

LORAIN COUNTY
 EROSION CONTROL
 HWY. AUTH. NO.
 W. P. A. JOB NO. 47-701

STATE OF OHIO
 DEPARTMENT OF HIGHWAYS
 W. P. A. STATE WIDE HIGHWAY PROJECTS
 STATE WIDE OFFICIAL - PROJECT O.P.-665-1-42-48
 LORAIN COUNTY
 EROSION CONTROL S.H. 290 & S.H. 886 SEC. S. PT. & SEC. A
 ROUTE 585 F.A.P. 293-7.965 MILES

THE RIGHT OF WAY NECESSARY FOR THIS IMPROVEMENT HAS BEEN PROVIDED BY THE STATE OF OHIO

I HEREBY APPROVE THESE PLANS AND DECLARE THAT PROVISIONS FOR MAINTENANCE AND SAFETY OF TRAFFIC WILL BE MADE AS HEREIN DESCRIBED-

MAINTAINED BY REGULAR LORAIN COUNTY STATE HIGHWAY MAINTENANCE DEPARTMENT

FLAGMEN WILL BE FURNISHED BY W.P.A.

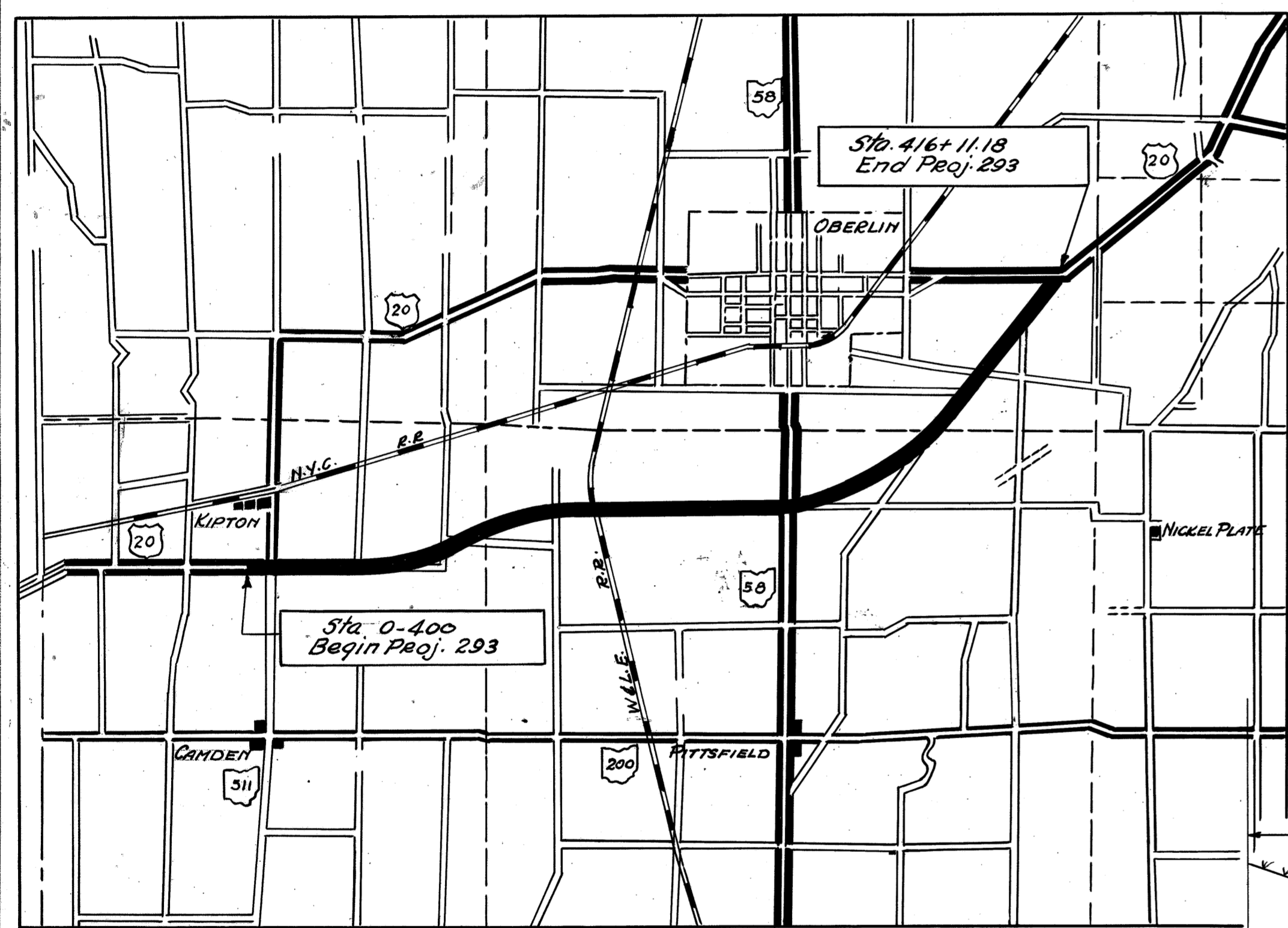
LIGHTS, SIGNS AND BARRICADES WILL BE PROVIDED BY STATE HIGHWAY DEPARTMENT

APPROVED *Murray D. Shaffer*
 DATE _____ RESIDENT DIVISION DEPUTY DIRECTOR

APPROVED *H. D. Metcalf*
 DATE 10-7-38 CHIEF ENGR. BUREAU OF MAINTENANCE

APPROVED *W. B. Jones*
 DATE 10-7-38 FIRST ASST. DIRECTOR - CHIEF ENGINEER

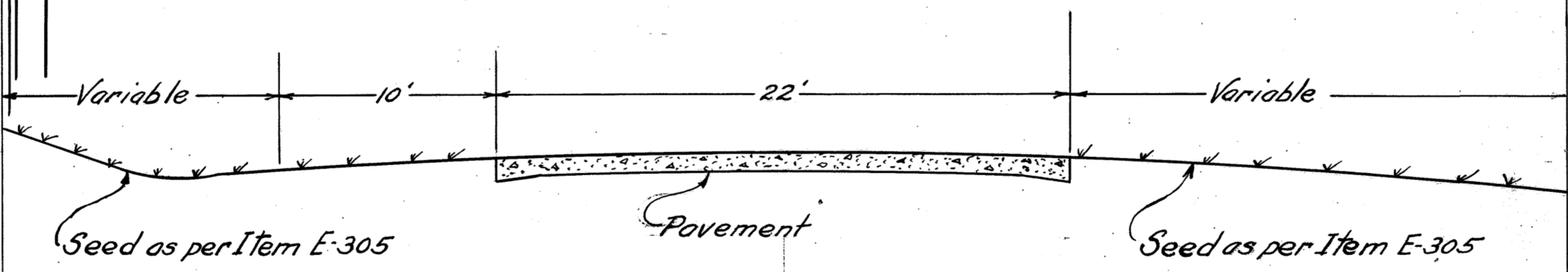
APPROVED *Robert C. Beyle*
 DATE 10-7-38 DIRECTOR OF HIGHWAYS



LOCATION PLAN

SUMMARY OF QUANTITIES		
TOTAL QUANTITY	UNIT	EROSION CONTROL
586,389	SQ. YDS.	FINE GRADING
586,389	SQ. YDS.	SEEDING & MULCHING SHOULDERS SLOPES & DITCHES

TYPICAL SECTION
 EROSION CONTROL



SEED FORMULA

60% Ky. Blue Grass
 25% Red Top
 15% Domestic Eye Grass
 Sown at rate of 4 Pounds per 1000 Sq. Ft.
 In addition to the above - One pound of Winter Vetch - *Vicia villosa* Shall be sown to each 1000 Sq. ft. on back Slopes From Sta. 19+00 To Sta. 29+00

CONSTRUCTION BUREAU
 MAY 5 1958
 GROUND PHOTOLAB

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	1 138
10	OHIO	293 (2)	1938	

LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
OBERLIN-NORWALK ROAD
KIPTON-EAST ROAD
S.H. 290 SEC. S PT.
S.H. 886 SEC. A

LORAIN COUNTY
CAMDEN PITTSFIELD AND RUSSIA TOWNSHIPS

LINE DATA

LENGTH OF S.H. 290 SEC. S PT. STA. 0-400 TO STA. 1+00	=	500 LIN. FT.
LENGTH OF S.H. 886 SEC. A STA. 1+00 TO STA. 416+111.8	=	4151.18 LIN. FT.
GROSS LENGTH OF PROJECT DEDUCTIONS	=	4201.18 LIN. FT.
WHEELING & LAKE ERIE R.R. STA. 158+56.92 TO STA. 158+66.18	=	9.26 LIN. FT.
NET LENGTH OF F.A.P. 293 (2)	=	4200.92 LIN. FT.
OR		7.954 MILES

Begin work Station 0+451
End work Station 416+14.5
Gross length of work = 4206.55 Lin. Ft.
Deduction for R.R. Crossing = 9.26 Lin. Ft.
Net Length of work = 4205.29 Lin. Ft.
or 7.965 Miles.

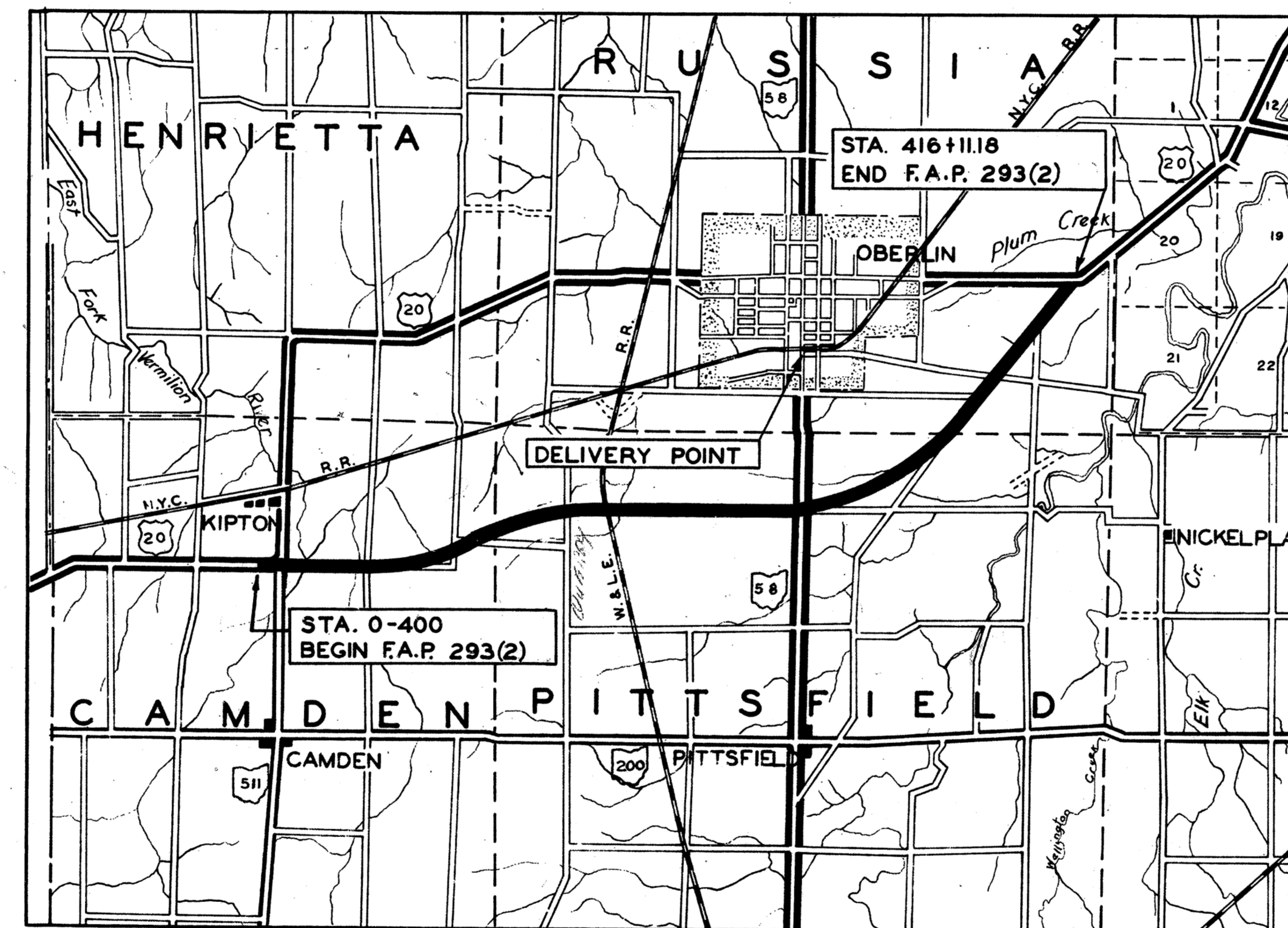
The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.
I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic.
Provisions for the maintenance and safety of traffic will be as set forth on sheet 2.

CONVENTIONAL SIGNS

STATE LINE	-----
COUNTY LINE	-----
TOWNSHIP LINE	-----
SECTION LINE	-----
CENTER LINE	-----
PROPERTY LINE	-----
CITY OR VILLAGE LINE	-----
FENCE LINE	-----
STEAM RAILROAD	-----
ELECTRIC RAILROAD	-----
POLE LINE	-----
GUARD RAIL	-----
DRAIN PIPE, NEW	-----
DRAIN PIPE, OLD	-----

INDEX OF SHEETS

TITLE SHEET	SHEET NO. 1
TYPICAL SECTION	2-3
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INTERSECTION DETAILS	101-110-110-A
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CHANNEL CROSS SECTIONS	129-132
SITE PLAN	133
STRUCTURES OVER 20 FT.	134-135
SUMMARY OF TABLES	136-137
CALCULATIONS & SUMMARY	138



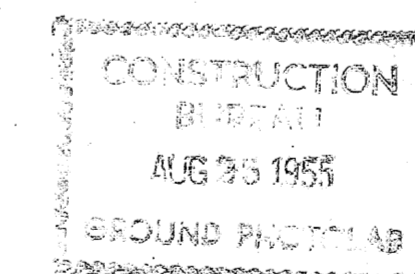
AVERAGE HAUL 3.9 MILES

LOCATION PLAN

PORTION TO BE IMPROVED
DETOURS SHOWN THUS
STATE HIGHWAYS
IMPROVED COUNTY ROADS
UNIMPROVED COUNTY ROADS

SCALES

PROFILE HORIZONTAL	1" = 100'
PROFILE VERTICAL	1" = 10'
PLAN	1" = 100'
CROSS SECTION	1" = 5'



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

- APPROVED _____
DATE _____ RESIDENT DISTRICT DEPUTY DIRECTOR
- APPROVED _____
DATE 6-11-35 RESIDENT DIVISION DEPUTY DIRECTOR
- APPROVED _____
DATE _____ CHIEF ENGINEER, BUREAU OF MAINTENANCE
- APPROVED *J. Burkey P.E. #45*
DATE 7-8-35 CHIEF ENGR., BUREAU OF BRIDGES & R.R. X'INGS
- APPROVED *W. J. ... P.E. #87*
DATE 8-1-35 CHIEF ENGINEER LOCATION & DESIGN
- APPROVED _____
DATE 7-18-35 FIRST ASST. DIRECTOR & CHIEF ENGINEER
- APPROVED _____
DATE 8-1-35 DIRECTOR OF HIGHWAYS
- RECOMMENDED FOR APPROVAL _____
DATE _____ DISTRICT ENGR., BUREAU OF PUBLIC ROADS
- RECOMMENDED FOR APPROVAL _____
DATE _____ CHIEF ENGINEER BUREAU OF PUBLIC ROADS
- APPROVED _____
DATE _____ CHIEF OF BUREAU

SUPPLEMENTAL SPECIFICATIONS

43 (Rev. 7-20-37)	M-110.11 (Rev. 9-16-36)
78	M-110.13 (Rev. 4-15-38)
102	E-111
105	S-122
110	T-110 (Rev. 6-3-36)
113	

FILE NO.	LORAIN COUNTY SH.290 SEC. S PT. & SH.886 SEC. A
DATE OF LETTING	-----
CONTRACT NO.	-----

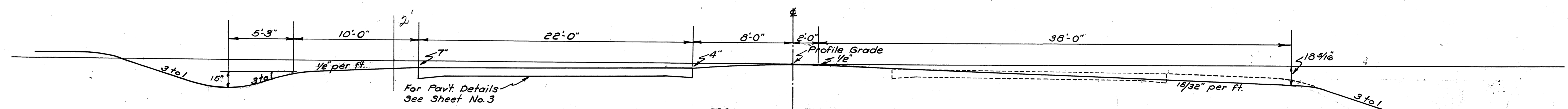
SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
DRAWING NO.	DATE		
G-7.07	10-1933		
E-5	7-12-35		
S-27 P.C.1	4-1-36		
I-8 CB NO 7	6-10-36		
S-27 P.C.3	1-1-36		
I-1,2,3,4 & 5	1-1-36		
I-8 C.B. 12 & 2-2	11-12-35		
L.B.C.-33	11-15-33		
S.B.C.-34	4-21-34		
S.T.C.-34	4-21-34		
B-T-71-R	7-11-38		
B-T-50-70-71E NO.1	10-1933		
B-T-70-71E NO.1	10-1933		
B-T-71E NO.1	10-1933	L-2	2-16-38
T-70-71E NO.1	10-1933	AS-35	9-6-35
L-1	2-16-38	MBD-36	12-8-36

TYPICAL SECTIONS

TYPE T-71

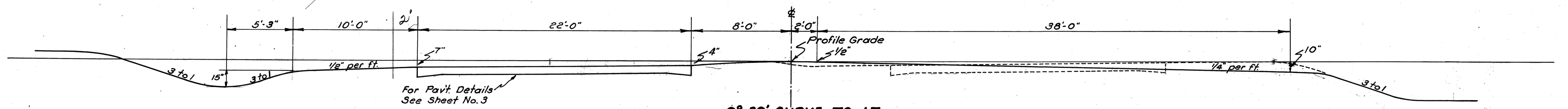
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	293(2)	1938

LORAIN COUNTY
S.H. 290 SEC. S PT.
S.H. 886 SEC. A



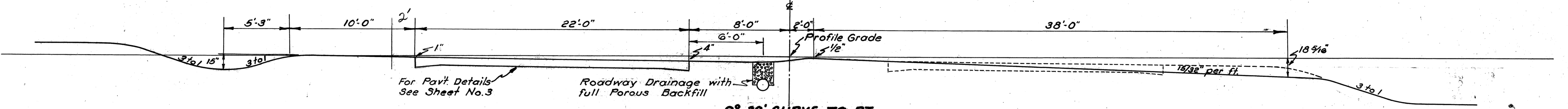
TANGENT SECTION

Sta. 0+400 to Sta. 43+21 = 4721.00 Lin. Ft.
Sta. 90+94.34 to Sta. 108+39.53 = 1745.19 Lin. Ft.
Sta. 154+17.86 to Sta. 234+81.50 = 8063.64 Lin. Ft.
Sta. 336+23.72 to Sta. 403+67.31 = 6743.59 Lin. Ft.
Sta. 414+50.64 to Sta. 416+11.18 = 160.54 Lin. Ft.
Total = 21433.96 Lin. Ft.



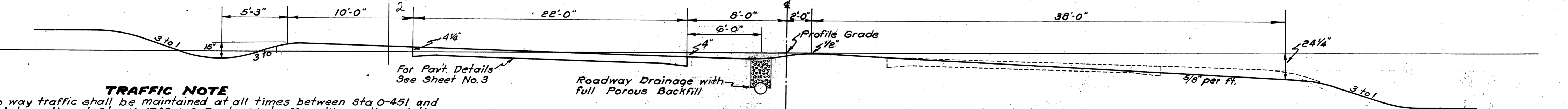
0° 30' CURVE TO LT.

Sta. 43+21 to Sta. 90+94.34 = 4773.34 Lin. Ft.
Sta. 234+81.50 to Sta. 336+23.72 = 10142.22 Lin. Ft.
Total 14915.56 Lin. Ft.



0° 30' CURVE TO RT.

Sta. 108+39.53 to Sta. 154+17.86 = 4578.33 Lin. Ft.
Total 4578.33 Lin. Ft.



1° 30' CURVE TO RT.

Sta. 403+67.31 to Sta. 414+50.64 = 1083.33 Lin. Ft.
Total 1083.33 Lin. Ft.

TRAFFIC NOTE

Two way traffic shall be maintained at all times between Sta 0-451 and the intersection at Sta. 10+1748. U.S. Route 20 traffic will use the existing route from this point to the end of the project. Two way traffic shall be maintained at all times at the intersections of State Routes 511 & 58, Stations 10+1748 and 249+25.7 respectively.

The Contractor shall so arrange his grading & paving operations to the satisfaction of the Engineer to accomplish this result.

Two way traffic shall be maintained at all times at all County and Local road crossings except during the actual placing and curing of concrete, at which time one way traffic shall be maintained.

The Contractor shall place aggregate meeting the requirements of Supp. Specification No. T-110 (Rev. 8-3-36) and Calcium Chloride in such quantities and at such locations as may be directed by the Engineer.

Estimated Quantities
Item T-110 Aggregate for maintaining traffic 300 Cu Yds.
Item M-10 Calcium Chloride 6 Tons

The Item of maintaining Traffic shall include lights, signs, barricades, watchmen, flagmen, signal men and any necessary tractors and equipment to insure the safe and unimpeded flow of traffic 24 hrs. daily at the locations heretofore specified.

DISPOSAL OF PAVT. & STRUCTURES REMOVED

All Conc. Base, Conc. Curb, Conc. Pavt. & Brick Surface from Pavt. Removal Items together with all Conc. & Unsuitable Masonry removed from Structures shall be wasted on Roadway Sections by the Contractor between Sta. 101+00 to Sta. 109+00, Sta. 258+00 to Sta. 260+00 & Sta. 338+00 to Sta. 342+00 in swamp area before beginning the building of Embankment.

Any suitable Concrete may be used for riprap on bridge at Sta. 16+33.40.

PIPE REMOVED & STORED

All pipe marked for removal & storage shall be neatly piled along the Right of Way by the Contractor for disposal of by the State Maintenance Forces.

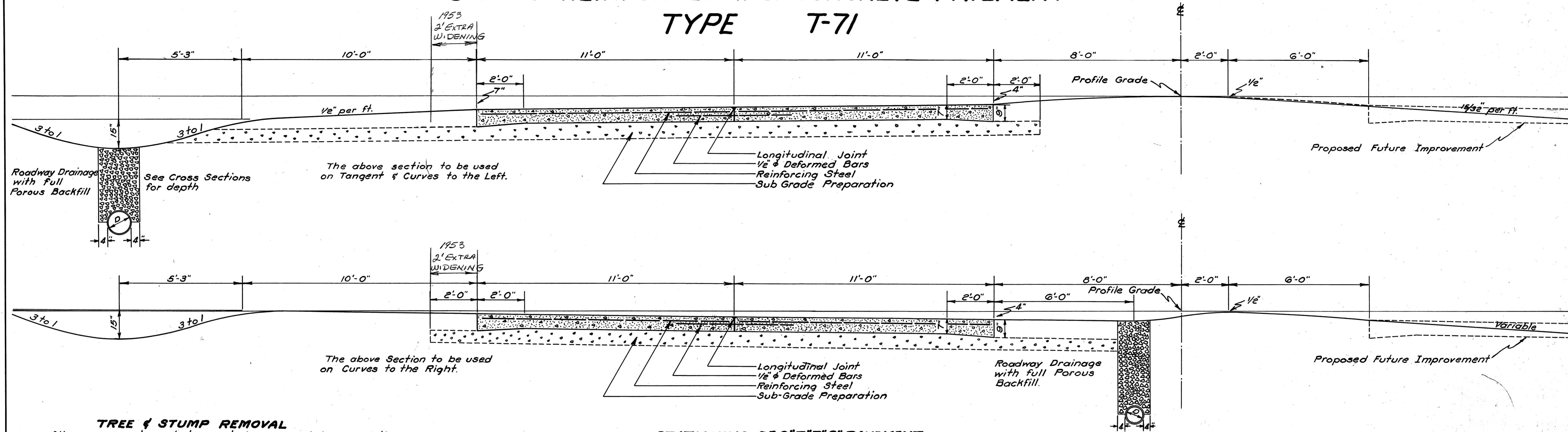
CULVERT BACKFILL

Backfill on all structures to be removed shall be made to same density as required for this material in Roadway Embankment. Pay for this Item included in Unit Price bid for removal.

TYPICAL SECTION

9'-7"-7'-9" REINFORCED P.C. CONCRETE PAVEMENT

TYPE T-71



The above section to be used on Tangent & Curves to the Left.

The above Section to be used on Curves to the Right.

STATIONING OF 9'-7"-7'-9" PAVEMENT

Sta. 0+00 to Sta. 16+00.90	= 2000.90 Lin. Ft.
Sta. 16+65.90 to Sta. 158+56.92	= 14191.02 Lin. Ft.
Sta. 158+66.18 to Sta. 415+00	= 25633.82 Lin. Ft.
Total	41823.74 Lin. Ft.

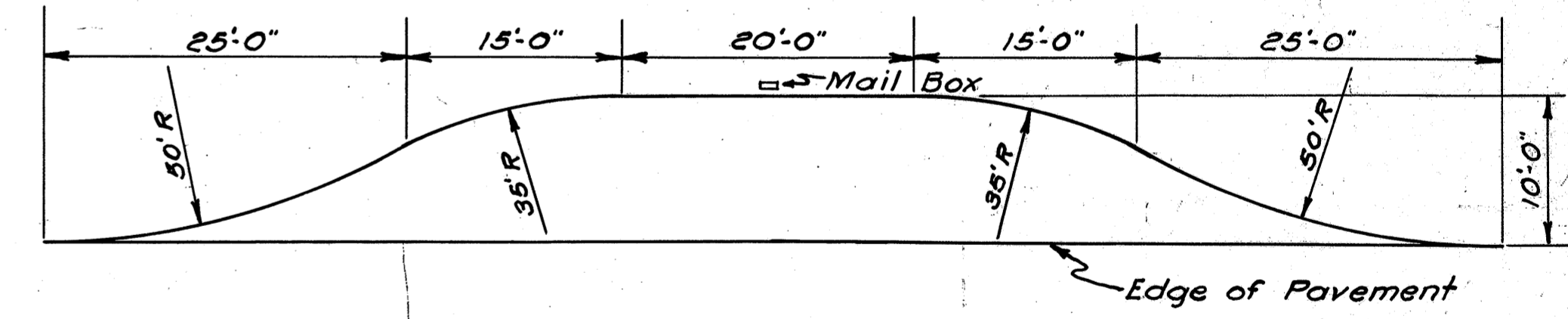
TREE & STUMP REMOVAL
All necessary trees & stumps to be removed for completion of this project shall be included for payment in Unit Price Bid for Roadway Excavation.
No tree shall be removed until it has been conspicuously marked by the Engineer.
All other trees within area on which work is to be done shall be protected according to Std. Drwg. No. L-2 as required by the Engineer. Payment for same to be included in Unit Price bid for Roadway Excavation.

REMOVAL OF EXISTING MASONRY
All suitable Stone Masonry shall be removed & stored at either of the three storage sites, located within the Right of Way, at stations 60+00, 250+00 & 321+00.
All concrete & unsuitable stone masonry shall be wasted by the Contractor as shown by note on sheet No. 2.
Cost of same to be included in Unit Price Bid for "Removal of Existing Bridges" or "Removal of Portions of Existing Structures."

SUB-GRADE PREPARATION
Between the following stations the Sub-Grade shall be excavated for a depth of 1 1/4" below the bottom of the Pavement and for a width as shown on the Cross Sections. After necessary excavation has been completed, 2" of No. 6 Aggregate, or .06 Cu. Yds. per Sq. Yd., shall be spread uniformly over the entire width. This Aggregate shall then be manipulated with the Sub-Grade for an additional 6" as per Supplemental Specification No. 113.

Sta. 55+00 to Sta. 65+00	= 1000.00 Lin. Ft.
Sta. 85+00 to Sta. 92+00	= 700.00 Lin. Ft.
Sta. 119+00 to Sta. 138+00	= 1900.00 Lin. Ft.
Sta. 220+00 to Sta. 248+00	= 2800.00 Lin. Ft.
Sta. 262+00 to Sta. 265+00	= 300.00 Lin. Ft.
Sta. 335+00 to Sta. 339+50	= 450.00 Lin. Ft.
Sta. 340+50 to Sta. 355+00	= 1450.00 Lin. Ft.
Sta. 370+00 to Sta. 395+00	= 2500.00 Lin. Ft.
Sta. 406+00 to Sta. 416+00	= 1000.00 Lin. Ft.
Total	12100.00 Lin. Ft.

SKETCH SHOWING CONSTRUCTION OF APPROACHES AT MAIL BOXES
Aggregate Required 5 Cu. Yds.



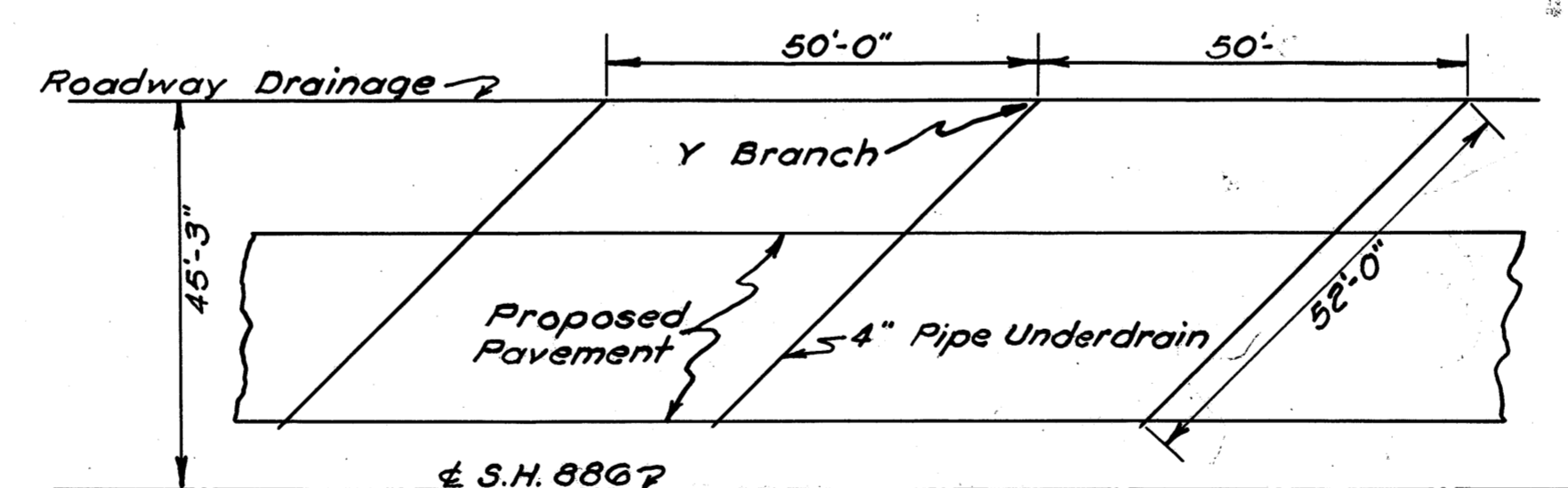
Note - After completion of shoulders the Mail Box Approaches are to be excavated to a depth of 3" & 3" of Aggregate placed. Cost of resetting the boxes according to sketch above & the cost of excavation to be included in Unit Price Bid for Aggregate for Traffic Compacted Approaches.

Note - Wherever pipes are to be placed within or beneath an embankment and the upper extremity of the pipe will be less than 2 ft. below the surface of the original ground, the embankment shall be constructed full cross-section width to an elevation of at least 2 ft. above the upper extremity of the pipe before laying pipe. The trench shall then be excavated to the minimum width necessary for placing pipe & proper backfilling. The pipe shall be laid & trench backfilled before more embankment is placed thereon.

Note - Embankments shall be constructed according to the requirements of Supplemental Specifications No. 110 in lieu of the requirements of Sections E-105 & E-106 of the Construction & Material Specifications.

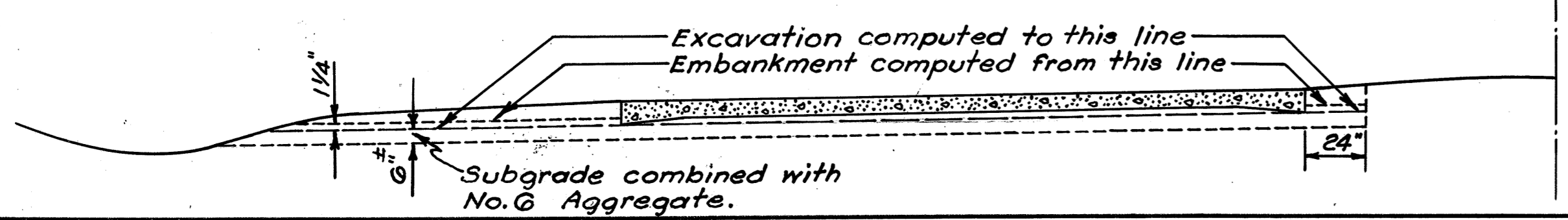
Note - Water shall be applied according to the requirements of Supplemental Specifications No. E-111

Note - Expansion joints of an approved type shall be installed on this project. No contraction joints are required.



4" PIPE UNDERDRAIN CONNECTED TO ROADWAY DRAINAGE

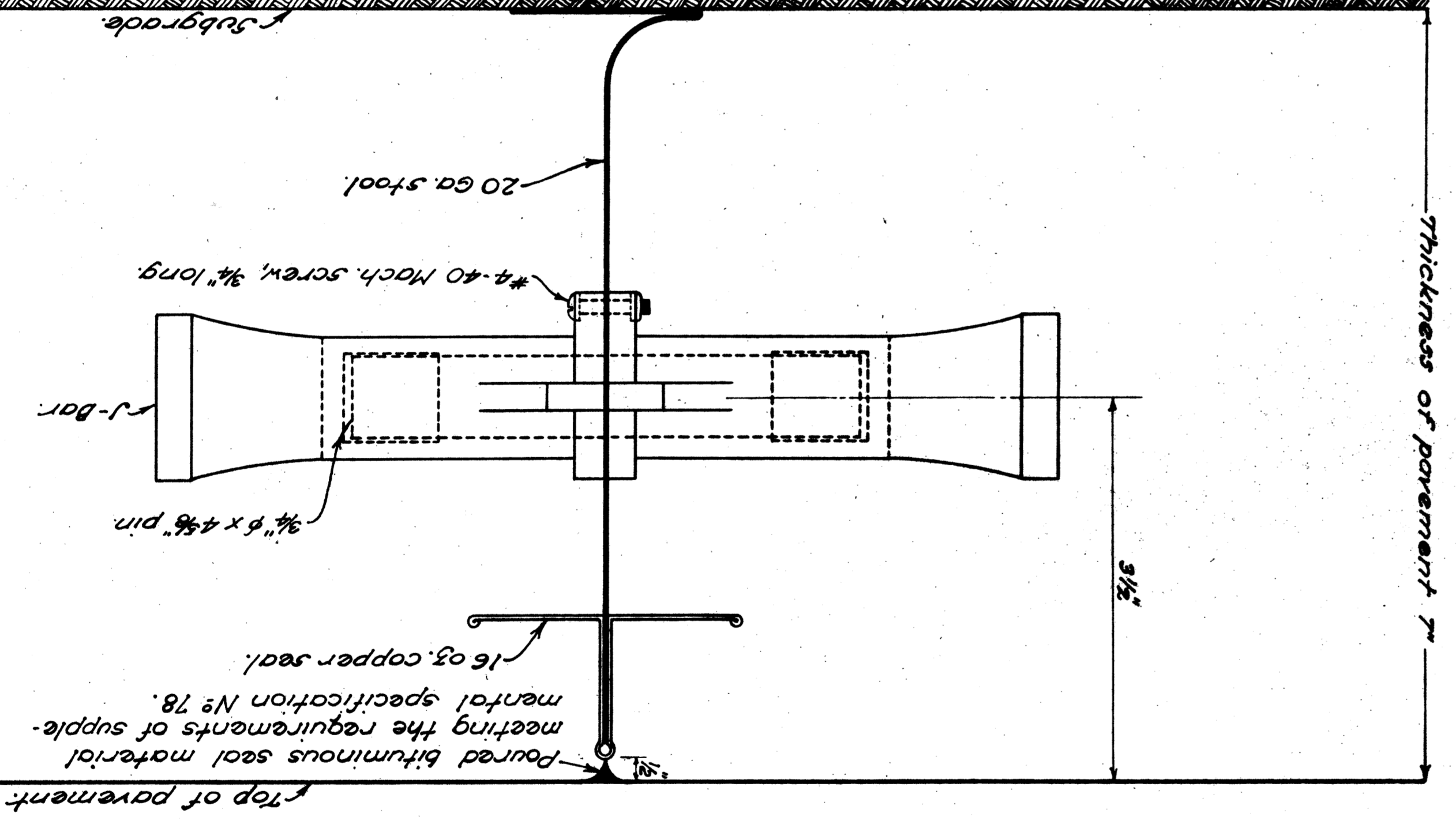
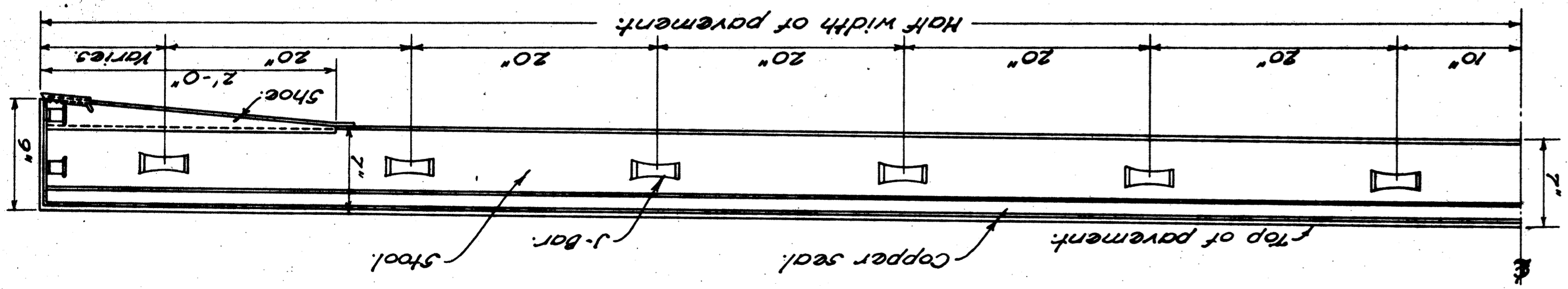
Note - The upper end of all pipe underdrains, Item I-4 shall be effectively blocked with concrete, flat stone, brick laid in mortar, or with precast clay stoppers, payment for which is included in the Unit Price bid per lineal foot of pipe.



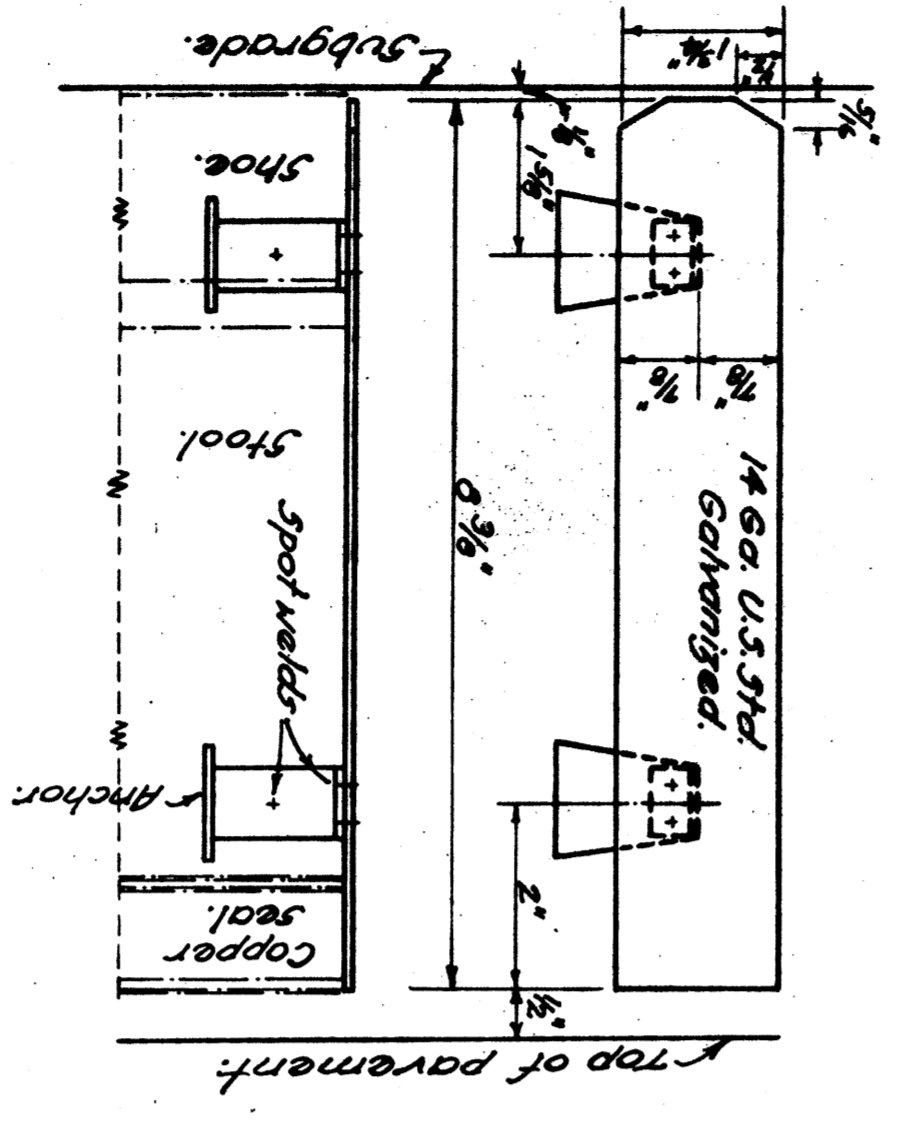
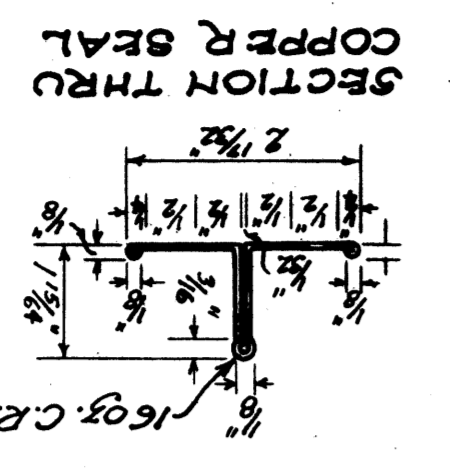
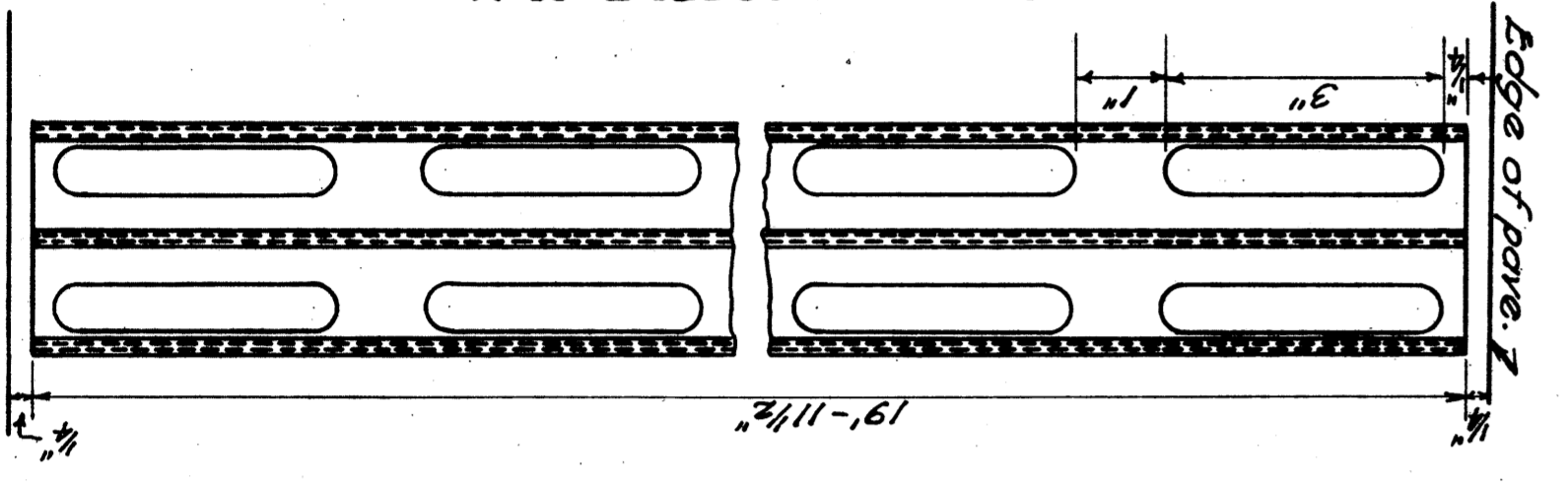
138	4
FISCAL YEAR	1938
FED. AID PROJECT	293(2)
STATE	OHIO
RD. NO.	54, 290
COUNTY	LORAIN
SEC. 5 PT.	S.M. 886
SEC. A	

TRANSVERSE JOINTS

CONSTRUCTION JOINT

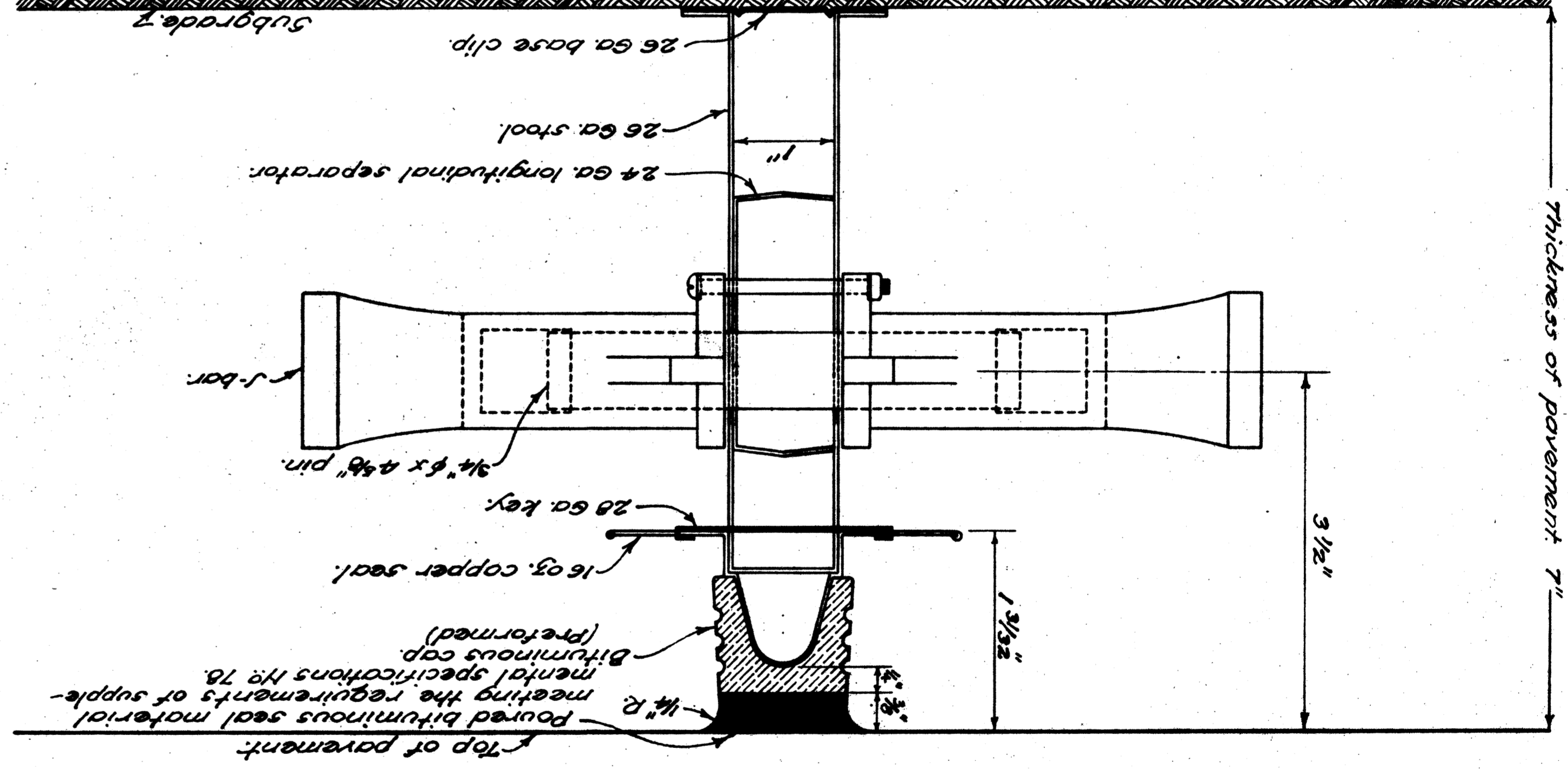
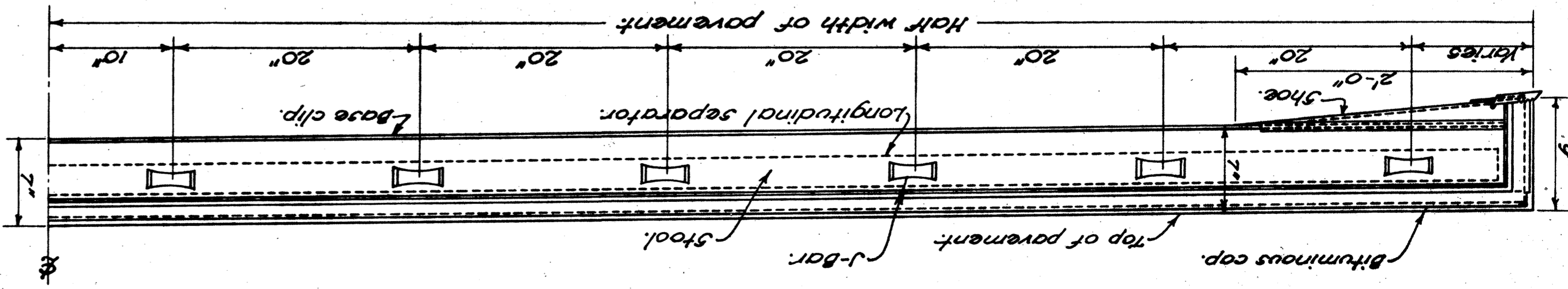


TYPICAL SECTION OF JOINT

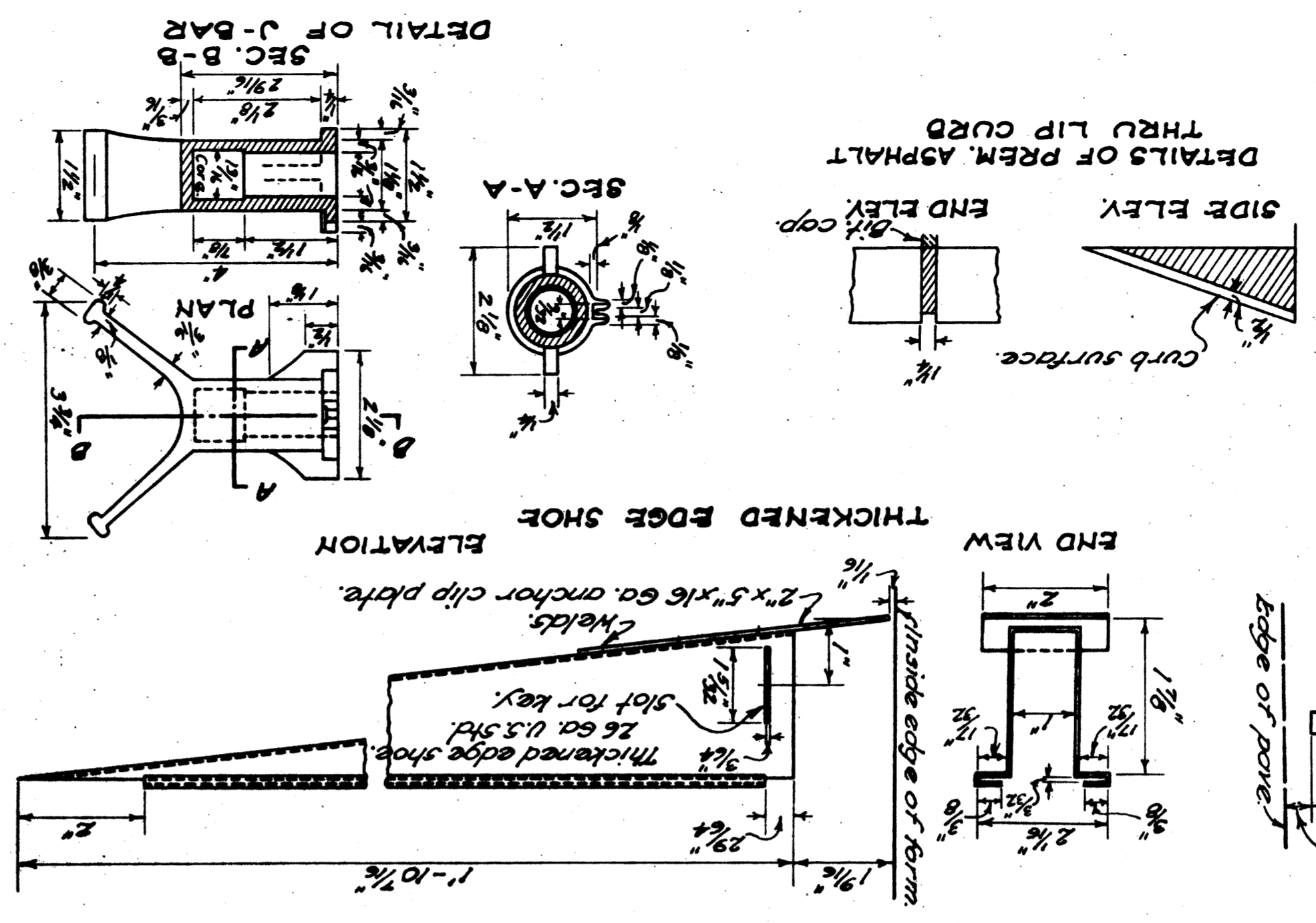


STEEL END PLATE

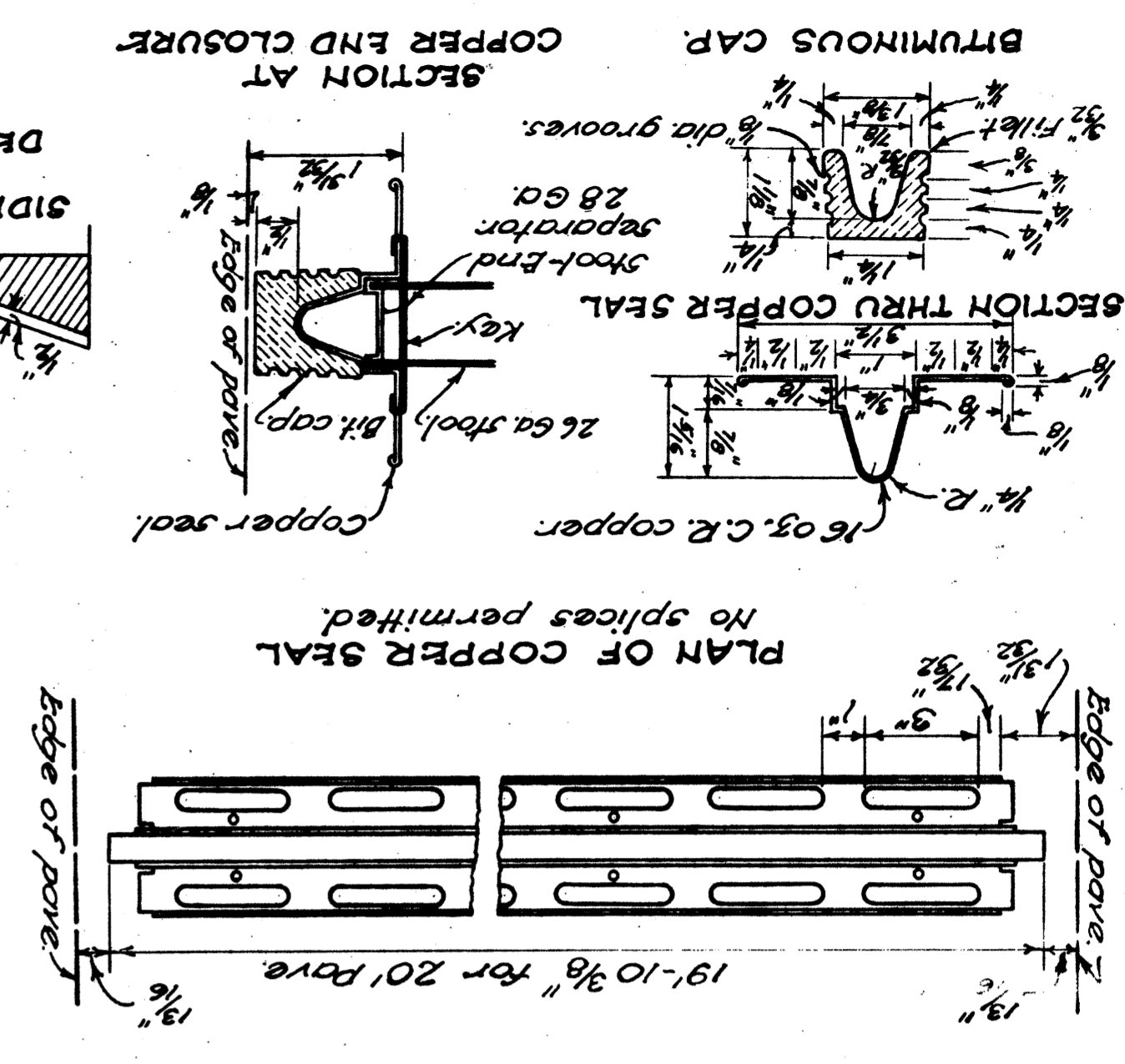
EXPANSION JOINT



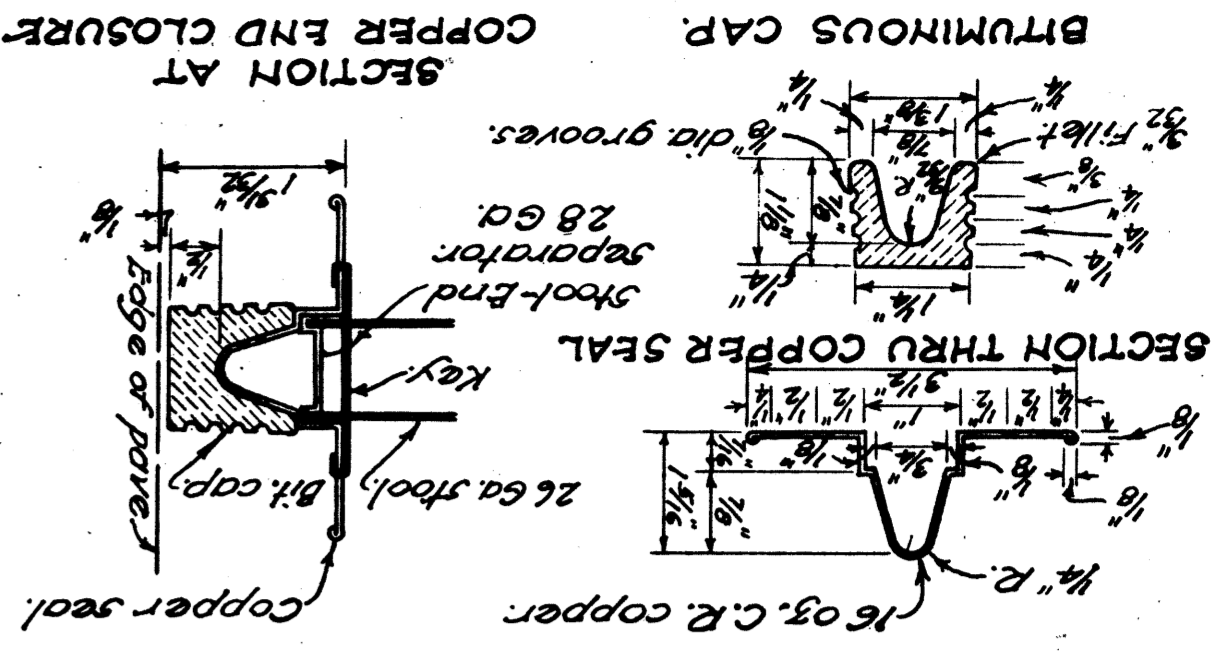
TYPICAL SECTION OF JOINT



THICKENED EDGE SHOE ELEVATION



PLAN OF COPPER SEAL



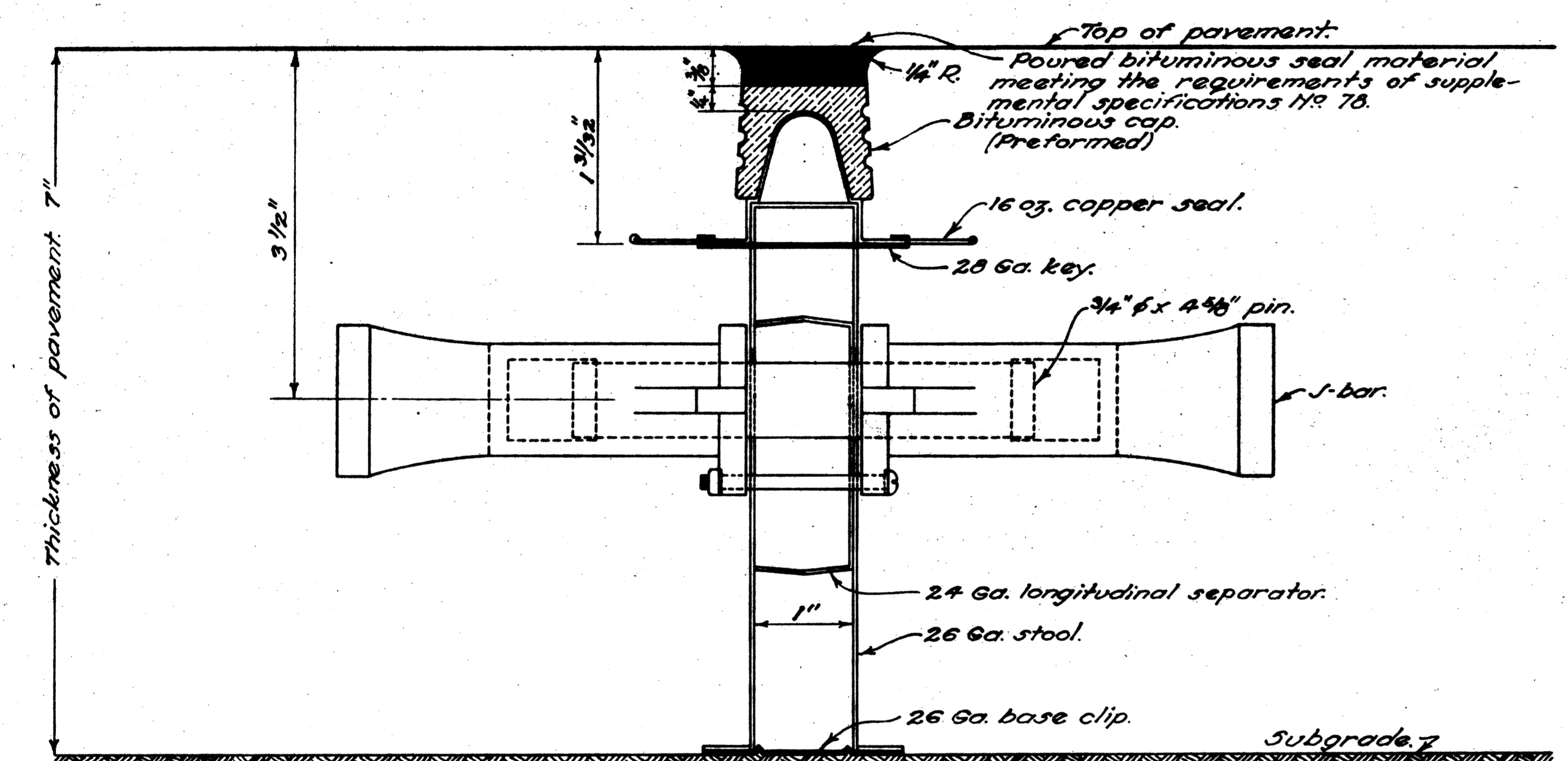
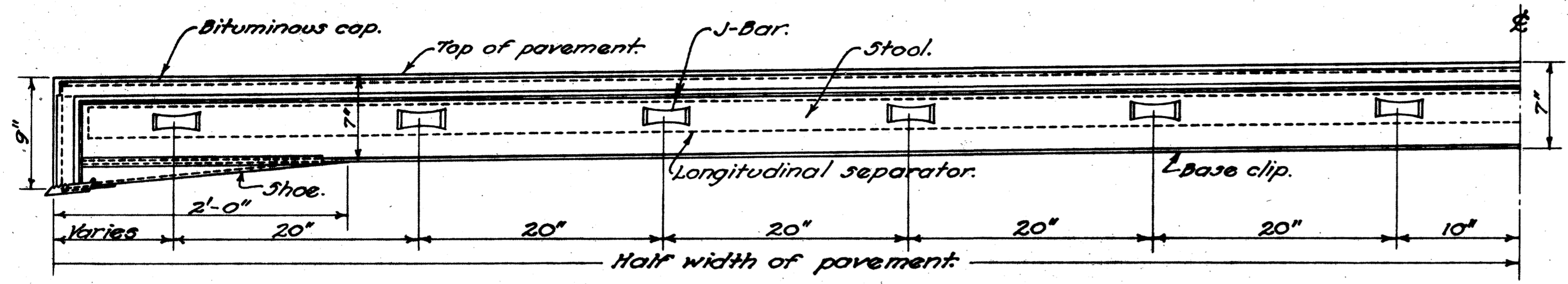
SECTION AT COPPER END CLOSURE

TRANSVERSE JOINTS

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
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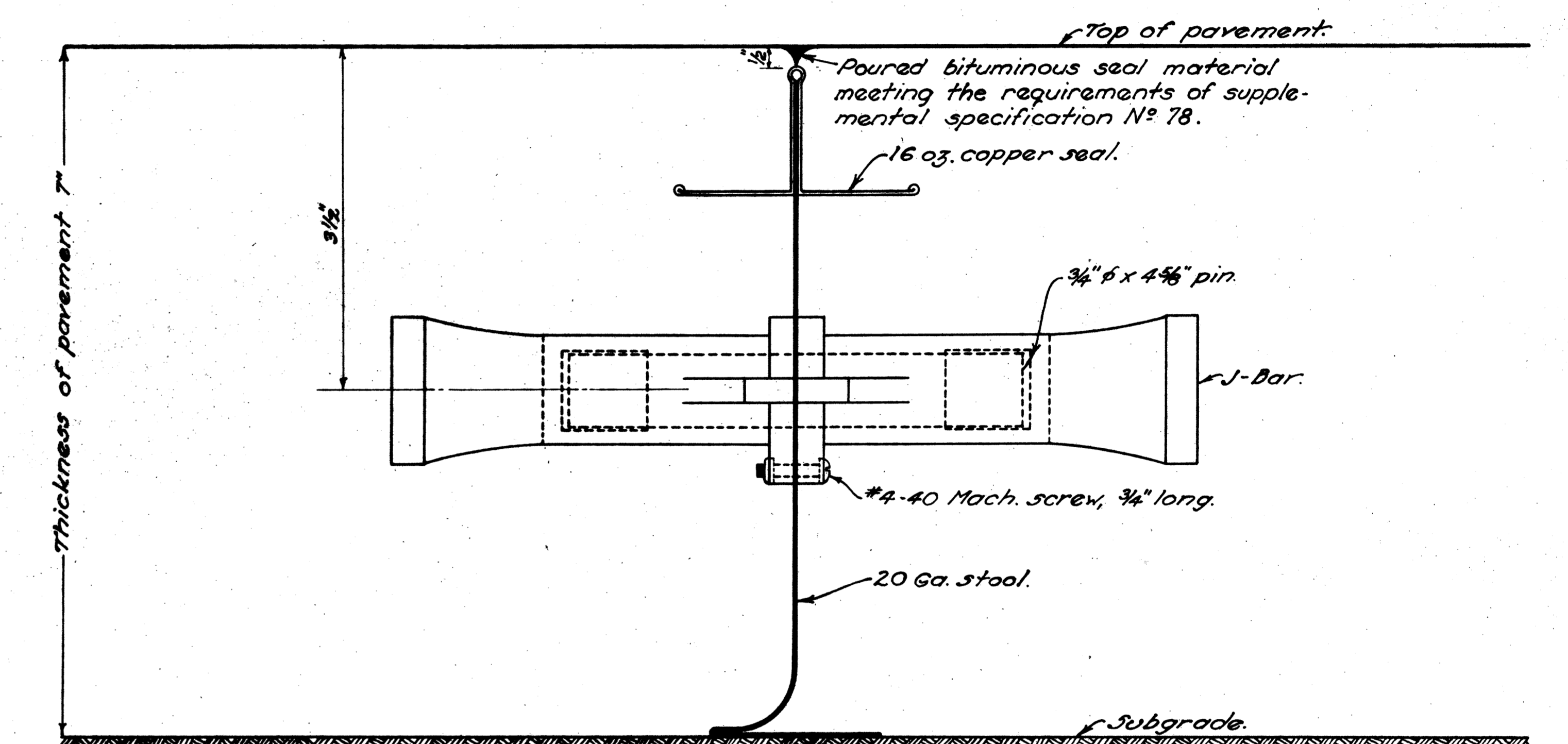
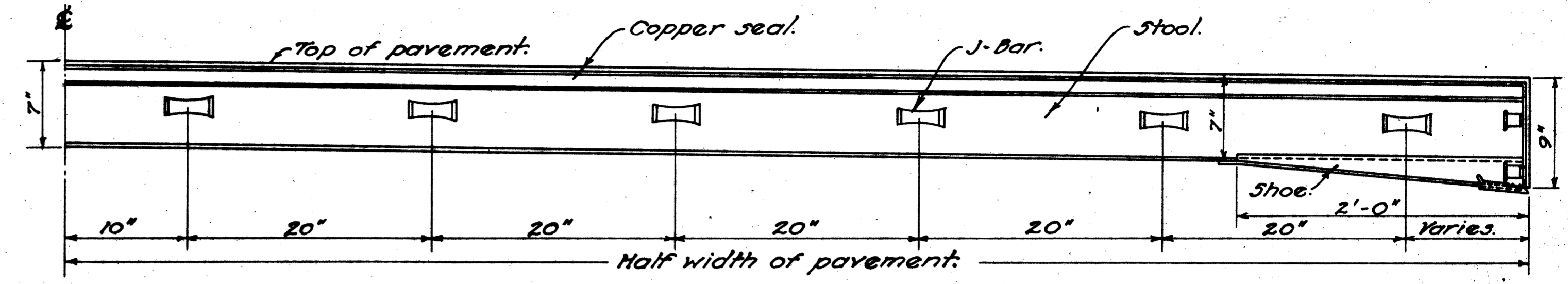
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EXPANSION JOINT

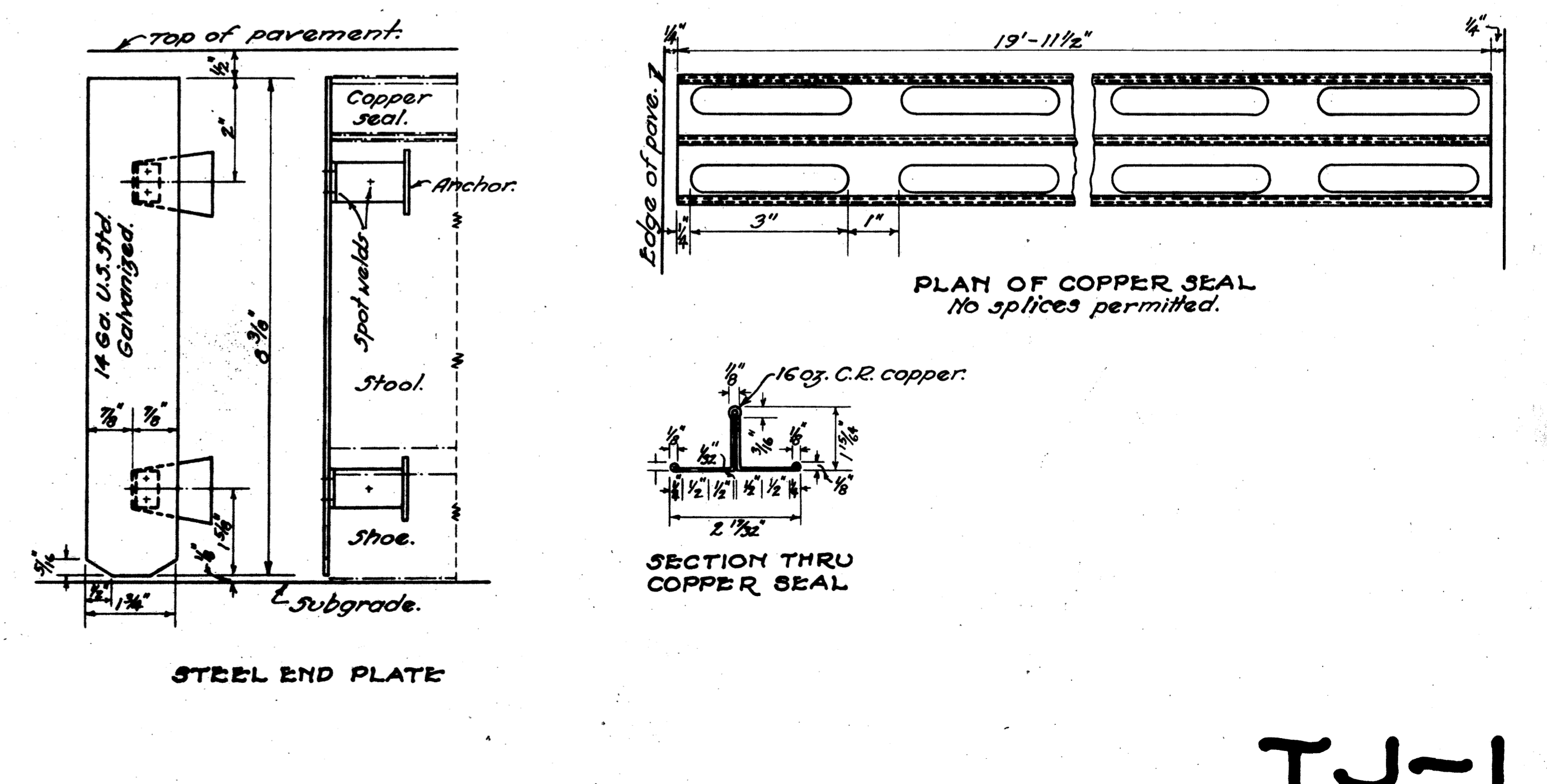
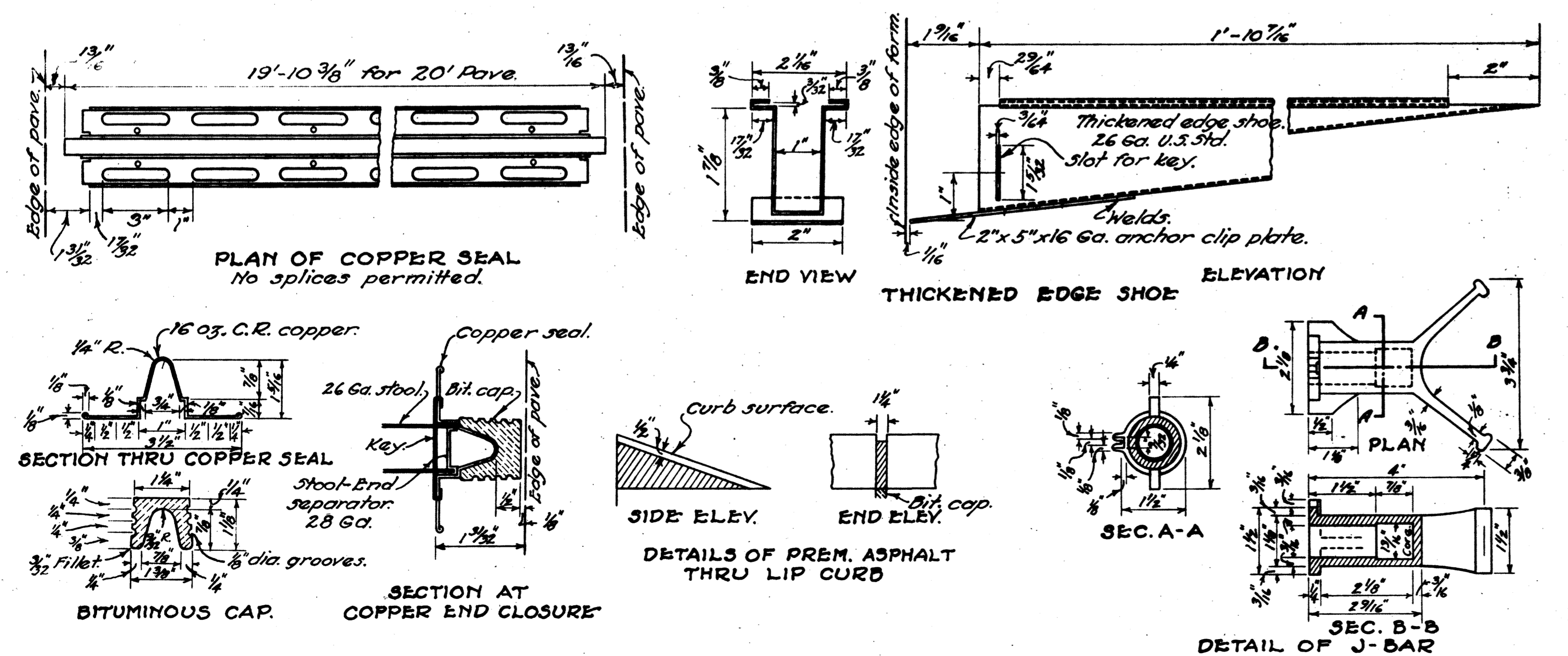


TYPICAL SECTION OF JOINT

CONSTRUCTION JOINT



TYPICAL SECTION OF JOINT



TJ-1

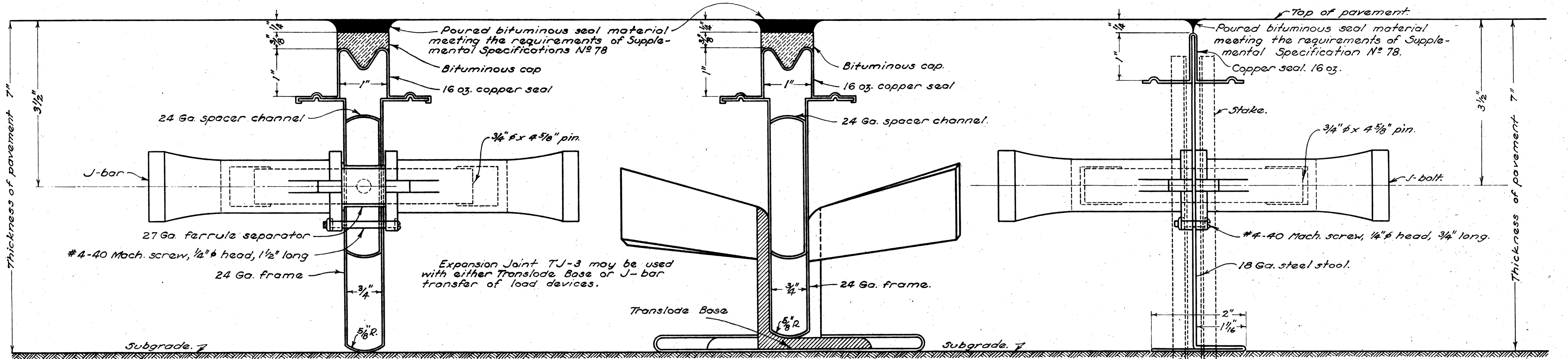
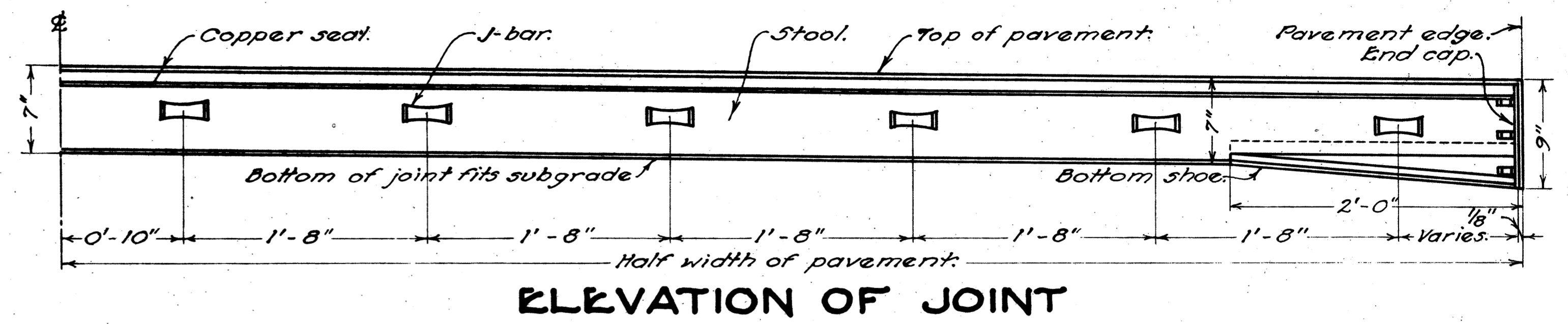
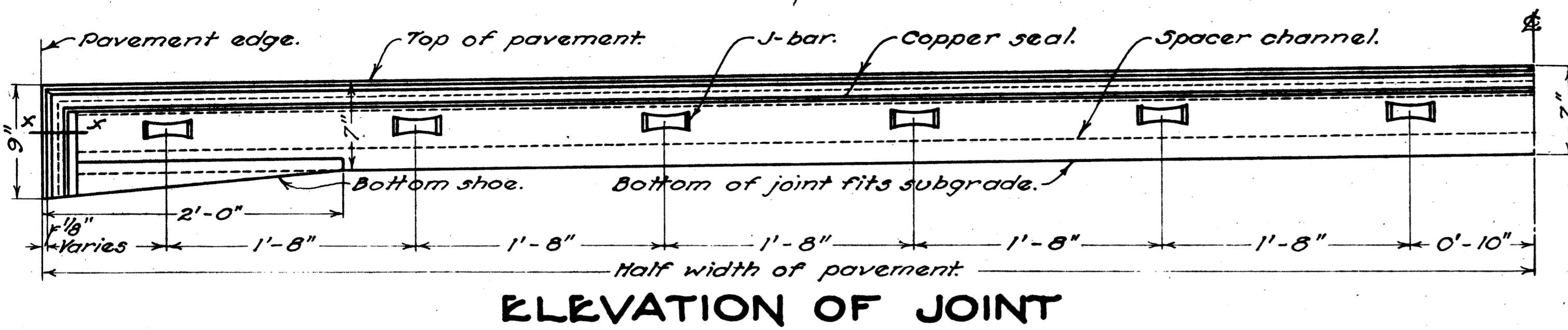
TRANSVERSE JOINTS

EXPANSION JOINT

CONSTRUCTION JOINT

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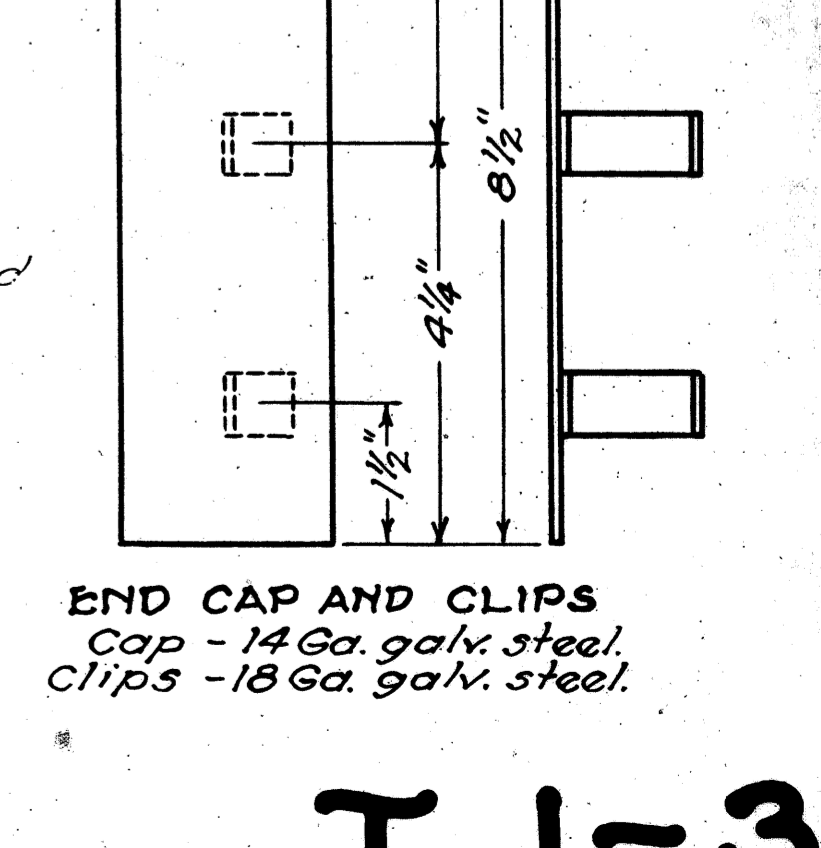
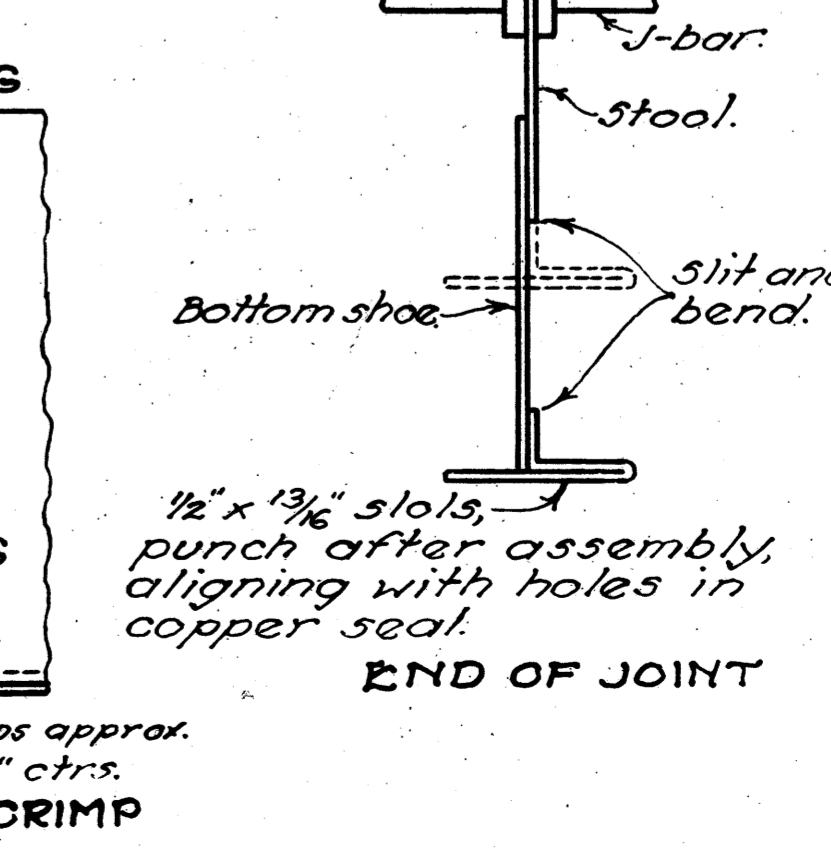
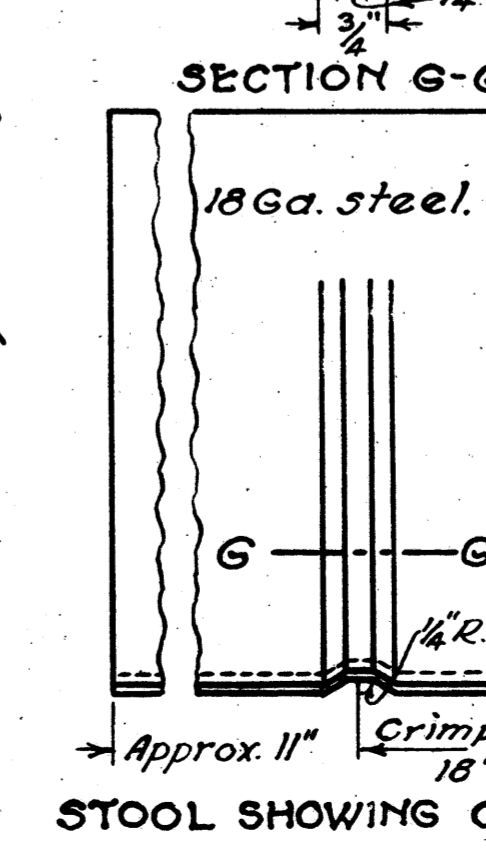
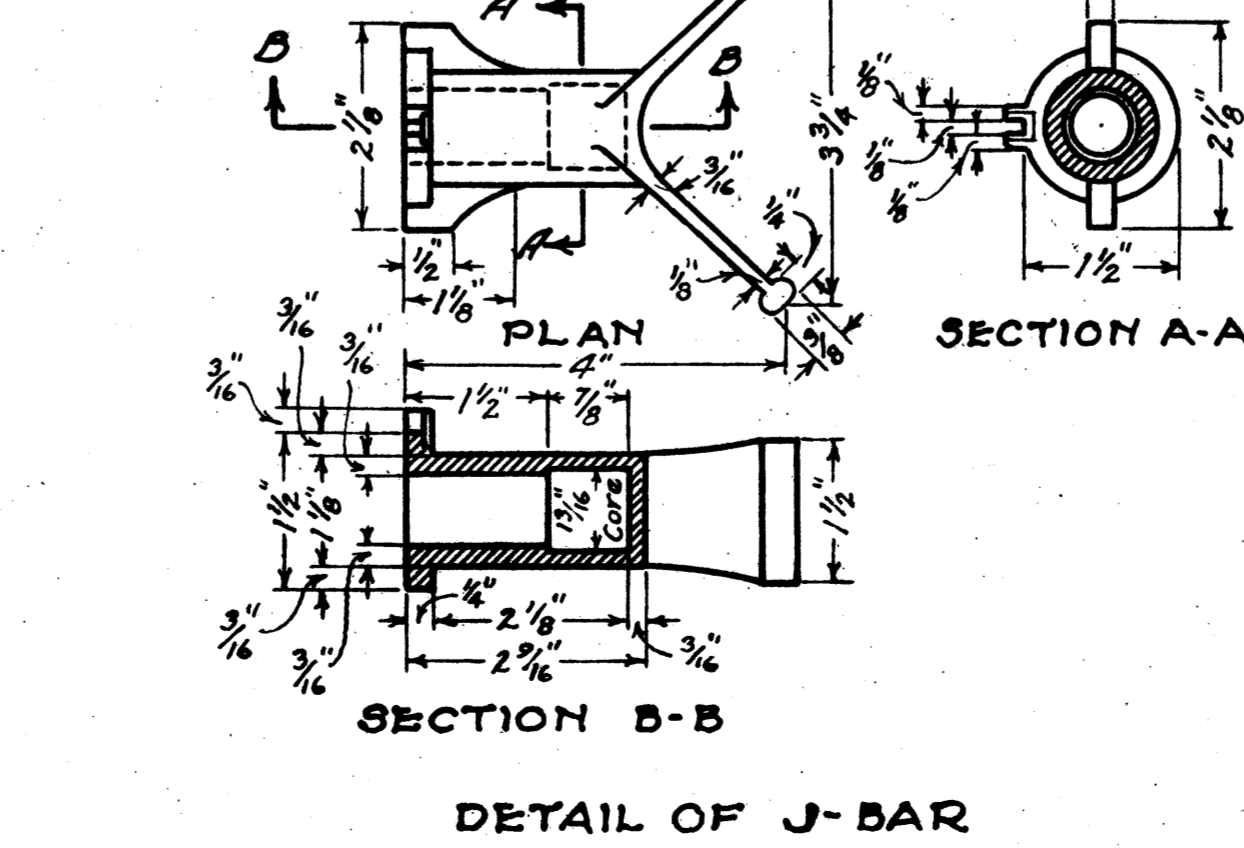
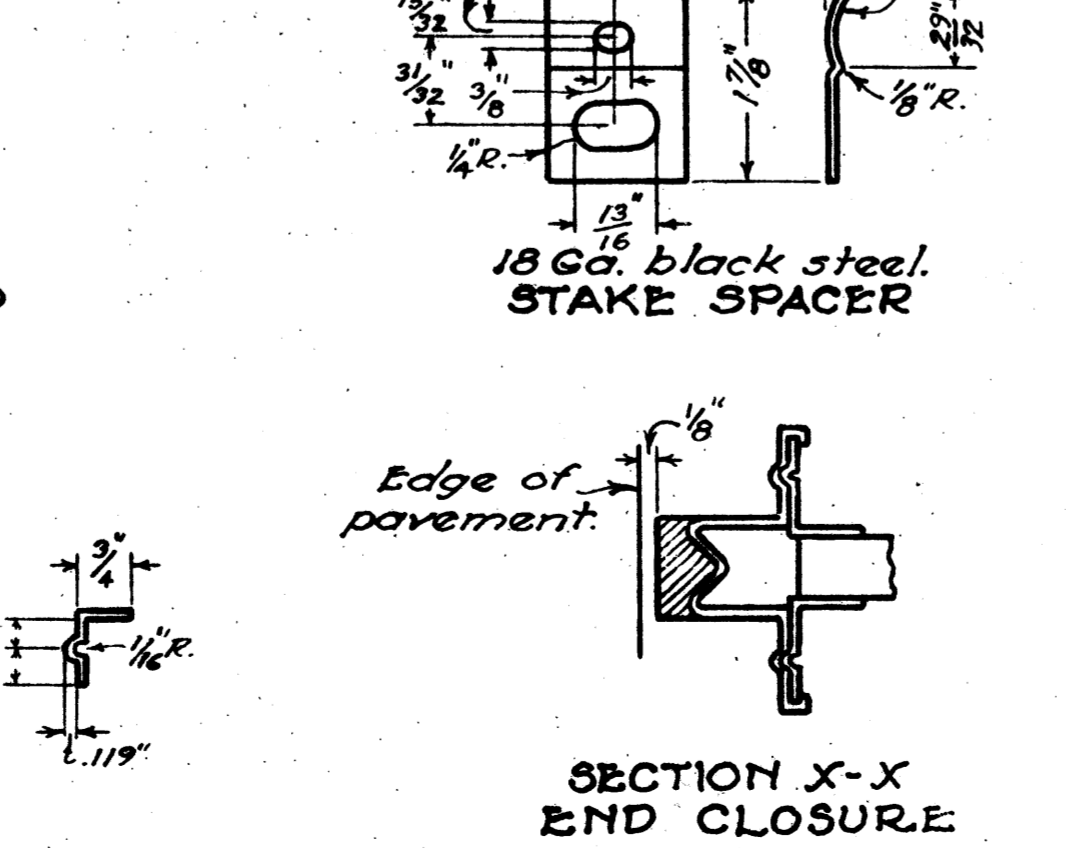
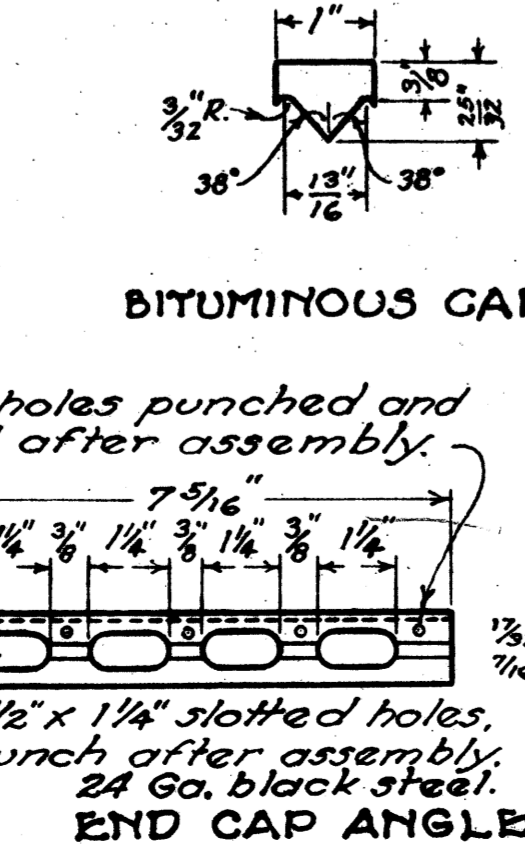
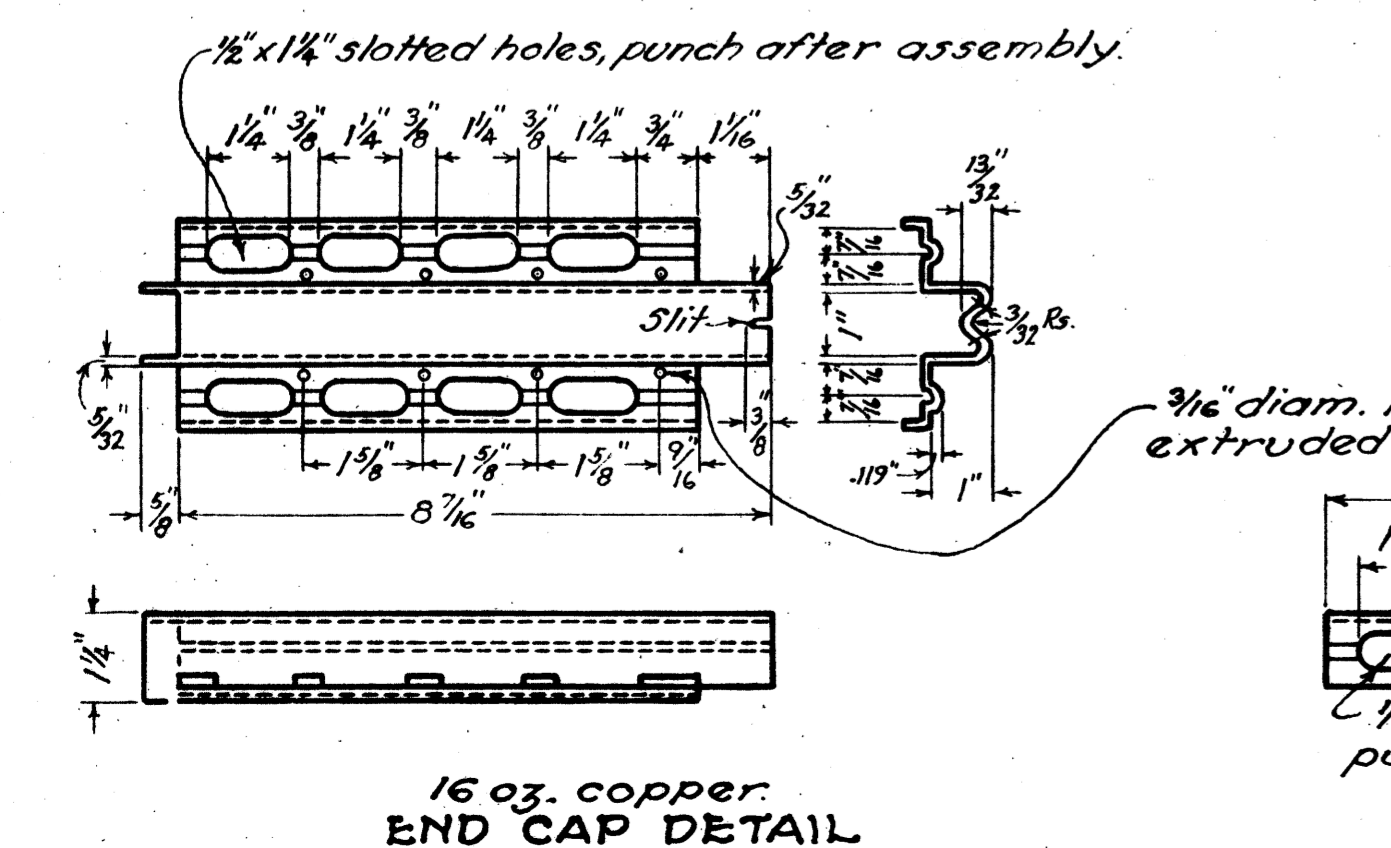
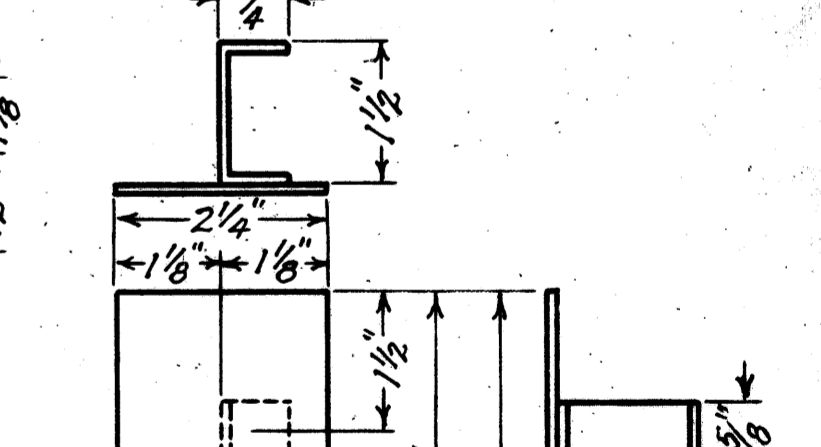
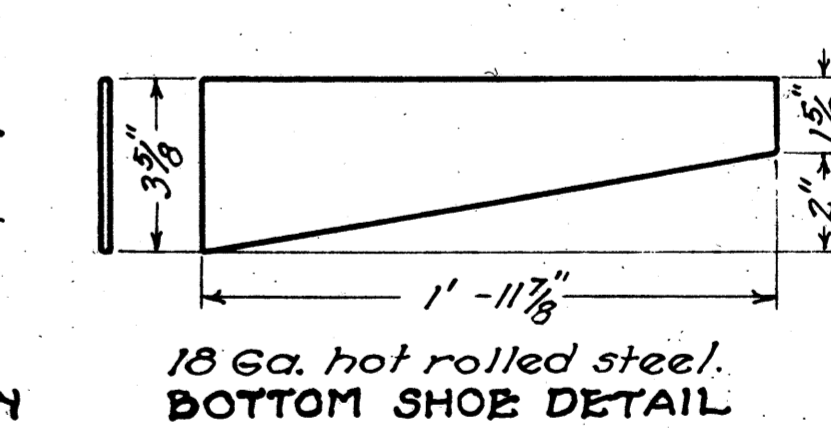
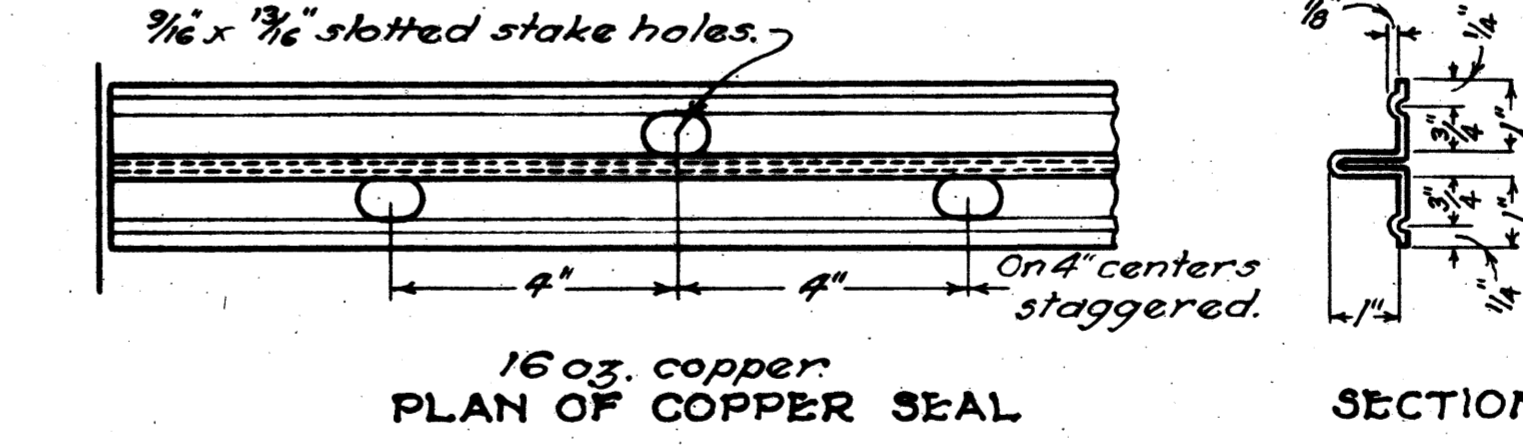
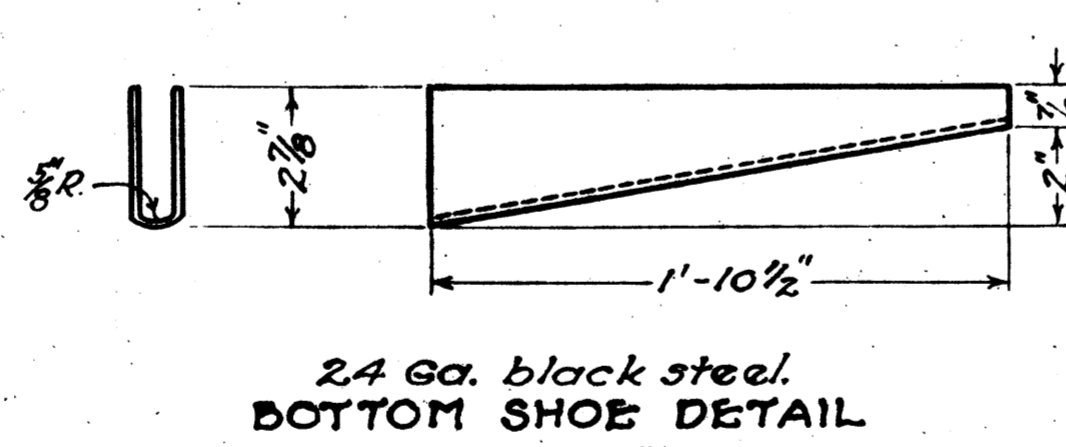
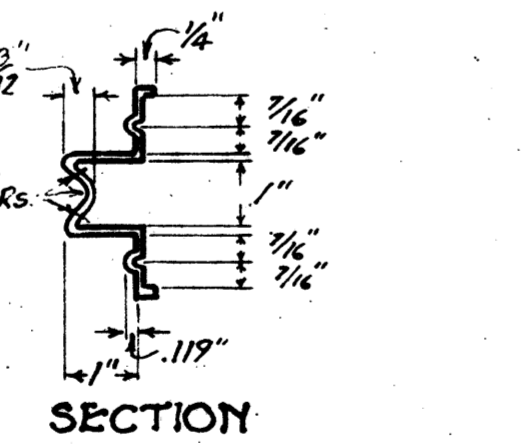
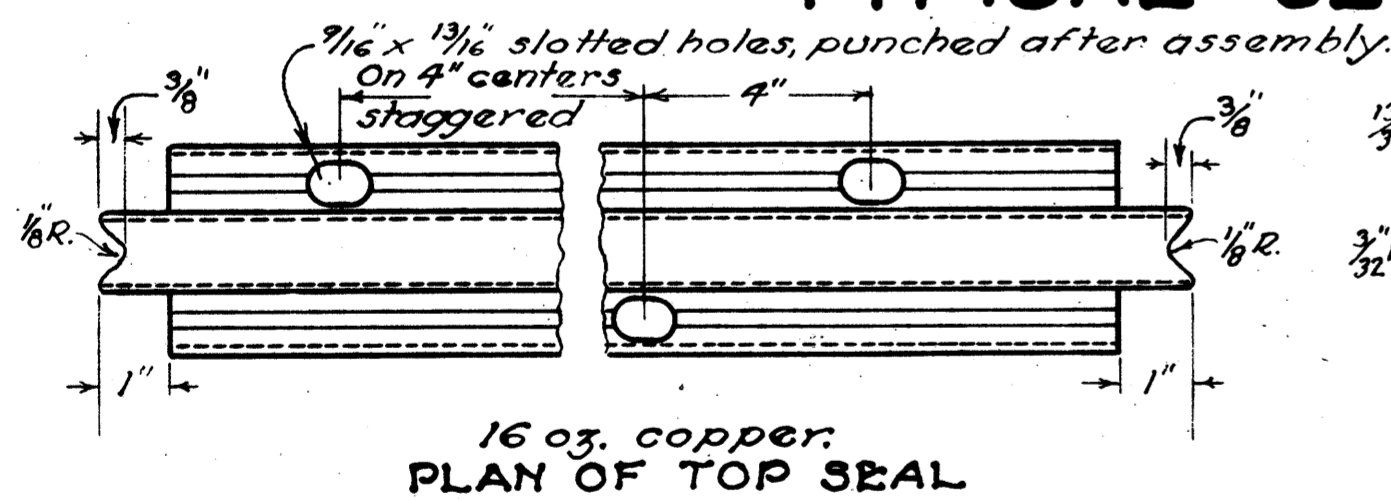
LORAIN S.H. 290 S.H. 886	COUNTY SEC. 3. PT. SEC. A
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TYPICAL SECTION OF JOINT

TYPICAL SECTION OF JOINT

TYPICAL SECTION OF JOINT



TRANSVERSE JOINTS

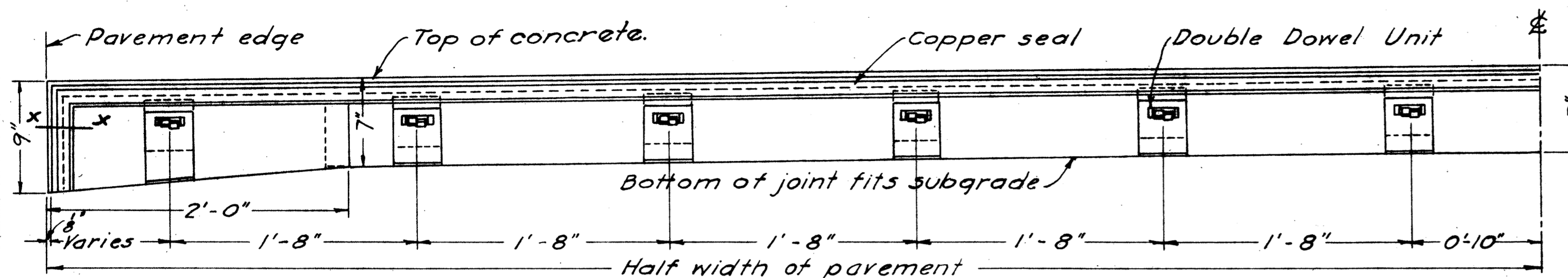
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	293(2)	1938

7
138

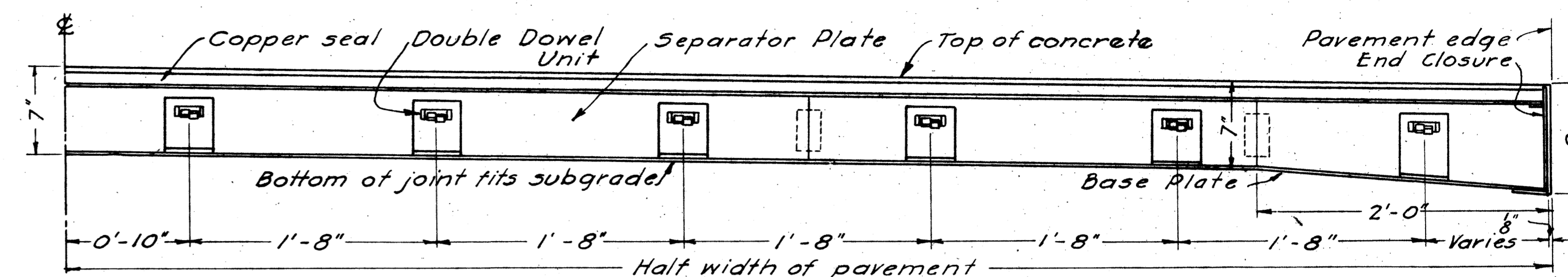
EXPANSION JOINT

CONSTRUCTION JOINT

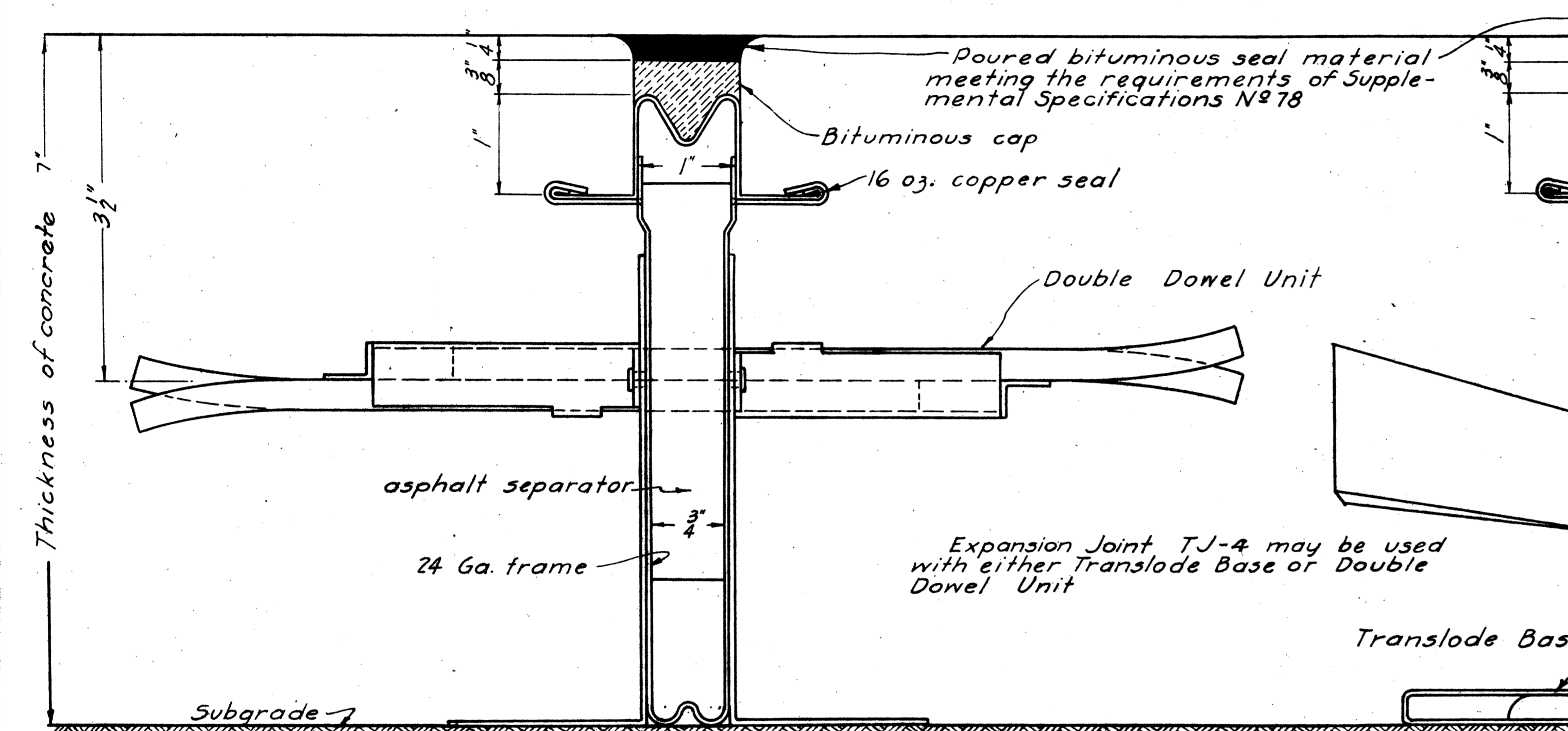
LORAIN COUNTY
S.H. 290 SEC. 3 PT. SEC. A.
S.H. 886



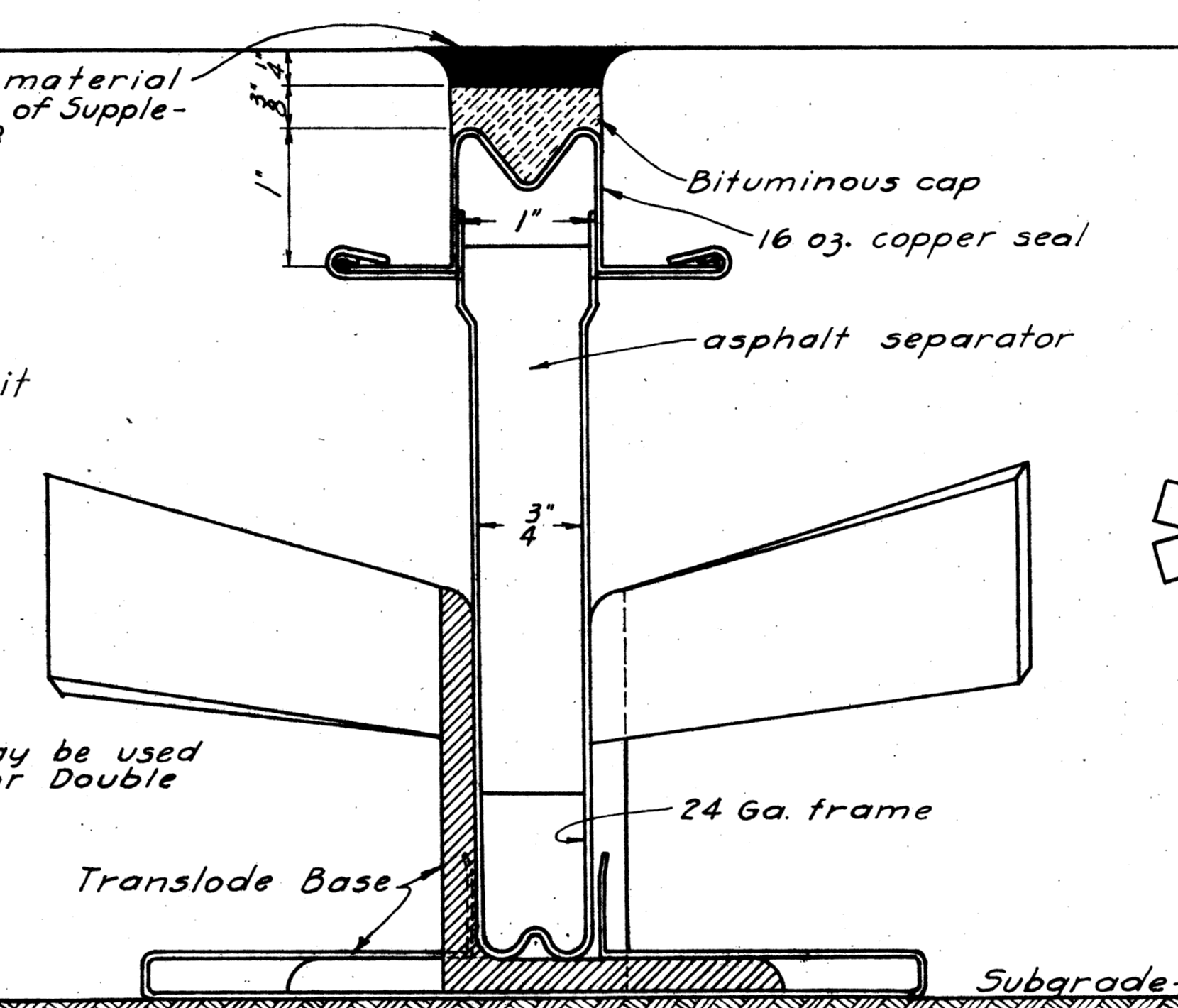
ELEVATION OF JOINT



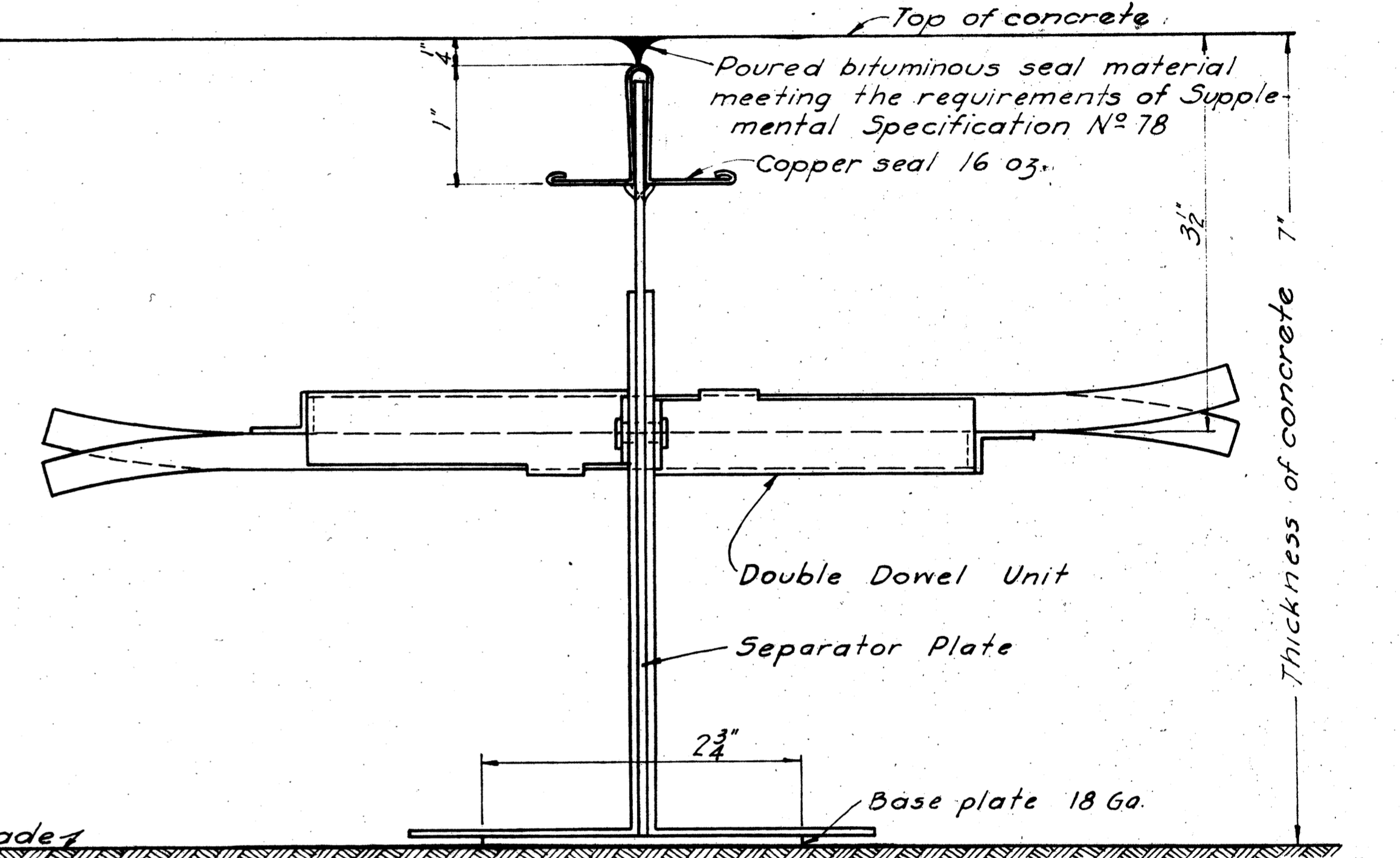
ELEVATION OF JOINT



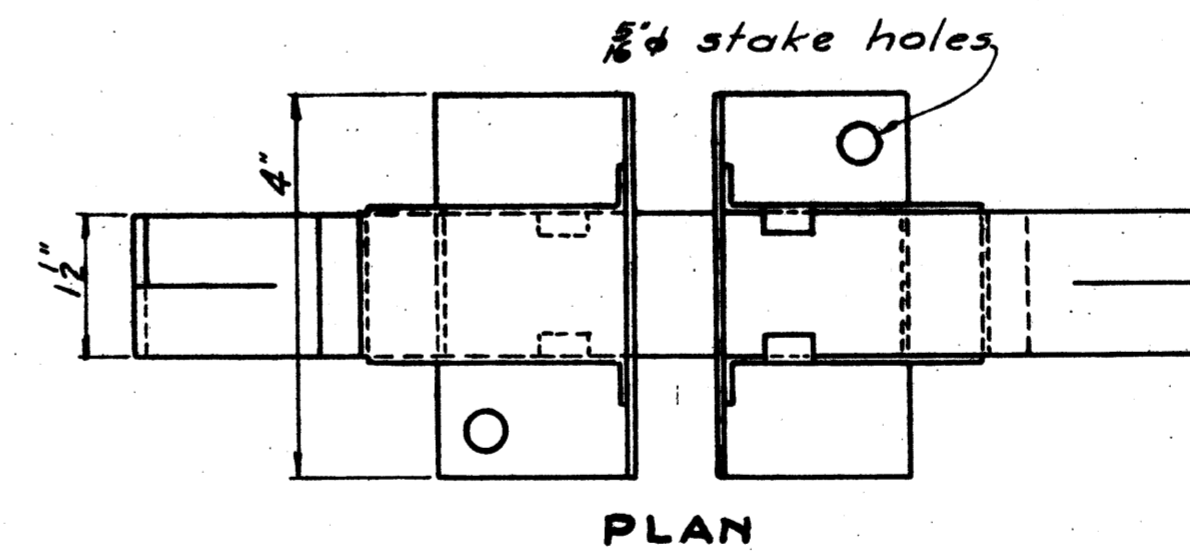
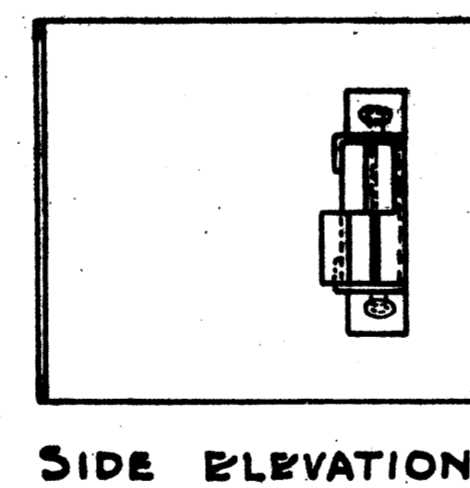
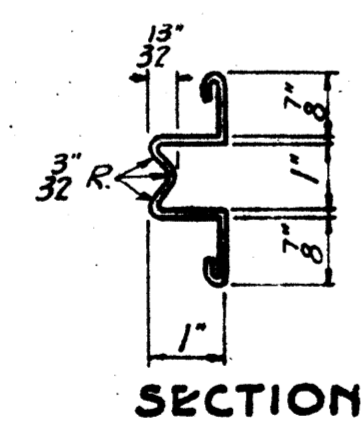
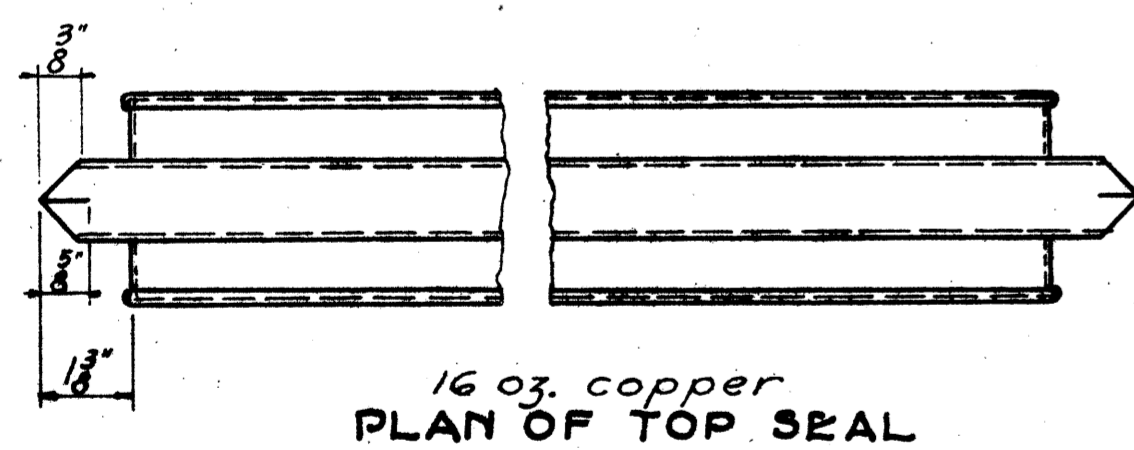
TYPICAL SECTION OF JOINT



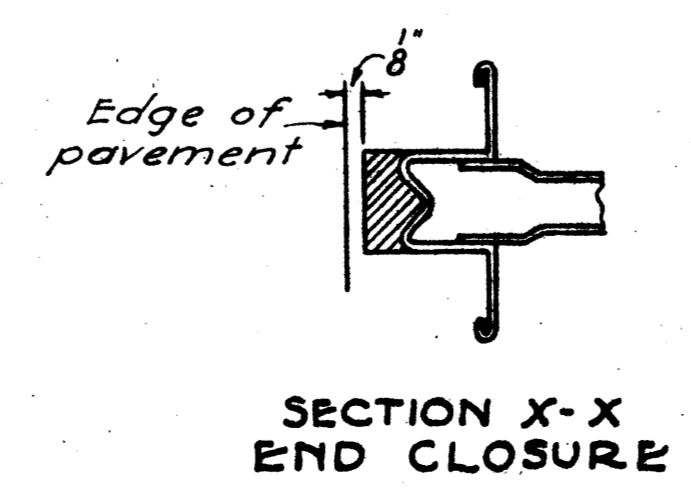
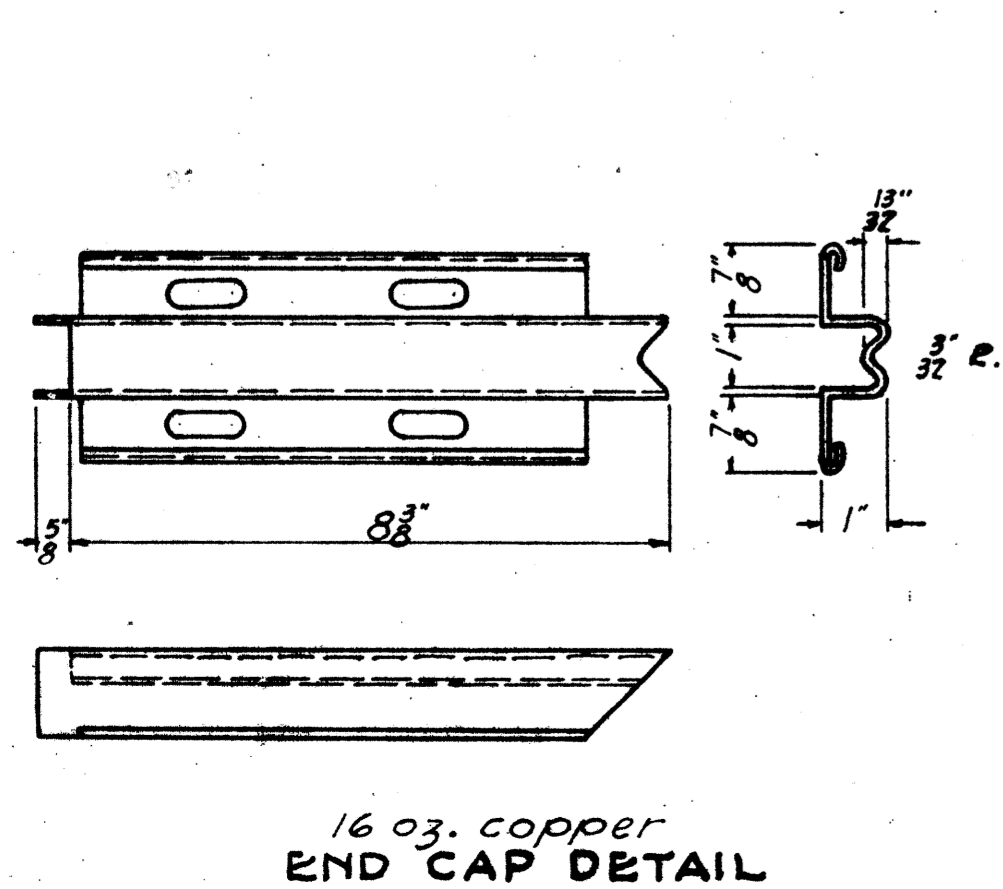
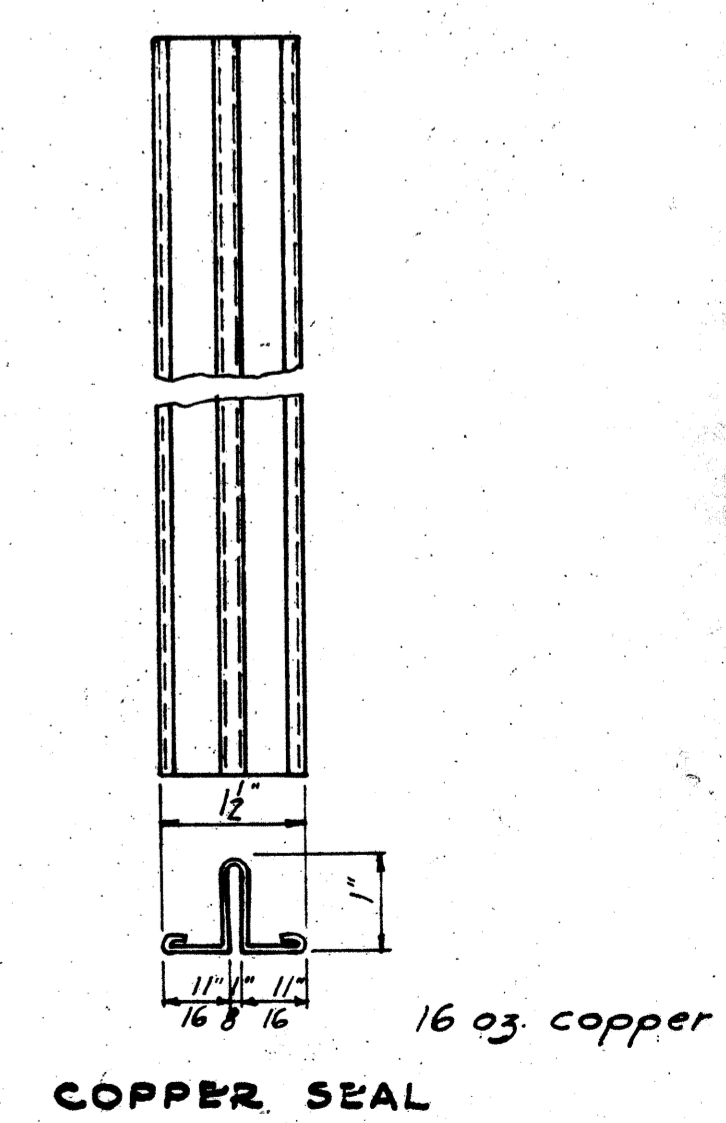
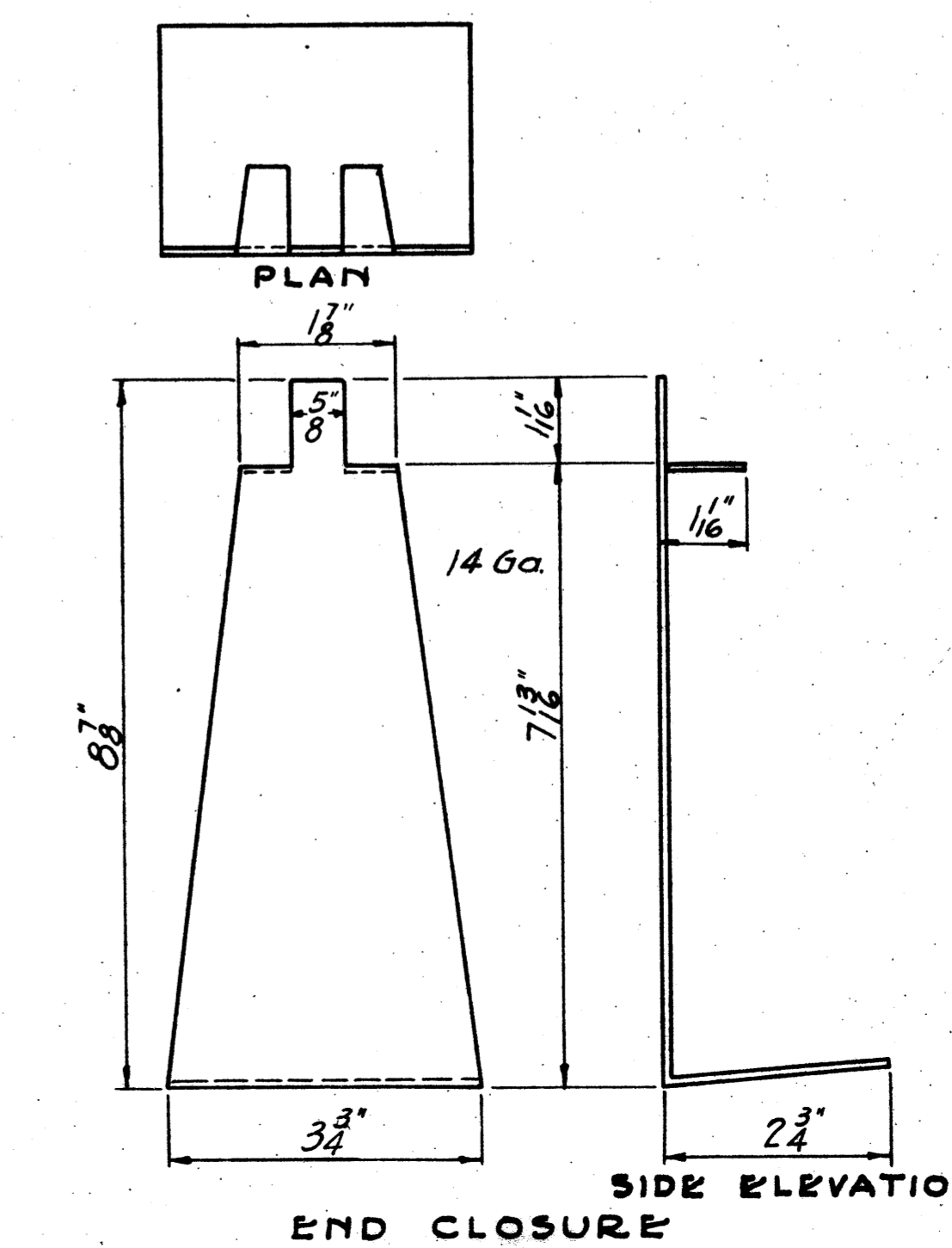
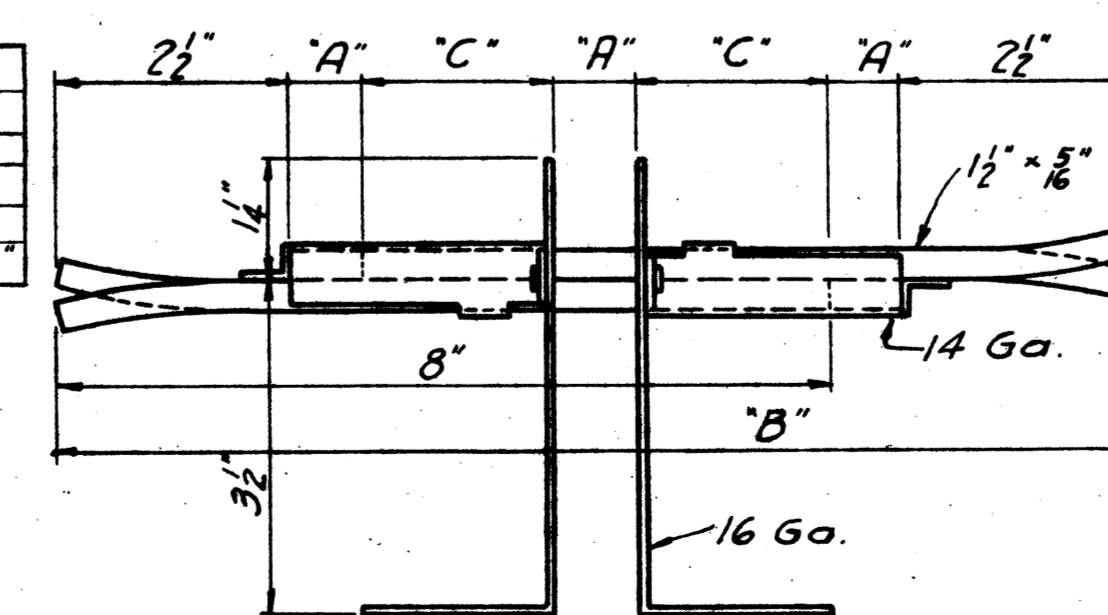
TYPICAL SECTION OF JOINT



TYPICAL SECTION OF JOINT



Dimension "A" for expansion joint	1 3/8"
"B"	1 1/8"
"C"	1 1/8"
"A" construction	1 1/8"
"B"	1 1/8"
"C"	2 1/8"



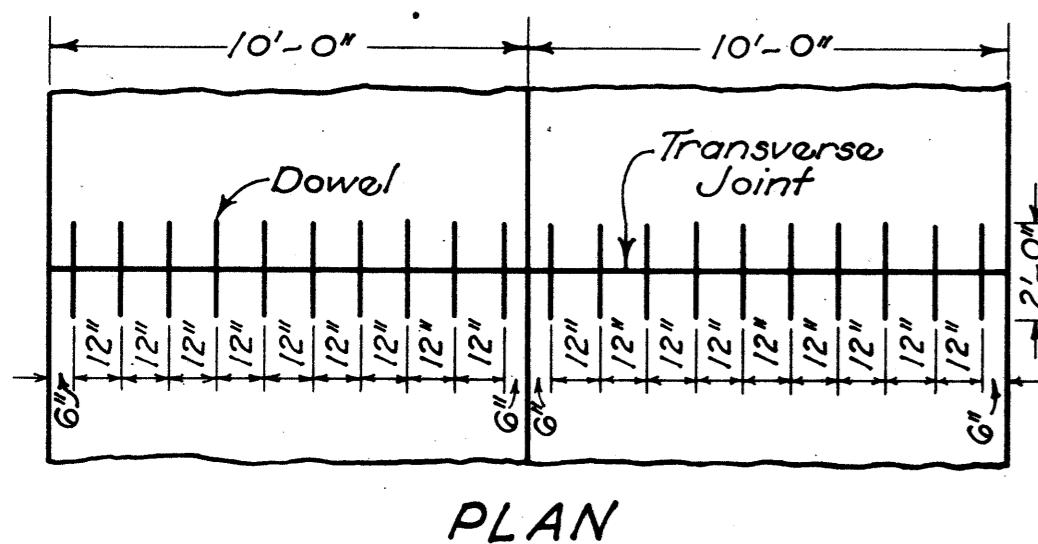
TJ-4

TRANSVERSE JOINTS CONSTRUCTION JOINT

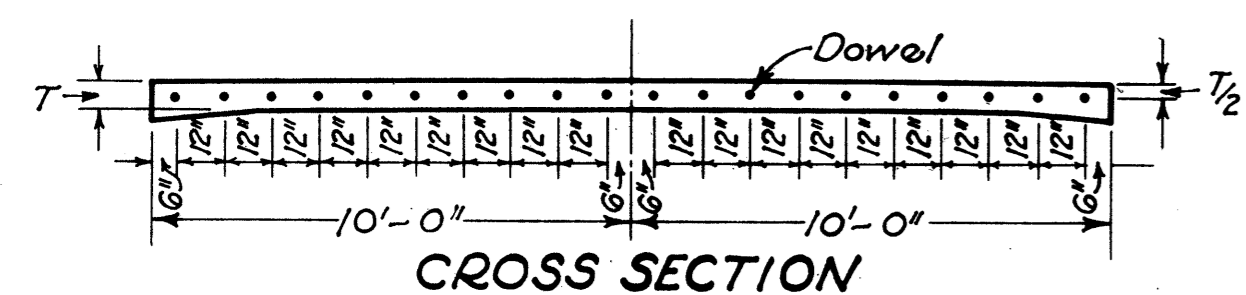
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	7-A 198
10	OHIO	293 (2)	1938	

LORAIN S.H. 290 S.M. 866 COUNTY SEC. 5 PT. SEC. A

DOWEL SPACING

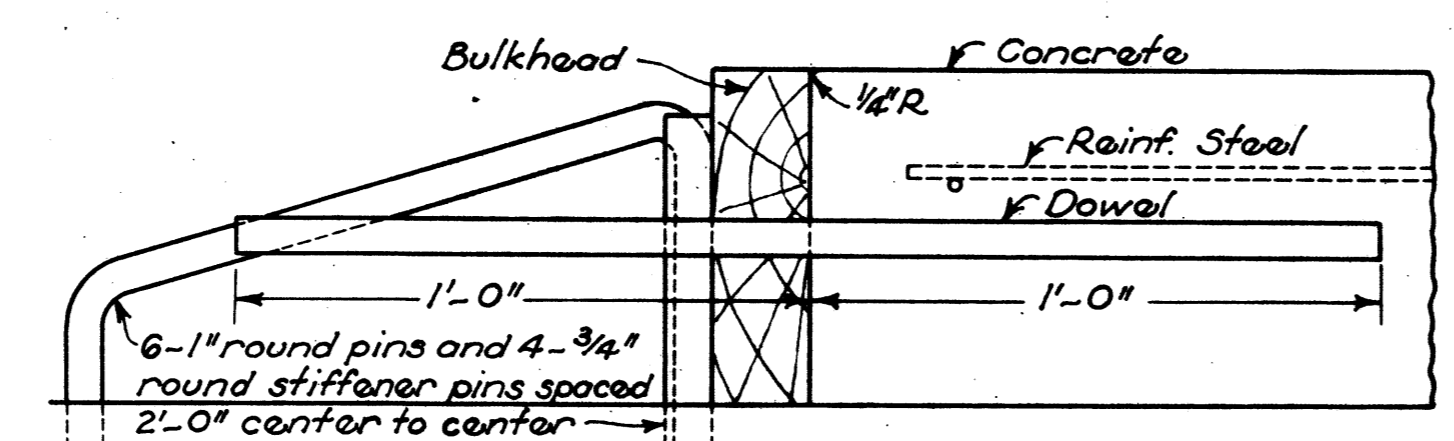
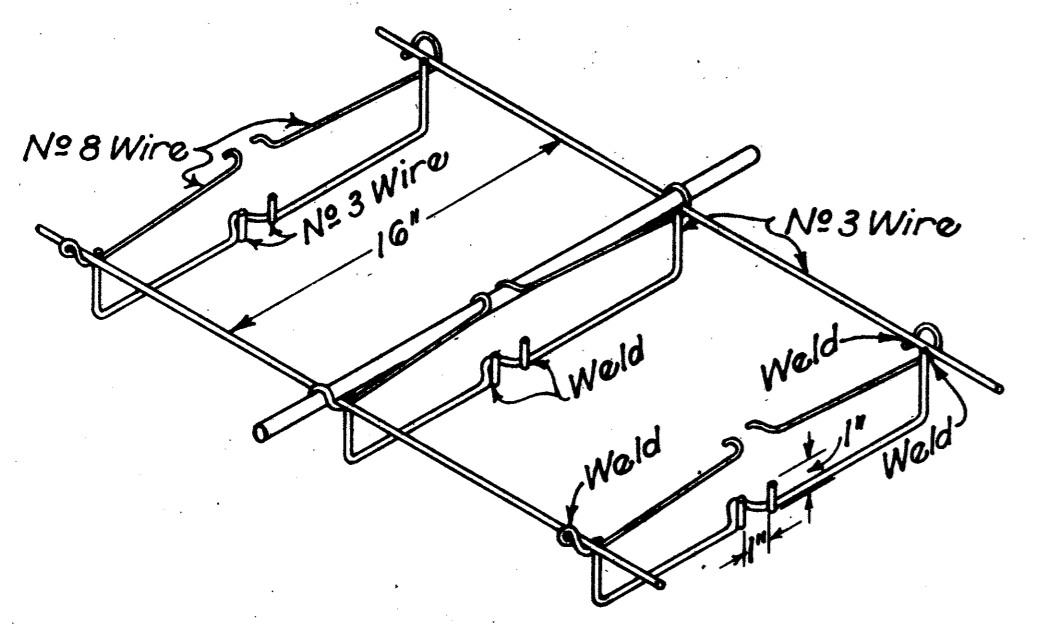
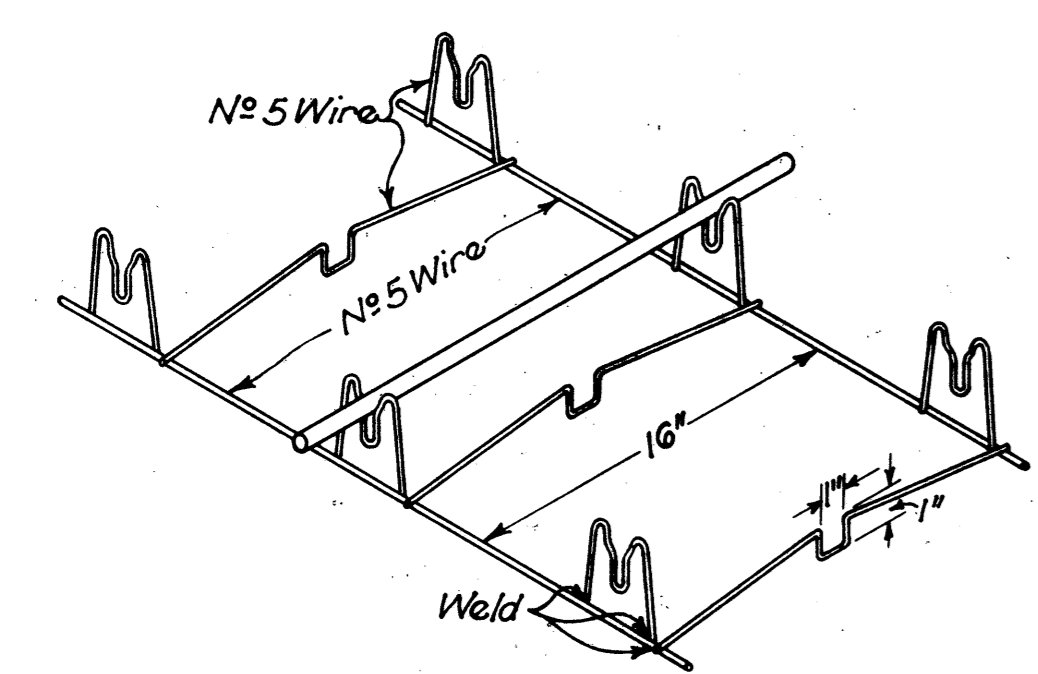


PLAN

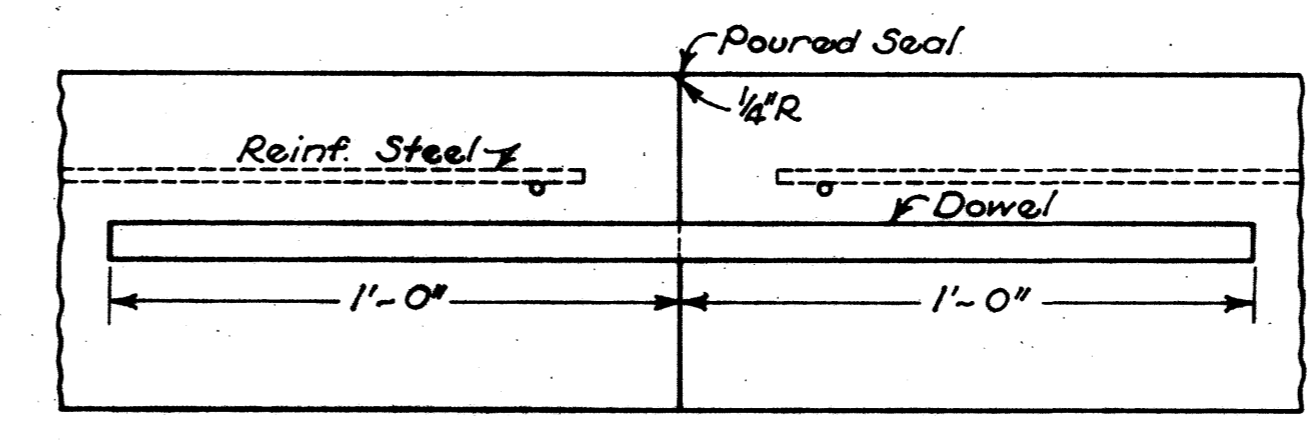


CROSS SECTION

DOWEL SUPPORT UNITS

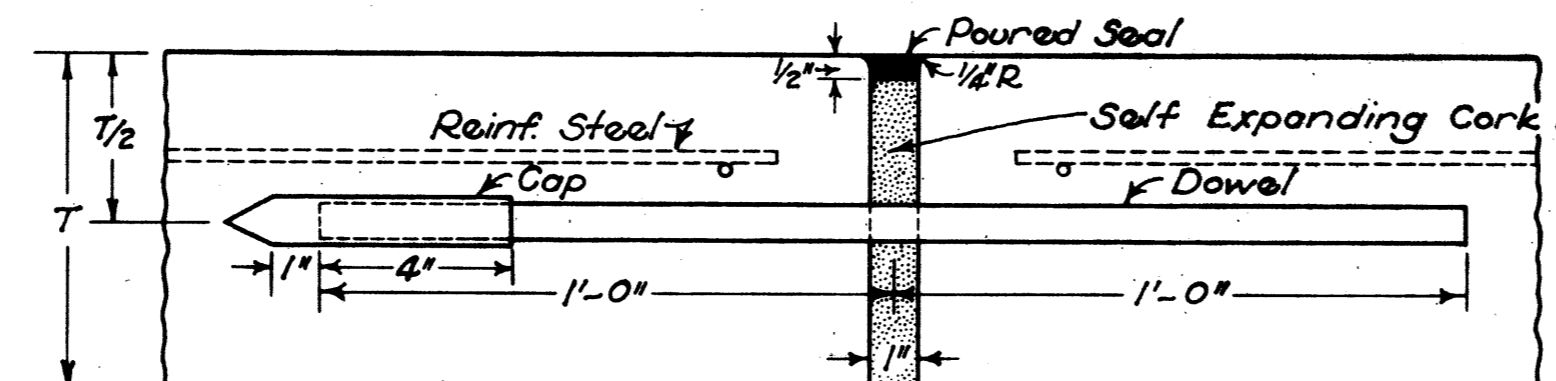


DETAIL OF BULKHEAD

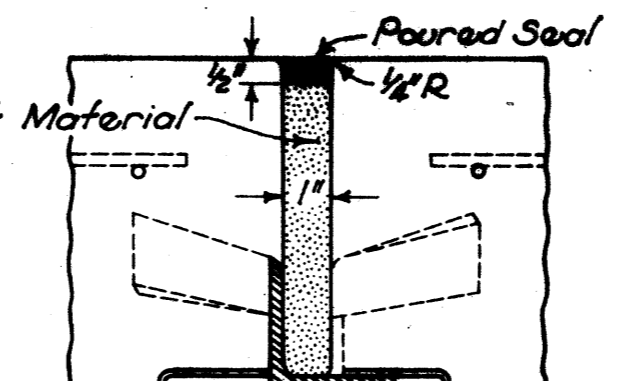


DETAIL OF DOWEL JOINT

SELF EXPANDING CORK EXPANSION JOINT

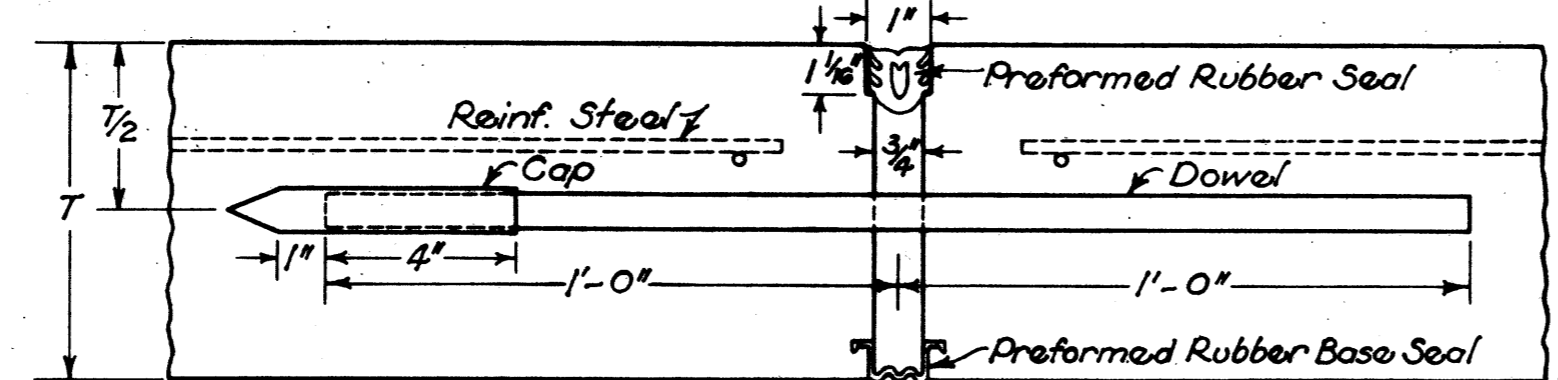


TRANSFER OF LOAD BY DOWEL

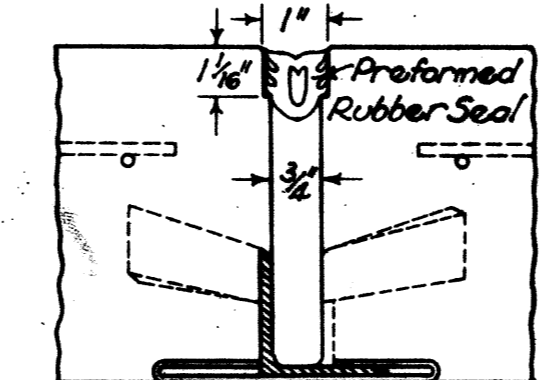


TRANSFER OF LOAD WITH TRANSVERSE BASE

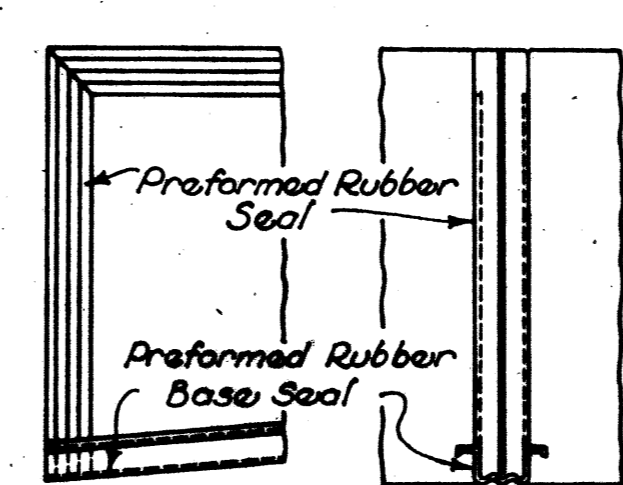
EXTRUDED RUBBER EXPANSION JOINT



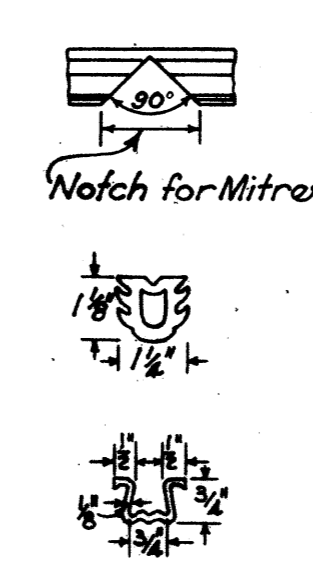
TRANSFER OF LOAD BY DOWEL



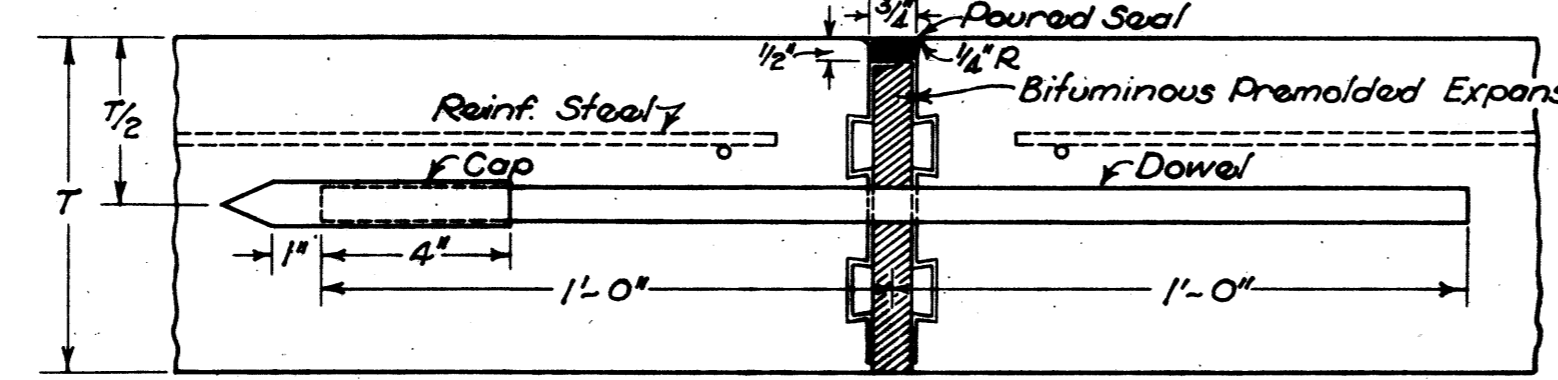
TRANSFER OF LOAD WITH TRANSVERSE BASE



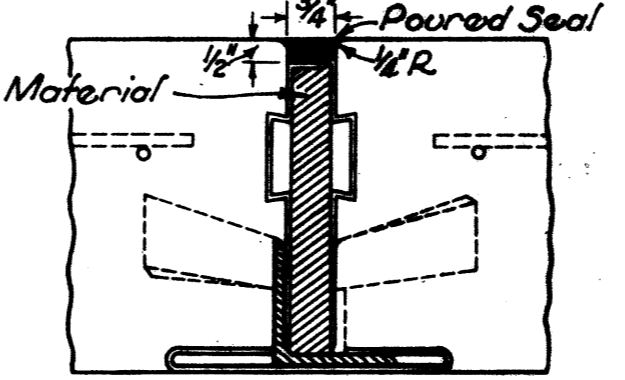
SIDE VIEW END VIEW
DETAIL OF END SEAL



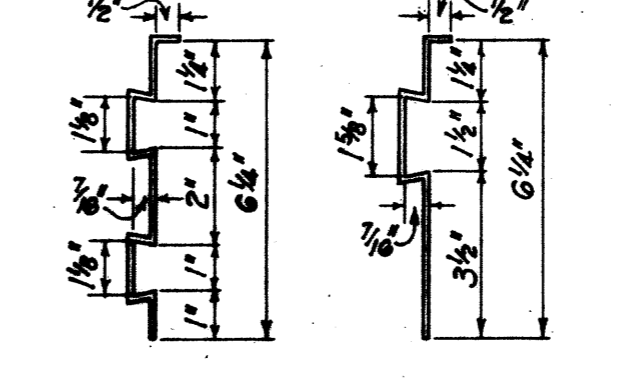
NON-EXTRUDING BITUMINOUS PREMOLDED EXPANSION JOINT



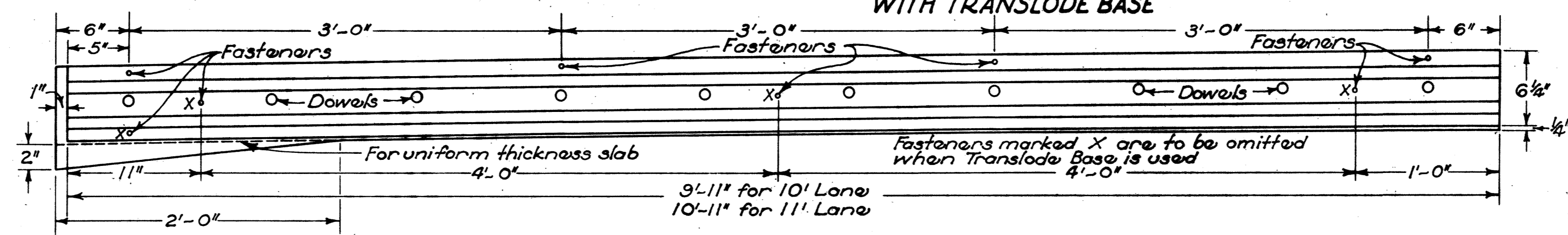
TRANSFER OF LOAD BY DOWEL



TRANSFER OF LOAD WITH TRANSVERSE BASE



DETAILS OF SIDE PLATES



ELEVATION OF EXTRUSION CHAMBER PLATES SHOWING LOCATION OF FASTENERS

NOTES

GENERAL. Expansion joints shown are to be considered as alternatives; the type to be used on any project shall be optional with the contractor. The type of joint selected by the contractor and all operations and materials for assembling and installing the joints shall be approved by the engineers.

DOWELS. All dowels shall be 3/8 inch round, smooth bars. The entire dowel shall be thoroughly coated before placing in the pavement using either bituminous material meeting the requirements of Section M-5.8 CO2 or heavier, or an oil such as 600 W or equal. Prior to placing, all dowels shall be assembled in a unit which is to remain in place for either construction or expansion joints. The length of the unit shall be not less than the distance between longitudinal joints and sufficient support shall be provided to hold the dowels accurately perpendicular to the joint. Expansion joint material shall be forced over the lower cross wires so as to fit snugly on the subgrade. The design of the dowel support unit may be as shown herewith or may be an approved equal, and it shall be shop assembled. When the width between longitudinal joints varies from 10 feet, the spacing of the dowels shall not exceed 12 inches.

CONSTRUCTION JOINTS. A bulkhead shall be constructed to permit dowels to extend through the joint. Care shall be taken in removing bulkhead and placing adjacent concrete to see that dowels are embedded in the concrete without being bent.

EXPANSION JOINTS. Expansion joints shall be constructed as shown herewith. The spacing of the expansion joints shall not exceed sixty (60) feet. The type and arrangement of expansion joints at intersections shall be as specifically shown on the plan.

Each dowel bar shall be equipped with a neat fitting metal cap on one end. The surface width of expansion joints shall not be greater than the width shown herewith. The bituminous material for the poured seal shall meet the requirements of Supplemental Specification M-11.7B.

The top edge of the extrusion chamber plates, and also the top edge of all expansion joint materials shall be shaped to fit the surface of the pavement.

Joints in monolithic curbs shall be constructed with the same type of filler material as used in the expansion joints. When preformed material is used in curbs over 3 inches in height, sufficient holes shall be provided in the material to prevent extrusion.

SELF EXPANDING CORK JOINT. The filler material for this joint shall meet the requirements of Supplemental Specification M-11.11, and shall be accurately held in place by means of approved steel bulkheads. Dowel holes shall be 3/8 inch in diameter.

EXTRUDED RUBBER JOINT. The seal material for this joint shall meet the requirements of Supp. Spec. M-11.13. The joint opening shall be constructed by means of an approved collapsible form, having a clip or other suitable closing device under each dowel. The form shall be left in place until, in the opinion of the engineer, concrete has hardened sufficiently to permit withdrawal without damage to the pavement.

NON-EXTRUDING BITUMINOUS PREMOLDED JOINT. The filler material shall meet the requirements of Sec. M-10.1. The extrusion chamber plates shall be constructed of 24 gauge metal rolled to true section. When assembled in the field, a template and protected bench shall be provided for the workmen to insure accuracy in assembling.

Dowel holes shall be punched in the filler material, and shall be 1/16 inch round holes to insure tight fitting dowels. Dowel holes in the side plates shall be 1/8 inch in diameter. In no case shall dowels interfere with the extrusion chambers. At each end of the assembly the extrusion chambers shall be bent down to seal the ends of the chambers. The joint shall at all times be protected from heat and other agencies which tend to cause distortion. The assembled joint shall be securely fastened together by 1/8 inch stove bolts or other approved fasteners. The holes for the fasteners may be made in the plates at the factory; when made in the field, they shall be drilled after the joint is assembled. The stove bolts shall be fastened with thin nuts, speed nuts, or rubber tubing screwed on. In order for this joint to function properly, the plates must be fitted snugly against the filler material and held in position while concrete is being deposited so that no mortar enters between the plate and filler, after which the fasteners must function in such a manner as will permit the plates to move with the concrete slab. The use of clinched nails or any such fasteners as would prevent the movement of the plates will not be permitted. The joint shall then be staked rigidly to the subgrade.

SUPPLEMENTAL SPECIFICATIONS
78
M-110.11 (Revised 9-16-36)
M-110.13 (Revised 4-15-38)

LORAIN
S.H. 290
S.H. 886

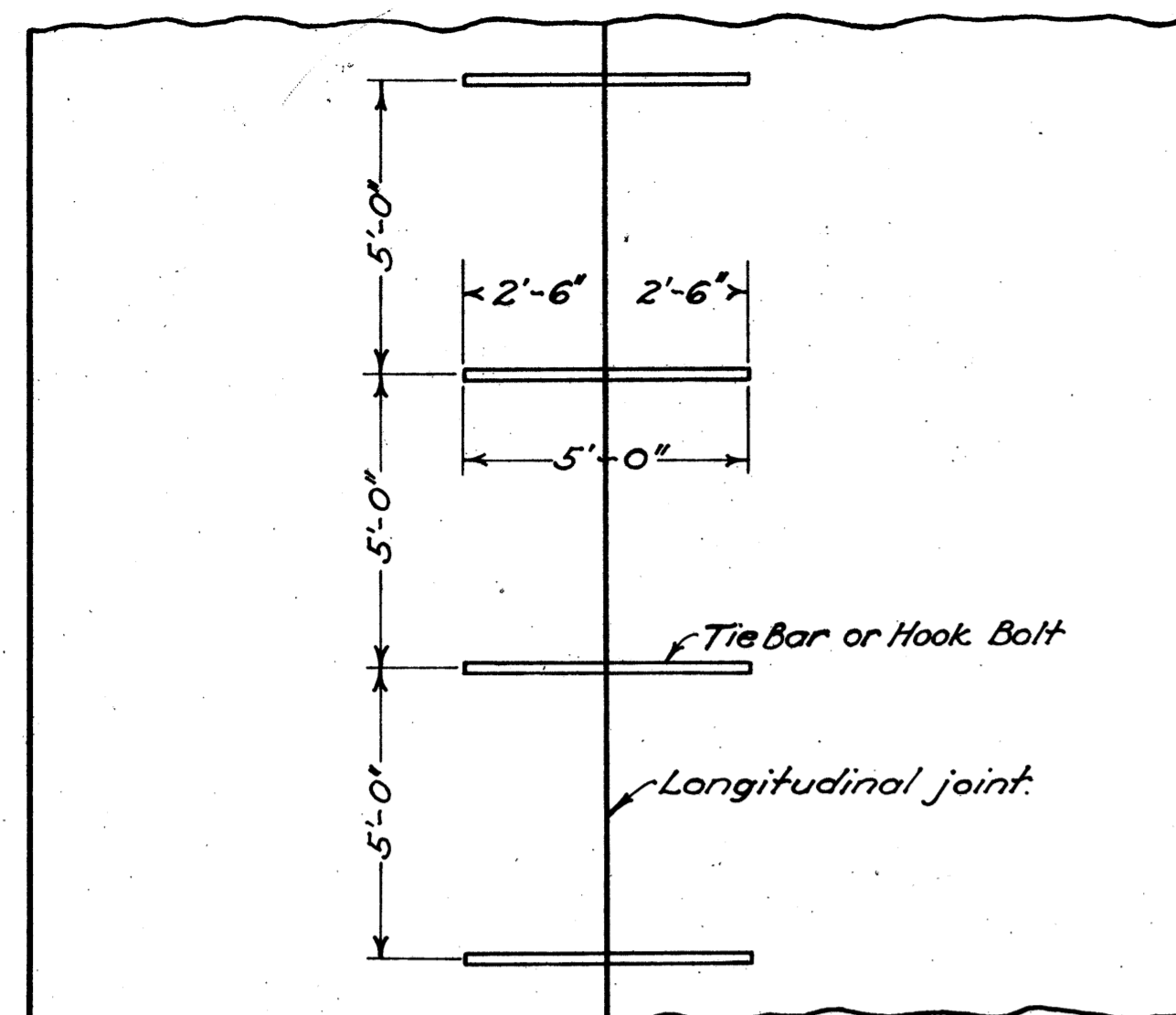
COUNTY
SEC. 3 PT.
SEC. A

LONGITUDINAL JOINTS

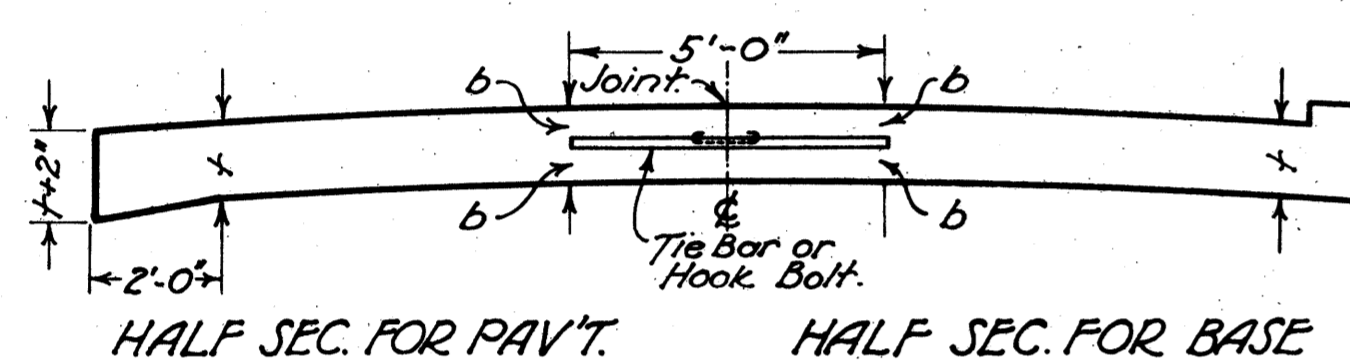
KEY JOINT

METAL JOINT

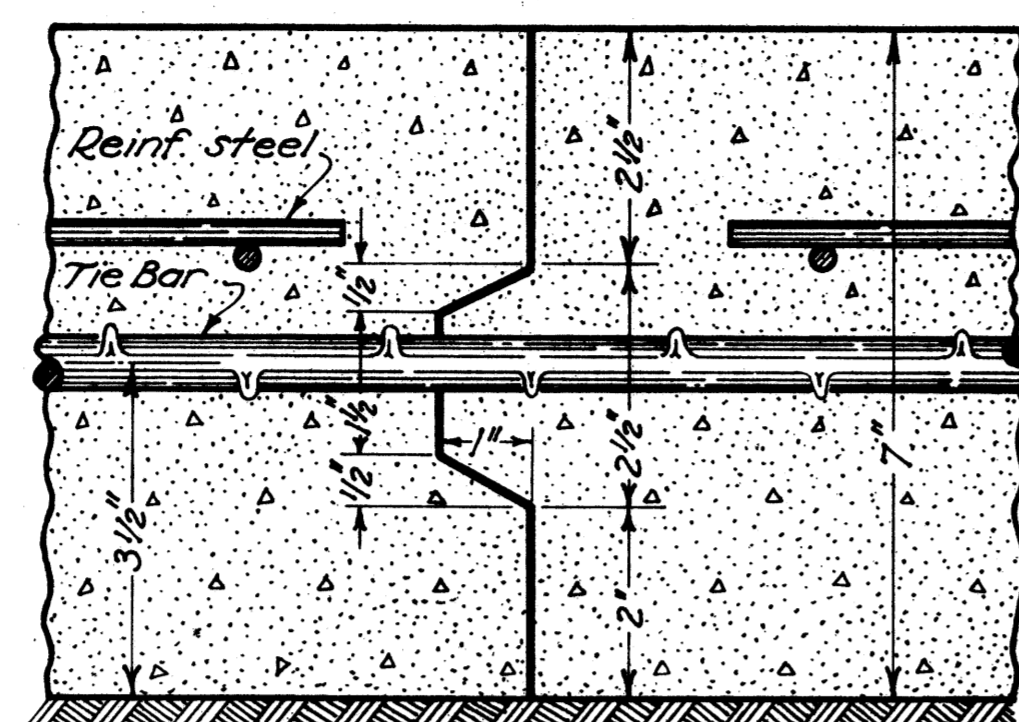
IMPRESSED JOINT



HALF PLAN FOR PAV'T. HALF PLAN FOR BASE

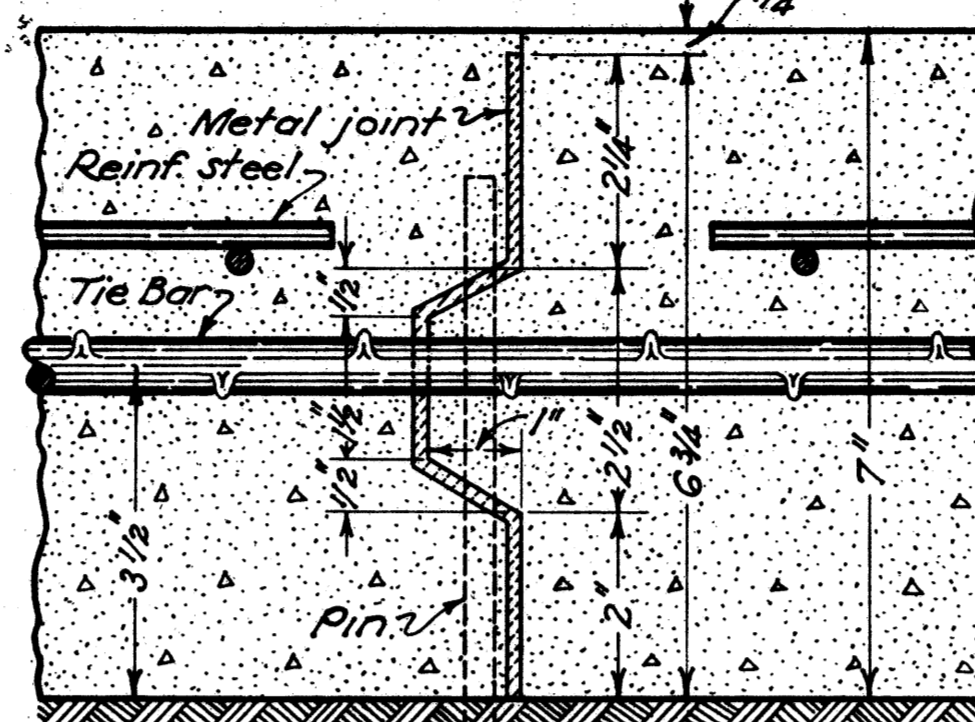


HALF SEC. FOR PAV'T. HALF SEC. FOR BASE



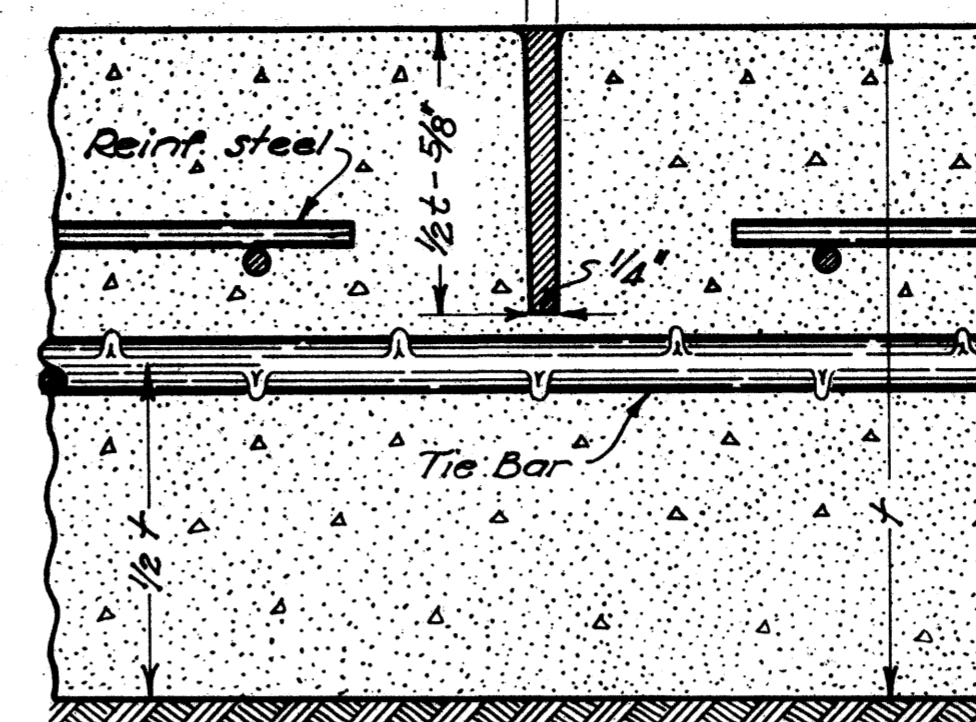
DETAIL OF JOINT

Note:- This joint is designed for 7" slab. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.



DETAIL OF JOINT

Note:- This joint is designed for 7" slab. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4" of the surface of the slab. Other deformations may be used if approved by the engineer.



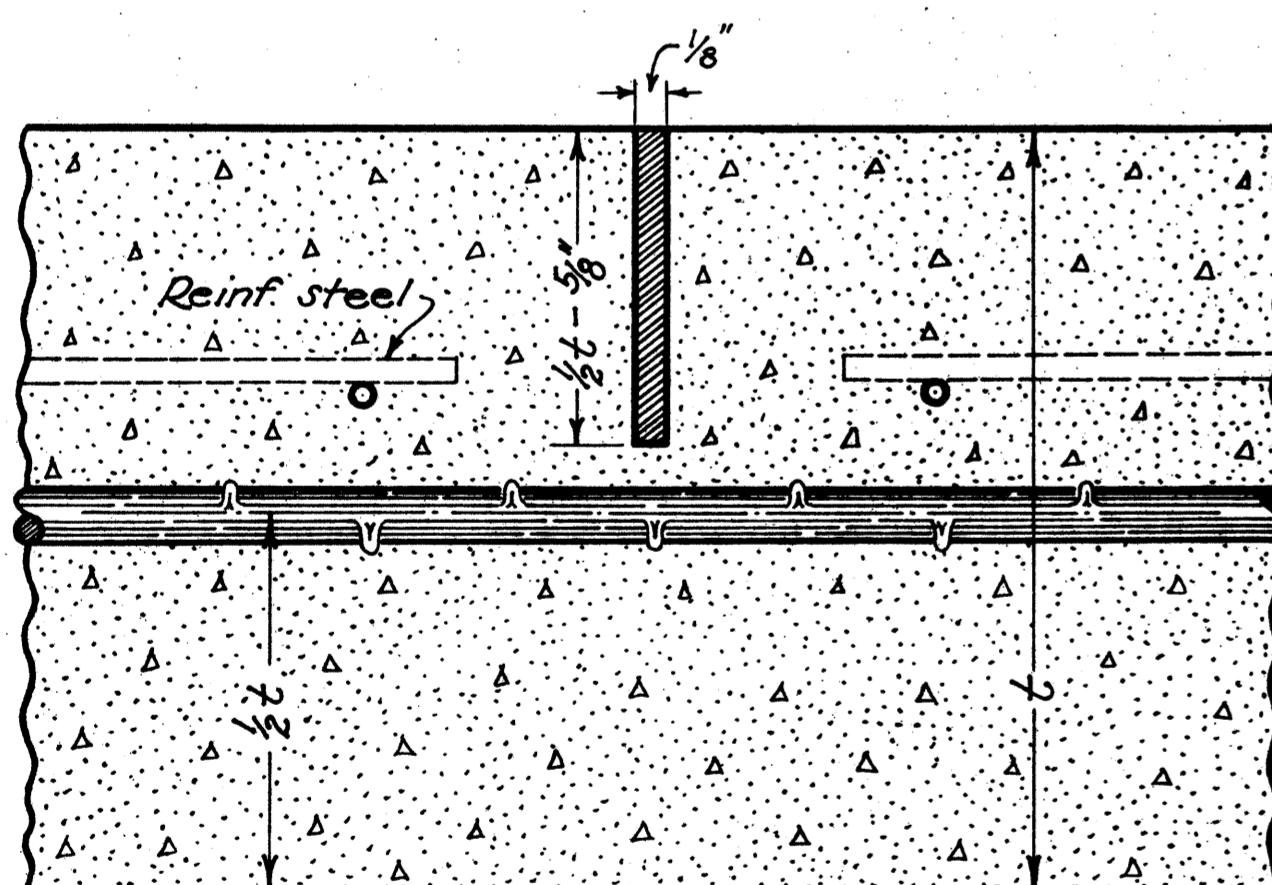
DETAIL OF JOINT

DESCRIPTION:- This joint shall be formed by impressing a device or bar into the newly deposited concrete before initial setting. The device or bar shall be removed as soon as the concrete is in such condition as to preclude of distortion or injury to the concrete. The groove thus formed shall be on the center line unless otherwise shown on the plans, and of the dimensions as detailed above. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed. The joint shall be filled to the surface with filler as per supplemental specification No. 78, in lieu of the requirements under Sections 6-71.033 and 7-71.034. The filler shall be handled in such a manner that it will be confined to the joint and in no wise mar the surface.

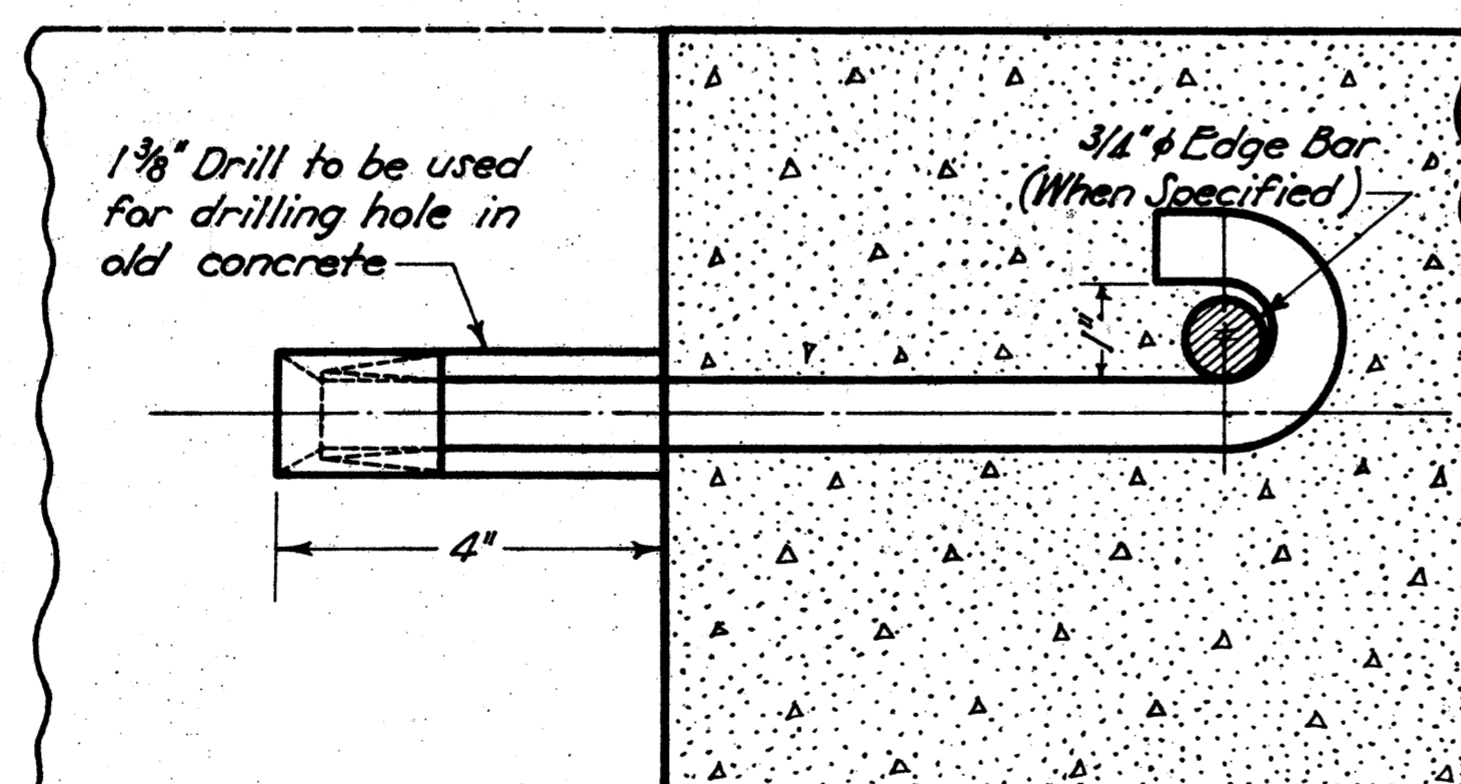
GENERAL- Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this sheet.
The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American hook bolts or equal, spaced 5'-0" center to center. Tie bars to be 1/2 inch round, deformed bars placed 5 foot centers extending across joint.
A satisfactory device shall be used to hold the tie bars in proper position.

Key joints used in part width construction shall be painted with two coats of Filler as per Supplemental Specification No. 78 before the adjoining slabs are poured.
The Metal, Key, and Premolded Joints shall not be edged.

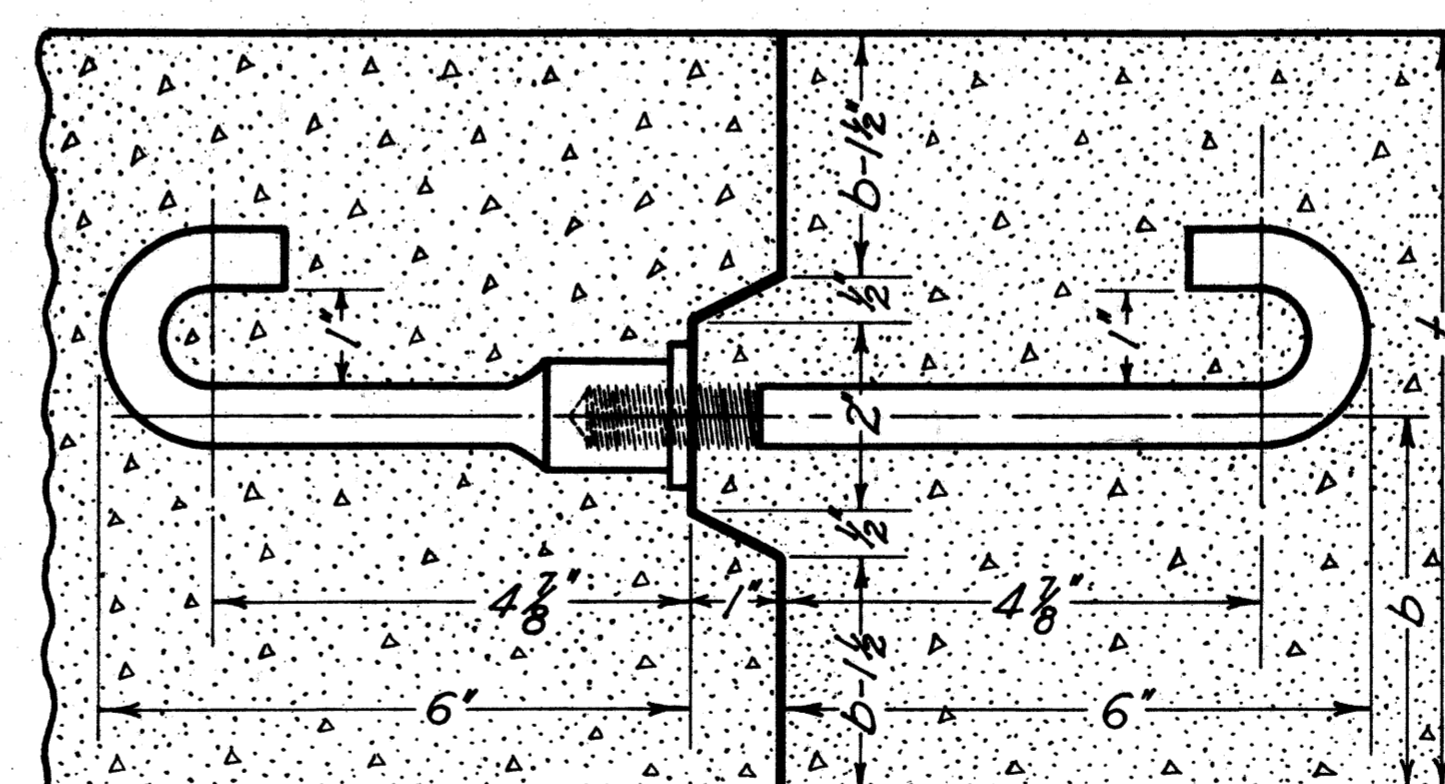
PREMOLDED JOINT



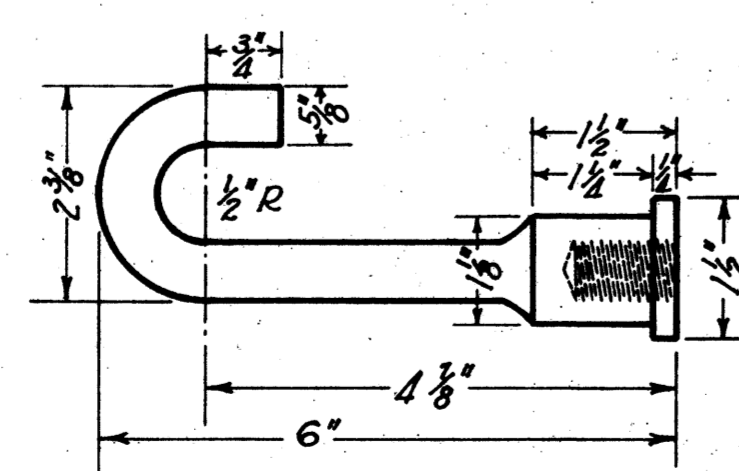
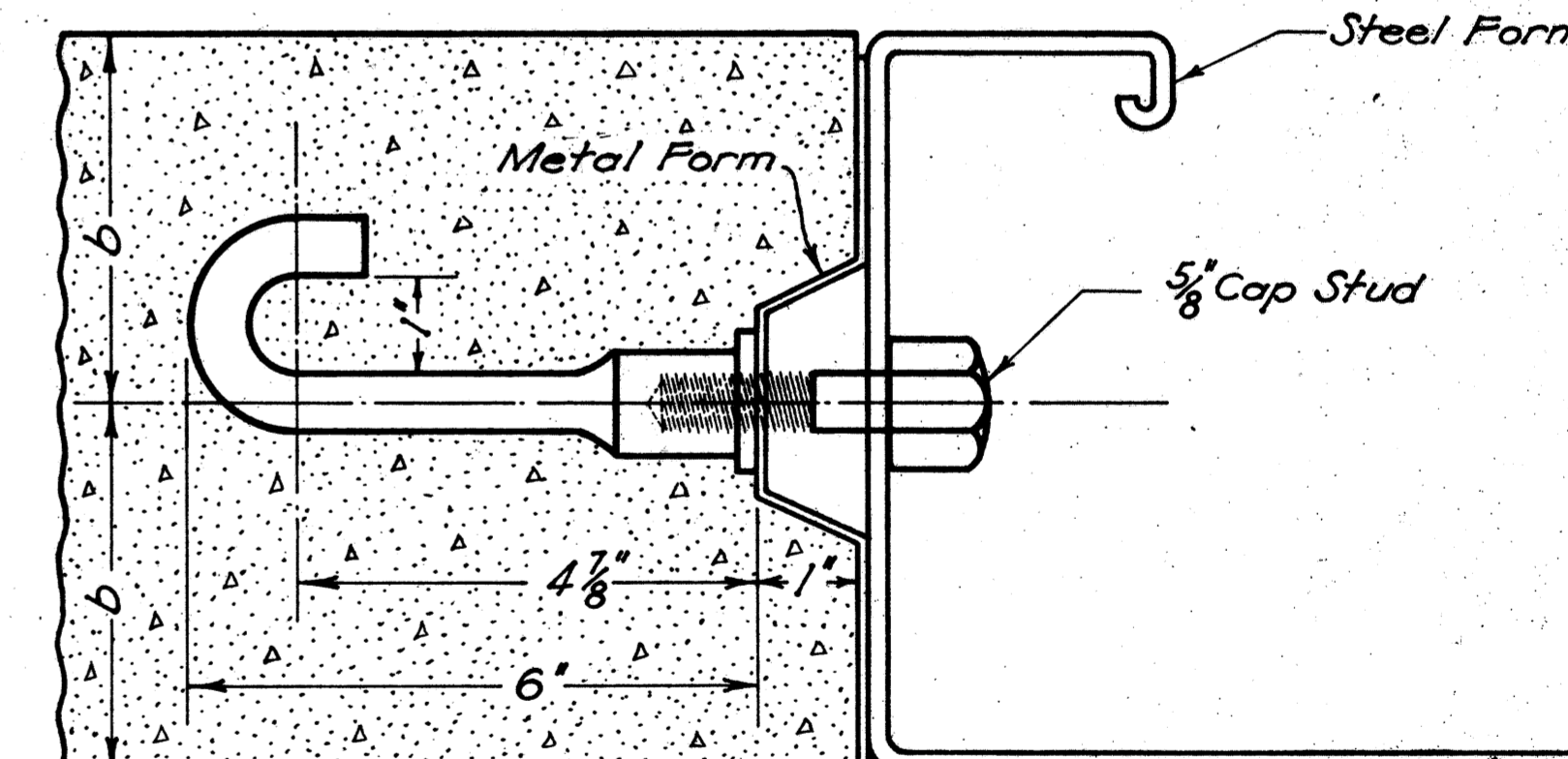
EXPANSION BOLT JOINT



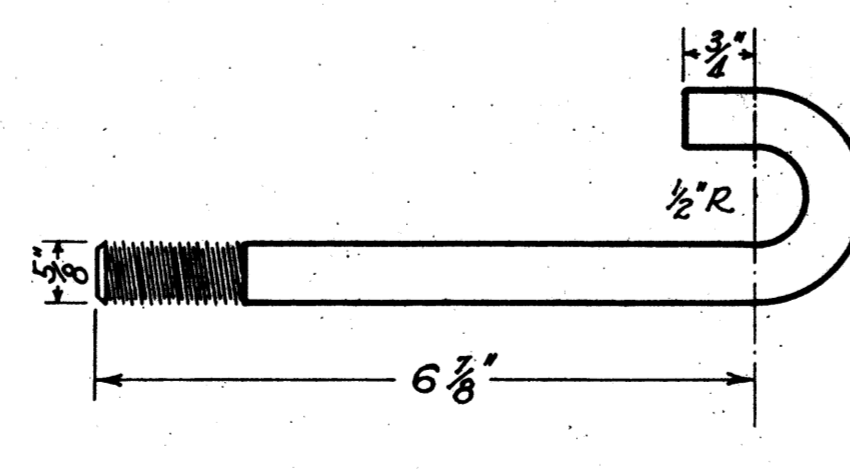
HOOK BOLT AND KEY JOINT



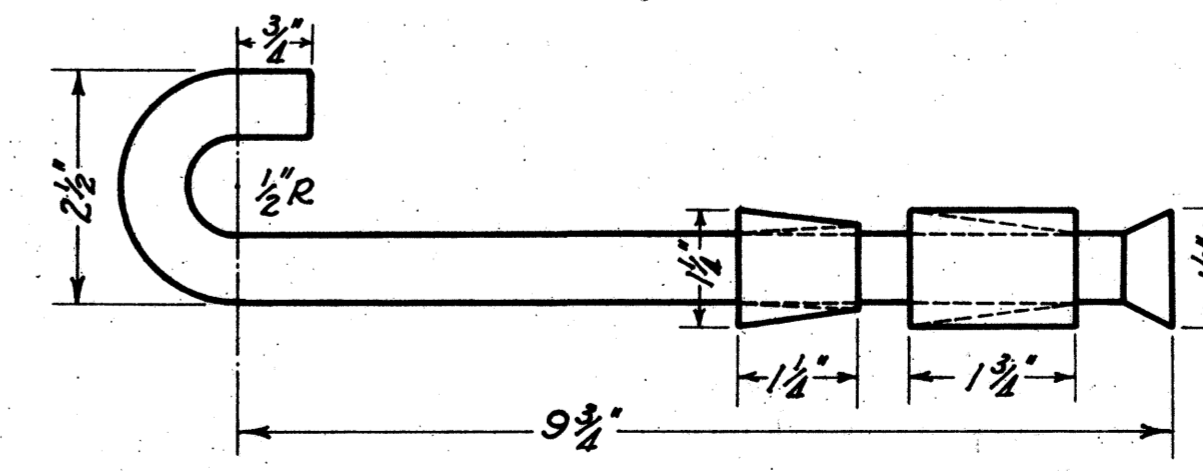
ACCEPTABLE METHOD OF FORMING JOINT



INSERT



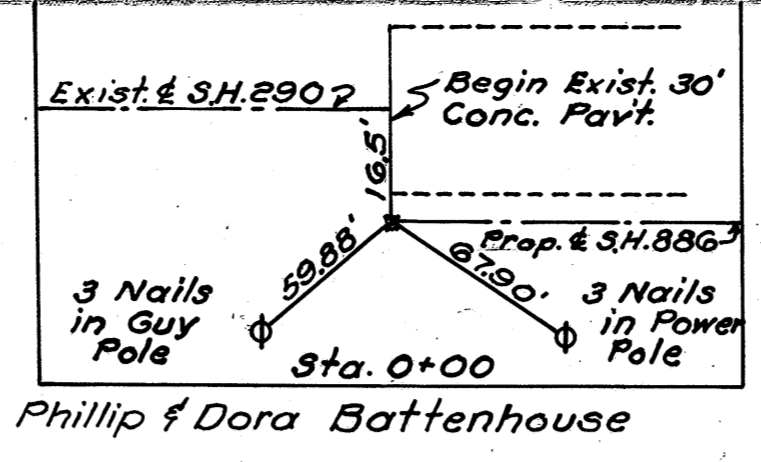
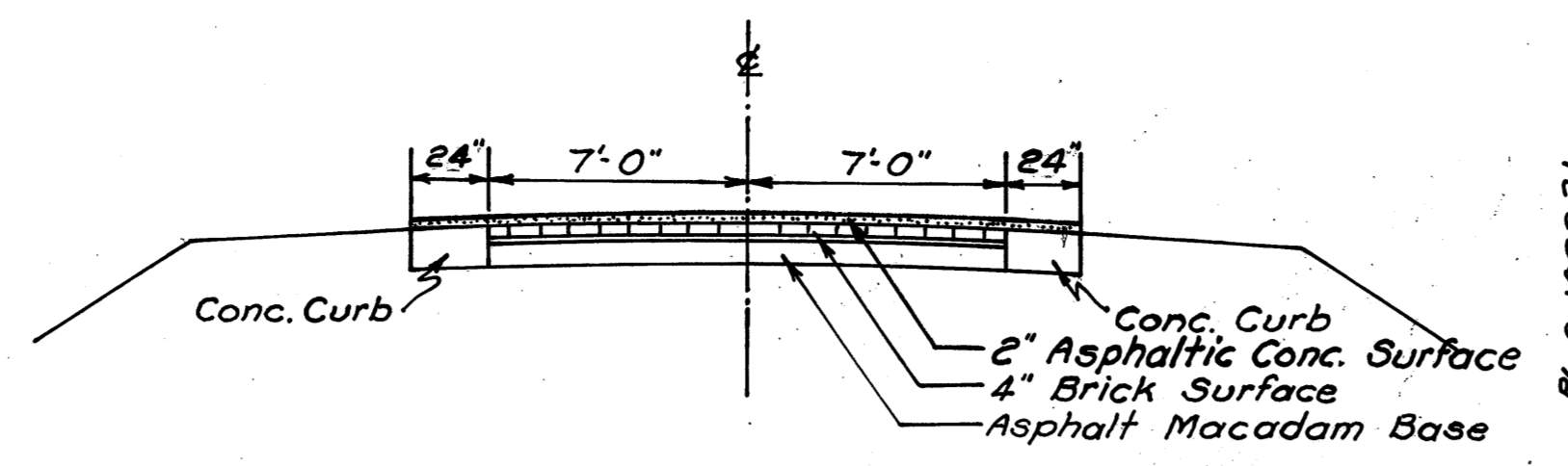
J BOLT



EXPANSION BOLT DETAIL

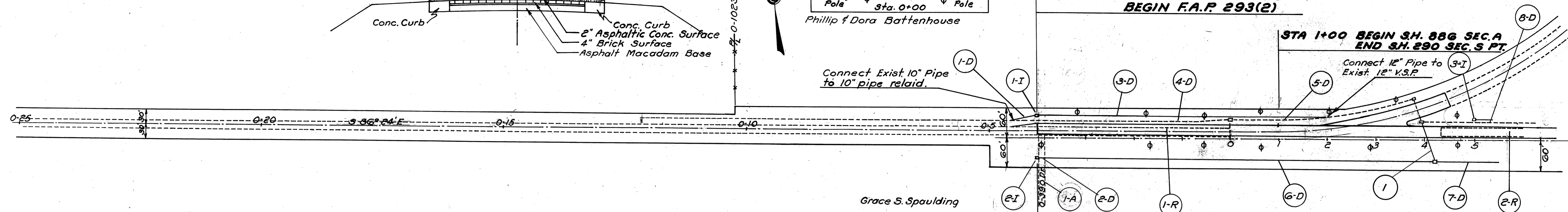
HOOK BOLT DETAIL

TYPICAL SECTION ADJOINING PAVEMENT



**STA. 0-400 BEGIN PROJECT
BEGIN S.H. 290 SEC. 3 PT.
BEGIN F.A.P. 293(2)**

**STA 1+00 BEGIN S.H. 88G SEC. A
END S.H. 290 SEC. 3 PT.**



D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	12" Pipe for Roadway Drainage	Abandon Exist. Catch Basin	Remove & Store Exist. 12" Pipe	12"x12"x4" Y Pipe Special	Remove & Store Exist. 10" Pipe	Clean & Relay Exist. 10" Pipe	12" Pipe Under Drives Item I-3
1-D	0-451	0-401	Lt.						50	20
2-D	0-399	0-379	Rt.							
3-D	0-399	2+01	Lt.	600						
4-D	0-400	0+00	Lt.		1			400		
5-D	0+01	2+00	Lt.			199				
6-D	0-379	4+24	Rt.	803						
7-D	4+26	5+00	Rt.	74						
8-D	4+02	9+76	Lt.		1	572				
Total				1477	2	771		400	50	20

A-DRIVEWAYS

Item No.	Sta.	Side	Aggregate for Tr. Comp. Approach
1-A	0-390	Rt.	5
Total			5

R-PAVEMENT REMOVAL

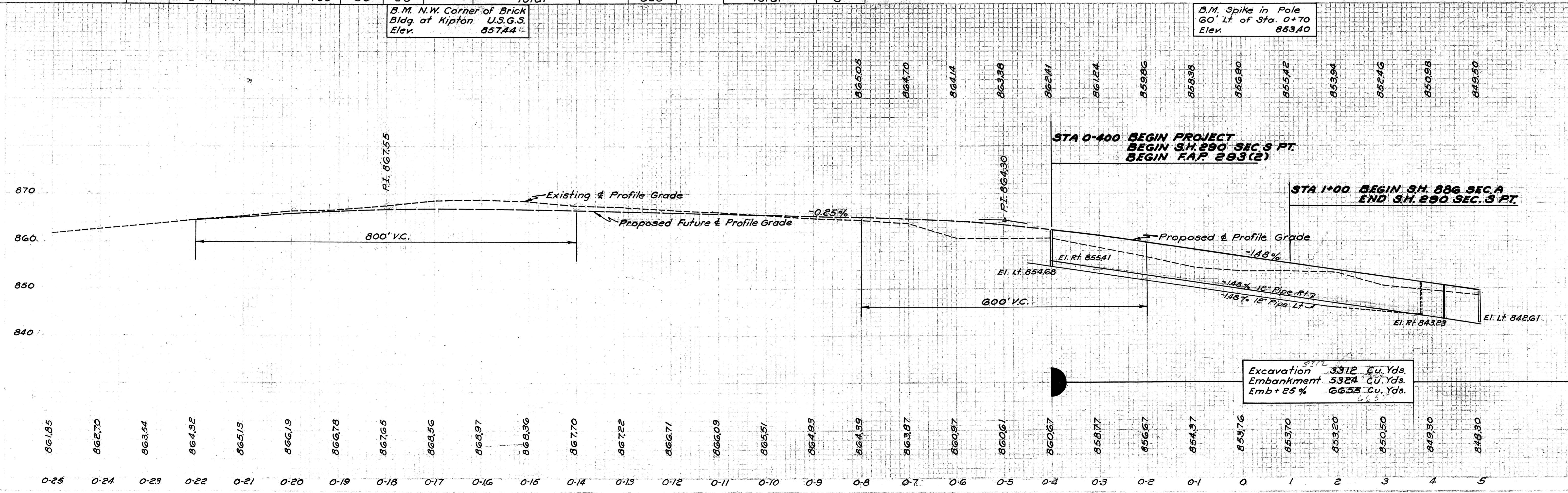
Item No.	From Sta.	To Sta.	14"-4" Brick Pavt. with Two 2"x12" Conc. Curbs	
			Lin. Ft.	Sq. Yds.
1-R	0-400	0+00	400	800
2-R	4+36	5+00	64	128
Total				928

I-CATCH BASINS

Item No.	Sta.	Side	Std. No. 1-2 Catch Basin
1-I	0-400	Lt.	1
2-I	0-400	Rt.	1
3-I	5+00	Lt.	1
Total			3

B.M. N.W. Corner of Brick Bldg. at Kipton U.S.G.S. Elev. 857.44

B.M. Spike in Pole 60' Lt. of Sta. 0+70 Elev. 853.40



**STA 0-400 BEGIN PROJECT
BEGIN S.H. 290 SEC. 3 PT.
BEGIN F.A.P. 293(2)**

**STA 1+00 BEGIN S.H. 88G SEC. A
END S.H. 290 SEC. 3 PT.**

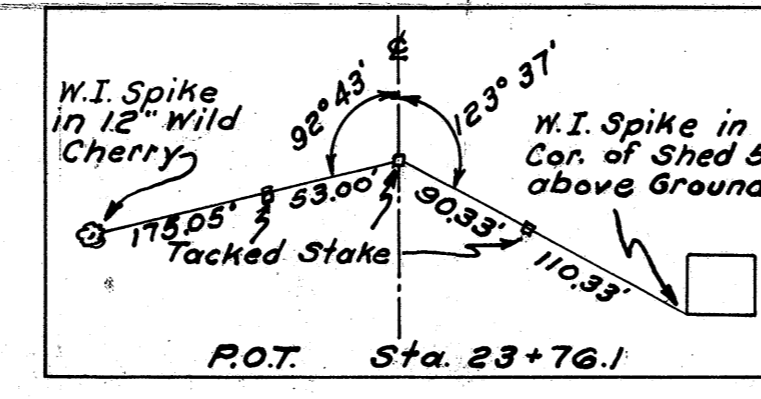
Excavation 3312 Cu. Yds.
Embankment 5324 Cu. Yds.
Emb + 25% 6655 Cu. Yds.

R-PAVEMENT REMOVAL

Item No.	From Sta.	To Sta.	14' 4" Brick Pav't with two 2'x12" Conc. Curbs Lin. Ft.	Sq. Yds.
1-R	5+00	9+85	485	970
Total				970

2 Sta. 10+17.48 Remove exist. #2 C.B. and manhole. Remove & store exist. 15" Pipe. Build Std. 12" Pipe Culvert with Std. No. 1-2 C.B. Rt. & Lt. as shown. See Sheet No. 112 for details.

3 Sta. 10+17.48 Remove Exist. #1 C.B. Remove & Store 50 Lin. Ft. 15" Pipe. Build Std. 12" Pipe Culv. with Std. #1-2 C.B.s as shown. Remove & Relay 29 Lin. Ft. of 15" pipe & 40 Lin. Ft. of 12" pipe as shown. Build Std. #1-2 C.B. with salvaged casting at Sta. 1+00 on S.H. 754 as shown. Sheet 112 for details. For detail of Intersection See Sheet No. 102 & 103



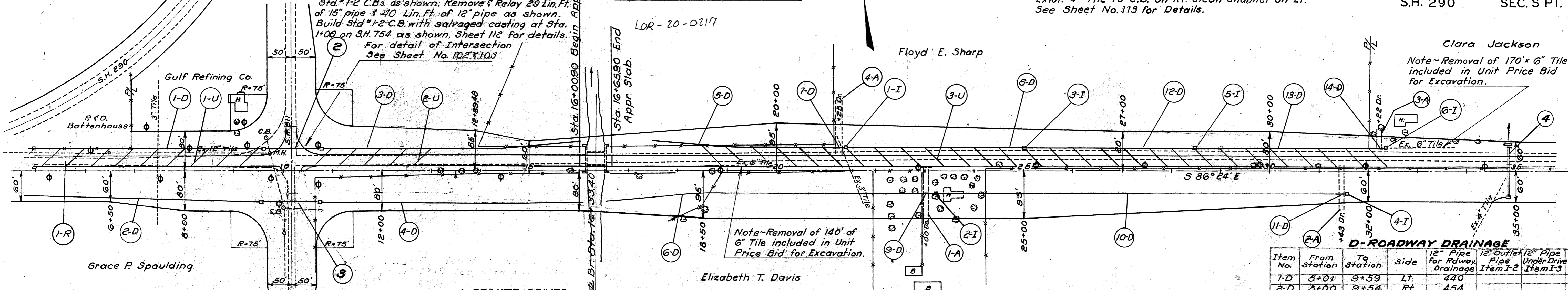
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
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S.H. 886 SEC. A
S.H. 290 SEC. S PT.

4 Sta. 34+82.5 - Remove 32"x12" Conc. Pipe Culvert. Build Std. 15" Pipe Culvert with Std. Headwall on Lt. & Std. No. 1-2 Catch Basin on Rt. Connect Exist. 4" Tile to C.B. on Rt. Clean Channel on Lt. See Sheet No. 113 for Details.

Clara Jackson
Note - Removal of 170' x 6" Tile Included in Unit Price Bid for Excavation.



I-CATCH BASINS

Item No.	Sta.	Side	Std. #1-2 Catch Basin
1-I	21+37	Lt.	1
2-I	23+11	Rt.	1
3-I	25+00	Lt.	1
4-I	31+53	Rt.	1
5-I	28+50	Lt.	1
6-I	32+35	Lt.	1
Total			6

A-PRIVATE DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe for Drives Lin. Ft.
1-A	23+00	Rt.	15	20
2-A	31+43	Rt.	10	20
3-A	32+22	Lt.	15	20
4-A	21+25	Lt.	5	20
Totals			35	80

PROPOSED STRUCTURE
Type: Existing Concrete Beam (Sta. 16+33A0) to be raised
Span: 36' clear
Roadway: 24'
Loading: H-15-33
Skew: None
Surface Course: Conc. (5" Average thickness)
Approach Slabs 12' Long & 22' Wide

U-PIPE UNDERDRAINS

Item No.	From Sta.	To Sta.	Side	4" Pipe Under-drains
1-U	5+50	9+50	Lt.	468
2-U	11+00	13+00	Lt.	260
3-U	18+50	32+00	Lt.	1456
Total				2184

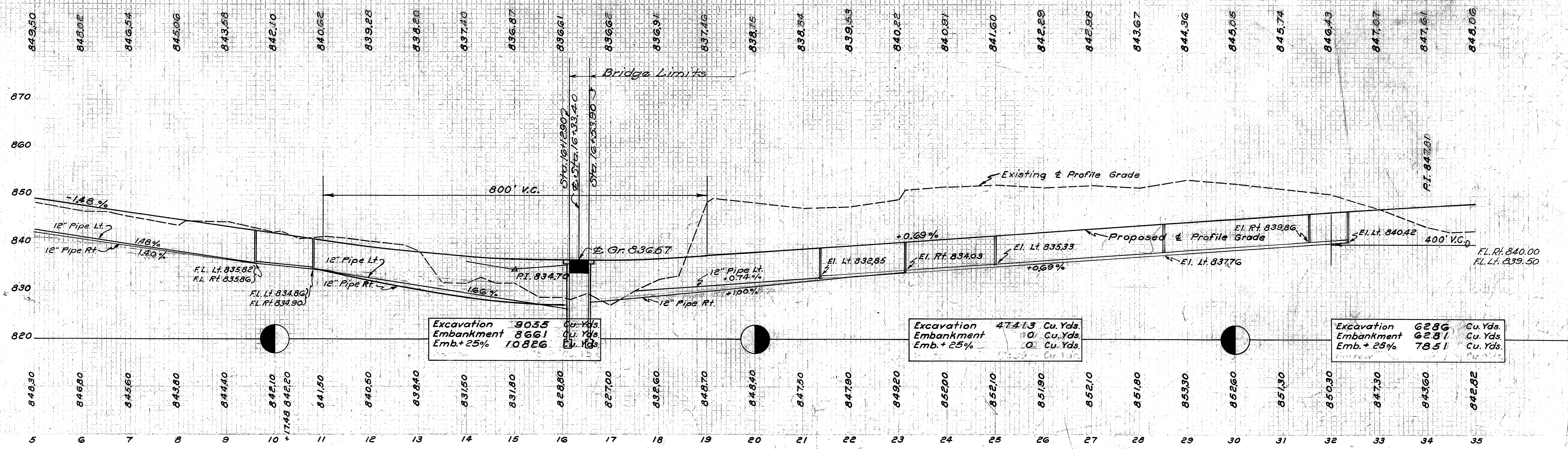
D-ROADWAY DRAINAGE

Item No.	From Station	To Station	Side	12" Pipe for Roway Drainage	12" Outlet Pipe Item 1-2	12" Pipe Under Drive Item 1-3	12"x12"x4" Pipe Specials
1-D	3+01	9+59	Lt.	440			9
2-D	3+00	9+54	Rt.	454			
3-D	10+81	16+13	Lt.	502	20		5
4-D	10+76	16+10	Rt.	514	20		
5-D	17+50	21+16	Lt.	334	20		6
6-D	16+54	22+90	Rt.	616	20		
7-D	21+16	21+36	Lt.			20	
8-D	21+38	24+89	Lt.	349			6
9-D	22+90	23+10	Rt.			20	
10-D	23+12	31+32	Rt.	820			
11-D	31+32	31+52	Rt.			20	
12-D	25+01	28+49	Lt.	336			6
13-D	28+51	32+14	Lt.	349			7
14-D	32+14	32+34	Lt.			20	
Totals				4714	80	80	39

B.M. Spike in 40" Elm 115' Rt. of Sta. 12+18 Elev. 836.46

B.M. Spike in 15" Wild Cherry 100' Lt. of Sta. 21+15 Elev. 846.64

B.M. Spike in 18" Ash 52' Lt. of Sta. 32+10 Elev. 850.52

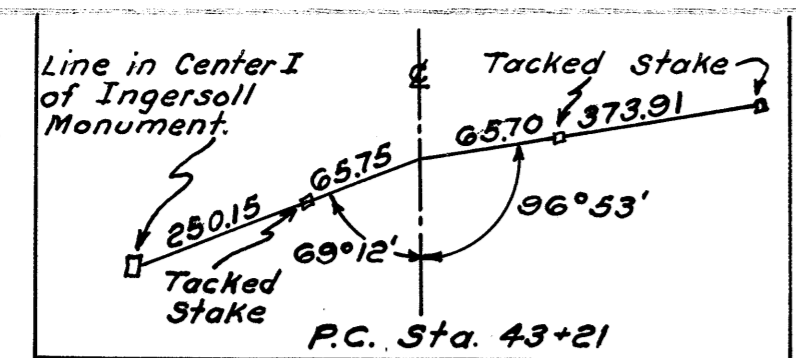


Excavation 9035 Cu. Yds.
Embankment 8661 Cu. Yds.
Emb. + 25% 10886 Cu. Yds.

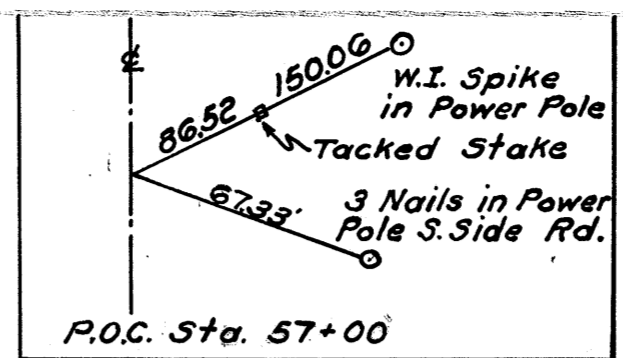
Excavation 47413 Cu. Yds.
Embankment 0 Cu. Yds.
Emb. + 25% 0 Cu. Yds.

Excavation 6286 Cu. Yds.
Embankment 6281 Cu. Yds.
Emb. + 25% 7851 Cu. Yds.

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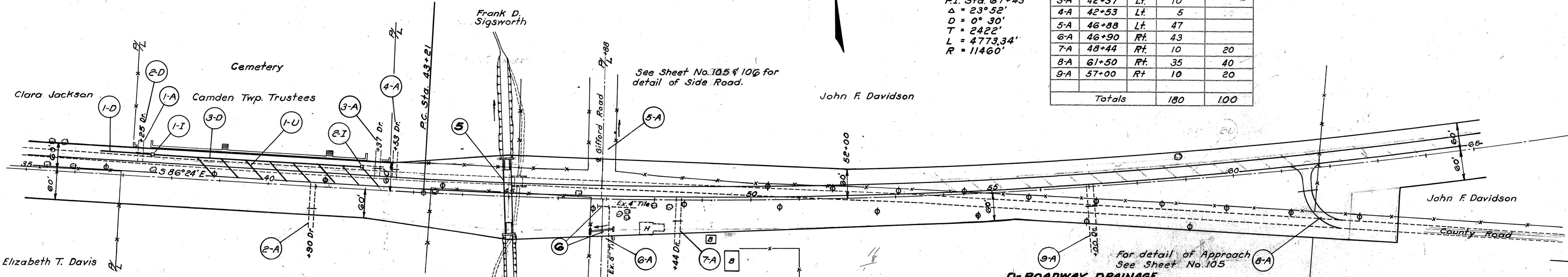
5 Sta. 45+00 Build Std. 14'x10'x15.67% Concrete Box Culvert. Excavate Channel 288 ft. Lt. 4350 ft. Rt. Remove Exist. 19.3'x20 Conc. & Stone Structure at Sta. 45+18. See Sheets No. 114 & 115 for Details Existing Water-way 117.5 Sq. Ft. Proposed Water-way 140.0 Sq. Ft.



P.I. Sta. 67+43
Δ = 23° 32'
D = 0° 30'
T = 2422'
L = 4773.34'
R = 11460'

A-PRIVATE DRIVES & APPROACHES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.
1-A	37+25	Lt.	10	
2-A	40+90	Rt.	10	20
3-A	42+37	Lt.	10	
4-A	42+53	Lt.	5	
5-A	46+88	Lt.	47	
6-A	46+90	Rt.	43	
7-A	48+44	Rt.	10	20
8-A	61+50	Rt.	35	40
9-A	57+00	Rt.	10	20
Totals			180	100



I-CATCH BASINS

Item No.	Sta.	Side	Std. #1-2 Catch Basin
1-I	37+35	Lt.	1
2-I	41+99	Lt.	1
Total 2			

6 Sta. 46+90 - Remove & Store 22'x8" C.I.P. Remove Exist Stone Headwalls. Build Std. 15" Pipe Culvert with Std Headwalls Rt. & Lt. See Sheet No. 111 for details.

D-ROADWAY DRAINAGE

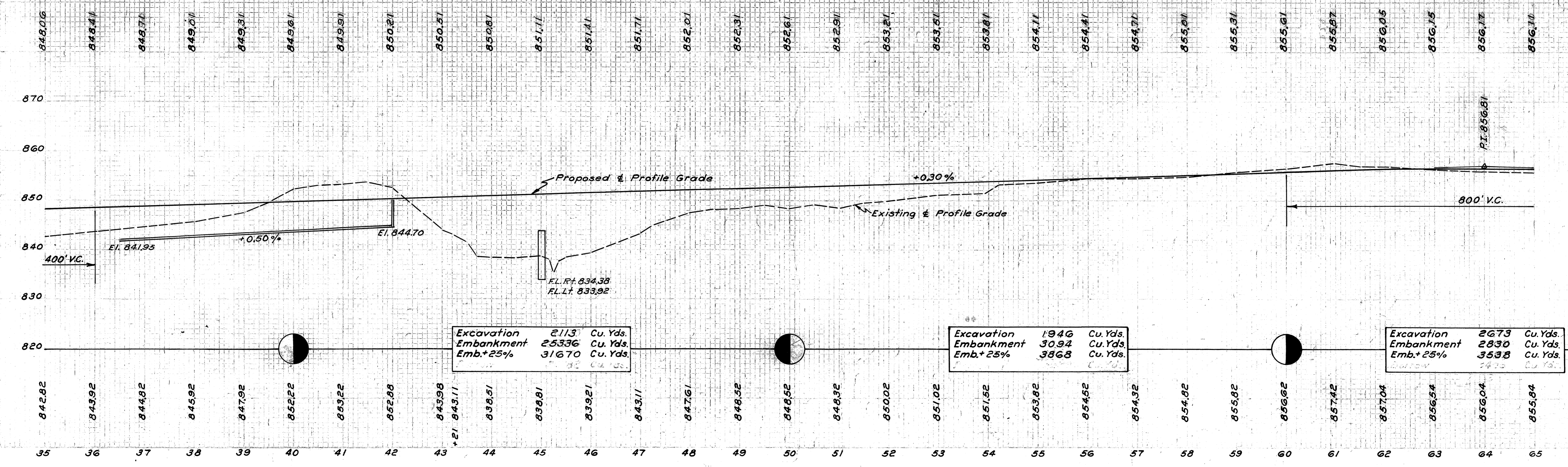
Item No.	From Sta.	To Sta.	Side	8" Pipe for Roadway Drainage Item I-3	8" Pipe Under Drives Item I-3	8"x8"x4" Y.S. Pipe for Specials	8" Pipe for Outlet
1-D	36+50	37+14	Lt.	44			20
2-D	37+14	37+34	Lt.		20		
3-D	37+36	41+98	Lt.	448		7	
Totals				492	20	7	20

U-PIPE UNDERDRAINS

Item No.	From Sta.	To Sta.	Side	4" Pipe Underdrains	4" Outlet Pipe Item I-4
1-U	38+50	41+99	Lt.	416	
Totals 416					

B.M. Spike in 48" Oak
80' ± Lt. of Sta. 45+75
Elev. 839.66

B.M. Spike in 15" Hickory
45' Lt. of Sta. 58+75
Elev. 855.46

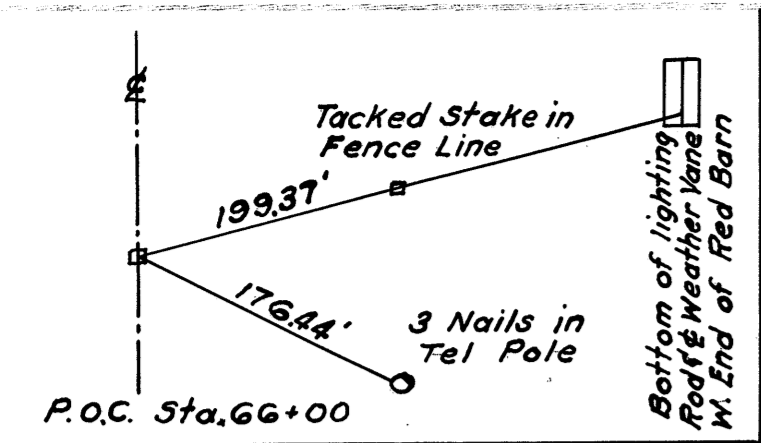


Excavation 2113 Cu. Yds.
Embankment 25336 Cu. Yds.
Emb.+25% 31670 Cu. Yds.

Excavation 1946 Cu. Yds.
Embankment 3092 Cu. Yds.
Emb.+25% 3868 Cu. Yds.

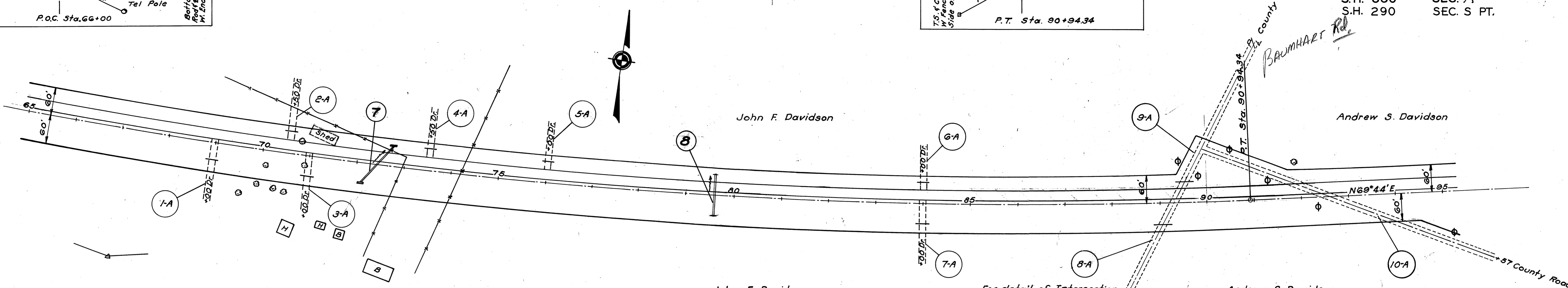
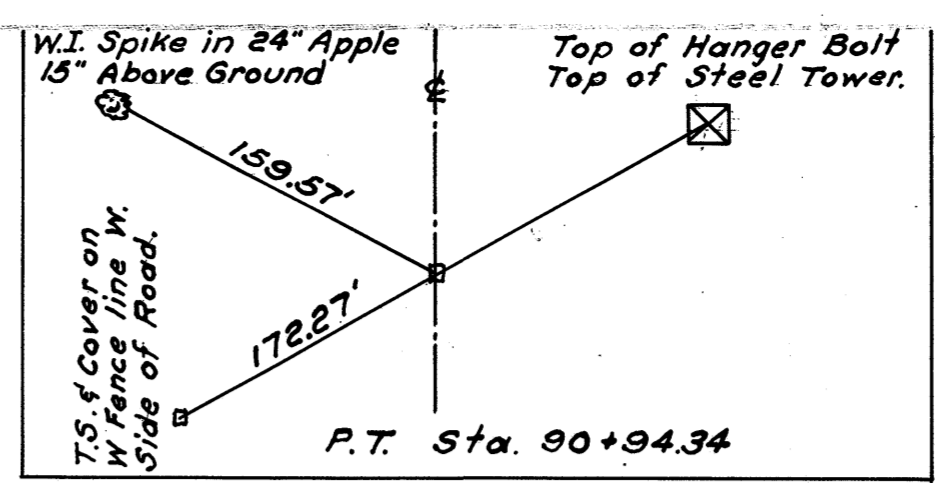
Excavation 2673 Cu. Yds.
Embankment 2830 Cu. Yds.
Emb.+25% 3538 Cu. Yds.

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7 Sta. 72+40 Build Std. 15" x 110' Pipe Culvert with Std. Headwalls Rt. & Lt., 37° 48' L.F. Skew. See Sheet No. 113 for Details.

8 Sta. 79+60 Build Std. 15" x 84' Pipe Culvert, with Headwalls Rt. & Lt. Excavate Channel on Lt. for Outlet. See Sheet No. 116 for Details.

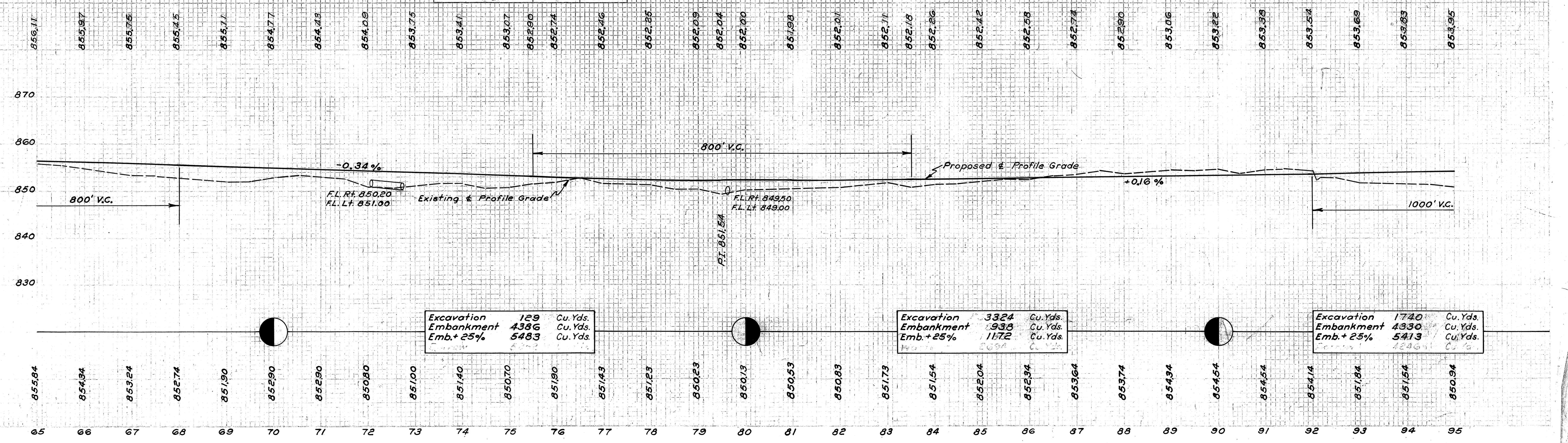


A-PRIVATE DRIVES & APPROACHES

ITEM No.	Station	Side	Aggregate Cu. Yds. For Tr. Comp. Approach	12" Pipe For Drives Lin. Ft.
1-A	69+00	Rt.	8	20
2-A	70+50	Lt.	4	20
3-A	71+00	Rt.	8	20
4-A	73+50	Lt.	4	20
5-A	76+00	Lt.	4	20
6-A	84+00	Lt.	4	20
7-A	84+00	Rt.	8	20
8-A	89+28	Rt.	15	40
9-A	89+28	Lt.	20	40
10-A	92+57	Rt.	30	40
Total			105	220

B.M. Spike in 24" Apple
105' Lt. of Sta. 70+00
Elev. 855.31

B.M. Spike in 18" Apple
68' Lt. of Sta. 91+75
Elev. 855.60



Excavation 129 Cu. Yds.
Embankment 4386 Cu. Yds.
Emb.+25% 5483 Cu. Yds.

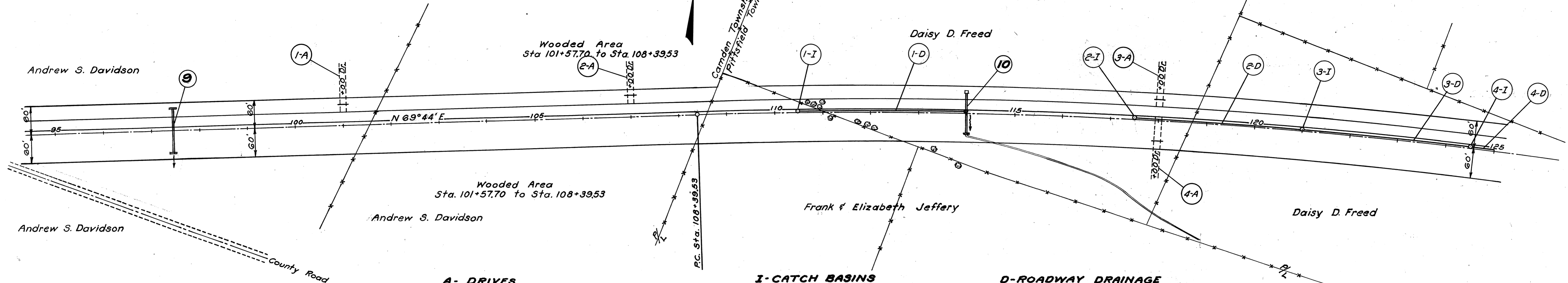
Excavation 3324 Cu. Yds.
Embankment 938 Cu. Yds.
Emb.+25% 1172 Cu. Yds.

Excavation 1740 Cu. Yds.
Embankment 4330 Cu. Yds.
Emb.+25% 5413 Cu. Yds.

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9 Sta. 97+45 Build Std. 15" x 88' Pipe Culvert with Std. Headwalls Rt. & Lt. Clean Inlet & Outlet. See Sheet No. 116 for Details.

10 Sta. 114+00 Build Std. 15" x 90' Pipe Culvert with Std. Headwall on Rt. & Std. No. 1-2 & 2-2 C.B.s. as shown. Excavate Channel on Rt. as shown for outlet. See Sheet No. 117 for Details.



A- DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.
1-A	101+00	Lt.	4	20
2-A	107+00	Lt.	4	20
3-A	118+00	Lt.	4	20
4-A	118+00	Rt.	8	20
Total			20	80

I- CATCH BASINS

Item No.	Station	Side	Std. #7 Catch Basin
1-I	110+50	Center	1
2-I	117+50	Center	1
3-I	121+00	Center	1
4-I	124+50	Center	1
Total			4

D- ROADWAY DRAINAGE

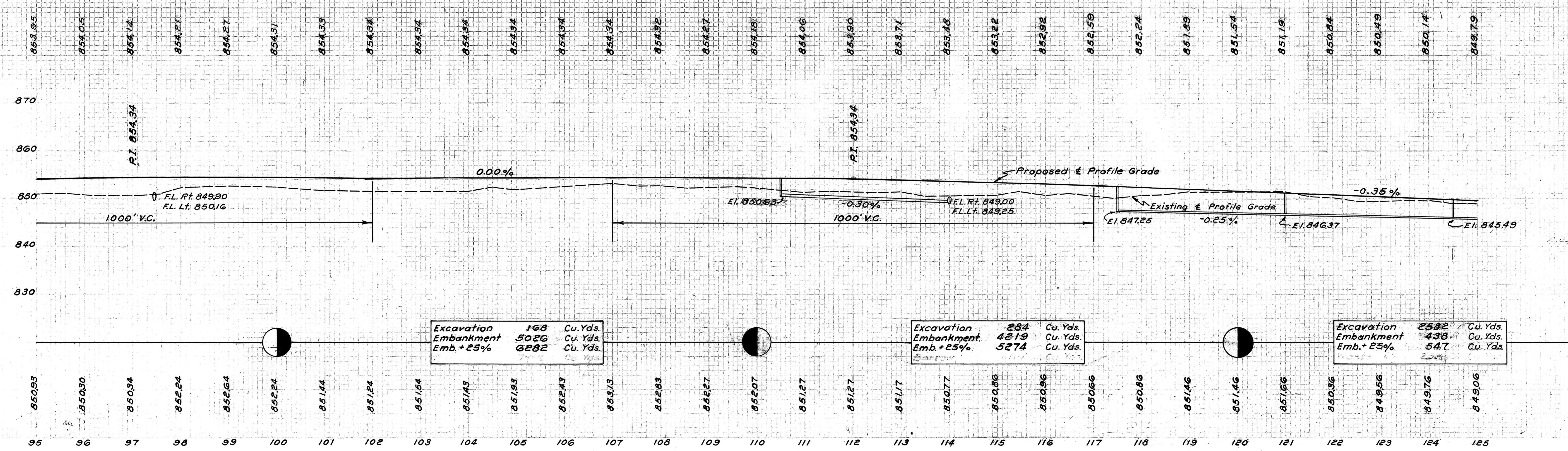
Item No.	From Station	To Station	Side	8" Pipe for Roadway Drainage
1-D	110+51	113+99	Center	348
2-D	117+51	120+99	Center	348
3-D	121+01	124+49	Center	348
4-D	124+51	125+00	Center	49
Total				1093

B.M. Spike in 24" Oak
100' Lt. of Sta. 103+30
Elev. 852.24

B.M. Spike in 36" Twin
Oak. 82' Lt. of Sta. 108+80
Elev. 852.99

B.M. Spike in 15" Elm
200' Lt. of Sta. 115+18
Elev. 852.42

B.M. Spike in 24" Hickory
120' Lt. of Sta. 124+25
Elev. 852.54

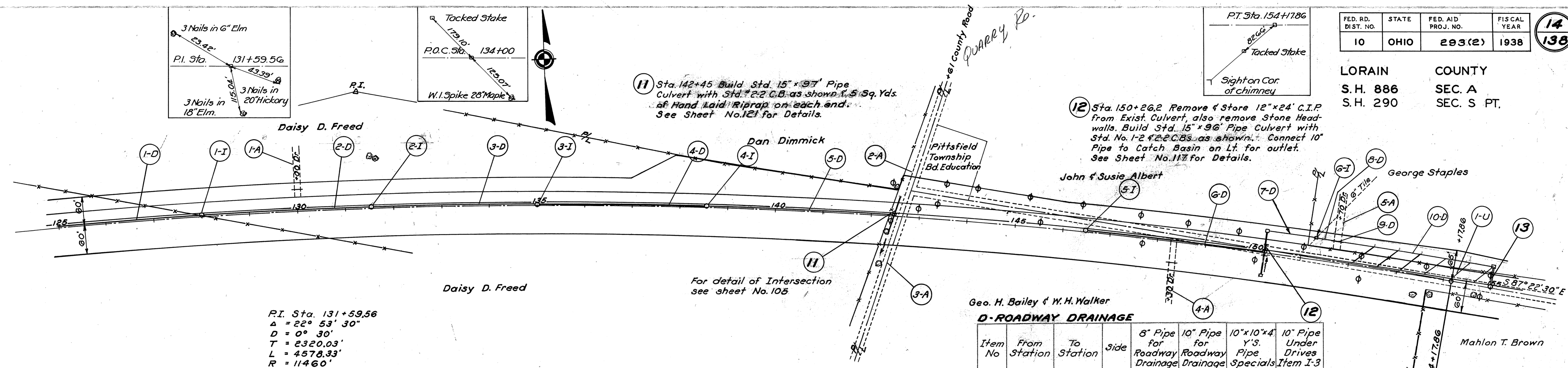


Excavation 168 Cu. Yds.
Embankment 5026 Cu. Yds.
Emb. + 25% 6282 Cu. Yds.

Excavation 284 Cu. Yds.
Embankment 4219 Cu. Yds.
Emb. + 25% 5274 Cu. Yds.

Excavation 2582 Cu. Yds.
Embankment 438 Cu. Yds.
Emb. + 25% 547 Cu. Yds.

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R.I. Sta. 131+59.56
Δ = 22° 53' 30"
D = 0° 30'
T = 2320.03'
L = 4578.33'
R = 11460'

U-PIPE UNDERDRAINS

Item No.	From Sta.	To Sta.	Side	4" Pipe Underdrains
1-U	152+50	155+00	Lt.	312
Total				312

A-PRIVATE DRIVES & APPROACHES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.
1-A	130+00	Lt.	4	20
2-A	142+61	Lt.	10	
3-A	142+61	Rt.	15	
4-A	148+30	Rt.	8	20
5-A	151+70	Lt.	4	
Total			41	40

I-INLETS & CATCH BASINS

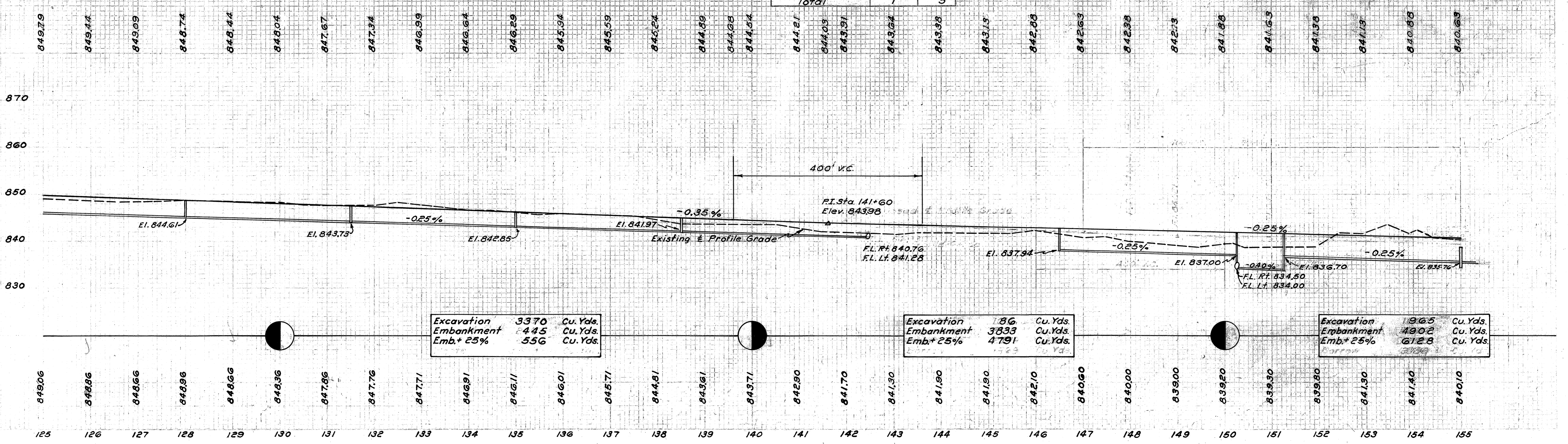
Item No.	Station	Side	Std. No. 1-2 C.B. Unit	Std. No. 7 C.B. Unit
1-I	128+00	Center		1
2-I	131+50	Center		1
3-I	135+00	Center		1
4-I	138+50	Center		1
5-I	146+50	Center		1
6-I	151+22	Left	1	
Total			1	5

D-ROADWAY DRAINAGE

Item No.	From Station	To Station	Side	8" Pipe for Roadway Drainage	10" Pipe for Roadway Drainage	10"x10"x4" Y.S. Pipe Specials	10" Pipe Under Drives Item I-3
1-D	125+00	127+99	Center	299			
2-D	128+01	131+49	Center		348		
3-D	131+51	134+99	Center		348		
4-D	135+01	138+49	Center		348		
5-D	138+51	142+45	Center		384		
6-D	146+51	150+26	Center	374			
7-D	150+27	151+21	Left		94		
8-D	151+23	151+60	Left		37		
9-D	151+60	151+80	Left				20
10-D	151+80	154+99	Left			309	5
Total				673	1878	5	20

B.M. Spike in 24" Elm
110' Lt. of Sta. 138+50
Elev. 844.06

B.M. Spike in Tel. Pole
50' Lt. of Sta. 146+30
Elev. 843.32



Excavation	3370	Cu. Yds.
Embankment	445	Cu. Yds.
Emb.+ 25%	556	Cu. Yds.

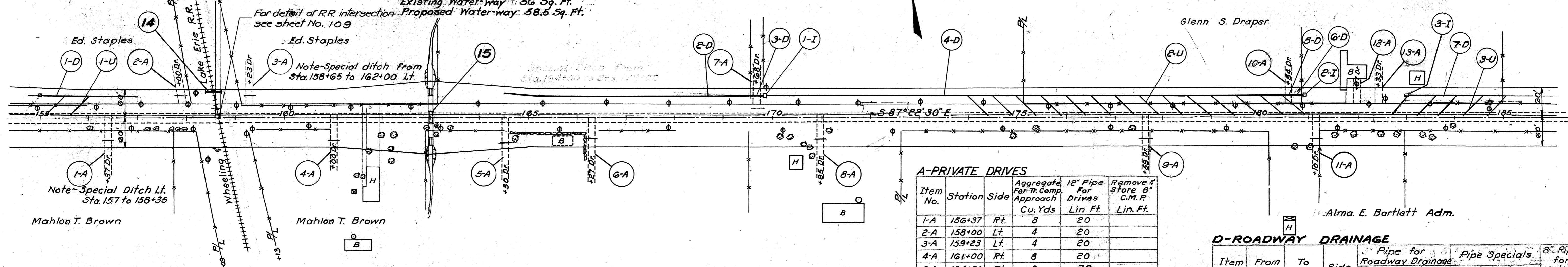
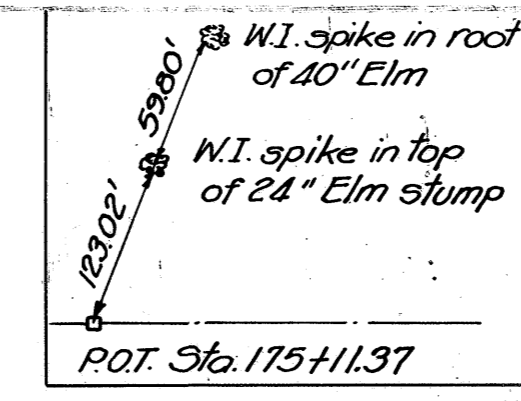
Excavation	186	Cu. Yds.
Embankment	3833	Cu. Yds.
Emb.+ 25%	4791	Cu. Yds.

Excavation	1965	Cu. Yds.
Embankment	4902	Cu. Yds.
Emb.+ 25%	6128	Cu. Yds.

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Note - Wheeling & Lake Erie R.R. will raise rails to meet proposed grade during the construction of this project.

Flasher Lights will be erected at this crossing by proposed project No. F.A.G.H. 293(3)



I-CATCH BASINS

Item No.	Sta.	Side	Std 4'-2' Catch Basin
1-I	169+79	Lt.	1
2-I	180+99	Lt.	1
3-I	183+00	Lt.	1
Total			3

14 Sta 158+48.09 Build Std. 16" x 30' Pipe Culvert with Std. Side Road Headwalls Rt. & Lt.
See Sheet No. 118 for Details.
Note - This Structure is to be built under supervision of Wheeling & Lake Erie R.R. Engineers.
16" Pipe shall be extra Heavy Cast Iron Pipe

U-PIPE UNDERDRAINS

Item No.	From Station	To Station	Side	4" Pipe Under-drain
1-U	155+50	156+00	Lt.	104
2-U	174+00	180+50	Lt.	728
3-U	183+00	185+00	Lt.	260
Total				1092

A-PRIVATE DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds	12" Pipe For Drives Lin Ft.	Remove & Store 8" C.M.P. Lin. Ft.
1-A	156+37	Rt.	8	20	
2-A	158+00	Lt.	4	20	
3-A	159+23	Lt.	4	20	
4-A	161+00	Rt.	8	20	
5-A	164+50	Rt.	8	20	
6-A	166+27	Rt.	8	20	
7-A	169+68	Lt.	4	20	30
8-A	170+95	Rt.	8	20	
9-A	177+59	Rt.	8	20	
10-A	180+54	Lt.	4	20	
11-A	181+10	Rt.	4	20	
12-A	181+97	Lt.	4	20	
13-A	182+33	Lt.	8	20	
Total			80	180	30

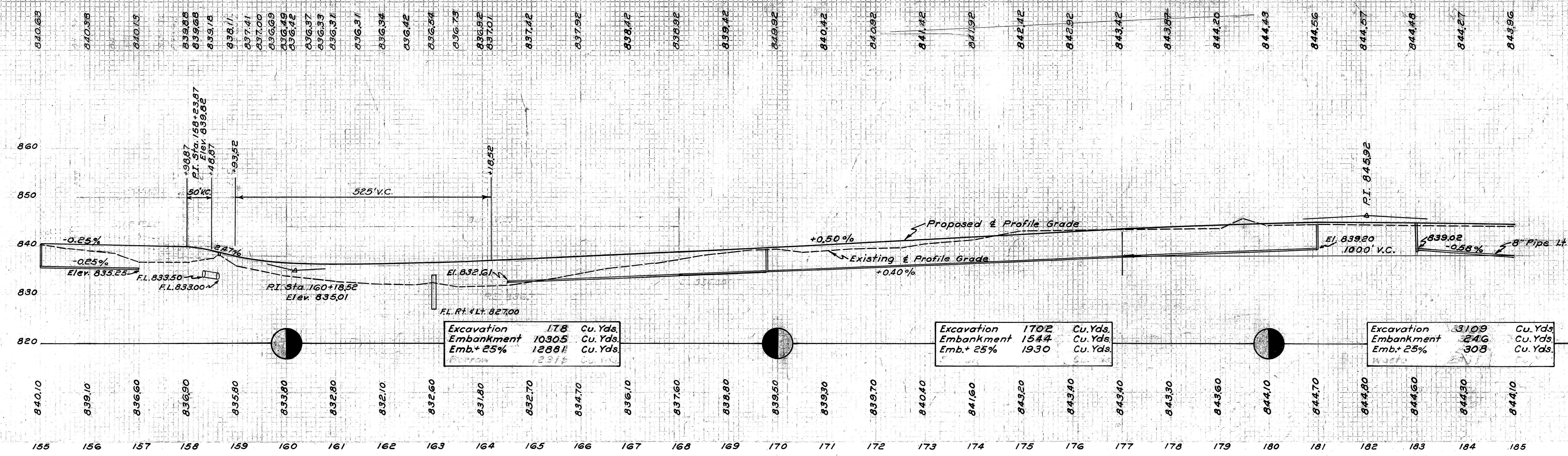
D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	Pipe for Roadway Drainage	Pipe Specials	8" Pipe for Outlet	8" Pipe Under Drives
1-D	155+01	156+99	Lt.				
2-D	164+50	169+58	Lt.	488	50	20	
3-D	169+58	169+78	Lt.				20
4-D	169+80	180+44	Lt.	1036	14		
5-D	180+44	180+64	Lt.				20
6-D	180+64	180+98	Lt.	34			
7-D	183+01	185+00	Lt.	192	4		
Totals				1750	194	20	40

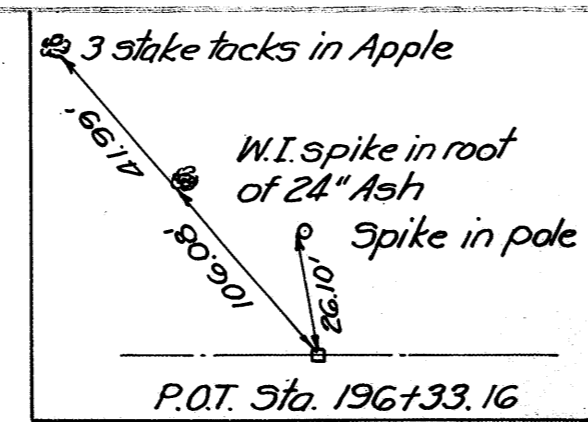
B.M. Spike in 24" Apple 59' Rt. of Sta. 161+70 Elev. 833.80

B.M. Spike in 15" Pine 55' Rt. of Sta. 170+60 Elev. 840.29

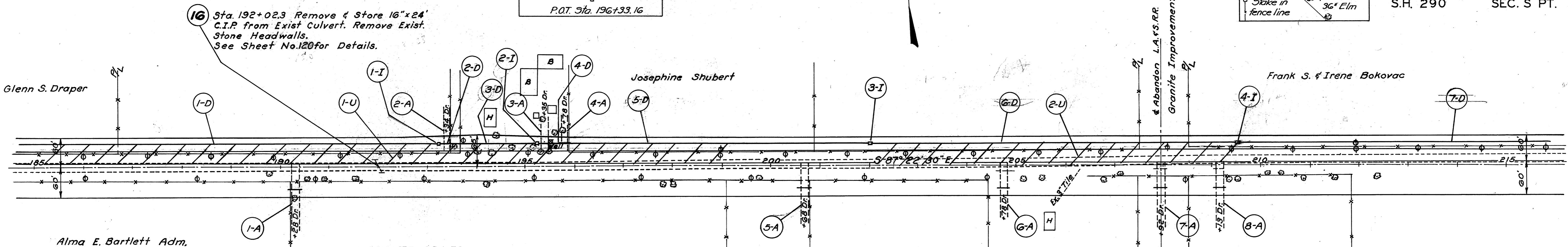
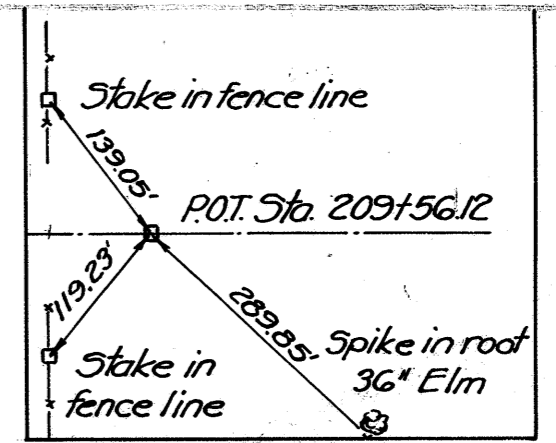
B.M. Chiseled X on Stone Walk 54' Lt. of Sta. 183+20 Elev. 846.36



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Note - Well on Lt. Sta. 195+50, to be filled with 30 Cu. Yds. of No. 6 Aggregate.



I-CATCH BASINS

Item No.	Station	Side	Std. No. 1-2 Catch Basin
1-I	193+23	Lt.	1
2-I	195+25	Lt.	1
3-I	201+99	Lt.	1
4-I	209+49	Lt.	1
Totals			4

A-PRIVATE DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.	Remove & Store 12" C.I.P. Lin. Ft.	Remove & Store 12" V.S.P. Lin. Ft.
1-A	190+28	Rt.	8	20		
2-A	193+34	Lt.	4			
3-A	195+35	Lt.	4			
4-A	195+78	Lt.	4			
5-A	200+68	Rt.	8	20		
6-A	204+78	Rt.	8	20	24	
7-A	207+92	Rt.	8	20	24	
8-A	209+13	Rt.	8	20		20
Totals			52	100	48	20

D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	Pipe for Rdway Drainage			Pipe Under Drives 10"	Pipe Specials 8"x8" 10"x10" 12"x12"		
				8"	10"	12"		4" Y3	4" Y3	4" Y3
1-D	185+00	193+22	Lt.	789			16			
2-D	193+24	193+44	Lt.				20			
3-D	193+44	195+24	Lt.		172			4		
4-D	195+26	195+88	Lt.				60	1		
5-D	195+88	201+98	Lt.		596			7		
6-D	202+00	209+48	Lt.		720			14		
7-D	209+50	215+00	Lt.			550				
Totals				789	1488	550	80	16	26	

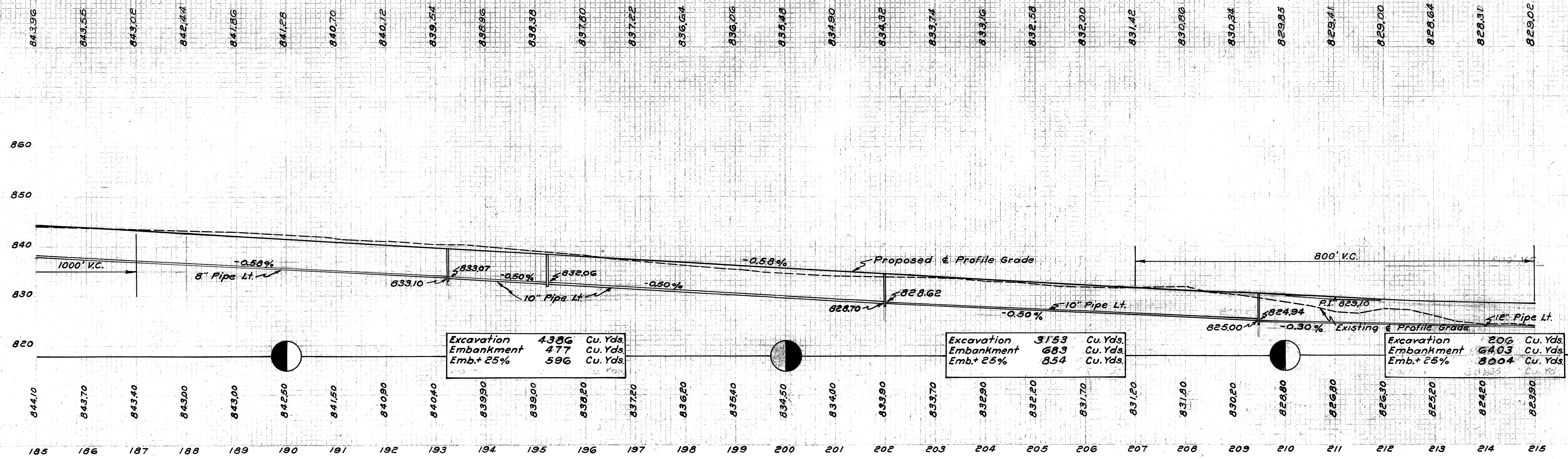
U-PIPE UNDERDRAINS

Item No.	From Sta.	To Sta.	Side	4" Pipe Under-drain
1-U	185+00	199+00	Lt.	1456
2-U	202+50	209+50	Lt.	780
Total				2236

B.M. Chiseled X on bottom step to house 75' Lt. of Sta. 194+16 Elev. 843.36

B.M. Chiseled X on top step to house 97' Rt. of Sta. 205+80 Elev. 836.90

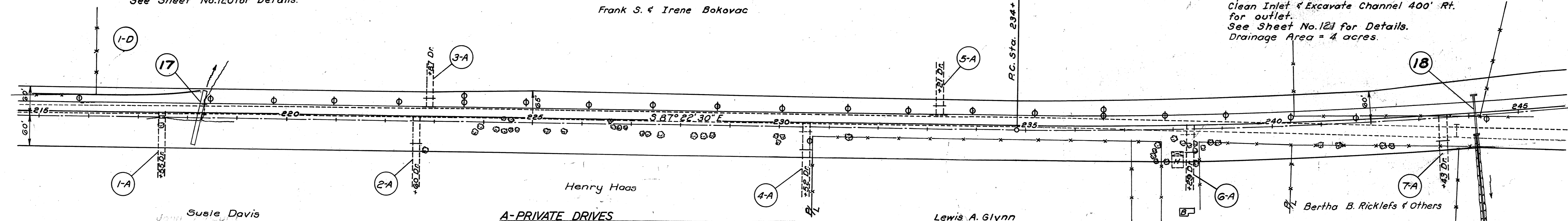
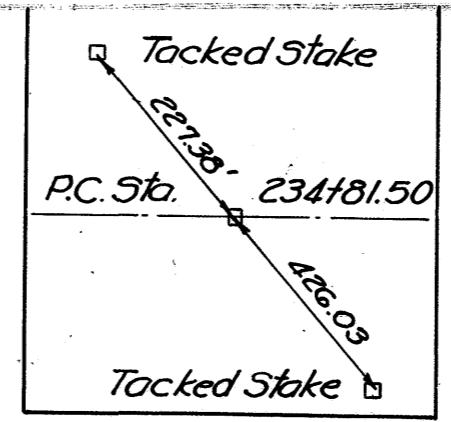
B.M. Spike in 30" Elm 185' Rt. of Sta. 211+85 Elev. 827.14



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17 Sta. 218+21.3 Remove Exist. 4'x2'x20'-6" Stone Culvert. Build Std. 2'x4'x106'-3" Conc. Box Culvert, 14° 48' L.F. Skew. Clean Channel on Rt. See Sheet No. 120 for Details.

18 Sta. 244+17 Remove & Store 18"x25" C.I.P. from Exist. Culv. at Sta. 243+73 also remove Exist. Stone Headwalls. Build Std. 15"x88" Pipe Culvert with Std. Headwalls Rt. & Lt. Clean Inlet & Excavate Channel 400' Rt. for outlet. See Sheet No. 121 for Details. Drainage Area = 4 acres.

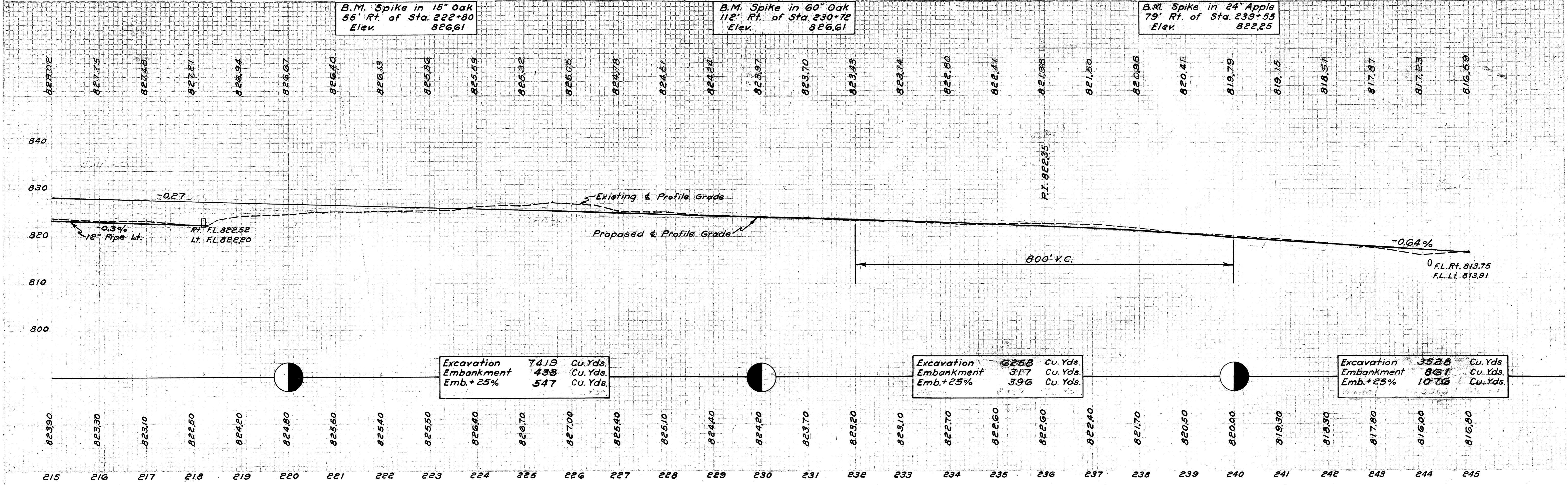


A-PRIVATE DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.	Remove & Store 10" C.I.P. Lin. Ft.	Remove & Store 10" C.M.P. Lin. Ft.
1-A	217+55	Rt.	8	20		
2-A	222+60	Rt.	8	20		
3-A	222+87	Lt.	4	20	14	
4-A	230+52	Rt.	8	20		18
5-A	233+21	Lt.	4	20		
6-A	238+29	Rt.	8	20		20
7-A	243+43	Rt.	8	20		
Totals			48	140	14	38

D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	12" Pipe for Roadway Drainage	12" Pipe for Outlet Item I-2
I-D	215+00	218+30	Lt.	310	20
Totals				310	20



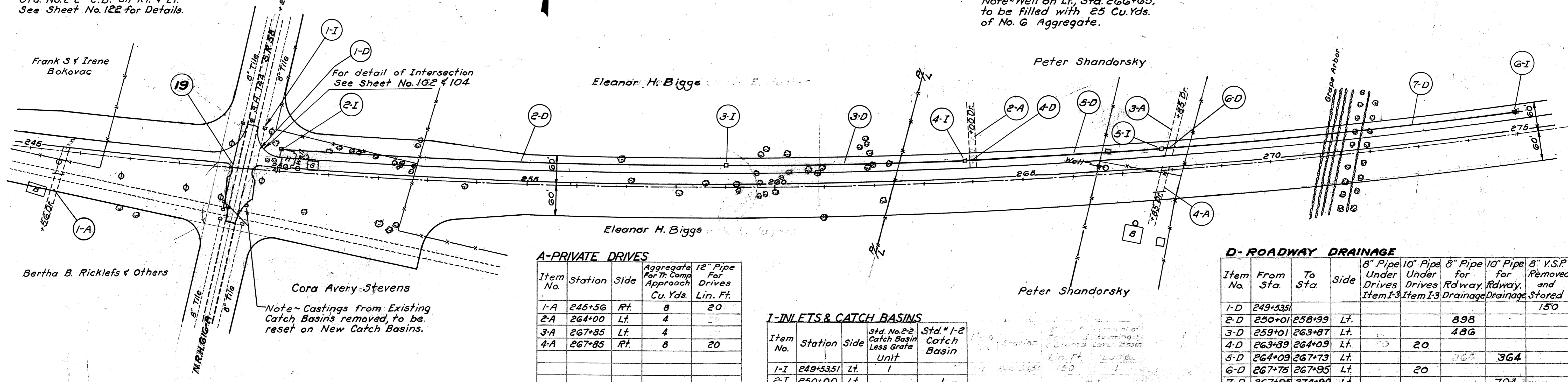
PLAN
DATE
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NOTE BOOK
ALIGNED CHECKED
PT. OF WAY CHECKED

LORAIN COUNTY
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19 Sta. 249+00.00 - Remove & Store 150 Lin. Ft. of 8" V.S.P. Remove Exist. C.B. on Rt. Build Std. 15" Culvert with Std. No. 2-2 C.B. on Rt. & Lt. See Sheet No. 122 for Details.

Note-Well on Lt. Sta. 250+50, to be filled with 15 Cu.Yds. of No. 6 Aggregate.

Note-Well on Lt. Sta. 266+65, to be filled with 25 Cu.Yds. of No. 6 Aggregate.



A-PRIVATE DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.
1-A	245+56	Rt.	8	20
2-A	264+00	Lt.	4	20
3-A	267+85	Lt.	4	20
4-A	267+85	Rt.	8	20
Total			24	40

I-INLETS & CATCH BASINS

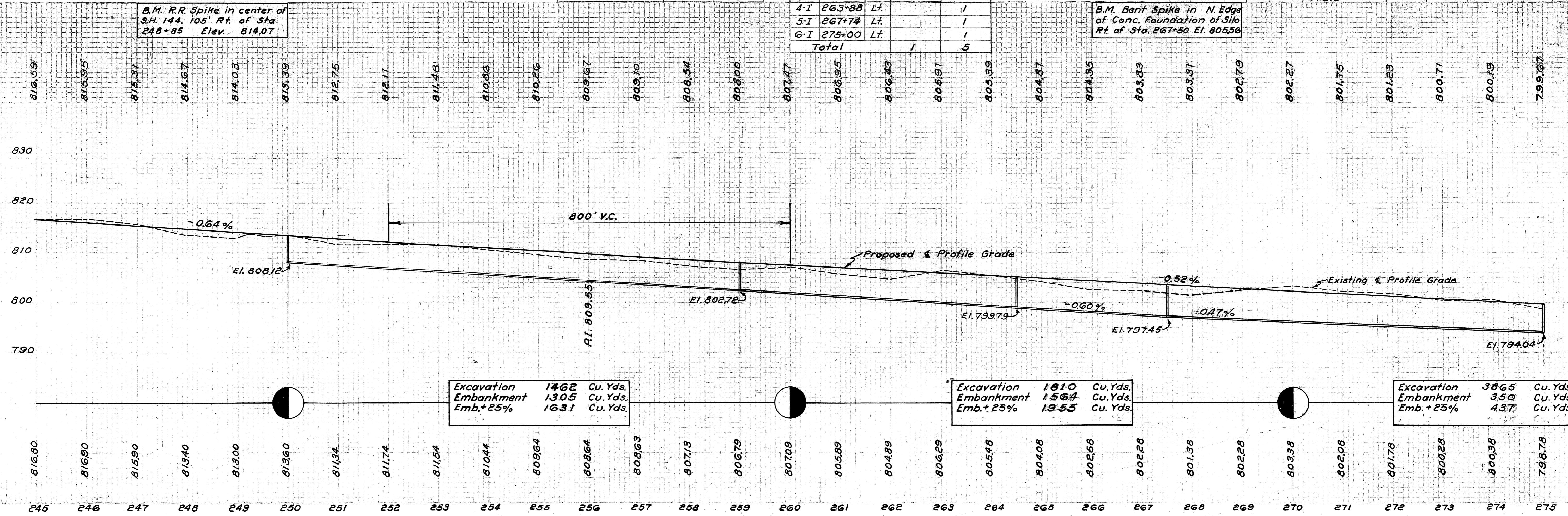
Item No.	Station	Side	Std. No. 2-2 Catch Basin Less Grate Unit	Std. # 1-2 Catch Basin
1-I	249+53.51	Lt.	1	
2-I	250+00	Lt.		1
3-I	259+00	Lt.		1
4-I	263+88	Lt.		1
5-I	267+74	Lt.		1
6-I	275+00	Lt.		1
Total			1	5

D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	8" Pipe Under Drives Item I-3	10" Pipe Under Drives Item I-3	8" Pipe for Rdway Drainage	10" Pipe for Rdway Drainage	8" V.S.P. Removed and Stored	Removal of Existing Catch Basin
1-D	249+53.51							150	1
2-D	250+01	258+99	Lt.			398			
3-D	259+01	263+87	Lt.			486			
4-D	263+89	264+09	Lt.	20	20				
5-D	264+09	267+73	Lt.			364	364		
6-D	267+75	267+95	Lt.		20				
7-D	267+95	274+99	Lt.				704		
Totals				20	40	1384	1068	150	1

B.M. R.R. Spike in center of S.H. 144. 105' Rt. of Sta. 248+85 Elev. 814.07

B.M. Bent Spike in N. Edge of Conc. Foundation of Silo Rt. of Sta. 267+50 El. 805.56

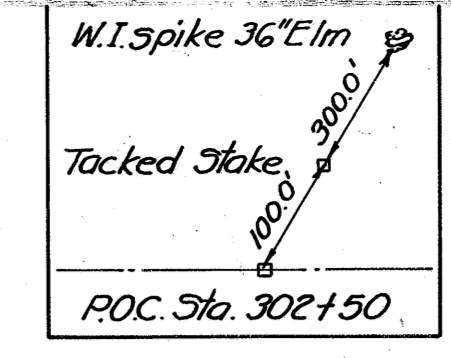


Excavation 1462 Cu. Yds.
Embankment 1305 Cu. Yds.
Emb.+25% 1631 Cu. Yds.

Excavation 1810 Cu. Yds.
Embankment 1564 Cu. Yds.
Emb.+25% 1955 Cu. Yds.

Excavation 3865 Cu. Yds.
Embankment 350 Cu. Yds.
Emb.+25% 437 Cu. Yds.

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20 Sta. 289+70 Build 15"x96" Pipe Culvert with Std. Headwall on Rt. & Std. No. 1-2 Catch Basin on Lt. Excavate Channel 86' on Rt. for Outlet. See Sheet No. 127 for Details.

P.I. Sta. 289+11.88
Δ = 50° 42' 40"
D = 0° 30'
T = 5430.38'
L = 10142.22'
R = 11459.16'

21 Sta. 295+00 Build Std. 7'x5'x144" Concrete Box Culvert. Excavate Channel 81 ft. Rt. & 322 ft. Lt. See Sheet No. 123 for Details.

Metta G. Campbell

Metta G. Campbell

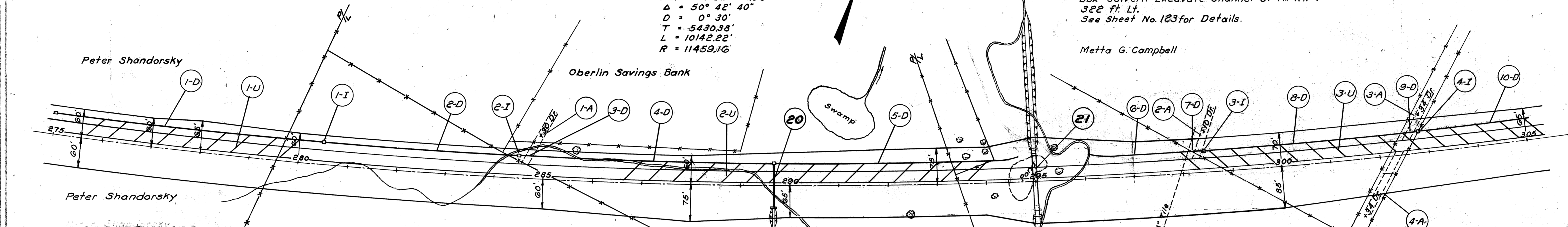
U-PIPE UNDERDRAINS

Item No.	From Sta.	To Sta.	Side	4" Pipe Under-drains
1-U	276+00	280+00	Lt.	468
2-U	287+00	294+00	Lt.	780
3-U	298+00	304+50	Lt.	728
Total				1976

I-CATCH BASINS

Item No.	Sta.	Side	Std. #1-2 Catch Basin
1-I	280+50	Lt.	1
2-I	284+40	Lt.	1
3-I	298+40	Lt.	1
4-I	302+80	Lt.	1
Total			4

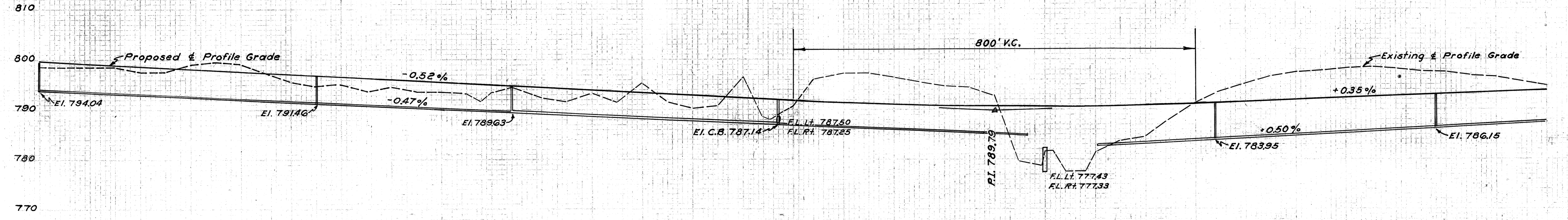
B.M. Spike in 24" Elm
250' Lt. of Sta. 304+50
Elev. 795.41



D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	Pipe for Roadway Drainage		12" Pipe Under Drives		Pipe Specials		12" Pipe For Outlet		A-PRIVATE DRIVES & APPROACHES					
				10"	12"	Item	13	10"x10"x4"	12"x12"x4"	Ys.	Ys.	ITEM No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.	
1-D	275+01	280+49	Lt.	530					9			1-A	284+50	Lt.	4		
2-D	280+51	284+39	Lt.	388			20					2-A	298+10	Lt.	4		
3-D	284+41	284+61	Lt.									3-A	302+34	Lt.	4		
4-D	284+61	289+69	Lt.	496				6				4-A	302+34	Rt.	8	20	
5-D	289+71	294+65	Lt.	456			20	9		20							
6-D	296+03	298+19	Lt.	194				1		20							
7-D	298+19	298+39	Lt.				20										
8-D	298+41	302+59	Lt.	400				9									
9-D	302+59	302+79	Lt.				20										
10-D	302+81	305+00	Lt.	210				5									
Totals				530	2144	60	9	30	40								

799.67	799.15	798.23	798.11	797.59	797.07	796.55	796.03	795.51	794.99	794.47	793.95	793.43	792.91	792.39	791.87	791.40	791.05	790.80	790.66	790.63	790.71	790.89	791.19	791.54	791.89	792.24	792.59	792.94	793.29	793.64
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------



Excavation 2268 Cu. Yds.
Embankment 3317 Cu. Yds.
Emb.+ 25% 4146 Cu. Yds.

Excavation 12403 Cu. Yds.
Embankment 10960 Cu. Yds.
Emb.+ 25% 13700 Cu. Yds.

Excavation 12680 Cu. Yds.
Embankment 476 Cu. Yds.
Emb.+ 25% 595 Cu. Yds.

798.78	798.78	797.68	799.08	799.08	795.78	795.08	794.88	793.78	791.98	793.48	794.48	792.18	793.28	791.48	793.48	790.16	796.48	+37 788.96	+78 789.56	790.36	+40 796.06	797.16	796.46	794.65	+74 798.45	792.85	+35 782.89	+69 777.79	781.79	+15 781.89	+40 777.79	+80 777.79	+04 781.19	+26 782.49	784.39	791.29	795.19	797.49	798.19	798.19	796.49	791.99
275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305												

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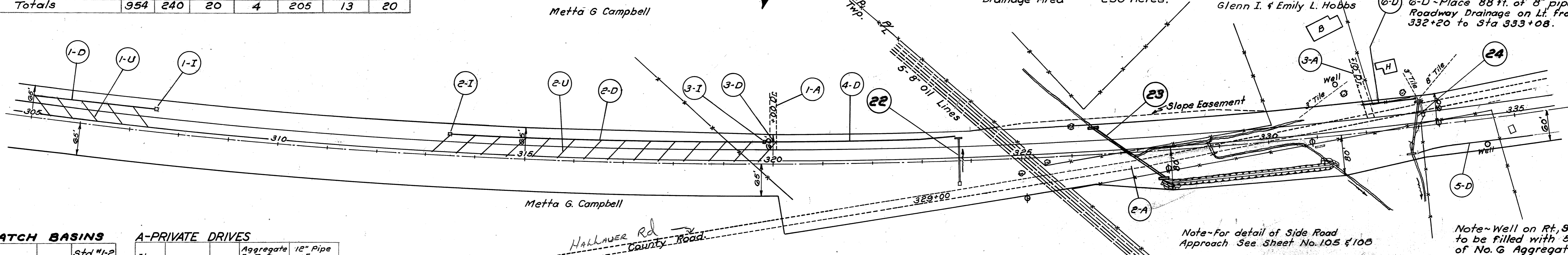
D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	Pipe for Roadway Drainage		10" Pipe Under Drives Item I-3	12"x12" Pipe Y'S Special	8" Pipe for Roadway Drainage	10"x10" Pipe Y'S Special	10" Pipe for Outlet Item I-2
				10"	12"					
1-D	305+00	307+49	Lt.		240					
2-D	313+51	319+89	Lt.	614					12	
3-D	319+91	320+11	Lt.			20				
4-D	320+11	323+73	Lt.	340					1	20
5-D	332+95	335+00	Rt.					205		
Totals				954	240	20	4	205	13	20

22 Sta. 323+75 Build Std. 15"x98" Pipe Culvert with Std. No. 1-2 Catch Basin on Rt. & Std. Headwall on Lt. See Sheet No. 122 for Details.

23 Sta. 327+16.5 Build Std. 48"x192" Pipe Culvert with Std. Plain Conc. Headwalls Rt. & Lt. Remove Exist. 6'-6" x 23'-6" Conc. Slab Culvert. Excavate Channel on Rt. as shown for Outlet. See Sheet No. 124 for Details. Existing Waterway 13.7 Sq. Ft. Proposed Waterway 12.6 Sq. Ft. Drainage Area 250 Acres.

Note-Construct special ditch on Lt. from Sta. 330+50 to Sta. 332+00.
6-D Place 88 ft. of 8" pipe for Roadway Drainage on Lt. from Sta. 332+20 to Sta. 333+08.



I-CATCH BASINS

Item No.	Sta.	Side	Std. #1-2 Catch Basin
1-I	370+50	Lt.	1
2-I	313+50	Lt.	1
3-I	319+90	Lt.	1
Total			
3			

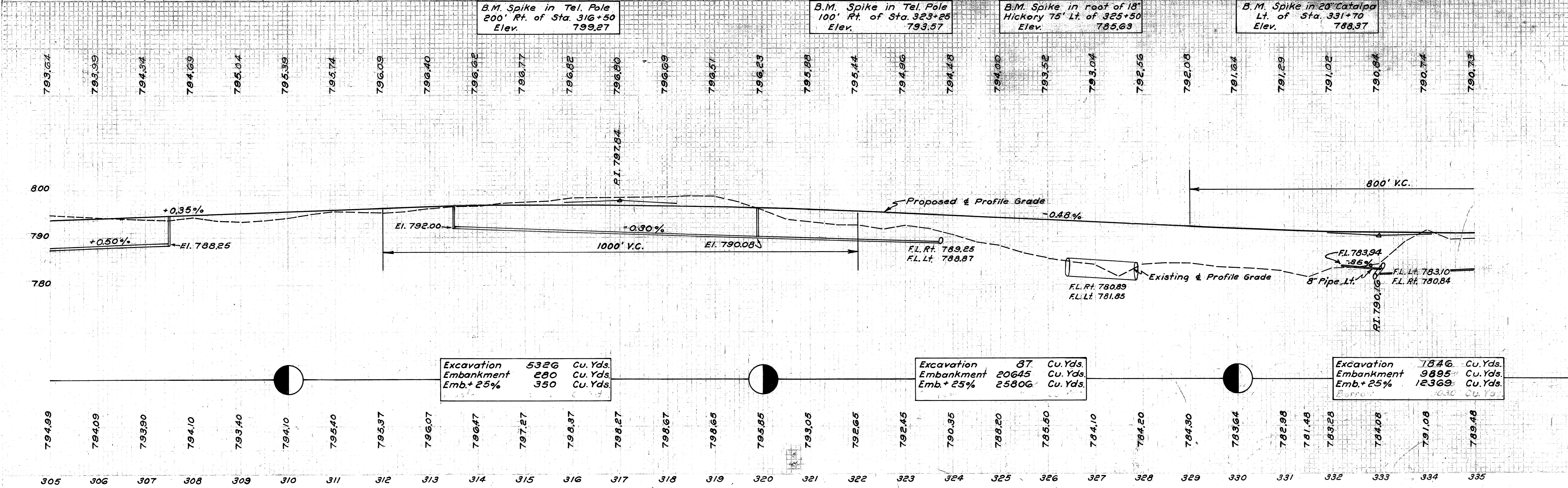
A-PRIVATE DRIVES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.
1-A	320+00	Lt.	4	
2-A	329+00	Rt.	135	
3-A	332+10	Lt.	4	20
Total				
143				
20				

U-PIPE UNDERDRAIN

Item No.	From Sta.	To Sta.	Side	4" Pipe Under-drains
1-U	305+00	307+00	Lt.	260
2-U	313+50	320+00	Lt.	728
Total				
988				

24 Sta. 332+94 Remove & Store 12"x32" Conc. Pipe & 15"x52" Drain Tile from Exist. Struct. also remove Exist. Hdwalls & Catch Basin. Build Std. 15"x106" Pipe Culvert with Std. Plain Conc. Headwalls. See Sheet No. 125 for Details.



B.M. Spike in Tel. Pole 200' Rt. of Sta. 316+50 Elev. 799.27

B.M. Spike in Tel. Pole 100' Rt. of Sta. 323+25 Elev. 793.57

B.M. Spike in root of 18" Hickory 75' Lt. of 325+50 Elev. 785.63

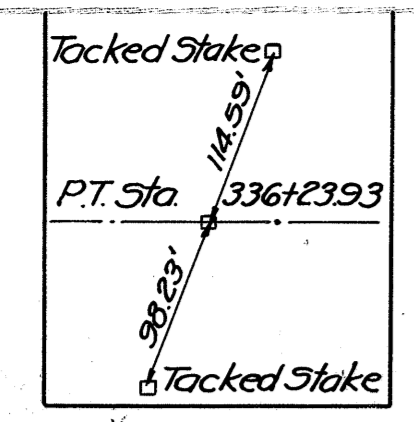
B.M. Spike in 20" Catalpa Lt. of Sta. 331+70 Elev. 788.37

Excavation 5326 Cu. Yds.
Embankment 280 Cu. Yds.
Emb. + 25% 350 Cu. Yds.

Excavation 87 Cu. Yds.
Embankment 20645 Cu. Yds.
Emb. + 25% 25806 Cu. Yds.

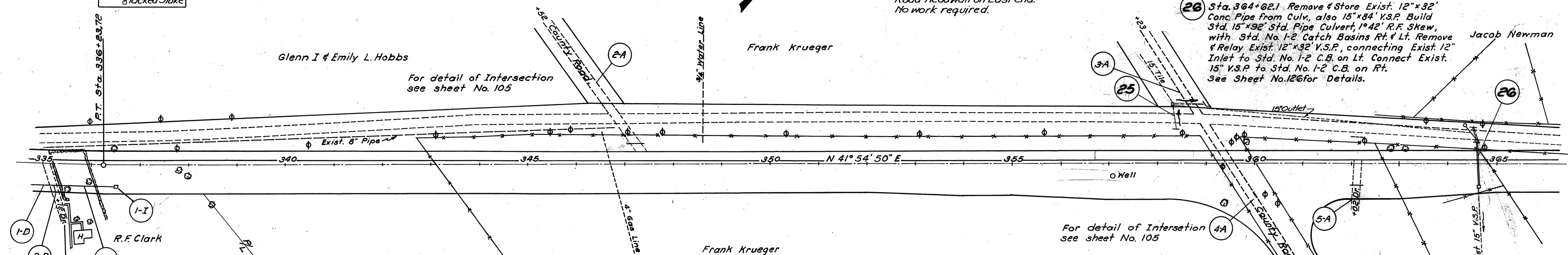
Excavation 7846 Cu. Yds.
Embankment 9895 Cu. Yds.
Emb. + 25% 12369 Cu. Yds.

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25 Sta. 358+39 Existing 12"X50' Conc. Pipe Culvert with Concrete headwall on Rt. and Conc. C.B. on Left, also 12"X72' Conc. Pipe Culvert with Side Road Headwall on East end. No work required.

26 Sta. 364+02.1 Remove & Store Exist. 12"X32' Conc. Pipe from Culv. also 15"X84' V.S.P. Build Std. 15"X92' Std. Pipe Culvert, 1°42' R.F. Skew, with Std. No. 1-2 Catch Basins Rt. & Lt. Remove & Relay Exist. 12"X32' V.S.P., connecting Exist. 12" Inlet to Std. No. 1-2 C.B. on Lt. Connect Exist. 15" V.S.P. to Std. No. 1-2 C.B. on Rt. See Sheet No. 126 for Details.



A-PRIVATE DRIVES & APPROACHES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.	Remove & Store 10" C.M.P. Lin. Ft.
1-A	335+12	Rt.	8		
2-A	347+52	Lt.	20	40	
3-A	359+23	Lt.	20		
4-A	359+23	Rt.	15		
5-A	362+02	Rt.	8	20	18
Totals			71	60	18

D-ROADWAY DRAINAGE

Item No.	Side	From Sta.	To Sta.	8" Pipe for Roadway Drainage	8" Pipe Under Drives Item I-3
1-D	Rt.	335+00	335+11	11	
2-D	Rt.	335+11	335+31		20
3-D	Rt.	335+31	336+49	118	
Totals				129	20

I-CATCH BASINS

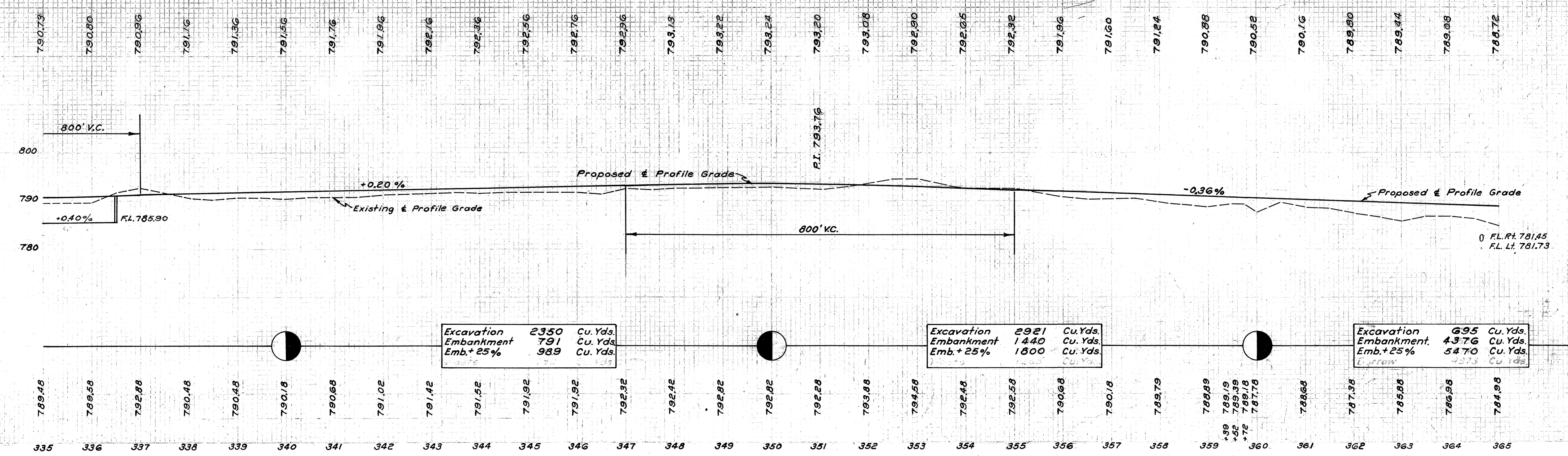
Item No.	Side	Station	Std. #1-2 Catch Basin Unit	
1-I	Rt.	336+50	1	
Total				1

Spike in Tel. Pole Lt. of Sta. 338+75 Elev. 791.61

Spike in Tel. Pole Lt. of Sta. 347+35 Elev. 794.33

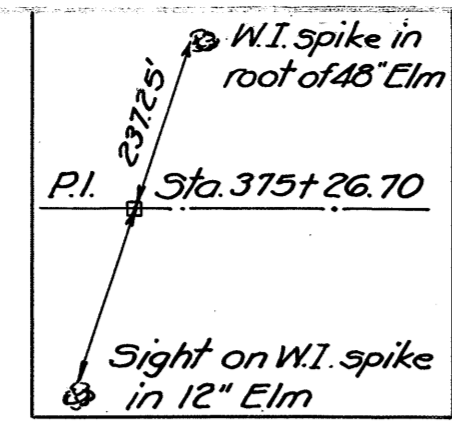
Spike in Root of 40" Oak Lt. of Sta. 349+60 Elev. 795.54

B.M. Spike in Root of 30" Elm Lt. of Sta. 356+90 Elev. 789.67



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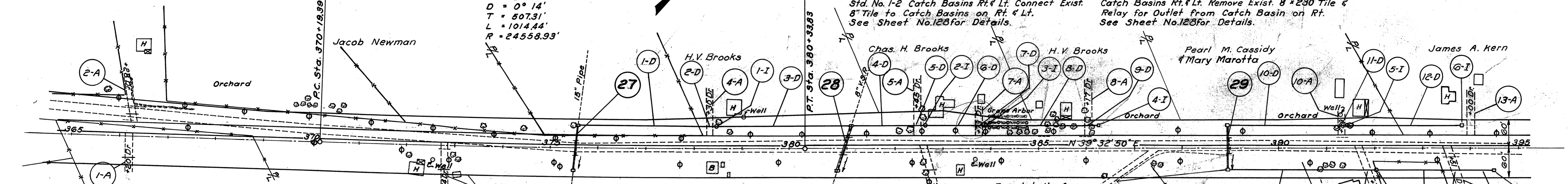
Note-Well on Lt. Sta. 379+05, to be filled with 15 Cu. Yds. of No. 6 Aggregate.



PI. Sta. 375+26.70
 $\Delta = 2^\circ 22'$
 $D = 0^\circ 14'$
 $T = 507.31'$
 $L = 1014.44'$
 $R = 24558.93'$

28 Sta. 380+94.15 Remove Exist. Catch Basins Rt. & Lt. also remove & Store 8" x 88' of Exist. Tile. Build Std. 15" x 92' Pipe Culv., 12" 06' L.F. Skew with Std. No. 1-2 Catch Basins Rt. & Lt. Connect Exist. 8" Tile to Catch Basins on Rt. & Lt. See Sheet No. 126 for Details.

29 Sta. 388+97.83 Remove & Store 15" x 32' Conc. Pipe from Exist. Culv. Remove Exist. Conc. Headwalls. Build Std. 15" x 90' Pipe Culvert with Std. No. 1-2 Catch Basins Rt. & Lt. Remove Exist. 8" x 230' Tile & Relay for Outlet from Catch Basin on Rt. See Sheet No. 128 for Details.



A-PRIVATE DRIVES & APPROACHES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yds.	12" Pipe For Drives Lin. Ft.	Remove & Store 10" C.M.P. Lin. Ft.	Remove & Store 8" C.M.P. Lin. Ft.	Remove & Store 8" V.S.P. Lin. Ft.
1-A	366+20	Rt.	6	20		18	
2-A	366+28	Lt.	8	20		10	
3-A	372+74	Rt.	8	20	16		
4-A	378+30	Lt.	5				
5-A	382+45	Lt.	6				
6-A	382+65	Rt.	8	20			
7-A	383+73	Lt.	5				
8-A	386+17	Lt.	4		18		
9-A	387+44	Rt.	20				
10-A	391+29	Lt.	4			18	
11-A	391+68	Rt.	8				
12-A	393+51	Rt.	8			16	
13-A	394+00	Lt.	4				
Total			94	80	34	62	10

27 Sta. 375+51.38 Remove & Store Exist. 12" x 32' Conc. Pipe from Exist. Culv. also 15" x 92' Exist. V.S.P. Build Std. 15" x 88' Pipe Culv., 1" 04' L.F. Skew, with Std. No. 1-2 Catch Basins Rt. & Lt. Connect Exist. 15" V.S.P. to Catch Basins on Rt. & Lt. See Sheet No. 126 for Details.

D-ROADWAY DRAINAGE

Item No.	From Sta.	To Sta.	Side	8" Pipe for Roadway Drainage	8" Pipe Under Drives Item I-3
1-D	375+53	378+19	Lt.	266	
2-D	378+19	378+39	Lt.		20
3-D	378+41	381+03	Lt.	262	
4-D	381+05	382+35	Lt.	130	
5-D	382+35	382+55	Lt.		20
6-D	382+57	383+63	Lt.	106	
7-D	383+63	383+83	Lt.		20
8-D	383+85	386+07	Lt.	222	
9-D	386+07	386+27	Lt.		20
10-D	388+99	391+19	Lt.	220	
11-D	391+19	391+39	Lt.		20
12-D	391+41	393+81	Lt.	240	
13-D	388+99	391+59	Rt.	260	
14-D	391+59	391+79	Rt.		20
15-D	391+81	393+41	Rt.	160	
16-D	393+41	393+61	Rt.		20
17-D	393+61	394+49	Rt.	88	
Total				1954	140

I-CATCH BASINS

Item No.	Sta.	Side	Std #1-2 Catch Basin Units	Std #1 Side Ditch Inlets
1-I	378+40	Lt.		1
2-I	382+56	Lt.		1
3-I	383+84	Lt.		1
4-I	386+28	Lt.	1	
5-I	391+40	Lt.		1
6-I	393+82	Lt.	1	
7-I	391+80	Rt.		1
8-I	394+50	Rt.	1	
Total			3	5

Note-Well on Rt. Sta. 372+55 to be filled with 21 Cu. Yds. of No. 6 Aggregate.

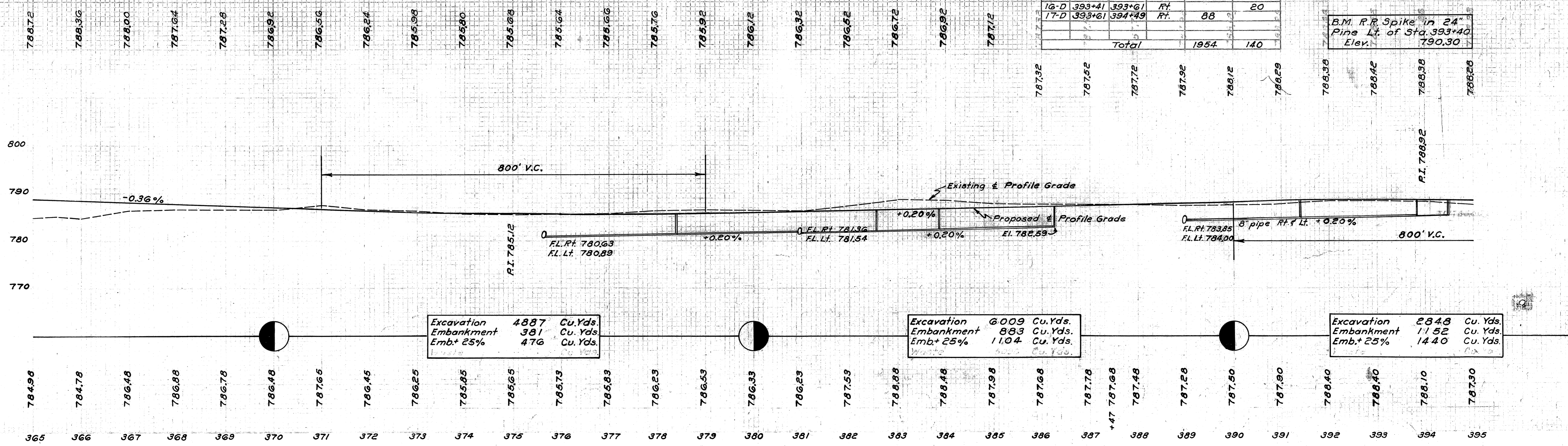
Note-Well on Rt. Sta. 383+80 to be filled with 38 Cu. Yds. of No. 6 Aggregate.

B.M. Spike in Root of 36" Oak Lt. of Sta. 365+75 Elev. 787.72

B.M. Spike in Root of 15" Hickory Lt. of Sta 373+55 Elev. 786.48

B.M. Spike in Root of 12" Hickory Lt. of Sta 382+10 Elev. 789.91

B.M. R.R. Spike in 24" Pine Lt. of Sta. 393+40 Elev. 790.30

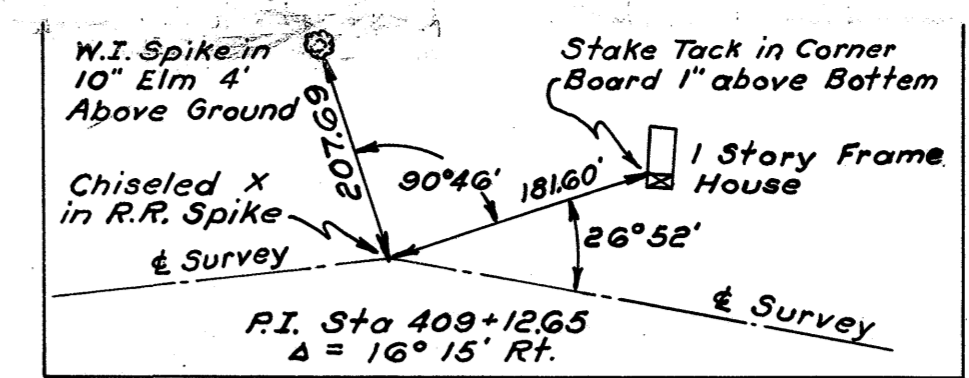


Excavation 4887 Cu. Yds.
 Embankment 381 Cu. Yds.
 Emb.+ 25% 476 Cu. Yds.

Excavation 6009 Cu. Yds.
 Embankment 883 Cu. Yds.
 Emb.+ 25% 1104 Cu. Yds.

Excavation 2848 Cu. Yds.
 Embankment 1152 Cu. Yds.
 Emb.+ 25% 1440 Cu. Yds.

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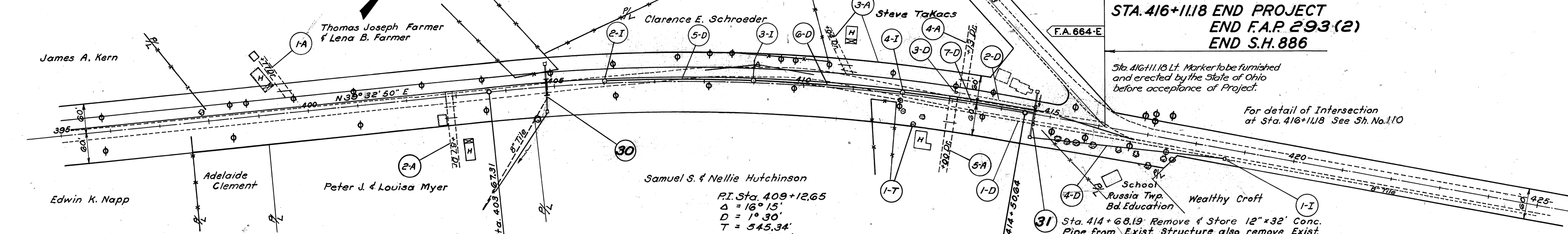
30 Sta. 404+81 Remove & Store 12"x32' Conc. Pipe from Exist. Culv. also remove Conc. Head-walls. Build Std. 15"x34' Pipe Culvert with Std. No. 1-2 Catch Basins Rt. & Lt. Connect Exist. 3" & 4" Tile to C.B. on Lt. Remove & Store 254' of Exist. 8" Tile on Rt. Lay 230' of 12" Pipe on Rt for Outlet. See Sheet No. 127 for Details.

STA. 416+11.18 END PROJECT
END F.A.P. 293(2)
END S.H. 886

Sta. 416+11.18 Lt. Marker to be furnished and erected by the State of Ohio before acceptance of Project.

For detail of Intersection at Sta. 416+11.18 See Sh. No. 110

31 Sta. 414+68.19 Remove & Store 12"x32' Conc. Pipe from Exist. Structure, also remove Exist. C.B. Build Std. 15"x88' Pipe Culvert with Std. No. 1-2 & 2-2 C.B.s. as shown. Connect 8" Pipe to C.B. on Rt. for Outlet. See Sheet No. 125 for Details.



A-PRIVATE DRIVES & APPROACHES

Item No.	Station	Side	Aggregate For Tr. Comp. Approach Cu. Yd.	12" Pipe For Drives Lin. Ft.	Remove & Store 10" C.M.P. Lin. Ft.	Remove & Store 8" C.M.P. Lin. Ft.
1-A	399+77	Lt.	4	20		
2-A	402+87	Rt.	8	20	18	
3-A	411+04	Lt.	4	20		24
4-A	413+13	Lt.	4	20		
5-A	413+00	Rt.	8	20		
			28	100	18	24

D-ROADWAY DRAINAGE Note-Item 4-D, 5-D & 6-D obtained from Item 1-D & 2-D.

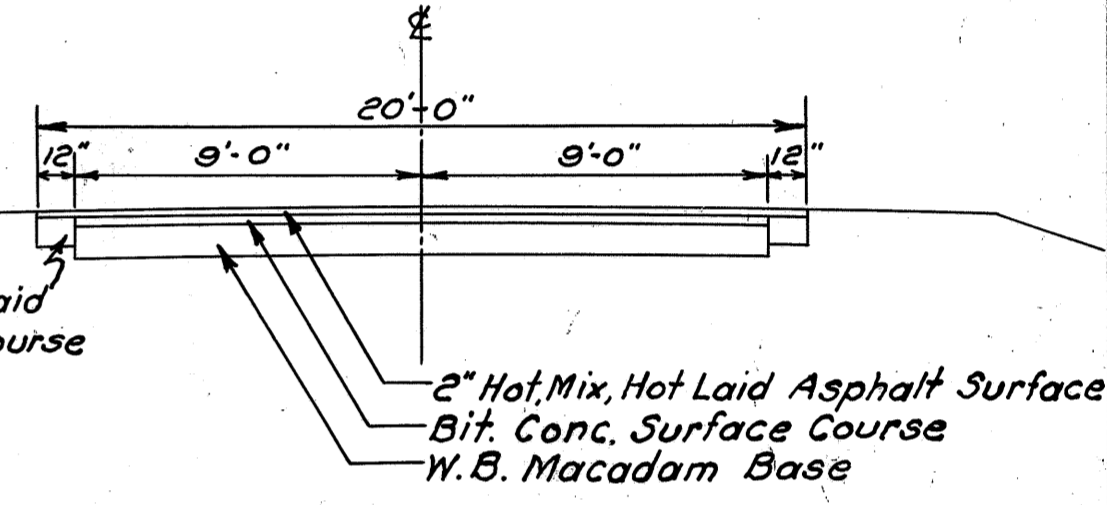
Item No.	Station	Side	8" Pipe Lin. Ft.	Remove & Store 8" V.S.P. Lin. Ft.	Existing Catch Basin Removed Lump	Clean & Relay 8" V.S.P. Lin. Ft.
1-D	409+27	418+65	Rt.		938	
2-D	413+05	414+65	Lt.		160	
3-D	413+03	Rt.				1
4-D	414+69	418+65				396
5-D	406+01	408+99				298
6-D	409+01	411+99				298
7-D	412+01	414+67		266		
Totals			266	1098	1	992

I-CATCH BASINS

Item No.	Station	Side	Std. No. 2-2 Catch Basin Less Grate Unit	Std. No. 7 Catch Basin Unit
1-I	418+65	Rt.	1	
2-I	406+00	Lt.		1
3-I	409+00	Lt.		1
4-I	412+00	Lt.		1
Total			1	3

T-RIPRAP FOR TREE PROTECTION

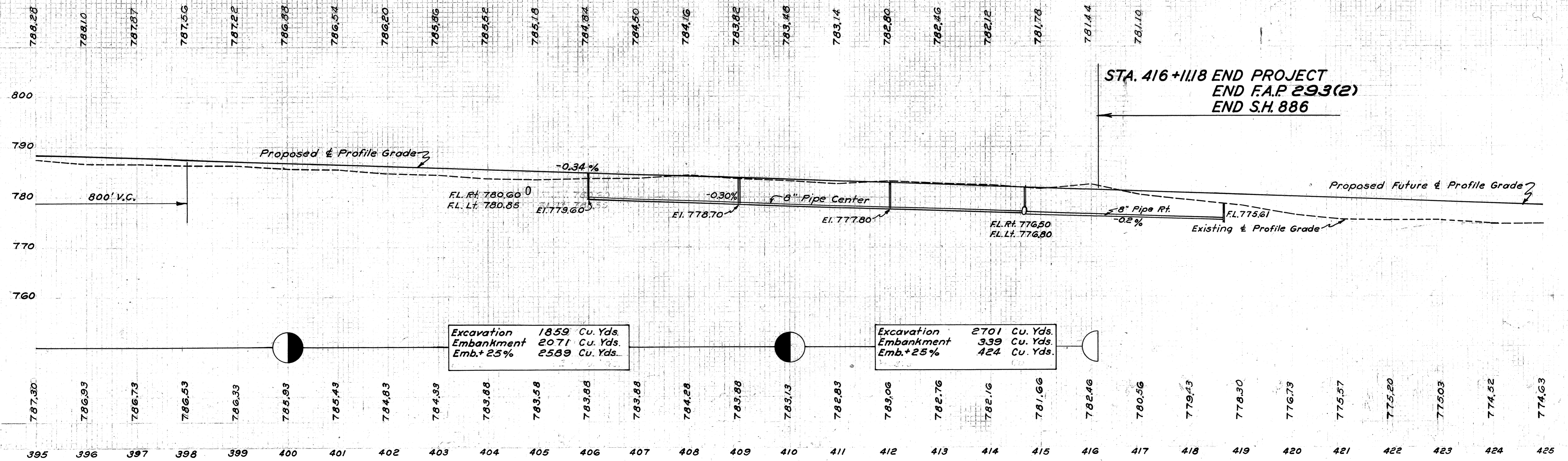
Item No.	Station	Kind	Riprap for Tree Protection Sq. Yds.
1-T	412+25	18" Maple	6
Total			6



B.M. X on Bottom Conc. Step Lt. of Sta. 399+30 Elev. 788.68

B.M. Spike in Roof of 30' Maple Rt. of Sta. 415+90 Elev. 781.68

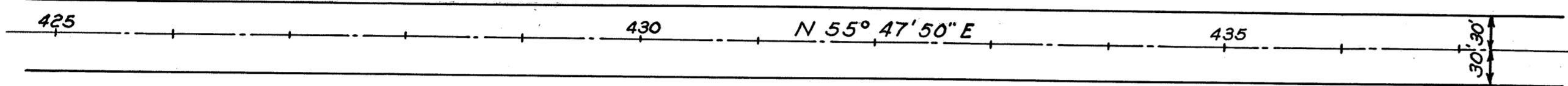
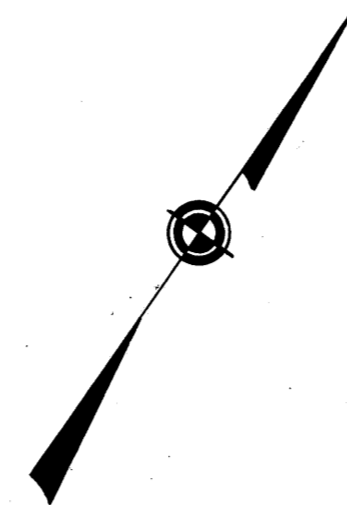
B.M. Spike in Pole opp. Sta. 89+42. (S.H. 313 Sec.M.) Elev. 785.73



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	293(2)	1938

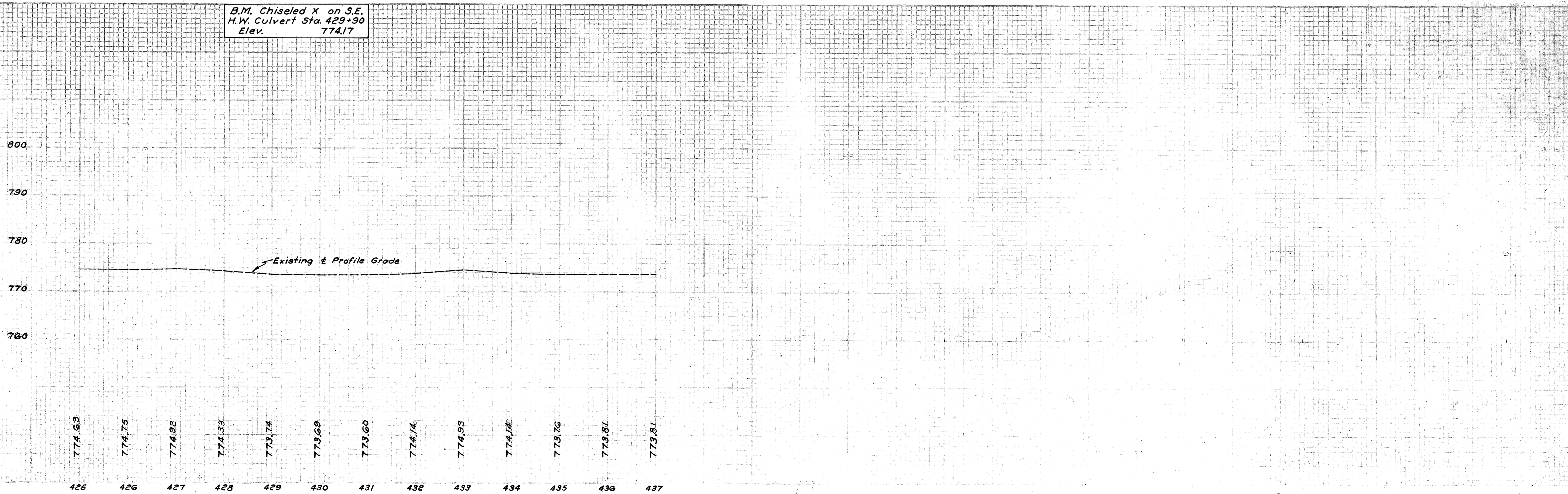
24
138

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.



PLAN	DATE
PREPARED BY	
PLOTTED BY	
CHECKED BY	
IN CHARGE	

B.M. Chiseled X on S.E.
H.W. Culvert Sta. 429+90
Elev. 774.17



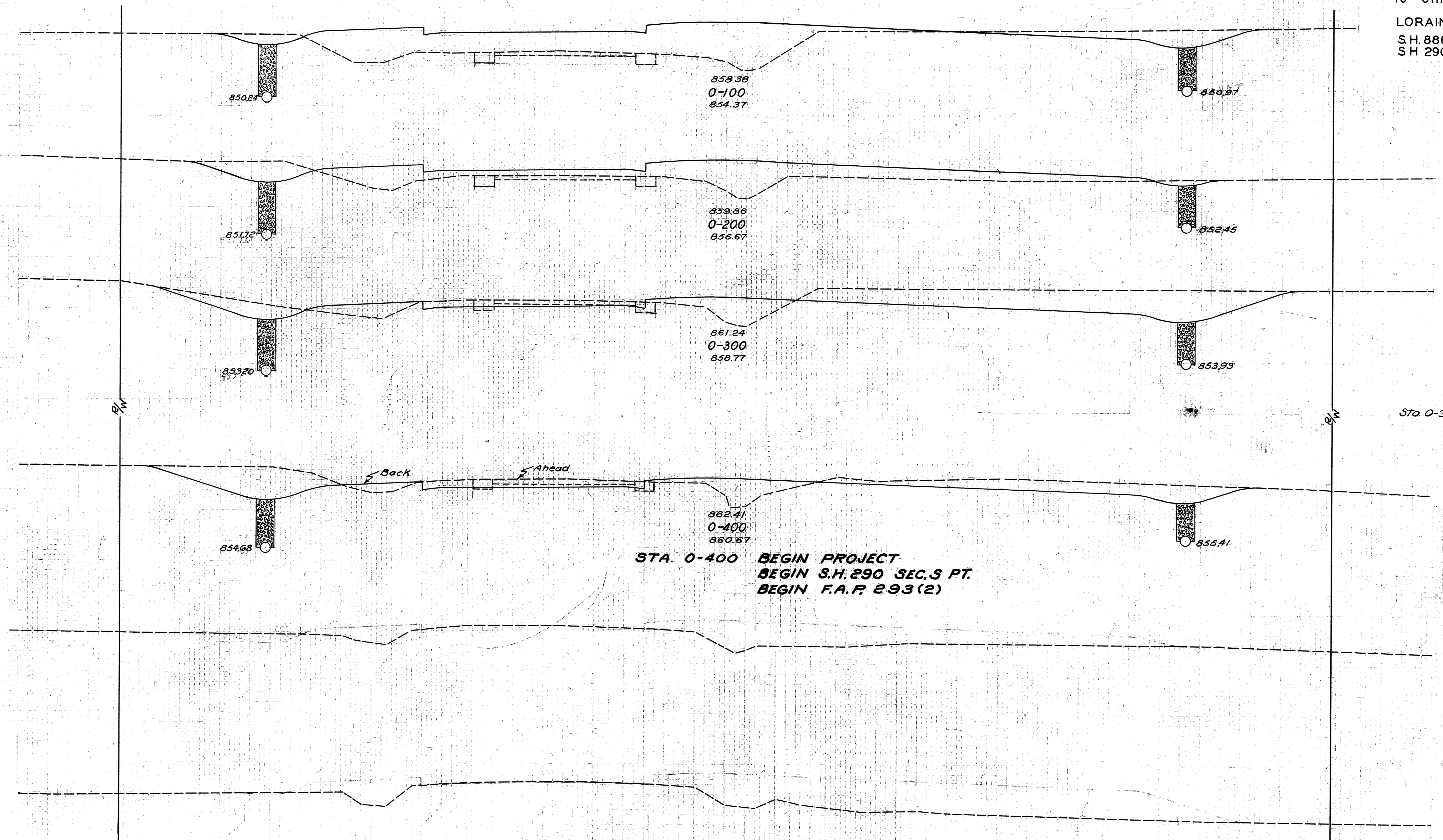
SUPERELEVATION TABLES

LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.

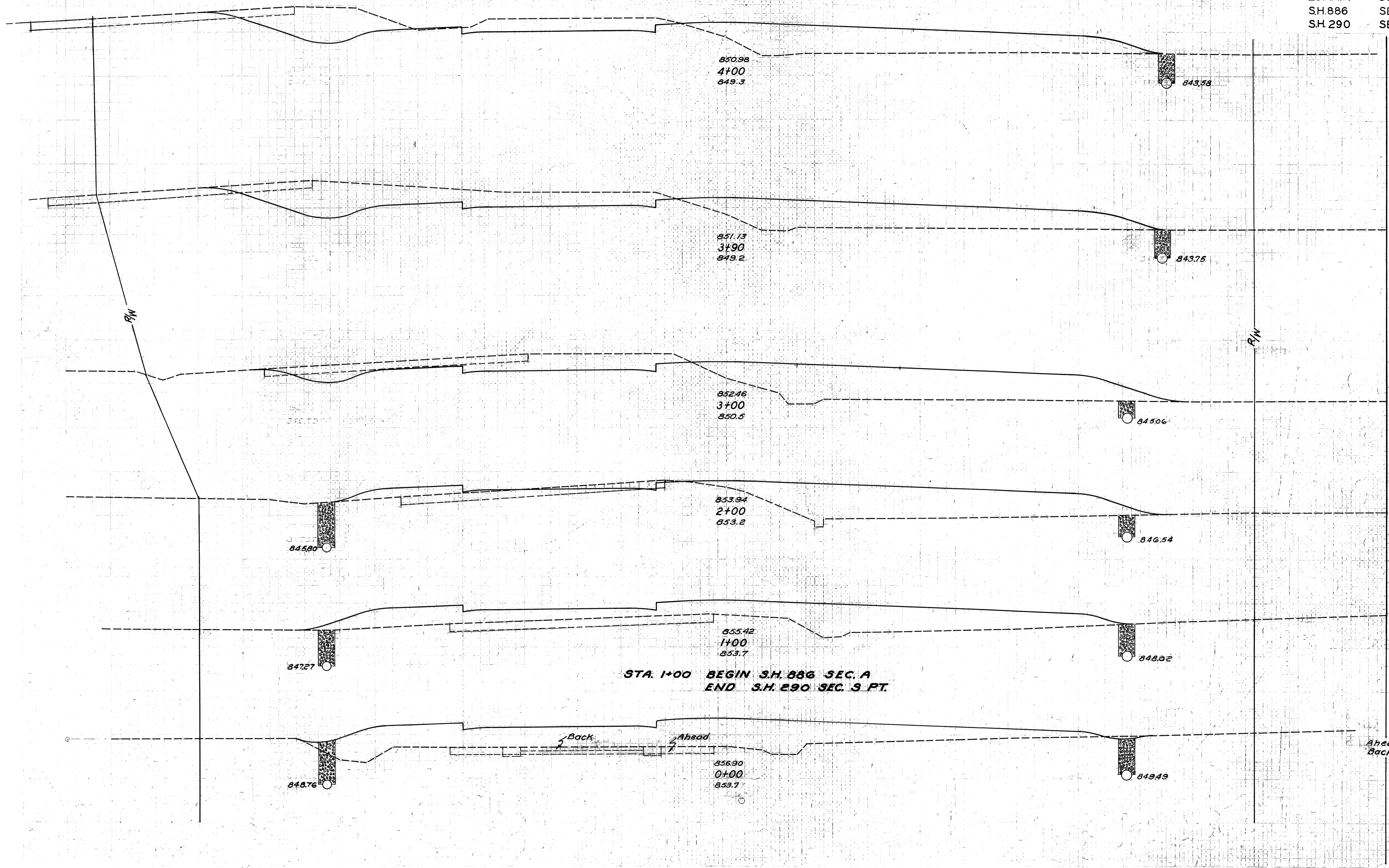
P.C. STA. 108+39.53 D-0° 30' RT. P.T. STA. 154+17.86									
Continued from Sheet No.									
LEFT			CENTER				RIGHT		
Add To Rt. Edge Grade	Elev. Left Edge	Elev. Right Edge	Deduct From & Grade	Station	& Grade	Deduct From & Grade	Elev. 2' Right of &	Elev. 40' Right of &	Deduct From & Grade
0.25	841.49	841.24	0.33	151+25	841.57	.04	841.53	840.04	1.53
	841.43	841.18		+50	841.51		841.47	839.98	
	841.36	841.11		+75	841.44		841.40	839.91	
	841.30	841.05		152+00	841.38		841.34	839.85	
	841.24	840.99		+25	841.32		841.28	839.79	
	841.18	840.93		+50	841.26		841.22	839.73	
	841.11	840.86		+75	841.19		841.15	839.66	
	841.05	840.80		153+00	841.13		841.09	839.60	
	840.99	840.74		+25	841.07		841.03	839.54	
	840.93	840.68		+50	841.01		840.97	839.48	
	840.86	840.61		+75	840.94		840.90	839.41	
	840.80	840.55		154+00	840.88		840.84	839.35	
+0.25	840.76	840.51		P.T.+17.86	840.84		840.80	839.31	
+0.25	840.74	840.49		+25	840.82		840.78	839.29	
+0.20	840.63	840.43		+50	840.76		840.72	839.23	
+0.10	840.46	840.36		+75	840.69		840.65	839.16	
-0.05	840.25	840.30		155+00	840.63		840.59	839.10	
-0.17	840.07	840.24		+25	840.57		840.53	839.04	
-0.24	839.94	840.18		+50	840.51		840.47	838.98	
-0.25	839.89	840.14	0.33	+67.86	840.47	.04	840.43	838.94	1.53

P.C. STA. 403+67.31 D-1° 30' RT. P.T. STA. 414+50.64									
LEFT			CENTER				RIGHT		
Add To Rt. Edge Grade	Elev. Left Edge	Elev. Right Edge	Deduct From & Grade	Station	& Grade	Deduct From & Grade	Elev. 2' Right of &	Elev. 40' Right of &	Deduct From & Grade
-0.25	785.57	785.82	0.33	402+17.31	786.15	.04	786.11	784.62	1.53
-0.24	785.55	785.79		+25	786.12		786.08	784.57	1.55
-0.16	785.54	785.70		+50	786.03		785.99	784.39	1.64
+0.03	785.65	785.62		+75	785.95		785.91	784.23	1.72
+0.31	785.84	785.53		403+00	785.86		785.82	784.06	1.80
+0.53	785.98	785.45		+25	785.78		785.74	783.90	1.88
+0.66	786.02	785.36		+50	785.69		785.65	783.73	1.96
+0.68	785.98	785.30		P.C.+67.31	785.63		785.59	783.61	2.02
	785.96	785.28		+75	785.61		785.57	783.59	
	785.87	785.19		404+00	785.52		785.48	783.50	
	785.79	785.11		+25	785.44		785.40	783.42	
	785.70	785.02		+50	785.35		785.31	783.33	
	785.62	784.94		+75	785.27		785.23	783.25	
	785.53	784.85		405+00	785.18		785.14	783.16	
	785.45	784.77		+25	785.10		785.06	783.08	
	785.36	784.68		+50	785.01		784.97	782.99	
	785.28	784.60		+75	784.93		784.89	782.91	
	785.19	784.51		406+00	784.84		784.80	782.82	
	785.11	784.43		+25	784.76		784.72	782.74	
	785.02	784.34		+50	784.67		784.63	782.65	
	784.94	784.26		+75	784.59		784.55	782.57	
	785.85	784.17		407+00	784.50		784.46	782.48	
	784.77	784.09		+25	784.42		784.38	782.40	
	784.68	784.00		+50	784.33		784.29	782.31	
	784.60	783.92		+75	784.25		784.21	782.23	
	784.51	783.83		408+00	784.16		784.12	782.14	
	784.43	783.75		+25	784.08		784.04	782.06	
	784.34	783.66		+50	783.99		783.95	781.97	
	784.26	783.58		+75	783.91		783.87	781.89	
	784.17	783.49		409+00	783.82		783.78	781.80	
	784.09	783.41		+25	783.74		783.70	781.72	
	784.00	783.32		+50	783.65		783.61	781.63	
	783.92	783.24		+75	783.57		783.53	781.55	
	783.83	783.15		410+00	783.48		783.44	781.46	
	783.75	783.07		+25	783.40		783.36	781.38	
	783.66	782.98		+50	783.31		783.29	781.29	
	783.58	782.90		+75	783.23		783.19	781.21	
	783.49	782.81		411+00	783.14		783.10	781.12	
	783.41	782.73		+25	783.06		783.02	781.04	
	783.32	782.64		+50	782.97		782.93	780.95	
	783.24	782.56		+75	782.89		782.85	780.87	
	783.15	782.47		412+00	782.80		782.76	780.78	
	783.07	782.39		+25	782.72		782.68	780.70	
	782.98	782.30		+50	782.63		782.59	780.61	
	782.90	782.22		+75	782.55		782.51	780.53	
	782.81	782.13		413+00	782.46		782.42	780.44	
	782.73	782.05		+25	782.38		782.34	780.36	
	782.64	781.96		+50	782.29		782.25	780.27	
	782.56	781.88		+75	782.21		782.17	780.19	
	782.47	781.79		414+00	782.12		782.08	780.10	
	782.39	781.71		+25	782.04		782.00	780.02	
	782.30	781.62		+50	781.95		781.91	779.93	
+0.68	782.30	781.62		P.T.+50.64	781.95		781.91	779.93	2.02
+0.63	782.17	781.54		+75	781.87		781.83	779.93	1.94
+0.48	781.93	781.45		415+00	781.78		781.74	779.92	1.86
+0.22	781.59	781.37		+25	781.70		781.68	779.92	1.78
-0.04	781.24	781.28		+50	781.61		781.57	779.91	1.70
-0.20	781.00	781.20		+75	781.53		781.49	779.91	1.61
-0.25	780.86	781.11		416+00	781.44		781.40	779.91	1.53
-0.25	780.86	781.11	0.33	+00.64	781.44	.04	781.40	779.91	1.53

10 OHIO 293(2) 1938
LORAIN COUNTY
S.H. 886 SEC. A
SH 290. SEC. S PT.

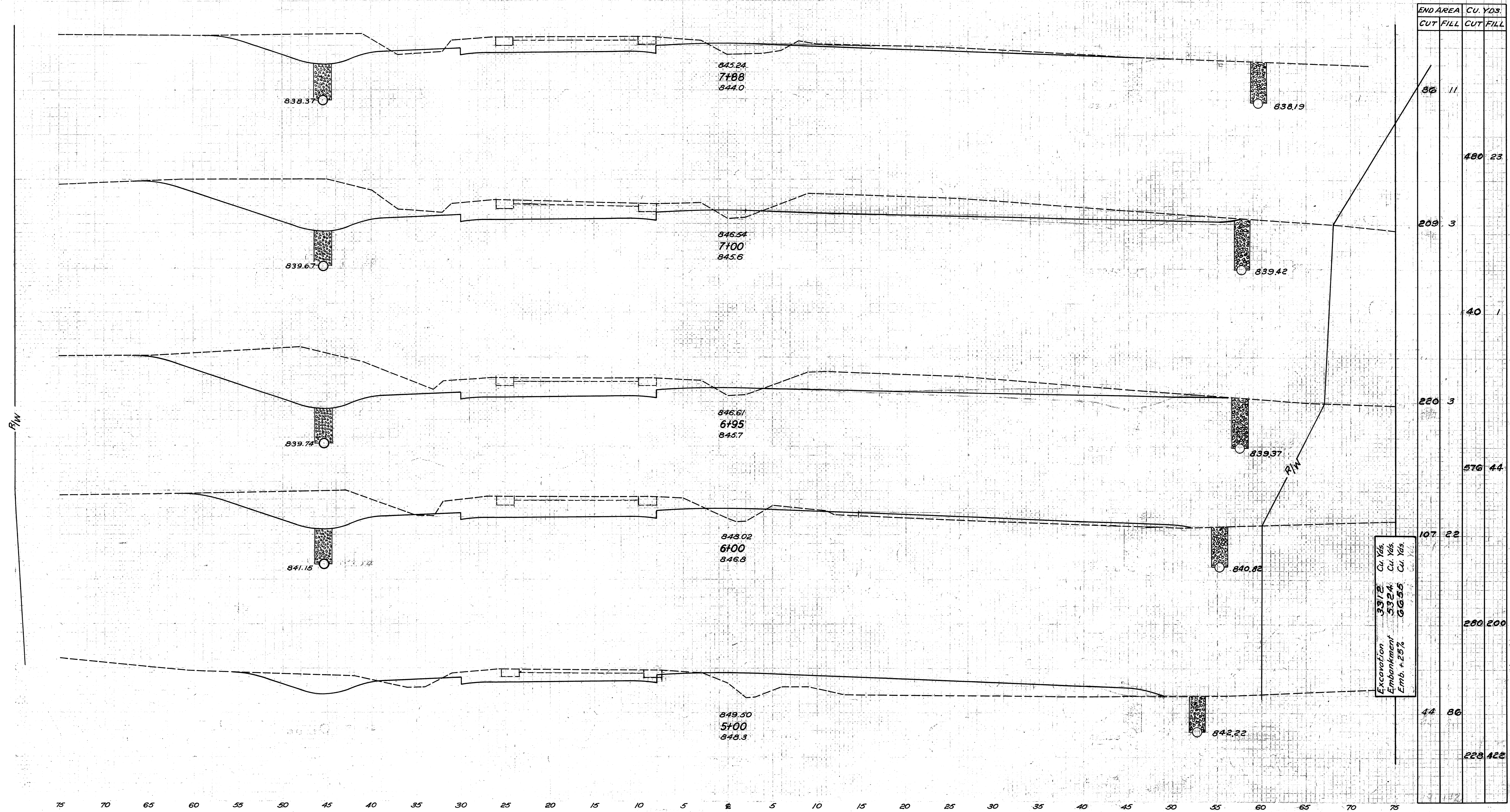


END AREA	CU. YDS.	
	CUT	FILL
28	142	
		85 457
18	105	
		239 257
111	34	
		361 113
		5
Ahead	84	27
Back	80	25
		169 23
		148 46
0-500	0	0



END AREA	CUT	FILL	CU. YDS.
CUT	FILL	CUT	FILL
79	142		
		33	52
101	139		
		250	495
49	158		
		94	609
2	171		
		4	678
0	195		
		4	778
2	225		
2	214		
		56	659

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
86	11		
		480	23
209	3		
		40	1
220	3		
		576	44
107	22		
		280	200
44	86		
		223	422

Excavation 3372 Cu. Yds.
 Embankment 5324 Cu. Yds.
 Emb. +25% 6635 Cu. Yds.

841.64
10+31
841.7

842.01
10+06
842.1

842.10
10+00
842.1

842.57
9+82
842.8

842.69
9+60
843.2

843.58
9+00
844.4

844.84
8+15
844.7

845.06
8+00
843.8

10+31

Total for Int. at Sta 10+17.48
See Sheet No. 103

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
72	0		
		71	0
81	0	165	11
		18	0
78	00		
		33	21
22	63		
31	63		
		30	44
43	46		
		100	148
47	87		
		189	230
73	59		
		41	32
75	57		
		36	15

Ahead →
Back ←

Ahead →
Back ←

836.71

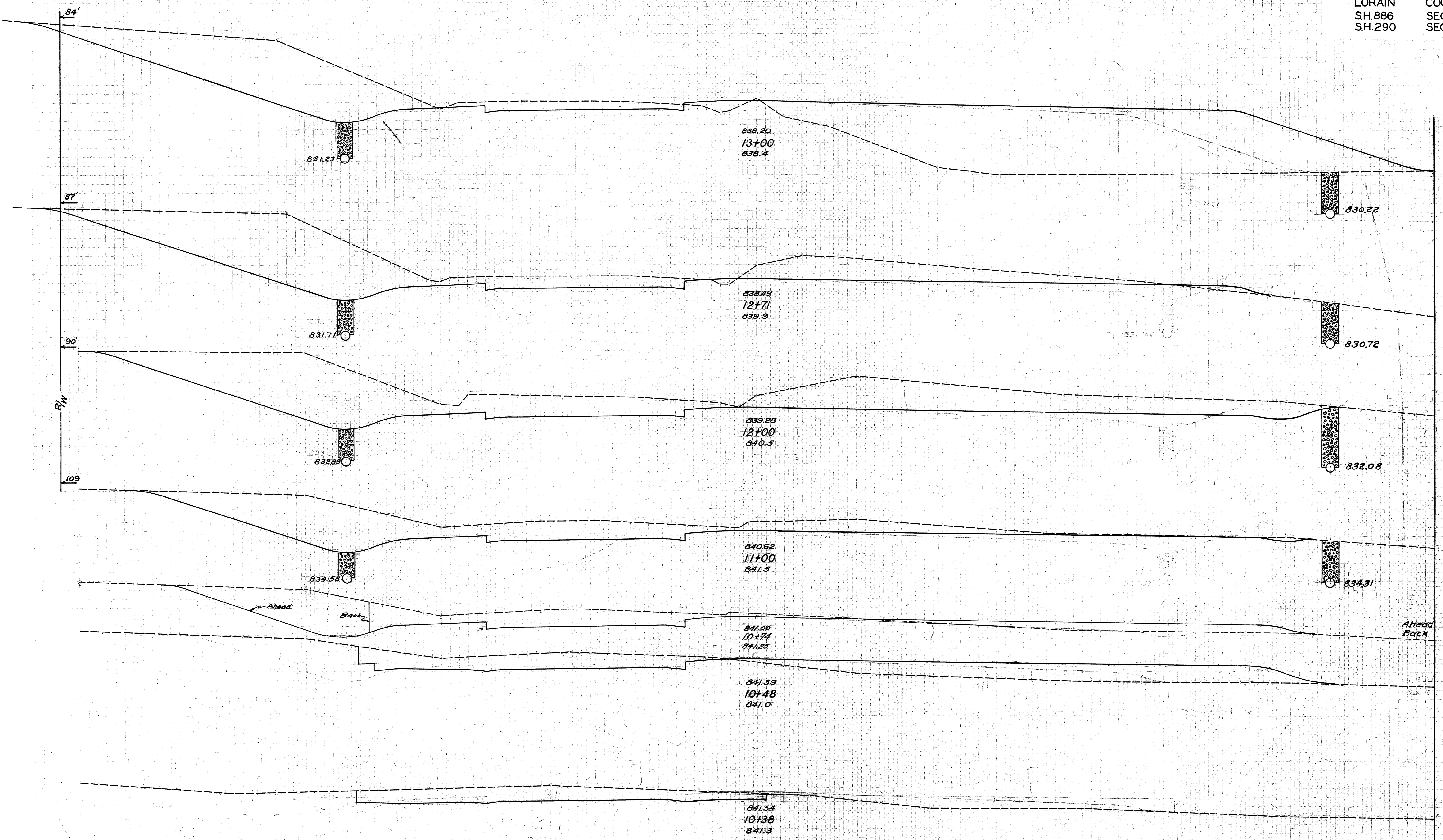
836.62

837.91

837.81

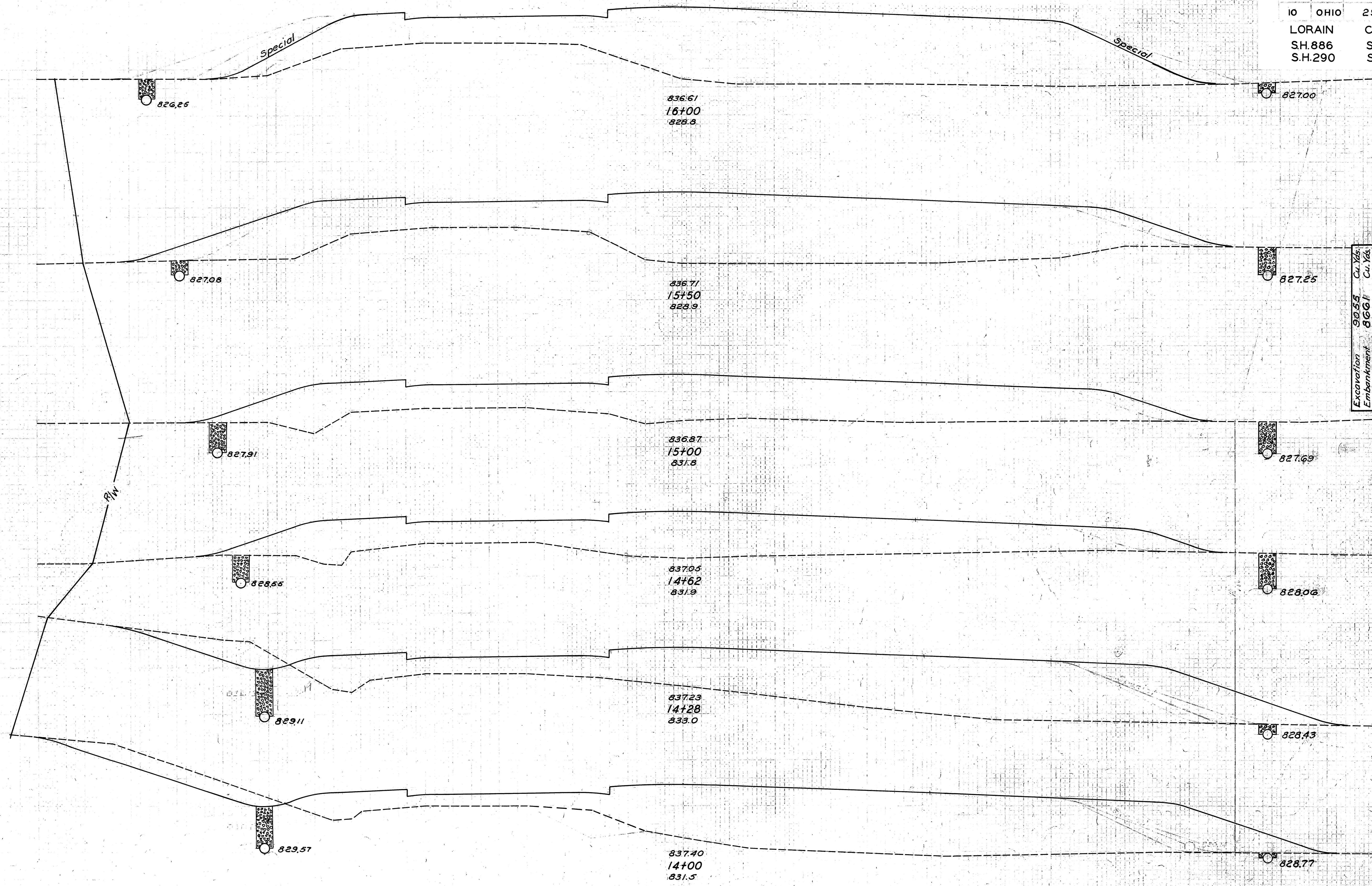
838.19

838.02



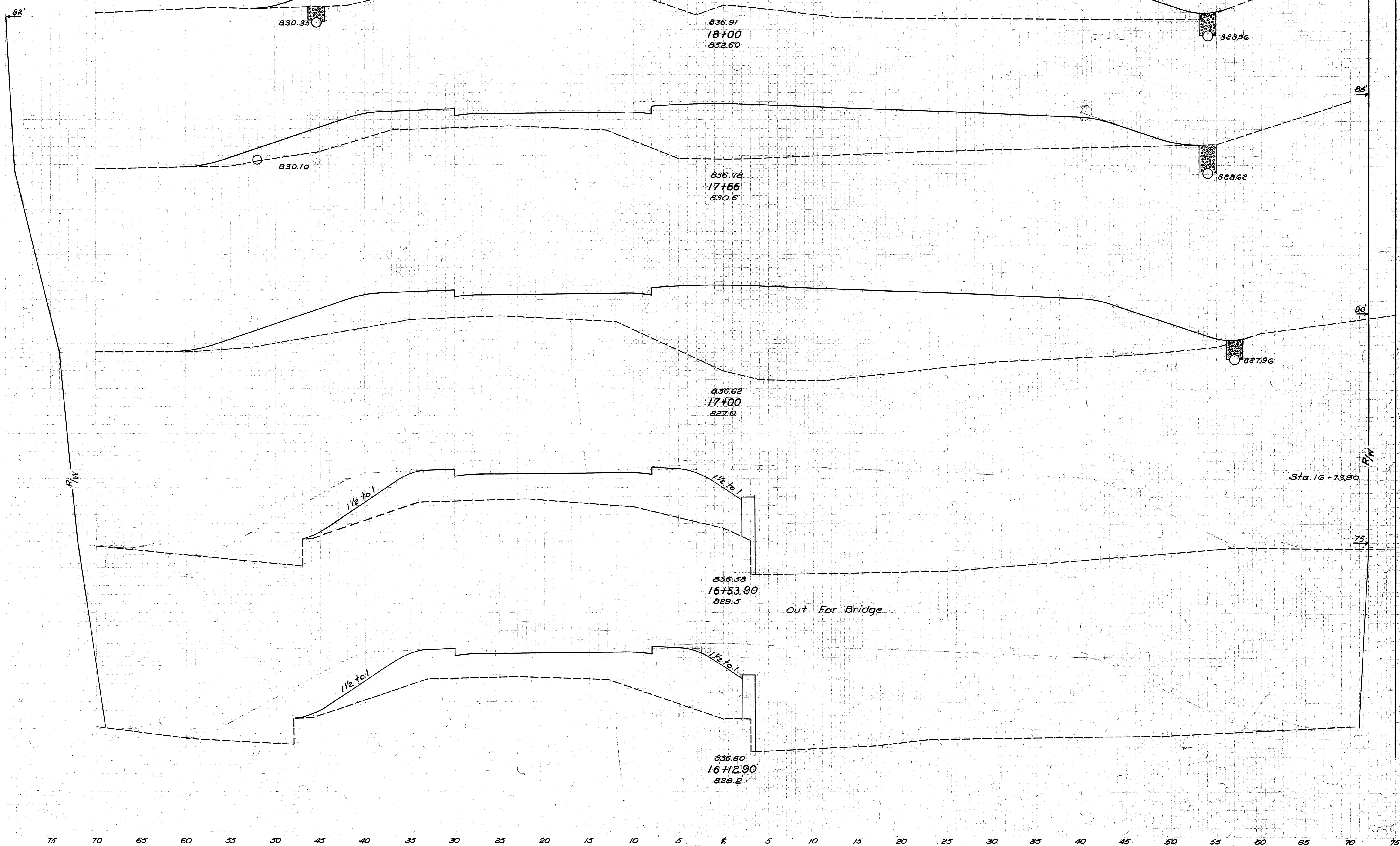
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
194	396		
		260	215
290	5		
		852	6
358	0		
		1024	0
195	0		
127	35		
64	35		
		71	56
110			
83	82		
		27	15
63	100		
		18	00

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

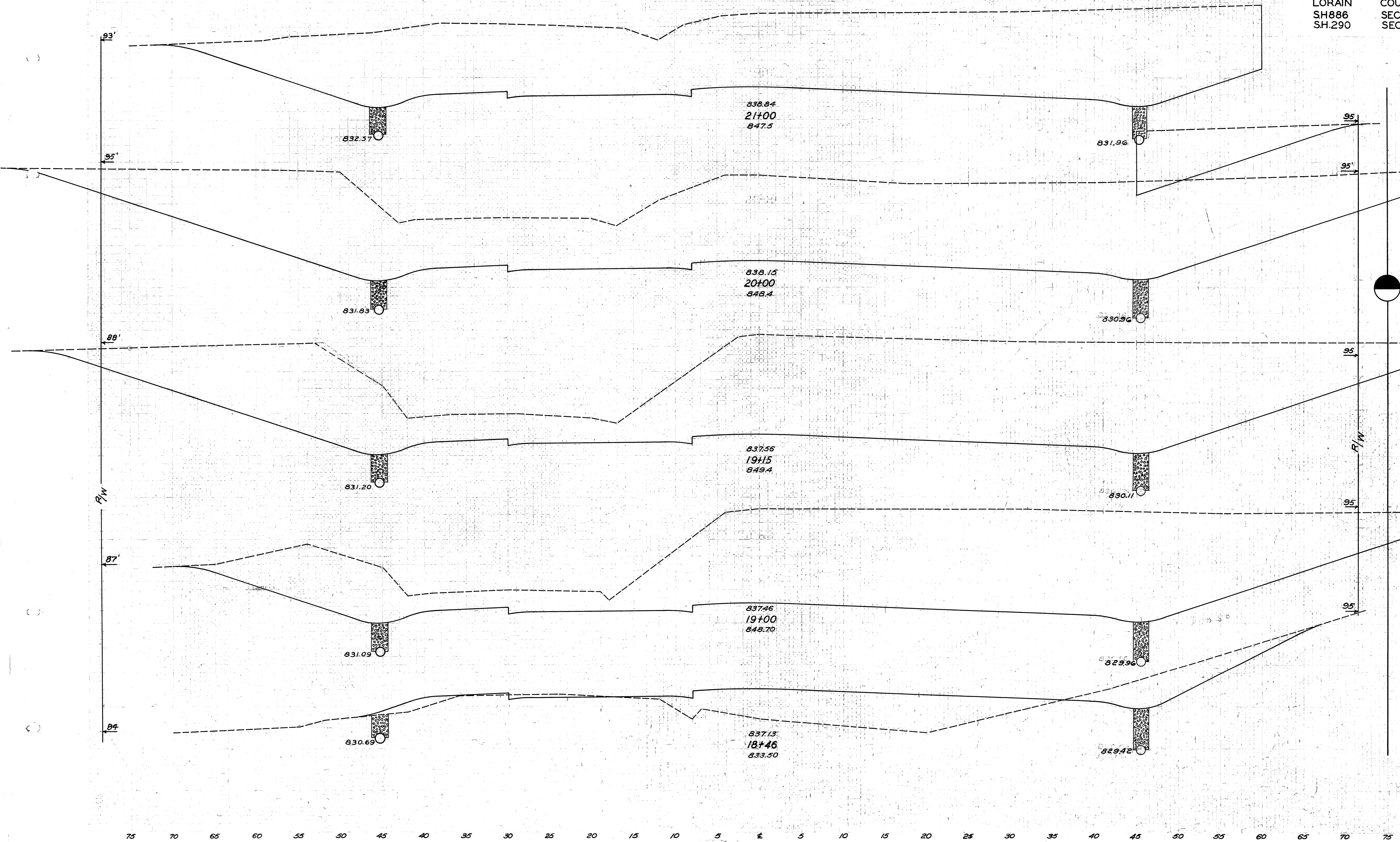


END AREA	CU. YDS.	
CUT	FILL	
0	538	
		0 1014
0	557	
		0 868
0	381	
		0 518
0	356	
		17 528
27	483	
		33 508
36	497	
		426 1654

Excavation 90.55 Cu. Yds.
 Embankment 866.1 Cu. Yds.
 Emb. + 2.5% 1082.6 Cu. Yds.

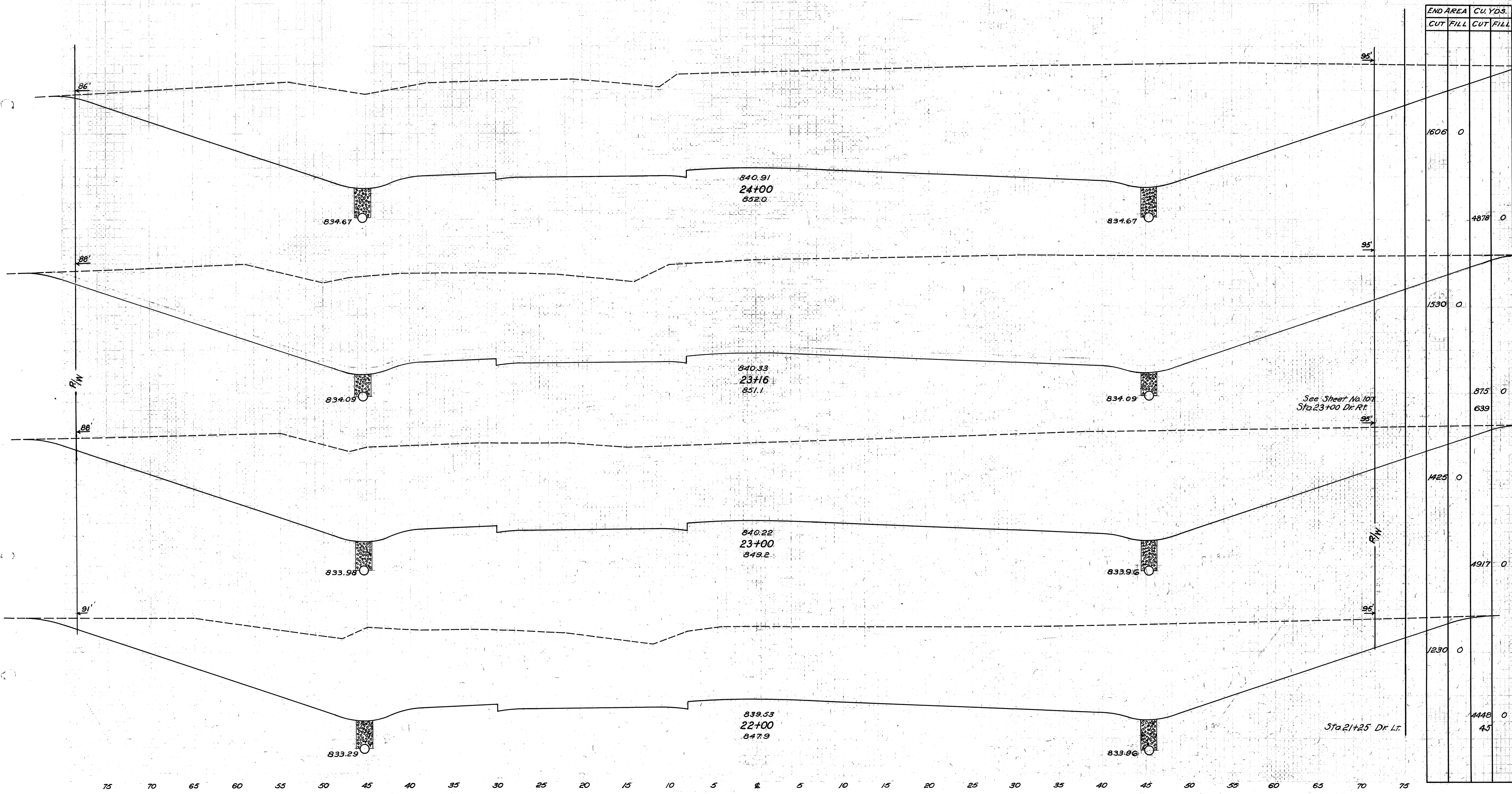


END AREA	CU. YDS.	
	CUT	FILL
0	325	
		0 432
0	362	
		0 1204
0	623	
		0 610
0	639	
		0 287
0	137	
		0 151
		0 165



END AREA	CUT	FILL	CU. YDS.	CUT	FILL
1172	0				
		4619	0		
1322	0				
		4151	0		
1315	0				
		679	0		
1130	0				
		1191	158		
61	158				
		52	411		

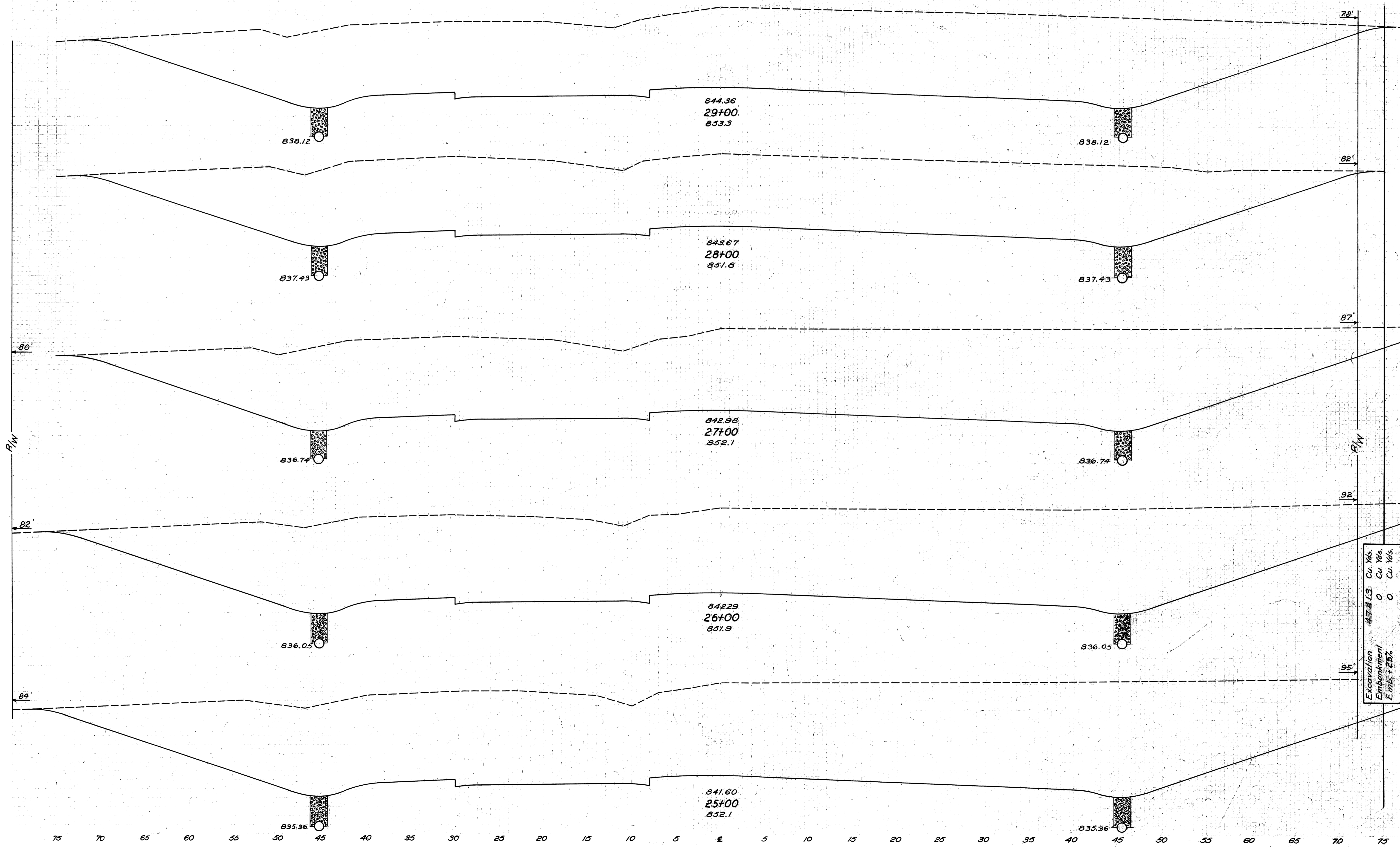
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
1606	0	4878	0
1530	0	875	0
1425	0	639	0
1230	0	4917	0
		4448	45

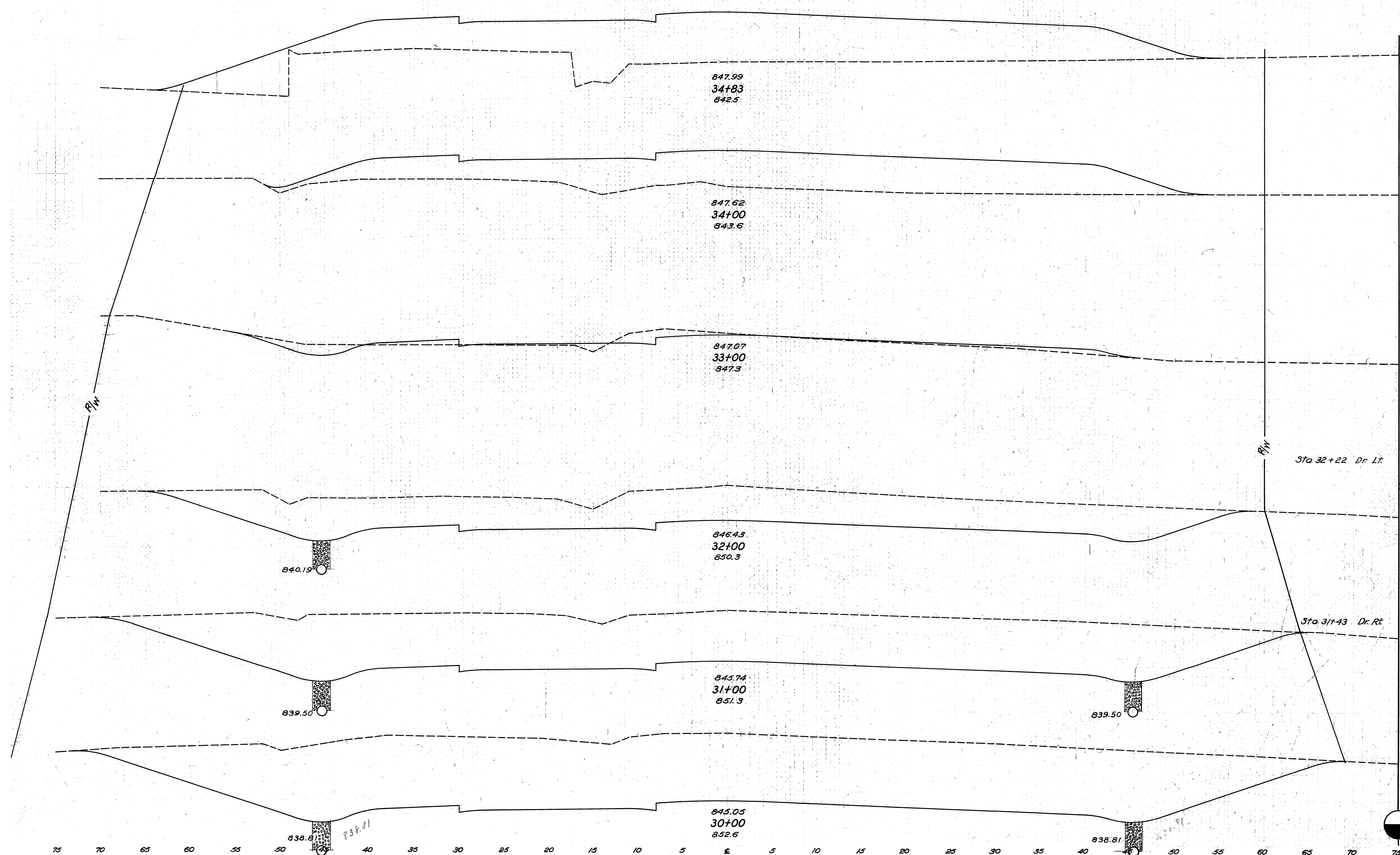
See Sheet No. 107
Sta. 23+00 Dr. Rt.

Sta. 21+25 Dr. Lt.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
1077	0		
		3860	0
1007	0		
		4091	0
1202	0		
		4630	0
1298	0		
		5061	0
1435	0		
		5632	0

Excavation 474.13 Cu. Yds.
 Embankment 0 Cu. Yds.
 Emb. + 25% 0 Cu. Yds.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	451	0	1160
0	304		
		37	602
20	21		
		778	39
		7	
400	0		
		2020	0
		28	
691	0		
		2983	0
920	0		
		3698	0

Sta 32+22 Dr. Lt.

Sta 31+43 Dr. Rt.

840.15

839.50

838.81

847.99
34+83
842.5

847.62
34+00
843.6

847.07
33+00
847.3

846.43
32+00
850.3

845.74
31+00
851.3

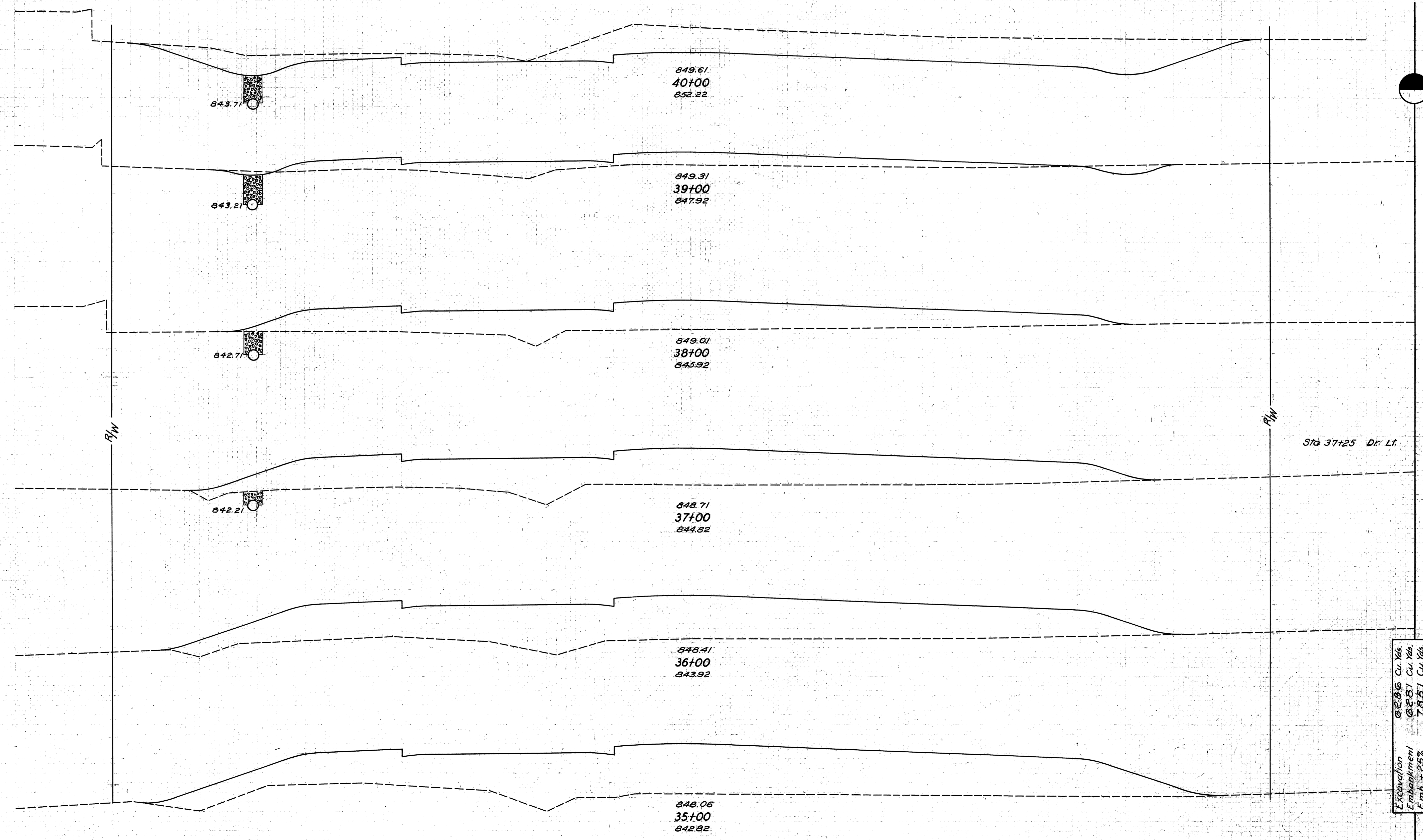
845.05
30+00
852.6

839.50

838.81

838.81

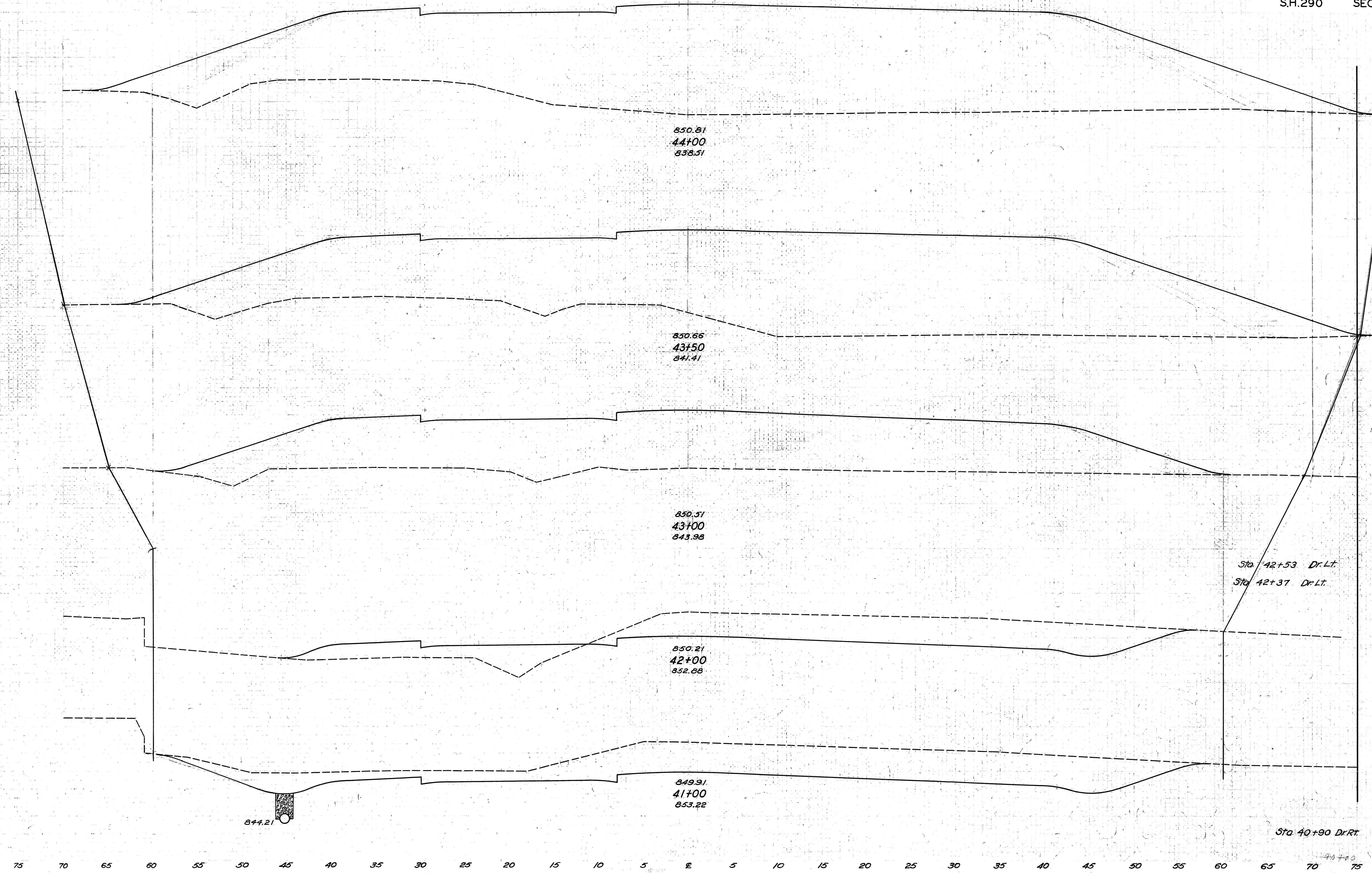
75 70 65 60 55 50 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
220	0		
		420	146
7	79		
		13	519
0	201		
		0	904
			15
0	287		
		0	1134
0	358		
		0	1430
0	414		
		0	272

Excavation @ 28% Cu. Yds. 6281
 Embankment @ 25% Cu. Yds. 7851

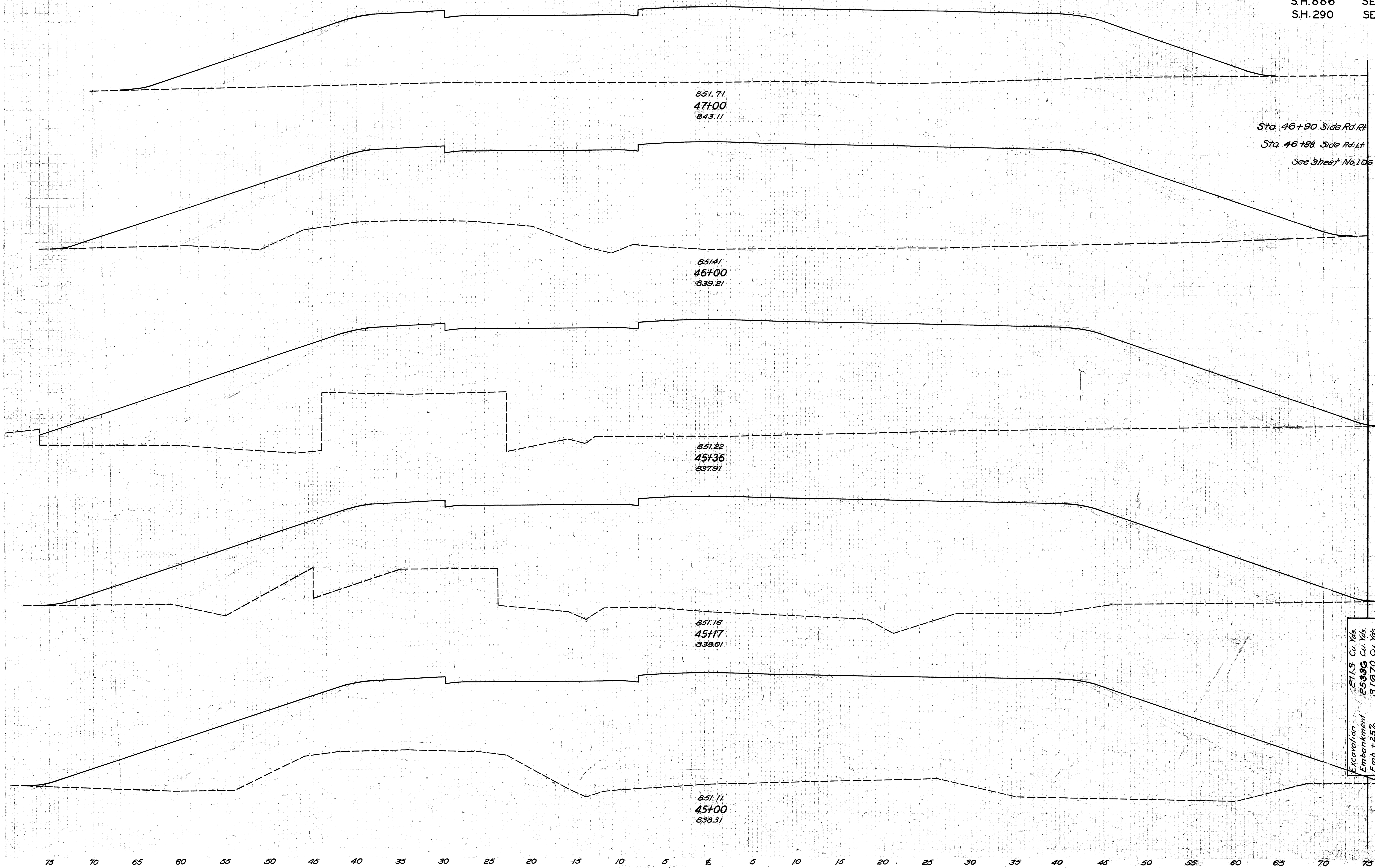
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA	CUT	FILL	CU. YDS.
CUT	FILL	CUT	FILL
0	1163		
		0	2045
0	1046		
		0	1530
0	606		
		319	1226
			10
			10
172	56		
		850	104
287	0		
		939	0
			5

Sta 42+53 Dr. Lt.
Sta 42+37 Dr. Lt.

Sta 40+90 Dr. Rt.

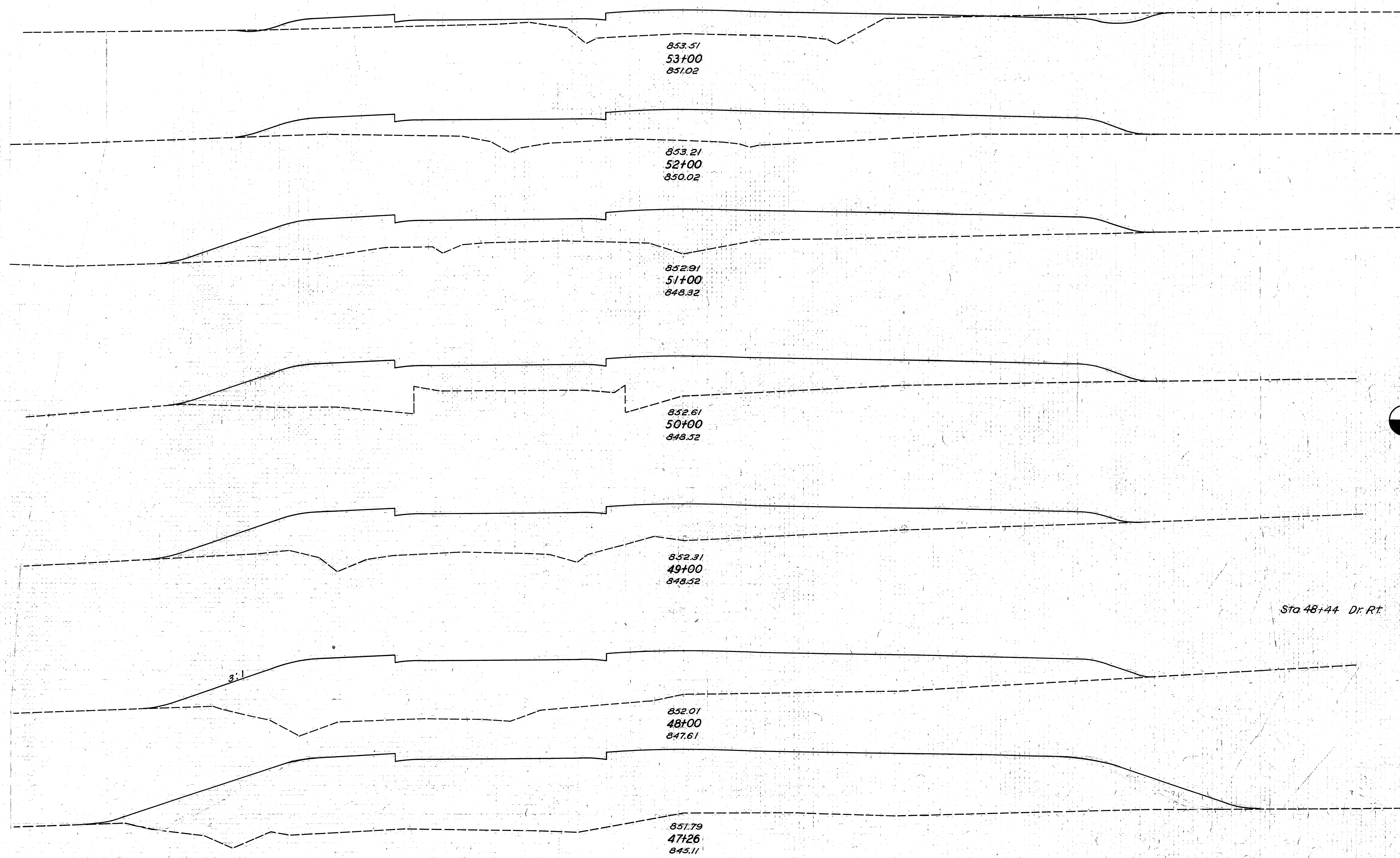


Sta 46+90 Side Rd. Rht.
Sta 46+88 Side Rd. Lt.
See Sheet No. 106

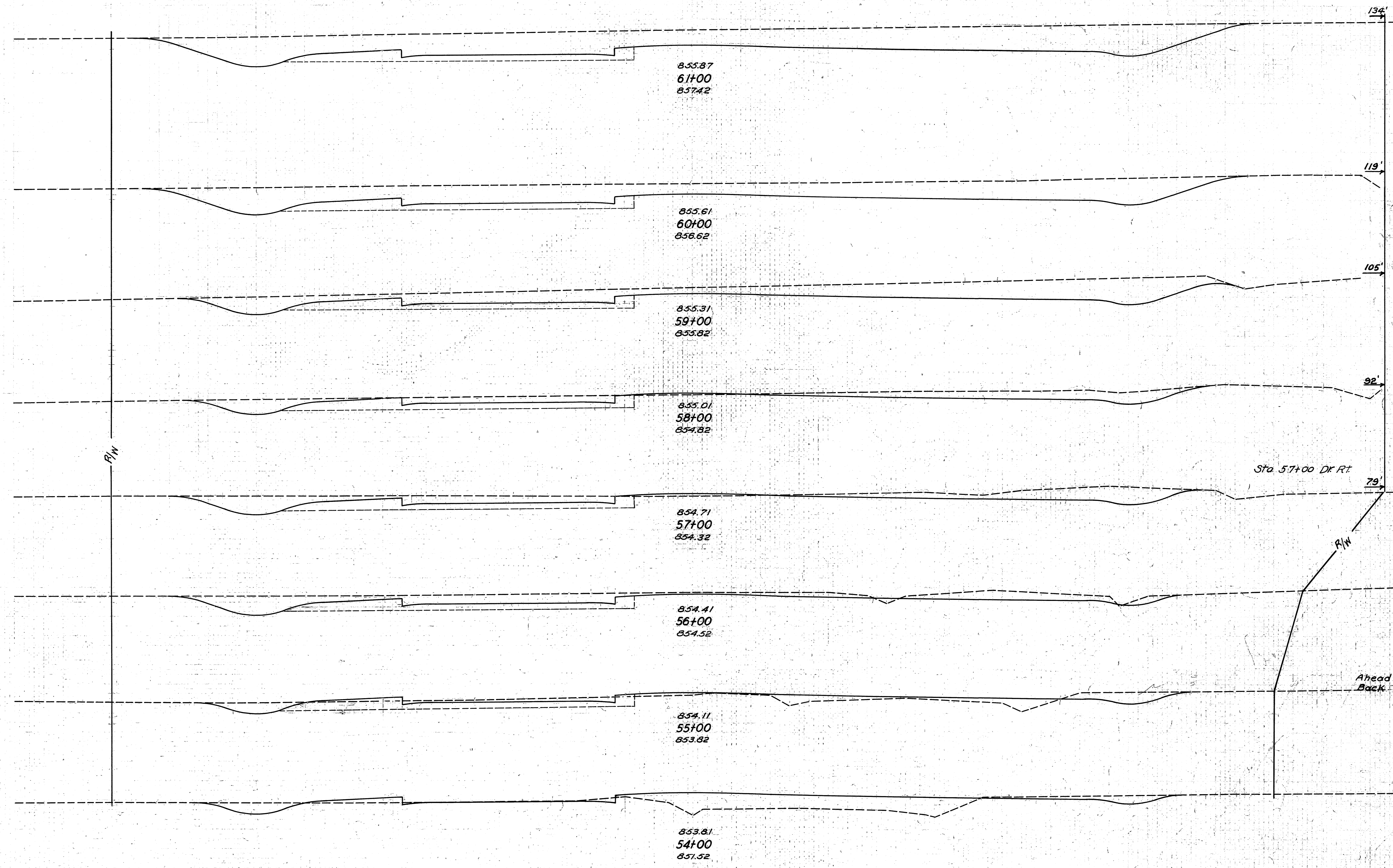
END AREA	CU. YDS.	
	CUT	FILL
0	835	797
		1354
		0 3780
0	1206	
		0 3082
0	1394	
		0 962
0	1340	
		0 859
0	1889	
		0 4726

Excavation 2113 Cu. Yds.
Embankment 25396 Cu. Yds.
Emb. + 25% 31670 Cu. Yds.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
4	100		
		7	574
0	210		
		0	887
0	269		
		0	1052
0	299		
		0	1126
0	309		
		0	1396
			10
0	445		
		0	1577
0	706		
		0	742



855.87
61+00
857.42

855.61
60+00
856.62

855.31
59+00
855.82

855.01
58+00
854.82

854.71
57+00
854.32

854.41
56+00
854.52

854.11
55+00
853.82

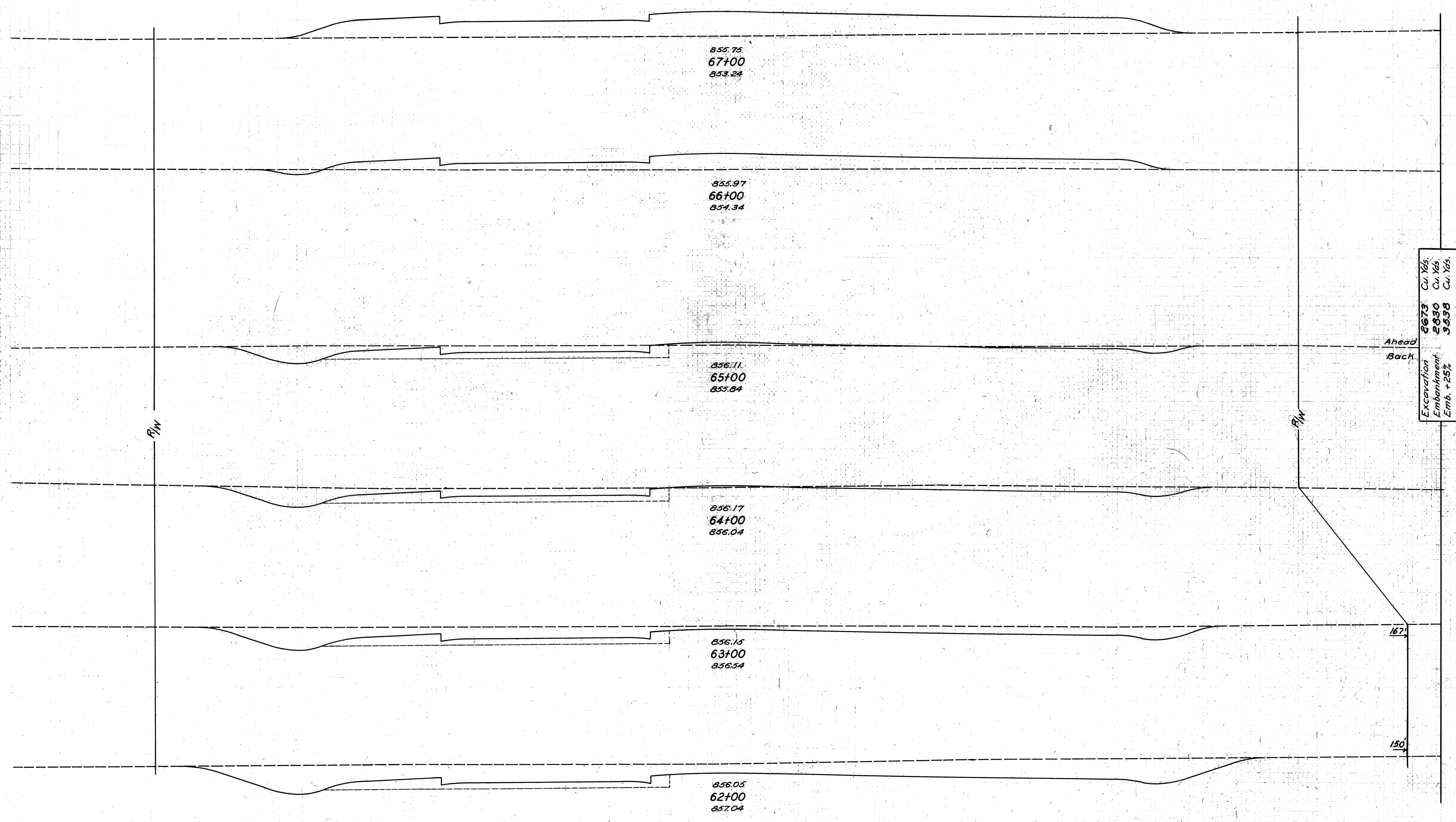
853.81
54+00
857.52

Sta. 57+00 Df Rt

Ahead
Back

Excavation
Embankment
Emb. + 85%

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
24.6	6		
		826	20
200	5		
		641	30
146	11		
		406	33
173	7		
		281	24
			3
79	6		
		296	22
81	6		
		209	52
32	22		
24	19		
		70	135
14	54		
		33	285

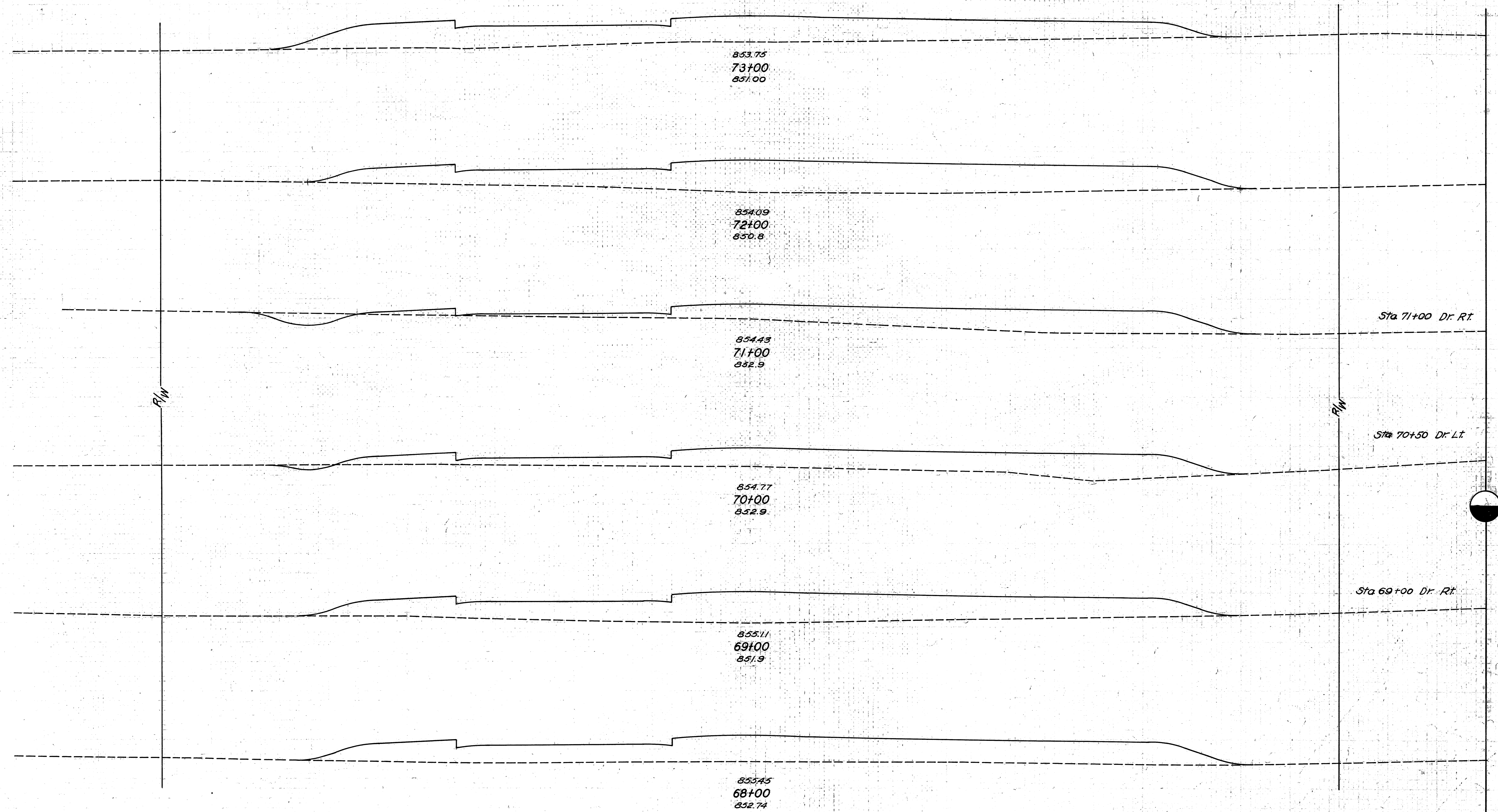


END AREA	CU. YDS.	
	CUT	FILL
0	172	
2	94	493
4.3	4	181
56	70	
78	7	31
110	5	22
130	5	20
197	6	22
		33

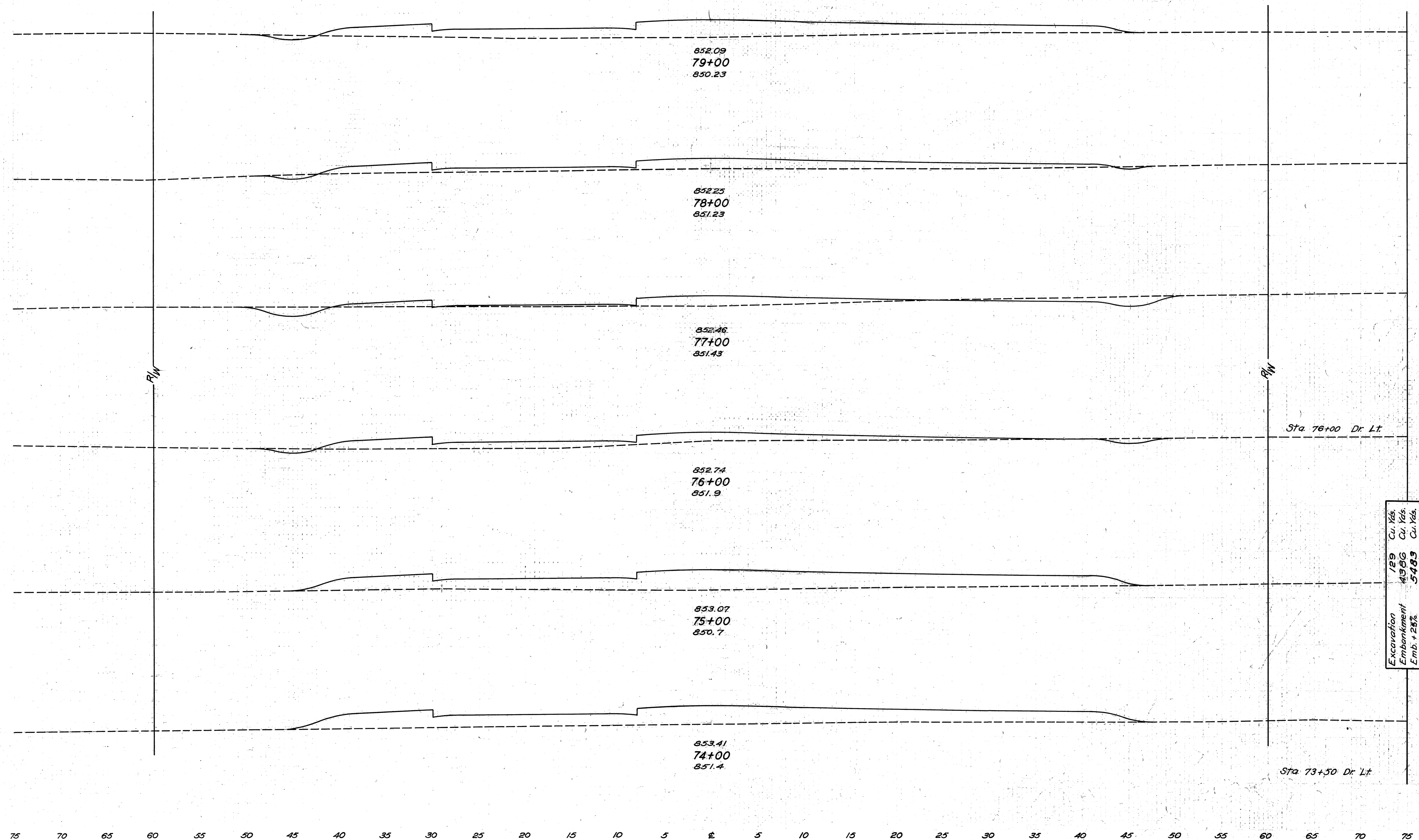
Excavation 2673 Cu. Yds.
 Embankment 2830 Cu. Yds.
 Emb. +25% 3538 Cu. Yds.

Ahead
Back

Sta 61+50 Side Rd Rt.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	195		
		0	756
0	213		
		17	609
			11
9	116		
		20	474
			2
2	140		
		4	626
			4
0	198		
		0	730
0	196		
		0	681

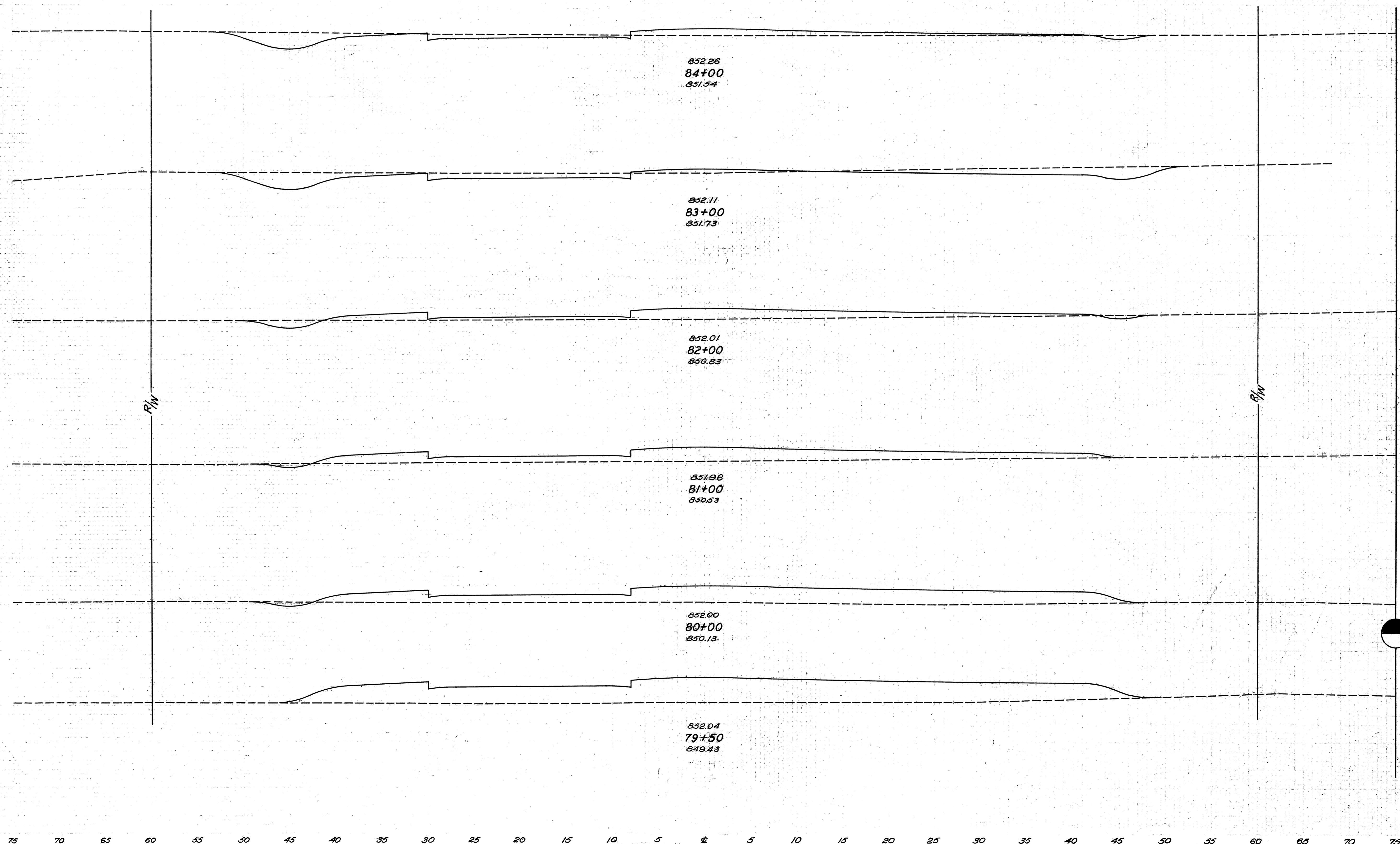


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	98		
		7	281
2	54		
		35	152
17	28		
		39	144
			5
4	50		
		7	330
0	128		
		0	476
0	129		
		0	600

Excavation 129 Cu. Yds.
 Embankment 4366 Cu. Yds.
 Emb. + 25% 5485 Cu. Yds.

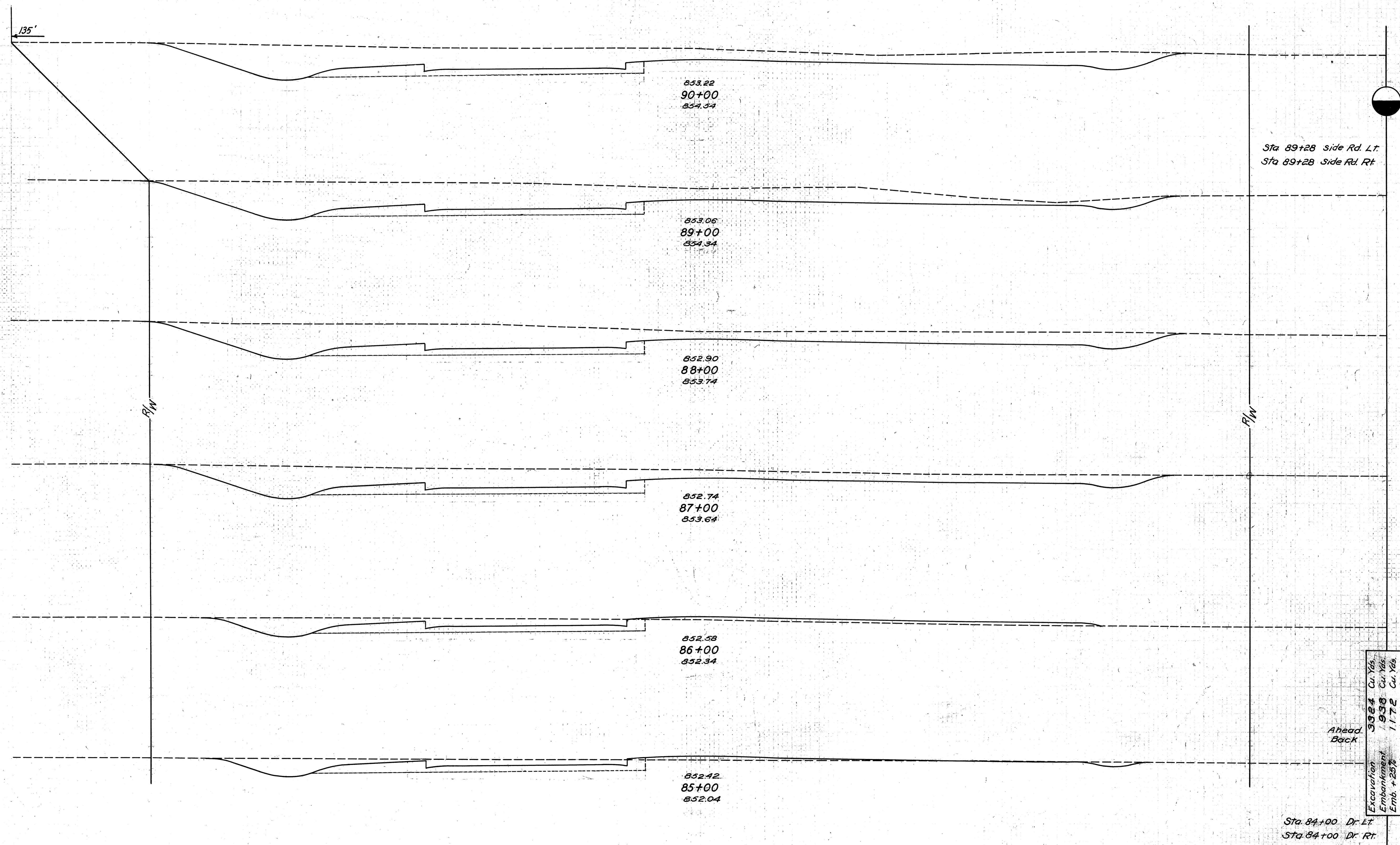
Sta. 76+00 Dr. Lt.

Sta. 73+50 Dr. Lt.

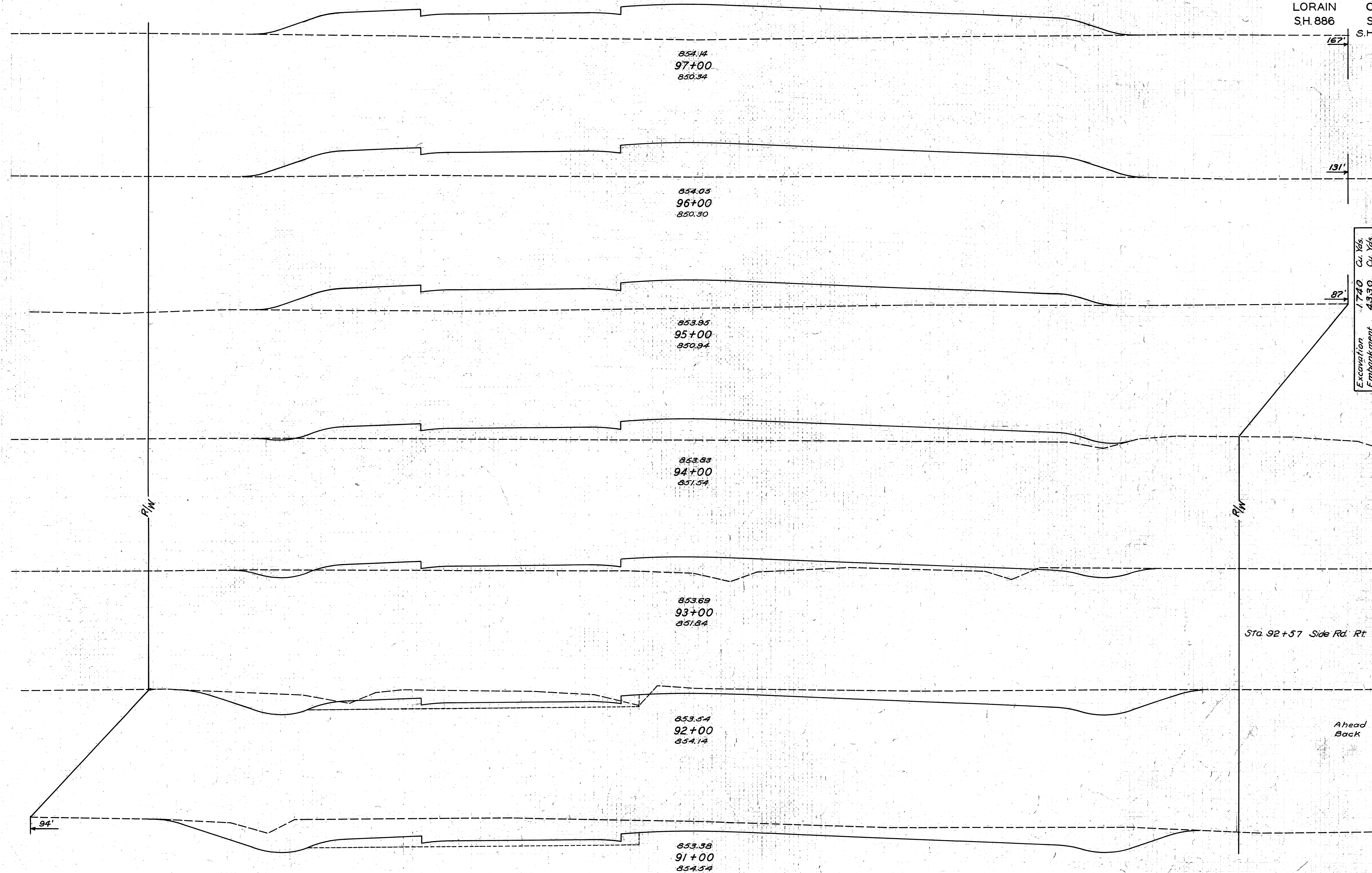


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
28	21		
		148	48
52	5		
		107	98
6	48		
		15	233
2	78		
		7	346
2	109		
		2	273
0	186		
		2	263

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



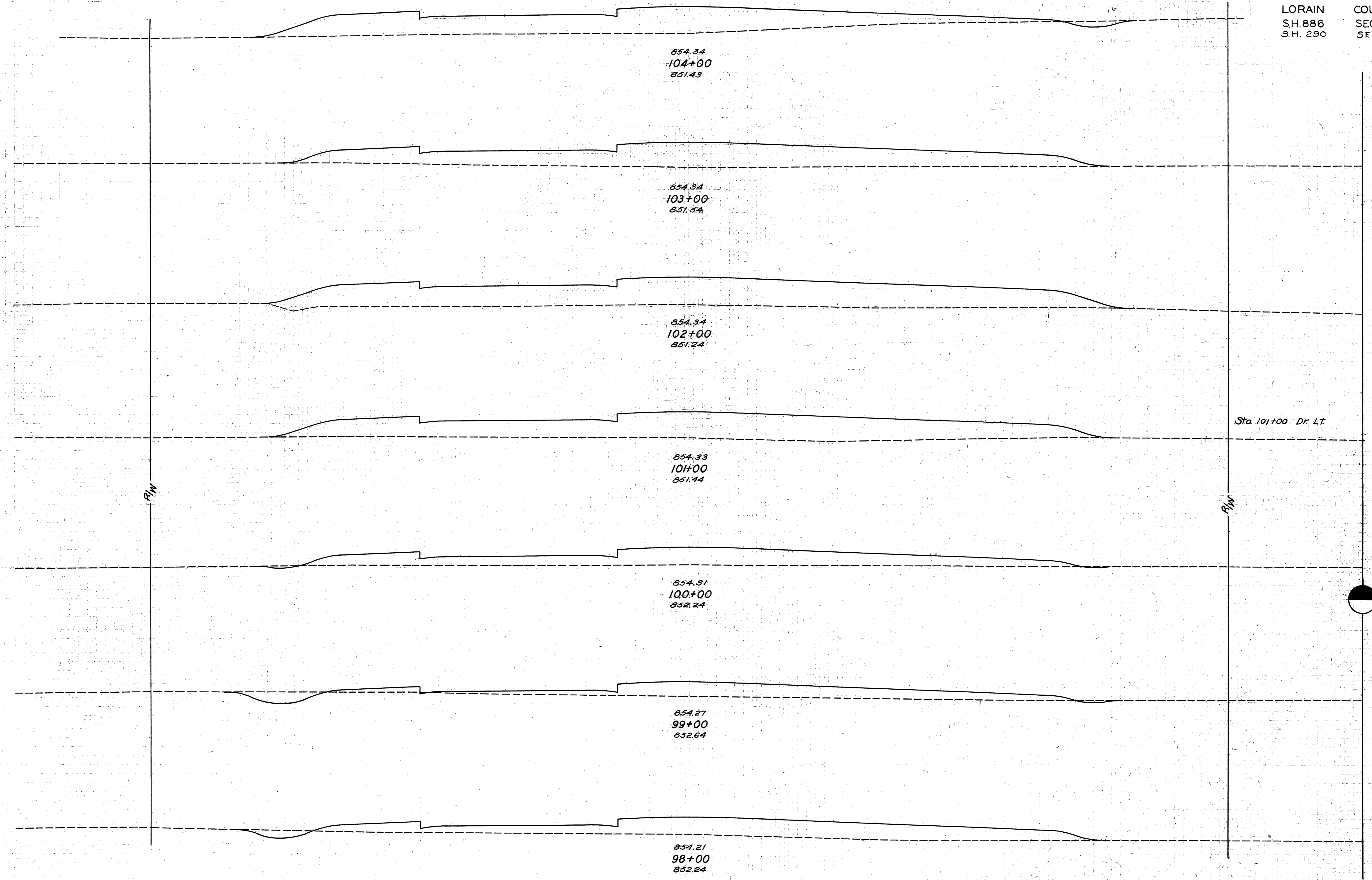
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
213	5		
		800	20
		42	
		7	
219	6		
		794	20
210	5		
		704	20
170	6		
		407	50
50	21		
		167	57
48	10		
38	4		
		122	46
		2	
		2	



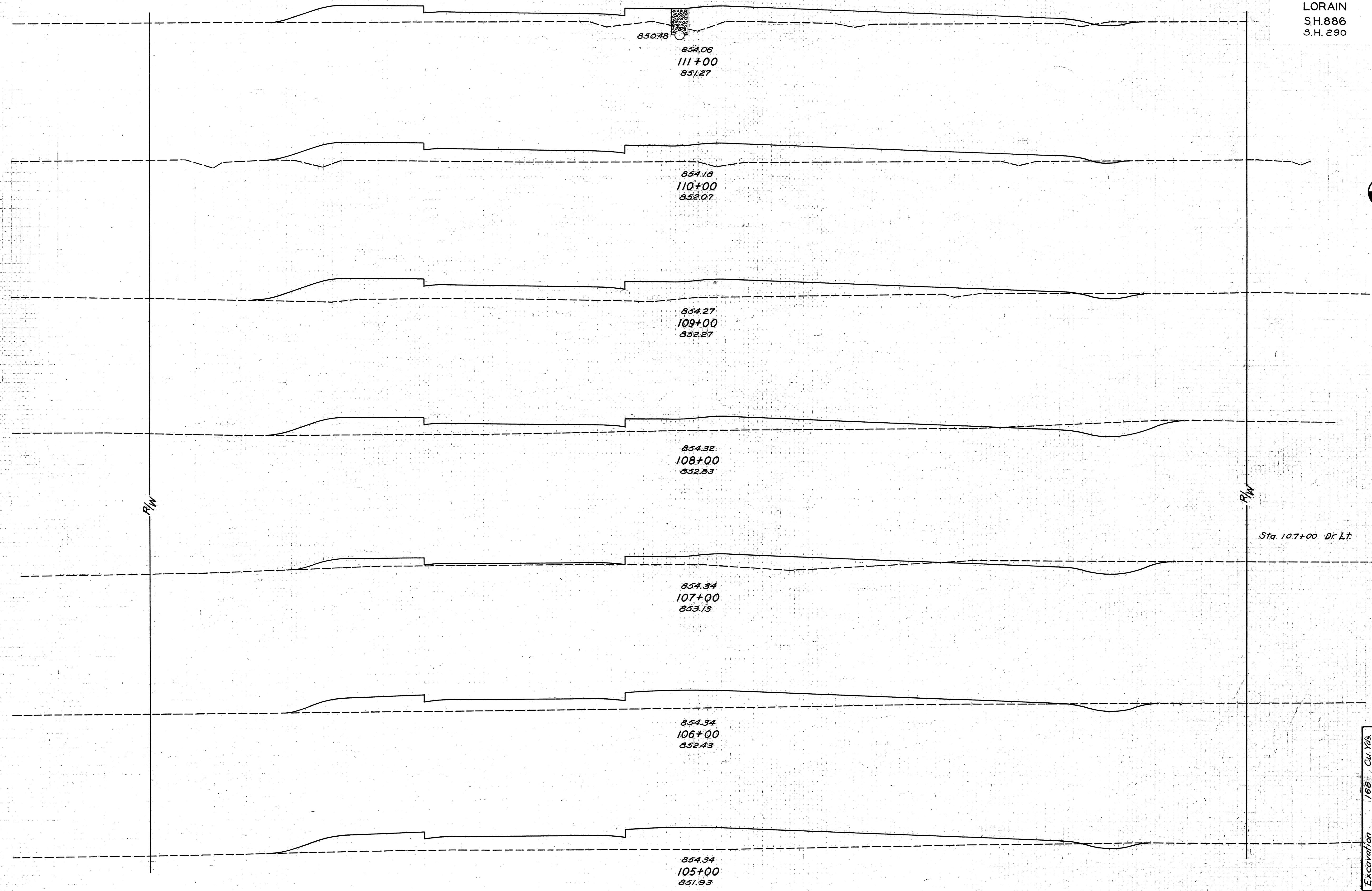
Excavation 1740
 Embankment 4330
 Emb. + 25% 5413

END AREA	CU. YDS.	
CUT	FILL	
0	248	
0	263	0 946
0	199	0 856
0	619	0 619
0	135	
22	385	
12	73	
6		
256	139	
126	8	
134	6	
626	22	
204	6	
772	20	

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 4 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

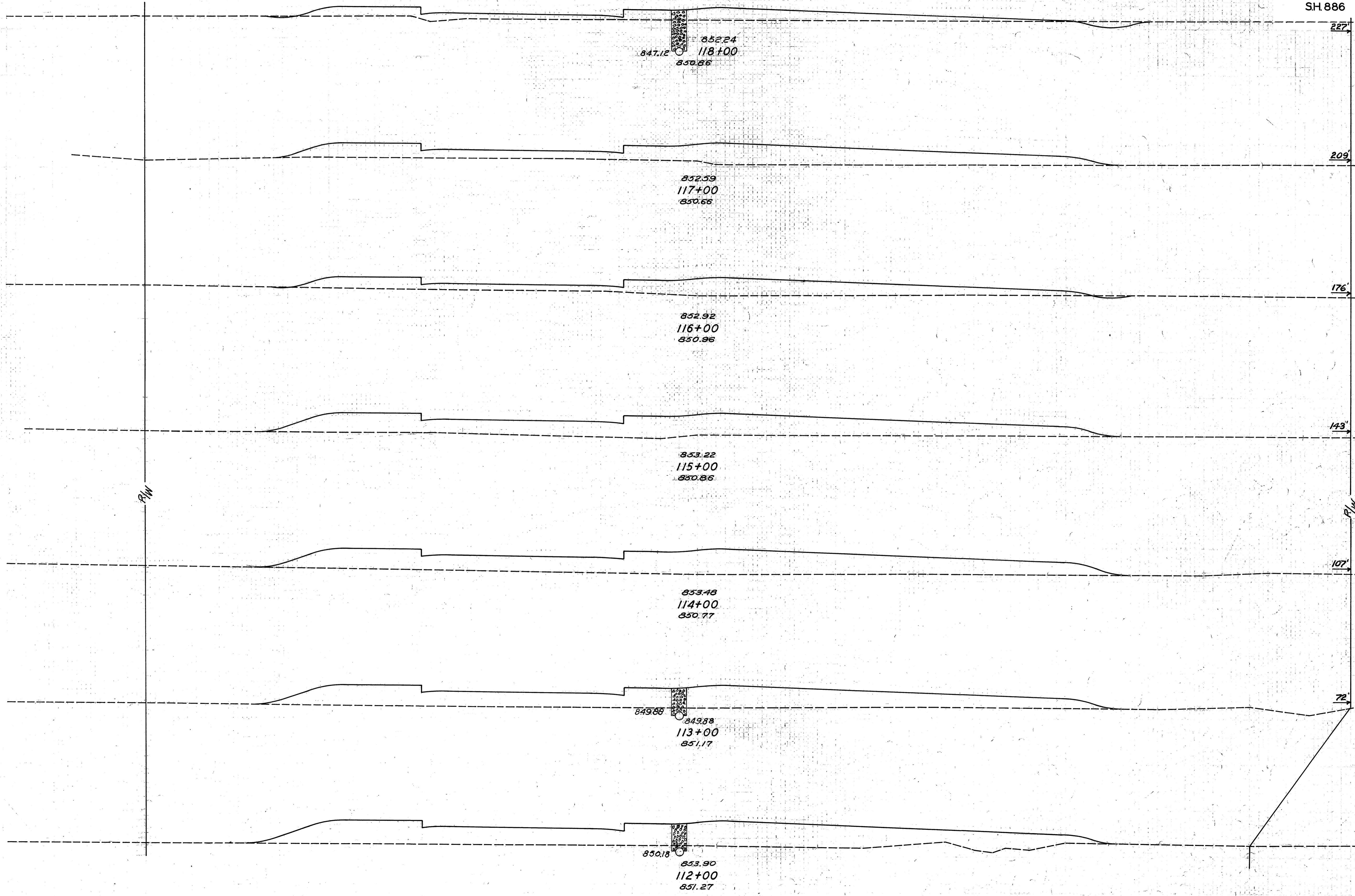


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
4	157		
		7	594
0	164		
		0	724
0	227		
		0	776
			5
0	192		
		2	554
1	107		
		19	326
9	69		
		28	343
6	116		
		11	674



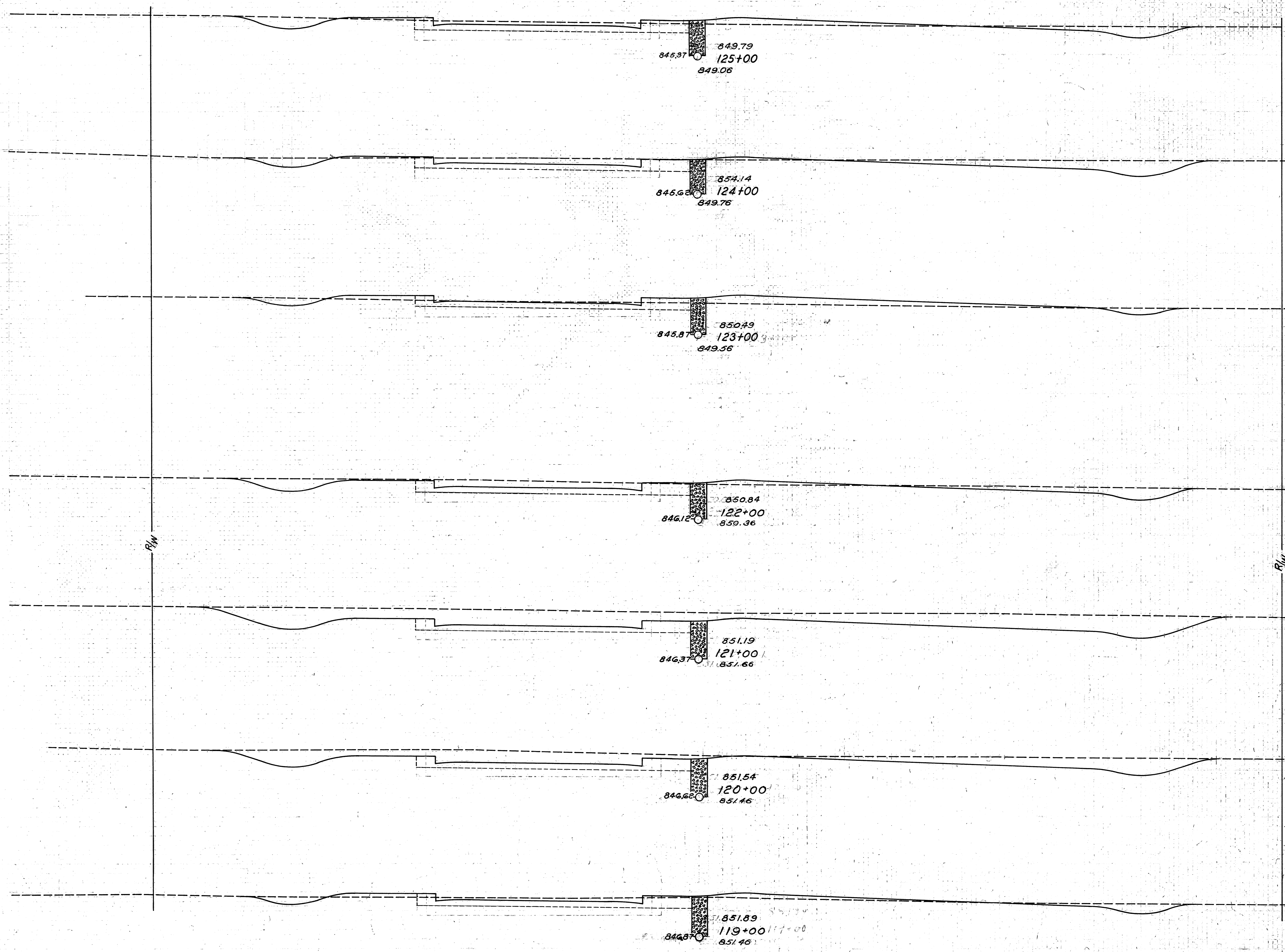
END AREA	CU. YDS.	
	CUT	FILL
1	114	
0	132	2 456
2	125	4 276
		31 393
15	87	
		59 252
17	49	
		41 281
5	103	
		13 435
2	132	
		11 535

Excavation 168 Cu. Yds.
 Embankment 5026 Cu. Yds.
 Emb. + 25% 6282 Cu. Yds.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
4	64		
0	123	7	346
		2	400
1	93		
		2	456
0	153		
		0	600
0	171		
		0	606
0	156		
		0	624
0	181		
		2	546

Excavation 284 Cu. Yds.
 Embankment 4219 Cu. Yds.
 Emb. + 23% 5274 Cu. Yds.



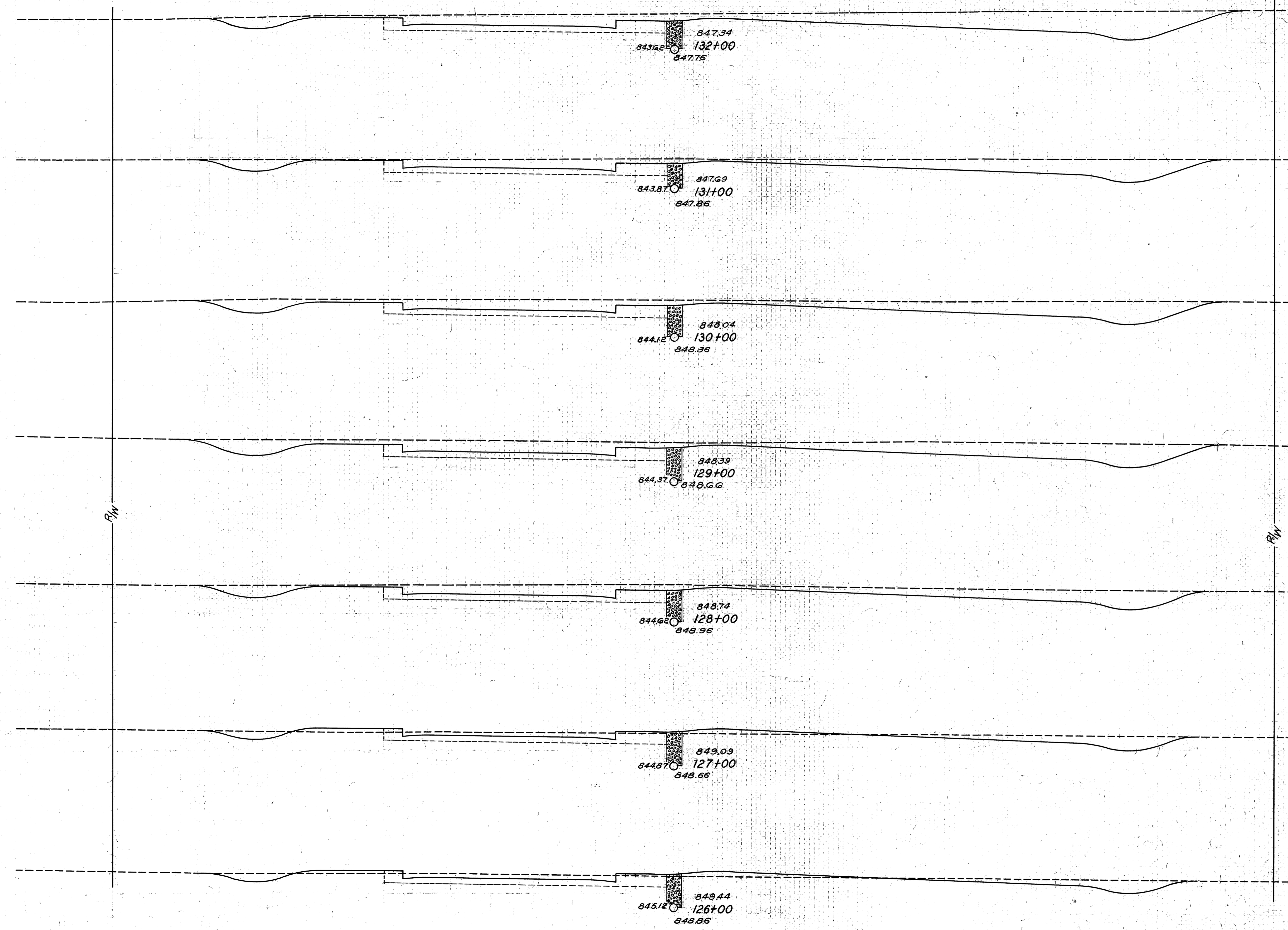
Excavation
 Embankment
 Emb. +25%

Sta.	END AREA		CU. YDS.	
	CUT	FILL	CUT	FILL
125+00	39	21	180	52
124+00	58	7	139	76
123+00	17	34	126	80
122+00	51	8	376	24
121+00	152	4	463	15
120+00	98	4	228	37
119+00	25	16	41	141
	18	12		
				4
				3

Ahead
 Back

Sta. 118+00 Dr. Lt.
 Sta. 118+00 Dr. Rt.

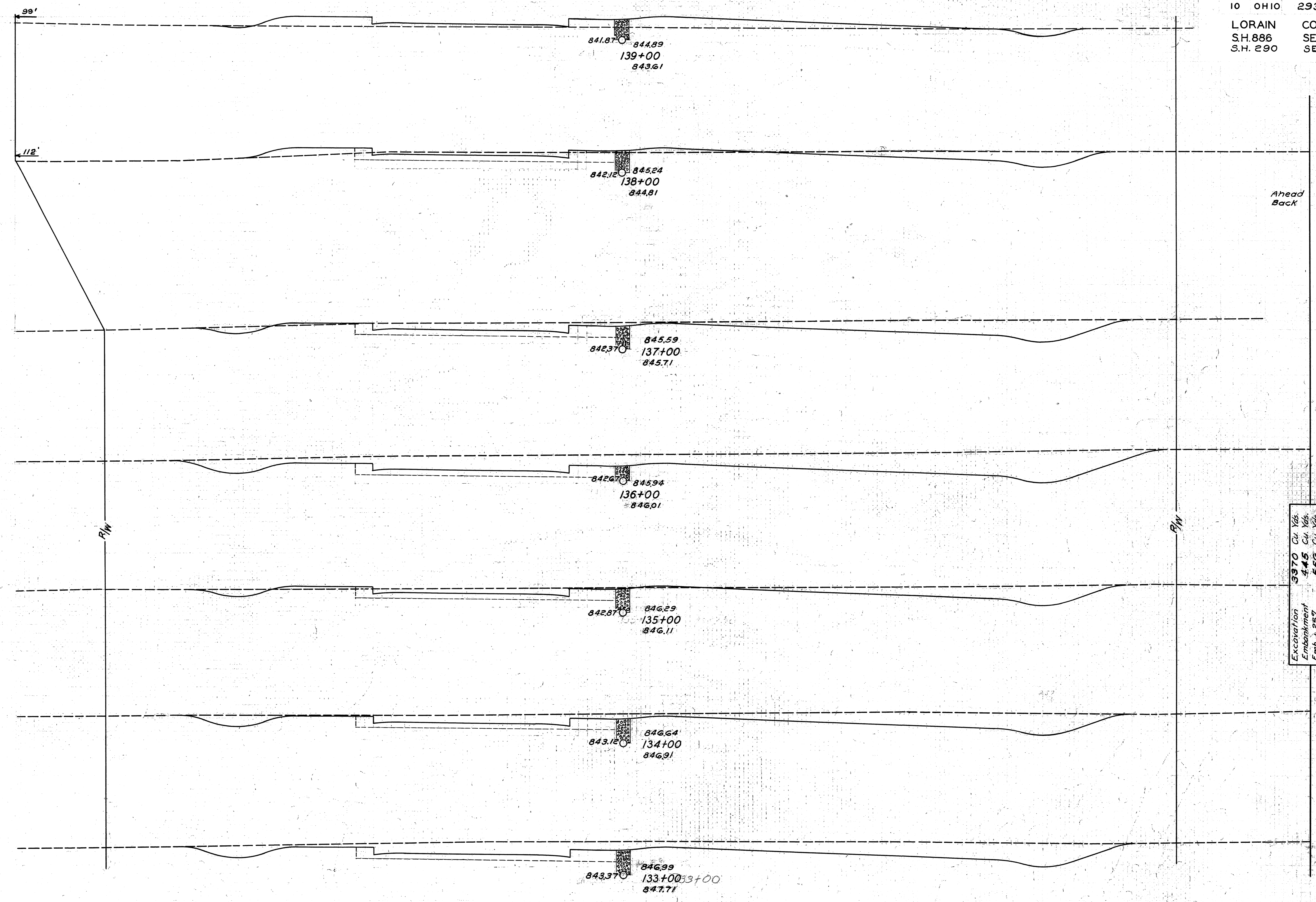
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



Sta. 130+00 Dr. LT.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
131	4		
		419	15
95	4		
		369	15
104	4	5	
		407	15
116	4		
		374	15
86	4		
		283	35
40	15		
		143	57
37	16		
		141	69

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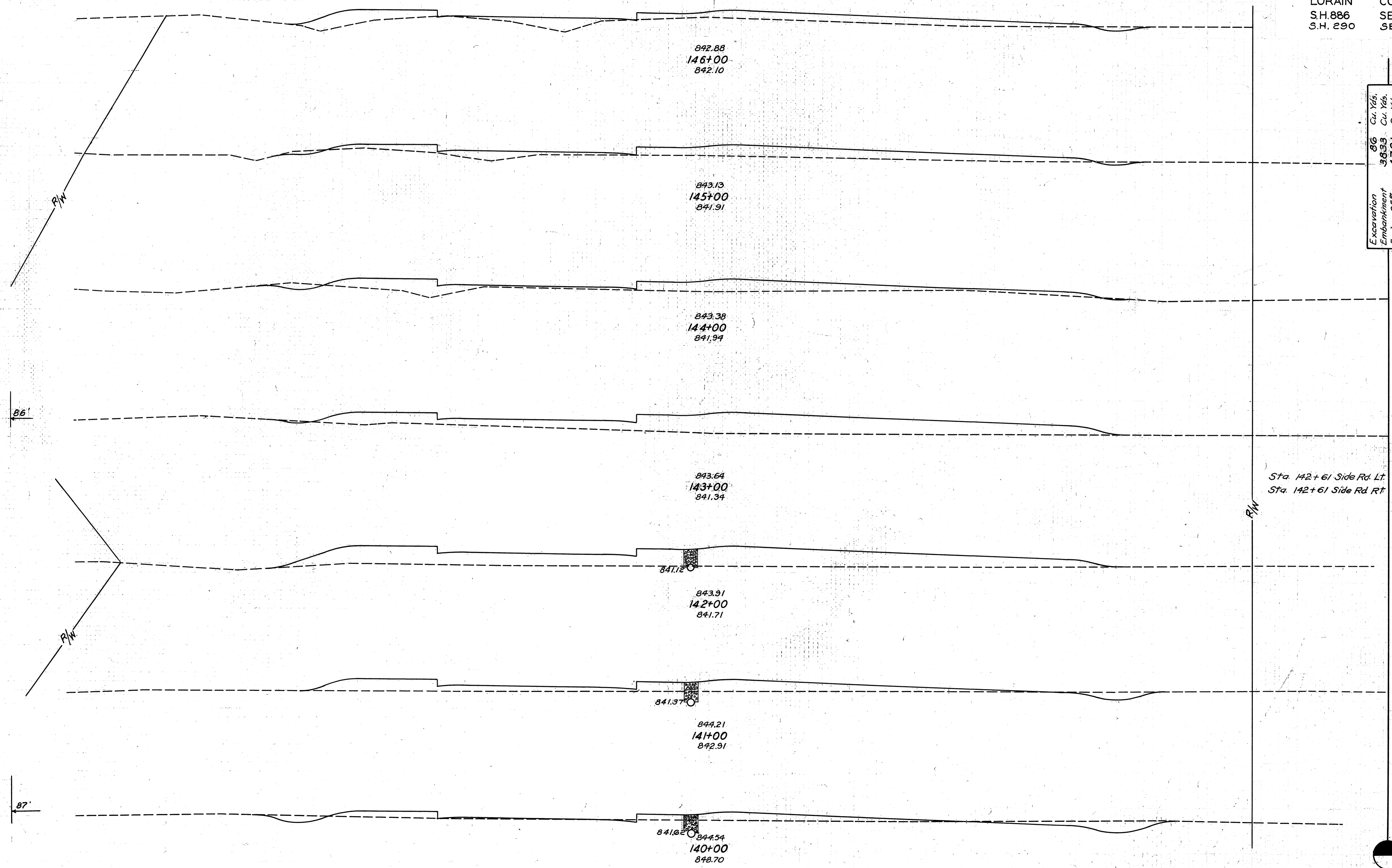


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
4	53		
		80	130
39	17		
47	19		
		248	46
90	6		
		504	19
162	4		
		461	22
67	8		
		317	22
104	4		
		441	15
134	4		
		491	15

Excavation 3970 Cu. Yds.
Embankment 445 Cu. Yds.
Emb. + 25% 550 Cu. Yds.

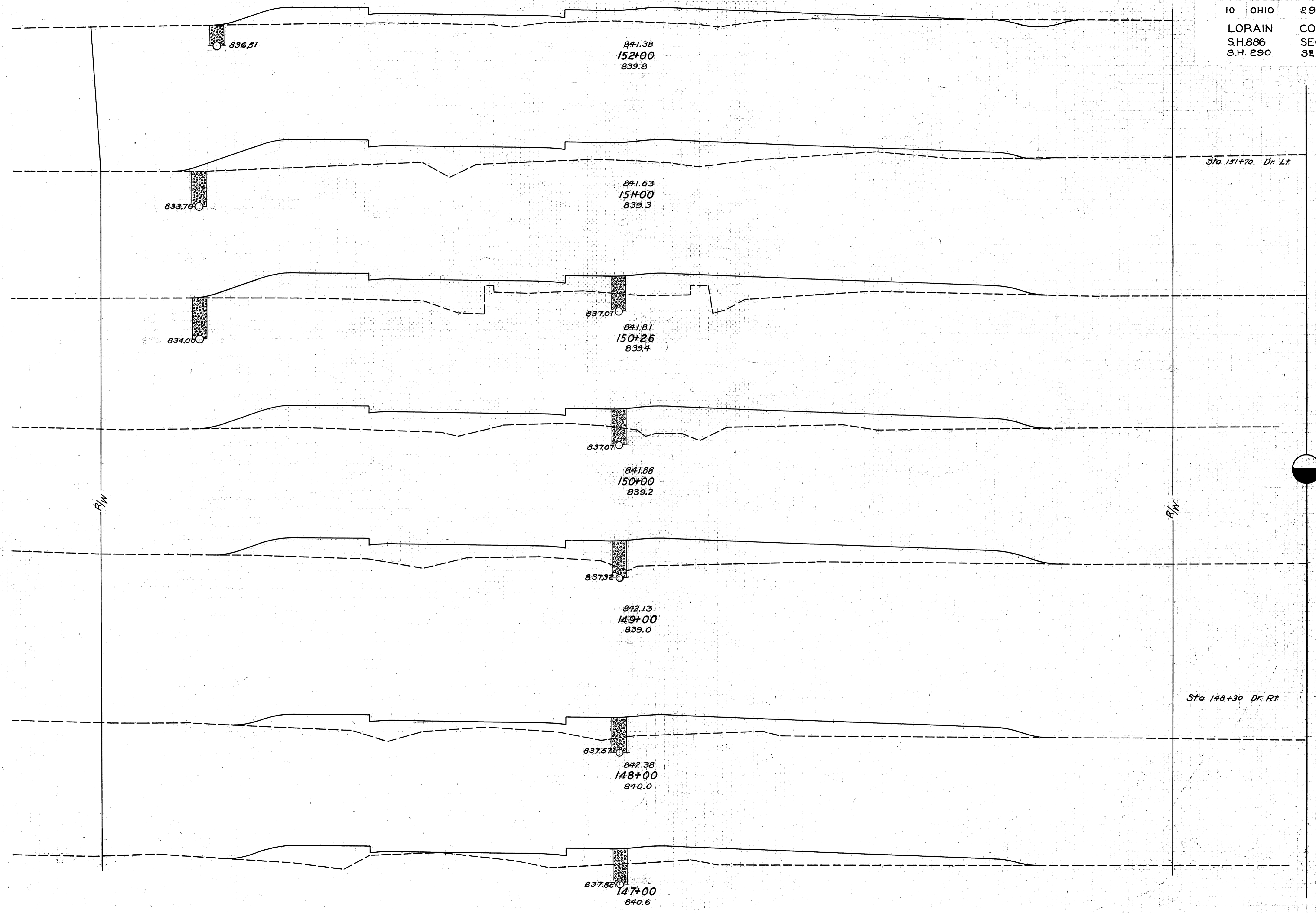
FEDERAL AID
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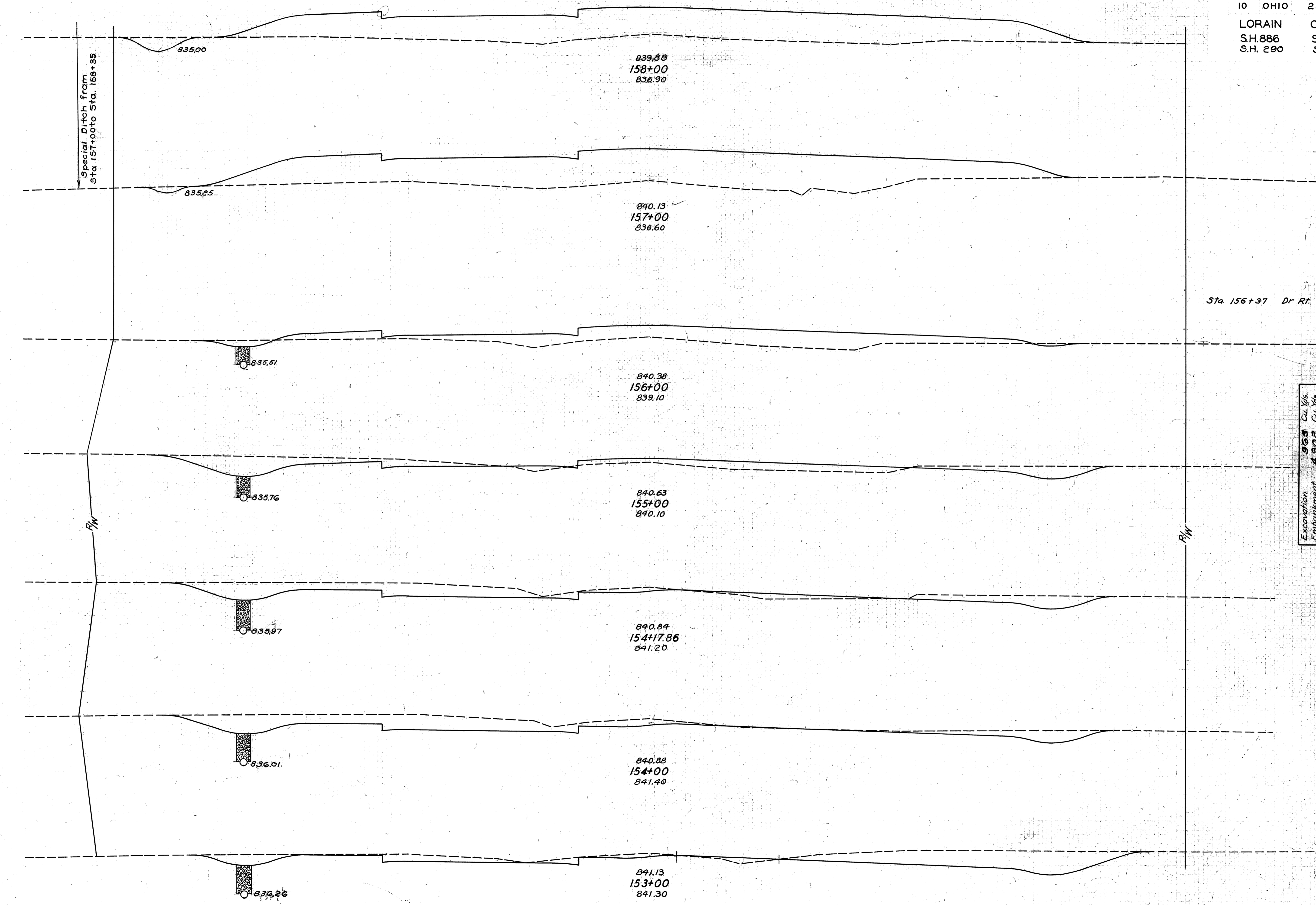


Excavation Emb.	Cu. Yds.	Cu. Yds.	END AREA		Cu. Yds.
			CUT	FILL	
86	3633	4791	2	63	9 231
			3	62	9 222
			2	58	4 326
			0	118	10 5
			0	139	0 476
			11	378	11 378
			6	65	39 169
			15	26	35 146

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 4 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
5	90	4	478
0	168	0	475
0	179	0	169
0	172	0	654
0	181	0	587
0	136	2	459
0	112	4	324



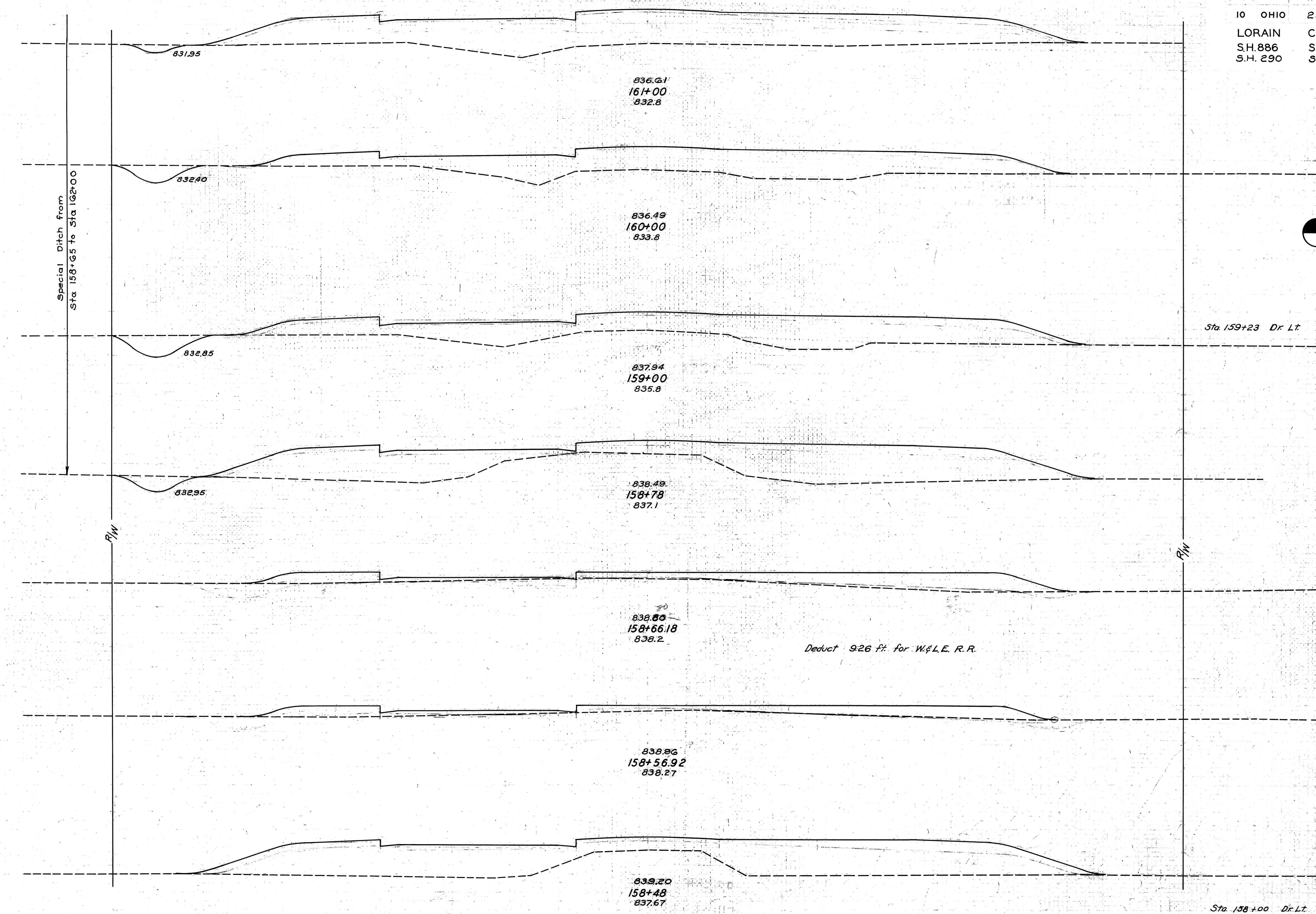
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
6	256		
		15	1006
2	287		
		13	709
			3
5	96		
		104	230
51	28		
		186	50
71	5		
		59	2
109	0		
		357	6
84	3		
		165	172

Excavation 968 Cu. Yds.
 Embankment 4902 Cu. Yds.
 Emb. +25% 6128 Cu. Yds.

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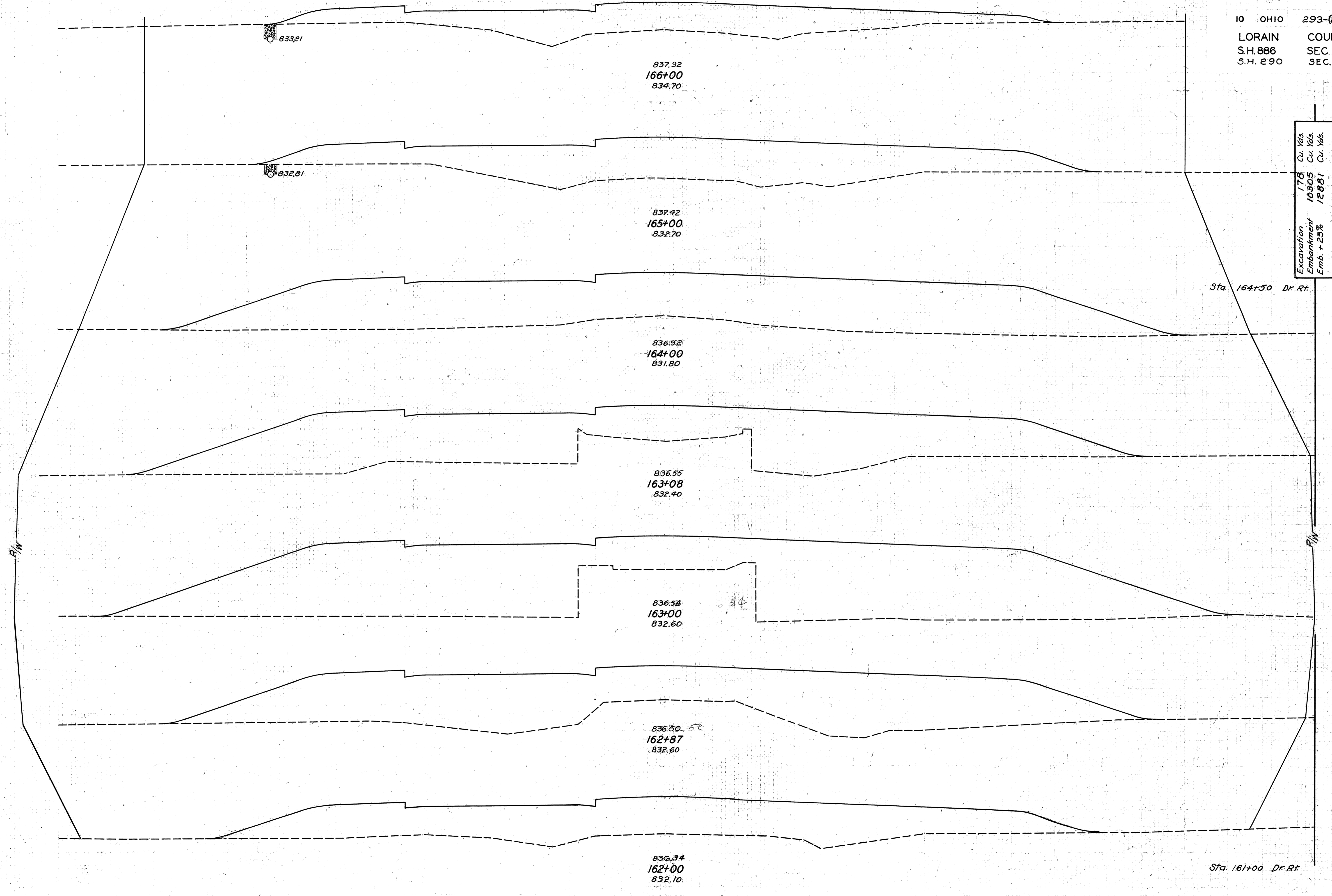
58
 138



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
5	297		
		26	917
9	198		
		41	759
			9
13	212		
		9	196
9	269		
		2	70
0	90		
		0	0
0	74		
		0	60
0	292		
		5	487

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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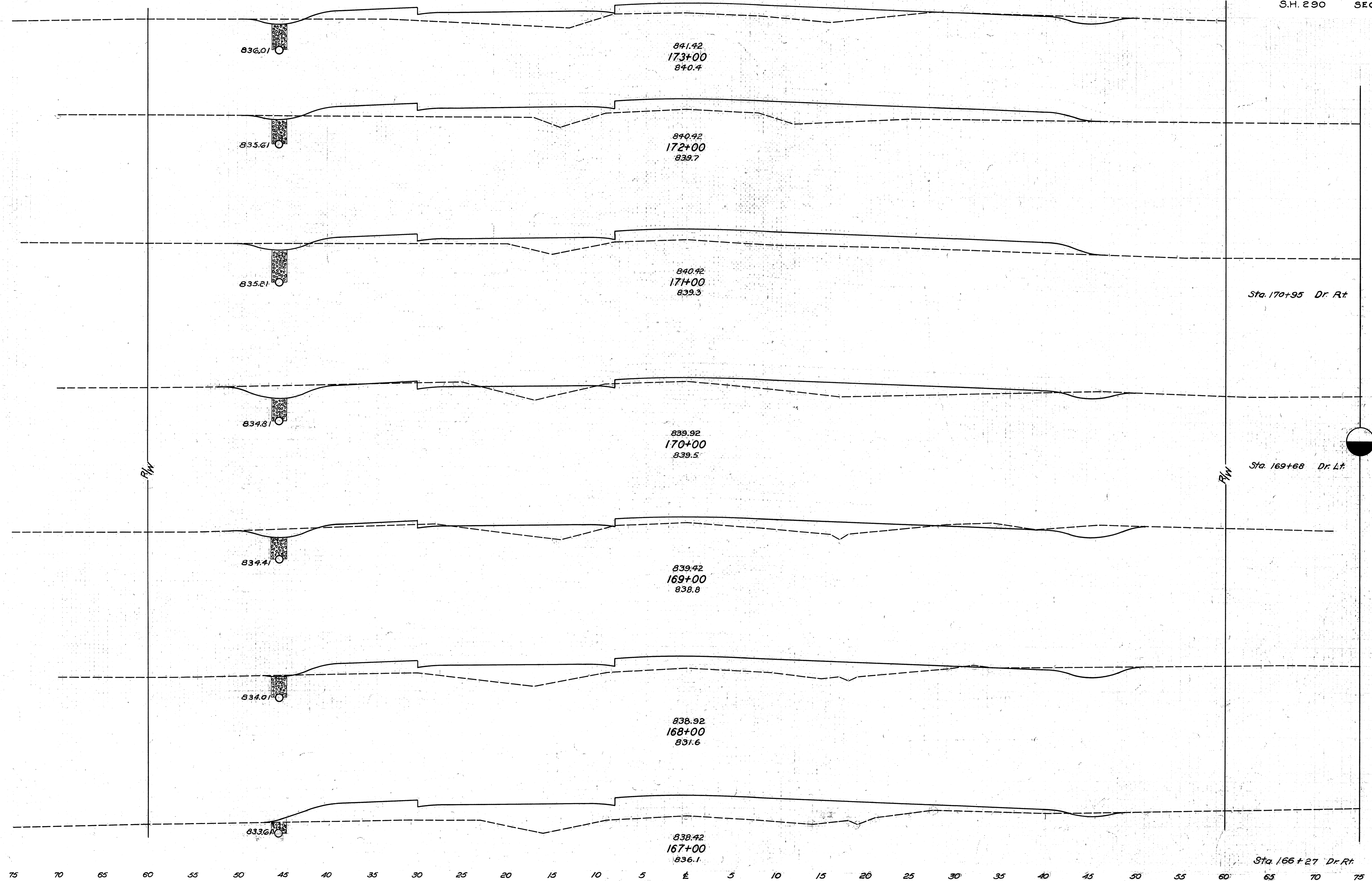
Excavation 178 Cu. Yds.
Embankment 10305 Cu. Yds.
Emb. + 25% 12881 Cu. Yds.

Sta. 164+50 Dr. Rt.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	215	0	998
0	324	0	1624
0	553	0	47
0	536	0	1856
0	536	0	198
0	797	0	323
0	543	0	1441
0	351	9	1200
		9	9

Sta. 161+00 Dr. Rt.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



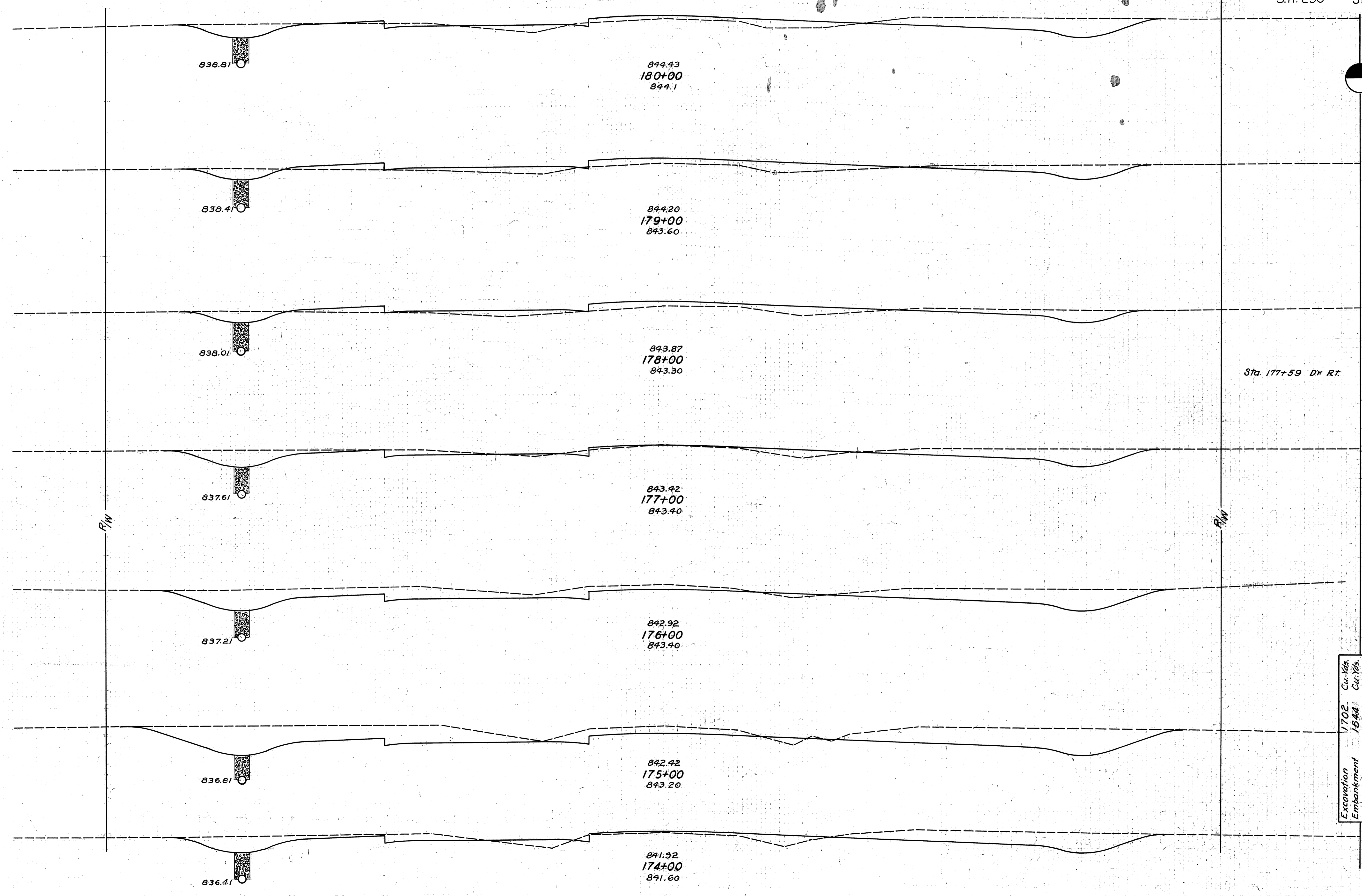
END AREA	CU. YDS.	
	CUT	FILL
6	77	
		15 352
2	113	
		11 385
4	95	
		46 272
21	52	
		2
		72 191
18	51	
		48 293
8	107	
		19 502
2	164	
		4 702
		2

Sta. 170+95 Dr. Rt.

Sta. 169+68 Dr. Lt.

Sta. 166+27 Dr. Rt.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



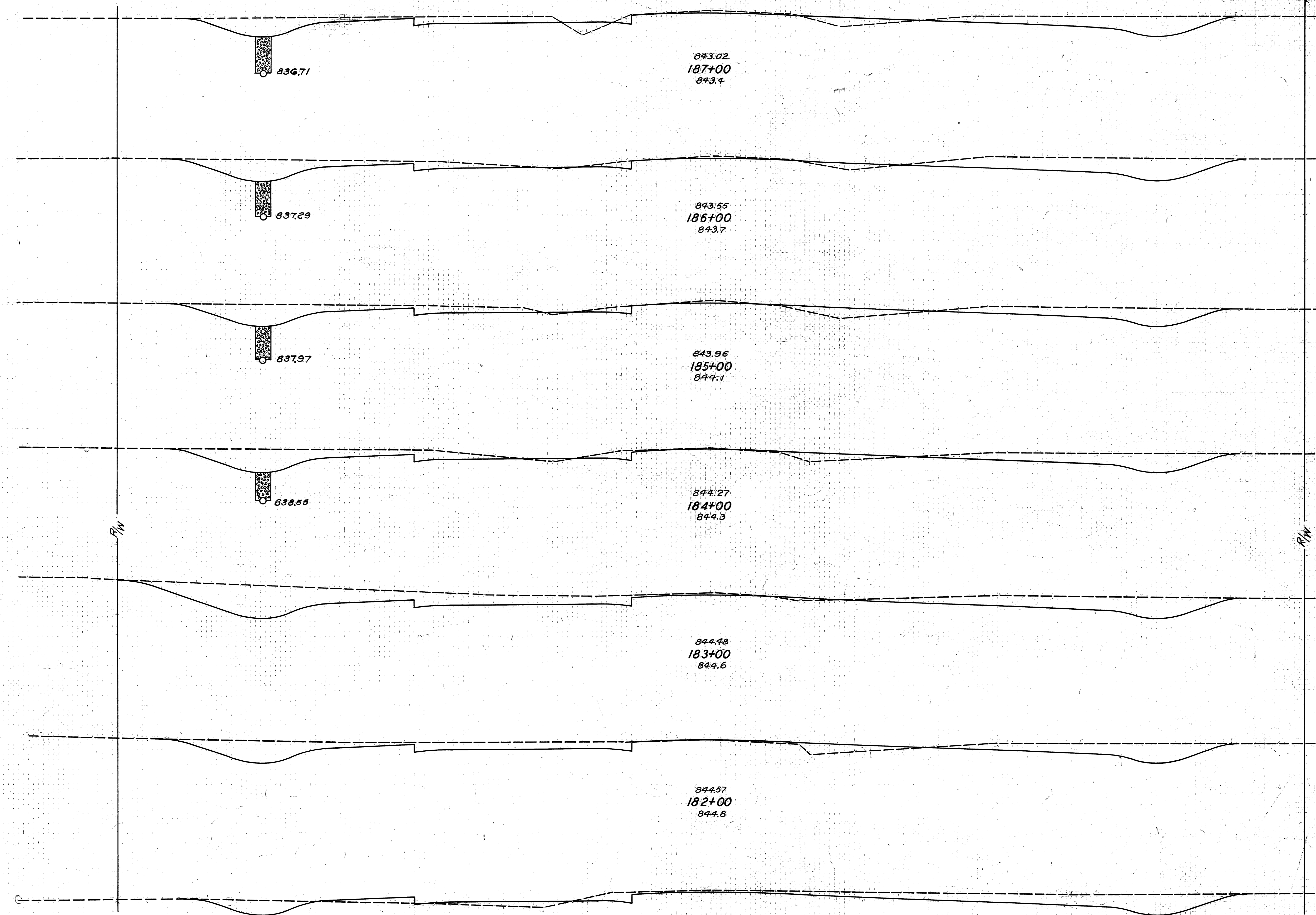
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
48	21		
		135	107
25	37		
		91	124
24	30		
		139	4
			70
51	8		
		280	19
100	2		
		461	7
149	2		
		394	30
64	14		
		130	169

Sta. 177+59 Dr Rt

Excavation 1702 Cu. Yds.
 Embankment 1544 Cu. Yds.
 Emb. + 25% 1930 Cu. Yds.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 4 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
64	10		
		257	28
75	5		
		252	28
61	10		
		241	33
69	8		
		341	19
115	2		
		344	20
		5	
71	9		
		4	
		244	33
		2	
61	9		
		202	56
		3	

Excavation 3109 Cu. Yds.
Embankment 246 Cu. Yds.
Emb. + 25% 308 Cu. Yds.

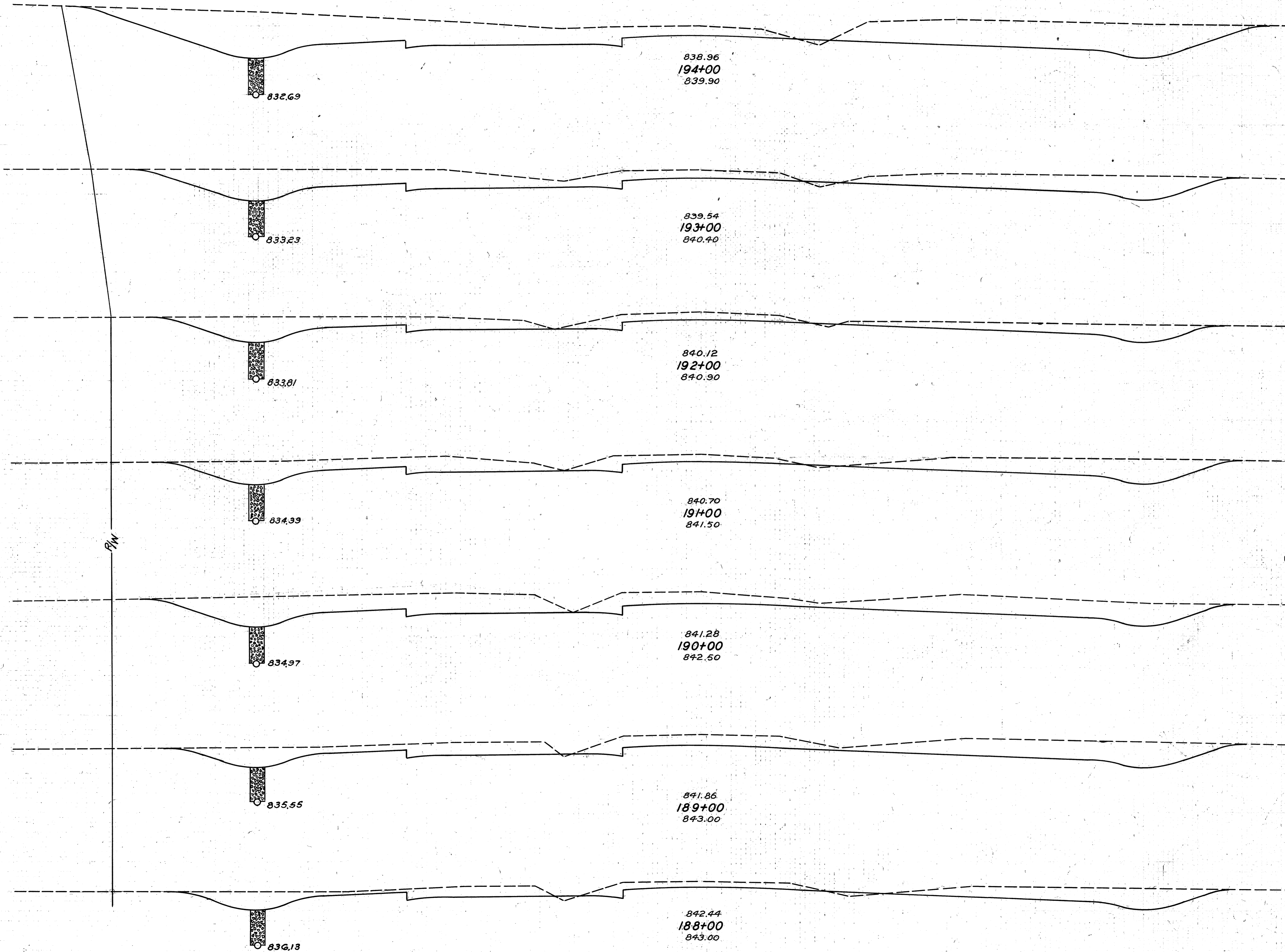
Sta. 182+33 Dr. Lt.

Sta. 181+97 Dr. Lt.

Sta. 181+10 Dr. Rt.

Sta. 180+54 Dr. Lt.

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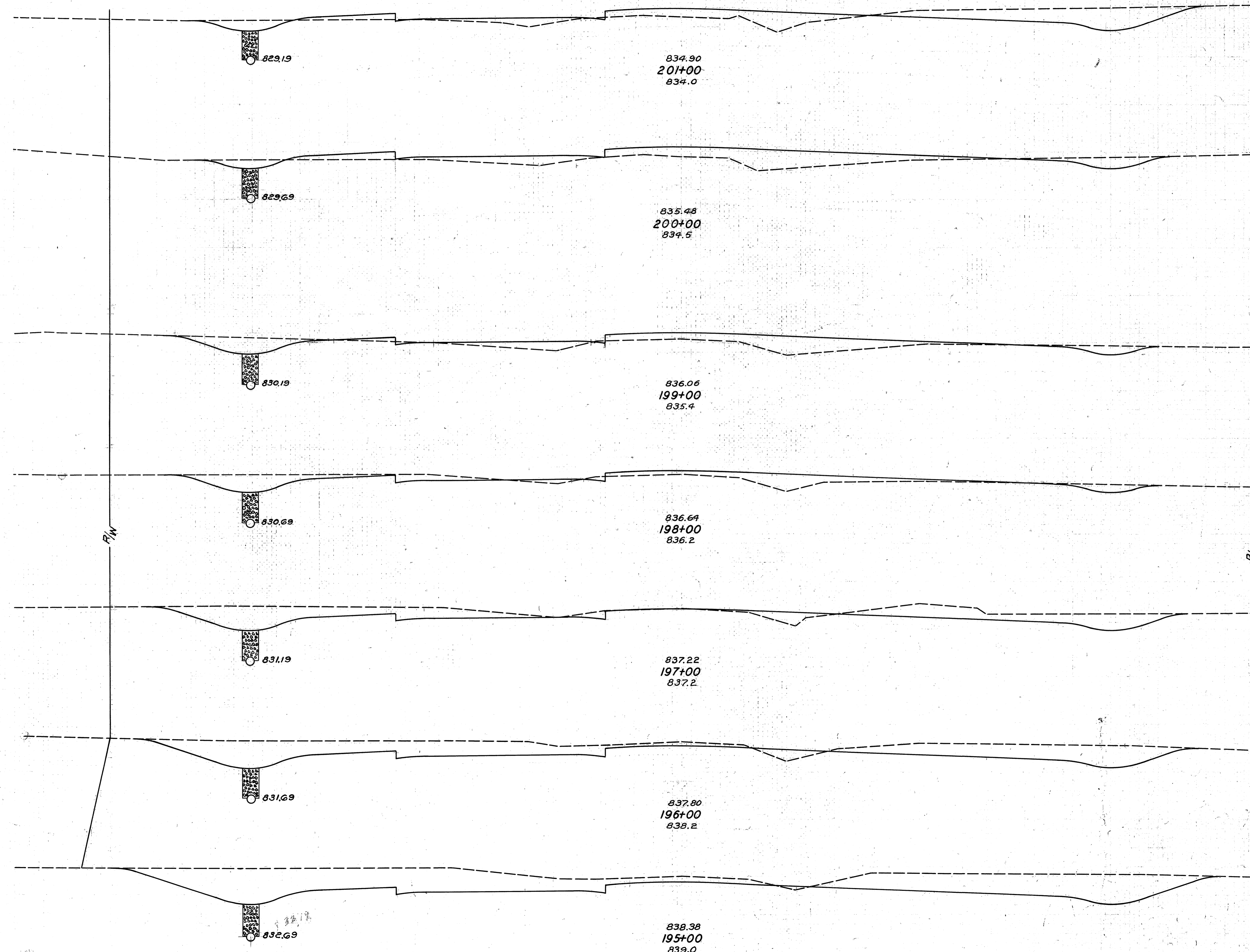
Sta 193+34 Lt Dr

Sta 190+28 Rt Dr

END AREA	CU. YDS.	
	CUT	FILL
254	2	
		744 7
148	2	8
		461 6
101	1	
		411 2
121	0	
		526 0
		3
163	0	
		539 0
128	0	
		398 4
87	2	
		280 22

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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Sta 200+68 Rt Dr.

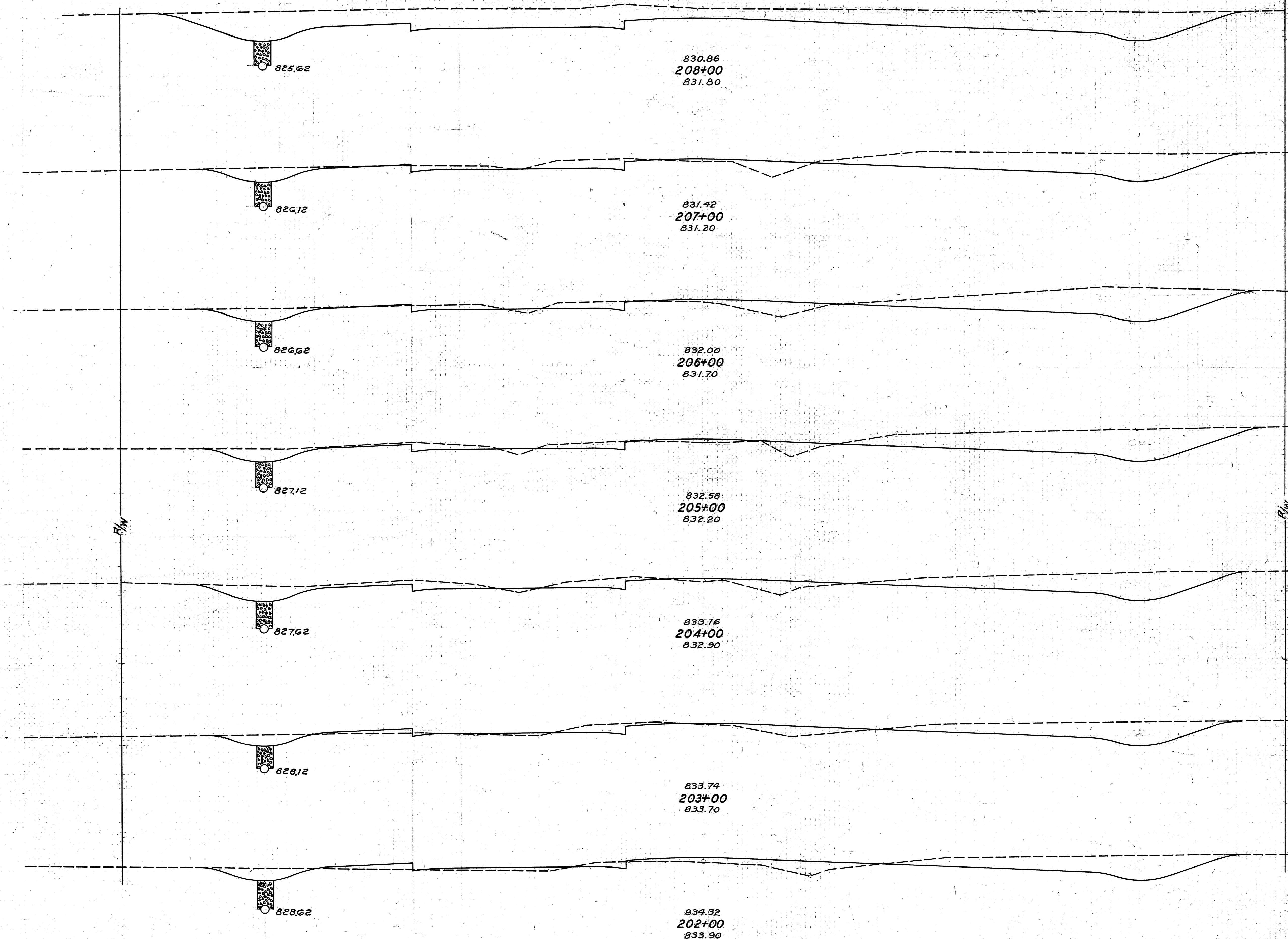
Sta 195+78 Lt Dr.

Sta. 195+35 Lt Dr.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
48	38	5	194
13	67	65	217
22	50	94	141
29	26	209	61
84	7	398	24
131	6	611	19
199	1	7	6
		10	

Excavation 4386 Cu. Yds.
Embankment 477 Cu. Yds.
Emb. + 25% 596 Cu. Yds.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



Sta. 207+92 Rt. Dr.

Sta. 204+78 Rt. Dr.

R/W

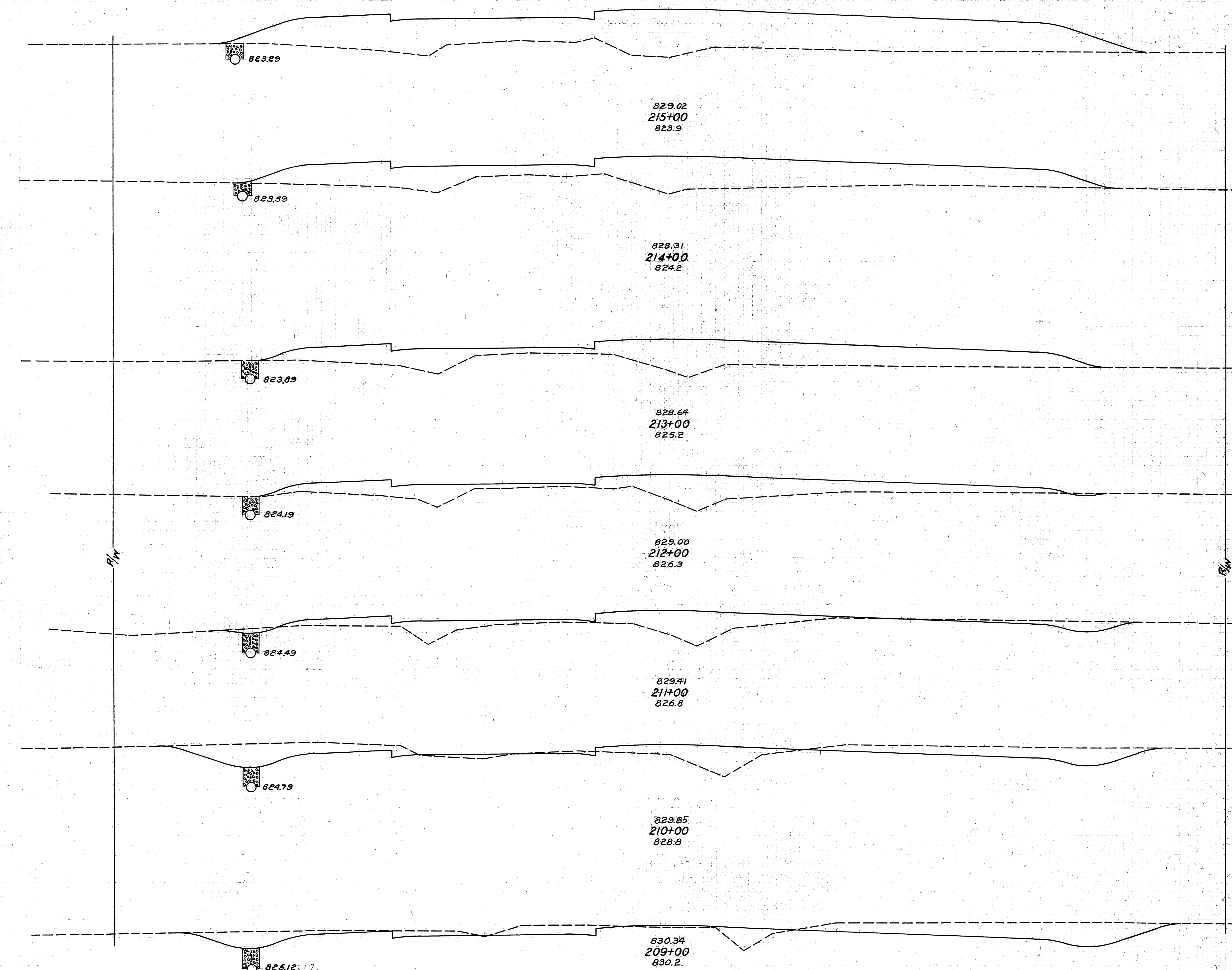
R/W

Excavation
Embankment
Emb. + 25%

3753 Cu. Yds.
683 Cu. Yds.
854 Cu. Yds.

END AREA	CU. YDS.	
	CUT	FILL
193	0	5
99	9	541
66	14	309
98	11	307
87	13	343
61	13	274
57	26	219
		194

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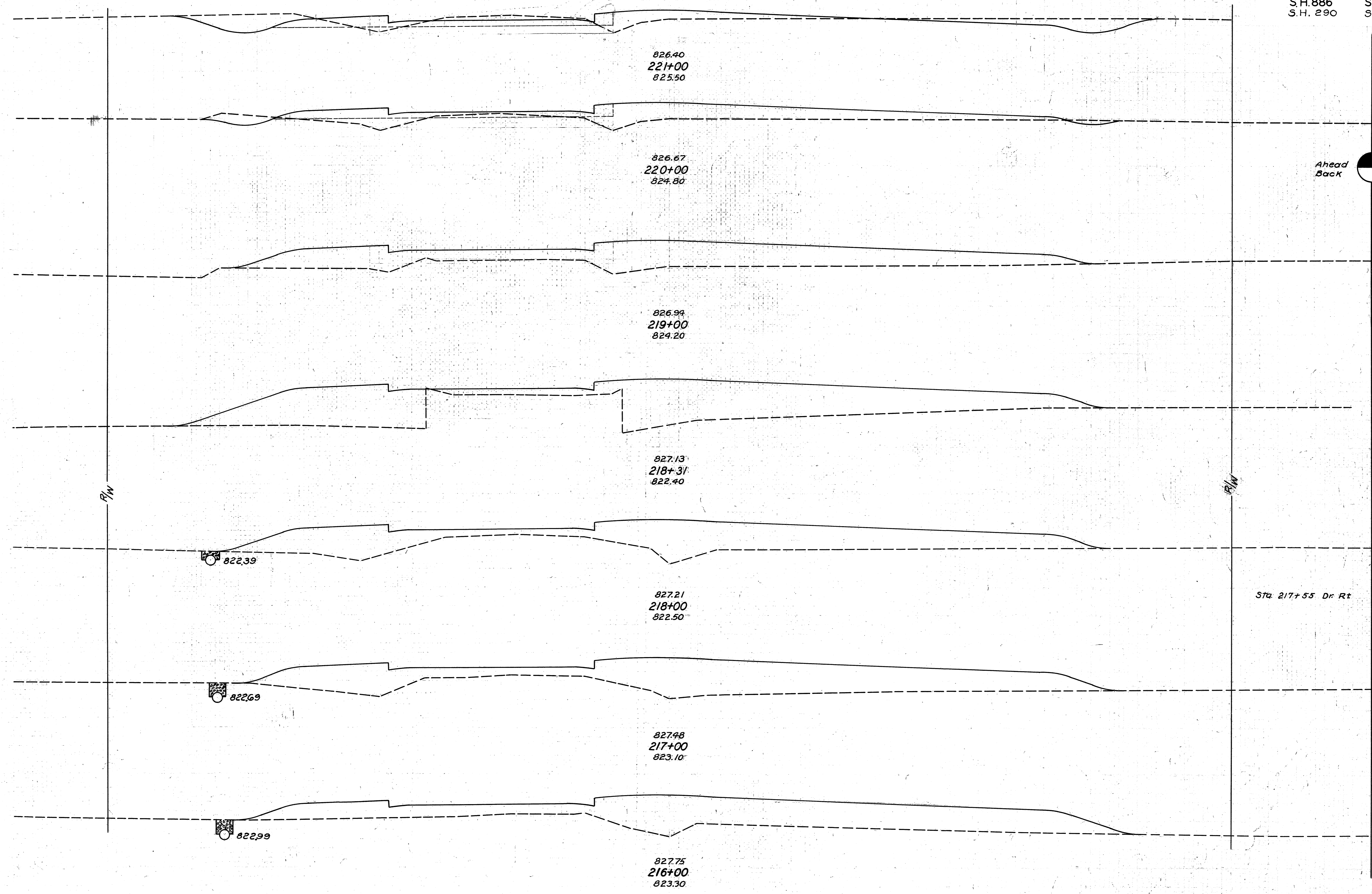
Excavation 206
Embankment 640.3
Emb. +25% 300.4

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	311	0	354
0	204	0	689
0	168	2	522
1	114	28	344
14	72	165	193
75	32	306	80
90	11	4	
		524	20

Sta. 209+13 Rt. Dr.

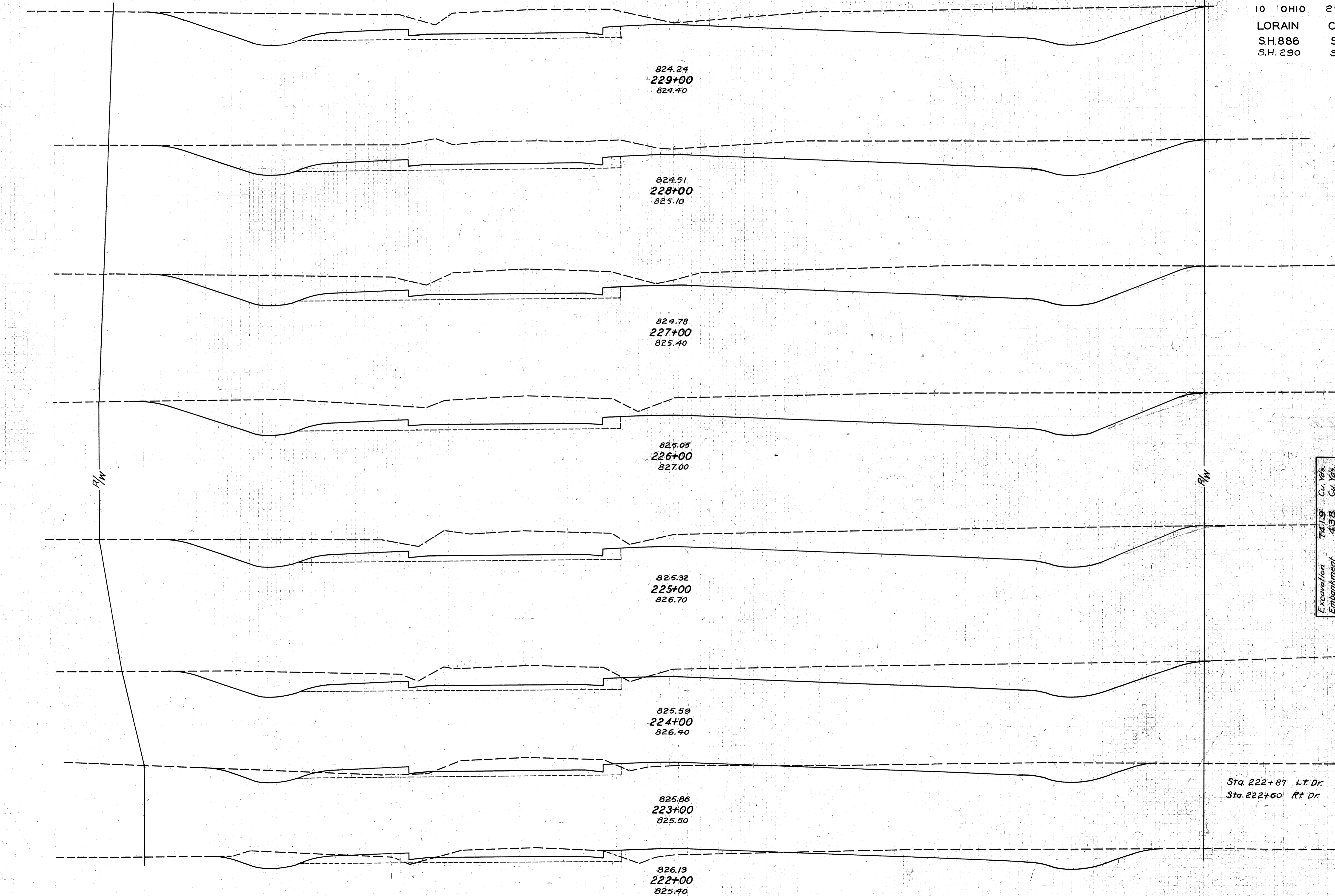
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
42	38		
		93	125
8	87		
6	87		
		111	452
0	157		
		0	520
0	250		
		0	254
0	193		
		0	8
		0	746
0	210		
		0	767
0	204		
		0	954

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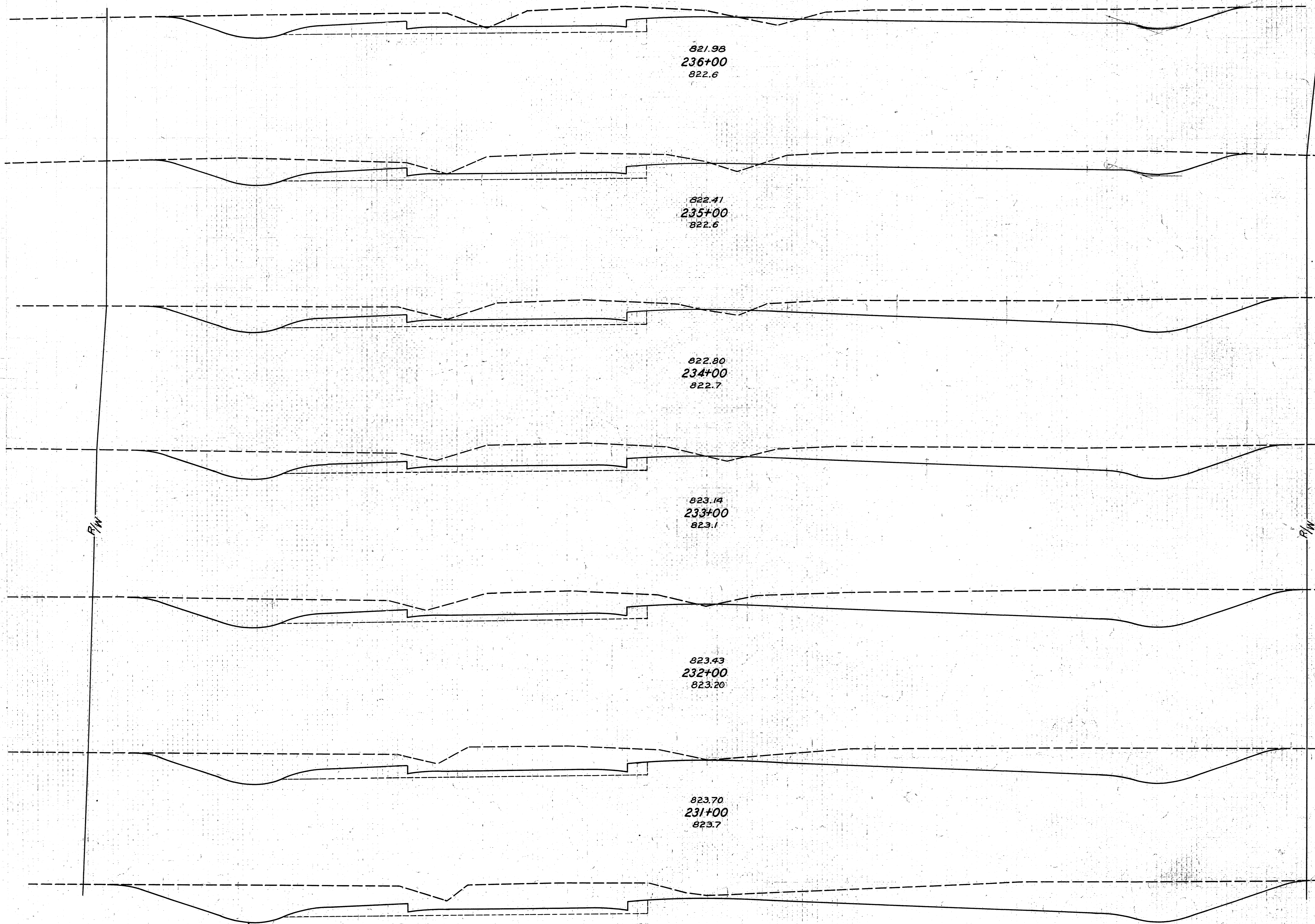


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
264	6	993	20
272	5	1043	20
291	6	1165	22
338	6	1141	20
278	5	911	22
217	7	544	26
80	7	300	52
82	21	3	3
		230	109

Excavation 74.19 Cu. Yds.
Embankment 4.38 Cu. Yds.
Emb. + 25% 5.47 Cu. Yds.

Sta. 222+87 Lt. Dr.
Sta. 222+60 Rt. Dr.

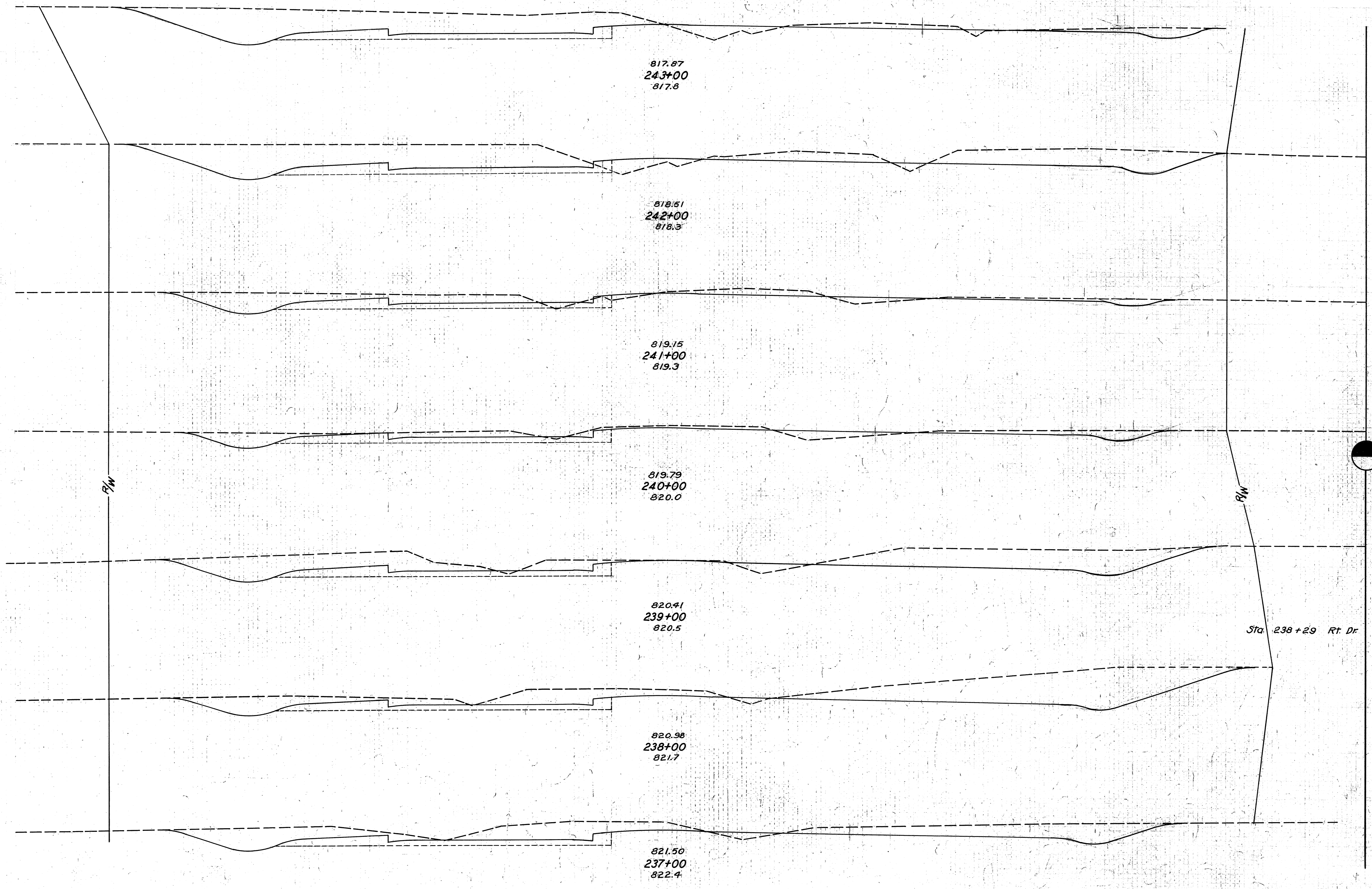
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



Excavation	6258
Embankment	3175
Emb. + 25%	3966

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
130	9		
		531	33
158	9		
		609	30
171	7		
		661	28
		14	
186	8		
		741	26
214	6		
		798	20
217	5		
		867	20
251	6		
		993	22

FEDERAL AID 70
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 S.H. 290 SEC. 3 PT

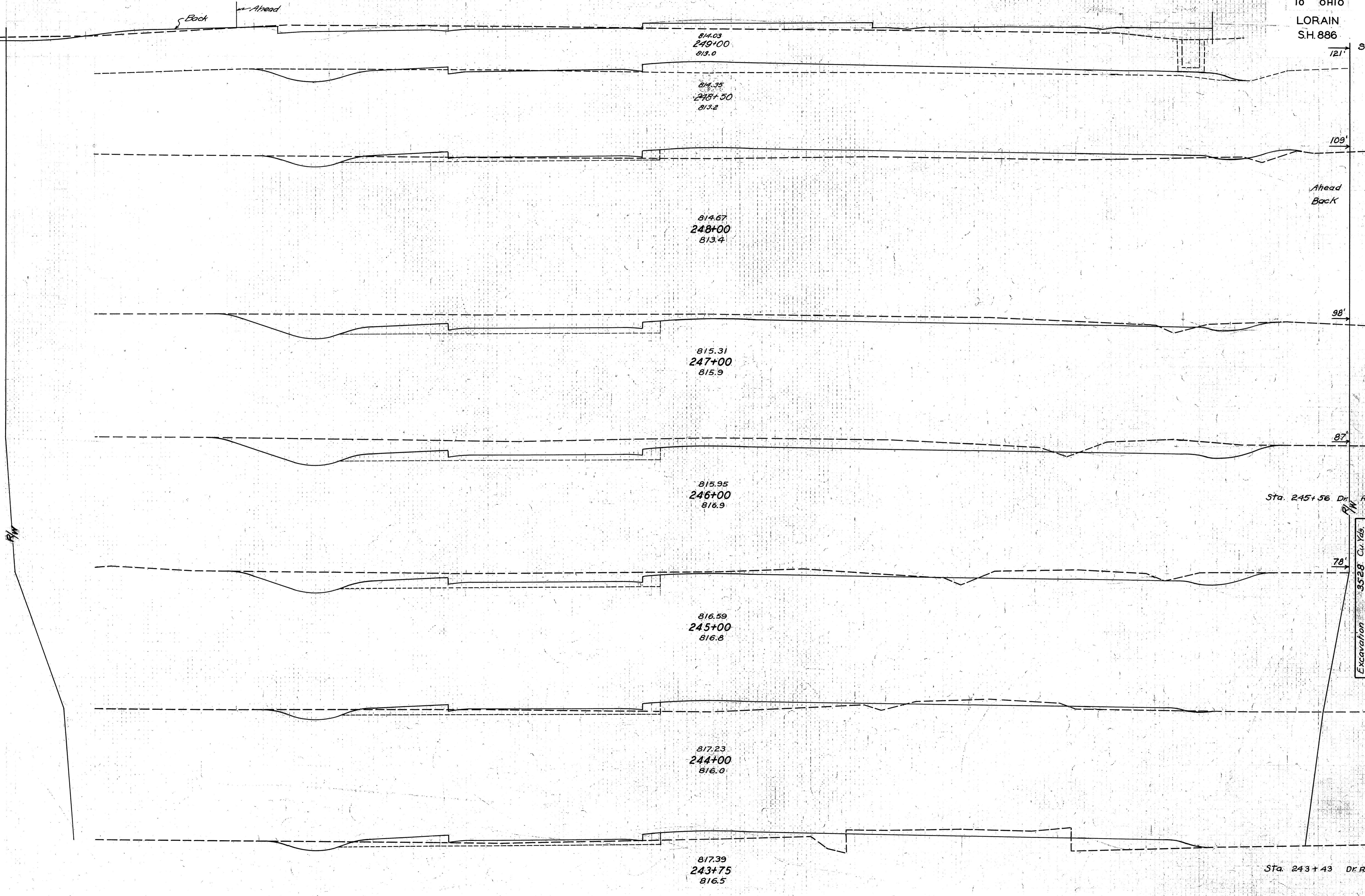


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
147	17		
		630	61
193	16		
		483	56
68	14		
		215	48
48	12		
		361	52
147	16		
		604	44
179	8		
		537	31
122	9		
		467	33

Sta. 238+29 Rt. Dr.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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S.H. 290 SEC. 3 PT.

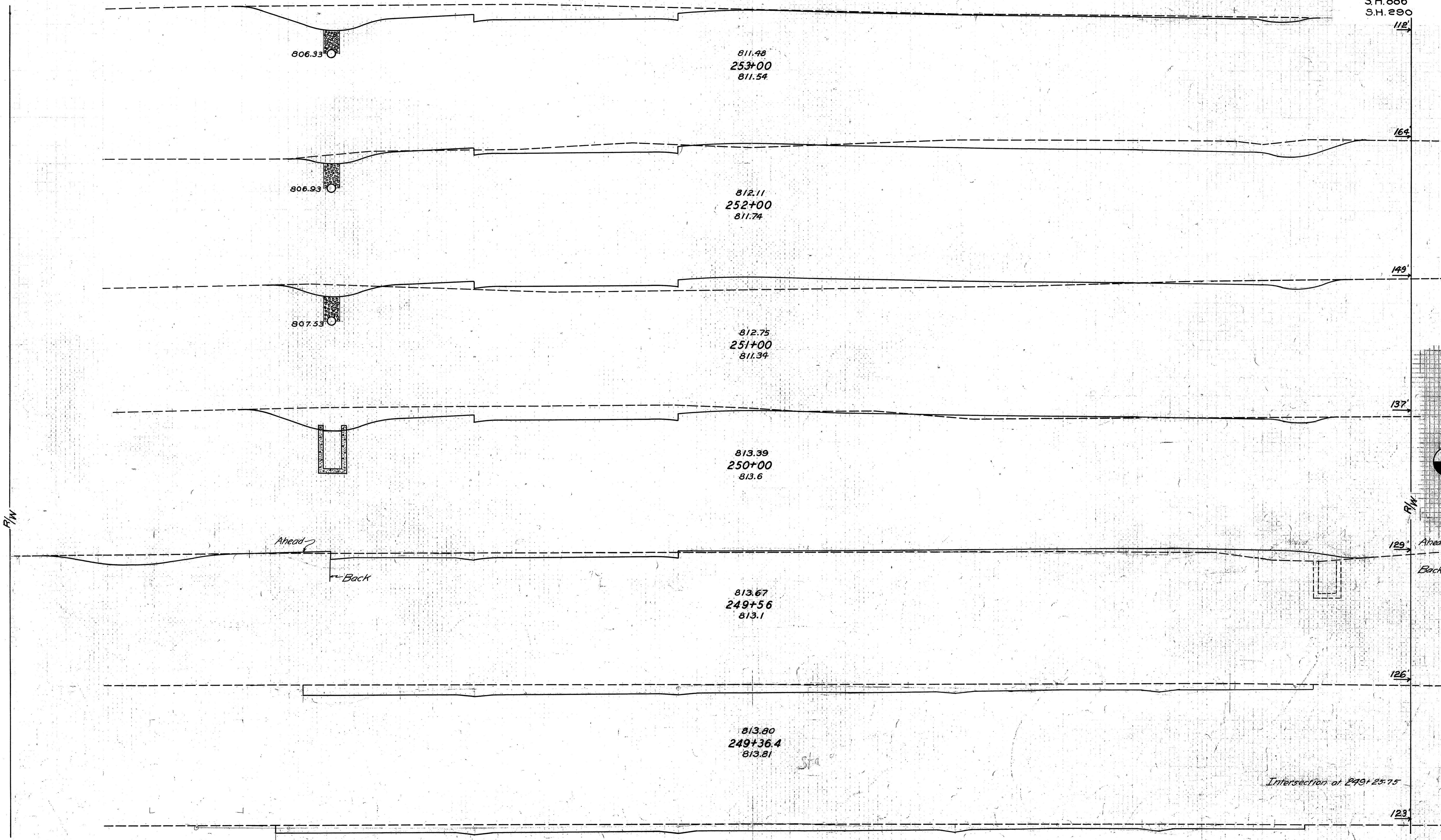


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
20	44		
27	51	78	101
15	58	24	110
11	61		
9	61		
		244	126
123	7		
		520	26
158	7		
		5	
		480	24
101	6		
		230	27
23	41		
		28	46
37	58		
		256	114
		3	

Excavation 3528 Cu. Yds.
Embankment 861 Cu. Yds.
Emb. + 27%

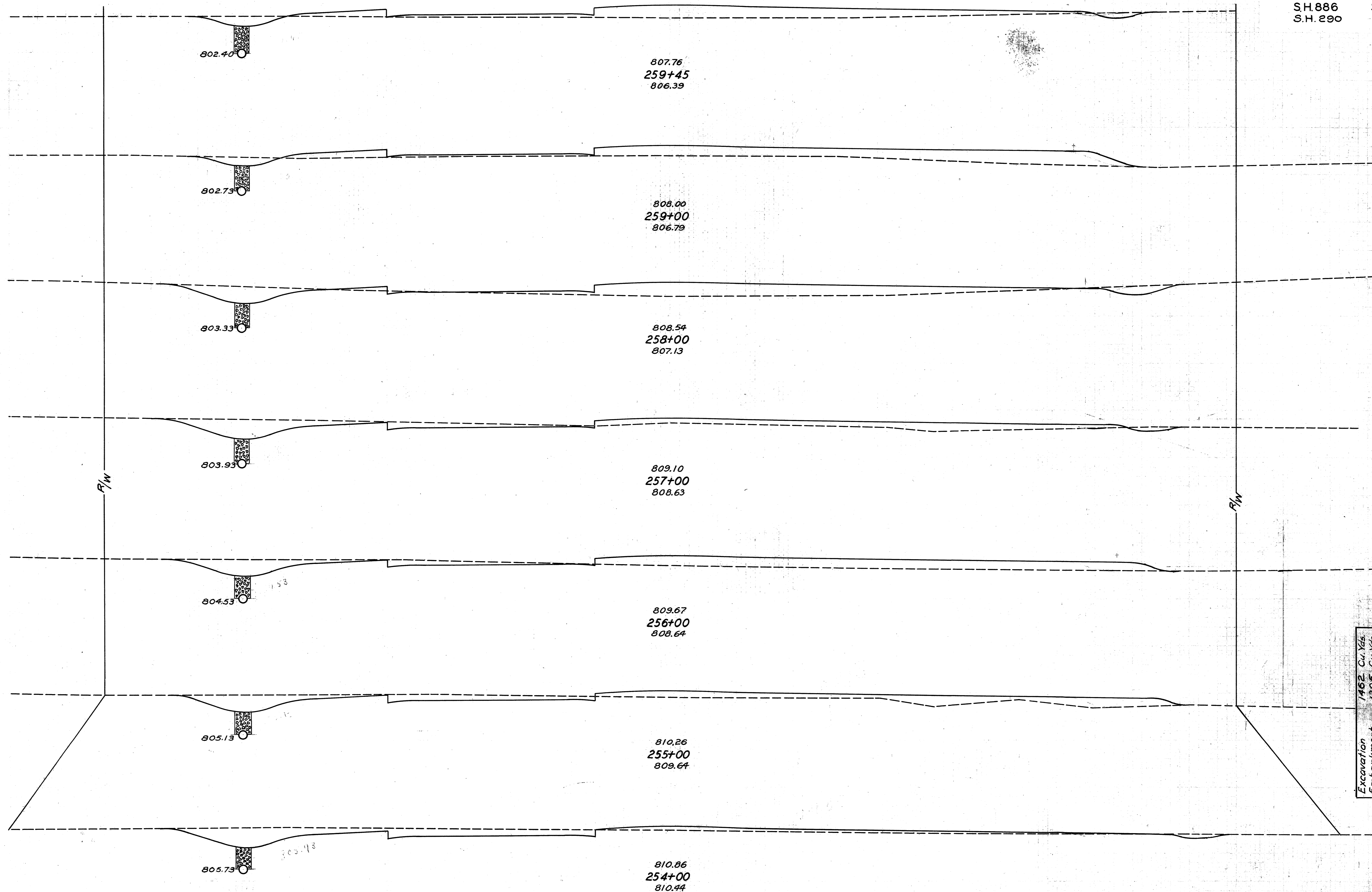
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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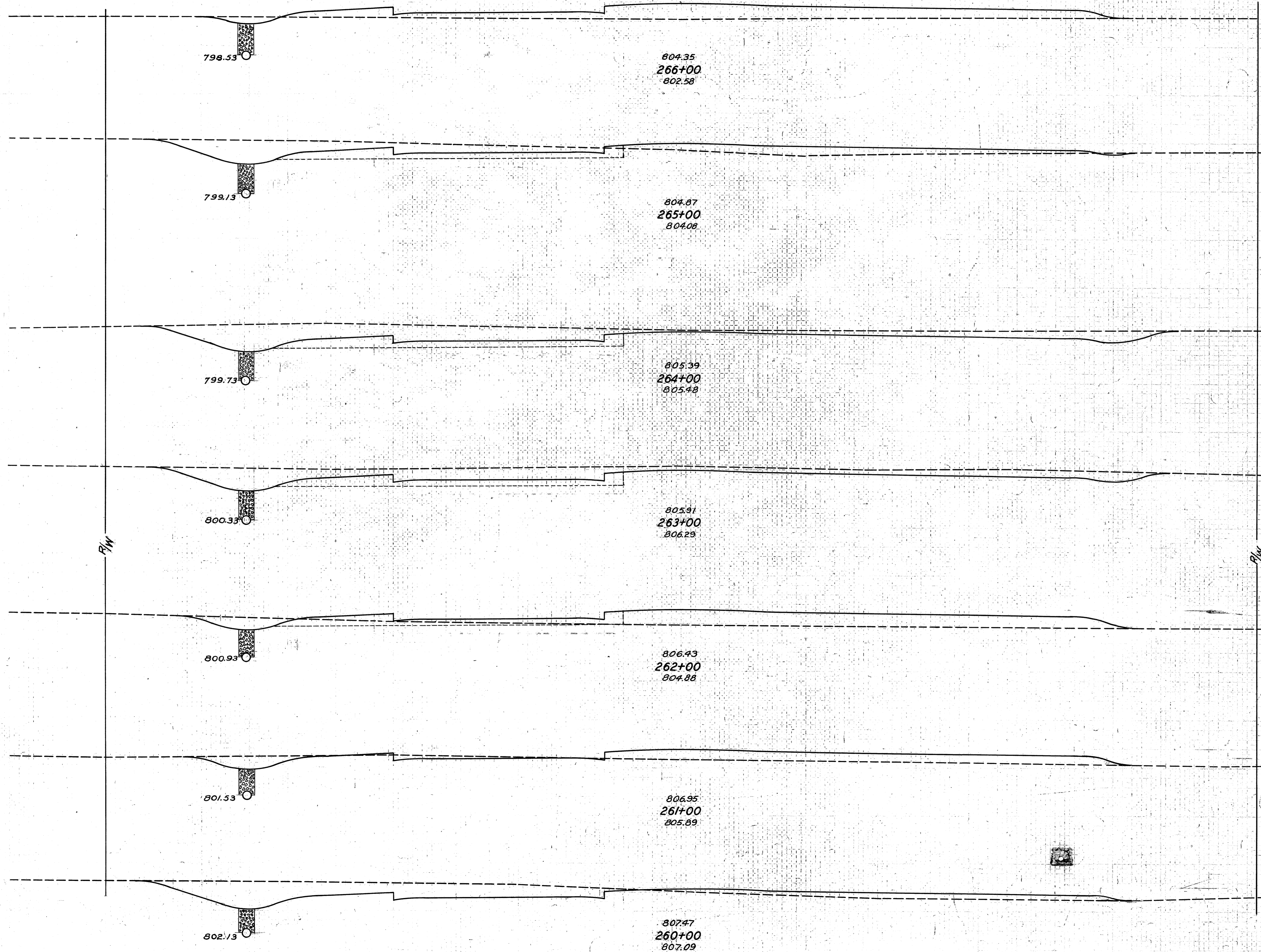
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
81	0		
		287	7
74	4		
		174	109
20	55		
		183	111
79	5		
		91	29
33	31		
		15	31
		44	11
102	0		
		72	0
		95	9
84	0		
		30	13

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA	CU. YDS.	
	CUT	FILL
7	60	
6	75	11 12
20	56	48 243
35	37	102 172
26	58	113 176
30	42	104 185
41	12	131 83
41	12	226 22

Excavation 1462 Cu. Yds.
 Embankment 1305 Cu. Yds.
 Emb. + 25% 1631 Cu. Yds.



Excavation 1810 Cu. Yds.
 Embankment 1564 Cu. Yds.
 Emb. + 25%

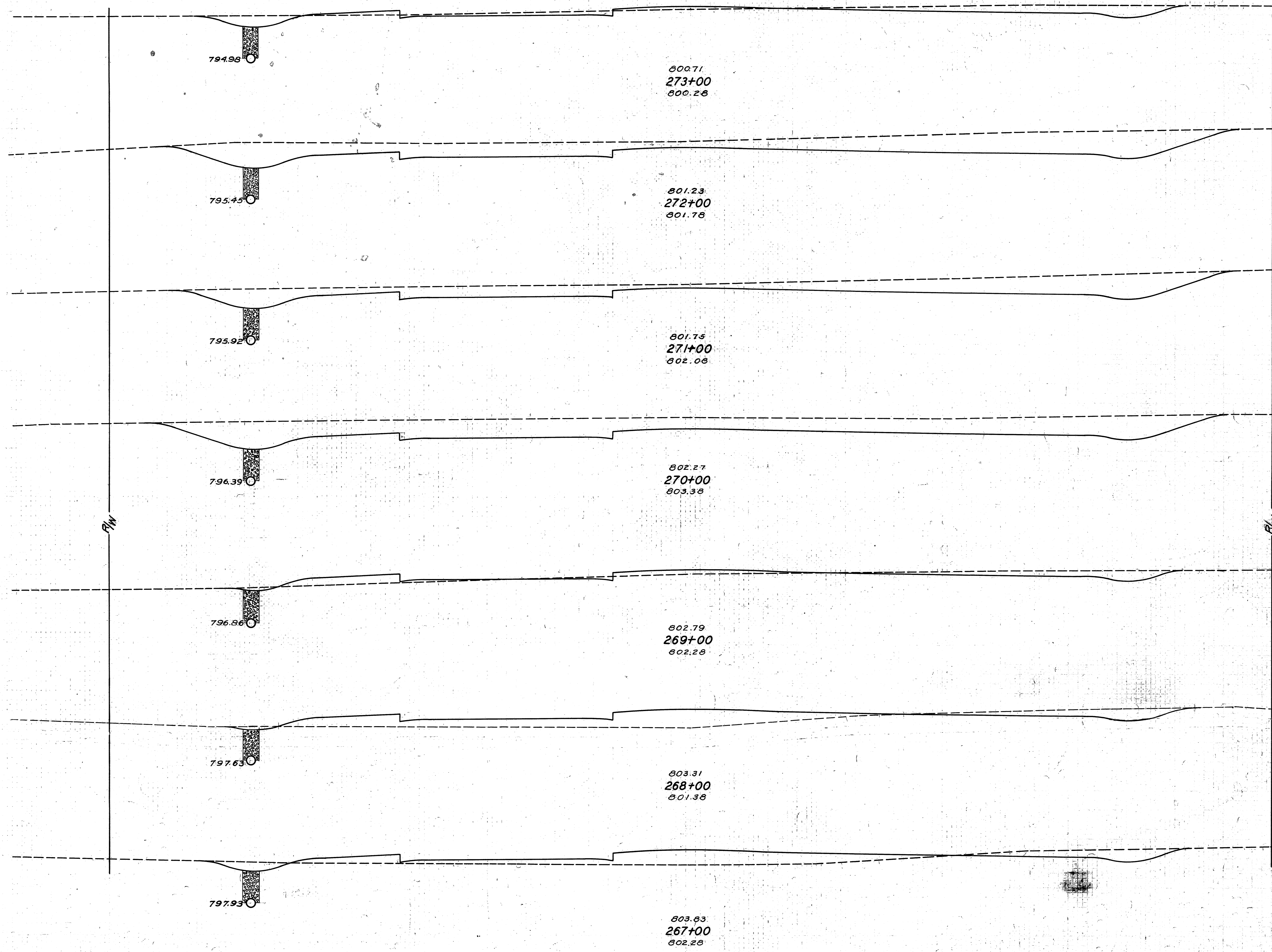
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
4	36		
		102	220
51	33		
60	38		
		330	81
118	6		
		7	
		407	20
102	5		
		206	176
9	90		
8	89		
		43	259
15	51		
		165	139
74	24		
		83	85

Sta. 264+00 Dr. Lt.

Ahead
Back

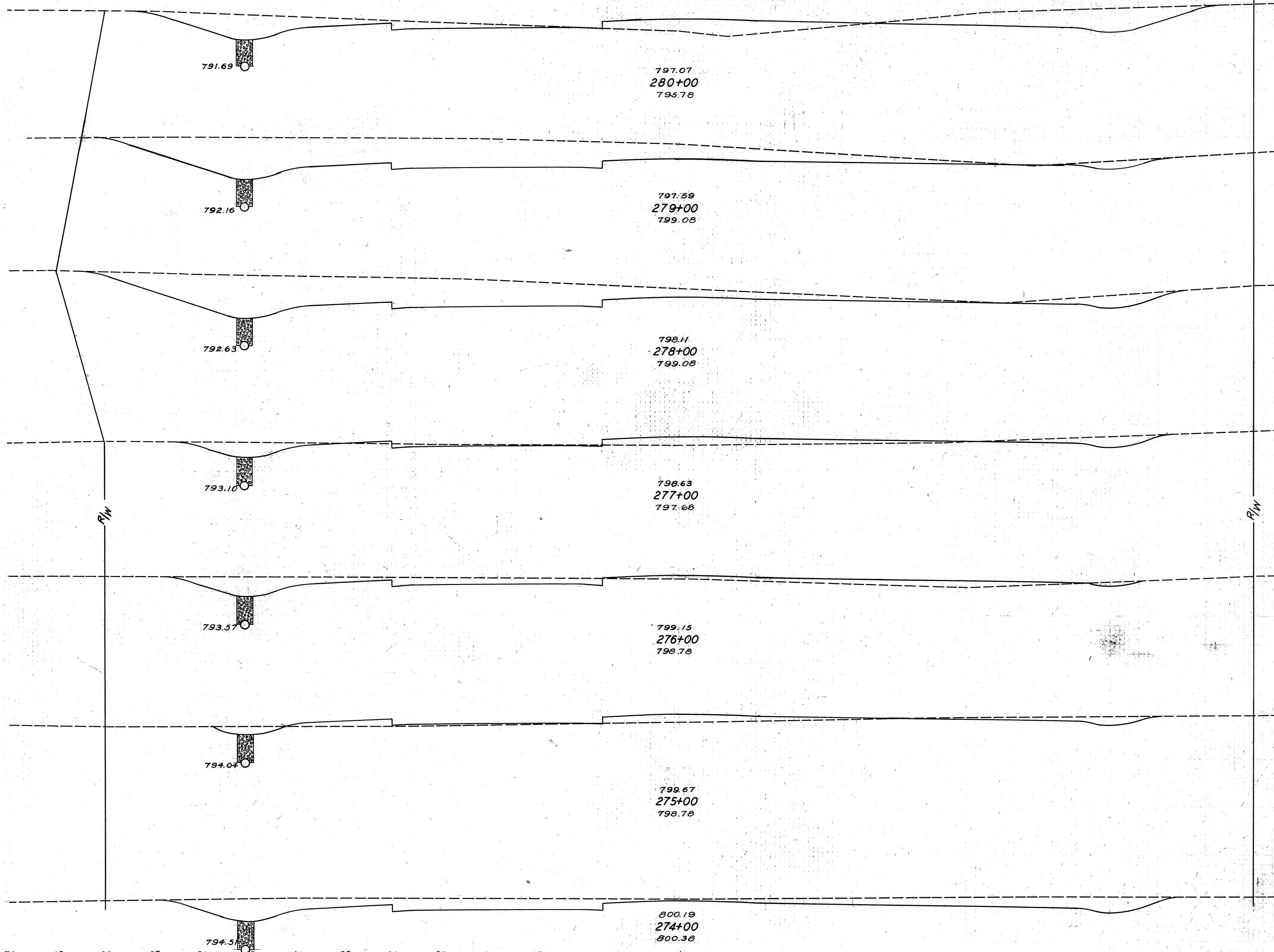
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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S.H. 290 SEC. S PT.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
40	7		
		381	13
166	0		
		543	0
127	0		
		561	0
176	0		
		359	37
18	20		
		69	156
19	64		
		2	2
		74	217
21	53		
		46	257

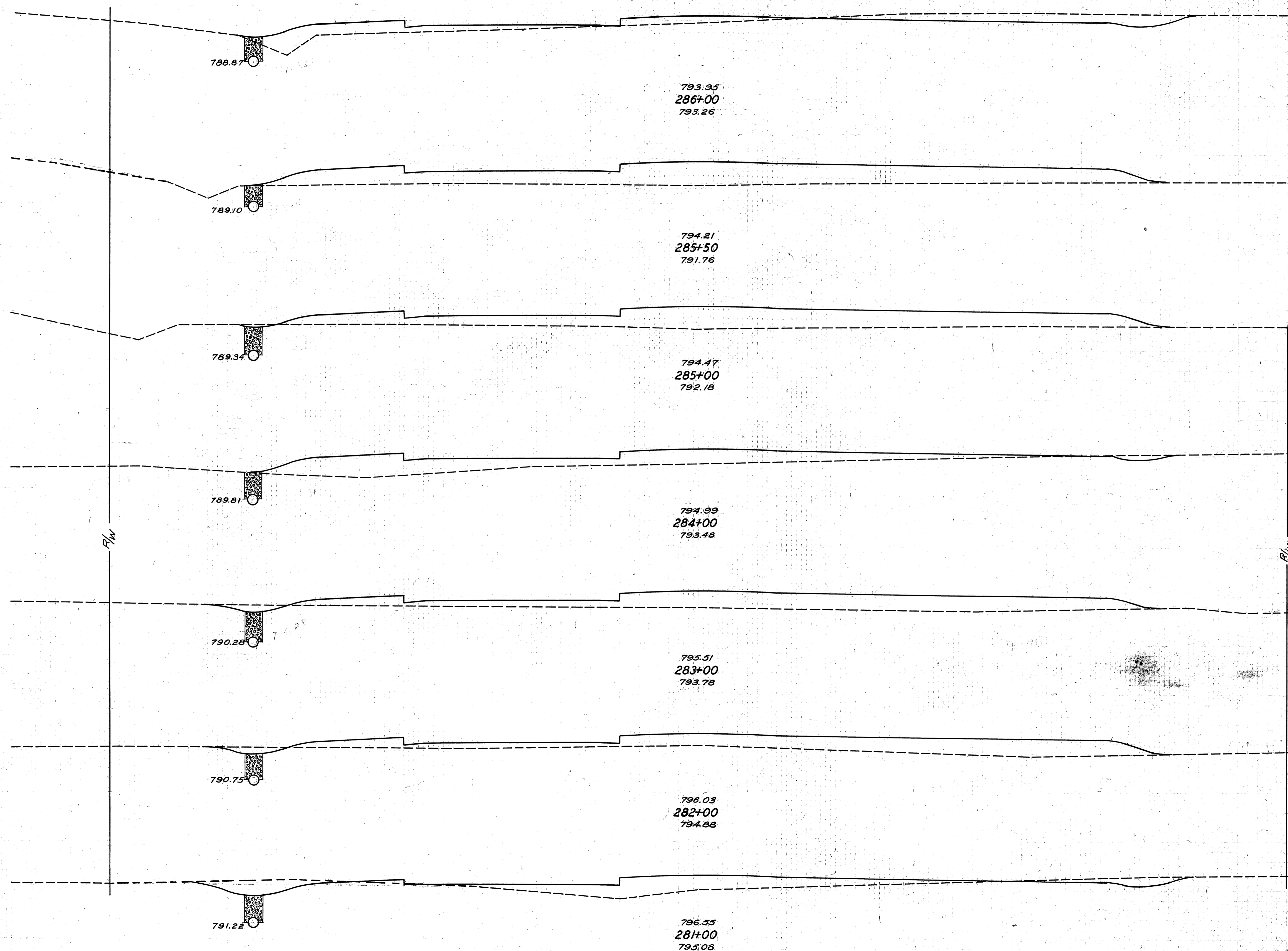
Sta. 267+85 Dr. Lt.
Sta. 267+85 Dr. Rt.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
85	31		
		526	57
199	0		
		719	0
189	0		
		402	41
28	22		
		133	83
44	23		
		109	93
15	27		
		222	30
105	0		
		269	13

Excavation 3865 Cu. Yds.
 Embankment 350 Cu. Yds.
 Emb. + 25% 437 Cu. Yds.

10 OHIO 293(2) 1938
LORAIN COUNTY
S.H. 886 SEC.A
S.H. 290 SEC. S PT.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
28	41		
		26	171
0	144		
		1	248
1	124		
		5	
		6	398
2	91		
		9	357
3	102		
		11	365
3	95		
		43	270
20	51		
		194	152

Excavation 2268 Cu. Yds.
Embankment 5317 Cu. Yds.
Emb. + 25% 4146 Cu. Yds.

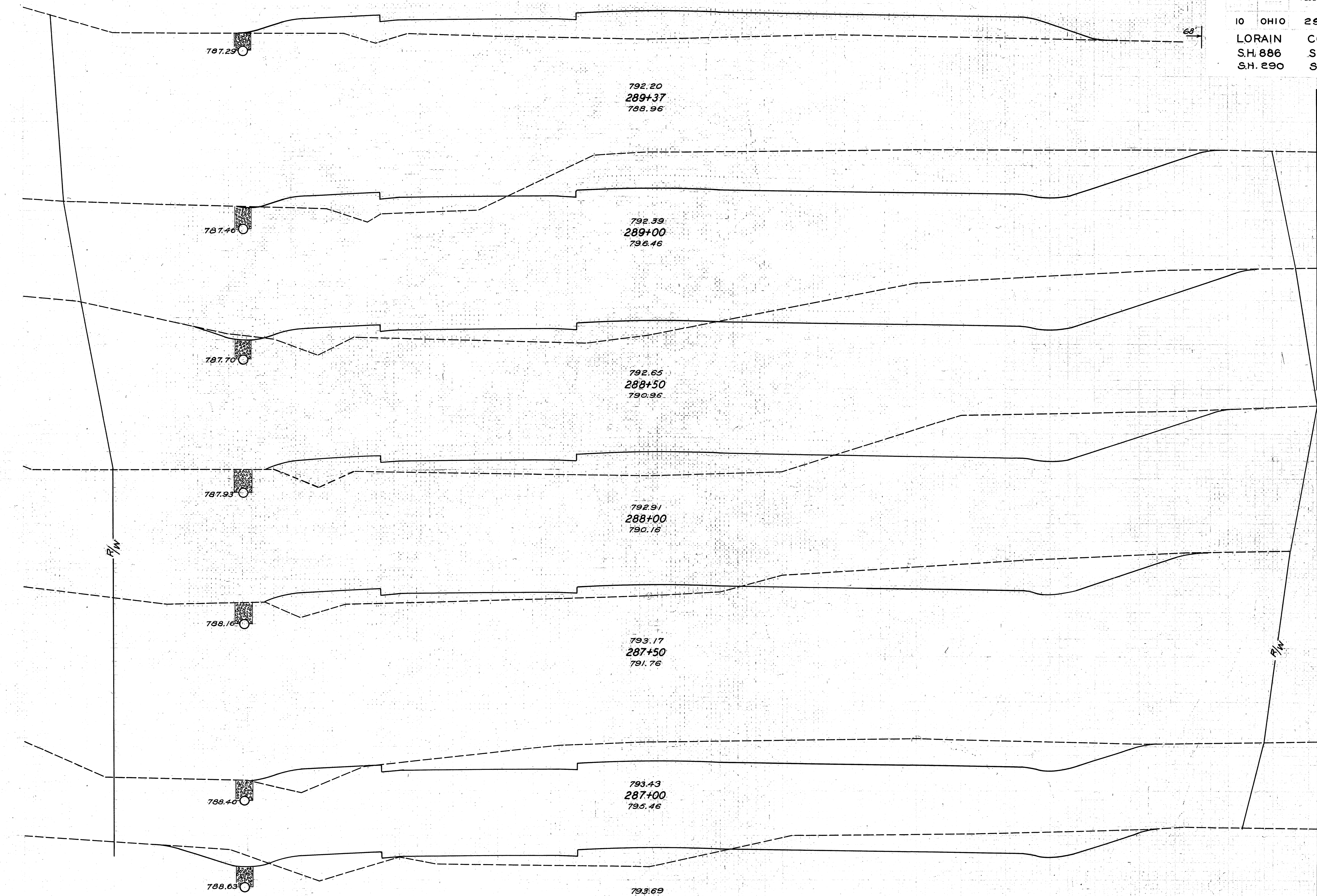
Sta 284 + 50 Dr. Lt.

R/W

R/W

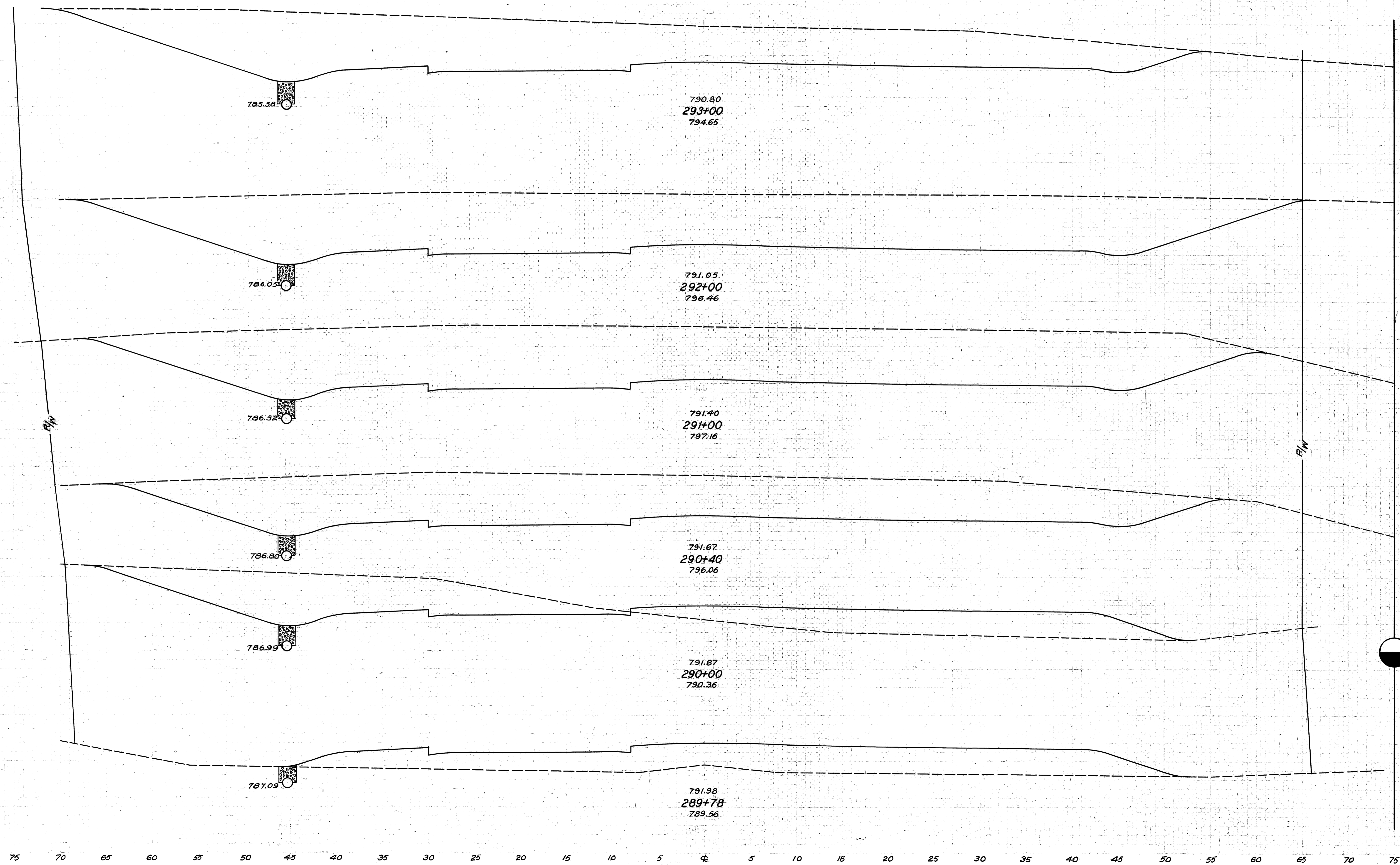
FEDERAL AID
 10 OHIO 293(2) 1938
 LORAIN COUNTY
 S.H. 886 SEC. A
 S.H. 290 SEC. S PT.

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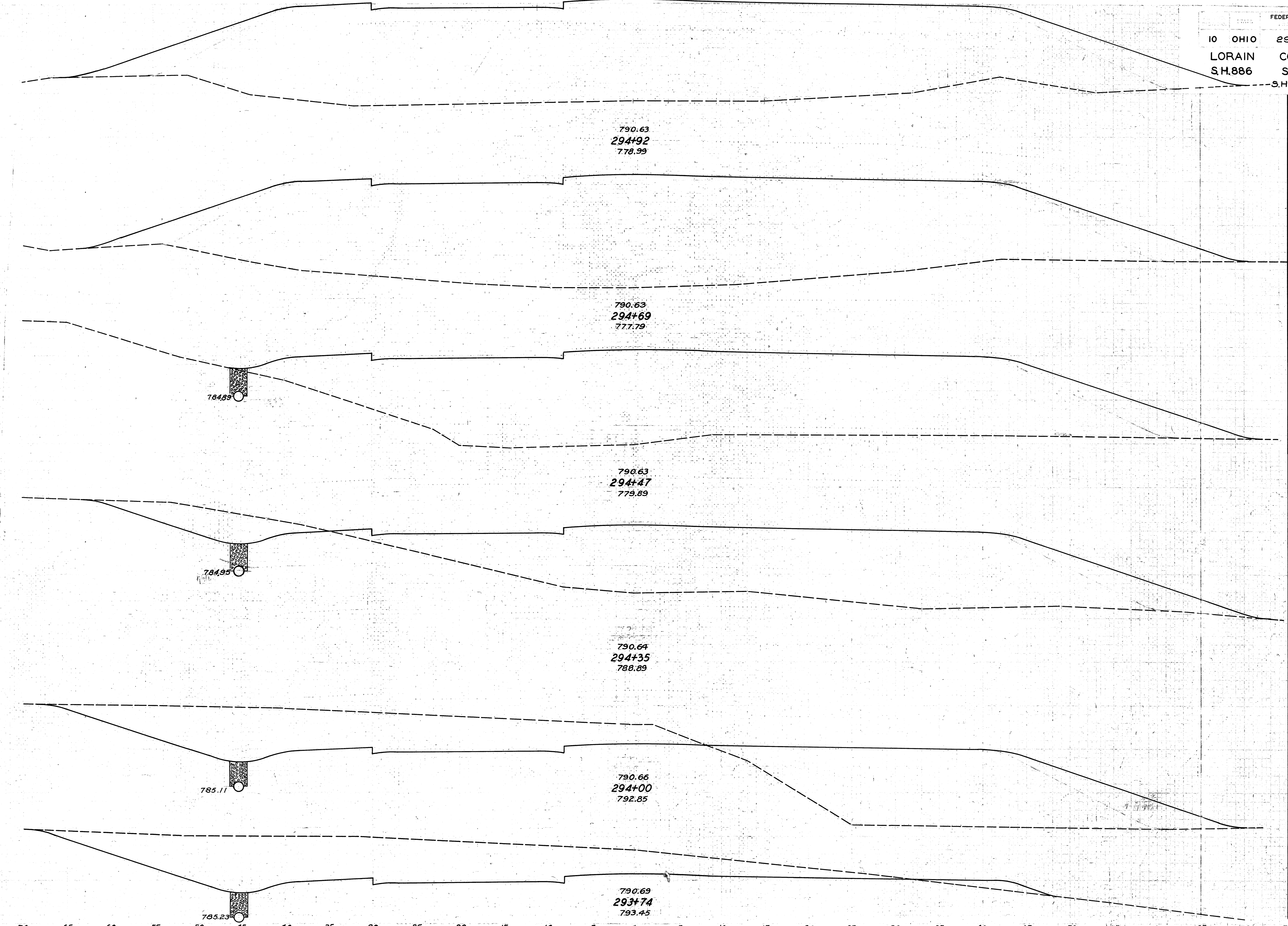
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	202		
		210	168
306	43		
		478	110
211	75		
		318	179
133	119		
		228	167
113	62		
		289	73
199	17		
		270	82
93	71		
		112	104

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
536	0		
		2302	0
707	0		
		2641	0
719	0		
		1384	0
527	0		
		522	95
178	128		
		73	144
0	225		
		0	324

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



790.63
294+92
778.99

790.63
294+69
777.79

790.63
294+47
779.89

790.64
294+35
788.89

790.66
294+00
792.85

790.69
293+74
793.45

784.89

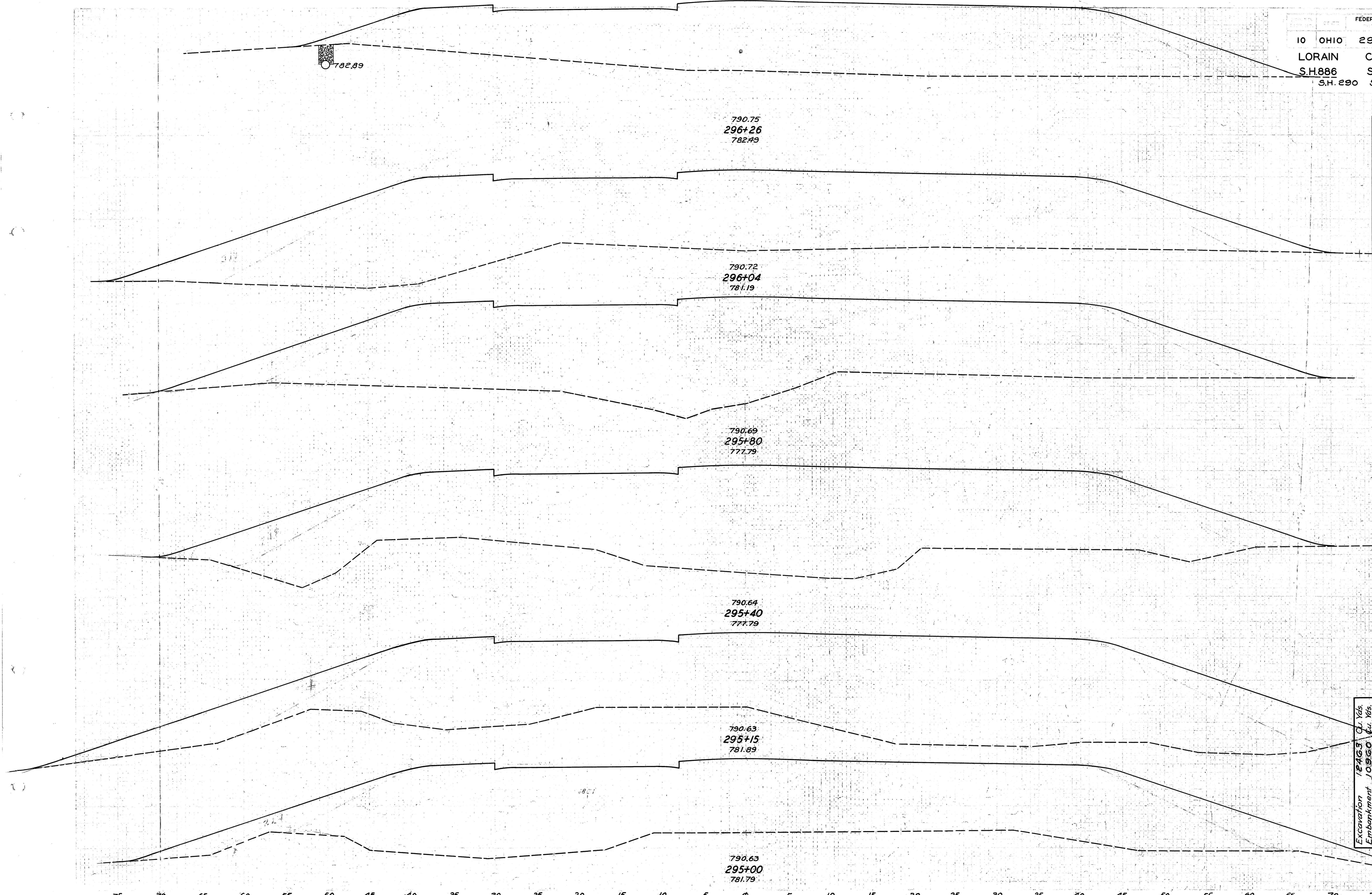
784.95

785.11

785.23

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	1110	0	960
0	1143	0	819
0	868	12	326
56	601	213	613
273	344	291	170
332	9	1189	13

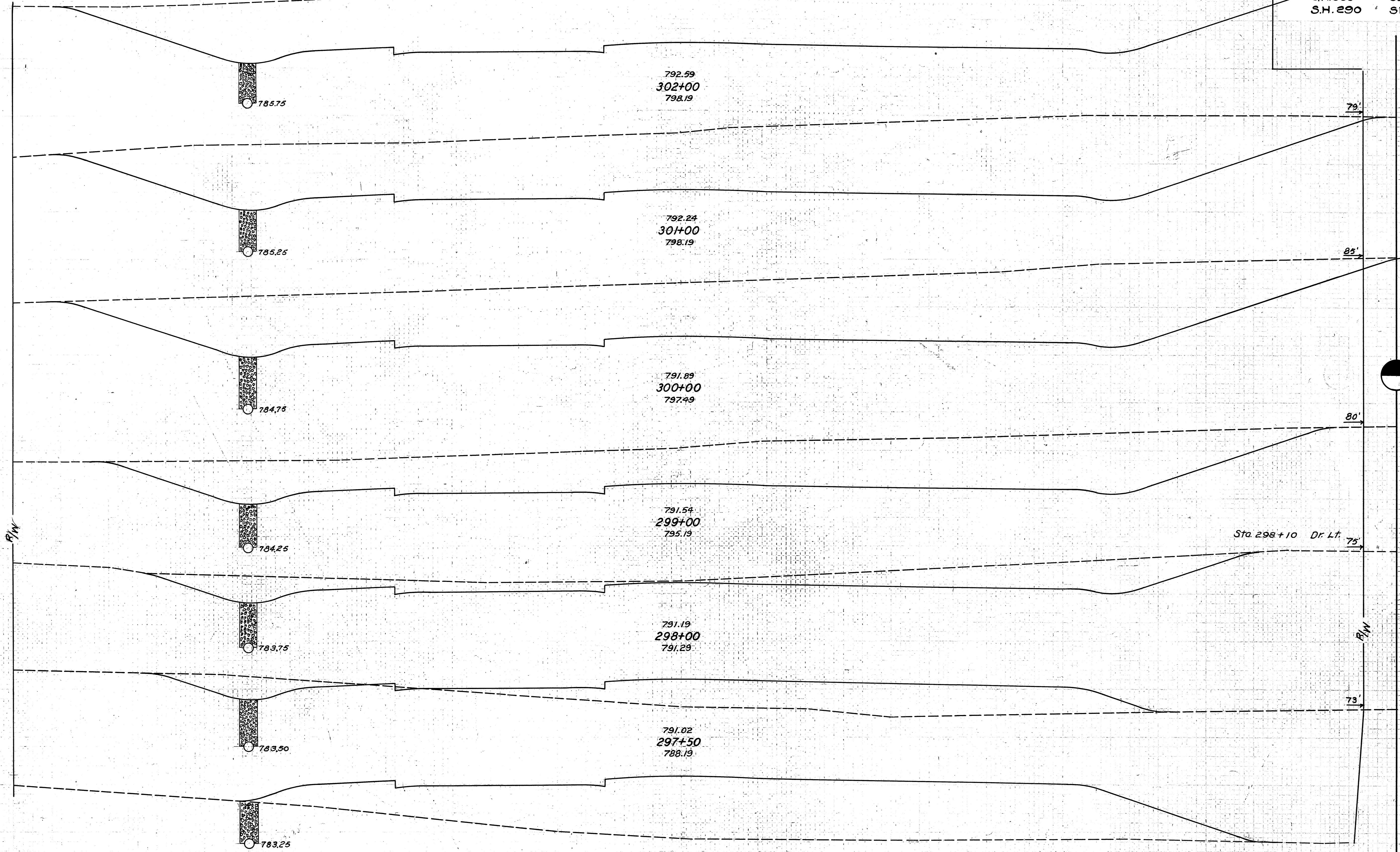
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



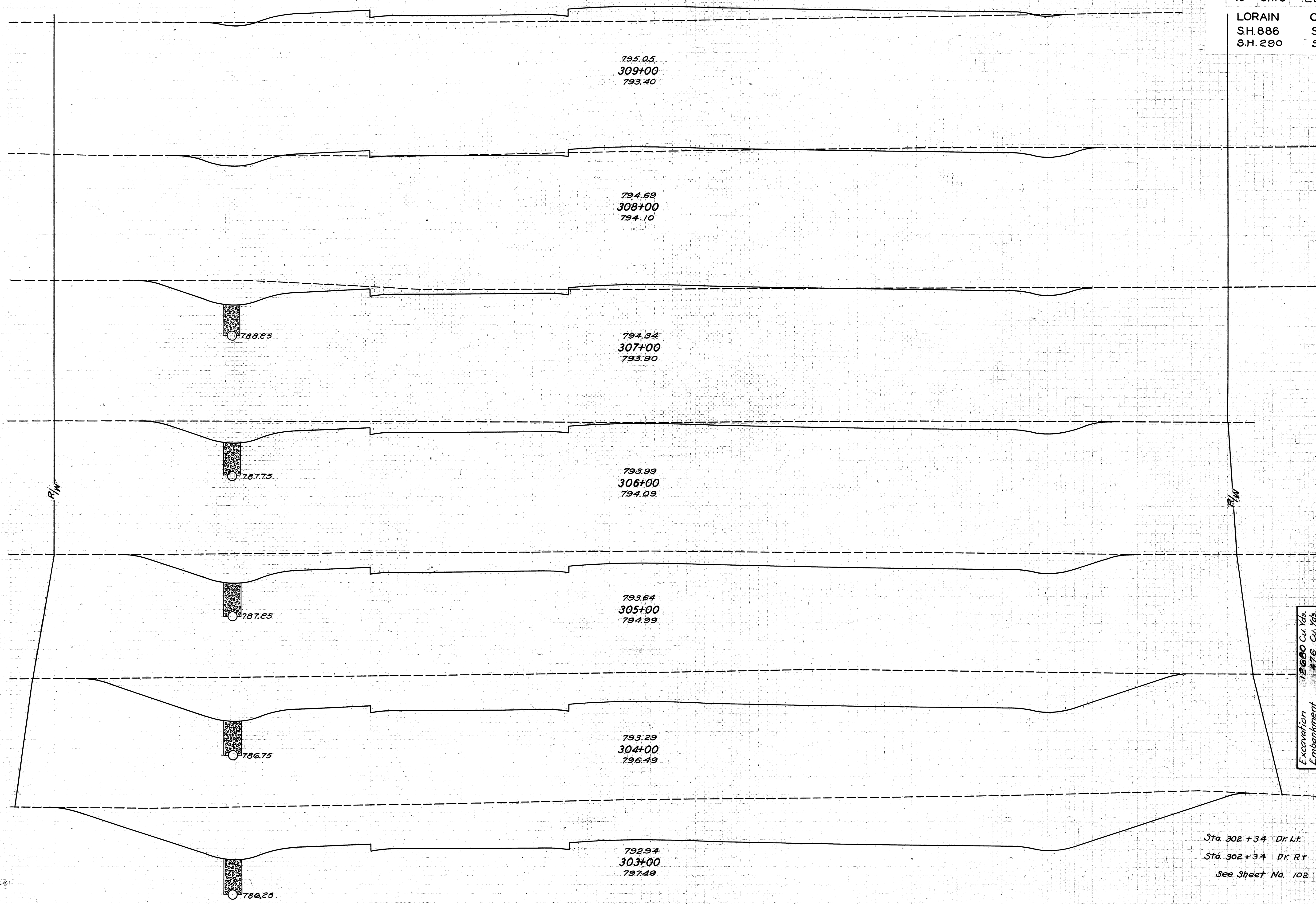
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	729		
		0	741
0	1091		
		0	987
0	1109		
		0	1685
0	1166		
		0	1140
0	1296		
		0	651
0	1048		
		0	320

Excavation 12463 Cu. Yds.
 Embankment 10960 Cu. Yds.
 Emb. + 25% 13700 Cu. Yds.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



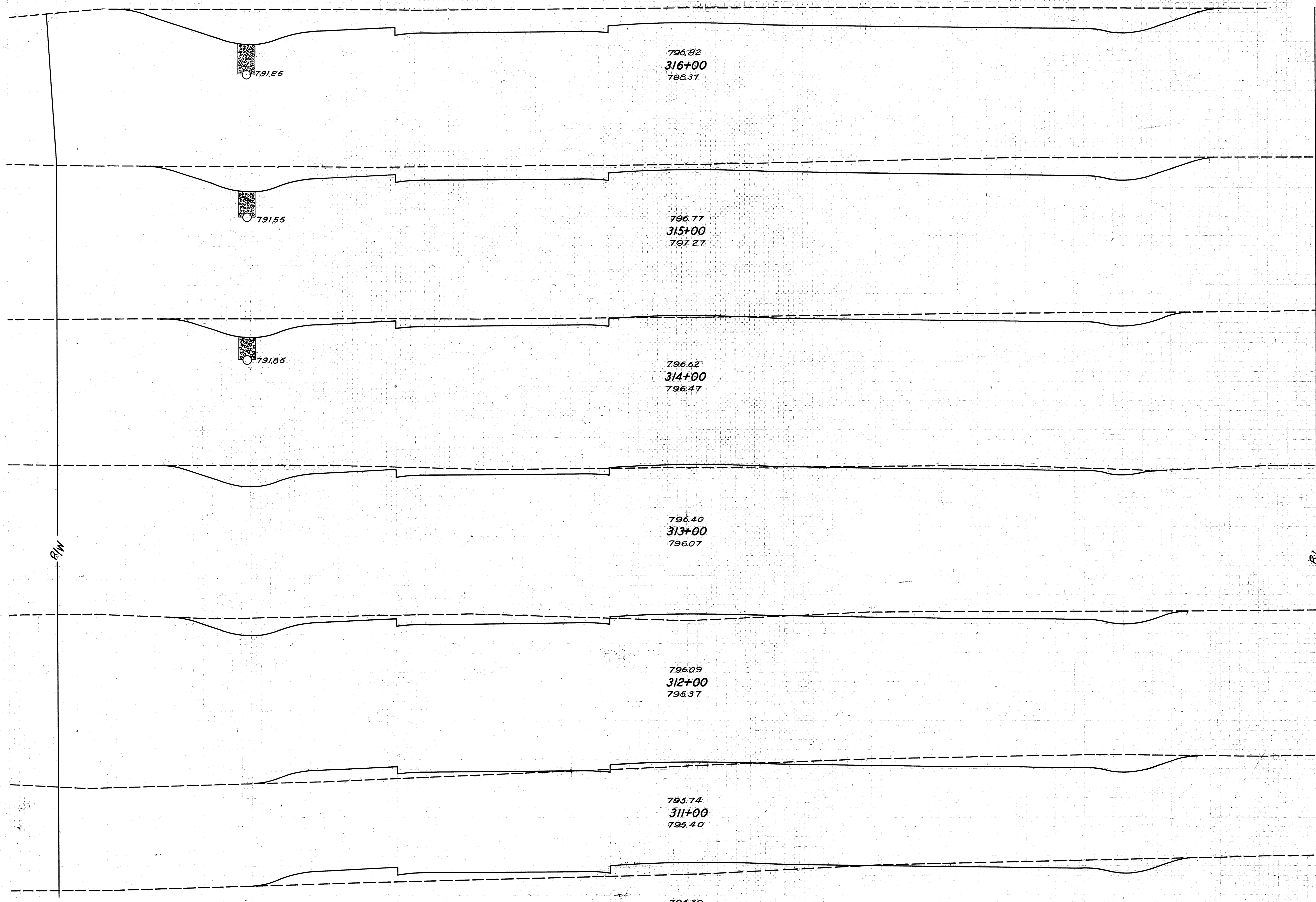
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
746	0		
		2881	0
810	0		
		2941	0
778	0		
		2400	0
518	0		
		1281	0
174	0		
		15	
174	0		
		187	160
28	173		
		26	612
0	488		
		0	1668



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	82		
		56	174
28	12		
		156	39
56	9		
		293	17
102	0		
		559	0
200	0		
		1148	0
420	0		
		1839	0
584	0		
		2463	0
		98	
		180	

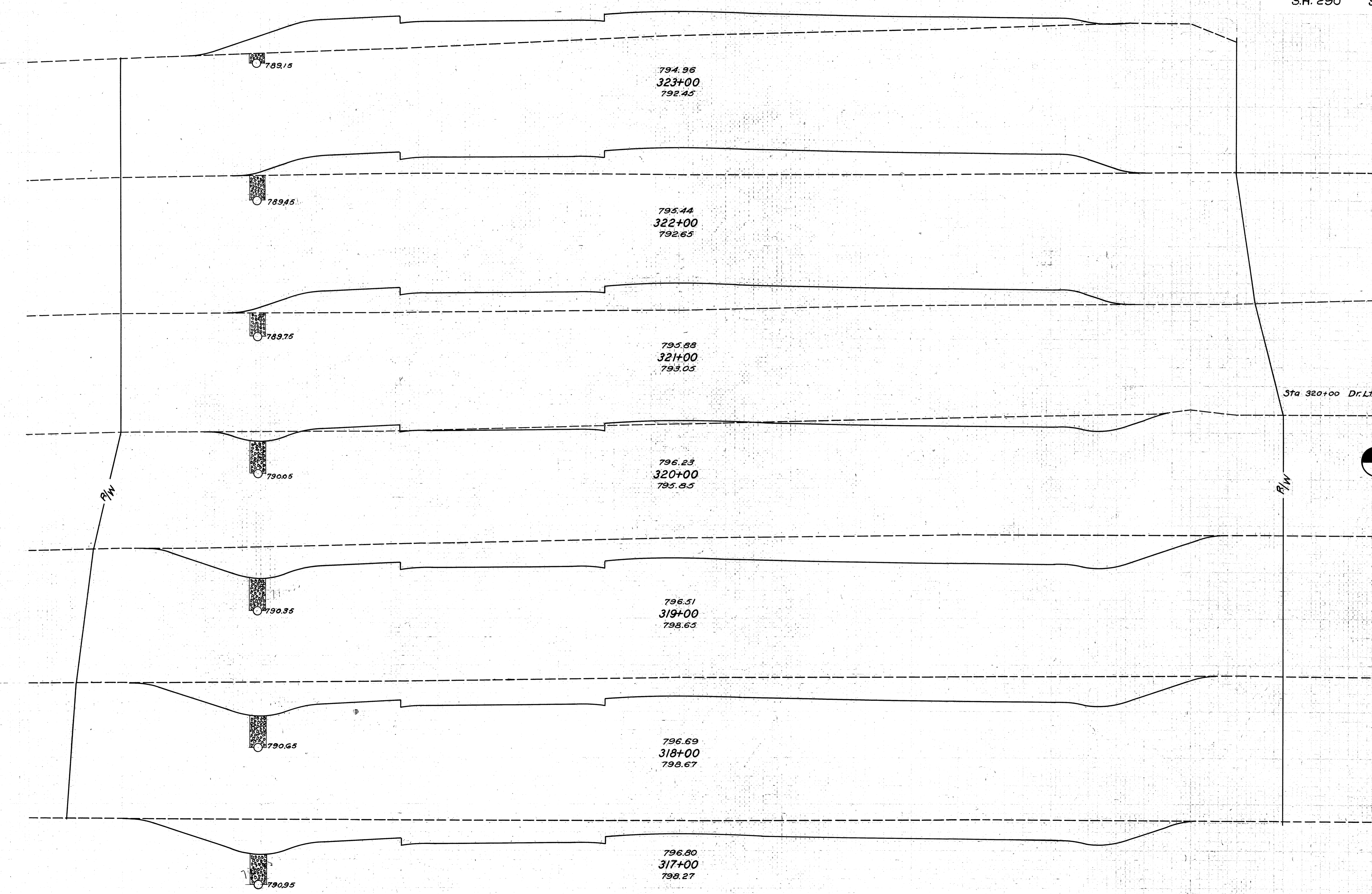
Excavation 13680 Cu. Yds.
Embankment 476 Cu. Yds.
Emb. + 25% 595 Cu. Yds.

Sta. 302+34 Dr. Lt.
Sta. 302+34 Dr. Rt.
See Sheet No. 102



	END AREA		CU. YDS.	
	CUT	FILL	CUT	FILL
228	0		698	0
149	0			
			406	4
70	2			
			222	13
50	5			
			215	26
66	9			
			200	70
42	29			
			120	148
23	51			
			46	246

Excavation 3326 Cu. Yds.
Embankment 280 Cu. Yds.
Emb. + 25% 350 Cu. Yds.

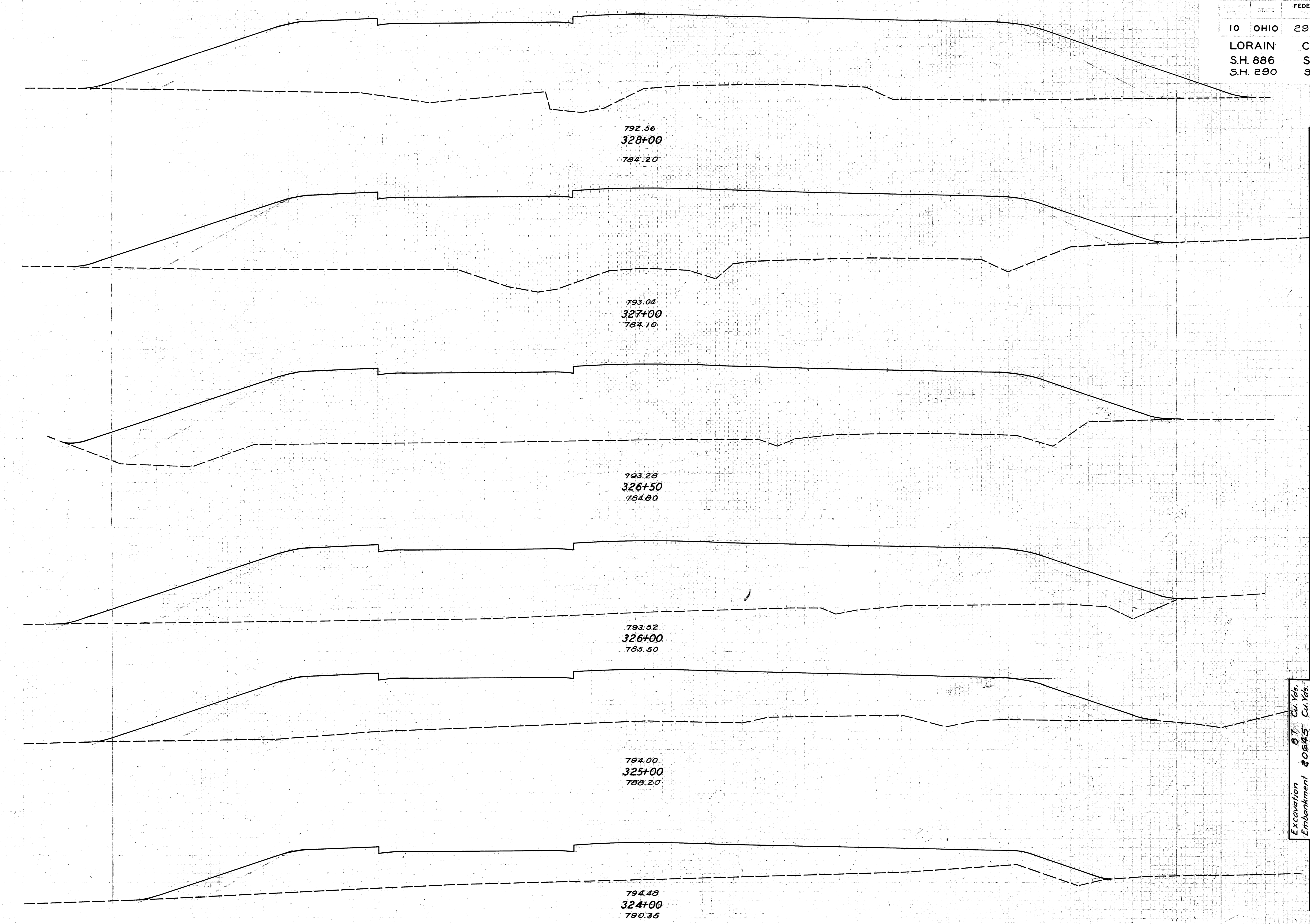


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	200		
		0	731
0	195		
		0	709
0	188		
		87	367
			4
47	10		
		622	19
289	0		
		1048	0
277	0		
		943	0
232			
		852	0

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

FEDERAL AID
 10 OHIO 293(2) 1938
 LORAIN COUNTY
 S.H. 886 SEC. A
 S.H. 290 SEC. S PT.

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792.56
328+00
784.20

793.04
327+00
784.10

793.28
326+50
784.80

793.52
326+00
785.50

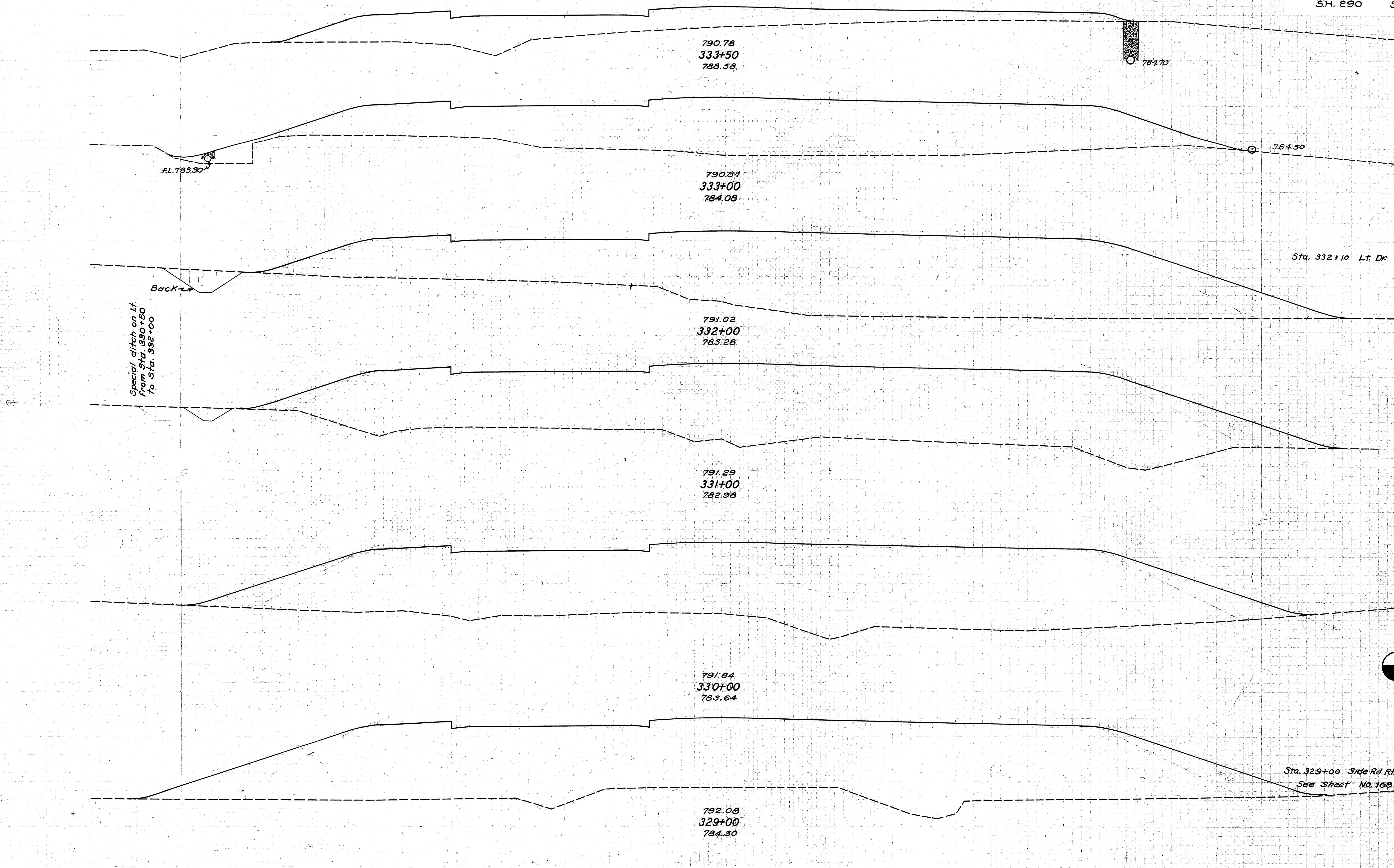
794.00
325+00
788.20

794.48
324+00
790.35

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	878	0	3194
0	847	0	1563
0	841	0	1508
0	788	0	2500
0	562	0	1678
0	344	0	1007

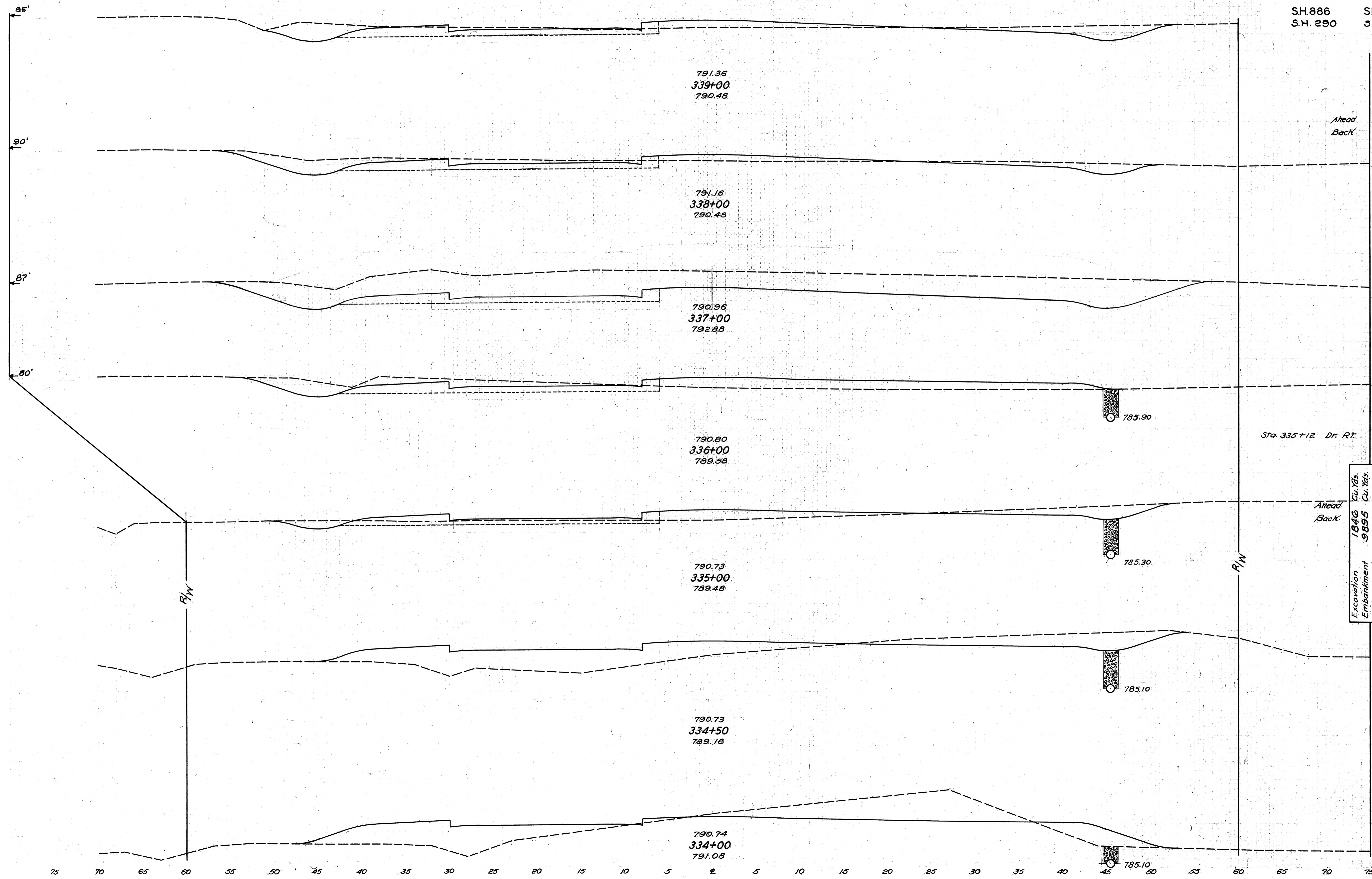
Excavation 8.7 Cu. Yds.
 Embankment 40.45 Cu. Yds.
 Emb. + 25% 25.806 Cu. Yds.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	184		
0	520	0	652
			0 2287
4.4	715		22
		11	2789
2.2	791		
		4	3011
0	835		
		0	3150
0	866		
			1004
		0	3230

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LORAIN COUNTY
SH.886 SEC. A
S.H. 290 SEC. S PT.



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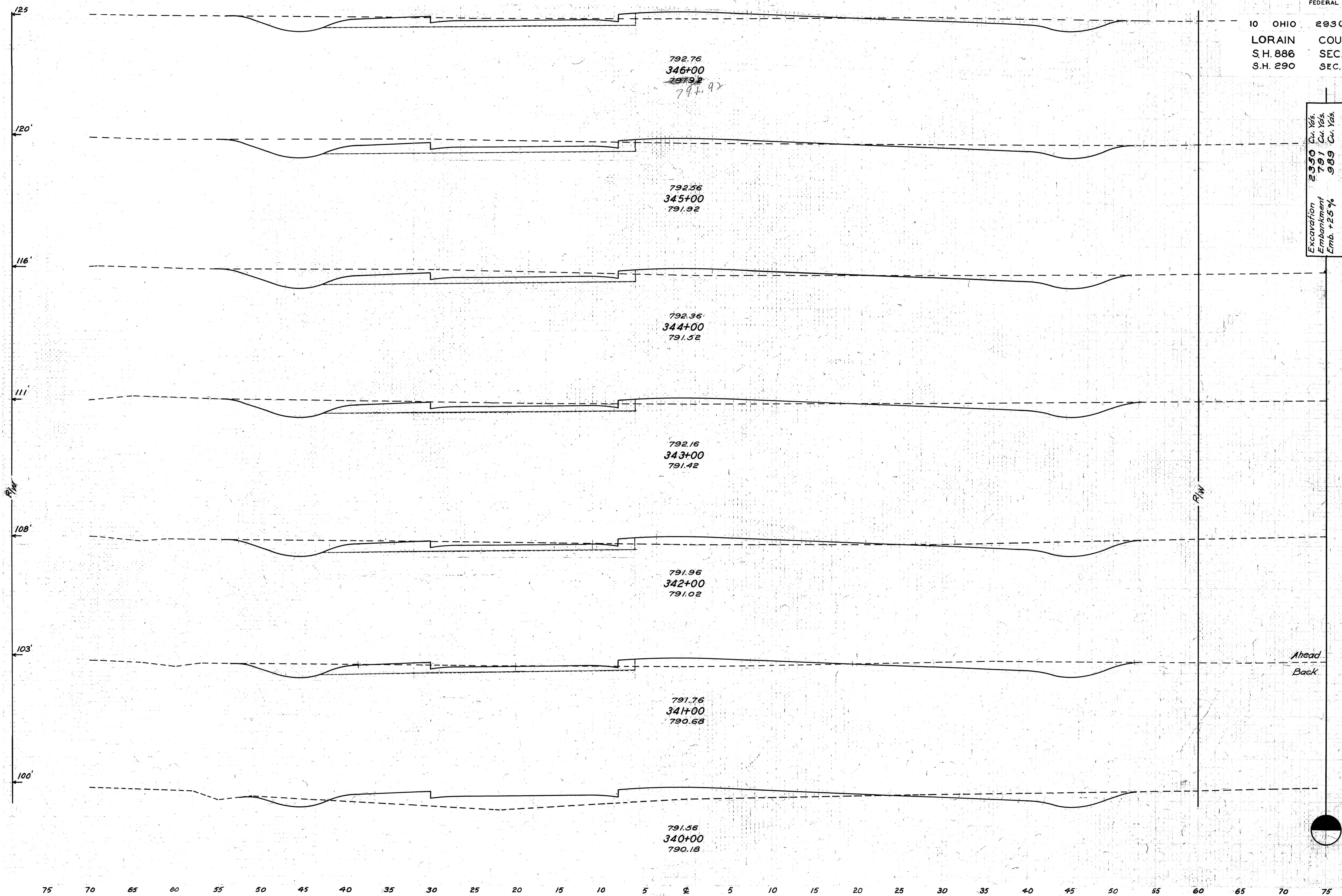
Ahead
Back

Excavation 1846 Cu. Yds.
Embankment 9895 Cu. Yds.
Emb. + 25% 12369 Cu. Yds.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
38	20		
47	25	191	81
56	19		
		593	46
264	6		
		565	115
41	56		
		7	
		130	170
29	36		
27	35		
		61	128
40	104		
		102	173
70	83		
		65	247

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

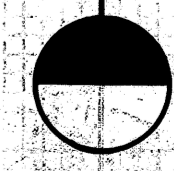
10 OHIO 293(2) 1938
LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.



Excavation	2350	Cu. Yds.
Embankment	791	Cu. Yds.
Emb. + 25%	989	Cu. Yds.

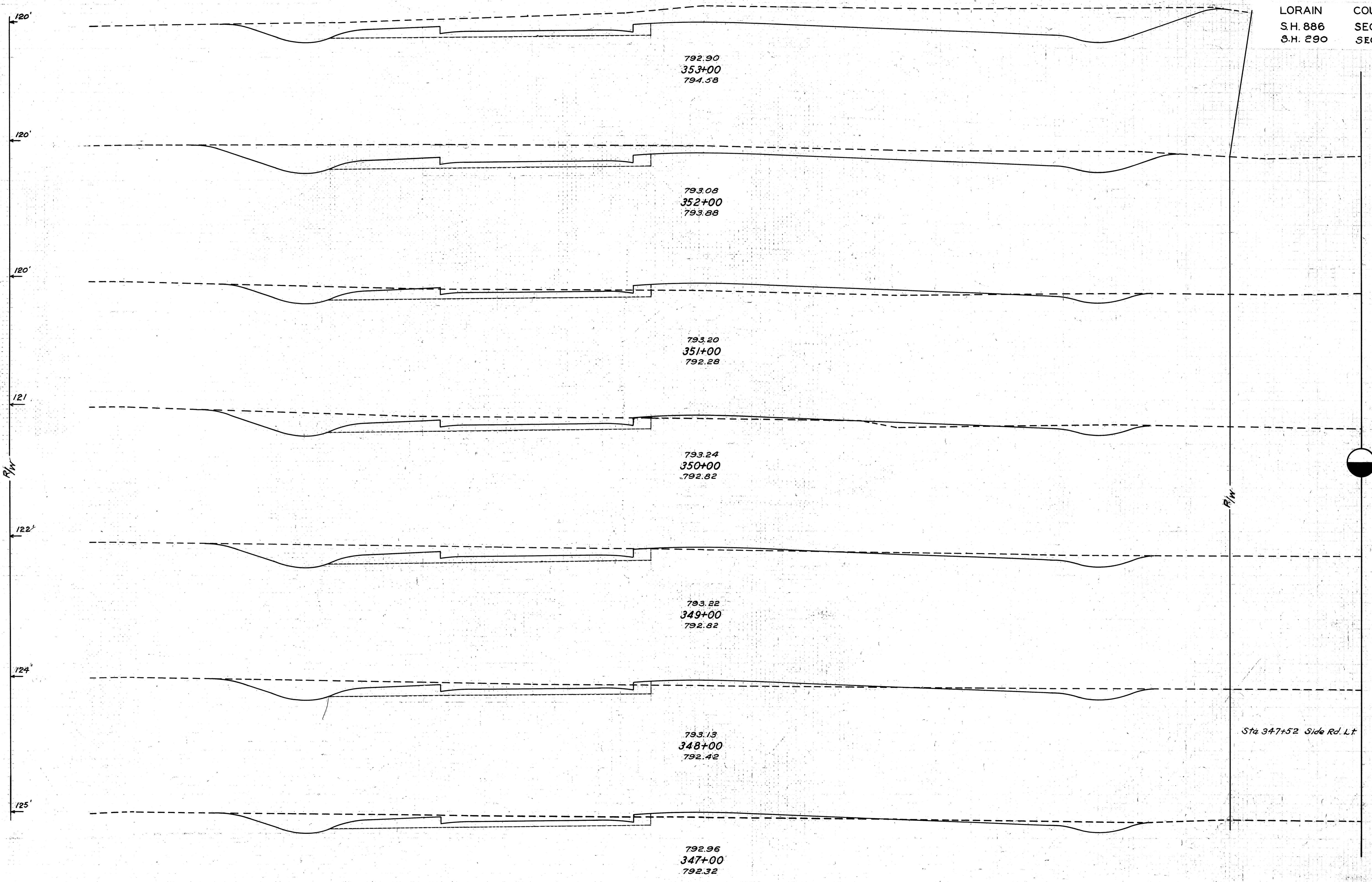
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
48	23		
		204	70
62	15		
		243	67
69	21		
		243	72
62	18		
		219	78
56	24		
		191	89
47	24		
39	20		
		119	174
25	74		
		117	174

Ahead
Back



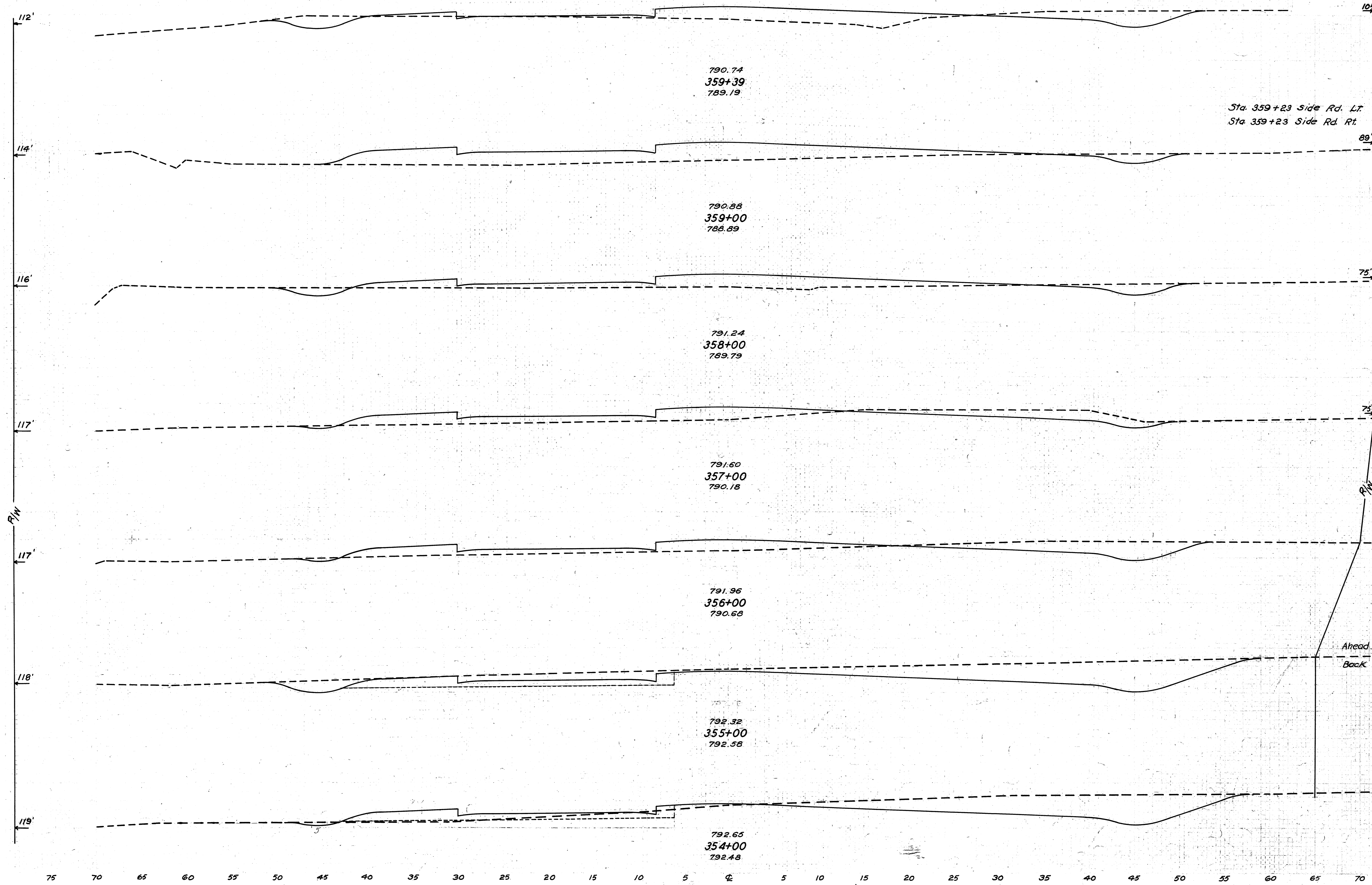
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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LORAIN COUNTY
S.H. 886 SEC.A
S.H. 290 SEC. 5 PT.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
219	5	726	20
173	6	400	74
43	34	256	94
95	17	335	54
86	12	274	54
62	17	8	61
84	16	244	72

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



790.74
359+39
789.19

Sta. 359+23 Side Rd. Lt.
Sta. 359+23 Side Rd. Rt.

790.88
359+00
788.89

791.24
358+00
789.79

791.60
357+00
790.18

791.96
356+00
790.68

792.32
355+00
792.58

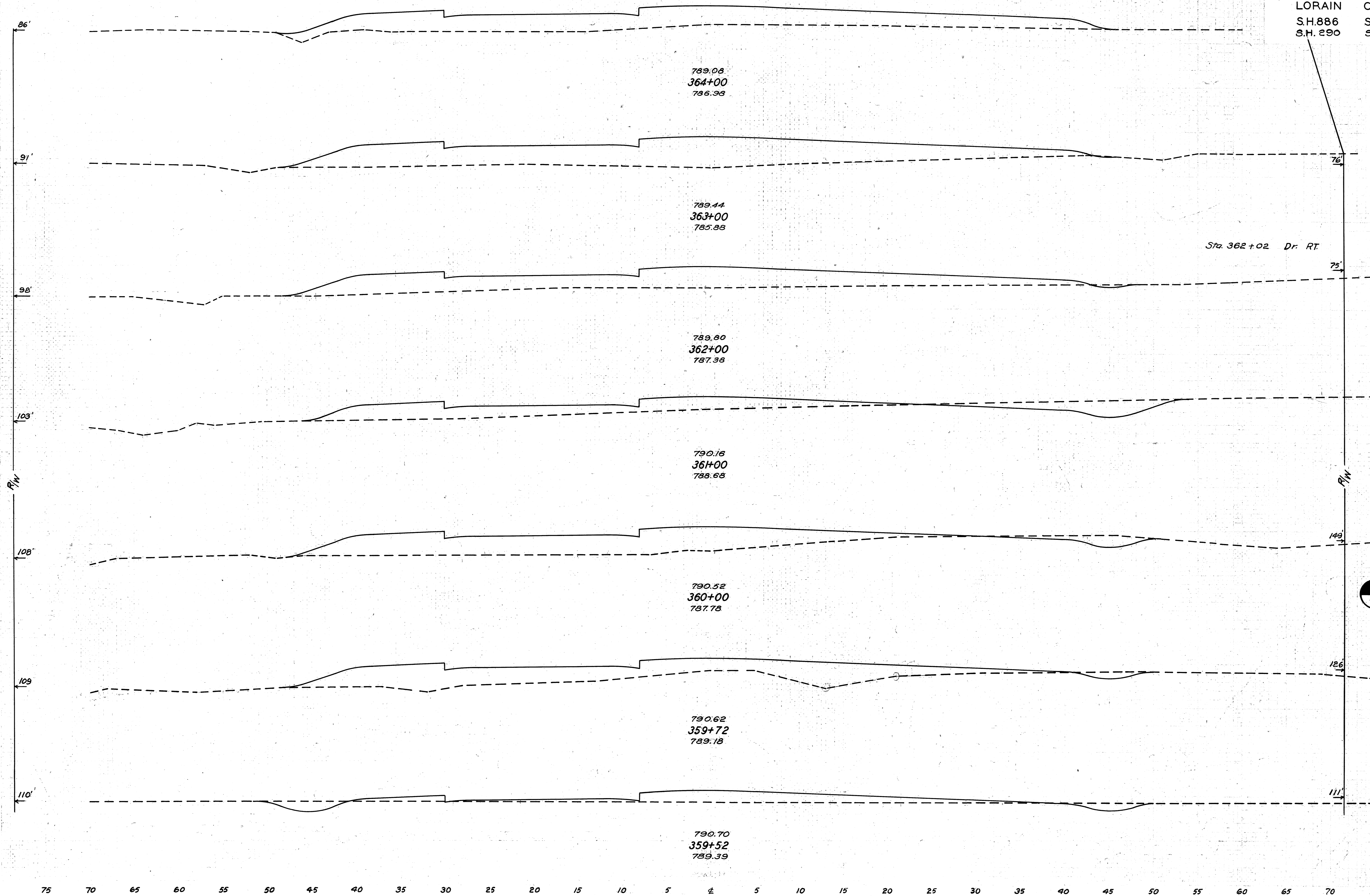
792.65
354+00
792.48

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
30	52	6	6
		27	108
8	97		
		37	293
12	61		
		70	207
26	51		
		113	176
35	44		
		293	81
123	0		
132	6		
		407	67
88	30		
		569	65

Excavation 2921 Cu. Yds.
 Embankment 1440 Cu. Yds.
 Emb. + 25% 1800 Cu. Yds.

Ahead
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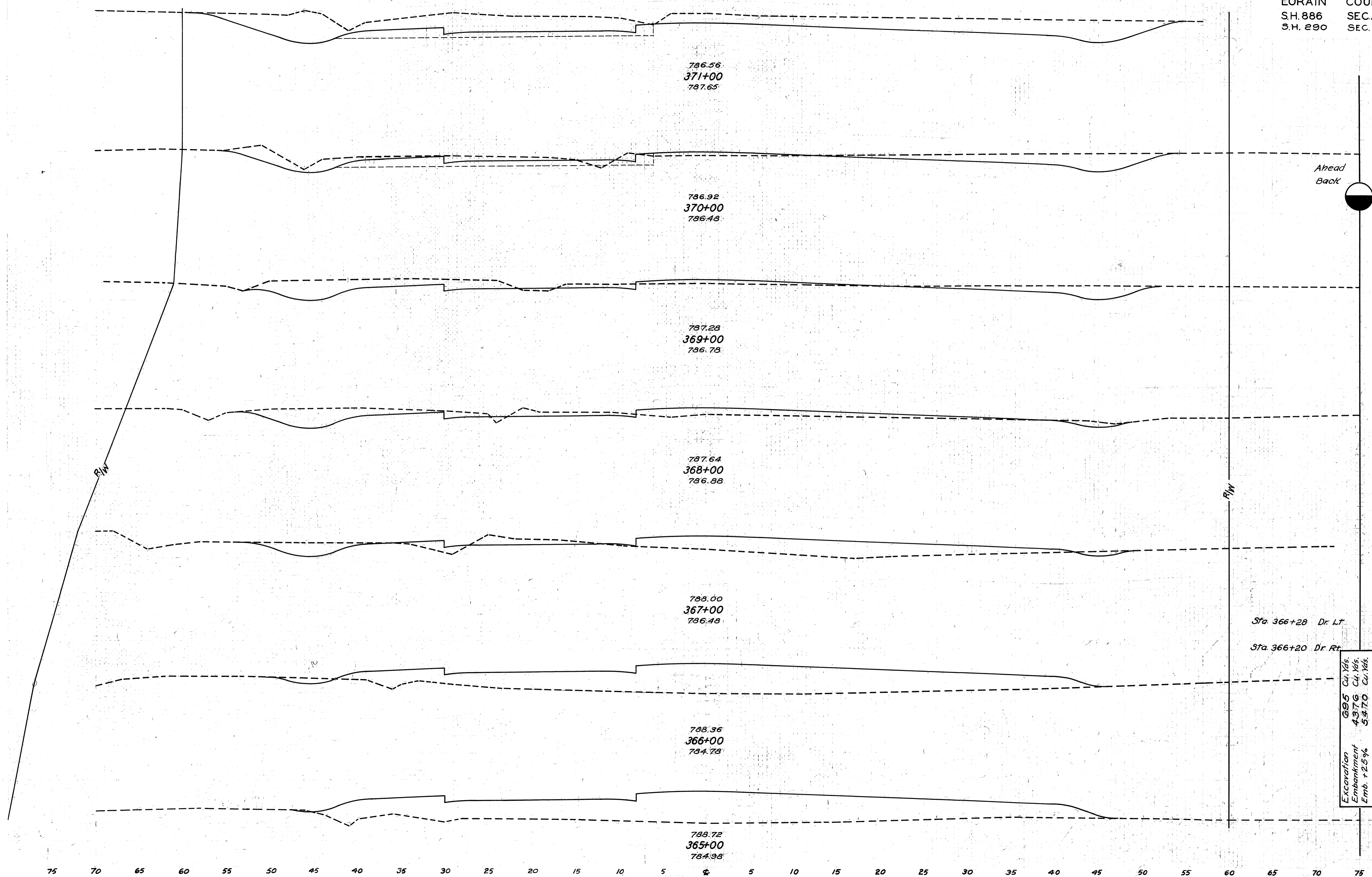
10 OHIO 293(2) 1938
LORAIN COUNTY
S.H. 886 SECA
S.H. 290 SEC. 5 PT.



Sta. 362+02 Dr. RT

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	162	0	670
0	200	2	633
1	142	3	406
25	77	48	406
25	77	65	402
10	140	7	147
4	143	6	71
12	50	10	25

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 4 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



786.56
 371+00
 787.65

786.92
 370+00
 786.48

787.28
 369+00
 786.78

787.64
 368+00
 786.88

788.00
 367+00
 786.48

788.36
 366+00
 784.78

788.72
 365+00
 784.98

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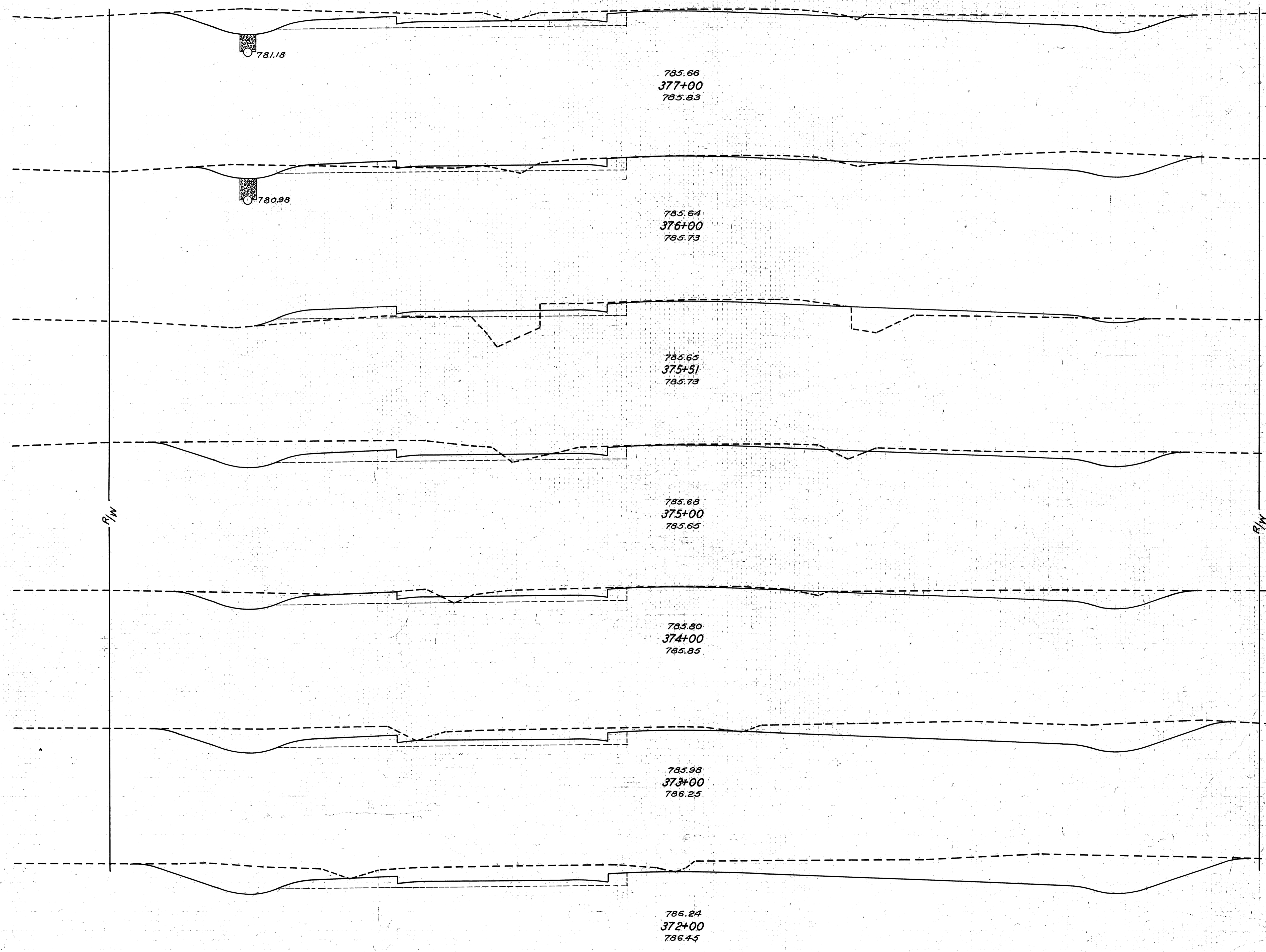
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
182	6	478	31
76	11		
67	6		
		231	33
58	12		
		178	69
38	25		
		115	187
24	76		
		2	
		50	498
			4
3	193		
		6	763
0	219		
		0	706

Sta. 366+28 Dr. LT.
 Sta. 366+20 Dr. Rt.

Excavation 695 Cu. Yds.
 Embankment 437.6 Cu. Yds.
 Emb. +2.5% 54.70 Cu. Yds.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

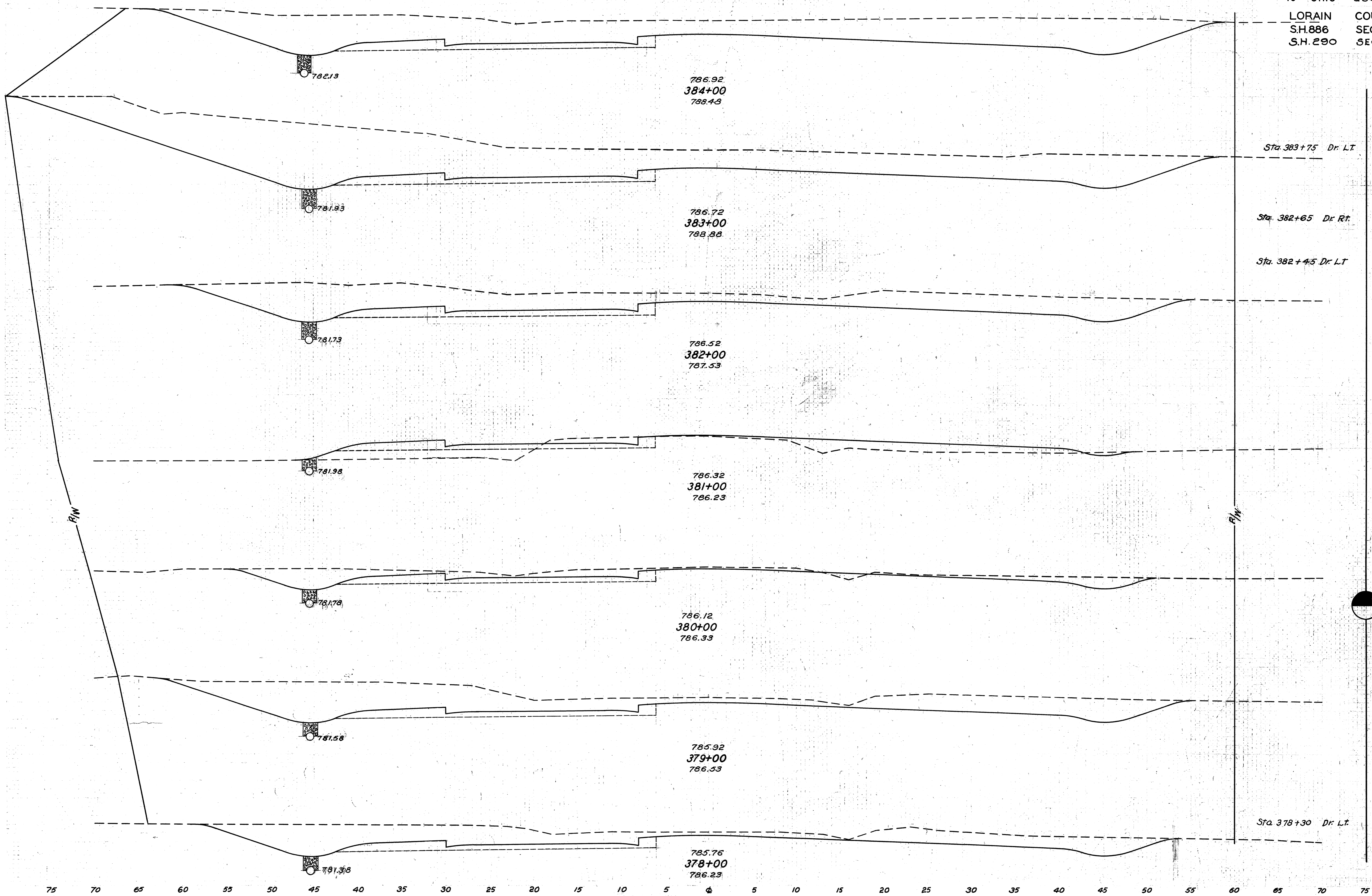
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LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
96	6		
		300	22
66	12		
		75	83
17	79		
		102	84
91	10		
		296	31
69	7		
		411	24
153	6		
		8	
		683	22
216	6		
		797	22

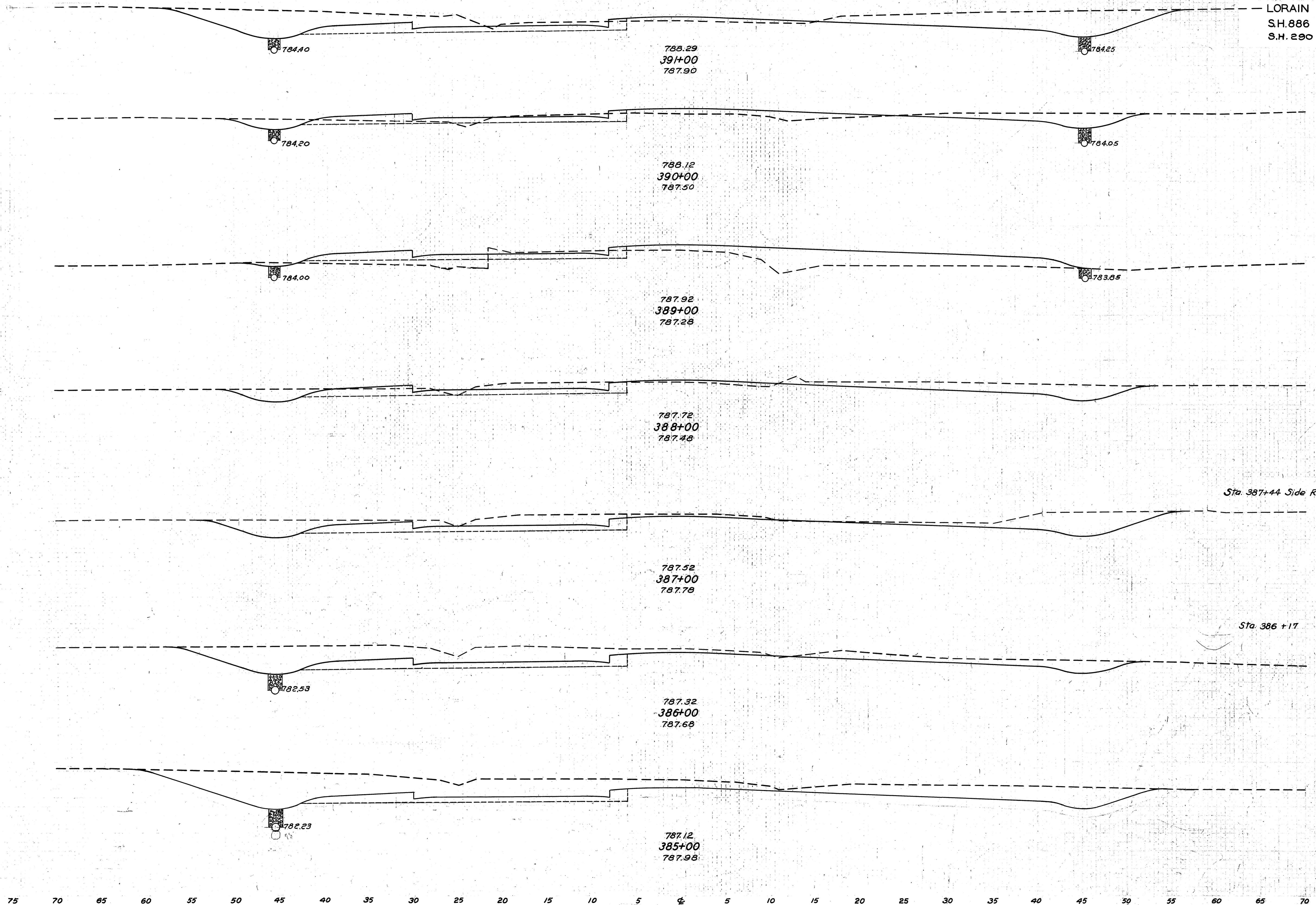
Excavation 4887 Cu. Yds.
Embankment 381 Cu. Yds.
Emb. + 25% 476 Cu. Yds.

Sta. 372+74 D.F. RT.



END AREA		CU. YDS.	
CUT.	FILL	CUT	FILL
325	6	66	
		1459	22
463	6		13
		1276	20
		47	
226	5		444
			156
14	79		154
			157
69	6		550
			20
228	5		737
			20
170	6		17
			193
			22

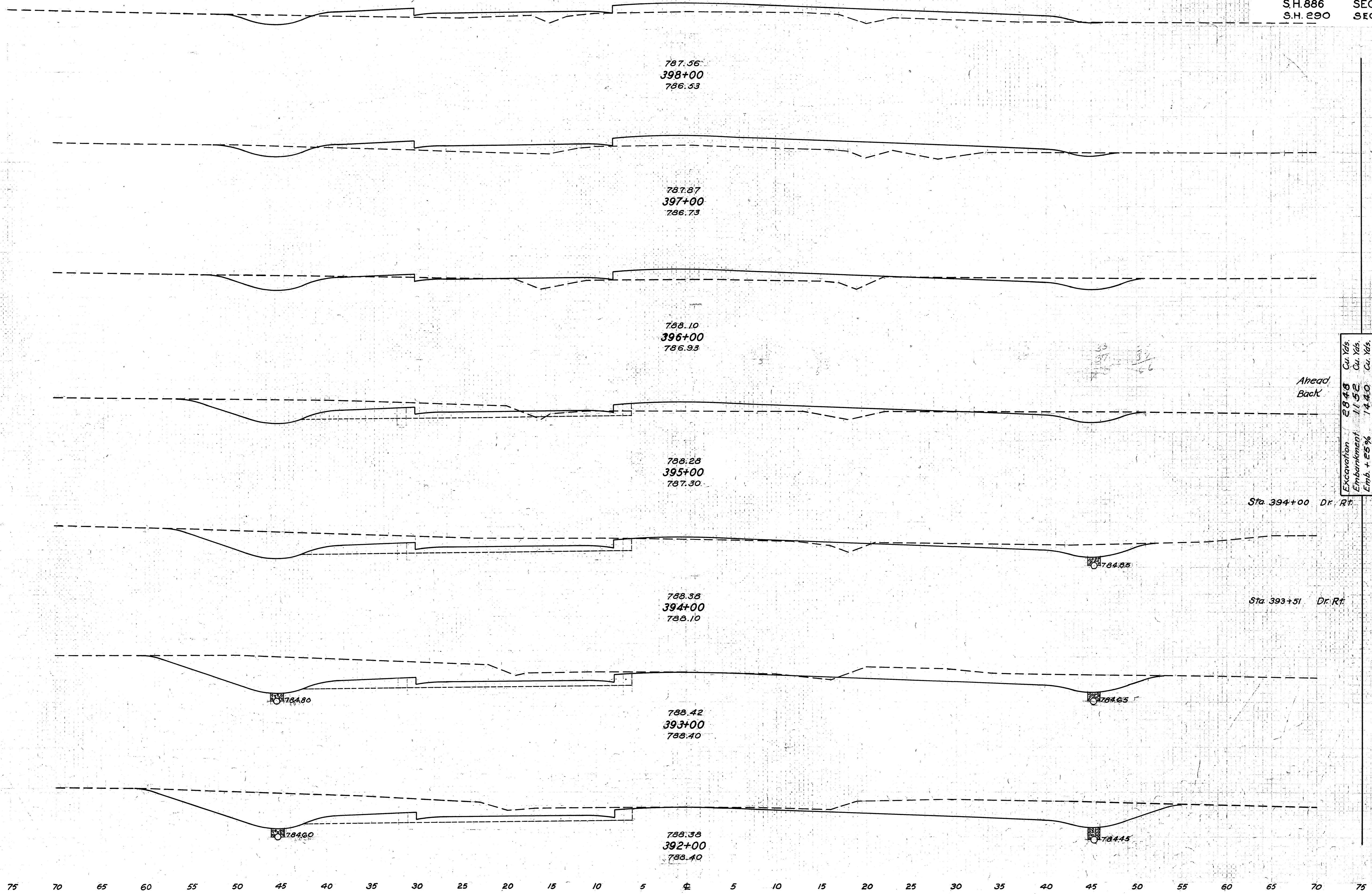
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
131	16	315	93
39	34		
		87	235
8	93		
		139	196
67	13		
		304	33
		17	
97	5		
		422	20
		7	
131	6		
		607	22
197	6		
		967	22

Excavation 6009 Cu. Yds.
 Embankment 883 Cu. Yds.
 Emb. +2.5% 1104 Cu. Yds.

Sta. 387+44 Side Rd. Rt.
 Sta. 386+17 Dr. Lt.

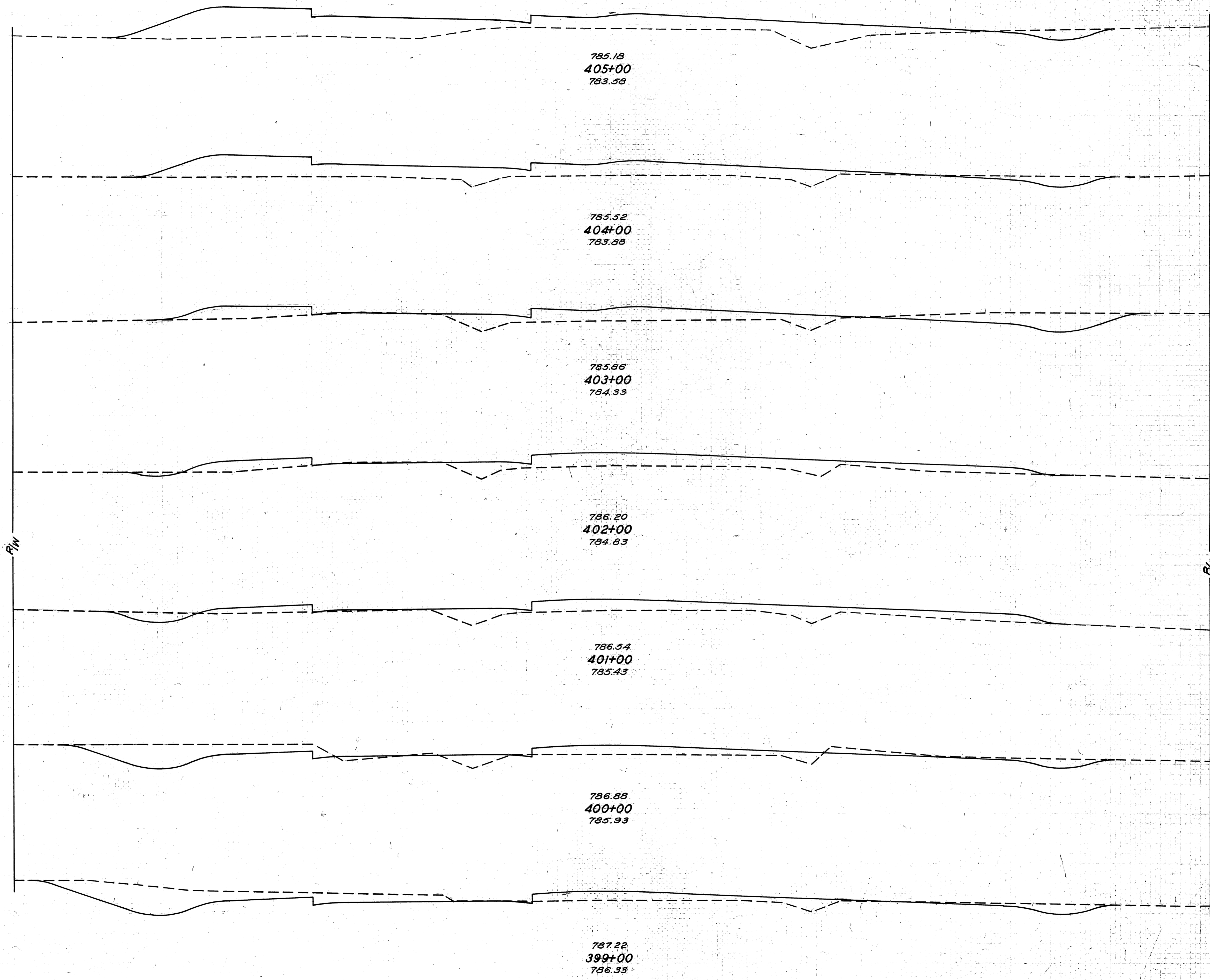


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
6	68		
		30	265
10	75		
		67	209
26	38		
		150	124
55	29		
61	31		
		289	85
95	15		
		470	37
		5	
159	5		
		622	20
177	6		
		570	41

Excavation 2848 Cu. Yds.
 Embankment 1152 Cu. Yds.
 Emb. + 25% 1440 Cu. Yds.

Sta 394+00 Dr. Rt.

Sta 393+51 Dr. Rt.

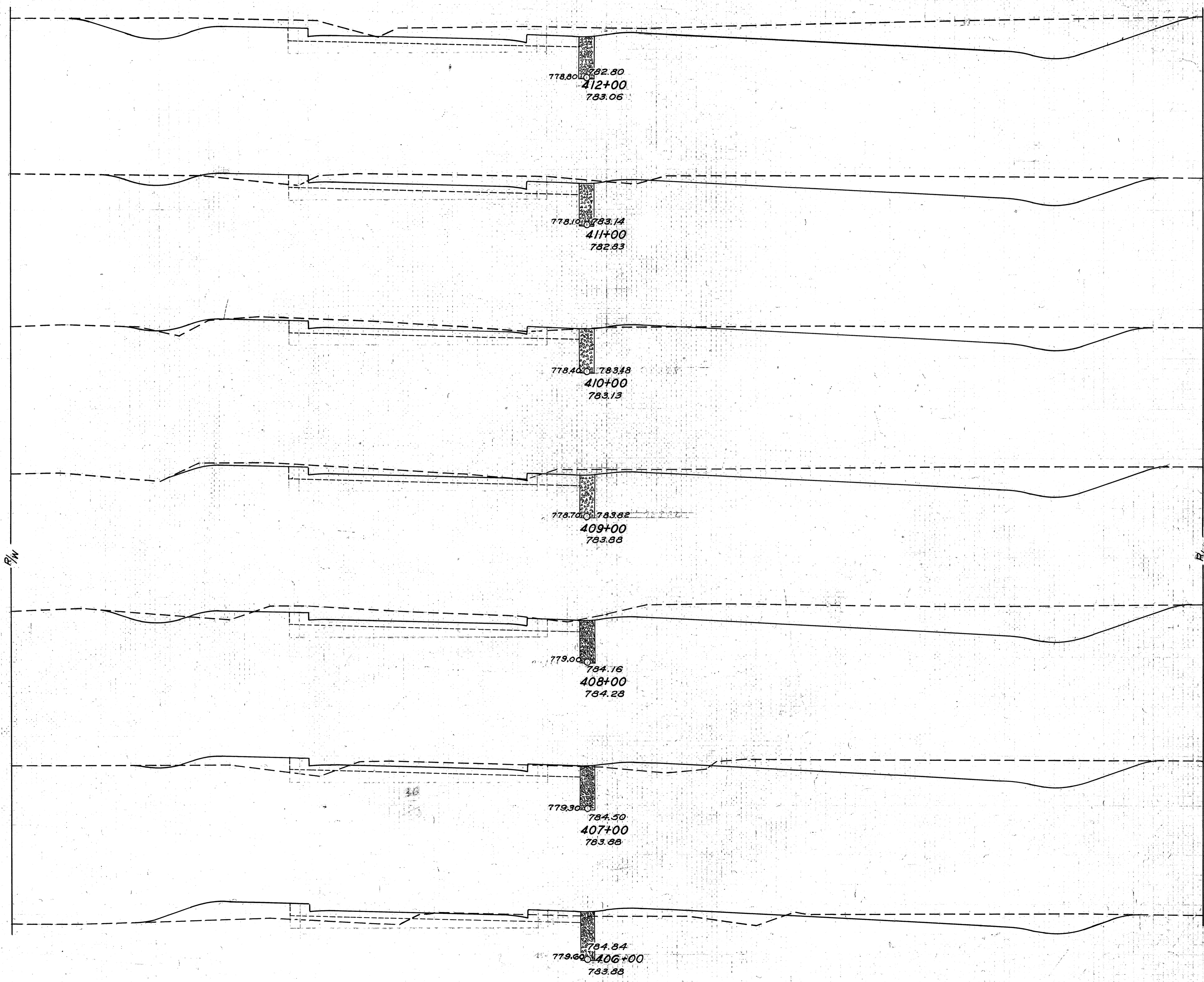


Sta. 402+87 Dr. Rt.

Sta. 399+77 Dr. Lt.

Excavation 1859 Cu. Yds.
 Embankment 2071 Cu. Yds.
 Emb. +25% 2589 Cu. Yds.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
7	129		
		30	422
9	99		
		61	293
24	59		
		2	
		48	233
2	67		
		19	241
8	63		
		100	176
46	32		
		4	
		196	106
60	25		
		122	172

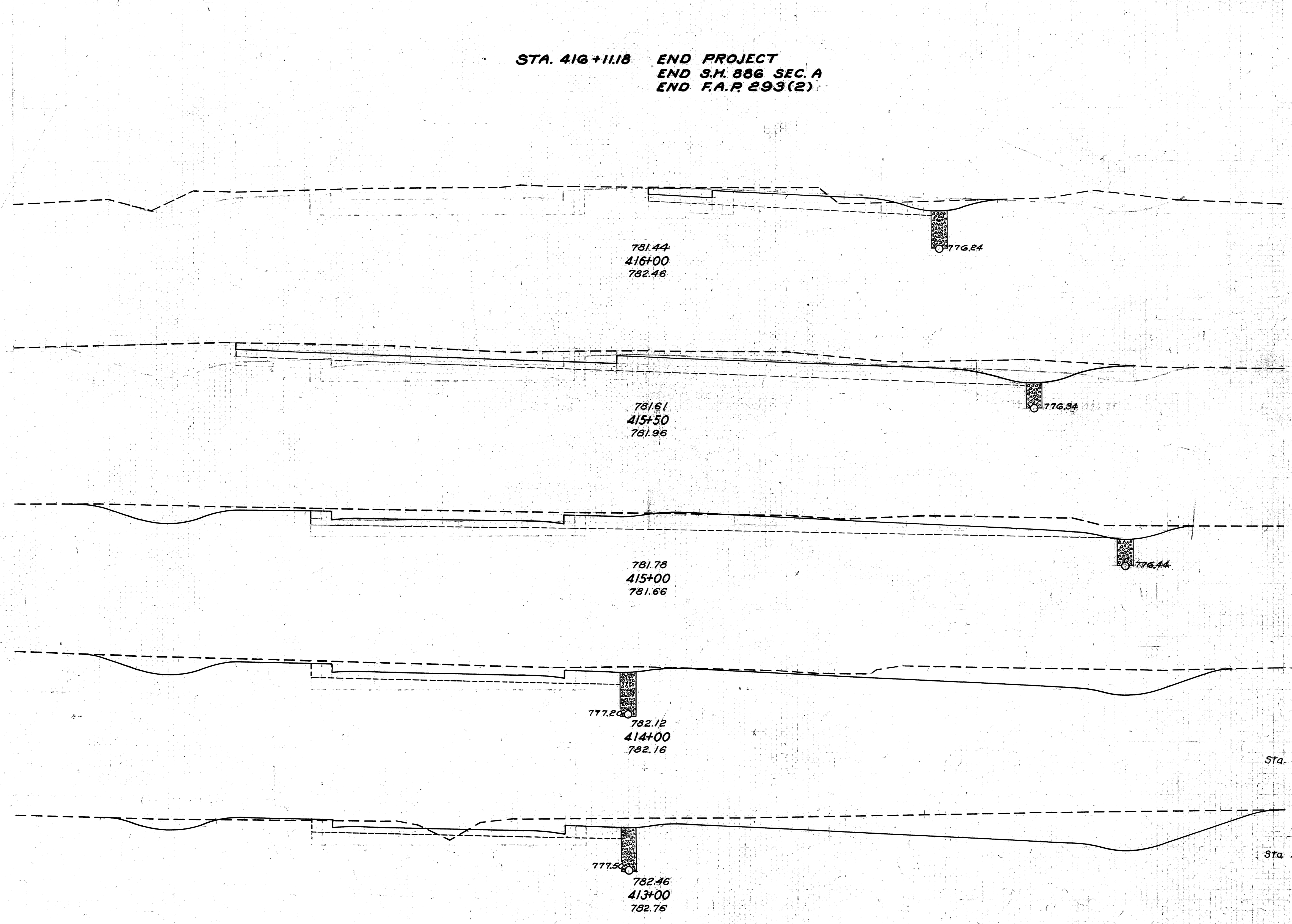


Sta 411+04 Dr. Lt.

END AREA	CU. YDS.	
	CUT	FILL
180	4	3
		532 28
118	11	
		357 113
75	50	
		337 102
107	5	
		496 24
161	8	
		459 76
87	33	
		233 165
39	56	
34	53	
		76 337

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STA. 416+11.8 END PROJECT
 END S.H. 886 SEC. A
 END F.A.P. 293(2)



Sta. 416+50

Sta. 413+13 Dr. Lt.

Sta. 413+00 Dr. Rt.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	0		
		26	13
28	14		
		129	37
111	26		
		139	47
104	25		
		378	54
100	4		
		152	20
144	7		
		8	
		600	20

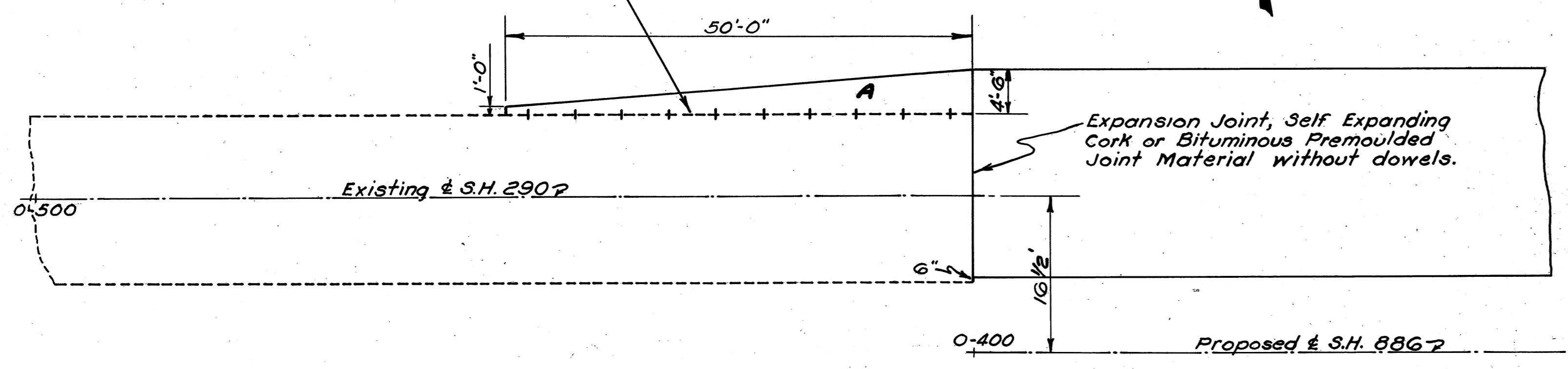
Excavation 2701 Cu. Yds.
 Embankment 339 Cu. Yds.
 Emb. + 25% 424 Cu. Yds.

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	293 (2)	1938

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LORAIN COUNTY
S.H. 290 SEC. 3 PT.
S.H. 886 SEC. A

American expansion bolts or equal placed on 5'-0" centers. Cost of bolts and bolt holes to be included for payment in the price bid per Sq. Yd. for Item T-71 (7" Reinforced P.C. Conc. Pavt.)



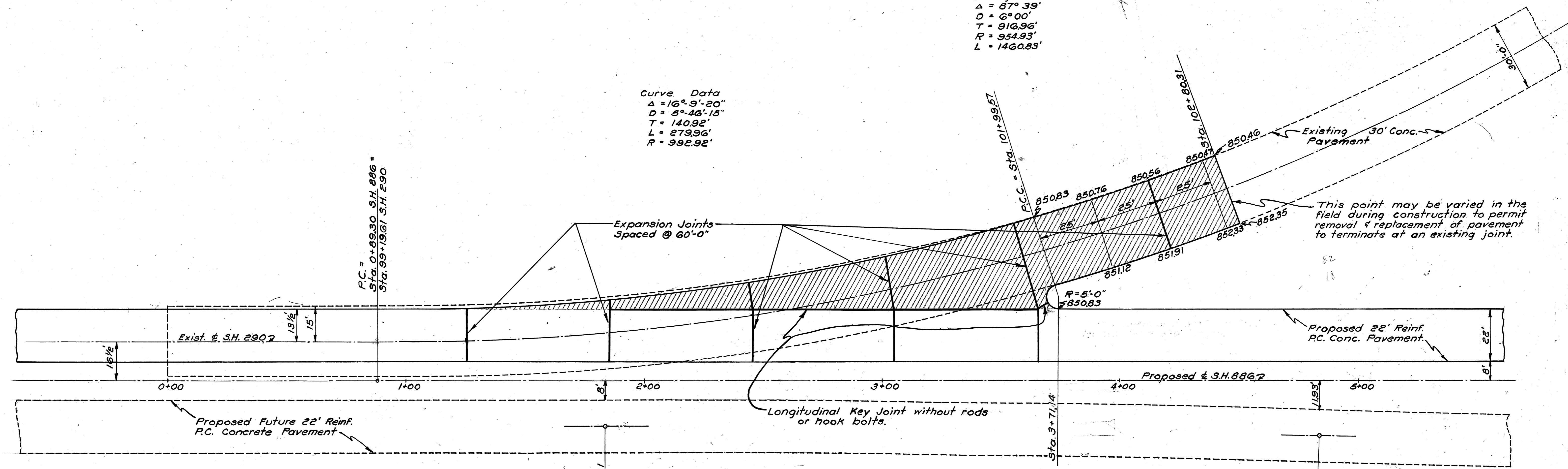
**DETAIL OF MERGER
STA 0-400**
7" Reinforced P.C. Conc. Pavement
Area A = (50 x 2.75) ÷ 9 = 15.3 Sq. Yds.

PROPOSED WORK
Remove & dispose Exist. 10"-8"-8"-10" Conc. Pavt. from Sta. 0+00 (S.H. 886) to Sta. 102+80.31 (S.H. 290). Replace hatched area with 7" Reinf. P.C. Conc. Pavement.

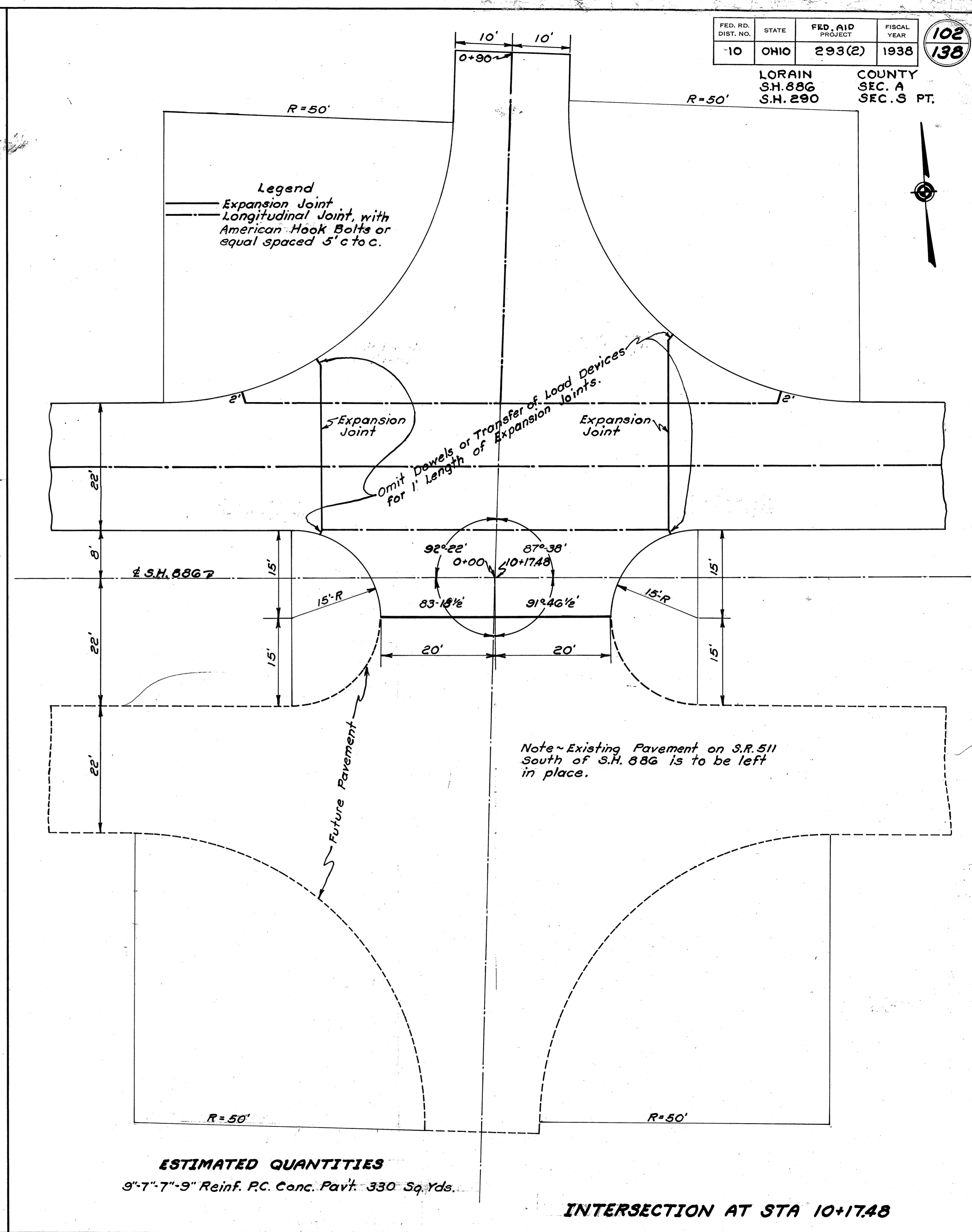
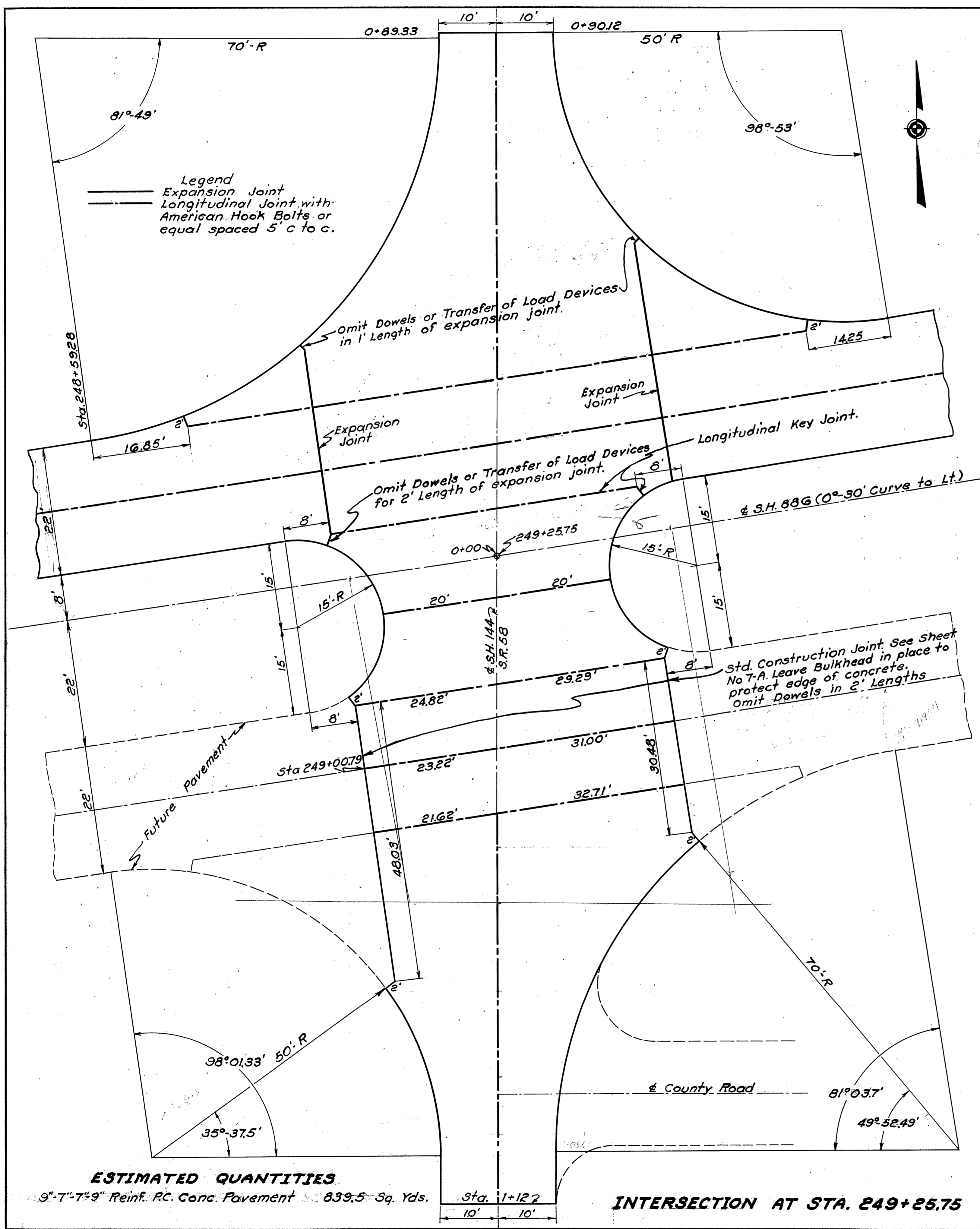
ESTIMATED QUANTITIES
7" Reinforced Portland Cement Concrete Pavement 678.5 Sq. Yds.
Removal & Disposal of 10"-8"-8"-10" Concrete Pavement 1500 Sq. Yds.

Existing Curve Data
Δ = 87° 39'
D = 6° 00'
T = 916.96'
R = 954.93'
L = 1460.83'

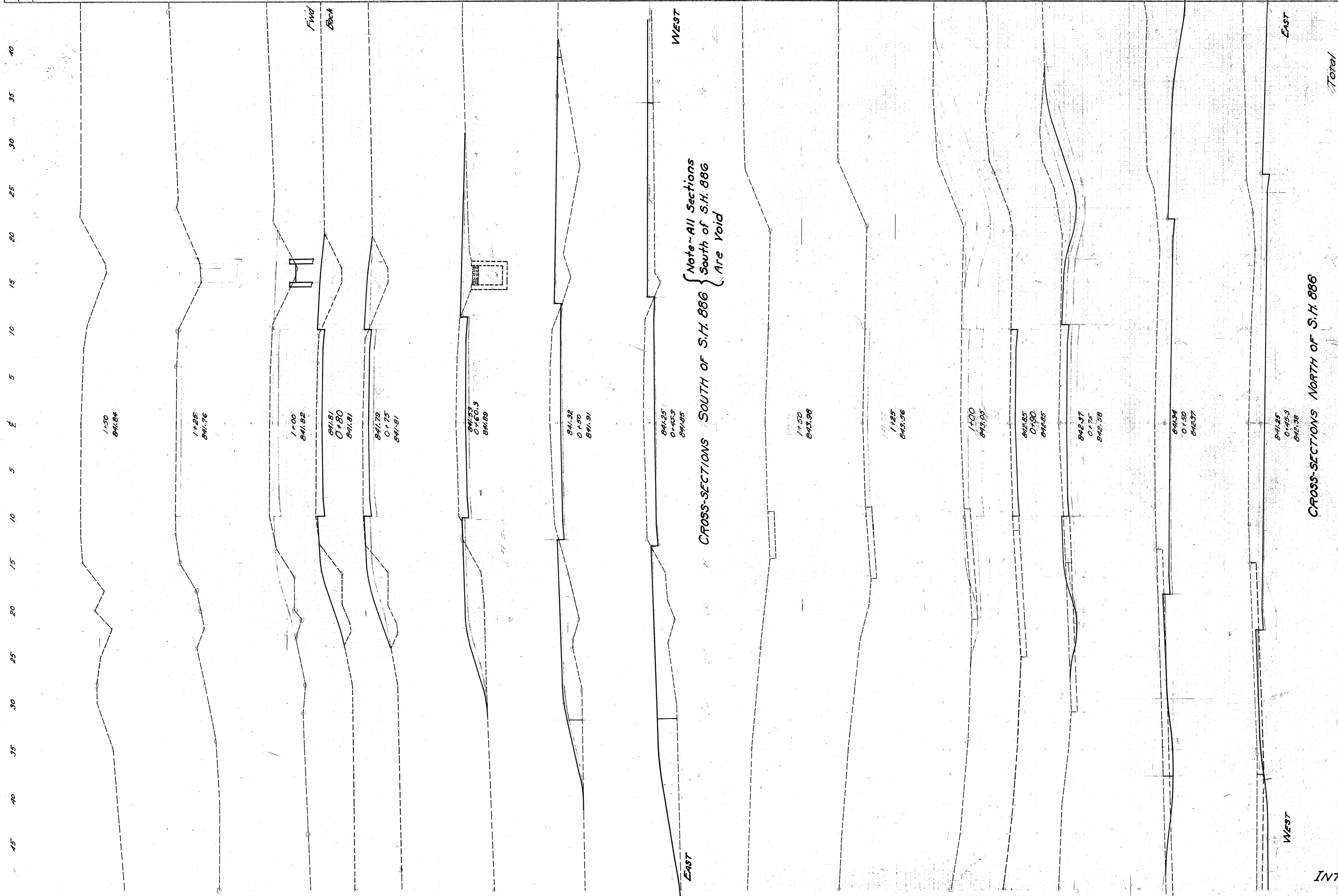
Curve Data
Δ = 16° 9' 20"
D = 5° 46' 15"
T = 140.92'
L = 279.96'
R = 992.92'



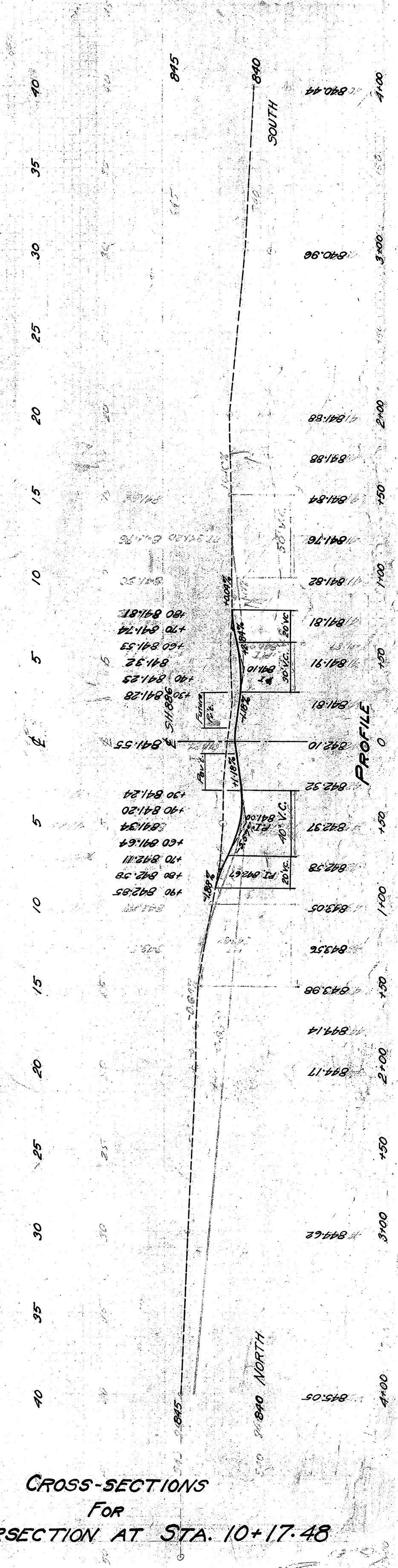
Curve Data for Future Pavement
P.I. Sta. 3+34.01
Δ = 1° 30'
D = 30'
T = 150'



END AREA	QUANT.
CUT	FILL
CUT	FILL
12	20
50	10
171	1
140	4
165	11



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 S.H. 886 SEC. A
 S.T. 290 SEC. S PT.



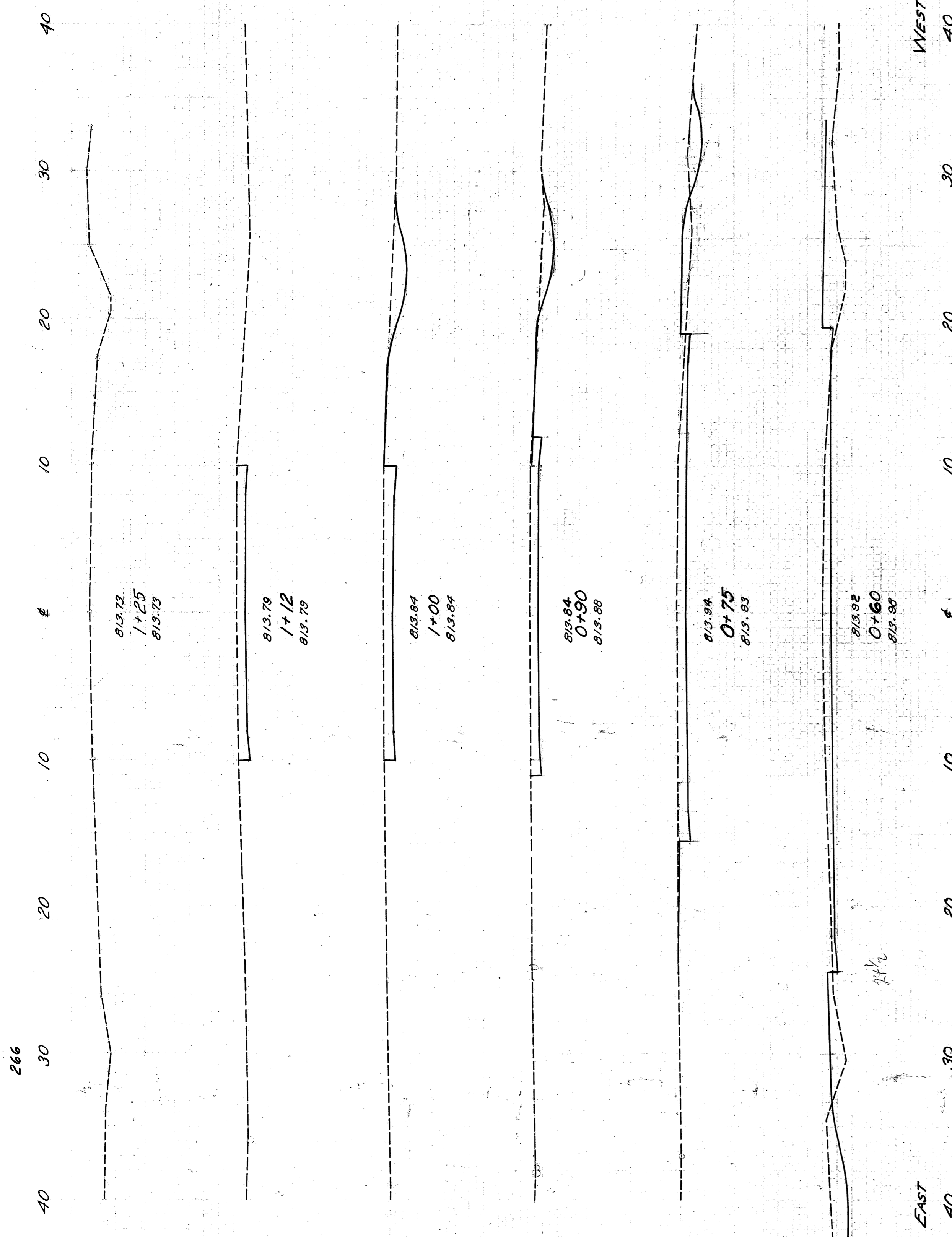
CROSS-SECTIONS
 For
 INTERSECTION AT STA. 10+17.48

END AREA	CU. YDS.	CUT	FILL	CUT	FILL
	19	0		8	0
	22	0		9	0
	24	0		14	1
	27	5		11	5
	16	11			
	25	0		17	1
	35	3		36	2
	43	2			
				95	9

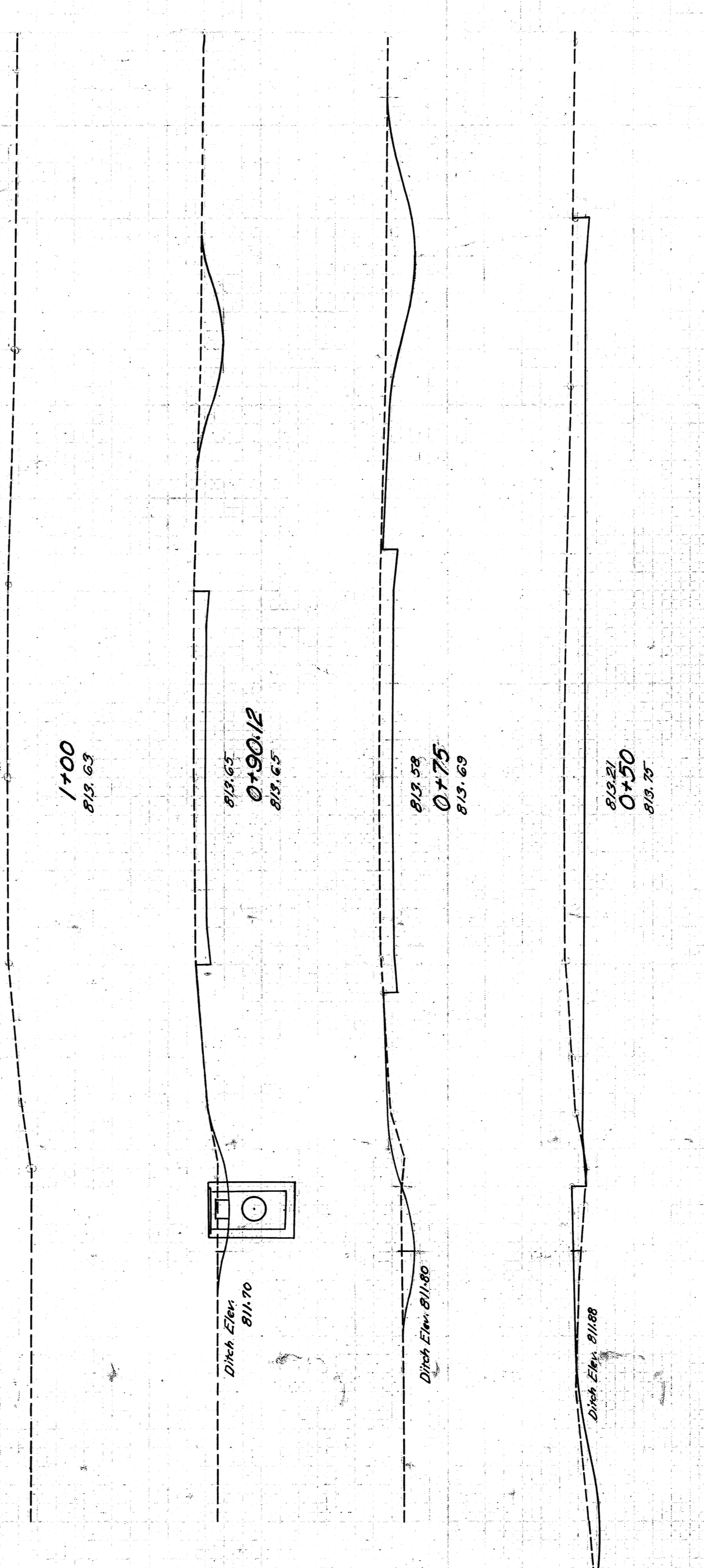
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR
10	OHIO	293(2)	1938

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.

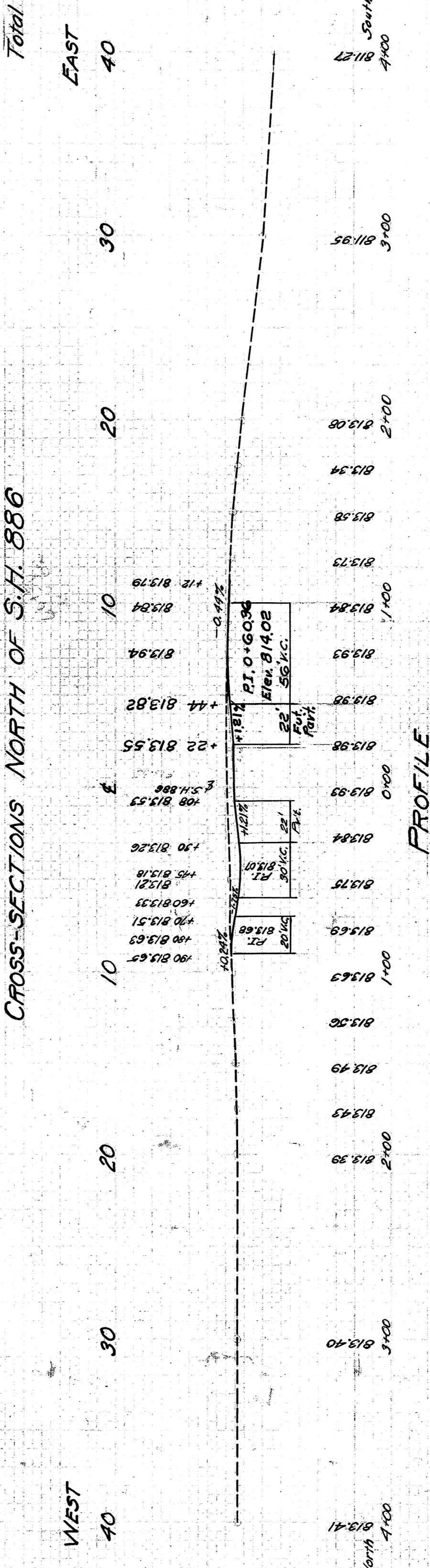
104
138



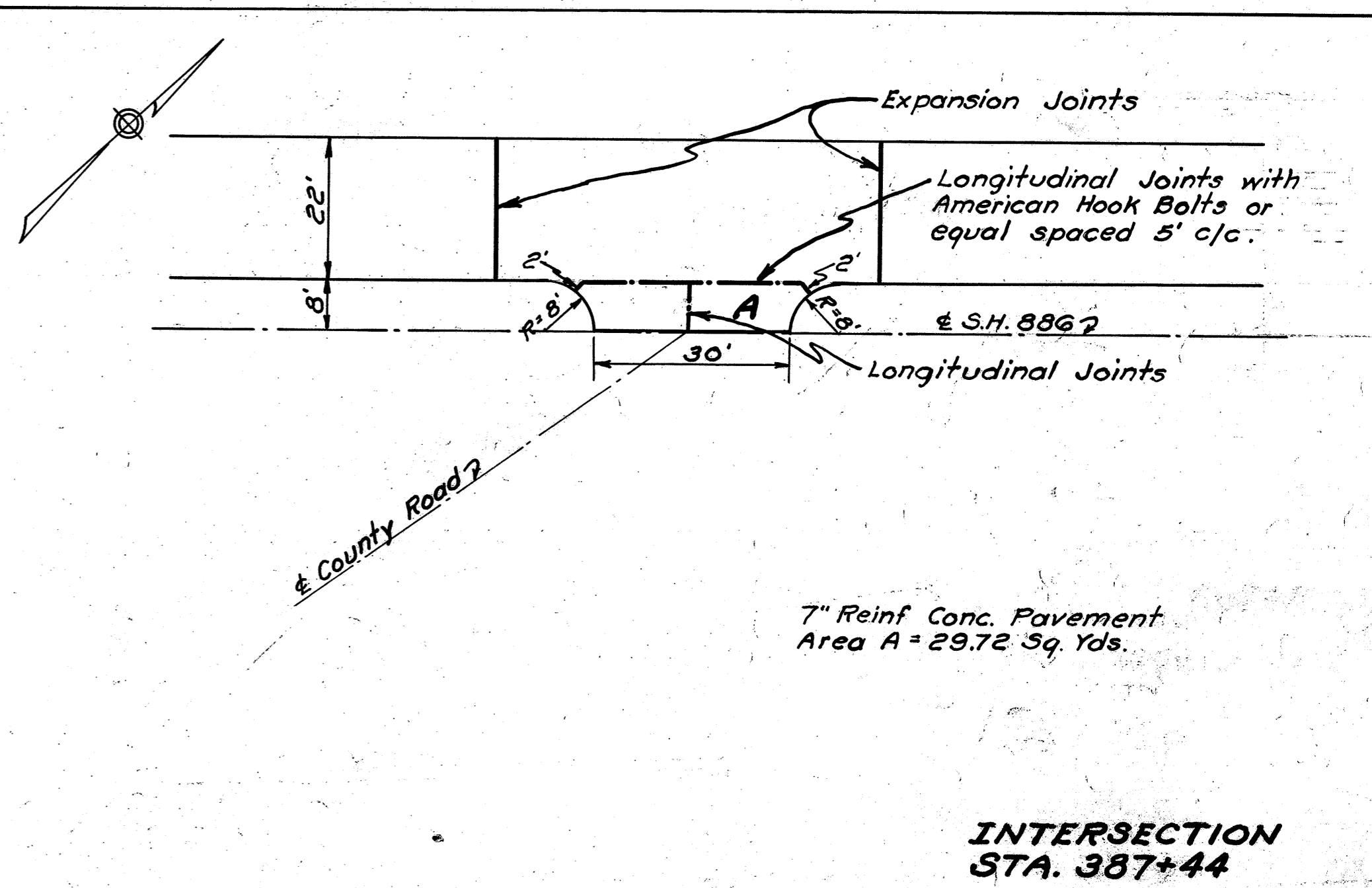
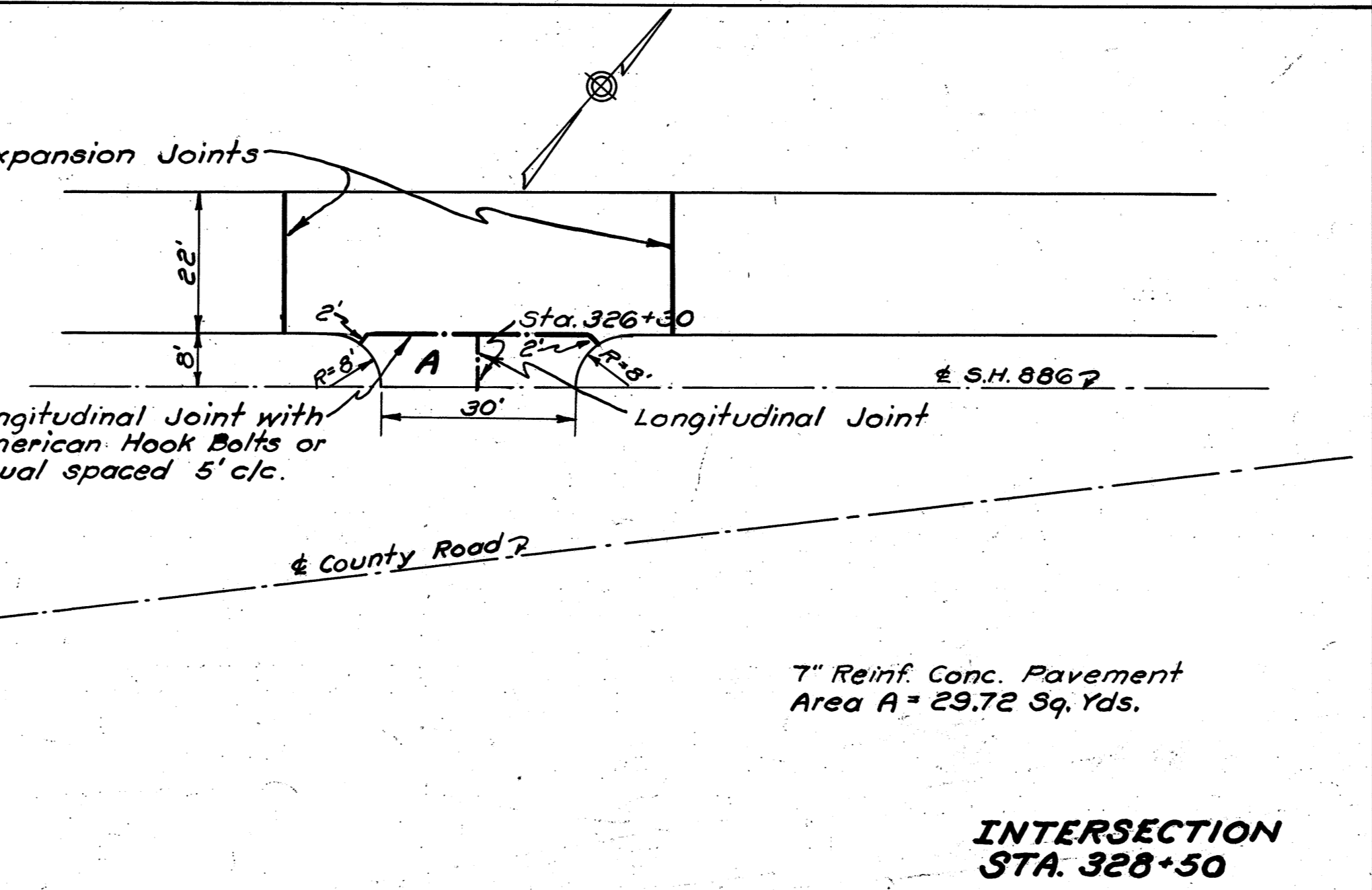
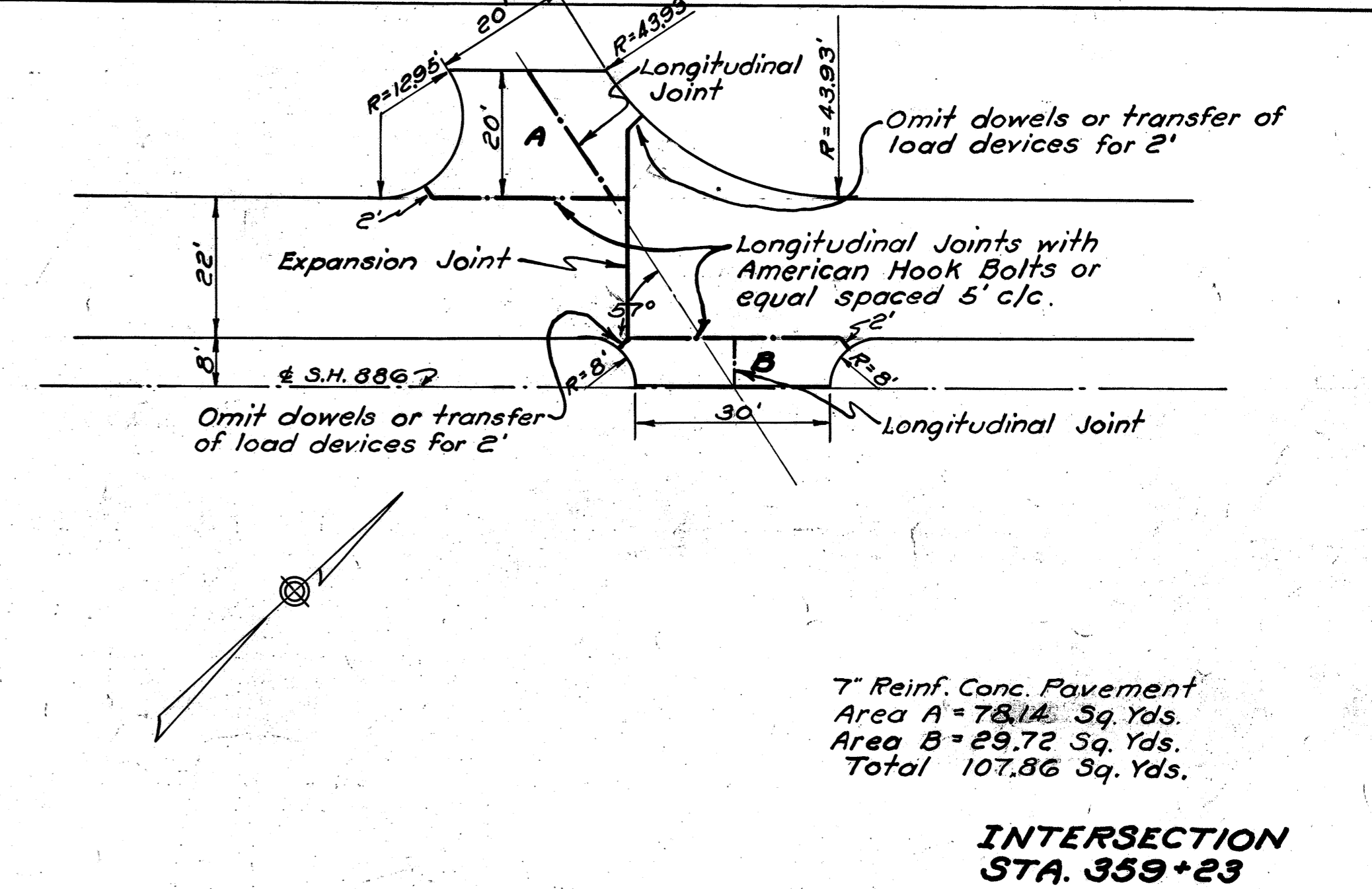
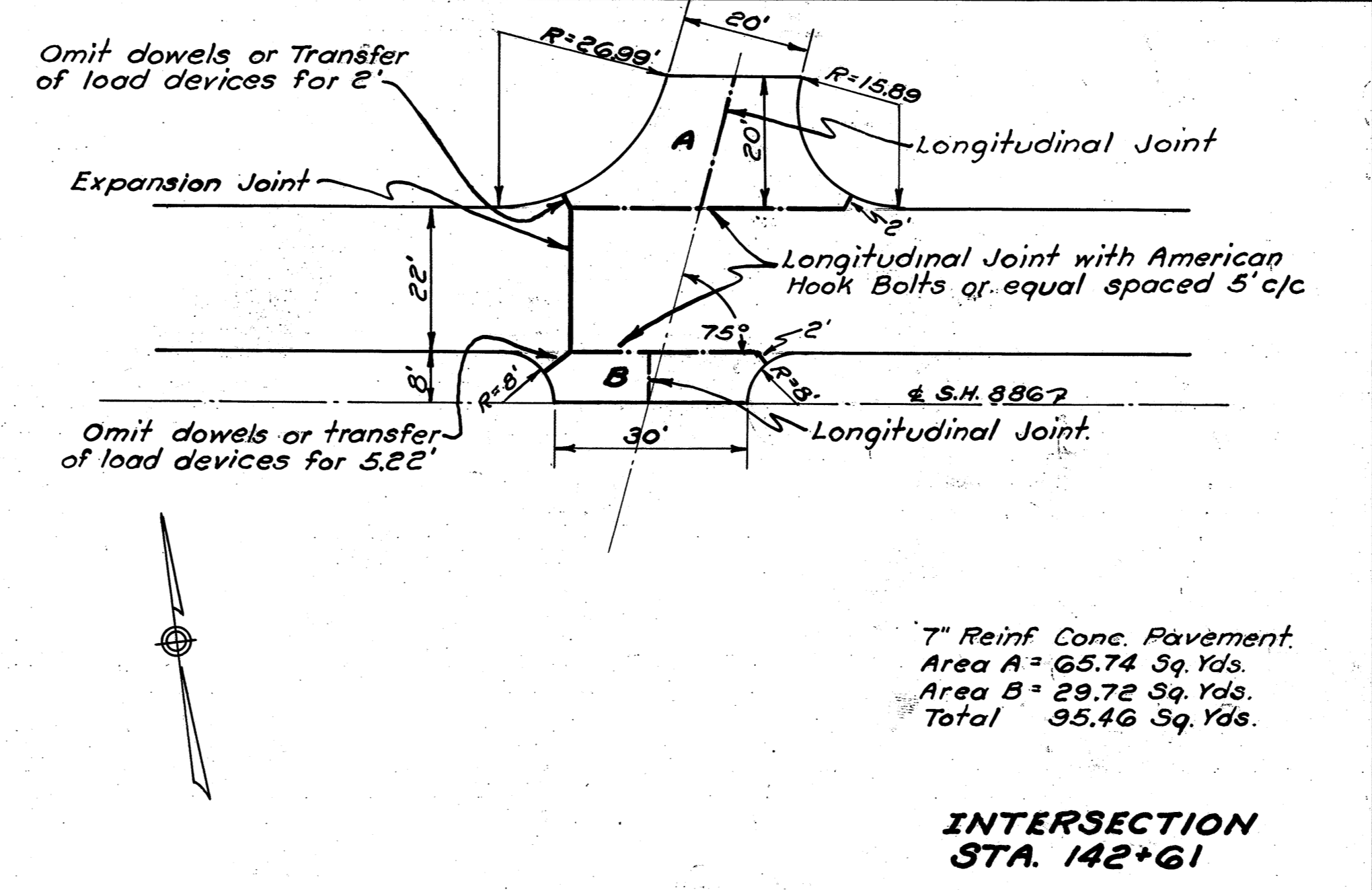
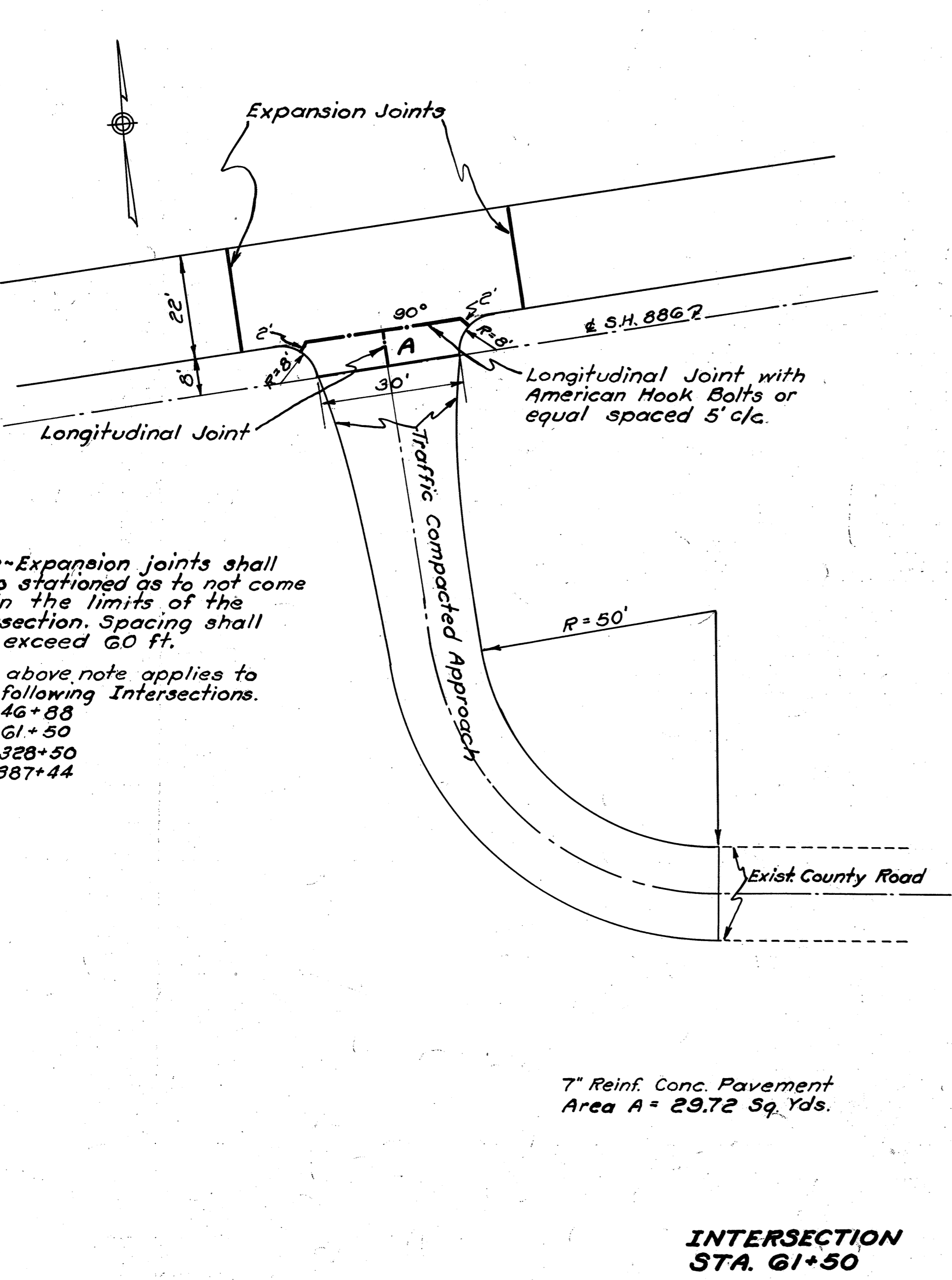
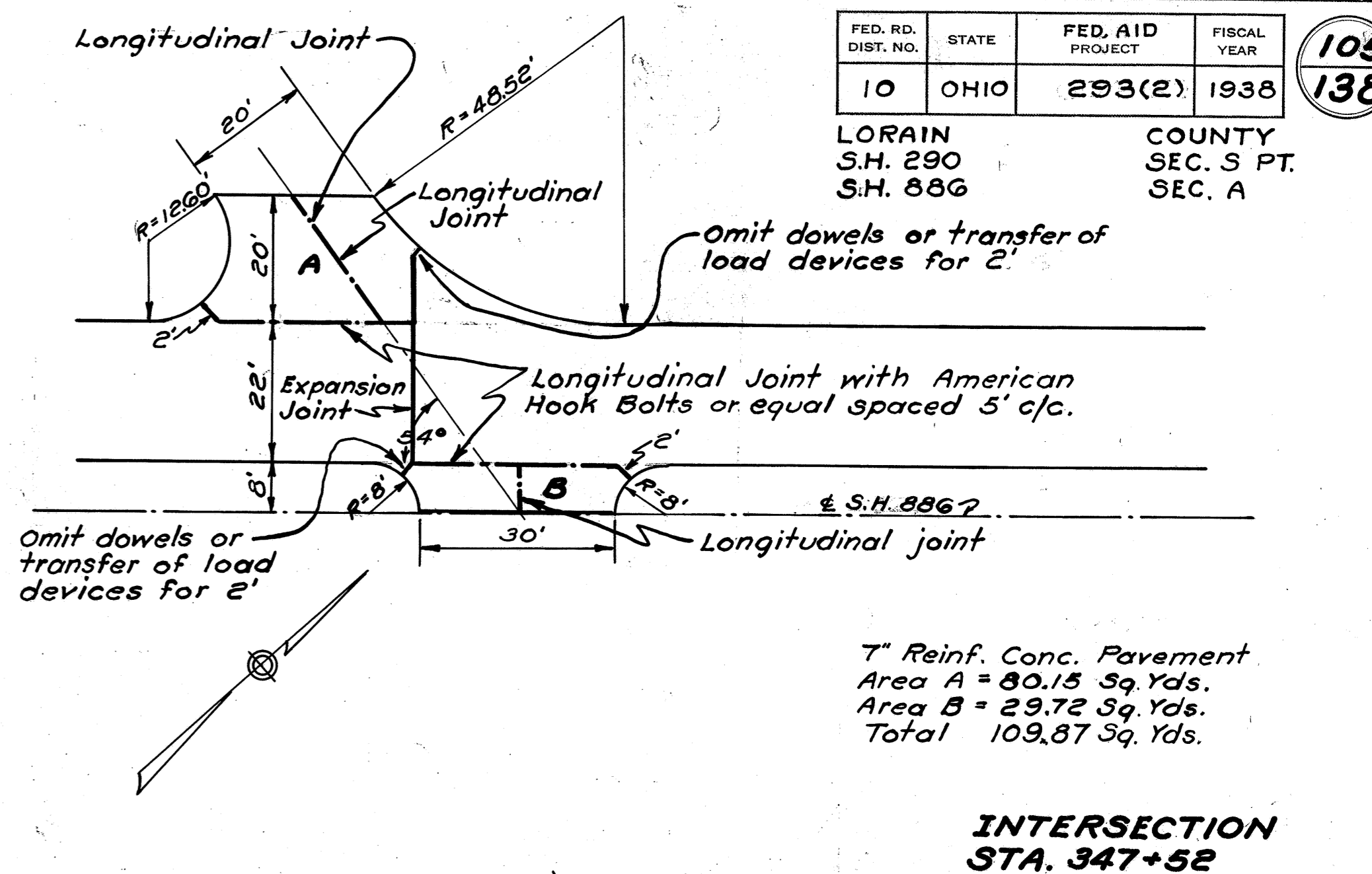
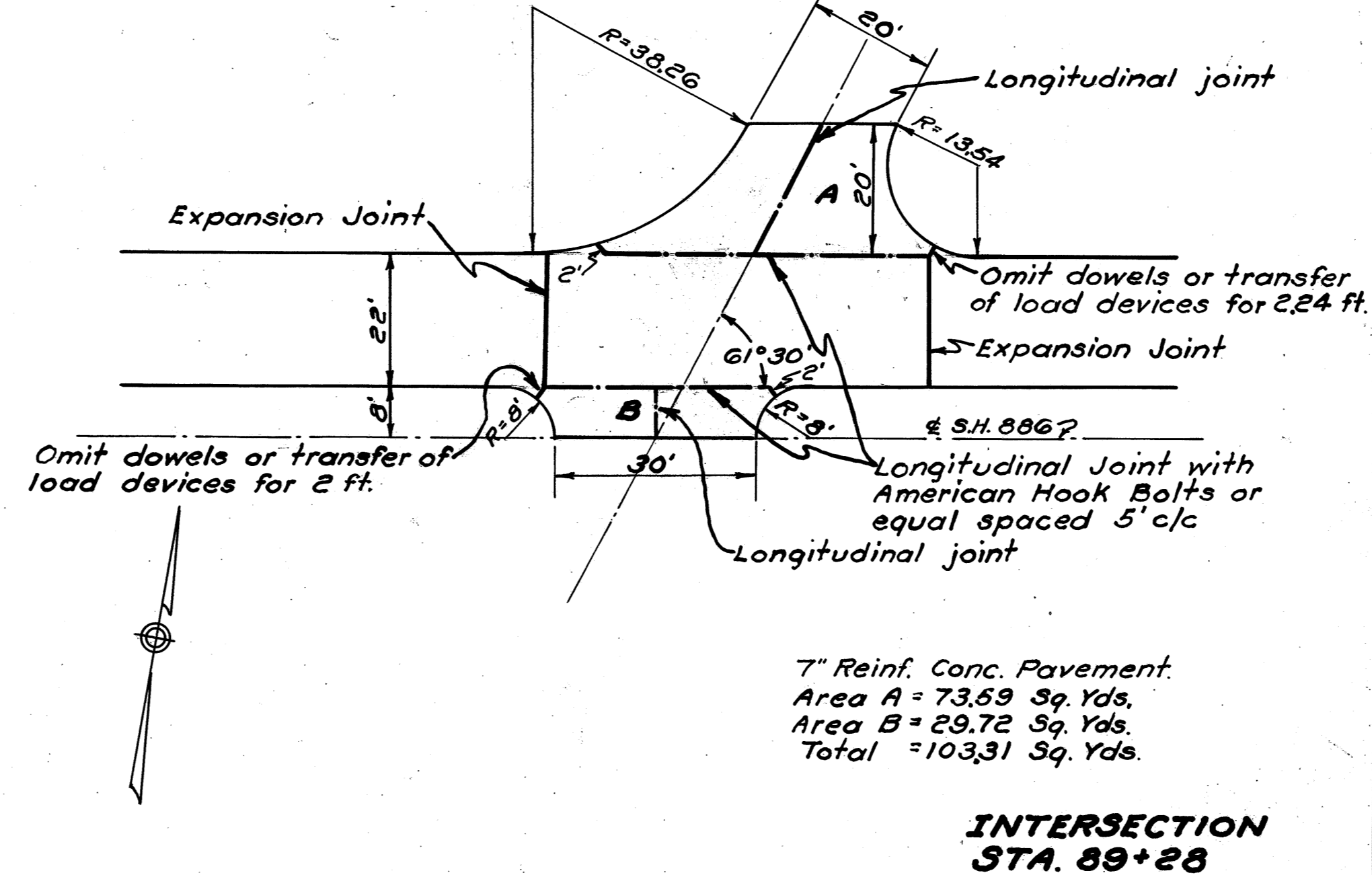
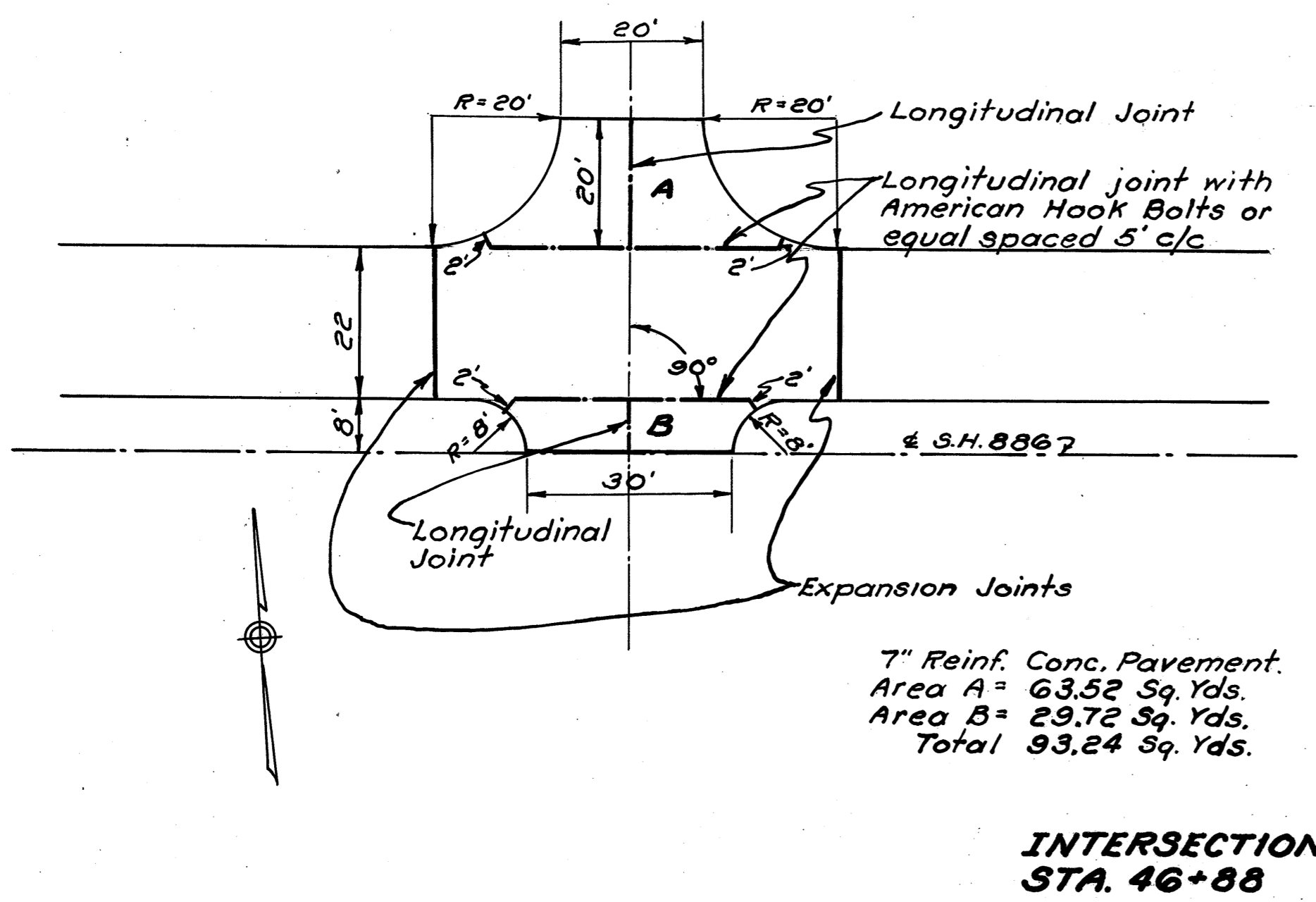
CROSS-SECTIONS SOUTH OF S.H. 886



CROSS-SECTIONS NORTH OF S.H. 886



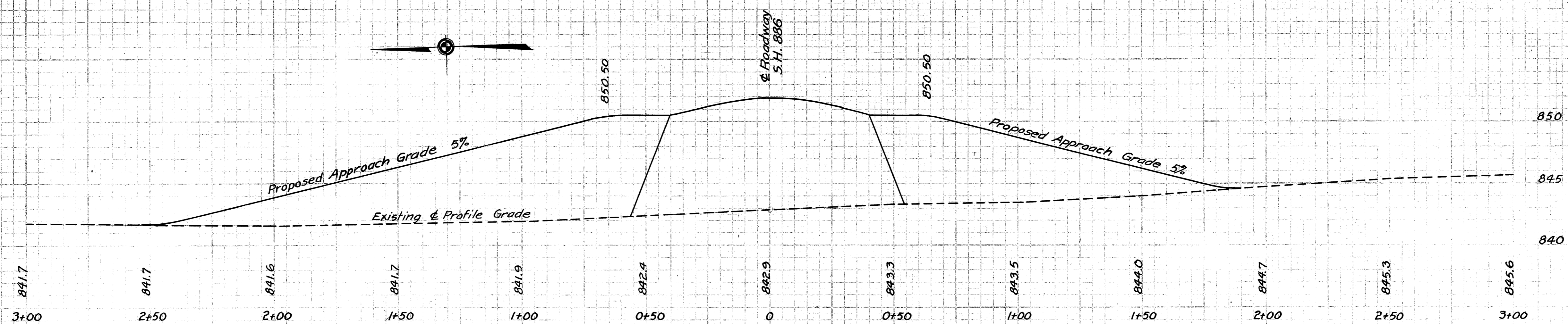
CROSS-SECTIONS AND PROFILE FOR INTERSECTION AT STA. 249+25.75 WITH S.H. 144



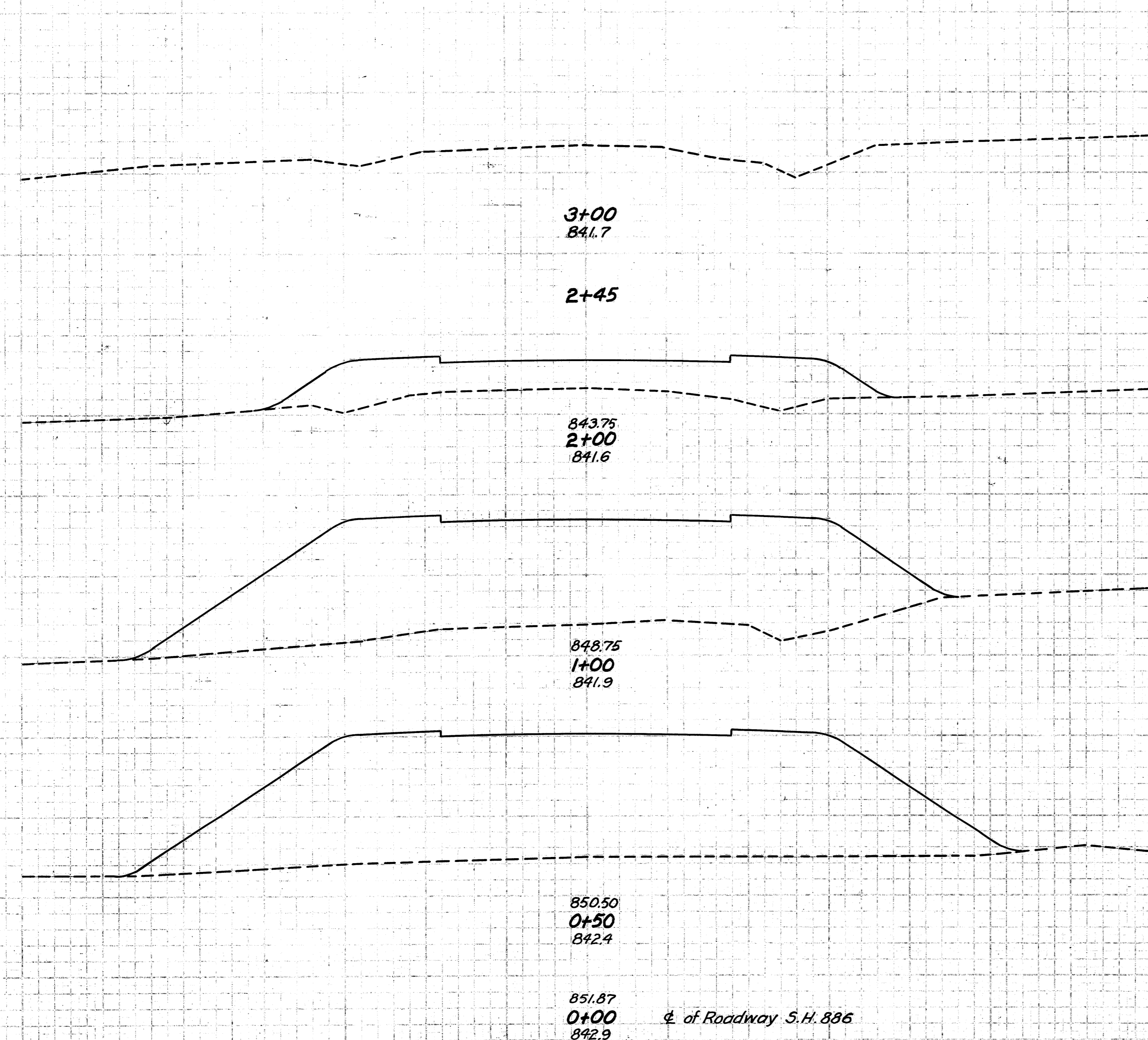
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	293(2)	1938

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138

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.

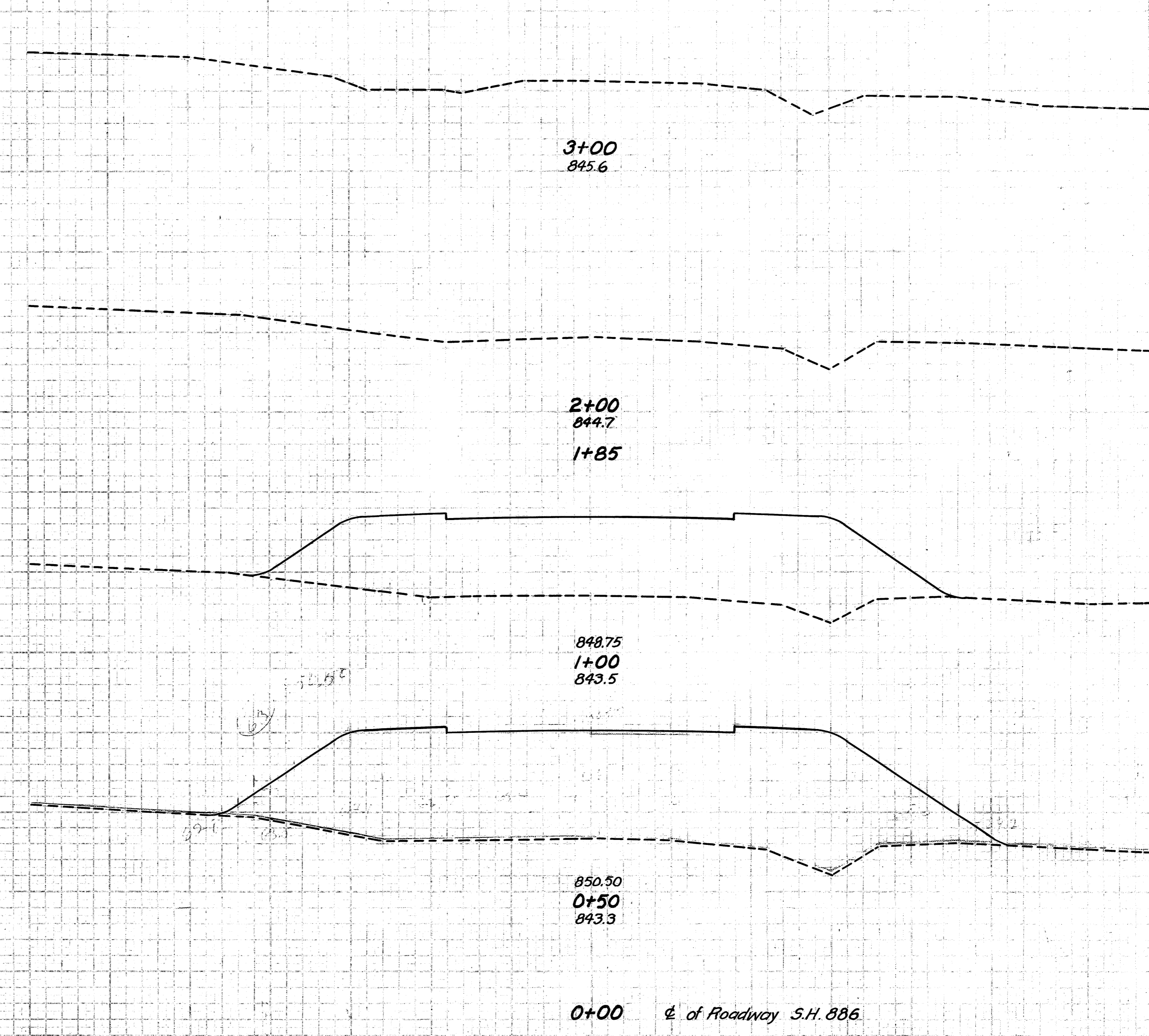


PROFILE ON ϕ OF SIDE ROAD
STA. 46+89



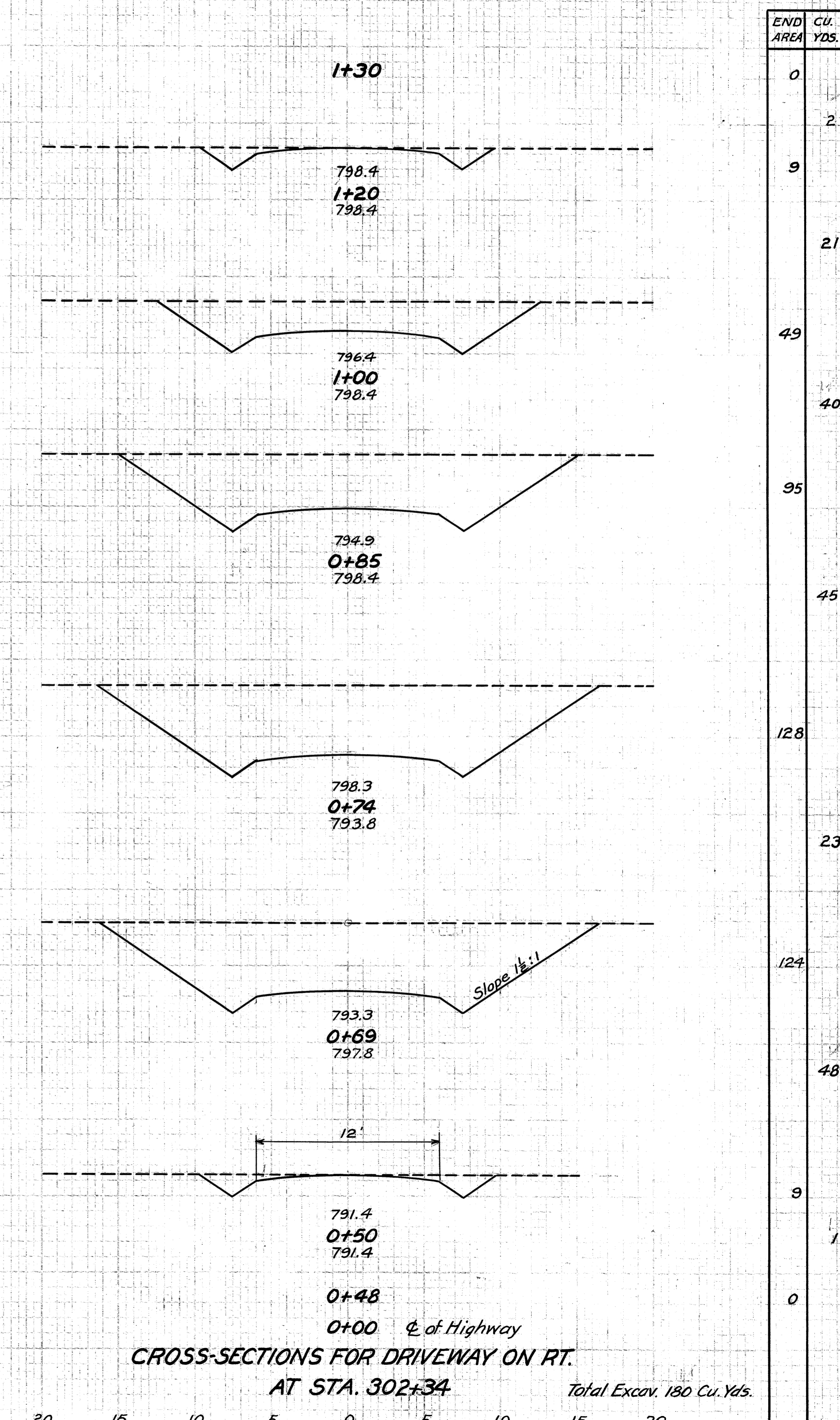
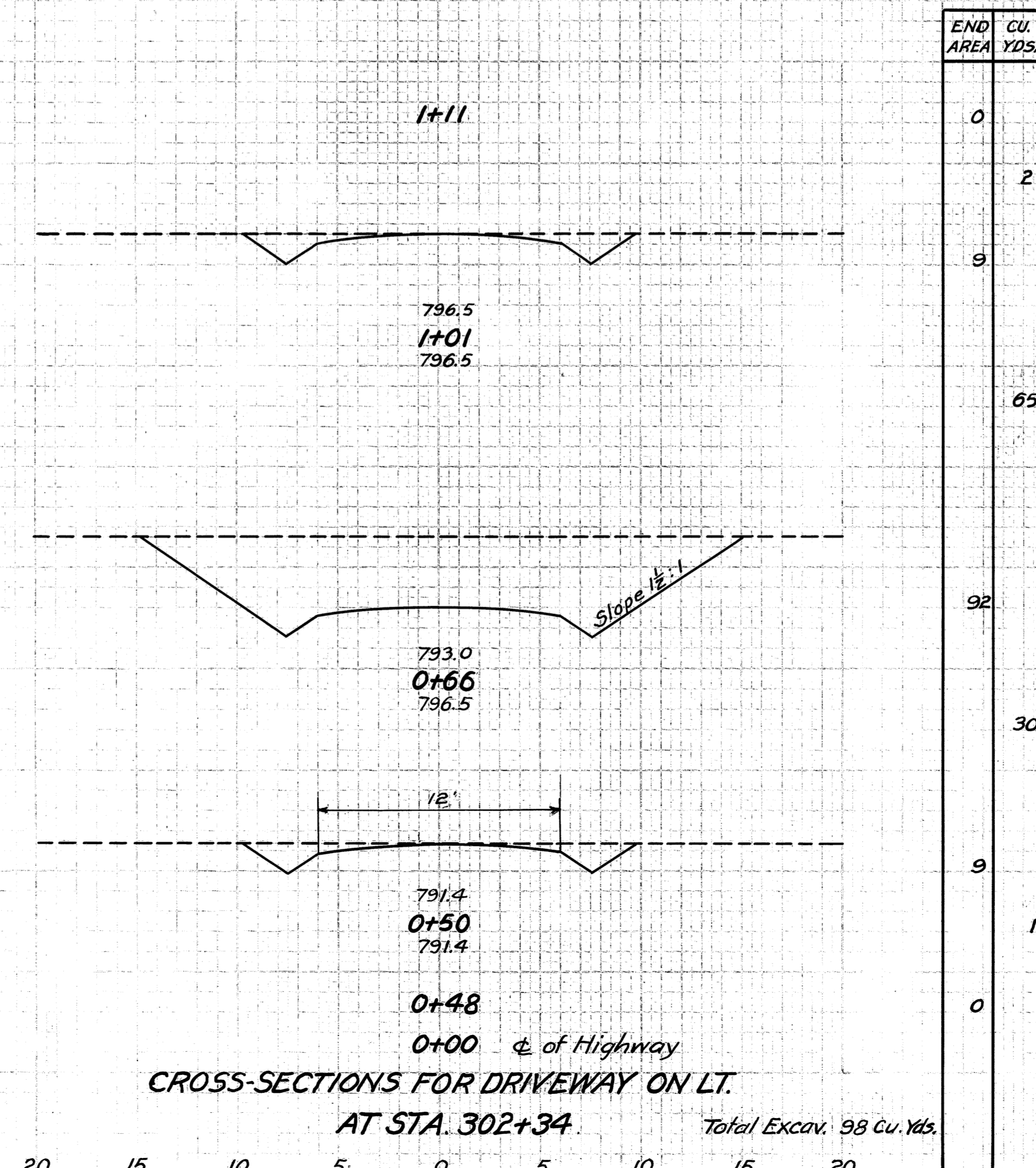
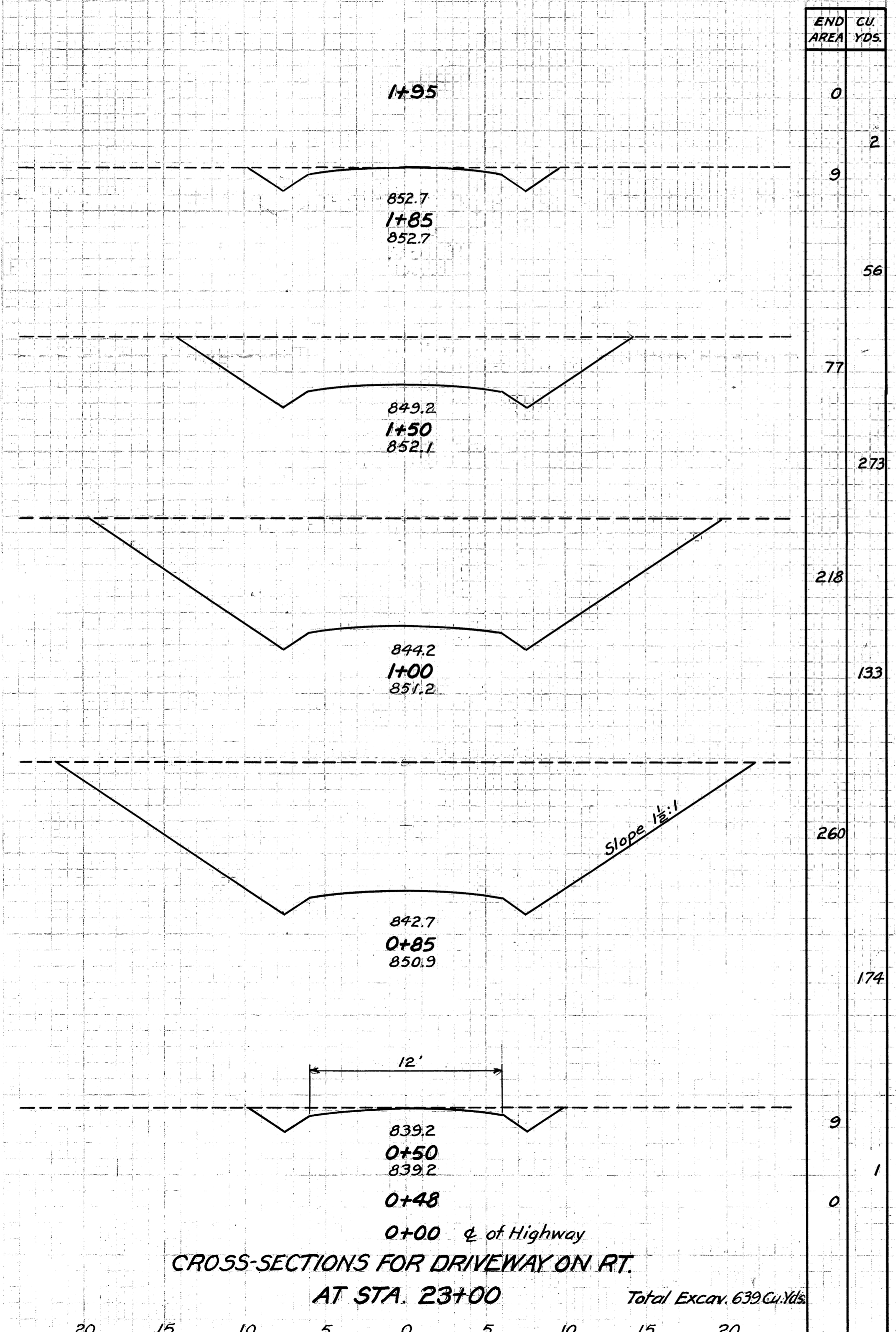
CROSS-SECTIONS
NORTH

END. AREA	CU. YDS.
0	
68	
82	
672	
281	
401	
0+65 = 338	
213	
0+48 = 338	
Total =	1354



CROSS-SECTIONS
SOUTH

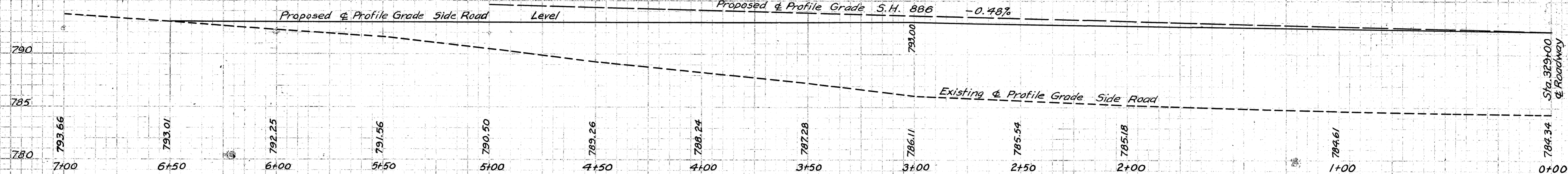
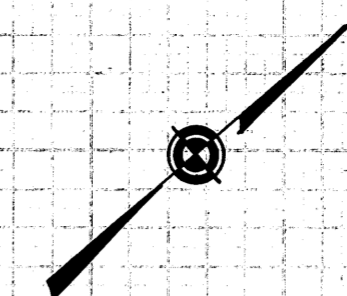
END. AREA	CU. YDS.
0	
299	
190	
308	
285	
190	
285	
Total =	797



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
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LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.



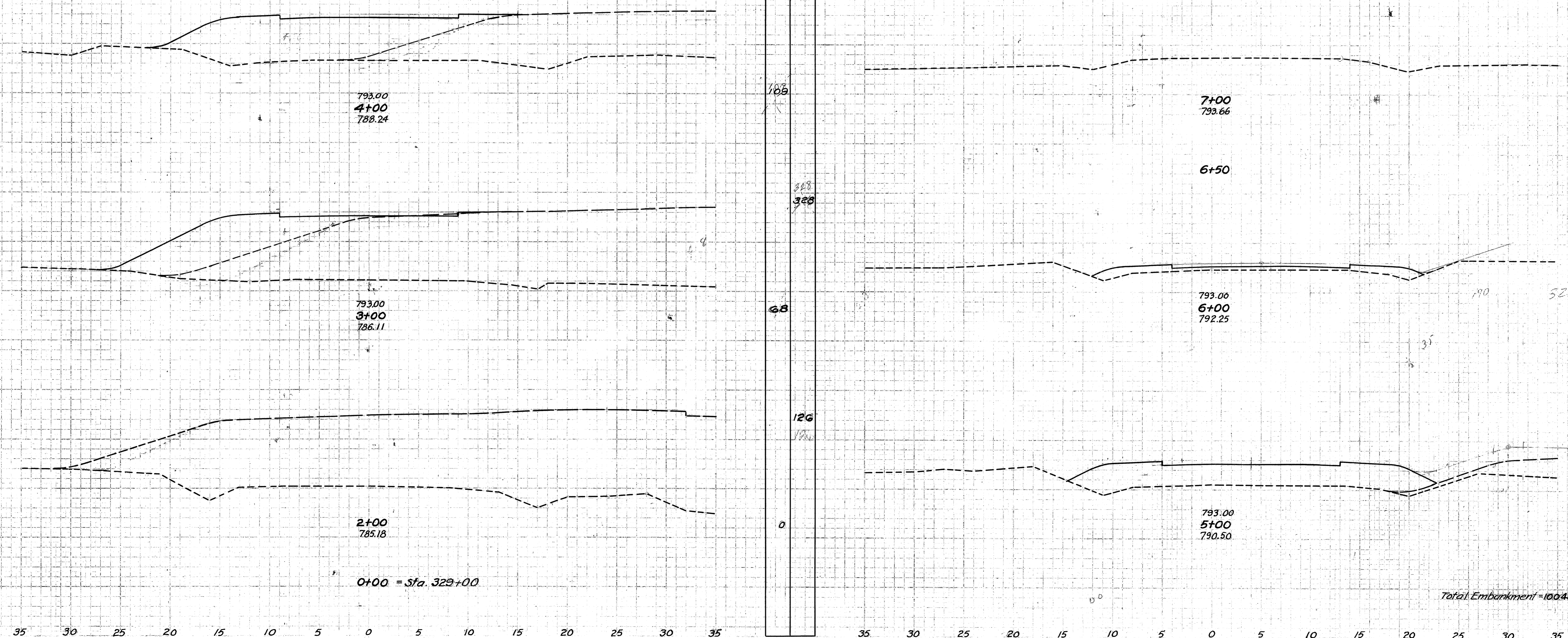
PROFILE ON & OF SIDE ROAD
STA. 329+00

DATE	
BY	
CHECKED	
APPROVED	

DATE	
BY	
CHECKED	
APPROVED	

END AREA	CU. YDS.
7+00	109
6+50	328
6+00	68
5+00	126
4+00	0

END AREA	CU. YDS.
7+00	0
6+50	15
6+00	16
5+00	181
4+00	82
0+00	354



Total Embankment = 1004 Cu. Yds.

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	293(2)	1938

109
138

LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.

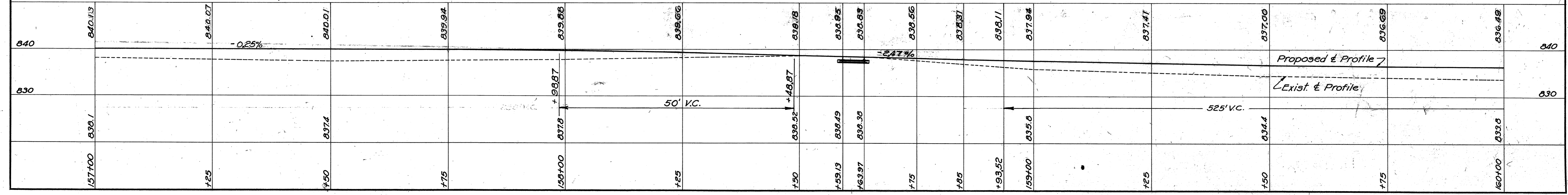
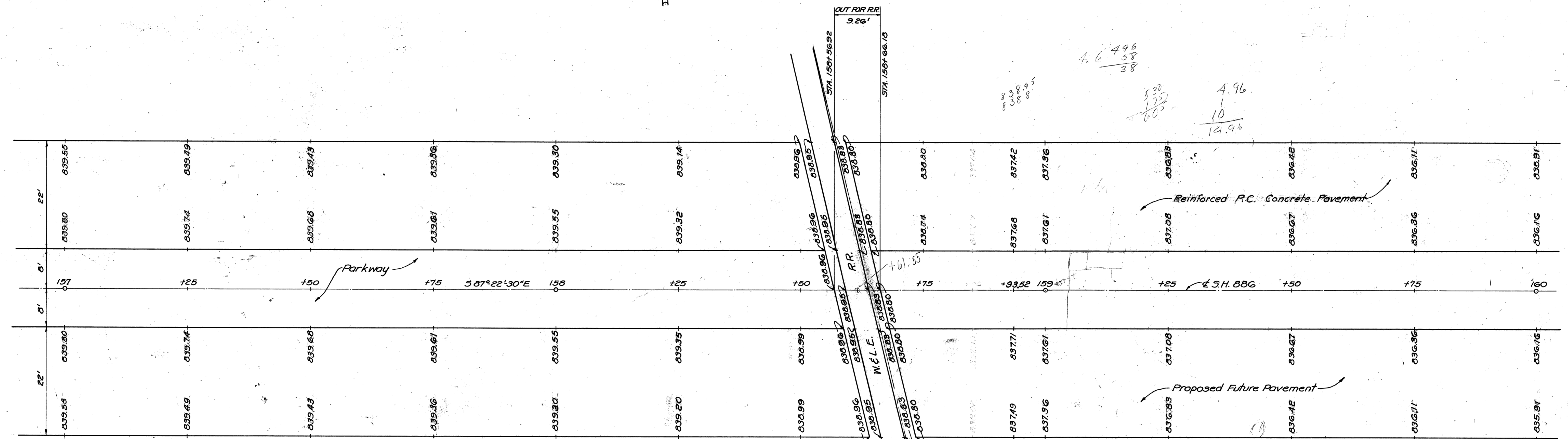
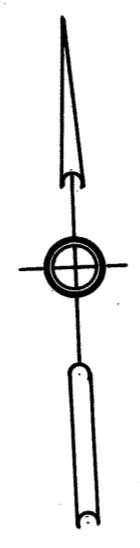
34457.56
34436.6
096

4.6
496
58
38

5.20
1.55
60
4.96
10
14.96

5.58
5.96
1.296

1375
60
2000
360
1185
119500
525

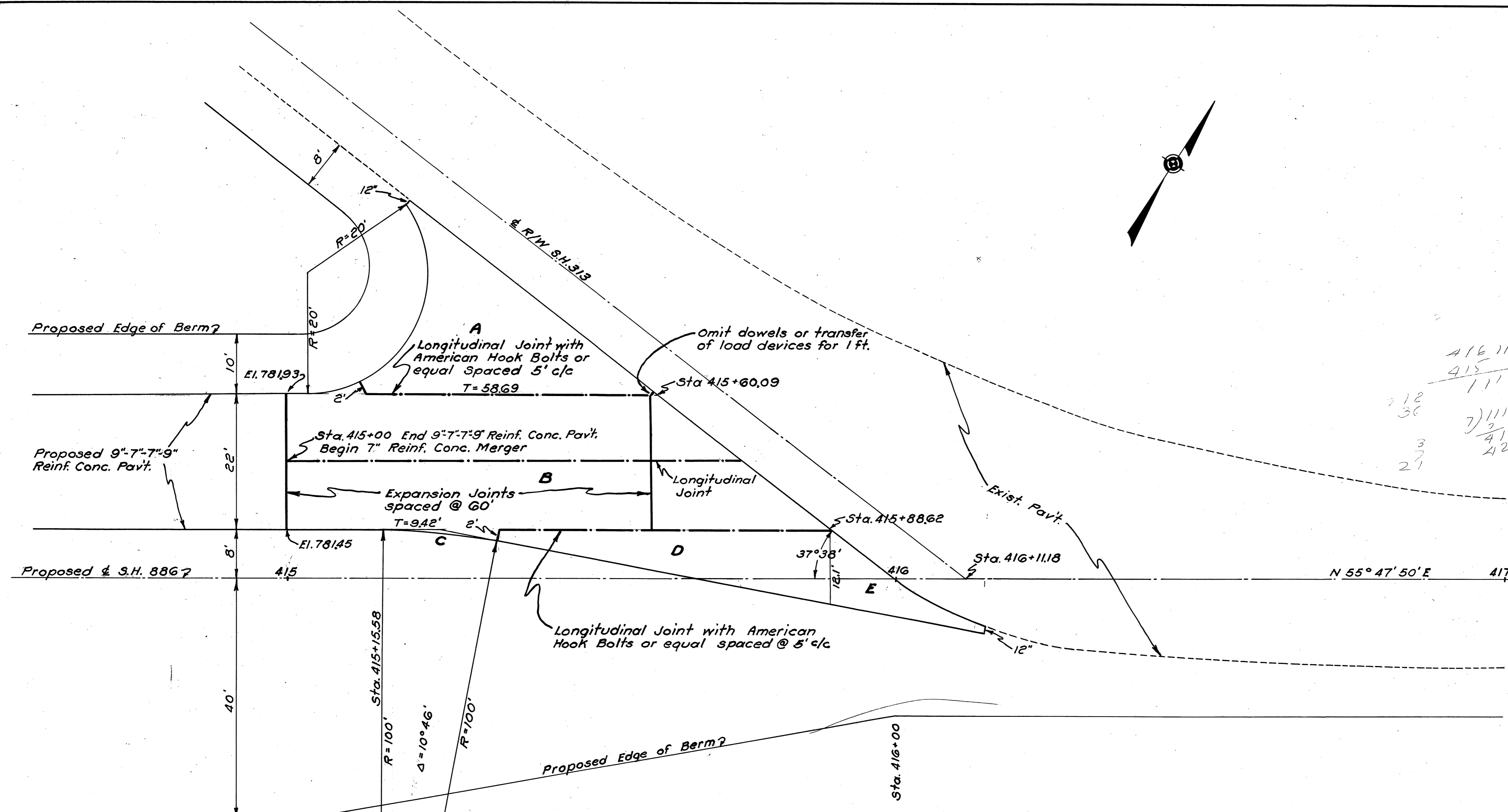


W & L. E. R.R. INTERSECTION
Scale 1"=10'0"

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
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110
138

LORAIN COUNTY
S.H. 290 SEC. S PT.
S.H. 886 SEC. A



Handwritten calculations:

$$\begin{array}{r} 416.11 \\ - 415.11 \\ \hline 1.00 \\ 2.18 \\ - 36 \\ \hline 3 \\ - 21 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 13 \\ 7 \\ \hline 20 \\ 91 \\ \hline 111 \\ - 41 \\ \hline 70 \\ - 58 \\ \hline 12 \end{array}$$

**DETAIL OF MERGER
S.H. 886 & S.H. 313**

7" Reinforced Concrete Pavement	
Area A $(20 \times 58.69) - [\pi 20^2 \times 142.37/360] + (1 \times 3) =$	673.8 Sq. Ft.
Area B $22 \times 74.355 =$	1635.8 Sq. Ft.
Area C $(100 \times 9.42) - (\pi 100^2 \times 10.77/360) =$	2.6 Sq. Ft.
Area D $63.62 \times 6.05 =$	384.9 Sq. Ft.
Area E (By Planimeter) =	152.0 Sq. Ft.
Total	2849.1 Sq. Ft.
or	316.6 Sq. Yds.

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
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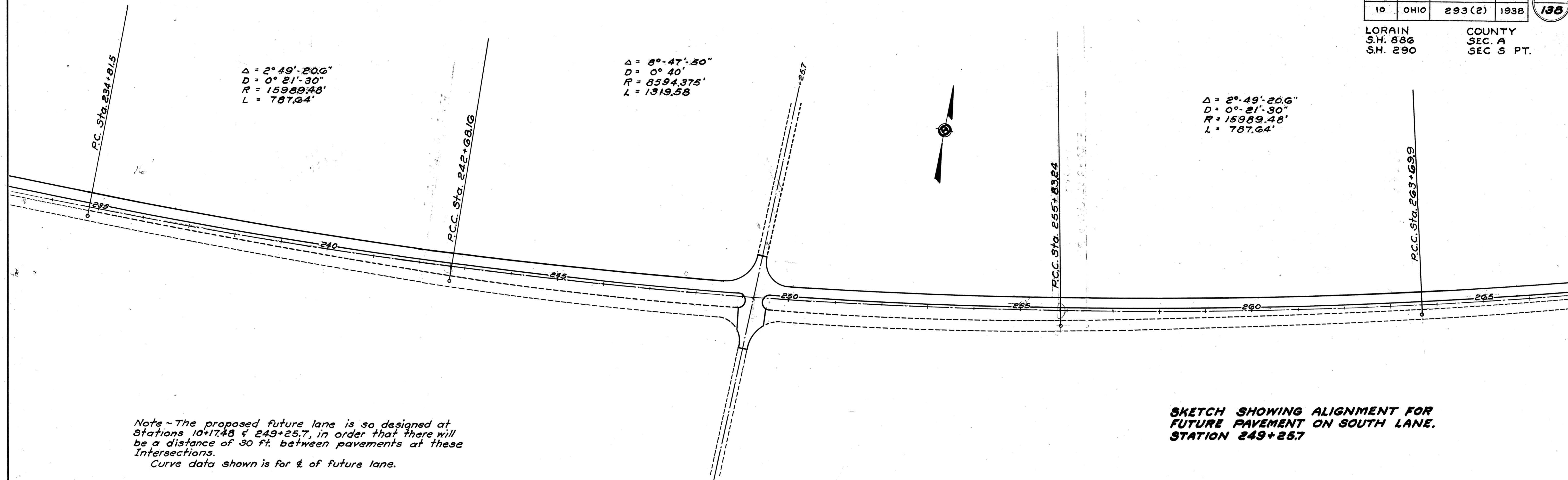
110-A
138

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.

$\Delta = 2^{\circ}49'20.6''$
 $D = 0^{\circ}21'30''$
 $R = 15989.48'$
 $L = 787.64'$

$\Delta = 8^{\circ}47'50''$
 $D = 0^{\circ}40'$
 $R = 8594.375'$
 $L = 1319.58$

$\Delta = 2^{\circ}49'20.6''$
 $D = 0^{\circ}21'30''$
 $R = 15989.48'$
 $L = 787.64'$



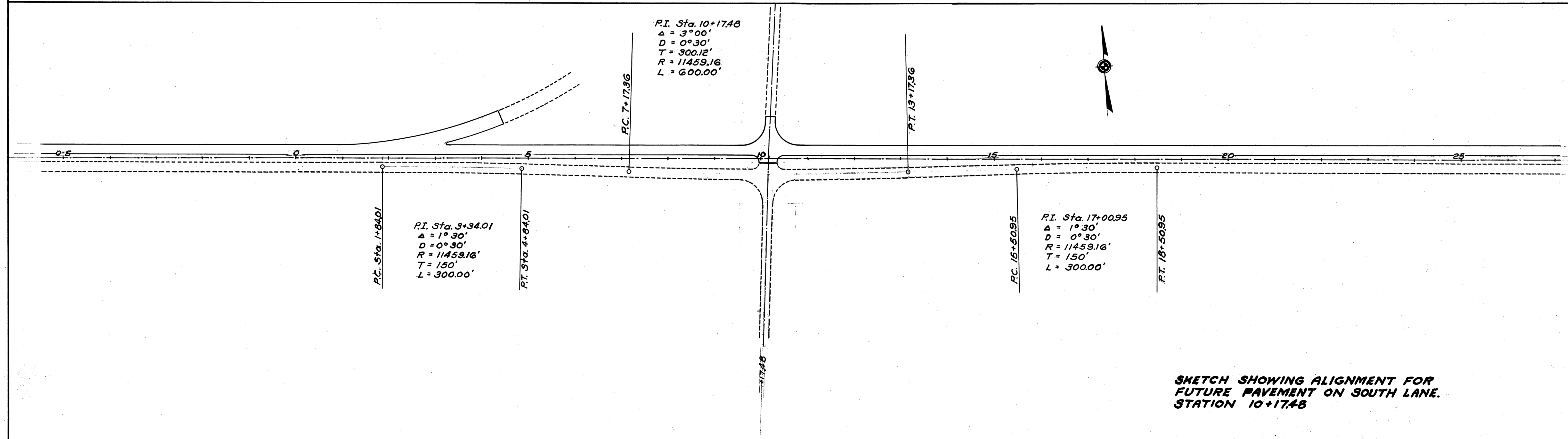
Note - The proposed future lane is so designed at Stations 10+17.48 & 249+25.7, in order that there will be a distance of 30 ft. between pavements at these Intersections.
 Curve data shown is for $\frac{1}{4}$ of future lane.

SKETCH SHOWING ALIGNMENT FOR FUTURE PAVEMENT ON SOUTH LANE, STATION 249+25.7

P.I. Sta. 10+17.48
 $\Delta = 3^{\circ}00'$
 $D = 0^{\circ}30'$
 $T = 300.12'$
 $R = 11459.16'$
 $L = 600.00'$

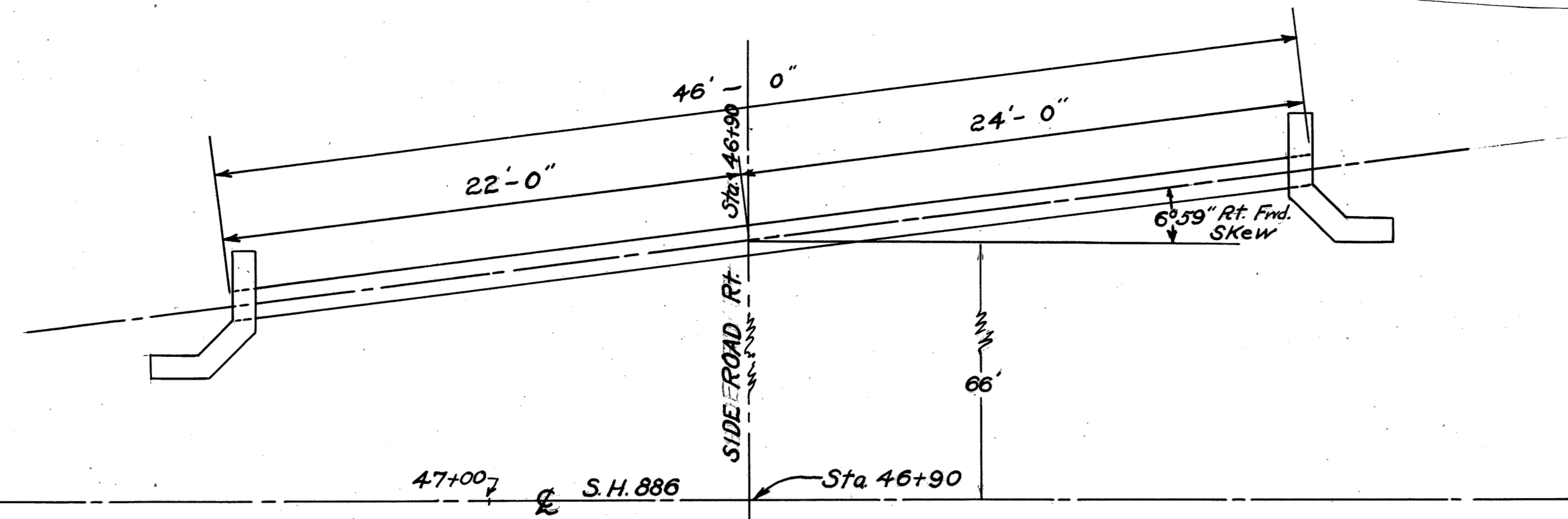
P.I. Sta. 3+34.01
 $\Delta = 1^{\circ}30'$
 $D = 0^{\circ}30'$
 $R = 11459.16'$
 $T = 150'$
 $L = 300.00'$

P.I. Sta. 17+00.95
 $\Delta = 1^{\circ}30'$
 $D = 0^{\circ}30'$
 $R = 11459.16'$
 $T = 150'$
 $L = 300.00'$



SKETCH SHOWING ALIGNMENT FOR FUTURE PAVEMENT ON SOUTH LANE, STATION 10+17.48

LORAIN COUNTY
S.H. 886 SEC. A



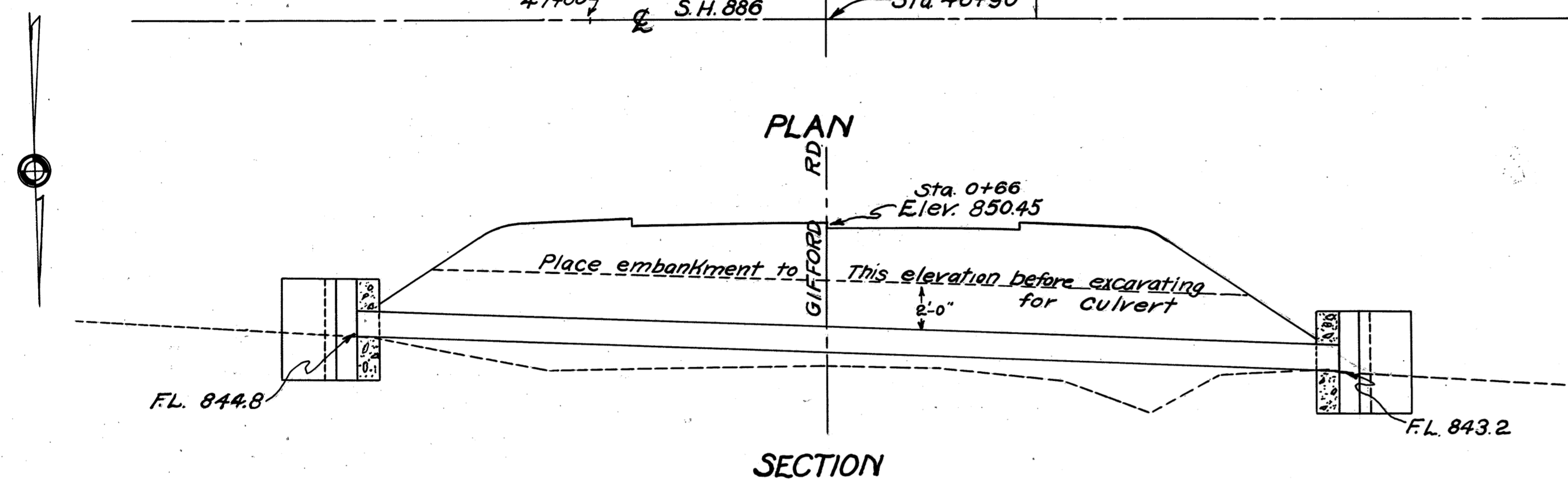
CULVERT DATA

TYPE - Pipe Culvert
 SIZE - 15" x 46"
 Work Required - Remove & Store 22' x 8'
 C.I.P. Remove existing stone headwalls
 Build Std. 15" x 46" Pipe Culvert with Std.
 Headwalls Rt & Lt.

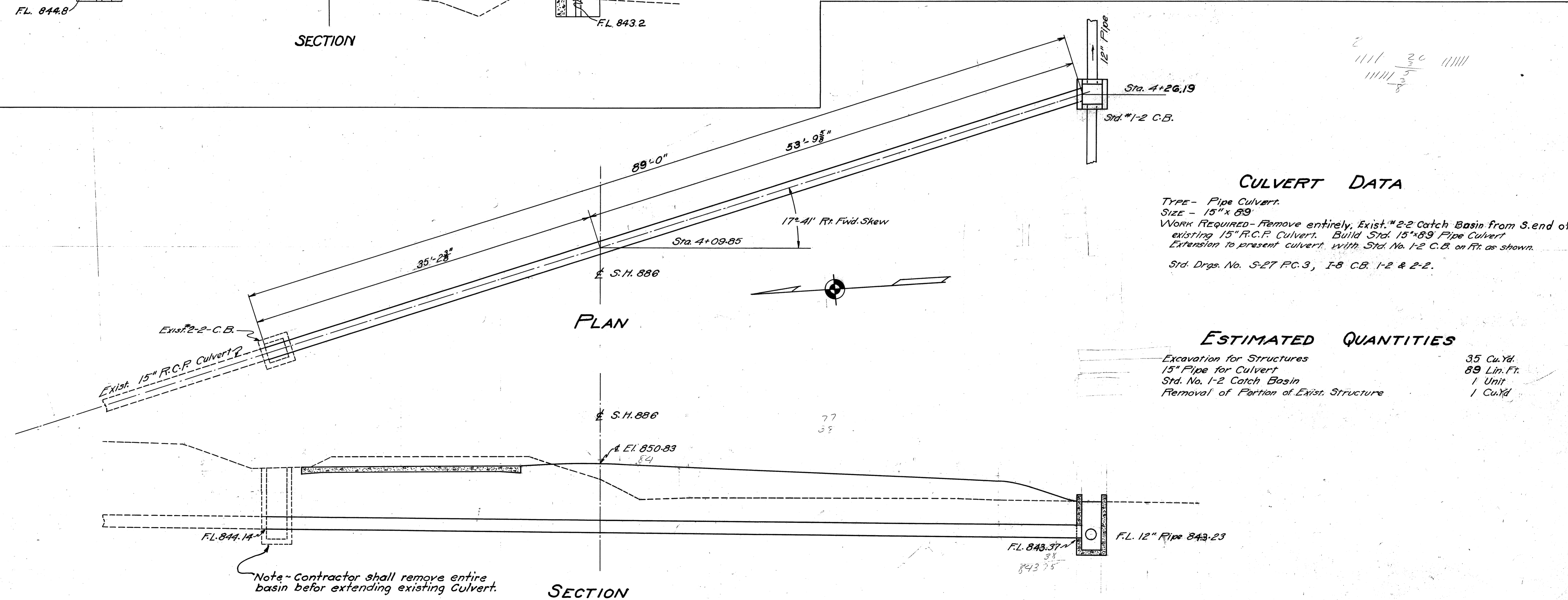
ESTIMATED QUANTITIES

Excavation for Structures	23 Cu. Yd.
15" Pipe for Culvert	46 Lin. Ft.
Concrete (1: 5/2 Mix)	2.7 Cu. Yd.
Reinforcing Steel	65 lbs.
Removal of Existing 8" pipe	22 Lin. Ft.
Removal of Existing Structure	2 Cu. Yd.

STRUCTURE NO. 6
STA. 46 + 90



SECTION

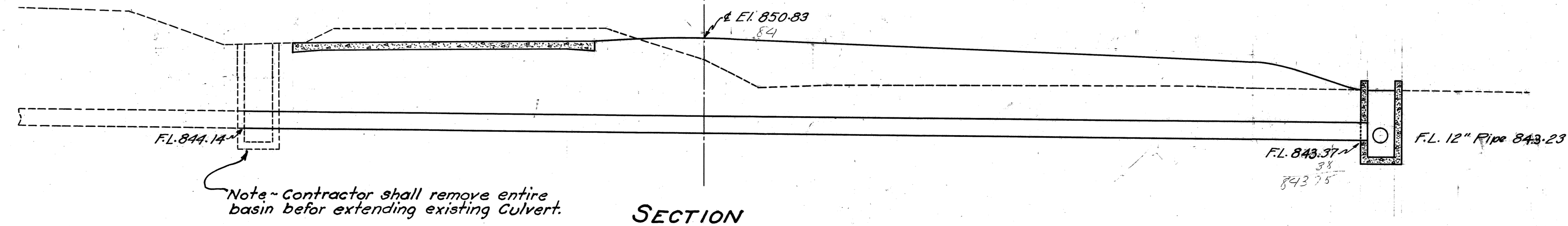


CULVERT DATA

TYPE - Pipe Culvert.
 SIZE - 15" x 89"
 WORK REQUIRED - Remove entirely, Exist. #2-2 Catch Basin from S. end of
 existing 15" R.C.P. Culvert. Build Std. 15" x 89" Pipe Culvert
 Extension to present culvert. with Std. No. 1-2 C.B. on Ft. as shown.
 Std. Drgs. No. S-27 P.C.3, I-8 C.B. 1-2 & 2-2.

ESTIMATED QUANTITIES

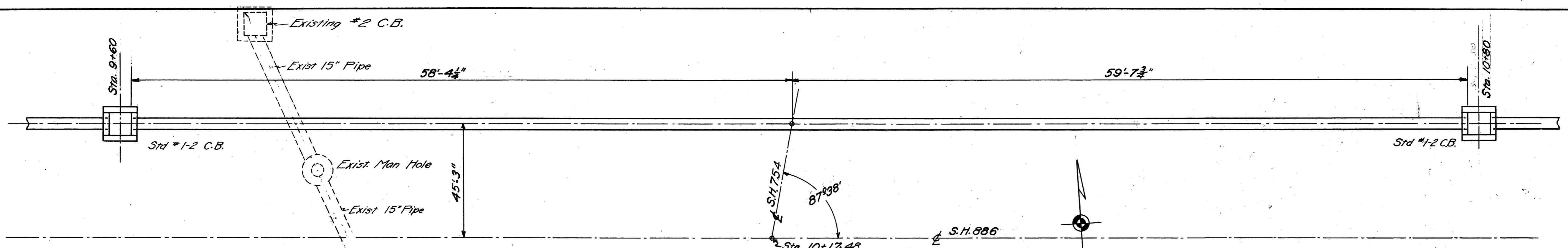
Excavation for Structures	35 Cu. Yd.
15" Pipe for Culvert	89 Lin. Ft.
Std. No. 1-2 Catch Basin	1 Unit
Removal of Portion of Exist. Structure	1 Cu. Yd.



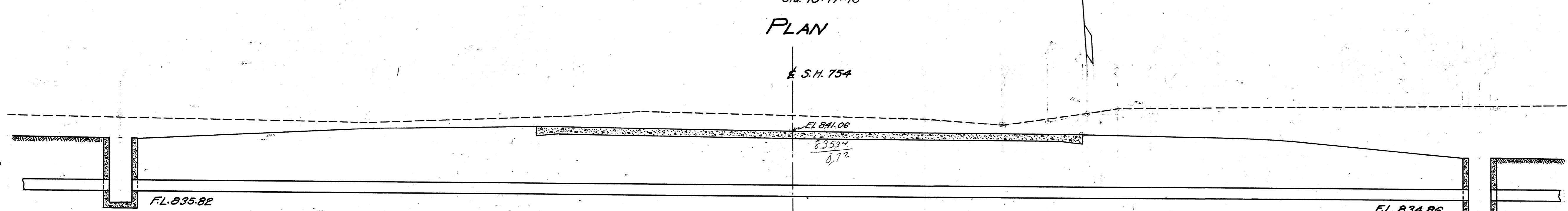
SECTION

STRUCTURE NO. 1
STA. 4+09-85

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.



PLAN

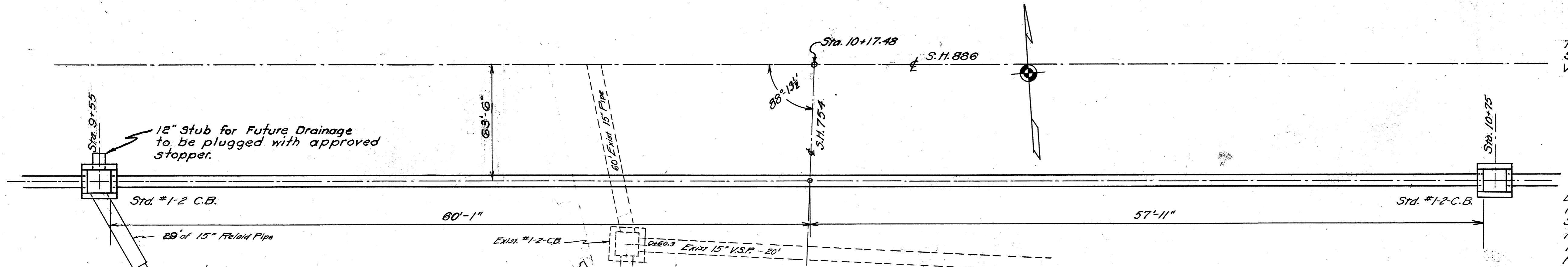


SECTION

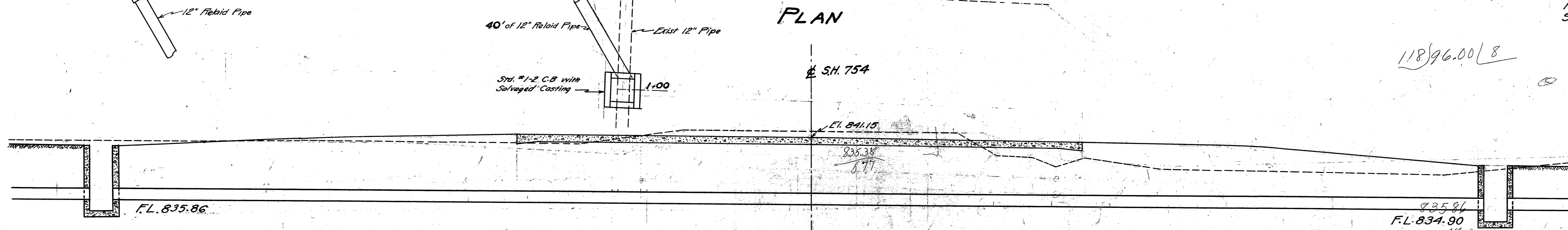
CULVERT DATA
 TYPE - Pipe Culvert
 SIZE - 12" x 118"
 WORK REQUIRED - Remove entirely, Exist. #2 C.B. & Man Hole.
 Remove and store existing 15" pipe. Build Std. 12" Pipe Culvert with Std. No. 1-2 Catch Basins Rt. & Lt. as shown.
 Std. Drgs. S-27 PC 3, I-8 CB 1-2 & 2-2.

ESTIMATED QUANTITIES
 Excavation for Structures 69 Cu. Yds.
 12" Pipe for Culvert 118 Lin. Ft.
 Std. No. 1-2 Catch Basins 2 Units
 Remove & Store Exist. 15" Pipe 58 Lin. Ft.
 Removal of Portion of Exist. Struct. 3 Cu. Yd.

STRUCTURE No. 2
 LEFT OF STA. 10+17.48



PLAN



SECTION

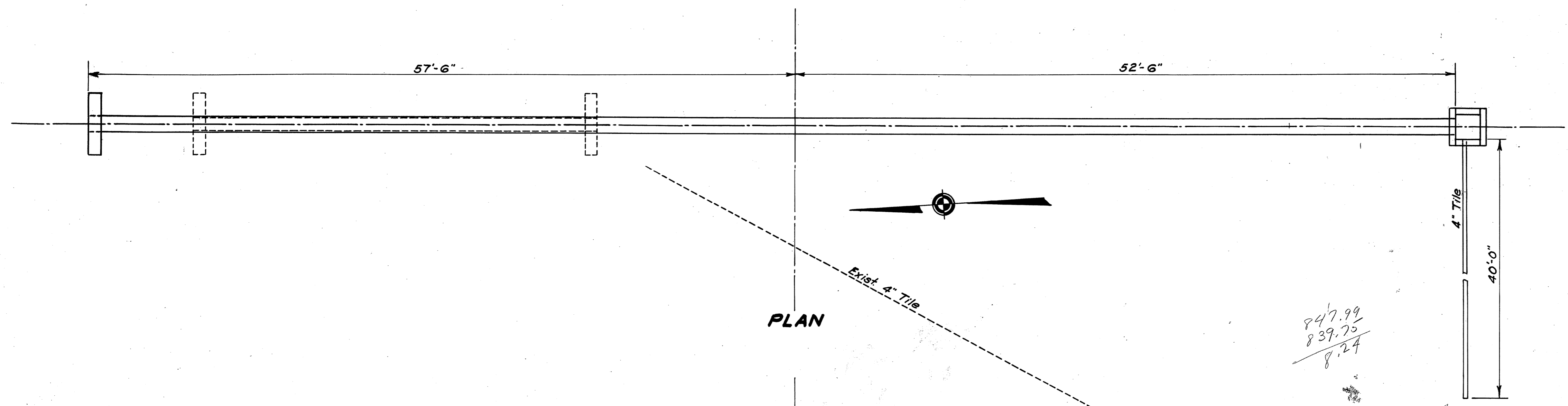
CULVERT DATA
 TYPE - Pipe Culvert
 SIZE - 12" x 118"
 WORK REQUIRED - Remove entirely, Exist. #1 C.B.
 Remove and store 50 lin. ft. 15" Pipe. Build Std. 12" Pipe Culvert with Std. No. 1-2 Catch Basins as shown.
 Remove and relay 29 lin. ft. of 15" Pipe and 40 lin. ft. of 12" Pipe as shown. Build Std. No. 1-2 C.B. with salvaged casting at Sta. 1+25 on S.H. 754 as shown.
 Std. Drgs. S-27 PC.3, I-8 C.B. 1-2 & 2-2, I-1, 2, 3, 4 & 5.

ESTIMATED QUANTITIES
 Excavation for Structures 57 Cu. Yds.
 12" Pipe for Culvert 118 Lin. Ft.
 Std. No. 1-2 Catch Basins 2 Units
 Removal of Portion of Exist. Struct. 1 Cu. Yd.
 Remove & Store Exist. 15" Pipe 50 Lin. Ft.
 Remove & Relay Exist. 15" Pipe 29 Lin. Ft.
 Remove & Relay Exist. 12" Pipe 40 Lin. Ft.
 Std. No. 1-2 C.B. Less Casting 1 Unit

STRUCTURE No. 3
 RIGHT OF STA. 10+17.48

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	113 138
10	OHIO	293(2)	1938	

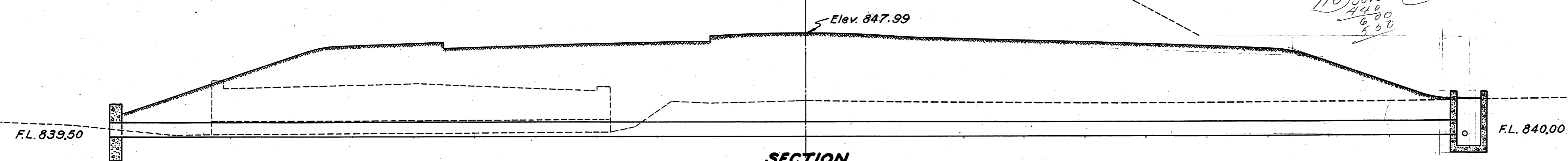
LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. 3 PT.



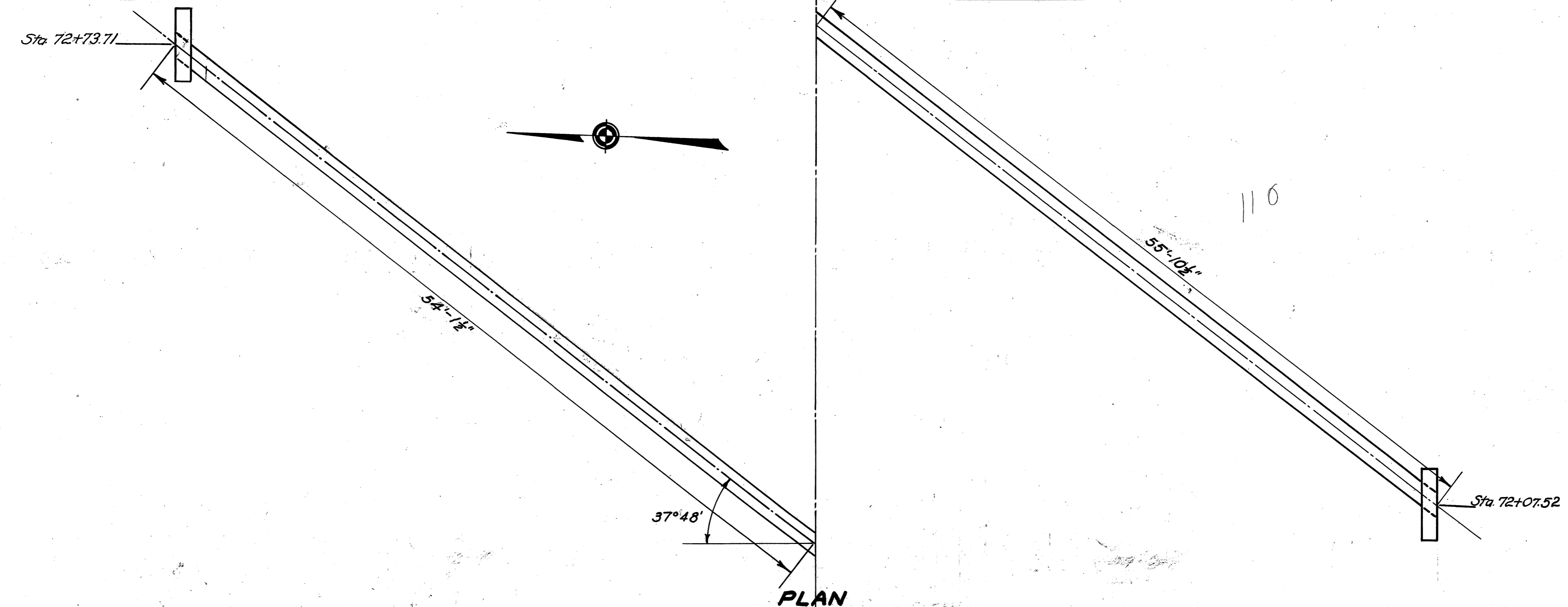
CULVERT DATA
Type ~ Pipe
Size ~ 15" x 110'-0"
Work Required ~ Remove Exist. 32" x 12" Conc. Pipe Culvert. Build Std. 15" Pipe Culvert with Std. Hdwall on Lt. & Std. No. 1-2 Catch Basin on Rt. Connect Exist. 4" Tile to Catch Basin on Rt. Clean Channel on Lt.
Std. Drawings S-27 P.C.1, S-27 P.C.3 & I-8 C.B. 1-2 & 22

ESTIMATED QUANTITIES

Structural Excavation	36	Cu. Yds.
Channel Excavation	12	Cu. Yds.
1-5/2 Concrete	.85	Cu. Yds.
Reinforcing Steel	24	Lbs.
Std. No. 1-2 Catch Basin	1	Unit
Remove & Store Exist. 12" Conc. Pipe	32	Lin. Ft.
Removal of Portions of Exist. Struct.	2	Cu. Yds.
4" Pipe for roadway drainage	40	Lin. Ft.
15" Pipe for Roadway Culvert	110	Lin. Ft.



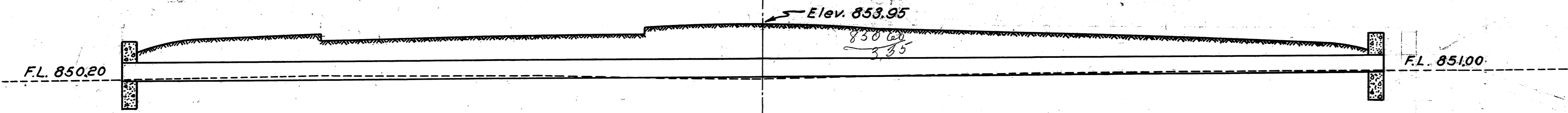
STRUCTURE NO. 4
STA. 34+82.5



CULVERT DATA
Type ~ Pipe
Size ~ 15" x 110'-0"
Work Required ~ Build Std. 15" Pipe Culvert with Std. Headwalls Rt. & Lt. 37°-48' L.F. Skew.
Std. Drawings S-27 P.C.1 & S-27 P.C.3

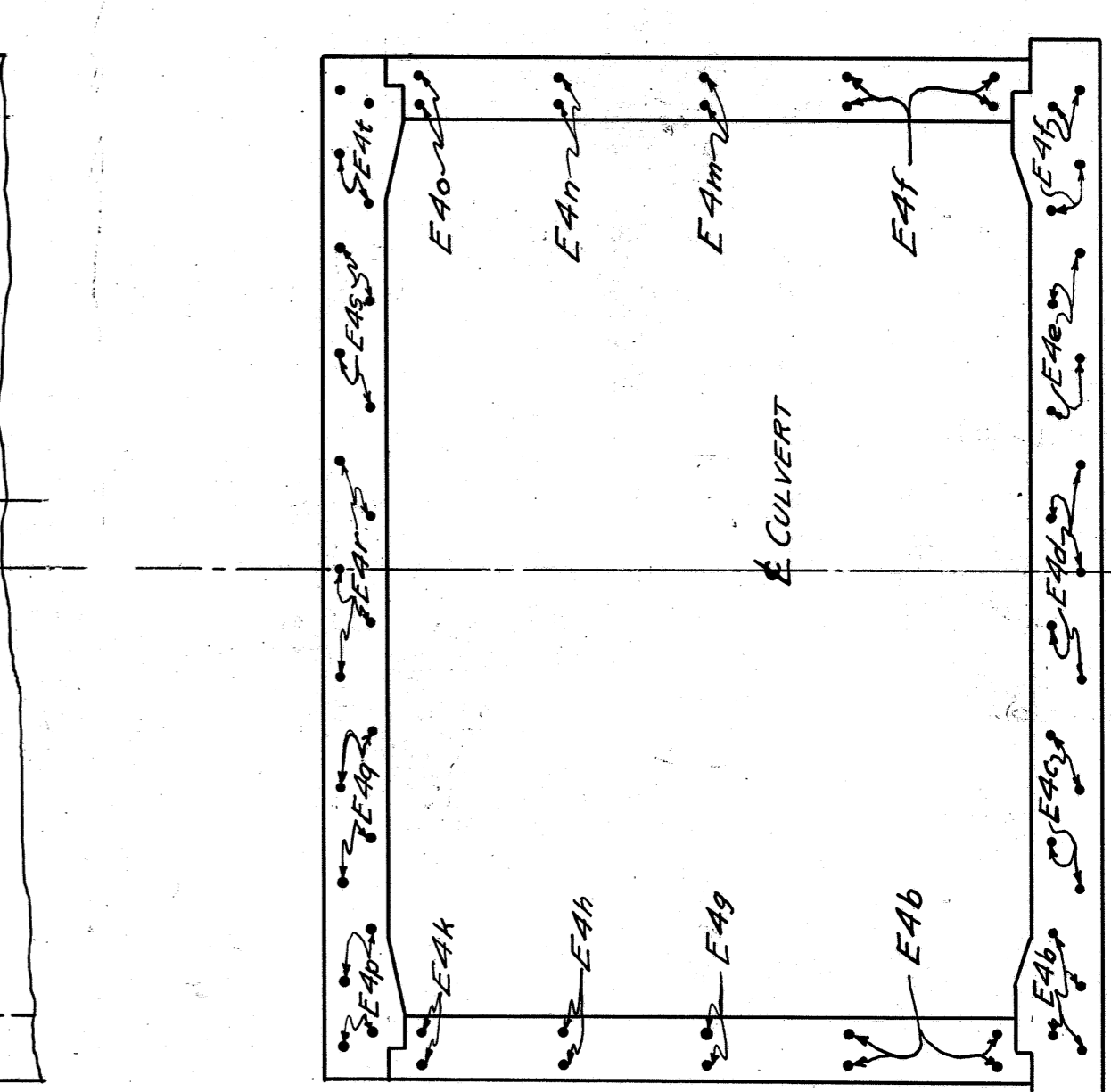
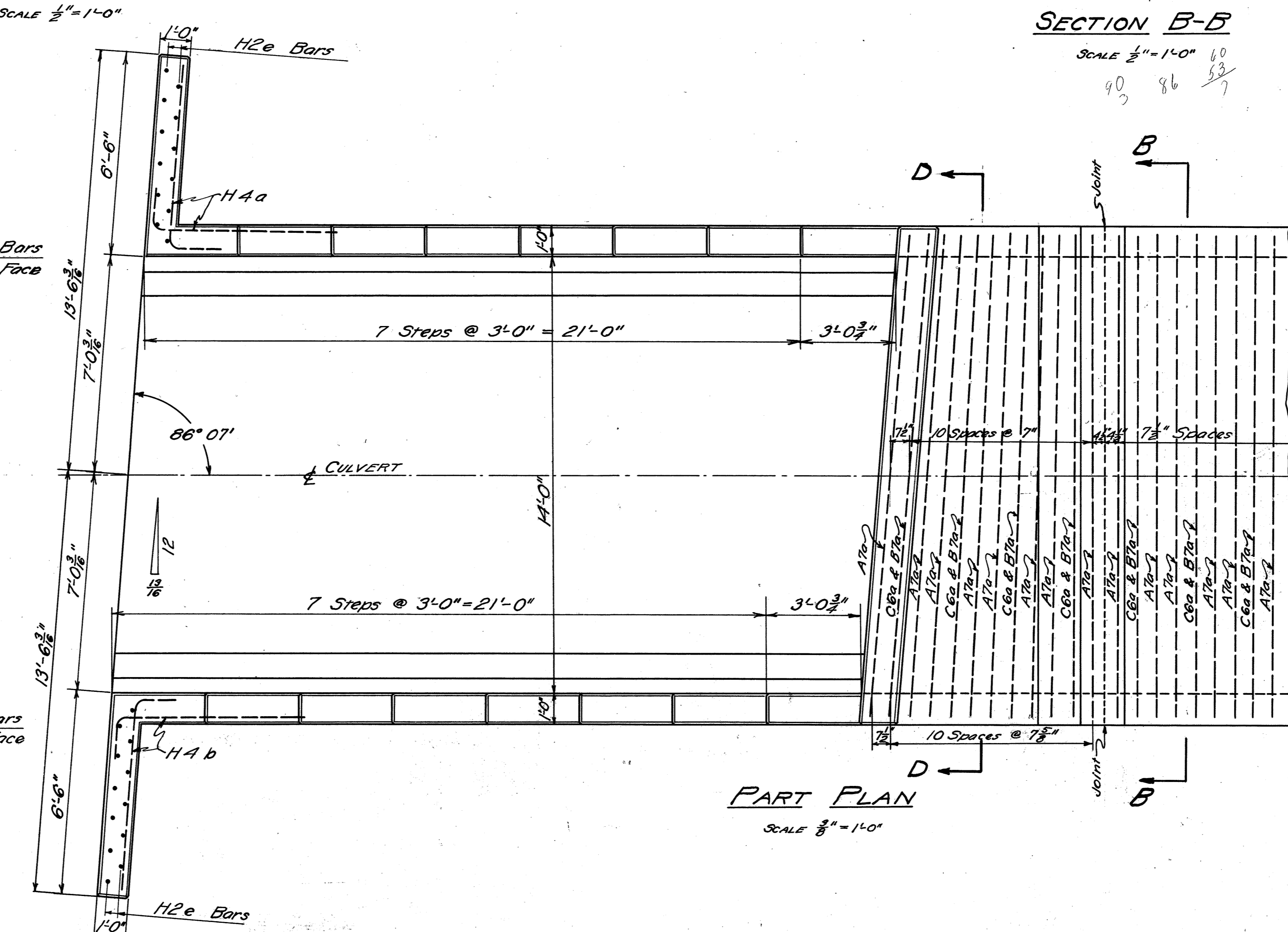
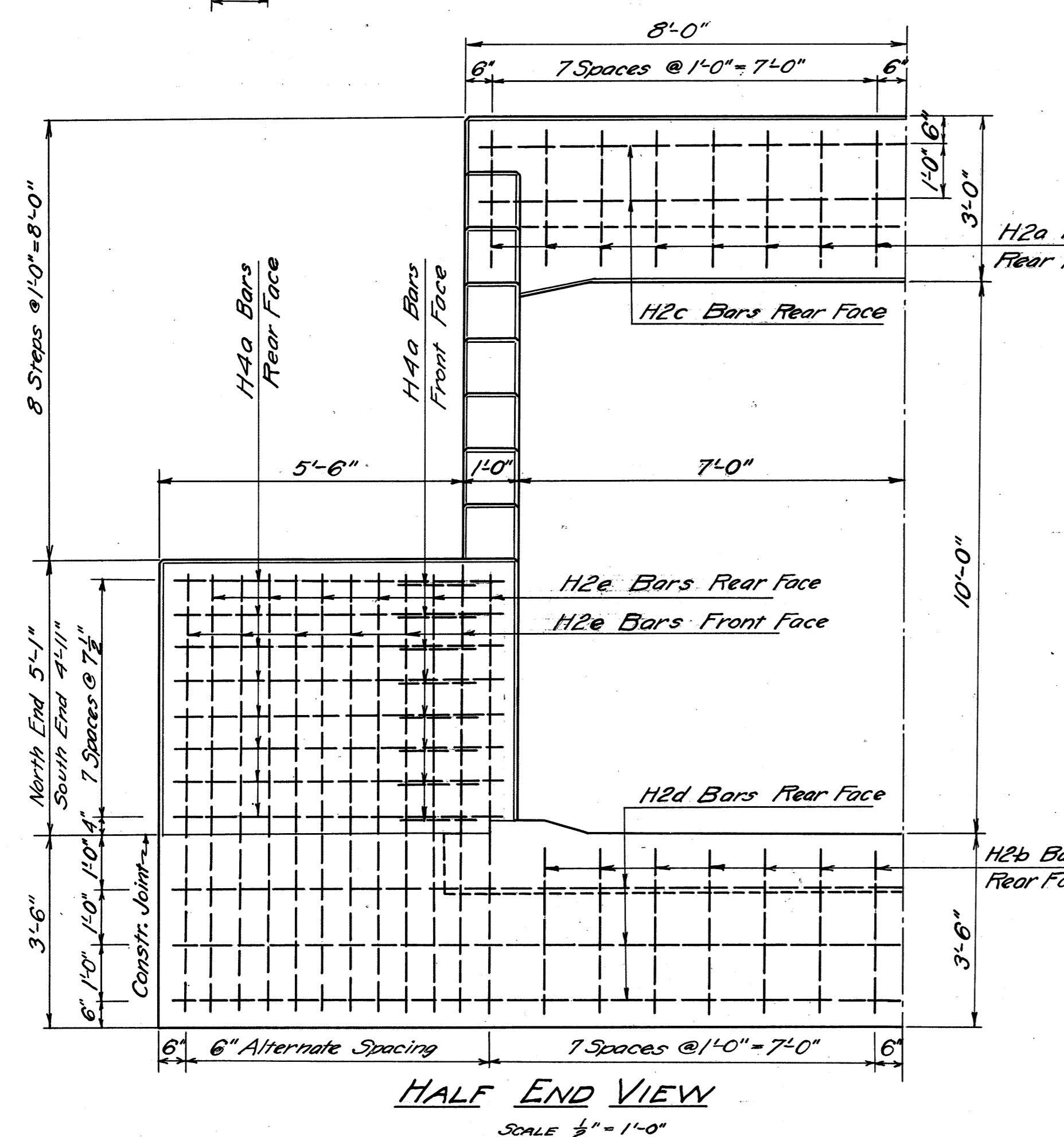
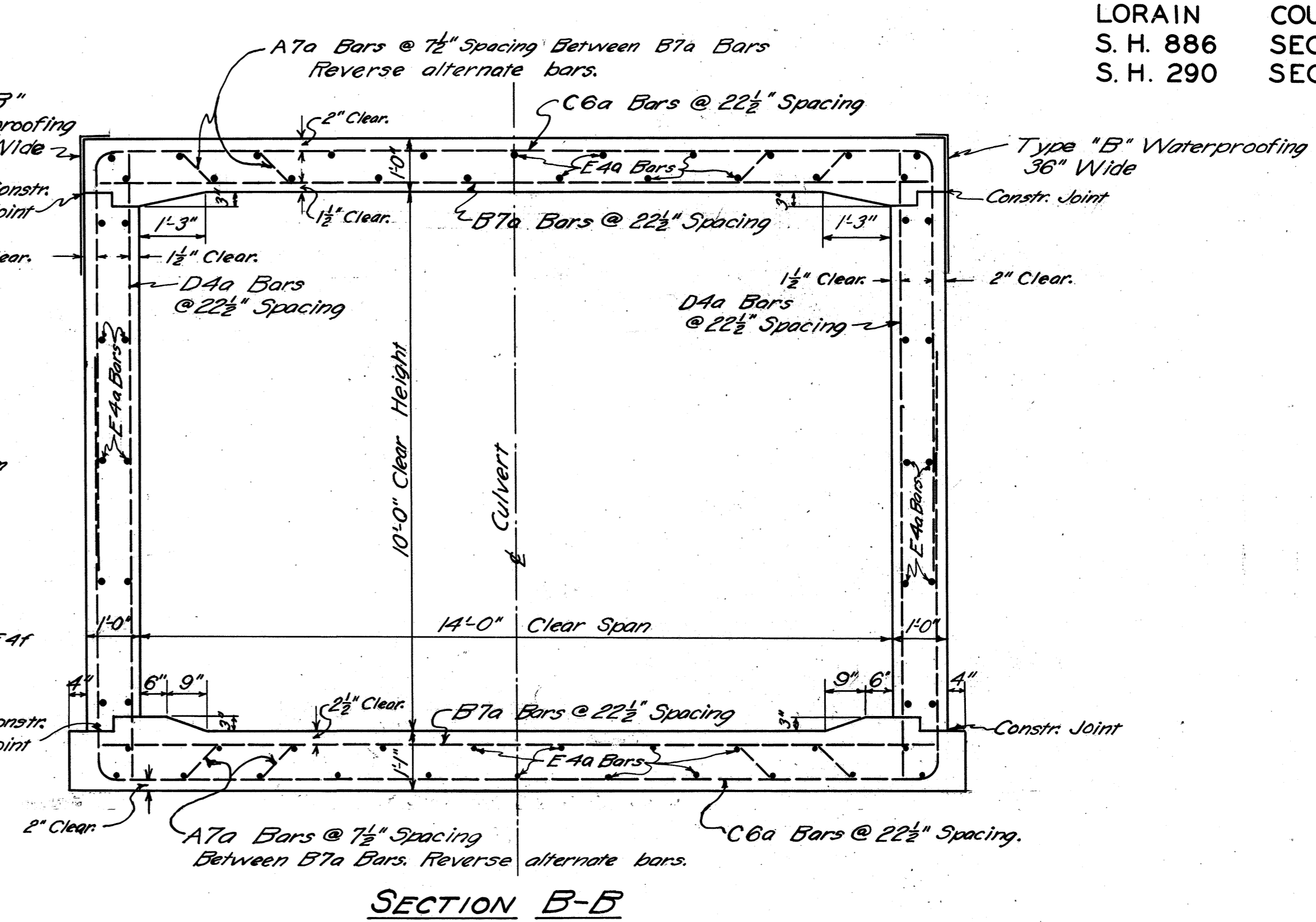
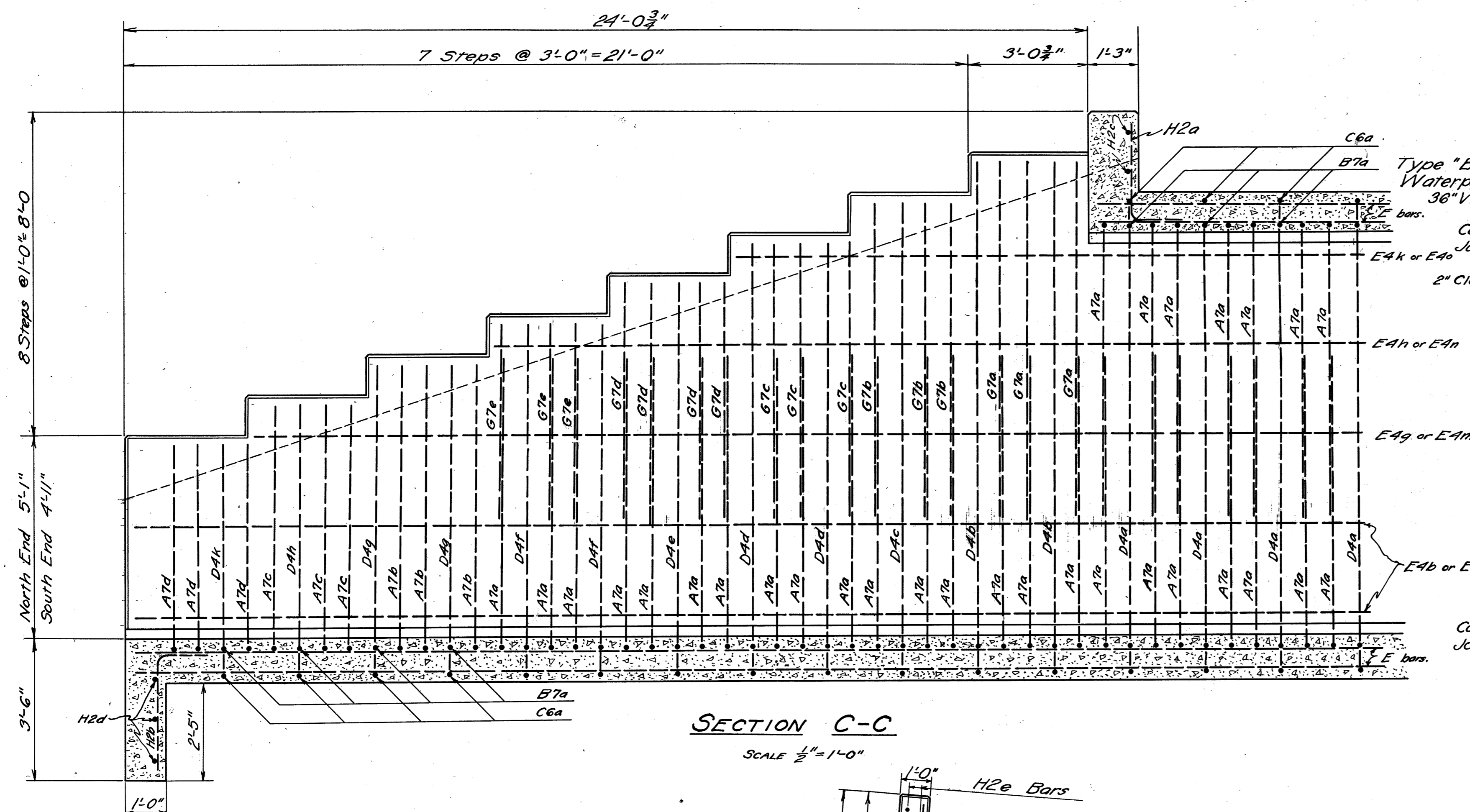
ESTIMATED QUANTITIES

Structural Excavation	42	Cu. Yds.
1-5/2 Conc.	1.7	Cu. Yds.
Reinforcing Steel	47	Lbs.
15" Pipe for Roadway Culvert	110	Lin. Ft.



STRUCTURE NO. 7
STA. 72+40

LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.



STRUCTURE No. 5
STATION 45+00

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
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138

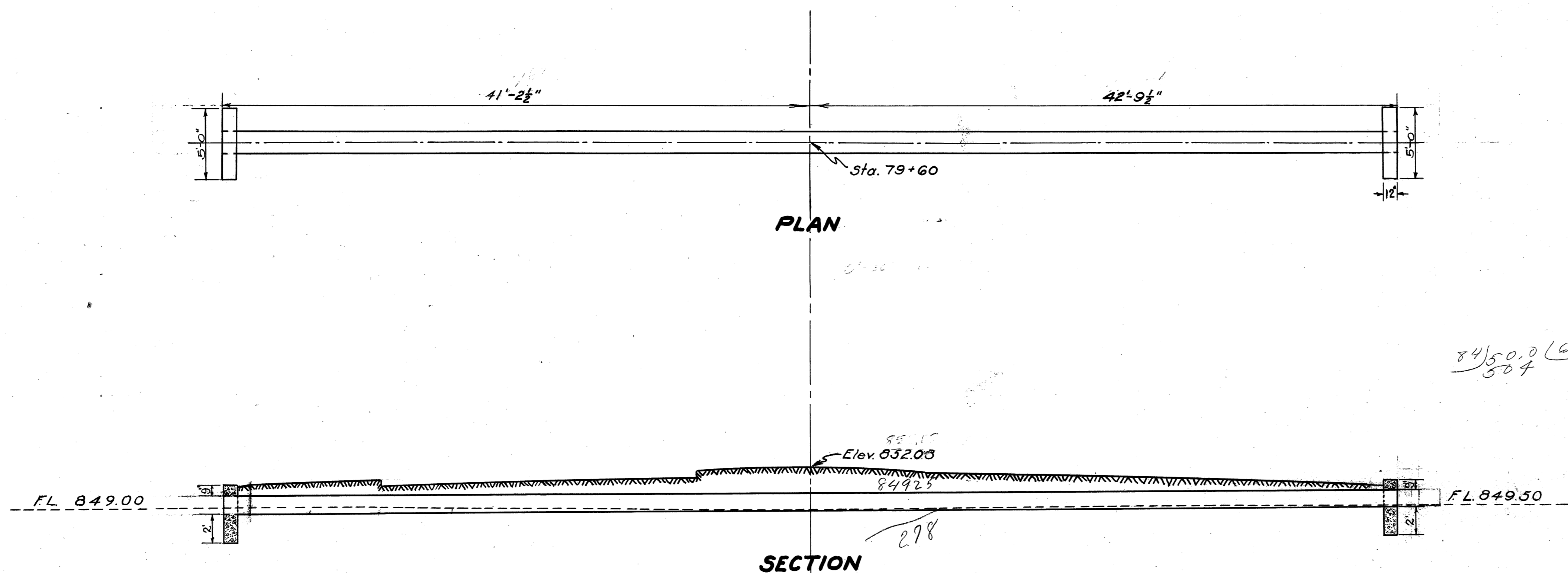
LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.

CULVERT DATA

Type ~ Pipe Culvert
Size ~ 15" x 84'-0"
Work Required ~ Build Std. 15" x 84'-0" Pipe Culvert, with Headwalls Rt. & Lt.
Excavate Channel on Lt. for Outlet.
Std. Drawing No. S-27 P.C.3 & 1.

ESTIMATED QUANTITIES

Excavation for Structures	25 Cu. Yds.
Channel Excavation	10 Cu. Yds.
15" Pipe for Culverts	84 Lin. Ft.
1-5/8" Concrete	1.5 Cu. Yds.
Reinforcing Steel	47 Lbs.



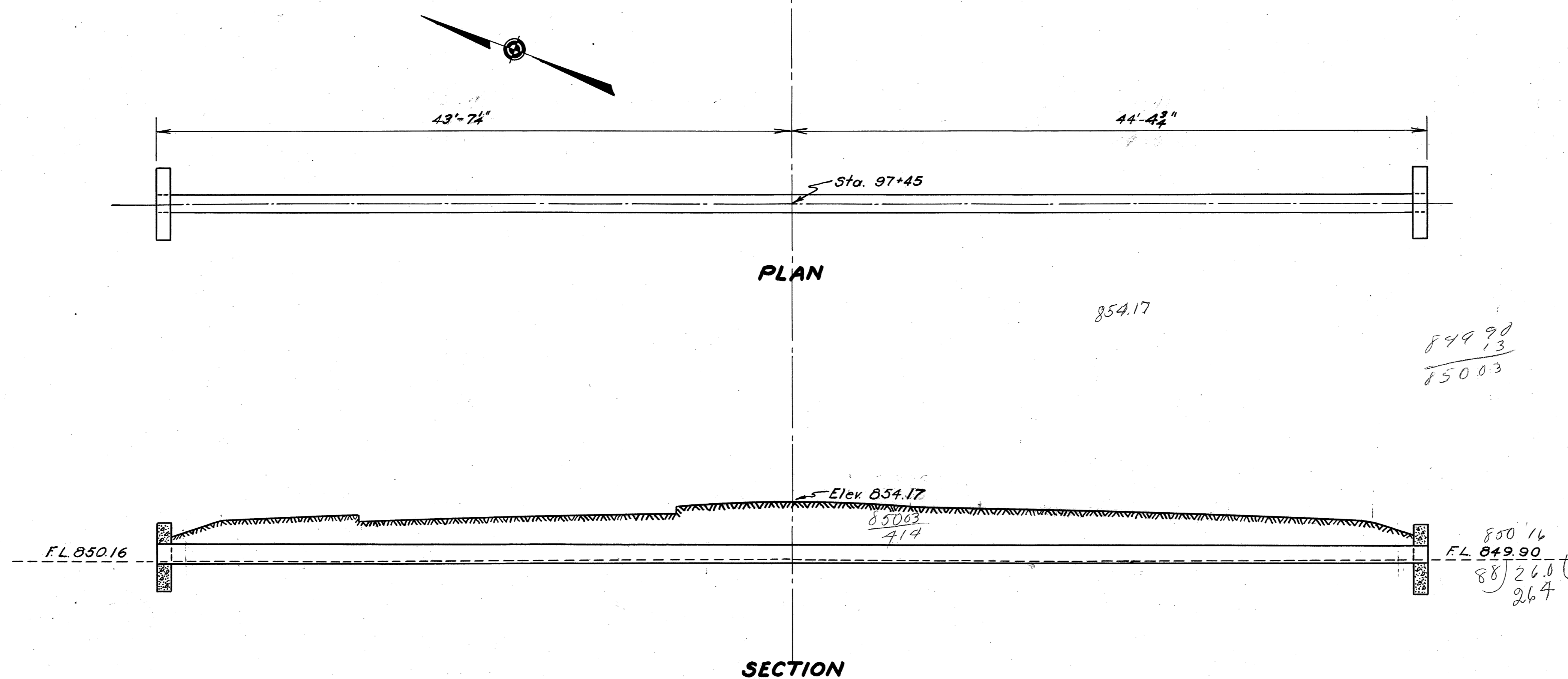
**STRUCTURE NO. 8
STATION 79+60**

CULVERT DATA

Type ~ Pipe Culvert
Size ~ 15" x 88'-0"
Work Required ~ Build Std. 15" x 88' Pipe Culvert with Std. Headwalls Rt. & Lt. Clean Inlet & Outlet.
Std. Drawing S-27 P.C.1 & S-27 P.C.3

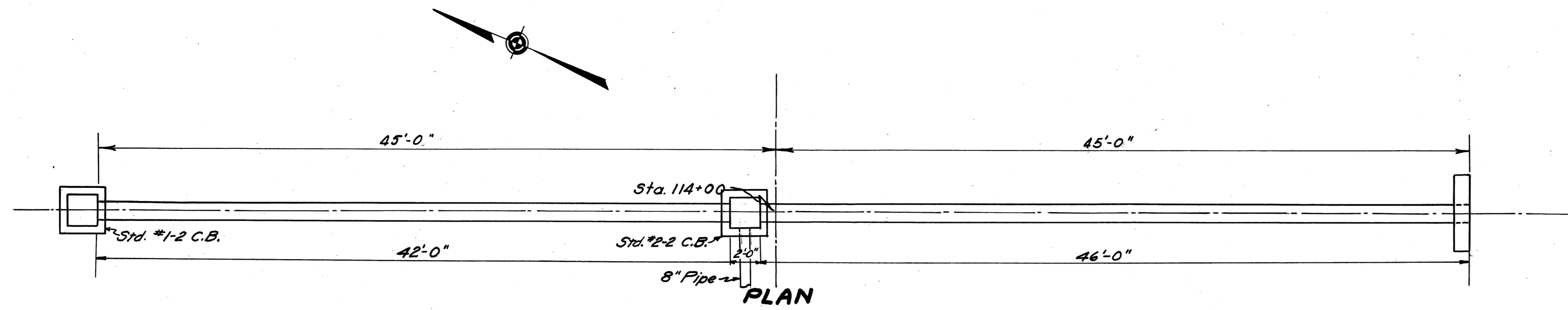
ESTIMATED QUANTITIES

Excavation for Structures	32 Cu. Yds.
Channel Excavation	5 Cu. Yds.
15" Pipe for Culverts	88 Lin. Ft.
1-5/8" Concrete	1.7 Cu. Yds.
Reinforcing Steel	47 Lbs.



**STRUCTURE NO. 9
STATION 97+45**

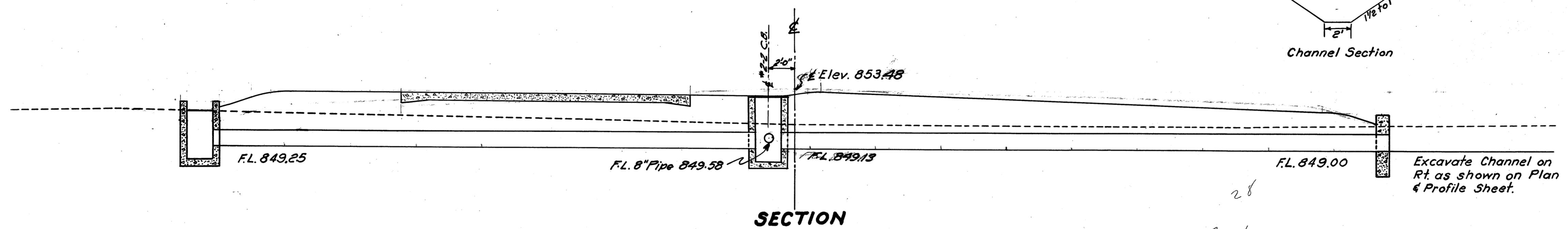
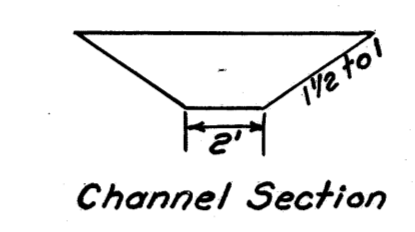
LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.



CULVERT DATA
Type - Pipe Culvert
Size - 15" x 90'-0"
Work Required - Build Std. 15" x 90' Pipe Culvert with Std. Headwall on Rt. & Std. No. 1-2 & 2-2 C.B.s As Shown. Excavate Channel on Rt. as shown for outlet.
Std. Drawings No. S-27 P.C.1, S-27 P.C.3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	31	Cu. Yds.
Channel Excavation	25	Cu. Yds.
15" Pipe for Culverts	88	Lin. Ft.
1-5/2 Concrete	.85	Cu. Yds.
Reinforcing Steel	24	Lbs.
Std. No. 1-2 Catch Basin	1	Unit.
Std. No. 2-2 Catch Basin	1	Unit.

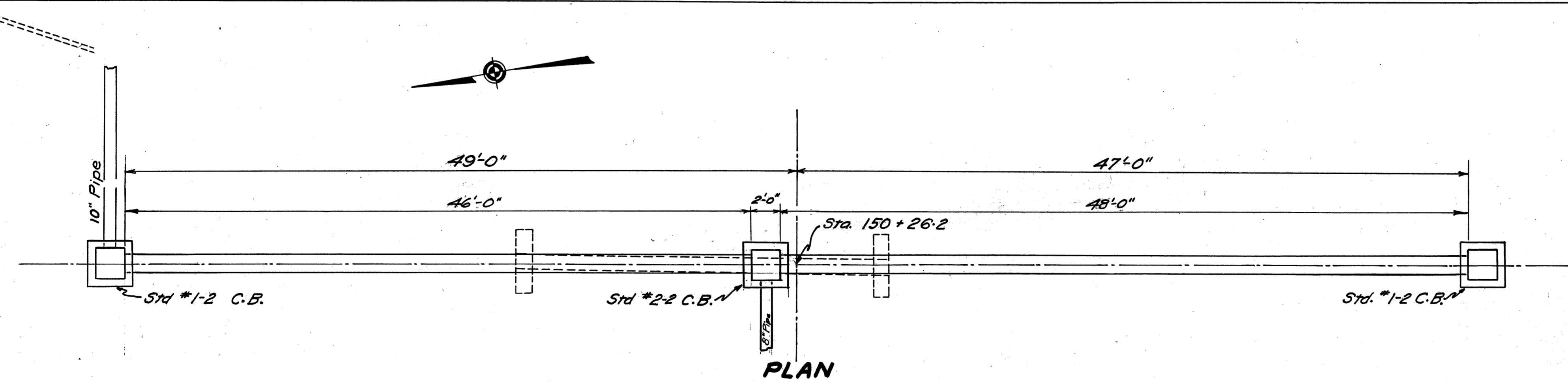


Handwritten calculations:

$$\begin{array}{r} 42 \overline{) 12.0} \quad 1.37 \\ \underline{84} \\ 360 \\ \underline{336} \end{array}$$

$$\begin{array}{r} 46 \overline{) 30} \quad 1.38 \\ \underline{138} \end{array}$$

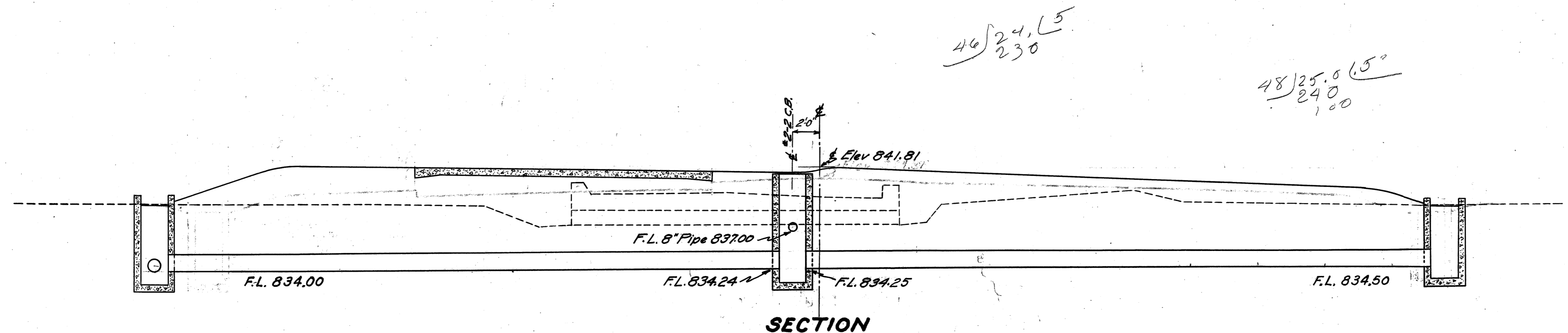
**STRUCTURE NO. 10
STATION 114+00**



CULVERT DATA
Type - Pipe Culvert
Size - 15" x 96'-0"
Work Required - Remove & Store 12" x 24' C.I.P. from Exist. Culv., also remove Stone Headwalls. Build Std. 15" x 96' Pipe Culvert with Std. No. 1-2 & 2-2 Catch Basins as shown. Connect 10" Pipe to C.B. on Lt. for outlet.
Std. Drawings No. S-27 P.C.3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	37	Cu. Yds.
Std. No. 1-2 Catch Basins	2	Units.
12" C.I.P. Removed & Stored	24	Lin. Ft.
Removal of Portions of Exist. Structure	2	Cu. Yds.
15" Pipe for Culverts	94	Lin. Ft.
Std. No. 2-2 Catch Basin	1	Unit.

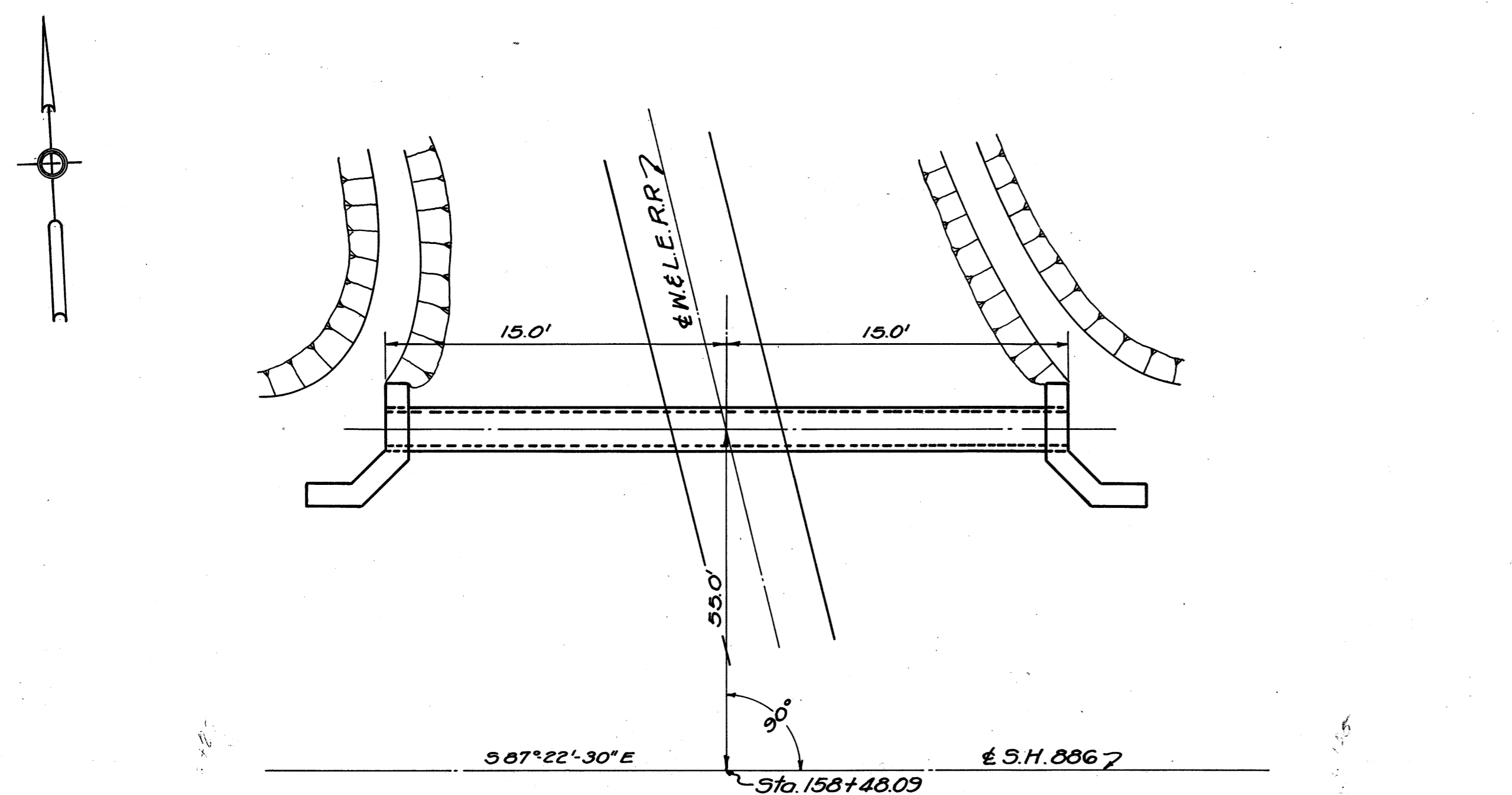


Handwritten calculations:

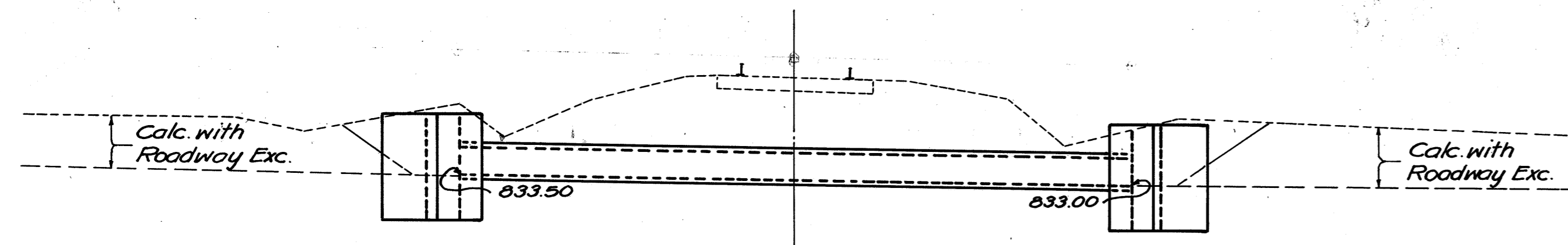
$$\begin{array}{r} 46 \overline{) 24.65} \\ \underline{230} \end{array}$$

$$\begin{array}{r} 48 \overline{) 25.0} \quad 1.5 \\ \underline{240} \\ 100 \end{array}$$

**STRUCTURE NO. 12
STATION 150+26.2**



PLAN



SECTION

CULVERT DATA

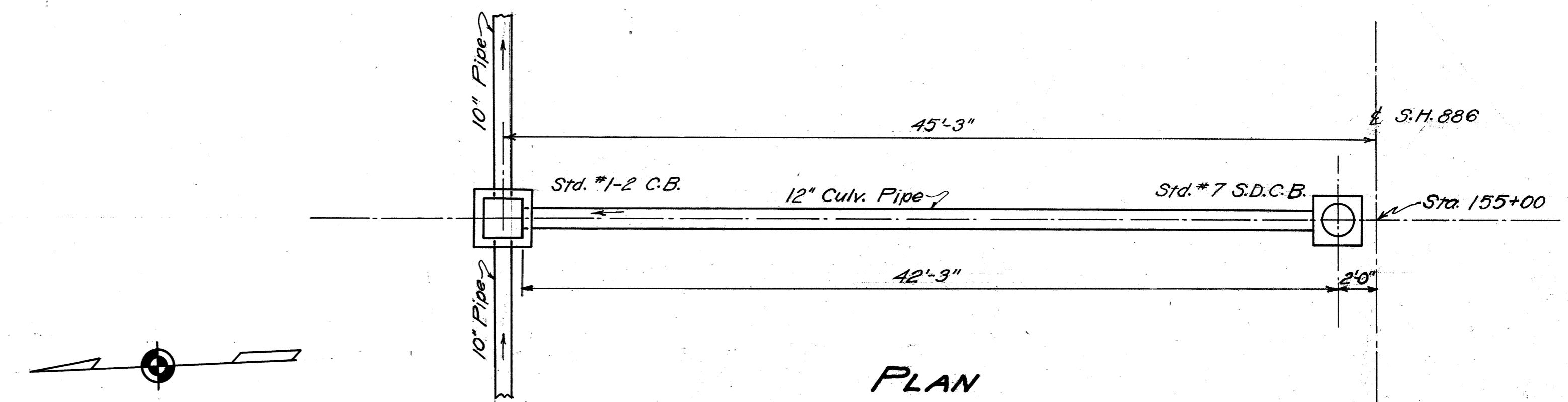
Type: Pipe Culvert
Size: 12" x 41"
Work Required: Build Std. 12" x 41" Pipe Culvert with Std. Side Road Headwalls on Rt. & Lt.
Std. Dwg. S-27 P.C. 1 & 3.

Note - This Culvert is to be built under directions of the Wheeling & Lake Erie R.R. Engineers.

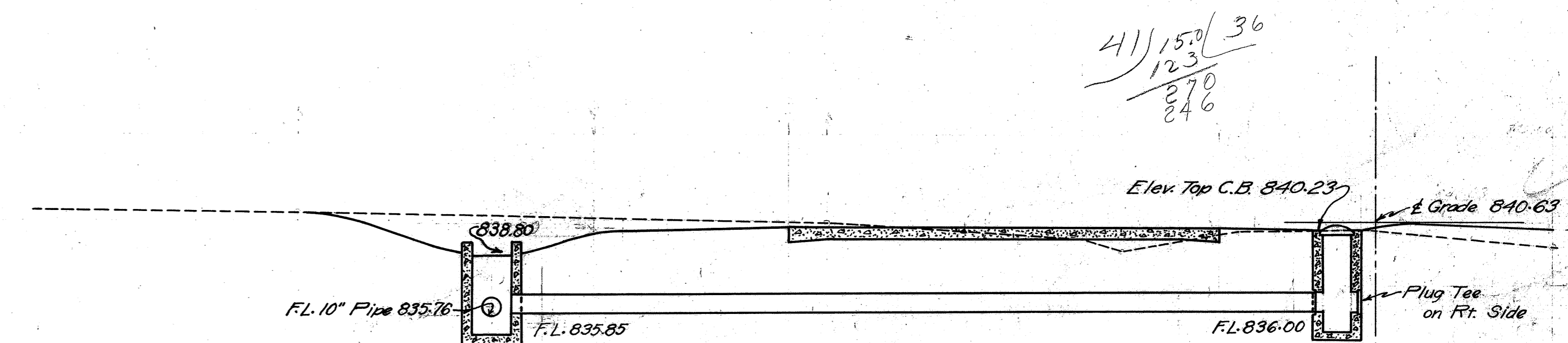
ESTIMATED QUANTITIES

Structure Excavation	20	Cu.Yds.
Channel Excavation	5	Cu.Yds.
16" Extra Heavy Cast Iron Pipe	30	Lin. Ft.
Reinforcing Steel	65	Lbs.
Concrete 1:1 1/2 Mix	2.7	Cu.Yds.

STRUCTURE NO. 14
STA. 158+48.09



PLAN



SECTION

CULVERT DATA

TYPE - Pipe Culvert
SIZE - 12" x 41"
WORK REQUIRED - Build Std. 12" Pipe Culvert with Std. No. 7 Side Ditch Catch Basin on Rt. and Std. No. 1-2 Catch Basin on Lt. as shown. Plug Tee on Rt. side of #7 C.B.
Std. Drgs. No. S-27 P.C. 3, I-8 C.B. 1-2 & 2-2, & I-8 C.B. No. 7.

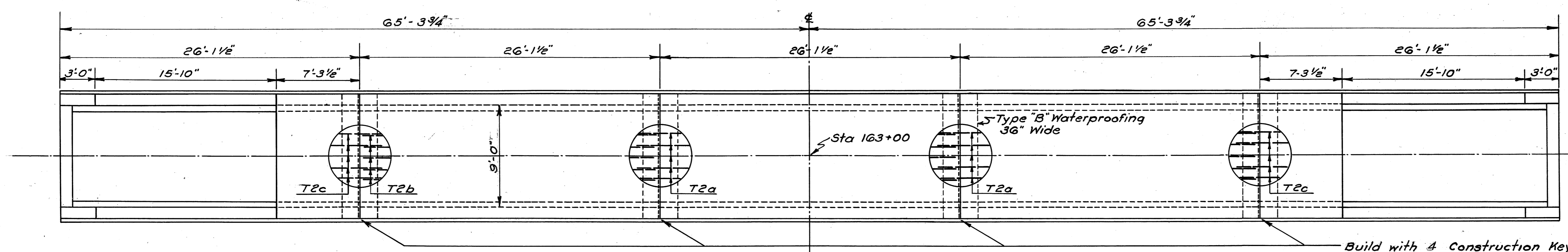
ESTIMATED QUANTITIES

Excavation for Structures	14	Cu. Yd.
12" Pipe for Culvert	41	Lin. Ft.
Std. No. 1-2 Catch Basin	1	Unit
Std. No. 7 Side Ditch Catch Basin	1	Unit

41 | 150 | 36
123
270
246

STRUCTURE No. 13
STA. 155+00

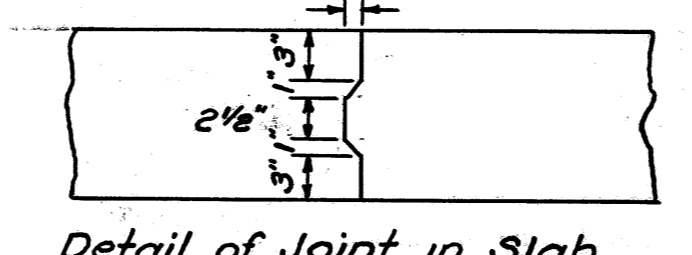
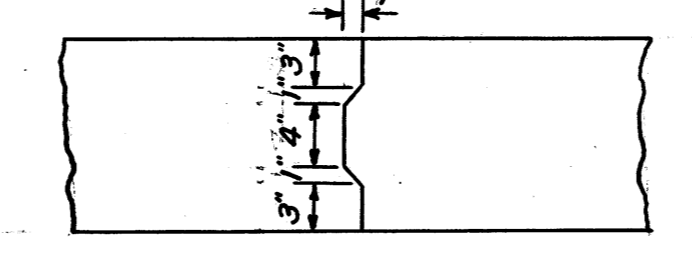
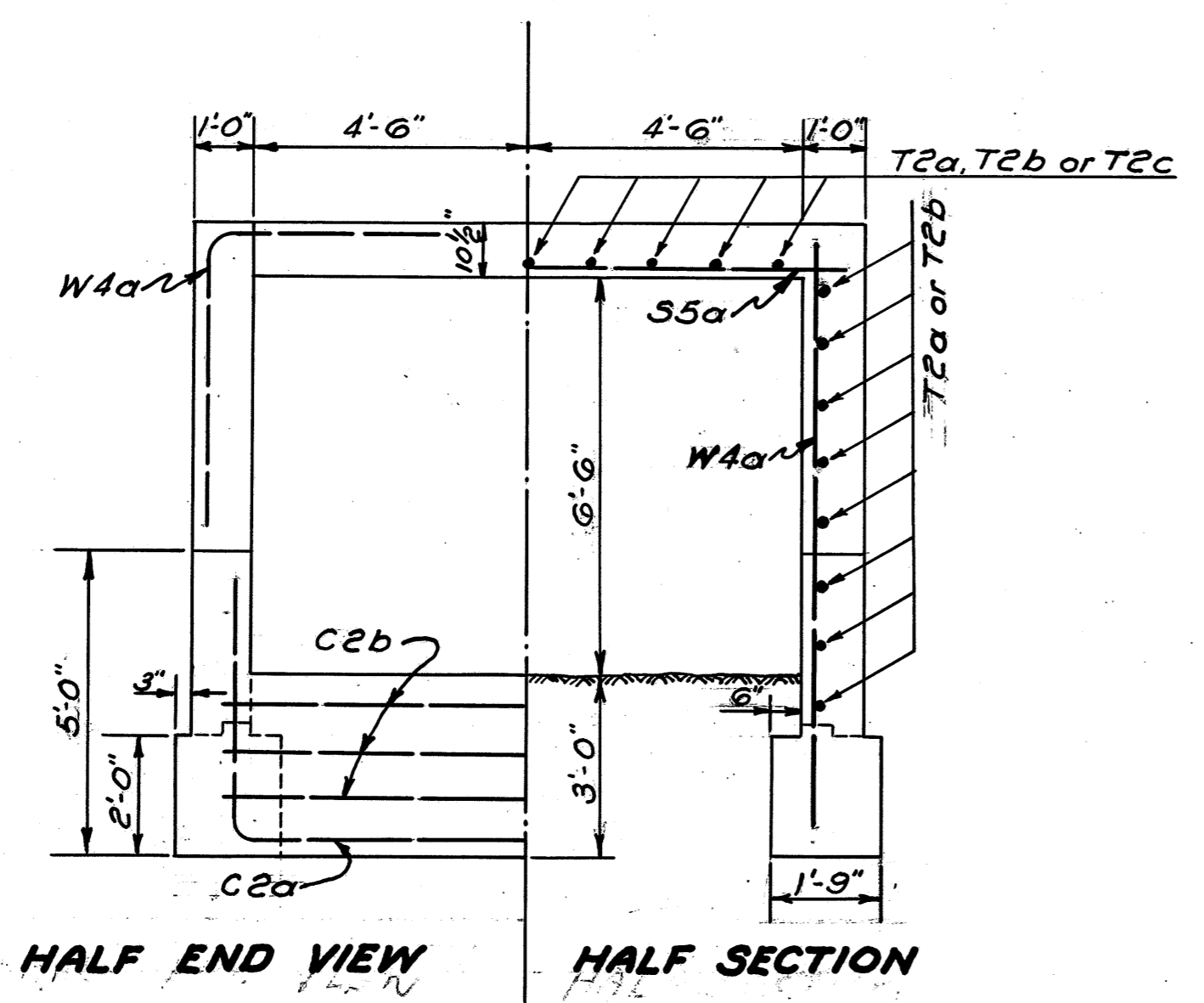
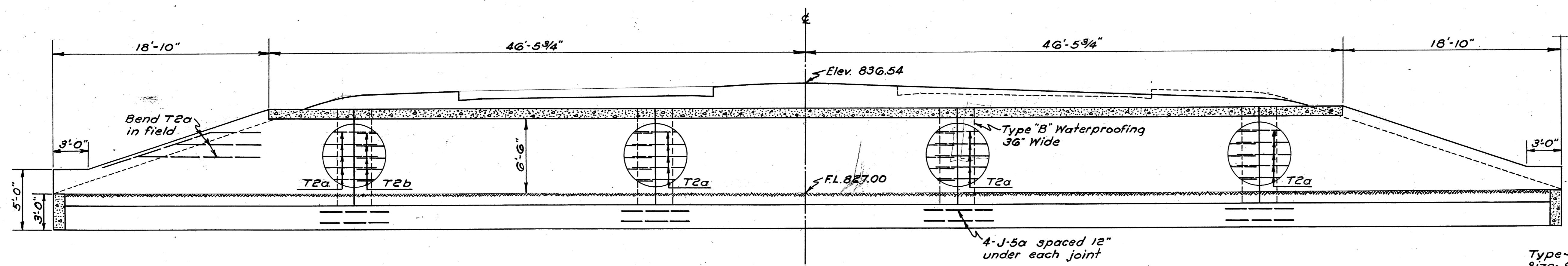
LORAIN COUNTY
 S.H. 886 SEC. A
 S.H. 290 SEC. S PT.



Build with 4 Construction Keyed Joints
 & place lap of T bars next to joints as shown. Cover joints with Type "B" Waterproofing



92 11/2



CULVERT DATA

Type - Slab Top Culvert
 Size - 9'-0" x 6'-6" x 130'-7 1/2"
 Work Required - Remove Existing 14' x 4' x 20'-0" Stone Slab Culvert. Build Std. 9'-0" x 6'-6" x 130'-7 1/2" Conc. Slab Top Culvert with 4 joints as shown, Clean channel Rt. & Lt.

Std. Drawing S.T.C.-34

REINFORCING STEEL					
Mark	Size	No	Length	Spacing	Weight
T-2a	1/2" φ	82	28'-0"	1'-0"	1554
T-2b	1/2" φ	25	25'-6"	1'-0"	426
T-2c	1/2" φ	18	9'-0"	1'-0"	108
S-5a	3/4" φ	249	10'-6"	4 1/2"	3930
W-4a	5/8" φ	256	9'-6"	1'-0"	2539
C-2a	1/2" φ	2	18'-0"		24
C-2b	1/2" φ	6	10'-0"	1'-0"	40
J-5a	3/4" φ	32	6'-0"	1'-0"	289
Total					8910

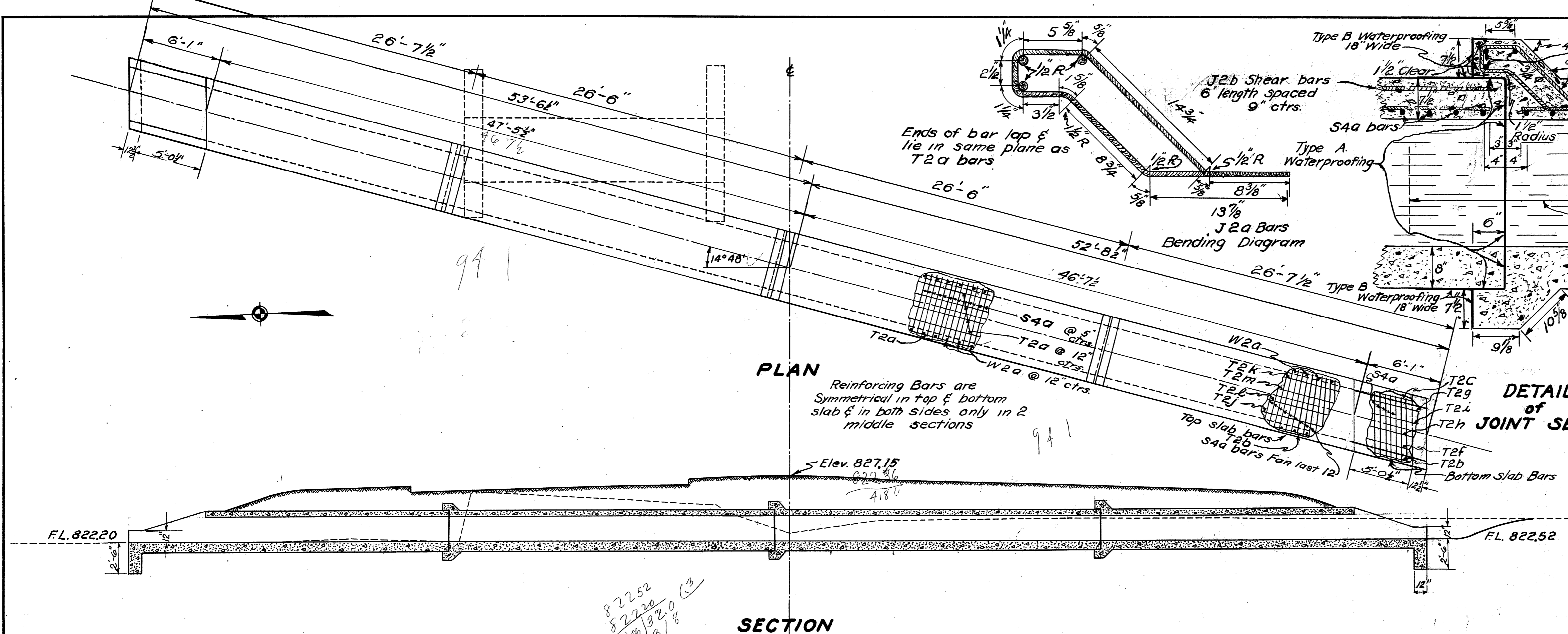
ESTIMATED QUANTITIES

Excavation for Structures	115	Cu. Yds.
Channel Excavation	187	Cu. Yds.
1-5 1/2 Concrete	100.5	Cu. Yds.
1-6 1/2 Concrete	34.7	Cu. Yds.
Reinforcing Steel	8910	Lbs.
Type "B" Waterproofing	37	Sq. Yds.
Removal of Existing Structure	Lump	

STRUCTURE NO. 15
STATION 163+00

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.

120
138



PLAN

Reinforcing Bars are Symmetrical in top & bottom slab & in both sides only in 2 middle sections

SECTION

DETAIL OF JOINT SECTION

HALF END VIEW HALF SECTION

Culvert Data
Type - Small Box Culvert
Size - 4'x2' x 106'-3"
Work Required - Remove Exist. 4'x2'x20'-6" Stone Culvert. Build Std. 4'x2' Conc. Box Culvert.
14° 48' L.F. Skew. Clean Channel on Right.
Std. Drawing No. S.B.C. 34

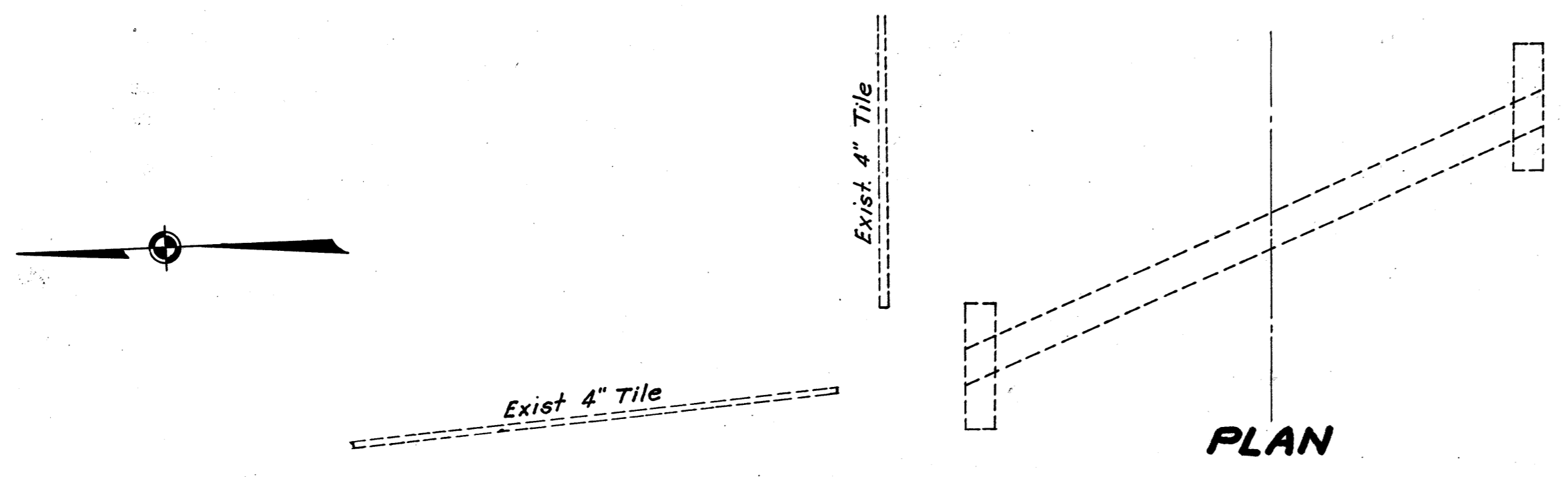
STRUCTURE NO. 17
STATION 218+21.3

Estimated Quantities

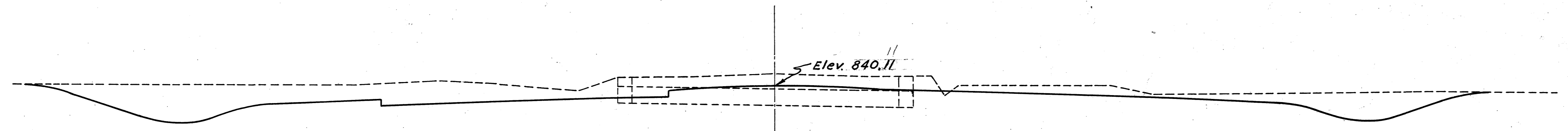
Structural Excavation	76	Cu. Yds.
Channel Excavation	10	Cu. Yds.
1-5/2 Concrete	376	Cu. Yds.
Reinforcing Steel	4084	Lbs.
Removal of Existing Structure	Lump.	
Type B Waterproofing	12	SQ Yds.
Type A Waterproofing	5	SQ Yds.

STRUCTURE STEEL

Mark	NO	Size	Length	Space	Weight
T2k	2	1/2"	19'-9"	8 3/8" shown	26
T2l	2	1/2"	20'-3"	"	27
T2m	2	1/2"	20'-0"	"	27
J2a	42	1/2"	5'-4"	9"	150
J5a	18	3/4"	4'-8"	as shown	126
S4a	480	3/8"	5'-1"	5"	2547
W2a	208	1/2"	3'-0"	12"	417
T2a	24	1/2"	26'-0"	12"	417
T2b	4	1/2"	26'-9"	12"	71
C2a	12	1/2"	3'-3"	12"	26
C2b	4	1/2"	5'-1"	12"	14
T2c	4	1/2"	25'-6"	as shown	68
T2f	2	1/2"	26'-6"	"	35
T2g	2	1/2"	25'-9"	"	34
T2h	2	1/2"	26'-3"	"	37
T2j	2	1/2"	26'-0"	"	35
T2j	2	1/2"	20'-6"	"	27
J2b	42	1/2"	6'-0"	9"	168
TOTAL					4252



PLAN



SECTION

CULVERT DATA
Type - Cast Iron Pipe
Size 16" x 24"
Work Required - Remove & Store 16" x 24" C.I.P. Remove Exist. Stone Headwalls.

ESTIMATED QUANTITIES

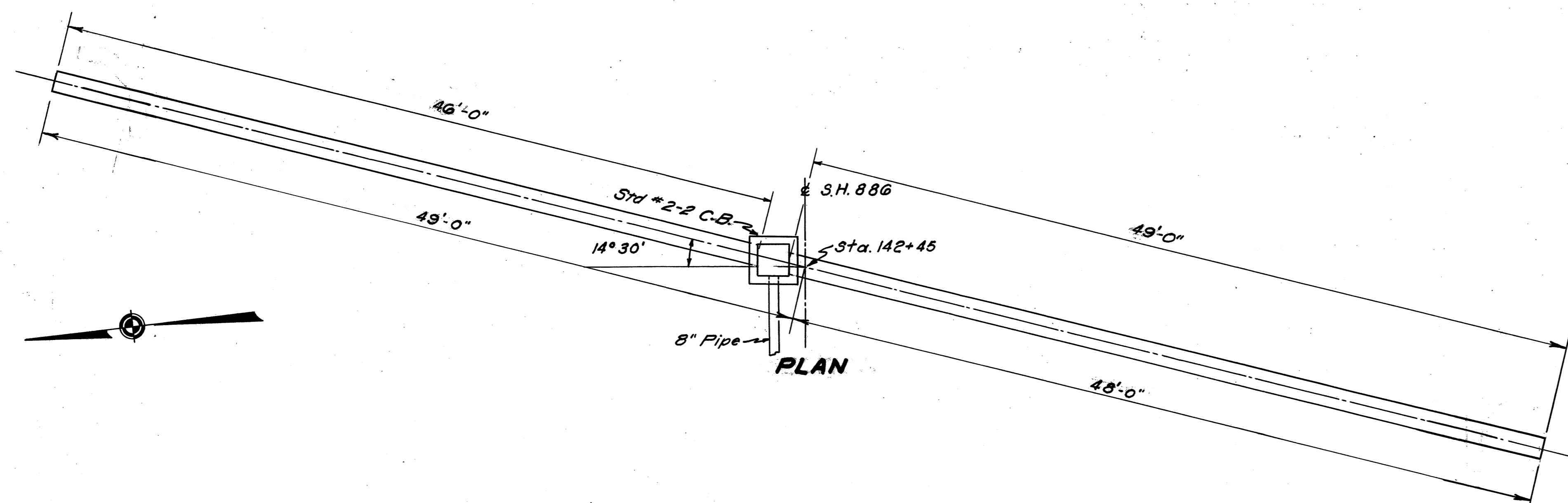
Remove & Store 16" C.I.P.	24	Lin. Ft.
Removal of Portions of Exist. Structure	2	Cu. Yds.

STRUCTURE NO. 16
STATION 192+02.3

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	293(2)	1938

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138

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S. H. 290 SEC. S PT.

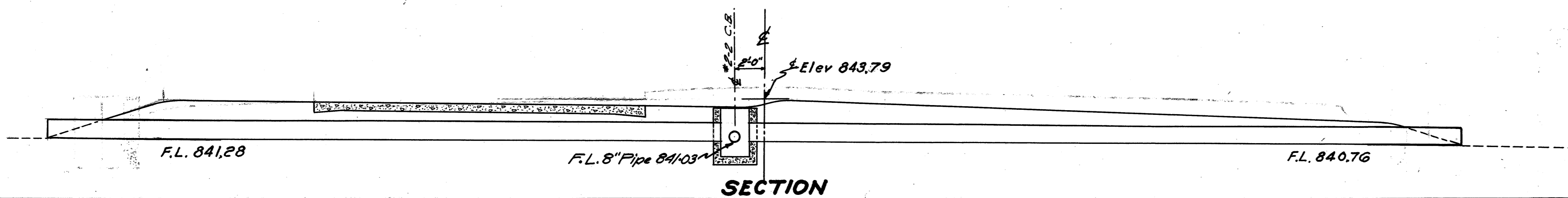


CULVERT DATA

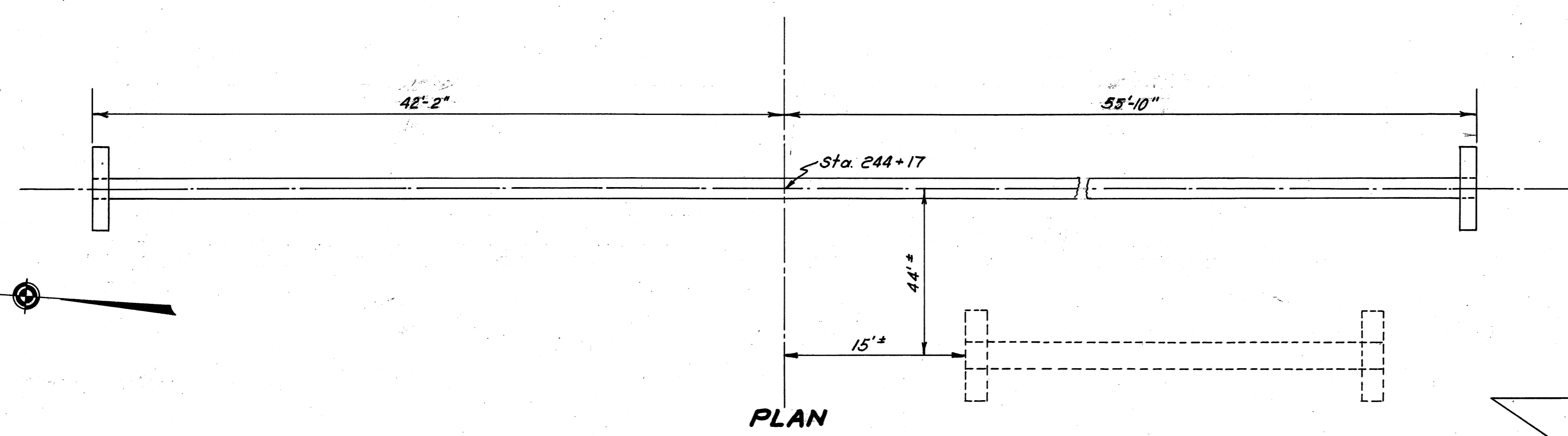
Type - Pipe Culvert
Size - 15" x 97'-0"
Work Required - Build Std. 15" x 97'-0" Pipe Culvert with Std. No 2-2 Catch Basin as shown & 5 Sq. Yds. of Hand Laid Riprap on each end.
Std. Drawing No. S-27 P.C.3

ESTIMATED QUANTITIES

Excavation for Structures	25 Cu. Yds.
Hand Laid Riprap (12" thick)	10 Sq. Yds.
15" Pipe for Culverts	95 Lin. Ft.
Std. No. 2-2 Catch Basin	1 Unit



**STRUCTURE NO. 11
STATION 142+45**

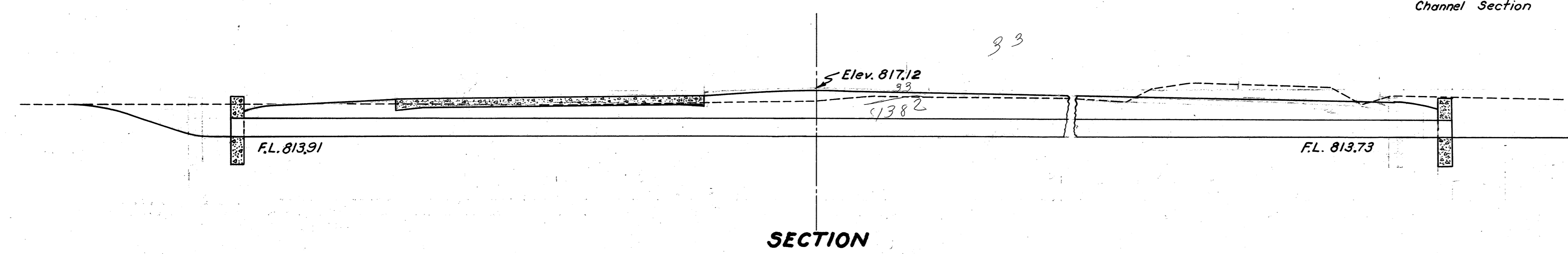


CULVERT DATA

Type - Pipe Culvert
Size - 15" x 98'-0"
Work Required - Remove & Store 18" x 25' Cast Iron Pipe from Culvert at Station 243+73, also Remove Exist. Stone Headwalls. Build Std. 15" x 98'-0" Pipe Culvert with Std. Headwalls Rt. & Lt. Clean Inlet & Excavate Channel 400' Rt. for Outlet.
Std. Drawing No. S-27 P.C.1 & S-27 P.C.3

ESTIMATED QUANTITIES

Excavation for Structures	29 Cu. Yds.
Channel Excavation	50 Cu. Yds.
15" Pipe for Culverts	98 Lin. Ft.
1-5% Concrete	1.7 Cu. Yds.
Reinforcing Steel	47 Lbs.
Remove & Store 18" C.I.P.	25 Lin. Ft.
Removal of Portions of Exist. Structure	2 Cu. Yds.



Handwritten calculations:
98 | 18.00 | 180 | 1.9
196 | 98 | 81
10 | 920 | 81
81

**STRUCTURE NO. 18
STATION 244+17**

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	293(2)	1938

122
138

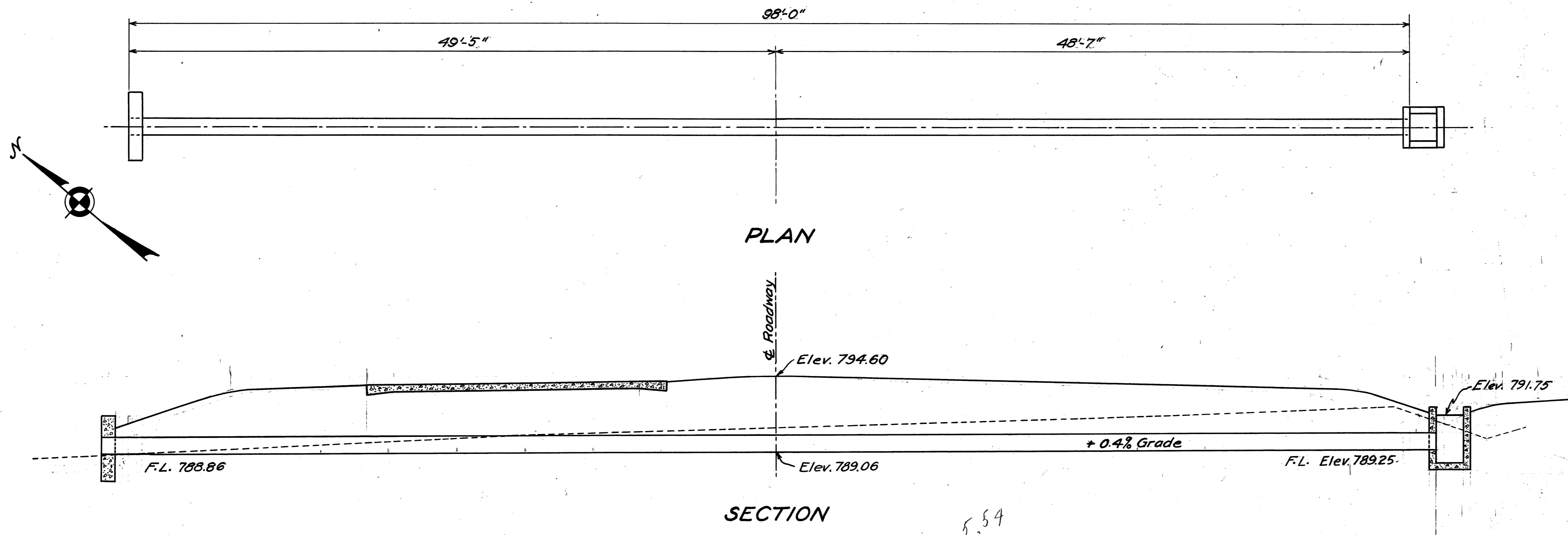
LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.

CULVERT DATA

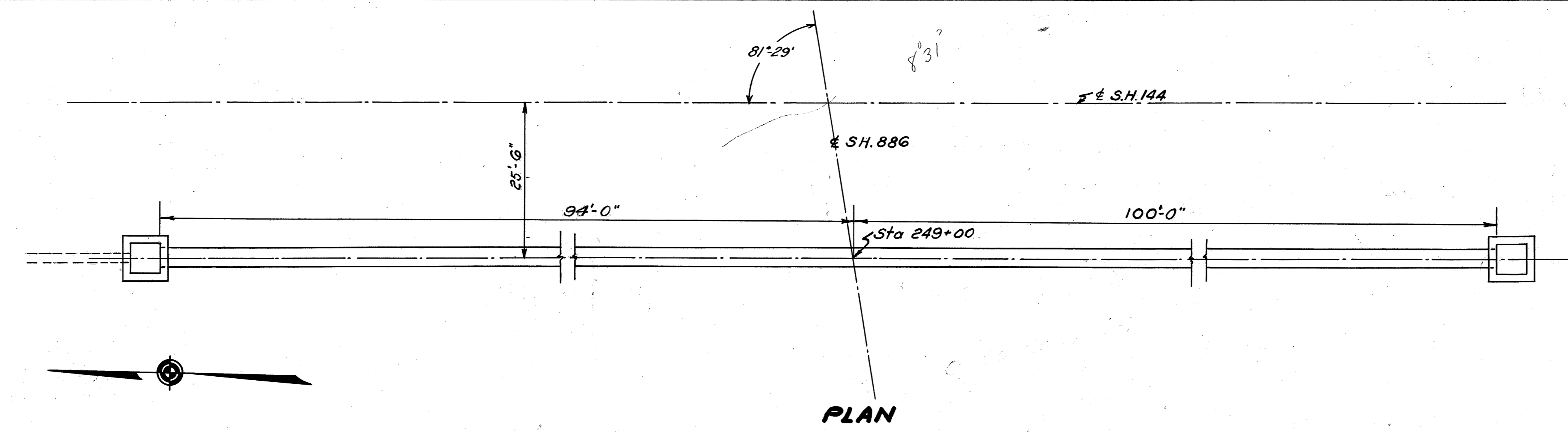
Type: Pipe Culvert
Size: 15" x 98' 0"
Work Required: Build Standard 15" x 98' Pipe Culvert with Standard No. 1-2 Catch Basin on Right and Standard Head Wall on Left. Standard Drawings S-27 P.C. 1 and I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation	35 Cu. Yds.
15" Pipe for Culvert	98 Lin. Ft.
Concrete 1-5 1/2	0.85 Cu. Yds.
Reinforcing Steel	24 Lbs.
Standard No. 1-2 Catch Basin	1 Unit



STRUCTURE NO. 22
STATION 323+75

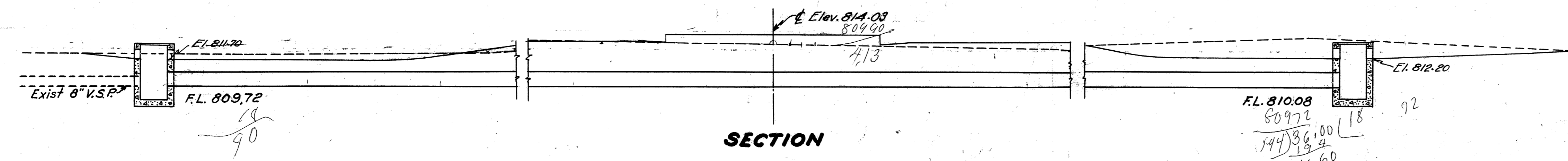


CULVERT DATA

Type: Pipe Culvert
Size: 15" x 194'
Work Required: Remove & Store 150 Lin. Ft. of 8" V.S.P. Remove entirely, Exist. C.B. on Rt. Build Std. 15" pipe Culvert with Std. No. 2-2 C.B. on Rt. & Lt. Std. Drawings No. S-27 P.C. 3 & I-8 C.B. 1-2 & 2-2

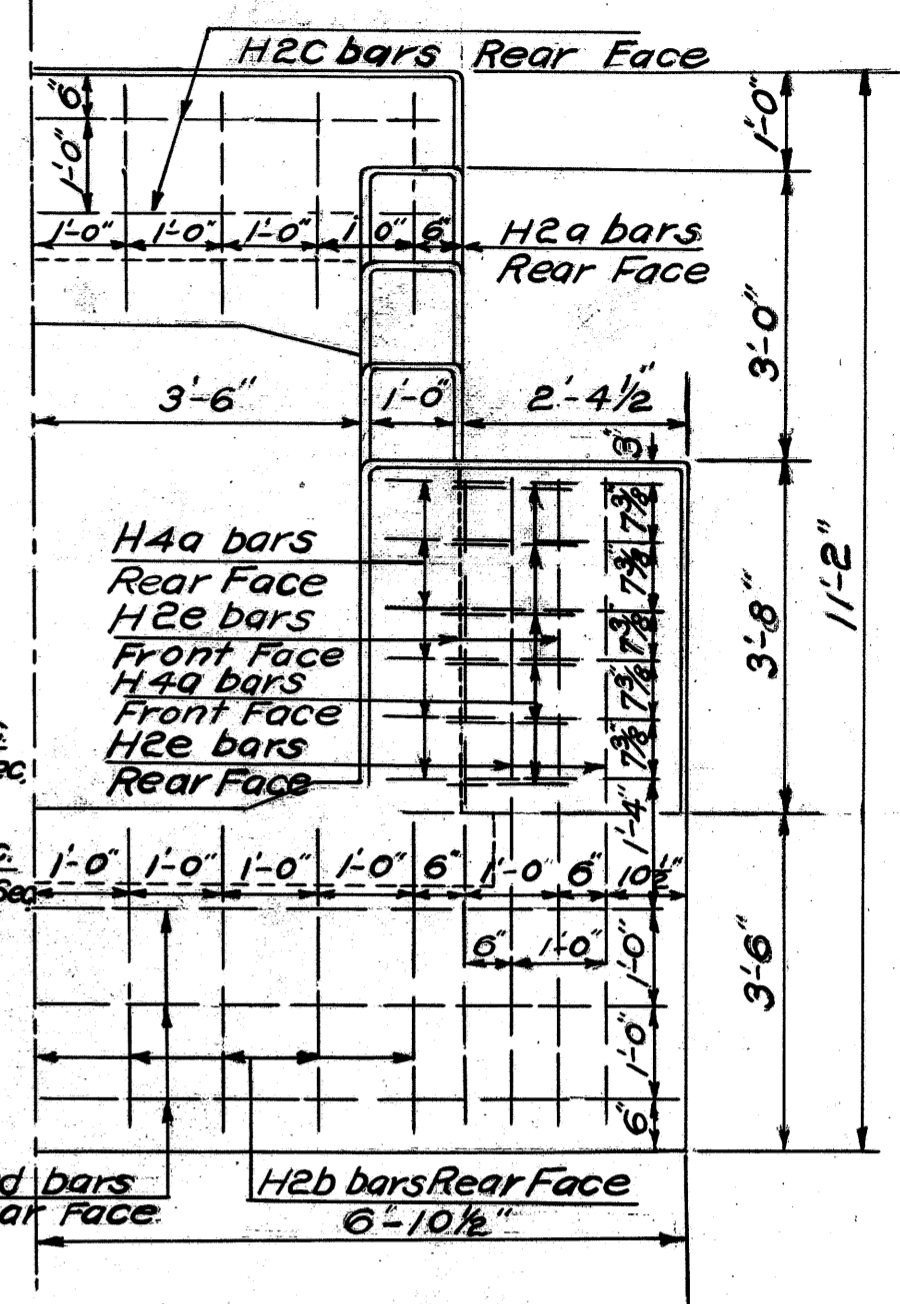
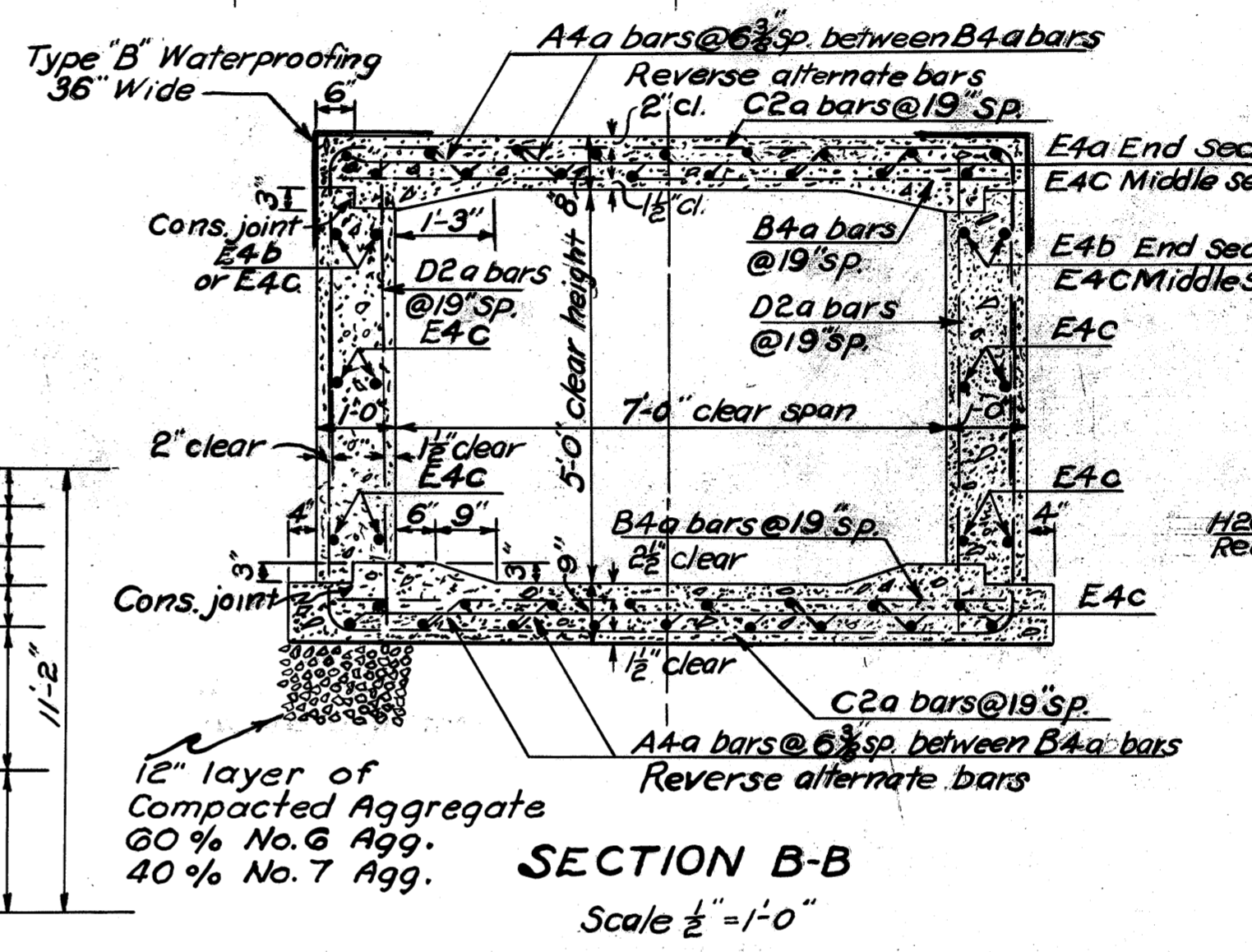
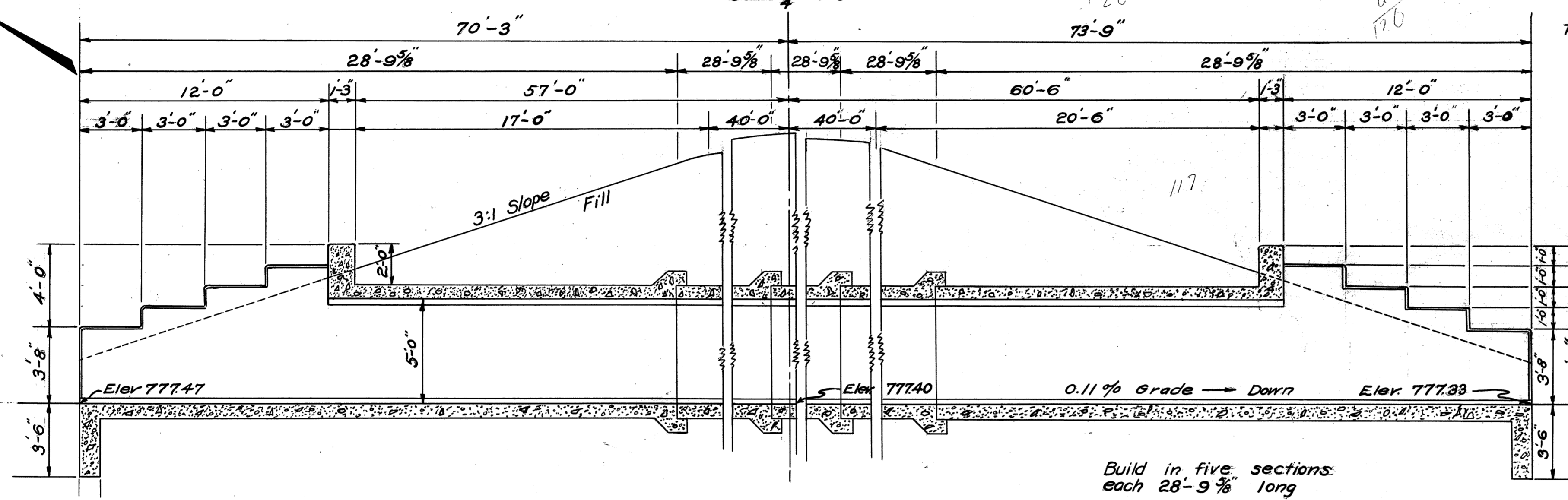
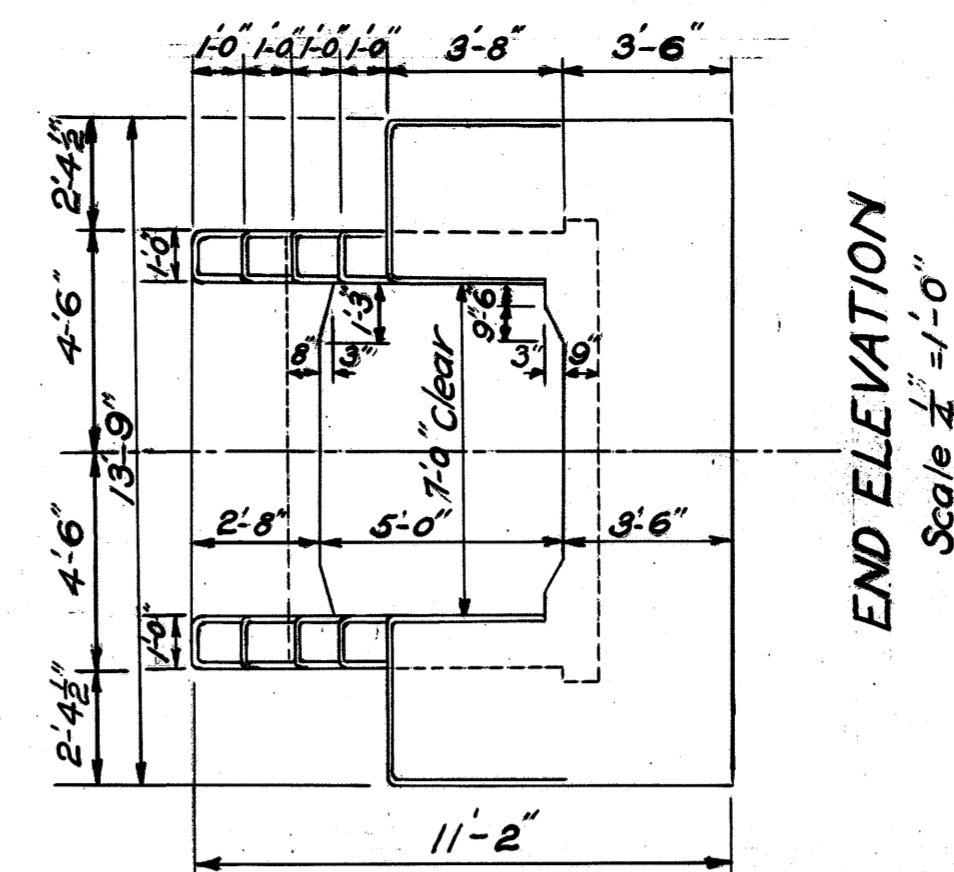
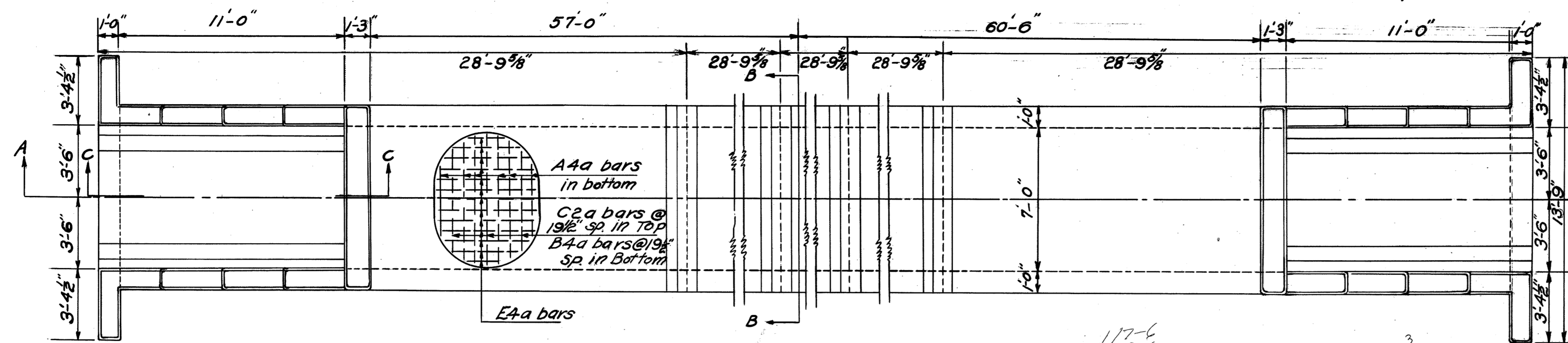
ESTIMATED QUANTITIES

Excavation for Struct.	57 Cu. Yds.
15" Pipe for Culv.	194 Lin. Ft.
Std. No. 2-2 C.B.	1 Unit
Std. No. 2-2 C.B. Less Casting	1 Unit
8" V.S.P. Removed & Stored	150 Lin. Ft.
Removal of Portions of Exist. Struct.	1 Cu. Yd.



STRUCTURE NO. 19
STA. 249+00

LORAIN COUNTY
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S.H. 290 SEC. S PT.



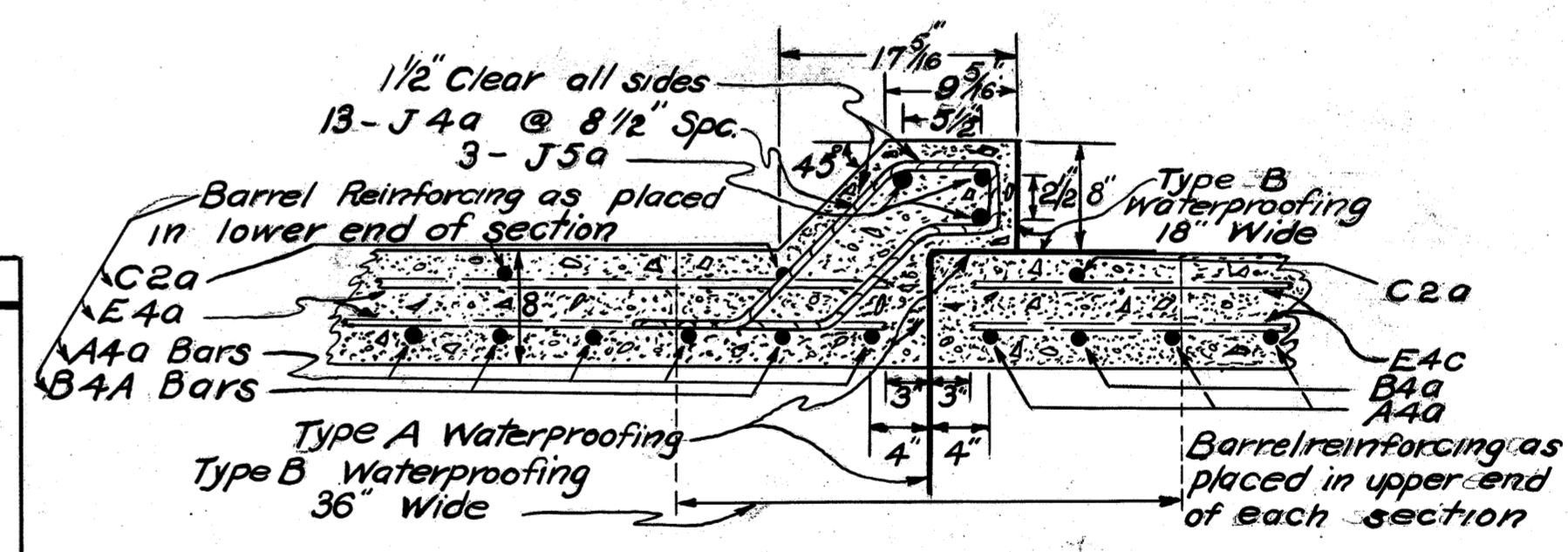
SECTION A-A
Scale 1/4" = 1'-0"

SECTION B-B
Scale 1/2" = 1'-0"

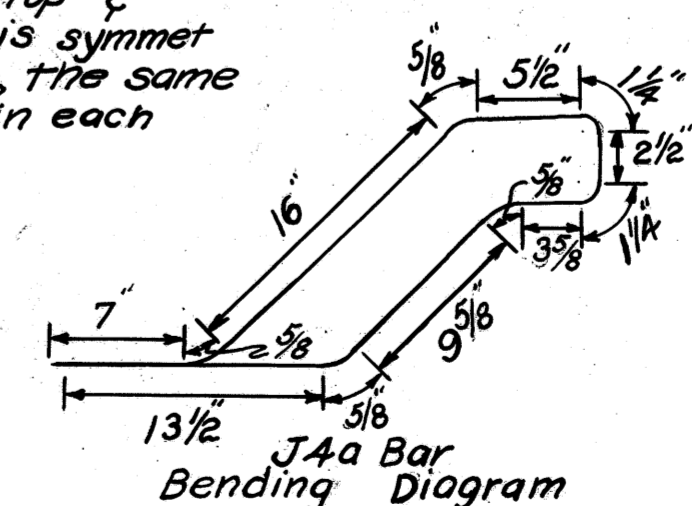
HALF END VIEW
SHOWING STEEL
Scale 1/2" = 1'-0"

STEEL DETAILS AND QUANTITIES

MARK	SIZE	NO	LENGTH	WEIGHT	SHAPE	BENDING DIAGRAMS
A4a	3/8"	330	17'-0"	5857	BT.	
B4a	3/8"	166	8'-6"	1473	ST.	
C2a	1/2"	164	9'-8"	1041	BT.	
D2a	1/2"	152	6'-0"	609	ST.	
D2b	1/2"	4	7'-0"	19	ST.	
D2c	1/2"	8	6'-0"	32	ST.	
D2d	1/2"	8	5'-0"	27	ST.	
D2e	1/2"	8	4'-0"	21	ST.	
E4a	3/8"	34	16'-4"	578	ST.	
E4b	3/8"	8	25'-4"	211	ST.	
E4c	3/8"	188	28'-4"	5560	ST.	
G4a	3/8"	16	5'-0"	83	ST.	
G4b	3/8"	16	4'-0"	67	ST.	
G4c	3/8"	16	3'-0"	50	ST.	
H2a	1/2"	18	3'-9"	45	BT.	
H2b	1/2"	18	4'-3"	51	BT.	
H2c	1/2"	4	8'-6"	23	ST.	
H2d	1/2"	6	13'-3"	53	ST.	
H2e	1/2"	16	6'-9"	72	ST.	
H4a	3/8"	48	4'-3"	213	BT.	
J4a	5/8"	104	5'-4"	578	BT.	
J5a	3/4"	24	8'-6"	307	ST.	
REPLACEMENT STEEL						
R4	3/8"	2	4'-6"	9		
R2	1/2"	2	4'-0"	5		
R5	3/4"	2	5'-0"	15		
				TOTAL	16999	



Note - Joint at top & bottom of barrel is symmetrical for each slab, the same reinforcing is used in each



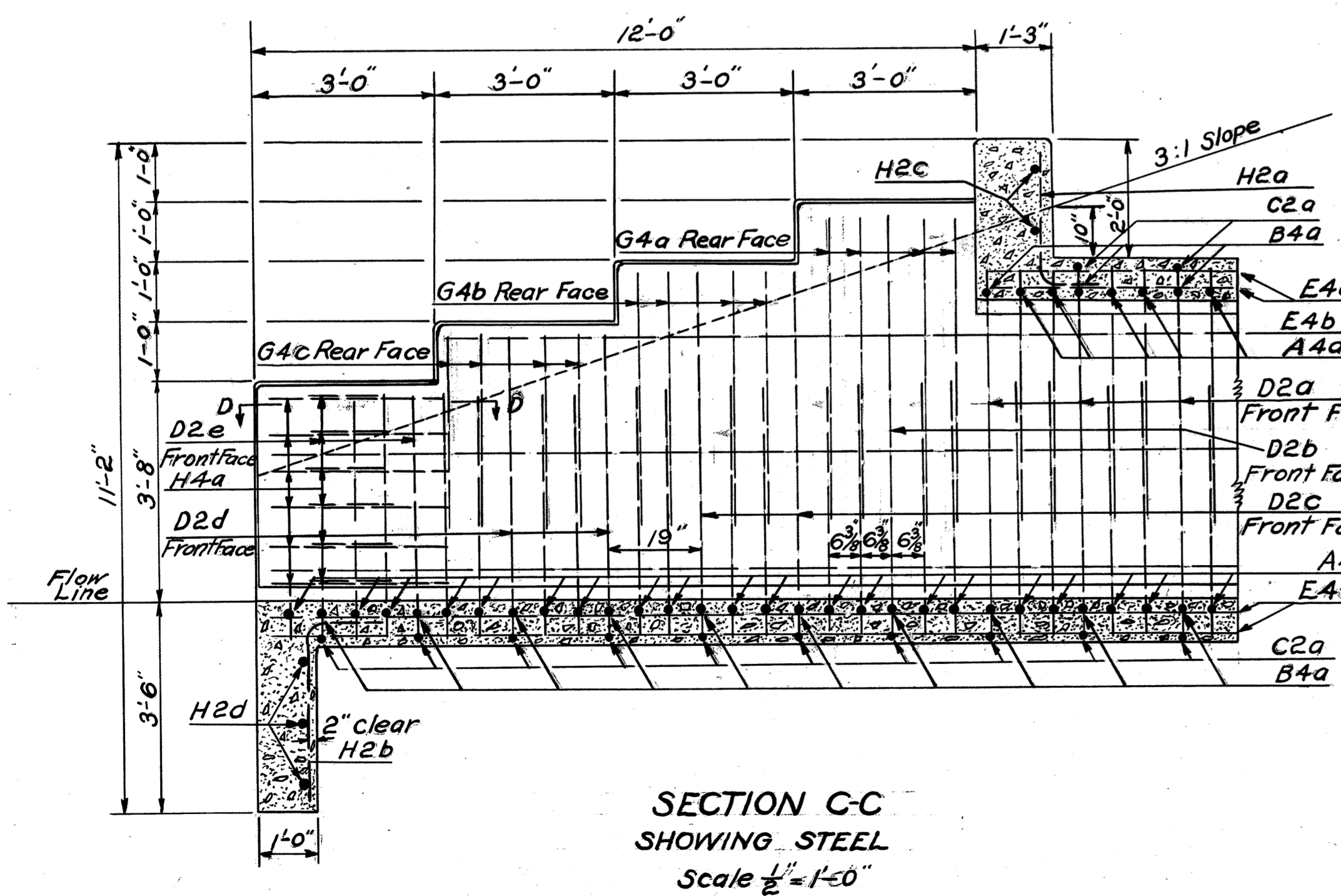
CULVERT DATA
TYPE STANDARD CONCRETE BOX CULVERT
SIZE 7'-0" x 5'-0" x 14'-0"
STANDARD DRAWING L.B.C.-33
WORK REQUIRED: BUILD STD. 7'x5'x14'
CONCRETE BOX CULVERT EXCAVATE
CHANNEL 8' RT. & 322' LT.

ESTIMATED QUANTITIES

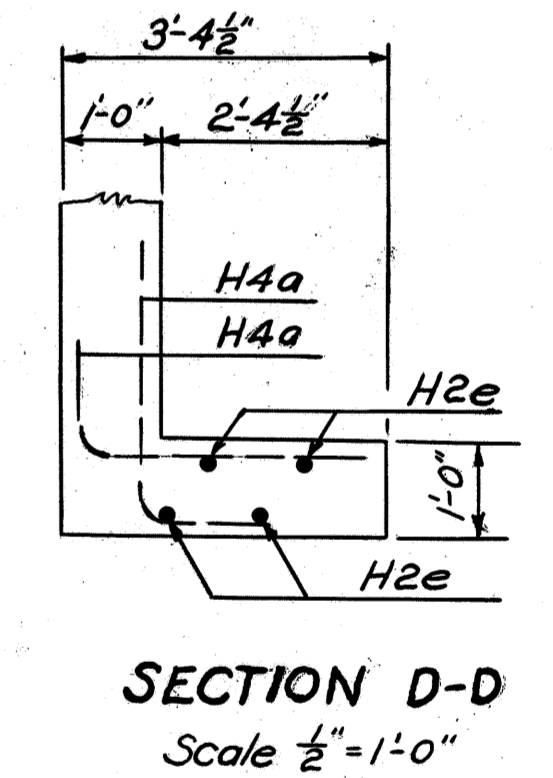
EXCAVATION FOR STRUCTURE	96 CU. YDS.
1:5 1/2 MIX CONCRETE	132.5 CU. YDS.
REINFORCING STEEL	16,999 LBS.
AGGREGATE (POROUS BACKFILL)	50 CU. YDS.
CHANNEL EXCAVATION	624 CU. YDS.
TYPE "A" WATERPROOFING	15 SQ. YDS.
TYPE "B" WATERPROOFING	127 SQ. YDS.

Note - Old channel is to be filled & compacted to same density as required for Roadway Embankment.

STRUCTURE NO 21
STATION 295+00



SECTION C-C
SHOWING STEEL
Scale 1/2" = 1'-0"

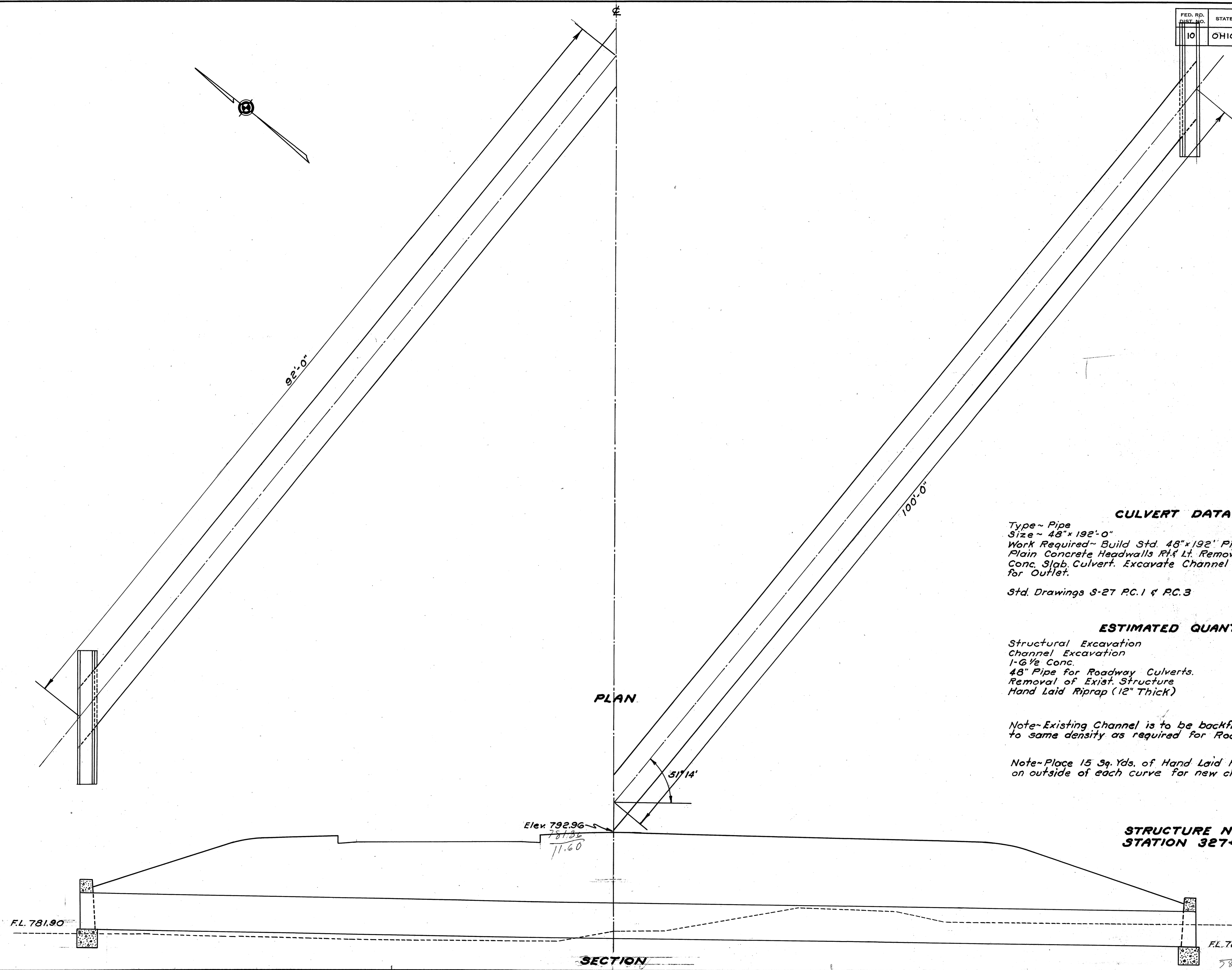


SECTION D-D
Scale 1/2" = 1'-0"

Note All exposed edges to be chamfered 3/4"

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	293(2)	1938

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CULVERT DATA

Type ~ Pipe
 Size ~ 48" x 192'-0"
 Work Required ~ Build Std. 48" x 192" Pipe Culvert with Std. Plain Concrete Headwalls Rt. & Lt. Remove Exist. 6'-6" x 23'-6" Conc. Slab Culvert. Excavate Channel on Right as shown for Outlet.
 Std. Drawings S-27 P.C. 1 & P.C. 3

ESTIMATED QUANTITIES

Structural Excavation	353 Cu. Yds.
Channel Excavation	391 Cu. Yds.
1-6 1/2 Conc.	12.1 Cu. Yds.
48" Pipe for Roadway Culverts.	192 Lin. Ft.
Removal of Exist. Structure	Lump.
Hand Laid Riprap (12" Thick)	30 Sq. Yds.

Note - Existing Channel is to be backfilled and compacted to same density as required for Roadway Embankment.

Note - Place 15 Sq. Yds. of Hand Laid Riprap (12" thick) on outside of each curve for new channel.

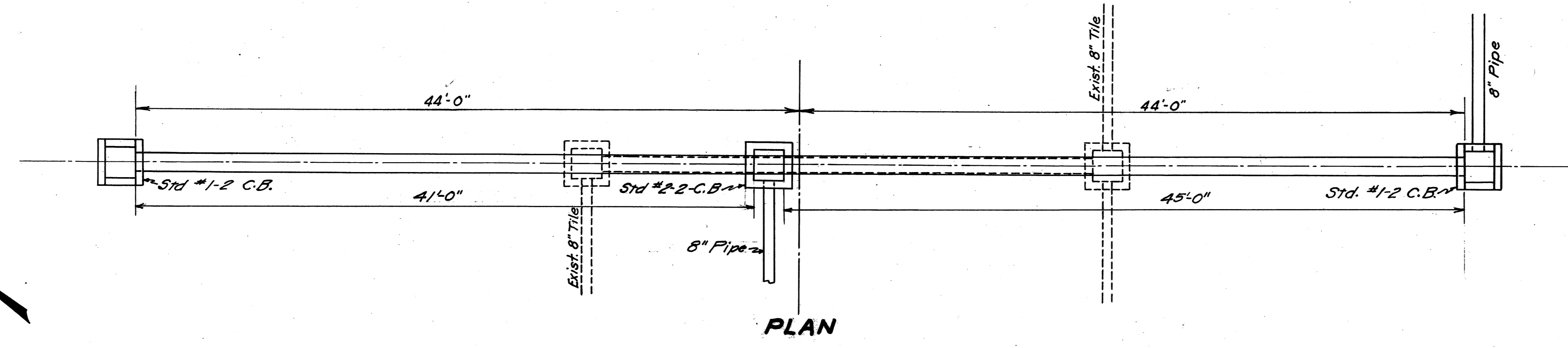
**STRUCTURE NO. 23
 STATION 327+16.5**

PLAN

SECTION

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">125</div> <div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">138</div>
10	OHIO	293(2)	1938	

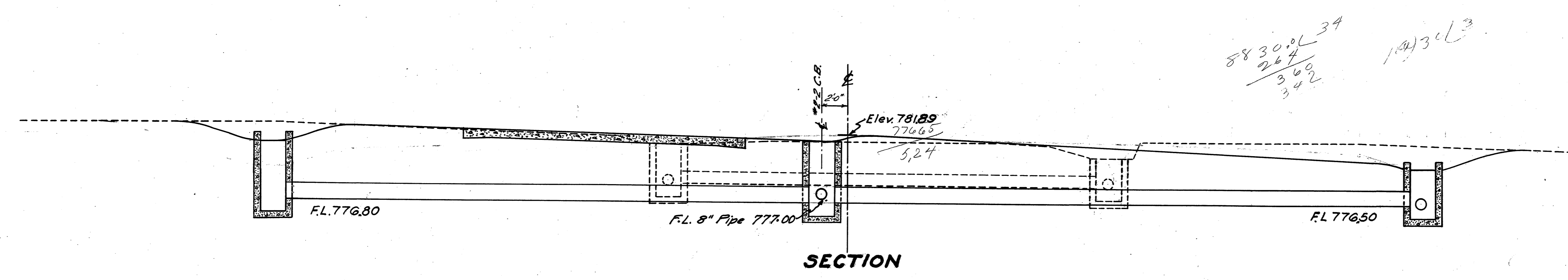
LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.



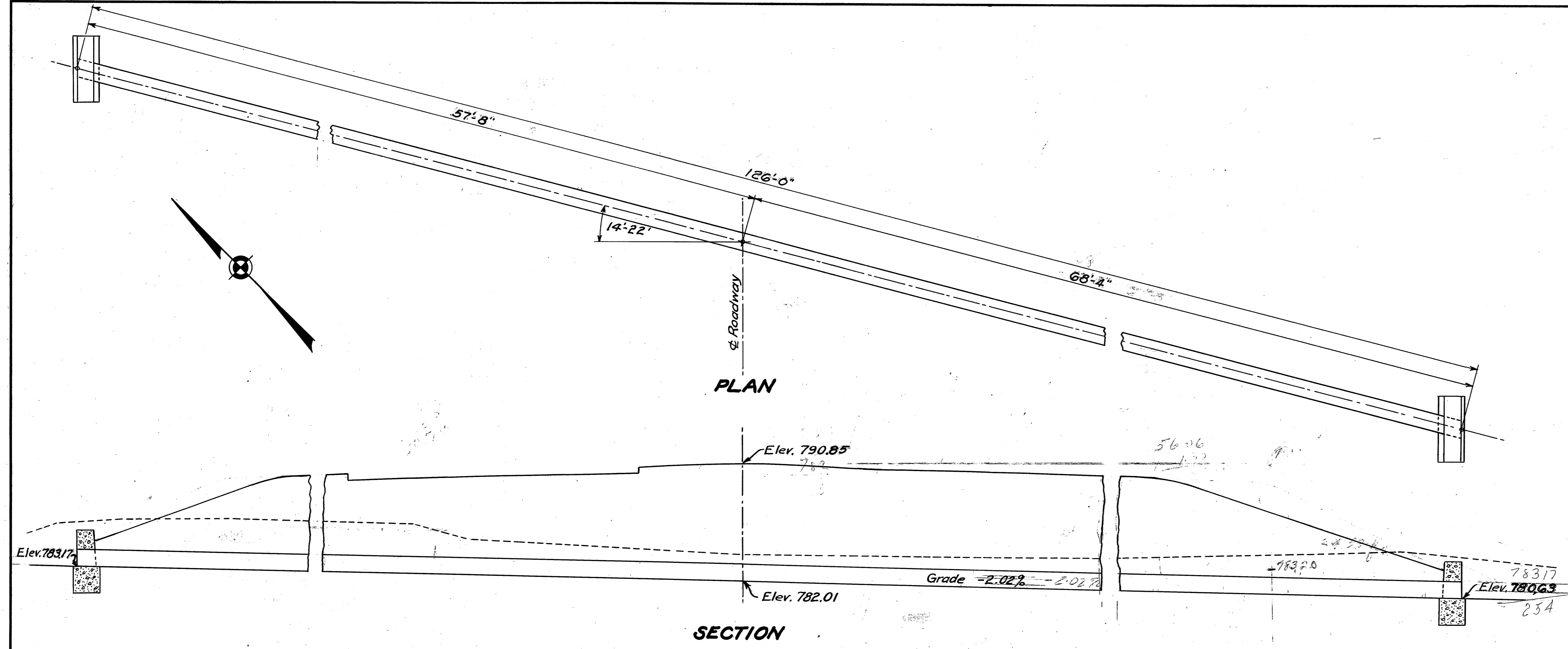
CULVERT DATA
 Type - Pipe Culvert
 Size 15" x 88'-0"
 Work Required - Remove & Store 12" x 32' Conc. Pipe from Exist. Structure, also Remove entirely Exist. Catch Basins, Build Std. 15" x 88' Pipe Culvert with Std. No. 1-2 & 2-2 Catch Basins as shown. Connect 8" Pipe to C.B. on Rt. for Outlet.
 Std. Drawings No. S-27 P.C.3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	32 Cu. Yds.
15" Pipe for Culverts	86 Lin. Ft.
Std. No. 1-2 Catch Basins	2 Units
Remove & Store 12" Conc. Pipe	32 Lin. Ft.
Removal of Portions of Exist. Struct.	2 Cu. Yds.
Std. No. 2-2 Catch Basins	1 Unit



STRUCTURE NO. 31
STATION 414+68.19



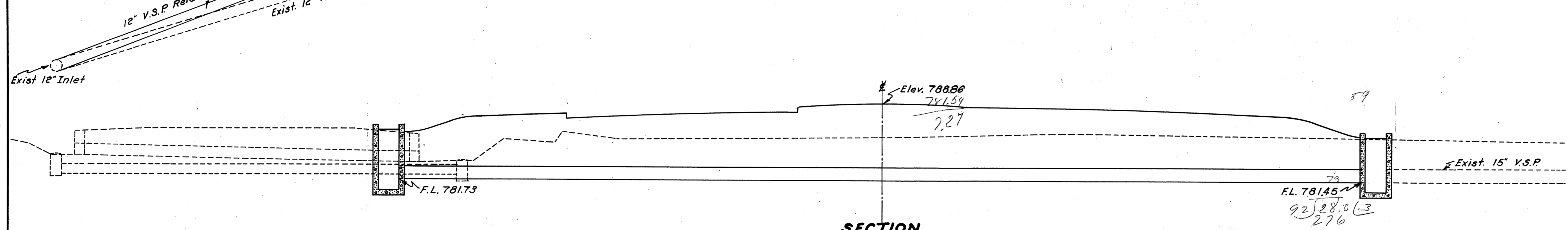
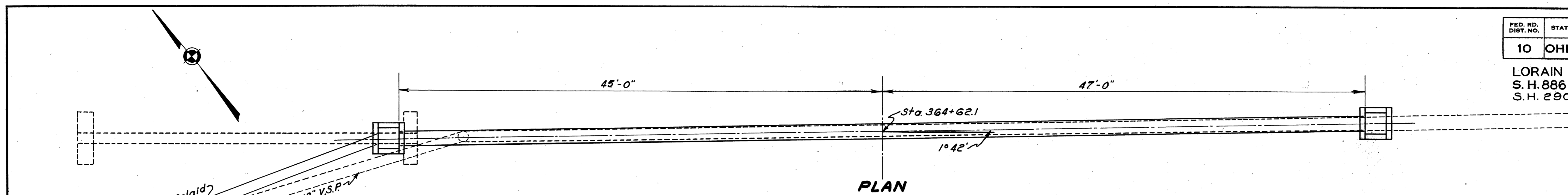
CULVERT DATA
 Type: Pipe Culvert
 Size: 15" x 126"
 Work Required: Remove and store 12" x 32' Concrete Pipe and 15" x 52' Drain Tile from Existing Structure, also Remove Existing Head Walls and Catch Basin. Build Standard 15" x 126' Pipe Culvert with Head Walls.
 Standard Drawing No. S-27 P.C. 1 & 3

ESTIMATED QUANTITIES

Excavation for Structure	55 Cu. Yds.
Excavation for Channel	13 Cu. Yds.
15" Pipe for Culvert	126 Lin. Ft.
Concrete 1:6 1/2	2.7 Cu. Yds.
Remove and Store 12" Conc. Pipe	32 Lin. Ft.
Remove and Store 15" Drain Tile	52 Lin. Ft.
Removal of Portions of Exist. Structure	3 Cu. Yds.

Note - Existing channel is to be backfilled and compacted to same density as required for Roadway Embankment.

STRUCTURE NO. 24
STATION 332+94



CULVERT DATA

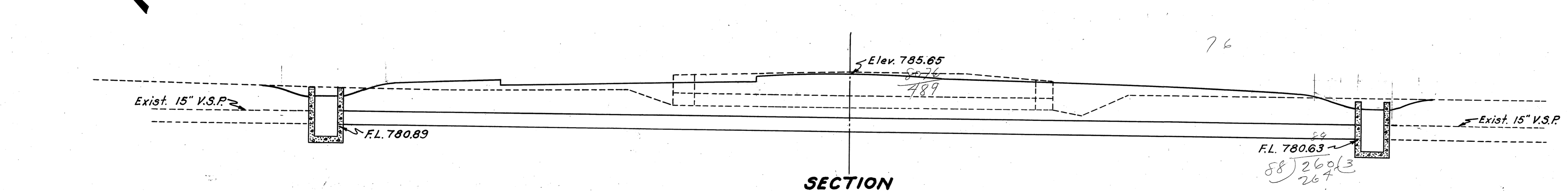
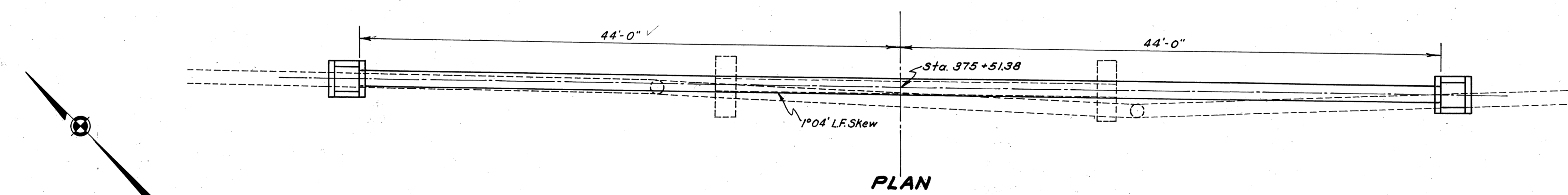
Type - Pipe Culvert
Size - 15" x 92'-0"

Work Required - Remove & Store Exist 12" x 32' Conc. Pipe from Culvert, also 15" x 84' V.S.P. Build Std. 15" x 92' Pipe Culv. 1°42' R.F. Skew, with Std. No. 1-2 C.B. Rt. & Lt. Remove & Relay Exist. 12" x 32' V.S.P. connecting Exist. 12" Inlet to Std. No. 1-2 C.B. on Lt. Connect Exist. 15" V.S.P. to Std. No. 1-2 C.B. on Rt. Std. Drawings S-27 RC.3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	39	Cu. Yds.
Std. No. 1-2 Catch Basins	2	Units
15" Pipe for Culverts	92	Lin. Ft.
Removal of Portions of Exist. Structure	2	Cu. Yds.
12" V.S.P. Removed & Relaid	32	Lin. Ft.
12" Conc. Pipe Removed & Stored	32	Lin. Ft.
15" V.S.P. Removed & Stored	84	Lin. Ft.

**STRUCTURE NO. 26
STATION 364+62.1**



CULVERT DATA

Type - Pipe Culvert
Size - 15" x 88'-0"

Work Required - Remove & Store Exist. 12" x 32' Conc. Pipe from Exist. Culvert, also Exist. 15" x 92' V.S.P. Build Std. 15" x 88' Pipe Culvert, 1°04' L.F. Skew, with Std. No. 1-2 C.B. Rt. & Lt. Connect Exist. 15" V.S.P. to Catch Basins on Rt. & Lt. Std. Drawings S-27 P.C.3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	29	Cu. Yds.
Std. No. 1-2 Catch Basins	2	Units
15" Pipe for Culverts	88	Lin. Ft.
15" V.S.P. Removed & Stored	92	Lin. Ft.
12" Conc. Pipe Removed & Stored	32	Lin. Ft.
Removal of Portions of Exist. Structure	2	Cu. Yds.

**STRUCTURE NO. 27
STATION 375+51.38**

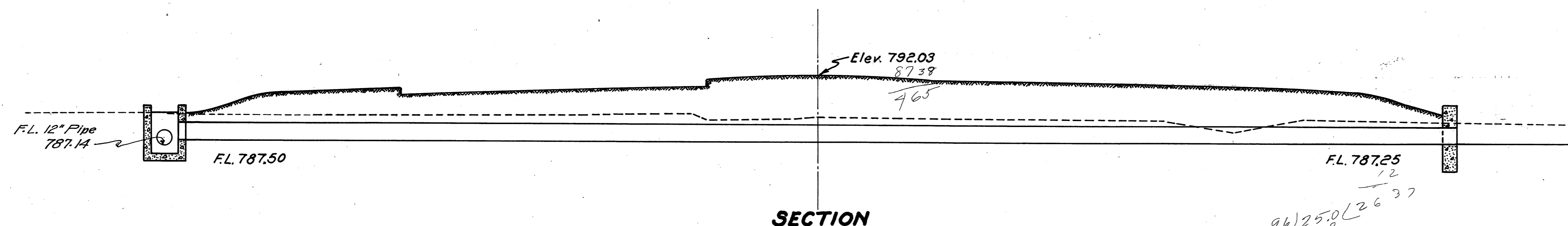
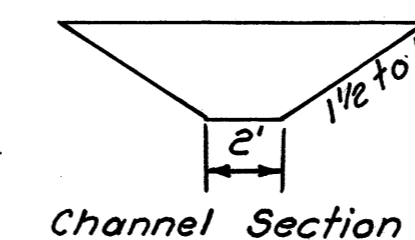
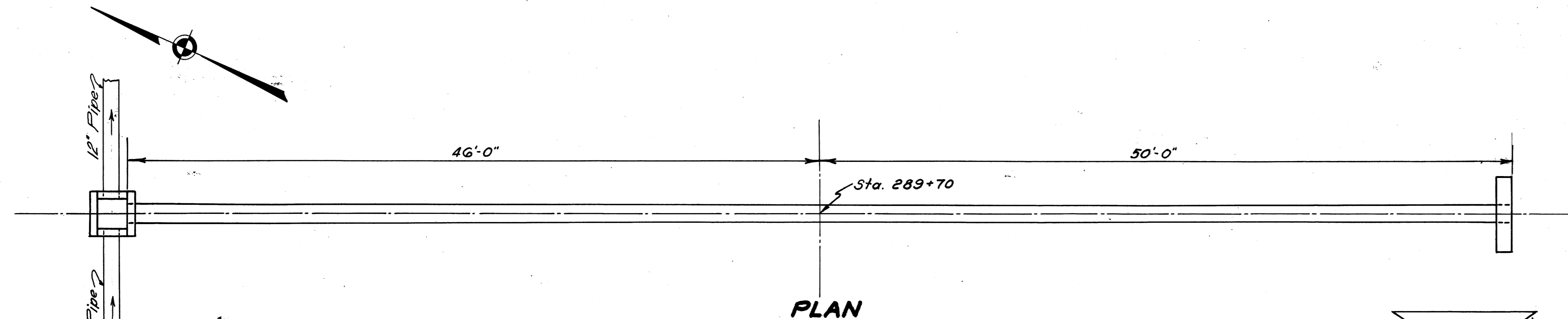
LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.

CULVERT DATA

Type ~ Pipe Culvert
Size ~ 15" x 96" - 0"
Work Required ~ Build Std. 15" x 96" 0" Pipe Culvert with Std. Headwall on Rt. & Std. No. 1-2 Catch Basin on Lt. Excavate Channel 86 ft. on Rt. for Outlet.
Std. Drawings No. S-27 P.C. 1, S-27 P.C. 3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	36 Cu. Yds
15" Pipe for Culverts	96 Lin. Ft.
1-5/8" Concrete	.85 Cu. Yds.
Reinforcing Steel	24 Lbs.
Std. No. 1-2 Catch Basin	1 Unit
Channel Excavation	15 Cu. Yds.



96) 25.00 / .27
1880
620
658
564
56

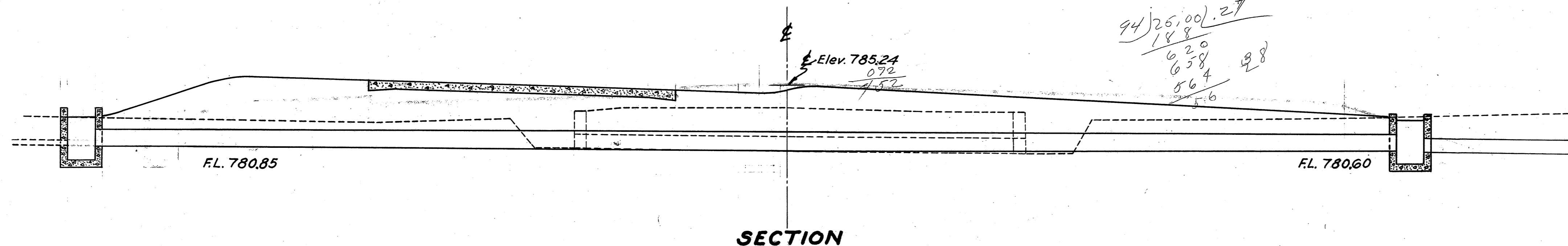
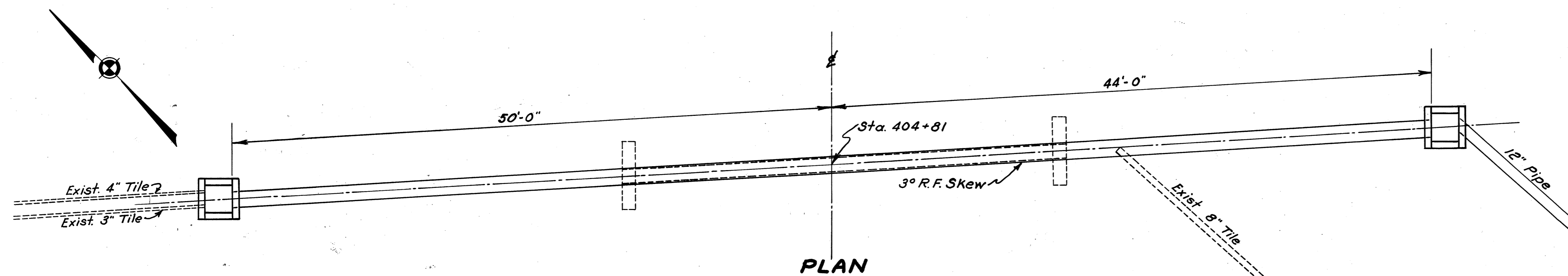
**STRUCTURE NO. 20
STATION 289+70**

CULVERT DATA

Type ~ Pipe Culvert
Size ~ 15" x 94" - 0"
Work Required ~ Remove & Store 12" x 32' Conc. Pipe from Exist. Culvert, also remove Conc. Headwalls. Build Std. 15" x 94" Pipe Culvert with Std. No. 1-2 Catch Basins Rt. & Lt. Connect Exist 3" x 4" Tile to C.B. on Lt. Remove & Store 254' of Exist 8" Tile on Rt. Lay 230 ft. of 12" Pipe on Rt. for outlet.
Std. Drawings No. S-27 P.C. 3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	32 Cu. Yds.
15" Pipe for Culverts	94 Lin. Ft.
12" Pipe for Roadway Drainage	230 Lin. Ft.
Std. No. 1-2 Catch Basin	2 Units
12" Conc. Pipe Removed & Stored	32 Lin. Ft.
8" Tile Removed & Stored	254 Lin. Ft.
Removal of Portions of Exist. Structure	2 Cu. Yds.



94) 25.00 / .27
1880
620
658
564
56

**STRUCTURE NO. 30
STATION 404+81**

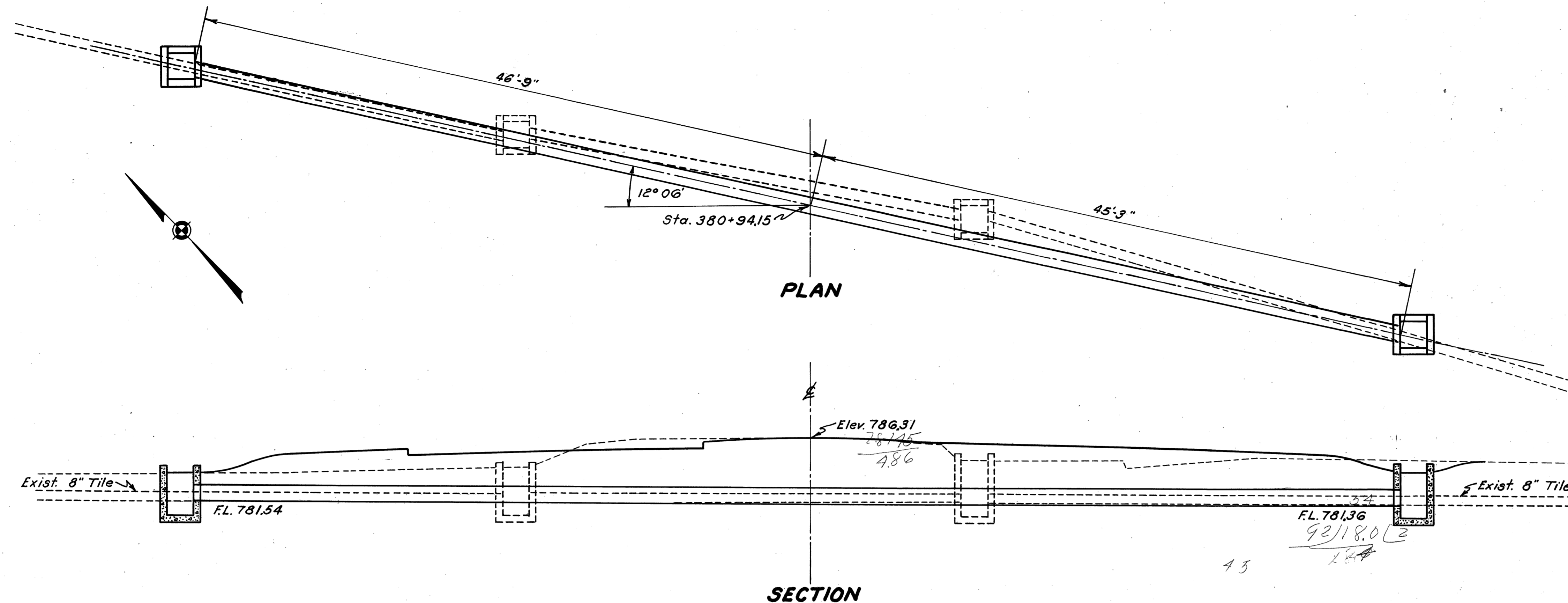
LORAIN COUNTY
S. H. 886 SEC. A
S. H. 290 SEC. S PT.

CULVERT DATA

Type - Pipe Culvert
Size - 15" x 92'-0"
Work Required - Remove entirely Exist. C.B.s Rt. & Lt. also remove & store 8" x 88' of Exist. Tile. Build Std. 15" x 92' Pipe Culv., 12° 06' L.F. Skew, with Std. No. 1-2 Catch Basins Rt. & Lt. Connect Exist. 8" Tile to Catch Basins on Rt. & Lt. Std. Drawings No. S-27 P.C.3 & I-8 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	31 Cu. Yds.
15" Pipe for Culverts	92 Lin. Ft.
Remove & Store 8" Tile	88 Lin. Ft.
Removal of Portions of Exist. Structure	2 Cu. Yds.
Std. No. 1-2 Catch Basins	2 Units



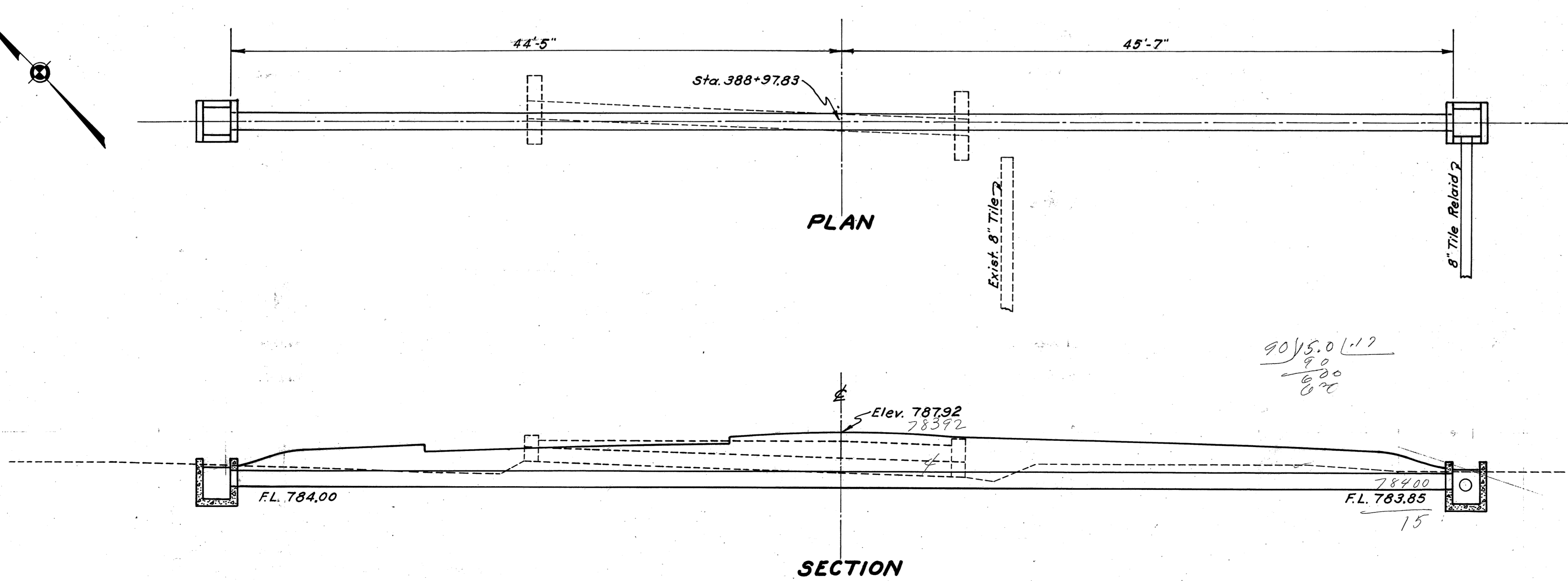
**STRUCTURE NO. 28
STATION 380+94.15**

CULVERT DATA

Type - Pipe Culvert
Size - 15" x 90'-0"
Work Required - Remove & Store 15" x 32' Conc. Pipe from Exist. Culv. Remove Exist. Conc. Headwalls. Build Std. 15" x 90' Pipe Culvert with Std. No. 1-2 Catch Basins Rt. & Lt. Remove Exist. 8" x 230' Tile & Relay for Outlet from Catch Basin on Rt. Std. Drawings S-27 P.C.3 & I-8 C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation for Structures	28 Cu. Yds.
15" Pipe for Culverts	90 Lin. Ft.
Std. No. 1-2 Catch Basins	2 Units
15" Conc. Pipe Removed & Stored	32 Lin. Ft.
Removal of Portions of Exist. Structure	2 Cu. Yds.
8" Tile Removed & Relaid	230 Lin. Ft.



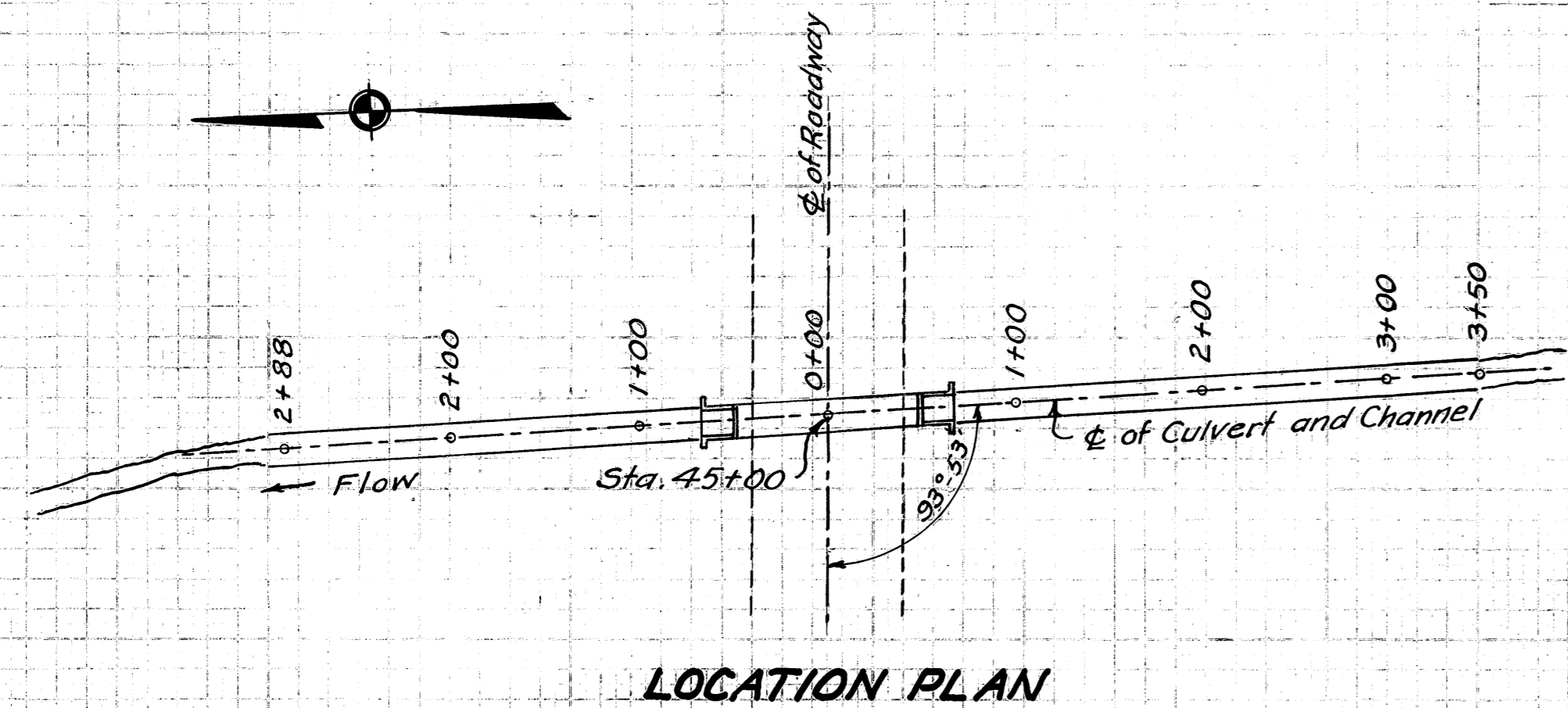
**STRUCTURE NO. 29
STATION 388+97.83**

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	293-(2)	1938

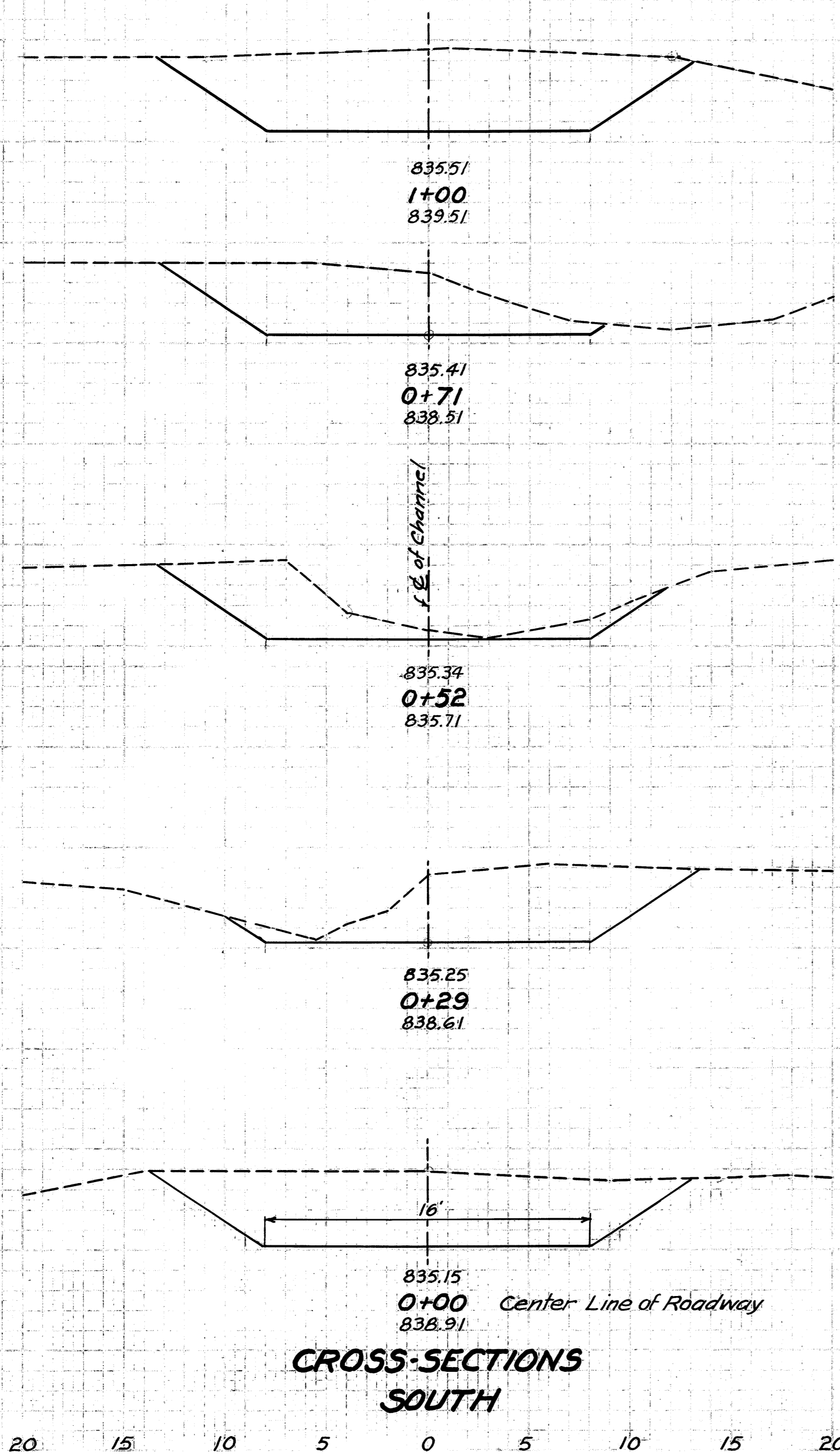
129
138

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.

CHANNEL CROSS-SECTIONS STA. 45+00

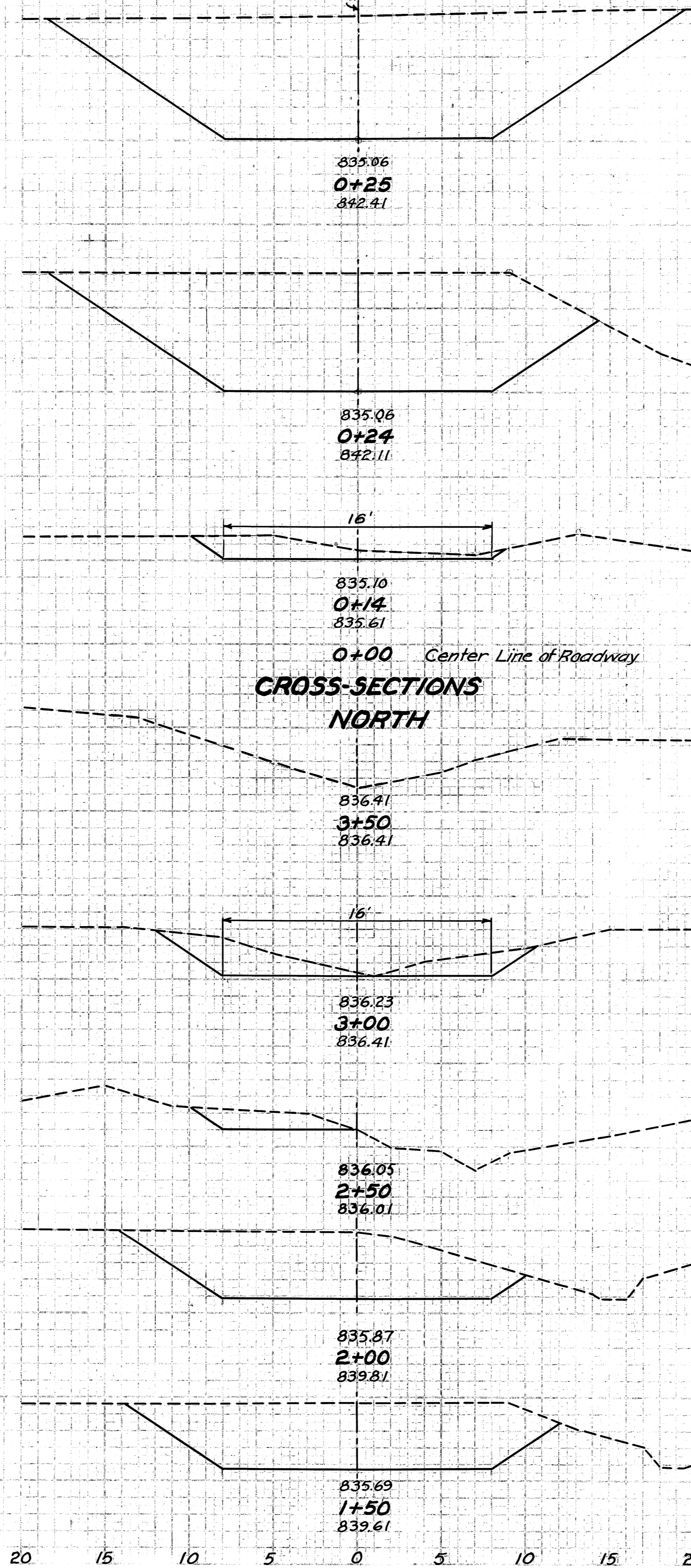


LOCATION PLAN



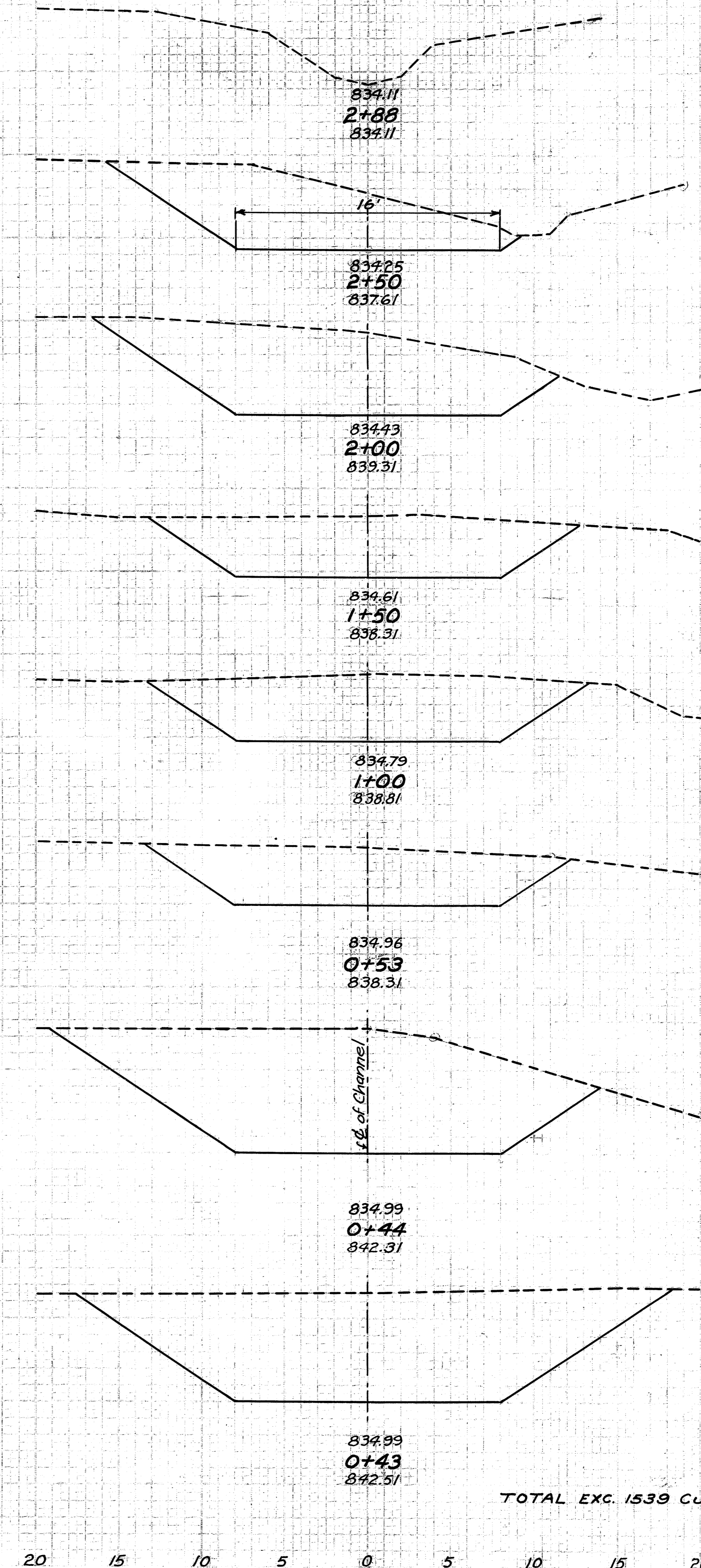
CROSS-SECTIONS
SOUTH

END AREA	CU. YDS.
83	72
51	
29	
32	
36	
52	
69	
76	



CROSS-SECTIONS
NORTH

END AREA	CU. YDS.
199	
7	
177	
36	
15	
24	
76	
0	
20	
22	
28	
9	
77	
74	
146	
83	
134	



END AREA	CU. YDS.
0	
52	
74	
168	
108	
170	
75	
146	
82	
133	
71	
41	
173	
6	
171	
125	

TOTAL EXC. 1539 Cu. Yds.

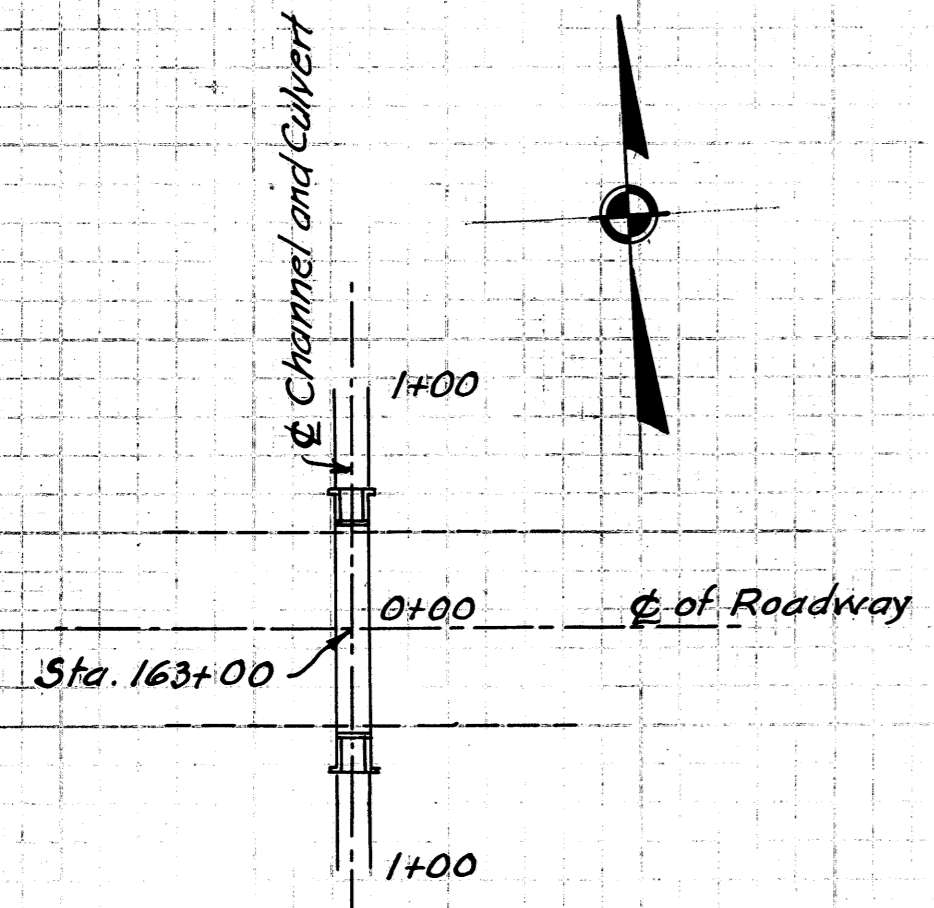
**CHANNEL CROSS-SECTIONS
STA. 163+00**

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	293-(2)	1938

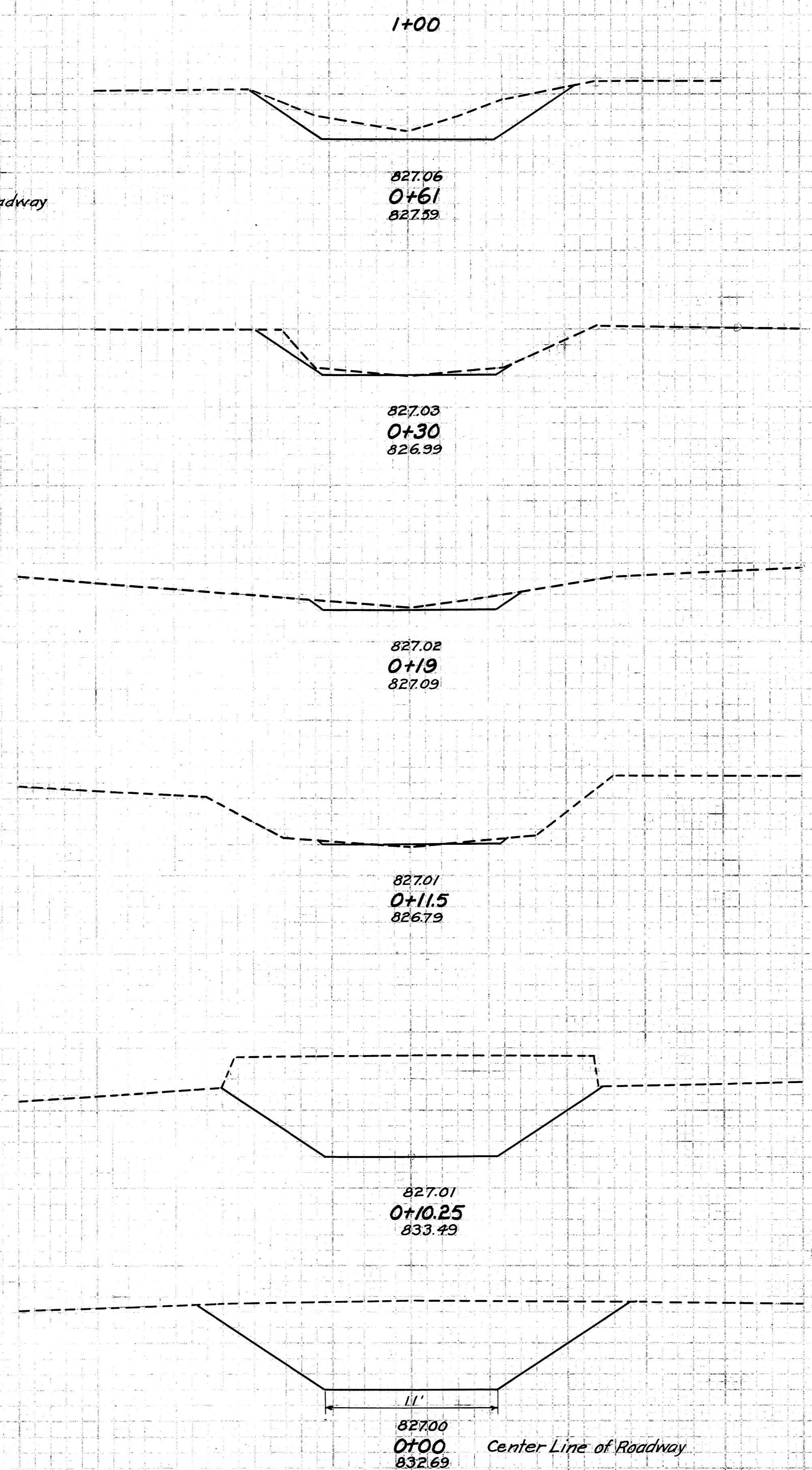
130
138

LORAIN SH. 886
S.H. 290

COUNTY SEC. A
SEC. 5 PT.

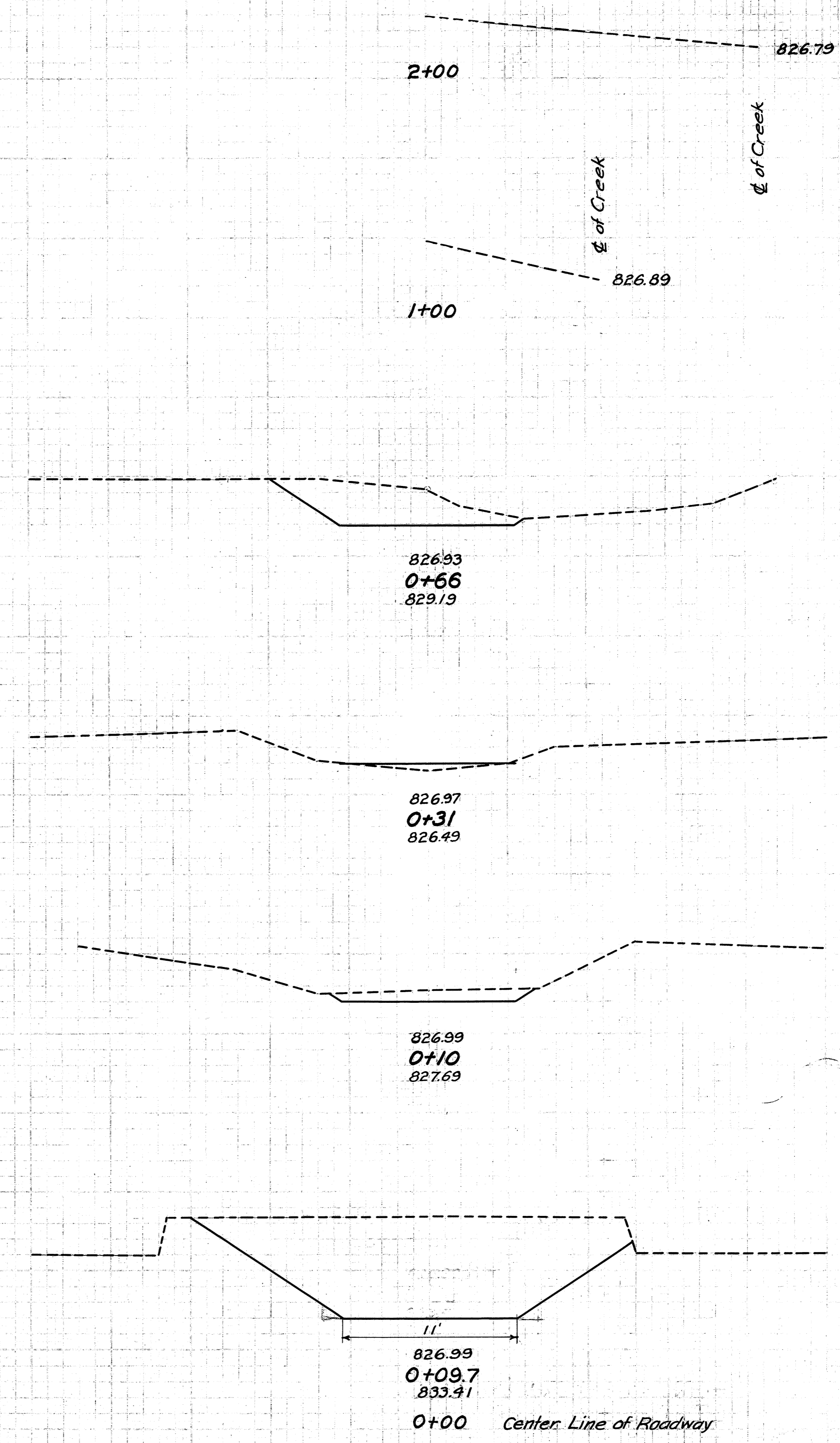


LOCATION PLAN



CROSS-SECTIONS SOUTH

END AREA	CU. YDS.
0	0
17	17
23	23
16	16
4	4
2	2
6	6
1	1
1	1
3	3
726	726
45	45
111	111



CROSS-SECTIONS NORTH

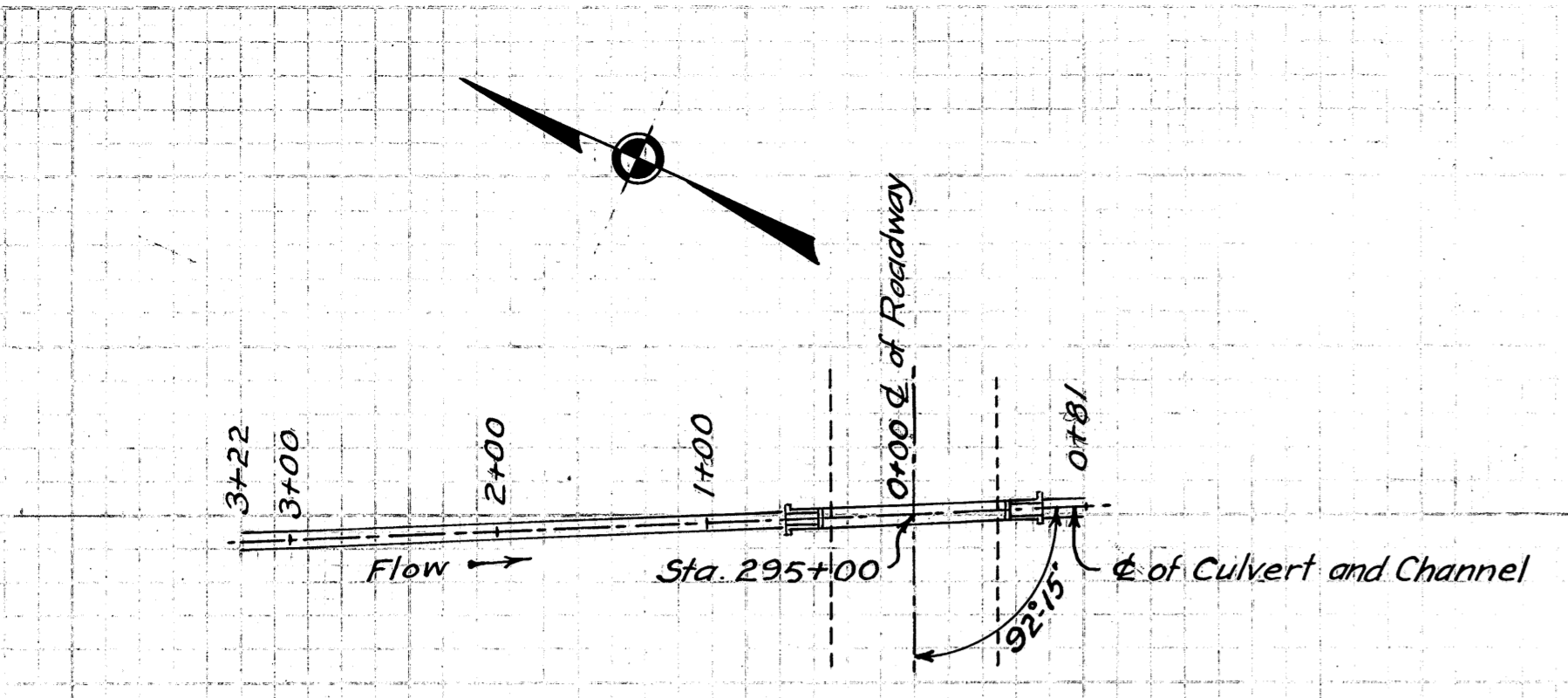
END AREA	CU. YDS.
0	0
17	17
27	27
18	18
0	0
4	4
9	9
1	1
132	132
44	44
111	111

TOTAL EXC. 167 Cu. Yds

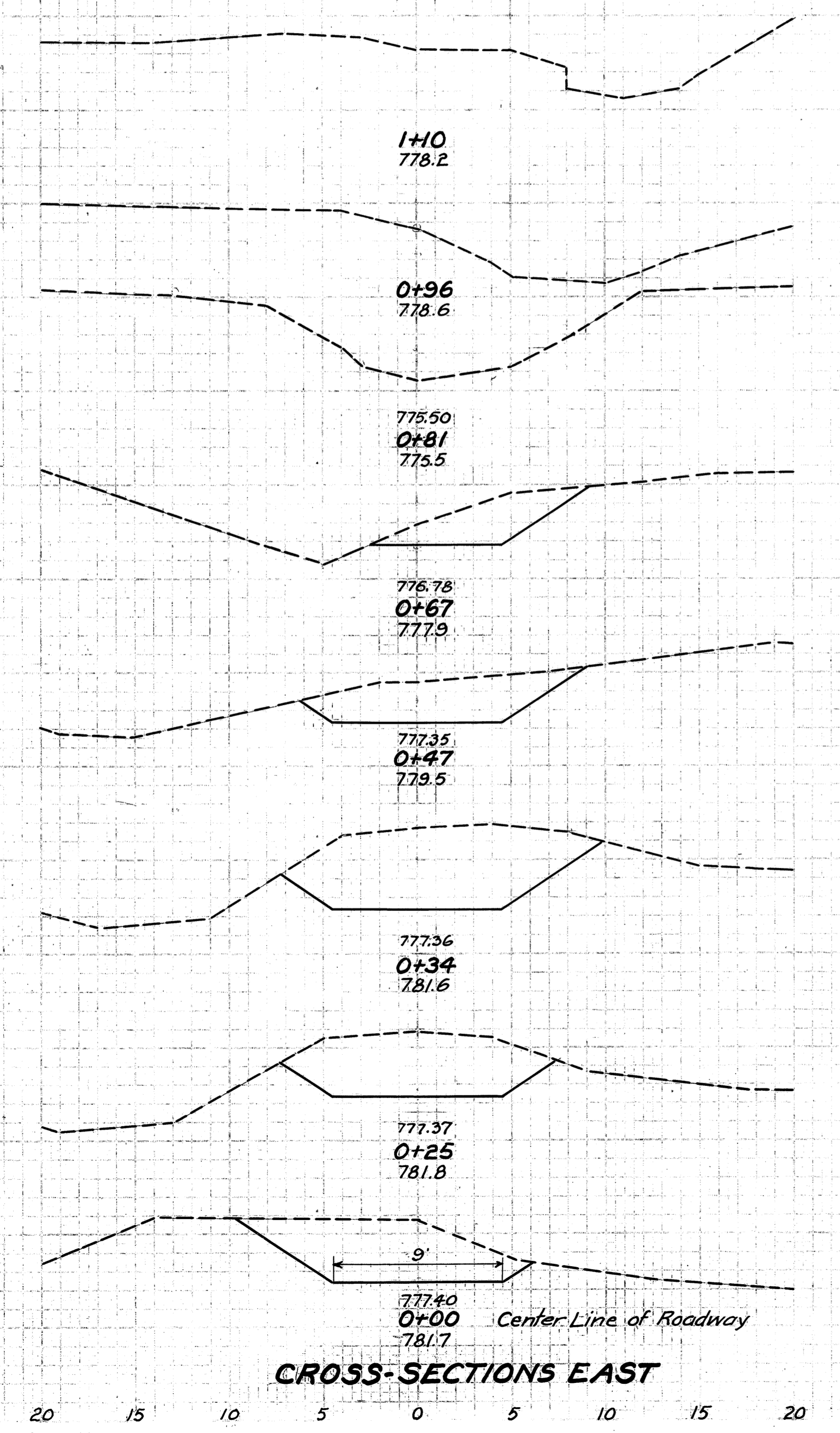
Handwritten signature and notes

LORAIN COUNTY
S.H. 886
SEC. A
S.H. 290
SEC. 5 PT.

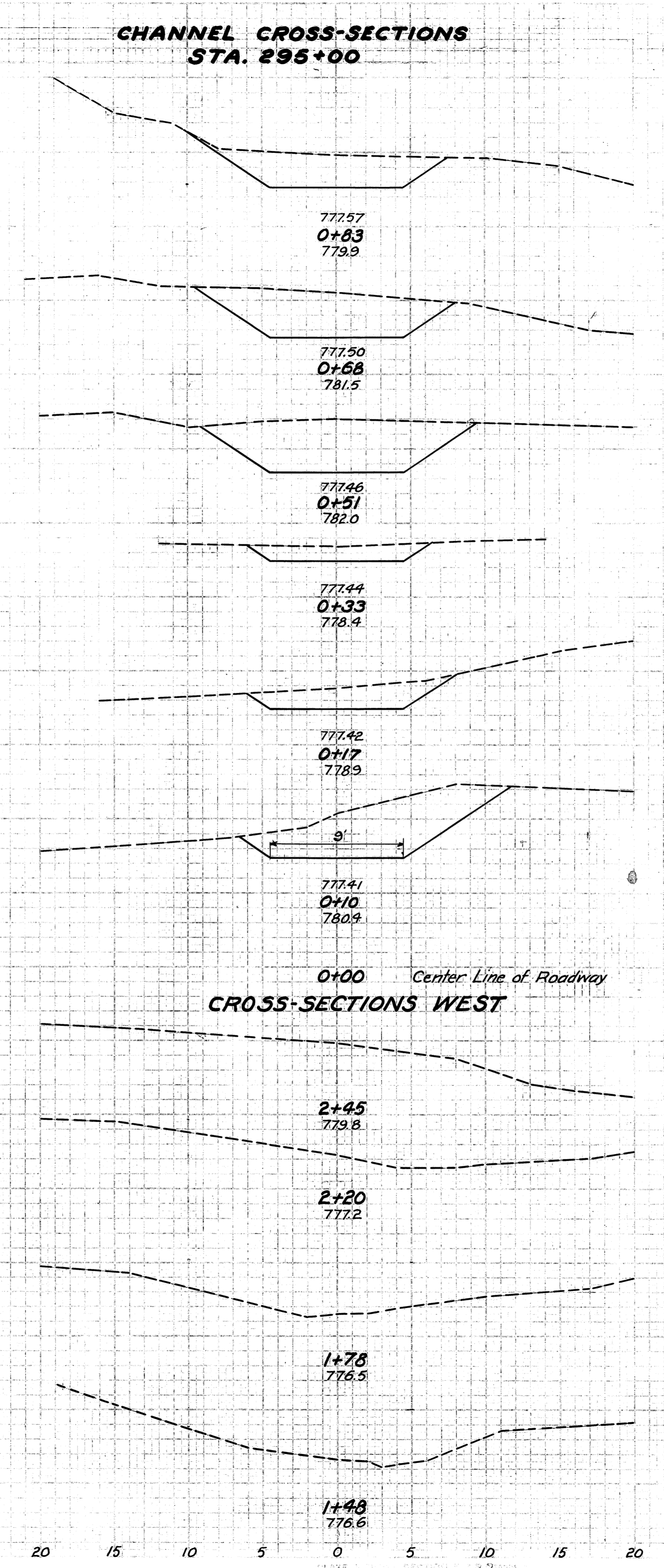
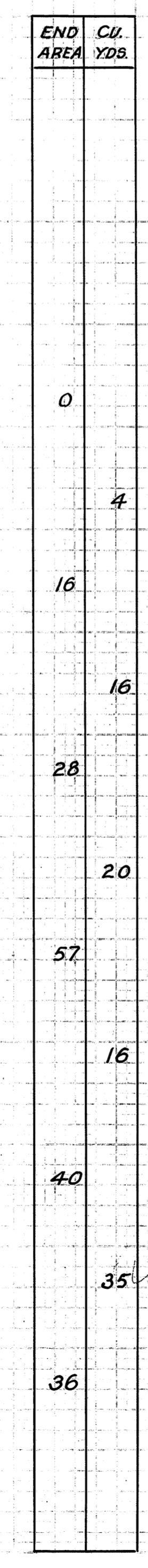
**CHANNEL CROSS-SECTIONS
STA. 295+00**



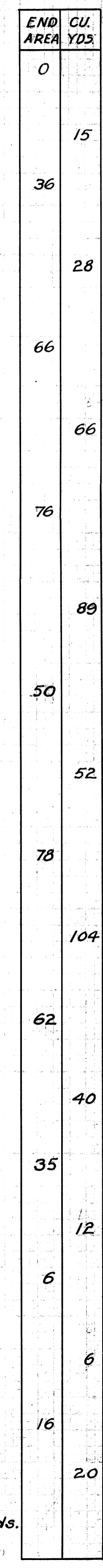
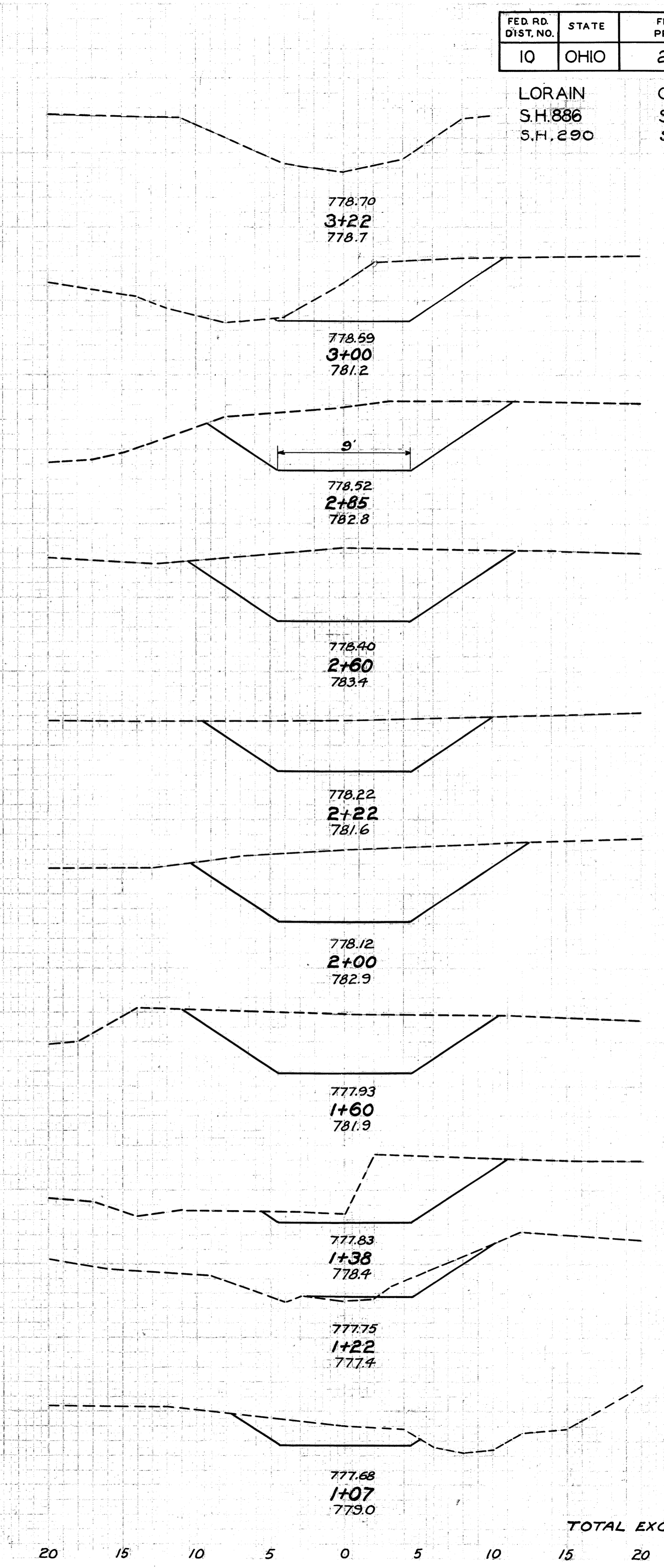
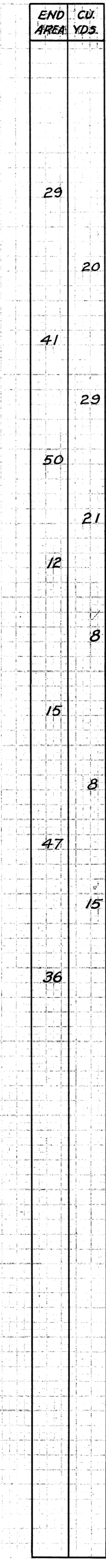
LOCATION PLAN



CROSS-SECTIONS EAST



CROSS-SECTIONS WEST

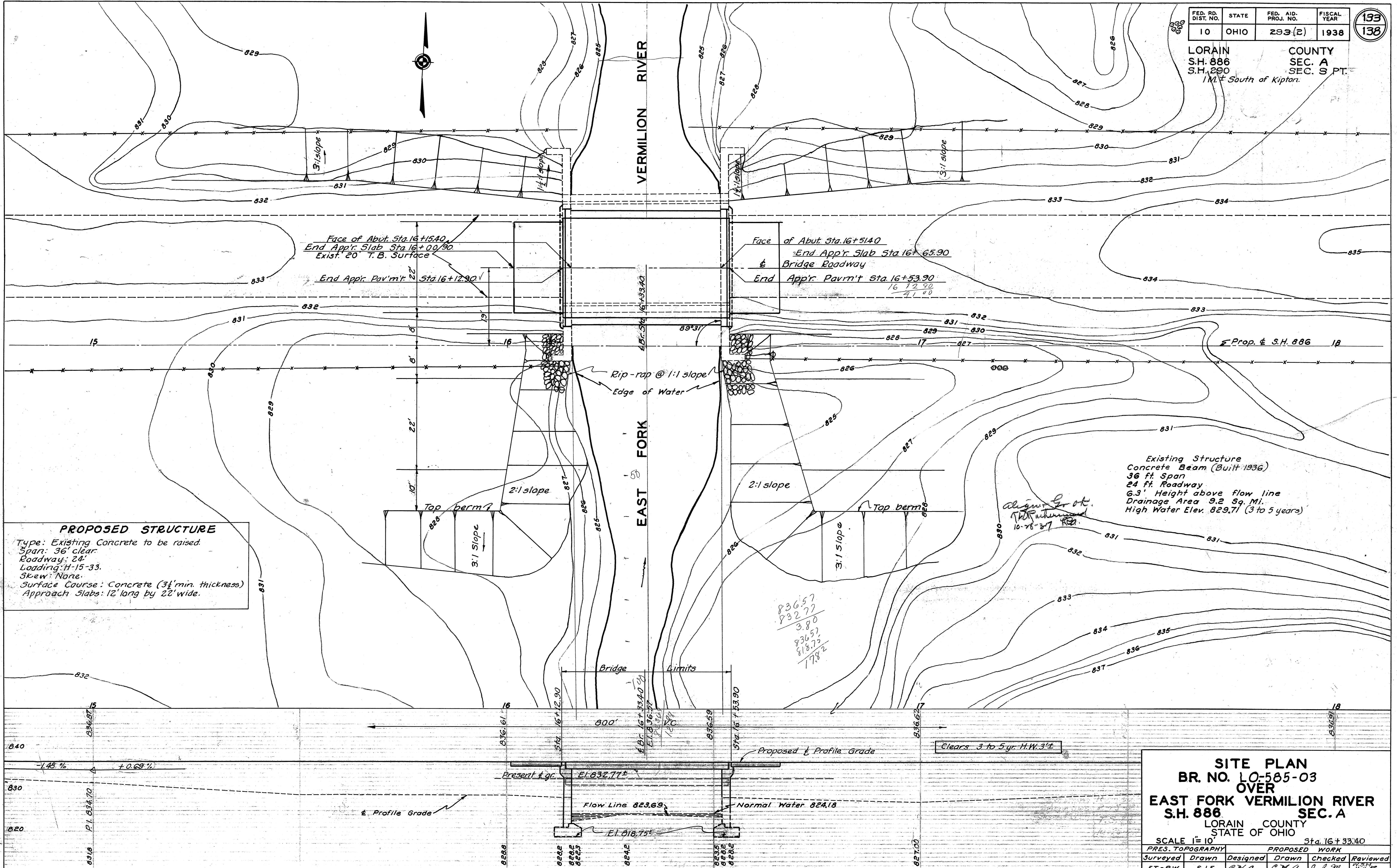


TOTAL EXC. 624 Cu. Yds.

FED. RD. DIST. NO.	STATE	FED. AID. PROJ. NO.	FISCAL YEAR
10	OHIO	293(2)	1938

133
138

LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.
1/4 mi. South of Kipton.



PROPOSED STRUCTURE
 Type: Existing Concrete to be raised.
 Span: 36' clear.
 Roadway: 24'.
 Loading: H-15-33.
 Skew: None.
 Surface Course: Concrete (3 1/2" min. thickness)
 Approach Slabs: 12' long by 22' wide.

Existing Structure
 Concrete Beam (Built 1936)
 36 ft Span
 24 ft Roadway
 6.3' Height above flow line
 Drainage Area 9.2 Sq. Mi.
 High Water Elev. 829.71 (3 to 5 years)

836.57
 832.72
 3.80
 836.57
 818.75
 178.2

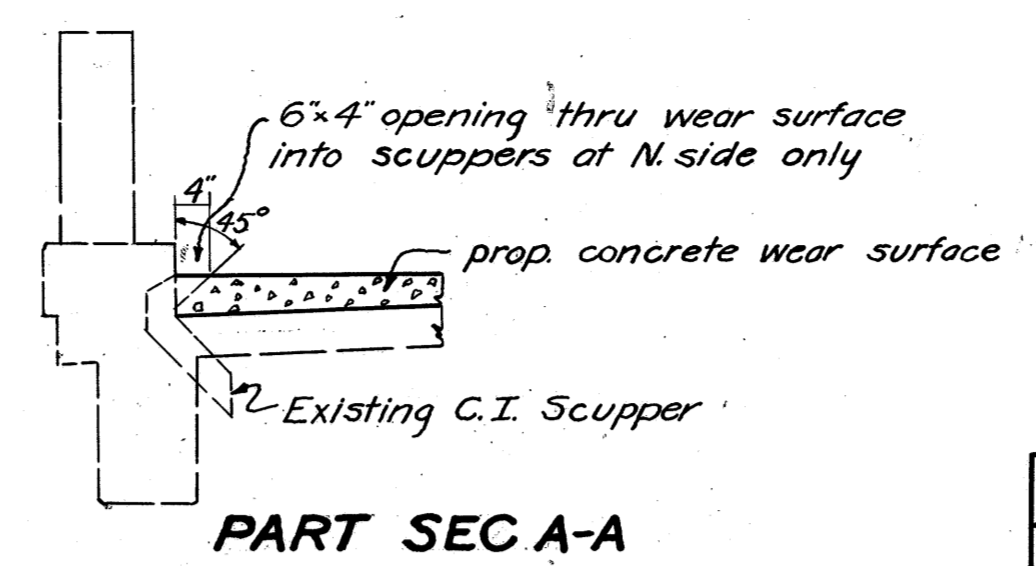
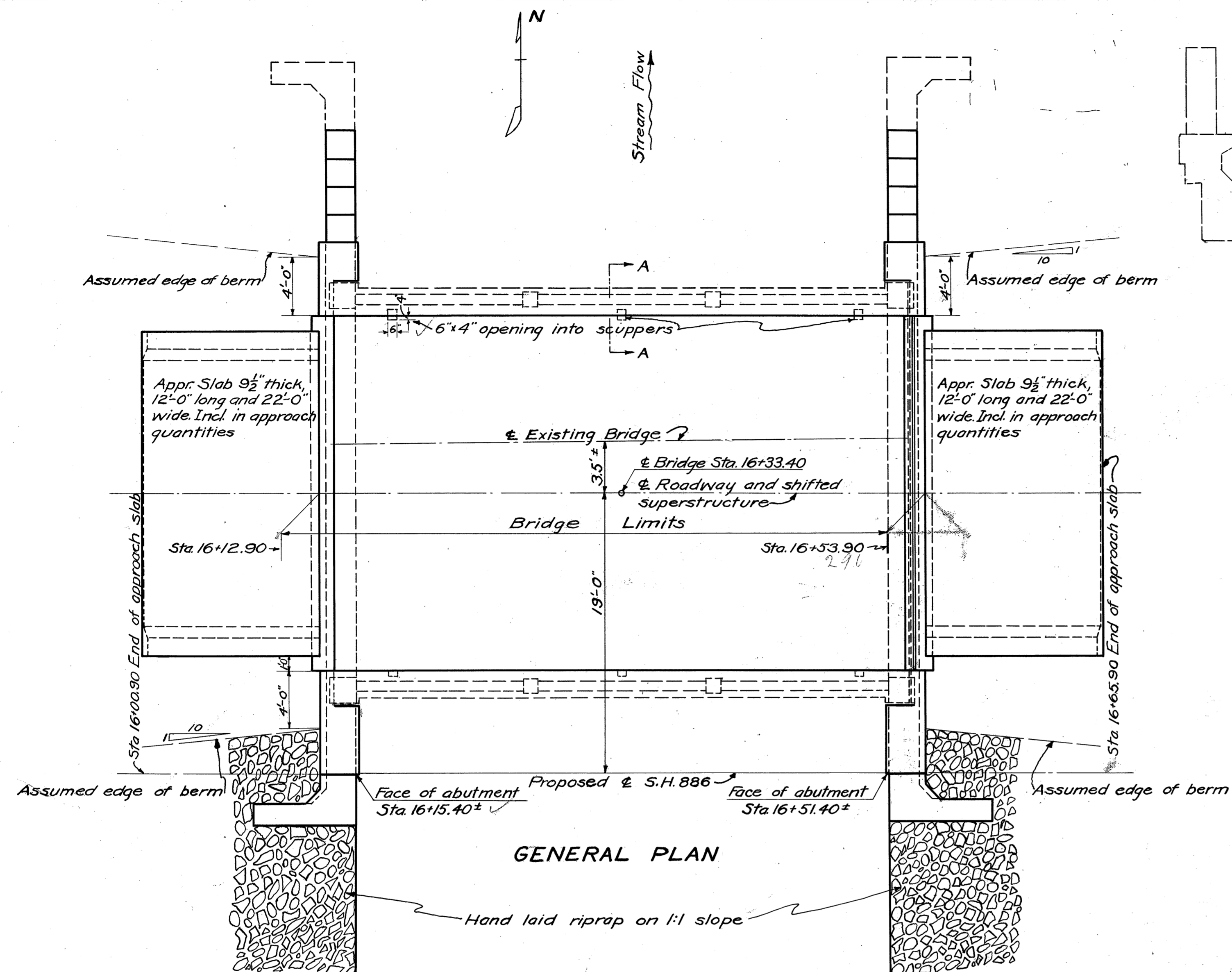
SITE PLAN
 BR. NO. LO-585-03
 OVER
 EAST FORK VERMILION RIVER
 S.H. 886 SEC. A
 LORAIN COUNTY
 STATE OF OHIO

SCALE 1" = 10' Sta. 16+33.40

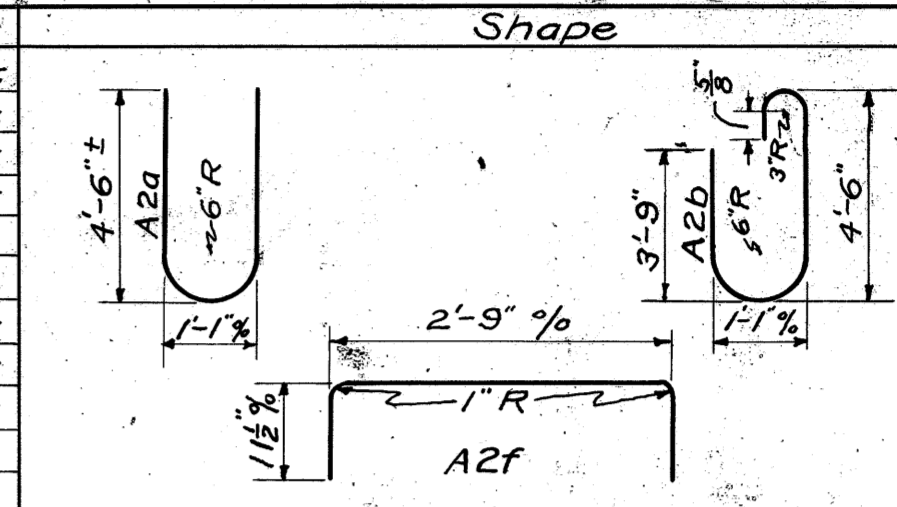
PRES. TOPOGRAPHY		PROPOSED WORK			
Surveyed	Drawn	Designed	Drawn	Checked	Reviewed
E.T.-R.W.	S.J.E.	C.N.A.	C.N.A.	J.B.M.	W.H.C.

4/14/38

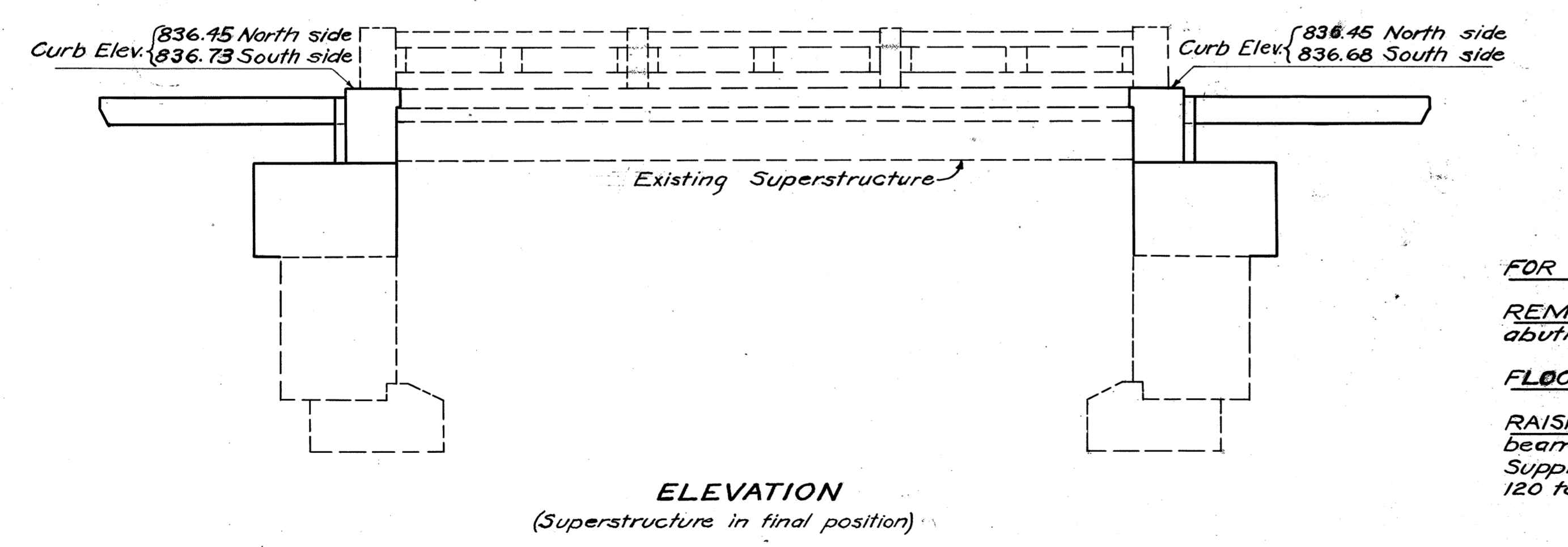
LORAIN COUNTY
S.H. 886 SEC. A
S.H. 290 SEC. S PT.



STEEL LIST					
ABUTMENT STEEL					
Mark	Size	No	Length	Weight	Shape
A5a	3/8"	48	2'-0"	140	Str.
A5b	3/8"	8	5'-6"	70	Str.
A5c	3/8"	6	7'-9"	70	Str.
A4a	3/8"	14	6'-6"	100	Str.
A2a	1/2"	34	9'-6"	220	Bt.
A2b	1/2"	22	9'-6"	140	Bt.
A2c	1/2"	8	23'-6"	130	Str.
A2d	1/2"	8	7'-0"	40	Str.
A2e	1/2"	8	9'-0"	50	Str.
A2f	1/2"	72	4'-6"	220	Bt.
Total				1180	
REPLACEMENT STEEL					
RE5	3/8"	1	7'-0"	10	Str.
RE4	3/8"	1	6'-6"	10	Str.
RE2	1/2"	1	6'-0"	0	Str.
Total				20	
Grand Total				1200	



ESTIMATED QUANTITIES						
Item	Description	W. Abut.	E. Abut.	Super-Structure	General	Total
E-2	Excavation for structures, Dry	14	14			28 Cu. yds.
E-2	Porous Backfill					Lump Sum
S-1	1:6 1/2 Concrete, Walls	19	19			38 Cu. yds.
S-3	Type B Waterproofing	31	31			62 Sq. yds.
S-4	Reinforcing Steel	590	590		20	1200 lbs.
S-7	Structural Steel and Hardware				70	70 lbs.
S-9	1/4" Premolded Expansion Joint Filler		13			13 Sq. ft.
S-9	Folded Copper Strip (12" @ 24 oz.)	6	6			12 Lin. ft.
S-22	Removal of portion of existing structure	5	5			10 Cu. yds.
S-23	Dowel holes for 3/4" dowels	31	31			62 Lin. ft.
I-10	Hand-laid Riprap	50	50			100 Sq. yds.
T-70	5" Average Portland cement concrete surface course			103.7		103.7 Sq. yds.
Sup. Sp. No. 105	Raising and shifting existing superstructure				Lump	Lump Sum



FOR DETAILS OF APPROACH SLABS, reference shall be made to Standard Drawing AS-35.

REMOVAL OF PORTIONS OF EXISTING STRUCTURE includes removal of necessary portions of abutments. Materials removed shall be disposed of as indicated on page 2 of these plans.

FLOODING OF BACKFILL not permitted back of abutment and wingwalls.

RAISING AND SHIFTING EXISTING SUPERSTRUCTURE. Existing superstructure (one concrete beam span) shall be raised and shifted to elevations and position indicated and according to Supplemental Specifications No. 105. Weight of superstructure, without wearing surface, is approximately 120 tons.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

**GENERAL PLAN & ELEVATION
NOTES, QUANTITIES & STEEL LIST**

BRIDGE NO. LO-583-03
OVER
EAST FORK VERMILLION RIVER
LORAIN COUNTY S.H. 886
SEC. A COUNTY S.H. SEC. S STA. 16+33.40

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
A.F.F.	A.F.F.	T.N.N.	E.T.P.	H.S.H.	4/1/38

DATE: 4/14/38

TABLE NO. 1 EXCAVATION & EMBANKMENT

Station		Exc.	Emb.	Emb+25%
From	To	Cu. Yds.	Cu. Yds.	Cu. Yds.
0+00	10+00	3312	5324	6655
10+00	20+00	9655	8661	10826
20+00	30+00	47413	0	0
30+00	40+00	6286	6281	7851
40+00	50+00	2113	25336	31670
50+00	60+00	1946	3094	3868
60+00	70+00	2673	2830	3538
70+00	80+00	129	4386	5483
80+00	90+00	3324	938	1172
90+00	100+00	1740	4330	5413
100+00	110+00	168	5026	6282
110+00	120+00	284	4219	5274
120+00	130+00	2582	438	547
130+00	140+00	3370	445	556
140+00	150+00	86	3833	4791
150+00	160+00	965	4902	6128
160+00	170+00	178	10305	12881
170+00	180+00	1702	1544	1930
180+00	190+00	3109	246	308
190+00	200+00	4386	477	596
200+00	210+00	3153	683	854
210+00	220+00	206	6403	8004
220+00	230+00	7419	438	547
230+00	240+00	6258	317	396
240+00	250+00	3528	861	1076
250+00	260+00	1462	1305	1637
260+00	270+00	1810	1564	1955
270+00	280+00	3865	350	437
280+00	290+00	2268	3317	4146
290+00	300+00	12463	10960	13700
300+00	310+00	12680	476	595
310+00	320+00	5326	280	350
320+00	330+00	87	20645	25806
330+00	340+00	1846	9895	12369
340+00	350+00	2350	791	989
350+00	360+00	2921	1440	1800
360+00	370+00	695	4376	5470
370+00	380+00	4887	381	476
380+00	390+00	6009	883	1104
390+00	400+00	2848	1152	1440
400+00	410+00	1859	2071	2589
410+00	416+11.18	2701	339	424
Total		181462	161542	201927

Borrow 20465 Cu. Yds.
Channel Exc. 2866 Cu. Yds.
Net Borrow 17599 Cu. Yds.

TABLE NO. 2 PRIVATE DRIVES & APPROACHES

Totals From Sheet No.	12" Pipe For Driveway Lin. Ft.	Agg. For Tr. Comp Approach Cu. Yds.	Remove & Store							
			6" C.M.P. Lin. Ft.	10" C.M.P. Lin. Ft.	10" C.I.P. Lin. Ft.	12" C.I.P. Lin. Ft.	8" V.S.P. Lin. Ft.	12" V.S.P. Lin. Ft.		
9		5								
10		35								
11	100	180								
12	220	105								
13	80	20								
14	40	41								
15	180	80	30							
16	100	52								
17	140	48		38	14					
18	40	24								
19	20	20								
20	20	143								
21	60	71								
22	80	94	62	34				10		
23	100	28	24	18						
Totals			1180	946	116	108	14	48	10	20

TABLE NO. 3 PIPE UNDERDRAINS

Totals From Sheet No.	4" Pipe Underdrains Lin. Ft.	4" Outlet Pipe For Pipe Underdrains Lin. Ft.	
			9
10	2184		
11	416		
12			
13			
14	312		
15	1092		
16	2236		
17			
18			
19	1976		
20	988		
21			
22			
23			
Totals			9204

TABLE NO. 4 CATCH BASINS

Totals From Sheet No.	Std No. 1-2 Catch Basins Units	Std No. 2-2 C.B. less Casting Units	Std No. 7 Catch Basins Units	Std. No. 1 Side Ditch Inlets Units				
					9	3		
10	6							
11	2							
12								
13			4					
14	1		5					
15	3							
16	4							
17								
18	5	1						
19	4							
20	3							
21	1							
22	3			5				
23		1	3					
Totals					35	2	12	5

TABLE NO. 5 ROADWAY DRAINAGE

Totals From Sheet No.	Pipe For Roadway Drainage				Pipe For Roadway Drainage Under Drives, Item I-3				Outlet Pipe For Roadway Drainage, Item I-2			6"x6"x4" Y'S. Units	8"x8"x4" Y'S. Units	10"x10"x4" Y'S. Units	12"x12"x4" Y'S. Units	8" V.S.P. Removed & Stored Lin. Ft.	Existing C.B. Abandoned Units	12" Tile Removed & Stored Lin. Ft.	8" V.S.P. Remove & Relaid Lin. Ft.	10" Pipe Removed & Stored Lin. Ft.	10" Pipe Remove & Relay Lin. Ft.	
	6"	8"	10"	12"	6"	8"	10"	12"	6"	8"	10"											12"
	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.											Lin. Ft.
9				1477				20									2	771		400	50	
10				4714				80														
11		492						20		20												
12																						
13		1093																				
14		673	1878																			
15		1750	194				40	20		20												
16		789	1488	550			80															
17							310															
18		1384	1068				40															
19			530	2144				60														
20		205	954	240			20															
21		129					20															
22		1954					140															
23		266																				
Totals			8735	6112	9435		220	160	160	40	20	140		41	55	73	256	4	771	992	400	50

TABLE NO. 6 INTERSECTIONS

Totals From Sheet No.	7" Reinf. Concrete Pavement Sq. Yds.	9"-7"-7"-9" Reinf. Conc. Pavement Sq. Yds.		
			101	693.8
102		1169.5		
105	598.9			
110	316.6			
Totals			1609.3	1169.5

TABLE NO. 7 PAVT. REMOVAL

Totals From Sheet No.	14'-4" Brick Pavt. with two 2"x12" Conc. Curb Sq. Yds.	10'-8"-8"-10" Concrete Pavement Sq. Yds.		
			9	928
10	970			
101		1500.0		
102		373.0		
Totals			1898.0	1873.0

TABLE NO. 8 TREE PROTECTION

Totals From Sheet No.	Riprap 12" Thick Sq. Yds.	
23	6	
Total		6

TABLE NO. 10 POROUS BACKFILL

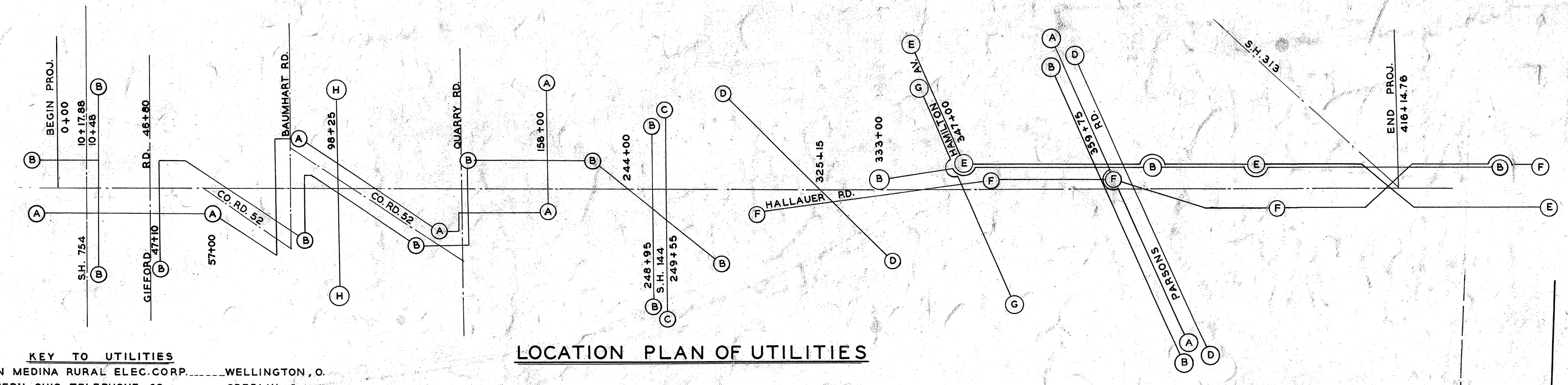
Totals From Sheet No.	No. 6 Aggregate for filling Abandoned Wells Cu. Yds.	
16	30	
18	40	
20	55	
21	10	
22	74	
Total		209

LINE NO.	CALCULATIONS	TOTALS	UNITS
1	LENGTH OF PROJECT		
2	Sta. 0+400 to Sta 416+11.18	4201.18	Lin. Ft.
3	Deductions		
4	Sta. 158+56.92 to Sta. 158+66.18 (W of L.E.R.R.)	9.26	Lin. Ft.
5	Net Length of Project	4200.92	Lin. Ft.
6		or	7.954 Miles
7	FINISHING SHOULDERS, SLOPES & DITCHES		
8	See Line No. 5 = 4200.92 Lin. Ft.		
9	Bridge Limits - Sta. 16+13.40 to Sta. 16+53.40 = 40 Lin. Ft.		
10	Net Length = 4196.92 Lin. Ft.	use	41,962 Lin. Ft.
11			
12	9"-7"-7"-9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT		
13	Length Sta. 0+400 to Sta. 16+00.90 = 2000.90 Lin. Ft.		
14	Sta. 16+65.90 to Sta. 158+56.92 = 14191.02 Lin. Ft.		
15	Sta. 158+66.18 to Sta. 415+00 = 25633.82 Lin. Ft.		
16	Total = 41825.74 Lin. Ft.		
17	Area = 41825.74 x 22 + 9 = 102240.70 Sq. Yds.		
18	Area of Intersections (see Table No. G) 1169.50 Sq. Yds.		
19	Total 103,410.20 Sq. Yds.		103,574.7 Sq. Yds.
20			
21	9 1/2" REINFORCED CONCRETE APPROACH SLABS		
22	Length Sta. 16+00.92 to Sta. 16+12.90 = 12 Lin. Ft.		
23	Sta. 16+53.90 to Sta. 16+65.90 = 12 Lin. Ft.		
24	Total = 24 Lin. Ft.		
25	Area = 24 x 22 + 9 = 58.67 Sq. Yds.	Use	58.7 Sq. Yds.
26			
27	WATER		
28	161,542 Cu. Yds. x 5 = 807,710 Gals.	Use	808 M. Gals.
29			
30	AGGREGATE FOR TRAFFIC COMPACTED SIDE & MAIL BOX APPROACHES		
31	Totals from Table No. 2 = 946 Cu. Yds.		
32	30 Mail Box Approaches @ 5 Cu. Yds. = 150 Cu. Yds.		
33	Total 1096 Cu. Yds.	use	1100 Cu. Yds.
34			
35	SUBGRADE PREPARATION		
36	Subgrade treatment by incorporation of Aggregate	Estimated	46800 Sq. Yds.
37			
38			
39	TEMPORARY ROAD FOR MAINTAINING TRAFFIC		
40	Aggregate	Estimated	300 Cu. Yds.
41	Calcium Chloride	Estimated	6 Tons.
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
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ITEM NO.	TOTALS	UNITS	SUMMARY	REFERENCE SHEET	LINE	TABLE
ROADWAY						
E-1	181,462	Cu. Yds.	Roadway Excavation (Unclassified)	136		1
E-4	17,599	Cu. Yds.	Borrow (Contractor to Furnish)	136		1
E-5	41,962	Lin. Ft.	Finishing Shoulders, Slopes & Ditches	138	10	
E-8	1,898	Sq. Yds.	Removal & Disposal of Existing 4" Brick Pavement with Two 2"x12" Conc. Curbs	136		7
E-8	1,873	Sq. Yds.	Removal & Disposal of Existing 10"-8"-8"-10" Concrete Pavement.	136		7
E-111	808	M-Gals	Water (Estimated)	138	28	
I-1	1180	Lin. Ft.	12" Pipe for Driveways	136		2
E-2	209	Cu. Yds.	No. 6 Aggregate for Porous Backfill	136		10
I-3	8735	Lin. Ft.	8" Pipe for Roadway Drainage with full Porous Backfill	136		5
I-3	6112	Lin. Ft.	10" Pipe for Roadway Drainage with full Porous Backfill	136		5
I-3	9435	Lin. Ft.	12" Pipe for Roadway Drainage with full Porous Backfill	136		5
I-3	220	Lin. Ft.	8" Pipe for Roadway Drainage Under Drives	136		5
I-3	160	Lin. Ft.	10" Pipe for Roadway Drainage Under Drives	136		5
I-3	160	Lin. Ft.	12" Pipe for Roadway Drainage Under Drives	136		5
I-2	40	Lin. Ft.	8" Outlet Pipe for Roadway Drainage	136		5
I-2	20	Lin. Ft.	10" Outlet Pipe for Roadway Drainage	136		5
I-2	140	Lin. Ft.	12" Outlet Pipe for Roadway Drainage	136		5
I-4	9204	Lin. Ft.	4" Pipe Underdrains	136		3
T-110	300	Cu. Yds.	Aggregate for Maintaining Traffic	138	40	
M-10	6	Tons	Calcium Chloride for Maintaining Traffic	138	41	
I-5	41	Units	8"x8"x4" Y Branch, Pipe Specials	136		5
I-5	55	Units	10"x10"x4" Y Branch, Pipe Specials	136		5
I-5	73	Units	12"x12"x4" Y Branch, Pipe Specials	136		5
I-6	1743	Lin. Ft.	Pipe Removed & Stored (Various Sizes)	136		2 & 5
I-6	992	Lin. Ft.	8" Vitrified Sewer Pipe Cleaned & Relaid	136		5
I-6	50	Lin. Ft.	10" Tile Cleaned & Relaid	136		5
I-8	2	Units	Std. No. 2-2 Catch Basin, Less Casting	136		4
I-8	12	Units	Std. No. 7 Side Ditch Catch Basins	136		4
I-8	5	Units	Std. No. 1-1 Side Ditch Inlets	136		4
I-8	35	Units	Std. No. 1-2 Catch Basins	136		4
S-122	4	Units	Catch Basins Abandoned	136		5
T-110	1100	Cu. Yds.	Aggregate for Traffic Compacted Approaches	138	33	
S-113	46800	Sq. Yds.	Subgrade treatment by incorporation of aggregate	138	36	
PAVEMENT						
S-5	58.7	Sq. Yds.	9 1/2" Reinforced Concrete Approach Slab	138	25	
T-71	103,410.2	Sq. Yds.	9"-7"-7"-9" Reinforced Portland Cement Concrete Pavement	138	19	
T-71	1609.3	Sq. Yds.	7" Reinforced Portland Cement Concrete Pavement	136		6
STRUCTURES - 20 FT. SPAN & UNDER						
I-10	40	Sq. Yds.	Hand Laid Riprap (12" Thick)	137		9
S-27	30	Lin. Ft.	16" Extra Heavy Cast Iron Pipe	137		9
E-2	17.74	Cu. Yds.	Excavation for Structures (Unclassified)	137		9
E-3	2866	Cu. Yds.	Channel Excavation	137		9
S-1	34.7	Cu. Yds.	Concrete for Footers (1-6 1/2 mix)	137		9
S-1	14.8	Cu. Yds.	Concrete for Headwalls (1-6 1/2 mix)	137		9
S-1	100.5	Cu. Yds.	Concrete for Walls & Slab (1-5 1/2 mix)	137		9
S-1	474.4	Cu. Yds.	Concrete for Box Culverts (1-5 1/2 mix)	137		9
S-1	15.4	Cu. Yds.	Concrete for Headwalls (1-5 1/2 mix)	137		9
S-3	283	Sq. Yds.	Waterproofing (Type B)	137		9
S-4	79856	Lbs.	Reinforcing Steel	137		9
S-22	31	Cu. Yds.	Removal of Portions of Existing Structures	137		9
S-24		Lump	Removal of 4 Existing Structures	137		9
S-27	277	Lin. Ft.	12" Pipe for Roadway Culverts	137		9
S-27	1958	Lin. Ft.	15" Pipe for Roadway Culverts	137		9
S-27	192	Lin. Ft.	48" Pipe for Roadway Culverts	137		9
I-8	24	Units	Std. No. 1-2 Catch Basins	137		9
I-8	5	Units	Std. No. 2-2 Catch Basins	137		9
I-8	1	Units	Std. No. 2-2 Catch Basins Less Casting	137		9
I-8	1	Units	Std. No. 7 Side Ditch Catch Basins	137		9
S-3	51	Sq. Yds.	Waterproofing (Type A)	137		9
E-2	50	Cu. Yds.	Aggregate for Porous Backfill (60% of No. 6 & 40% of No. 7)	137		9
I-3	230	Lin. Ft.	12" Pipe for Roadway Drainage	137		9
I-3	40	Lin. Ft.	4" Pipe for Roadway Drainage	137		9
I-6	230	Lin. Ft.	8" Drain Tile Cleaned & Relaid	137		9
I-6	72	Lin. Ft.	12" Vitrified Sewer Pipe Cleaned & Relaid	137		9
I-6	1147	Lin. Ft.	Pipe Removed & Stored (Various Sizes)	137		9
I-8	1	Units	Std. No. 1-2 Catch Basin Less Casting	137		9
I-6	29	Lin. Ft.	15" Vitrified Sewer Pipe Cleaned & Relaid	137		9
ROADSIDE IMPROVEMENT						
L-7	6	Sq. Yds.	Riprap for Tree Protection (12" Thick)	136		8
STRUCTURES OVER 20 FT. SPAN - For Estimated Quantities See Sheet No. 134.						

LoR-20-178

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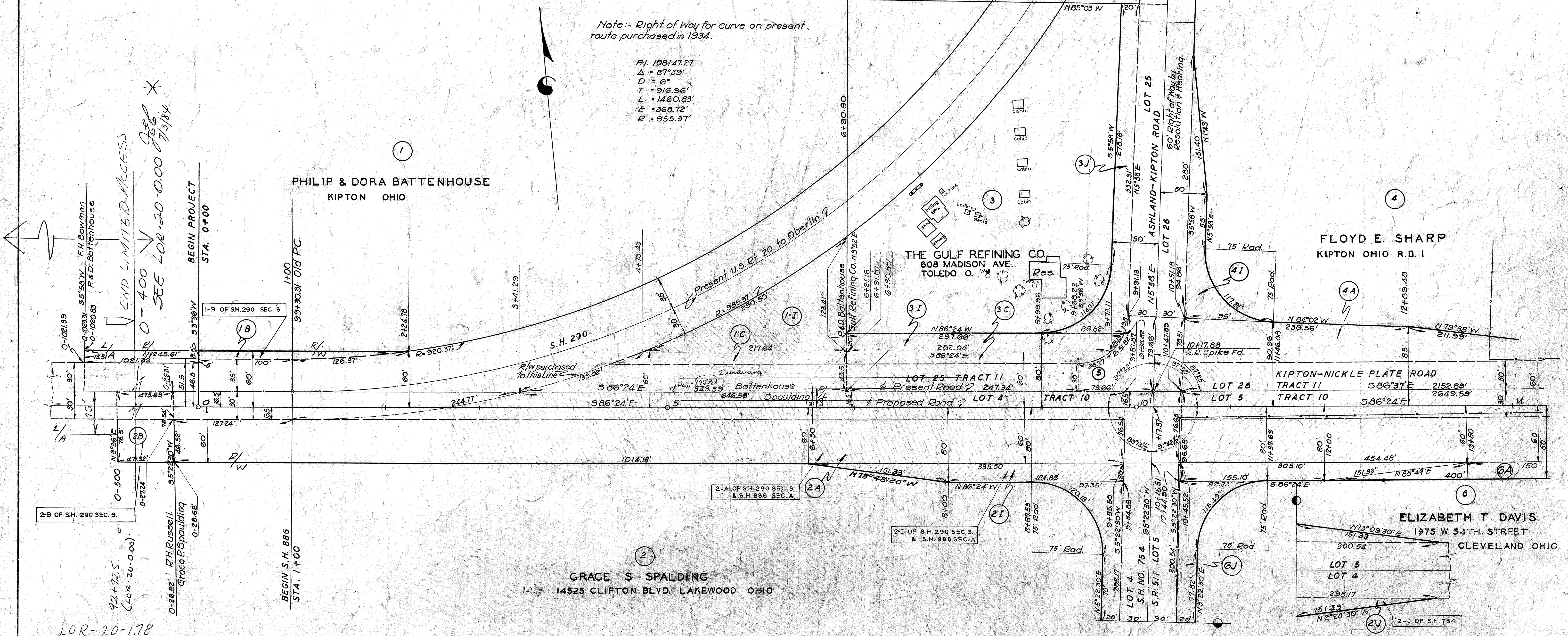


- KEY TO UTILITIES**
- A. LORAIN MEDINA RURAL ELEC. CORP. WELLINGTON, O.
 - B. NORTHERN OHIO TELEPHONE CO. OBERLIN, O.
 - C. OHIO ELECTRIC POWER CO. OBERLIN, O.
 - D. BUCKEYE PIPELINE CO. WAKEMAN, O.
 - E. BELL TELEPHONE CO. CLEVELAND, O.
 - F. MARION RESERVE POWER & LIGHT CO. MARION, O.
 - G. OHIO FUEL GAS CO. COLUMBUS, O.
 - H. OHIO PUBLIC SERVICE CO. ELYRIA, O.

LOCATION PLAN OF UTILITIES

Note: - Right of Way for curve on present route purchased in 1934.

P.I. 108+47.27
 $\Delta = 87^{\circ}33'$
 $D = 6^{\circ}$
 $T = 916.96'$
 $L = 1460.83'$
 $E = 368.72'$
 $R = 955.87'$



END LIMITED ACCESS
 SEE LoR-20-000 9/3/34

2-B OF S.H. 290 SEC. S.

0-28.02' B.H. Russell
 Grace S Spaulding

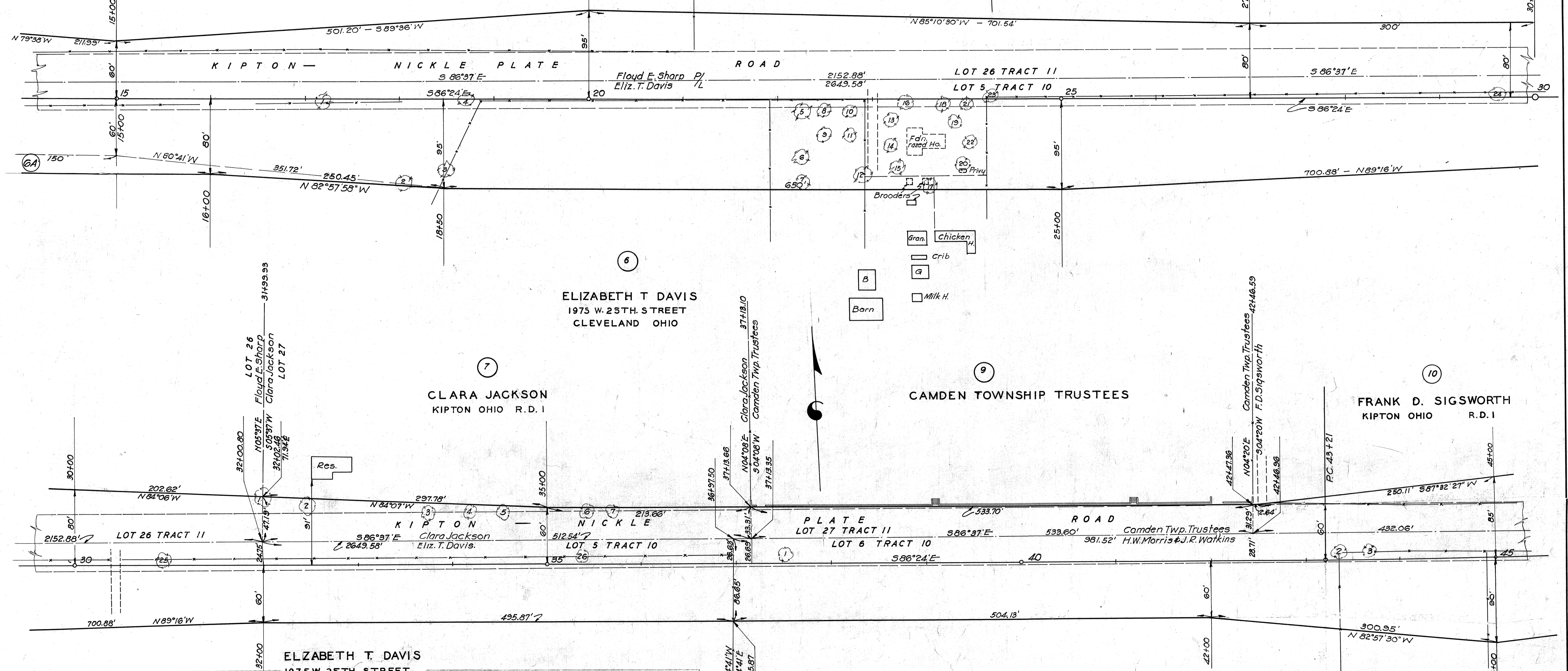
BEGIN S.H. 886
 STA. 1+00

GRACE S SPALDING
 14525 CLIFTON BLVD. LAKEWOOD OHIO

ELIZABETH T DAVIS
 1975 W 54TH STREET
 CLEVELAND OHIO

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No
6	1	17+18	R	3.5'	Butternut	30"	X	
	2	18+03	R	89'	Locust	18"		X
	3	18+49	R	76'	"	15"		X
	4	18+63	E	"	Elm	40"	X	
	5	22+26	R	11.5'	Apple	18"	X	
	6	22+26	R	62.5'	"	24"	X	
	7	22+26	R	88'	"	18"		X
	8	22+51	R	11'	"	12"	X	
	9	22+51	R	36.5'	"	18"	X	
	10	22+77	R	12'	"	15"	X	
	11	22+77	R	35'	"	15"	X	
	12	22+89	R	82'	Maple	24"	X	



TREES IN RIGHT OF WAY

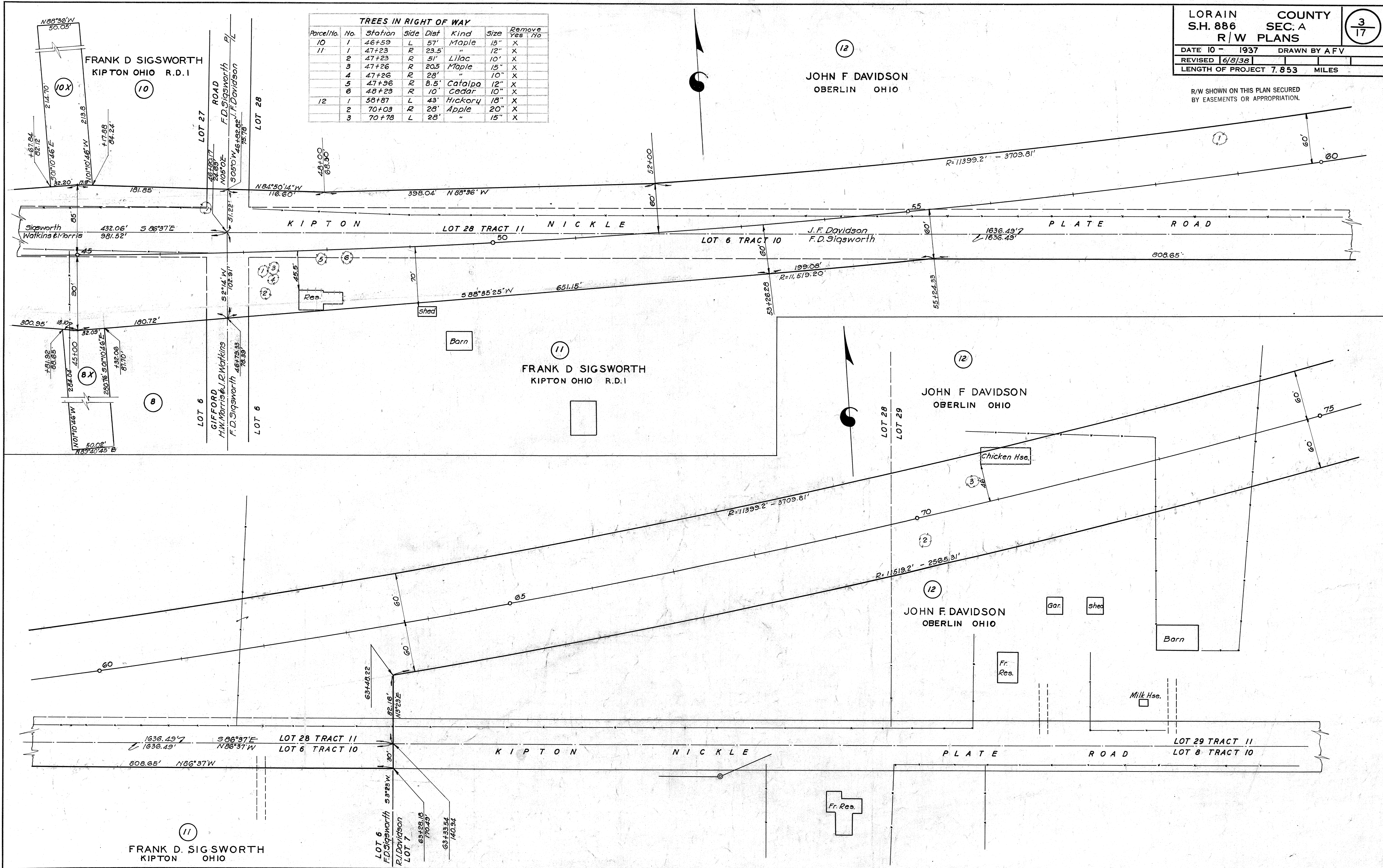
Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No
6 Cont'd.	13	23+19	R	22'	Apple	12"	X	
	14	23+19	R	47.5'	Cherry	18"	X	
	15	23+27	R	71.5'	Apple	12"	X	
	16	23+36	R	6'	Pine	18"	X	
	17	23+61	R	90'	Mulberry	12"		X
	18	23+75	R	6'	Pine	24"	X	
	19	23+83	R	24'	Peach	2"	X	
	20	23+94	R	70'	Apple	15"	X	
	21	24+01	R	7'	Mulberry	4"	X	
	22	24+04	R	46'	Cherry	24"	X	
	23	24+23	L	2'	Elm	6"	X	
	24	24+63	L	6'	Apple	18"	X	

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No
6 Cont'd.	25	30+98	L	6"	Elm	8"	X	
	26	35+38	L	8"	W. Cherry	10"	X	
7	1	32+06	L	69.5'	Dasswood	18"	X	X
	2	32+47	L	61'	Box Elder	12"	X	X
	3	33+74	L	55'	Maple	12"		X
	4	34+20	L	56'	Apple	12"	X	X
	5	34+54	L	56'	Maple	12"	X	X
	6	35+43	L	55'	"	12"	X	X
	7	35+71	L	55'	"	12"	X	X
8	1	37+53	L	9'	Walnut	12"	X	X
	2	43+32	L	9.5'	Maple	24"	X	X
	3	43+67	L	9.5'	"	18"	X	X

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist	Kind	Size	Remove Yes/No
10	1	46+59	L	57'	Maple	15"	X
11	1	47+23	R	23.5'	"	12"	X
	2	47+23	R	51'	Lilac	10"	X
	3	47+26	R	20.5'	Maple	15"	X
	4	47+26	R	28'	"	10"	X
	5	47+96	R	8.5'	Catalpa	12"	X
	6	48+23	R	10'	Cedar	10"	X
12	1	58+87	L	43'	Hickory	18"	X
	2	70+03	R	25'	Apple	20"	X
	3	70+78	L	28'	"	15"	X



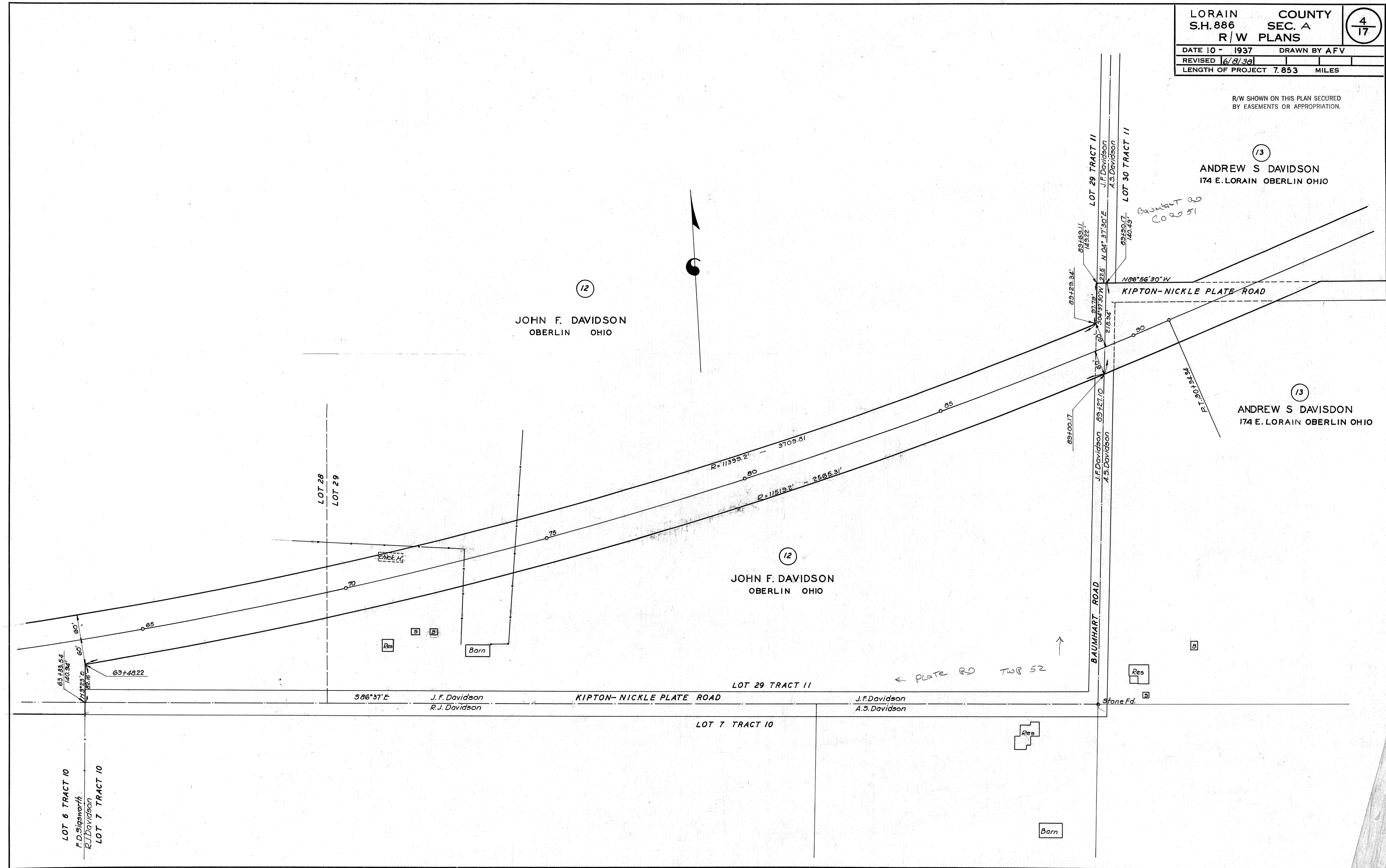
R/W SHOWN ON THIS PLAN SECURED
 BY EASEMENTS OR APPROPRIATION.

(13)
 ANDREW S DAVIDSON
 174 E. LORAIN OBERLIN OHIO

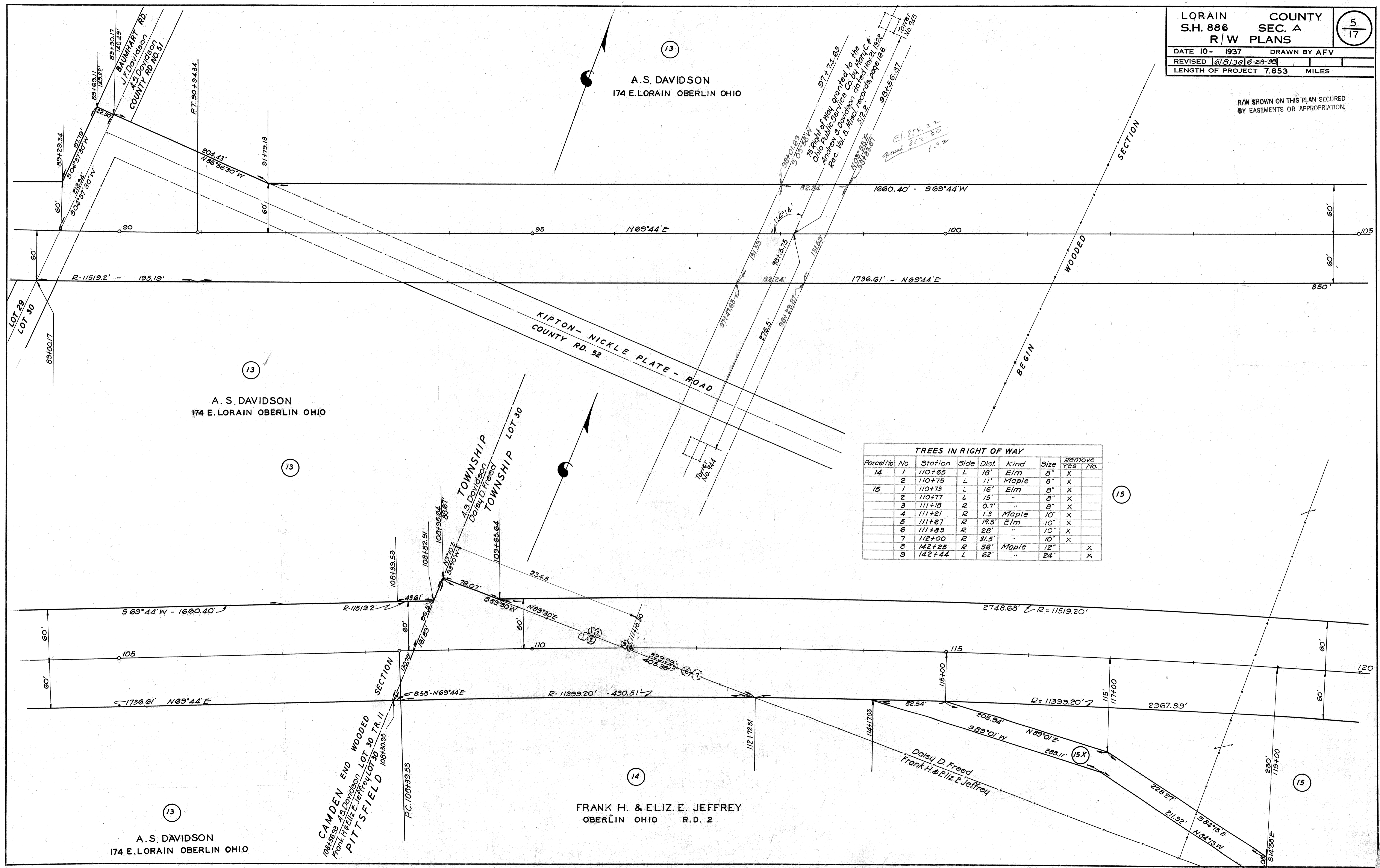
(13)
 ANDREW S DAVIDSON
 174 E. LORAIN OBERLIN OHIO

(12)
 JOHN F. DAVIDSON
 OBERLIN OHIO

(12)
 JOHN F. DAVIDSON
 OBERLIN OHIO



R/W SHOWN ON THIS PLAN SECURED BY EASEMENTS OR APPROPRIATION.



TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No.
14	1	110+65	L	18'	Elm	8"	X	
	2	110+75	L	11'	Maple	8"	X	
15	1	110+73	L	16'	Elm	8"	X	
	2	110+77	L	15'	"	8"	X	
	3	111+18	R	0.7'	"	8"	X	
	4	111+21	R	1.3	Maple	10"	X	
	5	111+67	R	19.5'	Elm	10"	X	
	6	111+89	R	28'	"	10"	X	
	7	112+00	R	31.5'	"	10"	X	
	8	142+25	R	56'	Maple	12"		X
	9	142+44	L	62'	"	24"		X

R/W SHOWN ON THIS PLAN SECURED
BY EASEMENTS OR APPROPRIATION.

15
DAISY D. FREED
OBERLIN, O. R. D. 2

15
DAISY D. FREED
OBERLIN, O. R. D. 2

16
DAN DIMMICK
HUNTSBURG OHIO R. D. 1

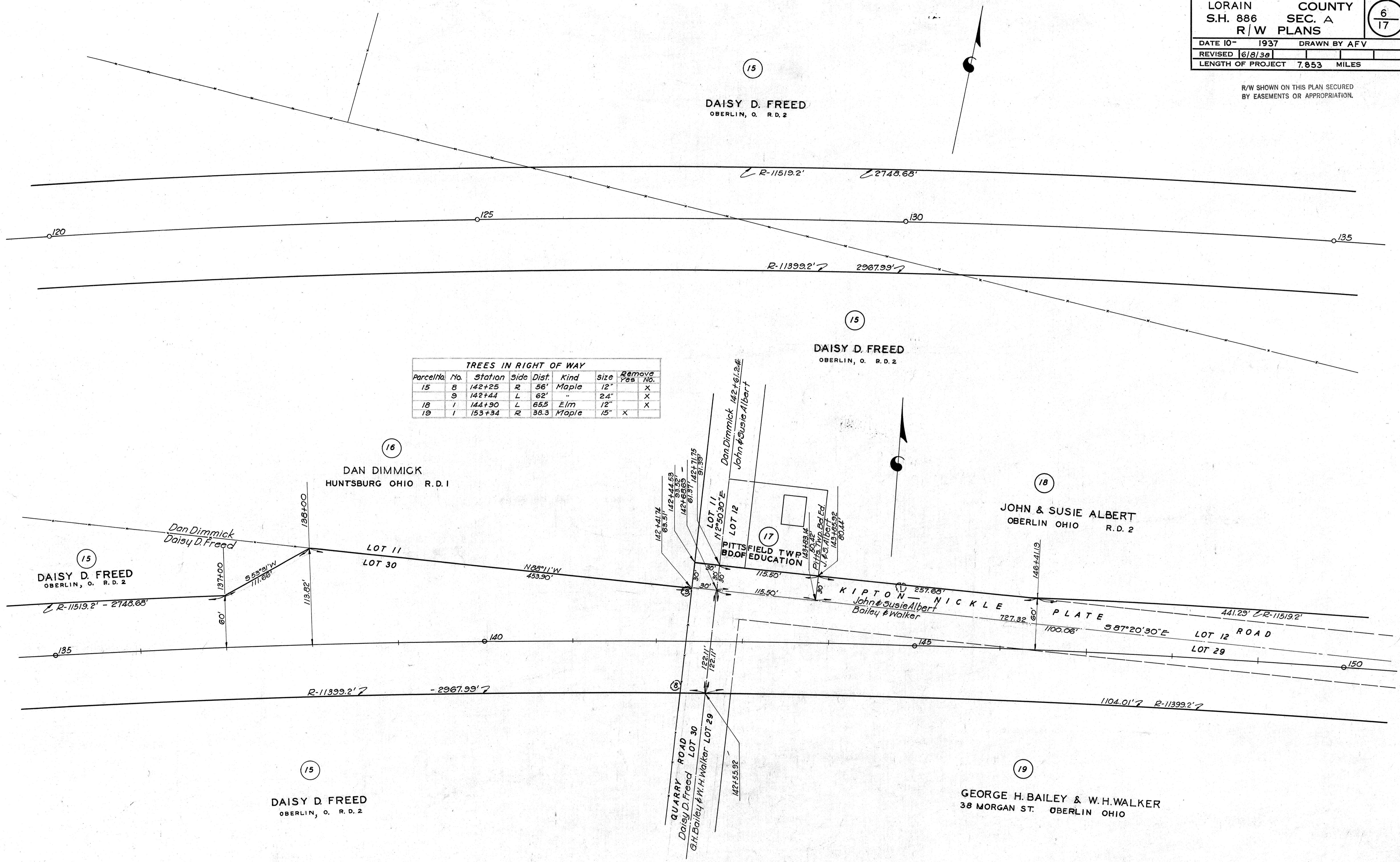
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JOHN & SUSIE ALBERT
OBERLIN OHIO R. D. 2

15
DAISY D. FREED
OBERLIN, O. R. D. 2

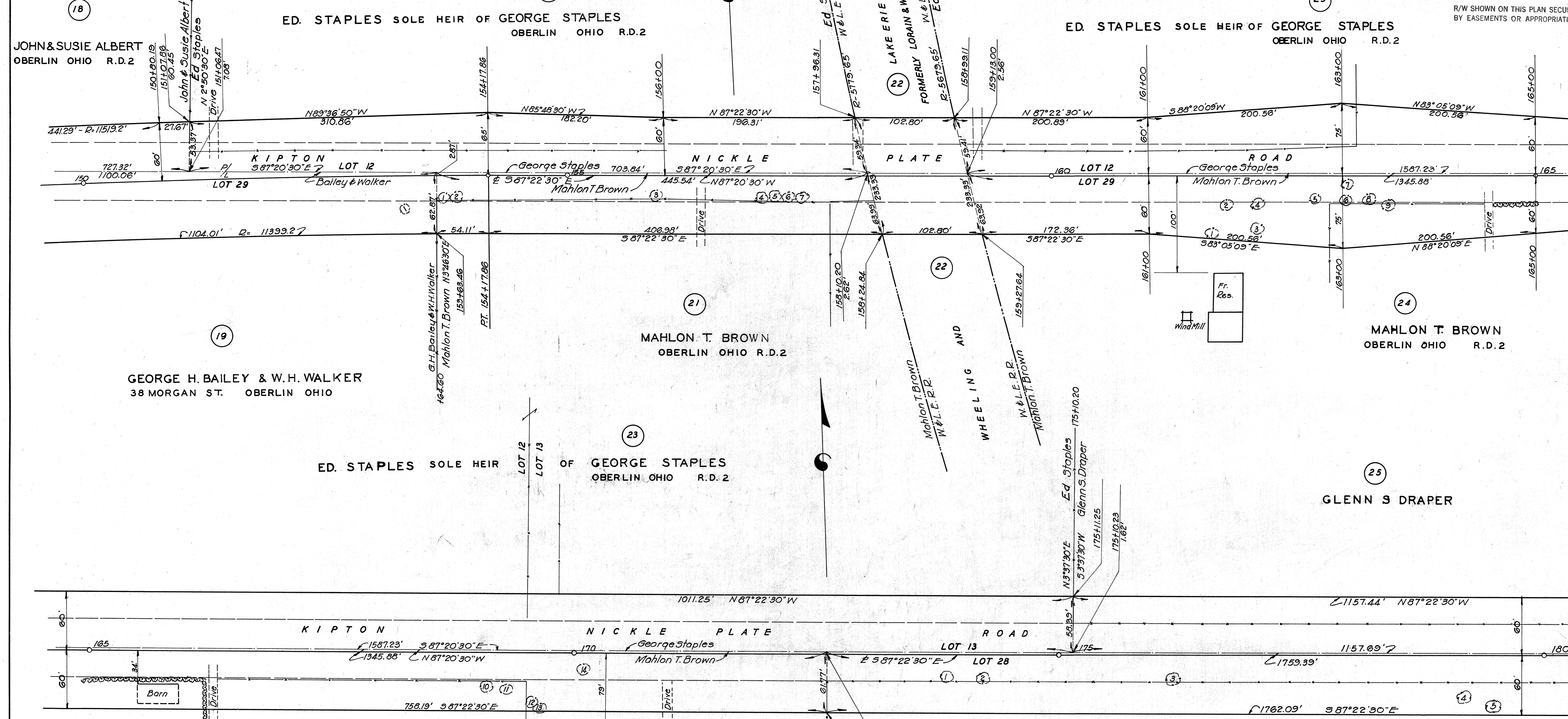
15
DAISY D. FREED
OBERLIN, O. R. D. 2

19
GEORGE H. BAILEY & W.H. WALKER
38 MORGAN ST. OBERLIN OHIO

TREES IN RIGHT OF WAY							
Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes No
15	8	142+25	R	56'	Maple	12"	X
	9	142+44	L	62'	"	24"	X
18	7	144+90	L	65.5	Elm	12"	X
18	1	153+34	R	38.3	Maple	15"	X



R/W SHOWN ON THIS PLAN SECURED
 BY EASEMENTS OR APPROPRIATION.



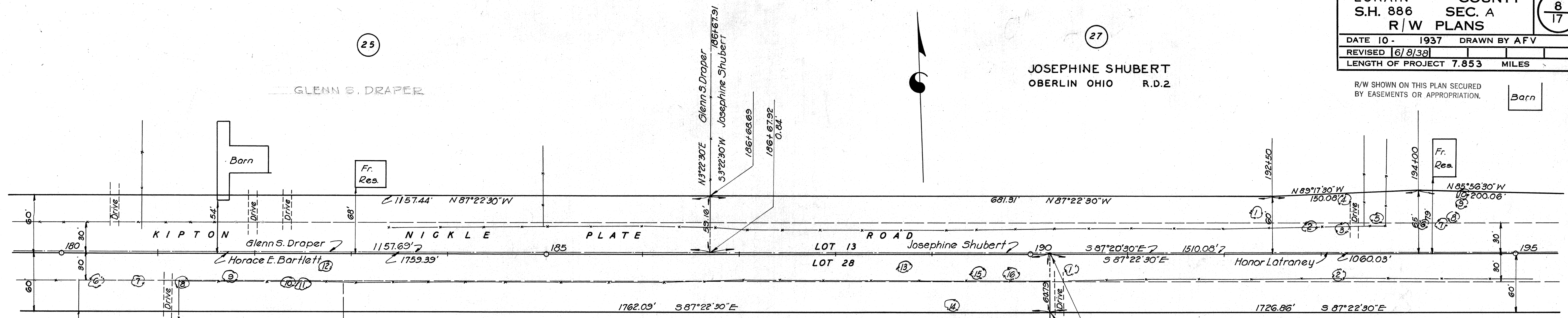
TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No.
21	1	153+87	R	27'	Elm	30"	X	
	2	153+74	R	23'	Hickory	10"	X	
	3	155+98	R	24'	W. Cherry	10"	X	
	4	157+12	R	25.5'	"	12"	X	
	5	157+26	R	22'	Poplar	15"	X	
	6	157+59	R	24'	Apple	12"	X	
	7	157+83	R	24'	Maple	12"	X	
24	1	161+68	R	64'	Apple	24"		X
	2	161+89	R	31'	Hemlock	10"	X	
	3	162+10	R	61'	Elm	18"		X
	4	162+14	R	30'	Apple	10"	X	
	5	162+86	R	25.5'	Oak	15"	X	
	6	163+02	R	30'	Maple	12"	X	
	7	163+07	R	14'	Oak	8"	X	
	8	163+28	R	27'	"	24"	X	

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No.
24 Cont.	9	163+66	R	31'	Ash	15"	X	
	10	169+09	R	36'	cherry	10"	X	
	11	169+30	R	35'	"	10"	X	
	12	169+58	R	54'	Hemlock	"		X
	13	169+59	R	60'	"	12"		X
26	1	170+08	R	21'	Elm	24"	X	
	2	173+86	R	28'	Maple	12"	X	
	3	174+36	R	25'	W. Cherry	24"	X	
	4	176+27	R	25'	Maple	15"	X	
	5	179+15	R	47'	Elm	18"	X	
Cont'd.	5	179+66	R	55'	Maple	15"		X

JOSEPHINE SHUBERT
 OBERLIN OHIO R.D.2



TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist	Kind	Size	Remove Yes	No.
26 Cont.	6	180+43	R	30'	Maple	15"	X	
	7	180+65	R	30'	Elm	36"	X	
	8	181+34	R	30'	"	36"	X	
	9	181+70	R	28'	Maple	24"	X	
	10	182+23	R	30'	Hickory	30"	X	
	11	182+39	R	35'	Elm	20"	X	
	12	182+79	R	14'	Maple	20"	X	
	13	188+75	R	16'	Oak	36"	X	
	14	189+19	R	62'	Maple	12"		X
	15	189+48	R	24.5'	Hickory	12"	X	
	16	189+79	R	25.5'	Oak	12"	X	
27	1	192+42	L	37'	Cherry	6"	X	
	2	192+96	L	26.6'	Elm	8"	X	
	3	193+23	L	27'	Ash	10"	X	
	4	193+28	L	60'	"	20"		X
	5	193+63	L	32'	Walnut	10"	X	
	6	194+03	L	27.5'	Elm	12"	X	
	7	194+24	L	27.5'	"	12"	X	
	8	194+38	L	29'	Ash	12"	X	
	9	194+52	L	66'	"	18"		X
	10	194+52	L	70'	"	18"		X
28	1	190+44	R	23.5'	Oak	12"	X	
	2	193+13	R	26'	Ash	30"	X	
	3	197+77	R	26'	Oak	24"	X	
	4	197+98	R	26.5'	W. Cherry	10"	X	
	5	204+96	R	22'	"	12"	X	
	6	205+10	R	21.5'	"	10"	X	
	7	205+48	R	21'	Elm	15"	X	
	8	206+72	R	21.4'	"	8"	X	
	9	207+08	R	19.5'	"	30"	X	

HORACE E BARTLETT
 OBERLIN OHIO R.D.2

JOSEPHINE SHUBERT
 OBERLIN OHIO R.D.2

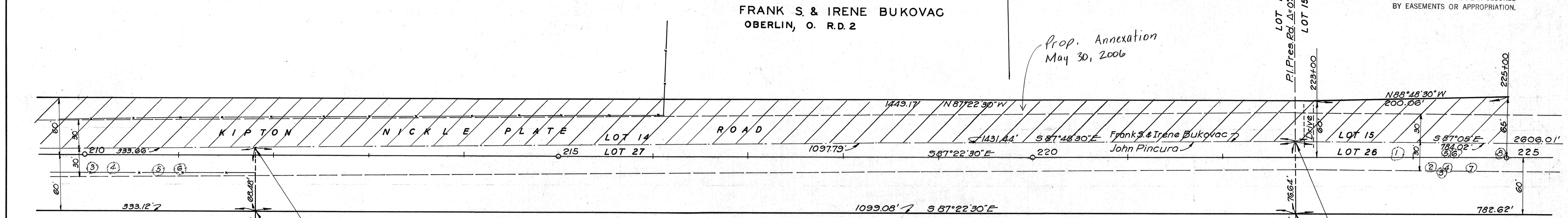
HONOR LATRANY AND MARGARET, JOSEPH, BERTHA, STEVE JR. & BERT LATRANY
 C/O HONOR LATRANY, ATTY. IN FACT, R.D.2 OBERLIN, O.
 (SOLE HEIRS OF STEVE LATRANY (DECEASED))

FRANK S. & IRENE BUKOVAC
 OBERLIN, O. R.D.2
 Prop. Annexation May 30, 2006

HONOR LATRANY AND MARGARET, BERT, JOSEPH, STEVE JR., BERTHA LATRANY
 C/O HONOR LATRANY, ATTY. IN FACT, R.D.2 OBERLIN, O.
 (SOLE HEIRS OF STEVE LATRANY (DECEASED))

HONOR LATRANY AND JOSEPH, MARGARET, BERT STEVE JR. & BERTHA LATRANY
 SOLE HEIRS OF STEVE LATRANY (DECEASED)
 C/O HONOR LATRANY, ATTY. IN FACT, OBERLIN, O. R.D.2

R/W SHOWN ON THIS PLAN SECURED BY EASEMENTS OR APPROPRIATION.



29
HONOR LATRANY AND JOSEPH BERT, MARGARET, STEVE JR. & BERTHA LATRANY, SOLE HEIRS OF STEVE LATRANY, DECEASED. C/O HONOR LATRANY, ATTY IN FACT, OBERLIN, O. R. D. 2

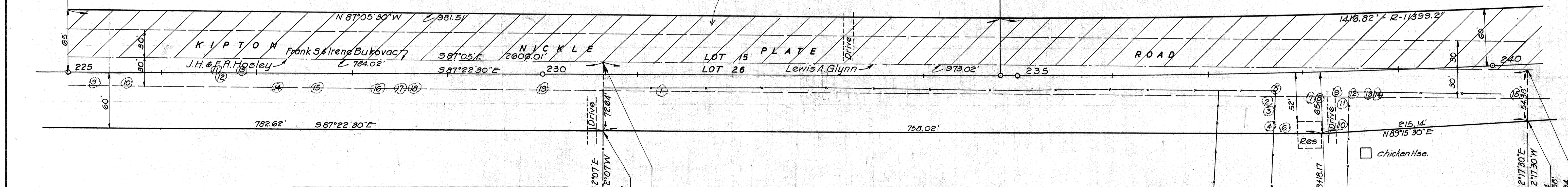
TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No
29	1	209+23	R	20'	Elm	12"	X	
	2	209+35	R	20'	"	20"	X	
	3	210+05	R	18.5'	Apple	10"	X	
	4	210+35	R	17.5'	Elm	18"	X	
	5	210+80	R	18'	"	24"	X	
	6	211+00	R	17.5'	W.Cherry	14"	X	
32	1	212+32	R	19'	Hickory	15"	X	
33	1	223+86	L	2'	Elm	8"	X	
	2	224+20	R	11.5'	"	8"	X	
	3	224+32	R	14.5'	"	8"	X	
	4	224+36	R	12.5'	"	8"	X	
	5	224+38	L	3'	"	8"	X	
	6	224+43	L	3'	"	12"	X	
	7	224+60	R	11'	"	8"	X	
	8	224+95	L	2'	"	8"	X	
	9	225+29	R	11.5'	"	10"	X	
	10	225+61	R	12'	"	8"	X	
	11	226+59	L	0.3'	"	8"	X	
	12	226+62	R	0.5'	"	(2) 8"	X	
	13	226+87	L	2.5'	"	10"	X	
	14	227+23	R	15.2'	"	6 1/2"	X	
	15	227+61	R	15'	"	8"	X	
	16	228+27	R	15.8'	"	12"	X	
	17	228+49	R	15'	"	(2) 15"	X	
	18	228+63	R	15'	"	8"	X	
	19	230+00	R	15'	"	(3) 8"	X	
34	1	231+32	R	15'	"	8"	X	
	2	237+64	R	33.2'	Plum	10"	X	
	3	237+64	R	40'	"	10"	X	
Cont'd.	4	237+64	R	56.5'	"	(2) 8"	X	

32
SUSIE DAVIES
WELLINGTON OHIO R.D.4

31
FRANK S & IRENE BUKOVAC
OBERLIN, O. R. D. 2

33
HENRY HAAS
OBERLIN OHIO R.D.2



33
HENRY HAAS
OBERLIN OHIO R. D. 2

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No
34 Cont'd.	5	237+71	R	18.8'	Elm	8"	X	
	6	237+79	R	60'	Cherry	10"	X	
	7	238+09	R	28.8'	Plum	6"	X	
	8	238+17	R	30'	Pine	24"	X	
	9	238+35	R	25.3'	Crab Apple	15"	X	
	10	238+37	R	57'	Ash	10"	X	
	11	238+40	R	34.5'	Pine	2"	X	
	12	238+52	R	26'	Walnut	12"	X	
	13	238+69	R	25.8'	Maple	18"	X	
	14	238+76	R	25'	Ash	15"	X	
	15	240+31	R	34.2'	"	24"	X	

34
LEWIS A. GLYNN
OBERLIN OHIO R. D. 2

R/W SHOWN ON THIS PLAN SECURED BY EASEMENTS OR APPROPRIATION.

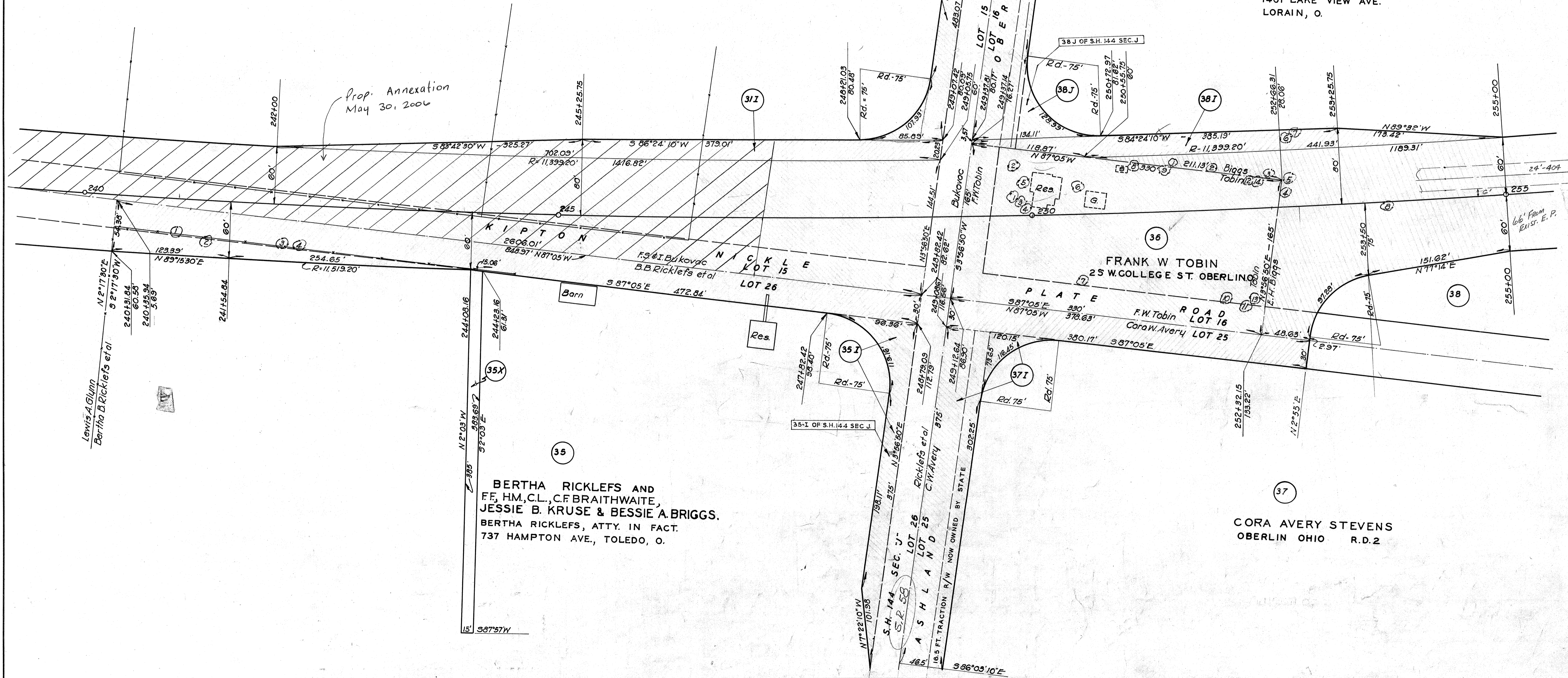
TREES IN RIGHT OF WAY							
Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes No
35	1	240+94	R	36'	Ash	20"	X
	2	241+30	R	41'	"	24"	X
	3	242+11	R	42.5'	"	24"	X
	4	242+26	R	42.8'	"	24"	X
36	1	249+83	L	18.5'	Cherry	4"	X
	2	249+83	L	52.5'	" (2)	6"	X
	3	249+88	L	15.6'	"	4"	X
	4	249+93	L	7'	"	12"	X
	5	249+93	L	33.8'	"	8"	X
	6	250+51	L	29'	Walnut	10"	X
	7	250+52	R	73.5'	Elm	18"	X
	8	251+18	L	54'	"	10"	X
	9	251+41	L	47.5'	"	10"	X
	10	252+02	R	98'	Ash	18"	X
	11	252+25	R	104'	Hickory	10"	X
	12	252+29	L	32'	Ash	18"	X
	13	252+29	R	97'	Elm	24"	X
	14	252+34	L	31.4'	"	6'-8'-12"	X
38	1	251+55	L	47'	"	8"	X
	2	251+90	L	40'	"	8"	X
	3	252+57	L	28.5'	Ash	12"	X
	4	252+64	L	13'	"	12"	X
	5	252+69	L	26'	W. Cherry	15"	X
	6	252+77	L	73'	Pin Oak	10"	X
	7	252+79	L	79'	Ash	8"	X
Cont'd.	8	253+73	R	1'	Apple	8"	X

FRANK S. & IRENE BUKOVAC
OBERLIN, O. R. D. 2

ELEANOR H. BIGGS
1401 LAKE VIEW AVE.
LORAIN, O.

BERTHA RICKLEFS AND
FF, HM, C.L., C.F. BRAITHWAITE,
JESSIE B. KRUSE & BESSIE A. BRIGGS.
BERTHA RICKLEFS, ATTY. IN FACT.
737 HAMPTON AVE., TOLEDO, O.

CORA AVERY STEVENS
OBERLIN OHIO R. D. 2



R/W SHOWN ON THIS PLAN SECURED
 BY EASEMENTS OR APPROPRIATION.

38
 ELEANOR H. BIGGS
 1401 LAKE VIEW AVE.
 LORAIN, O.

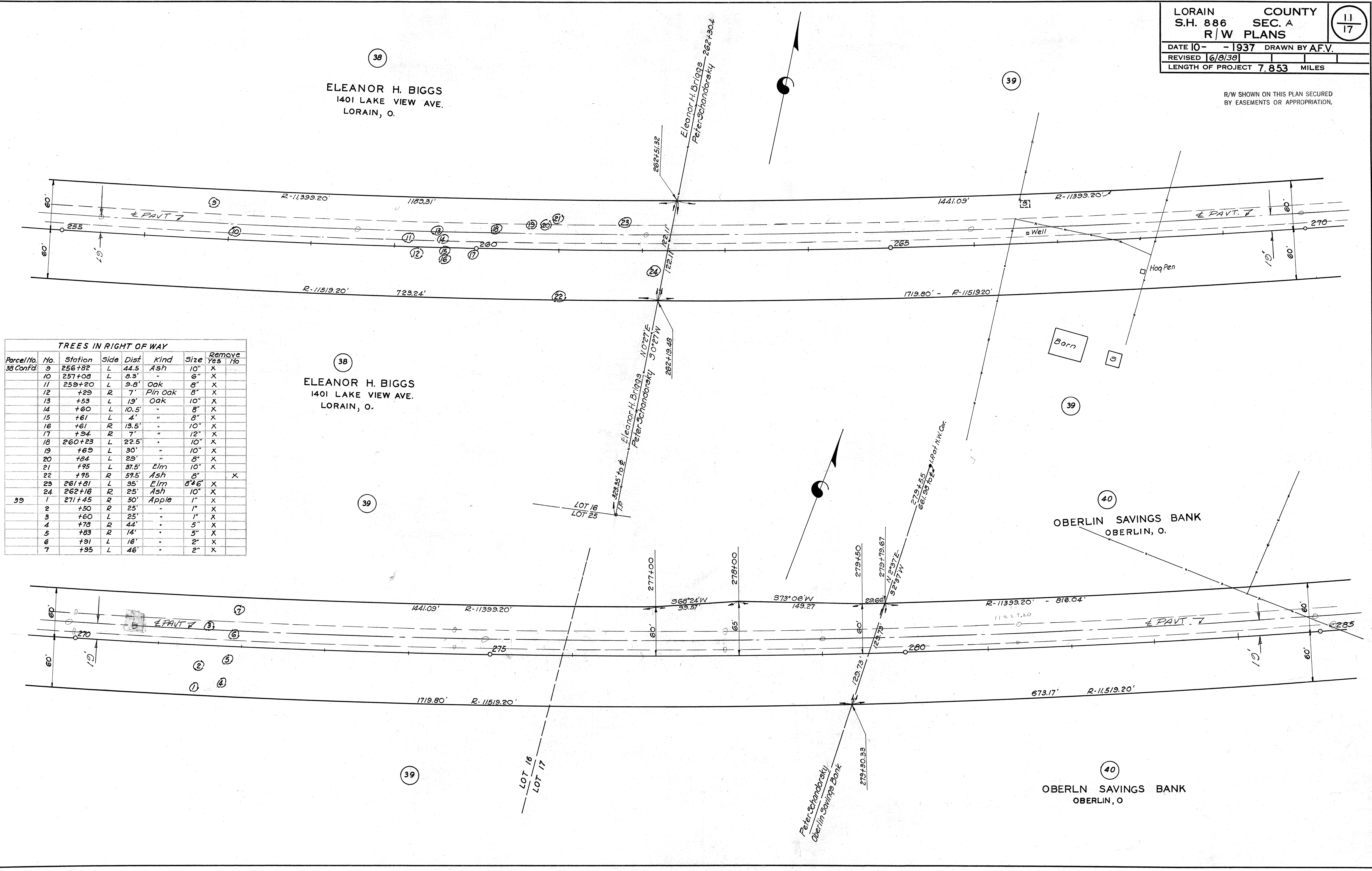
38
 ELEANOR H. BIGGS
 1401 LAKE VIEW AVE.
 LORAIN, O.

40
 OBERLIN SAVINGS BANK
 OBERLIN, O.

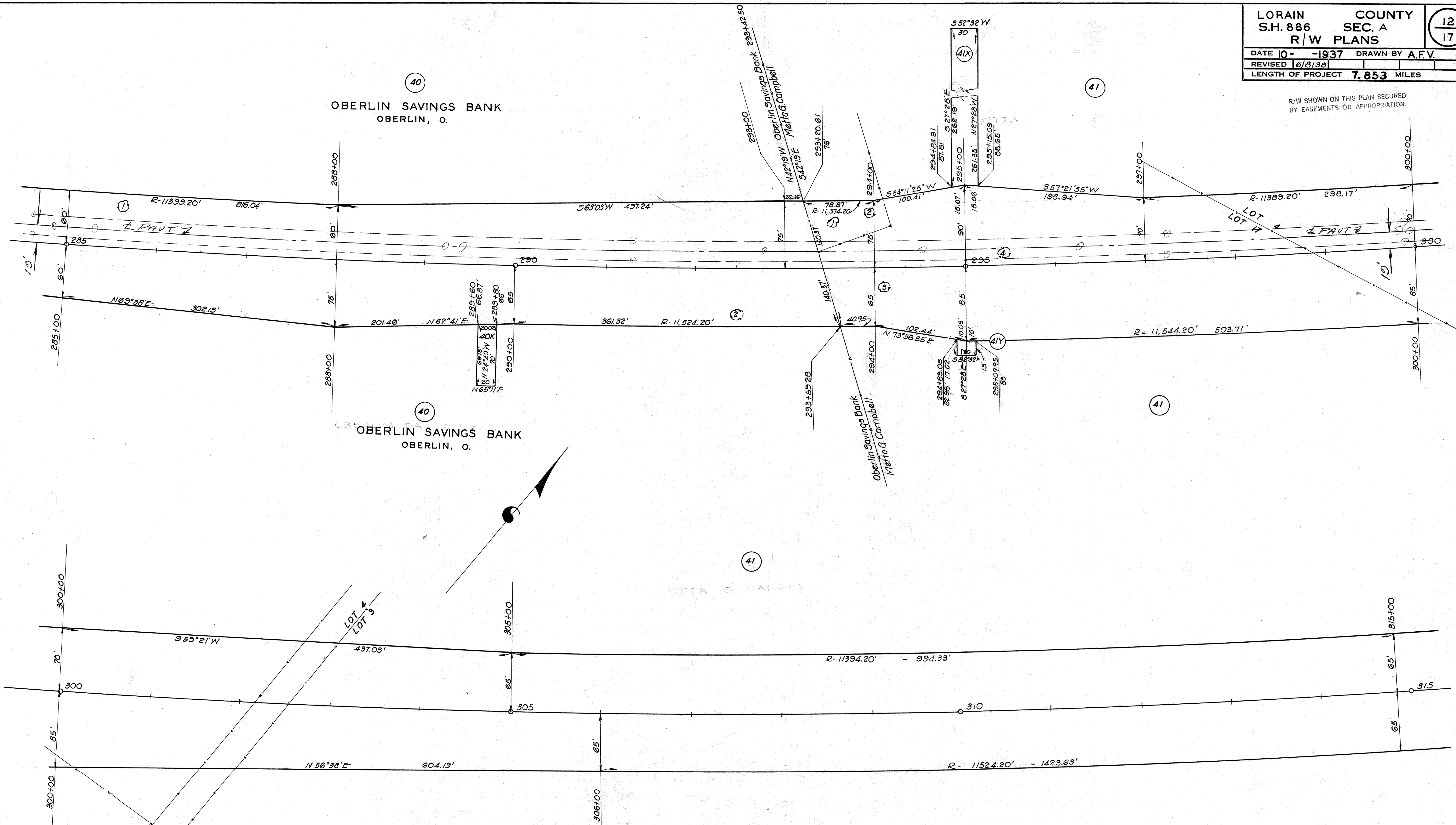
40
 OBERLIN SAVINGS BANK
 OBERLIN, O.

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist	Kind	Size	Remove		
							Yes	No	
38 Cont'd.	9	256+82	L	44.5	Ash	10"	X		
	10	257+08	L	8.3'	"	6"	X		
	11	259+20	L	9.8'	Oak	8"	X		
	12	+29	R	7'	Pin Oak	8"	X		
	13	+53	L	13'	Oak	10"	X		
	14	+60	L	10.5'	"	8"	X		
	15	+61	L	4'	"	8"	X		
	16	+61	R	13.5'	"	10"	X		
	17	+94	R	7'	"	12"	X		
	18	260+23	L	22.5'	"	10"	X		
	19	+69	L	30'	"	10"	X		
	20	+84	L	29'	"	8"	X		
	21	+95	L	37.5'	Elm	10"	X		
	22	+95	R	59.5'	Ash	8"		X	
	23	261+81	L	35'	Elm	8" x 6"	X		
	24	262+16	R	25'	Ash	10"	X		
	39	1	271+45	R	50'	Apple	1"	X	
		2	+50	R	25'	"	1"	X	
		3	+60	L	25'	"	1"	X	
		4	+79	R	44'	"	5"	X	
		5	+83	R	14'	"	5"	X	
		6	+91	L	16'	"	2"	X	
		7	+95	L	46'	"	2"	X	



R/W SHOWN ON THIS PLAN SECURED
 BY EASEMENTS OR APPROPRIATION.



TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove
							Yes No
40	1	285+61	L	46'	Osage	12"	X
	2	292+44	R	52'	"	12"	X
41	1	293+57	L	50'	Apple	12"	X
	2	293+95	L	64'	"	15"	X
	3	294+12	R	21'	Osage	12"	X
	4	295+43	L	13'	Willow	24"	X

Cont'd.

R/W SHOWN ON THIS PLAN SECURED BY EASEMENTS OR APPROPRIATION.

LORAIN COUNTY
S.H. 886 SEC. A
R/W PLANS

13
17

DATE 10-1937 DRAWN BY A.F.V.

REVISED 6/8/38

LENGTH OF PROJECT 7.853 MILES

41
METTA G CAMPBELL

43
GLENN I & EMILY L HOBBS
OBERLIN OHIO R. D. 2

44
GLENN I & EMILY L HOBBS
OBERLIN OHIO R. D. 2

43
GLENN & EMILY HOBBS
OBERLIN OHIO R. D. 2

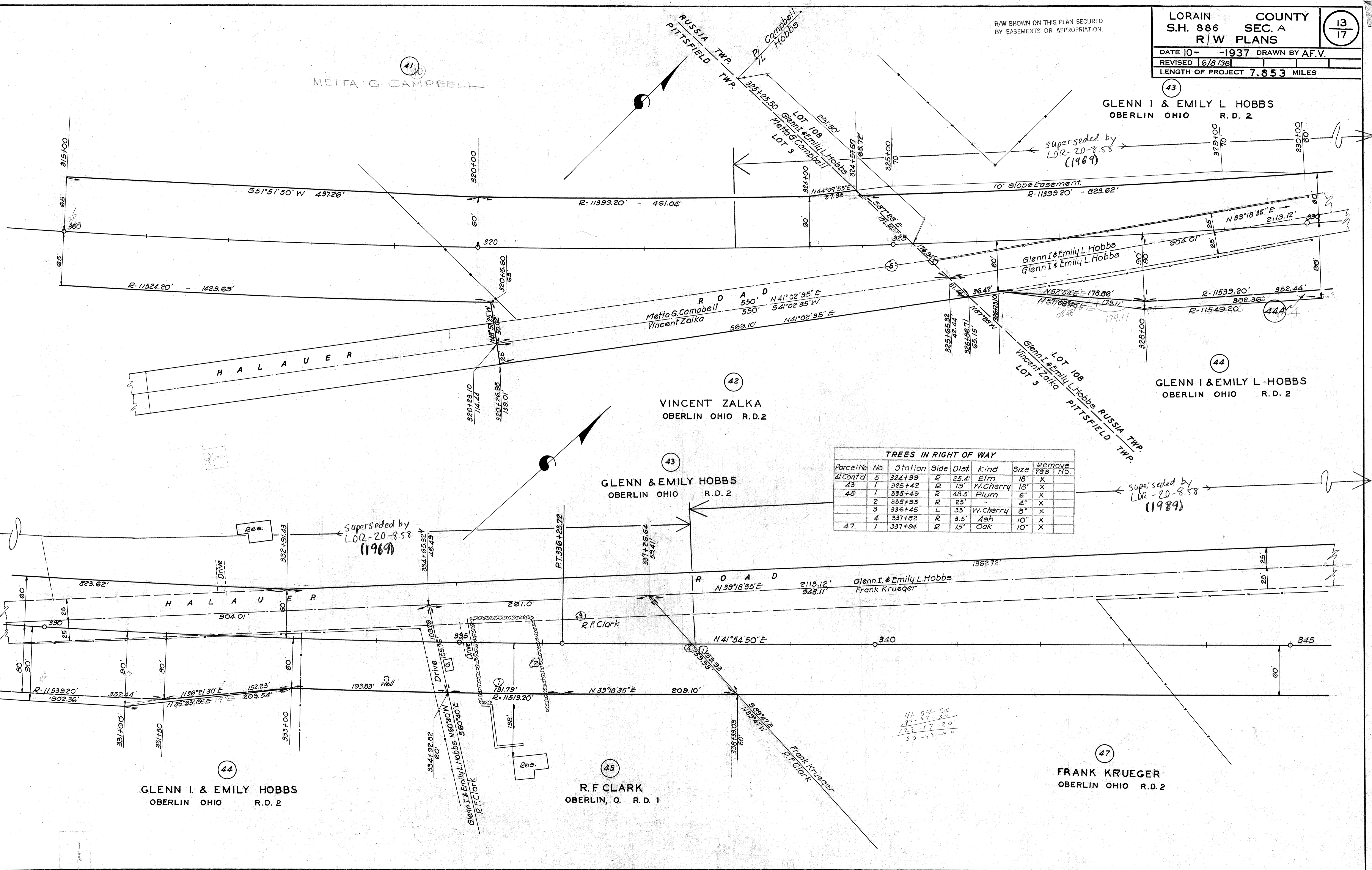
44
GLENN I & EMILY HOBBS
OBERLIN OHIO R. D. 2

45
R. F. CLARK
OBERLIN, O. R. D. 1

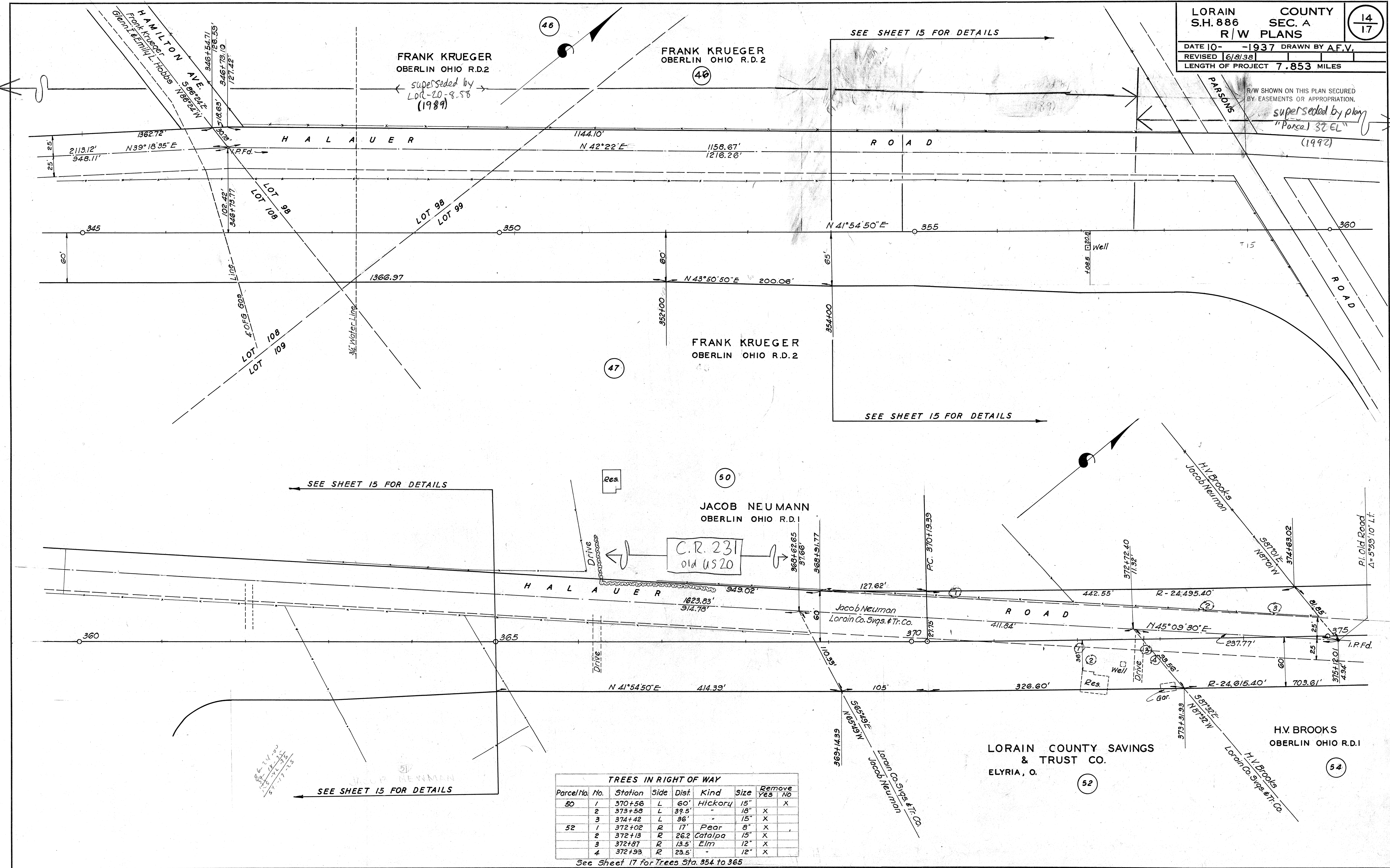
47
FRANK KRUEGER
OBERLIN OHIO R. D. 2

TREES IN RIGHT OF WAY

Parcel No	No	Station	Side	Dist	Kind	Size	Remove
41 Cont'd							Yes No
43	1	324+39	R	25.4	Elm	18"	X
45	1	325+42	R	15'	W. Cherry	18"	X
	2	335+49	R	48.5'	Plum	6"	X
	3	335+95	R	25'	"	4"	X
	4	336+45	L	33'	W. Cherry	8"	X
	4	337+82	R	3.5'	Ash	10"	X
47	1	337+94	R	15'	Oak	10"	X



R/W SHOWN ON THIS PLAN SECURED BY EASEMENTS OR APPROPRIATION.
superceded by plat "Parcel 32 EL" (1992)



TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No
50	1	370+56	L	60'	Hickory	15"	X	
	2	373+58	L	39.5'	"	18"	X	
	3	374+42	L	36'	"	15"	X	
52	1	372+02	R	17'	Pear	8"	X	
	2	372+13	R	26.2'	Catalpa	15"	X	
	3	372+87	R	13.5'	Elm	12"	X	
	4	372+93	R	23.5'	"	12"	X	

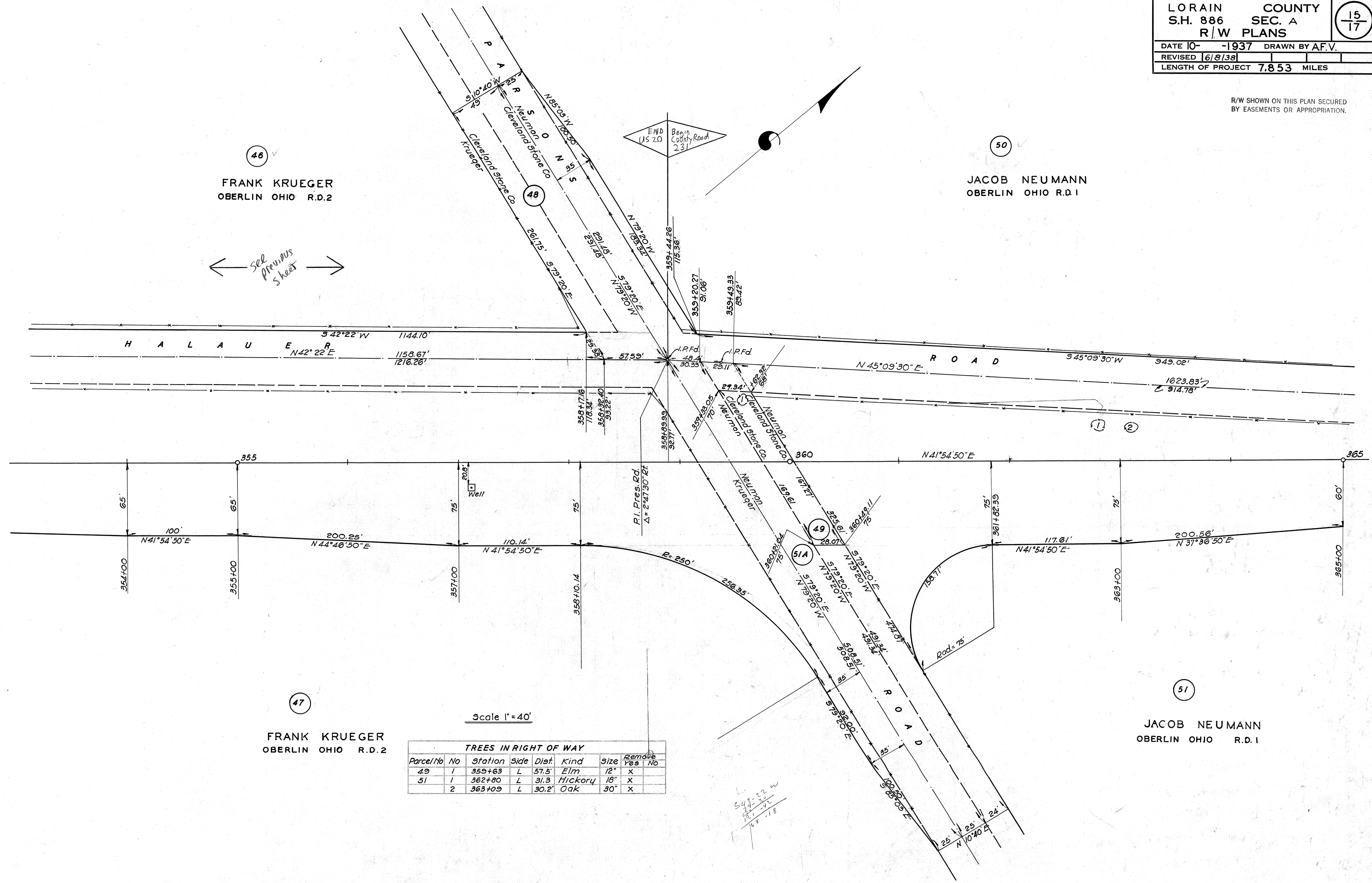
See Sheet 17 for Trees Sta. 354 to 365

R/W SHOWN ON THIS PLAN SECURED
 BY EASEMENTS OR APPROPRIATION.

46
 FRANK KRUEGER
 OBERLIN OHIO R.D.2

50
 JACOB NEUMANN
 OBERLIN OHIO R.D.1

← see previous sheet →



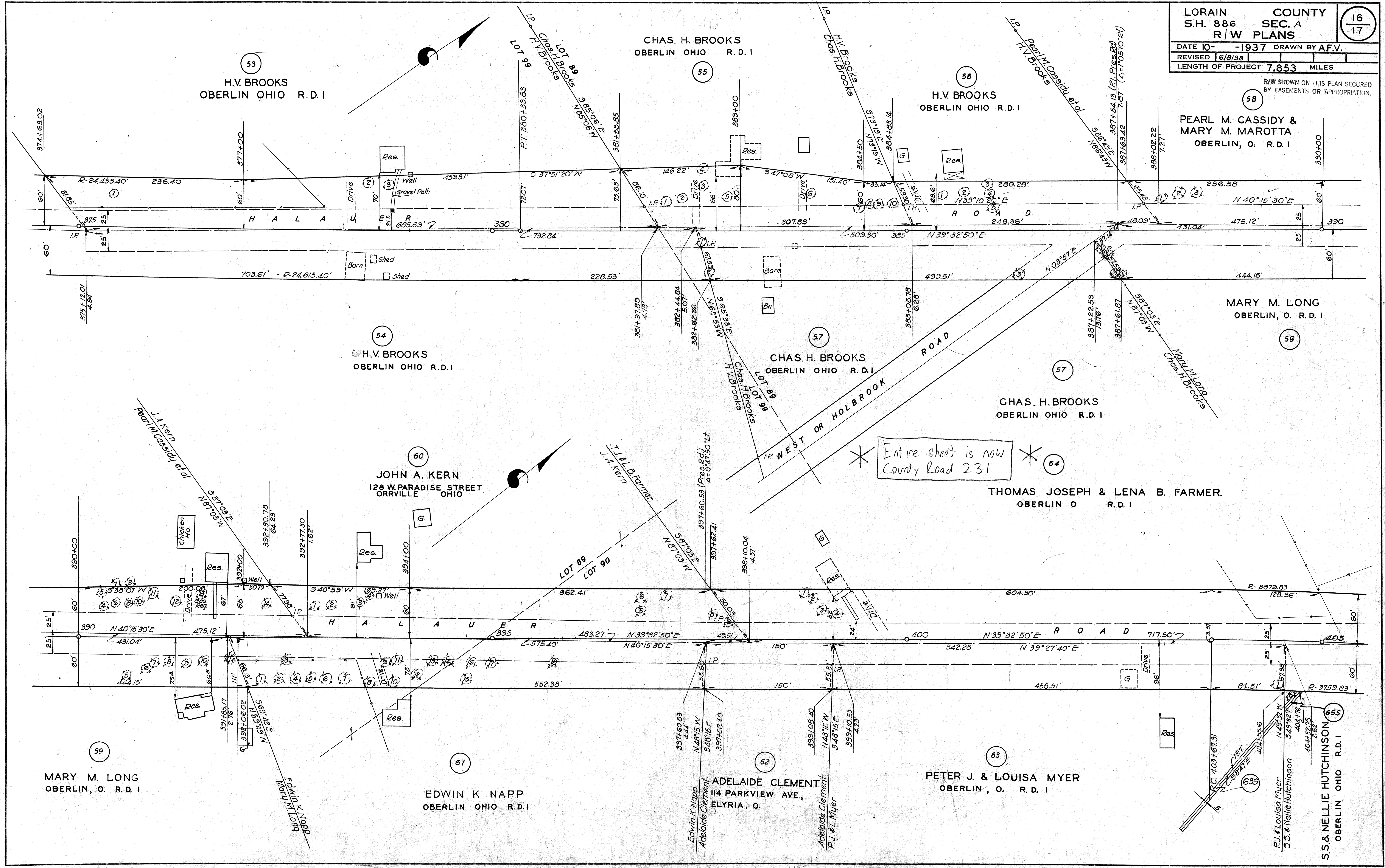
47
 FRANK KRUEGER
 OBERLIN OHIO R.D.2

51
 JACOB NEUMANN
 OBERLIN OHIO R.D.1

Scale 1" = 40'

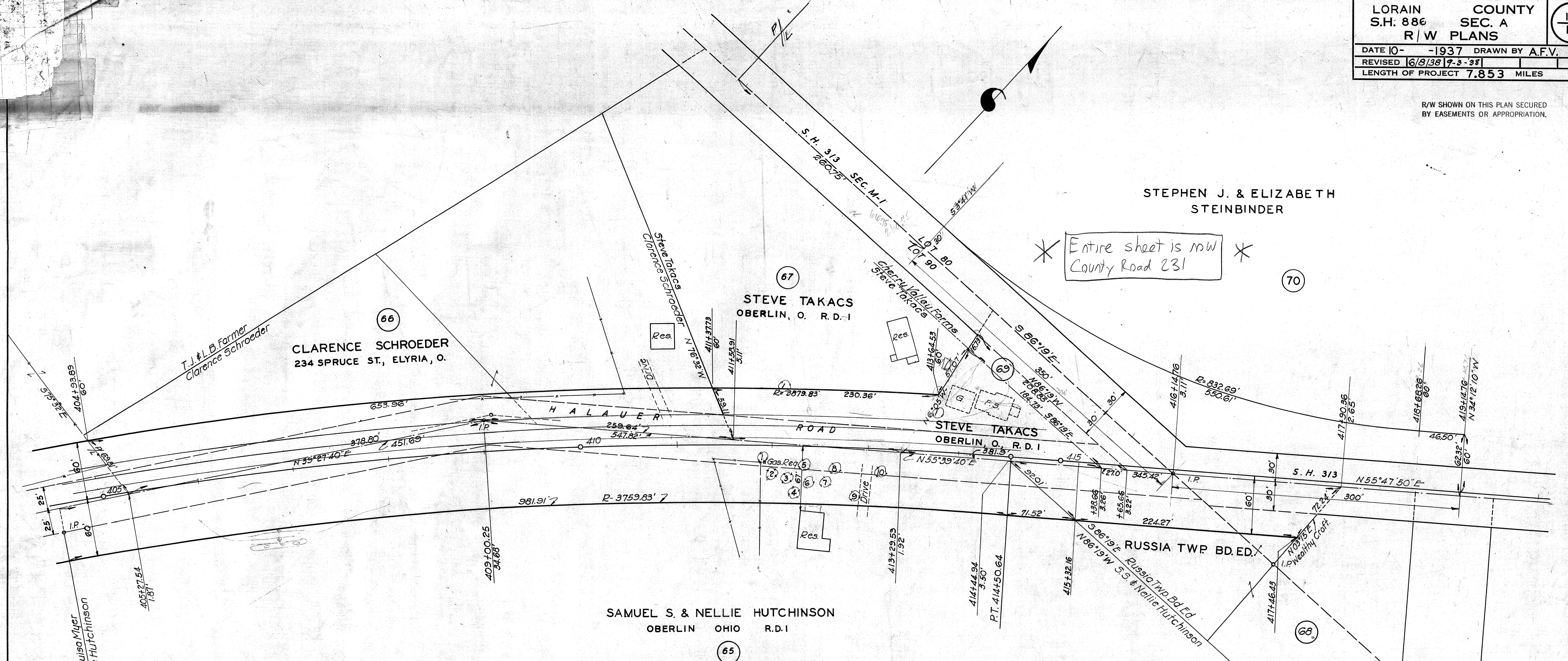
TREES IN RIGHT OF WAY

Parcel/No	No	Station	Side	Dist	Kind	Size	remove
							Yes No
49	1	359+63	L	57.5'	Elm	12"	X
51	1	362+80	L	31.3	Hickory	18"	X
	2	363+09	L	30.2'	Oak	30"	X



Entire sheet is now
 County Road 231

R/W SHOWN ON THIS PLAN SECURED
 BY EASEMENTS OR APPROPRIATION.



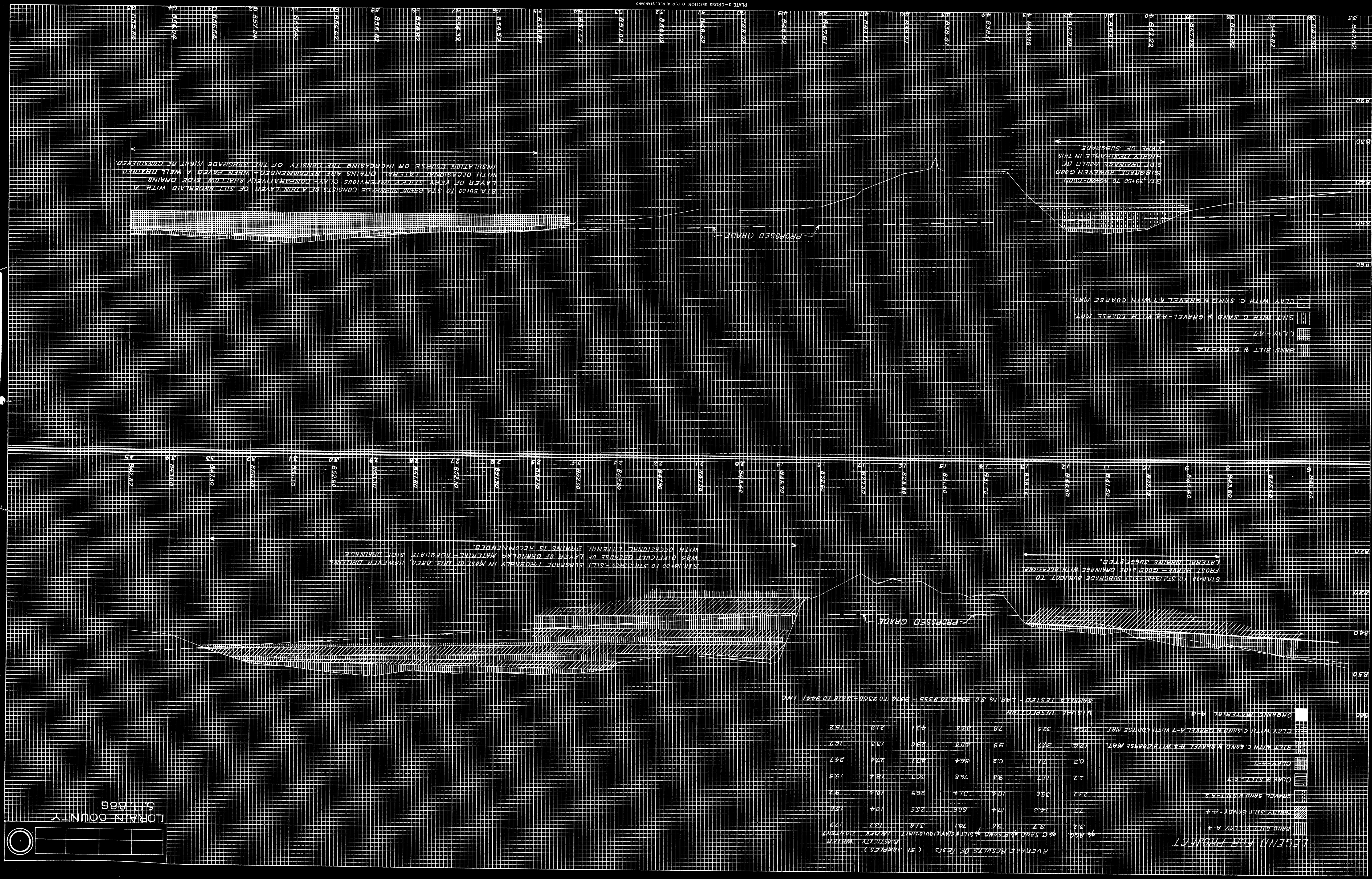
SAMUEL S. & NELLIE HUTCHINSON
 OBERLIN OHIO R.D.1

TREES IN RIGHT OF WAY

Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No.	Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No.	Parcel No.	No.	Station	Side	Dist.	Kind	Size	Remove Yes	No.
53	1	375+43	L	40.5'	Elm	36"	X		58 Cont'd	10	390+73	L	43'	Cherry	4"	X		61 Cont.	6	393+00	R	49'	Fruit		X	
	2	378+50	L	59'	Maple	30"	X			11	390+90	L	50'	Peach		X			7	393+23	R	50'	"		X	
	3	378+78	L	54.5'	Pine	18"	X			12	391+18	L	41'	Walnut	1"	X			8	393+51	R	55.5'	Pine	2"		X
55	1	382+10	L	35'	Hickory	12"	X		13	391+48	L	48.5'	Maple	30"	X		9	393+72	R	27.7'	Osage	4'-6"-8"	X			
	2	382+30	L	38.5'	"	15"	X		14	392+26	L	40'	"	8"	X		10	393+80	R	51.6'	Maple	8"	X			
	3	382+54	L	65.5'	Pear	12"	X		1	387+33	R	29.5'	Elm	30"	X		11	393+85	R	27'	Osage	8'-6"	X			
	4	382+54	L	79.5'	Peach	4"		X	2	387+35	R	32.5'	W.Cherry	6"	X		12	394+08	R	45.3'	Maple	6"	X			
	5	382+83	L	41'	Maple	30"	X		3	387+53	R	54.5'	Elm	30"		X	13	394+25	R	27'	Osage	4'-8"	X			
	6	383+82	L	45.8'	Plum	4"	X		4	387+56	R	58'	W.Cherry	8"		X	14	394+46	R	27.6'	"	8"	X			
	7	384+46	L	31'	Quince	1/2"	X		5	390+57	R	47.5'	Pine	4"	X		15	394+69	R	51'	Maple	10"	X			
	8	384+58	L	33'	"	2"	X		6	390+81	R	38.6'	Walnut	6"	X		16	394+73	R	28'	Osage	4'-6"	X			
	9	384+67	L	33'	"	1"	X		7	390+88	R	31'	Poplar	15"	X		17	395+00	R	28'	"	8'-4"	X			
	10	384+87	L	33'	"	2"	X		8	391+08	R	29.3'	Maple	20"	X		18	395+75	R	29'	"	8'-6"	X			
56	1	385+44	L	42.6'	Maple	6"	X		9	391+29	R	32'	Poplar	20"	X		63	404+51	R	58'	Elm	10"		X		
	2	385+72	L	45'	"	8"	X		10	391+52	R	28'	Maple	10"	X		64	398+75	L	57'	Fruit	1"	X			
	3	385+98	L	59.5'	Cherry	3"		X	11	391+84	R	29'	Ash	18"	X		2	398+85	L	48.5'	"	3"	X			
	4	386+01	L	42.5'	Peach	3"	X		1	392+85	L	37'	Hickory	18"	X		3	398+98	L	35'	Spruce	3"	X			
57	5	386+04	L	32'	"	2"	X		2	393+06	L	38'	"	22"	X		4	393+12	L	30'	Cherry	6"	X			
	1	382+51	R	21'	Elm	10"	X		3	393+41	L	43.3'	Pine	24"	X		65	411+91	R	14'	Maple	12"	X			
	2	382+58	R	47.5'	"	6"	X		4	393+48	L	55.8'	Apple	18"	X		2	411+99	R	28.5'	Pear	12"	X			
58	3	386+35	R	57.5'	"	48"	X		5	396+80	L	34'	Fruit	1"	X		3	412+16	R	35.5'	Pine	1/2"	X			
	1	388+07	L	40.5'	Apple		X		6	396+80	L	50'	"	1"	X		4	412+25	R	50'	Maple	18"	X			
Cont'd.	2	388+30	L	44'	"		X		7	397+11	L	53'	Apple	1"		X		5	412+33	R	21'	"	1"	X		
	3	388+51	L	47'	"		X		8	397+69	L	31'	"	1"	X		6	412+35	R	38'	Pine	18"	X			
	4	390+29	L	37'	Pear	Young Fruit	X		9	397+90	L	22'	Willow	12"	X		7	412+57	R	38'	"	2"	X			
	5	390+29	L	57.8'	"	Young Fruit	X		1	392+23	R	50'	Fruit	3"	X		8	412+64	R	23.5'	Maple	1/2"	X			
	6	390+45	L	42'	Apple		X		2	392+43	R	49'	Apple	6"	X		9	412+87	R	52'	Cherry	8"	X			
	7	390+45	L	59'	"		X		3	392+52	R	25.5'	Ash	6'-8"-10"	X		10	413+14	R	24'	Maple	18"	X			
	8	390+62	L	38.7'	"		X		4	392+64	R	50'	Apple	8"	X		67	412+12	L	60'	Apple	5"		X		
	9	390+62	L	36.7'	"		X		5	392+82	R	46'	Fruit	4'-10"	X		68	413+62	L	39'	Maple	2"	X			

ORIGINAL
 SURVEY PLOTTED
 NOTE BOOK NO. _____
 AREAS CHECKED _____
 BY _____
 DATE _____

FINAL
 SURVEY PLOTTED
 NOTE BOOK NO. _____
 AREAS CHECKED _____
 BY _____
 DATE _____



LEGEND FOR PROJECT

[Symbol]	SAND SILT & CLAY - A-4
[Symbol]	SANDY SILT SANDY - A-4
[Symbol]	GRAVEL SAND & SILT - A-2
[Symbol]	CLAY & SILT - B-7
[Symbol]	CLAY - B-7
[Symbol]	SILT WITH C. SAND & GRAVEL - A-2 WITH COURSE MAT.
[Symbol]	CLAY WITH C. SAND & GRAVEL - A-2 WITH COURSE MAT.
[Symbol]	DRAINAGE MATERIAL - A-2

AVERAGE RESULTS OF TESTS (51 SAMPLES)	
PLASTICITY INDEX	WATER CONTENT
3.2	17.9
9.7	17.9
9.0	17.9
7.81	17.9
5.14	17.9
13.2	17.9
9.7	17.9
14.3	17.9
17.4	17.9
6.6	17.9
25.6	17.9
10.4	17.9
10.4	17.9
31.4	17.9
25.6	17.9
10.4	17.9
10.4	17.9
11.7	17.9
9.3	17.9
76.8	17.9
36.3	17.9
18.4	17.9
24.7	17.9
6.2	17.9
66.4	17.9
47.1	17.9
27.4	17.9
24.7	17.9
0.3	17.9
7.1	17.9
6.2	17.9
66.4	17.9
47.1	17.9
27.4	17.9
24.7	17.9
12.4	17.9
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9.9	17.9
40.0	17.9
29.8	17.9
13.5	17.9
16.2	17.9
20.4	17.9
32.5	17.9
7.8	17.9
38.3	17.9
42.1	17.9
21.9	17.9
15.2	17.9

VISUAL INSPECTION

SAMPLES TESTED - LAB. NO. 30 994 TO 995 - 3074 TO 3088 - 3418 TO 3441 INC.

541.866
 LORAIN COUNTY

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 BY

FINAL SURVEY PLOTTED AREAS CHECKED
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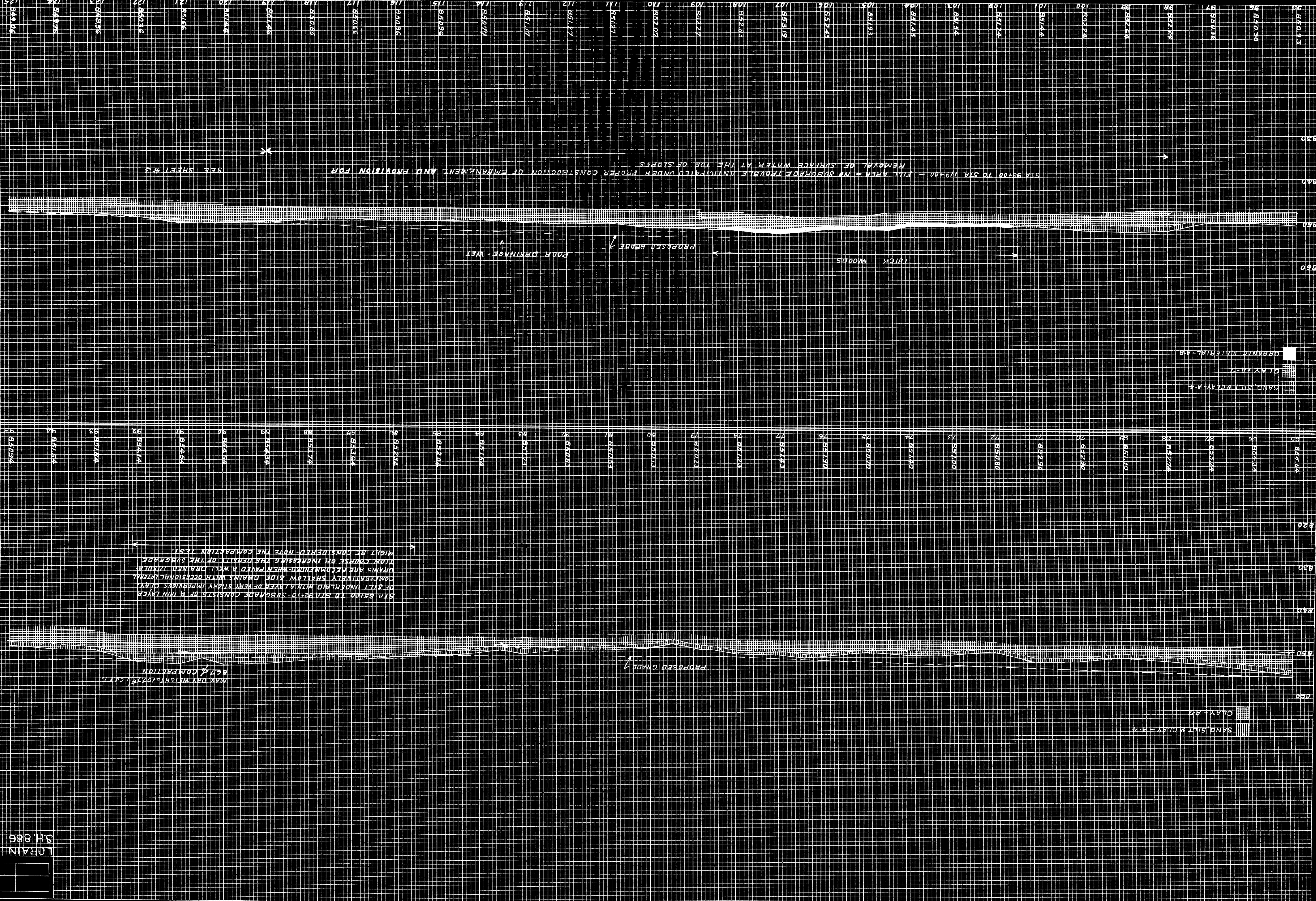
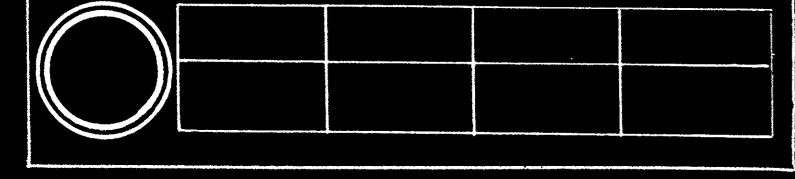


PLATE 3 - CORRECTION SECTION - C & R E & E STATIONING

LORAIN COUNTY
 SH 685



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BY
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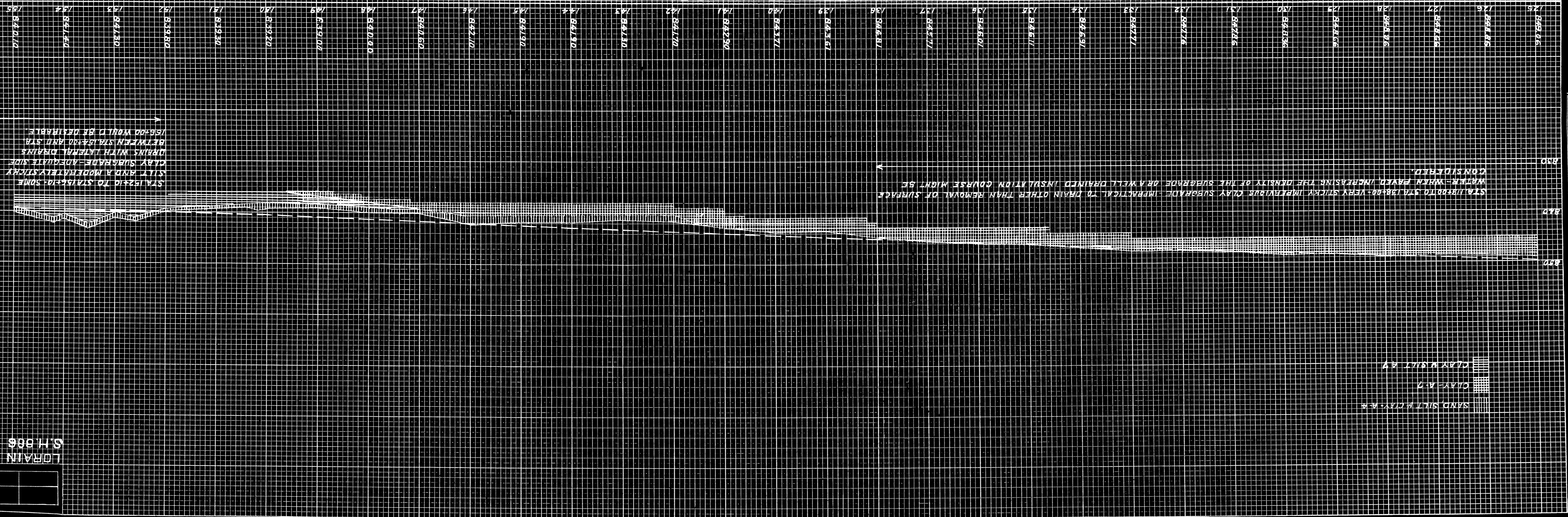
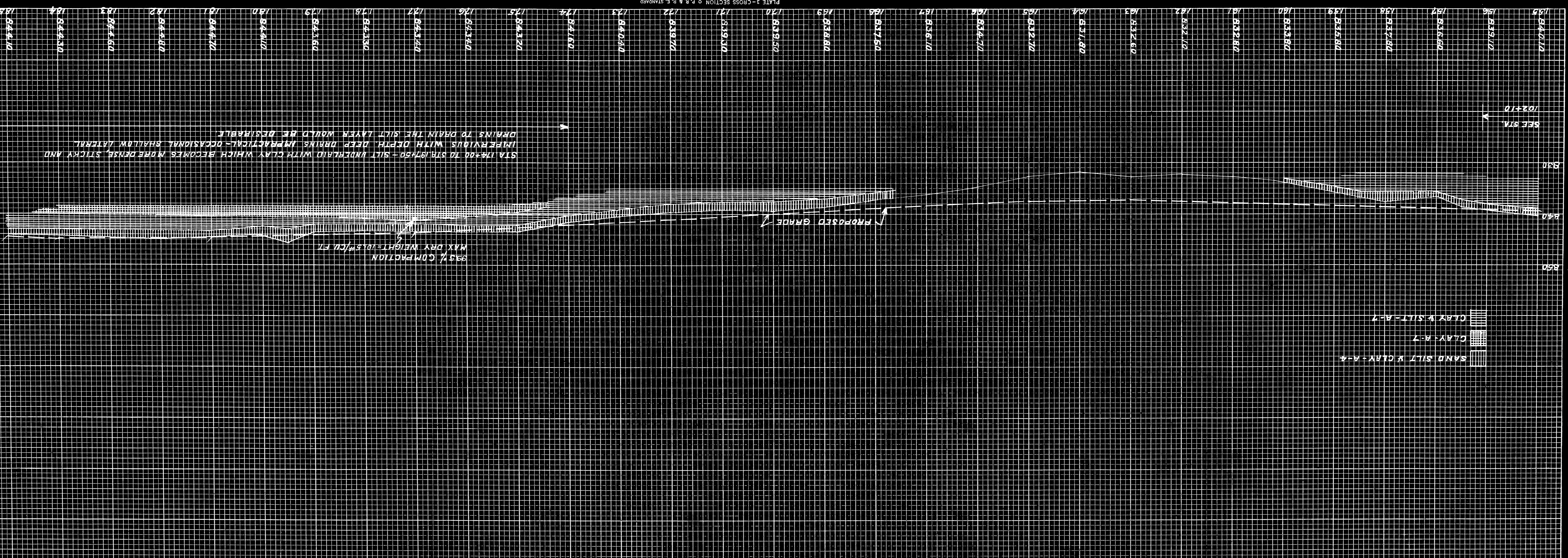
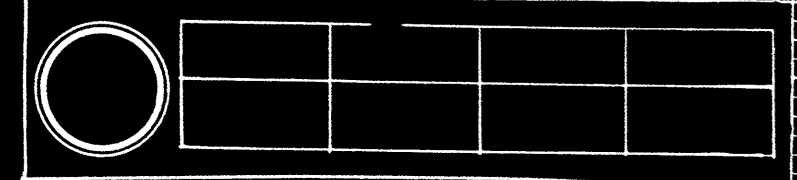


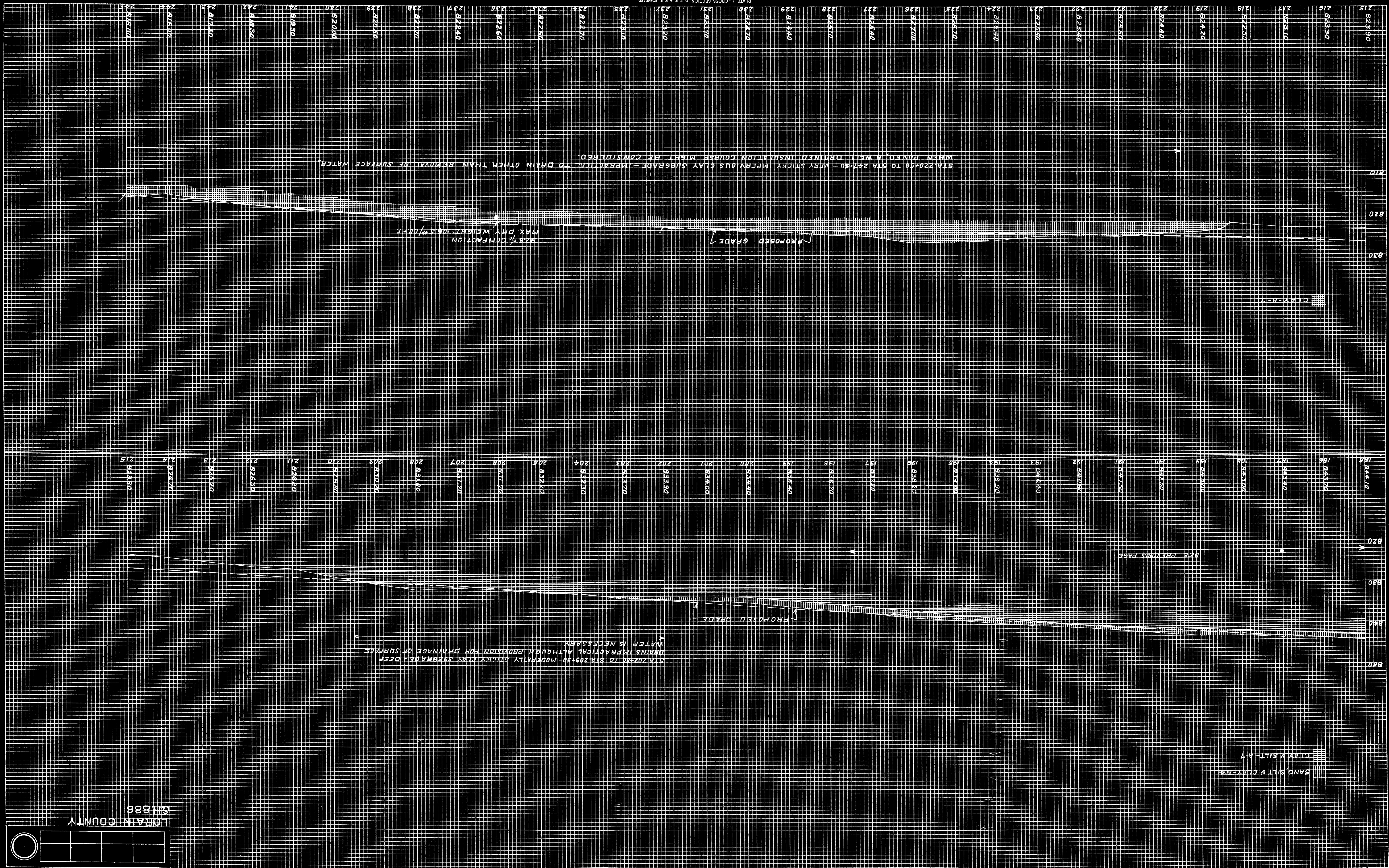
PLATE 3 - GROSS SECTION OF P. R. & E. STANDARD
 KEUFFEL & ESSER CO., NEW YORK

LORAIN COUNTY
 S. H. 886

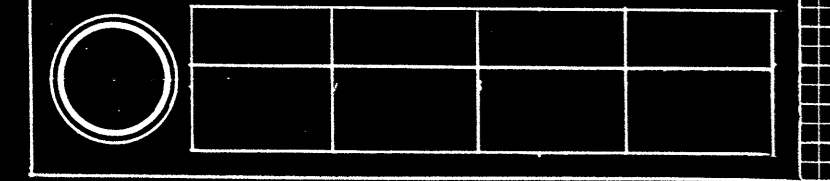


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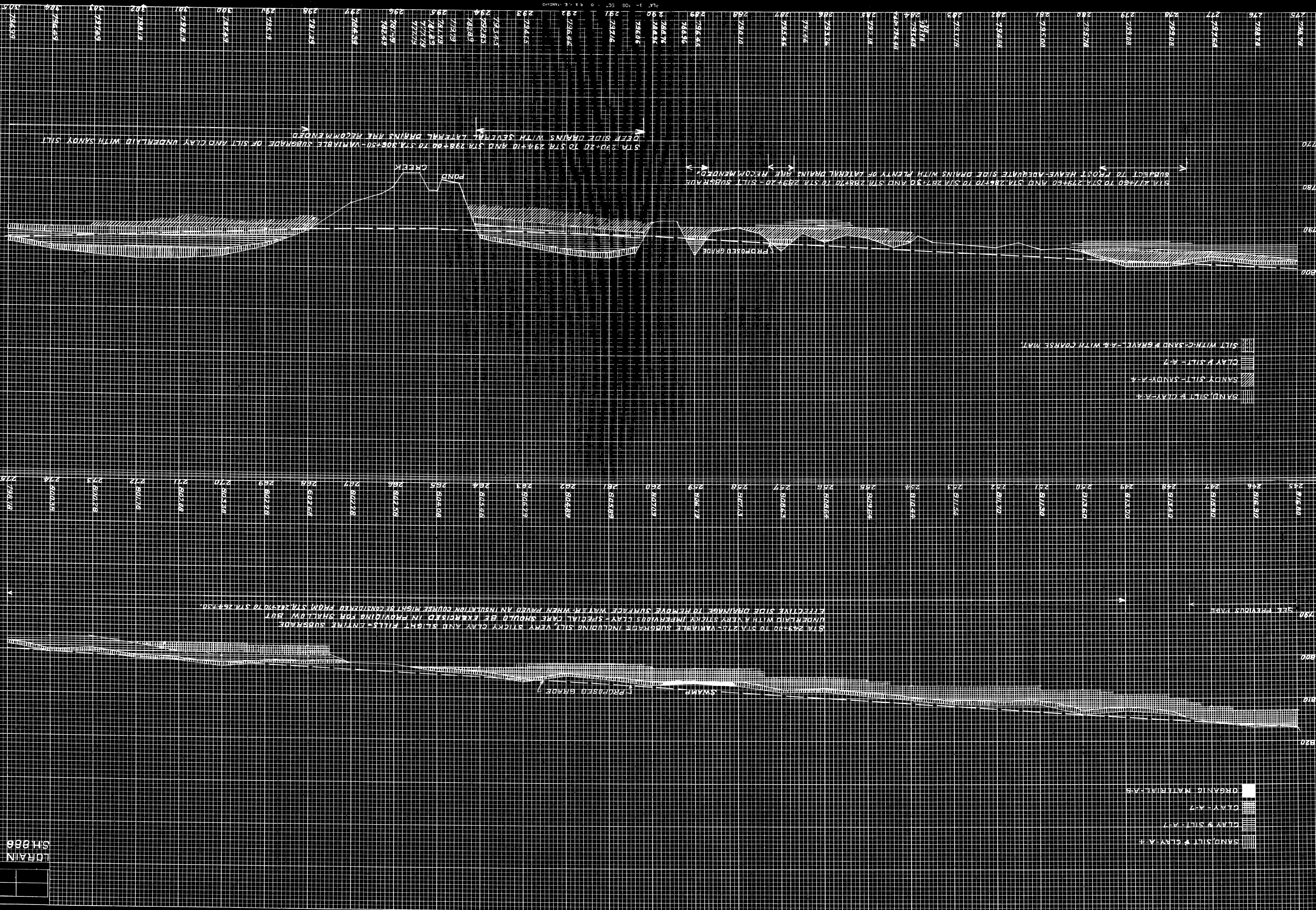


LORAIN COUNTY
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FINAL SURVEY PLOTTED BY DATE
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SAND/SILT & CLAY-A-4
 SANDY SILT-SANDY-A-4
 CLAY & SILT-A-7
 SILT WITH C-SAND & GRAVEL-A-8 WITH COARSE MAT.

SAND/SILT & CLAY-A-4
 CLAY & SILT-A-7
 CLAY-A-7
 ORGANIC MATERIAL-A-8

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STA 506+10 TO STA 537+70-VERY STICKY IMPERVIOUS CLAY SUBGRADE FOR THE REMOVAL OF SURFACE DRAINAGE IMPERVIOUS ENCEPT WITH A VERY IMPERVIOUS CLAY- DRAINAGE IMPERVIOUS ENCEPT WHEN RAVED A WELL DRAINED INSULATION COURSE MIGHT BE CONSIDERED.

CLAY & SILT - A-7
 CLAY A-7
 ORGANIC MATERIAL - A-8

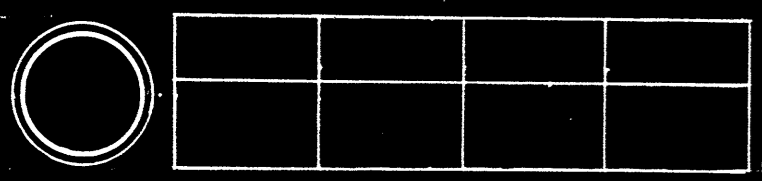
SANDY SILT & CLAY - A-6
 SANDY SILT - SANDY - A-6
 CLAY & SILT - A-7
 CLAY - A-7

STA 512+30 TO STA 520+00- VERY STICKY CLAY SUBGRADE UNDERLAD WITH SANDY SILT- SIDE DRAINS EXTENDING IN DEPTH TO BASE OF SANDY SILT LAYER WOULD BE DESIRABLE.

STA 48+50 TO STA 455+30-MODERATELY STICKY CLAY SUBGRADE UNDERLAD WITH A VERY IMPERVIOUS CLAY- DRAINAGE IMPERVIOUS ENCEPT FOR THE REMOVAL OF SURFACE WATER- WHEN RAVED A WELL DRAINED INSULATION COURSE MIGHT BE CONSIDERED.

SEE PLAN VIEW SHEET

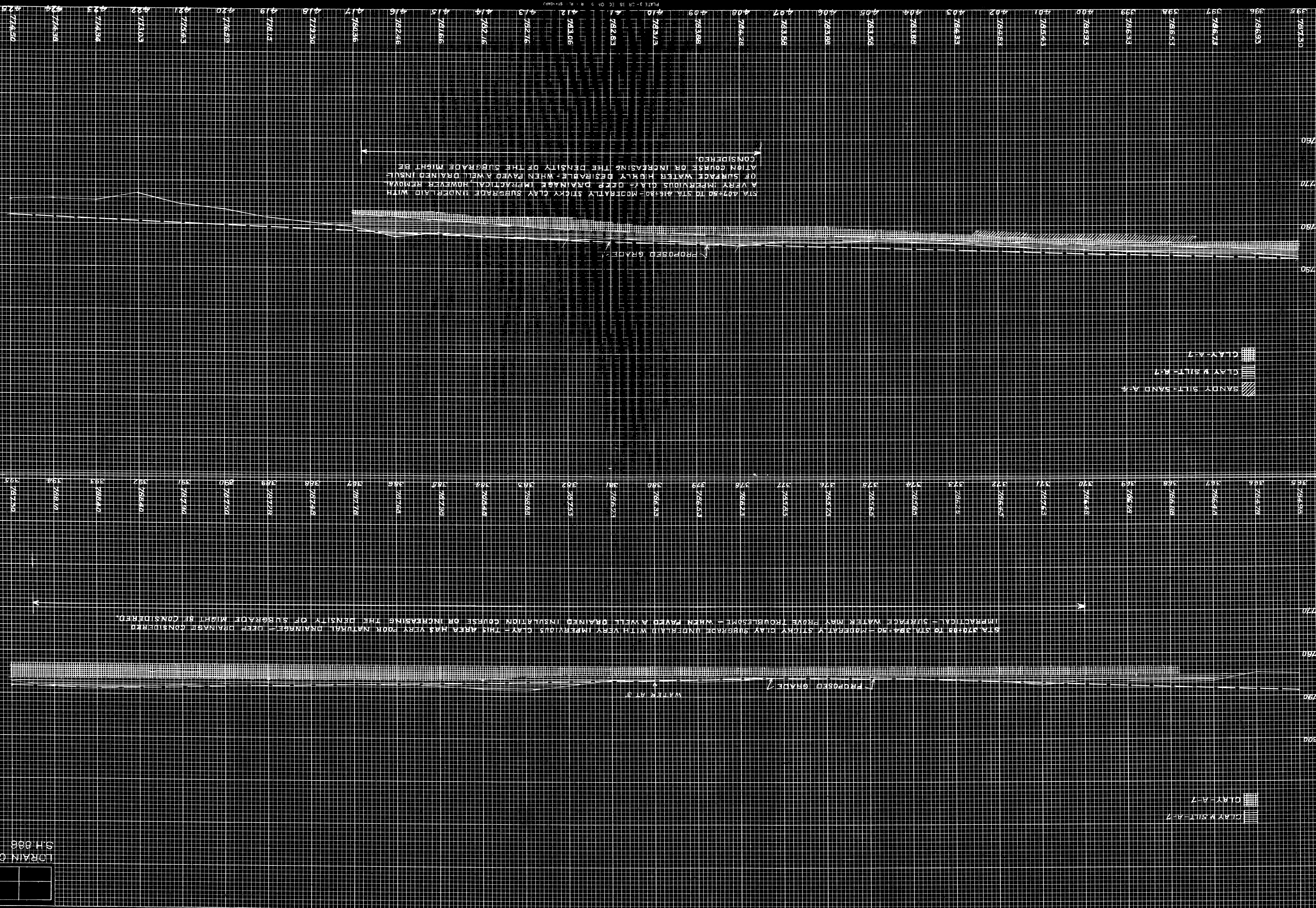
LORAIN COUNTY
 G.H. 086



ORIGINAL SURVEY
 DATE _____ BY _____
 TEMP. _____
 NO. _____ AREAS CHECKED _____

FINAL SURVEY
 DATE _____ BY _____
 TEMP. _____
 NO. _____ AREAS CHECKED _____

790 795 800 770 760 750 740 730 720 710 700



STA. 407+50 TO STA. 416+50 - MODERATELY STICKY CLAY SUBGRADE UNDERLAIN WITH A VERY IMPERVIOUS CLAY DEEP DRAINAGE IMPRACTICAL, HOWEVER REMOVAL OF SURFACE WATER HIGHLY DESIRABLE - WHEN PAVED A WELL DRAINED INSULATION COURSE OR INCREASING THE DENSITY OF THE SUBGRADE MIGHT BE CONSIDERED.

STA. 370+00 TO STA. 384+00 - MODERATELY STICKY CLAY SUBGRADE UNDERLAIN WITH VERY IMPERVIOUS CLAY - THIS AREA HAS VERY POOR NATURAL DRAINAGE - DEEP DRAINAGE CONSIDERED IMPRACTICAL - SURFACE WATER MAY PROVE TROUBLESOME - WHEN PAVED A WELL DRAINED INSULATION COURSE OR INCREASING THE DENSITY OF SUBGRADE MIGHT BE CONSIDERED.

CLAY-A-7
 CLAY & SILT-A-7

SANDY SILT-SAND A-#
 CLAY & SILT-A-7
 CLAY-A-7

LORAIN COUNTY
 SH. 686

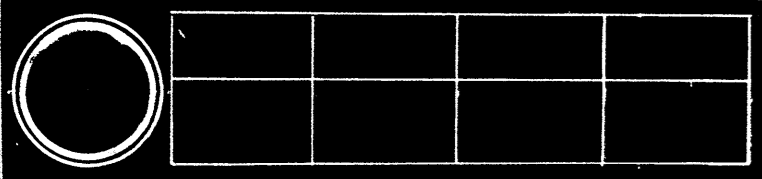


PLATE 3 - 2" x 36" SS EC ON C
 R. R. ST. 1040-3
 MW
 JK