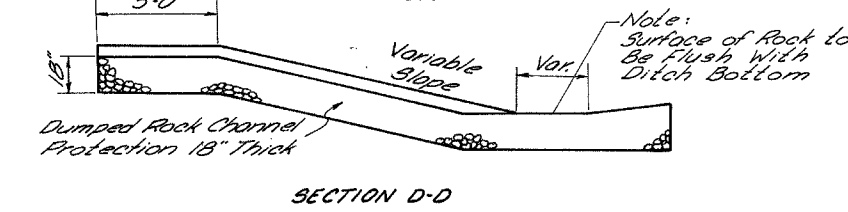
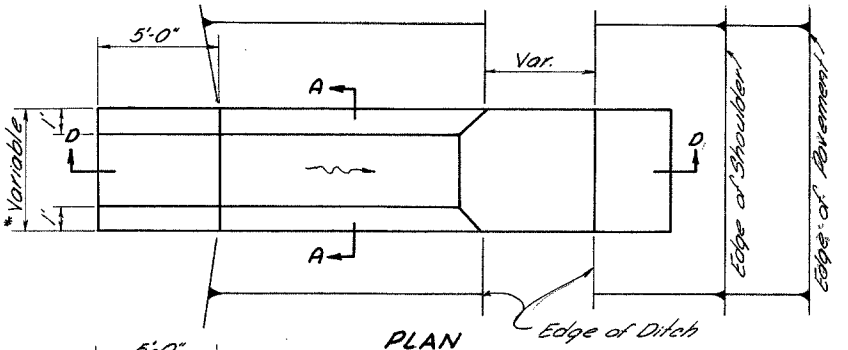
PLAN  
Apply 0.50 gal. of Bituminous Material Sec. M-5.6 F1, or F2, per Sq. Yd.



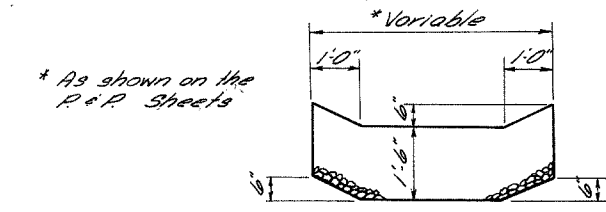
SECTION A-A

Notes:  
Aggregate, Bituminous Material & Necessary Excavation for Spring Drains shall be included for Payment in the Price Bid for Item I-9, Stone Underdrains No. 1, as per plan. Spring Drains shall be placed at Locations Designated by the Engineer. Porous Back Fill to be minimum depth of 12" over the pipe. This item shall be Non-performed in event None are Encountered.

DETAIL SECTION SPRING DRAIN



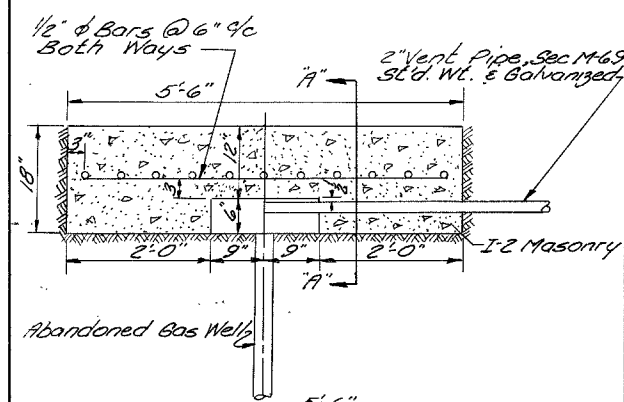
SECTION D-D



SECTION A-A

EROSION CONTROL AT SWALES

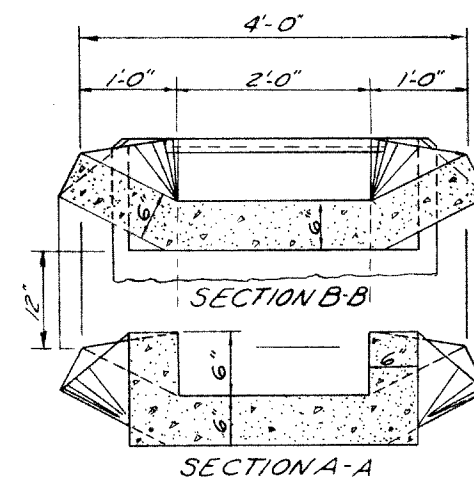
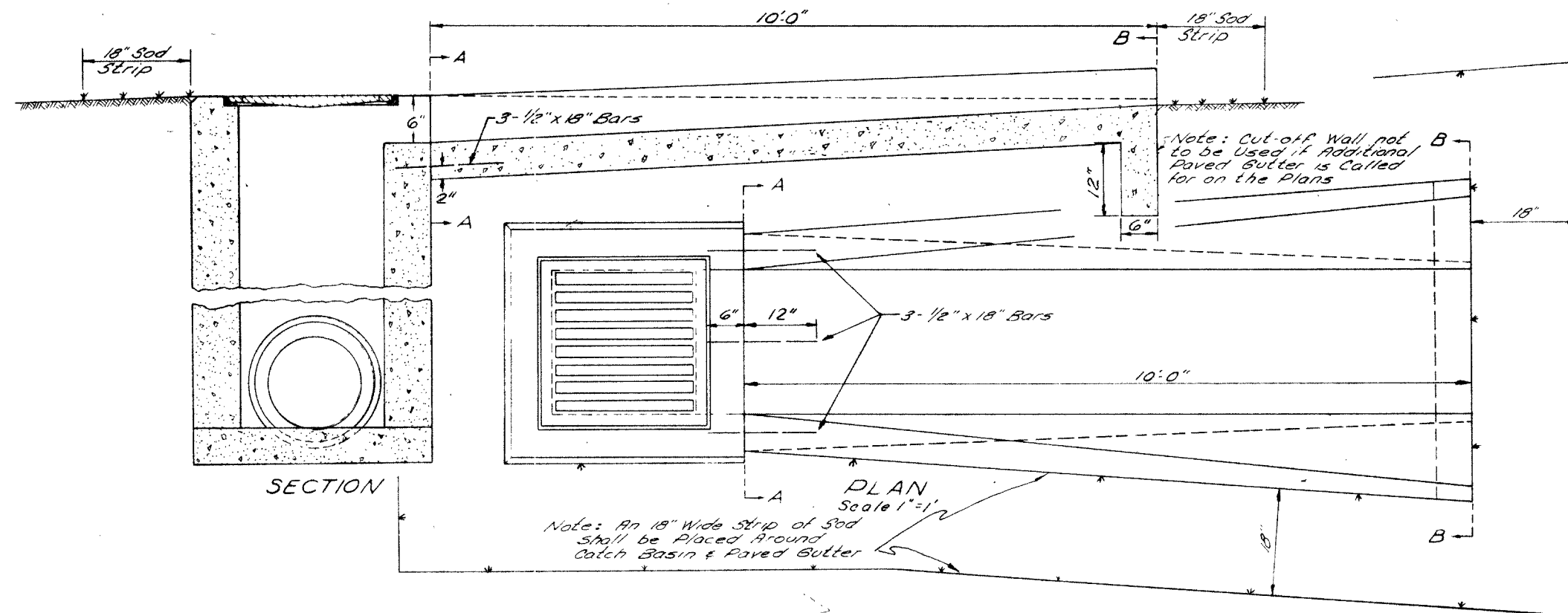
The Abandoned Gas Well Casing shall be Cut off at Least 9'-2 FT. Below Existing Ground Cost of This Operation shall be Included in the Unit Price Bid for Masonry, Item I-2. The Pipe Specials shall be Included in the Unit Price Bid for the Vent Pipe. See Sheet No. 169 for additional details.



SECTION A-A

ABANDONED GAS WELL VENT DETAIL

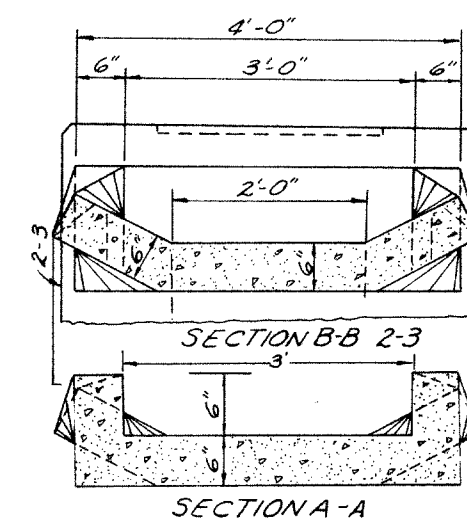
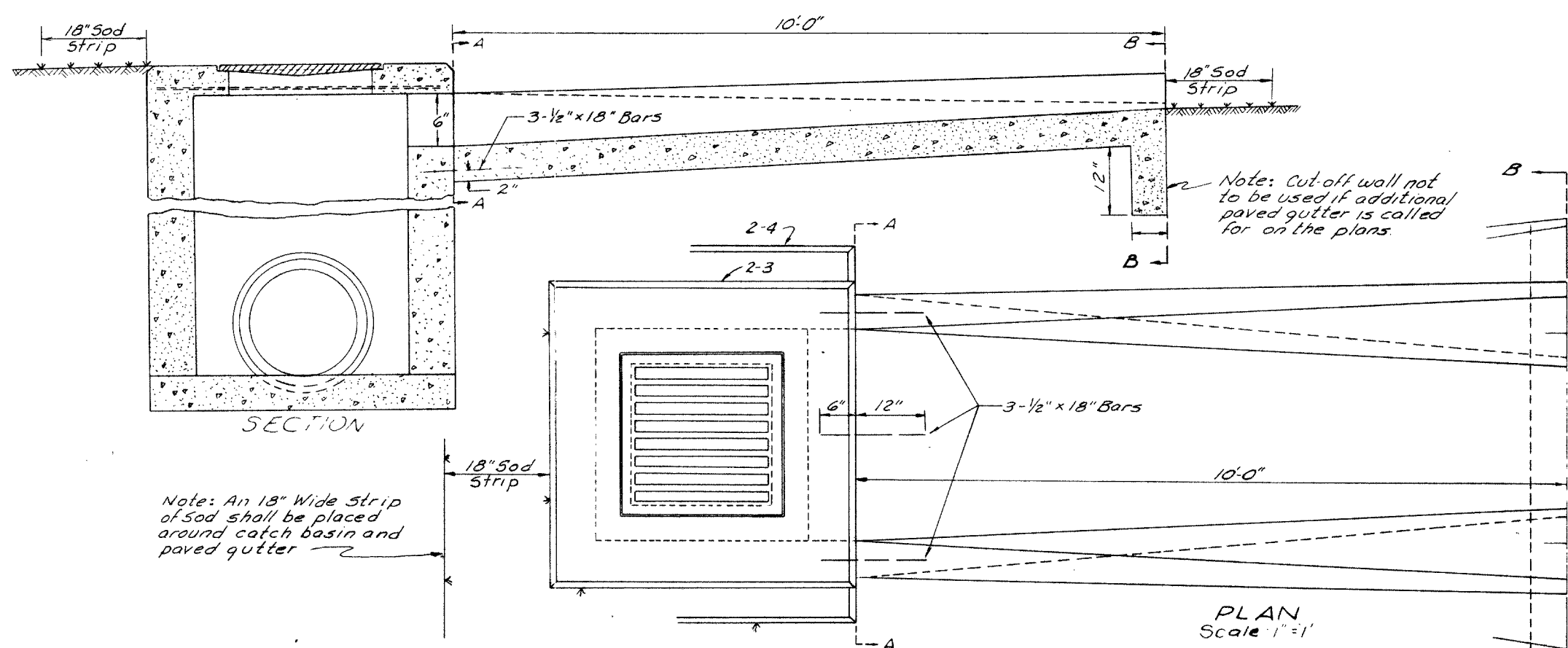
LOR-254-408 B



Note: An 18" Wide Strip of Sod shall be Placed Around Catch Basin & Paved Gutter

Note: Side Inlets & Paved Gutter shall be Provided on Both Sides of the Catch Basin in Sags

2-2-A Catch Basin with Item I-14 Paved Gutter Type I Modified As Per Plan



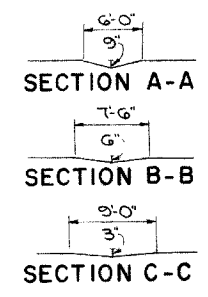
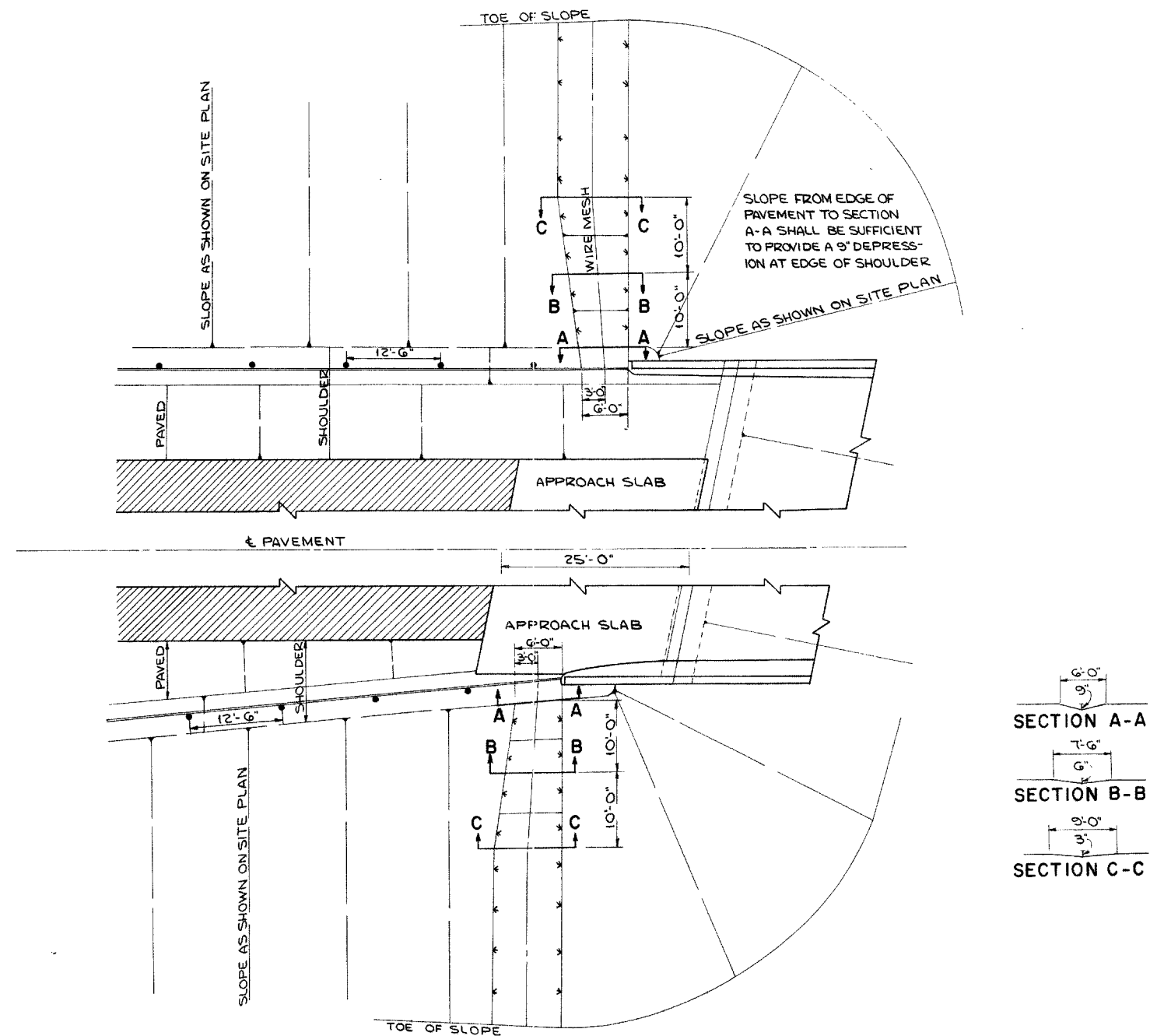
Note: An 18" Wide Strip of Sod shall be placed around catch basin and paved gutter

For Dimensions not shown see Standard Drawing I-8 CB. 2-3 & 2-4

Note: Modification of the No. 2-3 & 2-4 Catch Basins consists of providing windows as required without bars, dimensioned as shown in Section A-A

Standard No 2-3 & 2-4 Catch Basin (Modified) with Item I-14 Paved Gutter Type I Modified As Per Plan

# TYPICAL APPROACH SLAB EROSION CONTROL



### SPECIAL BERM AND SLOPE PROTECTION

PRIOR TO PLACEMENT OF SOD ON THE BERM AND SLOPE, GALVANIZED POULTRY FENCE SHALL BE PLACED ON THE FINISHED GRADE IN STRANDS WHICH SHALL BE AT RIGHT ANGLES TO THE DIRECTION OF FLOW. EACH STRAND SHALL BE STAKED SECURELY ON TOP AND BOTTOM WITH STAKES AT FOUR FOOT INTERVALS, AND ALTERNATED IN ROWS FOUR FOOT APART.

STAKES SHALL BE 1" x 1" x 8" WOOD STAKES AND SHALL BE PERPENDICULAR TO THE GROUND AND FLUSH WITH THE TOP OF THE SOD.

THE FENCE SHALL BE SECURED TO THE WOOD STAKES BY METAL STAPLES.

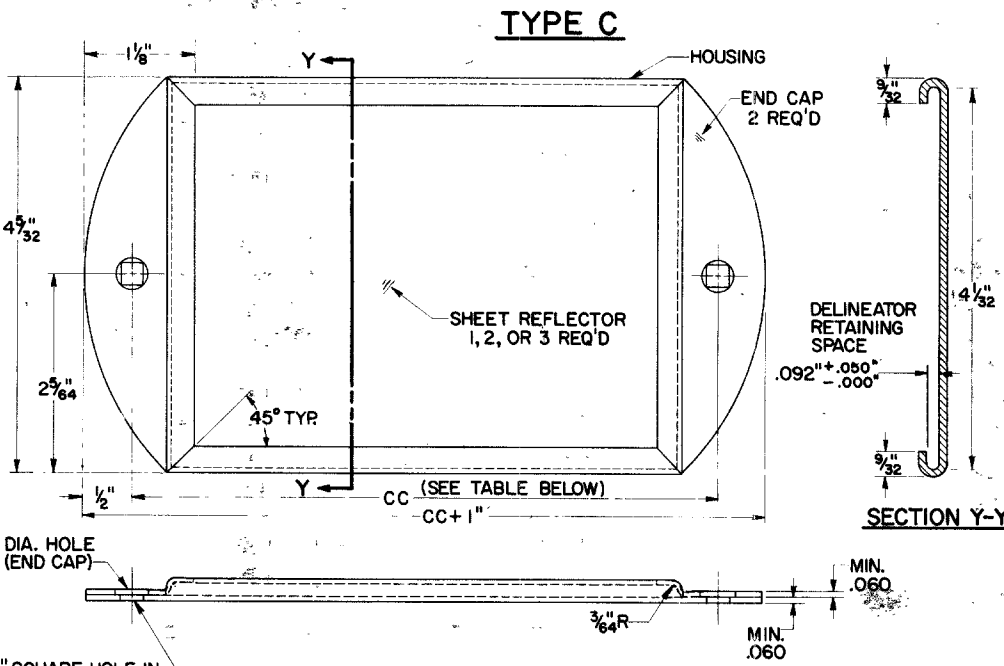
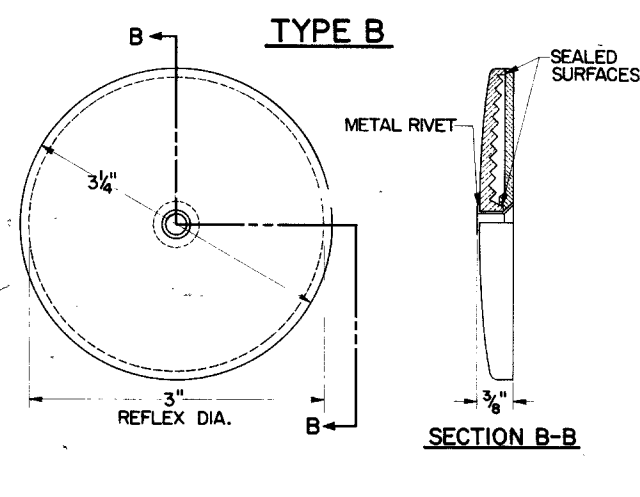
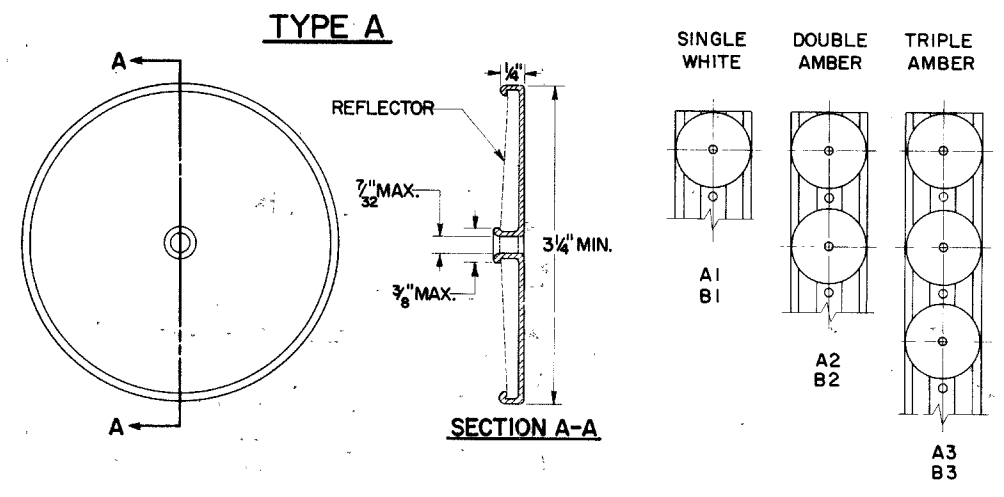
THE FENCE SHALL BE STRAIGHT LINE POULTRY FENCE OR EQUIVALENT WITH STRAND WIDTH OF FOUR FEET HAVING A TWO INCH MESH AND ALL WIRES NO. 20 GAUGE.

THE STRANDS OF FENCING SHALL BE FASTENED TOGETHER AT TWELVE INCH INTERVALS BY MEANS OF HOG RINGS.

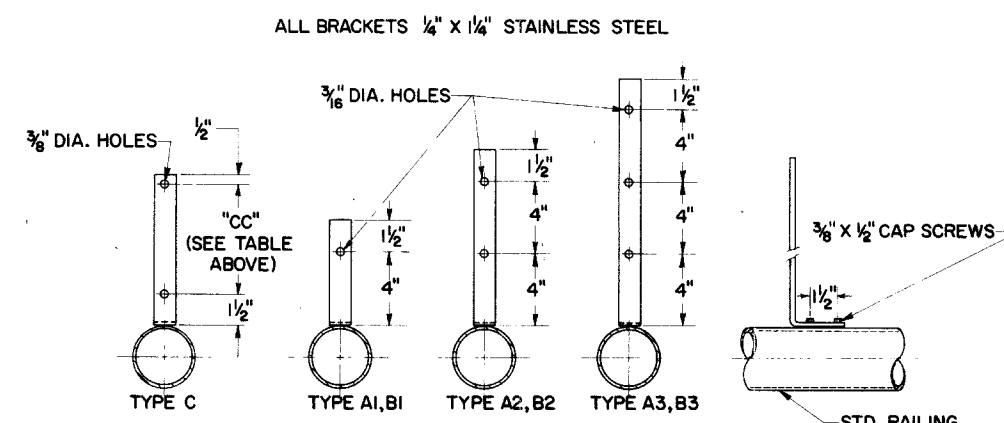
SOD SHALL BE LAID IN ACCORDANCE WITH CONSTRUCTION AND MATERIALS SPECIFICATIONS, SECTION L-10.07. THIS ITEM IS REQUIRED ONLY WHERE RATE OF SIDE SLOPE IS GREATER THAN 6 TO 1.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM L-10 SODDING, FOR SPECIAL BERM AND SLOPE PROTECTION.

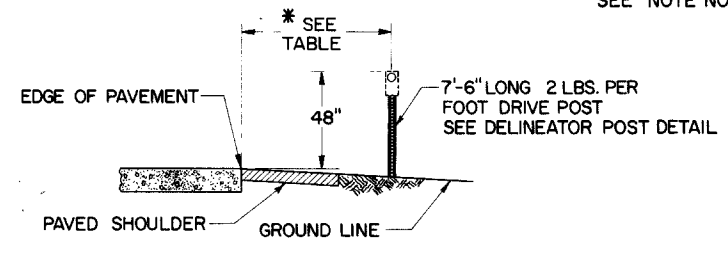
LOR-254-4.08-B



TYPE	DIM. CC
C1- SINGLE WHITE	6"
C2- DOUBLE AMBER	11"
C3- TRIPLE AMBER	16"



BRIDGE RAIL BRACKET

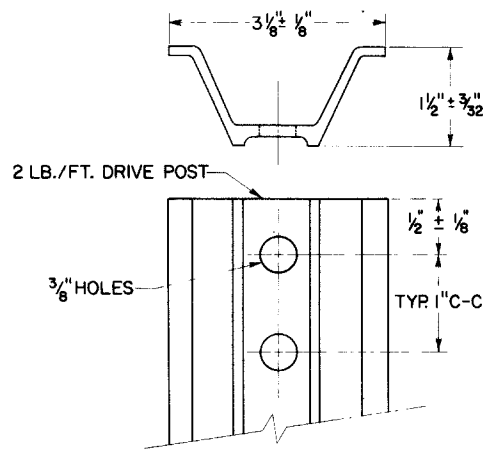


LATERAL PLACEMENT OF DELINEATORS

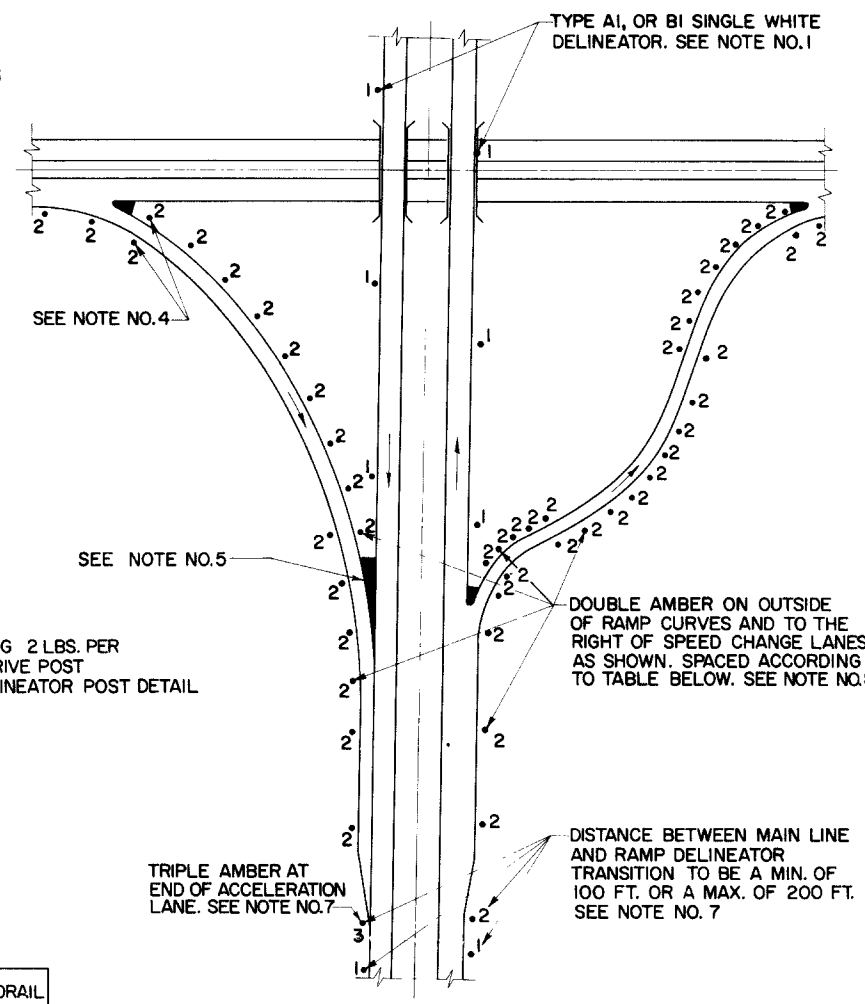
\* TABLE

TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE WHITE	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE
TRIPLE AMBER	12'-6"	6" OUTSIDE

\*\* THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.



DELINEATOR POST



TYPICAL DELINEATOR PLACEMENT

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

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, BEGINNING AT STA. +00, +25, +50, OR +75.
- DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION NO. I-127, (1-15-62).
- PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM I-127 DELINEATORS".
- 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.
- RAMP DELINEATOR AT END OF ACCELERATION & BEGINNING OF DECELERATION LANES TO BE A MAXIMUM OF 5' FROM POINT OF TANGENCY AT MAIN LINE.
- ALL RAMP DELINEATORS SHALL BE PLACED TO THE NEAREST 5' INCREMENTS, SUCH AS +05, +10, +15, +20 AND SO ON.

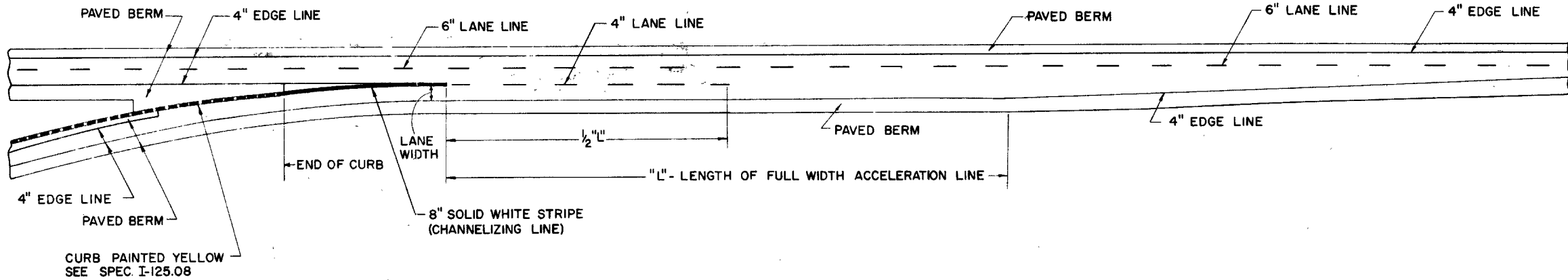
BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
DELINEATOR DETAILS	I-127
APPROVED <i>Robert Calmer</i> ENGINEER OF TRAFFIC	DATE 9-25-62 10-2-63

LOR-254-4.08-B

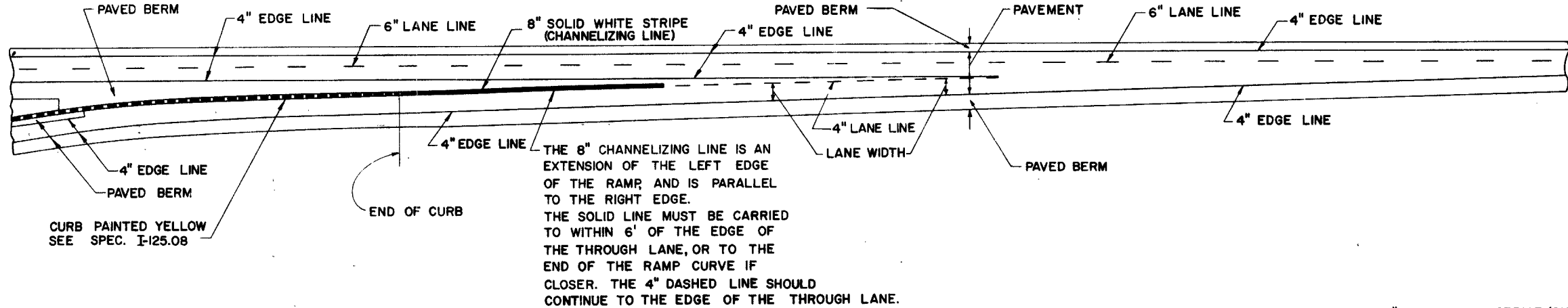
### I-127 DELINEATORS

7221(U)										7221(I)									
REF.	STATION TO STATION	SPACING (FT.)	SIDE	C-2 POST	C-3 POST	A-1 POST				REF.	STATION TO STATION	SPACING (FT.)	SIDE	C-2 POST	C-3 POST	A-1 POST			
Ramp	493+00	495+99.95	100'	R	4					Ramp	634+00	637+00	100'	R	4				
"	7+00	13+00	100'	R	7					"	38+00	43+00	100'	R	6				
"	13+80	14+30	50'	R	2					"	43+80	44+30	50'	R	2				
"	14+30	17+80	50'	L	8					"	44+30	47+30	50'	L	7				
"	17+80	18+30	50'	R	2					"	47+30	47+80	50'	R	2				
										"	48+60	49+30	70'	R	2				
Ramp	8+30	11+30	30'	R	11					"	49+70	53+70	40'	R	11				
"	11+90	12+90	100'	R	2					"	53+70	56+10	30'	L	9				
"	13+70	14+20	50'	R	2														
"	14+20	17+20	50'	L	7														
"	17+20	17+70	50'	R	2					Ramp	54+00	55+00	100'	R	2				
"	518+50	532+50	100'	R	15														
"	533+50	---		R		1													
										Ramp	24+80	26+30	30'	L	6				
Ramp	530+00	526+00	100'	R	5					"	26+30	27+50	30'	R	5				
"	27+00	32+00	100'	R	6					"	28+10	28+80	70'	R	2				
"	32+00	39+20	80'	L	10					"	29+20	31+20	50'	R	6				
"	39+20	---		R	1					"	31+90	32+90	100'	R	2				
										"	33+70	34+20	50'	R	2				
										"	34+20	37+70	50'	L	8				
Ramp	34+80	39+90	30'	R	18					"	37+70	38+20	50'	R	2				
"	39+90	---		L	1					"	39+00	42+00	100'	R	4				
"	40+20	45+70	50'	L	12					"	637+00	626+00	100'	R	12				
"	45+70	46+20	50'	R	2					"	625+00	---		R		1			
"	47+00	49+00	100'	R	3														
"	499+99.95	489+00	100'	R	12														
"	488+00	---		R		1													
										Ramp	25+00	26+00	100'	R	2				
E. BOUND LOR 254	502+50	516+50	200'	R					8										
W. BOUND LOR 254	503+50	521+50	200'	R					10										
TOTALS				132	2	18				TOTALS				96	1				

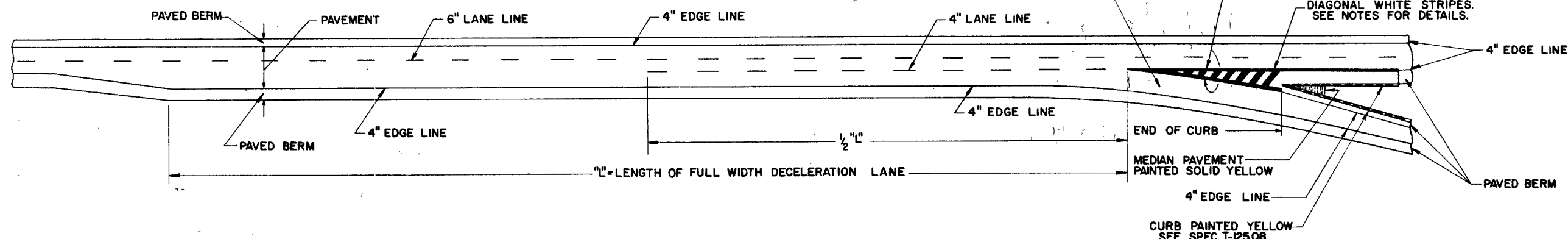
**ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE**



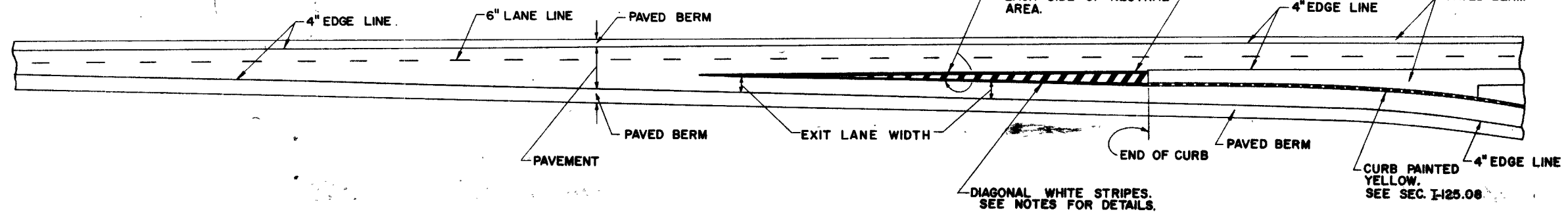
**ENTRANCE TERMINAL - TAPERED ACCELERATION LANE**



**EXIT TERMINAL - PARALLEL DECELERATION LANE**



**EXIT TERMINAL - TAPERED DECELERATION LANE**



**NOTES**

EDGE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.06.

LANE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.07.

CHANNELIZING LINES SHALL BE CONTINUOUS WHITE BEADED STRIPES 8" IN WIDTH PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.07 b.

DIAGONAL STRIPES IN EXIT RAMP MARKINGS SHALL BE 2' WIDE WHITE BEADED STRIPES SET AT A 45° ANGLE TO THE CENTER LINE OF THE THROUGH PAVEMENT AND SLANTED IN THE DIRECTION OF THE FLOW OF TRAFFIC ON SAID PAVEMENT. SPACE BETWEEN THE 2' DIAGONAL STRIPES SHALL BE 6' AS MEASURED PARALLEL TO THE CENTER LINE OF THE THROUGH PAVEMENT. PAINT ON THE DIAGONAL STRIPES SHALL BE APPLIED AT THE RATE OF ONE GALLON TO EACH 100 SQUARE FEET AND GLASS BEADS SHALL BE APPLIED AT THE RATE OF SIX POUNDS PER GALLON OF PAINT. DIAGONAL WHITE STRIPES SHALL BE PLACED BETWEEN THE TWO 8" WHITE CHANNELIZING LINES AT EXIT RAMP AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.07 c.

BUREAU OF TRAFFIC  
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING PM-I

DATE 7-17-61  
4-6-62

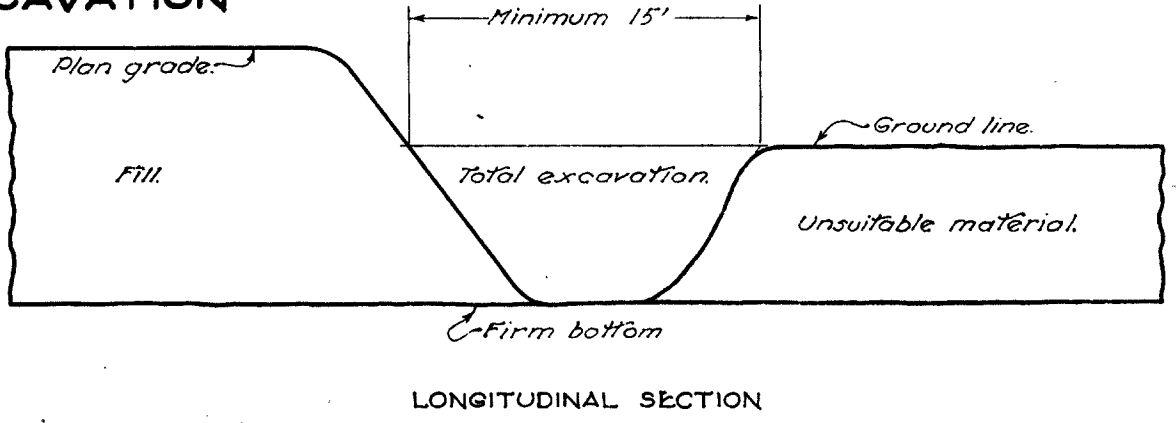
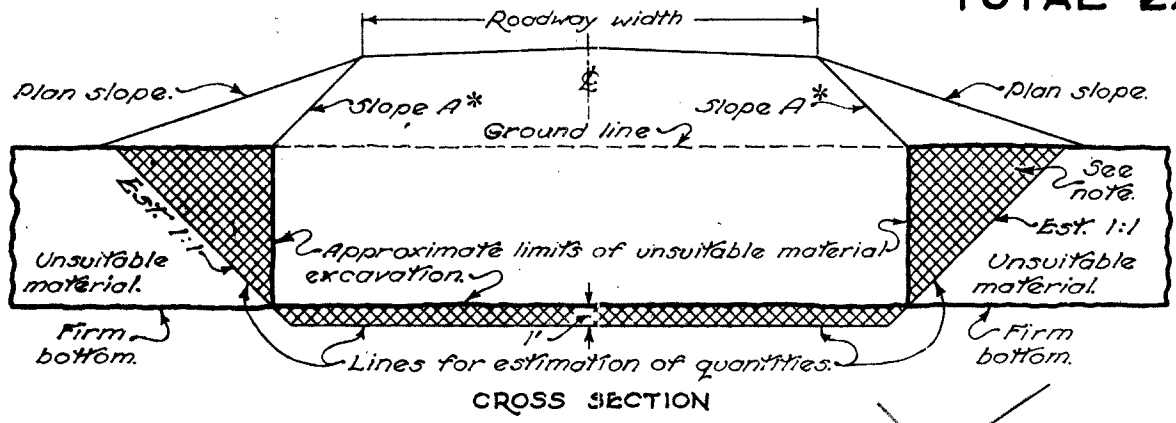
APPROVED *Robert Elmer*  
ENGINEER OF TRAFFIC

CODE 7221 U										
REF.	SIDE	STATION		4"	4"	6"	8"	DIAGONAL STRIPES	CURB ISLAND MARKING	
		FROM	TO	EDGE LINE	LANE LINE	LANE LINE	CHANNEL LINE			
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
E.B. LOR 254	R	422+00	493+00	7100						
"	R	502+00	526+00	2400						
"	R	533+50	585+00	5,150						
"	L	422+00	585+00	16,300						
W.B. LOR 254	R	422+00	488+00	6600						
"	R	495+00	521+00	2600						
"	R	530+00	590+00	6000						
"	L	422+00	590+00	16,800						
E.B. LOR 254		422+00	585+00			16,300				
W.B. LOR 254		422+00	590+00			16,800				
RAMPK	R	493+00	495+99.95	300						
"	R	5+99.95	18+50	1250						
"	L	11+00	18+50	750						
"	L	495+00	496+00		100					
"	L	496+00	502+03				603			
"	L	6+00	11+00				500	LUMP	LUMP	
RAMPJ	R	8+20	18+50	1030						
"	R	518+50	533+50	1500						
"	L	8+20	18+50	1030						
"	L	521+50	524+00				250		LUMP	
"	L	524+00	526+00				200			
RAMP I	R	530+00	526+50	350						
"	R	26+50	39+50	1300						
"	L	31+03	39+50	847						
"	L	527+75	526+50		125					
"	L	526+50	521+00				550	LUMP		
"	L	26+50	31+03				453		LUMP	
RAMP H	R	35+00	49+99.95	1500						LUMP
"	R	499+99.95	488+00	1200						
"	L	35+00	45+00	1000						
"	L	500+00	497+00				300			
"	L	497+00	495+00		200					
TOTALS				75,007	$425 \times \frac{3}{8} = 159$	$33,100 \times \frac{3}{8} = 12,413$	2856	LUMP	LUMP	
				14.21 MI	0.03 MI	2.86 MI	0.54 MI			

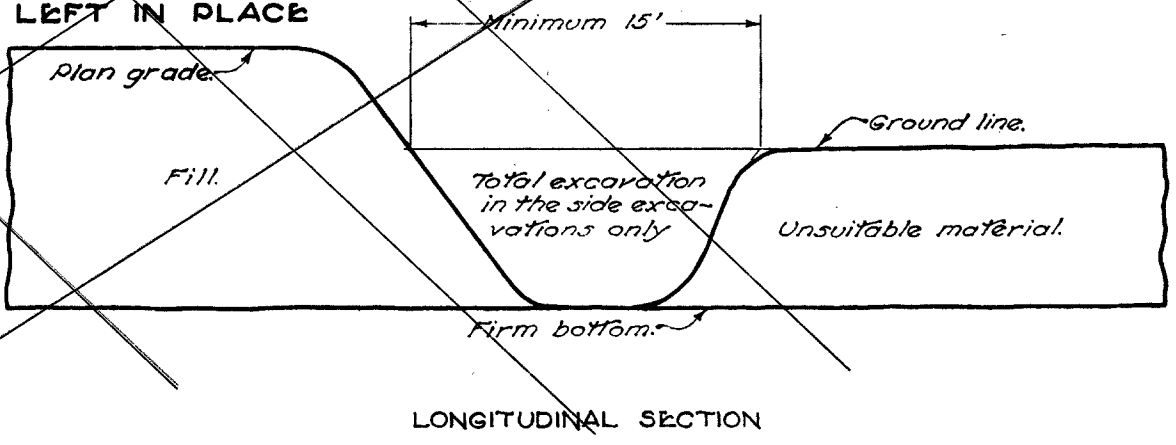
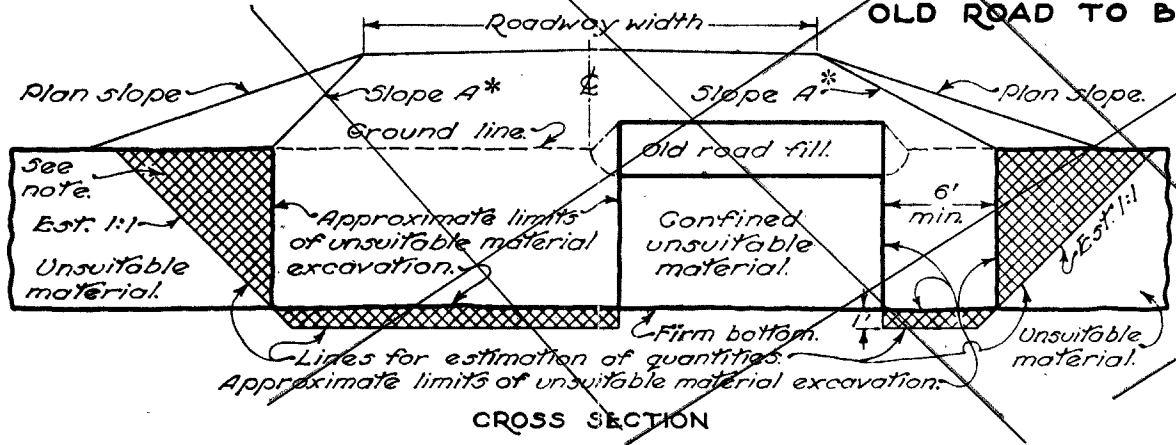
CODE 7221 I										
REF.	SIDE	STATION		4"	4"	6"	8"	DIAGONAL STRIPES	CURB ISLAND MARKING	
		FROM	TO	EDGE LINE	LANE LINE	LANE LINE	CHANNEL LINE			
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
RAMP A	R	22+00	43+00	2100						
"	R	637+00	625+00	1200						
"	L	24+40	26+50	210						LUMP
"	L	27+50	38+50	1100						LUMP
"	L	637+00	634+00				300			
"	L	634+00	632+00		200					
RAMP A-1	R	24+75	26+50	175						
"	L	24+75	27+50	275						
RAMP F	R	634+00	637+50	350						
"	R	37+50	57+18	1968						
"	L	42+03	51+57	954						
"	L	53+52	56+18	266						
"	L	636+25	637+50		125					
"	L	637+50	643+00				550	LUMP		
"	L	37+50	42+00				450		LUMP	
RAMP E-1	R	53+52	55+60	208						
"	L	51+57	55+60	403						
E.B. LOR 254	R	585+00	634+00	4900						
"	L	585+00	643+05	5805						
W.B. LOR 254	R	590+00	625+00	3500						
"	R	625+00	632+00	700						
"	R	632+00	643+05	1105						
"	L	590+00	643+05	5305						
E.B. LOR 254		585+00	643+05						5805	
W.B. LOR 254		590+00	643+05						5305	
TOTALS				30,524	$325 \times \frac{3}{8} = 122$	$11,110 \times \frac{3}{8} = 4166$	1300	LUMP	LUMP	
				5.78 MI	0.02 MI	0.79 MI	0.25 MI			

# SWAMP TREATMENT

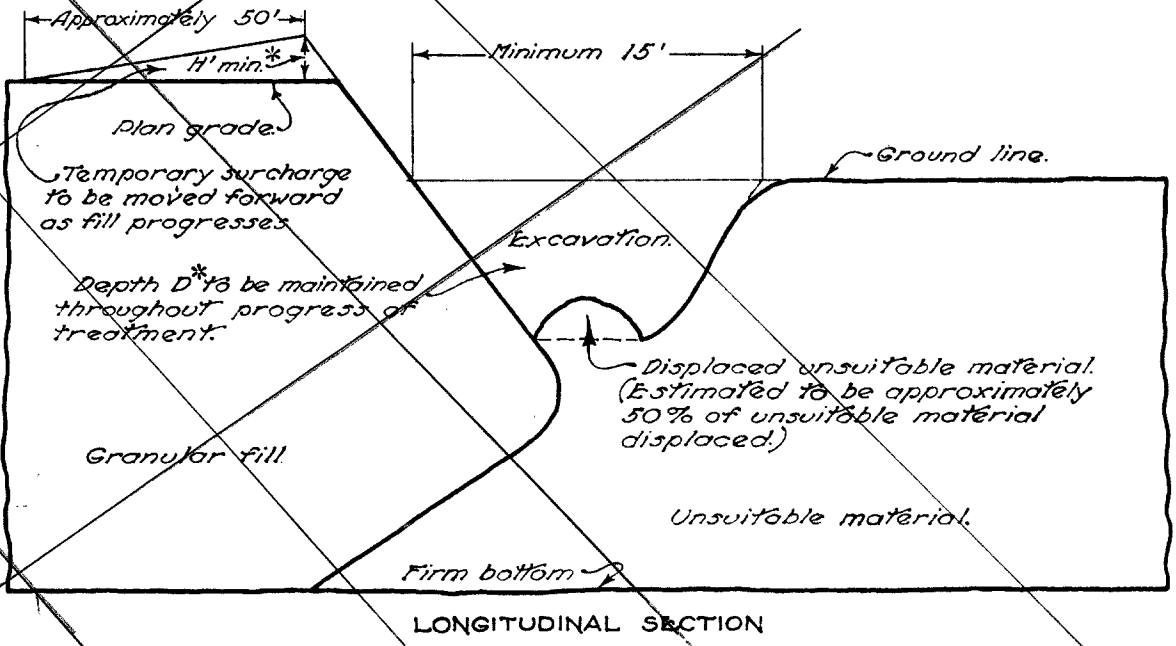
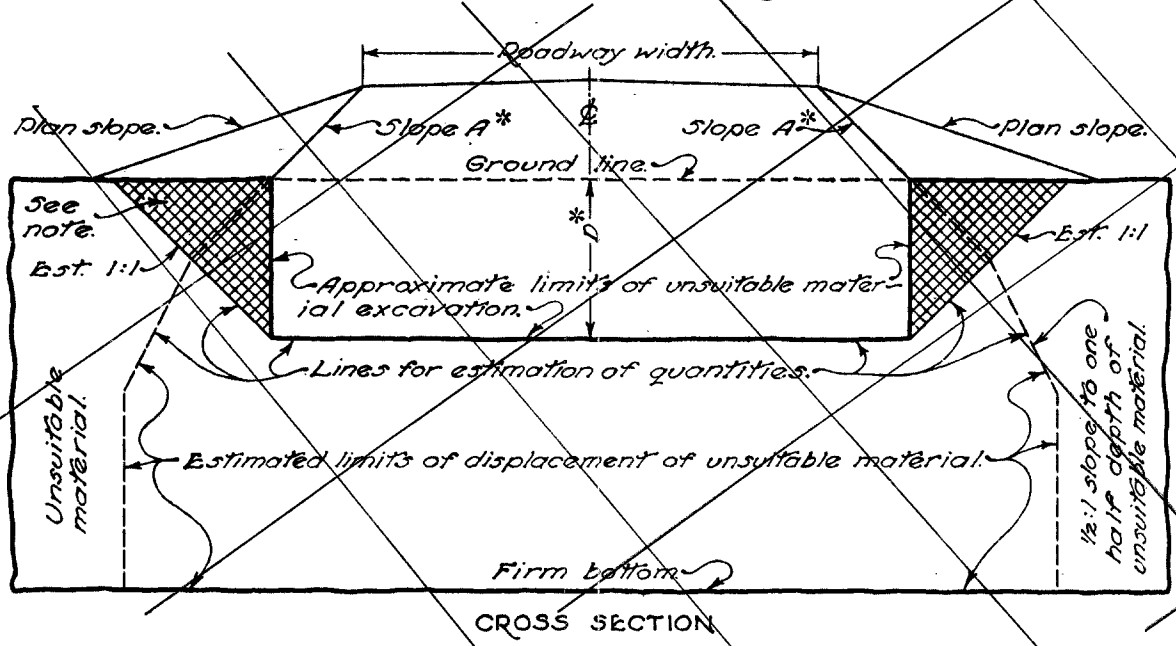
## METHOD 1 TOTAL EXCAVATION



## METHOD 2 TOTAL SIDE EXCAVATION OLD ROAD TO BE LEFT IN PLACE



## METHOD 3 PARTIAL EXCAVATION AND DISPLACEMENT



### NOTES

TRENCHING AND BACKFILLING shall be carried progressively across the swamp and so coordinated as to leave an open trench not to exceed in length at any time the working reach of the equipment used for swamp excavation.

FILL shall be constructed by the method of end dumping, using granular material, up to the elevations designated on the plan. Embankment required above this elevation, if any, shall be constructed in accordance with Sec. E-1.08 of the Construction and Material Specifications.

EXCAVATION of unsuitable material ahead of the fill and end dumping of granular material across the bog area shall be advanced in a straight line for the full embankment width to avoid entrapment of unsuitable material beneath any portion of the fill.

#### GRANULAR MATERIAL

The granular material shall meet the requirements of Sec. E-1.02 of the Construction and Material Specifications modified to require at least 75 per cent by weight of the grains or particles to be retained on the No. 200 sieve.

EXCAVATED UNSUITABLE MATERIAL which is to be used adjacent to fills for slope flattening or which is piled adjacent to the fill to be disposed of later in accordance with Sec. E-1.06, shall be shaped to its final position or removed from the area at least two weeks prior to paving operations on the fill.

EQUIPMENT used for excavation of unsuitable materials shall be located ahead of the excavation unless otherwise authorized by the Director.

\* as shown on the plans.

CROSS-HATCHED sections are included in quantities to allow for possible sloughing and undercutting.



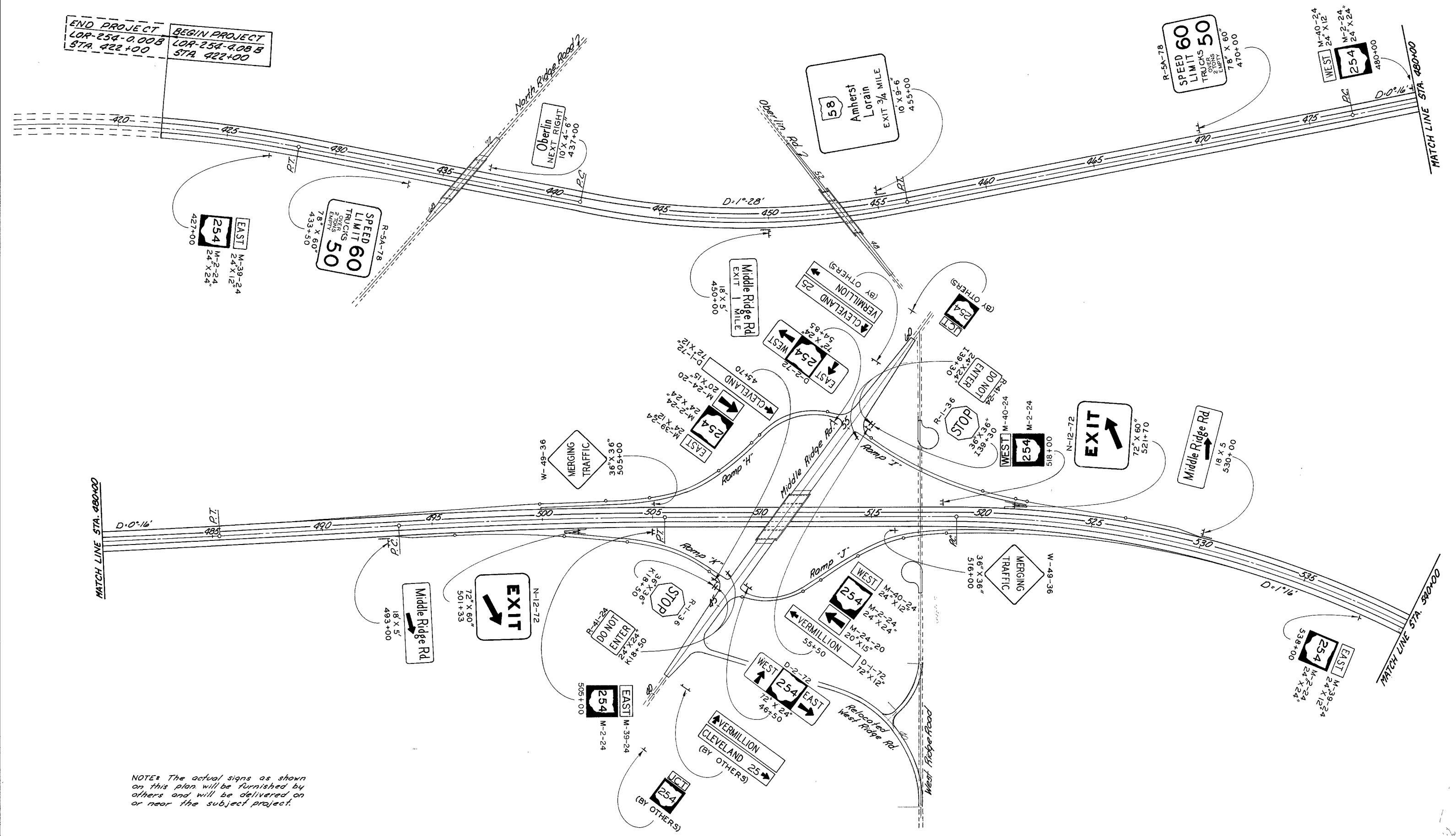
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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END PROJECT  
LOR-254-0.00B  
STA. 422+00

BEGIN PROJECT  
LOR-254-4.08 B  
STA. 422+00

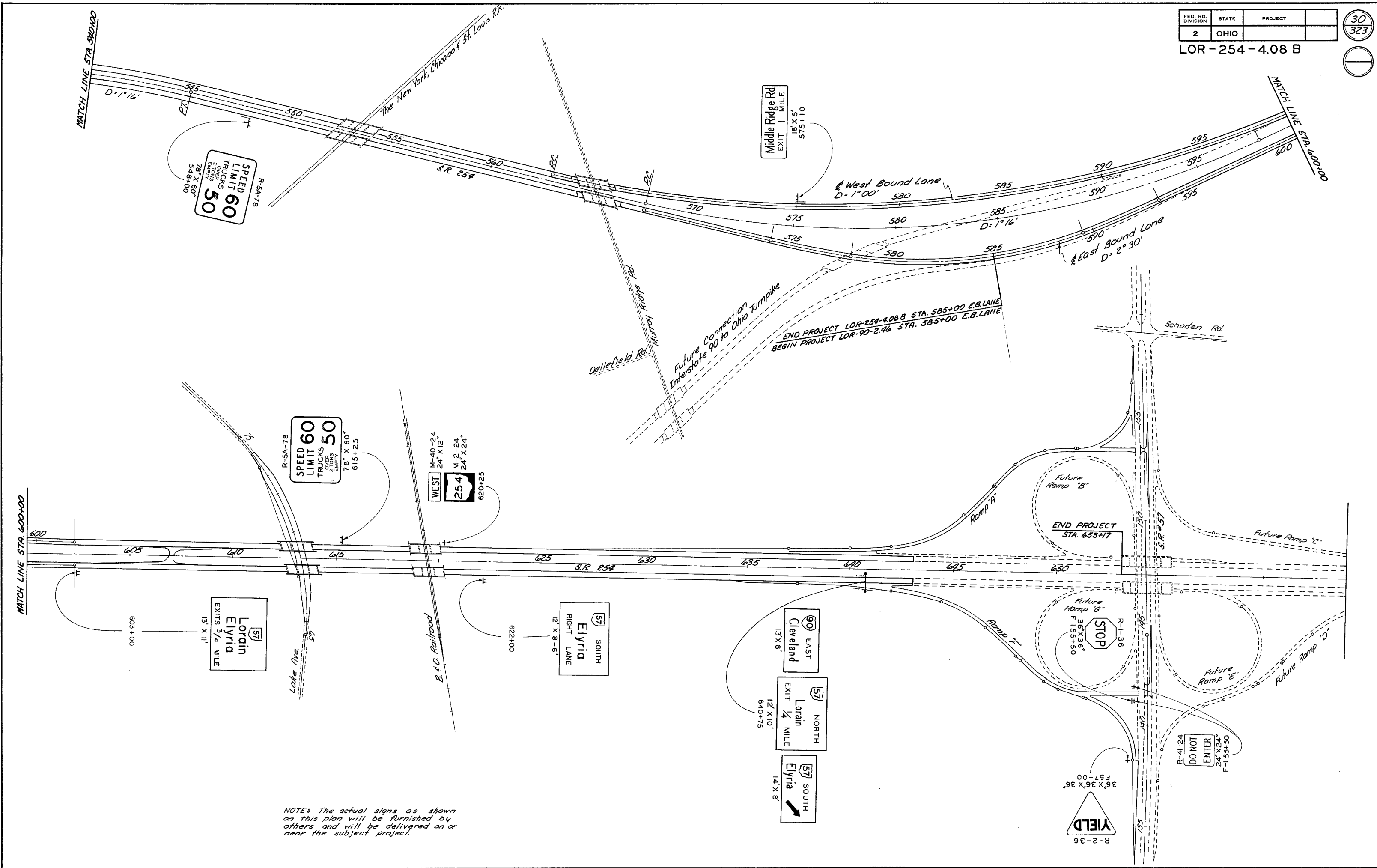


NOTE: The actual signs as shown on this plan will be furnished by others and will be delivered on or near the subject project.

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R-5A-78  
SPEED LIMIT 60  
TRUCKS OVER 8000 LBS  
EMPTY 50  
78' X 60"  
548+00

R-5A-78  
SPEED LIMIT 60  
TRUCKS OVER 8000 LBS  
EMPTY 50  
78' X 60"  
615+25

WEST  
254  
M-40-24  
24' X 12"  
M-2-24  
24' X 24"  
620+25

57  
Lorain  
Elyria  
EXITS 3/4 MILE  
13' X 11"

57 SOUTH  
Elyria  
RIGHT LANE  
12' X 8'-6"

90 EAST  
Cleveland  
13' X 8'

57 NORTH  
Lorain  
1/4 MILE  
12' X 10'  
640+75

57 SOUTH  
Elyria  
14' X 8'

R-2-36  
YIELD  
36' X 36' X 36"  
F-57+00

R-4I-24  
DO NOT ENTER  
24' X 24"  
F-1-55+50

NOTE: The actual signs as shown on this plan will be furnished by others and will be delivered on or near the subject project.

SHEET	STATION	SIDE	CODE 7221-U												SHEET	STATION	SIDE	CODE 7221-(1)													
			Sign Erection Flat Sheet Type	Sign Erection Guide Type	Steel Drive Post 2 lbs Per Ft.	Steel Drive Post 4 lbs Per Ft.	Structural Supports 8 lbs Beam As per Plan	Structural Supports 10B 11.5	Structural Supports 10B 17	Diameter & Depth of Concrete Foundation	Concrete for Sign Support Foundation As per Plan	I-15 Guard Rail Steel Beam Standard Type (Deep)	Sign Erection Flat Sheet Type	Sign Erection Guide Type				Steel Drive Post 4 lbs Per Ft.	Structural Supports 8 lbs Beam As per Plan	Structural Supports 12 WF 27	Structural Supports 12 B 22	Diameter & Depth of Concrete Foundation	Concrete for Sign Support Foundation As per Plan	I-15 Guard Rail Steel Beam Standard Type (Deep)							
			Sq. Ft.	Sq. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.				Cu. Yds.	Lin. Ft.	Sq. Ft.	Sq. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.	Pcs.	Length Lin. Ft.	Cu. Yds.	Lin. Feet.
29	427+00	Rt.	6.0			1	15.00						12"x4'	0.1		30	603+00	Rt.	143.0					2	27.50				30"x8'	2.9	75
	433+50	Rt.		32.5				2	17.50				12"x4'	0.2			615+25	Lt.	32.5			2	17.75					12"x4'	0.2		
	437+00	Lt.		45.0						2	16.75		30"x5.25'	1.9			620+25	Lt.	6.0		1	14.75						12"x4'	0.1		
	450+00	Rt.		90.0							2	18.50	30"x6'	2.2	75		622+00	Rt.					2	24.25			30"x6.75'	2.5			
	455+00	Lt.		95.0							2	24.50	30"x6'	2.2	75																
	470+00	Lt.		32.5				2	17.75				12"x4'	0.2																	
	480+00	Lt.	6.0			1	15.00						12"x4'	0.1																	
	493+00	Rt.		90.0							2	22.00	30"x6'	2.2																	
	501+33	Rt.		30.0				2	15.50				12"x4'	0.2																	
	505+00	Lt.	9.0					1	16.25				12"x4'	0.1																	
	505+00	Rt.	8.0			1	15.00						12"x4'	0.1																	
	516+00	Rt.	9.0					1	16.25				12"x4'	0.1																	
	518+00	Lt.	6.0			1	15.00						12"x4'	0.1																	
	521+70	Lt.		30.0				2	15.50				12"x4'	0.2																	
	530+00	Lt.		90.0							2	18.50	30"x6'	2.2	75																
29	538+00	Rt.	6.0			1	15.00						12"x4'	0.1		30	57+00	Rt.	4.5		1	13.50						12"x4'	0.1		
30	548+00	Rt.		32.5				2	19.25				12"x4'	0.2																	
30	575+10	Lt.		90.0							2	22.00	30"x6'	2.2	75																
	MIDDLE RIDGE ROAD													RAMP F-1																	
29	45+70	Lt.	14.0		3	5.75	11.25	2	11.25				12"x4'	0.2		30	55+50	Rt.	11		1	13.00						12"x4'	0.1		
	46+50	Rt.		12.0			12.50	2	12.25				12"x4'	0.2			55+50	Lt.	4.0		1	12.50						12"x4'	0.1		
	54.85	Lt.		12.0			12.25	2	12.25				12"x4'	0.2																	
	55+50	Rt.	14.0		3	5.75	11.25	2	11.25				12"x4'	0.2																	
	RAMP I																														
29	39+30	Rt.		11.0			13.50						12"x4'	0.1																	
	39+30	Lt.		4.0			12.50						12"x4'	0.1																	
	RAMP K																														
29	18+50	Rt.		11.0			13.50						12"x4'	0.1																	
	18+50	Lt.		4.0			12.50						12"x4'	0.1																	
				108.0	681.5	6	30.0	17	221.25	12	200.25	2	36.50	10	206.00																
													15.8	300																	

# TRAFFIC CONTROL NOTES

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**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.

**I-129 STRUCTURAL SUPPORTS STEEL BEAM (TYPE), AS PER PLAN**

THE STRUCTURAL STEEL BEAM SUPPORTS SHALL BE GALVANIZED (AFTER PUNCHING) IN ACCORDANCE WITH ASTM A-123.

QUANTITIES FOR ITEM I-129 "STRUCTURAL SUPPORTS, STEEL BEAM (TYPE), AS PER PLAN" APPEARING IN THE QUANTITY TABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT SUPPORT LENGTHS PRIOR TO FABRICATION AND GALVANIZING OF SUPPORTS. PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID PER LIN. FT. WHICH PRICE AND PAYMENT SHALL INCLUDE ALL COSTS IN CONNECTION WITH THE EMBEDMENT OF THE SUPPORTS.

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

**I-129 OVERHEAD SIGN SUPPORT, BY TYPE, AS PER PLAN**

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 32.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH "OVERHEAD SIGN SUPPORT, BY TYPE, AS PER PLAN" INSTALLED IN PLACE AND ACCEPTED, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL ANCHOR BOLTS (FOR INSTALLATION UNDER ITEM I-129 "CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS"), AND FOR FURNISHING AND INSTALLING THE OVERHEAD SIGN SUPPORT STRUCTURE SHOWN ON SHEET NUMBER 30B INCLUDING SIGN BRACKETS AND ALL COMPONENT PARTS NECESSARY TO MAKE A COMPLETE WORKABLE INSTALLATION READY FOR SIGN ERECTION.

ERECTION OF THESE SUPPORTS SHALL BE ACCOMPLISHED IN A MANNER MEETING THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION NUMBER I-129.

**I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS, BY TYPE, AS PER PLAN**

PAYMENT FOR THIS ITEM SHALL BE PER CUBIC YARD BASED ON APPROVED PLAN DIMENSIONS OR DIMENSIONS AS MODIFIED BY THE ENGINEER IN LIEU OF PLAN QUANTITIES AS SPECIFIED IN SUPPLEMENTAL SPECIFICATION I-129.

PAYMENT FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS IN LIEU OF BEING A SEPARATE PAY ITEM AS CALLED FOR IN SUPPLEMENTAL SPECIFICATION NO. I-129.

PAYMENT FOR INSTALLATION ONLY OF THE 2 INCH GALVANIZED STEEL CONDUIT ELLS WILL BE INCLUDED IN THIS ITEM. PAYMENT FOR FURNISHING THIS CONDUIT IS INCLUDED UNDER "GROUND ROD AND WIRE CONNECTION AS PER PLAN".

FOUNDATIONS SHALL BE CONSTRUCTED IN THE MANNER CALLED FOR UNDER SUPPLEMENTAL SPECIFICATION I-129. CONCRETE SHALL BE CLASS "C".

**I-129 SIGN ERECTION, BY TYPE, AS PER PLAN**

THE CONTRACTOR SHALL ERECT SIGN PANELS FURNISHED BY OTHERS AS NOTED ON THE SCHEMATIC SIGNING LAYOUT SHEETS NUMBER 29 & 30. THE PANELS SHALL BE MOUNTED ON THE BRACKETS OR BEAM SUPPORTS PROVIDED IN THE PLANS.

A SCHEDULE FOR SIGN ERECTION SHALL BE SUBMITTED TO THE ENGINEER, BUREAU OF TRAFFIC, 450 EAST TOWN STREET, COLUMBUS, OHIO, 60 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 I-129, SIGN ERECTION BY TYPE, AS PER PLAN" SHALL INCLUDE ALL NECESSARY EQUIPMENT, MANPOWER AND TOOLS TO ERECT THE SIGNS NOTED. 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.

**S-25 GROUND ROD AND WIRE CONNECTION**

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING GROUND ROD AND WIRE AS DETAILED AND SPECIFIED ON SHEET 32.

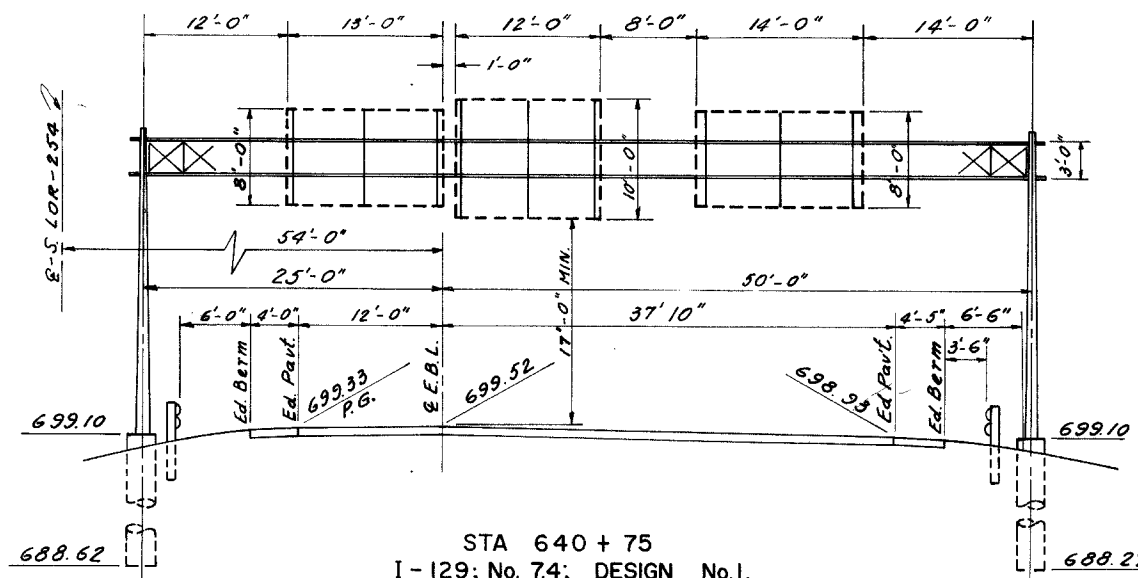
BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, TOOLS, MATERIALS AND EQUIPMENT REQUIRED FOR THE COMPLETE ITEM OF WORK.

**CERTIFICATION AND APPROVAL OF SIGN SUPPORTS**

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

- (A) SIX (6) COPIES OF THE FOLLOWING:
  - 1. SHOP DRAWINGS AND MATERIAL LISTS FOR APPROVAL FOR OVERHEAD SIGN SUPPORTS.
  - 2. CATALOG CUTS, DESCRIPTIONS OR SAMPLES OF FABRICATOR'S STANDARD ITEMS AS SHOWN IN THE PLANS OR THEIR EQUAL FOR APPROVAL.
- (B) CERTIFICATIONS OR SAMPLES FOR ALL MATERIALS WHICH HAVE BEEN APPROVED ABOVE UNDER ITEM (A) SHALL BE IN POSSESSION OF THE CONTRACTOR PRIOR TO ANY PURCHASE OR INSTALLATION.

**GUARD RAIL, STEEL BEAM STANDARD TYPE (DEEP) AS PER PLAN**  
 GUARD RAIL FOR THIS ITEM SHALL BE STEEL BEAM STANDARD TYPE (DEEP) WITH A POST SPACING OF 6'-3"



STA 640 + 75  
 I-129; No. 74; DESIGN No.1.  
 75' SPAN

**SIGN SIZE**

- 13'-0" x 8'-0" = 104 Sq. Ft.  
 Spacing 0'-6", 2 @ 6'-0"; 0'-6"  
 No. of Brackets = 3  
 Height = 8'-0" Type Ya
- 12'-0" x 10'-0" = 120 Sq. Ft.  
 Spacing 0'-6", 2 @ 5'-6"; 0'-6"  
 No. of Brackets = 3  
 Height = 10'-0" Type Ya
- 14'-0" x 8'-0" = 112 Sq. Ft.  
 Spacing 0'-8 1/2", 6'-3 3/8", 6'-3 3/8", 0'-8 1/2"  
 No. of Brackets = 3; Height = 8'-0", Type Ya

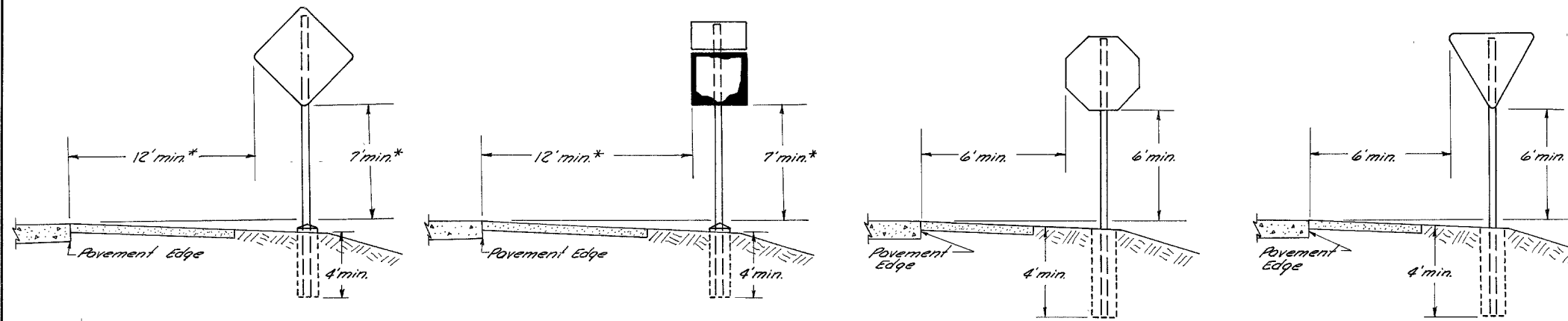
**OVERHEAD SIGN SUPPORT QUANTITIES**

Station	Side	I-129	S-25	I-15	I-129	I-129
		Concrete For Sign Support Foundation	Ground Rod and Wire	Guard Rail Steel Beam Std. Type Deep as per Plan	Overhead Sign Support No.74 Design No.1	Sign Erection Guide Type
		Cu. Yd.	Each	Lin.Ft.	Each	Sq. Ft.
640+75	Rt	9.21	1	50	1	104
						120
						112
<b>Totals</b>		<b>9.21</b>	<b>1</b>	<b>50</b>	<b>1</b>	<b>336</b>

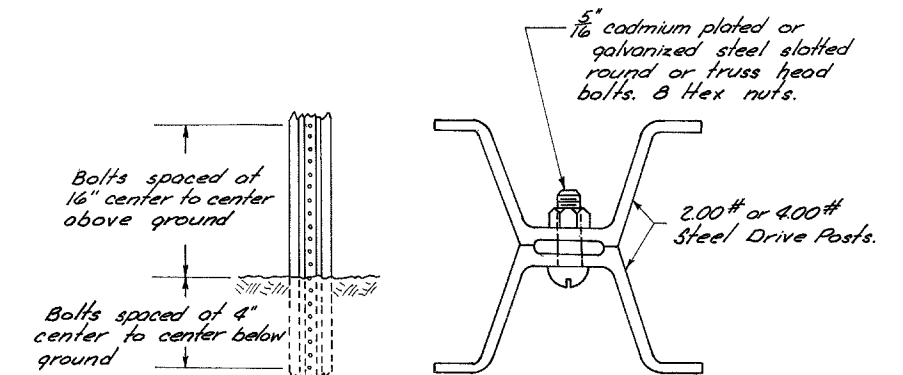
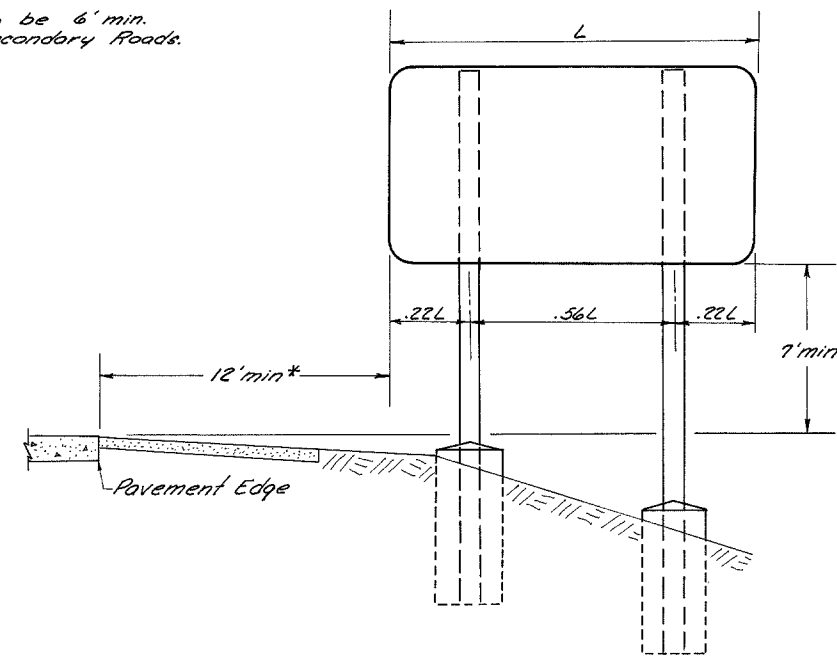
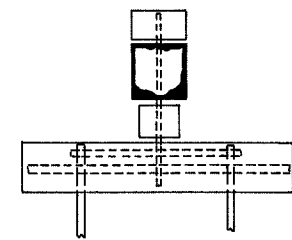
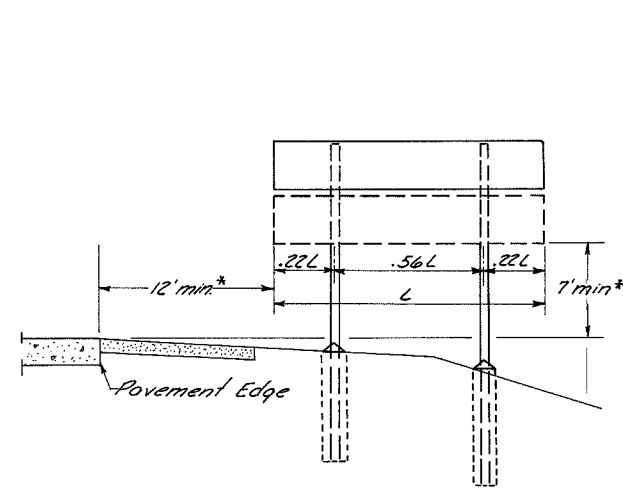
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

31  
323

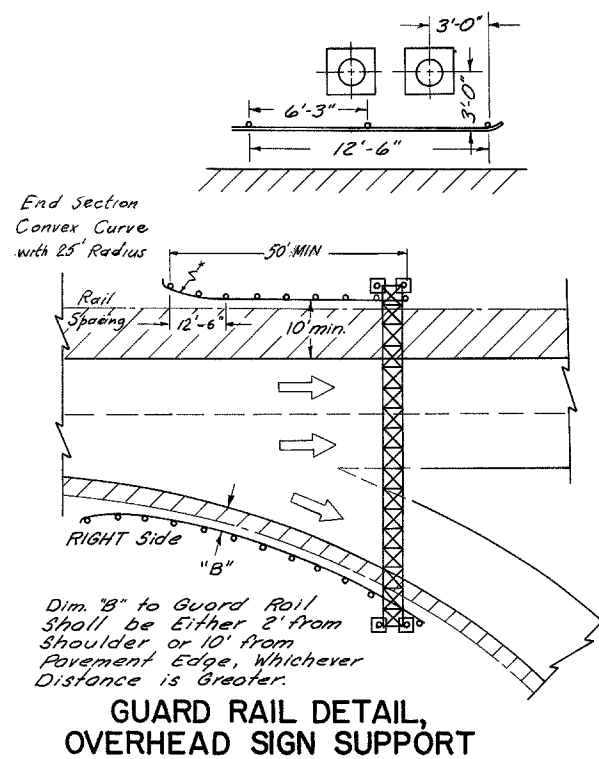
LOR-254-4.08 B



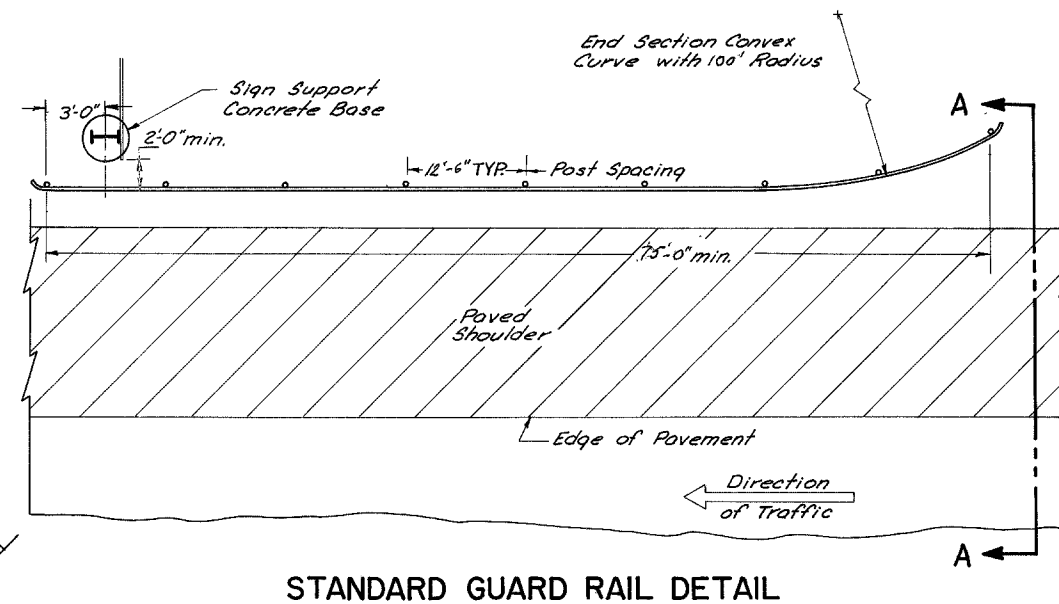
\* This Dimension to be 6' min. on Ramps and Secondary Roads.



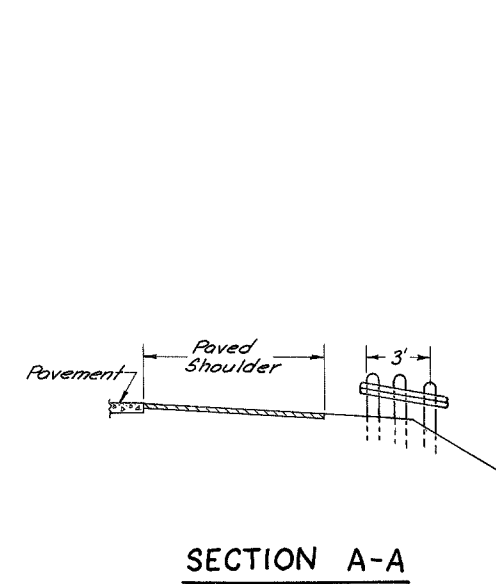
4" x 8" BEAM DETAILS



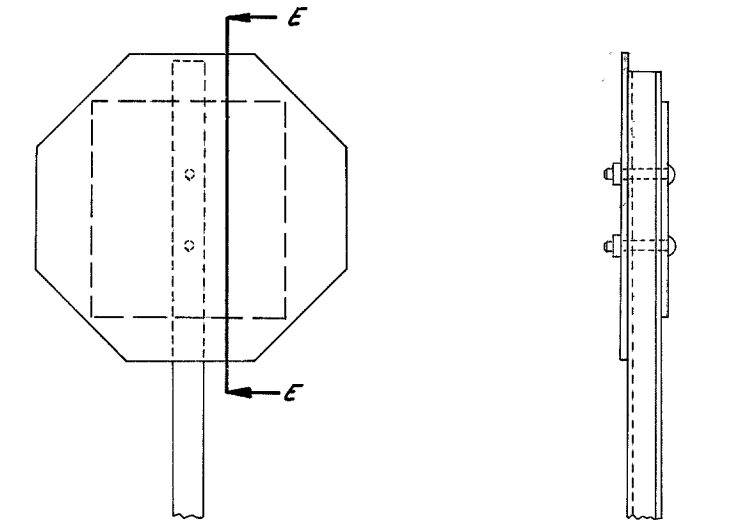
GUARD RAIL DETAIL, OVERHEAD SIGN SUPPORT



STANDARD GUARD RAIL DETAIL



SECTION A-A



DOUBLE SIGNS

LOR - 254 - 4.08 B

**NOTES**

**MATERIALS**  
 THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.  
 SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION I-129 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

**FABRICATION**  
 THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4.1. MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

**ERECTION**  
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

**PAYMENT**  
 PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

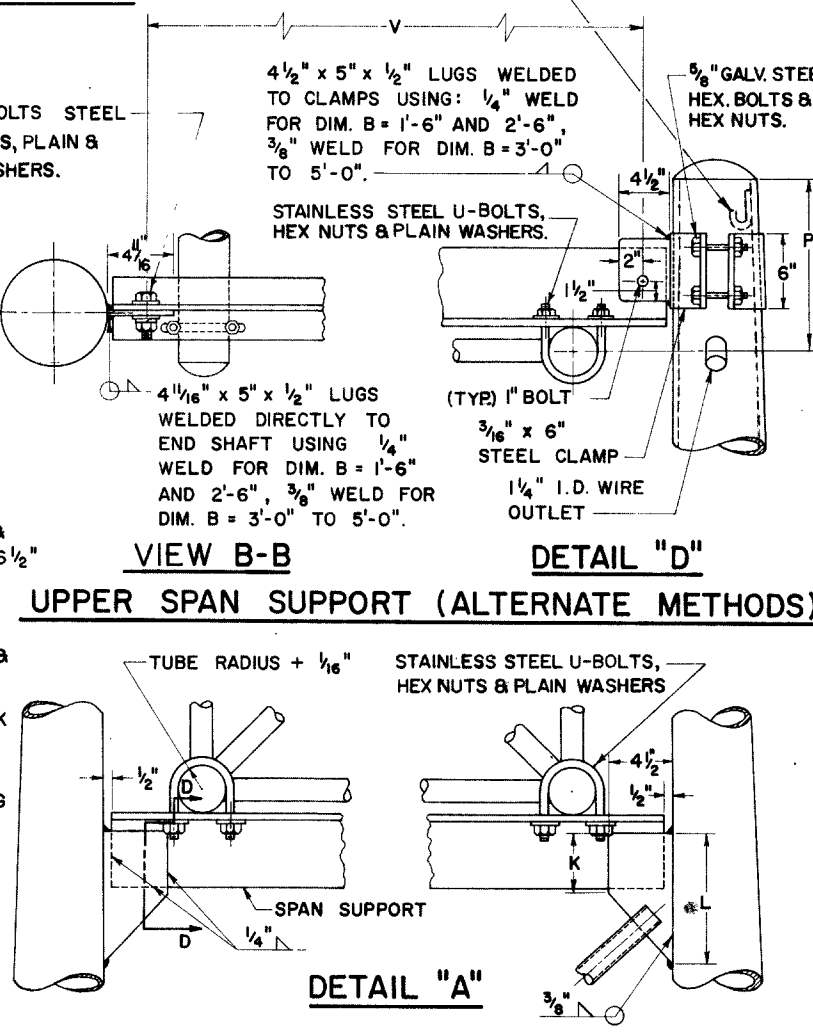
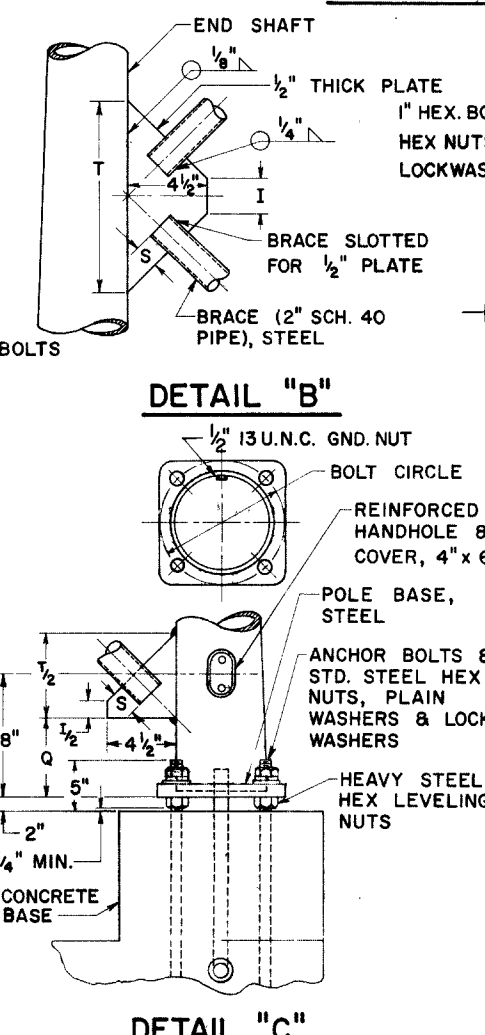
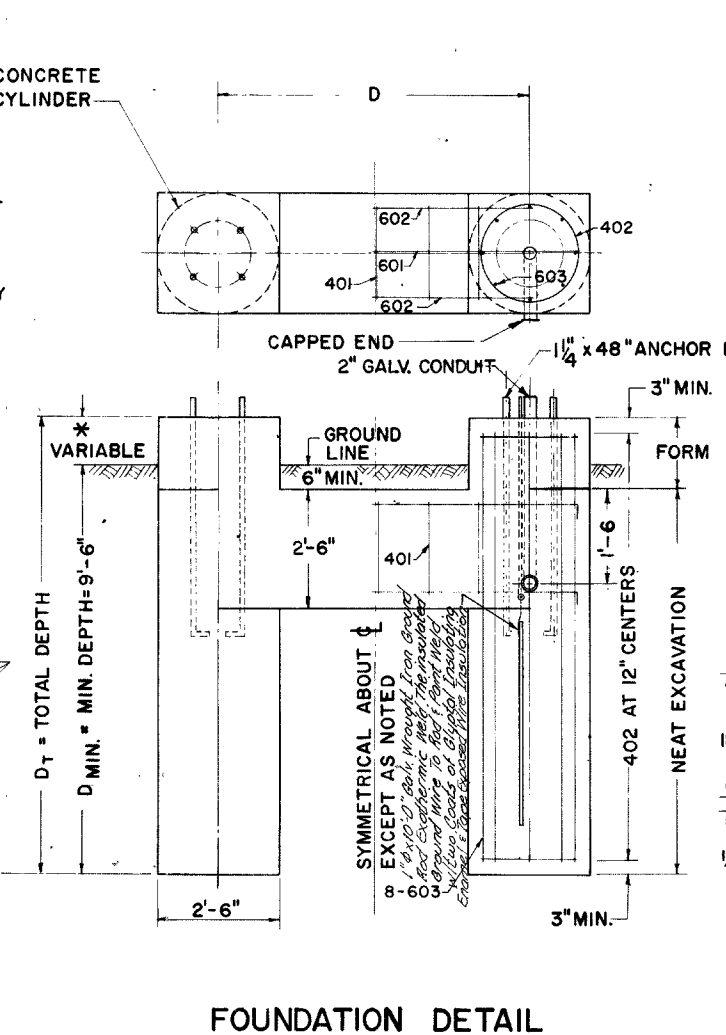
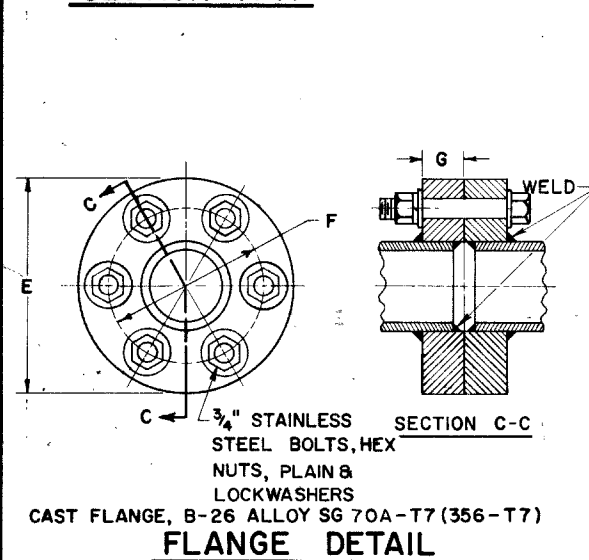
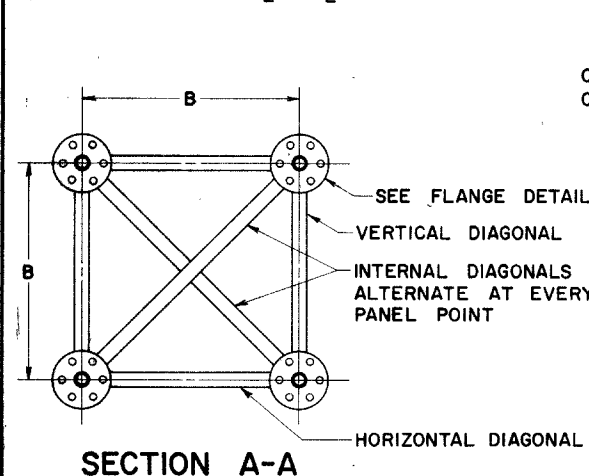
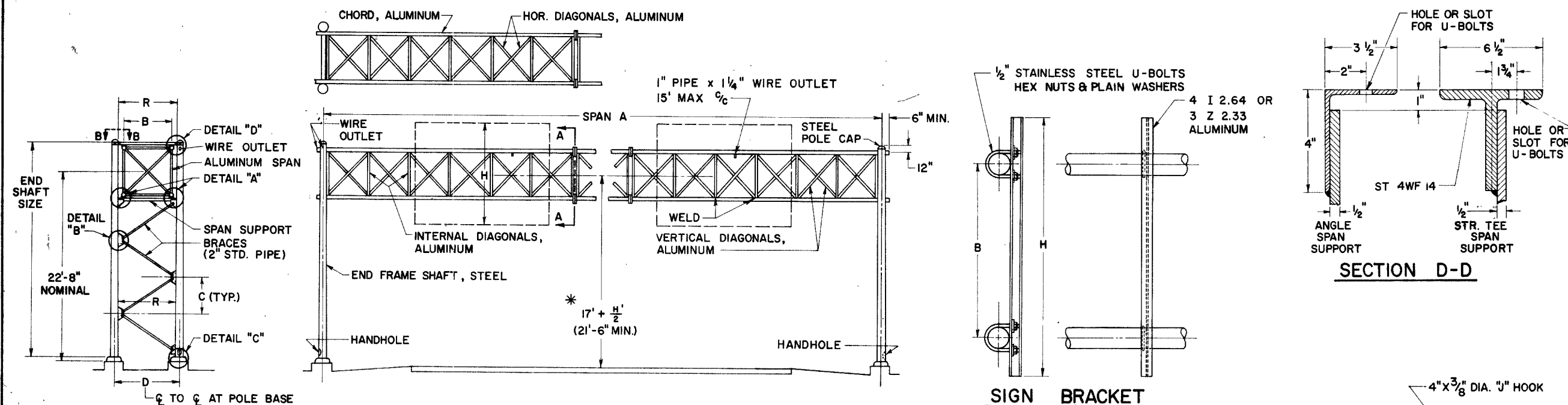
**SOILS**  
 THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND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

**REINFORCING STEEL**  
 COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS. BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

**FOUNDATION ELEVATION**  
 ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17" CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

*Ground Rod Added to Foundation Detail*

**DESIGN**  
 THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.



DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' thru 75'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0", 3 GA.	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 7/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.660" x .140"
2	76' thru 85'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6" 3 GA.	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 3/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900" x .145"
3	86' thru 90'	4'-0"	4'-10 1/4"	5'-7"	11"	8" x 6.22" x 25'-6" 3 GA.	6'-7 1/8"	8 1/2"	1 1/2"	5 5/8"	4 3/8"	7 3/4"	42"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 3/8"	11"	SPLIT TEE 4'-10"	5 1/2" x .250"	2" x .188"	1.900" x .145"
4	91' thru 110'	5'-0"	4'-8 1/2"	6'-7"	11"	8" x 6.18" x 26'-0", 3 GA.	7'-3 1/4"	8 1/2"	1 1/2"	-	3 1/2"	7 3/4"	12"	7 1/4"	5'-10"	1 3/4"	11 1/4"	3 3/4"	5'-4 3/8"	11"	SPLIT TEE 5'-10"	5 1/2" x .250"	2 1/2" x .188"	2 1/2" x .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D <sub>T</sub> -6"	STR.

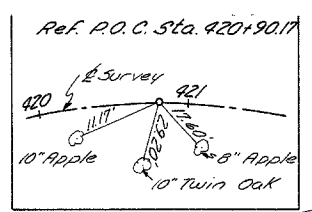
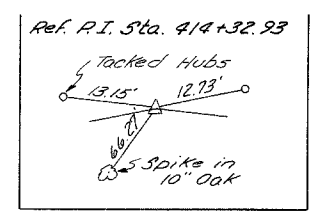
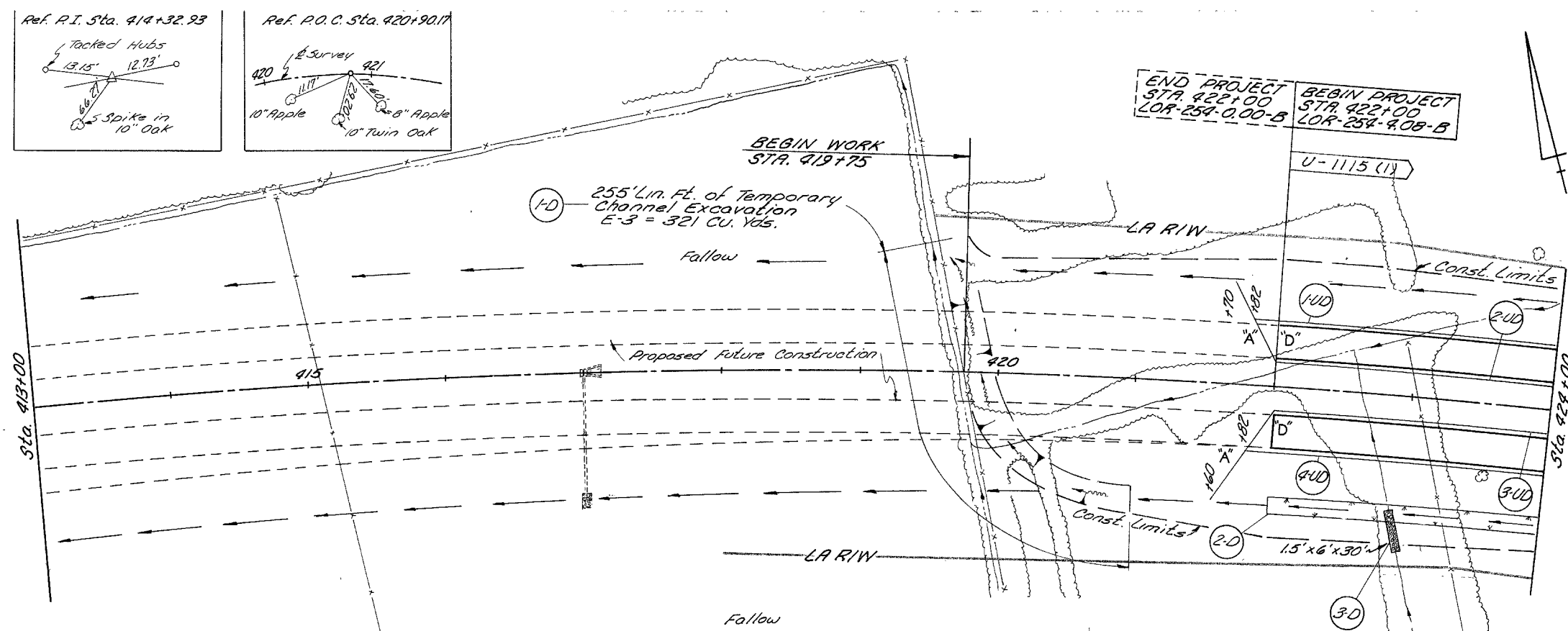
BUREAU OF TRAFFIC  
 OHIO DEPARTMENT OF HIGHWAYS

**OVERHEAD SIGN SUPPORTS No. 7.4**

DATE: 5-2-61  
 7-25-61  
 5-8-61

APPROVED: *Robert E. Lomer*  
 ENGINEER OF TRAFFIC

LOR - 254 - 4.08 B



BM Spike in 40" Oak 145'  
Lt. Sta. 415+00  
Elev. 642.373

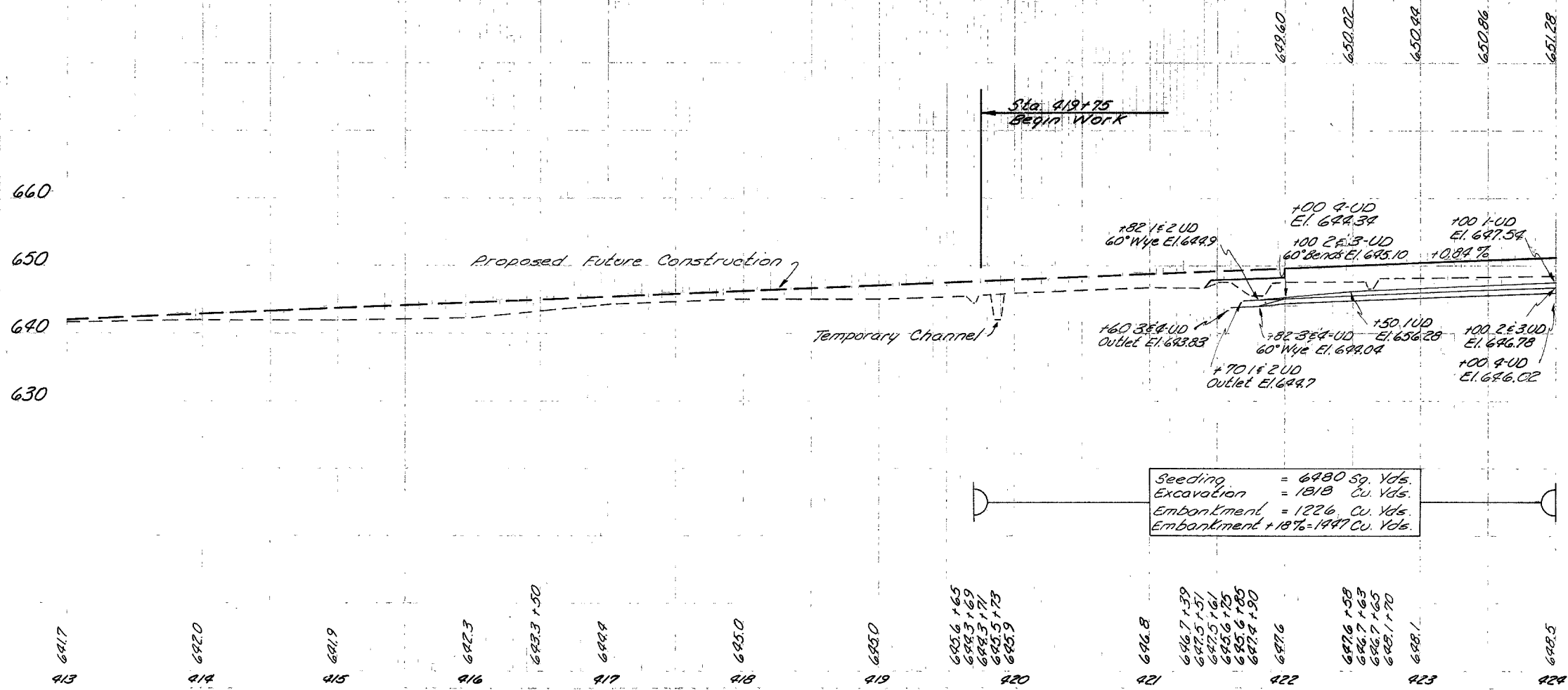
NOTE: Typical Section of Adjoining Pavement at Beginning of Project is the Same as Typical Section for Sta. 422+00 Shown on Sheet 5 Except That There Will be an Acceleration Lane Taper Along The Right Edge of The East Bound Lane.

Curve Data  
P.I. Sta. 414+32.93  
 $\Delta = 28^\circ 33' 36''$  Rt.  
 $D = 1^\circ 00'$   
 $R = 5729.58'$   
 $T = 1458.32'$   
 $L = 2856.00'$   
 $E = 182.68'$

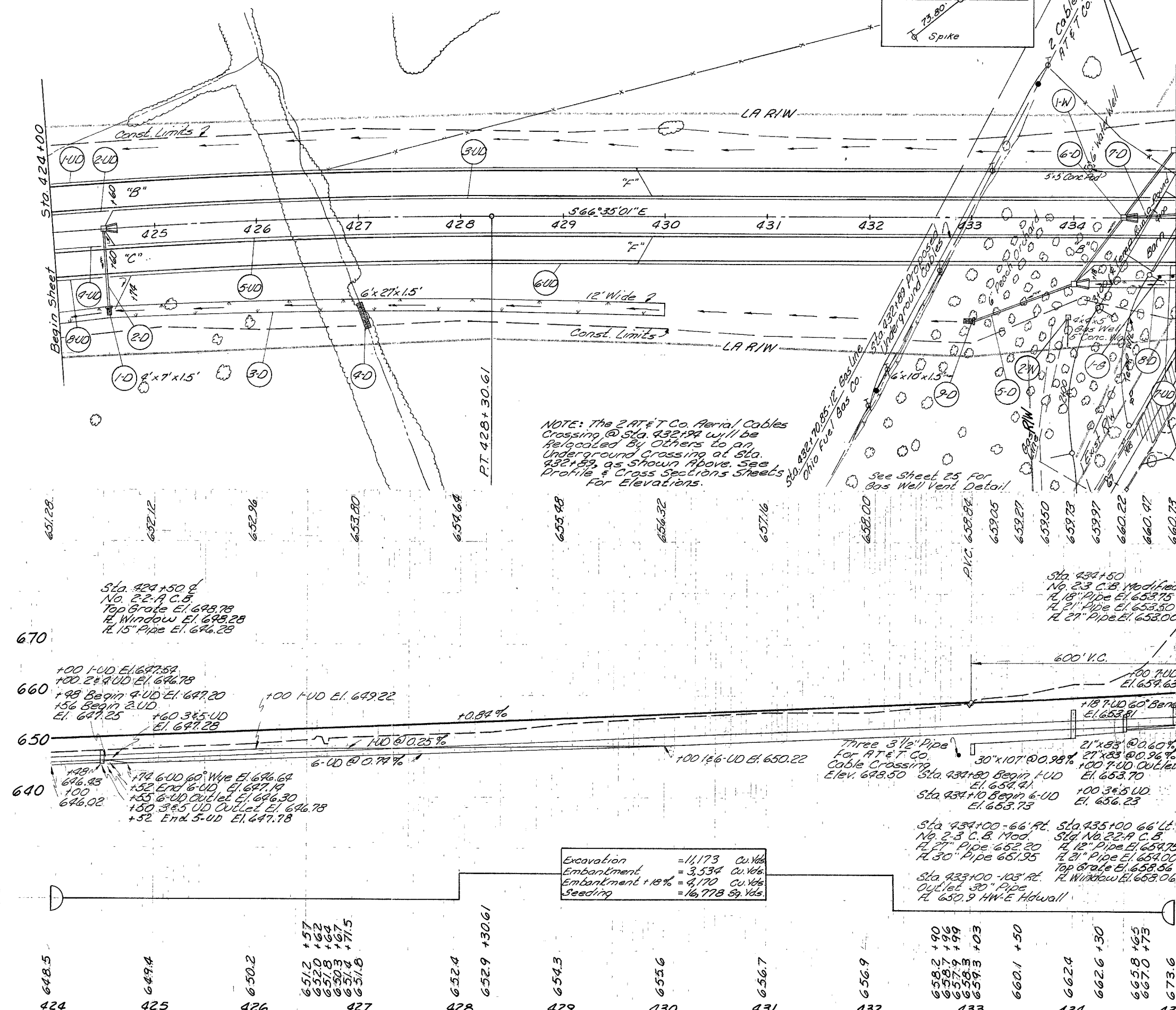
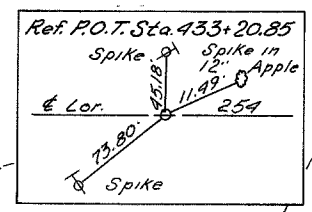
For Outlet Detail  
'A' & 'D' See Sheet 24

Item No.	Station		Side	6" Pipe Class I-5 Shallow Lin. Ft.	I-1 8" Pipe Class F-4 Sec. 116.916 Lin. Ft.		I-5 6" Pipe Class J-1 Pipe Special Class J-1 6" 60' 6" Bend Wye Each	
	From	To			Lin. Ft.	Lin. Ft.		
1UD	421+70	424+00	Lt.	218				
2UD	422+00	424+00	Lt.	200	10	55	1	1
3UD	422+00	424+00	Rt.	200	10	70	1	1
4UD	421+60	424+00	Rt.	218				
Totals				836	20	125	2	2

Item No.	Station		Side	L-10 Sodding Width Area L.F. S.Y.	I-10 Dumped Rock Channel Protection Cu. Yds.	E-3 Channel Excavation Cu. Yds.
	From	To				
1-D	419+75	421+00	L&R			321
2-D	422+00	424+00	Rt.	12	267	
3-D	422+90		Rt.		10.0	
Totals				267	10.0	321



For Outlet Detail  
"B" & "C" See Sheet 24



Item No	Station		Side	I-1				I-5			I-24	I-15
	From	To		6" Pipe Class I-3	6" Pipe Class I-3	6" Pipe Class I-3	5" Pipe Class I-3	Pipe Special Class I-3	6"60 Bend	6"60 Wye		
1-UD	424+00	434+80	LT	600	512						1	
2-UD	424+00	424+56	LT	56								
3-UD	424+50	435+00	LT	1038		20				1		
4-UD	424+00	424+48	LT	48								
5-UD	424+50	435+00	RT	1046		20				1		
6-UD	424+52	434+10	RT	575	442		10			2		
7-UD	434+00	435+00	RT		100	10				1		
8-UD	424+00	424+48	RT	48								
1-B	434+80	435+100	RT									20
2-W	433+95		RT									Sum Lump
Totals				3411	1054	50	10	1	1	4		

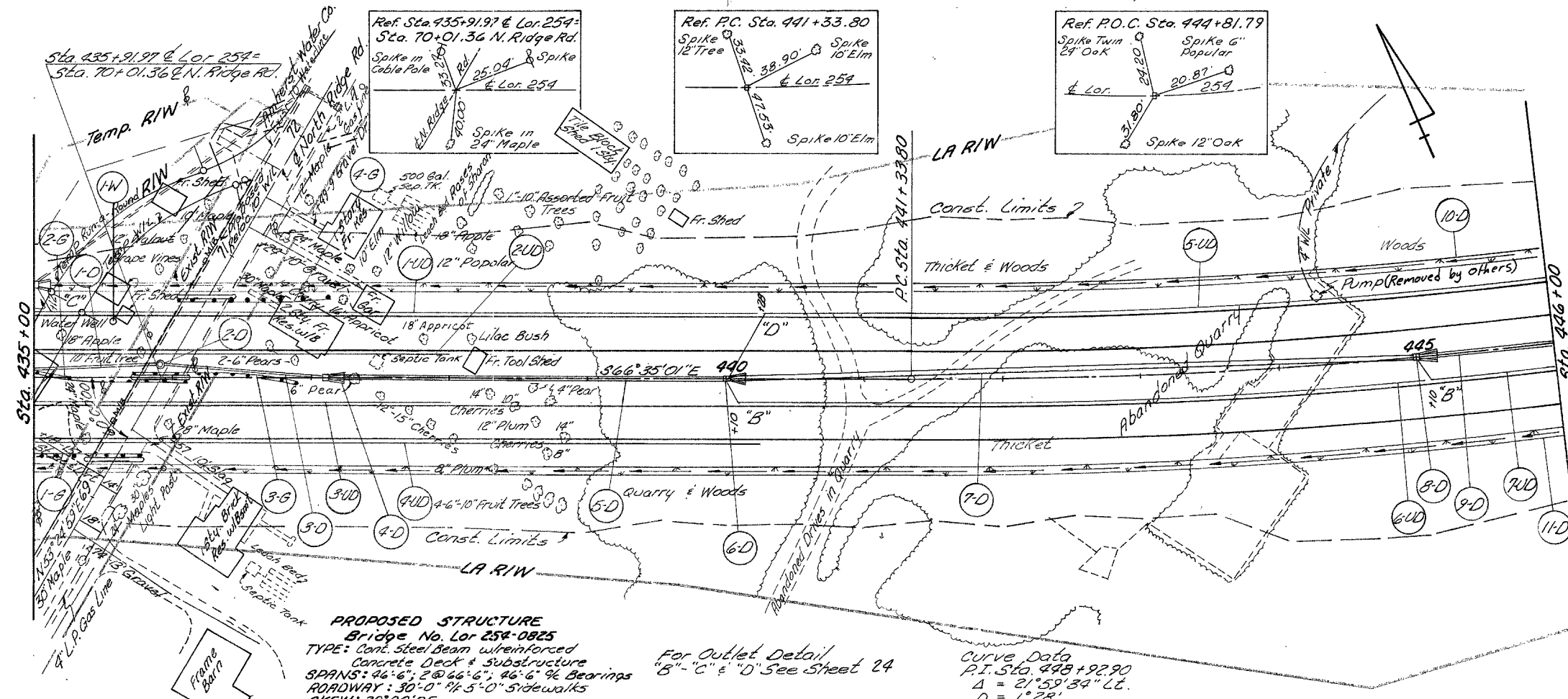
Item No	Station		Side	L-10 Sodding		I-8 Catch Basin		I-14		I-1		I-1		Spoke	
	From	To		No. 22A	No. 23 Mod.	No. 22A	No. 23 Mod.	Lim. Ft.	Cu. Yds.	Class E1 Pipe 18" 30"	Class I-1 Pipe 15" 21" 27"	Class I-1 Pipe 15" 21" 27"	Spoke		
1-D	424+50		RT							1.6					
2-D	424+50		RT	1.5	7	1	10			0.26		77			
3-D	424+00	430+00	RT	12	800										
4-D	424+05		RT							90					
5-D	433+00	434+00	RT							0.51	107				
6-D	434+00	435+00	LR	1.5	15	1	2	30				83	83		
7-D	434+50	435+00	RT								50				
8-D	434+12	435+00	RT	6	59										
9-D	432+90	433+00	RT							34					
1-W	434+16		LT											1	
2-W	433+95		RT					39	1.6						
Totals				881	2	2	40	39	14.0	2.37	50	107	77	83	83

NOTE: The AT&T Co. Aerial Cables Crossing @ Sta. 432+99 will be Relocated by Others to an Underground Crossing at Sta. 432+89, as shown above. See Profile & Cross Sections Sheets for Elevations.

Excavation = 11,173 Cu. Yds  
Embankment = 3,534 Cu. Yds  
Embankment + 18% = 4,170 Cu. Yds  
Seeding = 16,778 Sq. Yds

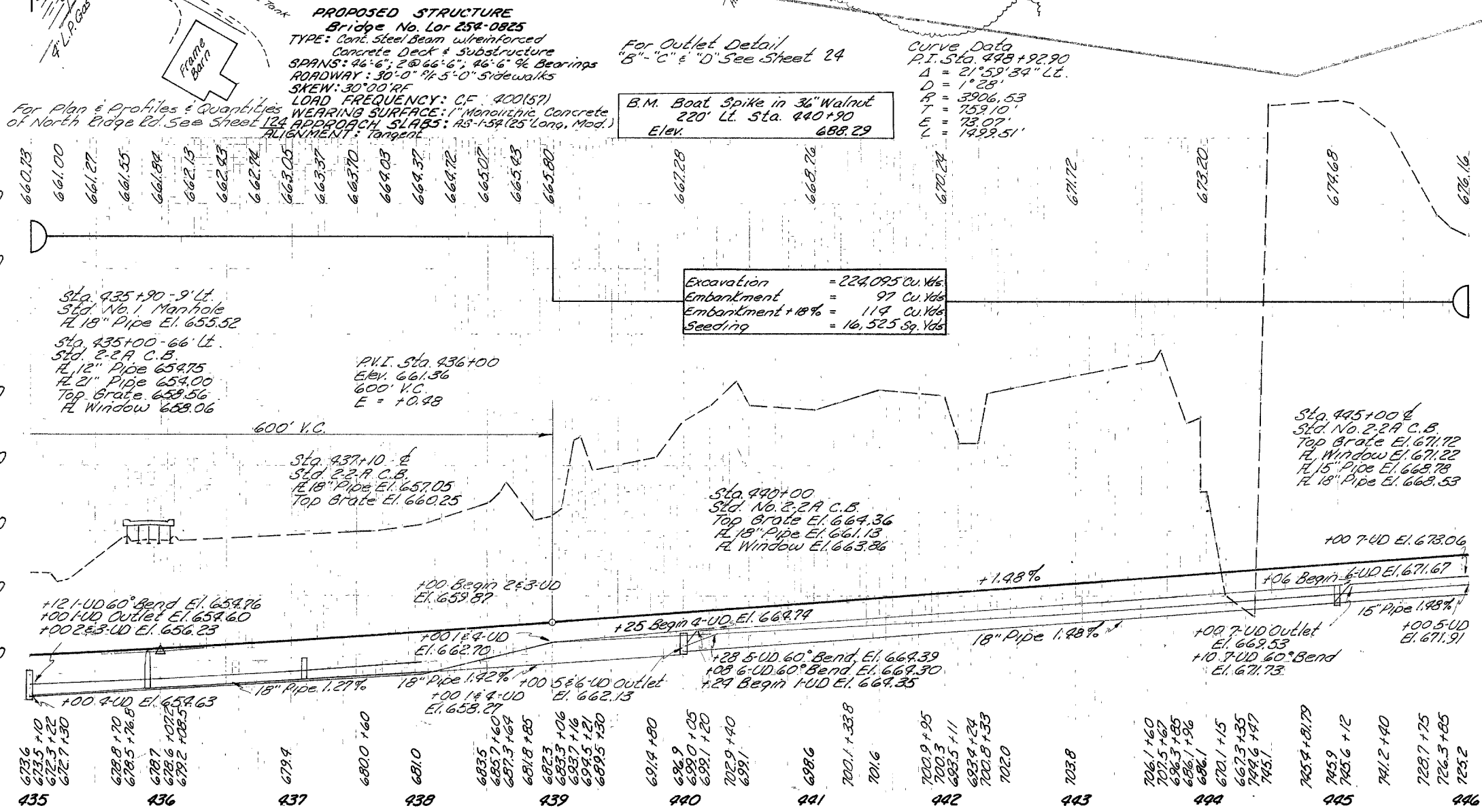


LOR - 254 - 4.08 B

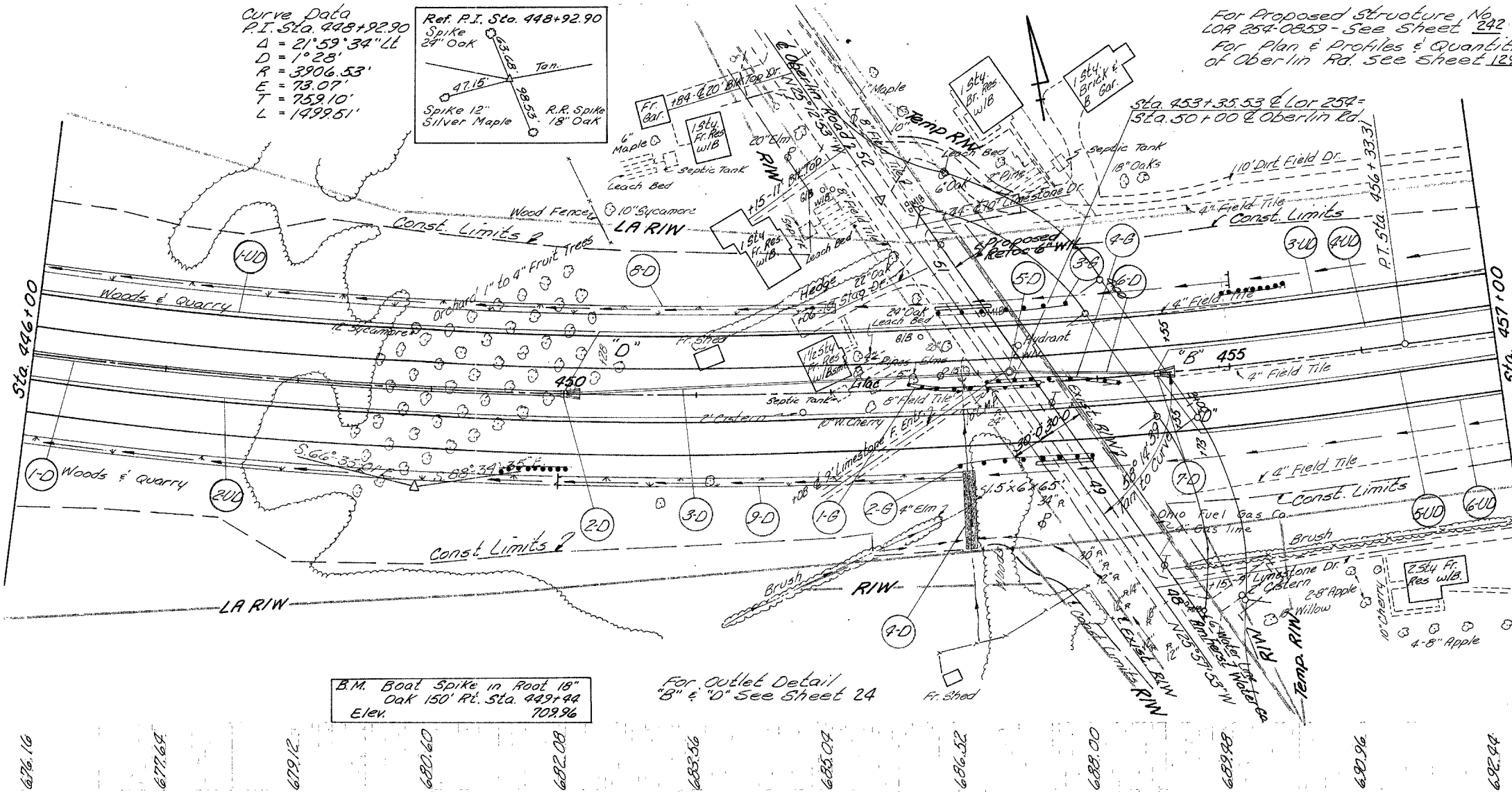


Item No.	Station		Side	I-1				I-5		
	From	To		6" Pipe Class I-3 Shallow Lin. Ft.	6" Pipe Class I-3 Deep Lin. Ft.	6" Pipe Class I-3 Lin. Ft.	6" Pipe Class F-4 J-1 Lin. Ft.	Drilled Water Wells Abandoned Each	Pipe Class I-3 Bend Wye Each	Pipe Class I-5 Bend Wye Each
1-UD	434+58	440+24	LT.		326	224	10		1	
2-UD	435+00	438+00	LT.	300						
3-UD	435+00	438+00	RT.	300						
4-UD	435+00	440+25	RT.		300	225				
5-UD	440+00	446+00	LT.			372	10	44	1	
6-UD	440+00	445+06	RT.			509	10		1	
7-UD	445+00	446+00	RT.			99	10		1	
1-N	435+57		LT.					1		
Totals				600	626	1629	40	44	1	2

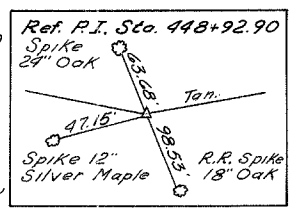
Item No.	Station		Side	I-8		I-14		I-8		I-1		L-10		I-15		I-15		
	From	To		No. 2-2A Catch Basin Each	Std. Pvd. Gutter Type I Mod. As Per Plan Lin. Ft.	Standing No. 1 Manhole Each	Class E1 Pipe 15" Lin. Ft.	Class E1 Pipe 18" Lin. Ft.	Sodding Width Area L.F. B.V.	Guard Rail Steel Beam Standard Type (Deep) Lin. Ft.	Guard Rail Steel Beam Standard Barrier Type (Deep) Lin. Ft.							
1-D	435+00	435+90	LT.						90									
2-D	435+90		LT.			1												
3-D	435+90	437+10	LT.						120									
4-D	437+10		E.	1	10						1.5	5						
5-D	437+10	440+00	E.						290									
6-D	440+00		E.	1	10						1.5	5						
7-D	440+00	445+00	E.						500									
8-D	445+00		E.	1	10						1.5	5						
9-D	445+00	446+00	E.					100										
10-D	435+12	446+00	LT.								6	725						
11-D	435+00	446+00	RT.								6	734						
1-B	435+00	435+80	RT.											80.0				
2-B	435+01	436+13.5	E.											87.5	25			
3-B	435+70	436+22.5	E.											87.5	25			
4-B	436+03	437+03	LT.											100.0				
Totals				3	30	1	100	1000	1474	355.0	50							



LOR-254-4.08 B



Curve Data  
P.I. Sta. 448+92.90  
 $\Delta = 21^\circ 59' 34''$  LL  
 $D = 1^\circ 28'$   
 $R = 3906.53'$   
 $E = 73.07'$   
 $L = 1499.51'$



For Proposed Structure No. LOR 254-0859 - See Sheet 242  
For Plan & Profiles & Quantities of Oberlin Rd. See Sheet 122

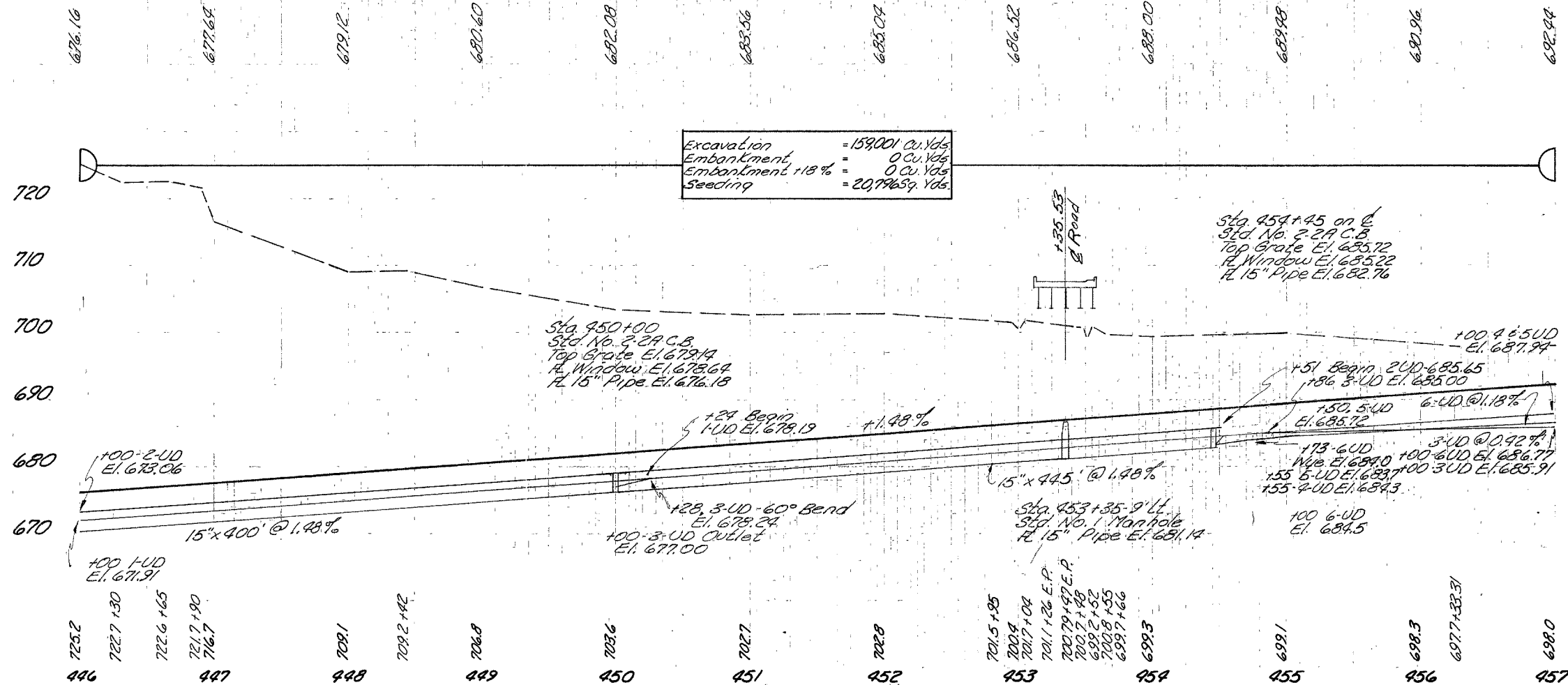
Item No.	Station		Side	I-1		I-5					
	From	To		6" Pipe Class I-3	6" Pipe Class I-3	6" Pipe Class I-3	6" Pipe Class I-3	6" Pipe Class I-3			
1UD	446+00	450+00	LT.			424					
2UD	446+00	454+51	RT.			851					
3UD	450+00	457+00	LT.		214	458	10				
4UD	454+45	457+00	LT.	253		10	44				
5UD	454+45	457+00	RT.	245							
6UD	454+45	457+00	RT.		227	10	44				
Totals				498	441	17.33	30	88	1	2	1

Item No.	Station		Side	I-8 No. 2 PA Catch Basin	I-14 Std. No. 1 Manhole	I-8 Standard No. 1 Manhole	I-10 Dumped Rock Channel Protection	I-11 15" Pipe Class E1	I-10 Sodding		I-15
	From	To							Each	Lin. Ft.	
1-D	446+00	450+00	E					400		1.5	5
2-D	450+00		E	1	10						
3-D	450+00	453+35	LT.					335			
4-D	453+00		RT.				22				
5-D	453+35		LT.					110		1.5	5
6-D	453+35	454+45	LT.							6	400
7-D	454+45		E	1	10					6	467
8-D	446+00	451+97	LT.								
9-D	446+00	452+97	RT.								
1-B	452+58	453+58	RT.							75	25
2-B	452+23	453+23	RT.							100	
3-B	452+82	453+82	LT.							100	
4-B	453+17	454+17	LT.							75	25
Totals				2	20	1	22	845	877	350	50

B.M. Boat Spike in Root 18" Oak 150' Rt. Sta. 449+44 Elev. 709.96

For Outlet Detail "B" & "D" See Sheet 24

Excavation = 159001 Cu. Yds  
Embankment = 0 Cu. Yds  
Embankment +18% = 0 Cu. Yds  
Seeding = 2079659 Yds



Sta. 454+45 on E Side No. 2 PA C.B. Top Grate El. 685.72 R. Window El. 685.22 R. 15" Pipe El. 682.76

Sta. 450+00 Std. No. 2 PA C.B. Top Grate El. 679.14 R. Window El. 678.64 R. 15" Pipe El. 676.18

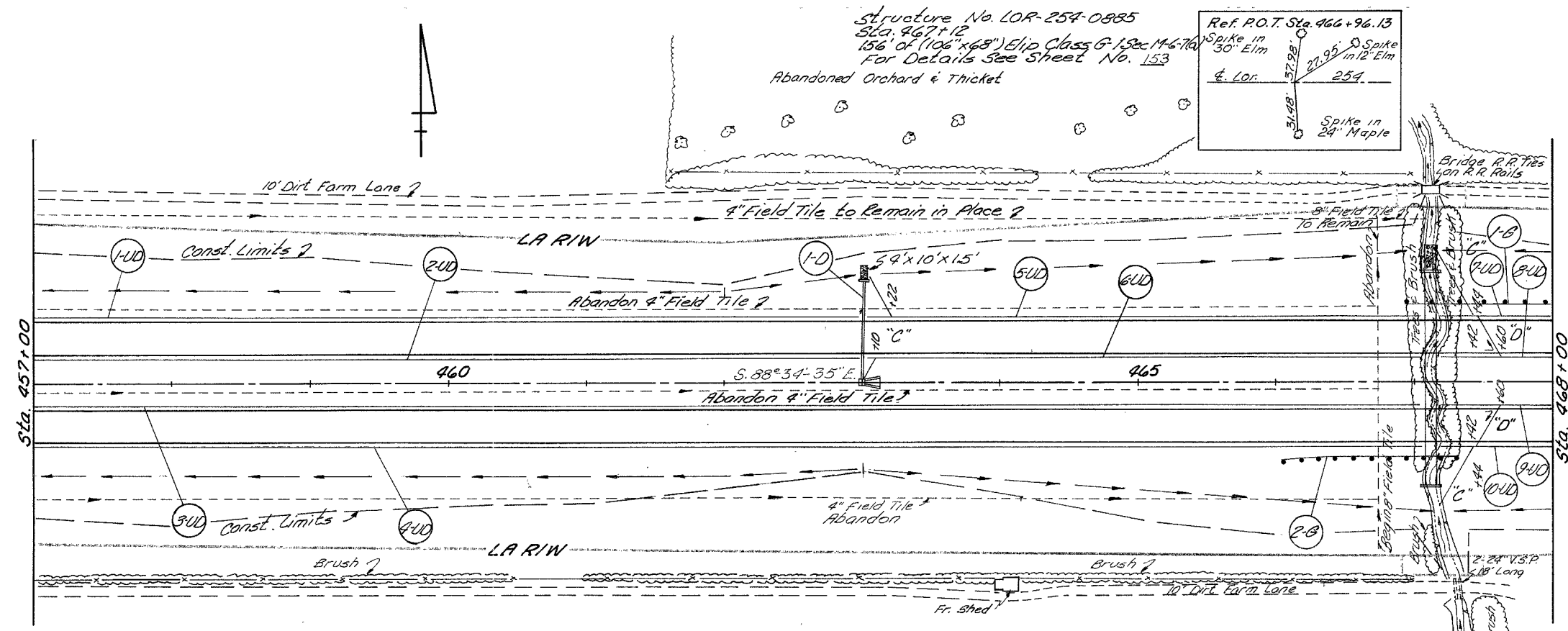
100 4 6 5 UD - El. 687.94

151 Begin 2UD-685.65  
186 3-UD El. 685.00  
150 5-UD El. 685.72  
173 6-UD  
100 6-UD El. 686.77  
153 5-UD El. 683.100 3UD El. 685.91  
155 4-UD El. 684.3

Sta. 453+35 9 LL Std. No. 1 Manhole R. 15" Pipe El. 683.14

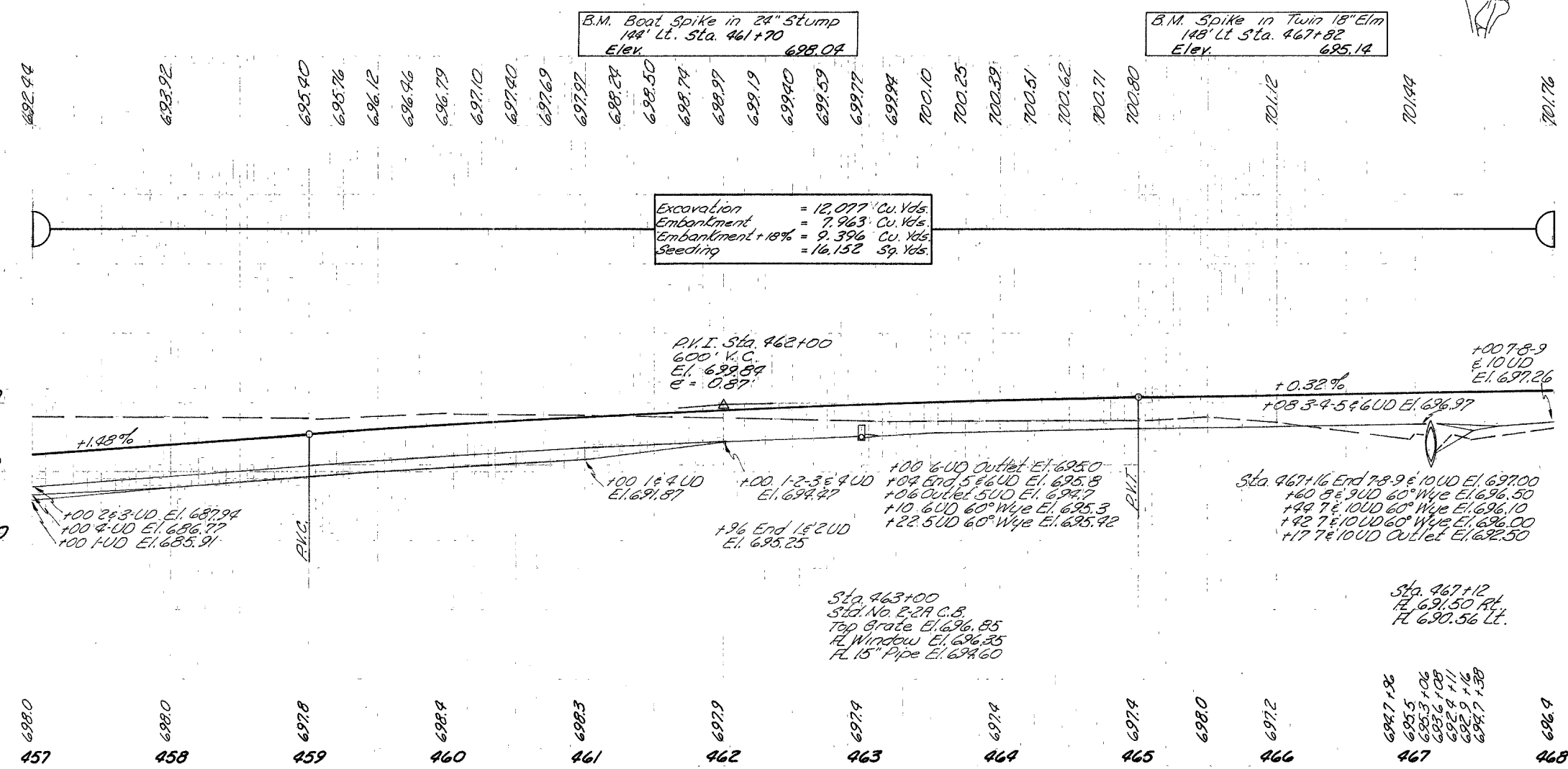
701.5 +85  
700.9  
701.7 +04  
701.1 26 E.P.  
700.79 +97 E.P.  
700.7 +88  
699.2 +52  
700.8 +55  
699.7 +66  
699.3

LOR-254-4.08 B

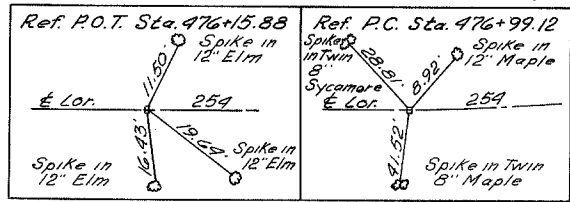


Item No.	Station		Side	6" Pipe Class I-3		I-1		I-5		
	From	To		Shallow Lin. Ft.	Deep Lin. Ft.	Class F-4 Lin. Ft.	Class F-4 Sec. 146.16 Lin. Ft.	Class J-1 Lin. Ft.	Pipe Specials Class I-3 Class J-1	
1UD	457+00	462+96	Lt.	96	500					
2UD	457+00	462+96	Lt.	596						
3UD	457+00	467+08	Rt.	1008						
4UD	457+00	467+08	Rt.	508	500					
5UD	463+04	467+08	Lt.	426			10		1	
6UD	463+00	467+08	Lt.	413			10		1	
7UD	467+16	468+00	Lt.	129			10		1	
8UD	467+16	468+00	Lt.	84				35	2	
9UD	467+16	468+00	Rt.	84				35	2	
10UD	467+16	468+00	Rt.	124			10		1	
Totals				3468	1000	10	30	70	9	9

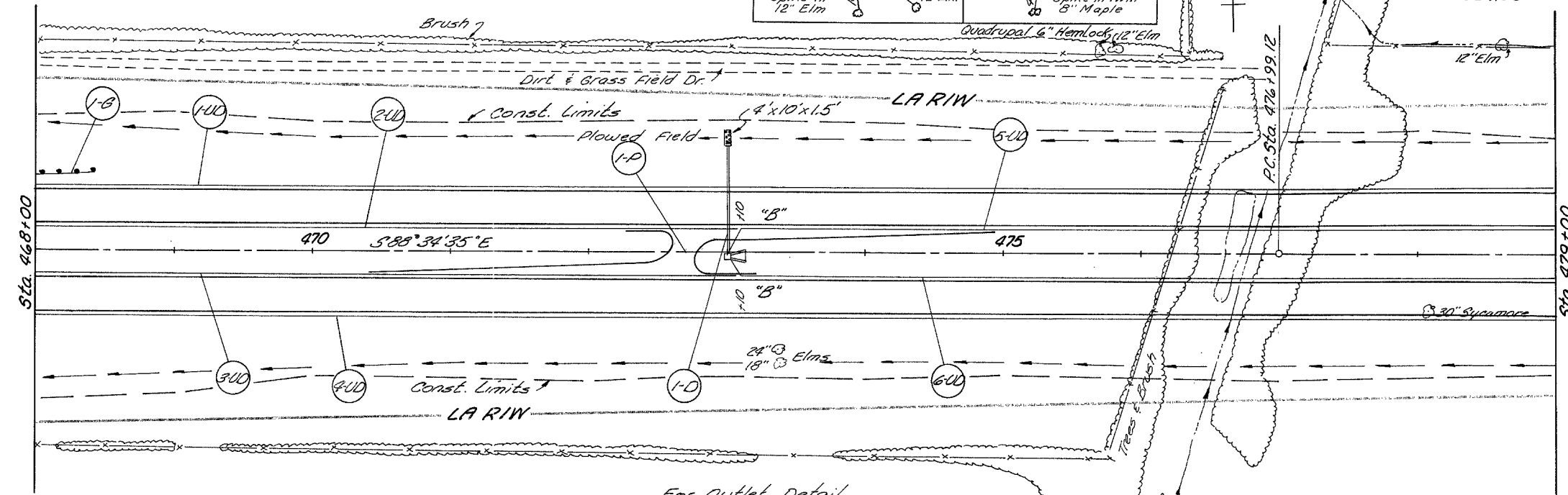
Item No.	Station		Side	I-8	I-14	I-2	I-1	I-10	L-10	I-15
	From	To		No. 2-2A Catch Basin	Std. Prod. Gutter Type I Modified As Per Plan	Masonry	15" Pipe Class J-1	Dumped Rock Channel Protector	Sodding	Guard Rail
1-D	463+00		Lt.	1	10	0.26	74	2.2	1.5	7
1-B	466+93	468+00	Lt.							107
2-B	466+05	467+30	Rt.							125
Totals				1	10	0.26	74	2.2	7	232



LOR-254-4.08 B



Curve Data  
P.I. Sta. 481+16.20  
 $\Delta = 2^\circ 13' 27''$  Lt.  
 $D = 0^\circ 16'$   
 $R = 21485.92'$   
 $T = 417.08'$   
 $E = 4.04'$   
 $L = 834.06'$



Item No.	Station	Side	I-1		I-5	I-15	
			6" Pipe Class I-3	6" Pipe Class I-4	Pipe Special 6" 60° Bend Class I-3	Board Rail Steel Standard Type (Deep)	
	From	To	Shallow Lin. Ft.	Lin. Ft.	Each	Lim. Ft.	
1UD	468+00	472+00	LT.	1090			
2UD	468+00	473+06	LT.	506	10		
3UD	468+00	473+06	RT.	506			
4UD	468+00	479+00	RT.	1100			
5UD	473+00	479+00	LT.	603	10	1	
6UD	473+00	479+00	RT.	595	10	1	
1-B	468+00	468+43	LT.			43	
Totals				4400	30	2	43

Item No.	Station	Side	I-8	I-14	I-2	I-1	I-10	L-10		
			No. 2-2A Catch Basin	Stal Pvd Butler Type I Mod. 15' per 15' Span	Masonry	15" Pipe Class F1	Dumped Rock Channel Protection	Soil Sodding		
	From	To	Each	Lin. Ft.	Cu. Yds.	Lin. Ft.	Cu. Yds.	Width Area L.F. S.V.		
1-D	473+00		Left	1	10	0.26	83	2.2	1.5	7
Totals				1	10	0.26	83	2.2		7

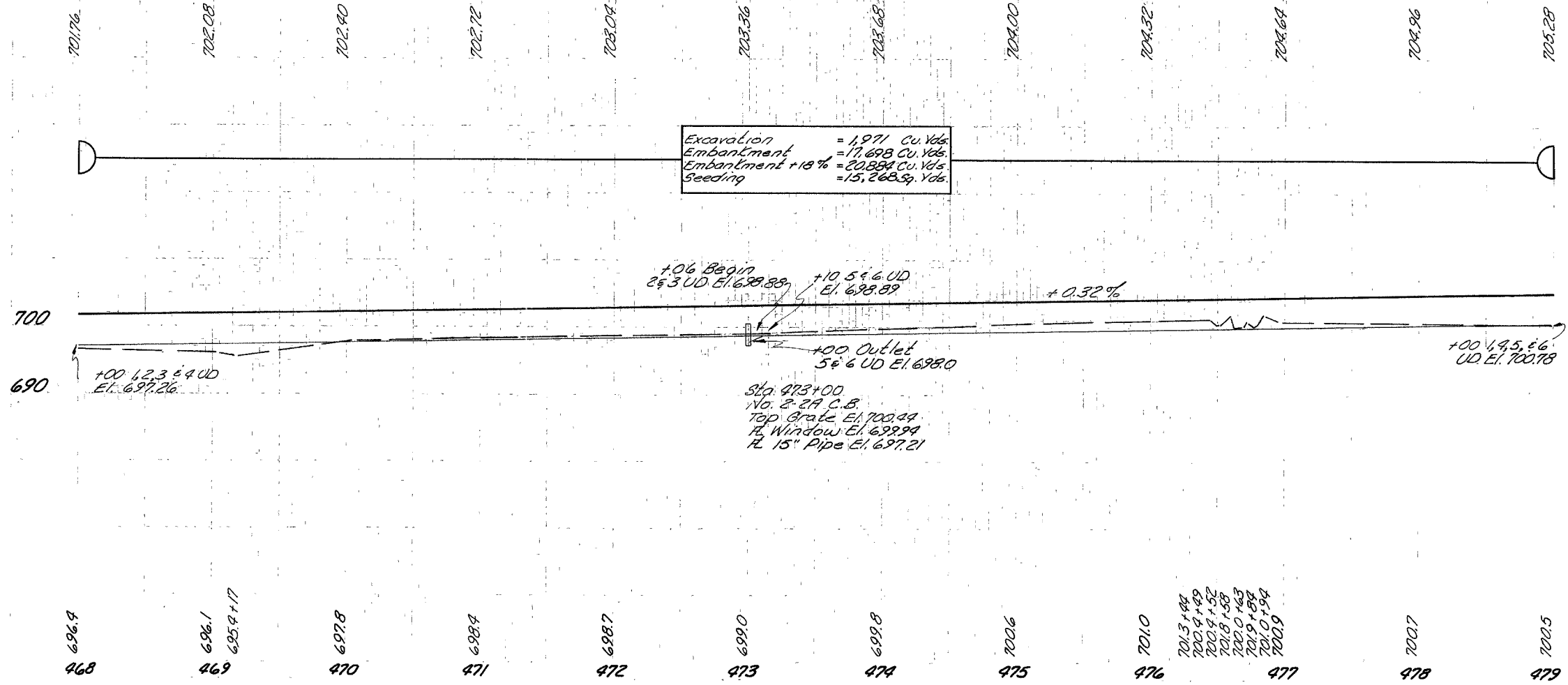
Item No.	Station	Side	T-31	T-31	B-21	B-19	I-22	
			Bituminous Surface Treatment Material As Per Plan	Bitum. Surface Treatment No. 6	Water-Proofer Aggregate Base Course	6" Aggr. Base Course	Subbase	
	From	To	Bals.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	
1-D	472+70		Left	75.93	2.93	25.31	55.06	29.75
Totals				75.93	2.93	25.31	55.06	29.75

B.M. Boal Spike in 24" Elm  
147' Lt Sta. 470+20  
Elev. 699.02

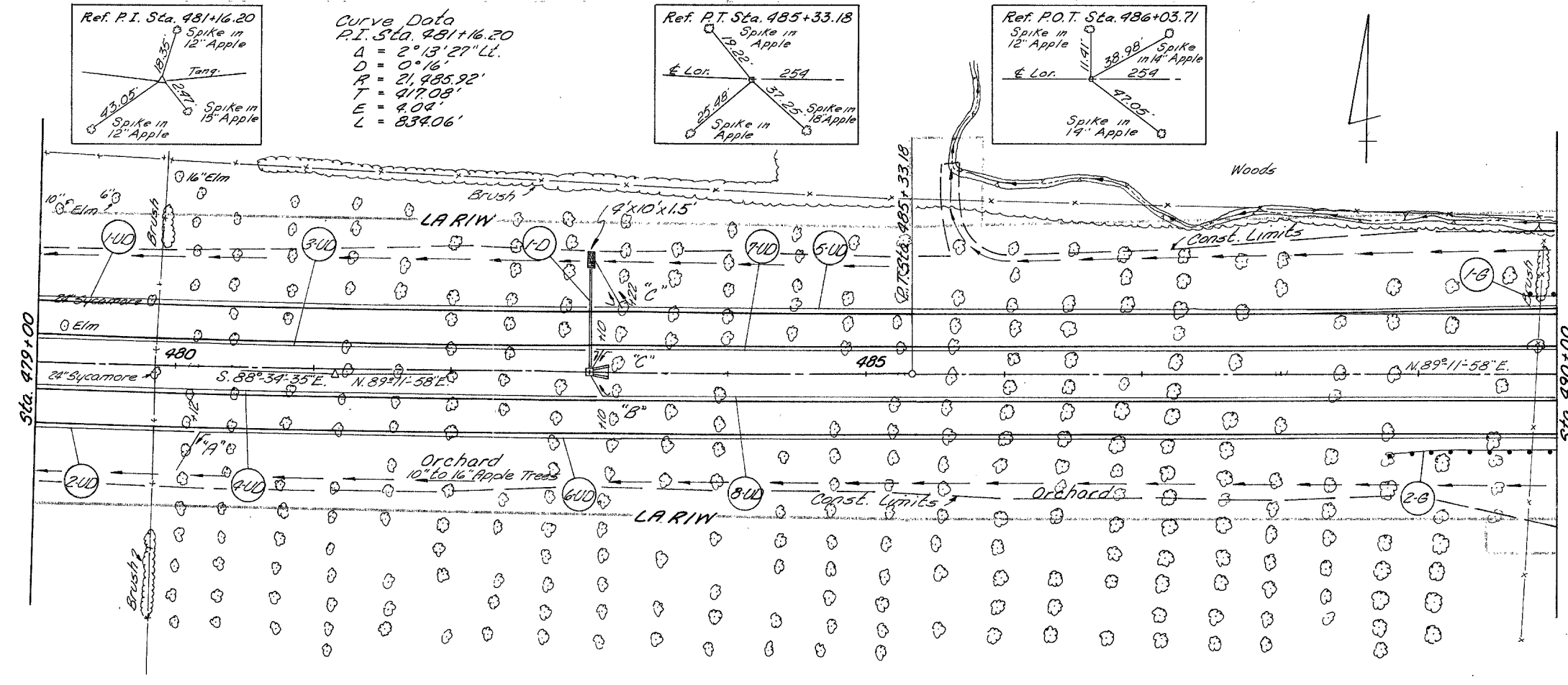
Sta. 472+70 Standard  
U-Turn Median Opening  
For Details See Sheet 25

B.M. Boal Spike in 20" Sycamore  
194' Rt. Sta. 478+76  
Elev. 701.65

Excavation = 1,971 Cu. Yds.  
Embankment = 17,698 Cu. Yds.  
Embankment + 18% = 20,884 Cu. Yds.  
Seeding = 15,260 Sq. Yds.



LOR-254-4.08 B

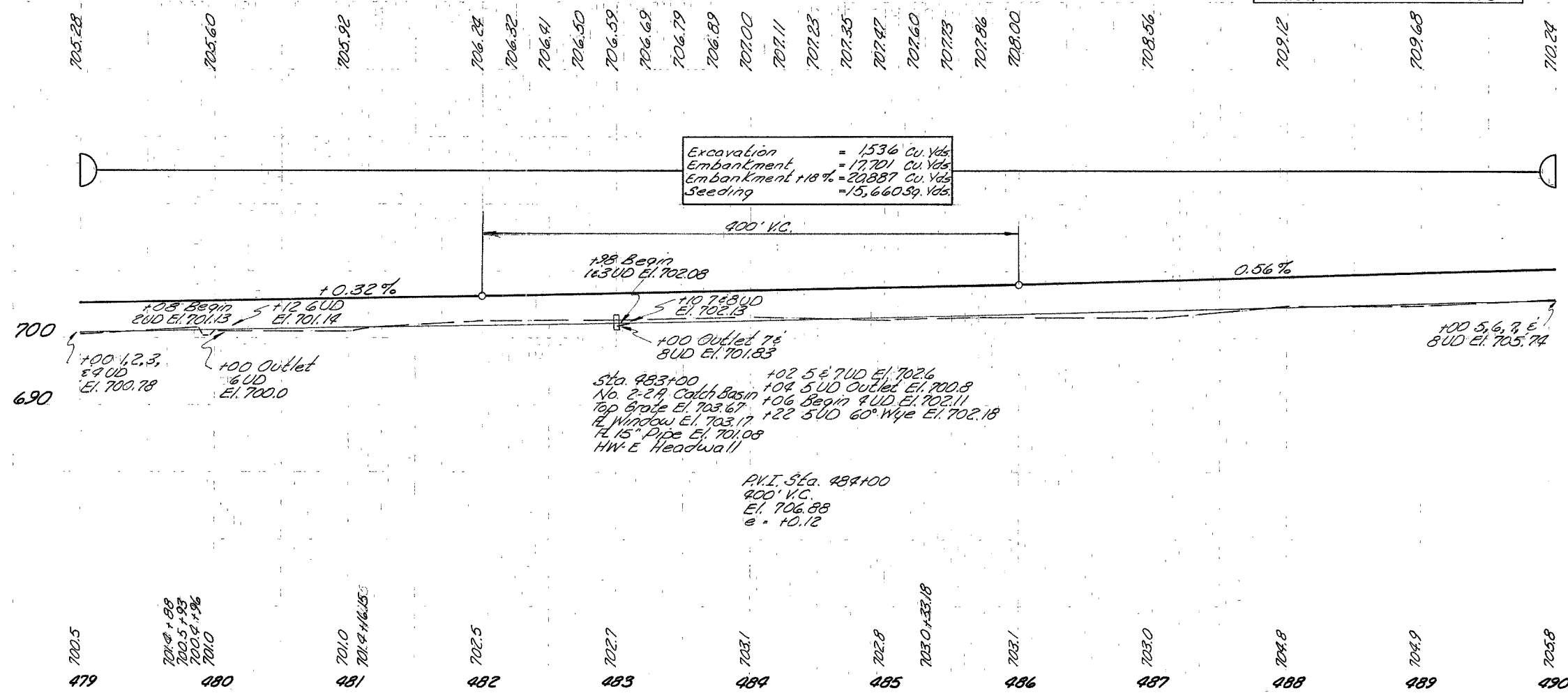


Item No.	Station		Side	Pipe				
	From	To		6" Pipe Class I-3 Shallow Lin. Ft.	6" Pipe Class I-4 Lin. Ft.	8" Pipe Class I-4 Sec. 6.4(c) Lin. Ft.	15" Pipe Special Class I-3 Bend Each	15" Pipe Special Class I-3 Wye Each
1-UD	479+00	482+98	Lt.	398				
2-UD	479+00	480+08	Rt.	108				
3-UD	479+00	482+98	Lt.	398				
4-UD	479+00	485+06	Rt.	406				
5-UD	483+02	490+00	Lt.	722		10		1
6-UD	480+00	490+00	Rt.	1009		10		1
7-UD	483+00	490+00	Lt.	707	10			1
8-UD	483+00	490+00	Rt.	699	10			1
Totals				4447	20	20	3	1

Item No.	Station		Side	Structure						
	From	To		No. 2-29 Catch Basin Each	Std. Prod. Butler Type I Modified Rq. Per Plan Lin. Ft.	Masonry I-2 Cu. Yds.	15" Pipe Class I-1 Lin. Ft.	Dumped Rock Channel Protection Cu. Yds.	Sodding L-10 L.F. S.V.	Guard Rail Standard Slide Deep I-15 Lin. Ft.
1-D	483+00		Lt.	1	10	0.26	76	2.2	1.5	5
1-B	489+85	490+00	Lt.							15
2-B	488+75	490+00	Rt.							125
Totals				1	10	0.26	76	2.2	5	140

For Outlet Detail "A", "B" & "C" See Sheet 24

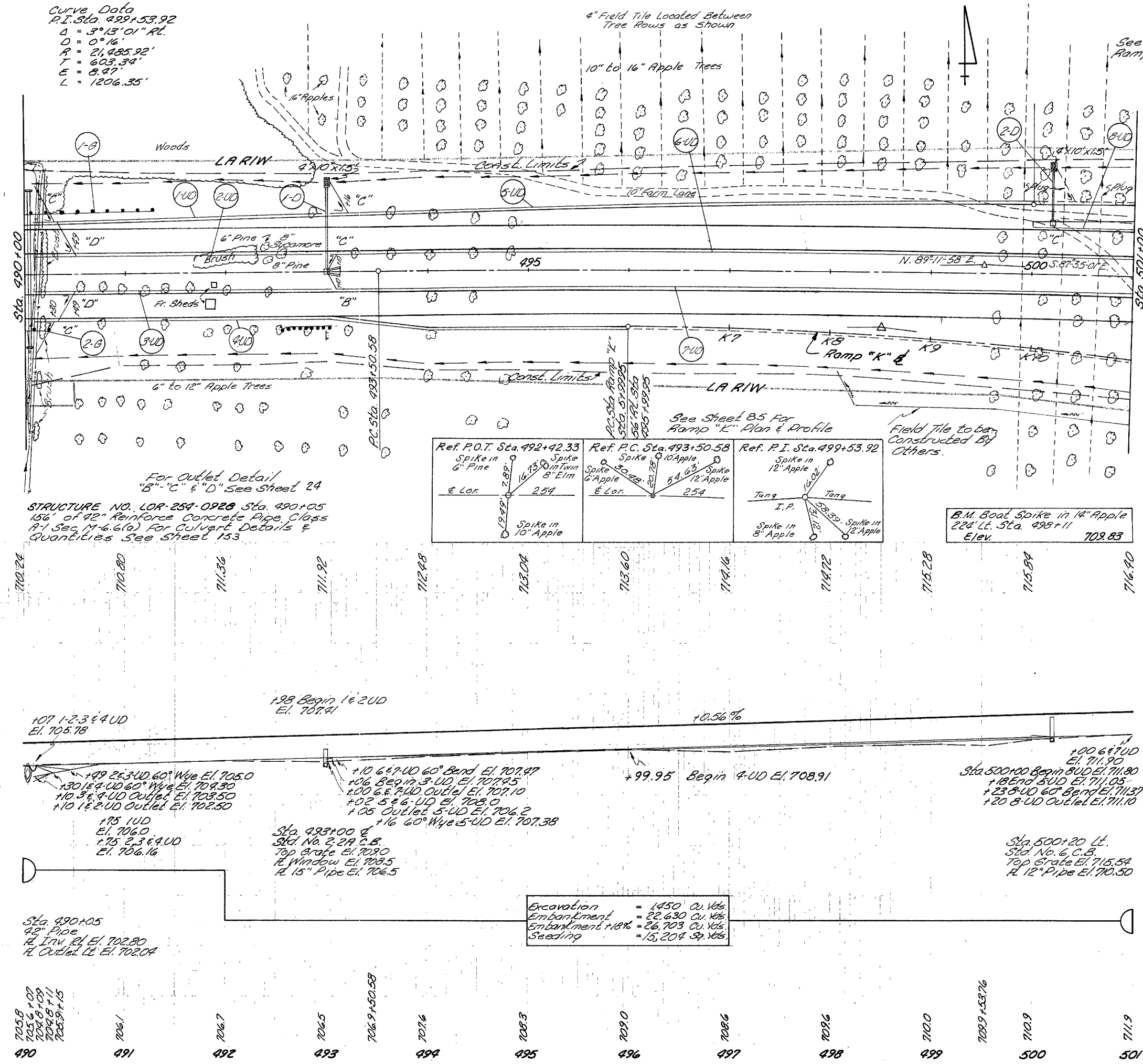
B.M. Boat Spike in 24" Oak 163' Lt. Sta. 488+43 Elev. 704.66



LOR-254-4.08 B

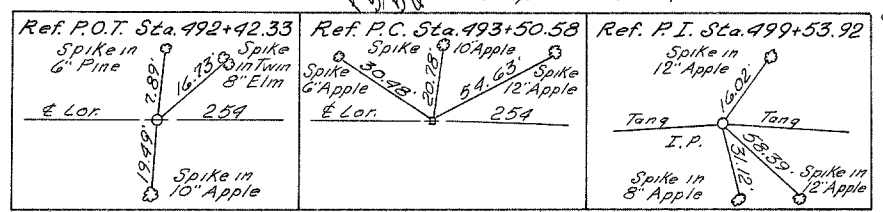
Curve Data  
P.I. Sta. 499+53.92  
Δ = 3°13'01" RL  
D = 0°16'  
R = 21,485.92'  
T = 603.34'  
E = 8.47'  
L = 1206.35'

See Sheet 72 for Ramp "H" Plan & Profile



Item No.	Station		Side	I-1		I-5		I-1	
	From	To		6" Pipe Class 153	6" Pipe Class F-4	8" Pipe Class F-4 Sec 176.90	Pipe Specials Class 153	6" 60" Wye Class J-1	6" Pipe Class J-1
				Shallow					
				Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Lin. Ft.
1-1	490+07	492+98	LT	323		10	1		
2-1	490+07	492+98	LT	291				2	35
3-1	490+07	493+06	RT	299				2	35
4-1	490+07	496+00	RT	622		10	1		
5-1	493+02	500+18	LT	741		10	1		
6-1	493+02	501+00	LT	807	10		1		
7-1	493+00	501+00	RT	799	10				
8-1	500+00	501+00	LT	100		4	1		
Totals				3982	20	34	5	4	70

Item No.	Station		Side	I-8		I-14		I-2		I-10		I-1		I-15		I-10	
	From	To		16" 2' 2" Catch Basin	16" 6" Catch Basin	Std. 14" Gutter Type I Modified As per plan	Masonry	Channel Protection	Pipe Class F-1	12" 15" Type (Deep)	Guard Rail	Steel Beam Standard Type	Width Area	Sodding	Width Area	L.F. S.V.	
				Each	Lin. Ft.	Cu. Yds.			Lin. Ft.	Lin. Ft.							
1-1	493+00		RT	1	10	0.26	2.2			85						1.5	7
2-1	500+20		LT	1		0.23	2.2			47						1.5	7
1-1	490+00	491+35	LT														135
2-1	490+00	490+25	RT														25
Totals				1	1	10	0.49	4.4		47	85						14

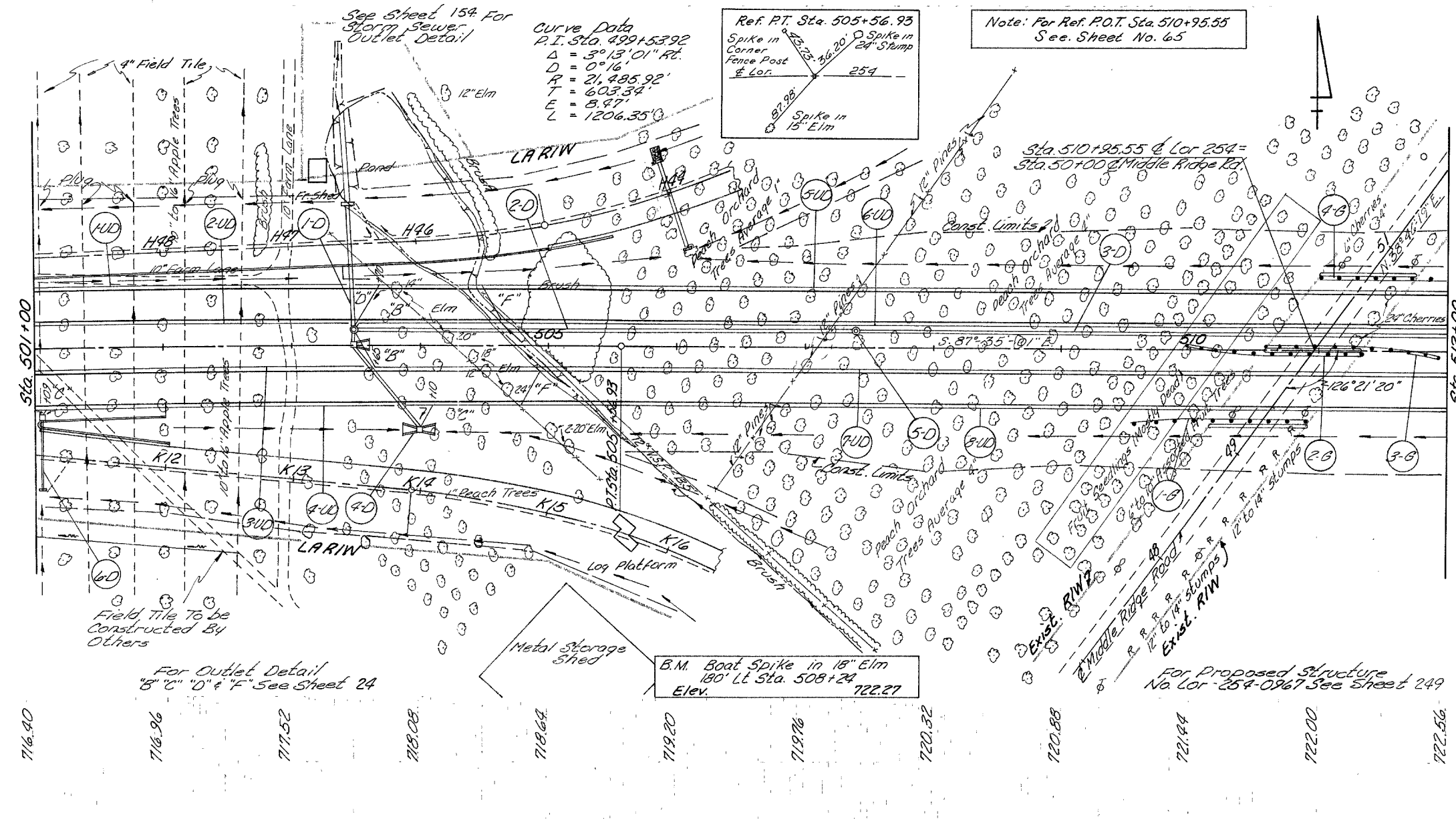


B.M. Boat Spike in 14" Apple  
224' Lt. Sta. 498+11  
Elev. 709.83

Excavation	= 1450 Cu. Yds.
Embankment	= 22,630 Cu. Yds.
Embankment +18%	= 26,703 Cu. Yds.
Seeding	= 13,204 Sq. Yds.

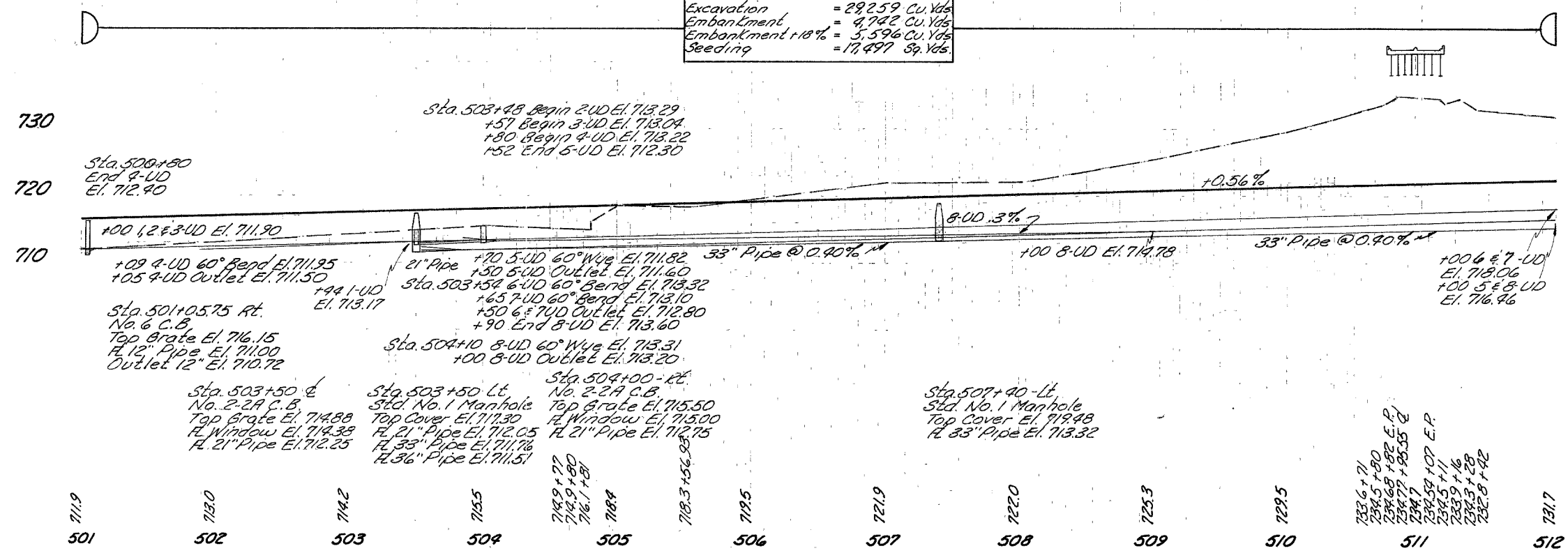
Sta. 490+05  
42" Pipe  
H. Inv. Rt. El. 702.80  
H. Outlet Lt. El. 702.04

LOR-254-4.08 B



Item No.	Station		Side	6" Pipe Class I-3		6" Pipe Class F-4		6" Pipe Class F-1		Pipe Spec. Class F-1		Pipe Spec. Class I-3	
	From	To		Shallow Lin. Ft.	Deep Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each		
												Wye	Wye Bend
1UD	501+00	503+44	LT	244									
2UD	501+00	503+48	LT	248									
3UD	501+00	503+57	RT	257									
4UD	500+80	503+80	RT	300									
5UD	503+52	512+00	LT		848		10	30		1			
6UD	503+50	512+00	LT		846		6					1	
7UD	503+50	512+00	RT		858		10						1
8UD	503+90	512+00	RT				850	10				2	
Totals				2753	1698	42	30			1		3	2

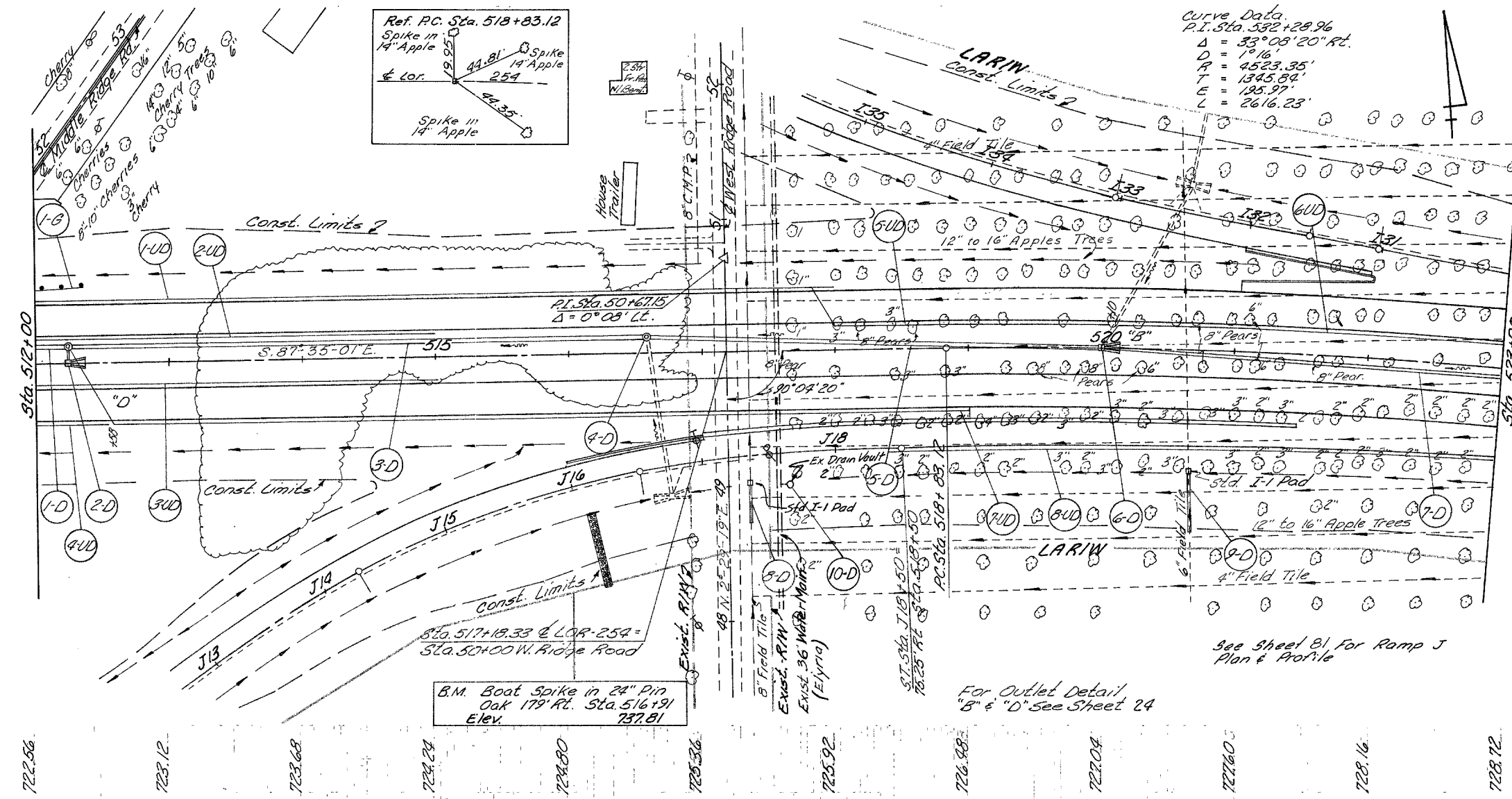
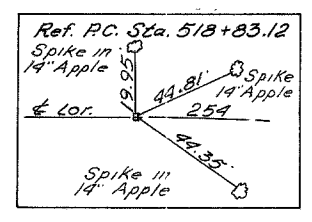
Item No.	Station		Side	I-1 Class E-1 Pipe		I-1 I-8 Class F-1 Pipe		I-14 Type I Dugout		I-8 Batching		L-10		I-15	
	From	To		21" Lin. Ft.	33" Lin. Ft.	21" Lin. Ft.	36" Lin. Ft.	12" Basin	125 Per Plan	Each	Each	Width	Area	Lin. Ft.	Lin. Ft.
1-D	503+50	504+00	RT	12			112		10	1	1	1.5	5		
2-D	503+50	504+00	LT		390										
3-D	507+40	512+00	LT		460				84						
4-D	503+50	504+00	RT						20	1		1.5	10		
5-D	507+40		LT												
6-D	504+5.75		RT				51	1				1.5	5		
1-B	509+84	510+91.5	RT												137.5
2-B	509+96	511+33.5	RT												112.5
3-B	510+57	511+94.5	LT												112.5
4-B	510+99	512+00	LT												101
Totals				12	880	84	112	51	1	30	2	2	20	483.5	50



LOR - 254 - 4.08 B

See Sheet 77 For Ramp I  
Plan & Profile

Curve Data.  
P.I. Sta. 532+28.96  
 $\Delta = 33^\circ 08' 20''$  RT.  
D = 19.16'  
L = 4523.35'  
T = 1345.84'  
E = 125.97'  
L = 2616.23'

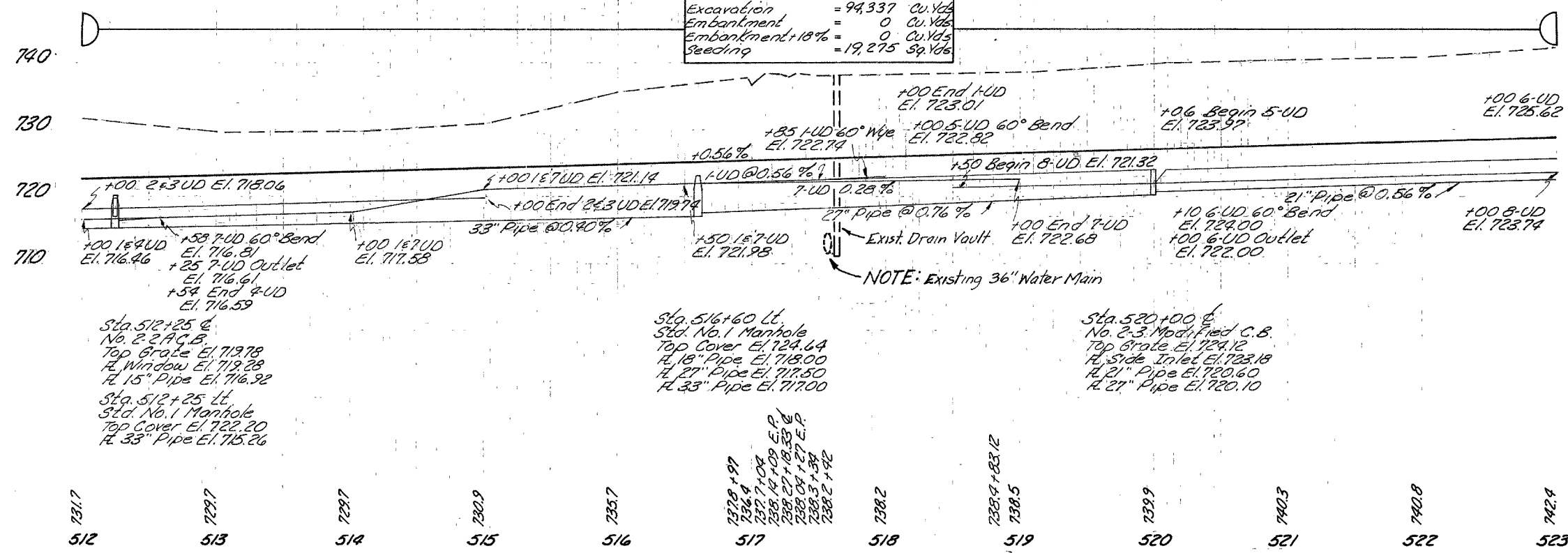


Item No.	Station		Side	Class I-3 6" Pipe		Class I-3 6" Pipe Sec. M.G.A.(h)	Class I-3 6" Pipe	Pipe Specials		I-15 Guard Rail / Steel Beam Standard Type (Deep)		
	From	To		Shallow Lin. Ft.	Deep Lin. Ft.			Class I-3 6" Band Each	Class J-1 6" Band Each			
1-UD	512+00	518+00	LT.		200	900						
2-UD	512+00	515+00	LT.	300								
3-UD	512+00	515+00	RT.	300								
4-UD	512+00	512+54	RT.		54							
5-UD	517+85	520+06	LT.			206	35		1	1		
6-UD	520+00	523+00	LT.			229	10		1	1		
7-UD	512+25	519+00	RT.		142	500	58		1	1		
8-UD	518+50	523+00	RT.			450						
1-B	512+00	512+65	LT.							36.5		
Totals				600	396	1855	93	20	1	2	2	36.5

\* See General Notes

Item No.	Station		Side	Class E-1 Pipe			Sodding Width Area	I-8 Standard Catch Basin No. 229 Mod	I-8 Plain Vault 15" Class II 8" Pipe	I-1 15" Class II 8" Pipe	I-8 Standard No. 1 Manhole	I-14 Type I Paved Butler Modified As Per Plan			
	From	To		21" Lin. Ft.	27" Lin. Ft.	33" Lin. Ft.									
1-D	512+00	512+25	LT.			25									
2-D	512+25	516+60	LT.			435	1.5	5	1		12	1			
3-D	512+25	516+60	LT.									10			
4-D	516+60	516+60	LT.									1			
5-D	516+60	520+00	LT.			340						10			
6-D	520+00	520+00	LT.				1.5	5	1						
7-D	520+00	523+00	LT.			300									
8-D	517+34	517+34	RT.			10					29				
9-D	520+64	520+64	RT.			10					35				
10-D	517+62	517+62	RT.							1					
Totals				300	340	460	20	10	1	1	1	12	64	2	20

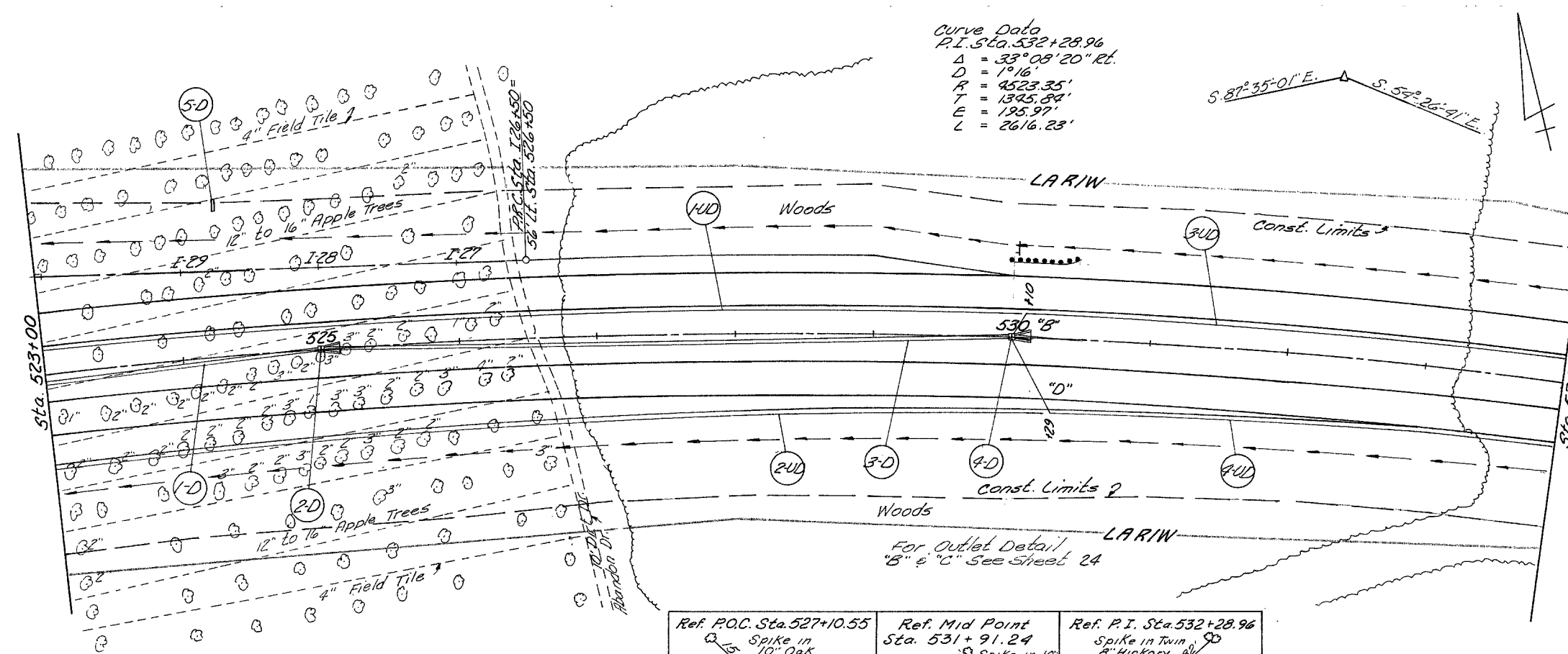
Excavation = 94,337 Cu.Yds  
Embankment = 0 Cu.Yds  
Embankment @ 18% = 0 Cu.Yds  
Seeding = 19,275 Sq.Yds



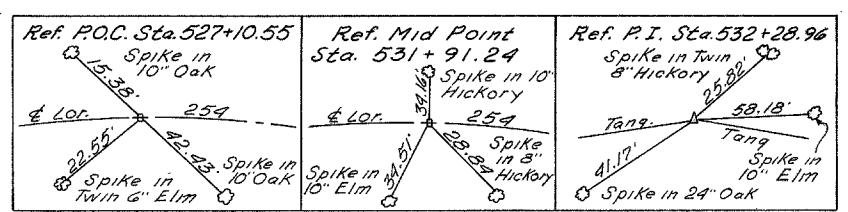


LOR-254- 4.08 B

Curve Data  
P.I. Sta. 532+28.96  
Δ = 33° 08' 20" Rt.  
D = 1° 16'  
R = 4523.35'  
T = 1395.84'  
E = 195.97'  
L = 2616.23'

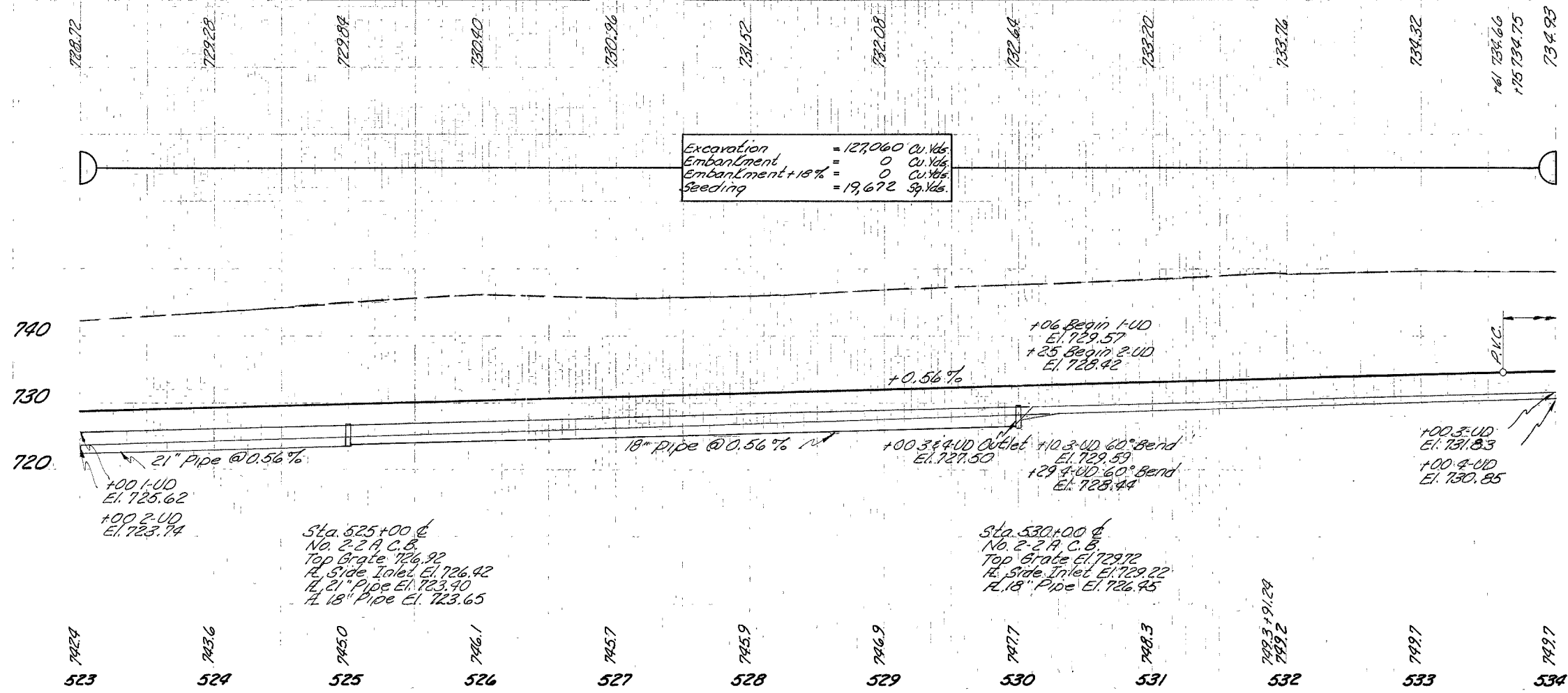


Item No.	Station		Side	I-1		I-5	
	From	To		6" Pipe Class I-3 Sec. M-6.9(h) Lin. Ft.	6" Pipe Class J-1 Lin. Ft.	6" Pipe Class F-4 Lin. Ft.	Pipe Specials Class J-1 6" 60° Bend Each
1-UD	523+00	530+06	LT.	706			
2-UD	523+00	530+25	RT.	725			
3-UD	530+00	534+00	LT.	399	10		1
4-UD	530+00	534+00	RT.	371	52	10	1
Totals				2201	52	20	1



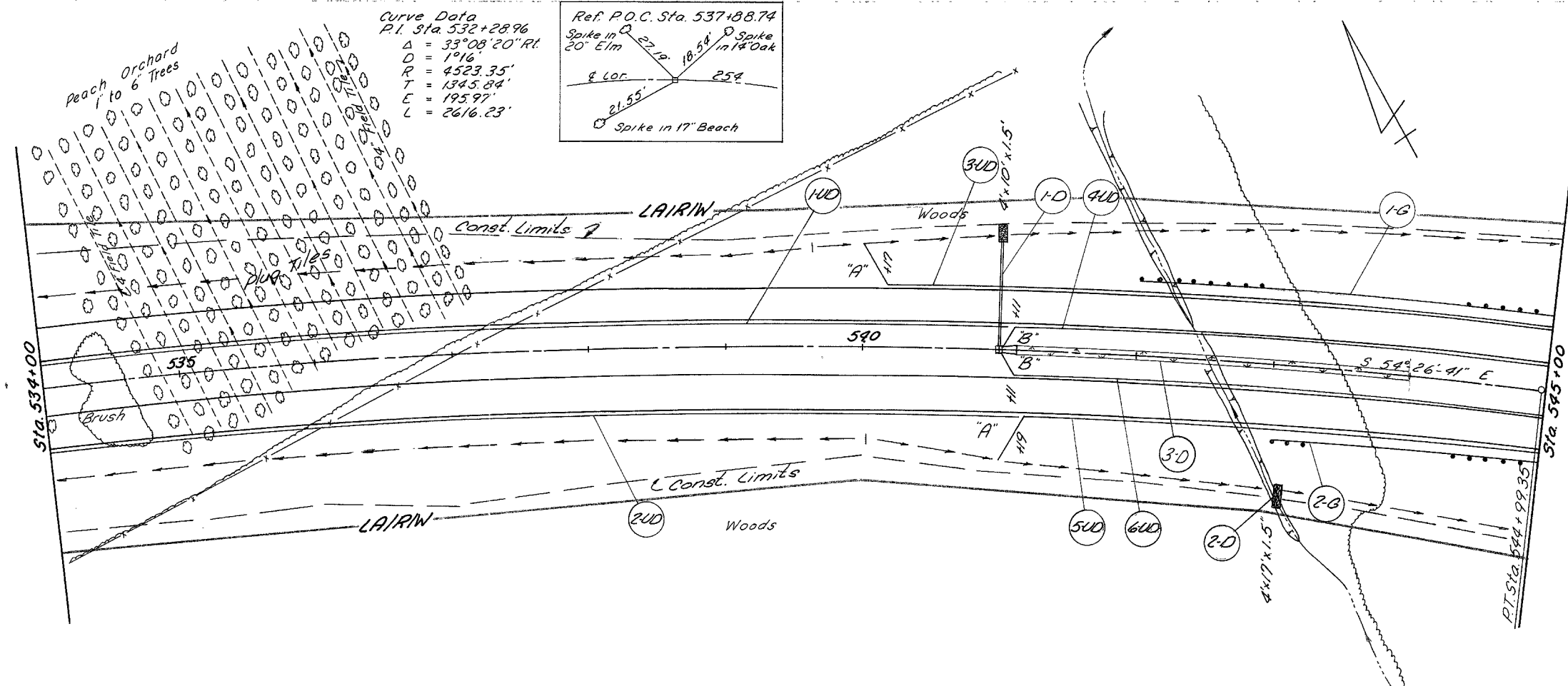
B.M. Boat Spike in 14" Apple  
149' Rt. Sta. 525+42  
Elev. 743.40

Excavation = 127,060 Cu. Yds.  
Embankment = 0 Cu. Yds.  
Embankment + 18% = 0 Cu. Yds.  
Seeding = 19,672 Sp. Yds.



Item No.	Station		Side	L-10	I-1	I-B	I-1A	I-1
	From	To		Soeding Width Area 18" 21" L.F. S.Y.	Class E-1 Standard Catch Basin No. 2-2-A Lin. Ft.	Type 1 Paved Butte Modified As Per Plan Lin. Ft.	Class F-4 Pipe 8" Sec. M-6.9(c) Lin. Ft.	
1-D	523+00	525+00	LT.		200			
2-D	525+00		RT.	1.5 5		1	10	
3-D	525+00	530+00	LT.		500			
4-D	530+00		RT.	1.5 5		1	10	
5-D	523+74		LT.					10
Totals				10	500	200	2	20

LOR-254-4.08 B



Curve Data  
 P.I. Sta. 532+28.96  
 $\Delta = 33^\circ 08' 20''$  Rl.  
 $D = 1916'$   
 $R = 4523.35'$   
 $T = 1345.84'$   
 $L = 195.97'$   
 $L = 2616.23'$

Ref. P.O.C. Sta. 537+88.74  
 Spike in Q 22' in 18" Oak  
 Spike in 17" Beach

Item No.	Station		Side	I-1				
	From	To		Class I-3 6" Pipe Shallow Lin. Ft.	Class I-3 6" Pipe Sec. M6.9(h) Lin. Ft.	Class F4 6" Pipe Lin. Ft.	Class F4 5" Pipe Sec. M6.9(c) Lin. Ft.	I-5 Pipe Specials Class I-3 6" Bend Each
1UD	534+00	541+07	Lt.	207	500			
2UD	534+00	541+15	Rl.	215	500			
3UD	540+00	545+00	Lt.	494		10	10	1
4UD	541+00	545+00	Lt.	399		10		1
5UD	541+00	545+00	Rl.	405			10	1
6UD	541+00	545+00	Rl.	399		10		1
Totals				2119	1000	30	20	4

Item No.	Station		Side	I-15						
	From	To		I-8 No. 22-A Standard Catch Basin Each	I-2 Masonry Cu. Yds.	I-10 Dumped Rock Channel Protection Cu. Yds.	I-11 Class I-1 15" Pipe Lin. Ft.	I-14 Standard Paved Gutter Type I Mod As Per Plan Lin. Ft.	I-15 Guard Rail Steel Beam Std. Type (Deep) Lin. Ft.	L-10 Sodding Width Area L.F. Sq. Ft.
1-D	541+00		Lt.	1	0.26	2.2	81	10		1.5 7
2-D	543+07		Rl.			3.7				
3-D	541+00	544+00	Lt.							6.0 200
1-G	542+07	545+00	Lt.						296	
2-G	543+03	545+00	Rl.						195	
Totals				1	0.26	5.9	81	10	491	207

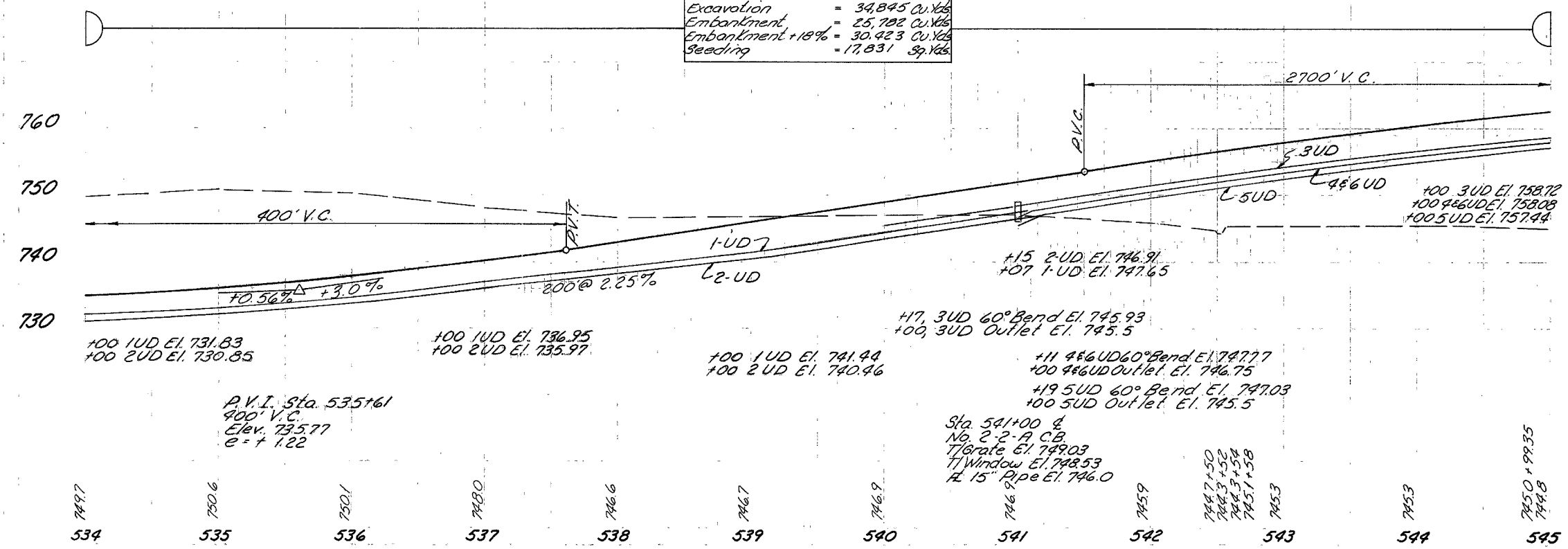
B.M. Boat Spike in 30" Walnut  
 144' Rl. Sta. 534+40  
 Elev. 752.06

For Outlet Details  
 "A" & "B" See Sheet No. 24

B.M. Boat Spike in 18" Oak  
 397' Lt. Sta. 543+94  
 Elev. 741.55

734.93	735.14	735.40	735.70	736.03	736.40	736.81	737.25	737.73	738.25	738.82	739.42	740.05	740.73	741.44	742.19	742.94	745.94	748.94	751.94	753.44	754.18	754.91	755.63	756.33	757.02	757.69	758.35	759.00	759.63	760.25	760.85	761.44	762.02	762.58
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

Excavation = 34,845 Cu. Yds.  
 Embankment = 25,702 Cu. Yds.  
 Embankment + 18% = 30,423 Cu. Yds.  
 Seeding = 17,831 Sp. Yds.



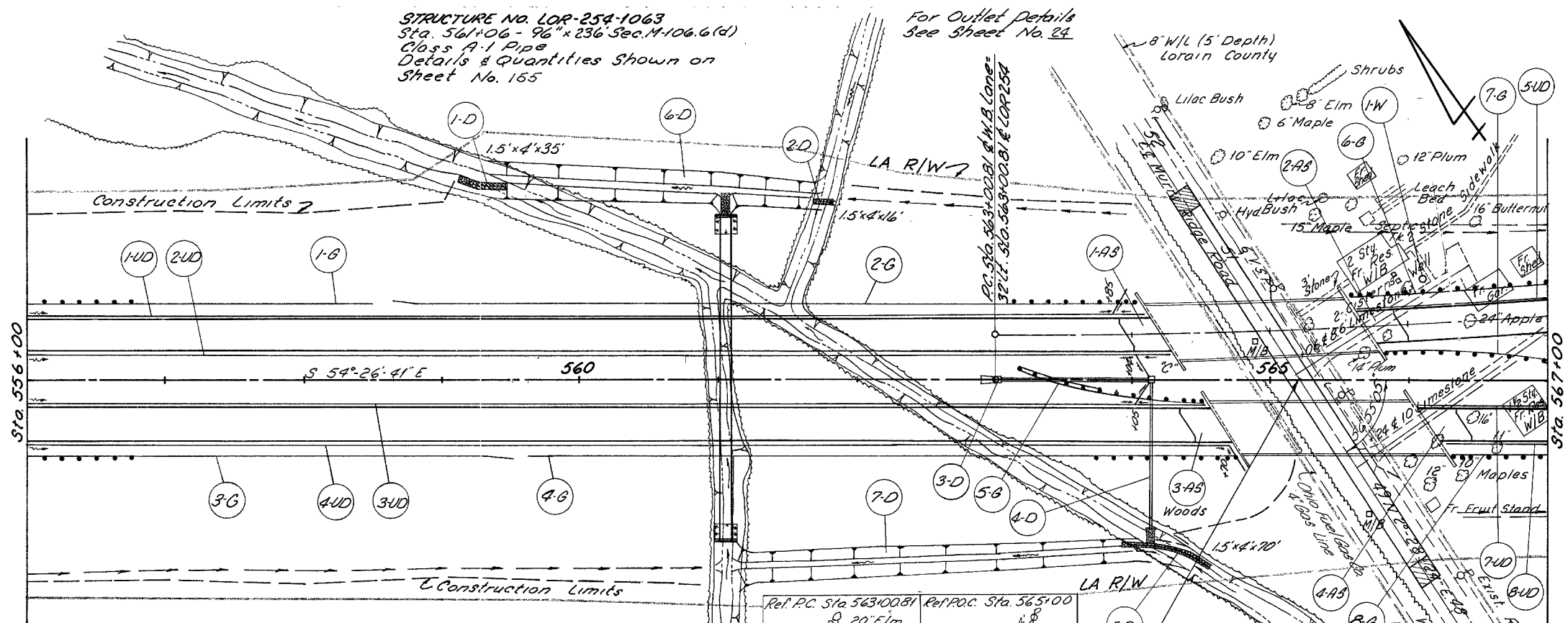


MICROFILMED  
AUG 20 1965

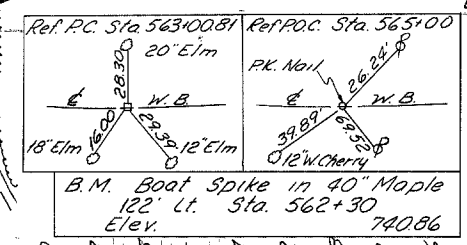
LOR-254-4.08 B

STRUCTURE NO. LOR-254-1063  
Sta. 561+06 - 96" x 236" Sec. M-106.6(d)  
Class A-1 Pipe  
Details & Quantities Shown on  
Sheet No. 165

For Outlet Details  
See Sheet No. 24



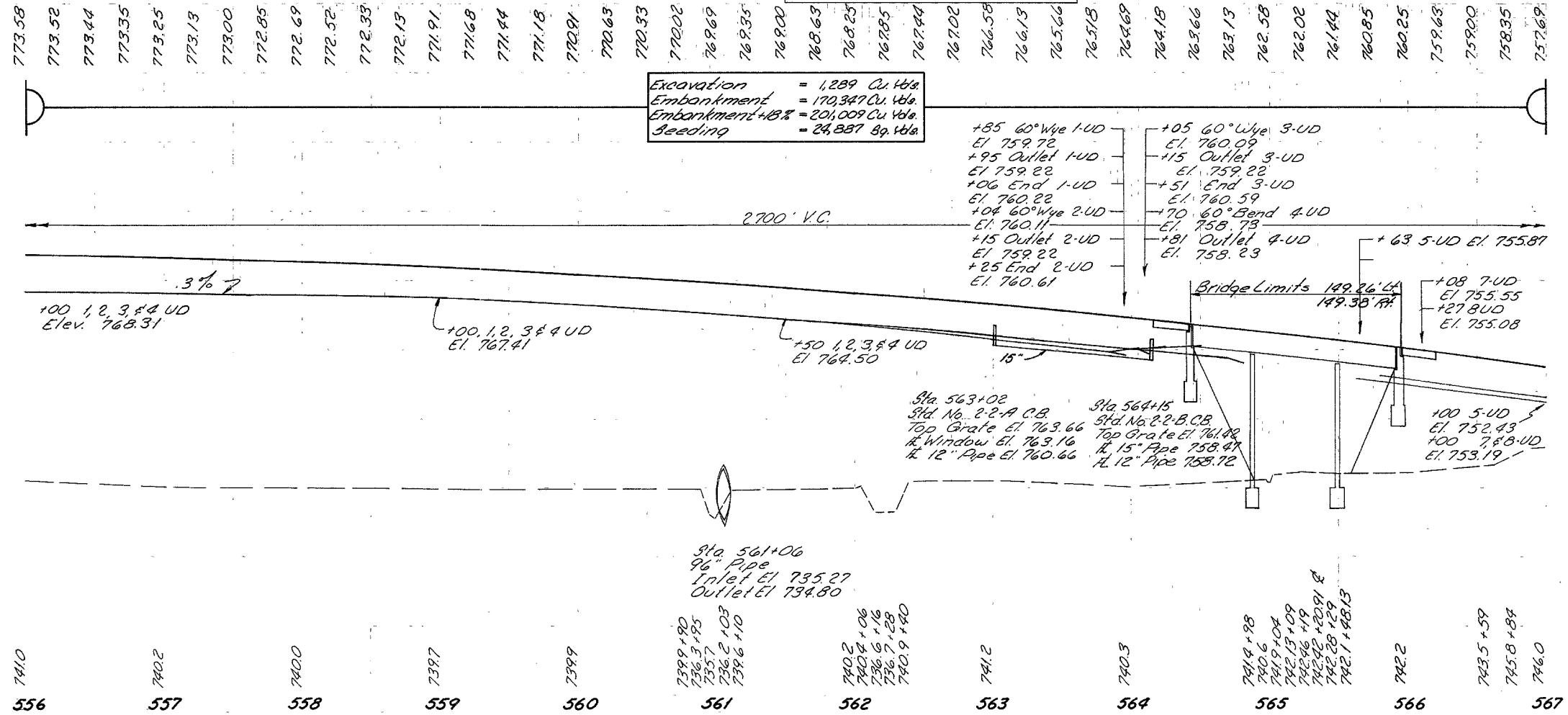
**PROPOSED STRUCTURE - NO. LOR-254-1069 L&R**  
 TYPE: Cont. Steel Beam wire-reinforced concrete Deck and Substructure  
 SPANS: 42'-0" 60'-0" 42'-0"  
 ROADWAY: 40'-0" Top Parapets  
 LOAD FREQUENCY: CF 400 (S7)  
 SKEW: 31° 08' 13" R/L Left Bridge  
 33° 04' 55" R/L Right Bridge  
 WEARING SURFACE: 1" Monolithic Surface  
**APPROACH SLABS:**  
 45'-1'-34" (25' long)  
**ALIGNMENT:**  
 100' Curve left - Lt.  
 Bridge Tangent - Rt. Bridge  
**SUPERELEVATION:**  
 .032' / ft - Lt. Bridge Only



Sta. 565+20.91 @ LOR-254 -  
Sta. 50+00 Murray Ridge Rd.

Item No.	Station		Side	I-1		I-5		I-15		I-7	Specials	
	From	To		Class I-3 Pipe 6" Shallow Lin. Ft.	Class F-4 Pipe 6" Wye 60" Bend Lin. Ft.	Pipe Specials Class I-3 60" Bend Wye Each	Guard Rail 3rd Type (deep)	Rail Beam Barrier Type (deep)	Reinf. Conc. Approach Slabs 7'-13" Sp. Hds.			Drilled Water Wells Abandoned Each
1-W	566+09		Lt.								1	
1-UD	556+00	564+06	Lt.	817		10						
2-UD	556+00	564+25	Lt.	836	10							
3-UD	556+00	564+51	Rt.	850	20							
4-UD	556+00	564+70	Rt.	871	10	10	1					
5-UD	565+63	567+00	Lt.	137								
7-UD	566+08	567+00	Rt.	92								
8-UD	566+27	567+00	Rt.	73								
1-B	556+00	558+51.5	Lt.					251.5				
2-B	558+65.5	564+03	Lt.					537.5				
3-B	556+00	559+33.5	Rt.					353.5				
4-B	559+63.5	564+76	Rt.					512.5				
5-B	563+18	564+50	Rt.					75	62.5			
6-B	565+59	567+00	Lt.					141				
1-AS	563+25.65	564+20.65	Lt.							66.7		
2-AS	565+68.91	565+94.91	Lt.							66.7		
3-AS	564+40.12	564+63.12	Rt.							66.7		
4-AS	566+14.51	566+39.51	Rt.							66.7		
7-B	565+83	567+00	Rt.					112.5	4.5			
8-B	566+32	567+00	Rt.					68				
Totals				3676	40	20	1	3	2051.5	67.0	266.1	1

Item No.	Station		Side	I-1		I-5		I-2	E-3	I-8		I-10	I-11	L-10
	From	To		Class E-1 12" Pipe Lin. Ft.	Class F-4 15" Pipe L.F.	Class J-1 15" Pipe L.F.	Pipe Specials Class F-4 15" x 15" 25" Bend Each			Masonry Channel Excavation C.Y.	Channel Excavation C.Y.			
1-D	559+12	559+47	Lt.											77
2-D	561+68	561+84	Lt.											36
3-D	562+90	564+15	Rt.	113						1		10	1.5	7
4-D	564+15		Rt.		55	60	2	.26		1	2.2		1.5	2
5-D	563+90	564+60	Rt.											15.5
6-D	559+33	561+75	Lt.							744				
7-D	561+11	564+40	Rt.							602				
Totals				113	55	60	2	.26	1346	1	1	290	10	9



Excavation = 1,289 Cu. Yds.  
 Embankment = 170,347 Cu. Yds.  
 Embankment + 48% = 201,009 Cu. Yds.  
 Seeding = 24,387 Sq. Yds.

+85 60° Wye 1-UD  
El. 759.72  
+95 Outlet 1-UD  
El. 759.22  
+06 End 1-UD  
El. 760.22  
+04 60° Wye 2-UD  
El. 760.11  
+15 Outlet 2-UD  
El. 759.22  
+25 End 2-UD  
El. 760.61

+05 60° Wye 3-UD  
El. 760.09  
+15 Outlet 3-UD  
El. 759.22  
+51 End 3-UD  
El. 760.59  
+70 60° Bend 4-UD  
El. 758.73  
+81 Outlet 4-UD  
El. 758.23

+63 5-UD El. 755.87  
+08 7-UD El. 755.55  
+27 8-UD El. 755.08

Sta. 563+02  
Std. No. 2-2-A C.B.  
Top Grate El. 763.66  
R. Window El. 763.16  
R. 12" Pipe El. 760.66

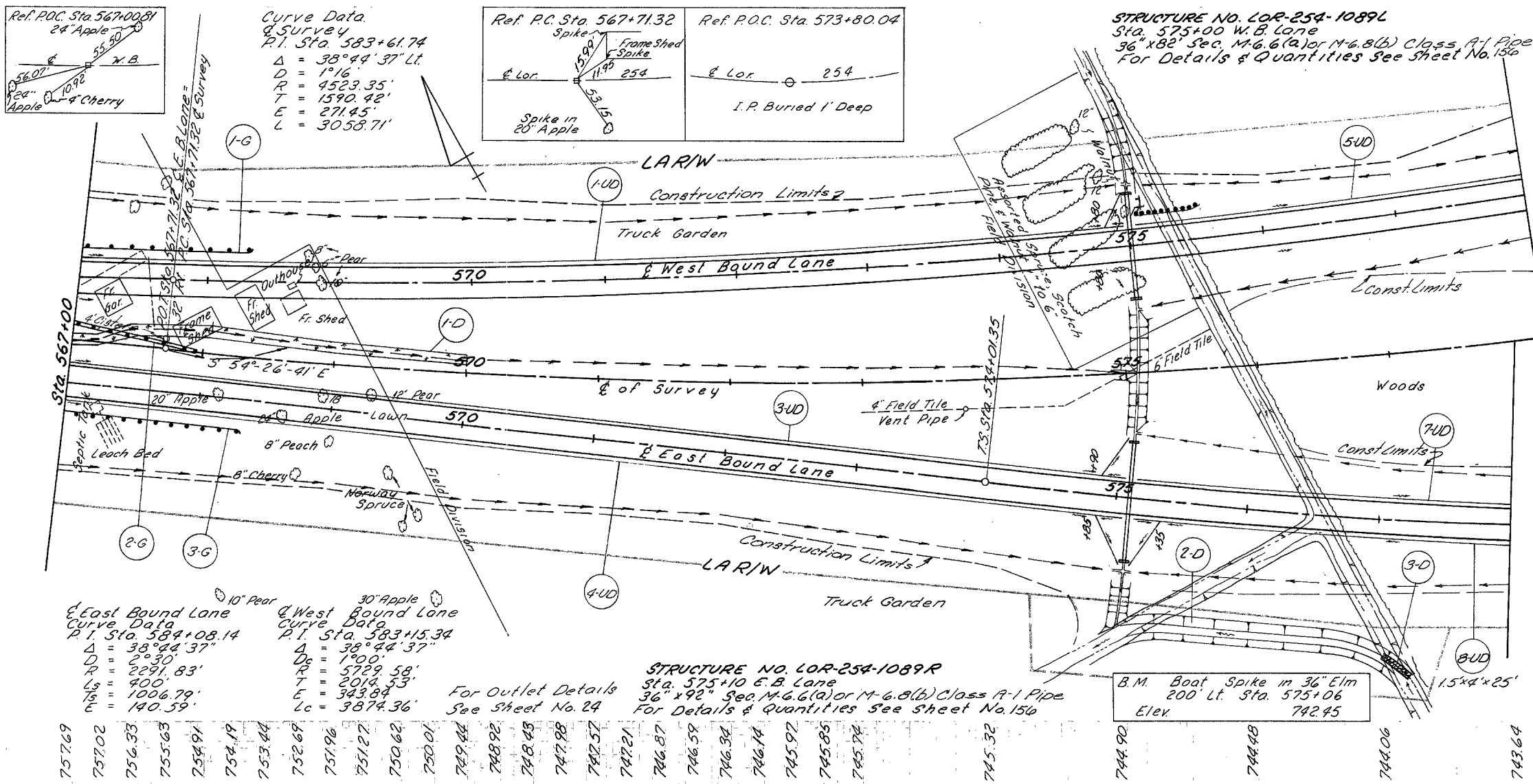
Sta. 564+15  
Std. No. 2-2-B C.B.  
Top Grate El. 761.48  
R. 15" Pipe 758.41  
R. 12" Pipe 758.72

100 5-UD El. 752.43  
100 7, 8-UD El. 753.19

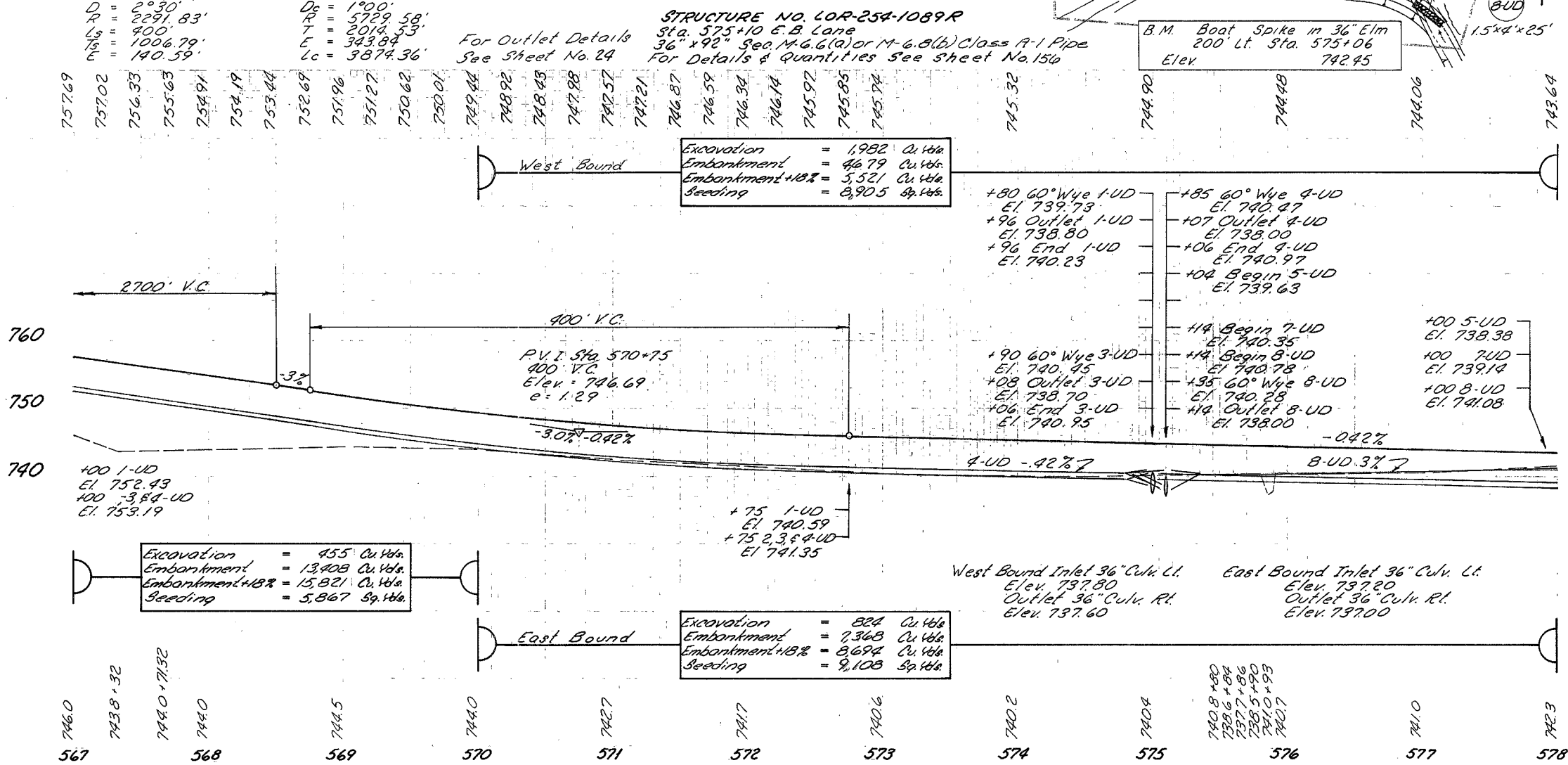
Sta. 561+06  
96" Pipe  
Inlet El. 735.27  
Outlet El. 734.80

741.0 740.2 740.0 739.7 739.9 739.9 739.9 740.2 740.4 740.6 740.8 741.0 741.2 741.2 740.3 741.4 741.6 741.8 742.0 742.2 742.4 742.6 742.8 743.0 743.2 743.4 743.6 743.8 744.0

LOR-254-4.08 B

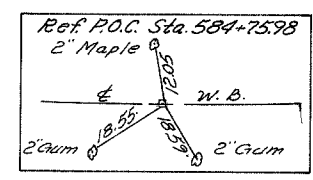
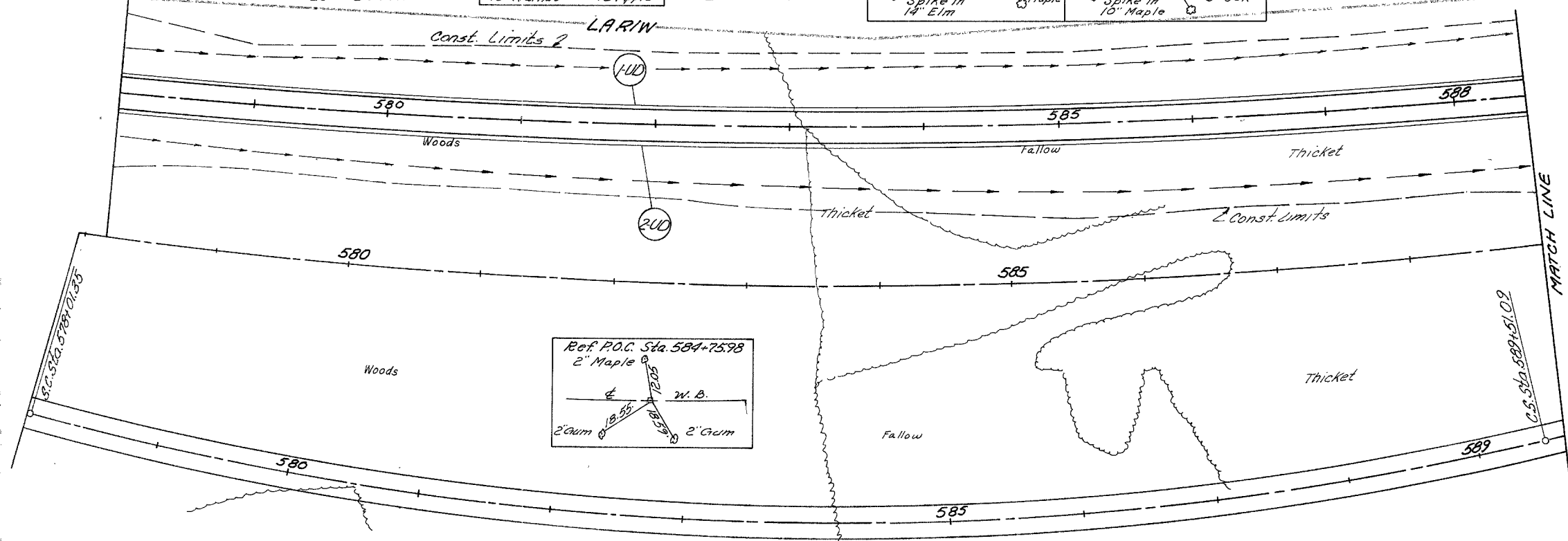
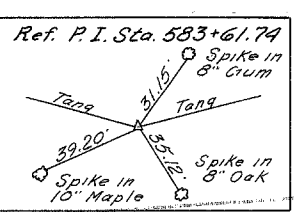
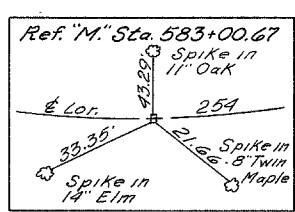
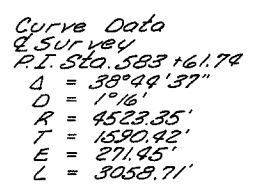
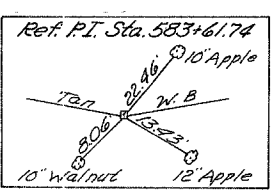
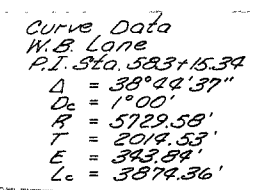
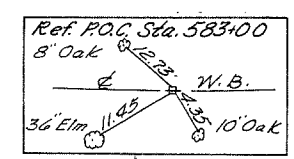


Item No	Station	Side	I-1		I-5		I-10		E-3		L-120		I-15	
			Class F.3 6" Pipe Shallow Lin. Ft.	Class F.4 Sec. M.6.6(a) 5" Pipe Lin. Ft.	Pipe Specs Class I-3 6" 60° Wye Each	Dumped Road Channel Excavation C.Y.	Channel Excavation C.Y.	Width L.F.	Area S.Y.	Guard Steel Type (deep) Lin. Ft.	Rail Beam Barrier Type (deep) Lin. Ft.			
1-G	567+00	568+34	LI.											134
2-G	567+00	567+91	E											95.5
3-G	567+00	568+32	RI.											132
1-UD	567+00	574+96	LI.	818	10	1								
3-UD	567+00	575+06	RI.	832	10	1								
4-UD	567+00	575+06	RI.	839	10	1								
5-UD	575+04	578+00	LI.	296										
7-UD	575+14	578+00	RI.	286										
8-UD	575+14	578+00	RI.	918	10	1								
1-D	567+00	570+00	LI.							6	200			
2-D	575+15	577+30	RI.							303				
3-D	577+09	577+32	RI.				5.6							
				3389	40	4	5.6	303		200	166			95.5



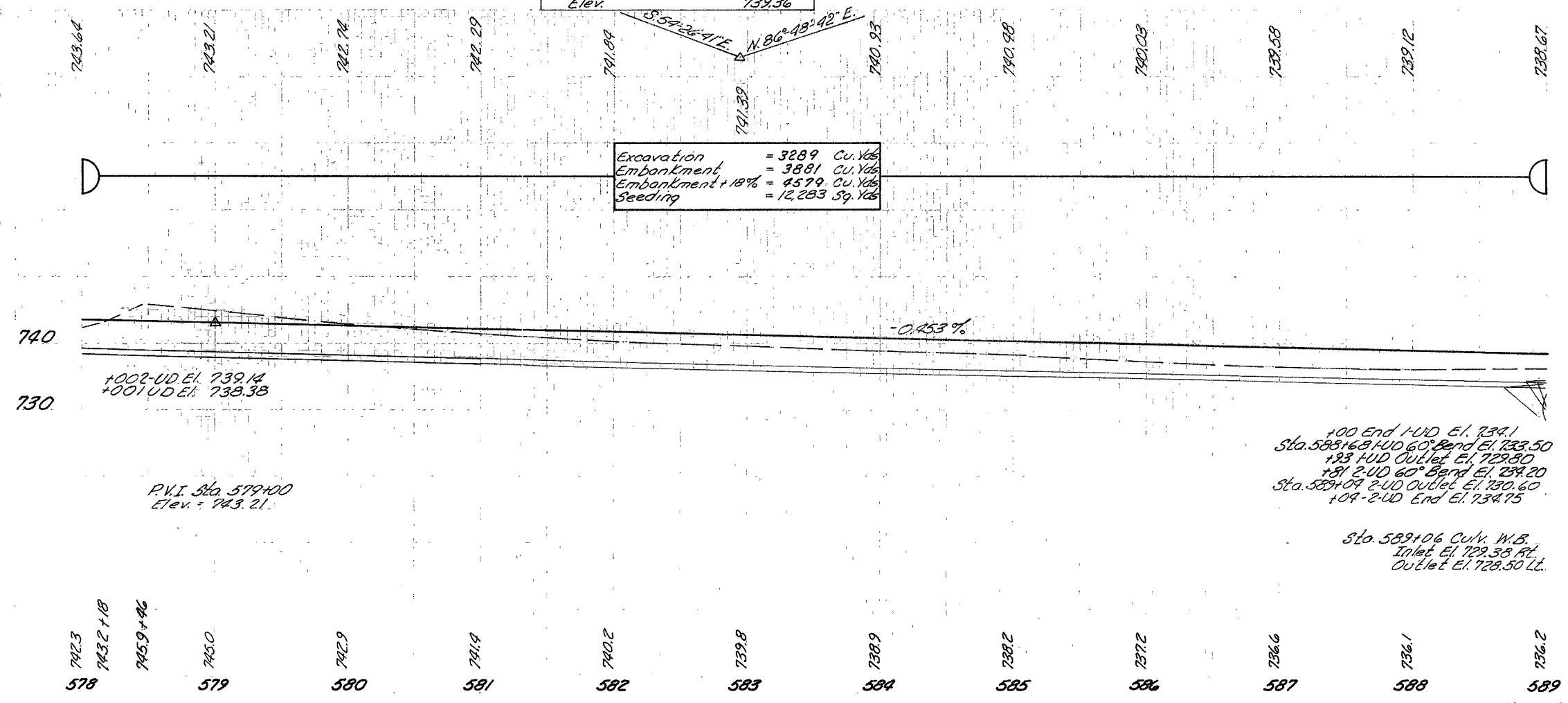


LOR - 254 - 4.08 B



B.M. Boat Spike in 14" Maple  
184' Lt. Sta. 582+57  
Elev. 739.36

See Next Sheet for Continuation  
of Plan of West Bound Lane to  
Sta. 589+00. Profile Shown Below.

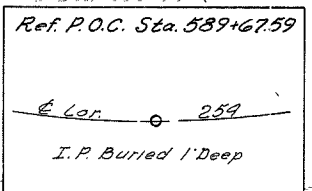


Item No.	Station		Side	I-1		I-5					
	From	To		Class I-3 8" Pipe 6" Pipe Class I-4 Sec. M-6.4(C) Shallow Lin. Ft.	Pipe Class I-5 6" 60° Wye Class I-3 Each						
HUD	578+00	589+00	Lt.	1140	10	1					
RUD	578+00	589+00	Rt.	1139	10	1					
Totals				2279	20	2					

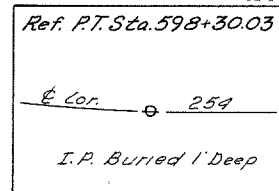
Sta. 589+06 Culv. W.B.  
Inlet El. 729.38 Rt.  
Outlet El. 728.50 Lt.

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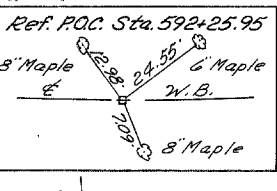
STRUCTURE NO. LOR-254-1116 W.B.  
Sta. 589+06 W.B. 88' of 42" Class A-1  
Pipe, Sec. M-6.6(a) For Details &  
Quantities See Sheet No. 157



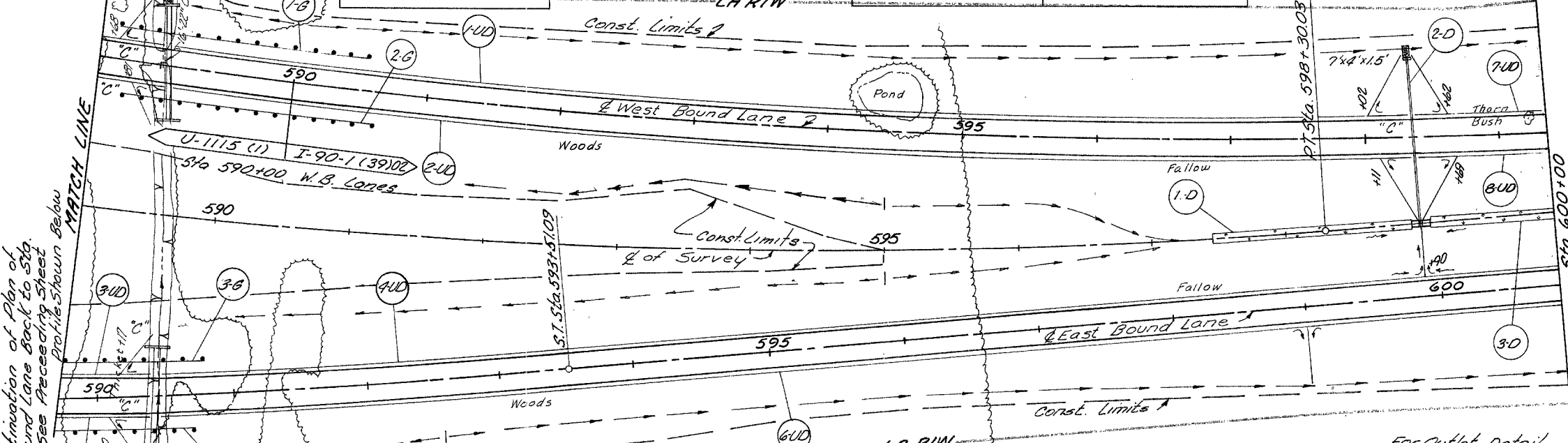
Curve Data  
C.G. of Survey  
P.I. Sta. 589+67.59  
Δ = 38°44'37"  
R = 4523.35'  
T = 1590.92'  
E = 271.95'  
L = 3058.71'



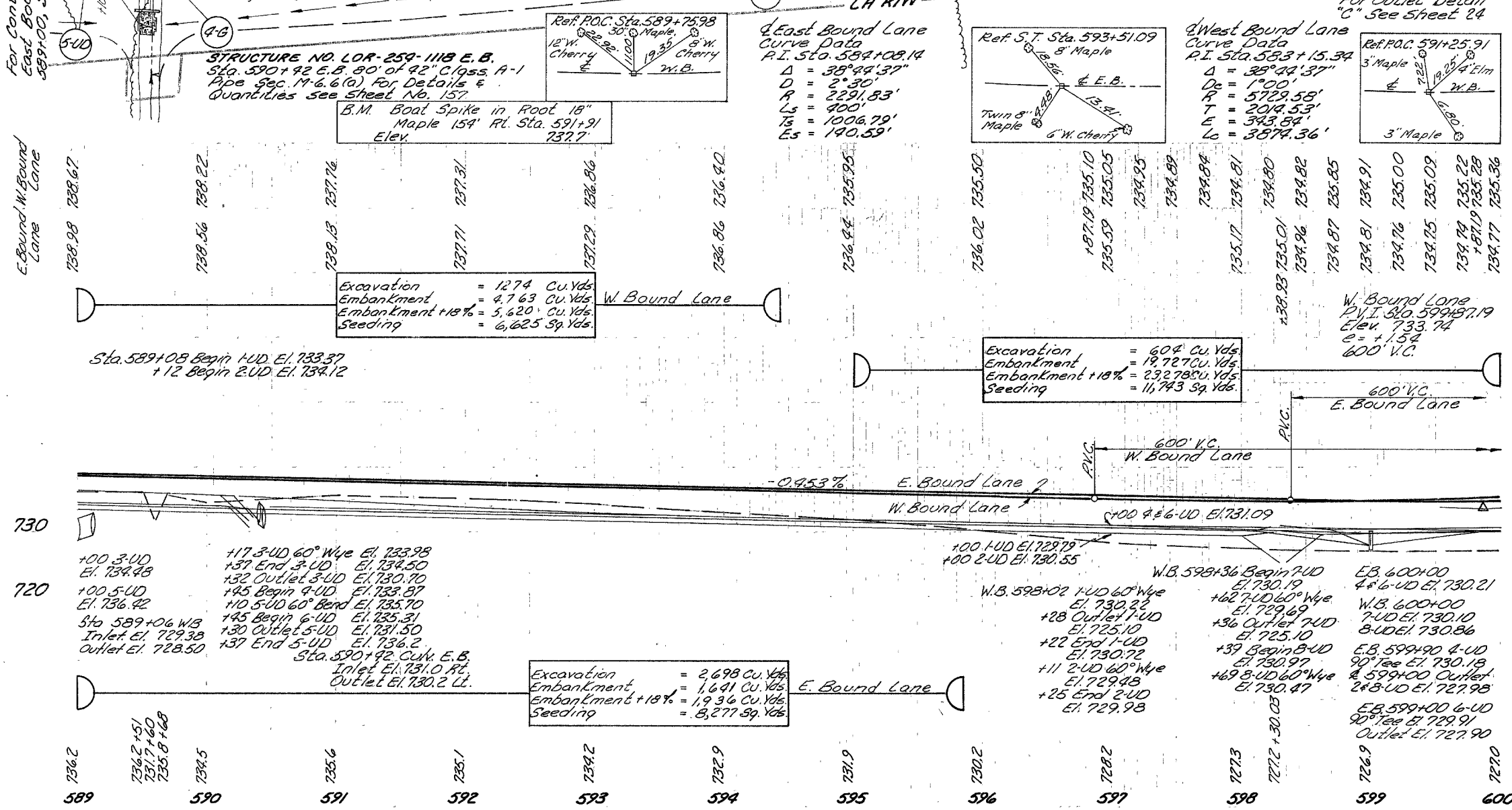
Ref. P.T. Sta. 598+30.03  
Ref. P.O.T. Sta. 599+05.49  
Ref. P.O.C. Sta. 592+25.95  
Ref. P.O.C. Sta. 594+75.98



Ref. P.O.C. Sta. 592+25.95  
Ref. P.O.C. Sta. 594+75.98



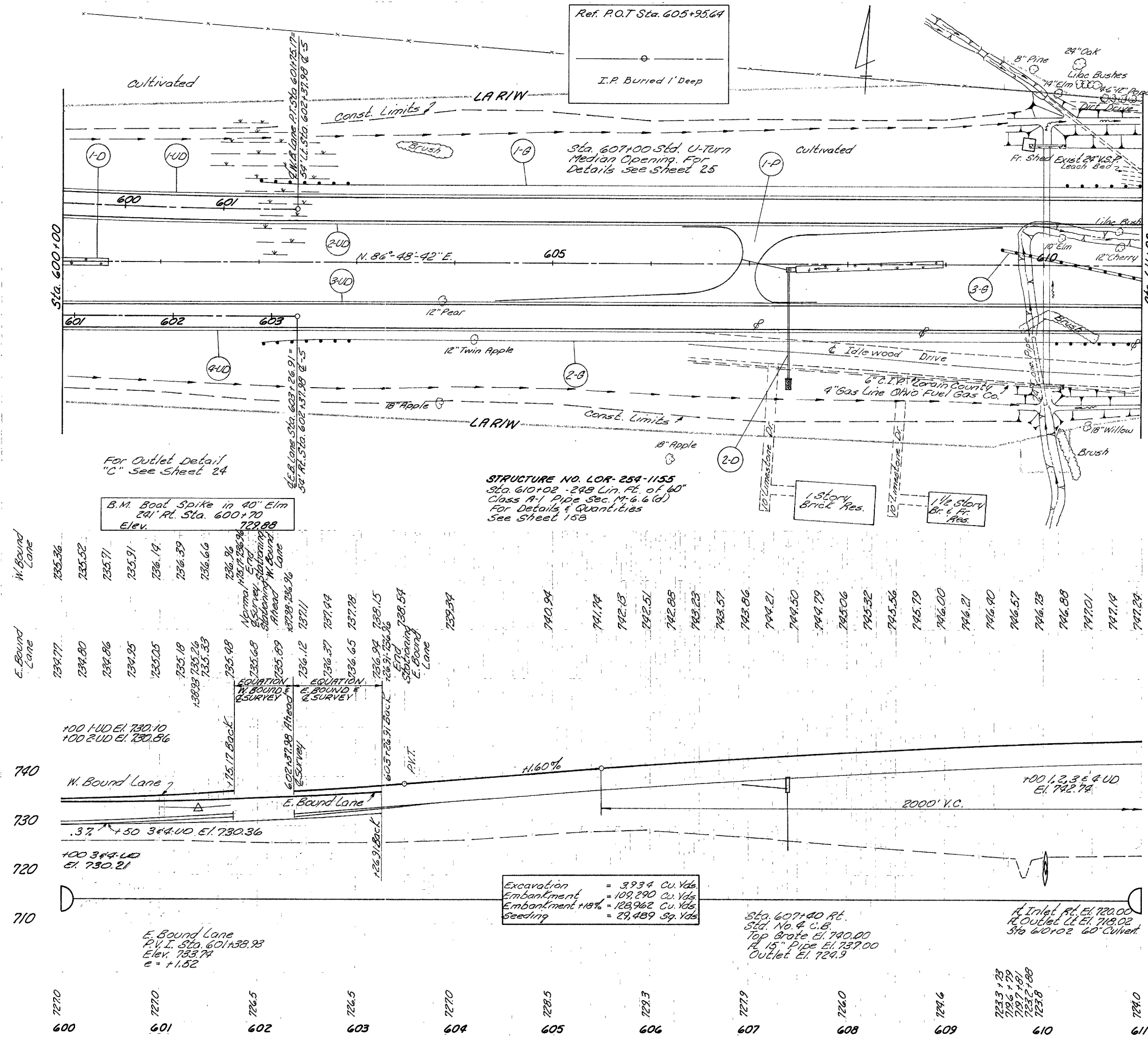
Item No.	Station	Side	I-1		I-5	
			Class I-3 6" Pipe	Class F4 6" Pipe	Class F4 8" Pipe Sec. M-6.6(c)	Pipe Special Class I-3 6" x 6" Wye Tee Each
1-D	589+08	W.B.	965		10	1
2-D	589+12	W.B.	968	10		1
3-D	589+00	W.B.	158		10	1
4-D	590+45	W.B.	984	10		1
5-D	589+00	W.B.	165		10	1
6-D	590+45	W.B.	983	10		1
7-D	598+36	W.B.	205	10		1
8-D	598+39	W.B.	206	10		1
Totals			4634	30	50	6 2



Item No.	Station	Side	I-8	I-10	I-2	L120	I-1	I-15
			Standard Catch Basin No. 4	Dumped Rock Channl. Protection	Masonry	Jute Matting	Pipe Class J-1	Guard Rail St. Beam Std. Type (Deep)
1-D	589+43	W.B.				B	133	
2-D	599+00	W.B.	1	1.6	.26	B	83	187.5
3-D	599+07	W.B.						187.5
1-B	588+66	W.B.						112.5
2-B	588+75	W.B.						109.5
3-B	589+65	W.B.						597.0
4-B	589+65	W.B.						
Totals			1	1.6	.26	216	124	



LOR-254-4.08 B

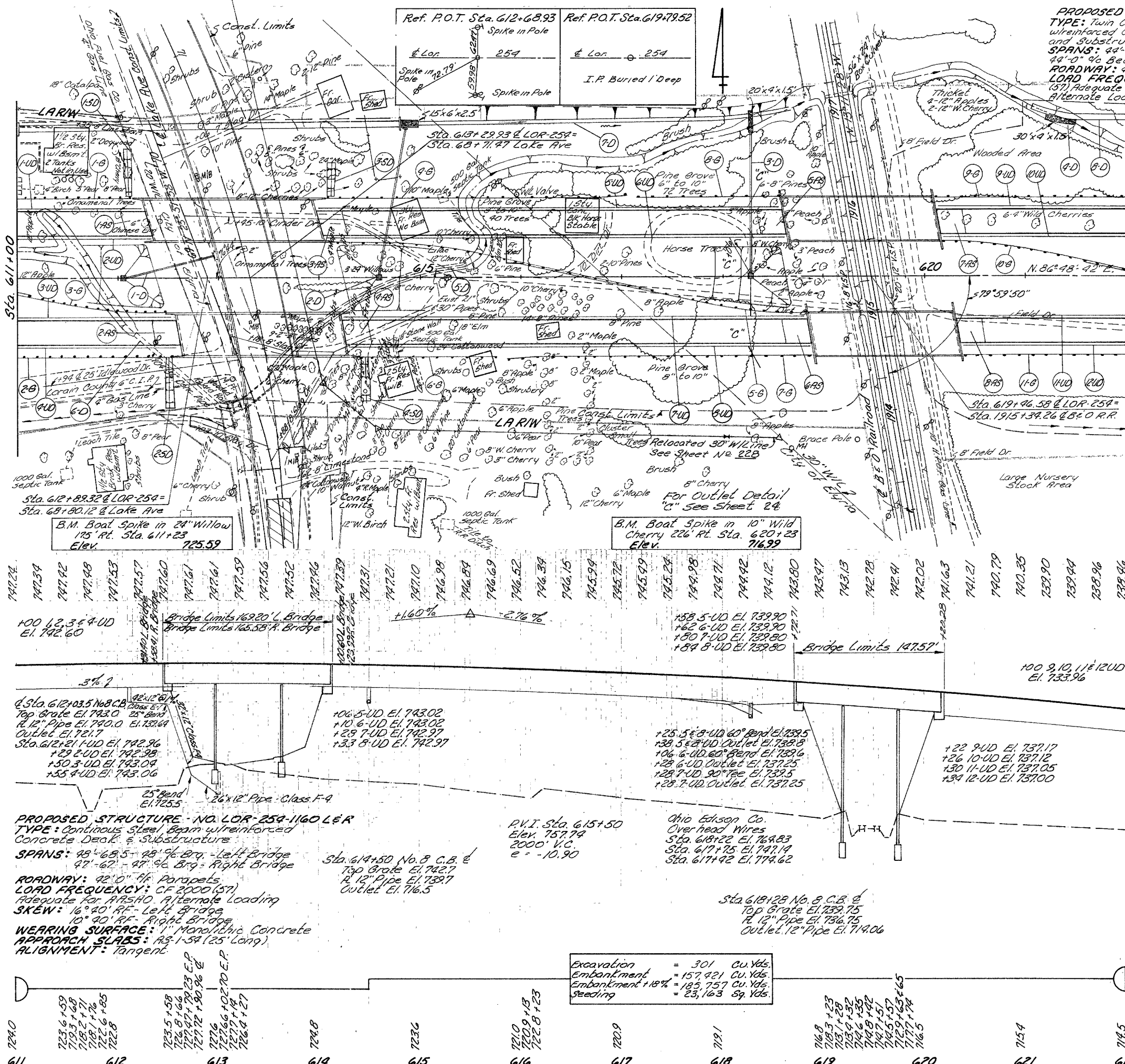


Item No.	Station	Side	I-1		I-8	I-5	L-120	I-10	I-2
			Class I-3 6" Pipe	Shallow					
From	To		Lin. Ft.	Lin. Ft.	Each	L.F.	S.Y.	Cu. Yds.	
1-UD	600+00	RT	1037						
2-UD	600+00	LT	1037						
3-UD	600+00	RT	1179	10					
4-UD	600+00	LT	1179	10					
1-D	600+10	RT				8	42		
2-D	607+40	RT		35	80	1	2	8	133
Totals			4524	20	35	80	1	2	175

Item No.	Station	Side	I-15		L-10
			Guard rail Steel Standard Type (Deep)	Guard rail St. Beam Barrier Type (Deep)	
From	To		Lin. Ft.	Lin. Ft.	Width Area L.F. S.Y.
1-B	604+97.5	LT	9025		
2-B	602+00	RT	900		
3-B	608+56	LT	150		
Totals			1802.5	150	1.5 6

Item No.	Station	Side	F-31		B-21		E-19		I-22		I-1	
			Bituminous Material	No. 6 Aggregate	Aggregate Base Course	6" Aggr. Base Course	Subbase	Class I-3 6" Pipe	Class F-4 6" Pipe			
From	To		Bals.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Lin. Ft.	Lin. Ft.			
1-P	607+00	LT	116.95	3.74	38.98	83.70	173.14	40	10			
Totals			116.95	3.74	38.98	83.70	173.14	40	10			

**PROPOSED STRUCTURE - NO. LOR-254-1172 L&R**  
 TYPE: Twin Cont. Steel Beam  
 Reinforced Concrete Deck  
 and Substructure  
 SPANS: 44'-0"; 55'-0";  
 44'-0" 4% Bearing 1/4 Parapets  
 ROADWAY: 42'-0" 1/4 Parapets  
 LOAD FREQUENCY: CF 2000  
 (57) Adequate for AAASHO  
 Alternate Loading



Item No.	Station		Side	I-1			
	From	To		Class I-3 6" Pipe	Class F4 6" Pipe	Class F4 8" Pipe	Pipe Special Class I-3
				Shallow Lin. Ft.	Lin. Ft.	Lin. Ft.	Each
1UD	611+00	612+21	LT.	121			
2UD	611+00	612+29	LT.	129			
3UD	611+00	612+50	RT.	150			
4UD	611+00	612+55	RT.	155			
5UD	614+06	618+58	LT.	469		10	1
6UD	614+10	618+62	LT.	485	10		1
7UD	614+28	618+80	RT.	482	10		1
8UD	614+33	618+84	RT.	468		10	1
9UD	620+22	622+00	LT.	178			
10UD	620+26	622+00	LT.	174			
11UD	620+30	622+00	RT.	170			
12UD	620+34	622+00	RT.	166			
<b>Totals</b>				<b>3147</b>	<b>20</b>	<b>20</b>	<b>3 1</b>

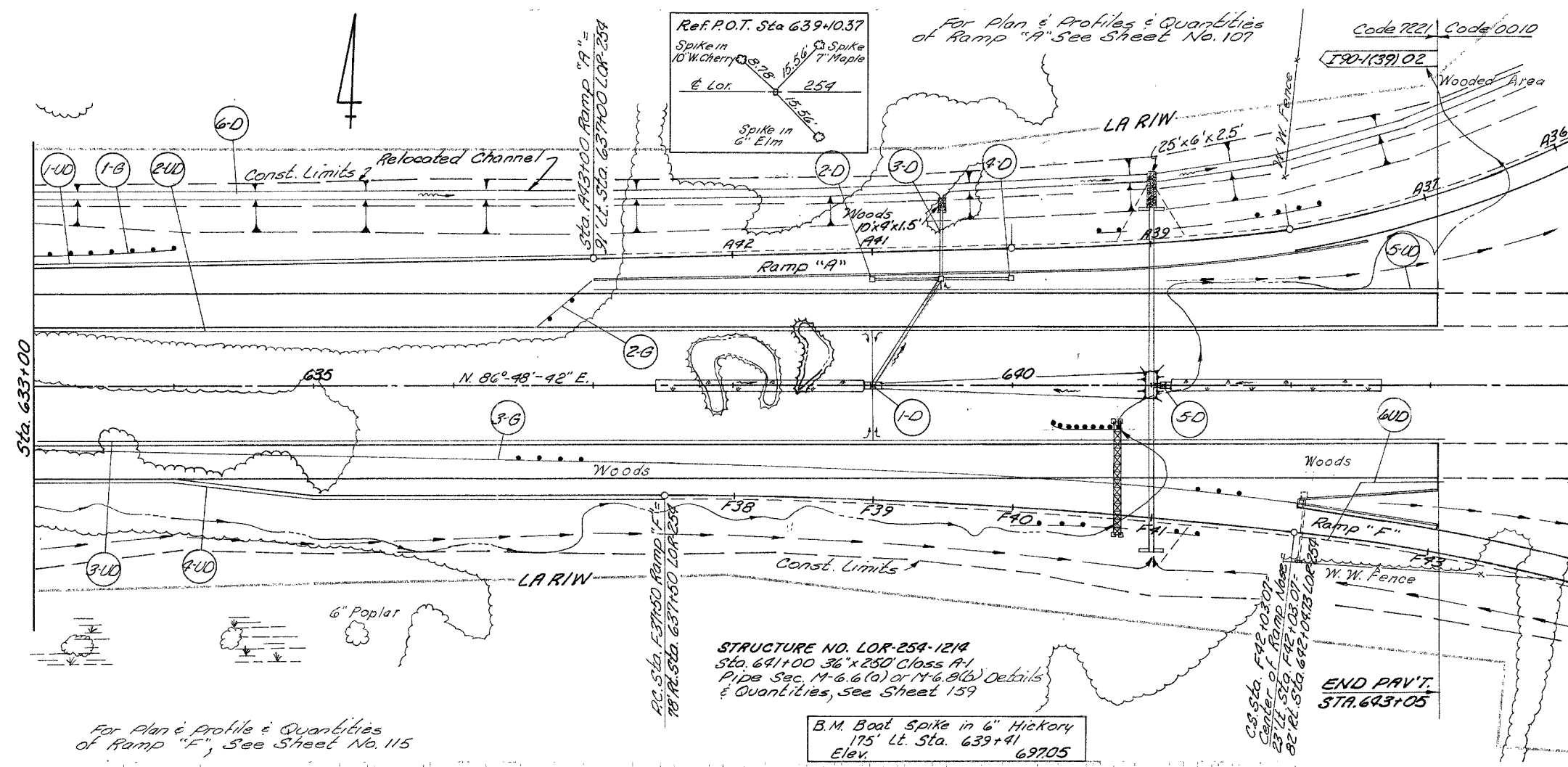
Item No.	Station		Side	I-1										
	From	To		L-10 Bodding Width Area L.F. S.Y.	I-1 12" Pipe Class F4 L.F.	L-10 12" Pipe Class F4 L.F. S.Y.	I-8 Each	I-7 Cu. Yds.	I-10 Cul. Vds.	E-12 Pipe Removal Over 15" Lin. Ft.	E-3 Excavation C.V.			
1UD	612+03.5	6100 Lake	Left	4	42	58	2	1						
2UD	614+58	614+85	Left	6	89	60	2	1	223					
3UD	618+28	618+28	Left	6	88	56	2	1	223	4.4				
4UD	619+40		LT.							6.6				
5UD	613+15	615+45	RT.							520				
6UD	612+16	613+00	RT.							104				
7UD	615+00	618+65	LT.								1131			
8UD	621+00	622+00	LT.								124			
13UD	612+08		LT.											
14UD	612+50		RT.											
15UD	614+08		LT.											
16UD	614+44		RT.											
<b>Totals</b>				<b>16</b>	<b>42</b>	<b>177</b>	<b>153</b>	<b>141</b>	<b>6</b>	<b>3</b>	<b>246</b>	<b>110</b>	<b>624</b>	<b>1255</b>

Item No.	Station		Side	I-15			I-7			
	From	To		Guard Rail Type (Deep) Lin. Ft.	Guard Rail Type (Deep) Lin. Ft.	Reinforce Concrete Approach Type (Deep) Sp. Yds.	Guard Rail Type (Deep) Lin. Ft.	Guard Rail Type (Deep) Lin. Ft.	Reinforce Concrete Approach Type (Deep) Sp. Yds.	
1-B	611+00	612+10	LT.	110						
2-B	611+00	612+50	RT.	150						
3-B	611+00	612+44	Q	150						
4-B	614+06	617+06	LT.	300						
5-B	614+15	618+19	Q	325	137.5					
6-B	614+15	615+66.5	RT.	125					66.7	
7-B	615+35	618+35	RT.	300					66.7	
8-B	617+20	618+57.5	LT.	137.5					66.7	
9-B	620+03.5	622+00	RT.	122.5					66.7	
10-B	620+15	622+00	Q	150	37.5				66.7	
11-B	620+36	622+00	LT.	164					66.7	
12-B	620+64	612+31.4	LT.						66.7	
13-B	620+33.4	612+33.4	RT.						66.7	
14-B	614+02.0	614+25.6	LT.						66.7	
15-B	614+28.9	614+48.9	RT.						66.7	
16-B	618+28.0	613+63.0	LT.						66.7	
17-B	618+52.8	618+02.8	RT.						66.7	
18-B	620+16.0	620+35.0	LT.						66.7	
19-B	620+29.6	620+54.6	RT.						66.7	
<b>Totals</b>				<b>2104.0</b>	<b>175.0</b>	<b>533.6</b>				

Excavation = 301 Cu. Yds.  
 Embankment = 157,421 Cu. Yds.  
 Embankment +18% = 185,757 Cu. Yds.  
 Seeding = 23,163 Sq. Yds.



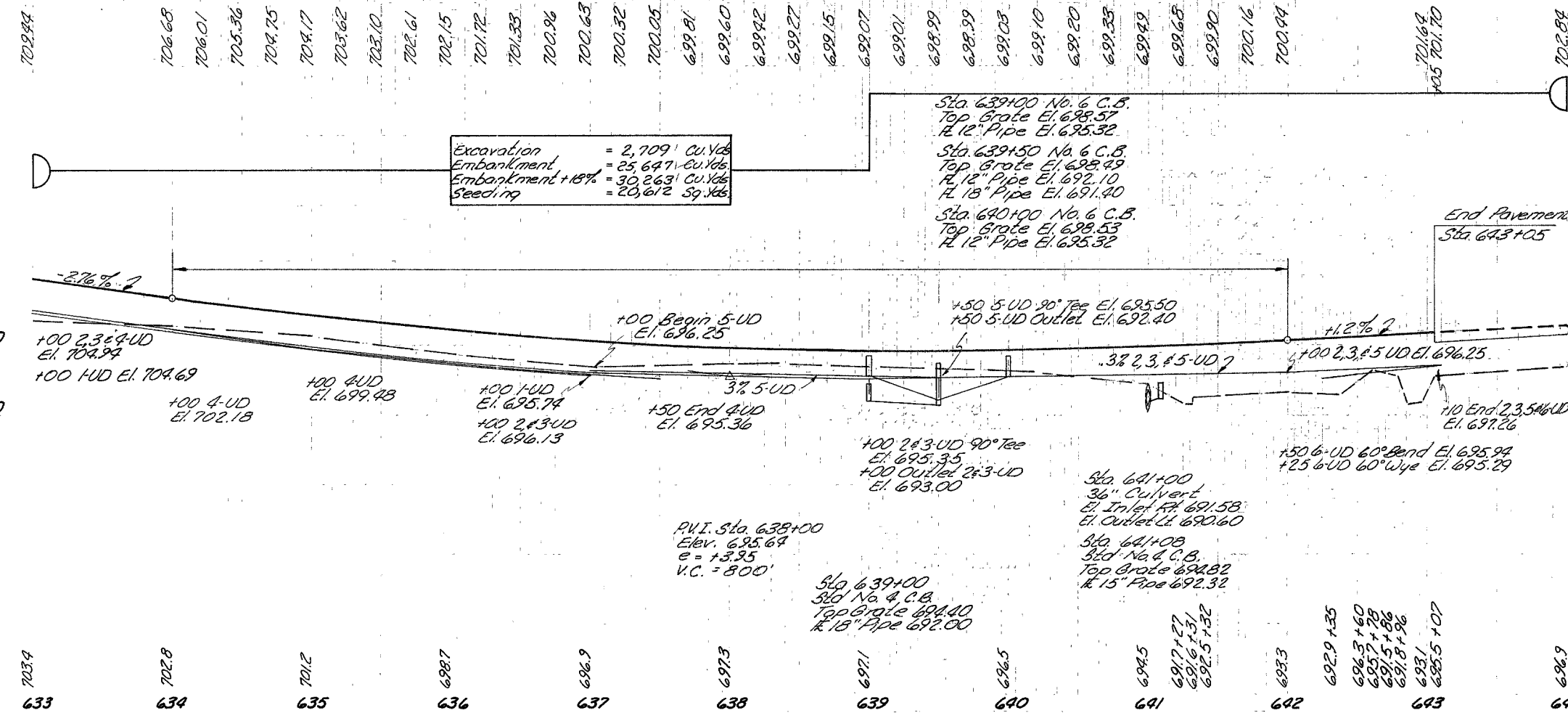
LOR-254-4.08 B



Item No.	Station		Side	I-1		I-5		I-15		I-1		I-15	
	From	To		Class I-3 6" Pipe Shallow Lin. Ft.	Class F-4 6" Pipe Lin. Ft.	Pipe Specials Class I-3 6" 60° Tee Each	Guard Rail Steel Beam Standard Type (Deep) 6" 60° 60° Wye Each	Pipe Specials Class J-1 6" Pipe Lin. Ft.	Temp. Guard Rail As Per Plan *	Class J-1 6" Pipe Lin. Ft.	Temp. Guard Rail As Per Plan *		
1-UD	633+00	637+00	LT.	400									
2-UD	633+00	643+10	LT.	1019	30	1							
3-UD	633+00	643+10	RT.	1029	20	1							
4-UD	633+00	637+50	RT.	452									
5-UD	637+00	643+10	LT.	600	18	1							
6-UD	642+25	643+10	RT.	60				1	1	48			
1-B	633+00	639+07.5	LT.				107.5						
2-B	636+60	637+00	LT.									50	
3-B	633+00	642+00	RT.									900	
Totals				3560	68	3	107.5	1	1	48		950	

\* See Note in Proposal

Item No.	Station		Side	I-1		I-2		I-8		I-10		L-120		E-3	
	From	To		Pipe Class J-1 12" Lin. Ft.	Pipe Class J-1 18" Lin. Ft.	Masonry Catch Basin No. 6	Standard Rock Channel No. 4	Dumped Rock Channel Protection	Cu. Yds.	Jute Matting Width Splice	Channel Excavation Cu. Yds.				
1-D	637+43	639+50	LT.		90			1			8	133			
2-D	639+00	639+50	LT.	50			1								
3-D	639+50		LT.		48	0.26	1		2.2						
4-D	639+50	640+00	LT.	50			1								
5-D	641+00	642+65	RT.					1			8	133			
6-D	633+00	637+00	LT.										605		
Totals				100	138	0.26	3	2	2.2		266	605			









# SUPERELEVATION TABLES

STATION	PROFILE ELEVATION	WEST BOUND LANES			EAST BOUND LANES		
		LEFT EDGE		RIGHT EDGE	LEFT EDGE		RIGHT EDGE
535+25	736.40	737.38	736.89	736.40	736.40	735.91	735.42
+50	736.81	737.79	737.30	736.81	736.81	736.32	735.83
+75	737.25	738.23	737.74	737.25	737.25	736.76	736.27
536+00	737.73	738.71	738.22	737.73	737.73	737.24	736.75
+25	738.25	739.23	738.74	738.25	738.25	737.76	737.27
+50	738.82	739.80	739.31	738.82	738.82	738.33	737.84
+75	739.42	740.40	739.91	739.42	739.42	738.93	738.44
537+00	740.05	741.03	740.54	740.05	740.05	739.56	739.07
+25	740.73	741.71	741.22	740.73	740.73	740.24	739.75
+50	741.44	742.42	741.93	741.44	741.44	740.95	740.46
+75	742.19	743.17	742.68	742.19	742.19	741.70	741.21
538+00	742.94	743.92	743.43	742.94	742.94	742.45	741.91
+25	743.69	744.67	744.18	743.69	743.69	743.20	742.71
+50	744.44	745.42	744.93	744.44	744.44	743.95	743.46
+75	745.19	746.17	745.68	745.19	745.19	744.70	744.21
539+00	745.94	746.92	746.43	745.94	745.94	745.45	744.96
+25	746.69	747.67	747.18	746.69	746.69	746.20	745.71
+50	747.44	748.42	747.93	747.44	747.44	746.95	746.46
+75	748.19	749.17	748.68	748.19	748.19	747.70	747.21
540+00	748.94	749.92	749.43	748.94	748.94	748.45	747.96
+25	749.69	750.67	750.18	749.69	749.69	749.20	748.71
+50	750.44	751.42	750.93	750.44	750.44	749.95	749.46
+75	751.19	752.17	751.68	751.19	751.19	750.70	750.21
541+00	751.94	752.92	752.43	751.94	751.94	751.45	750.96
+25	752.69	753.67	753.18	752.69	752.69	752.20	751.71
+50	753.44	754.42	753.93	753.44	753.44	752.95	752.46
+75	754.19	755.17	754.68	754.19	754.19	753.69	753.20
542+00	754.91	755.89	755.40	754.91	754.91	754.42	753.93
+25	755.63	756.61	756.12	755.63	755.63	755.14	754.65
+50	756.33	757.31	756.82	756.33	756.33	756.33	755.35
+75	757.02	758.00	757.51	757.02	757.02	757.51	756.04
543+00	757.69	758.67	758.18	757.69	757.69	758.18	756.71
+25	758.35	759.33	758.84	758.35	758.35	759.33	757.37
+50	759.00	759.98	759.49	759.00	759.00	759.98	758.02
+75	759.63	760.61	760.12	759.63	759.63	760.12	758.65
544+00	760.25	761.23	760.74	760.25	760.25	761.23	759.27
+25	760.85	761.81	761.33	760.85	760.85	761.33	759.88
+50	761.44	762.31	761.87	761.44	761.44	761.87	760.57
+75	762.02	762.78	762.40	762.02	762.02	762.40	761.26
545+00	762.58	763.22	762.90	762.58	762.58	763.22	761.94
+25	763.13	763.66	763.39	763.13	763.13	763.66	762.60
+50	763.66	764.08	763.86	763.66	763.66	764.08	763.24
+75	764.18	764.48	764.37	764.18	764.18	764.48	763.88
546+00	764.69	764.88	764.88	764.69	764.69	764.88	764.50
+25	765.18	764.30	764.37	765.18	765.18	764.25	764.06
+50	765.66	765.72	765.85	765.66	765.66	766.13	765.60
+75	766.13	766.13	766.32	766.13	766.13	766.32	766.13
D=2° 30'							
TS 547+01.35 SC 578+01.35							
CS 589+51.09 ST 593+51.09							
573+75	745.43	745.43	745.62	745.43	745.43	745.62	745.43
574+00	745.32	745.32	745.51	745.32	745.32	745.51	745.32
+25	745.22	745.22	745.41	745.22	745.22	745.41	745.22
+50	745.11	745.11	745.30	745.11	745.11	745.30	745.11
+75	745.01	745.01	745.20	745.01	745.01	745.20	745.01
575+00	744.90	744.90	745.12	744.90	744.90	745.12	744.90
+25	744.80	744.80	745.08	744.80	744.80	745.08	744.80
+50	744.69	744.69	745.04	744.69	744.69	745.04	744.69
+75	744.59	744.59	745.00	744.59	744.59	745.00	744.59

STATION	PROFILE ELEVATION
576+00	744.48
+25	744.38
+50	744.27
+75	744.17
577+00	744.06
+25	743.96
+50	743.85
+75	743.75
578+00	743.64
+25	743.54
+50	743.43
+75	743.33
579+00	743.21
+25	743.10
+50	742.99
+75	742.88
580+00	742.78
+25	742.67
+50	742.57
+75	742.46
581+00	742.36
+25	742.26
+50	742.15
+75	742.05
582+00	741.94
+25	741.84
+50	741.73
+75	741.63
583+00	741.52
+25	741.42
+50	741.31
+75	741.21
584+00	741.10
+25	741.00
+50	740.89
+75	740.79
585+00	740.67
+25	740.57
+50	740.46
+75	740.36
586+00	740.25
+25	740.15
+50	740.04
+75	739.94
587+00	739.82
+25	739.72
+50	739.61
+75	739.51
588+00	739.40
+25	739.30
+50	739.19
+75	739.09
589+00	738.98
+25	738.88
+50	738.77
+75	738.67
590+00	738.56
+25	738.46
+50	738.35
+75	738.25
591+00	738.13
+25	738.03
+50	737.92
+75	737.82
592+00	737.71
+25	737.61
+50	737.50
+75	737.40
593+00	737.29
+25	737.19
+50	737.08
+75	736.98

STATION	PROFILE ELEVATION
744.48	744.95
744.38	744.91
744.27	744.87
744.17	744.83
744.06	744.78
743.96	744.74
743.85	744.70
743.75	744.66
743.64	744.61
743.54	744.51
743.43	744.40
743.33	744.30
743.21	744.18
743.10	744.07
742.99	743.96
742.88	743.85
742.78	743.75
742.67	743.64
742.57	743.54
742.46	743.43
742.36	743.33
742.26	743.23
742.15	743.12
742.05	743.02
741.94	742.91
741.84	742.81
741.73	742.70
741.63	742.60
741.52	742.49
741.42	742.39
741.31	742.28
741.21	742.18
741.10	742.07
741.00	741.97
740.89	741.86
740.79	741.76
740.67	741.64
740.57	741.54
740.46	741.43
740.36	741.33
740.25	741.22
740.15	741.12
740.04	741.01
739.94	740.91
739.82	740.79
739.72	740.69
739.61	740.58
739.51	740.48
739.40	740.37
739.30	740.27
739.19	740.16
739.09	740.06
738.98	739.95
738.88	739.85
738.77	739.74
738.67	739.64
738.56	739.54
738.46	739.44
738.35	739.34
738.25	739.24
738.13	739.14
738.03	739.04
737.92	738.94
737.82	738.84
737.71	738.74
737.61	738.64
737.50	738.54
737.40	738.44
737.29	738.34
737.19	738.24
737.08	738.14
736.98	738.04

EAST BOUND LANES		
LEFT EDGE		RIGHT EDGE
744.48	744.95	745.42
744.38	744.91	745.45
744.27	744.87	745.46
744.17	744.83	745.49
744.06	744.78	745.50
743.96	744.74	745.53
743.85	744.70	745.54
743.75	744.66	745.56
743.64	744.61	745.58
743.54	744.51	745.48
743.43	744.40	745.37
743.33	744.30	745.27
743.21	744.18	745.15
743.10	744.07	745.04
742.99	743.96	744.93
742.88	743.85	744.82
742.78	743.75	744.72
742.67	743.64	744.61
742.57	743.54	744.51
742.46	743.43	744.40
742.36	743.33	744.30
742.26	743.23	744.20
742.15	743.12	744.09
742.05	743.02	743.99
741.94	742.91	743.88
741.84	742.81	743.78
741.73	742.70	743.67
741.63	742.60	743.57
741.52	742.49	743.46
741.42	742.39	743.36
741.31	742.28	743.25
741.21	742.18	743.15
741.10	742.07	743.04
741.00	741.97	742.94
740.89	741.86	742.83
740.79	741.76	742.73
740.67	741.64	742.61
740.57	741.54	742.51
740.46	741.43	742.40
740.36	741.33	742.30
740.25	741.22	742.19
740.15	741.12	742.09
740.04	741.01	741.98
739.94	740.91	741.88
739.82	740.79	741.76
739.72	740.69	741.66
739.61	740.58	741.55
739.51	740.48	741.45
739.40	740.37	741.34
739.30	740.27	741.24
739.19	740.16	741.13
739.09	740.06	741.03
738.98	739.95	740.92
738.88	739.85	740.82
738.77	739.74	740.71
738.67	739.64	740.61
738.56	739.54	740.51
738.46	739.44	740.41
738.35	739.34	740.31
738.25	739.24	740.21
738.13	739.14	740.11
738.03	739.04	740.01
737.92	738.94	739.91
737.82	738.84	739.81
737.71	738.74	739.71
737.61	738.64	739.61
737.50	738.54	739.51
737.40	738.44	739.41
737.29	738.34	739.31
737.19	738.24	739.21
737.08	738.14	739.11
736.98	738.04	739.01



# SUPERELEVATION TABLES

LOR-254-408 B

STATION	PROFILE ELEVATION	WEST BOUND LANES		
		LEFT EDGE		RIGHT EDGE
578+75	743.33	742.57	742.95	743.33
579+00	743.21	742.45	742.63	743.21
+25	743.09	742.33	742.71	743.09
+50	742.98	742.22	742.60	742.98
+75	742.86	742.10	742.48	742.86
580+00	742.75	741.99	742.37	742.75
+25	742.64	741.88	742.26	742.64
+50	742.52	741.76	742.14	742.52
+75	742.41	741.65	742.03	742.41
581+00	742.30	741.54	741.92	742.30
+25	742.18	741.42	741.80	742.18
+50	742.07	741.31	741.69	742.07
+75	741.96	741.20	741.58	741.96
582+00	741.84	741.08	741.46	741.84
+25	741.73	740.97	741.35	741.73
+50	741.62	740.86	741.24	741.62
+75	741.51	740.75	741.13	741.51
583+00	741.39	740.63	741.01	741.39
+25	741.28	740.52	740.90	741.28
+50	741.17	740.41	740.79	741.17
+75	741.06	740.30	740.68	741.06
584+00	740.93	740.17	740.55	740.93
+25	740.82	740.06	740.44	740.82
+50	740.71	739.95	740.33	740.71
+75	740.60	739.84	740.22	740.60
585+00	740.48	739.72	740.10	740.48
+25	740.37	739.61	739.99	740.37
+50	740.26	739.50	739.88	740.26
+75	740.15	739.39	739.77	740.15
586+00	740.03	739.27	739.65	740.03
+25	739.92	739.16	739.54	739.92
+50	739.81	739.05	739.43	739.81
+75	739.70	738.94	739.32	739.70
587+00	739.58	738.82	739.20	739.58
+25	739.47	738.71	739.09	739.47
+50	739.36	738.60	738.98	739.36
+75	739.24	738.48	738.86	739.24
588+00	739.12	738.36	738.74	739.12
+25	739.01	738.25	738.63	739.01
+50	738.89	738.18	738.51	738.89
+75	738.78	738.02	738.40	738.78
589+00	738.67	737.91	738.29	738.67
+25	738.56	737.80	738.18	738.56
+50	738.45	737.69	738.07	738.45
+75	738.34	737.58	737.96	738.34
590+00	738.22	737.46	737.84	738.22
+25	738.11	737.35	737.73	738.11
+50	738.00	737.24	737.62	738.00
+75	737.88	737.12	737.50	737.88
591+00	737.76	737.00	737.38	737.76
+25	737.65	736.89	737.27	737.65
+50	737.54	736.78	737.16	737.54
+75	737.43	736.67	737.05	737.43
592+00	737.31	736.55	736.93	737.31
+25	737.20	736.44	736.82	737.20
+50	737.09	736.33	736.71	737.09
+75	737.98	737.22	737.60	737.98
593+00	736.86	736.10	736.48	736.86
+25	736.75	735.99	736.37	736.75
+50	736.63	735.87	736.25	736.63
+75	736.52	735.76	736.14	736.52
594+00	736.40	735.64	736.02	736.40
+25	736.29	735.53	735.91	736.29
+50	736.18	735.42	735.80	736.18
+75	736.07	735.31	735.69	736.07
595+00	735.95	735.19	735.57	735.95
+25	735.84	735.08	735.46	735.84
+50	735.73	734.97	735.35	735.73
+75	735.62	734.86	735.24	735.62
596+00	735.50	734.74	735.12	735.50
+25	735.39	734.63	735.01	735.39
+50	735.28	734.52	734.90	735.28

STATION	PROFILE ELEVATION	WEST BOUND LANES		
		LEFT EDGE		RIGHT EDGE
596+75	735.17	734.41	734.79	735.17
597+00	725.05	734.29	734.67	735.05
+25	734.95	734.19	734.57	734.95
+50	734.89	734.18	734.51	734.89
+75	734.84	734.08	734.46	734.84
598+00	734.81	734.05	734.43	734.81
+25	734.80	734.04	734.42	734.80
+50	734.82	734.06	734.44	734.82
+75	734.85	734.09	734.47	734.85
599+00	734.91	734.15	734.53	734.91
+25	735.00	734.24	734.62	735.00
+50	735.09	734.33	734.71	735.09
+75	735.22	734.46	734.84	735.22
600+00	735.36	734.60	734.98	735.36
+25	735.52	734.76	735.14	735.52
+50	735.71	734.95	735.33	735.71
+75	735.91	735.15	735.53	735.91
601+00	736.14	735.38	735.76	736.14
+25	736.39	735.63	736.01	736.39
+50	736.66	736.02	736.34	736.66
+75	736.96	736.43	736.70	736.96
601+75.17	W.B.			
LANES = 602+37.98				
AHEAD ON SURVEY				
602+50	737.11	736.63	736.87	737.11
+75	737.44	737.08	737.27	737.44
603+00	737.78	737.53	737.72	737.78
+12.81	738.00	737.81	737.81	738.00
+25	738.15	737.99	738.18	738.15
+50	738.54	738.44	738.63	738.54
+75	738.94	738.90	739.09	738.94
+87.81	739.14	739.14	739.33	739.14

STATION	PROFILE ELEVATION	RELOCATED WEST RIDGE ROAD		
		LEFT EDGE		RIGHT EDGE
35+60	746.67	746.51	746.67	746.51
+75	746.75	746.59	746.75	746.67
36+00	746.88	746.72	746.88	746.93
+25	747.01	746.83	747.01	747.19
+50	747.14	746.83	747.14	747.45
+75	747.27	746.83	747.27	747.71
37+00	747.40	746.83	747.40	747.97
+25	747.53	746.83	747.53	748.23
+50	747.66	746.83	747.66	748.49
+75	747.79	746.96	747.79	748.62
38+00	747.92	747.09	747.92	748.75
+25	748.05	747.22	748.05	748.88
+50	748.15	747.32	748.15	748.98
+75	748.17	747.34	748.17	749.00
39+00	748.12	747.29	748.12	748.95
+25	748.01	747.18	748.01	748.84
+50	747.82	746.99	747.82	748.65
+75	747.57	746.74	747.57	748.40
40+00	747.24	746.41	747.24	748.07
+25	746.85	746.02	746.85	747.68
+50	746.39	745.56	746.39	747.22
+75	745.85	745.02	745.85	746.68
41+00	745.28	744.45	745.28	746.11
+25	744.71	743.88	744.71	745.54
+50	744.14	743.31	744.14	744.97
+75	743.57	742.74	743.57	744.40
42+00	743.00	742.17	743.00	743.83
+25	742.43	741.60	742.43	743.26
+50	741.86	741.03	741.86	742.69

STATION	PROFILE ELEVATION	RELOCATED WEST RIDGE ROAD		
		LEFT EDGE		RIGHT EDGE
42+75	741.29	740.46	741.29	742.12
43+00	740.72	739.89	740.72	741.55
+25	740.15	739.32	740.15	740.98
+50	739.58	738.75	739.58	740.41
+75	739.01	738.31	739.01	739.71
44+00	738.44	737.87	738.44	739.01
+25	737.87	737.43	737.87	738.31
+50	737.30	736.99	737.30	737.61
+75	736.73	736.55	736.73	736.91
45+00	736.16	736.00	736.16	736.21
+25	735.59	735.43	735.59	735.51
+40	735.36	735.20	735.36	735.20
DC=19° 06' P.C. = 100+67.46 P.T. = 103+17.76				
100+50	747.58	747.35	747.58	747.81
+75	747.33	747.00	747.33	747.66
101+00	747.08	746.65	747.08	747.51
+25	746.83	746.30	746.83	747.34
+50	746.58	745.95	746.58	747.21
+75	746.33	745.60	746.33	747.06
102+00	746.08	745.25	746.08	746.91
+25	745.83	745.00	745.83	746.66
+50	745.58	744.90	745.58	746.26
+75	745.29	744.77	745.29	745.81
103+00	744.93	744.56	744.93	745.30
+25	744.49	744.27	744.49	744.71
+35	744.30	744.14	744.30	744.46
+50	743.98	743.82	743.98	744.05
+75	743.43	743.27	743.43	743.34
+87.31	743.16	743.00	743.16	743.00
LAKE AVENUE				
67+00	727.65	726.82	727.65	728.51
+25	727.36	726.50	727.36	728.22
+50	727.13	726.27	727.13	727.99
+75	726.99	726.13	726.99	727.85
68+00	726.90	726.04	726.90	727.76
+25	726.88	726.02	726.88	727.74
+50	726.92	726.06	726.92	727.78
+75	727.03	726.17	727.03	727.89
69+00	727.21	726.35	727.21	728.07
+25	727.42	726.56	727.42	728.28
+50	727.63	726.77	727.63	728.49
+75	727.84	726.98	727.84	728.70
70+00	728.05	727.19	728.05	728.91
+25	728.26	727.40	728.26	729.12
+50	728.47	727.61	728.47	729.33
+75	728.68	727.82	728.68	729.54
71+00	728.89	728.03	728.89	729.75
+25	728.10	727.24	728.10	728.96
+50	729.31	728.45	729.31	730.17
+75	729.52	729.66	729.52	730.38
72+00	729.73	728.87	729.73	730.59
+25	729.94	729.08	729.94	730.80
+50	730.15	729.29	730.15	731.01
+75	730.36	729.50	730.36	731.22
73+00	730.57	729.71	730.57	731.43

# SUPERELEVATION TABLES

STATION	PROFILE	LEFT EDGE	CL	RIGHT EDGE
RAMP "A"				
P. I. STA. A29	+92.57	DC = 15°	00'	
P. I. STA. A36	+24.86	DC = 8°	00'	
A27+50	692.20	692.45		692.20
P. T. +50.52	692.20	692.45		692.20
T. S. +55.16	692.25	692.47		692.25
+75	692.45	692.54		692.45
A28+00	692.68	692.61		692.68
+25	692.90	692.68		692.90
+50	693.10	692.72		693.10
+75	693.29	692.75		693.29
A29+00	693.48	692.78		693.48
S. C. +05.16	693.52	692.79		693.52
+25	693.67	692.81		693.67
+50	693.86	692.85		693.86
+75	694.05	692.88		694.05
A30+00	694.24	692.91		694.24
+25	694.43	693.10		694.43
+50	694.62	693.46		694.62
C. S. +60.71	694.70	693.60		694.70
+75	694.81	693.82		694.81
A31+00	695.00	694.17		695.00
+25	695.19	694.53		695.19
+50	695.38	694.89		695.38
+75	695.57	695.24		695.57
A32+00	695.76	695.52		695.76
S. T. +10.71	695.84	695.74		695.84
T. S. +12.5	695.86	695.78		695.86
+25	695.95	695.95		695.95
+50	696.14	696.13		696.14
+75	696.33	696.66		696.33
A33+00	696.52	697.01		696.52
+25	696.71	697.37		696.71
+50	696.90	697.73		696.90
+75	697.09	698.08		697.09
A34+00	697.28	698.44		697.28
S. C. +12.5	697.38	698.71		697.38
+25	697.47	698.80		697.47
+50	697.66	698.99		697.66
+75	697.85	699.18		697.85
A35+00	698.04	699.37		698.04
+25	698.23	699.56		698.23
+50	698.42	699.75		698.42
+75	698.61	699.94		698.61
A36+00	698.78	700.11		698.78
+25	698.92	700.25		698.92
+50	699.02	700.35		699.02
+75	699.09	700.42		699.09
A37+00	699.12	700.45		699.12
+25	699.12	700.45		699.12
+50	699.08	700.41		699.08

STATION	PROFILE	LEFT EDGE	CL	RIGHT EDGE
RAMP "F"				
P. I. STA. F43	+57.08	D= 1° 30'	D= 8° 00'	
P. I. STA. F45	+79.36	D= 8° 00'		
P. I. STA. F47	+69.86	D= 8° 00'		
P. I. STA. F51	+13.58	D= 15°		
F43+50	700.51	701.84		700.51
+75	700.60	701.93		700.60
F44+00	700.66	701.99		700.66
+25	700.70	702.03		700.70
+50	700.70	702.03		700.70
S. C. +53.07	700.70	702.03		700.70
+75	700.67	702.00		700.67
F45+00	700.64	701.97		700.64
+25	700.56	701.89		700.56
+50	700.45	701.78		700.45
+75	700.33	701.66		700.33
F46+00	700.17	701.50		700.17
+25	700.00	701.33		700.00
+50	699.82	701.15		699.82
+75	699.65	700.98		699.65
F47+00	699.48	700.81		699.48
C. S. +03.07	699.46	700.77		699.46
+25	699.30	700.45		699.30
+50	699.13	700.11		699.13
+75	698.96	699.76		698.96
F48+00	698.79	699.41		698.79
+25	698.61	699.05		698.61
+50	698.44	698.71		698.44
+75	698.27	698.36		698.27
F49+00	698.10	698.01		698.10
S. T. +03.07	698.08	697.97		698.08
T. S. +22.98	697.94	697.64		697.94
+25	697.92	697.65		697.92
+50	697.75	697.31		697.75
+75	697.58	696.96		697.58
F50+00	697.41	696.61		697.41
+25	697.23	696.25		697.23
+50	697.06	695.91		697.06
S. C. +72.98	696.90	695.58		696.90
+75	696.89	695.56		696.89
F51+00	696.72	695.39		696.72
+25	696.54	695.44		696.54
C. S. +46.31	696.40	695.47		696.40
+50	696.37	695.48		696.37
RAMP "H"				
P. I. STA. H37	+63.24		D = 18° 00'	
P. I. STA. H43	+50.70		D = 8° 00'	
H36+00	732.67	732.20		732.67
+25	732.26	731.58		732.26
+50	731.85	730.95		731.85
+75	731.43	730.32		731.43
H37+00	731.01	729.68		731.01
+25	730.59	729.26		730.59
+50	730.17	728.84		730.17
+75	729.75	728.42		729.75

STATION	PROFILE	LEFT EDGE	CL	RIGHT EDGE
H38+00	729.33	728.17		729.33
+25	728.91	727.91		728.91
+50	729.49	727.66		728.49
+75	728.07	727.40		728.07
H39+00	727.65	727.15		727.65
P. T. +14.69	727.40	727.00		727.40
+25	727.23	726.90		727.23
+50	726.81	726.64		726.81
T. S. +74.95	726.39	726.39		726.39
+75	726.39	726.39		726.39
H40+00	725.97	726.14		725.97
+25	725.55	725.88		725.55
+50	725.13	725.63		725.13
+75	724.71	725.38		724.71
H41+00	724.29	725.12		724.29
+25	723.87	724.87		723.87
+50	723.45	724.61		723.45
S. C. +74.95	723.03	724.36		723.03
+75	723.03	724.36		723.03
H42+00	722.61	723.94		722.61
+25	722.19	723.52		722.19
+50	721.77	723.10		721.77
+75	721.36	722.69		721.36
H43+00	721.99	722.32		721.99
+25	720.63	721.96		720.63
+50	720.31	721.64		720.31
+75	720.01	721.34		720.01
H44+00	719.74	721.07		719.74
RAMP "I"				
P. I. STA. I 32	+56.08		D = 3° 00'	
P. I. STA. I 35	+91.10		D = 4° 00'	
132+25	727.49	727.93		727.49
+50	727.47	727.98		727.47
+75	727.51	728.09		727.51
133+00	727.62	728.27		727.62
S. C. +06.07	727.66	728.33		727.66
+25	727.79	728.46		727.79
+50	728.03	728.70		728.03
+75	728.30	728.97		728.30
134+00	728.57	729.24		728.57
+25	728.84	729.51		728.84
+50	729.11	729.78		729.11
+75	729.38	730.05		729.38
135+00	729.65	730.32		729.65
+25	729.92	730.59		729.92
+50	730.19	730.86		730.19
+75	730.46	731.13		730.46
136+00	730.73	731.40		730.73
+25	731.00	731.67		731.00
+50	731.27	731.94		731.27
+75	731.54	732.21		731.54
137+00	731.81	732.48		731.81
+25	732.08	732.75		732.08
+50	732.35	733.02		732.35
+75	732.62	733.29		732.62
138+00	732.89	733.56		732.89
+25	733.16	733.83		733.16
+50	733.43	733.96		733.43

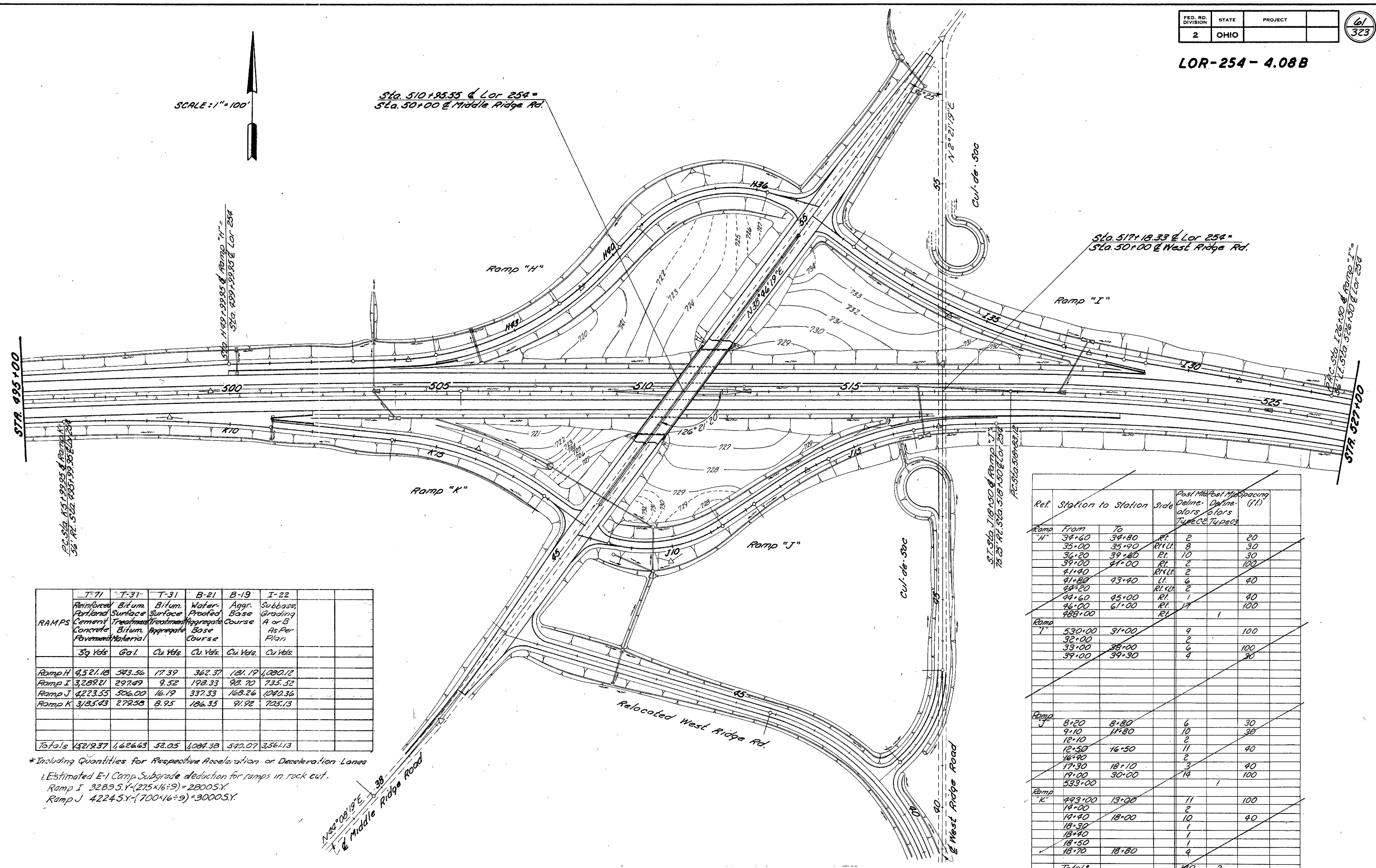
STATION	PROFILE	LEFT EDGE	CL	RIGHT EDGE
RAMP "J"				
P. I. STA. J9	+98.96	D = 18° 00'		
P. I. STA. J15	+44.61	D = 8° 00'		
J9+50	735.75	734.42		735.75
+75	735.31	733.98		735.31
J10+00	734.84	733.51		734.84
+25	734.36	733.03		734.36
+50	733.88	732.72		733.88
+75	733.40	732.41		733.40
J11+00	732.92	732.09		732.92
+25	732.44	731.78		732.44
P. T. +31.61	732.31	731.69		732.31
+50	731.96	731.47		731.96
+75	731.48	731.15		731.48
J12+00	731.00	730.84		731.00
T. S. +25	730.52	730.53		730.52
+50	730.04	730.22		730.04
+75	729.56	729.90		729.56
J13+00	729.08	729.59		729.08
+25	728.60	729.27		728.60
+50	728.12	728.96		728.12
+75	727.64	728.64		727.64
J14+00	727.16	728.33		727.16
S. C. +25	726.68	728.01		726.68
+50	726.20	727.53		726.20
+75	725.72	727.05		725.72
J15+00	725.24	726.57		725.24
+25	724.80	726.13		724.80
+50	724.43	725.76		724.43
RAMP "K"				
P. I. STA. K15	+95.51	D = 8° 00'		
K12+25	717.51	717.76		717.51
+50	718.14	718.39		718.14
+75	718.87	719.12		718.87
K13+00	719.69	719.94		719.69
+25	720.56	720.81		720.56
+50	721.43	721.63		721.43
+75	722.30	722.66		722.30
P. C. +94.20	722.97	723.65		722.97
K14+00	723.17	723.88		723.17
+25	724.04	724.19		724.04
+50	724.91	725.93		724.91

LOR-254-4.08B

SCALE: 1"=100'

Sta. 510+95.55 @ Lor 254 =  
Sta. 50+00 @ Middle Ridge Rd.

Sta. 517+18.33 @ Lor 254 =  
Sta. 50+00 @ West Ridge Rd.



	T-71	T-31	T-31	B-21	B-19	I-22
RAMPS	Reinforced Portland Cement Pavement	Bitum. Surface Treatment	Bitum. Surface Treatment	Water-Proofed Aggregate Base Course	Aggr. Base Course	Subbase, Grading A or B As Per Plan
	39 Yds	Gal.	Cu Yds	Cu Yds	Cu Yds	Cu Yds
Ramp H	4,521.18	543.56	17.39	362.37	181.19	1,080.12
Ramp I	3,288.21	297.49	9.52	198.33	98.70	735.52
Ramp J	4,223.55	506.00	16.19	337.33	168.26	1,040.36
Ramp K	3,185.43	272.58	8.95	186.35	91.92	725.13
Totals	15,219.37	1,626.63	52.05	1,084.38	540.07	3,561.13

\*Including Quantities for Respective Acceleration or Deceleration Lanes  
 †Estimated E-1 Comp. Subgrade deduction for ramps in rock cut.  
 Ramp I 3289.5.Y-(275x16÷9)=2800.5.Y  
 Ramp J 4224.5.Y-(700x16÷9)=3000.5.Y

Ref.	Station to Station	Side	Post-Mile- Deline- Type	Post-Mile- Deline- Type	Spacing (ft.)
Ramp H	From To				
	34+60 34+80	RT	2		20
	35+00 35+90	RT/LT	8		30
	36+20 39+80	RT	10		30
	39+00 41+00	RT	2		100
	41+40 41+80	RT/LT	2		
	42+20 43+40	LT	6		40
	44+60 45+00	RT/LT	2		
	46+00 47+00	RT	1		40
	48+00 61+00	RT	17		100
	48+00 61+00	RT	1		
Ramp I	530+00 31+00		9		100
	32+00		2		
	33+00		6		100
	39+00 39+90		4		30
Ramp J	8+20 8+80		6		30
	9+10 11+80		10		30
	12+10		2		
	12+50 16+50		11		40
	16+90		2		
	17+30 18+10		3		40
	19+00 30+00		14		100
	533+00		1		
Ramp K	493+00 13+00		11		100
	14+00		2		
	14+40 18+00		10		40
	18+30		1		
	18+40		1		
	18+50		1		
	18+70 18+80		4		
Total*			149	2	

LOR-254-4.08B

SCALE: 1" = 100'

Ramp "H" Curve Data

P.I. Sta. H43+50.70	P.I. Sta. H37+63.28
$\Delta = 42^{\circ}00'$	$\Delta = 61^{\circ}02'04''$
$D = 8^{\circ}00'$	$D = 10^{\circ}00'$
$R = 716.20'$	$R = 318.31'$
$L = 325.0'$	$L = 339.08'$
$L_s = 200'$	$T = 187.63'$
$T = 325.75'$	$E = 51.18'$
$E_s = 53.4'$	
$\theta_s = 8^{\circ}00'$	
$L.T. = 133.47'$	
$S.T. = 66.79'$	
$X = 199.61'$	
$Y = 9.30'$	

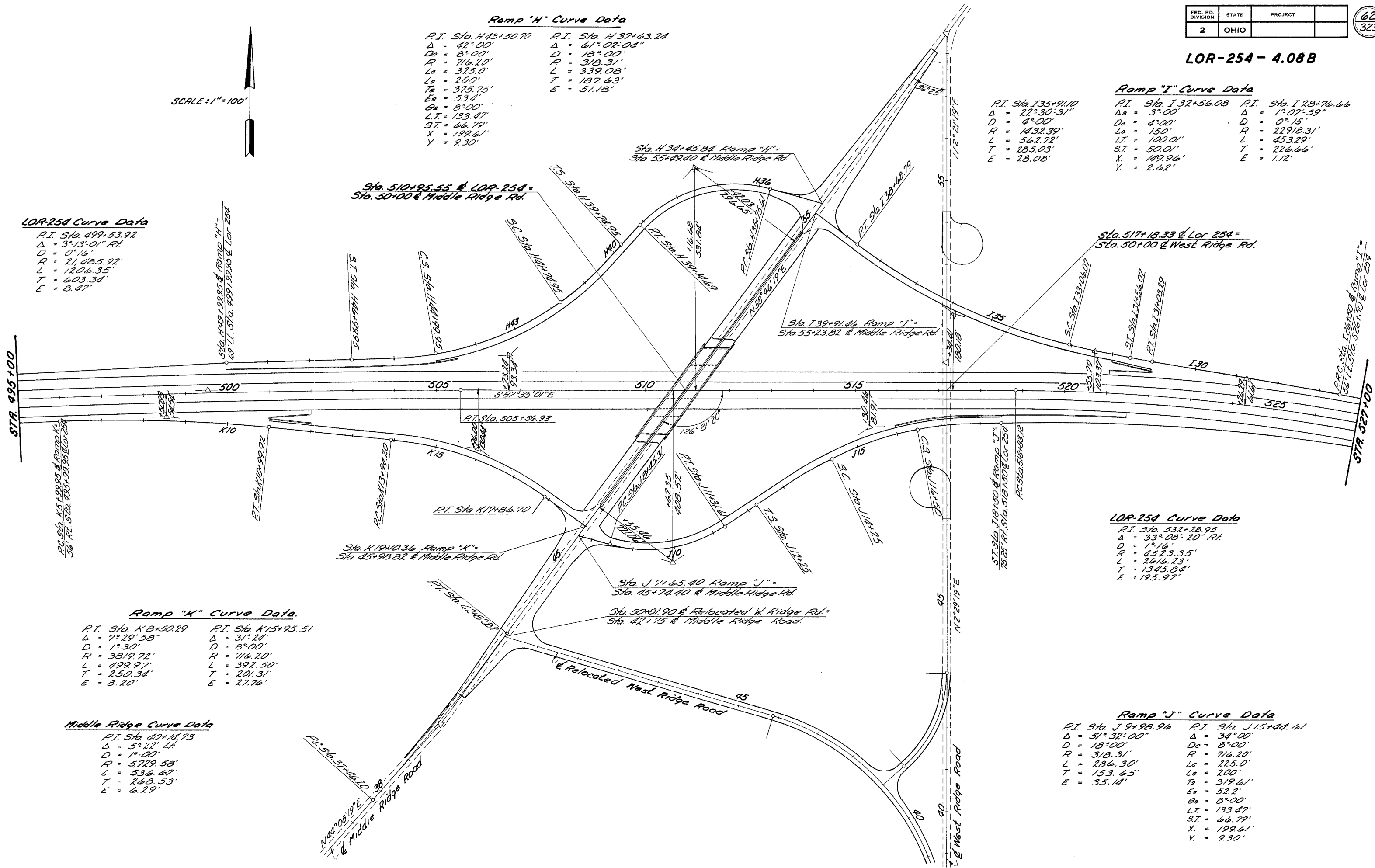
Ramp "I" Curve Data

P.I. Sta. I35+91.10	P.I. Sta. I32+56.08	P.I. Sta. I28+76.66
$\Delta = 22^{\circ}30'31''$	$\Delta = 3^{\circ}00'$	$\Delta = 1^{\circ}07'59''$
$D = 4^{\circ}00'$	$D = 4^{\circ}00'$	$D = 0^{\circ}15'$
$R = 1432.39'$	$L = 150'$	$R = 22910.31'$
$L = 562.72'$	$L.T. = 100.01'$	$L = 453.29'$
$T = 285.03'$	$S.T. = 50.01'$	$T = 226.66'$
$E = 28.08'$	$X = 149.96'$	$E = 1.12'$
	$Y = 2.62'$	

LOR-254 Curve Data

P.I. Sta. 499+53.92  
 $\Delta = 3^{\circ}13'01''$  R/L  
 $D = 0^{\circ}16'$   
 $R = 21,405.92'$   
 $L = 1206.35'$   
 $T = 603.34'$   
 $E = 8.47'$

Sta. 517+18.33 & Lor 254 =  
Sta. 50+00 & West Ridge Rd.



Ramp "K" Curve Data

P.I. Sta. K8+50.29	P.I. Sta. K15+95.51
$\Delta = 7^{\circ}29'58''$	$\Delta = 31^{\circ}24'$
$D = 1^{\circ}30'$	$D = 8^{\circ}00'$
$R = 3819.72'$	$R = 716.20'$
$L = 499.97'$	$L = 392.50'$
$T = 250.34'$	$T = 201.31'$
$E = 8.20'$	$E = 27.76'$

Middle Ridge Curve Data

P.I. Sta. 40+14.73  
 $\Delta = 5^{\circ}22'47''$   
 $D = 1^{\circ}00'$   
 $R = 5729.58'$   
 $L = 536.67'$   
 $T = 268.53'$   
 $E = 6.29'$

LOR-254 Curve Data

P.I. Sta. 532+28.95  
 $\Delta = 33^{\circ}08'20''$  R/L  
 $D = 1^{\circ}16'$   
 $R = 4523.35'$   
 $L = 2616.23'$   
 $T = 1345.84'$   
 $E = 195.97'$

Ramp "J" Curve Data

P.I. Sta. J9+98.96	P.I. Sta. J15+44.61
$\Delta = 51^{\circ}32'00''$	$\Delta = 34^{\circ}00'$
$D = 18^{\circ}00'$	$D = 8^{\circ}00'$
$R = 318.31'$	$R = 716.20'$
$L = 286.30'$	$L_s = 225.0'$
$T = 153.65'$	$L_s = 200'$
$E = 35.14'$	$T = 319.61'$
	$E_s = 52.2'$
	$\theta_s = 8^{\circ}00'$
	$L.T. = 133.47'$
	$S.T. = 66.79'$
	$X = 199.61'$
	$Y = 9.30'$

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

63  
323

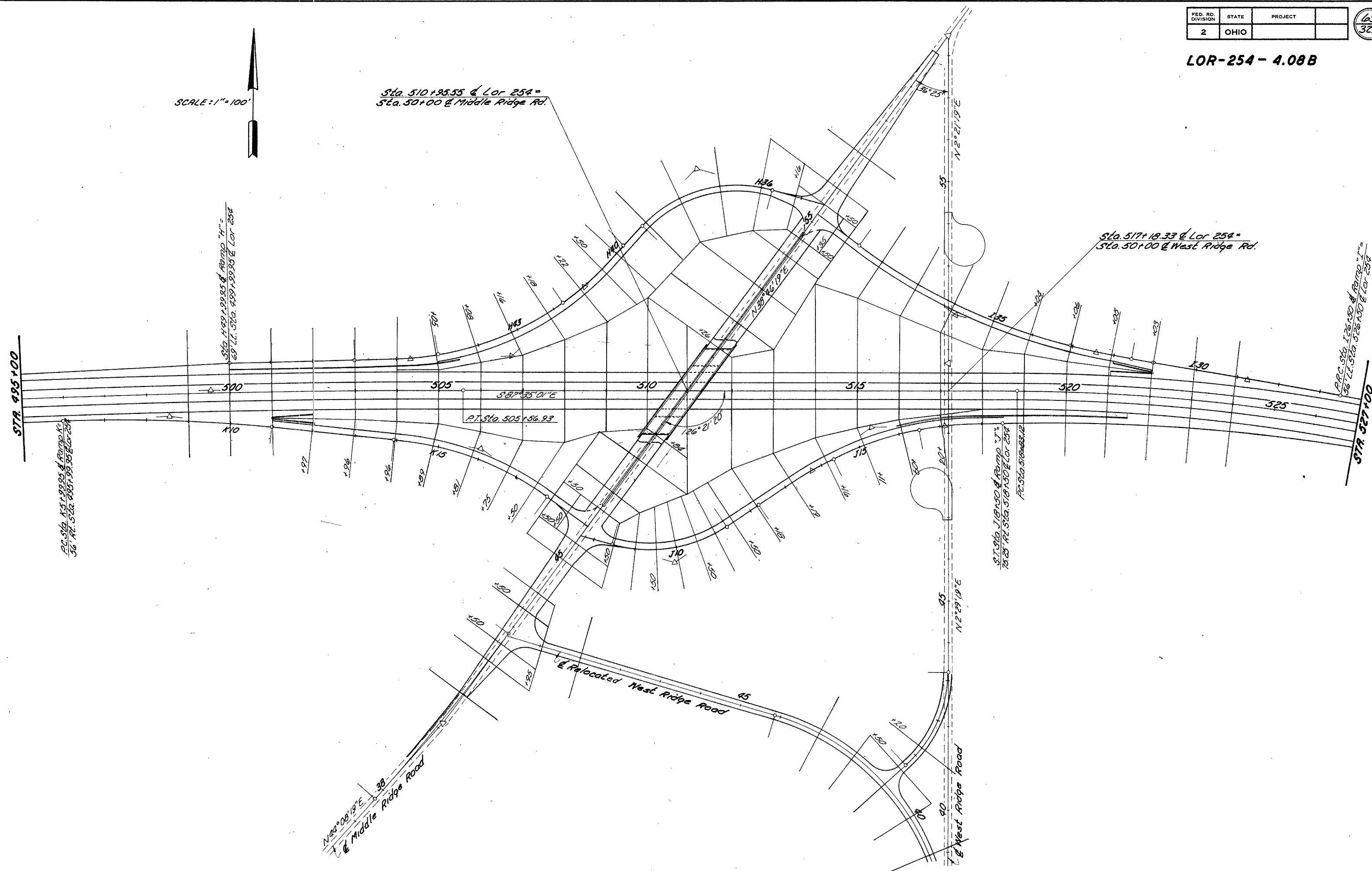
LOR-254-4.08B

SCALE: 1"=100'



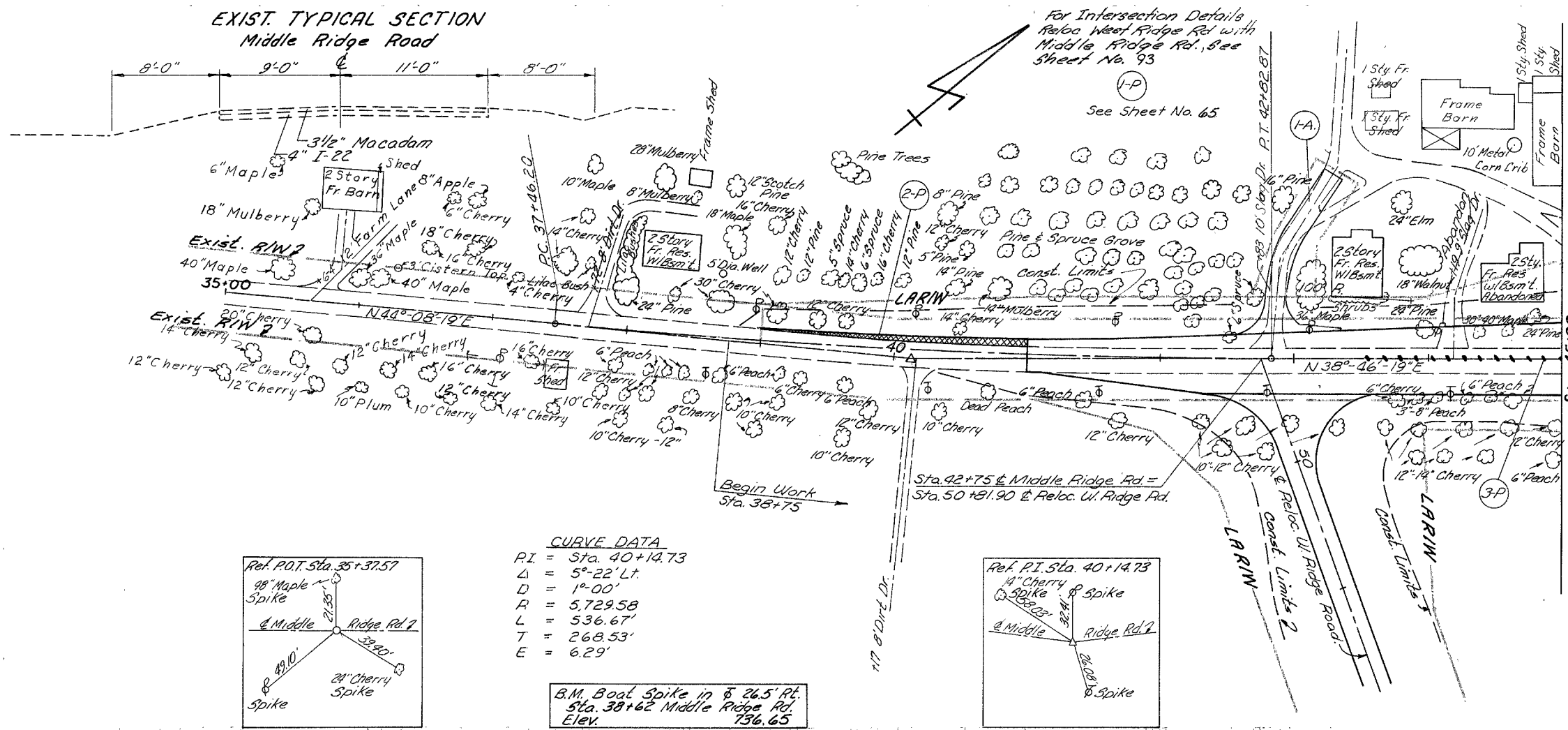
Sta 510+95.55 @ Lor 254 =  
Sta. 50+00 @ Middle Ridge Rd.

Sta. 517+18.33 @ Lor 254 =  
Sta. 50+00 @ West Ridge Rd.



MIDDLE RIDGE RD. INTERCHANGE CROSS SECTION LAYOUT PLAN

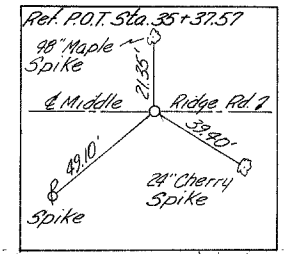
LOR-254-4.08 B



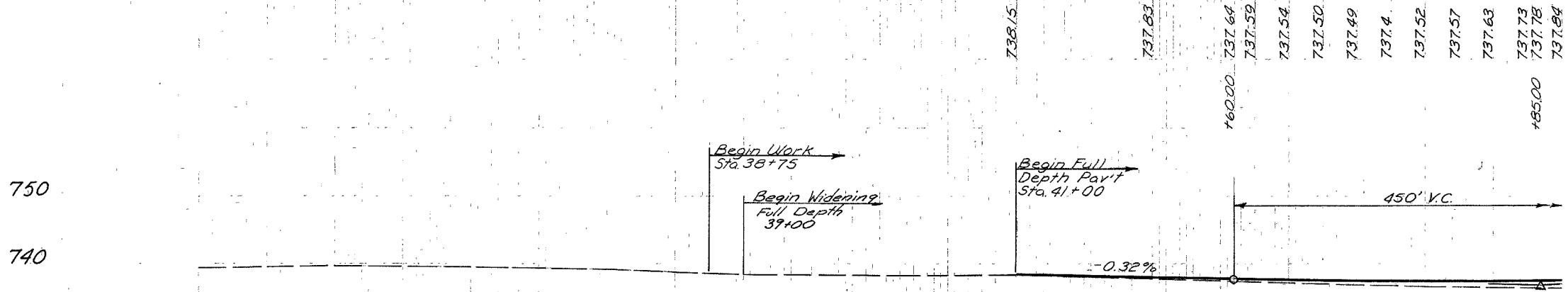
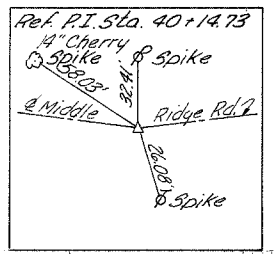
Item No.	Station		Side	T-35	B-35	B-35	B-19	T-30	I-18	I-22	I-23	
	From	To		Asphaltic Concrete Surface Course Type C 1"	Asphaltic Concrete Leveling Course 1 1/2"	Asphaltic Concrete Base Course 3"	Crushed Aggregate Base Course 5"	Bitum Prime Coat Applied @ 0.4 Gal. per Sq. Yd.	Stabilized Crushed Aggregate Shoulders 6"	Subbase 6"	Precast Concrete Traffic Dividers	
2-P	39+00	41+00	Lt.	2.78	4.17	8.80	25.93	42.22	14.12	21.30		
3-P	43+55	44+99	Rt.								13	
1-A	42+83		Lt.	* 15.68			9.13	112.92				
Totals				18.46	4.17	8.80	9.13	25.93	155.14	14.12	21.30	13

\* Two 1" Courses. See Driveway Typical

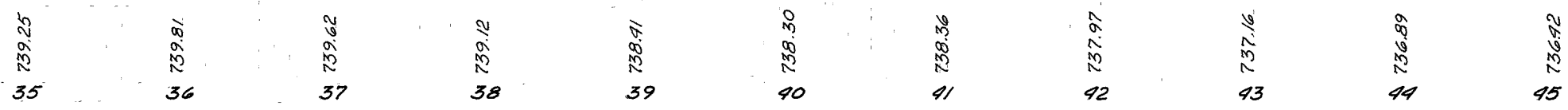
**CURVE DATA**  
 P.I. = Sta. 40+14.73  
 Δ = 5°-22' Lt.  
 D = 1°-00'  
 R = 5,729.58  
 L = 536.67'  
 T = 268.53'  
 E = 6.29'



B.M. Boat Spike in 8' 24.5' Pt.  
 Sta. 38+62 Middle Ridge Rd.  
 Elev. 736.65



Excavation	= 745 Cu Yds.
Embankment	= 1,035 Cu Yds.
Embankment + 18%	= 1,221 Cu Yds.
Seeding	= 4085 Sq Yds.



LOR-254-4.08 B

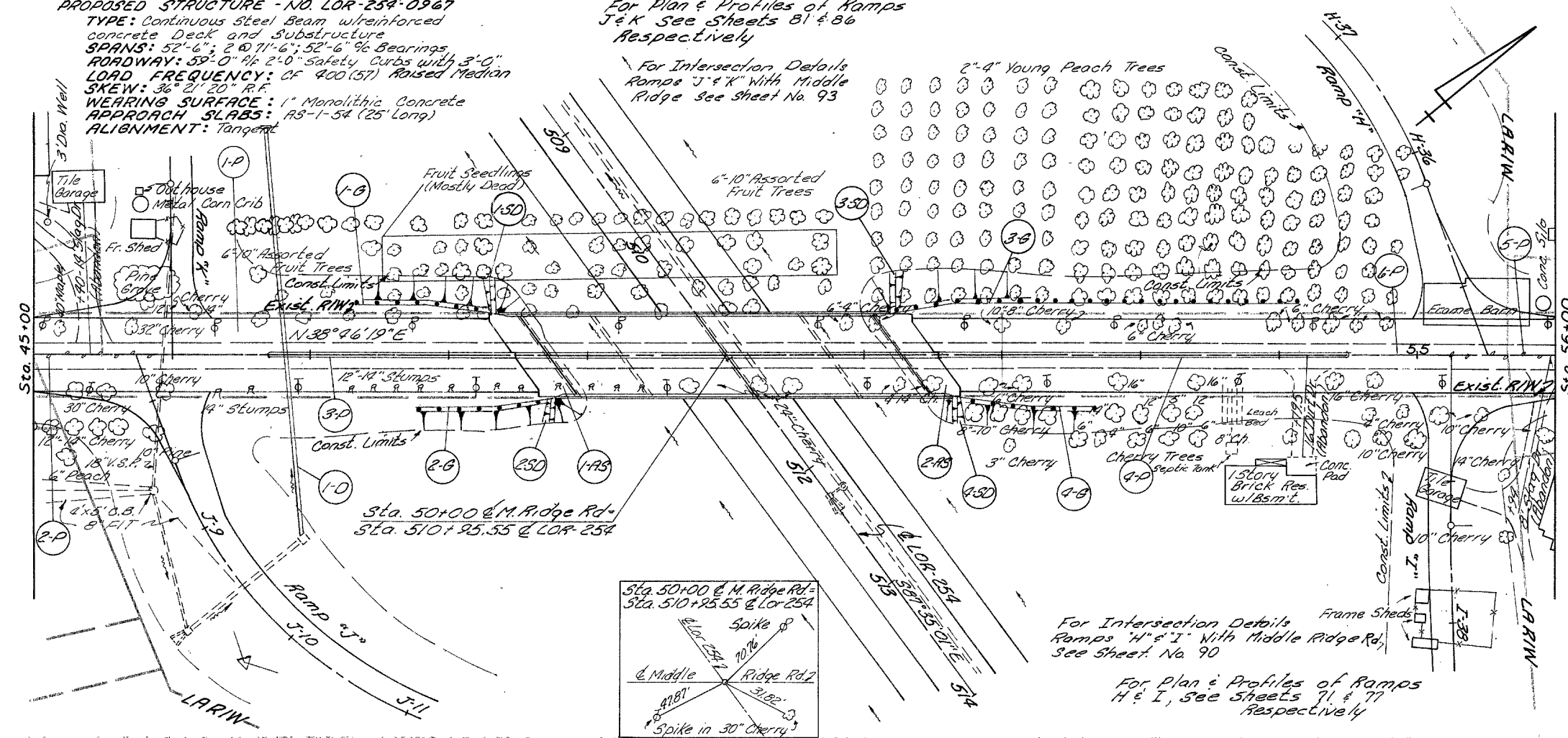
REVISIONS  
AUG 20 1968

**PROPOSED STRUCTURE - NO. LOR-254-0967**  
 TYPE: Continuous Steel Beam w/reinforced concrete Deck and Substructure  
 SPANS: 52'-6"; 2 @ 71'-6"; 52'-6" Bearings  
 ROADWAY: 52'-0" w/ 2'-0" Safety Curbs with 3'-0" Raised Median  
 LOAD FREQUENCY: CF 400 (57) Raised Median  
 SKEW: 36° 21' 20" R.F.  
 WEARING SURFACE: 1" Monolithic Concrete  
 APPROACH SLABS: AS-1-54 (25' Long)  
 ALIGNMENT: Tangent

For Plan & Profiles of Ramps J & K See Sheets 81 & 86 Respectively

For Intersection Details Ramps "J" & "K" with Middle Ridge See Sheet No. 93

2"-4" Young Peach Trees

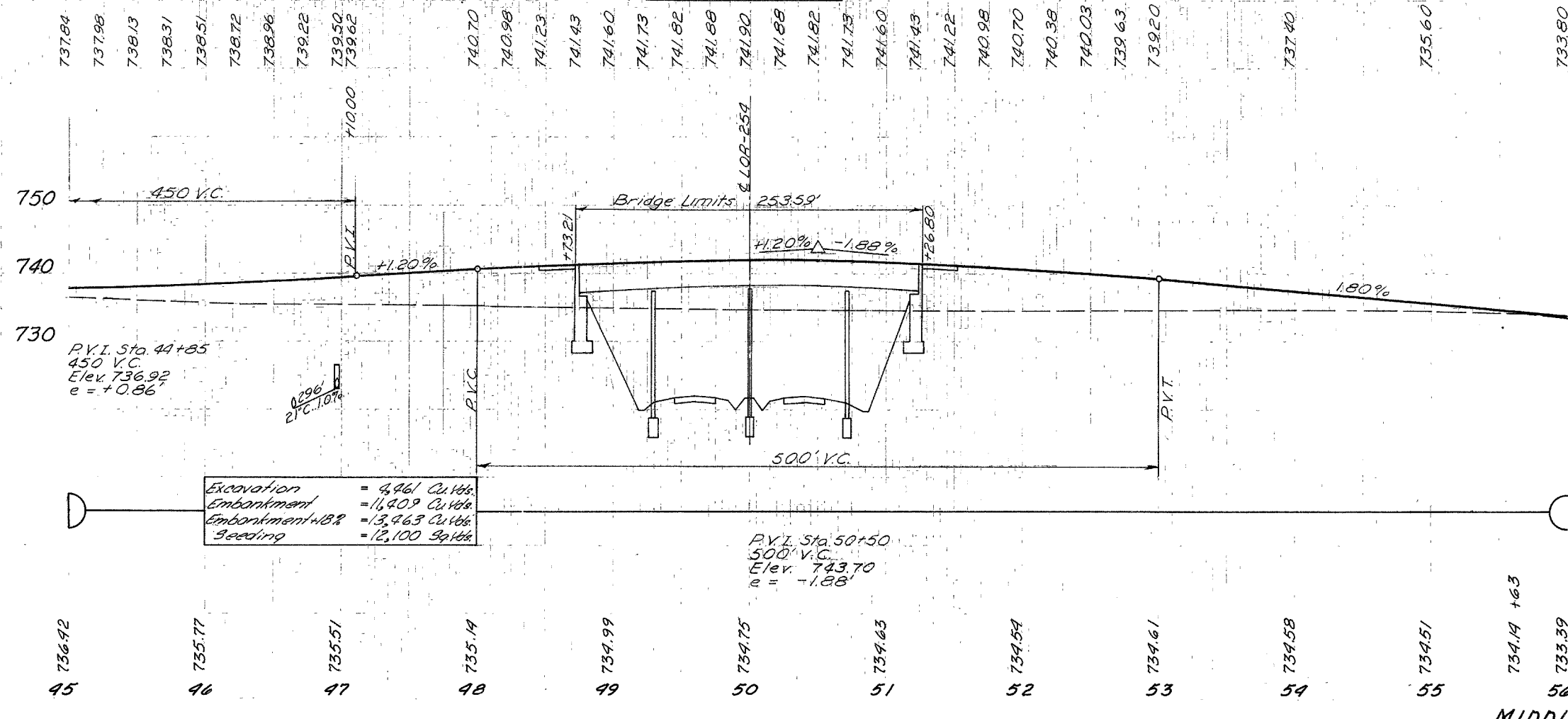


Item No.	Station		Side	I-1 Class J-1 Pipe 21" Lin. Ft.	I-2 Masonry 2x16 L.F.	I-15 Reinft. Concrete Approach Slab 7'-13"	I-7 Special Berms Slope Protection	L-10 Subbase	I-22 Subbase
	From	To							
1-D	46+64.5	46+96.5	LAR	296	236				
1-B	47+35	48+35	LA			100			
2-B	47+81	48+81	RA			100			
3-B	51+15	54+15	LA			300			
4-B	51+64	52+64	RA			100			
1-A9	48+48.21	48+73.21	Q				170.41		30.77
2-A9	51+26.80	51+51.80	Q				170.41		30.77
1-SD	48+32		LA						29
2-SD	48+73		RA						22
3-SD	51+31		LA						29
4-SD	51+68		RA						22
Totals				296	0.36	600	340.82	102	61.54

For Intersection Details Ramps "H" & "I" with Middle Ridge Rd. See Sheet No. 90

For Plan & Profiles of Ramps H & I, See Sheets 71 & 77 Respectively

Item No.	Station		Side	7-35 Asphaltic Concrete Surface Course Type "C"Cu. Yds.	8-35 Asphaltic Concrete Leveling Course Type "C"Cu. Yds.	I-18 Stabilized Crushed Aggregate Shoulder Course 6" Cu. Yds.	8-19 Crushed Aggregate Base Course 6" Cu. Yds.	I-21 Base Pavement Type 2 S.Y.	F-30 Prime Coat Gal.	I-9 Stone Underdrain No. 2 L.F.	I-23 Precast Traffic Dividers Ea.	I-22 6" Subbase Cu. Yds.	
	From	To											
1-P	41+00	48+98.21	Q	108.84	163.26	73.18	907.14		160.97	342		696.17	
2-P	45+11	45+53	Q								7		
3-P	46+70	48+98.21	Q				5830						
4-P	51+51.80	54+50	Q				9949						
5-P	55+55	56+00	Q								6		
6-P	51+51.80	60+00	Q	119.21	178.81	369.27	95.23	1002.67	172.28	558		769.67	
Total				228.05	342.07	742.45	168.21	1909.81	158.25	337.94	900	13	1465.84







140

120

100

80

60

40

20

0

20

40

60

80

100

120

140

	End Area		Volume	
	Out	Fill	Out	Fill
+31	0	0	0	1
+33	0	26	0	44
1+25	0	0	5	0
1+50	10	0		

730

730

730

730

730

730

730

730

Cross Section of Dr.  
33' W

Ranging Profile of  
Proposed Drive 10%  
Ranging Profile  
of Exist Drive

737.49  
43+50  
736.9

737.54  
43+00  
737.2

737.67  
42+50  
737.5

737.83  
42+00  
737.9

738.15  
41+00  
738.4

40+00  
738.3

39+00  
738.4

38+00  
739.1

Begin Work 38+75

Back Only

LOR-254-4.08 B

67  
323

43+50 37 49

72 153

40 96

Earthwork for Drive  
Sta 42+83

92 123

5 45

59 37

104 71

53 39

196 148

Ahead 53 41  
Back 12 32

46 78

13 10

28 30

2 6

1 3

38+75 0 0

140

120

100

80

60

40

20

0

20

40

60

80

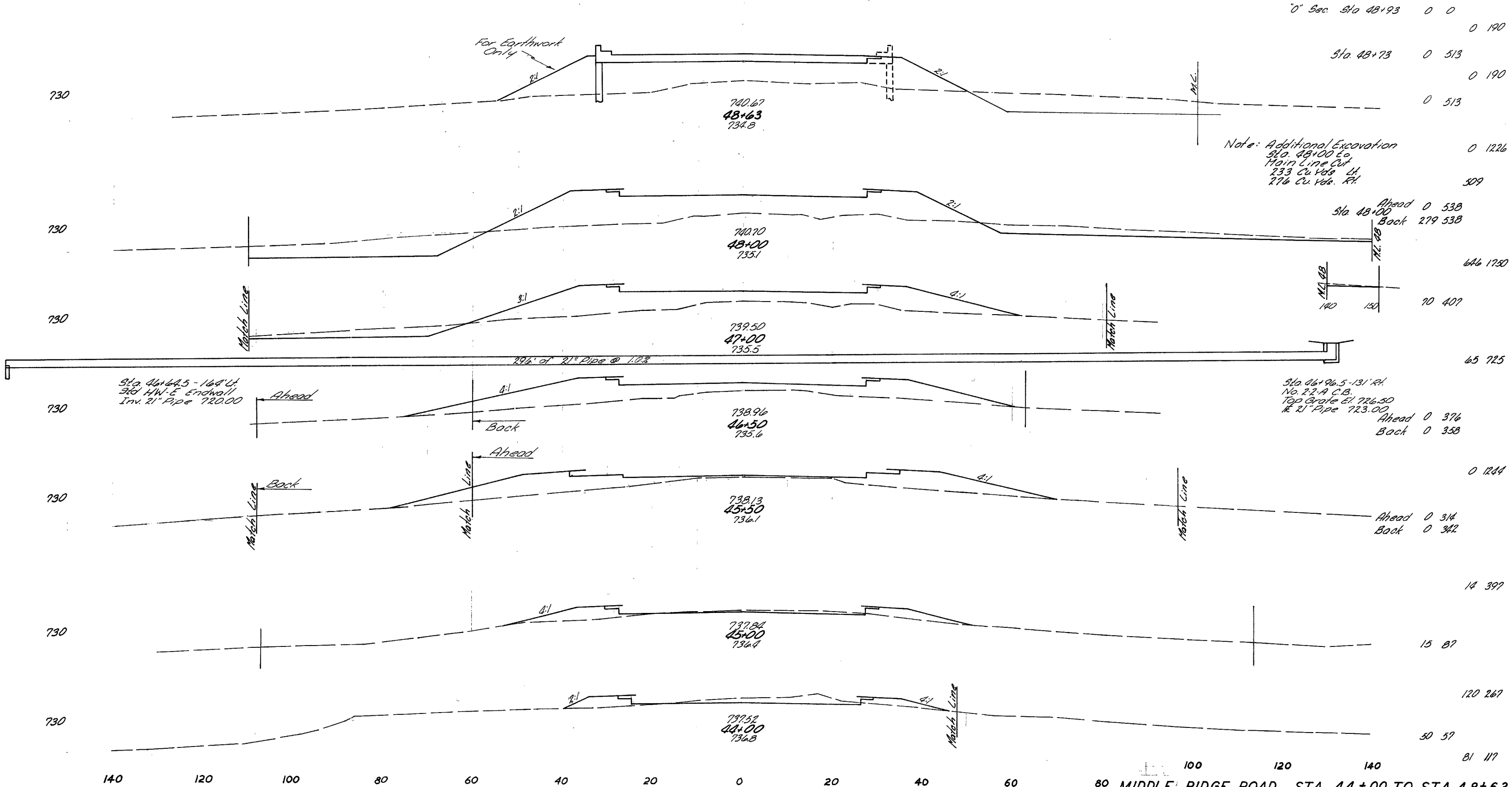
100

120

140

MIDDLE RIDGE ROAD STA 38+00 TO STA 43+50

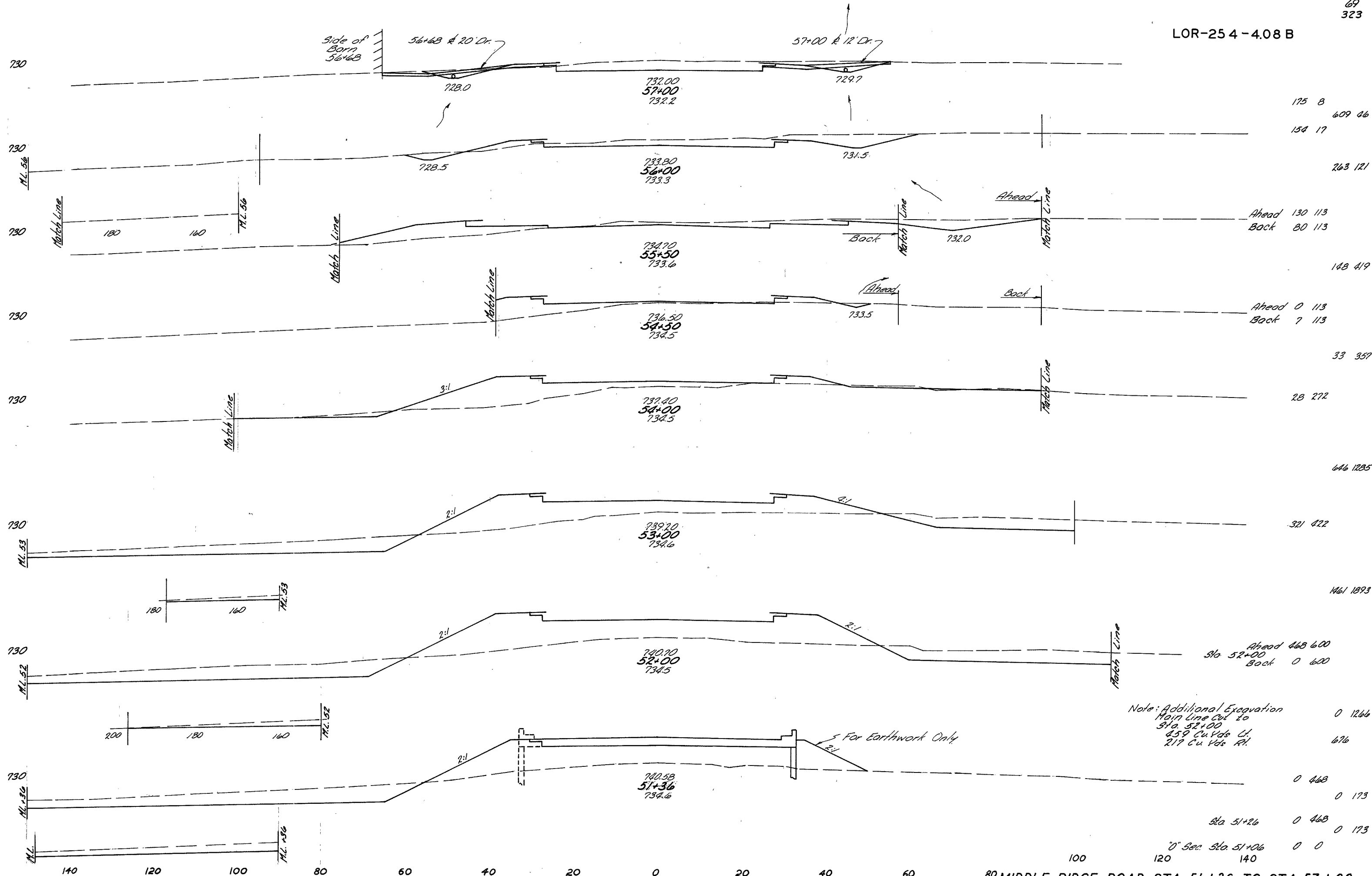
LOR-254-4.08 B



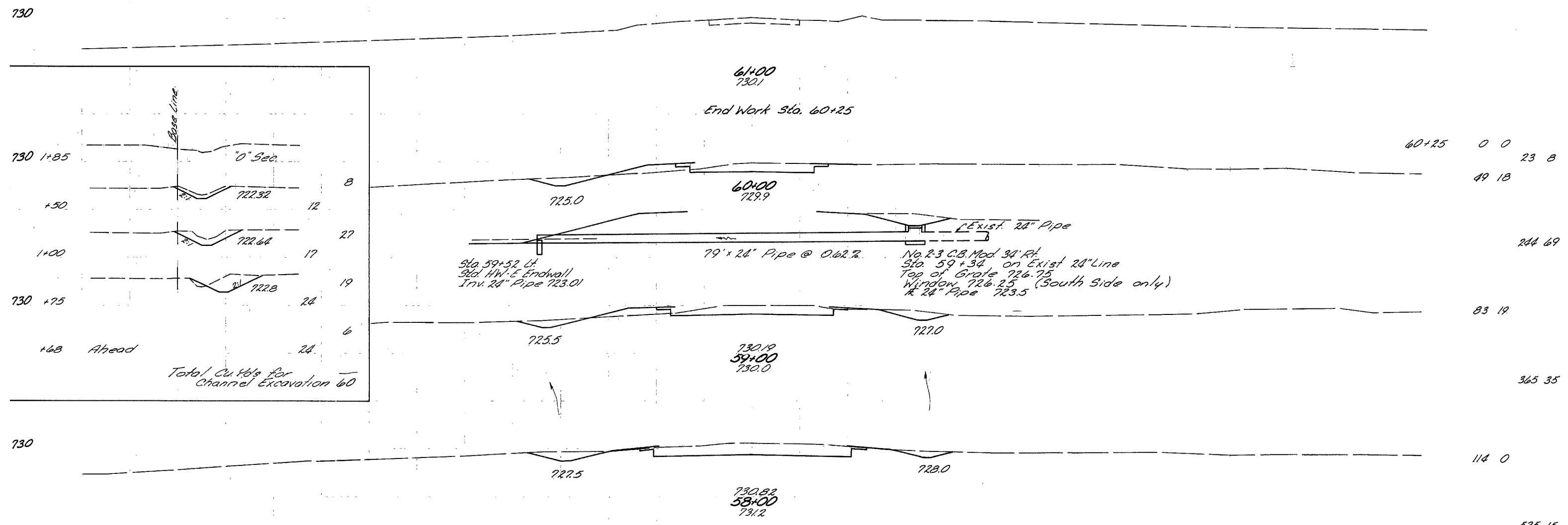
140 120 100 80 60 40 20 0 20 40 60 80 100

69  
323

LOR-254-4.08 B



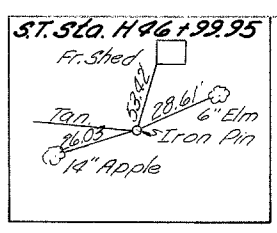
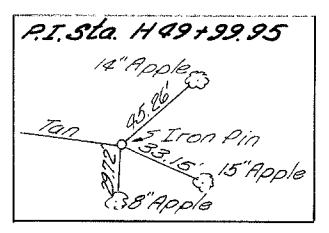
100 120 140 80 MIDDLE RIDGE ROAD STA 51+36 TO STA 57+00





LOR-254-4.08 B

**Curve Data**  
**Q LOR-254**  
 P.I. Sta. 499+53.92  
 Δ = 3°13'01" RL  
 D = 0'16"  
 R = 2,985.92'  
 T = 603.34'  
 E = 8.97'  
 L = 1206.35'



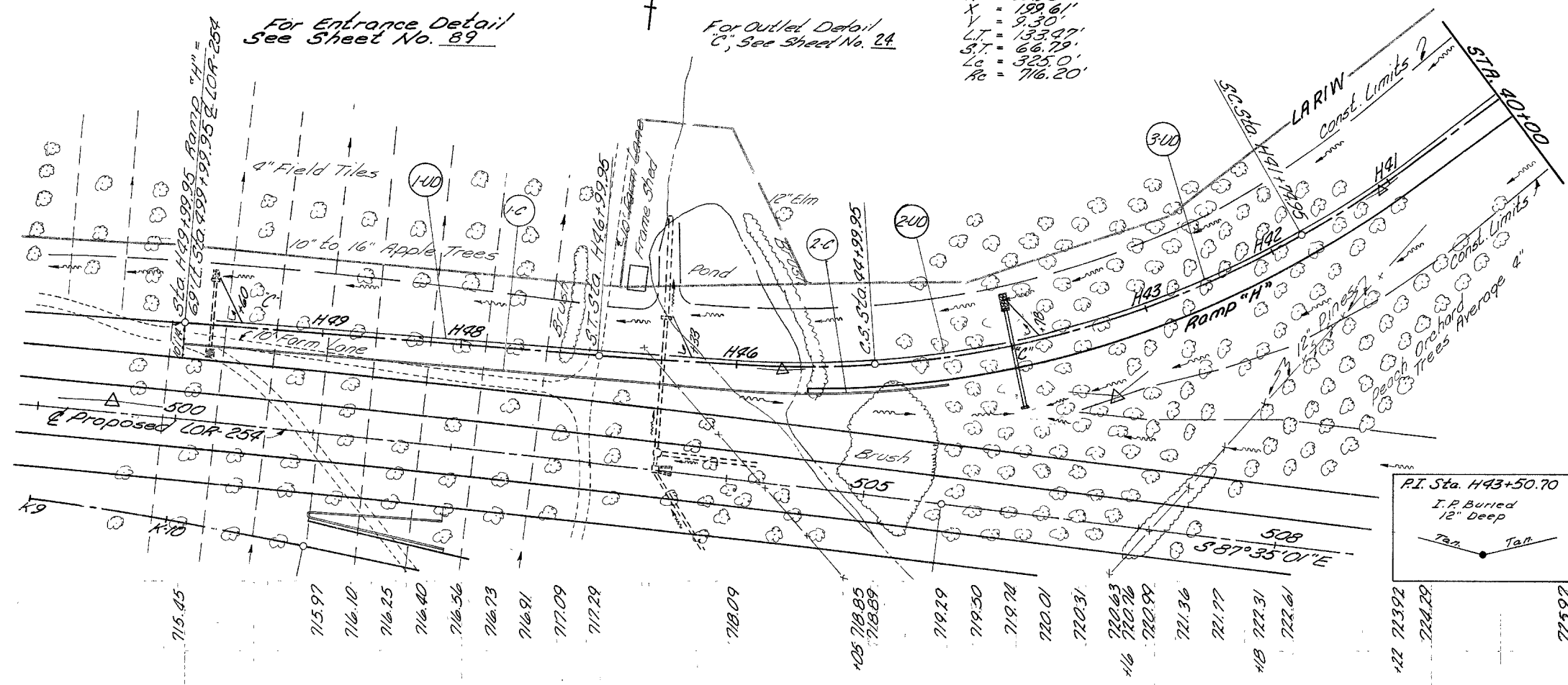
**Curve Data**  
**Ramp "H"**  
 P.I. Sta. 43+50.70  
 Δ = 42°00'  
 D = 8'00"  
 R = 200'  
 T = 375.75'  
 E = 53.4'  
 L = 8'00"  
 D = 2.35'  
 K = 98.93'  
 X = 199.61'  
 Y = 9.30'  
 L.T. = 133.47'  
 S.T. = 66.79'  
 Lc = 325.0'  
 Rc = 716.20'

B.M. Boat Spike in 18" Elm  
 180' Lt. Sta. 508+24  
 Elev. 722.27

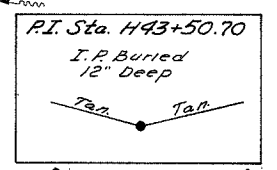
**STRUCTURE**  
 Sta. H44+00, 24" x 74"  
 M. 6.6 (a) or M. 6.8 (b) Pipe  
 Class A-1. For Details  
 See Sheet No. 162

For Entrance Detail  
 See Sheet No. 89

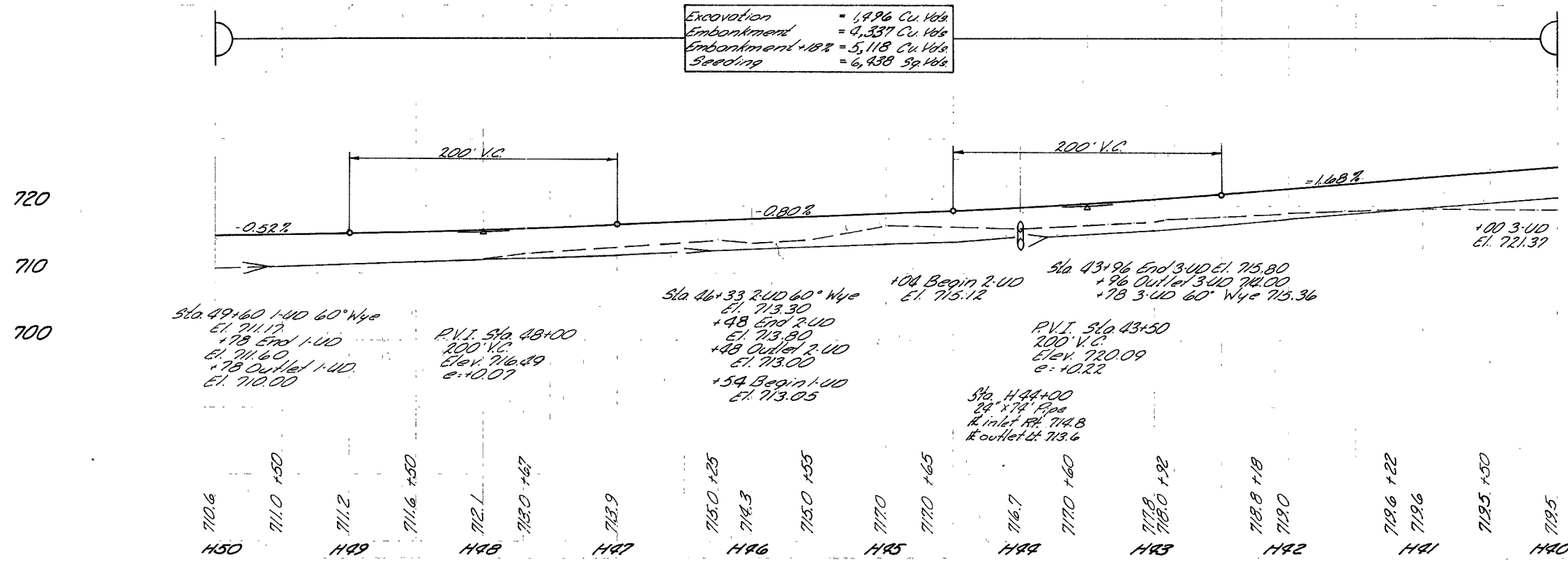
For Outlet Detail  
 "C", See Sheet No. 24



Item No.	station		Side	I-1		I-5		I-12	
	From	To		6" Pipe Class I-3 Shallow	8" Pipe Class F4 Sec. M-6.9(c)	Pipe Spacing Class I-3 60" Wye	Sid. Type 7 Conc. Curb	Sid. Type 8 Conc. Curb	
1-UD	H46+54	H49+78	Lt.	350	10	1			
2-UD	H44+00	H46+48	Lt.	266	10	1			
3-UD	H40+00	H43+96	Lt.	420	10	1			
1-C	H46+25	H50+00	Rt.					375.00	
2-C	H44+50	H46+25	Rt.				177.65		
<b>Totals</b>				<b>1036</b>	<b>30</b>	<b>3</b>	<b>177.65</b>	<b>375.00</b>	

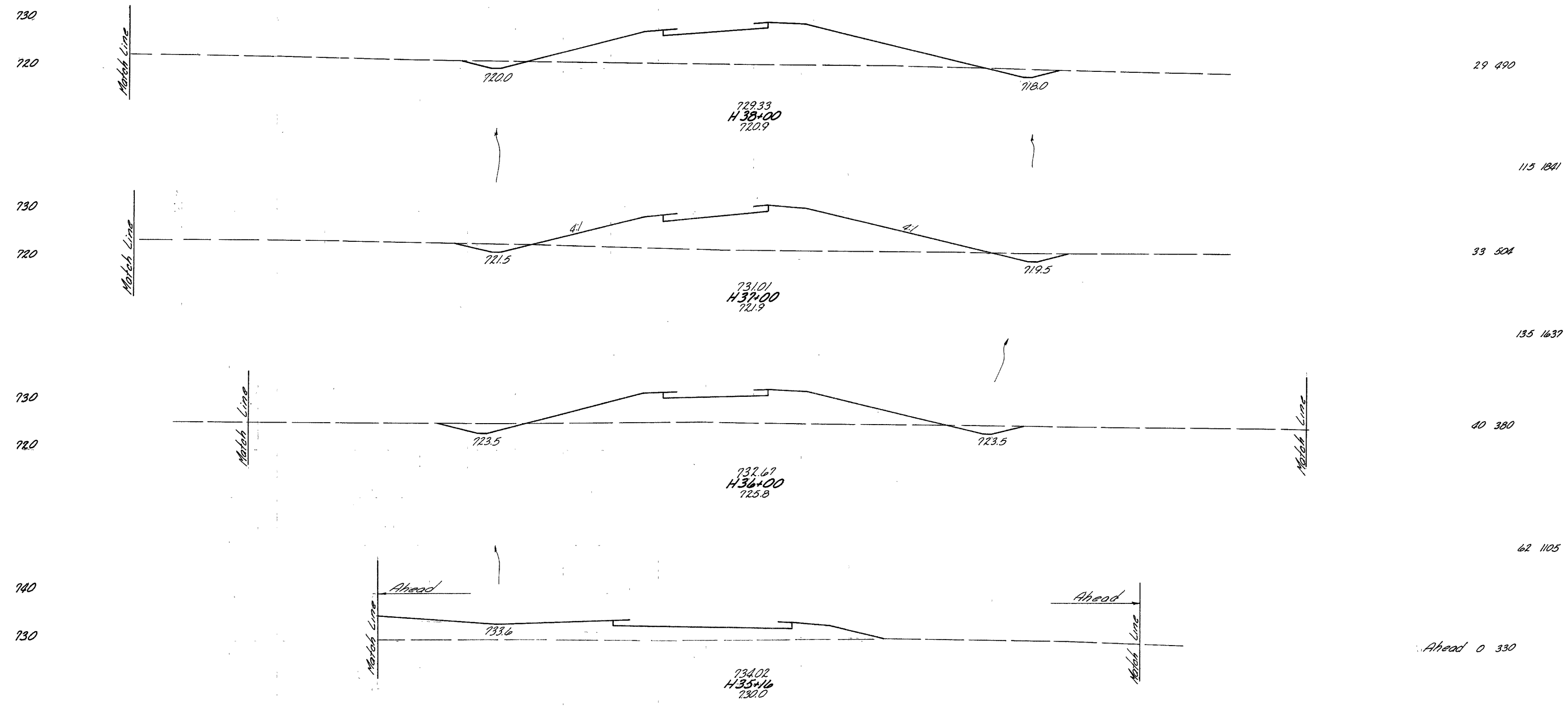


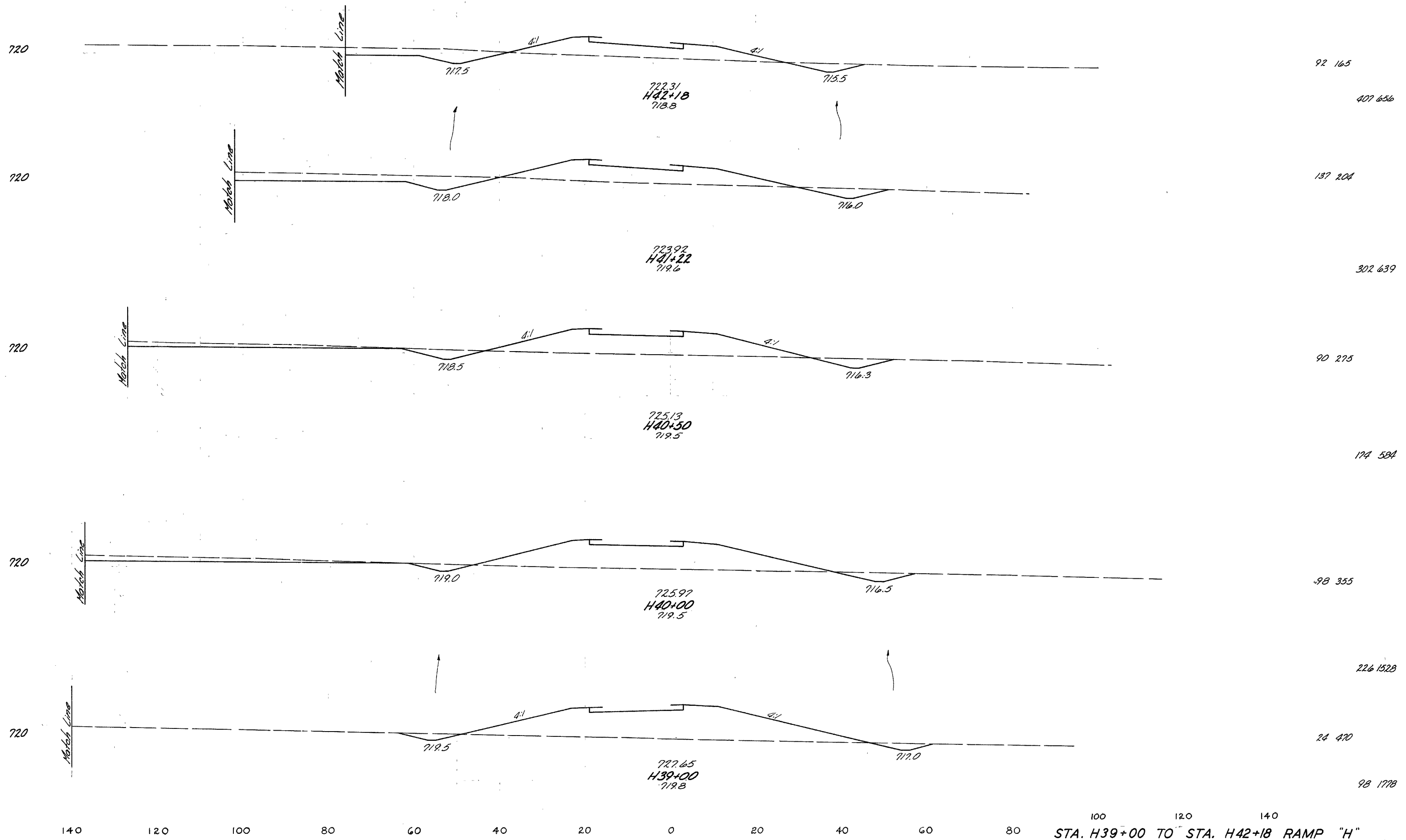
Excavation = 1,496 Cu Yds  
 Embankment = 4,337 Cu Yds  
 Embankment +18% = 5,118 Cu Yds  
 Seeding = 6,438 Sq Yds



STA. H40 + 00 TO STA. H50 + 00 RAMP "H"

LOR-254-4.08 B

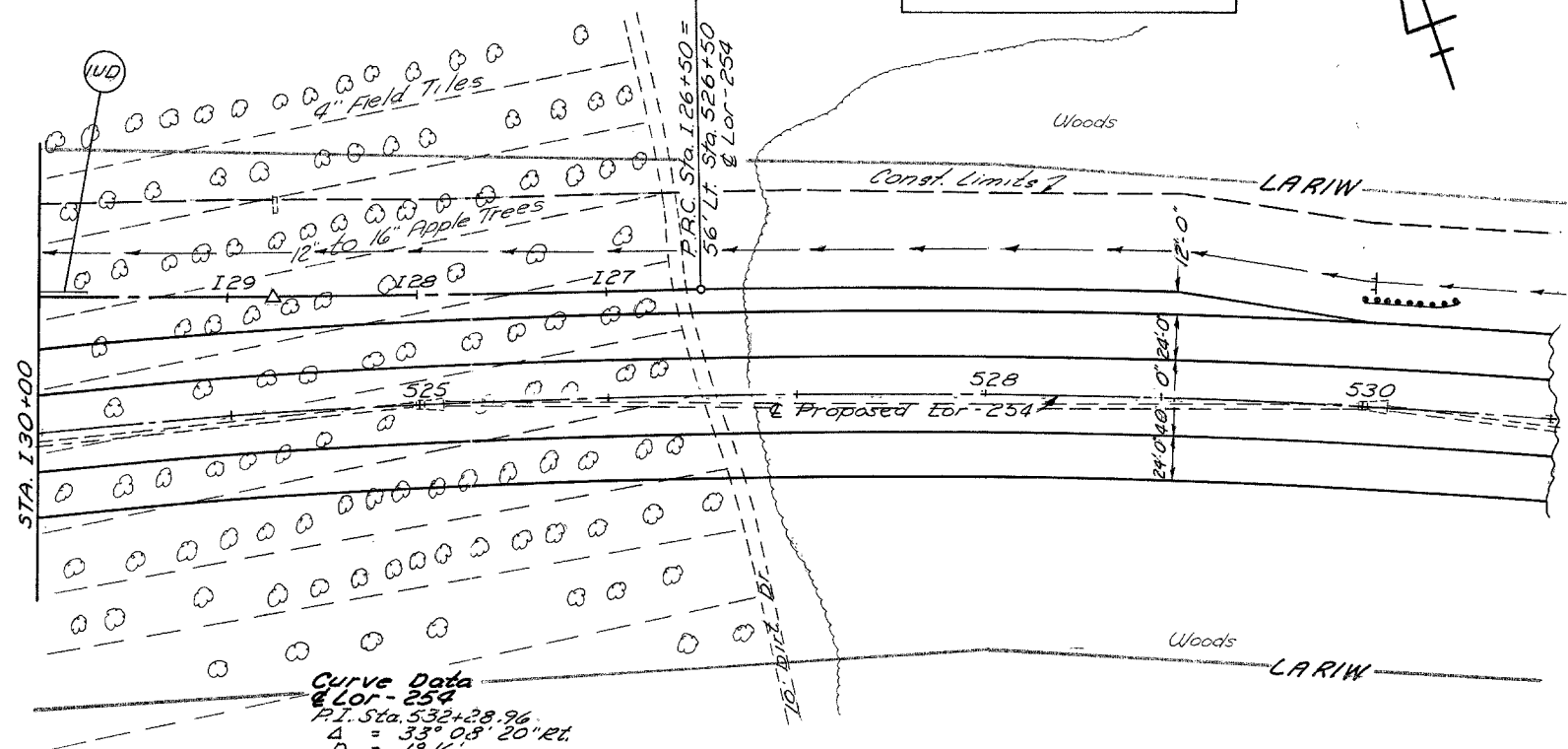
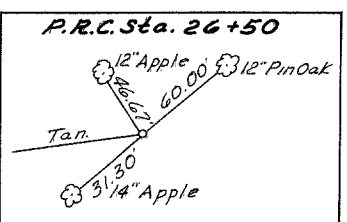
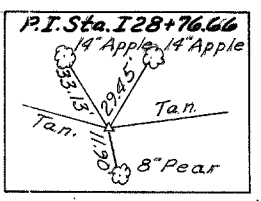








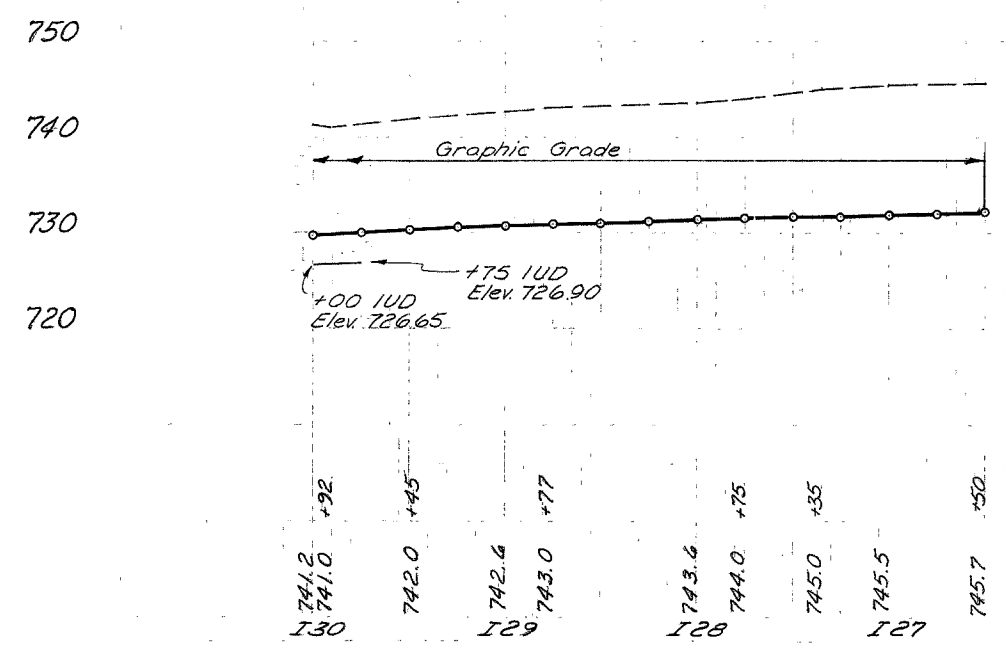
**Curve Data Ramp "I"**  
 P.I. Sta. I 28+76.66  
 Δ = 1° 07' 59"  
 D = 0° 15'  
 R = 22,918.31'  
 L = 453.29'  
 T = 226.66'  
 E = 1.12'



**Curve Data Lor-254**  
 P.I. Sta. 532+28.96  
 Δ = 33° 08' 20" Rt.  
 D = 1° 16'  
 R = 4523.35'  
 L = 1345.84'  
 T = 125.97'  
 E = 2616.23'

B.M. Boat Spike in 14" Apple  
 149' Rt. Sta. 525+42  
 Elev. 749.40

729.75
+75 730.00
+50 730.25
+25 730.45
730.65
+75 730.85
+50 731.03
+25 731.20
731.37
+75 731.53
+50 731.65
+25 731.77
731.89
+75 732.02
+50 732.15

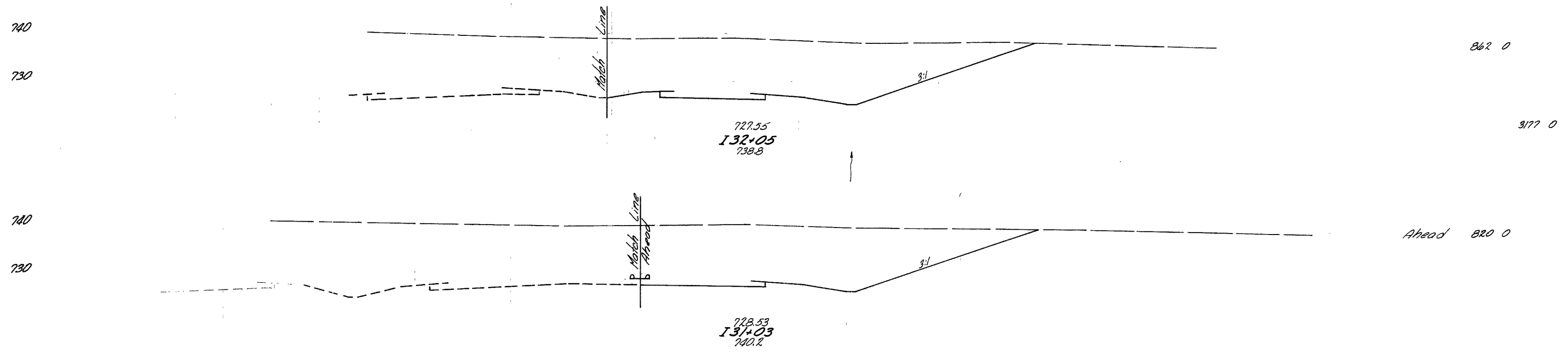


Item No.	Station		Side	I-1	Class I-3	Sec	M-64(h)				
	From	To		Lin. Ft.							
I-UD	I 29+75	I 30+00	Lt	25							
Totals				25							

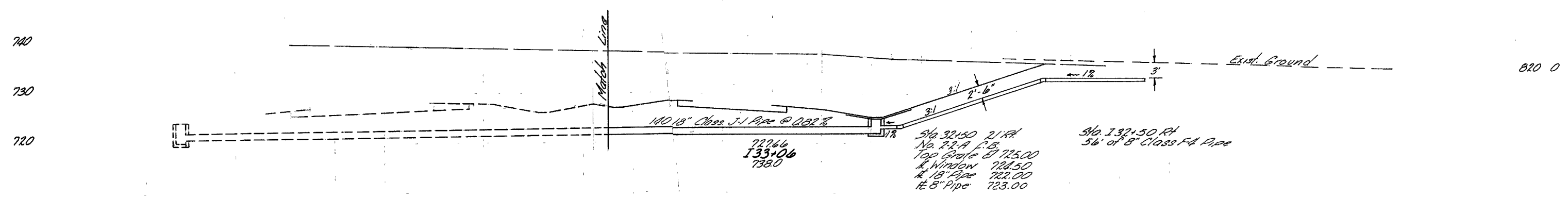
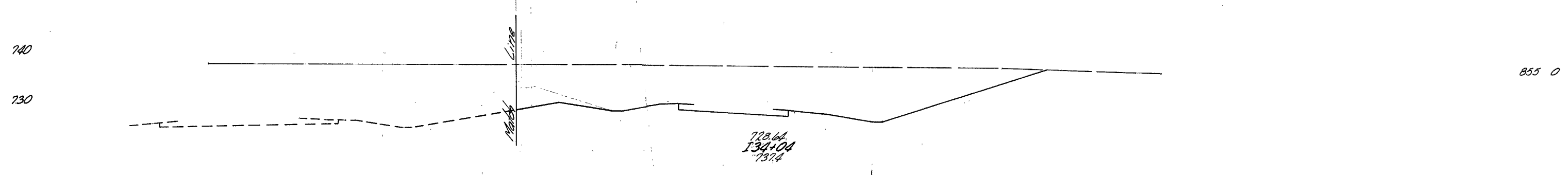
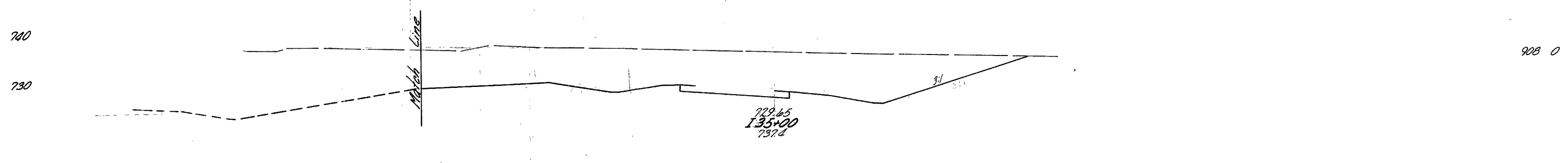
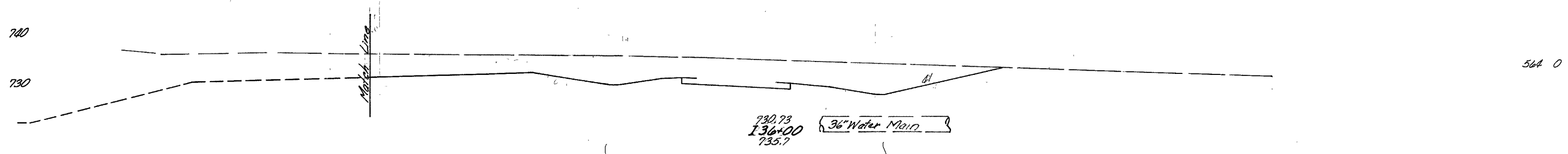


140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

LOR-254-4.08B

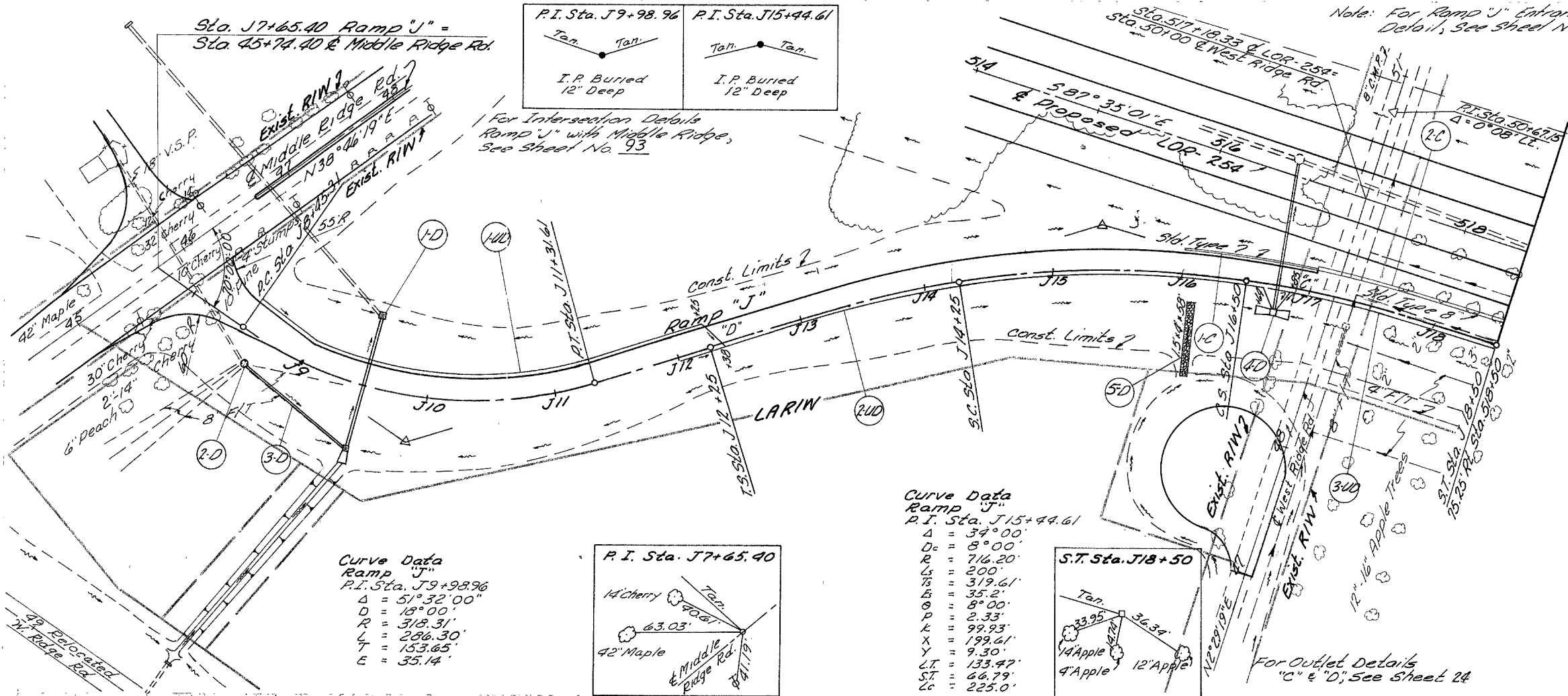


140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
STA. 131+03 TO STA. 132+05 RAMP "I"



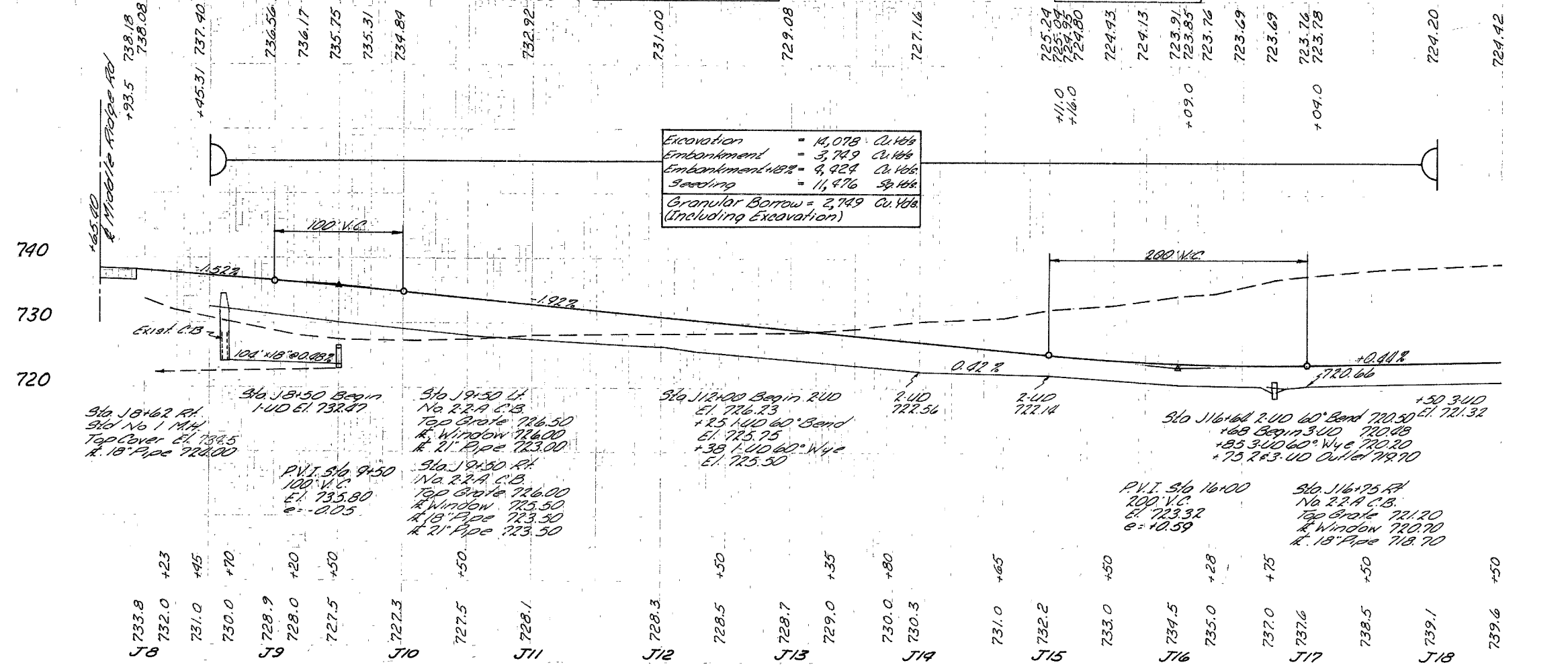


LOR-254-4.08 B

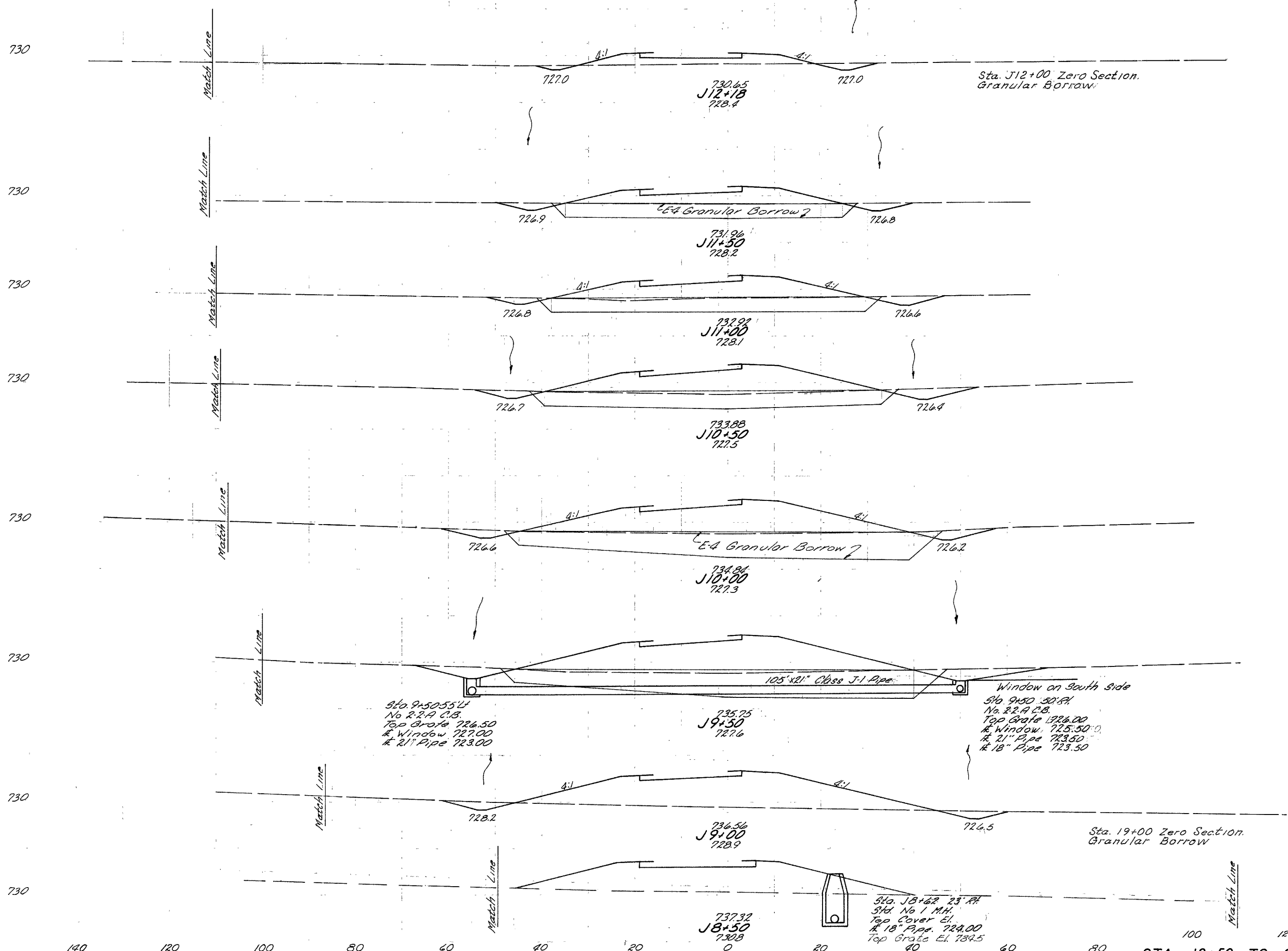


Item No.	Station		Side	I-1				I-5	
	From	To		Class I-3 6" Pipe Shallow Lin. Ft.	Class I-3 6" Pipe 5' to 6' (4' h) M-6.4 (h) Lin. Ft.	Class I-1 6" Pipe Lin. Ft.	Class I-4 6" Pipe Lin. Ft.	Pipe 3' specials Class I-3 6" Pipe 6' to 8' (4' h) Band Wye Each	Class I-3 6" Pipe 6' to 8' (4' h) Band Wye Each
1-UD	J8+50	J12+38	LAR	358		26		1	1
2-UD	J12+00	J16+75	RH	200	274		10		1
3-UD	J16+63	J18+50	RH		182		20		1
Totals				558	456	26	30	1	1

Item No.	Station		Side	I-1		I-10		I-14		I-8		I-12	
	From	To		Class I-1 18" 21' 18" Pipe Lin. Ft.	Class I-1 18" 21' 18" Pipe Width	Scrubbing Type I Width Lin. Ft.	Scrubbing Type I Area	Scrubbing Type I Lin. Ft.	Scrubbing Type I Area	Concrete Curb 3' to 3'6" Type A Each	Concrete Curb 3' to 3'6" Type B Each		
1-D	J9+50		LAR	105		1.5	5	10		2			
2-D	J8+62		RH								1		
3-D	J8+62	J9+50	RH		104								
4-D	J16+75		LAR	120		1.5	5	20		1			
5-D	J16+09		RH		13								
1-C	J16+00	J17+00	LH									100	
2-C	J17+00	52+50	LH									450	
Totals				120	105	104	13	3.0	10	30	3	1	100



LOR-254-4.08 B



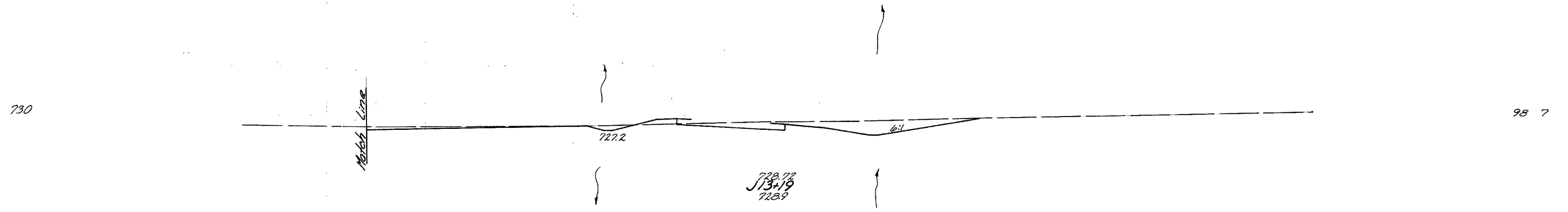
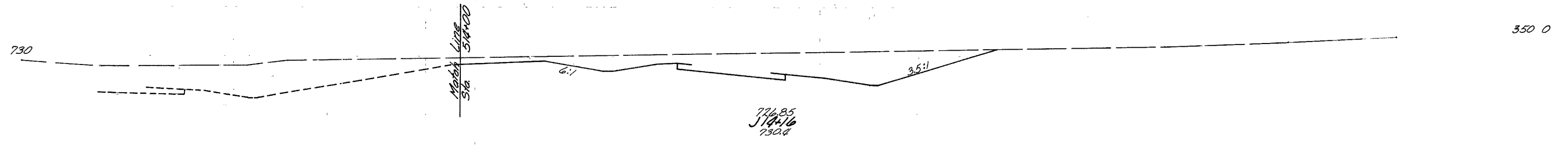
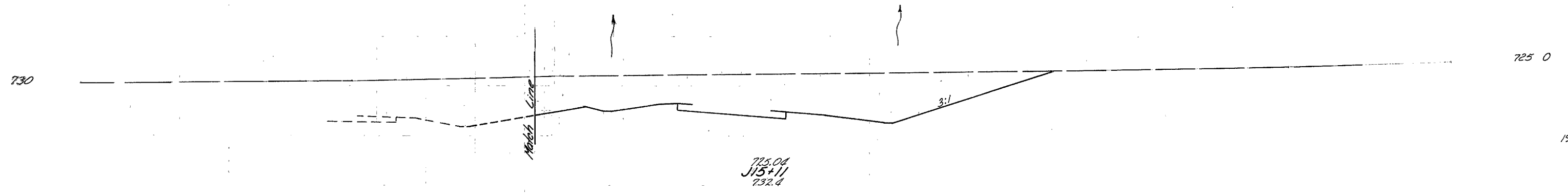
GRANULAR BORROW INCLUDING EXCAVATION	
AREA	CUMULATIVE
0	0
176	58 259
26 131	190 26 131
369	369 54 293
32 185	208 32 185
414	414 69 396
42 242	239 42 242
610	610 73 536
37 337	419 37 337
96 656	784 96 656
66 371	427 66 371
89 726	396 89 726
30 413	9+00 30 413
2749	Total 2749
0 360	Ahead Only 0 360
28 716	



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

83  
323

LOR-254-4.08B



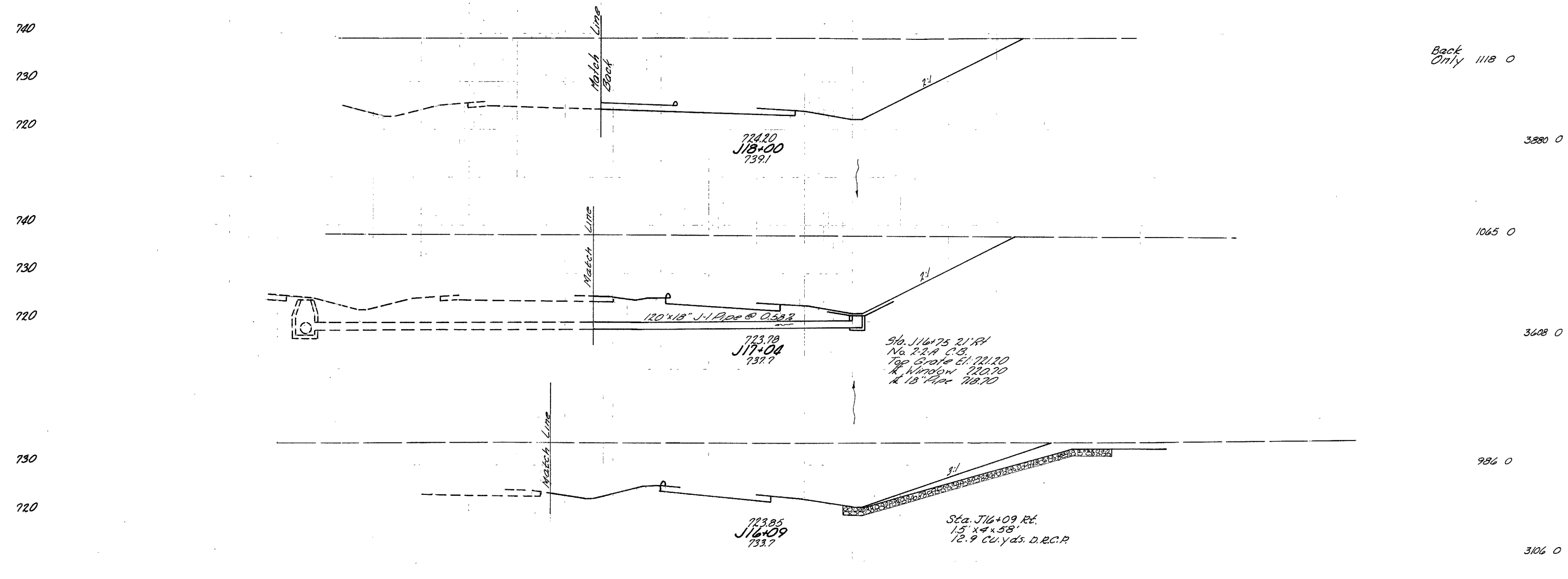
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

STA. J13+19 TO STA. J15+11 RAMP "J"

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

84  
323

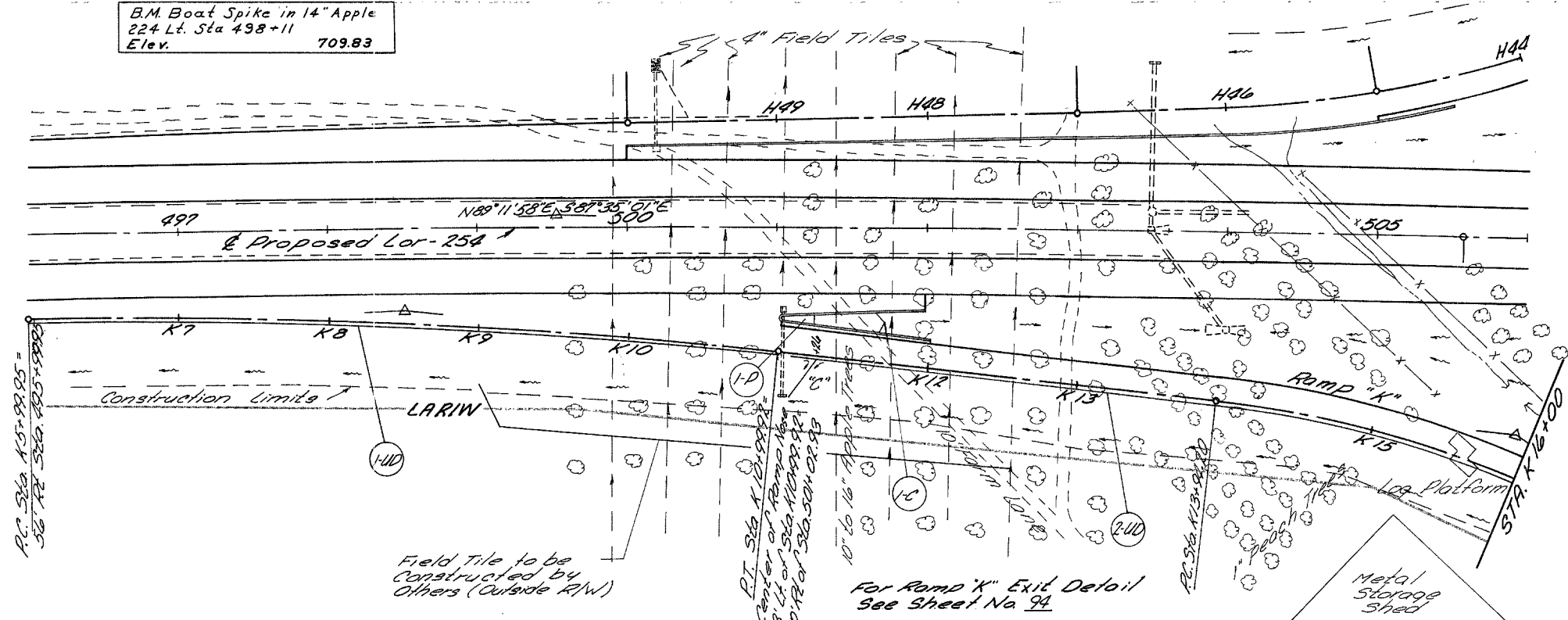
LOR-254-4.08 B



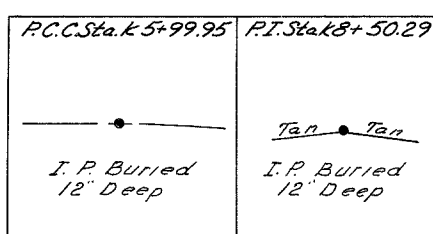
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 STA. J16+09 TO STA. J18+00 RAMP "J"

LOR-254-4.08 B

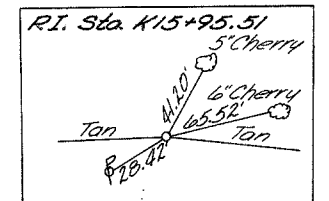
B.M. Boat Spike in 14" Apple  
224 Lt. Sta 498+11  
Elev. 709.83



Item No.	Station		Side	Pipe				
	From	To		Class I-3 6" Pipe Shallow Lin. Ft.	Class I-5 6" Pipe Sec. 17-6.9(c) Lin. Ft.	Class I-5 Pipe Specials 6" 60° Wye Each	Class I-12 Std. Type 6 Conc Curb Lin. Ft.	Class I-21 Conc. Median Div'd Std Type 1 Sp. lbs.
1-UD	K6+00	K11+00	RT	500				
2-UD	K11+06	K16+00	RT	516	10	1		
I-C	K10+9992	K11+9992	LT				204.63	
I-P	K10+9992	K11+9992	LT					11.5
Totals				1016	10	1	204.63	11.5



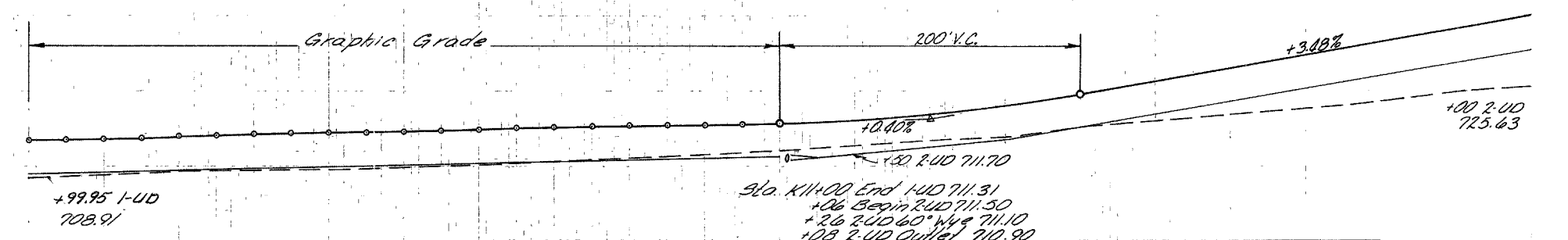
Curve Data  
Ramp "K"  
P.I. Sta. K 8+50.29  
Δ = 7° 29' 58"  
D = 1° 30'  
R = 3819.72'  
L = 499.97'  
T = 250.34'  
E = 8.20'



Curve Data  
Ramp "K"  
P.I. Sta. 499+53.92  
Δ = 3° 13' 01" RT  
D = 0° 14'  
R = 21,485.92'  
L = 1206.35'  
T = 603.34'  
E = 8.47'

Curve Data  
Ramp "K"  
P.I. Sta. K 15+95.51  
Δ = 31° 24'  
D = 8° 00'  
R = 716.20'  
L = 392.50'  
T = 201.31'  
E = 27.76'

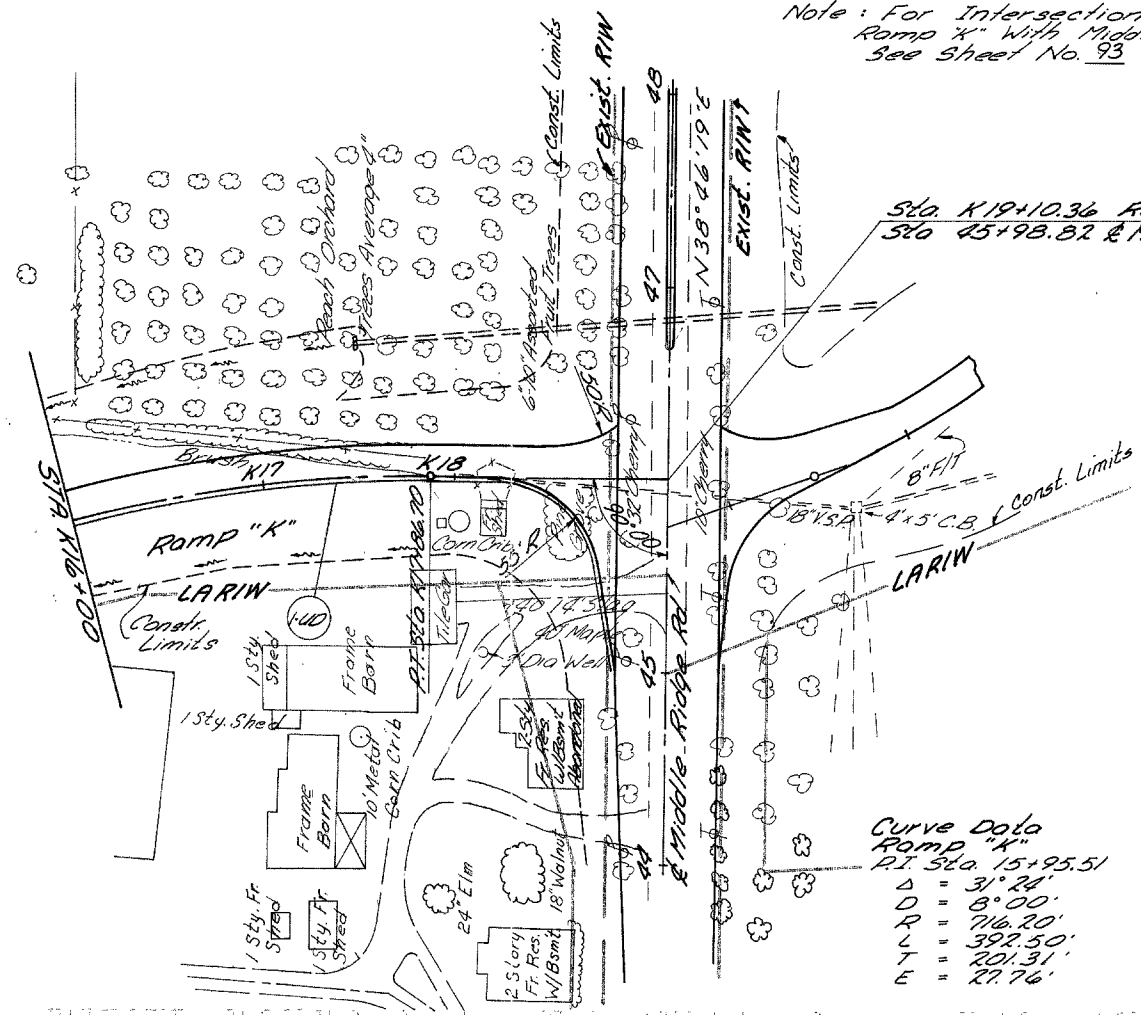
+99.95	713.41	713.55	713.68	713.82	713.96	714.09	714.22	714.34	714.46	714.58	714.70	714.82	714.94	715.06	715.17	715.28	715.39	715.50	715.60	715.71	715.81	715.96	716.20	716.54	716.92	716.98	717.51	718.14	718.87	719.55	719.69	723.17	724.65	730.13
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------



Excavation = 227 Cu. Yds.  
Embankment = 5,582 Cu. Yds.  
Embankment + 18% = 6,587 Cu. Yds.  
Seeding = 3296 Sp. lbs.

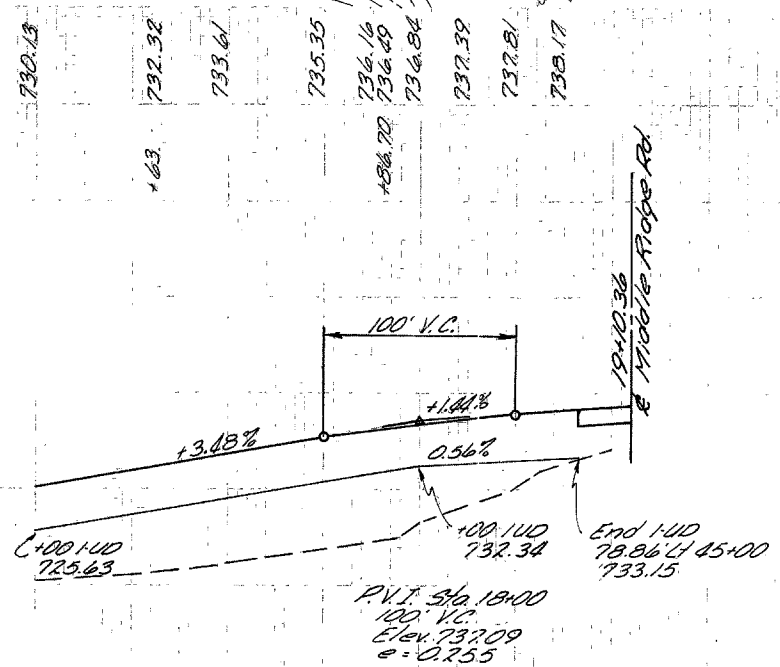
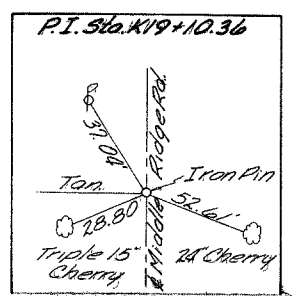
708.4	708.9	709.2	709.6	709.9	710.1	710.6	711.1	712.0	712.1	713.0	713.4	714.0	715.1	716.0	716.9	718.0	718.7	719.0	720.0	720.4
K6	K7	K8	K9	K10	K11	K12	K13	K14	K15	K16										

Note: For Intersection Details  
Ramp "K" With Middle Ridge Rd.,  
See Sheet No. 93



Sta. K19+10.36 Ramp "K" =  
Sta. 45+98.82 & Middle Ridge Rd.

Curve Data  
Ramp "K"  
P.I. Sta. 15+95.51  
D = 31' 24"  
D = 8' 00"  
R = 716.20'  
L = 392.50'  
T = 201.31'  
E = 27.76'

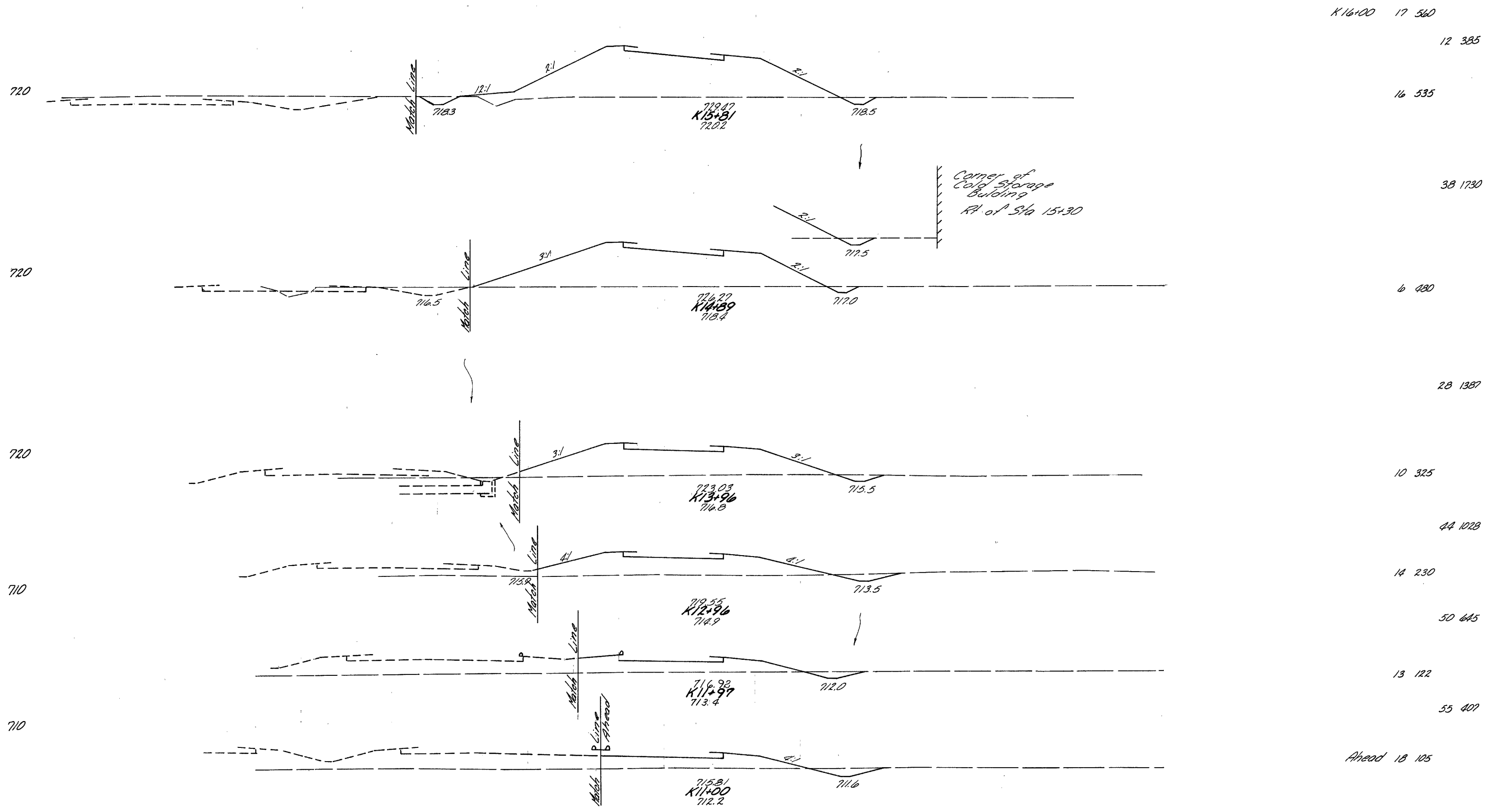


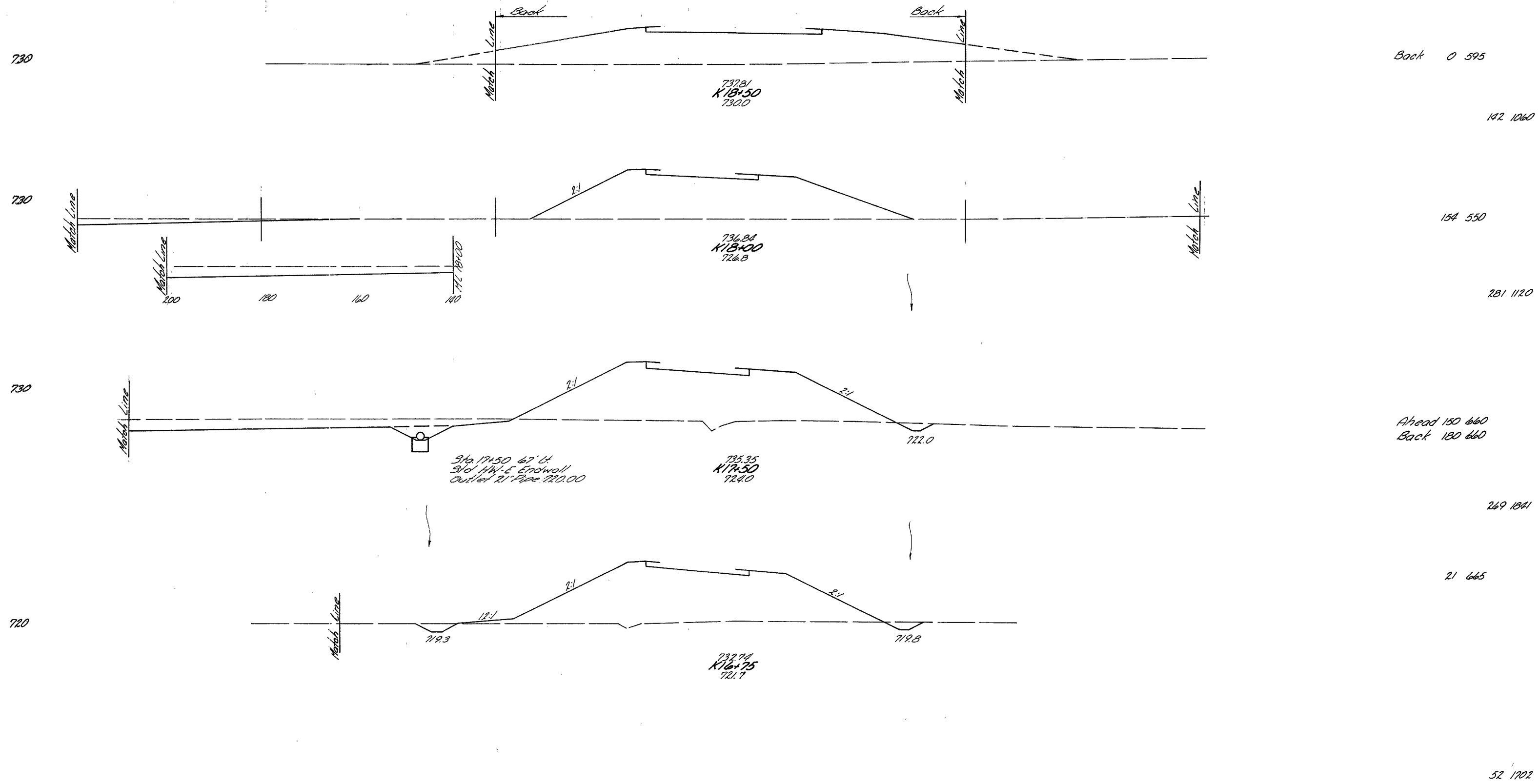
Excavation	=	744	Cu. Yds.
Embankment	=	5,723	Cu. Yds.
Embankment +18%	=	6,753	Cu. Yds.
Seeding	=	3,751	Sq. Yds.

720.4	721.0	722.0	722.2	723.0	725.0	726.6	728.0	730.0	732.0	734
K16	K17	K17	K17	K17	K18	K18	K18	K19	K19	K19
	143	192	122	190	190	148	148	148	143	

Item No.	Station		Side	I-1 6" Pipe Class I-3 Shallow Lin. Ft.					
	From	To							
140	K16+00	45+00	RT	350					
Totals				350					

LOR-254-4.08B





Back 0 595

142 1060

154 550

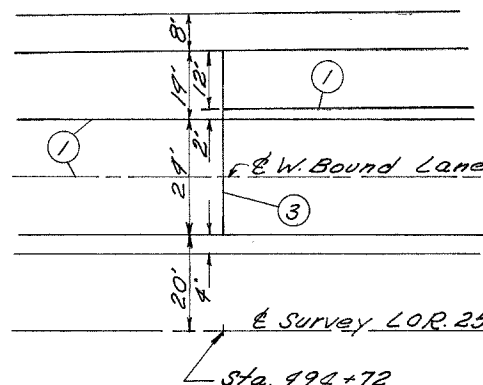
281 1120

Ahead 150 660  
Back 180 660

269 1841

21 665

52 1702



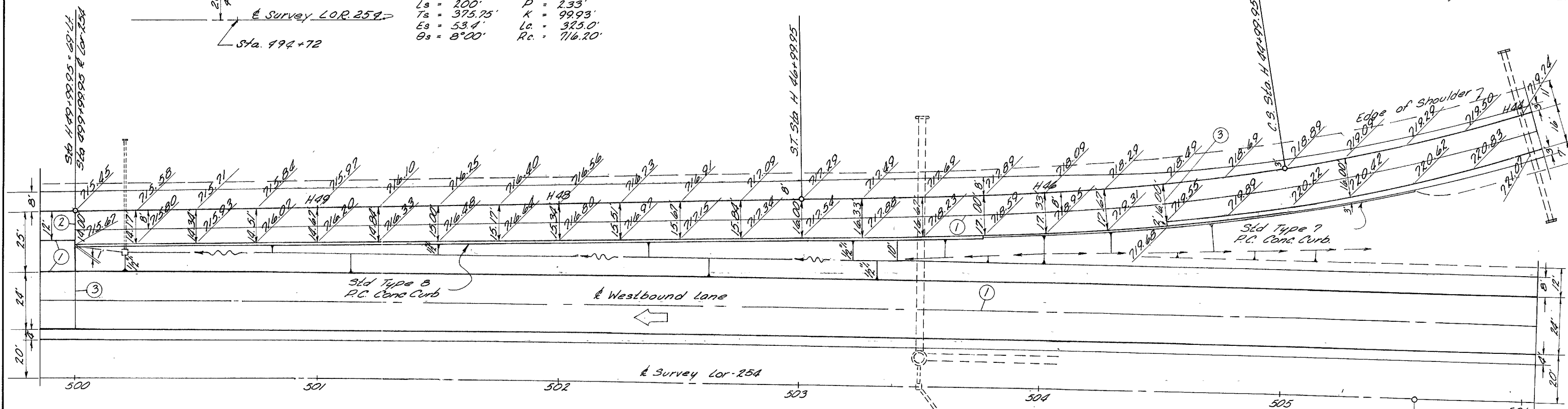
Ramp "H" Curve Data

$\Delta = 42^\circ 00'$  L.T. = 133.47'  
 $D_c = 8^\circ 00'$  S.T. = 66.79'  
 $L_s = 200'$  P = 2.33'  
 $T_s = 375.75'$  K = 99.93'  
 $E_s = 53.4'$  Lc. = 325.0'  
 $\theta_s = 8^\circ 00'$  Rc. = 716.20'

Scale: 1" = 20'

NOTE: For Ramp "H" Superelevation Tables, See Sheet 60

Note: For Culvert Details & Quantities, See Sheet No. 162

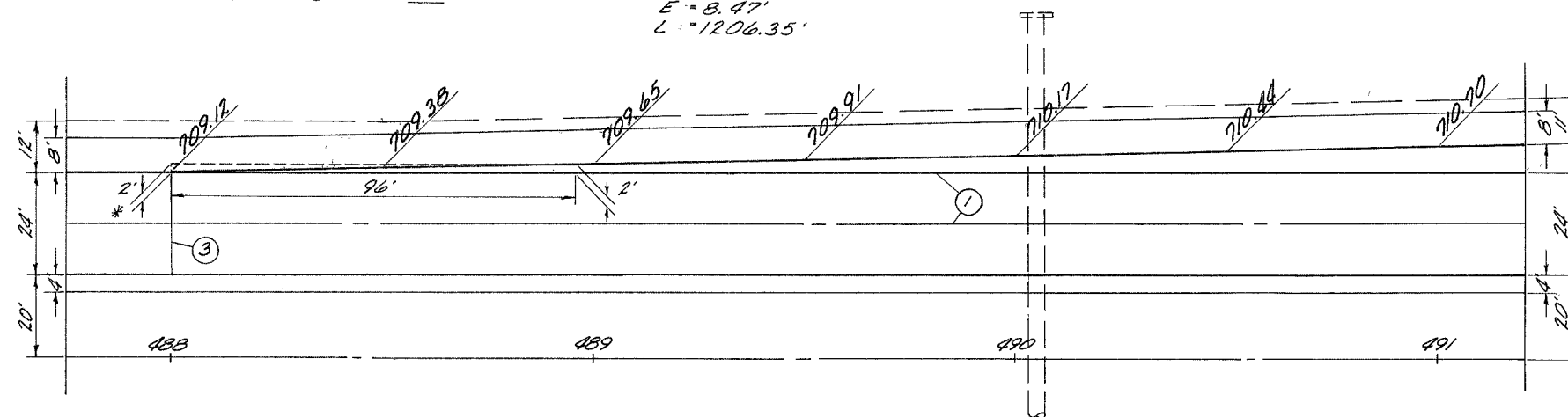


Stations	Acceleration Lane Widths	Pavement Edge Elevations	Stations	Acceleration Lane Widths	Pavement Edge Elevations
488+00	0.00	709.12	+50	13.54	712.55
+50	1.04	709.38	495+00	14.58	712.81
489+00	2.08	709.65	+50	15.62	713.08
+50	3.12	709.91	496+00	16.67	713.34
490+00	4.17	710.17	+50	17.71	713.60
+50	5.21	710.44	497+00	18.75	713.87
491+00	6.25	710.70	+50	19.79	714.13
+50	7.29	710.97	498+00	20.83	714.39
492+00	8.33	711.23	+50	21.87	714.66
+50	9.37	711.49	499+00	22.91	714.92
493+00	10.42	711.76	+50	23.96	715.19
+50	11.46	712.02	499+99.95	25.00	715.45
494+00	12.50	712.28			

CURVE DATA

P.I. Sta. 499+53.92  
 $\Delta = 3^\circ 13' 01''$  RT.  
 $D = 0^\circ 16'$   
 $R = 21,485.92$   
 $T = 603.34'$   
 $E = 8.47'$   
 $L = 1206.35'$

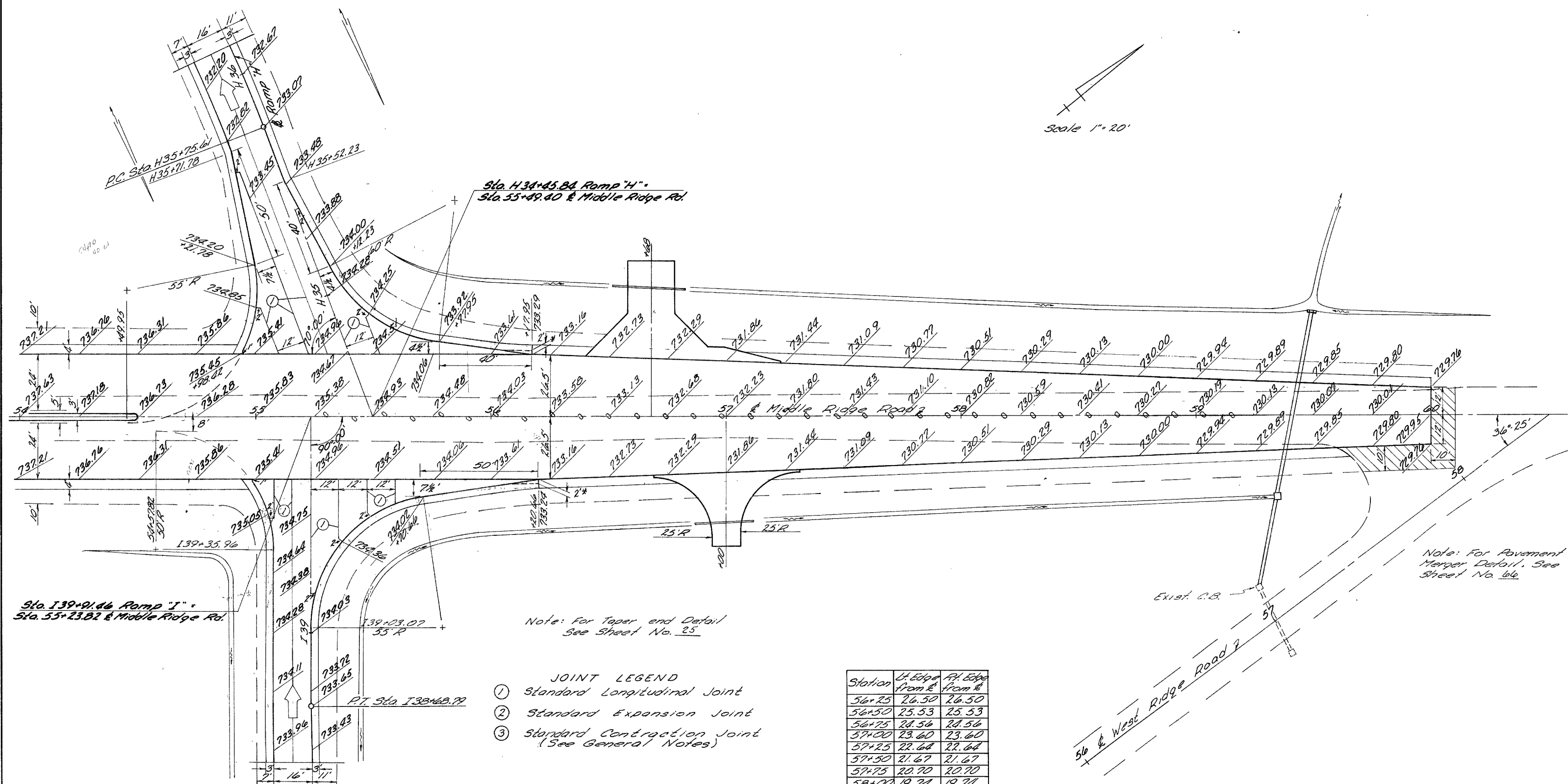
\* Note: For Taper End Detail, See Sheet No. 25



JOINT LEGEND

- ① Standard Longitudinal Joint
- ② Standard Expansion Joint
- ③ Standard Contraction Joint (See General Notes)

For Culvert Details & Quantities, See Sheet No. 15B



Scale 1"=20'

Sta. 139+91.66 Ramp "I"  
Sta. 55+23.82 & Middle Ridge Rd.

Sta. 134+45.84 Ramp "H"  
Sta. 55+49.40 & Middle Ridge Rd.

Note: For Taper end Detail  
See Sheet No. 25

Note: For Pavement  
Merger Detail, See  
Sheet No. 66

- JOINT LEGEND
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Contraction Joint  
(See General Notes)

Station	Lt. Edge from E	Rt. Edge from E
56+25	26.50	26.50
56+50	25.53	25.53
56+75	24.56	24.56
57+00	23.60	23.60
57+25	22.64	22.64
57+50	21.67	21.67
57+75	20.70	20.70
58+00	19.74	19.74
58+25	18.77	18.77
58+50	17.81	17.81
58+75	16.84	16.84
59+00	15.87	15.87
59+25	14.91	14.91
59+50	13.94	13.94
59+75	12.97	12.97
60+00	12.00	12.00



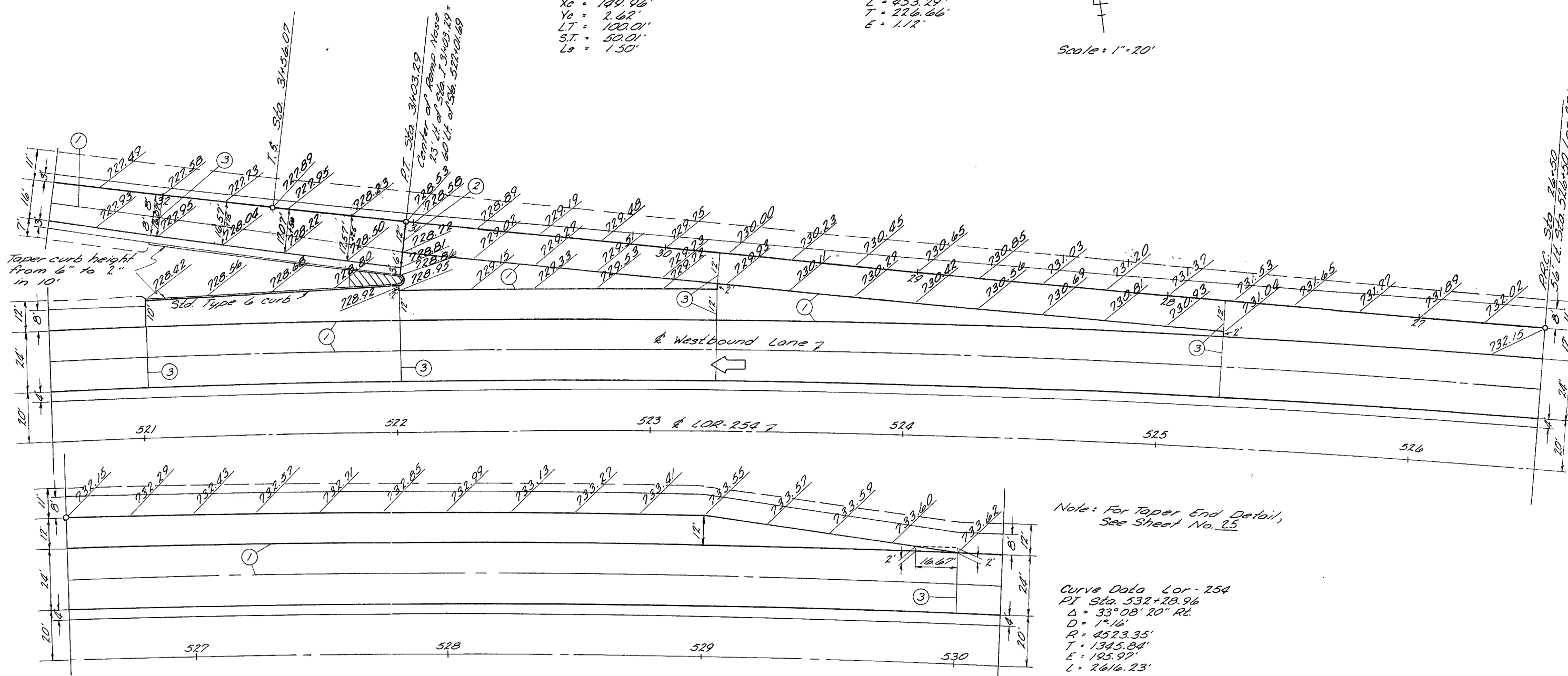
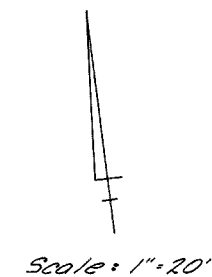
LOR-254-4.08B

Ramp "I" Curve Data

$\Delta = 3^{\circ}00'$   
 $P = 0.65'$   
 $K = 74.99'$   
 $X_c = 149.96'$   
 $Y_c = 2.67'$   
 $L.T. = 100.01'$   
 $S.T. = 50.01'$   
 $L_s = 1.50'$

Ramp "I" Curve Data

$\Delta = 1^{\circ}07'.59''$   
 $D = 0'.15'$   
 $R = 22918.31'$   
 $L = 453.29'$   
 $T = 226.66'$   
 $E = 1.12'$



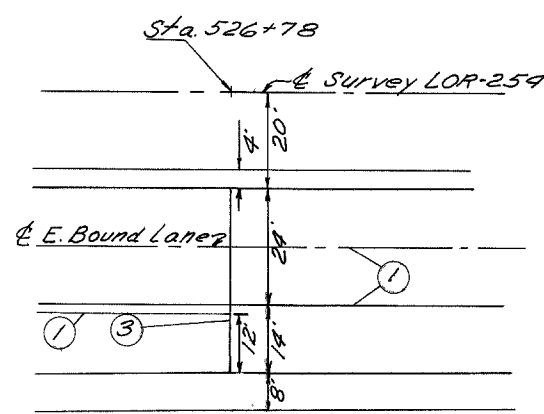
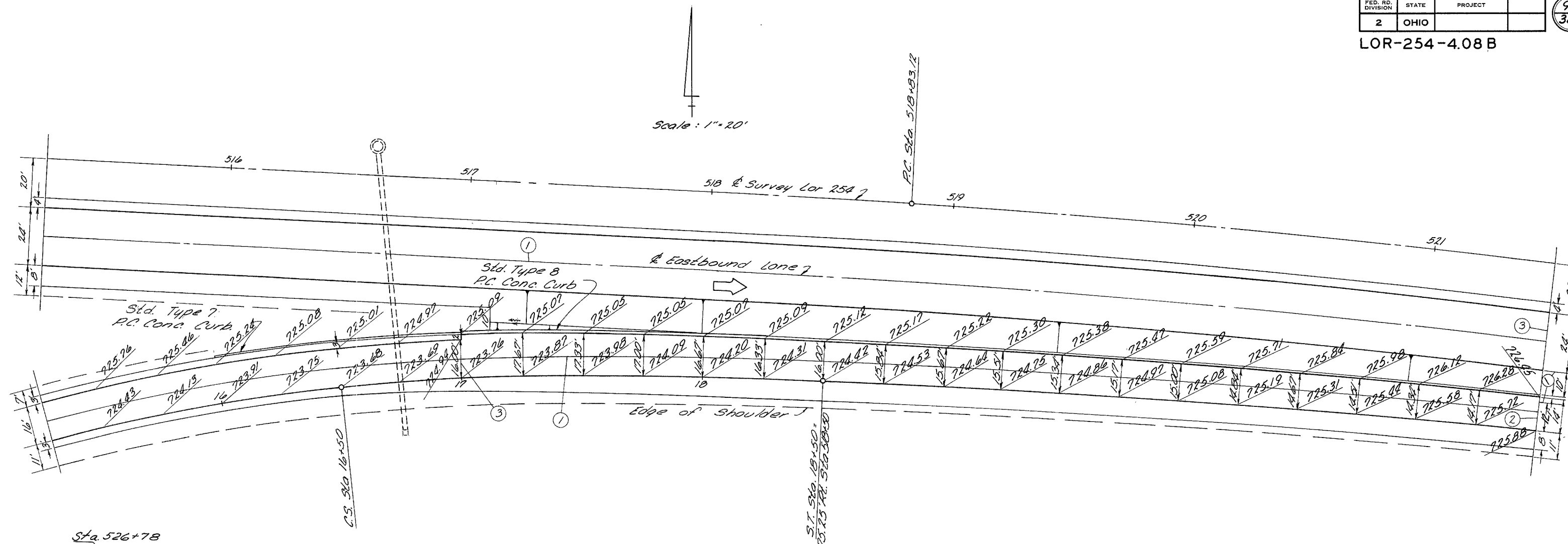
Note: For Taper End Detail, See Sheet No. 25

Curve Data Lor-254  
 PI Sta. 532+28.96  
 $\Delta = 33^{\circ}08'20''$  Rt.  
 $D = 1^{\circ}16'$   
 $R = 4523.35'$   
 $T = 1345.84'$   
 $E = 195.97'$   
 $L = 2616.23'$

- JOINT LEGEND**
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Contraction Joint (See General Notes)

Note: See Sheet No. 121 For Nose Tapering Detail

Scale: 1" = 20'



Ramp J Curve Data

PI Sta  
 $\Delta = 34^{\circ}00'$   
 $R = 716.20'$   
 $D_c = 8^{\circ}00'$   
 $L_s = 200'$   
 $T_s = 319.61'$   
 $E_s = 35.2'$   
 $\theta_s = 8^{\circ}00'$   
 $P = 2.33'$   
 $X = 99.93'$   
 $Y = 9.30'$   
 $LT = 133.47'$   
 $ST = 66.79'$   
 $L_c = 225.0'$

Curve Data @ Lor-254

PI Sta. 532+28.96  
 $\Delta = 33^{\circ}08'20''$  Rt.  
 $D = 1^{\circ}16'$   
 $R = 4523.35'$   
 $T = 1345.84'$   
 $E = 125.97'$   
 $L = 2616.23'$

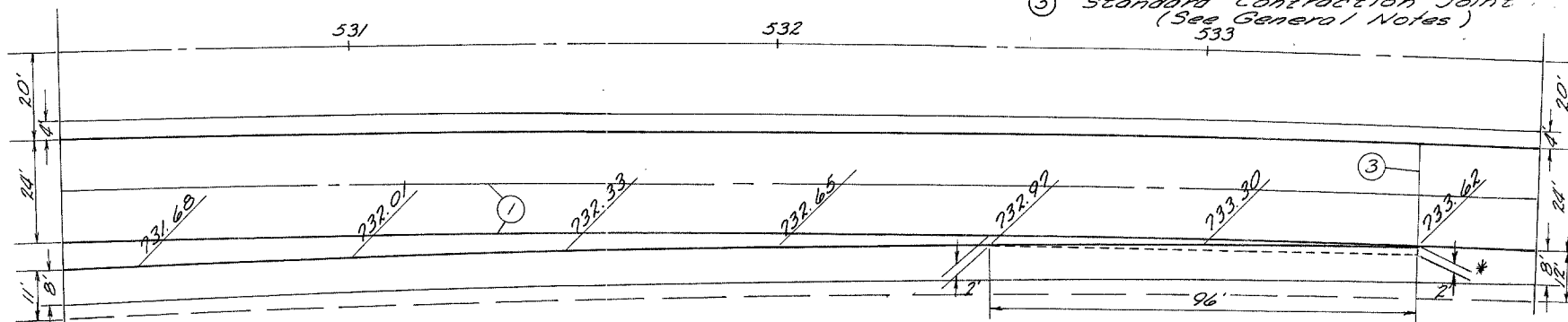
JOINT LEGEND

- ① Standard Longitudinal Joint.
- ② Standard Expansion Joint.
- ③ Standard Contraction Joint (See General Notes)

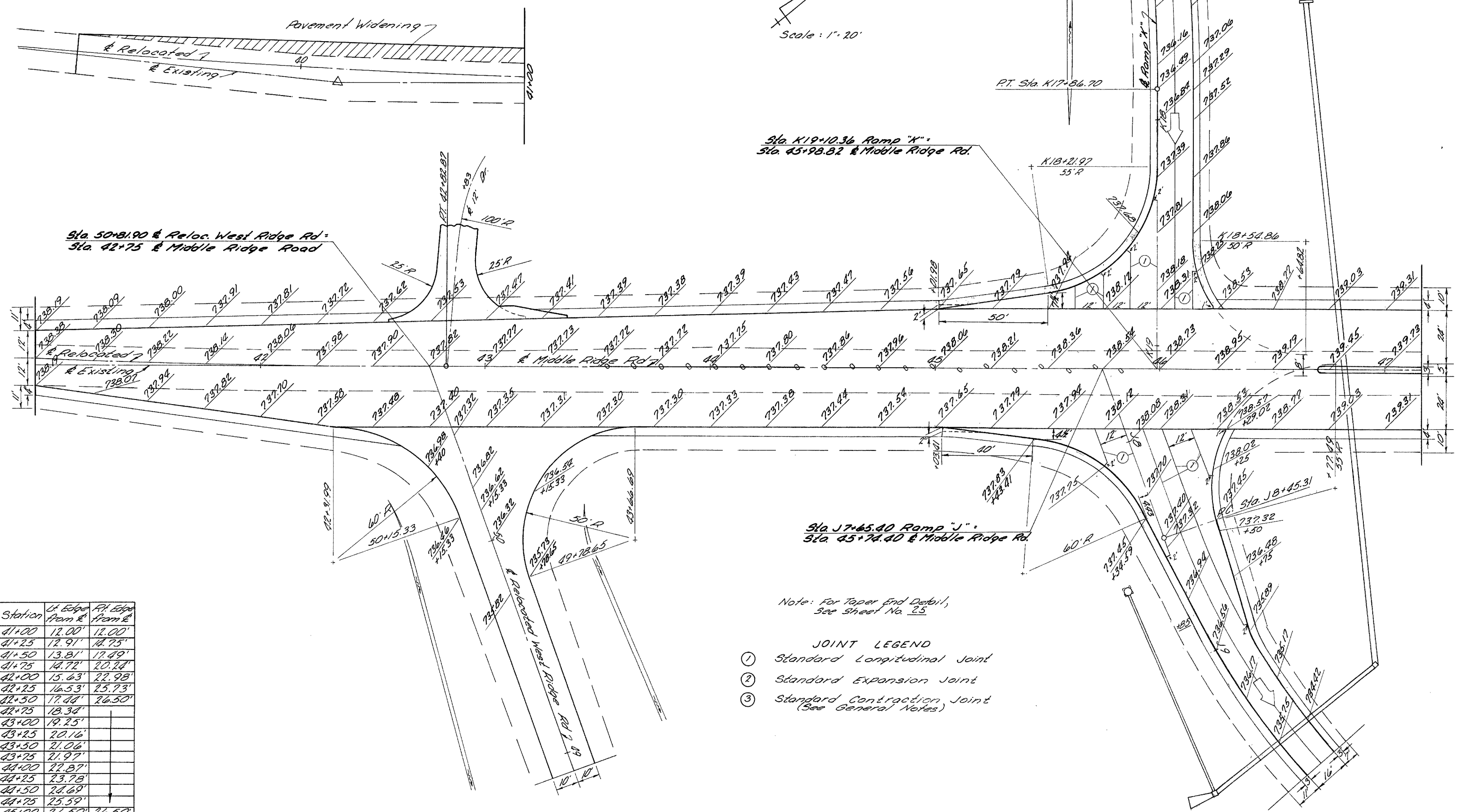
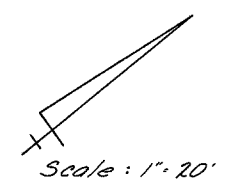
Stations	Acceleration Lane Widths	Pavement Edge Elevations	Stations	Acceleration Lane Widths	Pavement Edge Elevations
521+50	25.00'	725.88	528+00	11.46'	730.07
522+00	23.96'	726.20	+50	10.42'	730.39
+50	22.91'	726.52	529+00	9.37'	730.72
523+00	21.87'	726.84	+50	8.33'	731.04
+50	20.83'	727.17	530+00	7.29'	731.36
524+00	19.79'	727.49	+50	6.25'	731.68
+50	18.75'	727.81	531+00	5.21'	732.01
525+00	17.71'	728.13	+50	4.17'	732.33
+50	16.67'	728.46	532+00	3.12'	732.65
526+00	15.62'	728.78	+50	2.08'	732.97
+50	14.58'	729.10	533+00	1.04'	733.30
527+00	13.54'	729.42	+50	0.00'	733.62
+50	12.50'	729.75			

Note: For Ramp "J" Superelevation Tables, See Sheet No. 60

\*Note: For Taper End Detail, See Sheet No. 25



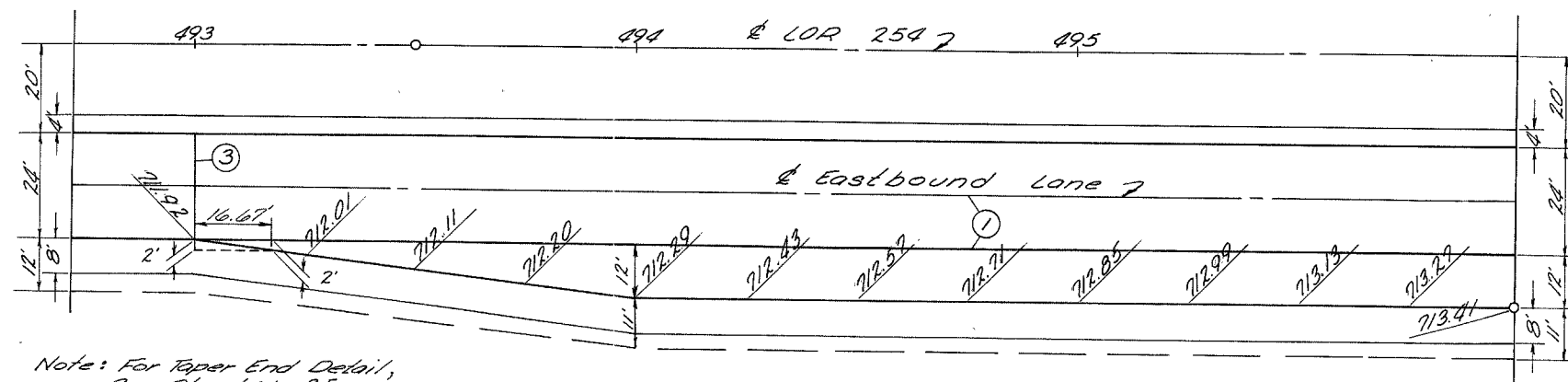
**CURVE DATA**  
 P.I. Sta. 40+14.73  
 $\Delta = 5^{\circ} 22' 14''$   
 $D = 1^{\circ} 00'$   
 $R = 5,729.58'$   
 $L = 536.67'$   
 $T = 268.53'$   
 $E = 6.29'$



Station	Lt. Edge from E	Rt. Edge from E
41+00	12.00'	12.00'
41+25	12.91'	14.75'
41+50	13.81'	17.49'
41+75	14.72'	20.24'
42+00	15.63'	22.98'
42+25	16.53'	25.73'
42+50	17.44'	26.50'
42+75	18.34'	
43+00	19.25'	
43+25	20.16'	
43+50	21.06'	
43+75	21.97'	
44+00	22.87'	
44+25	23.78'	
44+50	24.69'	
44+75	25.59'	
45+00	26.50'	26.50'

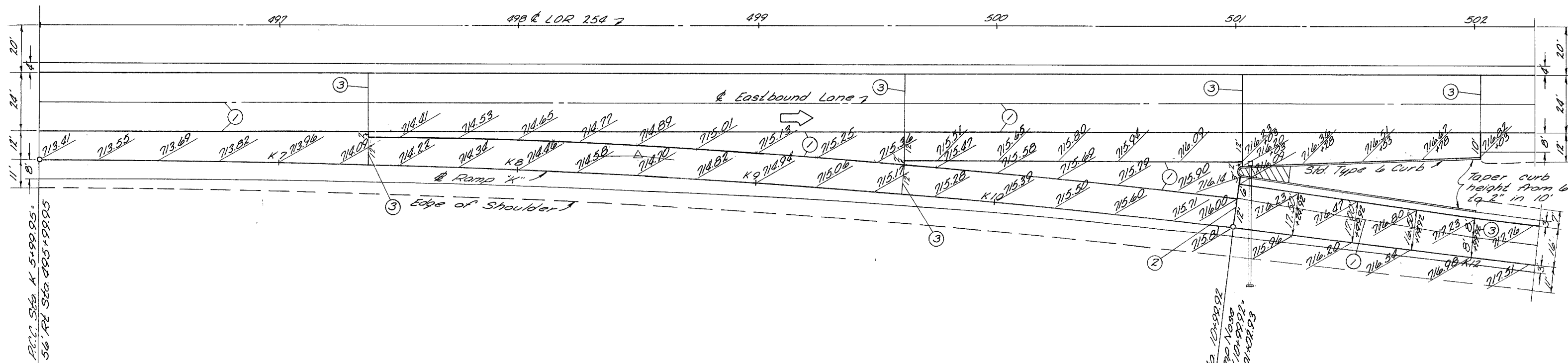
Note: For Taper End Details, See Sheet No. 25

- JOINT LEGEND**
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Contraction Joint (See General Notes)



Scale: 1" = 20'

P.I. Sta. 499+53.92  
 $\Delta = 3^{\circ}13'01''$  Rt.  
 $D = 0^{\circ}16'$   
 $R = 21,485.92'$   
 $T = 603.34'$   
 $L = 1206.35'$   
 $E = 8.47'$



- JOINT LEGEND**
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Contraction Joint  
(See General Notes)

Ramp "K" Curve Data  
 P.I. Sta. K 5+50.29  
 $\Delta = 7^{\circ}29'58''$   
 $D = 1^{\circ}30'$   
 $R = 3819.72'$   
 $L = 499.97'$   
 $T = 250.34'$   
 $E = 8.20'$

P.I. Sta. 10+99.92  
 Center of Ramp Nose  
 P.C. Sta. K 10+99.92  
 S.G. Pt. Sta. 501+99.93

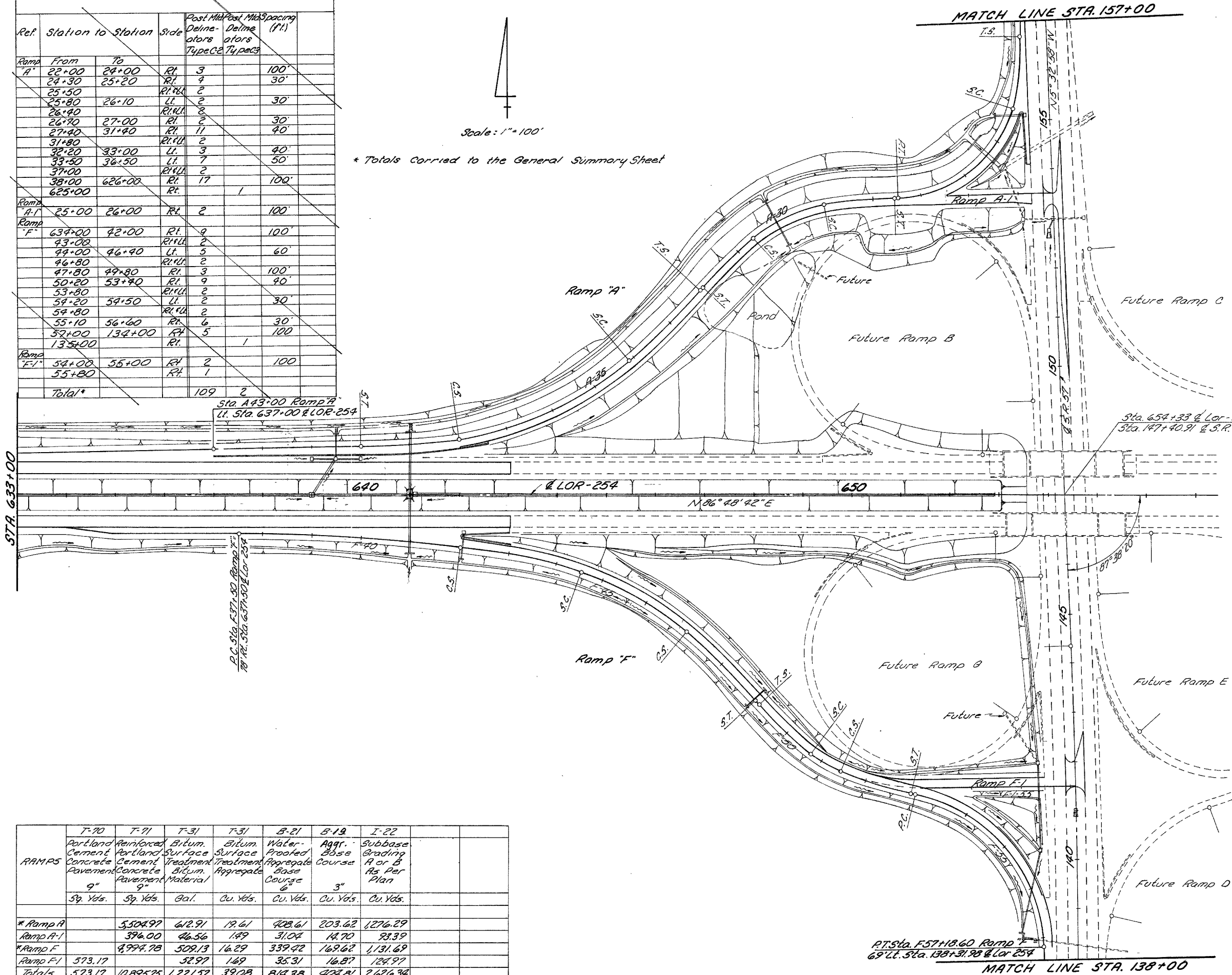
Note: See Sheet No. 121  
 For Nose Tapering  
 Detail.

LOR - 254 - 4.08 - B

Ref.	Station	Station	Side	Post Deline-ators Type	Mid Post Deline-ators Type	Max Spacing (ft)
Ramp A	22+00	24+00	Rt.	3		100'
	24+30	25+20	Rt.	4		30'
	25+50	26+10	Lt.	2		30'
	26+40	27+00	Rt.	2		30'
	27+40	31+40	Rt.	11		40'
	31+80	33+00	Lt.	3		40'
	33+50	36+50	Lt.	7		50'
	37+00	38+00	Rt.	2		
	38+00	626+00	Rt.	17		100'
Ramp A-1	25+00	26+00	Rt.	2		100'
Ramp F	634+00	42+00	Rt.	9		100'
	43+00	44+00	Rt.	2		
	44+00	46+40	Lt.	5		60'
	46+80	47+80	Rt.	3		100'
	47+80	49+80	Rt.	3		90'
	50+20	53+40	Rt.	9		90'
	53+80	54+20	Rt.	2		30'
	54+20	54+80	Rt.	2		30'
	55+10	56+60	Rt.	6		30'
	57+00	134+00	Rt.	5		100'
Ramp F-1	54+00	55+00	Rt.	2		100'
	55+80		Rt.	1		
Total*				109	2	

\* Totals Carried to the General Summary Sheet

Scale: 1" = 100'



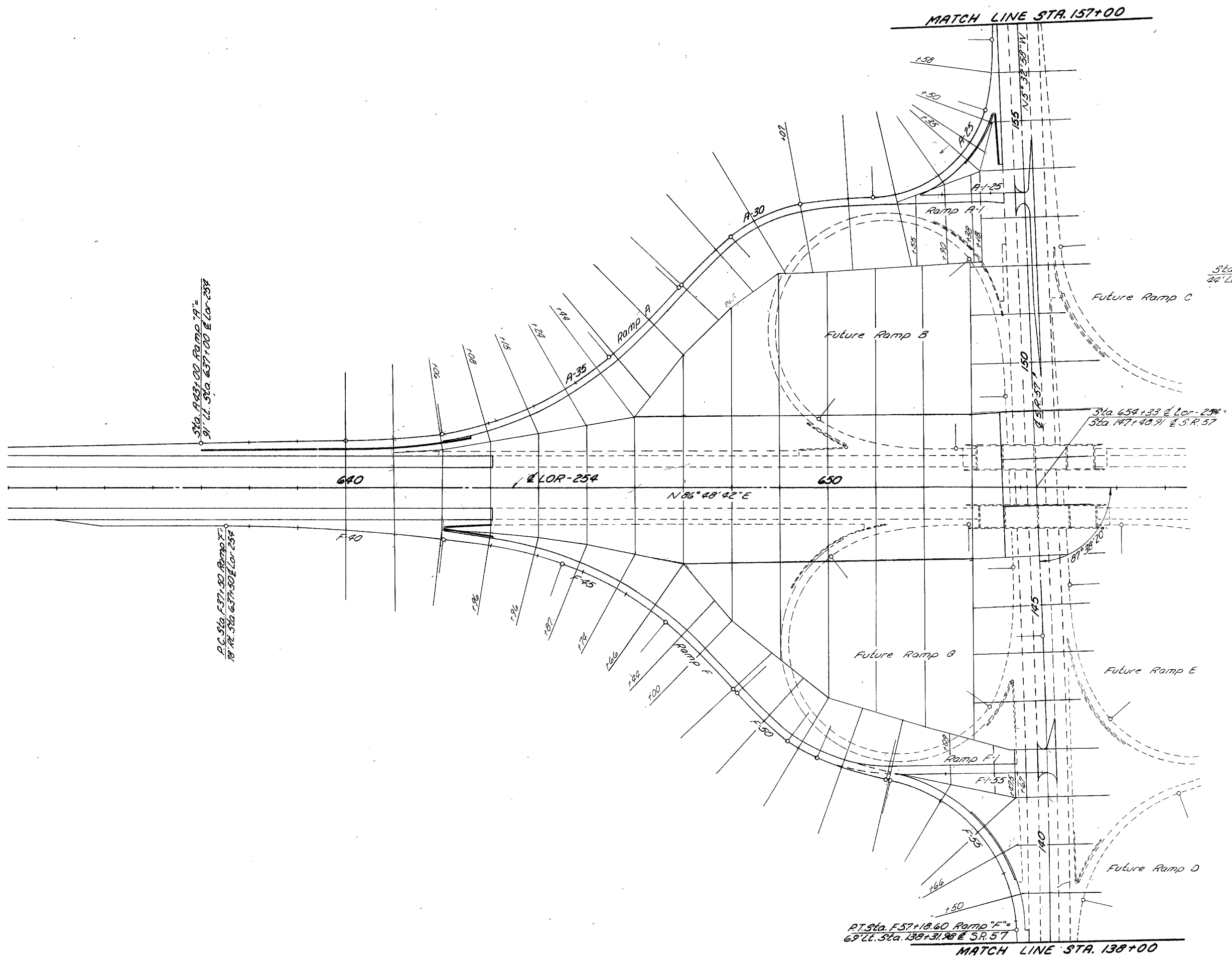
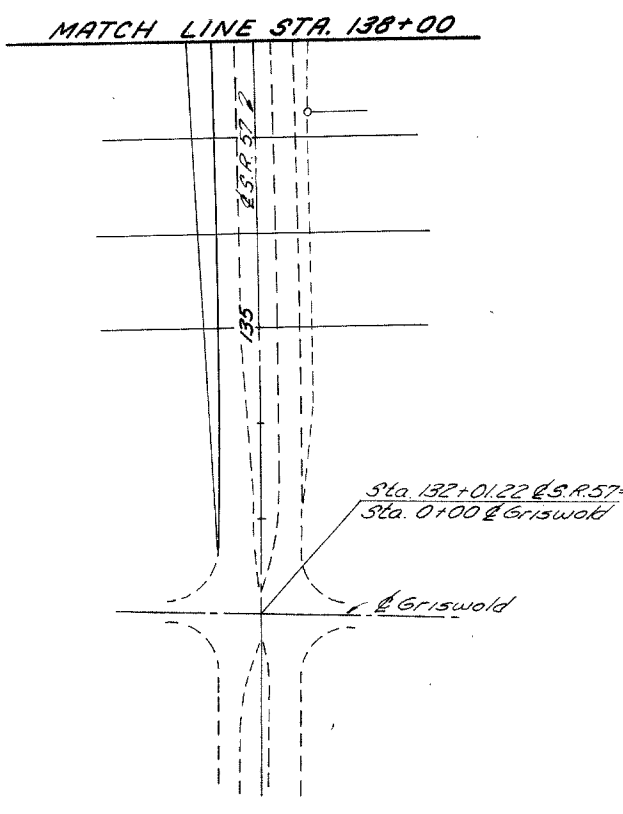
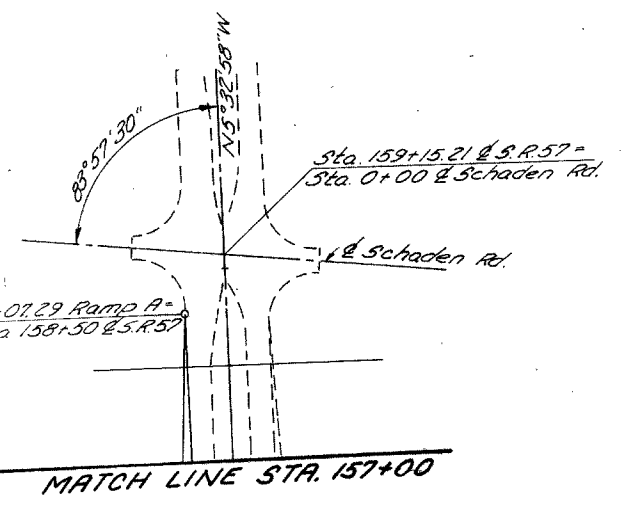
	T-70	T-71	T-31	T-31	B-21	B-19	I-22
RAMPS	Portland Cement Concrete Pavement 9"	Reinforced Cement Pavement 9"	Bitum. Surface Treatment Material	Bitum. Surface Treatment Aggregate	Water-Proofed Aggregate Base Course	Aggr. Base Course 3"	Subbase Grading A or B As Per Plan
	Sq. Yds.	Sq. Yds.	Gal.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.
* Ramp A		5,504.97	612.91	19.61	428.61	203.62	1,276.29
Ramp A-1		396.00	46.56	149	31.04	14.70	93.39
* Ramp F		4,974.78	509.13	16.29	339.42	169.62	1,131.69
Ramp F-1		573.17	52.97	1.69	35.31	16.87	124.97
Totals	573.17	10,895.75	1,221.57	39.08	814.38	404.81	2,626.34

\* Including Quantities for Respective Acceleration or Deceleration Lanes

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		97 323

LOR-254-408 B

MATCH LINE STA. 157+00



MATCH LINE STA. 138+00

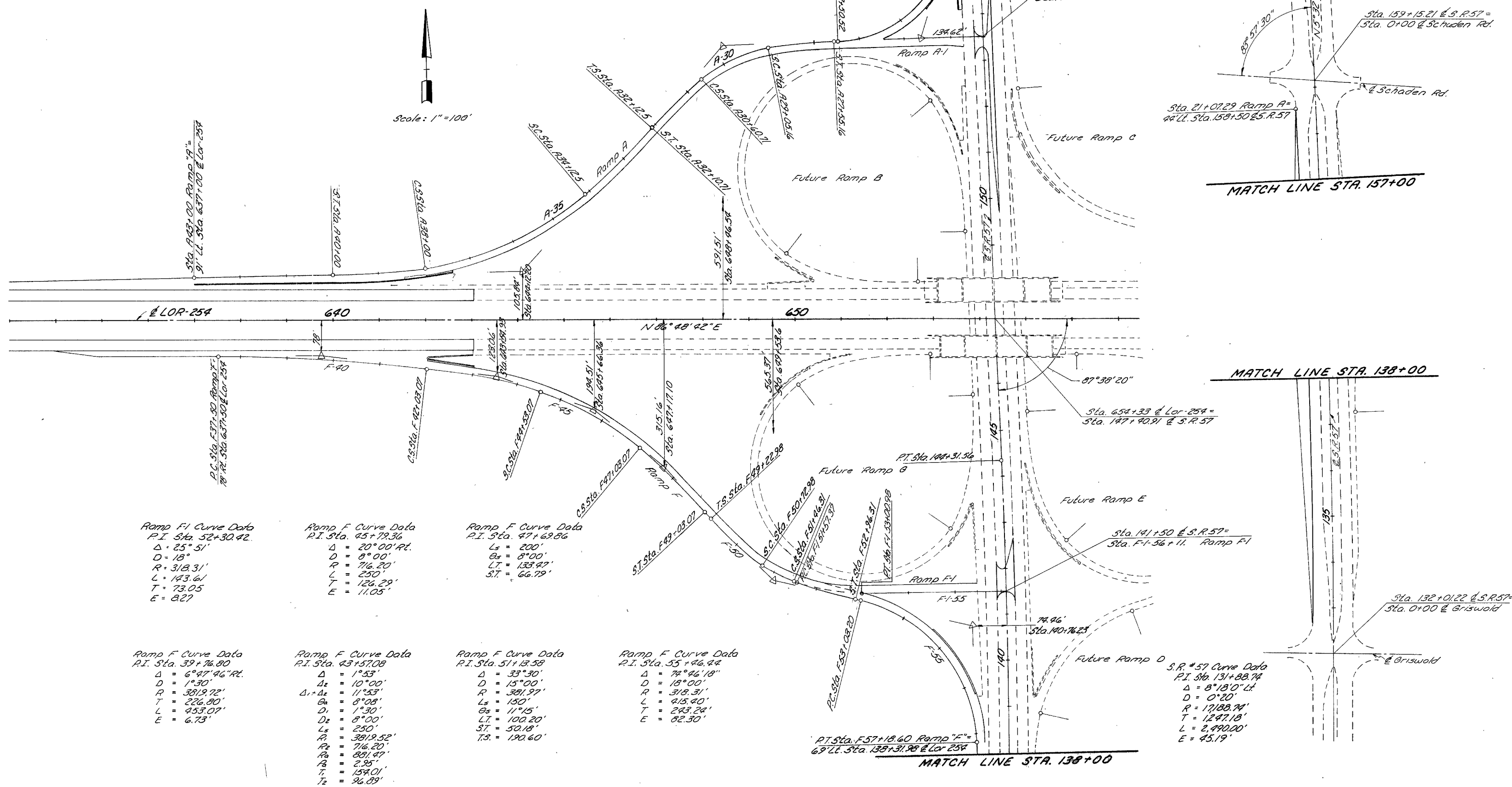
LOR-254-4.08-B

**Ramp A Curve Data**  
P.I. Sta. 36+24.86  
 $\Delta = 47^{\circ}00'$   
 $D_c = 8^{\circ}00'$   
 $L_s = 200'$   
 $L_c = 412.36'$   
 $E_s = 67.3'$   
 $E_c = 8^{\circ}20'$   
 $P = 2.33'$   
 $K = 29.23'$   
 $R = 716.20'$

**Ramp A Curve Data**  
P.I. Sta. 29+92.57  
 $\Delta = 45^{\circ}49'57''$   
 $D_c = 15^{\circ}00'$   
 $L_s = 11.25'$   
 $L_c = 150'$   
 $E_s = 237.41'$   
 $E_c = 155.55'$   
 $P = 100.20'$   
 $LT = 50.18'$   
 $ST = 149.92'$   
 $X_c = 9.79'$   
 $R = 381.97'$

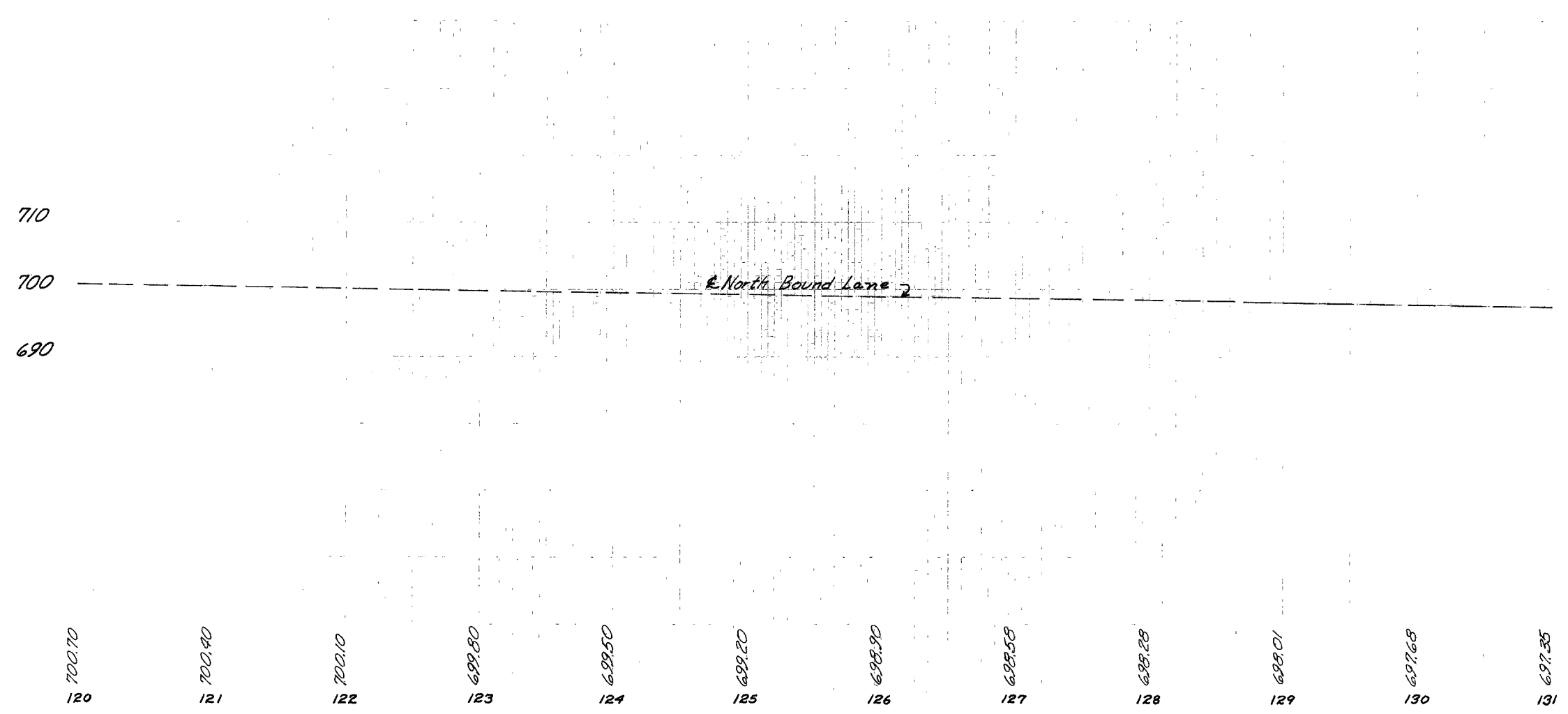
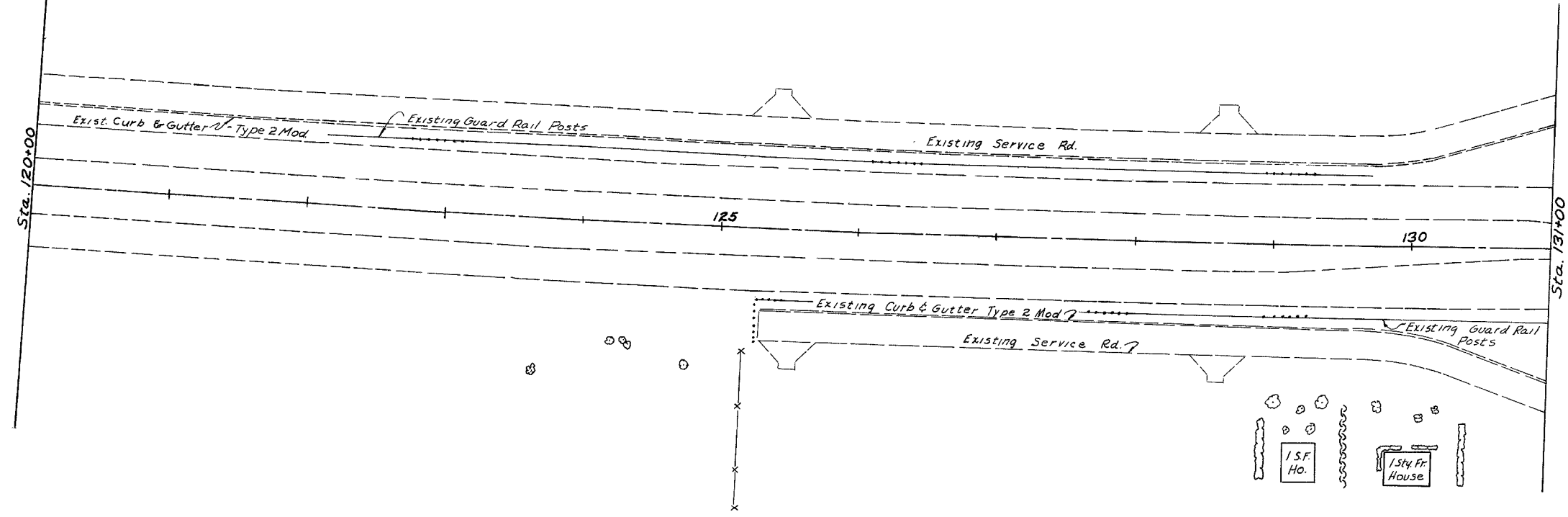
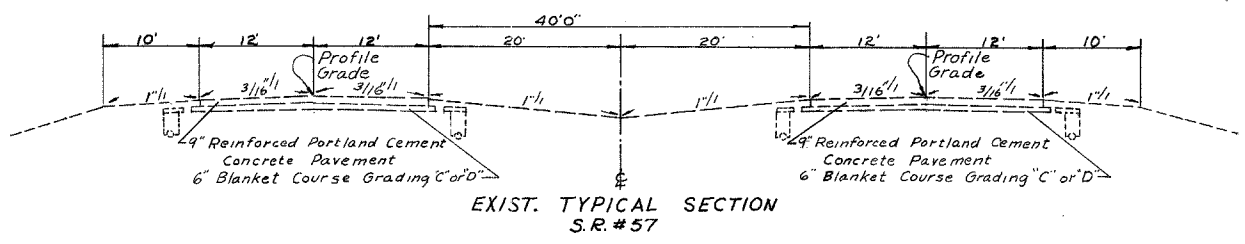
**Ramp A Curve Data**  
P.I. Sta. 26+13.84  
 $\Delta = 70^{\circ}45'07''$   
 $D = 22^{\circ}00'$   
 $R = 260.44'$   
 $E = 58.94'$   
 $L_s = 321.60'$   
 $L_c = 184.92'$

**Ramp A Curve Data**  
P.I. Sta. 23+79.36  
 $\Delta = 16^{\circ}30'$   
 $L_s = 150'$   
 $X_c = 148.76'$   
 $X_e = 14.31'$   
 $P = 3.59'$   
 $K = 74.79'$   
 $LT = 100.44'$   
 $ST = 50.40'$



LOR-254-408 B

Exist. Curve Data  
 P.I. Sta. 131+88.74  
 $\Delta = 8^{\circ} 18' 0''$  LL.  
 $D = 0^{\circ} 20'$   
 $L = 2490.0'$   
 $E = 45.19'$   
 $T = 1247.18'$   
 $R = 17188.74'$

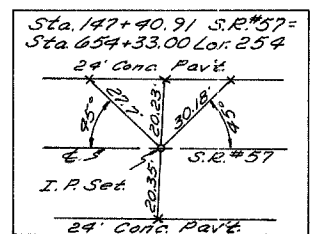
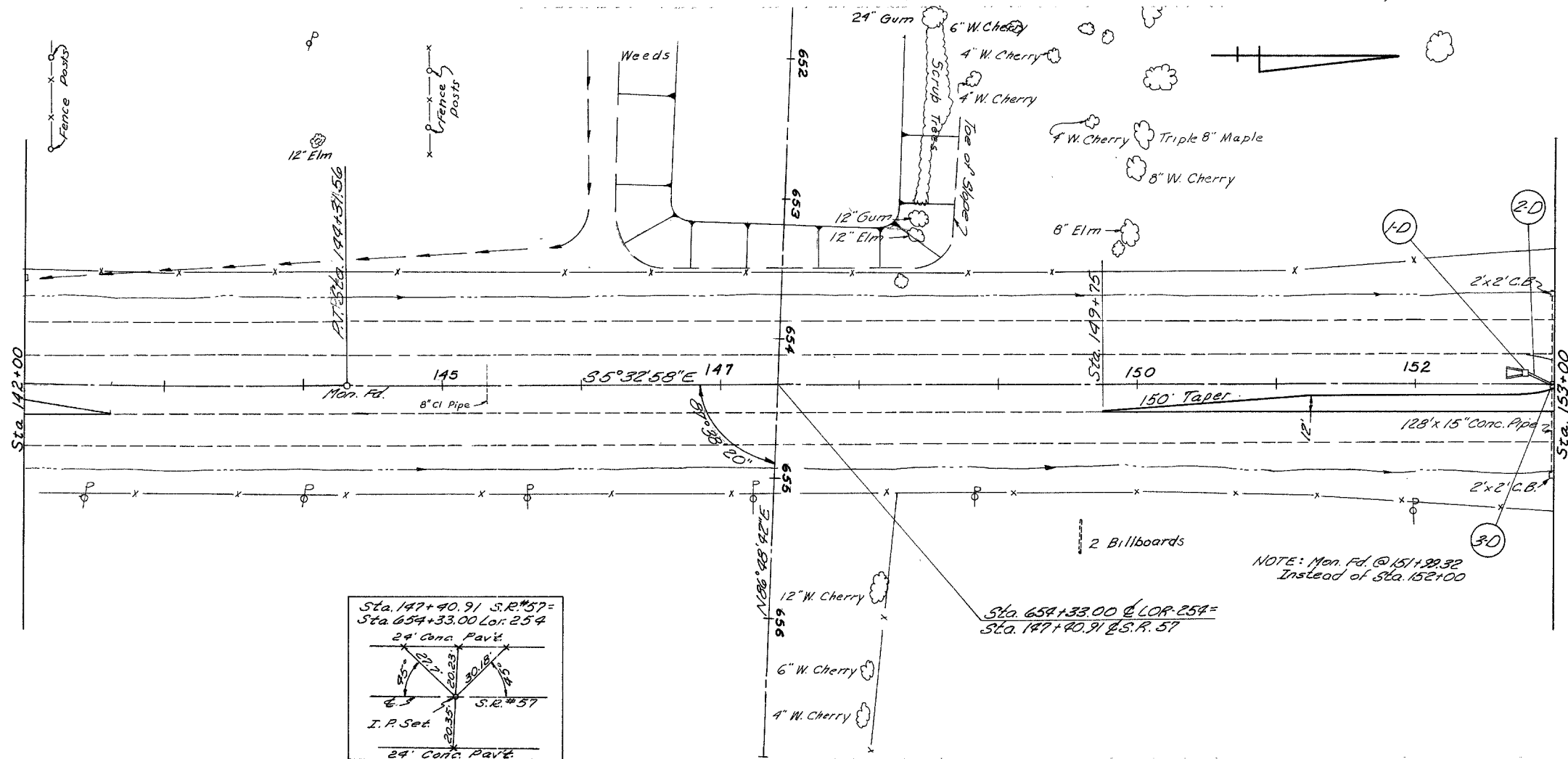






LOR-254-408 B

Item No.	Station		Side	I-8	I-19	I-1	I-16			
	From	To		Standard No. 2-A Catch Basin	5/16" Pipe Paved Butler Mod. As Per Plan	12" Pipe Class E1	Abandon Catch Basin			
				Each	Lin. Ft.	Lin. Ft.	Each			
1-D	152+79		LT.	1	10					
2-D	152+79	152+99	LT.			22				
3-D	153+00		RT.				1			
Totals				1	10	22	1			



NOTE: Mon. Fd. @ 151+99.32  
Instead of Sta. 152+00

Sta. 654+33.00 @ LOR 254-  
Sta. 147+40.91 @ S.R. 57

Excavation = 602 Cu. Yds  
Embankment = 65 Cu. Yds  
Embankment +18% = 77 Cu. Yds  
Seeding = 4261 Sq. Yds

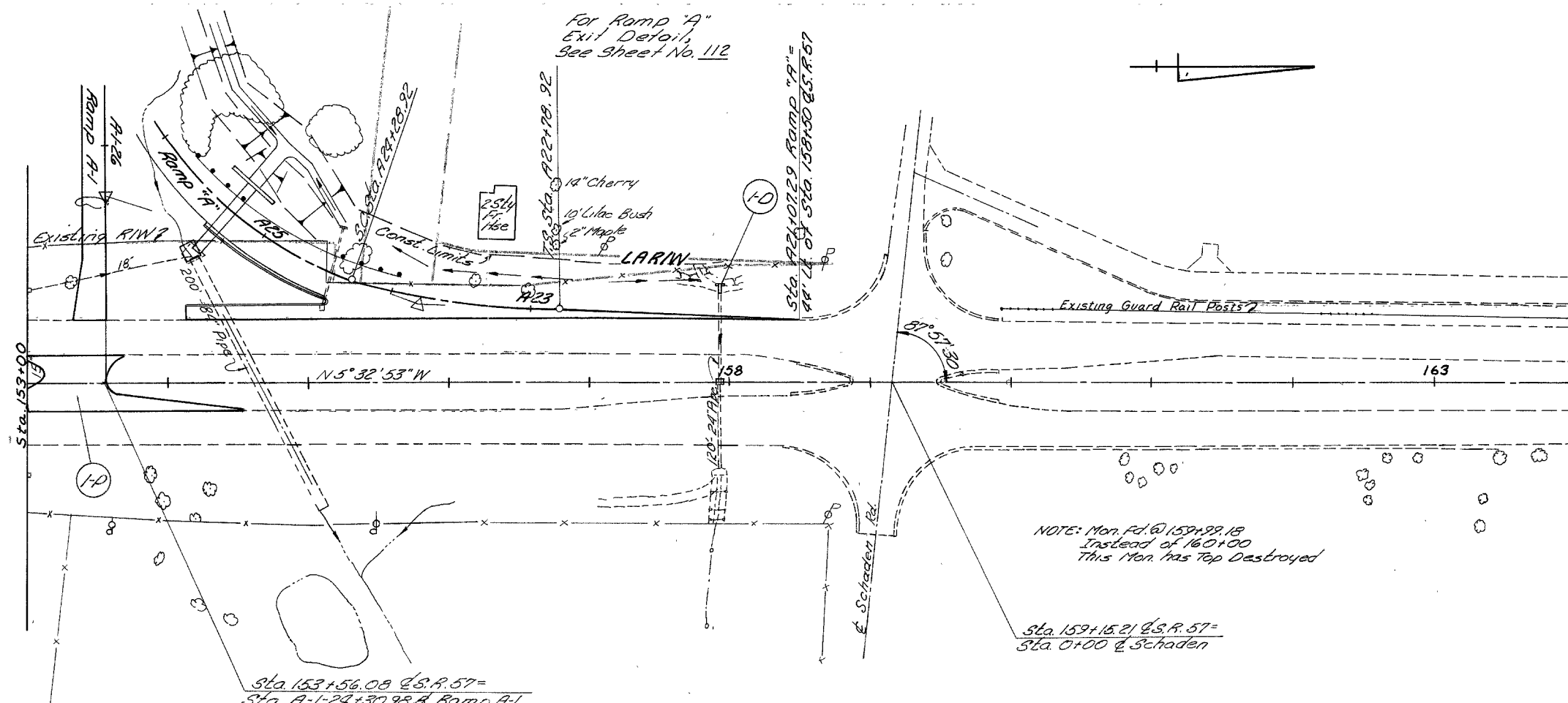
Excavation = 107 Cu. Yds  
Embankment = 43 Cu. Yds  
Embankment +18% = 51 Cu. Yds  
Seeding = 2263 Sq. Yds

Profile N. Bound Lane 2

Sta. 152+79.6' LLE  
7" Grate El. 688.55  
12" Pipe El. 689.92  
Std. No. 2-A C.B.

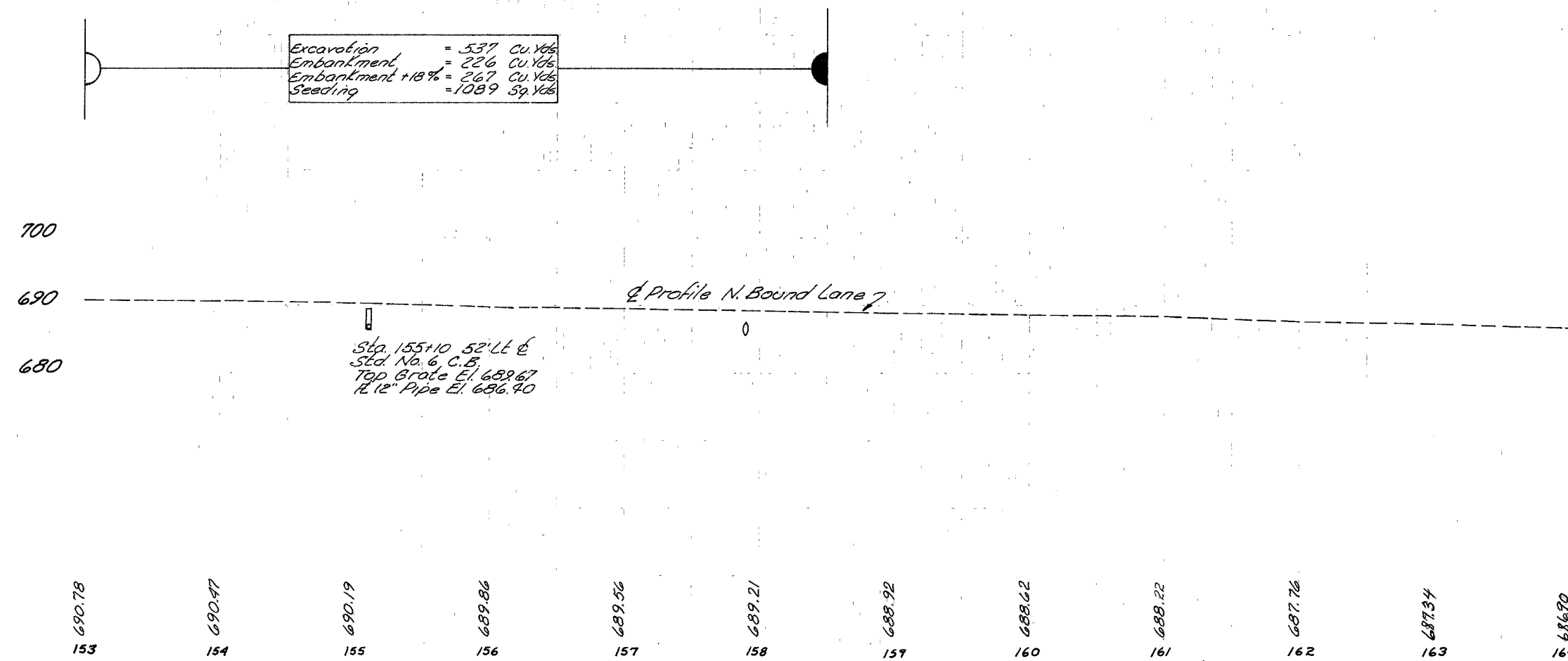
- 694.04 142
- 693.74 143
- 693.43 144
- 693.14 145
- 692.81 146
- 692.52 147
- 692.25 148
- 692.03 149
- 691.63 150
- 691.42 151
- 691.10 152
- 690.78 153

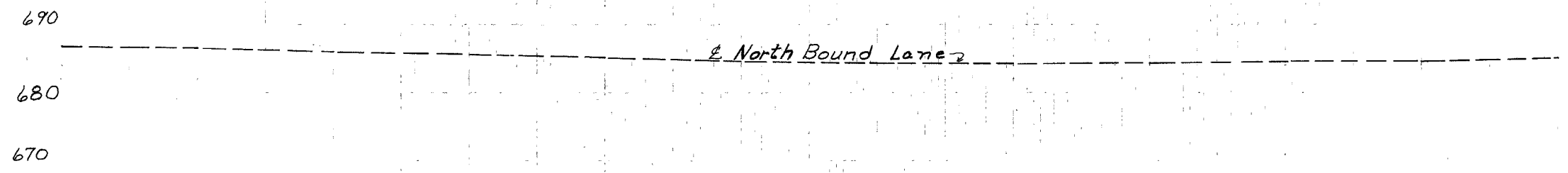
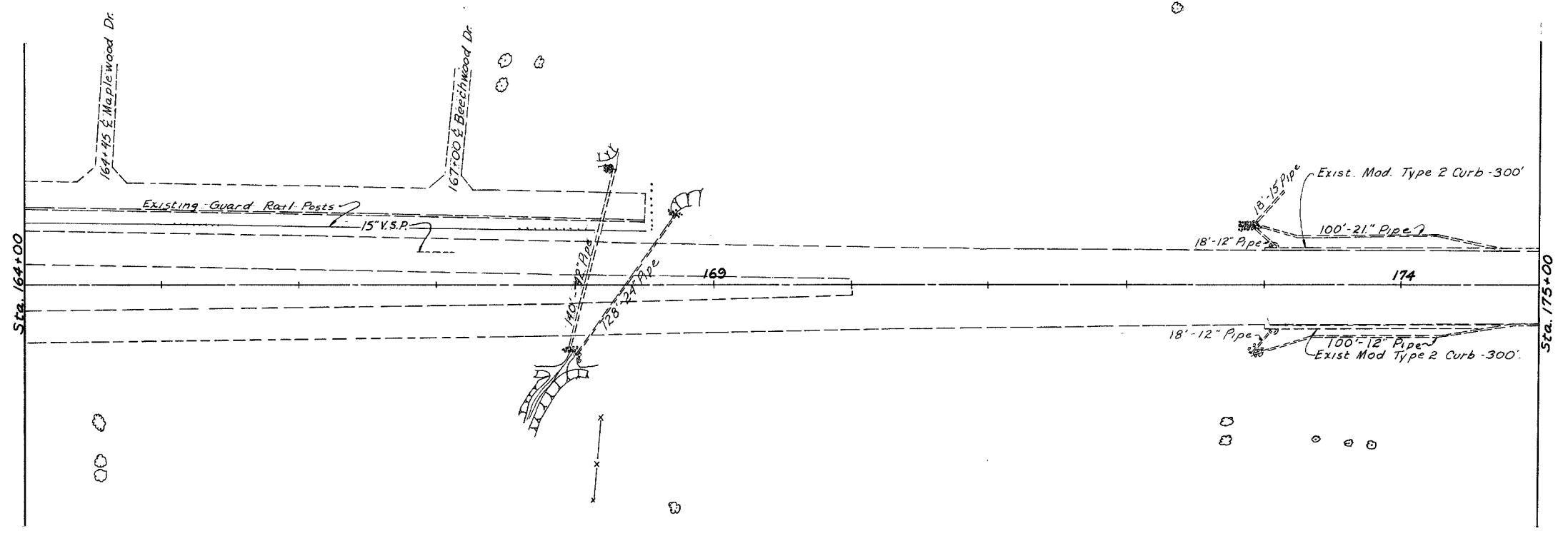
LOR-254-408 B



Item No.	Stations		Side	I-1	I-2				
	From	To		Class A1 Pipe Extension 24" 14' 6.6' @ 24"	Masonry				
I-D	157+89		Lt.	8	.41				
	Totals			8	.41				

Item No.	Stations		Side	T-71	I-22	I-18			
	From	To		Reinforced Portland Cement Concrete Pavement	Subgrade Stabilized Grading	Crushed Aggregate			
I-D	149+75	152+62.08		659.19	119.34	27.2			
	Totals			659.19	119.34	27.2			

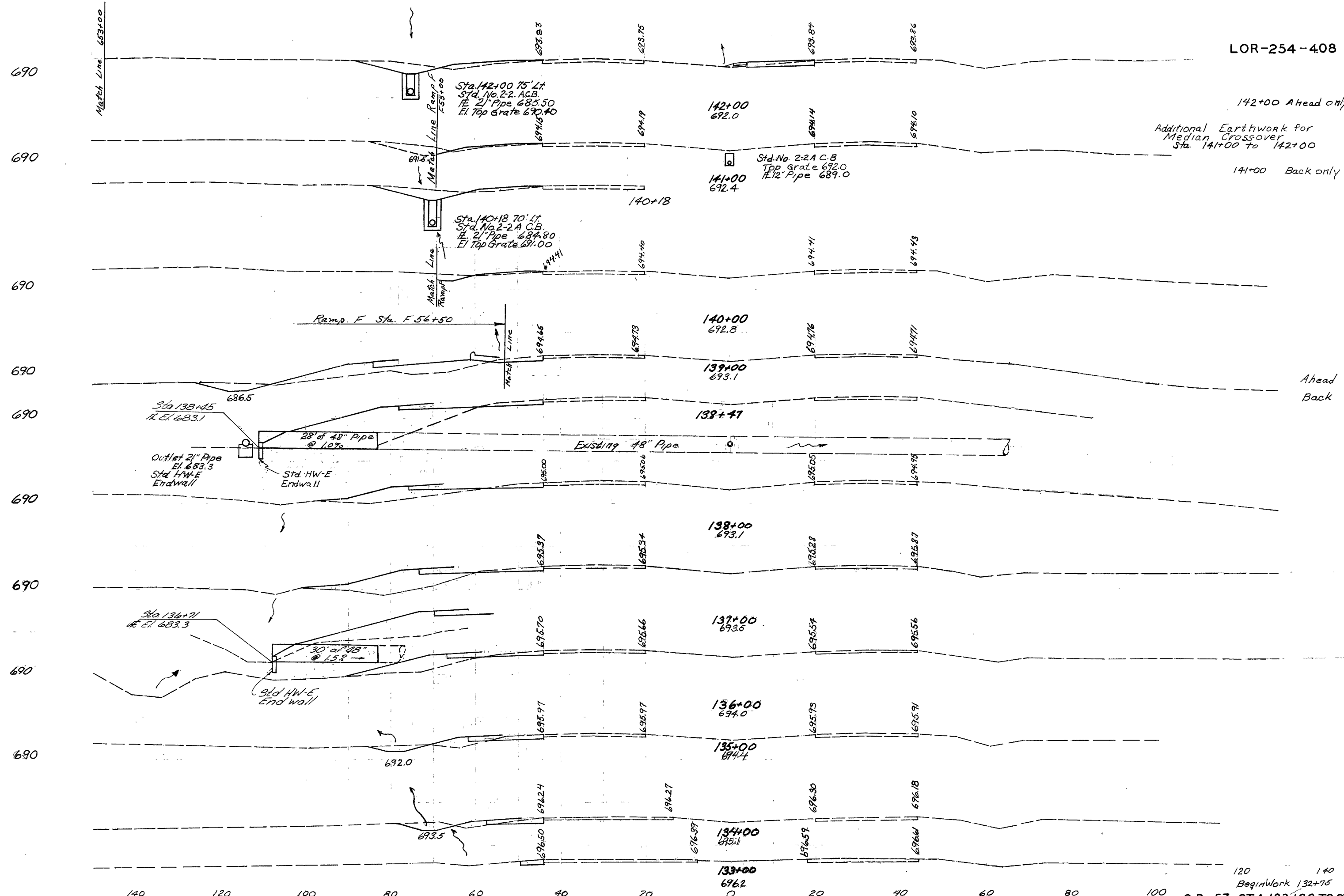




686.90	686.44	686.00	685.56	685.12	684.68	684.37	684.23	684.27	684.48	684.78	685.08
164	165	166	167	168	169	170	171	172	173	174	175

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

LOR-254-408 B



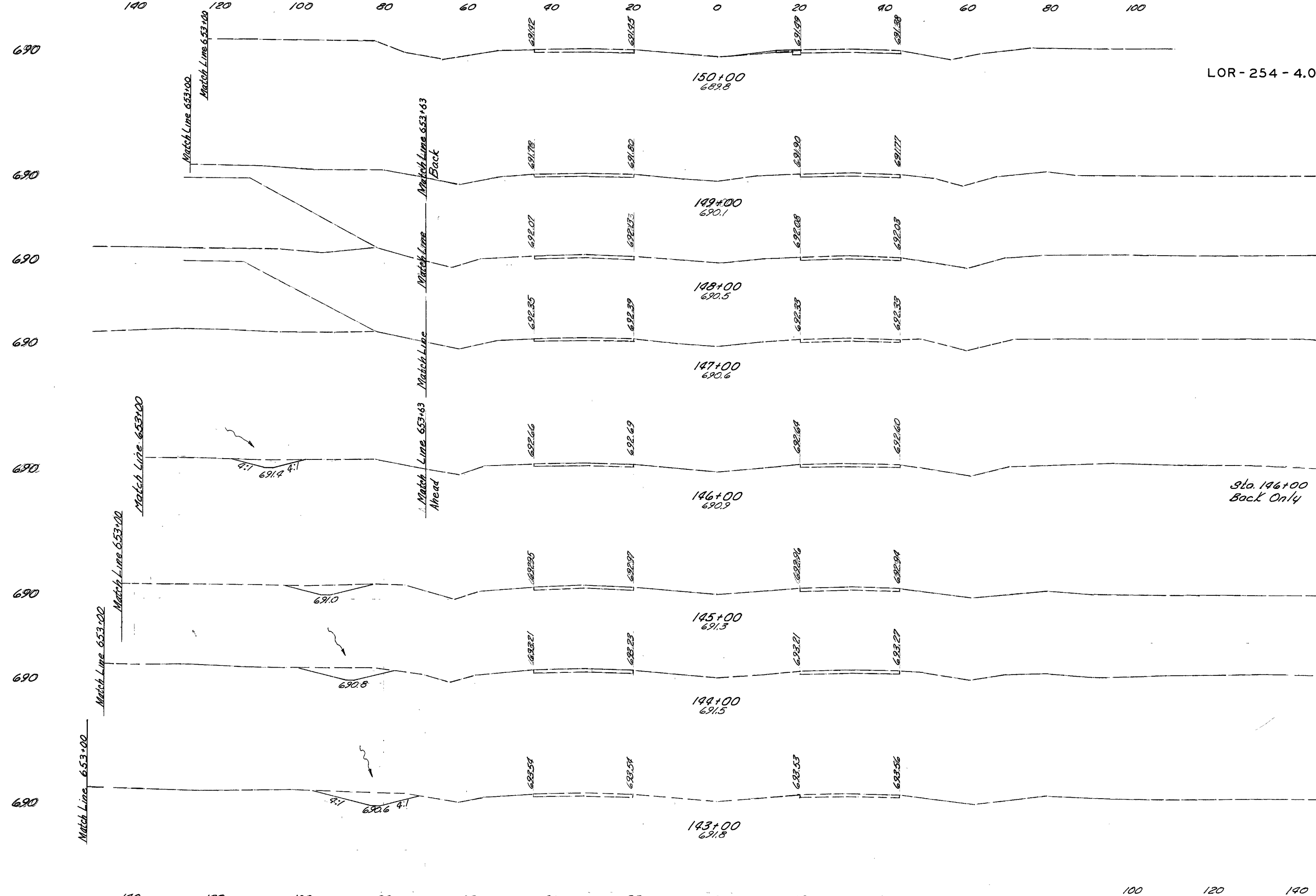
END AREA	VOLUME	
	CUT	FILL
140	19	
		37 2
141+00 Back only	3	8
		20 19
	8	2
		30 4
Ahead	8	0
Back	28	102
		74 307
	11	65
		46 319
	14	107
		39 315
	7	63
		54 144
	22	15
		83 46
	23	10
		56 17
	7	0
	0	3
	0	0

Additional Earthwork for Median Crossover Sta. 141+00 to 142+00

Ahead  
Back

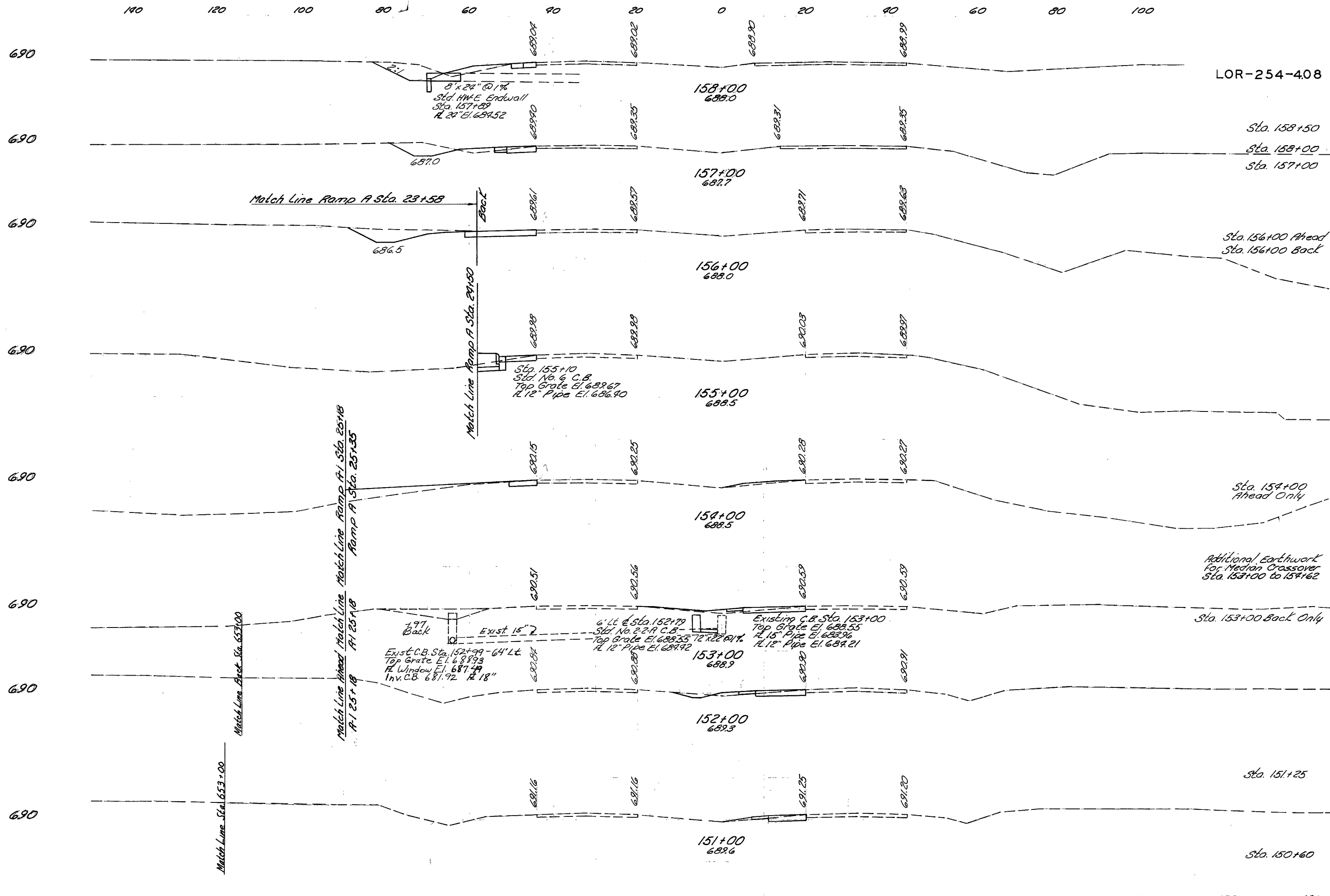
120 140  
Begm Work 132+75

LOR-254-4.08 B



END AREA	VOLUME	
	CUT	FILL
19	0	0
32	0	94
44	4	141
57	4	187
180	43	0

LOR-254-408 B

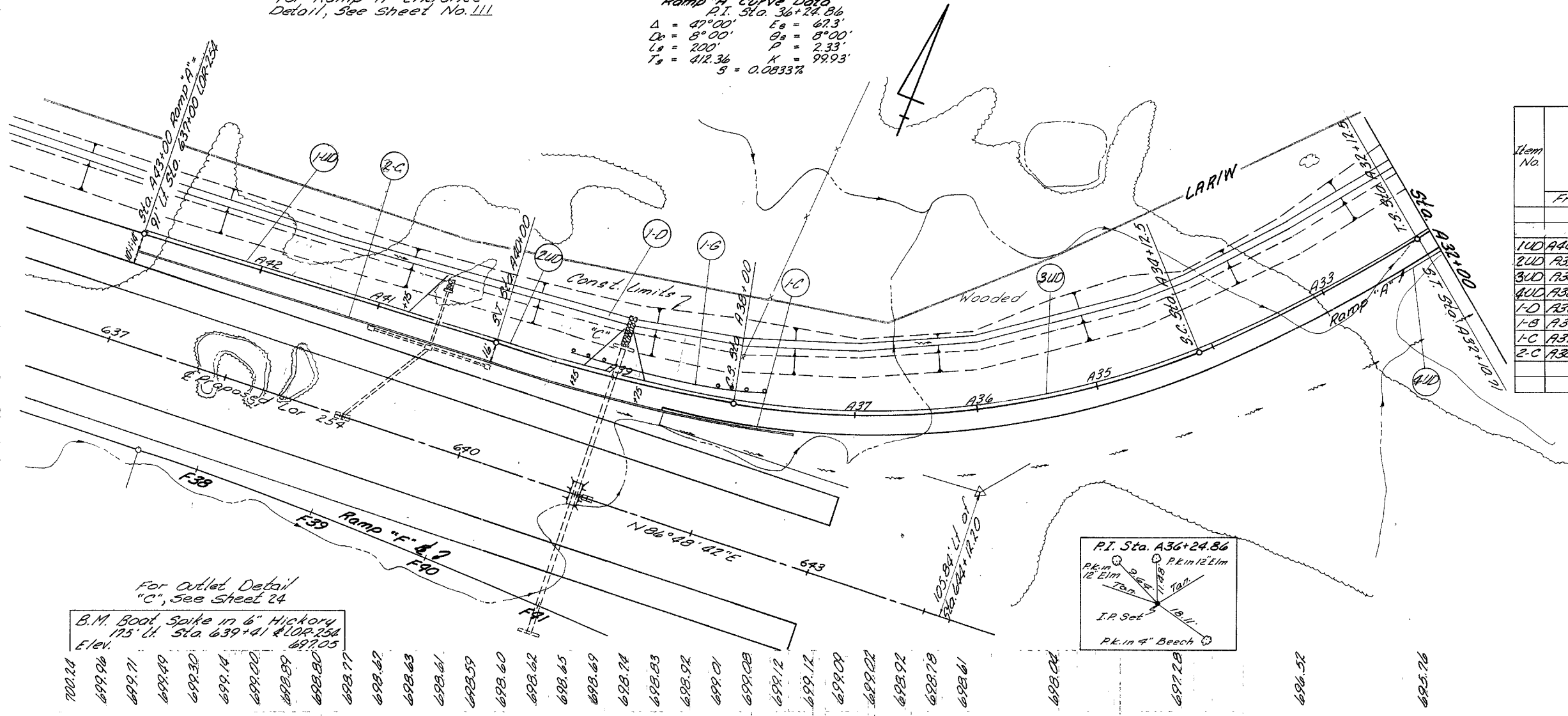


END AREA	VOLUME	
	CUT	FILL
Sta. 158+50	0	0
Sta. 158+00	46	15
Sta. 157+00	42	9
Sta. 156+00 Ahead	67	0
Sta. 156+00 Back	18	0
Sta. 155+00	7	11
Sta. 154+00 Ahead Only	7	59
Additional Earthwork For Median Crossover Sta. 153+00 to 154+62	57	1
Sta. 153+00 Back Only	11	8
Sta. 152+00	15	5
Sta. 151+25	16	4
Sta. 150+60	0	0

LOR-254-4.08 B

For Ramp "A" Entrance  
Detail, See sheet No. 111

Ramp "A" Curve Data  
P.I. Sta. 36+24.86  
 $\Delta = 47^{\circ}00'$   $E_s = 67.3'$   
 $C_s = 8^{\circ}00'$   $G_s = 8^{\circ}00'$   
 $L_s = 200'$   $P = 2.33'$   
 $T_s = 412.36$   $K = 99.93'$   
 $S = 0.0833\%$

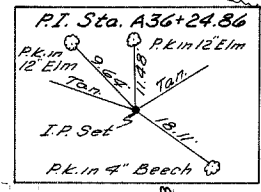


Item No.	Station	Side	I-1		I-5		I-15		E-3		I-12	
			6" Pipe Class I-3	8" Pipe Class F-4 Sec. 17-6.9(C)	Pipe Specials Class I-3	6" Wye	Steel Beam Guard Rail	Channel Excav.	5/8" Curb	5/8" Curb		
From To			Shallow Lin. Ft.	Lin. Ft.	Each	Lin. Ft.	Cu. Yds.	Lin. Ft.	Lin. Ft.			
1UD	A40+52	A43+00	RL	283	10	1						
2UD	A38+02	A40+48	RL	182	10	1						
3UD	A38+98	A32+00	RL	734	10	1						
4UD	A32+00	A32+50	LL	50								
1-D	A32+00	A43+00	RL						3405			
1-B	A37+25	A39+25	RL					162.5				
1-C	A37+50	A38+25	LL								76.9	
2-C	A39+25	A43+00	LL								477.3	
Total				1,249	30	3	162.5	3405	477.3	76.9		

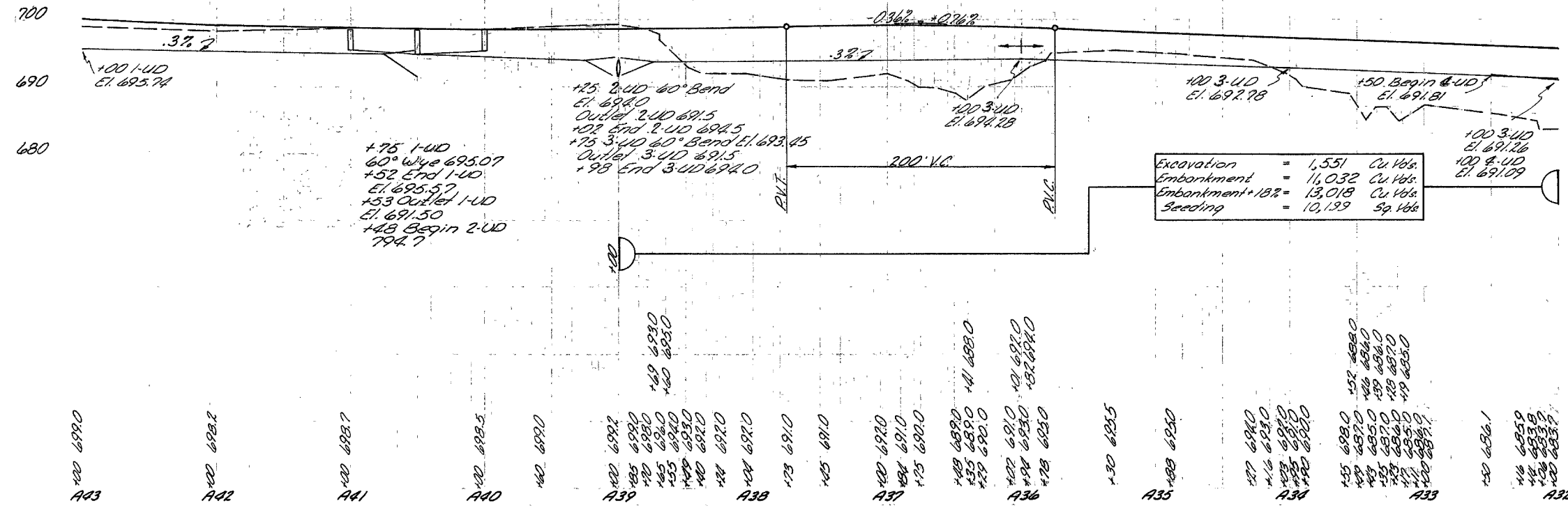
For Cullet Detail  
"C", See sheet 24

B.M. Boot Spike in 6" Hickory  
175' LI Sta. 639+41 #LOR-254  
Elev. 697.05

700.24
699.96
699.71
699.49
699.30
699.14
699.00
698.89
698.80
698.77
698.67
698.63
698.61
698.59
698.60
698.62
698.65
698.69
698.74
698.83
698.92
699.01
699.08
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699.12
699.09
699.02
698.92
698.78
698.61
698.04
697.28
696.52
695.76



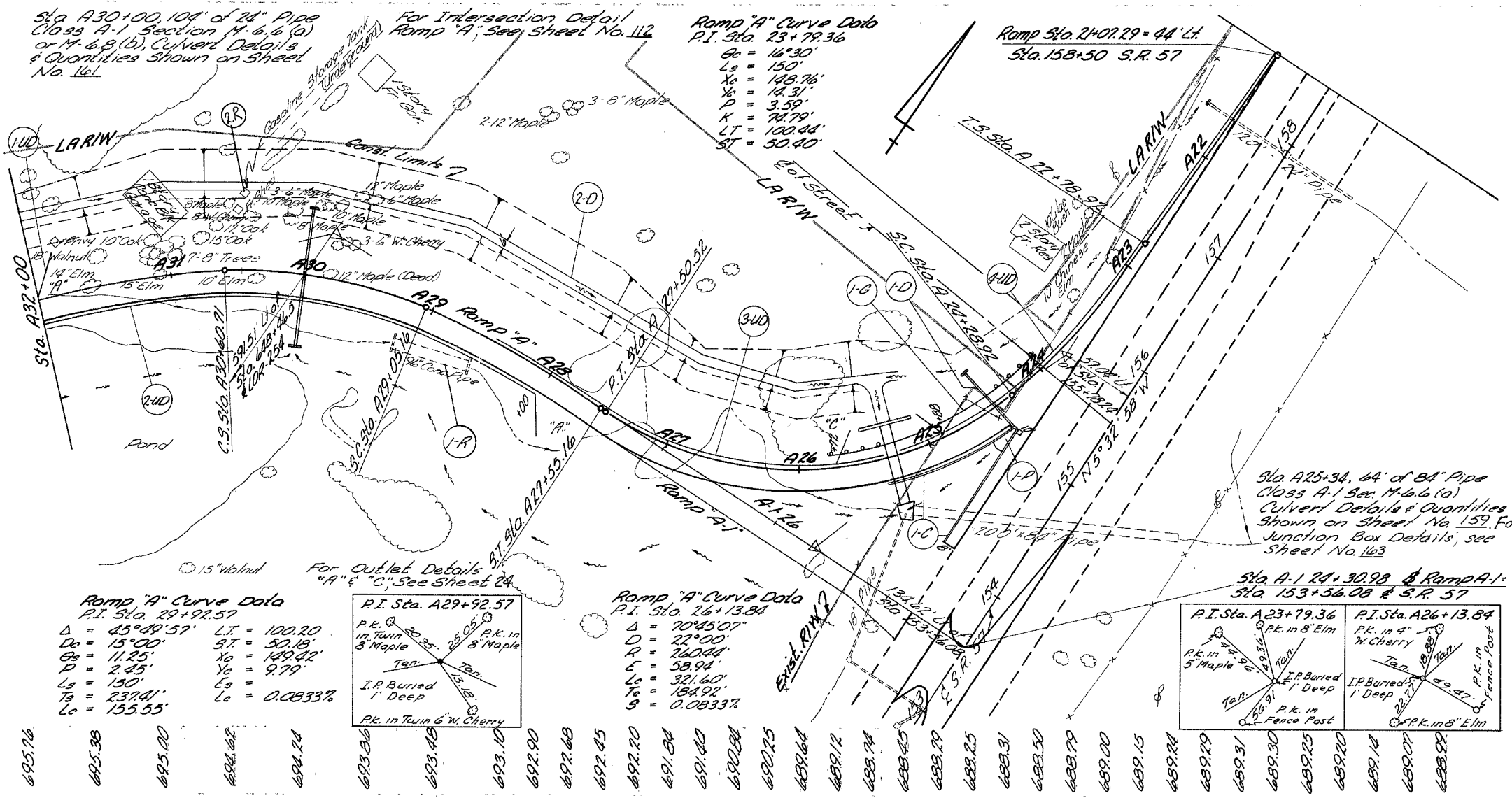
P.V.I. Sta. A36+75  
200' V.C.  
e = 0.28



Excavation	=	1,551	Cu Yds.
Embarkment	=	11,032	Cu Yds.
Embarkment + 18%	=	13,018	Cu Yds.
Seeding	=	10,139	Sq. Yds.

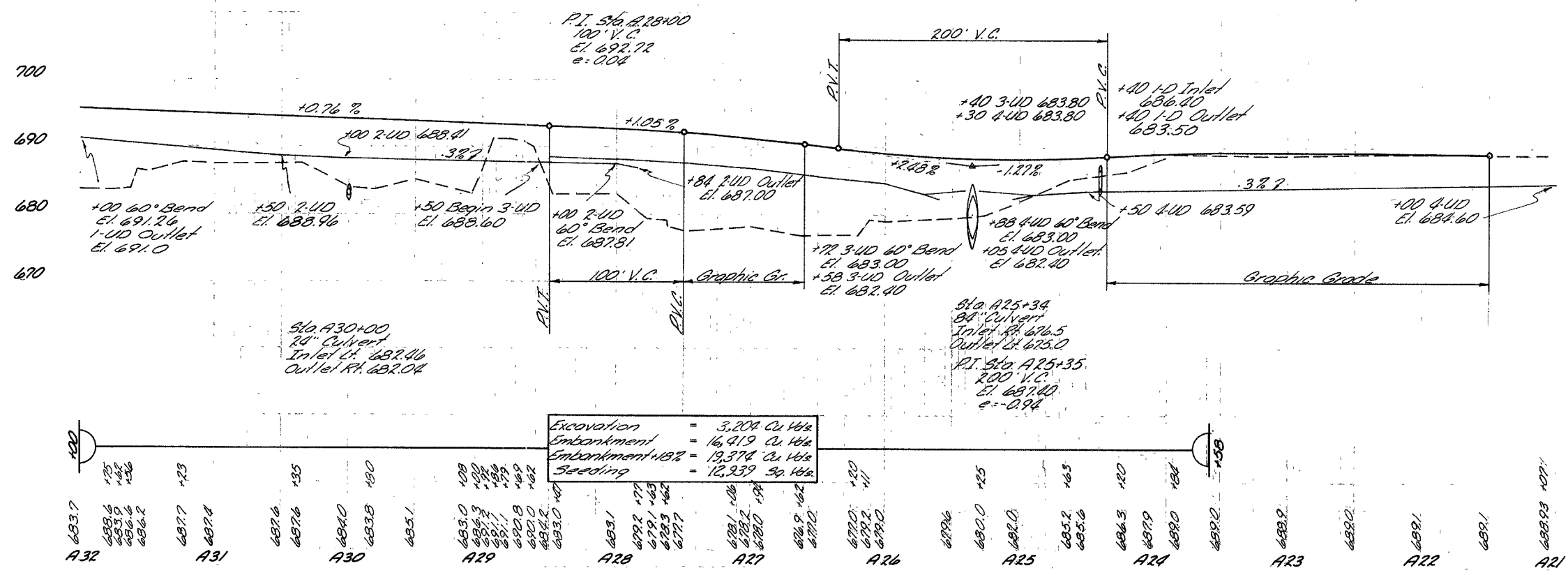


LOR-254-408 B



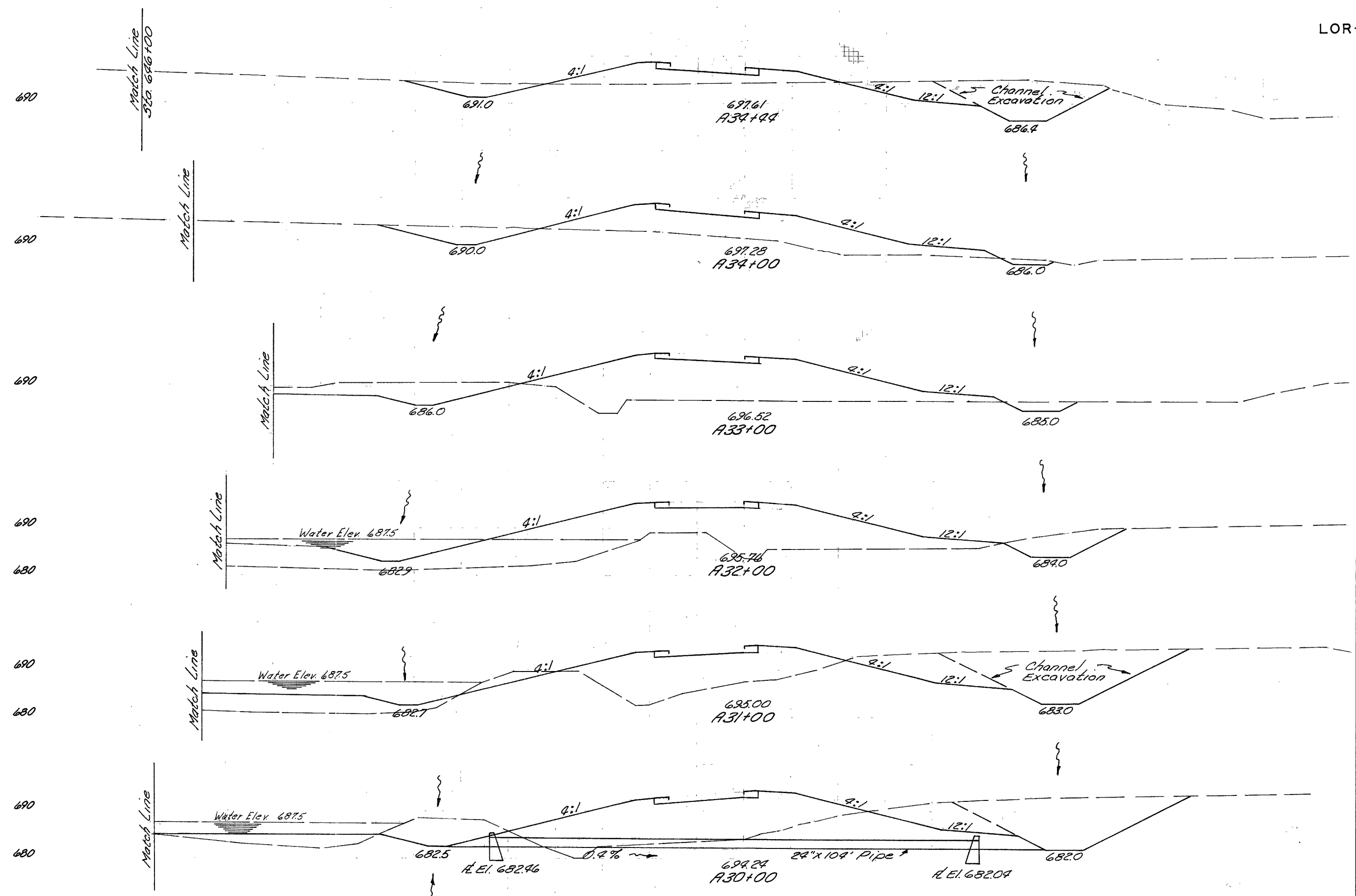
Item No.	Stations		Side	I-1 6" Pipe Class I-3		I-5 8" Pipe Class F-9 Sec. 14-6.9(c)		I-1 12" Pipe Class F-7		E-12 15" Pipe Removal Over		E-3 18" Pipe Masonry Structure		I-8 24" Pipe No. 6 Catch Basin	
	From	To		Shallow Lin. Ft.	Lin. Ft.	Each	Each	Lin. Ft.	Lin. Ft.	Cu. Yds.	Each	Each			
1-UD	A27+86	A32+00	RL	19	10	1									
2-UD	A27+84	A32+00	LT	470	10	1	10								
3-UD	A25+90	A29+50	RL	330	10	1									
4-UD	A21+00	A25+30	RL	445	10	1									
1-D	A24+40		LER					58		.23				1	
2-D	A25+35	A32+00	R								56/7				
1-R	A29+15		LT						60'						
	Total			1204	40	2	2	10	58	60'	.23	56/7		1	

Item No.	Stations		Side	I-15 Guard Rail Steel Beam Type Deep		I-12 Concrete Curb Standard Type 6		I-21 Concrete Median Pavement Type 1		Special Rem. of Under- ground Storage Tank	
	From	To		Lin. Ft.	Lin. Ft.	Sq. Yds.	Lump	Lump			
1-B	A24+00	A25+82	LT	175							
1-D	A24+39.56	A24+59.56	RL			15.9					
1-C	A24+39.56	A25+39.56	RL			211.87					
2-R	A30+47		RL						Lump		
	Total			175	211.87	15.9			Lump		



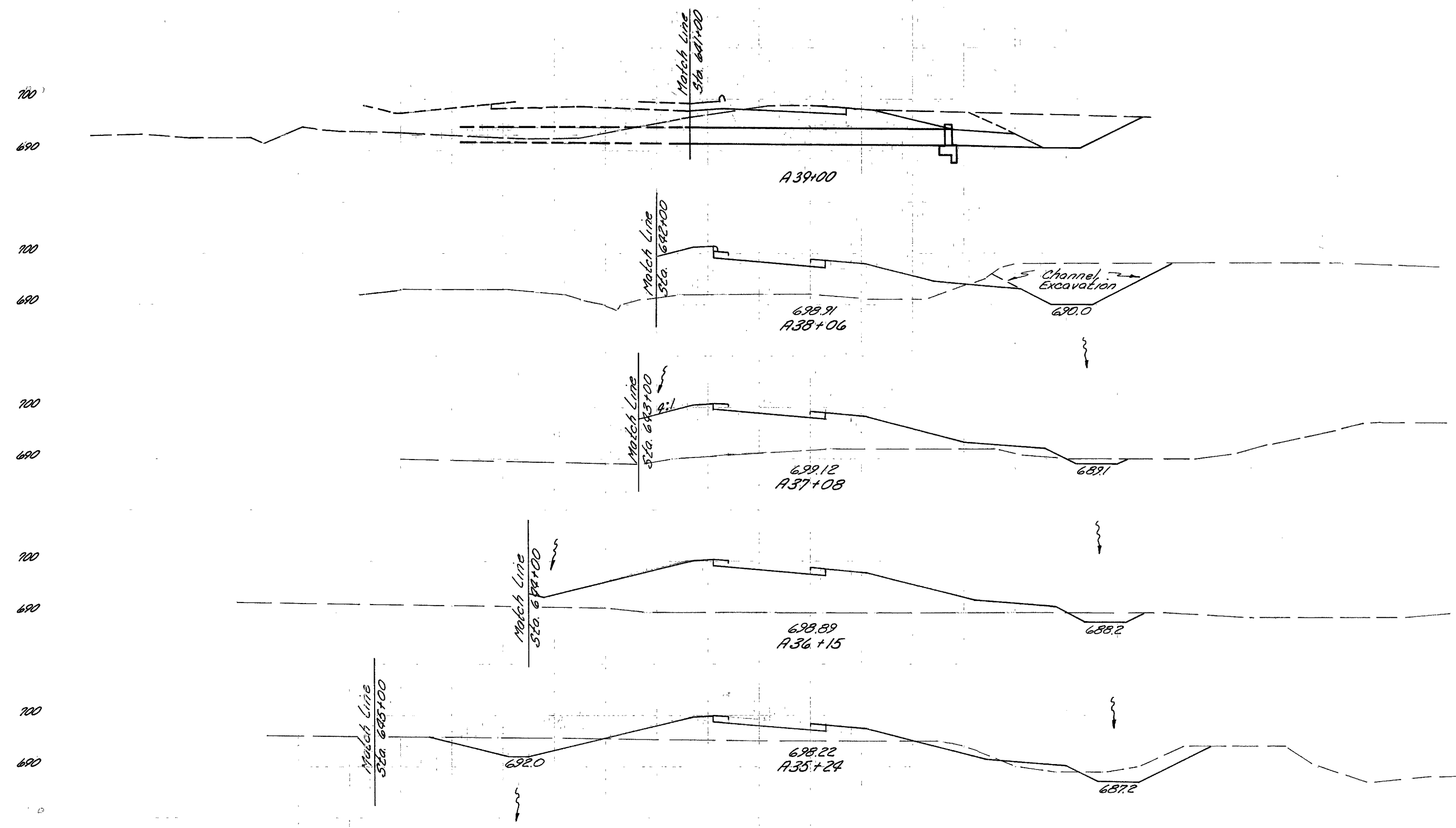


LOR-254-408 B



Channel Excavation	
End Area	Volume
200	121 155
171	161 435
10	76 380
63	454 1837
24	169 612
180	313 2889
73	0 932
774	252 2731
345	136 543
1231	628 2163
320	203 625
1315	726 1714

LOR-254-408 B



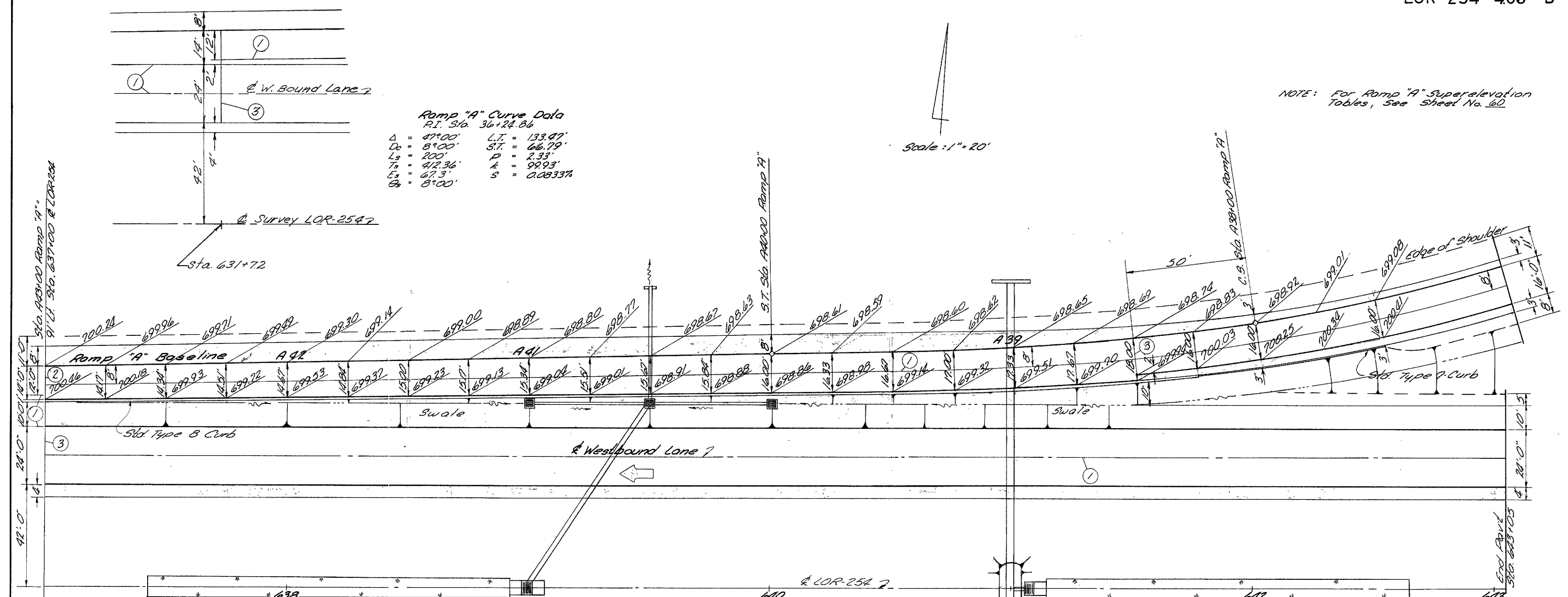
Channel Excavation End Area	Volume	Back 72	8
135	566	145	676
190	11	380	
369	20	1544	
9	0	471	
52	0	1866	
21	0	672	
137	148	1326	
62	88	175	
408	310	489	

**Ramp "A" Curve Data**  
 P.I. Sta. 36+24.86

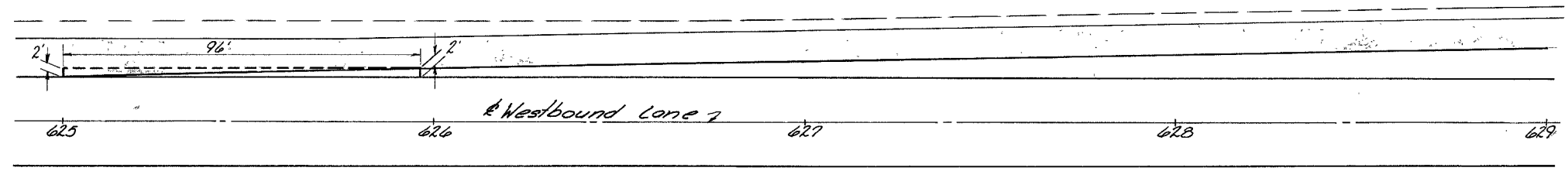
$\Delta$ = 47°00'	L.T. = 133.47'
$L_c$ = 8°00'	S.T. = 66.79'
$L_s$ = 200'	P = 2.33'
$T_s$ = 412.36'	k = 99.93'
$E_s$ = 67.3'	S = 0.0833%
$O_s$ = 8°00'	

Scale: 1" = 20'

NOTE: For Ramp "A" Super-elevation Tables, See Sheet No. 60

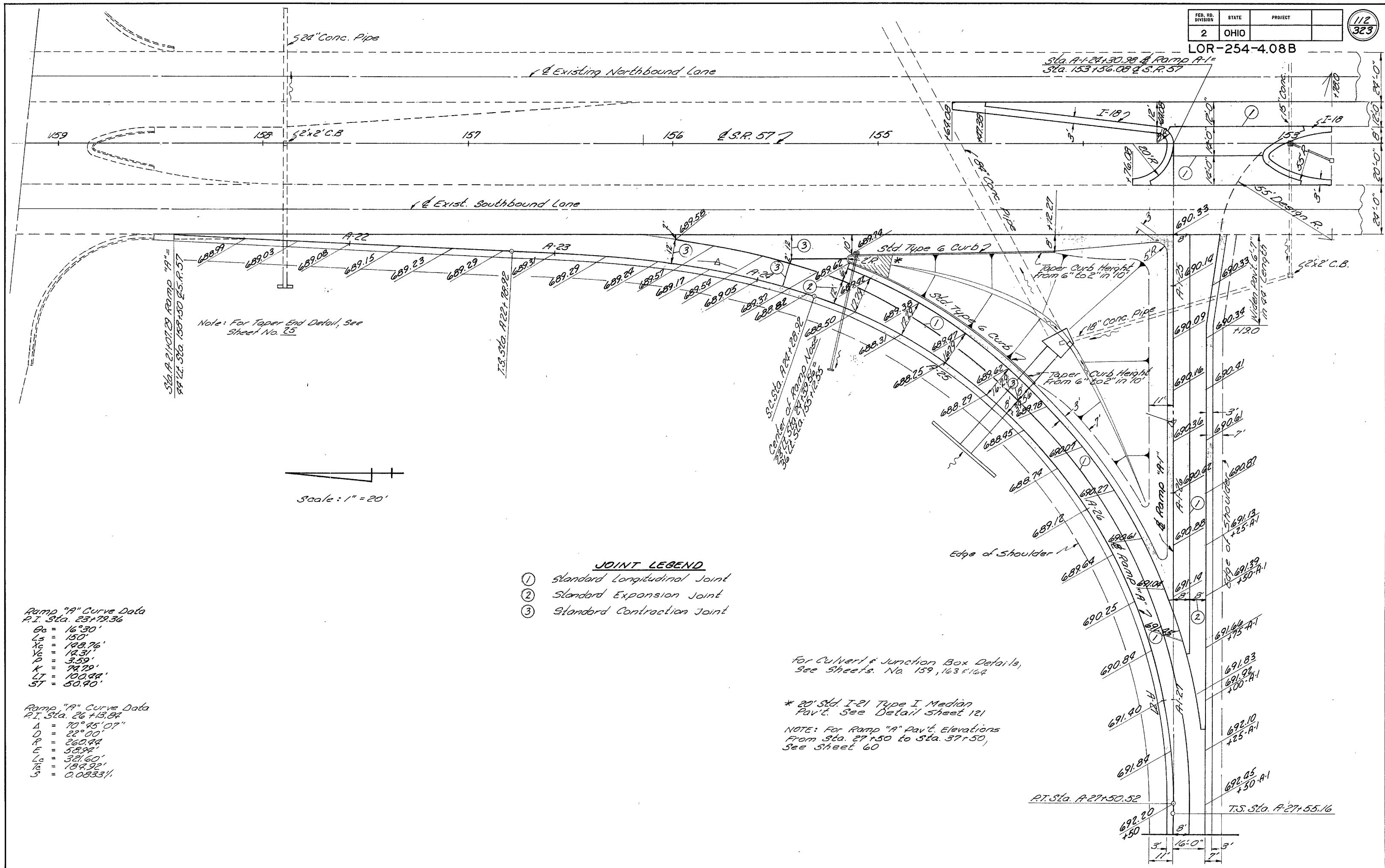


Stations	Acceleration	Pavement Edge Elevations	Stations	Acceleration	Pavement Edge Elevations
625+00	0.00	731.49	632+50	15.62	710.58
+25	.52	730.81	633+00	16.67	709.18
+50	1.04	730.12	+50	17.71	707.78
626+00	2.08	728.73	634+00	18.75	706.39
+50	3.12	727.33	+25	19.27	705.71
627+00	4.17	725.93	+50	19.79	705.05
+50	5.21	724.54	+25	20.31	704.43
628+00	6.25	723.14	635+00	20.83	703.85
+50	7.29	721.75	+25	21.35	703.29
629+00	8.33	720.35	+50	21.87	702.76
+50	9.37	718.95	+25	22.39	702.26
630+00	10.42	717.56	636+00	22.91	701.79
+50	11.46	715.16	+25	23.43	701.35
631+00	12.50	714.76	+50	23.96	700.96
+50	13.54	713.37	+25	24.48	700.59
632+00	14.58	711.97	637+00	25.00	700.24

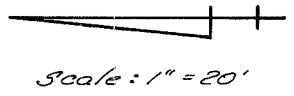


Note: For Taper End Detail, See Sheet No. 25.

- JOINT LEGEND**
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Construction Joint



Note: For Taper End Detail, See Sheet No. 25



**JOINT LEGEND**

- ① Standard Longitudinal Joint
- ② Standard Expansion Joint
- ③ Standard Contraction Joint

Ramp "A" Curve Data  
P.I. Sta. 23+79.36

- Ga = 16°30'
- Ls = 150'
- Xc = 148.76'
- Yc = 14.31'
- P = 3.59'
- K = 74.79'
- LT = 100.44'
- ST = 50.40'

Ramp "A" Curve Data  
P.I. Sta. 26+13.87

- A = 70°45'07"
- D = 22°00'
- R = 260.44'
- E = 58.98'
- Lc = 321.60'
- Tc = 189.92'
- S = 0.05331/

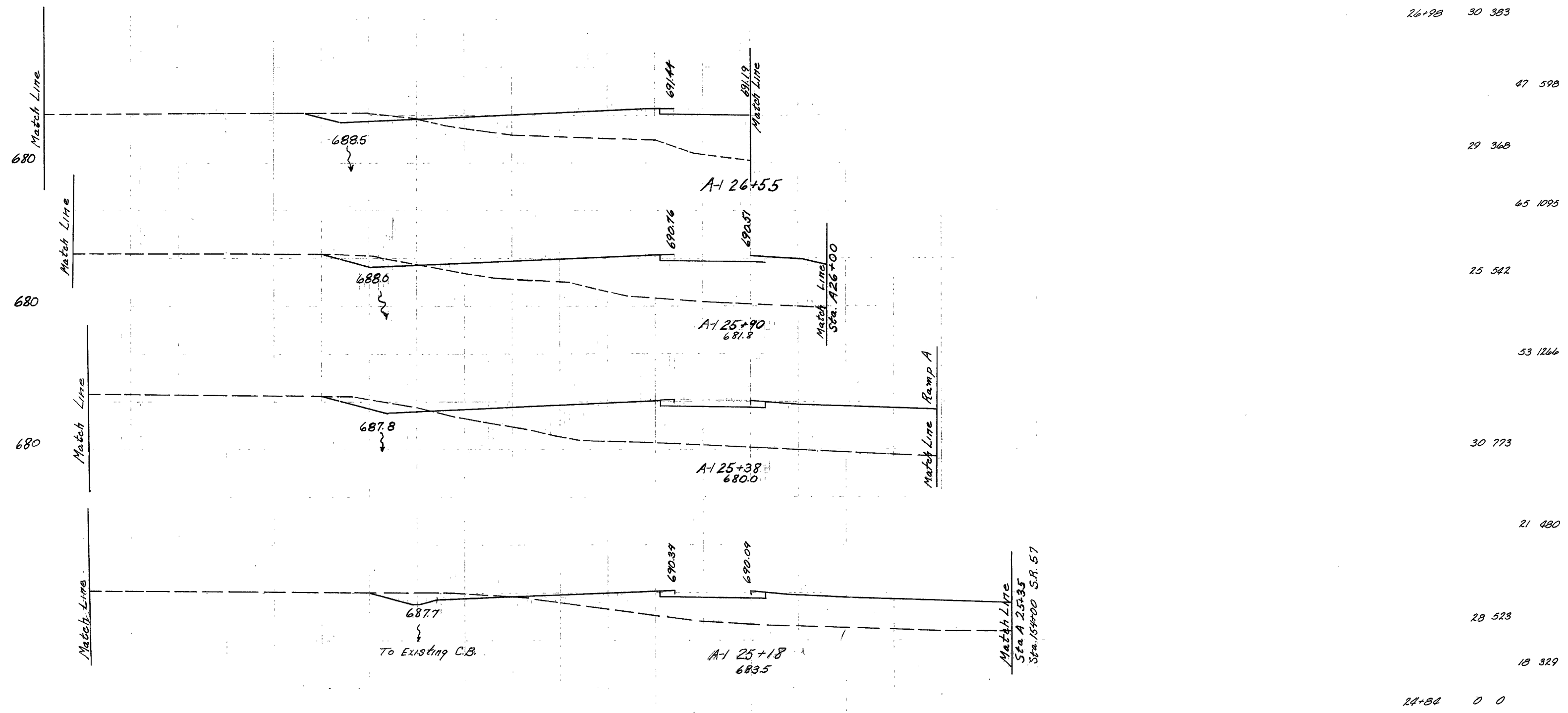
For Culvert & Junction Box Details, See Sheets No. 159, 163 & 164

\* 20' Std. I-21 Type I Median Pav't. See Detail Sheet 121

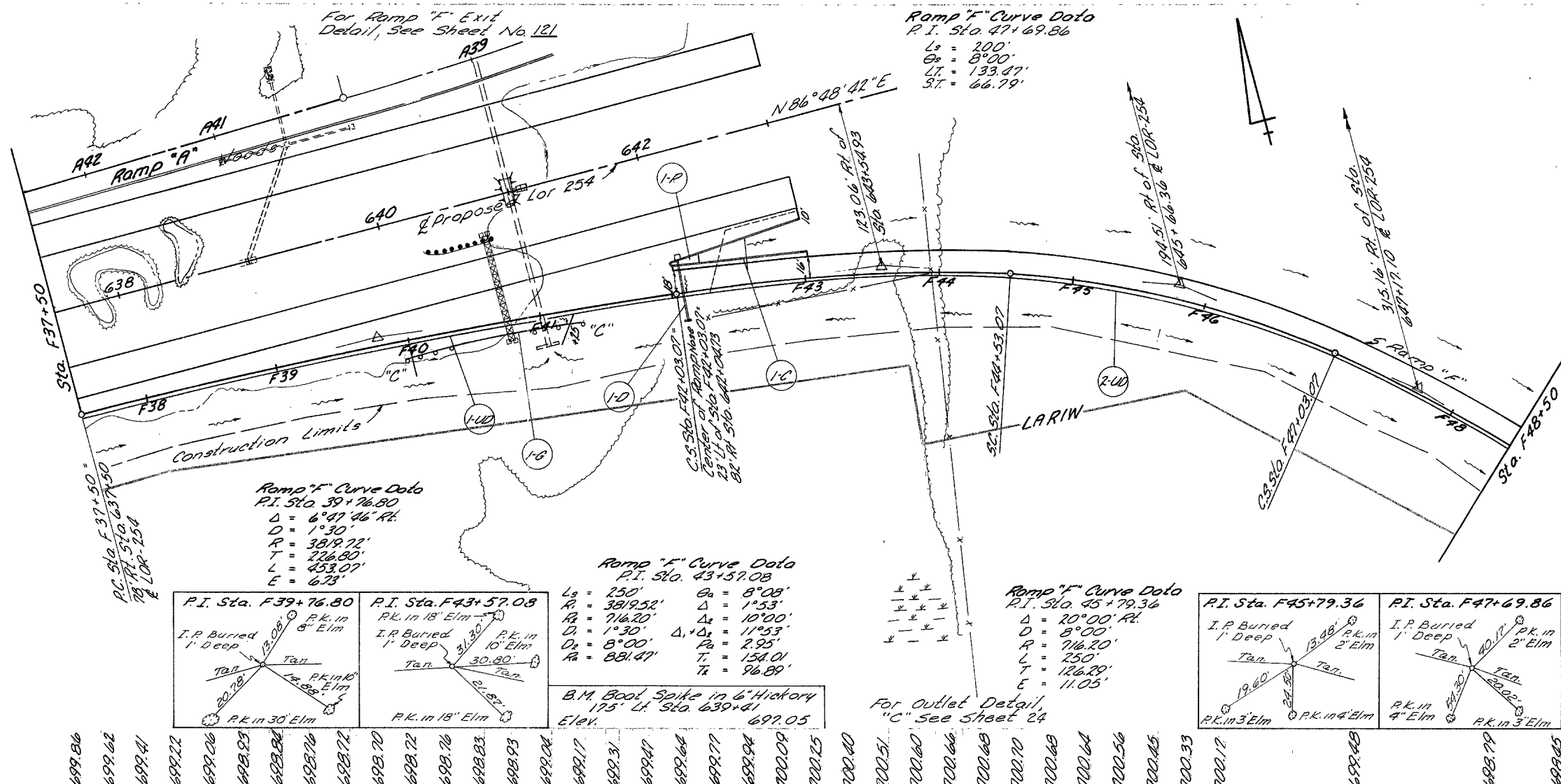
NOTE: For Ramp "A" Pav't. Elevations From Sta. 27+50 to Sta. 37+50, See Sheet 60



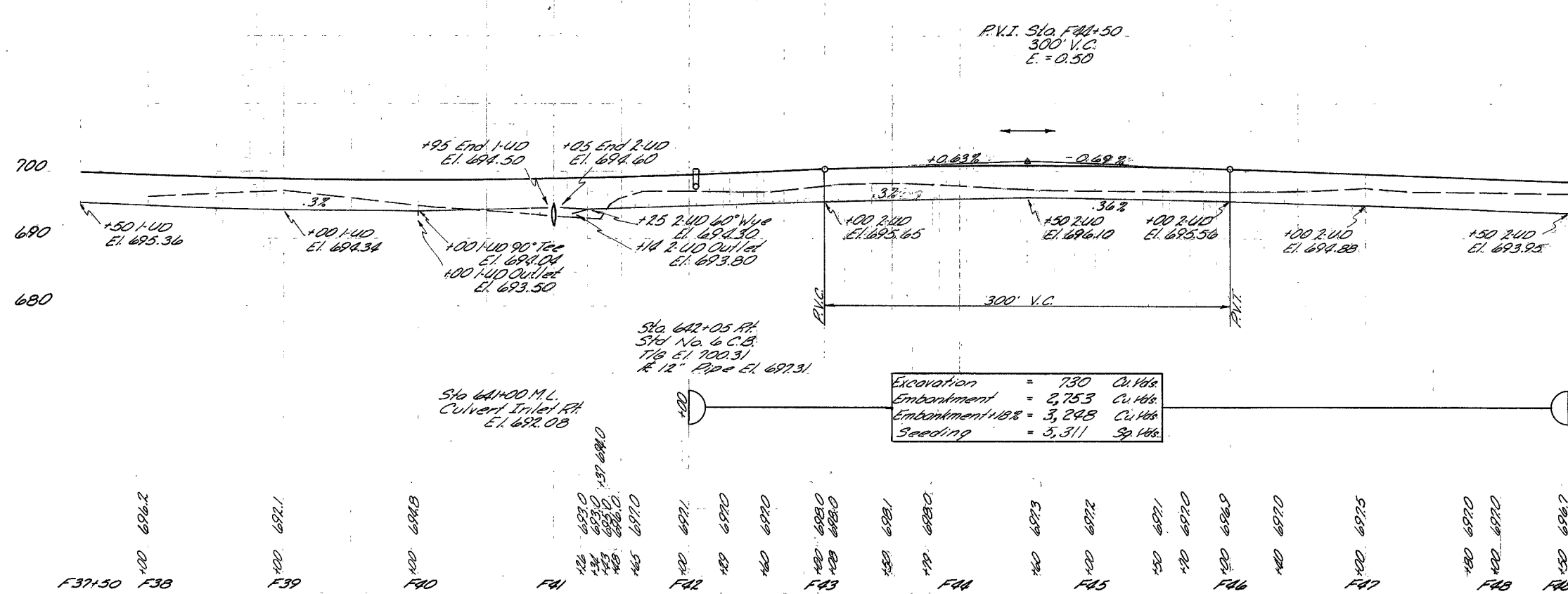
LOR-254-4.08 B







Item No.	Station		Side	I-1		I-5		I-8		I-2		I-1		I-12		I-15		I-21	
	From	To		6" Pipe Class I-3	8" Pipe Class F-4 Sec. 14-6.91c	Pipe Specials Class I-3	5" Catch Basin	5" Tee Wye	5" Catch Basin	Masonry	12" Pipe Class F-1	None	Standard Type 6	None	Standard Type 6	None	Standard Type 6	Concrete Median Pavement Standard Type I	Sq. Yds.
1UD	F37+50	F40+25	RL	361	10	1													
2UD	F41+05	F48+50	RL	760	10	1													
I-B	F39+96	F41+38.5	RL																1375
I-D	F42+05		LER						1	.23	54								
I-C	F42+01.07	F43+03.07	LL																20494
I-P	F42+01.57	F42+21.57	LL																13.17
Total				1121	20	1	1	1	.23	54	20494	1375	13.17						



Excavation	=	730	Cu Yds.
Embankment	=	2,753	Cu Yds.
Embankment @ 15%	=	3,248	Cu Yds.
Seeding	=	5,311	Sq. Yds.



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

117  
323

LOR-254-4.08 B

690

Match Line  
Sta. 698+00 - Rt.

695.1  
698.79  
F48+00  
695.0

42 61

92 130

690

Match Line

695.4  
699.18  
F47+94  
695.5

47 65

102 243

690

Match Line  
Sta. 697+00

695.9  
699.71  
F46+66  
696.0

24 103

48 450

690

Match Line  
Sta. 696+00

696.5  
700.33  
F45+74  
697.0

4 161

21 554

690

Match Line  
Sta. 695+00

697.0  
700.67  
F44+87  
696.0

9 183

47 538

690

Match Line  
Sta. 694+00

700.65  
F43+96  
695.5

31 136

141 437

690

Match Line  
Sta. 693+00

700.22  
F42+96  
695.0

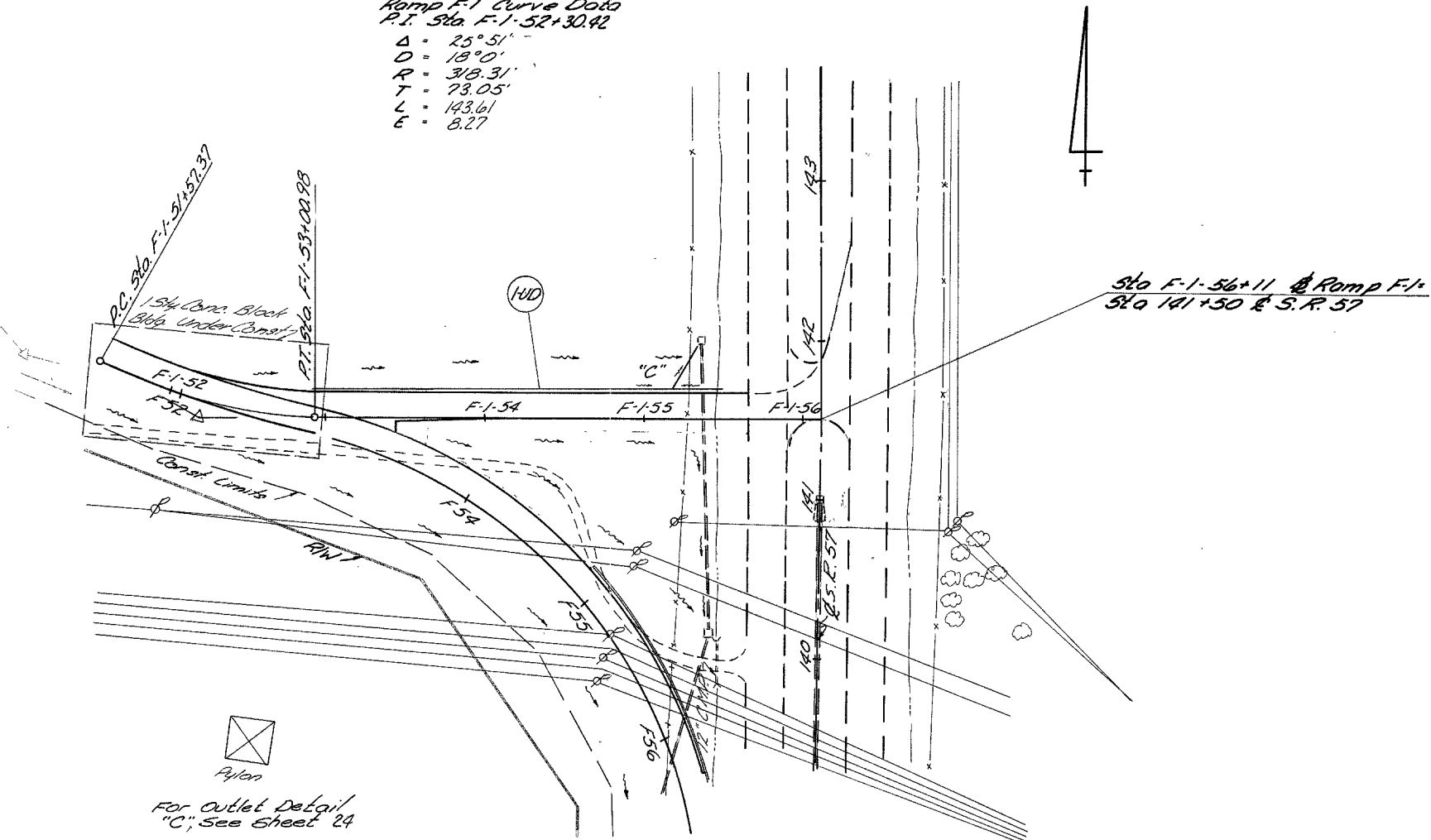
45 100

167 306

140 120 100 80 60 40 20 0 20 40 60 80 100 120 STA. F42+96 TO STA. F48+00 RAMP "F"



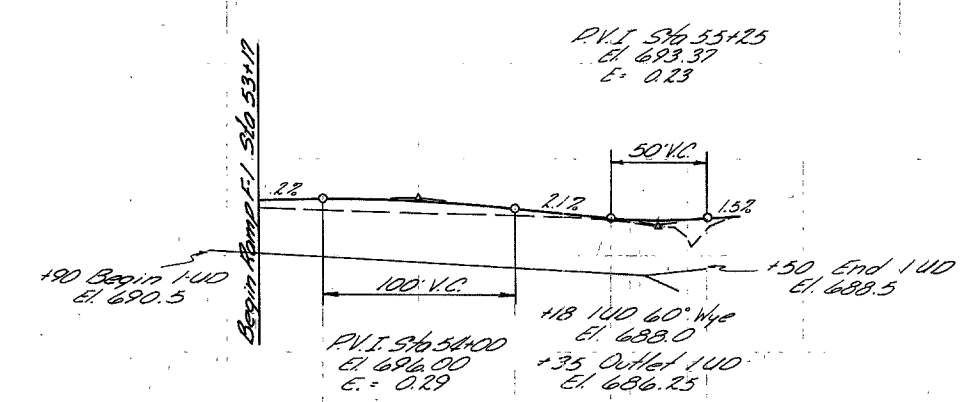
Ramp F-1 Curve Data  
 P.I. Sta F-1-52+30.42  
 Δ = 25° 51'  
 D = 18° 0'  
 R = 318.31'  
 T = 78.05'  
 L = 143.61'  
 E = 8.27'



Sta F-1-56+11 @ Ramp F-1-51+50 & S.R. 57

For Outlet Detail "C" See Sheet 24

- 626.38
- 626.03
- 625.68
- 625.80
- 625.90
- 625.88
- 625.70
- 625.41
- 624.25
- 623.90
- 623.55
- 623.25
- 622.00

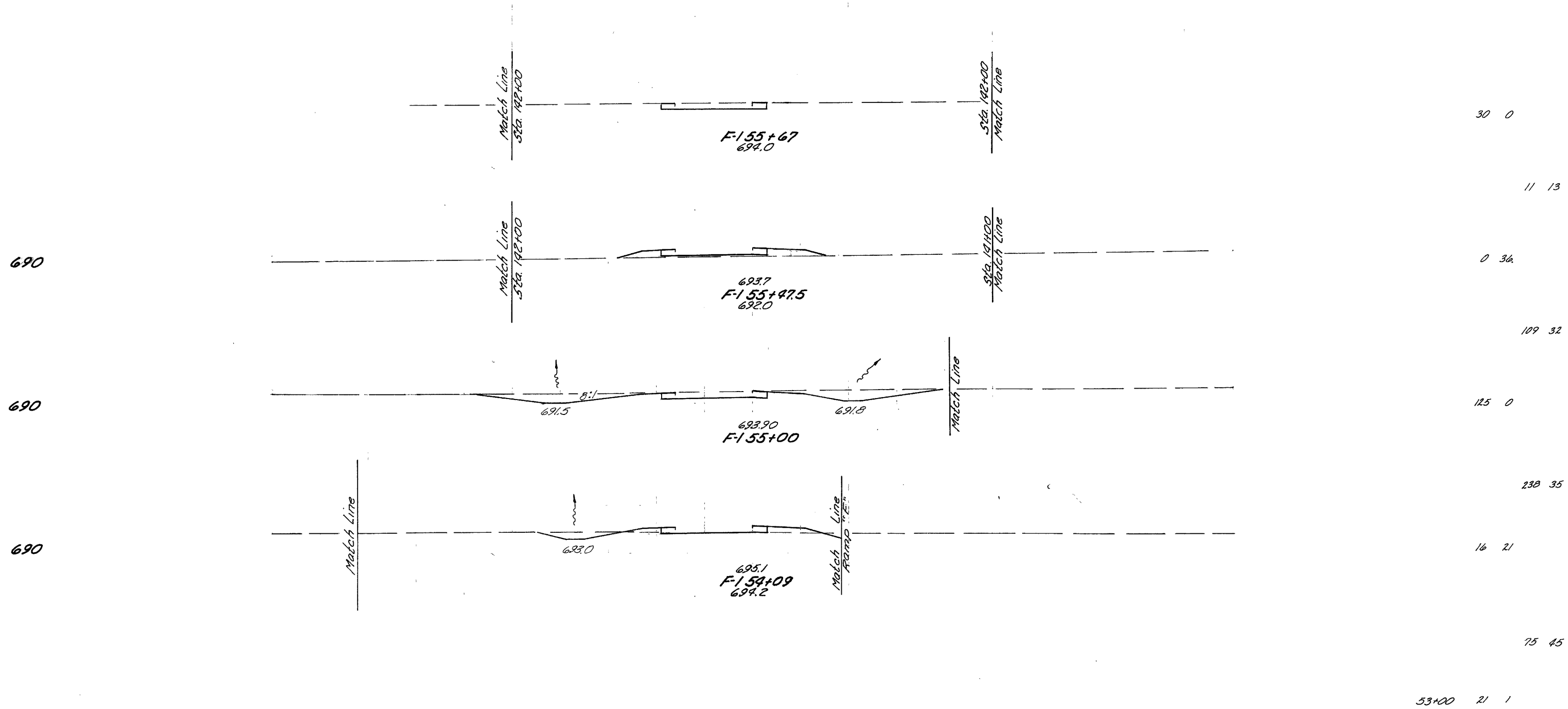


Excavation	=	433	Cu Yds.
Embankment	=	125	Cu Yds.
Embankment @ 8%	=	147	Cu Yds.
Seeding	=	2359	Sq Yds.

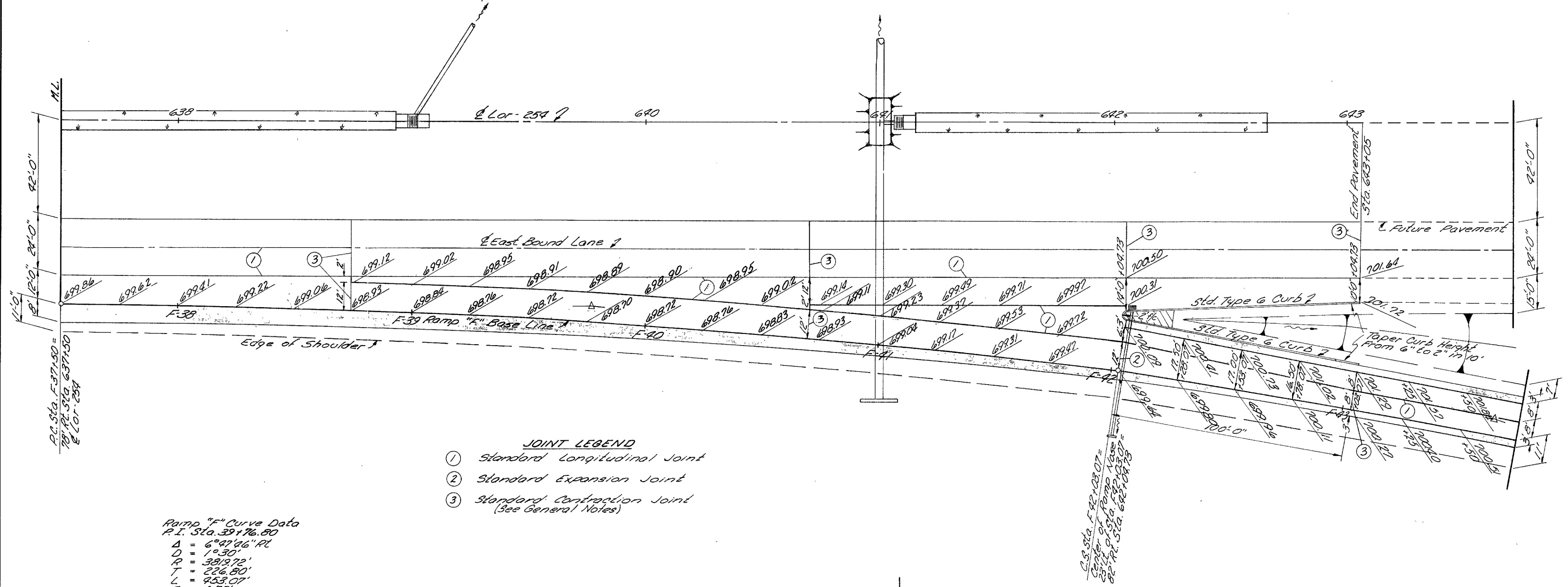
- F-1-51+51
- F-1-52
- F-1-53
- 17' 623.0
- 100' 624.3
- 178' 624.0
- 100' 623.2
- 133' 624.0
- 139' 624.0
- 144' 624.0
- 147' 624.0
- 152' 624.0
- 157' 624.0
- 162' 624.0
- F-1-56

Item No.	Stations		Side	I-1		
	From	To		Class I-3 6" Pipe Deep Lin. Ft.	Class F-4 6" Pipe Lin. Ft.	I-5 Pipe Special Class I-3 6" 60" Wye Each
HUD	52+90	55+50	Lt	482	10	1
Totals				482	10	1

LOR-254-4.08 B



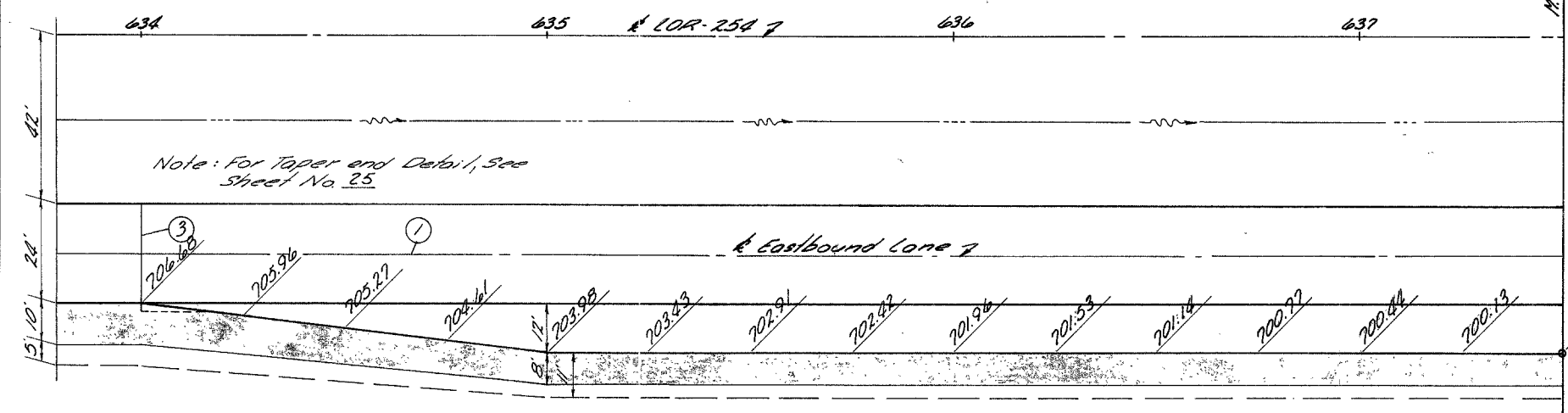
Scale: 1"=20'



- JOINT LEGEND**
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Contraction Joint (See General Notes)

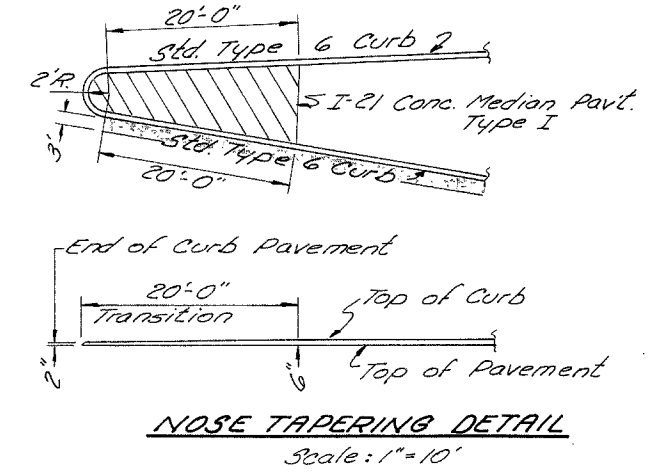
Ramp "F" Curve Data  
 P.I. Sta. 39+76.80  
 $\Delta = 6^{\circ}47'46''$  PI  
 $D = 1^{\circ}30'$   
 $R = 3819.72'$   
 $T = 226.80'$   
 $L = 453.07'$   
 $E = 6.73'$

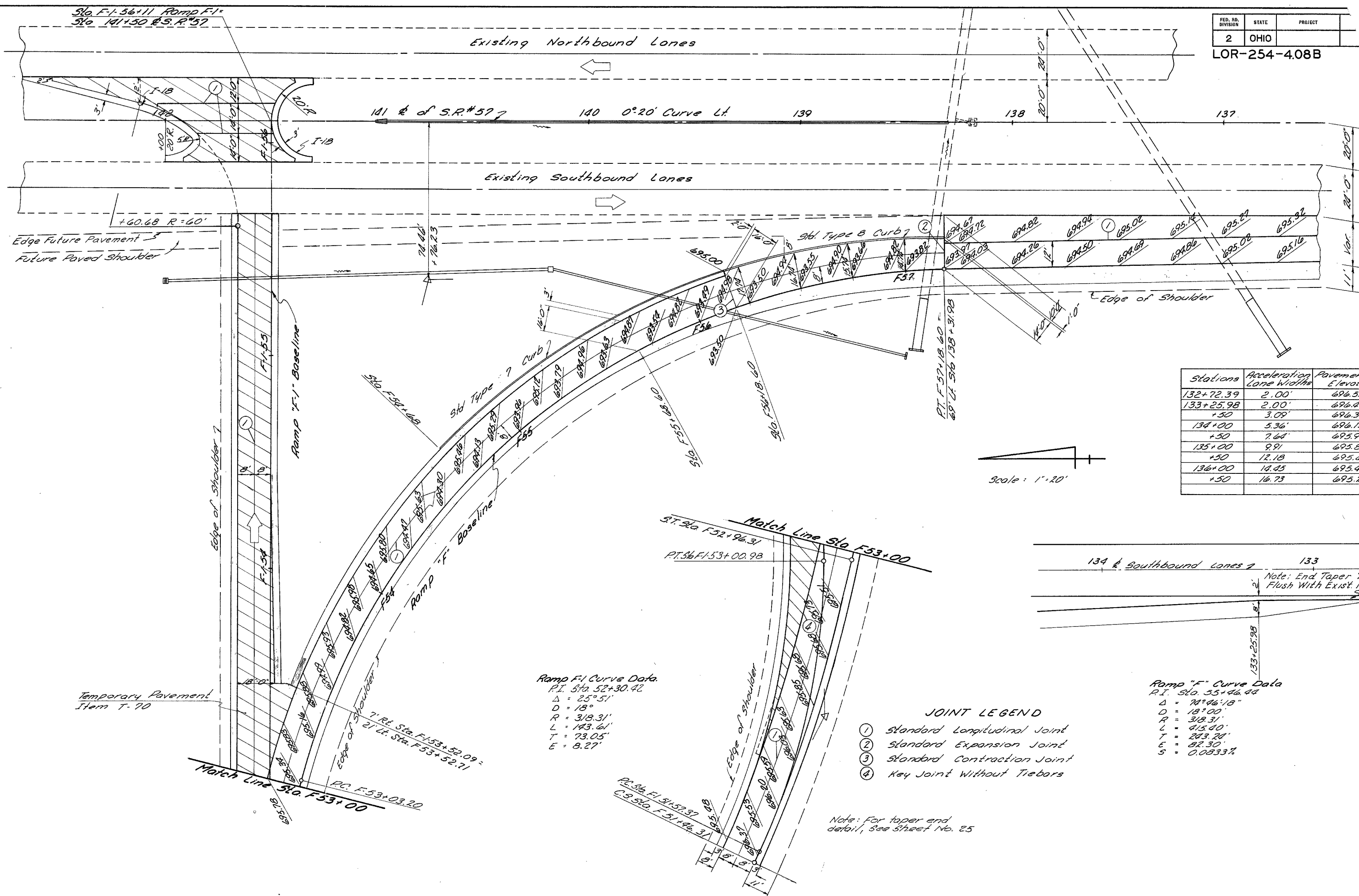
C.B. Sta. F-42+03.07 =  
 Center of Ramp Nose  
 25' P.I. Sta. F-42+03.07 =  
 642+09.23



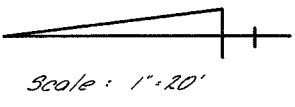
Note: For Taper and Detail, See Sheet No. 25

Ramp "F" Curve Data  
 P.I. Sta. 43+57.08  
 $L_s = 250'$   
 $R_1 = 3819.52'$   
 $R_2 = 716.20'$   
 $D_1 = 1^{\circ}30'$   
 $D_2 = 8^{\circ}00'$   
 $R_3 = 881.47'$   
 $\Delta_1 = 8^{\circ}08'$   
 $\Delta_2 = 1^{\circ}53'$   
 $\Delta_3 = 10^{\circ}00'$   
 $\Delta_1 + \Delta_2 = 11^{\circ}53'$   
 $P_a = 2.95'$   
 $T_1 = 154.01'$   
 $T_2 = 96.89'$





Stations	Acceleration Lane Widths	Pavement Edge Elevations
132+72.39	2.00'	696.52
133+25.98	2.00'	696.49
+50	3.09'	696.34
134+00	5.36'	696.15
+50	7.64'	695.97
135+00	9.91'	695.82
+50	12.18'	695.61
136+00	14.45'	695.47
+50	16.73'	695.25



**Ramp F-1 Curve Data**  
 P.I. Sta. 52+30.42  
 $\Delta = 25^{\circ}51'$   
 $D = 18'$   
 $R = 318.31'$   
 $L = 143.61'$   
 $T = 73.05'$   
 $E = 8.27'$

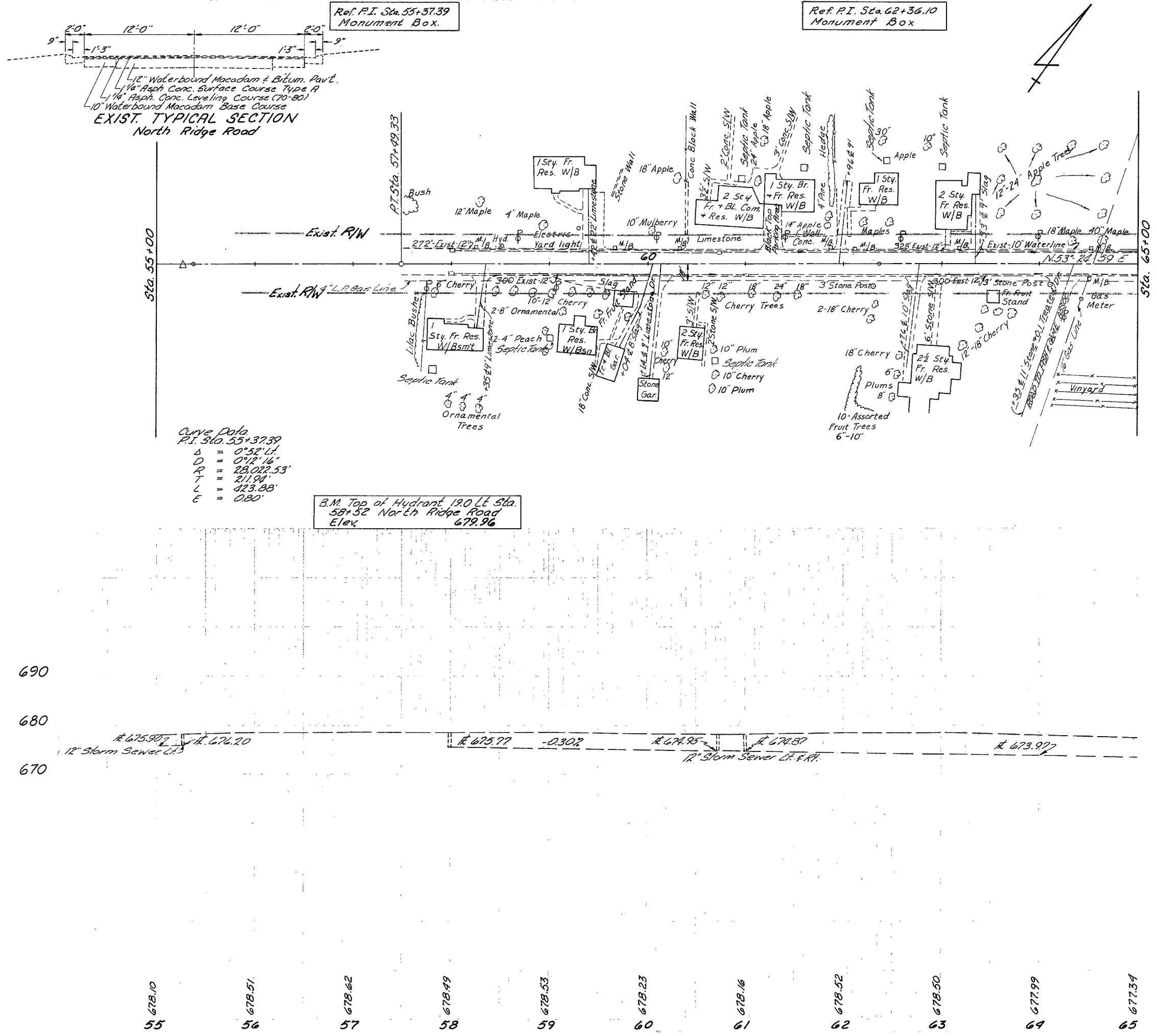
**Ramp 'F' Curve Data**  
 P.I. Sta. 55+46.44  
 $\Delta = 74^{\circ}46'18''$   
 $D = 18^{\circ}00'$   
 $R = 318.31'$   
 $L = 415.00'$   
 $T = 203.24'$   
 $E = 62.30'$   
 $S = 0.0833\%$

- JOINT LEGEND**
- ① Standard Longitudinal Joint
  - ② Standard Expansion Joint
  - ③ Standard Contraction Joint
  - ④ Key Joint Without Tiebars

Note: For taper end detail, see Sheet No. 25



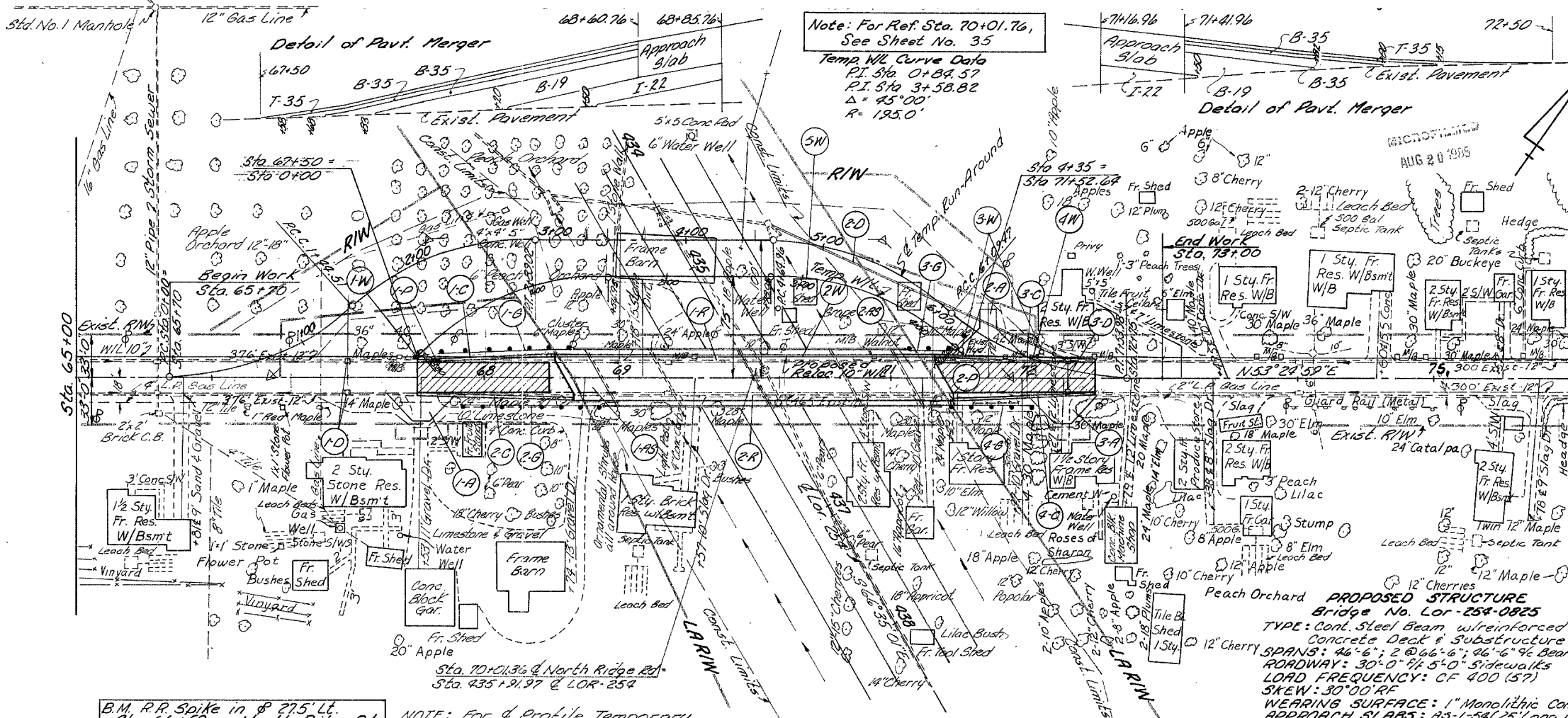
LOR-254-408 B



Curve Data Temp. Run-Around

P.I. Sta 0+75.58 Δ = 41°24'  
 P.I. Sta 2+20.09 D = 28°39'  
 P.I. Sta 5+40.54 R = 200'  
 P.I. Sta 6+85.05 L = 144.5'  
 E = 13.80'

LOR-204-408 B



Note: For Ref. Sta. 70+01.76,  
See Sheet No. 35  
 Temp. W/L Curve Data  
 P.I. Sta. 0+84.57  
 P.I. Sta. 3+58.82  
 Δ = 45°00'  
 R = 195.0'

Item No.	Station	Side	I-1		I-5		I-8		I-15		
			12" Pipe Class E-1	12" Pipe Class F-4	12" Pipe Class F-1	12" Pipe Class F-2	Removal Existing Curbs	Removal Existing Curbs	Removal Existing Curbs	Removal Existing Curbs	
1-D	67+00	LR									
2-D	72+30	LR	180	61							
3-D	72+30	LR			10	10					
1-A	67+50	LR					26				
2-A	67+50	LR							500		
1-B	67+60	LR								100	
2-B	67+85	LR								100	
3-B	71+9.5	LR								37.5	
4-B	71+42	LR								62.5	
Totals			180	61	10	10	2	26	4	1000	300

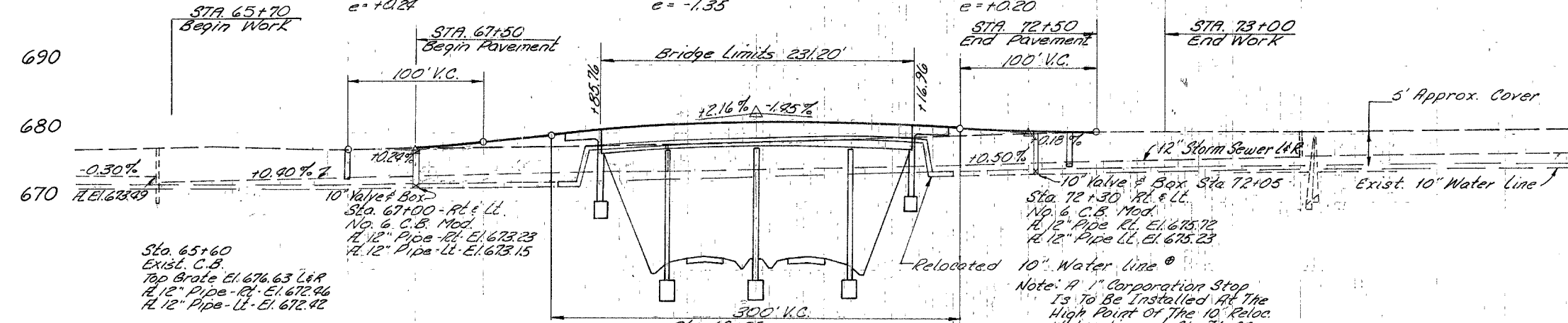
Item No.	Station	Side	Width	Length	Aggregate Base Course			Asphaltic Concrete Surface Course			Special Comp. Curbs	F-7	F-22
					5"	6"	8"	1"	2"	3"			
1-A	67+53	LR	12	20	2844	10.31							
2-A	71+72	LR	12	35			15.19						
3-A	72+27	LR	12	20	2844	10.31							
1-C	67+50	LR										102	
2-C	67+50	LR										117	
3-C	71+34	LR										116	
4-C	71+49	LR										101	
1-A3	68+60.76	LR											8582.490
2-A3	71+41.96	LR											8582.720
1-P	67+50	LR			108.29		40.37	8.56	2059	12.57			2164
2-P	71+41.96	LR			70.94		33.70	7.33	1278	8.22			1498
Totals					23611	2062	15.19	74.07	23.79	33.67	2079	436	17164

B.M. R.P. Spike in P 275 Lt.  
Sta. 66+59 on North Ridge Rd.  
Elev. 675.90

NOTE: For Profile Temporary Run-Around, See Sheet 127

677.38 677.50 677.74 678.10 678.58 679.66 680.16 680.59 680.99 681.22 681.42 681.55 681.60 681.58 681.97 681.80 681.05 680.73 680.91 680.20 680.09 680.09

P.V.I. Sta. 67+50 El. 677.5 100' V.C. e = +0.24  
 P.V.I. Sta. 70+00 El. 682.9 300' V.C. e = -1.35  
 P.V.I. Sta. 72+00 El. 680.0 100' V.C. e = +0.20



Sta. 65+60  
Exist. C.B.  
Top Grade El. 676.63 L&R  
12" Pipe - Rt. El. 672.46  
12" Pipe - Lt. El. 672.42

Excavation = 53 Cu. Yds.  
 Embankment = 377 Cu. Yds.  
 Embankment + 18% = 445 Cu. Yds.  
 Seeding = 2,193 Sq. Yds.

Note: A 1" Corporation Stop Is To Be Installed At The High Point of The 10" Reloc. Water Line at Sta. 71+02 and Accessible after Construction is Completed

677.34 677.97 677.38 677.81 678.14 679.65 679.35 680.01 680.18 680.19 680.41

NOTE: When no longer necessary for service, Temporary Water Main pipe shall become the property of the Contractor to dispose of as he pleases outside of R/W.

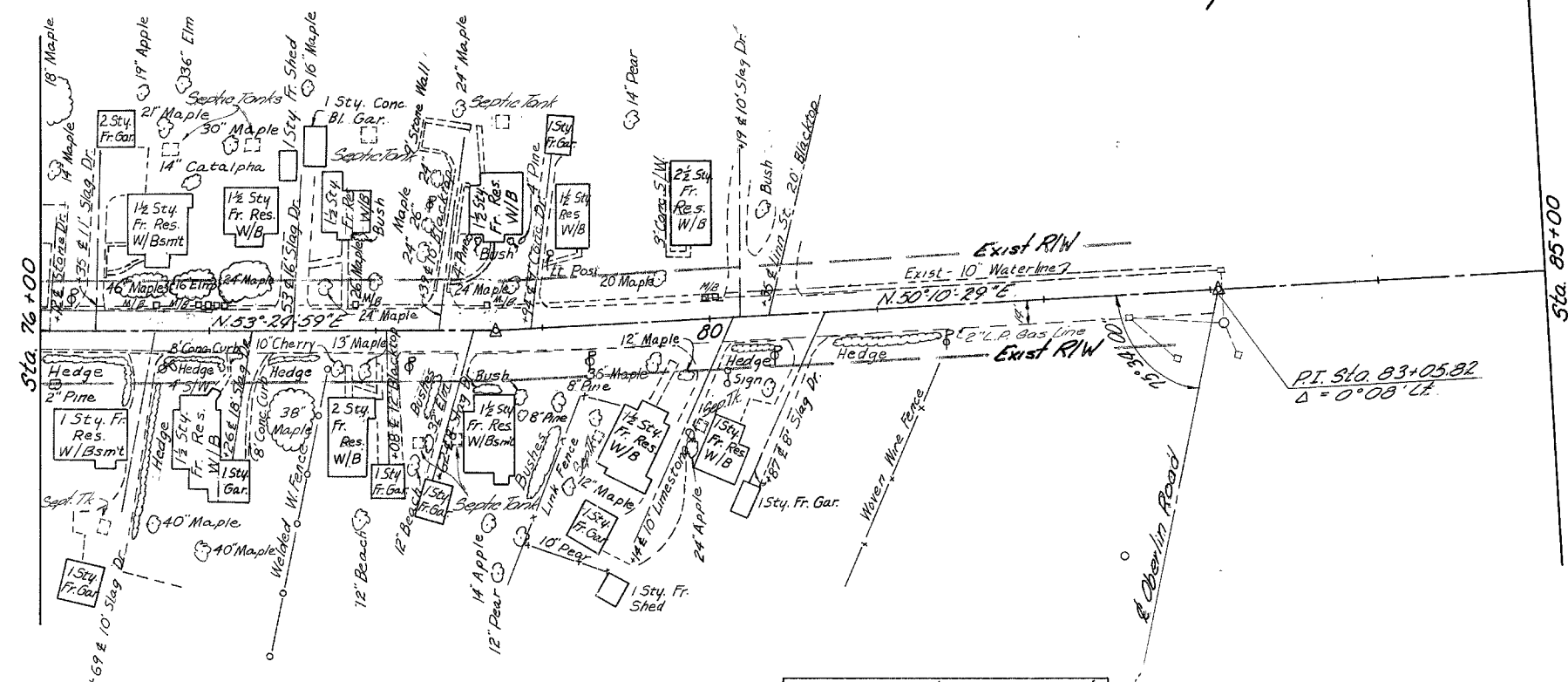
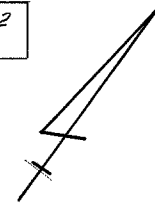
Item No.	Station	Side	I-124											
			10" New Water Main	10" New Water Main	Exist. Fire Hpd.	10" Gate	10" Wye	10" Tee	10" Plug	10" Struc.	Comp. For Struc.	Stop 1"		
1-W	67+50	LR												
2-W	68+55	LR	290											
3-W	71+50	LR												
4-W	72+05	LR												
5-W	67+50	LR												
Total			290	432	1	2	2	4	1	1	3	0.9	1	

\* On temporary water lines a 'Slip Type' joint of a variety approved by Amherst Service Director & Proj. Engineer may be used in lieu of the leaded or mechanical joints as specified in supplemental specifications I-124.02 (a). See NOTE above regarding disposition.  
 Pipes shall be insulated with 1 1/2" thick Johns-Manville Thermaplastics & covered with Johns-Manville 76" Metal-On-Jacket or 'Strudilite Frost Casting by Universal Fabricated Products Co. Chicago, Ill., Encased in Corrugated Aluminum Sheets, or as approved by the Engineer.

NORTH RIDGE ROAD STA 65+00 TO STA 76+00

Ref. P.I. Sta. 78+72.83  
Monument Box.

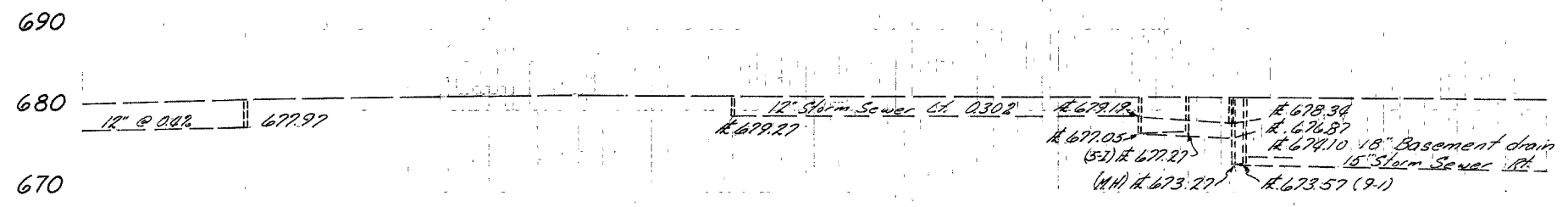
Ref. P.I. Sta. 83+05.82  
Monument Box



P.I. Sta. 78+72.83  
 $\Delta = 3^{\circ}14'30''$  Lt.

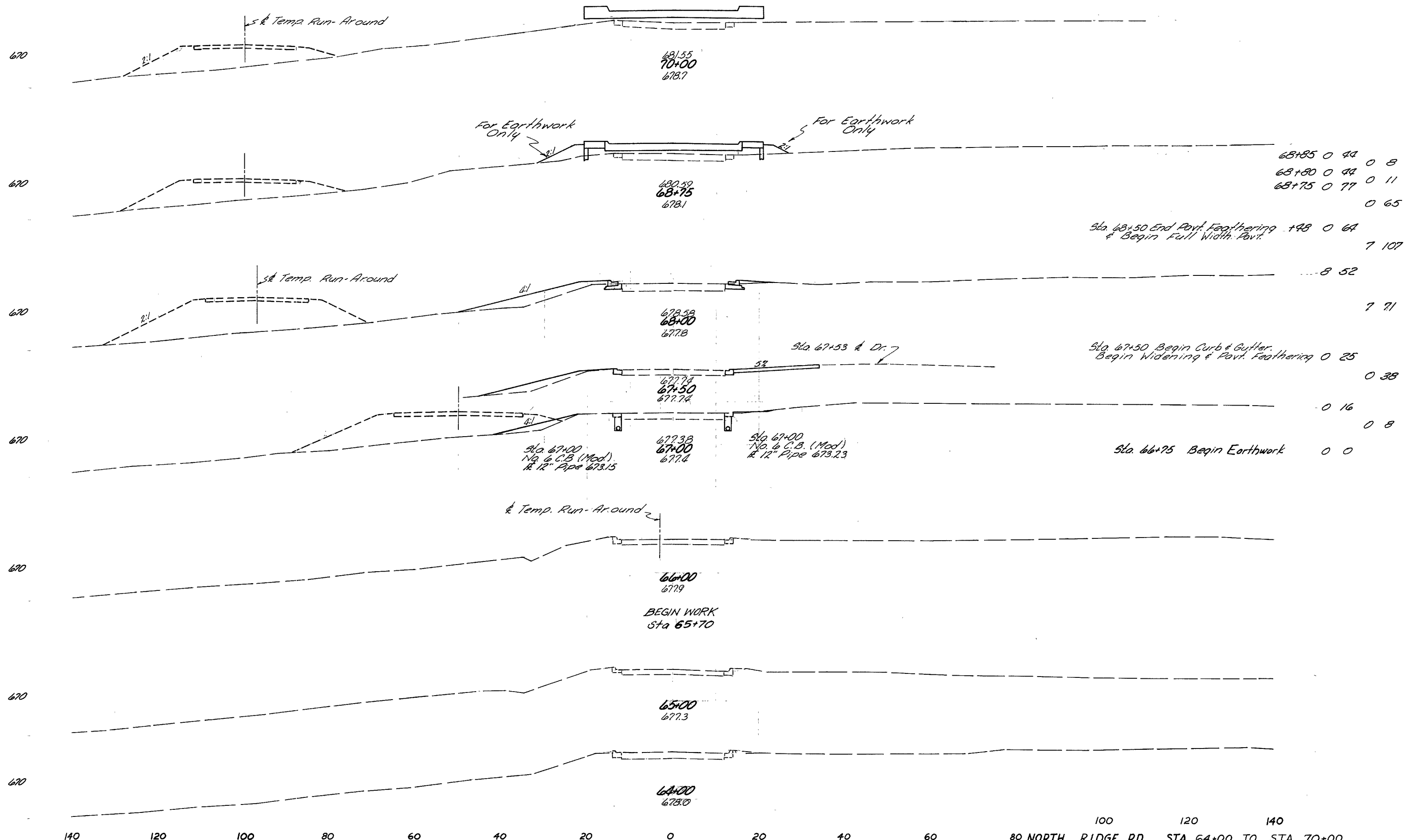
B.M. Arrow of Hydrant 20' Lt.  
Sta. 84+03 North Ridge Rd.  
Elev. 682.96

P.I. Sta. 83+05.82  
 $\Delta = 0^{\circ}08'14''$  Lt.

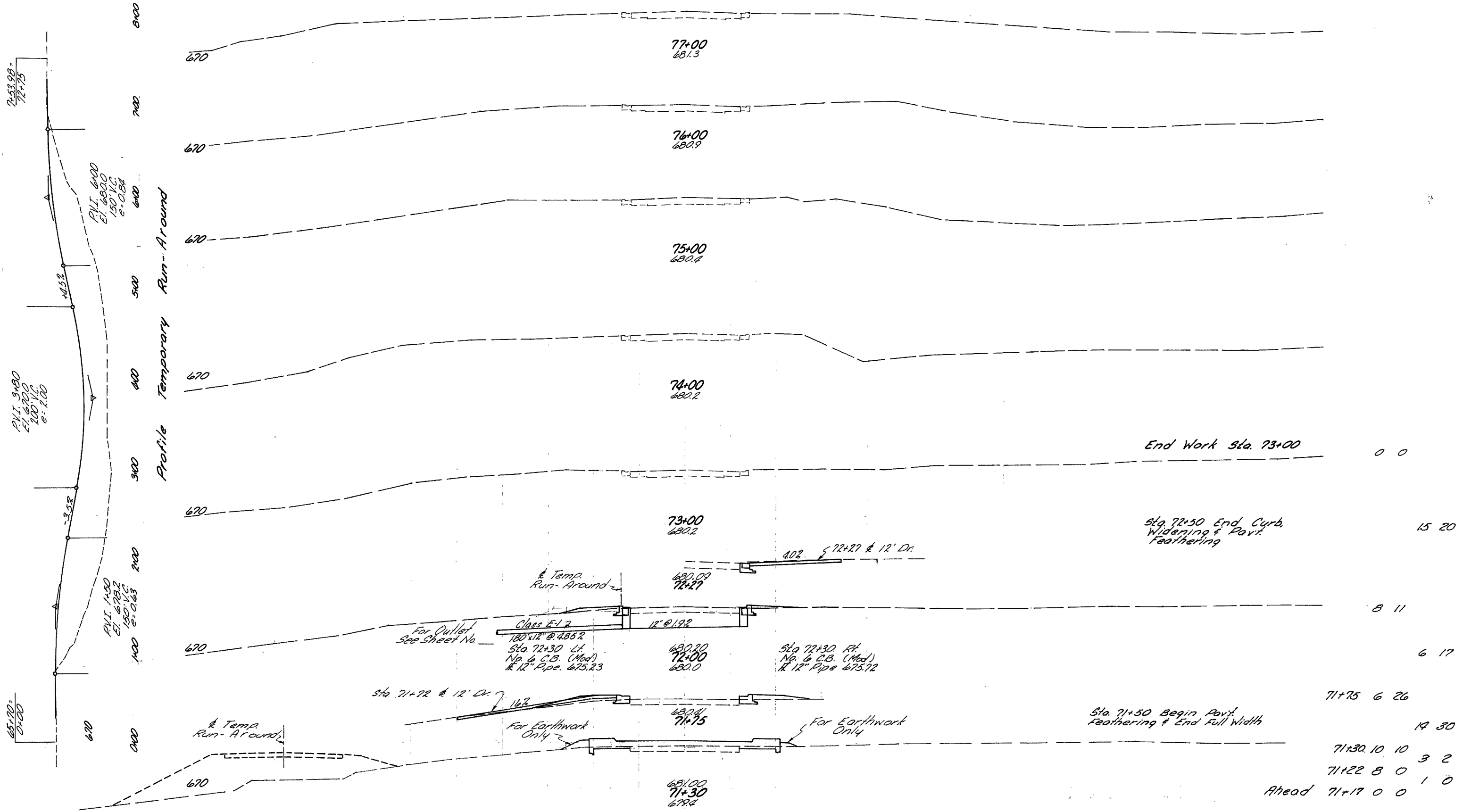


680.87	681.26	681.63	681.93	681.83	681.83	681.72	681.61	681.48	681.21
76	77	78	79	80	81	82	83	84	85

LOR-254-408 B

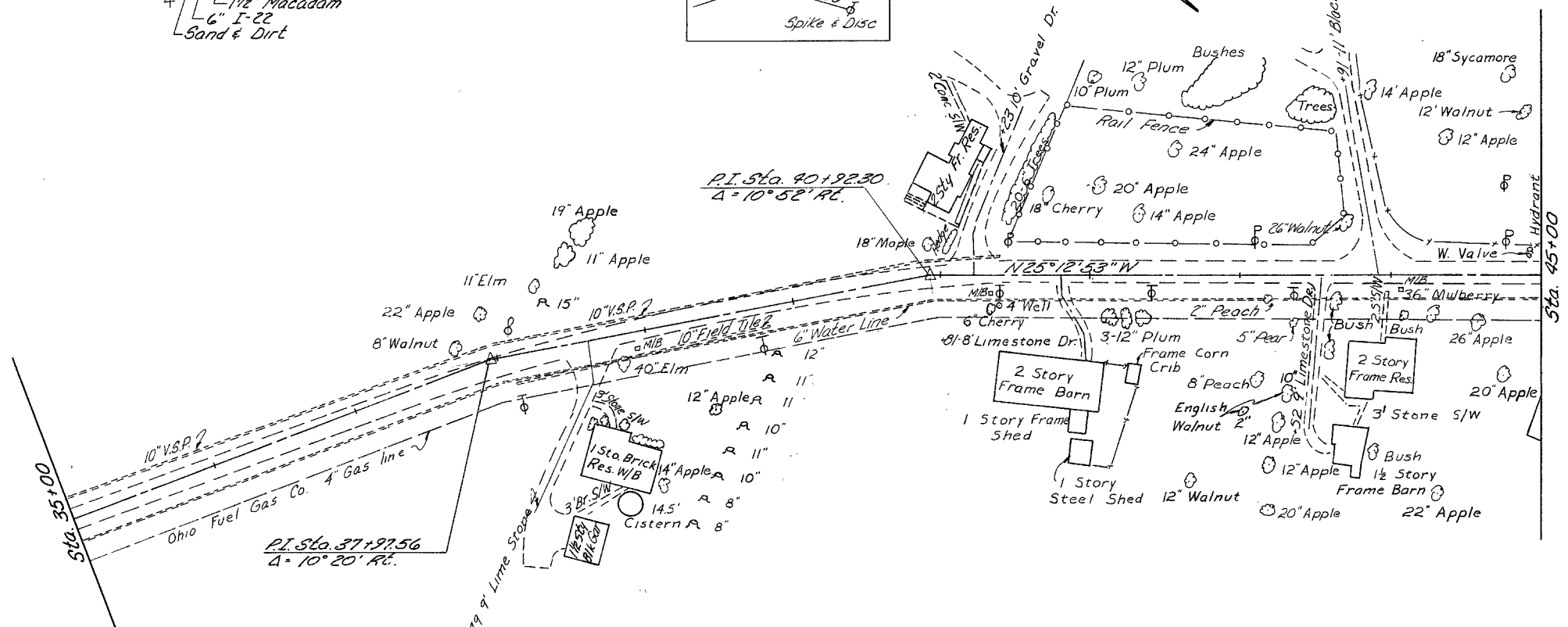
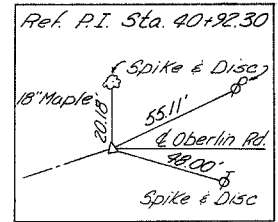
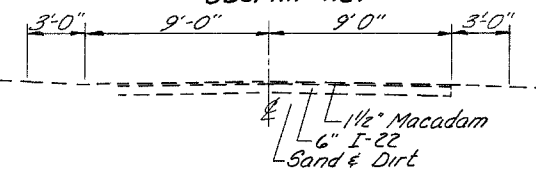


LOR-254-408 B



71+75	6	26
71+30	10	10
71+22	8	0
Ahead 71+17	0	0
	3	2
	1	0
	19	30
	8	11
	15	20
	0	0

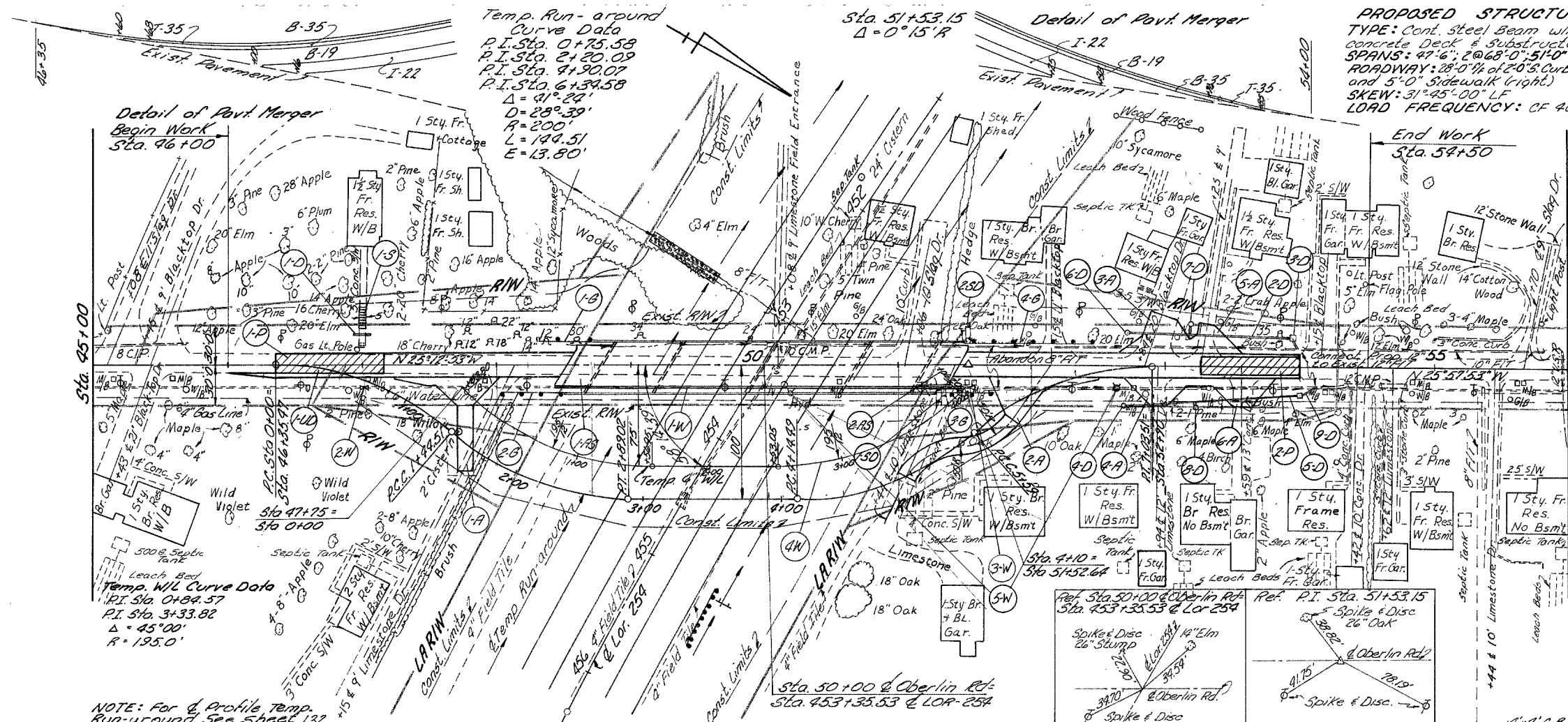
EXIST. TYPICAL SECTION  
Oberlin Rd.



710  
700  
690

706.73 35  
707.58 36  
708.59 37  
709.16 + 97.56  
709.17 38  
709.97 39  
709.98 40  
709.87 + 92.30  
709.95 41  
709.87 42  
710.17 43  
710.42 44  
709.14 45

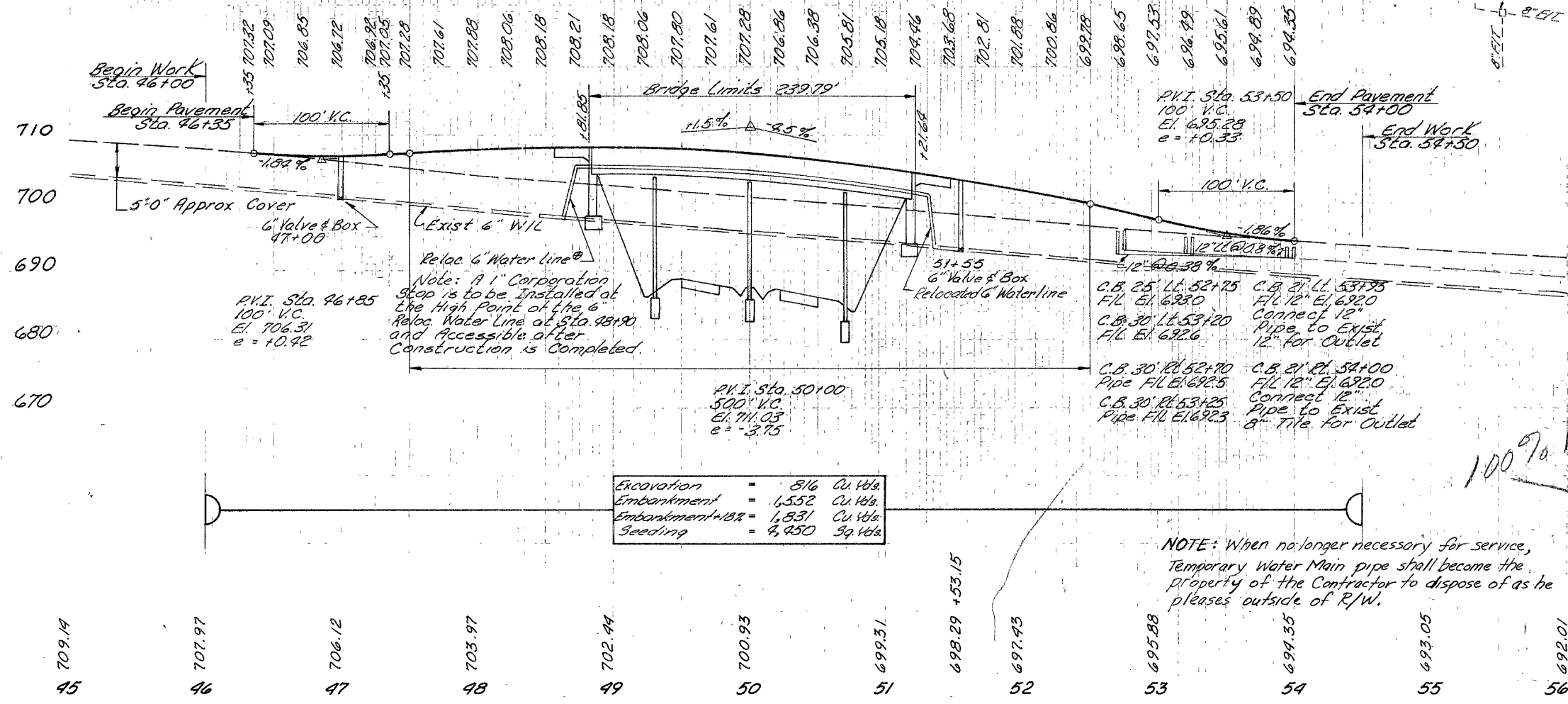
LOR-254 - 408 B



**PROPOSED STRUCTURE - BRIDGE NO. LOR-254-0859**  
 TYPE: Cont. Steel Beam wirereinforced concrete Deck & Substructure  
 SPANS: 47'-6", 2 @ 60'-0" 5'-10" bearings  
 ROADWAY: 28'-0" of 20' S. curb (left) and 5'-0" sidewalk (right)  
 SKEW: 31°45'-00" LF  
 LOAD FREQUENCY: CF 400(57)W

Item No.	Station	Side	I-9		I-1		I-5		I-8		L-10	S-24	I-13	E-8
			Stone Underdrain No. 2	Class. Fr. 12" Pipe	Class. Fr. 12" Pipe	Class. Fr. 12" Pipe	Pipe Specials Class E-3	Class. Fr. 12" Pipe	Class. Fr. 12" Pipe	Class. Fr. 12" Pipe				
1-S	47+00	LT.												
1-D	45+94	46+06	LT.		12									
2-D	52+75	53+95	LT.			120	1							
3-D	53+95	54+00	LT.			8								
4-D	52+70	RT.							1					
5-D	52+70	54+00	RT.				130	1						
6-D	52+75	54+00	LT.						1					
7-D	53+20	54+00	LT.				8							
8-D	53+25	54+00	RT.				3							
9-D	54+00	54+10	RT.				12							
1-30	51+25	54+00	RT.									17		
2-50	51+50	54+00	LT.									11		
1-UD	46+35	54+00	LER	156										
Totals			156		12	281	2	2	4	2	28	Lump	60	65

Item No.	Station	Side	Width	Length	Shew	Crushed Aggregate Base Course			I-15	I-7	B-35	F-30	E-22	E-8	
						5"	6"	8"							
1-A	47+75	RT.	12	69		11.26	14.52	9.47					32.18		
2-A	52+15	RT.	12	135	55	16.26	29.61	6.42					46.22		
3-A	52+84	RT.	20	31.25	72	16.71		6.66					47.95		
4-A	52+94	RT.	12	20		10.85		4.30					30.96		
5-A	53+25	LT.	12	26	80	10.68		9.19					30.17		
6-A	53+59	RT.	13	20		11.19		4.92					31.82	8	
Totals						250	76.88	154.66	94.13	58.79	161.88	401.2	611.21	9.942	8

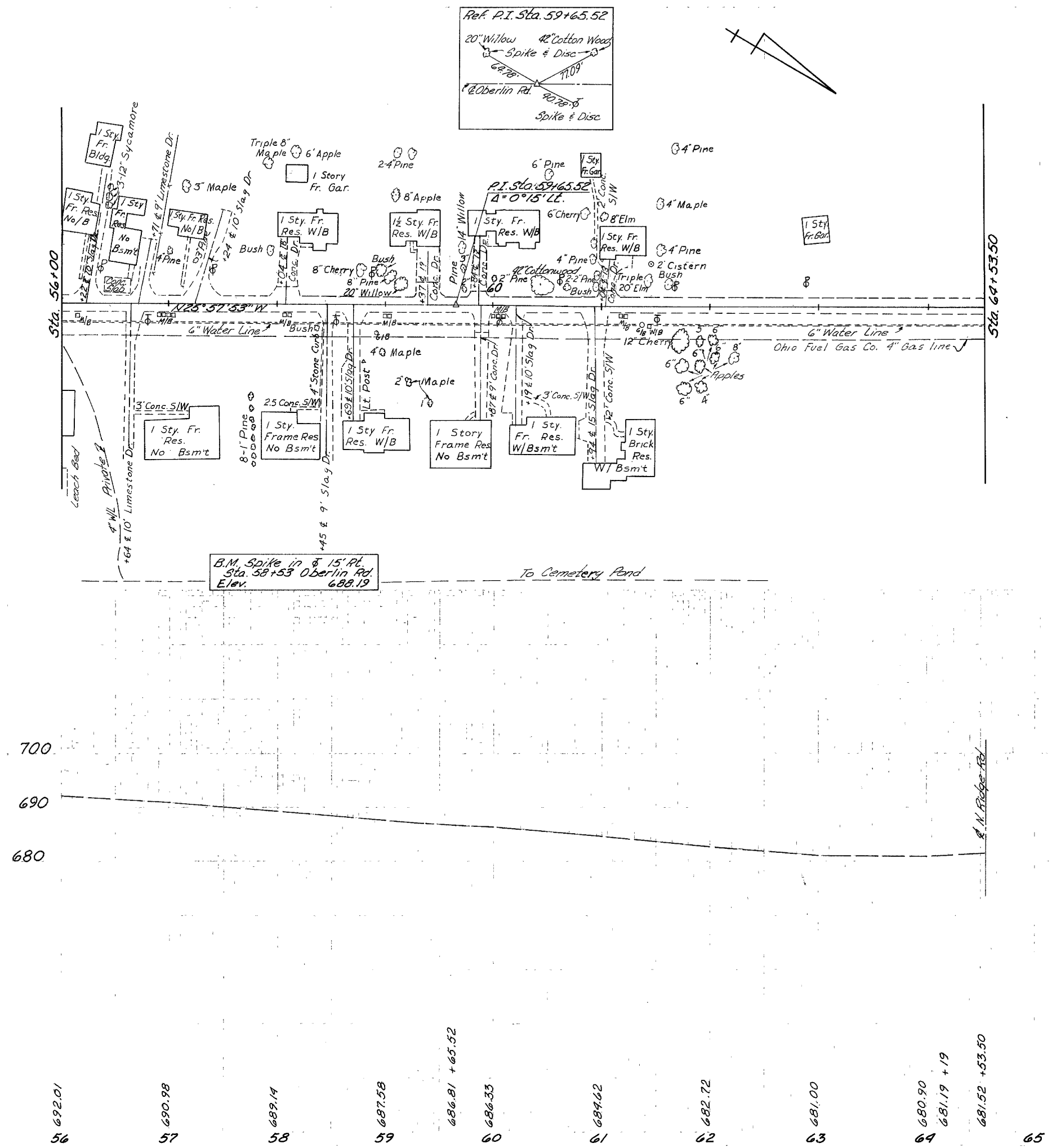


Excavation	=	816	Cu Yds.
Embankment	=	1,552	Cu Yds.
Embankment + 18%	=	1,831	Cu Yds.
Seeding	=	9,450	Sq. Yds.

NOTE: When no longer necessary for service, Temporary Water Main pipe shall become the property of the Contractor to dispose of as he pleases outside of R/W.

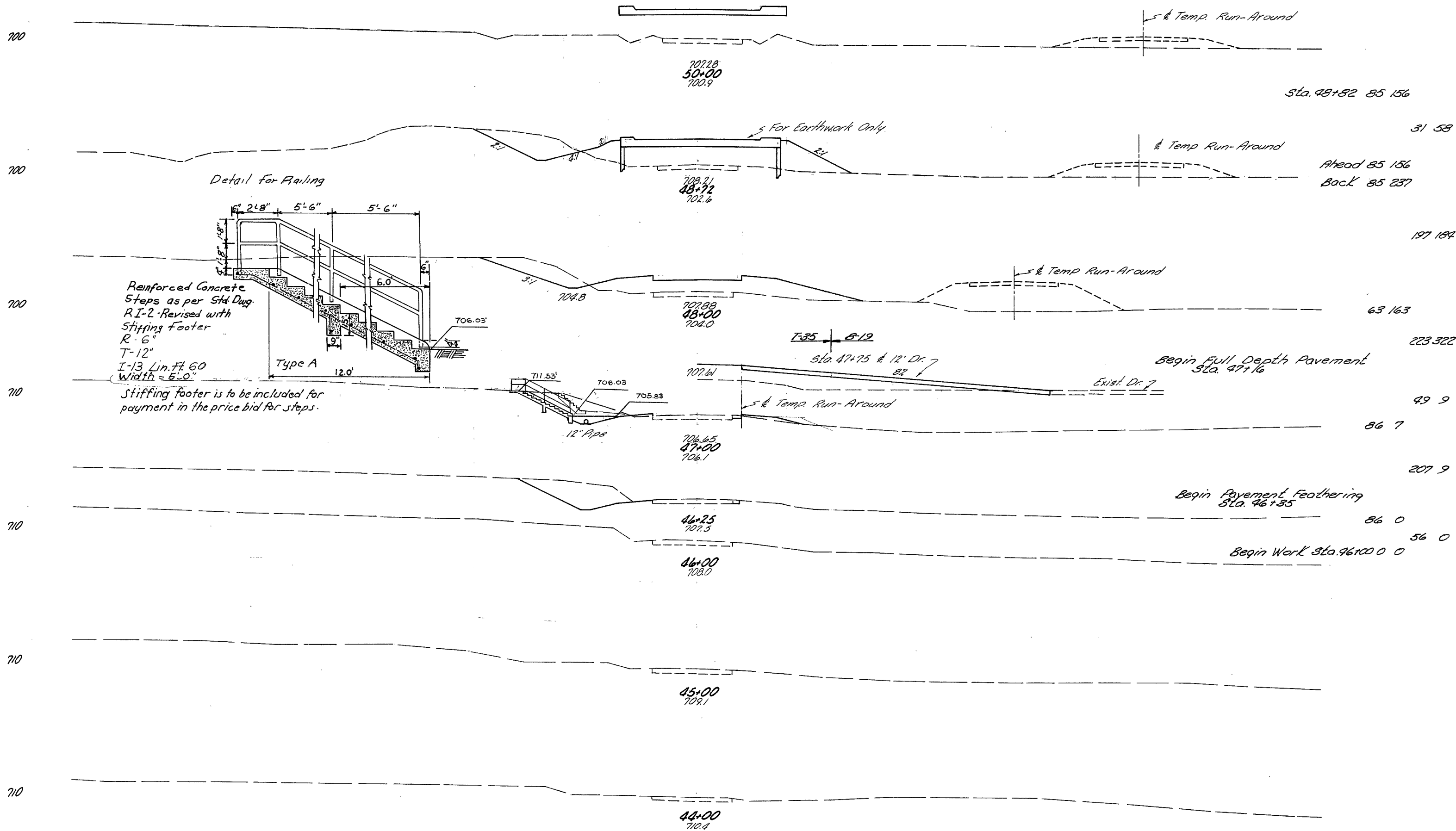
Item No.	Station	Side	I-124							3-1									
			6" @ New Water Main Insulated As Per Plan	6" New Water Main As Per Plan	6" Gate Valve & Box	Fittings	6" 45° Bends	6" 90° Wye Branch	6" Cut-In Sleeve		Exist. Conc. Pipe Ad for Temporary Class Rest "E"								
5W	50+20	52+65	RT.																
1-W	48+45	51+55	RT.	310				1	4										
2-W	47+00		RT.																
3-W	51+55		RT.																
4-W	47+75	54+52.64	RT.																
Totals				310	408	2	1	4	2	5	1	0.9							

\* On temporary water lines, a "Slip Type" joint of a variety approved by the Amherst Service Director & Project Engineer, may be used in lieu of the leaded or mechanical joints as specified in supplemental specifications I-124.02 (a). See NOTE @ left regarding disposition.  
 @ Pipes shall be Insulated With 1/2" Thick Johns-Manville Ther-mobestos & covered with Johns-Manville "Metal-On" jacket or Strudilite Frost Casting by Universal Fabricated Products Co. Chicago, Ill., Encased in Corrugated Aluminum, or as approved equal by the Engineer.





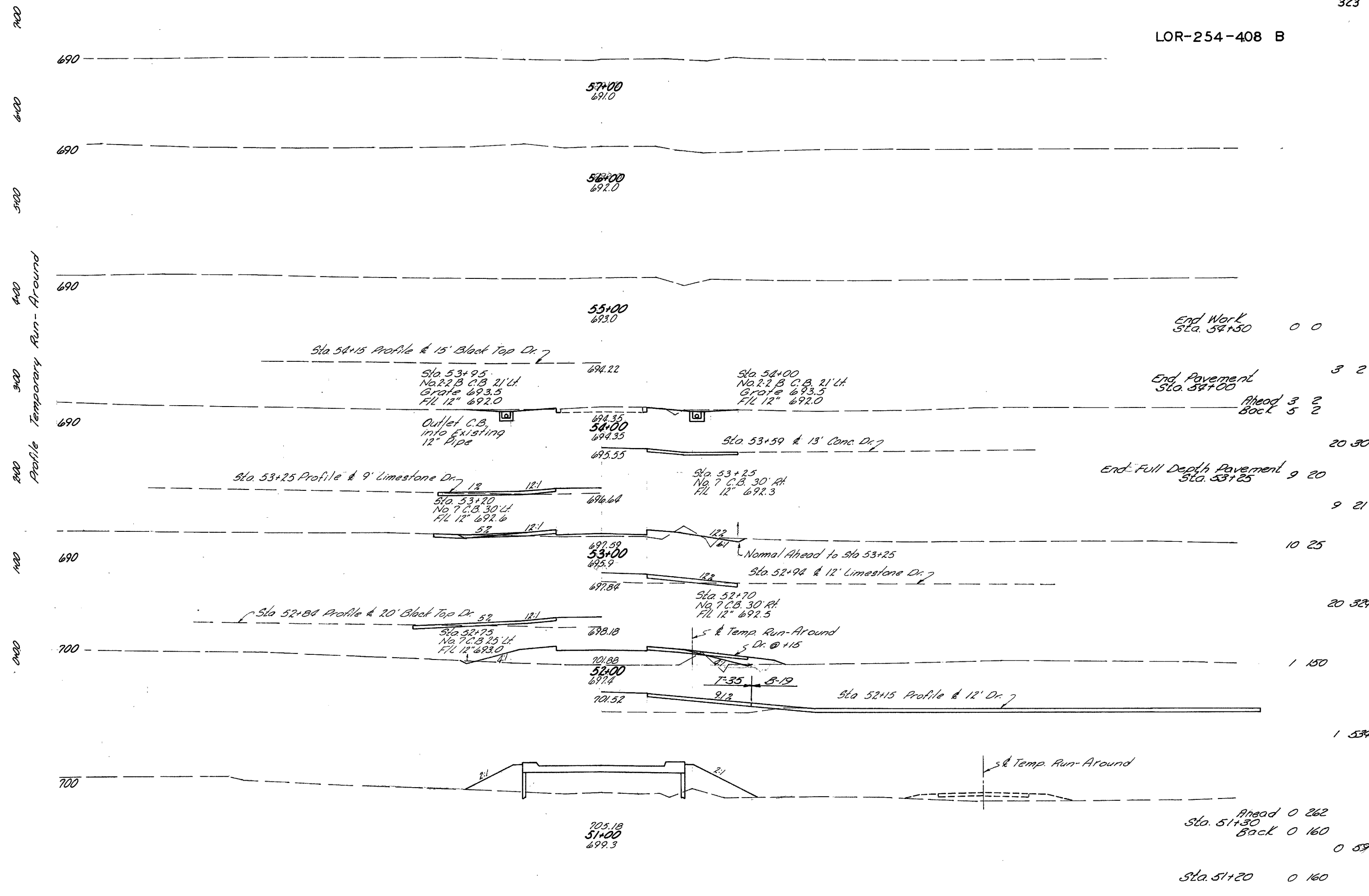
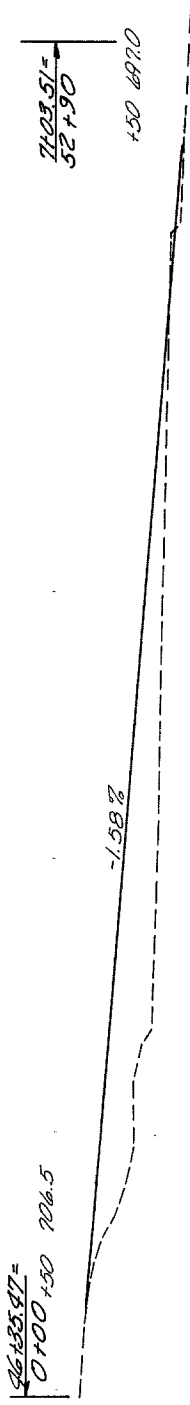
LOR-254-408 B



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

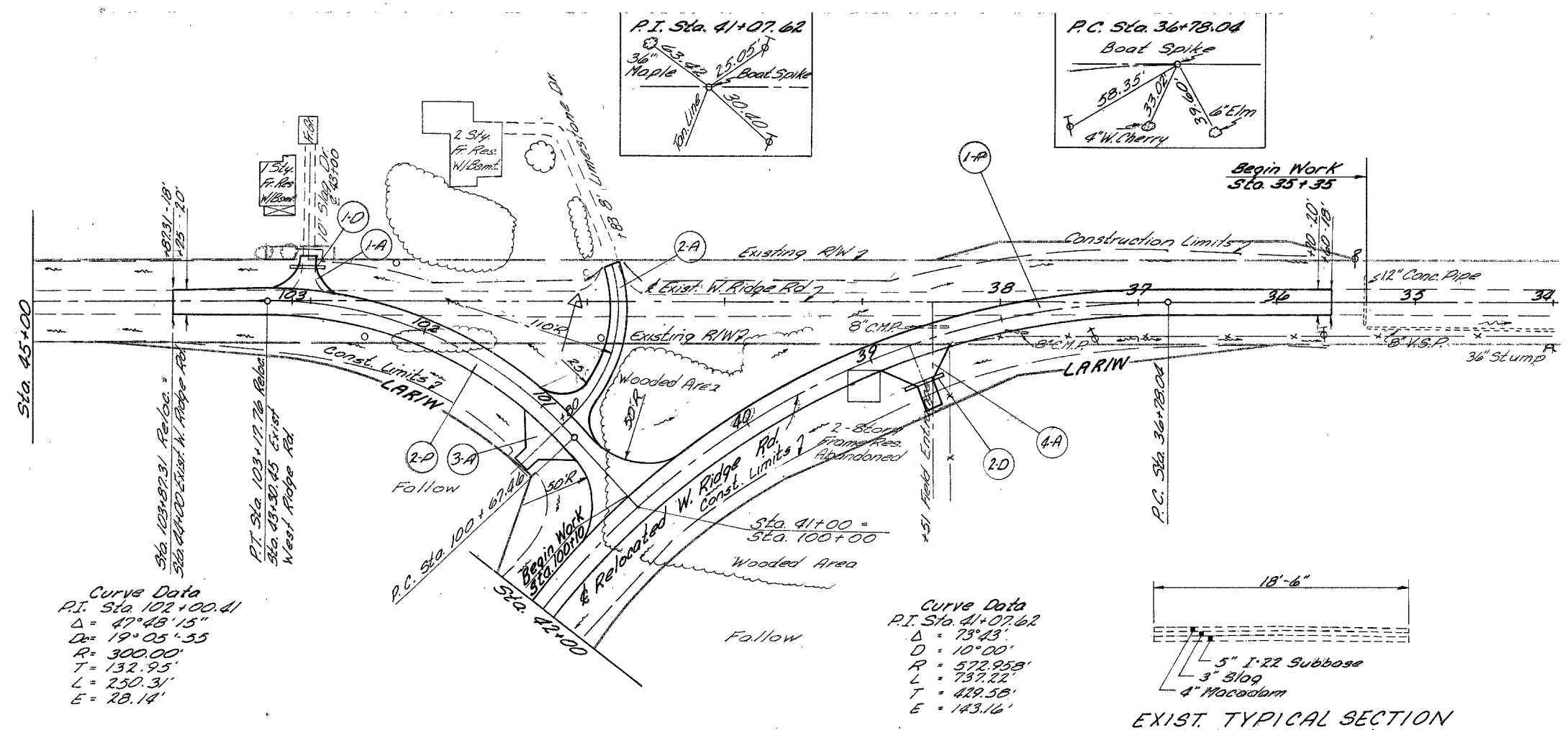
132  
323

LOR-254-408 B



140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
OBERLIN RD. STA. 51+00 TO STA. 57+00

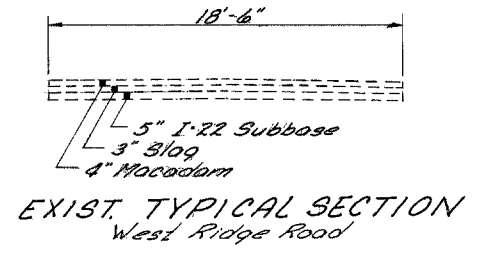
LOR-254-4.08B



Item No.	Station		Side	I-1 Class F4 Pipe	12" Lin. Ft.
	From	To			
1-D	102+88		Rt.	26	
2-D	38+55	38+85	Lt.	30	
Total				56	

**Curve Data**  
 P.I. Sta. 102+00.41  
 $\Delta = 47^\circ 48' 15''$   
 $D = 19^\circ 05' 55''$   
 $R = 300.00'$   
 $T = 132.95'$   
 $L = 250.31'$   
 $E = 28.14'$

**Curve Data**  
 P.I. Sta. 41+07.62  
 $\Delta = 73^\circ 23'$   
 $D = 10^\circ 00'$   
 $R = 572.958'$   
 $L = 737.22'$   
 $T = 429.58'$   
 $E = 143.16'$

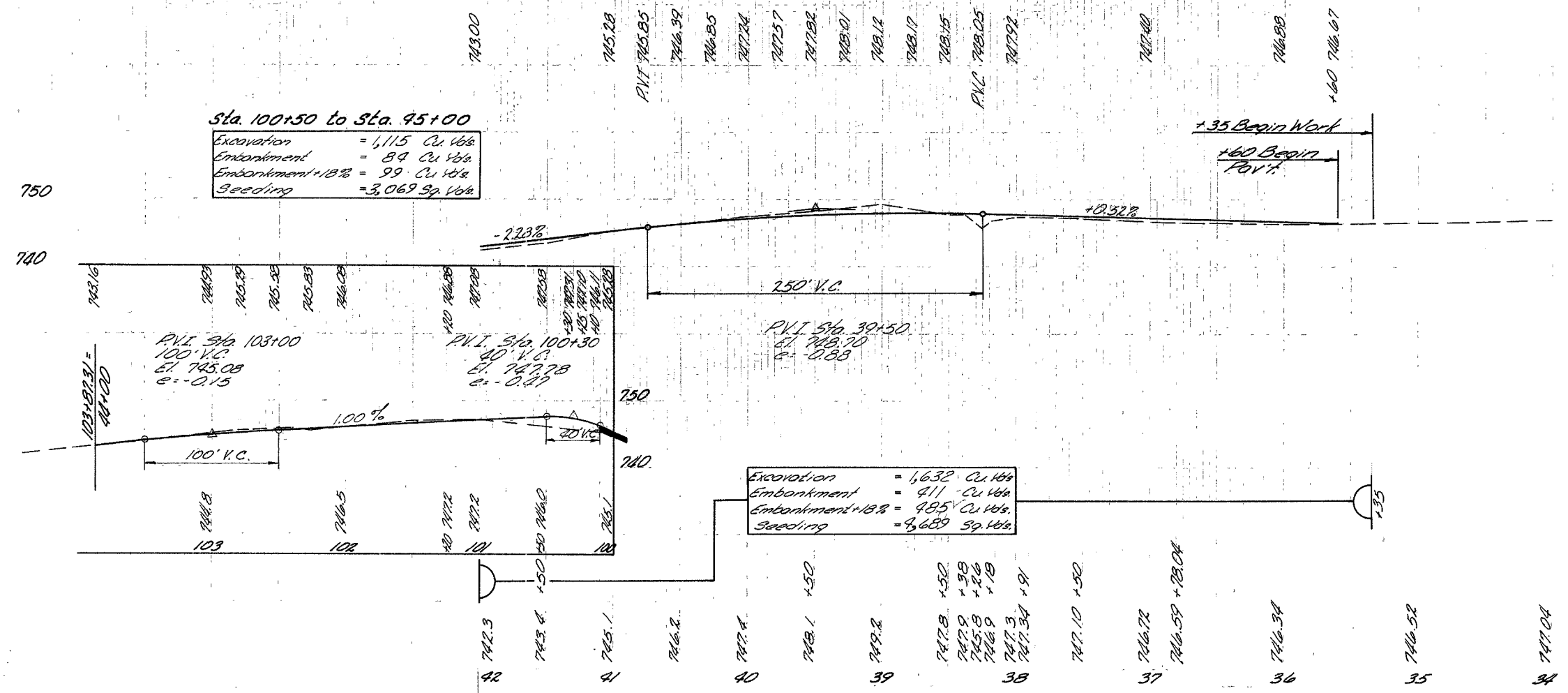


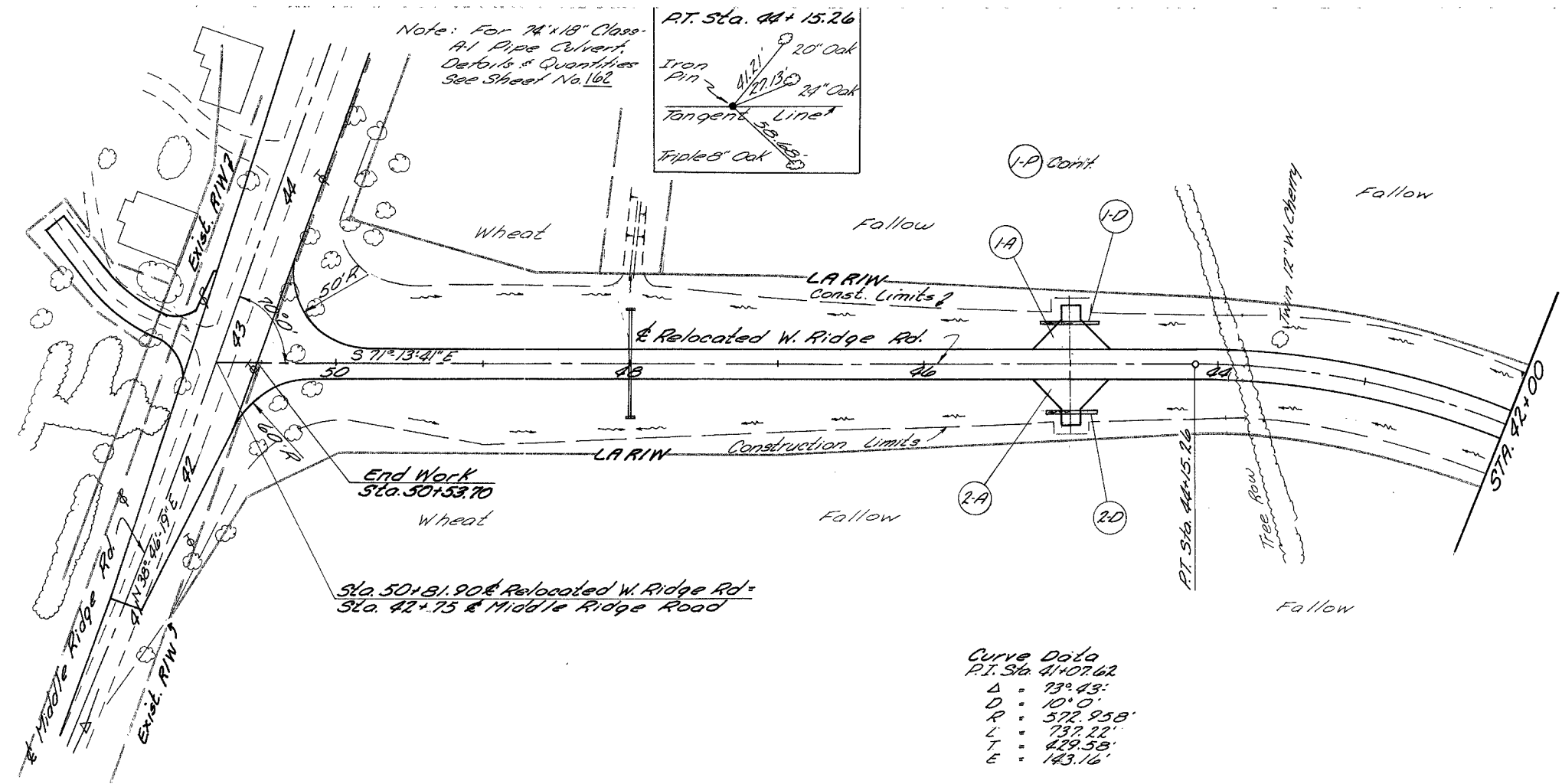
Item No.	Station		Side	Width	Length	skew	Crushed Aggregate Base Course 5" 6" Cu. Yds.	B-19 Asph. Conc. Surface Type "A" 1"	T-35 Asph. Conc. Surface Type "A" 1 1/2"	B-35 Asph. Conc. Surface Type "A" 1 1/2"	T-30 Bitum. Prime Coat 0.9 Gal. Per Sq. Yd.	I-22 F-Subbase 11"	I-9 Stone Underdrain 16"
	From	To											
1-P	35+60	50+53.70					608.64		96.78	145.17	1393.61	48.33	1050.0
2-P	100+10	123+87.3					166.90		26.56	39.85	382.53	114.31	262.5
1-A	102+88		Rt.	12	25	6° 9.90			x 3.89				28.01
2-A	100+80		Rt.	12	120	0° 28.75			*10.85				78.14
3-A	100+80		Lt.	12	29	0°	14.31						
4-A	38+70		Lt.	12	38	0°	15.57						
Totals							38.65	380.54	138.08	185.02	1882.29	532.64	312.5

\* Two 1" Courses See Driveway Typical

**Sta. 100+50 to Sta. 95+00**  
 Excavation = 1,115 Cu. Yds.  
 Embankment = 89 Cu. Yds.  
 Embankment +18% = 99 Cu. Yds.  
 Seeding = 3,069 Sp. Yds.

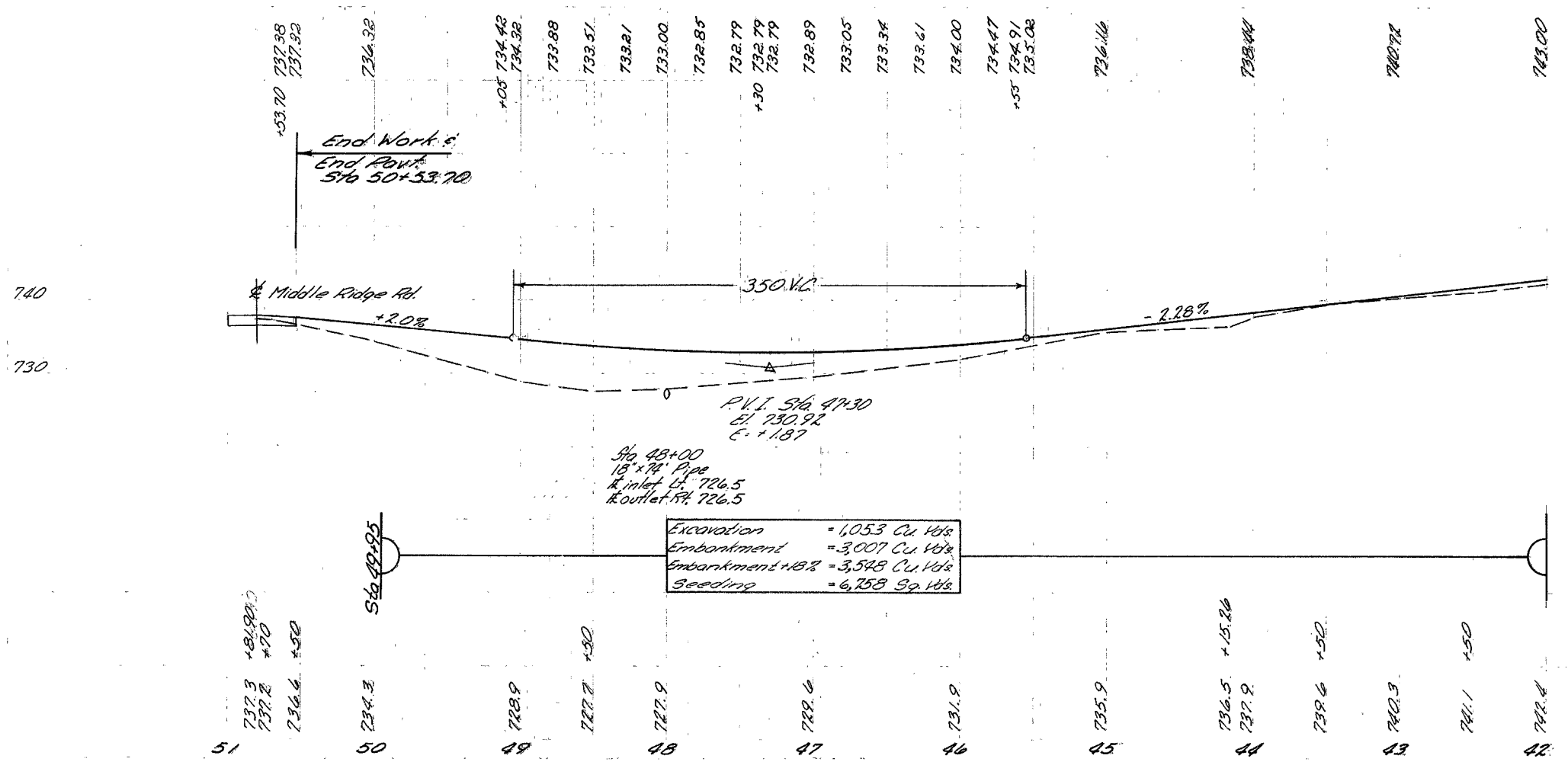
**Excavation = 1,632 Cu. Yds.**  
**Embankment = 411 Cu. Yds.**  
**Embankment +18% = 485 Cu. Yds.**  
**Seeding = 4,689 Sp. Yds.**

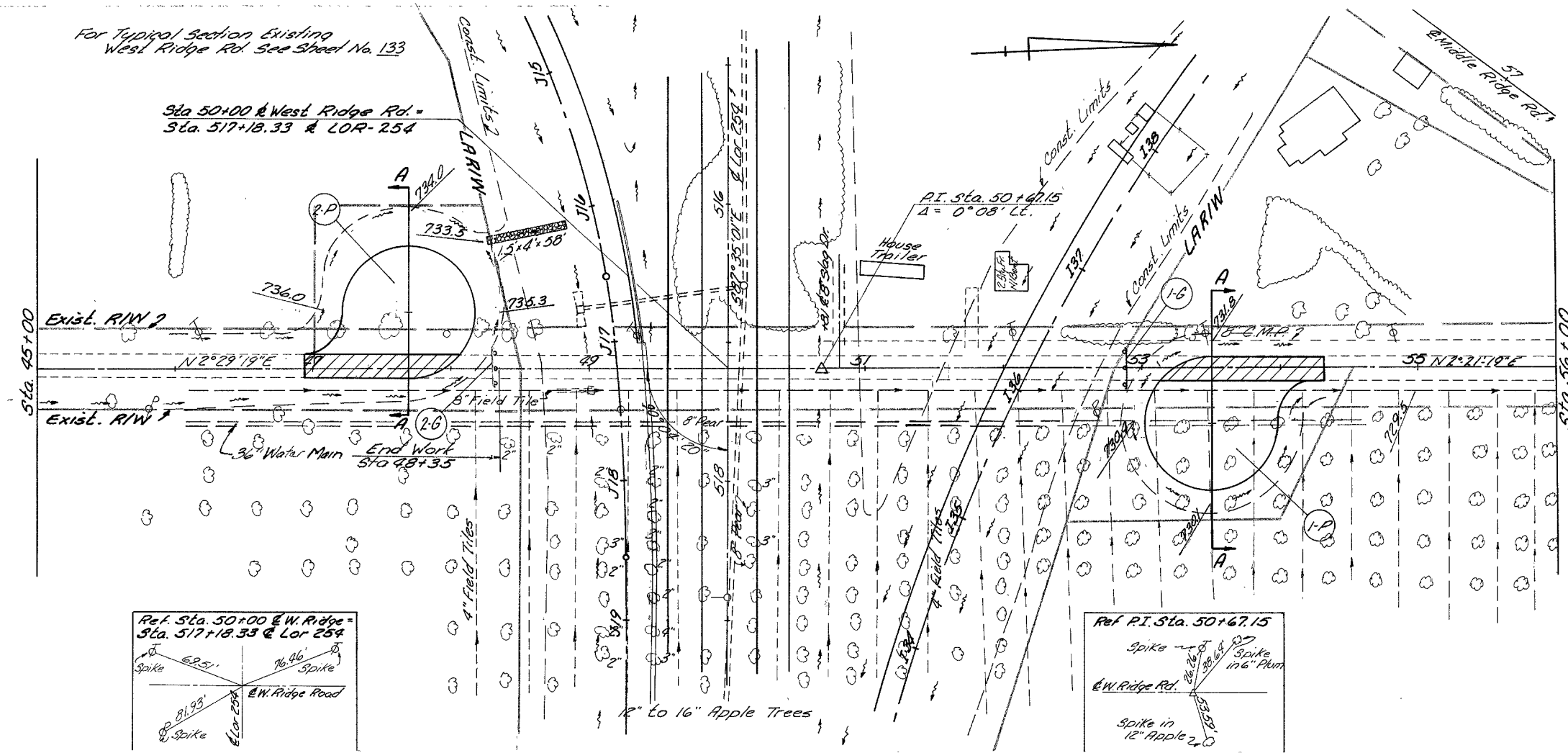




Curve Data  
P.I. Sta. 41+07.62  
Δ = 73° 43'  
D = 10' 0"  
R = 572.958'  
L = 737.22'  
T = 429.58'  
E = 143.16'

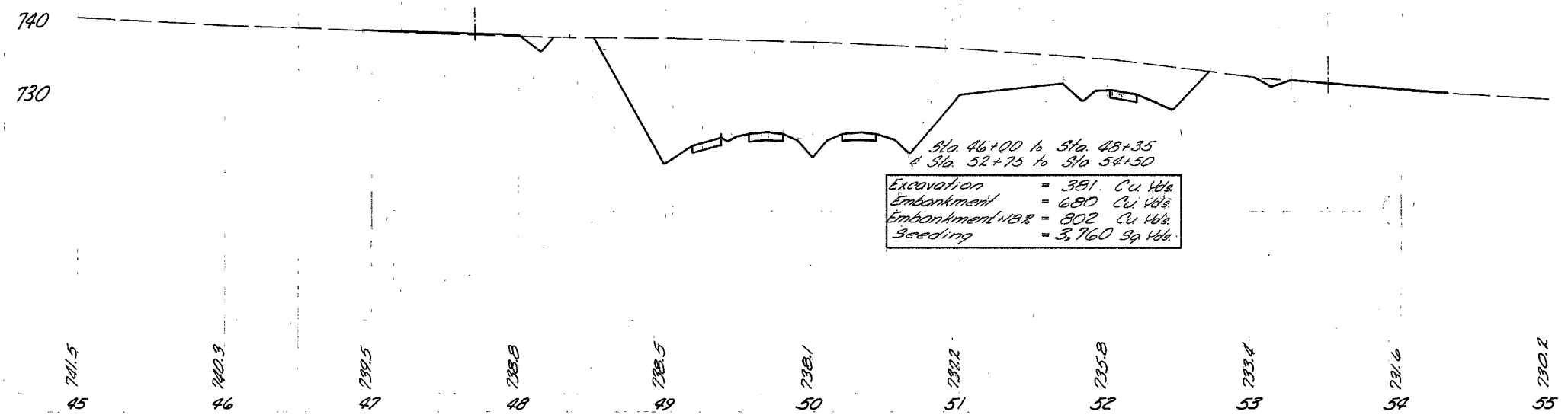
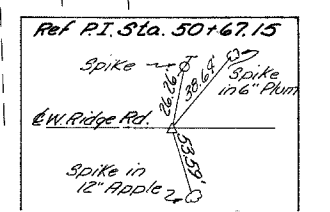
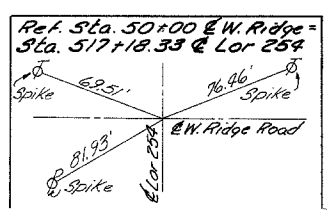
Item No.	Station		Side	Length	Width	Slew	F-1		B-19	
	From	To					Class F9	Crushed	12" Pipe	Aggregate
				Lin. Ft.			Lin. Ft.		Cu. Yds.	
1-A	45+00		RL	29	12	0°			14.31	
2-A	45+00		LT	29	12	0°			14.31	
1-D	44+82	45+22	LT				40			
2-D	44+82	45+18	RL				36			
		Total					76		28.62	



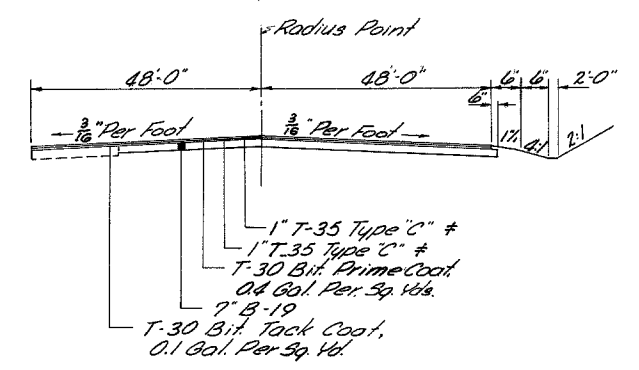


Item No.	Station		Side	B-19 Aggregate Base Course 7" Cu. Yds.	T-35 Asph. Conc. Surface Course C Type C Cu. Yds.	T-30 Bitum Prime Coat @ 0.1 Gal. Per Sq. Yds. Gal.	T-30 Bitum Tack Coat @ 0.1 Gal. Per Sq. Yds. Gal.	I-15 Guard Rail, Steel Beam Type Deep Lim. Ft.
	From	To						
1-B	52+90							25
2-B	48+30							25
1-P	53+50		RT.	142.41	*52.26	292.96	20.83	
2-P	47+70		LT.	142.41	*52.26	292.96	20.83	
Total				284.82	104.52	585.92	41.66	50

\* Two 1" Courses. See Driveway Typical



Resurfacing Only



SECTION A-A

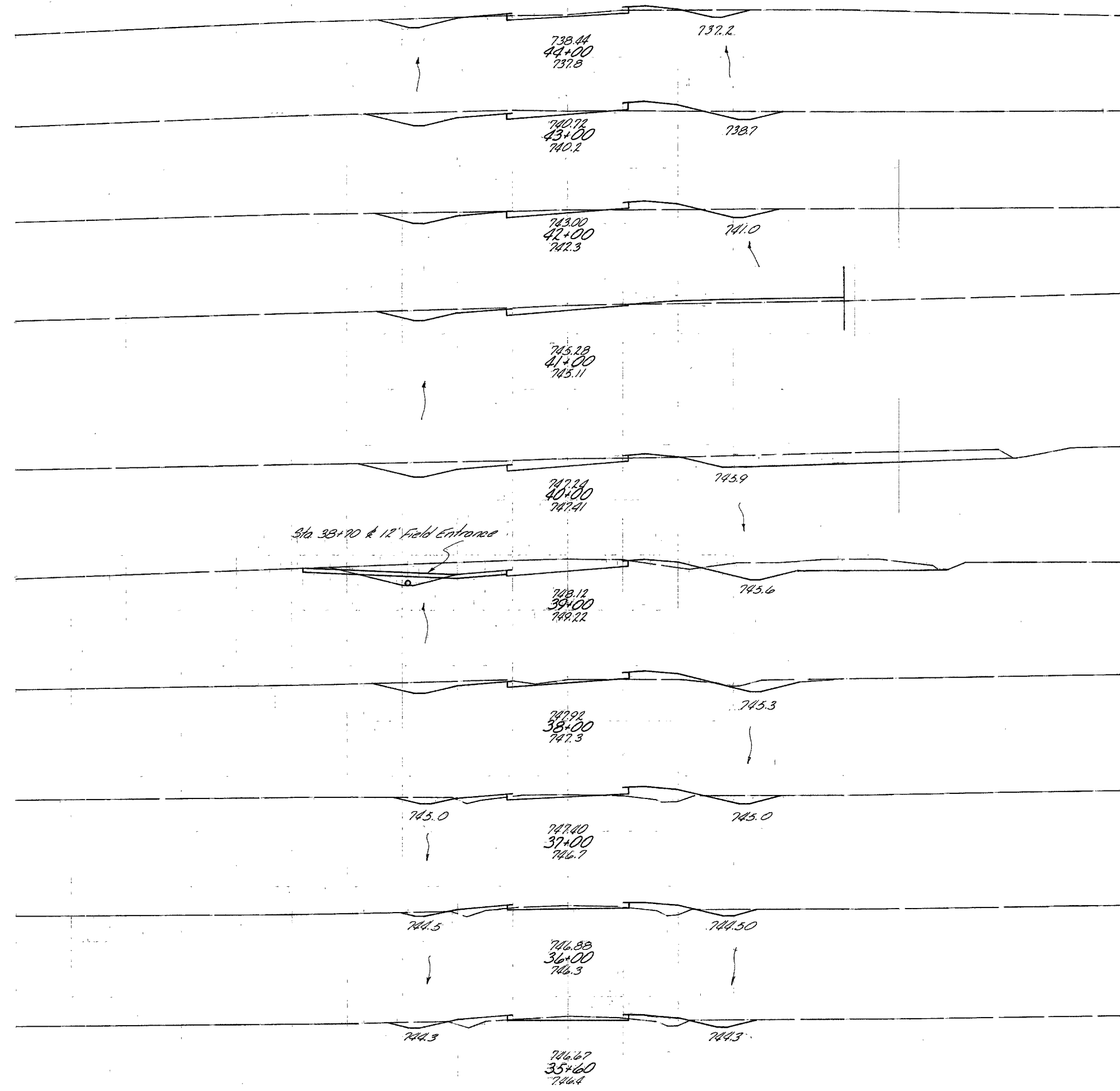
\* Thickness shown is designed thickness as described in Sec. T-35.01.

100 80 60 40 20 0 20 40 60 80 100

136  
323

LOR-254-4.08B

740  
740  
740  
740  
740  
750  
740  
750  
740  
750  
740  
750  
740  
750  
740  
750  
740  
750  
740



36 7  
69 19  
215 63  
47 15  
87 28  
41+50 47 15  
42 7  
41+25 45 0  
23 18  
41+11 45 68A  
25B  
35 20  
40+90 45 25A  
63B  
32 19  
40+75 70 0  
74 2  
40+50 90 5  
166 9  
90 5  
483 24  
171 8  
407 46  
49 17  
143 91  
28 32  
94 102  
23 23  
35 34  
24 23  
11 11

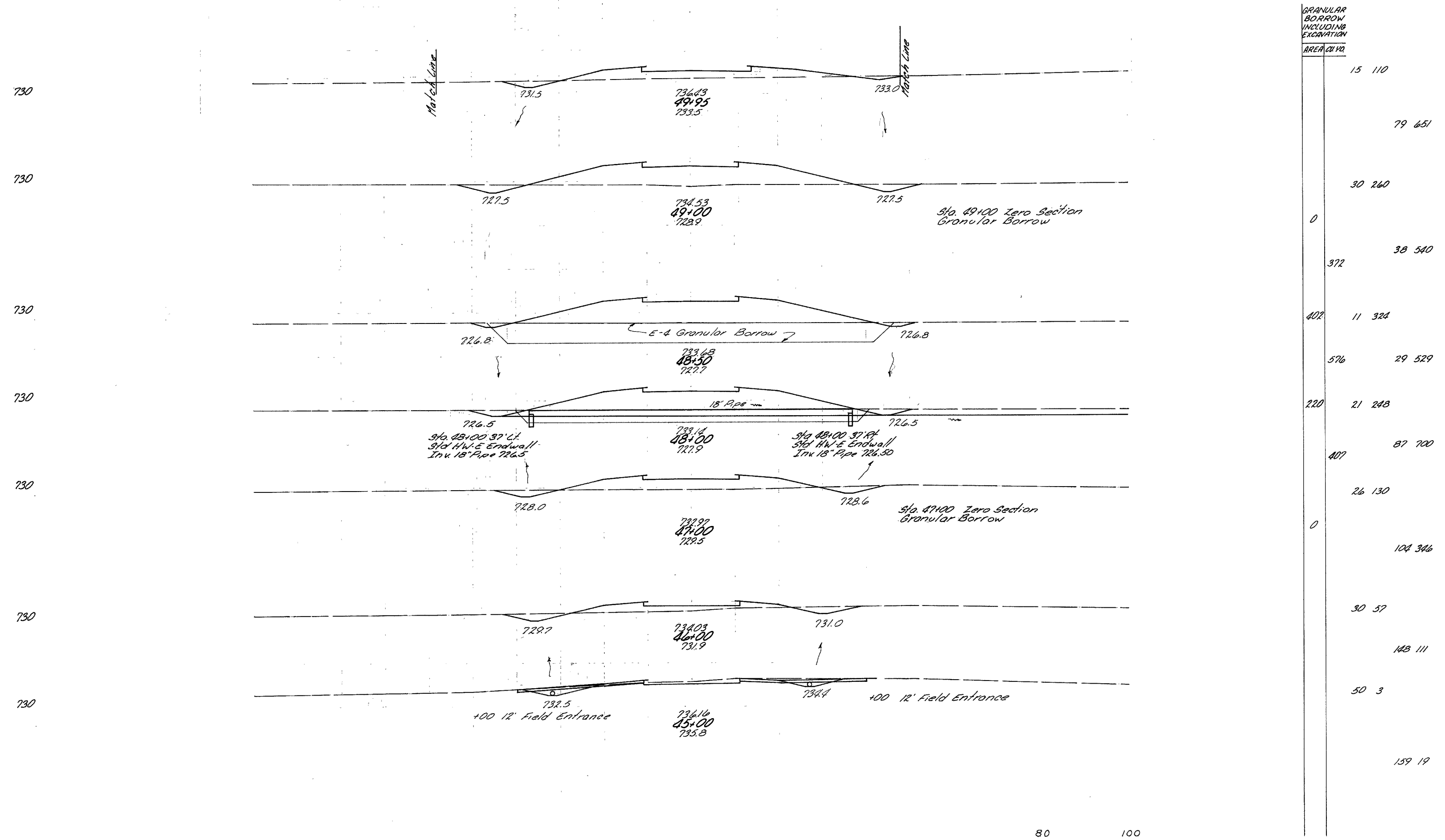
Begin Work  
Sta. 35+35 0 0

100 80 60 40 20 0 20 40 60 80 100 RELOCATED W. RIDGE RD. STA. 35+60 TO STA. 44+00

100 80 60 40 20 0 20 40 60 80 100

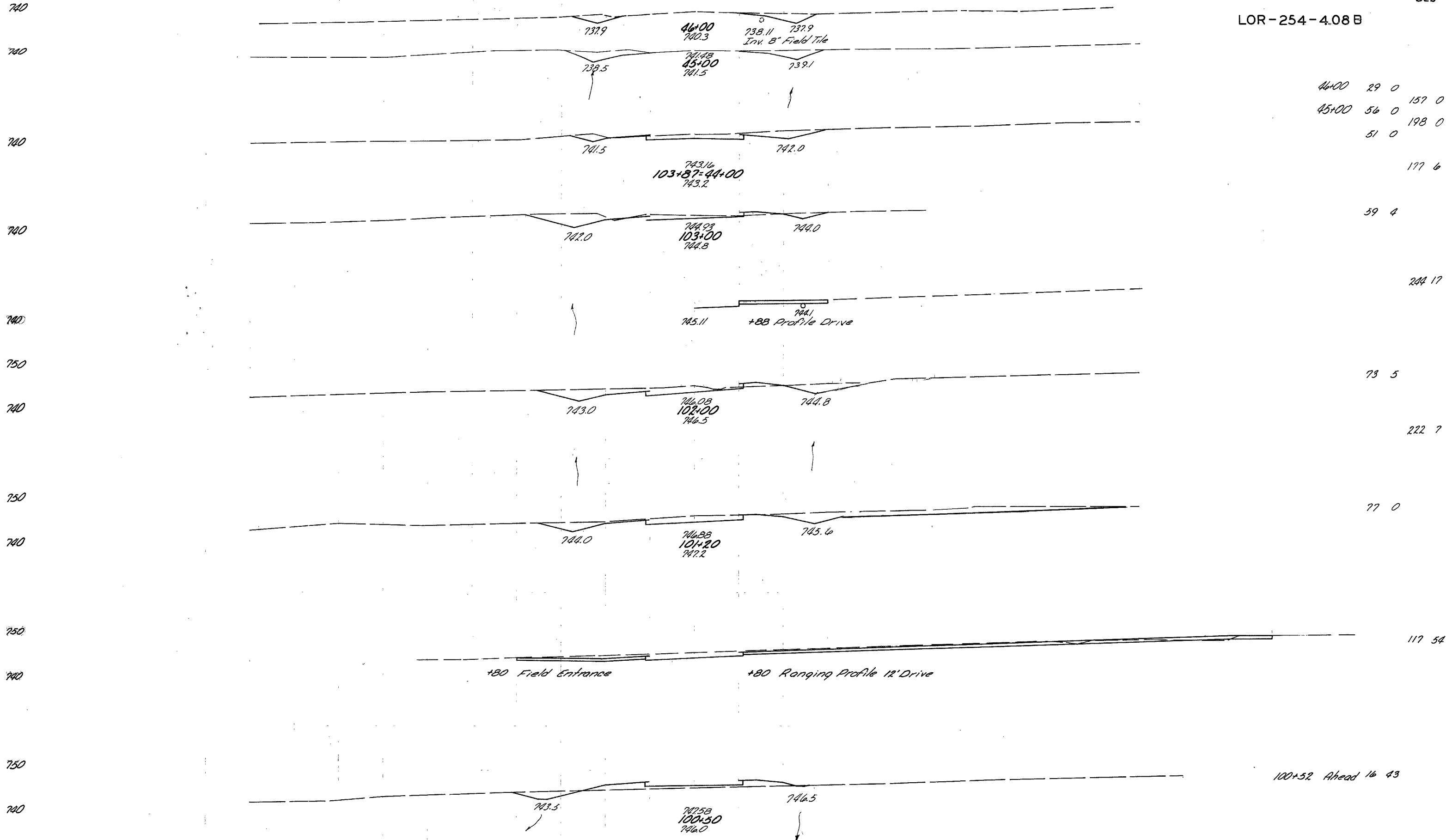
137  
323

LOR-254-4.08B



100 80 60 40 20 0 20 40 60 80 100 RELOCATED WEST RIDGE ROAD STA. 45+00 TO STA. 49+95

LOR-254-4.08 B



46+00	29 0	157 0
45+00	56 0	198 0
	51 0	

177 6

59 4

244 17

73 5

222 7

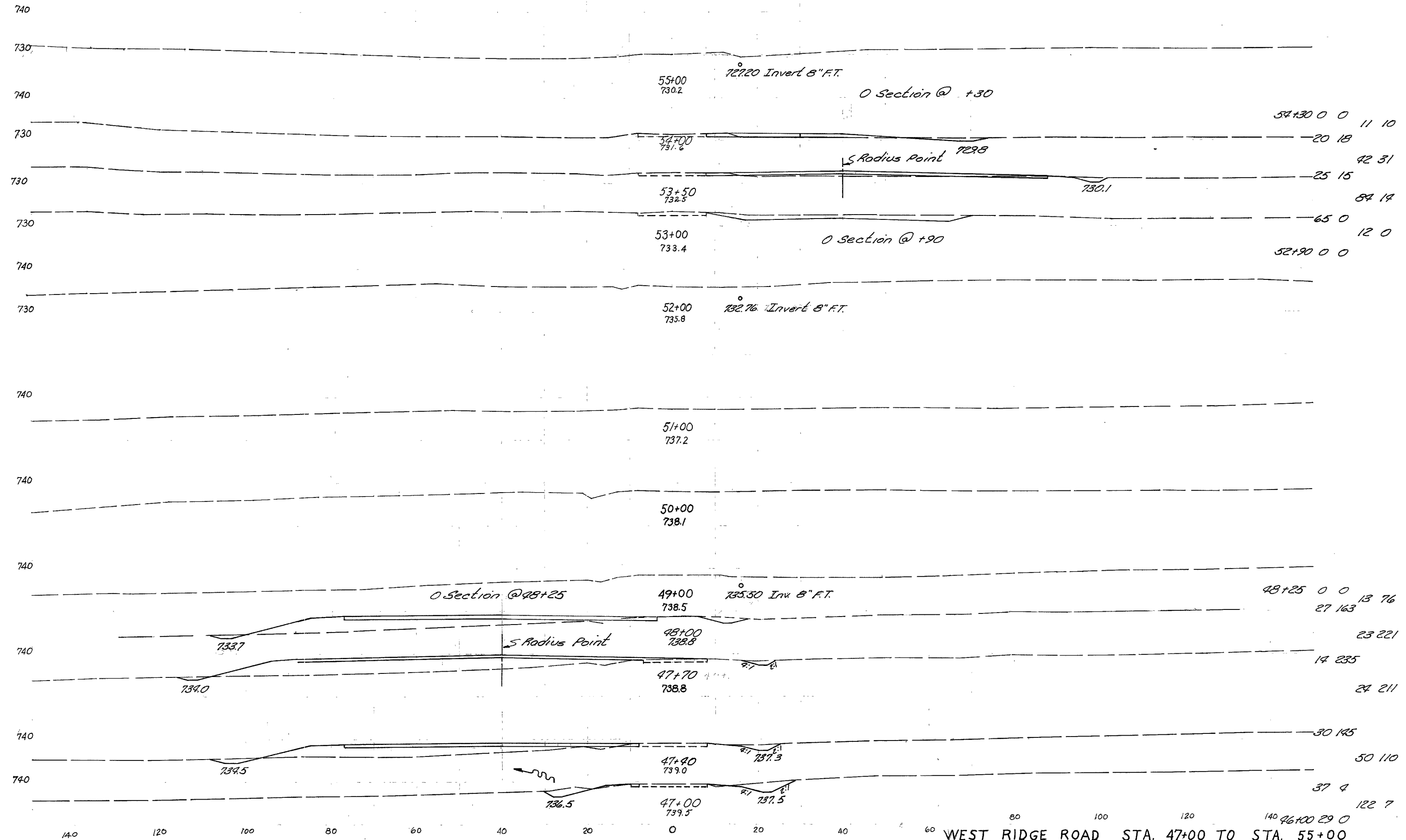
77 0

117 54

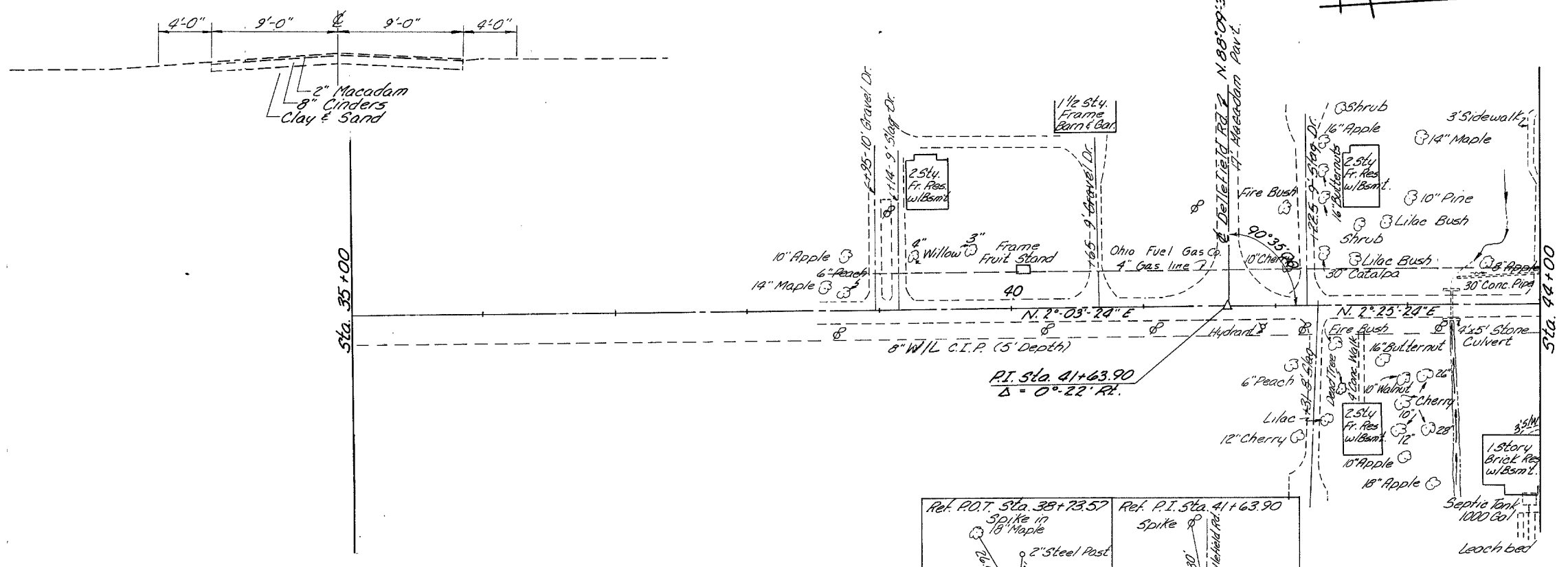
100+52 Ahead 16 43



LOR-254-4.08B

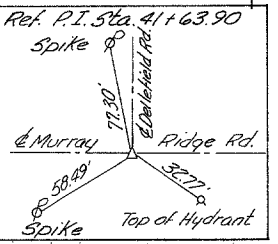
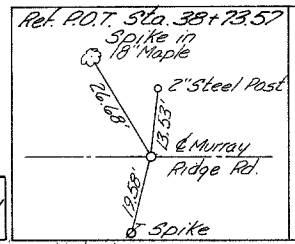


EXIST. TYPICAL SECTION  
Murray Ridge Road



B.M. Arrow of Hydrant 18' Rt.  
Sta. 37+08 Murray Ridge Rd.  
Elev. 743.08

B.M. Arrow of Hydrant 19.5'  
Rt. Sta. 41+90 Murray Ridge Rd.  
Elev. 745.23



750

740

730

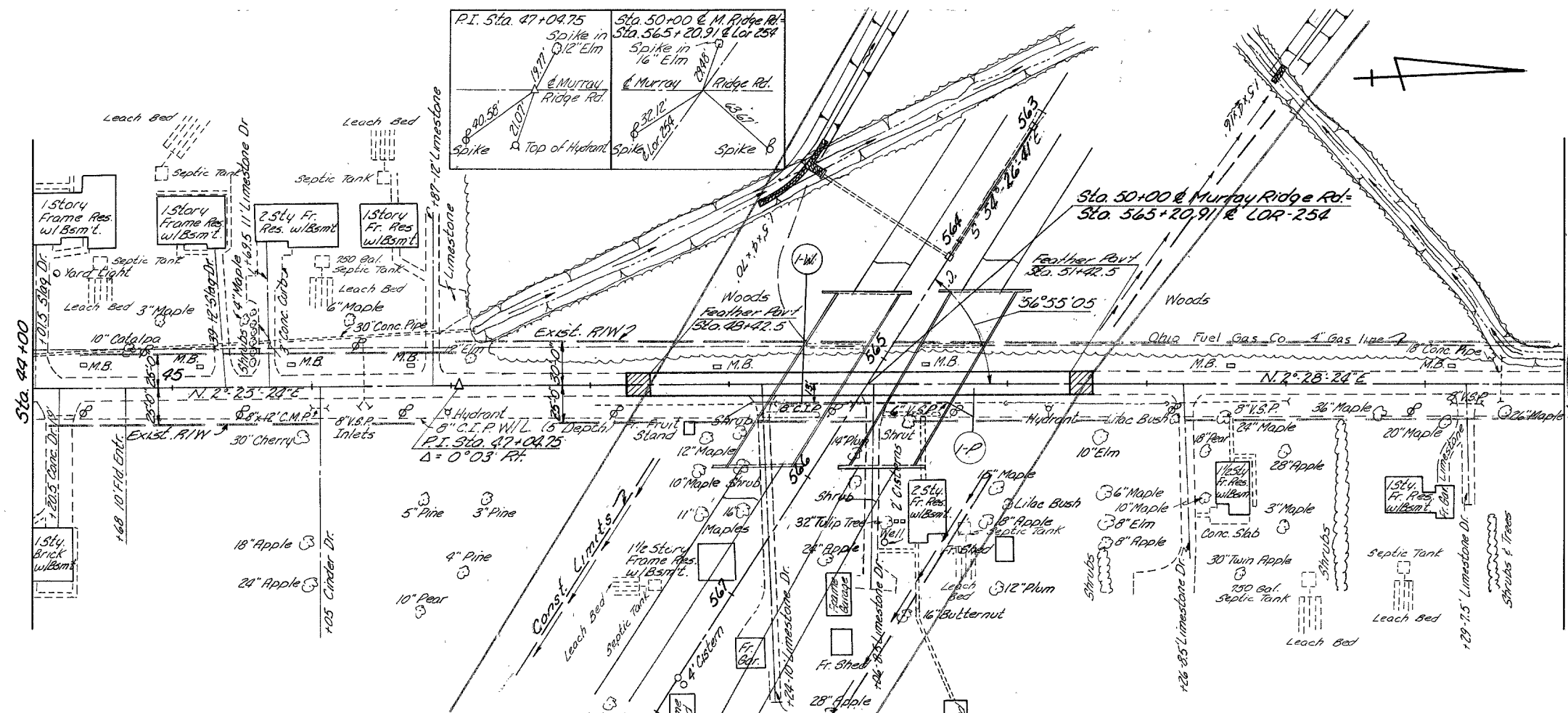
741.78	741.91	741.90	742.12	742.56	743.29	743.59	744.24 + 40	744.06	743.83 + 50	743.98	744.51 + 35	744.51 + 40	743.74
35	36	37	38	39	40	41	42	42	43	43	44	44	44

MICROFILMED  
AUG 20 1985

LOR-254-408 B

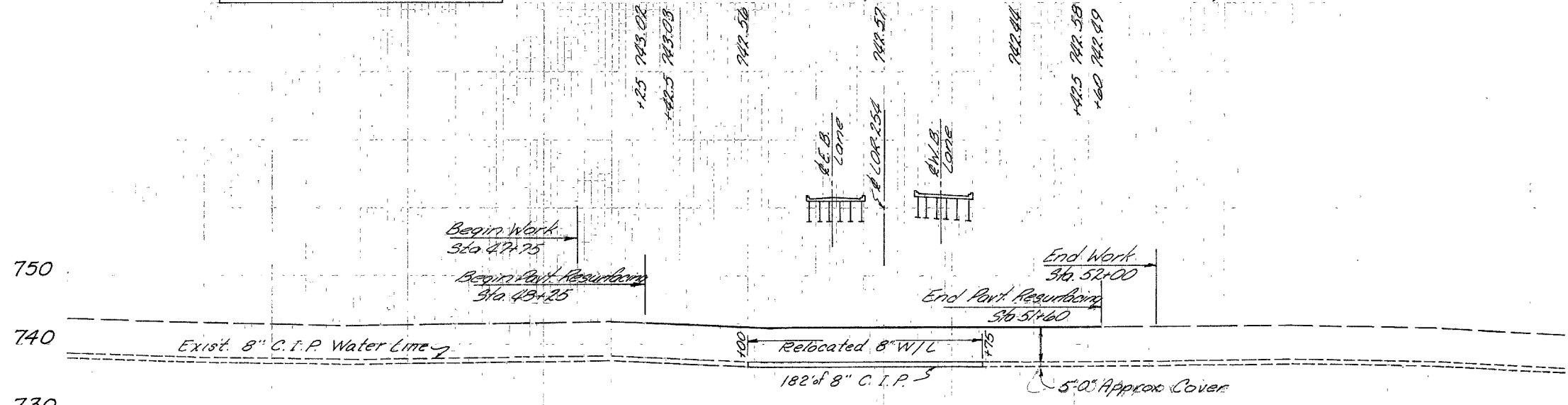
Item No.	Station		Side	T-35	T-35	T-30	I-124		S-1	
	From	To		Asphlts Concrete Surface Course Type "C" 1/2"	Asphlts Concrete Surface Course Type "C" 1"	Bituminous Coat 0.10 gal. Per Sq. Yd.	8" New Water Main	Fittings 8" 45° Bends	8" Cut-in Sleeve	Conc. For Structure Class "E"
I-P	48+25	51+60	R	12.81	18.1	67	Lin Ft.	Each	Each	Cu. Yds.
I-W	49+00	50+75	RH				182	4	2	1.2
Total				12.81	18.1	67	182	4	2	1.2

Fed



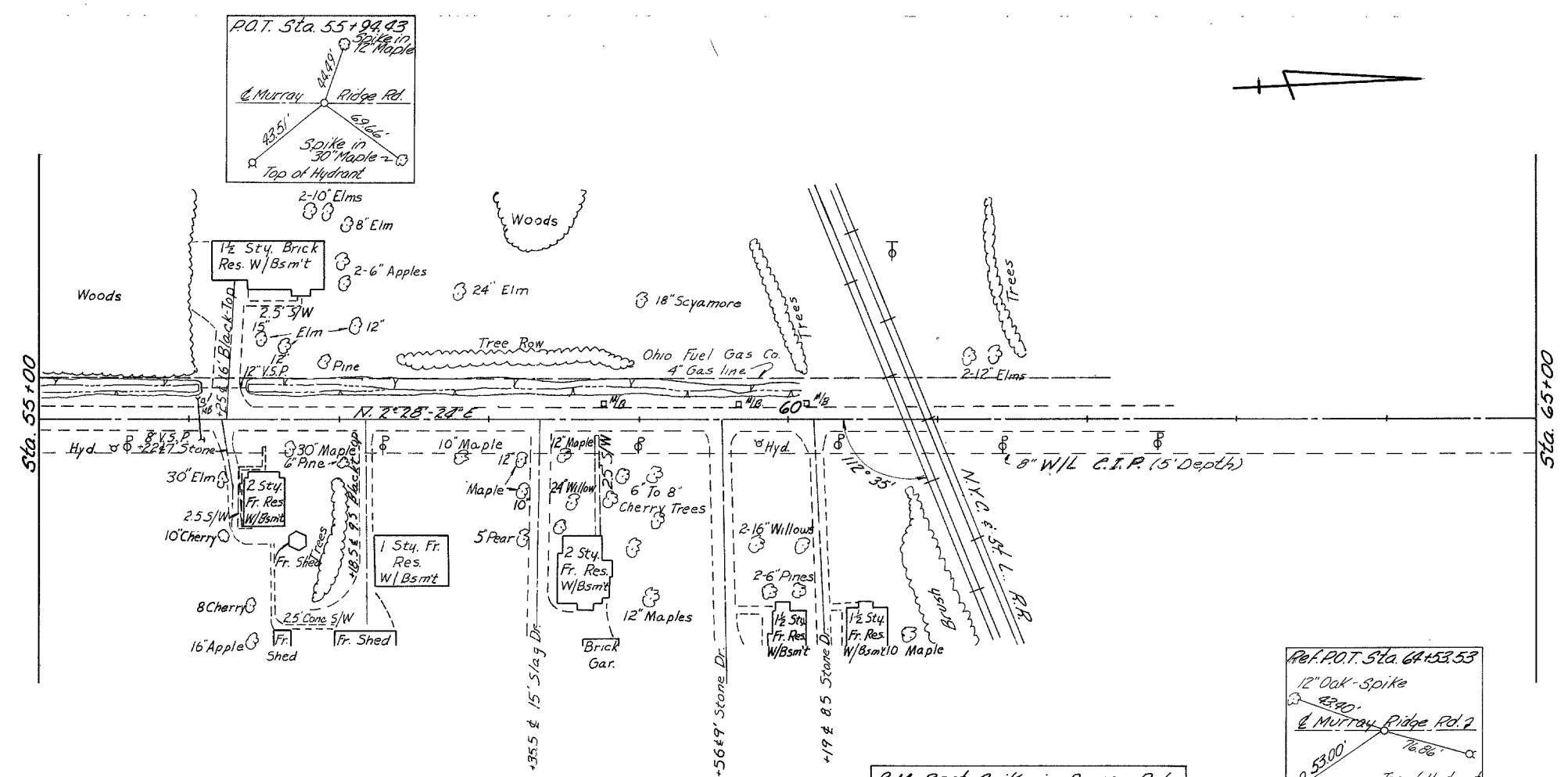
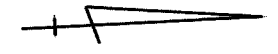
B.M. Arrow of Hydrant 20' Rt.  
Sta. 46+97 Murray Ridge Road  
Elev. 744.90

For Proposed Structure  
No. LOR-254-1069 L&R, See Sheet No. 26A



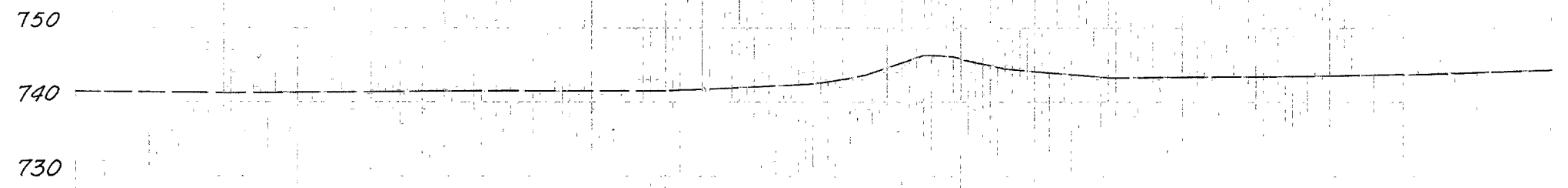
Excavation	=	0	Cu Yds.
Embankment	=	29	Cu Yds.
Embankment +18%	=	34	Cu Yds.
Seeding	=	672	Sq Yds.

- 743.74 44
- 743.02 45
- 742.57 46
- 742.99 47
- 743.22 48
- 743.02 +25
- 742.88 +42.5
- 742.41 49
- 742.42 50
- 742.29 51
- 742.43 42.5
- 742.49 +60
- 742.62 52
- 742.80 53
- 742.67 +50
- 742.24 54
- 741.27 55



B.M. Boat Spike in Power Pole  
 49' Pt. Sta. 1011435 N.Y.C. & St. L. R.R.  
 Elev. 742.23

Ref. P.O.T. Sta. 64+53.53  
 12" Oak-Spike  
 8320'  
 Murray Ridge Rd. 2  
 74.00'  
 Top of Hydrant  
 Spike

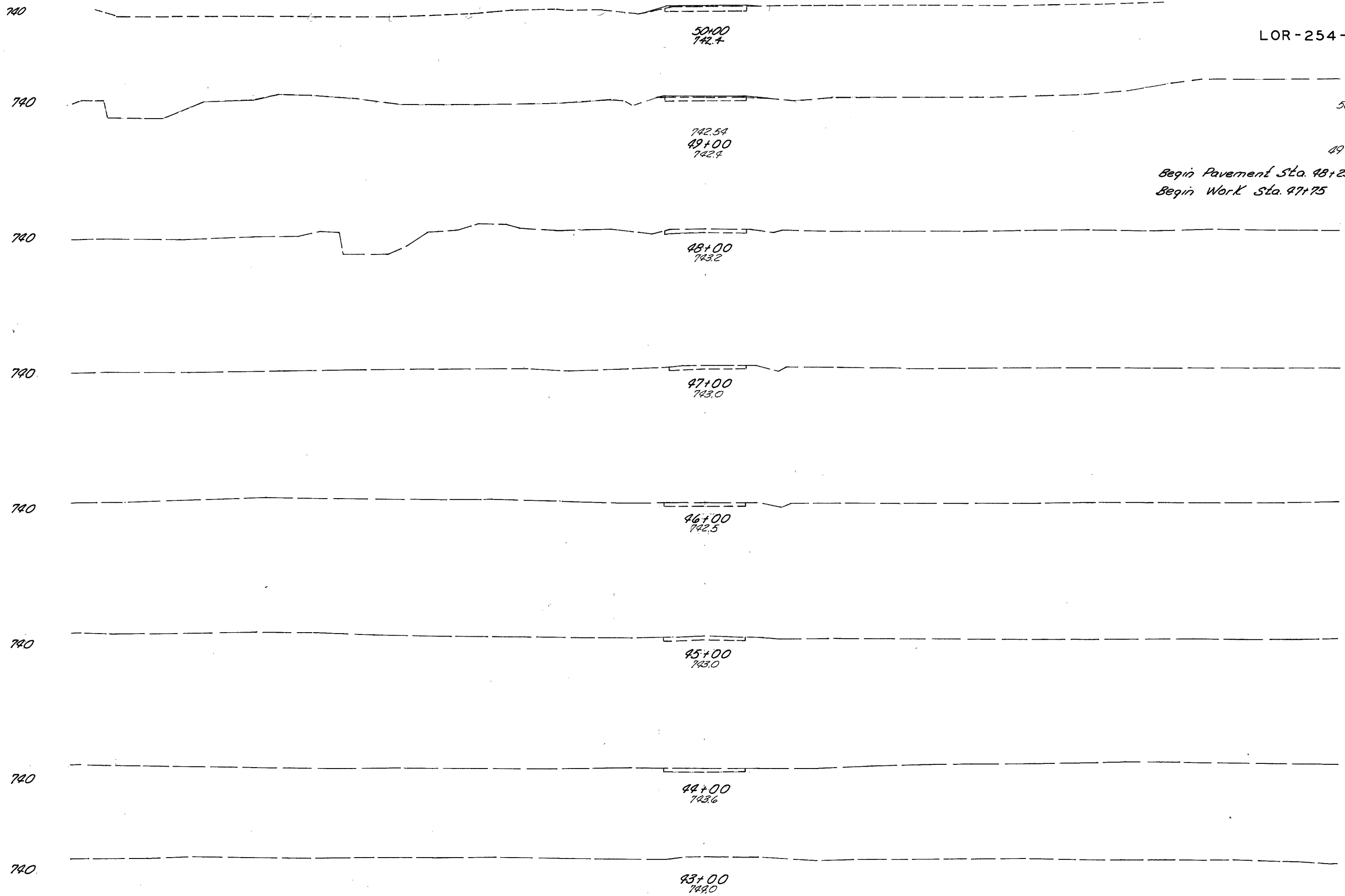


741.27	741.08	741.24	741.28	741.45	742.38	743.57+35	746.22+74	746.22+76.47	746.26+81.56	746.08+90.81	746.06+95.93	745.99	744.53+28	743.20	743.26	743.71	744.24
55	56	57	58	59	60							61		62	63	64	65

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

143  
323

LOR-254-4.08 B



50+00 0 2  
0 8  
49+00 0 2  
0 5  
Begin Pavement Sta. 48+25 0 2  
Begin Work Sta. 47+75 0 0 0 2

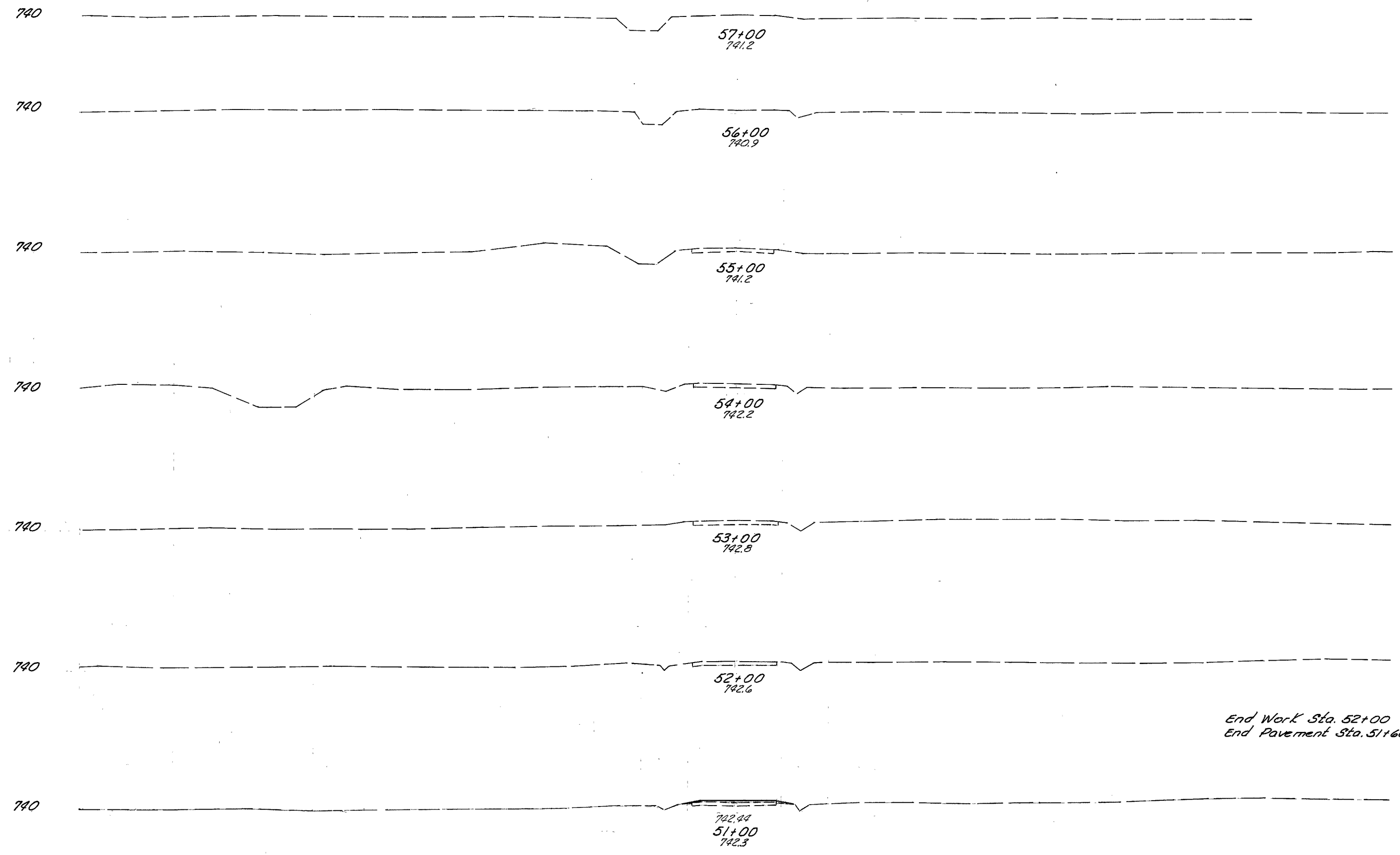
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

80 MURRAY RIDGE ROAD STA. 43+00 TO STA. 50+00

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

144  
323

LOR - 254 - 4.08 B



End Work Sta. 52+00 0 0 0 2  
 End Pavement Sta. 51+60 0 2 0 2

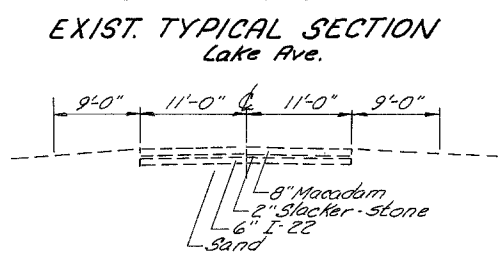
0 4

0 2

0 8

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

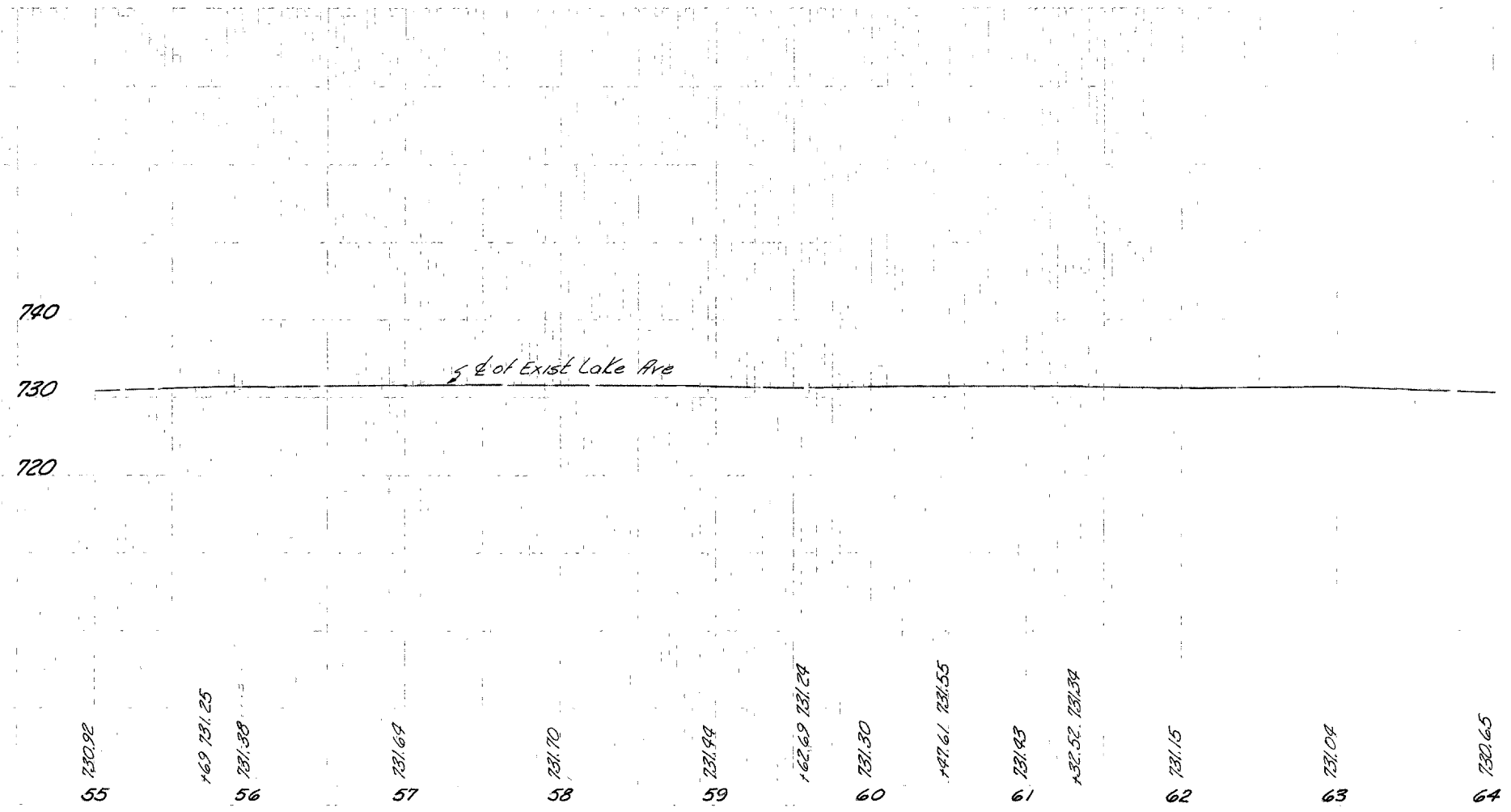
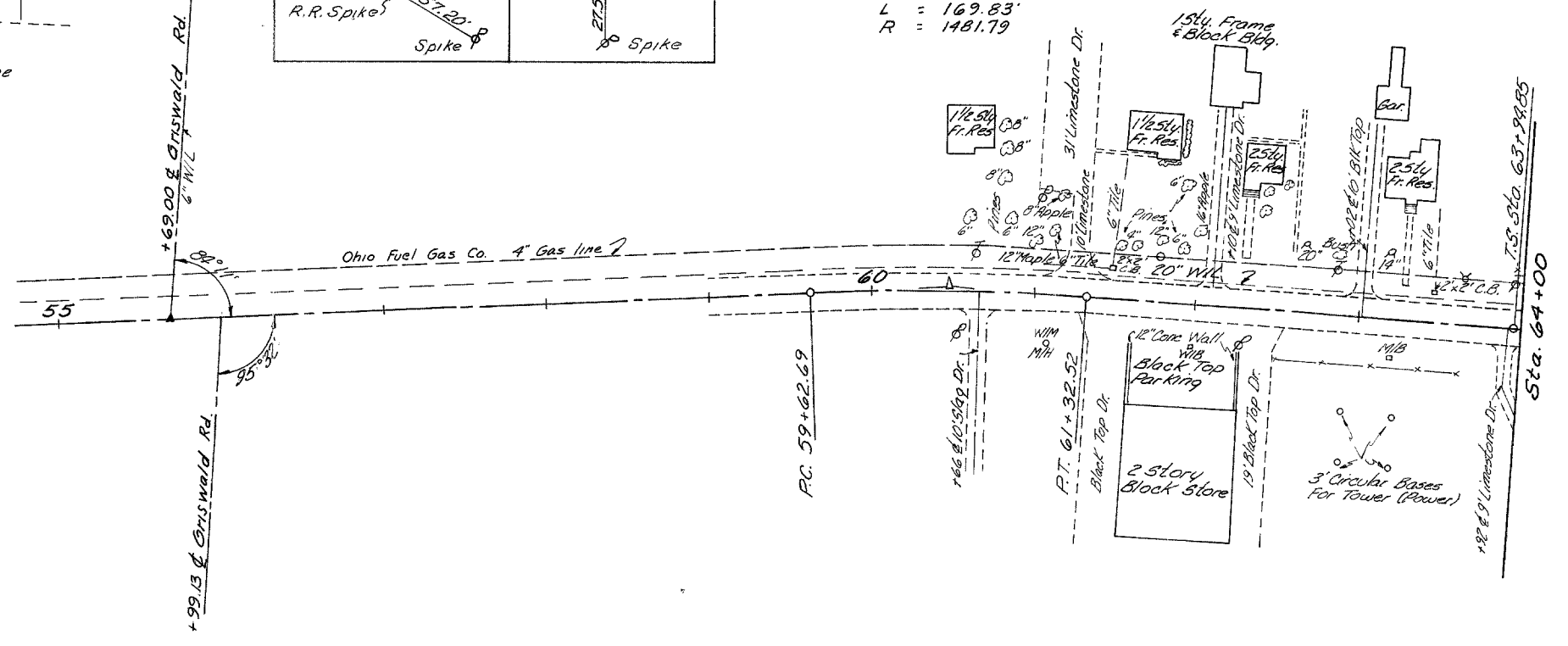
MURRAY RIDGE ROAD STA. 51+00 TO STA. 57+00



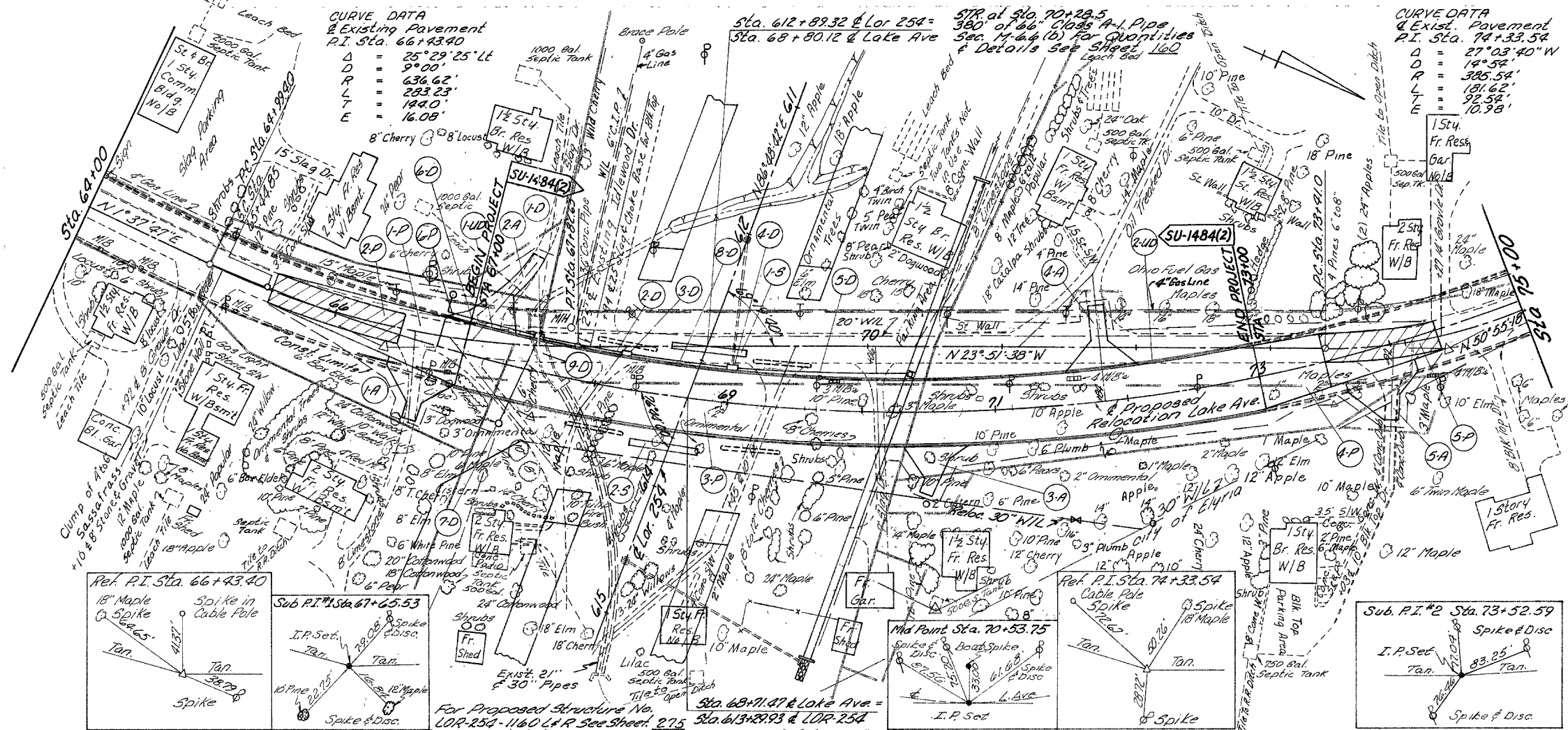
<p>Ref. P.I. Sta. 55+69.00</p> <p>Spike in Cable Pole</p> <p>44.91' 53.07'</p> <p>57.20' Spike</p> <p>R.R. Spike</p>	<p>Ref. Sta. 60+47.70</p> <p>Spike in Cable Pole</p> <p>38.15' 28.75'</p> <p>Tang</p> <p>27.59' Spike</p>
--	---

Curve Data. P.I. Sta. 60+47.70  
& Existing Pavement

$\Delta = 6^{\circ}34'00''$   
 $D = 3^{\circ}52'$   
 $E = 2.44'$   
 $T = 85.01'$   
 $L = 169.83'$   
 $R = 1481.79'$



LOR-254-408 B



CURVE DATA  
& Exist. Pavement  
P.I. Sta. 74+33.54  
D = 27°03'40\"/>

CURVE DATA  
Proposed Relocation  
P.I. Sta. 70+98.81  
D = 52°33'05\"/>

CURVE DATA  
& Existing Pavement  
P.I. Sta. 66+43.40  
D = 25°29'25\"/>

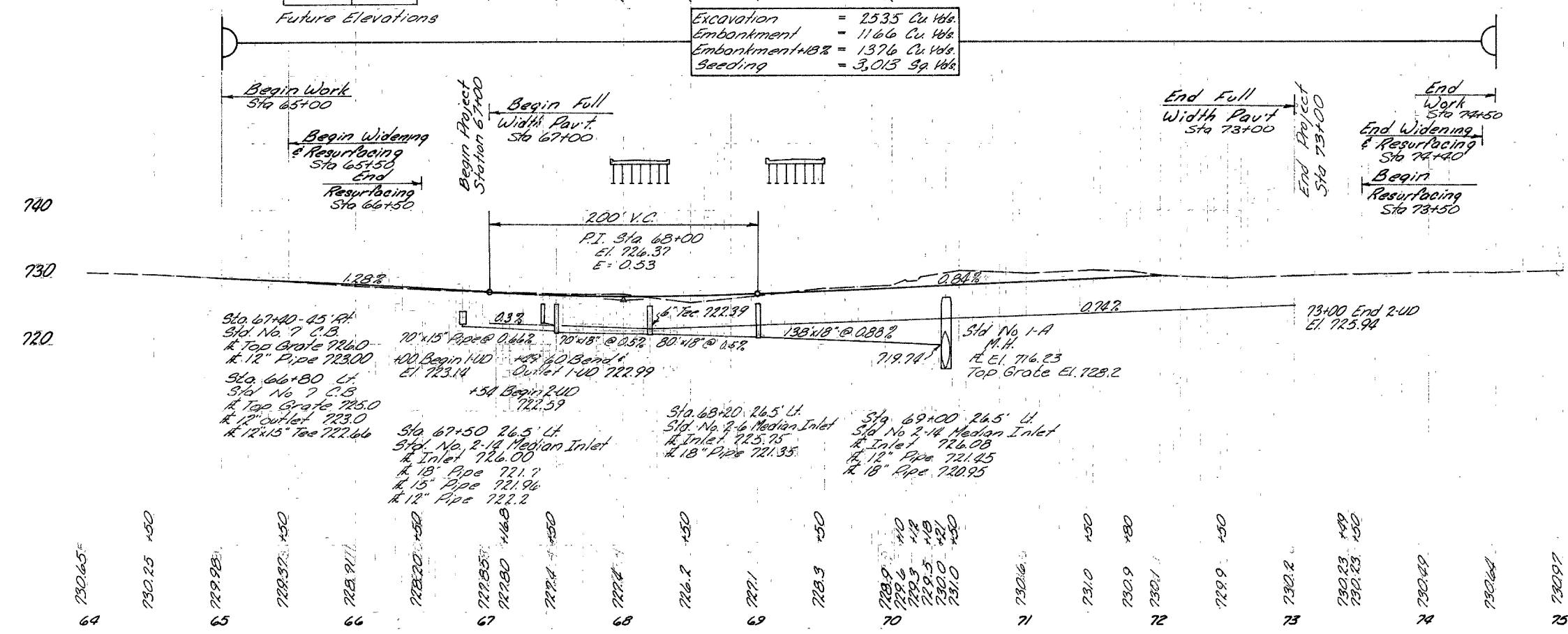
Sta. 612+89.32 @ Lor 254 =  
Sta. 68+80.12 @ Lake Ave  
STR at Sta. 70+29.5  
380' of 66\"/>

Item No.	Station	Side	I-1 6\"/>				
			Shallow Lim. Ft.	Each			
1-U	67+00	LL	52	1			
2-U	67+54	LL	538	1	10		
1-S	68+55	LL				290	
2-S	68+30	RL				265	
Total			590	1	10	555	

Item No.	Station	Side	I-1 PIPE Class E-1		I-8 Standard Median Inlet	I-24 Removal of Existing Structure	I-5 Pipe Specials Class E-1	I-8 Standard Side Ditch	I-1 12\"/>		
			12\"/>								
1-D	67+50	LL				1					
2-D	67+50	LL		70							
3-D	68+20	LL			1						
4-D	69+00	LL				1					
5-D	69+00	LL		138							
6-D	66+80	LL	14	70							
7-D	67+40	RL						1	73		
8-D	68+20	LL		80							
9-D	67+65	LER				Lump					
Total			14	70	289	1	2	Lump	1	2	73

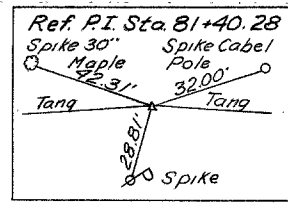
Item No.	Station	Side	Width	Length	Slew	F-30 Truss Base Course		B-19 Asphalt Concrete Surface Type C		F-35 Asphalt Concrete Surface Type C		B-35 Asphalt Concrete Surface Type C		F-22 Asphalt Concrete Surface Type C		F-30 Asphalt Concrete Surface Type C		I-12 Standard Curb & Butler Type 2 Modified	
						5\"/>													
1-A	66+75	RL	12	38	0°	35.51	12.8	5.3	5.03										
2-A	66+50	LL	12	70	55°	42.28	15.3	9.7	5.99										
3-A	70+77	RL	12	40	65°	35.62	12.9	2.7	9.25										
4-A	71+84	LL	12	46	0°	28.44	10.3	7.7	9.03										
5-A	74+03	RL	12	30	74°	35.70	20.0		7.89										
1-P	65+50	67+00				139	81.3	9.04	28.9	14.1	63.4								
2-P	65+50	66+50						6.52			28.44								
3-P	67+00	73+00				1280	748.0	88.89	266.7	133.3	577.8								1200
4-P	73+00	74+40				141	81.0	9.33	29.5	14.6	62.0								
5-P	73+50	74+40						5.87			220								
6-P	66+80	67+00	LL								20								
Total						179.68	71.3	93.7	147.54	32.51	1620.7	32.2	46.04	1220					

\* 2-1\"/>

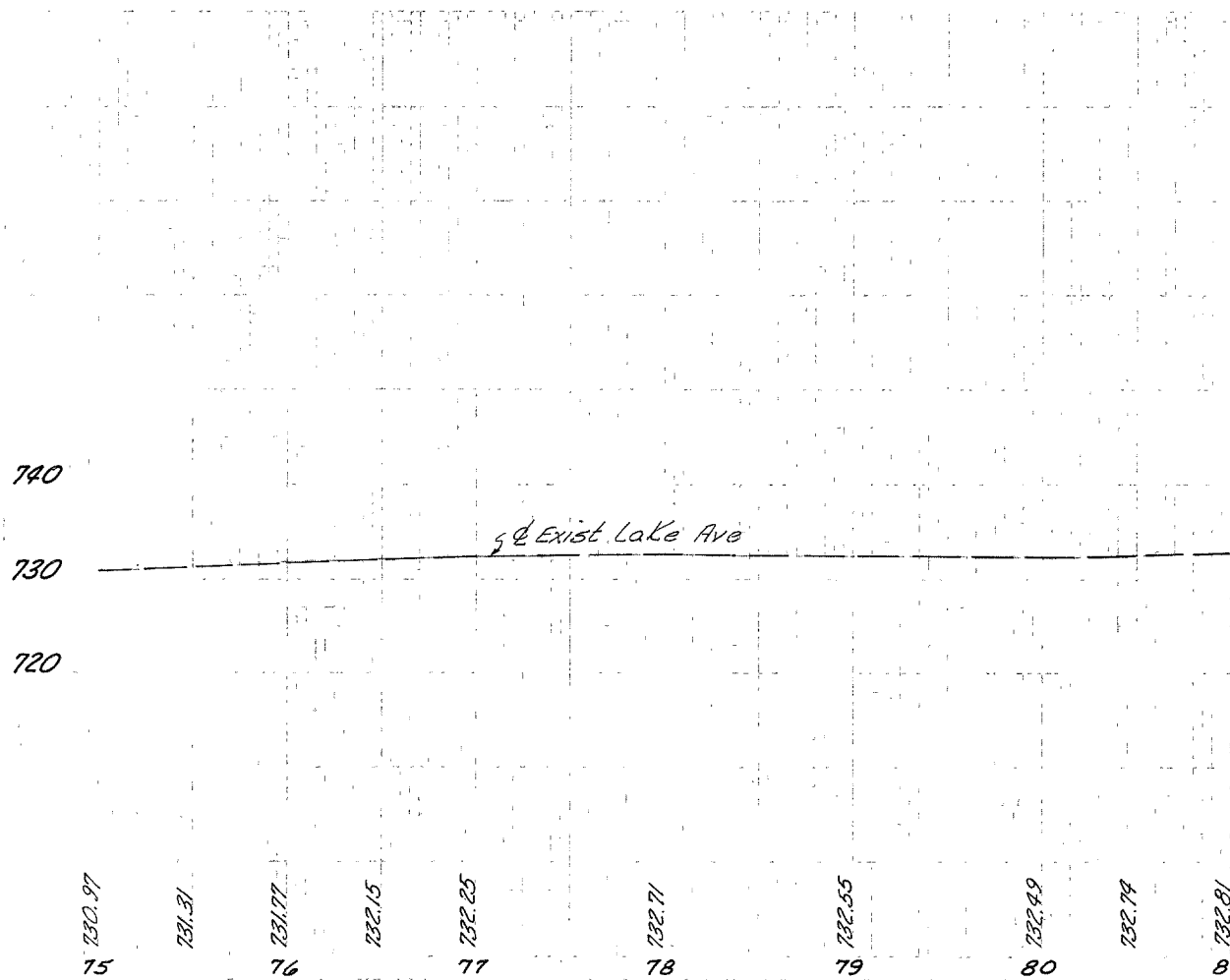
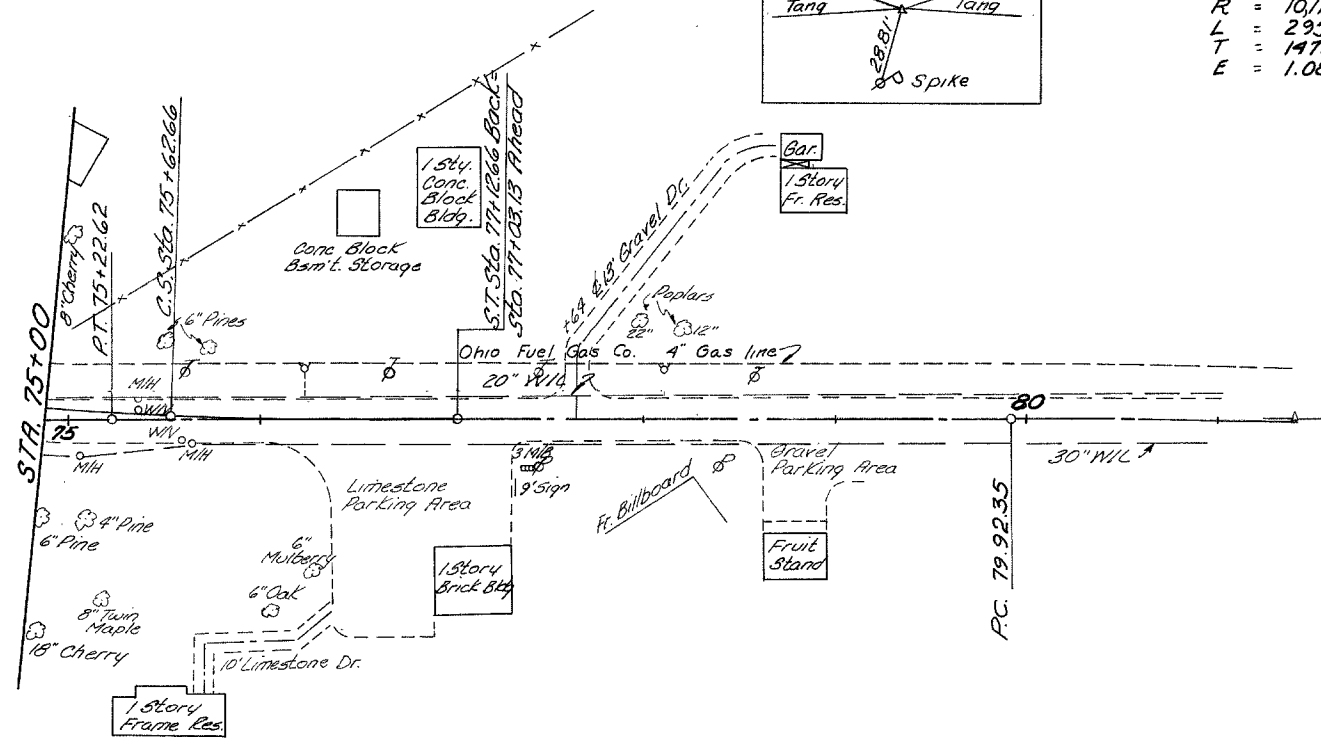




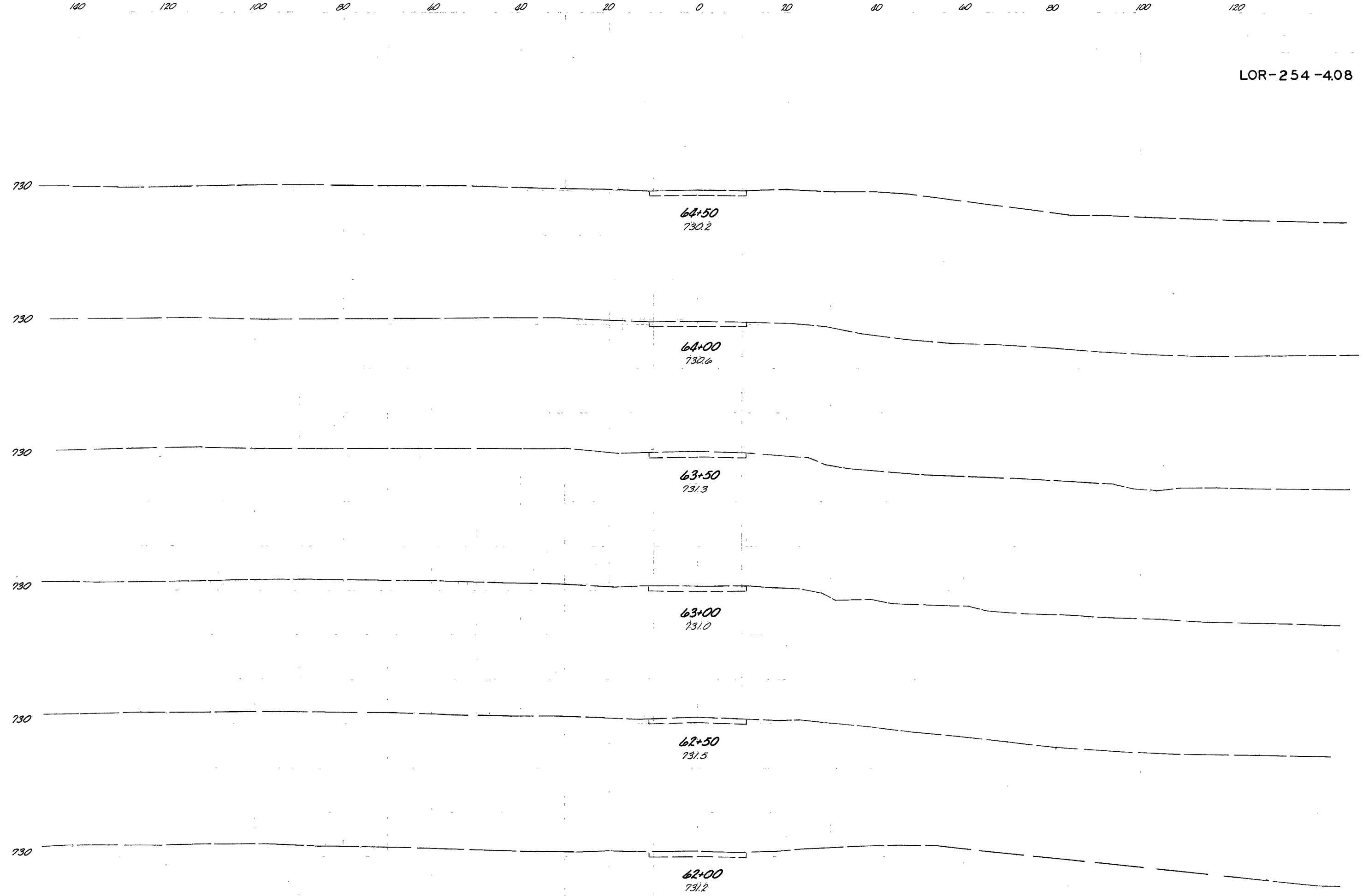
LOR-254-408 B



Curve Data P.I. Sta. 81+40.28  
& Existing Pavement  
 $\Delta = 1^{\circ}40'35''$  Rt.  
 $D = 0^{\circ}34'00''$   
 $R = 10,111.00'$   
 $L = 295.83'$   
 $T = 147.93'$   
 $E = 1.08'$



LOR-254-4.08 B

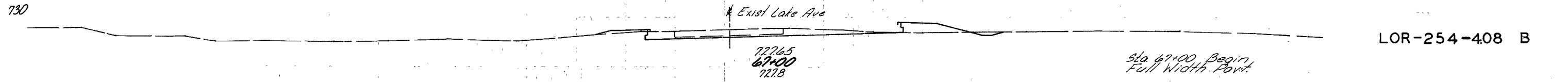


LAKE AVE. STA. 62+00 TO STA. 64+50

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

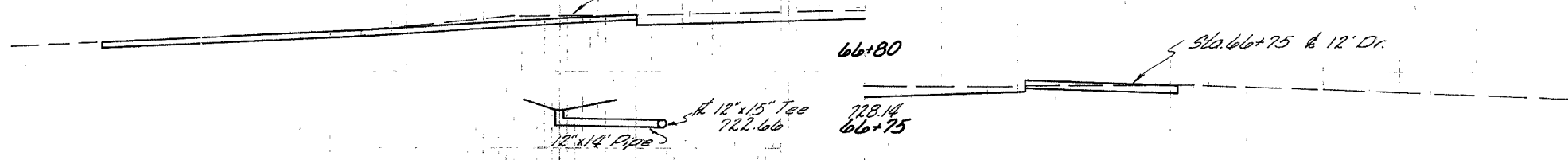
149  
323

LOR-254-408 B



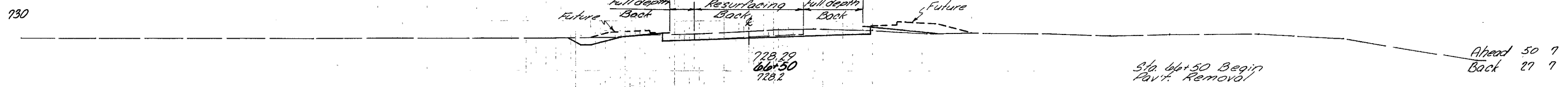
Sta. 66+80 Ramping Profile & 12' Dr.

30 21



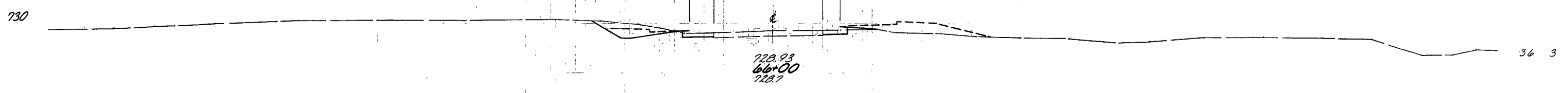
65 26

Sta. 66+80 40' Lt.  
No. 7 Side ditch C.B.  
R. 12" Pipe 723.0  
Top C.B. 725.0



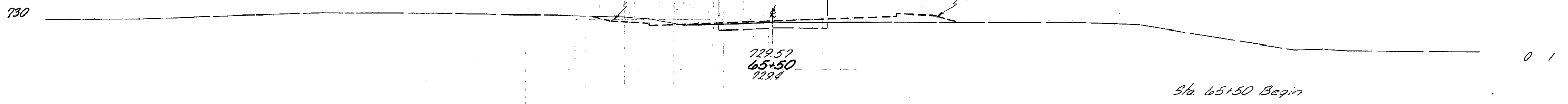
58 9

Full depth  
Pav't widening



36 3

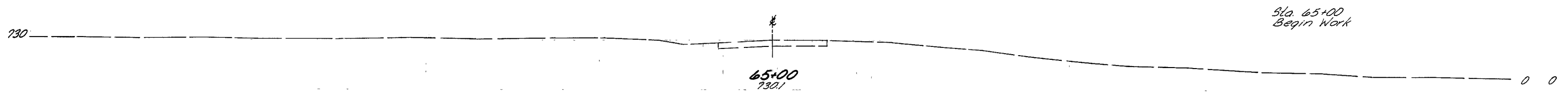
Resurfacing



33 3

0 1

Sta. 65+50 Begin



0 0

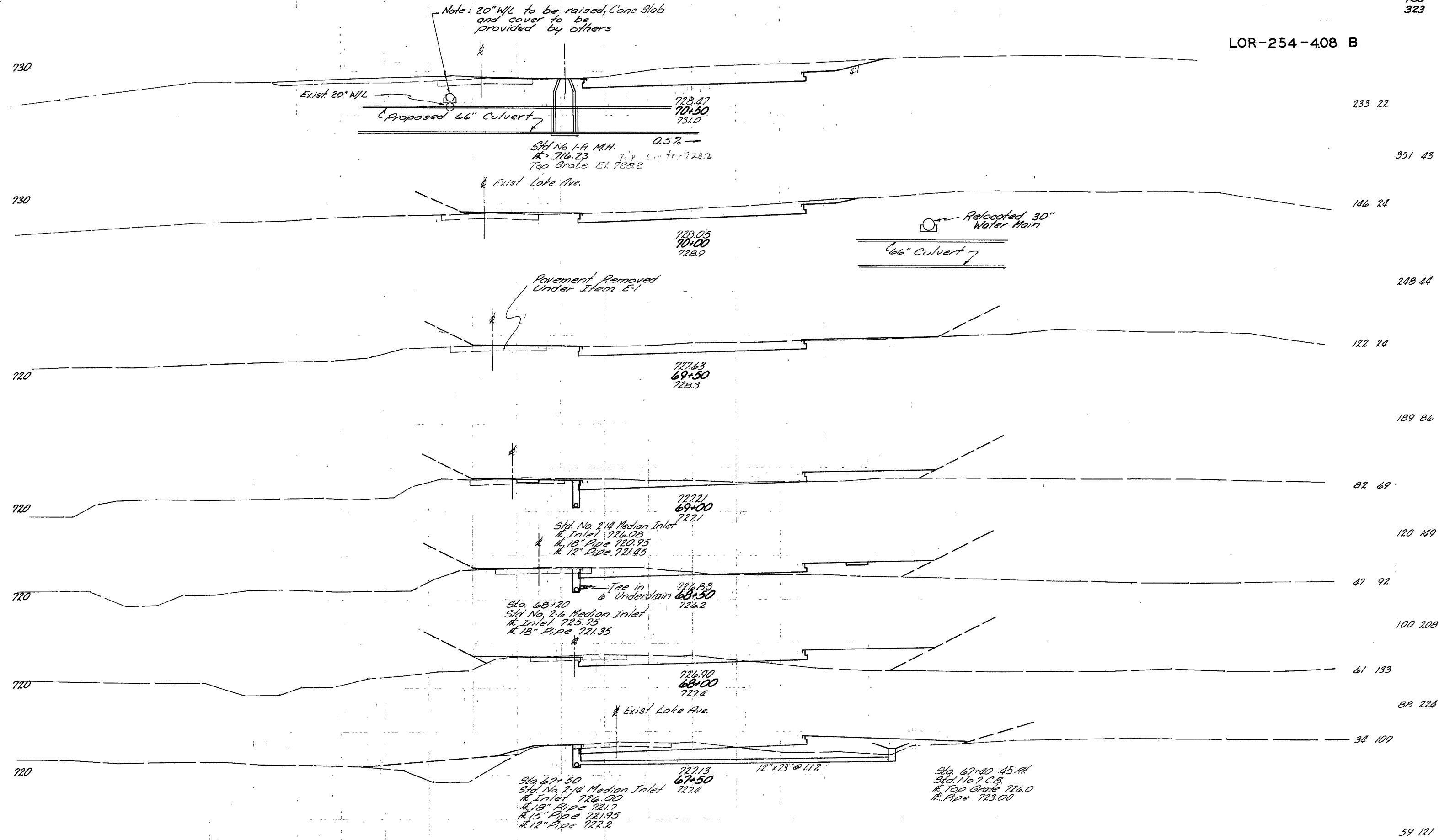
Sta. 65+00  
Begin Work

140 120 100 80 60 40 20 0 20 40 60 80 100 120  
LAKE AVE. STA. 65+00 TO STA. 67+00

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

150  
323

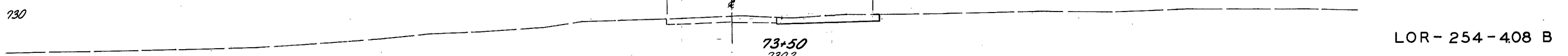
LOR-254-408 B



140 120 100 80 60 40 20 0 20 40 60 80 LAKE AVE. STA. 67+50 TO STA. 70+50

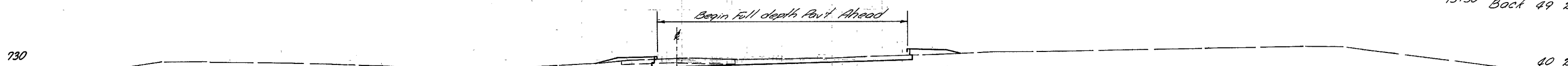
140 120 100 80 60 40 20 0 20 40 60 80 100 120

151  
323

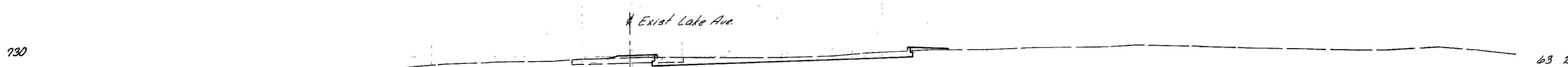


LOR-254-408 B

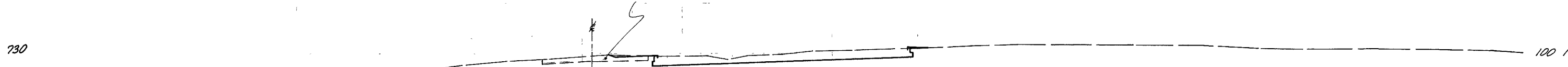
73+50 Ahead 27 0  
Back 49 20



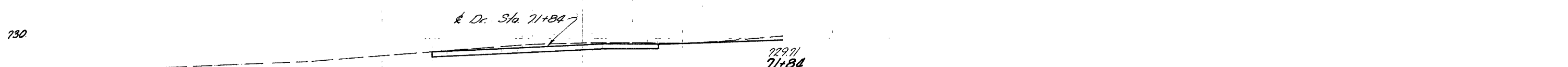
83 39  
40 22



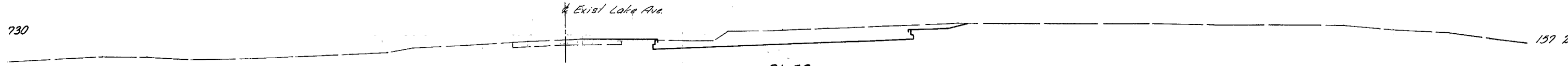
96 41  
63 22



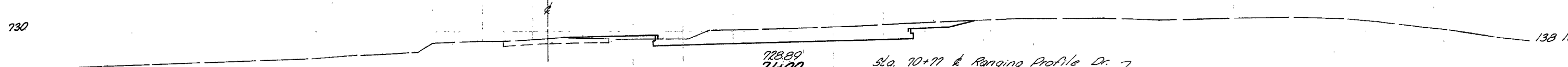
151 36  
100 17



238 34  
157 20

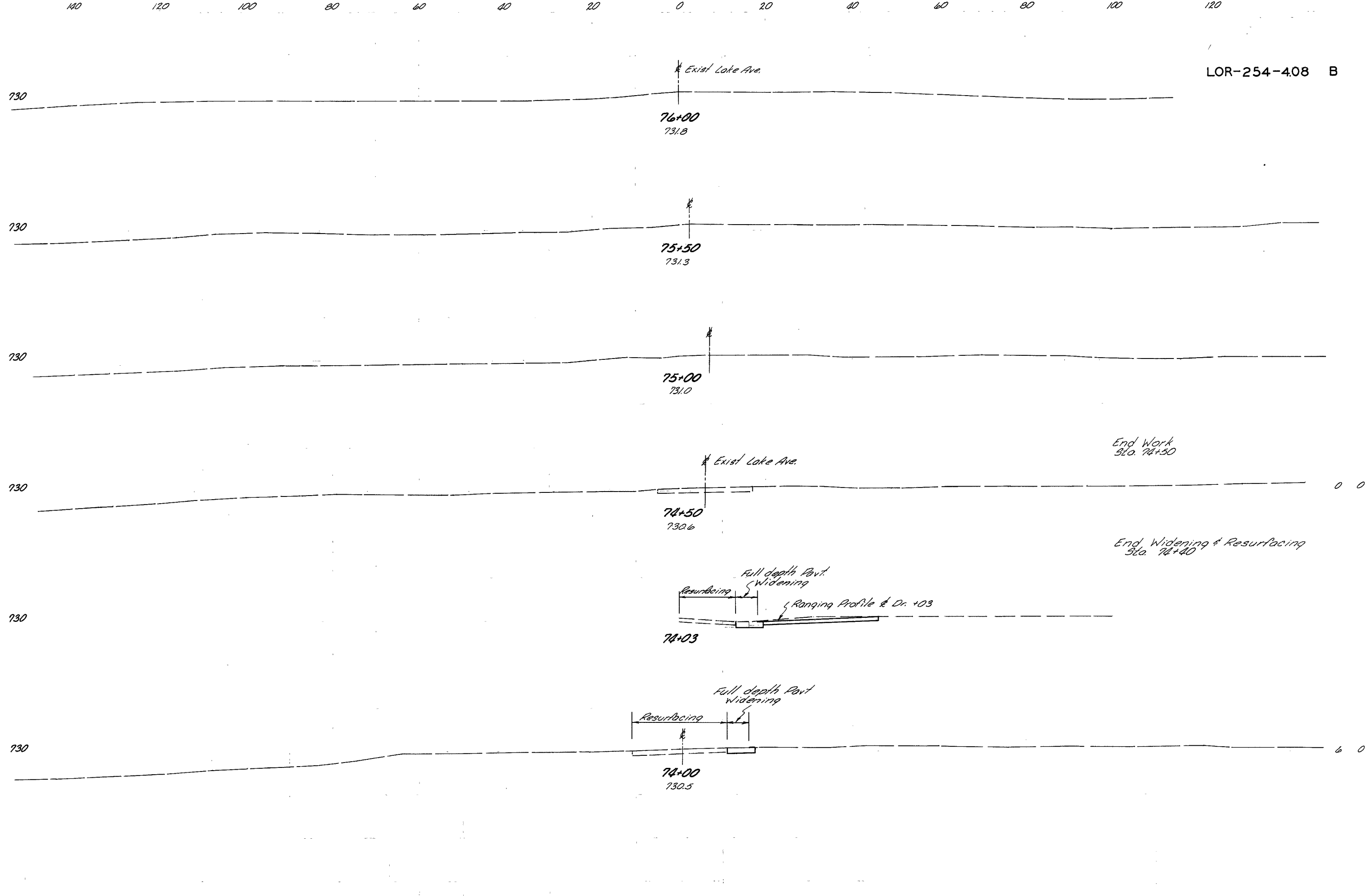


273 35  
138 18

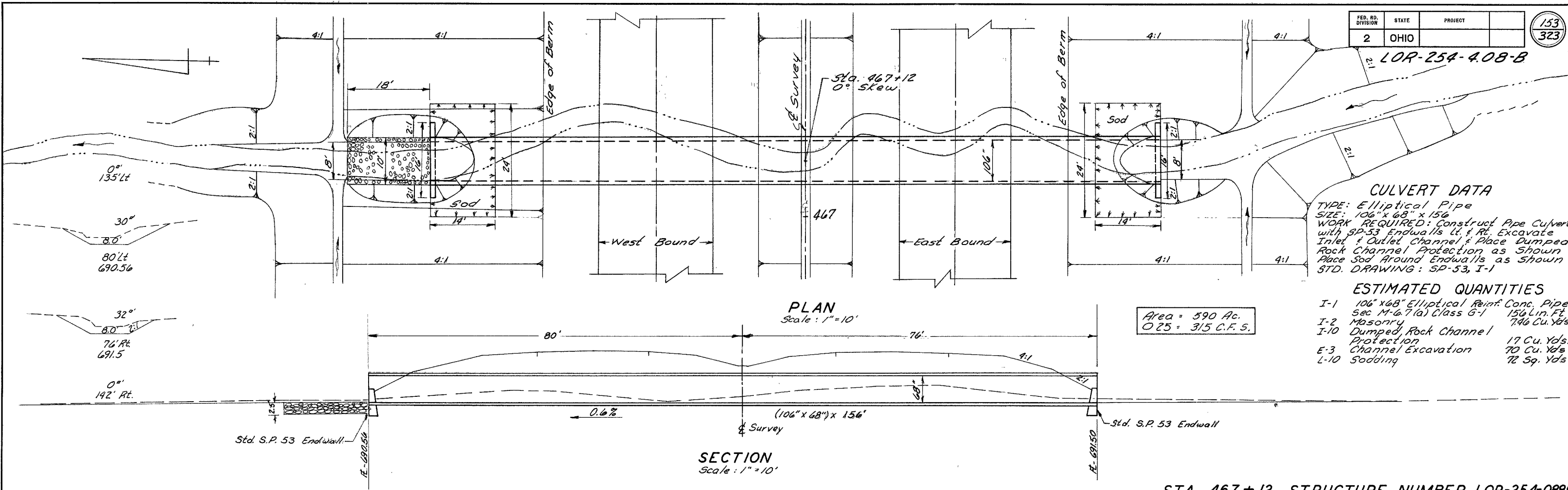


349 67

140 120 100 80 60 40 20 0 20 40 60 80 100 120 LAKE AVE. STA. 71+00 TO STA. 73+50



LOR-254-4.08-B



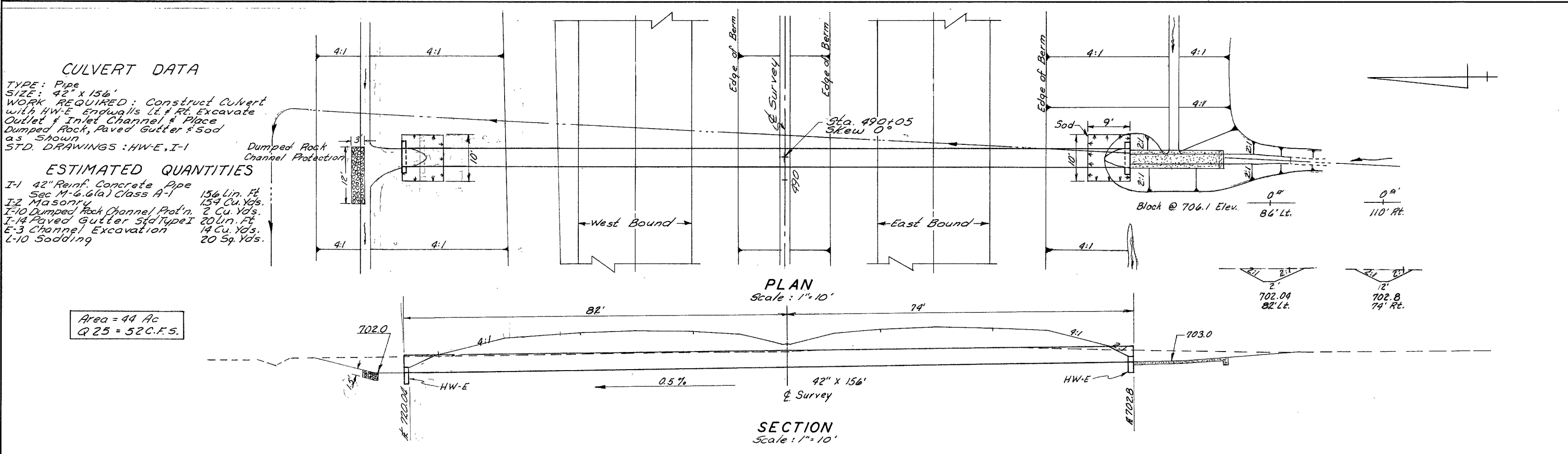
**CULVERT DATA**  
 TYPE: Elliptical Pipe  
 SIZE: 106" x 68" x 156"  
 WORK REQUIRED: Construct Pipe Culvert with S.P. 53 Endwalls Lt. & Rt. Excavate Inlet & Outlet Channel & Place Dumped Rock Channel Protection as Shown Place Sod Around Endwalls as Shown  
 STD. DRAWING: SP-53, I-1

**ESTIMATED QUANTITIES**

I-1	106" x 68" Elliptical Reinf. Conc. Pipe	156 Lin. Ft.
I-2	Masonry	746 Cu. Yds.
I-10	Dumped Rock Channel Protection	17 Cu. Yds.
E-3	Channel Excavation	70 Cu. Yds.
L-10	Sodding	72 Sq. Yds.

Area = 590 Ac.  
Q 25 = 315 C.F.S.

STA. 467+12 STRUCTURE NUMBER LOR-254-0885



**CULVERT DATA**  
 TYPE: Pipe  
 SIZE: 42" x 156"  
 WORK REQUIRED: Construct Culvert with HW-E Endwalls Lt. & Rt. Excavate Outlet & Inlet Channel & Place Dumped Rock, Paved Gutter & Sod as Shown  
 STD. DRAWINGS: HW-E, I-1

**ESTIMATED QUANTITIES**

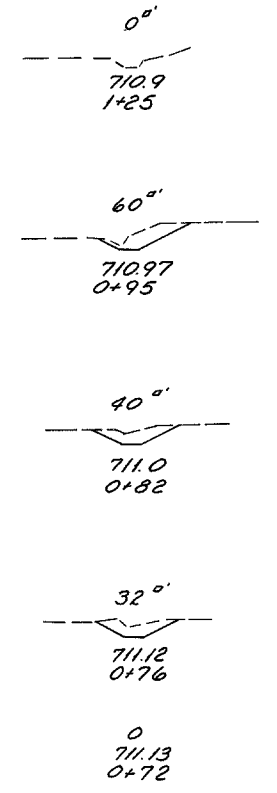
I-1	42" Reinf. Concrete Pipe	156 Lin. Ft.
I-2	Masonry	154 Cu. Yds.
I-10	Dumped Rock Channel Prot'n	2 Cu. Yds.
I-14	Paved Gutter Std Type I	20 Lin. Ft.
E-3	Channel Excavation	14 Cu. Yds.
L-10	Sodding	20 Sq. Yds.

Area = 44 Ac  
Q 25 = 52 C.F.S.

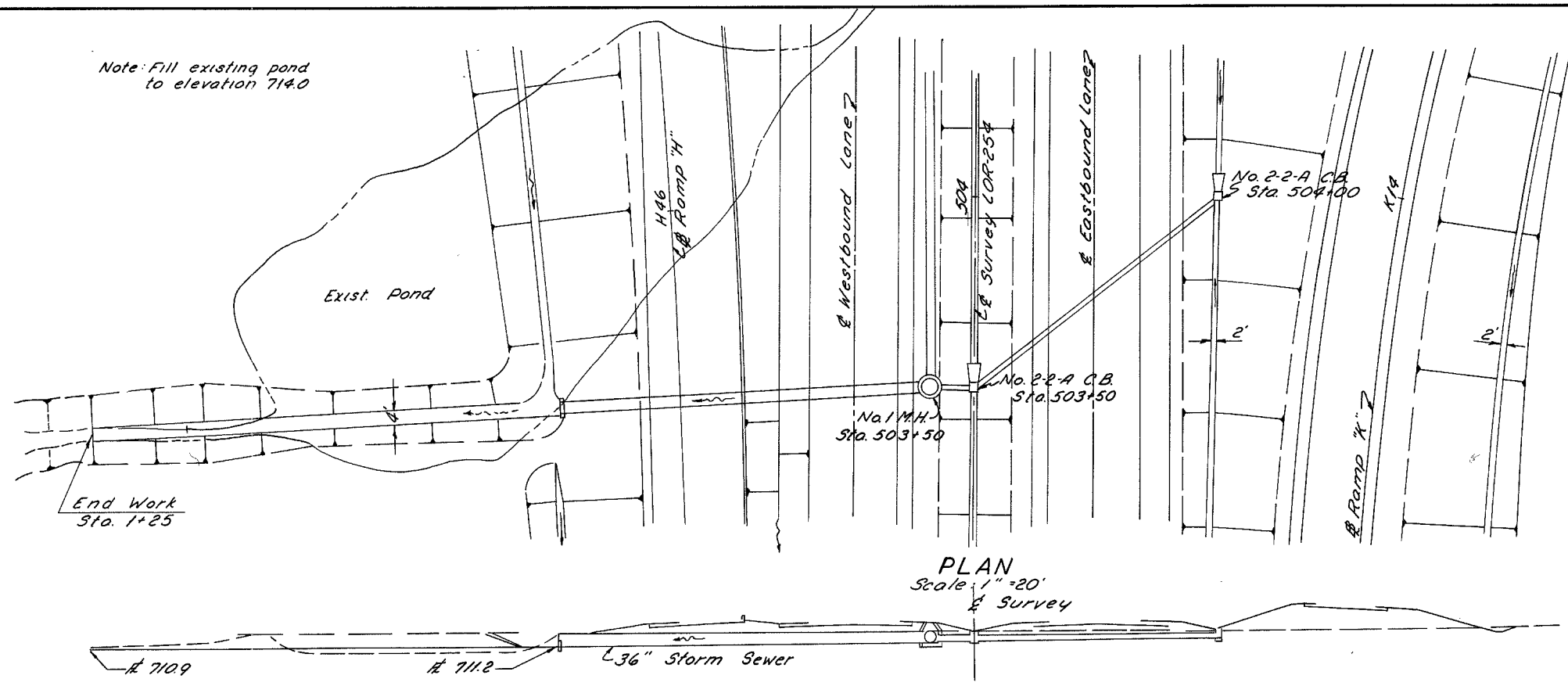
STA 490 + 05 STRUCTURE NUMBER LOR-254-0928

STA. 467+12 & STA. 490+05 STR. NO. LOR-254-0885 & STR. NO. LOR-254-0928

**CROSS SECTIONS**  
For Channel Excavation  
Scale 1"=20'



Note: Fill existing pond to elevation 714.0



**PLAN**  
Scale: 1"=20'  
Survey

**SECTION**  
Scale: 1"=20'

**ESTIMATED QUANTITIES**  
E-3 Channel Excavation 59.7 Cu Yds.

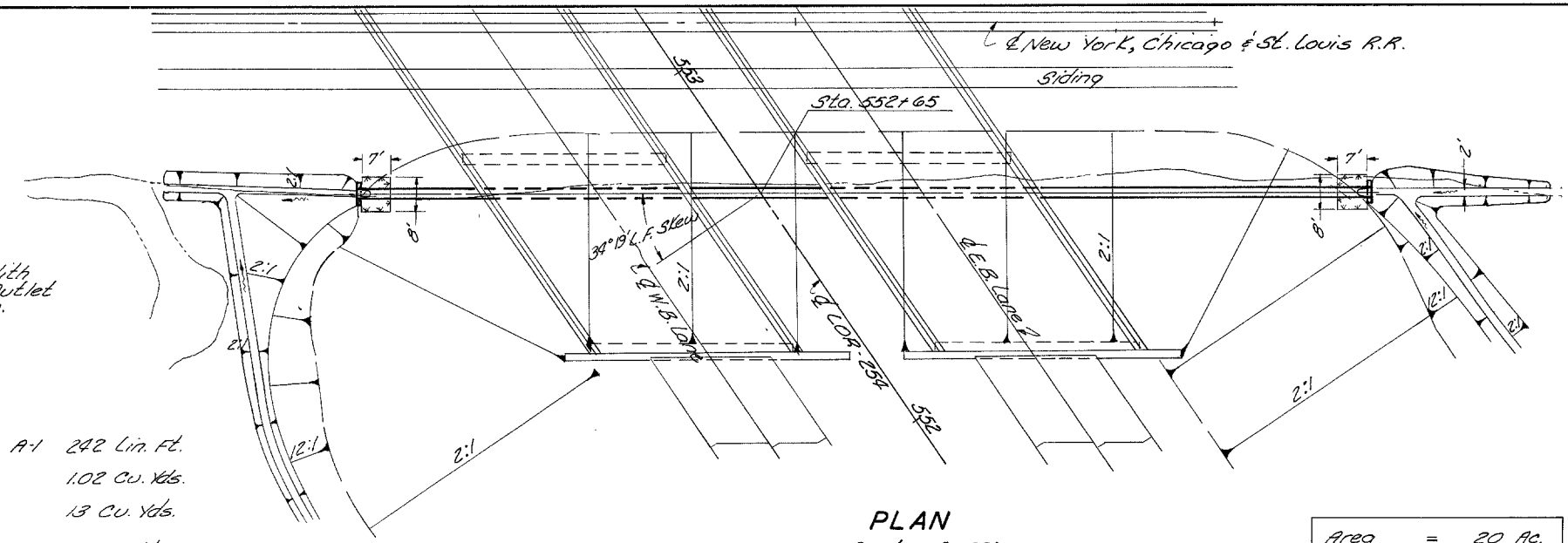
OUTLET FOR STORM SEWER STA. 503 + 50

**CULVERT DATA**

Type: Pipe  
Size: 30" x 242'  
Work Required: Construct Culvert With Std. HW-E Endwalls Lt. & Rt. Excavate Outlet & Inlet Channels. Place Sod as Shown.

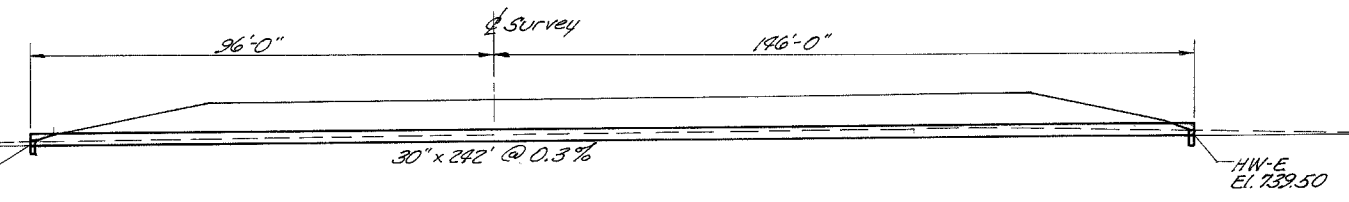
**ESTIMATED QUANTITIES**

I-1 30" M-6.6(a) or M-6.8(b) Pipe Class A-1 242 Lin. Ft.  
I-2 Masonry 1.02 Cu. Yds.  
E-3 Channel Excavation 13 Cu. Yds.  
L-10 Sodding 11 Sq. Yds.



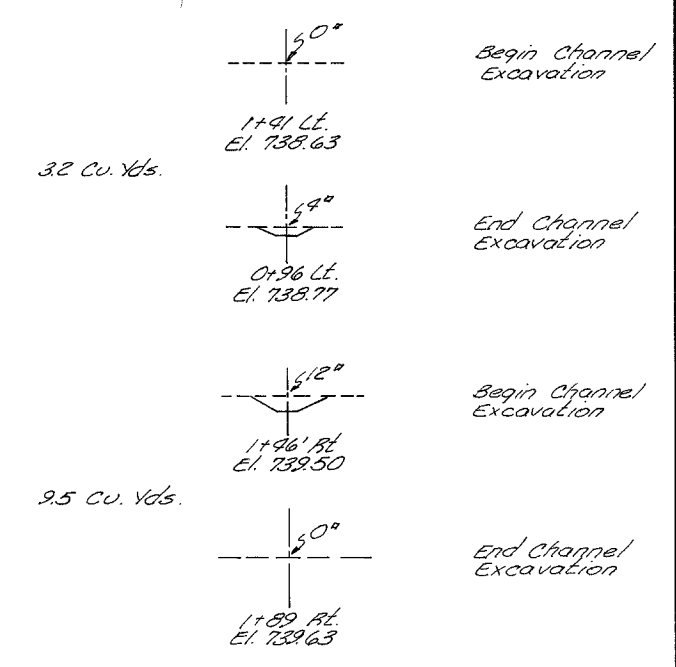
**PLAN**  
Scale: 1"=20'

Area = 20 Ac.  
Q25 = 31 C.F.S.



**SECTION**  
Scale: 1"=20'

**CROSS SECTIONS**  
For Channel Excavation  
Scale: 1"=10'



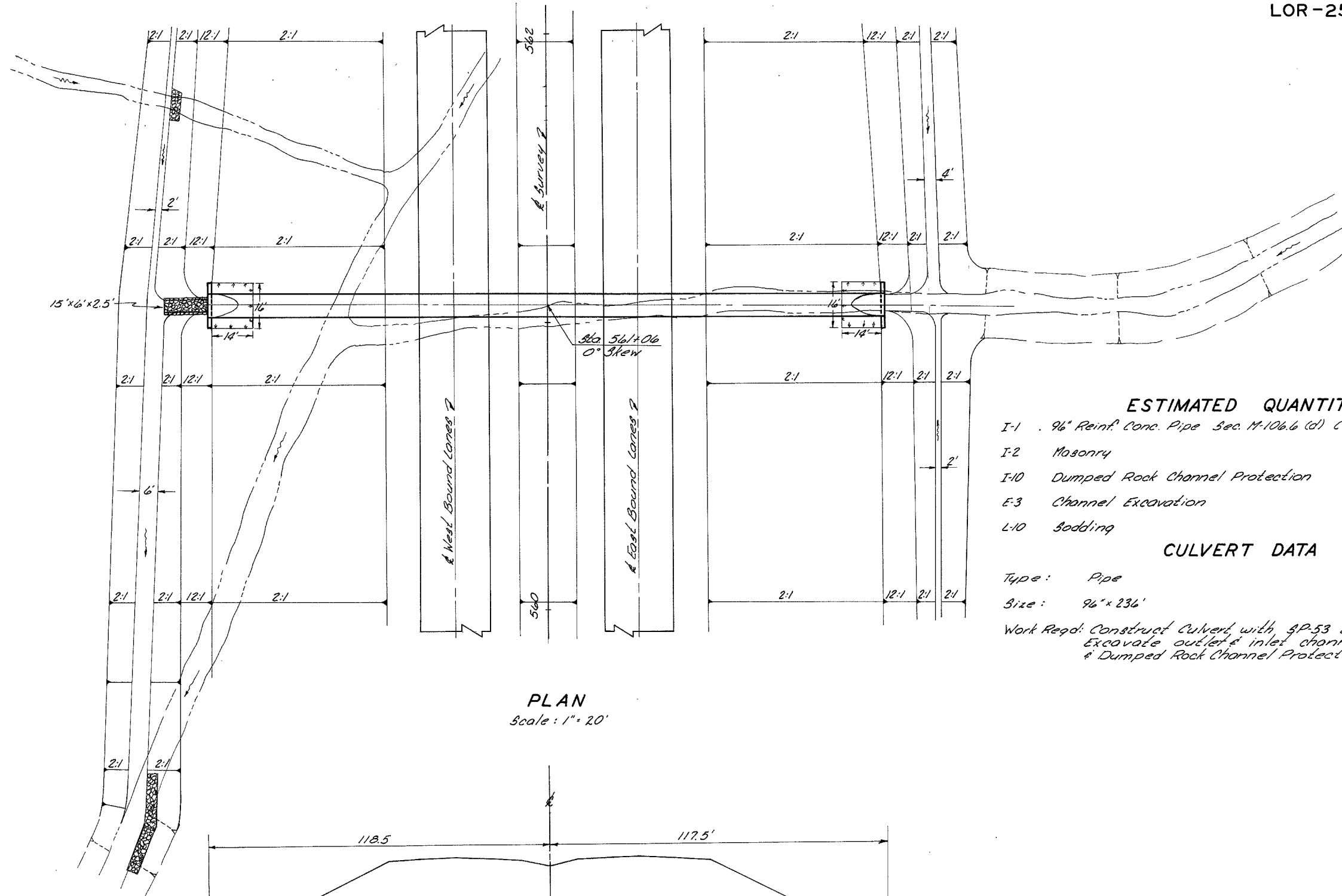
Total Channel Excavation: 13 Cu. Yds.



LOR-254-4.08B



Area = 645 Ac.  
Q 25 = 305 C.F.S.



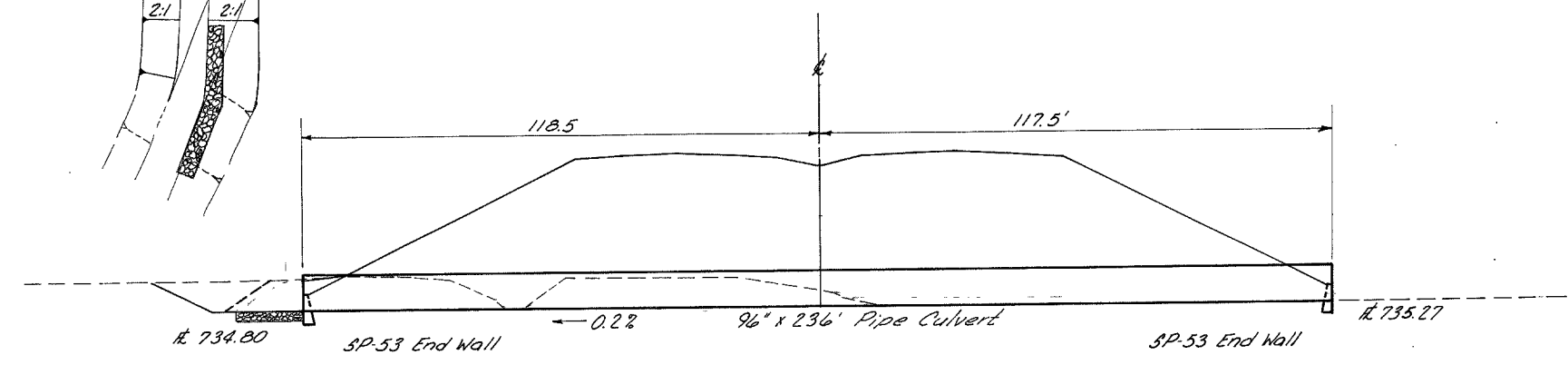
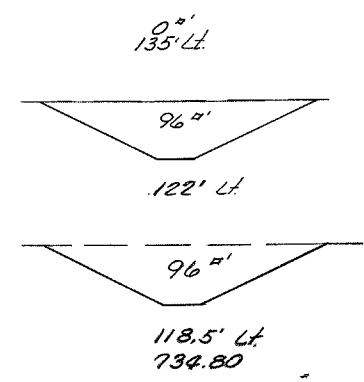
**ESTIMATED QUANTITIES**

I-1	96" Reinf. Conc. Pipe Sec. M-106.6 (d) Class A-1	236 Lin. Ft.
I-2	Masonry	10.26 Cu. Yds.
I-10	Dumped Rock Channel Protection	8.3 Cu. Yds.
E-3	Channel Excavation	37 Cu. Yds.
L-10	Bedding	50 Sq. Yds.

**CULVERT DATA**

Type: Pipe  
 Size: 96" x 236"  
 Work Reqd: Construct Culvert with SP-53 End Walls Lt. & Rt. Excavate outlet & inlet channels. Place sod & Dumped Rock Channel Protection as shown.

**PLAN**  
Scale: 1" = 20'

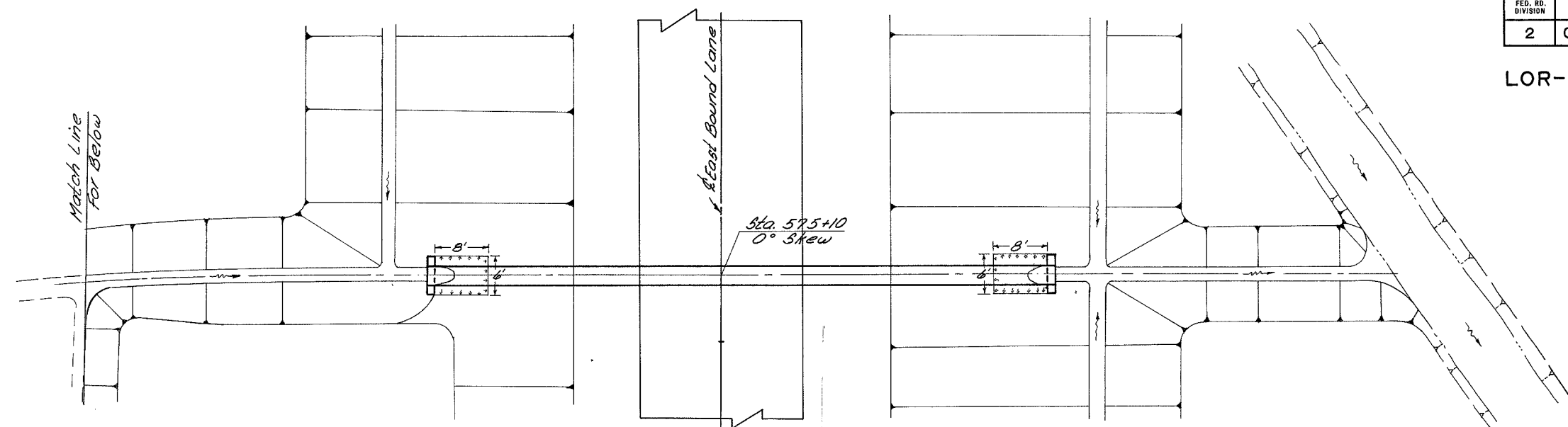


**SECTION**  
Scale: 1" = 20'

LOR-254-4.08-B



Area = 27 Ac.  
Q 25 = 32 C.F.S.



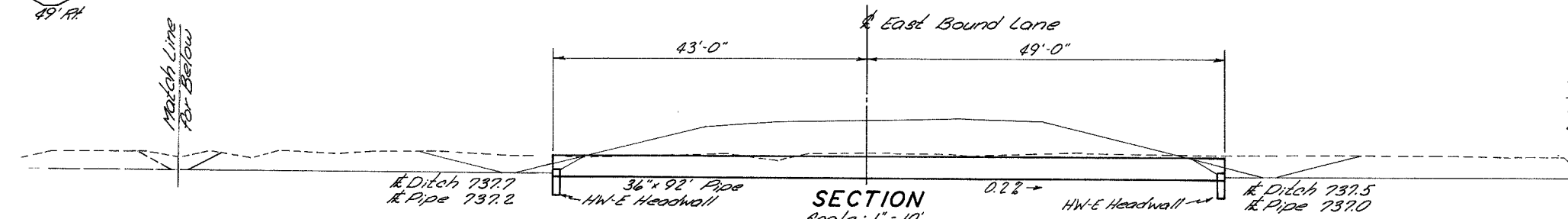
PLAN  
Scale: 1" = 10'

CULVERT DATA

Type: Pipe  
Size: 36" x 92"  
Work Rd.: Construct Culvert with HW-E Headwalls Lt. & Rt. Excavate outlet & inlet channels. Place sod as shown.

ESTIMATED QUANTITIES

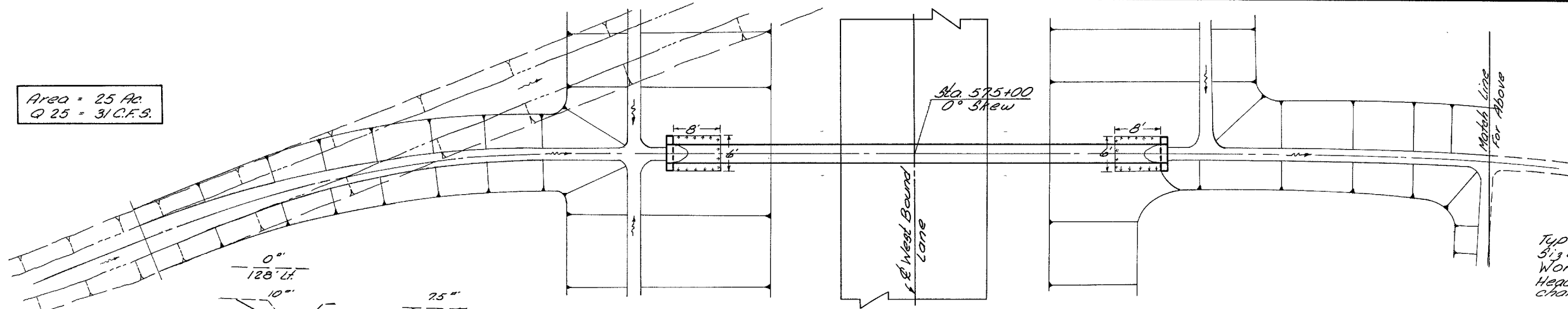
I-1 36" M-6.6 (a) or M-6.8(b) Class A-1	92 Lin. Ft.
I-2 Masonry	1.18 Cu. Yds.
E-3 Channel Excavation	72 Cu. Yds.
L-10 Sodding	10 Sq. Yds.



SECTION  
Scale: 1" = 10'

STA. 575 + 10 STRUCTURE NUMBER LOR-254-1089 R

Area = 25 Ac.  
Q 25 = 31 C.F.S.



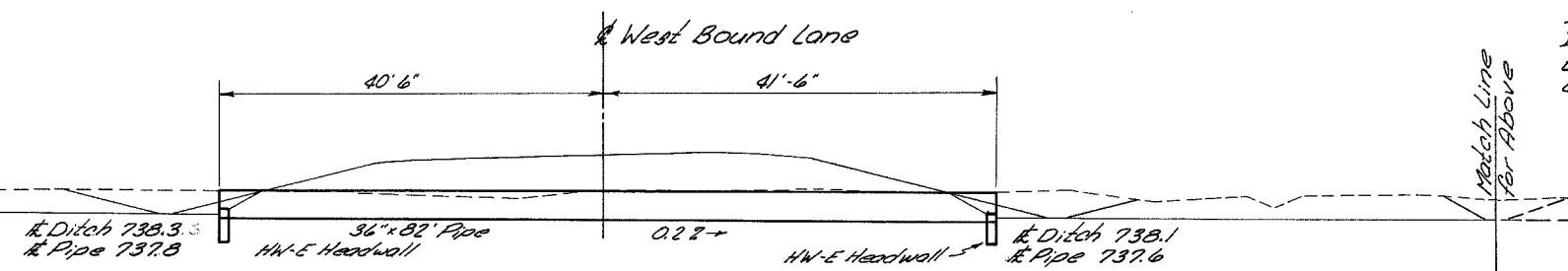
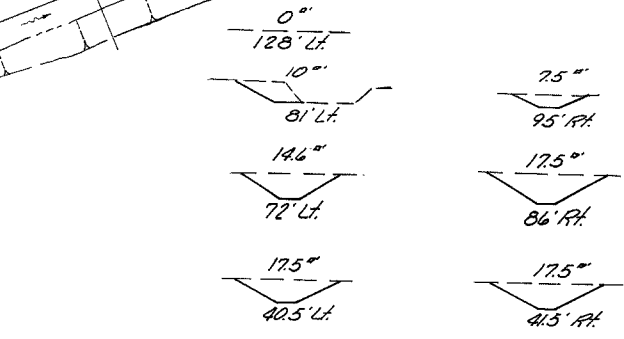
PLAN  
Scale: 1" = 10'

CULVERT DATA

Type: Pipe  
Size: 36" x 82"  
Work Rd.: Construct Culvert with HW-E Headwalls Lt. & Rt. Excavate outlet & inlet channels. Place sod as shown.

ESTIMATED QUANTITIES

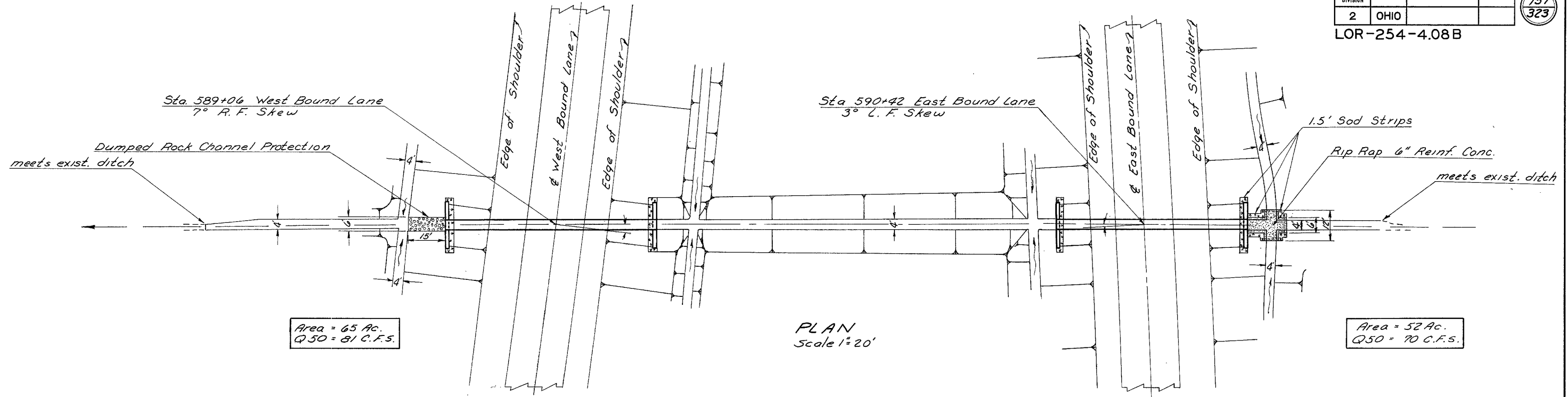
I-1 36" M-6.6 (a) or M-6.8(b) Class A-1	82 Lin. Ft.
I-2 Masonry	1.18 Cu. Yds.
E-3 Channel Excavation	65 Cu. Yds.
L-10 Sodding	10 Sq. Yds.



SECTION  
Scale: 1" = 10'

STA. 575 + 00 STRUCTURE NUMBER LOR-254-1089 L

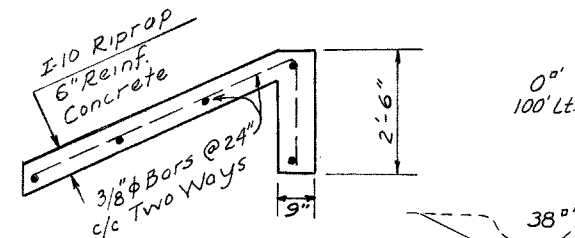
STA. 575 + 00 & STA. 575 + 10 STR. NO. LOR-254-1089 R & STR. NO. LOR-254-1089 L



PLAN  
Scale 1" = 20'

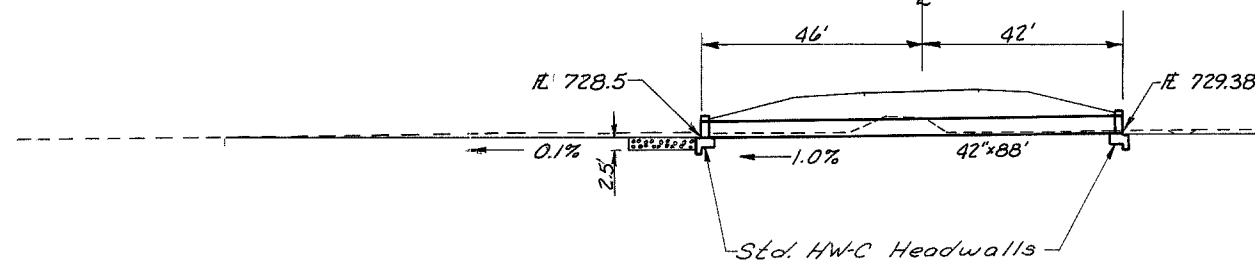
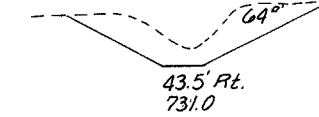
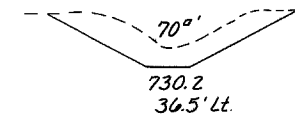
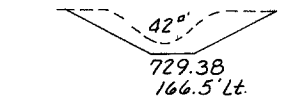
STRUCTURE NO. LOR-254-1116

STRUCTURE NO. LOR-254-1118

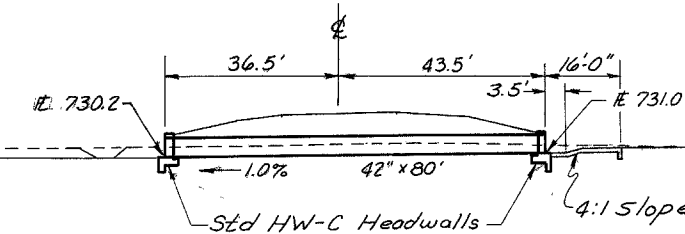


CUT-OFF WALL DETAIL

Note: Payment for cut-off wall is to be included in the price bid for Item I-10 Riprap 6" Reinforced Concrete



SECTION  
Scale 1" = 20'



CULVERT DATA

Type: Pipe  
Size: 42" x 88'  
Work Required: Construct culvert with Std. HW-C Headwalls Lt. & Rt. Excavate outlet & inlet channels. Place sod & dumped rock channel protection as shown

ESTIMATED QUANTITIES

I-1 42" Sec. M-6.6 (a) Class A-1 88 Lin.ft.  
I-2 Masonry 22 Cu.Yds.  
I-10 Dumped Rock Channel Protection 8 Cu.Yds.  
E-3 Channel Excavation 38 Cu.Yds.  
L-10 Sodding 7 Sq.Yds.

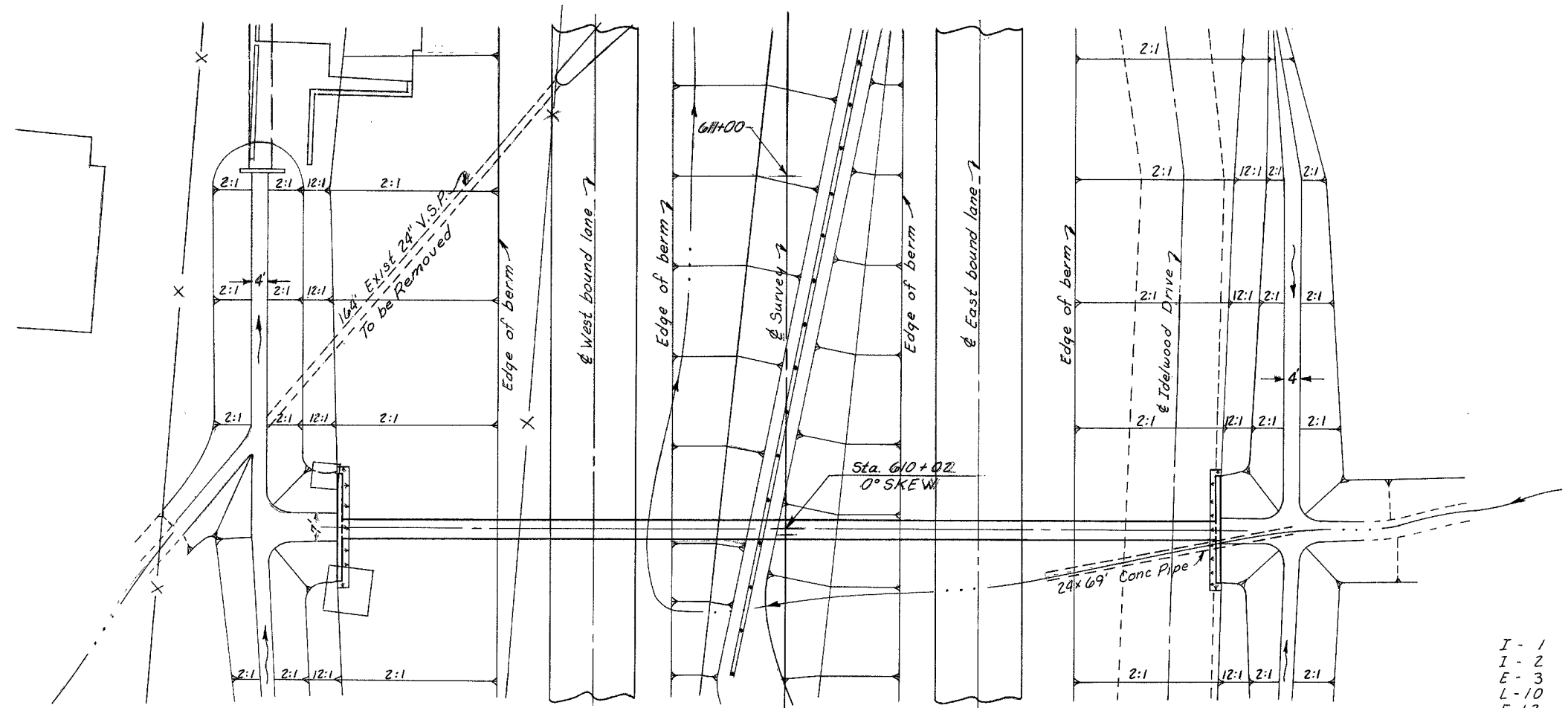
CULVERT DATA

Type: Pipe  
Size: 42" x 80'  
Work Required: Construct culvert with Std HW-C Headwalls Lt & Rt. Excavate outlet & inlet channels. Place sod & Rip Rap as shown

ESTIMATED QUANTITIES

I-1 42" Sec. M-6.6 (a) Class A-1 80 Lin.ft.  
I-2 Masonry 22 Cu. Yds  
I-10 Rip Rap 6" Reinf. Conc Slab 13 Sq.Yds.  
E-3 Channel Excavation 336 Cu.Yds.  
L-10 Sodding 17 Sq.Yds.

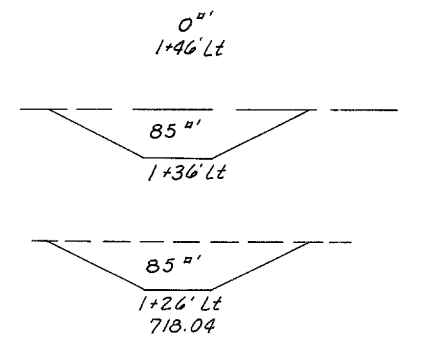
LOR-254-4.08B



PLAN

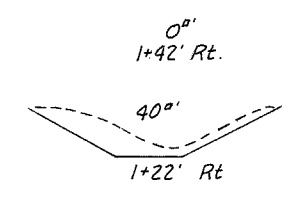
**ESTIMATED QUANTITIES**

I - 1	60" Reinf. Conc. Sec. M-6.6 (d) Class A-1	248 Lin. ft.
I - 2	Masonry	44 Cu. Yds.
E - 3	Channel Excavation	62 Cu. Yds.
L - 10	Sodding	12 Sq. Yds.
E - 12	Pipe Removal (Over 15")	233 Lin. ft.



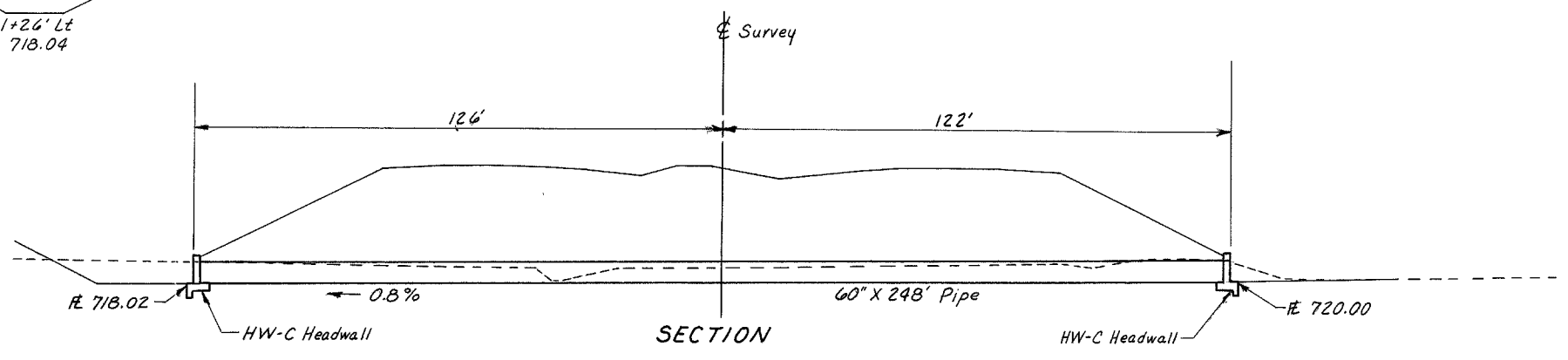
Area = 106 Ac.  
Q50 = 155 cfs.

Scale: 1" = 20'



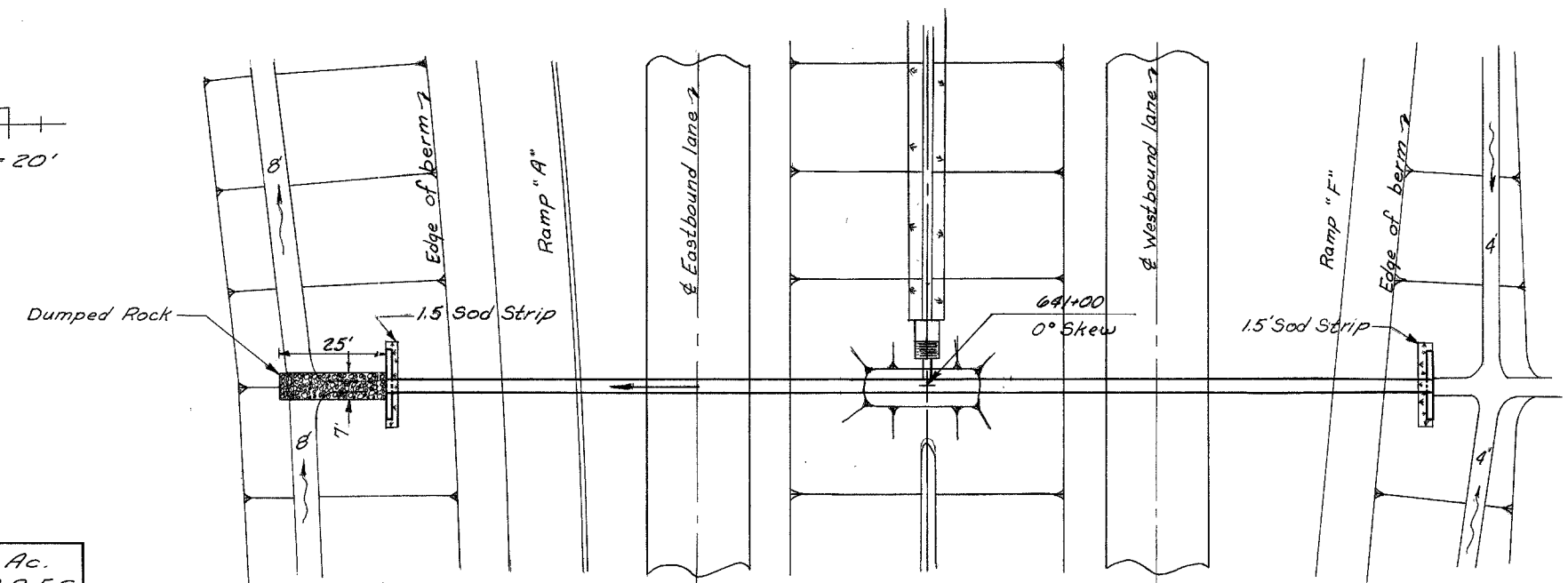
**CULVERT DATA**

Type: Pipe  
Size: 60" x 248'  
Work Required: Construct Culvert with Std HW-C Headwalls Lt & Rt, Place 1.5' Sod Strips as Shown



SECTION

Scale: 1" = 20'



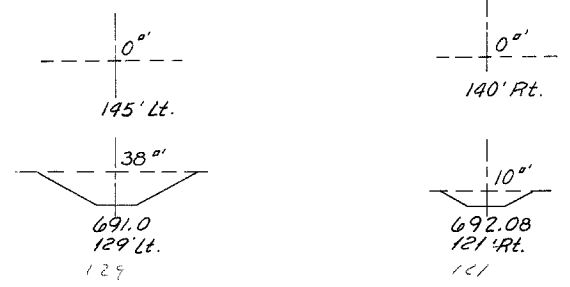
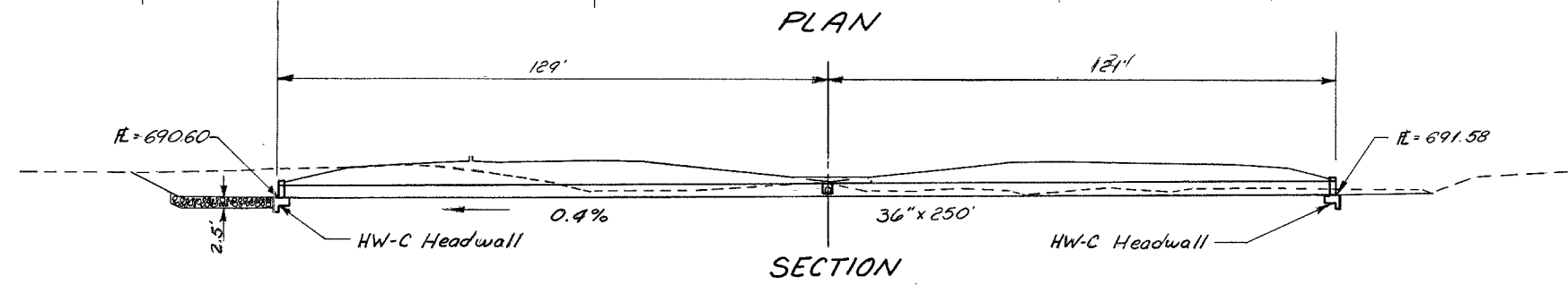
Area = 44 Ac.  
Q50 = 53 C.F.S.

**ESTIMATED QUANTITIES**

I-1	36" M-6.6 (a) or M-6.8(b) Class A-1 Pipe	250 Lin. Ft.
I-2	Masonry	16 Cu. Yds.
I-10	Dumped Rock Channel Protection	14 Cu. Yds.
E-3	Channel Excavation	16 Cu. Yds.
L-10	Sodding	8 Sq. Yds.
I-5	Pipe Specials 36"x15" Tee	1 Each

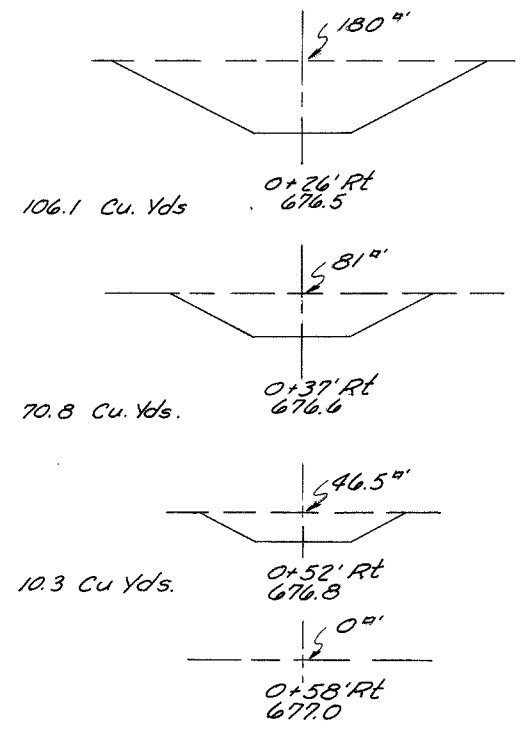
**CULVERT DATA**

Type: Pipe  
 Size: 36"x250'  
 Work Required: Construct Culvert with Std HW-C Headwalls Lt & Rt, Place Sod & Dumped Rock as Shown



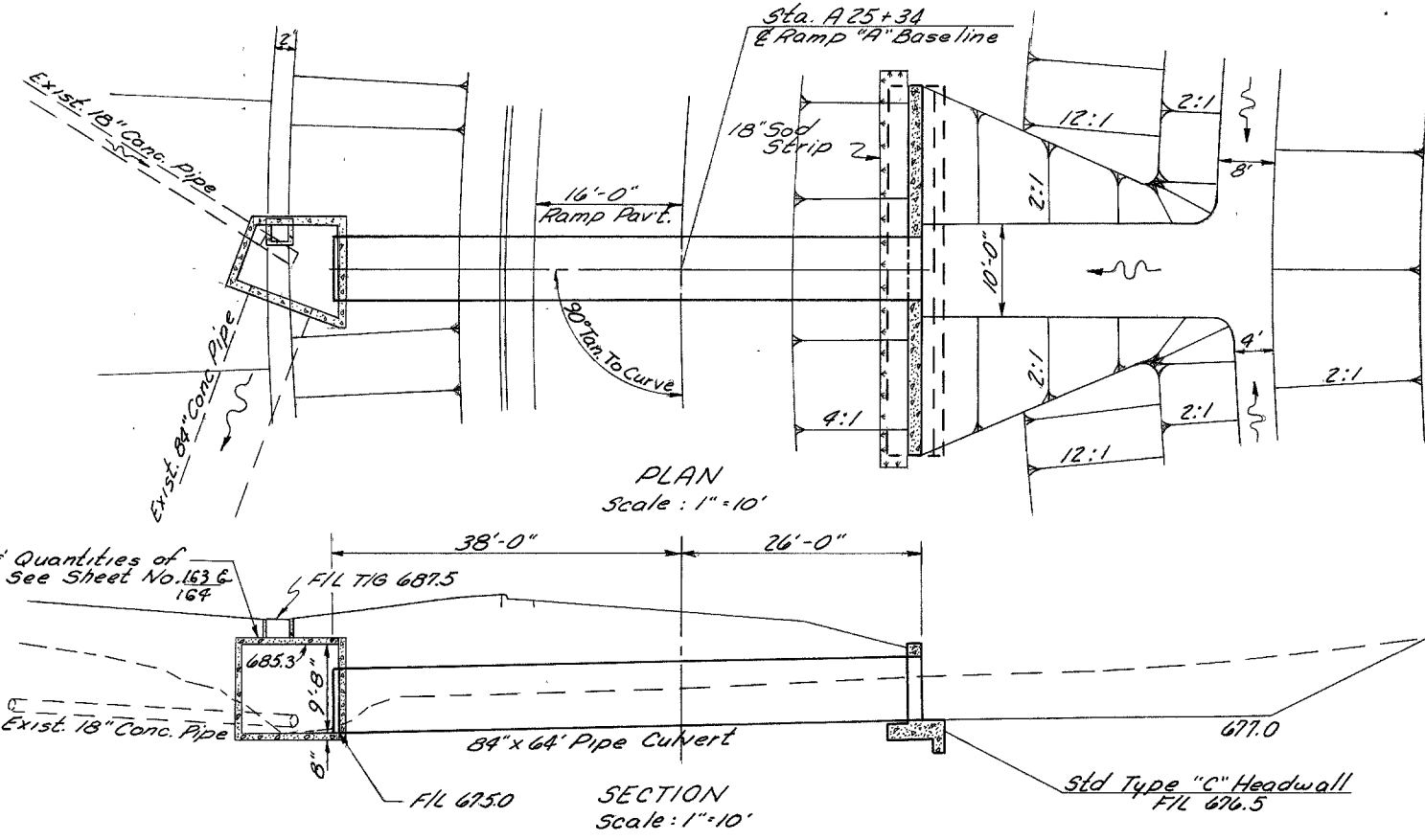
STA. 641+00 STRUCTURE NO. LOR-254-1214

**CROSS SECTIONS For Channel Excavation**  
 Scale: 1" = 10'



Area = Ac.  
Q50 = C.F.S.

For Details & Quantities of Junction Box See Sheet No. 163 & 164



**ESTIMATED QUANTITIES**

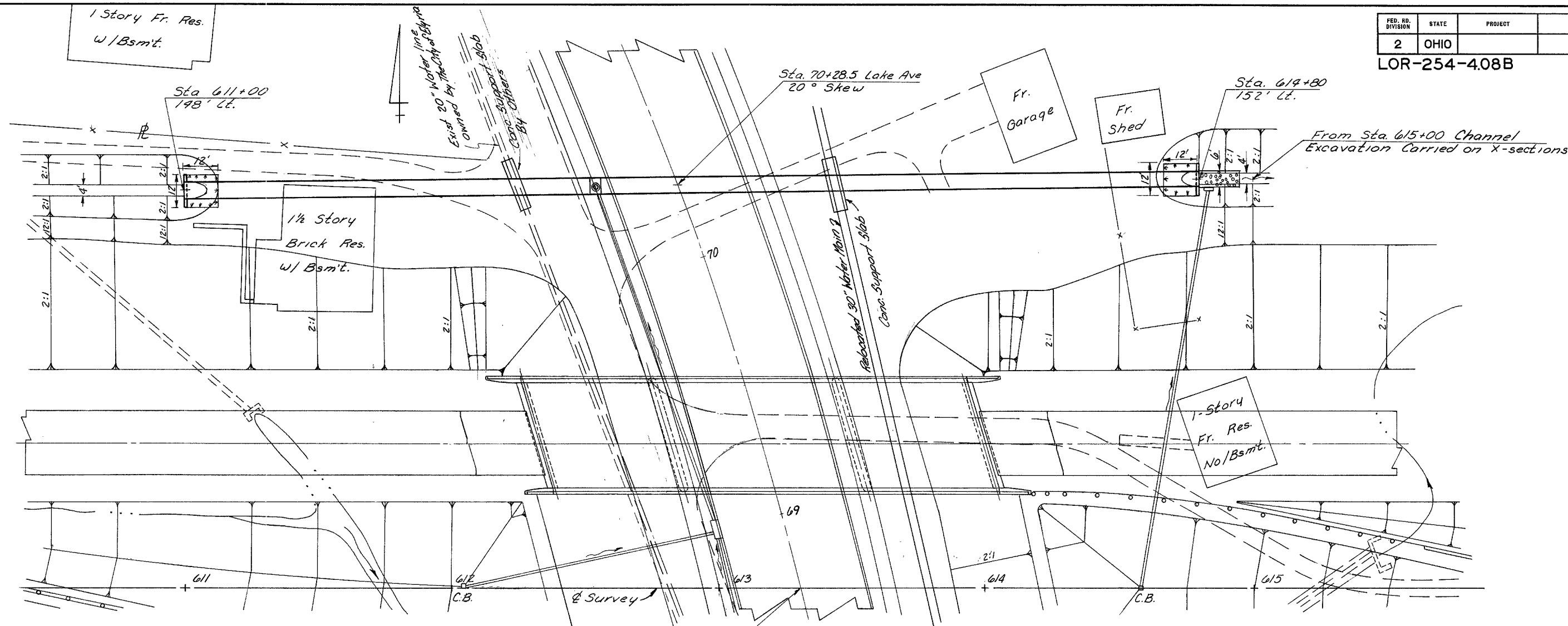
E-3	Channel Excavation	187 Cu. Yds.
I-1	84" Pipe Culvert Class A-1 Sec. M-6.6(a)	64 Lin. Ft.
I-2	Masonry (Headwall)	35 Cu. Yds.
L-10	Sodding	8 Sq. Yds.

**CULVERT DATA**

Type: Pipe Culvert, Standard Drawing HW-C Headwall  
 Size: 84"x64' Class A-1 Sec M-6.6(a)  
 Work Required: Construct Culvert, Box Junction & Headwall as Shown

Total Channel Excavation: 187 Cu. Yds.

STRUCTURE AT STA. A25+34 RAMP 'A'  
 STRUCTURES AT STA. A25+34 RAMP 'A' & STA. 641+00 STR. NO. LOR-254-1214



**CULVERT DATA**

Type : Pipe  
 Size : 66" x 380'  
 Work Required: Construct Culvert with SP-53 Endwalls Lt. & Rt. Place sod & dumped rock channel protection as shown

Sta. 613+29.93 S.R. 254  
 Sta. 68+71.47 Lake Ave.

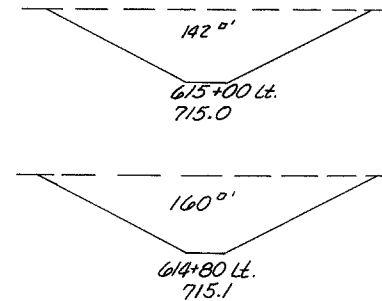
**ESTIMATED QUANTITIES**

I- 1 66" Reinf. Conc. Pipe Sec. M-66 (b) Class A-1	380 Lin. Ft.
I- 2 Masonry	59 Cu. Yds.
E- 3 Channel Excavation	117 Cu. Yds.
I-10 Dumped Rock Channel Protection	8 Cu. Yds.
L-10 Sodding	32 Sq. Yds.
I- B Manhole Std. No. 1-A	1 Each

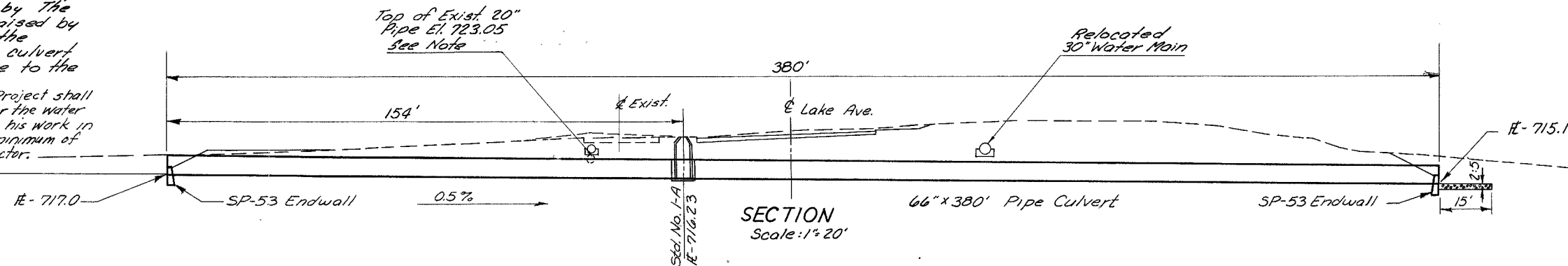
**PLAN**

Scale: 1" = 20'

Area = 162 Ac.  
 Q.50 = 194 C.F.S.



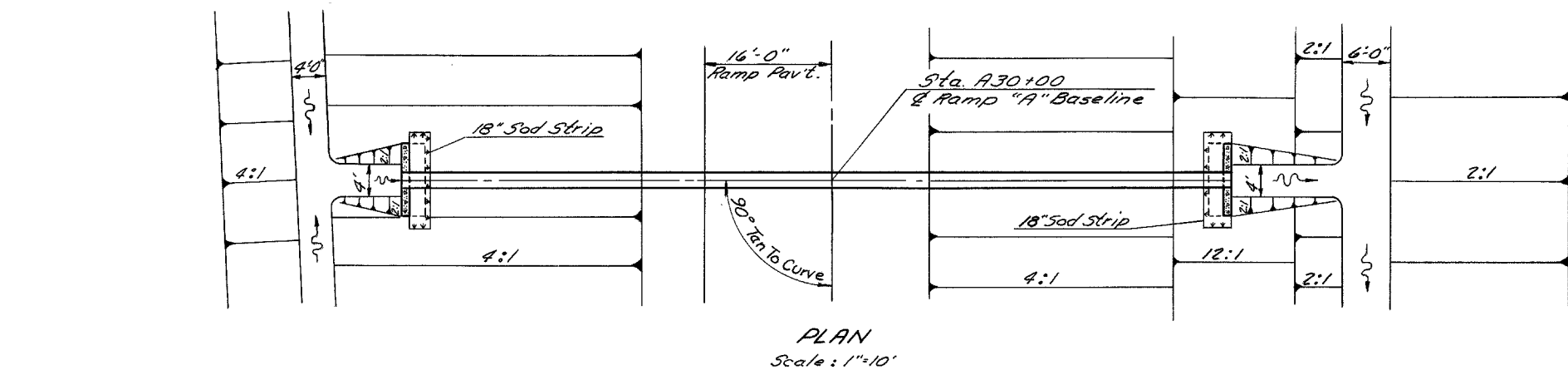
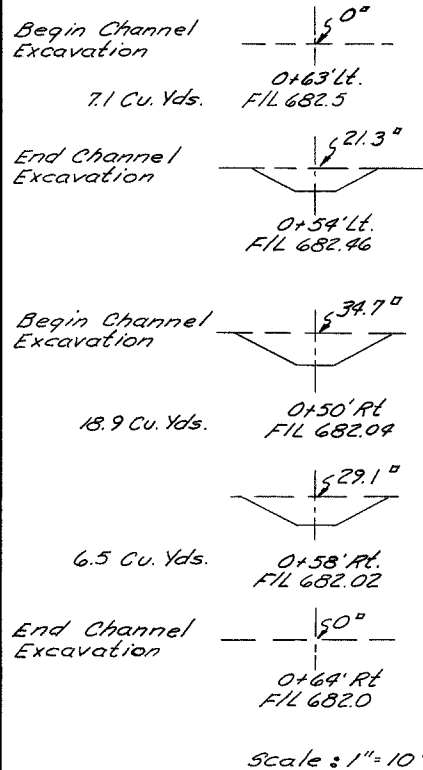
Note: The grade of the existing 20" water line owned by The City of Elyria, will be raised by city forces to allow for the construction of the 66" culvert at no additional expense to the contractor.  
 The Contractor for this Project shall cooperate with the Contractor for the water line, and schedule and coordinate this work in a manner that will result in a minimum of interference with the other Contractor.



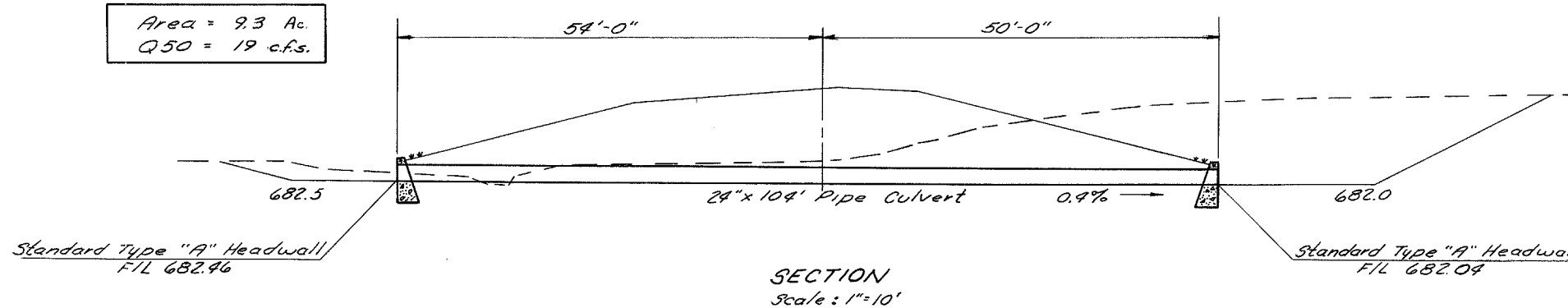
**SECTION**

Scale: 1" = 20'

**CROSS SECTIONS**  
For  
Channel Excavation



Area = 9.3 Ac.  
Q50 = 19 cfs.



**ESTIMATED QUANTITIES**

E-3 Channel Excavation	33 Cu. Yds.
I-1 24" Pipe Culvert Class A-1 Sec. M-6.6(b) or M-6.8(b)	104 Lin. Ft.
I-2 Masonry	10.2 Cu. Yds.
L-10 Sodding	6 Sq. Yds.

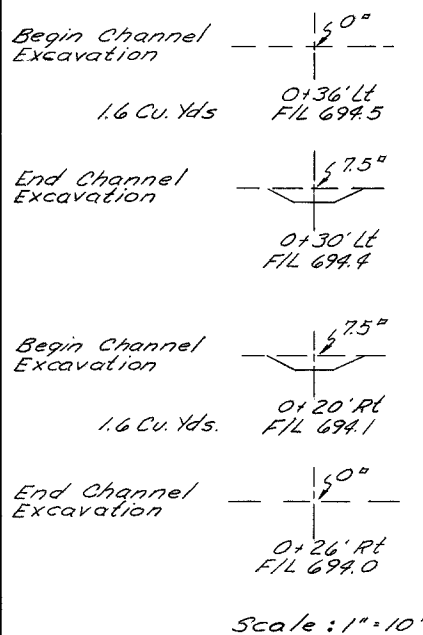
**CULVERT DATA**

Type: Pipe Culvert, Standard  
Drawing HW-A Headwall  
Size: 24" x 104' Class A-1 Section  
M-6.6(b) or M-6.8(b)  
Work Required: Construct Culvert &  
Headwalls as Shown

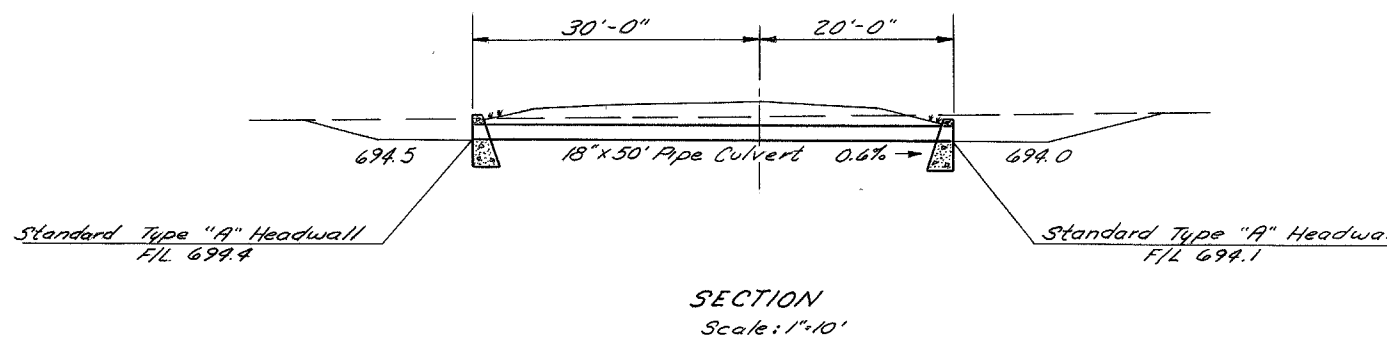
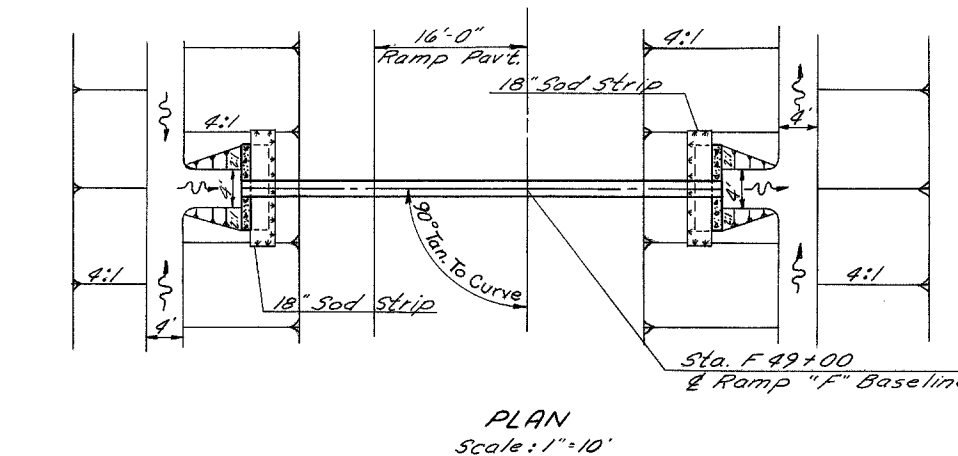
Total Channel Excavation: 33 Cu. Yds.

STRUCTURE AT RAMP STA. A 30+00

**CROSS SECTIONS**  
For  
Channel Excavation



Area = 3.4 Ac.  
Q50 = 9 cfs.



**ESTIMATED QUANTITIES**

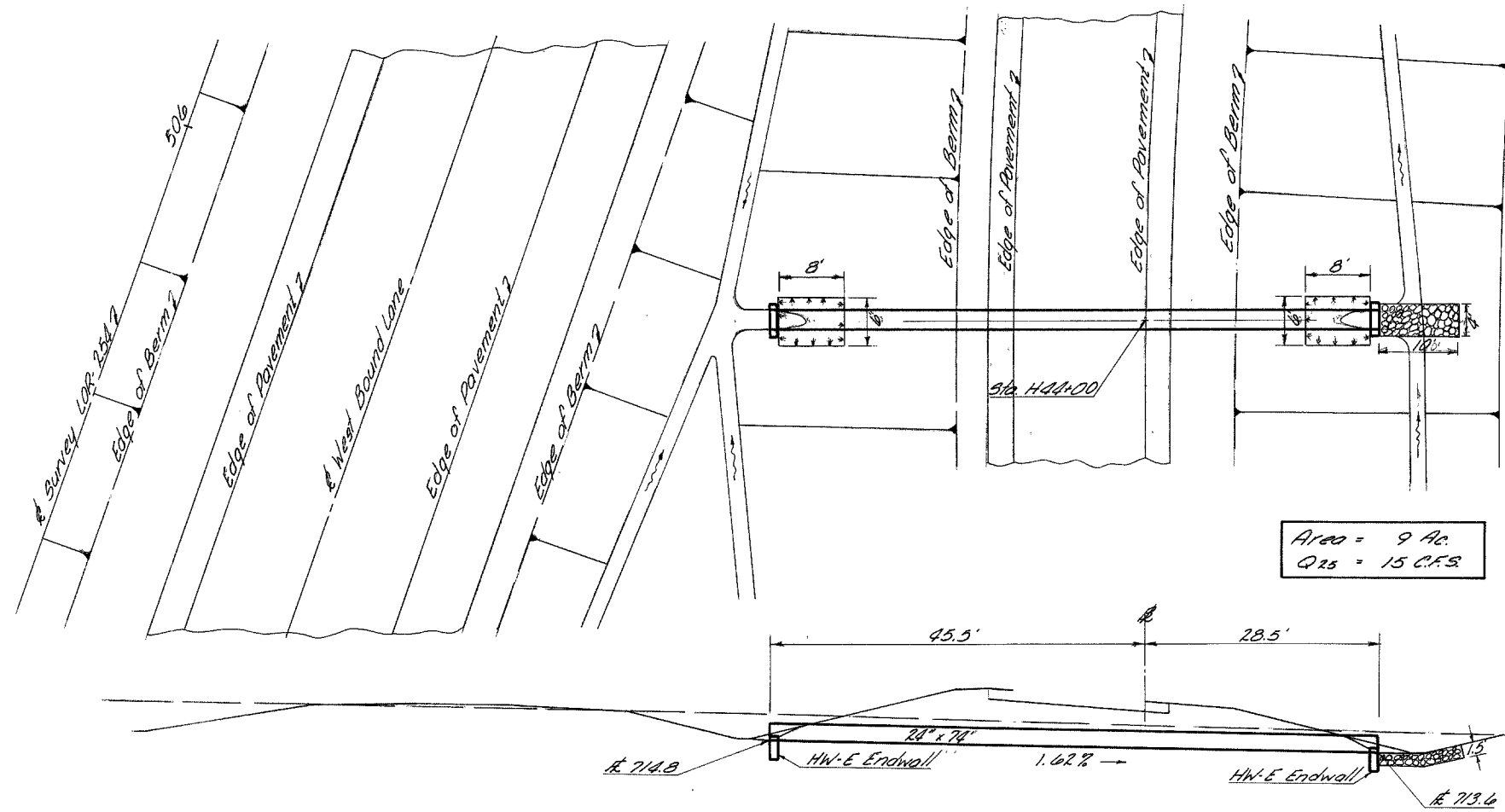
E-3 Channel Excavation	3 Cu. Yds.
I-1 18" Pipe Culvert Class A-1 Sec. M-6.6(a) or M-6.8(b)	50 Lin. Ft.
I-2 Masonry	6.3 Cu. Yds.
L-10 Sodding	5 Sq. Yds.

**CULVERT DATA**

Type: Pipe Culvert, Standard  
Drawing HW-A Headwall  
Size: 18" x 50', Class A-1 Section  
M-6.6(a) or M-6.8(b)  
Work Required: Construct Culvert &  
Headwalls as Shown

Total Channel Excavation: 3 Cu. Yds.

STRUCTURE AT RAMP STA. F 49+00  
STRUCTURES AT RAMPS STA. A30+00 & STA. F49+00



**CULVERT DATA**

Type: Pipe  
 Size: 24" x 74"  
 Work Req'd: Construct culvert with Std HW-E Endwalls Lt & Rt. Excavate outlet & inlet channels. Place Sod & dumped Rock as shown.

**ESTIMATED QUANTITIES**

I-1	24" M-6.6 (a) or M-6.8 (b) Pipe Class A-1	74 Lin Ft.
I-2	Masonry	.82 Cu Yds.
E-3	Channel Excavation	2 Cu Yds.
L-10	Sodding	10 Sq Yds.
I-10	Dumped Rock Channel Protection	2.2 Cu Yds.

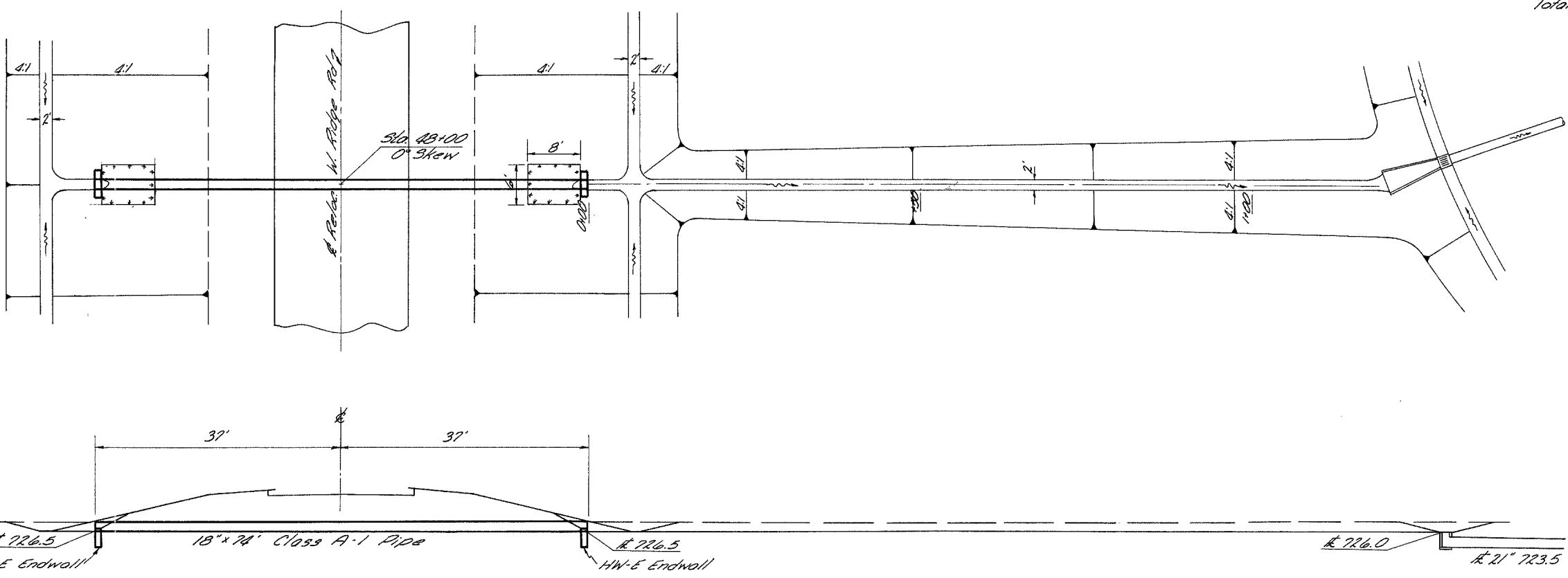
Area = 9 Ac.  
 Q25 = 15 C.F.S.

STRUCTURE RAMP "H" STA. H44+00

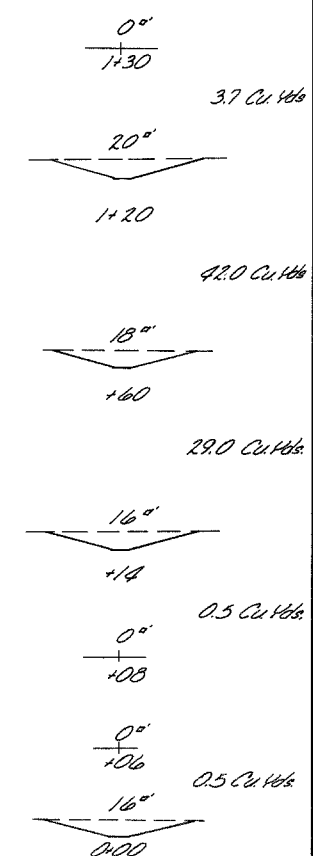
**CULVERT DATA**  
 Type: Pipe  
 Size: 18" x 74"  
 Work Req'd: Construct culvert with Std HW-E Endwalls Lt & Rt. Excavate outlet & inlet channels. Place Sod as shown.

**ESTIMATED QUANTITIES**

I-1	18" Class A-1 Pipe	74 Lin Ft.
I-2	Masonry	0.60 Cu Yds.
E-3	Channel Excavation	77 Cu Yds.
L-10	Sodding	10 Sq Yds.



Total Channel Excavation 75.7 Cu Yds.



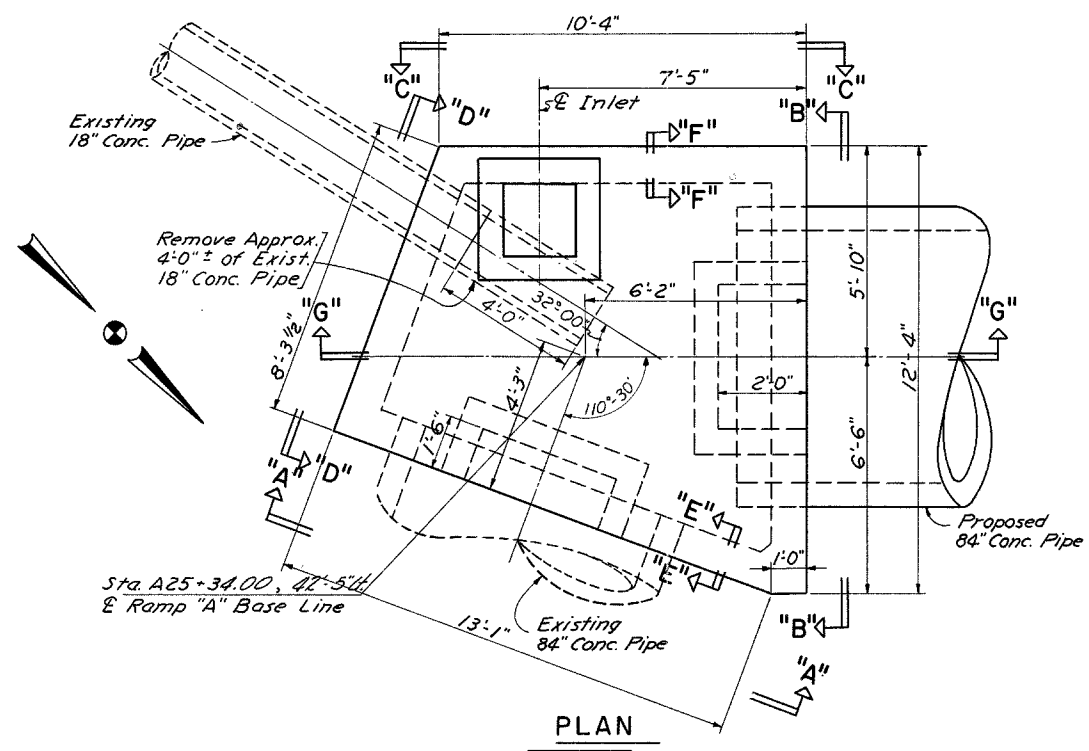
STRUCTURE STA. 48+00 RELOC. W. RIDGE RD.

STRUCTURES STA. 48+00 RELOC. W. RIDGE RD. & STA. H44+00 RAMP H

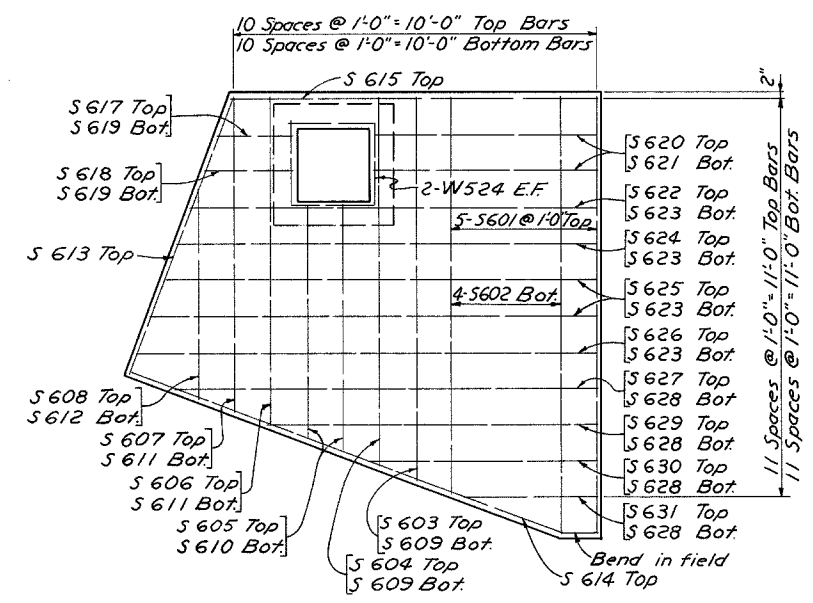




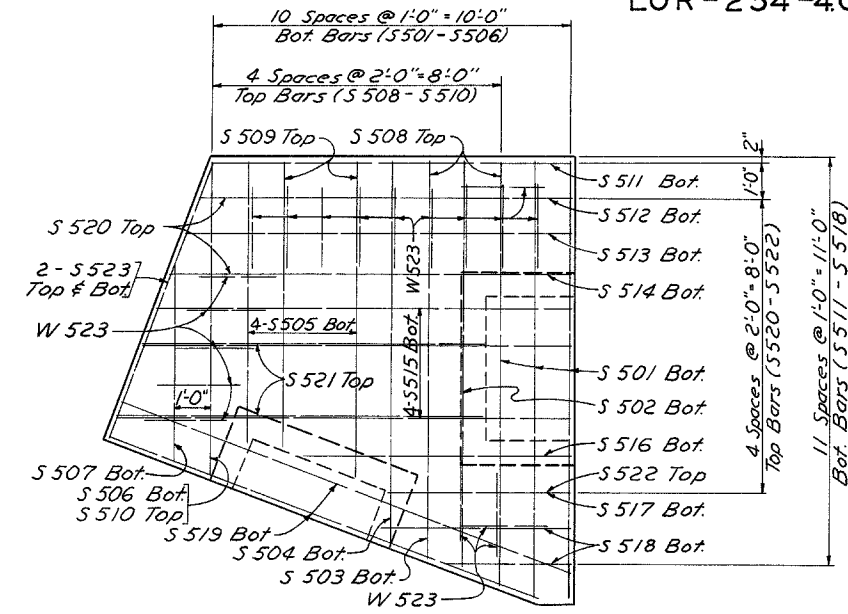
LOR-254-408 B



PLAN

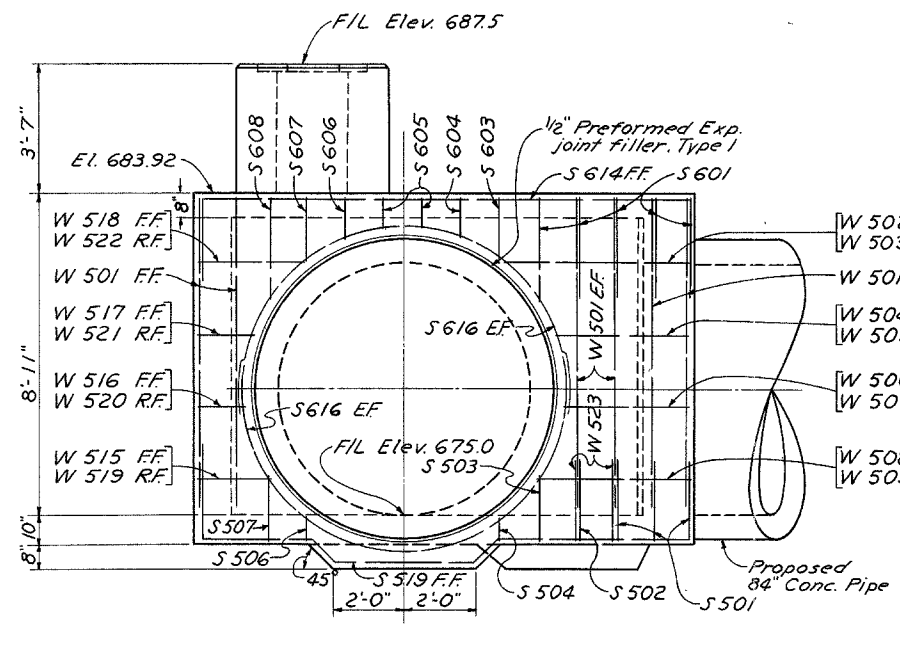


REINFORCING PLAN TOP SLAB

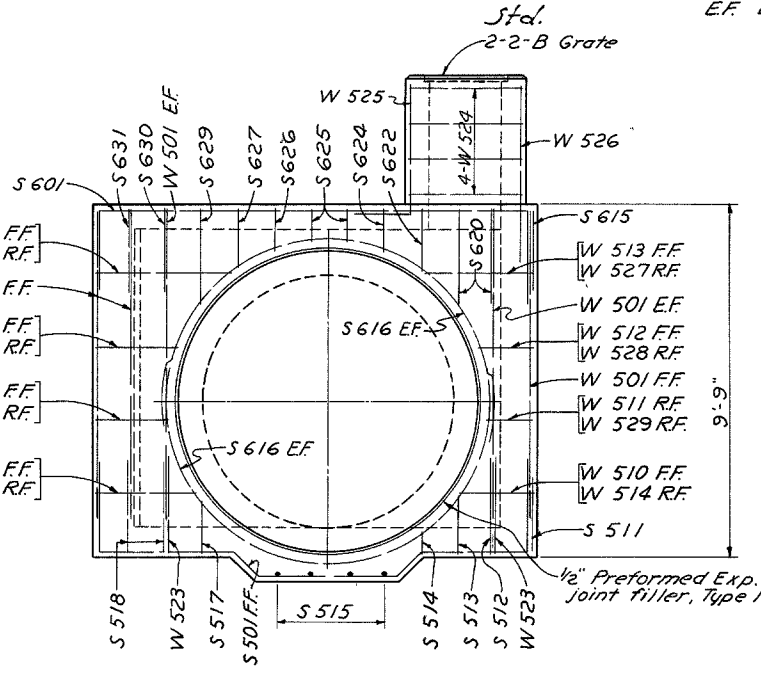


REINFORCING PLAN BOTTOM SLAB

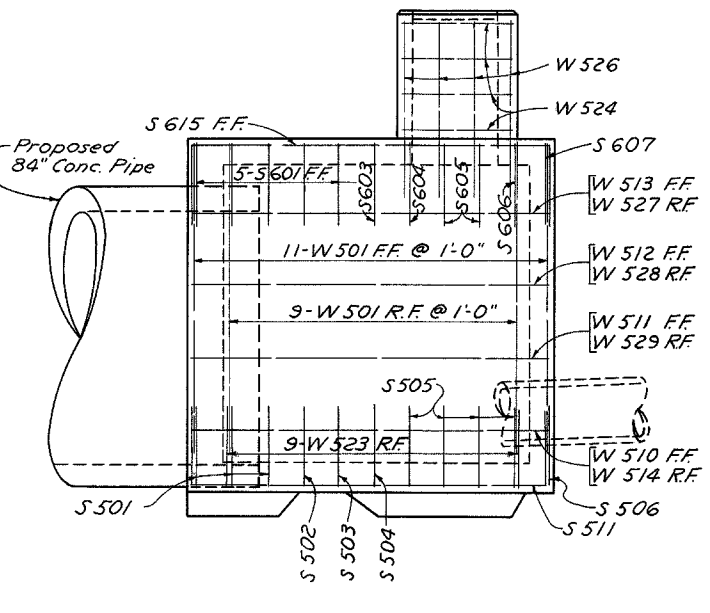
NOTATION:  
 FF Denotes Front Face  
 RF Denotes Rear Face  
 EF Denotes Each Face



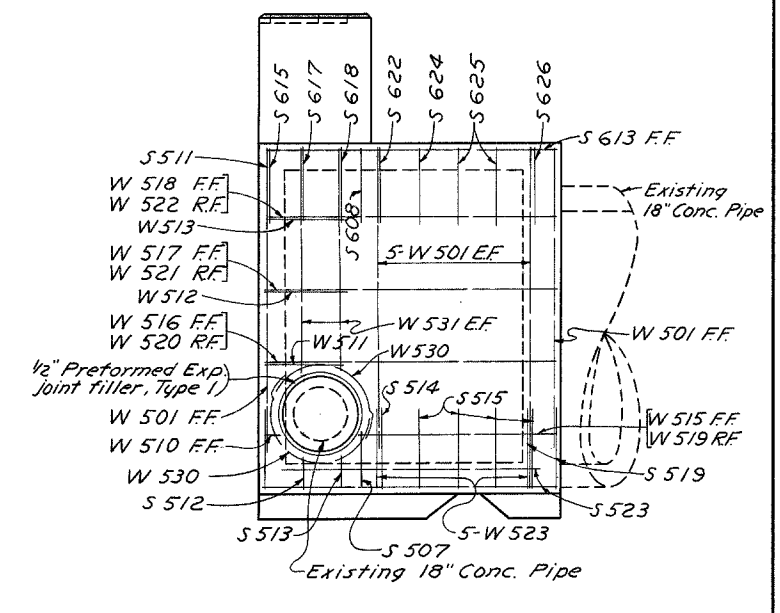
ELEVATION "A-A"



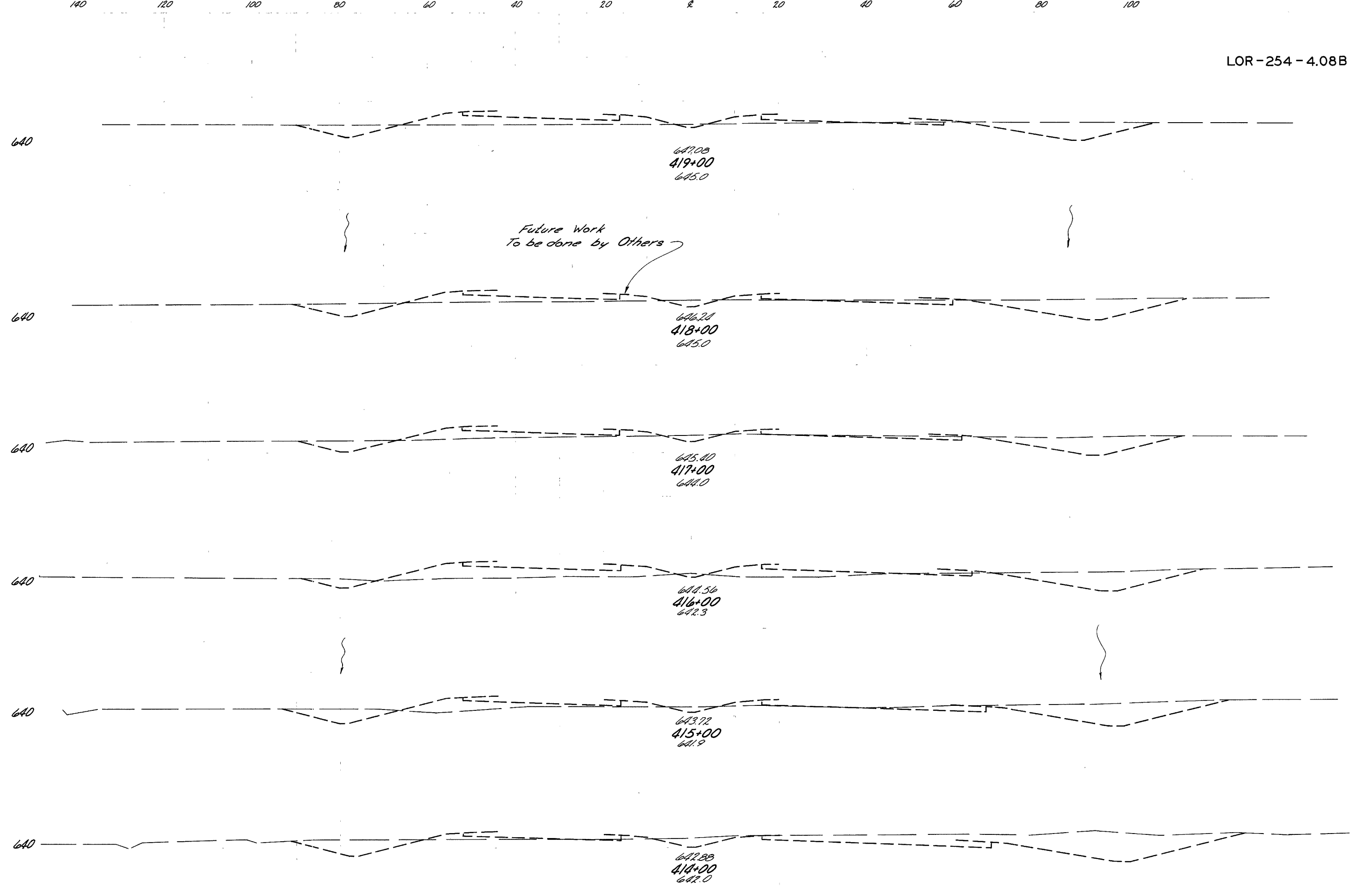
ELEVATION "B-B"



ELEVATION "C-C"



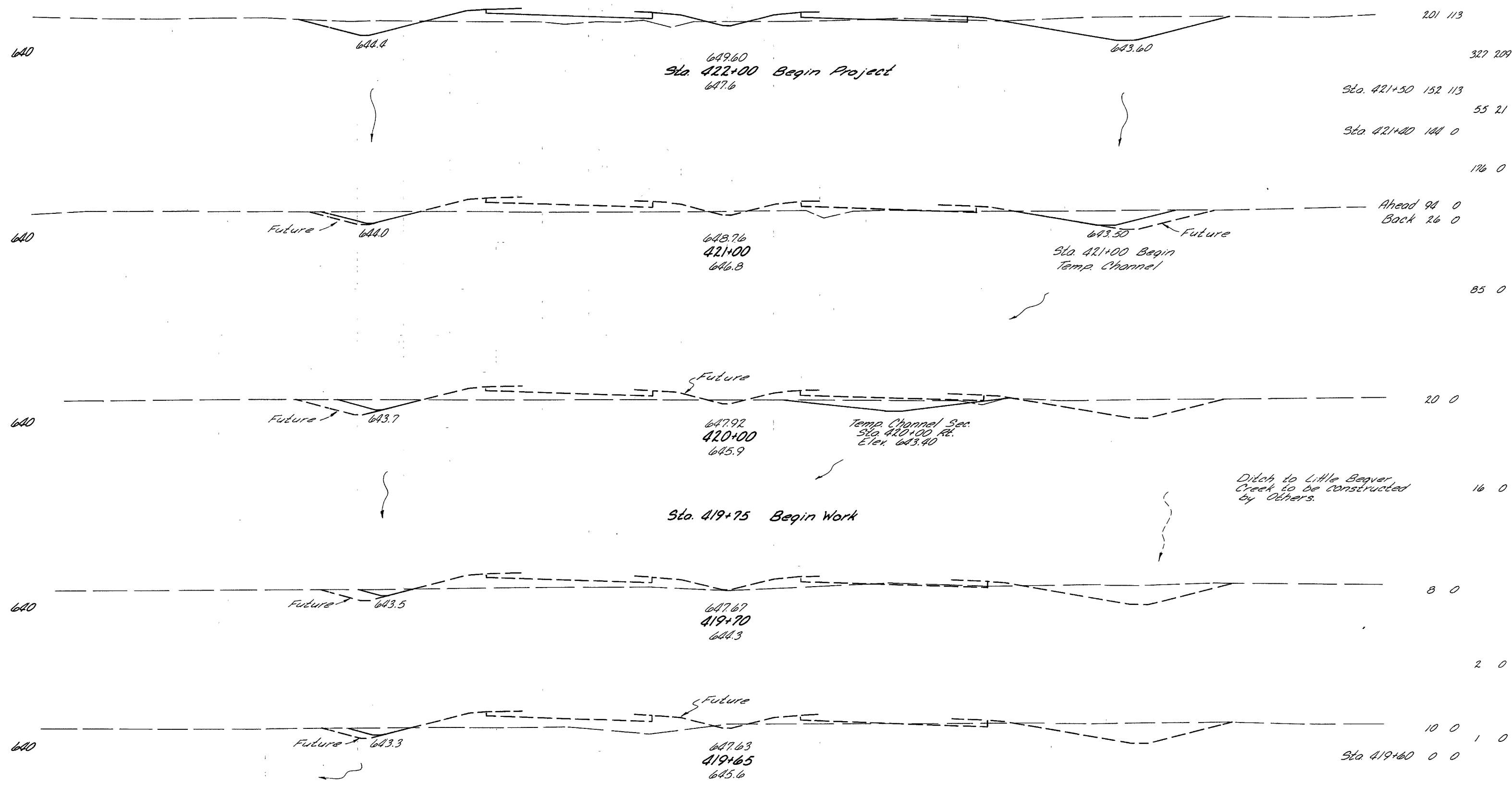
ELEVATION "D-D"



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

106  
323

LOR-254-4.08 B



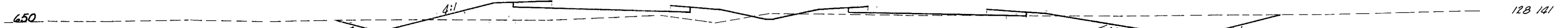
140 120 100 80 60 40 20 0 20 40 60 80 100

120 140  
STA. 419+65 TO STA. 422+00

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

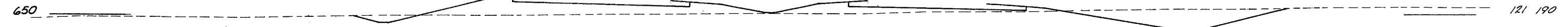
167  
323

LOR-254-4.08B



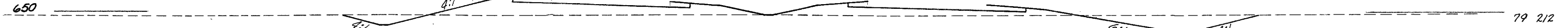
4:1 648.52 4:1 653.50 426+64 651.9 6:1 647.50 4:1

295 392



648.20 652.96 426+00 650.2 646.96

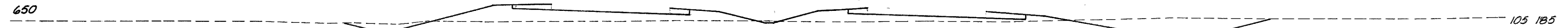
370 744



4:1 647.30 4:1 652.12 425+00 649.4 6:1 646.12 4:1

341 735

15' x 77' @ 0.75 %  
Sta. 424+50 @  
No. 2-2 R.C.B.  
Top Grate El. = 648.78  
E Window El. = 648.28  
E 15' Pipe El. = 646.28  
Outlet 645.70  
H-WE Endwall 4' x 7' x 1.5' Dumped Rock



646.4 651.28 424+00 648.5 645.28

489 565



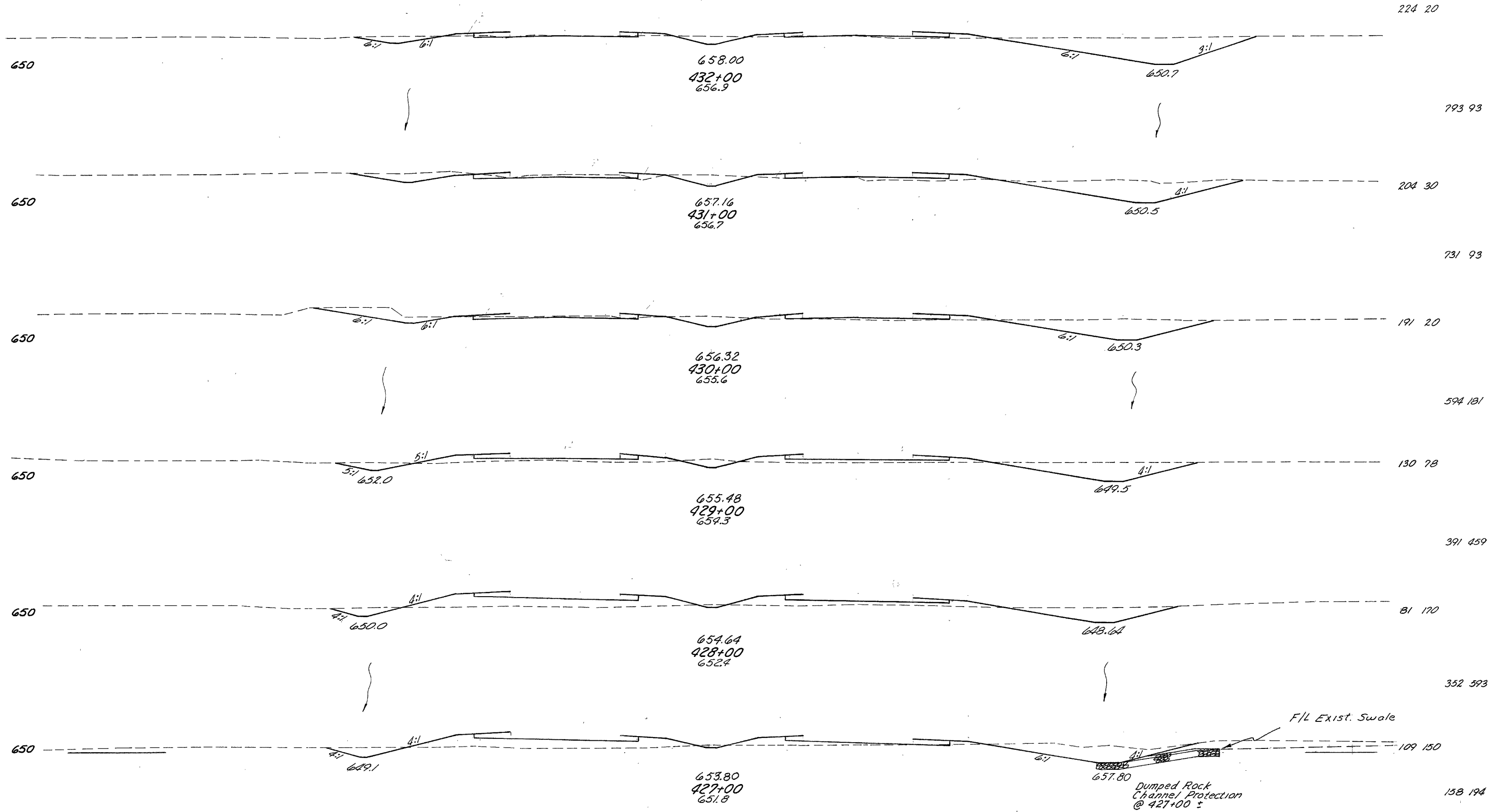
4:1 645.5 4:1 650.44 423+00 648.1 6:1 644.44 4:1

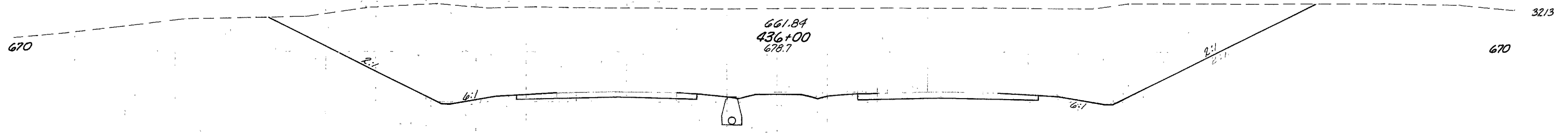
667 431

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

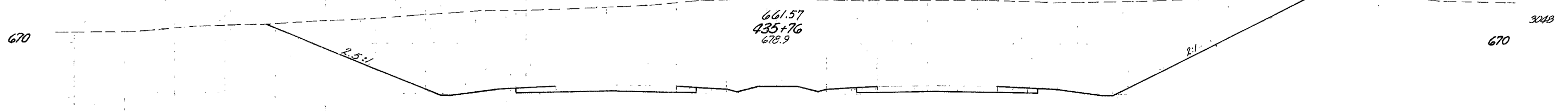
120 140  
STA 423+00 to STA 426+64

LOR-254-4.08B

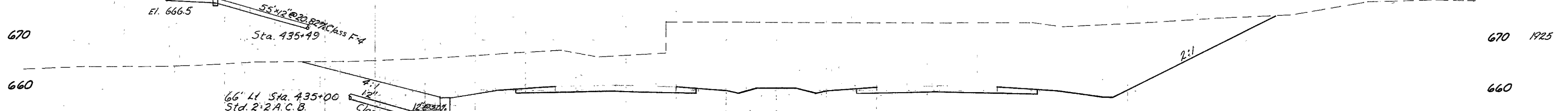




Sta. 435+90 9' Lt  
Std. No. 1 Manhole  
R. 18" Pipe 653.52  
Top of MH El. 661.10

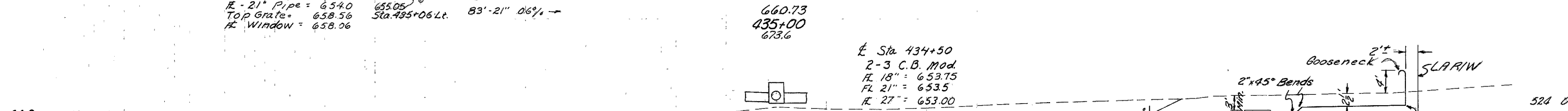


12" From Sheet 57  
El. 666.5  
See Std. Constr. Drwn. I. 1  
55' x 2' @ 20' Spacing Class F-4  
Sta. 435+49

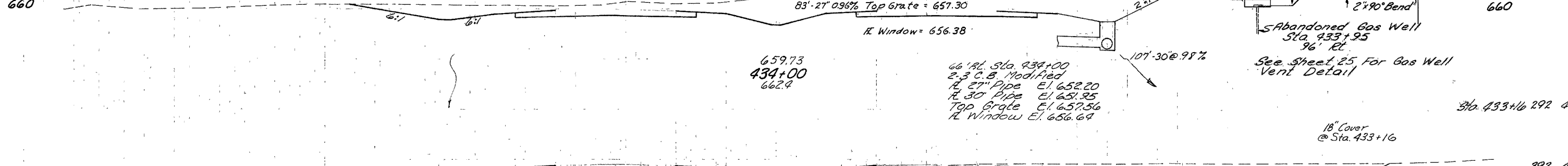
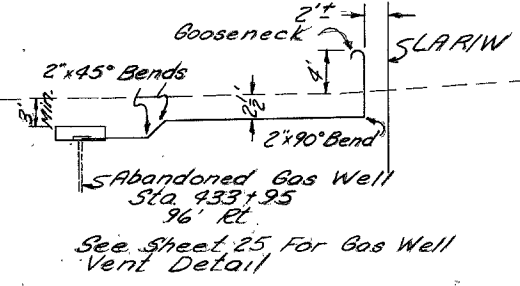


66' Lt Sta. 435+00  
Std. 2" x 2" C.B.  
R. 12" Pipe = 654.75  
R. 21" Pipe = 654.0  
Top Grate = 658.56  
R. Window = 658.06  
Class F-4  
12" x 20"  
6  
Sta. 435+06 Lt. 83'-21" 0.6% →

Sta. 434+50  
2-3 C.B. Mod  
R. 18" = 653.75  
FL 21" = 653.5  
R. 27" = 653.00  
Top Grate = 657.30  
R. Window = 656.38



66' Lt. Sta. 434+00  
2-3 C.B. Modified  
R. 27" Pipe El. 652.20  
R. 30" Pipe El. 651.25  
Top Grate El. 657.56  
R. Window El. 656.64

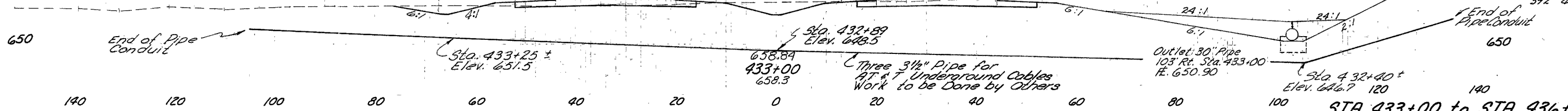


Sta. 433+25 ±  
Elev. 651.5

Three 3 1/2" Pipe for  
AT & T Underground Cables  
Work to be Done by Others

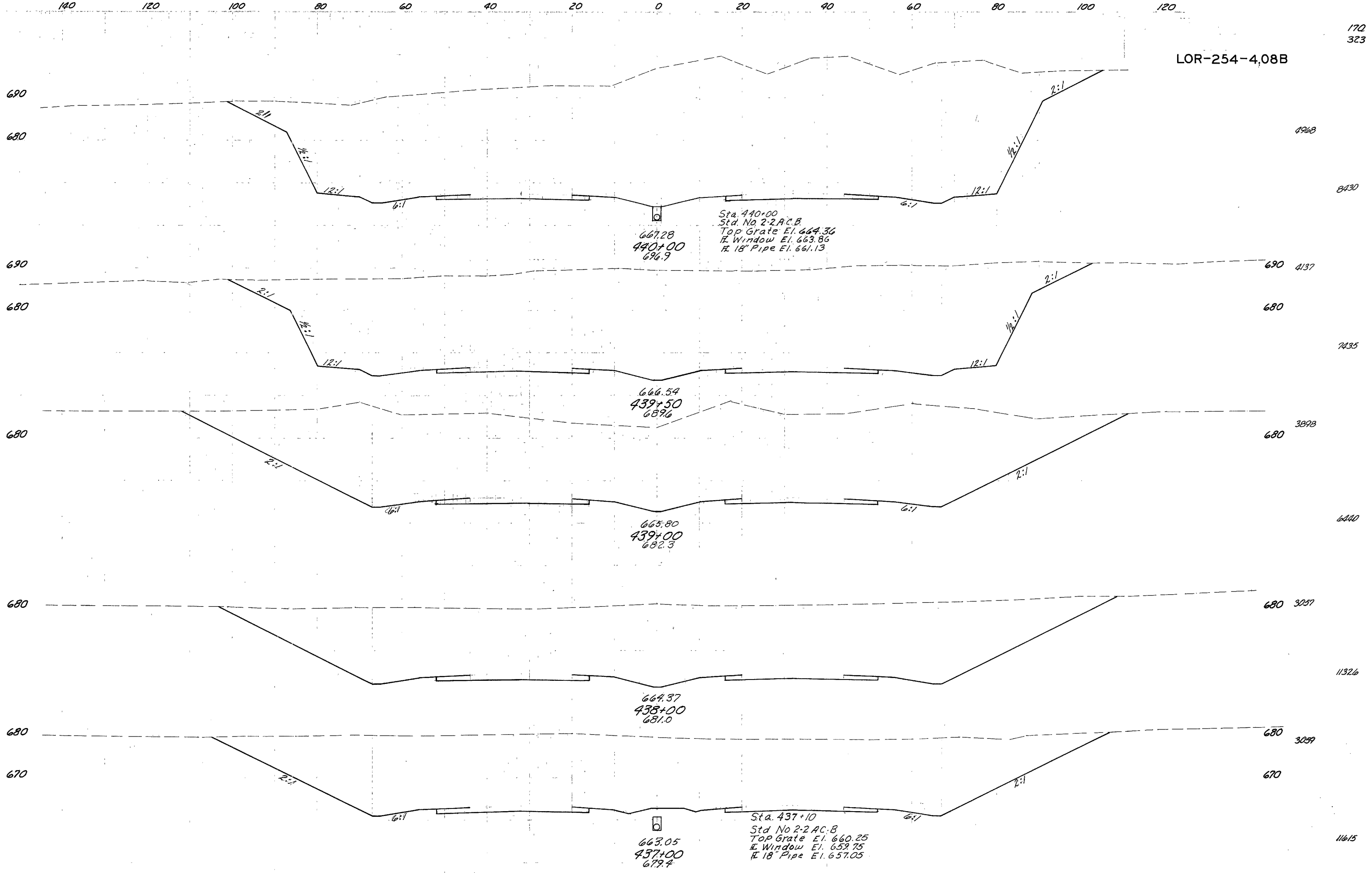
Outlet 30" Pipe  
103' Rt. Sta. 433+00  
E. 650.90

Sta. 432+40 ±  
Elev. 646.7



LOR-254-4,08B

170  
323

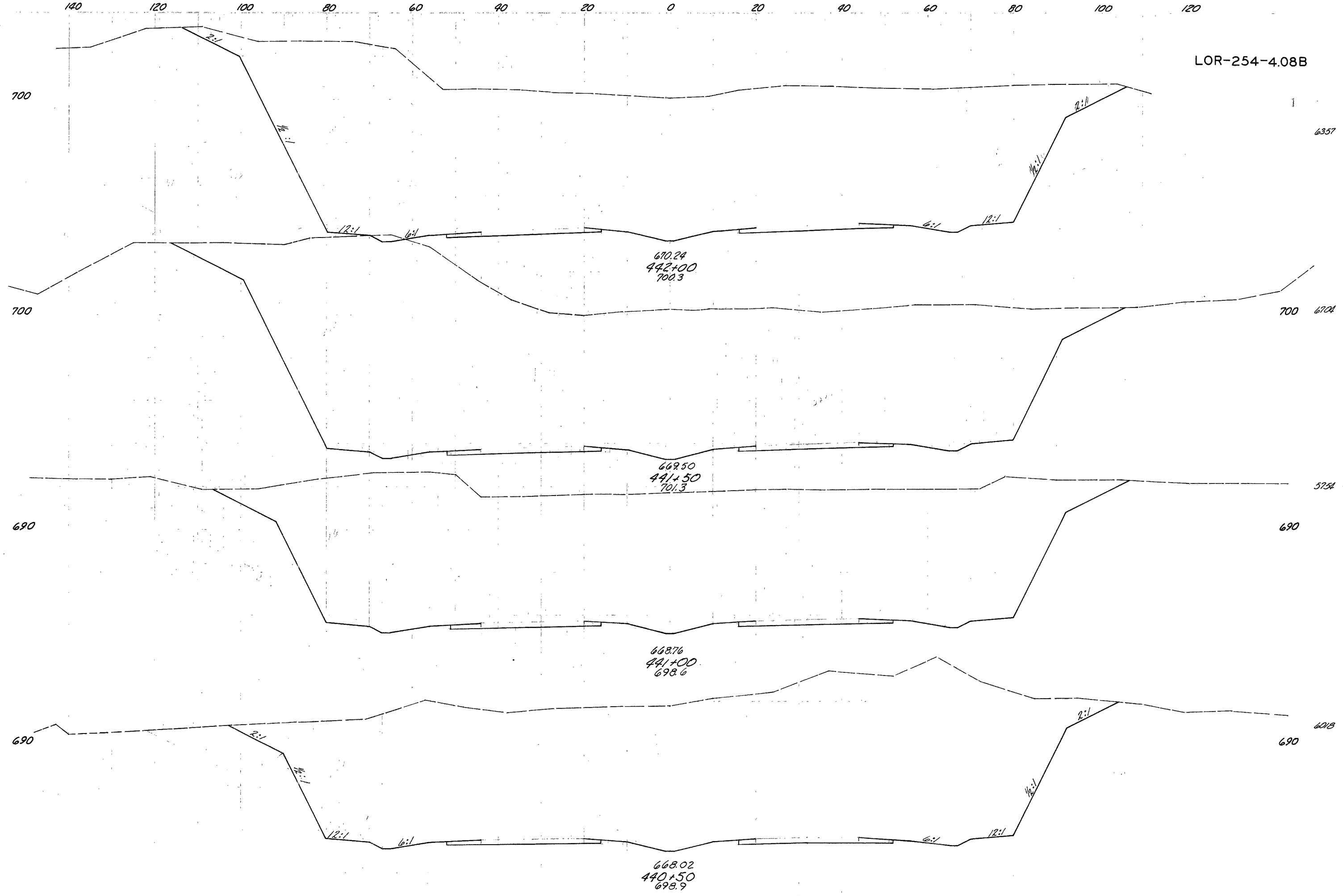


120 140  
STA. 437+00 to STA. 440+00



LOR-254-4.08B

171  
323



6357

12088

700 6704

11535

5754

690

10920

690 6018

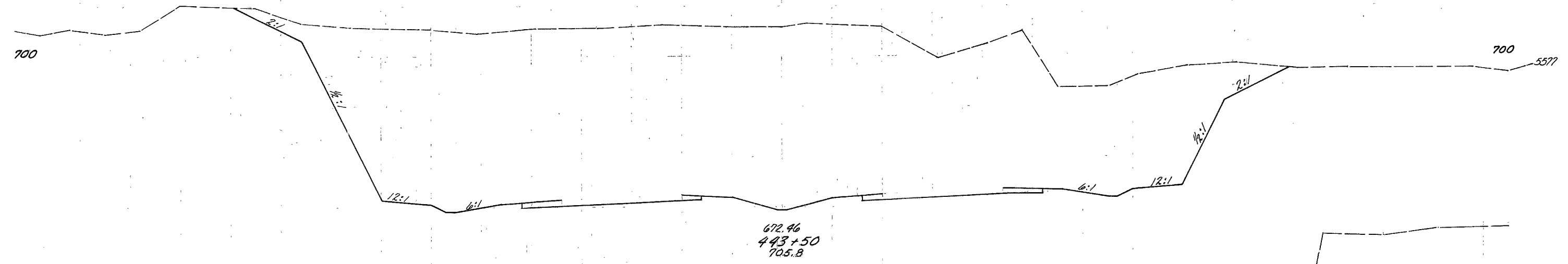
10172

120 140  
STA. 440+50 to STA. 442+00

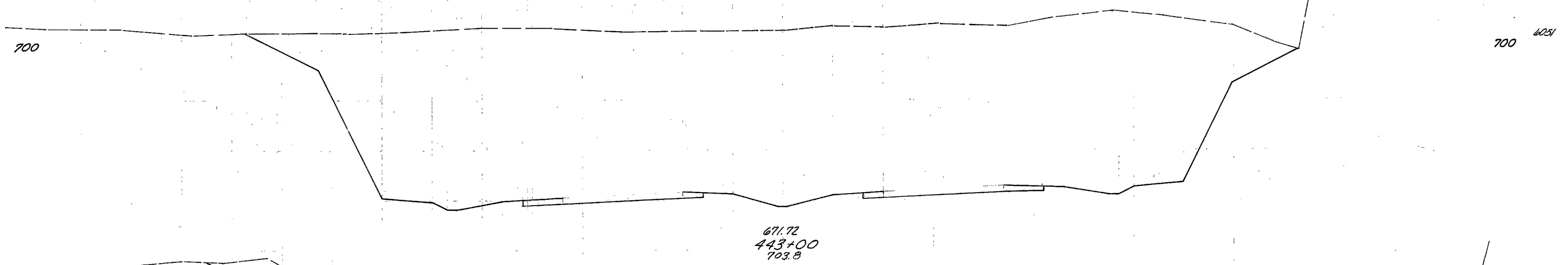
140 120 100 80 60 40 20 0 20 40 60 80 100 120

172  
323

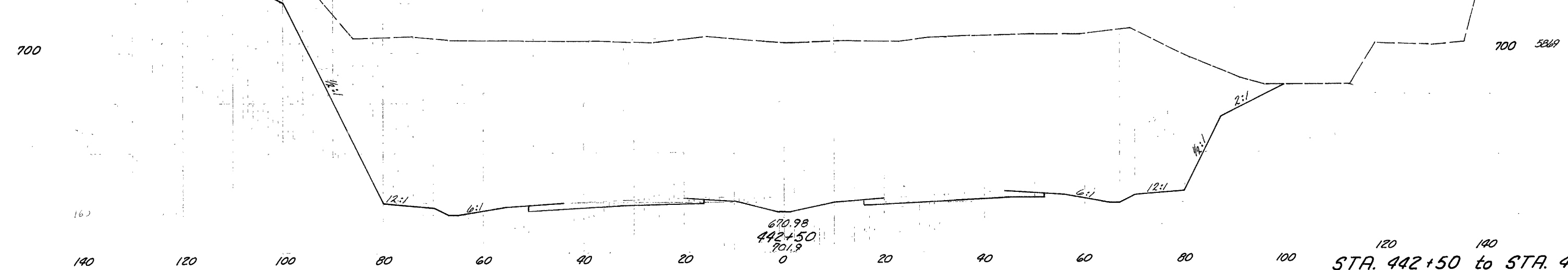
LOR-254-4.08B



10766



11039



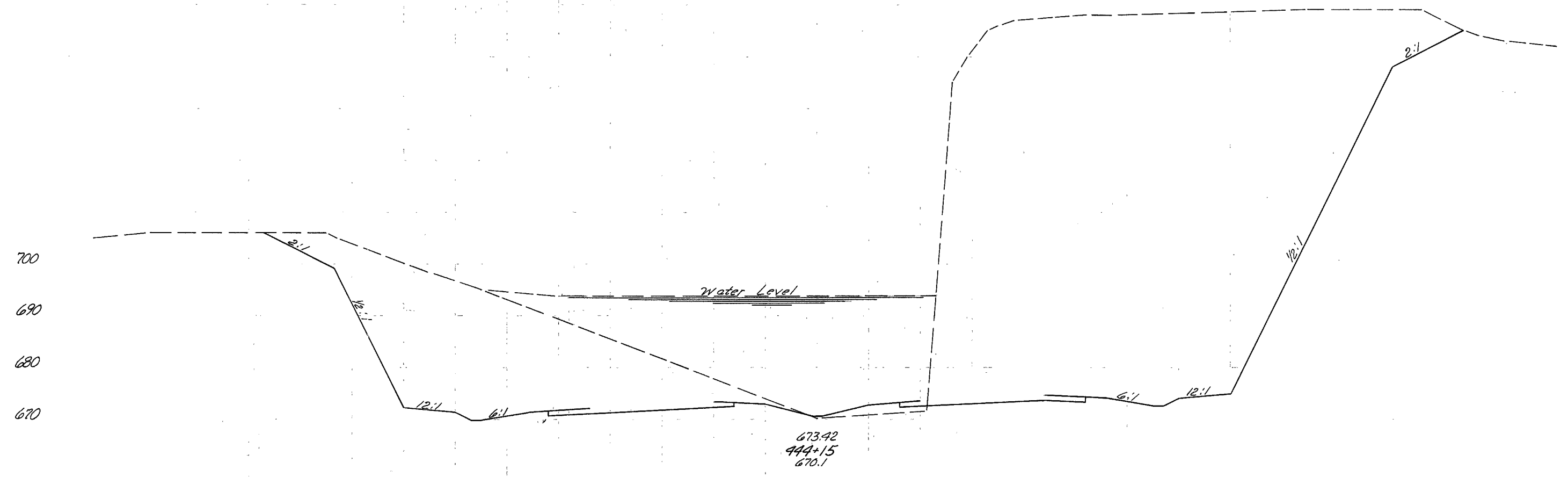
11315

120 140  
STA. 442+50 to STA. 443+50

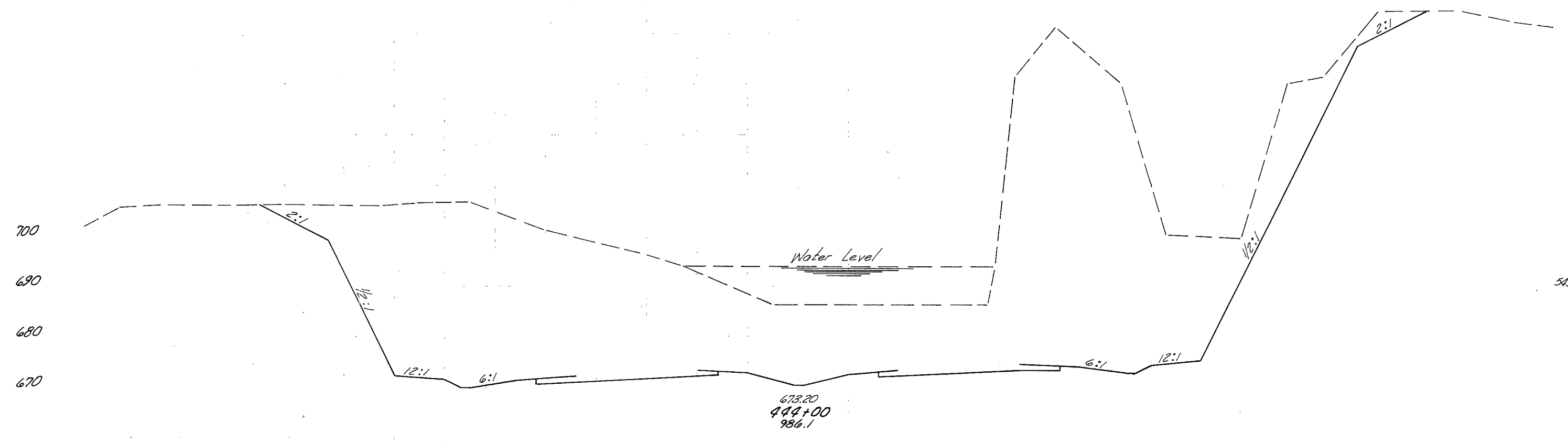
140 120 100 80 60 40 20 E 20 40 60 80 100 120

173  
323

LOR-254-408 B



6912.30



2636 B

5458 0

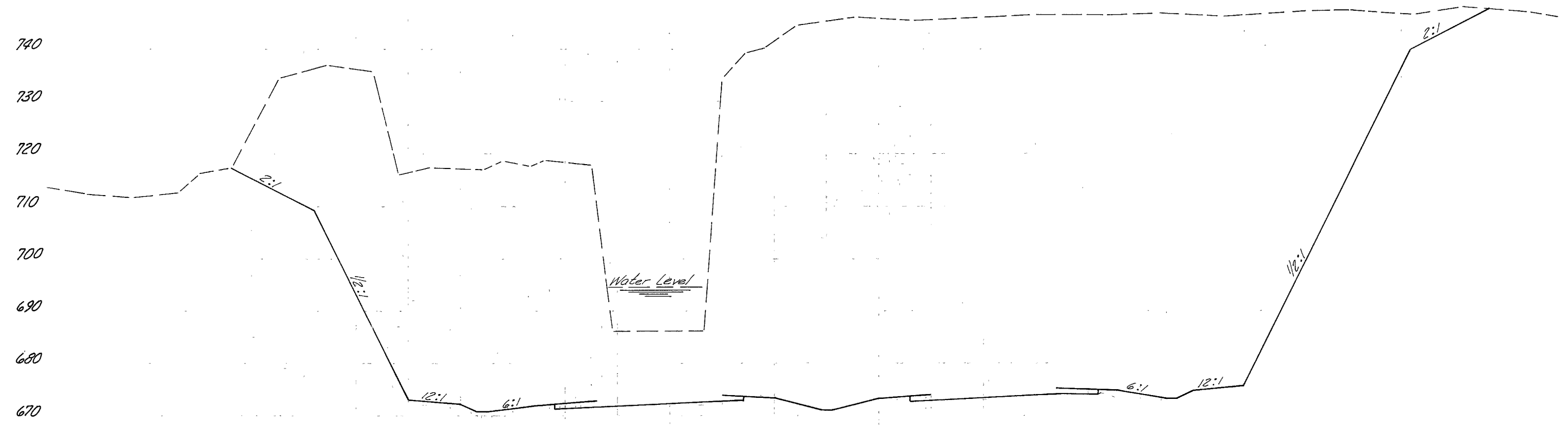
10218 0

140 120 100 80 60 40 20 E 20 40 60 80 100 120 140  
STA. 444+00 to STA. 444+15

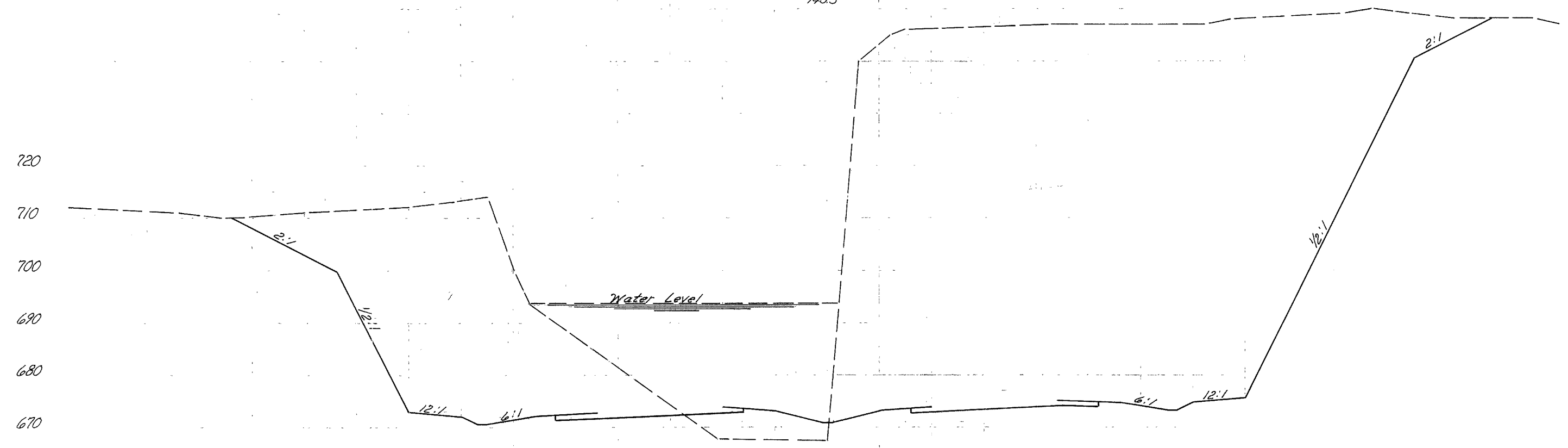
140 120 100 80 60 40 20 0 20 40 60 80 100 120

174  
323

LOR-254-408 B



673.94  
444+50  
745.5



673.72  
444+35  
667.3

140 120 100 80 60 40 20 0 20 40 60 80 100 120  
STA. 444+35 to STA. 444+50

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

175  
323

LOR-254-4.08B

730 730 11929

700

23779

675.42  
445+50  
737.5

740 740 13753

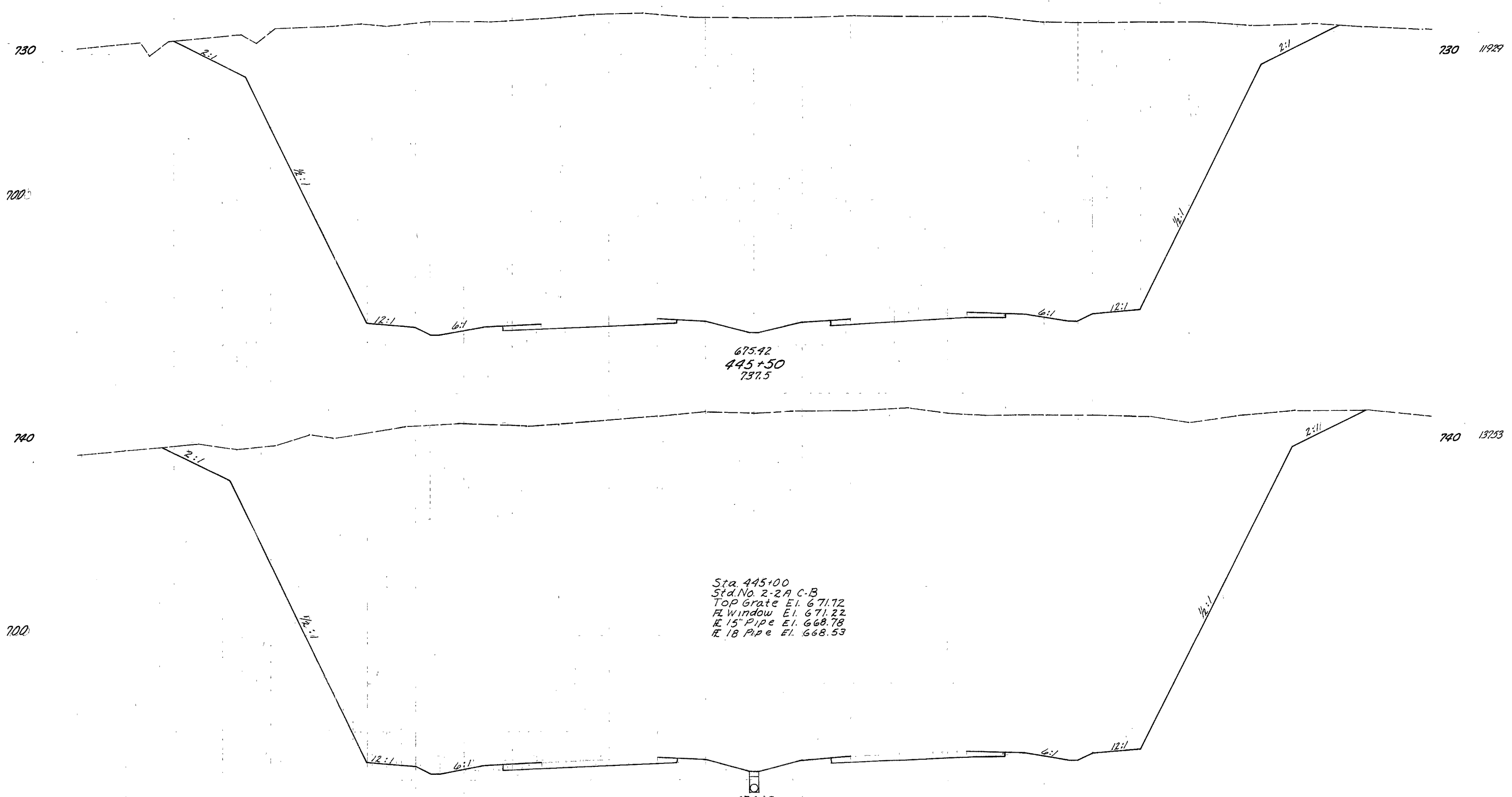
700

23447

Sta. 445+00  
Std. No. 2-2A C-B  
Top Grate El. 671.12  
FL Window El. 671.22  
R 15" Pipe El. 668.78  
R 18" Pipe El. 668.53

674.68  
445+00  
715.9

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
STA. 445+00 to STA. 445+50



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

176  
323

LOR-254-4.08B

710

700

7246

14366

677.64  
447+00  
716.7

720

700

8269

16422

676.90  
446+50  
722.7

720

700

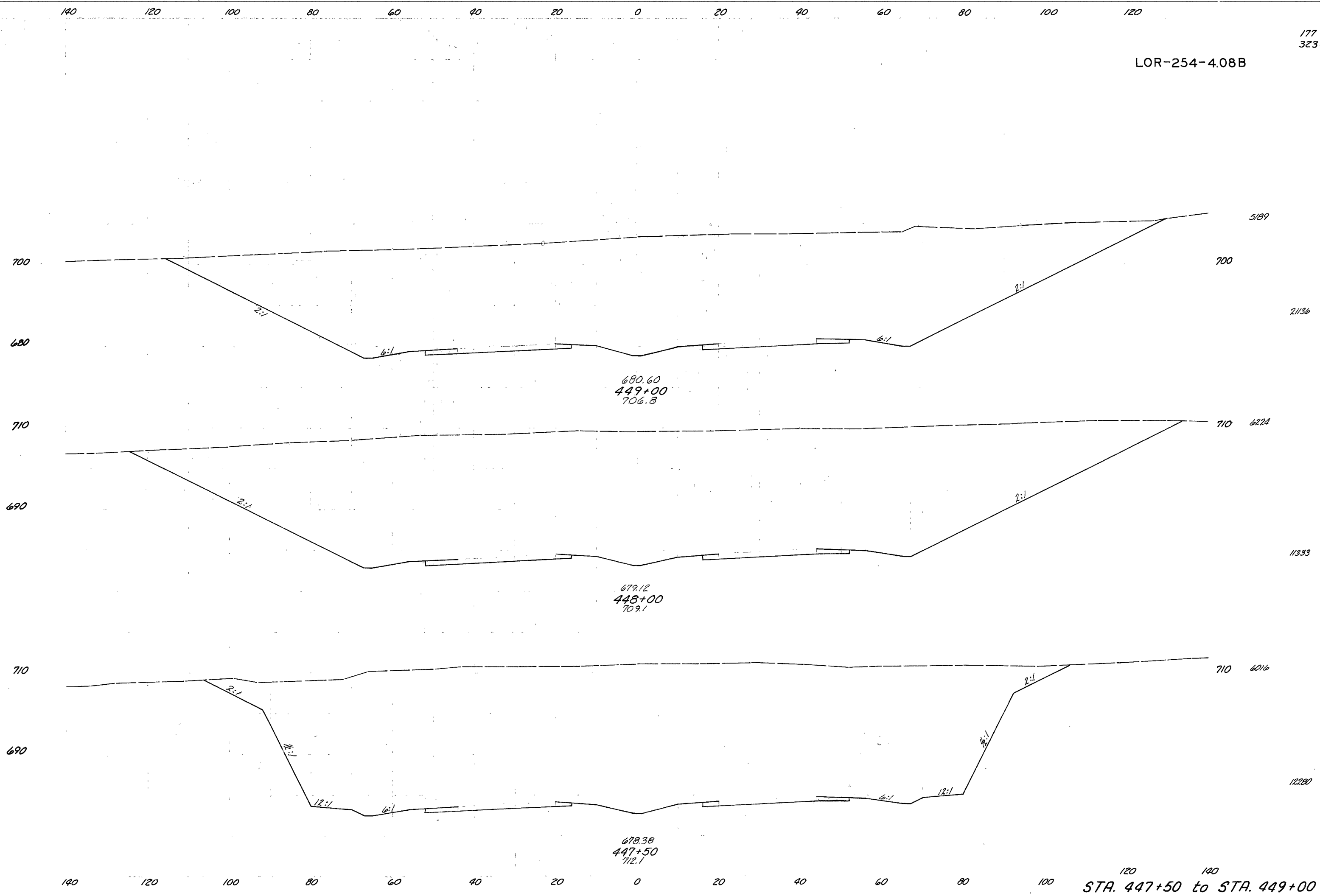
9467

12814

676.16  
446+00  
725.2

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

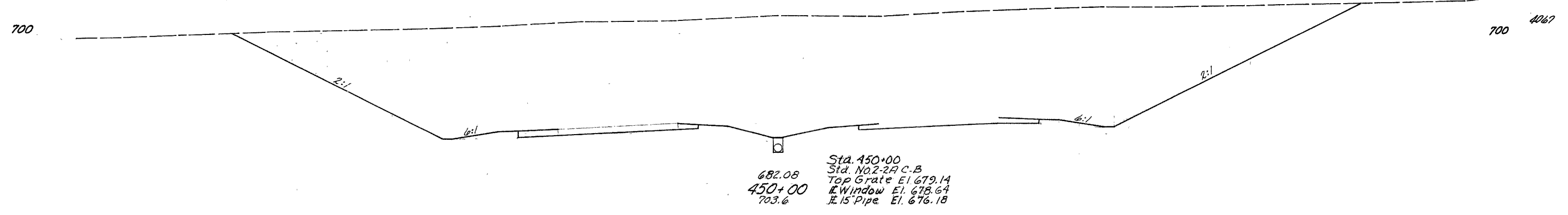
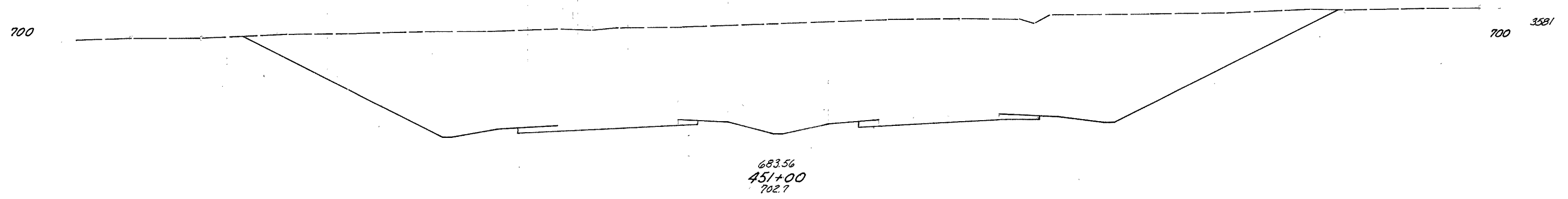
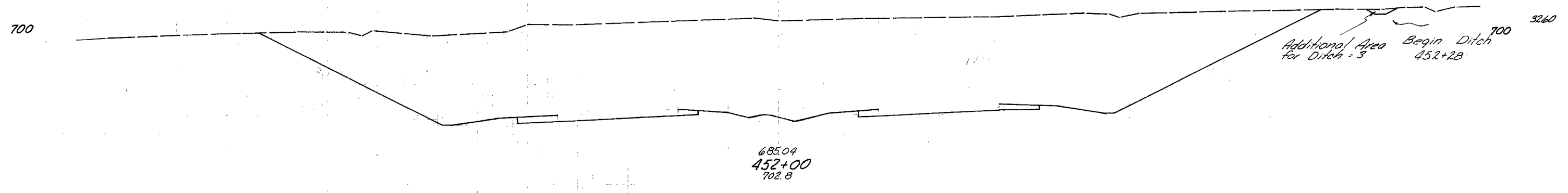
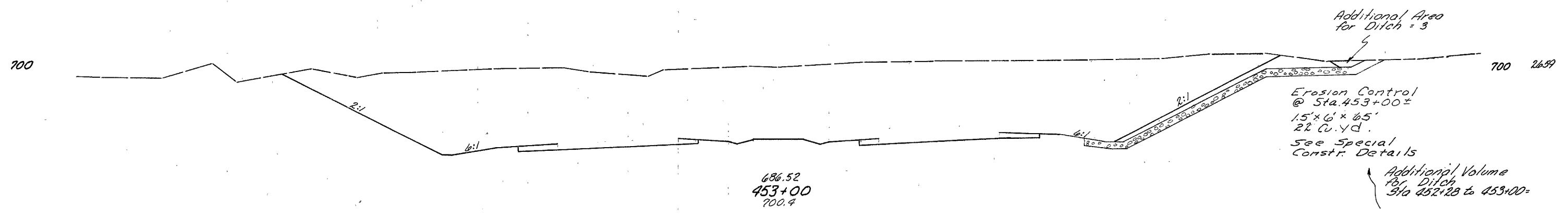
120 140  
STA. 446+00 to STA. 447+00



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

178  
323

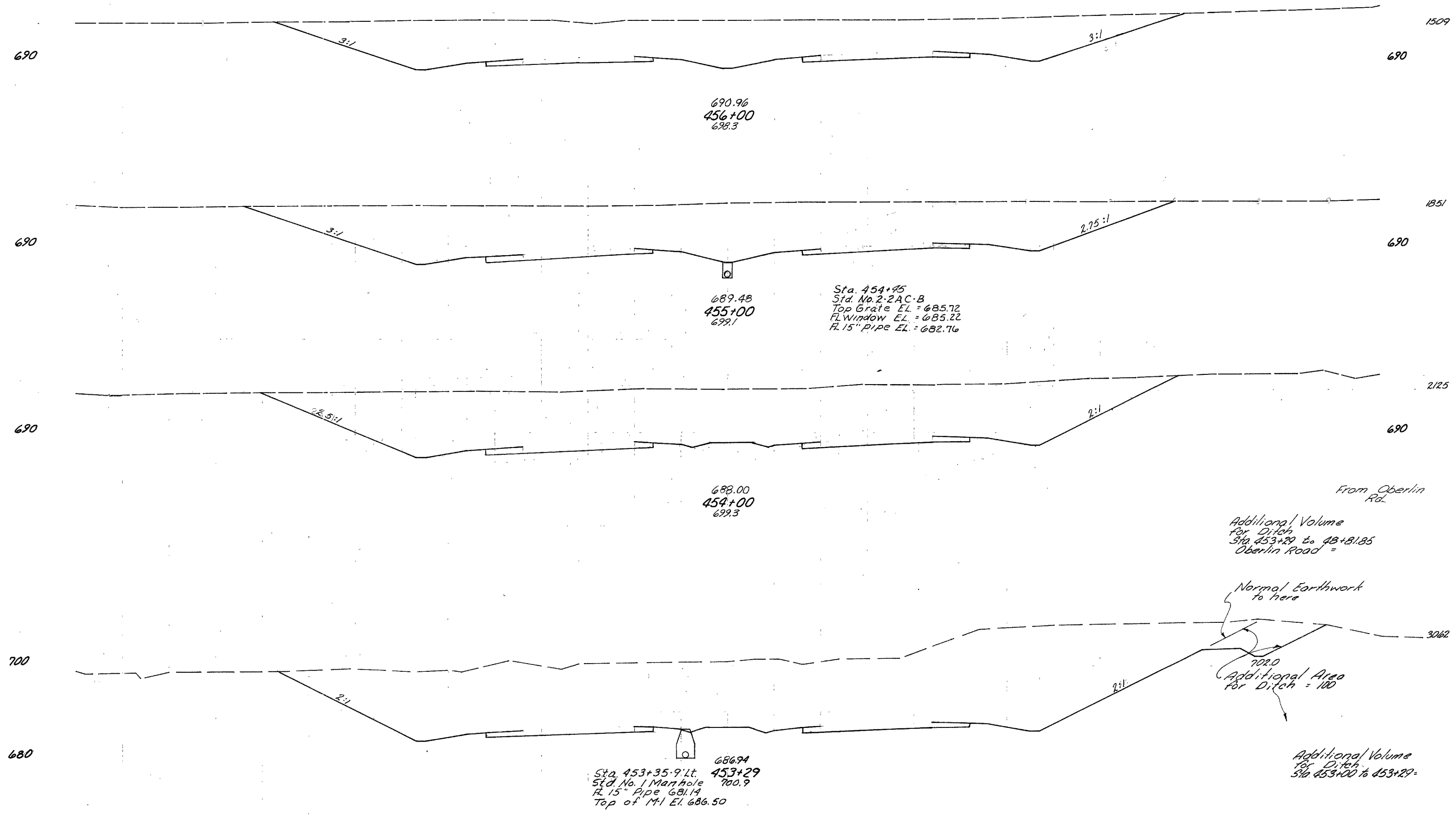
LOR-254-4.08B



140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
STA. 450+00 to STA. 453+00



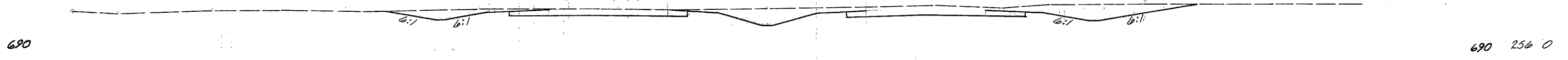
LOR-254-4.08B



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

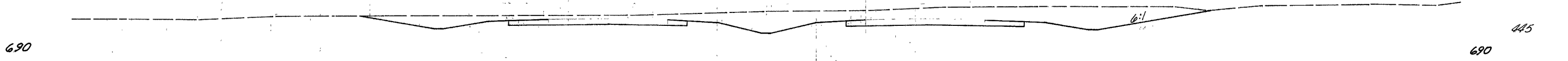
180  
323

LOR-254-4.08B



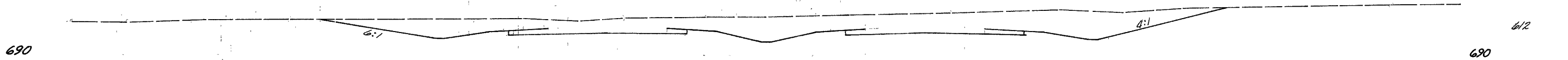
697.97  
461+00  
698.3

1298



696.79  
460+00  
698.4

1957



695.40  
459+00  
697.8

2817



693.92  
458+00  
695.0

3696



692.44  
457+00  
698.0

4808

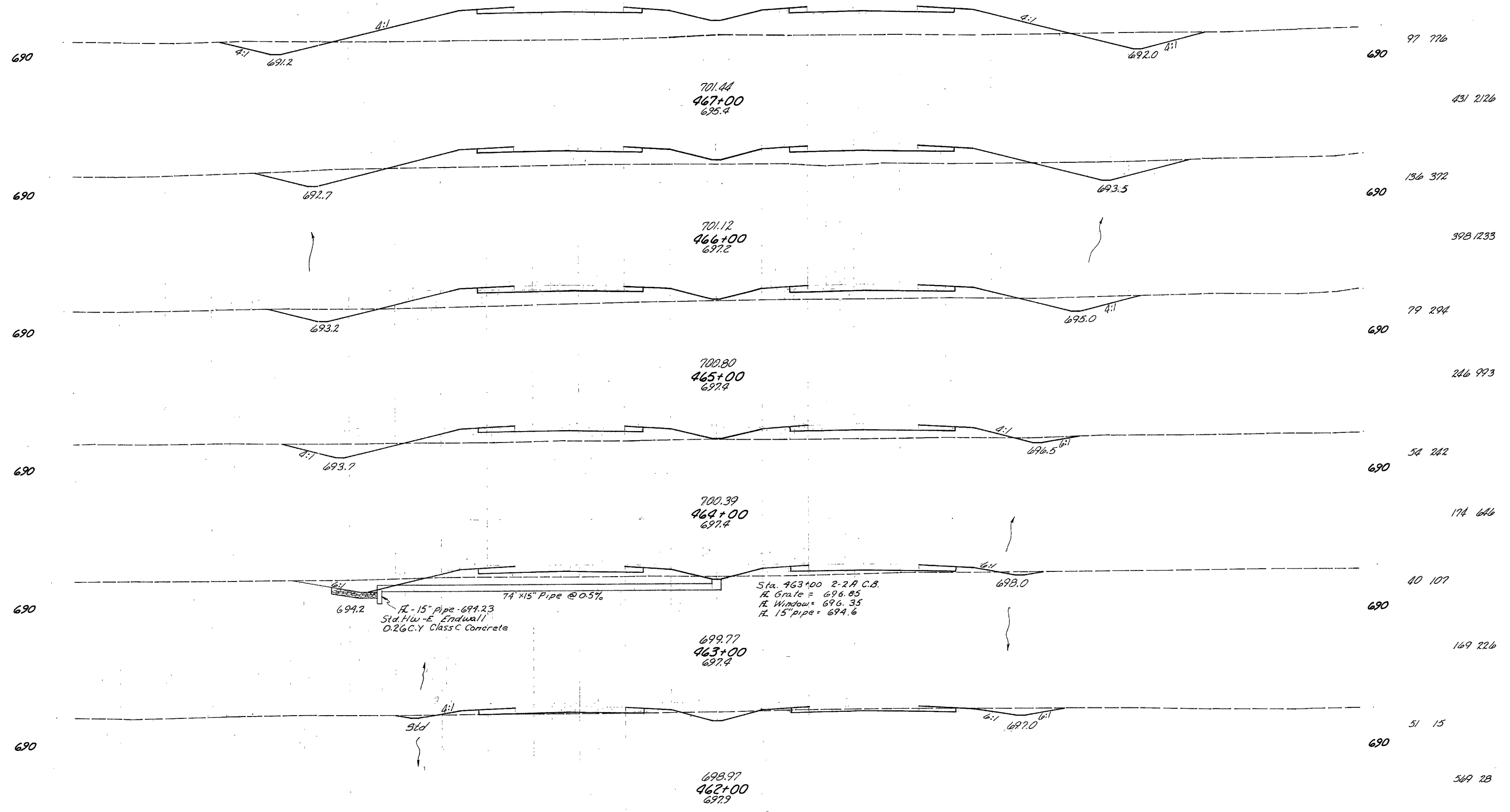
140 120 100 80 60 40 20 0 20 40 60 80 100

120 140  
STA. 457+00 to STA. 461+00

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

181  
323

LOR-254-4.08B



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

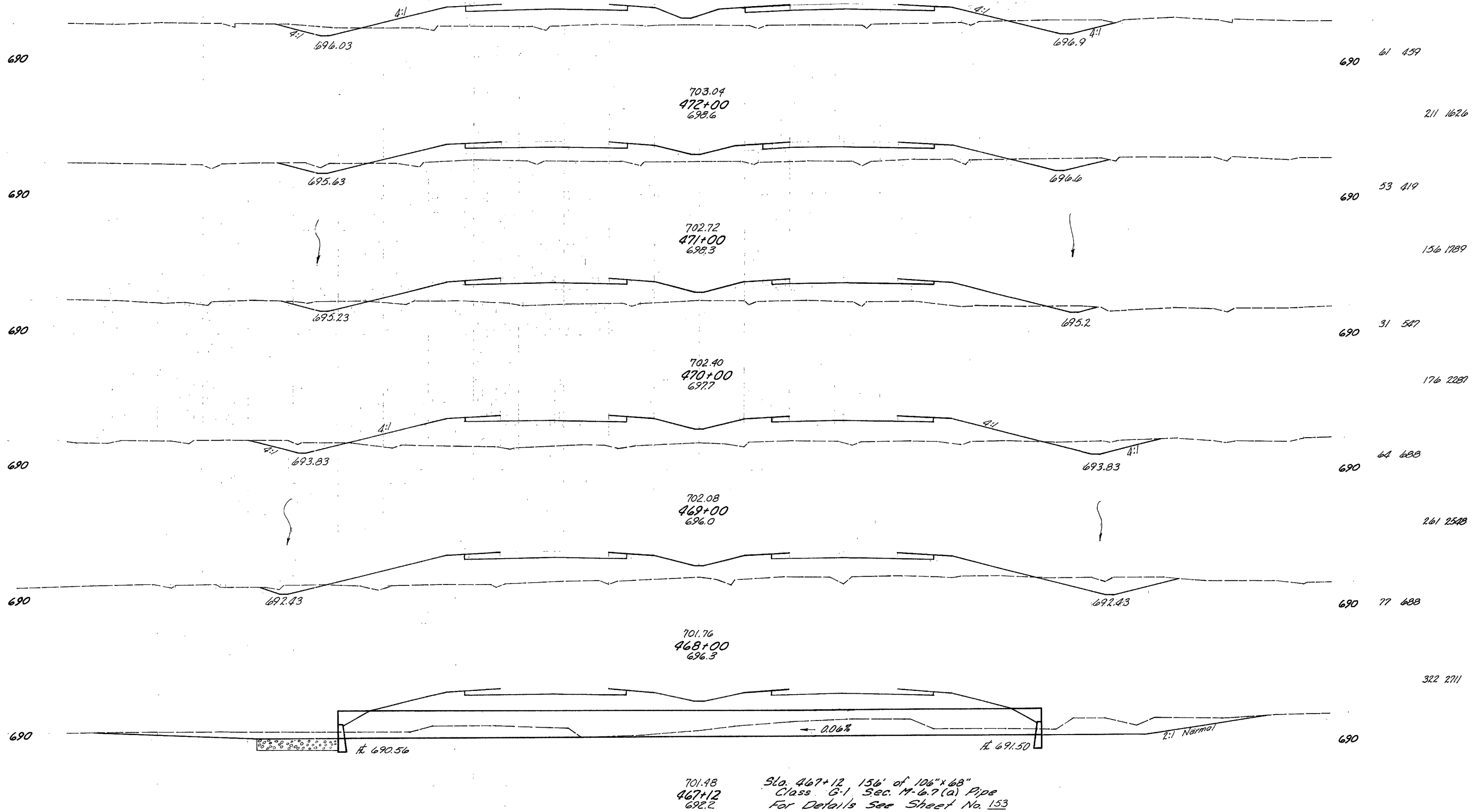
120 140  
STA. 462+00 to STA. 467+00

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

Sta. 472+70 Standard U-Turn  
Median Opening For Details  
& Quantities See Sheet No. 25

182  
323

LOR-254-4.08B



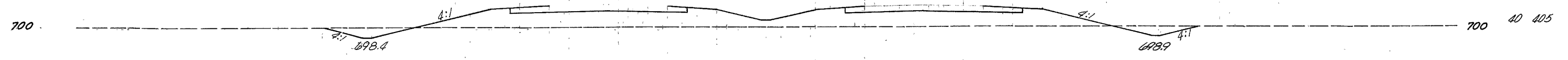
Sta. 467+12 156' of 106" x 68"  
Class G-1 Sec. M-6.7 (a) Pipe  
For Details See Sheet No. 153

140 120 100 80 60 40 20 0 20 40 60 80 100 120  
120 140  
STA. 467+13 to STA. 472+00

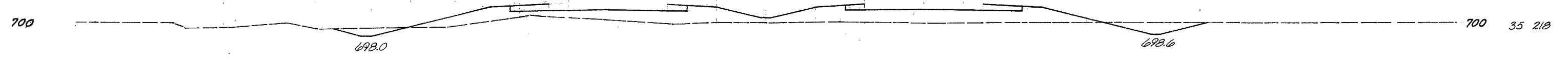
140 120 100 80 60 40 20 0 20 40 60 80 100 120

183  
323

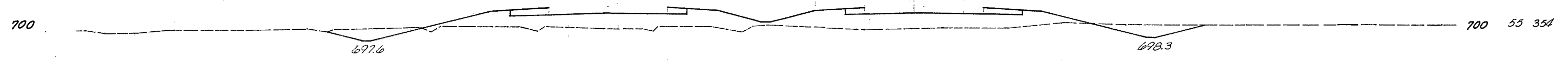
LOR-254-4.08B



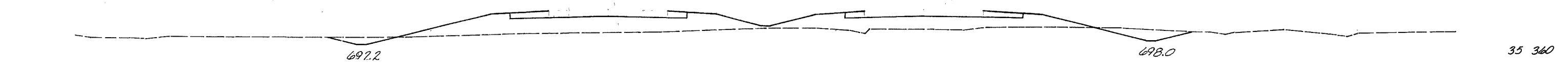
139 1154



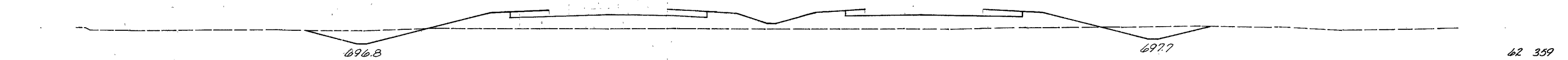
167 1059



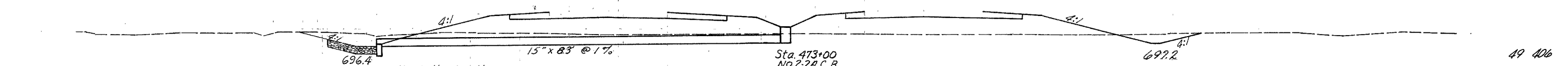
167 1322



180 1331



206 1417



204 1602

HWE Headwall  
0.26 C.Y Class C Concrete

15" x 83" @ 1%

Sta. 473+00  
No. 2-24 C.B.  
Top Grate El. = 700.44  
H Window El. = 699.94  
H 15" Pipe El. = 697.21

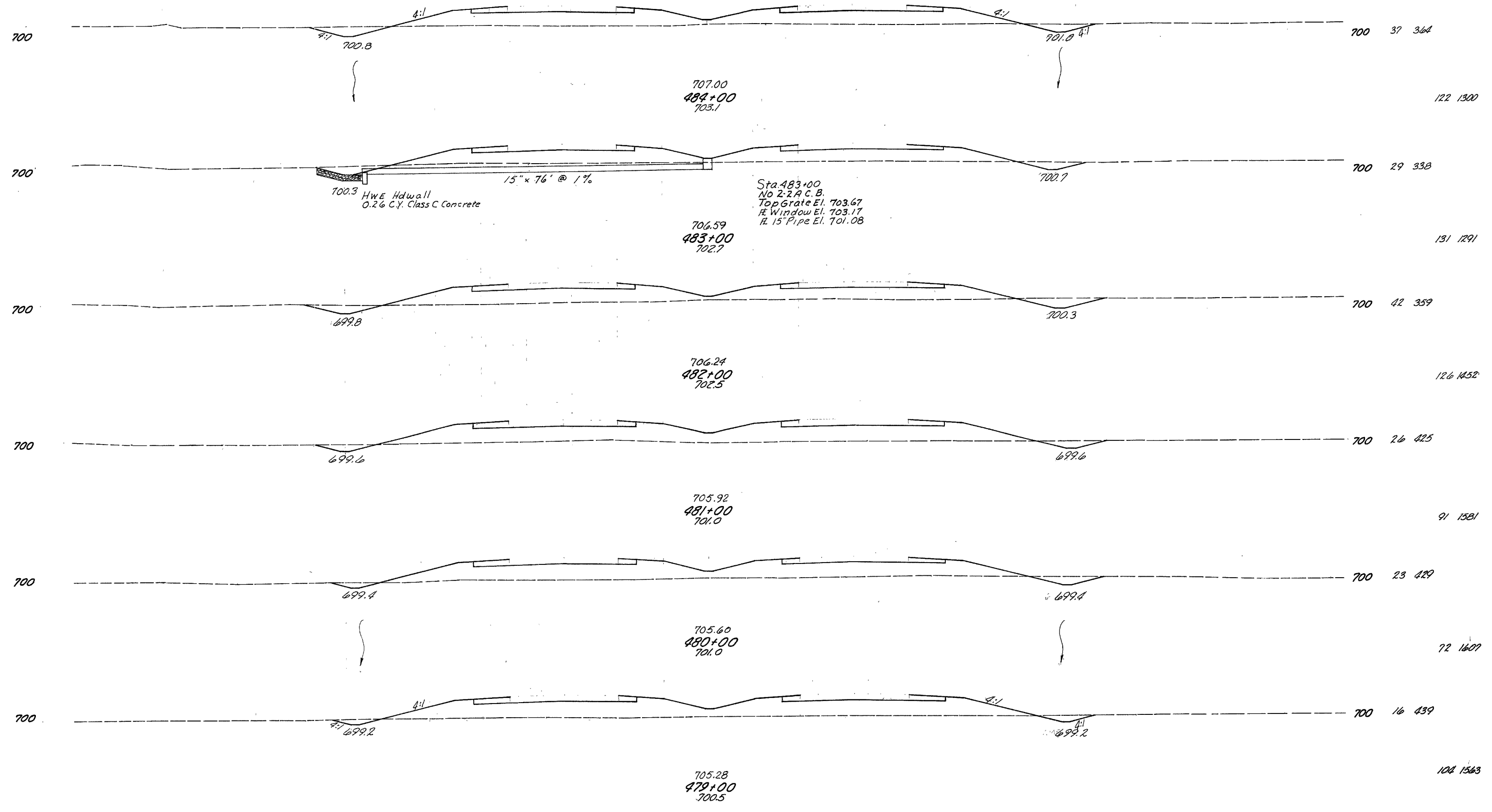
140 120 100 80 60 40 20 0 20 40 60 80 100

120 140  
STA. 473+00 to STA. 478+00

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

184  
323

LOR-254-4.08B



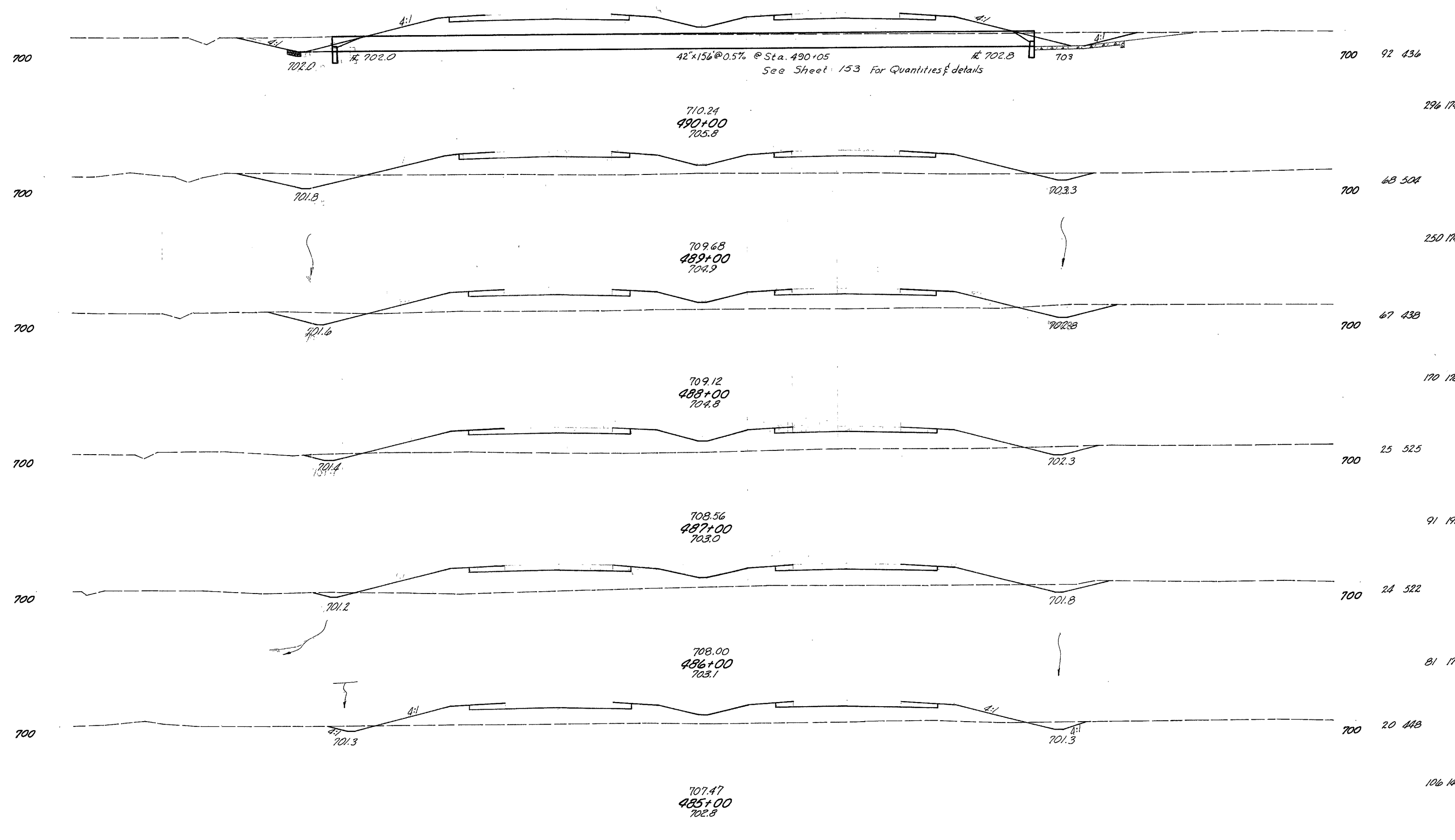
140 120 100 80 60 40 20 0 20 40 60 80 100

120 140  
STA. 479+00 to STA. 484+00

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

185  
323

LOR-254-4.08B



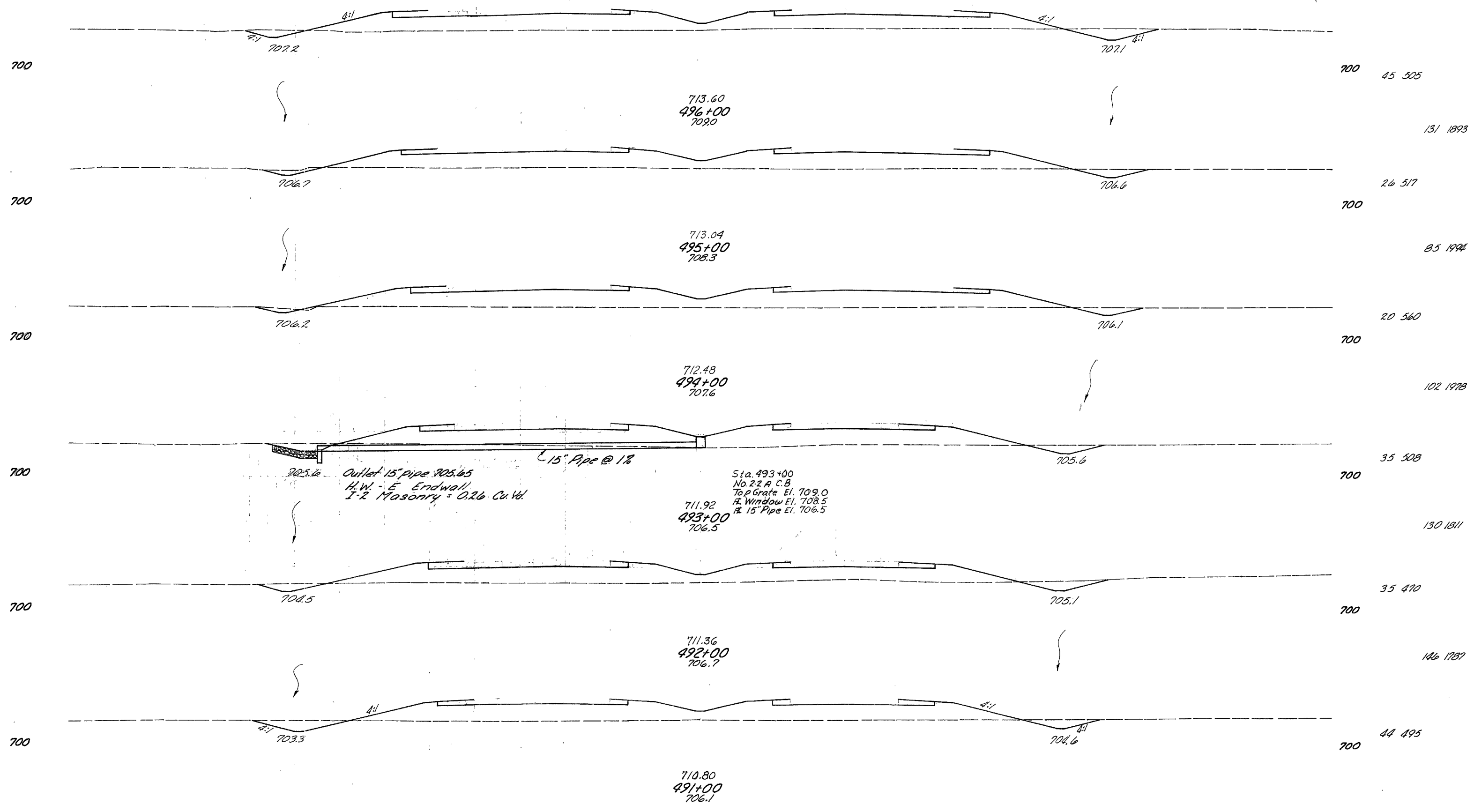
140 120 100 80 60 40 20 0 20 40 60 80 100

120 140  
STA. 485+00 to STA. 490+00

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

186  
323

LOR-254-4.08B



140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
STA. 491+00 to STA. 496+00

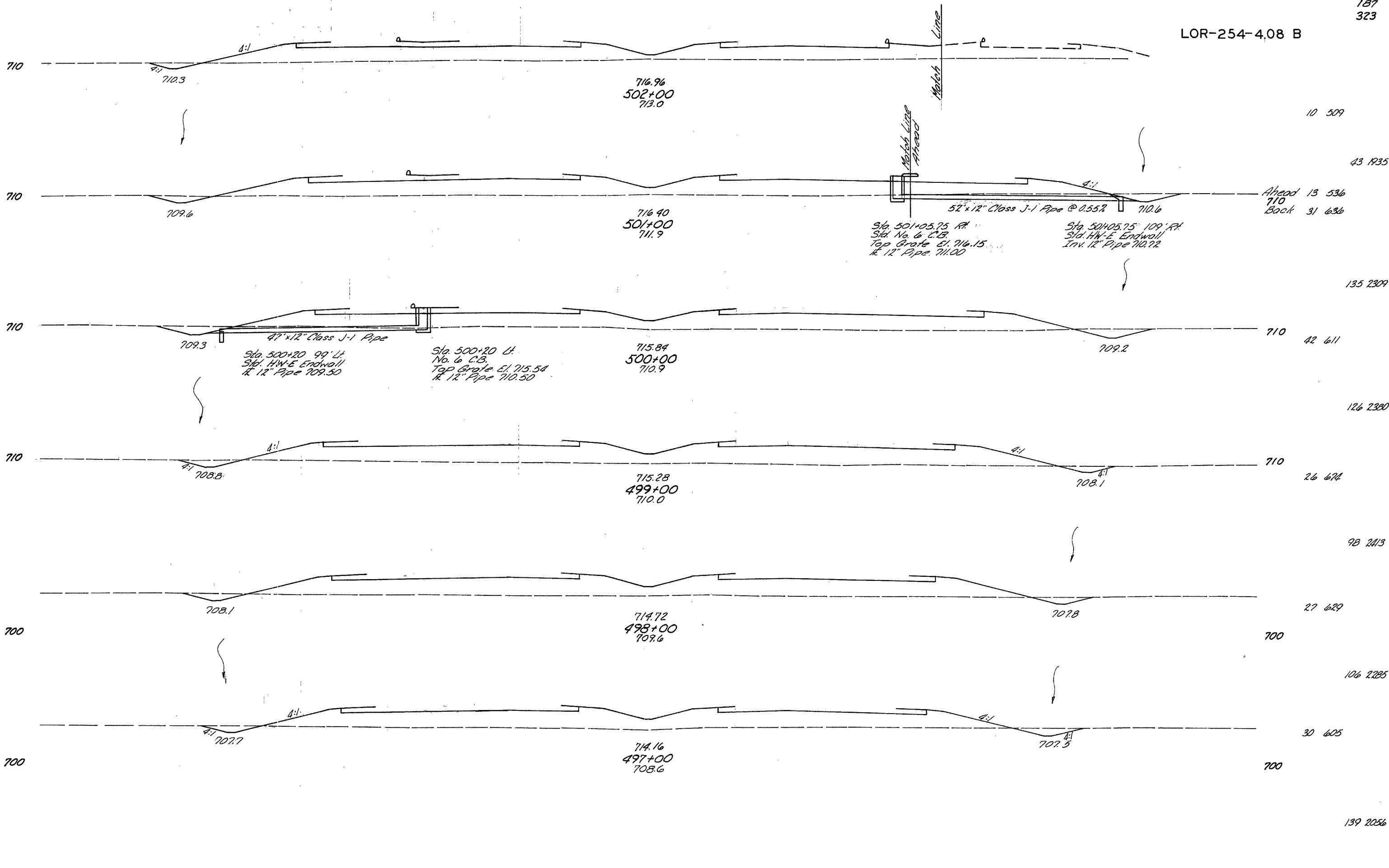
252 1724



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

187  
323

LOR-254-4.08 B



10 509  
 43 1935  
 Ahead 13 536  
 Back 31 636  
 135 2309  
 42 611  
 126 2380  
 26 674  
 98 2413  
 27 629  
 106 2285  
 30 605  
 139 2056

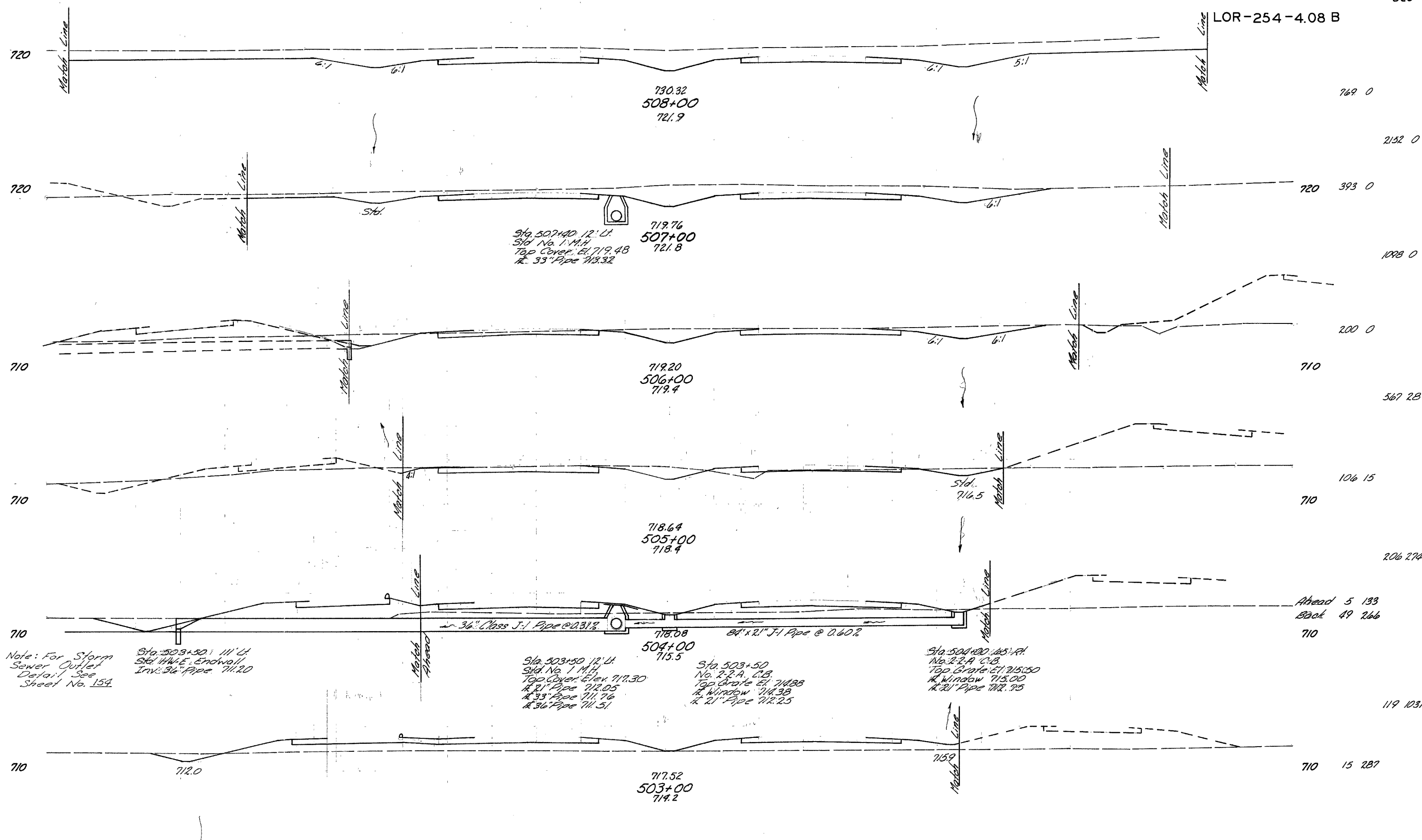
140 120 100 80 60 40 20 0 20 40 60 80 100 120

120 140  
STA. 497+00 to STA. 502+00

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

188  
323

LOR-254-4.08 B



730.32  
508+00  
721.9

Sta. 507+40 12' Lt.  
Std. No. 1 M.H.  
Top Cover Elev. 719.48  
R. 33" Pipe 715.32

719.76  
507+00  
721.8

719.20  
506+00  
719.4

718.64  
505+00  
718.4

718.08  
504+00  
715.5

Sta. 503+50 12' Lt.  
Std. No. 1 M.H.  
Top Cover Elev. 717.30  
R. 21" Pipe 712.05  
R. 33" Pipe 711.76  
R. 36" Pipe 711.51

Sta. 503+50  
No. 2-2-A C.B.  
Top Grate Elev. 714.88  
R. Window 714.35  
R. 21" Pipe 712.25

Sta. 504+00 165' Rt.  
No. 2-2-A C.B.  
Top Grate Elev. 715.00  
R. Window 715.00  
R. 21" Pipe 712.25

717.52  
503+00  
714.2

Note: For Storm  
Sewer Outlet  
Detail See  
Sheet No. 154

Sta. 503+50 111' Lt.  
Std. HW E. Endwall  
Inv. 36" Pipe 711.20

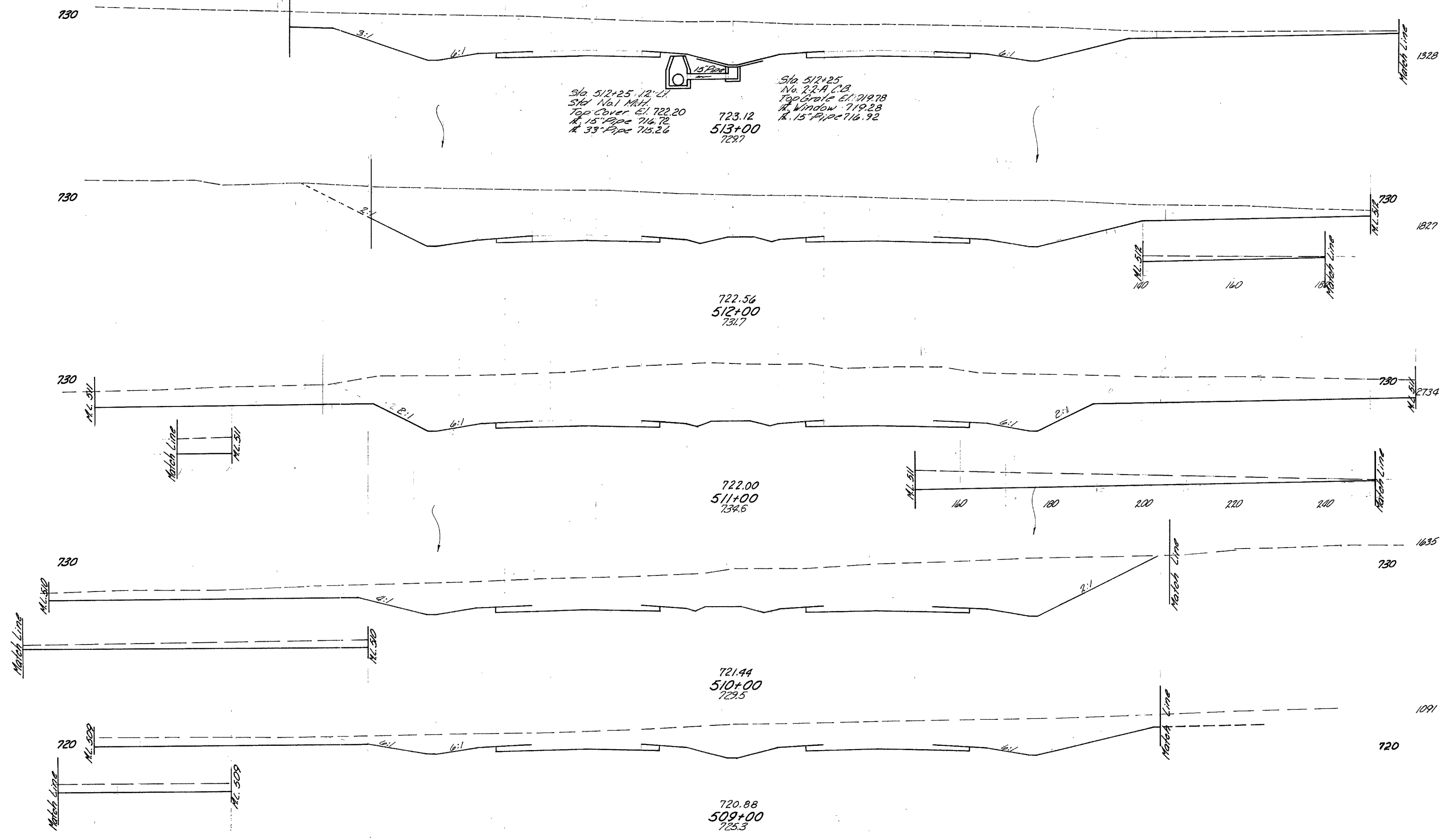
140 120 100 80 60 40 20 0 20 40 60 80 100 120 STA. 503+00 to STA. 508+00

46 1474

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

189  
323

LOR-254-4.08 B



5843

8446

8090

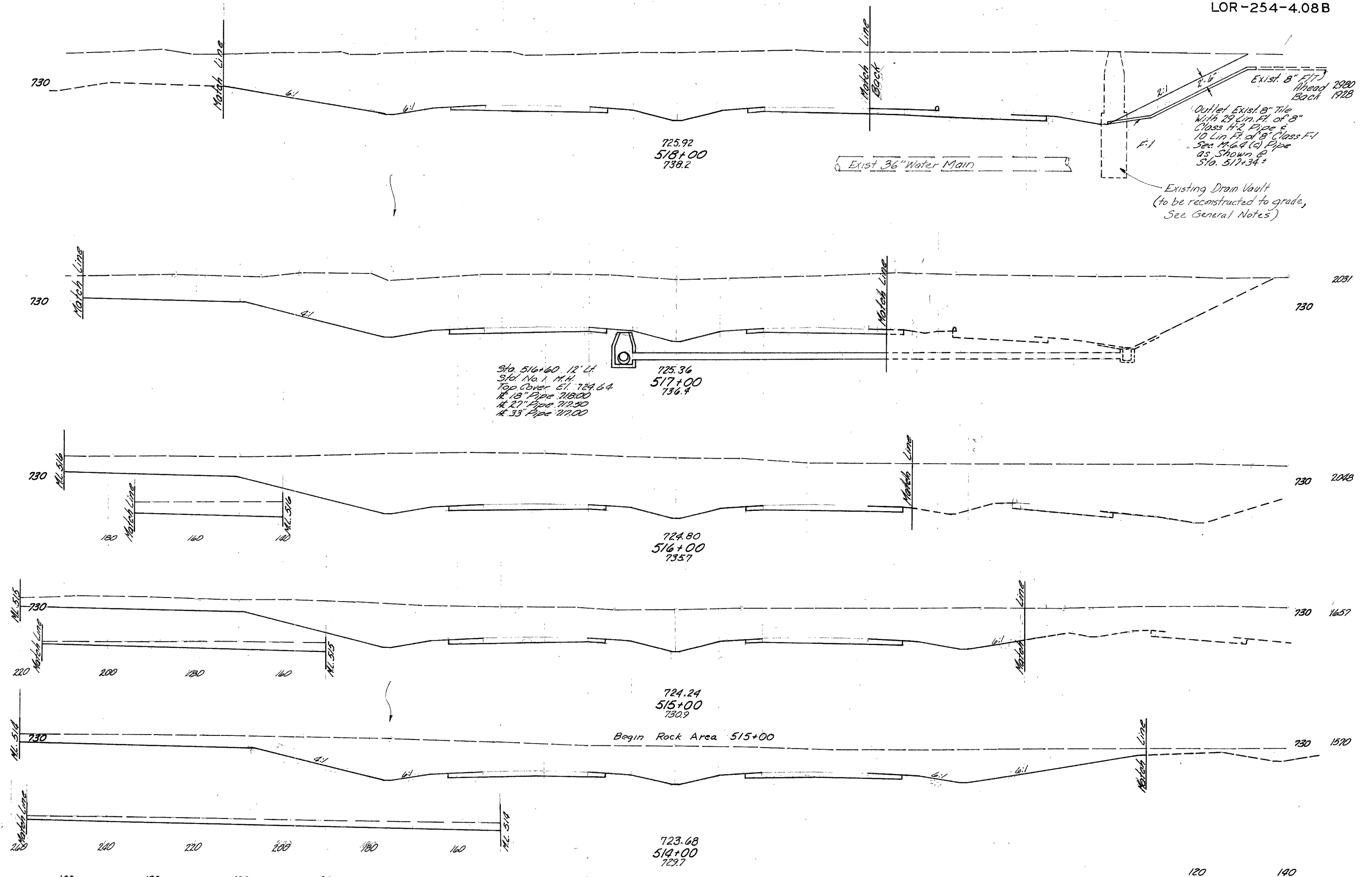
5008

3444

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

120 140  
STA. 509+00 to STA. 513+00

LOR-254-4.08B



Exist 8" FIT  
Ahead 1928  
Back 1928  
Outlet Exist 8" Tile  
With 29 Lin. Ft. of 8"  
Class H-2 Pipe &  
10 Lin. Ft. of 8" Class F-1  
Sec. M-6-4 (c) Pipe  
as Shown @  
Sta. 517+34±

Existing Drain Vault  
(to be reconstructed to grade,  
See General Notes)

Sta. 516+60 12' dia  
Std. No. 1 M.H.  
Top Cover El. 724.64  
# 18" Pipe 718.00  
# 20" Pipe 719.50  
# 33" Pipe 717.00

725.36  
517+00  
736.4

724.80  
516+00  
735.7

724.24  
515+00  
730.9

Begin Rock Area 515+00

723.68  
514+00  
729.7

7332

2091

730

7553

730

2048

6862

730

1657

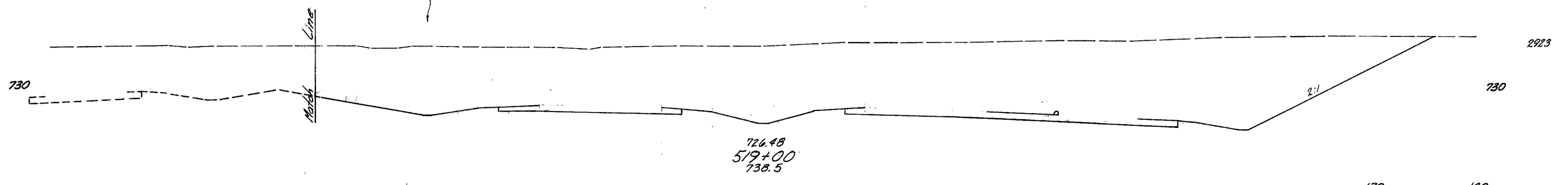
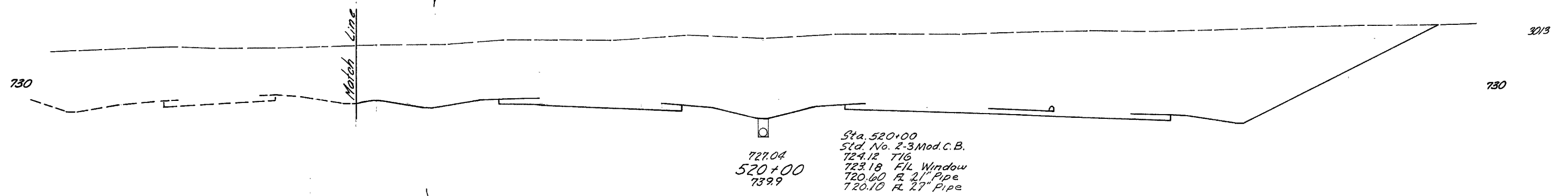
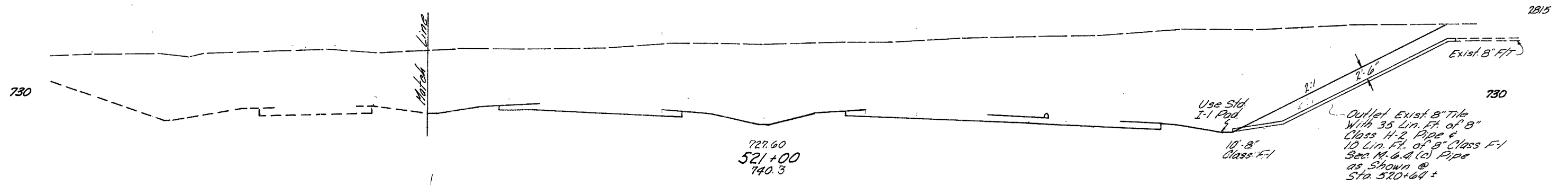
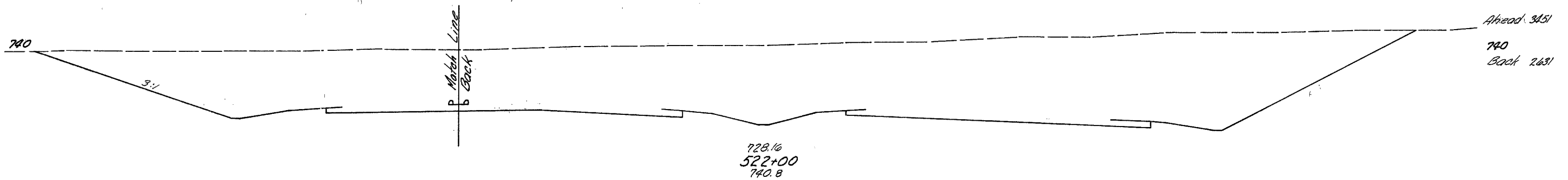
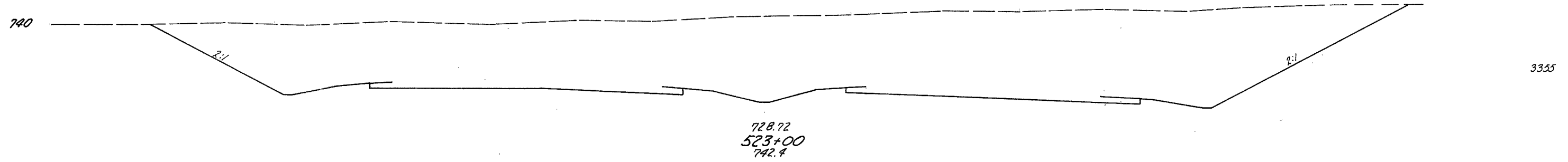
5976

730

1570

5367

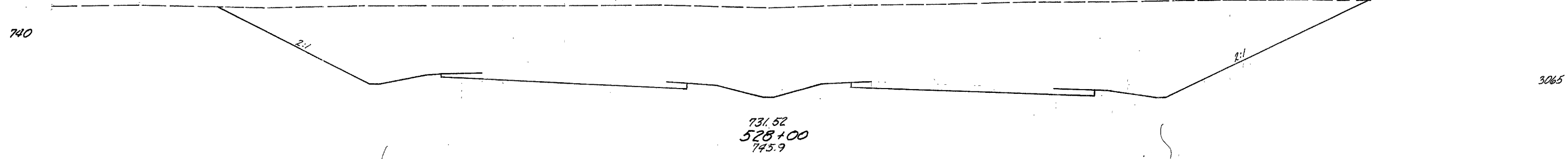
LOR-254-4.08 B



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

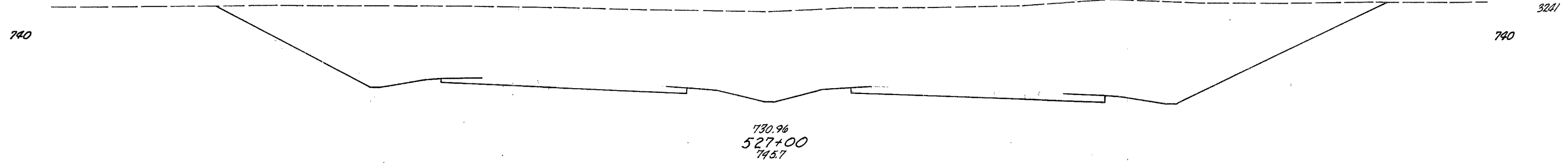
192  
323

LOR-254-4.08B



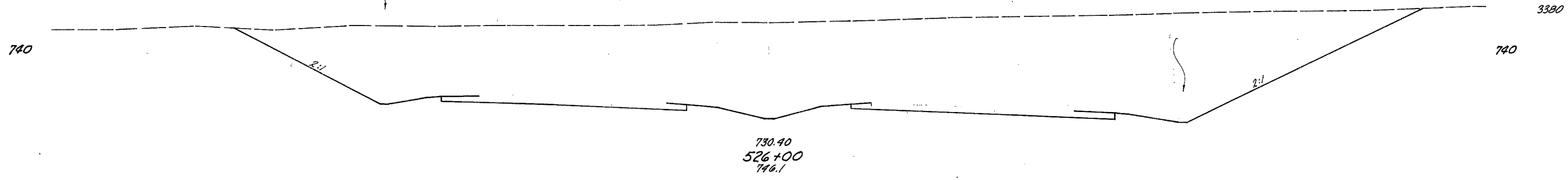
3065

11678



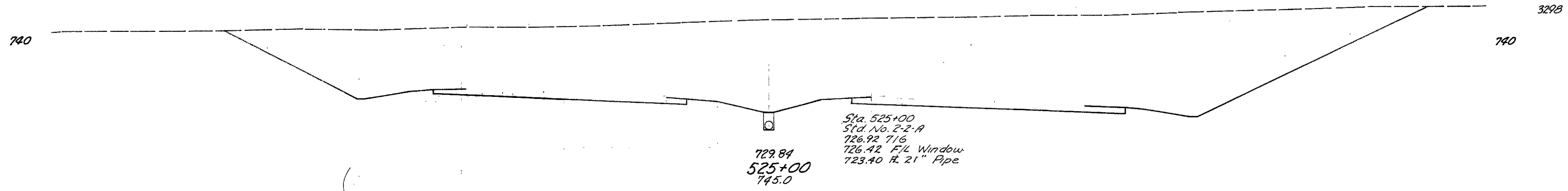
3241

12261



3380

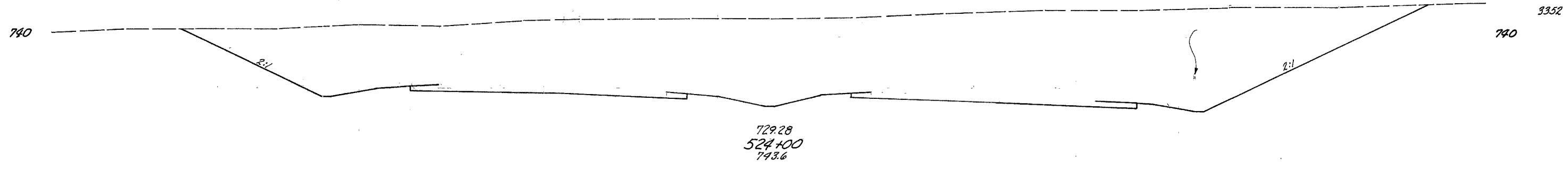
12367



3298

12315

Sta. 525+00  
Std. No. 2-2-A  
726.92 7/16  
726.42 F/4 Window  
723.40 Fl. 21" Pipe



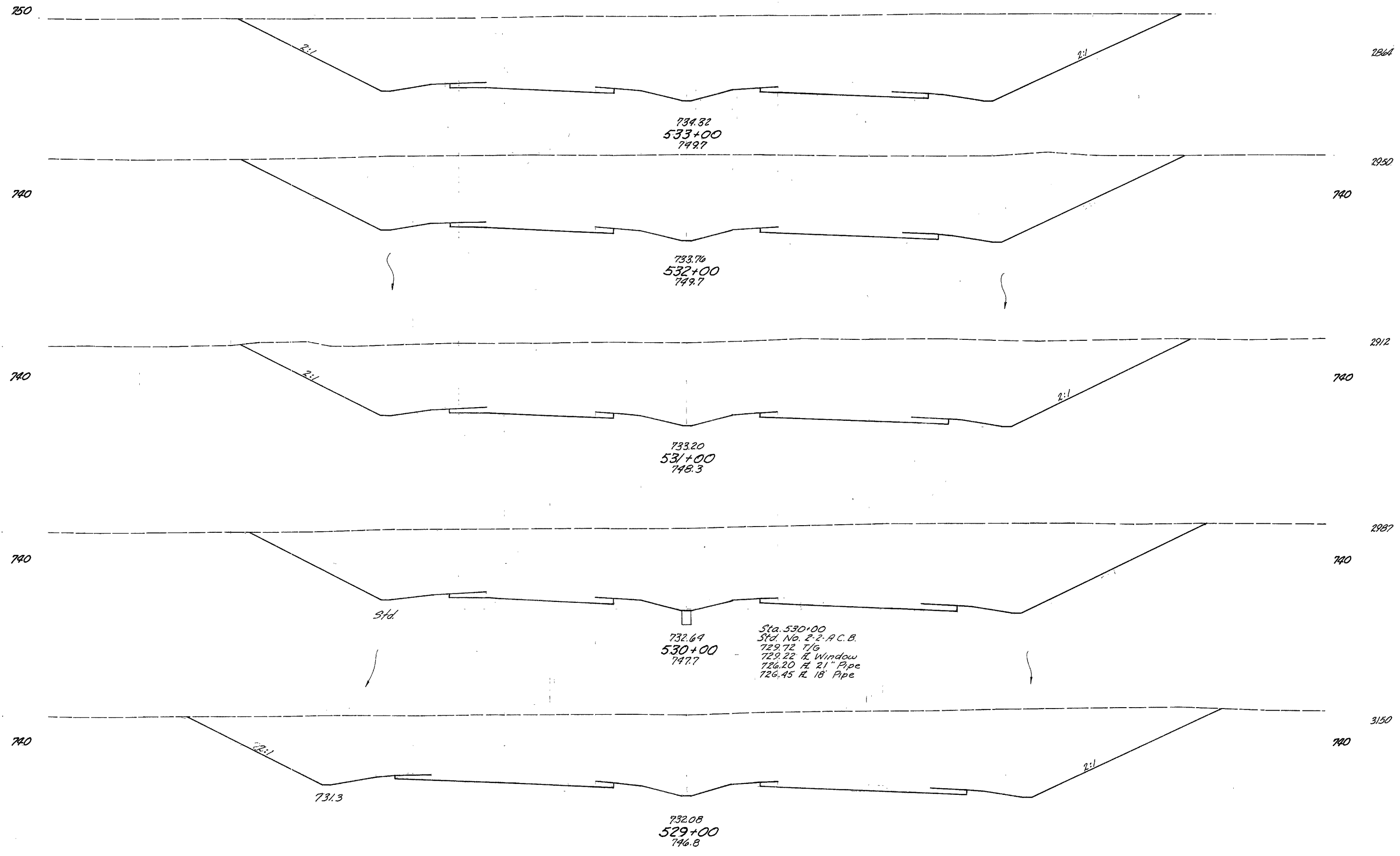
3352

12420

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

120 140  
STA. 524+00 to STA. 528+00

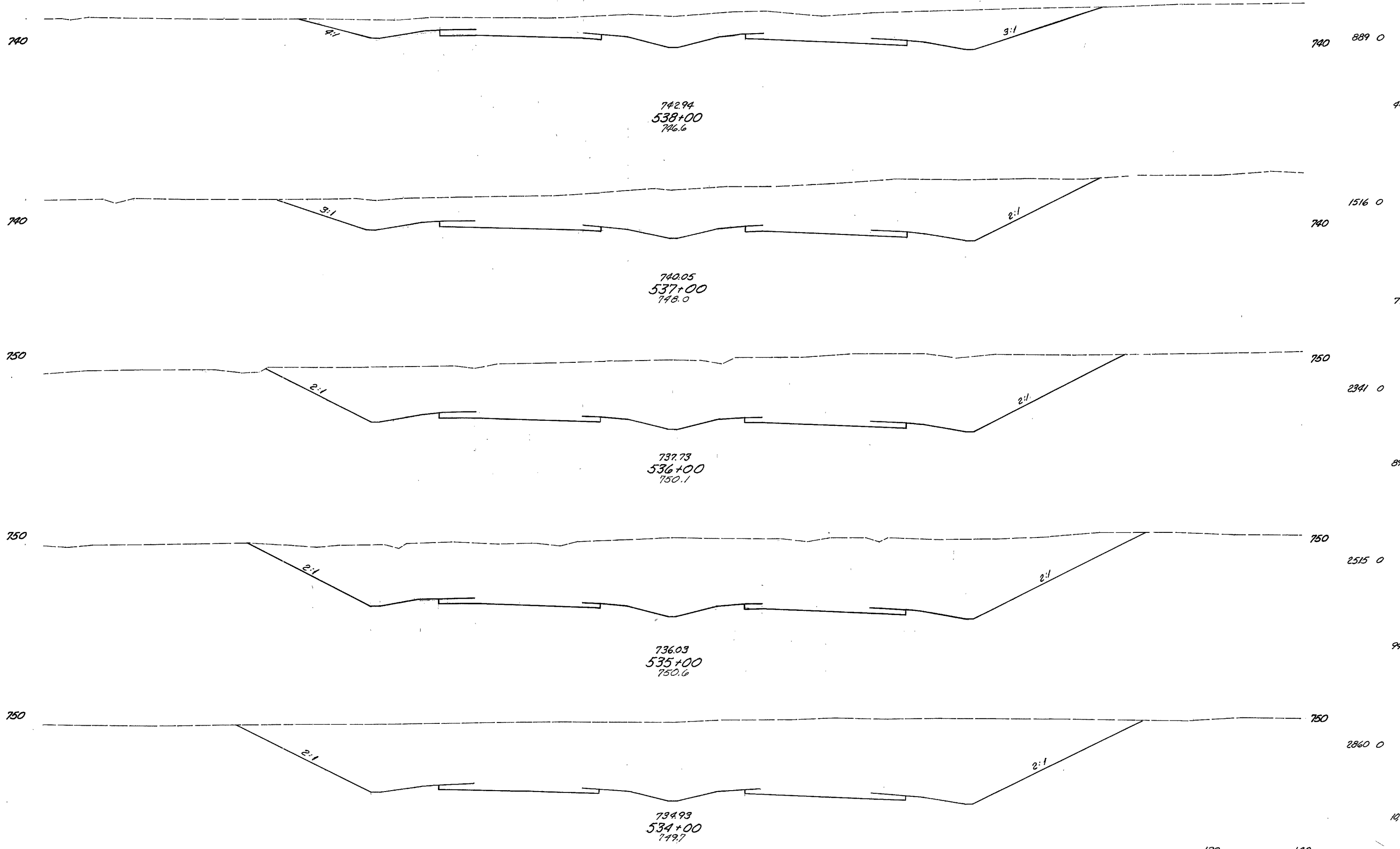
LOR-254-4.08 B



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

194  
323

LOR-254-4.08B

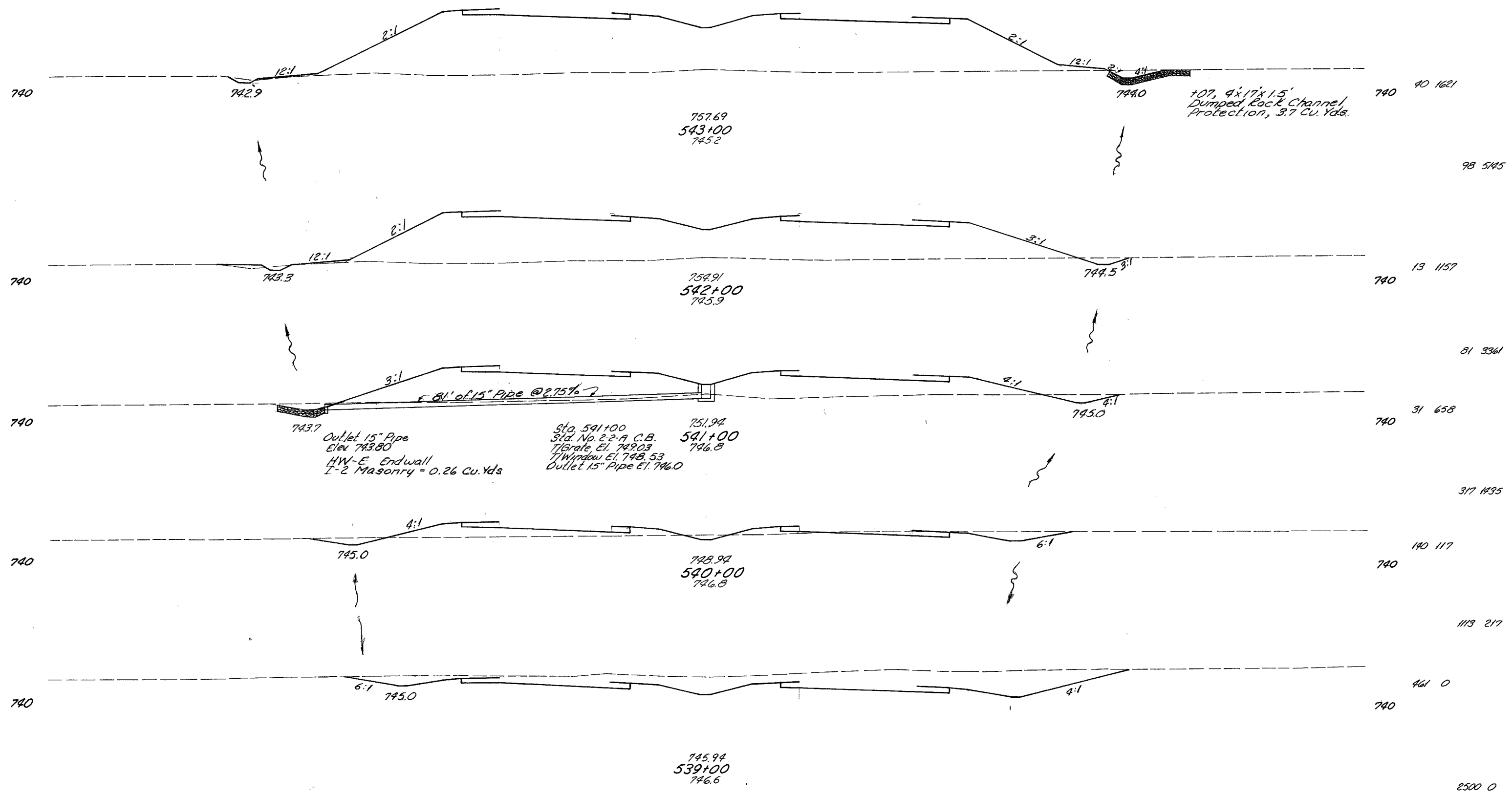


140 120 100 80 60 40 20 0 20 40 60 80 100 120 STA. 534+00 to STA. 538+00

Vertical 3' 18" 6" 4" 2"



LOR-254-4.08-B

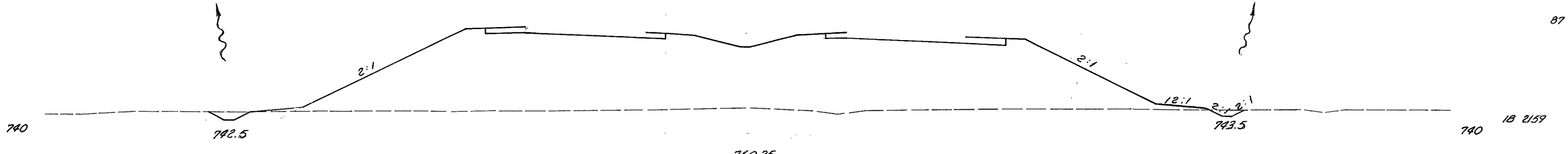
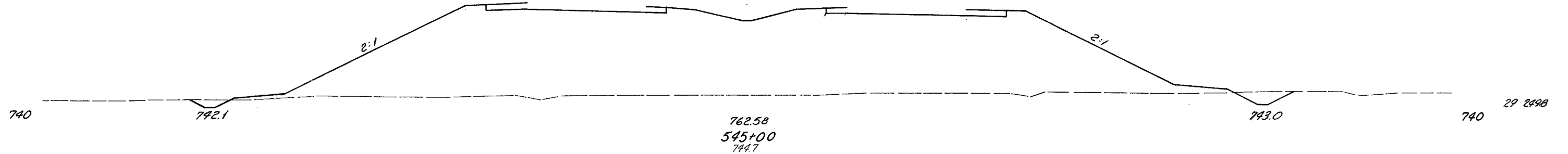
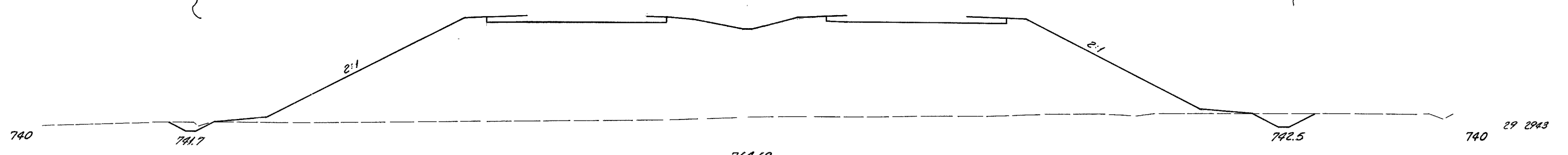
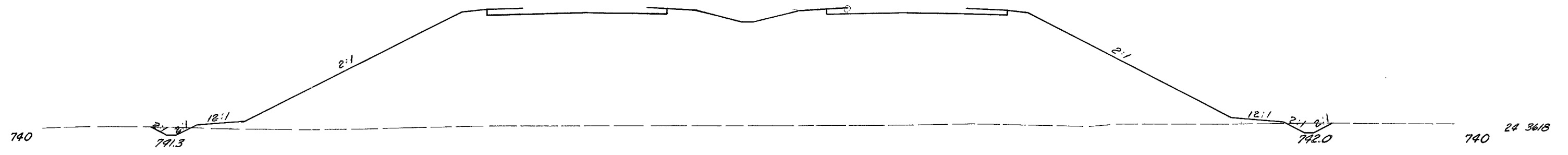


Channel Slope = 2%  
Channel Depth = 0.5'

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

196  
323

LOR-254-4.08-B



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

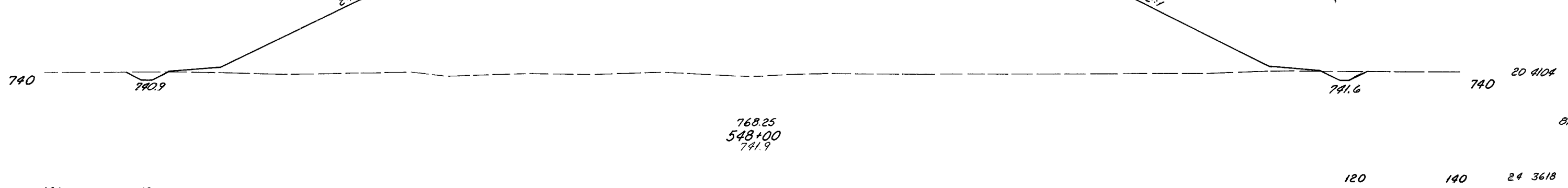
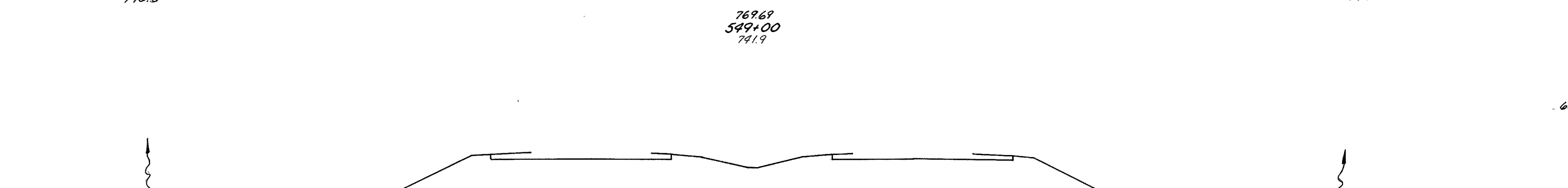
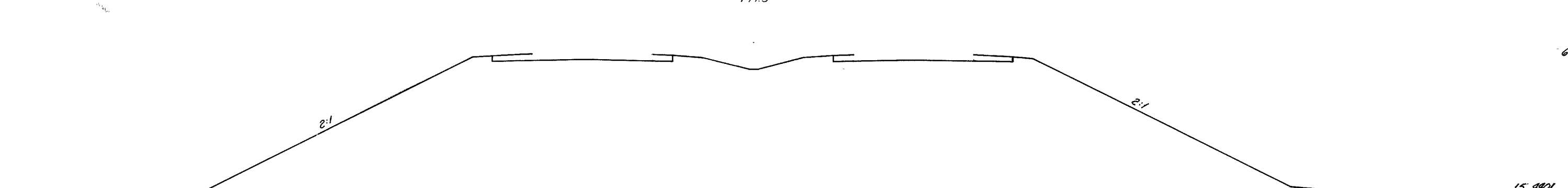
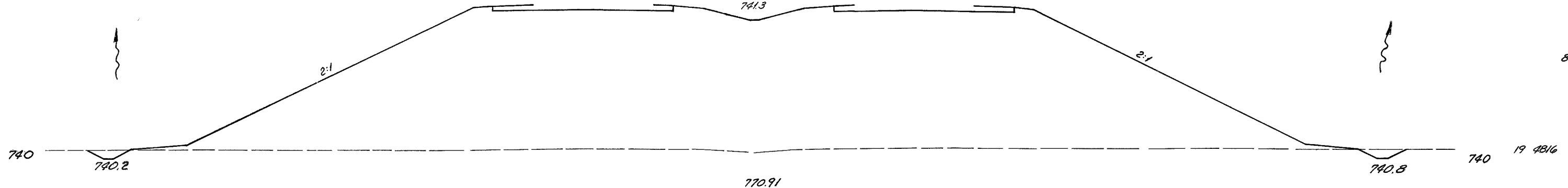
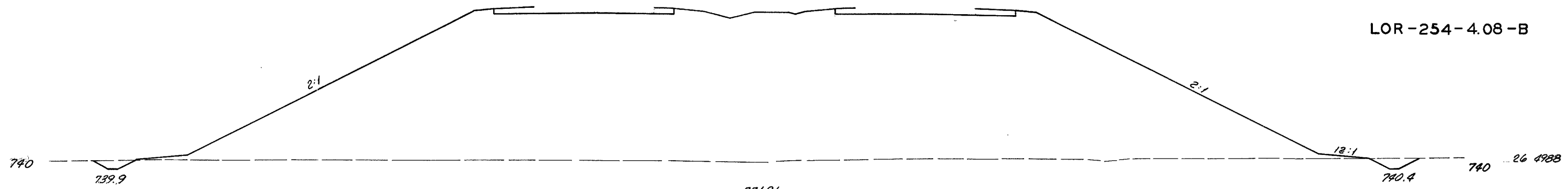
STA. 544+00 TO STA. 547+00

Checked 3-18-69 R.S.  
1/20/69 C.A.B.

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

197  
323

LOR-254-4.08-B



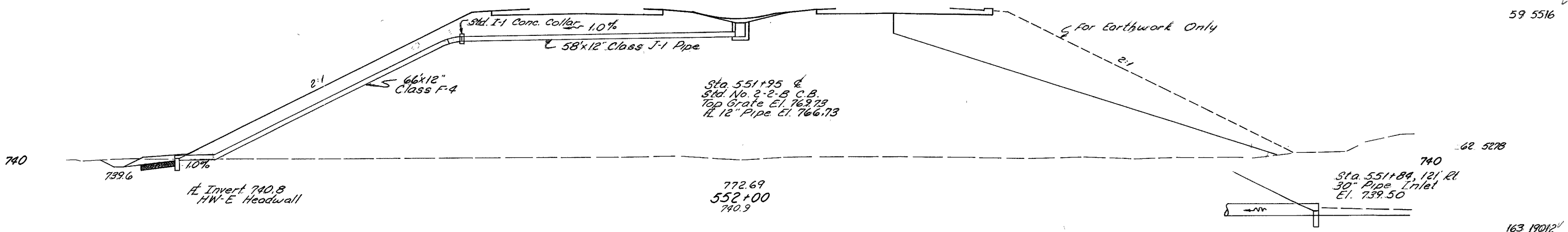
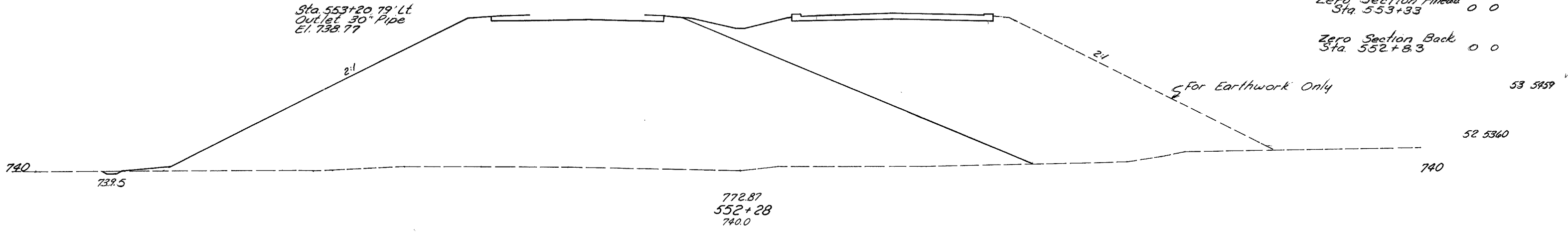
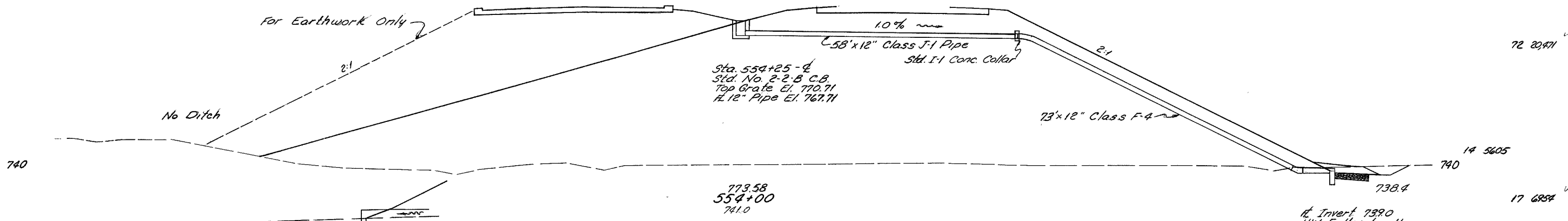
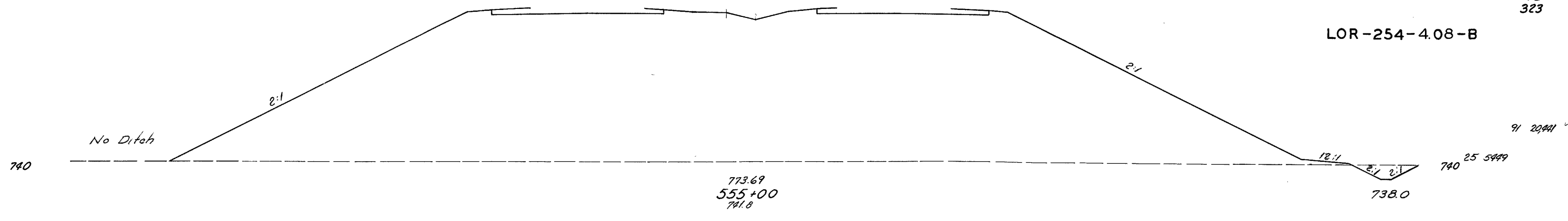
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 24 3618  
STA 548+00 TO STA 551+00

Chart 3-18-59 55

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

198  
323

LOR-254-4.08-B

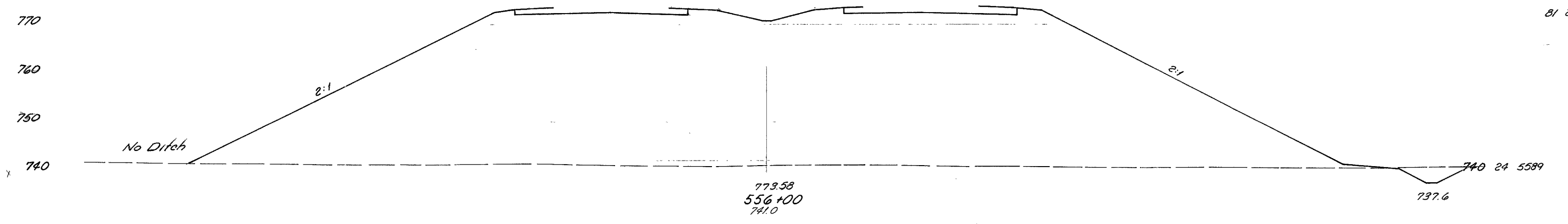
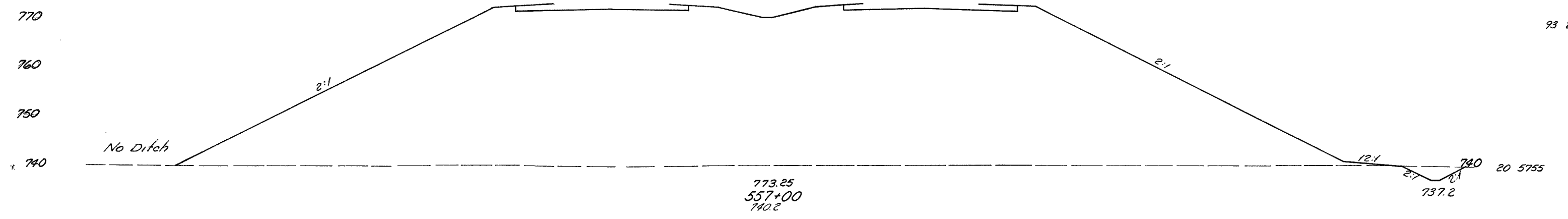
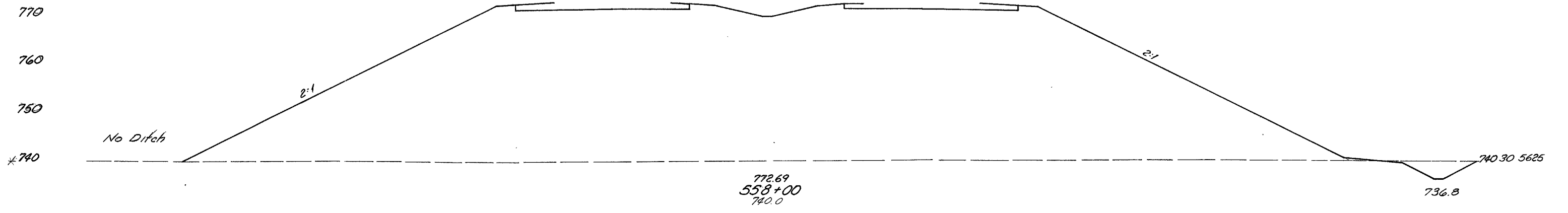


140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
STA. 552+00 TO STA. 555+00

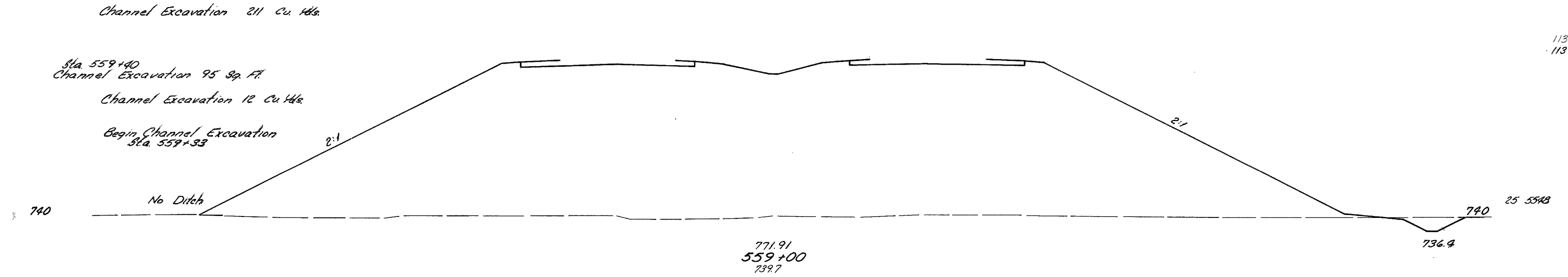
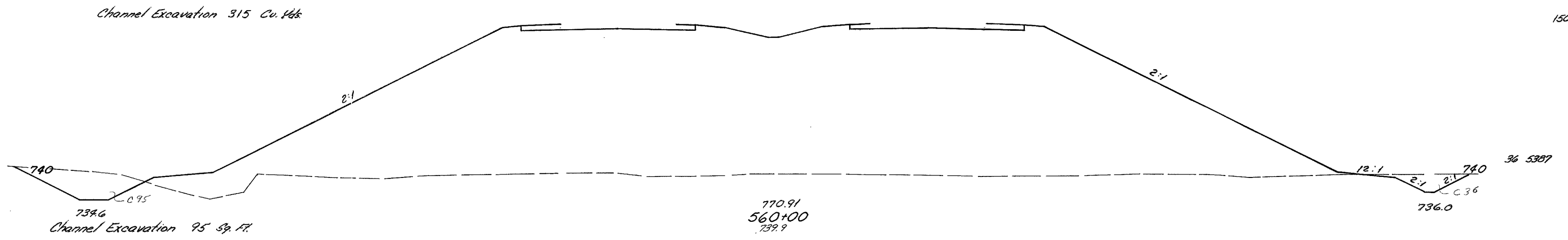
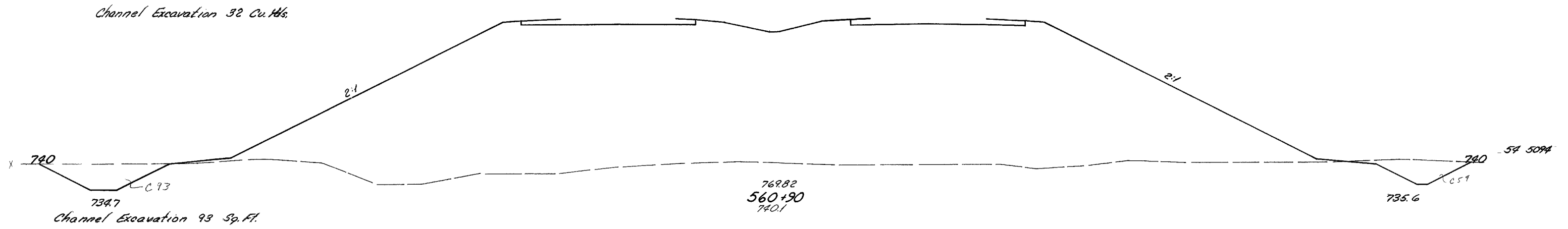
140 120 100 80 60 40 20 0 20 40 60 80 100 120

199  
323

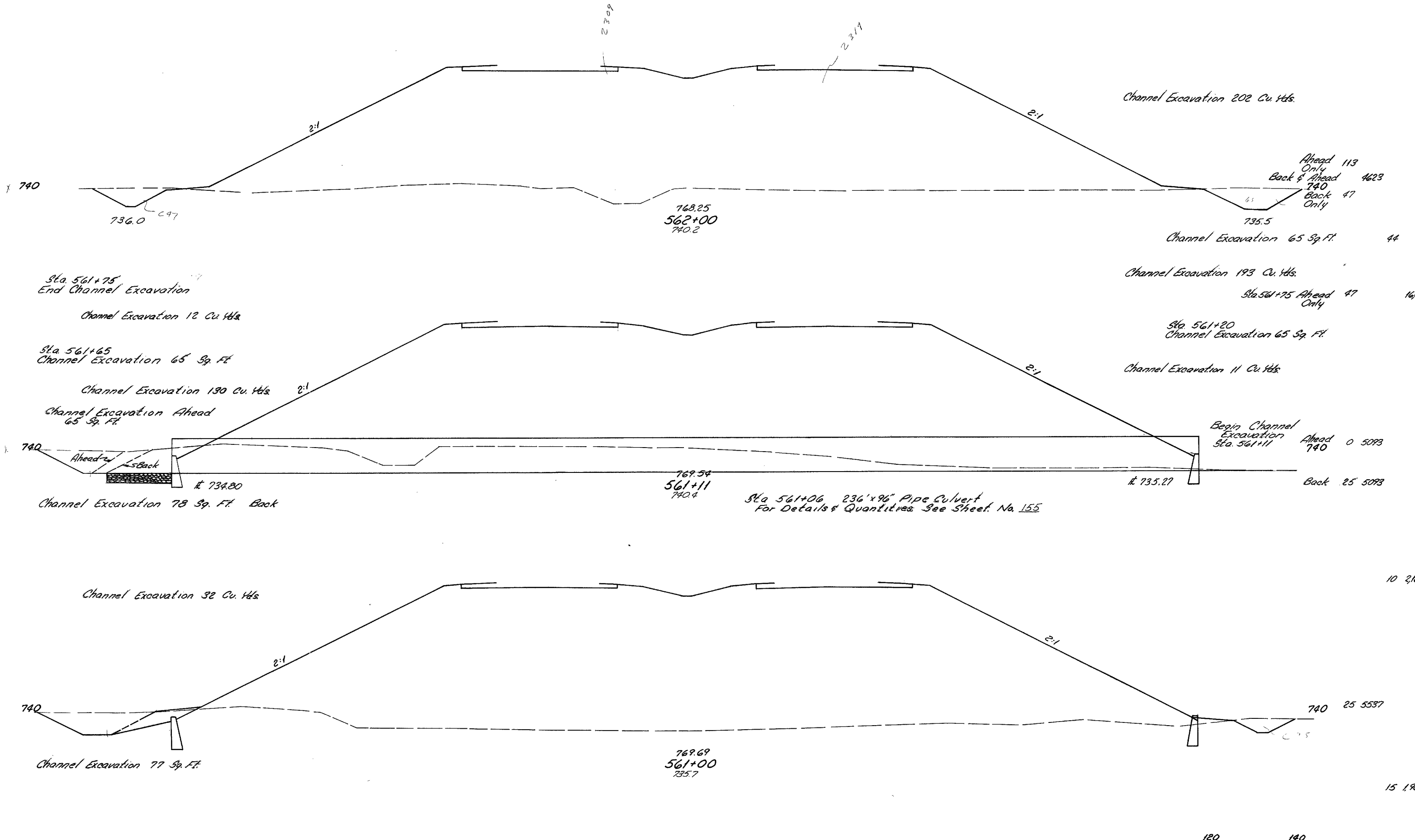
LOR-254-408-B



140 120 100 80 60 40 20 0 20 40 60 80 100 120 STA. 556+00 TO STA. 558+00



LOR-254-4.08 B

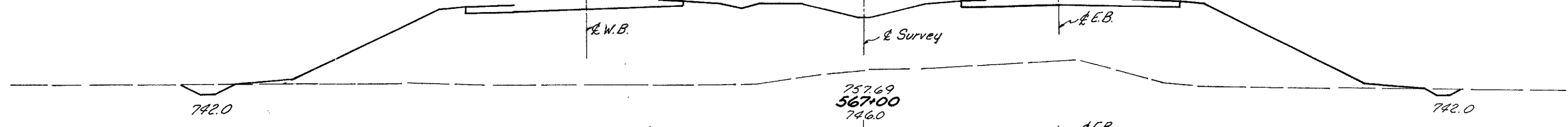


140 120 100 80 60 40 20 0 20 40 60 80 100 120

202  
323

LOR - 254 - 4.08 - B

740

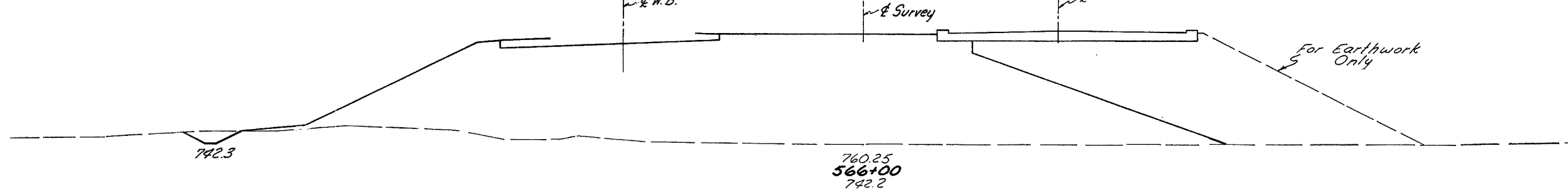


15 1780

50 8022

12 2552

740



3 671

Sta 565+94 12 2552

Zero Section  
Sta. 565+59 0 0

8 1654

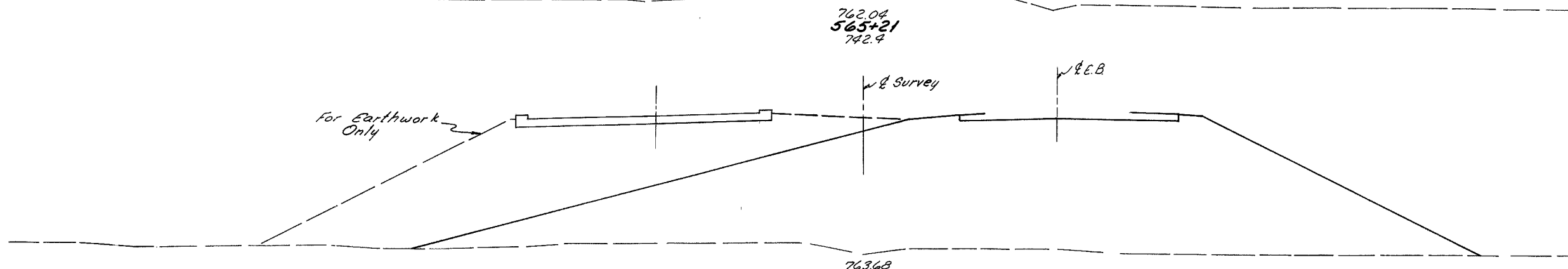
740



Zero Section  
Sta. 564+94 0 0

0 2898

740



0 3330

Sta. 564+40  
End Channel Excavation  
Channel Excavation 6 Cu. Yds.

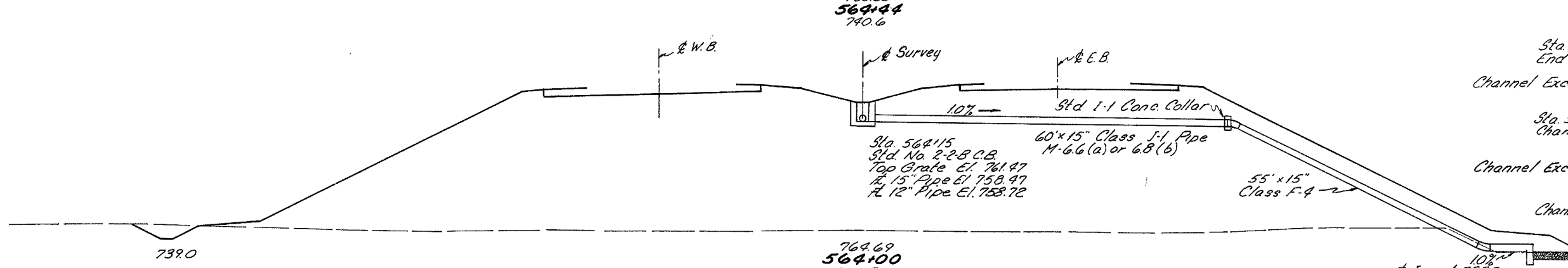
41 5716

Sta. 564+30  
Channel Excavation 35 Sp. Ft.  
Channel Excavation 40 Cu. Yds.

Channel Excavation 37 Sp. Ft.

50 3685

740



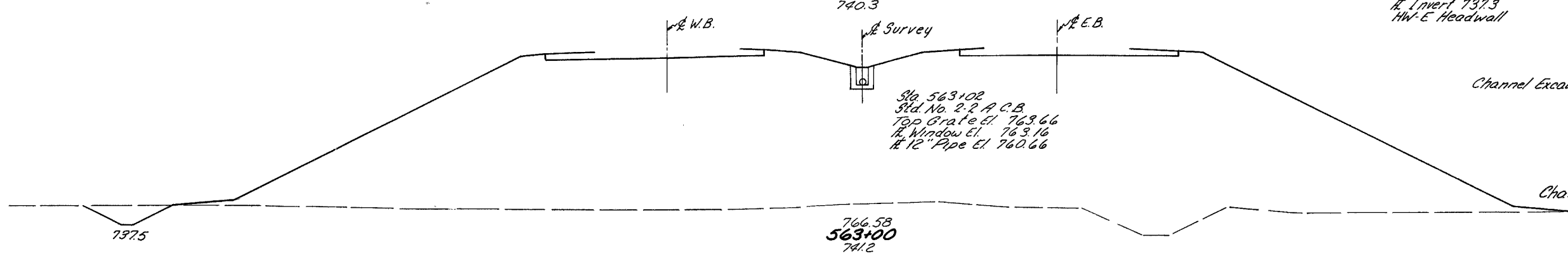
Channel Excavation 150 Cu. Yds.

231 19504

Channel Excavation 44 Sp. Ft.

75 4147

740

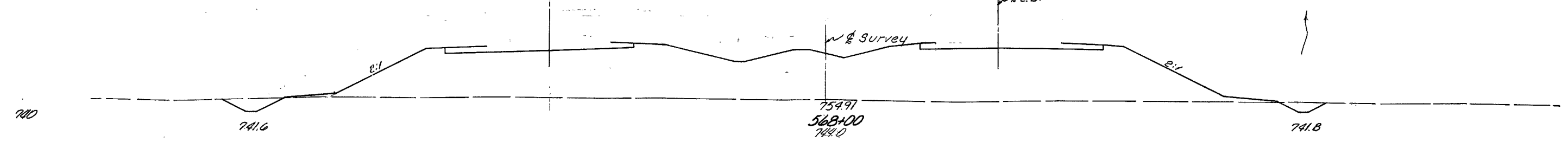
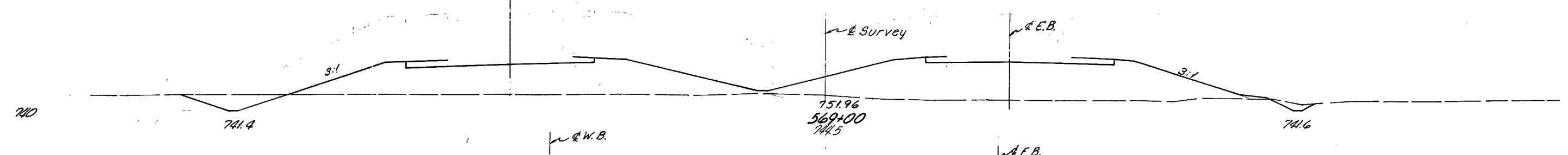
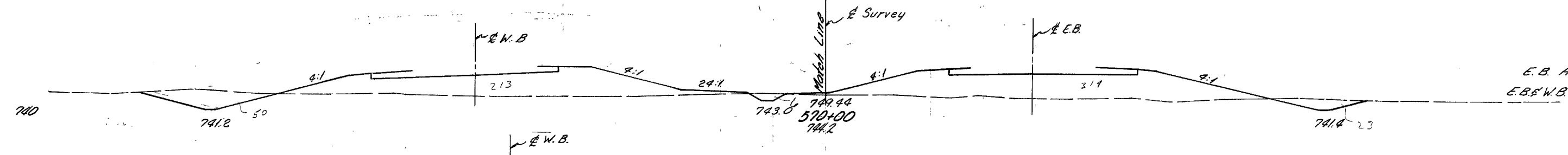
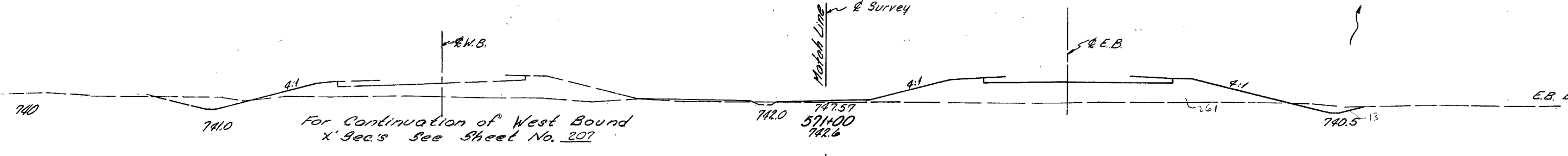
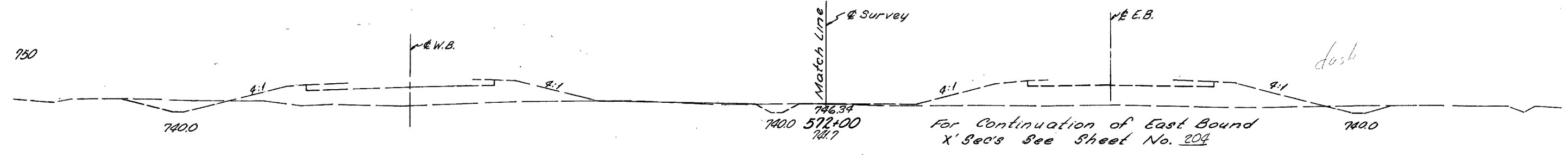
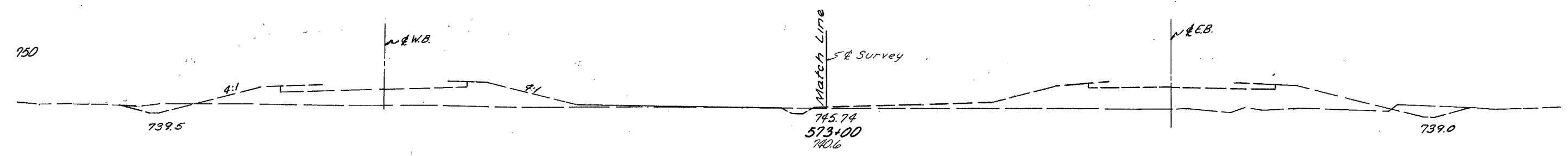


348 16241

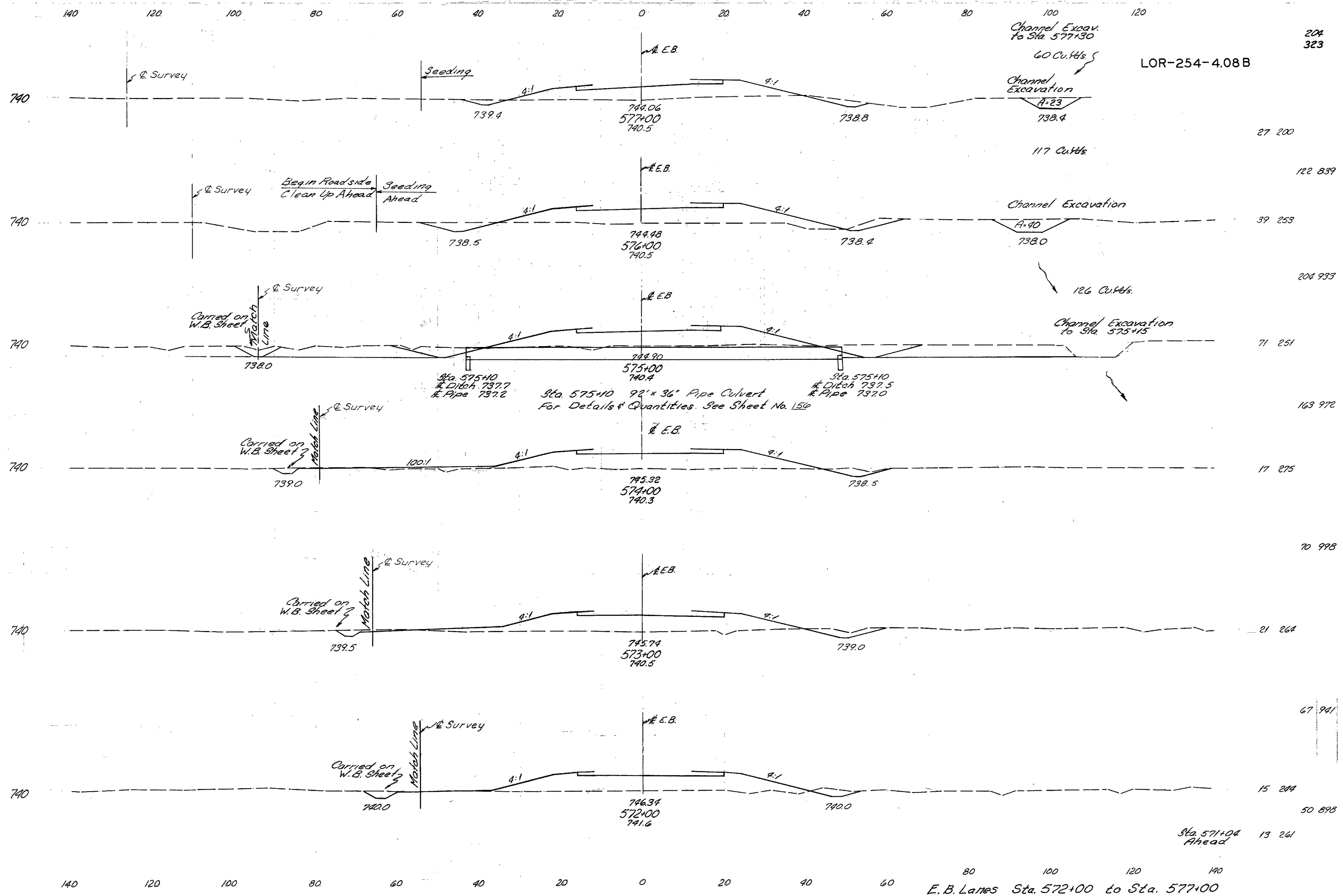
140 120 100 80 60 40 20 0 20 40 60 80 100 120

STA. 563+00 TO STA. 567+00





67 1065  
 E.B. Ahead 23 314  
 E.B. & W.B. Back 79 527  
 231 2781  
 46 975  
 141 9567  
 30 1492  
 83 6060



LOR-254-4.08B

204  
323

27 200

122 839

39 253

204 933

71 251

163 972

17 275

70 998

21 264

67 941

15 244

50 898

13 261

E.B. Lanes Sta. 572+00 to Sta. 577+00

Sta. 571+04 Ahead

Sta. 575+00 92' x 36" Pipe Culvert  
For Details & Quantities. See Sheet No. 150

Sta. 575+00  
# Ditch 737.7  
# Pipe 737.2

Sta. 575+00  
# Ditch 737.5  
# Pipe 737.0

Channel Excav.  
to Sta. 577+30

Channel Excavation  
A=23

Channel Excavation  
A=40

Channel Excavation  
to Sta. 575+15

Begin Roadside  
Clean Up Ahead

Seeding Ahead

Carried on  
W.B. Sheet

Carried on  
W.B. Sheet

Carried on  
W.B. Sheet

Carried on  
W.B. Sheet

140

120

100

80

60

40

20

0

20

40

60

80

100

120

140

120

100

80

60

40

20

0

20

40

60

80

100

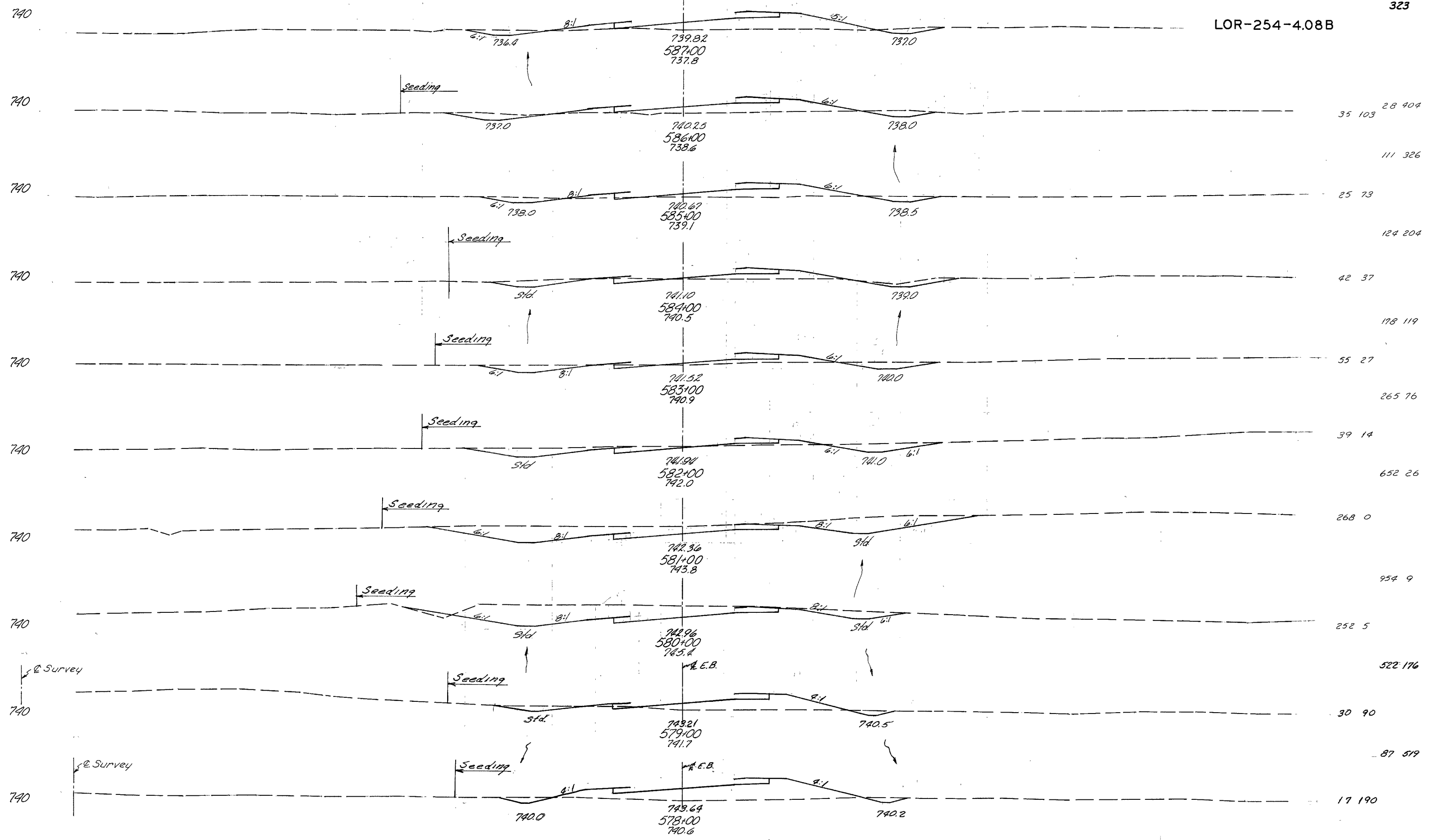
120

140

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

205  
323

LOR-254-4.08B



Revised P.S. - 3/2/59

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
E. B. Lanes Sta. 578+00 to Sta. 587+00

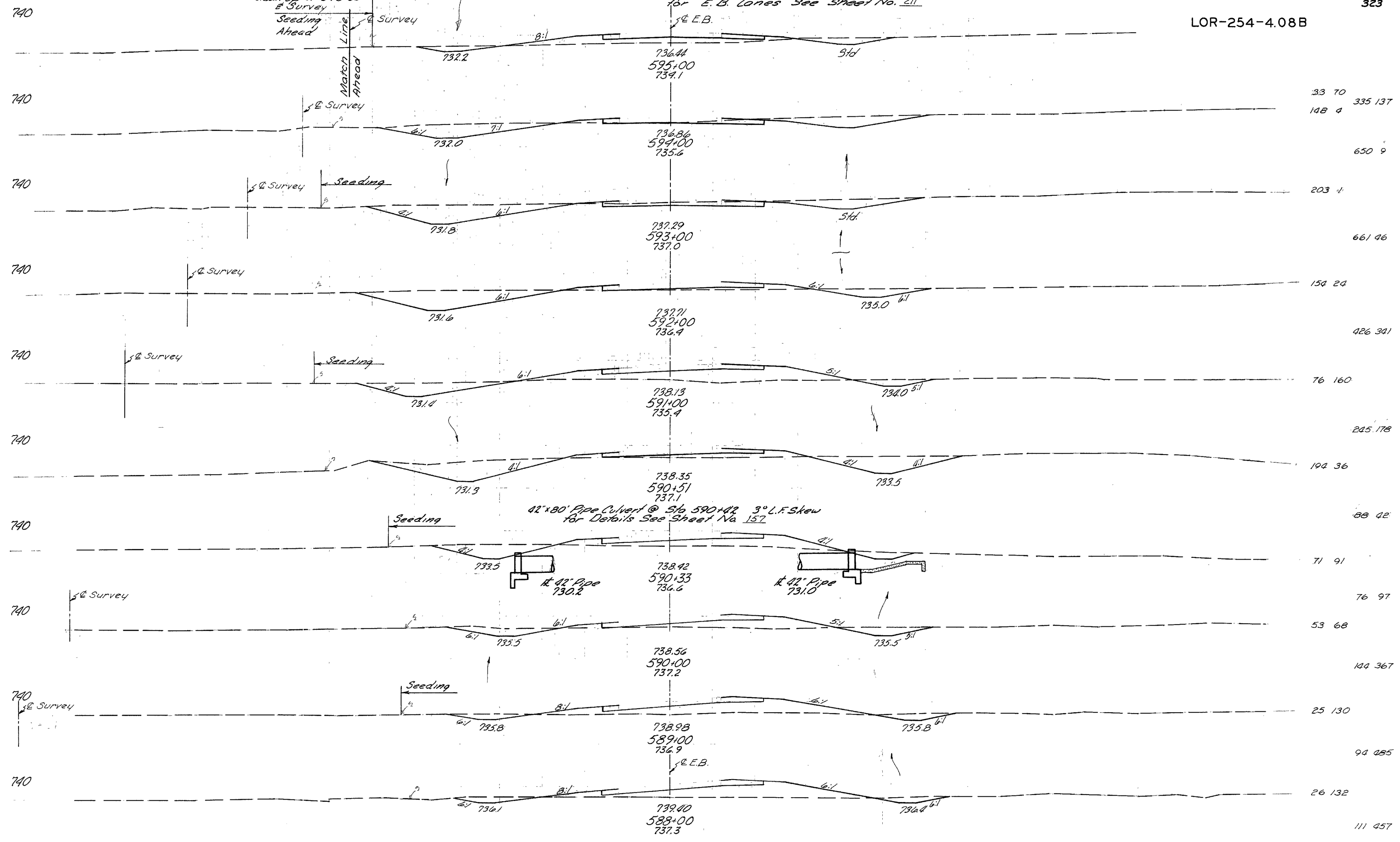
140 120 100 80 60 40 20 0 20 40 60 80 100 120

Lead Roadside  
Clean up St 595+00  
& Survey  
Seeding  
Ahead  
Match  
Line  
Ahead

For Continuation of X Sec.  
for E. B. Lanes See Sheet No. 211

206  
323

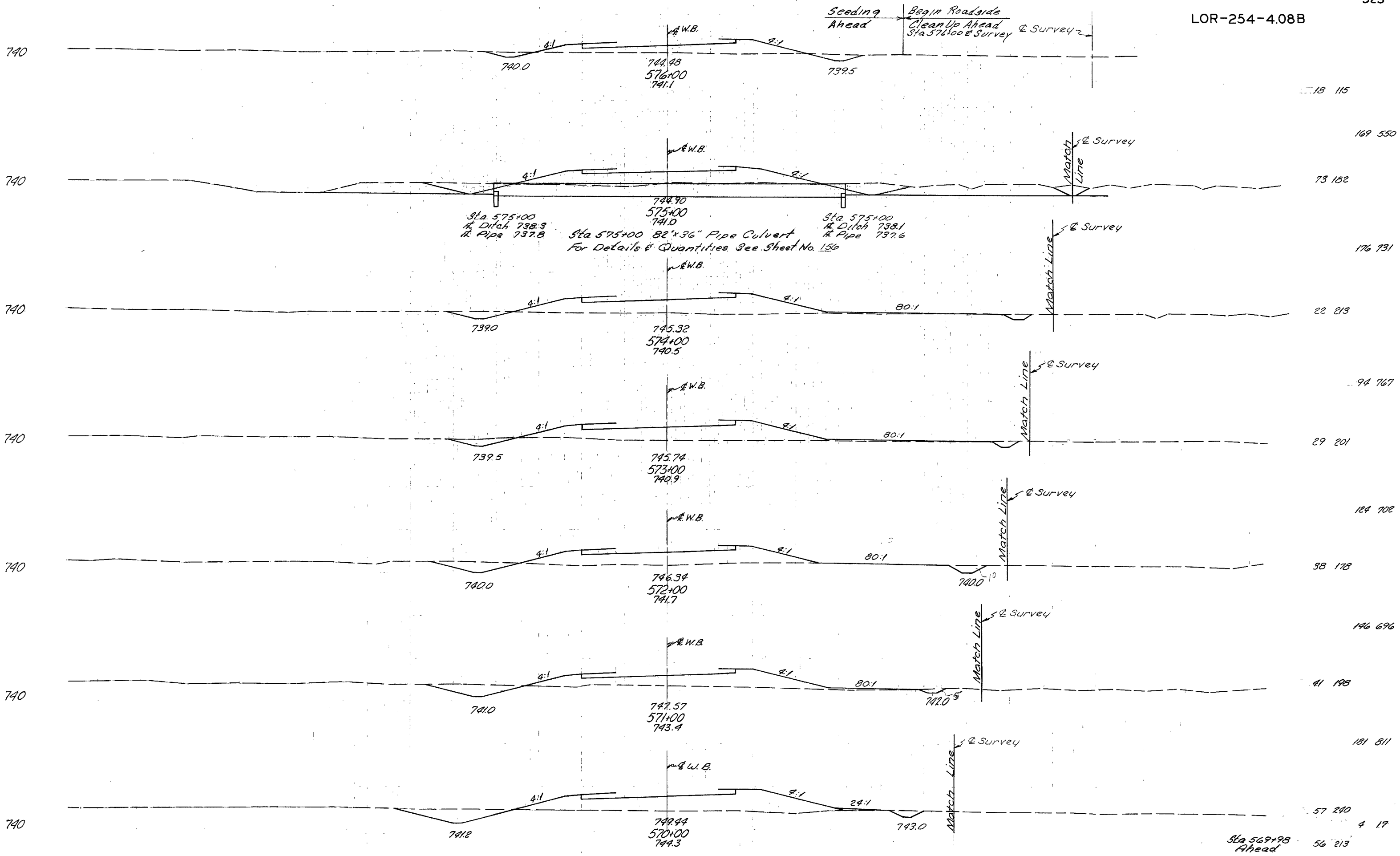
LOR-254-4.08B



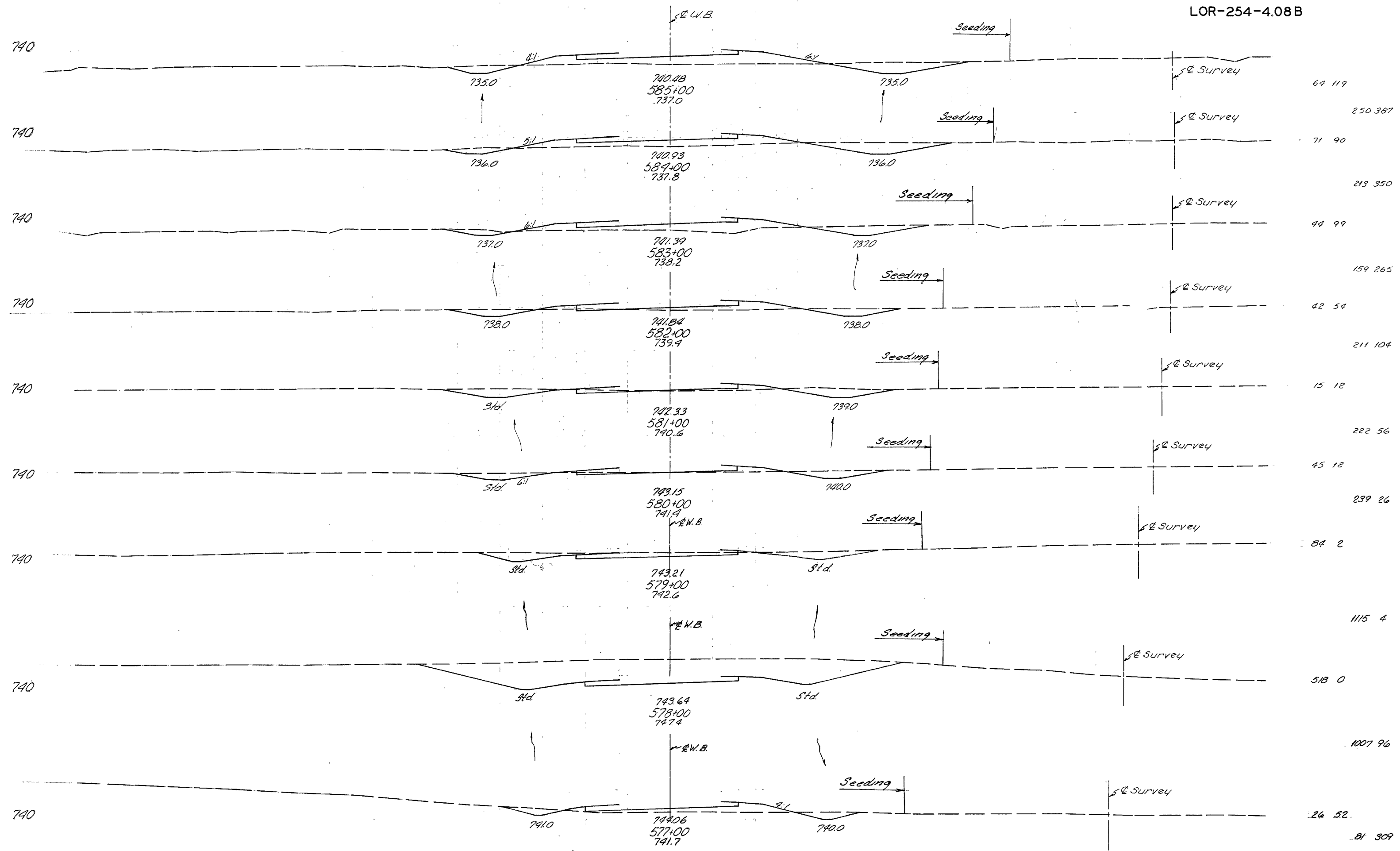
33 70  
148 4  
650 9  
203 4  
661 46  
154 24  
426 341  
76 160  
245 178  
194 36  
88 42  
71 91  
76 97  
53 68  
144 367  
25 130  
94 485  
26 132  
111 457

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

E. B. Lanes Sta. 588+00 to Sta. 595+00



LOR-254-4.08B

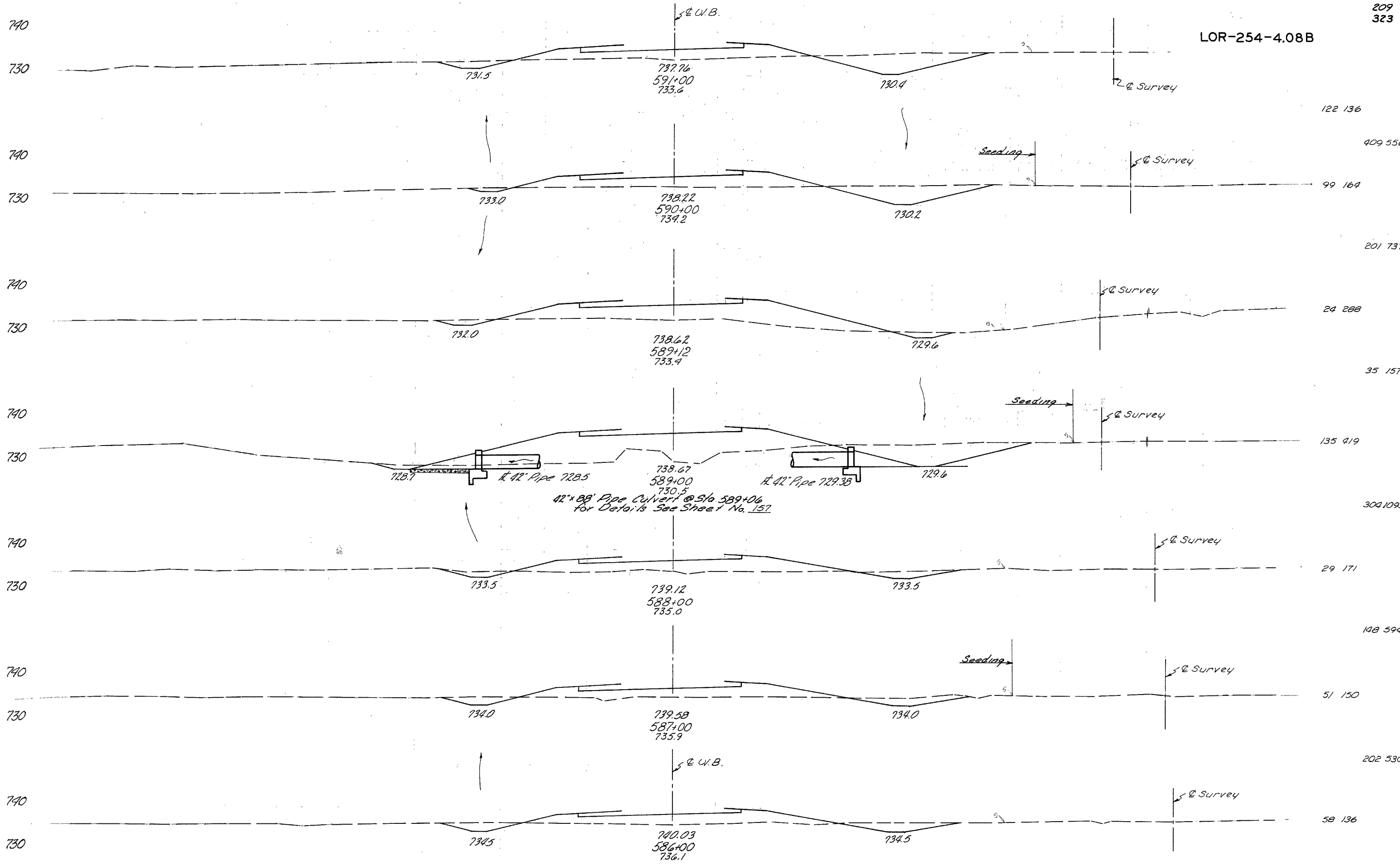


64 119  
250 387  
71 90  
213 350  
44 99  
159 265  
42 54  
211 104  
15 12  
222 56  
45 12  
239 26  
84 2  
1115 4  
518 0  
1007 96  
26 52  
81 309

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

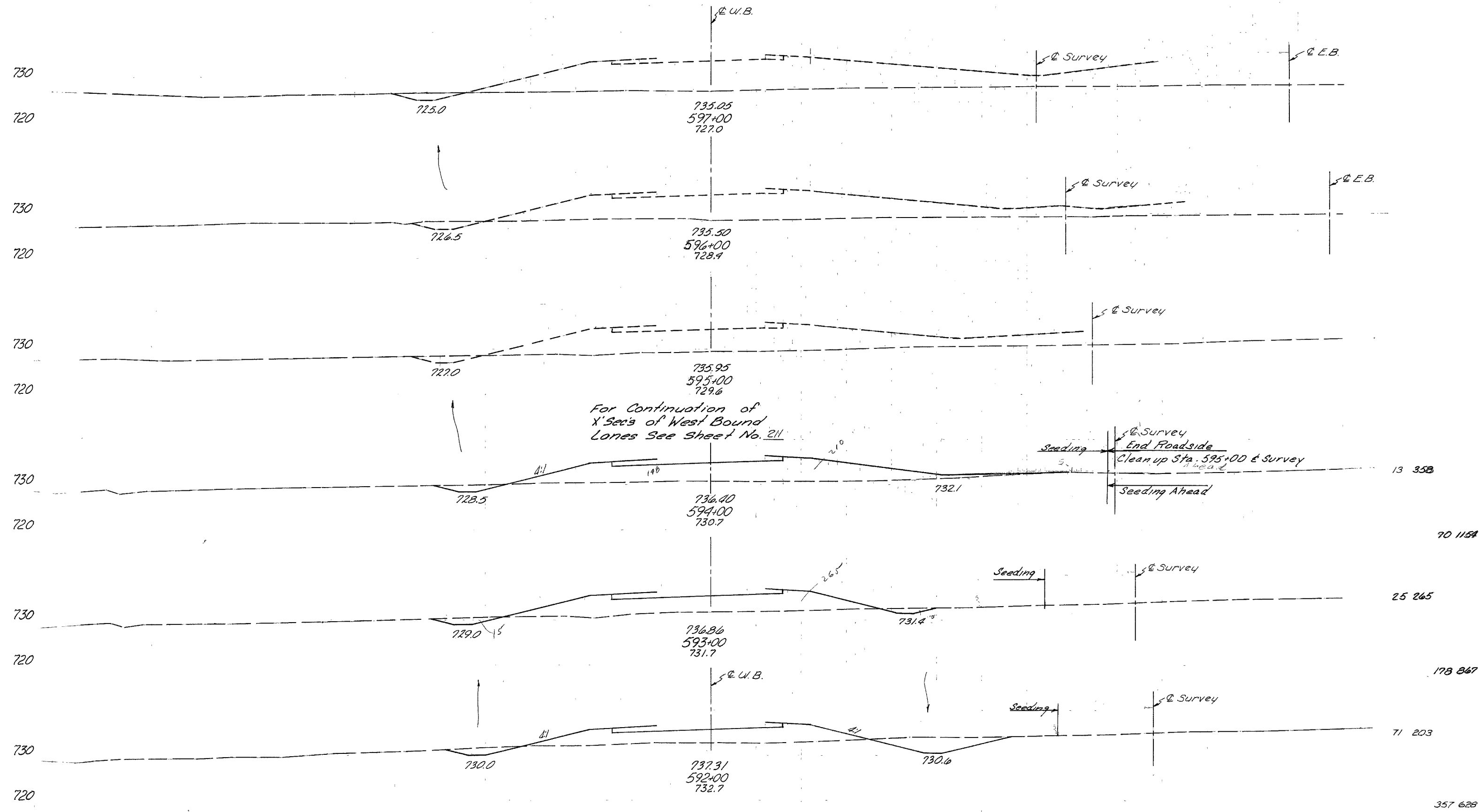
209  
323

LOR-254-4.08B



140 120 100 80 60 40 20 0 20 40 60 80 100 120 140  
W. B. Lanes Sta. 586+00 to Sta. 591+00

226 472



For Continuation of  
X'Sec's of West Bound  
Lanes See Sheet No. 211

Seeding  
End Roadside  
Clean up Sta. 595+00 & Survey Ahead  
Seeding Ahead

13 358

70 1154

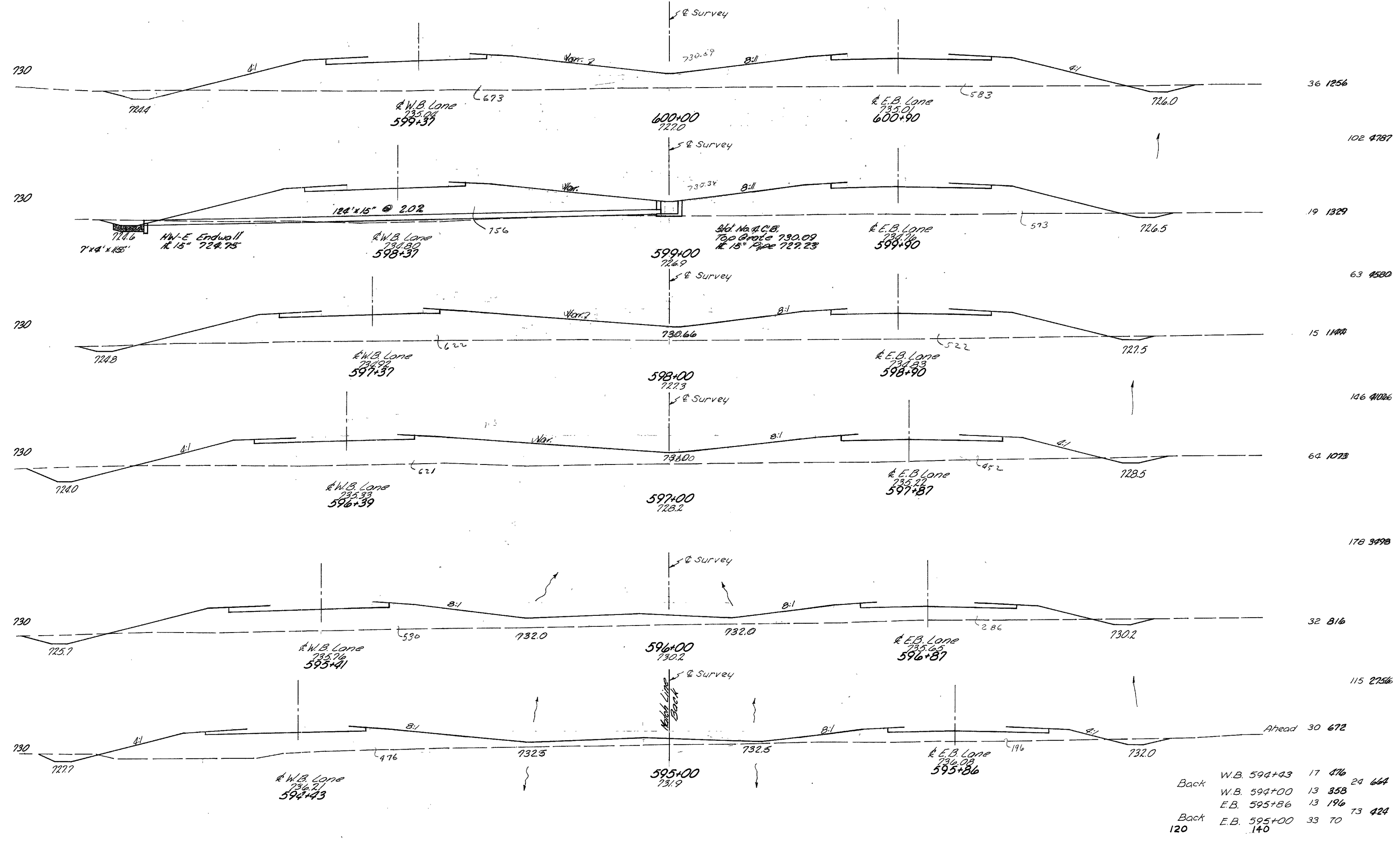
25 265

178 867

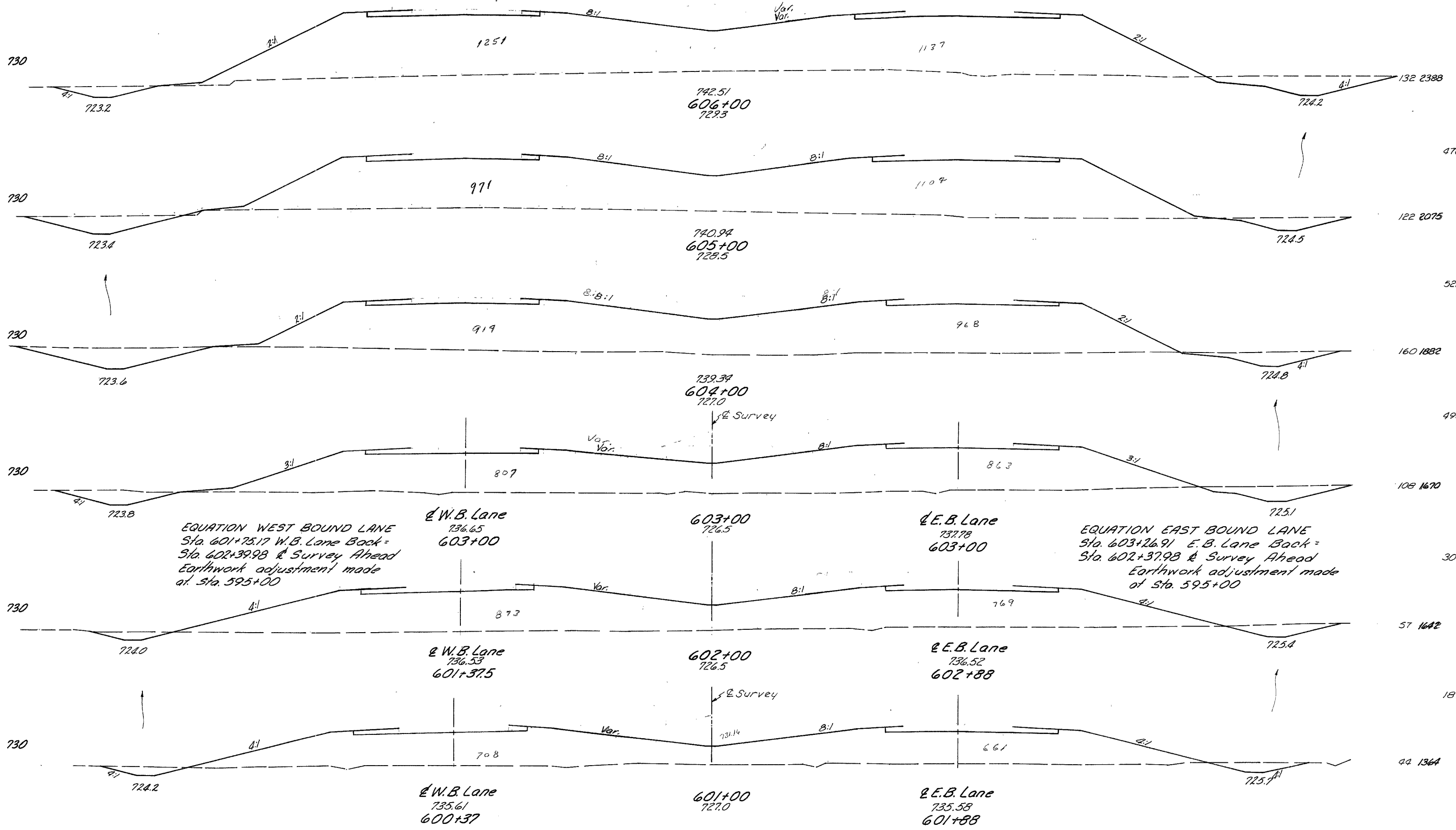
71 203

357 628





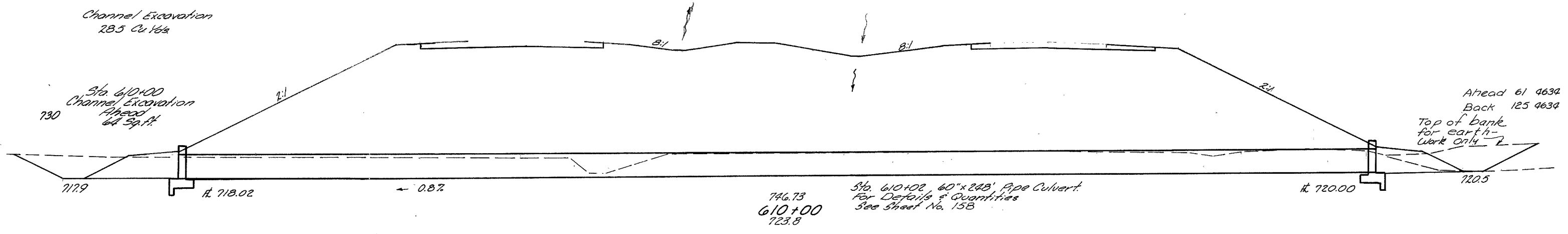
Back	W.B. 594+43	17	476	24	664
	W.B. 594+00	13	358		
	E.B. 595+86	13	196	73	424
Back	E.B. 595+00	33	70		
	120		140		



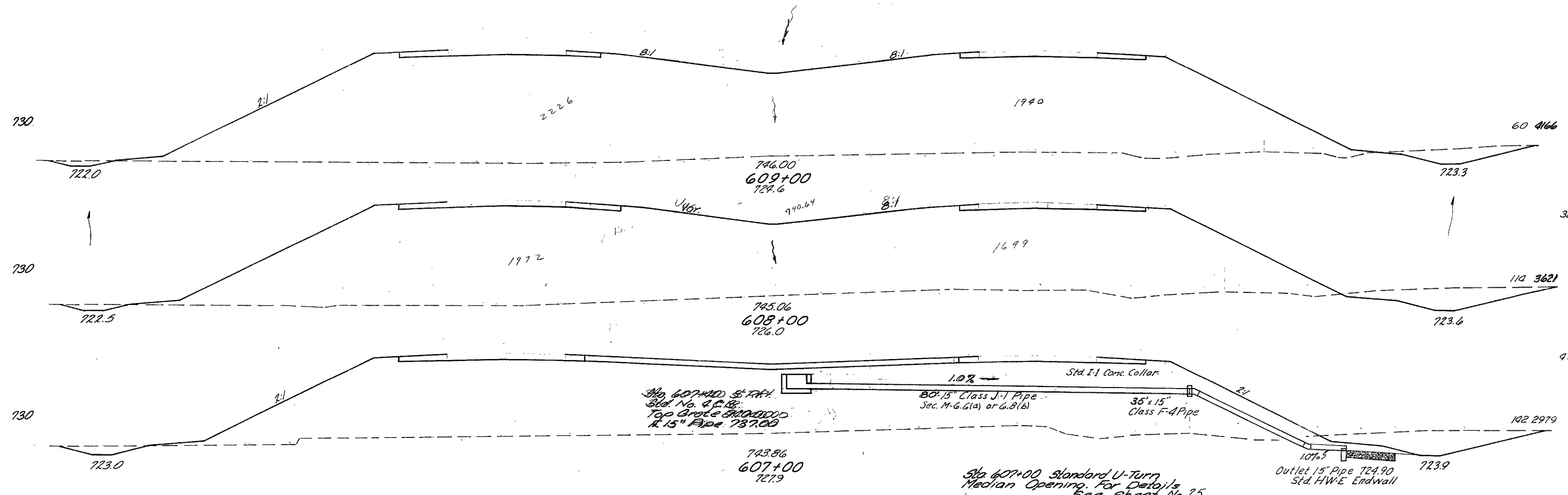
EQUATION WEST BOUND LANE  
Sta. 601+75.17 W.B. Lane Back =  
Sta. 602+39.98 & Survey Ahead  
Earthwork adjustment made  
at Sta. 595+00

EQUATION EAST BOUND LANE  
Sta. 603+26.91 E.B. Lane Back =  
Sta. 602+37.98 & Survey Ahead  
Earthwork adjustment made  
at Sta. 595+00

LOR-254-4.08B



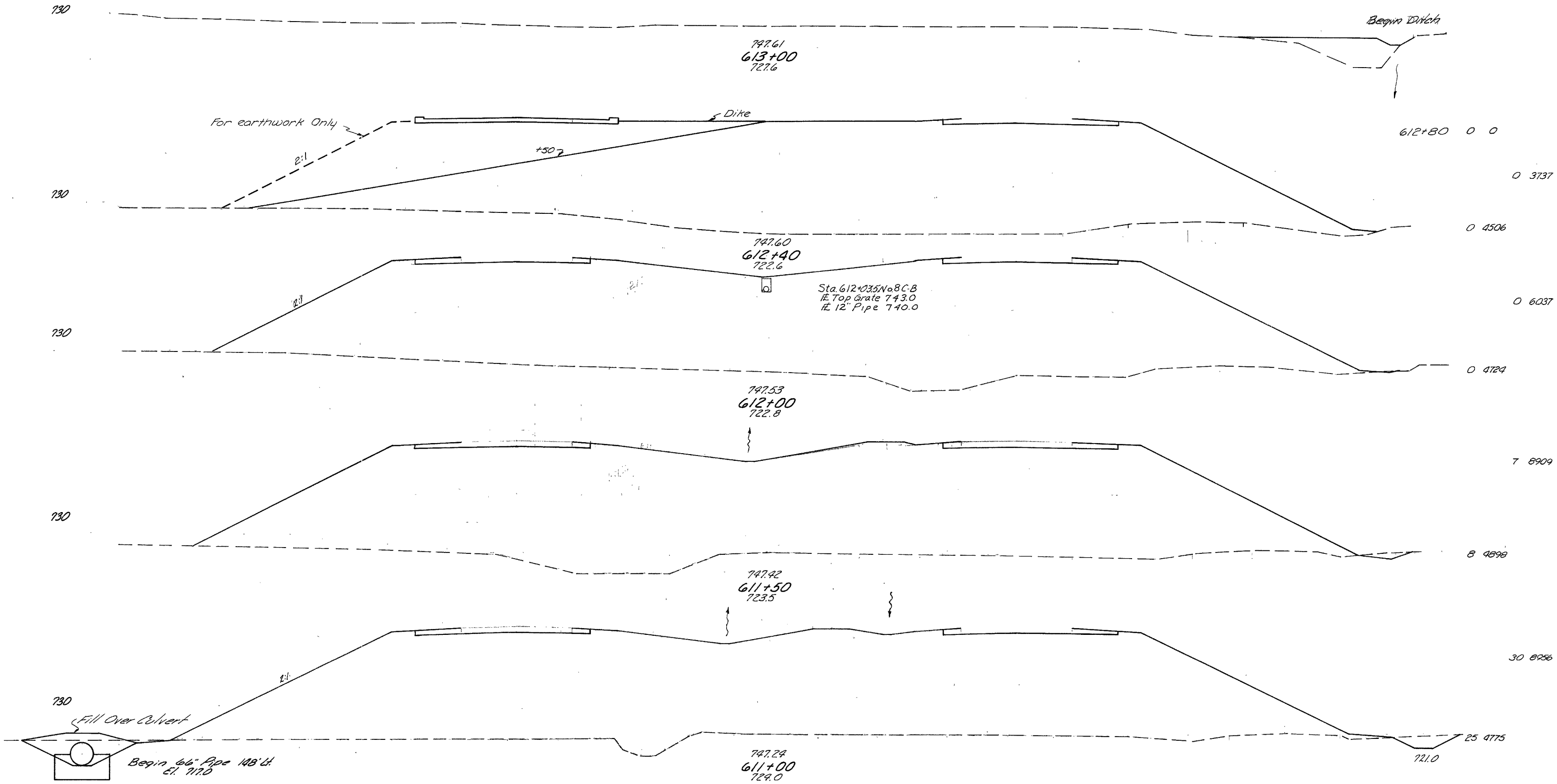
323 16,916



322 14,920

474 12,222

507 9,939

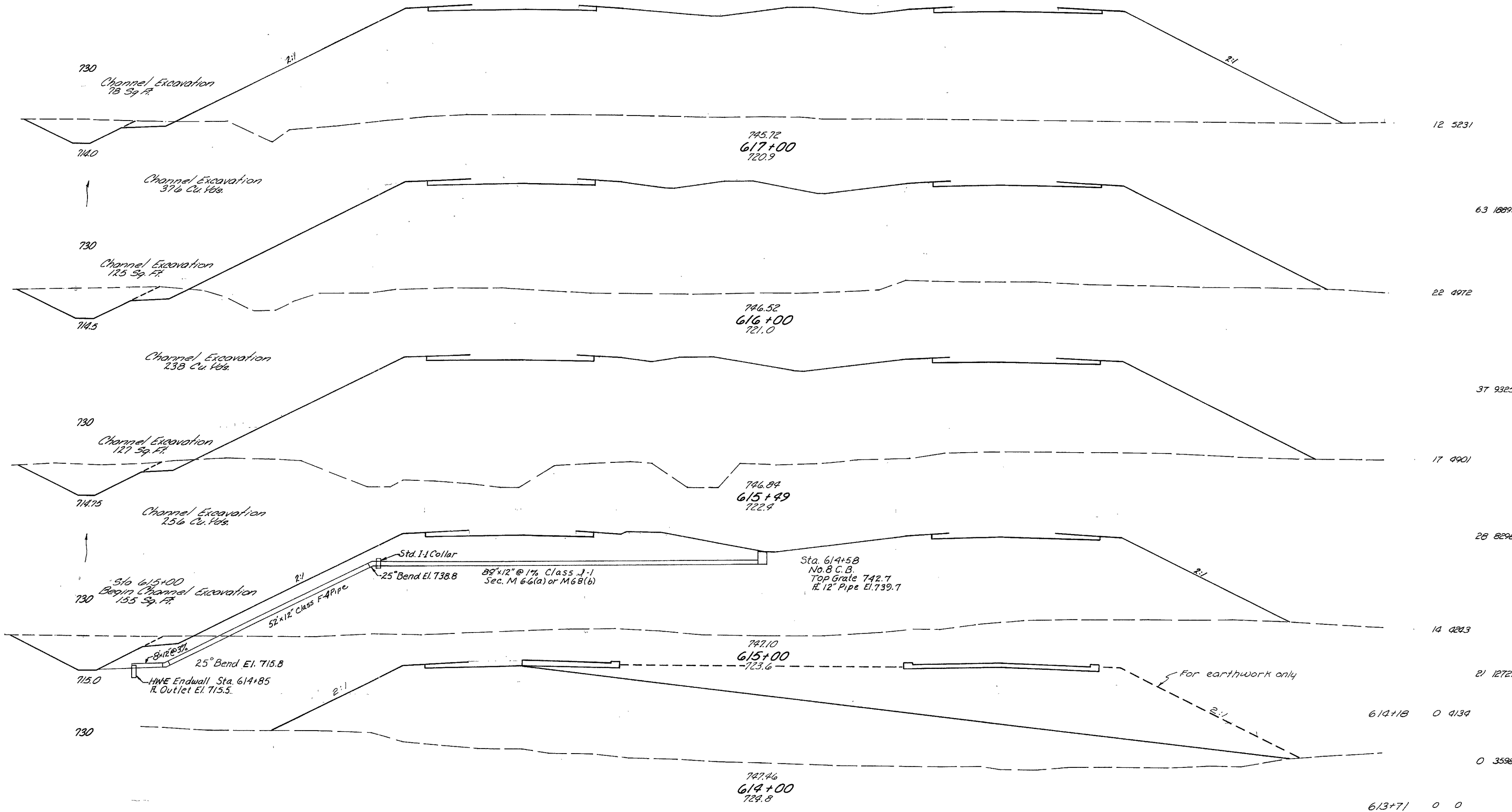


Sta. 612+03.5 No. 8 C-B  
 El. Top Grate 743.0  
 El. 12" Pipe 740.0

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

215  
323

LOR-254-4.08B

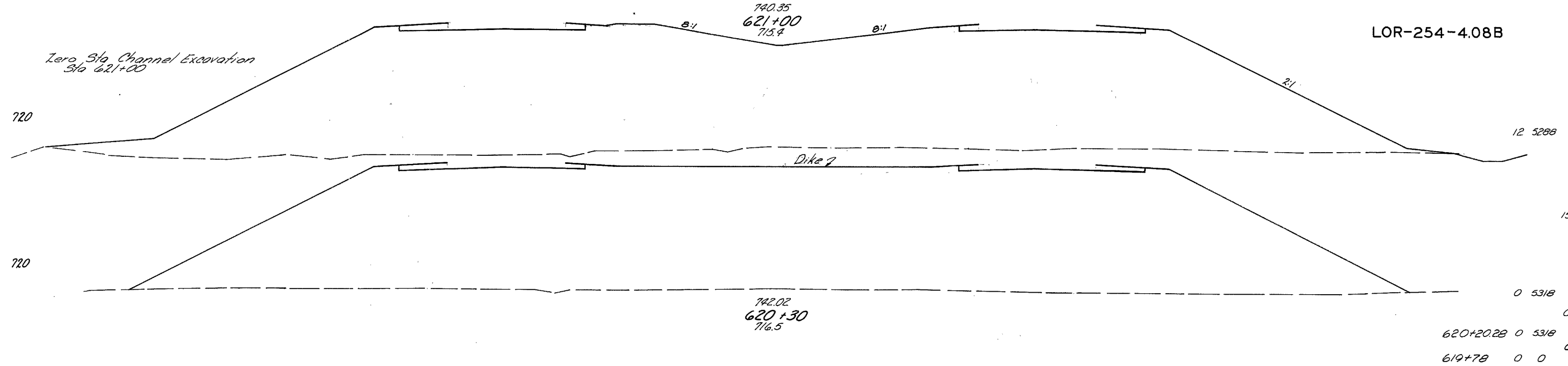


140 120 100 80 60 40 20 0 20 40 60 80 100 STA 614+00 TO STA 617+00

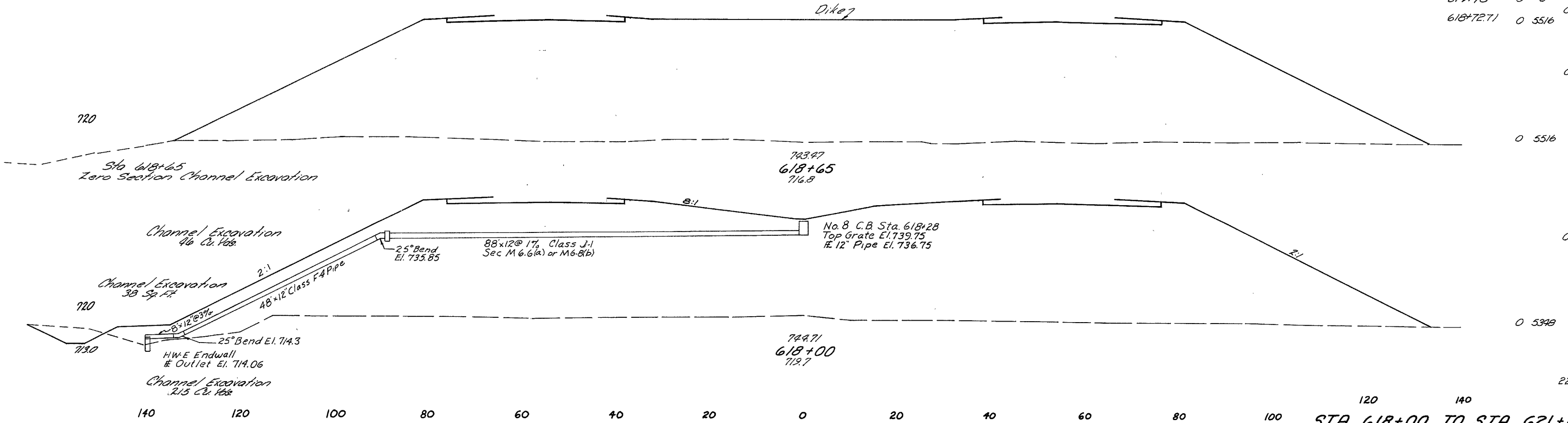
140 120 100 80 60 40 20 0 20 40 60 80 100

216  
323

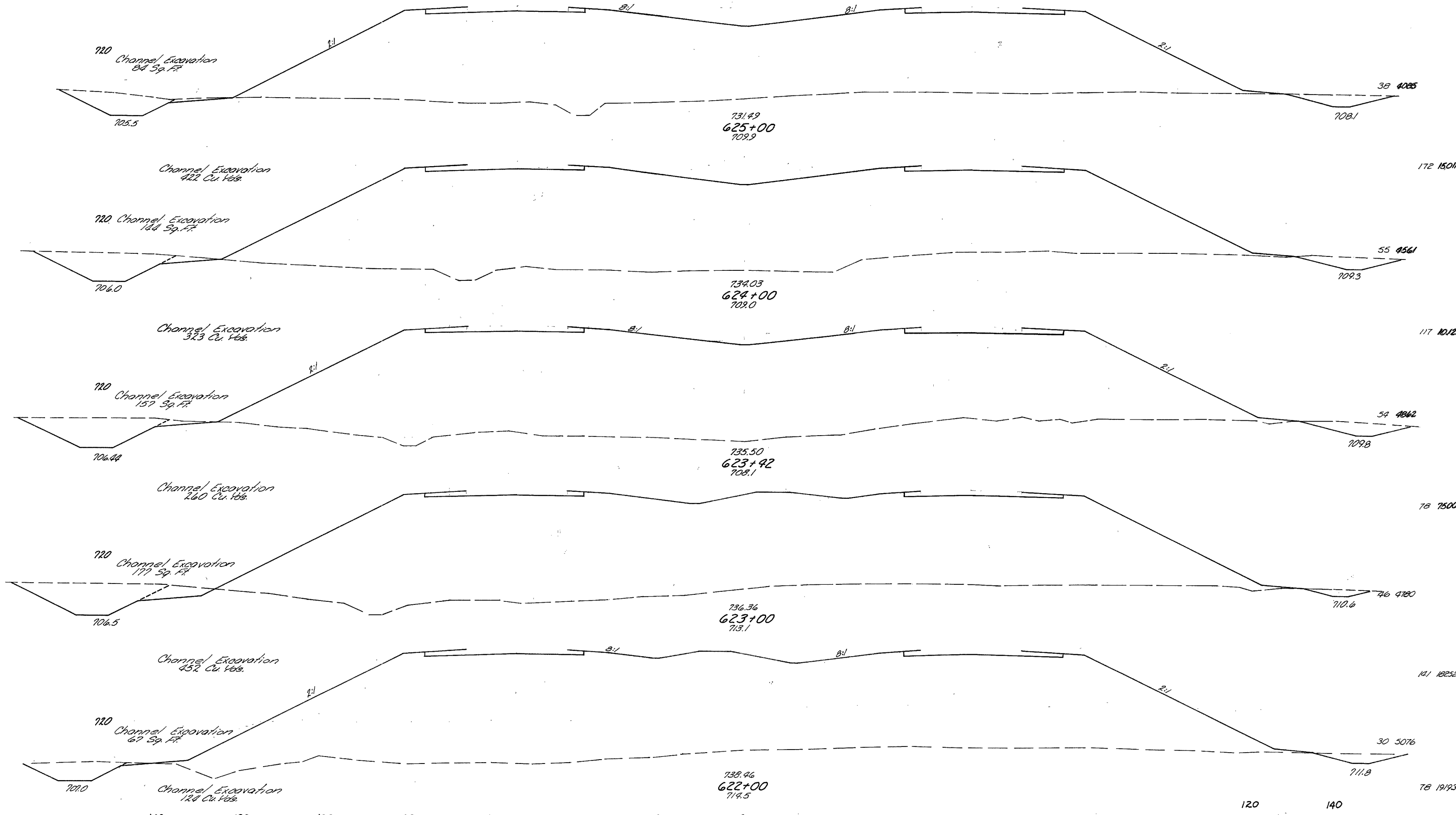
LOR-254-4.08B



619+18	0	0
618+72.71	0	5516



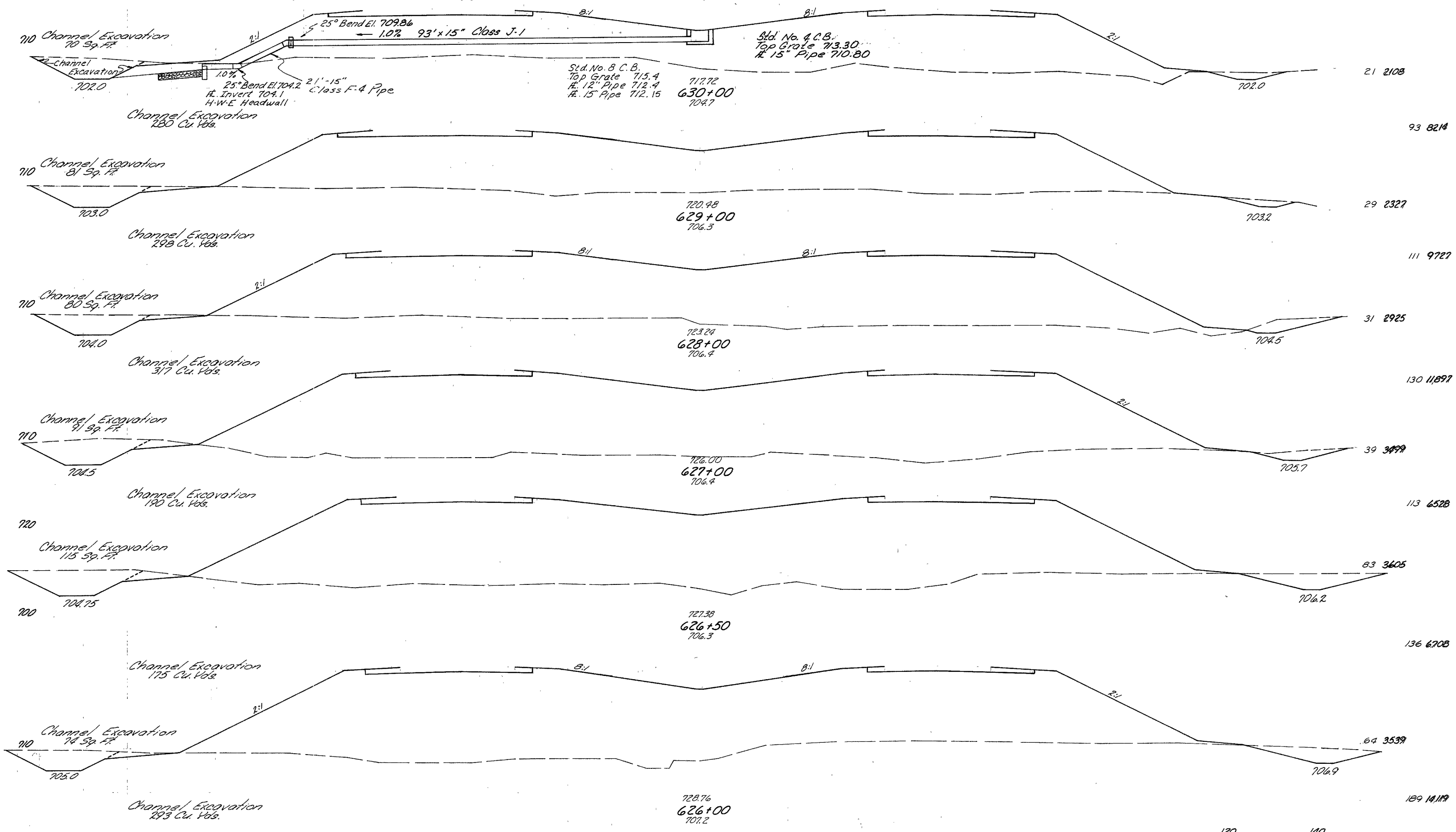
LOR-254-408 B



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

218  
323

LOR-254-4.08B



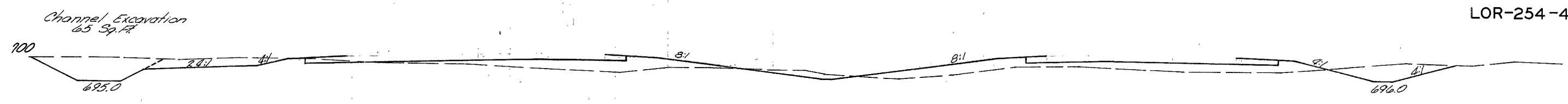
120 140 STA. 626+00 TO STA. 630+00



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

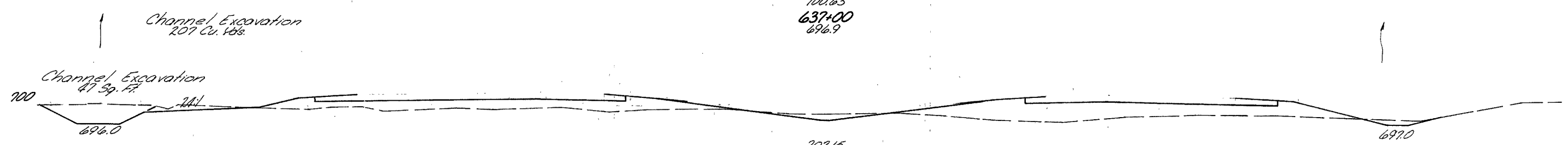
219  
323

LOR-254-4.08B



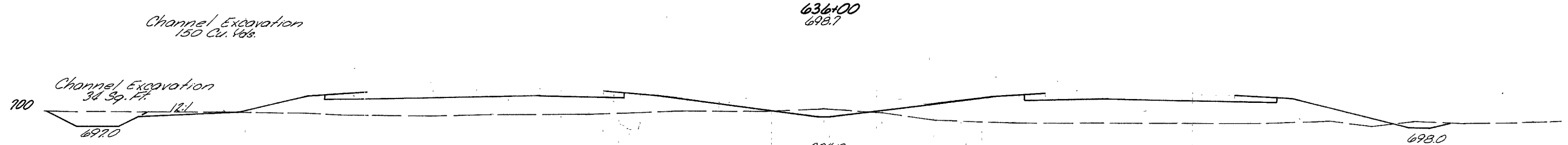
98 231

235 1141



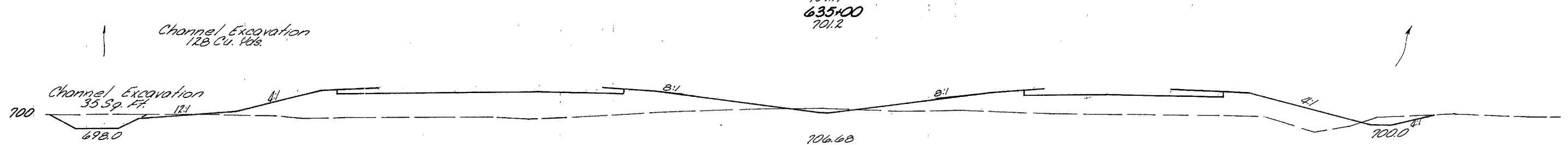
29 385

109 1907



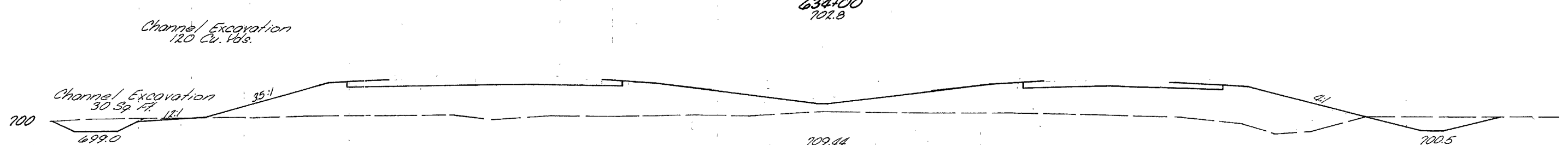
30 645

102 2511



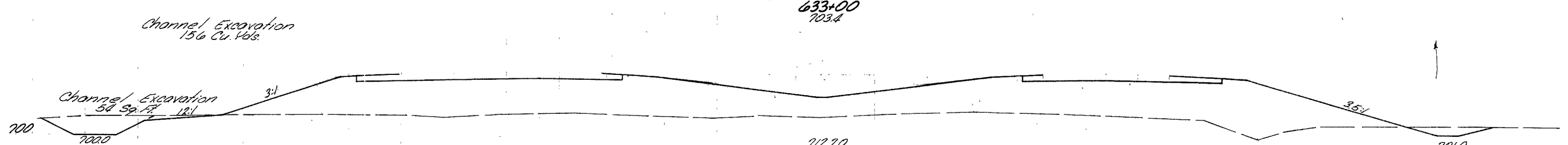
25 711

120 3311



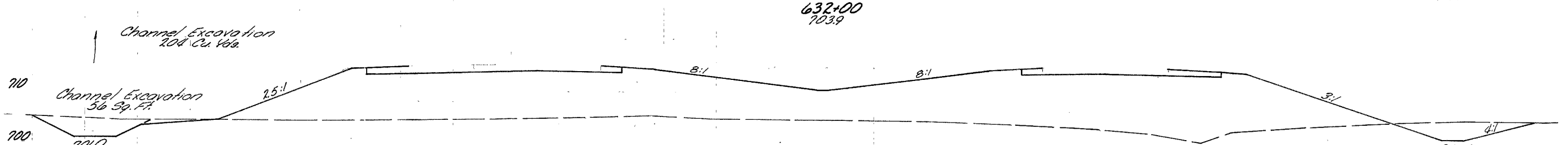
40 1077

115 4448



22 1325

152 5837



60 1827

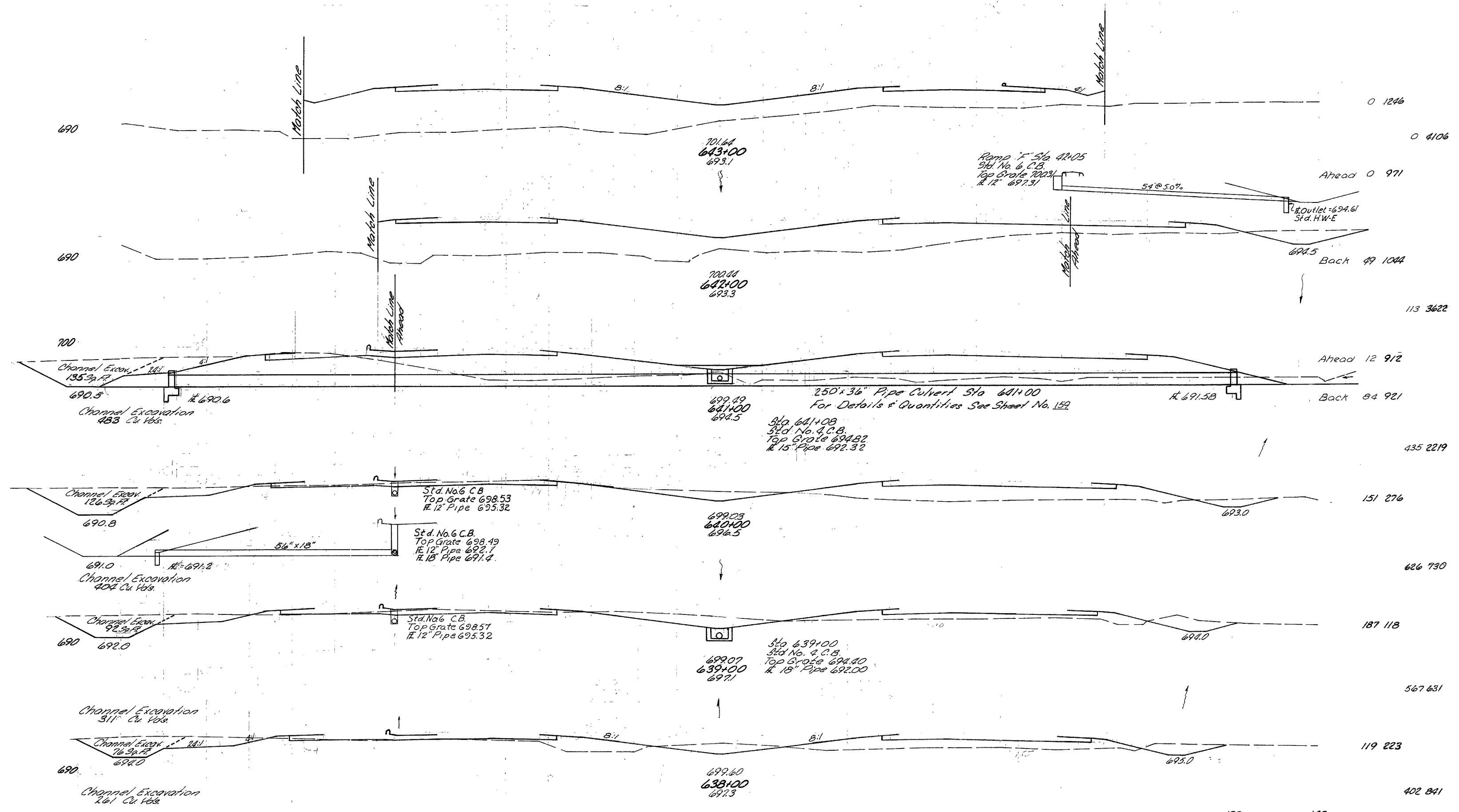
150 5287

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

120 140  
STA. 631+00 TO STA. 637+00

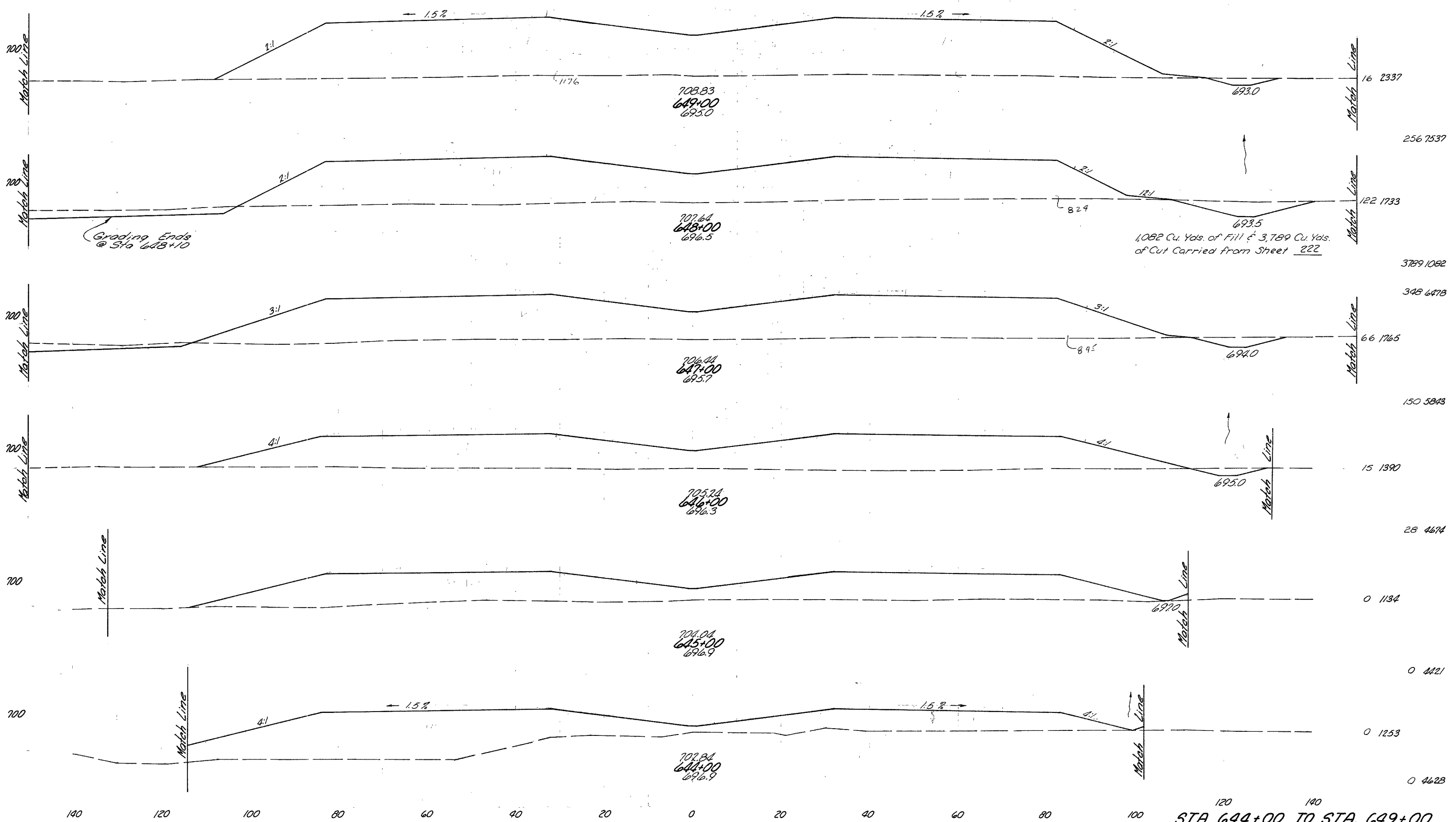
End Project Sta. 643+05  
End Pavement Sta. 643+05

LOR-254-4.08B



0 1246  
0 4106  
Ahead 0 971  
Back 49 1044  
113 3622  
Ahead 12 912  
Back 84 921  
435 2219  
151 276  
626 730  
187 118  
567 631  
119 223  
402 841

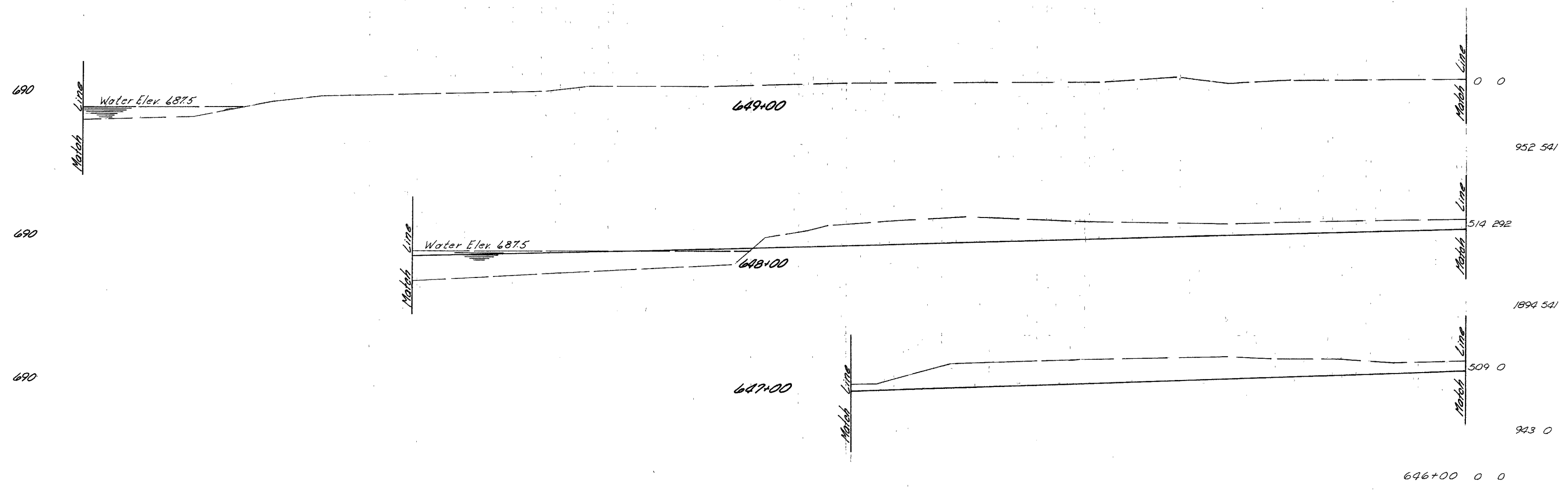
LOR-254-4.08B



460 440 420 400 380 360 340 320 300 280 260 240 220 200

222  
323

LOR-254-4.08

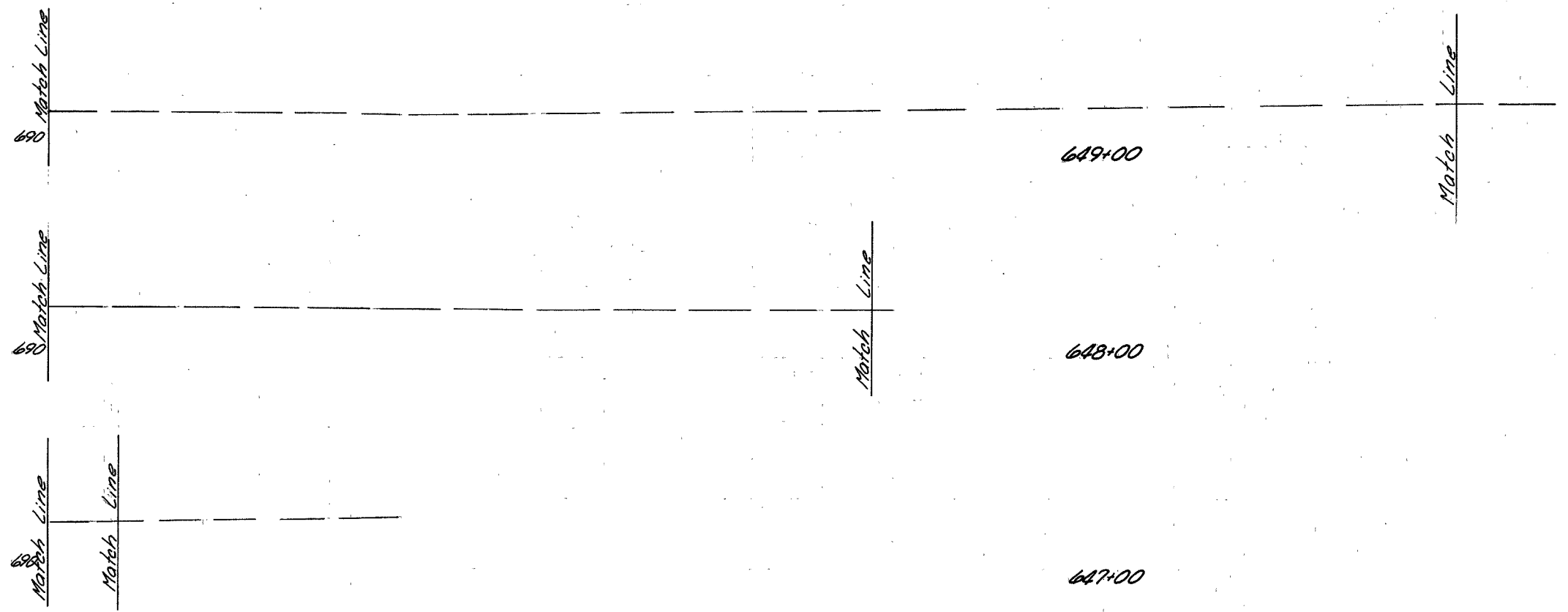


Total Carried on Sheet 221 3789,082

460 440 420 400 380 360 340 320 300 280 260 240 220 200 STA. 647+00 TO STA. 649+00 LEFT

150 160 180 200 220 240 260 280 300 320 340 360 380 400

LOR-254-4.08B



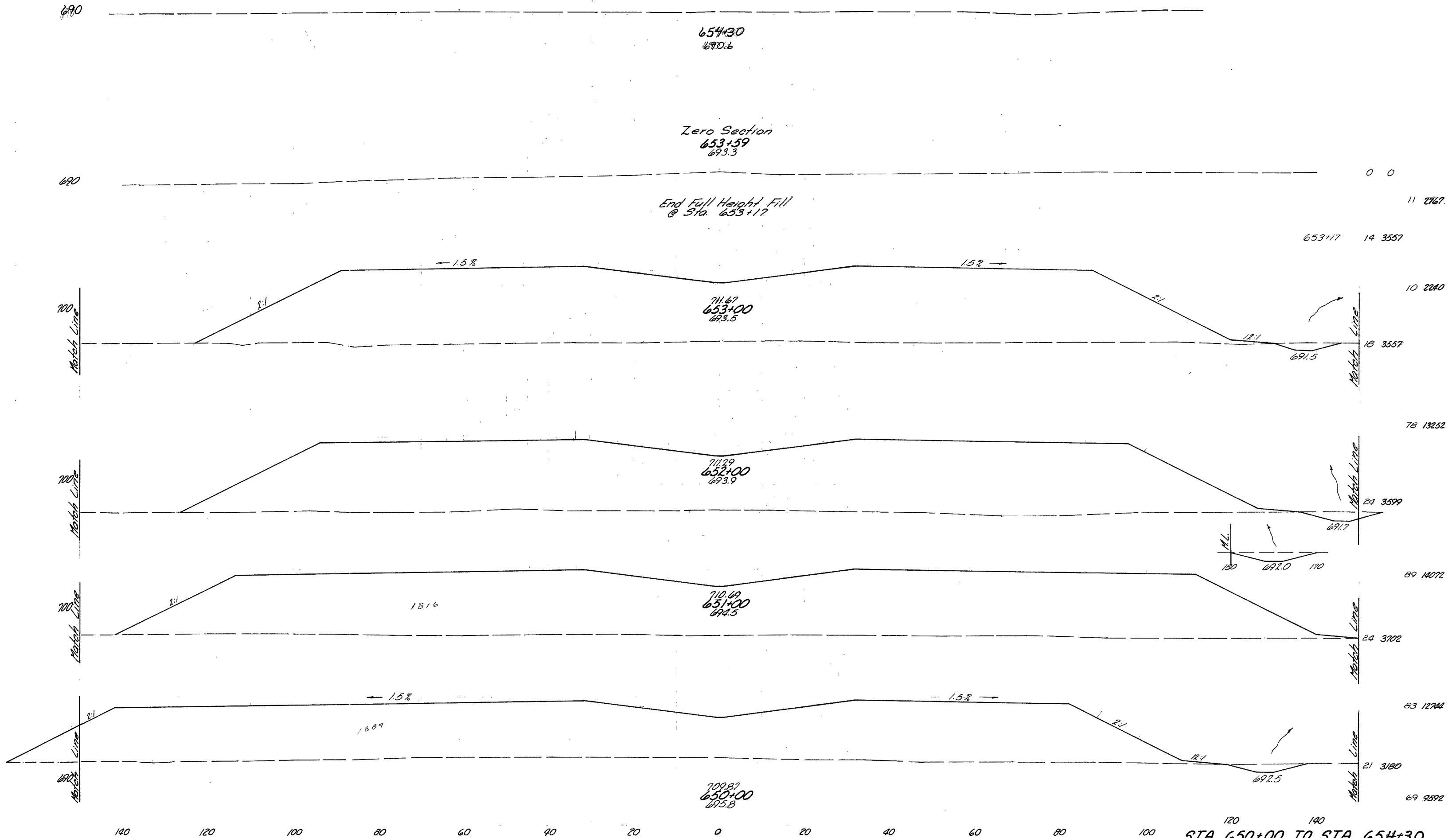
150 160 180 200 220 240 260 280 300 320 340 360

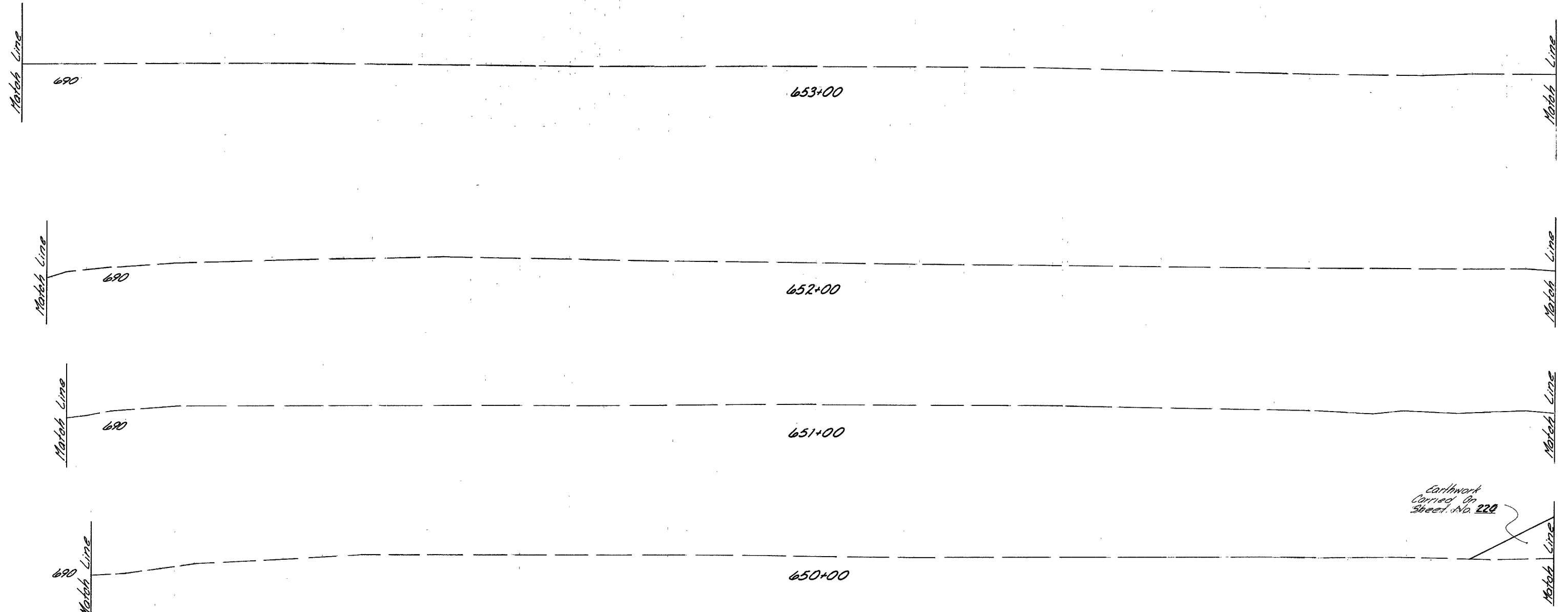
380 400 420 440  
STA. 647+00 TO STA. 649+00 RIGHT

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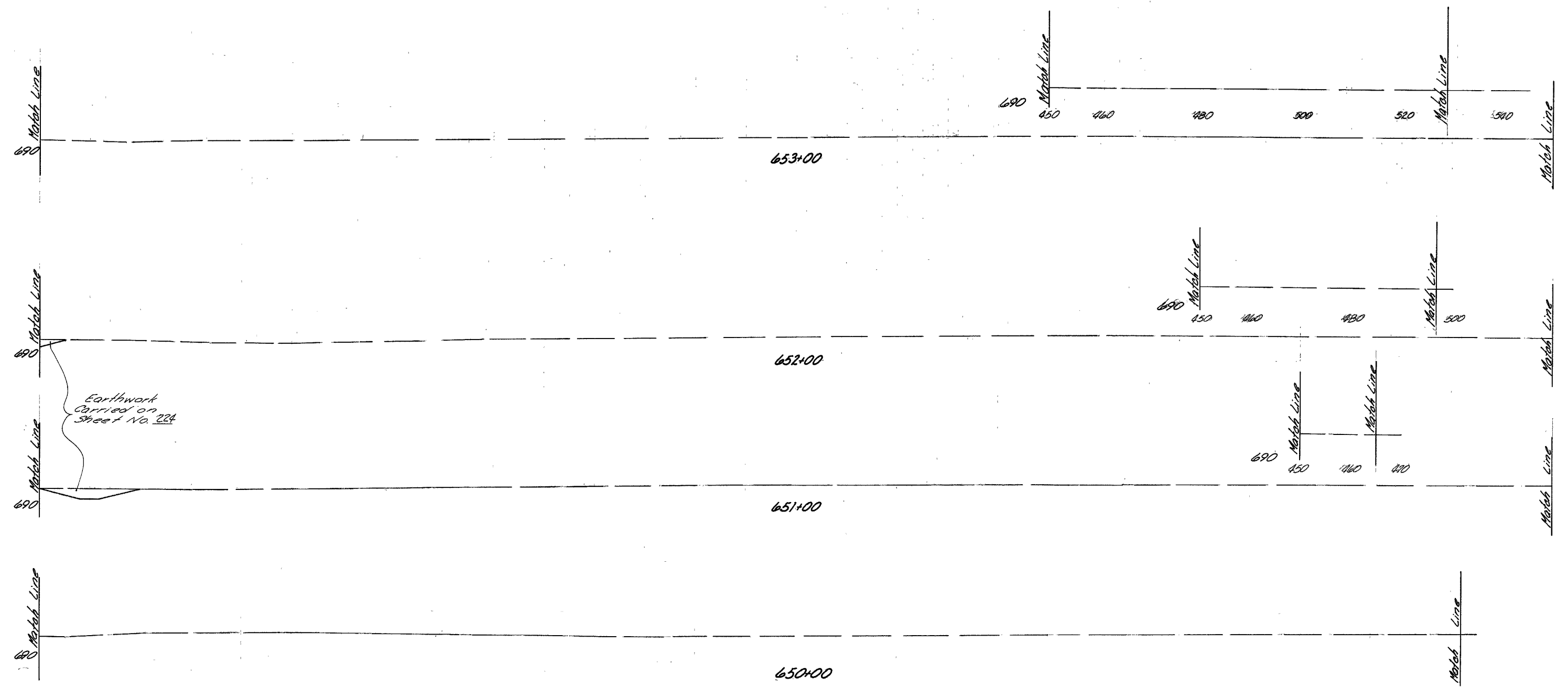
224  
323

LOR-254-4.08B



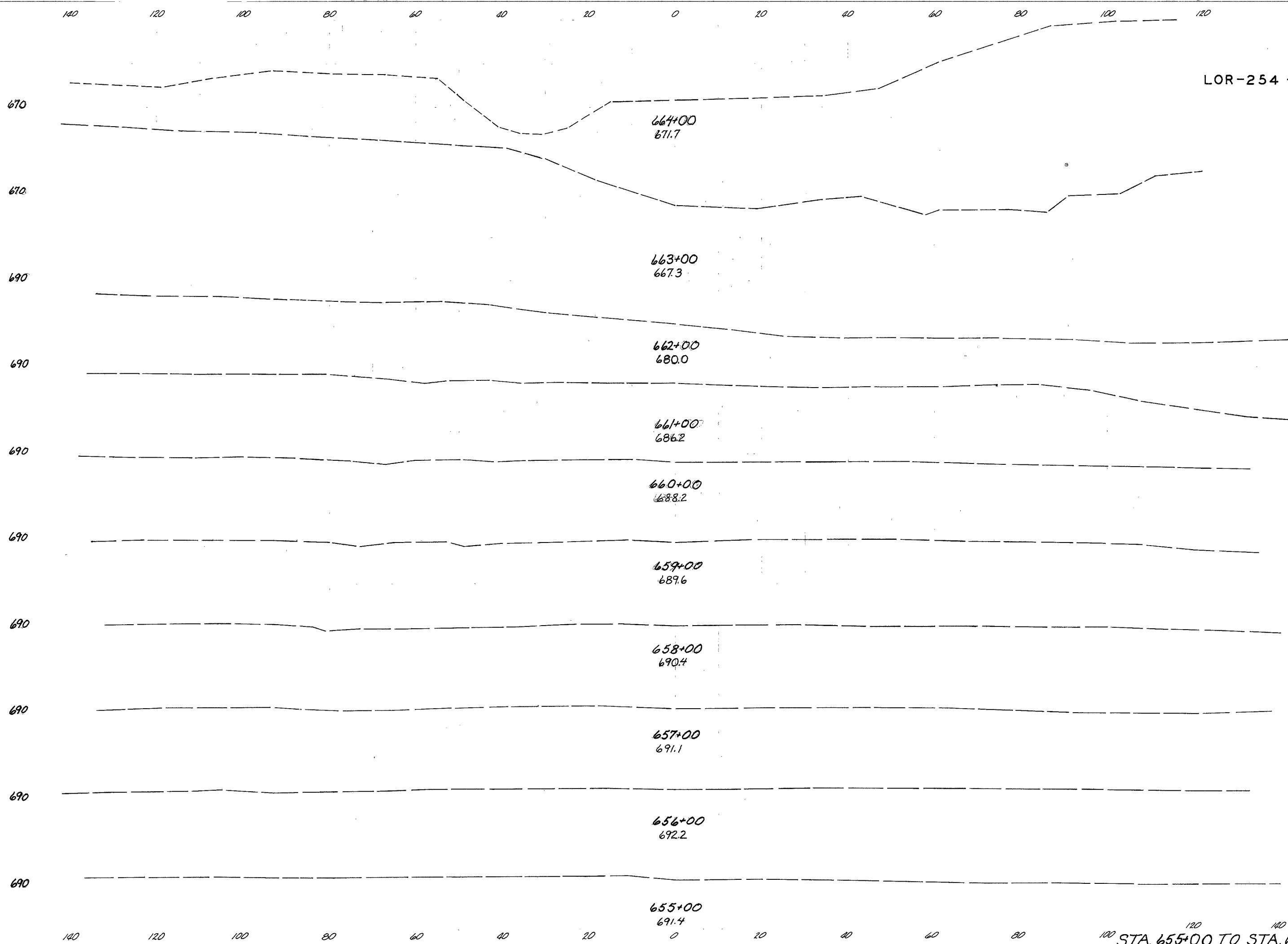


Earthwork  
Carried On  
Sheet No. 229





LOR-254 - 4.08 B

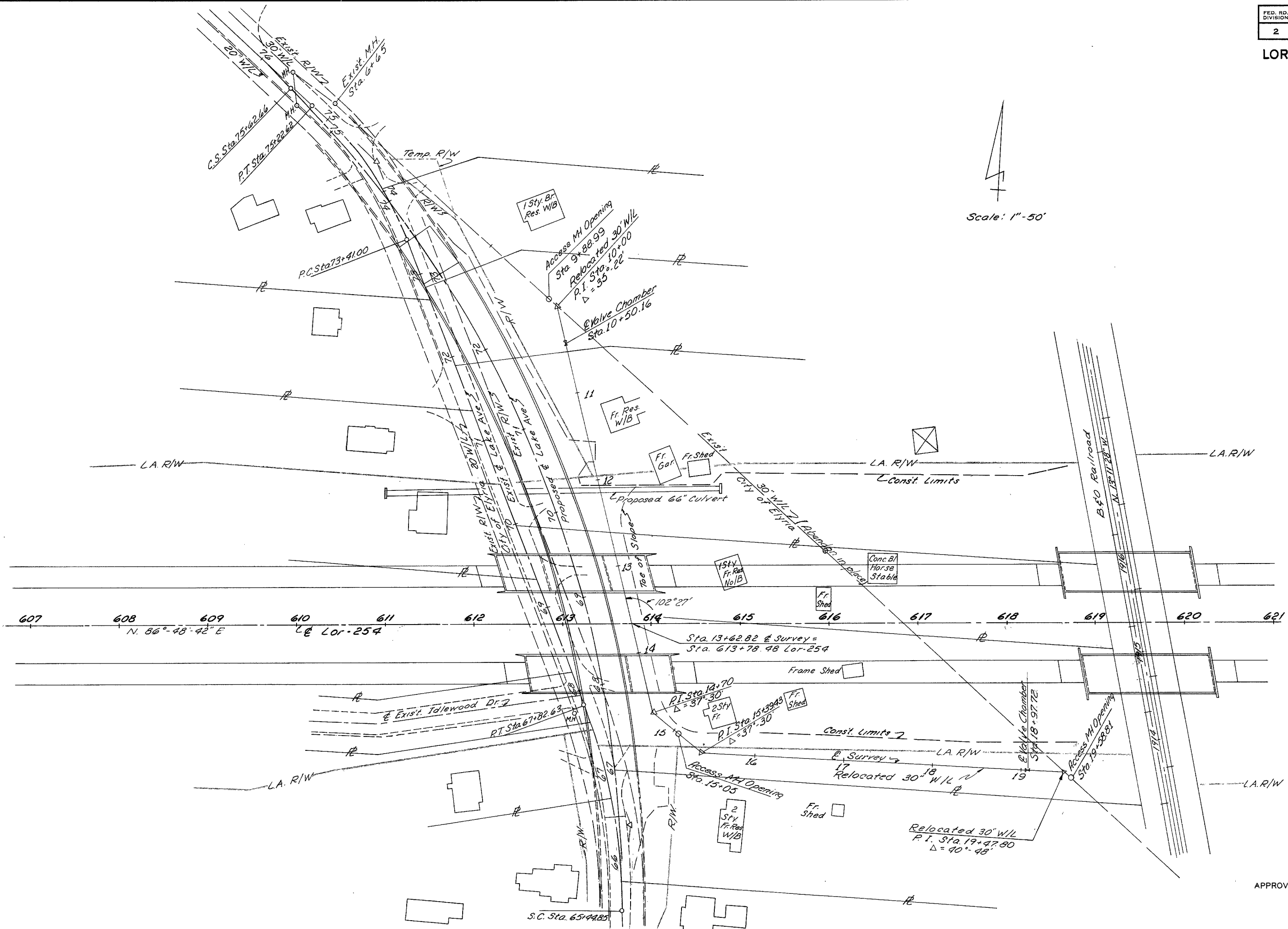
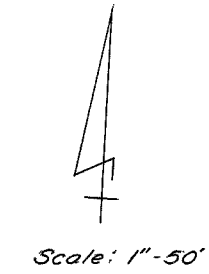


120 140  
STA. 655+00 TO STA. 664+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

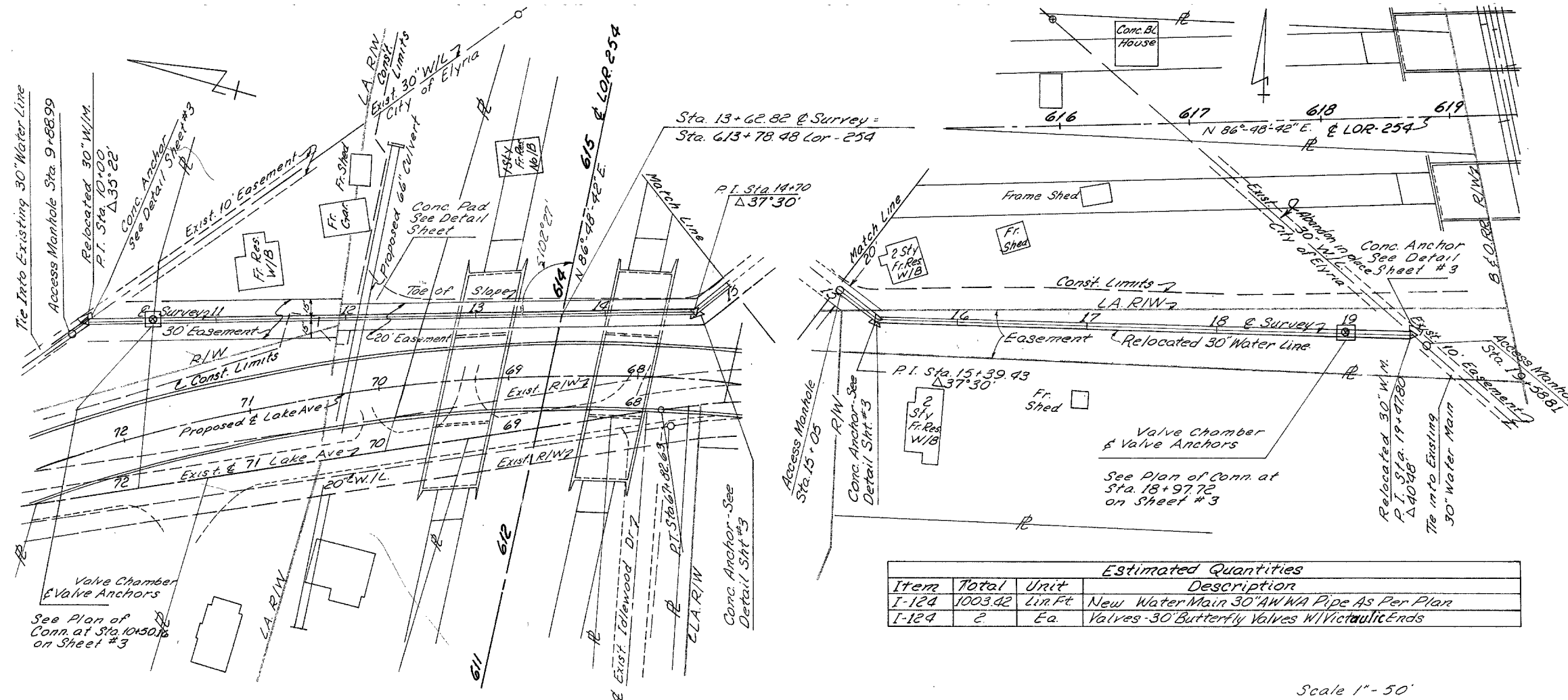
228  
323

LOR-254-4.08B



APPROVED: *R. E. Kleinoeder* DATE July 23, 1964  
R. E. KLEINOEDER  
ELYRIA CITY ENGINEER

RELOCATED 30" WATER MAIN - GENERAL PLAN

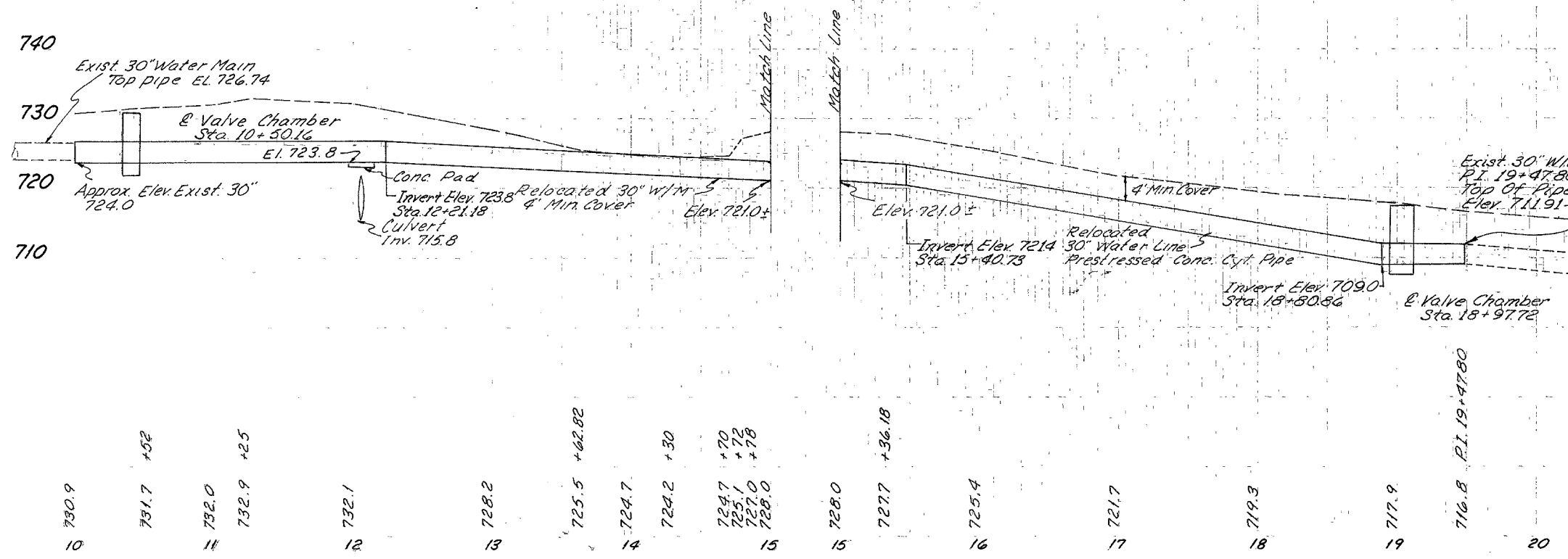


Estimated Quantities			
Item	Total	Unit	Description
I-124	1003.42	Lin. Ft.	New Water Main 30" AWWA Pipe As Per Plan
I-124	2	Ea.	Valves - 30" Butterfly Valves w/ Victaulic Ends

General Notes

1. Relocated 30" Water Main to Have 4'-0" Cover With Minimum of 3'-6" at Ditches
2. Fill May be Used in Low Areas to Maintain 4'-0" Cover
3. Contractor Shall Submit Scheme for Hydrostatic Testing of New Installation To be Approved by The Elyria City Engineer and State's Project Engineer.
4. Contractor Shall Furnish Necessary Taps For Hydrostatic Testing and Sterilization of The New Installation Subject to The Approval of The Elyria City Engineer & State's Project Engineer.
5. Contractor Shall Provide Tied Joint Feature 35' Minimum Each Side of P.I. of Each Bend
6. The Contractor Shall Use Only Material and Construction Methods That Comply With The Supplemental Specification No. I-124 Of The State Of Ohio.
7. The Amount Bid For "Item I-124 New Water Main, Using 30" AWWA C301 Pipe, As Per Plan" Shall Include The Cost Of Furnishing And Installing All Access Manholes With Covers, All Tapped Pipes And All Small Diameter Pipes, Fittings, Valves, And Air Vacuum Valves As Shown On The Plans.
8. The Amount Bid For "Item S-1 Concrete For Structures Class 'C'" As Per Plan Shall Include The Cost Of Furnishing And Installing All Small Diameter Pipe Sleeves, All Air Vent Pipes & Fittings, All Steel W.Iron Ladder Rungs And Manhole Frames And Covers For Valve Chambers "All Elyria Standards" & Concrete Anchors.
9. Time Of Shut Down Of Existing 30" Water Force Main Shall Be At Low Water Demand And Shall Be Determined By The City Of Elyria - Shut Down Shall Not Exceed 8 Hours.
10. No Shutdown Will Be Allowed Prior To December 26, 1964, The Official Completion Date Of City Of Elyria 36" Force Water Main New Under Construction.
11. New Main Shall Be Pressure Tested And Sterilized Prior To Shut Down And Connection To Existing 30" Water Force Main.

Scale 1" = 50'

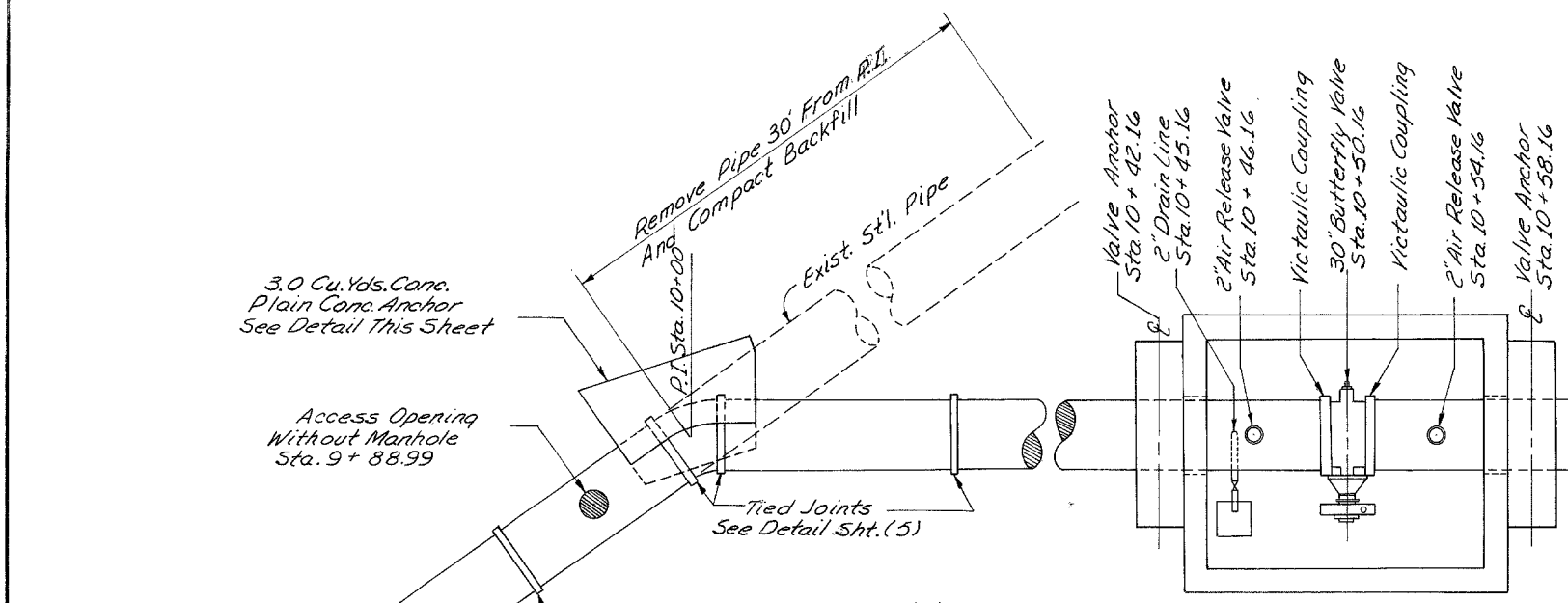


SUMMARY ESTIMATED QUANTITIES

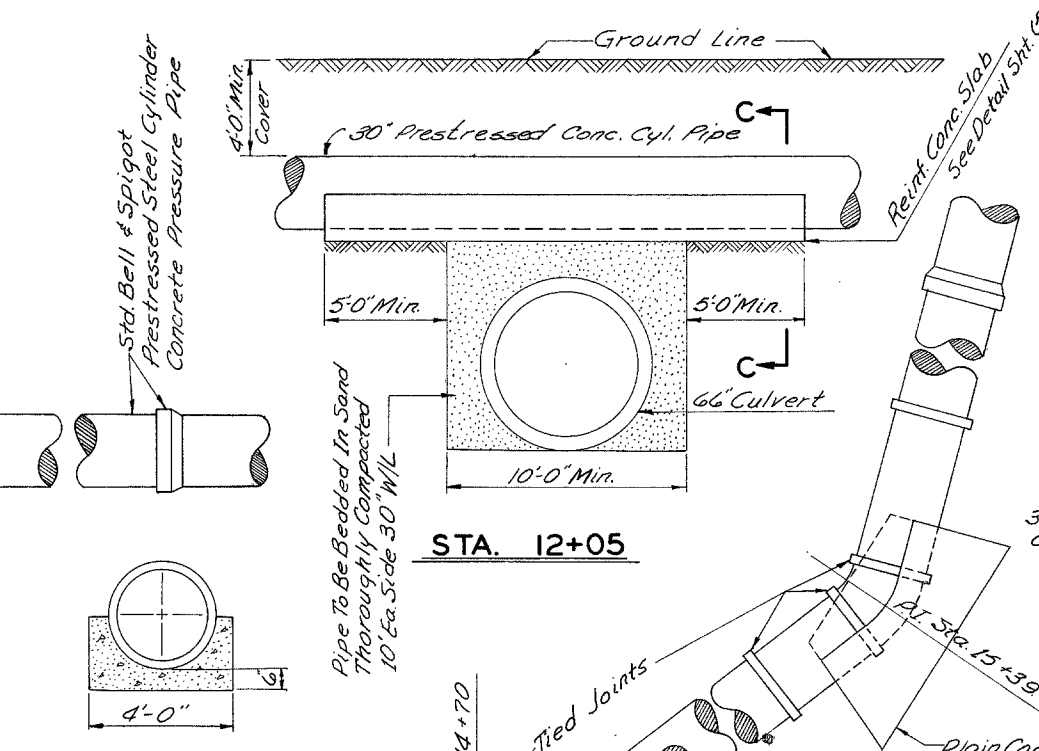
ITEM	TOTAL	UNIT	DESCRIPTION	SHEET
E-2	218	Cu Yds	Excavation For Structures	231
E-12	136	Lin. Ft.	Removal Of Pipe	230
S-1	9	Cu Yds	Concrete For Structure Class 'C'	231
S-1	52.02	Cu Yds	Concrete For Structure Class 'C' As Per Plan	231
S-1	21.4	Cu Yds	Concrete For Structure Class 'E'	230
S-3	152.9	Sq Yds	Waterproofing	231
S-4	13756	Lbs.	Reinforcing Steel	231
S-7	212	Lbs.	Structural Steel - Sliding Bearing Plates	231
S-9	90	Sq Ft.	1/2" Preformed Expansion Joint Filler Type 1	231
I-124	1003.42	Lin. Ft.	New Water Main 30" AWWA Pipe As Per Plan	229
I-124	2	Ea.	Valves - 30" Butterfly Valves w/ Victaulic Ends	229
I-124	1	Ea.	Fitting - 30" x 40" Bend	230
I-124	1	Ea.	Fitting - 30" x 35" Bend	230
I-124	2	Ea.	Fitting - 30" x 37" Bend	230
I-124	2	Ea.	Fitting - Follow Ring 30" x 3'	230
I-124	2	Ea.	Fitting - Adaptor 30" Spigot To Follow Ring Flange To Dresser Coupling	230
I-124	2	Ea.	Fitting - Spigot To Spigot 30" x 3'	230

LOR-254-4.08 B

General Note:  
Pipe Anchors & Slabs To Be Poured Against Undisturbed Earth Or Well Compacted Backfill

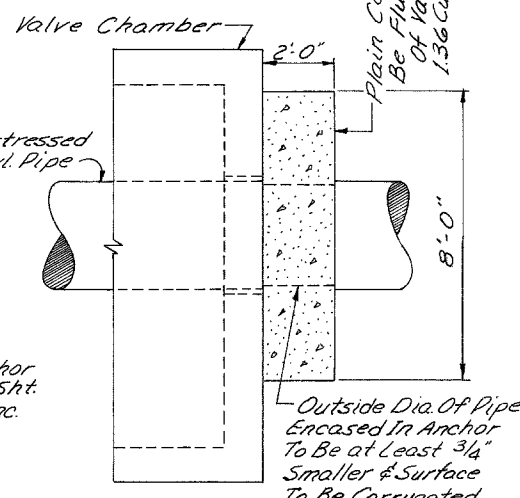


PLAN OF CONNECTION STA. 10+00



SECTION C-C

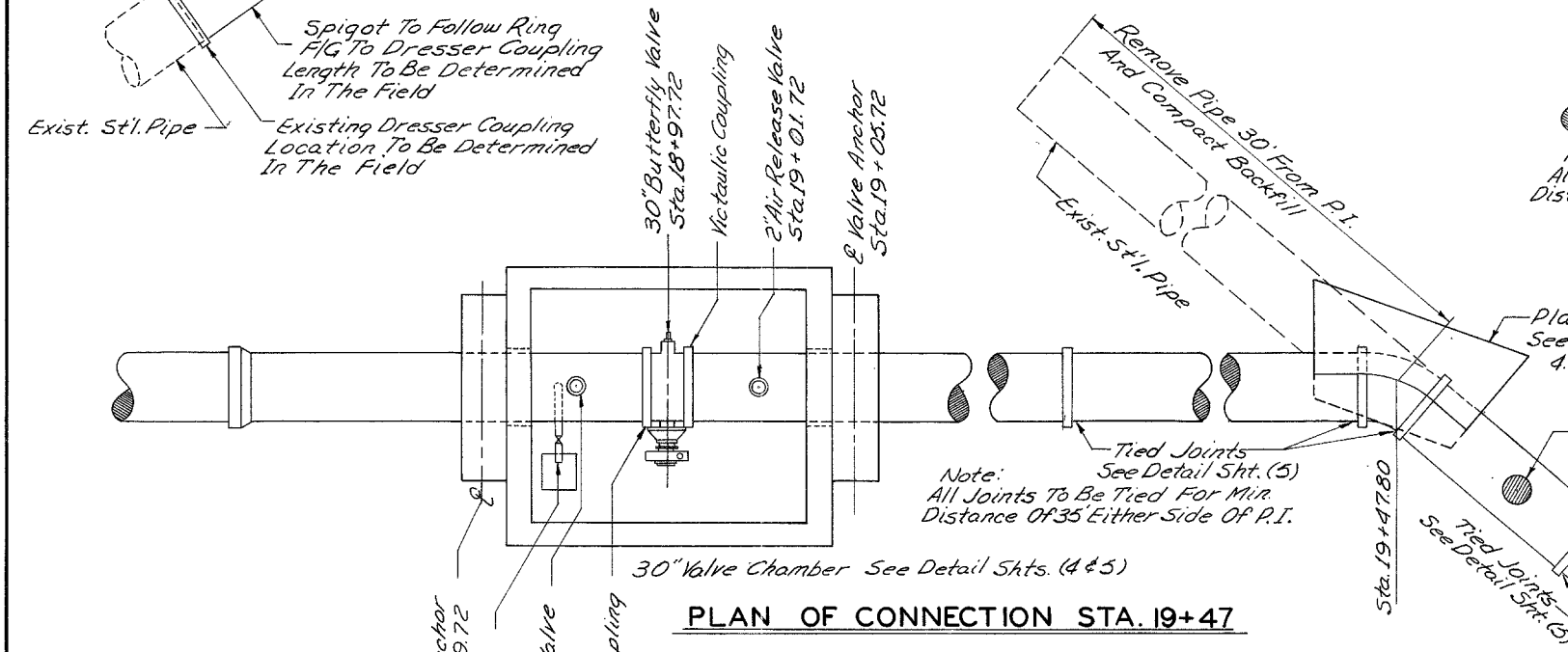
PLAN OF CONNECTION STA. 14+70



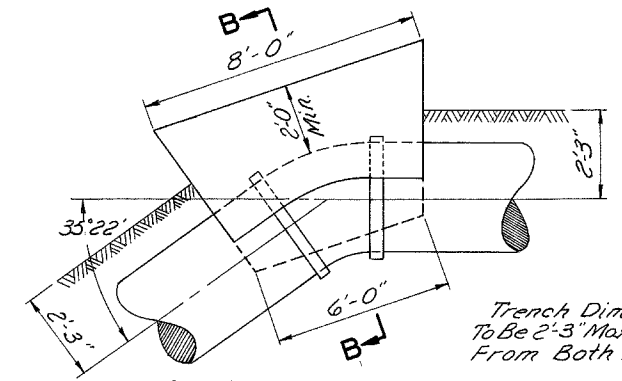
TYPICAL PLAN OF VALVE ANCHOR

ESTIMATED QUANTITIES			
ITEM	TOTAL	UNIT	DESCRIPTION
E-12	136	Lin. Ft.	Removal Of Pipe
S-1	214	Cu. Yds.	Concrete For Structures Class B
I-124	1	Ea.	Fitting 30" x 40" 48" Bend
I-124	1	Ea.	Fitting 30" x 35" 22" Bend
I-124	2	Ea.	Fitting 30" x 37" 30" Bend
I-124	2	Ea.	Fitting Follow Ring 30" x 36"
I-124	2	Ea.	Fitting Adaptor 30" Spigot To Follow Ring - Flg To Dresser Cpl.
I-124	2	Ea.	Fitting Spigot To Spigot 30" x 36"

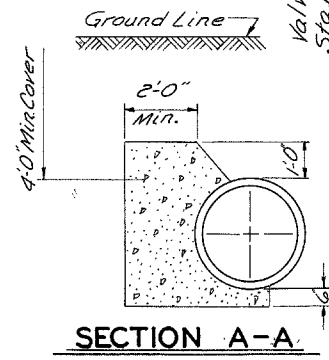
Quantities Carried to Sheet No. 229



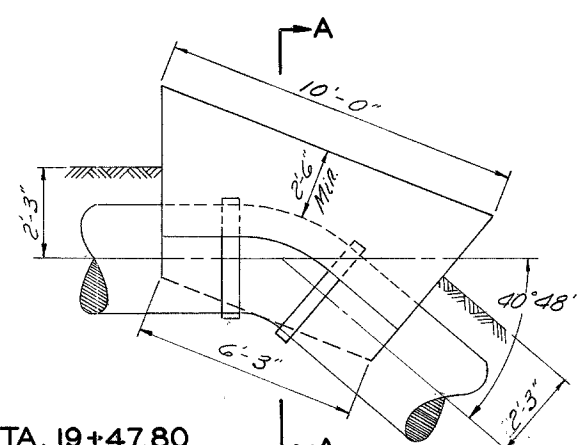
PLAN OF CONNECTION STA. 19+47



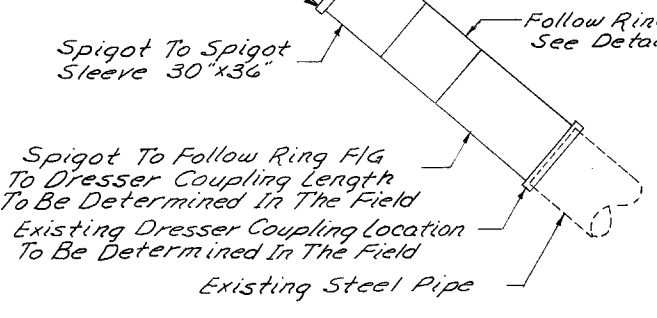
DETAIL 35' 22' BENT ANCHOR STA. 10+00



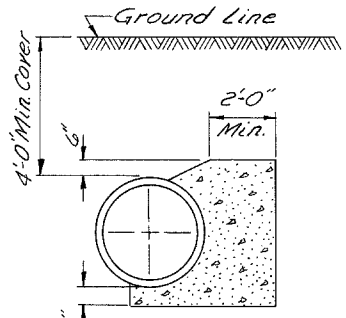
SECTION A-A



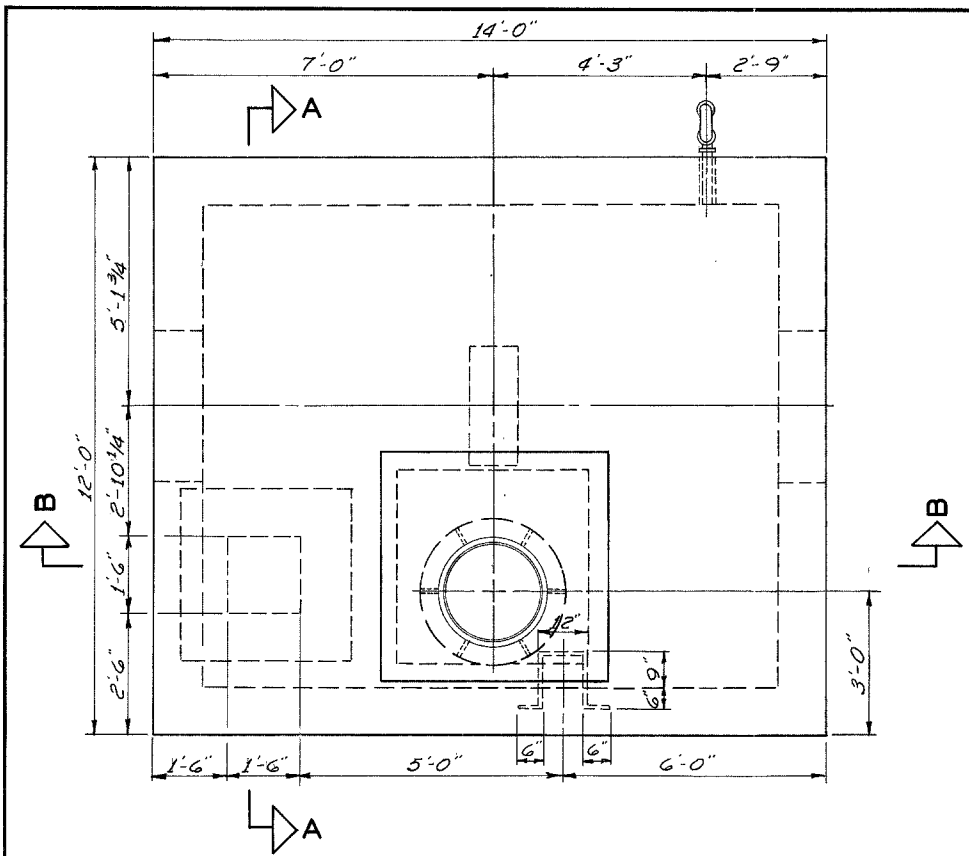
STA. 19+47.80  
DETAIL 40' 48' BEND ANCHOR



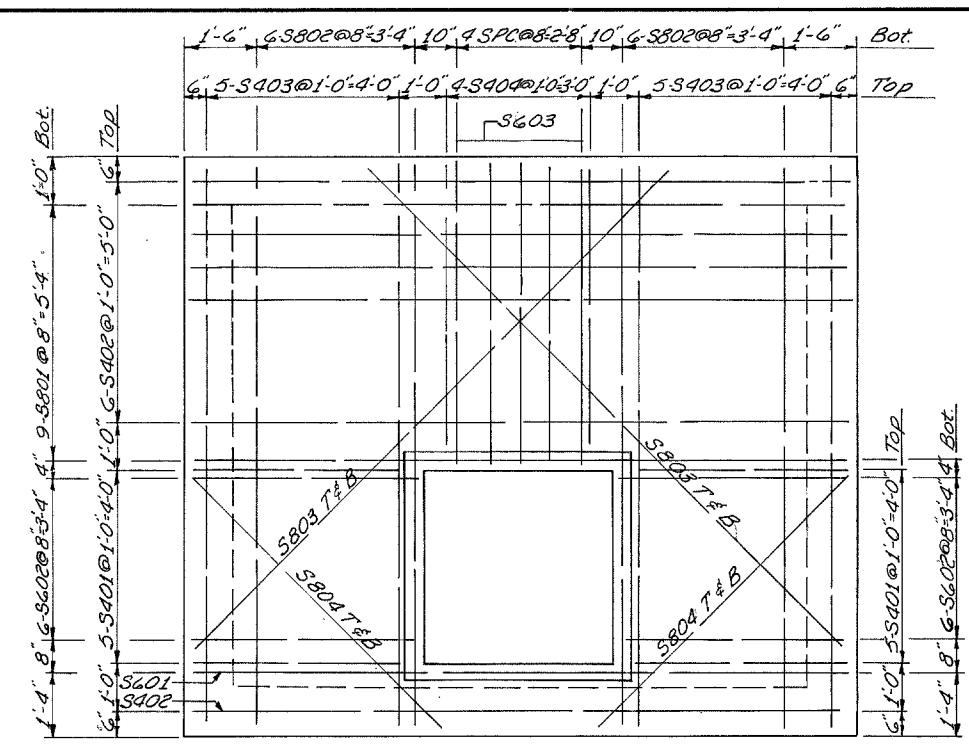
DETAIL 37' 30' BEND ANCHOR STA. 14+70 & 15+39.43



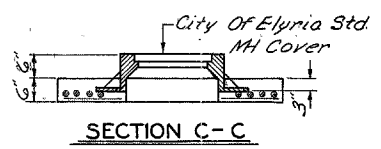
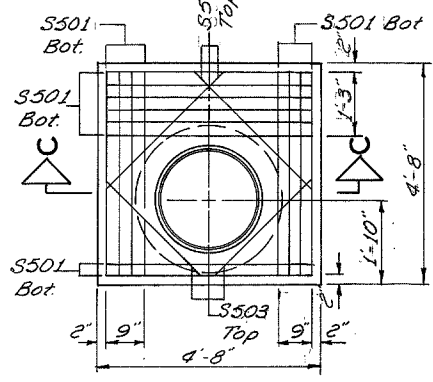
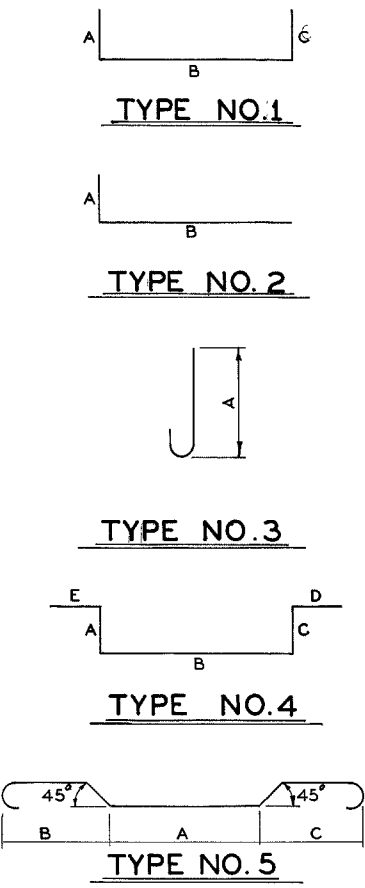
SECTION B-B



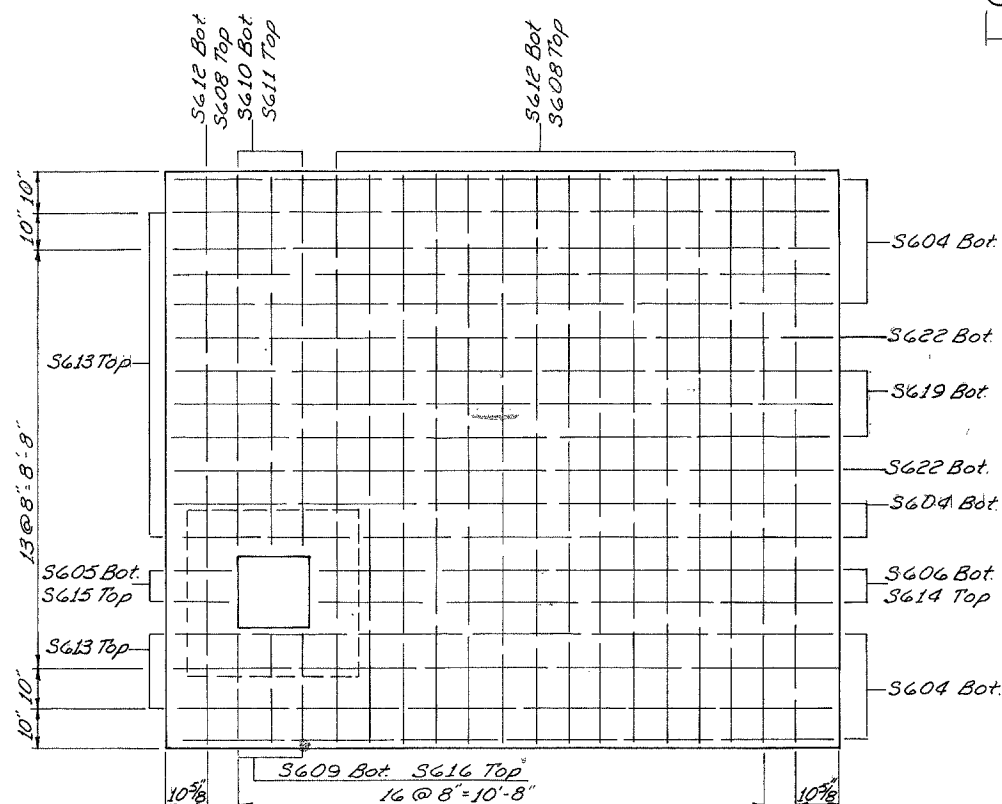
PLAN OF 30" VALVE CHAMBER



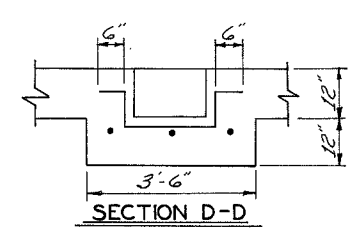
REINFORCING PLAN - COVER SLAB



REINFORCING PLAN - MANHOLE COVER



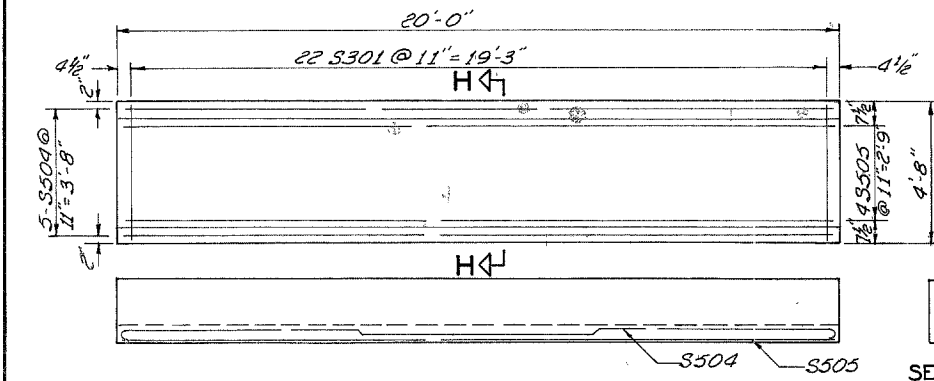
REINFORCING PLAN BOTTOM SLAB



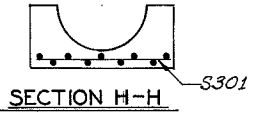
SECTION D-D

ITEM	TOTAL	UNIT	DESCRIPTION
S-1	90	Cu. Yds.	Concrete For Structure Class 'C'
S-4	552	Lbs.	Reinforcing Steel

Quantities Carried to Sheet No. 229



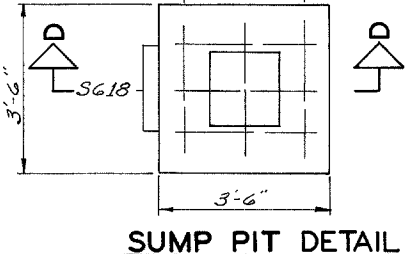
REINFORCING PLAN - PIPE SUPPORT SLAB



SECTION H-H

ITEM	TOTAL	UNIT	DESCRIPTION
E-2	218	Cu. Yds.	Excavation For Structures
S-1	52.02	Cu. Yds.	Concrete For Structure Class 'C' As Per Plan
S-3	152.9	Sq. Yds.	Waterproofing
S-4	1320.4	Lbs.	Reinforcing Steel
S-7	212	Lbs.	Structural Steel Sliding Bearing Plates
S-9	90	Sq. Ft.	1/2" Preformed Expansion

Quantities Carried to Sheet No. 229



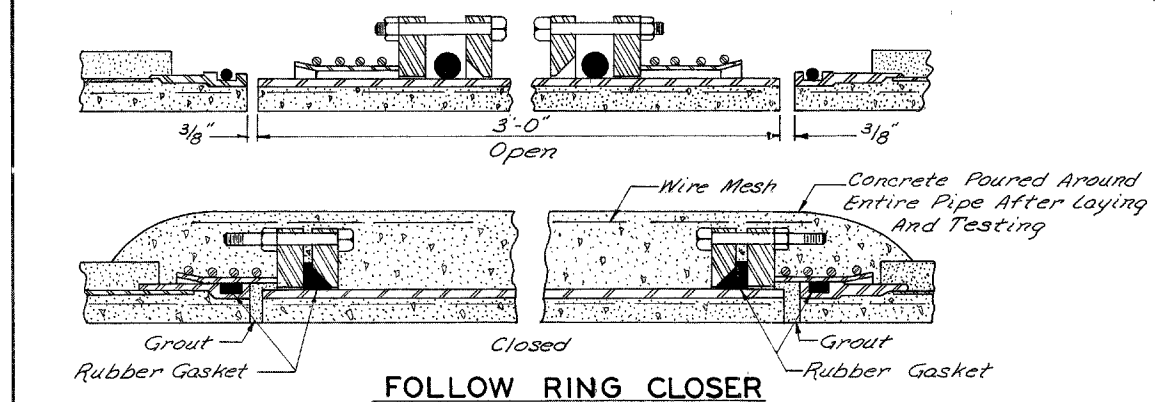
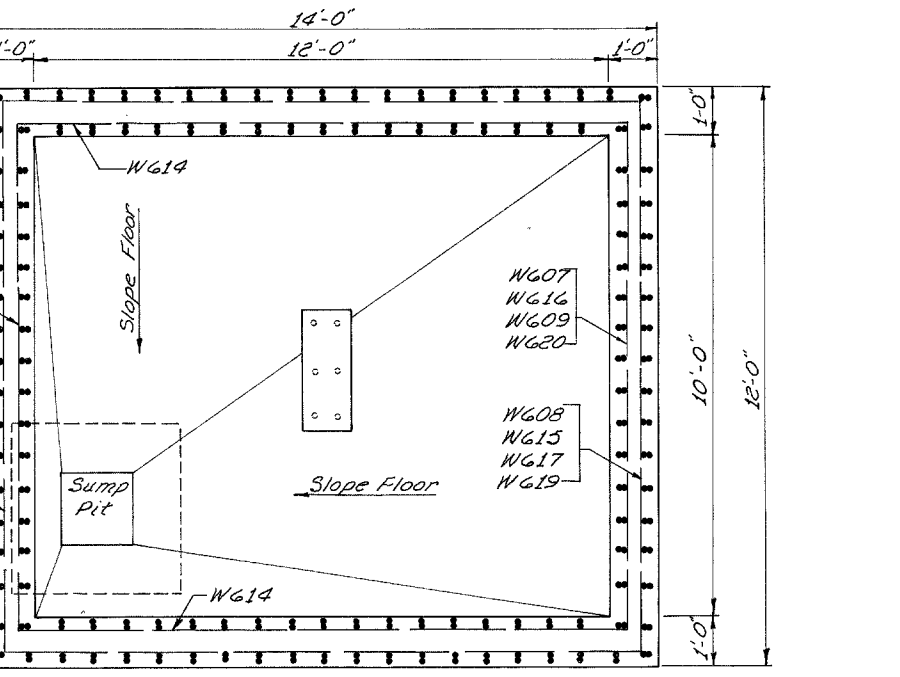
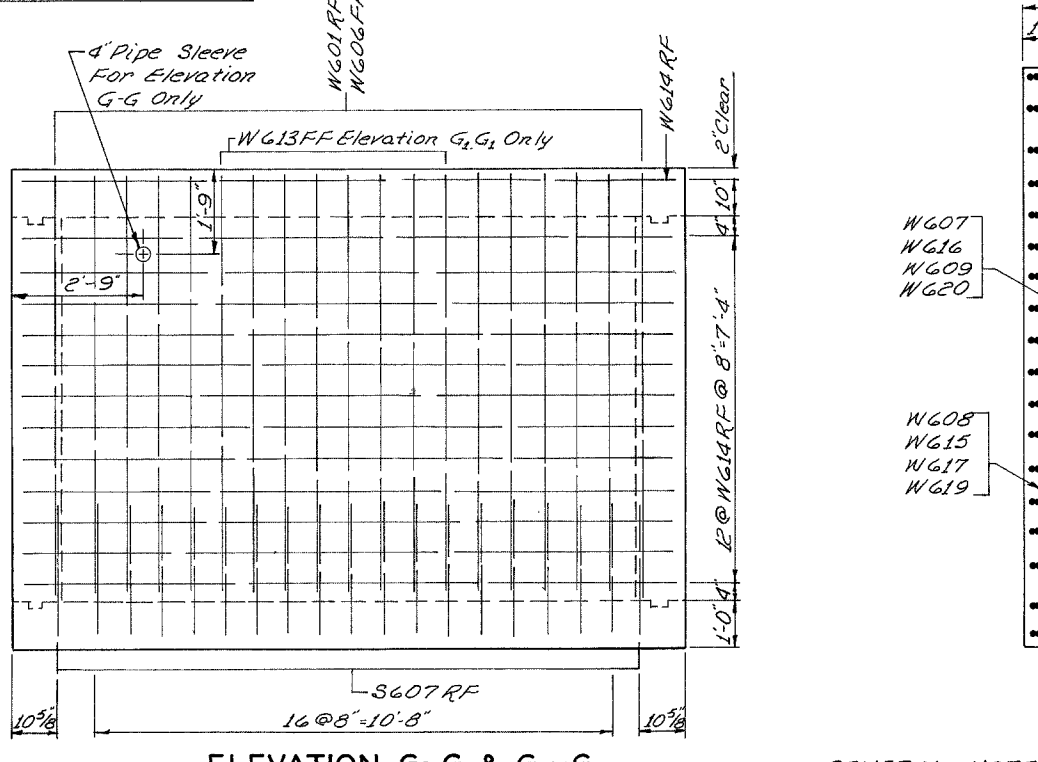
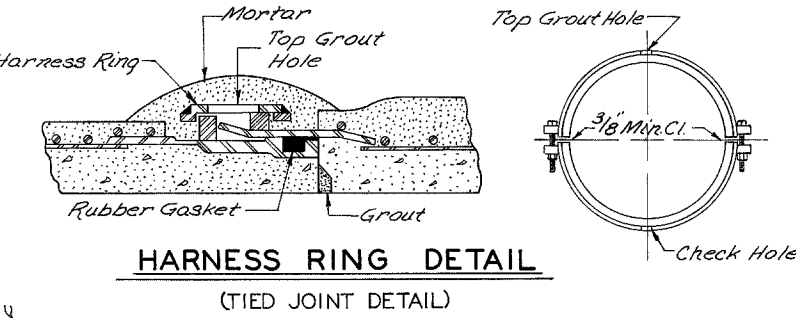
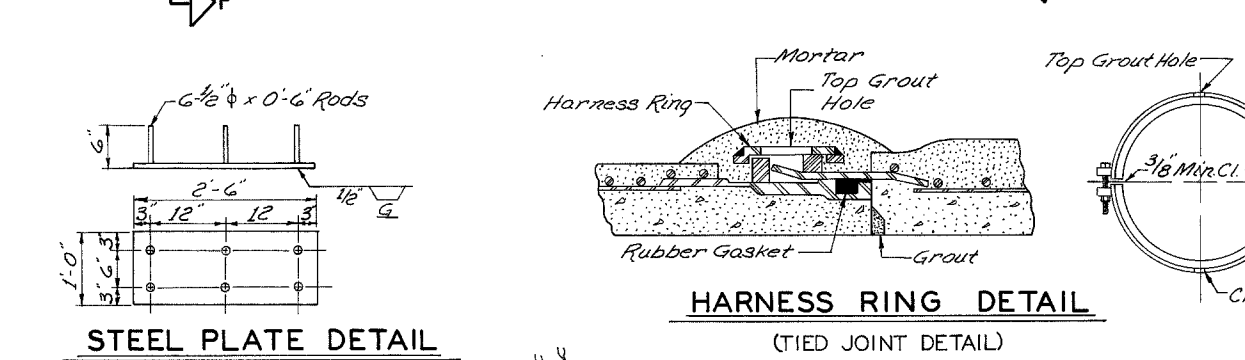
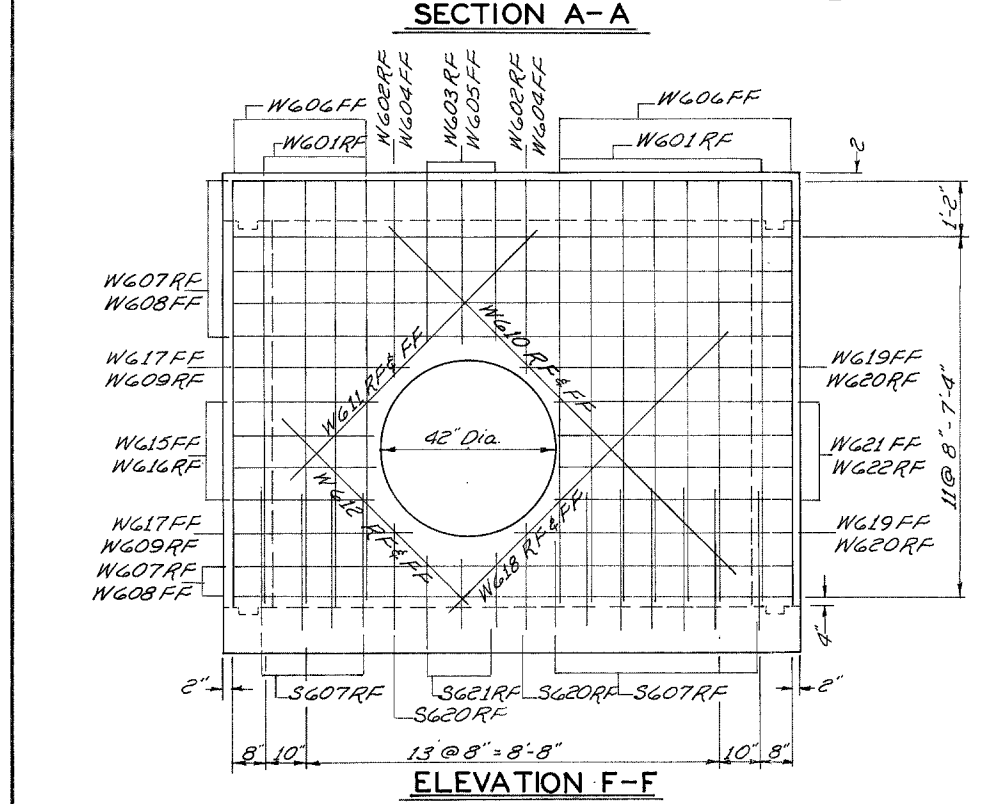
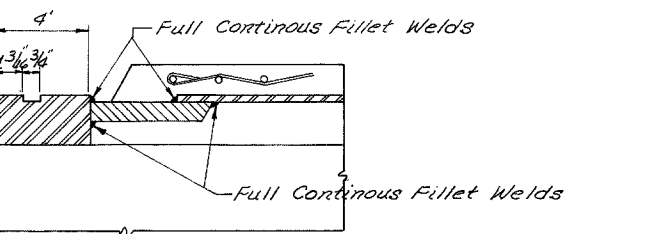
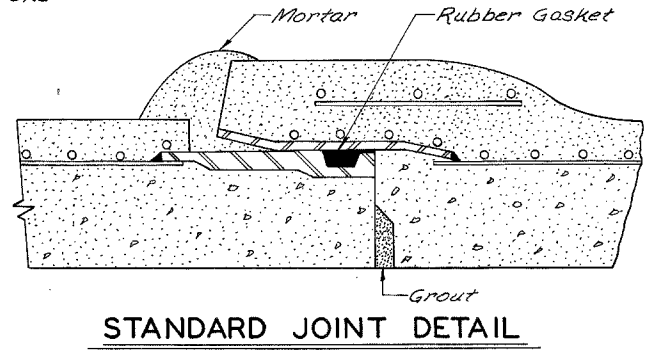
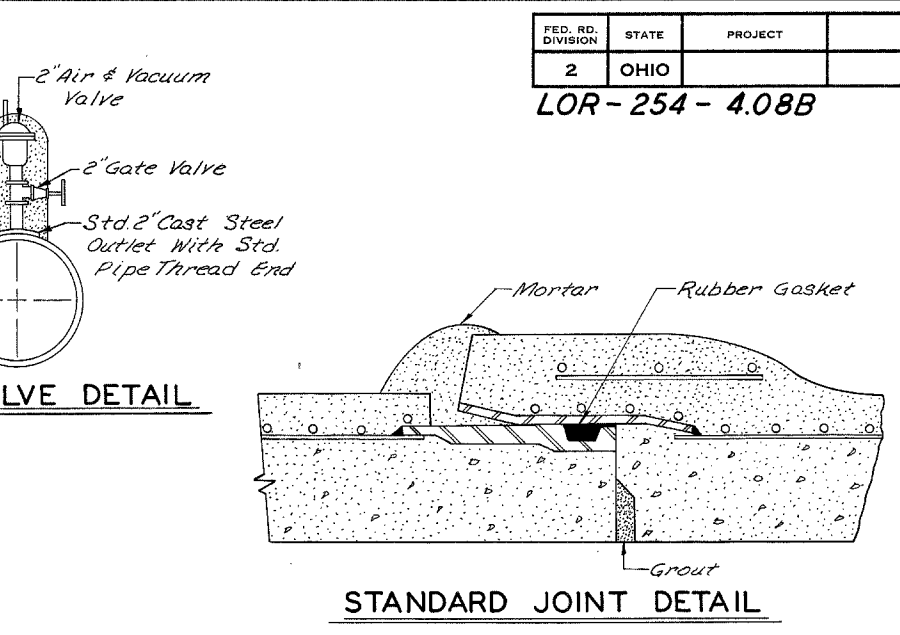
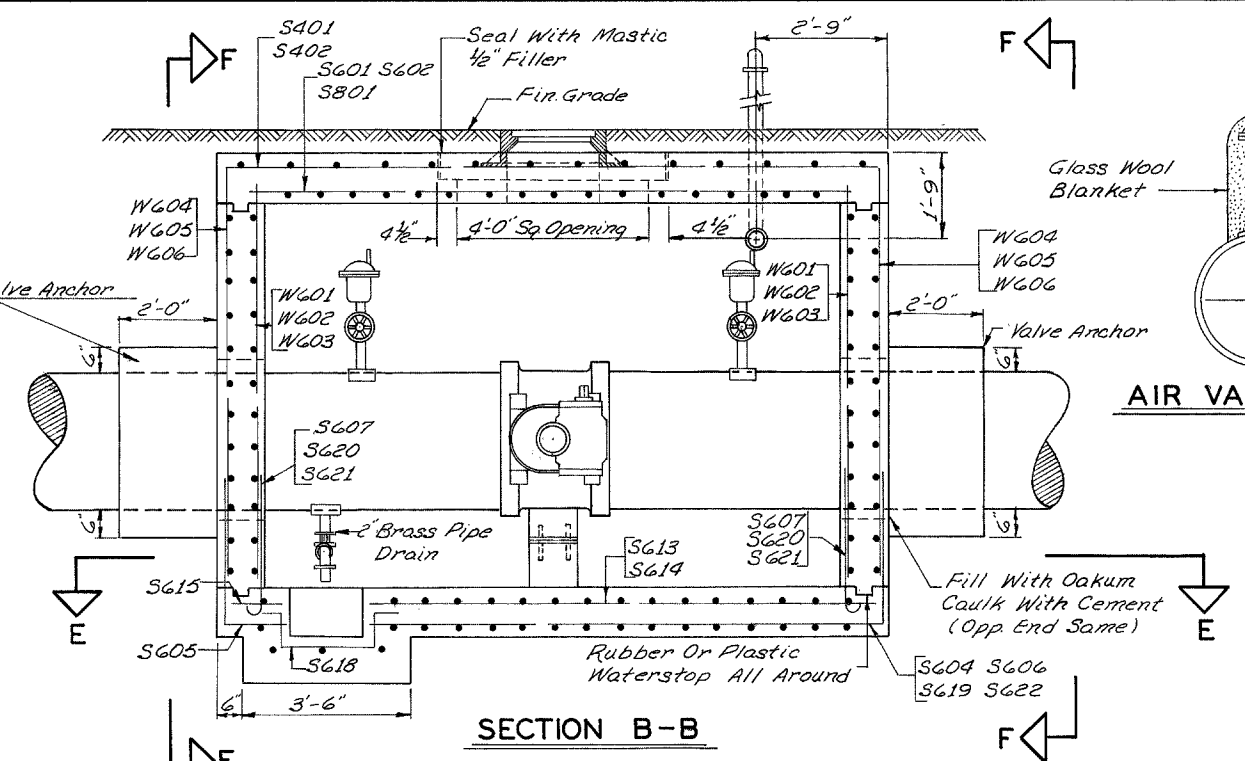
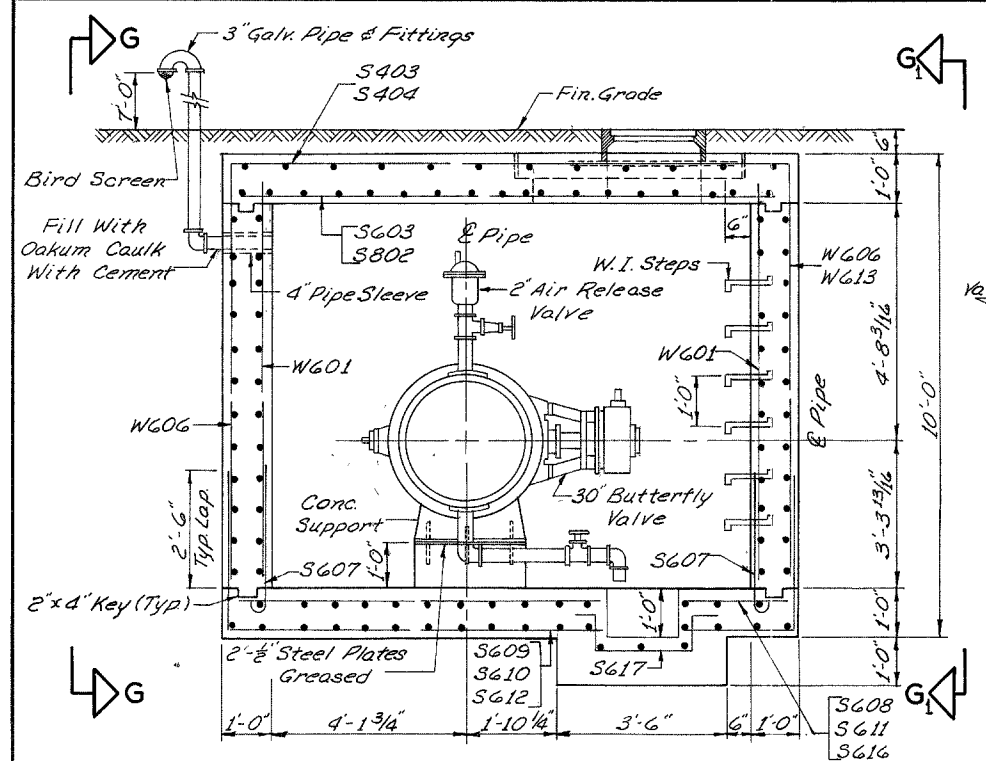
SUMP PIT DETAIL

REINFORCING STEEL LIST FOR 2 VALVE CHAMBERS									
MARK	NO	LENGTH	TYPE	A	B	C	D	E	WEIGHT
S401	20	4'-4"	Str.						58
S402	14	13'-8"	Str.						128
S403	20	11'-8"	Str.						156
S404	8	5'-9"	Str.						30
S501	32	5'-4"	Str.						144
S502	4	4'-0"	Str.						17
S503	4	2'-10"	Str.						11
S601	2	13'-8"	Str.						42
S602	24	4'-8"	Str.						168
S603	10	6'-2"	Str.						94
S604	22	20'-2"	1	3'-3"	13'-8"	3'-3"			666
S605	4	4'-5"	2	3'-3"	1'-2"				88
S606	4	10'-11"	2	3'-3"	10'-8"				33
S607	108	3'-8"	3	3'-0"					297
S608	32	11'-8"	Str.						281
S609	6	5'-5"	2	3'-3"	2'-2"				24
S610	6	10'-11"	2	5'-3"	7'-8"				100
S611	6	7'-8"	Str.						70
S612	32	18'-2"	1	3'-3"	11'-8"	3'-3"			874
S613	28	13'-8"	Str.						574
S614	4	10'-9"	Str.						64
S615	4	1'-2"	Str.						8
S616	6	2'-2"	Str.						20
S617	6	2'-8"	4	0'-8"	2'-4"	0'-8"	0'-6"	0'-6"	42
S618	6	4'-2"	4	0'-8"	1'-10"	0'-8"	0'-6"	0'-6"	40
S619	6	16'-4"	1	1'-4"	13'-8"	1'-4"			148
S620	8	2'-8"	3	2'-0"					32
S621	12	2'-0"	3	1'-4"					36
S622	4	16'-4"	1	1'-4"	13'-8"	1'-4"			100
S801	18	13'-8"	Str.						639
S802	24	11'-8"	Str.						750
S803	8	14'-6"	Str.						310
S804	8	7'-4"	Str.						158
W601	120	8'-8"	Str.						1562
W602	8	3'-10"	Str.						46
W603	12	3'-2"	Str.						48
W604	8	6'-2"	2	2'-4"	3'-10"				76
W605	12	5'-6"	2	2'-4"	3'-2"				100
W606	112	10'-0"	2	2'-4"	8'-8"				1682
W607	28	10'-8"	Str.						450
W608	28	25'-8"	1	7'-0"	11'-8"	7'-0"			1078
W609	8	5'-0"	Str.						60
W610	8	10'-6"	Str.						126
W611	8	7'-6"	Str.						90
W612	8	8'-6"	Str.						102
W613	16	9'-7"	1	0'-11"	8'-8"				232
W614	26	12'-8"	Str.						496
W615	16	11'-10"	1	7'-0"	4'-10"				286
W616	16	4'-4"	Str.						106
W617	8	13'-6"	1	7'-10"	6'-6"				204
W618	8	8'-0"	Str.						96
W619	8	12'-0"	1	5'-0"	7'-0"				144
W620	8	4'-8"	Str.						58
Total									13204

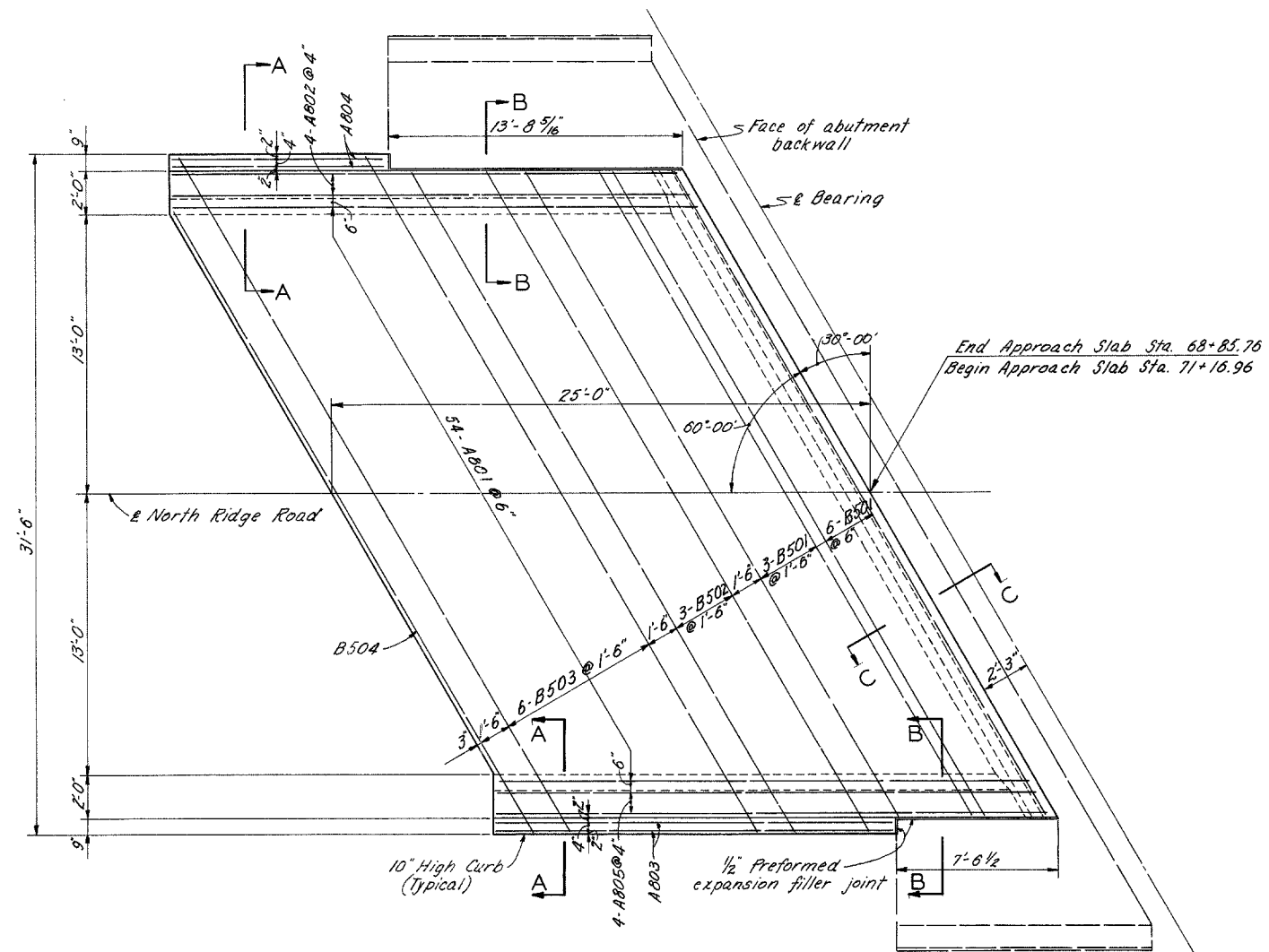
Quantities Carried to Sheet No. 229

NOTES: Bar Size Is Indicated In The Bar Mark The First Digit Where Three Digits Are Used Example S601 Is A Number 6 Bar S-Slab, W-Wall, RF-Rearface FF-Frontface Clearance To Reinforcing Steel From Face Of Concrete Shall Be 2" Unless Noted.

REINFORCING STEEL LIST FOR PIPE SUPPORT SLAB									
MARK	NO	LENGTH	TYPE	A	B	C	D	E	WEIGHT
S301	22	4'-4"	Str.						358
S304	5	21'-4"	1	6'-10"	6'-4"	6'-10"			112
S505	4	19'-8"	Str.						82



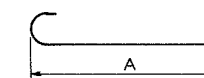
**GENERAL NOTE:**  
Valve Chamber To Have Type "B" Waterproofing



PLAN VIEW

REINFORCING STEEL									
MARK	NUMBER	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A801	108	25'-7"	1	24'-6"					73.77
A802	8	(2)	1	(1)					5.30
A803	4	18'-4"	Str.						19.6
A804	4	9'-10"	Str.						10.5
A805	8	(4)	1	(3)					56.2
B501	18	34'-3"	Str.						64.3
B502	6	35'-1"	Str.						22.0
B503	12	36'-0"	Str.						45.1
B504	2	33'-0"	Str.						6.9
TOTAL									1015.3

- ① Vary from 23'-6" to 24'-0" Vary 2 each by 2"
- ② Vary from 24'-7" to 25'-1" Vary 2 each by 2"
- ③ Vary from 25'-0" to 25'-6" Vary 2 each by 2"
- ④ Vary from 26'-1" to 26'-7" Vary 2 each by 2"

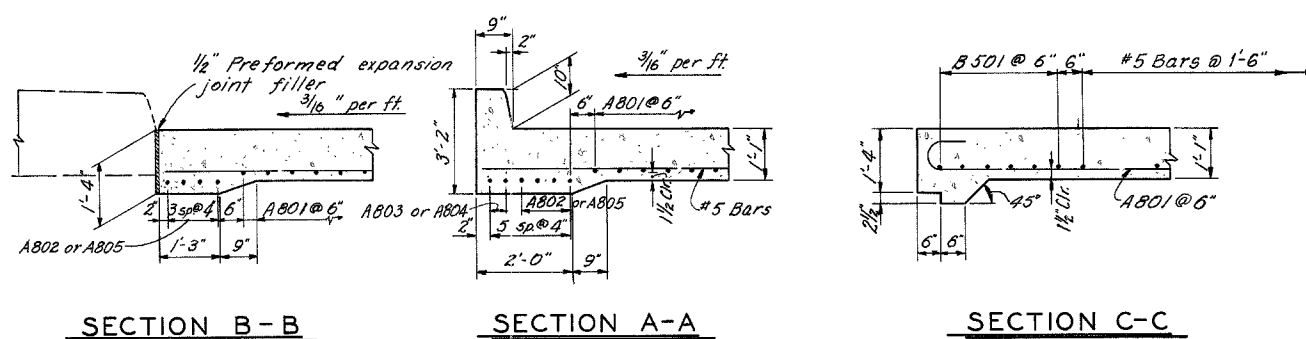


NOTES:

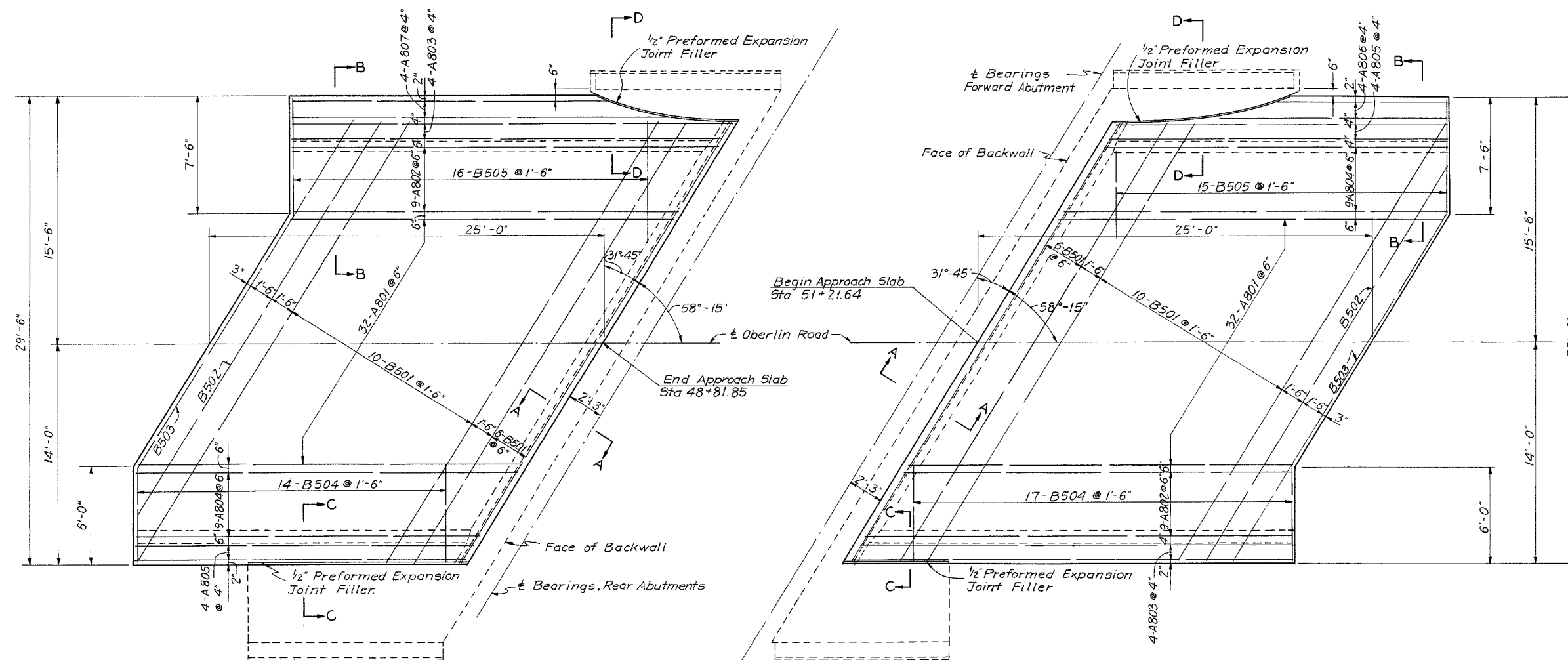
REFERENCE shall be made to Standard Drawing AS-1-54 (revised 7-5-62) for details not shown and notes not shown hereon.

CONCRETE shall be Class "C".

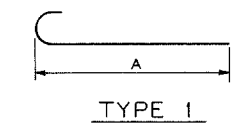
PAYMENT for all concrete, reinforcing steel, concrete curb and expansion joint material shall be included in the unit price bid for Item I-7, Reinforced Concrete Approach Slab (T-13).



NOTE:  
Curb to match sidewalk for height and sloping face at sidewalk



PLAN



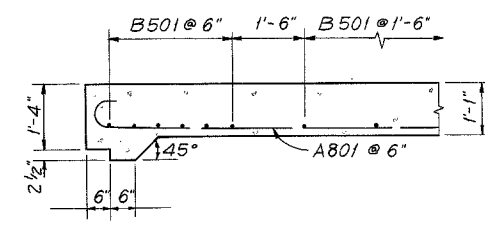
MARK	NO.	LENGTH	TYPE	A	WEIGHT
A801	64	25'-7"	1	24'-6"	4372
A802	18	(2)	1	(1)	1302
A803	8	(4)	1	(3)	617
A804	18	(6)	1	(5)	1161
A805	8	(8)	1	(7)	477
A806	4	(9)	Str.		129
A807	4	(10)	Str.		232
B501	32	32'-7"	Str.		1088
B502	2	28'-9"	Str.		60
B503	2	25'-6"	Str.		53
B504	31	6'-0"	Str.		194
B505	31	7'-6"	Str.		242
TOTAL WEIGHT					9927

- (1) Vary from 24'-9" to 27'-3" Vary 2 each by 3 3/4"
- (2) Vary from 25'-10" to 28'-4" Vary 2 each by 3 3/4"
- (3) Vary from 27'-5" to 28'-2" Vary 2 each by 3"
- (4) Vary from 28'-6" to 29'-3" Vary 2 each by 3"
- (5) Vary from 21'-10" to 24'-4" Vary 2 each by 3 3/4"
- (6) Vary from 22'-11" to 25'-5" Vary 2 each by 3 3/4"
- (7) Vary from 21'-0" to 21'-6" Vary 2 each by 3"
- (8) Vary from 22'-1" to 22'-7" Vary 2 each by 3"
- (9) Vary from 10'-3" to 14'-0" Vary each by 1'-3"
- (10) Vary from 20'-0" to 23'-6" Vary each by 1'-2"

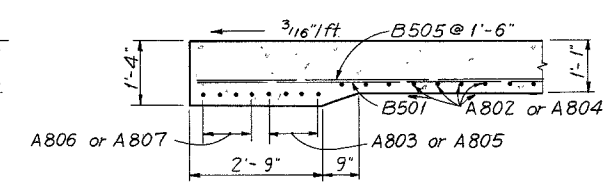
**NOTE:**  
REFERENCE shall be made to Standard Drawing A5-1-54 (revised 7-5-62) for details and notes not shown herein.

**CONCRETE** shall be Class "C"

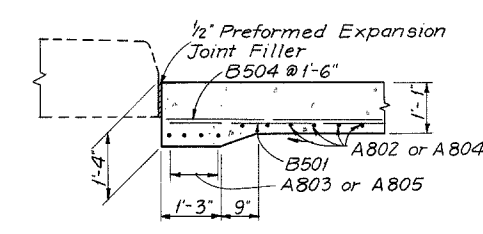
**PAYMENT** for all concrete, reinforcing steel, and expansion joint material shall be included in the unit price bid for Item 1-7 Reinforced Concrete Approach Slabs (T=13)



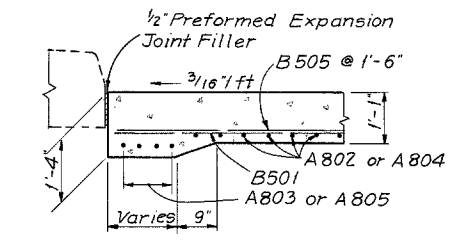
SECTION "A - A"



SECTION "B - B"



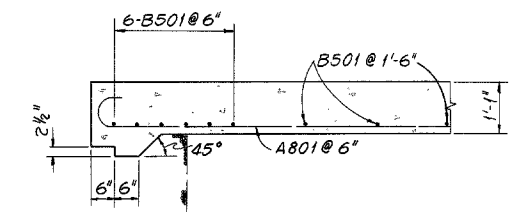
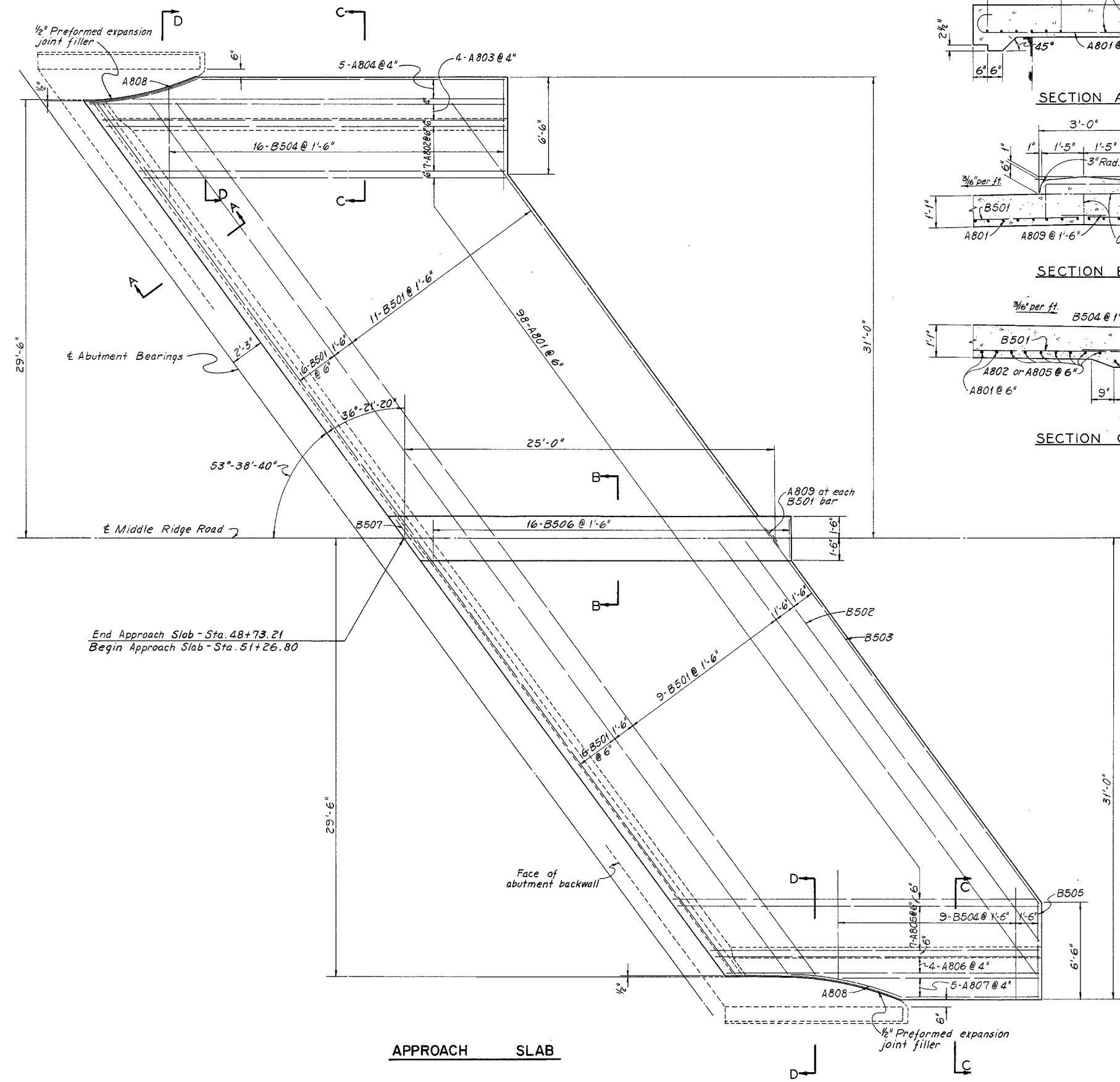
SECTION "C - C"



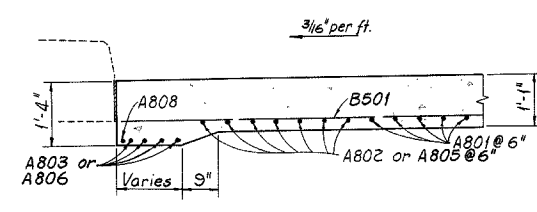
SECTION "D - D"



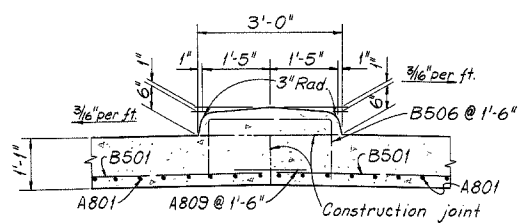
LORAIN COUNTY  
LOR-254-4.08 B



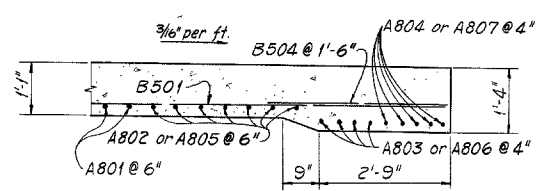
SECTION A-A



SECTION D-D



SECTION B-B



SECTION C-C

REINFORCING STEEL



MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
A801	196	25'-7"	1	24'-6"			13388
A802	14	(2)	1	(1)			1000
A803	8	(4)	1	(3)			611
A804	10	(5)	Str.				605
A805	14	(6)	1				860
A806	8	(8)	1	(7)			480
A807	10	(9)	Str.	(10)			325
A808	4	7'-6"	Str.	Bend in field			80
A809	68	1'-6"	Str.				272
B501	64	36'-0"	Str.				2403
B502	2	33'-6"	Str.				70
B503	2	30'-3"	Str.				63
B504	50	7'-4"	Str.				382
B505	2	6'-4"	Str.				13
B506	32	4'-7"	2	1'-2"	2'-6"	1'-2"	153
B507	2	5'-3"	2	1'-2"	3'-2"	1'-2"	11
TOTAL WEIGHT							20716

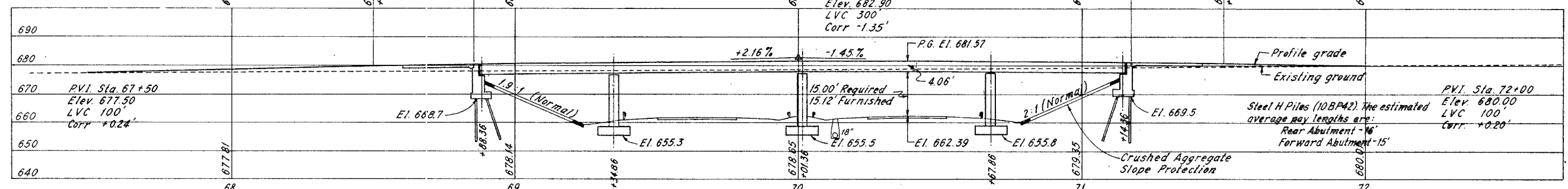
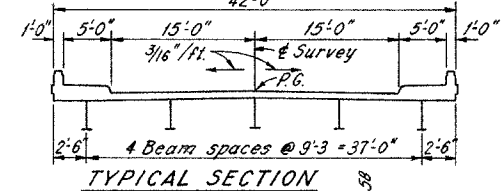
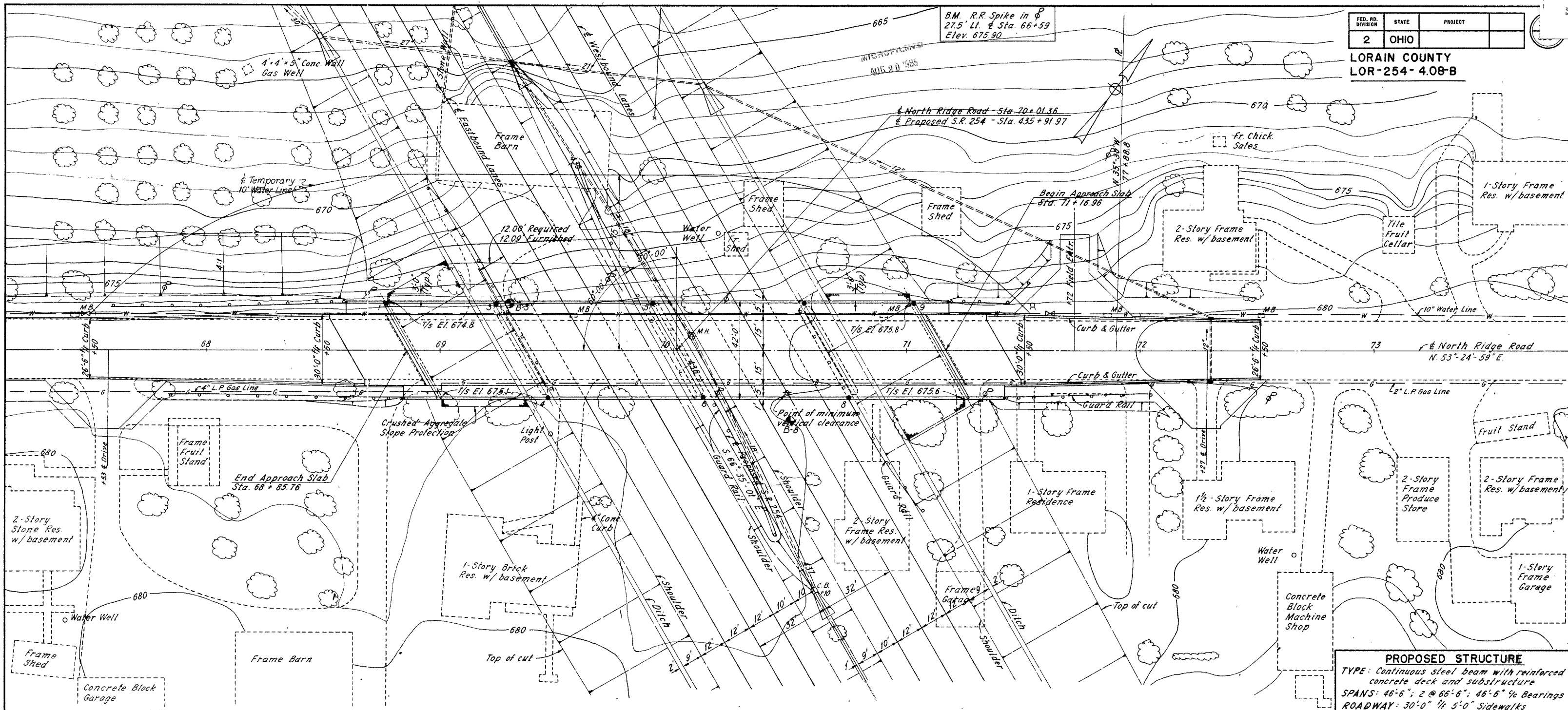
- ① 24'-8" to 26'-8" Vary 2 each by 4"
- ② 25'-9" to 27'-9" Vary 2 each by 4"
- ③ 27'-2" to 27'-11" Vary 2 each by 3"
- ④ 28'-3" to 29'-0" Vary 2 each by 3"
- ⑤ 25'-0" to 20'-4" Vary 2 each by 1'-2"
- ⑥ 24'-0" to 22'-0" Vary 2 each by 4"
- ⑦ 21'-9" to 21'-0" Vary 2 each by 3"
- ⑧ 22'-10" to 22'-1" Vary 2 each by 3"
- ⑨ 14'-4" to 10'-0" Vary 2 each by 3"
- ⑩ 13'-3" to 8'-11" Vary 2 each by 1'-1"

NOTE:

REFERENCE shall be made to Standard Drawing AS-1-54 (revised 7-5-62) for details and notes not shown herein.  
 CONCRETE shall be Class "C".  
 PAYMENT for all concrete, reinforcing steel raised median and expansion joint material shall be included in the unit price bid for item 1-7, Reinforced Concrete Approach Slab (T=13").

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LORAIN COUNTY  
LOR-254-4.08-B



**PROPOSED STRUCTURE**  
 TYPE: Continuous steel beam with reinforced concrete deck and substructure  
 SPANS: 46'-6"; 2 @ 66'-6"; 46'-6" 1/2 Bearings  
 ROADWAY: 30'-0" 1/4 5'-0" Sidewalks  
 LOAD FREQUENCY: CF 400 (57)  
 SKEW: 30°00' RF  
 WEARING SURFACE: 1" Monolithic concrete  
 APPROACH SLABS: AS-1-54 (25' long, modified)  
 ALIGNMENT: Tangent  
 AVERAGE DAILY TRAFFIC: 15,700 (North Ridge Road); 18,000 (S.R. 254) - 1980 figures  
**FOUNDATION INVESTIGATION LEGEND**  
 ● - Indicates core boring  
 ○ - Indicates rod sounding

\* - Theoretical only. Traffic should be diverted to other roads before this traffic count is reached.

SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 MANSFIELD, OHIO

**SITE PLAN**  
 BRIDGE NO. LOR-254-0825  
 UNDER NORTH RIDGE ROAD  
 LORAIN COUNTY S.R. 254  
 STA 435 + 49.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	RAK	J.E.G.			

**GENERAL NOTES**

**REFERENCE** shall be made to Standard Drawings AS-1-54 (revised 7-5-62), AR-1-57 (revised 4-2-62), SD-1-63 (dated 11-12-63), SD-2-64 (dated 11-25-64), F5B-1-62 (revised 1-15-63) and Supplemental Specifications S-101 (adopted 7-12-62) and S-307 (revised 10-1-64).

**DESIGN SPECIFICATIONS:** This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof, except strength of splices, which conform to Sec 6-16.31 of the AASHTO Standard Specifications for Highway Bridges dated 1961, together with current revisions thereof.

**UNIT STRESSES**

Design Loading - CF400(57)  
 Concrete, Class "C" - basic unit stress 1,333 psi  
 Concrete, Class "E" - basic unit stress 1,133 psi  
 Structural Steel - ASTM A36 - basic unit stress 20,000 psi (except piling)  
 (ASTM A7 and A373 not permitted)  
 Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 psi. except spiral reinforcement may be plain Structural Grade with basic unit stress of 18,000 psi.

**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. 5-18.05 is not less than the following value for a pile hammer of the indicated energy rating:  
 50 tons, per pile using an 11,000 ft. lb. hammer  
 43 tons per pile using an 15,000 ft. lb. or greater hammer.

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile for the abutment piles.

**FOUNDATION BEARING PRESSURE:** Pier footings are designed for a maximum bearing pressure of 2.5 tons per sq. ft.

**WELDING** of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class B welds are shown thus B.

**CONCRETE DECK PLACING:** In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

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

**UTILITY LINES** All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum. \* \*

**10" WATER LINE** and sleeves shall be installed and supported before abutment backwall concrete is placed.

**STEEL PIPE SLEEVES:** The cost of standard steel pipe sleeves in abutments shall be included in the bid price per cu yd. paid for item S-1, abutment concrete, Class "E".

\* \* The Lorain Telephone Company will be placing three (3) four (4) inch conduits on this structure. Sleeves shall be placed in the backwalls by the Contractor and will be furnished by the Lorain Telephone Company upon request.

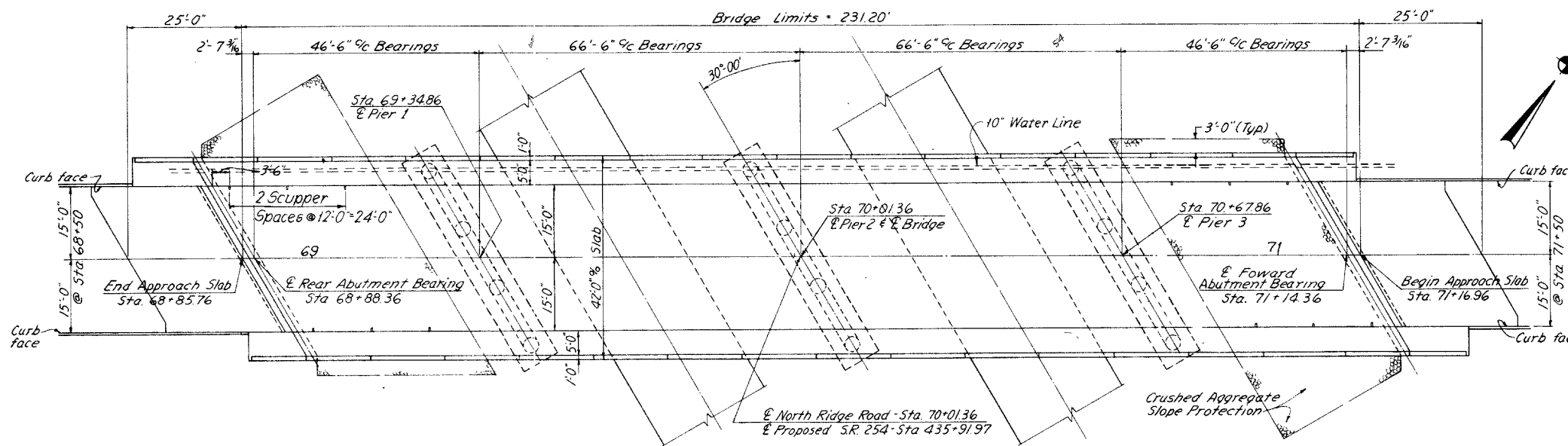
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**GENERAL PLAN, GENERAL NOTES AND ESTIMATED QUANTITIES**

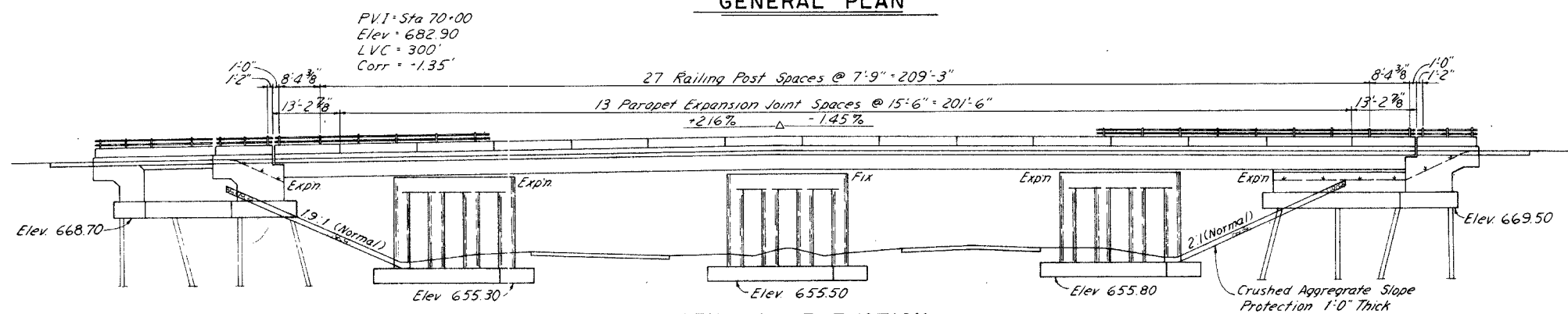
BRIDGE NO. LOR-254-0825  
UNDER NORTH RIDGE ROAD

LORAIN COUNTY STA. 435 + 49.25 S.R. 254

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.Z.	J.R.B.	J.R.B.	J.E.G.			



**GENERAL PLAN**



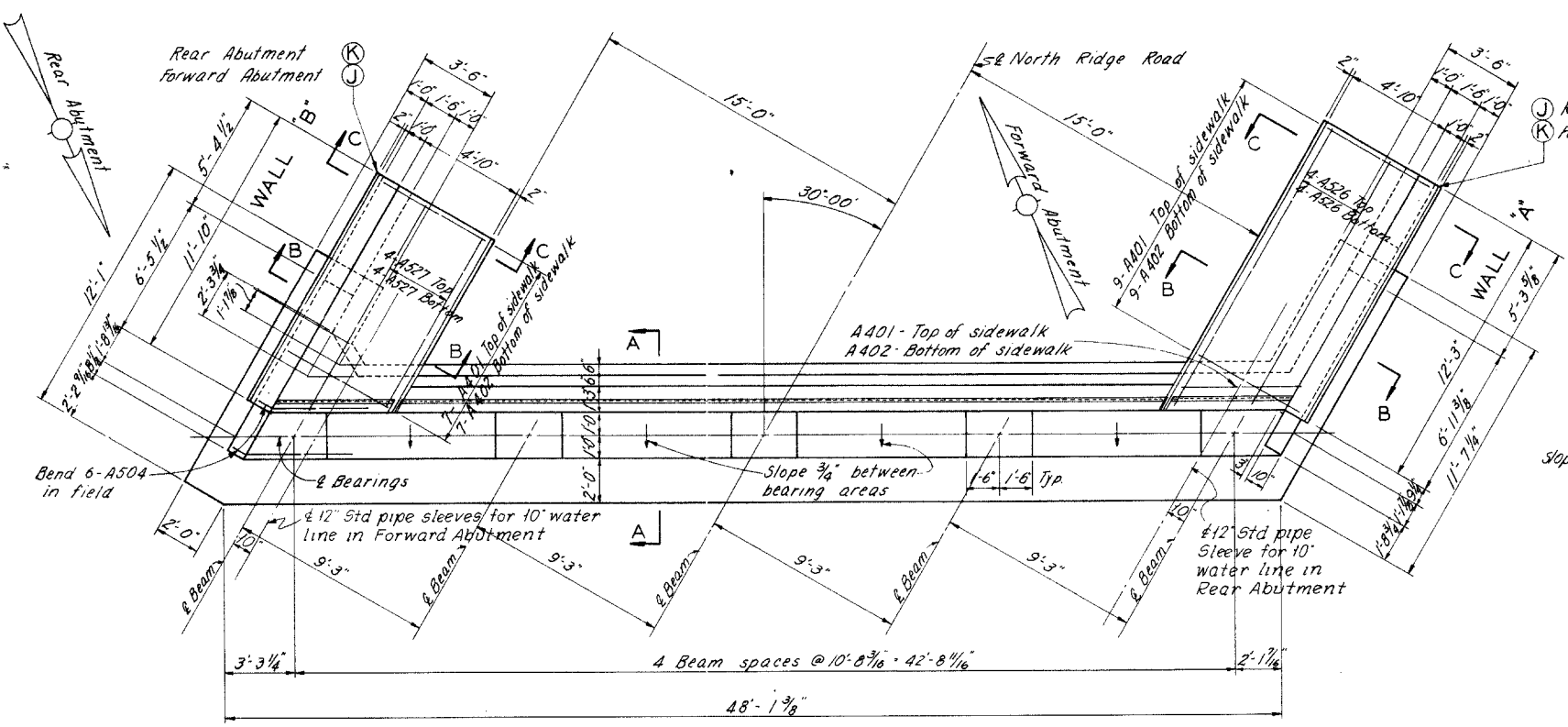
**GENERAL ELEVATION**

**ESTIMATED QUANTITIES**

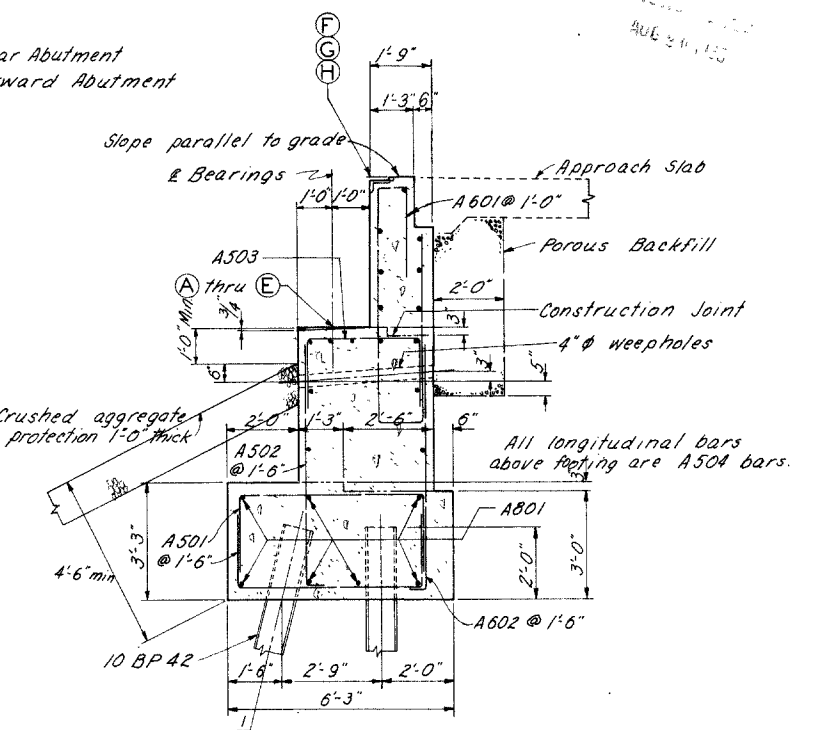
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS.	GEN.
E-2	568	Cu Yds	Unclassified Excavation		247	321	
S-1	368	Cu Yds	Class "C" concrete, superstructure	368			
S-1	95	Cu Yds	Class "C" concrete above pier footings			95	
S-1	139	Cu Yds	Class "E" concrete, pier footings			139	
S-1	196	Cu Yds	Class "E" concrete, abutments		196		
S-4	126,314	Lbs	Reinforcing steel	81,369	11,071	33,874	
S-7	237,683	Lbs	Structural steel	237,683			
S-8	237,683	Lbs	Field painting of structural steel	237,683			
S-14	504.13	Lin Ft	Railing (Type "C" aluminum rail, & supports, & concrete parapet)	455.96	48.17		
S-16	Lump	Sum	First test pile		Lump		
S-18	372	Lin Ft	Steel H Piles (10BP42)		372		
S-29	33	Cu Yds	Porous Backfill		33		
S-29	12	Each	Scuppers, including supports	12			
I-10	560	Sq Yds	Crushed aggregate slope protection				560
S-101	368	Each	Water-reducing, set-retarding admixture	368			

\* 220.5 lb. has no State or Federal Participation 100% City of Amherst

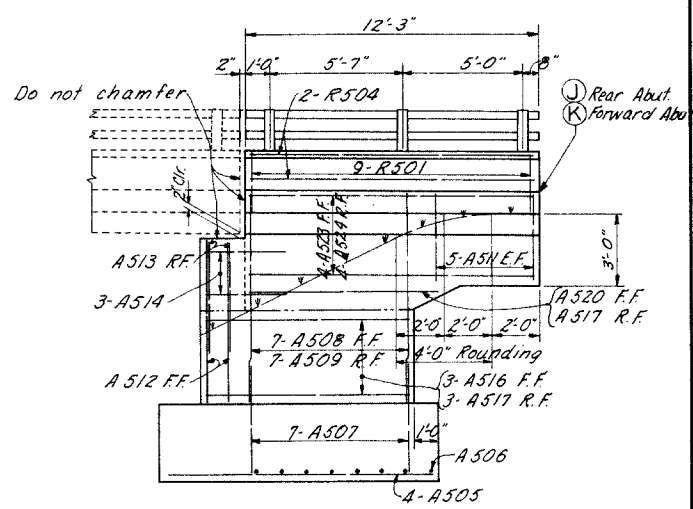
LORAIN COUNTY  
LOR-254-4.08-B



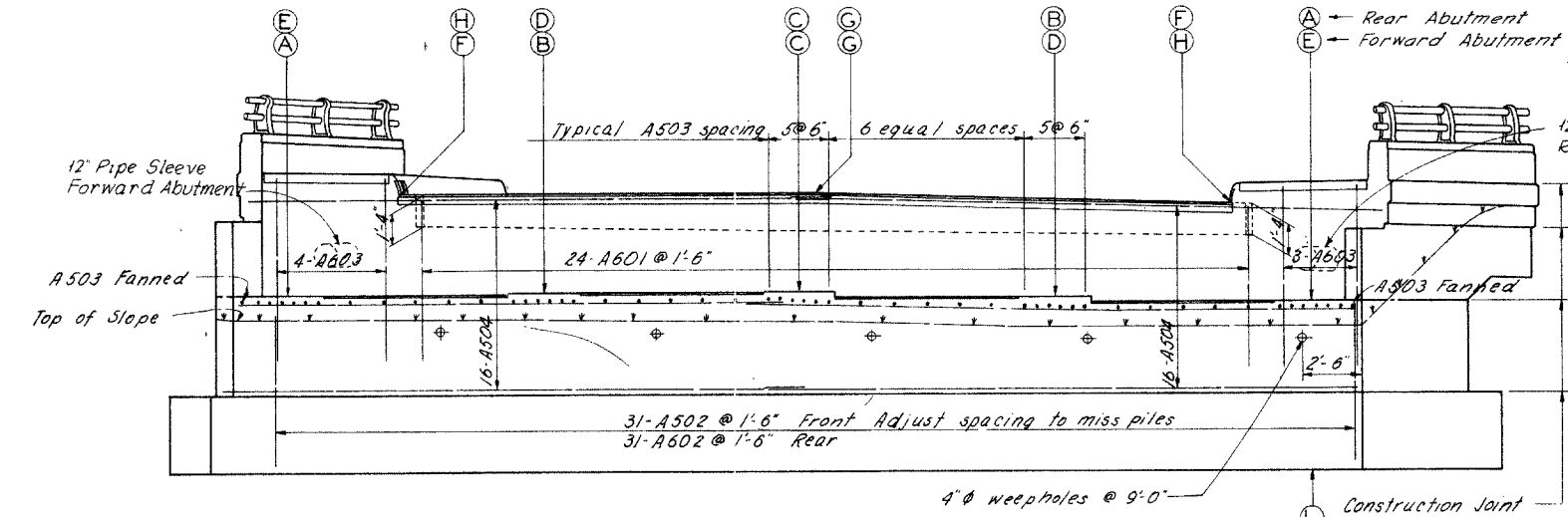
PLAN



SECTION A-A

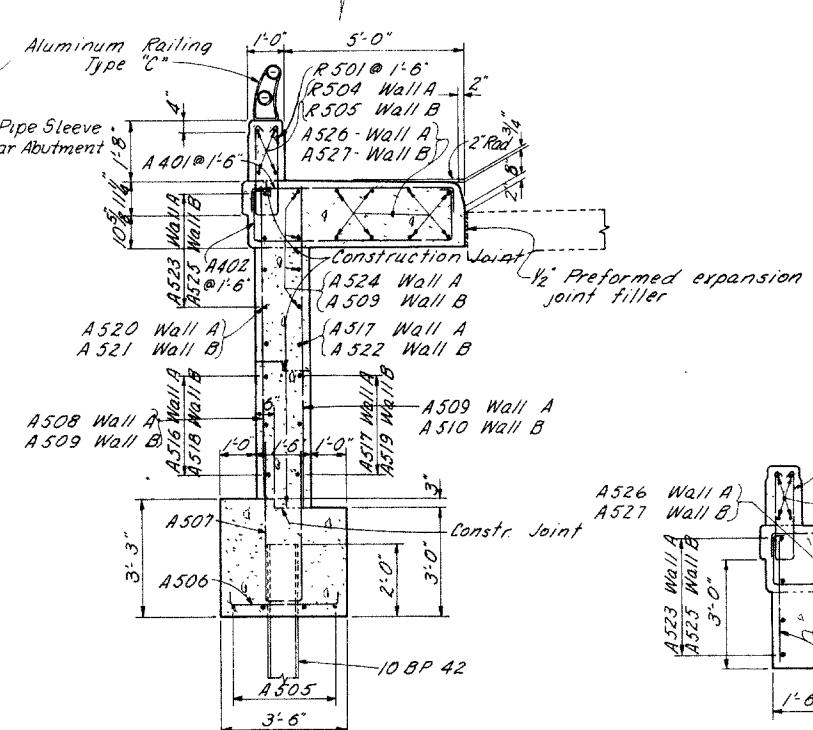


WALL A'

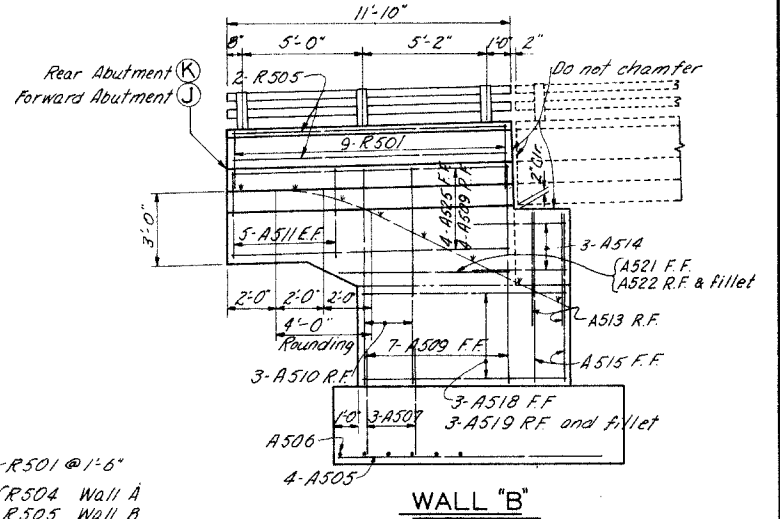


ELEVATION

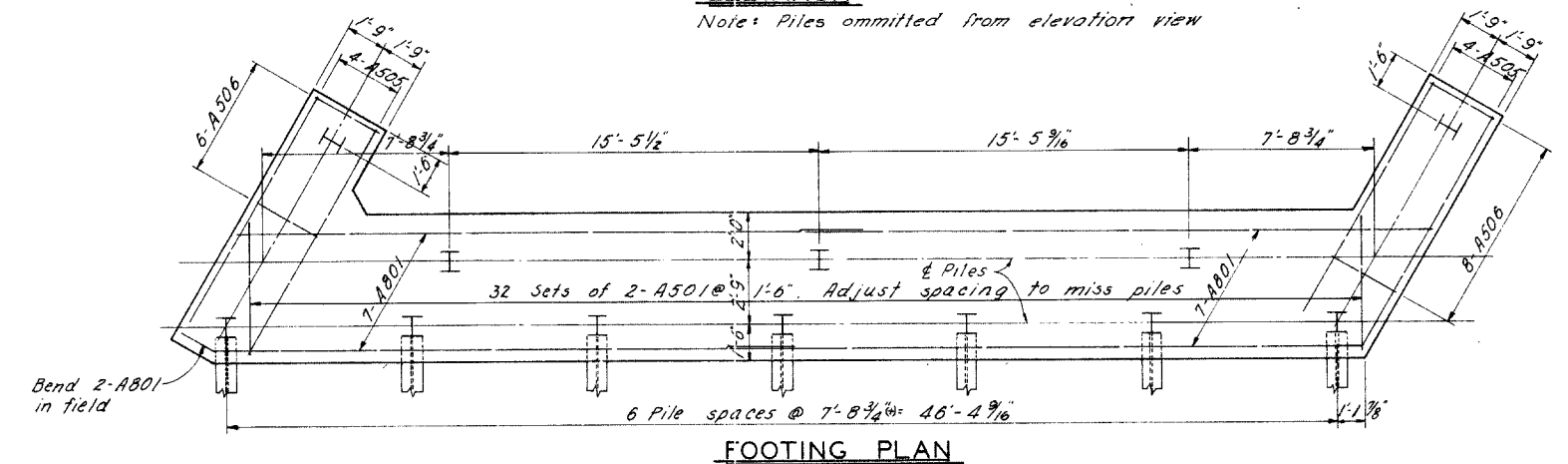
Note: Piles omitted from elevation view



SECTION B-B



WALL B'



FOOTING PLAN

TABLE OF ELEVATIONS										
LOCATION	A	B	C	D	E	F	G	H	J	L
REAR ABUTMENT	675.82	676.06	676.30	676.25	676.19	679.99	680.38	680.29	680.60	668.70
FORWARD ABUTMENT	676.88	676.98	677.07	676.27	676.66	681.00	681.15	680.83	681.810	669.50

NOTES:

- CONCRETE:** All abutment concrete shall be Class "E" except parapets, which shall be Class "C".
- RAILING:** See AR-1-57 and Sheet 2. Tubing on abutment wingwalls to be continuous.
- 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.
- POROUS BACKFILL:** 2'-0" thick, shall extend upward to the approach slab and for the full length of the abutment. Excavation therefor, in excess of that required for construction of the abutment, shall be paid for in the bid price per cu. yd. paid for porous backfill.
- GENERAL NOTES:** See Sheet 237
- NOTATION:** FF=Front Face, RF=Rear Face; EF=Each Face

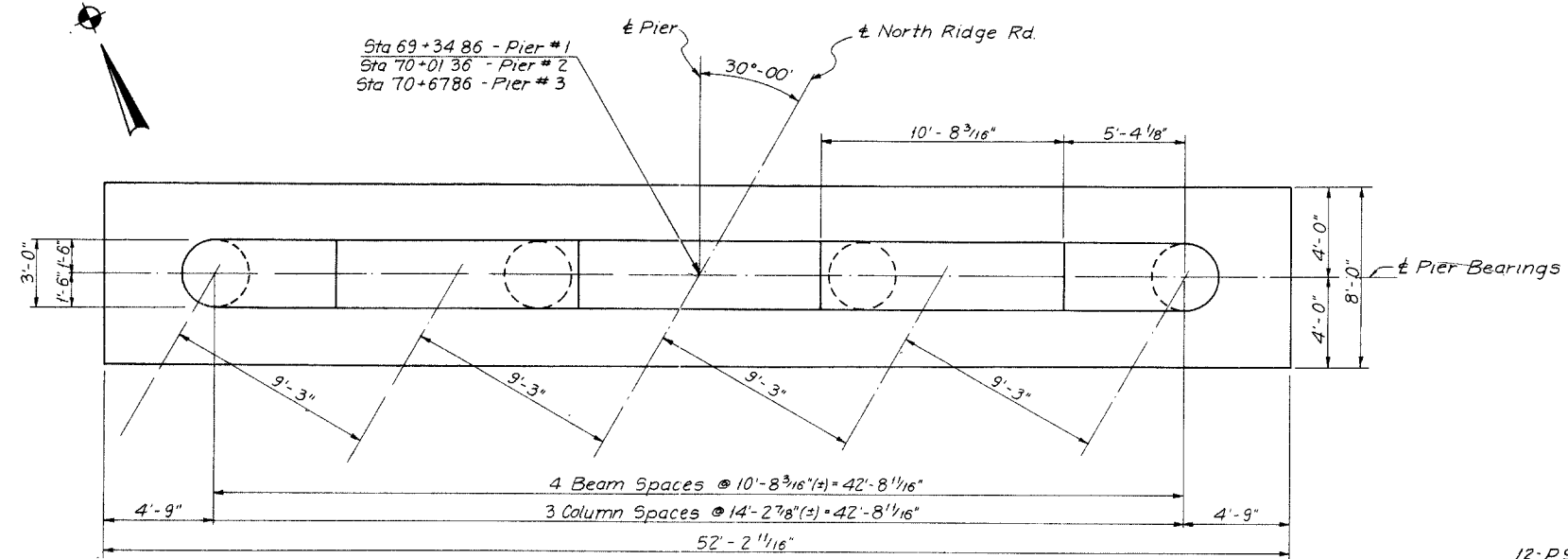
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**ABUTMENTS**  
BRIDGE NO LOR-254-0825  
UNDER NORTH RIDGE ROAD  
LORAIN COUNTY S.R. 254

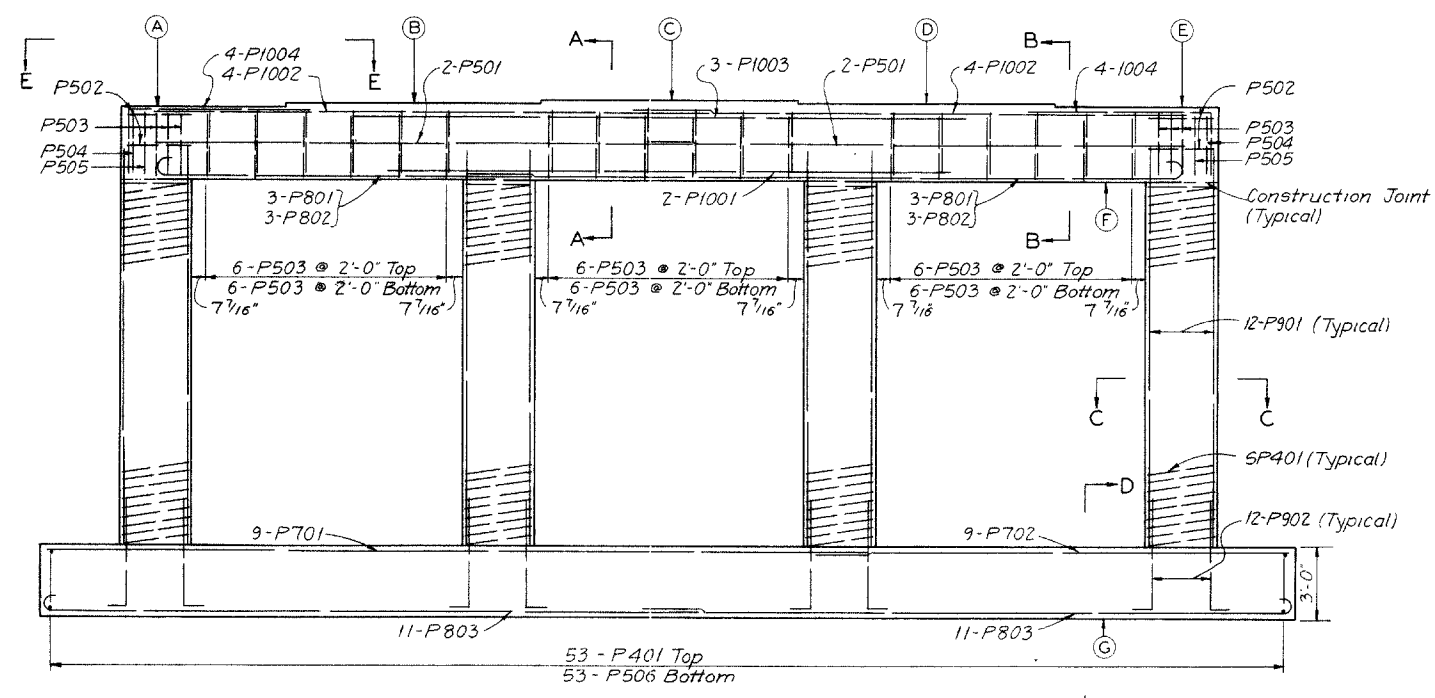
STA 435 + 49.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	E.B.	J.E.G.			

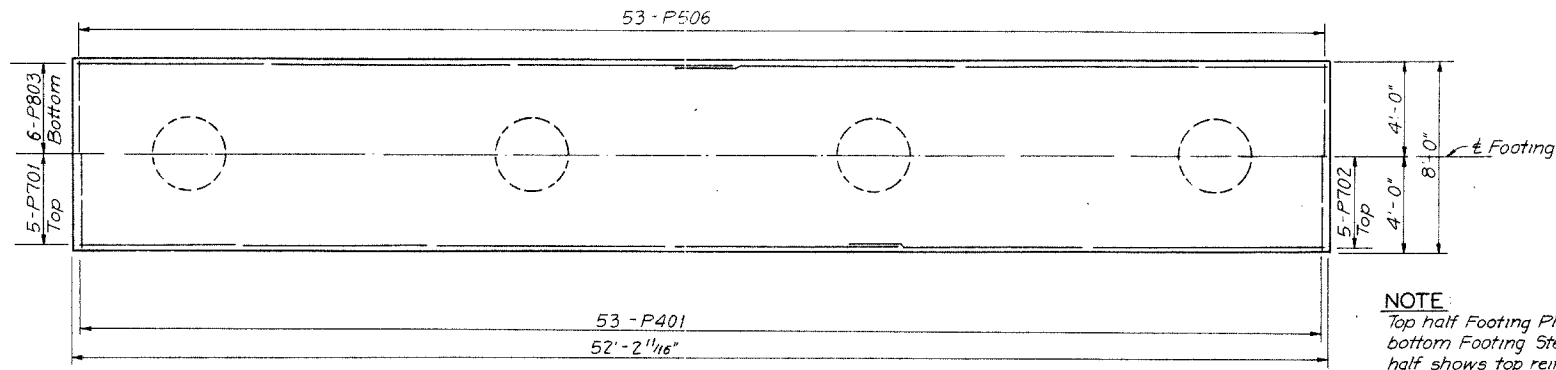
DATE: 8-21-70  
AUTH: P.D.



PLAN

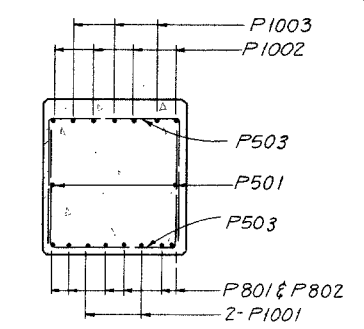


ELEVATION

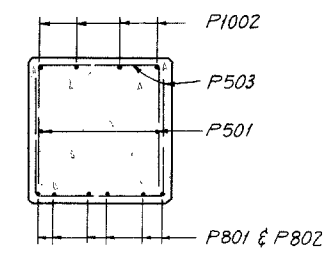


FOOTING PLAN

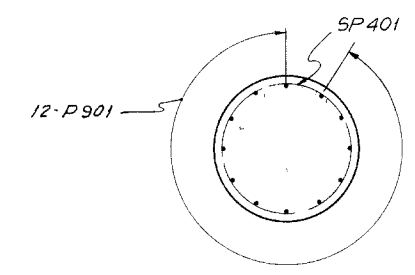
NOTE:  
Top half Footing Plans shows  
bottom Footing Steel Bottom  
half shows top reinforcing steel.



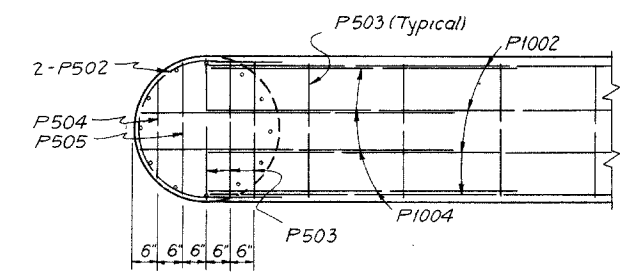
SECTION "A-A"



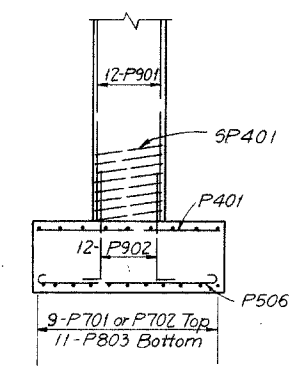
SECTION "B-B"



SECTION "C-C"



VIEW "E-E"



SECTION "D-D"

NOTES:  
**CONCRETE:** All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C"

GENERAL NOTES: See Sheet 237

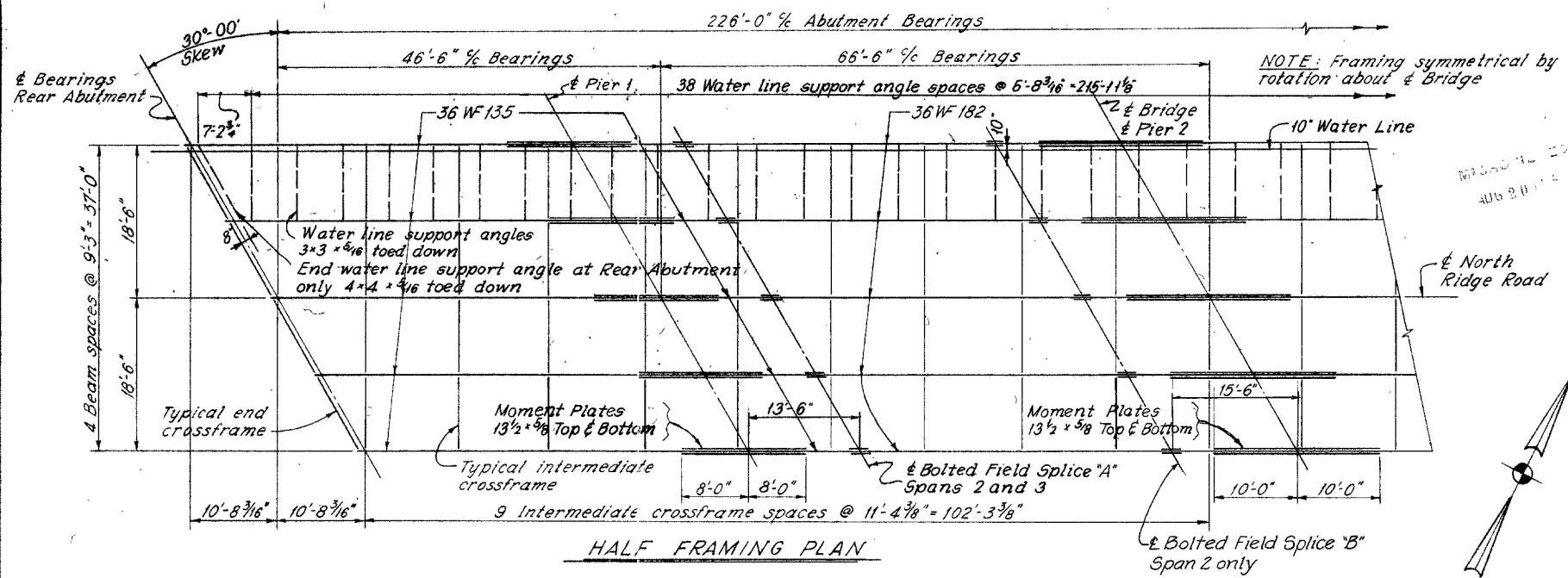
**BRIDGE SEAT REINFORCING:** Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

TABLE OF ELEVATIONS							
LOCATION	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Pier 1	676.49	676.70	676.91	676.82	676.73	673.49	655.30
Pier 2	676.74	676.91	676.08	676.95	676.82	673.74	655.50
Pier 3	677.11	677.24	677.36	677.19	677.01	674.01	655.80

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**PIERS**  
BRIDGE NO. LOR-254-0825  
UNDER NORTH RIDGE ROAD  
LORAIN COUNTY STA. 435 + 49 25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.C.	J.W.C.	L. K.	J.E.G.			



**NOTES**

**BOLTED FIELD SPLICES**  
**UNIT STRESSES:** Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i. bending; 12,000 p.s.i. shear. High Strength Bolts - ASTM A325 - basic unit stress 13,500 p.s.i. shear; 40,000 p.s.i. bearing.  
**MATERIAL:** Splice plates, fills and bolts shall be according to Item 5-7. Bolts shall 1" diameter, High Strength. The weight shall be included under Item 5-7 Structural Steel, for payment.  
**FILLS** shown on the plans are based on the nominal member sizes being spliced, however, in the final shop assembly, fills shall be furnished to the nearest 1/8 inch in thickness based on the actual measured sizes of the members being spliced. Drawing together of splice plates over material that varies by 1/8 inches or more in thickness, at the centerline of the splice, will not be permitted.  
**FIELD ASSEMBLY:** In the final assembly of parts to be bolted, each beam shall be so supported that drift pins may be placed in a sufficient number of holes (not less than 25%) to provide and maintain accurate alignment of holes and parts. Heavy driving of drift pins will not be permitted. A sufficient number of bolts shall be installed and brought to a snug tight condition to bring all parts of the splice into complete contact before the member is released. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-the-nut method. Drift pins shall then be replaced with bolts and tightened in the same manner. Bolt lengths determined by the use of Table No. 1 in Sec. 5-7.10 shall be adjusted to the next 1/4 inch length increment.

CAMBERING of beams is required in accordance with the following table:

	DEFLECTION AND CAMBER							
	OUTSIDE BEAMS				INSIDE BEAMS			
	End Spans	Middle Spans	Field Splice Span 2	Field Splice Span 3	End Spans	Middle Spans	Field Splice Span 2	Field Splice Span 3
Deflection due to weight of steel	0	0	0	0	0	0	0	0
Deflection due to remaining dead load	3/16	1/8	1/16	1/16	3/16	1/8	1/16	1/16
Convexity required for vertical curve	3/8	15/16	1/8	1/2	3/8	15/16	1/8	1/4
Sum of deflection and convexity	9/16	15/16	3/16	3/4	9/16	15/16	3/16	5/16
Required camber	0	15/16	0	0	0	15/16	0	5/16

GUTTERS, END CROSSFRAMES, END DAMS, SCUPPERS, AND SIDEWALK END DAM DETAILS: See Std. Dwg. SD-1-63, Sheets 2, 3 and 4.

RAILING: See AR-1-57, Type "C".

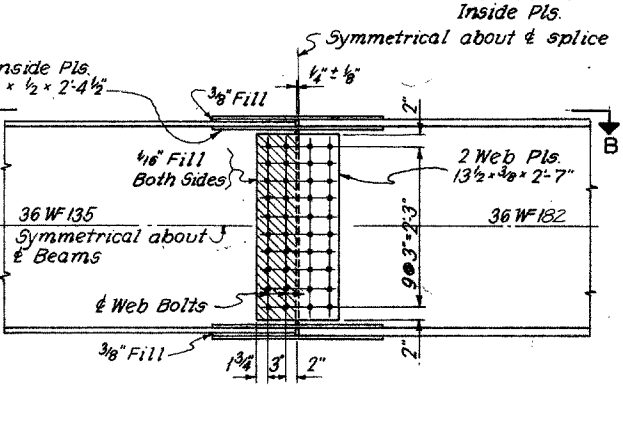
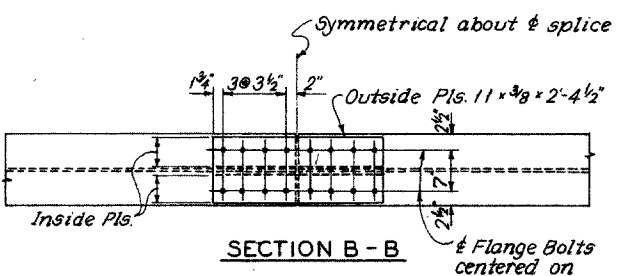
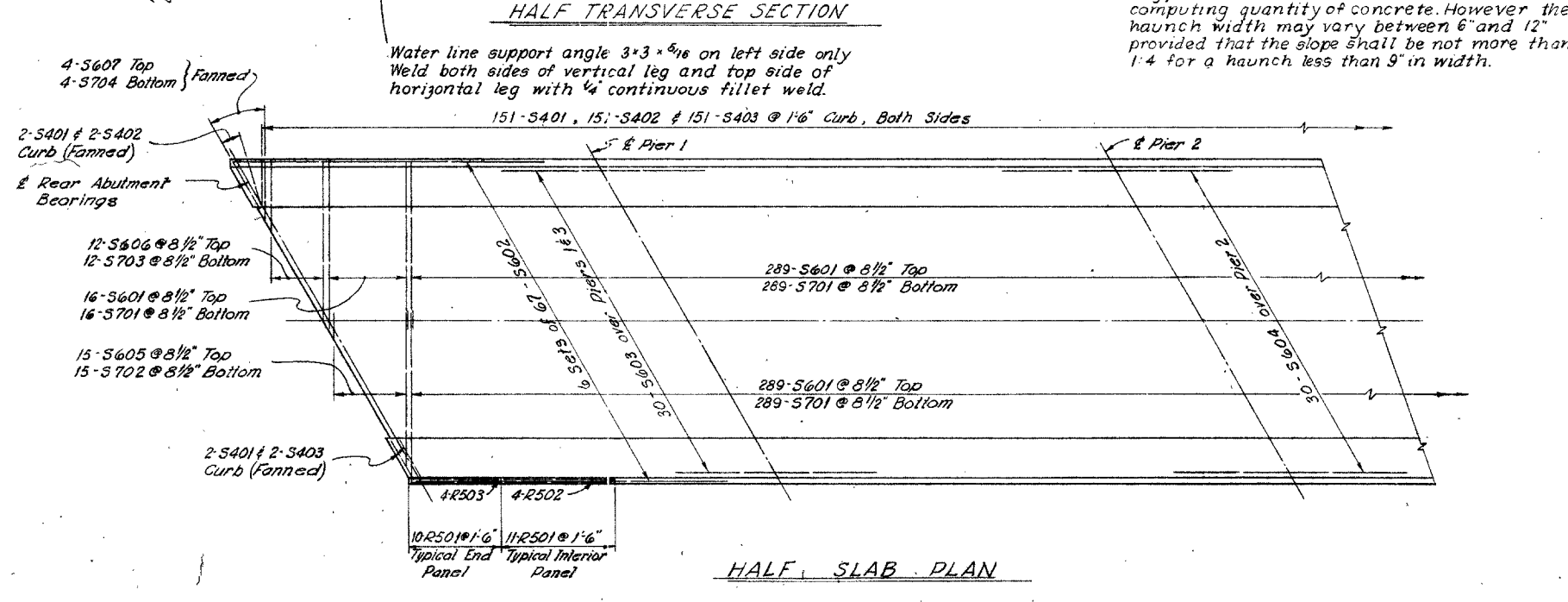
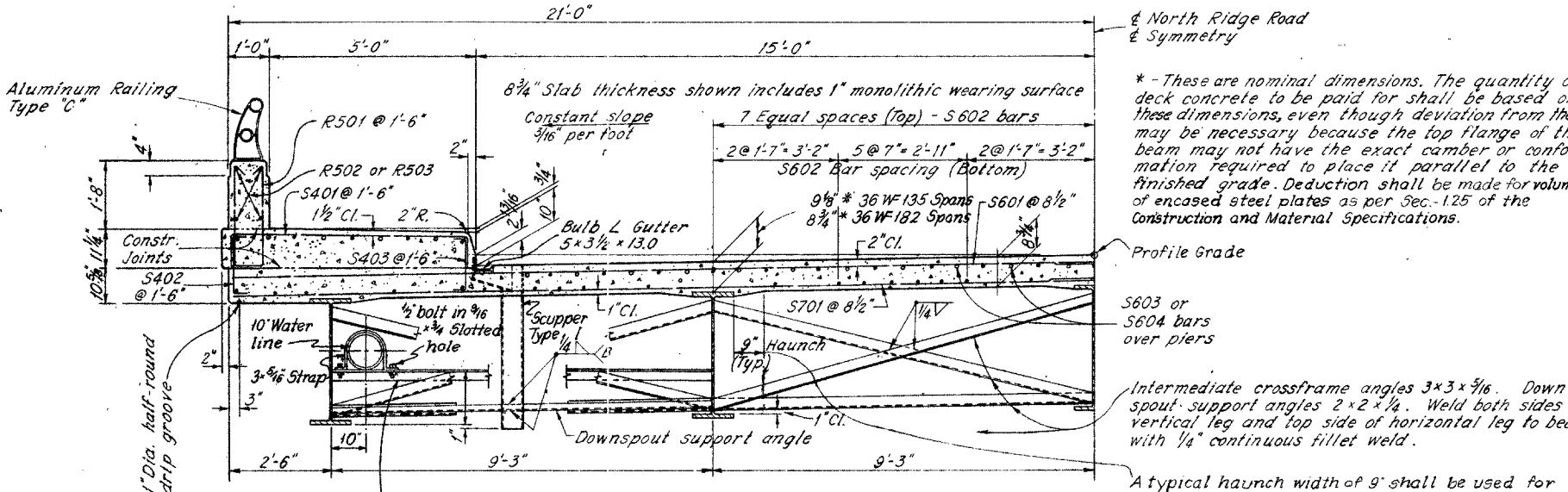
RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING: See Sheet 237.

CONCRETE: All superstructure concrete shall be Class "C".

BEARINGS: Abutment use E100, Piers 1 & 3 use E200 and Pier 2 use F200. See Std. Dwg. F5B-1-62.

GENERAL NOTES: See Sheet 237.

BOLTED FIELD SPLICE "B": See Std. Dwg. SD-2-64.



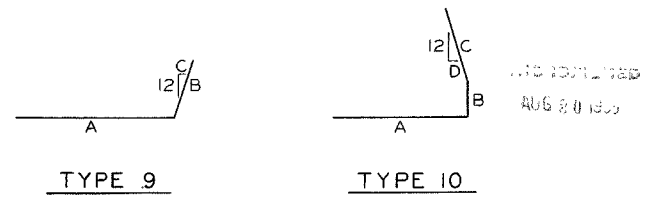
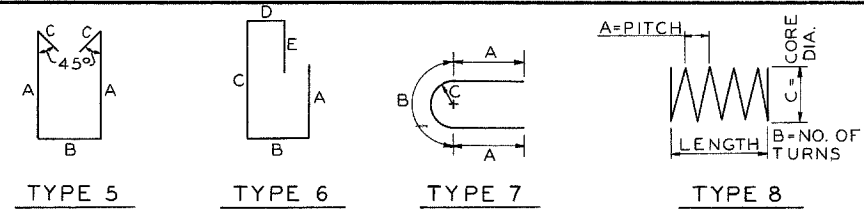
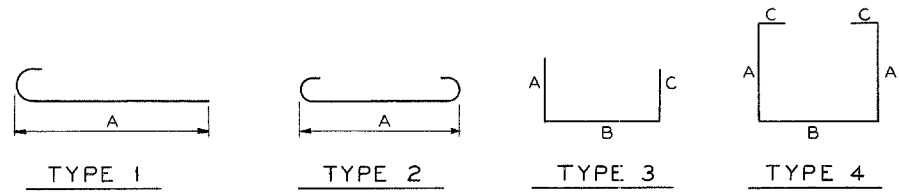
MOMENT PLATE WELDING DETAIL

SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 MANSFIELD, OHIO.

**SUPERSTRUCTURE**  
 BRIDGE NO. LOR-254-0825  
 UNDER NORTH RIDGE ROAD  
 LORAIN COUNTY S.R. 254

STA. 435 + 49.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK.	R.A.K.	J.E.G.	J.W.C.			



ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R501	36	5'-9"	5	2'-5"	8"	4"			216
R504	8	11'-11"	Str.						*
R505	8	11'-6"	Str.						*
A401	34	6'-7"	3	8"	5'-6"	8"			150
A402	34	8'-2"	4	1'-3"	5'-6"	4"			185
A501	128	9'-4"	3	2'-2"	5'-3"	2'-2"			1246
A502	62	6'-11"	3	6'-6"	6"	0"			447
A503	104	7'-2"	3	2'-0"	3'-5"	2'-0"			777
A504	64	24'-8"	Str.						1647
A505	16	11'-0"	Str.						184
A506	28	3'-5"	3	4"	3'-0"	4"			100
A507	20	9'-10"	3	4'-4"	1'-2"	4'-7"			205
A508	14	8'-8"	Str.						127
A509	36	8'-11"	Str.						336
A510	6	9'-2"	Str.						57
A511	40	3'-6"	Str.						146
A512	4	6'-9"	Str.						28
A513	8	4'-7"	Str.						38
A514	12	7'-11"	3	3'-10"	6"	3'-10"			99
A515	4	7'-0"	Str.						29
A516	6	10'-0"	9	8'-6"	1'-7"	6 <sup>15/16</sup>			63
A517	8	8'-0"	Str.						67
A518	6	10'-6"	10	8'-6"	7"	1'-7"	6 <sup>15/16</sup>		66
A519	6	5'-9"	9	3'-11"	1'-11"	6 <sup>15/16</sup>			36
A520	2	8'-9"	9	7'-3"	1'-7"	6 <sup>15/16</sup>			18
A521	2	9'-1"	10	7'-1"	7"	1'-7"	6 <sup>15/16</sup>		19
A522	2	6'-8"	9	2'-10"	3'-11"	6 <sup>15/16</sup>			14
A523	8	12'-11"	9	11'-5"	1'-7"	6 <sup>15/16</sup>			108
A524	8	12'-1"	Str.						101
A525	8	13'-5"	10	11'-5"	7"	1'-7"	6 <sup>15/16</sup>		112
A526	16	Varies	Str.	12'-8" to 14'-5"	Varies 4 each by 7"				226
A527	16	Varies	Str.	8'-11" to 10'-8"	Varies 4 each by 7"				163
A601	48	15'-8"	6	5'-3"	1'-4"	6'-9"	10"	2'-2"	1130
A602	62	6'-10"	3	6'-6"	6"	0"			636
A603	14	16'-2"	3	7'-7"	1'-4"	7'-7"			340
A801	28	26'-2"	Str.						1956
TOTAL WEIGHT									11071

SUPERSTRUCTURE

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R501	326	5'-9"	5	2'-5"	8"	4"			1955
R502	144	15'-2"	Str.						*
R503	16	12'-11"	Str.						*
S401	310	6'-7"	3	8"	5'-6"	8"			1363
S402	306	1'-10"	3	4"	1'-5"	4"			375
S403	306	1'-7"	3	4"	1'-2"	4"			324
S601	610	21'-10"	Str.						20004
S602	402	39'-6"	Str.						23850
S603	60	25'-0"	Str.						2253
S604	30	28'-0"	Str.						1262
S605	30	Varies	Str.	20'-0" to 2'-10"	Varies 2 each by 1'-2 <sup>3/4</sup>				514
S606	24	Varies	Str.	21'-5" to 7'-11"	Varies 2 each by 1'-2 <sup>3/4</sup>				529
S607	8	6'-8"	Str.						80
S701	610	21'-11"	Str.						27327
S702	30	Varies	Str.	20'-1" to 2'-11"	Varies 2 each by 1'-2 <sup>3/4</sup>				705
S703	24	Varies	Str.	21'-5" to 7'-11"	Varies 2 each by 1'-2 <sup>3/4</sup>				719
S704	8	6'-8"	Str.						109
TOTAL WEIGHT									81369

PIERS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P401	159	7'-6"	Str.						797
P501	12	22'-4"	Str.						280
P502	12	8'-0"	7	1'-11"	4'-2"	1'-4"			100
P503	126	7'-3"	3	2'-5"	2'-8"	2'-5"			953
P504	6	6'-11"	3	2'-8"	1'-10"	2'-8"			43
P505	6	7'-7"	3	2'-8"	2'-6"	2'-8"			47
P506	159	8'-8"	2	7'-6"					1437
P701	27	33'-0"	Str.						1821
P702	27	19'-10"	Str.						1095
P801	18	30'-10"	1	29'-9"					1482
P802	18	16'-7"	1	15'-6"					797
P803	66	27'-2"	Str.						4787
P901	144	18'-1"	Str.						8854
P902	144	6'-0"	3	5'-7"	6"	0"			2938
P1001	6	20'-7"	Str.						531
P1002	24	23'-0"	Str.						2375
P1003	9	25'-6"	Str.						988
P1004	24	10'-7"	3	7'-10"	2'-10"	0"			1093
SP401	12	15'-3"	8	4 <sup>1/2</sup>	44	32"			3456
TOTAL WEIGHT									33874

NOTES:

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 P1008 is a No.10 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 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 deformations but shall in other respects conform to Item 5-4. 1/2 closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft. will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

REPLACEMENT BARS:

MARK	LENGTH	NO.
RE 400	5'-3"	1
RE 500	5'-7"	2
RE 600	5'-11"	3
RE 700	6'-2"	2
RE 800	6'-6"	1
RE 900	6'-10"	1
RE 1000	7'-2"	1

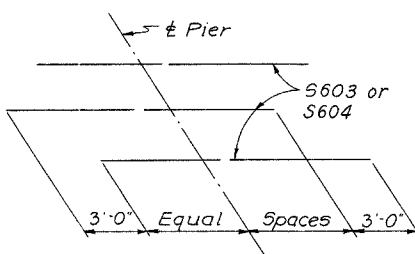


DIAGRAM SHOWING STAGGER OF S603 AND S604 BARS OVER PIERS

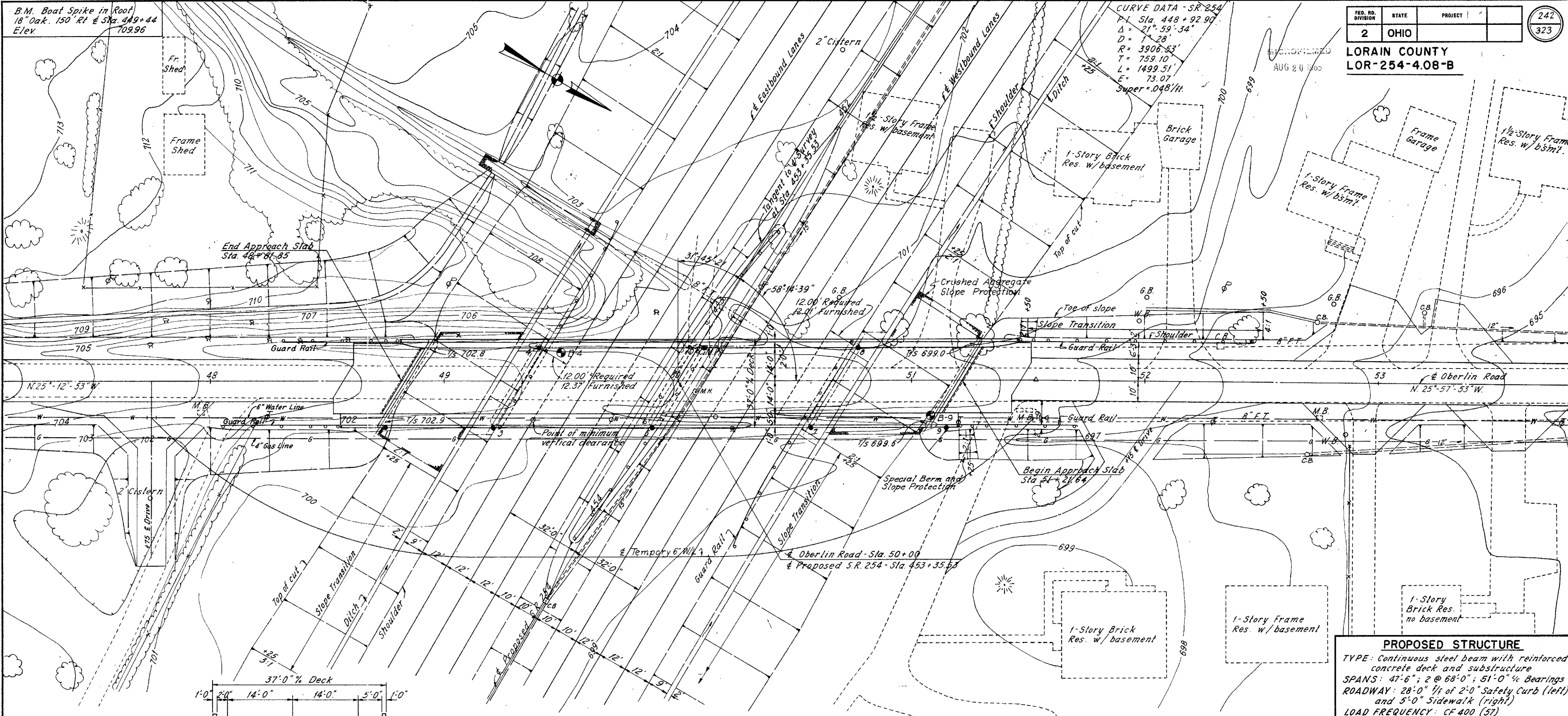
SHAFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 Mansfield, Ohio.

**REINFORCING STEEL**  
 BRIDGE NO. LOR-254-0825  
 UNDER NORTH RIDGE ROAD  
 LORAIN COUNTY S.R. 254  
 STA. 435 + 49.25

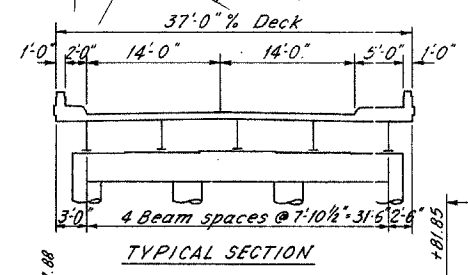
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.K.	L.K.	L.K.				

B.M. Boat Spike in Root  
18" Oak. 150' RI @ Sta. 449+44  
Elev. 709.96

LORAIN COUNTY  
LOR-254-4.08-B

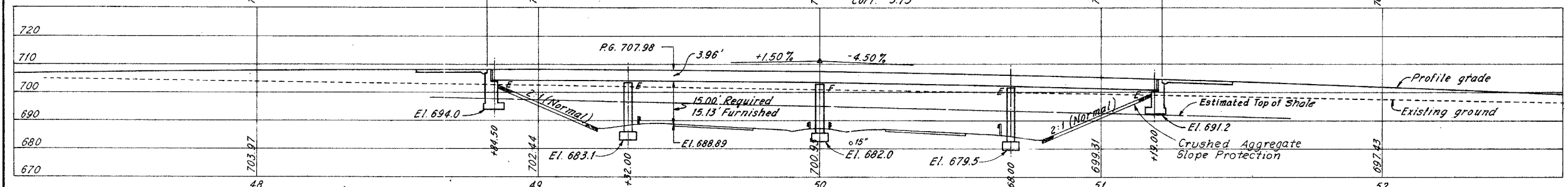


CURVE DATA - S.R. 254  
P.I. Sta. 448+92.90  
 $\Delta = 21^\circ 59' 34''$   
 $D = 128'$   
 $R = 3906.53'$   
 $T = 759.10'$   
 $L = 1499.51'$   
 $E = 73.07'$   
Super = 0.48'/ft.



Bridge Limits 239.79'

P.V.I. Sta. 50+00  
Elev. 711.03  
L.V.C. 500'  
Corr. -3.75'



**PROPOSED STRUCTURE**  
TYPE: Continuous steel beam with reinforced concrete deck and substructure  
SPANS: 47'-6"; 2 @ 68'-0"; 51'-0" 1/4 Bearings  
ROADWAY: 28'-0" 1/4 of 2'-0" Safety Curb (left) and 5'-0" Sidewalk (right)  
LOAD FREQUENCY: CF 400 (57)  
SKEW: 31'-45'-00" LF  
WEARING SURFACE: 1" Monolithic concrete  
APPROACH SLABS: AS-1-54 (25' long, modified)  
ALIGNMENT: Tangent  
AVERAGE DAILY TRAFFIC: 1950 (Oberlin Road); 18,000 (S.R. 254) - 1980 figures  
**FOUNDATION INVESTIGATION LEGEND**  
● Core Boring location  
● Rod Sounding location

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**SITE PLAN**  
BRIDGE NO. LOR-254-0859  
UNDER OBERLIN ROAD  
LORAIN COUNTY S.R. 254  
STA. 453+35.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	R.A.K.	J.W.C.			



**GENERAL NOTES**

**REFERENCE** shall be made to Standard Drawings SD-1-63 (dated 11-12-63) AR-1-57 (revised 4-2-62), FS-B-1-62 (revised 1-15-63), AS-1-54 (revised 7-5-62), SD-2-64 (dated 11-26-64) and Supplemental Specifications S-101 (adopted 7-12-62) and S-307 (revised 10-1-64).


**DESIGN SPECIFICATIONS:** This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof, except strength of splices which shall conform to Sec. 1.6.31 of the A.A.S.H.O. "Standard Specifications for Highway Bridges" dated 1961, together with current revisions thereof.

**UNIT STRESSES:**

Design Loading - CF 400 (57)  
 Concrete, Class "C" - basic unit stress 1,333 psi  
 Concrete, Class "E" - basic unit stress 1,133 psi  
 Structural Steel - ASTM A36 - basic unit stress 20,000 psi  
 (ASTM A7 and A373 not permitted)  
 Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 psi, except spiral reinforcement may be plain Structural Grade with basic unit stress of 18,000 psi.

**PIER AND ABUTMENT FOOTINGS** shall extend a minimum of 3" into undisturbed shale or to the elevation shown, whichever is lower.

**FOUNDATION BEARING PRESSURE:** Abutment footings are designed for a maximum bearing pressure of 2.0 tons per sq. ft. Pier footings are designed for a maximum bearing pressure of 3.6 tons per sq. ft.

**WELDING** of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus .

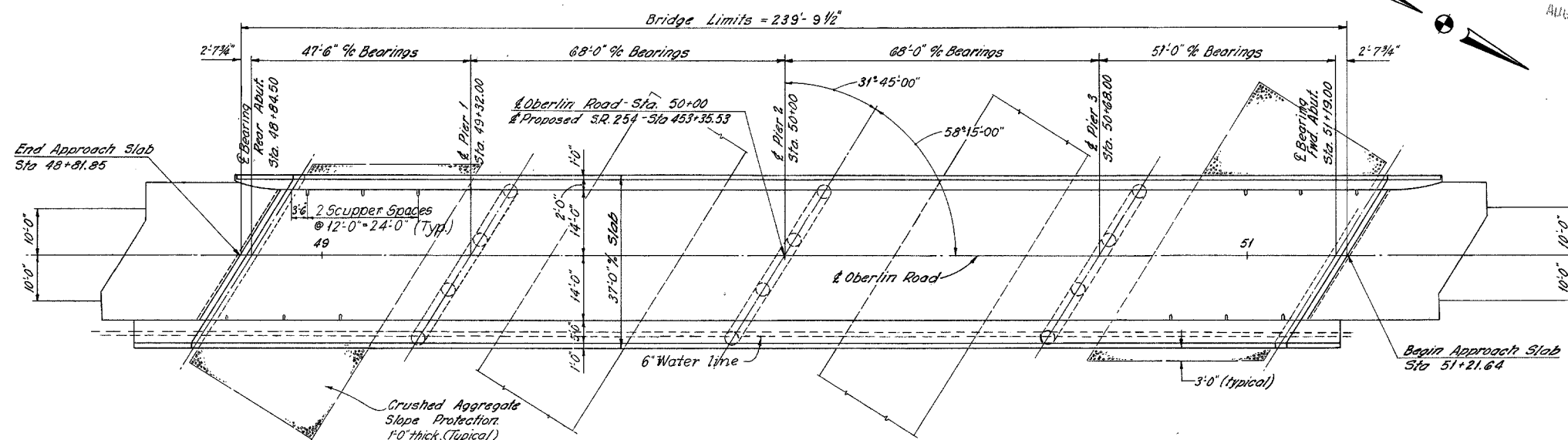
**CONCRETE DECK PLACING:** In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

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

**UTILITY LINES:** All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

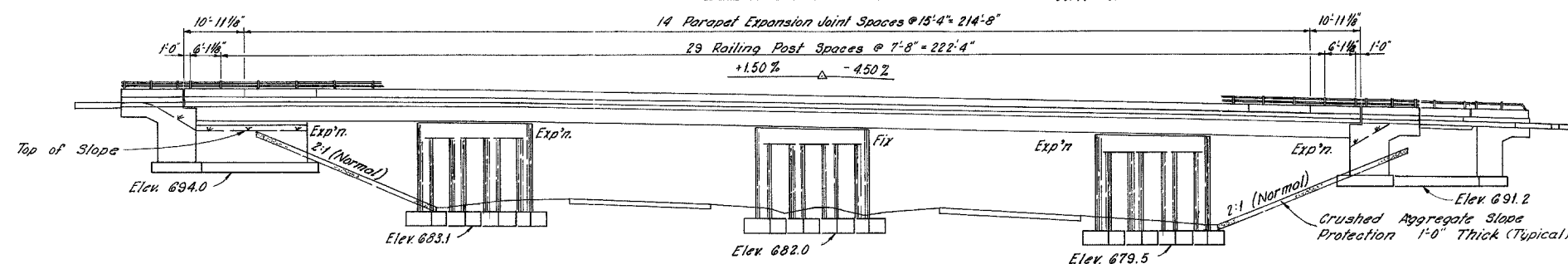
**6" WATER LINE** and sleeves shall be installed and supported before abutment backwall concrete is placed.

**STEEL PIPE SLEEVES:** The cost of standard steel pipe sleeves in abutments shall be included in the bid price per cu. yd. paid for Item 5-1 abutment concrete, Class "E".



**VERT. CURVE DATA**  
 P.V.I. Sta. 50+00  
 Elev. 711.03  
 L.V.C. 500'  
 Corr. -3.75'

**GENERAL PLAN**



**GENERAL ELEVATION**

**ESTIMATED QUANTITIES**

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS.	PIERS	GEN'L
E-2	224	Cu. Yds.	Unclassified excavation		224		
E-2	129	Cu. Yds.	Shale excavation		48	81	
S-1	302	Cu. Yds.	Class "C" concrete, superstructure	302			
S-1	90	Cu. Yds.	Class "C" concrete, piers above footings			90	
S-1	48	Cu. Yds.	Class "E" concrete, pier footings			48	
S-1	192	Cu. Yds.	Class "E" concrete, abutments		192		
S-4	105,442	Lbs.	Reinforcing steel	71,584	9,254	24,604	
* S-7	219,973	Lbs.	Structural steel	219,973			
* S-8	219,973	Lbs.	Field painting of structural steel	219,973			
S-14	519.88	Lin. Ft.	Railing (Type "C" aluminum rail & supports, and concrete parapet)	473.04	46.84		
S-29	29	Cu. Yds.	Porous backfill		29		
S-29	12	Each	Scuppers, including supports	12			
I-10	533	Sq. Yds.	Crushed aggregate slope protection				533
S-101	302	Each	Water-reducing, set-retarding admixture	302			

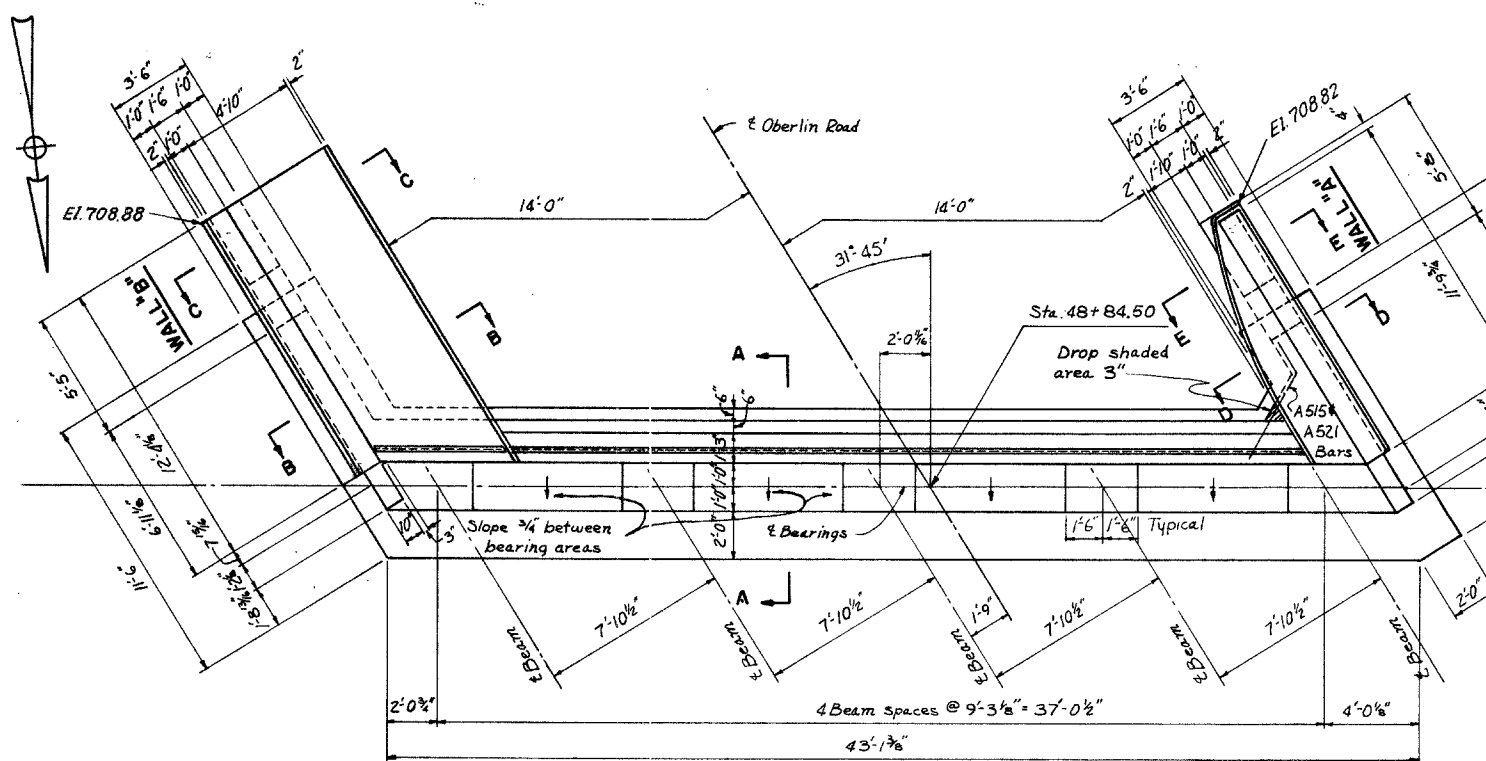
\* 873 lb. has no State or Federal Participation 100% - City of Amherst

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 Consulting Engineers  
 MANSFIELD, OHIO.

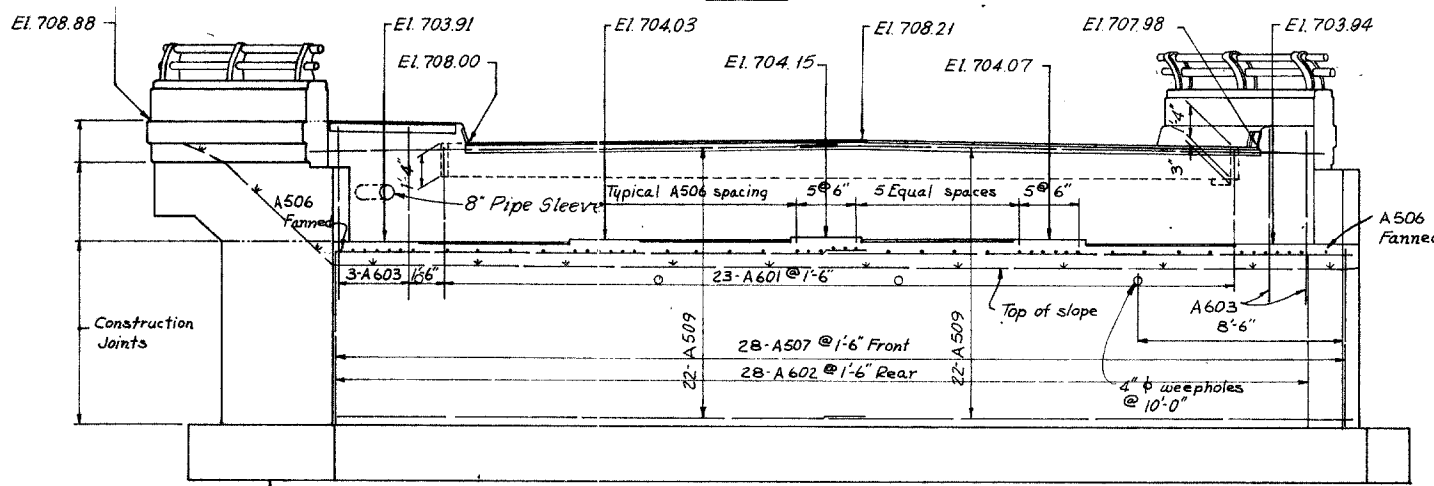
**GENERAL PLAN, GENERAL NOTES  
 AND ESTIMATED QUANTITIES**  
 BRIDGE NO. LOR-254-0859  
 UNDER OBERLIN ROAD  
 LORAIN COUNTY STA. 453 + 35.05 S.R. 254

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	J.E.G.	J.E.G.	J.W.C.			

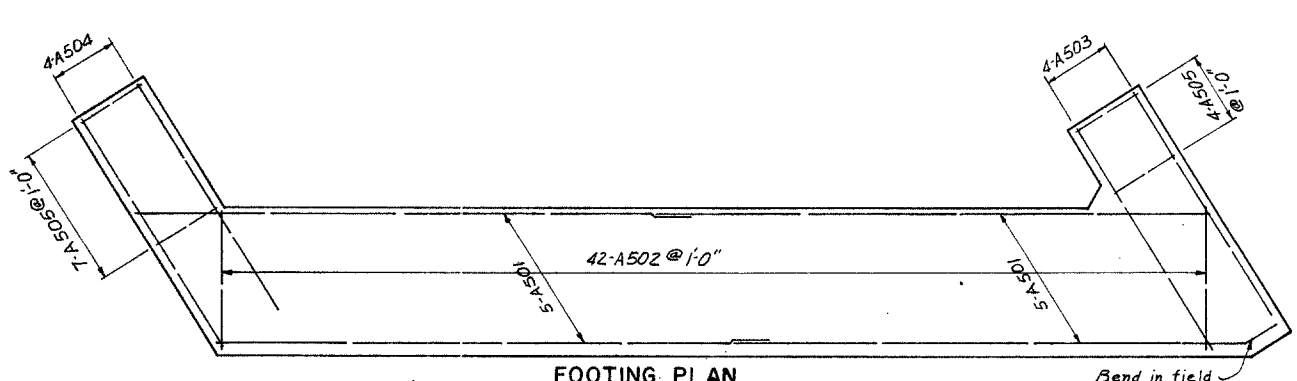
MICROFILMED  
AUG 20 1965



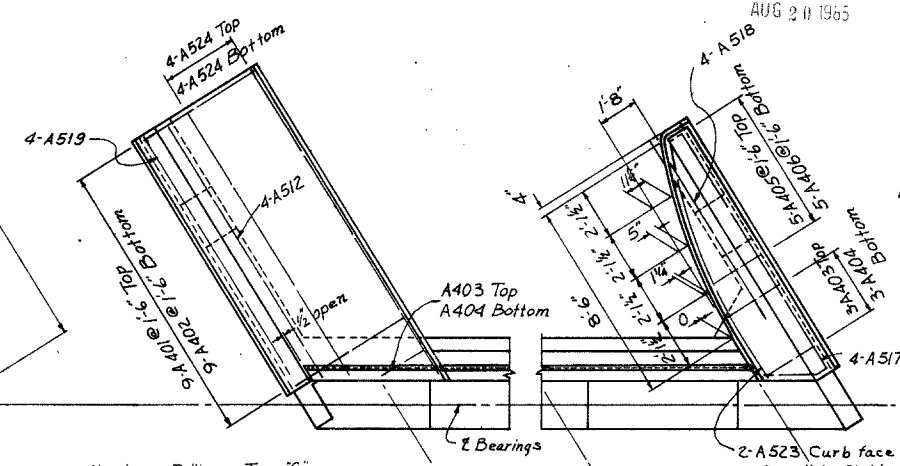
PLAN



ELEVATION

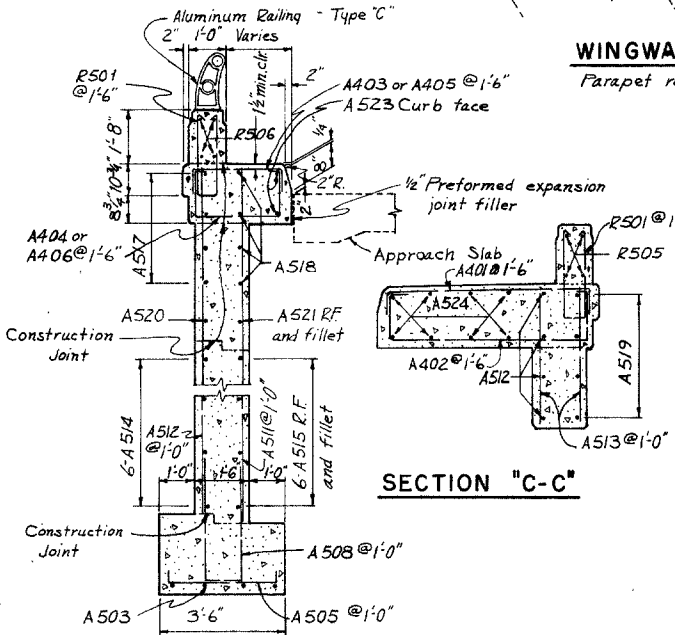


FOOTING PLAN

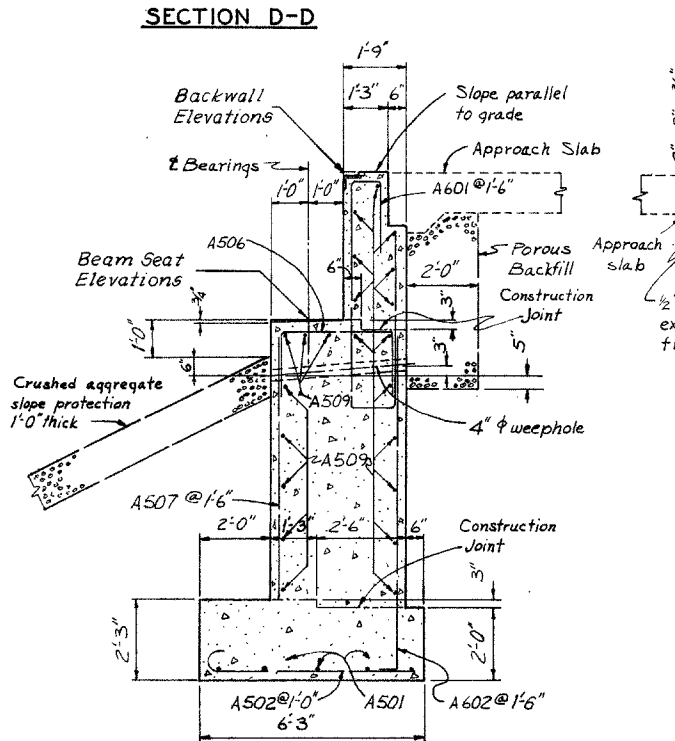


WINGWALL PLAN

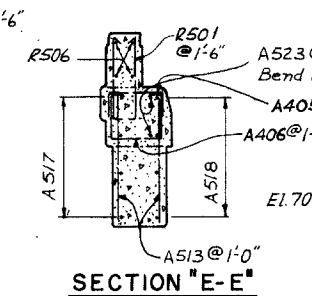
Parapet reinforcing not shown



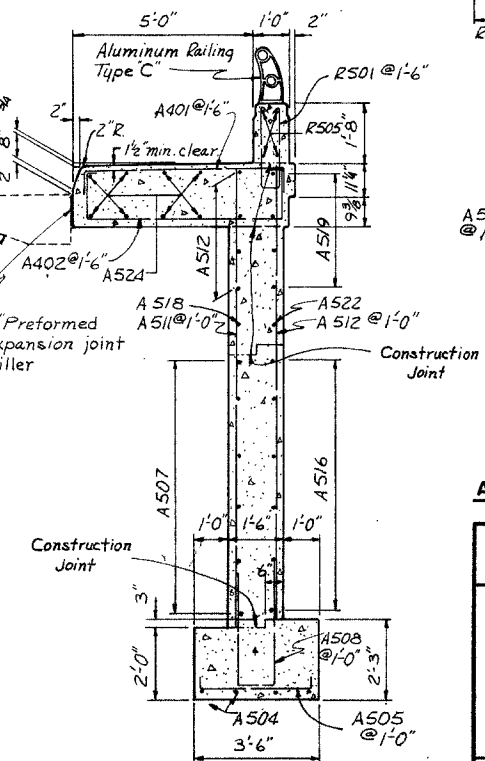
SECTION "C-C"



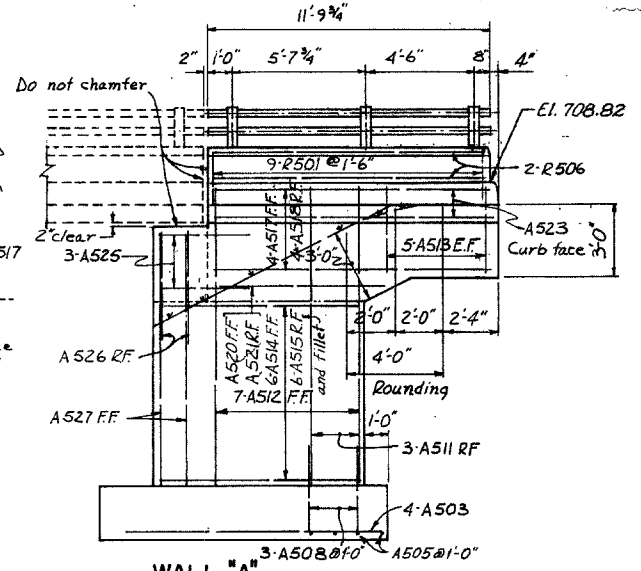
SECTION "D-D"



SECTION "E-E"

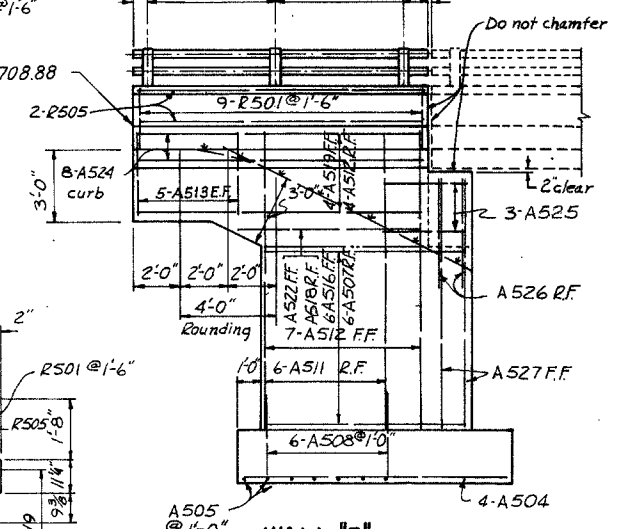


SECTION "B-B"



WALL "A"

Curb reinforcing not shown



WALL "B"

Sidewalk reinforcing not shown

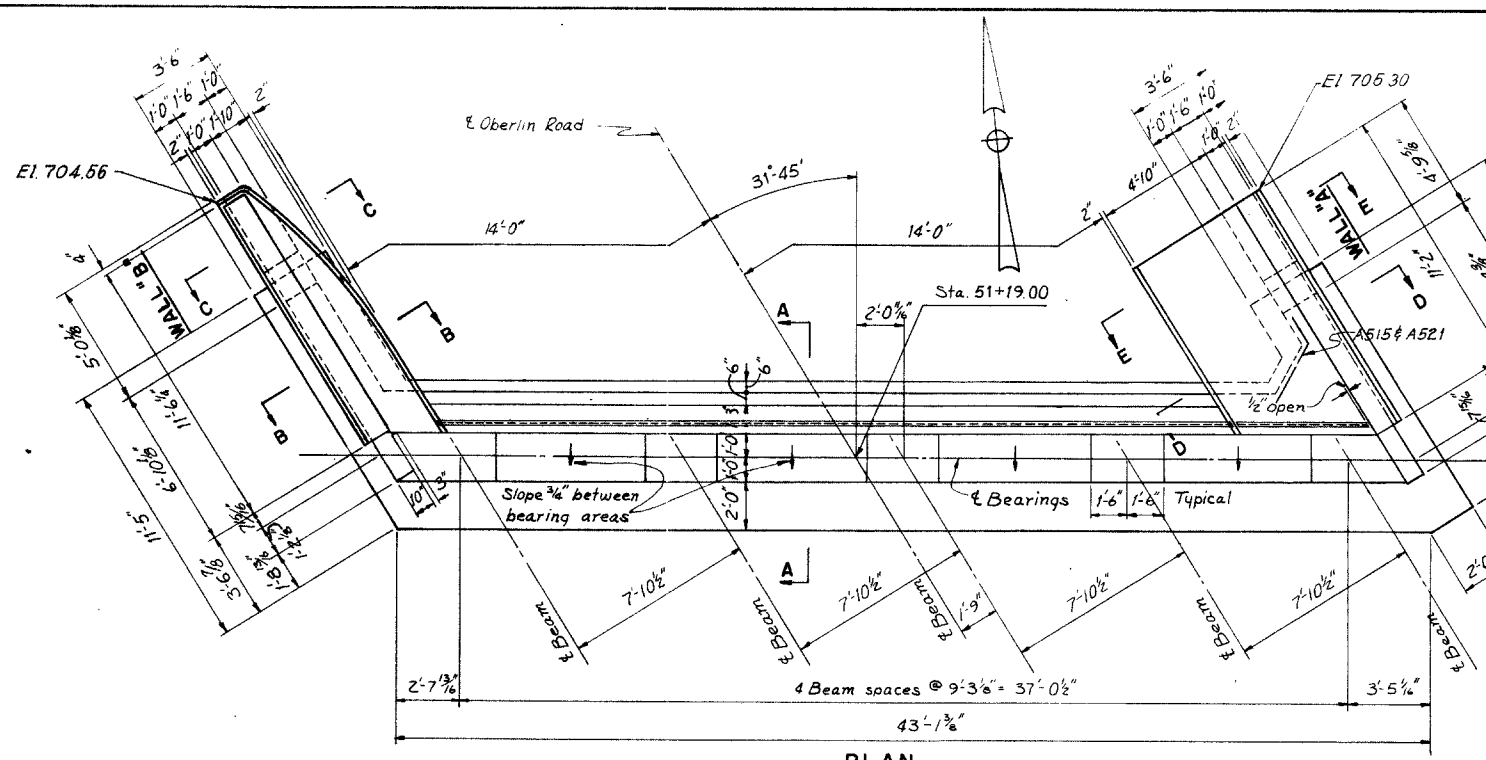
ABUTMENT NOTES: See Sheet 245

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Consulting Engineers  
MANSFIELD, OHIO.

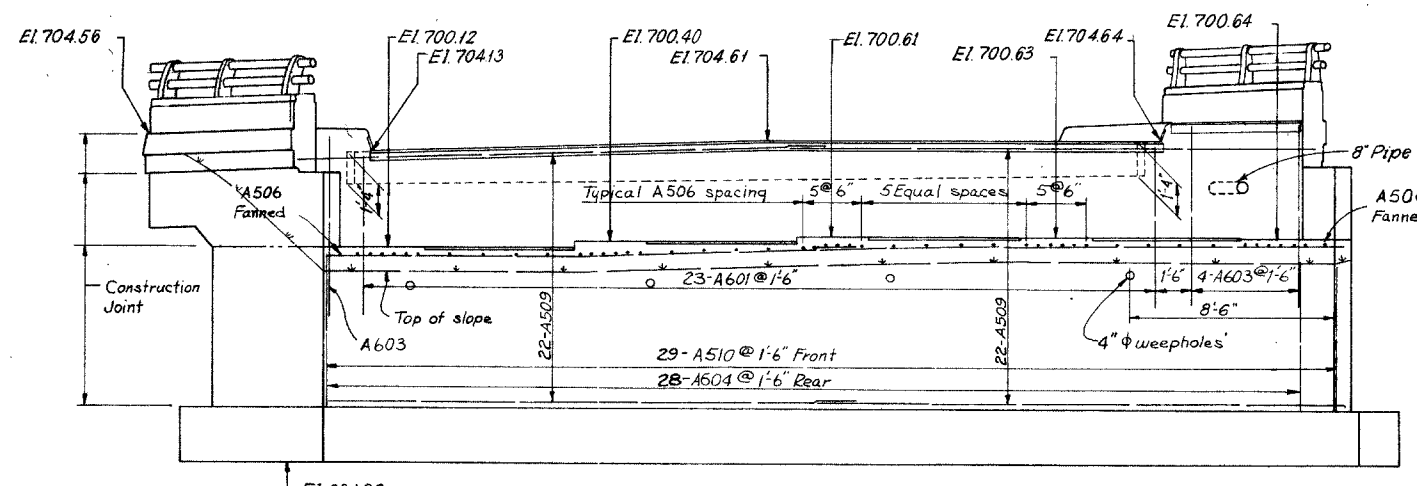
**REAR ABUTMENT**  
BRIDGE NO. LOR-254-0859  
UNDER OBERLIN ROAD  
LORAIN COUNTY S.R. 254  
STA. 453 + 35.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	W.H.A.	J.W.C.			

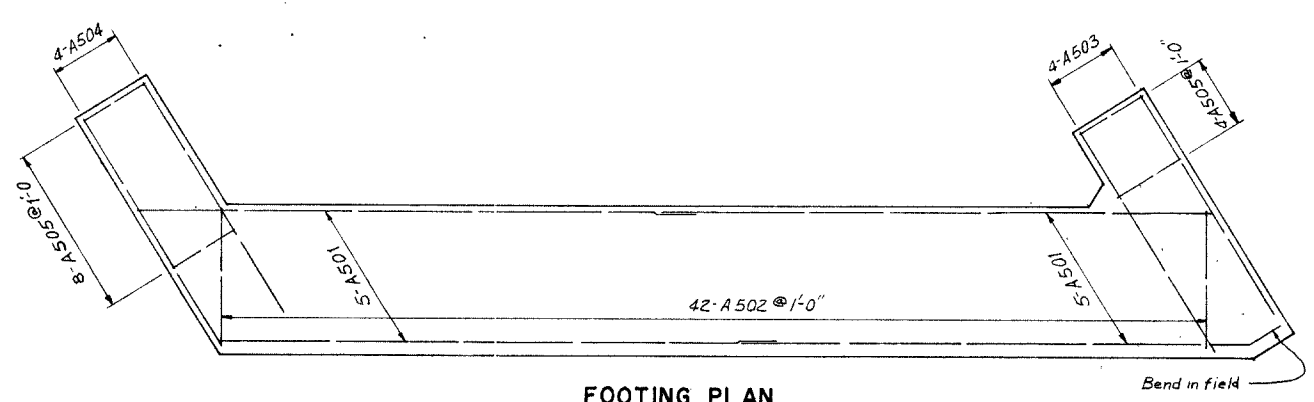
LORAIN COUNTY  
LOR-254-4.08-B



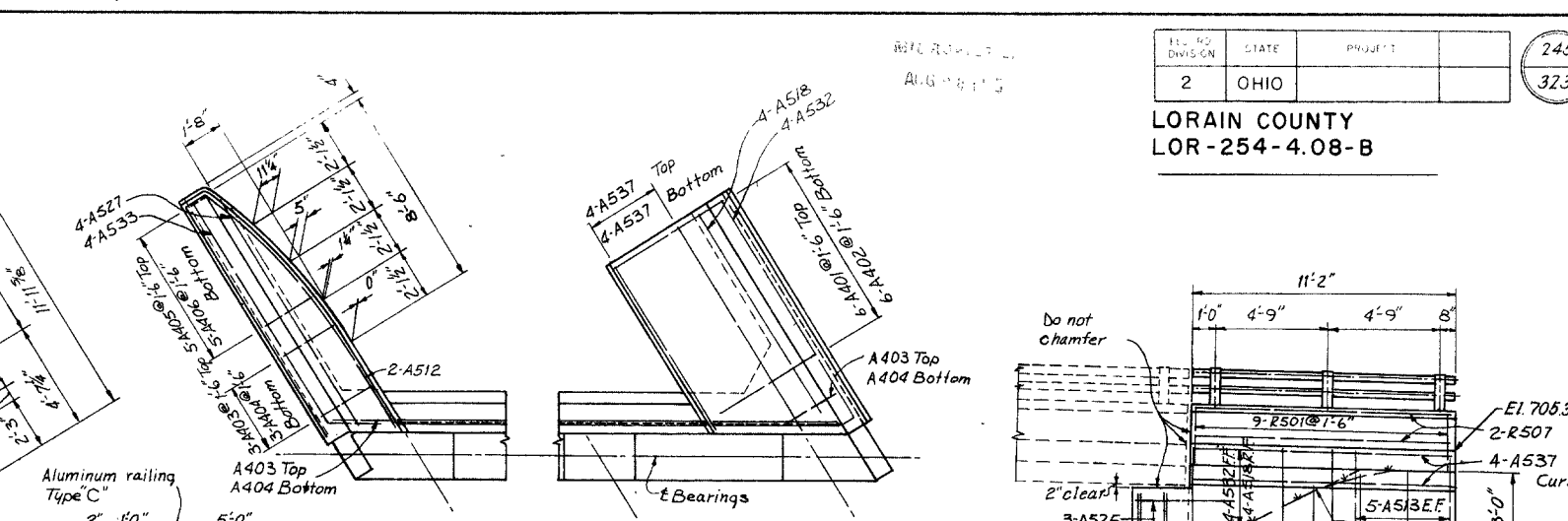
PLAN



ELEVATION

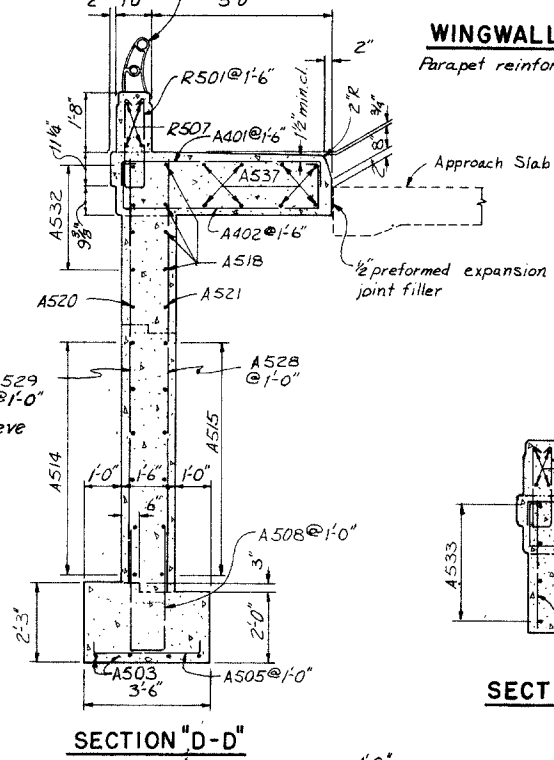


FOOTING PLAN



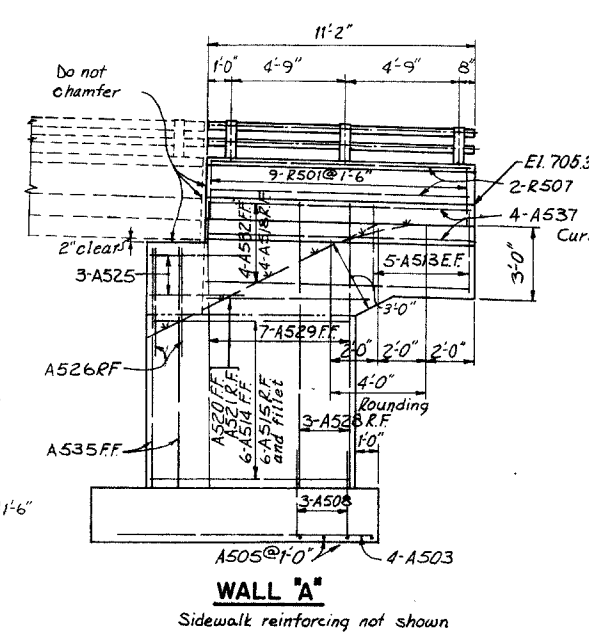
WINGWALL PLAN

SECTION "E-E"



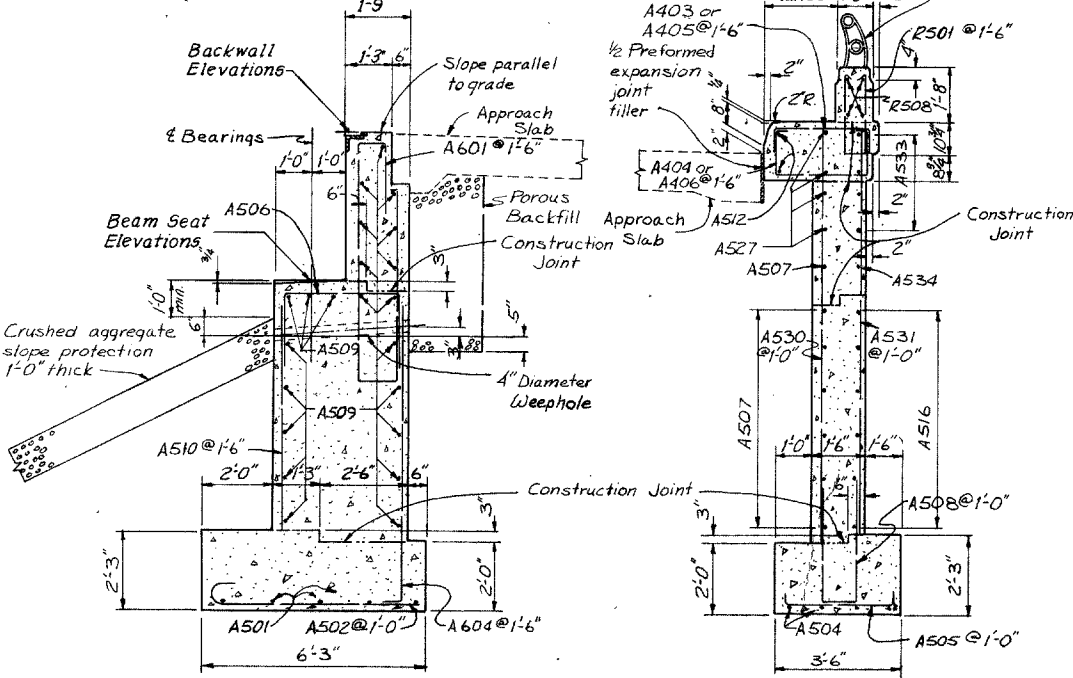
SECTION "D-D"

SECTION "C-C"



WALL "A"

WALL "B"



SECTION "A-A"

SECTION "B-B"

ABUTMENT NOTES

**CONCRETE:** All abutment concrete shall be Class "E" except parapets, which shall be Class "C".

**RAILING:** See AR-1-57 and sheet 243. Tubing on abutment wingwalls to be continuous.

**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.

**NOTATION:** FF=Front Face, R.F.=Rear Face, E.F.=Each Face.

**POROUS BACKFILL:** 2'-0" thick, shall extend upward to the subgrade elevation and for the full length of the abutment. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

**GENERAL NOTES:** See Sheet 243.

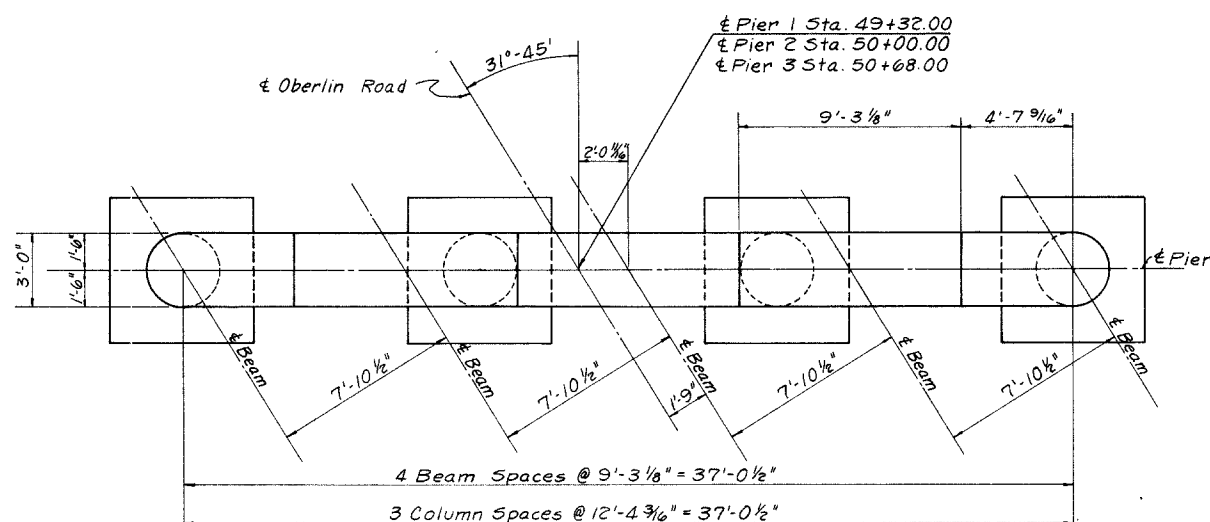
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**FORWARD ABUTMENT**  
BRIDGE NO. LOR-254-0859  
UNDER OBERLIN ROAD  
LORAIN COUNTY S.R. 254

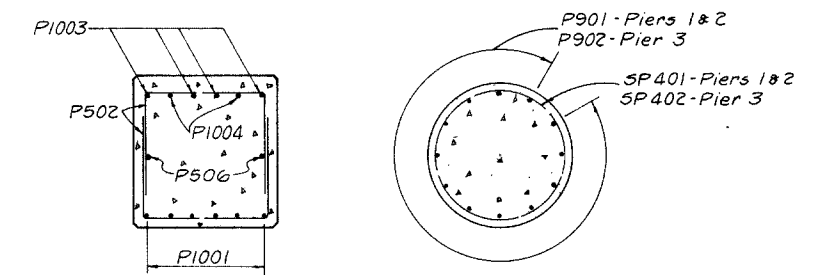
STA. 463 + 35.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	W.H.A.	J.W.C.			

PHOTO FILE  
AUG 21 1963

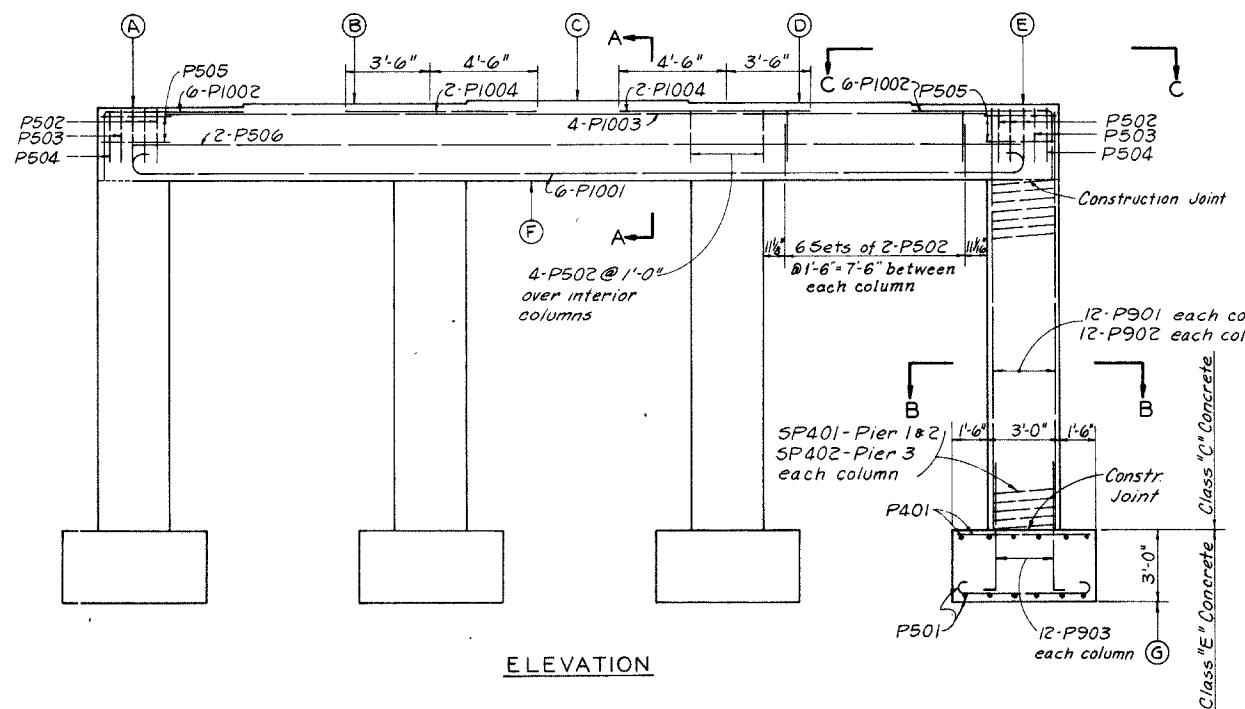


PLAN

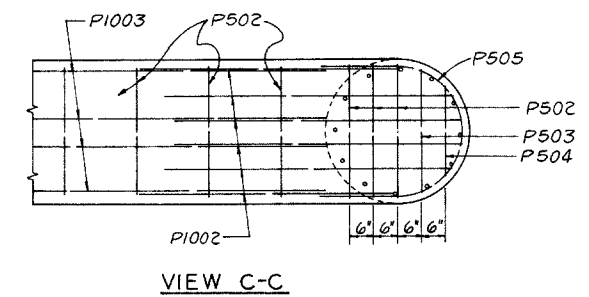


SECTION A-A

SECTION B-B



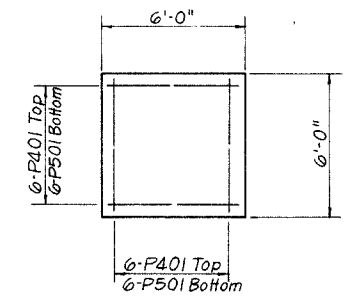
ELEVATION



VIEW C-C

**NOTES**

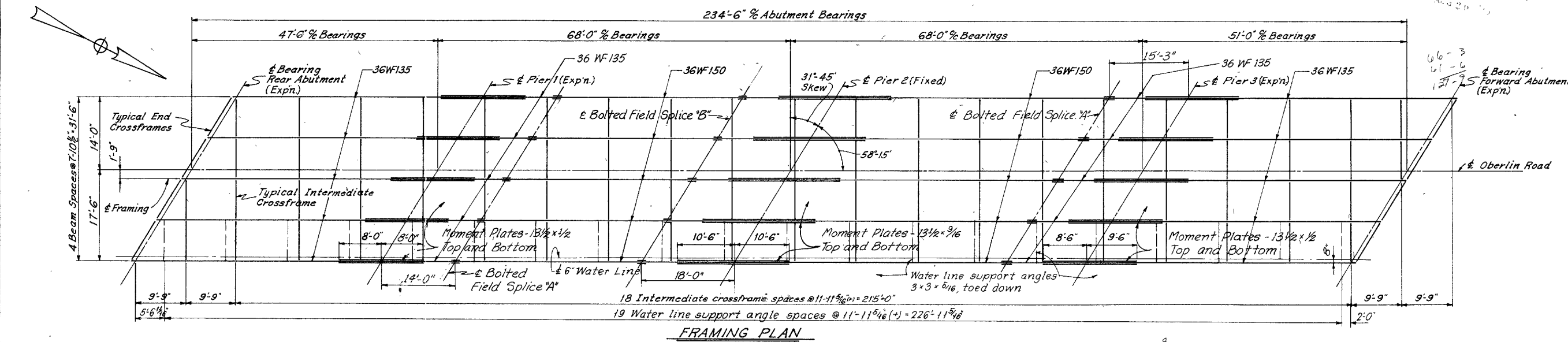
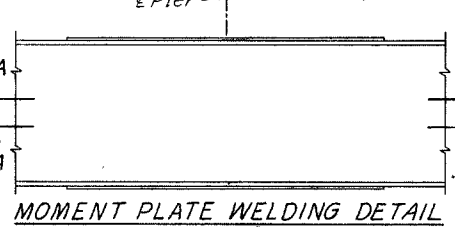
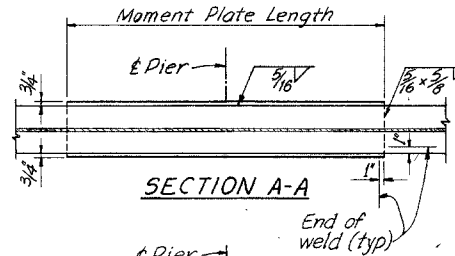
**CONCRETE:** All concrete for pier footings shall be Class "E". All pier concrete above footings shall be Class "C".  
**BRIDGE SEAT REINFORCING:** Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seats so as to avoid interference with the drilling of anchor bar holes.  
**GENERAL NOTES:** See sheet 243



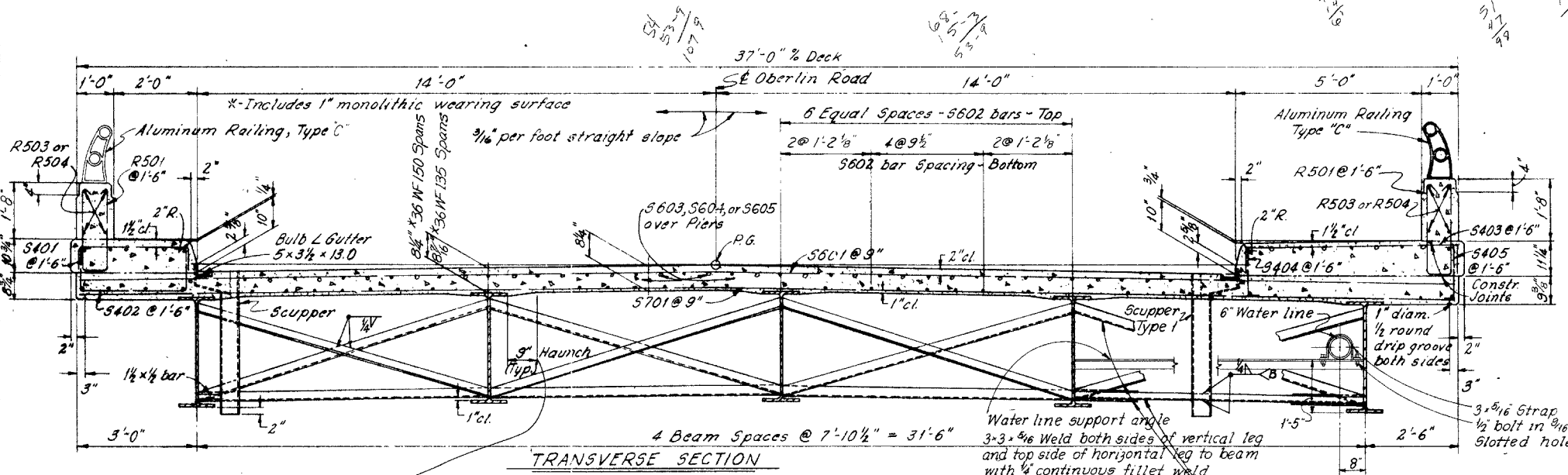
PLAN OF TYPICAL FOOTING

TABLE OF ELEVATIONS							
LOCATION	A	B	C	D	E	F	G
PIER 1	703.66	703.82	703.92	703.83	703.74	700.66	683.10
PIER 2	702.54	702.74	702.88	702.83	702.77	699.54	682.00
PIER 3	701.48	701.72	701.90	701.89	701.87	698.48	679.50

SHAFFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.							
<b>PIERS</b>							
BRIDGE NO. LOR-254-0859 UNDER OBERLIN ROAD							
LORAIN COUNTY						S.R. 254	
STA. 453 + 35.05							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
R.A.K.	R.A.K.	G.G.	J.W.C.				



FRAMING PLAN



TRANSVERSE SECTION

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.

\*- These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 5-125 of the Construction and Material Specifications

Intermediate crossframe angles 3x3x5/16. Downspout support angles 2x2x1/4. Weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld. All longitudinal bars 5602 except as otherwise shown. Lap 5602 bars 1'-11" minimum.

NOTES:  
 CAMBERING of beams is required in accordance with the following table:

	DEFLECTION AND CAMBER					
	INTERIOR BEAMS		LEFT FASCIA BEAM		RIGHT FASCIA BEAM	
	END SPANS	MIDDLE SPANS	END SPANS	MIDDLE SPANS	END SPANS	MIDDLE SPANS
Deflection due to weight of steel	0	0	0	0	0	0
Deflection due to remaining dead load	1/16	1/16	1/16	3/16	1/16	5/16
Convexity required for vertical curve	0	1/16	1/16	1/16	1/16	1/16
Sum of deflection and convexity	1/16	1/8	1/8	1/4	1/8	3/8
Required camber	0	0	0	0	0	0

END CROSSFRAMES, END DAMS, GUTTERS, SCUPPERS, CURB PLATE DETAILS AND SIDEWALK END DAM DETAILS: See Std. Dwg. 5D-1-63 Sheets 2, 3 & 4 of 4.

RAILING: See Std. Dwg. AR-1-57, Type "C"

BOLTED FIELD SPLICE "B": See Std. Dwg. 5D-2-64

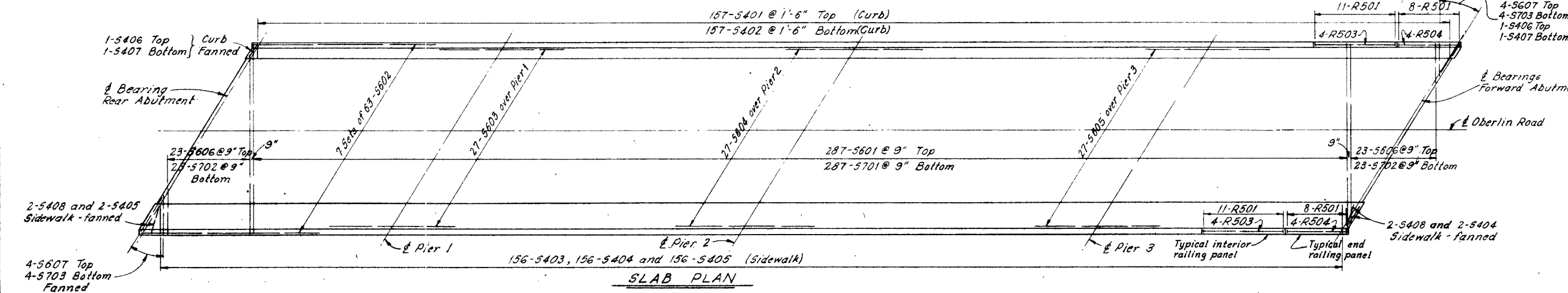
BEARINGS: See Std. Dwg. FSB-1-62 for the following:  
 E-100 Abutments  
 E-200 Piers 1 and 3  
 F-200 Pier 2

RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING: See Sheet 243

CONCRETE: All superstructure concrete shall be Class "C"

GENERAL NOTES: See Sheet 243

BOLTED FIELD SPLICE DETAIL "A": Sheet 248



SLAB PLAN

SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 MANSFIELD, OHIO.

**SUPERSTRUCTURE**  
 BRIDGE NO. LOR-254-0859  
 UNDER OBERLIN ROAD

LORAIN COUNTY S. R. 254  
 STA. 453 + 35.05

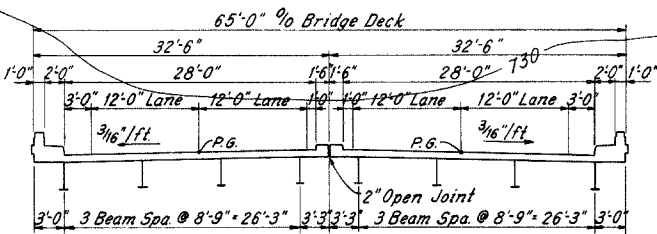
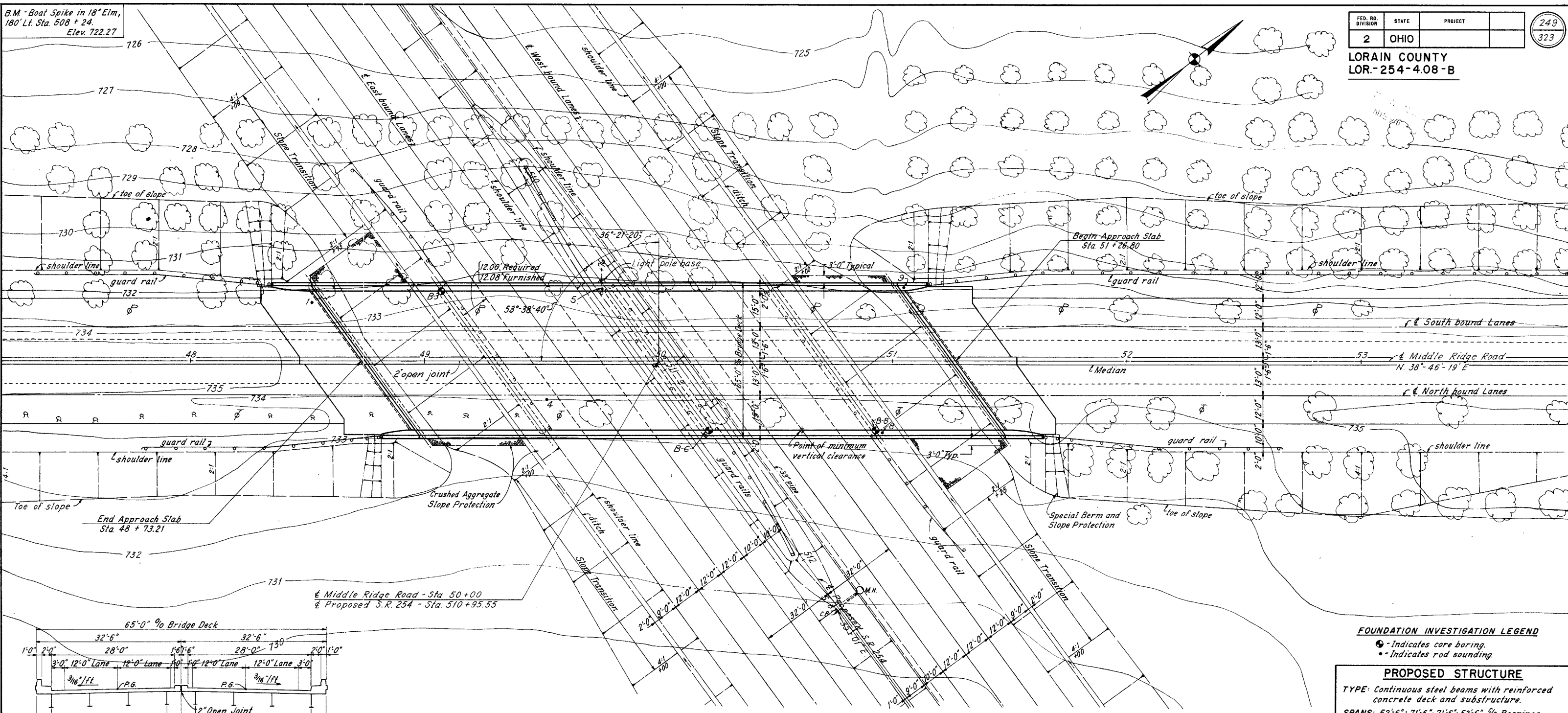
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	Ed	J.W.C.			



B.M. - Boat Spike in 18" Elm,  
180' Lt. Sta. 508 + 24.  
Elev. 722.27

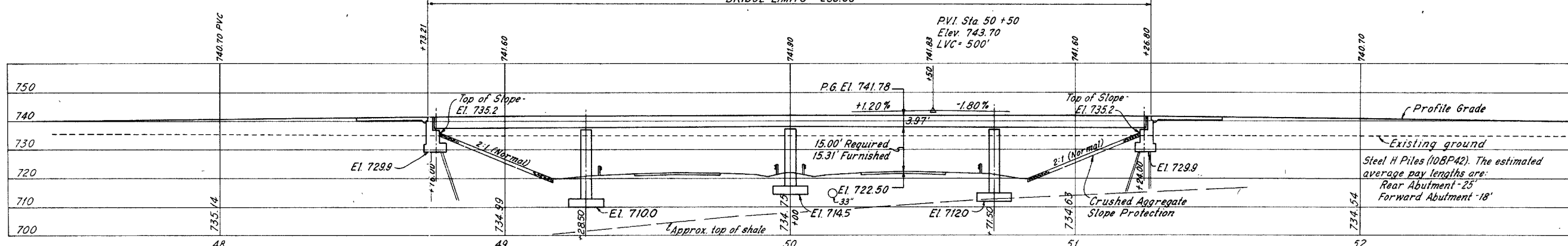
FED. RD. DIVISION	STATE	PROJECT	249
2	OHIO		323

LORAIN COUNTY  
LOR-254-4.08-B



TYPICAL SECTION

BRIDGE LIMITS = 253.59'



FOUNDATION INVESTIGATION LEGEND

- Indicates core boring.
- Indicates rod sounding.

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinforced concrete deck and substructure.  
 SPANS: 52'-6"; 71'-6"; 71'-6"; 52'-6" 1/2 Bearings.  
 ROADWAY: 59'-0" 1/2 2'-0" safety curbs with 3'-0" raised median.  
 LOAD FREQUENCY: CF 400 (57)  
 SKEW: 36°-21'-20" R.F.  
 WEARING SURFACE: 1" monolithic concrete  
 APPROACH SLABS: AS-1-54 (25'-0" long)  
 ALIGNMENT: Tangent  
 AVERAGE DAILY TRAFFIC: 3970 (1962); 10,200 (1982)

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

SITE PLAN

BRIDGE NO. LOR-254-0967  
UNDER MIDDLE RIDGE ROAD  
LORAIN COUNTY S.R. 254  
STA. 510 + 31.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	Bob	UH	J.W.C.			

**GENERAL NOTES**

**REFERENCE** shall be made to Standard Drawings AS-1-54 (revised 7-5-62), AR-1-57 (revised 4-2-62), FSB-1-62 (revised 1-15-63), SD-1-63, Sheets 2, 3 & 4 (dated 11-12-63), SD-2-64 (dated 11-25-64) and Supplemental Specifications S-101 (adopted 7-12-62) and S-307 (revised 10-1-64).

**DESIGN SPECIFICATIONS:** This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof, except strength of splices, which shall conform to Sec. 1.6.31 of the A.A.S.H.O. "Standard Specifications for Highway Bridges" dated 1961, together with current revisions thereof.

**UNIT STRESSES**  
 Design Loading - CF 400 (57)  
 Concrete, Class "C" - basic unit stress 1,333 psi  
 Concrete, Class "E" - basic unit stress 1,133 psi  
 Structural Steel - ASTM A36 - basic stress 20,000 psi (except piling).  
 (ASTM A7 and A373 not permitted)  
 Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 psi, except spiral reinforcement may be plain Structural Grade with basic unit stress of 18,000 psi.

**REAR ABUTMENT PILES:** Piles shall be driven to a minimum bearing capacity of 35 tons per pile.  
**FORWARD ABUTMENT PILES:** Piles shall be driven, with a hammer of not less than 11,000 ft. lbs. per blow, to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating.  
 50 tons per pile using an 11,000 ft. lb. hammer  
 43 tons per pile using an 15,000 ft. lb. or greater hammer  
 If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile.

**PIER 3 FOOTINGS** shall extend a minimum of 3" into undisturbed shale or to the elevation shown, whichever is lower.

**WELDING** of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class B welds are shown thus B.

**CONCRETE DECK PLACING:** In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

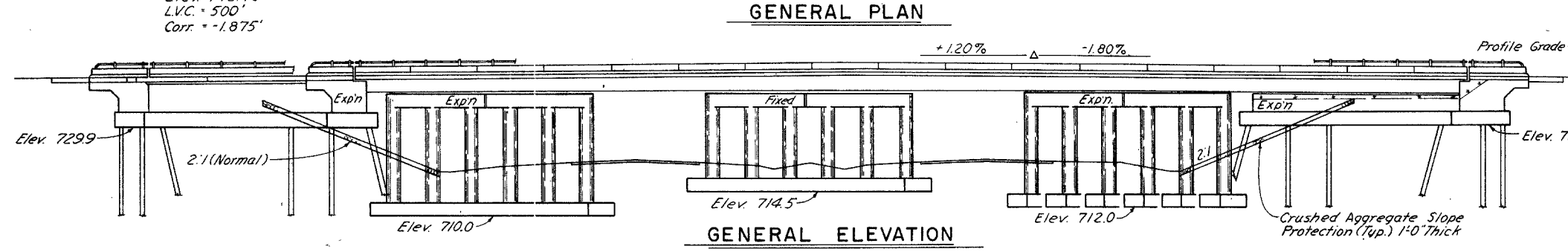
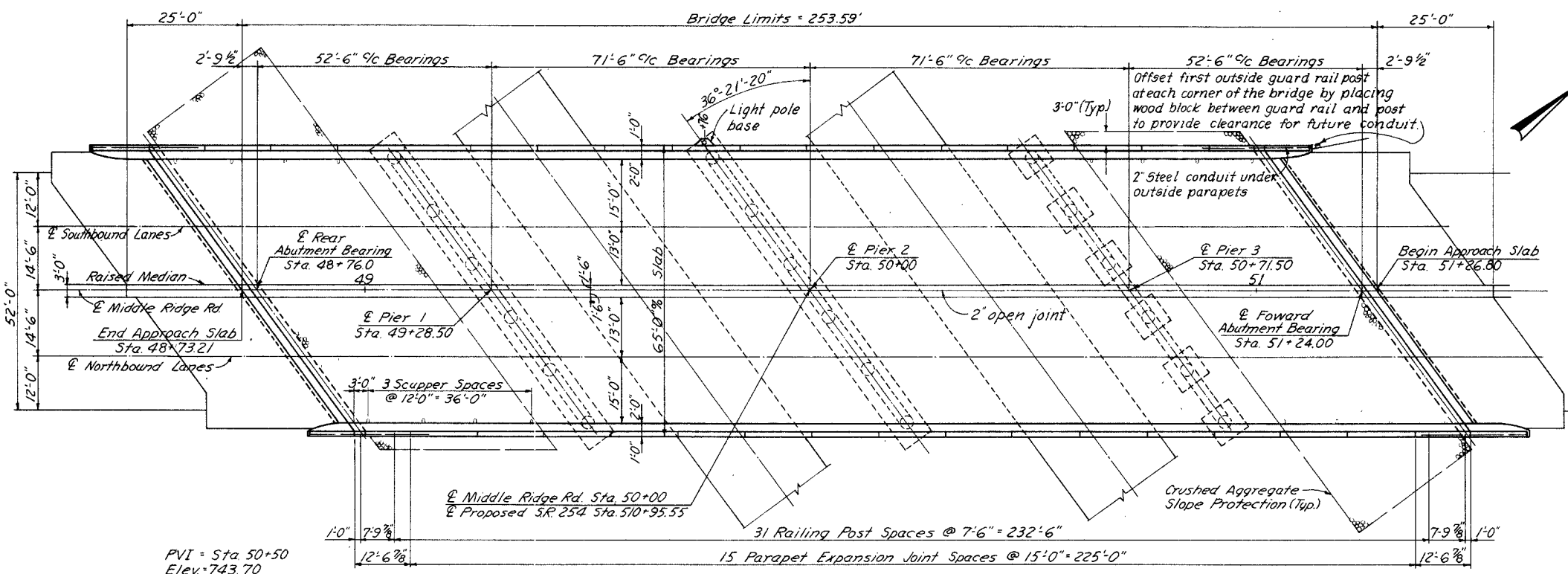
**MACHINE FINISH:** The concrete bridge deck shall be finished by the use of a finishing machine.

**UTILITY LINES:** All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum. See note regarding telephone conduit and sleeves to the Lorain Telephone Co. on sheet 237.

**STRUCTURE LIGHTING:** Two-inch rigid galvanized steel conduit and fittings shall meet the American Association Specifications for Rigid Steel Conduit, Designation C80.1 and shall be installed under each parapet as shown. The conduit shall be extended up into the light pole base on the left side of the structure and capped as shown. Install one No. 10 galvanized steel pull wire in structure conduit. All conduit and fittings shall be galvanized after threading. If field threads are required, they shall be painted with a zinc rich base paint prior to assembly. (For payment see below.)

**STRUCTURE GROUNDING:** The superstructure shall be grounded by encasing one No. 10 7 strand soft annealed bare copper cable in either outside column of Pier 2. The lower end of this cable shall be extended in one continuous length an additional 25 ft. to form a loop, as large as the excavation will permit, under the footing of Pier 2. This loop shall be separated from the footing by two layers of tar paper. The column cable shall be extended through the top of the pier cap with lead of sufficient length to exothermic weld upper end of cable to outside beam of superstructure. One anchor rod in the light pole base shall be grounded with one No. 10 AWG 7-strand soft annealed bare copper cable to the outside beam of superstructure with exothermic welds. Ground straps shall be used where electrical continuity of metal conduit is interrupted. Ground each run or section of conduit. The cost and installation of all conduit, fittings, ground cable, anchor rods and galvanized pull wire shall be considered as paid for in the lump sum bid for Item S-25.

Conduit grounds shall be the same as for anchor rods.



PVI = Sta 50+50  
 Elev. 743.70  
 LVC = 500'  
 Corr. = -1.875'

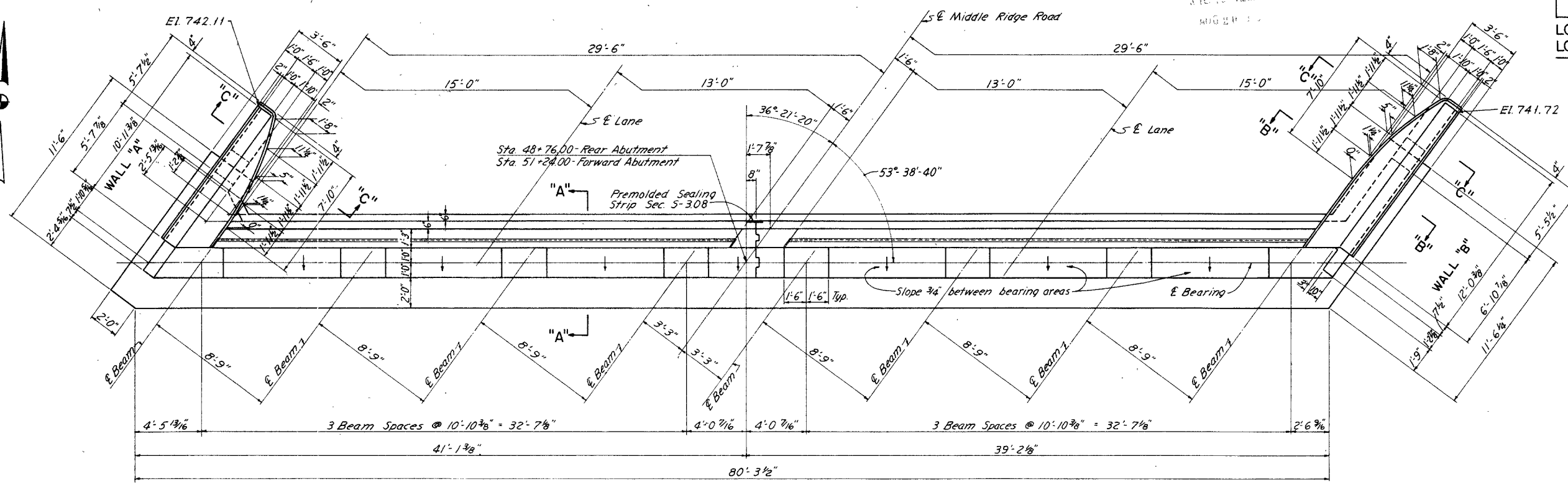
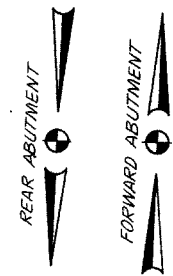
ESTIMATED QUANTITIES							
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS.	GEN.
E-2	1032	Cu. Yds.	Unclassified Excavation		352	680	
E-2	10	Cu. Yds.	Shale Excavation			10	
E-2	Lump	Sum	Cofferdams, Cribbs & Sheeting				Lump
S-1	504	Cu. Yds.	Class "C" concrete, superstructure	504			
S-1	171	Cu. Yds.	Class "C" concrete, piers above footings			171	
S-1	167	Cu. Yds.	Class "E" concrete, pier footings			167	
S-1	282	Cu. Yds.	Class "E" concrete, abutments		282		
S-3	14.33	Lin. Ft.	Waterproofing (Premolded sealing strip)		14.33		
S-4	204,785	Lbs.	Reinforcing steel	134,509	15,839	54,437	
S-7	410,900	Lbs.	Structural steel	410,900			
S-8	410,900	Lbs.	Field painting of structural steel	410,900			
S-14	546.26	Lin. Ft.	Railing (Type "A" aluminum rail & supports, & concrete parapet.)	500.30	45.96		
S-16	Lump	Sum	First test pile				Lump
S-18	774	Lin. Ft.	Steel piles 10BP42		774		
S-25	Lump	Sum	Electric Lighting System, complete.				Lump
S-29	57	Cu. Yds.	Porous backfill		57		
S-29	16	Each	Scuppers, including supports		16		
I-10	800	Sq. Yds.	Crushed aggregate slope protection				800
S-101	504	Each	Water-reducing, set retarding admixture	504			

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 Consulting Engineers  
 MANSFIELD, OHIO.

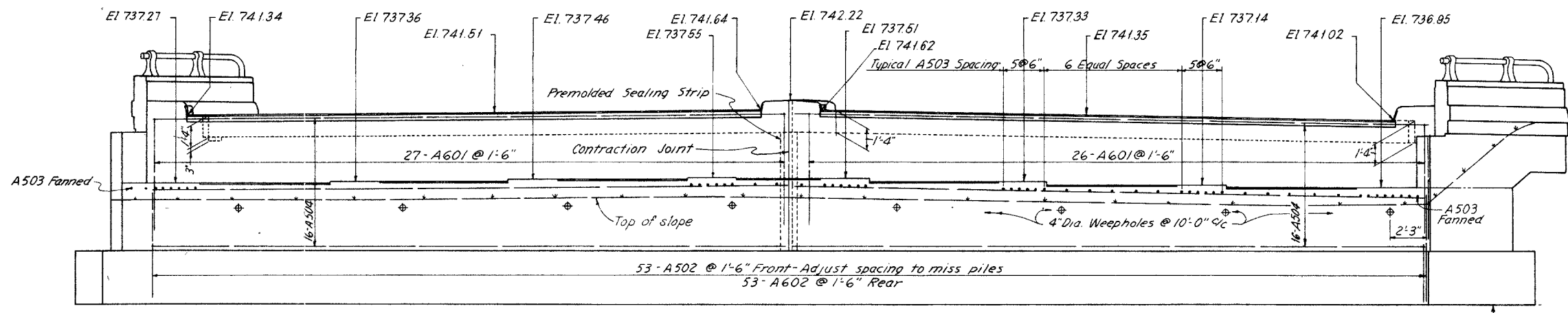
**GENERAL PLAN, GENERAL NOTES  
 AND ESTIMATED QUANTITIES**  
 BRIDGE NO. LOR-254-0967  
 UNDER MIDDLE RIDGE ROAD  
 LORAIN COUNTY STA. 510 + 31.33 S.R. 254

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.E.G.	J.E.G.	J.R.B.	J.W.C.			



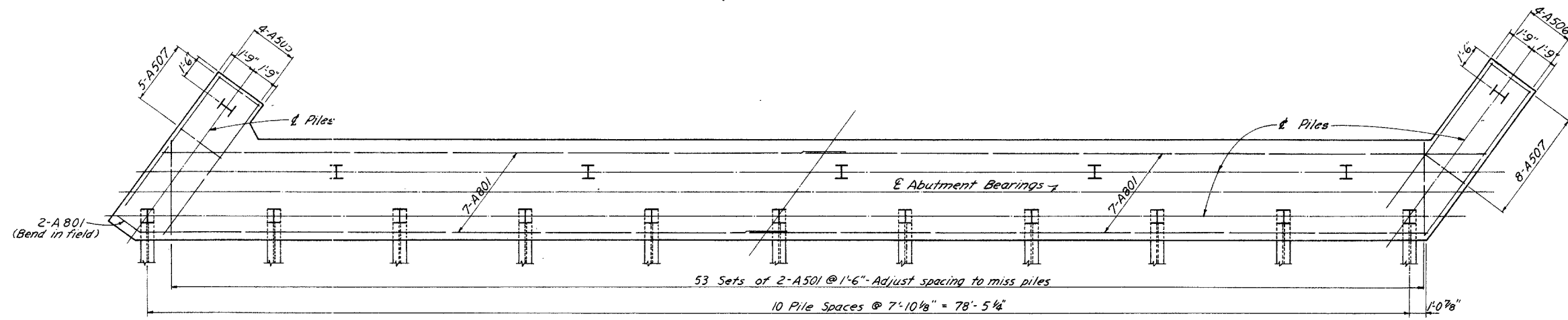


**PLAN**



**ELEVATION**

Note: Piles omitted from elevation view

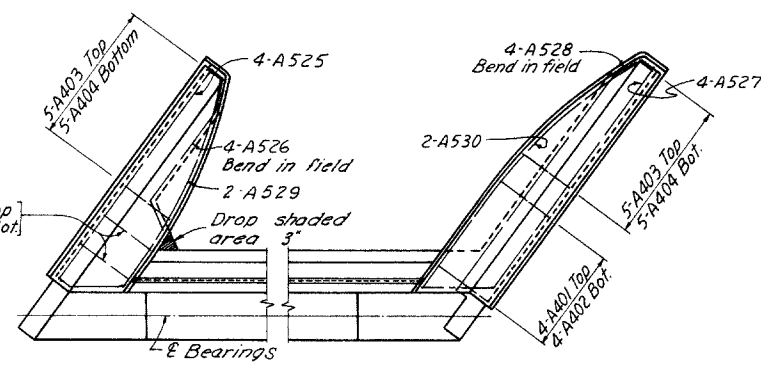
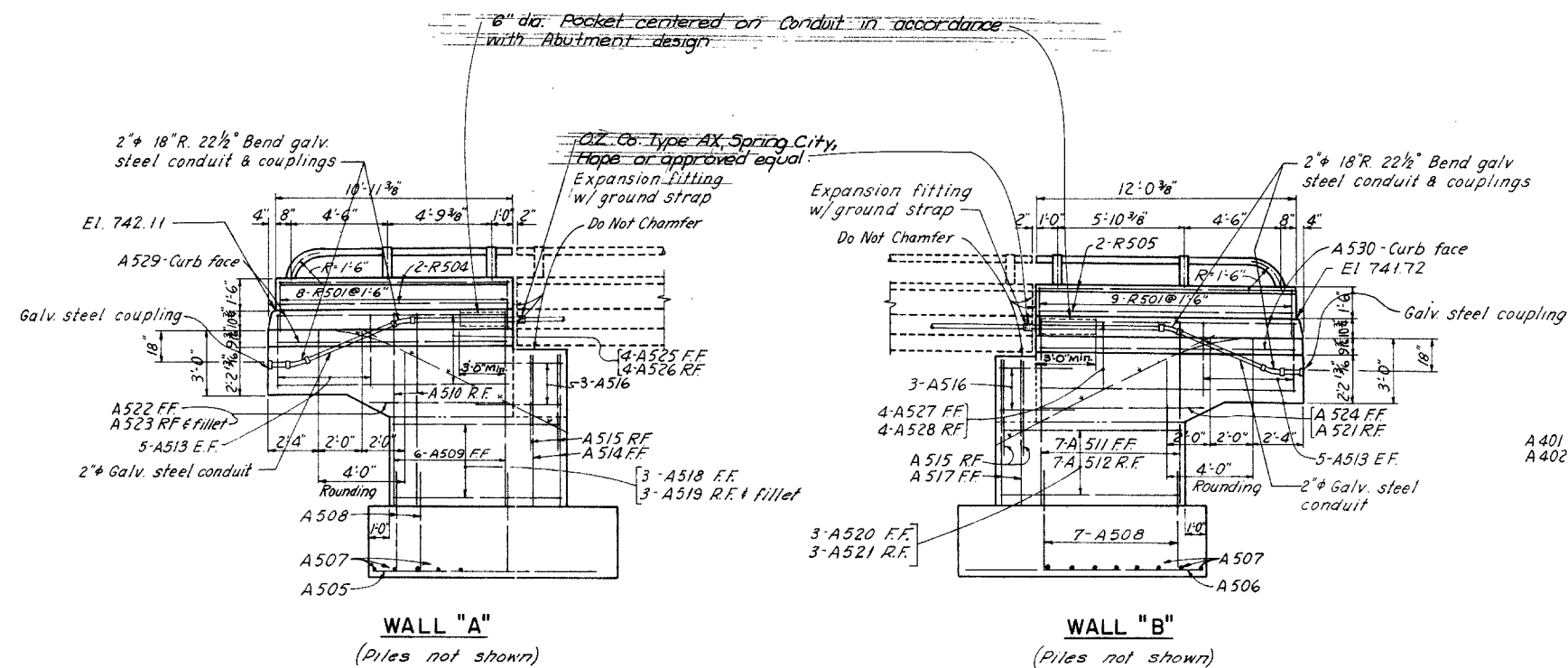


**FOOTING PLAN**

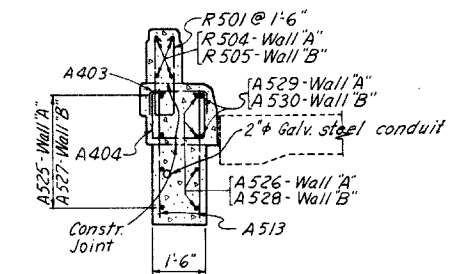
ABUTMENT NOTES: See Sheet 252

SHAFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.						
<b>ABUTMENTS - I</b>						
BRIDGE NO. LOR-254-0967 UNDER MIDDLE RIDGE ROAD						
LORAIN COUNTY					S.R. 254	
STA. 510 + 31.33						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	J.R.B.	J.W.C.			

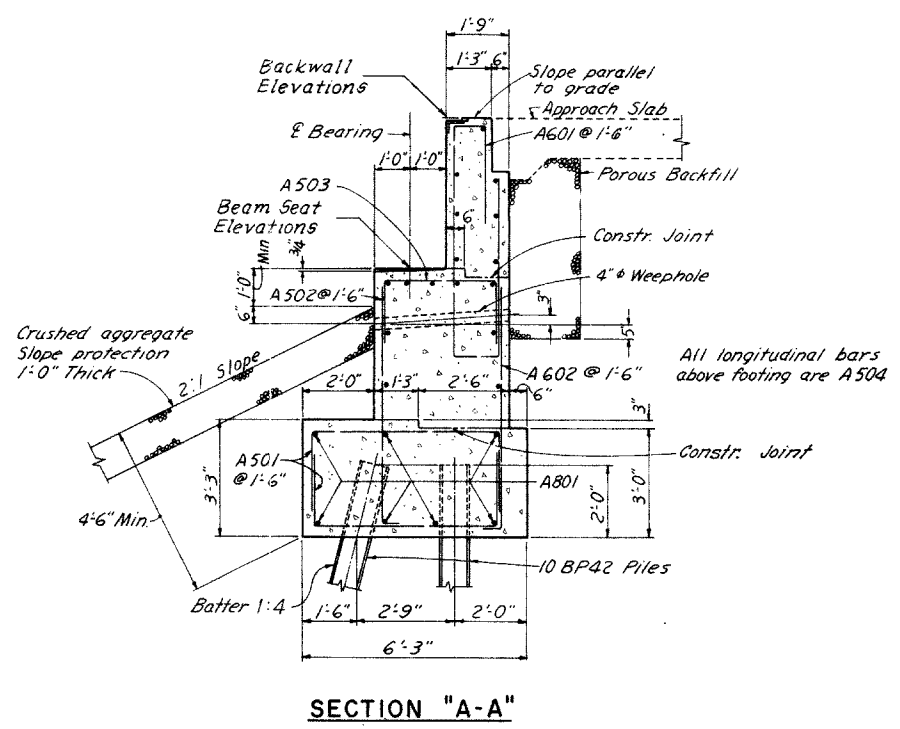
LORAIN COUNTY  
LOR - 254 - 4.08 - B



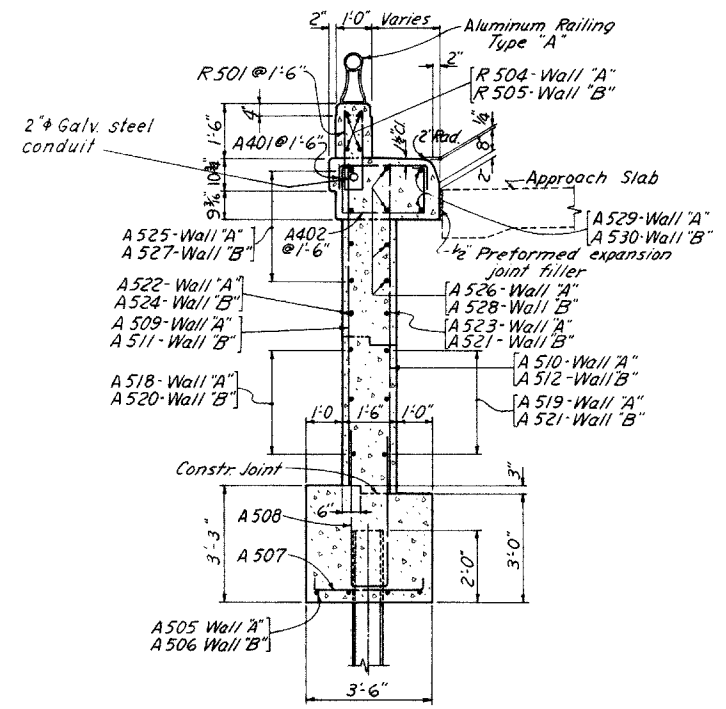
WINGWALL PLAN



SECTION "C-C"



SECTION "A-A"

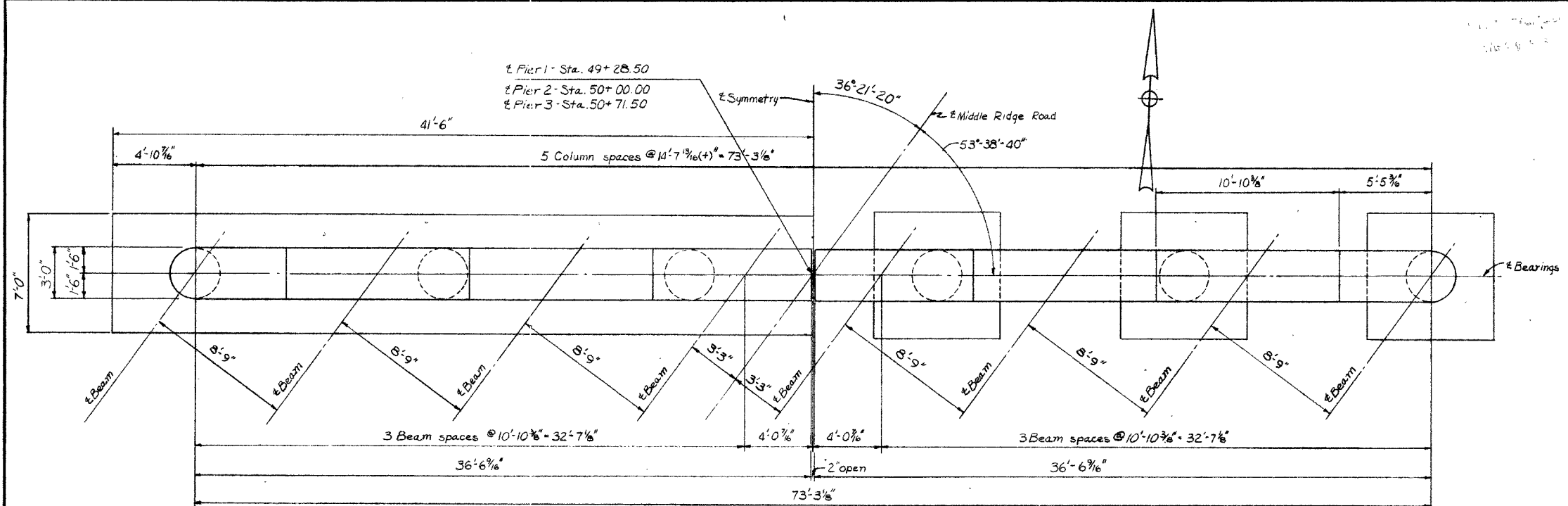


SECTION "B-B"

**ABUTMENT NOTES:**  
**CONCRETE:** All abutment concrete shall be Class "E" except parapets, which shall be Class "C."  
**RAILING:** See AR-1-57 and Sheet 250. Tubing on abutment wingwalls to be continuous.  
**NOTATION:** F.F. - Front Face; R.F. - Rear Face; E.F. - Each Face.  
**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.  
**POROUS BACKFILL:** 2'-0" thick, shall extend upward to the approach slab and raised median and for the full length of the abutment. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cubic yard paid for porous backfill.  
**GENERAL NOTES:** See Sheet 250.

SHAFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.						
<b>ABUTMENTS - 2</b>						
BRIDGE NO. LOR-254-0967 UNDER MIDDLE RIDGE ROAD						
LORAIN COUNTY STA. 510 + 31.33 S.R. 254						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	J.R.B.	J.W.C.			

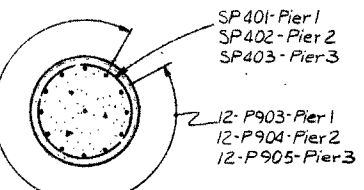
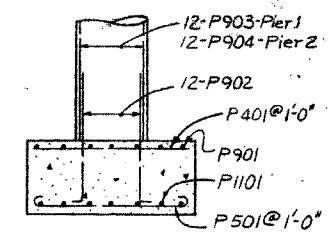
LORAIN COUNTY  
LOR-254-4.08-B



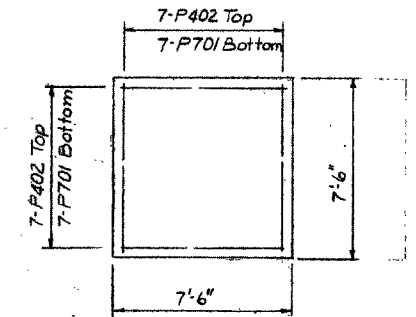
HALF PLAN - PIERS 1 & 2

HALF PLAN - PIER 3

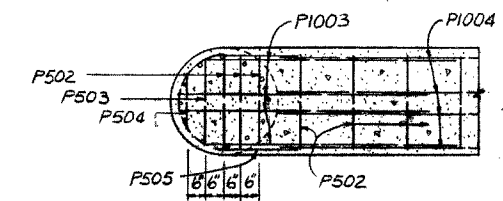
SECTION A-A



SECTION B-B



PLAN OF TYPICAL FOOTING  
PIER 3



SECTION C-C

NOTES

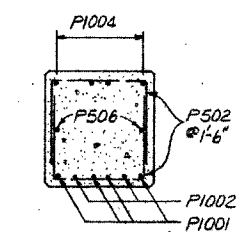
**CONCRETE:** All concrete for pier footings shall be class "E". All concrete for piers above footings shall be class "C".

**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.

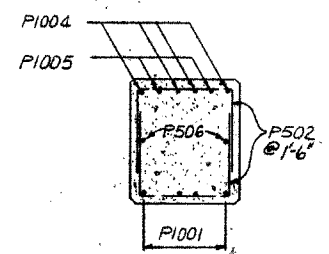
**FOUNDATION BEARING PRESSURE:** Pier footings are designed for maximum bearing pressures as follows:  
Pier 1: 2.0 Tons per sq. ft. (soil)  
Pier 2: 2.3 Tons per sq. ft. (soil)  
Pier 3: 3.2 Tons per sq. ft. (shale)

**GENERAL NOTES:** See Sheet 250

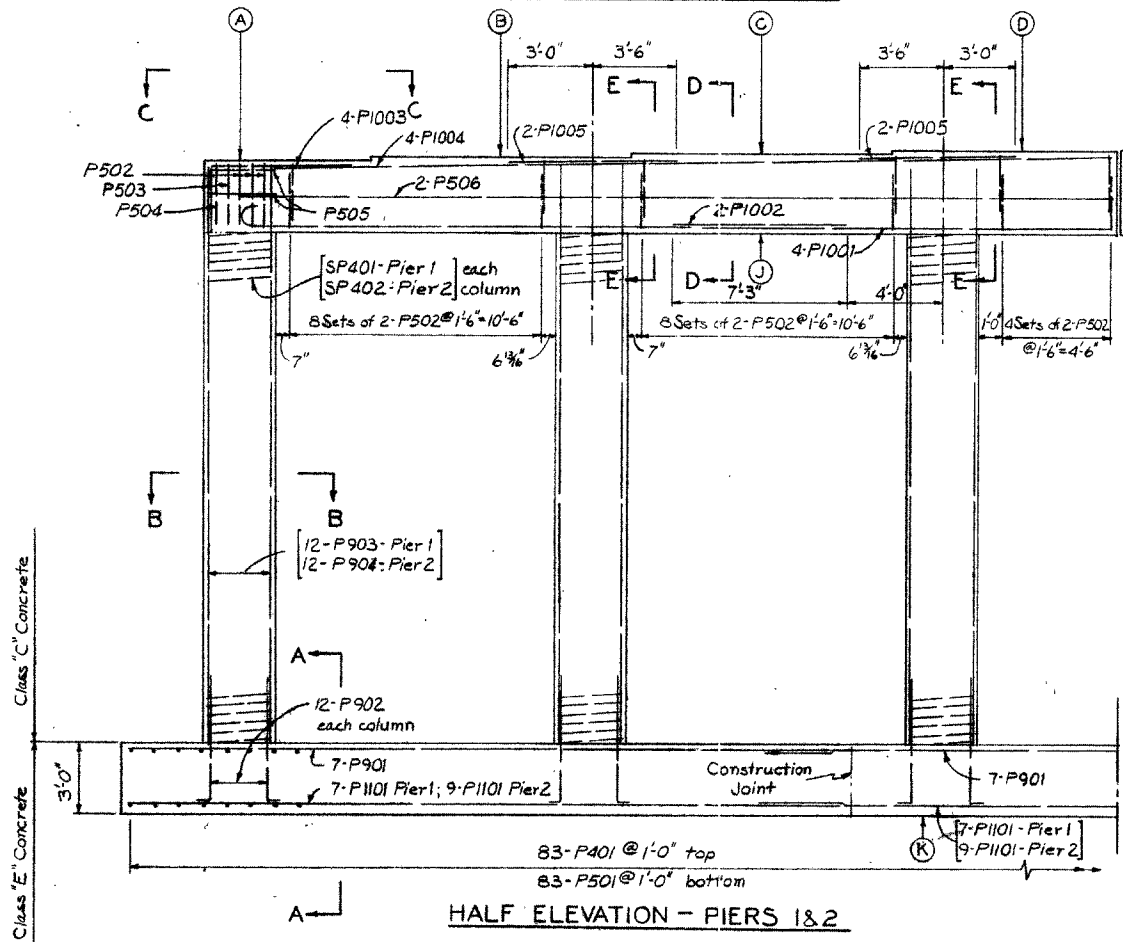
**GROUNDING:** See Sheet 250



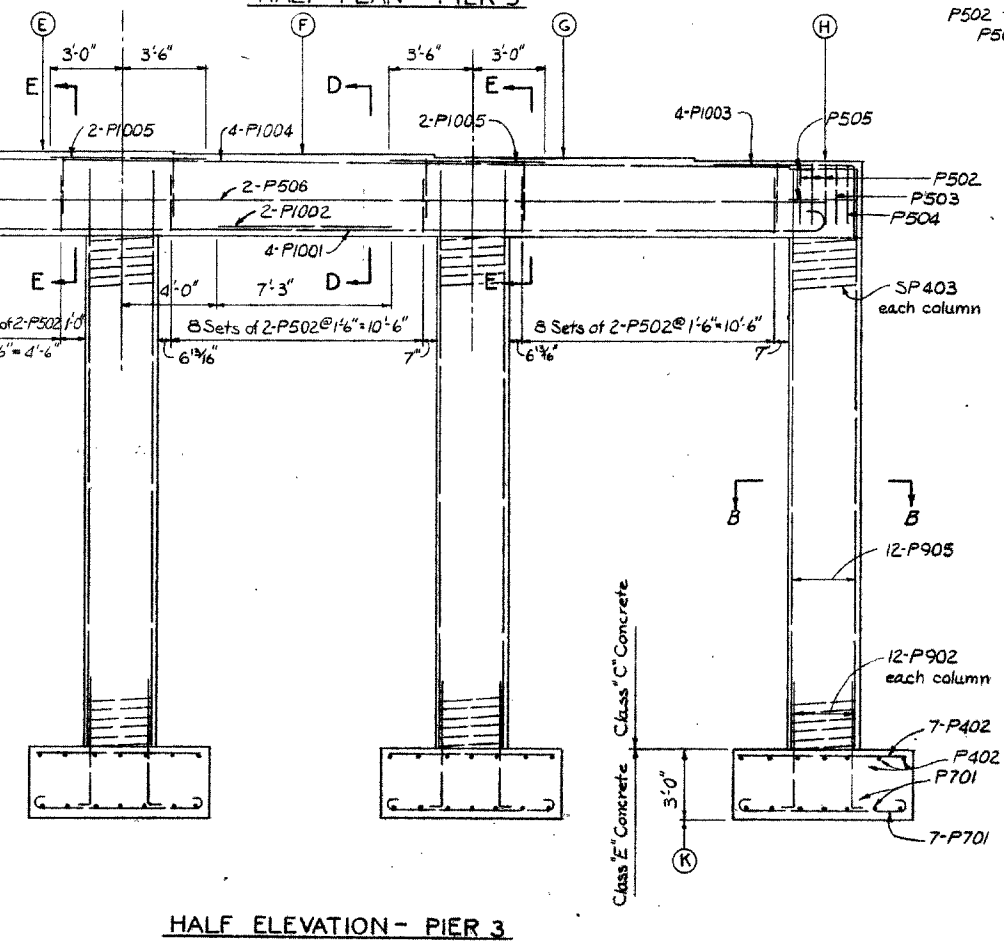
SECTION D-D



SECTION E-E



HALF ELEVATION - PIERS 1 & 2



HALF ELEVATION - PIER 3

TABLE OF ELEVATIONS										
LOCATION	A	B	C	D	E	F	G	H	J	K
Pier 1	737.27	737.44	737.61	737.78	737.80	737.69	737.57	737.46	734.27	710.00
Pier 2	737.19	737.33	737.48	737.61	737.61	737.48	737.33	737.19	734.19	714.50
Pier 3	737.46	737.57	737.69	737.80	737.78	737.61	737.44	737.27	734.27	712.00

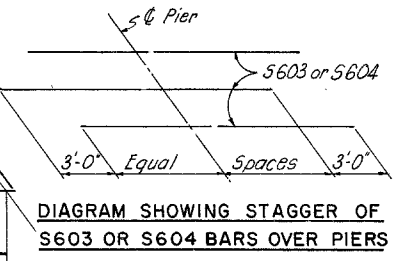
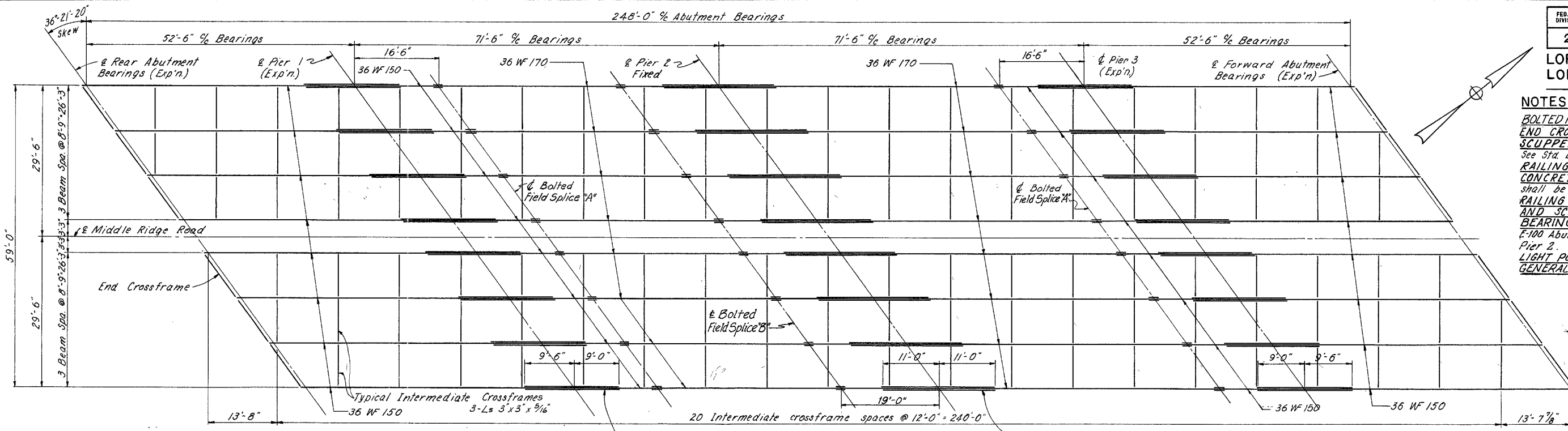
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**PIERS**  
BRIDGE NO. LOR-254-0967  
UNDER MIDDLE RIDGE ROAD  
LORAIN COUNTY, OHIO  
S.R. 254  
STA. 510+31.33

DESIGNED	CHECKED	TRACED	CHECKED	REVIEWED	DATE
RAK	RAK	WHA	JWC		

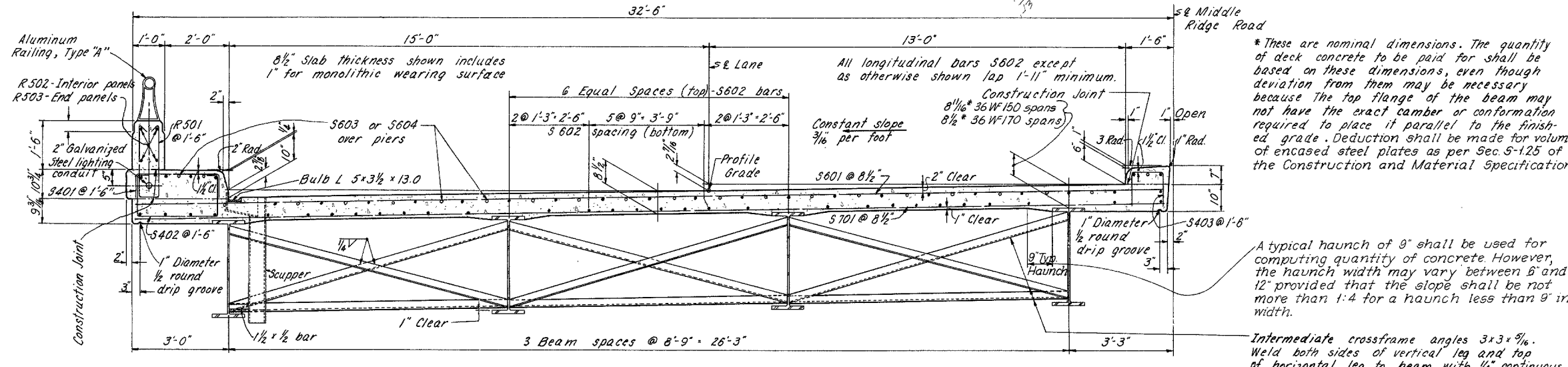
LORAIN COUNTY  
LOR-254-4.08-B

**NOTES:**  
**BOLTED FIELD SPLICE "B":** See Std. Dwg. SD-2-64  
**END CROSSFRAMES, END DAMS, GUTTERS, SCUPPERS AND CURB PLATE DETAILS:** See Std. Dwg. 60-1-63, Sheets 2, 3 & 4 of 4  
**RAILING:** See Std. Dwg. AR-1-57, Type A  
**CONCRETE:** All superstructure concrete shall be Class "C".  
**RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING:** See Sheet 250  
**BEARINGS:** See Std. Dwg. FSB-1-62 for the following: F-100 Abutments, E-200 Piers 1 and 3 and F-200 Pier 2.  
**LIGHT POLE BASE DETAILS:** See Sheet 255  
**GENERAL NOTES:** See Sheet 250



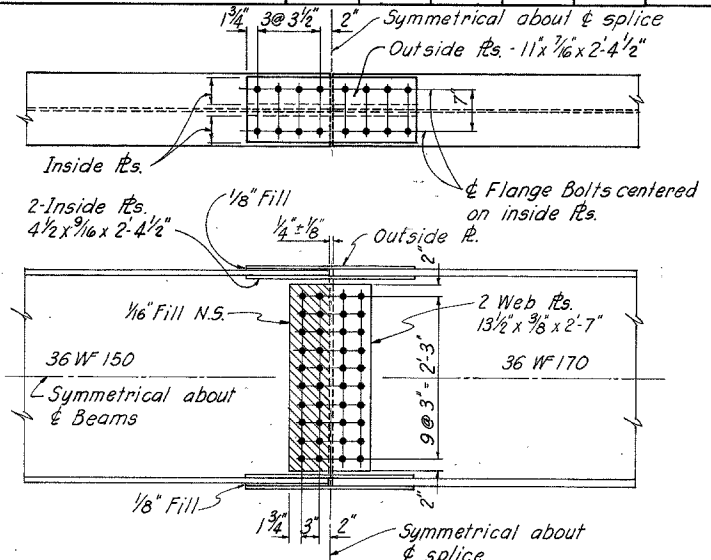
CAMBERING of beams is required in accordance with the following table:

	OUTSIDE BEAMS			INSIDE BEAMS		
	END SPANS	MIDDLE SPANS	FIELD SPLICE	END SPANS	MIDDLE SPANS	FIELD SPLICE
Deflection due to weight of steel	0"	1/16"	0"	0"	1/16"	0"
Deflection due to remaining dead load	1/4"	1/8"	1/16"	3/16"	1/8"	1/16"
Convexity required for vertical curve	1/4"	7/16"	1/4"	1/4"	7/16"	1/4"
Sum of Deflection and Convexity	1/4"	9/8"	3/16"	1/2"	9/8"	3/16"
Required Camber	0"	0"	0"	0"	0"	0"

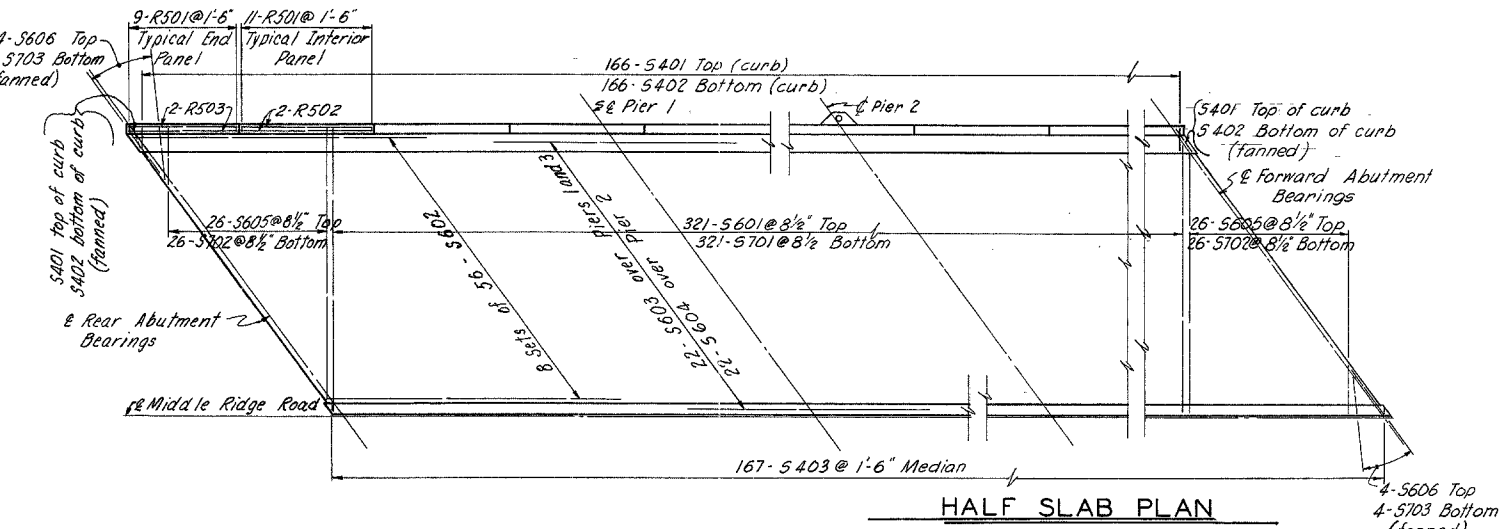


\*These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 5-125 of the Construction and Material Specifications.

A typical haunch 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.



Place bolt head on exposed side of fascia beams. Place nuts on top surface of lower flange splice. Washers may be omitted as allowed in Sec. 5-7.10.



**BOLTED FIELD SPLICES**

**UNIT STRESSES:** Structural Steel ASTM A36 - basic unit stress 20,000 p.s.i. bending; 12,000 p.s.i. shear. High Strength Bolts - ASTM A325 - basic unit stress 13,500 p.s.i. shear; 40,000 p.s.i. bearing.

**MATERIAL:** Splice plates and bolts shall be according to Item 5-7. Bolts shall be 1" diameter, High Strength. The splice weight shall be included under Item 5-7, Structural Steel, for payment.

**FIELD ASSEMBLY:** In the final assembly of parts to be bolted, each beam shall be so supported that drift pins may be placed in a sufficient number of holes (not less than 25%), to provide and maintain accurate alignment of holes and parts. Heavy driving of drift pins will not be permitted. Sufficient bolts shall be installed and brought to a snug tight condition to bring all parts of the splice into complete contact before the member is released. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-the-nut method. Drift pins shall then be replaced with bolts and tightened in the same manner. Bolt lengths determined by use of Table No. 1 in Sec. 5-7.10 shall be adjusted to the next 1/4-inch length increment.

**FILLS:** Shown on the plans are based on the nominal member sizes being spliced, however, in the final shop assembly, fills shall be furnished to the nearest 1/16 inch in thickness based on actual measured sizes of the members being spliced. Drawing together of splice plates over material that varies by 1/16 inch or more in thickness, at the centerline of the splice, will not be permitted.

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO

**SUPERSTRUCTURE**  
BRIDGE NO. LOR-254-0967  
UNDER MIDDLE RIDGE ROAD

LORAIN COUNTY S.R. 254

STA. 510+31.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	E.B.	J.W.G.			

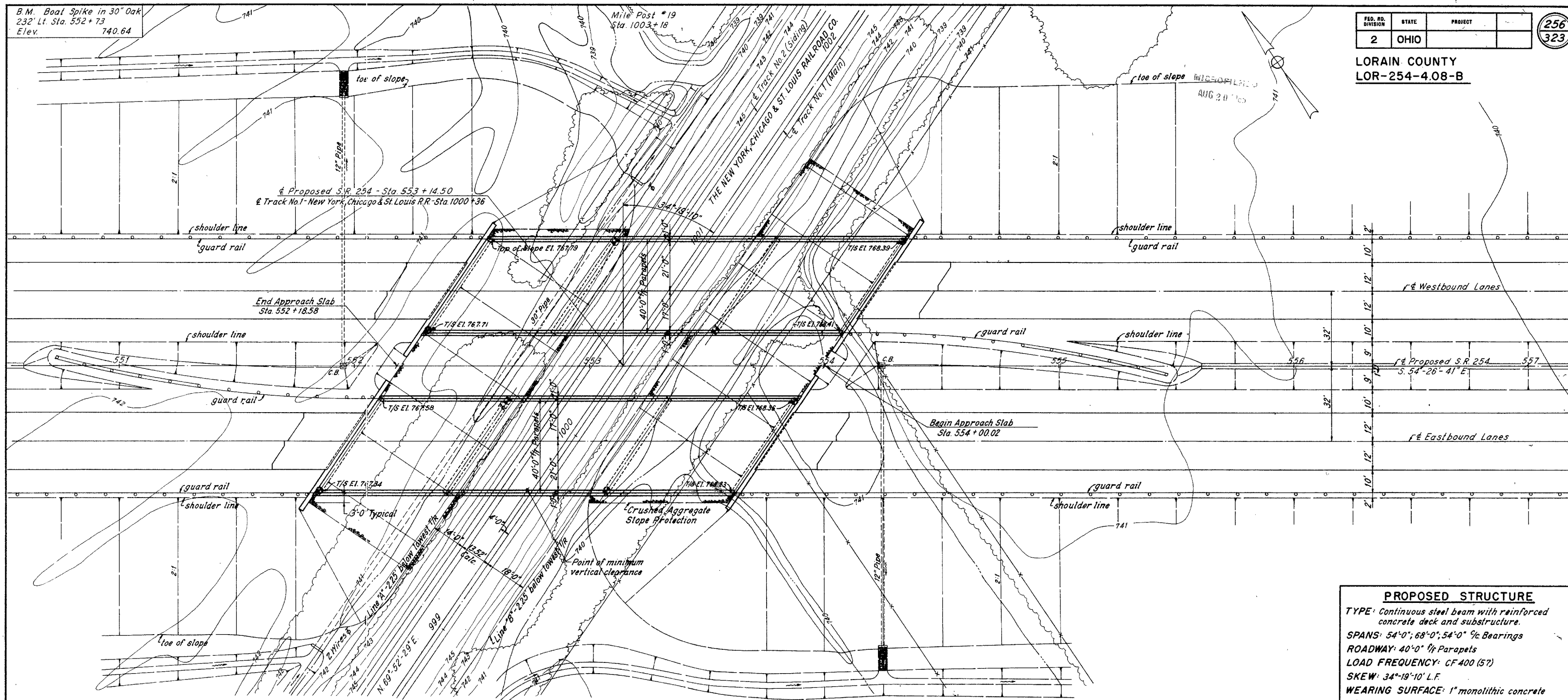


B.M. Boat Spike in 30" Oak  
232' Lt. Sta. 552+73  
Elev. 740.64

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

256  
323

LORAIN COUNTY  
LOR-254-4.08-B



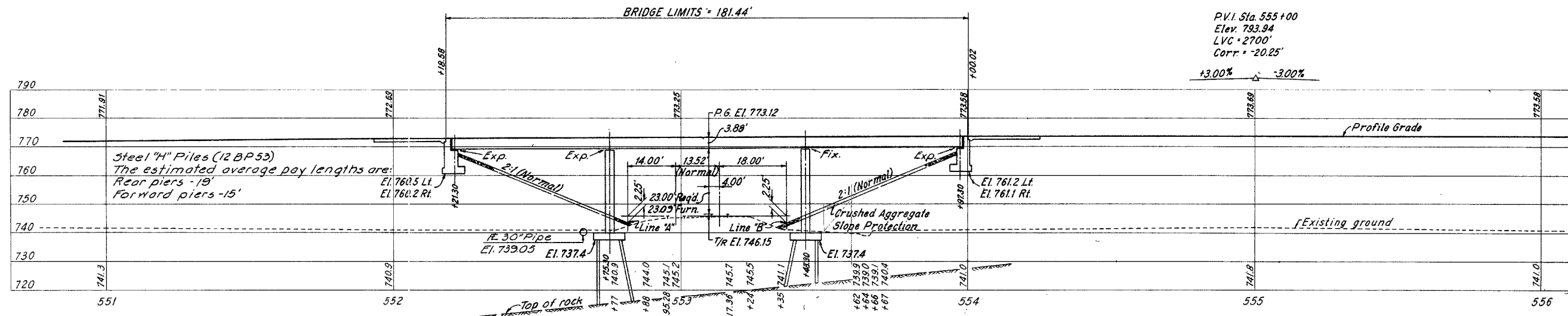
**PROPOSED STRUCTURE**  
 TYPE: Continuous steel beam with reinforced concrete deck and substructure.  
 SPANS: 54'-0"; 68'-0"; 54'-0" % Bearings  
 ROADWAY: 40'-0" Parapets  
 LOAD FREQUENCY: CF 400 (57)  
 SKEW: 34°-19'-10" L.F.  
 WEARING SURFACE: 1" monolithic concrete  
 APPROACH SLABS: AS-1-54 (25'-0" long)  
 ALIGNMENT: Tangent  
 AVERAGE DAILY TRAFFIC: 17,400 (1980)

**FOUNDATION INVESTIGATION LEGEND**  
 • Indicates core boring  
 • Indicates rod sounding

SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 MANSFIELD, OHIO.

**SITE PLAN**  
 BRIDGE NO. LOR-254-1046 L & R  
 OVER NEW YORK, CHICAGO & ST. LOUIS R.R.  
 LORAIN COUNTY S.R. 254  
 STA. 552+18.58 TO STA. 554+00.02

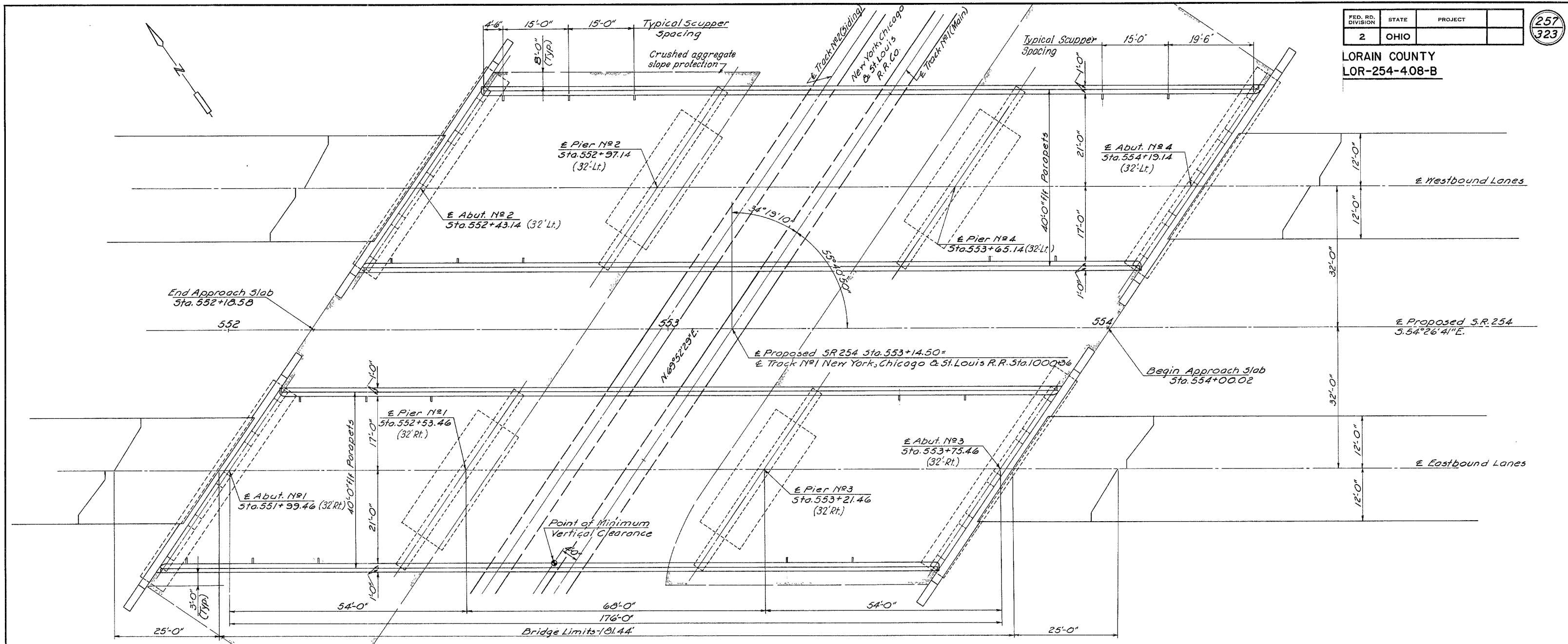
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	Bob	UH		JL	8/5-88	



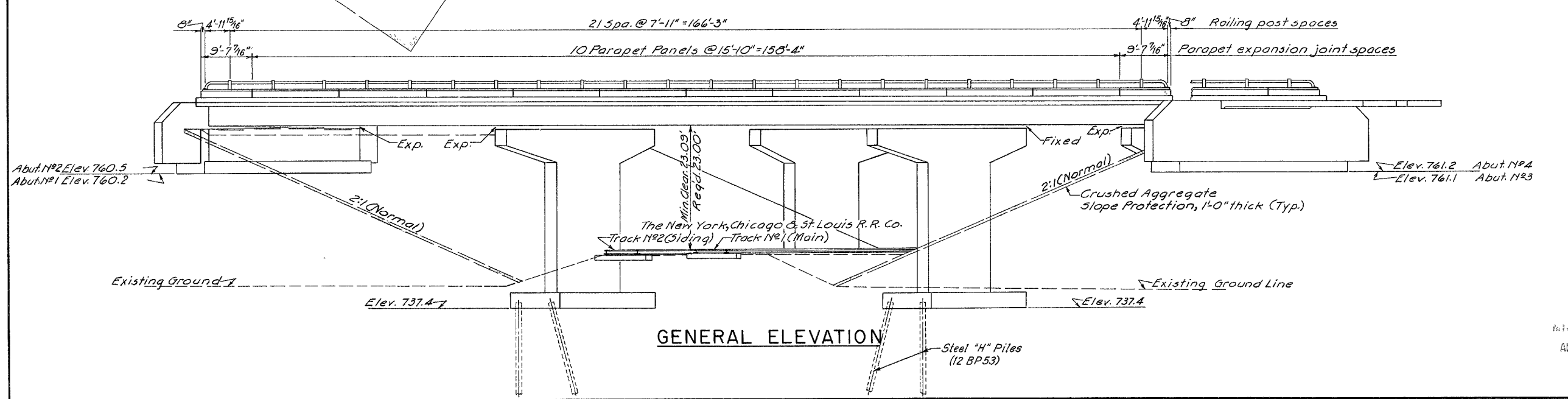
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

257  
323

LORAIN COUNTY  
LOR-254-408-B



**GENERAL PLAN**



**GENERAL ELEVATION**

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**GENERAL PLAN**  
BRIDGE NO. LOR-254-1046 L & R  
OVER NEW YORK, CHICAGO & ST. LOUIS R.R.

LORAIN COUNTY  
STA. 552 +18.58 TO STA. 554 +00.02

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.A.D.	J.E.		R.O.B.	J.F.	8/5/64	

AUG 2 1964

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

258  
323

LORAIN COUNTY  
LOR-254-4.08-B

**GENERAL NOTES**

**REFERENCE** shall be made to Standard Drawings AS-1-54 (revised 7-5-62); AR-1-57 (revised 4-2-62); FSB-1-62 (revised 1-15-63); SD-1-63 sheets 2,3 and 4 of 4 (dated 11-12-63); and to Supplemental Specifications S 101 (dated 7-12-62) and S-307 (revised 10-1-64).

**DESIGN SPECIFICATIONS:** These structures conform to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

**UNIT STRESSES:**

Design Loading - CF = 400 (57)  
Concrete Class C - basic unit stress 1,333 p.s.i.  
Concrete Class E - basic unit stress 1,133 p.s.i.  
Structural Steel - ASTM A 36 basic unit stress 20,000 p.s.i. (ASTM A 7 and A 373 steel not permitted except piling.)  
Reinforcing Steel - ASTM A 15, A 16, A 160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i.


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

**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 ft. back of the abutments. After a minimum period of thirty (30) days with the approach embankments in place, excavation may be made for the abutments and piers.

**FOUNDATION BEARING PRESSURE:** Abutment footings are designed for a maximum bearing pressure of 2 tons per sq. ft.

**PILES:** Shall be driven to a minimum bearing capacity of 45 tons per pile.

**DECK PLACING PROCEDURE:** In placing the deck concrete construction joints will be permitted parallel to the transverse reinforcing steel and near the middle of any span. Because of the flow of curing water from the surface of the previously placed deck concrete, the sequence of pours shall be upgrade, starting at the lowest points in the grade line.

**WELDING** of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made at the shop. Class B welds are shown thus B 

**BOLTED FIELD SPLICES (CONT.)**

**FIELD ASSEMBLY:** In the final assembly of parts to be bolted, each beam shall be so supported that drift pins may be placed in a sufficient number of holes (not less than 25%) to provide and maintain accurate alignment of holes and parts. Heavy driving of drift pins will not be permitted. A sufficient number of bolts shall be installed and brought to a snug tight condition to bring all parts of the splice into complete contact before the member is released. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-the-nut method. Drift pins shall then be replaced with bolts and tightened in the same manner. Bolt lengths determined by the use of Table No. 1 in Sec. S-7.10 shall be adjusted to the next 1/4-inch length increment.

**RAILROAD AERIAL LINES** will be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

**CONSTRUCTION CLEARANCE** of 20'6" vertically above the top of the railroad rails and 8' horizontally from center of outside tracks shall be maintained at all times.

**SHEETING AND BRACING:** Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.

**ALIGNING RAILROAD TRACKS:** After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the Supervision of the Railroad Company, nothing in Sec. E-2.04, E-2.08 or G-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

**BOLTED FIELD SPLICES**

**DESIGN SPECIFICATIONS:** Shall conform to those specified under the GENERAL NOTES except; strength of splice is based on Sec. 1.6.31 of the A.A.S.H.O. "Standard Specifications for Highway Bridges" dated 1961, together with current revisions thereof.

**UNIT STRESSES:** Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i. bending; 12,000 p.s.i. shear. High Strength Bolts - ASTM A325 - basic unit stress 13,500 p.s.i. shear; 40,000 p.s.i. bearing.

**MATERIAL:** Splice plates, fills and bolts shall be according to Item S-7. Bolts shall be 1" diameter, High Strength. The weight shall be included under Item S-7, Structural Steel, for payment.

**FILLS:** shown on the plans are based on the nominal member sizes being spliced, however, in the final shop assembly, fills shall be furnished to the nearest 1/16 inch in thickness based on the actual measured sizes of the members being spliced. Drawing together of splice plates over material that varies by 1/16 inches or more in thickness, at the centerline of the splice, will not be permitted.

**ESTIMATED QUANTITIES (2-BRIDGES)**

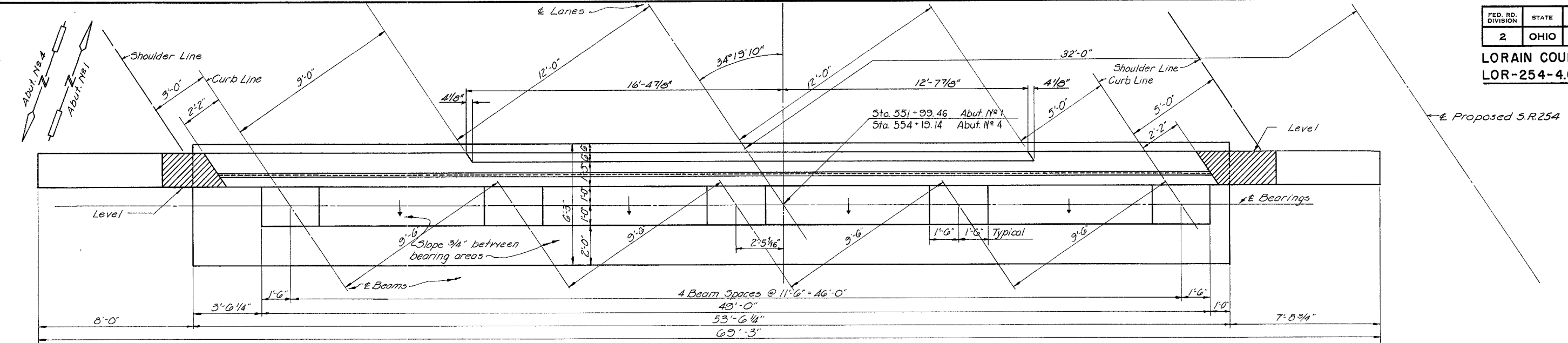
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS.	PIERS	GEN'L
E-2	881	Cu. Yds.	Unclassified Excavation		600	281	
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
S-1	446	Cu. Yds.	Class "C" concrete, superstructure	446			
S-1	316	Cu. Yds.	Class "C" concrete, piers above footings			316	
S-1	379	Cu. Yds.	Class "E" concrete, abutments		379		
S-1	138	Cu. Yds.	Class "E" concrete, pier footings			138	
S-4	197,404	lbs.	Reinforcing steel	129,712	17,663	50,029	
S-7	386,800	lbs.	Structural steel	386,800			
S-8	386,800	lbs.	Field painting of structural steel	386,800			
S-14	710.28	Lin. ft.	Railing, Type "A" (Alum. rail & supports & conc. parapets)	710.28			
S-16	Lump	Sum	First test pile				Lump
S-18	1,360	Lin. ft.	Steel piles, 12 BP53			1,360	
S-29	106	Cu. Yds.	Porous backfill		106		
S-29	20	Each	Scuppers, including supports	20			
S-29	195	Lin. ft.	6" helical CMP, Sec. M-6.4(h), non-perf.	195			
S-29	196	Lin. ft.	6" helical perforated CMP, Sec. M-6.4 (h), including specials.	196			
I-10	1,988	Sq. Yds.	Crushed aggregate slope protection				1,988
S-101	446	Each	Water reducing, set-retarding admixture	446			

SHAFFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.						
<b>GENERAL NOTES AND ESTIMATED QUANTITIES</b>						
BRIDGE NO. LOR-254-1046 L & R OVER NEW YORK, CHICAGO & ST. LOUIS R.R.						
LORAIN COUNTY				S.R. 254		
STA. 552 + 18.58 TO STA. 554 + 00.02						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.A.D.	J.G.		R.O.B.	J.F.	9/5/74	

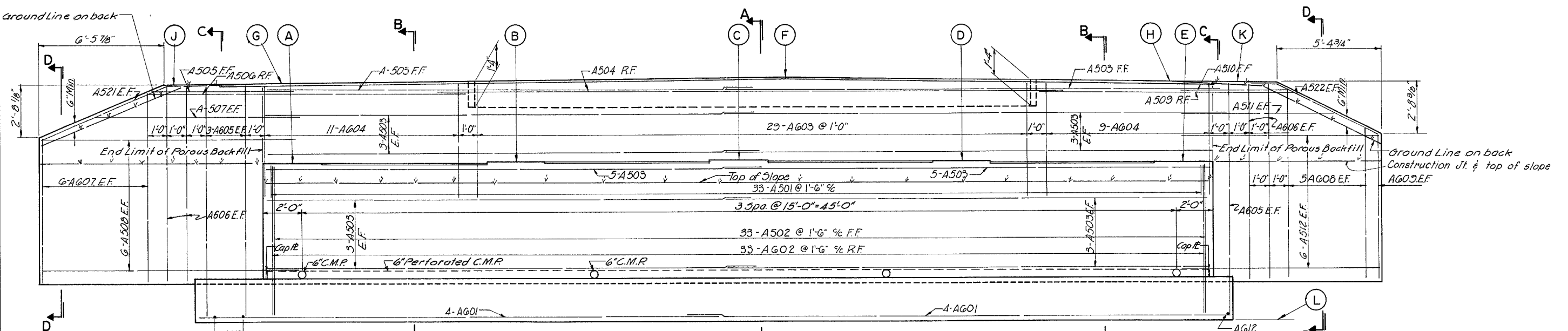
MICHAEL J. HARRIS  
ARCHITECT



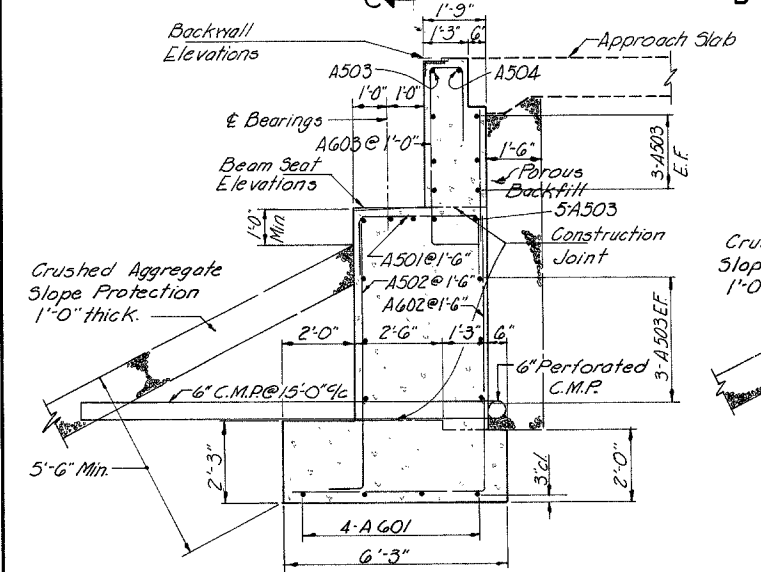
LORAIN COUNTY  
LOR-254-4.08-B



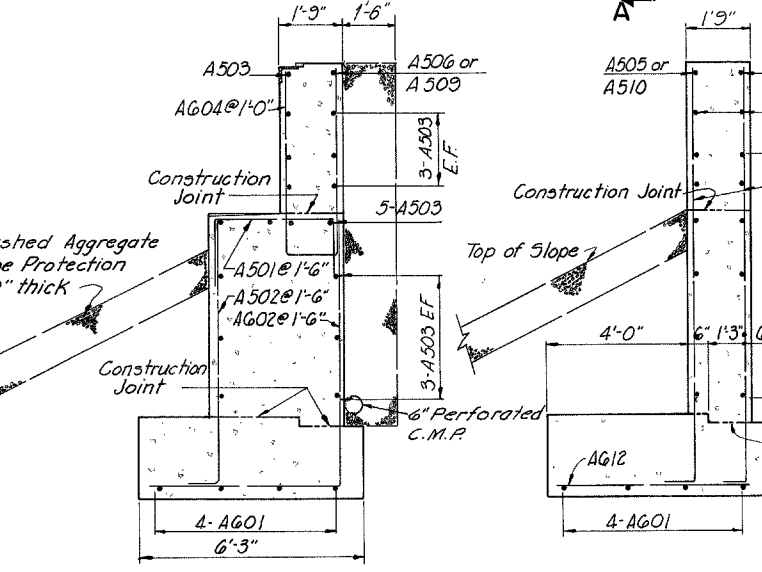
PLAN



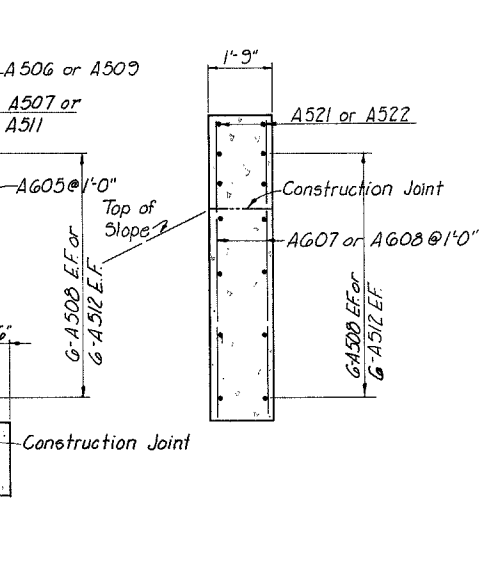
ELEVATION



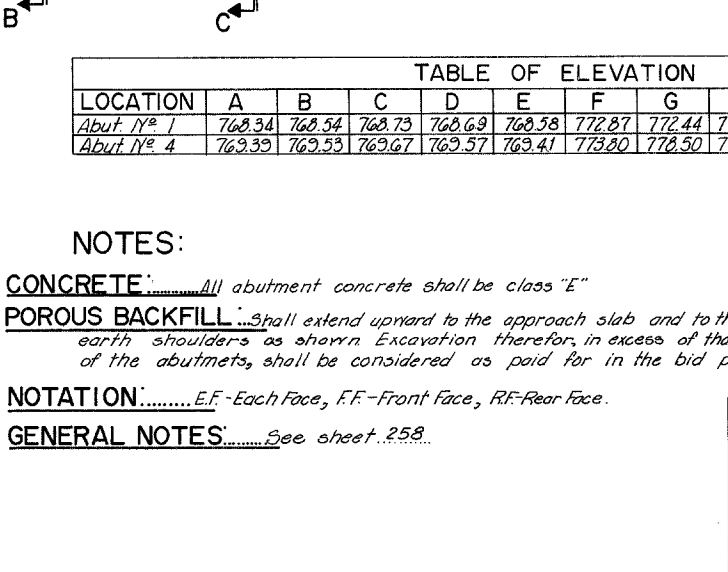
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

LOCATION	A	B	C	D	E	F	G	H	J	K	L
Abut. No. 1	768.94	768.94	768.73	768.69	768.58	772.87	772.44	772.68	772.40	772.65	760.2
Abut. No. 4	769.39	769.33	769.67	769.37	769.41	773.80	776.50	773.52	773.47	773.43	761.2

**NOTES:**  
**CONCRETE:** All abutment concrete shall be class "E"  
**POROUS BACKFILL:** Shall extend upward to the approach slab and to the surface of the earth shoulders as shown. Excavation therefor, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

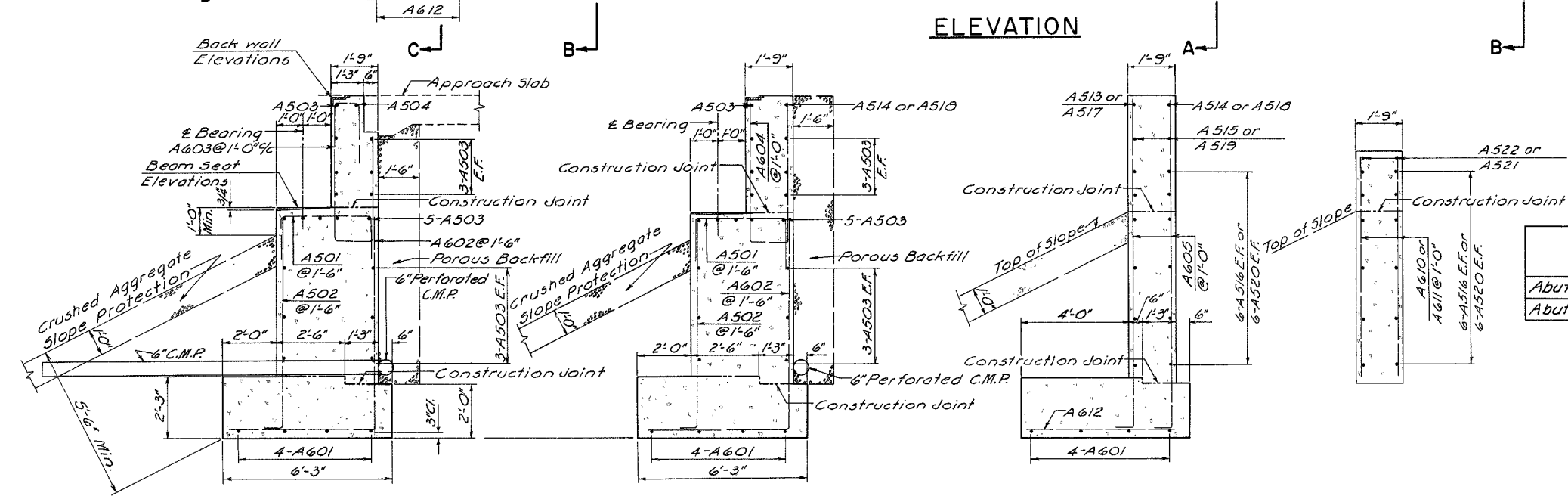
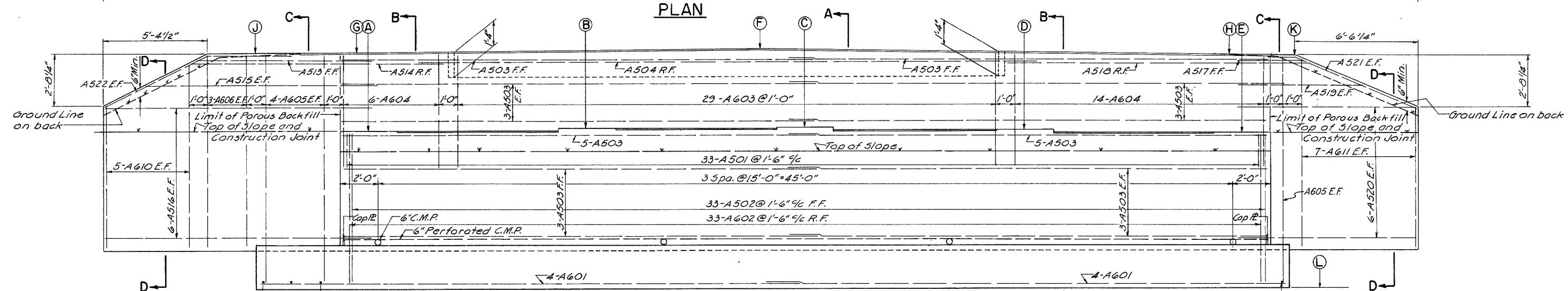
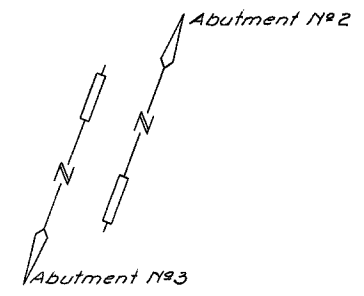
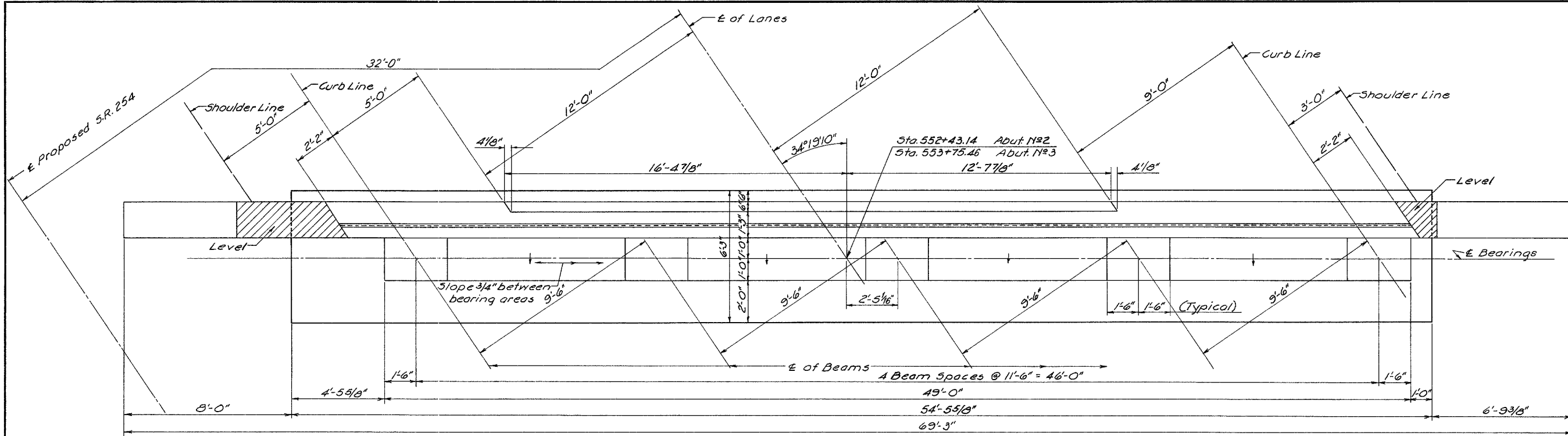
**NOTATION:** E.F. - Each Face, F.F. - Front Face, R.F. - Rear Face.  
**GENERAL NOTES:** See sheet .258.

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO

**ABUTMENT NO. 1 & NO. 4**  
BRIDGE NO. LOR-254-1046 L & R  
OVER NEW YORK, CHICAGO & ST. LOUIS R.R.

LORAIN COUNTY  
STA. 552 +18.58 TO STA. 554 +00.02

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.A.D.	J.S.		ROB	JL	8/5-64	



ABUTMENT NOTES: see sheet 259

	A	B	C	D	E	F	G	H	J	K	L
Abut. No. 2	768.70	768.89	769.02	768.90	768.79	773.14	772.80	772.89	772.77	772.07	760.5
Abut. No. 3	769.36	769.50	769.56	769.40	769.23	773.71	773.47	773.34	773.45	773.30	761.1

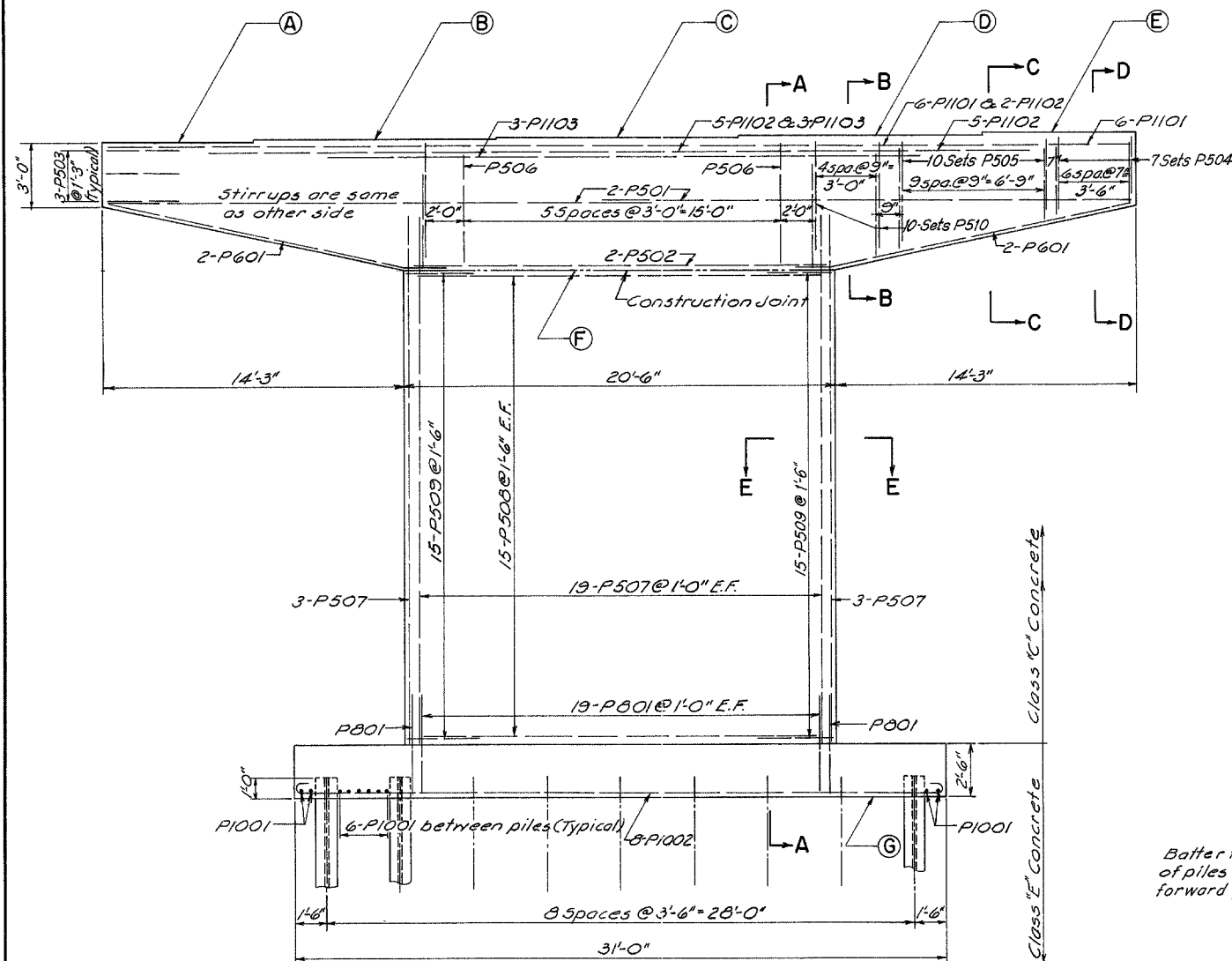
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**ABUTMENT NO. 2 & NO. 3**  
BRIDGE NO. LOR-254-1046 L & R  
OVER NEW YORK, CHICAGO & ST. LOUIS R.R.

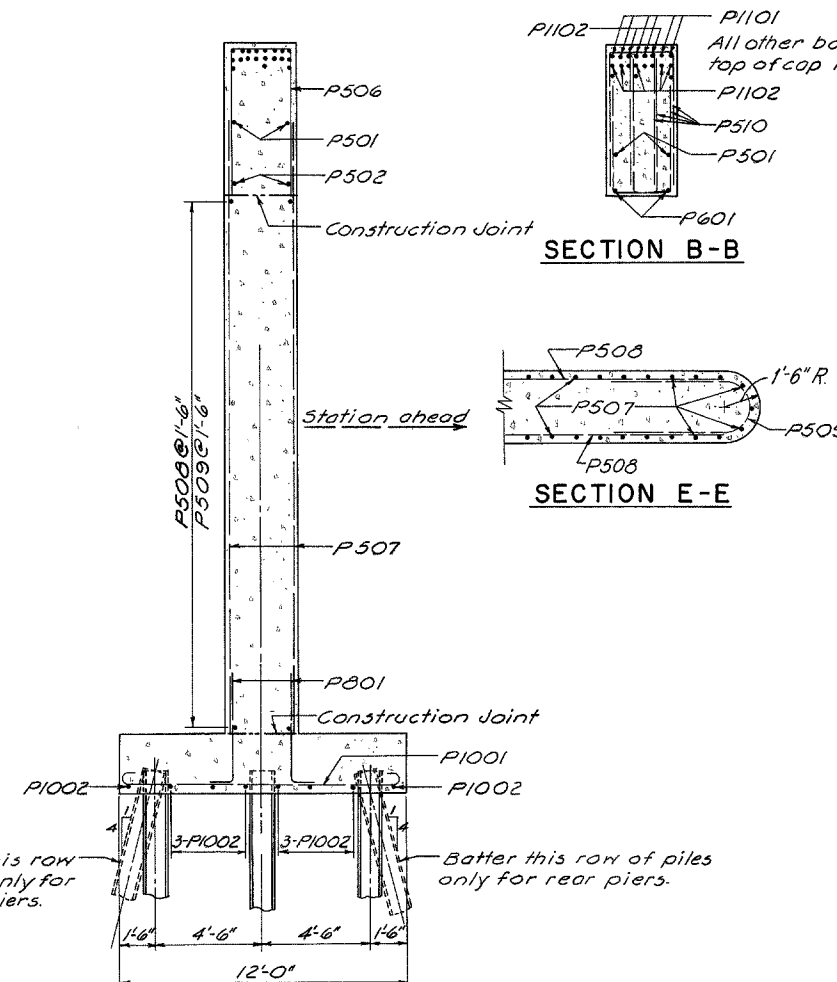
LORAIN COUNTY S.R. 254  
STA. 552+18.58 TO STA. 554+00.02

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.A.D.	J.E.		R.O.B.	J.F.	9-5-44	

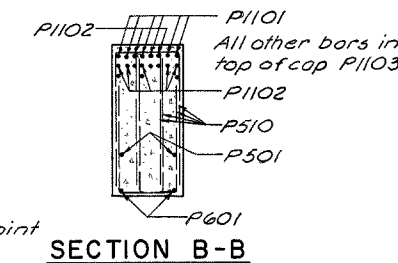
LORAIN COUNTY  
LOR-254-4.08-B



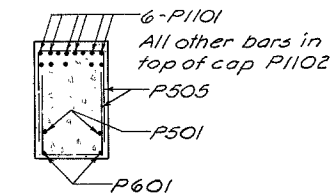
ELEVATION



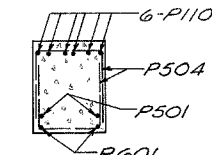
SECTION A-A



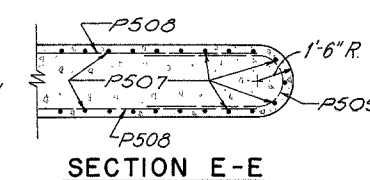
SECTION B-B



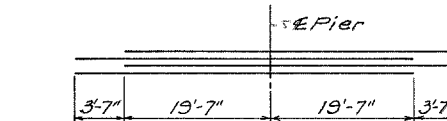
SECTION C-C



SECTION D-D



SECTION E-E



STAGGERING OF P1102 BARS

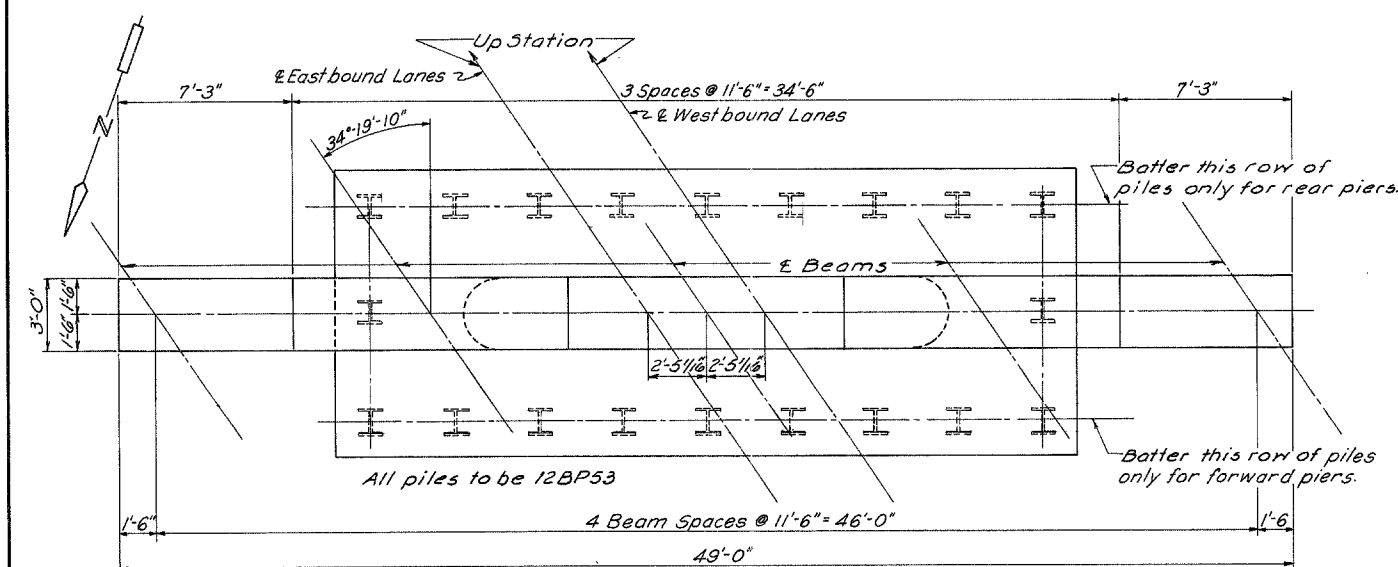
NOTES:

**BRIDGE SEAT REINFORCING:** Special care shall be taken in placing reinforcing steel in the vicinity of the beam seat so as to avoid interference with the drilling of anchor bar holes.

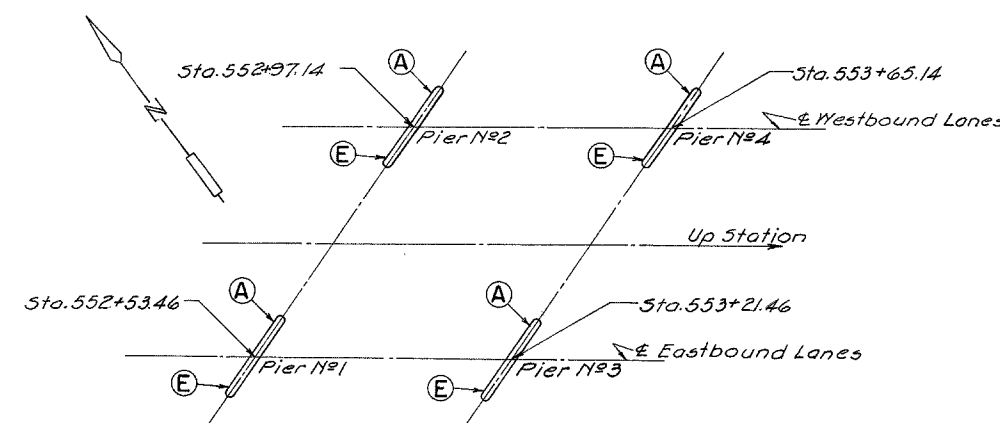
**CONCRETE:** All concrete for pier footings shall be Class "E" and all concrete above footings shall be Class "C".

**GENERAL NOTES:** See Sheet 258.

TABLE OF ELEVATIONS							
	A	B	C	D	E	F	G
Pier No 1	768.85	768.97	769.02	768.83	768.65	762.53	737.40
Pier No 2	769.01	769.13	769.25	769.13	768.95	762.63	737.40
Pier No 3	768.86	768.99	769.05	768.87	768.70	762.52	737.40
Pier No 4	768.95	769.08	769.21	769.10	768.93	762.59	737.40



PLAN



LOCATION PLAN

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**PIERS**  
BRIDGE NO. LOR-254-1046 L & R  
OVER NEW YORK, CHICAGO & ST. LOUIS R.R.  
LORAIN COUNTY S.R. 254  
STA. 552 + 18.58 TO STA. 554 + 00.02

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.B.	J.E.		V.A.D.	J.F.	8/5/84	





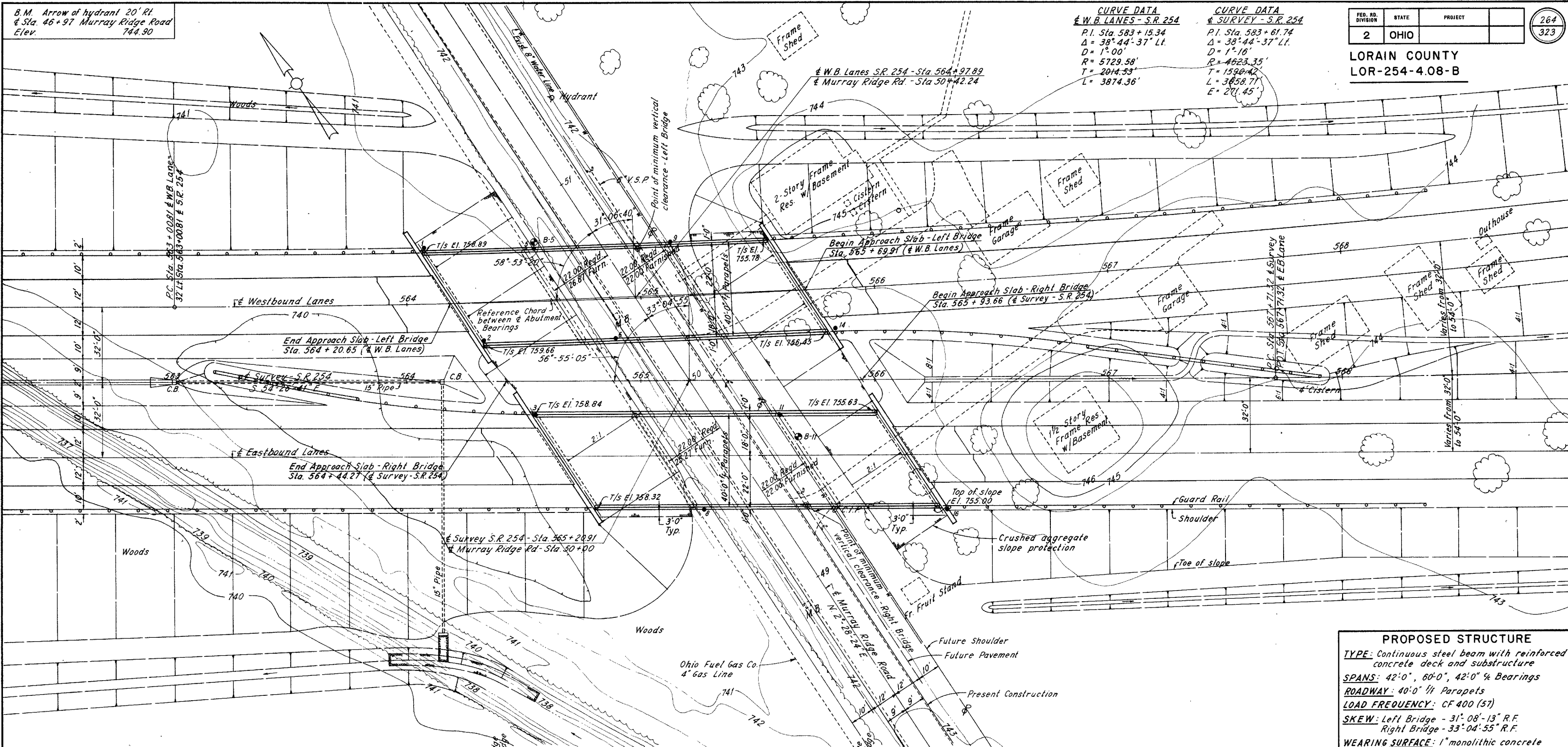
B.M. Arrow of hydrant 20' Rt.  
& Sta 46+97 Murray Ridge Road  
Elev. 744.90

**CURVE DATA**  
 W.B. LANES - S.R. 254  
 P.I. Sta 583+15.34  
 $\Delta = 38^{\circ}44'37''$  Lt.  
 $D = 1^{\circ}00'$   
 $R = 5729.58'$   
 $T = 2014.33'$   
 $L = 3874.36'$

**CURVE DATA**  
 SURVEY - S.R. 254  
 P.I. Sta 583+61.74  
 $\Delta = 38^{\circ}44'37''$  Lt.  
 $D = 1^{\circ}16'$   
 $R = 4623.35'$   
 $T = 1590.42'$   
 $L = 3858.71'$   
 $E = 271.45'$

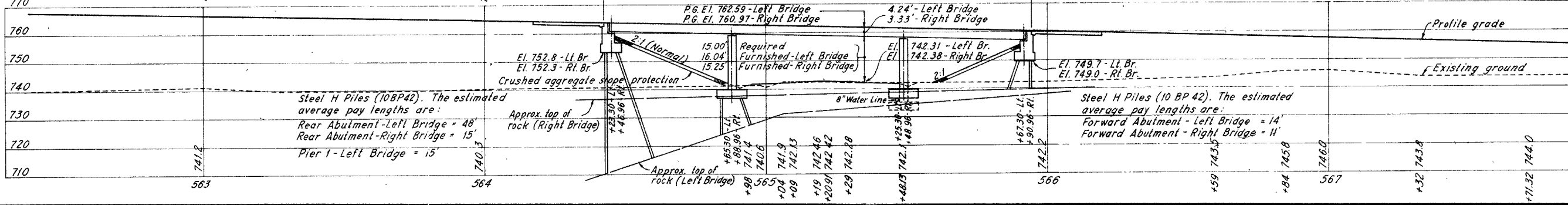
FED. RD. DIVISION	STATE	PROJECT	264 323
2	OHIO		

LORAIN COUNTY  
LOR-254-4.08-B



P.V.I. Sta 555+00  
Elev. 793.94  
L.V.C. 2700'  
Corr. -20.25'  
+3.00%      -3.00%

LEFT BRIDGE LIMITS - 149.26'  
RIGHT BRIDGE LIMITS - 149.36'



**PROPOSED STRUCTURE**  
**TYPE:** Continuous steel beam with reinforced concrete deck and substructure  
**SPANS:** 42'-0", 60'-0", 42'-0" & Bearings  
**ROADWAY:** 40'-0" 1/4 Parapets  
**LOAD FREQUENCY:** CF 400 (57)  
**SKIEW:** Left Bridge - 31° 08' - 13" R.F.  
 Right Bridge - 33° 04' - 55" R.F.  
**WEARING SURFACE:** 1" monolithic concrete  
**APPROACH SLABS:** AS-1-54 (25' long)  
**ALIGNMENT:** Left Bridge - 1°00' curve left  
 Right Bridge - Tangent  
**SUPERELEVATION:** Left Bridge only - .032' per ft.  
**AVERAGE DAILY TRAFFIC:** 17,400 (1980) - S.R. 254  
 2800 (1980) - Murray Ridge Road

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD OHIO

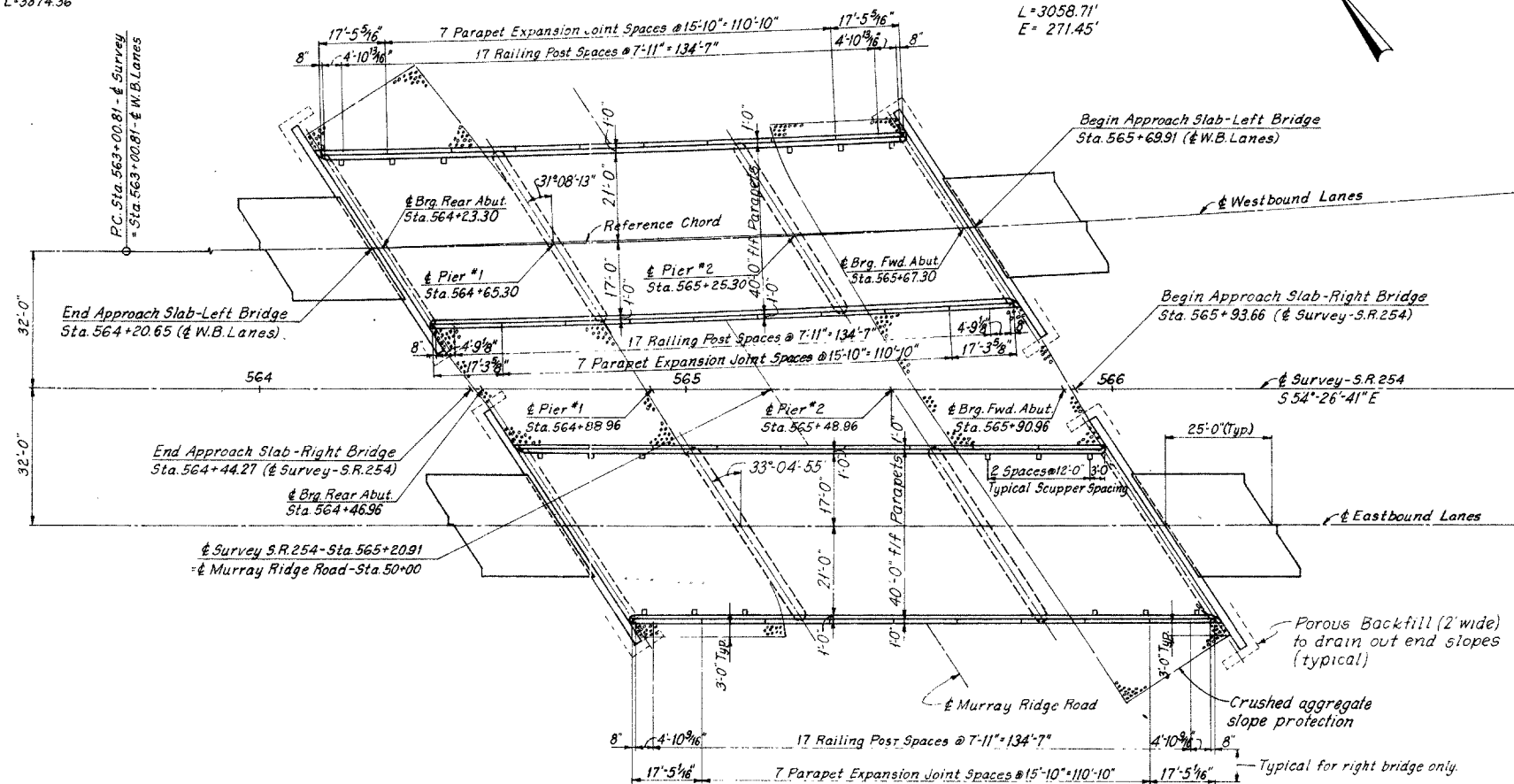
**SITE PLAN**  
**BRIDGE NO. LOR-254-1069 L&R**  
**OVER MURRAY RIDGE ROAD**

LORAIN COUNTY  
STA. 564 + 20.65 TO STA. 565 + 69.91 - LT. BR.  
STA. 564 + 44.27 TO STA. 565 + 93.66 - RT. BR.

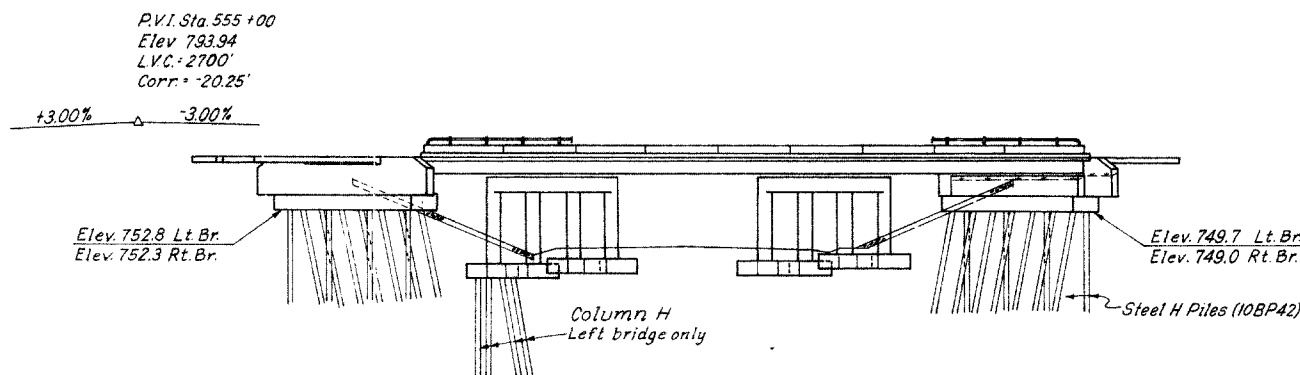
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK		RAK				

**CURVE DATA**  
 W.B. Lanes - S.R. 254  
 P.I. Sta. 583+15.34  
 Δ = 38°-44'-37" Lt.  
 D = 1°-00'  
 R = 5729.58'  
 T = 2014.53'  
 L = 3874.36'

**CURVE DATA**  
 S. SURVEY - S.R. 254  
 P.I. Sta. 583+61.74  
 Δ = 38°-44'-37" Lt.  
 D = 1°-16'  
 R = 4623.35'  
 T = 1590.42'  
 L = 3058.71'  
 E = 271.45'



GENERAL PLAN



GENERAL ELEVATION

ITEM	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE				RIGHT BRIDGE				
				SUPER	ABUTS	PIERS	GEN'L	SUPER	ABUTS	PIERS	GEN'L	
E-2	721	Cu. Yds.	Unclassified excavation		188	235			206	92		
E-2	43	Cu. Yds.	Rock Excavation			19				24		
S-1	354	Cu. Yds.	Class "C" concrete, superstructure	177				177				
S-1	14.4	Cu. Yds.	Class "C" concrete, piers above footings			79				65		
S-1	113	Cu. Yds.	Class "E" concrete, pier footings			56				57		
S-1	330	Cu. Yds.	Class "E" concrete, abutments		165				165			
S-4	162,936	Lbs.	Reinforcing steel	51,463	9353	22,176		51,079	9278	19,587		
S-7	279,500	Lbs.	Structural steel	138,400				141,100				
S-8	279,500	Lbs.	Field painting of structural steel	138,400				141,100				
S-14	602.51	Lin. Ft.	Railing (Type A alum rail, supports, & conc parapets)	291.16				311.35				
S-16	Lump	Sum	First test pile				Lump			Lump		
S-18	968	Lin. Ft.	Steel piles, 10BP42		682	60			286			
S-29	73	Cu. Yds.	Porous Backfill		36				37			
S-29	18	Each	Scuppers, including supports	6					12			
I-10	1282	Sq. Yds.	Crushed aggregate slope protection				641				641	
S-101	354	Each	Water-reducing, set-retarding admixture	177				177				

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AR-1-57 (revised 4-2-62), AS-1-54 (revised 7-5-62), SD-1-63 (dated 11-12-63), FSB-1-62 (revised 1-15-63), Supplemental Specifications 5101 (dated 7-12-62) and 5-307 (revised 10-1-64).

DESIGN SPECIFICATION: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof, except strength of splices, which shall conform to Sec. 16.31 of the AASHTO "Standard Specifications for Highway Structures" dated 1961, together with current revisions thereof.

UNIT STRESSES: DESIGN LOADING - CF 400(57)  
 Concrete, Class "C" - basic unit stress 1,333 p.s.i.  
 Concrete, Class "E" - basic unit stress 1,333 p.s.i.  
 Structural Steel - ASTM A36 basic unit stress 20,000 p.s.i. (except piling)  
 ASTM A7 and A373 steel not permitted.  
 Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade - basic unit stress 20,000 p.s.i. except spiral reinforcing which may be plain Structural Grade with a basic unit stress of 18,000 p.s.i.

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

PILES shall be driven to firm contact with rock. 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. 5-18.05 is not less than the following value in tons per pile for a pile hammer of the indicated energy rated:

	Abutments	Left Bridge Pier 1	Column H
7000 ft lbs.	45 tons	34 tons	25 tons
11000 ft lbs.	40 tons	25 tons	23 tons
15,000 ft lbs.	35 tons		

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 28 tons per pile for the abutment piles and 21 tons for the piles at column H of Pier 1, Left Bridge.

PIER FOOTINGS shall extend a minimum of 3' into undisturbed rock or to the elevations shown, whichever is lower, except at Pier 1, Column H, Left Bridge, which is on piles.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus B.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

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

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and the Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 28'-0" shall be maintained on Murray Ridge Road at all times except while paving with T-95 Asphaltic Concrete. The Contractor shall safeguard the traveling public by providing platforms, nets or other suitable protection above the traveled lanes. A minimum vertical clearance of 13'-8" shall be provided at all times.

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.

FIRST TEST PILE: Payment will be made for only one test pile. It may be driven for either the Right or Left Bridge.

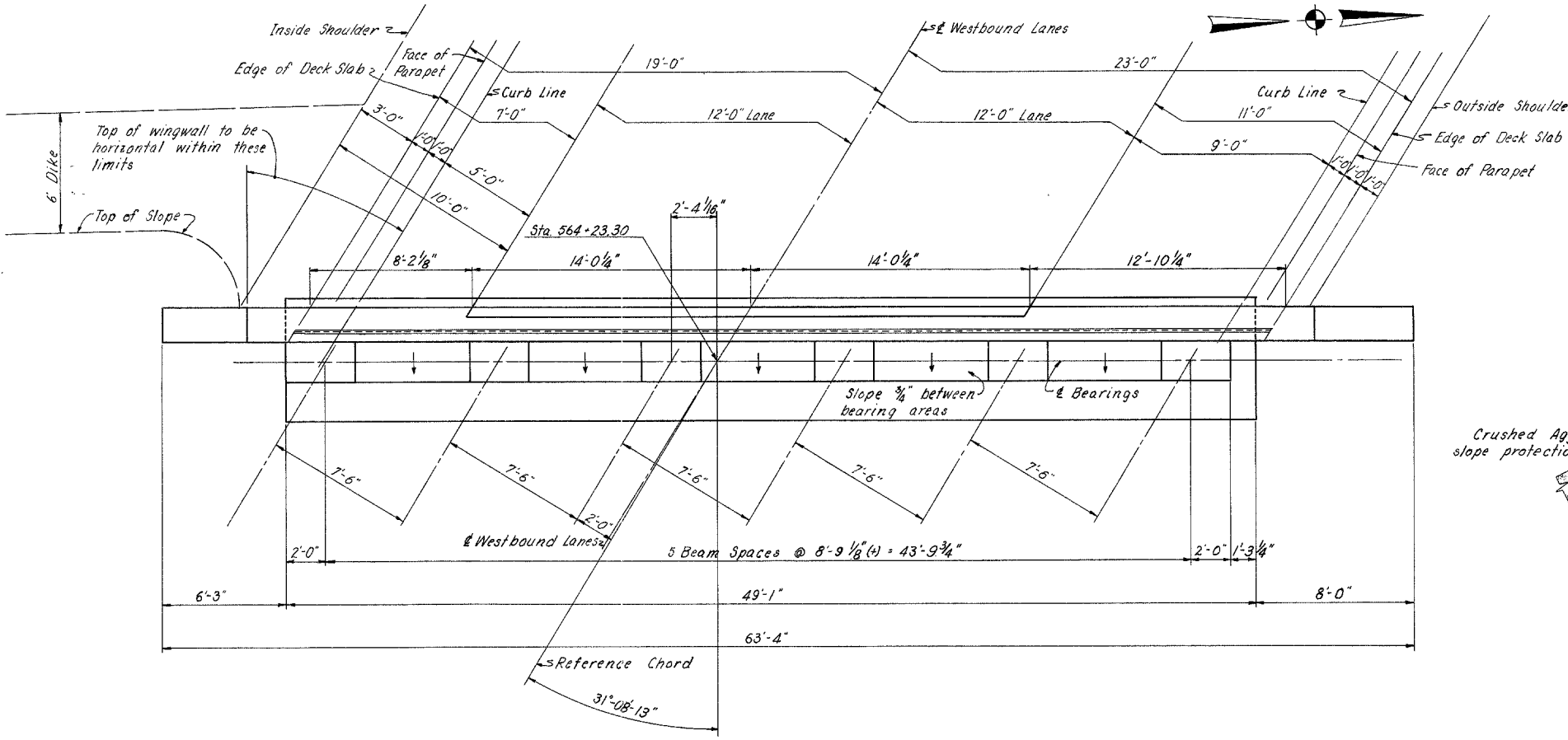
SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 MANSFIELD, OHIO.

GENERAL PLAN, GENERAL NOTES  
 AND ESTIMATED QUANTITIES  
 BRIDGE NO. LOR-254-1069 L&R  
 OVER MURRAY RIDGE ROAD

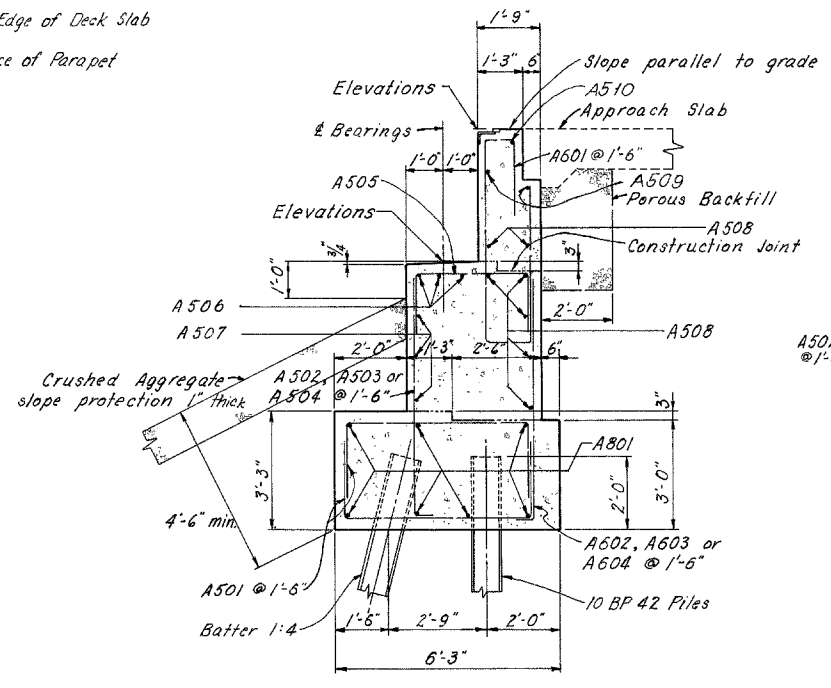
LORAIN COUNTY S.R. 254  
 STA. 564 + 20.65 TO STA. 565 + 69.91 - LEFT BRIDGE  
 STA. 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	JCZ	JCZ	JCZ			

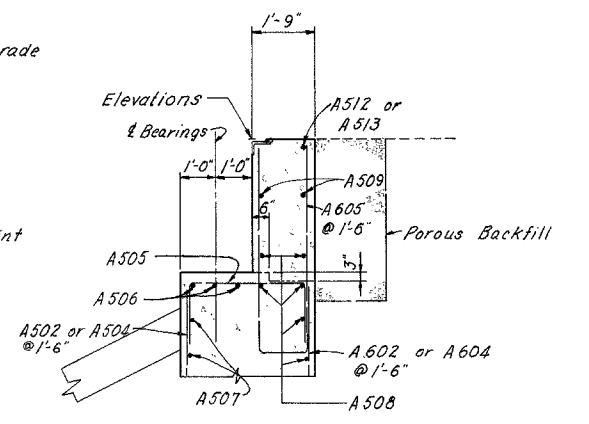
LORAIN COUNTY  
LOR-254-4.08-B



PLAN

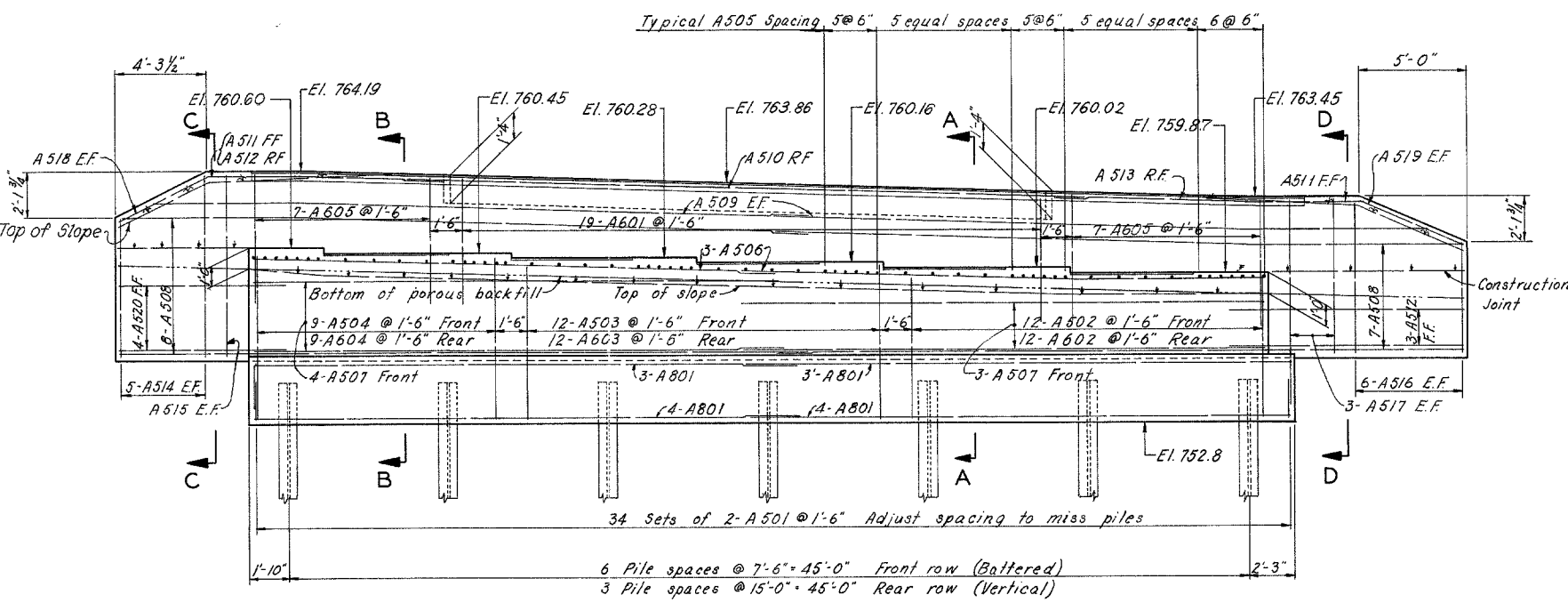


SECTION A-A

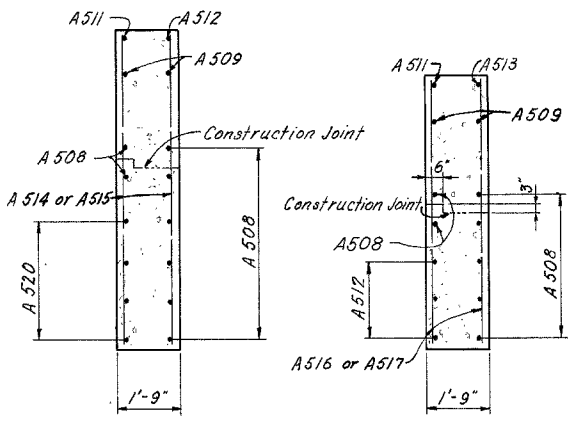


SECTION B-B

- NOTES:**
- POROUS BACKFILL:** shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu yd. paid for porous backfill.
- BRIDGE SEAT REINFORCING:** Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seats so as to avoid interference with the drilling of anchor bar holes.
- ABUTMENT CONCRETE:** All abutment concrete shall be Class "E".
- NOTATION:** F.F. - Front Face R.F. - Rear Face E.F. - Each Face
- GENERAL NOTES:** See Sheet 265



ELEVATION



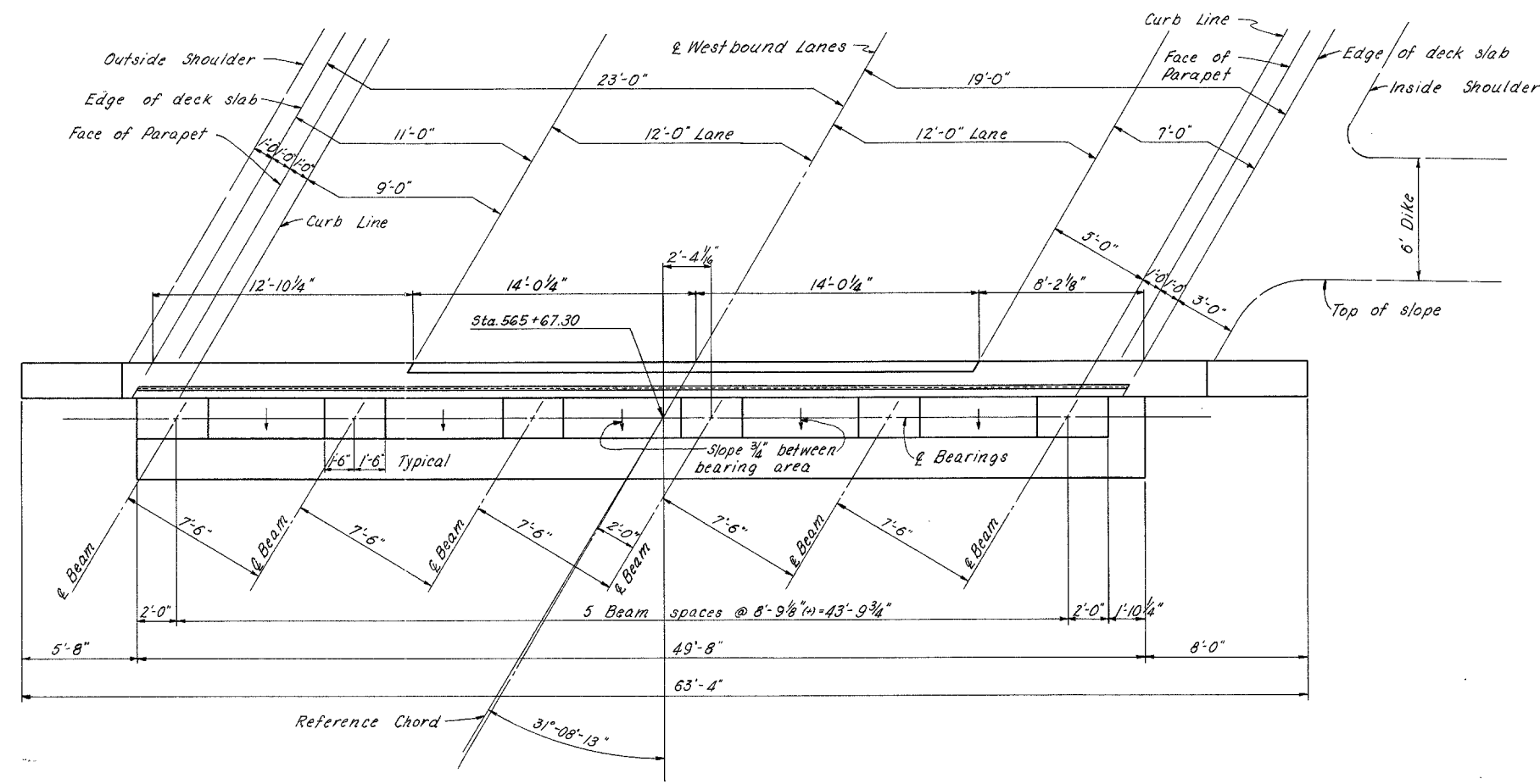
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO

**REAR ABUTMENT  
LEFT BRIDGE**  
BRIDGE NO. LOR-254-1069 L&R  
OVER MURRAY RIDGE ROAD  
LORAIN COUNTY  
STA. 564+20.85 TO STA. 565+69.91 - LEFT BRIDGE  
STA. 564+44.27 TO STA. 565+93.66 - RIGHT BRIDGE  
S.R. 254

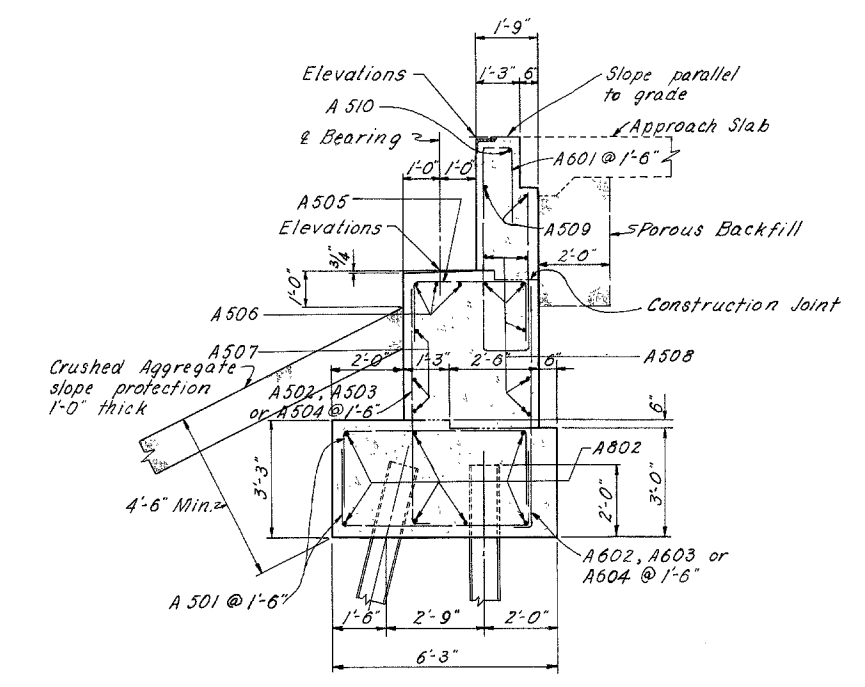
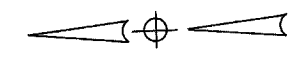
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	EB	JCZ			



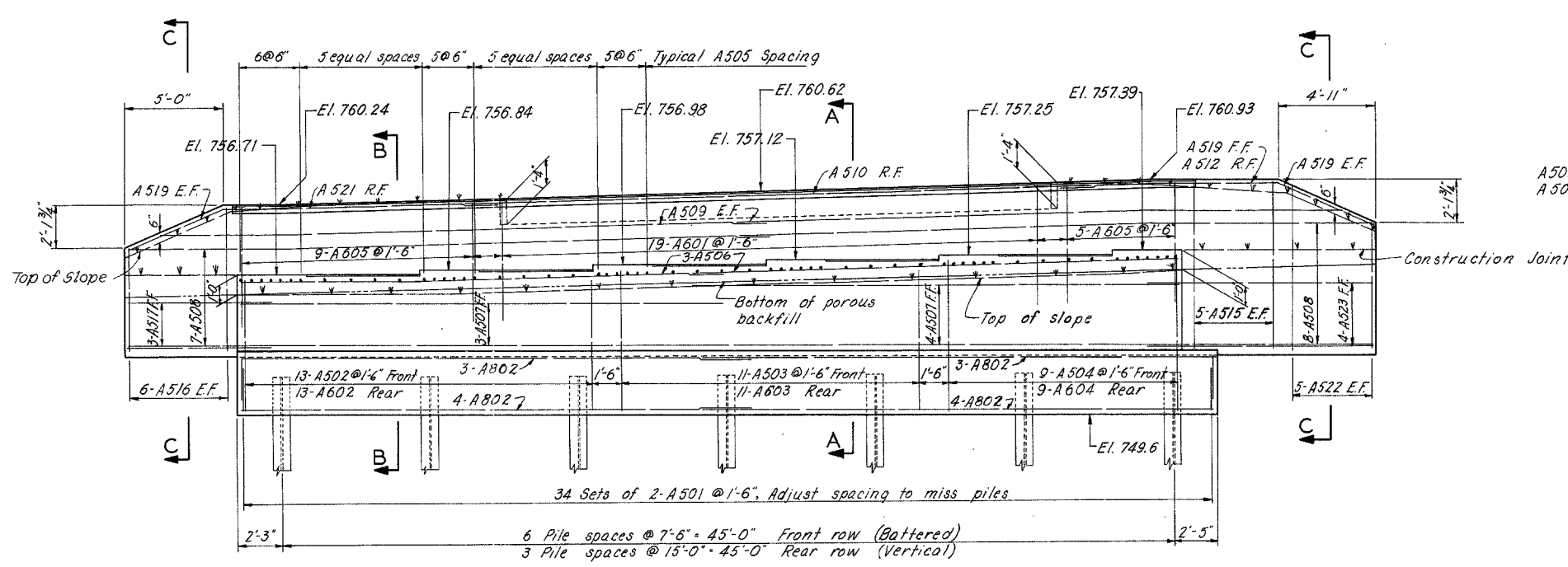
LORAIN COUNTY  
LOR-254-4.08-B



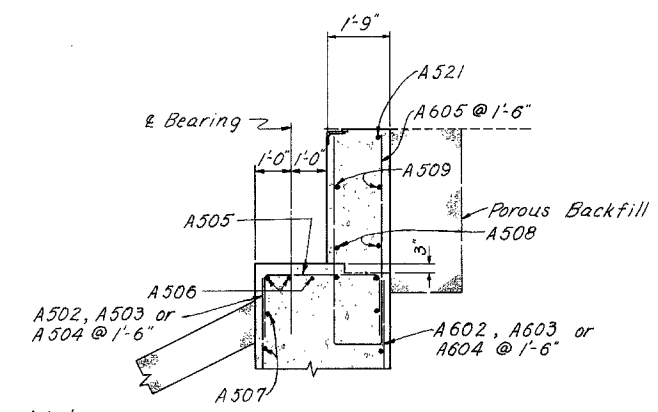
**PLAN**



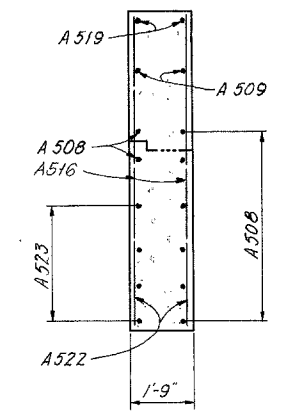
**SECTION A-A**



**ELEVATION**



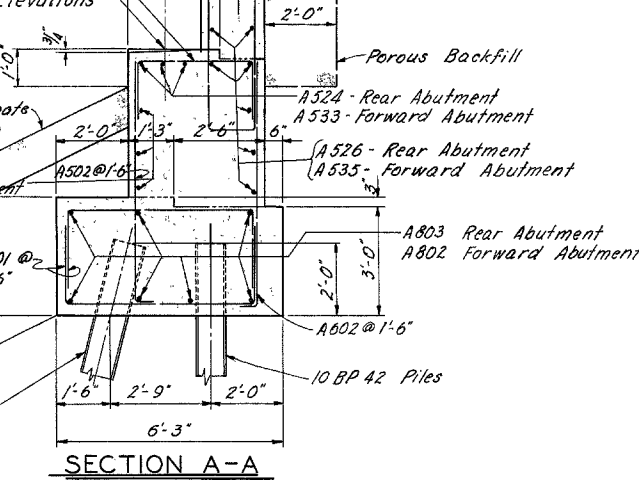
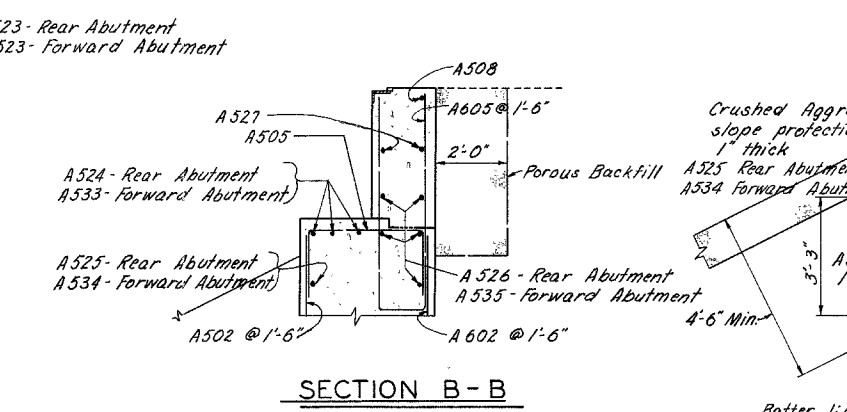
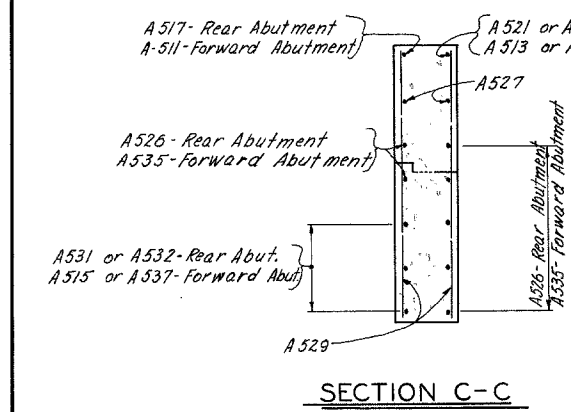
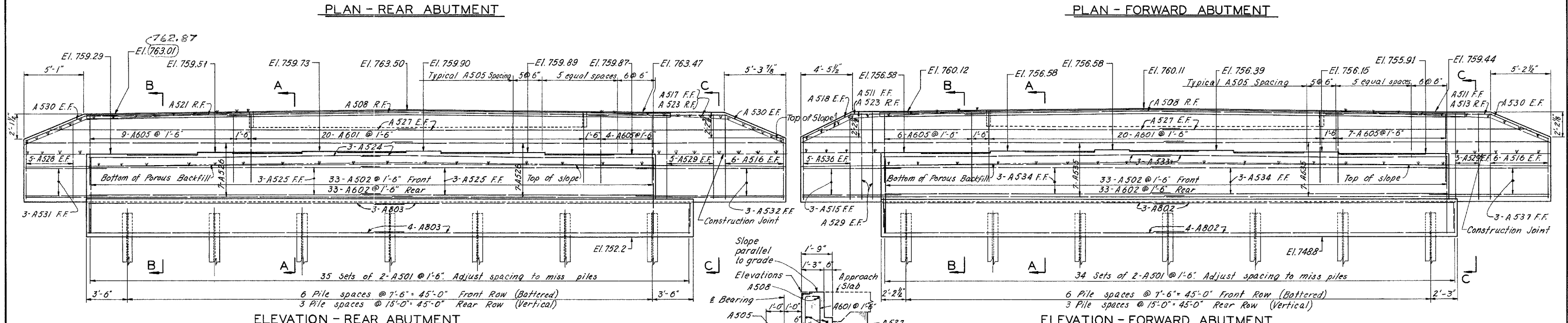
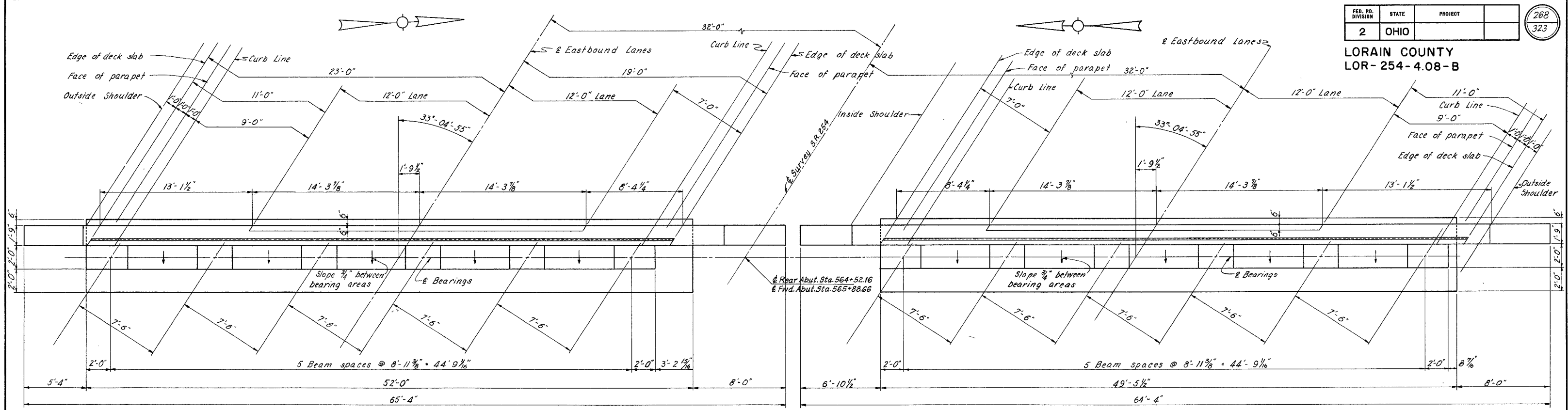
**SECTION B-B**



**SECTION C-C**

ABUTMENT NOTES: See Sheet 266

SHAFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.						
<b>FORWARD ABUTMENT LEFT BRIDGE</b>						
<b>BRIDGE NO. LOR-254-1069 L&amp;R OVER MURRAY RIDGE ROAD</b>						
LORAIN COUNTY STA. 564 + 20.65 TO STA. 565 + 69.91 - LEFT BRIDGE STA. 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE				S.R. 254		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	E.B.	JCZ			



**ABUTMENT NOTES:** See Sheet 266

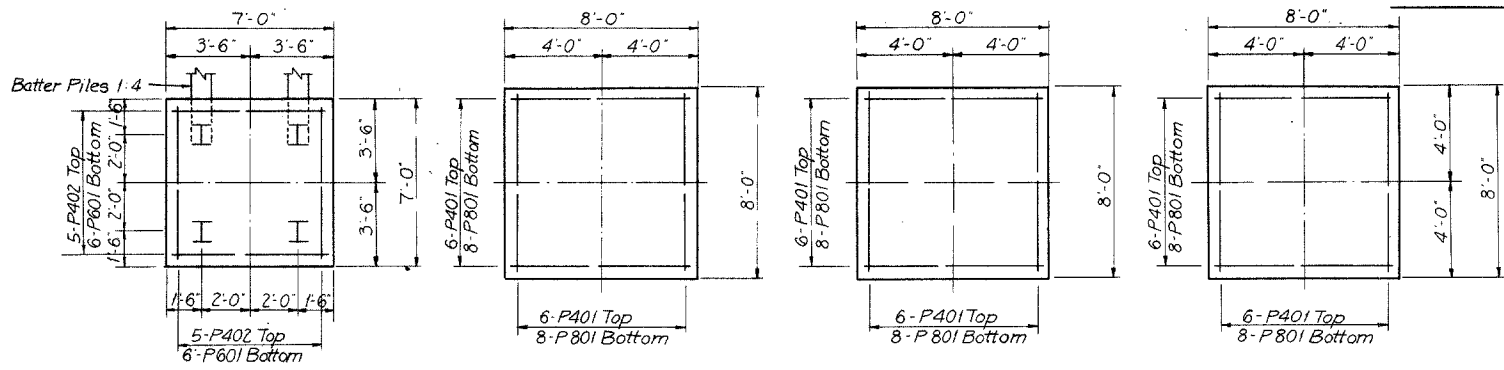
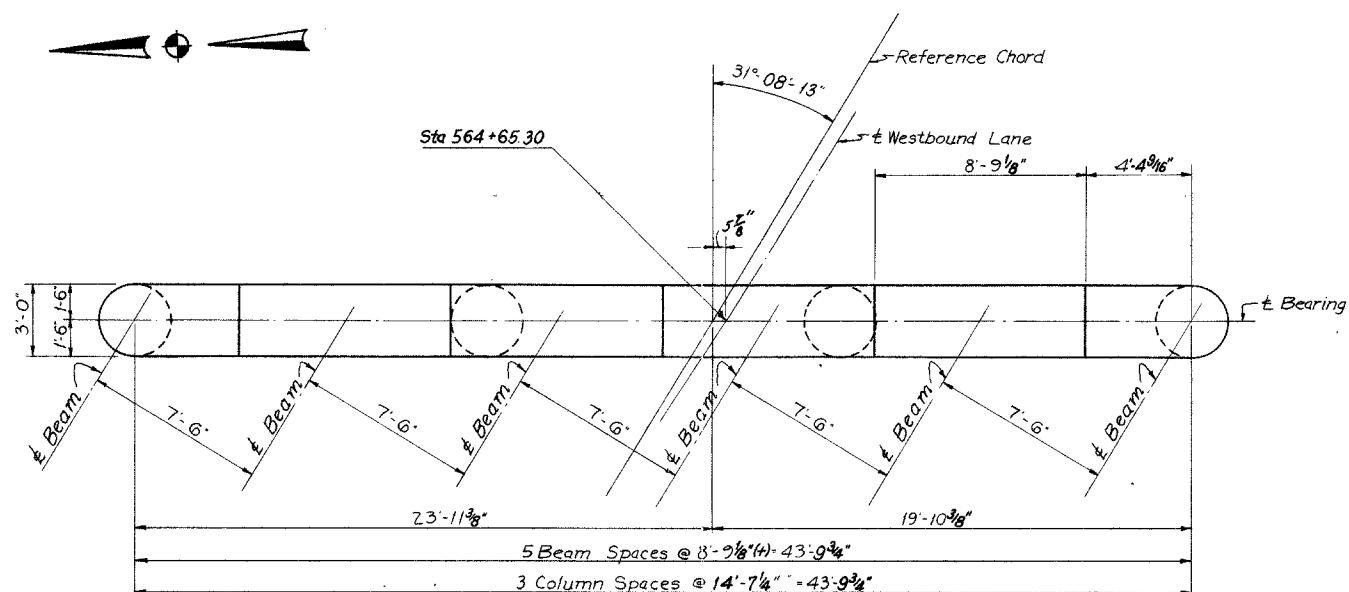
SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 Mansfield, Ohio.

**ABUTMENTS - RIGHT BRIDGE**  
**BRIDGE NO. LOR-254-1069 L&R**  
**OVER MURRAY RIDGE ROAD**

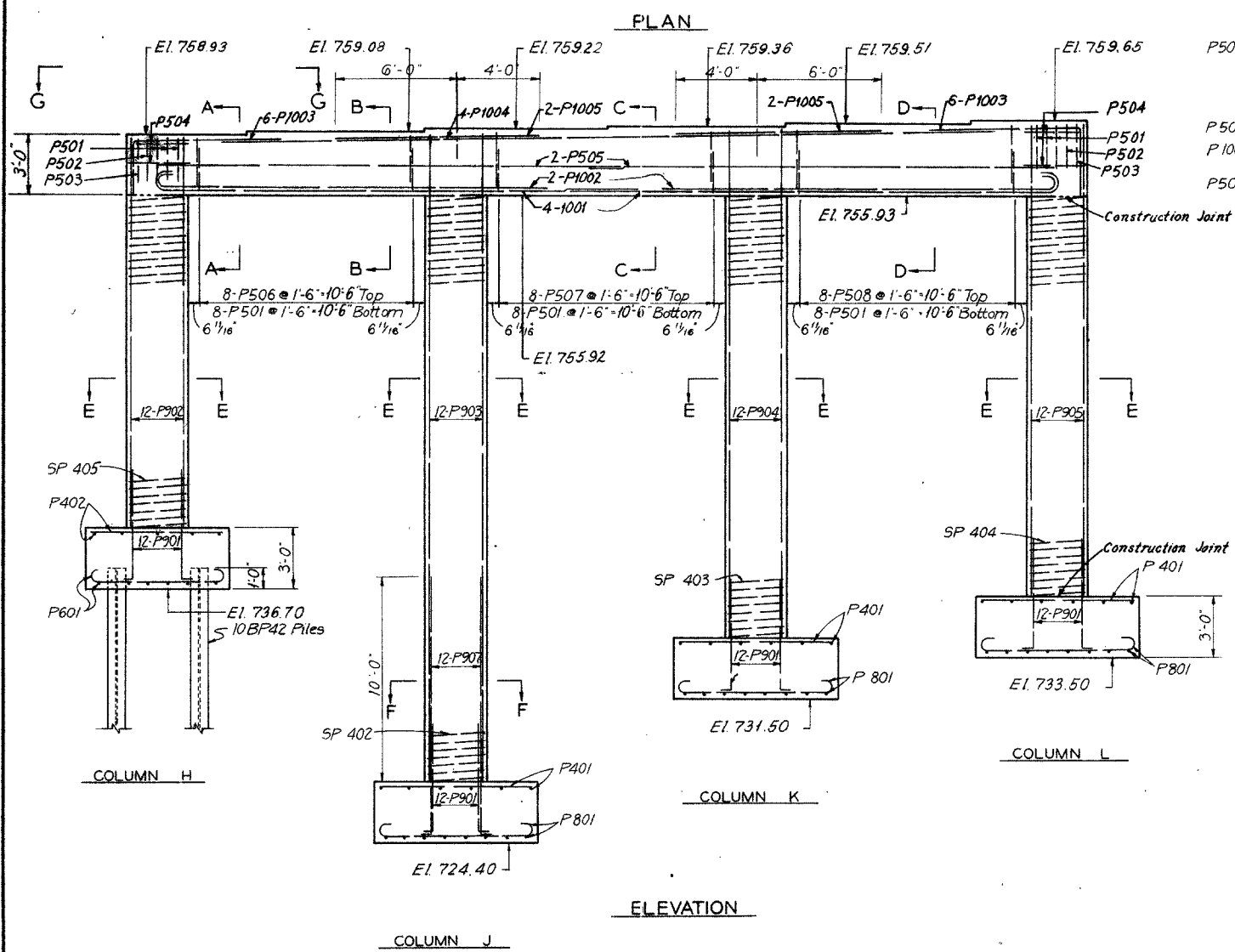
LORAIN COUNTY  
 STA. 564 + 20.69 TO STA. 565 + 69.91 - LEFT BRIDGE  
 STA. 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	ER	JCZ			8-24-66

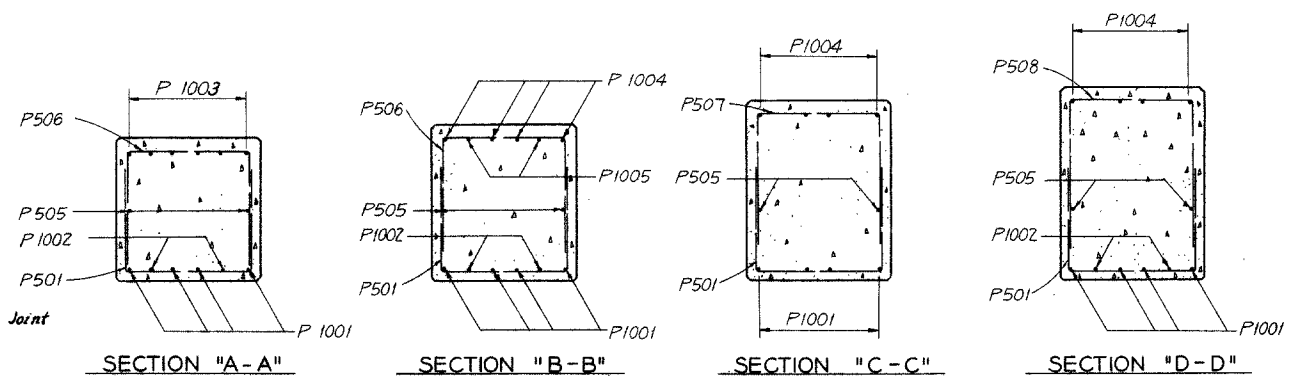
LORAIN COUNTY  
LOR-254-4.08-B



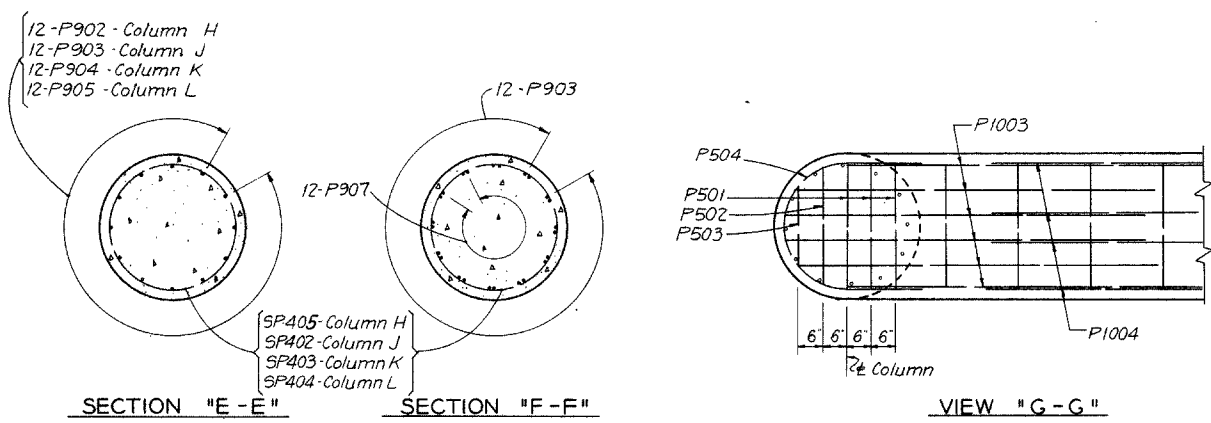
FOOTING PLAN



ELEVATION



SECTION "A-A" SECTION "B-B" SECTION "C-C" SECTION "D-D"

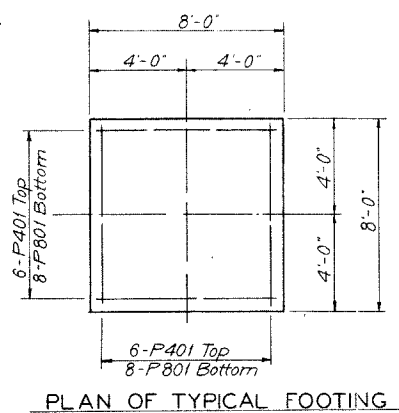
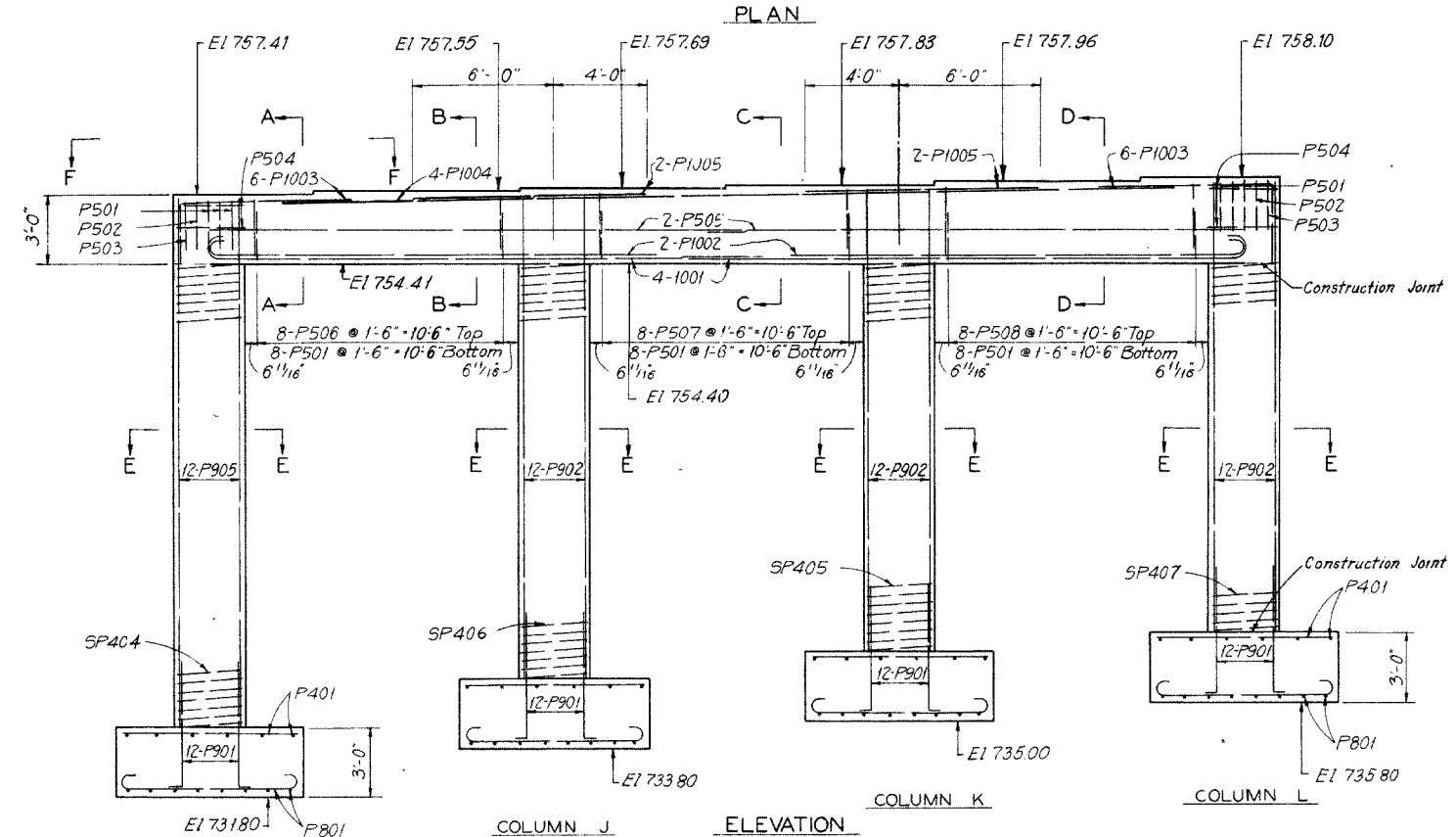
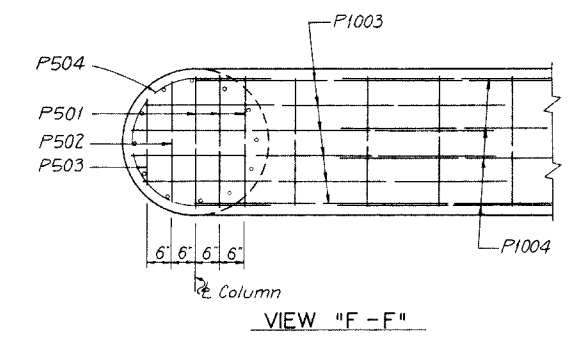
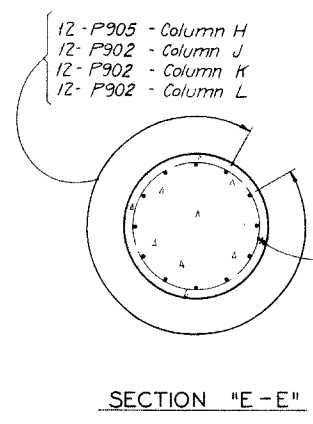
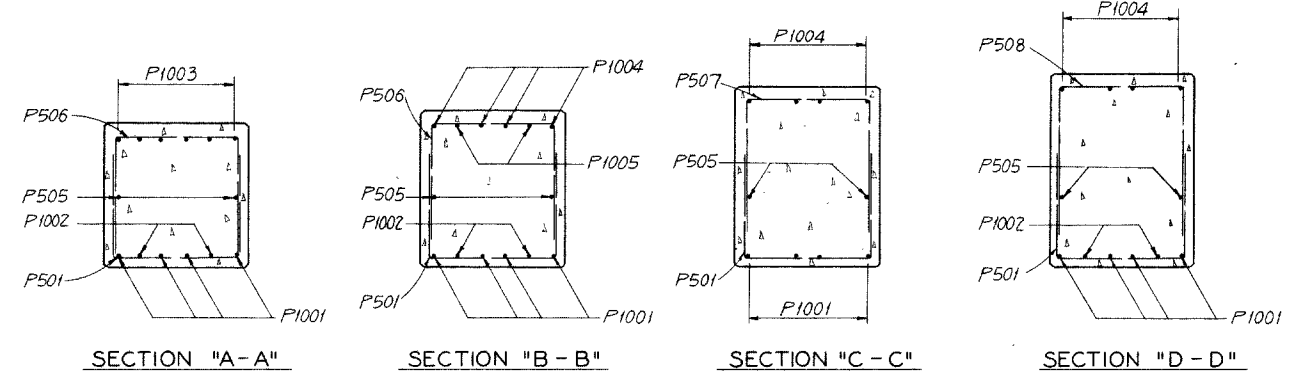
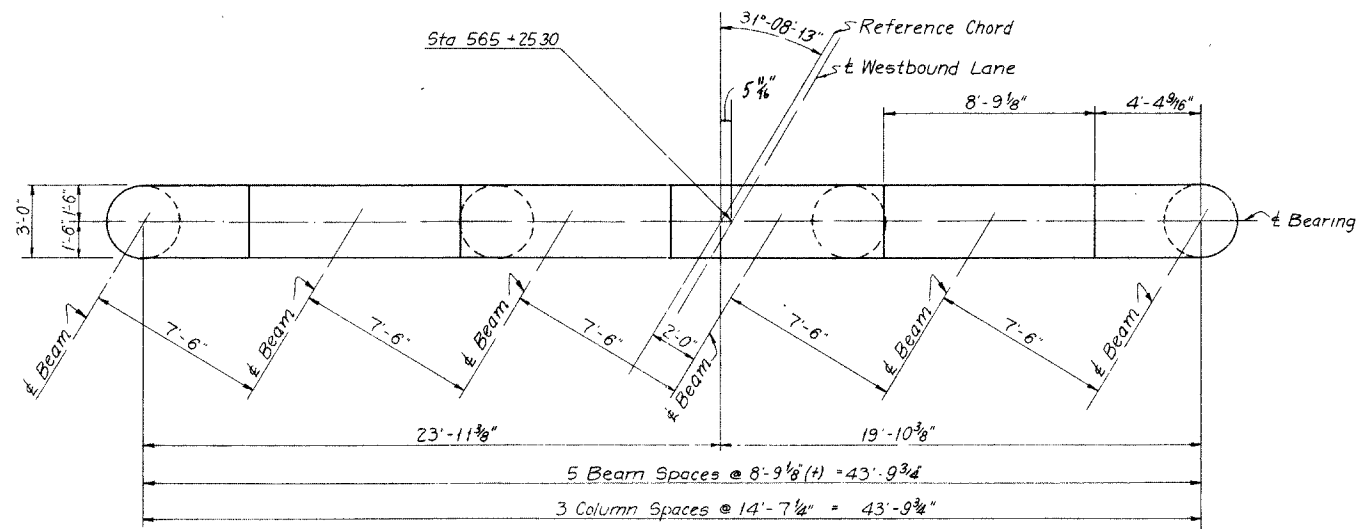


SECTION "E-E" SECTION "F-F" VIEW "G-G"

**NOTES**  
**CONCRETE:** All concrete for pier footings shall be Class "E" and all concrete above footing shall be Class "C".  
**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.  
**FOUNDATION BEARING PRESSURE:** Pier footings seated on rock are designed for a maximum bearing pressure of 34 tons per sq. ft.  
**GENERAL NOTES:** See Sheet 265

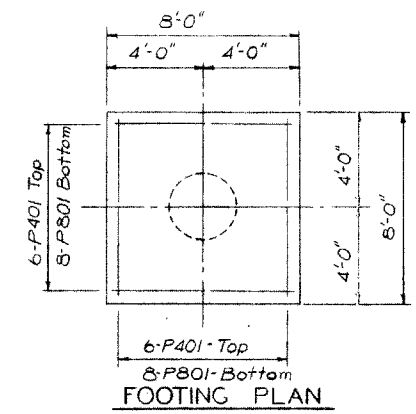
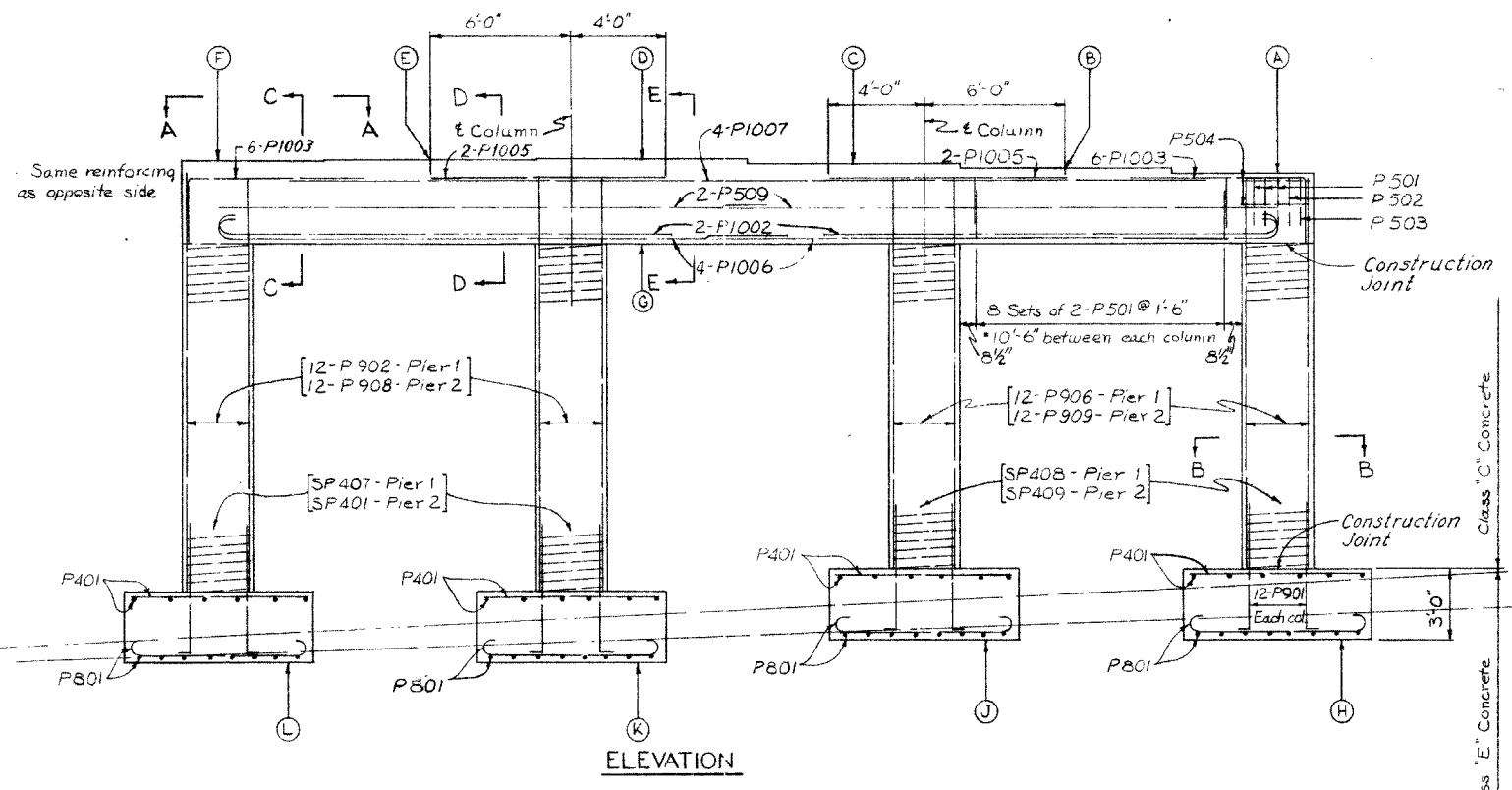
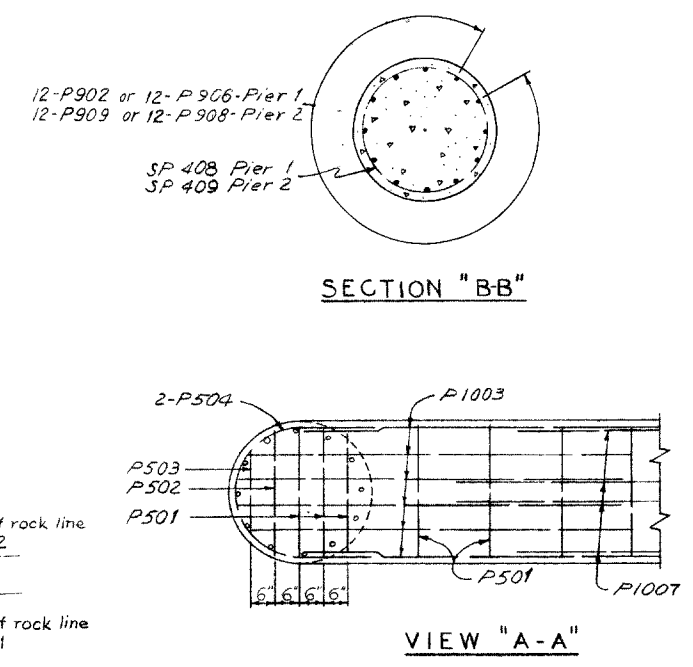
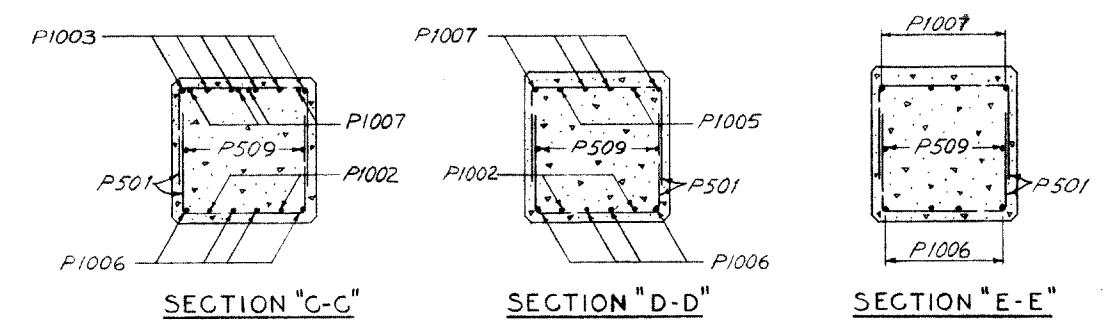
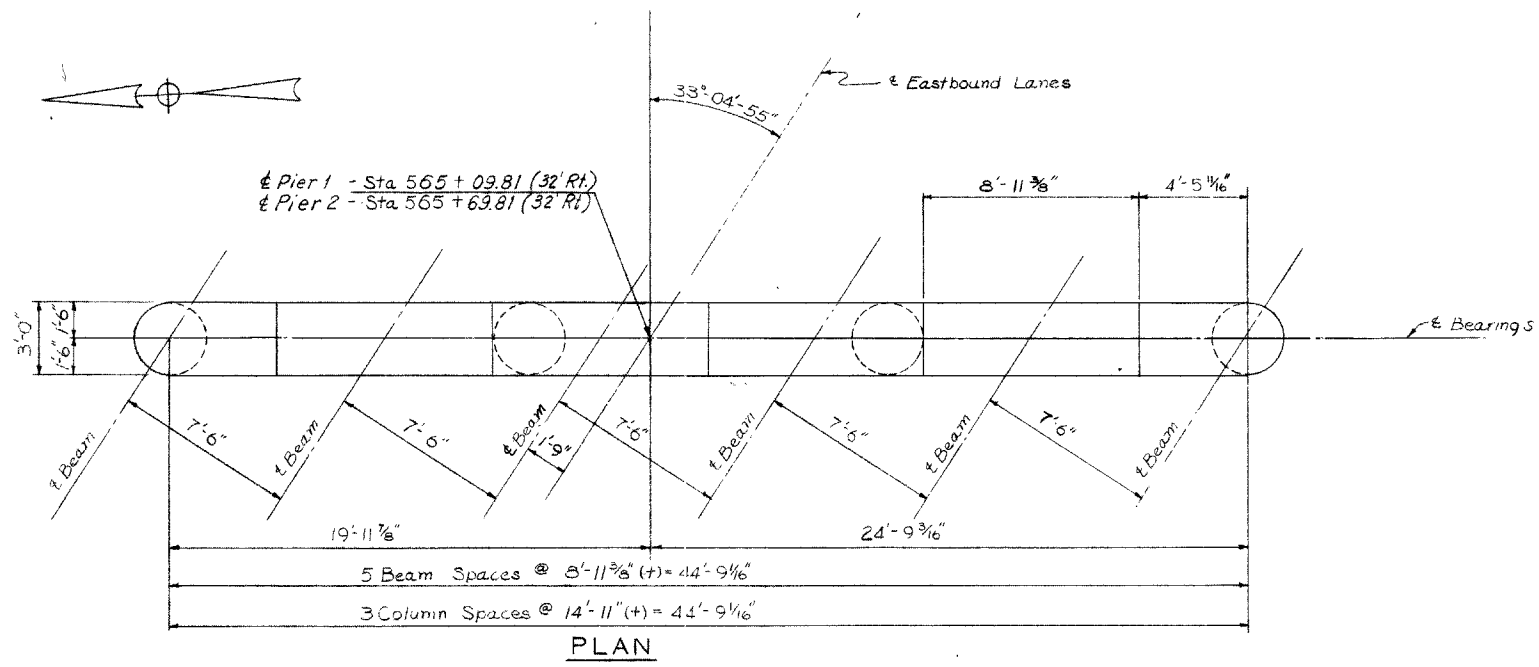
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SHAFFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.						
<b>PIER I- LEFT BRIDGE</b>						
<b>BRIDGE NO. LOR-254-1069 L&amp;R</b>						
<b>OVER MURRAY RIDGE ROAD</b>						
LORAIN COUNTY					SR 254	
STA. 564+20.65 TO STA. 565+69.91 - LEFT BRIDGE					STA. 564+44.27 TO STA. 565+93.66 - RIGHT BRIDGE	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	L.K.	J.C.Z.			



PIER NOTES See Sheet 269

SHAFFER, PARRETT AND ASSOCIATES Consulting Engineers MANSFIELD, OHIO.						
<b>PIER 2- LEFT BRIDGE</b>						
BRIDGE NO. LOR-254-1069 L&R OVER MURRAY RIDGE ROAD						
LORAIN COUNTY SR 254 STA 564 + 20.65 TO STA. 565 + 69.91 - LEFT BRIDGE STA 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	LK	J.C.Z.			



758.30 ?

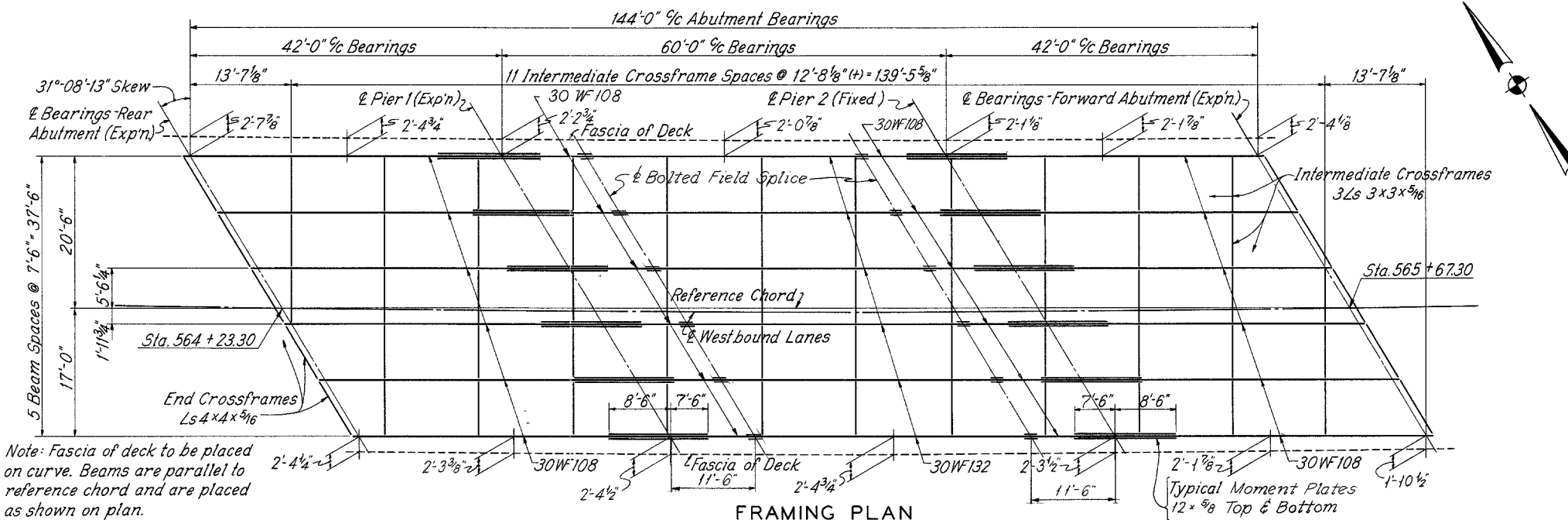
		TABLE OF ELEVATIONS										
		A	B	C	D	E	F	G	H	J	K	L
RIGHT BRIDGE	Pier 1	758.30	758.52	758.75	758.92	758.92	758.91	755.30	737.60	737.60	736.90	736.70
	Pier 2	756.68	756.92	757.15	757.33	757.33	757.33	753.68	738.70	738.70	737.30	737.30

PIER NOTES: See Sheet 269

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MANSFIELD, OHIO.

**PIERS - RIGHT BRIDGE**  
BRIDGE NO. LOR-254-1069 L&R  
OVER MURRAY RIDGE ROAD  
LORAIN COUNTY SR: 254  
STA. 564 + 20.65 TO STA. 565 + 69.91 - LEFT BRIDGE  
STA. 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	WHA	J.C.Z.			



Note: Fascia of deck to be placed on curve. Beams are parallel to reference chord and are placed as shown on plan.

**NOTES**

**CAMBERING** of each beam is required in accordance with the following table:

	DEFLECTION AND CAMBER			
	END SPANS	MIDDLE SPAN	END SPANS	MIDDLE SPAN
Deflection due to weight of steel	0	1/32	0	1/32
Deflection due to remaining dead load	5/32	1/4	1/8	1/32
Convexity required for vertical curve	1/16	1/8	1/16	1/8
Concavity required for horizontal curvature and superelevation	0	0	0	0
Sum of deflection and convexity	1/32	13/32	3/16	3/8
Required camber	0	0	0	0

**END CROSSFRAMES, END DAMS, GUTTERS AND SCUPPERS:** See Std. Dwg. SD-1-63, Sheets 2, 3 & 4 of 4.

**RAILING:** See Standard Drawing AR-1-57.

**RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING:** See Sheet 265

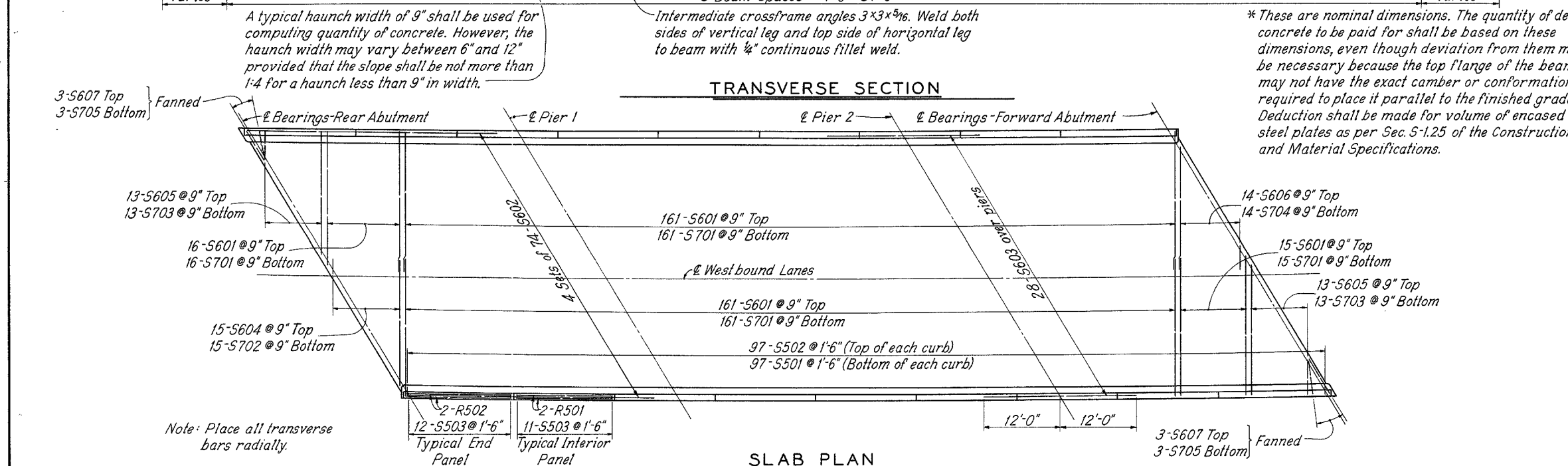
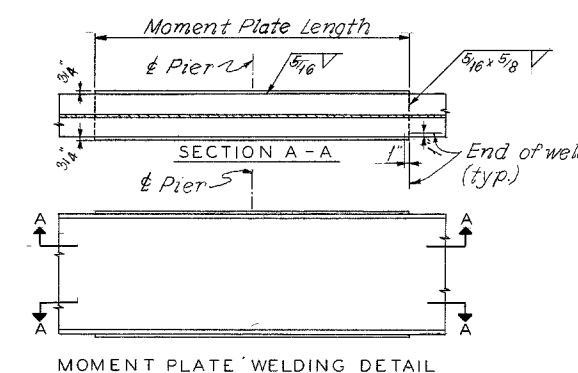
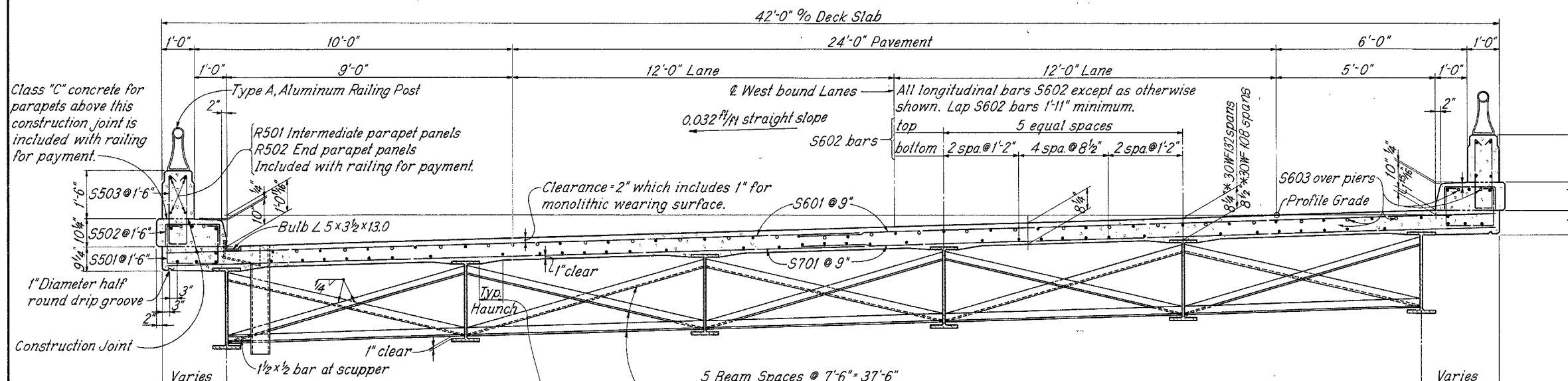
**CONCRETE:** All superstructure concrete shall be Class "C".

**BEARINGS:** See Standard Drawing FSB-1-62 for the following:  
E-100 Abutments, E-150 Pier 1 and F-150 Pier 2

**DECK SLAB CORNER DETAILS:** See Sheet 273

**GENERAL NOTES:** See Sheet 265

**BOLTED FIELD SPLICE NOTES AND DETAILS:** See Sheets 273 & 274



**PAVEMENT ELEVATIONS - LEFT BRIDGE**

AT STA.	564 + 25	564 + 50	564 + 75	565 + 00	565 + 25	565 + 50	565 + 75
Left Curb	763.12	762.60	762.07	761.52	760.96	760.38	759.79
& W.B. Lanes	763.80	763.28	762.75	762.20	761.64	761.06	760.47
Right Curb	764.34	763.82	763.29	762.74	762.18	761.60	761.01

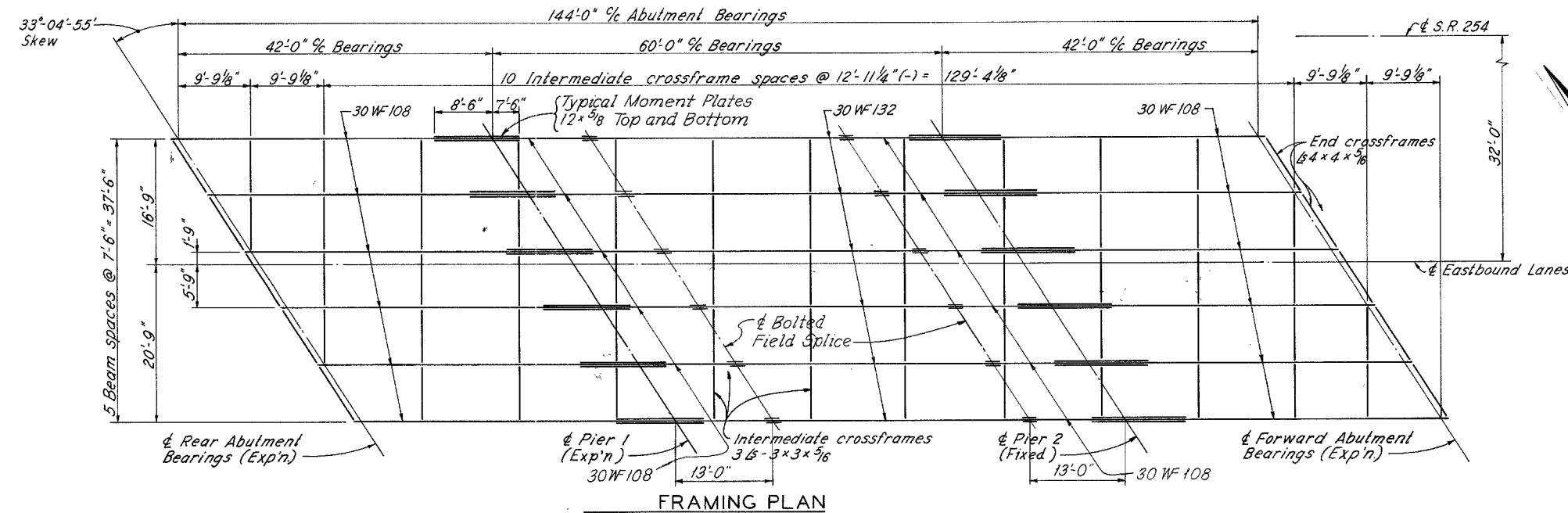
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 Consulting Engineers  
 MANSFIELD, OHIO.

**SUPERSTRUCTURE-LEFT BRIDGE**  
 BRIDGE NO. LOR-254-1069 L & R  
 OVER MURRAY RIDGE ROAD

LORAIN COUNTY      S.R. 254  
 STA. 564 + 20.65 TO STA. 565 + 69.91 - LEFT BRIDGE  
 STA. 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RHU	UL				

**LORAIN COUNTY**  
**LOR - 254 - 4.08 - B**



**NOTES:**  
CAMBERING of beams is required in accordance with the following table:

	DEFLECTION AND CAMBER			
	OUTSIDE BEAMS		INSIDE BEAMS	
	END SPANS	MIDDLE SPAN	END SPANS	MIDDLE SPAN
Deflection due to weight of steel	0	0	0	0
Deflection due to remaining dead load	1/8	1/8	1/8	1/8
Convexity required for vertical curve	1/8	1/8	1/8	1/8
Sum of deflection and convexity	3/8	3/8	3/8	3/8
Required Camber	0	0	0	0

**END CROSSFRAMES, END DAMS, GUTTERS AND SCUPPERS:**  
See Std Dwg 5D-1-63 Sheets 2, 3 and 4.

**RAILING:** See Std Dwg AR-1-57, Type 'A'

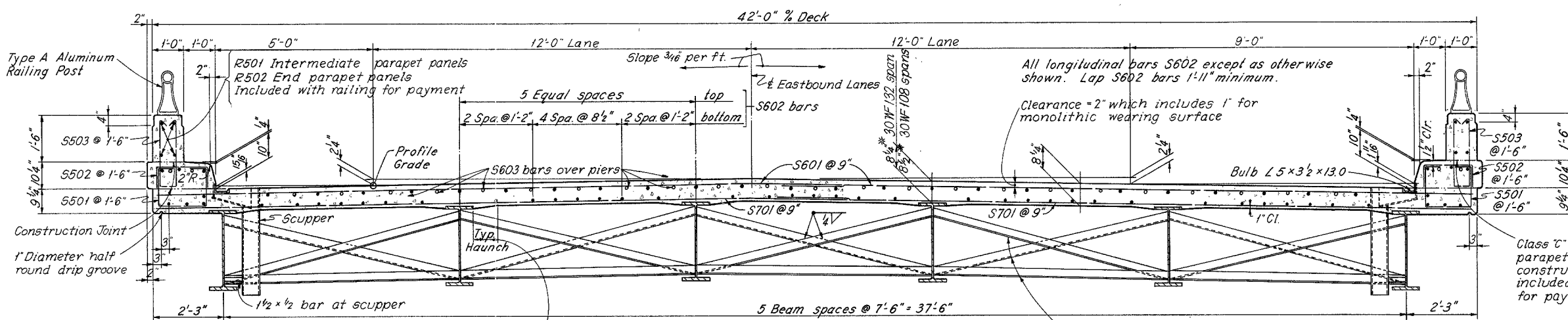
**RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING:** See Sheet 265

**CONCRETE:** All superstructure concrete shall be Class 'C'

**BEARINGS:** See Std Dwg F5B-1-62 for the following:  
E-100 Abutments  
E-150 Pier 1  
F-150 Pier 2

**GENERAL NOTES:** See Sheet 265

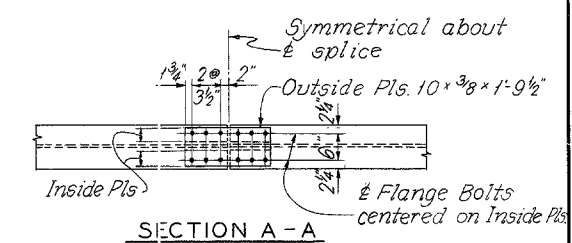
**BOLTED FIELD SPLICE NOTES AND DETAILS:** See Sheets 272, 274



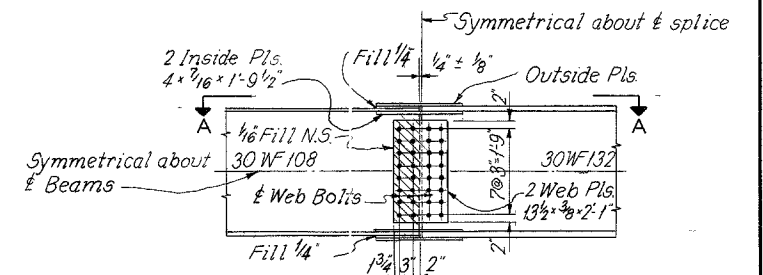
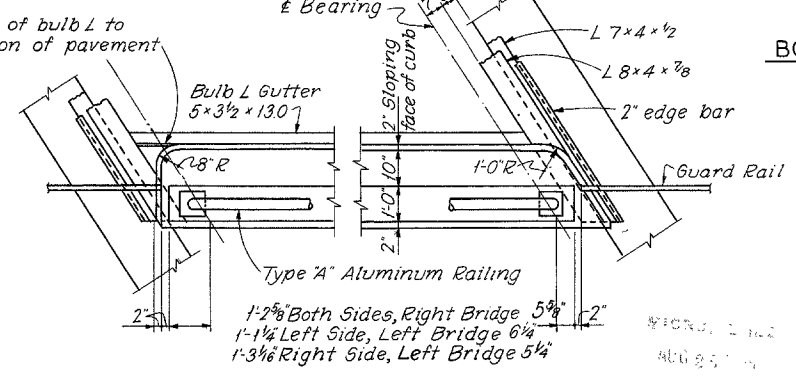
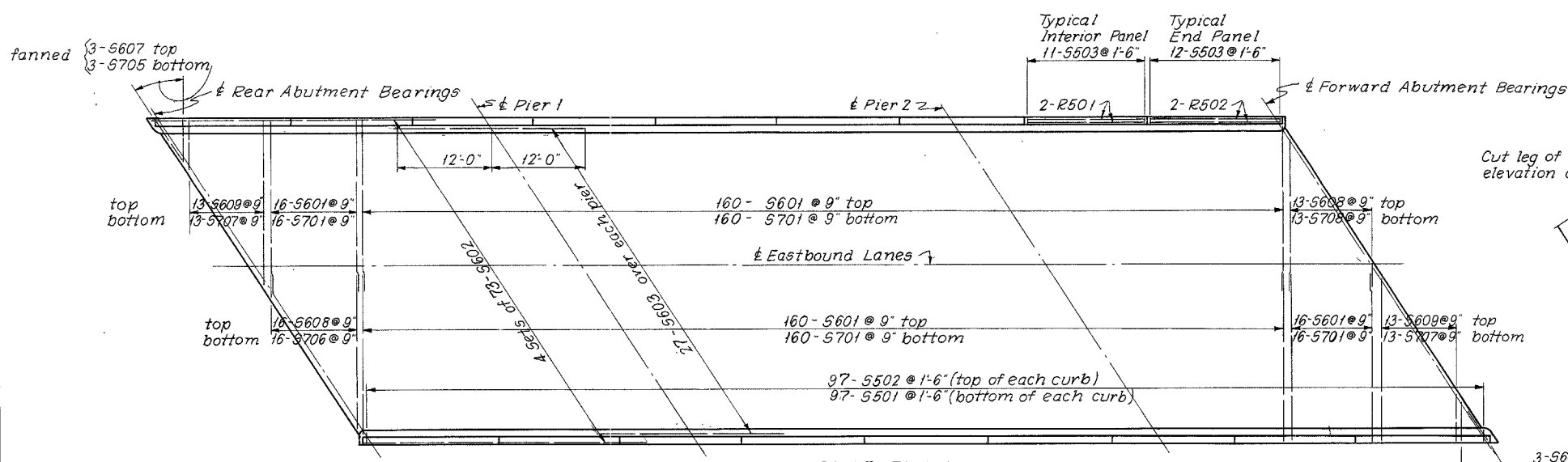
\* - These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 5-1.25 of the Construction and Material Specifications.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

Intermediate crossframe angles 3x3x5/8. Weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld.



**TRANSVERSE SECTION**



**BOLTED FIELD SPLICE DETAIL**  
Place bolt head on exposed side of fascia beams  
Place nuts on top surface of lower flange splice.  
Washers may be omitted as allowed in Sec. 5-7.10.

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**SUPERSTRUCTURE - RIGHT BRIDGE**  
**BRIDGE NO. LOR-254-1069 L&R**  
**OVER MURRAY RIDGE ROAD**

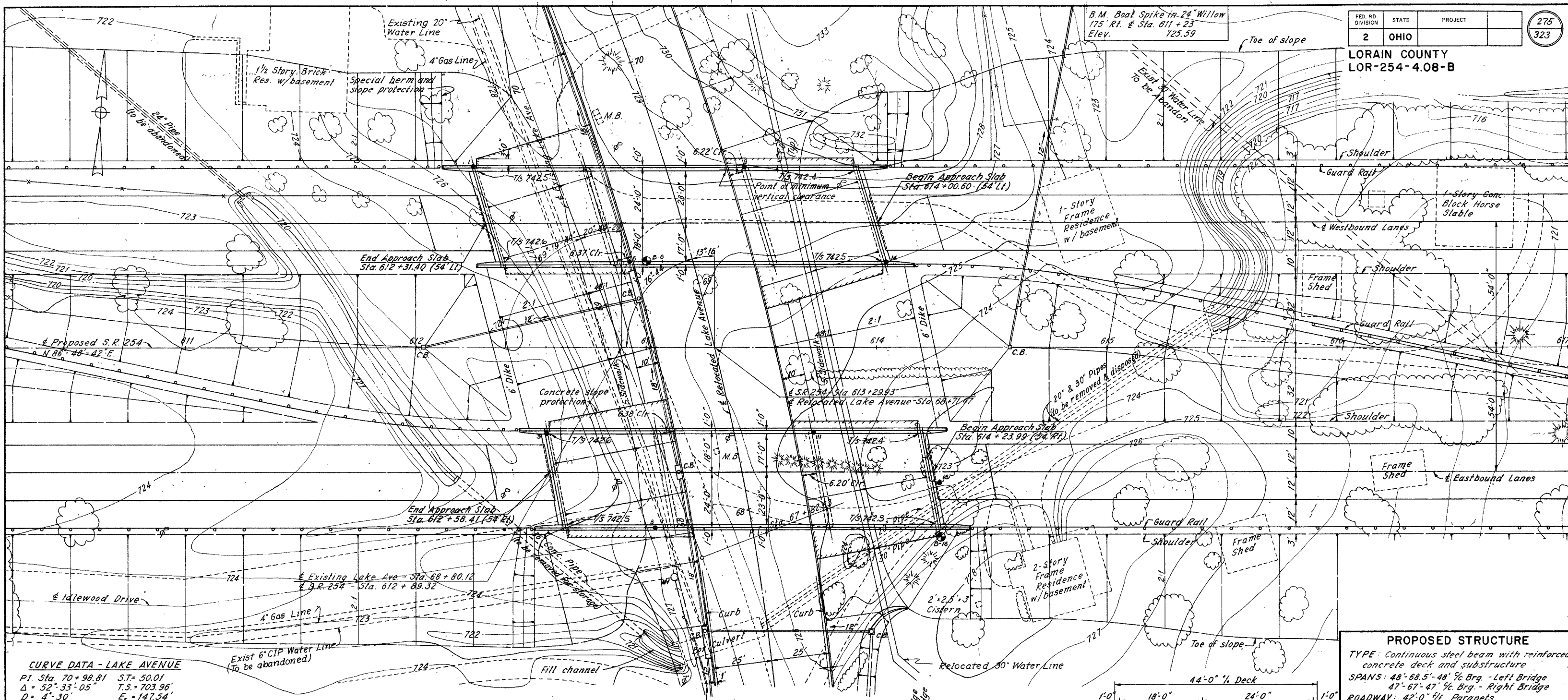
LORAIN COUNTY S.R. 254  
STA. 564 + 20.65 TO STA. 565 + 69.91 - LEFT BRIDGE  
STA. 564 + 44.27 TO STA. 565 + 93.66 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JC	RAK	RAK				

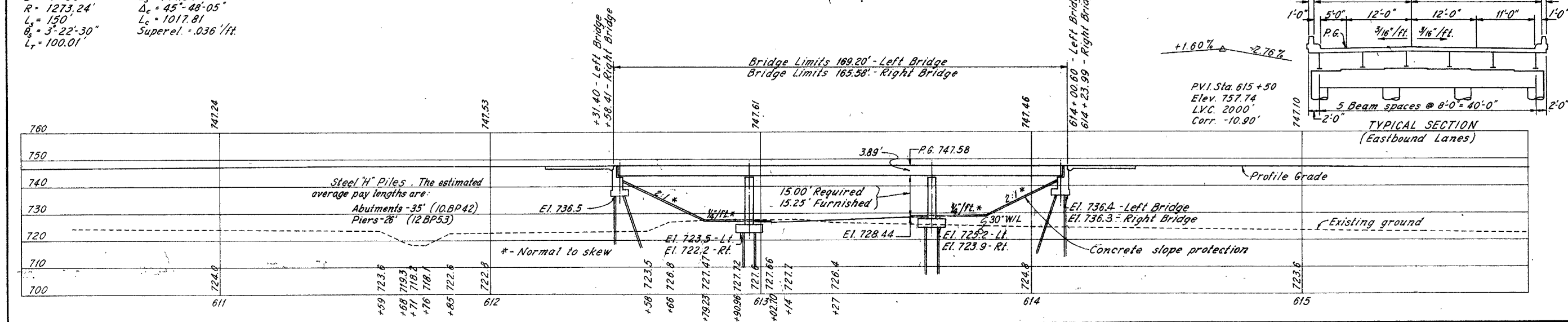
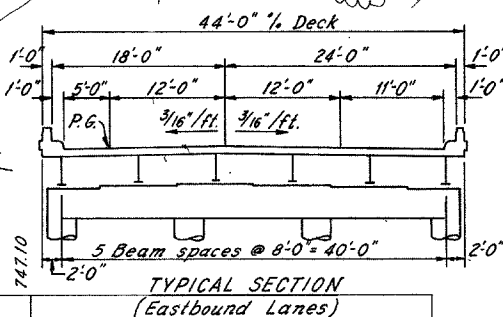




LORAIN COUNTY  
LOR-254-4.08-B



**CURVE DATA - LAKE AVENUE**  
 P.I. Sta. 70+98.81 S.T. = 50.01  
 Δ = 52° 33' 05" T.S. = 703.96'  
 D = 4'-30" E<sub>s</sub> = 147.54'  
 R = 1273.24' Δ<sub>c</sub> = 45° 48' 05"  
 L<sub>s</sub> = 150' L<sub>c</sub> = 1017.81'  
 θ<sub>s</sub> = 3° 22' 30" Superel. = 0.36'/ft.  
 L<sub>t</sub> = 100.01'



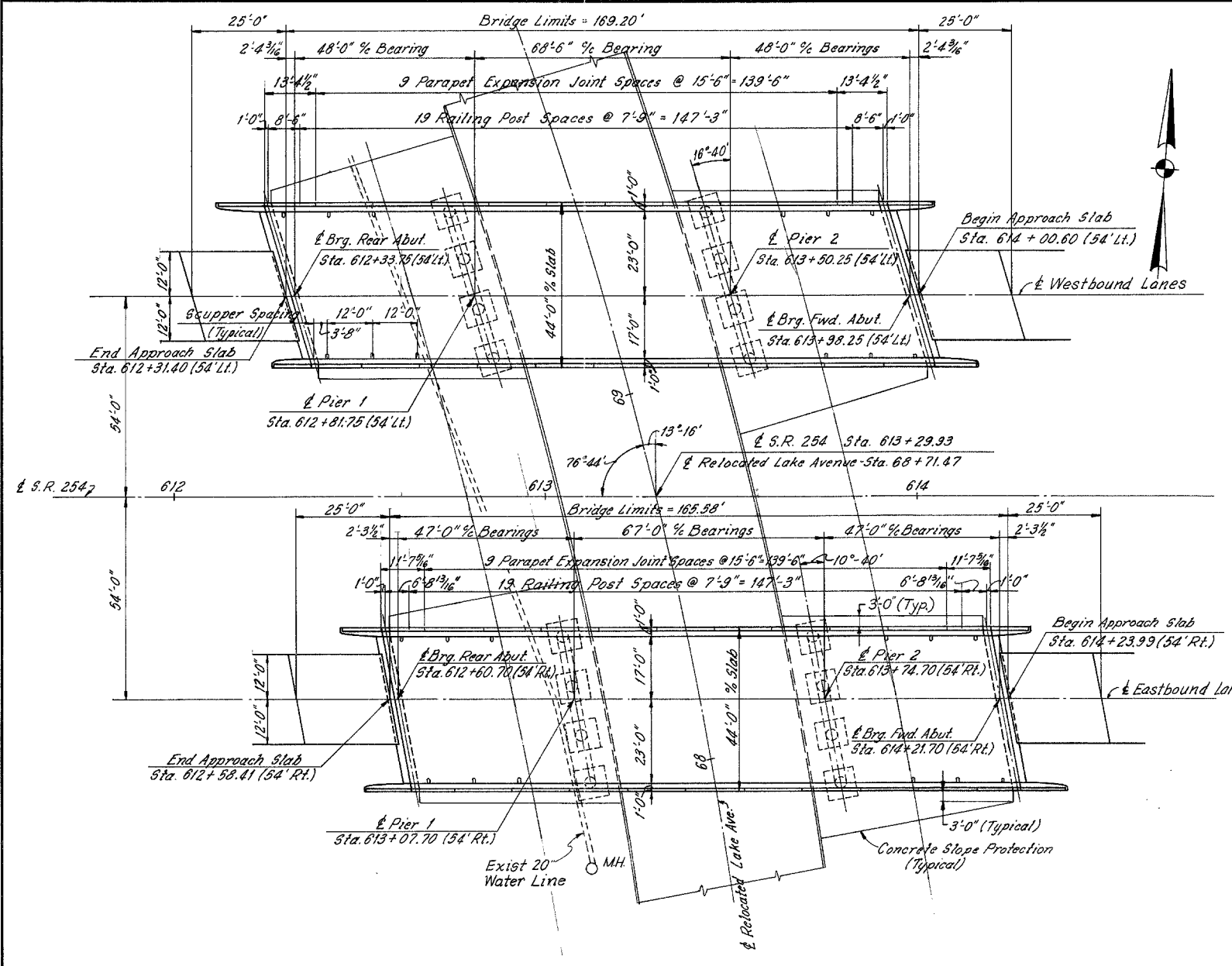
**PROPOSED STRUCTURE**  
 TYPE: Continuous steel beam with reinforced concrete deck and substructure  
 SPANS: 48'-68.5'-48' % Brg. - Left Bridge  
 47'-67'-47' % Brg. - Right Bridge  
 ROADWAY: 42'-0" % Parapets  
 LOAD FREQUENCY: CF2000 (57). Adequate for AASHO alternate loading.  
 SKEW: 16° 40' RF - Left Bridge  
 10° 40' RF - Right Bridge  
 WEARING SURFACE: 1' Monolithic concrete  
 APPROACH SLABS: AS-1-54 (25' long)  
 ALIGNMENT: Tangent  
 AVERAGE DAILY TRAFFIC: 19,000 (Lake Ave.)  
 19510 (S.R. 254) - 1975 figures

**FOUNDATION INVESTIGATION LEGEND**  
 ● - Indicates core boring  
 ○ - Indicates rod sounding

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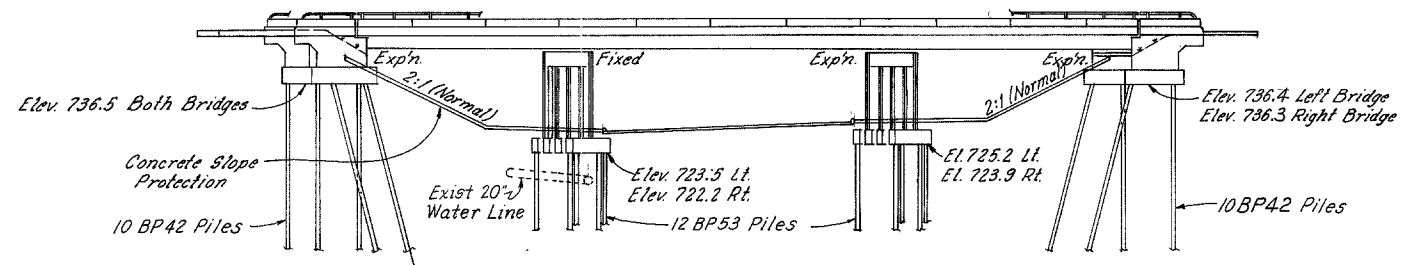
**SITE PLAN**  
 BRIDGE NO. LOR-254-1160 L & R  
 OVER LAKE AVENUE  
 LORAIN COUNTY S.R. 254  
 STA. 612+31.40 TO STA. 614+00.60 - LEFT BRIDGE  
 STA. 612+98.41 TO STA. 614+23.99 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	RAK	JWG			



GENERAL PLAN

**VERTICAL CURVE DATA**  
P.V.I. Sta. 615+50  
Elev. 757.74  
L.V.C. = 2000'  
Corr. = -10.90'



GENERAL ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	LEFT BRIDGE			RIGHT BRIDGE		
				SUPERABUTS	PIERS	GEN	SUPERABUTS	PIERS	GEN
E-2	658	Cu. Yds.	Unclassified excavation	246	70		232	110	
S-1	442	Cu. Yds.	Class "C" concrete, superstructure	223			219		
S-1	120	Cu. Yds.	Class "C" concrete, piers above footings		59			61	
S-1	114	Cu. Yds.	Class "E" concrete, pier footings		57			57	
S-1	332	Cu. Yds.	Class "E" concrete, abutments	170			162		
S-4	185,761	Lbs.	Reinforcing steel	64,283	10,105	18,710	63,581	9883	19,199
S-7	352,600	Lbs.	Structural steel	177,400			175,200		
S-8	352,600	Lbs.	Field painting of structural steel	177,400			175,200		
S-14	748.82	Lin. Ft.	Railing, Type A (Aluminum rail, supports, and concrete parapet)	332.50	46.66		325.44	44.32	
S-16	Lump	Sum	First test pile			Lump			Lump
S-18	1680	Lin. Ft.	Steel piles, 10BP42		840			840	
S-18	1660	Lin. Ft.	Steel piles, 12BP53			830			830
S-29	39	Cu. Yds.	Porous backfill				12	22	
S-29	24	Each	Scupper, including supports	12	23				
I-10	1425	Sq. Yds.	Concrete slope protection			762			709
S-101	442	Each	Water-reducing, set-retarding admixture	223			219		

GENERAL NOTES

**REFERENCE** shall be made to Standard Drawings AS-1-54 (revised 7-5-62), AR-1-57 (revised 4-2-62), F&B-1-62 (revised 1-15-63), SD-1-63 (dated 11-12-63) and Supplemental Specifications S-101 (dated 7-12-62) and S-307 (revised 10-1-64).

**DESIGN SPECIFICATIONS:** These structures conform to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

**UNIT STRESSES:**  
Design Loading - CF 2000 (57)  
Concrete Class "C" - basic unit stress 1333 psi  
Concrete Class "E" - basic unit stress 1133 psi  
Structural Steel - ASTM A36 - basic unit stress 20,000 psi (except piling) (ASTM A7 and A373 steel not permitted)  
Reinforcing Steel - ASTM A15, A16, A160 Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 psi, except spiral reinforcement may be plain Structural Grade with basic unit stress of 18,000 psi.

**EXCAVATION QUANTITY** includes the removal of fill material required for construction of the abutments and Pier 2 of both bridges.

**ABUTMENT PILES** shall be driven to a minimum bearing capacity of 31 tons per pile.

**PIER PILES** shall be driven with a hammer of not less than 11,000 ft.-lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth to shale, according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:  
60 tons per pile using an 11,000 ft.-lb. hammer  
45 tons per pile using a 15,000 ft.-lb. or greater hammer  
If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 45 tons per pile.

**WELDING** of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus: B.

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

**UTILITY LINES:** All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

**MAINTENANCE AND PROTECTION OF TRAFFIC:** Two lanes of traffic with a minimum horizontal width of 28'-0" shall be maintained for local traffic on Lake Avenue at all times. The Contractor shall safeguard the travelling public by providing platforms, nets or other suitable protection above the travelled lanes. A minimum vertical clearance of 13'-8" shall be provided at all times.

**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 abutments, after which excavation shall be made for abutments and pier 2 for both bridges, and piles driven.

**FIRST TEST PILE:** Payment will be made for only one test pile. It may be driven for either the Right or Left Bridge.

**20" WATER LINE:** The Contractor shall accurately establish by careful excavation the location of the 20" water line near the footings of Pier 1 of the Right bridge before driving piles in this area. Care shall be exercised so as to avoid damage to the line either during excavation operations or while driving piles.

**CONCRETE DECK PLACING:** In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

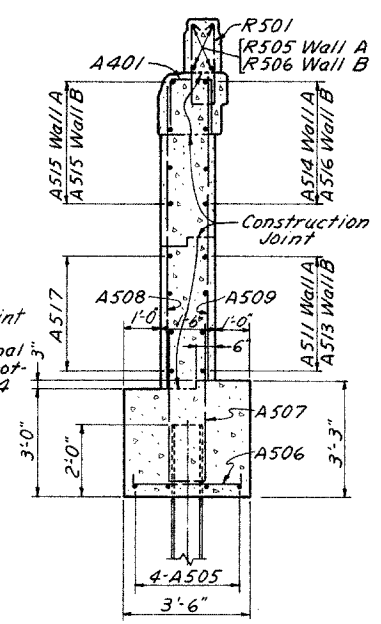
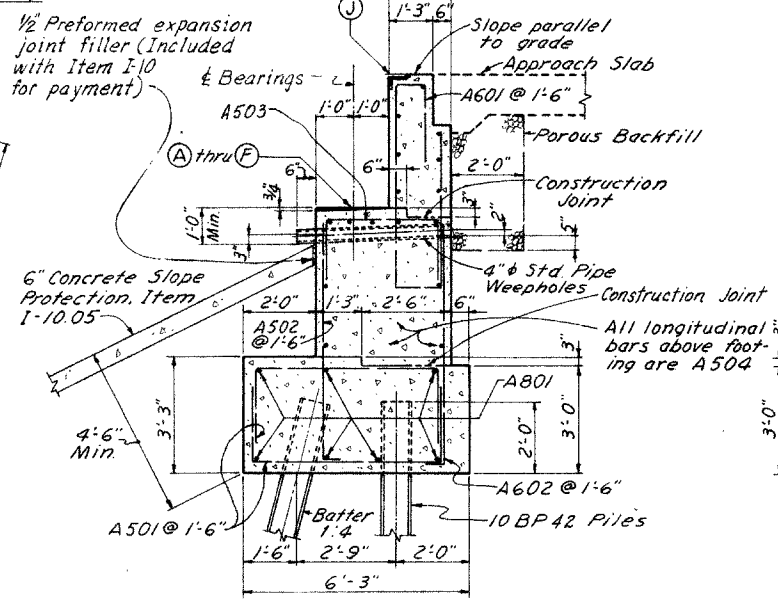
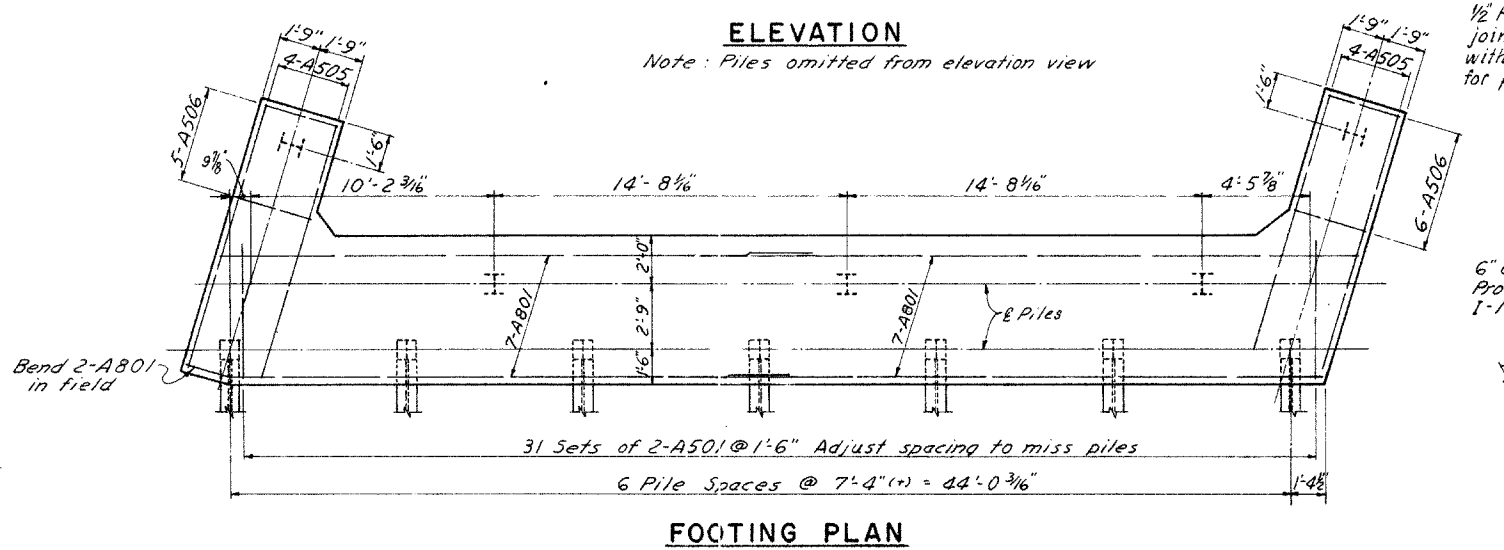
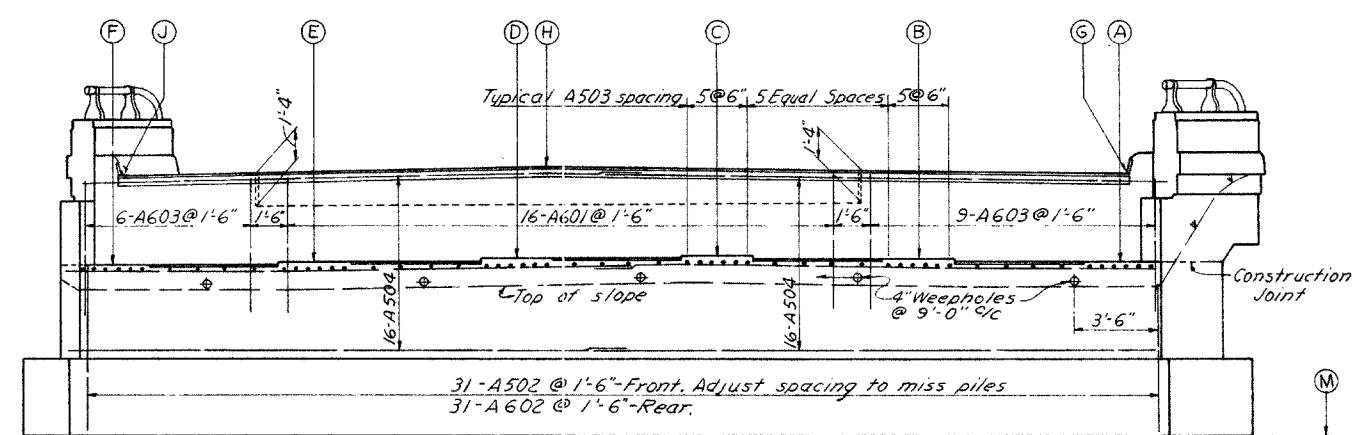
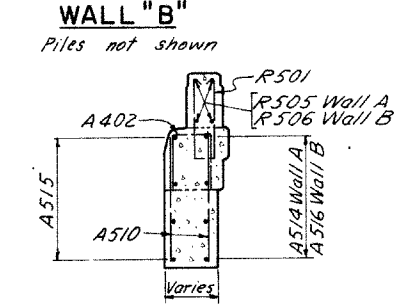
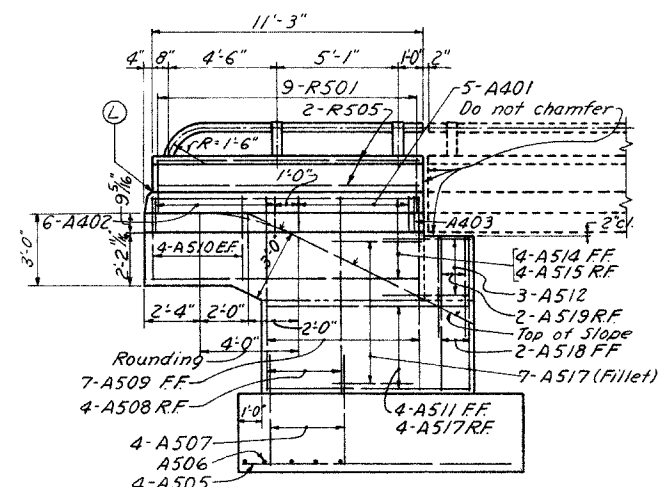
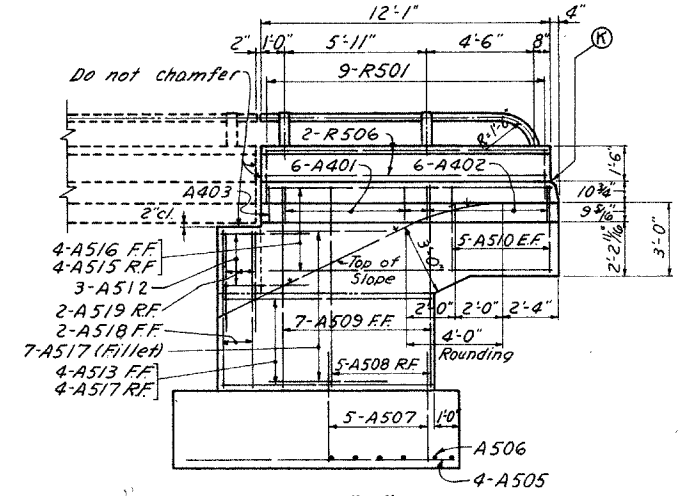
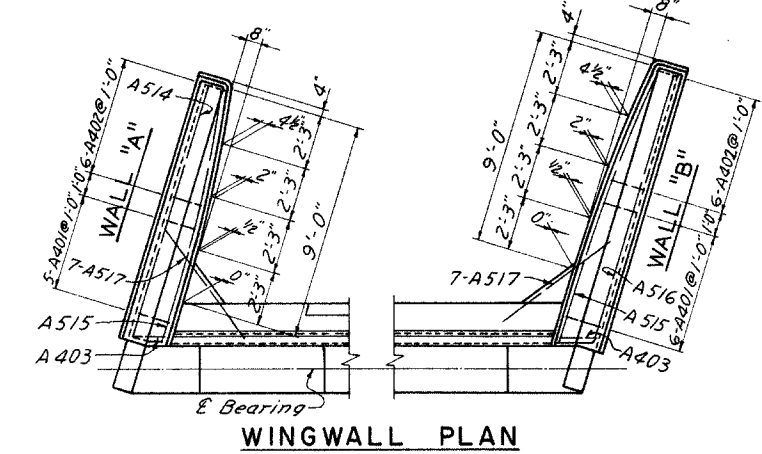
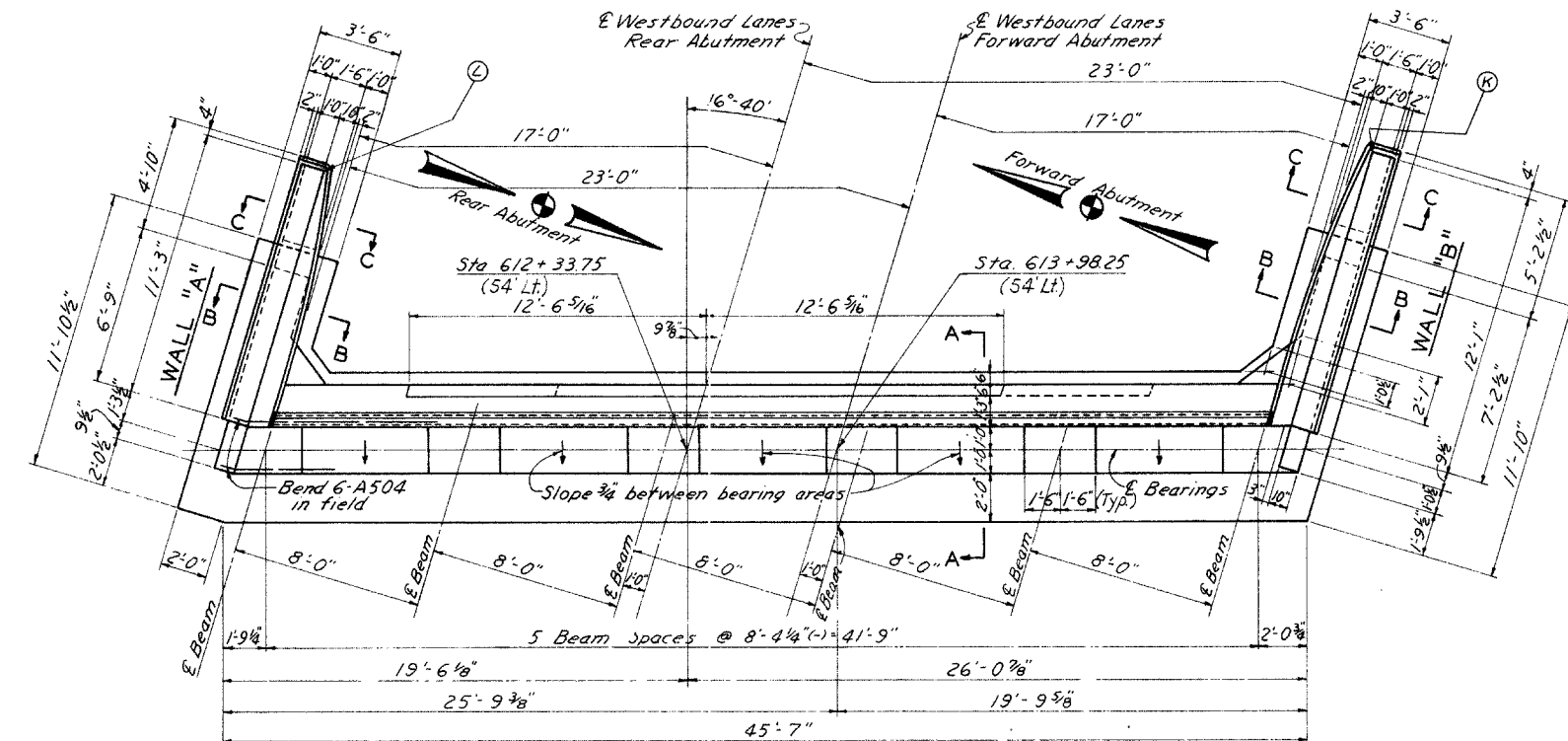
SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**GENERAL PLAN, GENERAL NOTES AND ESTIMATED QUANTITIES**  
BRIDGE NO. LOR-254-1160 L&R  
OVER LAKE AVENUE

LORAIN COUNTY  
STA. 612+31.40 TO STA. 614+00.60 - LEFT BRIDGE  
STA. 612+58.41 TO STA. 614+23.99 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	J.E.G.	J.W.C.			

LORAIN COUNTY  
LOR-254-4.08-B



**NOTES:**  
**CONCRETE:** All abutment concrete shall be Class "E" except parapets, which shall be Class "C".  
**RAILING:** See AR-1-57. Tubing on abutment wingwalls to be continuous.  
**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.  
**NOTATION:** FF = Front Face, R.F. = Rear Face, EF = Each Face.  
**POROUS BACKFILL:** 2'-0" thick, shall extend upward to the subgrade elevation and for the full length of the abutment. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.  
**GENERAL NOTES:** See Sheet 276

LOCATION	A	B	C	D	E	F	G	H	J	K	L	M
Rear Abutment	743.53	743.66	743.79	743.89	743.76	743.64	747.40	747.58	747.51	748.23	748.34	736.50
Forward Abutment	743.48	743.61	743.74	743.66	743.54	743.42	747.38	747.47	747.31	748.19	748.13	736.40

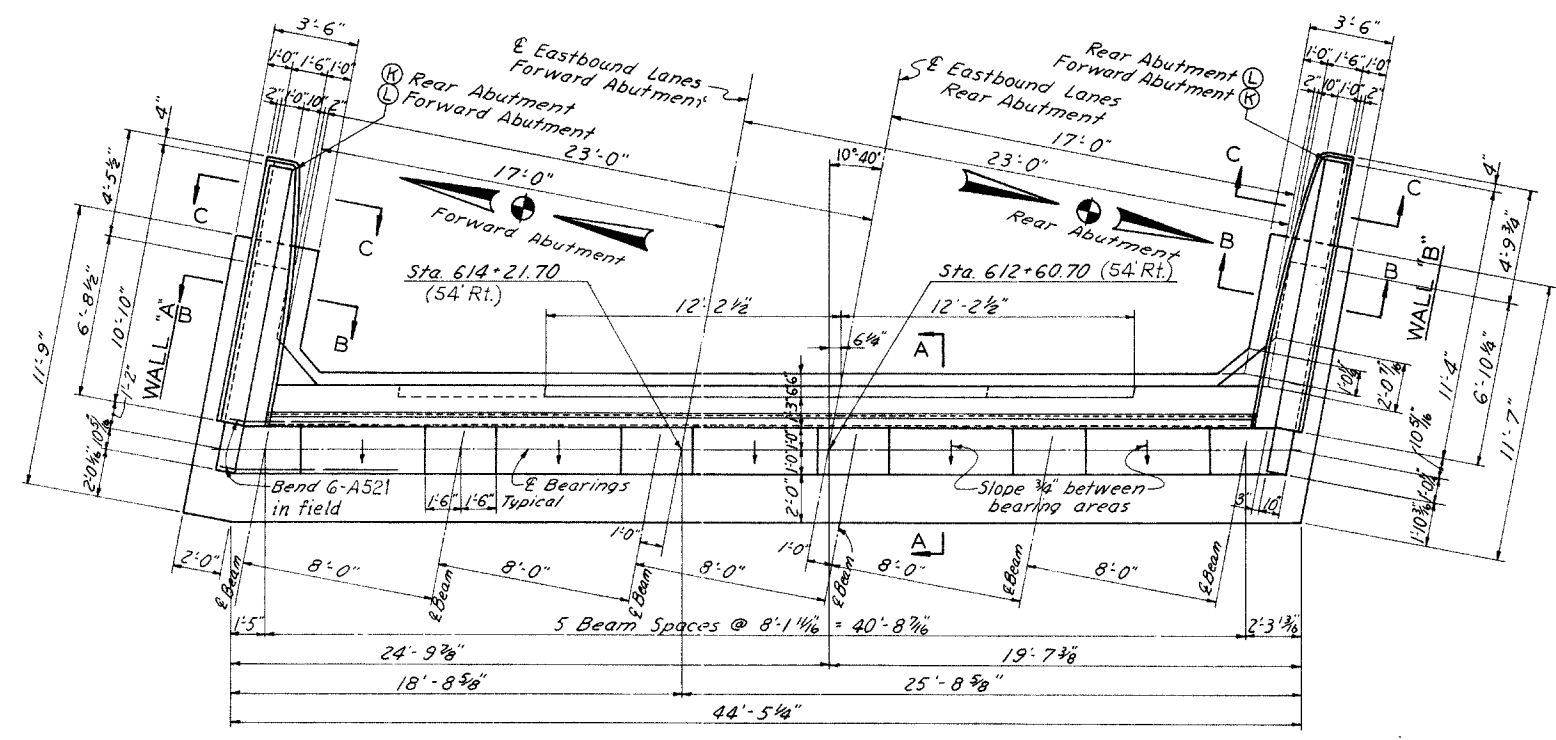
SHAFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 Mansfield, Ohio.

**ABUTMENTS - LEFT BRIDGE**  
 BRIDGE NO. LOR-254-1160 L&R  
 OVER LAKE AVENUE

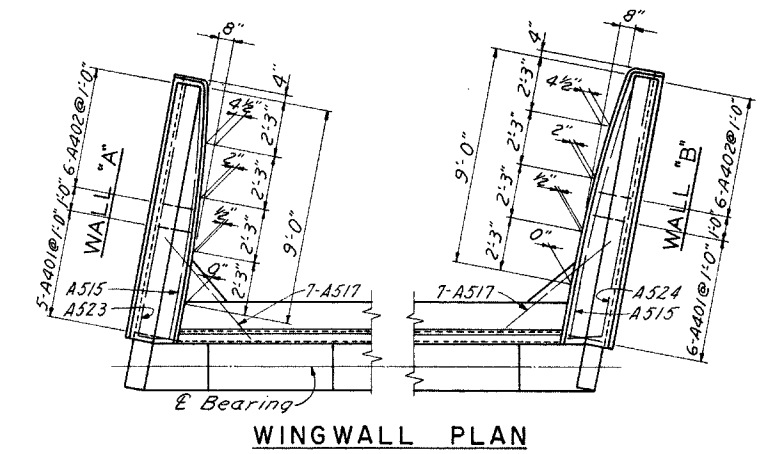
LORAIN COUNTY S.R. 254  
 STA. 612+31.40 TO STA. 614+00.60-LEFT BRIDGE  
 STA. 612+58.41 TO STA. 614+23.99-RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	J.R.B.	J.W.C.			3-29-66

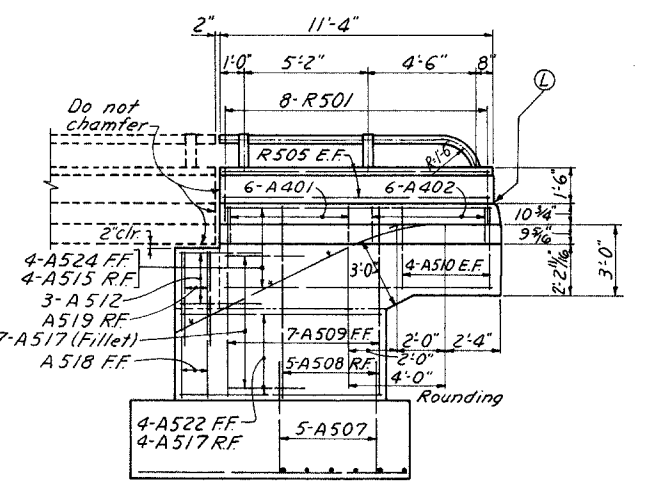
**LORAIN COUNTY  
LOR-254-4.08-B**



**PLAN**

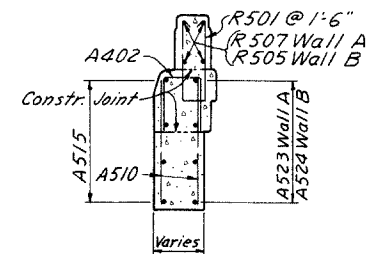


**WINGWALL PLAN**

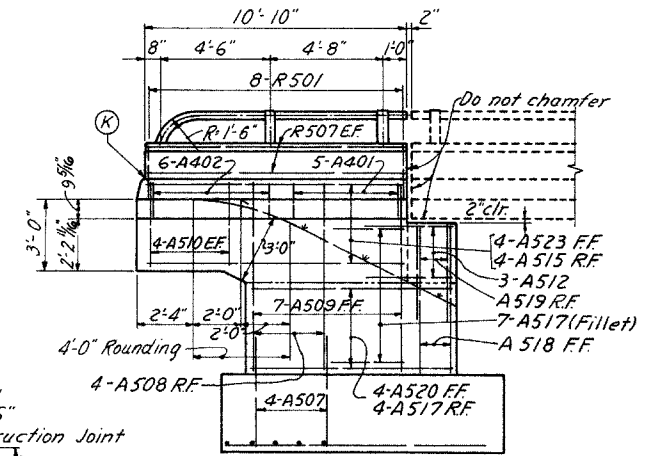


**WALL "B"**

Piles not shown

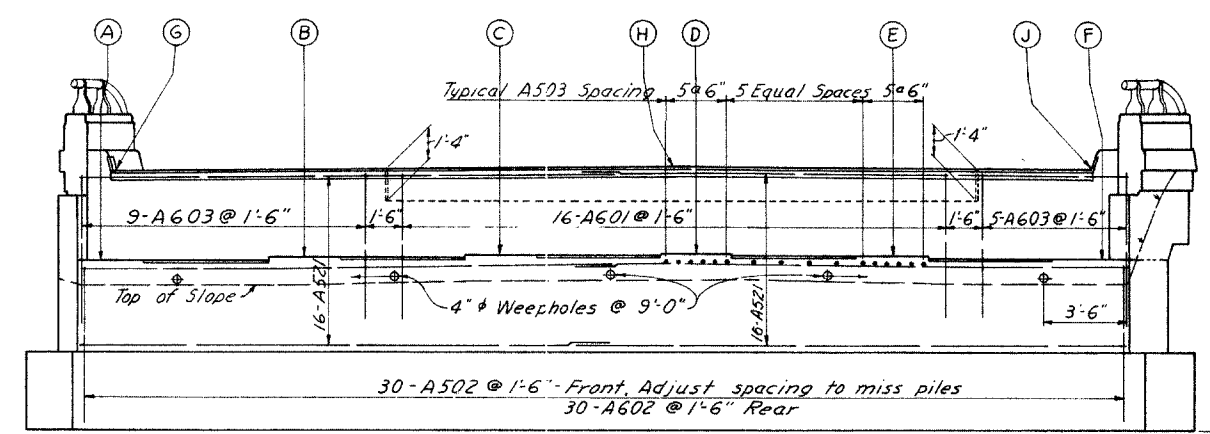


**SECTION "C-C"**



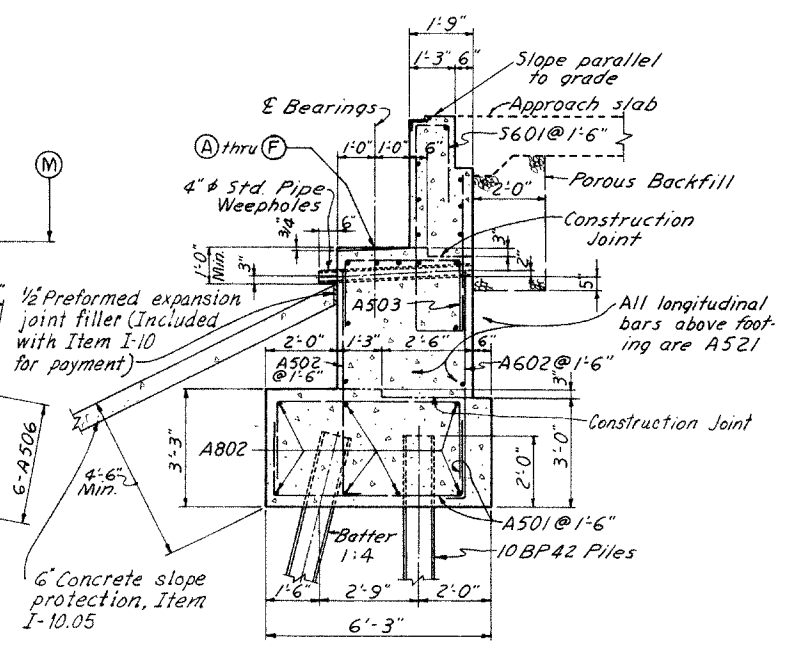
**WALL "A"**

Piles not shown

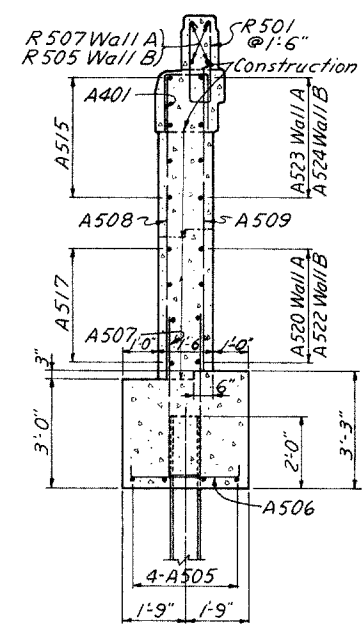


**ELEVATION**

Note: Piles omitted from elevation view.

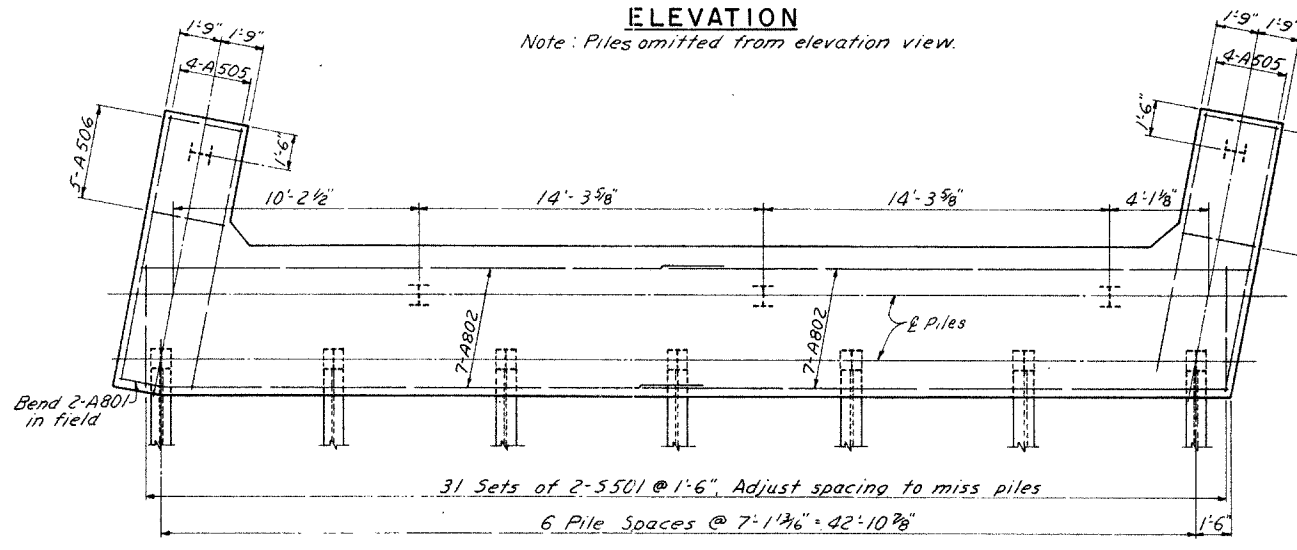


**SECTION "A-A"**



**SECTION "B-B"**

ABUTMENT NOTES: See Sheet 277



**FOOTING PLAN**

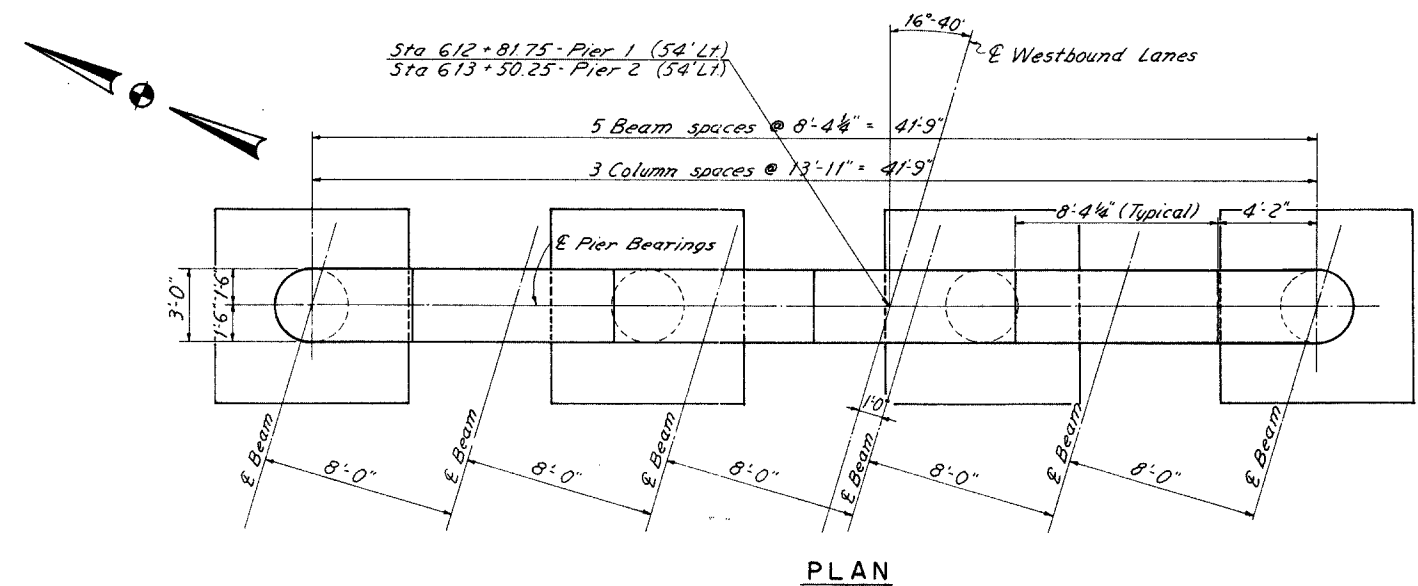
LOCATION	A	B	C	D	E	F	G	H	J	K	L	M
Rear Abutment	743.57	743.69	743.82	743.91	743.78	743.66	747.44	747.61	747.53	748.28	748.36	736.50
Forward Abutment	743.44	743.56	743.68	743.58	743.45	743.32	747.33	747.50	747.22	748.14	748.02	736.30

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Consulting Engineers  
MANSFIELD, OHIO.

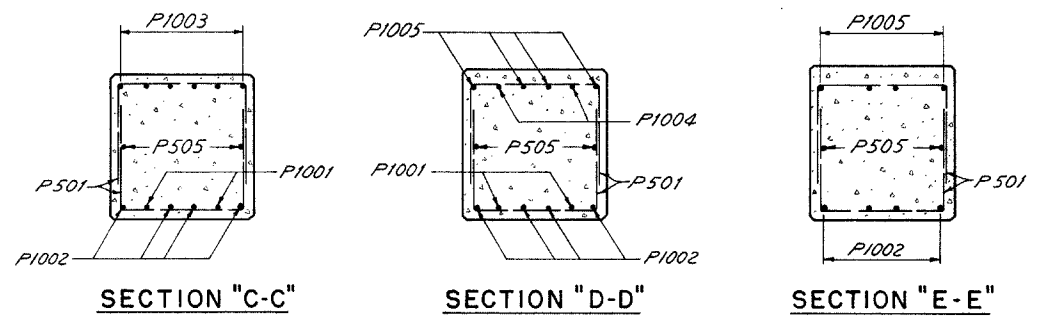
**ABUTMENTS - RIGHT BRIDGE**  
BRIDGE NO. LOR-254-1160 L&R  
OVER LAKE AVENUE

LORAIN COUNTY S.R. 254  
STA. 612 + 31.40 TO STA. 614 + 00.60 - LEFT BRIDGE  
STA. 612 + 58.41 TO STA. 614 + 23.99 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	J.R.B.	J.W.C.			8-24-66



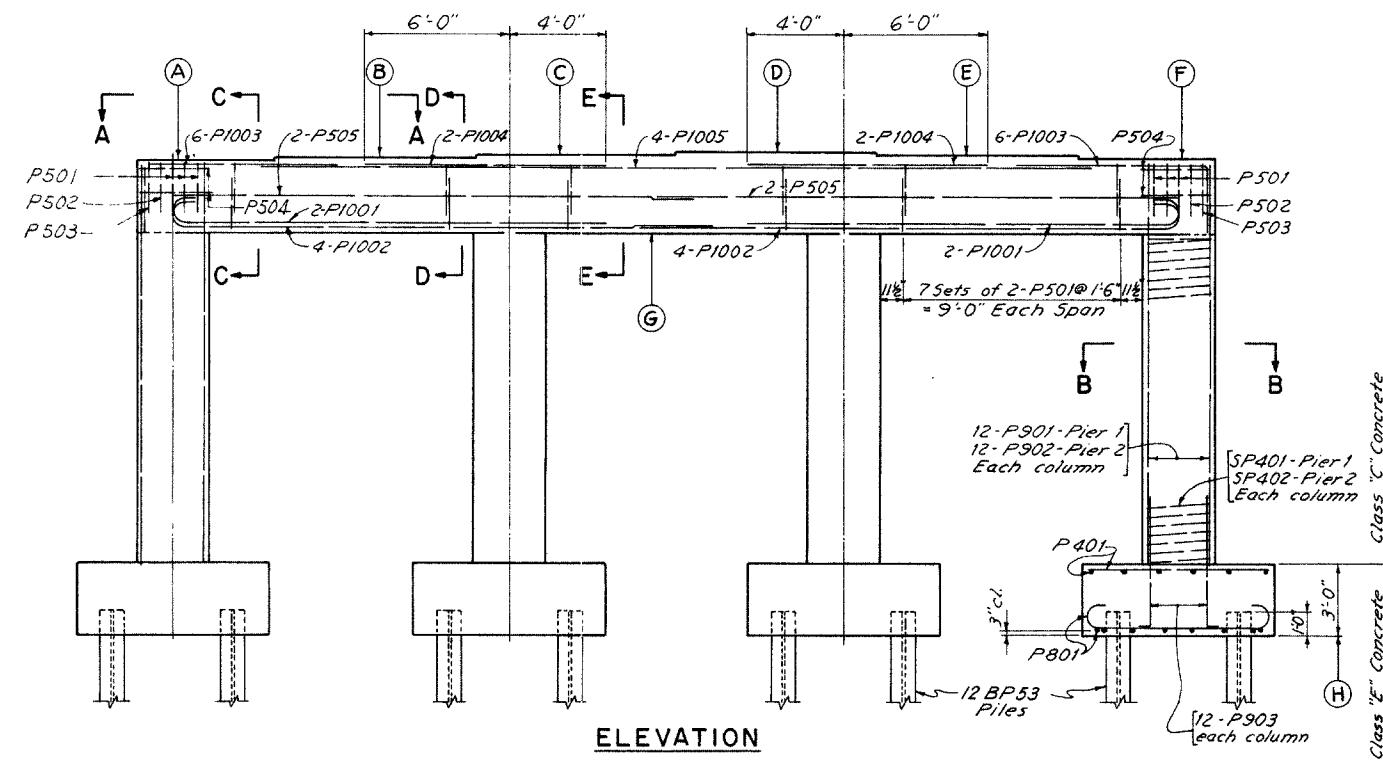
PLAN



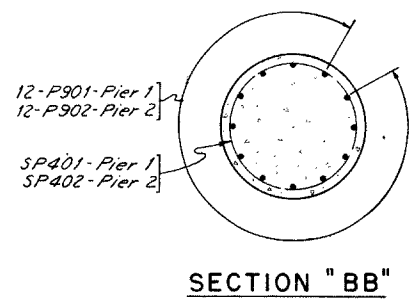
SECTION "C-C"

SECTION "D-D"

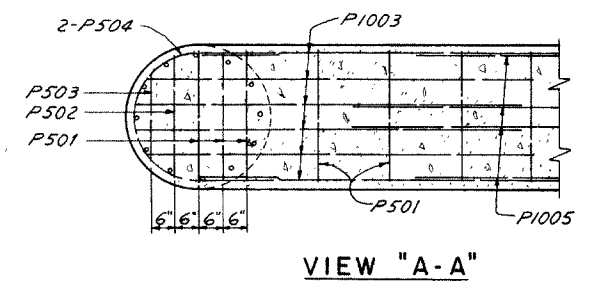
SECTION "E-E"



ELEVATION

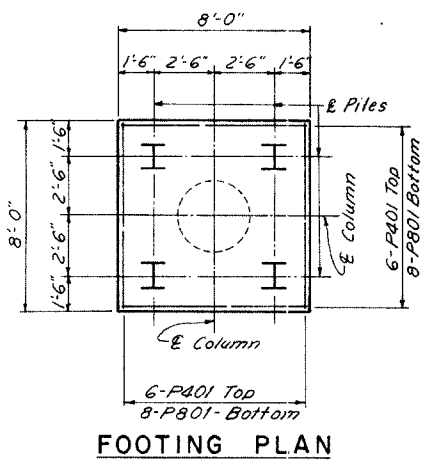


SECTION "BB"



VIEW "A-A"

**NOTES**  
**CONCRETE:** All concrete for pier footings shall be Class "E" and all concrete above footings shall be Class "C".  
**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.  
**GENERAL NOTES:** See Sheet 276



FOOTING PLAN

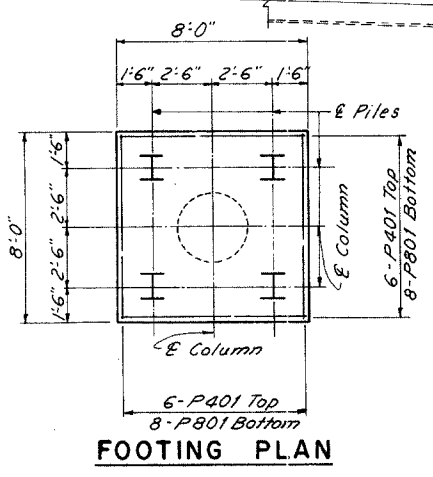
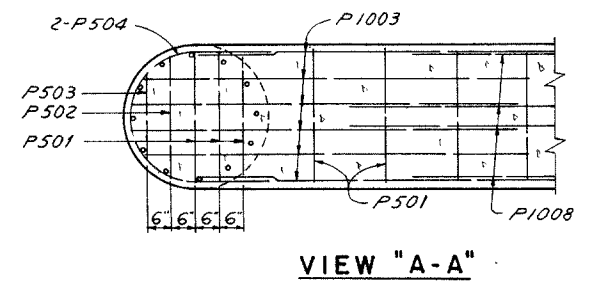
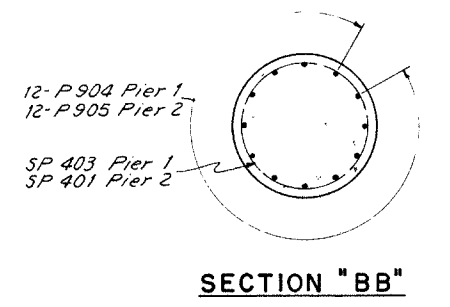
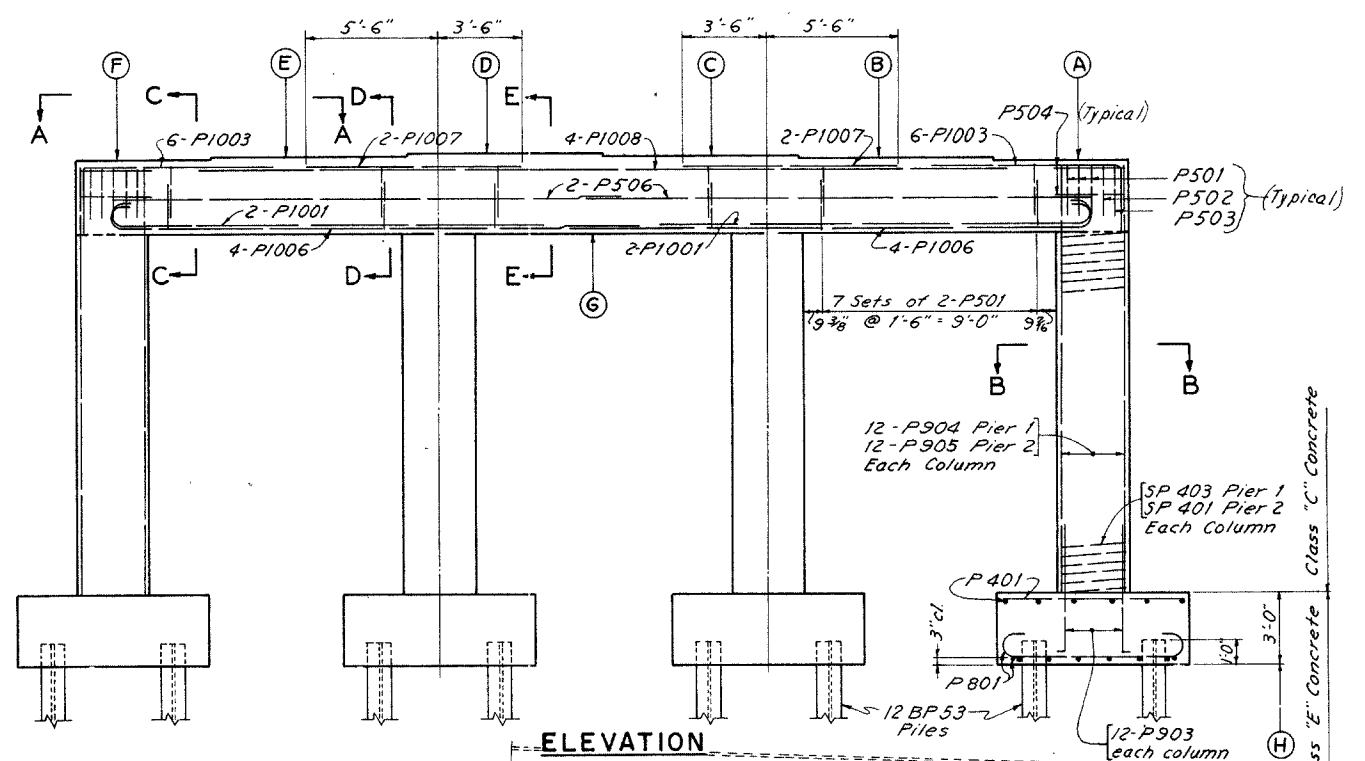
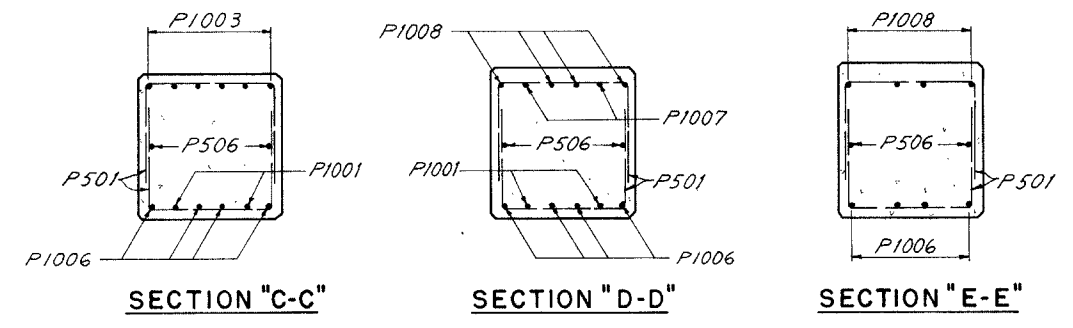
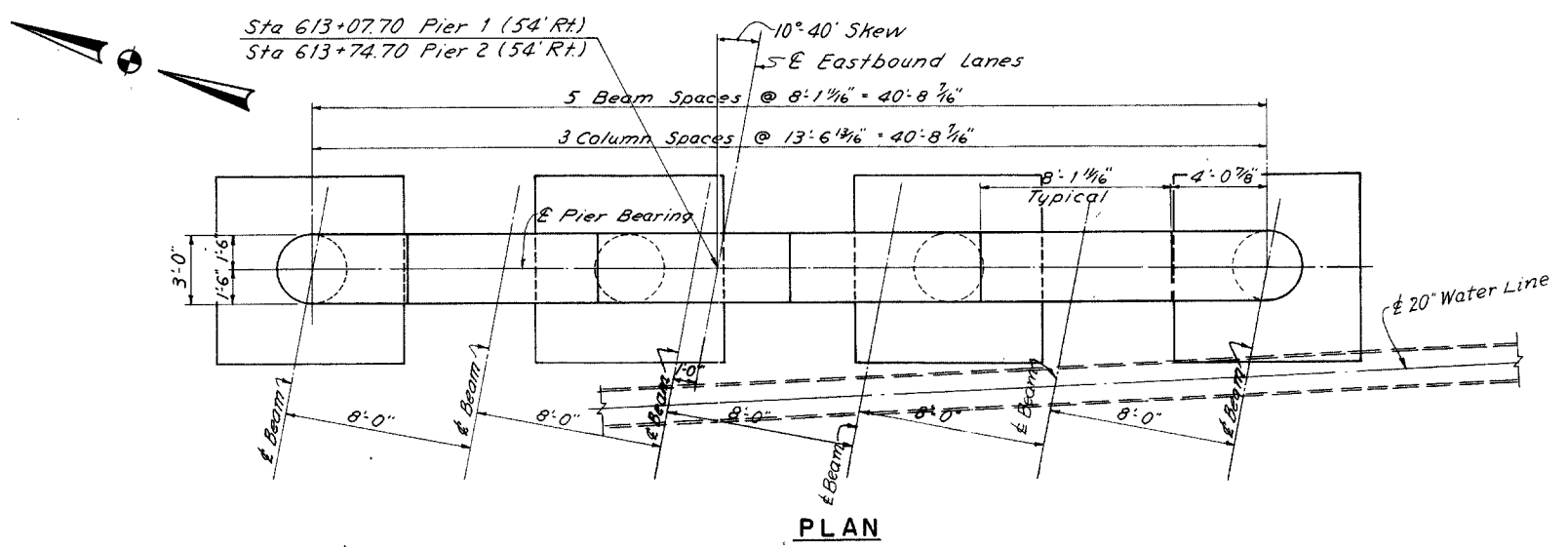
TABLE OF ELEVATION								
LOCATION	A	B	C	D	E	F	G	H
Pier 1	743.21	743.33	743.46	743.55	743.42	743.30	740.21	723.50
Pier 2	743.43	743.55	743.67	743.76	743.63	743.50	740.43	725.20

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Consulting Engineers  
MANSFIELD, OHIO.

**PIERS - LEFT BRIDGE**  
BRIDGE NO. LOR-254-1160 L&R  
OVER LAKE AVENUE

LORAIN COUNTY S.R. 254  
STA. 612 + 31.40 TO STA. 614 + 00.60 - LEFT BRIDGE  
STA. 612 + 58.41 TO STA. 614 + 23.99 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	J.R.B.	J.W.C.			



LOCATION	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Pier 1	743.20	743.32	743.45	743.54	743.42	743.30	740.20	722.20
Pier 2	743.37	743.49	743.62	743.72	743.60	743.48	740.37	723.90

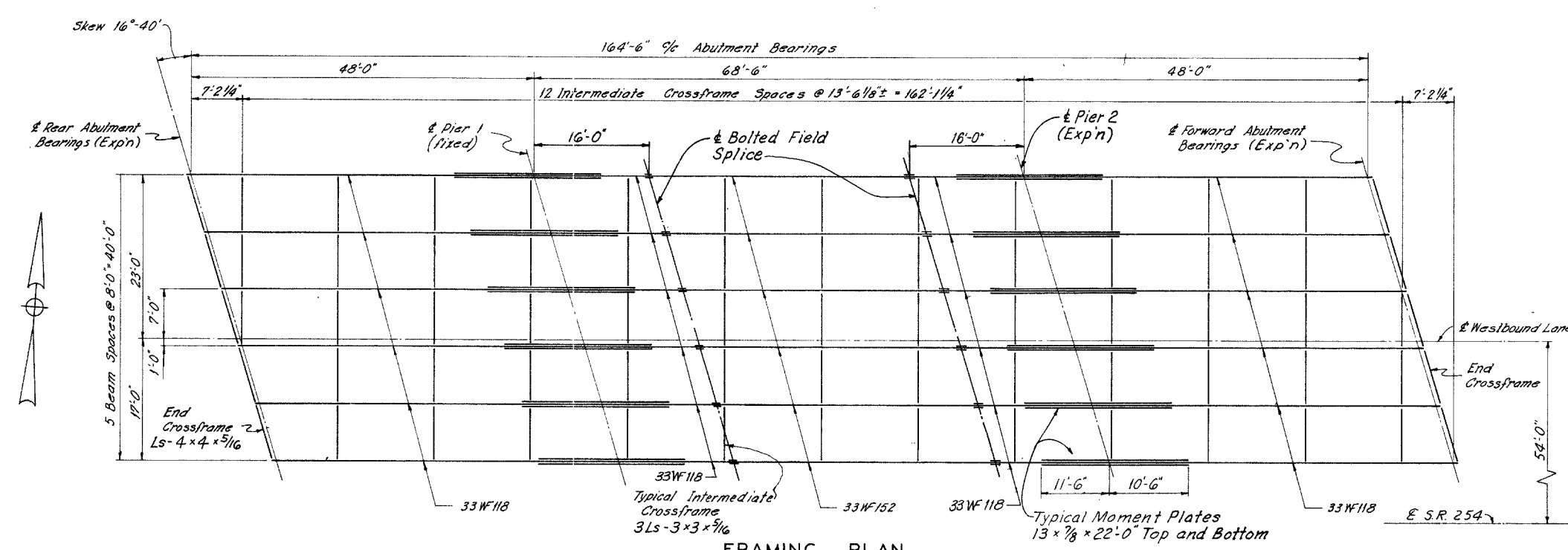
PIER NOTES: See Sheet 279

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**PIERS - RIGHT BRIDGE**  
**BRIDGE NO. LOR-254-1160 L&R**  
**OVER LAKE AVENUE**

LORAIN COUNTY S.R. 254  
STA. 612 + 31.40 TO STA. 614 + 00.60 - LEFT BRIDGE  
STA. 612 + 58.41 TO STA. 614 + 23.99 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	J.R.B.	J.W.C.			



**FRAMING PLAN**

**NOTES:**  
CAMBERING of each beam is required in accordance with the following table.

	DEFLECTION AND CAMBER			
	OUTSIDE BEAMS END SPANS	MIDDLE SPAN	INSIDE BEAMS END SPANS	MIDDLE SPAN
Deflection due to weight of steel	0"	0"	0"	0"
Deflection due to remaining dead load	3/16"	3/16"	3/16"	1/8"
Convexity required for vertical curve	1/16"	1/16"	1/16"	1/16"
Sum of deflection and convexity	1/8"	1/8"	1/8"	5/16"
Required camber	0"	0"	0"	0"

**END CROSSFRAMES, END DAMS, GUTTERS, SCUPPERS, AND CURB PLATE DETAILS:** See Std. Dwg. SD-1-63, Sheets 2 thru 4 of 4.

**RAILING:** See Std. Dwg. AR-1-57

**RAILING POST, PARAPET EXPANSION JOINT, AND SCUPPER SPACING:** See sheet 276

**CONCRETE:** All superstructure concrete shall be Class "C".

**BEARINGS:** See Std. Dwg. F5B-1-62 for the following:  
E-100 Abutments  
F-200 Pier 1  
E-200 Pier 2

**GENERAL NOTES:** See sheet 276

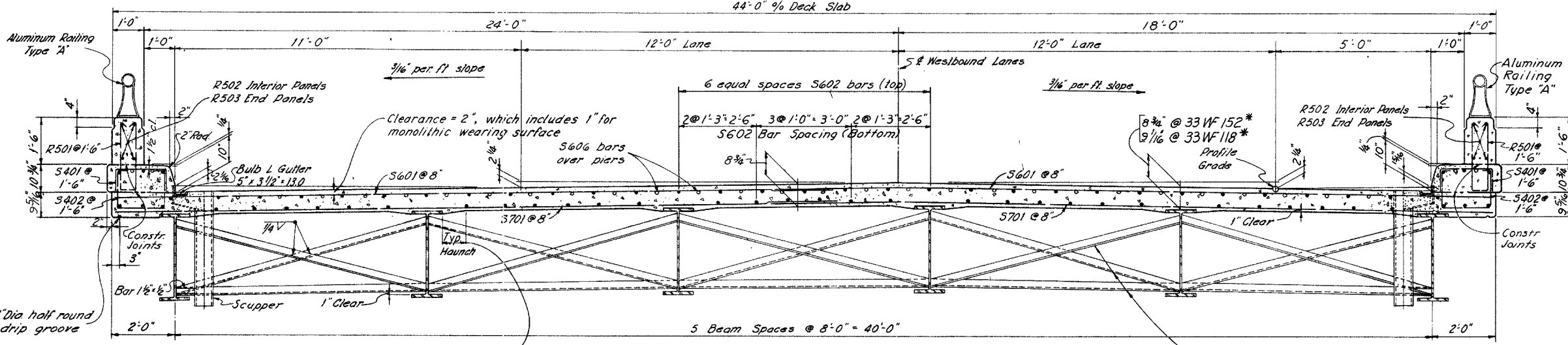
**DESIGN SPECIFICATIONS:** Shall conform to those specified on sheet 276, except strength of splices, which conform to Sec. 1.6.31 of the A.A.S.H.O. "Standard Specifications for Highway Bridges" dated 1961, together with current revisions.

**BOLTED FIELD SPLICES:**  
**UNIT STRESSES:** Structural Steel - ASTM A36 - Basic unit stress 20,000 psi. bending; 12,000 psi. shear. High Strength Bolts - ASTM A325 - basic unit stress 13,500 psi. shear; 40,000 psi. bearing.

**MATERIAL:** Splice Plates, fills and bolts shall be according to Item S-7. Bolts shall be 1" diameter, High Strength. The splice weight shall be included under Item S-7, Structural Steel, for payment.

**FILLS:** Shown on the plans are based on the nominal member sizes being spliced, however, in the final shop assembly, fills where necessary shall be furnished to the nearest 1/16 inch in thickness based on the actual measured sizes of the members being spliced. Drawing together of splice plates over material that varies by 1/16 inches or more in thickness, at the centerline of the splice, will not be permitted.

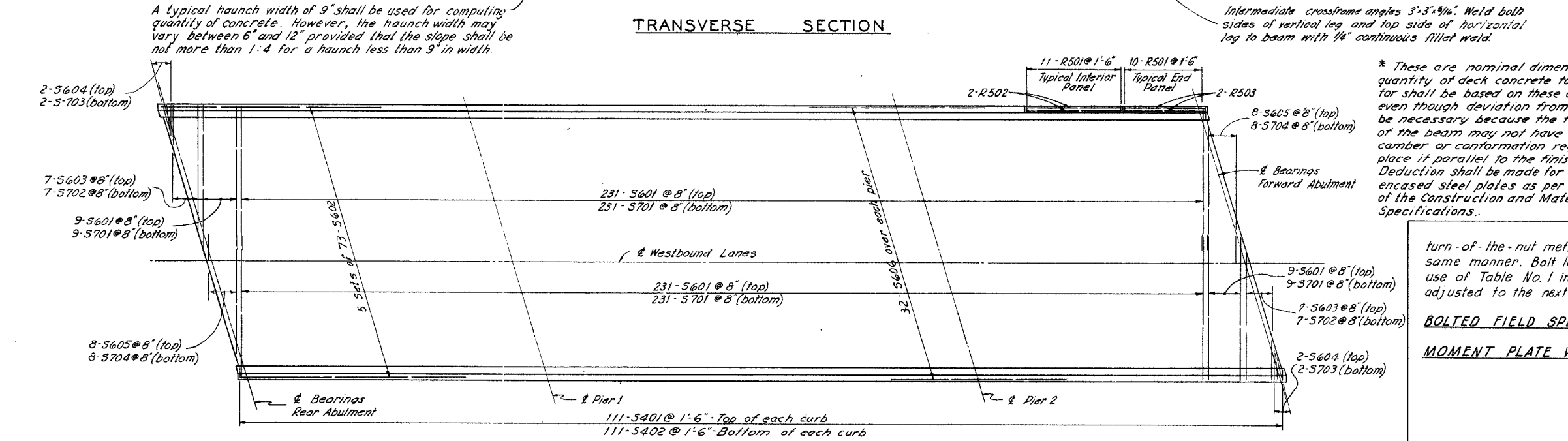
**FIELD ASSEMBLY:** In the final assembly of parts to be bolted, each beam shall be so supported that drift pins may be placed in a sufficient number of holes (not less than 25%) to provide and maintain accurate alignment of holes and parts. Heavy driving of drift pins will not be permitted. Sufficient bolts shall be installed and brought to a snug tight condition to bring all parts of the splice into complete contact before the member is released. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-the-nut method. Drift pins shall then be replaced with bolts and tightened in the same manner. Bolt lengths determined by the use of Table No. 1 in Sec. 5-7.10 shall be adjusted to the next 1/4-inch length increment.



**TRANSVERSE SECTION**

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.

\* These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 5-1.25 of the Construction and Material Specifications.



**SLAB PLAN**

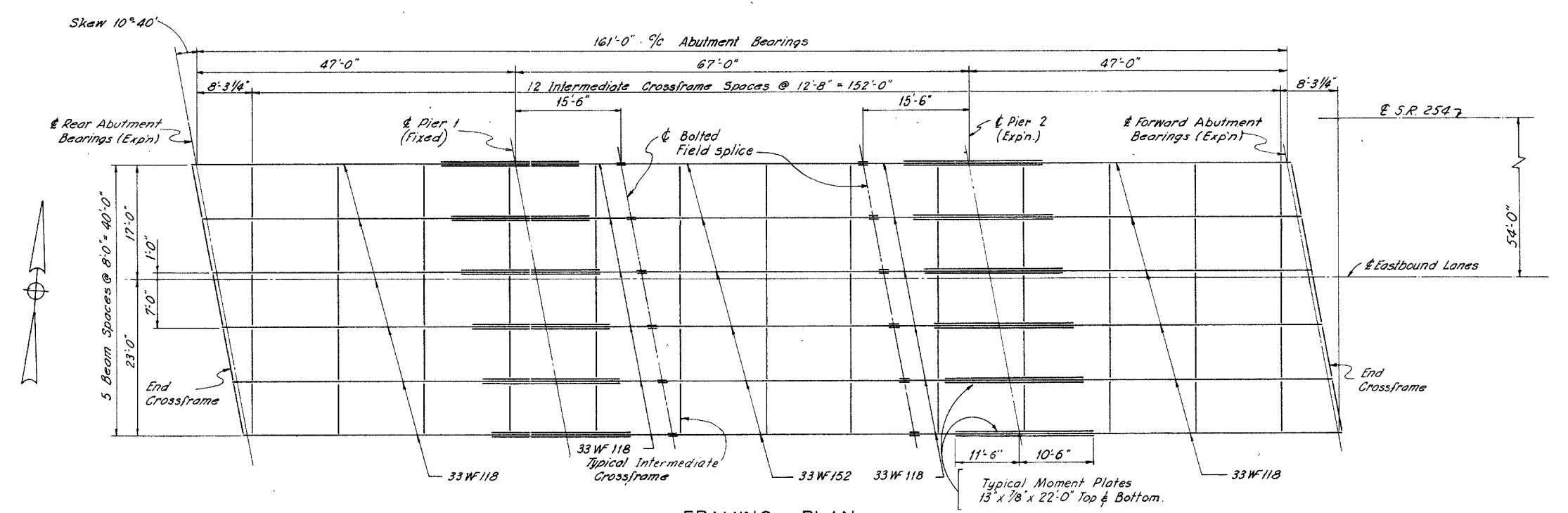
**BOLTED FIELD SPlice DETAIL:** See sheet 282  
**MOMENT PLATE WELDING DETAIL:** See sheet 283

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO.

**SUPERSTRUCTURE - LEFT BRIDGE**  
BRIDGE NO. LOR-254-1160 L&R  
OVER LAKE AVENUE

LORAIN COUNTY S.R. 254  
STA. 612 + 31.40 TO STA. 614 + 00.60 - LEFT BRIDGE  
STA. 612 + 08.41 TO STA. 614 + 23.99 - RIGHT BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.C.	J.W.C.	J.W.C.	J.E.G.			



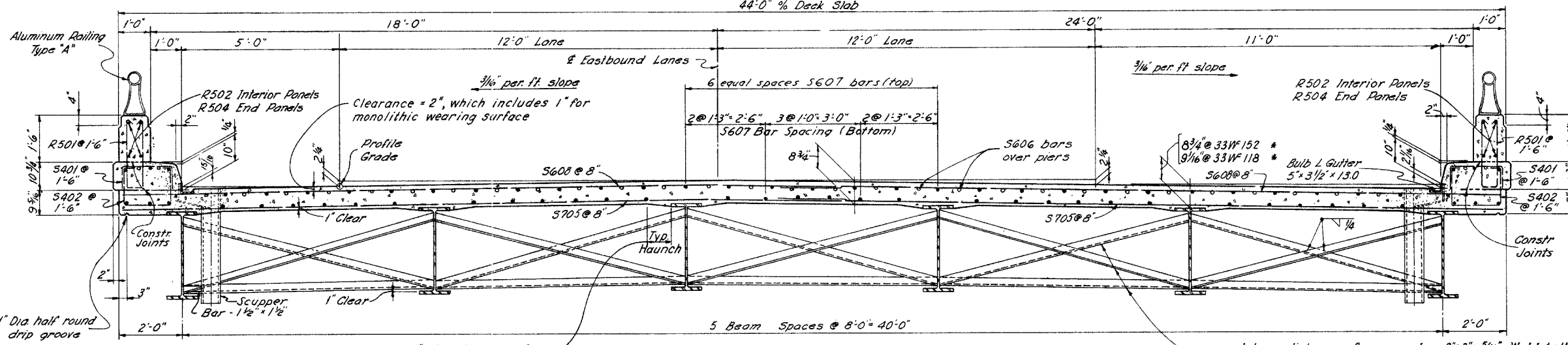
**FRAMING PLAN**

**NOTES:**  
CAMBERING of each beam is required in accordance with the following table:

	DEFLECTION AND CAMBER			
	OUTSIDE BEAMS END SPANS	MIDDLE SPAN	INSIDE BEAMS END SPANS	MIDDLE SPAN
Deflection due to weight of steel	0"	0"	0"	0"
Deflection due to remaining dead load	3/16"	3/16"	3/16"	1/4"
Convexity required for vertical curve	1/16"	0"	1/16"	0"
Sum of deflection and convexity	1/8"	3/16"	1/4"	1/4"
Required Camber	0"	0"	0"	0"

**END CROSSFRAMES, END DAMS, GUTTERS, SCUPPERS, AND CURB PLATE DETAILS:** See Std. Dwg. SD-1-63, Sheets 2 thru 4 of 4. Raise Abutment end of beams 1/16".

- RAILING:** See Std. Dwg. AR-1-57, Type A
- RAILING POST, PARAPET EXPANSION JOINT, AND SCUPPER SPACING:** See sheet 276
- CONCRETE:** All superstructure concrete shall be Class "C".
- BEARINGS:** See Std. Dwg. FS8-1-62 for the following:  
E-100 Abutments  
F-200 Pier 1  
E-200 Pier 2
- GENERAL NOTES:** See sheet 276
- BOLTED FIELD SPLICE NOTES:** See sheet 281
- MOMENT PLATE WELDING DETAIL:** See sheet 283

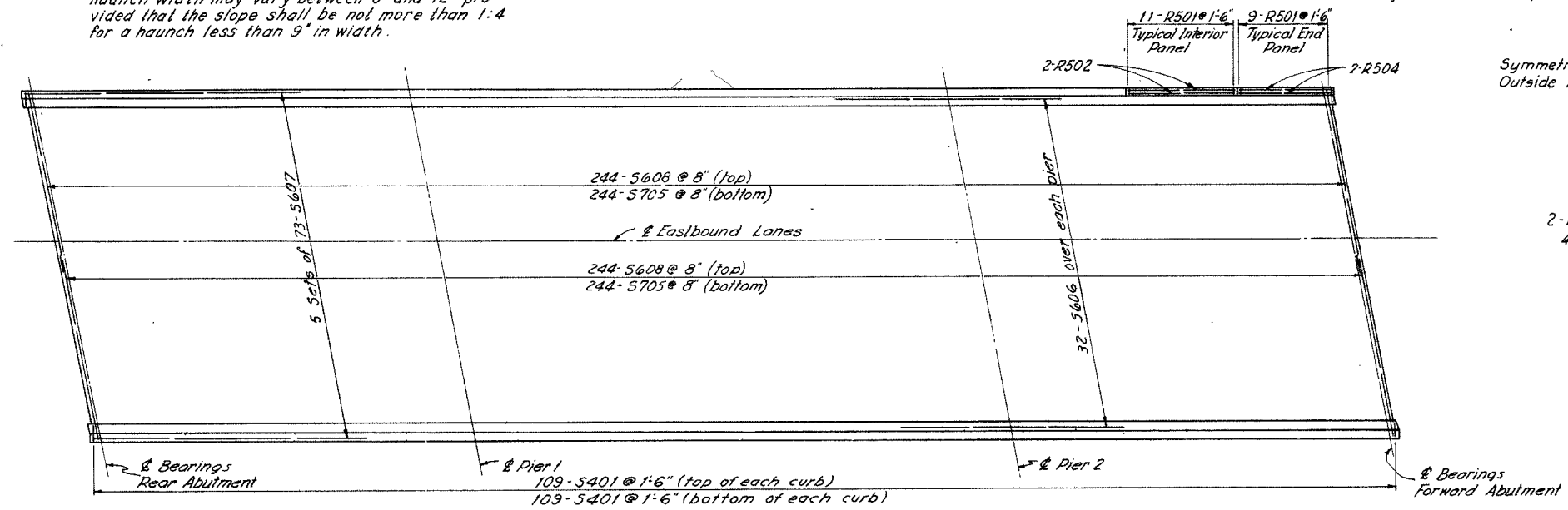


**TRANSVERSE SECTION**

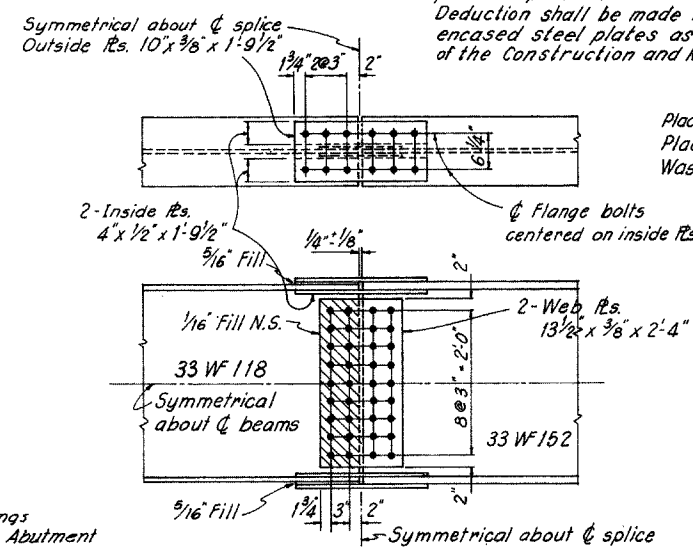
A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

Intermediate crossframe angles 3" x 3" x 3/16". Weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld.

\* These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. S-1.25 of the Construction and Material Specifications.



**SLAB PLAN**



**BOLTED FIELD SPLICE DETAIL**

**SHAFFER, PARRETT AND ASSOCIATES**  
Consulting Engineers  
MANSFIELD, OHIO.

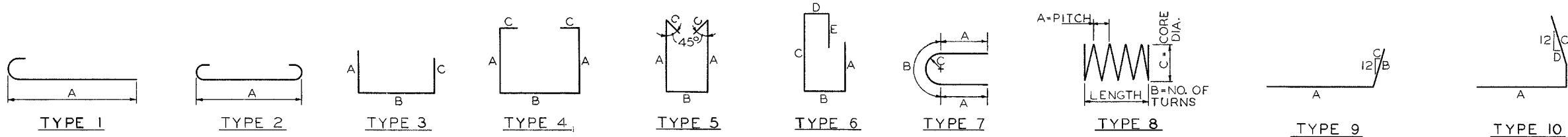
**SUPERSTRUCTURE - RIGHT BRIDGE**  
**BRIDGE NO. LOR-254-1160 L&R**  
**OVER LAKE AVENUE**

LORAIN COUNTY  
STA. 612 + 31.40 TO STA. 614 + 00.60 - LEFT BRIDGE  
STA. 612 + 58.41 TO STA. 614 + 23.99 - RIGHT BRIDGE

S.R. 254  
DATE REVISION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.C.	J.W.C.	J.W.C.	J.E.G.			





ABUTMENTS													
MARK	NUMBER			LENGTH	TYPE	WEIGHT							
	LBRIDGE	RBRIDGE	TOTAL			A	B	C	D	E	LBRIDGE	RBRIDGE	TOTAL
R501	36	32	68	5'-5"	5	2'-3"	8"	4"			203	181	384
R505	8	8	16	10'-11"	Str.						*	*	*
R506	8	8	16	11'-9"	Str.						*	*	*
R507	8	8	16	10'-6"	Str.						*	*	*
A401	22	22	44	4'-1"	3	1'-6"	1'-4"	1'-6"			60	60	120
A402	24	24	48	4'-1"	3	1'-6"	1'-6"	1'-6"			60	60	120
A403	4		4	4'-2"	3	1'-6"	1'-5"	1'-6"			11		11
A501	124	124	248	9'-4"	3	2'-2"	5'-3"	2'-2"			1207	1207	2414
A502	62	60	122	6'-11"	3	6'-6"	6"	0			447	433	880
A503	112	112	224	7'-0"	3	1'-11"	3'-5"	1'-11"			818	818	1636
A504	64		64	23'-5"	Str.						1563		1563
A505	16	16	32	11'-0"	Str.						184	184	368
A506	22	22	44	3'-5"	3	4"	3'-0"	4"			78	78	156
A507	18	18	36	9'-10"	3	4'-4"	1'-2"	4'-7"			185	185	370
A508	18	18	36	8'-6"	Str.						160	160	320
A509	28	28	56	8'-3"	Str.						241	241	482
A510	36	32	68	3'-6"	Str.						131	117	248
A511	8		8	9'-9"	10	8'-4"	7"	1'-0"	3 1/2"		81		81
A512	12	12	24	7'-5"	3	3'-7"	6"	3'-7"			93	93	186
A513	8		8	10'-1"	9	8'-7"	1'-7"	3 1/2"			84		84
A514	8		8	12'-6"	10	11'-1"	7"	1'-0"	3 1/2"		104		104
A515	16	16	32	10'-0"	Str.						167	167	334
A516	8		8	13'-2"	9	11'-8"	1'-7"	3 1/2"			110		110
A517	44	44	88	5'-6"	Str.						252	252	504
A518	8	8	16	6'-2"	Str.						51	51	102
A519	8	8	16	4'-0"	Str.						33	33	66
A520		8	8	9'-9"	10	8'-4"	7"	1'-0"	2 1/4"			81	81
A521	64	64	128	22'-10"	Str.						1524		1524
A522	8	8	16	9'-10"	9	8'-5"	1'-7"	2 1/4"			82		82
A523	8	8	16	12'-0"	10	10'-8"	7"	1'-0"	2 1/4"		100		100
A524	8	8	16	12'-5"	9	11'-0"	1'-7"	2 1/4"			104		104
A601	32	32	64	14'-5"	6	4'-7"	1'-5"	6'-0"	11"	2'-2"	693	693	1386
A602	62	60	122	6'-10"	3	6'-6"	6"	0			636	616	1252
A603	30	28	58	13'-1"	3	6'-0"	1'-5"	6'-0"			590	550	1140
A801	28		28	24'-11"	Str.						1863		1863
A802		28	28	24'-3"	Str.							1813	1813
<b>TOTAL WEIGHT</b>						<b>10106</b>	<b>9883</b>	<b>19988</b>					

① 1'-4" to 8". Vary 4 each by 1/8".  
② 4'-1" to 3'-5". Vary 4 each by 1/8".

\* These railing bars are included with Item 5-14 for payment.

REPLACEMENT BARS		
MARK	LENGTH	NUMBER
RE400	5'-3"	1
RE500	5'-7"	2
RE600	5'-11"	9
RE700	6'-3"	5
RE800	6'-6"	1
RE900	6'-10"	2
RE1000	7'-2"	1

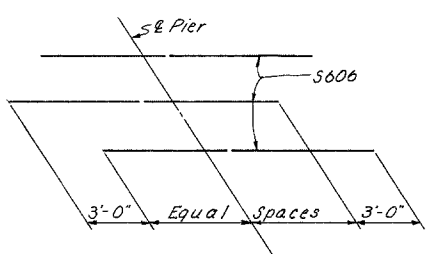
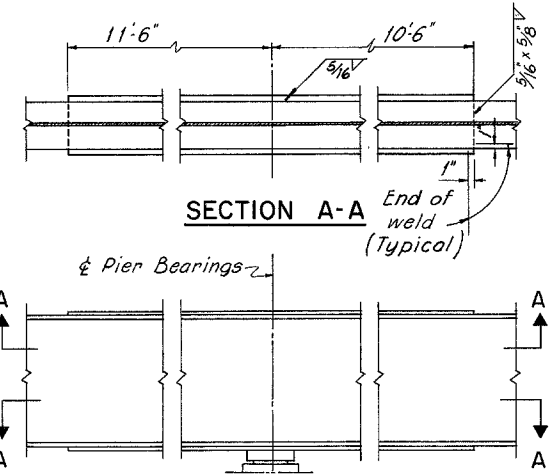


DIAGRAM SHOWING STAGGER OF S606 BARS OVER PIERS

SUPERSTRUCTURE													
MARK	NUMBER			LENGTH	TYPE	WEIGHT							
	LBRIDGE	RBRIDGE	TOTAL			A	B	C	D	E	LBRIDGE	RBRIDGE	TOTAL
R501	238	234	472	5'-5"	5	2'-3"	8"	4"			1345	1322	2667
R502	72	72	144	15'-2"	Str.						*	*	*
R503	16		16	13'-0"	Str.						*	*	*
R504		16	16	11'-3"	Str.						*	*	*
S401	222	218	440	2'-9"	3	8"	1'-8"	8"			408	400	808
S402	222	218	440	4'-6"	4	1'-4"	1'-8"	4"			667	655	1322
S601	480		480	22'-9"	Str.						16402		16402
S602	365		365	34'-8"	Str.						19005		19005
S603	14		14	Varies	Str.	7'-4"	to 20'-8 1/2"	Var 2 each by 2'-2 3/4"			295		295
S604	4		4	6'-0"	Str.						36		36
S605	16		16	Varies	Str.	4'-5"	to 20'-0"	Var 2 each by 2'-2 3/4"			293		293
S606	64	64	128	26'-0"	Str.						2499	2499	4998
S607		365	365	33'-11"	Str.							18594	18594
S608		488	488	23'-1"	Str.							16920	16920
S701	480		480	22'-11"	Str.						22484		22484
S702	14		14	Varies	Str.	7'-4"	to 20'-8 1/2"	Var 2 each by 2'-2 3/4"			401		401
S703	4		4	6'-0"	Str.						49		49
S704	16		16	Varies	Str.	4'-5"	to 20'-0"	Var 2 each by 2'-2 3/4"			399		399
S705		488	488	23'-3"	Str.							23191	23191
<b>TOTAL WEIGHT</b>						<b>64283</b>	<b>63581</b>	<b>127864</b>					



PIERS													
MARK	NUMBER			LENGTH	TYPE	WEIGHT							
	LBRIDGE	RBRIDGE	TOTAL			A	B	C	D	E	LBRIDGE	RBRIDGE	TOTAL
P401	96	96	192	7'-6"	Str.						481	481	962
P501	96	96	192	6'-9"	3	2'-2"	2'-8"	2'-2"			676	676	1352
P502	4	4	8	6'-7"	3	2'-2"	2'-6"	2'-2"			27	27	54
P503	4	4	8	6'-0"	3	2'-2"	1'-11"	2'-2"			25	25	50
P504	8	8	16	7'-4"	7	1'-7"	4'-2"	1'-4"			61	61	122
P505	8		8	21'-8"	Str.						181		181
P506		8	8	21'-2"	Str.							177	177
P801	128	128	256	9'-8"	2	7'-6"					3304	3304	6608
P901	48		48	16'-6"	Str.						2693		2693
P902	48		48	15'-1"	Str.						2462		2462
P903	96	96	192	5'-9"	3	5'-6"	6"	0			1877	1877	3754
P904		48	48	17'-10"	Str.							2910	2910
P905		48	48	16'-3"	Str.							2652	2652
P1001	8	8	16	19'-4"	1	17'-11"					667	667	1334
P1002	16		16	23'-11"	1	22'-6"					1647		1647
P1003	24	24	48	10'-7"	3	8'-0"	2'-10"	0			1093	1093	2186
P1004	8		8	10'-0"	Str.						344		344
P1005	8		8	34'-6"	Str.						1188		1188
P1006		16	16	23'-5"	1	22'-0"						1612	1612
P1007		8	8	9'-0"	Str.							310	310
P1008		8	8	33'-7"	Str.							1156	1156
SP401	4	4	8	13'-8"	8	4 1/2"	40	32"			1045	1045	2090
SP402	4		4	12'-3"	8	4 1/2"	36	32"			939		939
SP403		4	4	15'-0"	8	4 1/2"	43	32"				1126	1126
<b>TOTAL WEIGHT</b>						<b>18740</b>	<b>19199</b>	<b>37939</b>					

NOTES  
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 P1008 is a No. 10 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 cap. The "No. of Turns" shown is the "Length" divided

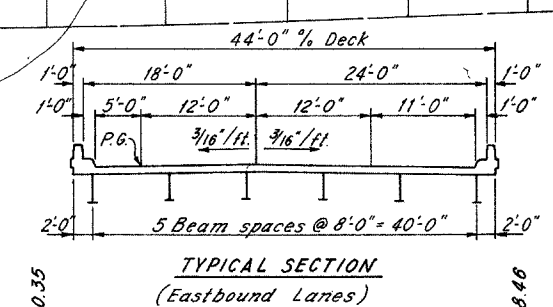
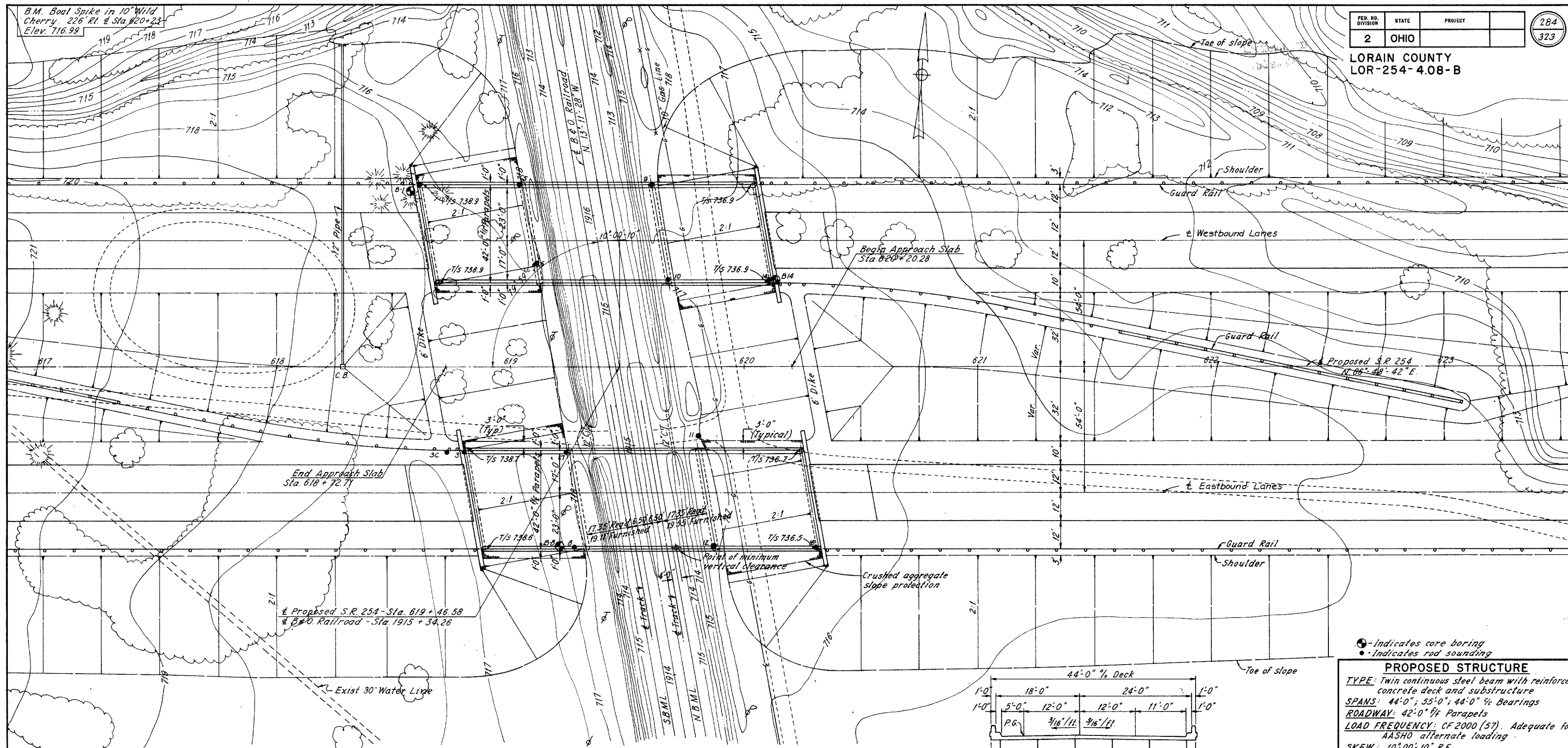
by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 5-4. 1/2 closed coils shall be provided at the ends of each spiral

unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

B.M. Boal Spike in 10" Wild Cherry, 226' RI. & Sta. 620+23 Elev. 716.99

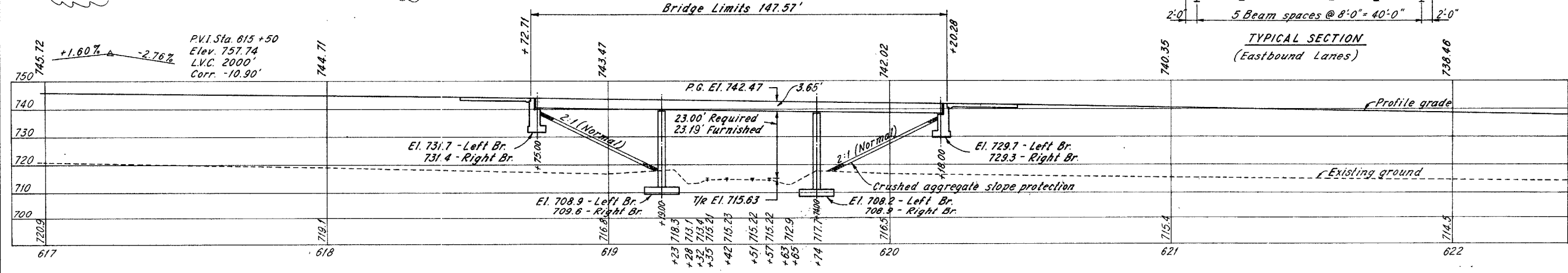
FED. RD. DIVISION	STATE	PROJECT	284
2	OHIO		323

LORAIN COUNTY  
LOR-254-4.08-B



⊕ Indicates core boring  
 ⊙ Indicates rod sounding

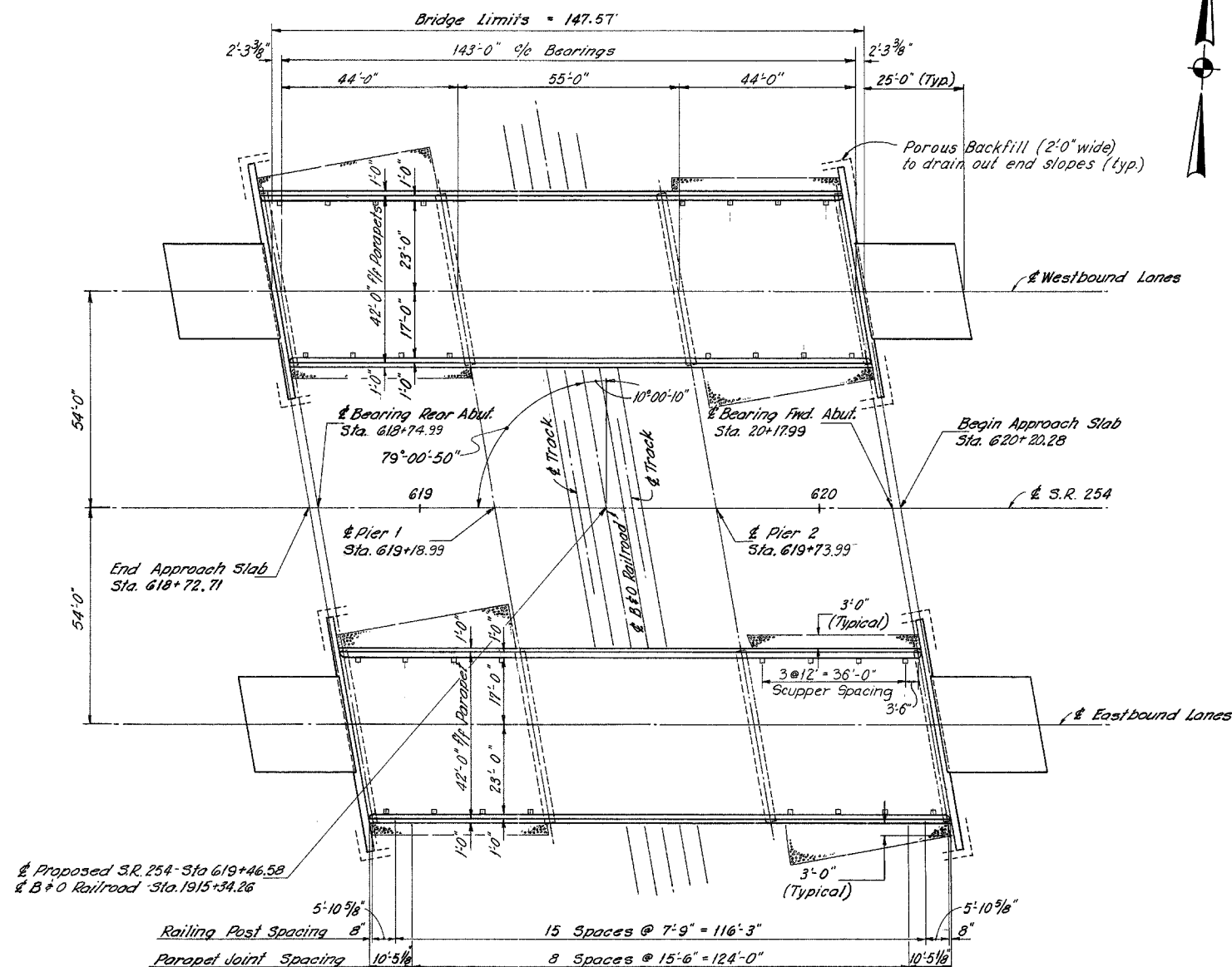
**PROPOSED STRUCTURE**  
 TYPE: Twin continuous steel beam with reinforced concrete deck and substructure  
 SPANS: 44'-0"; 55'-0"; 44'-0" 1/4 Bearings  
 ROADWAY: 42'-0" 1/4 Parapets  
 LOAD FREQUENCY: CF 2000 (57). Adequate for AASHTO alternate loading  
 SKEW: 10°00'10" RF  
 WEARING SURFACE: 1" Monolithic concrete  
 APPROACH SLABS: A5-1-54 (25' long)  
 ALIGNMENT: Tangent  
 AVERAGE DAILY TRAFFIC: 19,510 (1975)



SHAFFER, PARRETT AND ASSOCIATES  
 Consulting Engineers  
 Mansfield, Ohio.

**SITE PLAN**  
 BRIDGE NO. LOR-254-1172 L&R  
 OVER B & O RAILROAD  
 LORAIN COUNTY S.R. 254  
 STA. 618 + 72.71 TO STA. 620 + 20.28

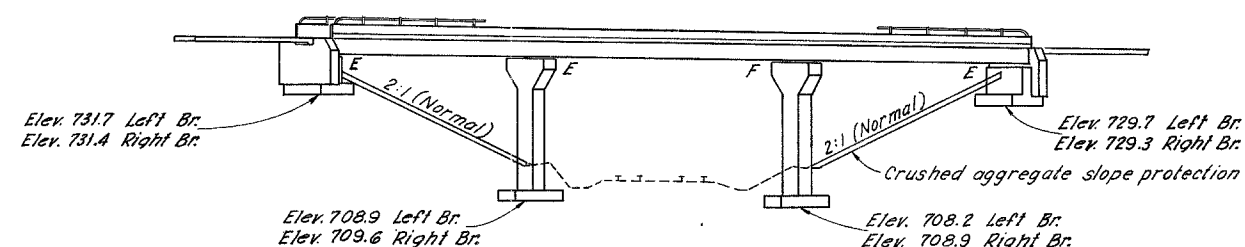
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	RAK	J.W.C.			



GENERAL PLAN

NOTE:  
Railing Post Spacing and Parapet Joint Spacing are the same for both bridges.

PVI Sta. 615+50  
Elev. 757.74  
L.V.G. 2000'  
Corr. -10.90



GENERAL ELEVATION

ITEM	TOTAL	UNIT	DESCRIPTION	ESTIMATED QUANTITIES			
				SUPER	ABUTS	PIERS	GENERAL
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	777	Cu. Yds.	Unclassified Excavation		462	315	
S-1	386	Cu. Yds.	Class "C" concrete, superstructure	386			
S-1	233	Cu. Yds.	Class "C" concrete, piers above footings			233	
S-1	74	Cu. Yds.	Class "E" concrete, pier footings			74	
S-1	337	Cu. Yds.	Class "E" concrete, abutments		337		
S-4	152,665	Lbs.	Reinforcing steel	111,705	17,142	23,818	
S-7	281,600	Lbs.	Structural steel	281,600			
S-8	281,600	Lbs.	Field painting structural steel	281,600			
S-14	579.42	Lin. Ft.	Railing, Type A (Aluminum rail, supports, & conc. parapets)	579.42			
S-29	32	Each	Scuppers, including supports	32			
S-29	71	Cu. Yds.	Porous backfill		71		
S101	386	Each	Water-reducing, set-retarding admixture	386			
T-10	1,123	Sq. Yds.	Crushed aggregate slope protection				1,123


GENERAL NOTES

UNIT STRESSES: DESIGN LOADING CF 2000(57)

Concrete Class "C" - basic unit stress 1,333 p.s.i.  
Concrete Class "E" - basic unit stress 1,133 p.s.i.  
Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i. (ASTM A7 and A373 steel not permitted)  
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i.

REFERENCE shall be made to Standard Drawings AS-154 (revised 7-5-62), AR-1-57 (revised 4-2-62), FSB-1-62 (revised 1-15-63) and SD-1-63, Sheets 2,3 and 4 of 4 (dated 11-12-63) and Supplemental Specifications S-101 (dated 7-12-62) and S-307 (revised 10-1-64).

DESIGN SPECIFICATIONS: This structure conforms to the requirements of Design Specifications for Highway Structures of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof, except strength of splices, which shall conform to Sec. 16.31 of the AASHTO "Standard Specifications for Highway Bridges" dated 1961, together with current revisions thereof.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class B welds are shown thus 

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

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

SURFACE FINISH OF CONCRETE: The requirements of Sec. 5-1.22, Rubbed Finish, shall apply to the following exposed concrete surfaces: The entire superstructure except the top and bottom surfaces of sidewalks and roadways and the entire surface of piers and abutments except bridge seats, back walls and the face of spill-through abutments between outside beams.

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

UTILITY LINES OTHER THAN RAILROAD AERIAL LINES:

All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and the Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

RAILROAD AERIAL LINES will be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

CONSTRUCTION CLEARANCE of 20' vertically above the top of the railroad rails and 8' horizontally from the center of the tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the Supervision of the Railroad Company, nothing in Sec. E-2.04, E-2.08 or 6-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

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, and after a waiting period of 60 days, excavation shall be made for the abutments and for piers that are set in the filled area.

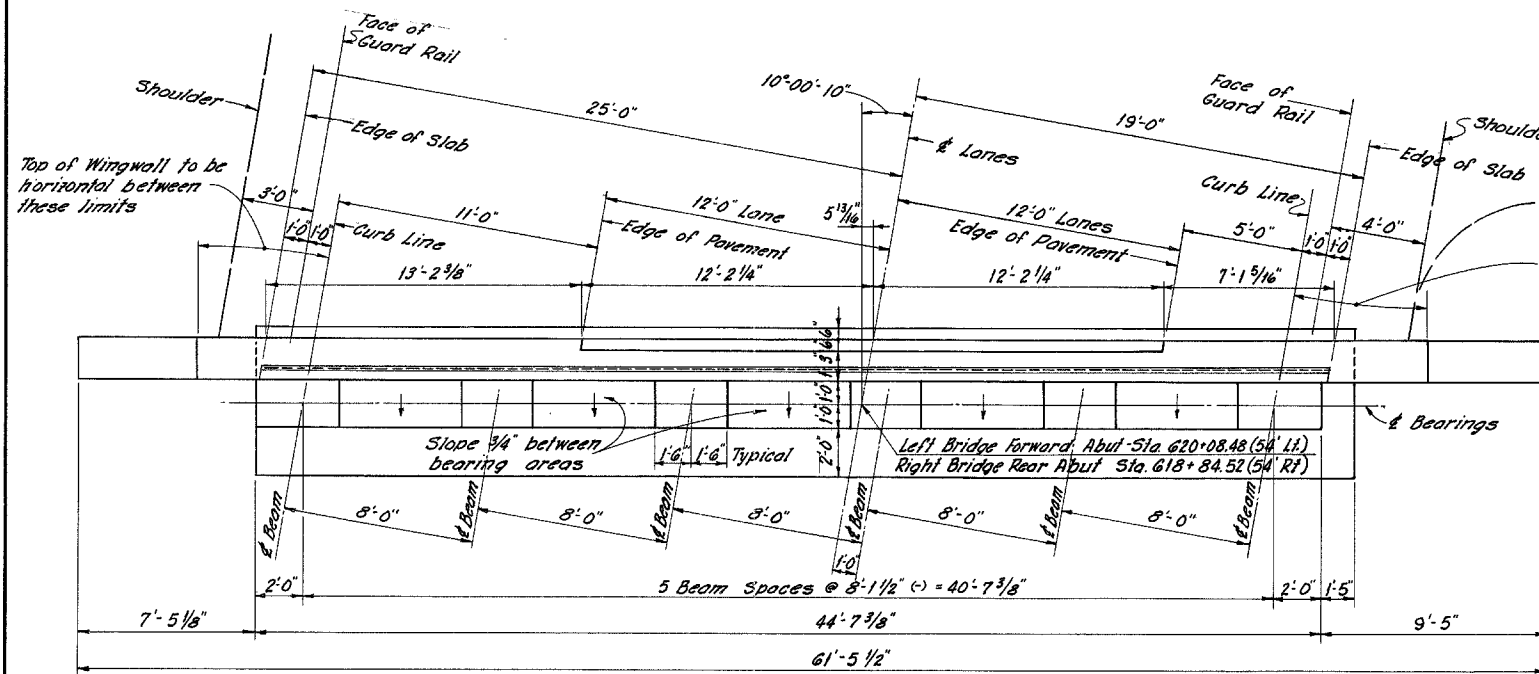
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Consulting Engineers  
MANSFIELD, OHIO

GENERAL PLAN, GENERAL NOTES  
AND ESTIMATED QUANTITIES  
BRIDGE NO. LOR-254-1172 L&R  
OVER B&O RAILROAD

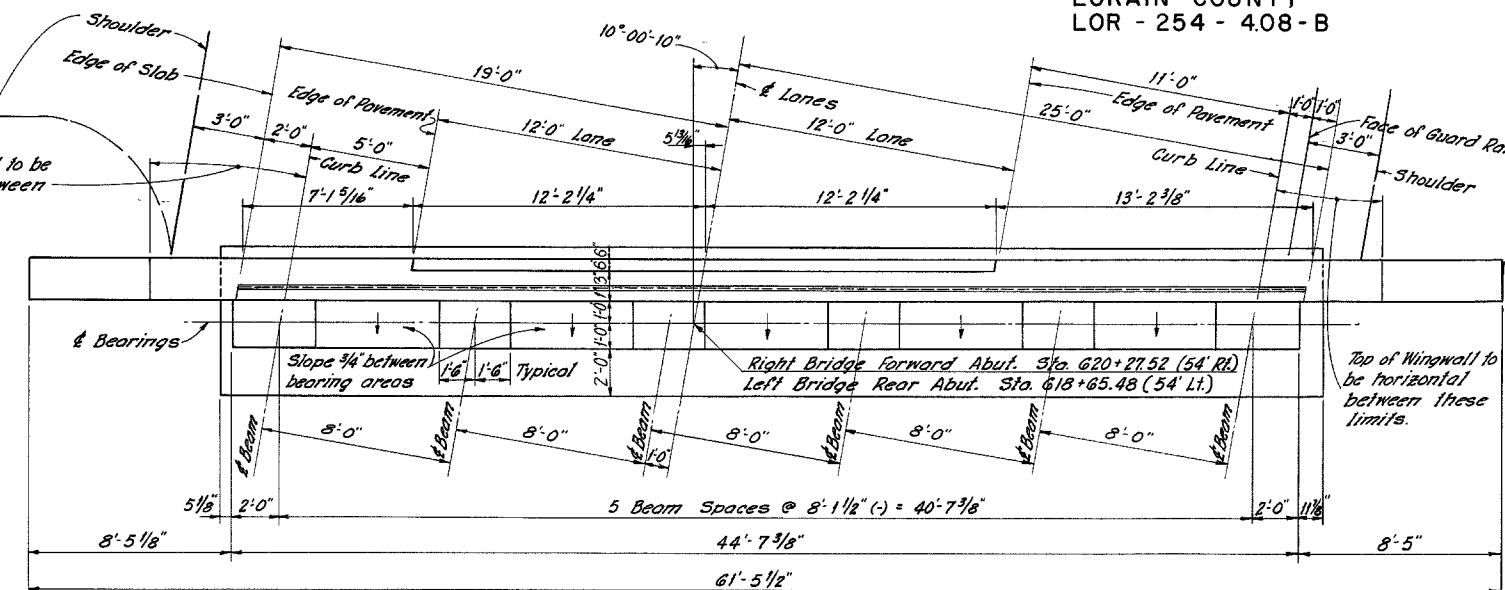
LORAIN COUNTY  
S.R. 254  
STA. 618 + 72.71 TO STA. 620 + 20.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.	J.C.	J.C.	RAK.			

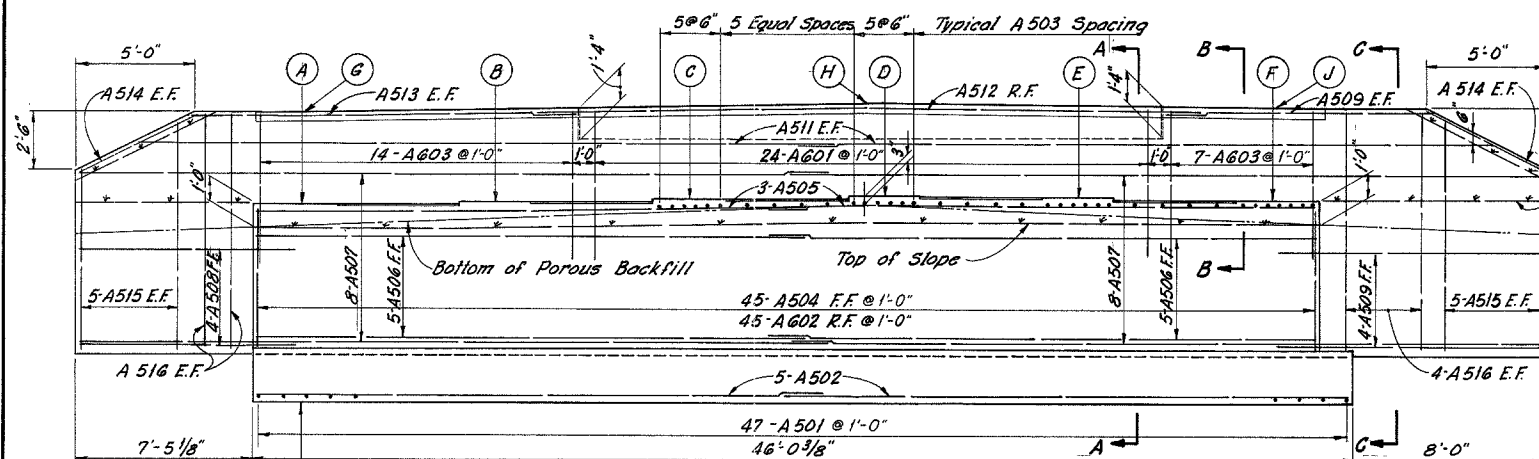
LORAIN COUNTY  
LOR - 254 - 408 - B



PLAN

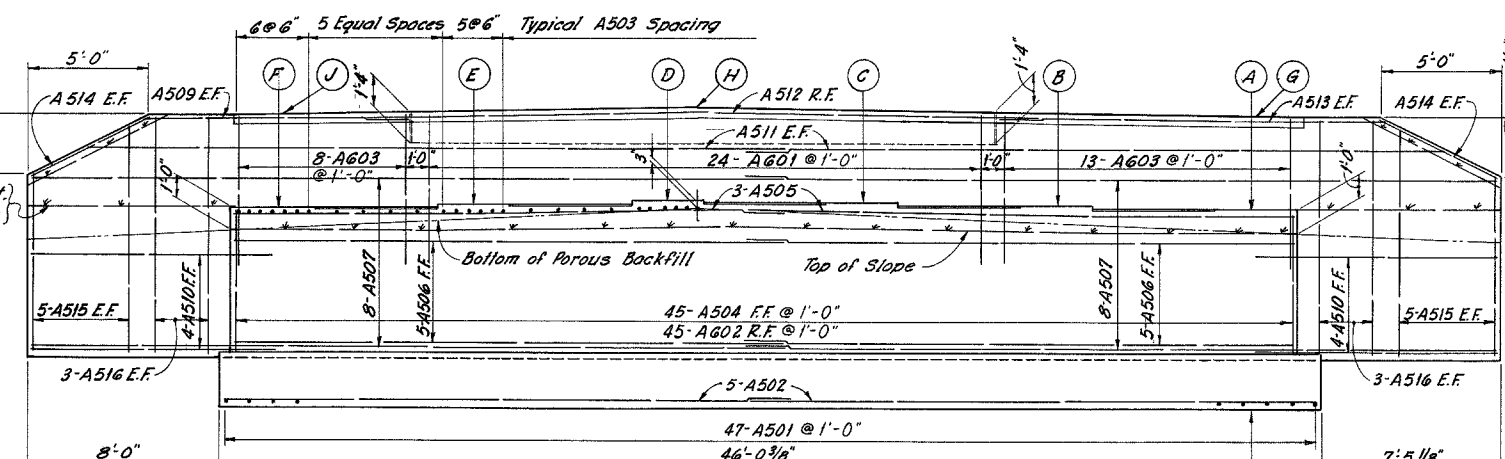


PLAN



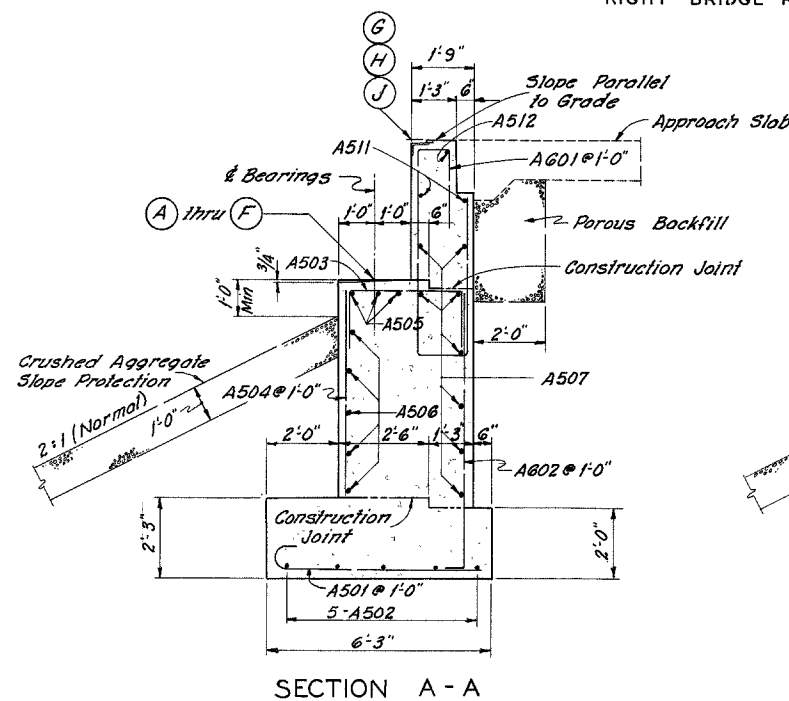
ELEVATION

LEFT BRIDGE FORWARD ABUT. LOOKING AHEAD  
RIGHT BRIDGE REAR ABUT. LOOKING BACK

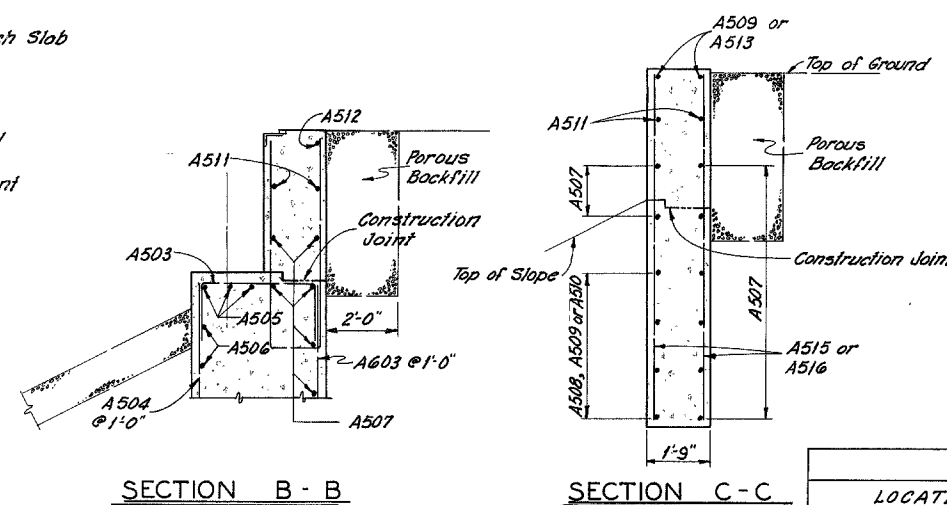


ELEVATION

RIGHT BRIDGE FORWARD ABUT. LOOKING AHEAD  
LEFT BRIDGE REAR ABUT. LOOKING BACK



SECTION A - A



SECTION B - B

SECTION C - C

NOTES

**FOUNDATION BEARING PRESSURE:** Abutment footings are designed for a maximum soil bearing pressure of 1.5 tons per sq. ft.

**ABUTMENT CONCRETE:** All abutment concrete shall be Class "E".

**POROUS BACKFILL:** shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

**NOTATION:** F.F. denotes Front Face.  
R.F. denotes Rear Face.  
E.F. denotes Each Face.

**GENERAL NOTES:** See Sheet 285

**BRIDGE SEAT REINFORCING:** Special care shall be taken placing reinforcing steel in the vicinity of the bridge seats so as to avoid interference with the drilling of anchor bar holes.

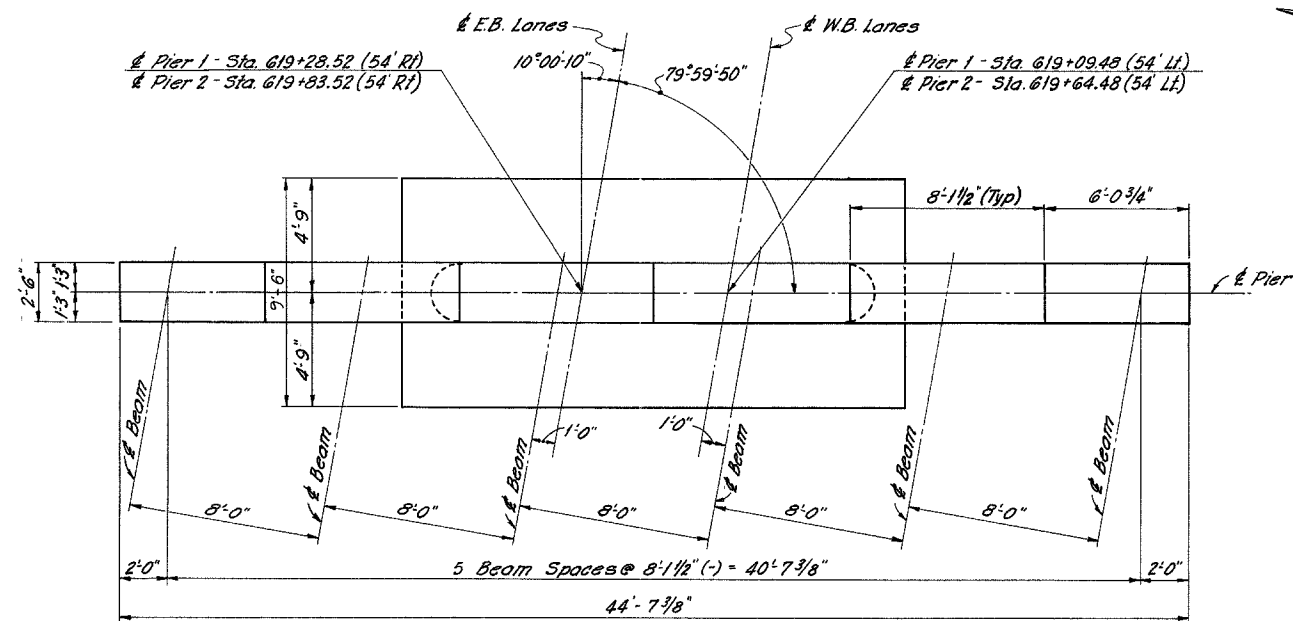
		TABLE OF ELEVATIONS									
LOCATION		A	B	C	D	E	F	G	H	J	K
REAR ABUTMENTS	Left Bridge	739.96	740.07	740.18	740.25	740.11	739.97	743.82	744.13	743.82	731.70
	Right Bridge	739.61	739.76	739.90	740.01	739.91	739.80	743.47	743.88	743.65	731.40
FORWARD ABUTMENTS	Left Bridge	737.94	738.04	738.15	738.22	738.07	737.92	741.77	742.06	741.75	729.70
	Right Bridge	737.50	737.65	737.80	737.92	737.81	737.71	741.33	741.76	741.54	729.30

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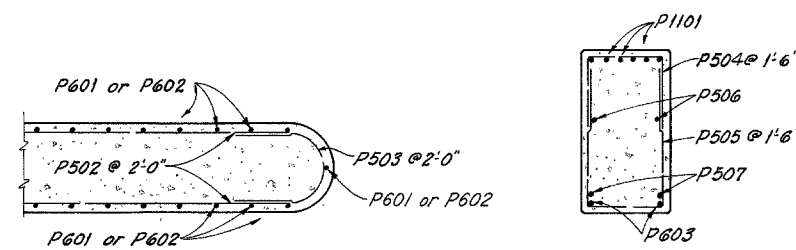
**ABUTMENTS**  
BRIDGE NO. LOR-254-1172 L&R  
OVER B & O RAILROAD

LORAIN COUNTY S.R. 254  
STA. 618 + 72.71 TO STA. 620 + 20.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK.	RAK.	JWC.	JWC.			

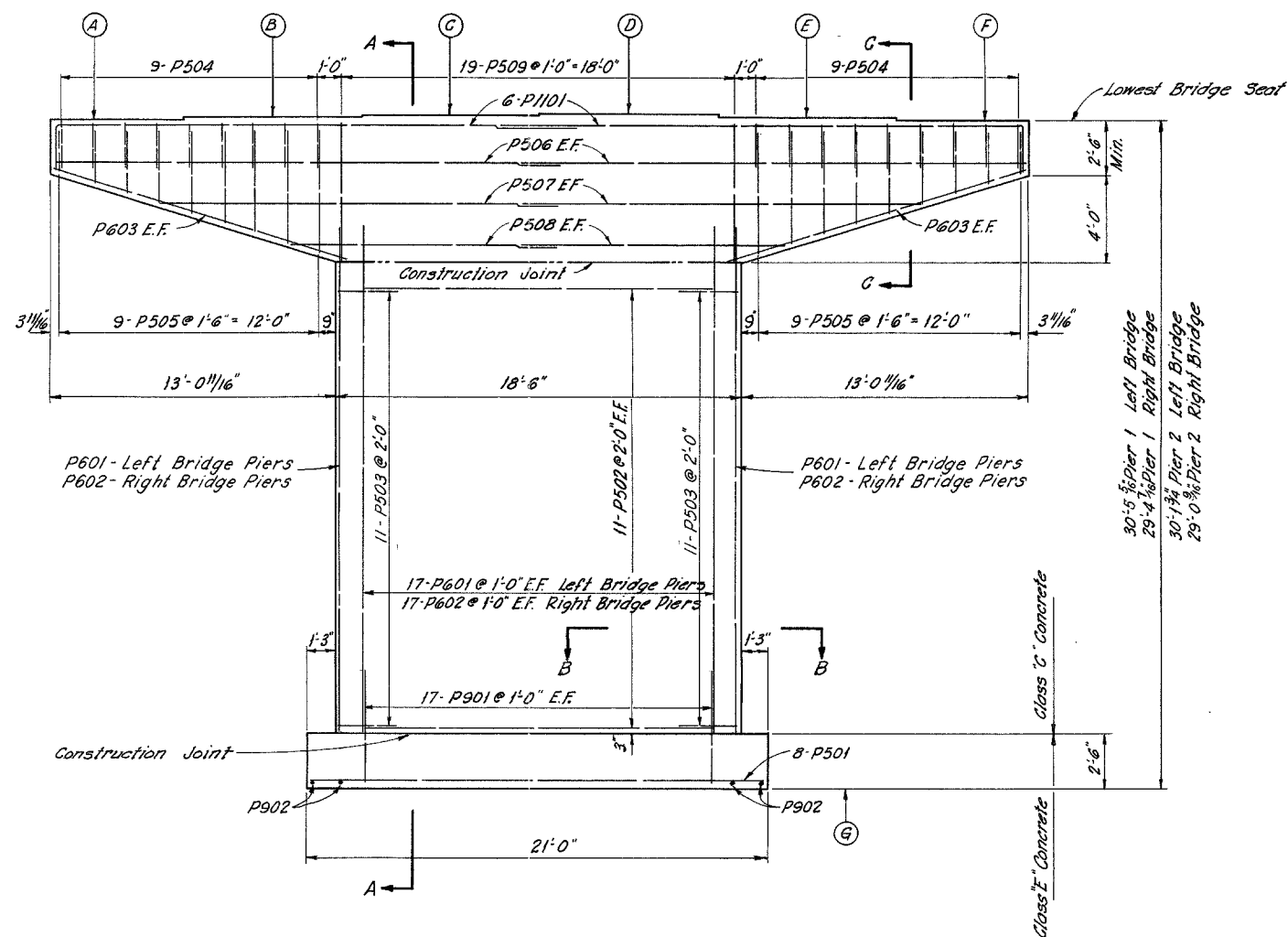


PLAN

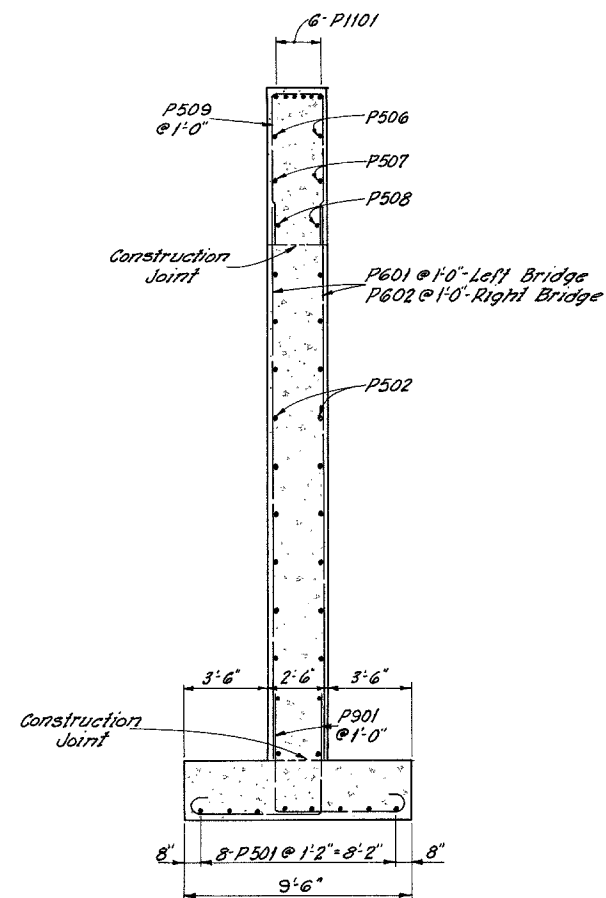


SECTION B - B

SECTION C - C



ELEVATION



SECTION A - A

NOTES

- CONCRETE: All pier concrete above footing construction joint shall be Class "C". Footing concrete shall be Class "E".
- FOUNDATION BEARING PRESSURE: Footings are designed for a maximum soil bearing pressure of 2.8 tons per sq. ft.
- E.F. denotes each face.
- GENERAL NOTES: See Sheet 285

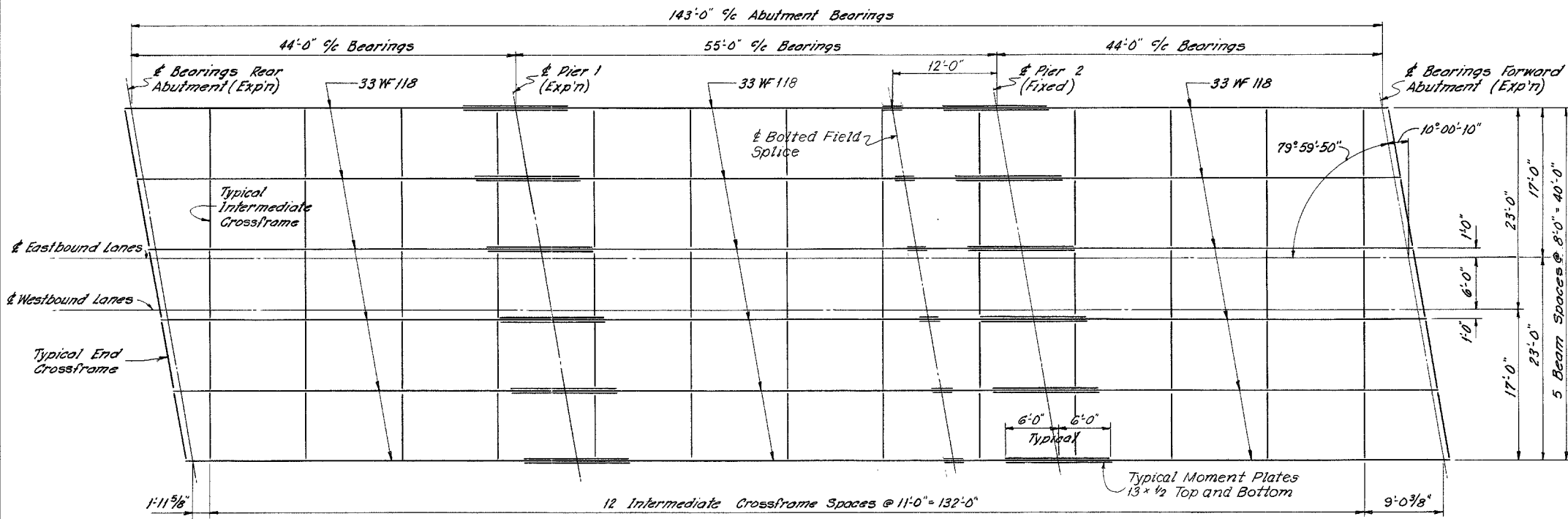
TABLE OF ELEVATIONS								
LOCATION		A	B	C	D	E	F	G
PIER 1	Left Bridge	739.35	739.45	739.56	739.63	739.49	739.34	708.90
	Right Bridge	739.16	739.27	739.37	739.26	739.11	738.97	709.60
PIER 2	Left Bridge	738.36	738.47	738.57	738.64	738.50	738.35	708.20
	Right Bridge	738.15	738.26	738.36	738.25	738.10	737.95	708.90

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Consulting Engineers  
MANSFIELD, OHIO

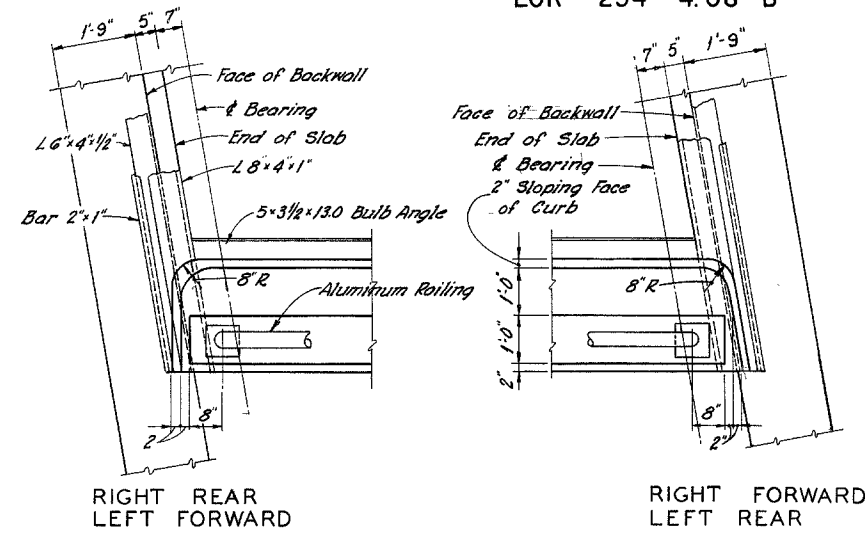
**PIERS**  
BRIDGE NO. LOR-254-1172 L&R  
OVER B&O RAILROAD  
LORAIN COUNTY S.R. 254  
STA. 618 + 72.71 TO STA. 620 + 20.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	JWC	JWC			

LORAIN COUNTY  
LOR - 254 - 4.08 - B



**FRAMING PLAN**



**SLAB CORNER DETAILS**

**NOTES**

CAMBERING of beams is required in accordance with the following table:

	DEFLECTION AND CAMBER			
	FASCIA BEAMS		INTERIOR BEAMS	
	End Spans	Middle Span	End Spans	Middle Span
Deflection due to weight of steel	0"	0"	0"	0"
Deflection due to remaining dead load	1/8"	1/8"	1/8"	1/8"
Convexity required for vert. curve	1 1/8"	1 1/8"	1 1/8"	1 1/8"
Sum of deflections & convexity	3 1/8"	3 1/8"	3 1/8"	3 1/8"
Required Camber	0"	0"	0"	0"

END CROSSFRAMES, END DAMS, GUTTERS AND SCUPPERS: See Sid. Dwg. SD-1-63, Sheets 2, 3 and 4 of 4.

RAILING: See Std. Dwg. AR-1-57, Type "A"

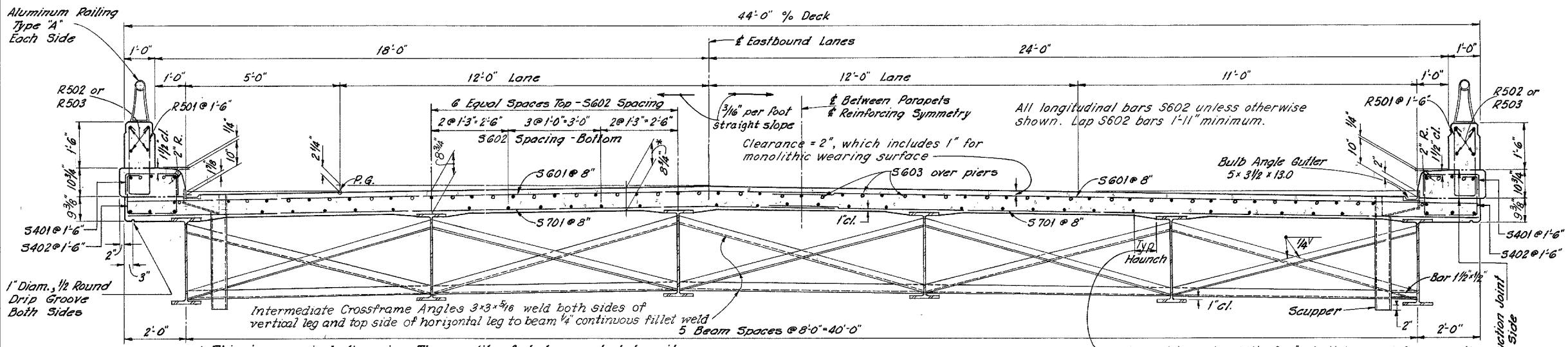
RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING: See Sheet 285

CONCRETE: All superstructure concrete shall be Class "C".

BEARINGS: See Std. Dwg. FSB-1-62 for the following:  
E-100 Abutments  
E-150 Pier 1  
F-150 Pier 2

GENERAL NOTES: See Sheet 285

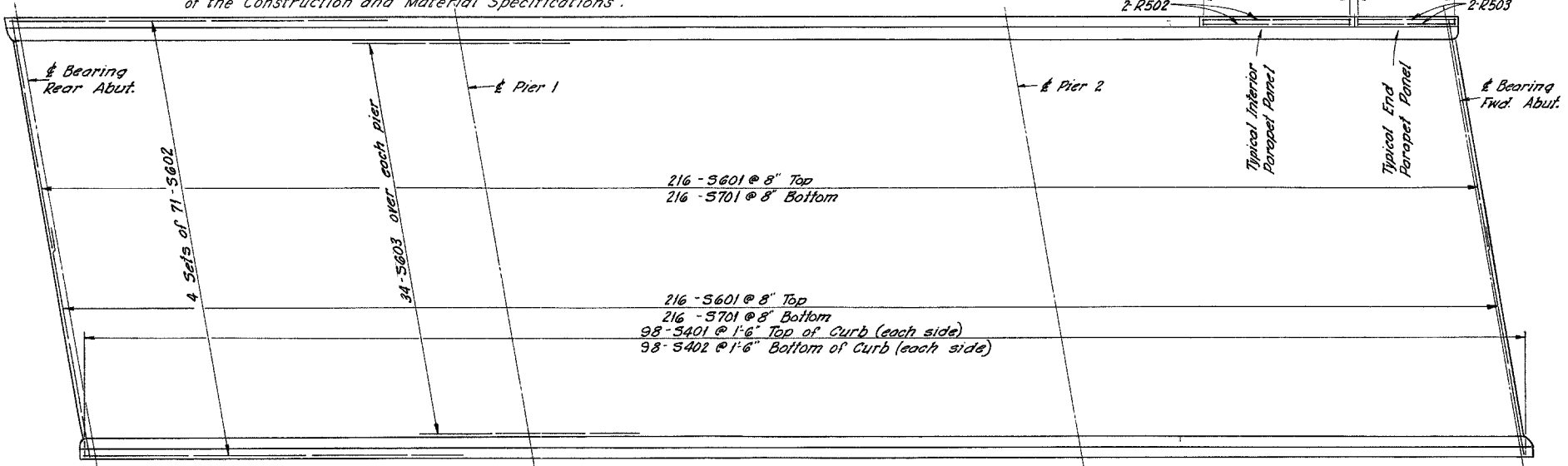
BOLTED FIELD SPLICE NOTES AND DETAILS: See Sheet 289



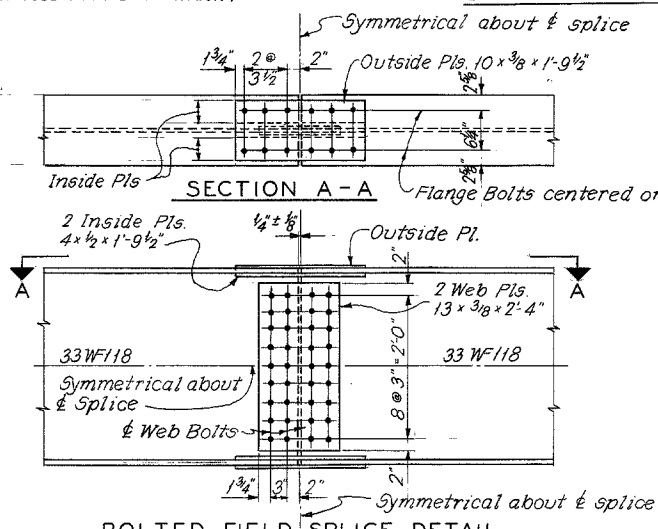
**TRANSVERSE SECTION**

\* This is a 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 finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 5-1.25 of the Construction and Material Specifications.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.



**SLAB PLAN**



**BOLTED FIELD SPLICE DETAIL**

Place bolt head on exposed side of fascia beams. Place nuts on top surface of lower flange splice. Washers may be omitted as allowed in Sec. 5-7.10.

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Consulting Engineers  
MANSFIELD, OHIO

**SUPERSTRUCTURE**  
BRIDGE NO. LOR-254-1172 L & R  
OVER B & O RAILROAD

LORAIN COUNTY S.R. 254  
STA. 618 + 72.71 TO STA. 620 + 20.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	J.W.C.	J.W.C.			

### ABUTMENTS

MARK NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A501	188	6'-4"	7	5'-9"				1242
A502	40	23'-7" Str.						984
A503	232	7'-2"	1	2'-0"	3'-5"	2'-0"		1734
A504	180	5'-8" Str.						1064
A505	24	22'-11" Str.						574
A506	40	26'-3"	1	3'-5"	22'-11"	0		1095
A507	64	31'-3" Str.						2086
A508	8	9'-0" Str.						75
A509	16	11'-0" Str.						184
A510	16	10'-0" Str.						167
A511	16	29'-0" Str.						484
A512	4	28'-0" Str.						117
A513	8	16'-0" Str.						134
A514	16	5'-6" Str.						92
A515	80	Varies Str.	7'-3" To 9'-3"	Vary 16 each by 6"				688
A516	48	9'-8" Str.						484
A601	96	14'-7"	4	4'-7"	1'-5"	6'-1"	11"	2103
A602	180	8'-0"	1	6"	7'-8"	0		2163
A603	84	13'-3"	1	6'-1"	1'-5"	6'-1"		1672
TOTAL WEIGHT								17,142

#### BOLTED FIELD SPLICES

**UNIT STRESSES:** Structural Steel-ASTM A36-basic unit stress 20,000 p.s.i. bending; 12,000 psi shear. High Strength Bolts-ASTM A325-basic unit stress 13,500 psi shear; 40,000 psi bearing.

**MATERIAL:** Splice plates, fills and bolts shall be according to Item S-7. Bolts shall be 1" diameter, High Strength. The weight shall be included under Item S-7, Structural Steel, for payment.

**FILLS** where necessary shall be furnished to the nearest 1/8 inch in thickness based on the actual measured sizes of the members being spliced. Drawing together of splice plates over material that varies by 1/8 inches or more in thickness, at the centerline of the splice, will not be permitted.

**FIELD ASSEMBLY:** In the final assembly of parts to be bolted, each beam shall be so supported that drift pins may be placed in a sufficient number of holes (not less than 25%) to provide and maintain accurate alignment of holes and parts. Heavy driving of drift pins will not be permitted. A sufficient number of bolts shall be installed and brought to a snug tight condition to bring all parts of the splice into complete contact before the member is released. Bolts shall then be installed in any remaining open holes and tightened to a snug tight fit, after which all bolts shall be tightened completely by calibrated wrenches or by the turn-of-the-nut method. Drift pins shall then be replaced with bolts and tightened in the same manner. Bolt lengths determined by the use of table No. 1 in Sec. S-7.10 shall be adjusted to next 1/4" inch length increment.

### SUPERSTRUCTURE

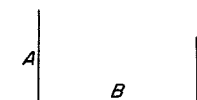
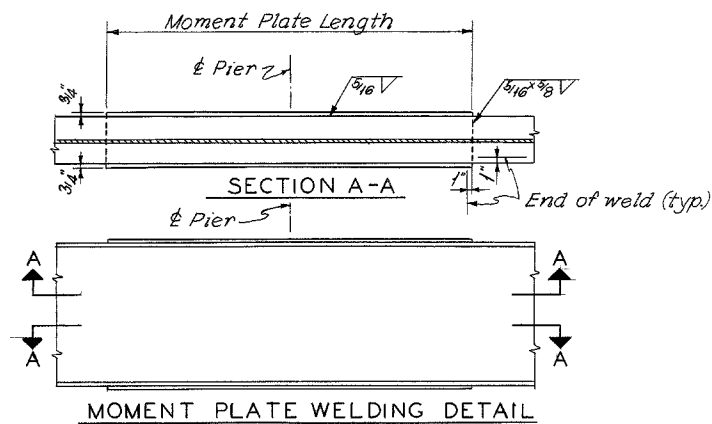
MARK NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R501	408	5'-5"	3	2'-3"	0'-8"	0'-4"		2305
R502	128	15'-2" Str.						*
R503	32	10'-1" Str.						*
S401	392	2'-9"	1	0'-8"	1'-8"	0'-8"		720
S402	392	4'-6"	2	1'-4"	1'-8"	0'-4"		1178
S601	864	23'-1" Str.						29,965
S602	568	37'-6" Str.						31,993
S603	136	22'-0" Str.						4,494
S701	864	23'-3" Str.						41,060
TOTAL WEIGHT								111,705

\* These railing bars are included with Item S-14 for payment.

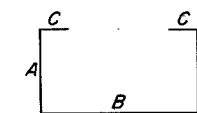
### PIERS

MARK NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P501	32	20'-6" Str.						684
P502	88	16'-0" Str.						1469
P503	88	6'-7"	8	1'-7"	3'-5"	1'-1"		604
P504	72	5'-9"	1	1'-11"	2'-2"	1'-11"		432
P505	72	(2)	1	(1)	2'-2"	(1)		682
P506	16	22'-11" Str.						382
P507	16	18'-2" Str.						303
P508	16	12'-0" Str.						200
P509	76	14'-7"	1	6'-4"	2'-2"	6'-4"		1156
P601	72	23'-4" Str.						2523
P602	72	22'-4" Str.						2415
P603	16	14'-3" Str.						342
P901	136	11'-9"	5	5'-1"	5'-7"			5433
P902	16	11'-6"	6	9'-0"				626
P1101	48	25'-9"	1	2'-2"	23'-11"	0		6567
TOTAL WEIGHT								23,818

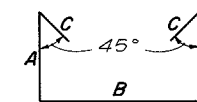
- (1) 1'-9" to 5'-5", Vary 8 each by 5 1/2"
- (2) 5'-5" to 12'-9", Vary 8 each by 11"



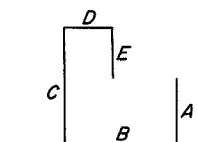
TYPE 1



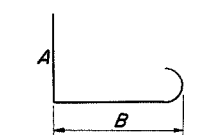
TYPE 2



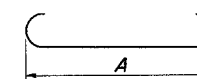
TYPE 3



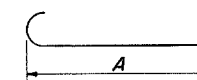
TYPE 4



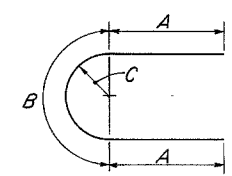
TYPE 5



TYPE 6



TYPE 7



TYPE 8

### REPLACEMENT BARS

MARK	NO.	LENGTH
RE400	1	5'-3"
RE500	2	5'-7"
RE600	4	5'-11"
RE700	3	6'-3"
RE900	1	6'-10"
RE1100	1	7'-7"

#### NOTE

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: A700 is a No. 7 size bar and P1101 is a No. 11 size bar.

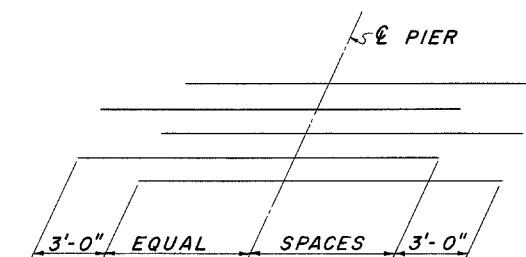


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

SHAFFER, PARRETT AND ASSOCIATES  
Consulting Engineers  
MANSFIELD, OHIO

**REINFORCING STEEL**  
BRIDGE NO. LOR-254-1172 L&R  
OVER B&O RAILROAD

LORAIN COUNTY S.R. 254  
STA. 618 + 72.71 TO STA. 620 + 20.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	J.B.	J.B.	J.W.C.			

# CENTER LINE SURVEY PLAT

66171.3  
#66171.3

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

290  
323

LOR-254-4.08 B  
CENTER LINE PLAT  
LIMITED ACCESS

1  
4

LIMITED ACCESS

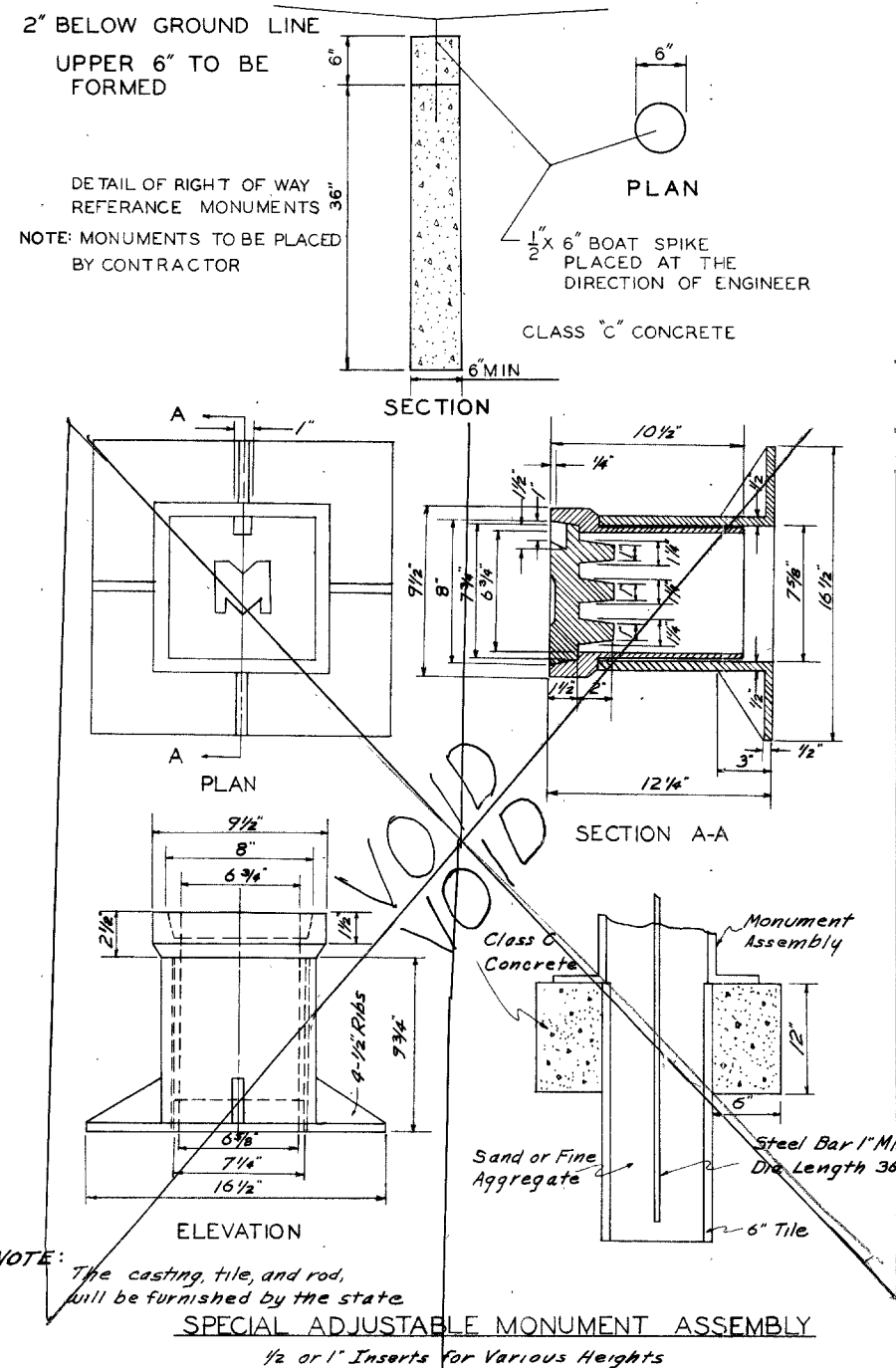
THIS IMPROVEMENT HAS BEEN DECLARED A LIMITED ACCESS ALONG C SURVEY LOR-254-4.08 B FROM STA 419+50.42 TO STA 653+42.67 ON THE LEFT AND FROM STA 420+04.03 TO STA 653+70.71 ON THE RIGHT, AND FROM STA 135+00 TO STA 176+46 ON THE LEFT OF SR 57 BY ACTION OF THE DIRECTOR OF HIGHWAYS AND RECORDED IN VOLUME \_\_\_\_\_ PAGE \_\_\_\_\_ OF THE DIRECTOR'S JOURNAL PURSUANT TO LAW.

LOR - 254 - 4.08 B  
LORAIN COUNTY

AMHERST TWP T6N, R18W  
LOT'S 59, 60, 61, 62, 79, 80, 81, & 82

ELYRIA TWP T6N, R17W  
LOT'S 1, 2, 4, 5, 7, 9, 10, 11, 13, 14, 15 & 16

SYMBOL  
● MONUMENTS  
■ SPECIAL MONUMENT ASSEMBLIES  
(SEE STANDARD DRAWING RI-1)



LOCATION OF CENTERLINE REFERENCE MONUMENT			
QUAN	STATION	LOCATION	REMARKS
1	428+30.61	Q of S	P.T.
1	434+00	Q of S	P.O.T.
1	436+50	Q of S	P.O.T.
2	441+33.80	10' Rt. - 10' Lt.	P.C.
1	451+00	Q-S	P.O.C.
1	456+33.31	Q-S	P.T.
1	466+00	Q-S	P.O.T.
1	476+39.12	Q-S	P.C.
1	481+16.20	Q-S	On P.I.
1	485+33.18	Q-S	P.T.
1	493+50.58	Q-S	P.C.
1	499+53.92	Q-S	P.T.
1	503+39.02	85.78' Lt. Q-S Lot Corner	
1	505+56.93	Q-S	P.T.
1	512+00	Q-S	P.O.T.
2	518+83.12	10' Rt. - 10' Lt.	P.C.
1	527+50	Q-S	P.O.C.
1	533+50	Q-S	P.O.C.
1	540+00	Q-S	P.O.C.
1	544+99.35	Q-S	P.T.
1	555+00	Q-S	P.O.T.
1	562+00	Q-S	P.O.T.
1	567+71.32	Q-S	P.C.
1	576+00	Q-S	P.O.C.
1	584+00	Q-S	P.O.C.
1	593+00	Q-S	P.O.C.
1	598+30.03	Q-S	P.T.
1	608+00	Q-S	P.O.T.
1	617+00	Q-S	P.O.T.
1	627+00	Q-S	P.O.T.
1	637+00	Q-S	P.O.T.
1	647+00	Q-S	P.O.T.
West Ridge Road Relocated			
1	91+07.62	P.I. On Lot Line	
Existing West Ridge Road			
1	50+67.15	Q-S Lot Corner	

36 TOTAL MONUMENT REFERENCE

LOCATION OF STANDARD MONUMENT ASSEMBLIES			
QUAN	STATION	LOCATION	REMARKS
North Ridge Road			
1	68+00	Q-S	P.O.T.
1	72+00	Q-S	P.O.T.
Oberlin Road			
1	47+50	Q-S	P.O.T.
1	51+53.15	Q-S	P.I. Lot Line
Middle Ridge Road			
1	90+19.73	Q-S	P.I.
1	46+50	Q-S	P.O.T.
1	54+60	Q-S	P.O.T.
West Ridge Road Relocated			
1	36+78.04	P.C.	
1	49+15.26	P.T.	
Lake Ave.			
1	66+43.90	Q-S	P.I.
1	74+33.54	Q-S	P.I.
West Ridge Road Relocated			
1	50+67.15	Q-S Lot Corner	

11 TOTAL MONUMENT ASSEMBLIES

RECEIVED NOV 14 1964 19  
RECORDED NOV 16 1964 19  
PLAT BOOK 24 PAGE 14  
SIGNED *Leola B. Mitchell* COUNTY RECORDER  
FEE 17.28  
SIGNED *D.H. Muma* P.E. NO. 24400  
DATE 10-27-64 DIVISION DEPUTY DIRECTOR  
DIV. NO. 3

I HEREBY CERTIFY THIS PLAT TO BE A TRUE DELINEATION OF A SURVEY MADE BY SHAFFER, PARRETT & ASSOCIATES OF MANSFIELD & WOOSTER, OHIO.  
DATE 8-4-64 BY *Edgar R. Johnston*  
REGISTER CIVIL ENGINEER 16680  
REGISTER SURVEYOR 3828

PREPARED BY  
**SHAFFER, PARRETT & ASSOCIATES**  
CONSULTING ENGINEERS  
MANSFIELD OHIO WOOSTER



AMHERST TOWNSHIP  
T-6N, R-18W

CURVE DATA  
P.I. Sta. 408+92.90  
Δ = 21°59'34" LL  
D = 1°28'  
R = 3906.53'  
T = 759.10'  
E = 73.07'  
L = 1499.51'

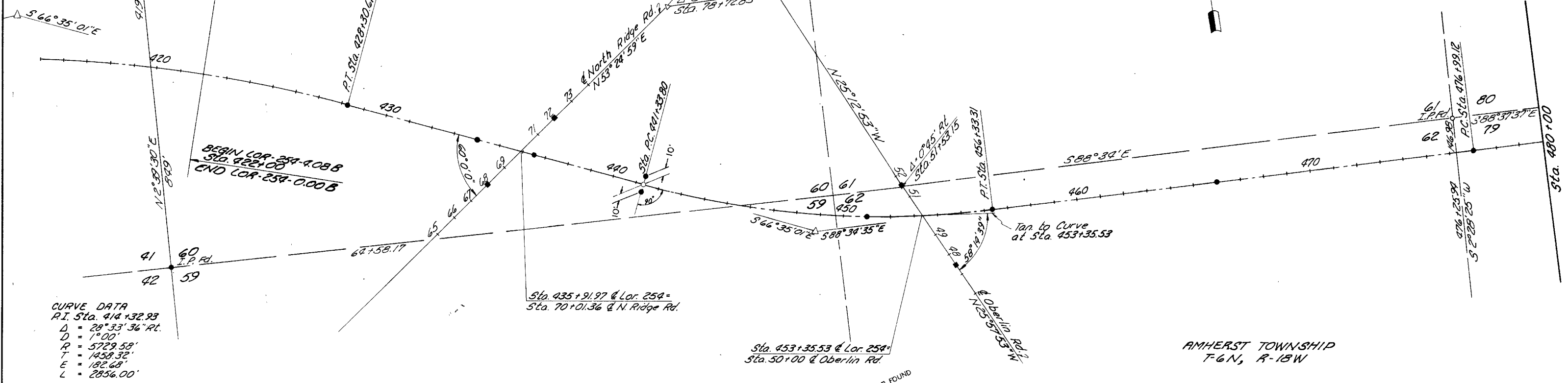
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

291  
323

2  
4

LOR-254-4.08 B  
CENTER LINE PLAT

Scale: 1" = 200'



CURVE DATA  
P.I. Sta. 414+32.93  
Δ = 28°33'36" RL  
D = 1°00'  
R = 5729.58'  
T = 1458.32'  
E = 182.68'  
L = 2856.00'

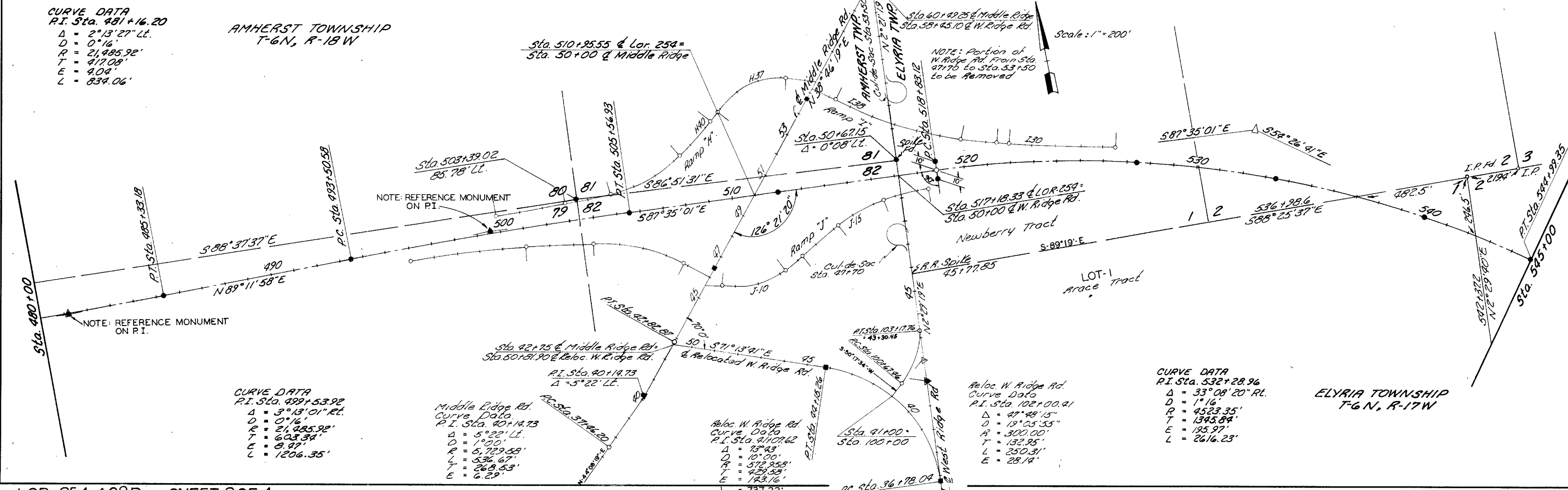
Sta. 435+91.97 @ Lor. 254 =  
Sta. 70+01.36 @ N. Ridge Rd.

AMHERST TOWNSHIP  
T-6N, R-18W

AMHERST TOWNSHIP  
T-6N, R-18W

CURVE DATA  
P.I. Sta. 481+16.20  
Δ = 2°13'27" LL  
D = 0°16'  
R = 21,485.92'  
T = 417.08'  
E = 4.04'  
L = 834.06'

Scale: 1" = 200'



CURVE DATA  
P.I. Sta. 429+53.92  
Δ = 3°13'01" RL  
D = 0°16'  
R = 21,485.92'  
T = 603.34'  
E = 8.97'  
L = 1206.35'

Middle Ridge Rd.  
Curve Data  
P.I. Sta. 401+14.73  
Δ = 5°22' LL  
D = 1°00'  
R = 5,729.58'  
T = 536.67'  
E = 268.53'  
L = 6.22'

Reloc. W. Ridge Rd.  
Curve Data  
P.I. Sta. 4107.62  
Δ = 13°43'  
D = 10°00'  
R = 379.958'  
T = 429.55'  
E = 123.16'  
L = 737.22'

Reloc. W. Ridge Rd.  
Curve Data  
P.I. Sta. 102+00.41  
Δ = 47°48'15"  
D = 19°05'55"  
R = 300.00'  
T = 132.95'  
L = 250.31'  
E = 28.14'

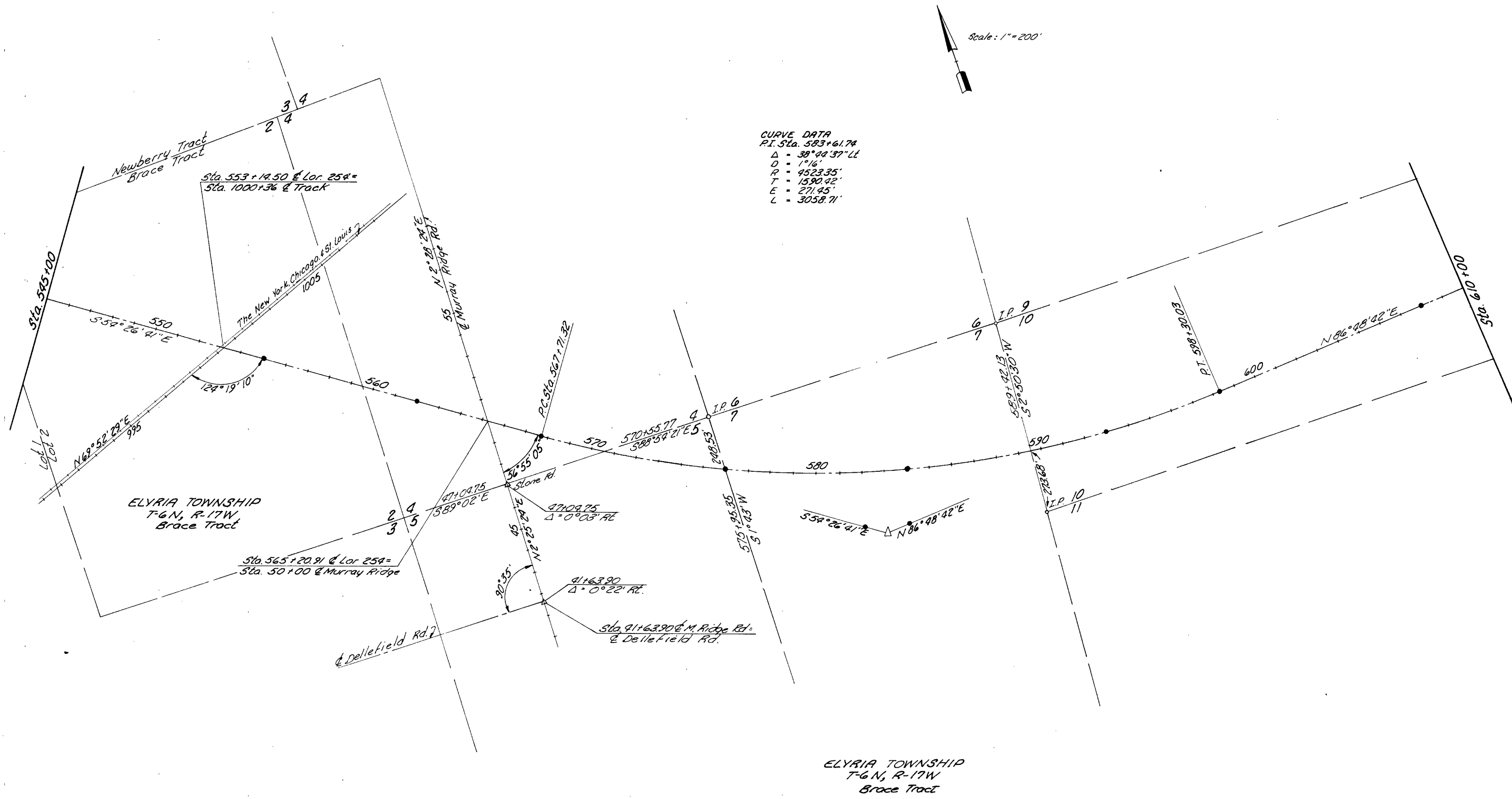
CURVE DATA  
P.I. Sta. 532+28.96  
Δ = 33°08'20" RL  
D = 1°16'  
R = 4523.35'  
T = 1395.84'  
E = 195.97'  
L = 2616.23'

ELYRIA TOWNSHIP  
T-6N, R-17W

ELYRIA TOWNSHIP  
T-6N, R-17W  
Brace Tract

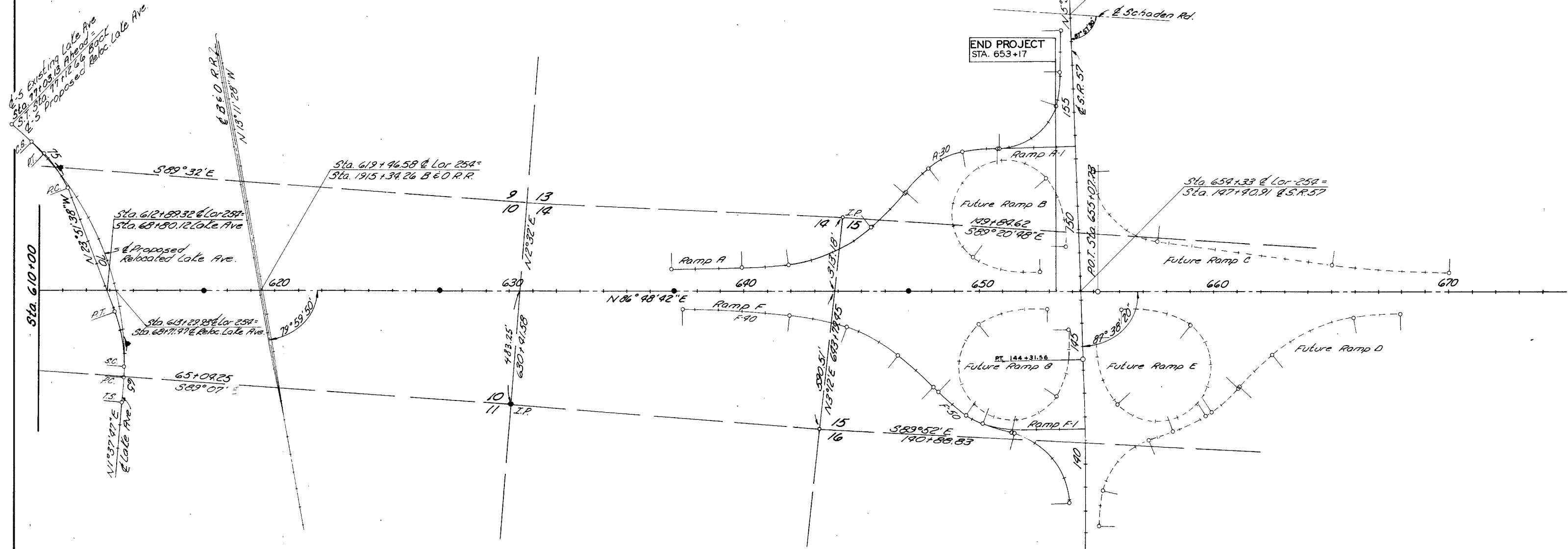
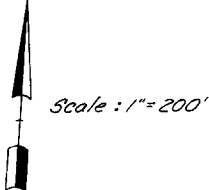
Scale: 1" = 200'

CURVE DATA  
P.I. Sta. 583+61.74  
Δ = 38° 04' 37" LL  
D = 1° 16'  
R = 4523.35'  
T = 1590.42'  
E = 271.45'  
L = 3058.71'



ELYRIA TOWNSHIP  
T-6N, R-17W  
Brace Tract

Proposed Relocated  
Lake Ave  
Curve Data  
T.S. Sta. 63+94.85  
S.C. Sta. 65+44.85  
P.I. Sta. 70+98.81  
C.S. Sta. 75+62.66  
S.T. Sta. 77+12.66  
Δ = 52°33'05"  
D = 9°30'  
R = 1273.24'  
L<sub>s</sub> = 150'  
T<sub>s</sub> = 723.96'  
E<sub>s</sub> = 147.54'



Existing Lake Ave  
Curve Data  
P.C. Sta. 62+98.90  
P.I. Sta. 66+43.90  
P.T. Sta. 67+82.63  
Δ = 25°29'25" LL  
D = 9°00'  
R = 636.62'  
T = 149.00'  
E = 16.08'  
L = 283.23'

Existing Lake Ave  
Curve Data  
P.C. Sta. 73+41.0  
P.I. Sta. 74+33.59  
P.T. Sta. 75+22.62  
Δ = 27°03'40" LL  
D = 14°54'  
R = 354.55'  
T = 92.54'  
E = 10.93'  
L = 181.62'

ELYRIA TOWNSHIP  
T-6N, R-17W  
Brace Tract

RECEIVED FOR RECORD  
AT 10:23 AM  
NOV 1 0 1954  
RECORDED & INDEXED  
SECURITY REL. 4803  
PLAT 24 Page 04  
LORAIN COUNTY RECORDER

Curve Data - Exist S.R.57  
P.I. Sta. 131+88.74  
Δ = 8°18'0" LL  
D = 0°20'  
R = 17188.74'  
T = 1297.18'  
L = 2490.0'  
E = 45.19'

# SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

S.R. 254 SEC LOR - 254 - 4.08 B LORAIN COUNTY, OHIO TOTAL NUMBER OF OWNERS 73

PARCEL NO.	OWNER	RECORDED BOOK/PAGE	DEED AREA	TO BE ACQ'D LAND BLDG	RESIDUE LEFT RIGHT	SHEET NO.	REMARKS
80WL	Jean Pohorence	303 447 447	17.87	1.80	11' 6" (L)	4	(ACQUIRED UNDER LOT 254 4.08B)
81WL	Charles A. Wiegand aka Charles Wiegand	678 322	74.58	3.08	42 11	46.5	
82WL	Charles A. Wiegand aka Charles Wiegand	302 47	45.87	1.12	Yes 0.70	3	5
82	" " " " " "			0.07			5
82A	" " " " " "			0.08	Yes		5
82-T	" " " " " "			0.23			5
82T-1	" " " " " "			0.16			5
83WL	Charles A. Wiegand aka Charles Wiegand			0.38			5
83T	" " " " " "			0.01			5
84WL	Cherry Valley Farms Incorporated	276 527	0.91	0.25	a16' 0.56' (L)		5
85T	John H. Linn	411 120	0.77	140sq ft			5
86WL	Howard B. and Janice Wiegand	590 504	0.29	0.16	Yes		5
86T	Howard B. and Janice Wiegand			0.06			5
87WL	Virble and Edith Ross	790 338	0.63	0.51	Yes		5 Total take
88WL	Eugene and Mary Linn	576 47	0.53	0.46	Yes		5
88T	Eugene and Mary Linn			0.05			5
89WL	Ralph & Dorothy M. Thomas	450 271	0.52	0.28			5
89T	Ralph & Dorothy M. Thomas			835 Sq. Ft.			5
90WL	Eugene and Mary Linn	316 519	0.72	0.08	Yes		5
		333 356					5
91WL	Lorain County Fish & Game Assn., Inc.	632 451	73.72	6.15	(L) 65.5	58.0	
92WL	Peter J. and Helen Breszler	286 332	0.99	0.07			6
92	Peter J. and Helen Breszler			1075 Sq. Ft.			6
93WL	Adolph R. and Madeline L. Ravnikar	539 128	0.62	0.17			6
93	Adolph R. and Madeline L. Ravnikar			0.01			6
94WL	Kenneth and C. Minnie A. Hughes	462 273	1.611	0.50			6
94	Kenneth and C. Minnie A. Hughes			0.04			6
95WL	Michael Karst & Susanna Karst	626 558	1.127	0.94	Yes		6 Remaining area
95	" " " " " "			0.05			6 too small for
95T	" " " " " "			0.07			6 practical use
96WL	Richard R. and Iona R. Zvosec	733 573	1.082	1.01	Yes		6 Total take
97WL	Donald Shawver	646 170	0.632	0.55		0.07 (L)	6
98WL	Harry & Gail Cogar	606 397	8.883	0.89			6
98A-WL	" " " " " "			0.04			6
98B-WL	" " " " " "			0.09			6
98T	" " " " " "			0.08			6
98	" " " " " "			0.15			6

PARCEL NO.	OWNER	RECORDED BOOK/PAGE	DEED AREA	TO BE ACQ'D LAND BLDG	RESIDUE LEFT RIGHT	SHEET NO.	REMARKS
100WL	Sophie Loder	759 567	14.96	11.90	2.5 1.0	6.7	
100	Sophie Loder			0.02			6
100A	Sophie Loder	759 567	0.677	0.05			6
100T	Sophie Loder			0.04			6
100T-1	Sophie Loder			0.02			7
100T-2	Sophie Loder			0.02			7
100A-T	Sophie Loder			0.11			6
101	John J. & Dorothy M. Sander	651 791	8.56	0.03			6
101T	John J. & Dorothy M. Sander			0.07			6
102	Kenneth R. and Jeannette A. Karl	587 520	0.918	0.02			6
103	Gilbert M. and Anne Evarish	631 59	44.532	34.54			6
103A	Harry & Gail Cogar	532 54	0.44	0.02			6
104	Norman J. and Pearle E. Bauman	631 91	0.9707	0			6 No R/W Needed
105WL	Frank A. and Mayo Borman	809 99	14.14	0.52			7
106WL	Robert A. and Emily J. Ehrman	796 289	6.65	0.05			7
		662 44	9.37				
107WL	George and Hanna Ehrman	222 205		0.62	0.10 (L) 8.65	7	
108WL	Edward and Anne M. Brandies	631 102	8.0027	0.61	0.12	7.5	7
109WL	Bertha E. Schmitkors	339 26	60.38	5.01	0.06 (L) 65.3	71.5	
109T	Bertha E. Schmitkors	258 11		0.03			7 76.8
109T-1	Bertha E. Schmitkors			0.03			7
110WL	Arthur Loren Schmitkors	612 378	28.42	4.53	Yes		8
110T	Arthur Loren Schmitkors	319 351	19.07	3.02			8
111WL	Paul William Schmitkors	612 384	66.17	9.58	Yes 48.5	7	8, 9, 10
111T	" " " " " "	608 244		0.05			7
111T-1	" " " " " "			0.27			8
111T-2	" " " " " "			0.08			10
111T-3	" " " " " "			0.08			10
111T-4	" " " " " "			0.04	Yes		10
111	" " " " " "			0.25	Yes		10
* 112WL	Gerald H. Eschtruth	512 500	4.060	2.73	Yes		9
112	Gerald H. Eschtruth			0.04	Yes		9
112AWL	Lewis Grobe, Life Estate	213 296	32.00	0.63			9
113WL	Gerald H. Eschtruth and Ruth E. La Fon	293 512	57.9	44.84	6.16	Yes 16.3 19.3	9, 10
113	Gerald H. Eschtruth and Ruth E. La Fon	297 422		0.21	Yes		9
113A	Gerald H. Eschtruth and Ruth E. La Fon	512 422		0.24			9
113B	Gerald H. Eschtruth and Ruth E. La Fon	515 473		1.12	16.76 2.5		10
113T	Gerald H. Eschtruth and Ruth E. La Fon	512 23		0.08			9
113T-1	Gerald H. Eschtruth and Ruth E. La Fon	514 226		0.15			10
114WL	Katherine Louise Wilson	612 608	13.08	0.08	0.26 12.91	10	
114	Katherine Louise Wilson			0.29			10

NOTE -  
PARCELS NOT ASSIGNED OR NOT NEEDED :-  
54A  
99  
104  
129  
135  
137  
138

SEE SHEETS 27, 28, 29, 30,  
FOR 200 SCALE DWGS.

(L) = Landlocked area

# SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

TYPE FUNDS	PARCEL NO.	OWNER	RECORDED		DEED AREA	TO BE ACQ'D		RESIDUE		SHEET NO.	REMARKS
			BOOK	PAGE		LAND	BLDG	LEFT	RIGHT		
ST	115WL	Andrew J. Johnson	137	435	22.284	2.35				9<10	
	115	Andrew J. Johnson				0.27				10	
	115A	Andrew J. Johnson			1.55	Yes	10.10	4.68		10<11	
	115B	Andrew J. Johnson				0.07				11	
	116WL	Eva K. and Earl W. Spiegelberg	723	580	13.967	12.36		10.9	18	9,10,12	
	116	Eva K. and Earl W. Spiegelberg	711	39	13.22	0.30				9	
	117-A	James W. & Dorathe A. Sinclair				0.01				11	
	117B-T	Otis W. Sinclair	417	88	0.82	0.01				11	
	117-C	Marion E. Howard	516	479	4.37					11	No R/W Needed
	118WL	Frank J. and Elizabeth E. Breznai John Peter Breznai and Mary Breznai	302	273	44.28	2.72		0.33	41.00	12	
	119WL	Steve Moro	492	102	44.73	6.15		32	6(2)	12<13	
	120Aerial	The Lorain & West Virginia Railway Company				16952.5F				13<24	
	120	"				462.5F					
	120A	"				162.5F					
	120B	"				162.5F					
	120C	"				162.5F					
	120SL	"				94905.F					
	120SL1	"				142503.F					
	121WL	Frank J. and Elizabeth Breznai	318	377	10.31	0.57				13	
	122WL	Roy E. Fankhauser ET-AL (Forest Ridge Allotment)	22	77		1.38		6.33	9.06	13	
	122A-WL	Roy E. Fankhauser ET-AL (Forest Ridge Allotment)				2.79				13<14	
	122B-WL	Roy E. Fankhauser ET-AL (Forest Ridge Allotment)				1.74				14	
I	124WL	Georgia L. Andrick, et al	459	278	5.0	0.73	Yes			14	
	125WL	Hugh A. and Esther Mc Gee	327	467	5.0	2.64	Yes	2.30	0.25	14	
	126WL	Stanley and Ann Jurczynski	315	29	4.0	2.37		0.08	1.42	14<15	
	126T	Stanley and Ann Jurczynski				0.03				14	
	127WL	John F. and Priscilla Phillips	680	389	4.03	1.25				14<15	
	127T	John F. and Priscilla Phillips				0.07				14	
	129WL	Alfred W. Helen E. & Susan Lehman	739	417	47.26	14.88				15	
						7.12	6.52				
	130WL	Earl R. and Lorraine J. Wander	396	559	31.0	12.87				15	
I	130T	Earl R. and Lorraine J. Wander				0.01				15	
ST	131WL	Michael J. Oleksa and Mary Belcheff	722	249	32.45	6.59		9(2)	2.5(2)	15<16	
	131T	"	800	586		0.11				15	
	131T-1	"				0.03				15	
	132 WL	"				1.55				16<17	
	132-C-WL	"				0.15				17	
	132-C-T	"				0.04				17	
	133 WL	"				4.16				17	
ST	133A WL	"				0.97				17	

TYPE FUNDS	PARCEL NO.	OWNER	RECORDED		DEED AREA	TO BE ACQ'D		RESIDUE		SHEET NO.	REMARKS
			BOOK	PAGE		LAND	BLDG	LEFT	RIGHT		
I	132A-WL	Louis & Mary Belcheff	722	249	0.51	0.14				0.36(2)	17
I	132B-WL	Michael J. & Consetta Oleksa	722	249	0.51	0.13				0.37(2)	17
SU	132	Michael J. Oleksa & Mary Belcheff	722	249	2.5	0.05					17
			800	586						5.12	16<17
I	134WL	Stanley and Anne H. Jurczynski	476	111	3.0075	2.03	Yes				16<17
	135	Earl D. Jolley, Sr. and Earl D. Jolley, Jr.	295	269	3.394						16
			351	442	2.3						No R/W Needed
SU	136-T	Earl D. Jr. and Elvira Jolley	761	257	6.69	0.01					17
I	136T-1	Earl D. Jr. and Elvira Jolley				0.02					Subject to 60' Easement
	137	Eugene & Patricia J. Root	715	544	1.91						No R/W Needed
	138	Catherine S. Collier	370	550	29.55						No R/W Needed
SU	139	Stanley C. and Iva Smith	493	17	1.69	0.07					17
SU	139-T	Stanley C. and Iva Smith				0.03					17
SU	140	John and Theresa Klyop	526	287	1.65	0.11					17
I	140U	John and Theresa Klyop				0.04					24
I	141WL	E. Louise Adams Faulkner	332	344	20.14	1.29	Yes				17
SU	141	E. Louise Adams Faulkner				0.21					17
SU	141T	E. Louise Adams Faulkner				0.04					17
I	141T-1	E. Louise Adams Faulkner				0.07					17
I	141-U	E. Louise Adams Faulkner				0.10					24
SU	142	Louis C. and Mary E. Belcheff	409	311	0.57	0.02					17
	142T	Louis C. and Mary E. Belcheff				0.04					17
	143	Gerald and Edna Laver	462	21	1.05	0.03					17
SU	144	Edmund R. and Edith E. Laver	273	375	6.20	0.10					17
			343	364							
I	145WL	Clarence R. and Dorothy L. Woodings	313	39	6.59	1.78	Yes				17
SU	145	Clarence R. and Dorothy L. Woodings				0.04					17
I	145U	Clarence R. and Dorothy L. Woodings				0.51					24
I	146WL	Clarence R. and Dorothy L. Woodings				2.33					17<18
ST	147WL	LeRoy A. and Barbara Schroeder	343	609	3.54	1.31	Yes				17
ST	148WL	LeRoy A. and Barbara Schroeder				6.25					17<18
I	149Aerial	The Baltimore and Ohio Railroad Co.				12,599.5F					17<25
	149	The Baltimore and Ohio Railroad Co.				265.5F					25
	149A	The Baltimore and Ohio Railroad Co.				265.5F					25
	149B	The Baltimore and Ohio Railroad Co.				265.5F					25
	149C	The Baltimore and Ohio Railroad Co.				265.5F					25
	149SL	The Baltimore and Ohio Railroad Co.				3,550.5F					25
	149SL-1	The Baltimore and Ohio Railroad Co.				2,500.5F					25
	150WL	Route 57 Corporation, ET-AL	598	288	25.27	5.67		4.5	12.0	18<19	
			603	497	6.792						
	151WL	Rose Hurd	216	166	2.02	1.71					19<20 * 2.44 Ac. Plus sublots
	154WL	"	216	166		0.01					19 1,2,3, 6 & PT. 89 in Schaden allotment
I	145E	Edmund R. and Edith E. Laver									17 Easement
I	146E	Edmund R. and Edith E. Laver									17 Easement

**LEGEND**

I - INTERSTATE  
I-90-1(39)

SU - LAKE AVENUE  
SU-1484(2)

ST - STATE  
Acquired prior to date of authority for I participation

# SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

TYPE FUNDS	PARCEL NO.	OWNER	RECORDED DEED		TO BE ACQ'D		RESIDUE		SHEET NO.	REMARKS	
			BOOK	PAGE	AREA	LAND	BLDG	LEFT			RIGHT
ST ST	152WL	Dennis H. Thomas	787	525	15.37	9.09			19&20	Total take	
	159WL	" " "	787	595		6.28			19,20,21	Shaden allotment Lot No. 14	
I	152AWL	The N. R. Co.	907	147	3.02	3.02	Yes	3.02 <sup>(2)</sup>	20&22		
I ↑	152BWL	Dennis H. Thomas and Jane Thomas	787	595	4.43	1.41			20		
	153WL	Kenneth Krueck, Trustee, Boys Scouts of America	695	365	3.43	3.43			19&21	Total take	
	155WL	Florence Mielke			2.0	0.42			19	Shaden Allotment Lot No. 10	
	156WL	Florence Mielke			1.0	0.44			19	Shaden Allotment Lot No. 11	
	157WL	Jack and Marianne Northrup	681	471	1.0	0.56	Yes		19	Shaden Allotment Lot No. 12	
	158WL	Jack and Marianne Northrup	648	288	1.0	0.65			19	Shaden Allotment Lot No. 13	
	160WL	Richard B. and Jane F. Law	741	382	1.35	0.08			23	Shaden Allotment Part Lot No. 7	
	161WL	Lillian E. Maiden	528	189	3.0	0.06			23	Total take	
	I ↓	162WL	Ohio Edison Co.	589	464	10.45	1.02				
			Ohio Edison Co.	591	346						
Ohio Edison Co.			589	205							
Ohio Edison Co.			590	313							
	589	92									
ST*	111 A	Arthur L. & Majorie Schmitkons	319	332	5.80				11	Lot No. 79 & 82	
*	137 A	John H. Jr. & Rose Hogan	961	181	1.51					No R/W Needed	

PARCEL NO.	OWNER	RECORDED DEED		TO BE ACQ'D		RESIDUE		SHEET NO.	REMARKS
		BOOK	PAGE	AREA	LAND	BLDG	LEFT		

2-3-69 Added Type Funds

Curve Data  
 P.I. Sta. 414+32.93  
 $\Delta = 28^{\circ}33'36''$  Rt.  
 $D = 1^{\circ}00'$   
 $R = 5729.58'$   
 $T = 1458.32'$   
 $E = 182.68'$   
 $L = 2856.00'$

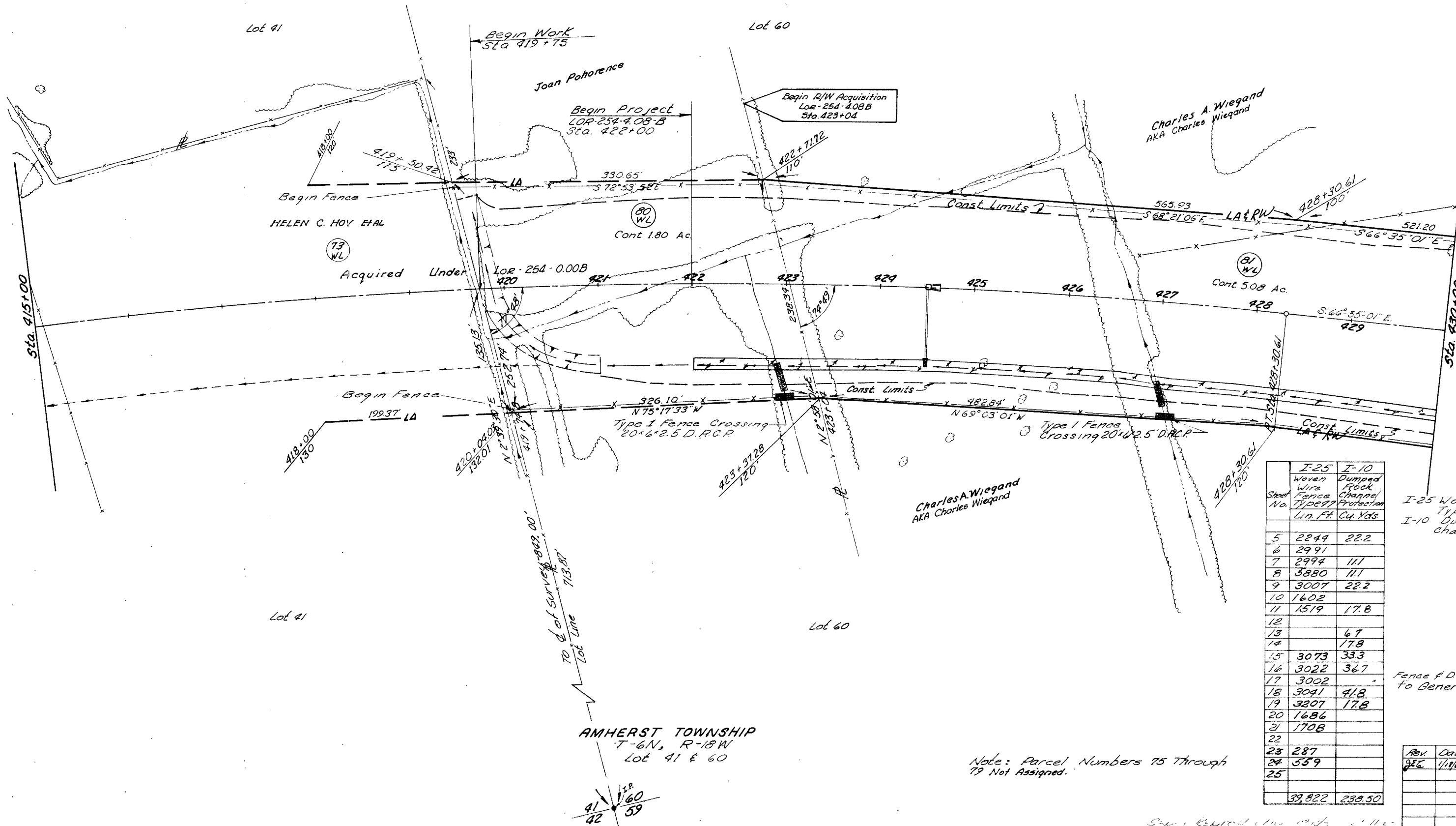
AMHERST TOWNSHIP  
 T-6N, R-18W

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

297  
323

4  
30

LOR - 254 - 4.08 B  
 RIGHT OF WAY PLAN  
 SCALE: 1" = 50'



Sheet No.	I-25 Woven Wire Fence Lin. Ft.	I-10 Dumped Rock Channel Protection Cu. Yds.
5	2244	22.2
6	2991	
7	2994	11.1
8	3880	11.1
9	3007	22.2
10	1602	
11	1519	17.8
12		
13		6.7
14		17.8
15	3073	33.3
16	3022	36.7
17	3002	
18	3041	41.8
19	3207	17.8
20	1686	
21	1708	
22		
23	287	
24	559	
25		
	39,822	238.50

I-25 Woven Wire Fence Type #7-2244 Lin. Ft.  
 I-10 Dumped Rock Channel Protection 22.2 Cu. Yds.

Fence & D.R.C.P. Carried to General Summary

REV	DATE	DESCRIPTION
25	1/10/65	Final Name Acquisition

Note: Parcel Numbers 75 Through 79 Not Assigned.

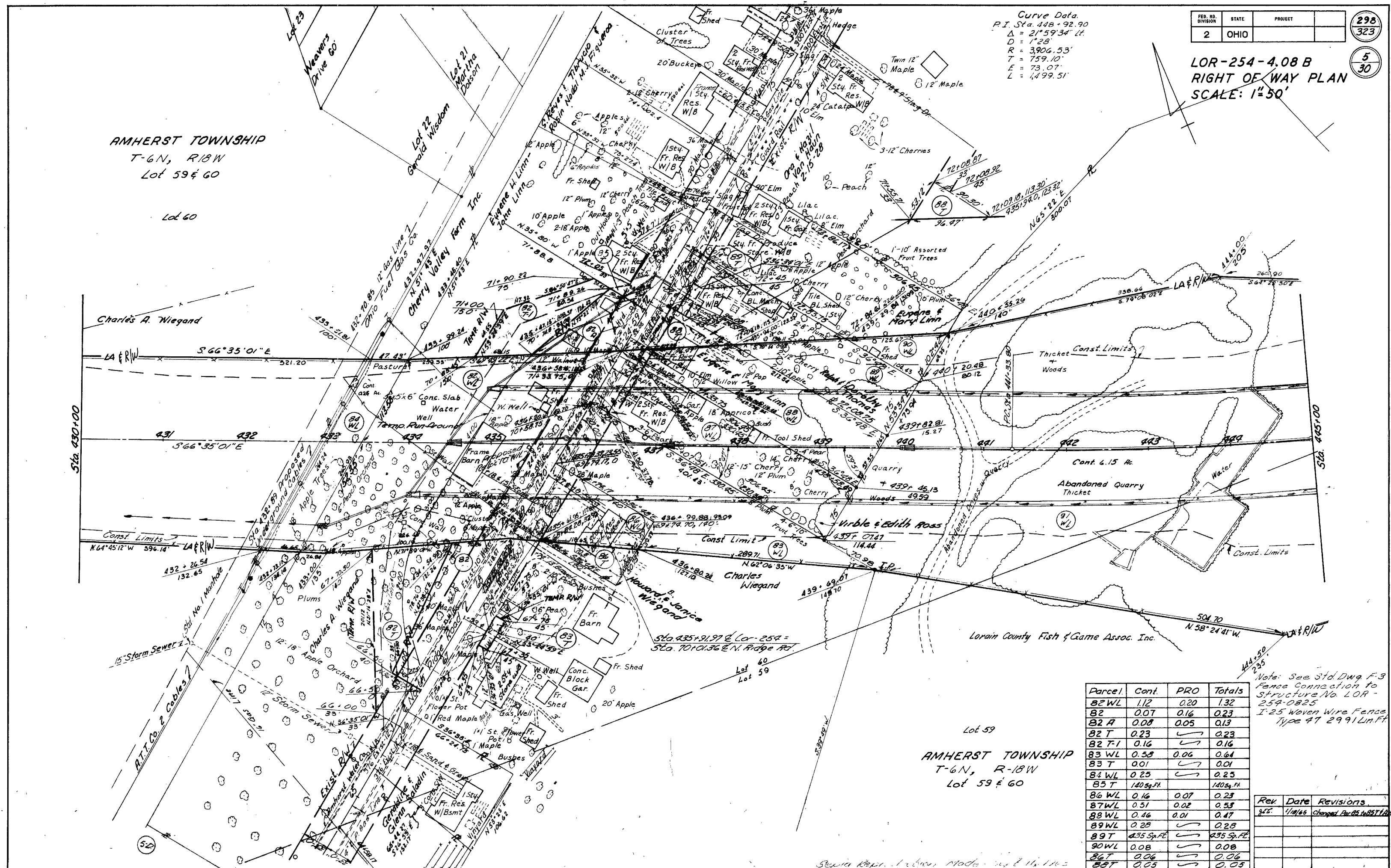
AMHERST TOWNSHIP  
 T-6N, R-18W  
 Lot 41 & 60



LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1"=50'

Curve Data  
P.I. Sta. 448+92.90  
Δ = 21°59'34" L.  
D = 1"28'  
R = 3906.53'  
T = 759.10'  
E = 73.07'  
L = 1499.51'

AMHERST TOWNSHIP  
T-6N, R-18W  
Lot 59 & 60



Parcel	Cont.	PRO	Totals
82 WL	1.12	0.20	1.32
82	0.07	0.16	0.23
82 A	0.08	0.05	0.13
82 T	0.23		0.23
82 T-1	0.16		0.16
83 WL	0.58	0.06	0.64
83 T	0.01		0.01
84 WL	0.25		0.25
85 T	140 sq. ft.		140 sq. ft.
86 WL	0.16	0.07	0.23
87 WL	0.51	0.02	0.53
88 WL	0.46	0.01	0.47
89 WL	0.28		0.28
89 T	435 sq. ft.		435 sq. ft.
90 WL	0.08		0.08
86 T	0.06		0.06
88 T	0.05		0.05

Note: See Std. Dwg. F-3  
Fence Connection to  
Structure No. LOR-  
254-0825  
1-25 Woven Wire Fence  
Type 47 2991 Lin. Ft.

Rev.	Date	Revisions
1	1/18/65	Changed Parc 85 to 85T (1/18/65)



LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1"=50'

Lot 61  
AMHERST TOWNSHIP

- 92 Cont. 107.59 Fl. Ac.  
PRO. 1313.59 Fl. Ac.  
Total 1420.99 Fl. Ac.
- 93 Cont. 0.01 Ac.  
PRO. 0.04 Ac.  
Total 0.05 Ac.
- 94 Cont. 0.04 Ac.  
PRO. 0.06 Ac.  
Total 0.10 Ac.
- 95 Cont. 0.05 Ac.  
PRO. 0.06 Ac.  
Total 0.11 Ac.
- 95 Cont. 0.07 Ac.

- 100A Cont. 0.11 Ac.
- 100 Cont. 0.05 Ac.  
PRO. 0.07 Ac.  
Total 0.12 Ac.
- 102 Cont. 0.02 Ac.  
PRO. 0.05 Ac.  
Total 0.07 Ac.
- 103 Cont. 0.02 Ac.  
PRO. 0.05 Ac.  
Total 0.07 Ac.
- 103 Cont. 345.59 Fl. Ac.  
PRO. 1410.59 Fl. Ac.  
Total 1755.59 Fl. Ac.
- 104 No R/W Needed

Oberlin Road  
P.I. Sta. 51+53.15  
Δ = 0° 45' R.L.

TEMP R/W  
Sta. 453+35.53 @ Lor 254  
Sta. 50+00 @ Oberlin Rd.

Nina M. Denton  
6' 12" 150

Austin W. O'Toole  
Trustee

John F. & Elise E.  
Goebel

Peter J. Gressler &  
Helen

Adolph R. &  
Maddeline

Kenneth C. &  
Minnie A. Hughes

Michael Karst &  
Susanna

Richard R. &  
Zvosec

Harry & Gaila Cogar

Lot 62

8.893 Ac Including 15  
.692  
8.191 Total

- 98 Cont. 0.49 Ac.
- 98A Cont. 0.04 Ac.
- 98B Cont. 0.09 Ac.  
Pro. 0.04 Ac.  
Total 0.13 Ac.
- 98 Cont. 0.18 Ac.  
Pro. 0.23 Ac.  
Total 0.41 Ac.
- 98 Cont. 0.08 Ac.
- 97 Cont. 0.55 Ac.  
Pro. 0.07 Ac.  
Total 0.62 Ac.

Lot 59  
AMHERST TOWNSHIP  
LORAIN COUNTY  
T-16 N, R-18 W

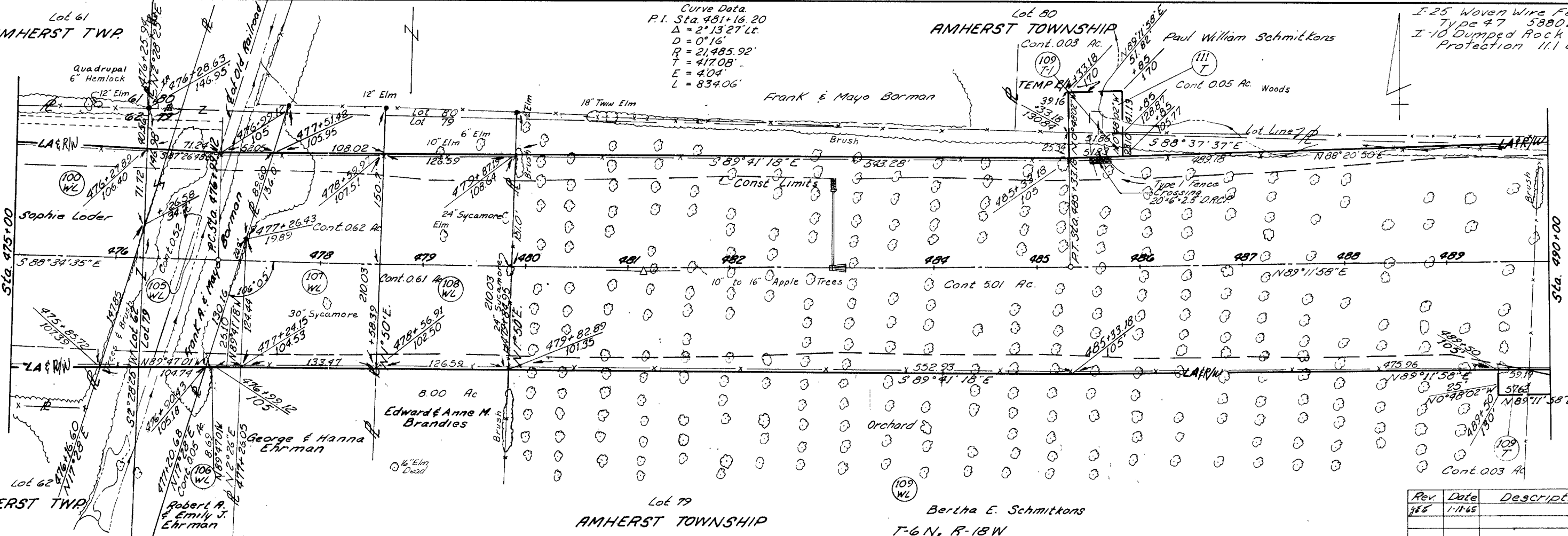
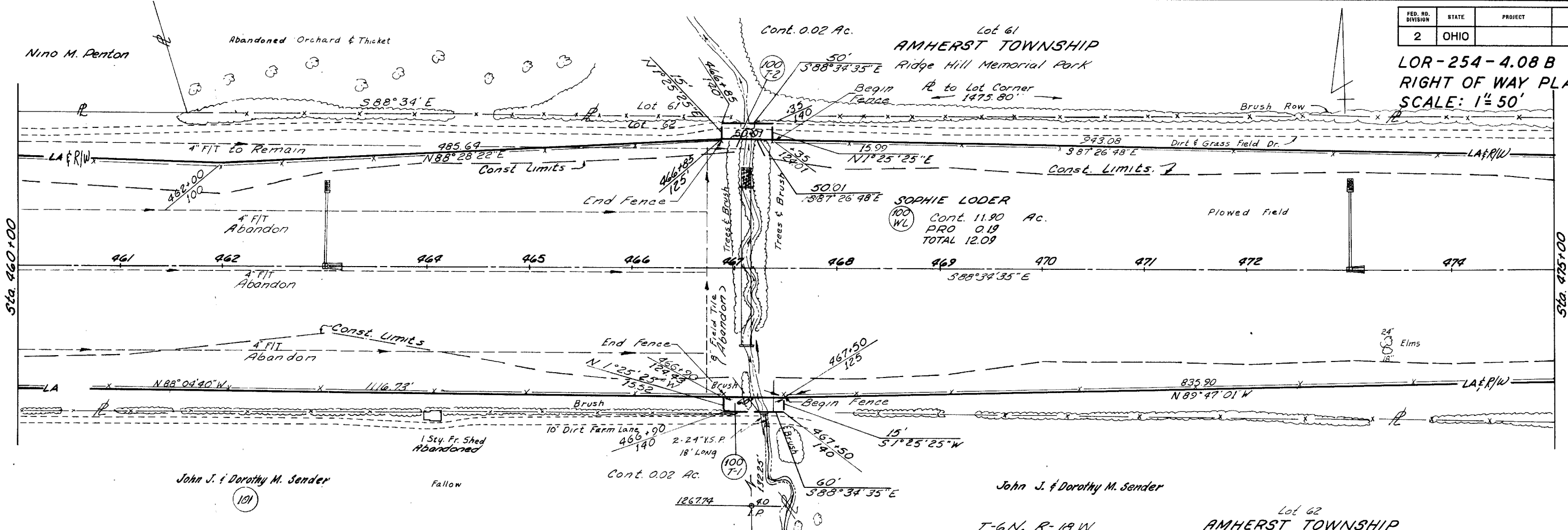
Curve Data  
P.I. Sta. 448+92.90  
Δ = 21° 59' 34" L.  
R = 1° 28'  
D = 3,904.53'  
T = 759.10'  
E = 73.07'  
L = 4,499.51'

AMHERST TOWNSHIP  
T-6 N, R-18 W

Note: See Std. Dwg. F-3 for  
Fence Connection to Structure  
No. LOR-254-0859  
I-25 Woven Wire Fence Type 47  
2994 Lin. Ft.  
I-10 Dumped Rock Channel  
Protection 111 Cu. Yds

Fred Herrmann & Julia  
C. Herrmann

Rev.	Date	Description
960	1/11/65	
961	4/1/66	East 1/2 For Pine Bl. W. L. Bedding, Distance of Area.



Curve Data  
P.I. Sta. 481+16.20  
Δ = 2°13'27\"/>

I-25 Woven Wire Fence  
Type 47 5880 Lin. Ft.  
I-10 Dumped Rock Channel  
Protection 11.1 Cu Yds.

Rev.	Date	Description
186	1-11-65	

Curve Data  
 P.I. Sta. 499+53.92  
 $\Delta = 3^{\circ}13'01''$  Rt.  
 $D = 0^{\circ}16'$   
 $R = 21,485.92'$   
 $T = 603.34'$   
 $E = 8.47'$   
 $L = 1,206.35'$

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

301  
323

8  
30

LOR-254-4.08 B  
 RIGHT OF WAY PLAN  
 SCALE: 1" = 50'  
 Lot 81  
 AMHERST TOWNSHIP

Lot 80  
 AMHERST TOWNSHIP  
 T-6N, R-18W

PAUL WILLIAM SCHMITKONS

(111) Cont. 9.58 Ac.  
 WL Pro. 0.36 Ac.  
 Total 9.94 Ac.  
 (111) Cont. 0.27 Ac.  
 T-1

ARTHUR LOREN SCHMITKONS

(110) Cont. 4.53 Ac.  
 WL  
 (110) Cont. 0.02 Ac.  
 T

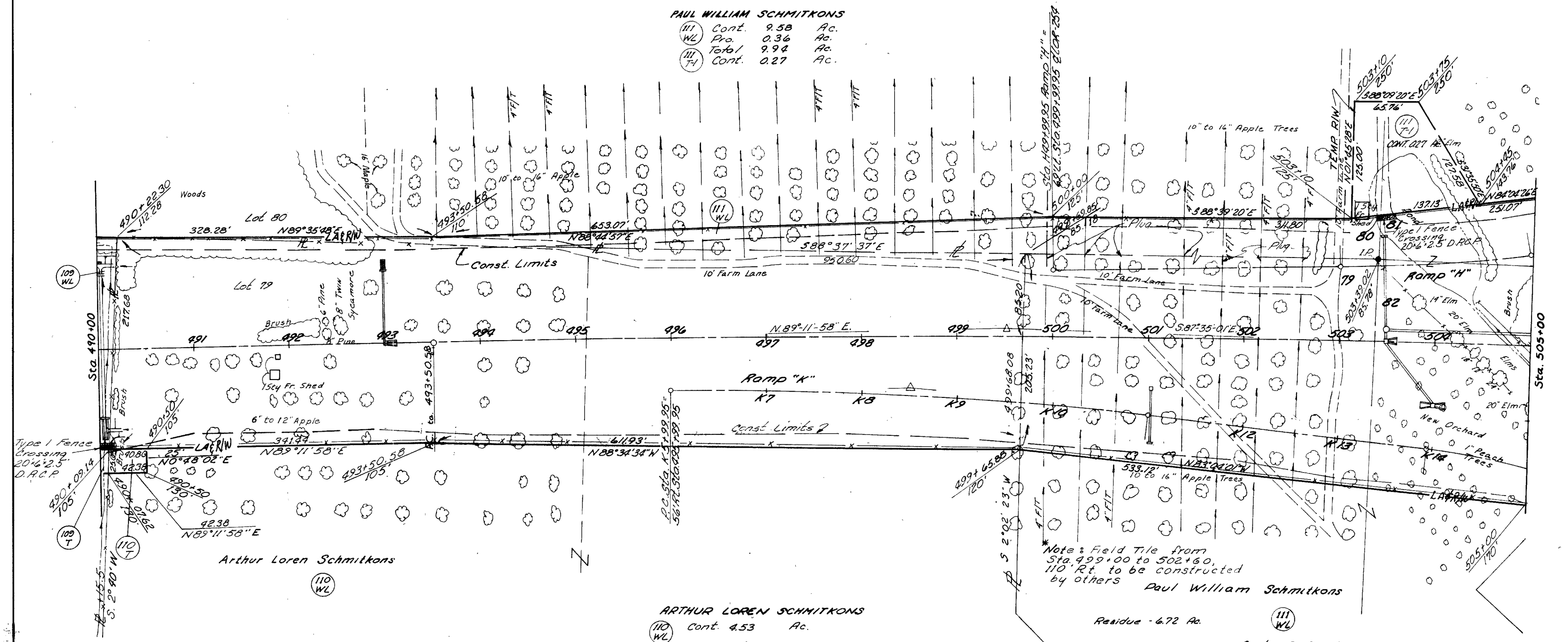
(111) Cont. - 9.58 Ac.  
 WL Pro. - 0.36 Ac.  
 Total - 9.94 Ac.

Lot 79  
 AMHERST TOWNSHIP  
 T-6N, R-18W

Arthur L. & Majorie Schmitkons

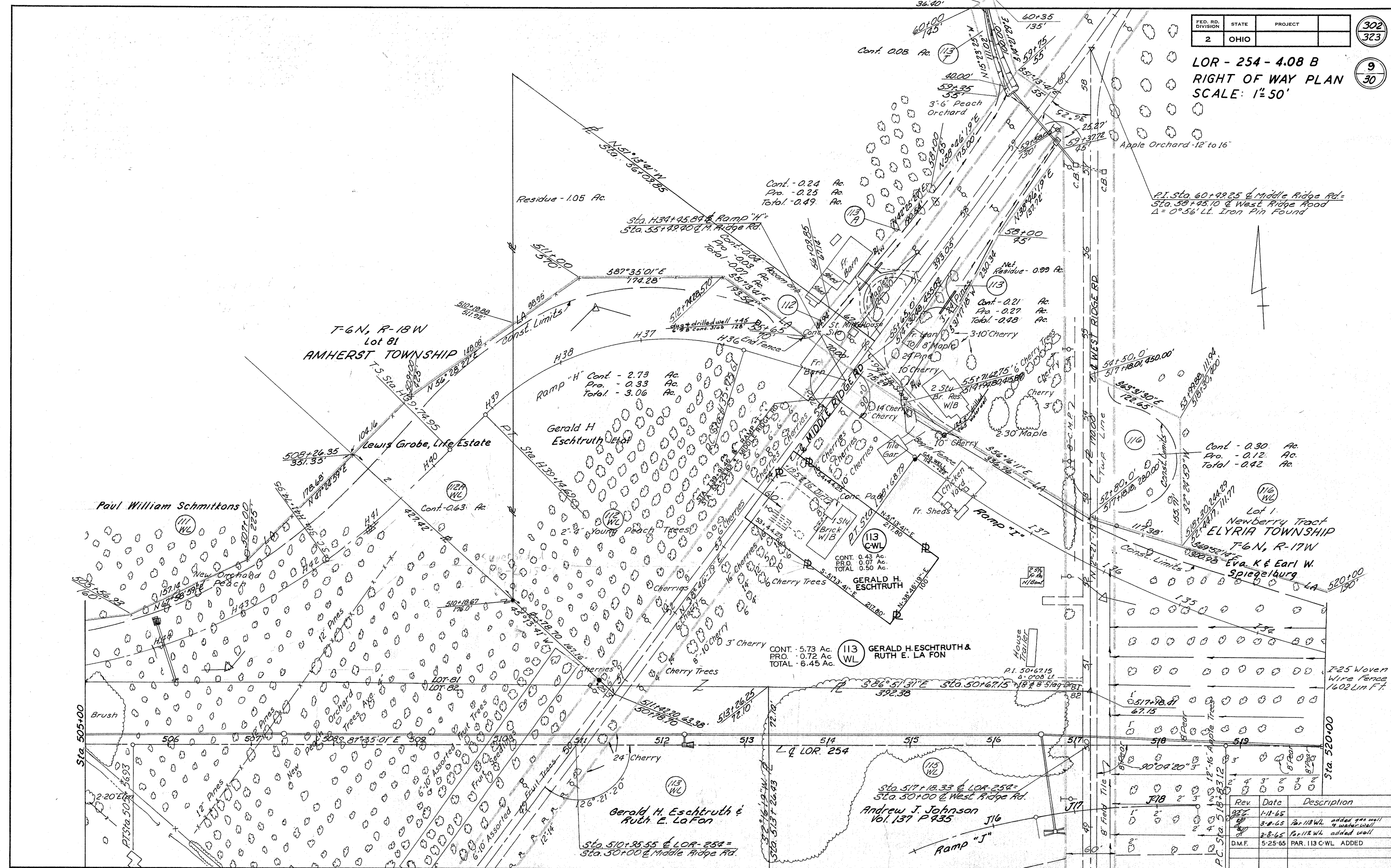
I-25 Woven Wire Fence  
 3007 Lin. Ft.  
 I-10 Dumped Rock  
 Channel Protection  
 22.2 Cu Yds

REV	DATE	DESCRIPTION
1	11-15	



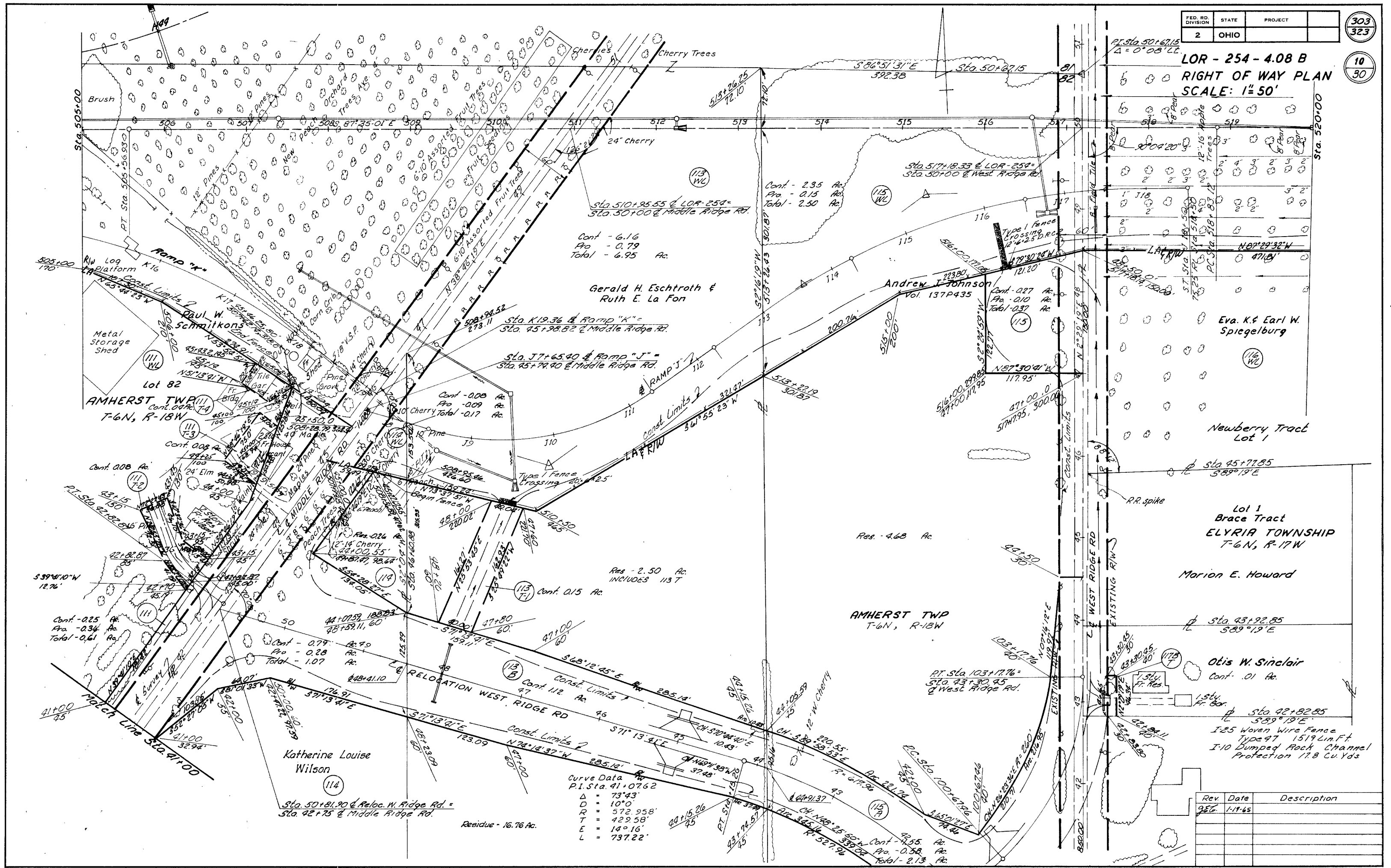
LOR - 254 - 4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'

P.I. Sta. 60+99.25 @ Middle Ridge Rd.  
Sta. 58+95.10 @ West Ridge Road  
Δ = 0°56' Lt. Iron Pin Found



Rev	Date	Description
1	1-11-65	
2	3-8-65	Par 113 WL added gas well & water well
3	2-8-65	Par 112 WL added water well
4	5-25-65	PAR. 113 C-WL ADDED

**LOR - 254 - 4.08 B**  
**RIGHT OF WAY PLAN**  
**SCALE: 1" = 50'**



LOR-254-4.08B R/W

R/W PLAN STA. 505+00 TO STA. 520+00 RT.

Rev.	Date	Description
956	1-11-65	

Curve Data  
 P.I. Sta. 41+07.62  
 Δ = 73°43'  
 D = 10°0'  
 R = 572.958'  
 T = 429.58'  
 E = 14°16'  
 L = 737.22'

Residue - 16.76 Ac.

LOR - 254 - 4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'

Marion E. Howard

Curve Data  
Reloc. West Ridge Rd.  
P.I. Sta. 102+00.41  
Δ = 47° 48' 15"  
D = 19° 05' 55"  
R = 300.00'  
T = 132.95'  
L = 250.31'  
E = 28.19'

Andrew J. Johnson  
Vol. 137 P 435  
Res - 468 Ac.

Otis W. Sinclair  
Cont. - 0.01 Ac.

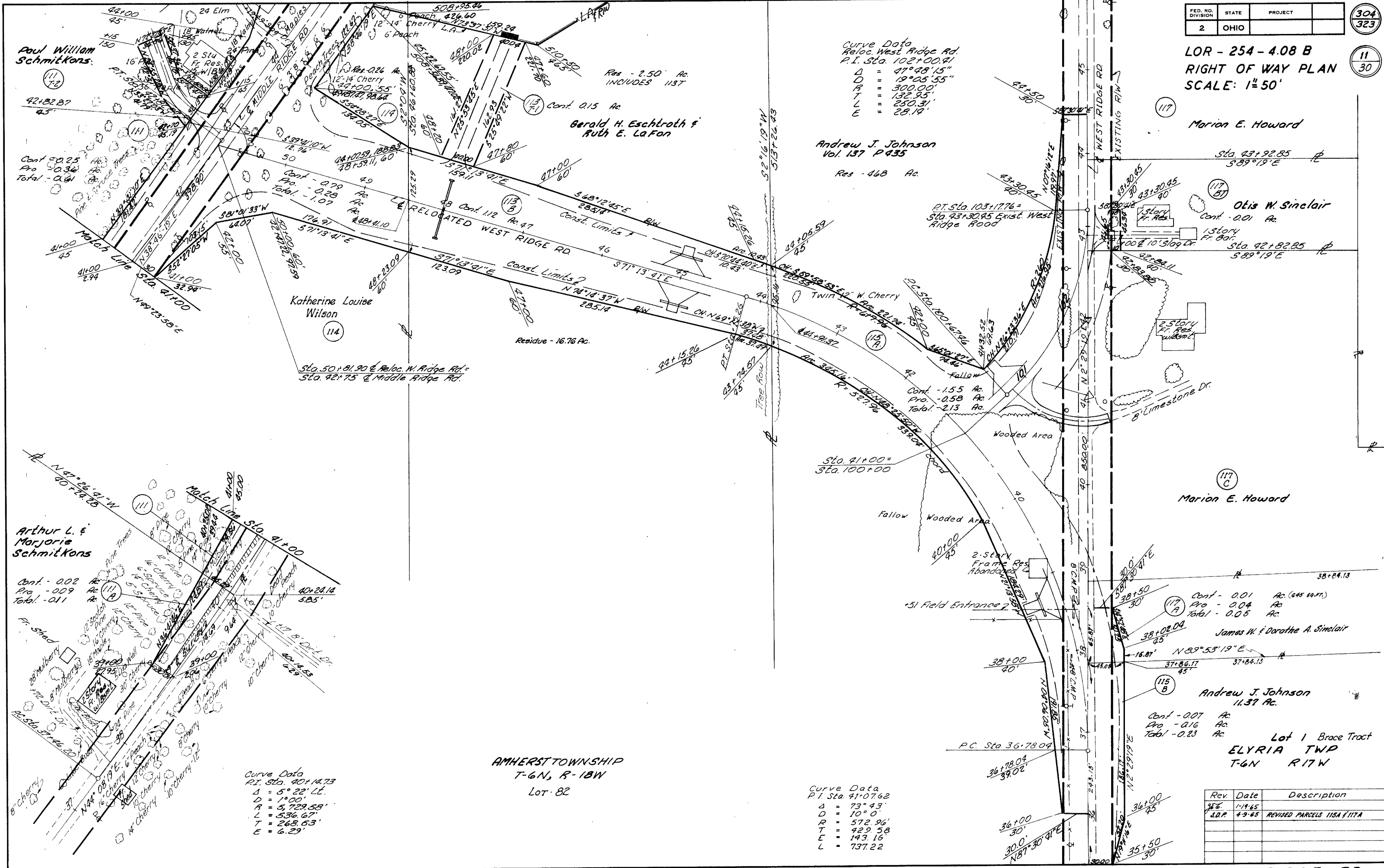
Marion E. Howard

James W. & Dorothe A. Sinclair

Andrew J. Johnson  
11.37 Ac.

Lot 1 Brace Tract  
ELYRIA TWP  
T-6N R-17W

Rev.	Date	Description
1/26	1-19-65	
J.D.P.	4-9-65	REVISED PARCELS 115A & 117A



Curve Data  
P.I. Sta. 40+14.73  
Δ = 5° 22' 11"  
D = 1° 00'  
R = 5,729.58'  
L = 536.67'  
T = 268.63'  
E = 6.29'

Curve Data  
P.I. Sta. 41+07.62  
Δ = 73° 43'  
D = 10° 0'  
R = 572.96'  
L = 429.58'  
T = 143.16'  
E = 737.22'

AMHERST TOWNSHIP  
T-6N, R-18W  
Lot 82

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

305  
323  
12  
30

LOR - 254 - 4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'

Curve Data  
P.I. Sta. 532+28.96  
 $\Delta = 33^{\circ}08'20"$   
 $D = 1^{\circ}16'$   
 $R = 4,523.35'$   
 $T = 1,345.84'$   
 $E = 195.97'$   
 $L = 2,616.23'$

ELYRIA TWP  
NEWBERRY TRACT  
Lot 1  
T-6N, R-17W

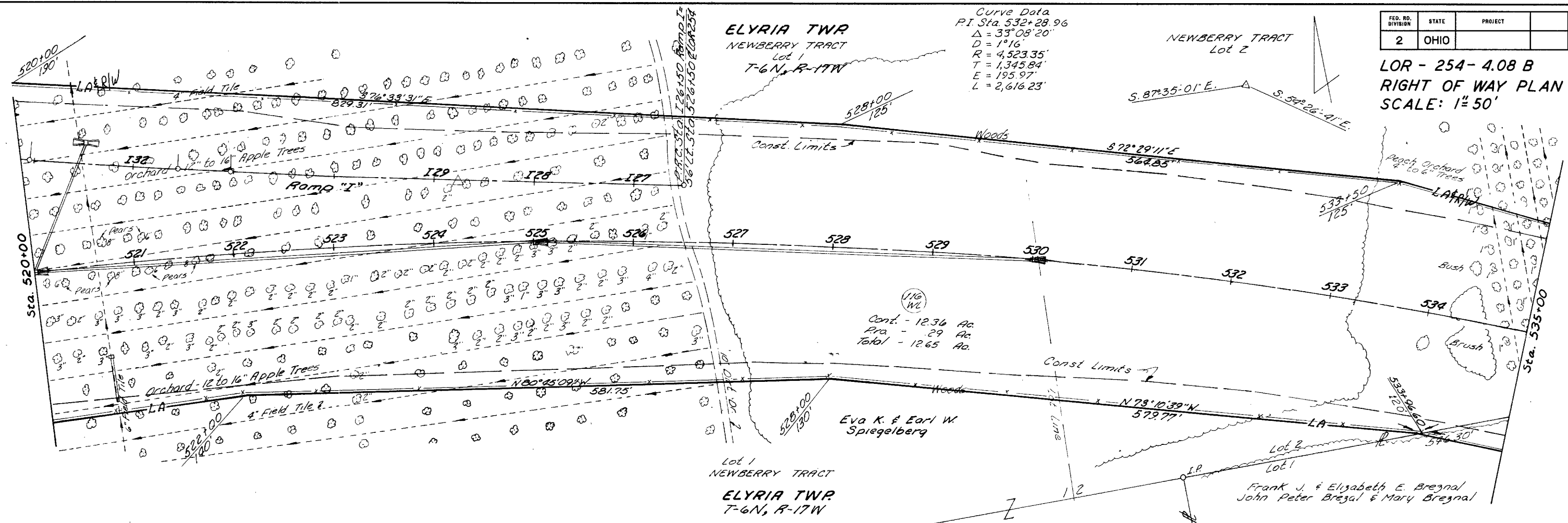
NEWBERRY TRACT  
Lot 2

ELYRIA TWP  
NEWBERRY TRACT  
Lot 1  
T-6N, R-17W

Frank J. & Elizabeth E. Breznal  
John Peter Breznal & Mary Breznal

Eva K. & Earl W. Spiegelberg

116 WL  
Cont. - 12.36 Ac.  
Pro. - .29 Ac.  
Total - 12.65 Ac.



I-25 Woven Wire Fence 6006 Lin. Ft.  
I-10 Dumped Rock Channel  
Protection 6.7 Cu.Yds

ELYRIA TWP  
NEWBERRY TRACT  
Lot 2  
T-6N, R-17W

Eva K. & Earl W. Spiegelberg

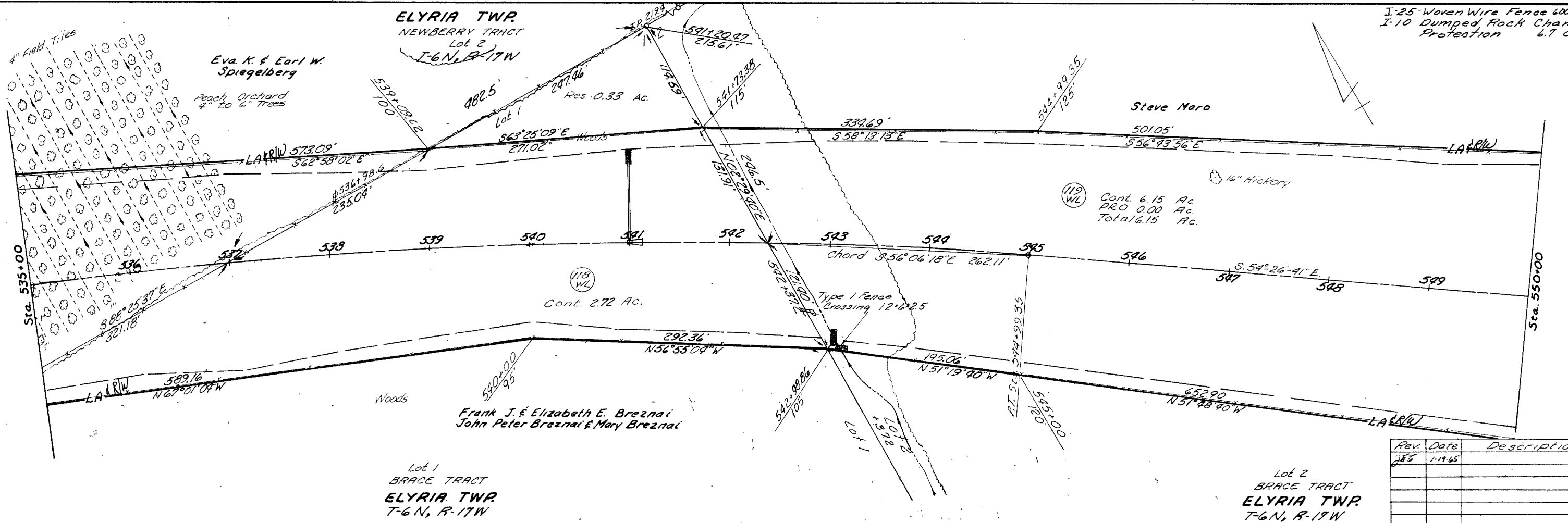
Steve Maro

119 WL  
Cont. 6.15 Ac.  
PRO 0.00 Ac.  
Total 6.15 Ac.

Frank J. & Elizabeth E. Breznal  
John Peter Breznal & Mary Breznal

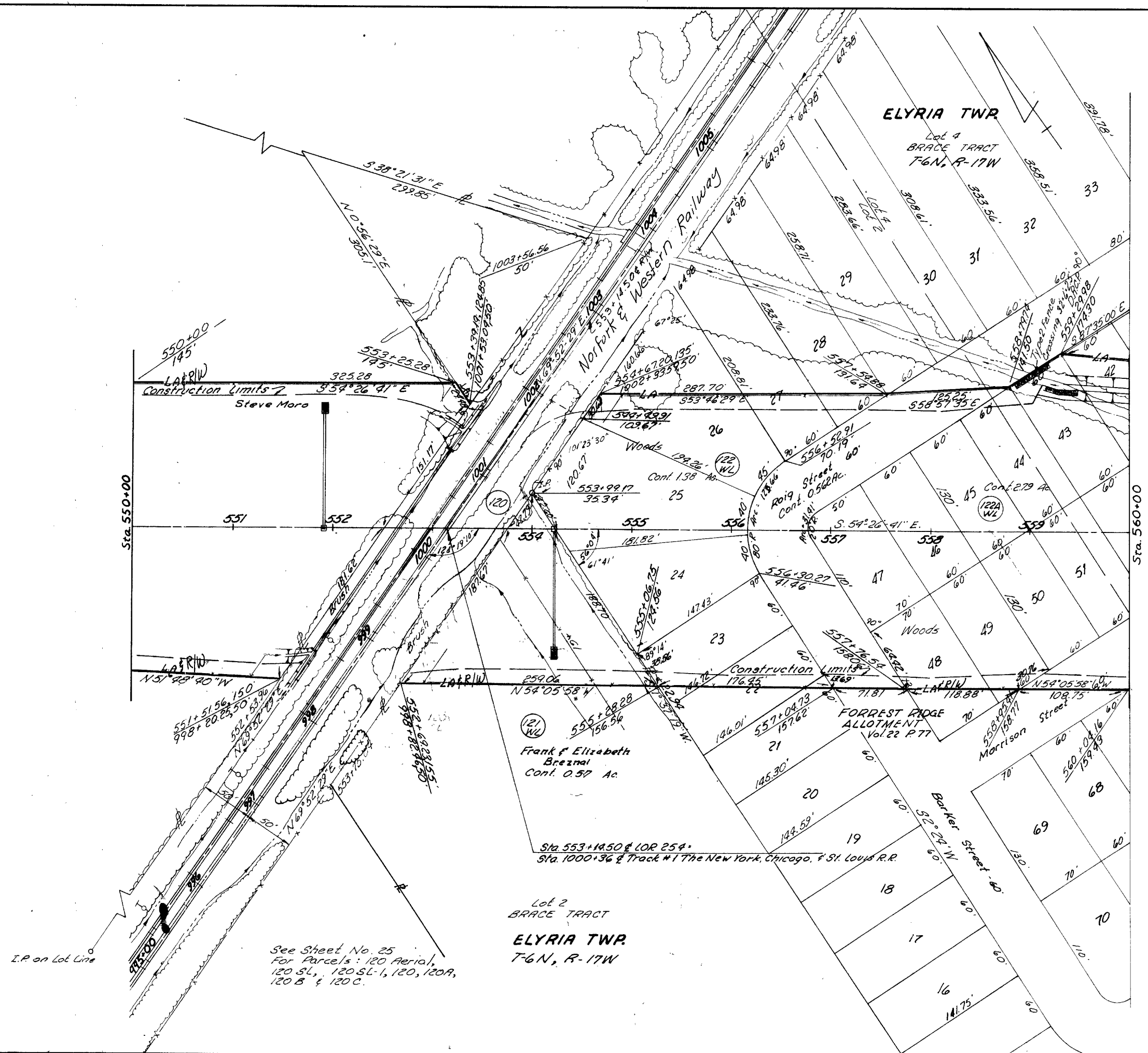
Lot 1  
BRACE TRACT  
ELYRIA TWP  
T-6N, R-17W

Lot 2  
BRACE TRACT  
ELYRIA TWP  
T-6N, R-17W



Rev.	Date	Description
1	1-19-65	

LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'



I-25 Woven Wire Fence 2191 Lin Ft.  
I-10 Dumped Rock Channel  
Protection 17.8 Cu. Yds.  
Note: See Std Dwg. F-3 For Fence  
Connection to Structure  
No. LOR 254-1046

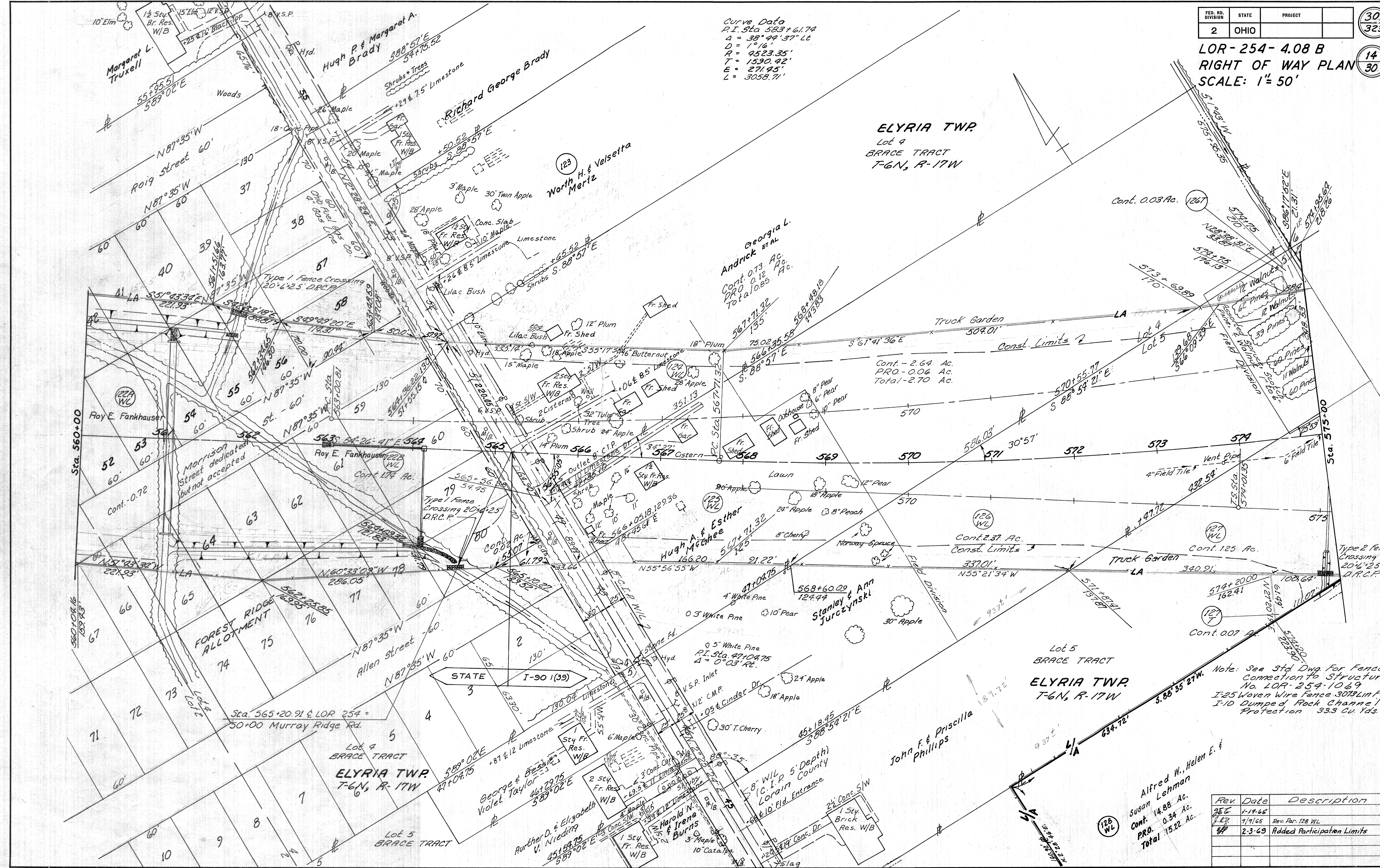
Rev.	Date	Description
950	1-11-65	



**LOR-254-4.08 B**  
**RIGHT OF WAY PLAN**  
**SCALE: 1" = 50'**

Curve Data  
 P.I. Sta 583+61.74  
 Δ = 38° 49' 37" LL  
 D = 1° 16'  
 R = 9523.35'  
 T = 1530.42'  
 E = 271.95'  
 L = 3058.71'

**ELYRIA TWP**  
 Lot 4  
**BRACE TRACT**  
 T-6N, R-17W

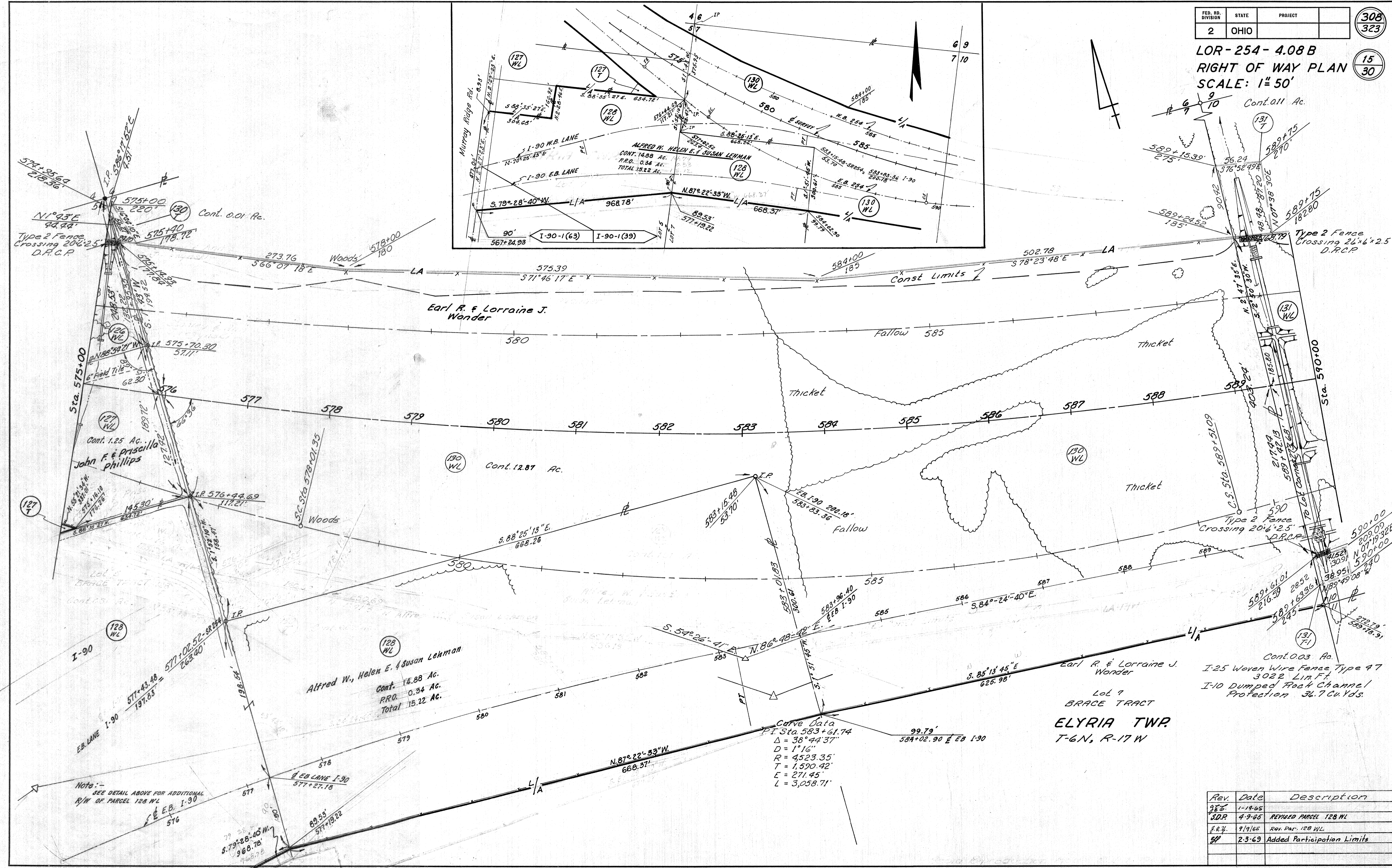


Note: See Std Dwg For Fence Connection to Structure No. LOR-254-1069  
 I-25 Woven Wire Fence 30" Lin F.F.  
 I-10 Dumped Rock Channel Protection 33.3 Cu. Yds.

Alfred W., Helen E. & Susan Lehman  
 Cont. 14.88 Ac.  
 PRO. 0.34 Ac.  
 Total 15.22 Ac.

Rev	Date	Description
1	1-17-65	
2	7/9/65	Rev Par. 128 WL
3	2-3-69	Added Participation Limits

LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'



Rev.	Date	Description
286	1-19-65	
SDP	4-9-66	REVISED PARCEL 128 WL
J.R.Y.	9/9/68	REV. PAR. 128 WL
SH	2-3-69	Added Participation Limits

Curve Data  
 P.I. Sta. 583+61.74  
 $\Delta = 38^{\circ}44'37''$   
 $D = 1^{\circ}16'$   
 $R = 4523.35'$   
 $T = 1590.42'$   
 $E = 271.45'$   
 $L = 3058.71'$

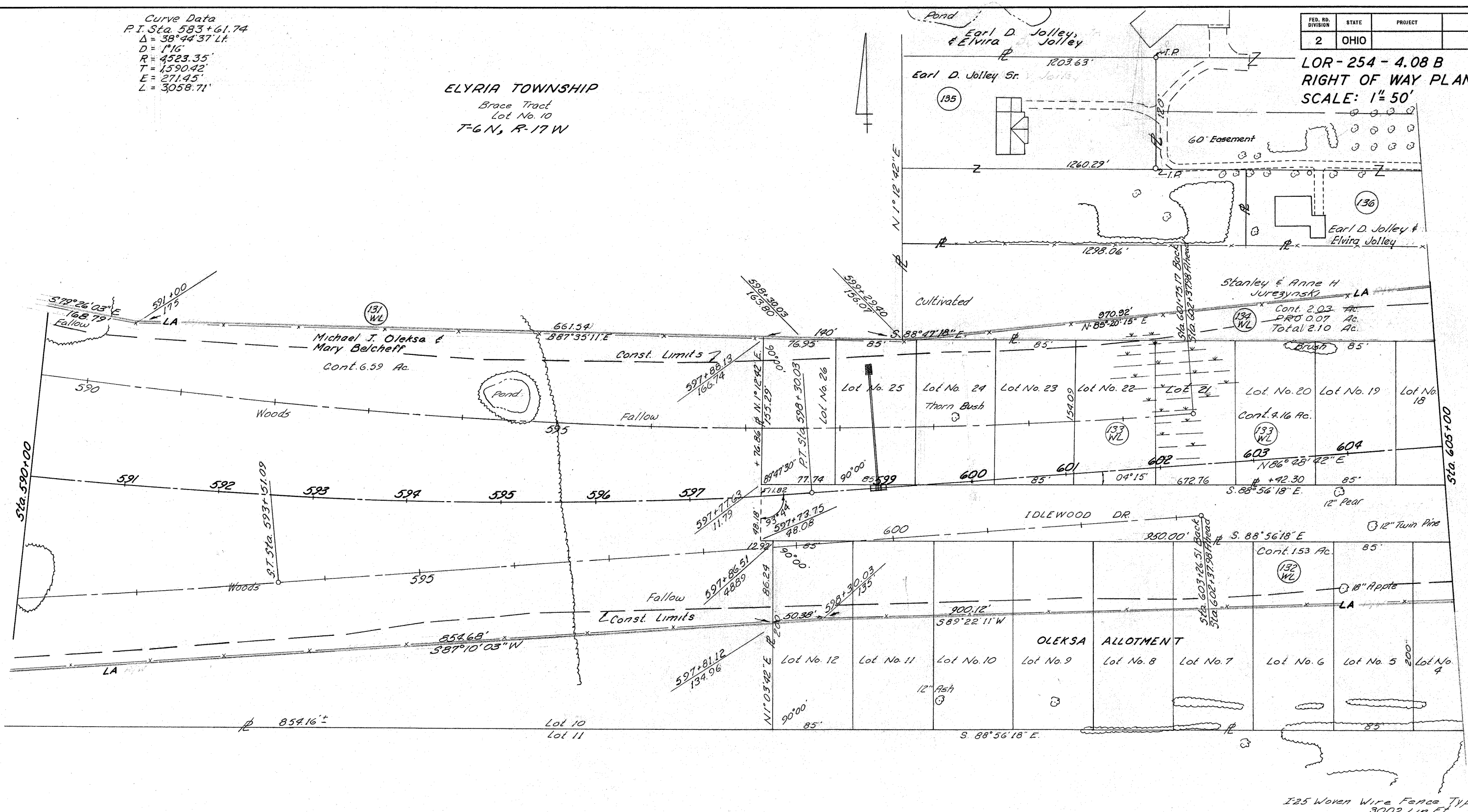
ELYRIA TOWNSHIP  
 Brace Tract  
 Lot No. 10  
 T-6 N, R-17 W

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

309  
323

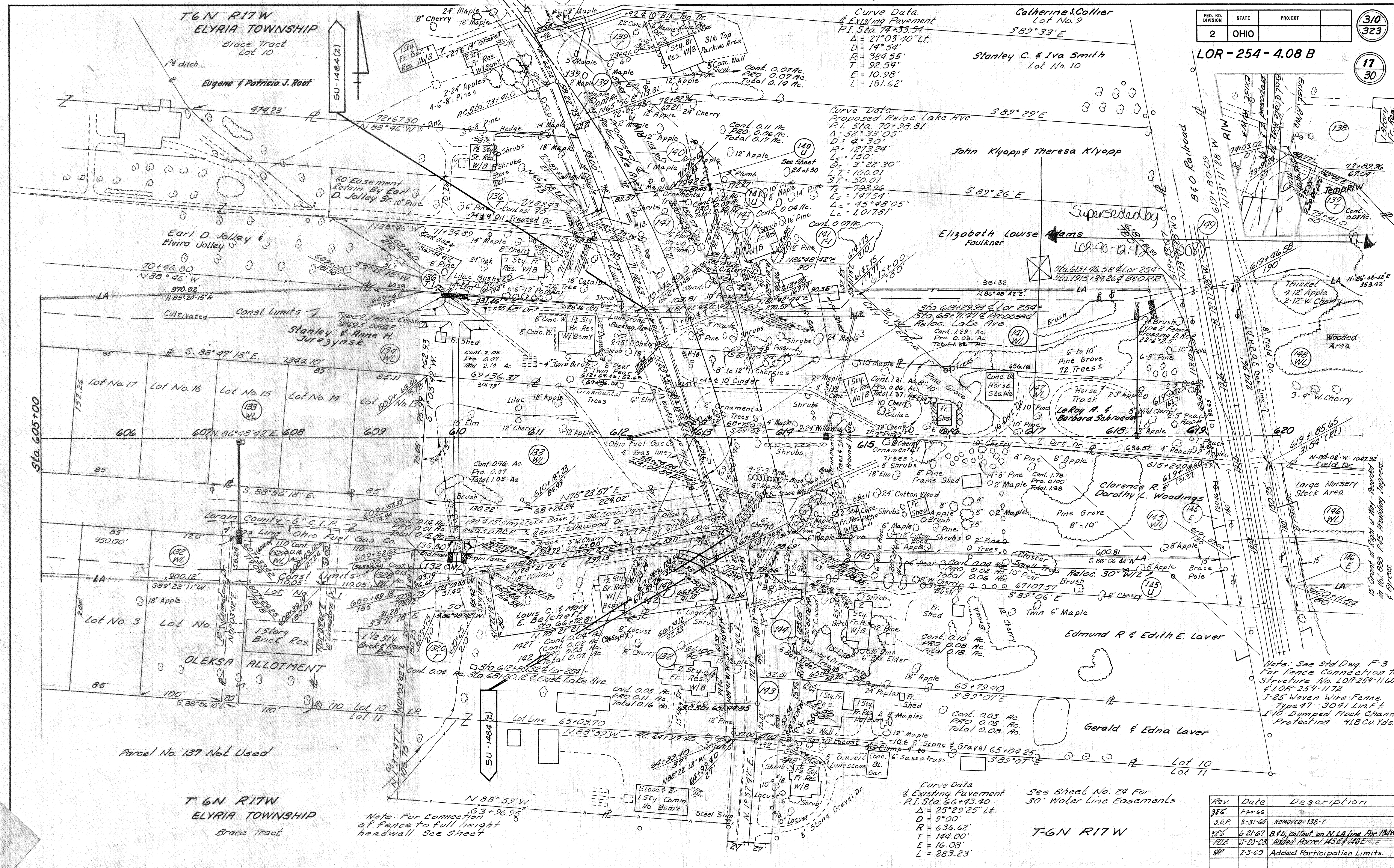
LOR-254-4.08 B  
 RIGHT OF WAY PLAN  
 SCALE: 1" = 50'

16  
30



ELYRIA TOWNSHIP  
 Brace Tract  
 T-6 N, R-17 W

Rev.	Date	Description
986	1-20-65	
986	6-21-67	B#D. on N. LA line For 134 WL



Curve Data  
 Existing Pavement  
 P.I. Sta. 74+33.54  
 $\Delta = 27^{\circ}03'40''$  Lt.  
 $D = 14^{\circ}54'$   
 $R = 384.55'$   
 $T = 92.54'$   
 $E = 10.98'$   
 $L = 181.62'$

Curve Data  
 Proposed Reloc. Lake Ave.  
 P.I. Sta. 70+98.81  
 $\Delta = 52^{\circ}33'05''$  Lt.  
 $D = 4^{\circ}30'$   
 $R = 1273.24'$   
 $L_s = 3^{\circ}22'30''$   
 $L_t = 100.01'$   
 $L = 147.54'$   
 $\Delta_c = 45^{\circ}48'05''$   
 $L_c = 1,017.81'$

Curve Data  
 Existing Pavement  
 P.I. Sta. 66+43.40  
 $\Delta = 25^{\circ}29'25''$  Lt.  
 $D = 9^{\circ}00'$   
 $R = 636.62'$   
 $T = 144.00'$   
 $E = 16.08'$   
 $L = 283.23'$

Note: See Std. Dwg. F-3  
 For Fence Connection to  
 Structure No. LOR-254-11.00  
 & LOR-254-11.72  
 I-25 Woven Wire Fence  
 Type 47 - 30x1 Lin. Ft.  
 I-10 Dumped Rock Channel  
 Protection 418 Cu. Yds.

Rev.	Date	Description
956	1-20-65	REMOVED 138-T
S.O.P.	3-31-68	
976	6-21-67	B&D callout on N.L.A. line for 134W.
R.D.B.	8-20-68	Added Parcel 145 & 148 to file
#	2-3-69	Added Participation Limits.

T-6 N R 17 W  
 ELYRIA TOWNSHIP  
 Brace Tract

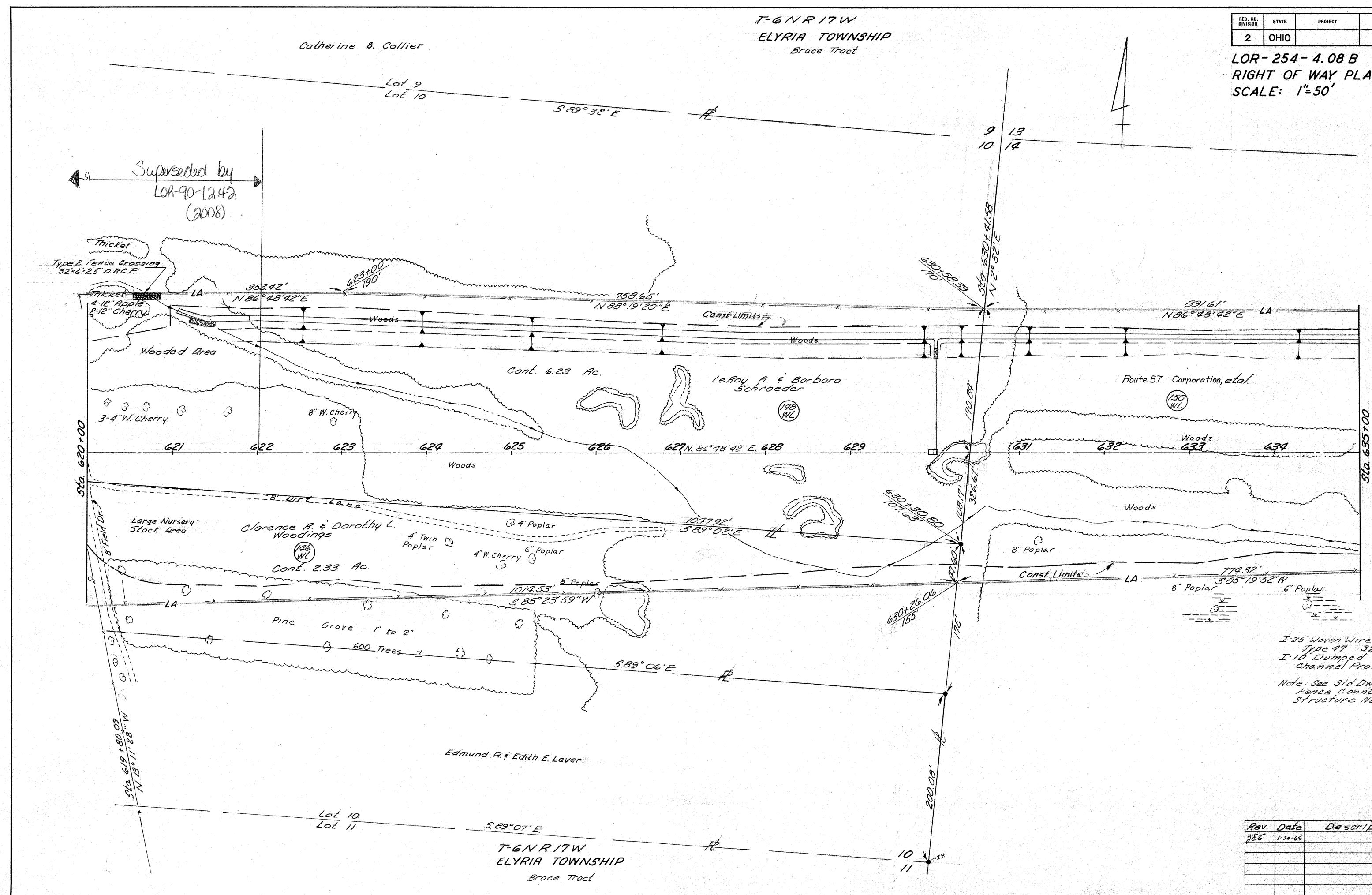
Catherine S. Collier

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

311  
323

LOR-254-4.08 B  
 RIGHT OF WAY PLAN  
 SCALE: 1"=50'

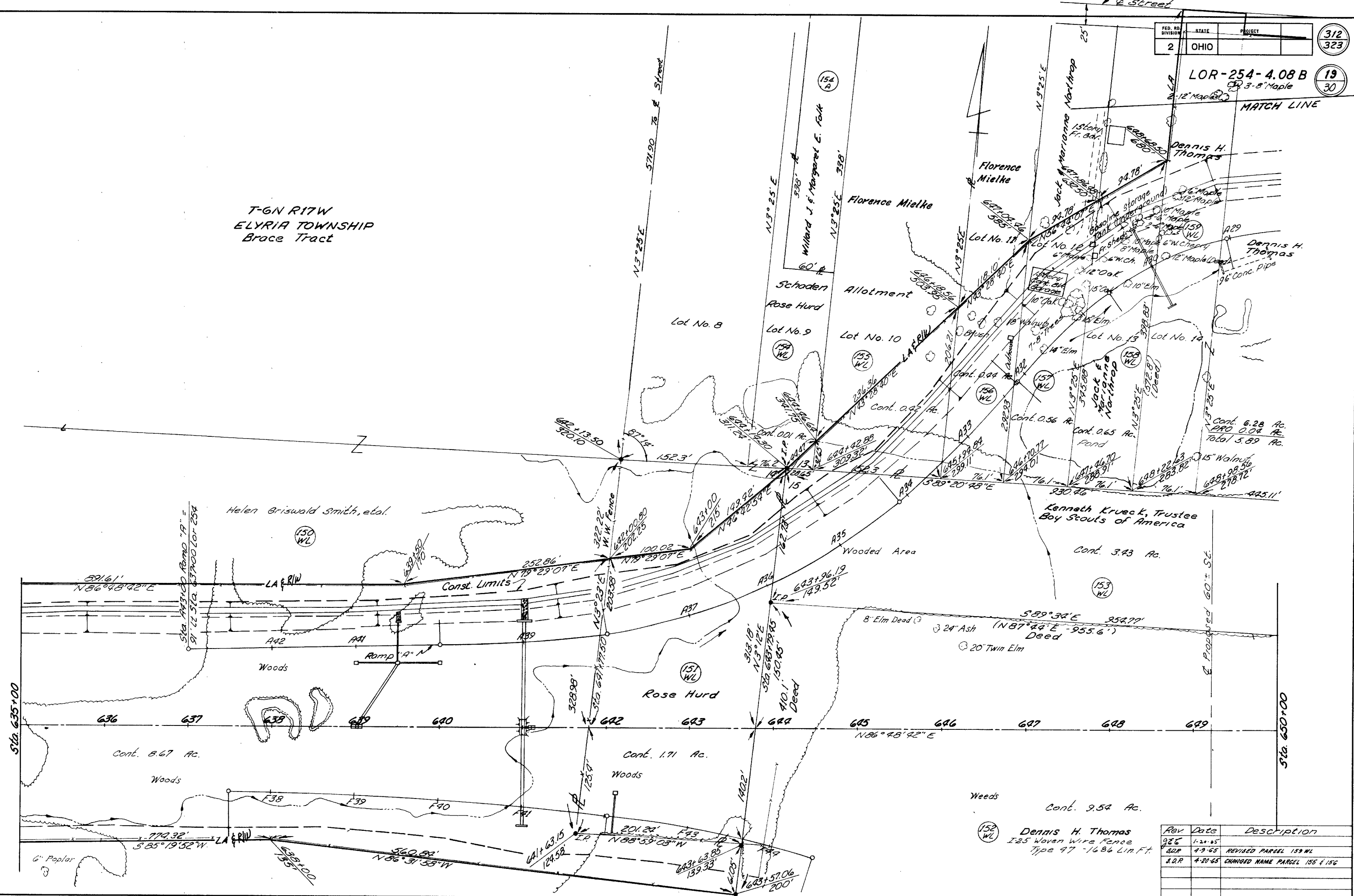
18  
30



1-25 Woven Wire Fence  
 Type 47 32.07 Lin. Ft.  
 1-10 Dumped Rock  
 Channel Protection  
 17.8 Cu. Yds.  
 Note: See Std. Dwg. F-3 For  
 Fence Connection to  
 Structure No. LOR-254  
 1172

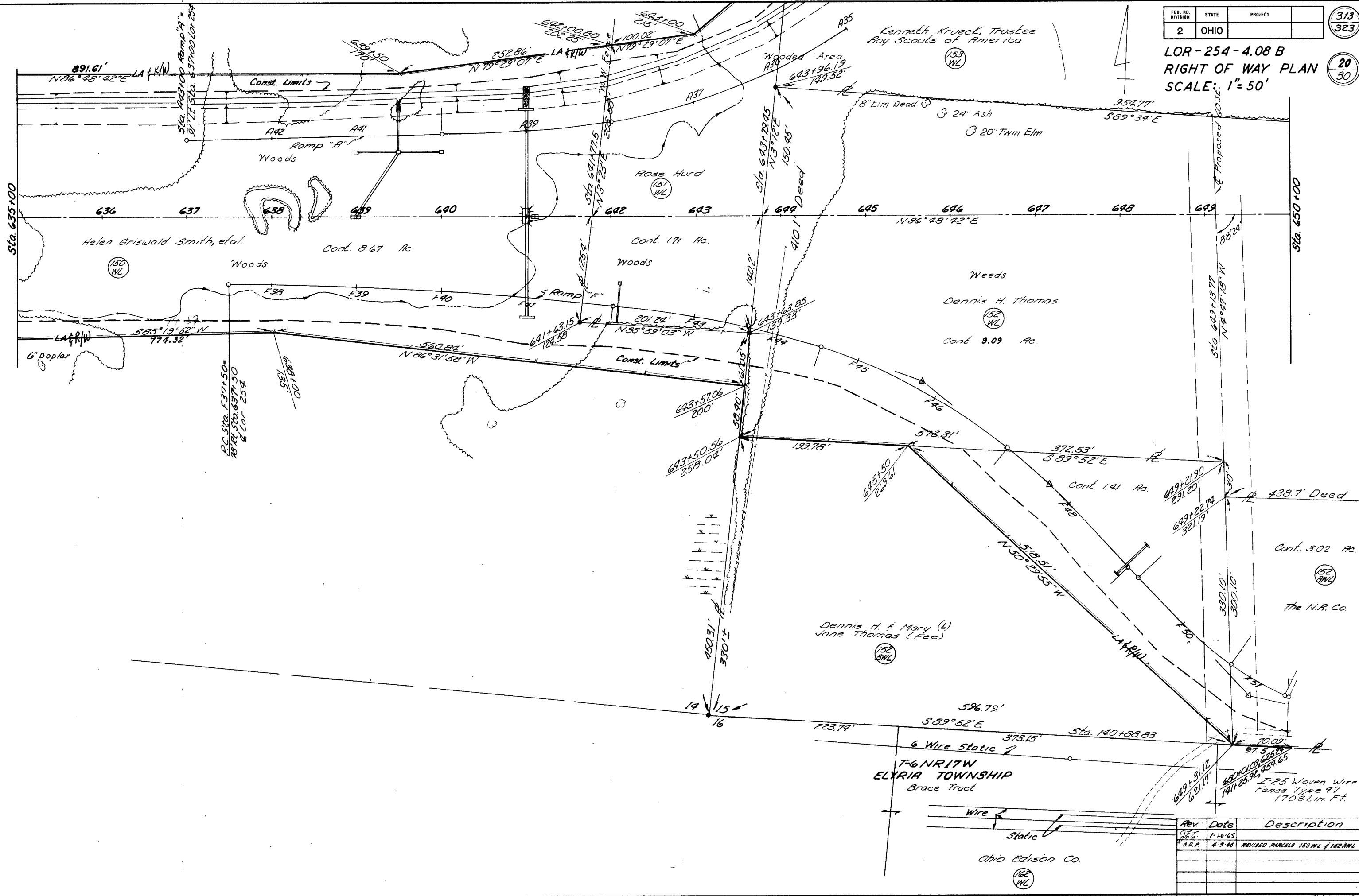
Rev.	Date	Description
256	1-20-65	

T-6N R17W  
ELYRIA TOWNSHIP  
Brace Tract



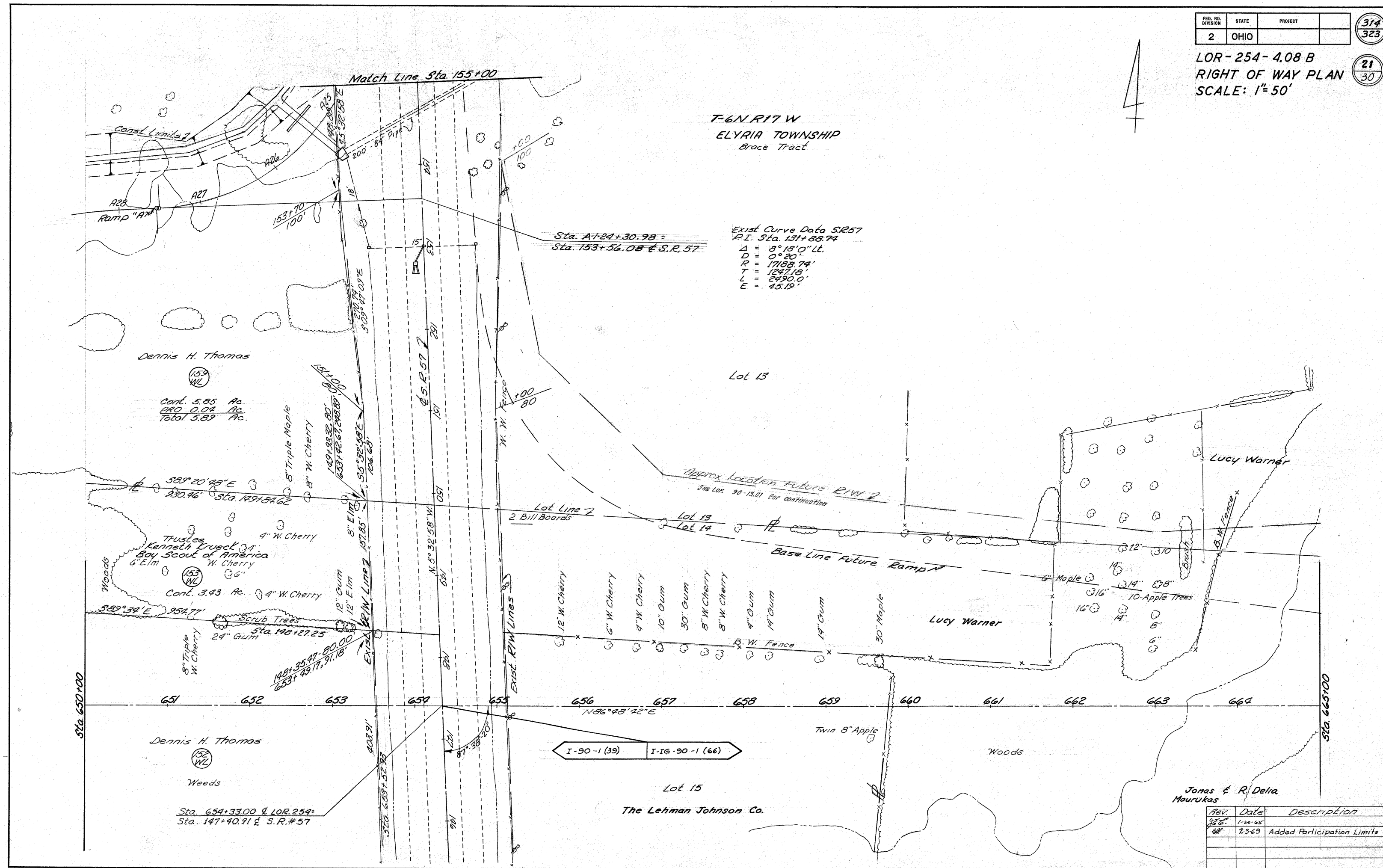
Rev	Date	Description
1	1-20-65	REVISED PARCEL 159 WL
2	4-9-65	CHANGED NAME PARCEL 155 & 156

LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'



Rev.	Date	Description
1	1-20-65	
2	4-9-66	REVISED PARCELS 152 WL & 162 ANL

LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1"=50'



T-6N R17 W  
ELYRIA TOWNSHIP  
Brace Tract

Exist Curve Data S.R.57  
P.I. Sta. 131+88.74  
Δ = 8°18'0" LT.  
D = 0°20'  
R = 17188.74'  
T = 1247.18'  
L = 2490.0'  
E = 45.19'

Sta. A1-24+30.98 =  
Sta. 153+56.08 & S.R. 57

Dennis H. Thomas  
153 WL  
Cont. 5.85 Ac.  
280 0.04 Ac.  
Total 5.89 Ac.

Trustees  
Kenneth Krueck  
Boy Scout of America  
W. Cherry  
6" Elm  
153 WL  
Cont. 3.43 Ac.  
4" W. Cherry

Dennis H. Thomas  
152 WL  
Weeds  
Sta. 654+33.00 & LOR 254-  
Sta. 147+40.91 & S.R.#57

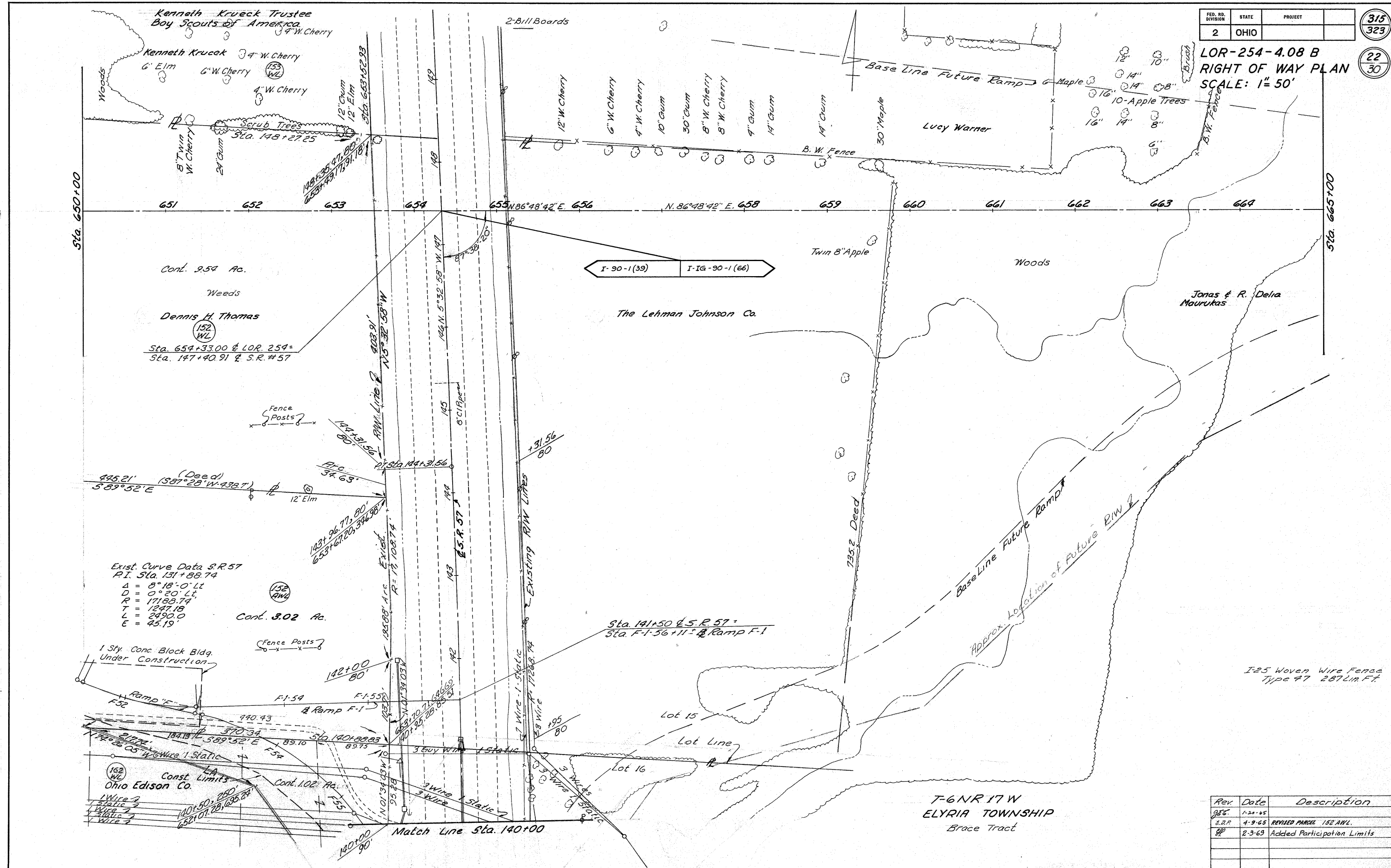
Lot 15  
The Lehman Johnson Co.

Jonas & R. Della  
Maurukas

Rev.	Date	Description
956	1-20-65	
957	2-3-69	Added Participation Limits



LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'



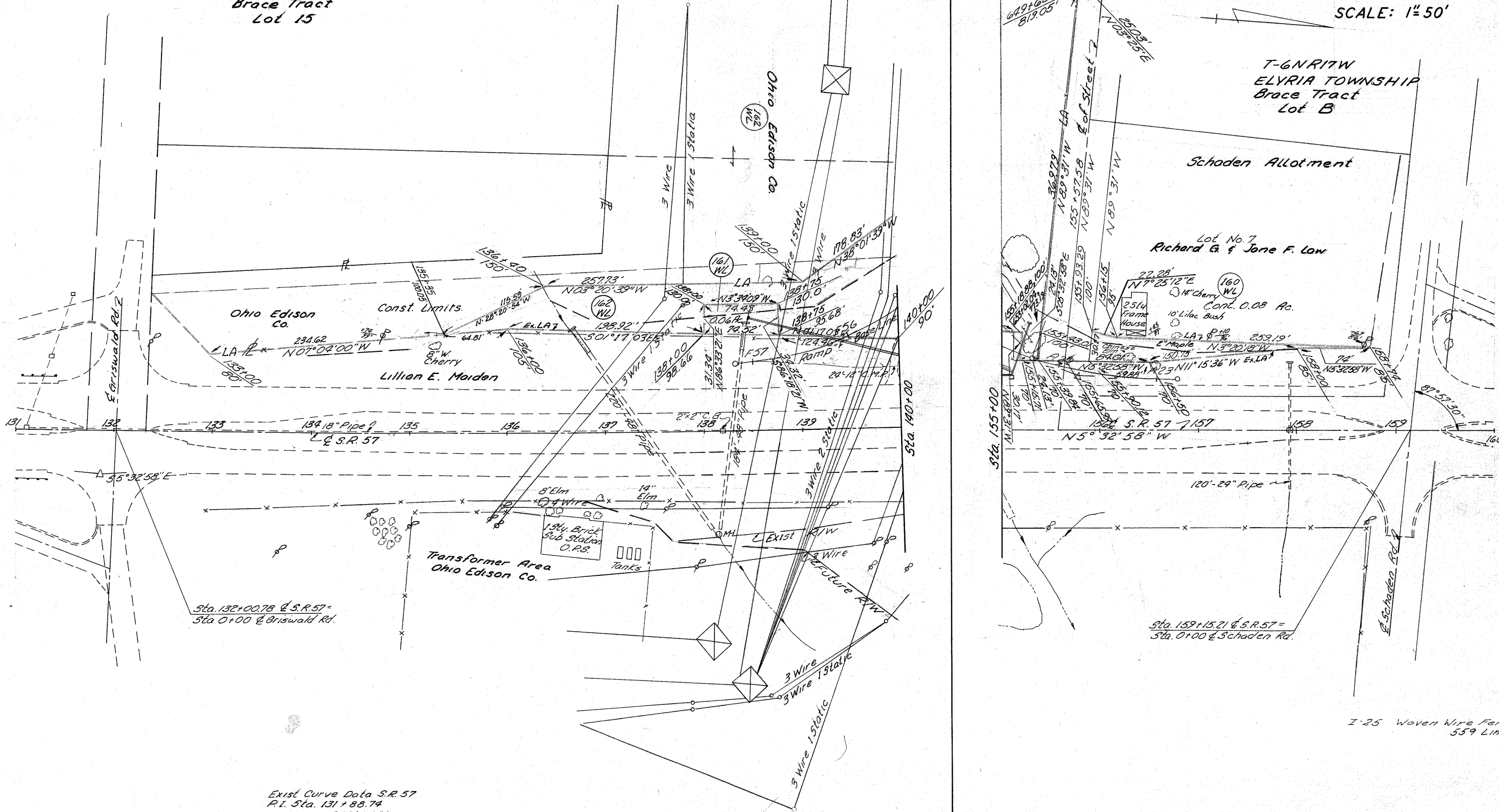
LOR-254-4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1"=50'

T-6NR17W  
ELYRIA TOWNSHIP  
Brace Tract  
Lot 15

T-6NR17W  
ELYRIA TOWNSHIP  
Brace Tract  
Lot B

Schaden Allotment

Lot No. 7  
Richard G. & Jane F. Low



Exist Curve Data S.R. 57  
P.I. Sta. 131 + 88.74  
Δ = 8° 18' 0" Lt  
D = 0° 20' Lt  
R = 17188.74'  
T = 1247.18'  
L = 2490.0'  
E = 45.19'

I-25 Woven Wire Fence Type #1  
539 Lin. Ft.

Rev.	Date	Description
256	1-20-65	
257	6-3-65	Rev. LA line on left between Sta. 135+30 & 136+40. Par. 162 W.

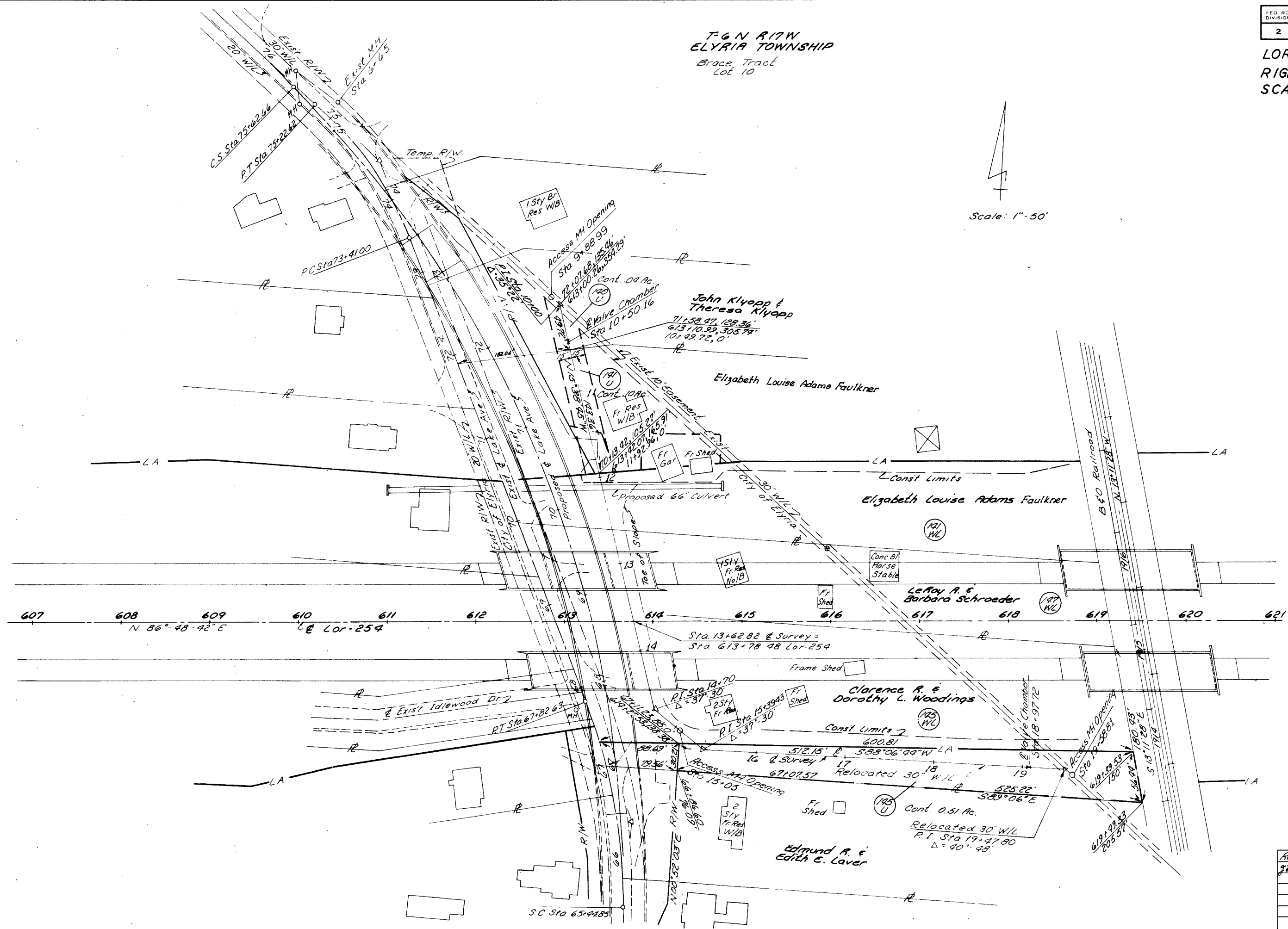
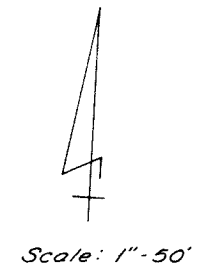
FED RD DIVISION	STATE	PROJECT
2	OHIO	

317  
323

LOR-254-4.08B  
RIGHT OF WAY PLAN  
SCALE: 1" = 50'

24  
30

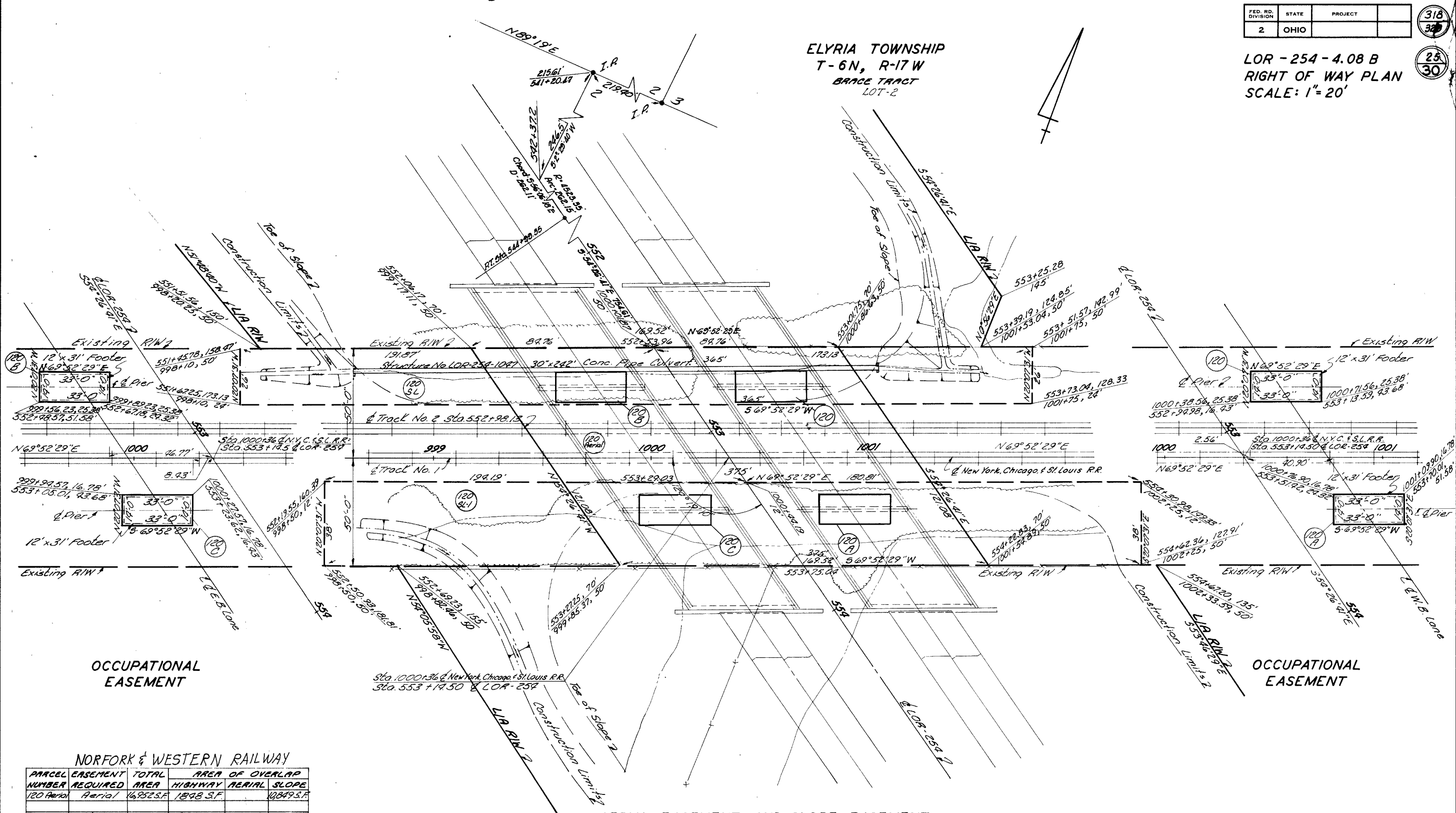
T & N R17W  
ELYRIA TOWNSHIP  
Brace Tract  
Lot 10



Rev.	Date	Description
1	1-20-65	

LOR - 254 - 4.08 B  
RIGHT OF WAY PLAN  
SCALE: 1" = 20'

ELYRIA TOWNSHIP  
T-6N, R-17W  
BRACE TRACT  
LOT-2



OCCUPATIONAL EASEMENT

OCCUPATIONAL EASEMENT

AERIAL EASEMENT AND SLOPE EASEMENT

Sta. 1000+36 @ New York, Chicago & St. Louis R.R.  
Sta. 553+19.50 @ LOR-254

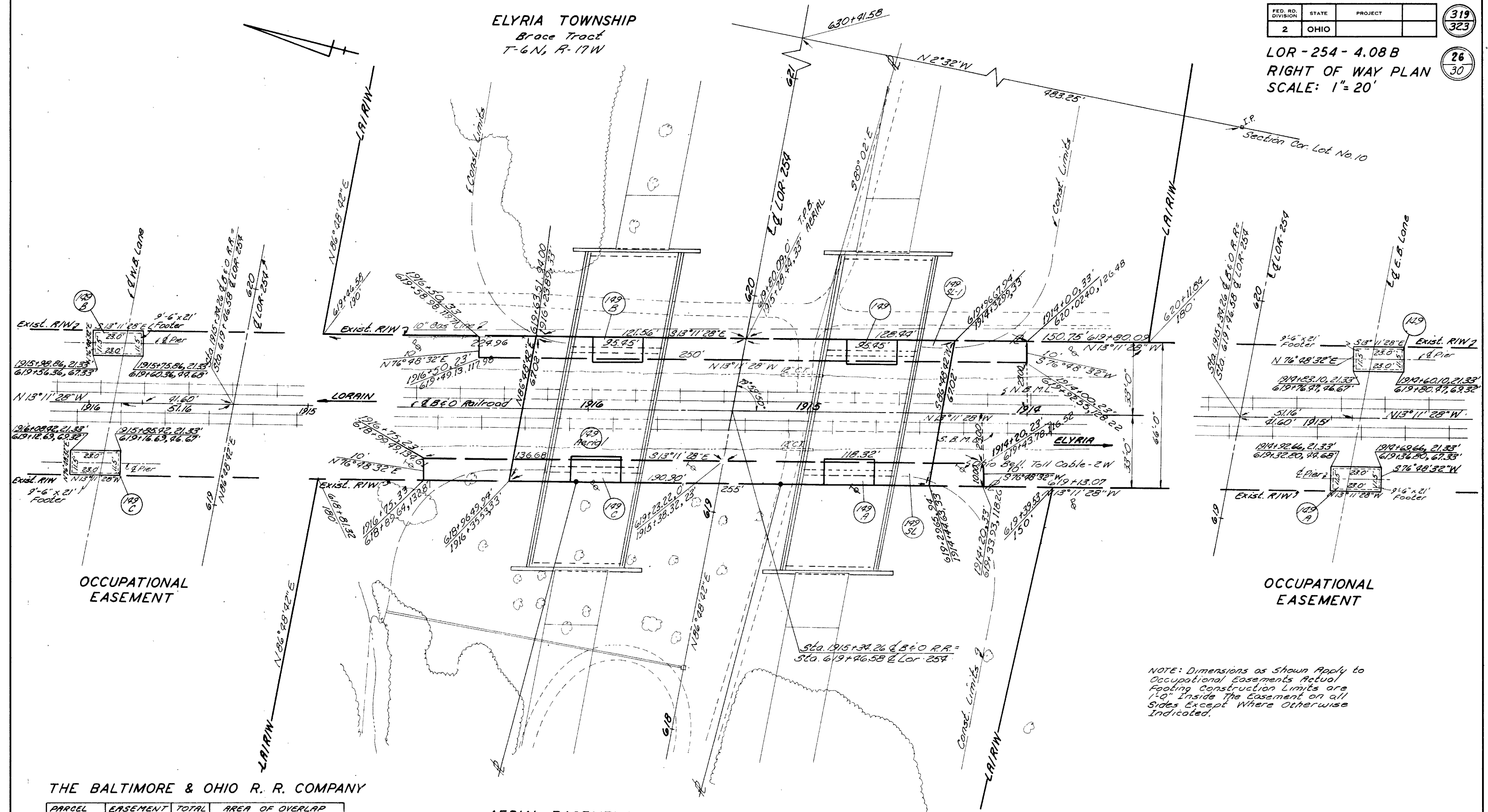
NORFOLK & WESTERN RAILWAY

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP		
			HIGHWAY	AERIAL	SLOPE
120 Aerial	Aerial	16,252 S.F.	18,948 S.F.	10,849 S.F.	
120-SL	Slope	9,490 S.F.	924 S.F.	4,407 S.F.	
120-SL-1	Slope	14,250 S.F.	924 S.F.	4,442 S.F.	
120	Highway	462 S.F.	462 S.F.	462 S.F.	
120A	Highway	462 S.F.	462 S.F.	462 S.F.	
120B	Highway	462 S.F.	462 S.F.	462 S.F.	
120C	Highway	462 S.F.	462 S.F.	462 S.F.	

10/27/64

REV.	DATE	DESCRIPTION

**ELYRIA TOWNSHIP**  
 Brace Tract  
 T-6N, R-17W



NOTE: Dimensions as shown Apply to Occupational Easements Actual Footing Construction Limits are 1'-0" Inside the Easement on all Sides Except Where Otherwise Indicated.

THE BALTIMORE & OHIO R. R. COMPANY

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	AREA OF OVERLAP
			HIGHWAY AERIAL SLOPE
149 Aerial	Aerial	2,539 S.F.	1060 S.F.
149	Highway	265 S.F.	265 S.F. 230 S.F.
149 A	Highway	265 S.F.	265 S.F. 230 S.F.
149 B	Highway	265 S.F.	265 S.F. 230 S.F.
149 C	Highway	265 S.F.	265 S.F. 230 S.F.
149 SL	Slope	2,550 S.F.	460 S.F. 1909 S.F.
149 SL-1	Slope	2,300 S.F.	460 S.F. 1909 S.F.

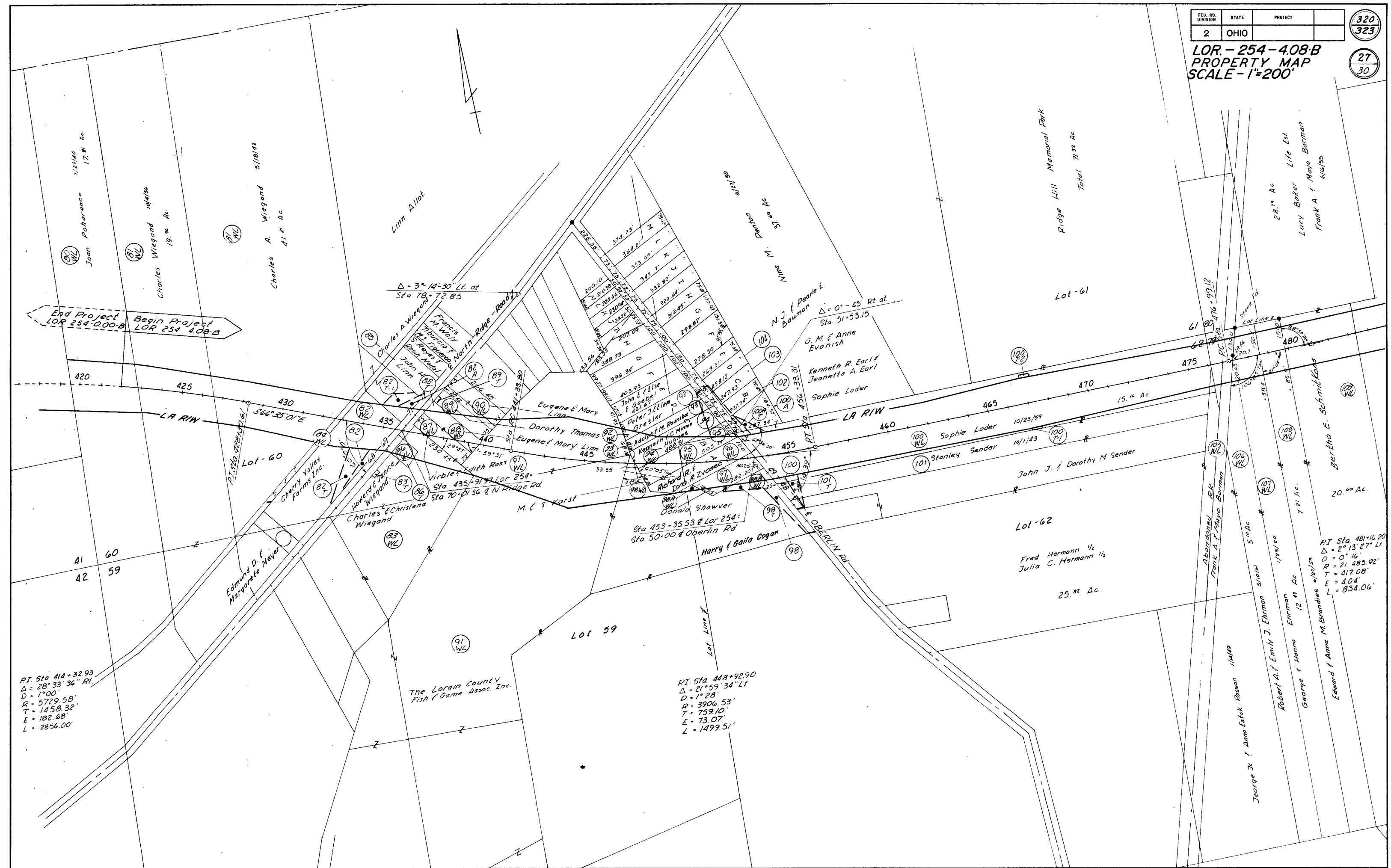
AERIAL EASEMENT AND SLOPE EASEMENT

Rev.	Date	Description
366	1-20-65	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

320  
323  
27  
30

**LOR-254-408-B**  
**PROPERTY MAP**  
**SCALE-1"=200'**



End Project LOR 254-000-B  
Begin Project LOR 254-408-B

PI. Sta 414+32.93  
Δ = 28° 33' 36" Rt  
D = 1° 00'  
R = 5729.58'  
T = 1458.32'  
E = 182.68'  
L = 2856.00'

The Lorain County  
Fish & Game Assoc. Inc.

PI. Sta 418+92.90  
Δ = 21° 59' 34" Lt  
D = 1° 28'  
R = 3906.53'  
T = 759.10'  
E = 73.07'  
L = 1499.51'

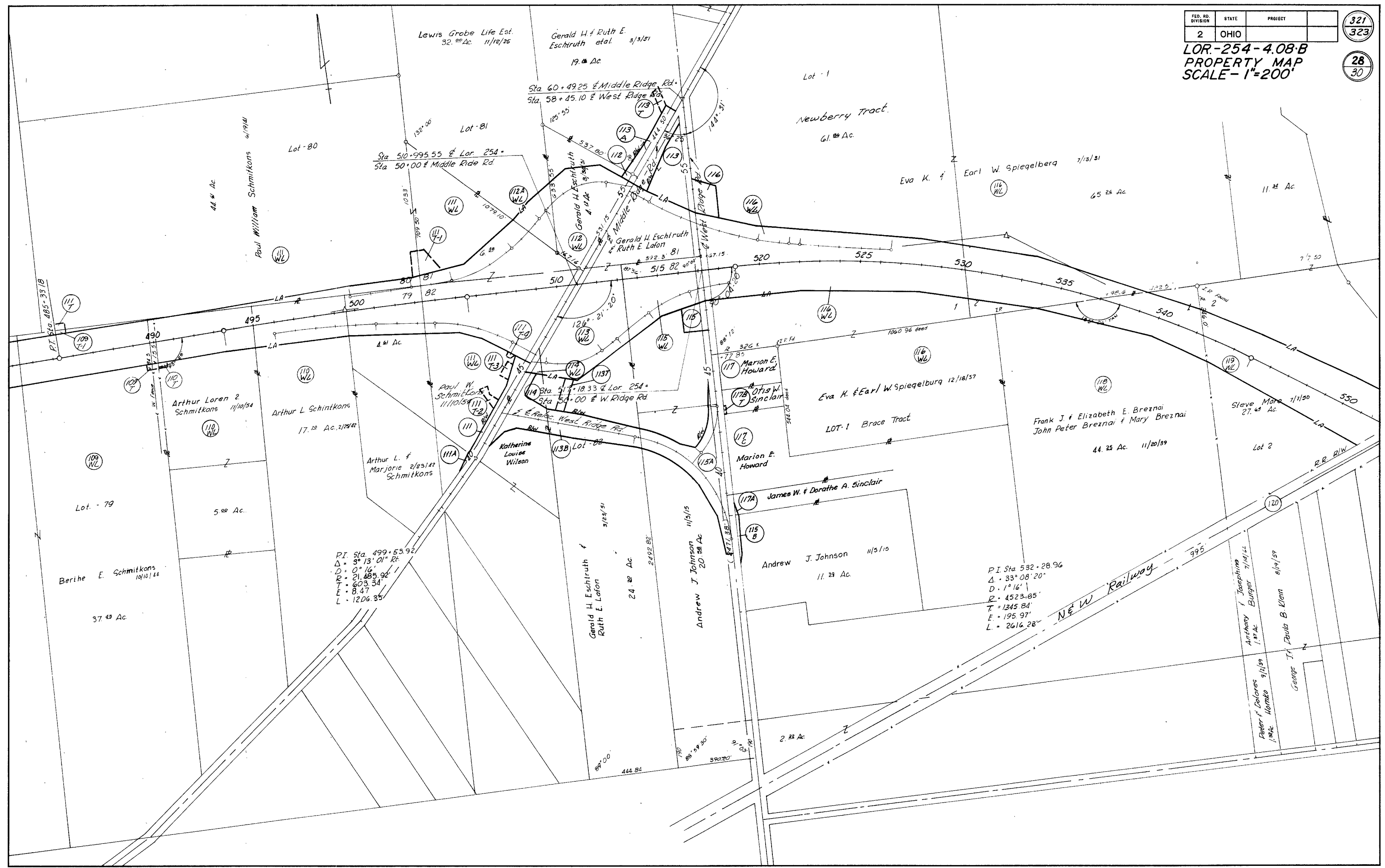
PT Sta. 481+16.20  
Δ = 2° 13' 27" Lt  
D = 0' 16"  
R = 21,485.92'  
T = 417.08'  
E = 404'  
L = 834.06'

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

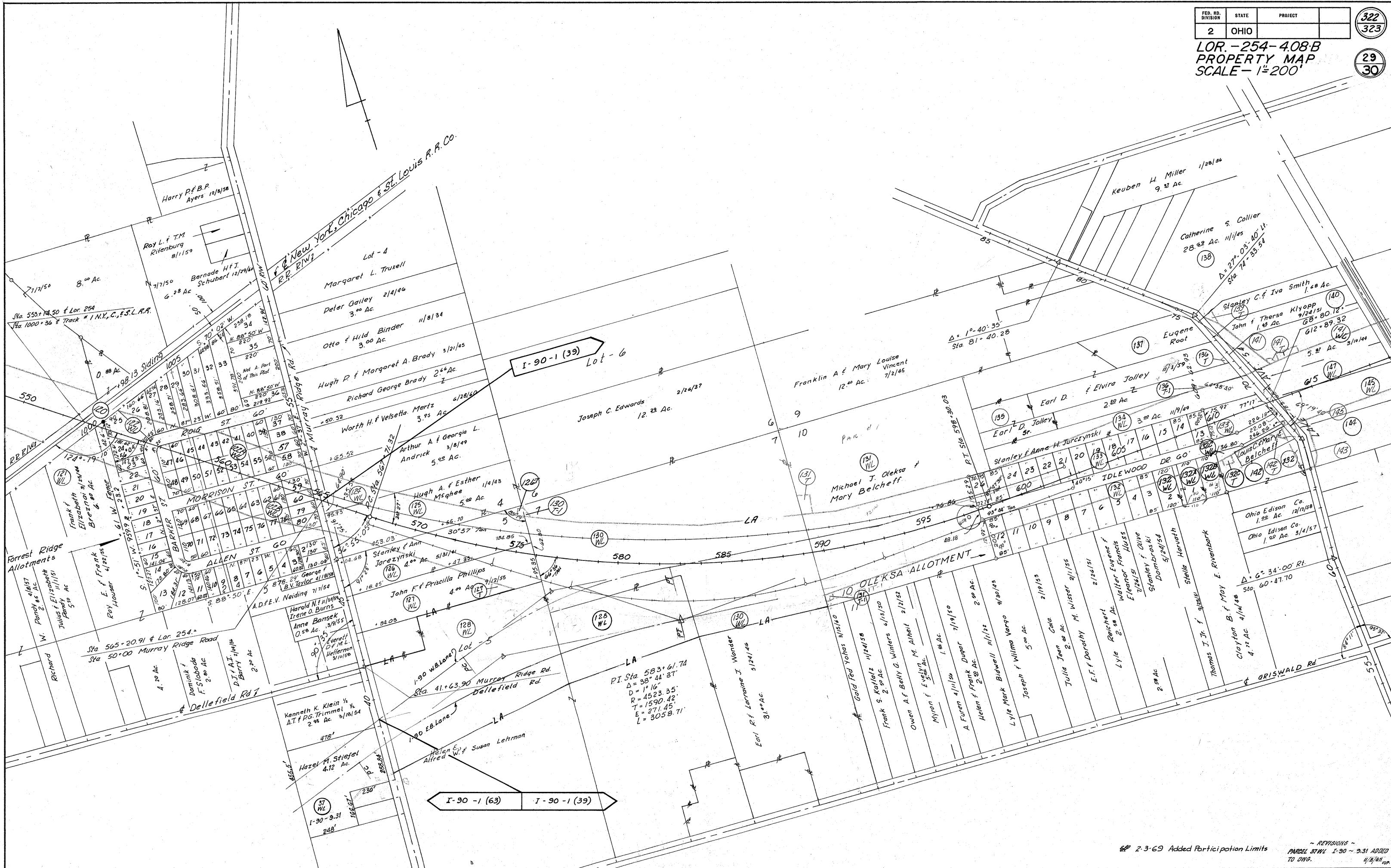
321  
323

LOR-254-4.08-B  
PROPERTY MAP  
SCALE-1"=200'

28  
30



LOR-254-408B  
PROPERTY MAP  
SCALE - 1"=200'



I-90-1 (63) I-90-1 (39)

PI Sta. 583+61.74  
 $\Delta = 38^{\circ} 44' 37''$   
 $D = 17' 16''$   
 $R = 4523.35'$   
 $T = 1590.42'$   
 $E = 271.45'$   
 $L = 3058.71'$

2-3-69 Added Participation Limits  
 REVISIONS -  
 PARCEL 37 WL I-90-2-31 ADDED TO OWN. 4/8/69

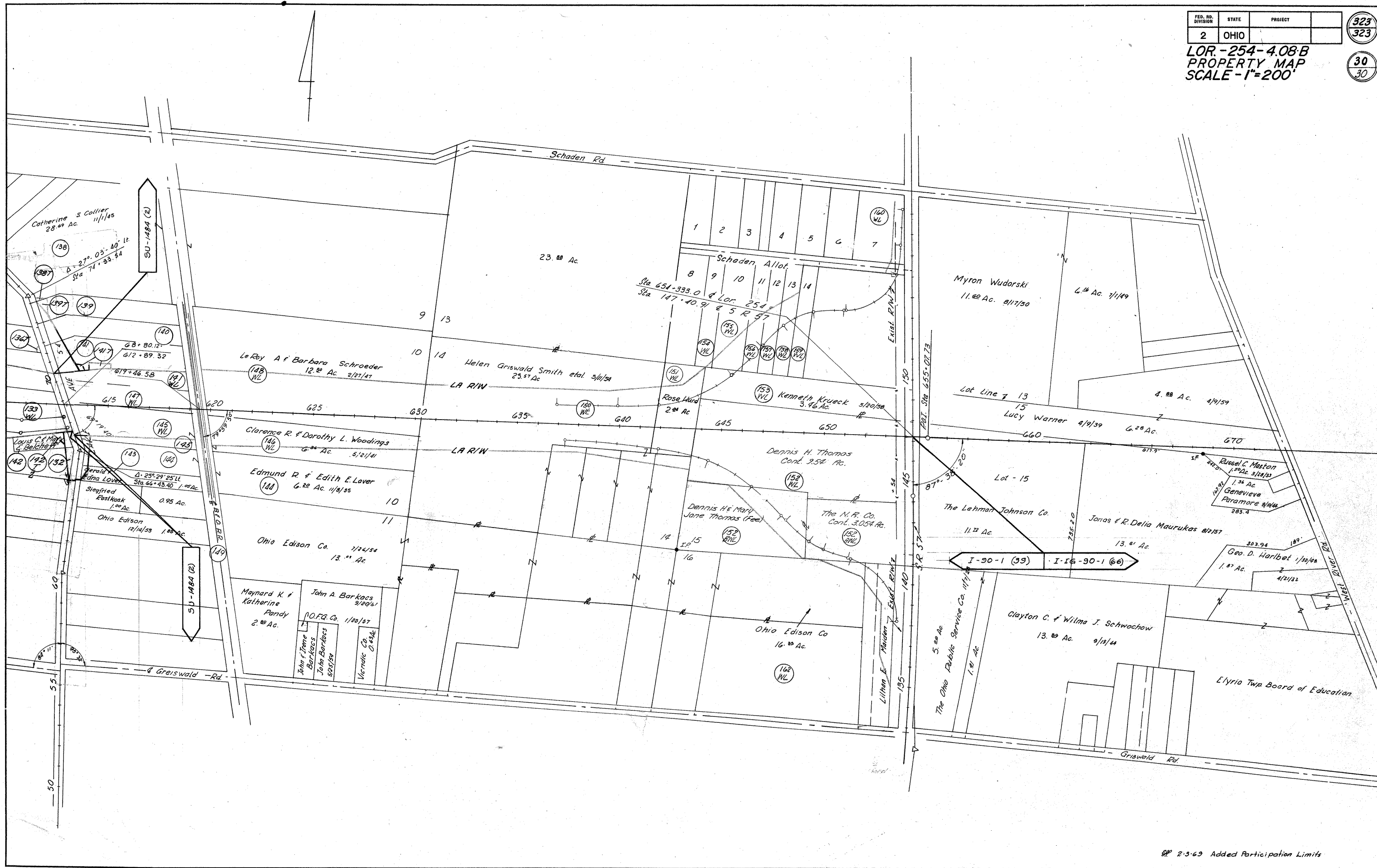


FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

323  
323

LOR-254-4.08-B  
PROPERTY MAP  
SCALE - 1" = 200'

30  
30



GENERAL INFORMATION

INTRODUCTION

The project consists of the major relocation of 1.2 miles of SR 254, beginning 0.2 mile south of existing SR 254, 0.6 mile east of SR 59, extending eastward, and terminating 100 feet east of SR 57, 1 mile south of existing SR 254. Included in this report are the profiles of North Ridge, Oberlin, Middle Ridge, and West Ridge Roads, and Lake Avenue.

Proposed grade indicates the following:

SR 254 - cuts, maximum 71 feet in depth; fill embankments, maximum 36 feet in height.

North Ridge, Oberlin, Middle Ridge and West Ridge Roads - fill embankment, maximum 6 feet in height.

Lake Avenue - proposed grade not available at time of report.

GEOLOGY OF THE PROJECT

The alignment traverses the generally flat glaciated Lake Plain Region. In the project area are two beach ridges of old Lakes Whittlesey and Warren, and a quarried knob of the resistant Berea sandstone. Thin to moderately deep lacustrine and beach deposits overlie sandstone, shale, and indurated clay, of the Berea and Redford formations, of Lower Mississippian age, and the Ohio formation, of Upper Devonian age. A rock section was measured in the abandoned rock quarry, in the vicinity of stations 424+00 and 414+00.

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical earth auger, hand auger (in areas of difficult access), and rotary type drill rig, between September 11 and 12, and on October 11, 1962.

INVESTIGATIONAL FINDINGS

Materials immediately below grade consist of the following:

SR 254 - sandy gravels, sandy silts and silt clays, in the A-1-b, A-2-II, A-1a and A-6a classifications, having generally low moisture contents, or moisture contents in the lower portions of the plastic range, as well as indurated clay, shale, and sandstone bedrock. Bedrock is anticipated in the excavations at the following locations:

Stations 434+00 to 456+50 - shale and indurated clay, at grade and in the ditches; sandstone, shale and indurated clay in the back slopes.

Stations 514+50 to 536+00 - shale and sandstone at grade, in the ditches and back slopes.

Frost susceptible sandy silts were encountered within three feet below proposed grade at stations 424+00 and 507+37. Wet materials were encountered at stations 434+00, 503+00 and 512+00. Elastic clay was noted at grade, at station 423+50.

North Ridge Road - sands, in the A-2a classification, and random fill material (encountered at station 66+00).

Oberlin Road - sand and sandy silts, in the A-2a and A-1a classifications.

Middle Ridge Road and Lake Avenue - sand, in the A-2a classification.

Relocated West Ridge Road - sands, sandy silts and silt clays, in the A-2a, A-1a and A-6 classifications. Frost susceptible sandy silts was encountered within three feet below grade at station 414+00.

In the embankment foundation areas, materials are comprised of the following:

SR 254 - silt clays with silts and silty clays in the A-6a, A-1, and A-6b classifications, and occasional sandy gravels, sands, and clays. Wet materials were encountered at the following stations:

575+00	627+00 to 629+50
593+50 to 598+55	633+00 to 616+00
613+30	653+00

North Ridge, Middle Ridge and Oberlin Roads - sand, silts, silt clays and clays, in the A-3, A-4, A-6a, and A-7-6 classifications.

Relocated West Ridge Road - sands and sandy silts, in the A-2a and A-1a classifications and occasional silt clays and sandy gravels, containing various amounts of organic matter between stations 50+50 and 55+00. Two to 11 feet of compressible, low strength peat and organic elastic clay were encountered between stations 51+00 and 54+50.

**LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 290 SAMPLES TESTED**

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Gravel and/or stone fragments with sand	A-1-b(0)	A-1-b	51	12	18	9	10	22	1	11	10
Fine sand	A-3(0)	A-3	9	27	56	4	11	11P	11P	12	10
Coarse and fine sand	-----	A-3a	5	21	59	6	16	11P	11P	12	16
Gravel and/or stone fragments with sand and silt	A-2-II(0)	A-2-II	11	6	23	11	16	20	0	11	16
Gravel with sand, silt, and clay	A-2-6(0)	A-2-6	39	39	13	1	9	29	11	16	1
Sandy silt	A-II(5)	A-IIa	15	6	26	26	27	24	3	17	66
Silt	A-4(0)	A-4b	1	1	9	55	34	24	2	21	20
Plastic silt and clay	A-5(2)	A-5	0	8	50	23	19	67	0	10	1
Silt and clay	A-6(0)	A-6a	12	5	11	27	45	29	12	16	105
Silty clay	A-6(11)	A-6b	11	3	10	32	51	39	18	20	21
Plastic clay	A-7-5(20)	A-7-5	1	3	16	21	59	69	36	11	3
Clay	A-7-6(15)	A-7-6	0	3	6	22	69	48	24	10	12
Random fill											VISUAL CLASSIFICATION
Fine-textured peat											VISUAL CLASSIFICATION
Sedimentary peat											VISUAL CLASSIFICATION
Woody peat											VISUAL CLASSIFICATION
Weathered indurated clay											VISUAL CLASSIFICATION
Weathered shale											VISUAL CLASSIFICATION
Weathered sandstone											VISUAL CLASSIFICATION
Indurated clay											VISUAL CLASSIFICATION
Shale											VISUAL CLASSIFICATION
Sandstone											VISUAL CLASSIFICATION
Various other material											VISUAL CLASSIFICATION
Sod and/or Topsoil											Approximate depth.
Berm material											
Auger boring - plan view											
Drive sample and/or core boring - plan view											
Auger boring plotted to vertical scale only											
Drive sample and/or core boring plotted to vertical scale only											
Number of blows for "Standard Penetration" test											
Water content											
Free water											
Broken rock interval											

NOTE: Figures beside borings indicate water content in percent. e.g. 15

REVISED 3/18/64

NOTE: The section designation appearing throughout the soil profile sheets shall be considered to read

LOR-254 - 4.08 B

LOR-90 - 11.90

FED. NUMBERS

U-1115 (1)

I-90-1 (39) 02

SU-1484 (2)

**SOIL PROFILE**

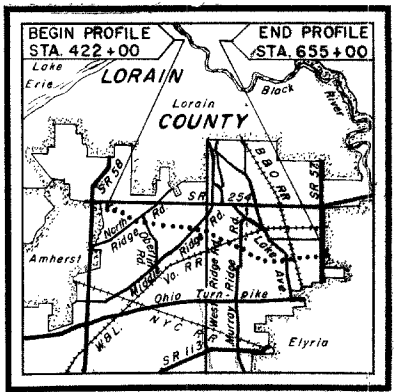
**LORAIN COUNTY**

**LOR-254 - 4.08 B**

**OHIO STATE HIGHWAY TESTING LABORATORY**

1820 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.



**LOCATION MAP**

Recon - P.L.H. - 8/16/62 - 8/23/62

Core - D.W.B.; W.F.H. - 9/11/62 - 9/13/62; 10/4/62

Drilling - Auger - J.A.G., A.J.P., L.M.D. - 9/4/62 - 9/12/62

Drafting - R.D.S. - 10/15/62

REVISED

Drafting - R.C.B. - 3/18/64

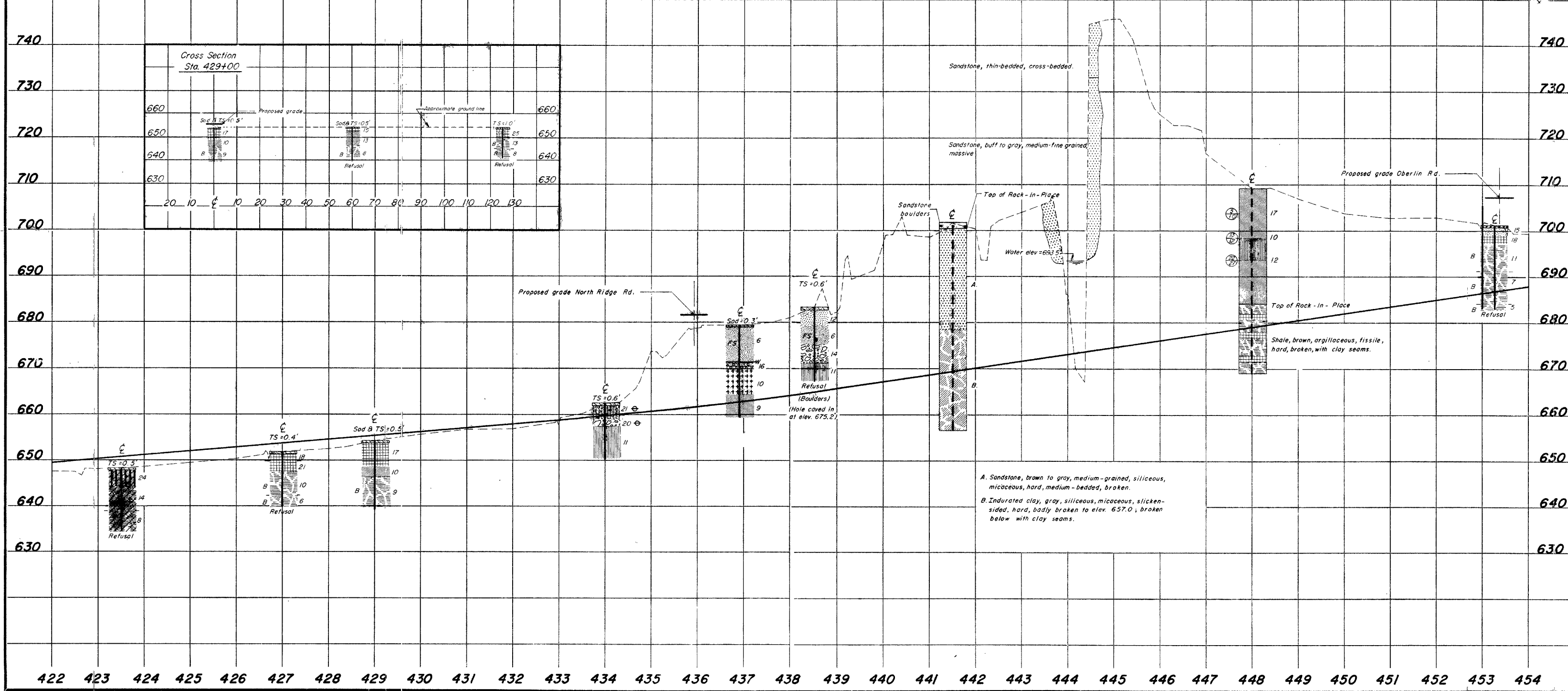
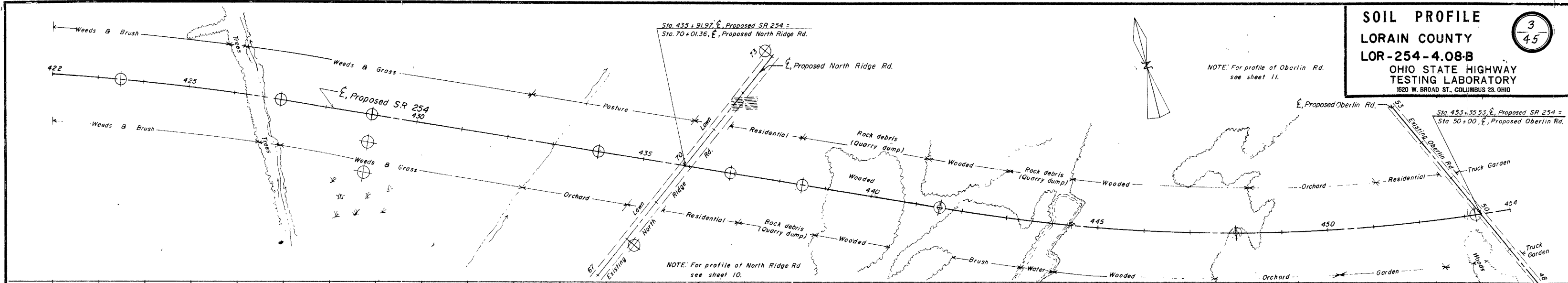


**SOIL PROFILE**  
**LORAIN COUNTY**  
**LOR-254-4.08-B**  
**OHIO STATE HIGHWAY TESTING LABORATORY**  
 1620 W. BROAD ST., COLUMBUS 23, OHIO

3  
45

NOTE: For profile of Oberlin Rd. see sheet 11.

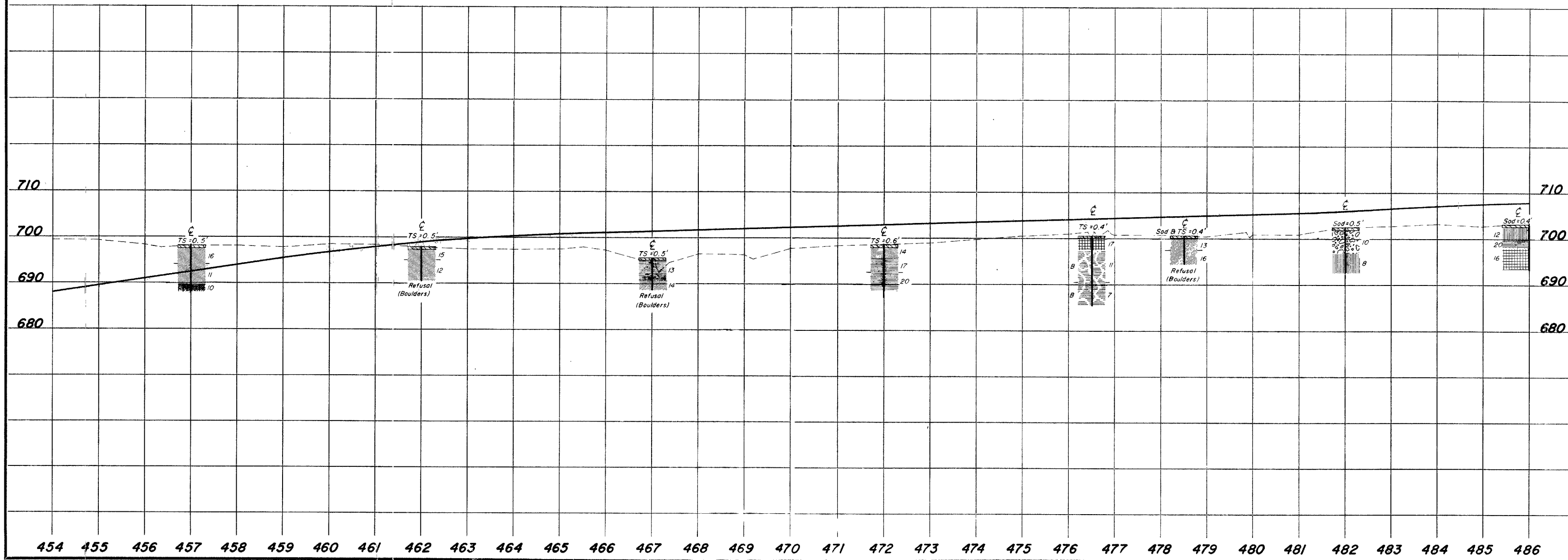
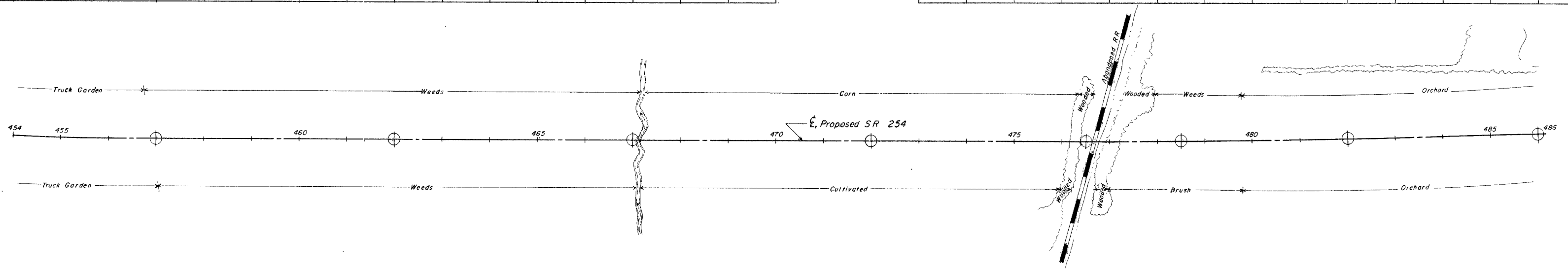
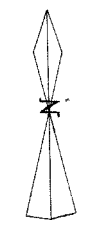
NOTE: For profile of North Ridge Rd see sheet 10.



A. Sandstone, brown to gray, medium-grained, siliceous, micaceous, hard, medium-bedded, broken.  
 B. Indurated clay, gray, siliceous, micaceous, slickensided, hard, badly broken to elev. 657.0; broken below with clay seams.

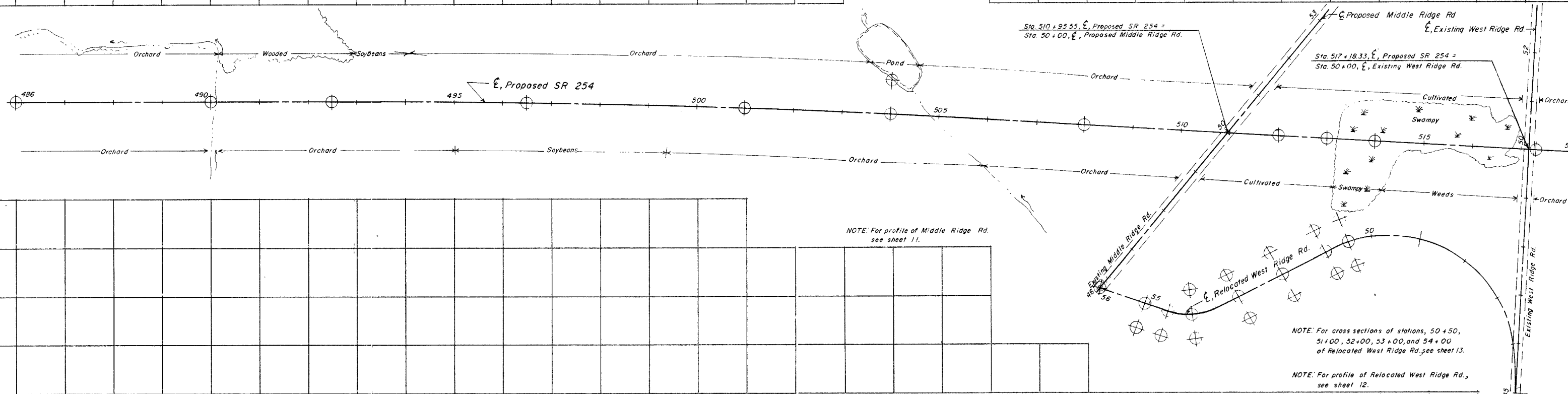
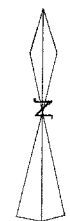
**SOIL PROFILE**  
**LORAIN COUNTY**  
**LOR-254-4.08B**  
 OHIO STATE HIGHWAY  
 TESTING LABORATORY  
 1620 W. BROAD ST., COLUMBUS 23, OHIO

4  
4.5



**SOIL PROFILE**  
**LORAIN COUNTY**  
**LOR-254-4.08B**  
 OHIO STATE HIGHWAY  
 TESTING LABORATORY  
 1620 W. BROAD ST., COLUMBUS 23, OHIO

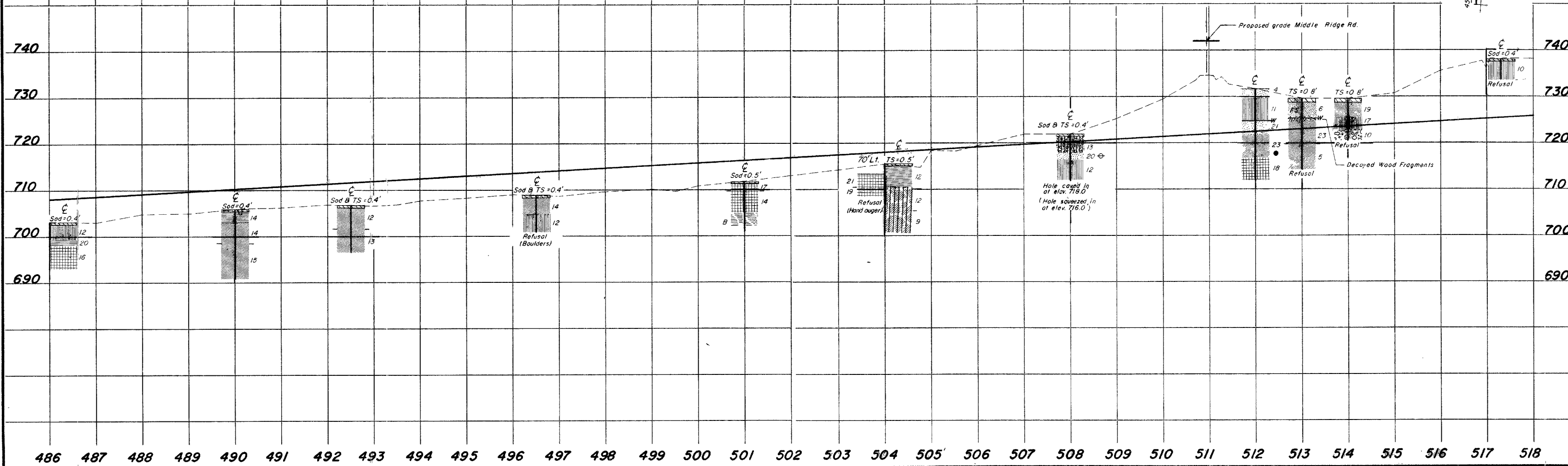
5  
45



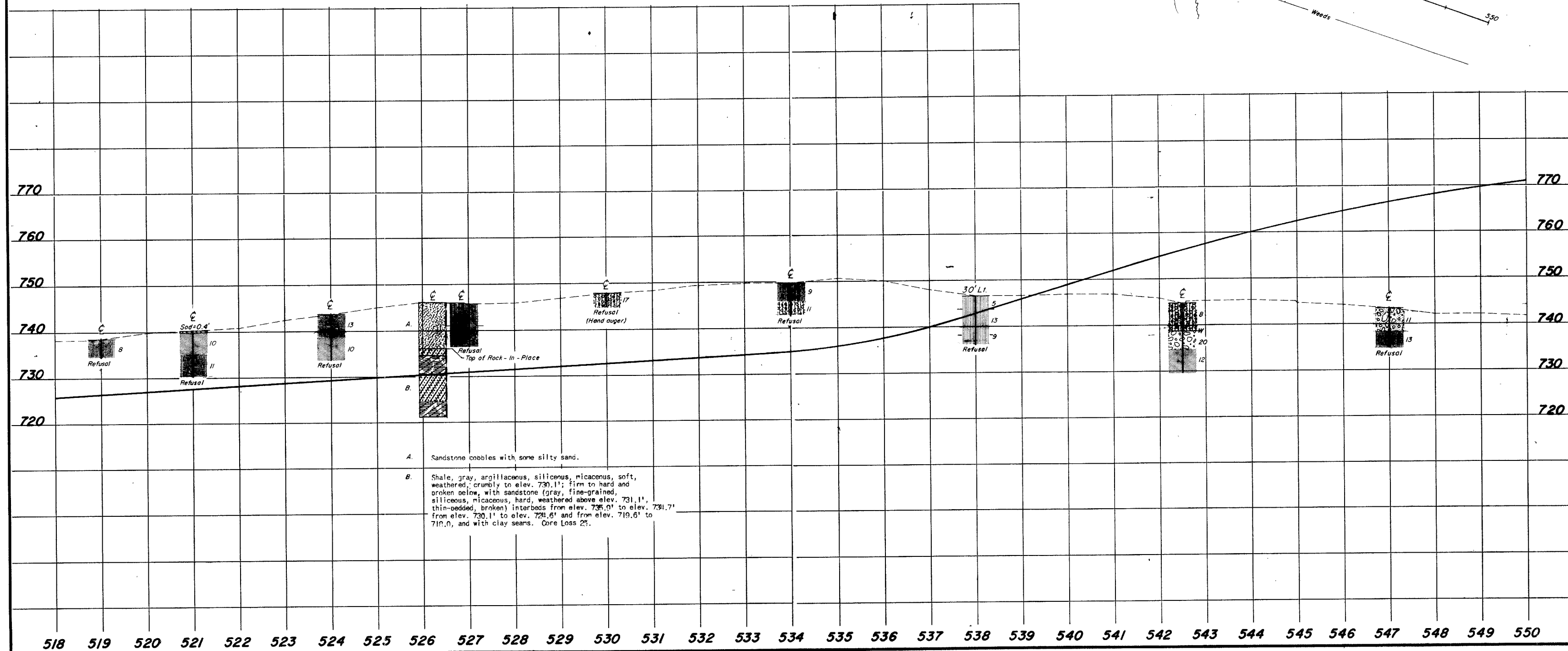
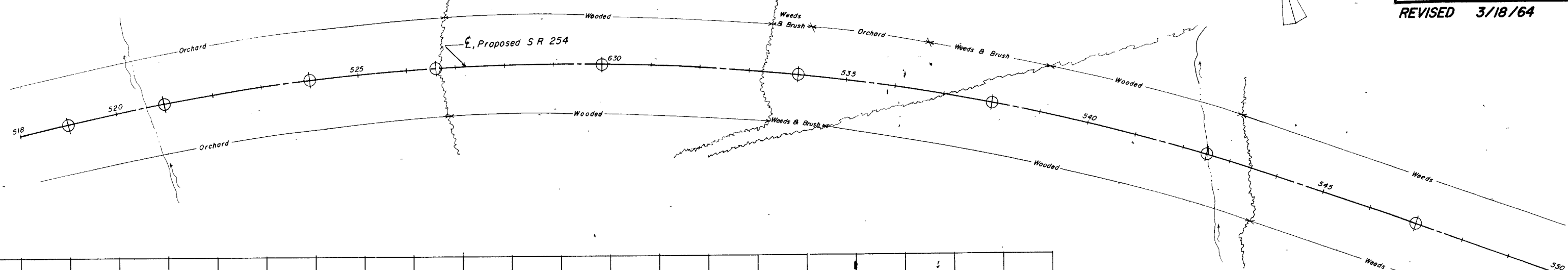
NOTE: For profile of Middle Ridge Rd.  
see sheet 11.

NOTE: For cross sections of stations, 50+50,  
51+00, 52+00, 53+00, and 54+00  
of Relocated West Ridge Rd, see sheet 13.

NOTE: For profile of Relocated West Ridge Rd,  
see sheet 12.

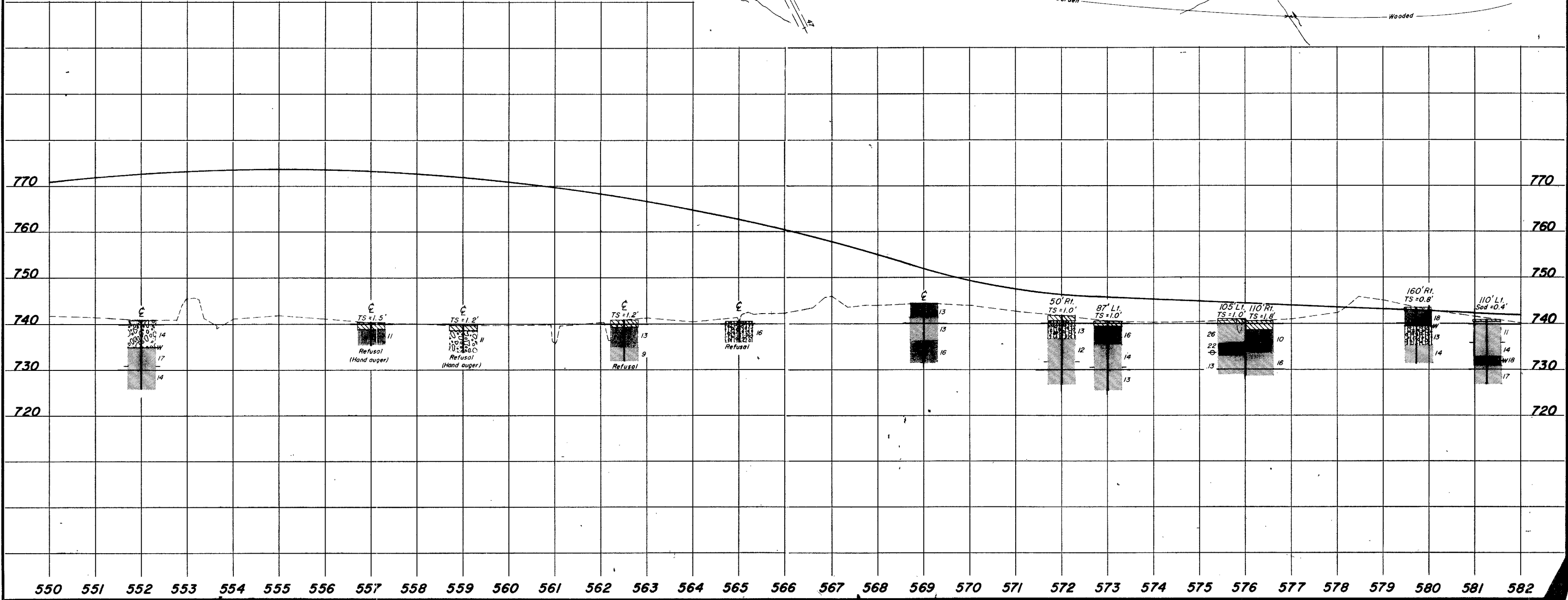
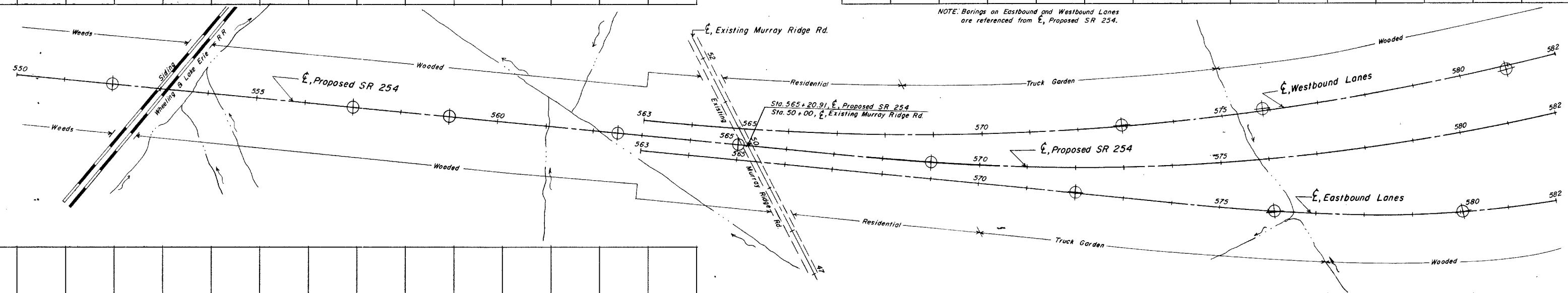


486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518





NOTE: Borings on Eastbound and Westbound Lanes are referenced from  $\bar{E}$ , Proposed SR 254.

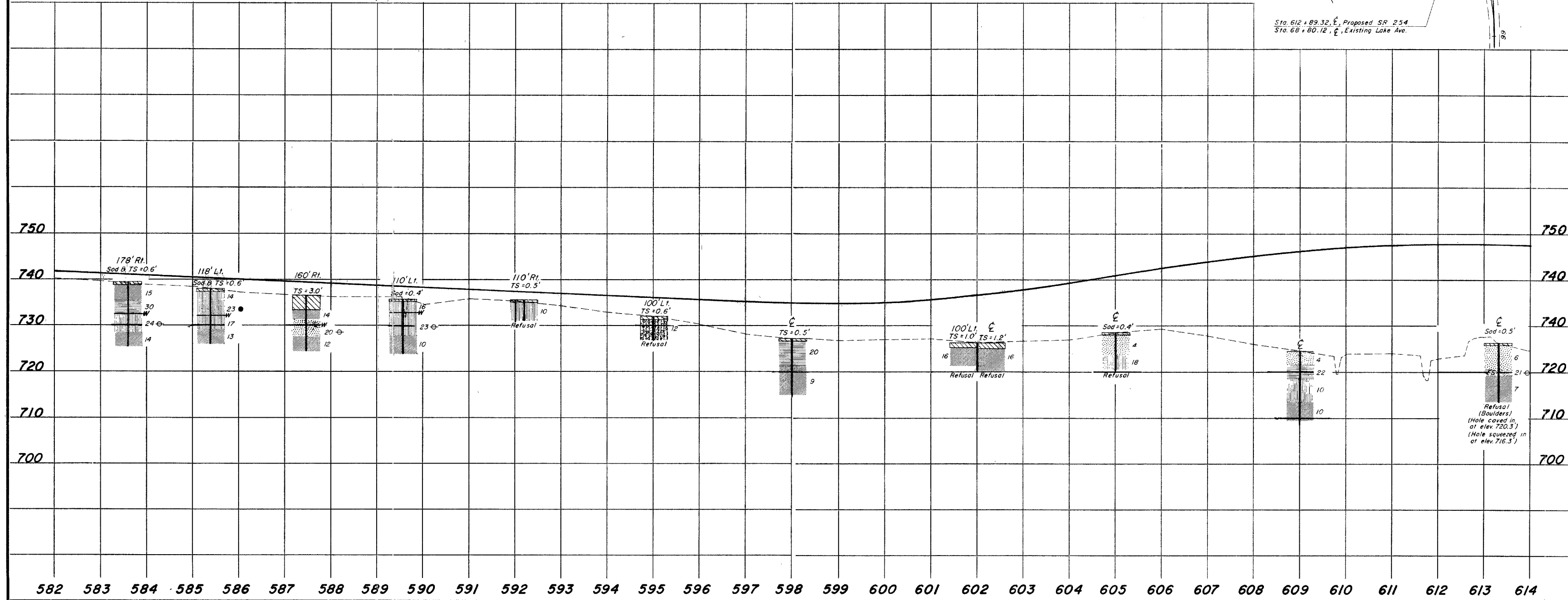
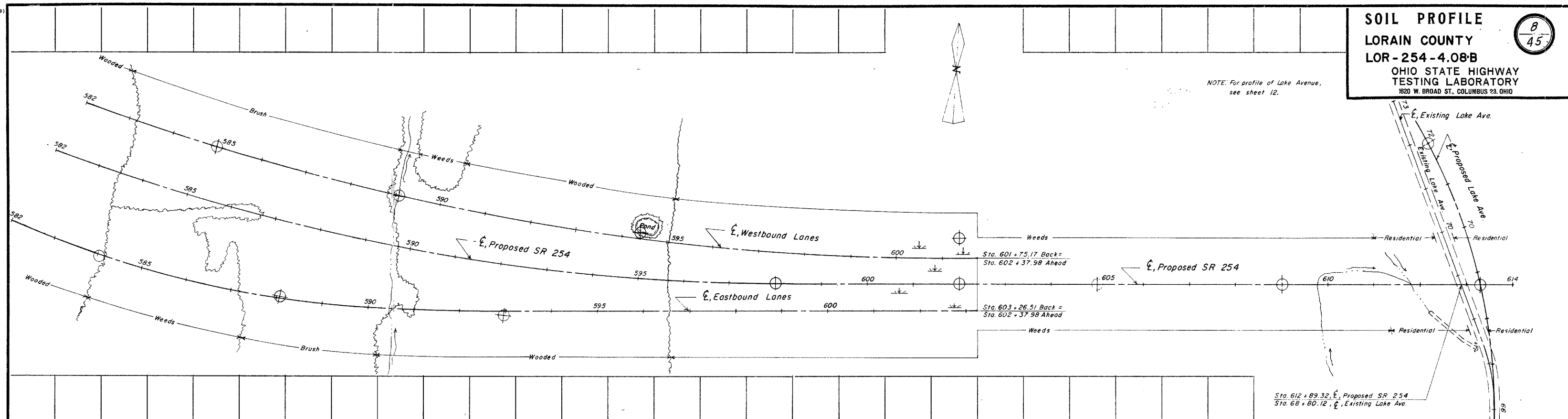


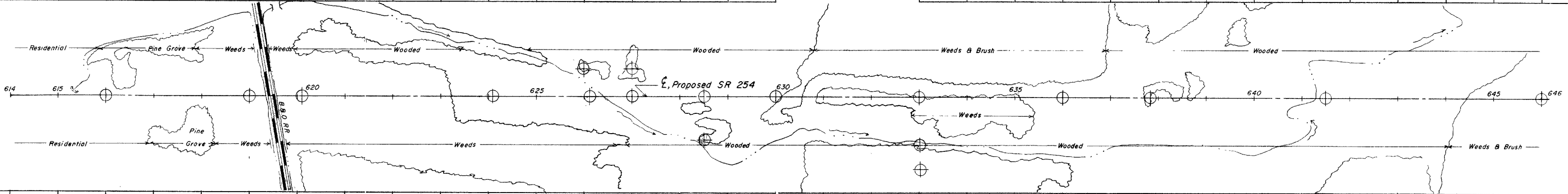
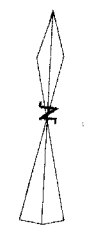


**SOIL PROFILE**  
**LORAIN COUNTY**  
**LOR-254-4.08B**  
**OHIO STATE HIGHWAY TESTING LABORATORY**  
 1620 W. BROAD ST., COLUMBUS 23, OHIO

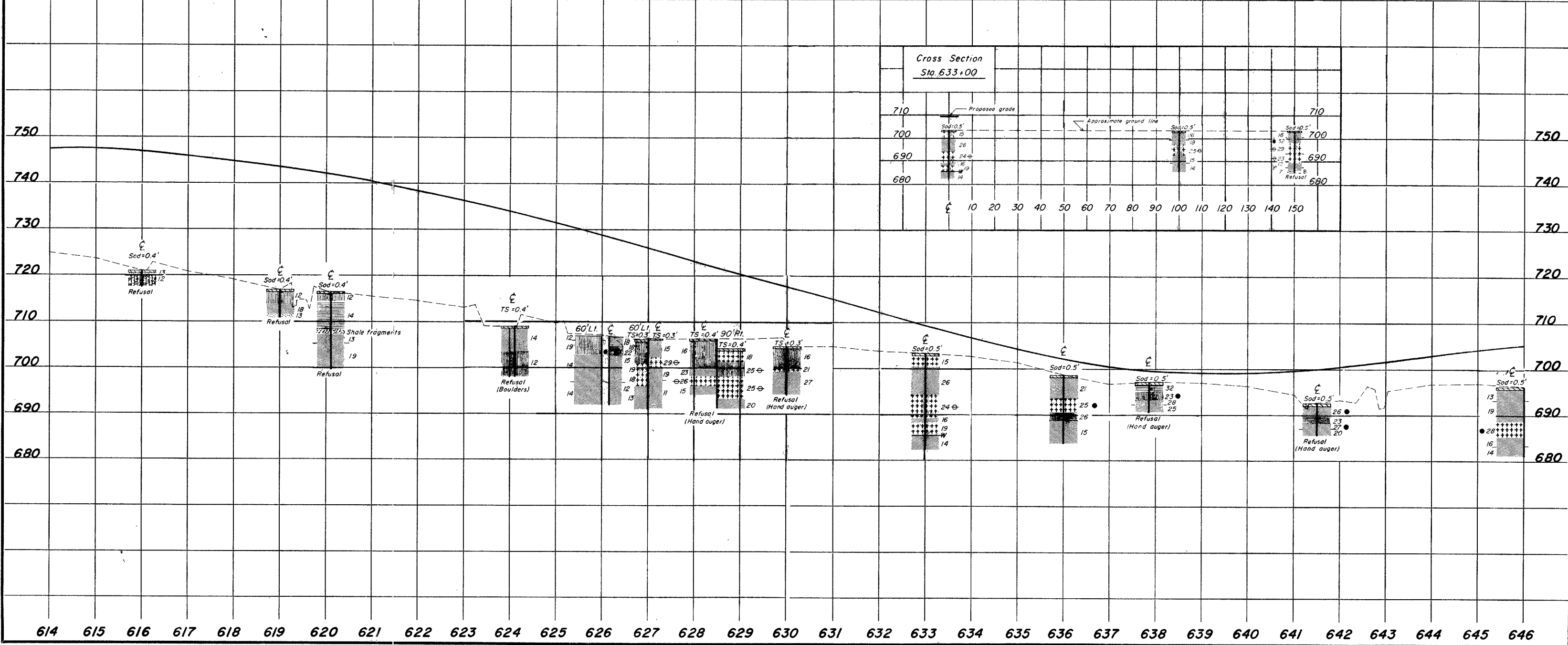
8  
45

NOTE: For profile of Lake Avenue, see sheet 12.



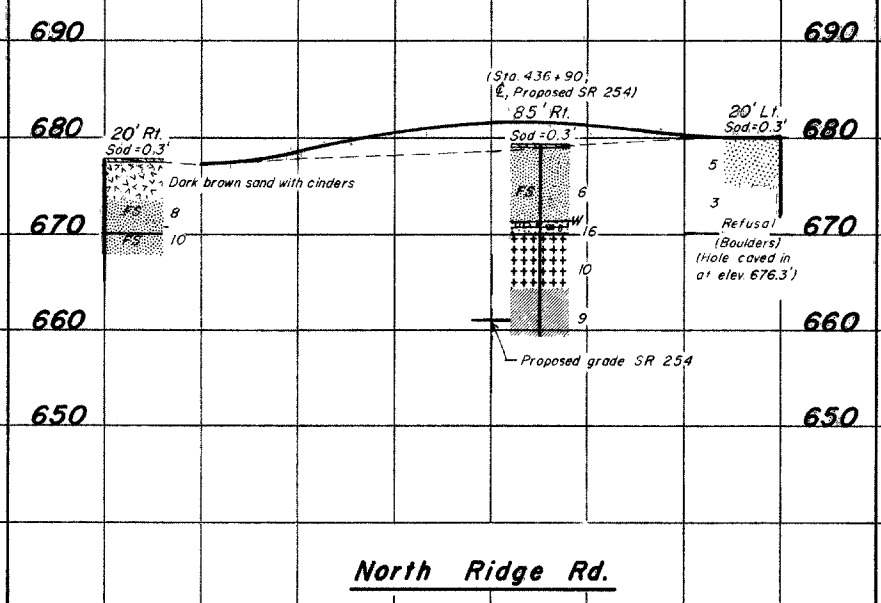
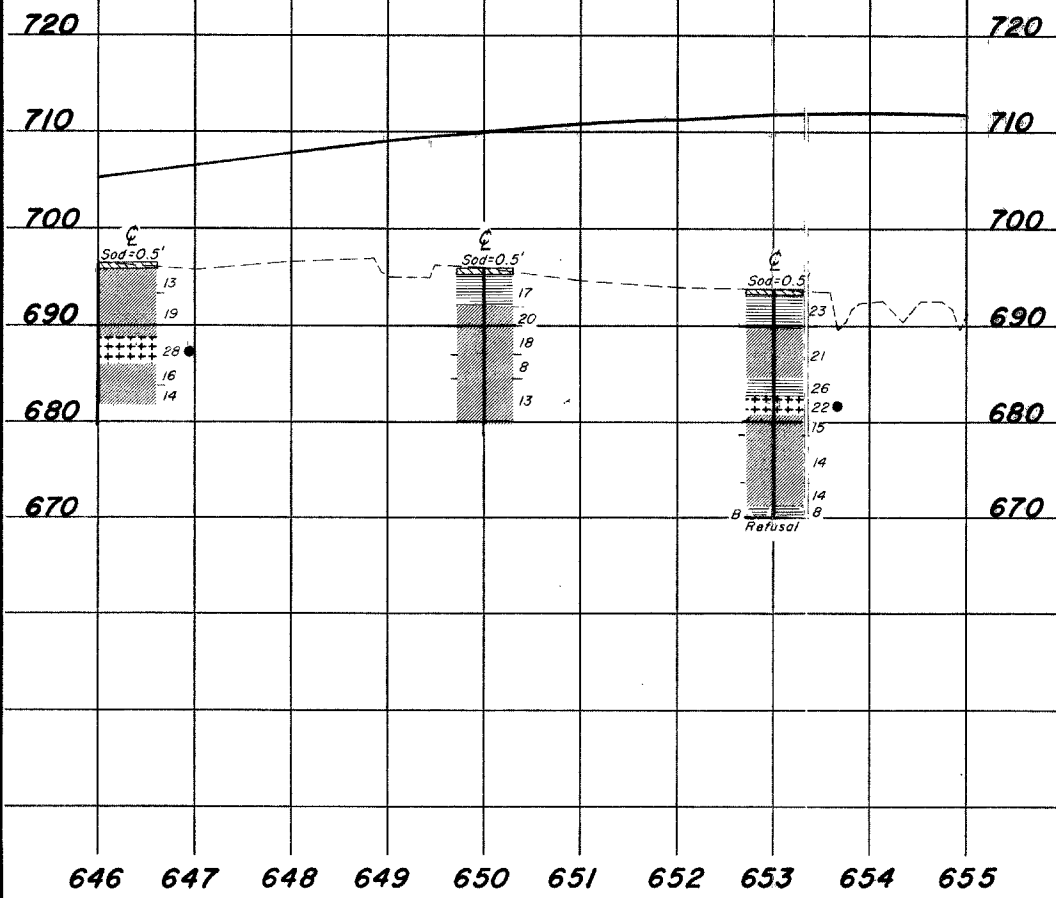
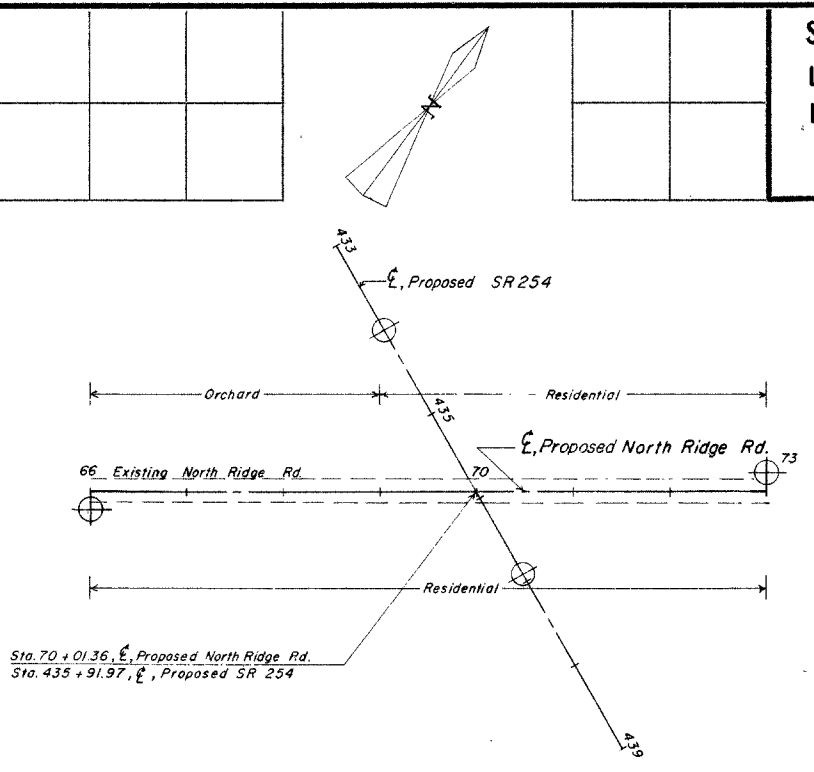
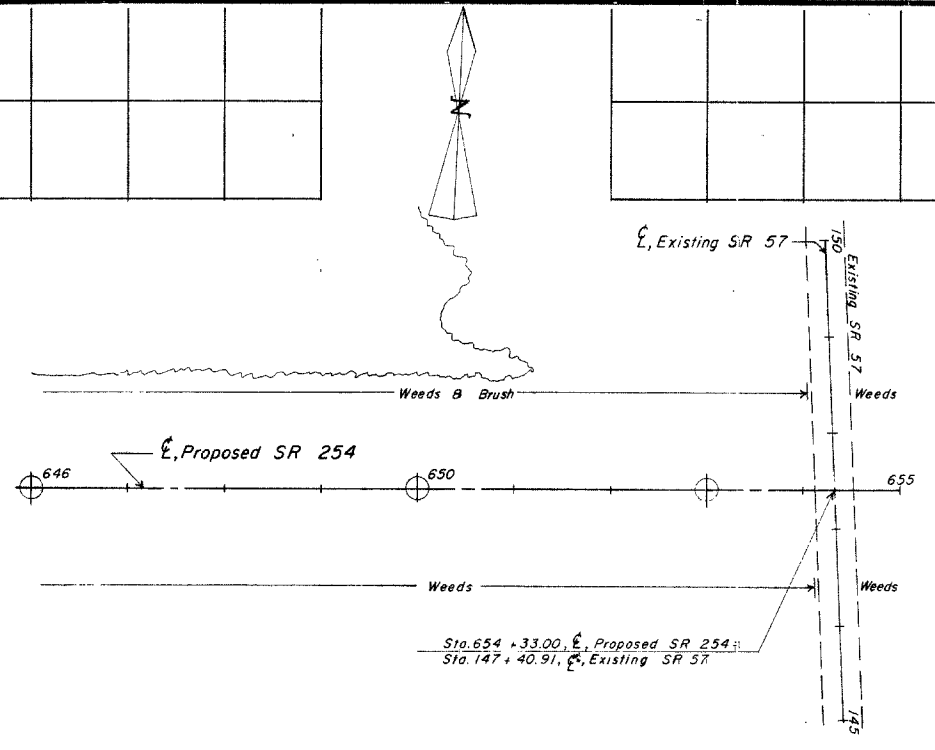


**Cross Section**  
**Sta. 633+00**

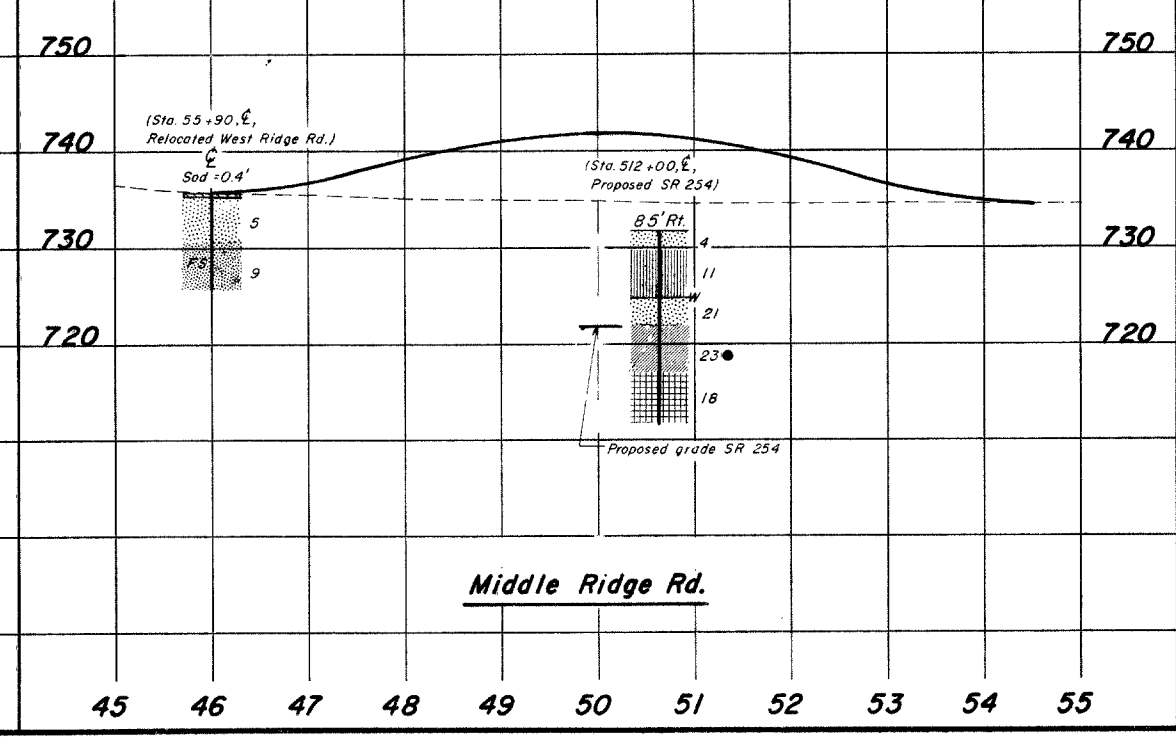
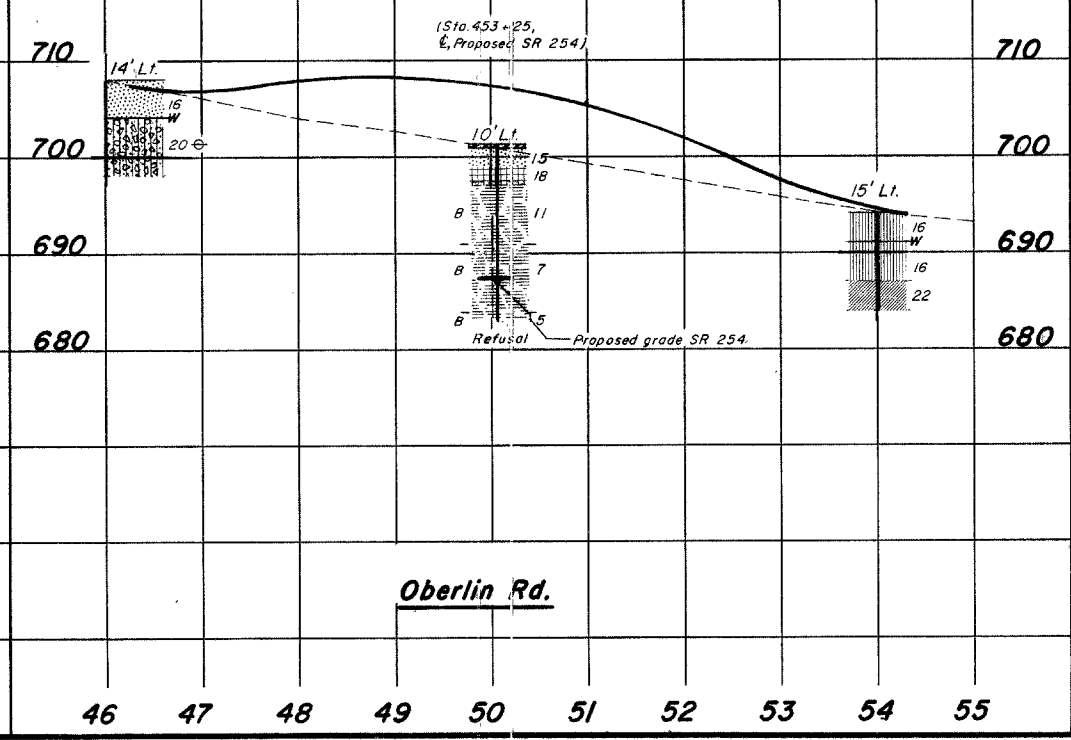
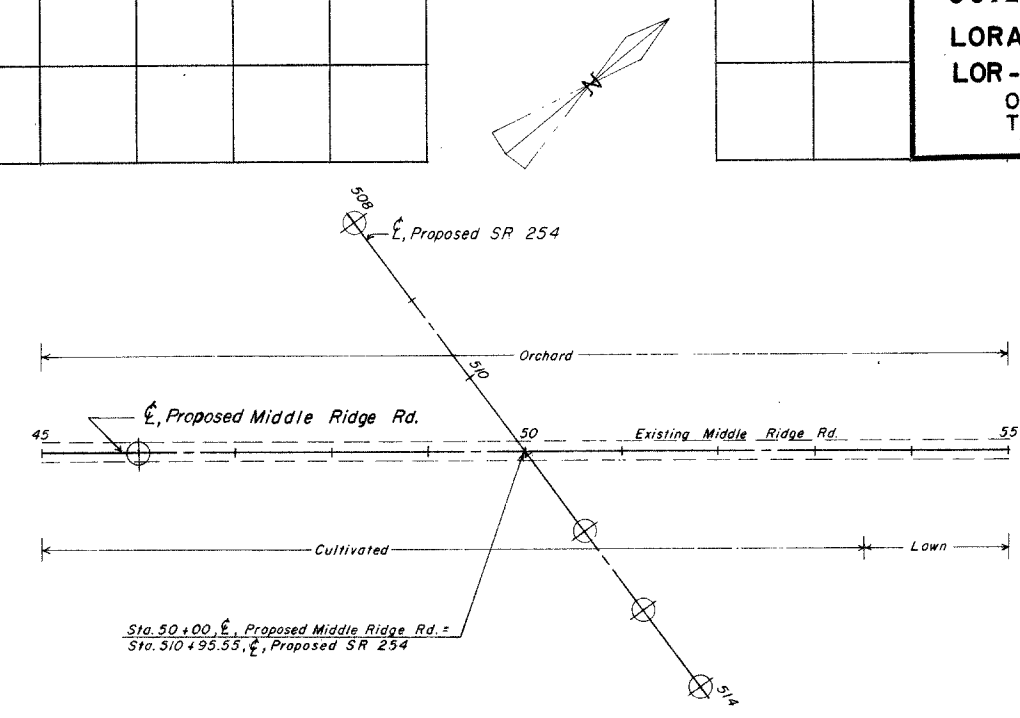
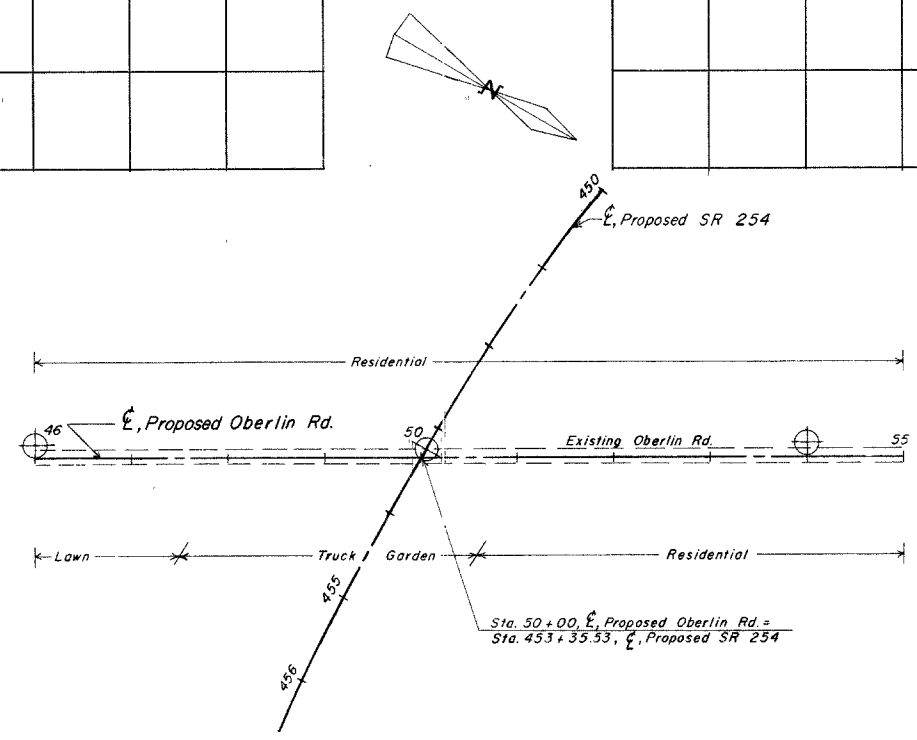


**SOIL PROFILE**  
**LORAIN COUNTY**  
**LOR-254-4.08-B**  
 OHIO STATE HIGHWAY  
 TESTING LABORATORY  
 1620 W. BROAD ST., COLUMBUS 23, OHIO

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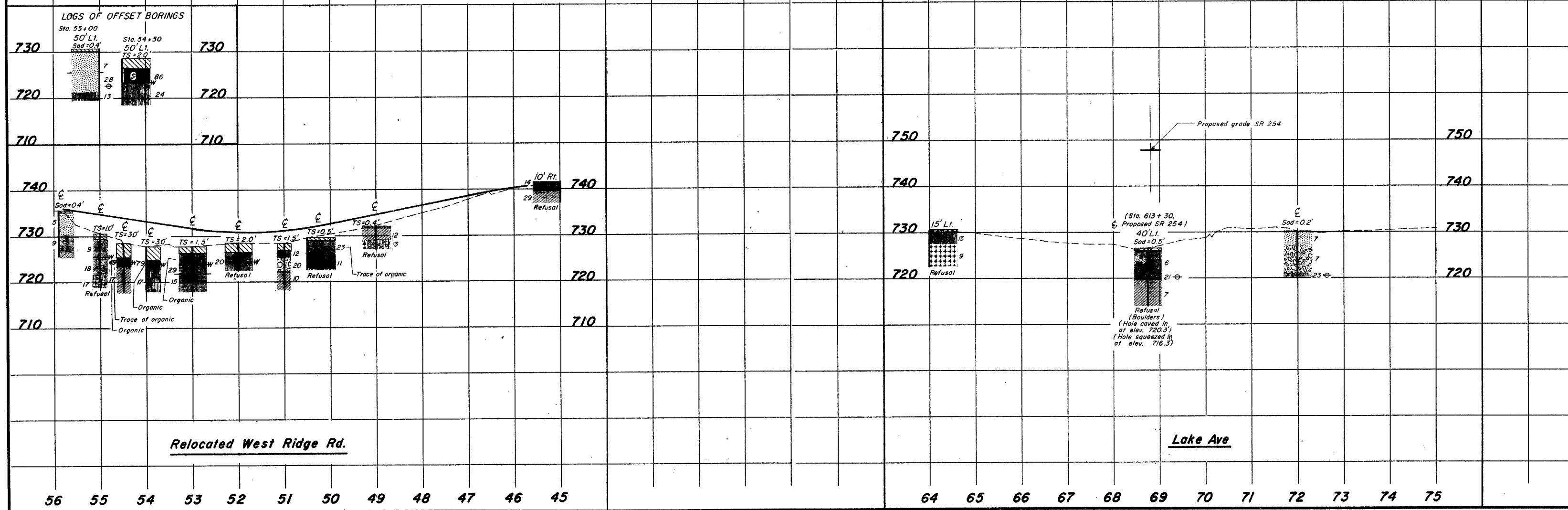
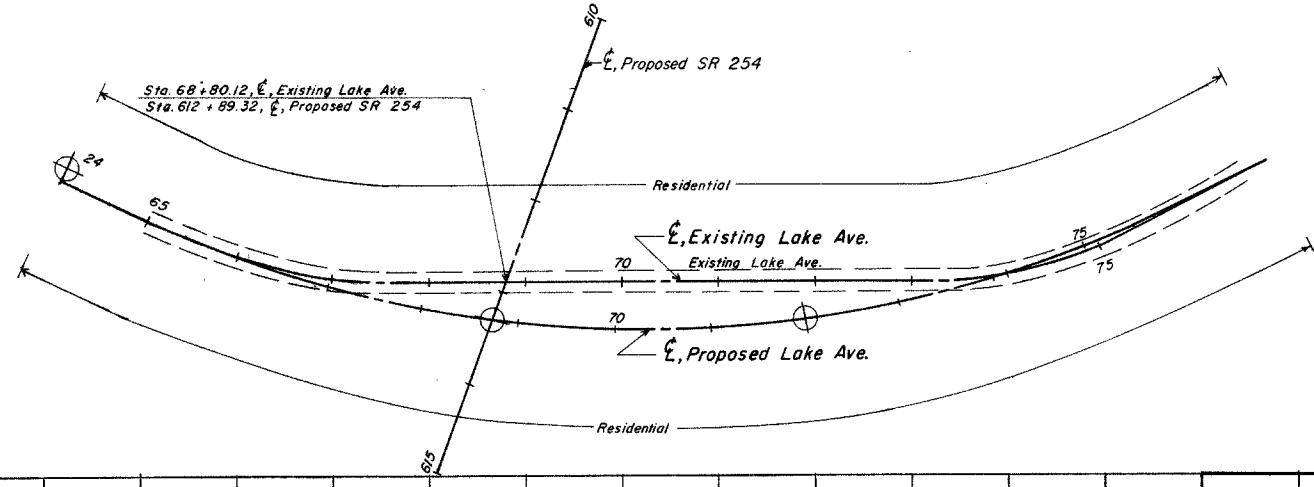
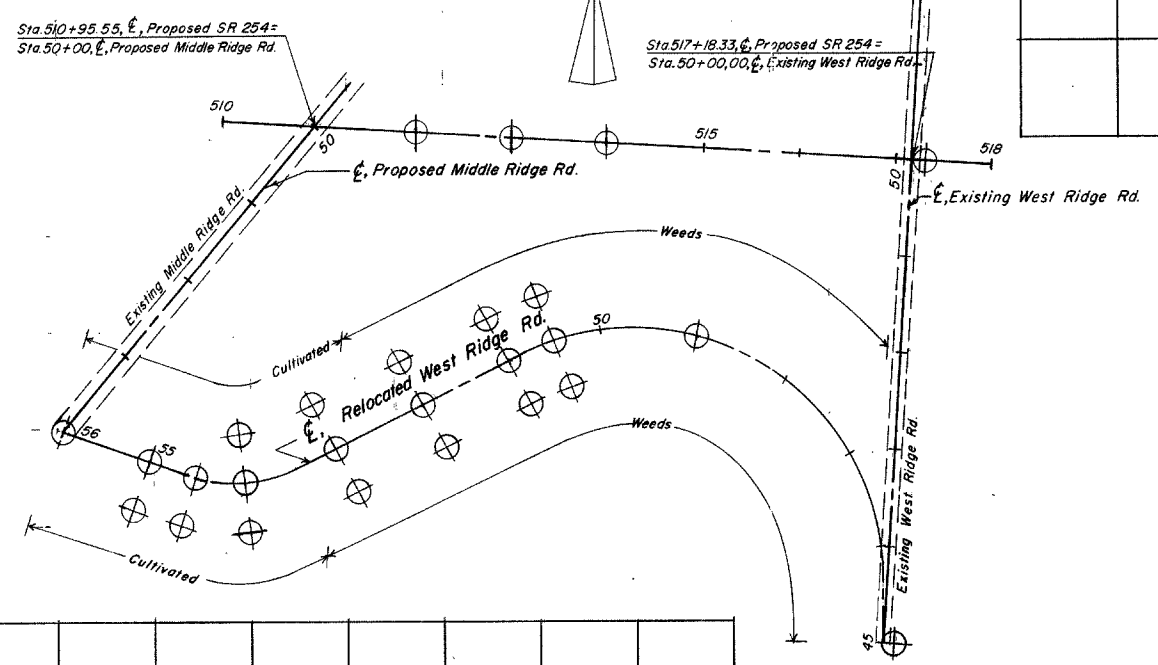


**North Ridge Rd.**



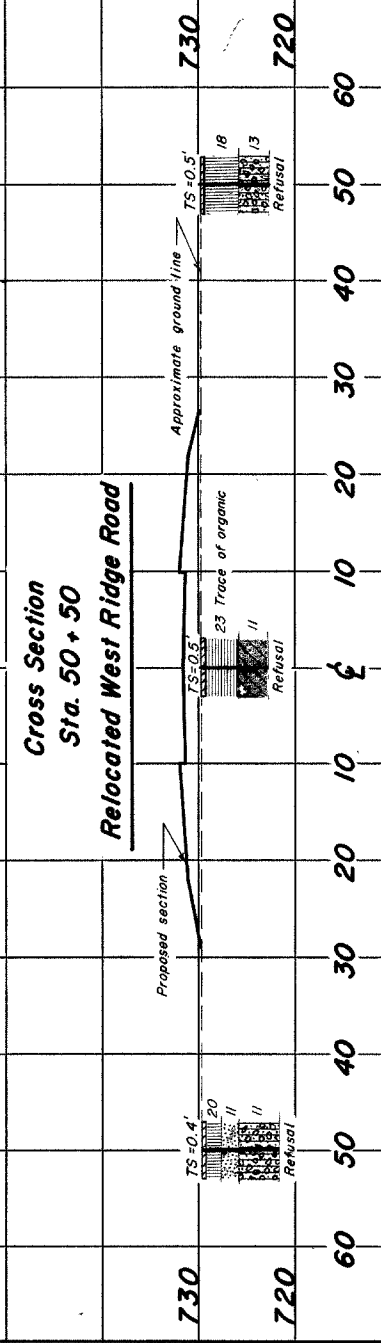
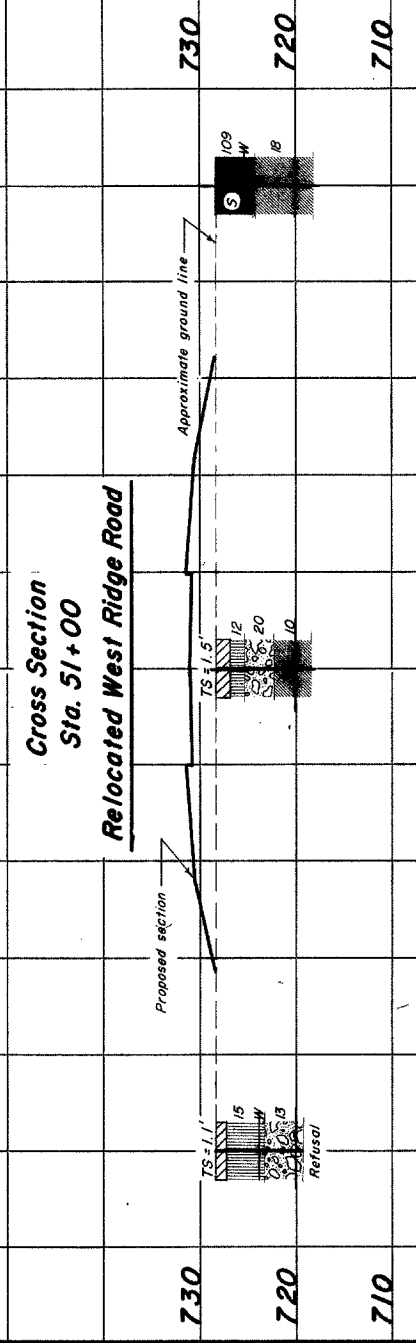
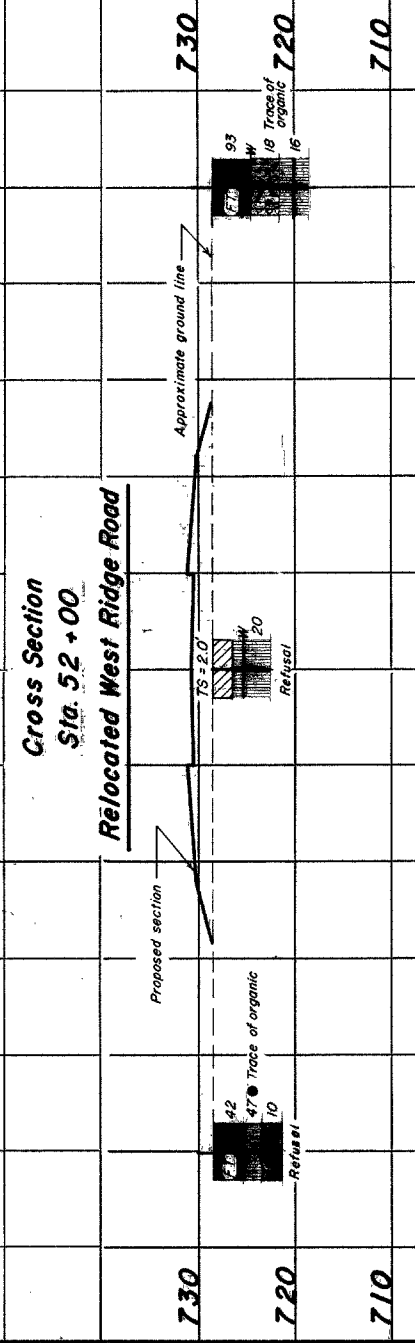
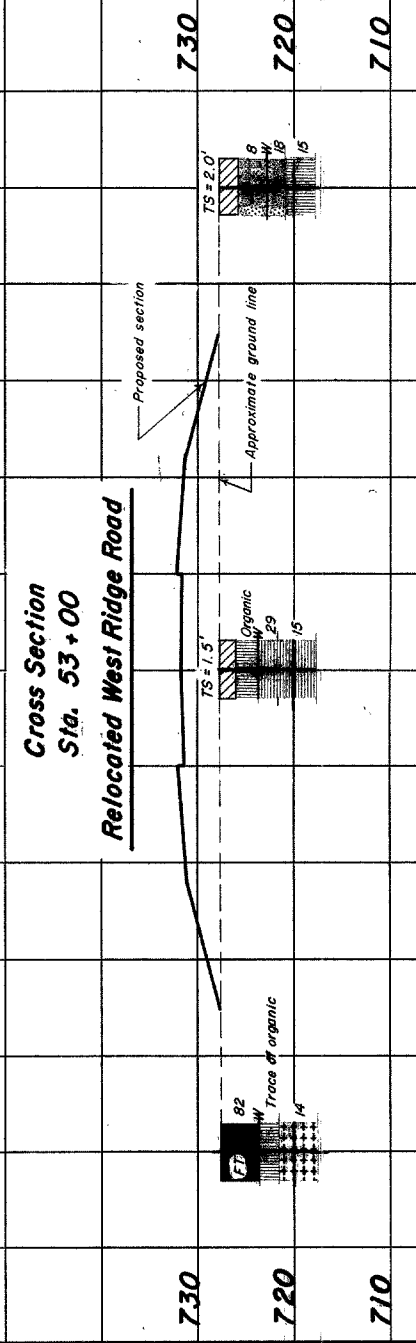
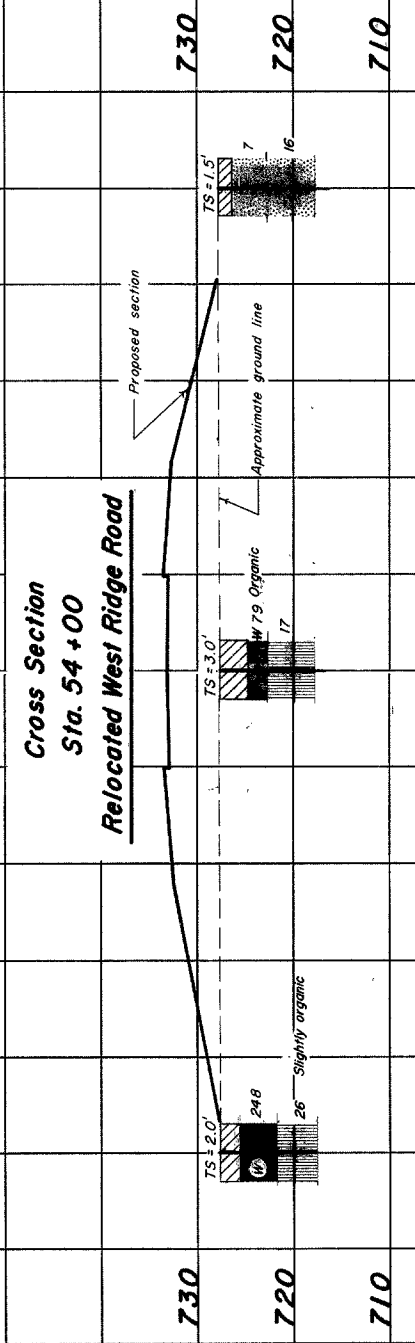
SOIL PROFILE  
LORAIN COUNTY  
LOR-254-4.08B  
OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 W. BROAD ST., COLUMBUS 23, OHIO

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45



Relocated West Ridge Rd.

Lake Ave.



GENERAL INFORMATION

INTRODUCTION

The project consists of the proposed construction of Pamps H, I, J, and K, and the proposed relocation of West Ridge Road of the Middle Ridge Road Interchange, on proposed SR 254, located approximately 0.5 mile south of Existing SR 254.

Proposed grade indicates the following:

Middle Ridge Road Interchange.

Pamp H - fill embankment, maximum 6 feet in height.

Pamp I - cut, maximum 14 feet in depth; fill embankment, maximum 2 feet in height.

Pamp J - cut, maximum 17 feet in depth; fill embankment, maximum 6 feet in height.

Pamp K - fill embankment, maximum 12 feet in height.

Relocated West Ridge Road - cut, maximum 2 feet in depth; fill embankments, maximum 7 feet in height.

GEOLOGY OF THE PROJECT

The project is located on the relatively flat glaciated Lake Plain, in an area of shallow to thin lacustrine, sedimentary, and beach ridge deposits. Underlying bedrock is comprised of shales, sandstone, and indurated clays, of Lower Mississippian or Upper Devonian age.

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical earth auger and hand auger (in areas of difficult access), on April 17, and 18, 1962.

INVESTIGATIONAL FINDINGS

Materials occurring immediately below grade consist of the following:

Pamp I - shale and sandstone bedrock, at grade, in the ditches and lower portions of backslopes, between stations 26+00 and 27+00.

Pamp J - sandy gravels and silt clays in the A-2-4 and A-6 classifications, having relatively low moisture contents, or moisture contents in the lower portion of the plastic range as well as sandstone and shale bedrock, anticipated to be encountered at grade, in the ditches, and lower portions of backslopes between stations 15+00 and 21+00.

Relocated West Ridge Road - sandy gravels and sands, in the A-2-4 and A-3 classifications, generally having somewhat high moisture contents.

In the embankment foundations, materials consist of the following:

Pamp H - gravels, sandy silts, silt clays, and clays, in the A-1-a, A-1-b, A-4a, A-6 and A-7-E classifications.

Pamp J - sands, sandy silts, and silt clays, in the A-3, A-3a, A-4a and A-6 classifications for the most part having low moisture contents or moisture contents in the lower portion of the plastic range. Two to six feet of low strength, highly compressible, wet, at-surface peats were encountered between approximately stations 3+00 and 12+00, as well as soils containing high moisture contents and various degrees of organic material.

Pamp K - sandy gravels, sands, silt clays and clays, in the A-1-b, A-3, A-6 and A-7-E classifications, having generally low water contents or moisture contents in the lower portion of the plastic range.

Relocated West Ridge Road - sandy gravels, sands, sandy silts, and silt clays, in the A-2-4, A-3, A-4a and A-6a classifications, generally having medium-high moisture contents. Low-strength, highly compressible, wet peats were encountered between stations 43+00 and 45+00.

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 97 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Stone fragments	A-1-1(a)	A-1-a	75	3	0	0	0	NP	NP	22	0
Stone fragments with sand	A-1-1(b)	A-1-b	49	7	22	10	11	NP	NP	14	4
Fine sand	A-2-1(a)	A-2	0	27	64	0	0	NP	NP	14	7
Coarse and fine sand	A-2-1(b)	A-2	0	22	7	7	14	NP	NP	10	2
Gravel and/or stone fragments with sand and silt	A-2-4(C)	A-2-4	45	3	10	16	16	NP	NP	16	10
Sandy silt	A-4(C)	A-4	17	7	24	25	27	10	0	16	27
Silt	A-4(C)	A-4	0	0	11	33	30	NP	NP	10	0
Elastic silt and clay	A-5(C)	A-5	0	0	0	30	10	47	0	40	1
Silt and clay	A-6(F)	A-6	10	4	16	26	26	0	10	10	3
Tilly clay	A-6(H)	A-6	3	4	10	25	40	0	17	10	3
Elastic clay	A-7-5(L)	A-7-5	4	3	44	26	17	24	44	20	
Clay	A-7-6(1S)	A-7-6	0	0	7	20	37	40	24	16	0
Fine-textured peat											
Loamy peat											
Sedimentary peat											
Wet peat											
Weathered indurated clay											
Weathered shale											
Weathered sandstone											
Grate											
Top and/or Topsoil											
Bed material											
Auger boring - plan view											
Core boring - plan view											
Obtained from Mainline Roadway Investigation											
Auger boring plotted to vertical scale only											
Core boring plotted to vertical scale only											
Water content nearly equal to or greater than liquid limit											
Indicated a non-plastic material with high water content											
Free water											
Indicated broken rock interval											

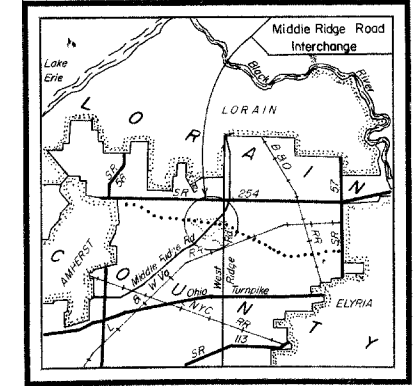
NOTE: Figures beside borings indicate water content in percent. c.p. 15

**SOIL PROFILE**  
LORAIN COUNTY  
LOR-254-4.08B  
SUPPLEMENT  
OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 W. BROAD ST., COLUMBUS 23, OHIO

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**MIDDLE RIDGE ROAD INTERCHANGE**  
NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

Fed. No. U-UG-



LOCATION MAP

Recon - PL H - 4/15/63

Drilling - Auger - JAG - 4/17/63 - 4/18/63

Drafting - S.J.H. - 5/6/63

MIDDLE RIDGE ROAD INTERCHANGE

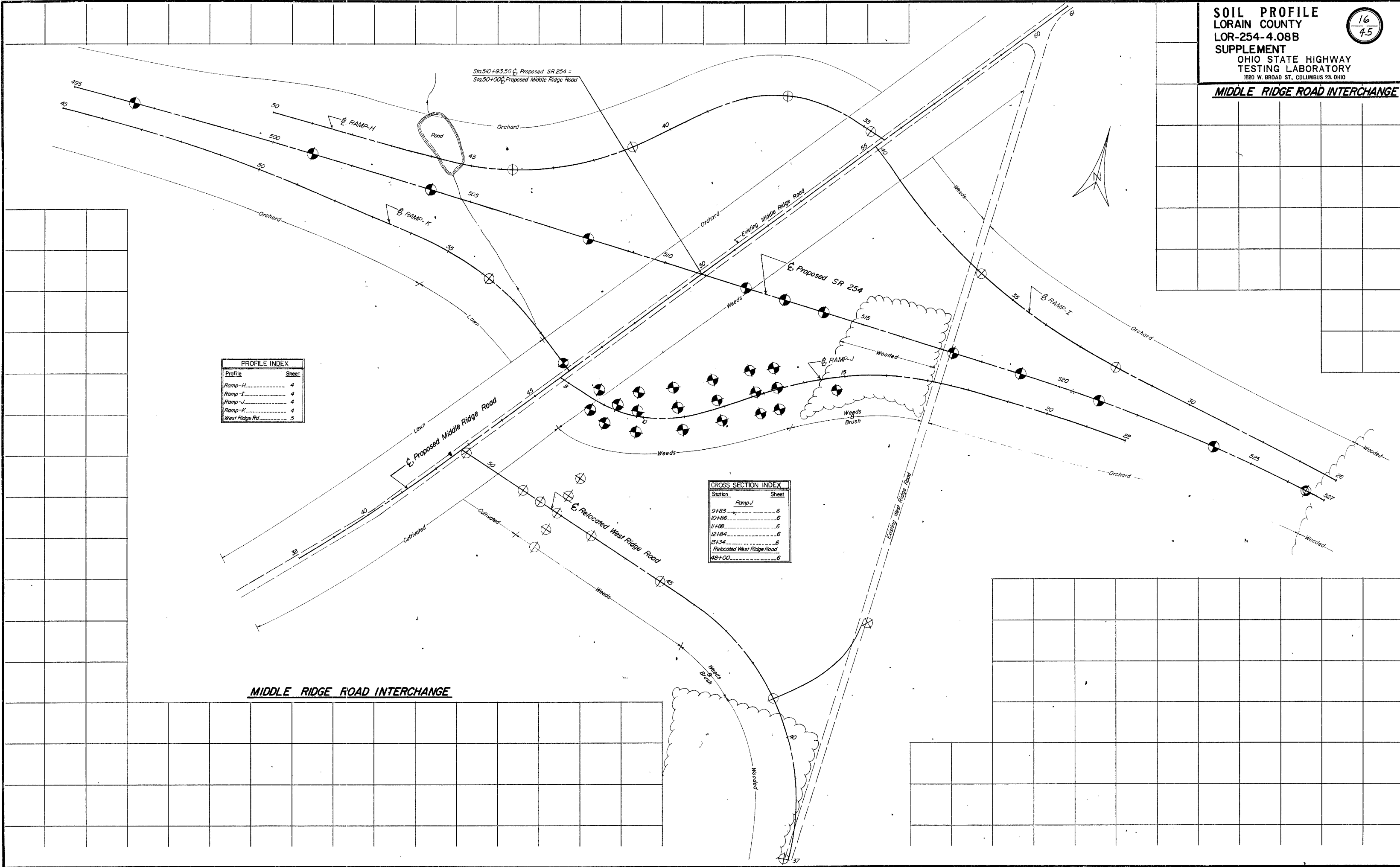
SUMMARY OF SOIL TEST DATA  
NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.  
\*Denotes sample taken at or near grade.

STATION & OFFSET	DEPTH FROM-TO	% Agg.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
RAMP H											
34+30	BL	C.4-6.0 6.0-9.0	9 36	39 17	42 27	10 12	NP NP	NP NP	8 15	A-2 A-1-b	
37+00	BL	C.5-7.0	35	3	20	10	24	30	12	30	A-6a
41+00	BL	C.4-2.0 2.0-4.0	0 13	2 3	26 22	46 33	26 23	NP NP	13 19	A-4a A-4a	
44+00	BL	C.4-3.0	66	9	11	4	10	NP	19	A-1-a*	
45+02	79'Lt	C.3-5.0 5.0-10.0 10.0-15.0	C Ret C	5 Weathered 2	7 Indurated 5	36 Clay 22	52 Clay 61	30 Clay 51	17 12 9	Visual Visual Visual	
48+30	70'Lt	C.5-2.0 2.0-7.0 7.0-10.0	C C C	5 2 2	14 5 22	24 32 61	57 51	32 26	17 14	A-7-c A-7-c Visual	
RAMP I											
20+02	64'Pt	C.0-5.0 5.0-10.0	14 14	2 1	4 3	35 42	45 40	39 32	18 11	19 10	A-6b A-6a
22+00	BL	C.5-2.0 2.0-5.0 5.0-10.0	32 10 Ret	15 C Broken	17 1 Clay	13 27 Shale	18 54	NP NP	24 13	A-6a A-7-c Visual	
26+00	BL	C.4-2.0	84	1	6	2	7	-	-	24	A-1-a
RAMP J											
3+75	25'Lt	1.0-5.0 5.0-9.0 9.0-12.0	0 0 40	24 22 5	68 72 20	8 13	NP NP NP	NP NP NP	9 16 17	A-2 A-2 A-2-4	
3+75	23'Pt	C.0-5.0 5.0-9.0 9.0-11.0	0 0 41	17 17 3	71 68 10	6 7 26	6 6 20	NP NP NP	7 23 12	A-2a A-2a A-2a	
3+00	33'Pt	C.0-5.0 5.0-10.0	16	5	15	31	31	NP	26	24	Visual A-4a
3+30	15'Lt	C.0-5.0 5.0-10.0	0 0	8 10	50 20	22 24	19 20	67 26	11	40 17	A-5 A-6a
3+00	50'Lt	1.5-5.0 5.0-10.0	0 0	25 21	40 67	3 10	10 NP	NP NP	7 16	A-2a A-2a	
3+60	12'Lt	C.0-5.0 5.0-10.0	4 24	9 5	44 14	26 26	17 31	24 23	44 17	79 17	A-7-5 A-4a
3+65	40'Pt	C.0-5.0 5.0-10.0	7 7	5 5	18 5	37 30	33 24	24 4	240 26	Visual A-4a	

STATION & OFFSET	DEPTH FROM-TO	% Agg.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
RAMP J (Cont'd)											
10+00	73'Lt	2.0-5.0 5.0-7.0 7.0-10.0	0 3 12	22 37 13	64 34 17	0 10 35	14 16 23	NP NP NP	8 16 15	A-2a A-2a A-4a	
10+30	20'Lt	1.5-4.0 4.0-6.0 6.0-10.0	13 10 0	11 5 1	27 26 33	20 20 45	20 20 23	NP NP NP	16 23 16	A-4a A-6b A-6b	
10+91	30'Pt	C.0-4.0 4.0-6.0 6.0-10.0	C 0 0	Brown 3 1	Fine-Textured 24 2 2	Peat 35 35 61	NP NP NP	NP NP NP	NP NP NP	NP NP NP	Visual A-4a A-4b
11+05	32'Pt	C.0-3.0 3.0-5.0 5.0-7.0	0 38 0	7 7 26	40 40 40	20 20 24	NP NP NP	NP NP NP	NP NP NP	NP NP NP	Visual A-4a Visual
11+80	20'Lt	C.0-6.0	37	5	21	10	19	NP	NP	20	A-4a
11+91	70'Lt	C.0-4.0 4.0-7.0 7.0-10.0	22 21 21	12 12 3	23 23 26	12 12 16	NP NP NP	NP NP NP	NP NP NP	NP NP NP	Visual A-2-4 A-2a
12+79	40'Pt	1.0-3.0 3.0-9.0	0 55	6 5	30 18	15 12	25 10	NP NP	NP NP	15 13	A-4a A-1-b
12+64	3'Lt	1.0-3.0 3.0-6.0 6.0-10.0	0 46 23	20 5 1	40 25 4	11 11 35	NP NP NP	NP NP NP	NP NP NP	NP NP NP	A-4a A-1-b A-6a
12+65	62'Lt	C.0-4.0 4.0-10.0	0 23	16 1	35 10	17 30	22 27	NP NP	NP NP	NP NP	Visual A-6a
13+26	39'Pt	C.0-2.0 2.0-4.0 4.0-6.0	0 11 61	6 6 2	29 50 4	30 12 16	NP NP NP	NP NP NP	NP NP NP	NP NP NP	A-4a A-2a A-2-4
13+04	3'Lt	C.0-4.0 4.0-7.0	0 0	8 3	27 10	46 46	30 30	NP NP	NP NP	NP NP	A-6b Visual
12+09	52'Lt	C.0-4.0 4.0-7.0	0 47	16 5	35 15	17 19	22 14	NP NP	NP NP	NP NP	A-4a A-2-4
14+77	30'Pt	C.0-3.0 3.0-5.0	0 58	4 3	21 10	17 15	46 14	NP NP	NP NP	NP NP	A-6a A-2-4
17+45	30'Lt	C.0-4.5	21	2	33	14	25	NP	NP	10	A-4a
19+10	70'Lt	C.0-4.0	10	5	32	26	26	NP	NP	8	A-4a
21+00	70'Lt	C.0-5.0 5.0-10.0	31 34	4 6	14 10	25 27	20 22	NP NP	NP NP	NP NP	A-6a A-4a

STATION & OFFSET	DEPTH FROM-TO	% Agg.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
RAMP K											
46+05	38'Lt	C.4-4.0 4.0-6.0	10 47	7 3	12 7	23 21	40 22	23 22	11 4	14 12	A-6a A-4a
56+00	BL	0.6-2.0	30	5	27	6	10	NP	NP	24	A-1-b
58+00	BL	C.0-5.0 5.0-10.0	0 0	32 34	56 57	- -	11 13	NP NP	NP NP	5 9	A-2a A-2
DELOCATED WEST RIDGE ROAD											
37+00	10'Lt	C.4-2.0 2.0-4.0	47 10	5 7	18 12	10 17	25 10	21 19	NP NP	NP NP	A-2-4* Visual
41+00	CL	C.5-2.0	24	4	32	17	10	NP	NP	20	A-2-4*
41+30	230'Pt	C.4-2.0	32	5	34	12	16	24	3	10	A-2-4
45+00	CL	C.5-2.0	35	4	26	19	16	NP	NP	21*	A-2-4*
47+00	CL	1.0-2.0 2.0-4.0	0 0	9 6	27 33	25 33	23 23	10 9	10 17	10 17	A-6a A-4a
48+00	100'Lt	C.5-6.0 6.0-6.5	Brown 21	Loamy 9	Peat 20	24	21	NP	NP	107 100	Visual A-4a
48+00	50'Lt	C.5-4.0 4.0-10.0	Brown 1	Loamy 2	Peat 10	40	24	NP	NP	34 10	Visual A-4a
48+00	CL	C.5-2.0 2.0-3.0	Brown 14	Loamy 7	Peat 11	33	23	23	6	30 22	Visual A-4a
48+00	30'Pt	C.5-2.0 2.0-5.0 5.0-7.5	Brown 10 50	Loamy 6 2	Peat 13 10	20 20	20 10	NP NP	NP NP	100 21 20	Visual A-4a A-2-4
48+00	100'Pt	C.5-4.0 4.0-7.0 7.0-10.0	Brown 27 0	Loamy 3 0	Peat 10 19	21 30	23 23	NP NP	NP NP	101 19 16	Visual A-4a A-4b
48+00	CL	1.0-4.5 4.5-6.0	Brown 0	Loamy 10	Peat 60	11	17	NP	NP	110 17	Visual A-2a
49+00	CL	1.5-4.0	0	10	77	4	6	NP	NP	17	A-0
50+65	CL	C.5-7.0 7.0-10.0	0 0	30 42	50 50	- -	8 8	NP NP	NP NP	7 23	A-2* A-0





**PROFILE INDEX**

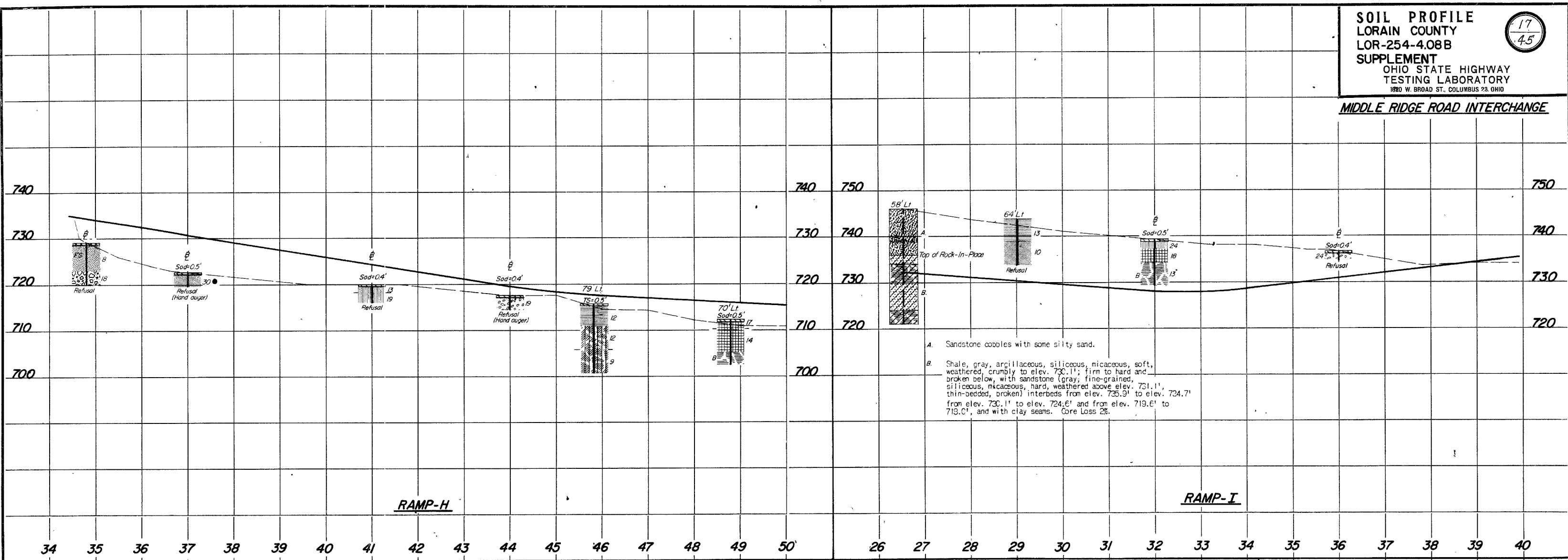
Profile	Sheet
Ramp-H	4
Ramp-I	4
Ramp-J	4
Ramp-K	4
West Ridge Rd.	5

**CROSS SECTION INDEX**

Station	Sheet
Ramp J	
9+83	6
10+86	6
11+88	6
12+84	6
13+34	6
Relocated West Ridge Road	
48+00	6

**MIDDLE RIDGE ROAD INTERCHANGE**

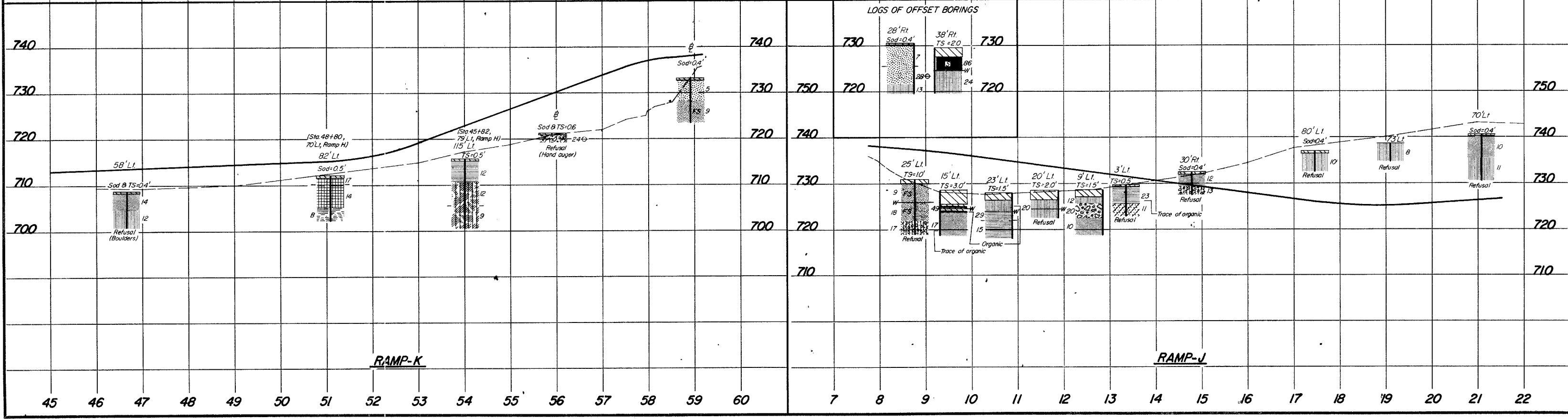
MIDDLE RIDGE ROAD INTERCHANGE



A. Sandstone cobbles with some silty sand.

B. Shale, gray, argillaceous, siliceous, micaceous, soft, weathered, crumbly to elev. 730.1'; firm to hard and broken below, with sandstone (gray, fine-grained, siliceous, micaceous, hard, weathered above elev. 731.1', thin-bedded, broken) interbeds from elev. 735.9' to elev. 734.7' from elev. 730.1' to elev. 724.6' and from elev. 719.6' to 713.0', and with clay seams. Core Loss 2%.

LOGS OF OFFSET BORINGS



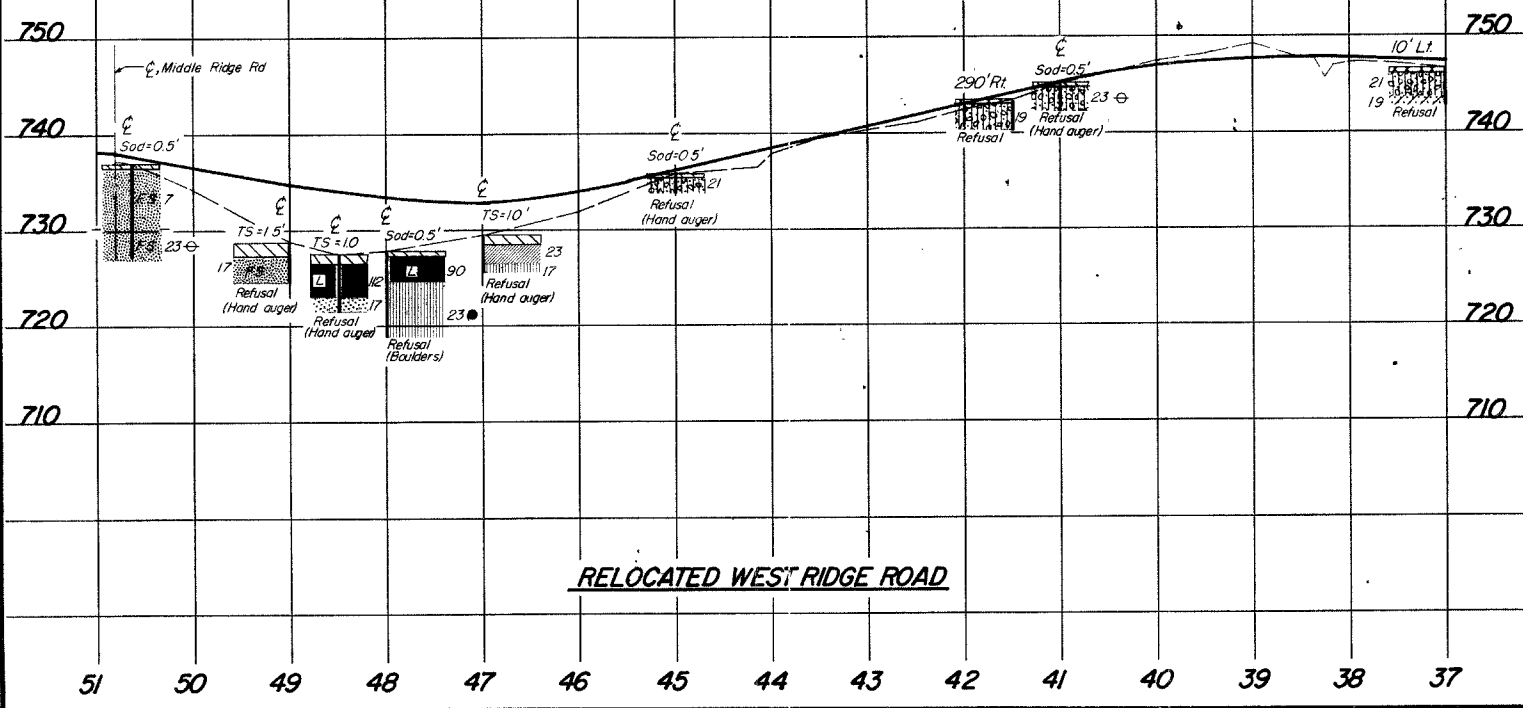
28' Rt. Sod=0.4'  
38' Rt. TS=2.0'

25' Lt. TS=1.0'  
15' Lt. TS=3.0'  
23' Lt. TS=1.5'  
20' Lt. TS=2.0'  
9' Lt. TS=1.5'  
3' Lt. TS=0.6'

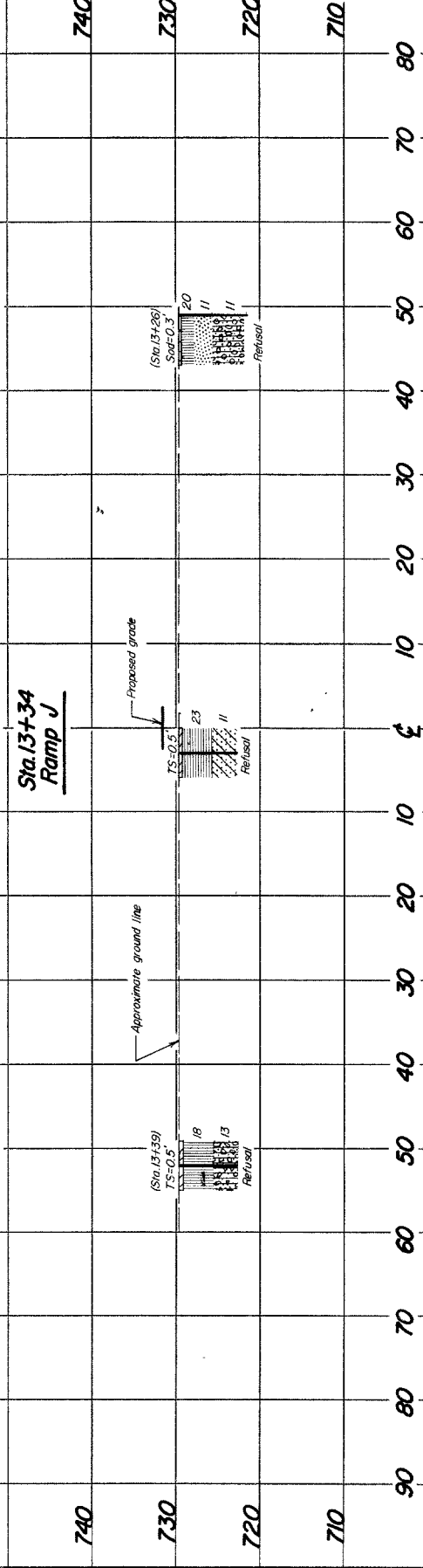
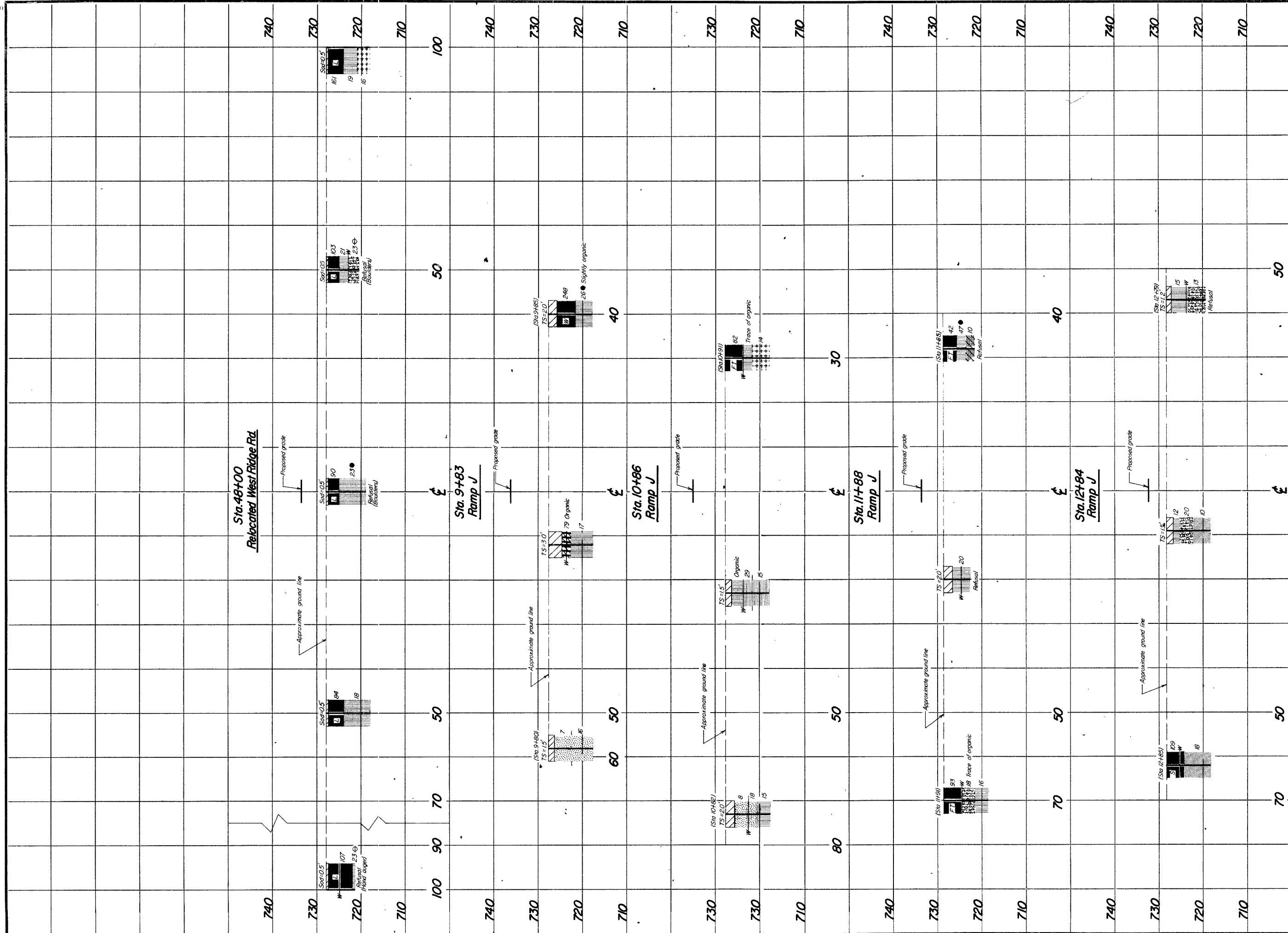
30' Rt. Sod=0.4'  
70' Lt. Sod=0.4'

80' Lt. Sod=0.4'

Trace of organic



**MIDDLE RIDGE ROAD INTERCHANGE**



GENERAL INFORMATION

Drive Rod Penetration 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 conditions may be evaluated.

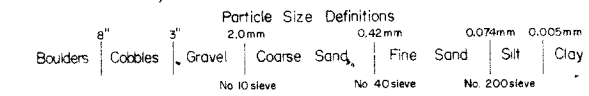
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description--based on laboratory test results and the Casagrande AC classification system--and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing 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.



LEGEND

- Auger Boring - Plan View.
- Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance - Soundings - Plan View.
- Electrical Resistivity Probe - Plan View.
- Indicates Auger Boring.
- Indicates Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only.
- Top of Rock
- Water saturated zone.
- Total Depth.
- Horizontal bar on log indicates the depth the sample was taken.
- Figures to the right of boring log in profile view indicate the number of blows for "Standard Penetration" test.  
X = First 6 inches  
Y = Second 6 inches
- 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.
- Footing
- Capped pile
- Footing on pile

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GEOLOGY OF THE SITE

The structure site is located upon the glaciated Lake Plain. Moderately deep beach and glacial deposits overlie shale and sandstone bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and eight drive rod penetration tests, made on April 16 and 17 and between May 3 and 8, 1963.

INVESTIGATIONAL FINDINGS

The borings disclosed moist, loose to very dense gravally and sandy silts, sands, and boulders above bedrock surface, encountered at 33 and 46-foot depths, elevations 647 and 631 feet. The borings were terminated at 49 and 60-foot depths, elevations 631 and 618 feet, after penetrating 14 and 16-feet below bedrock surface.

The rod soundings met increasing, somewhat erratic, resistance to penetration with increase in depth, and were terminated generally upon encounter with refusal or abrupt refusal to penetration at 19 to 26-foot depths, elevations 659 to 652 feet, above bedrock surface in dense and very dense silts, as indicated by the borings.

On the basis of the borings and the geology of the area, bedrock surface is considered to slope downward from the right side to left side and from the forward portion to the rear portion of the structure site, between elevations 647 and 631 feet.

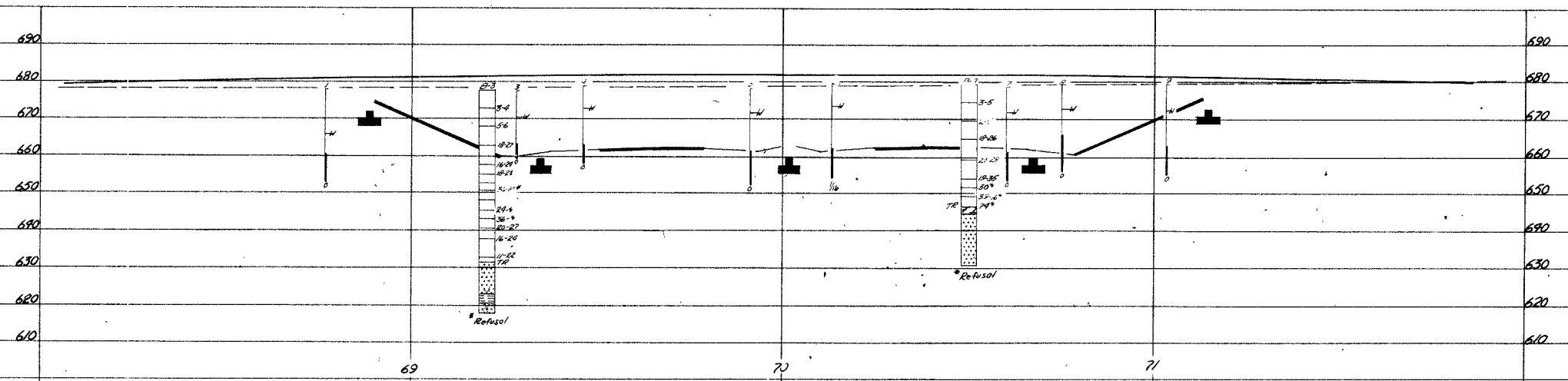
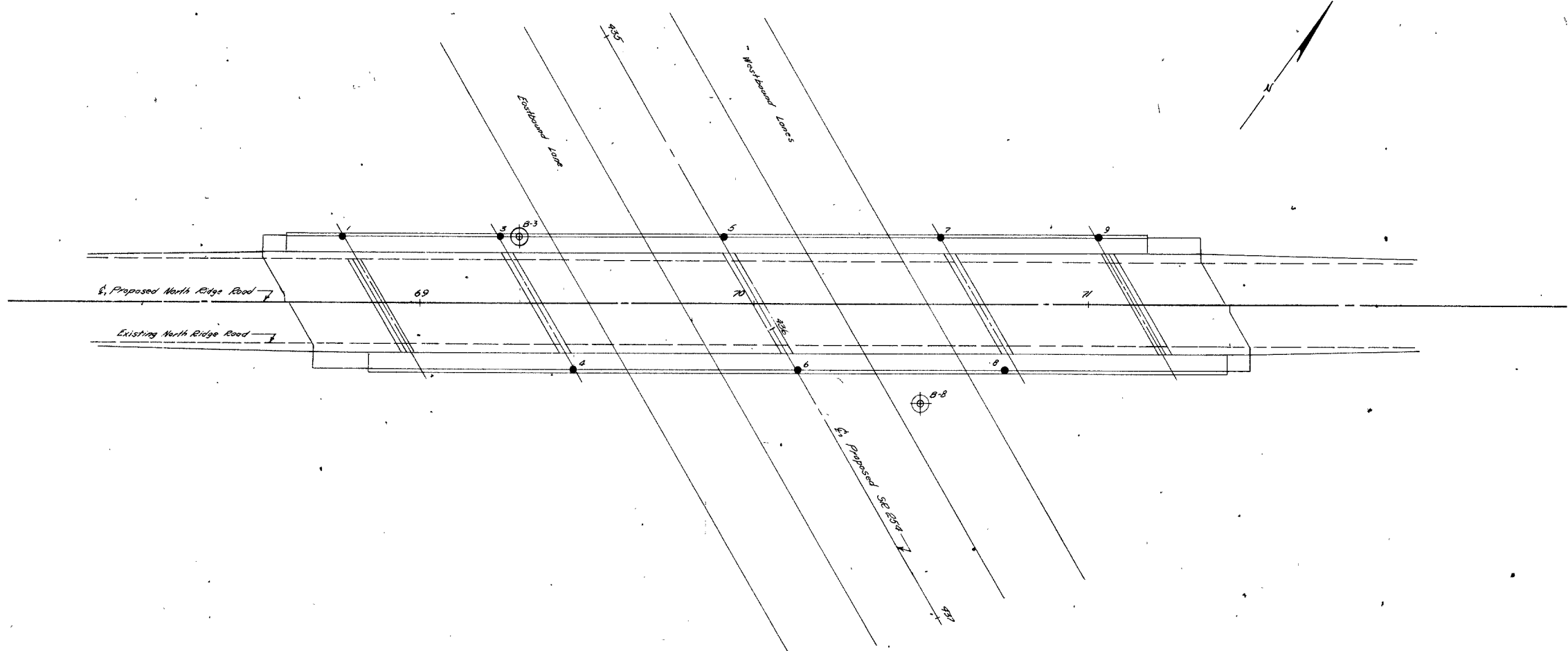
Free water level was observed in the rod sounding holes between elevations 673 and 666 feet.

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 STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-0885  
UNDER NORTH RIDGE ROAD  
SEC. LOR-254-408 B

CHECKED BY F.L.R.	REVIEWED BY P.D.R.	DATE 6-3-63
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OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. LOP-254-0885 UNDER NORTH RIDGE ROAD SEC. LOP-254-4.08 B			
PLAN AND PROFILE			
DRAWN BY E.L.F.	CHECKED BY F.L.R.	REVIEWED BY R.D.R.	DATE 6-3-63

SCALE: 1" = 20'

LOR-254-4.08 B

**LOG OF BORING**

Date Started 5-2-63      Sampler Type SS      Dia. 3 1/2"      Water Elev. \_\_\_\_\_  
 Date Completed 5-2-63      Casing Length 15'      Dia. 3 1/2"      \_\_\_\_\_  
 Boring No. 3-3      Station & Offset \_\_\_\_\_      Surface Elev. 629.0'

Elev.	Depth	Std. Pen. (lb)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.	
679.0	0															
679.0	2															
679.0	4															
679.0	6	7/4			Brown Sand	1	0	67	31	4	NE	NP	13			
668.0	10	5/6			Brown Gravelly Sand	2					A		14			
663.0	16	18/27			Gray Sandy Silt	3	11	0	19	17	30	20	4	11		
658.0	20	16/24			Gray Sandy Silt	4	15	8	12	36	29	20	2	11		
655.5	22															
654.0	24	19/23			Gray Gravelly Sandy Silt	5	17	10	12	36	24	21	3	10		
650.5	28	21/20			Sandstone boulders with clay and gravel											
648.0	30	(0.1')			Gray Gravelly Silt	6	47	4	5	26	14	20	2	10		
645.5	32				Gravel (Driller's Description)											
643.0	34	24/8			Gray Gravelly Silt	7	46	4	4	28	17	21	4	9		
640.5	36	26/8			Gray Gravelly Silt	8	46	4	5	30	15	20	2	11		
638.0	38	20/27			Gray Sandy Gravelly Silt	9	26	10	0	33	22	21	3	15		
636.0	40	16/24			Gray Gravelly Sandy Silt	10	18	10	12	29	31	22	6	11		
633.0	44															
631.0	46	11/22			Gray Gravelly Silty Sand	11	18	0	10	24	29	19	3	12		
631.0	48				TOP OF ROCK											
631.0	48		0.0		Sandstone, gray, medium-grained, broken, firm, carbonaceous laminae, argillaceous, diagonal fractures filled and recessed. Core loss 2f.											
623.0	50		0.0													
623.0	52		0.0													
623.0	54		0.0													
623.0	56		0.0		Shale, red, firm, non-fissile, dense, uniform. Core loss 8f.											
620.5	58		0.5		Sandstone, gray, argillaceous, few carbonaceous laminae, firm, fine-grained. Core loss 12f.											
618.0	60															

\*REPAIR      BOTTOM OF BORING

**LOG OF BORING**

Date Started 5-2-63      Sampler Type SS      Dia. 3 1/2"      Water Elev. \_\_\_\_\_  
 Date Completed 5-2-63      Casing Length 15'      Dia. 3 1/2"      \_\_\_\_\_  
 Boring No. 3-3      Station & Offset 70+50, 30' PL. (FORWARD PIEP)      Surface Elev. 629.0'

Elev.	Depth	Std. Pen. (lb)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.		
679.6	0																
679.6	2																
679.6	4																
679.6	6	7/5			Brown Silty Gravel	1	24	22	35	7	12	NP	NP	15			
669.6	10	2/5			Brown Gravelly Sand	2	20	15	61	4		NP	NP	22			
664.6	16	18/20			Gray Gravelly Sandy Silt	3	15	9	13	35	28	22	4	11			
659.6	20	23/20			Gray Gravelly Sandy Silt	4	19	10	14	30	27	20	3	10			
651.6	26	17/15			Gray Sandy Silt	5	14	11	14	34	27	NP	NP	11			
649.1	28	50'			Gray Sandy Gravelly Silt	6	29	5	13	31	22	NP	NP	10			
649.6	30	19/16'			Gray Gravelly Silt	7	48	4	3	27	18	NP	NP	9			
646.6	32	74'			Gray Gravelly Silt	8	30	3	8	40	23	NP	NP	8			
644.6	34	(0.4')			TOP OF ROCK												
644.6	34				Weathered Shale												
644.6	36		1.6	0.9	Sandstone, gray, firm, medium-grained, some carbonaceous material, broken at 37.5'. Remainder contains diagonal laminae of dark-gray carbonaceous, argillaceous shale extremely distorted by plastic flow, fractures on diagonal (cross) bedding. Core loss 15f.												
644.6	38		2.5	0.0													
644.6	40		4.0	1.0													
644.6	42																
644.6	44																
644.6	46																
644.6	48																
644.6	50																

\*REPAIR      BOTTOM OF BORING

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

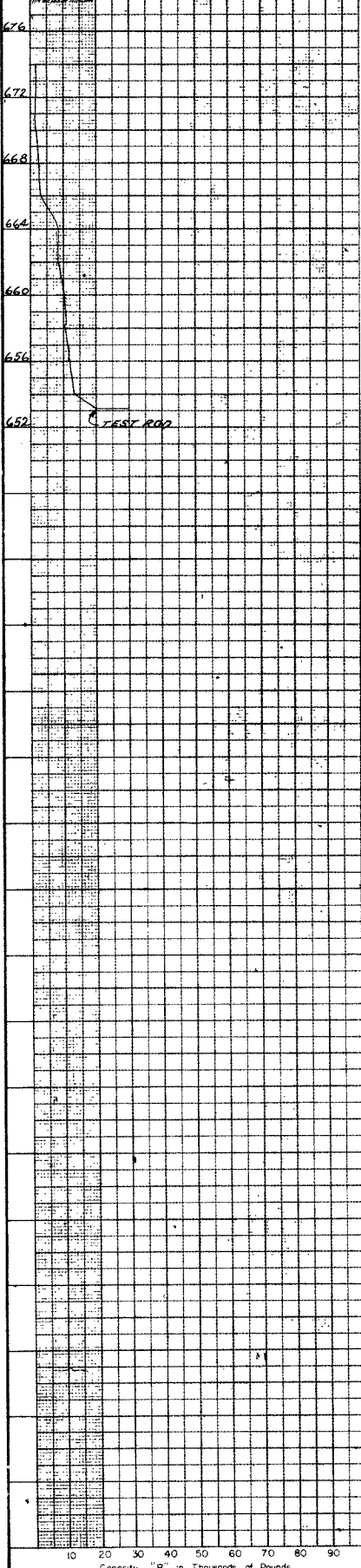
STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-0825  
UNDER NORTH RIDGE ROAD  
SEC. LOR-254-4.08 B

BORING DATA

TYPED BY LH	CHECKED BY FLR	REVIEWED BY ROR	DATE 6-3-63
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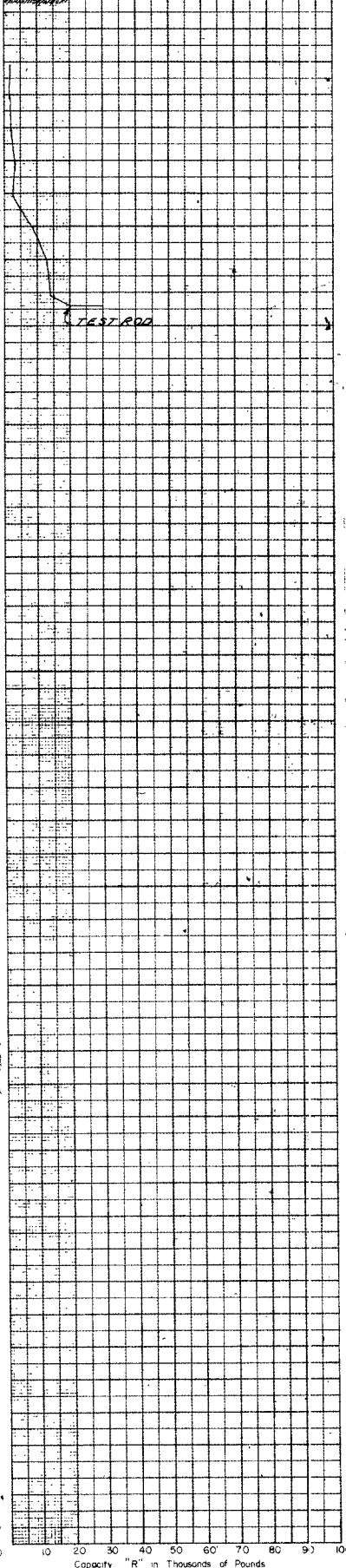
Test Location No. 1  
 Station B Offset 68+77.20' LT  
REAR ABUTMENT  
 Surface Elev. 678.0' Water Elev. 666.0'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



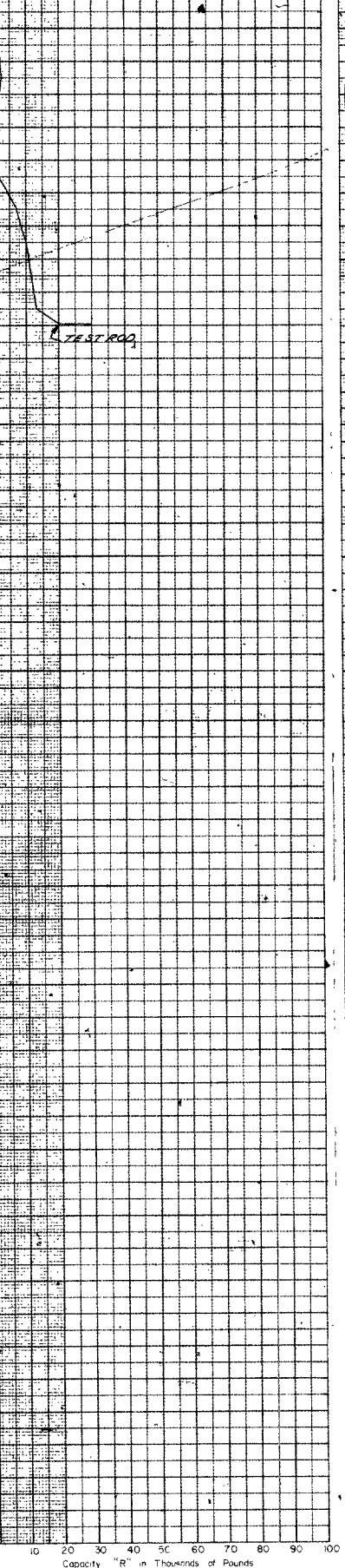
Test Location No. 2  
 Station B Offset 69+24.20' LT  
REAR PIER  
 Surface Elev. 677.8' Water Elev. 670.8'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



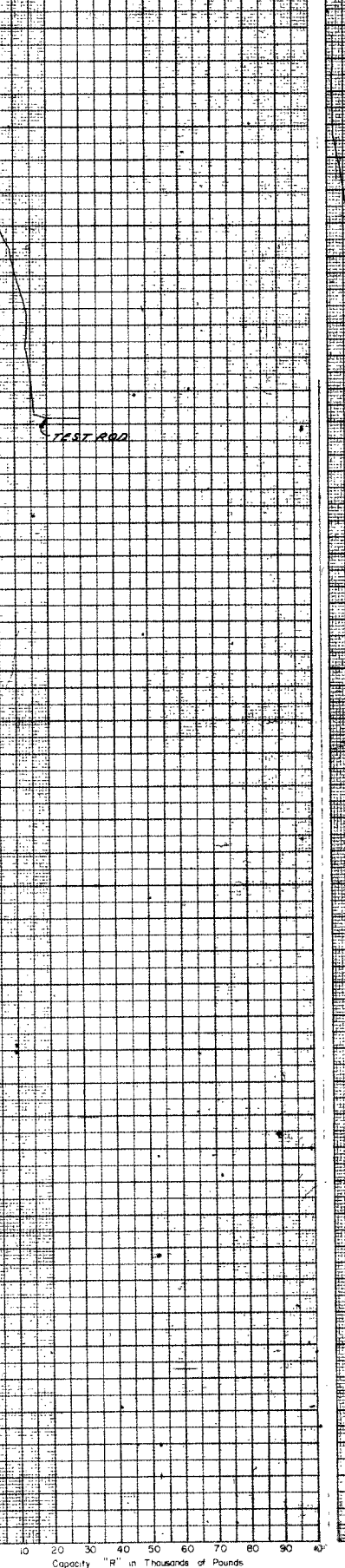
Test Location No. 3  
 Station B Offset 69+46.20' RT  
REAR PIER  
 Surface Elev. 679.0' Water Elev. 673.0'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



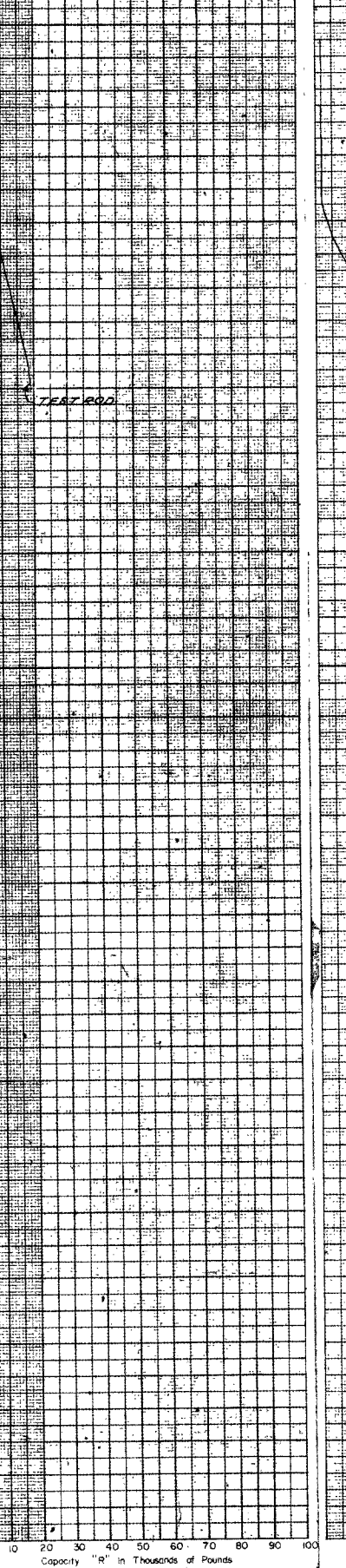
Test Location No. 4  
 Station B Offset 69+91.20' LT  
CENTER PIER  
 Surface Elev. 678.6' Water Elev. 671.6'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



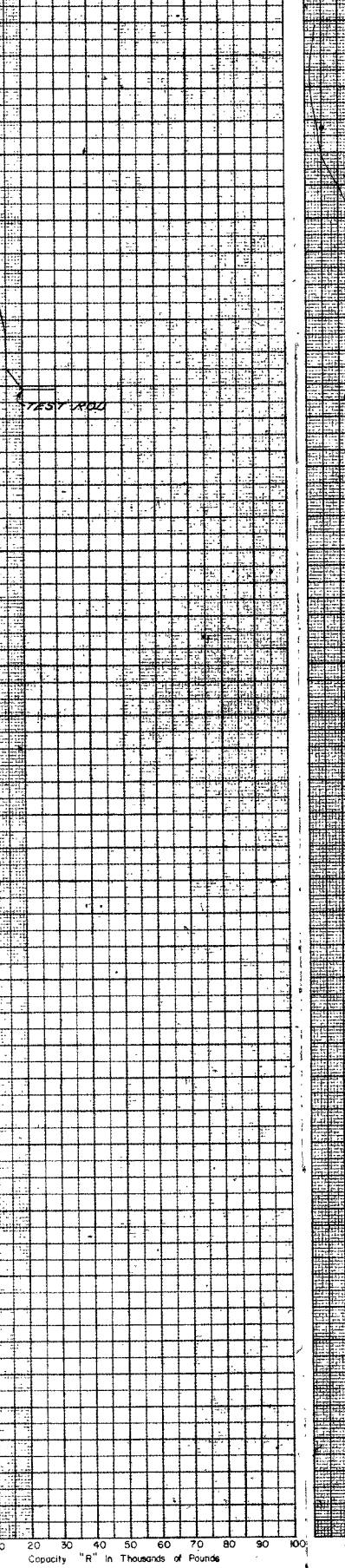
Test Location No. 5  
 Station B Offset 70+13.20' RT  
CENTER PIER  
 Surface Elev. 679.4' Water Elev. 673.4'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



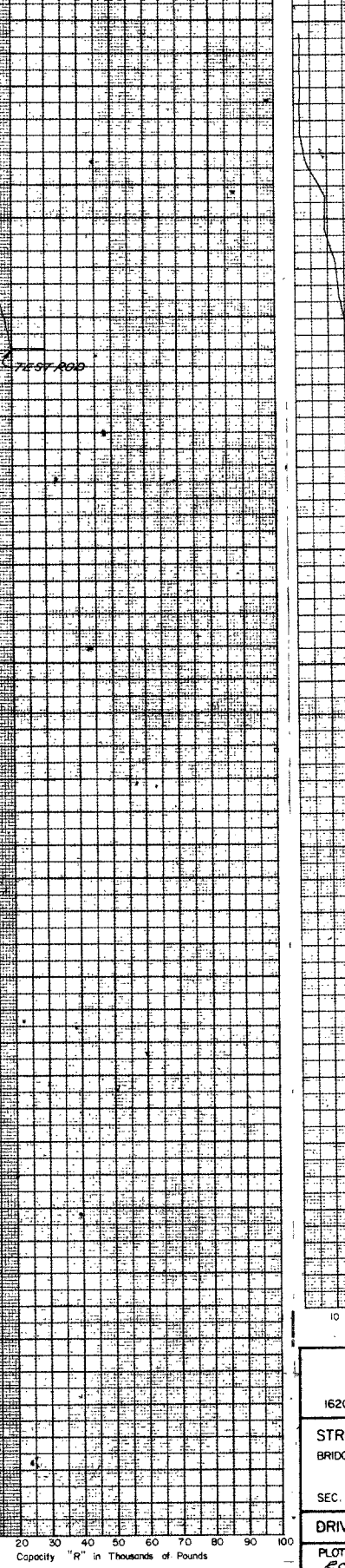
Test Location No. 6  
 Station B Offset 70+56.20' LT  
FORWARD PIER  
 Surface Elev. 679.0' Water Elev. 672.0'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



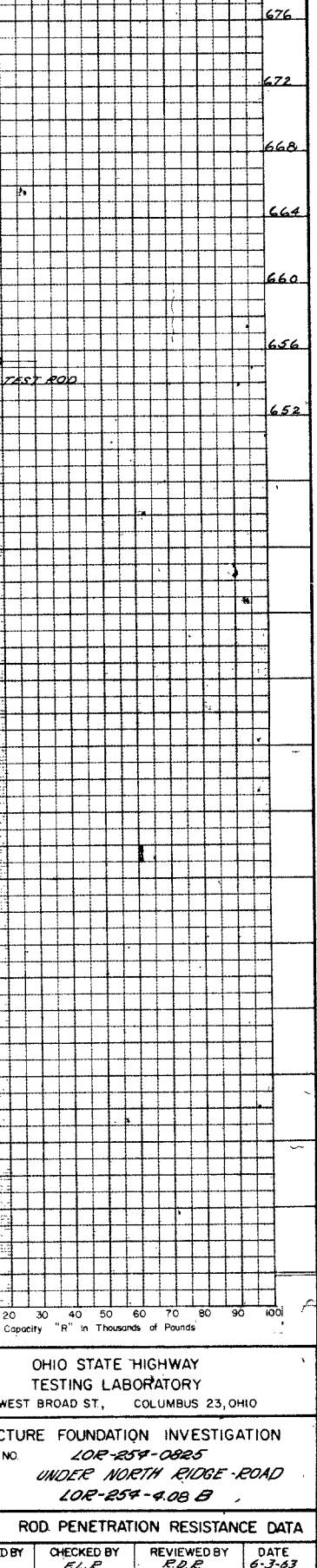
Test Location No. 7  
 Station B Offset 70+75.20' RT  
FORWARD PIER  
 Surface Elev. 679.7' Water Elev. 672.7'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



Test Location No. 8  
 Station B Offset 71+03.20' LT  
FORWARD ABUTMENT  
 Surface Elev. 679.3' Water Elev. 672.3'

Piling \_\_\_\_\_  
 Hammer \_\_\_\_\_  
 Formula \_\_\_\_\_  
 Reference \_\_\_\_\_  
 Rod Condition GOOD



23  
45

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

STRUCTURE FOUNDATION INVESTIGATION  
 BRIDGE NO. LOR-254-0885  
UNDER NORTH RIDGE ROAD  
 SEC. LOR-254-408 B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY <u>P.C.</u>	CHECKED BY <u>F.L.P.</u>	REVIEWED BY <u>P.D.R.</u>	DATE <u>6-3-63</u>
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GENERAL INFORMATION

Drive Rod Penetration 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 conditions may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description - based on laboratory test results and the Casagrande AC classification system - and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	8"	3"	2.0mm	0.42mm	0.075mm	0.005mm
Cobbles						
Gravel						
Coarse Sand						
Fine Sand						
Silt						
Clay						
	No. 10 sieve	No. 40 sieve	No. 200 sieve			

LEGEND

- Auger Boring - Plan View.
- Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance - Soundings - Plan View.
- Electrical Resistivity Probe - Plan View.
- Indicates Auger Boring.
- Indicates Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only.
- Top of Rock
- Water saturated zone.
- Total Depth.
- Horizontal bar on log indicates the depth the sample was taken.
- Figures to the right of boring log in profile view indicate the number of blows for "Standard Penetration" test.  
X = First 6 inches  
Y = Second 6 inches
- 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.
- Footings
- Capped pile
- Footings on pile

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GEOLOGY OF THE SITE

The structure site is located upon the glaciated Lake Plain. Shallow overburden overlies shale bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of one drive sample-core boring, one core boring, and eight drive rod penetration tests, made between April 11 and 16, and May 8 and 15, 1963.

INVESTIGATIONAL FINDINGS

The borings disclosed that bedrock surface, encountered at 3 and 6-foot depths, elevations 698 and 692 feet, is overlain by damp hard clay and medium-dense silt. The borings were terminated at 35 and 40-foot depths, elevations 663 and 661 feet, after penetrating 29 and 37 feet below bedrock surface.

The rod soundings generally met rapidly increasing resistance to penetration with increase in depth and were terminated upon encounter with refusal to penetration at 9 to 15-foot depths, elevations 693 to 686 feet, considered to have penetrated as much as 12 feet below bedrock surface, as indicated by the borings, and to have terminated upon firm bedrock surface or in the undefined weathered to fine shale transition zone.

On the basis of the borings, bedrock surface is considered to slope from the area of the left rear abutment to the right and forward portions of the structure site, between elevations 698 and 692 feet.

If it is the intention to found substructure units on bedrock, it is considered advisable that the open excavation 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 excavation be well drained at all times.

Unconfined compression tests on similar soft and firm shale bedrock indicates a crushing strength on the order of 120 to 175 tons per square foot, respectively. The crushing strength of the weathered shale is not expected to exceed 100 tons per square foot.

Free water level was observed in rod sounding hole number 8 at elevation 597 feet.

LOG OF BORING

Date Started 5-15-63 Date Completed 5-15-63 Boring No. B-4

Sampler Type SS Dia. 1 3/8" Casing Length 49+50, 12' Lt. (REAR PIER) Station & Offset

Water Elev. \_\_\_\_\_ Surface Elev. 701.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.	
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PL		W.C.
701.5	0				Brown Clayey Silt (Driller's Description)										
698.5	3				TOP OF ROCK										
	6		3.2	1.8											
	12		3.8	1.2											
	18		3.7	1.3											
	22		4.3	0.7	Shale, red, soft to firm, broken, diagonal joints with slickensides, non-fissile, sub-conchoidal fractures; bottom half becomes dense, hard, few clay seams throughout. Top 9.0' weathered, broken, much clay with calcareous vein filler. Core loss 25%.										
	26		3.7	1.3											
	30		4.4	0.6											
	34		4.0	1.0											
661.5	40				BOTTOM OF BORING										

LOG OF BORING

Date Started 5-8-63 Date Completed 5-9-63 Boring No. B-9

Sampler Type SS Dia. 1 3/8" Casing Length 51+08, 15' Rt. (FORWARD ABUTMENT) Station & Offset

Water Elev. \_\_\_\_\_ Surface Elev. 698.0'

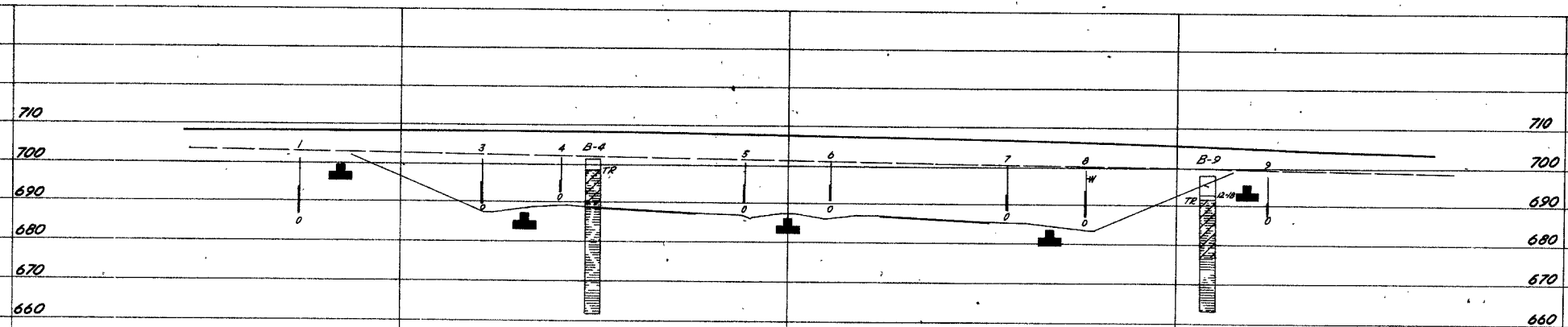
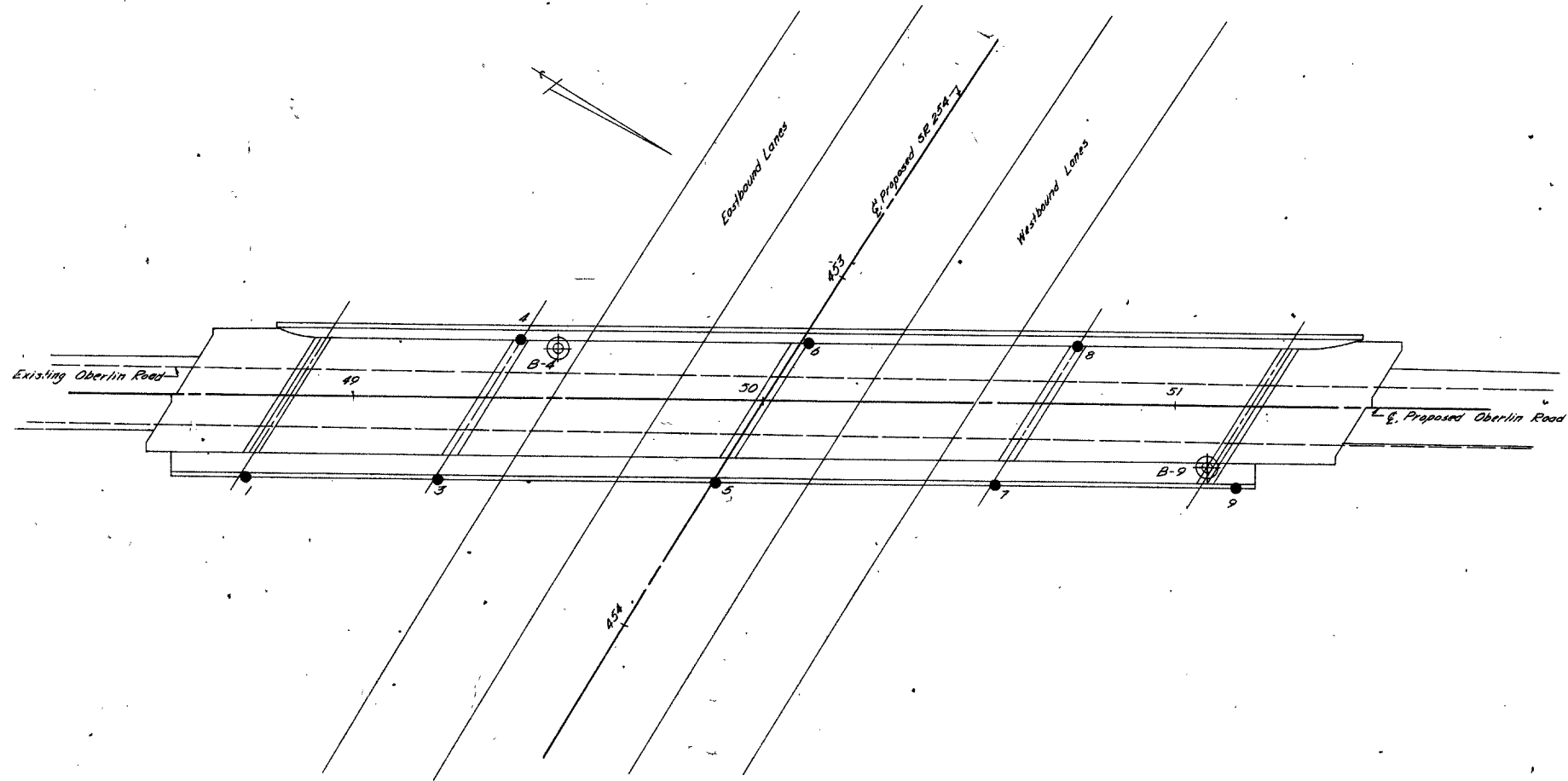
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.	
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PL		W.C.
698.0	0														
	2														
	4														
693.0	6	12/18			Red Silty Clay	1	0	0	0	46	54	42	17	14	
692.0	8				TOP OF ROCK										
	10		1.5	2.5											
	14		3.3	1.7											
	18		3.1	1.9	Shale, red, soft to moderately firm, fissile, badly broken, crumbly, slickensides, some clay seams near base. Top 15.0' very weathered, with calcareous clay vein filler. Core loss 30%.										
	22		3.4	1.6											
	26		4.2	0.8											
	30		4.3	0.7											
663.0	34				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 STATE HIGHWAY TESTING LABORATORY  
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-0859  
UNDER OBERLIN ROAD  
SEC. LOR-254-4.08 B

CHECKED BY F.L.R. REVIEWED BY R.D.R. DATE 6-3-63

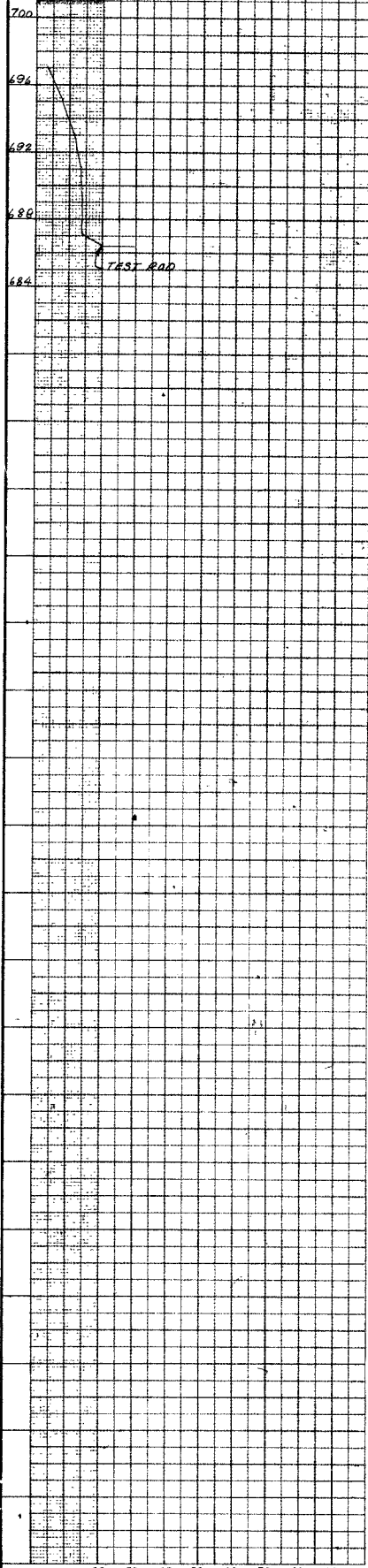


OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. LOR-254-0859 UNDER OBERLIN ROAD SEC. LOR-254-408 B			
PLAN AND PROFILE			
DRAWN BY R.F.W.	CHECKED BY L.R.	REVIEWED BY R.R.	DATE 6-3-63

SCALE: 1" = 20'

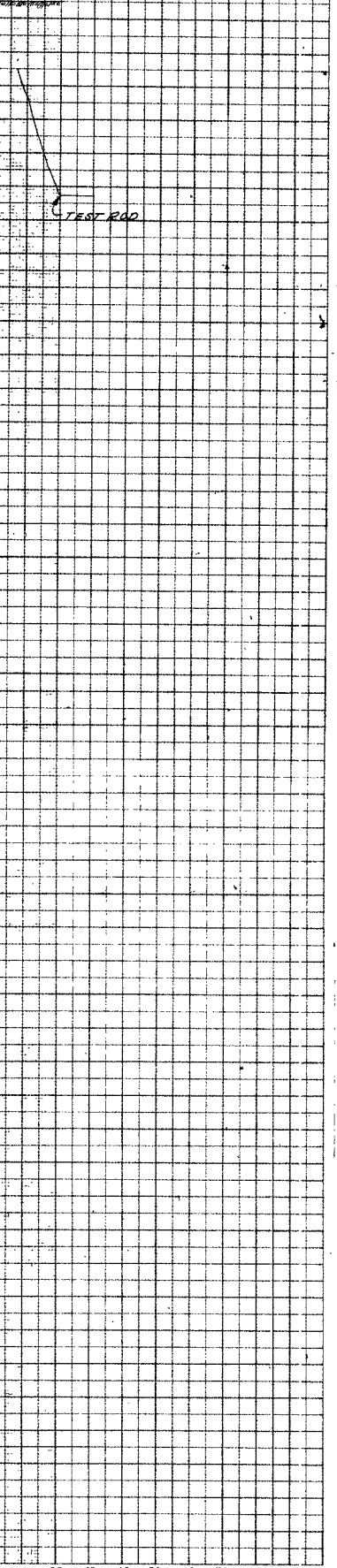
Test Location No. 1  
Station B Offset 48+74.20' RT.  
Surface Elev. 721.1 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



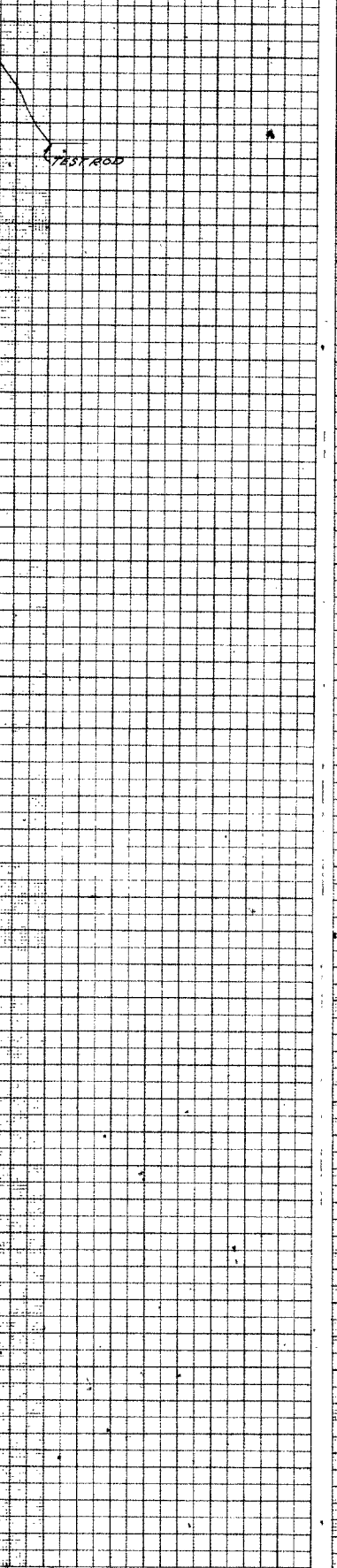
Test Location No. 2  
Station B Offset 49+21.20' RT.  
Surface Elev. 701.0 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



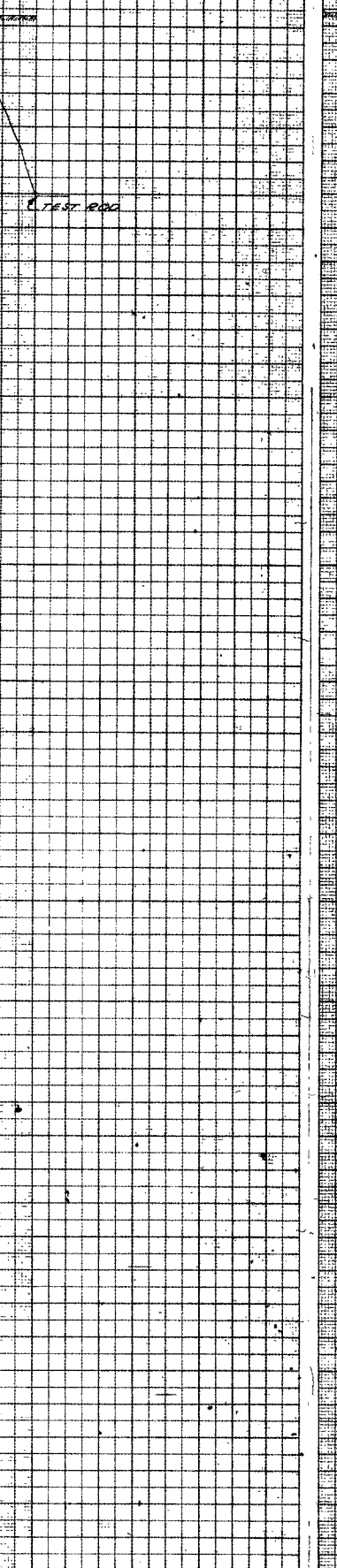
Test Location No. 3  
Station B Offset 49+41.14' LT.  
Surface Elev. 701.8 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



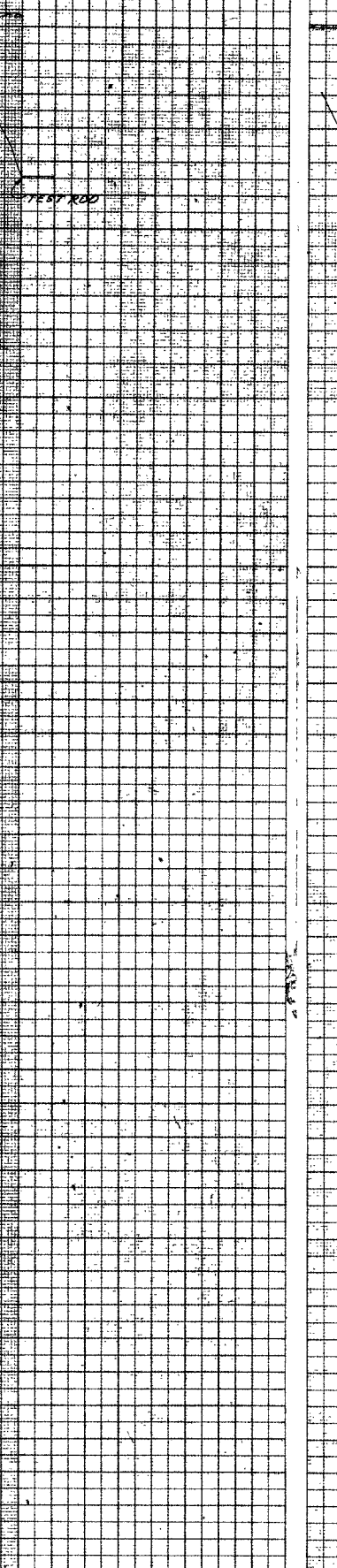
Test Location No. 4  
Station B Offset 49+89.20' RT.  
Surface Elev. 700.5 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



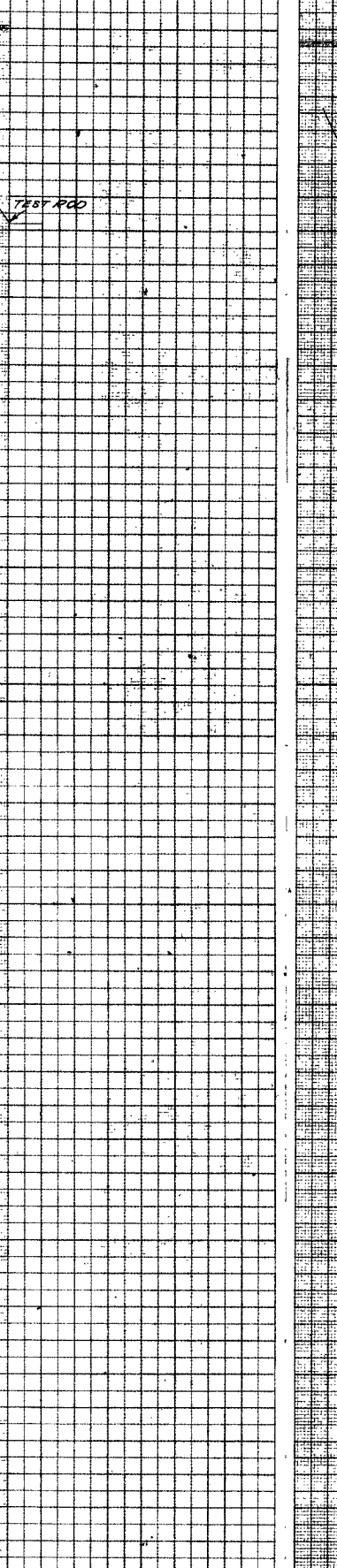
Test Location No. 5  
Station B Offset 50+11.14' LT.  
Surface Elev. 700.8 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



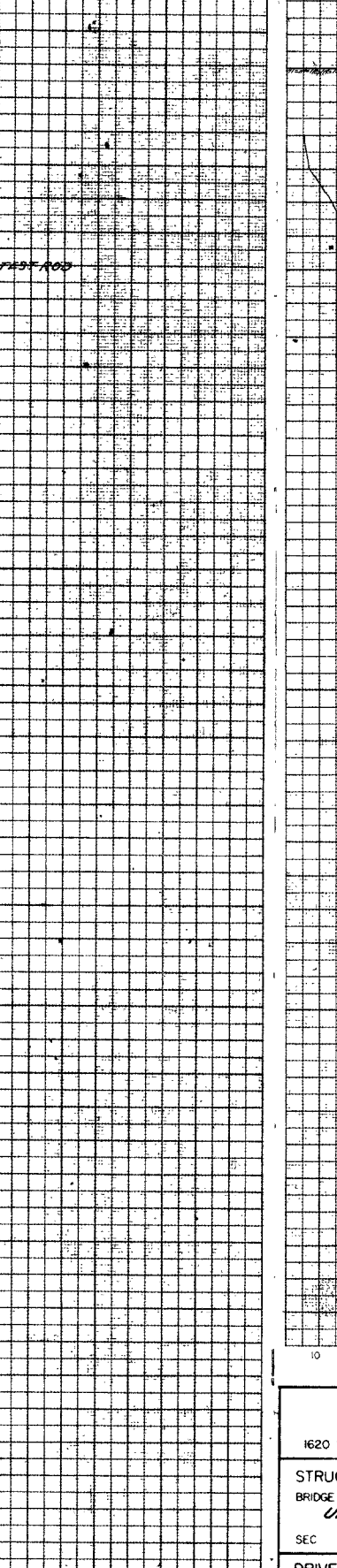
Test Location No. 6  
Station B Offset 50+57.20' RT.  
Surface Elev. 700.2 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



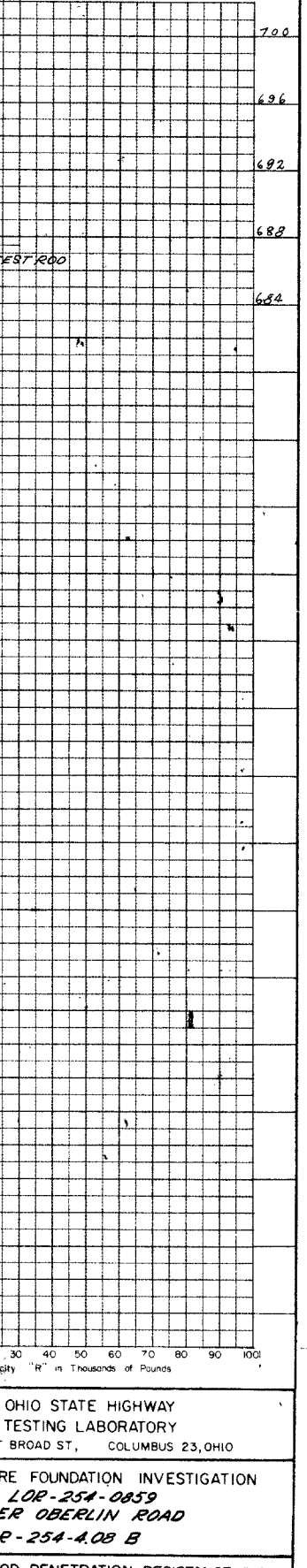
Test Location No. 7  
Station B Offset 50+77.14' LT.  
Surface Elev. 690.3 Water Elev. 677.3

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



Test Location No. 8  
Station B Offset 51+52.20' RT.  
Surface Elev. 698.0 Water Elev. DRY

Piling \_\_\_\_\_  
Hammer \_\_\_\_\_  
Formula \_\_\_\_\_  
Reference \_\_\_\_\_  
Rod Condition GOOD



26  
45

LOR-254-408 B

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

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-0059  
UNDER OBERLIN ROAD  
SEC. LOR-254-408 B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY RC CHECKED BY F.L.R. REVIEWED BY R.D.R. DATE 6-3-63

GENERAL INFORMATION

Drive Rod Penetration 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 conditions may be evaluated.

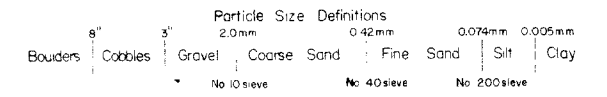
Drive Sample Borings - Drive - Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description, based on laboratory test results and the Casagrande A.C. classification system - and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing 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.



LEGEND

- Auger Boring - Plan View.
- Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance - Soundings - Plan View
- Electrical Resistivity Probe - Plan View.
- Indicates Auger Boring.
- Indicates Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only
- Top of Rock
- Water saturated zone.
- Total Depth.
- Horizontal bar on log indicates the depth the sample was taken.
- Figures to the right of boring log in profile view indicate the number of blows for Standard Penetration test.  
X = First 6 inches  
Y = Second 6 inches
- 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
- Footing
- Capped pile
- Footing on pile

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GEOLOGY OF THE SITE

The structure site is located upon the glaciated Lake Plain. Moderately deep glacial and lacustrine deposits overlie shale bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of three drive sample-core borings and five drive rod penetration tests, made on April 10 and 11, between May 9 and 14, and on July 29 and 30, 1963.

INVESTIGATIONAL FINDINGS

The borings disclosed predominantly moist, very loose to very dense sandy and gravelly silts, silty and clayey sands, and little organic material above bedrock surface, encountered at 18 to 38-foot depths, elevations 715 and 694 feet. The borings were terminated at 40 and 55-foot depths, elevations 693 to 678 feet, after penetrating 17 and 22 feet below bedrock surface.

The rod soundings generally met low resistance to penetration to elevation 719 feet, below this, increasing and erratic resistance to penetration with increase in depth. The rod soundings were terminated upon encounter with near refusal or refusal to penetration at 19 to 38-foot depths, elevations 713 to 695 feet. Rod sounding number 1 is considered to be on bedrock surface; numbers 4 and 5, to be above bedrock surface in very dense drift revealed by the borings; and numbers 8 and 9, to be as much as 4 feet below the surface of the soft shale.

On the basis of tests, bedrock surface is considered to slope downward, from forward to rear between elevations 715 and 695 feet, and to be somewhat flat-lying across the rear portion at approximate elevation 715 feet.

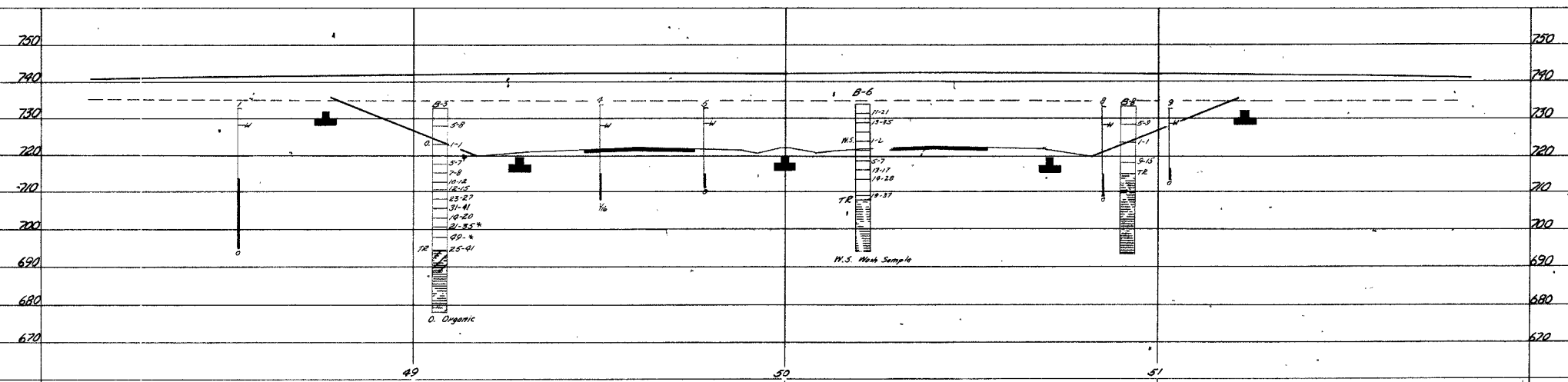
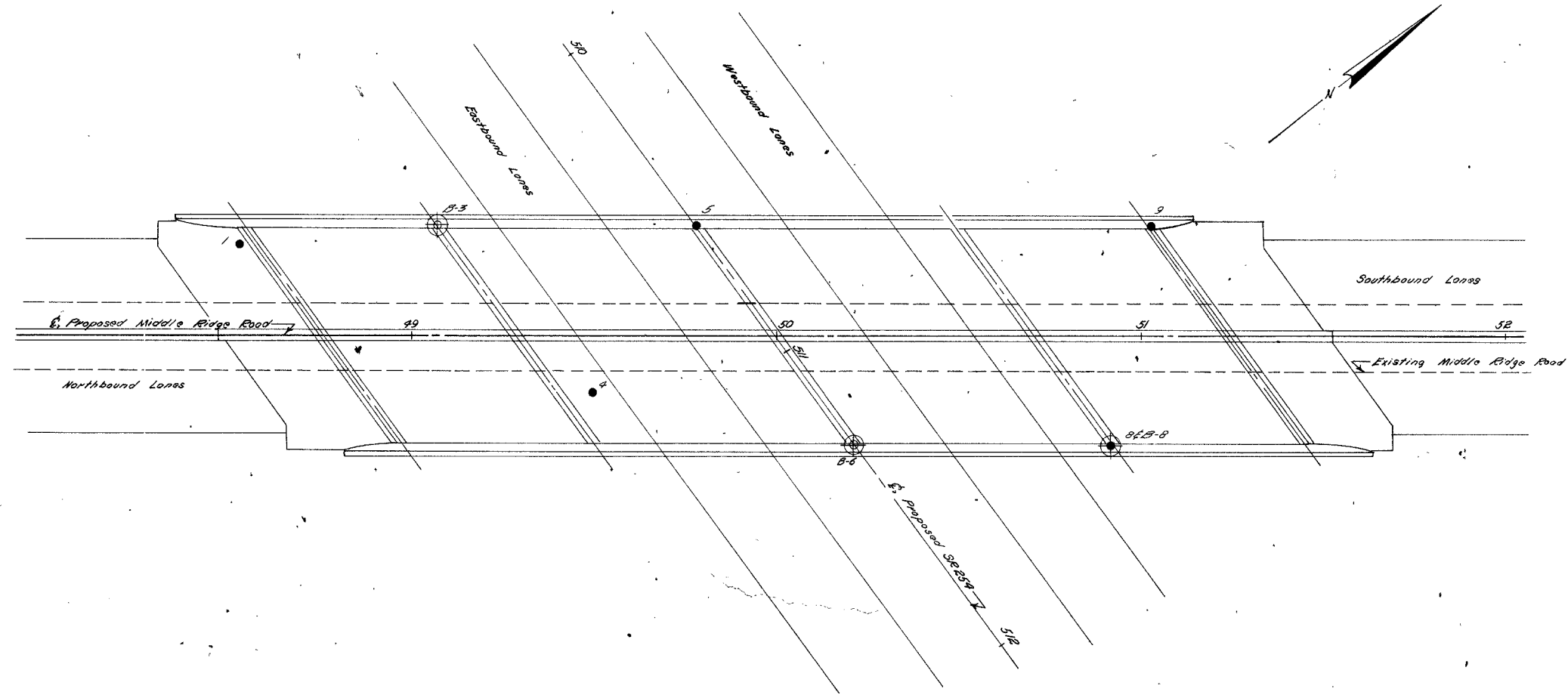
Free water level was noted in the rod sounding holes at 3 to 6-foot depths, at elevations 729 and 728 feet.

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design criteria 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 STATE HIGHWAY TESTING LABORATORY  
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-0967  
UNDER MIDDLE RIDGE ROAD  
SEC. LOR-254-408 B

CHECKED BY R.P.W. REVIEWED BY E.G.R.



OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. LOR-254-0967			
UNDER MIDDLE RIDGE ROAD			
SEC. LOR-254-408 B			
PLAN AND PROFILE			
DRAWN BY R.L.F., R.P.M.	CHECKED BY R.P.M.	REVIEWED BY R.P.R.	DATE 8-21-63

SCALE: 1" = 20'

LOG OF BORING

Date Started 5-13-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 5-14-63 Casing Length 38' Dia. 1 1/2"  
 Boring No. B-3 Station & Offset 49+07, 30' Lt. (REAR PIER) Surface Elev. 733.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.		
733.0	0																
728.0	5	5/8			Brownish-Gray Silty Sand	1	0	40	35	15	10	NP	NP	17			
723.0	10	1/1			Dark Brown and Gray Clayey Sand, Organic	2	0	14	48	18	20	34	15	38			
718.0	15	5/7			Brownish-Gray Sandy Gravelly Silt	3	20	6	11	32	22	NP	NP	23			
715.5	18	7/8			Gray Sandy Gravelly Silt	4	27	7	11	23	32	NP	NP	21			
711.0	20	10/12			Gray Sandy Gravelly Silt	5	27	10	14	23	20	NP	NP	17			
710.5	22	12/15			Gray Sandy Gravelly Silt	6	25	10	14	20	21	NP	NP	13			
708.0	26	23/27			Gray Silty Sandy Gravel	7	41	12	10	20	14	NP	NP	10			
705.5	28	31/41			No Sample Recovered												
703.0	30	34/20			Gray Gravelly Sandy Silt	8	22	12	13	16	17	NP	NP	18			
700.5	32	21/25 (0.4')			Gray Silty Sandy Gravel	9	30	10	13	17	11	NP	NP	9			
698.0	36	49/8			Gray Gravelly Sandy Silt	10	24	11	22	24	19	NP	NP	10			
695.5	38	25/12			Reddish-Gray Gravelly Silt	11	21	6	9	20	27	NP	NP	11			
694.2	40				TOP OF ROCK												
	42		0.2	1.7													
	44		2.7	0.3													
	46																
	48		4.4	0.6													
	50				Shale, red, non-fissile, compaction slickensides, firm, broken-in-part, few gray shale seams, badly weathered to 44.0'. Core loss 15%.												
	52																
678.0	54		4.9	0.1													

\*REFUSAL BOTTOM OF BORING

LOG OF BORING

Date Started 7-29-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 7-31-63 Casing Length 15' Dia. 1 1/2"  
 Boring No. B-6 Station & Offset 50+21, 30' Rt. (CENTER PIER) Surface Elev. 733.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.		
733.8	0																
731.3	2																
728.8	4	11/21			Brown Silty Sand	1	0	26	57	6	11	NP	NP	8			
726.3	6	13/25			Brown Silty Sand	2	0	62	23	3	12	NP	NP	14			
723.8	8				No Sample Recovered												
721.3	10	1/2			Gray Gravelly Sand (Wash Sample)	3											
718.8	12				No Sample Recovered												
716.3	14	5/7			Gray Gravelly Silt	4	23	3	9	37	28	24	4	21			
713.8	16	13/17			Reddish-Gray Gravelly Silt	5	20	1	2	33	44	NP	NP	21			
709.8	18	14/28			Reddish-Gray Silt	6	12	1	3	44	40	NP	NP	17			
707.8	20																
705.8	22																
703.8	24																
701.8	26	19/37			Red Clayey Silt	7	0	1	6	55	38	21	7	15			
699.8	28		1.5	2.5	TOP OF ROCK												
697.8	30				Shale, red, non-fissile, crumbly and soft, occasional firm intervals, numerous slickensides throughout, badly broken. Core loss 73%.												
695.8	32																
693.8	34		2.3	2.7													
691.8	36																
689.8	38		4.9	0.1													
687.8	40				BOTTOM OF BORING												

LOG OF BORING

Date Started 5-9-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 5-9-63 Casing Length 15' Dia. 1 1/2"  
 Boring No. B-8 Station & Offset 50+22, 30' Rt. (FORWARD PIER) Surface Elev. 733.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.		
733.2	0																
728.2	5	5/9			Brown Silty Sand	1	0	63	29	-8		NP	NP	16			
723.2	10	1/1			Gray Silty Sand	2	0	79	20	-14		NP	NP	22			
718.2	15	9/15			Red and Gray Clay	3	0	3	1	27	69	42	18	20			
715.2	18				TOP OF ROCK												
713.2	20		1.9	0.1													
711.2	22																
709.2	24		4.0	1.0													
707.2	26																
705.2	28		3.4	1.6	Shale, red to mottled red and gray, soft, poorly fissile, some compaction slickensides, becomes firm at 30.0', with 1.0' red clay seam (dense, soft, crumbly, damp), at 29.0'; broken-in-part. Core loss 18%.												
703.2	30																
701.2	32																
699.2	34		4.9	0.1													
697.2	36																
695.2	38		4.6	0.4													
693.2	40				BOTTOM OF BORING												

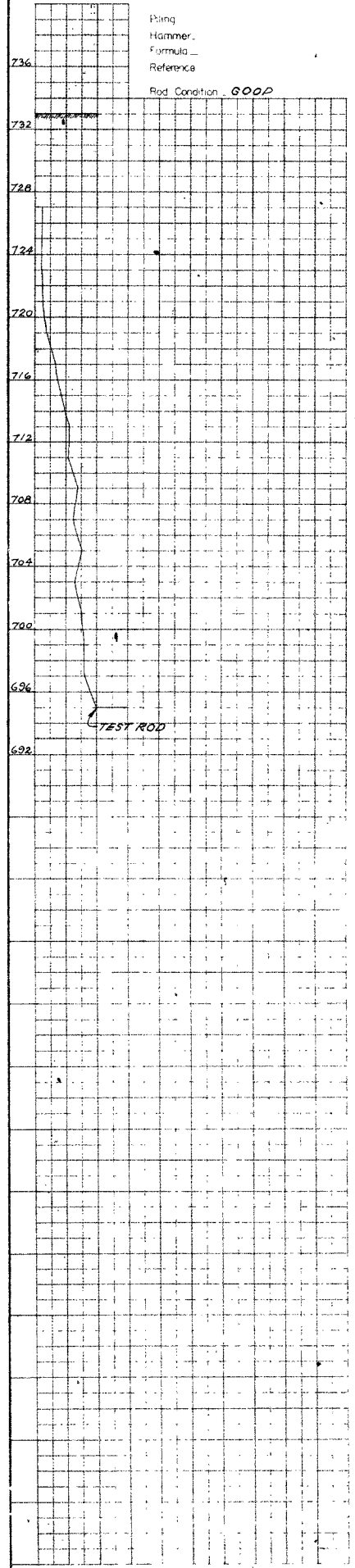
OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-0967  
UNDER MIDDLE RIDGE ROAD  
SEC. LOR-254-408B

BORING DATA

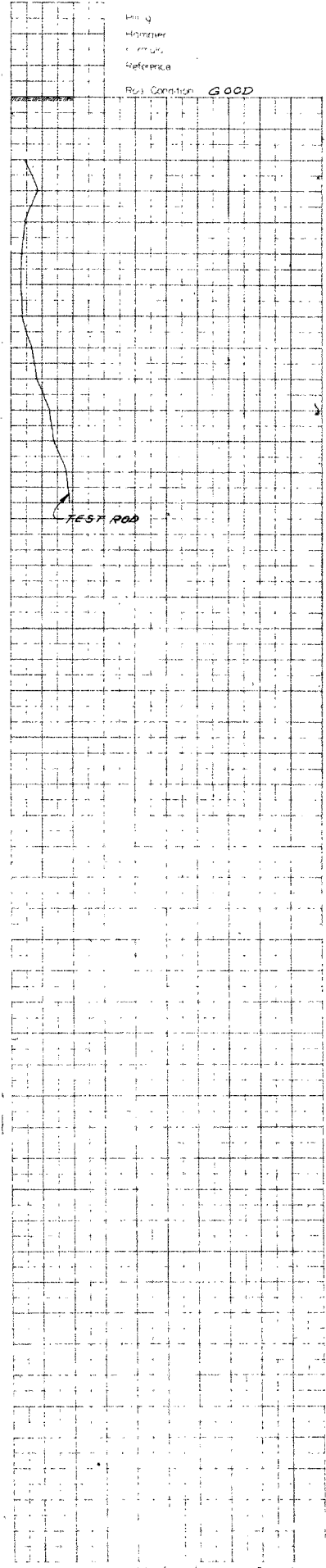
TYPED BY <u>J.A.C.</u>	CHECKED BY <u>R.P.M.</u>	REVIEWED BY <u>P.O.P.</u>	DATE <u>8-2-63</u>
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Test Location No. 1  
Station B Offset 48+53.25' LT  
REAR ABUTMENT  
Surface Elev. 733.0' Water Elev. 728.5'



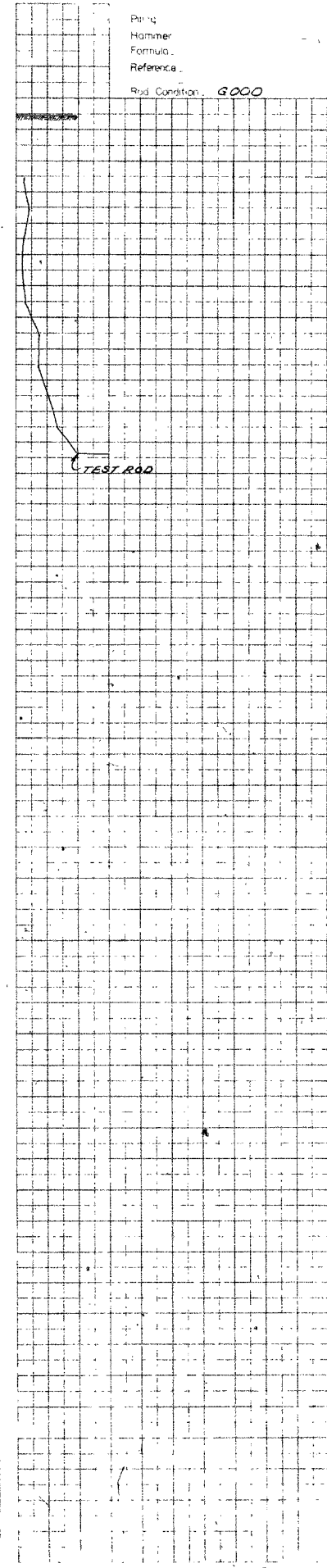
Piling  
Hammer  
Formula  
Reference  
Rod Condition - GOOD

Test Location No. 4  
Station B Offset 49+50.15' RT  
REAR PIER  
Surface Elev. 734.0' Water Elev. 728.0'



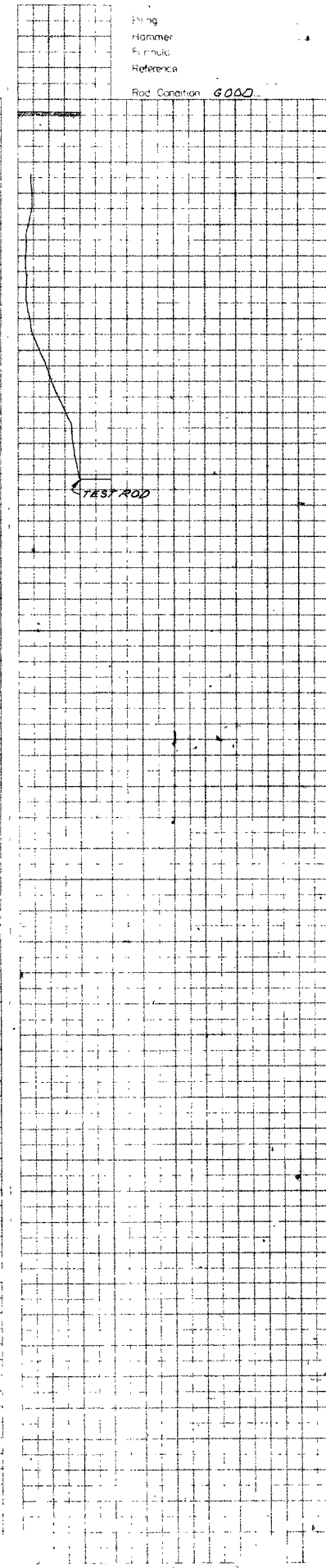
Piling  
Hammer  
Formula  
Reference  
Rod Condition - GOOD

Test Location No. 5  
Station B Offset 49+78.30' LT  
CENTER PIER  
Surface Elev. 732.9' Water Elev. 728.9'



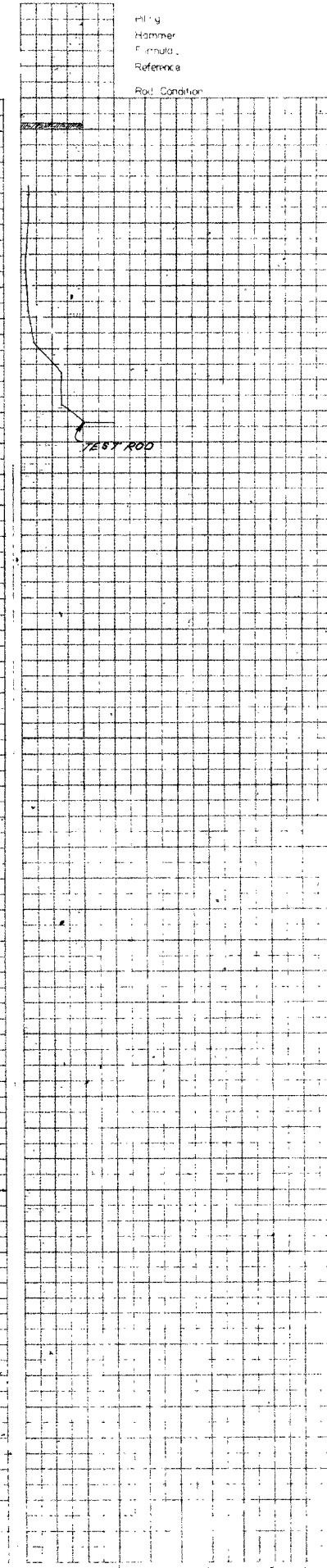
Piling  
Hammer  
Formula  
Reference  
Rod Condition - GOOD

Test Location No. 8  
Station B Offset 50+92.30' RT  
FORWARD PIER  
Surface Elev. 733.2' Water Elev. 728.2'



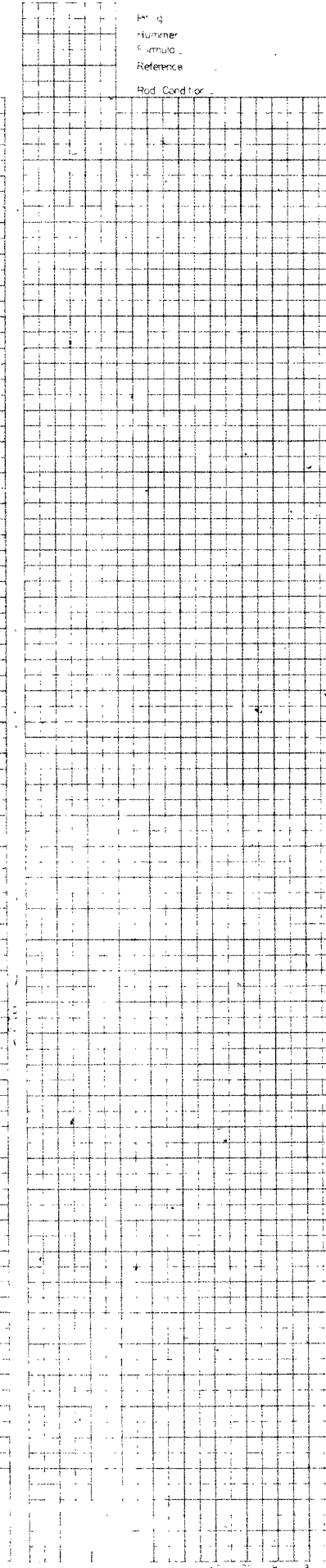
Piling  
Hammer  
Formula  
Reference  
Rod Condition - GOOD

Test Location No. 9  
Station B Offset 51+03.30' LT  
FORWARD ABUTMENT  
Surface Elev. 732.4' Water Elev. 728.4'



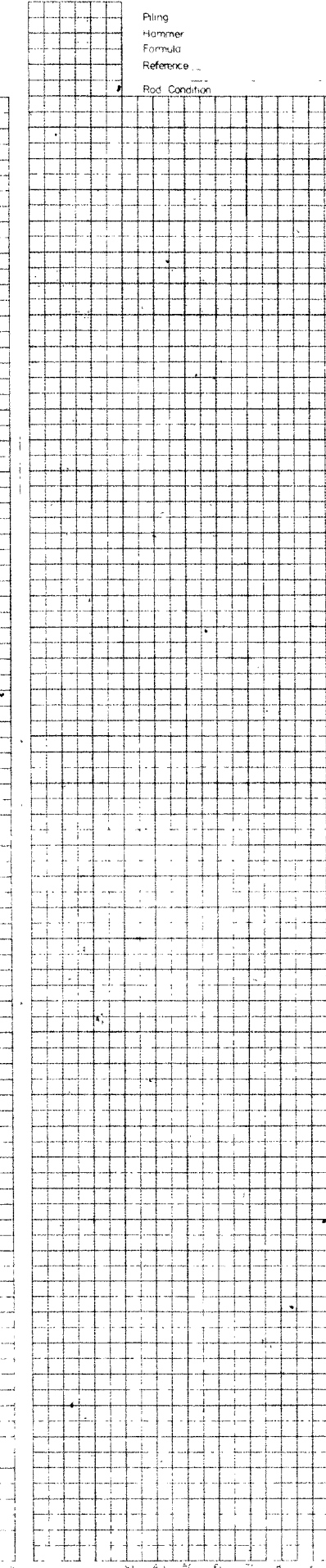
Piling  
Hammer  
Formula  
Reference  
Rod Condition

Test Location No. 10  
Station B Offset  
Surface Elev. Water Elev.



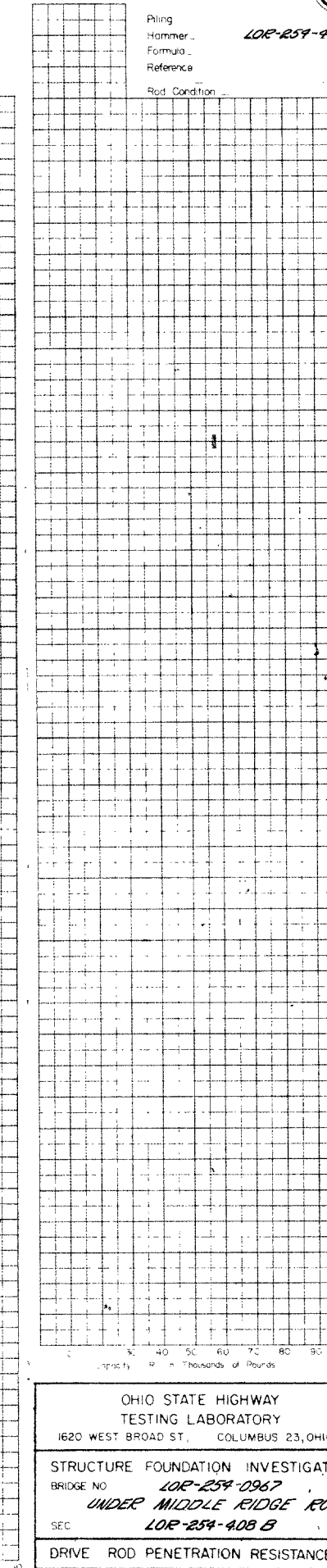
Piling  
Hammer  
Formula  
Reference  
Rod Condition

Test Location No. 11  
Station B Offset  
Surface Elev. Water Elev.



Piling  
Hammer  
Formula  
Reference  
Rod Condition

Test Location No. 12  
Station B Offset  
Surface Elev. Water Elev.



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

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-259-0967  
UNDER MIDDLE RIDGE ROAD  
SEC. LOR-259-408 B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY EC	CHECKED BY RRM	REVIEWED BY RGR	DATE 8-31-63
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**GEOLOGY OF THE SITE**

The structure site is located on the flat glaciated Lake Plain Region, in an area where thin to moderately deep lacustrine and glacial deposits overlie sandstone and shale bedrock, of Mississippian age.

**EXPLORATION**

The exploration consisted of two drive sample-core borings and ten drive rod penetration tests, made between May 20 and June 16, 1964.

**INVESTIGATIONAL FINDINGS**

Boring B-1, in the rear portion of the site, disclosed very stiff to hard sandy and gravelly clays and medium-dense to very dense gravelly silts and stone fragments to bedrock surface, encountered at 34-foot depth, elevation 707 feet. The boring was terminated at 45-foot depth, elevation 696 feet, after penetrating 11 feet of bedrock. Boring B-16 in the forward portion of the site disclosed shallow, medium-dense gravelly silts overlying bedrock surface, encountered at 7-foot depth, elevation 734 feet. The boring was terminated at 25-foot depth, elevation 717 feet, after penetrating 18 feet of bedrock.

The rod soundings encountered rapid increase in penetration resistance with increase in depth, and were terminated due to near-refusal or refusal to penetration at 9 and 22-foot depths, elevations 732 and 720 feet, considered to be in dense drift in the rear portion of the site and on or near bedrock surface in the forward portion of the site, as revealed by the borings.

On the basis of the tests, bedrock surface is considered to slope downward from the forward portion of the site to the rear portion and from the left side to the right side, between elevations 734 and 707 feet.

Free water was observed in rod sounding holes numbers 1, 3, and 8, between elevations 739 and 733 feet.

**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
- Electrical Resistivity Probe Location - Plan View
- Footings and Capped Pile
- Footings on Pile
- Electrical Resistivity Probe - Profile
- Top of Rock
- Interval of Relatively High Moisture
- Total Depth

**SYMBOLS OF ROCK TYPES**

- Coal
- Weathered indurated Clay
- Indurated Clay
- Weathered Shale
- Shale

- 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

- 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 appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
8"	3"	2.0mm	0.42mm	0.074mm	0.005mm	
		No 10 sieve	No 40 sieve	No 200 sieve		

Date Started 5-22-64		Sampler Type SS		Casing Length 10'		Water Elev. 740.9'	
Date Completed 5-27-64		Boring No. B-1		Station 551+85, 54' Rt (REAR ABUTMENT)		Surface Elev. 740.9'	
Elev	Depth	Pen	Res	Loss	Description		
740.9	0				TOP OF BORING		
735.9	6	9/13			Gray Sandy Clay		
733.4	8	13/15			Gray Gravelly Clay		
730.9	10	14/23			Gray Silt and Clay		
728.4	12	11/15			Gray Gravelly Clay		
725.9	14	10/14			Gray Gravelly Silt		
723.4	16	9/12			Brown Sandy Gravelly Silt		
720.9	18	50* (0.7')			Gray Sandy Gravelly Silt		
718.4	20	18/25			Red Clayey Silt		
715.9	22	20/21			Gray Gravelly Silt		
710.9	30	50* (0.6')			Red Clay Shale Fragments		
706.9	34				TOP OF ROCK		
705.9	35				Shale, brown, argillaceous, soft, crumbly. Core loss 10%.		
	38	2.1	2.9				
	42	4.9	0.1		Shale, brown, argillaceous intervals, medium-firm, fissile, broken. Core loss 22%.		
	44				BOTTOM OF BORING *REFUSAL		

Date Started 6-15-64		Sampler Type SS		Casing Length 10'		Water Elev. 740.9'	
Date Completed 6-16-64		Boring No. B-16		Station 551+38, 53' Lt (FORWARD ABUTMENT)		Surface Elev. 740.9'	
Elev	Depth	Pen	Res	Loss	Description		
741.7	0				TOP OF BORING		
739.0	2	3/10			Brown and Gray Sandy Gravelly Silt		
736.7	4	7/9			Gray Sandy Gravelly Silt		
734.0	6				TOP OF ROCK		
		0.6	1.9				
		4.3	0.7		Sandstone, gray, very fine-grained, cross-bedded, jointed, firm, with clay seams. Core loss 13%.		
		4.1	0.0				
		3.0	0.0				
					BOTTOM OF BORING		

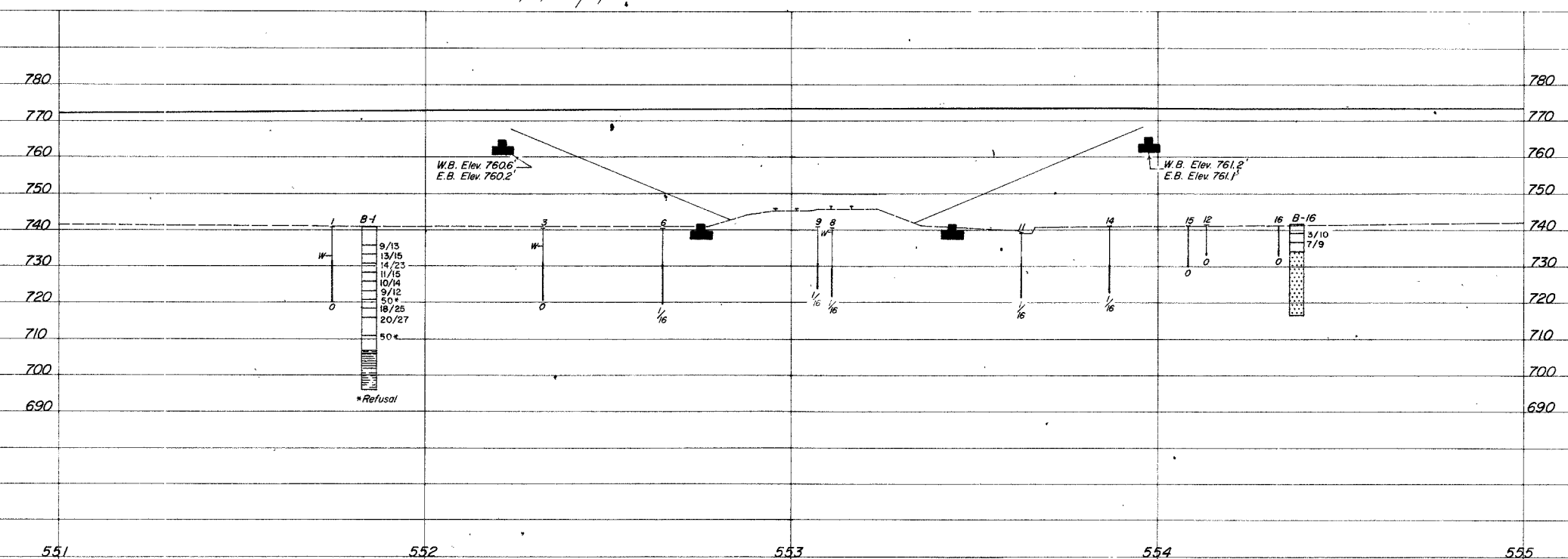
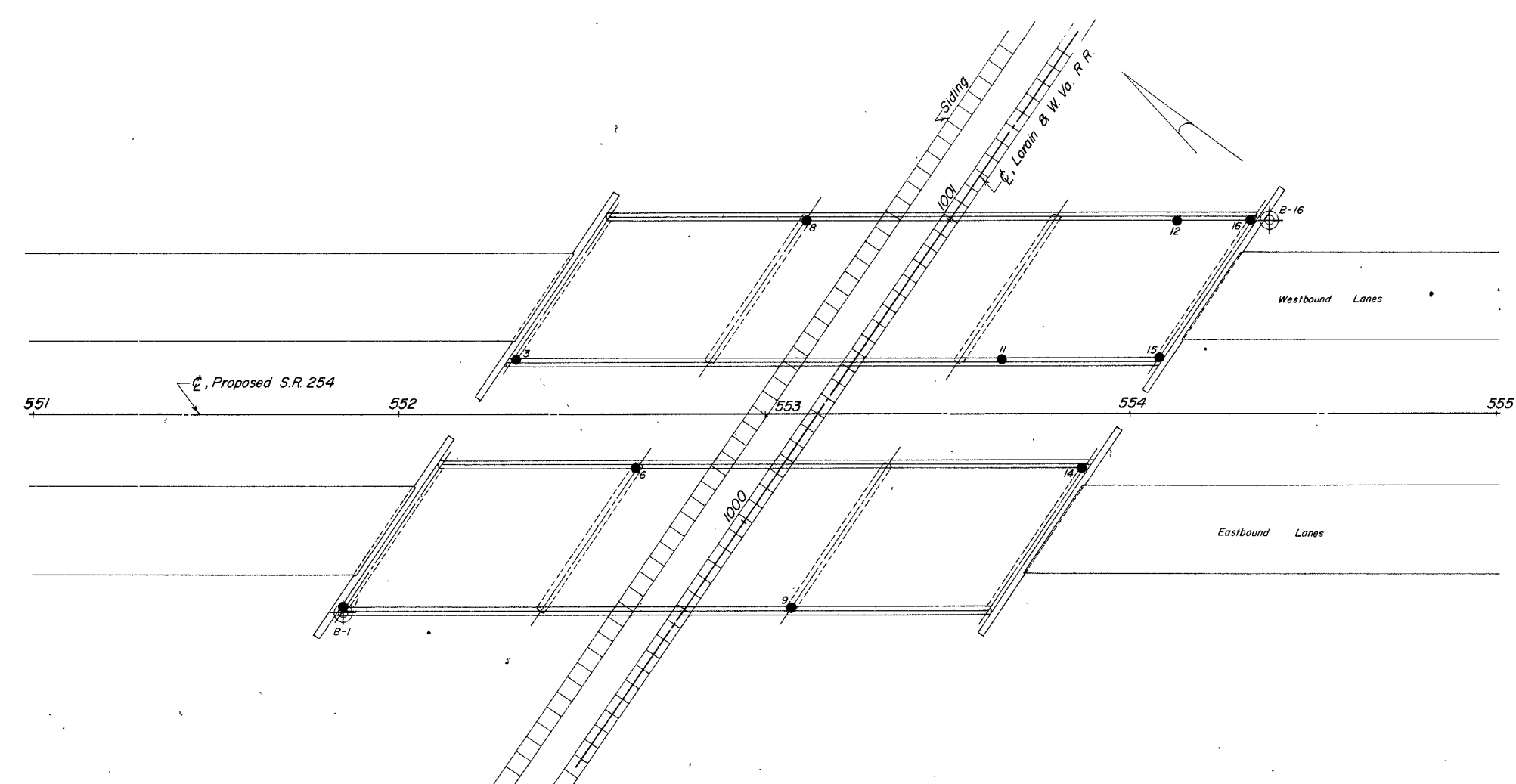
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

**OHIO STATE HIGHWAY TESTING LABORATORY**  
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO LOR-254-1046 L & R  
OVER LORAIN & W. VIRGINIA RR  
SEC. LOR-254-4.08-B

CHECKED BY R. D. R.	REVIEWED BY G. P. H.	DATE 7/9/64
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OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD ST., COLUMBUS 23, OHIO

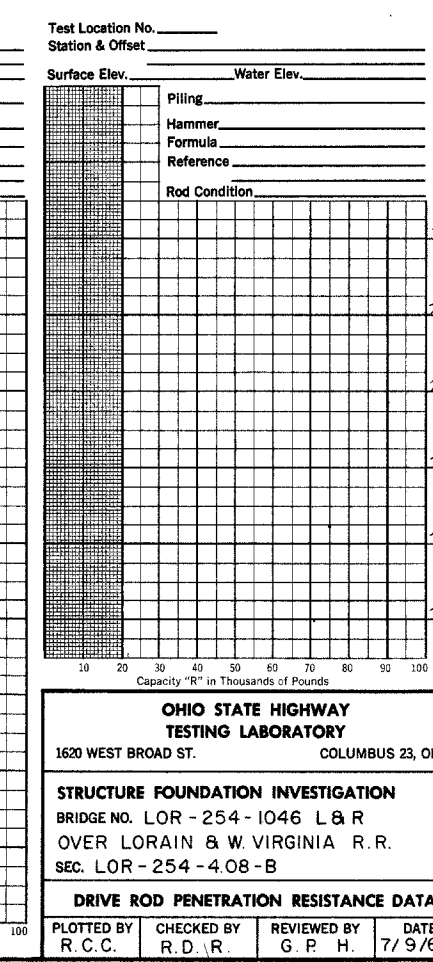
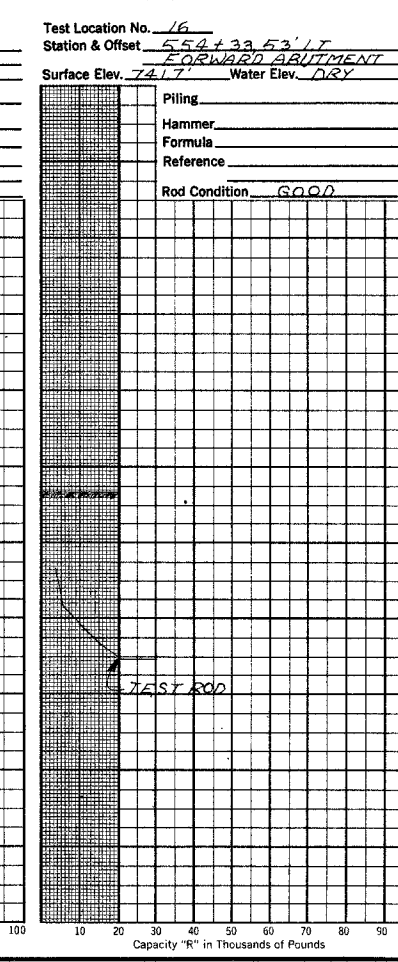
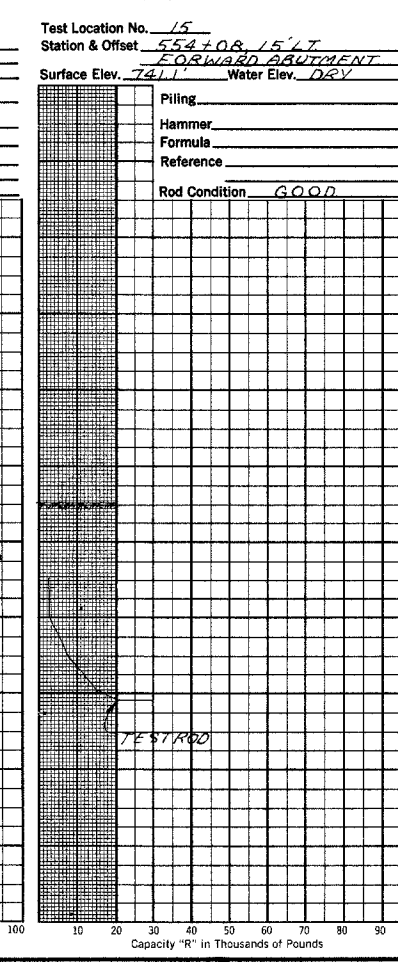
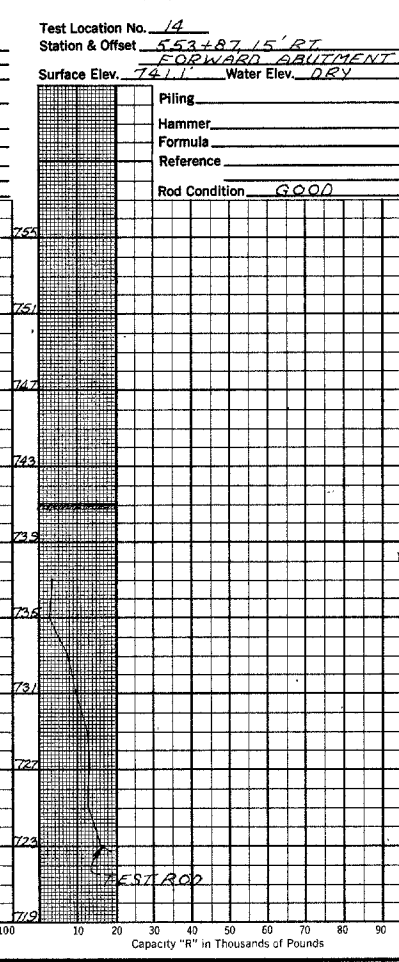
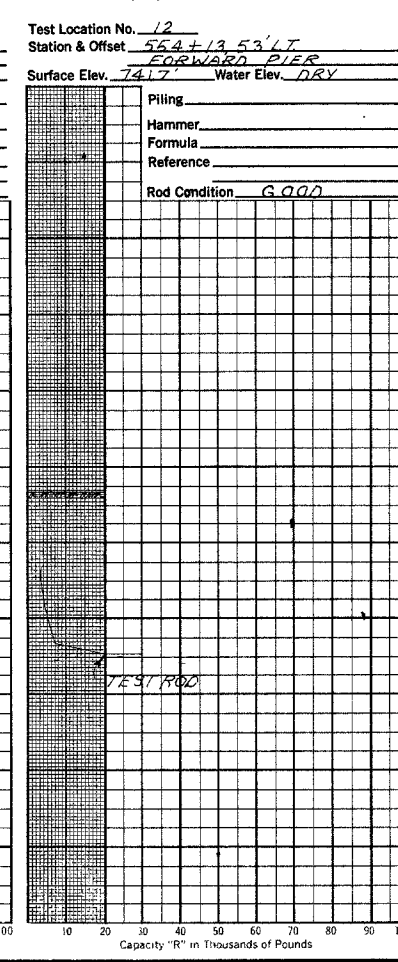
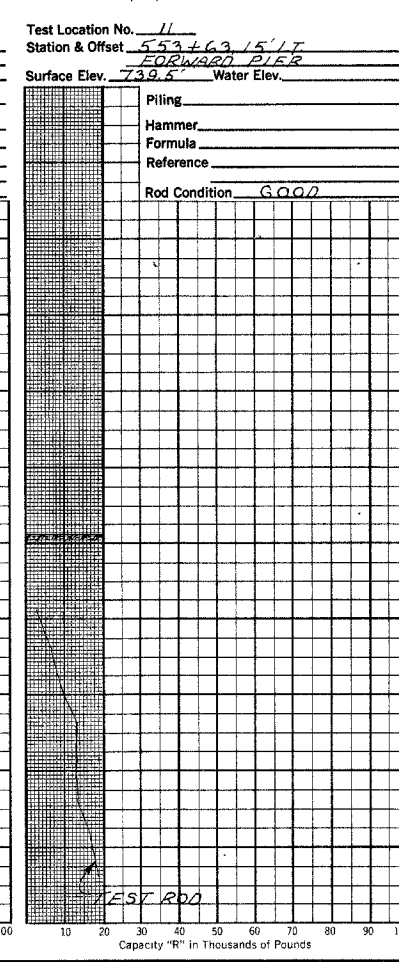
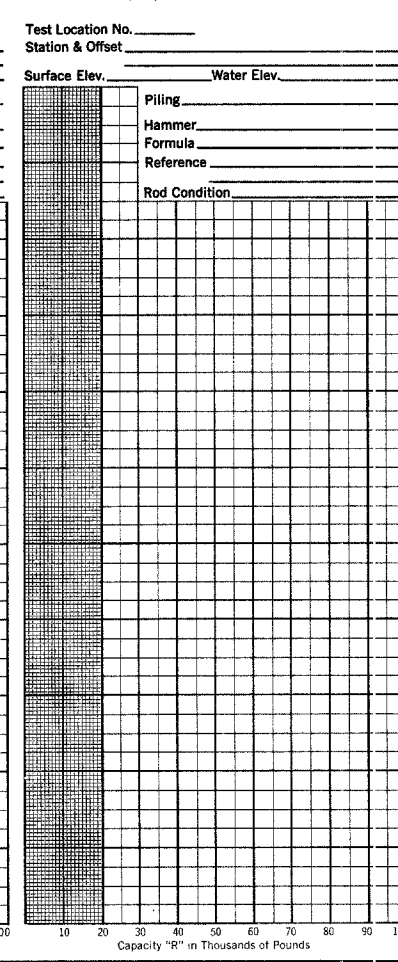
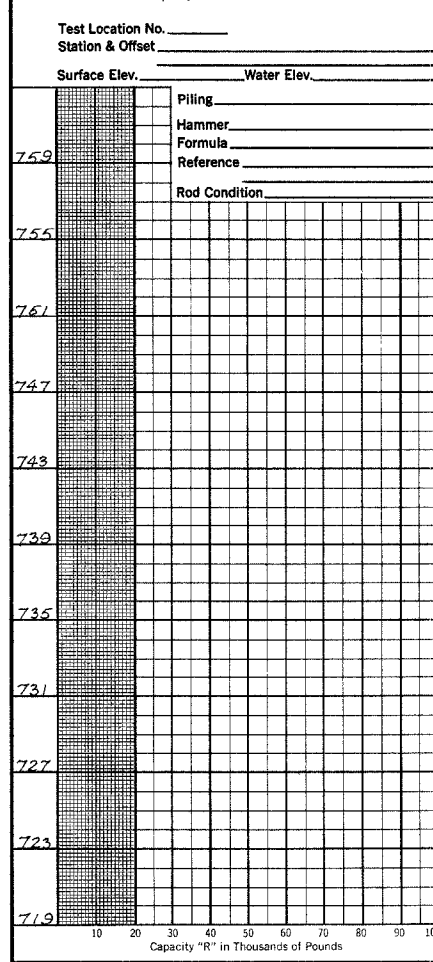
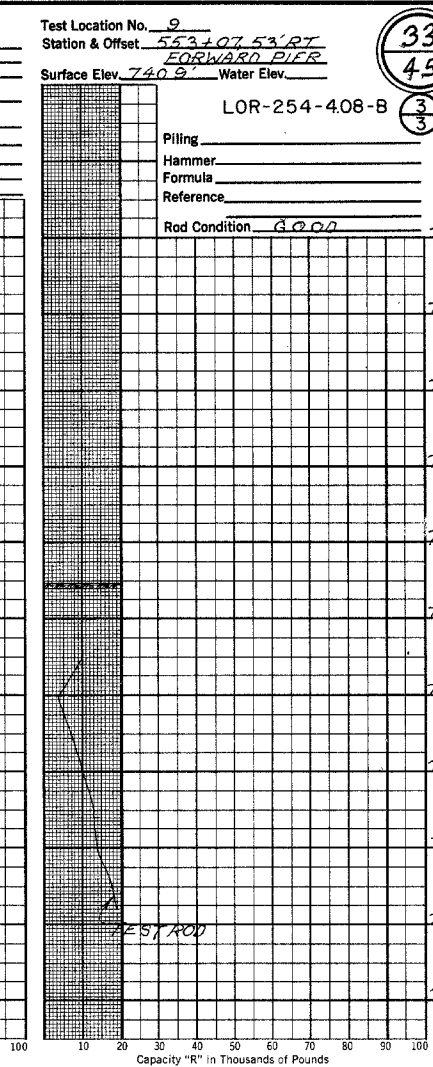
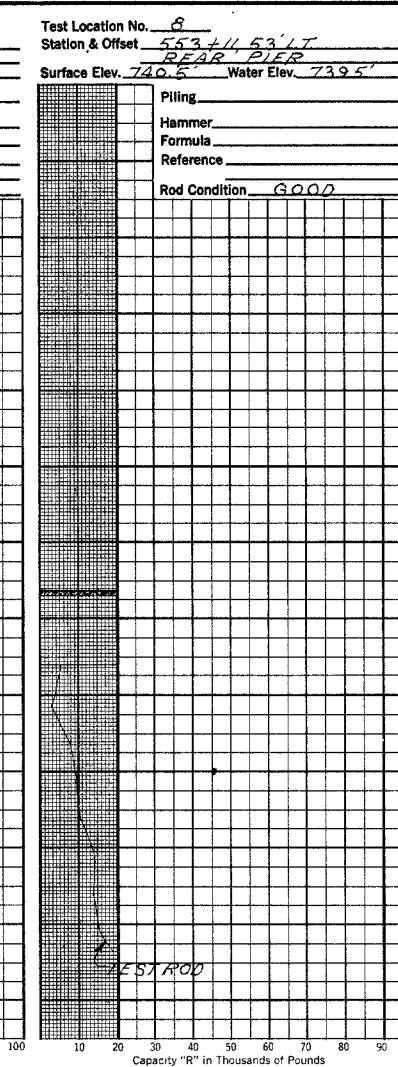
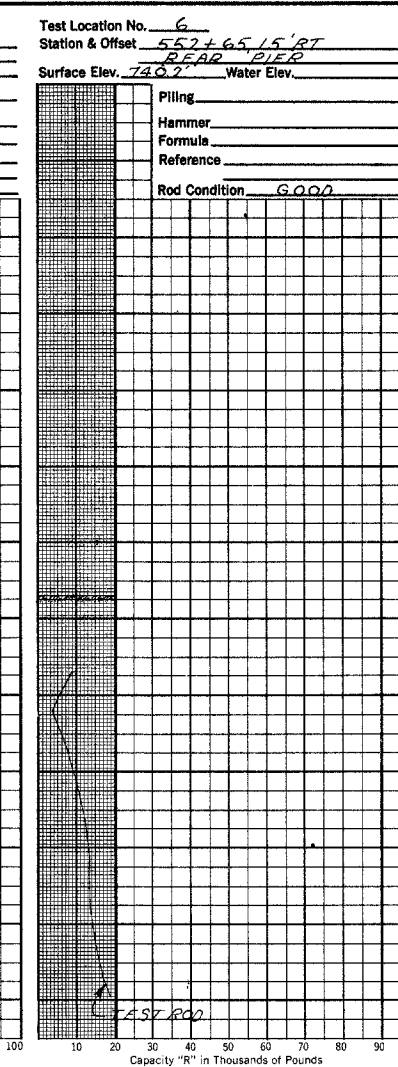
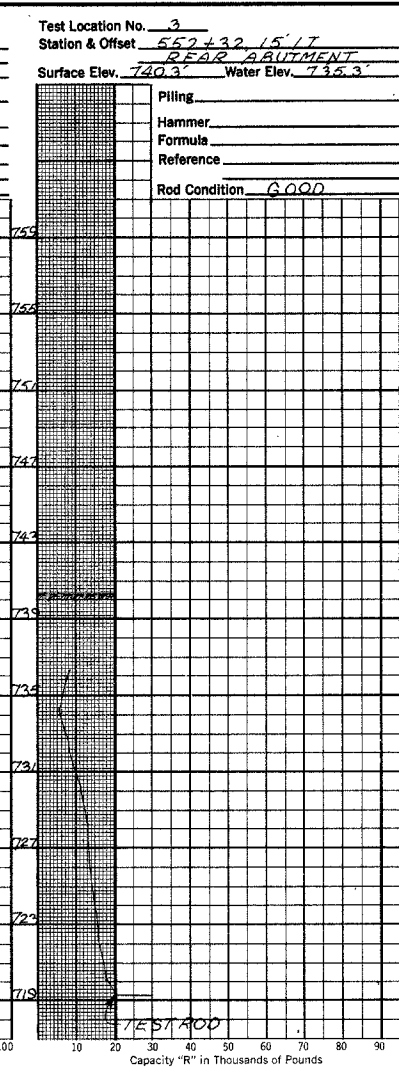
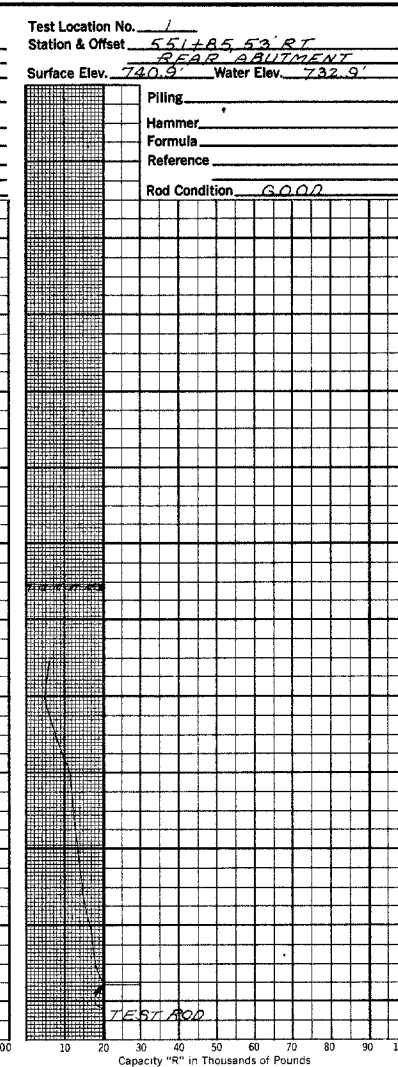
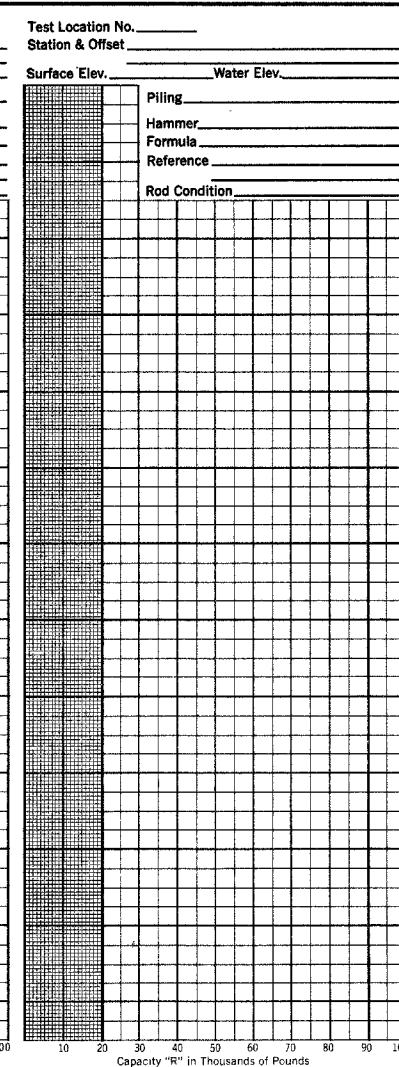
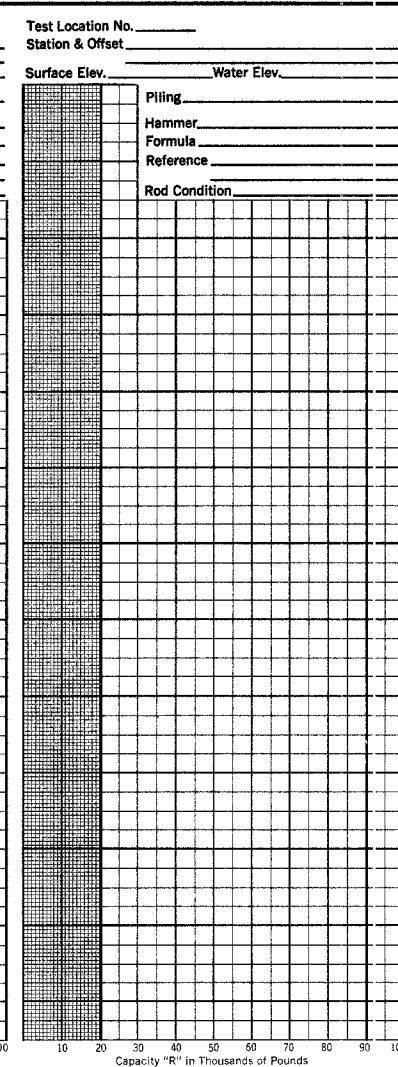
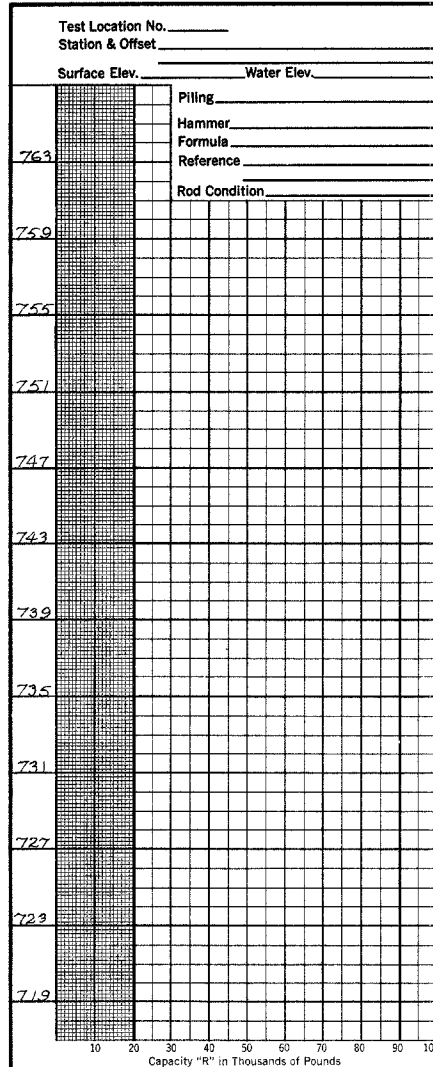
STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-1046 L&R  
OVER LORAIN & W. VIRGINIA R.R.  
SEC. LOR-254-4.08-B

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	G.P.H.	7/9/64

SCALE: 1"=20'

33  
45  
3  
3



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

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR - 254 - 1046 L & R  
OVER LORAIN & W VIRGINIA R.R.  
SEC. LOR - 254 - 4.08 - B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY R.C.C.	CHECKED BY R.D.R.	REVIEWED BY G.P.H.	DATE 7/9/64
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GENERAL INFORMATION

Drive Rod Penetration 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 conditions may be evaluated.

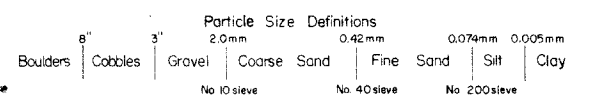
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description—based on laboratory test results and the Casagrande A.C. classification system—and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing 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.



LEGEND

- Auger Boring-Plan View.
- Press and/or Drive Sample and/or Core Boring-Plan View.
- Drive Rod Penetration Resistance-Soundings-Plan View.
- Electrical Resistivity Probe - Plan View.
- Indicates Auger Boring.
- Indicates Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only.
- Top of Rock
- Water saturated zone.
- Total Depth.
- Horizontal bar on log indicates the depth the sample was taken.
- Figures to the right of boring log in profile view indicate the number of blows for Standard Penetration test.  
X = First 6 inches  
Y = Second 6 inches
- 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.
- Footing
- Capped pile
- Footing on pile

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GEOLOGY OF THE SITE

The structure site is located upon the glaciated Lake Plain. Shallow to moderately deep glacial and lacustrine deposits overlie sandstone and shale bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of one drive sample-core boring, one core boring, and ten drive rod penetration tests, made on April 16 and 17, and May 15 and 16, 1963.

INVESTIGATIONAL FINDINGS

The borings disclosed that moist, medium-dense to dense gravelly and sandy silts and stiff clay with stone fragments overlie bedrock surface, encountered at 2 to 26-foot depths, elevations 740 and 714 feet. The borings were terminated at 15 and 35-foot depths, elevations 727 and 706 feet, after penetrating 9 and 13 feet below bedrock surface.

The rod soundings generally met rapidly increasing and erratic resistance to penetration with increase in depth and were terminated upon encounter with refusal to penetration at 3 to 24-foot depths, elevations 739 to 716 feet, considered to be below bedrock surface, as substantiated by the borings, with the exceptions of rod soundings numbers 1 and 5 which are considered to have terminated above bedrock surface in dense silts.

On the basis of the tests, bedrock surface is considered to be essentially flat-lying across most of the structure site at elevation 740 feet, with the exception of the left rear pier and abutment area of the westbound lane, where bedrock surface slopes sharply downward to approximate elevation 714 feet.

If it is the intention to found substructure units on bedrock, it is considered advisable that the open excavation 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 excavation be well drained at all times.

Unconfined compression tests on similar sandstone bedrock indicates a crushing strength on the order of 200 tons per square foot.

No free water was observed in the rod sounding holes.

LOG OF BORING

Date Started 5-16-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 5-16-63 Casing Length \_\_\_\_\_ Dia. \_\_\_\_\_  
 Boring No. B-11 Station & Offset 564+67, 24' Rt. (FORWARD PIER) Surface Elev. 742.1'

Elev.	Depth	Std. Pen. (N)	Proc. ft.	Loss ft.	Description	Sample No.	Physical Characteristics	SHTL Class.
							% Agg. % CS. % F.S. % Silt % Clay LL PL W.C.	
742.1	0				Brown Silty Clay with Sandstone Fragments. (Driller's Description)			
739.6	2				TOP OF ROCK			
	4		0.3	1.7				
	6		4.7	0.3	Sandstone, gray, firm, medium-grained, broken, with abundant carbonaceous laminae, cross-bedding, and many interbedded soft gray clay seams, breaks easily at seams, clay filled vertical joint at base, core very broken and weathered in top 1.5'. Core loss 5%.			
	8							
	10							
	12		4.8	0.2				
727.1	14							

BOTTOM OF BORING

LOG OF BORING

Date Started 5-15-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 5-15-63 Casing Length \_\_\_\_\_ Dia. \_\_\_\_\_  
 Boring No. B-5 Station & Offset 564+55, 59' Lt. (REAR PIER) Surface Elev. 740.8'

Elev.	Depth	Std. Pen. (N)	Proc. ft.	Loss ft.	Description	Sample No.	Physical Characteristics	SHTL Class.
							% Agg. % CS. % F.S. % Silt % Clay LL PL W.C.	
740.8	0							
738.3	2							
735.8	4	5/10			Brownish-Gray Gravelly Silt	1	16 5 8 31 40 33 10 20	
733.3	6	9/20			Brownish-Gray Sandy Silt	2	13 6 10 32 39 29 8 15	
730.8	8	12/21			Gray Sandy Silt	3	10 4 7 39 40 27 10 14	
728.3	10	13/29			Reddish-Gray Gravelly Sandy Silt	4	15 9 12 32 32 26 7 12	
725.8	12	13/25			Gray Sandy Gravelly Silt	5	20 7 11 31 31 24 4 13	
723.3	14	12/24			Gray Gravelly Sandy Silt	6	17 10 13 30 30 25 8 13	
720.8	16	14/24			Gray Sandy Gravelly Silt	7	24 10 11 29 26 23 6 12	
718.3	18	13/32			Gray Gravelly Sandy Silt	8	15 10 13 30 32 25 6 13	
715.8	20							
713.3	22							
710.8	24							
708.3	26	17/28			Gray Sandy Gravelly Silt	9	32 7 9 27 25 24 5 11	
705.8	28		2.0	1.0	TOP OF ROCK			
	30							
	32		4.7	0.3	Shale, red, fissile on moderate diagonal cleavage, moderately firm, crumbly, very broken, compacted slickensides on cleavage planes; major diagonal and horizontal slickensided zone at 33.0'. Core 15%.			
	34							

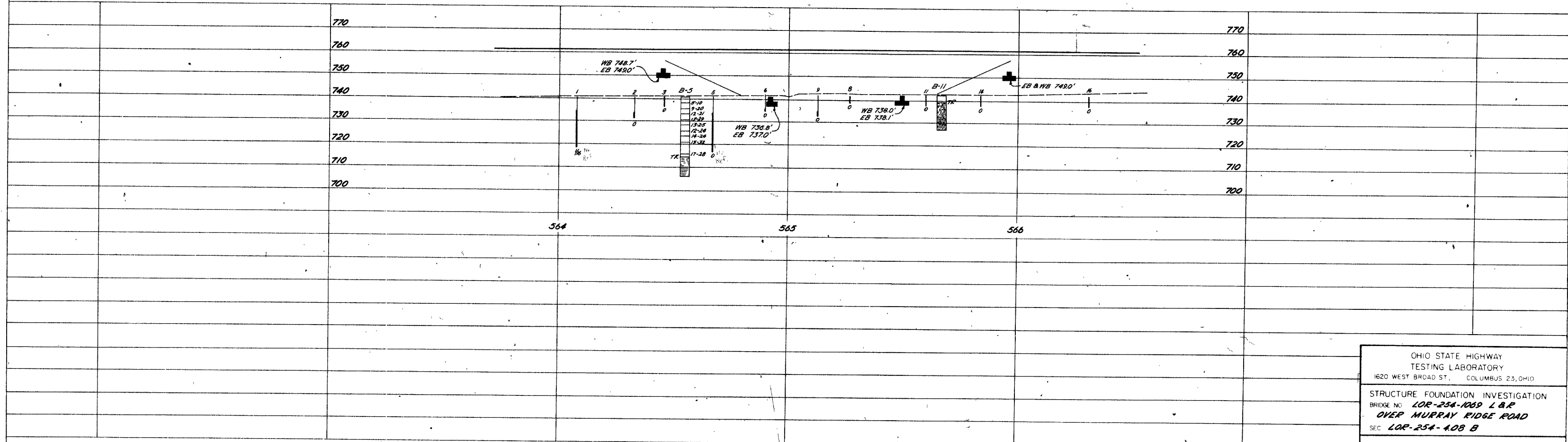
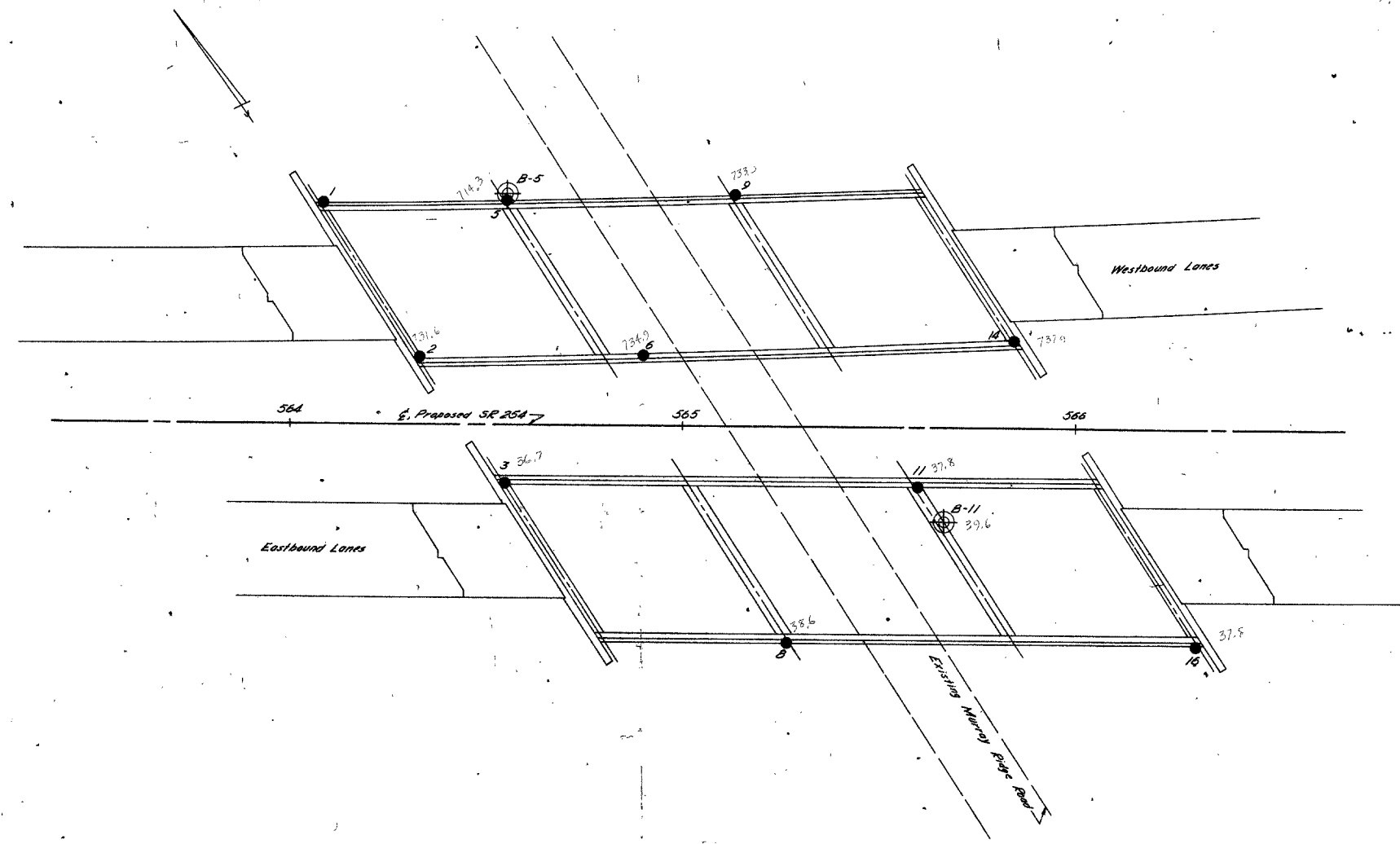
BOTTOM OF BORING

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OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-1069 L & R  
OVER MURRAY RIDGE ROAD  
SEC. LOR-254-408 B

CHECKED BY F.L.R.	REVIEWED BY P.D.R.	DATE 6-5-63
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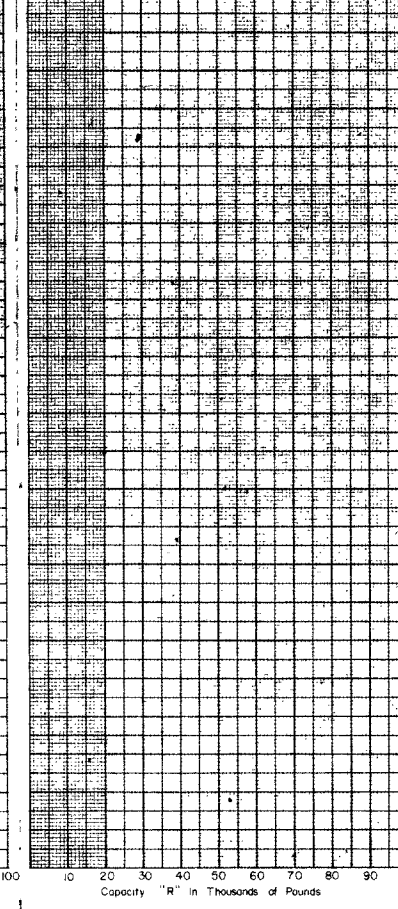
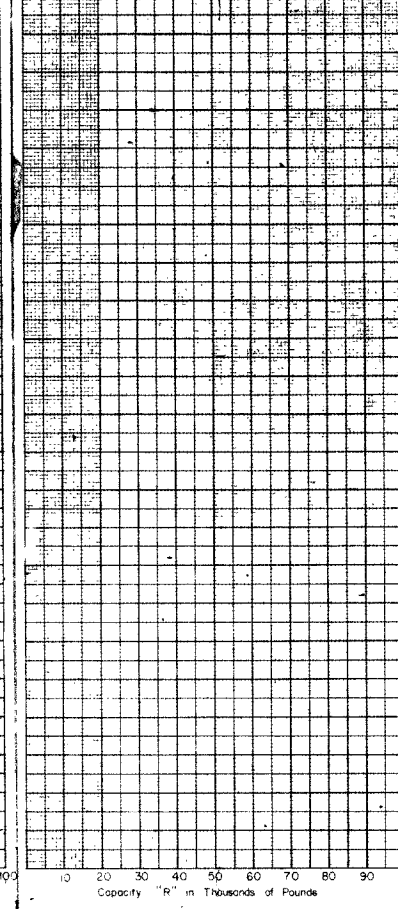
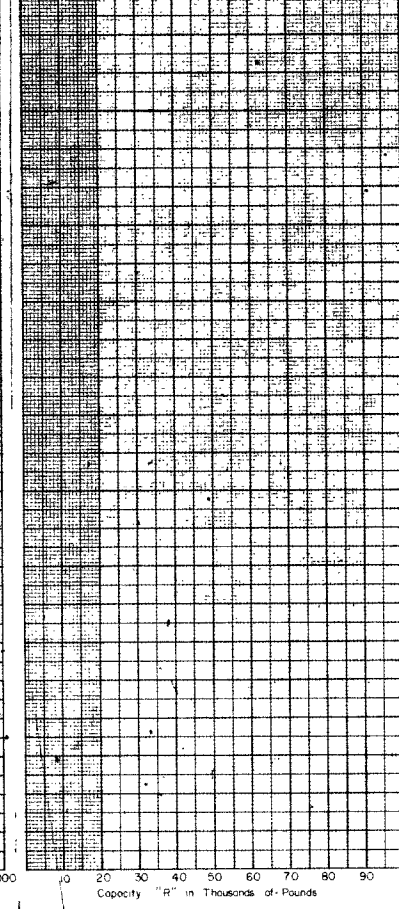
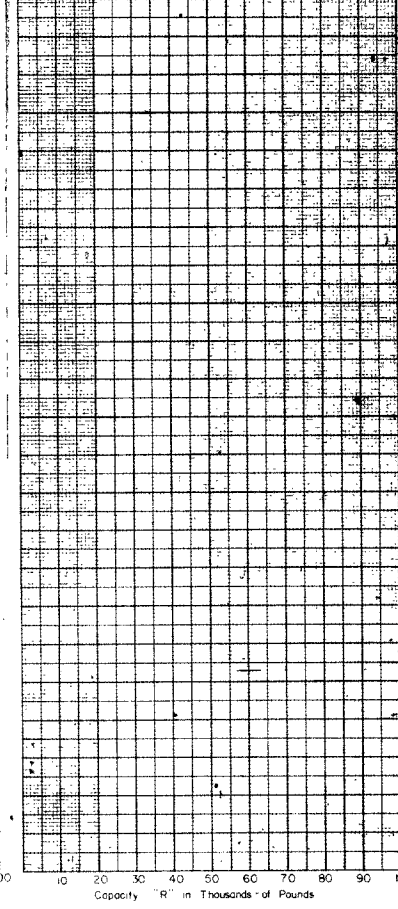
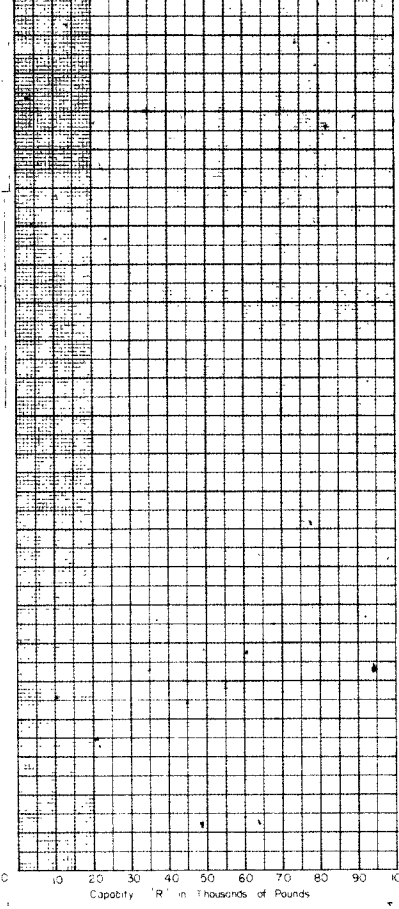
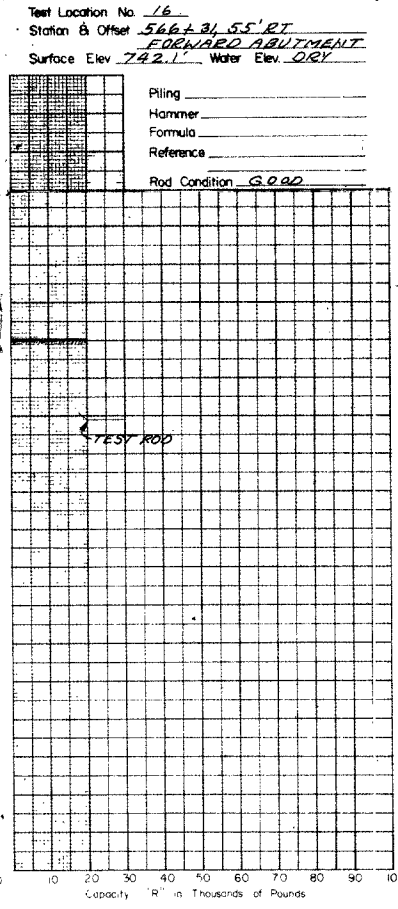
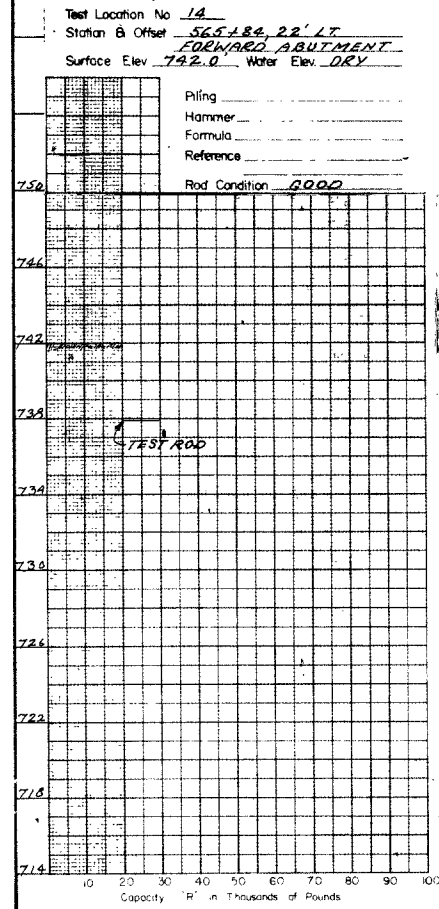
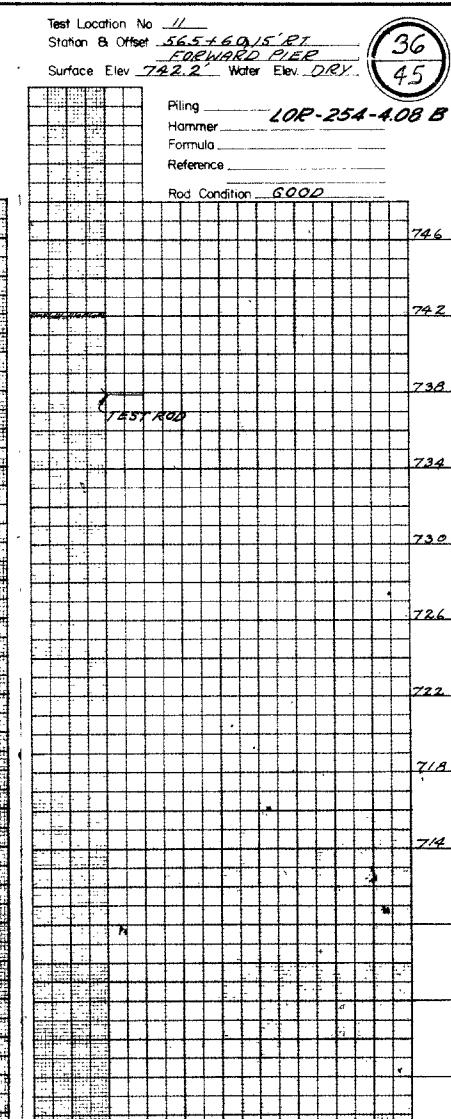
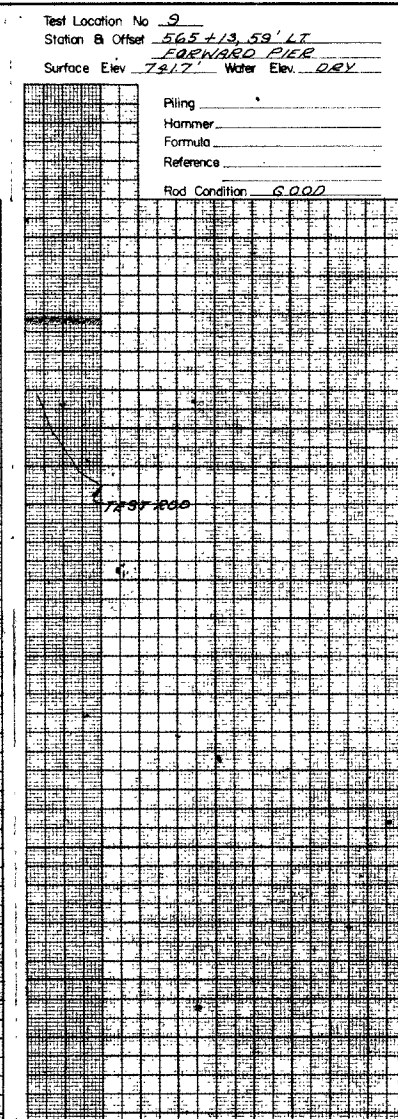
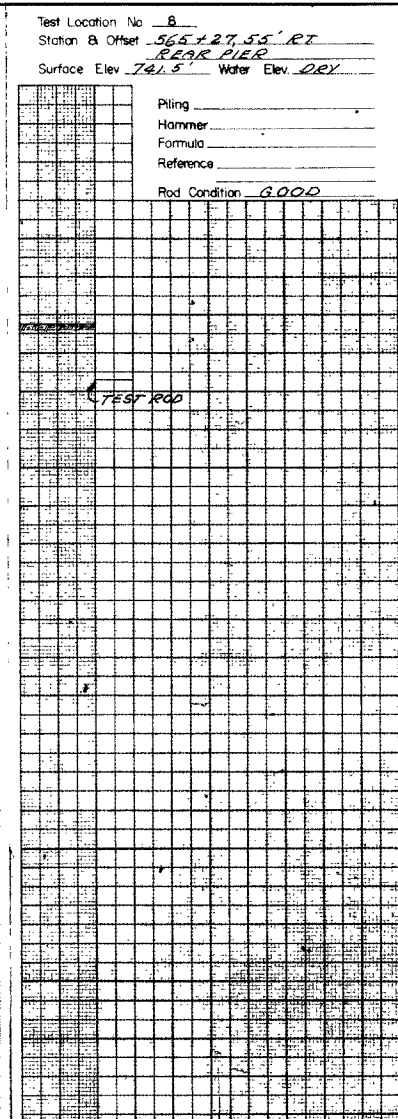
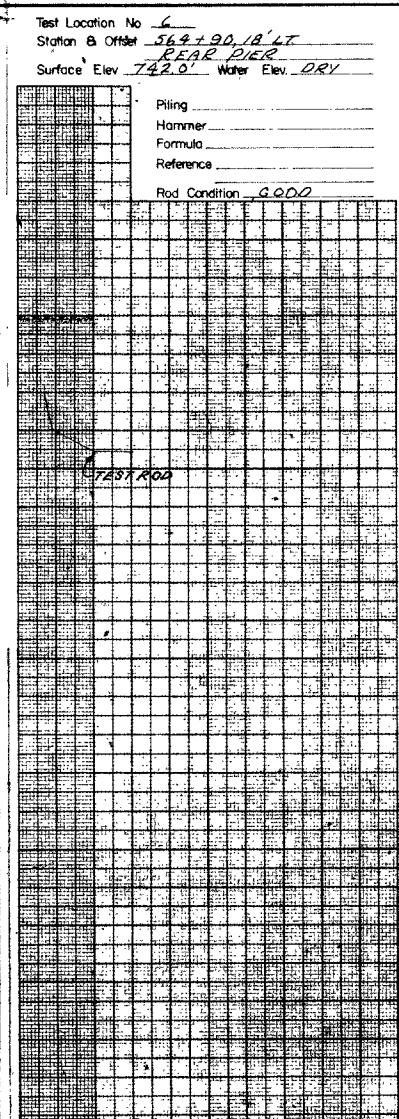
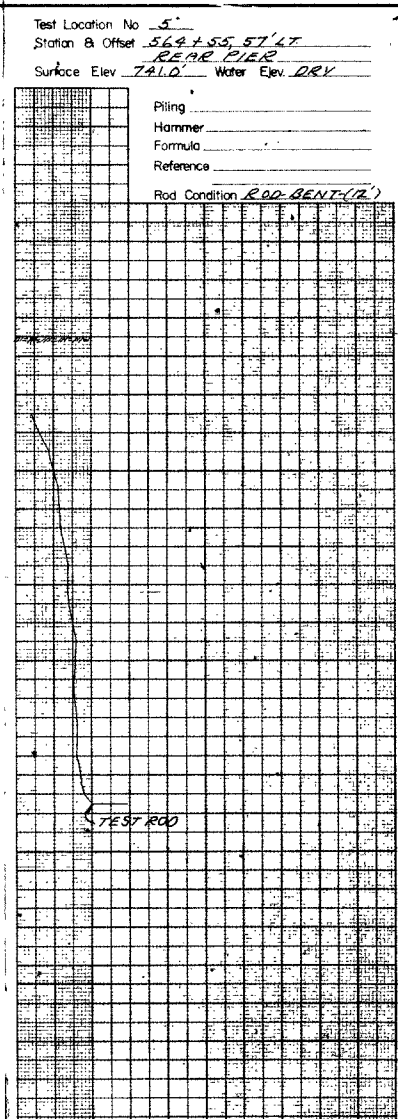
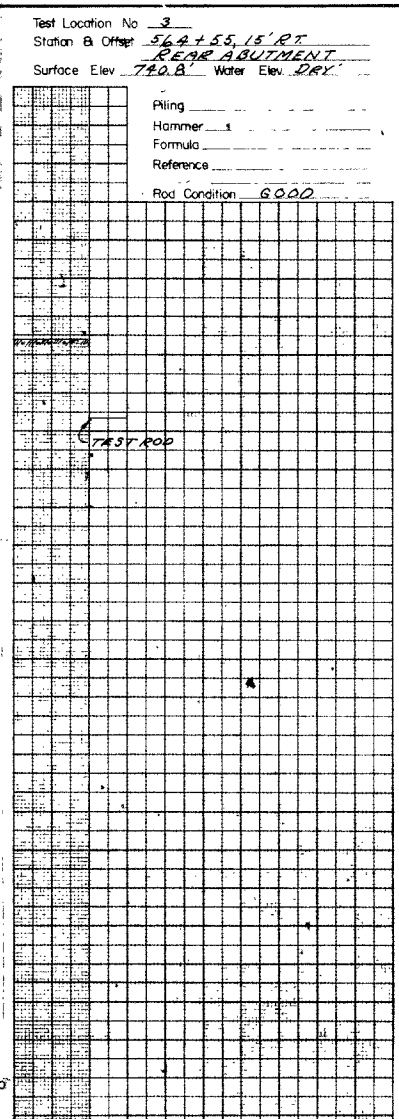
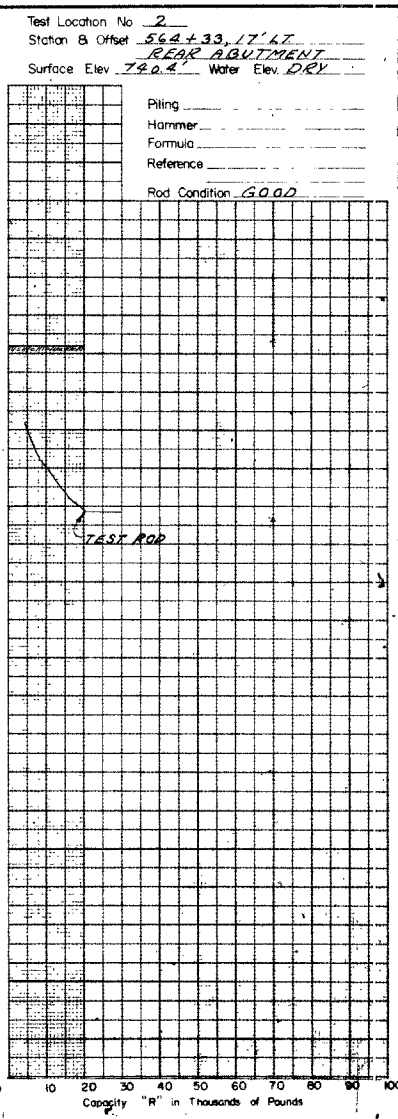
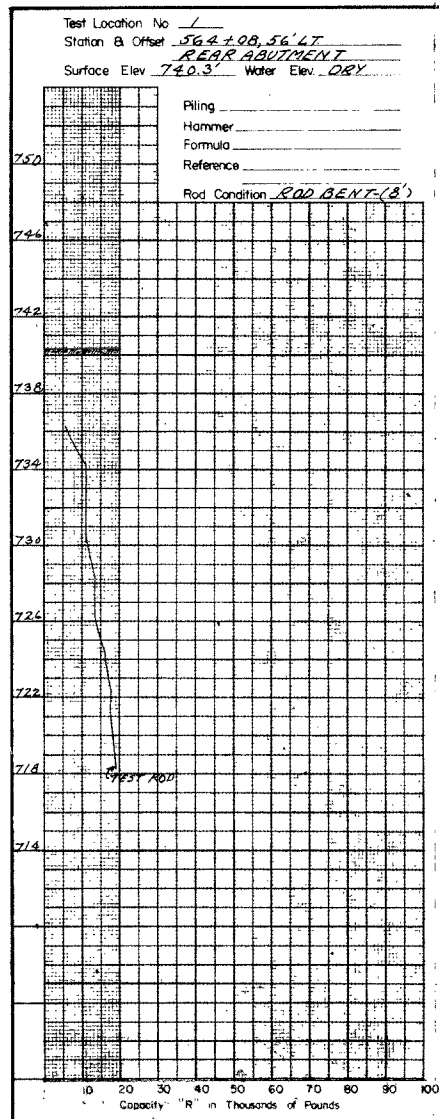
OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. **LOR-254-1089 L&R**  
**OVER MURRAY RIDGE ROAD**  
SEC. **LOR-254-408 B**

PLAN AND PROFILE

DRAWN BY <i>EPW</i>	CHECKED BY <i>KLR</i>	REVIEWED BY <i>RDR</i>	DATE <b>6-5-63</b>
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SCALE: 1" = 20'



(36)  
45

LOR-254-408 B

Rod Condition GOOD

Capacity "R" in Thousands of Pounds

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

STRUCTURE FOUNDATION INVESTIGATION  
 BRIDGE NO LOR-254-1069 L&R  
OVER MURRAY RIDGE ROAD  
 SEC LOR-254-408 B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY <u>RC</u>	CHECKED BY <u>FLR</u>	REVIEWED BY <u>RDP</u>	DATE <u>6-5-63</u>
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GENERAL INFORMATION

Drive Rod Penetration 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 conditions may be evaluated.

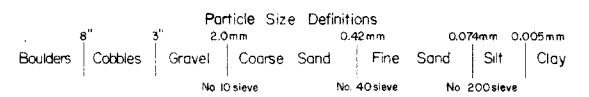
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are 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.

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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.



LEGEND

- Auger Boring - Plan View.
- Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance - Soundings - Plan View
- Electrical Resistivity Probe - Plan View.
- A Indicates Auger Boring.
- B Indicates Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only.
- TR Top of Rock
- Water saturated zone.
- TD Total Depth.
- Horizontal bar on log indicates the depth the sample was taken.
- X-Y Figures to the right of boring log in profile view indicate the number of blows for "Standard Penetration" test.  
X = First 6 inches  
Y = Second 6 inches
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" >= 10,000 lbs.
- / 16 Indicates final measurement of penetration in inches.
- Indicates Free Water elevation.
- Indicates Static Water elevation.
- Footings
- Capped pile
- Footings on pile

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GEOLOGY OF THE SITE

The structure site is located upon the glaciated Lake Plain. Moderately deep glacial drift overlies shale bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and eight drive rod penetration tests, made between April 10 and 16, and May 9 and 15, 1963.

INVESTIGATIONAL FINDINGS

The borings disclosed predominantly moist, loose to very dense sandy and gravelly silts, cobbles, clinders, and stiff to very stiff clays overlying bedrock surface, encountered at 30 and 39-foot depths, elevations 698 and 687 feet. The borings were terminated at 40 and 45-foot depths, elevations 681 and 688 feet, after penetrating 6 and 10 feet below bedrock surface.

The rod soundings met increasing and occasionally erratic resistance to penetration with increase in depth and were terminated upon encounter with near refusal or refusal to penetration at 18 to 31-foot depths, elevations 705 to 693 feet, considered to be above top of rock in dense silts and stiff clay, as substantiated by the borings.

On the basis of the tests, bedrock surface is considered to be relatively flat-lying across the structure site at elevation 698 feet, with the exception of the right forward abutment area where bedrock surface drops rapidly to elevation 687 feet.

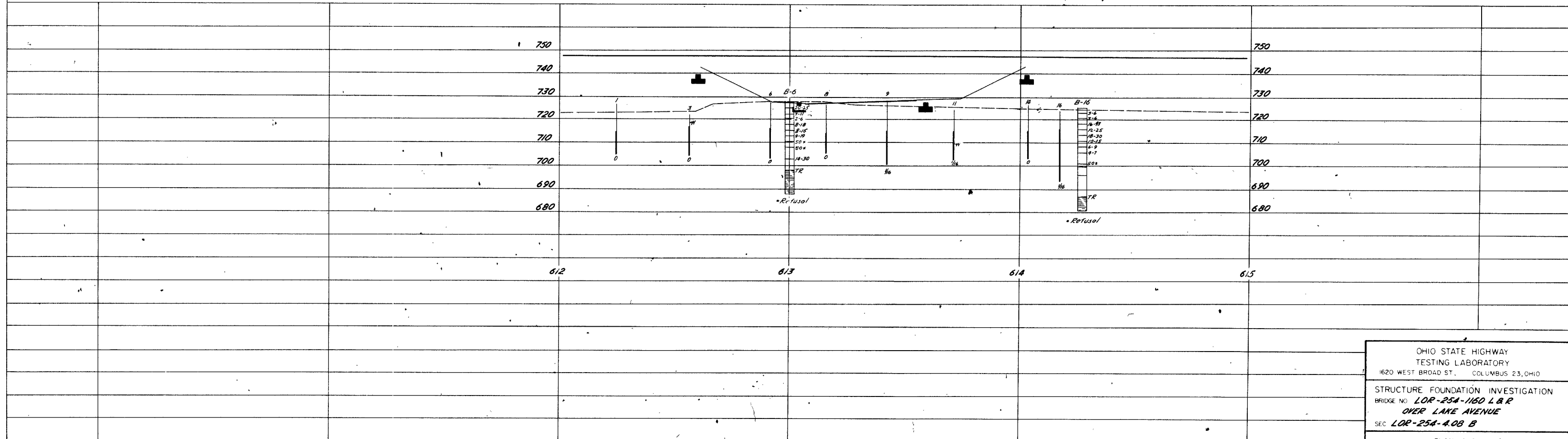
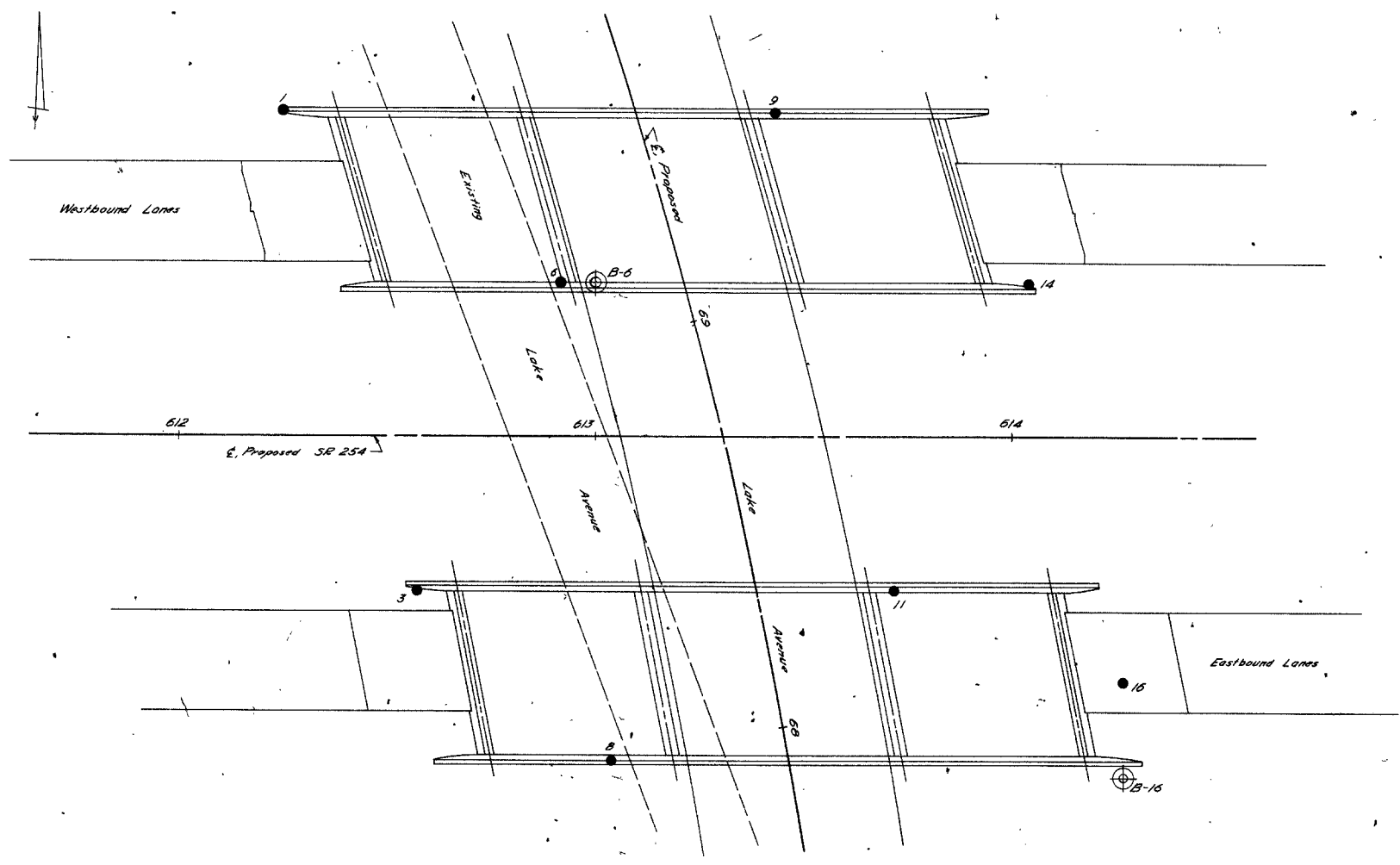
Free water elevation was noted in rod sounding holes numbers 3 and 11 between elevations 718 and 709 feet.

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 STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-1160 L & R  
OVER LAKE AVENUE  
SEC. LOR-254-408 B

CHECKED BY F.L.P.	REVIEWED BY R.D.P.	DATE 6-7-63
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OHIO STATE HIGHWAY TESTING LABORATORY  
 1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
 BRIDGE NO. LOR-254-1160 L & R  
 OVER LAKE AVENUE  
 SEC LOR-254-4.08 B

PLAN AND PROFILE

SCALE: 1" = 20'

DRAWN BY: RFW  
 CHECKED BY: F.L.P.  
 REVIEWED BY: R.D.R.  
 DATE: 6-7-63

LOR-254-408 B

LOG OF BORING

Date Started 4-9-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 5-10-63 Casing Length 10' Dia. 3 1/2"  
 Boring No. B-6 Station & Offset 613+00, 37' Lt. (Rear Pier) Surface Elev. 727.7

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.				
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	Pl.		W.C.			
727.7	0																	
725.2	2																	
722.7	4	20/25			Gray Broken Weathered Sandstone Cobbles	1												
720.2	6	7/11			Gray Broken Weathered Sandstone Cobbles	2												
717.7	8	2/6			Gray Sandy Silt	3	5	7	11	26	51	27	8	20				
715.2	10	8/18			Gray Gravelly Silt	4	13	7	10	17	53	26	7	16				
712.7	12	8/15			Gray Gravelly Silt	5	19	8	10	19	44	27	10	20				
710.2	14	9/19			Gray Sandy Silt	6	12	7	10	21	50	25	8	15				
707.7	16	50* (0.7')			Sandstone Cobbles													
702.7	18	50* (0.8')			Gray Sandy Gravelly Silt	7	34	8	9	24	25	21	4	15				
697.7	20	1 1/2/30			Gray Gravelly Sandy Silt	8	17	8	11	34	30	21	4	12				
	22				TOP OF ROCK-IN-PLACE													
	24		3.9	1.1	Shale, dark gray, moderately fissile (diagonal cleavage), firm, broken to 31.0" by vertical fracture; crumbly and moderately firm at 36.0' to 37.0', vertical fractures at base of interval. Core Loss 11%.													
	26																	
	28		5.0	0.0														
687.7	30																	

\*REFUSAL BOTTOM OF BORING

LOG OF BORING

Date Started 5-13-63 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
 Date Completed 5-15-63 Casing Length 10' Dia. 3 1/2"  
 Boring No. B-16 Station & Offset 614+27, 82' Rt. (FORWARD ABUTMENT) Surface Elev. 725.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	Pl.		W.C.		
725.7	0																
723.2	2																
720.7	4	3/6			Brownish-Gray Cinders and Ashes	1											
718.2	6	3/6			Brown Sandy Silty Clay	2											
715.7	8	16/43			Brown and Gray Sandy Silt	3	9	7	15	38	31	26	4	32			
713.2	10	12/25			Gray Sandy Silt	4	7	7	12	34	40	23	4	13			
710.7	12	18/30			Gray Sandy Silt	5	15	6	11	30	38	24	6	13			
708.2	14	10/15			Gray Gravelly Clay	6	21	5	5	24	45	31	11	21			
705.7	16	6/9			Gray Clay	7	0	1	2	12	85	40	12	28			
700.7	18	4/7			Gray Clay	8	0	1	2	20	77	46	20	31			
699.7	20	50*			Gray Sandy Gravelly Silt	9	23	9	13	33	22	NP	NP	12			
695.7	22	(0.7')			Clay, gray, pebbles, cobble fragments (Glacial Till).												
686.9	24				Clay, gray, soft, with very weathered red and gray shale and indurated clay fragments.												
	26				TOP OF ROCK												
	28																
680.7	30		4.7	0.3	Shale, gray, very firm, dense, moderately fissile, carbonaceous, uniform throughout. Core loss 6%.												

\*REFUSAL BOTTOM OF BORING

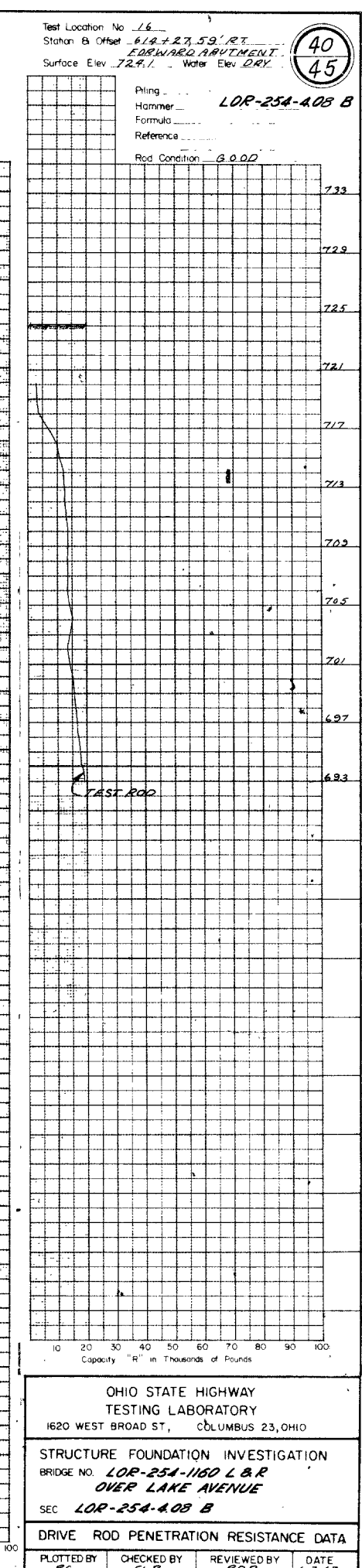
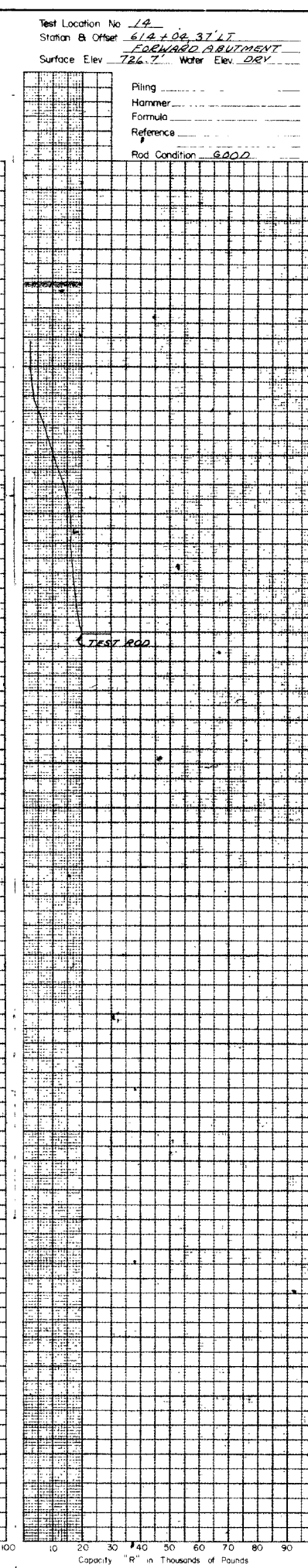
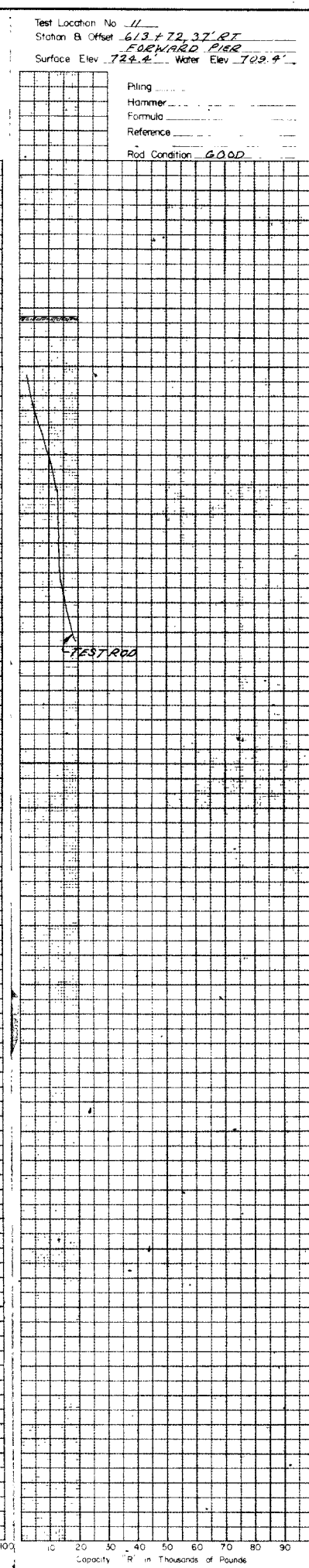
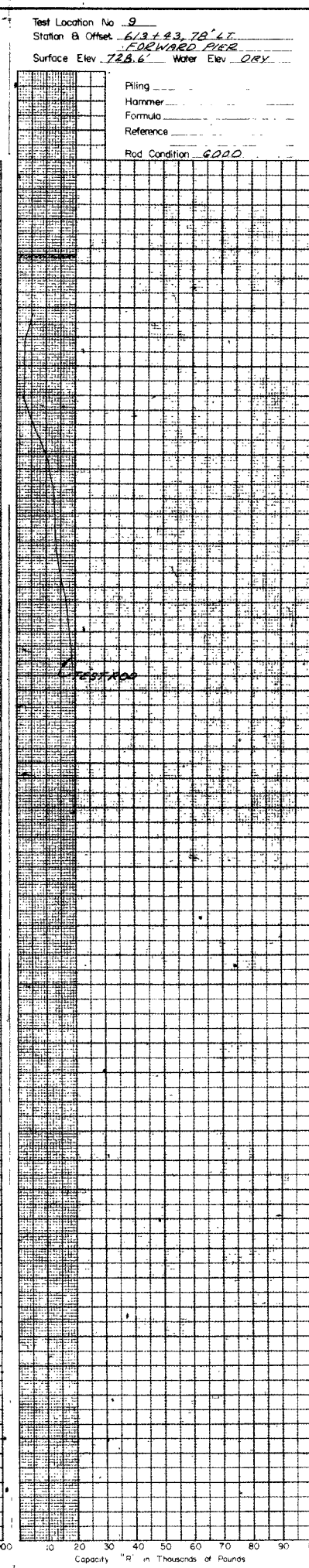
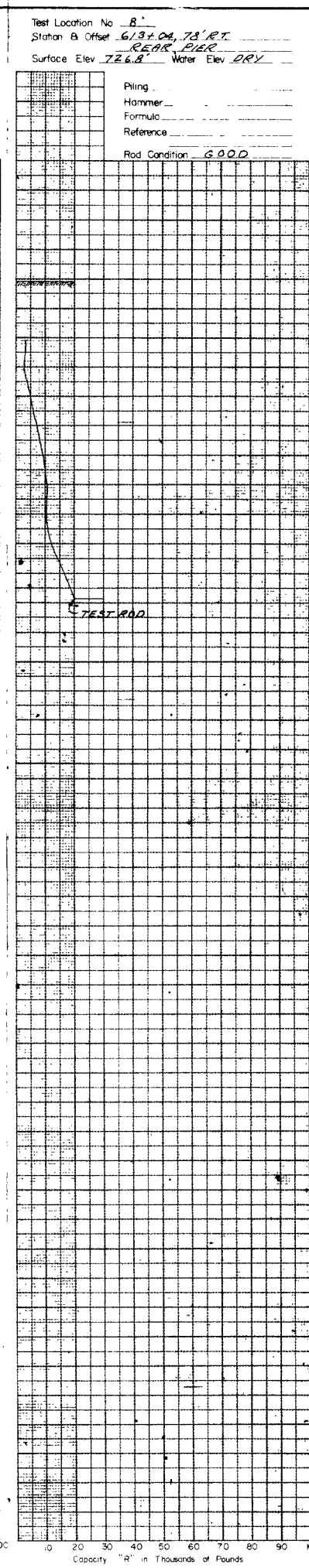
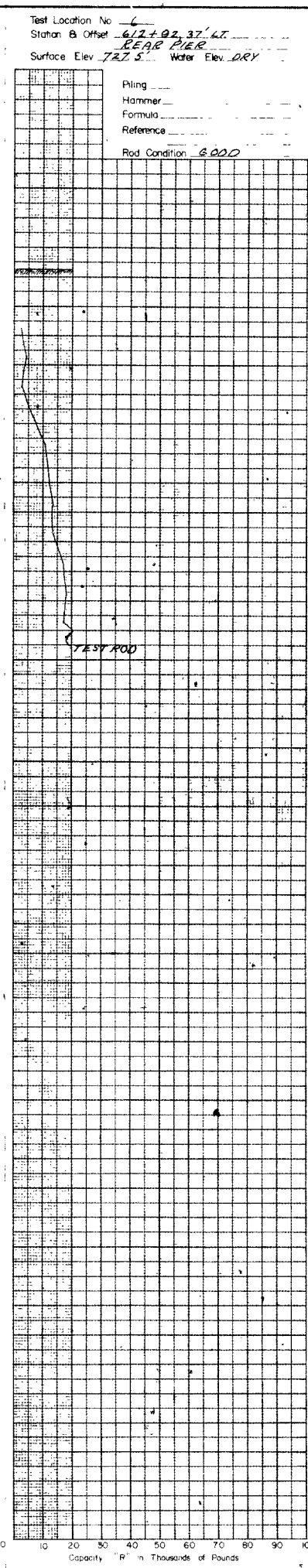
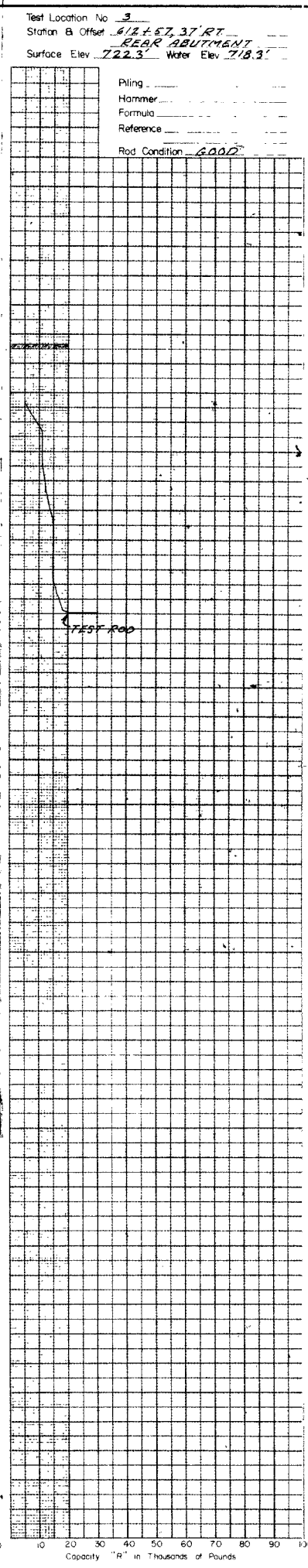
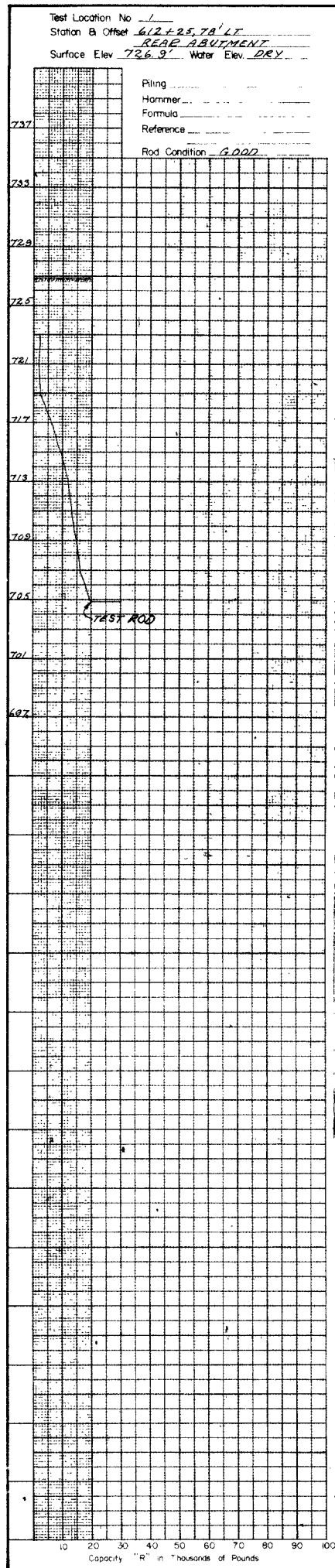
OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-160 L & R  
OVER LAKE AVENUE  
SEC. LOR-254-408 B

BORING DATA

TYPED BY <u>L.N.</u>	CHECKED BY <u>F.L.R.</u>	REVIEWED BY <u>P.D.R.</u>	DATE <u>6-7-63</u>
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40  
45

LOR-254-408 B

OHIO STATE HIGHWAY  
 TESTING LABORATORY  
 1620 WEST BROAD ST, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
 BRIDGE NO. LOR-254-1160 L & R  
OVER LAKE AVENUE  
 SEC LOR-254-408 B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY EC CHECKED BY FLR REVIEWED BY EDR DATE 6-7-63

GENERAL INFORMATION

Drive Rod Penetration 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 of 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 conditions may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description--based on laboratory test results and the Casagrande A.C. classification system--and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions						
8"	3"	2.0mm	0.42mm	0.075mm	0.005mm	
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
		No 10 sieve	No 40 sieve	No 200 sieve		

LEGEND

-  Auger Boring-Plan View.
-  Press and/or Drive Sample and/or Core Boring-Plan View.
-  Drive Rod Penetration Resistance-Soundings - Plan View
-  Electrical Resistivity Probe - Plan View.
-  A indicates Auger Boring.
-  B indicates Press and/or Drive Sample and/or Core Boring.
-  Electrical Resistivity Probe plotted to vertical scale only.
-  TR Top of Rock
-  Water saturated zone.
-  TD Total Depth.
-  Horizontal bar on log indicates the depth the sample was taken.
-  X-Y Figures to the right of boring log in profile view indicate the number of blows for "Standard Penetration" test. X = First 6 inches Y = Second 6 inches
-  Casing
-  Resistance "R" <= 10,000 lbs.
-  Resistance "R" >= 10,000 lbs.
-  / 16 indicates final measurement of penetration in inches.
-  Indicates Free Water elevation.
-  Indicates Static Water elevation.
-  Footing
-  Capped pile
-  Footing on pile

SYMBOLS OF ROCK TYPES

-  Coal
-  Weathered Indurated Clay
-  Indurated Clay
-  Weathered Shale
-  Shale
-  Weathered Sandstone
-  Sandstone
-  Leached Dolomite
-  Dolomite
-  Leached Limestone
-  Limestone

GEOLOGY OF THE SITE

The structure site is located in the glaciated Lake Plain Region. Shallow to moderately deep glacial and lacustrine deposits overlie sandstone, shale, and indurated clay, of Mississippian age.

EXPLORATION

The exploration consisted of two drive sample-core borings, one core boring, and thirteen drive rod penetration tests, made between April 9 and 16, and May 6 and 9, 1963.

INVESTIGATIONAL FINDINGS

Bedrock surface was encountered in boring B-1 at approximately 2-foot depth, elevation 716 feet. Borings B-8 and B-14 disclosed moist, stiff to hard clays above and very dense sandy and gravelly silts overlying bedrock surface, encountered at 20 and 44-foot depths, elevations 654 and 672 feet. The borings were terminated at 15 to 55-foot depths, elevations 703 to 661 feet, after penetrating 10 to 13 feet below bedrock surface.

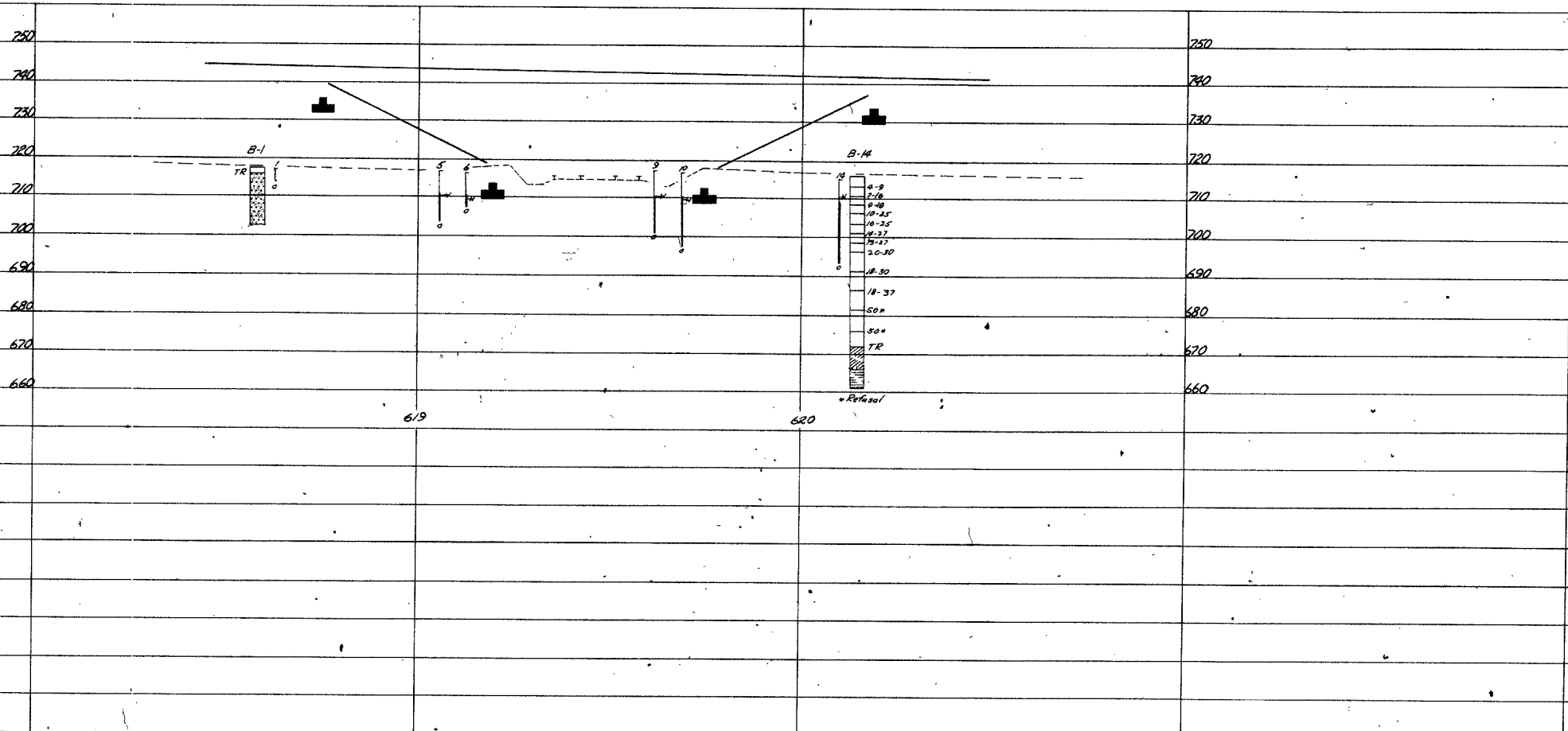
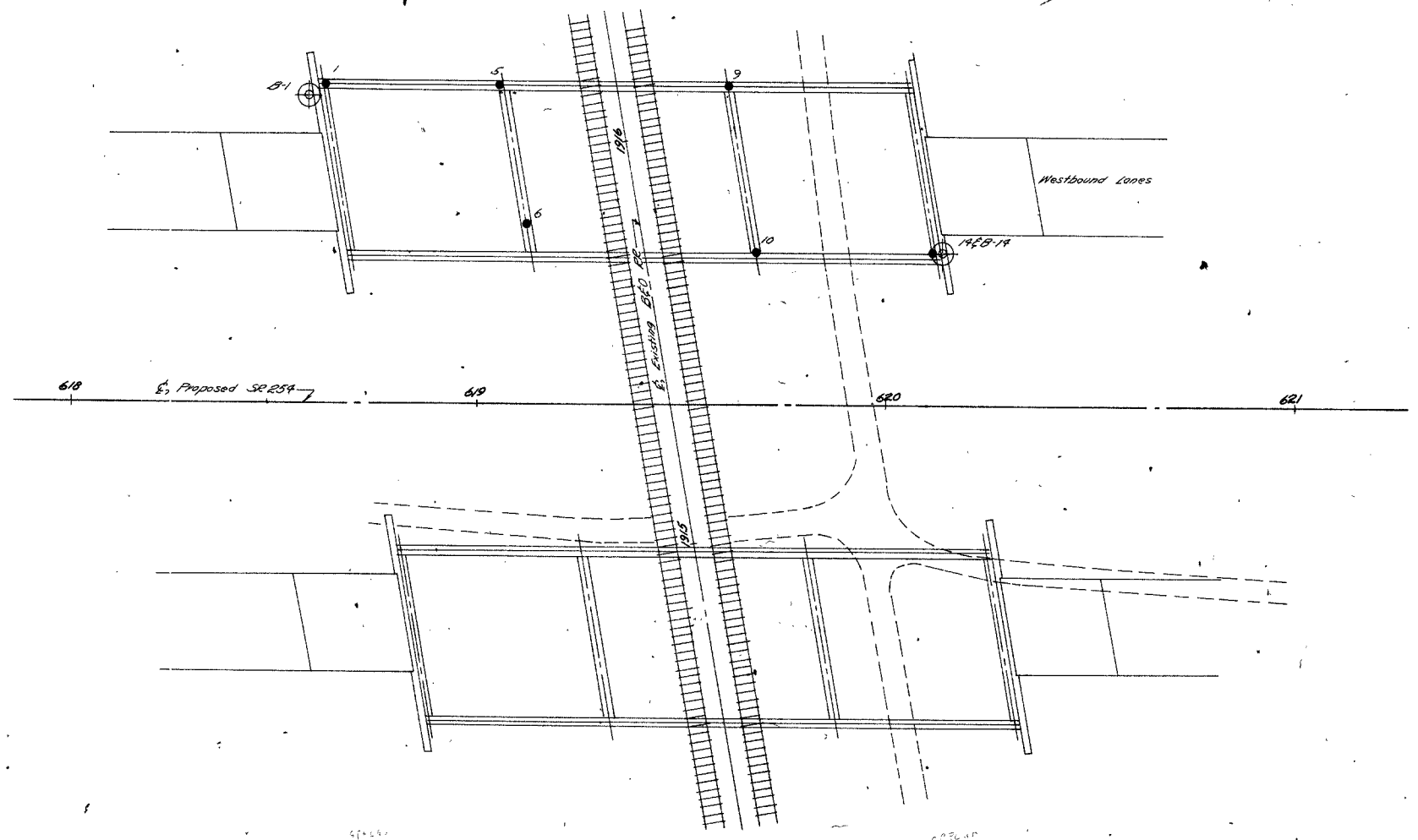
The rod soundings generally met increasing and somewhat erratic resistance to penetration with increase in depth, and were terminated upon encounter with refusal or abrupt refusal to penetration at 3 to 22-foot depths, elevations 714 to 694 feet, considered to be above bedrock surface, in dense and very dense silts, as substantiated by the borings, with the exceptions of rod soundings 1, 3, and 10 which are considered to have penetrated slightly below bedrock surface.

On the basis of the tests, bedrock surface is considered to slope steeply downward from the area of the left rear abutment to right and forward portions of the structure site, between elevations 716 and 661 feet.

Free water level was observed in rod sounding holes numbers 5, 6, and 8 through 14, between elevations 711 and 708 feet.

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 STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO		
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. <b>LOP-254-1172 L &amp; R</b> <b>OVER BEO RAILROAD</b>		
SEC. <b>LOP-254-408 B</b>		
CHECKED BY <b>F.L.R.</b>	REVIEWED BY <b>E.D.R.</b>	DATE <b>6-3-63</b>



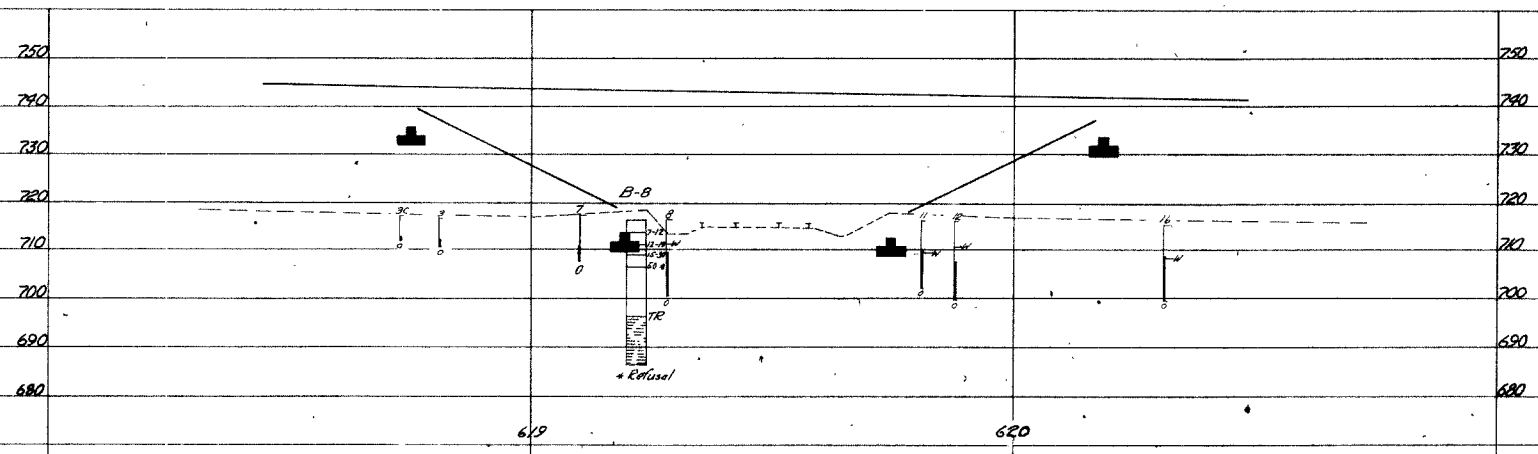
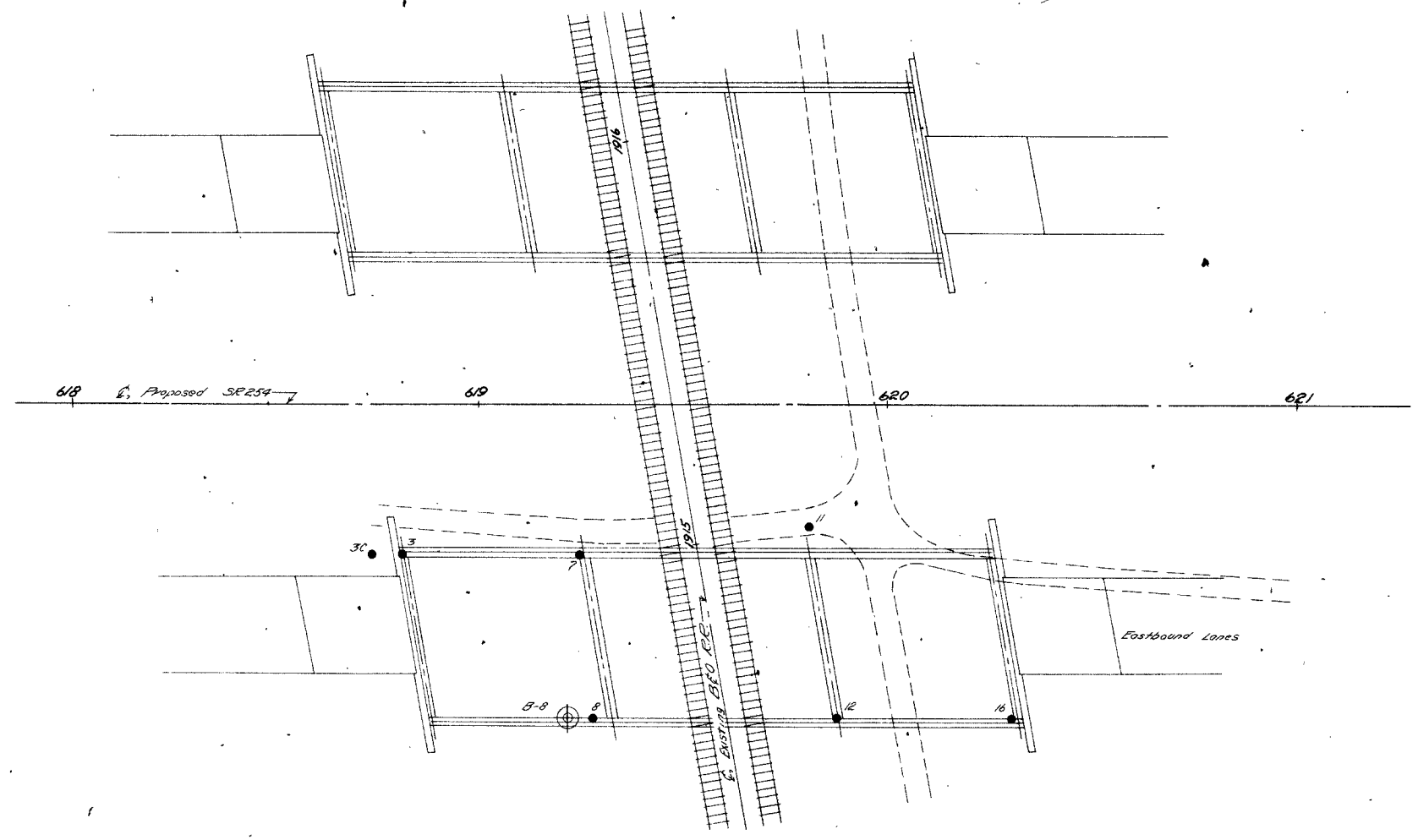
OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. **LOP-254-1172 L**  
**OVER BFD RAILROAD**  
SEC. **LOP-254-408 B**

PLAN AND PROFILE

DRAWN BY <b>R.L.F.</b>	CHECKED BY <b>F.L.R.</b>	REVIEWED BY <b>R.D.R.</b>	DATE <b>6-3-63</b>
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SCALE: 1" = 20'



OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST. COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. LOR-254-1122 R OVER BFO RAILROAD			
SEC. LOR-254-408 B			
PLAN AND PROFILE			
DRAWN BY E.L.F.	CHECKED BY F.L.R.	REVIEWED BY R.D.R.	DATE 6-3-63

SCALE: 1" = 20'

LOG OF BORING

Date Started 5-6-63      Sampler Type SS      Dia 1 3/8"      Water Elev. \_\_\_\_\_  
 Date Completed 5-22-63      Casing Length \_\_\_\_\_      Dia \_\_\_\_\_  
 Boring No. B-1      Station & Offset 618+50.25' Lt. (REAR ABUTMENT)      Surface Elev. 717.6'

Elev.	Depth	Std. Pen (lb)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SH:TL			
							Agg.	C.S.	F.S.	Silt	Clay	LL	PI		W.C.	Class.	
717.6	0																
716.1	2				TOP OF ROCK												
	4		1.6	0.9	Sandstone light-gray, fine, friable, medium-grained, broken by diagonal fractures, reddish-brown iron-stain to 2.0' on many open bedding planes and fracture faces, fractures - clay filled; below 2.0' iron-stain absent, carbonaceous and siliceous cross-bedded laminae throughout interval. Vertical open fracture 1.6' from base. Core loss 16%.												
	6																
	8		4.8	0.2													
	10																
	12																
	14		5.0	0.0													
702.6	14																

BOTTOM OF BORING

LOG OF BORING

Date Started 5-6-63      Sampler Type SS      Dia 1 3/8"      Water Elev. \_\_\_\_\_  
 Date Completed 5-22-63      Casing Length \_\_\_\_\_      Dia \_\_\_\_\_  
 Boring No. B-14      Station & Offset 620+14.32' Lt. (FORWARD ABUTMENT)      Surface Elev. 716.1'

Elev.	Depth	Std. Pen (lb)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SH:TL		
							Agg.	C.S.	F.S.	Silt	Clay	LL	PI		W.C.	Class.
716.1	0															
713.6	2															
711.1	4	4 1/2			Brown silty sand clay	1	10	7	10	20	50	13	14	21		
708.6	6	7 1/2			Brown sandy clay	2	9	6	10	25	50	32	13	21		
706.1	8	9 1/8			Brown sandy clay	3	13	7	9	20	42	3	22	14		
703.6	10	10 2/5			Light-brown sandy silt	4	14	10	11	26	30	25	9	16		
701.1	12	11 2/5			Light sandy gravelly silt	5	17	8	10	20	31	11	4	11		
698.6	14	14 2/7			Light sandy silt	6	12	8	10	20	30	22	4	13		
696.1	16	13 1/10				7	11	8	12	23	30	22	16	17		
	18					8	10	8	10	24	30	17	11	12		
	20					9	10	8	10	24	30	17	11	12		
	22					10	10	8	10	24	30	17	11	12		
	24					11	11	8	10	24	30	17	11	12		
686.1	26					12	11	8	10	24	30	17	11	12		
681.1	28					13	11	8	10	24	30	17	11	12		
	30					14	11	8	10	24	30	17	11	12		
	32					15	11	8	10	24	30	17	11	12		
	34					16	11	8	10	24	30	17	11	12		
676.1	36					17	11	8	10	24	30	17	11	12		
	38					18	11	8	10	24	30	17	11	12		
	40					19	11	8	10	24	30	17	11	12		
	42					20	11	8	10	24	30	17	11	12		
672.6	44				TOP OF ROCK											
	46															
	48															
	50	3.0	2.0		Indurated clay, dark-reddish-brown, firm to crumbly, very badly broken (with soft seams which crumble to powder), compaction slickensides; below 50.0', firm shale, non-fissile dense, firm, reddish-brown, few indurated clay seams. Core Loss 30%.											
	52															
	54	4.0	0.7													
661.1	54															

BOTTOM OF BORING

LOG OF BORING

Date Started 5-7-63      Sampler Type SS      Dia 1 3/8"      Water Elev. \_\_\_\_\_  
 Date Completed 5-22-63      Casing Length \_\_\_\_\_      Dia \_\_\_\_\_  
 Boring No. B-8      Station & Offset 619+22.70' Lt. (REAR PIER)      Surface Elev. 715.1'

Elev.	Depth	Std. Pen (lb)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SH:TL			
							Agg.	C.S.	F.S.	Silt	Clay	LL	PI		W.C.	Class.	
715.1	0																
713.8	2																
711.3	4	7/12			Brownish-gray sandy clay	1	10	7	12	24	47	14	14				
708.8	6	12/10			Brown sandy clay	2	14	8	9	22	50	10	11	13			
706.3	8	15/10			Brownish-gray sandy silt	3	15	8	10	24	43	20	9	15			
	10	50 *			Dark sandy gravelly silt Silt, light-gray, very firm to firm, very calcareous, contains dispersed unsorted granular material consisting of native and erratic angular rock fragments, pebbles and boulders. (facial silt)	4	24	11	8	20	34	24	9	15			
	12	50 *															
	14																
	16																
	18																
696.3	20				TOP OF ROCK												
	22																
	24				Shale, red, dense, non-fissile, firm, random fracture, pattern uniform to bottom. No core loss.												
	26																
	28																
696.3	30																

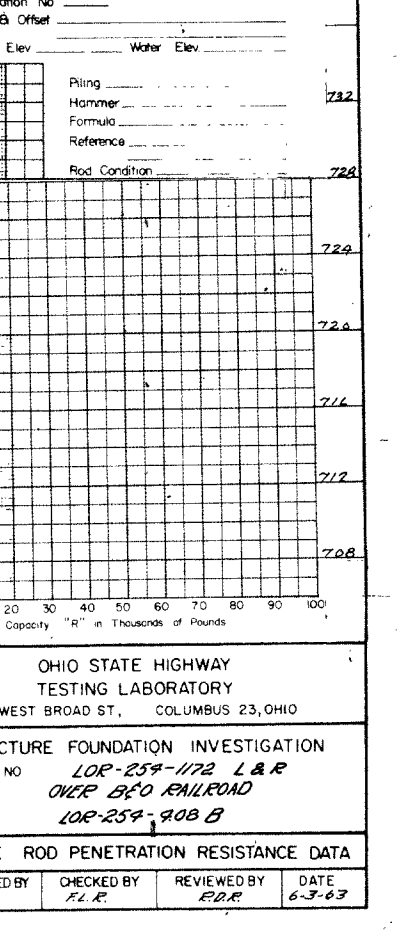
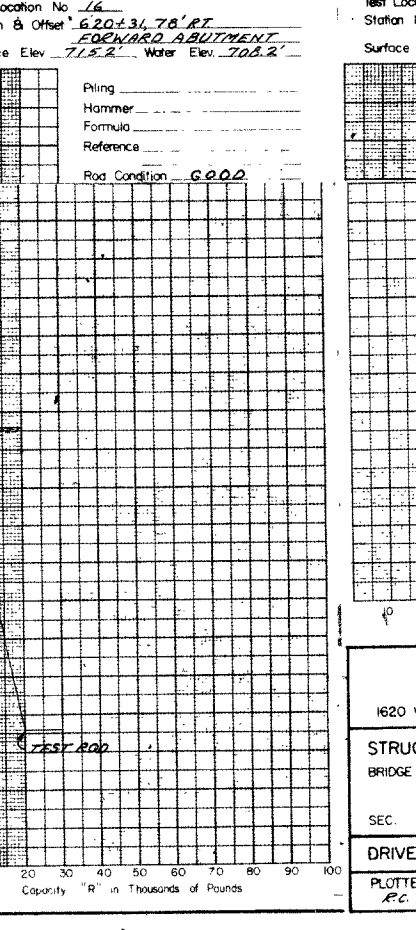
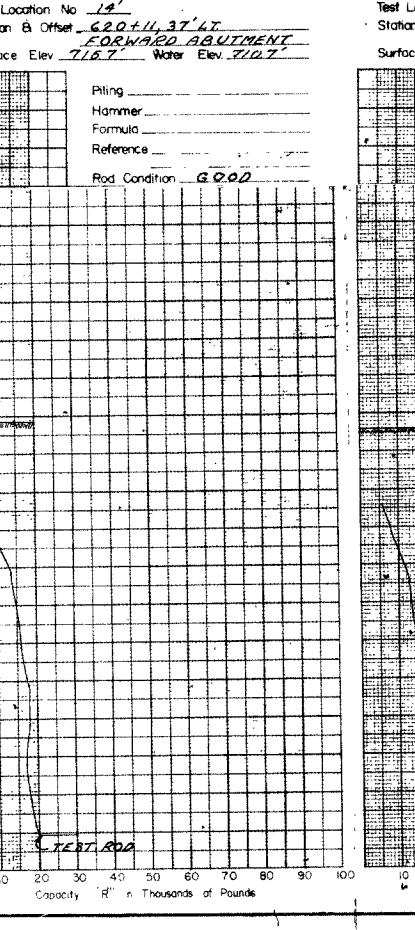
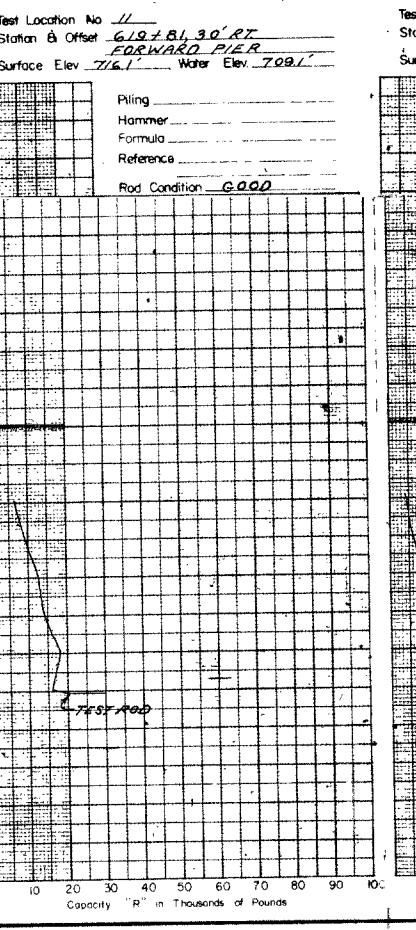
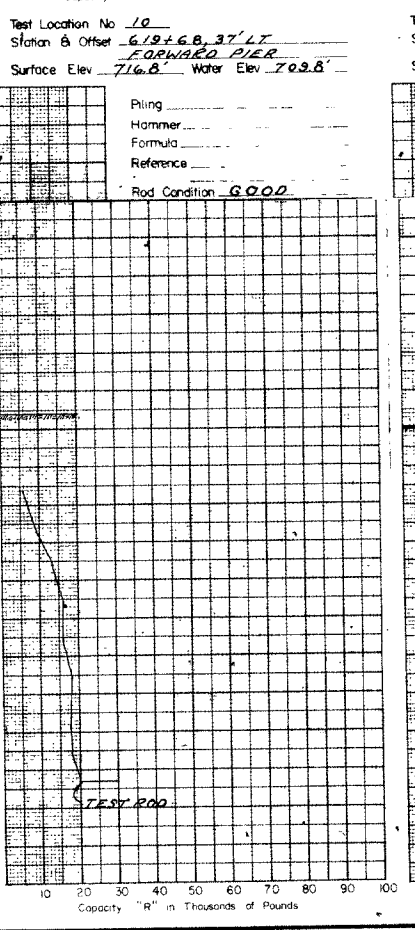
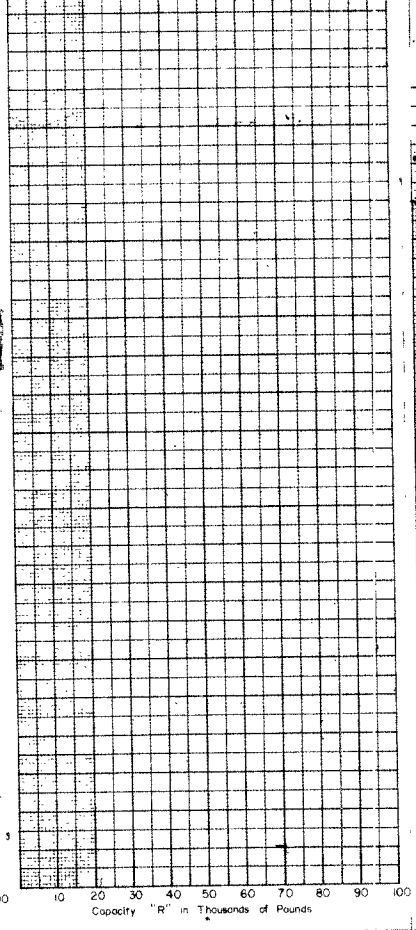
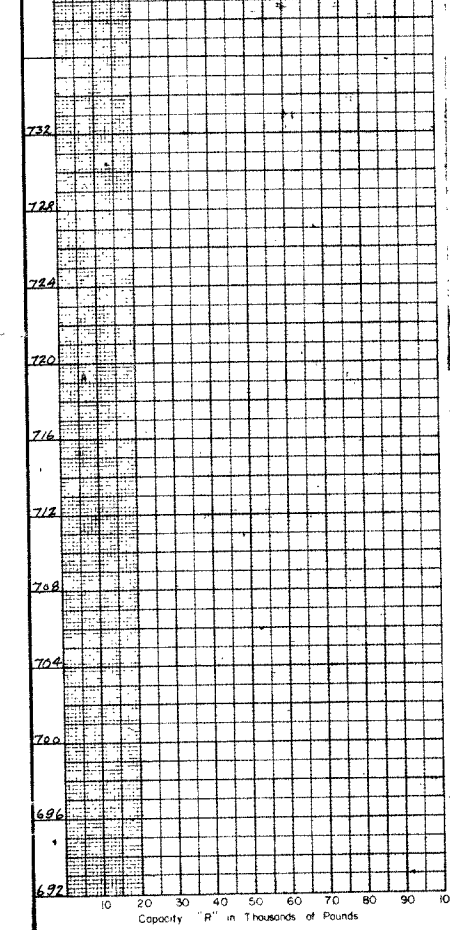
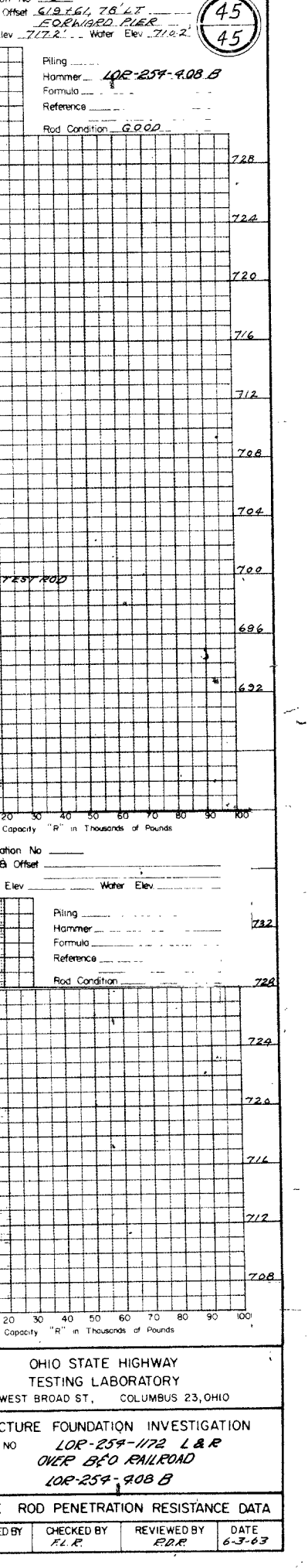
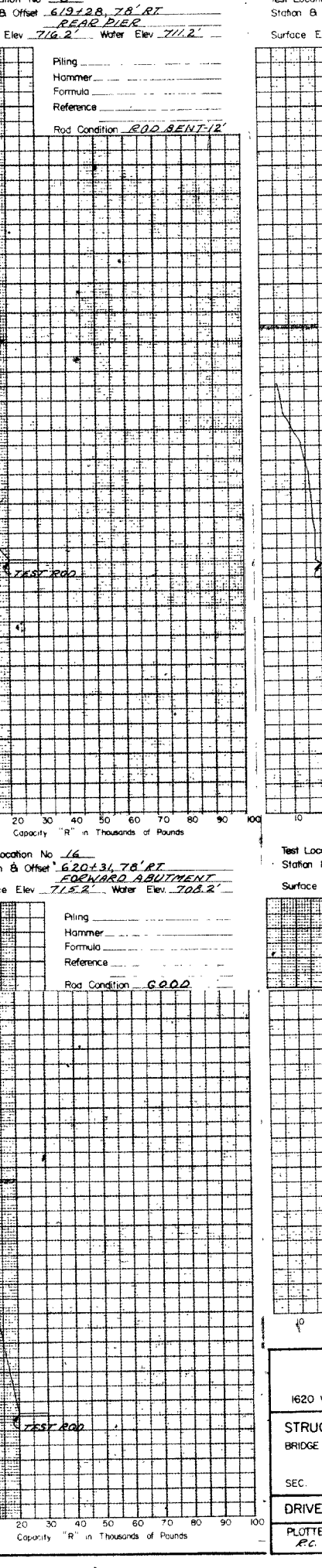
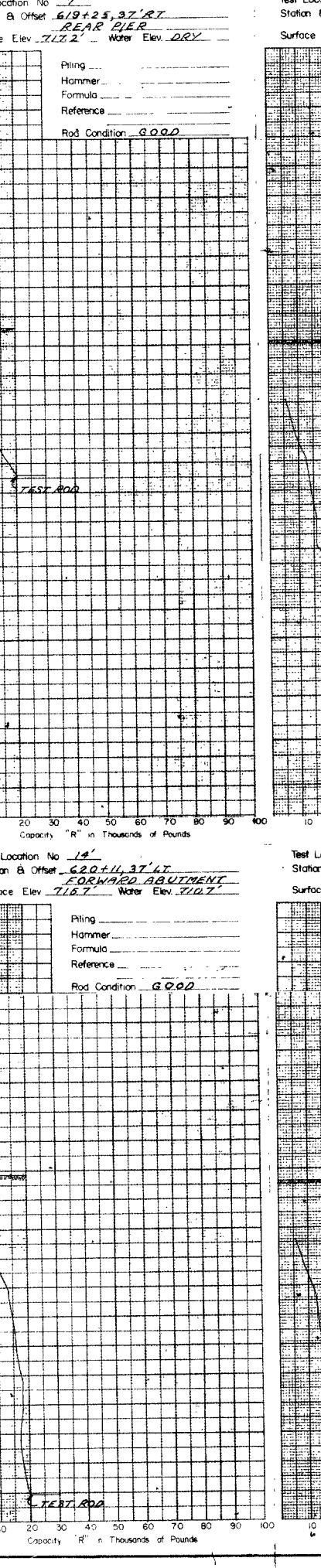
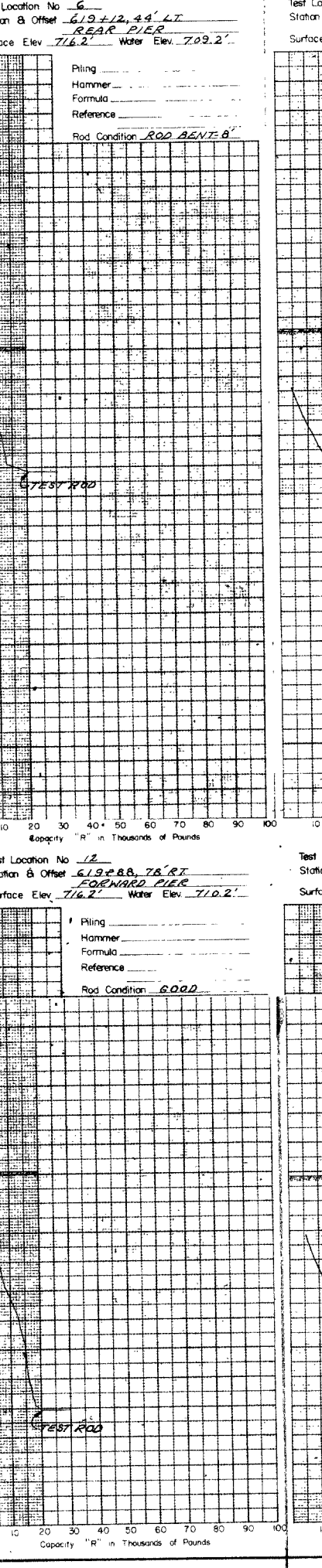
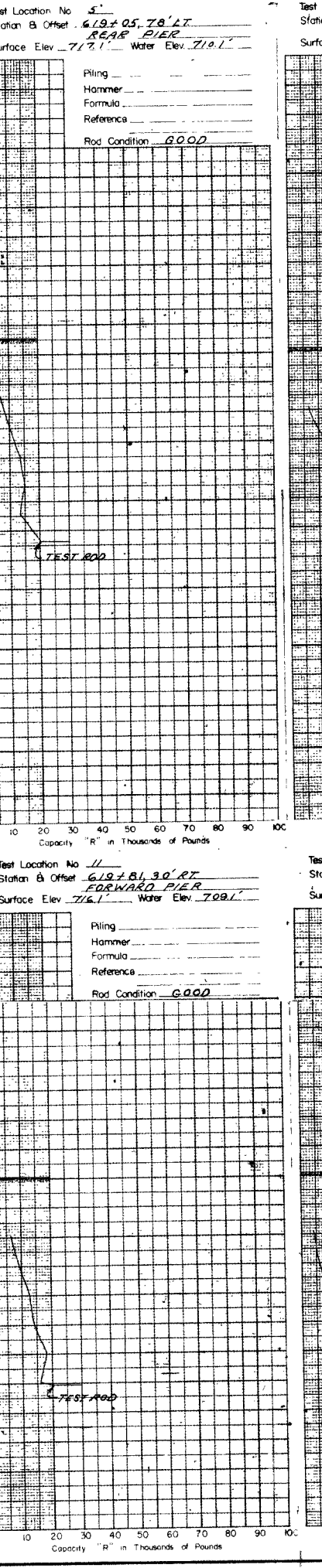
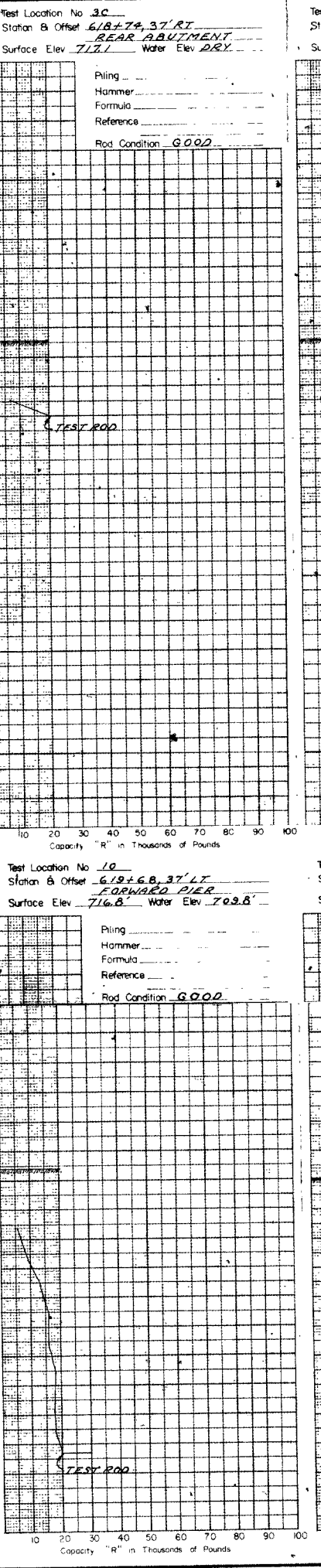
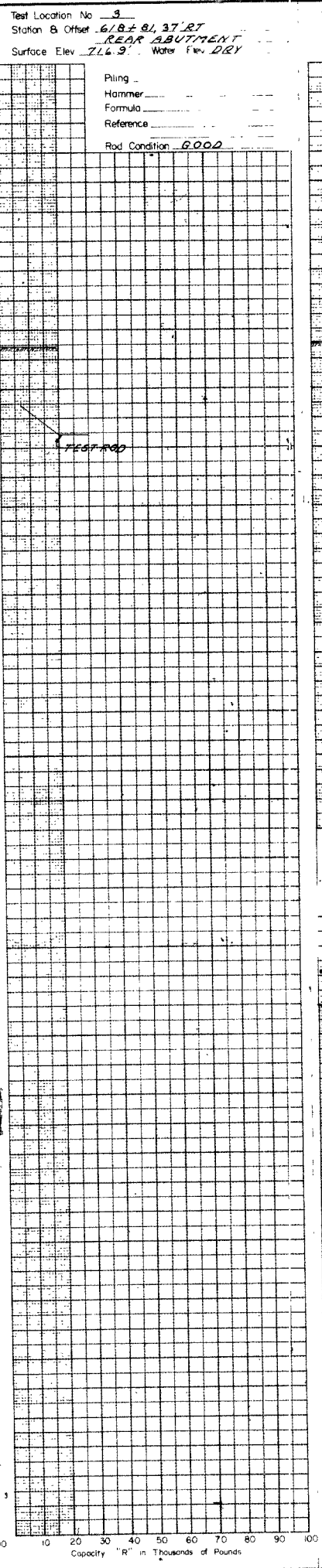
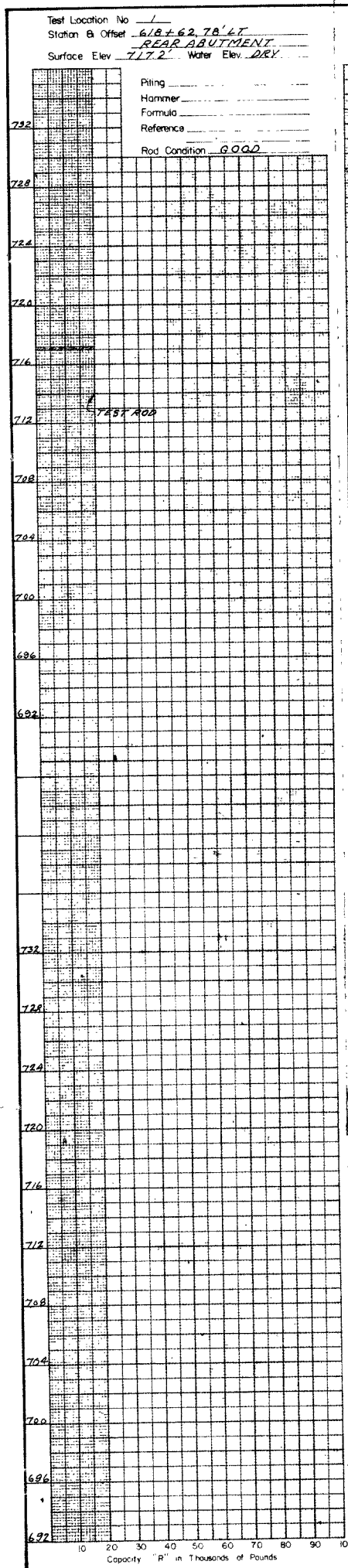
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OHIO STATE HIGHWAY  
TESTING LABORATORY  
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. LOR-254-1172 L&R  
OVER B&O RAILROAD  
SEC. LOR-254-408 B

BORING DATA

TYPED BY L.H.	CHECKED BY T.L.P.	REVIEWED BY E.P.W.	DATE 6-3-63
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OHIO STATE HIGHWAY TESTING LABORATORY  
 1620 WEST BROAD ST., COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
 BRIDGE NO. LOR-254-1172 L & R  
OVER B'CO RAILROAD  
 SEC. LOR-254-908 B

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY RC CHECKED BY FLR REVIEWED BY EDR DATE 6-3-63