8-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
LAK — 1 — 10.38
KIRTLAND HILLS VILLAGE
MENTOR TOWNSHIP
CONCORD TOWNSHIP
LAKE COUNTY

LIMITED ACCESS

This improvement has been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section 5511.02. Revised Code of Ohio and is especially designed for through traffic.

I-90-1(25)29

MICROFILMED JUN 27 1985

APR 11 1962 GROUND PHOTOLAB

FEDERAL RD. DIVISION	STATE	PROJECT	
2	OHIO	I-90-1(25)29	

1 / 306

LAKE COUNTY
LAK-090-11.38
PID 0.033
f.k.a.
LAK-001-10.38
PF# 126R

CONVENTIONAL SIGNS

State Line
County Line
Township Line
Section Line
Center Line
Corporation Line
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Steam Railroad
Power Poles
Telephone Poles
Trees or Stumps (existing)

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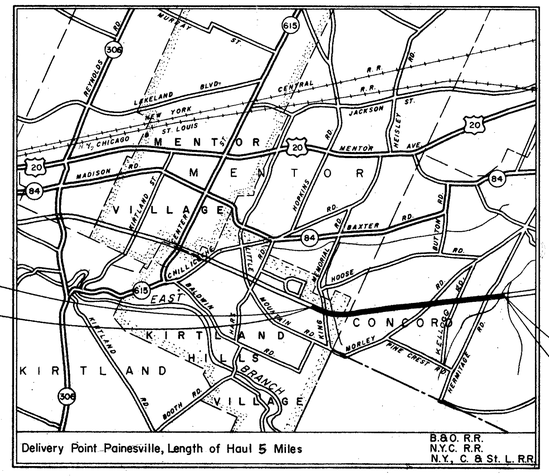
BEGIN PROJECT STA. 193 + 50

END PROJECT STA. 326 + 50



LOCATION MAP

SCALE IN MILES

1 ½ 0 1 2 3 4

LEGEND

Portion to be improved
State Roads
Other Roads

SCALE

Plan ..... 1" = 50'
Profile: Horizontal ..... 1" = 50'
Profile: Vertical ..... 1" = 10'

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

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

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

Approved ..... Wm. B. Henry
Date 10-28-59 Division Deputy Director

Approved ..... Guy E. Hecker
Date 12-14-59 Deputy Director of Planning & Programming

Approved ..... D.H. Overman
Date 12-7-59 Engineer of Bridges

Approved ..... W. Thomson
Date 12-9-59 Engineer of Location & Design

Approved ..... C.W. McCaughey
Date 12-9-59 Deputy Director of Design & Construction

Approved ..... G.A. Berry
Date 12-14-59 First Assistant Director

Approved ..... E.S. Preston
Date 12-14-59 Director of Highways

Revised Sheet Nos. 10, 11, 17, 21 & 256 To Indicate 100% State Participation of Rest Areas
R.E.C. 11-20-61

Added Sheet Nos. 296R, 297R, & 306R Superseding Sheet Nos. 296, 297, & 306
R.E.C. 7-25-60

LINE DATA

BEGIN PROJECT	STA. 193 + 50	
END PROJECT	STA. 326 + 50	
GROSS LENGTH OF PROJECT	13,300 LIN. FT.	
DEDUCT FOR EQUATION		
STA. 241 + 39.02 BK. = STA. 242 + 80.20 AH.	141.18 LIN. FT.	
NET LENGTH OF PROJECT	13,158.82 LIN. FT. OR 2.492 MILES	
ADD FOR APPROACHES (SHEET NO. 7)	4,848.22 LIN. FT.	
TOTAL LENGTH OF WORK	18,007.04 LIN. FT. OR 3.410 MILES	

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

B-T-50-70-71E NO.1	10-1-47	I-8 C.B. NO. 5	7-1-58	L-2	4-1-50	T-35	1-2-56
B-T-71R	3-2-53	I-8 C.B. NO. 6	1-26-59	L-1	4-1-50	T. J.	5-1-56
DR-1	1-3-55	I-8 M.H. NO. 1	1-26-59	L-3	4-1-50	S.P. 53	11-25-58
		I-8 M.H. NO. 1-A	1-26-59	L-3-A	4-1-50		
F-2	10-1-58	I-8 M.H. NO. 2	1-26-59	L. J. NO. 1	7-1-55		
F-3	9-1-59	I-12	7-1-54	R1-1	7-15-58	AR-1-57	2-2-59
G-7.07	6-1-56	I-14 G	1-22-52	R.R.A NO. 1	1-20-58	AS-1-54	12-1-54
HW-A&B	7-15-57	I-15 NO. 1	5-21-59	R.R.A. NO. 2	1-20-58	RB-1-55	2-2-59
HW-C	7-15-57			R.R.A. NO. 3	1-20-58	CSB-2-56	
I-1, 2, 3, 4 & 5	2-20-45	I-15 NO. 2-A	5-21-59	R.R.A. NO. 4-A	1-20-58	SHT. #1, #2, #3	2-2-59
I-8 C.B. 2-2-A & B	3-2-59	I-15 NO. 3	12-1-54	R.R.A. NO. 4-B	1-20-58		
I-8 C.B. 2-3 & 2-4	1-26-59	I-15 NO. 6	7-1-59	R.R.A. NO. 4-C	4-24-58		
I-8 C.B. NO. 3	1-26-59			R.R.A. NO. 5	11-3-58		
I-8 C.B. NO. 3-A	1-26-59			S-27 P.C. 3	2-20-45		
I-8 C.B. NO. 4	7-1-58	I-21-23	8-1-56	S-27 P.C. 4	1-4-54		

SUPPLEMENTAL SPECIFICATIONS

I-127	Rev	11-16-57
I-125	Rev.	4-22-59
18	Rev.	6-15-59
M-206.14		7-15-49
B-219	Rev.	3-12-59
S-207		4-28-55

APR 11 1962 GROUND PHOTOLAB

Prepared and Recommended By
Capitol Engineering Associates
Consulting Engineers, Dillsburg, Pa.
..... Partner

STATE OF OHIO ROBERT E. SMITH 18042 REGISTERED PROFESSIONAL ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER DATE

00126R1

File No.	
	LAKE COUNTY LAK-1-10.38
	Date of Letting 19
	Contract No. .....

SCHEMATIC LAYOUT PLAN

MICROFILMED
JUN 27 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2
306

LAKE COUNTY
LAK-1-10.38

LIGHTS, SIGNS and BARRICADES

The Contractor shall, in addition to the general requirements of Sec. G-7.07, on this project perform the following:

(a) Provide, erect, and maintain movable gates on intersecting roads closed to traffic at all points where local traffic terminates.

(b) Provide, erect, and maintain lights, signs, and barricades at the work limits on all intersecting roads which remain open to traffic.

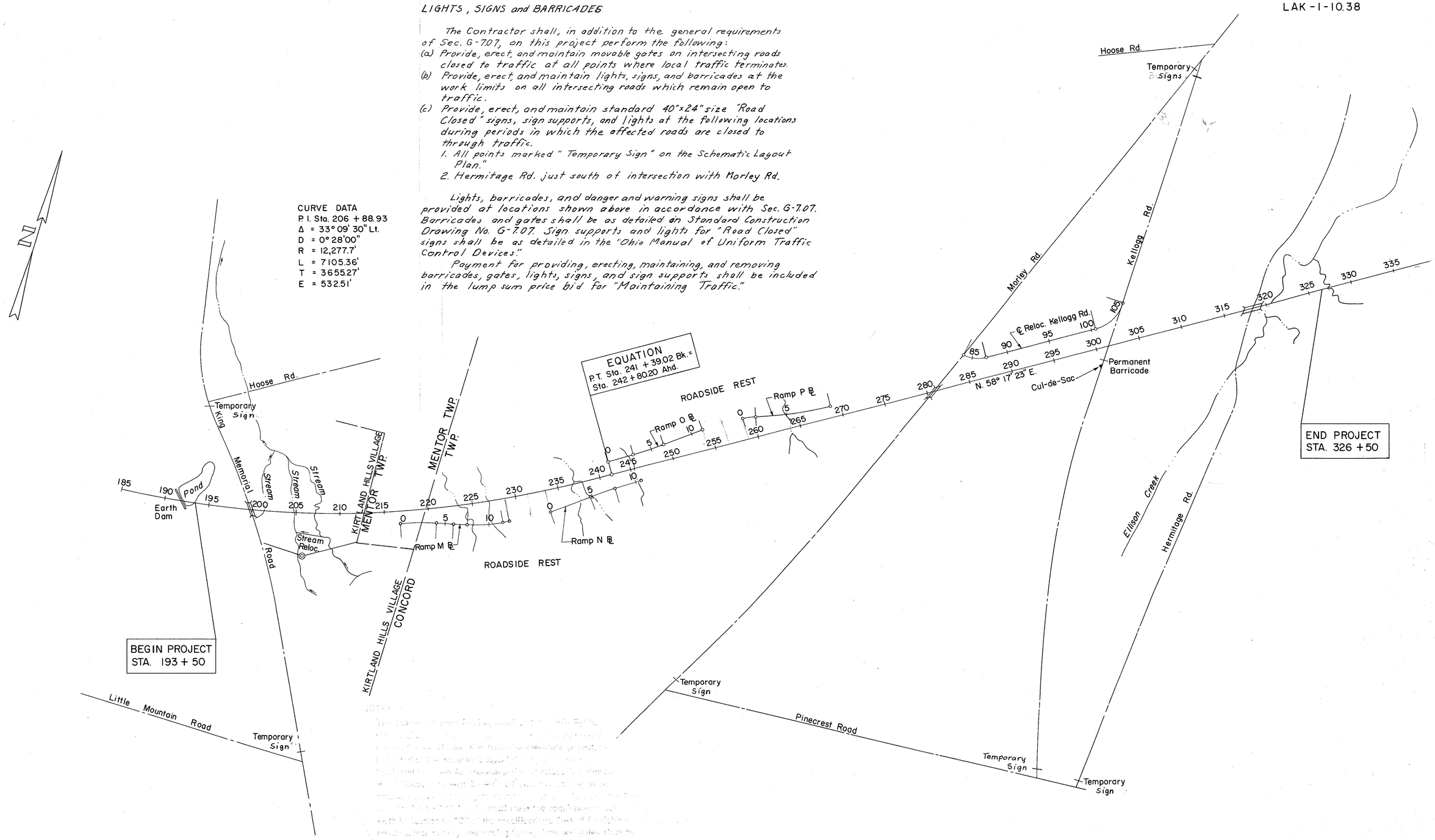
(c) Provide, erect, and maintain standard 40"x24" size "Road Closed" signs, sign supports, and lights at the following locations during periods in which the affected roads are closed to through traffic.

1. All points marked "Temporary Sign" on the Schematic Layout Plan."
2. Hermitage Rd. just south of intersection with Morley Rd.

Lights, barricades, and danger and warning signs shall be provided at locations shown above in accordance with Sec. G-7.07. Barricades and gates shall be as detailed in Standard Construction Drawing No. G-7.07. Sign supports and lights for "Road Closed" signs shall be as detailed in the "Ohio Manual of Uniform Traffic Control Devices."

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

CURVE DATA
P.I. Sta. 206 + 88.93
Δ = 33° 09' 30" Lt.
D = 0° 28'00"
R = 12,277.7'
L = 7105.36'
T = 3655.27'
E = 532.51'



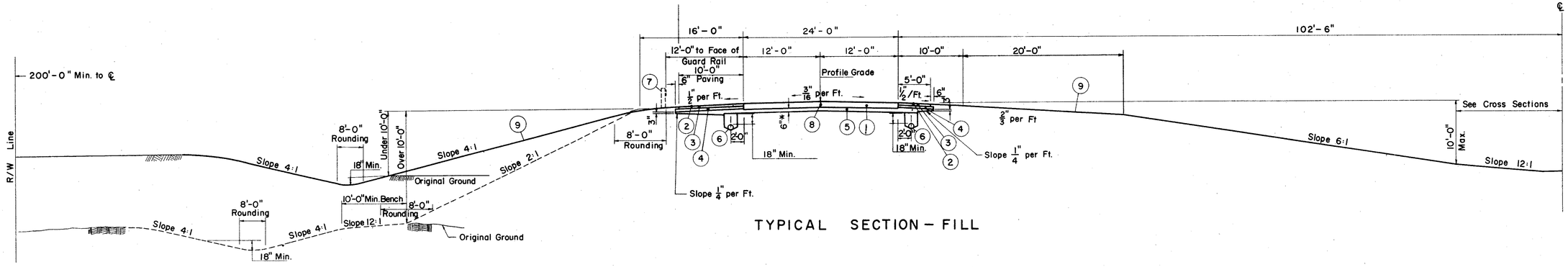
TYPICAL SECTIONS

TYPE T-71

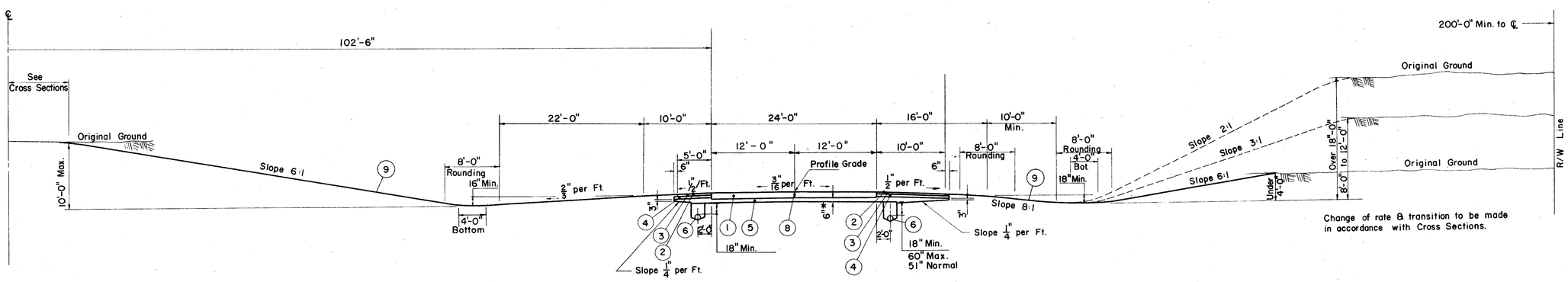
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3
306

LAKE COUNTY
LAK-1-10.38



TYPICAL SECTION – FILL



TYPICAL SECTION – CUT

LEGEND

1. T-71 10" Reinforced Portland Cement Concrete Pavement.
2. T-31 Bituminous Surface Treatment. (See note in proposal)
3. B-219 3" Waterproofed Aggregate Base Course
4. I-18 5" Stabilized Crushed Aggregate Shoulders & Approaches.
5. I-22 Variable Depth Subbase, as per plan.
6. I-4 6" Pipe Underdrain.
7. I-15 Guard Rail.
8. Standard Longitudinal Joint.
9. L-9 Seeding & Protecting Roadway Areas

* 18" Subbase Thickness
Approx. Sta. 286 + 00 to Sta. 295 + 00 (Eastbound & Westbound Lanes)
Approx. Sta. 306 + 00 to Sta. 309 + 00 Eastbound Lane
Approx. Sta. 308 + 00 to Sta. 311 + 00 Westbound Lane
Frost – susceptible Silt is anticipated thru these Areas

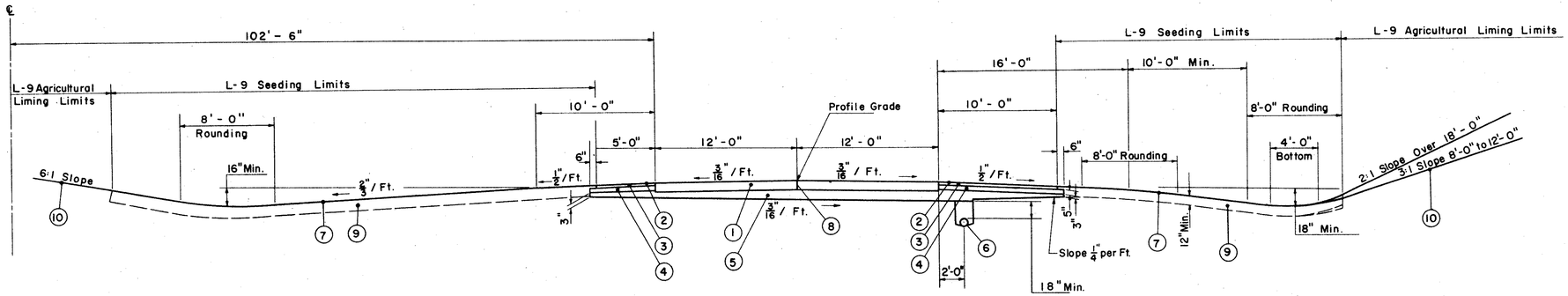
TYPICAL SECTIONS

TYPE T-71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4
306

LAKE COUNTY
LAK-1-10.38

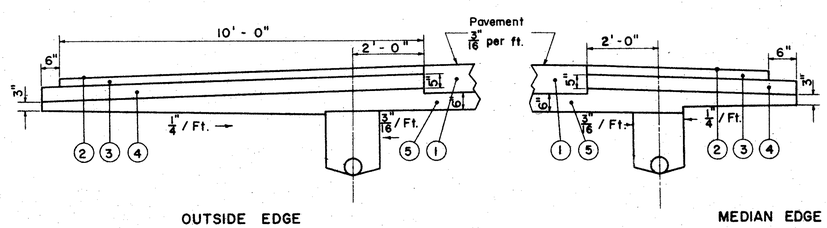


TYPICAL SECTION (ROCK CUTS - NORMAL SLOPES)

APPROX. ROCK CUT LIMITING STATIONS*

STA. 194+50 TO STA. 204+25 (Eastbound & Westbound Lanes)
STA. 208+50 TO STA. 213+00 (Eastbound Lane)
STA. 229+50 TO STA. 236+00 (Eastbound Lane)
STA 266+00 TO STA. 285+00 (Eastbound Lane)
STA. 314+00 TO STA. 318+00 (Eastbound & Westbound Lanes)

NOTE: Shale at Subgrade is anticipated thru these areas based on limited investigation. Actual limits shall be determined during grading operations.



OUTSIDE EDGE

MEDIAN EDGE

PAVED SHOULDER DETAIL

NOTE:

Unpaved areas in Median, Shoulders and Ditches shall be undercut to a depth of 12" as shown. Topsoil in sufficient amount to replace the undercut shall be stockpiled under Item L-1 and shall be placed under Item L-3.

LEGEND

1. T-71 10" Reinforced Portland Cement Pavement.
2. T-31 Bituminous Surface Treatment. (See Note in Proposal)
3. B-219 3" Waterproofed Aggregate Base Course
4. I-18 5" Stabilized Crushed Aggregate Shoulders & Approaches.
5. I-22 Variable Depth Subbase, as per plan.
6. I-4 6" Pipe Underdrain. Sec. M-6.4(h)
7. L-9 Seeding & Protecting Roadway Areas.
8. Standard Longitudinal Joint
9. L-1 Topsoil Stockpiled &
   L-3 Placing Stockpiled Topsoil. (See Note)
10. L-9 Agricultural Liming Material

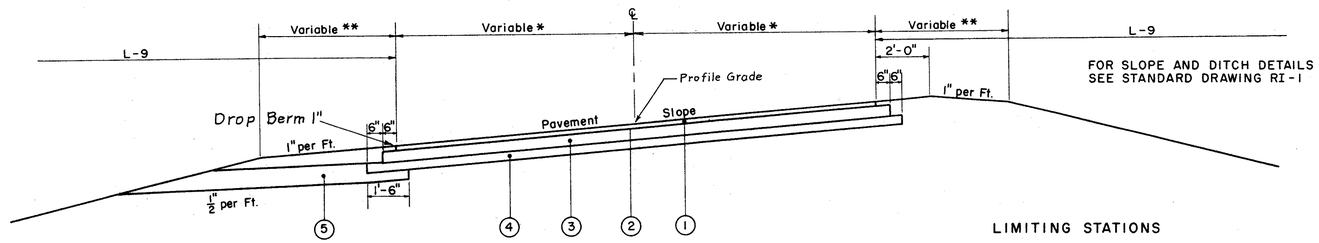
TYPICAL SECTIONS

TYPE T-32 ON B-19

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

5
306

LAKE COUNTY
LAK-1-10.38



FOR SLOPE AND DITCH DETAILS
SEE STANDARD DRAWING RI-1

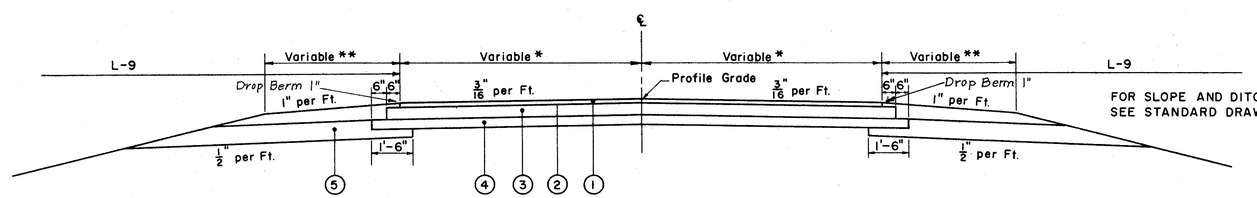
TYPICAL SUPERELEVATION SECTION

LIMITING STATIONS

KELLOGG ROAD RELOC.
STA. 85+01.13 TO STA. 88+80.42 379.29 LIN. FT.
STA. 99+46.43 TO STA. 105+37.33 590.90 LIN. FT.
TOTAL 970.19 LIN. FT.

KING MEMORIAL ROAD
STA. 25+18.45 TO STA. 35+18.56 1,000.11 LIN. FT.
DEDUCT FOR BRIDGE & EQUATION 488.50 LIN. FT.
TOTAL 511.61 LIN FT.

HERMITAGE ROAD
STA. 24+50 TO STA. 27+08.91 258.91 LIN. FT.
STA. 32+13.38 TO STA. 37+18.09 504.71 LIN FT.
TOTAL 763.62 LIN FT.



FOR SLOPE AND DITCH DETAILS
SEE STANDARD DRAWING RI-1

TYPICAL NORMAL SECTION

LIMITING STATIONS

MORLEY ROAD
STA. 22+00 TO STA. 39+00 1700.00 LIN. FT.
DEDUCT FOR BRIDGE 711.56 LIN. FT.
TOTAL 988.44 LIN. FT.

HERMITAGE ROAD
STA. 27+08.91 TO STA. 32+13.38 504.47 LIN. FT.
STA. 37+18.09 TO STA. 39+00 181.91 LIN. FT.
TOTAL 686.38 LIN. FT.

KELLOGG ROAD RELOC.
STA. 88+80.42 TO STA. 99+46.43 1066.01 LIN. FT.

TOTAL 1066.01 LIN. FT.

KING MEMORIAL ROAD
STA. 23+00 TO STA. 25+18.45 218.45 LIN. FT.
STA. 35+18.56 TO STA. 39+00 381.44 LIN. FT.
TOTAL 599.89 LIN. FT.

* 9'-0" ON MORLEY & HERMITAGE ROAD
8'-0" ON KING MEMORIAL ROAD
8'-0" ON KELLOGG ROAD RELOC.

** 5'-0" ON MORLEY & HERMITAGE ROAD
6'-0" ON KING MEMORIAL ROAD
6'-0" ON KELLOGG ROAD RELOC.

LEGEND

(1) T-32 Bituminous Road Mix, method B or C using .056 cu. yd. No. 46 Aggregate per sq. yd. and 0.9 gal. Sec. M-5.2, RC-2 or RC-3 or Sec. M-5.7, RT-8 or RT-9 per sq. yd. Bituminous Choke & Seal Coat using 0.004 cu. yd No. 6 Aggregate per sq. yd. for Choke, 0.008 cu. yd. No. 6 Aggregate per sq. yd. for Seal and 0.25 gal. Sec. M-5.7, RT-9 or RT-10 or Sec. M-5.2, RC-3 or RC-4 per sq. yd. for Seal.

(2) T-30 Bituminous Prime Coat — Sec. M-5.7, RT-2 or RT-3 Applied at the rate of 0.40 gal. per sq. yd.

(3) B-19 5" Aggregate Base Course.

(4) I-22 4" Subbase, as per plan

(5) I-9 Stone Underdrain (No. 2) staggered at 50' Intervals or as directed by the Engineer.

Rev. 3-1-6

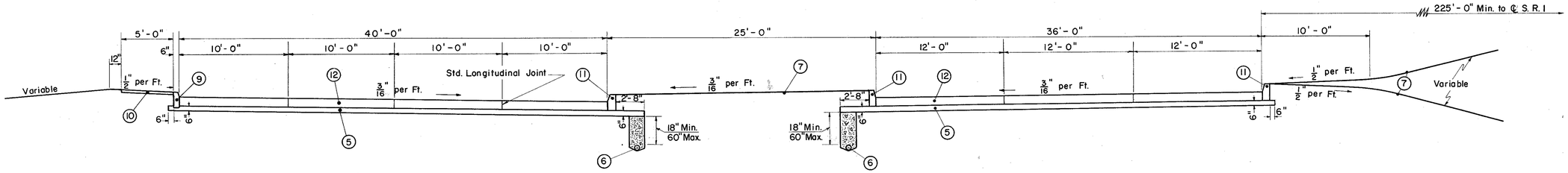
TYPICAL SECTIONS

TYPE T-71

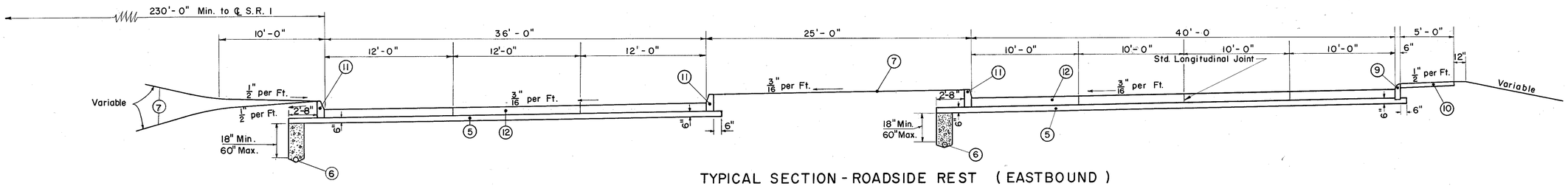
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6 / 306

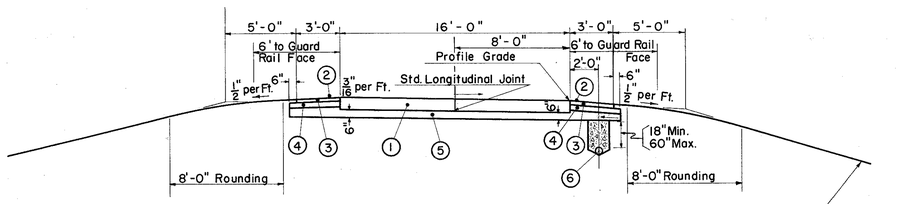
LAKE COUNTY
LAK-1-10.38



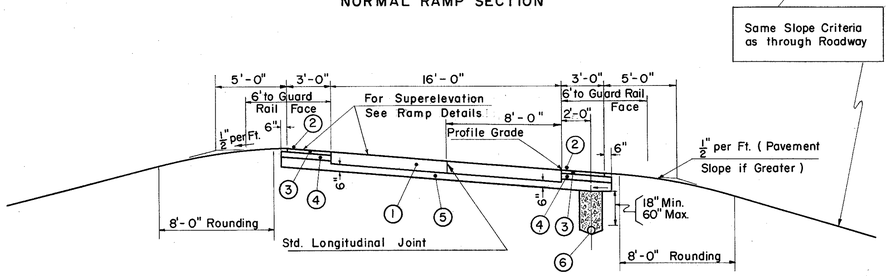
TYPICAL SECTION - ROADSIDE REST (WESTBOUND)



TYPICAL SECTION - ROADSIDE REST (EASTBOUND)



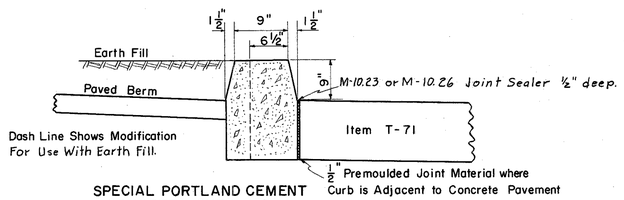
NORMAL RAMP SECTION



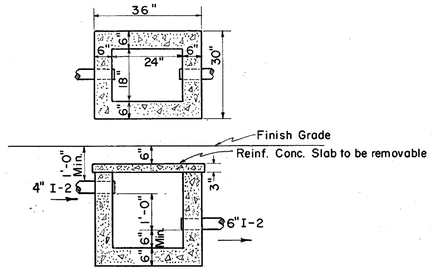
SUPERELEVATED RAMP SECTION

LEGEND

1. T-71 10" Reinforced Portland Cement Concrete Pavement.
2. T-31 Bituminous Surface Treatment. (See note in proposal)
3. B-219 3" Waterproofed Aggregate Base Course.
4. I-18 5" Stabilized Crushed Aggregate Shoulders & Approaches.
5. I-22 Variable Depth Subbase, as per plan
6. I-4 6" Pipe Underdrain.
7. L-9 Seeding & Protecting Roadway Areas.
9. I-12 Portland Cement Concrete Curb, Type 6.
10. I-13 Portland Cement Concrete Sidewalk, 4" Depth.
11. I-12 Special Portland Cement Concrete Curb (Modified).
12. T-71 9" Reinforced Portland Cement Conc. Pavement



SPECIAL PORTLAND CEMENT CONCRETE CURB DETAIL



TYPE A CATCH BASIN

GENERAL NOTES

ITEMS L-10 SODDING, I-10 RIP RAP & I-14 PAVED GUTTER

THESE ITEMS ARE PROVIDED ON THE PLANS FOR EROSION CONTROL. THE ENGINEER SHALL CHECK AND MAKE ADJUSTMENTS IN LOCATION AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

L-9 COMMERCIAL FERTILIZER

ALL AREAS TO BE SEEDED UNDER ITEM L-9 OR SODDED UNDER ITEM L-10 SHALL HAVE COMMERCIAL FERTILIZER 12-12-12, APPLIED AT THE RATE OF TWENTY (20) POUNDS PER 1,000 SQUARE FEET.

SEEDING AND PROTECTING

QUANTITIES FOR SEEDING ITEM L-9 ARE CALCULATED FOR ALL SOIL AREAS BETWEEN RIGHT-OF-WAY FENCE LINES. SEED SHALL BE SOWN AT THE RATE OF 3 POUNDS PER 1,000 SQUARE FEET EXCEPT AS OTHERWISE NOTED IN THE PLANS. SEEDING FORMULA FOR ALL SEEDED AREAS, EXCEPT PARK AREAS, SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

65% KENTUCKY 31 FESCUE
25% KENTUCKY BLUEGRASS
5% REDTOP
5% ALSIKE CLOVER.

QUANTITIES FOR LOCAL ROAD SEEDING INCLUDES ALL SOIL AREA BETWEEN THE WORK LIMITS.

CENTERLINE REFERENCE MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED OF CLASS "C" CONCRETE CAST-IN-PLACE IN A CIRCULAR HOLE, EIGHT INCHES IN DIAMETER AND FORTY-FOUR INCHES IN DEPTH. TOP OF CONCRETE SHALL BE FINISHED TWO INCHES BELOW GROUND LEVEL AND THE UPPER SIX INCHES PORTION OF THE CONCRETE SHALL BE FORMED. A 16d NAIL SHALL BE EMBEDDED IN THE WET CONCRETE AS DIRECTED BY THE ENGINEER TO MARK THE CENTERLINE AND STATION. MONUMENTS SHALL NOT BE PLACED UNTIL SEEDING IS COMPLETED.

EXISTING WATER WELLS

DUG WELLS ENCOUNTERED WITHIN THE WORK LIMITS SHALL BE FILLED WITH ROCK OR GRANULAR MATERIAL. DRILLED WELL CASING SHALL BE REMOVED TO AN ELEVATION APPROXIMATELY THREE FEET BELOW FINISHED GRADE AND COVERED WITH A PRE-CAST CONCRETE SLAB OR A LARGE ROCK. PRIOR TO CONSTRUCTION OF EMBANKMENT, THE CONTRACTOR SHALL REMOVE ANY MASONRY SURROUNDING A WELL WITHIN THREE FEET OF FINISHED GRADE. PUMPS AND OTHER APPURTENANCES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM. THE COST OF FILLING OR CAPPING OF WELLS SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD FOR ROADWAY EXCAVATION, ITEM E-1

SODDING

SOD DEPTH "d" AS NOTED ON THE PLANS IS THE VERTICAL DISTANCE FROM THE DITCH BOTTOM TO THE POINT ON THE DITCH SLOPES TO WHICH SODDING IS PLACED. SOD WIDTH "W" AS NOTED ON THE PLANS IS THE WIDTH OF SOD REQUIRED PER LINEAL FOOT. ALL AREAS TO BE SODDED SHALL BE LOOSENED TO A DEPTH NOT LESS THAN TWO INCHES JUST PRIOR TO LAYING SOD. COST SHALL BE INCLUDED FOR PAYMENT IN THE PRICE BID PER SQUARE YARD OF SODDING. A QUANTITY OF 1,200 SQUARE YARDS OF ITEM L-10 SODDING HAS BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED FOR EROSION CONTROL WHERE AND AS DIRECTED BY THE ENGINEER.

PLACING SOD IN DITCHES

All sod placed in ditches shall be laid with the long edges of the strips perpendicular to the flow line of the ditch. Successive strips shall be neatly matched and all joints staggered or broken. The sod shall be staked securely with stakes placed on maximum two ft. centers in rows not more than two feet apart. Stakes in adjacent rows shall be staggered. The stakes shall be wood from ¼" x ¾" x 12" to 1" x 1" x 24", as required to hold the sod and shall be driven flush with the top of the sod.

REMOVALS

ALL ITEMS MARKED FOR REMOVAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM. WHERE PIPE IS MARKED FOR REMOVAL WITH HEADWALLS AND/OR CATCH BASINS INVOLVED, THE COST OF SUCH REMOVAL SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT FOR ITEM E-12 PIPE REMOVAL.

ESTIMATED QUANTITIES

Specific location and usage of estimated quantities set up on this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project.

EXCAVATION FOR STRUCTURES

AN ITEM E-2 EXCAVATION FOR STRUCTURES HAS BEEN INCLUDED IN THE COMPUTATION SHEET TO PROVIDE FOR ALL HEADWALL EXCAVATION UNDER ITEM I-2 STORM SEWERS.

EXPANSION JOINTS

Although specific locations of certain expansion joints have been detailed on this plan, no waiver of the specifications is intended and expansion joints shall be provided at all major structures as required by Standard Construction Drawing T.J.

REPLACEMENTS

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

TEMPORARY DRAINAGE

TEMPORARY DRAINAGE WILL BE REQUIRED FOR THE PIPE UNDERDRAINS DURING CONSTRUCTION OF THIS SECTION, PAYMENT FOR WHICH IS INCLUDED IN THE PRICE BID PER LINEAR FOOT FOR ITEM I-4 UNDERDRAIN.

MANHOLE CASTING

MANHOLE CASTINGS LOCATED IN SLOPES SHALL BE SET SO THAT THE COVER WILL CONFORM WITH THE PLANE OF THE SLOPED SURFACE, *EXCEPT AS OTHERWISE SHOWN ON THE PLANS.*

GRATE ELEVATIONS

THE FLOW LINE OF GRATE ELEVATIONS SHOWN FOR I-8 #4 CATCH BASIN AND I-8 #5 CATCH BASIN IS THE LOWEST POINT ON THE GRATE.

PIPE UNDERDRAINS

THE LOCATION OF THE TRANSVERSE PIPE UNDERDRAINS LOCATED AT THE POINTS CUT TO FILL AND FILL TO CUT MAY BE REVISED SLIGHTLY DURING CONSTRUCTION TO ASSURE THAT THE UNDERDRAINS WILL BE PLACED IN CUT.

PIPE SPECIALS

I-5 PIPE SPECIALS HAVE BEEN COMPUTED ON THE BASIS OF 4' - 0". EXCEPT PIPE UNDERDRAINS WHERE 12" HAS BEEN OMITTED FOR EACH.

EXISTING DRAINAGE

IT IS ANTICIPATED THAT SOME EXISTING DRAINS OTHER THAN THOSE CARRYING DOMESTIC WASTE WILL BE INTERCEPTED AND SEVERED BY THE PROPOSED ROADWAY AND CHANNEL EXCAVATION. IN ANY SUCH CASE A SECTION OF THE PIPE SO SEVERED WILL BE REMOVED TO MAKE WAY FOR THE NECESSARY EXCAVATION. IF THE REMAINING PIPE FLOWS AWAY FROM THE EXCAVATION AND THE PLANS DO NOT INDICATE THAT IT IS TO BE USED AS AN OUTLET, IT SHALL BE BLOCKED AT ITS UPPER END IN ACCORDANCE WITH THE PROVISIONS OF ITEM 2.04. PAYMENT FOR PLUGGING IS INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION. IF THE PIPE FLOWS TOWARD THE DITCH EXCAVATION, THE TILE SHALL BE PRESERVED AND A PROPER OUTLET PROVIDED.

THE FOLLOWING QUANTITIES HAVE BEEN SET UP IN THE GENERAL SUMMARY TO BE USED FOR THE ABOVE PURPOSE AS DIRECTED BY THE ENGINEER.

I-3	6" ROADWAY DRAINAGE	400 LIN. FT.	
I-3	8" " "	400 LIN. FT.	
I-3	8" PIPE OUTLETS FOR ROADWAY DRAINAGE	100 LIN. FT.	- SEC. M 6.4 (c)
I-3	10" " " "	50 LIN. FT.	" "
I-3	12" " " "	50 LIN. FT.	" "
I-2	8" CLASS A STORM SEWERS UNDER PAV. OR APPROACHES	1200 LIN. FT.	- SEC. M 6.5 (b) OR M 6.8 (b)
I-2	12" " "	600 LIN. FT.	" "

THE AMOUNT AND LOCATION OF SUCH MATERIAL SHALL BE RECORDED AS USED AND SHALL BE SUBMITTED WITH THE FINAL ESTIMATE.

EROSION CONTROL AT HEADWALLS

AN 18" WIDE STRIP OF SOD SHALL BE PLACED ALONG THE BACK AND BOTH ENDS OF EACH STANDARD HEADWALL TYPE A, B AND C TO PREVENT EROSION. THE QUANTITY OF SODDING REQUIRED TO PREVENT EROSION AT THE HEADWALLS IS INCLUDED IN EACH OF THE CULVERT ESTIMATED QUANTITIES SUMMARIES.

SHALE SLOPES

AGRICULTURAL LIMING MATERIAL SHALL BE APPLIED TO SHALE SLOPES AT THE RATE OF 10 TONS PER ACRE.

ROCK SUBGRADE

The Contractor shall be paid for the thickness of I-22 material shown on the typical sections in rock excavation areas. Any pockets in the rock below the plan subgrade elevation under pavement shall drain either longitudinally or laterally and all irregularities in the rock below this elevation shall be filled with I-22 material at no additional cost to the State.

I-22 SUBBASE GRADING

I-22 SUBBASE GRADING A & B AS PER PLAN. MATERIAL FOR THIS ITEM SHALL MEET THE REQUIREMENTS FOR I-22 GRADING A OR B, EXCEPT THAT FOR BOTH GRADINGS THE PERCENT PASSING NO. 200 SIEVE SHALL NOT EXCEED TEN.

MAINTAINING LOCAL TRAFFIC

AGGREGATE AND CHLORIDE REQUIRED FOR MAINTENANCE OF LOCAL TRAFFIC, IN ACCORDANCE WITH THE PROVISIONS OF SECTION G-4.05 OF THE SPECIFICATIONS, IS PROVIDED IN THE SUMMARY OF QUANTITIES IN THE FOLLOWING AMOUNTS:

150 CU.YD. TRAFFIC COMPACTED SURFACE COURSE, ITEM T-10

3 TONS CALCIUM CHLORIDE
ITEM M-10.

REQUIREMENTS FOR HARDNESS AND SOUNDNESS WILL BE WAIVED FOR AGGREGATE USED FOR MAINTAINING LOCAL TRAFFIC.

EMBANKMENT

IN ADDITION TO THE REQUIREMENTS OF SEC. E-1.08(f) THE MOISTURE CONTENT OF ALL EMBANKMENT MATERIALS THAT DISPLAY PRONOUNCED ELASTICITY OR DEFORMATION UNDER THE ACTION OF CONSTRUCTION EQUIPMENT SHALL NOT EXCEED OPTIMUM AT THE TIME OF COMPACTION.

CONSTRUCTION LAYOUT STAKES

See note in proposal describing work to be done in this lump sum pay item.

SIGHT DISTANCE

BASIS FOR MEASURING SIGHT DISTANCE SHALL BE 4.0 FEET FOR HEIGHT OF EYE AND ZERO FEET FOR HEIGHT OF OBJECT. THE MINIMUM STOPPING SIGHT DISTANCE ON THIS PROJECT IS 600 FEET.

REMOVAL OF BUILDINGS

WHERE THE PLAN SHOWS A STRUCTURE TO BE REMOVED UNDER ITEM S-24, THE ENTIRE BUILDING WITHIN AND WITHOUT THE RIGHT-OF-WAY SHALL BE REMOVED TO GROUND LEVEL.

LINE DATA CALCULATION FOR APPROACHES

LENGTH OF WORK ON APPROACHES

KING MEMORIAL ROAD			
STA. 23 + 00 TO STA. 39 + 00			
DEDUCT FOR EQUATION		1.78	
NET LENGTH OF WORK	=	1,598.22	LIN. FT.
MORLEY ROAD			
STA. 22 + 00 TO STA. 39 + 00			
NET LENGTH OF WORK	=	1,700.00	LIN. FT.
S.R. 1 BEGIN WORK ON APPROACH			
STA. 192 + 50 TO BEGIN PROJECT STA. 193 + 50		100.00	LIN. FT.
HERMITAGE ROAD			
STA. 24 + 50 TO STA. 39 + 00			
NET LENGTH OF WORK		1,450.00	LIN. FT.
		4,848.22	LIN. FT.

TRAFFIC

King Memorial Road, Morley Road and Hermitage Road may be closed to traffic when necessitated by construction operations, except that the period of closure of any individual road shall not exceed eight calendar months. Also, the work shall be so arranged that Kellogg Road will remain open to two-way traffic at all times that Morley and Hermitage Roads are closed. At all other times two-way traffic shall be maintained on these roads by using the existing pavements or the proposed pavements and structures.
Local traffic shall be maintained at all times in accordance with the provisions of Sec. G-4.05 and it shall be understood to include maintaining access to adjacent properties affected by any of the construction operations. Materials are provided by note elsewhere on this sheet for maintaining local traffic.

SEE SHEET NO. 254 FOR ROADSIDE REST GENERAL NOTES.

ROAD MIX QUANTITIES

The quantity of bituminous material estimated for the Bituminous Road Mix Surface Course has been calculated on the line sheets for use with stone or gravel aggregate. If the Contractor elects to use slag aggregate, bituminous material for the road mix shall be applied at the rate of 1.1 gallon per square yard which will require an additional quantity of approximately 2,420 gallons. This additional quantity has been carried to the General Summary and is reflected in the grand total. Payment will be made on final measurement.

GENERAL NOTES

ROAD NAME SIGNS

ALL COUNTY, TOWNSHIP, CITY OR VILLAGE ROAD OR STREET NAME SIGNS THAT WILL BE DISTURBED BY THE CONSTRUCTION SHALL BE CAREFULLY REMOVED AND STORED BY THE CONTRACTOR FOR DISPOSAL BY THEIR RESPECTIVE OWNERS. PAYMENT FOR THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION.

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE FOR THE EXCLUSIVE USE OF THE STATE EMPLOYEES, IN ACCORDANCE WITH SEC. S-0.01 (b), HAVING A MINIMUM OF 500 SQUARE FEET OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THE FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL ALSO INSTALL WIRING AND OUTLETS SUITABLE FOR CONNECTING TO OFFICE EQUIPMENT, AND PROVIDE 110 VOLT ALTERNATING CURRENT DURING THE CONSTRUCTION OF THIS PROJECT.

DESIGN SPEED

THE GEOMETRICS FOR THIS PROJECT HAVE BEEN PLANNED FOR A DESIGN SPEED OF 70 MILES PER HOUR.

UTILITIES

THE CONTRACTOR SHALL NOTIFY AT LEAST 48 HOURS BEFORE BREAKING GROUND, ALL PUBLIC SERVICE CORPORATIONS HAVING WIRE, POLES, PIPE, CONDUITS, MANHOLES OR OTHER STRUCTURES THAT MAY BE AFFECTED BY THIS OPERATION, INCLUDING ALL STRUCTURES WHICH ARE AFFECTED AND SHOWN ON THESE PLANS. ANY AND ALL WORK REQUIRED FOR PUBLIC OR PRIVATE UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THEIR RESPECTIVE OWNERS, UNLESS OTHERWISE NOTED ON THESE PLANS.

ROUNDING OF CORNERS ON CROSS SECTIONS

THE ROUNDED CORNERS, AS SHOWN ON STANDARD DRAWING RI-1, APPLY TO ALL CROSS SECTIONS UNLESS OTHERWISE SHOWN ON THE TYPICAL SECTIONS.

R/W MONUMENTS, FEDERAL PROJECT MARKERS & SECTION MARKERS

EXISTING R/W MONUMENTS, BENCH MARKS, FEDERAL PROJECT MARKERS AND SECTION MARKERS THAT WILL BE REMOVED BY CONSTRUCTION, SHALL BE PROTECTED BY THE CONTRACTOR AS PER SECTION G-7.09 UNTIL THEY CAN BE WITNESSED, REFERENCED AND RESET BY THE CONSTRUCTION CREW.

ELEVATION DATUM

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

LOCATION AND SIZE OF PIPES

THE LOCATION, TYPE, DEPTH AND SIZE OF ALL EXISTING PIPES ARE SHOWN AS NEAR EXACT AS THE AVAILABLE INFORMATION WILL PERMIT. THE STATE WILL NOT BE RESPONSIBLE FOR ANY VARIATIONS FOUND DURING CONSTRUCTION.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO MAKES NO GUARANTEES AS TO THEIR ACCURACY OR COMPLETENESS.

REMOVAL OF TREES AND STUMPS

All trees and stumps lying within the construction limits of this project shall be removed under the lump sum price bid for Item E-9, Removal of Trees and Stumps, except that those trees and stumps for which protection and preservation work is indicated elsewhere in there plans shall not be removed. The following is an approximate estimate of the number of trees and stumps to be removed:

SIZES	NUMBER
6"-8"	2401
8"-10"	1345
10"-12"	923
12"-18"	700
Over 18"	289
Total	5658

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of those additional trees or stumps shall be included in the lump sum price bid for Item E-9, Removal of Trees and Stumps.

FLARING GUARD RAIL AT BRIDGES

GUARD RAIL ON CROSS ROADS SHALL BE FLARED TO MEET THE BRIDGE RAILING IN SUCH A MANNER THAT THE CHANGE IN ALIGNMENT OF THE GUARD RAIL SHALL NOT EXCEED 1:20.

DEEP LONGITUDINAL DRAINAGE

IT IS INTENDED THAT DEEP LONGITUDINAL UNDERDRAINS BE PROVIDED UNDER EACH OUTSIDE SHOULDER FOR ITS ENTIRE LENGTH THROUGH EACH SOIL CUT. AT EACH END OF EACH SOIL CUT, A TRAVERSE DRAIN IS LOCATED AT THE POINT WHERE SUBGRADE CHANGES FROM CUT TO FILL, AND SHALL DISCHARGE INTO THE DEEP UNDERDRAIN. IT IS ALSO INTENDED THAT SHALLOW LONGITUDINAL UNDERDRAINS SEC. M-6.4 (h) BE PROVIDED UNDER EACH OUTSIDE SHOULDER FOR ITS ENTIRE LENGTH THROUGH EACH ROCK CUT.

THE ENGINEER SHALL MAKE WHATEVER ADJUSTMENTS IN THE LENGTHS OF UNDERDRAINS OR LOCATIONS OF TRANSVERSE UNDERDRAINS THAT ARE NECESSARY TO ACCOMPLISH THE ABOVE.

SPECIAL DITCHES

FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS.

OUTLET FOR SUBGRADE DRAINAGE

10 LIN. FT. OF 8" CORRUGATED METAL PIPE, SEC. M. 6. 4 (a), SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR, IN MANHOLES, CATCH BASINS AND INLETS FOR EACH SUBGRADE DRAIN, WHERE, AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR EACH SHALL BE MADE AT THE PRICE BID PER LINEAL FOOT OF PIPE UNDERDRAIN OUTLETS.

PIPE

WHEN BELL AND SPIGOT PIPE IS USED, ANY NECESSARY PIPE CUT-OFFS WILL BE MADE AT THE SPIGOT END OF THE LENGTH OF PIPE ADJACENT TO THE END LENGTH. WHEN TONGUE AND GROVE PIPE IS USED THE LENGTH OF PIPE NEXT TO THE END LENGTH SHALL BE CUT AND BUTT JOINT FORMED WITH A COLLAR 12" LARGER THAN THE OUTSIDE DIAMETER AND 12" IN LENGTH. THE COST OF THE JOINT AND COLLAR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THE PERTINENT PIPE ITEM. *CONCRETE FOR THE COLLAR SHALL BE CLASS "E".*

REMOVAL OF EXISTING DRAINS

THE REMOVAL OF ALL EXISTING PIPE DRAINS WHICH INCLUDES SANITARY, YARD, ROOF, BASEMENT OR OTHER SIMILAR PIPE DRAINS WITHIN THE ROADWAY CONSTRUCTION LIMITS SHALL BE CLASSIFIED AND PAID FOR AS ROADWAY EXCAVATION, UNLESS OTHERWISE ITEMIZED FOR PAYMENT IN THE PLANS.

STONE UNDERDRAIN NO. 2

NO. 2 STONE UNDERDRAIN HAS BEEN ESTIMATED FOR CROSS ROAD DRAINAGE AT 50 FEET INTERVALS ON EACH SIDE WHERE I-4 DRAINAGE IS NOT PROVIDED. THEY SHALL BE PLACED NOT OVER 50 FEET APART AND STAGGERED. ON SUPERELEVATED SECTIONS THE UNDERDRAIN SHALL BE PLACED ON 50 FOOT INTERVALS ON LOW SIDE ONLY THIS QUANTITY IS TO BE USED IN ITS ENTIRETY.

PIPE CONNECTIONS

LONGITUDINAL PIPE LINES, WHERE CONNECTED TO PIPE CULVERTS, SHALL BE JOINED TO CULVERT PIPE SPECIALS, ITEM I-5. THE PIPE SPECIAL SPUR AND THE INITIAL EIGHT FOOT LENGTH OF LONGITUDINAL PIPE SHALL BE OF THE SAME KIND AND CLASS OF PIPE AS USED IN THE PIPE CULVERT AND SHALL BE JOINED BY MEANS OF 6" x 24" CONCRETE COLLAR OR METAL BAND. THE INITIAL EIGHT FEET OF LONGITUDINAL PIPE SHALL BE MANUFACTURED AS A SINGLE UNIT, WITH THE EXCEPTION OF RIGID PIPES 18 INCHES IN DIAMETER AND SMALLER, IN WHICH CASE TWO 4 FOOT LENGTHS MAY BE SHOP JOINED BY MEANS OF A REINFORCED CONCRETE COLLAR STRONG ENOUGH TO RESIST SEPARATION OF THE JOINT BECAUSE OF BACKFILL LOADING. ALL ADDITIONAL COST OF PROVIDING THE CULVERT PIPE AND COLLARS IN THE INITIAL SECTION OF THE LONGITUDINAL PIPE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PIPE SPECIAL.

PLUGGING PIPE ENDS

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

GUARD RAIL REMOVAL

THE REMOVAL OF ANY GUARD RAIL OR GUARD RAIL POSTS LYING WITHIN THE LIMITS OF ROADWAY EXCAVATION OR EMBANKMENT (AND NOT SPECIFICALLY PAID FOR UNDER A SEPARATE ITEM) IS INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION. ALL RESULTING MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM AT NO EXTRA COST TO THE STATE, EXCEPT THAT THE STEEL RAIL ON ALL EXISTING STEEL BEAM TYPE OR STEEL CABLE ON STEEL CABLE TYPE GUARD RAILS SHALL BE STORED ON THE RIGHT-OF-WAY FOR DISPOSAL BY THE OWNER.

HEAVY EQUIPMENT

THE CONTRACTOR SHALL EXERCISE CARE IN THE USE OF HEAVY EQUIPMENT OVER FINISHED WORK AND WILL BE REQUIRED TO REMOVE AND REPLACE ANY COMPLETED WORK DESTROYED THEREBY. CULVERTS SHALL BE BACKFILLED TO A HEIGHT OF FOUR FEET BEFORE LOADED EARTH-MOVING EQUIPMENT IS PERMITTED TO CROSS THE TRENCH. HEAVY EQUIPMENT SHALL NOT BE OPERATED OVER ANY COMPLETED LAYER OF EMBANKMENT, COMPACTED SUB-GRADE OR SUB-BASE, IF SUCH OPERATION TENDS TO DESTROY THE SOIL STRUCTURE OR PIPE UNDERDRAINS; HOWEVER IF SUCH OPERATION CANNOT BE AVOIDED, THE CONTRACTOR WILL BE REQUIRED TO REDUCE THE SIZE OF LOADS TO AN EXTENT THAT DAMAGE DOES NOT OCCUR. *ANY ADDITIONAL FILL AND SUBSEQUENT EXCAVATION REQUIRED TO PROVIDE THIS PROTECTION SHALL BE DONE AT NO ADDITIONAL COST TO THE STATE.*

SUBGRADE COMPACTION FOR DRIVES & MAIL BOX TURNOUTS

THE SUBGRADE UNDER B-19 OR T-70 MATERIAL USED ON DRIVES AND MAIL BOX TURNOUTS SHALL BE COMPACTED FOR A DEPTH OF SIX INCHES (6") TO THE DENSITY REQUIREMENTS OF TABLE III IN ITEM E-1. PAYMENT FOR SUBGRADE COMPACTION AS SPECIFIED ABOVE, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION.

EXCAVATION FOR ITEM B-19

EXCAVATION FOR B-19 MATERIAL USED ON SIDE ROAD APPROACHES, MAIL BOX TURNOUTS AND DRIVES HAS BEEN INCLUDED IN EARTHWORK QUANTITIES WHEN SAME IS IN "CUT". WHERE SIDE APPROACHES, MAIL BOX TURNOUTS, AND DRIVES ARE IN "FILL", EXCAVATION FOR B-19 MATERIAL SHALL BE MADE BY THE CONTRACTOR AT HIS OWN EXPENSE IF HE BUILDS THE EMBANKMENT UP TO FINISH GRADE BEFORE PLACING THE B-19 MATERIAL.

DRAINAGE OF SUBBASE MATERIAL

WHERE THE SUBBASE MATERIAL IS DRAINED BY I-9 STONE UNDERDRAIN OR BY EXTENSIONS THROUGH THE SHOULDERS TO THE FILL SLOPE OR THE DITCH LINE, THE CONTRACTOR SHALL FINISH, SEED AND MULCH THE SLOPES SO AS NOT TO IMPEDE DRAINAGE OF THE SUBBASE MATERIAL. THE ACTUAL AREA OF THE OUTCROP OF THE SUBBASE MATERIAL OR I-9 UNDERDRAIN SHALL NOT BE SEEDED.

PROTECTION OF TRAFFIC (OVERHEAD BRIDGE CONSTRUCTION)

The Contractor shall safeguard the traveling public on Hermitage Road by providing platforms, nets, or other suitable protection above the traveled lanes during any overhead bridge construction work. Payment for this protection shall be included in the lump sum price bid for "Maintaining Traffic".

EXISTING FLEXIBLE PAVEMENT

WITHIN THE LIMITS OF CONSTRUCTION WHERE THE EXISTING FLEXIBLE PAVEMENT WILL HAVE LESS THAN SIX (6) INCHES OF FILL PLACED UPON IT, THE PAVEMENT SHALL BE THOROUGHLY SCARIFIED FOR ITS FULL DEPTH, MIXED WITH SUFFICIENT SOIL AND PROPERLY RECOMPACTED TO INSURE THE ELIMINATION OF ANY PLANE OF SEPARATION BETWEEN IT AND THE EMBANKMENT PLACED THEREON. OUTSIDE THE LIMITS OF CONSTRUCTION THE EXISTING FLEXIBLE PAVEMENT SHALL BE THOROUGHLY SCARIFIED, MIXED WITH SUFFICIENT SOIL AND SHAPED TO FIT THE SURROUNDING TERRAIN IN SUCH A MANNER AS TO INSURE THE GROWTH OF SEED PLANTED THEREON. PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION.

NON-RIGID PAVEMENT REMOVAL

COST OF REMOVING NON-RIGID PAVEMENT IS TO BE INCLUDED WITH THE PRICE BID FOR ROADWAY EXCAVATION.

GUARD RAIL POST ANCHORS

AT LOCATIONS WHERE PIER FOOTINGS INTERFERE WITH INSTALLATION OF FULL LENGTH GUARD RAIL POSTS, SHORT POSTS SHALL BE PROVIDED AND SHALL BE ANCHORED IN ACCORDANCE WITH STANDARD DRAWING I-15 *No. 6.* COST OF PROVIDING AND INSTALLING NECESSARY ANCHORS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAL FOOT FOR GUARD RAIL.

GUARD RAIL PARAPET ANCHORS

COST OF PROVIDING AND INSTALLING ANCHOR FOR CONNECTING DEEP STEEL BEAM GUARD RAIL TO BRIDGE PARAPET IS INCLUDED IN THE BRIDGE QUANTITIES FOR PAYMENT. CONTRACTOR SHALL PROVIDE ONE ADDITIONAL GUARD RAIL POST IN THE CENTER OF THE FIRST PANEL OF DEEP STEEL BEAM GUARD RAIL WHERE ANCHORED TO THE PARAPET, COST OF WHICH SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAL FOOT OF GUARD RAIL.

EROSION CONTROL AT BRIDGES

SODDED CHANNELS SHALL BE PROVIDED AT ENDS OF BRIDGES WHERE REQUIRED BY THE PLANS. COST OF ALL WORK NECESSARY TO COMPLETE THE ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR "ITEM L-10, SODDING FOR SPECIAL BERM AND SLOPE PROTECTION". *SEE DETAIL ON SHEET 271.*

COMPUTATIONS & SUB-SUMMARIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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LAKE COUNTY
LAK-I-10.38

EARTHWORK

SHEET NO.	STATION FROM	STATION TO	E-1 ROADWAY EXCAVATION CU. YDS.	EMBANKMENT PLUS 18% CU. YDS.
13	193 + 50	200 + 00	117,571	1,225
14	200 + 00	210 + 00	85,745	81,543
15	210 + 00	220 + 00	59,916	8,513
16	220 + 00	230 + 00	27,891	35,324
19	230 + 00	240 + 00	65,937	66,656
20	240 + 00	250 + 00	15,800	73,689
23	250 + 00	260 + 00	28,463	56,682
24	260 + 00	270 + 00	34,869	128,526
25	270 + 00	280 + 00	82,638	289
26	280 + 00	290 + 00	97,207	0
27	290 + 00	300 + 00	23,640	6,202
28	300 + 00	310 + 00	45,621	10,955
29	310 + 00	320 + 00	115,460	17,222
30	320 + 00	326 + 50	9,830	258,864
KING MEMORIAL ROAD				
205	23 + 00	25 + 00	379	51
206	25 + 00	35 + 00	576	11,573
207	35 + 00	39 + 00	676	5,096
MORLEY ROAD				
216	22 + 00	25 + 00	483	1,791
217	25 + 00	35 + 00	241	11,660
218	35 + 00	39 + 00	836	5,966
DRIVEWAY LT. STA. 34+25 MORLEY ROAD				
226	0 + 75	6 + 60	513	2,151
KELLOGG ROAD RELOC.				
218	85+30.21	88 + 00	149	5,268
26	88+00	90 + 00	683	231
27	90+00	100 + 00	989	1,914
229	100+00	105 +37.33	3,720	13
DRIVE RT. STA. 27+31.34 EXIST. KELLOGG RD.				
229	0 + 44	3 + 85	248	712
HERMITAGE ROAD				
236	24 + 50	25 + 00	49	47
237	25 + 00	35 + 00	43,139	11,675
238	35 + 00	39 + 04.23	5,529	2
DRIVEWAY LT. STA. 27+00 HERMITAGE RD.				
237	0 + 32	2 + 12	33	1,389
	ADDITIONAL EXCAV. THROUGH ROCK CUT AREAS		14,056	16,586
	DEDUCT L-I, TOPSOIL STOCKPILED		16,586	
	TOTALS		866,020	821,815

E-1, COMPACTED SUBGRADE

AREA AS T-71 = 69,117.12 SQ. YDS.

AREA AS B-219 = 43,364.87 SQ. YDS.

AREA AS I-7 = 266.68 SQ. YDS.

TOTAL 112,748.67 SQ. YDS.

ESTIMATED DEDUCT. FOR ROCK SUBGRADE 12,000 SQ. YDS

NET 100,748.67 SQ. YDS.

T-71, 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

TOTAL NET LENGTH AS PER S.R.I
TYPICAL SECTIONS = 12,959.46 LIN. FT.

WIDTH, 4 LANES @ 12 FT. = 48 FT.

12,959.46 X 48 ÷ 9 = 69,117.12 SQ. YDS.

I-22, SUBBASE

TOTAL NET LENGTH NORMAL SECTION = 10,134.46
END AREA = 39.272 SQ. FT.
TOTAL NET LENGTH ROCK SECTION = 2,875.00
END AREA = 52.240 SQ. FT.
TOTAL NET LENGTH OF SECTION REQUIRING ADDITIONAL 12" SUBBASE = 1,200.00 LIN. FT.

10,134.46 X 39.272 ÷ 27 = 14,740.76 C.Y.
2,875.00 X 52.240 ÷ 27 = 5,562.59 C.Y.
1,200.00 X 80 X 1 ÷ 27 = 3,555.56 C.Y.
TOTAL = 23,858.91 C.Y.

I-18, STABILIZED CRUSHED AGGREGATE SHOULDER MATERIAL

TOTAL NET LENGTH AS PER S.R.I
TYPICAL SECTIONS PLUS 2 APPROACH SLABS
@ 25 FT. = 13,009.46 LIN. FT.

13,009.46 X 32 X 0.42 ÷ 27 = 6,475.82 CU. YD.

B-219, WATERPROOFED AGGREGATE BASE COURSE

TOTAL NET LENGTH AS PER I-18 = 13,009.46 LIN. FT.
WIDTH 2 SHOULDERS @ 5 FT. = 10 FT.
WIDTH 2 SHOULDERS @ 10 FT. = 20 FT.
TOTAL WIDTH = 30 FT.
13,009.46 X 30 ÷ 9 = 43,364.87 SQ. YDS.
43,364.87 X 3/36 (3" DEPTH) = 3,613.74 CU. YDS.

T-31, BITUMINOUS SURFACE TREATMENT

BITUMINOUS MATERIAL, 0.25 GAL. PER SQ. YD. OF B-219

AREA B-219 AS ABOVE = 43,364.87 SQ. YDS.
43,364.87 X 0.25 = 10,841.22 GAL.

NO. 6 AGGREGATE APPLIED @ .008 CU. YD. PER SQ. YD. OF B-219

43,364.87 X .008 = 346.92 CU. YD.

EDGE LINES

TOTAL NET LENGTH AS PER SHEET NO. 1 = 13,158.82 FT.

LENGTH 4 EDGES
4 X 13,158.82 = 52,635.28 FT.
ADD FOR 2 RAMP EXITS 200 FT.
ADD FOR 2 RAMP ENTRANCES 800 FT.
53,635.28 ÷ 5280 = 10.16 MILES

BARRIER LINES Estimated Length = 0.39 Mile

LANE & CENTER LINES

TOTAL NET LENGTH AS PER SHEET NO. 1 = 13,158.82 FT.
2 PAVEMENTS, 15 FT. LINES AND 25 FT. SPACES

13,158.82 X 2 X $\frac{15}{40}$ ÷ 5280 = 1.87 MILES

E-11, WATER M-GAL. = $\frac{\text{VOL. x 5}}{1,000}$

EMBANKMENT	696,453
I-22	29,326
I-18	6,951
B-19	2,072
TOTAL VOLUME CU. YD.	734,802
M-GALS.	3,674

Rev. 3-1-60

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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LAKE COUNTY
LAK-1-10.38

TYPE CODE 7221

ITEM NO.	7	13	14	15	16	17	19	20	21	23	24	25	26	27	28	29	30	205	206	207	216	217	218	226	229	236	237	238	ITEM NO.	QUAN.	UNIT	DESCRIPTIONS
																																DRAINAGE
E-2			107	8	482	6	712	516	24	10	139	36		60	39	2	244			33			2		37		16		E-2	2473	C.Y.	Excavation for Structures
E-3			4601		170	185	6	6			15,574			8		334	1152			8					13		12		E-3	22,069	C.Y.	Channel Excavation
I-1																				54			114						I-1	168	L.F.	12" Pipe for Driveways, Sec. M-6.4(a)
I-1																					50				40				I-1	90	L.F.	15" Pipe for Driveways, Sec. M-6.4(a)
I-1																					46	44							I-1	90	L.F.	24" Pipe for Driveways, Sec. M-6.4(a)
I-2						220			96																				I-2	316	L.F.	6" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.5 (b) or Sec. M-6.8(b)
I-2	1200		92			36		28			74																		I-2	1430	L.F.	8" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.5 (b) or Sec. M-6.8(b)
I-2									58							88													I-2	146	L.F.	15" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.5 (b) or Sec. M-6.8(b)
I-2			92	88								88																	I-2	268	L.F.	18" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.5 (b) or Sec. M-6.8(b)
I-2									68			184																	I-2	252	L.F.	21" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.6 (a) or Sec. M-6.8 (b)
I-2				94								94				164													I-2	352	L.F.	24" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.6(a) or Sec. M-6.8 (b)
I-2													354									62	176						I-2	592	L.F.	30" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.6 (b) or Sec. M-6.8 (b)
I-2																							72						I-2	72	L.F.	36" Class "A" Storm Sewers Under Pavs. or App., Sec. M-6.6 (b) or Sec. M-6.8 (b)
I-2						56			16																				I-2	72*	L.F.	4" Class "A" Storm Sewers
I-2													36			80							10						I-2	126	L.F.	15" Class "A" Storm Sewers Sec. M-6.5 (a) or Sec. M-6.8 (a)
I-2													12				198						10						I-2	220	L.F.	18" Class "A" Storm Sewers Sec. M-6.5 (a) or Sec. M-6.8 (a)
I-2													348																I-2	348	L.F.	24" Class "A" Storm Sewers Sec. M-6.5 (a) or Sec. M-6.8 (a)
I-2										170																			I-2	170	L.F.	15" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.6 (c)
I-2																	172												I-2	172	L.F.	18" Class "A" Storm Sewers Under Pav. or App., Sec. M-6.6 (c)
I-2							154																						I-2	154	L.F.	18" Class "A" Storm Sewers Sec. M-6.5 (b) or Sec. M-6.8 (b)
I-2			140	130								260				162													I-2	692	L.F.	21" Class "A" Storm Sewers Sec. M-6.6 (b) or Sec. M-6.8 (b)
I-2			20		6	20		10			20																		I-2	76	L.F.	8" Outlet Pipe for Storm Sewers Sec. M-6.4 (c)
I-2	600																												I-2	600	L.F.	12" Class "A" Storm Sewers Under Pav. or App. Sec. M-6.5 (b) or Sec. M-6.8 (b)
I-2											104																		I-2	104	L.F.	15" Class "A" Storm Sewers Sec. M-6.4 (c)
I-2																	42												I-2	42	L.F.	18" Class "A" Storm Sewers Sec. M-6.4 (c)
I-2																76													I-2	76	L.F.	24" Class "A" Storm Sewers Sec. M-6.4 (c)
I-2					198	24			102																				I-2	324	L.F.	15" Class "B" Storm Sewers
I-2						96		156	60		40																		I-2	352	L.F.	15" Class "B" Storm Sewers Under Pavement or Approaches
I-2					100																								I-2	100	L.F.	18" Class "B" Storm Sewers Under Pavement or Approaches
I-2			116																										I-2	116	L.F.	21" Class "A" Storm Sewers Under Pavement or Approaches Sec. M-6.6 (b) or M-6.8 (b)
I-3	400																												I-3	400	L.F.	6" Roadway Drainage
I-3	400																												I-3	400	L.F.	8" Roadway Drainage
I-3	100																						10						I-3	110	L.F.	8" Pipe Outlets for Roadway Drainage Sec. M-6.4 (c)
I-3	50																												I-3	50	L.F.	10" Pipe Outlets for Roadway Drainage Sec. M-6.4 (c)
I-3	50																												I-3	50	L.F.	12" Pipe Outlets for Roadway Drainage Sec. M-6.4 (c)
I-4		500	2062	3386	4259	1969	3212	3730	1404	4042	3705	2070	3083	4128	4150	1802	2632												I-4	46,134	L.F.	6" Underdrains
I-4		1000	1012	344	50		575				396	1032	446			802													I-4	5 657	L.F.	6" Underdrains Sec. M-6.4 (h)
I-4			20	40	20	10	20	10	90	10	10	50	30	20	20	20	50												I-4	420	L.F.	8" Outlet Pipe for Underdrains Sec. M-6.4 (a)
I-5			3	4	3	6	9	4	4	1	5	3	2	6	6	4	5												I-5	65	EA.	6" Pipe Special for Underdrains
I-5			2		1	1		1			2																		I-5	7	EA.	8" Pipe Special for Underdrains
I-5			2									2	1			4													I-5	9	EA.	6" Pipe Special for Underdrains Sec. M-6.4 (h)
I-5			2								2																		I-5	4	EA.	8" Pipe Specials for Storm Sewers Sec. M-6.5 (b) or Sec. M-6.8 (b)
I-5																	2												I-5	2	EA.	18" Pipe Specials for Storm Sewers Sec. M-6.4 (c)
I-5																2													I-5	2	EA.	24" Pipe Specials for Storm Sewers Sec. M-6.4 (c)
I-5													3										1						I-5	4	EA.	30" Pipe Specials for Storm Sewers Sec. M-6.6 (b) or Sec. M-6.8 (b)
I-5					1																								I-5	1	EA.	30" Pipe Special for Roadway Culvert Sec. M-6.6 (c)
I-5											2																		I-5	2	EA.	15" Pipe Specials for Storm Sewers Sec. M-6.4 (c)
I-8																							2						I-8	2	EA.	Standard No. 2-2-B Catch Basins
I-8																1													I-8	1	EA.	Standard No. 2-3 Catch Basin
I-8						3			2																				I-8	5	EA.	Standard No. 3 Catch Basins
I-8									4																				I-8	4	EA.	Standard No. 3-A Catch Basins
I-8																	2												I-8	2	EA.	Standard No. 4 Catch Basins
I-8			2	3	1		2		2			6	4			4													I-8	24	EA.	Standard No. 5 Catch Basins
I-8			1										1																I-8	2	EA.	Standard No. 5 Catch Basins Modified as per plan
I-8					1			2			1																		I-8	4	EA.	Standard No. 6 Catch Basins
I-8						1			1																				I-8	2	EA.	Type A Catch Basins, as per plan
I-8													1			3						1	1						I-8	6	EA.	Standard No. 1 Manholes
I-8							1																						I-8	1	EA.	Standard No. 2 Manhole (without drop pipe)
S-24			Lump												Lump							Lump	Lump						S-24	Lump	Lump	Removal of Existing Structures
I-9														432				81	135	144	117	117	270		198		423		I-9	1917	L.F.	Stone Underdrains, No. 2
I-10		113	256		16	64	171	171		14	177	94		16		183	285												I-10	1560	C.Y.	Dumped Rock Channel Protection
I-14			56																										I-14	56	L.F.	Type I Paved Gutter, Std.
I-14													32																I-14	32	L.F.	Type I Paved Gutter, Modified as per plan
S-1			48.2	5.4	21.4	3.1	32.7	35.4	12.4	3.1	49.0	9.4		10.5	6.2														S-1	236.8	C.Y.	Concrete for Structures, Class "C"
S-1							1.9	1.9			1.4			0.8		0.4	49.7			0.6			0.5		1.8		0.6		S-1	59.6	C.Y.	Concrete for Structures, Class "E"
S-4			2147	218	920	146	1486	1528	584	146	2111	411		436	292														S-4	10,425	LBS.	Reinforcing Steel
S-27																											60		S-27	60	L.F.	15" Pipe for Roadway Culverts
S-27															118														S-27	118	L.F.	18" Pipe for Roadway Culverts Sec. M-6.6 (b) or Sec. M-6.8 (b)
S-27					118									176															S-27	294	L.F.	24" Pipe for Roadway Culverts Sec. M-6.6 (b) or Sec. M-6.8 (b)
S-27					496																								S-27	496	L.F.	30" Pipe for Roadway Culverts Sec. M-6.6 (c)
S-27							640																						S-27	640	L.F.	36" Pipe for Roadway Culverts Sec. M-6.4 (d) 10 Gage
S-27							182																						S-27	182	L.F.	48" Pipe for Roadway Culverts Sec. M-6.4 (d) 8 Gage
S-27								428																					S-27	428	L.F.	54" Pipe for Roadway Culverts Sec. M-6.4 (d) 8 Gage
S-28			356																										S-28	356	L.F.	60" Sectional Corrugated Metal Str. Sec. M-6.4 (g) 10-10 Gage
S-27																									36				S-27	36	L.F.	58"x36" Corrugated Metal Arch Sec. M-6.4 (i)(d) for Roadway Culverts.
S-28											486																		S-28	486	L.F.	66" Sectional Corrugated Metal Structures Sec. M-6.4 (g) 10-5 Gage
S-28																	418												S-28	418	L.F.	180" Sectional Corrugated Metal Structures Sec. M-6.4 (g) 1-1 Gage
S-27																				94									S-27	94	L.F.	18" Pipe for Roadway Culverts Sec. M-6.6 (c)
S-29			0.9	0.3	0.3	0.6		0.3	0.6	0.3	0.6	0.6		0.6	0.6		1.5												S-29	7.2	C.Y.	Drainage of Structures No. 2 Aggregate

*100% State

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Rev. 11-20-61

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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306

TYPE CODE 7221

LAKE COUNTY
LAK-1-10.38

ITEM NO.	SHEET NUMBER 7&9	13	14	15	16	17	19	20	21	23	24	25	26	27	28	29	30	205	206	207	216	217	218	226	229	305	236	272	237	256	238	296	ITEM NO.	QUAN.	UNIT	DESCRIPTIONS
																																				ROADWAY
E-1	866,020																																E-1	866,020	C.Y.	Roadway Excavation, Method B as per plan
E-1	100,749					11,520			11,151					2224				356	1047	1077	948	863	1684	866	1790				3170				E-1	137,445	S.Y.	Compacted Subgrade
E-9	Lump																																E-9	Lump	Lump	Removal of Trees and Stumps, as per plan
E-11	3,674																																E-11	3,674	M-Gal	Water
E-12																				100	66	18	40						87				E-12	311	L.F.	Pipe Removed 15" and Under, as per plan
E-12																						135	219										E-12	354	L.F.	Pipe Removed Over 15", as per plan
I-13						2,656			2,531																								I-13	5,187*	S.F.	4" Sidewalks, Concrete
I-15																			624	336		464	760			32							I-15	2,216	L.F.	Guard Rail, Wire Cable Type, 3 Cables
I-15		350.0	1075.0		562.5	1012.5	537.5	862.5		650.0	887.5	162.5	162.5		250.0	1175.0	1500.0															I-15	9187.5	L.F.	Guard Rail, Steel Beam Std. Type (Deep)
I-8																																14	I-8	14	EA.	Center Line Reference Monuments, as per plan.
I-8																																2	I-8	2	EA.	Monument Assemblies, Standard.
L-1	16,586																																L-1	16,586	C.Y.	Topsoil Stockpiled
L-3	42,168																																L-3	42,168	S.Y.	Placing Stockpiled Topsoil, 12" Depth
L-6			10	31	52			17		27	43	36	17	82	60																		L-6	375	Units	Roadside Cleanup
L-9		18,335	30,570	27,833	33,294		36,206	26,826		35,982	31,100	28,742	31,493	28,264	26,790	30,844	26,819	869	4901	2747	1802	3283	6064	2060	4337		167		12746		2620		L-9	454,694	S.Y.	Seeding and Protecting, as per plan
L-9	0.11	1.67	2.77	2.55	3.03	0.03	3.27	2.43	0.01	3.25	2.81	2.64	2.87	2.68	2.45	2.81	2.43	.09	.46	.25	.17	.31	.55	.19	.41		.02		1.15		.24		L-9	41.65	Tons	Commercial Fertilizer (12-12-12)
L-9		1.80	1.39		.06		.80				.39	1.35	1.03																				L-9	6.82	Tons	Agricultural Liming Material for Shale Slopes
M-10	3																																M-10	3	Tons	Calcium Chloride furnished and applied for maintaining traffic.
T-10	150																																T-10	150	C.Y.	Traffic Compacted Surface Course for Maintaining Traffic
SS-18																																24426	SS-18	24,426	L.F.	Fence, Type "D"
SS-18																																3079	SS-18	3,079	L.F.	Park Fence
I-125	0.39																																I-125	0.39	Mile	4" Barrier Lines
I-125	10.16																																I-125	10.16	Miles	Edge Lines, 4"
I-125	1.87																																I-125	1.87	Miles	Lane Lines and Center Lines 6" Wide
I-125	Lump																																I-125	Lump	Lump	Curb and Island Marking
I-127																												130					I-127	130	EA.	Standard Delineators
L-10	1200	274	229	503	177	159	130	281	62	2	449	633	441	1573	458	215	152	92	175	41	104	99	12		271				6				L-10	7738	S.Y.	Sodding, as per plan
L-10						120										111			68			71											L-10	370	S.Y.	Sodding for Special Berm & Slope Protection, as per plan
S-24																										Lump							S-24	Lump	Lump	Removal of 1 Frame Barn Parcel No. 8 LA
S-25								150																						~~150~~			S-25	150	L.F.	4" Asbestos Cement Conduit, Sec. M-206.14, as per Plan
L-12																														100			L-12	100	EA.	Vinca Minor · Myrtle 2 Yr.
L-13																														580			L-13	580**	EA.	Cornus Racemosa · Gray Dogwood - 2'-3' - B & B 12"
L-14																														1			L-14	1 *	EA.	Aesculus Glabra · Ohio Buckeye - 1½" to 1¾" - B & B 22"
L-14																														21			L-14	21 *	EA.	Liquidamber Styraciflua - Sweet Gum - 1½" to 1¾" - B & B 22"
L-17																														Lump			L-17	Lump	Lump	Pruning Existing Trees
Special																														225			Special	225*	L.F.	Drilled Wells
Special																														2			Special	2 *	EA.	Well Shelter
Special																														2			Special	2 *	EA.	Toilet & Storage Building
Special																														28			Special	28 *	EA.	Park Table
Special																														12			Special	12 *	EA.	Charcoal Grill & Serving Table
Special																														2			Special	2 *	EA.	Bulletin Board

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*18 at Normal Participation & 3 at 100% State

*100% State
** 560 at Normal Participation & 20 at 100% State

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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306

TYPE CODE 7221

LAKE COUNTY
LAK-1-10.38

ITEM NO.	SHEET NUMBER 7&9	13	14	15	16	17	19	20	21	23	24	25	26	27	28	29	30	205	206	207	216	217	218	226	229	236	237	238	ITEM NO.	QUAN.	UNIT	DESCRIPTIONS
																																PAVEMENT
B-219	3614					133			120																				B-219	3867	C.Y.	Waterproofed Aggregate Base Course
B-19														328				52	134	161	136	108	250	183	257		463		B-19	2072	C.Y.	Aggregate Base Course, as per plan
I-7																201	67		138			138							I-7	544	S.Y.	Reinforced Concrete Approach Slabs (T-13")
I-12						590			594																				I-12	1184	L.F.	Standard Type 6 Concrete Curb
I-12						480			450																				I-12	930	L.F.	Special Portland Cement Concrete Curb, as per plan
I-12						1593			1493																				I-12	3086	L.F.	Modified Special Portland Cement Concrete Curb, as per plan
I-21						40			39																				I-21	79	S.Y.	4" Portland Cement Concrete Median Pavement, Type 1
I-22	23,859					2084			2023					267				44	130	89	74	87	176		135		358		I-22	29,326	C.Y.	Subbase Grading A or B, as per plan
I-18	6476					251			224																				I-18	6951	C.Y.	Stabilized Crushed Aggregate Shoulders and Approaches
T-30														889				142	364	404	340	278	655	41	437		1268		T-30	4818	GAL.	Bituminous Prime Coat: Sec. M-5.7, RT-2 or RT-3
T-31	10,841					401			362																				T-31	11,604	GAL.	Bituminous Surface Treatment-Bituminous Material, as per plan
T-31	347					13			12																				T-31	372	C.Y.	Bituminous Surface Treatment-No. 6 Aggregate
T-32	2420													2002				320	818	910	767	624	1475	106	983		2853		T-32	13,278	GAL.	Road Mix Bituminous Material: Sec. M-5.2, RC-2 or RC-3; or Sec. M-5.7 RT-8 or RT-9
T-32														556				89	227	252	214	173	410	29	273		793		T-32	3016	GAL.	Seal Coat Bituminous Material: Sec. M-5.2, RC-3 or RC-4; or Sec. M-5.7, RT-9 or RT-10
T-32														124				20	51	57	48	39	92	7	61		177		T-32	676	C.Y.	No. 46 Aggregate for Road Mix
T-32														10				1	4	4	4	3	7	1	4		13		T-32	51	C.Y.	No. 6 Aggregate for Choke
T-32														18				3	7	9	7	6	13	1	9		25		T-32	98	C.Y.	No. 6 Aggregate for Seal Coat
T-71	69,117					6140			5921																				T-71	81,178	S.Y.	10" Reinforced Portland Cement Concrete Pavement
T-71						3773			3781																				T-71	7,554	S.Y.	9" Reinforced Portland Cement Concrete Pavement
																													SPECIAL	LUMP	LUMP	Construction Layout Stakes

STRUCTURES OVER 20' SPAN

For Estimated Quantities for:
Bridge No. Lak-1-1050, See Sheet No. 275
Bridge No. Lak-1-1199, See Sheet No. 283
Bridge No. Lak-1-1271, See Sheet No. 291

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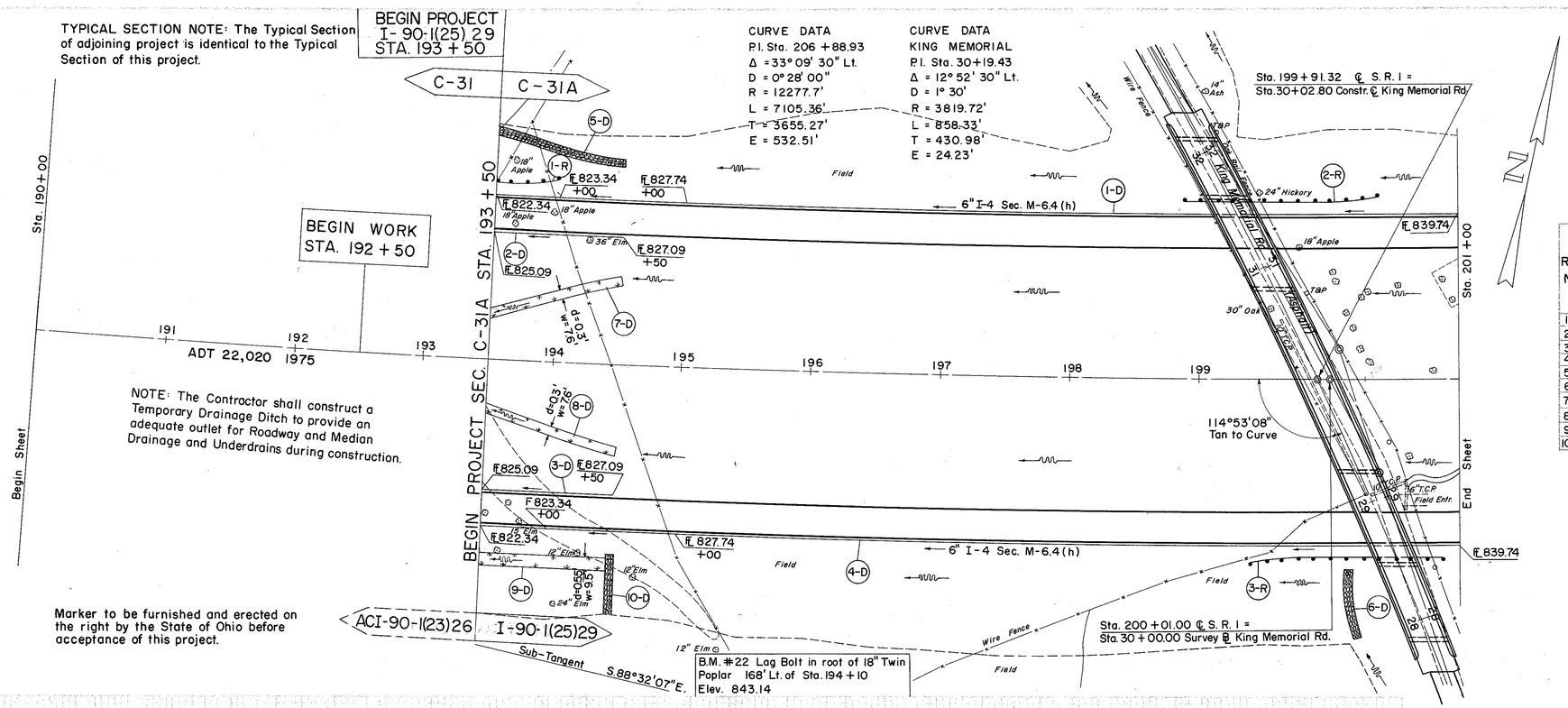
MICROFILMED
JUN 27 1985

LAKE COUNTY
LAK-1-10.38

TYPICAL SECTION NOTE: The Typical Section of adjoining project is identical to the Typical Section of this project.



NOTE: The Contractor shall construct a Temporary Drainage Ditch to provide an adequate outlet for Roadway and Median Drainage and Underdrains during construction.

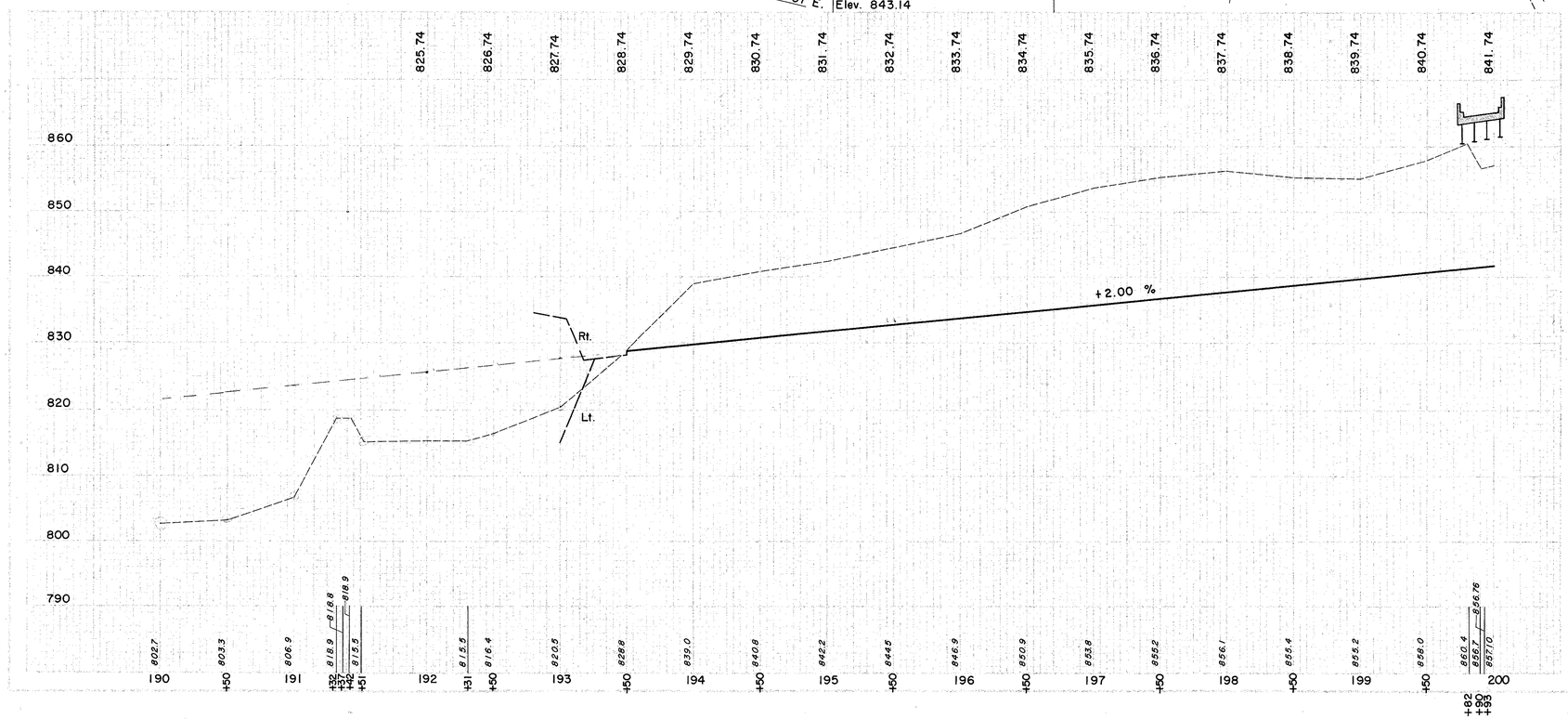
Marker to be furnished and erected on the right by the State of Ohio before acceptance of this project.

(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE	I-4 6" PIPE UNDERDRAIN DEEP	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN SEC. M-6.4 (h)	I-10 DUMPED ROCK CHANNEL PROTECT.	L-10 SODDING
				LIN. FT.			C.Y.	S.Y.
1-D	193+50	200+00	Lt.	150		500		
2-D	193+50	194+50	Lt.		100			
3-D	193+50	194+50	Rt.		100			
4-D	193+50	200+00	Rt.	150		500		
5-D	193+50	194+50	Lt.				55	
6-D	200+20		Rt.				33	
7-D	193+50	194+50	Lt.					84
8-D	193+50	194+50	Rt.					84
9-D	193+50	194+50	Rt.					106
10-D	194+50		Rt.				25	

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, STEEL BEAM STD. TYPE (DEEP)
				L.F.
1-R	193+50	194+00	Lt.	50
2-R	198+87.5	200+37.5	Lt.	150
3-R	199+37.5	200+87.5	Rt.	150
		TOTAL		350



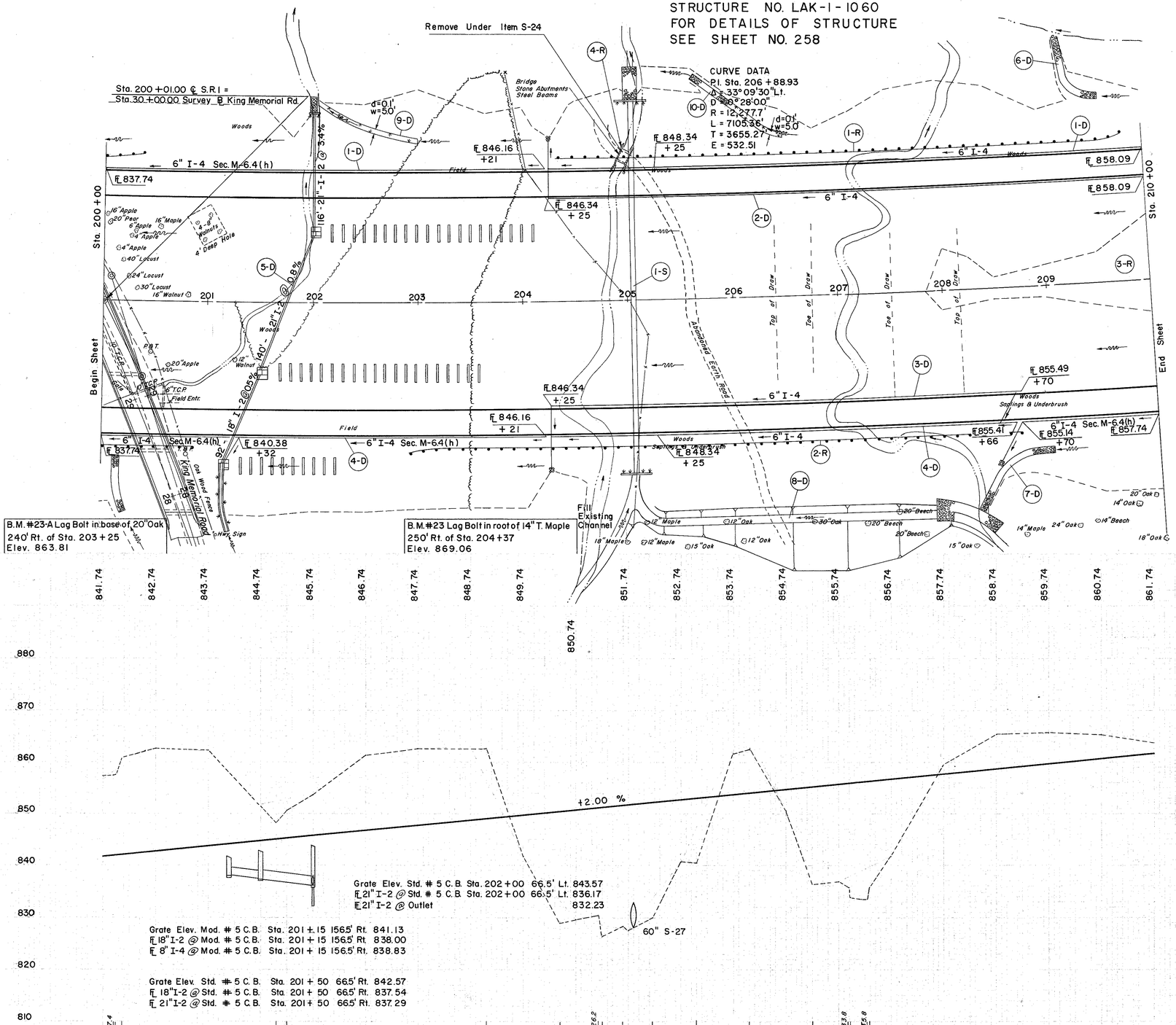
EXCAVATION		117,571 C.Y.
EMBANKMENT		1,038 C.Y.
EXCAVATION	18	1,225 C.Y.

Rev. 3-1-60

STA. 190+00 TO STA. 200+00

LAKE COUNTY
LAK-1-10.38

STRUCTURE NO. LAK-1-1060
FOR DETAILS OF STRUCTURE
SEE SHEET NO. 258



(D) DRAINAGE

REF NO.	STATION FROM	STATION TO	SIDE	CLASS A STORM SEWER SEC. M-68(b) or M-68(b) 21"	CLASS A STORM SEWER SEC. M-68(b) or M-68(b) 18"	CLASS A STORM SEWER SEC. M-68(b) or M-68(b) 8"	I-2 CLASS A STORM SEWER UNDER PAVEMENT 21"	I-2 CLASS A STORM SEWER UNDER PAVEMENT 18"	I-2 CLASS A STORM SEWER UNDER PAVEMENT 8"	I-4 8" OUTLET PIPE SEC. M-64(a)	I-4 6" PIPE UNDERDRAIN DEEP	I-4 6" PIPE UNDERDRAIN SHALLOW SEC. M-64(h)	I-5 8"X8"X6" TEE 60° WYE SEC. M-65(b) or M6.8(b) EACH	I-5 6"X8" INCREASER EACH	I-5 6"-90° BEND	I-5 6"-60° WYE	I-5 6"-60° BEND SEC. M-64(h)	I-8 6" 60° WYE SEC. M-64(h)	I-8 STD. # 5 CATCH BASIN	I-8 MOD. STD. # 5 CATCH BASIN	I-10 DUMPED ROCK CHANNEL PROTECT. C.Y.	I-10 DUMPED ROCK CHANNEL PROTECT. C.Y.	I-14.29 DRAINAGE OF STRUCT. NO. 2 AGGR. PAVED GUTTER TYPE L.F.	L-10 SODDING S.Y.	E-2 EXC. FOR STRUCT. C.Y.	E-3 CHANNEL EXC. C.Y.	S-1 CL "C" CONC. FOR STRUCT. C.Y.	S-4 REINF. STEEL STRUCT. LB.
1-D	200+00	210+00	LT.		46				10			574											0.6	133	7		4.2	193
2-D	204+25	210+00	LT.									574																
3-D	204+25	210+00	RT.									444																
4-D	200+00	210+00	RT.		46				10			470																
5-D	201+00	202+00	—																									
6-D	209+25		LT.		140			92	116																			
7-D	208+25	209+00	RT.																									
8-D	205+00	208+50	RT.																									
9-D	202+00	203+00	LT.																									
10-D	205+65	206+50	LT.																									

(S) STRUCTURES

REF NO.	STATION	I-10 DUMPED ROCK CHANNEL PROTECT C.Y.	E-2 EXCAV. FOR STRUCT. C.Y.	E-3 CHANNEL EXC. C.Y.	L-10 SODDING S.Y.	S-1 CONC. FOR STRUCT. CL. "C" C.Y.	S-4 REINF. STEEL STRUCT. LBS.	S-28 60" SEC. COR. MET. STR. SEC. M-64(g) 10-10 GA. L.F.
1-S	205+05	40	100	210	12	44	1954	356

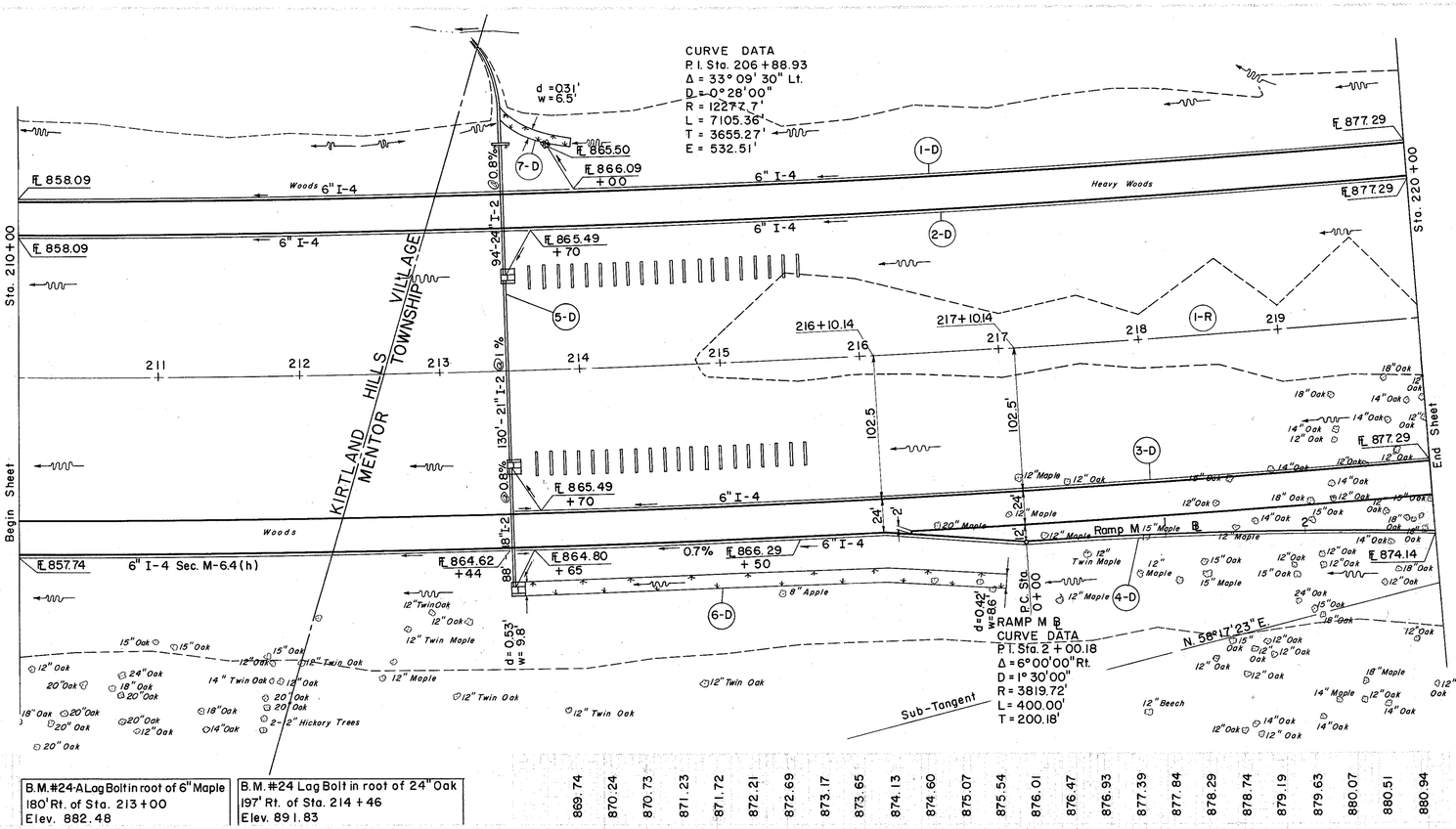
(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, STEEL BEAM STD. TYPE (DEEP) L.F.	L-6 ROADSIDE CLEANUP UNITS	S-24 REMOVAL OF EXIST. STRUCT. LUMP
1-R	204+37.5	209+75	LT.	537.5		
2-R	202+92	208+29	RT.	537.5		
3-R	208+00	210+00	℄		10	
4-R	205+00		LT.			LUMP
		TOTAL		1075	10	

EXCAVATION		85,745 C.Y.
EMBANKMENT		69,104 C.Y.
EXCESS EMBANKMENT	18	81,543 C.Y.

STA. 200+00 TO STA. 210+00

LAKE COUNTY
LAK-I-10.38



(D) DRAINAGE

REF NO.	STATION FROM	STATION TO	SIDE	CL "A" STM. SUP. SEC. M-6.6(b) OR M-6.8(b) I-2 21"	18"	24"	CLASS "A" STORM SEWER UNDER PAVT. SEC. M-6.3(b) OR M-6.8 (b) I-2	6" PIPE UNDERDRAIN DEEP LIN. FT.	6" PIPE UNDERDRAIN SHALLOW LIN. FT.	6" PIPE UNDER-DRAIN SEC. M-6.4(h) I-4	8" OUTLET PIPE SEC. M-6.4(a)	I-5 6" 60° BEND	I-5 6" 60° WYE EACH	I-8 STD. # 5 CATCH BASIN	L-10 SODDING S.Y.	E-2 EXC. FOR STRUCT. C.Y.	S-1 CONC. FOR STRUCT. CL. "C" C.Y.	S-4 REINF. STEEL LB.	S-29 DRAINAGE OF STRUCT. NO. 2 AGG. C.Y.
1-D	210+00	220+00	LT					1020			10		1						0.3
2-D	210+00	220+00	LT					1022			10		1						
3-D	213+50	220+00	RT						676	344	10		1						
4-D	210+00	220+00	RT								10		1						
5-D	213+50		—					668						3	109	8	5.4	2.18	
6-D	213+50	217+00	RT	130	88	94									358				
7-D	213+50	214+00	LT												36				

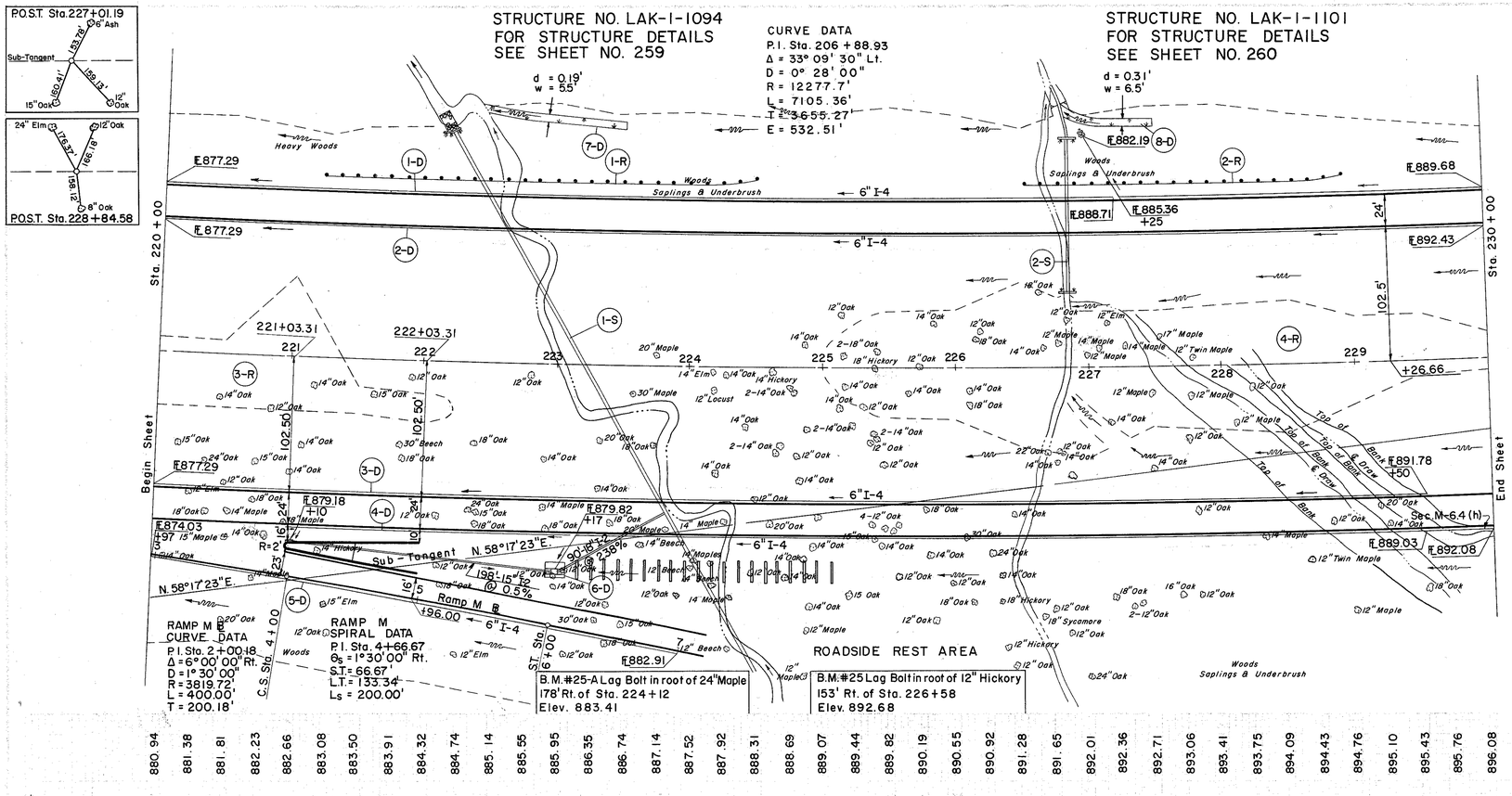
(R) ROADWAY

REF NO.	STATION FROM	STATION TO	SIDE	L-6 ROADSIDE CLEANUP UNITS
1-R	215+00	220+00	℄	31

Excavation		59,916 C.Y.
Embankment		7,214 C.Y.
Excess Excavation	18	8,513 C.Y.

STA. 210+00 TO STA. 220+00

LAKE COUNTY
LAK-1-10.38



(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE	CLASS "B" STORM SEWER 15"	OUTLET PIPE SEC. M-6.4 (c) 8"	CLASS "B" STORM SEWER UNDER PAV'T. 18"	I-2	6" PIPE UNDER DRAIN SHALLOW L.F.	6" PIPE UNDER DRAIN DEEP (SEC. M-6.4 (h))	I-4	8" OUTLET PIPE SEC. M-64 (a)	6" OUTLET PIPE SEC. M-64 (a) BEND	I-5	6" 60° WYE	6" X 8" INCREASER	I-8	STD. NO. 5 CATCH BASIN	STD. NO. 6 CATCH BASIN	I-8	STD. DRAINAGE STRUCT. NO. 2	S-29	SODDING AGGR. C.Y.	L-10
																					S.Y.	
1-D	220+00	230+00	LT.					721	316		10		1								0.3	
2-D	220+00	230+00	LT.					1000														
3-D	220+00	229+50	RT.					950														
4-D	221+00	230+00	RT.				6	217	652		10		1									
5-D	2+97 RAMP M	7+00 RAMP M	RT.						403											53		
6-D	221+04	223+95	RT.		198															61		
7-D	222+50	223+50	LT.			100														51		
8-D	226+80	227+50	LT.																			

(S) STRUCTURES

REF. NO.	STATION	SIDE	E-2 EXC. FOR STRUCT. C.Y.	E-3 CHANNEL EXC. C.Y.	L-10 SODDING S.Y.	I-5 18" X 30° TEE SEC. M-66 (c) EA.	I-5	I-10 DUMPED ROCK FOR CHANNEL PROTECT. (CLASS C) C.Y.	S-1 CONC. FOR STRUCT. C.Y.	S-4 REINF. STEEL LBS.	S-27 30" PIPE 24" PIPE FOR RDWY. CULVERTS SEC. M-66(b) OR SEC. M-66(a) L.F.	S-27 L.F.
1-S	223+19	℄	430	163	5	1		10	11.4	484	496	
2-S	226+86	LT.	52	7	6			6	100	436		118

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE	I-15 GUARD RAIL, STEEL BEAM STD. TYPE (DEEP) L.F.	L-6 ROADSIDE CLEAN UP UNITS
1-R	221+25	224+50	LT.	325	
2-R	226+53	228+92.5	LT.	237.5	
3-R	220+00	222+00	℄		11
4-R	225+00	230+00	℄		41
		TOTAL		562.5	52

Excavation		27,891 C.Y.
Embankment		29,936 C.Y.
Surplus Excavation	18	35,324 C.Y.

STA. 220+00 TO STA. 230+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

17
306

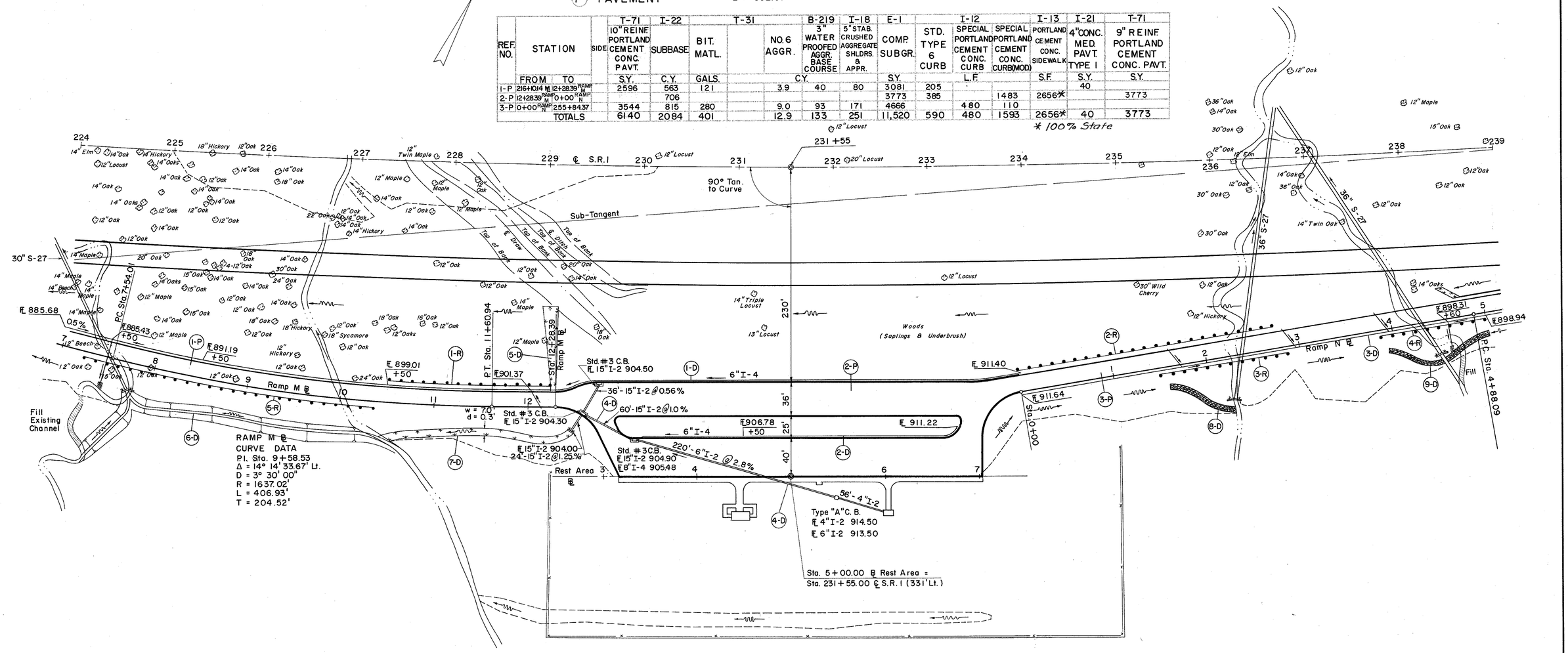
LAKE COUNTY
LAK-I-10.38

CURVE DATA
P.I. Sta. 206 + 88.93
Δ = 33° 09' 33" Lt.
D = 0° 28' 00"
R = 12,277.67'
L = 7105.36'
T = 3655.27'
E = 532.51'

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE	T-71 10" REINF. PORTLAND CEMENT CONC. PAVT.	I-22 SUBBASE	T-31 BIT. MATL.	T-31 NO. 6 AGGR.	B-219 3" WATER PROOFED AGGR. BASE COURSE	I-18 5" STAB. CRUSHED AGGREGATE SHLDRS. & APPR.	E-1 COMP. SUBGR.	I-12 STD. TYPE 6 CURB	I-12 SPECIAL PORTLAND CEMENT CONC. CURB	I-12 SPECIAL PORTLAND CEMENT CONC. CURB (MOD)	I-13 PORTLAND CEMENT CONC. SIDEWALK	I-21 4" CONC. MED. PAVT. TYPE I	T-71 9" REINF. PORTLAND CEMENT CONC. PAVT.
				S.Y.	C.Y.	GALS.	C.Y.			S.Y.	L.F.			S.F.	S.Y.	S.Y.
1-P	216+10.14 ℄	12+28.39 Ramp M		2596	563	121	3.9	40	80	3081	205				40	
2-P	12+28.39 Ramp M	0+00 Ramp N			706					3773	385		1483	2656*		3773
3-P	0+00 Ramp N	255+84.37		3544	815	280	9.0	93	171	4666		480	110			
TOTALS				6140	2084	401	12.9	133	251	11,520	590	480	1593	2656*	40	3773

* 100% State



(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL STEEL BEAM STD. TYPE (DEEP)
				L.F.
1-R	10+50 Ramp M	12+25	LT.	175
2-R	0+00 Ramp N	2+75	LT.	275
3-R	1+50 Ramp M	2+87.5	RT.	1375
4-R	3+87.5 Ramp N	5+00	RT.	112.5
5-R	7+25 Ramp M	10+35	RT.	312.5
		TOTAL		1012.5

(D) DRAINAGE

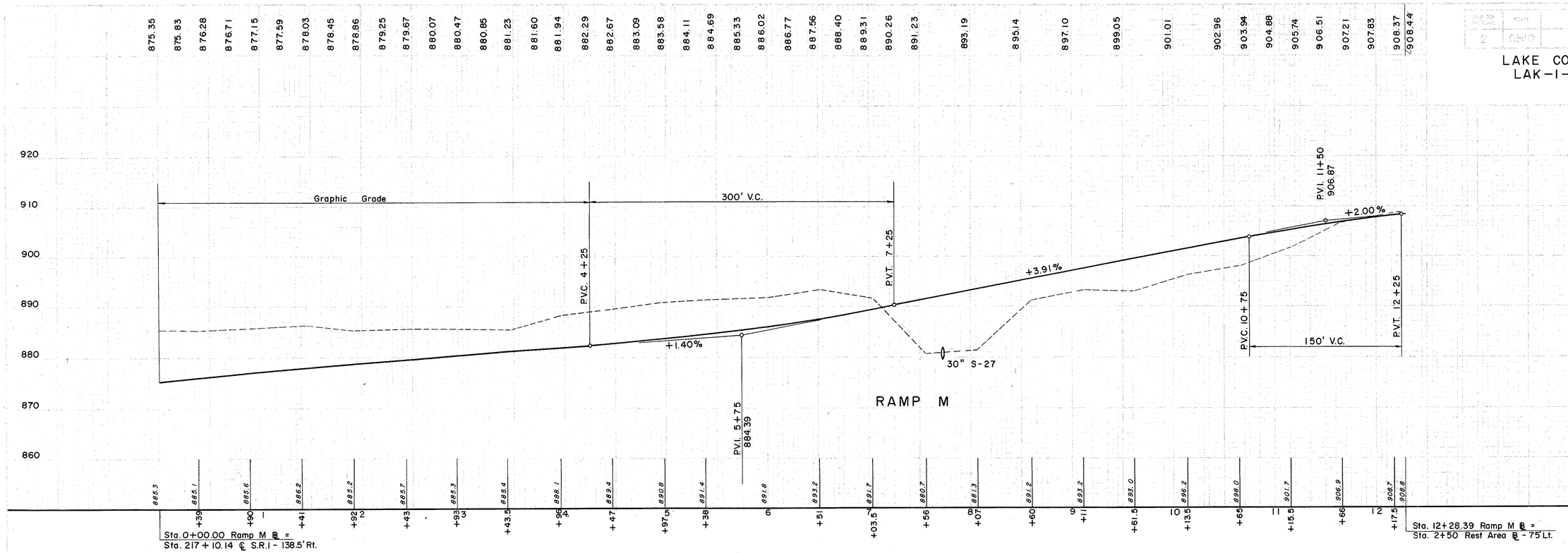
REF. NO.	STATION FROM	STATION TO	SIDE	I-2 CLASS "A" STORM SEWER 4"	I-2 CLASS "A" STORM SEWER UNDER PAVT. SEC. M-6.5(b) OR M-6.8(b) 6"	I-2 8"	I-2 CLASS "B" STORM SEWER UNDER PAVT. 15"	I-2 CLASS "B" STORM SEWER 15"	I-2 8" OUTLET PIPE SEC. M-6.4 (c)	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN DEEP	I-4 8" OUTLET PIPE SEC. M-6.4 (a)	I-5 6" 60° WYE	I-5 6" TEE	I-5 6"x8" INCREASER	I-8 TYPE "A" CATCH BASIN STD. NO. 5	I-8 TYPE "A" CATCH BASIN STD. NO. 6	S-1 CONC. FOR STRUCT. CL. "C"	S-4 REINF. STEEL	E-2 EXC. FOR STRUCT.	L-10 SODDING FOR SPECIAL SLOPE & BERM PROTECT.	L-10 SODDING	I-10 DUMPED ROCK CHANNEL PROTECT.	E-3 CHANNEL EXC.	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR.
				L.F.						L.F.			EA.					C.Y.	LBS.	C.Y.	S.Y.	S.Y.		C.Y.	
1-D	7+00 Ramp M	0+00 Ramp N	LT.			36			10	350	705		1	1	1										0.3
2-D	REST AREA		—						10		336														
3-D	0+00 Ramp N	5+00 Ramp N	RT.								578	10	3	1											0.3
4-D	REST AREA		—	56*	220		96	24								3	1	3.1	146	6		3			
5-D	12+28 Ramp M		LT.																		120				
6-D	7+80 Ramp M	10+50 Ramp M	RT.																					185	
7-D	10+50 Ramp M	12+50 Ramp M	RT.																			156			
8-D	1+70 Ramp N	2+20 Ramp N	RT.																				42		
9-D	4+00 Ramp N	4+50 Ramp N	RT.																				22		

* 100% State

Rev. 11-20-61
ROADSIDE REST PLAN
SCALE: 1" = 50'

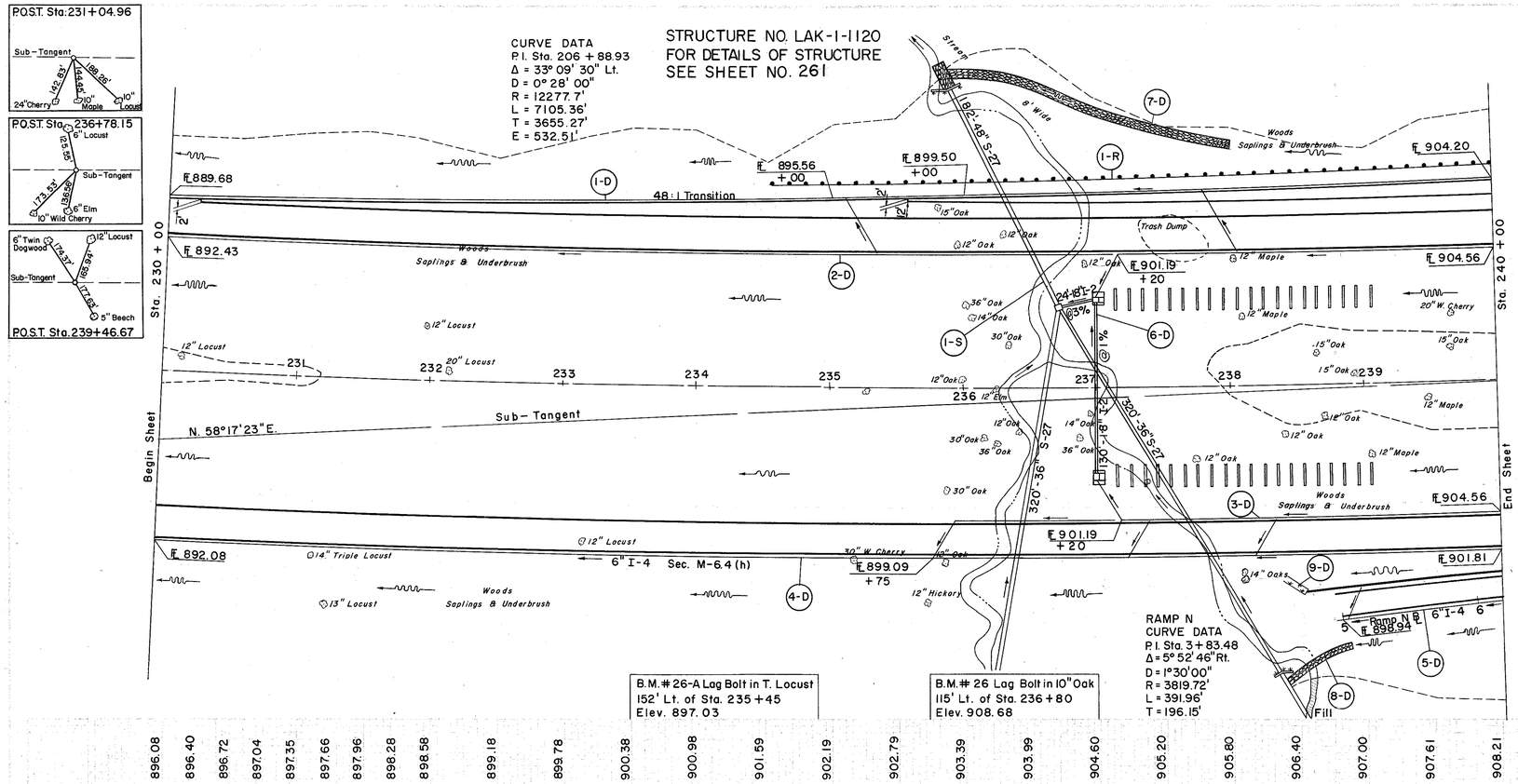
STA. 224 +00 TO STA. 239 + 00

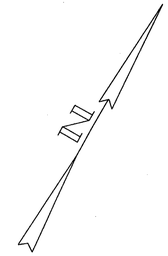
LAKE COUNTY
LAK-I-10.38



ROADSIDE REST
PROFILE RAMPS M & N

LAKE COUNTY
LAK-I-10.38





(D) DRAINAGE

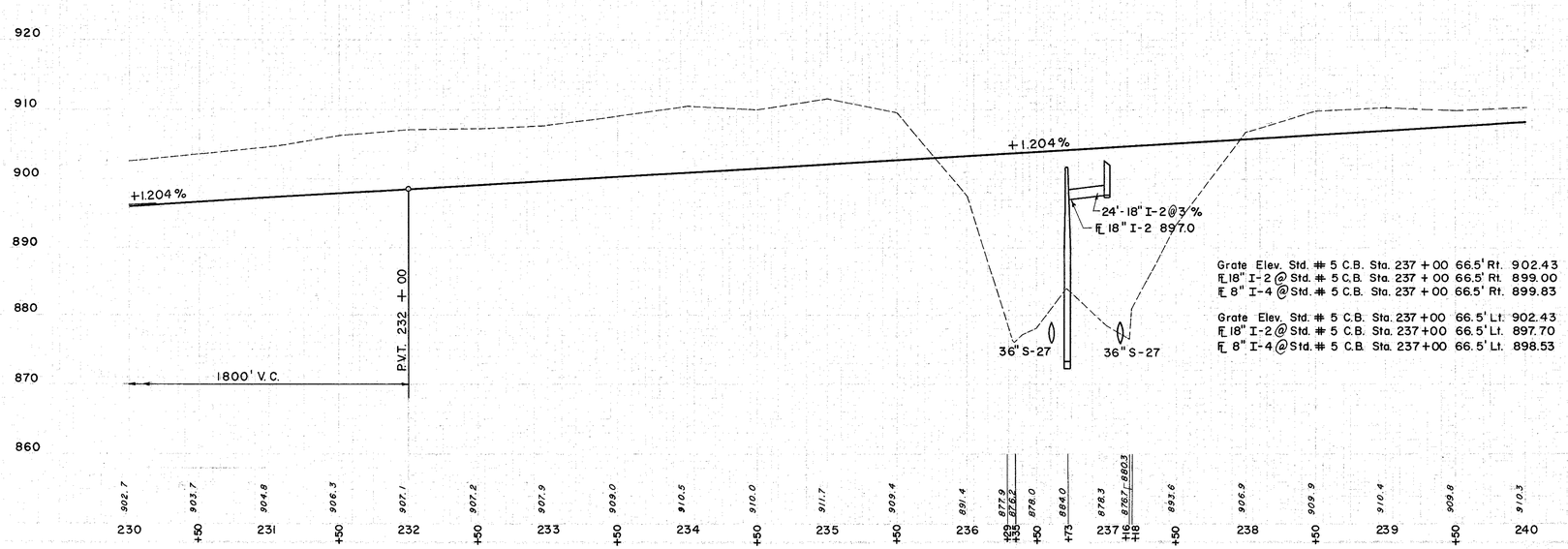
REF. NO.	STATION FROM	STATION TO	SIDE	I-2 CL. "A" STM. SWR. SEC. M-6.5 (b) OR M-6.6 (b) 18"	I-4 6" PIPE UNDERDRAIN DEEP	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 SEC. M-6.4 (h)	I-4 8" OUTLET PIPE SEC. M-6.4 (a)	I-5 6" 60° WYE	I-5 6" 60° BEND	I-8 STD. #5 CATCH BASIN	L-10 SODDING	I-10 DUMPED ROCK CHANNEL PROTECT.
					L. F.				EA.			S.Y.	C.Y.
1-D	230+00	240+00	LT.		600	498			2				
2-D	230+00	240+00	LT.			1022		10		1			
3-D	236+00	240+00	RT.			462		10		2			
4-D	230+00	240+00	RT.		486		575		3				
5-D	5+00"N"	6+20"N"	RT.		144				1				
6-D	237+00	—	—	154							2	107	
7-D	235+90	238+00	LT.										117
8-D	4+50"N"	5+10"N"	RT.										31
9-D	4+70"N"		LT.									12	

(S) STRUCTURES

REF. NO.	STATION	E-2 EXC. FOR STRUCT.	E-3 CHANNEL EXC.	L-10 SODDING	I-10 DUMPED ROCK CHANNEL PROTECT.	S-1 CONC. FOR STRUCT. CL."C"	S-1 CONC. FOR STRUCT. CL."E"	S-4 REINF. STEEL	S-27 36" PIPE FOR RDWY. CULVERTS SEC. M-6.4 (d) 10 GA.	S-27 48" PIPE FOR RDWY. CULVERTS SEC. M-6.4 (d) 8 GA.	I-8 STD. #2 M. H. (WITHOUT DROP PIPE)
		C.Y.		S.Y.	C.Y.			LB.	L.F.		EA.
1-S	237 + 00	712	6	11	23	32.7	1.92	1486	640	182	1

(R) ROADWAY

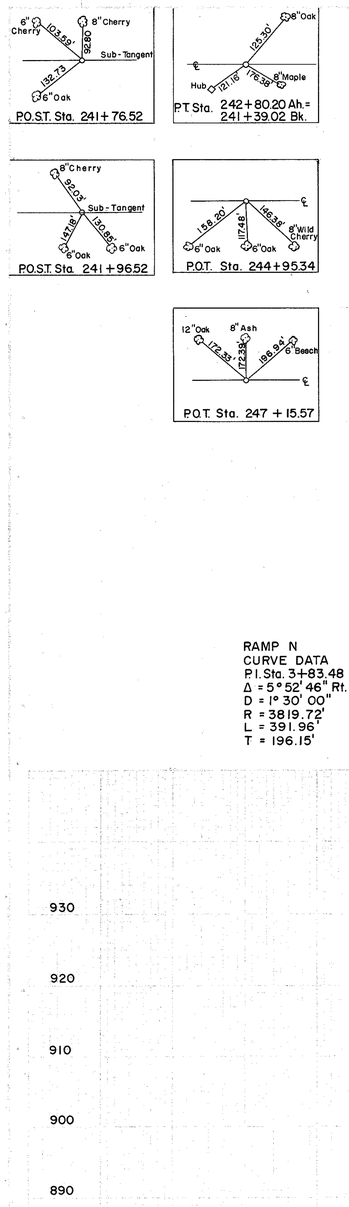
REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, STEEL BEAM STD. TYPE (DEEP)
				L.F.
1-R	234 + 62.5	240 + 00	LT.	537.5

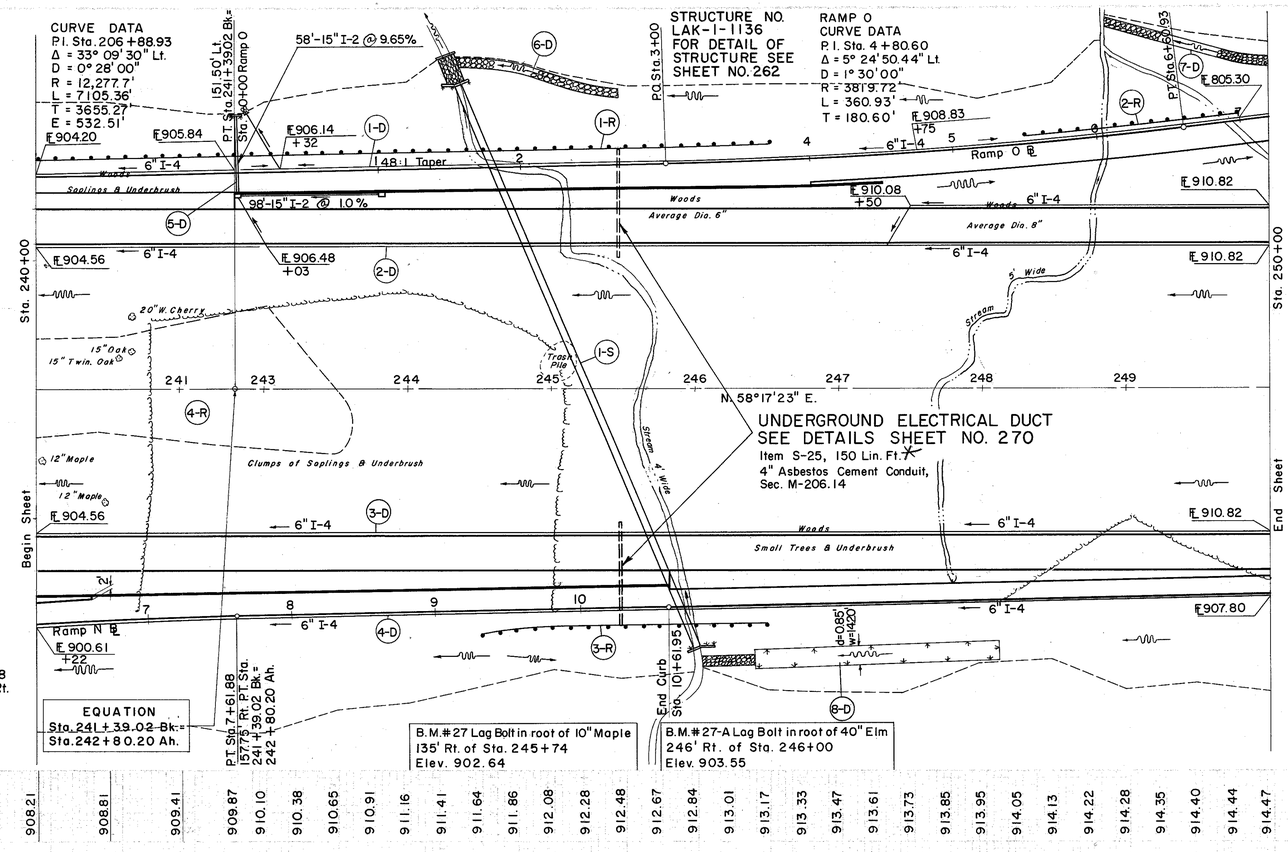


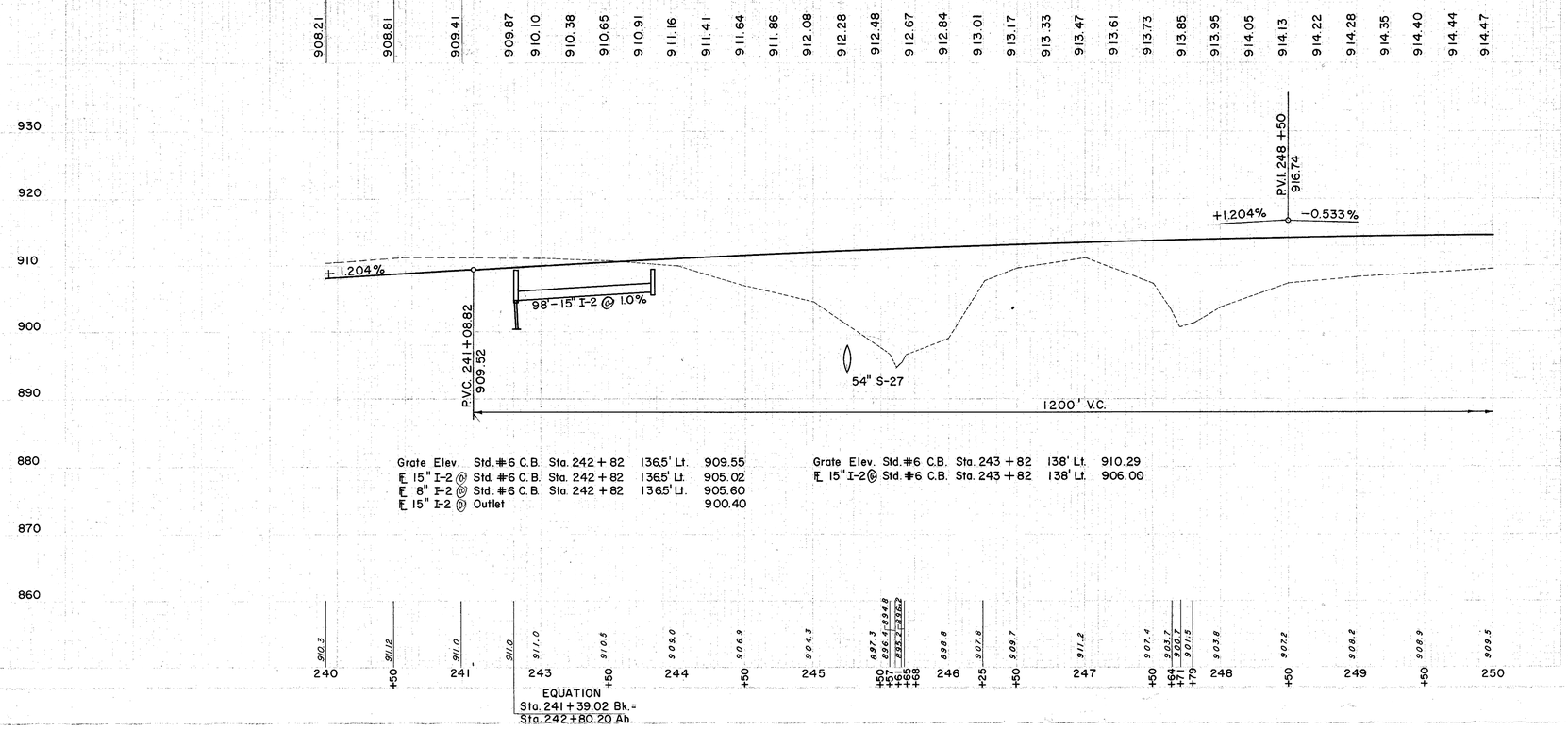
Excavation	18	65,937 C.Y.
Embankment		56,488 C.Y.
Overhaul		66,656 C.Y.

STA. 230 + 00 TO STA. 240 + 00

LAKE COUNTY
LAK-I-10.38







(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE	E-2 EXC. FOR STRUCT. C.Y.	I-2 8" CL. "A" STM. SWR. UNDER PAVT. SEC. M-6.5b(1)OR M-5.8(b)	I-2 15" CL. "B" STM. SWR. UNDER PAVT.	8" OUTLET PIPE SEC. M-64(c) L.F.	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN DEEP	8" OUTLET PIPE SEC. M-64(a)	I-5 6" INCREASER 6" x 8" EA.	I-5 6" 60° WYE EA.	I-5 6" 60° BEND EA.	I-8 STD. #6 CATCH BASIN	I-10 DUMPED ROCK CHANNEL PROTECT. C.Y.	L-10 SODDING S.Y.	S-1 CONC. FOR STRUCT. CL. "C" C.Y.	S-4 REINF. STEEL LBS.	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR. C.Y.
1-D	240+00	7+00 RAMP O	LT.																0.3
2-D	240+00	250+00	LT.		28		10	874		10		1	1						
3-D	240+00	250+00	RT.					1138			1								
4-D	6+22.4 "N"	250+00	RT.					860											
5-D	242+82	243+82	LT.	6		156			858					2		3.1	146		
6-D	244+35	245+50	LT.												2				
7-D	249+00	250+00	LT.												64				
8-D	245+80	248+10	RT.												64				
															20				270

(S) STRUCTURES

REF. NO.	STATION	E-2 EXC. FOR STRUCT. C.Y.	E-3 CHANNEL EXC. C.Y.	I-10 DUMPED ROCK CHANNEL PROTECT. C.Y.	L-10 SODDING S.Y.	S-1 CONC. FOR STRUCT. CL. "C" C.Y.	S-4 REINF. STEEL LBS.	S-27 54" PIPE FOR RD.WY. CULVERTS SEC. M-64 (d) 8 GA. L.F.
1-S	245+25	510	6	23	9	3.23	1.92	1382 428

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-45 GUARD RAIL, STEEL BEAM, STD. TYPE (DEEP) L.F.	L-6 ROADSIDE CLEANUP UNITS
1-R	240+00	246+50	LT.	512.5	
2-R	6+50 Ramp "O"	7+00	LT.	150	
3-R	244+50	246+50	RT.	200	
4-R	240+00	243+50	℄		17
		TOTAL		862.5	

EXCAVATION		15,800 C.Y.
EMBANKMENT		62,448 C.Y.
EXCAVATION EMBANKMENT	18	73,689 C.Y.

STA. 240+00 TO STA. 250+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

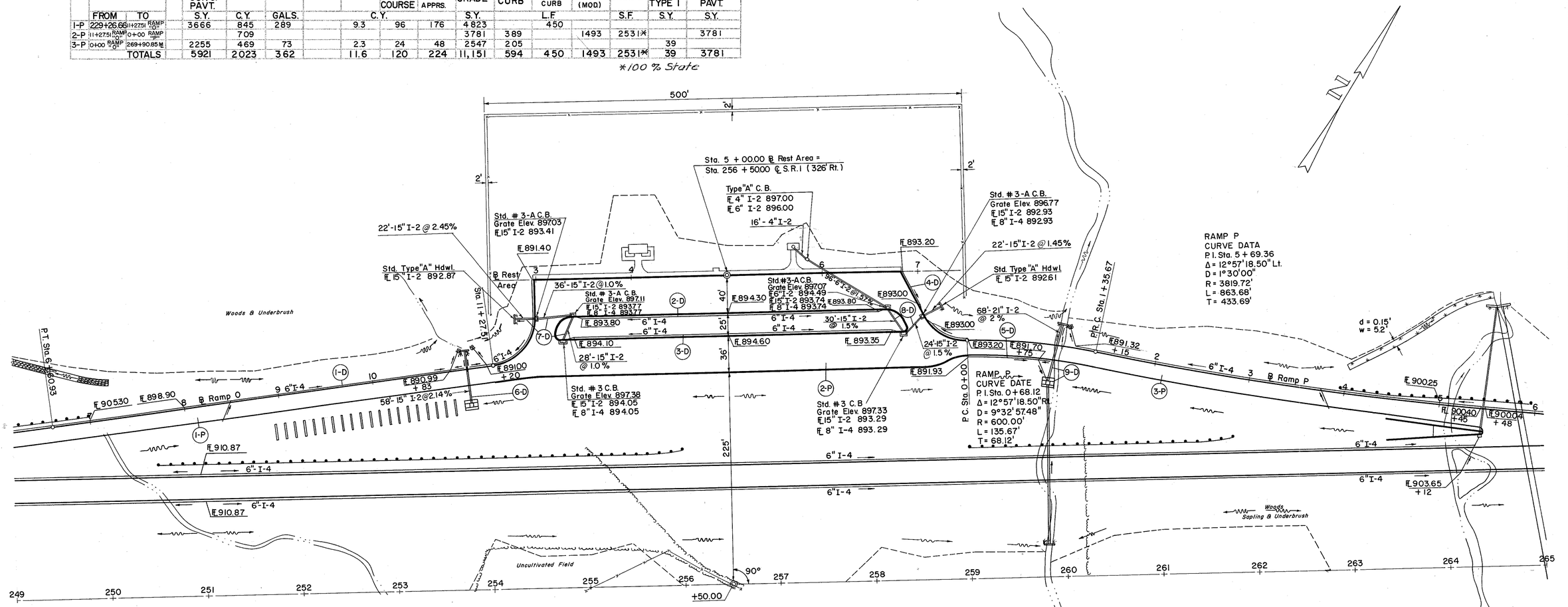
21
306

LAKE COUNTY
LAK-1-10.38

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE	T-71 10" REINF. PORTLAND CEMENT CONC. PAVT.	I-22 SUBBASE	T-31 BIT. MATL.	T-31 NO. 6 AGGR.	B-219 3" WATER-PROOFED AGGR. BASE COURSE	I-18 5" STAB. CRUSHED AGGR. SHOULDERS & APPRS.	E-1 COMP. SUB-GRADE	I-12 STD. TYPE 6 CURB	I-12 SPECIAL PORTLAND CEMENT CONC. CURB	I-12 SPECIAL PORTLAND CEMENT CONC. CURB (MOD)	I-13 PORTLAND CEMENT CONC. SIDEWALK	I-21 4" CONC. MED. PAVT. TYPE 1	T-71 9" REINF. PORTLAND CEMENT CONC. PAVT.
				S.Y.	C.Y.	GALS.	C.Y.			S.Y.	L.F.			S.F.	S.Y.	S.Y.
1-P	229+26.66	11+27.51 RAMP P		3666	845	289	9.3	96	176	4823		450				
2-P	11+27.51 RAMP P	0+00 RAMP P			709					3781	389		1493	2531*		3781
3-P	0+00 RAMP P	269+90.85 ℄		2255	469	73	2.3	24	48	2547	205				39	
	TOTALS			5921	2023	362	11.6	120	224	11,151	594	450	1493	2531*	39	3781

*100 % State



(D) DRAINAGE

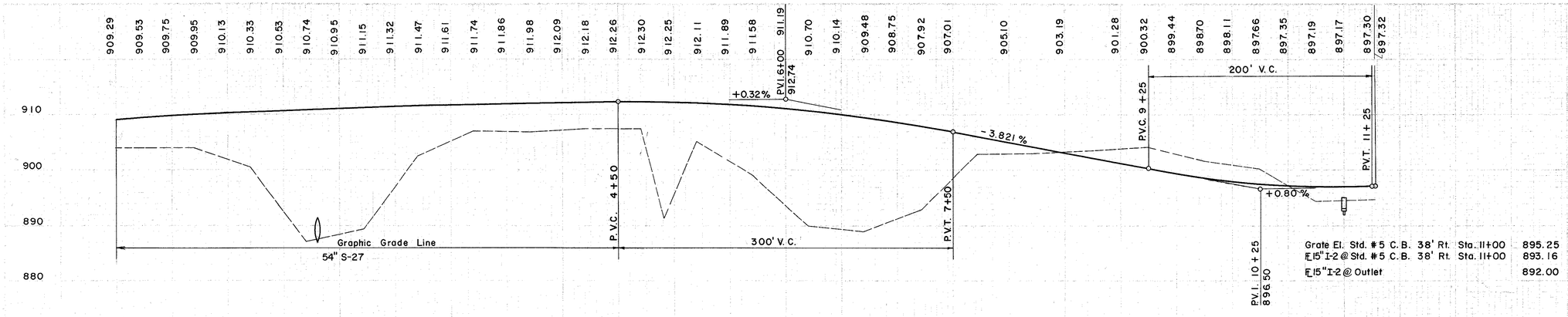
REF. NO.	STATION FROM	STATION TO	SIDE	E-2 EXC. FOR STRUCT.	I-2 CL."A" STORM SEWER UNDER PAVT. 6"	I-2 15"	I-2 21"	I-2 4" CL."A" STORM SEWER	I-2 15" CL."B" STORM SEWER	I-2 15" CL."B" STM. SWR. UNDER PAVT.	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 DEEP	I-4 8" OUTLET PIPE SEC. M-6.4(a)	I-5 6" 60° WYE	I-8 TYPE "A" CATCH BASIN	I-8 STD. #5 CATCH BASIN	I-8 STD. #3 CATCH BASIN	I-8 STD. # 3-A CATCH BASIN	L-10 SODDING	S-1 CONC. FOR STRUCT. CL."C"	S-4 REINF. STEEL	S-29 DRAINAGE OF STRUCT. NO.2 AGGR.
				C.Y.				L.F.						EA.	EA.				S.Y.	C.Y.	LBS.	C.Y.
1-D	7+00 RAMP P	3+00 ℄ REST AREA	LT.									576	20	3								0.6
2-D	3+40 ℄ REST AREA	6+70 ℄ REST AREA	RT.									310	20									
3-D	3+30 ℄ REST AREA	6+85 ℄ REST AREA	RT.									336	20									
4-D	6+88 ℄ REST AREA	0+00 RAMP P	—								82		20									
5-D	0+00 RAMP P	10+90	RT.									100	10	1								
6-D	11+00 RAMP O			6		58										1			56	3.1	146	
7-D	11+00 RAMP O	3+40 ℄		6					50	36							1	2	2	3.1	146	
8-D	5+70	7+20		6	96			16*	52	24					1		1	2	2	3.1	146	
9-D	0+96 RAMP P			6			68									1			2	3.1	146	

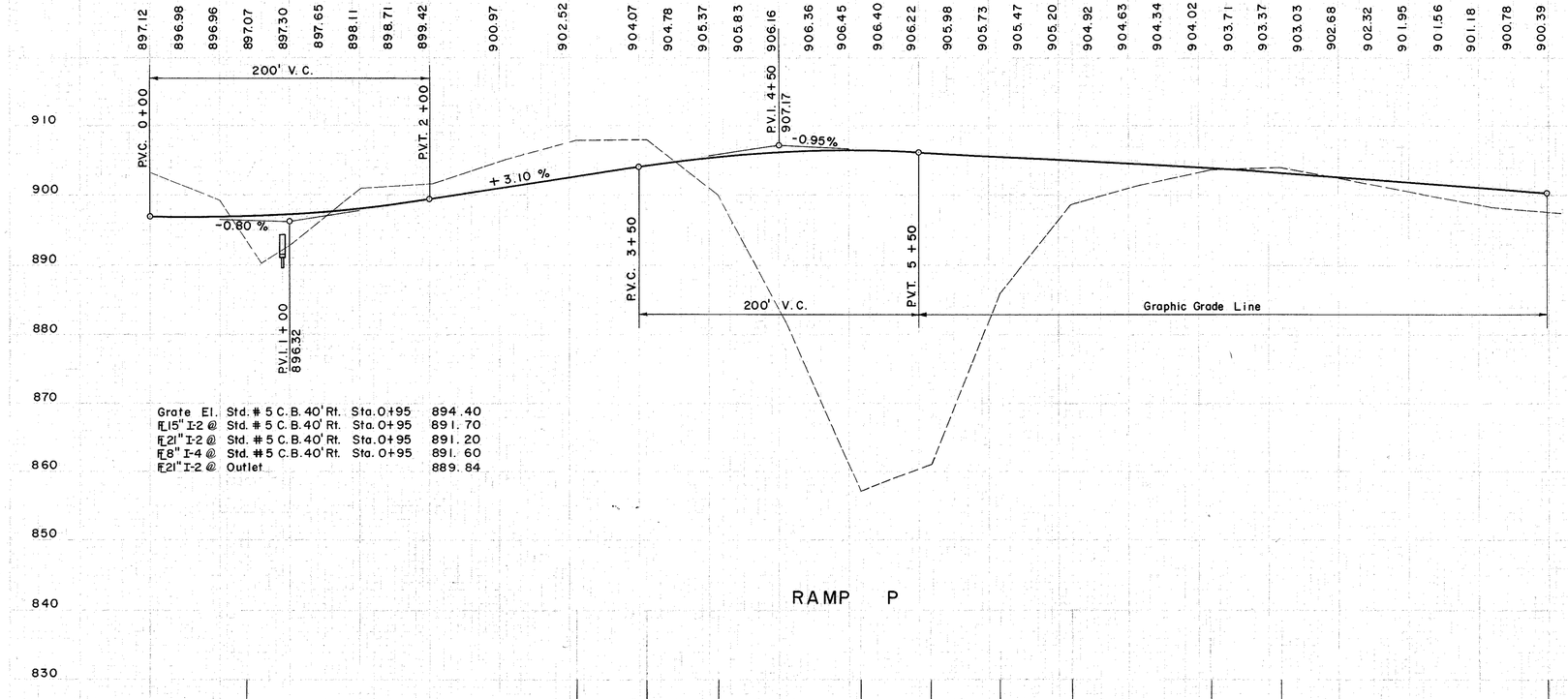
*100 % State

Rev. 11-20-61
ROADSIDE REST PLAN
SCALE: 1" = 50'

STA. 249 + 00 TO STA. 265 + 00

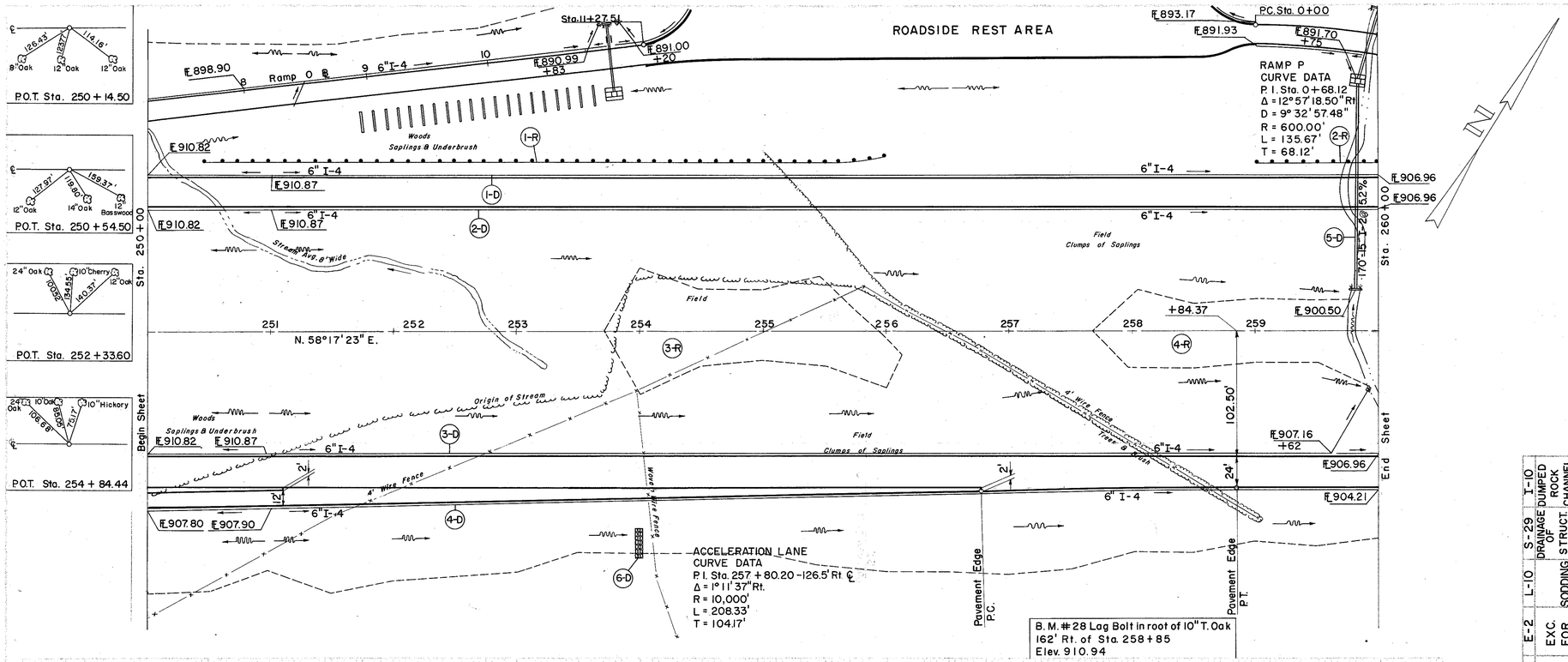
LAKE COUNTY
LAK-I-10.38

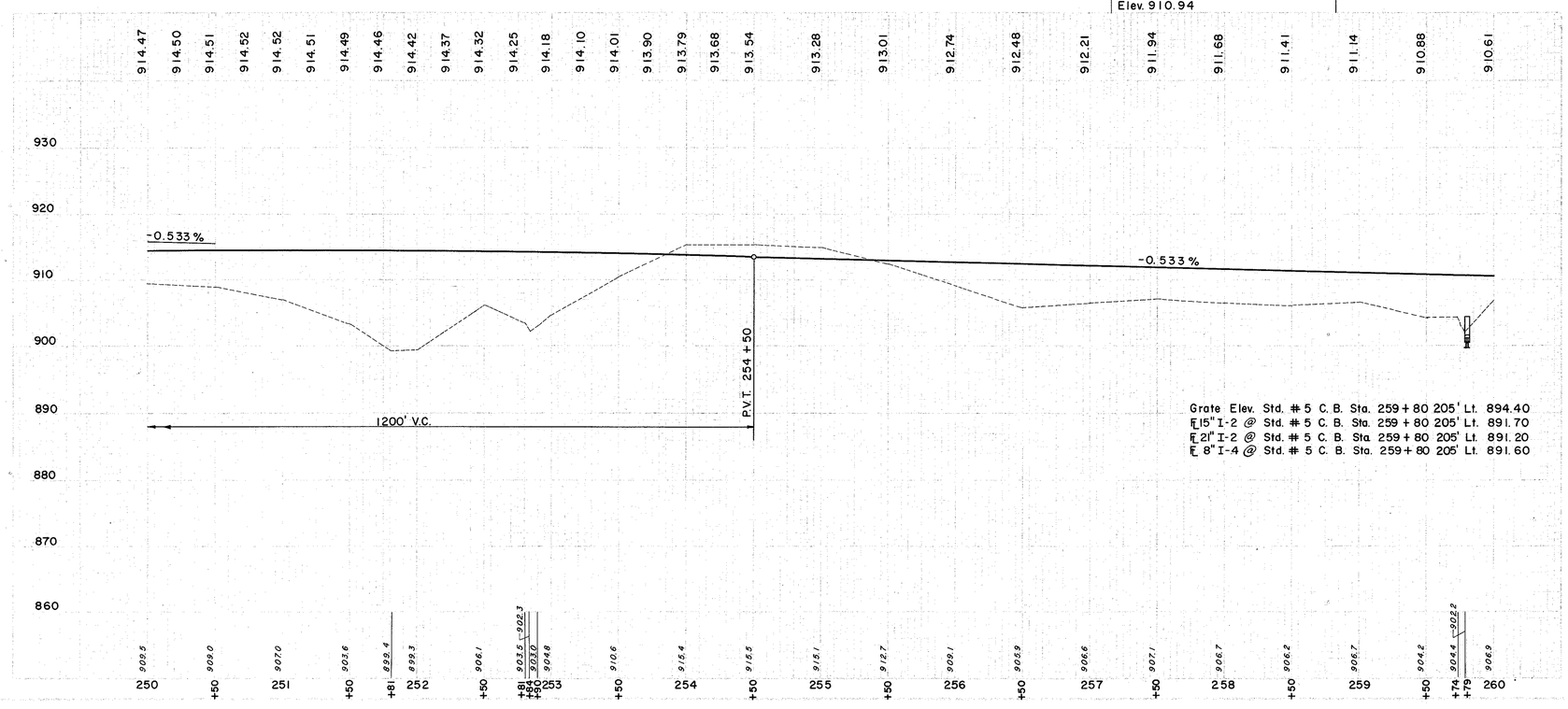




ROADSIDE REST
PROFILE RAMPS O & P

LAKE COUNTY
LAK-I-10.38





(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-2 15" CLASS "A" STORM SEWER UNDER PAVT SEC. M-6.6(c)	I-4 6" PIPE UNDERDRAIN SHALLOW L.F.	I-4 6" PIPE UNDERDRAIN DEEP L.F.	I-4 8" OUTLET PIPE SEC. M-64.(a)	I-5 6" 60° BEND EA.	S-1 CONC. FOR STRUCT. CLASS "C" C.Y.	S-4 REINF. STEEL LBS.	E-2 EXC. FOR STRUCT. C.Y.	L-10 SODDING S.Y.	S-29 DRAINAGE STRUCT. NO. 2 AGGR. C.Y.	T-10 DUMPED ROCK CHANNEL PROTECT. C.Y.
1-D	250+00	260+00	LT.		1000									
2-D	250+00	260+00	LT.		1000									
3-D	250+00	260+00	RT.		1042		10		1				0.3	
4-D	250+00	260+00	RT.			1000								
5-D	259+80		LT.	170					3.1	146	10	2		14
6-D	254+00		RT.											

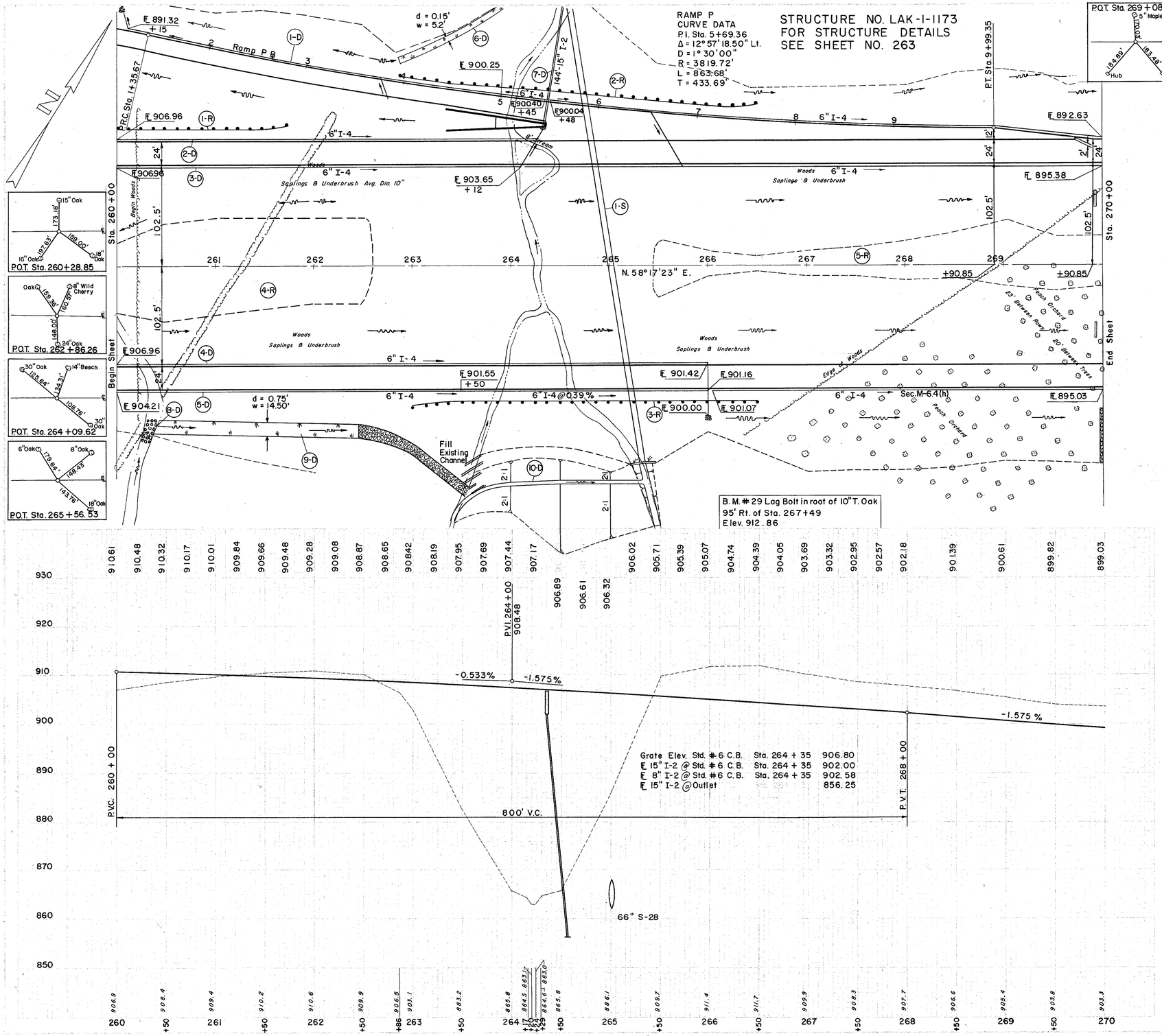
(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-5 GUARD RAIL, STEEL BEAM STD. TYPE I DEEP L.F.	L-6 ROADSIDE CLEANUP UNITS
1-R	250 + 50	256 + 00	LT.	550.0	
2-R	259 + 00	260 + 00	LT.	100.0	
3-R	253 + 50	256 + 00	℄		15
4-R	257 + 50	260 + 00	℄		12
		TOTAL		650.00	27

EXCAVATION		28,463 C.Y.
EMBANKMENT		48,036 C.Y.
EMBANKMENT	18	56,682 C.Y.

STA. 250+00 TO STA. 260+00

LAKE COUNTY
LAK-I-10.38



(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE	CLASS "A" STORM SEWER SEC. M-6.5 (b) OR M-6.8(b) 8"	CLASS "B" STORM SEWER UNDER PAVT. 15"	8" OUTLET PIPE SEC. M-64 (c)	I-2 6" PIPE UNDERDRAIN SHALLOW DEEP (SEC. M-64 (n)) L.F.	8" OUTLET PIPE SEC. M-6.4 (a)	6"x8"x8" 60° WYE SEC. M-65 (b) OR M-6.8 (b)	6" 60° BEND	6" 60° WYE	T-5 6" 90° BEND	6"x8" INCREASER	6"x8"x8" TEE SEC. M-6.5 (b) OR M-6.8 (b)	I-8 STD. NO. 6 CATCH BASIN	L-10 SODDING S.Y.	I-2 CL. ASS "A" STORM SEWER SEC. M-6.4 (c) 15" L.F.	I-5 15" 26° BEND SEC. M-6.4 (c) E.A.	I-10 DUMPED ROCK CHANNEL PROTECT.	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR. C.Y.	E-3 CHANNEL EXCAV.
1-D	I-I5 RAMP P	270+00	LT																		
2-D	260+00	264+12	LT	32		10	428	10													
3-D	260+00	270+00	LT				1058														
4-D	260+00	266+00	RT				600														
5-D	260+00	270+00	RT	42		10		599	396											0.3	
6-D	4+00 RAMP P	5+70 RAMP P	LT																		
7-D	264+35		LT		40																
8-D	260+36		RT																		
9-D	262+50	263+50	RT																		
10-D	263+50	265+35	RT																		

(S) STRUCTURES

REF. NO.	STATION	SIDE ℄	E-2 EXC. FOR STRUCT.	E-3 CHANNEL EXC.	I-10 DUMPED ROCK CHANNEL PROTECT.	L-10 SODDING	S-1 CONC. FOR STRUCT. CL "C" CL "E"	S-4 REINF. STEEL	S-28 66" SECT. CORR. METAL STRUCT. SEC. M-6.4 (g) 10-8 GA.
			C.Y.	C.Y.	S.Y.	S.Y.	C.Y.	LBS.	L.F.
1-S	265+01	℄	139	9837	23	11	490.1	2111	486

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-5 GUARD RAIL STEEL BEAM STD. TYPE (DEEP) L.F.	L-6 ROAD SIDE CLEANUP UNITS
1-R	260+00	261+75	LT	175.0	
2-R	3+197 RAMP P	7+595 RAMP P	LT	362.5	
3-R	263+00	266+50	RT	350.0	
4-R	260+00	262+50	℄		24
5-R	265+50	270+00	℄		19
		TOTAL		887.5	43

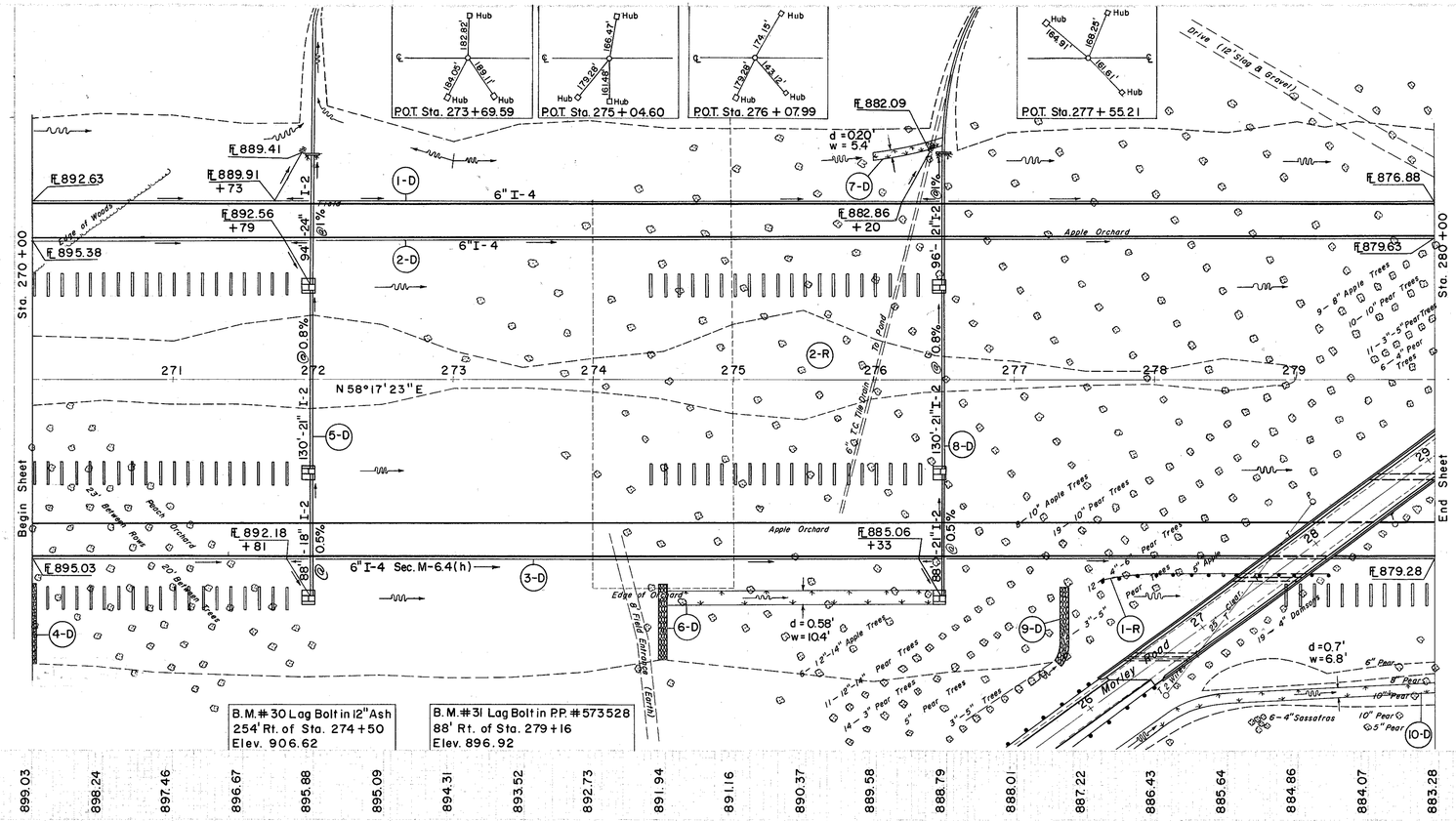
EXCAVATION		34,869 C.Y.
EMBANKMENT		108,920 C.Y.
EMBANKMENT	18	128,526 C.Y.

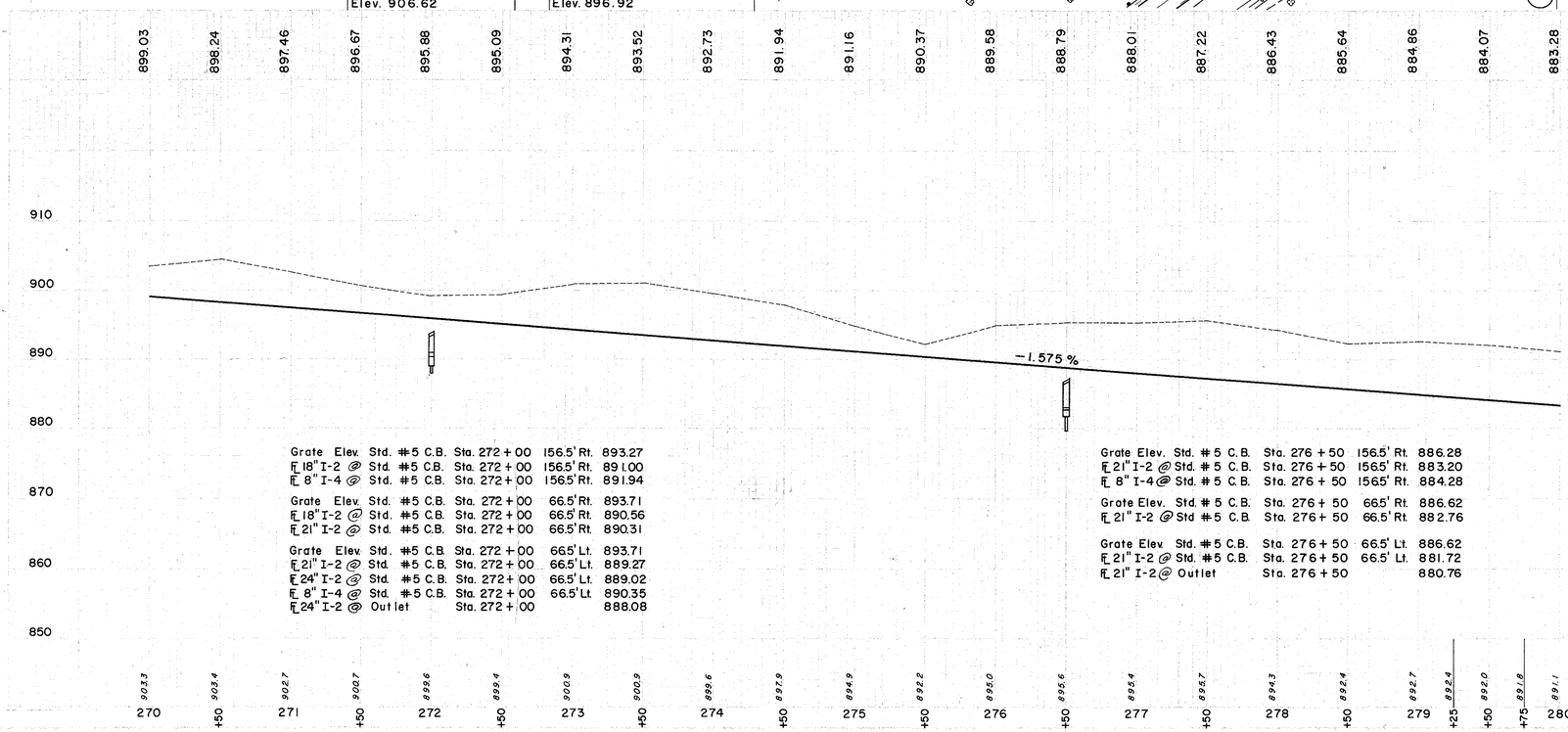
STA. 260+00 TO STA. 270+00

MICROFILMED
JUN 27 1985

1				
2	OHD			

LAKE COUNTY
LAK-1-10.38





(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-2 CLASS "A" STORM SEWER UNDER PAVT. 18"	I-2 CLASS "A" STORM SEWER UNDER PAVT. 21"	I-2 CLASS "A" STORM SEWER UNDER PAVT. 24"	CLASS "A" STORM SEWER SECM-6.6(b) ORM-6.8(b) 21"	I-4 6" PIPE UNDERDRAIN SHALLOW L.F.	I-4 6" PIPE UNDERDRAIN DEEP L.F.	I-4 6" PIPE UNDERDRAIN SECM-6.4(h)	8" OUTLET PIPE SEC. M-6.4(a)	T-5 6" 60° WYE SECM-6.4(h)	I-8 STD. NO. 5 CATCH BASIN EA.	I-10 DUMPED ROCK CHANNEL PROTECT C.Y.	L-10 SODDING S.Y.	S-1 CONC. FOR STRUCT. CL. "C" C.Y.	S-4 REINF. STEEL STRUCT. LBS.	E-2 EXC. FOR STRUCT. C.Y.	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR. C.Y.
1-D	270+00	280+00	LT.						1050		20								0.6
2-D	270+00	280+00	LT.					1020			10		2						
3-D	270+00	280+00	RT.							1032	20		2						
4-D	270+00		RT.																
5-D	272+00		RT. & LT.	88		94	130							32	160	5.2	218	21	
6-D	274+50	276+50	RT.											30	23.1				
7-D	276+00	276+50	LT.												30	42	193	15	
8-D	276+50		RT. & LT.		184		130						3		107				
9-D	277+50		RT.											32	105				
10-D	279+00	280+00	RT.																

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL-STEEL BEAM STD. TYPE (DEEP) L.F.	L-6 ROADSIDE CLEAN-UP UNITS
1-R	277+62.5	279+25	RT.	162.5	36
2-R	270+00	280+00	℄	162.5	36
		TOTALS			

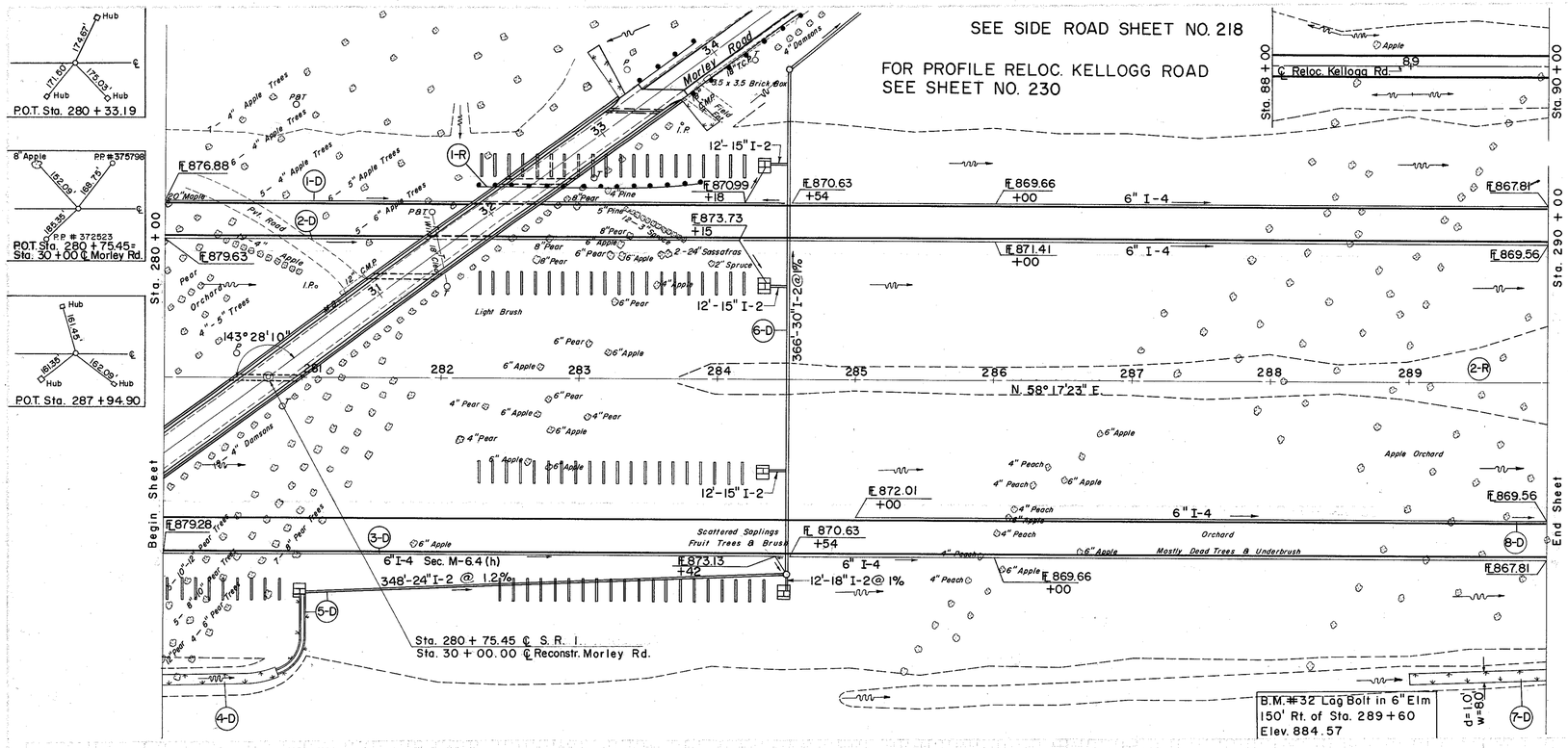
		82,638 C.Y.
		245 C.Y.
	18	289 C.Y.

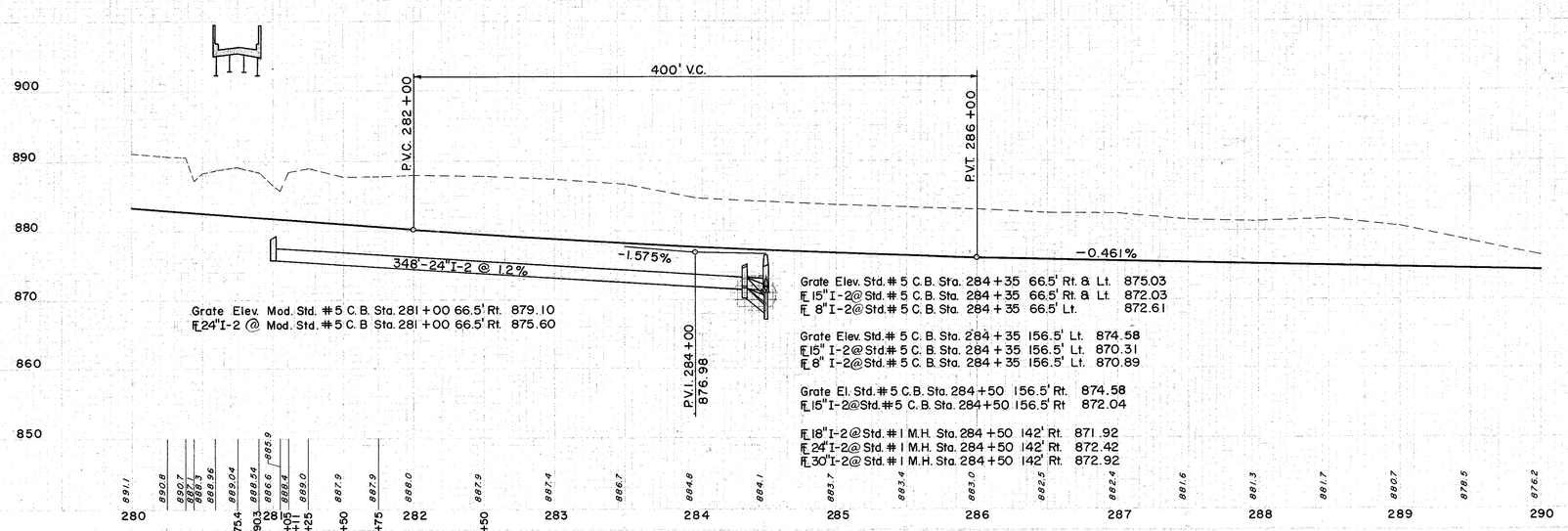
STA. 270+00 TO STA. 280+00

LAKE COUNTY
LAK-1-10.38

MICROFILMED
JUN 27 1985

NUM	DATE	REVISION
1		
2		





(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	I-2 CLASS "A" STM. SWR. SIDE OR ℄ 30"	I-2 CLASS "A" STM. SWR. SEC. M-6.8 (b) OR M-6.8 (a) 15"	I-2 CLASS "A" STORM SEWER SEC. M-6.5 (a) OR M-6.8 (a) 18"	I-2 CLASS "A" STORM SEWER SEC. M-6.5 (a) OR M-6.8 (a) 24"	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN DEEP	I-5 8" OUTLET PIPE SEC. M-6.4(a)	I-5 6" 60° WYE	I-5 6" 60° 60° WYE BEND	I-5 15" X 30" TEE SEC. M-6.6 (b) OR M-6.8(b)	I-5 6" 60° WYE SEC. M-6.4(h) EACH	I-8 MOD. STD. #5 CATCH BASIN	I-8 STD. #1 M.H.	I-14 PAVED GUTTER TYPE I MOD.	L-10 SODDING S.Y.
					L.F.		L.F.									L.F.	
1-D	280+00	290+00	LT.					1016	10	1	1						
2-D	280+00	290+00	LT.						10								
3-D	280+00	290+00	RT.				1021	546	10							32	72
4-D	280+00	281+00	RT.						16			1		1			67
5-D	281+00	284+50	RT.			348											213
6-D	284+50	—	℄	354	36	12							1				89
7-D	289+00	290+00	RT.										4				
8-D	285+00	290+00						500				3					

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-5 GUARD RAIL STEEL BEAM STD. TYPE (DEEP) L.F.	L-6 ROADSIDE CLEANUP UNITS
1-R	282+25	283+87.5	LT.	162.5	
2-R	283+50	290+00	℄		17
	TOTAL			162.5	17

STA. 88+00 TO STA. 90+00 KELLOGG RD.

EXCAVATION	=	683 C.Y.
EMBANKMENT	=	196 C.Y.
EMBANKMENT +18 %	=	231 C.Y.

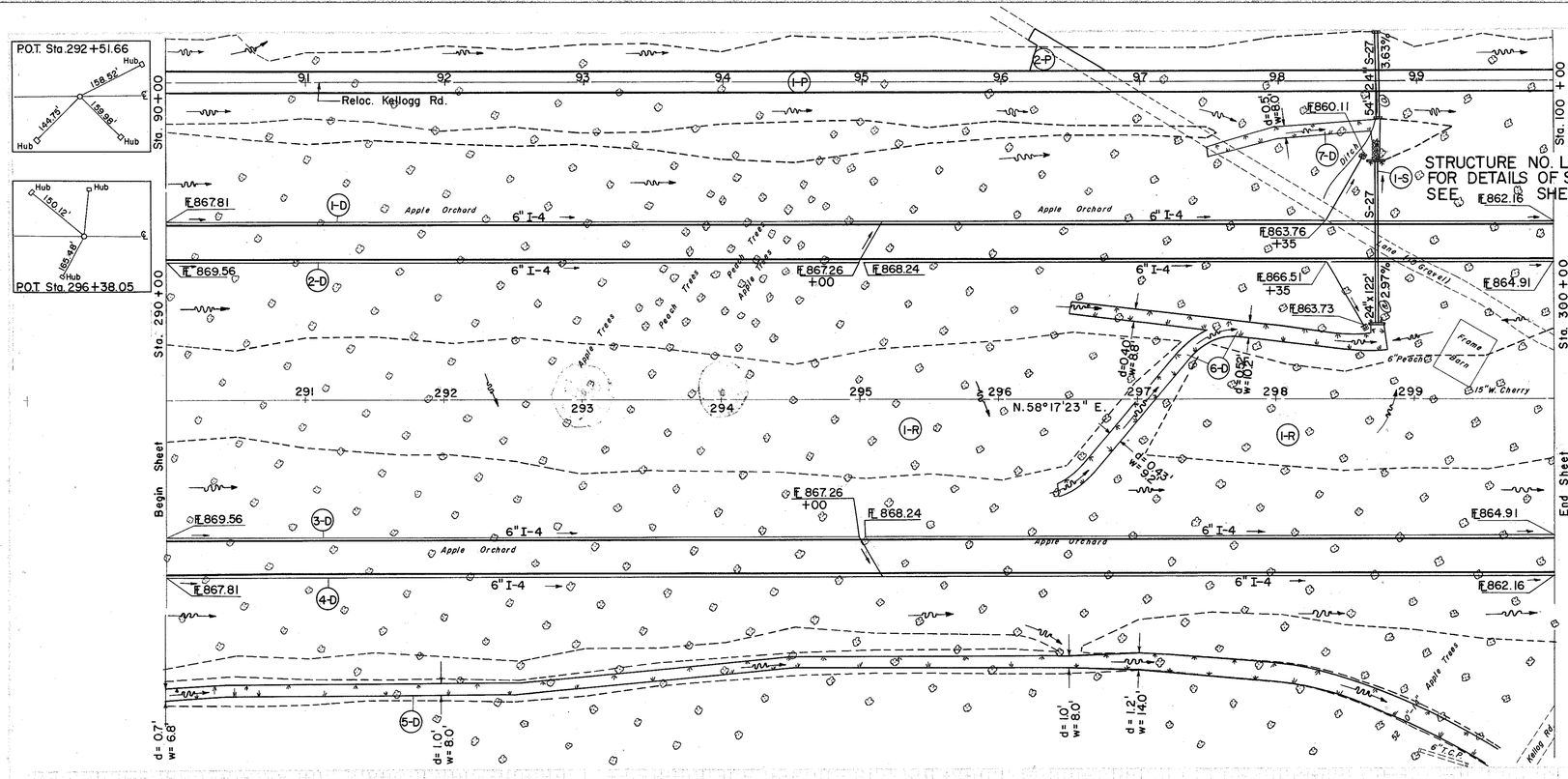
STA. 280+00 TO STA. 290+00

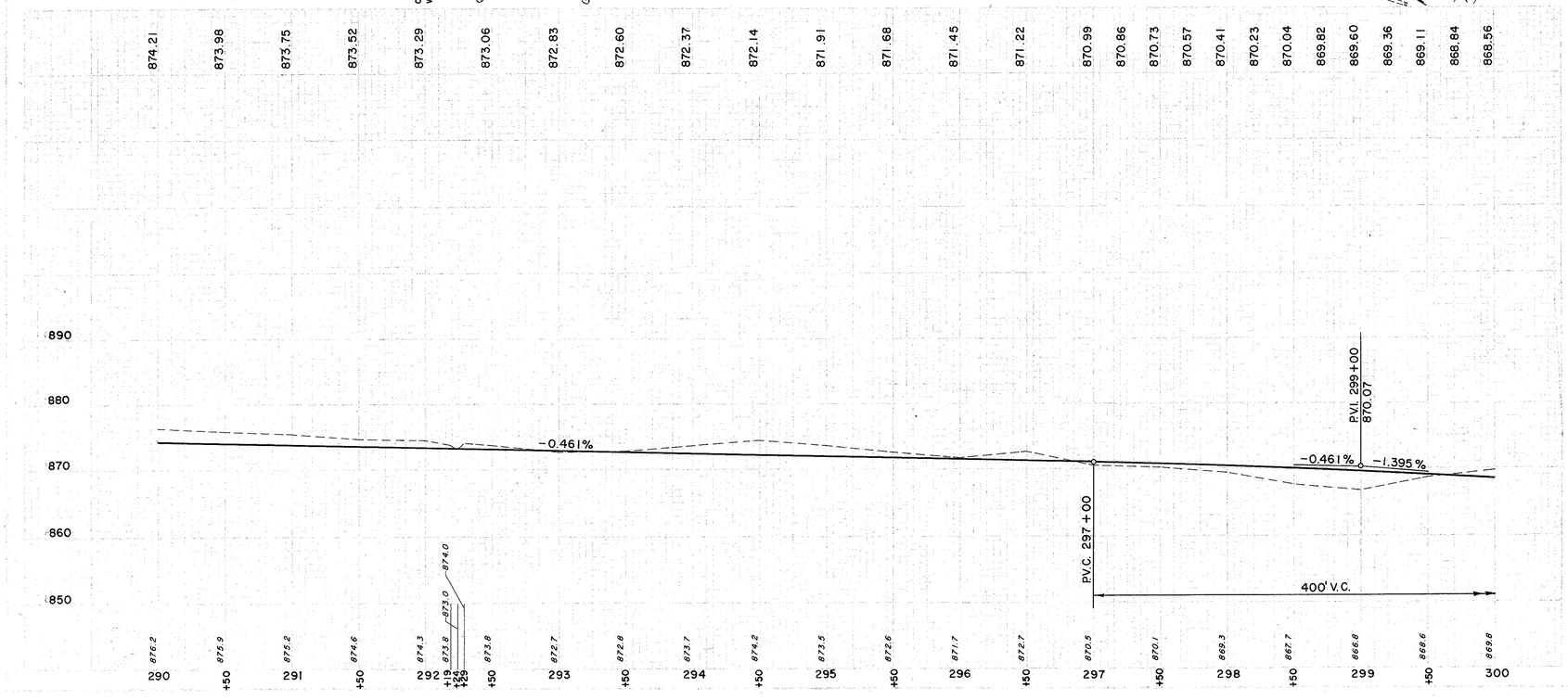
		97,207 C.Y.
		0 C.Y.
18		0 C.Y.

Rev. 3-1-60

STA. 280+00 TO STA. 290+00

LAKE COUNTY
LAK-1-10.38





(S) STRUCTURES

REF. NO.	STATION FROM	SIDE ℄	E-2 EXC. FOR STRUCT.	E-3 CHANNEL EXC.	L-10 SODDING	I-10 DUMPED ROCK CHANNEL PROTECT.	S-1 CONC. FOR STRUCT. CLASS "C" "E"	S-4 REINF. STEEL	S-27 24" PIPE FOR RDWY. CULVERTS SEC. M-6.6(b) or M-6.8(b)
			C.Y.		S.Y.	C.Y.	C.Y.	LBS.	L.F.
1-S	298+72	℄	60	8	14	16	10.5 0.82	436	176

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-32 ROAD MIX BIT. MATL.	T-32 SEAL COAT BIT. MATL.	T-32 #46 AGGR. FOR ROAD MIX	T-32 #6 AGGR. FOR CHOKE	T-32 #6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT	B-19 5" CRUSHED AGGR. BASE COURSE	I-22 4" SUB-BASE	E-1 COMP. SUB-GRADE	I-9 STONE UNDER DRAIN (NO. 2)
				GAL.		C.Y.			GAL.	C.Y.		S.Y.	L.F.
1-P	88+00	100+00		1920	533	119	9	17	853	315	267	2133	432
2-P	96+50		LT.	82	23	5	1	1	36	13		91	
	TOTALS			2002	556	124	10	18	889	328	267	2224	432

(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE OR ℄	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN DEEP	I-4 8" OUTLET PIPE SEC. M-6.4(a)	I-5 6" 60° BEND	I-5 6" 60° WYE	L-10 SODDING	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR.
				L.F.			EA.	EA.	S.Y.	C.Y.
1-D	290+00	300+00	LT.		1068	10	1	1		0.3
2-D	290+00	300+00	LT.	1034		10	2			0.3
3-D	290+00	300+00	RT.	996			1			
4-D	290+00	300+00	RT.		1030			1		
5-D	290+00	299+60	RT.						1046	
6-D	296+50	298+75	℄						402	
7-D	297+50	298+75	LT.						111	

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	L-6 ROADSIDE CLEANUP
				UNITS
1-R	290+00	300+00	℄	82
		TOTAL		82

STA. 90+00 TO STA. 100+00 KELLOGG RD.

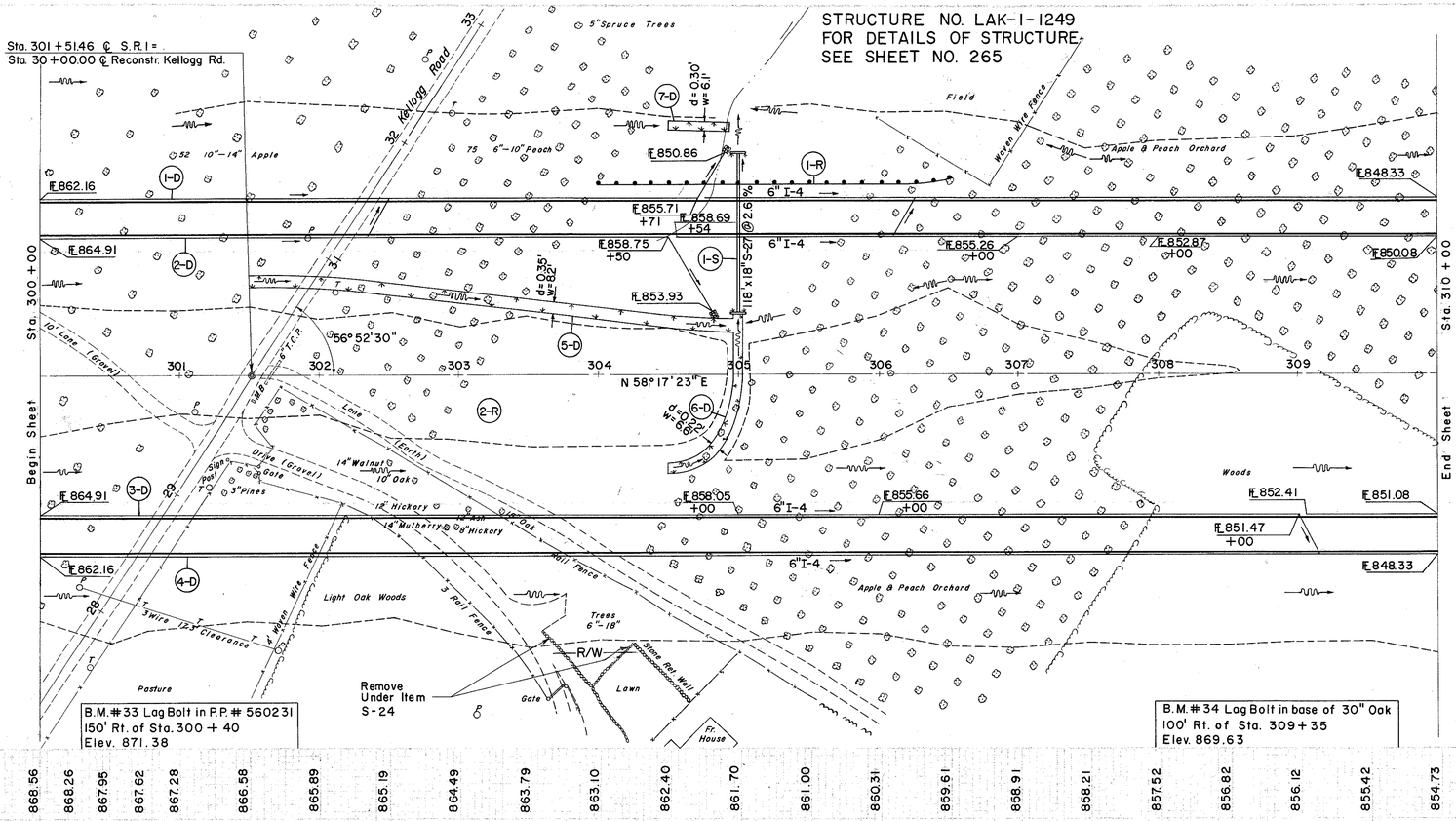
EXCAVATION	=	989 C.Y.
EMBANKMENT	=	1622 C.Y.
EMBANKMENT + 18 %	=	1914 C.Y.

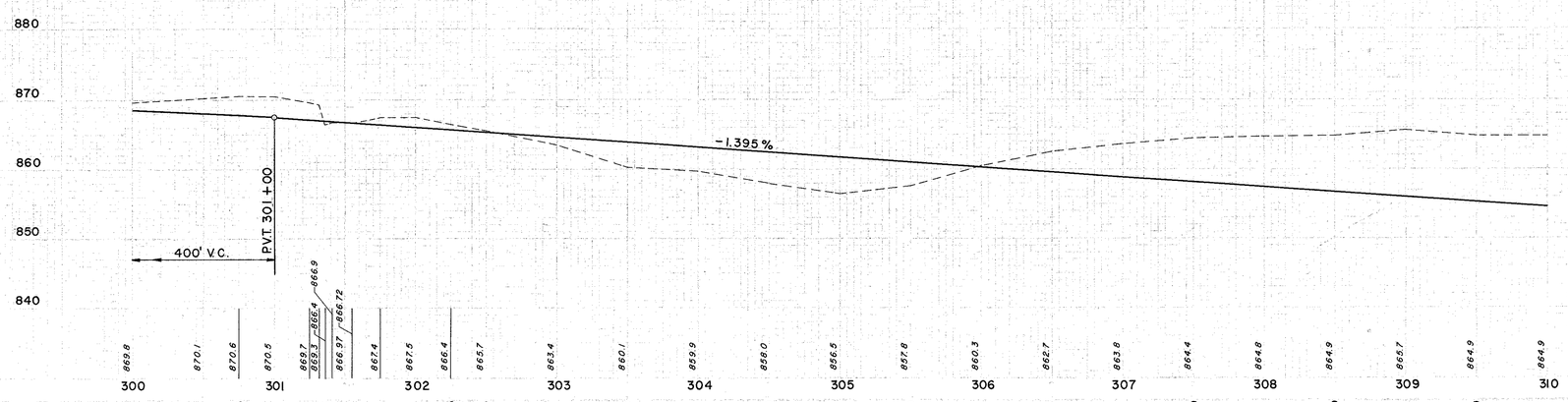
STA. 290+00 TO STA. 300+00

[illegible]		23,640 C.Y.
[illegible]		5,256 C.Y.
[illegible]	18	6,202 C.Y.

STA. 290+00 TO STA. 300+00

LAKE COUNTY
LAK-1-10.38





(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE OR ℄	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN DEEP	I-4 8" OUTLET PIPE SEC. M-6.4(a)	I-5 6" 60° WYE	I-5 6" 60° BEND	L-10 SODDING	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR.
				L.F.			EA.		S.Y.	C.Y.
1-D	300+00	310+00	LT.		1080	10	2	1		0.3
2-D	300+00	310+00	LT.	1044		10		1		0.3
3-D	300+00	310+00	RT.	996				1		
4-D	300+00	310+00	RT.		1030		1			
5-D	301+50	305+00	℄						319	
6-D	304+50	305+00	℄						100	
7-D	304+50	305+00	LT.						34	

(S) STRUCTURES

REF. NO.	STATION	SIDE ℄	E-2 EXC. FOR STRUCT.	S-1 CONC. FOR STRUCT. CL."C"	S-4 REINF. STEEL	S-27 18" PIPE FOR RDWY. CULVERT SEC. M-6.6(b) or M-6.8(b)	L-10 SODDING
			C.Y.		LBS.	L.F.	S.Y.
I-S	305+00	℄	39	6.2	292	118	5

(R) ROADWAY

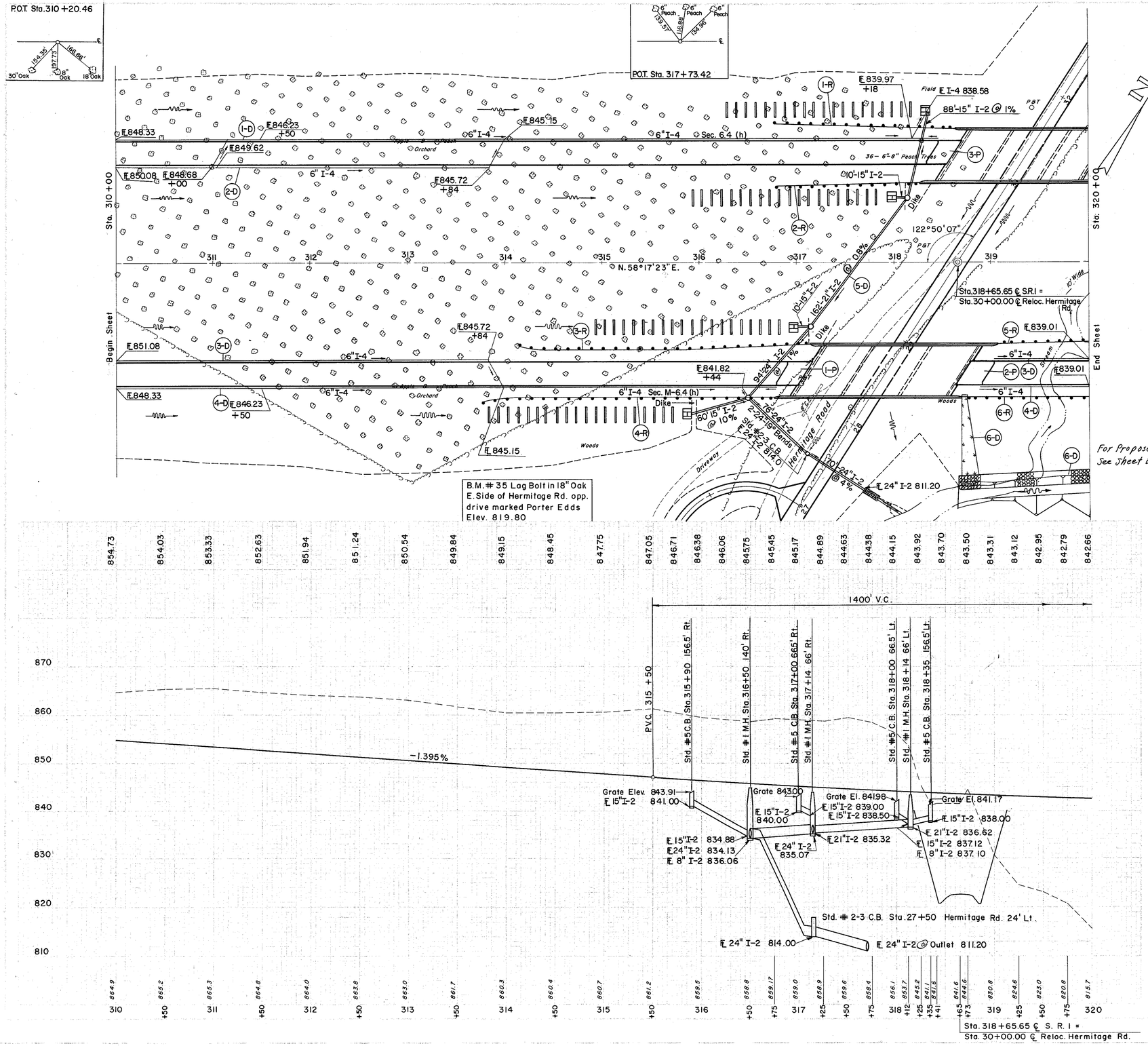
REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, STEEL BEAM STD. TYPE (DEEP)	L-6 ROADSIDE CLEANUP
				L.F.	UNITS
I-R	304 + 00	306+50	LT.	250	
2-R	300 + 00	308 + 50	℄		60
	TOTAL			250	60

EXCAVATION		45,732 C.Y.
EMBANKMENT		9,284 C.Y.
EMBANKMENT	18	10,955 C.Y.

From X-8

STA. 300+00 TO STA. 310+00

LAKE COUNTY
LAK-1-10.38



(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE OR ℄	I-2 CLASS "A" STORM SWR. UNDER PAVEMENT SEC. M-6.5 (b) or M-6.8 (b) 15"	I-2 CLASS "A" STORM SWR. UNDER PAVEMENT SEC. M-6.6 (a) or M-6.8 (a) 24"	I-2 CLASS "A" STORM SWR. UNDER PAVEMENT SEC. M-6.6 (a) or M-6.8 (a) 15"	I-2 CL. "A" STM. SWR. SEC. M-6.6 (b) or M-6.8 (b) 21"	I-2 CL. "A" STORM SEWER SEC. M-6.4 (c) 24"	I-4 6" PIPE UNDERDRAIN SHALLOW	I-4 6" PIPE UNDERDRAIN DEEP	I-4 6" PIPE UNDERDRAIN SEC. M-6.4 (b)	I-4 8" OUTLET PIPE SEC. M-6.4 (a)	I-5 6" 60° BEND 6" 60° WYE SEC. M-6.4 (b)	I-5 6" 60° WYE SEC. M-6.4 (b)	I-5 24" 19° BENDS SEC. M-6.4 (c)	I-8 STD. #5 CATCH BASIN EACH	I-8 STD. #1 M.H. EACH	I-8 STD. #2-3 CATCH BASIN EACH	I-10 DUMPED ROCK CHANNEL PROTECT. C.Y.	L-10 SODDING SODDING FOR SPECIAL BERM & SLOPE PROTECT. S.Y.	S-1 CONC. FOR STRUCT. CL. "E" C.Y.	E-2 EXC. FOR STRUCT. C.Y.	E-3 CHANNEL EXC. C.Y.
1-D	310+00	318+45	LT.								430	494	10		2								
2-D	310+00	313+85	LT.							378				2									
3-D	310+00	320+00	RT.							482				1									
4-D	310+00	320+00	RT.							112	400	308	10		2								
5-D	315+90	318+35	—																	0.41	2		
6-D	318+65	320+00	RT.			88	164	80	162	76									175				334

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE	I-7 REINF. CONC. APPROACH SLAB (T-13) S.Y.
1-P	316+86.08	317+11.08	RT.	67
2-P	318+72.44	318+97.44	RT.	67
3-P	318+45.86	318+70.86	LT.	67
		TOTAL		201

(R) ROADWAY

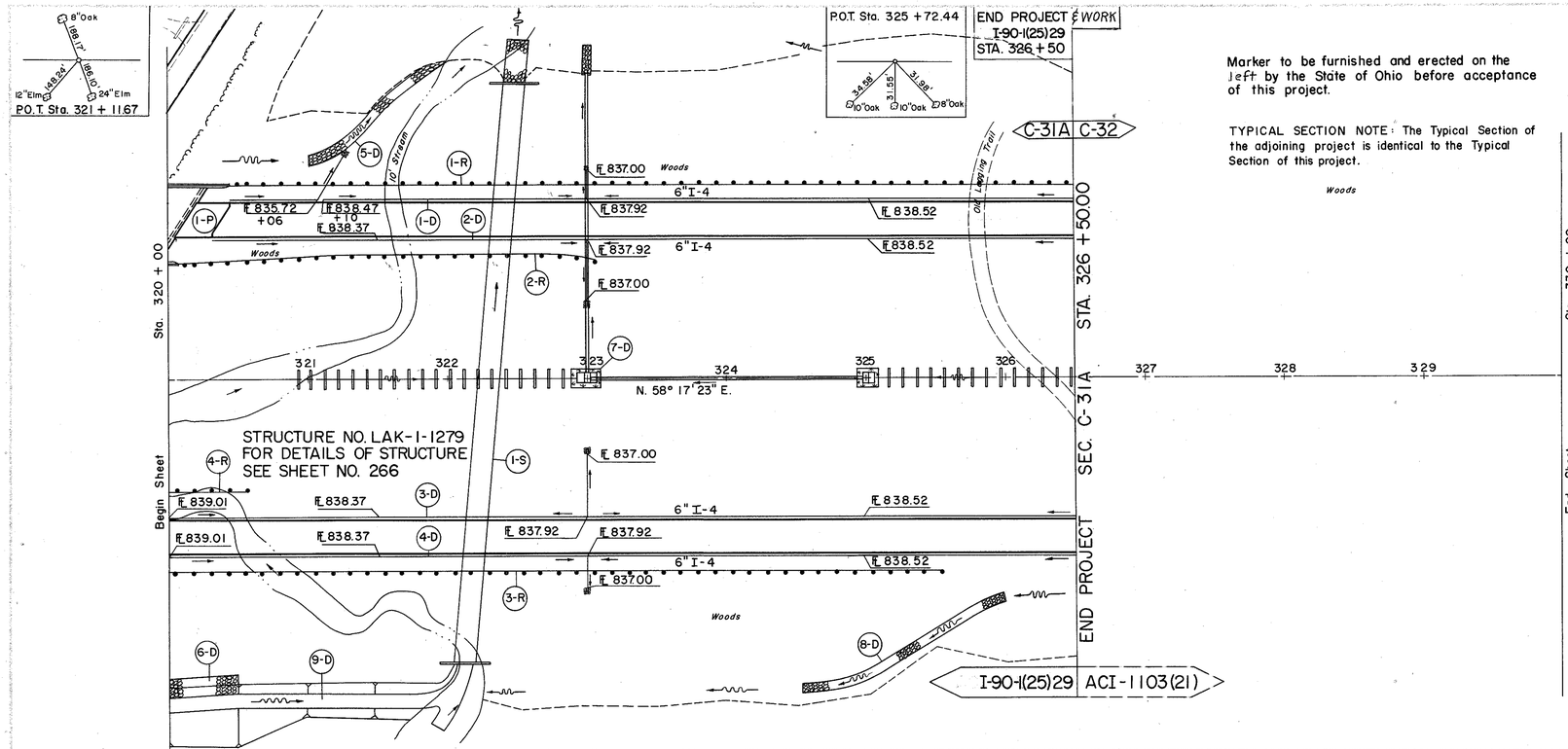
REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, STEEL BEAM, STD. TYPE (DEEP) L.F.
1-R	316+75.5	318+63	LT.	187.5
2-R	316+77	318+27	LT.	150.0
3-R	314+16	317+16	RT.	300.0
4-R	313+78	316+78	RT.	300.0
5-R	319+09	320+09	RT.	100
6-R	318+71	320+04.5	RT.	137.5
		TOTAL		1175.0

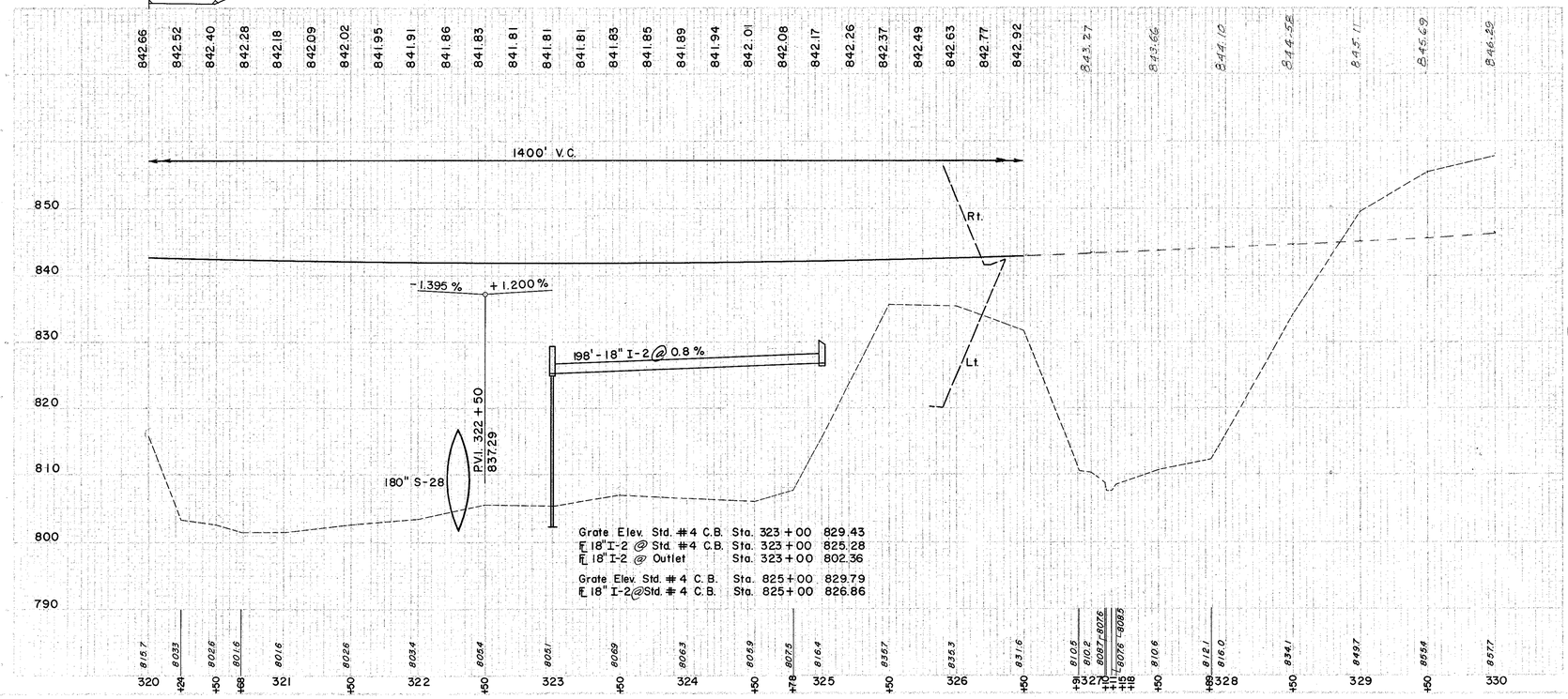
Excavation	115,311 C.Y.
Embankment	14,595 C.Y.
Embankment	17,222 C.Y.

18

STA. 310+00 TO STA. 320+00

LAKE COUNTY
LAK-1-10.38





(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE OR ℄	CL "A" STORM SEWER UNDER PAVT. SEC. M-6.6(k.) 18"	I-2 CL "A" STORM SEWER (SEC. M-6.5 (a) OR SEC. M-6.8 (a)) 18"	CLASS "A" STORM SEWER SEC. M-64 (c) 18"	6" PIPE UNDERDRAIN SHALLOW DEEP L.F.	I-4 8" OUTLET PIPE SEC. M-64 (a)	6" 60° BEND	I-5 6" TEE EA.	I-5 18" 25° BENDS SEC. M-64 (c)	I-8 STD. NO. 4 CATCH BASIN	I-10 DUMPED ROCK CHANNEL PROTECT. C.Y.	L-10 SODDING S.Y.	CONC. FOR STRUCT. CL. "E"	E-2 EXC. FOR STRUCT. C.Y.	S-29 DRAINAGE OF STRUCT. NO. 2 AGGR. C.Y.	E-3 CHANNEL EXCAV.
1-D	320+45	326+50	LT.														0.6	
2-D	320+32	326+50	LT.				550	86	20	1							0.3	
3-D	320+00	326+50	RT.				650		10								0.3	
4-D	320+00	326+50	RT.				685		10								0.3	
5-D	321+00	322+00	LT.				661		10									
6-D	320+00	320+50	RT.									75						
7-D	323+00	325+00	℄	172		198					2	65	109	0.30	2			612
8-D	324+50	326+00	RT.			42					2	11						
9-D	320+00	322+00	RT.									90						
			SUB TOTAL															

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE	I-7 REINF. CONC. APPROACH SLABS (TYPE 1) S.Y.
1-P	320+08.22	320+33.22	LT.	67

(S) STRUCTURES

REF. NO.	STATION FROM	STATION TO	SIDE	E-2 EXCAV. FOR STRUCT. C.Y.	E-3 CHANNEL EXCAV. FOR STRUCT. C.Y.	I-10 DUMPED ROCK CHANNEL PROTECT. S.Y.	L-10 SODDING S.Y.	S-1 CONC. FOR STRUCT. CLASS "E" C.Y.	S-28 180° SECTIONAL CORRUGATED METAL STRUCTURES SEC. M-167 1-1 Gage L.F.
I-S	322+30			242	540	44	43	49.42	418

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAILING STEEL BEAM STD. TYPE (DEEP) L.F.
1-R	320+44	326+44	LT.	6000
2-R	320+07	326+07	LT.	3000
3-R	320+045.5	325+545.5	LT.	5500
4-R	320+09	320+59	RT.	500
			SUB TOTAL	15000

EXCAVATION		9,830 C.Y.
EMBANKMENT		219,376 C.Y.
EMBANKMENT	18 %	258,864 C.Y.

STA. 320 + 00 TO STA. 330 + 00

8-1

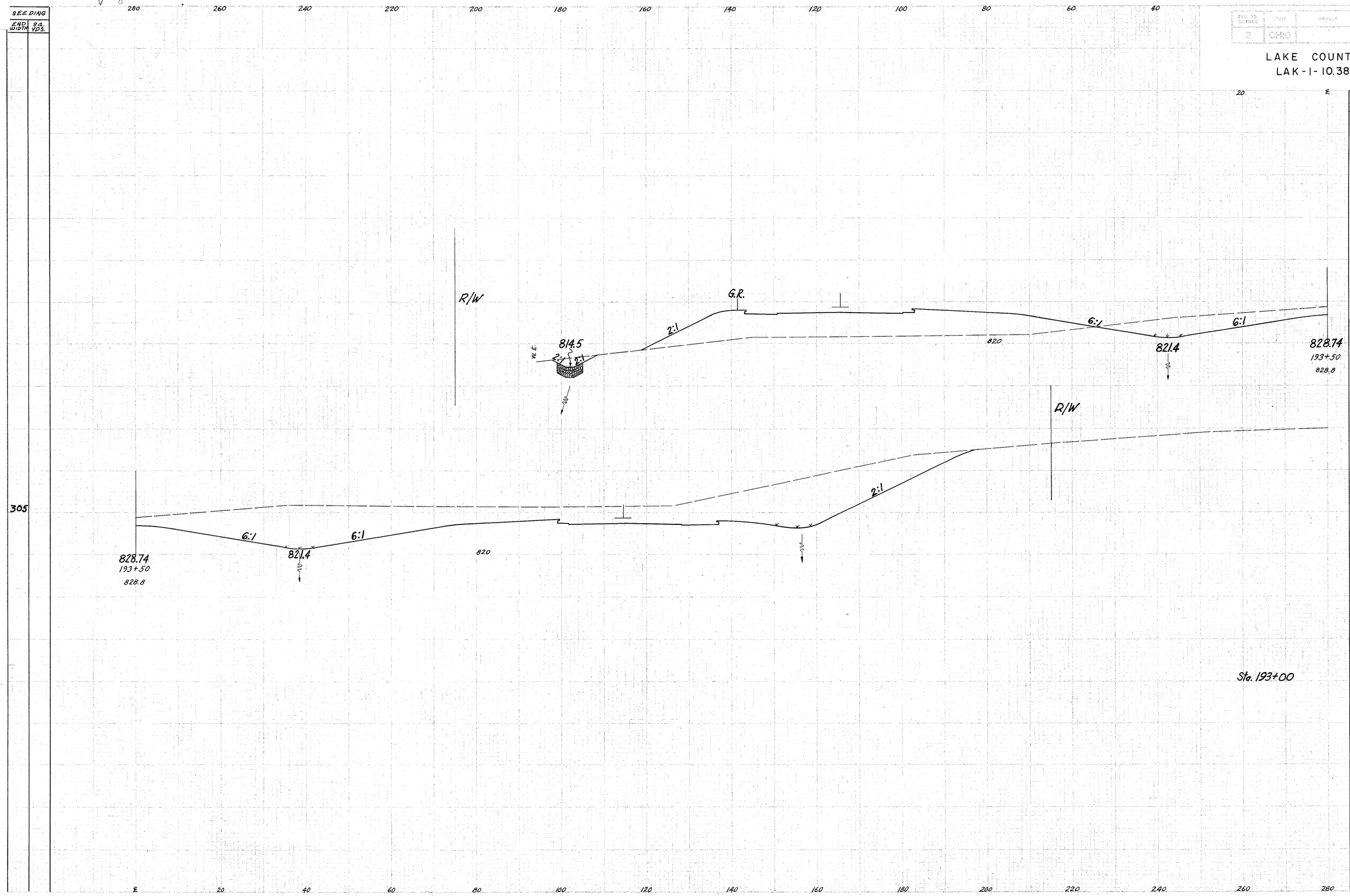
V-8

SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DISTRICT	STATE	FISCAL YEARS	
2	OHIO		

31
306

LAKE COUNTY
LAK-1-10.38

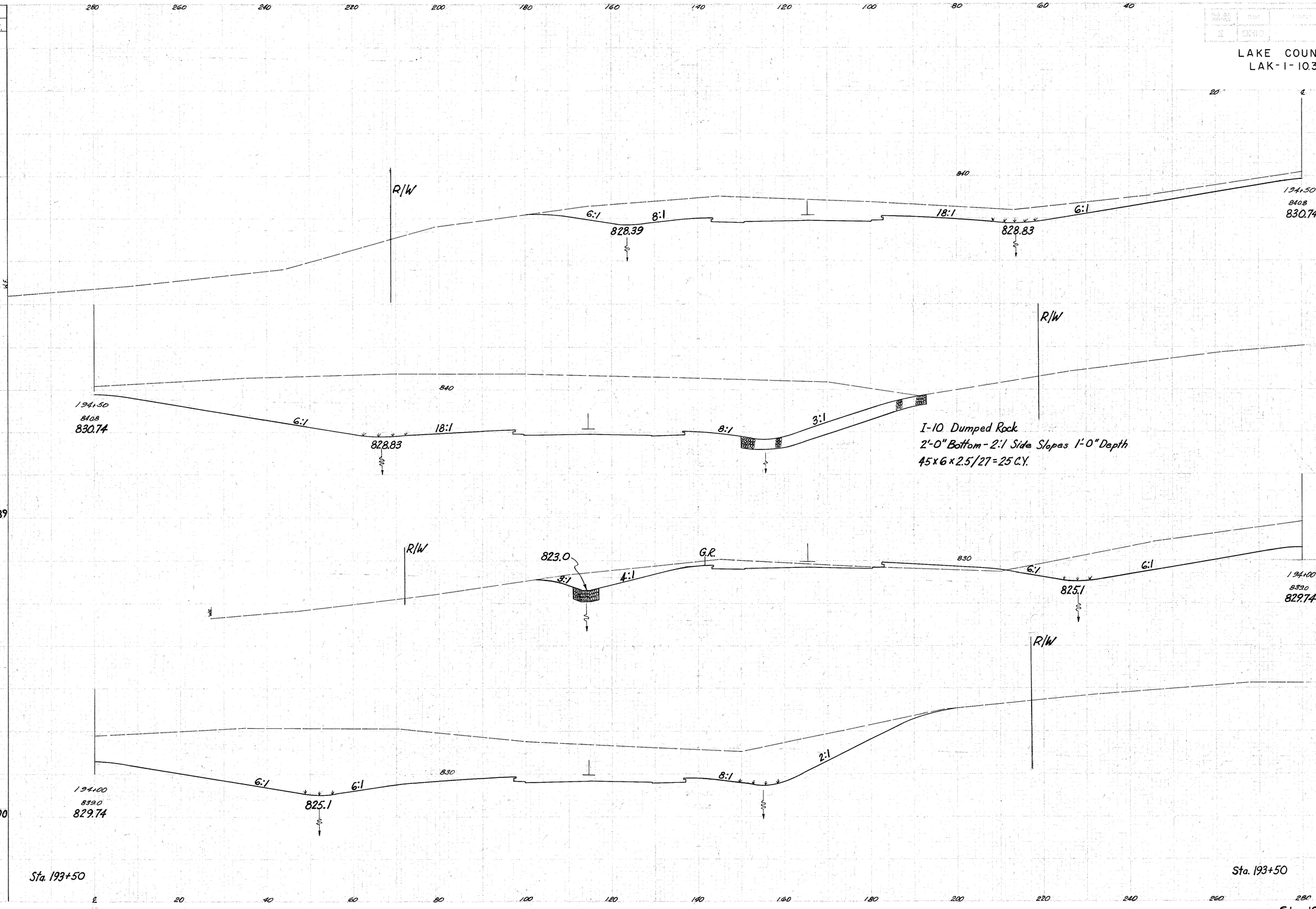


END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1395	540		
Sta. 193+00		0	0

Sta. 193+50

LAKE COUNTY
LAK-I-10.38

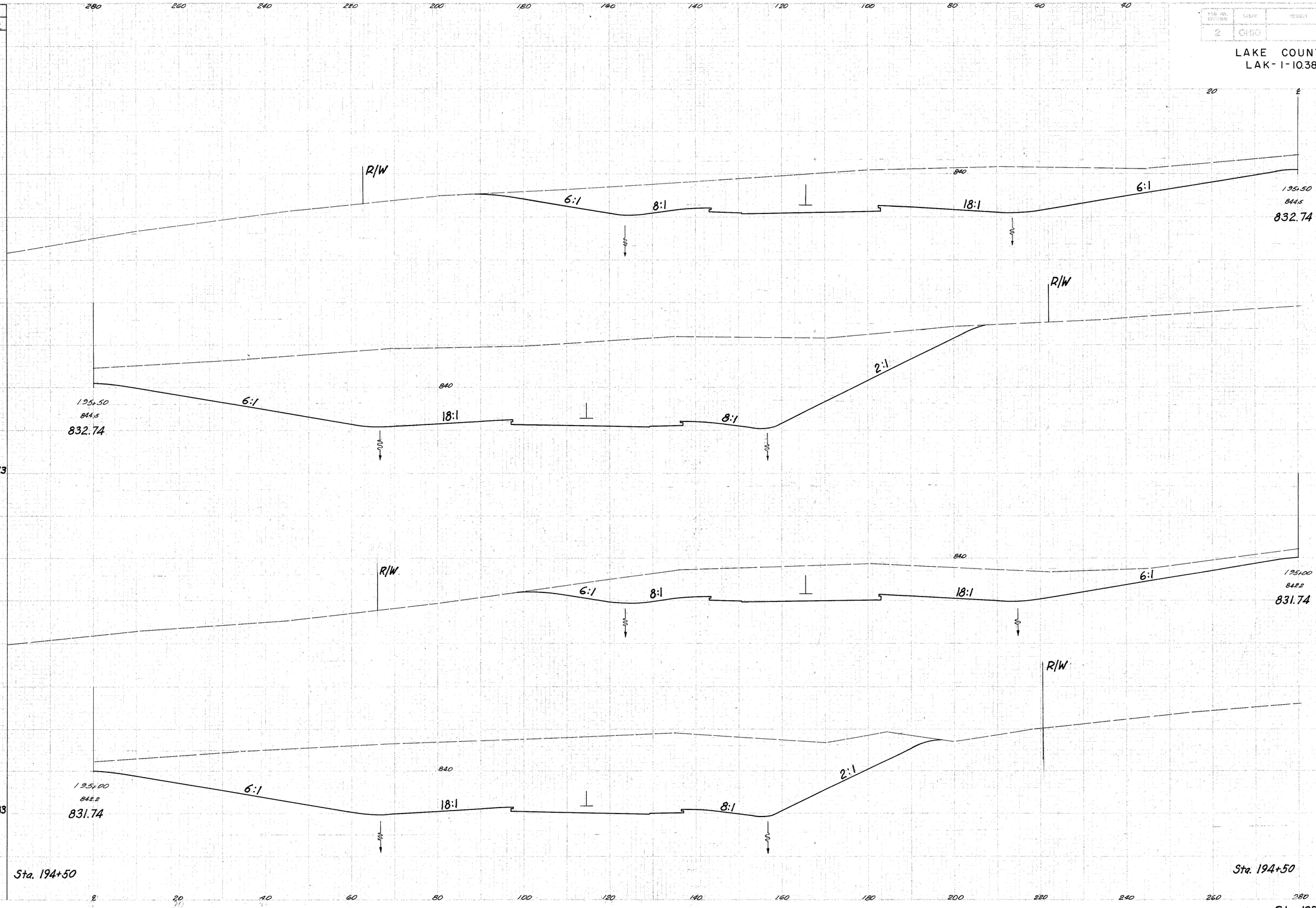
SEEDING	
END WIDTH	SQ. YDS.
301	
1689	
307	
1700	
305	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2735	0		
		4685	19
2325	20		
		3444	519
1395	540		

Sta. 194+00 to 194+50

SEEDING	
END WIDTH	SQ. YDS.
319	
	1733
305	
	1683
301	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
4310			
		7310	
3585			
		5852	
2735	0		

STATE	PROJECT
OHIO	

33
306

LAKE COUNTY
LAK-1-10.38

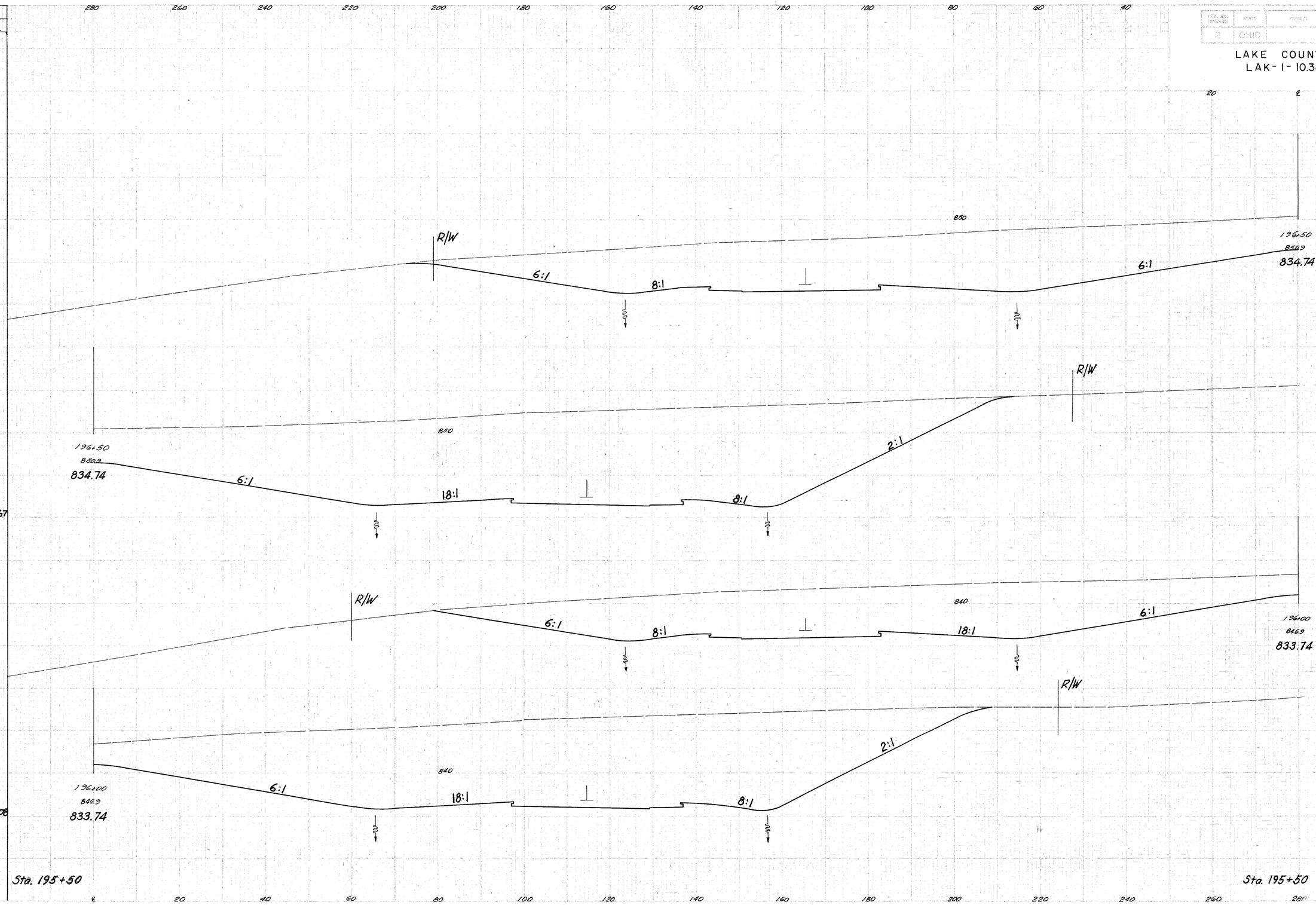
Sta. 195+00 to 195+50

FED. RD. DIVISION	STATE	PROJECT	
3	OHIO		

34
306

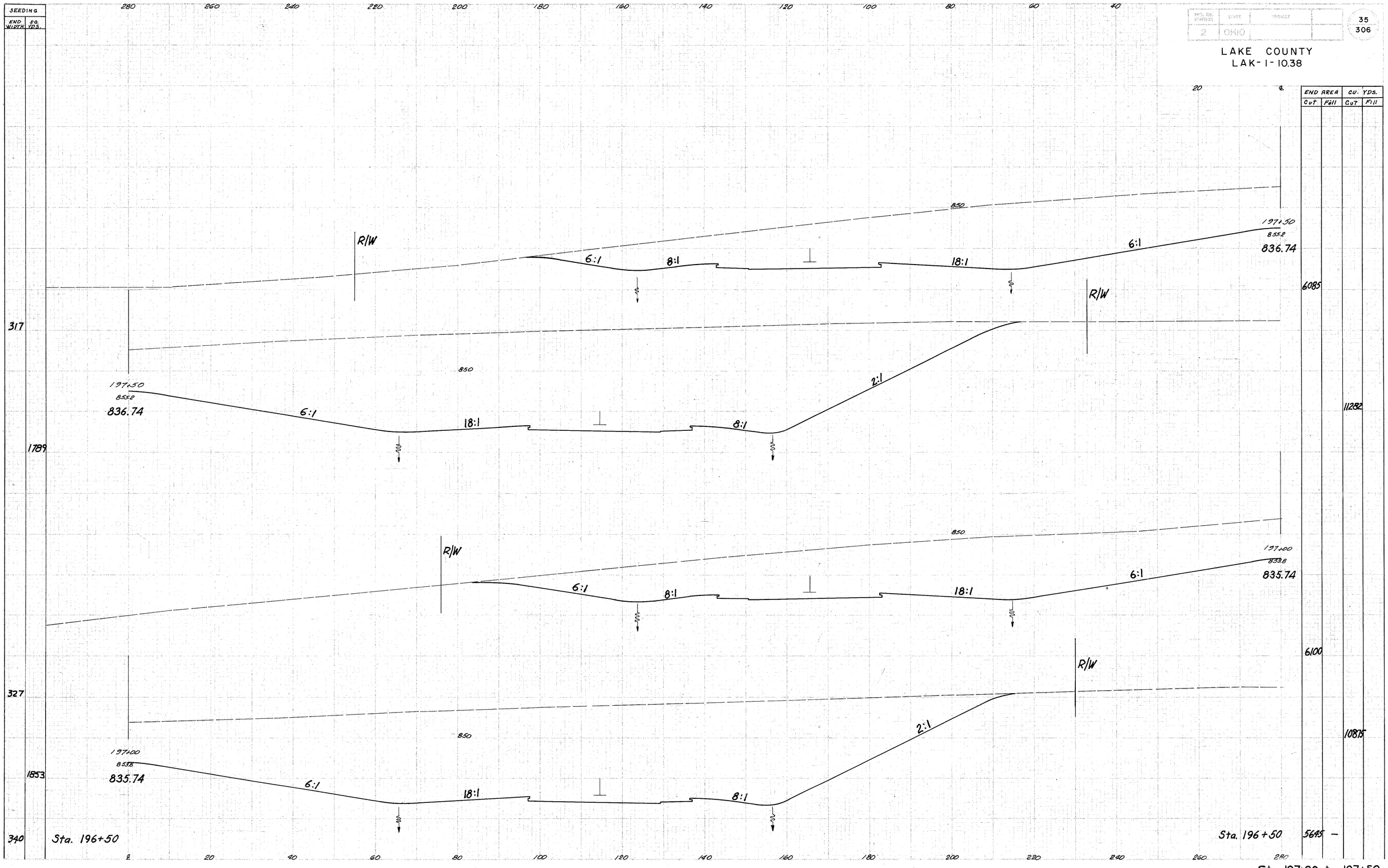
LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
340	1867
332	1808
319	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
5645			
		9927	
5076			
		8690	
4310			

Sta. 196+00 to 196+50



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

35
306

LAKE COUNTY
LAK-1-10.38

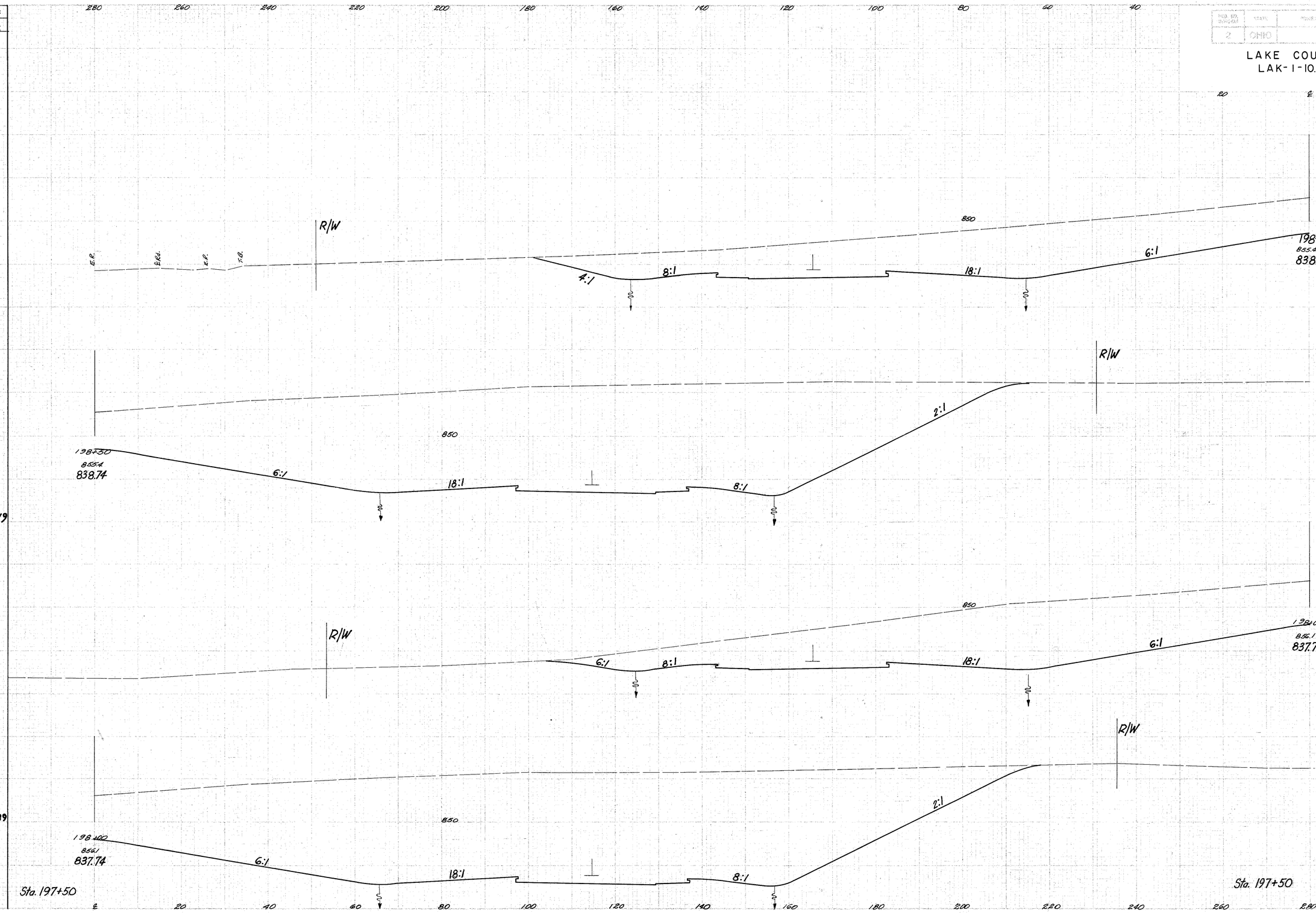
Sta. 197+00 to 197+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

36
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
310	
1719	
309	
1739	
317	

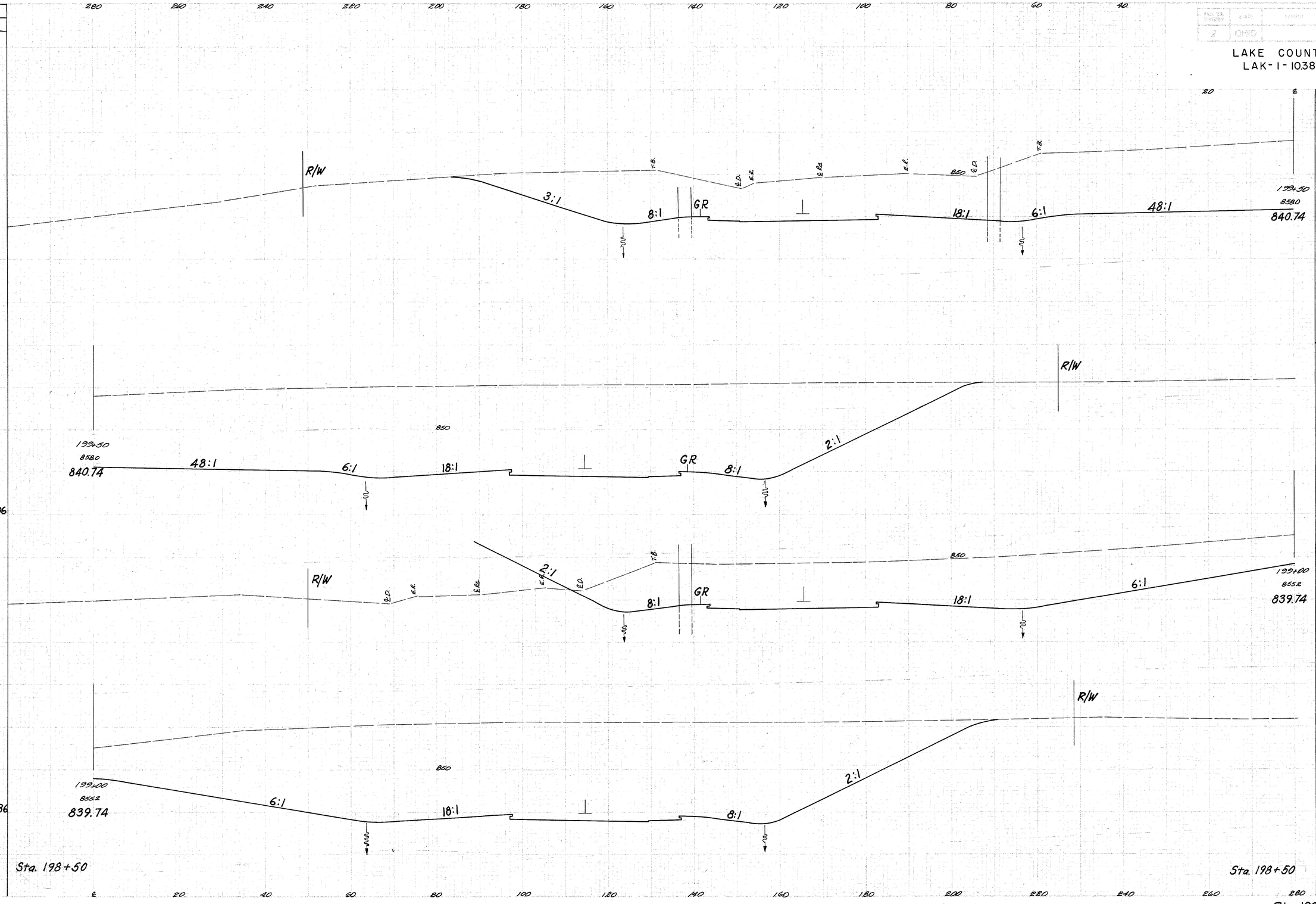


END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
5503	–		
		10678	
6030	–		
		11217	
6085	–		

Sta. 198+00 to 198+50

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
317	
1706	
297	
1686	
310	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
5954	—		
		10522	
5410	—		
		10104	
5503	—		

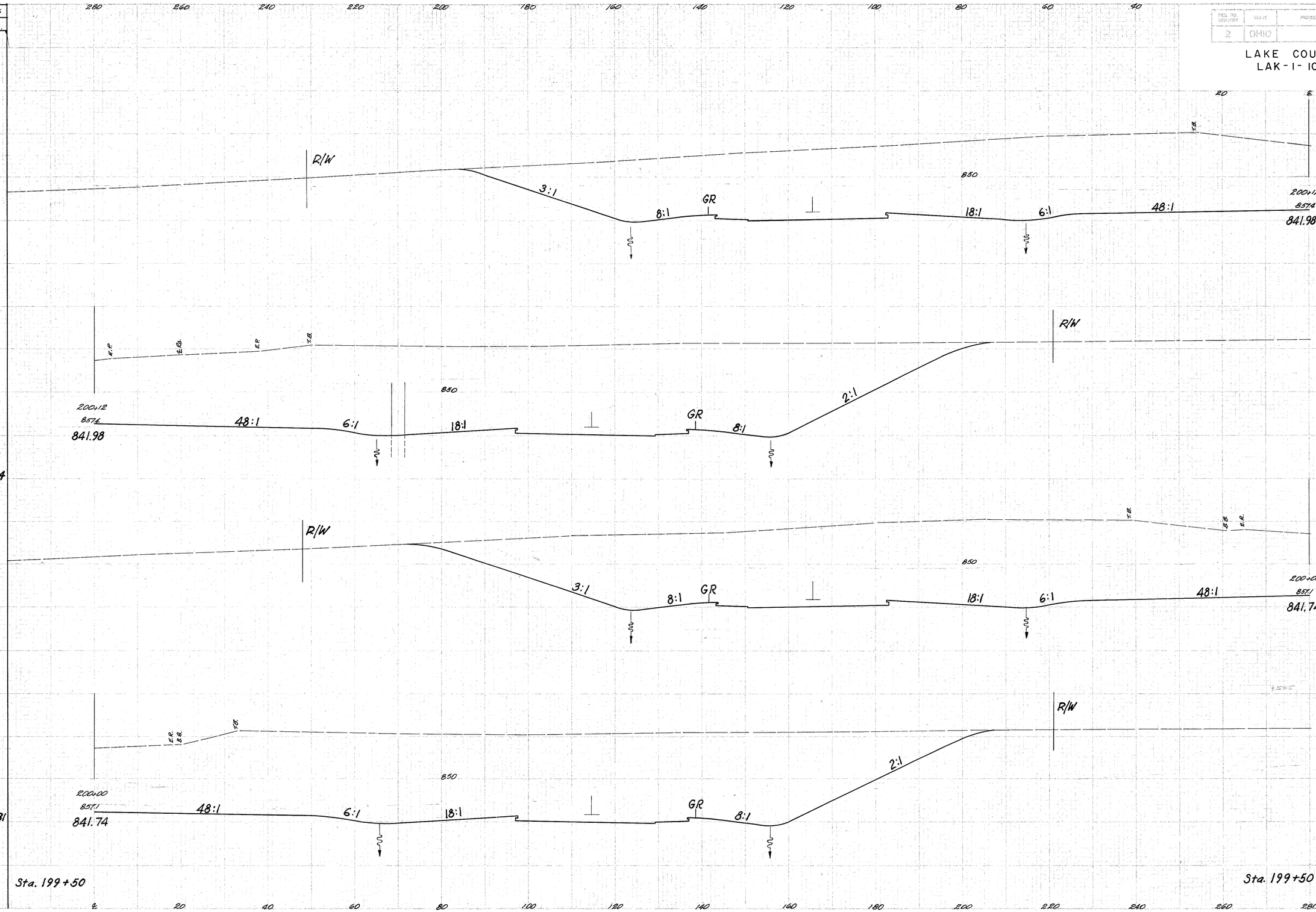
Sta. 199+00 to 199+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

38
306

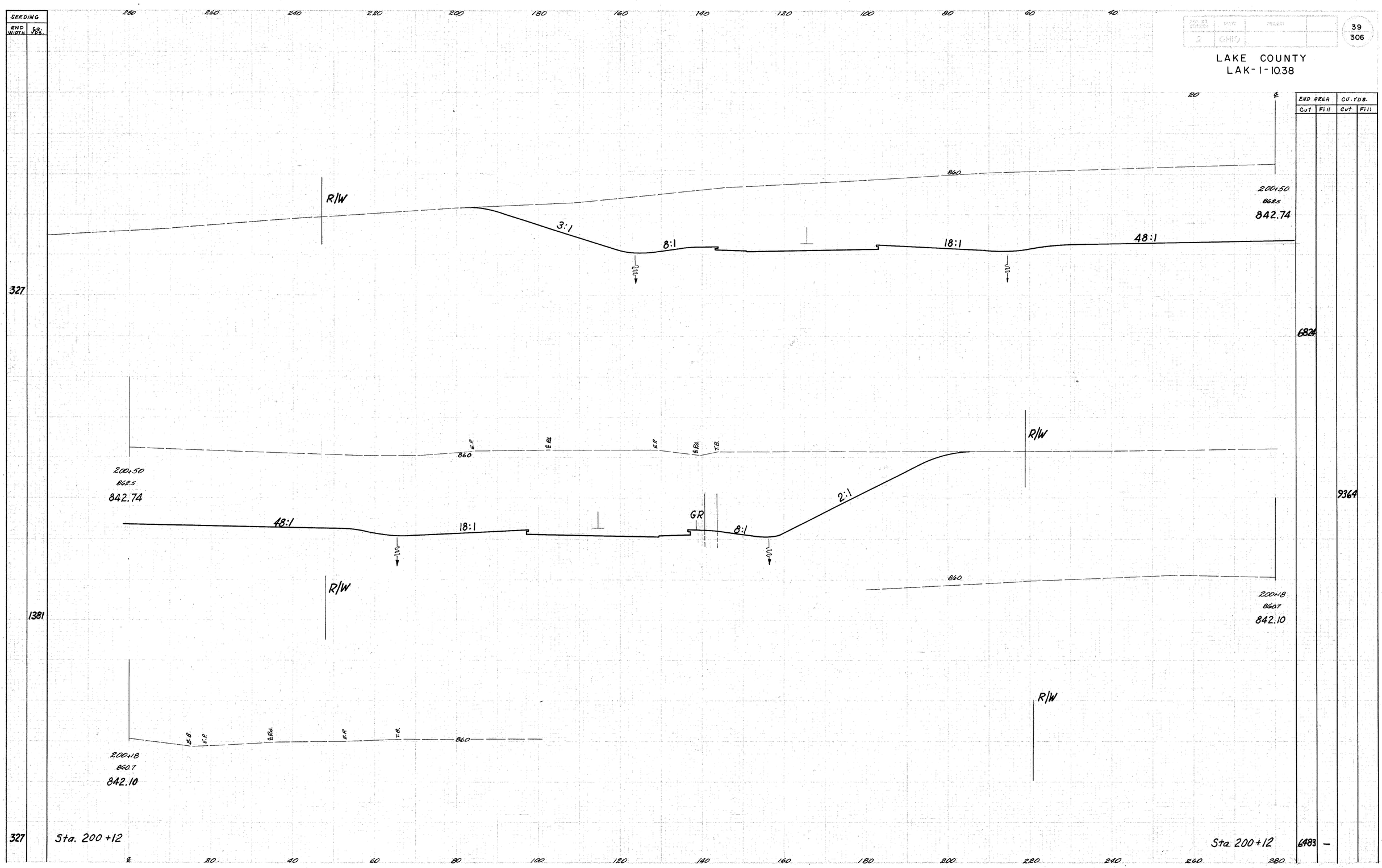
LAKE COUNTY
LAK-1-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
	327	6483		2924	
	434				
	324	6675		11693	
	1781				
	317	5954			



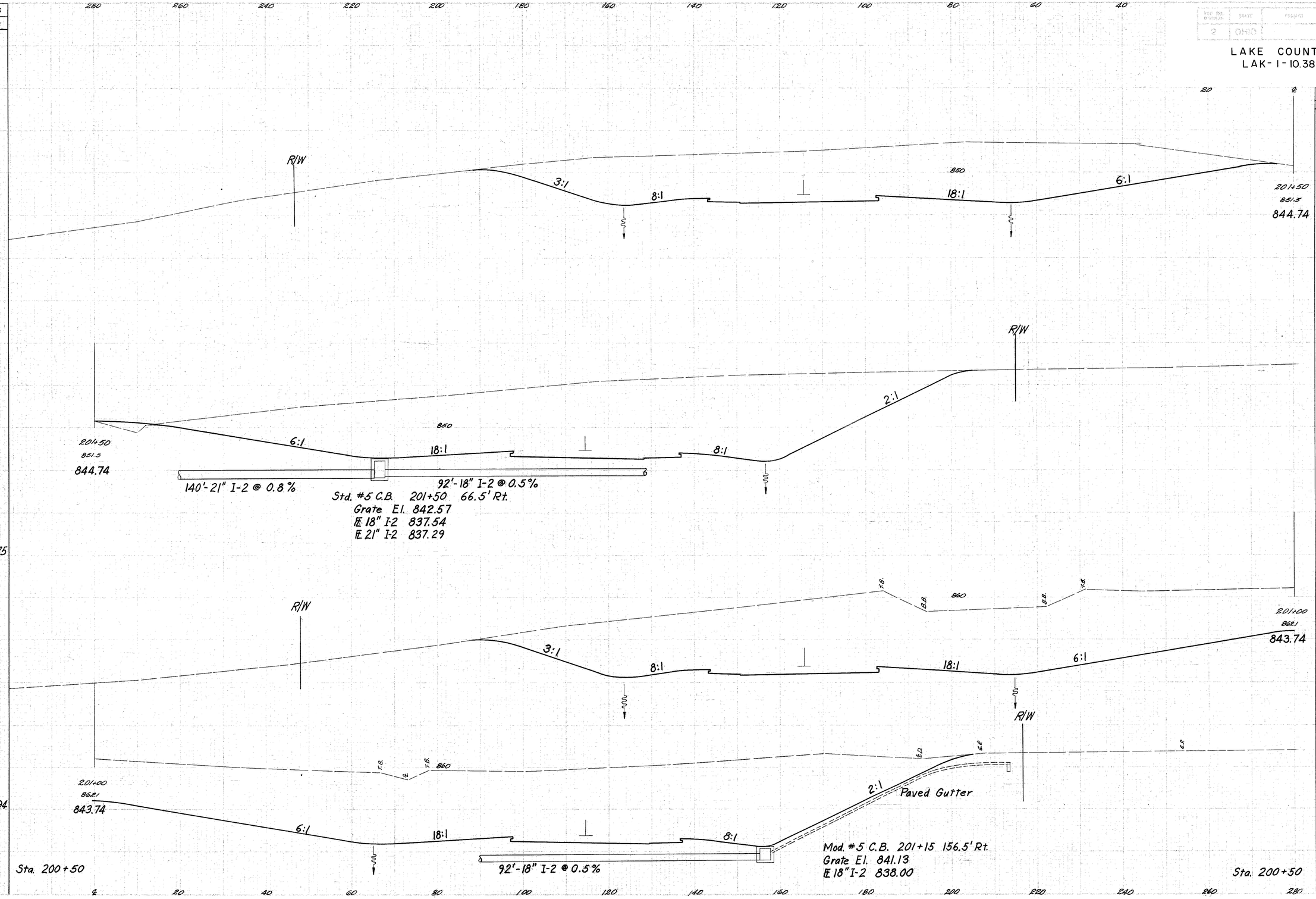
Sta. 200+00 to 200+12

LAKE COUNTY
LAK-1-10.38



Sta. 200+18 to 200+50

SEEDING		
END WIDTH	SQ. YDS.	
320		
1775		
319		
1794		
327		



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
4196	17		
		9111	16
5652	0		
		11552	
6824			

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	
2	OHIO		

40
306

LAKE COUNTY
LAK-1-10.38

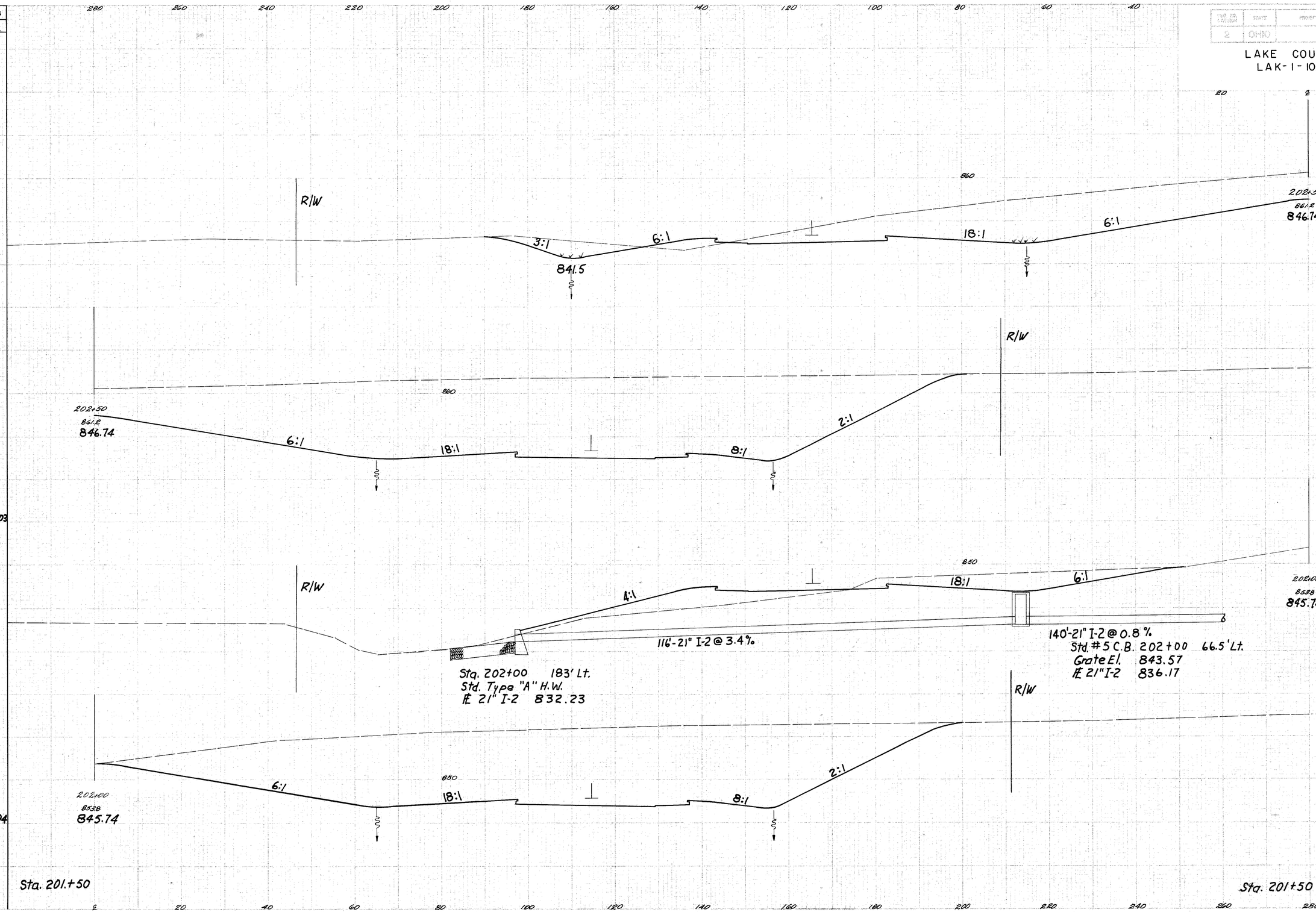
Sta. 201+00 to 201+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

41
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
323	
1803	
326	
1794	
320	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
3924	25		
		6220	159
2794	147		
		6412	152
4196	17		

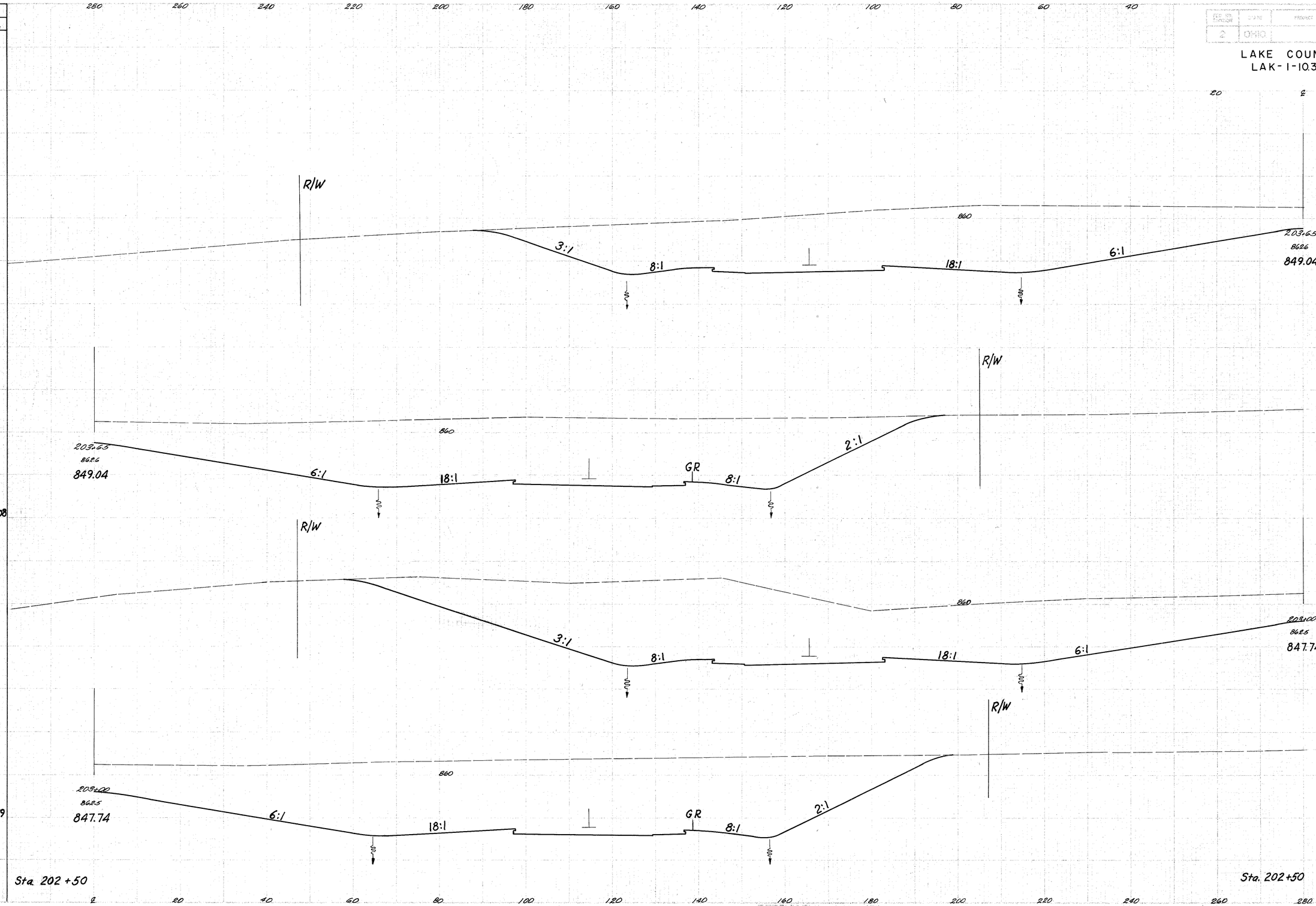
Sta. 202+00 to 202+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

42
306

LAKE COUNTY
LAK-1-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.
307	
2308	
332	
1819	
323	

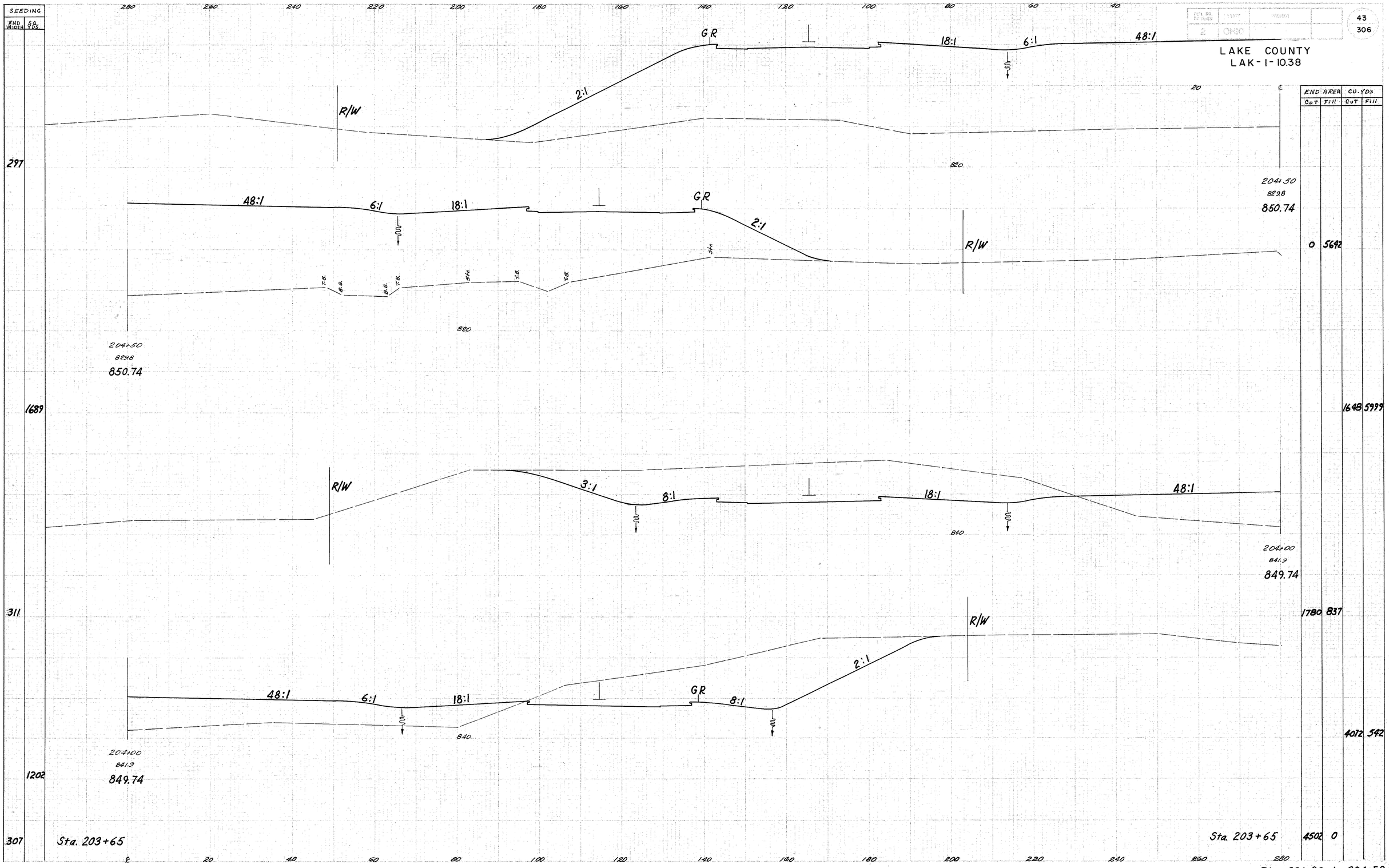


END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
4502	0		
		11897	
5382	0		
		8616	23
3924	25		

Sta. 203+00 to 203+65

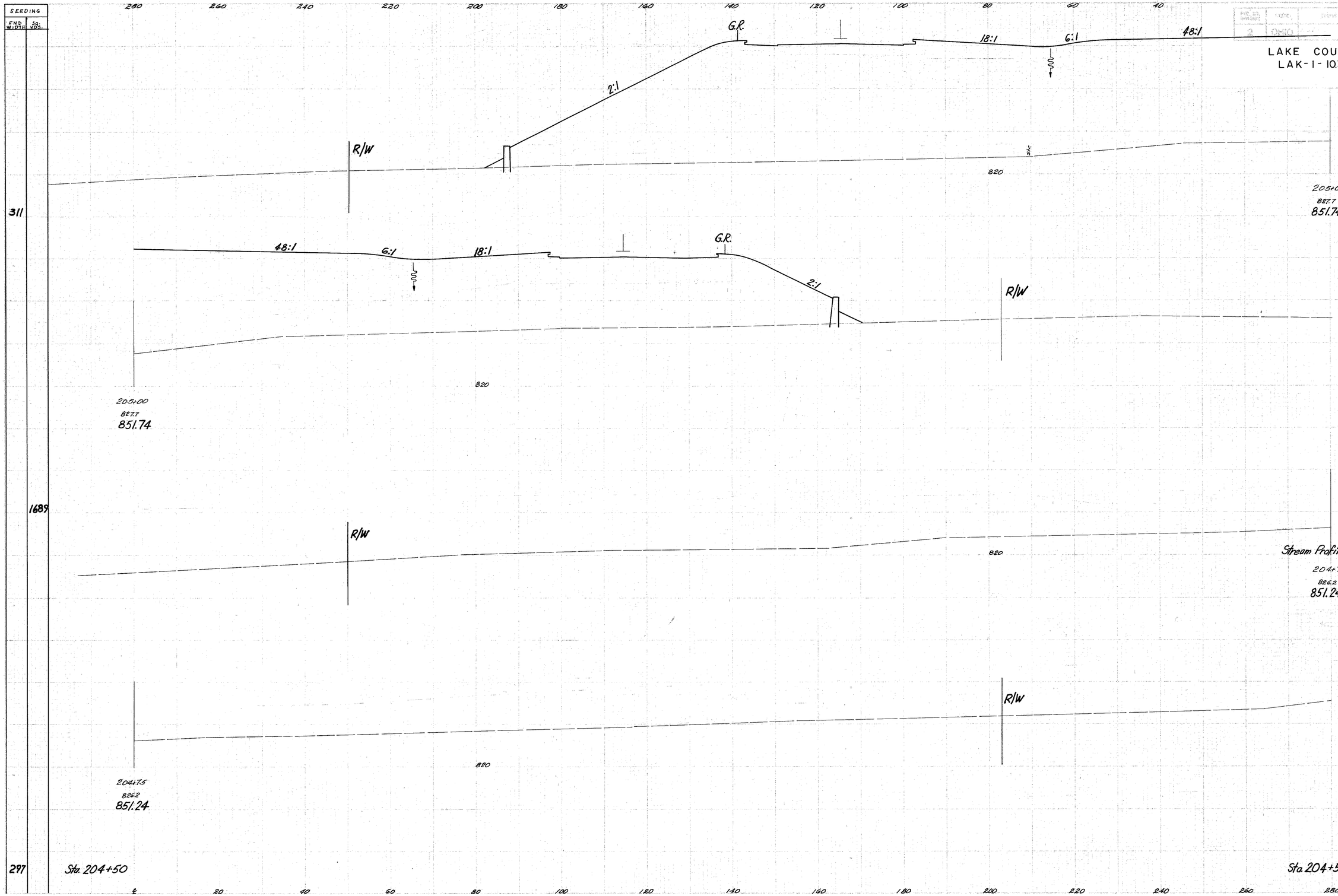
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	
2	OHIO		

LAKE COUNTY
LAK-I-10.38



Sta. 204+00 to 204+50

LAKE COUNTY
LAK-1-1038

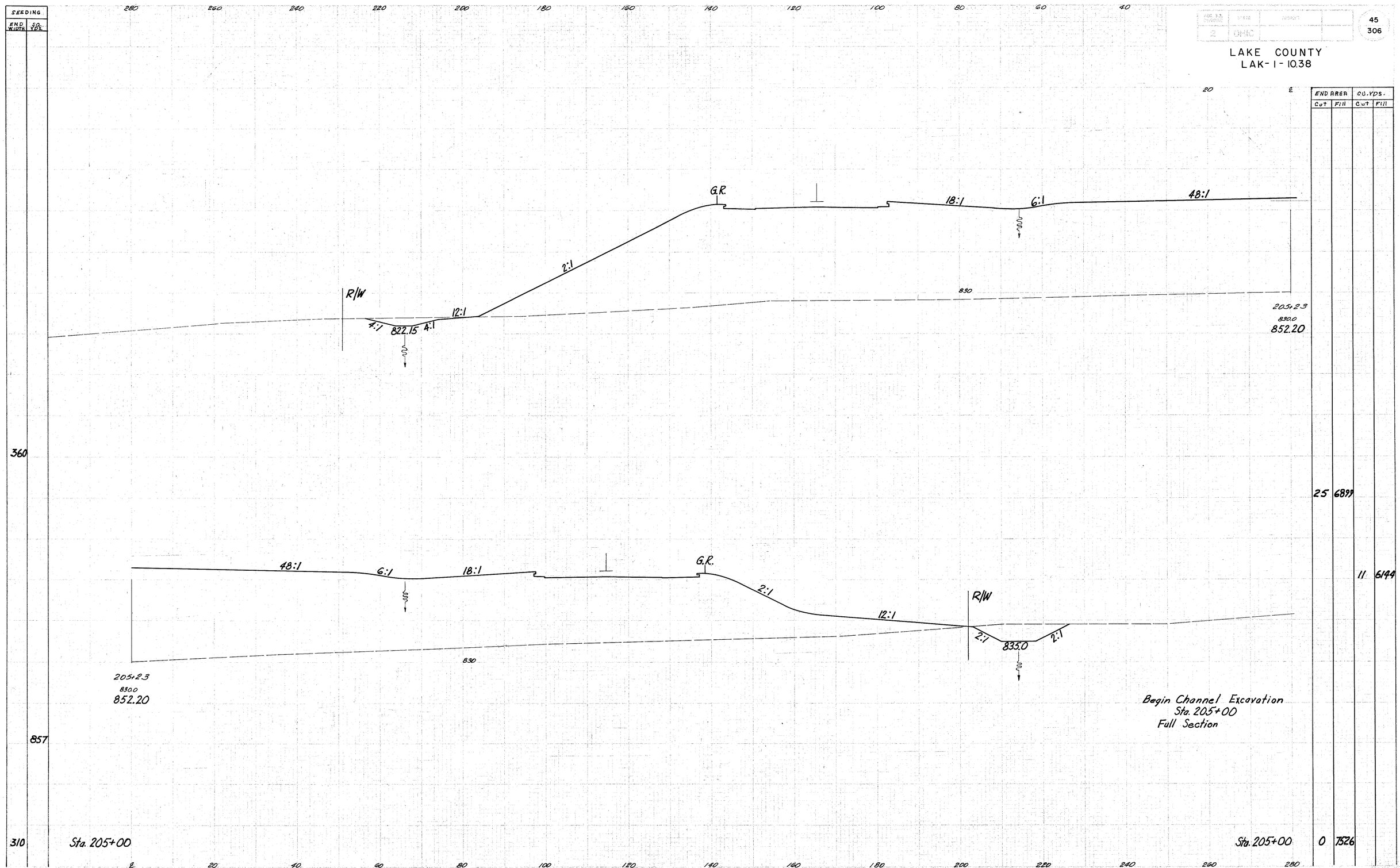


SEEDING	
END WIDTH	SQ. YDS.
311	
1689	
297	

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
0	7526		12193
0	5642		

Sta. 204+75 to 205+00

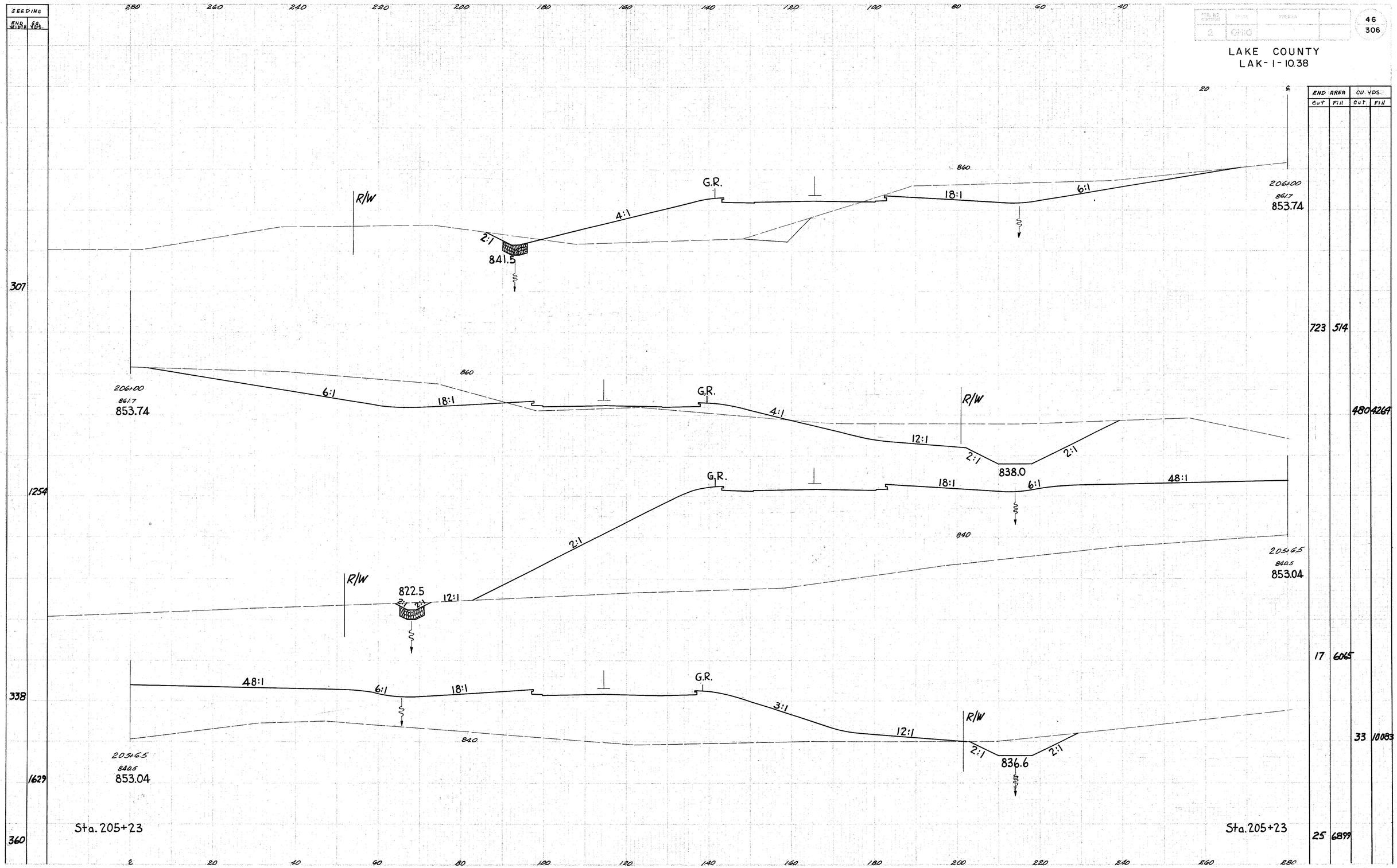
LAKE COUNTY
LAK-1-10.38



END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
25	6899		
		11	6144
0	7526		

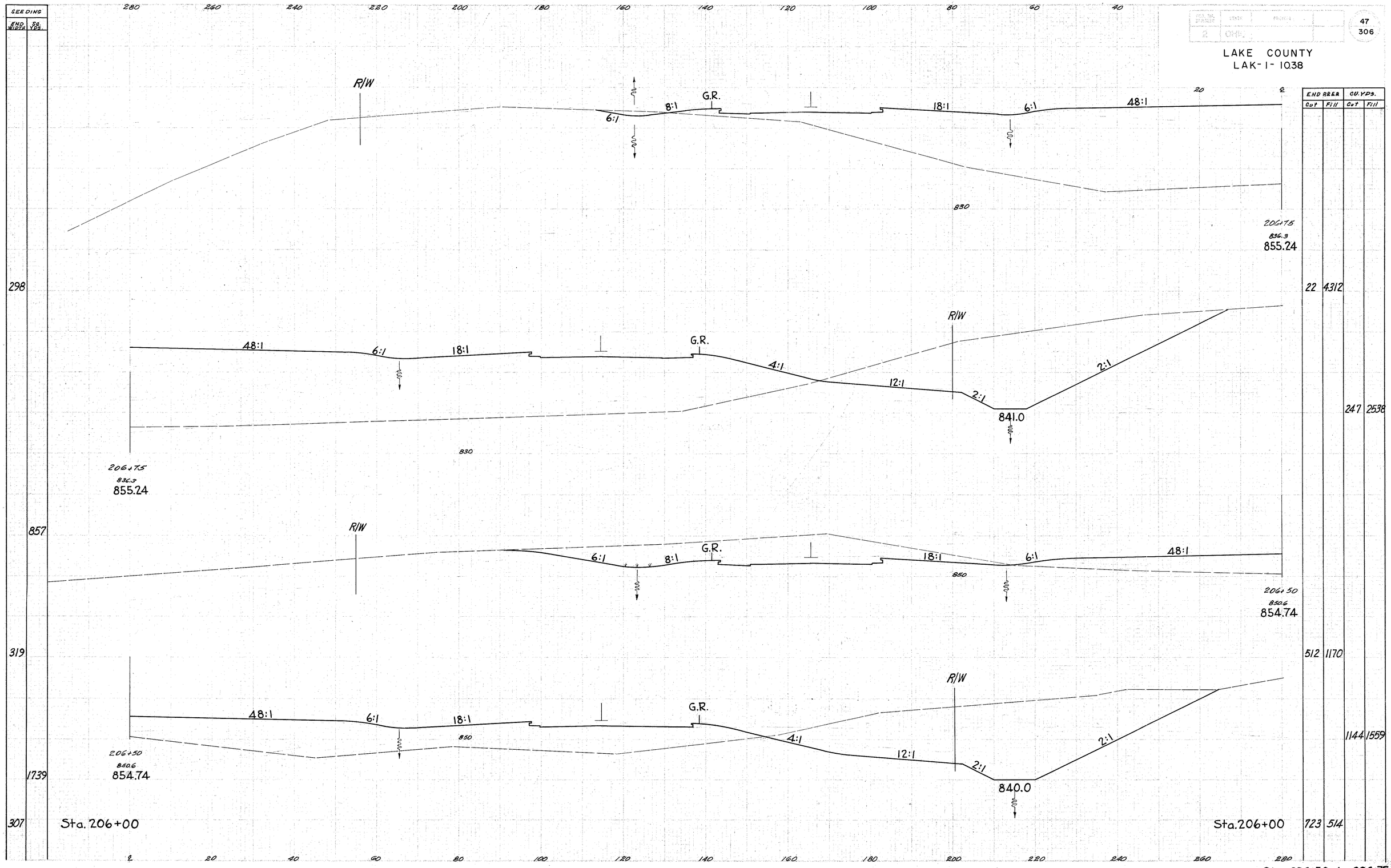
Sta. 205+23

LAKE COUNTY
LAK-1-10.38



Sta. 205+65 to 206+00

LAKE COUNTY
LAK-1-1038



Sta. 206+50 to 206+75

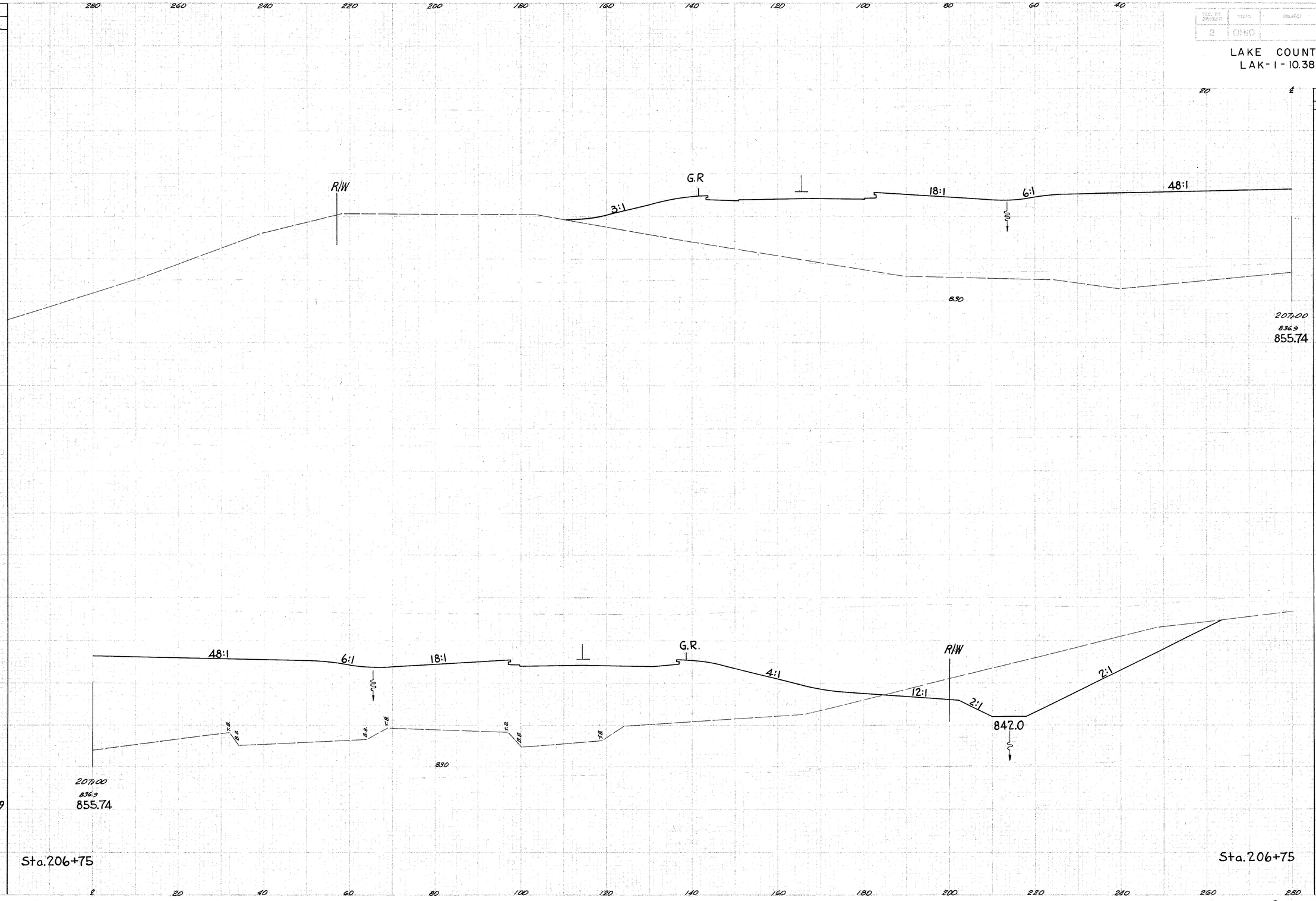
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

48
306

LAKE COUNTY
LAK-1-10.38

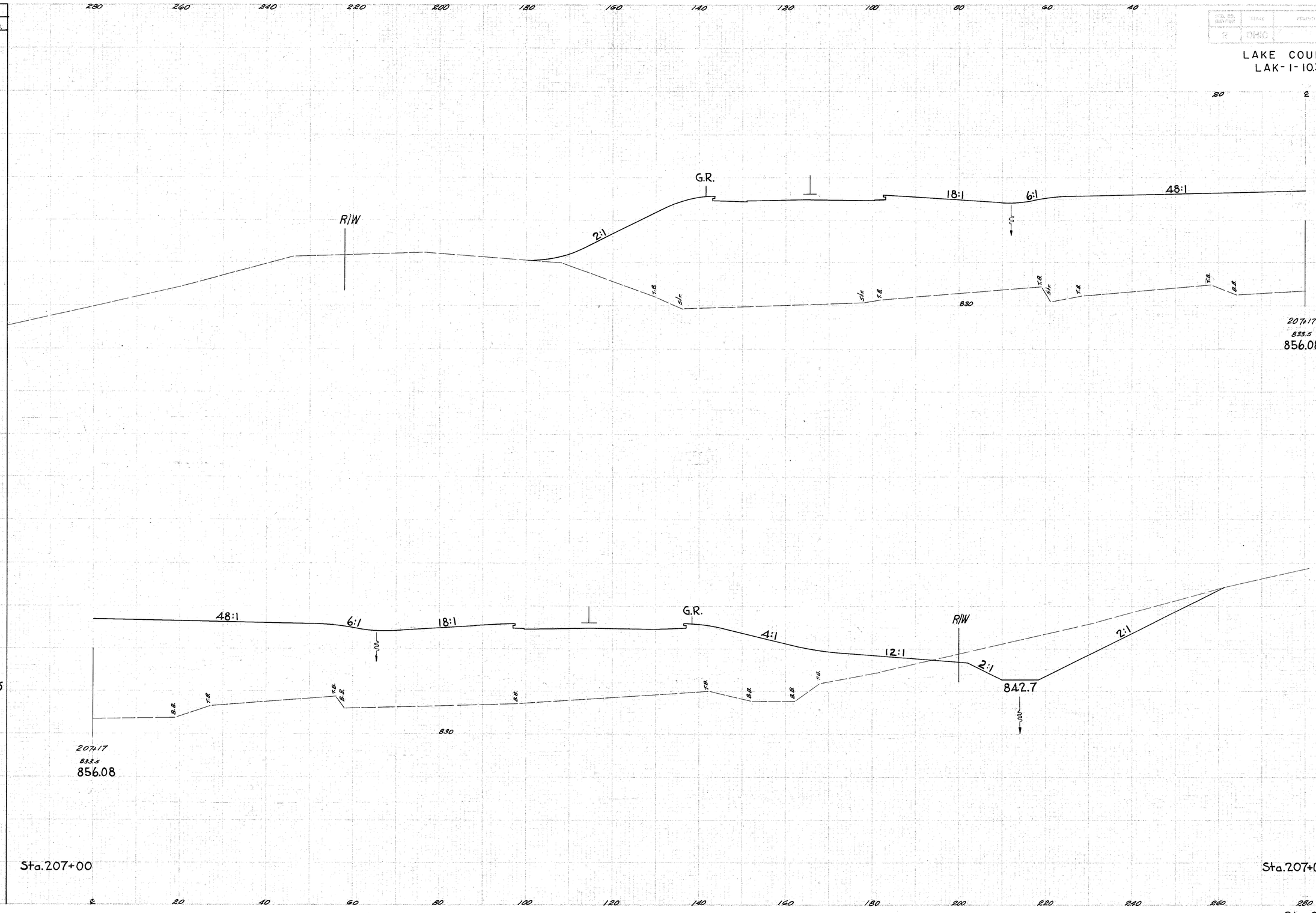
SEEDING	
END WIDTH	S.Q. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
311	
576	
299	



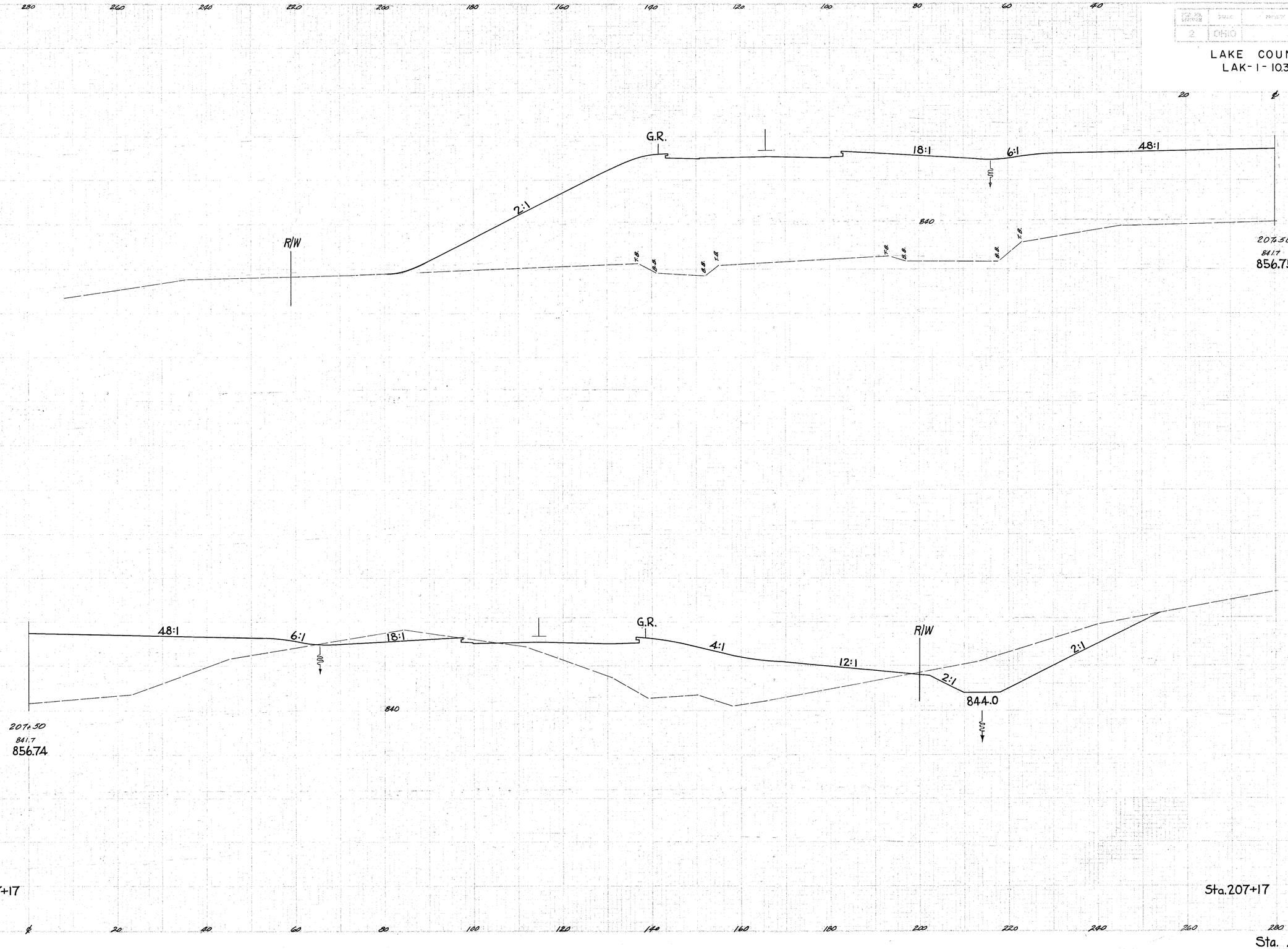
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
0	5659		
		3549	
0	5615		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

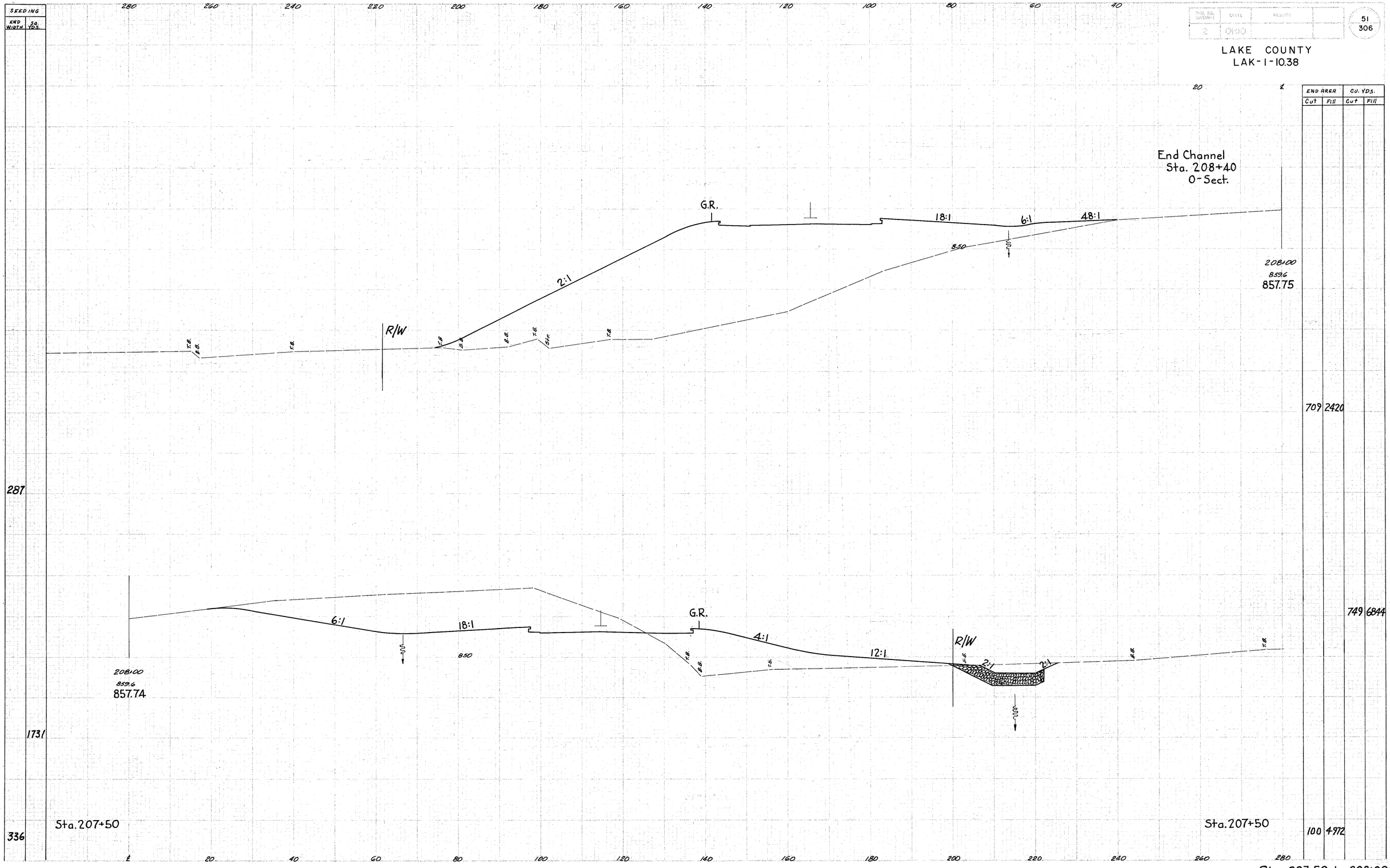
50
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
336	
1186	
311	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
100	4972		
		61	6497
0	5659		



LAKE COUNTY
LAK-1-10.38

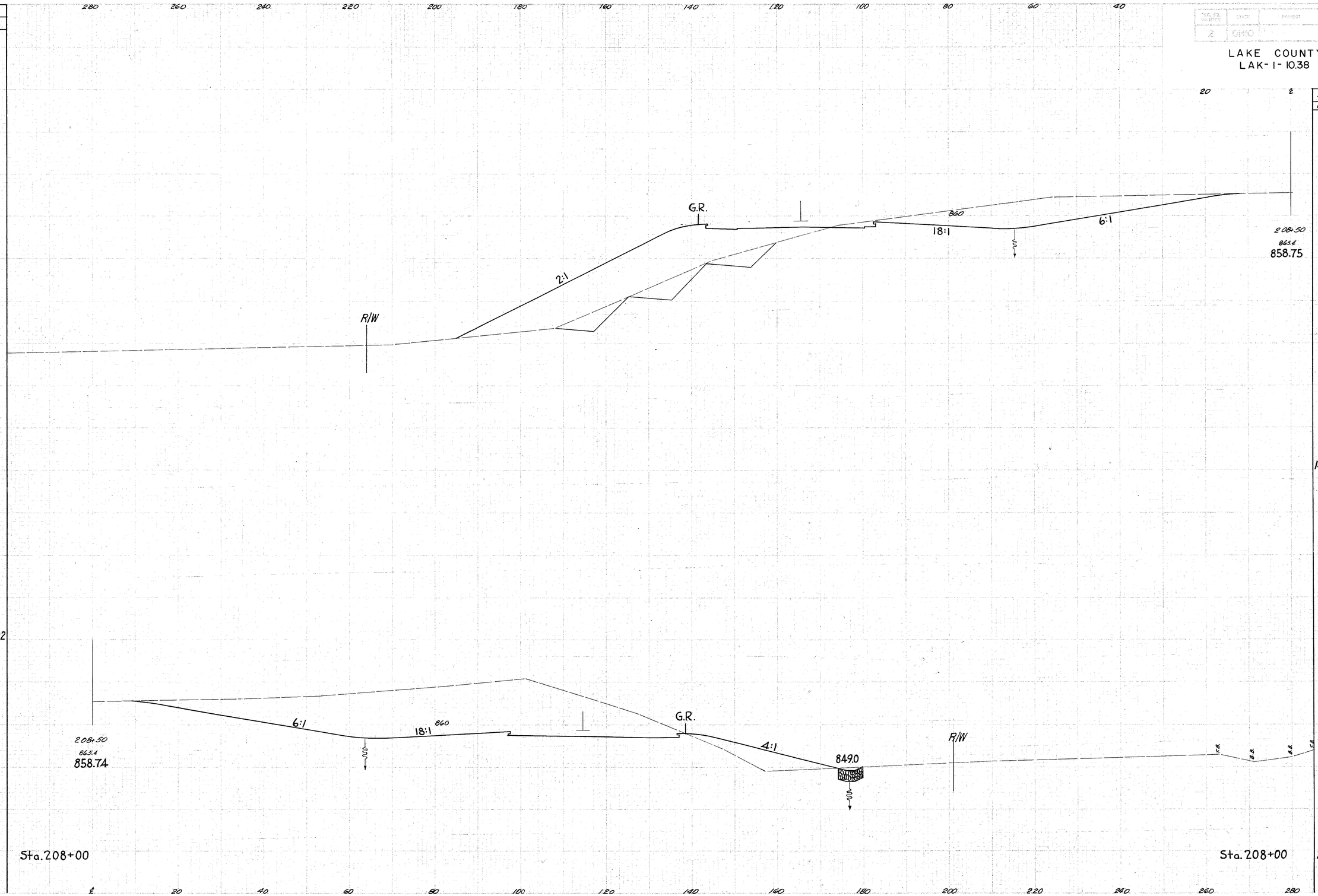
Sta. 207+50 to 208+00

SHEET NO.	STATE	PROJECT	
2	OHIO		

52
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
286	
1592	
287	



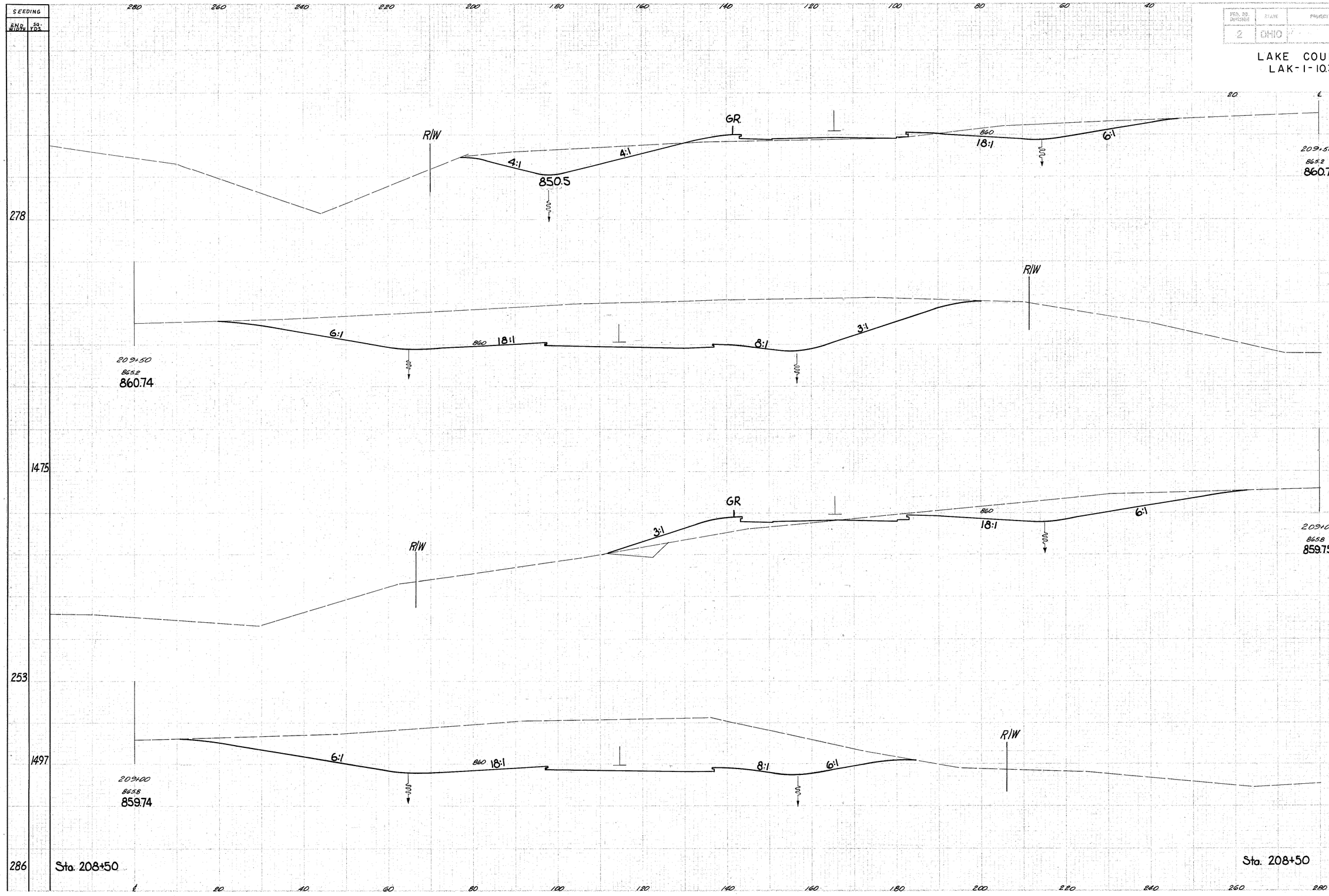
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1433	670		
1983	2861		
709	2420		

Sta. 208+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

53
306

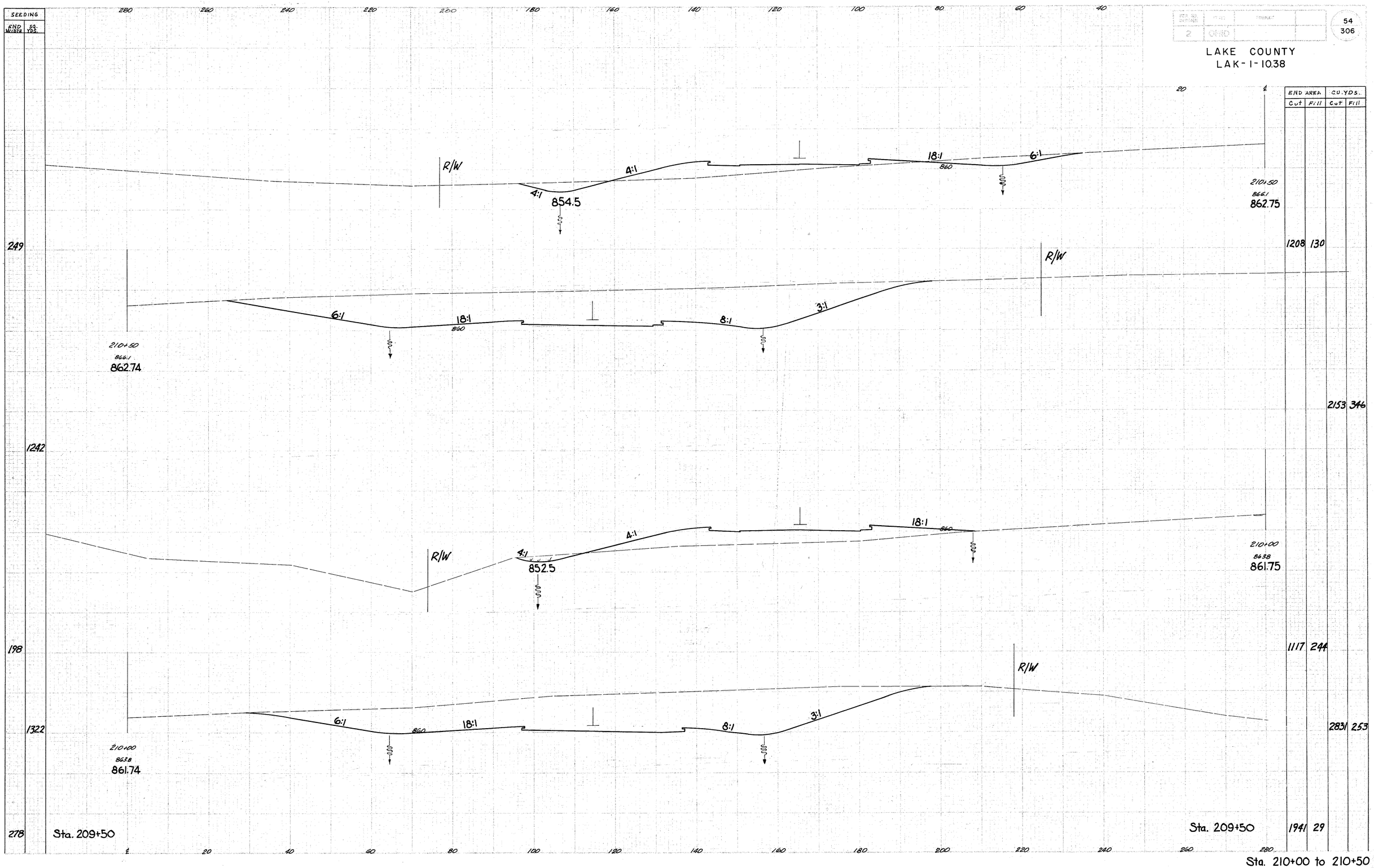
LAKE COUNTY
LAK-1-10.38



END AREA		CU. YDS	
Cut	Fill	Cut	Fill
1941	29		
		3392	119
1722	100		
		2921	713
1433	670		

FED. ROAD DIST.	STATE	PROJECT		54
2	OHIO			306

LAKE COUNTY
LAK-1-10.38



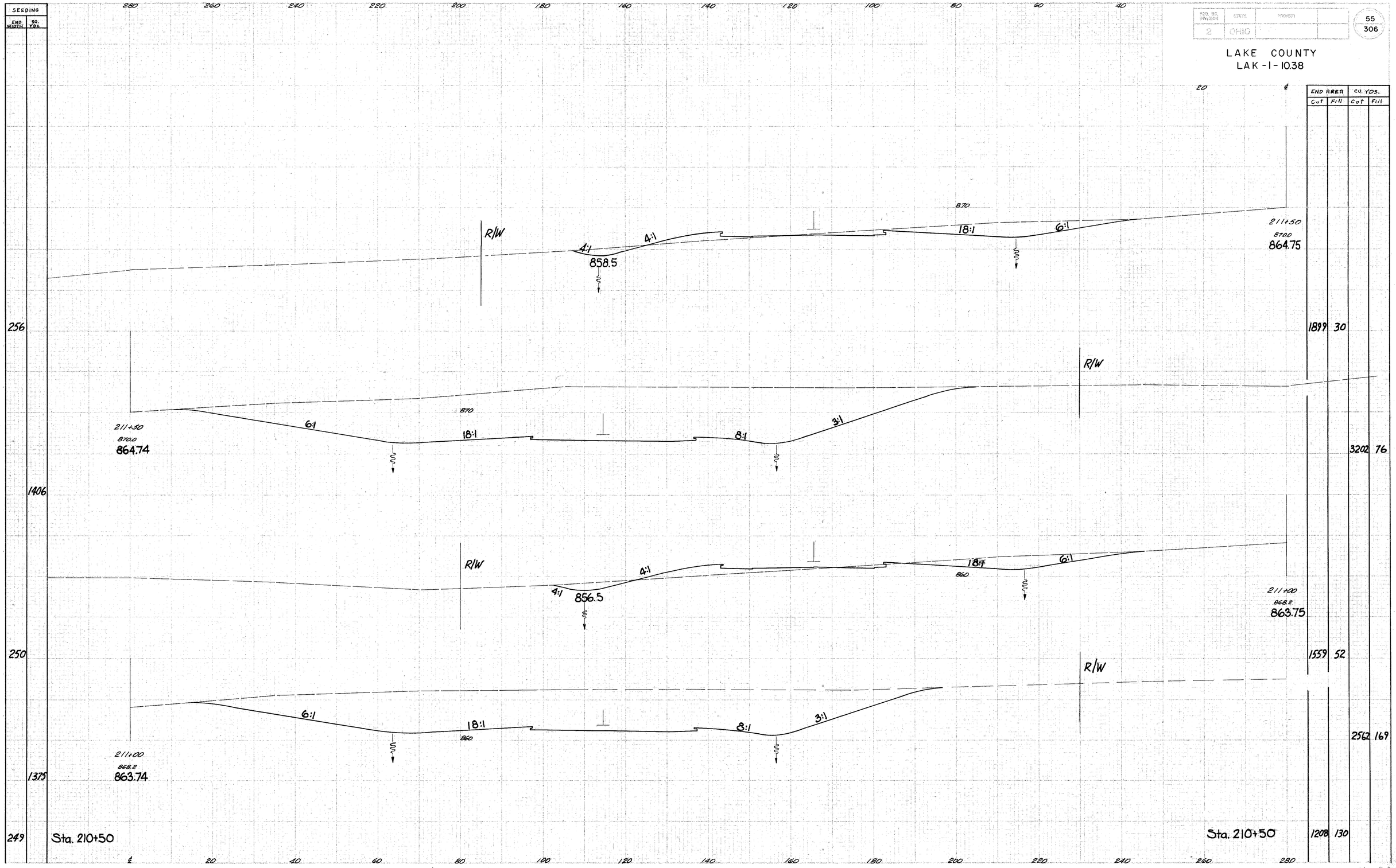
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1208	130		
		2153	346
1117	244		
		2831	253
1941	29		

Sta. 210+00 to 210+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

55
306

LAKE COUNTY
LAK-I-10.38



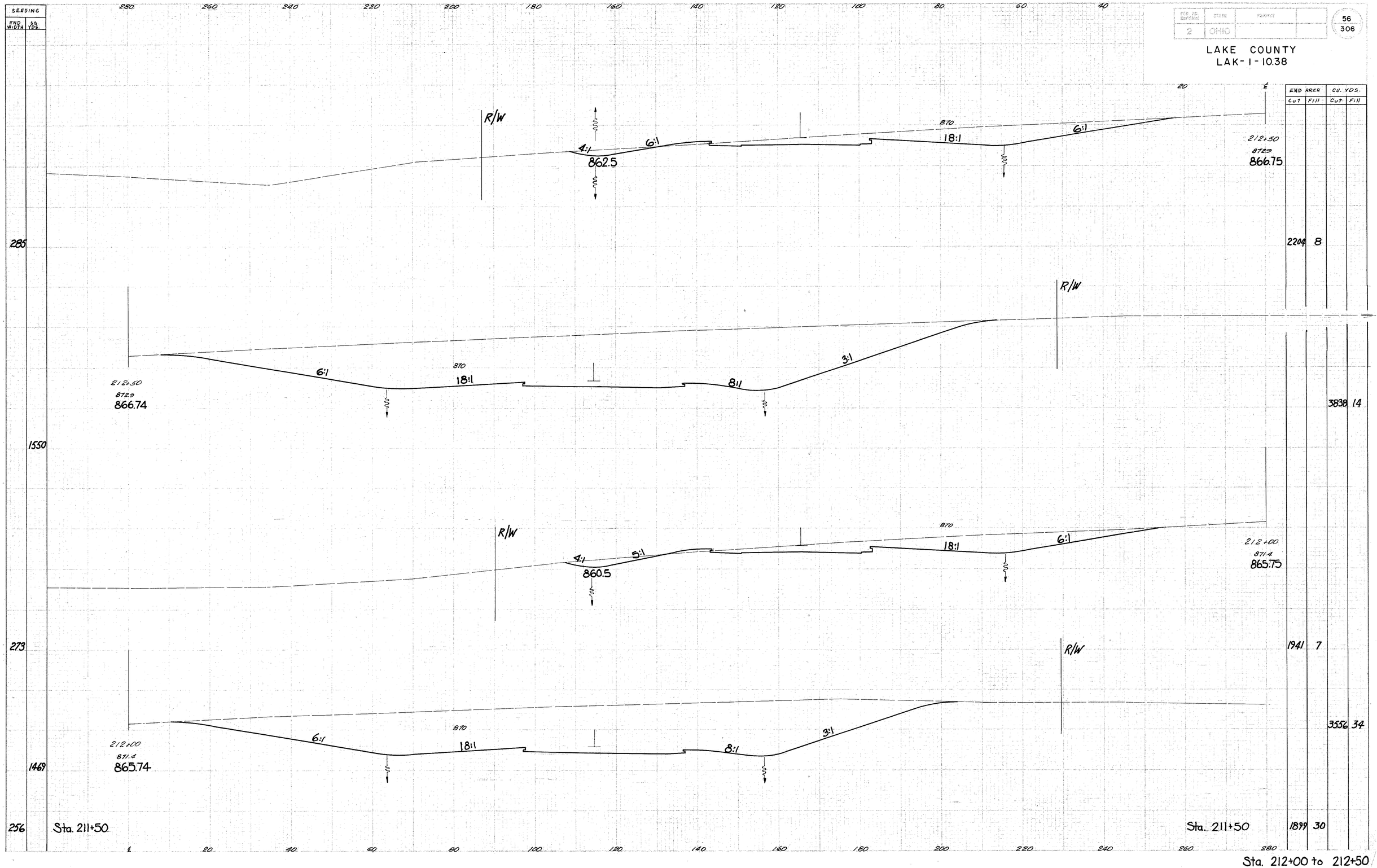
SEEDING		END AREA		CU. YDS.	
END WIDTH	SQ. YDS.	Cut	Fill	Cut	Fill
256		1899	30		
1406				3202	76
250		1559	52		
1375				2562	169
249		1208	130		

Sta. 211+00 to 211+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

56
306

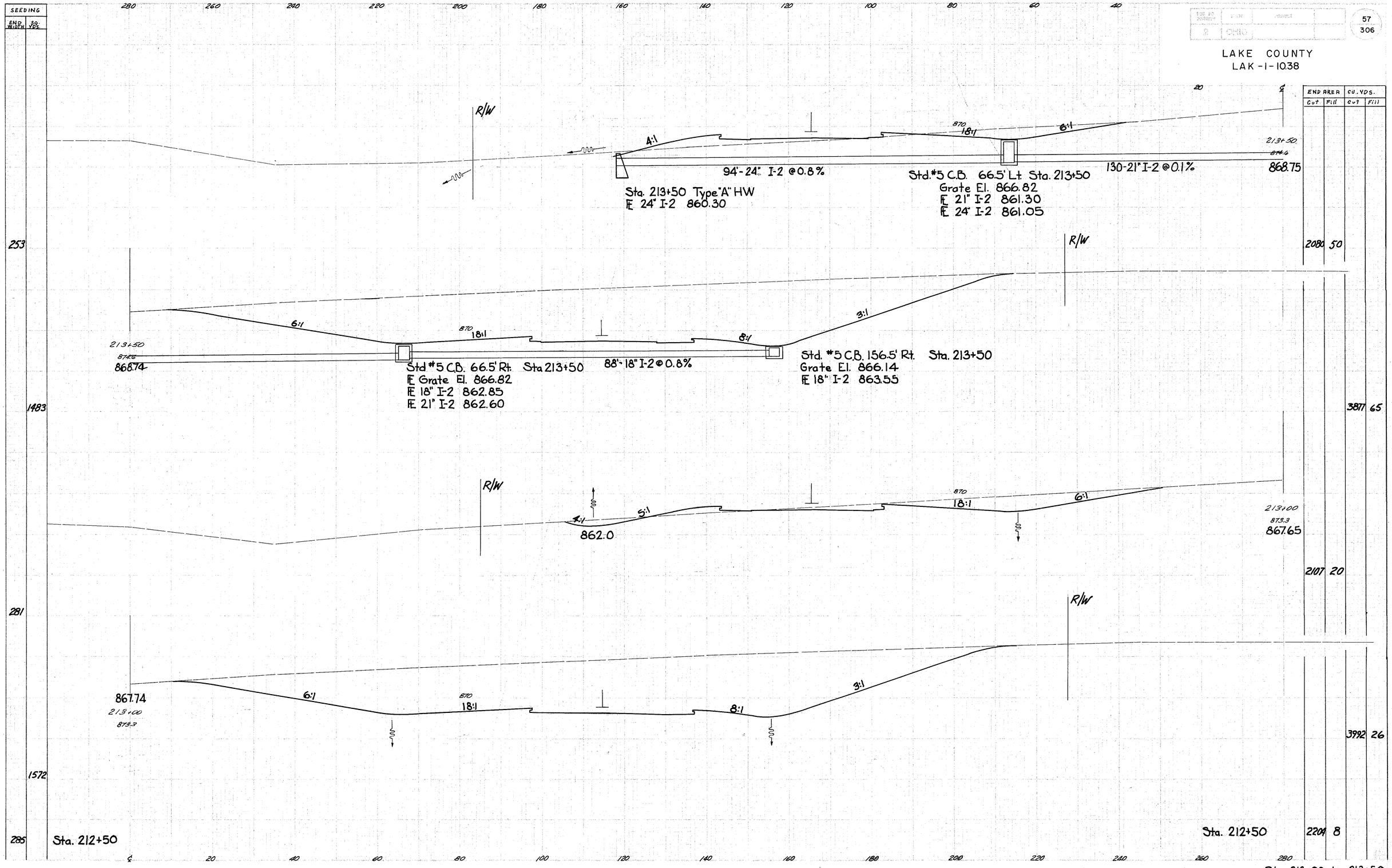
LAKE COUNTY
LAK-1-10.38



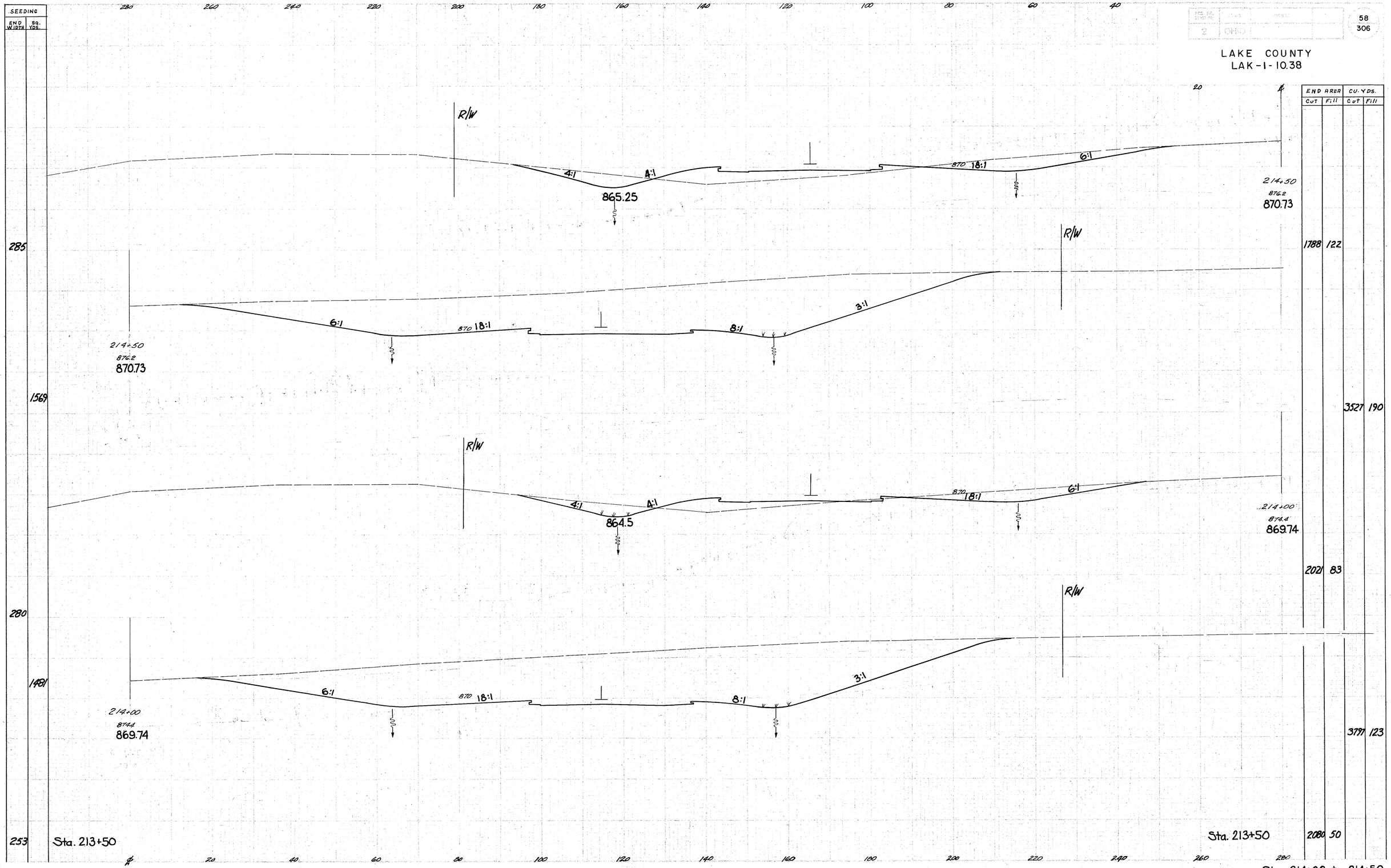
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

Sta. 212+00 to 212+50

LAKE COUNTY
LAK-1-1038



LAKE COUNTY
LAK-1-10.38



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
285		1788	122		
	1569			3527	190
		2021	83		
280					
	1481			3797	123
253		2080	50		

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

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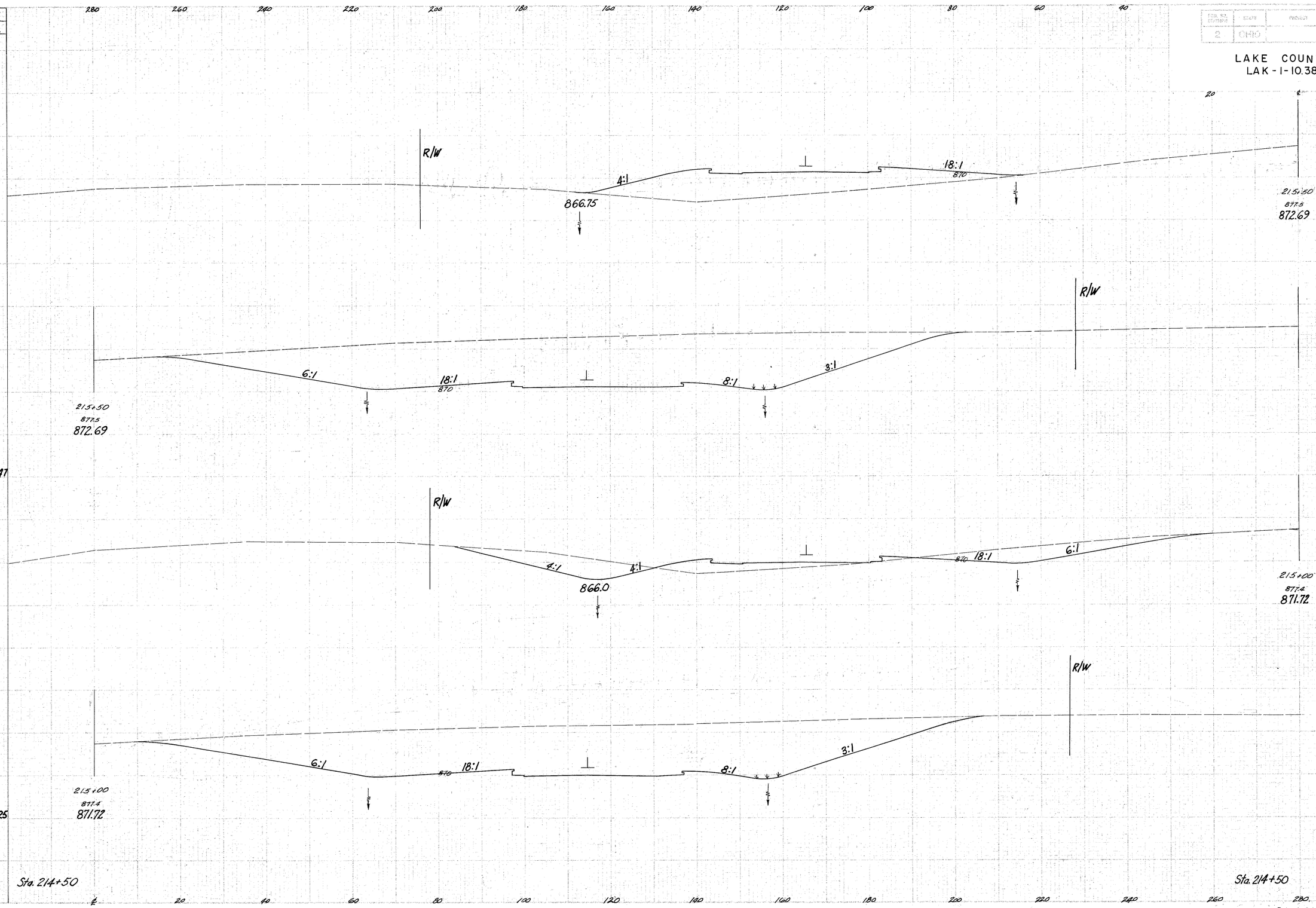
306

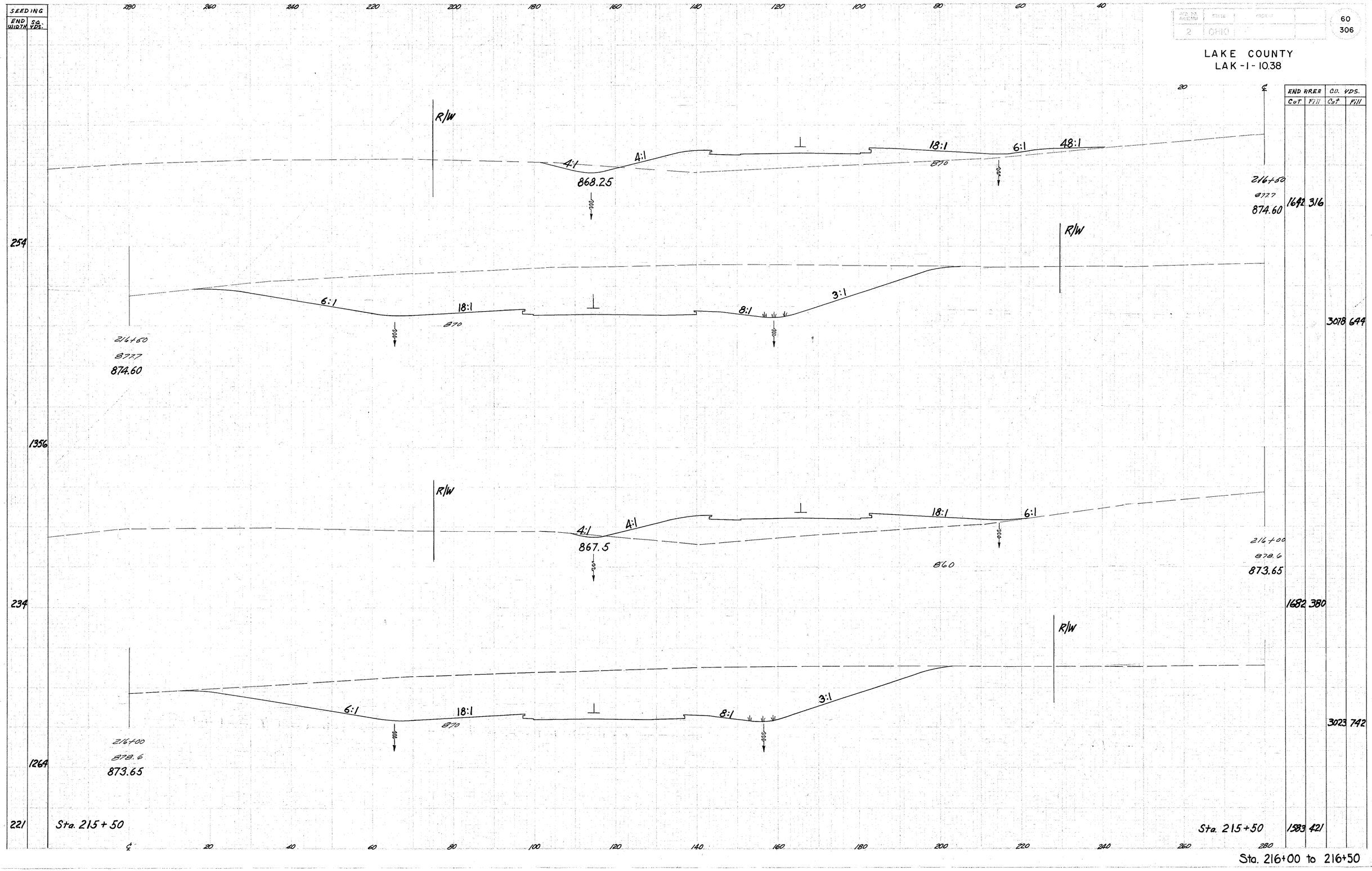
LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
221	
1447	
300	
1625	
285	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1583	421		
		3206	463
1880	79		
		3396	186
1788	122		

Sta. 215+00 to 215+50

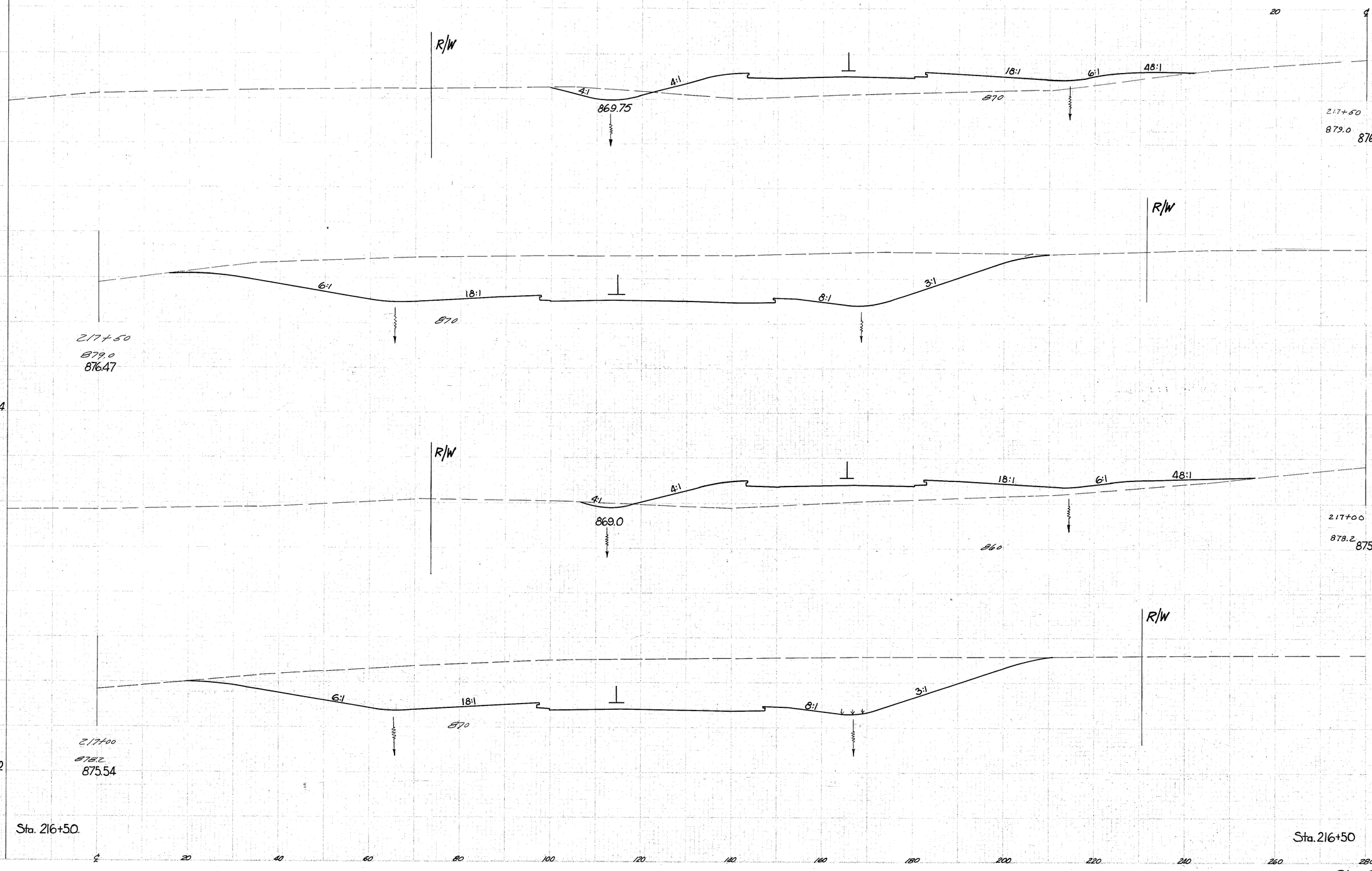


LAKE COUNTY
LAK-1-10.38

Sta. 216+00 to 216+50

LAKE COUNTY
LAK-1-10.38

SEEDING				END AREA		CU. YDS.	
	END WIDTH	SQ. YDS.		Cut	Fill	Cut	Fill
255				1534	351		
						2904	669
1444							
265				1602	372		
						3004	637
1442							
254	Sta. 216+50		Sta. 216+50	1642	316		



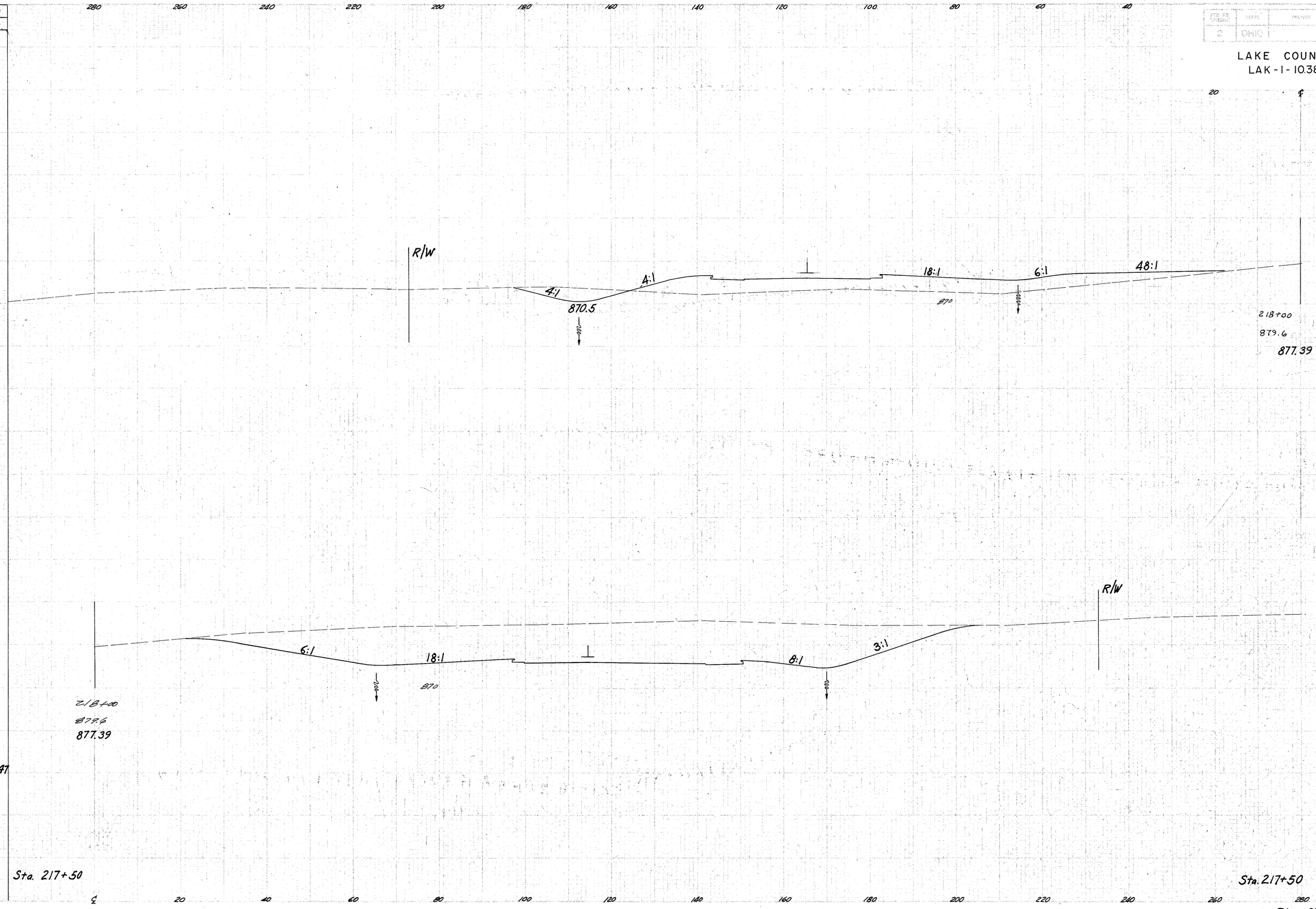
Sta. 216+50 to 217+50

STATE	PROJECT
OHIO	

62
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
266	
1447	
255	



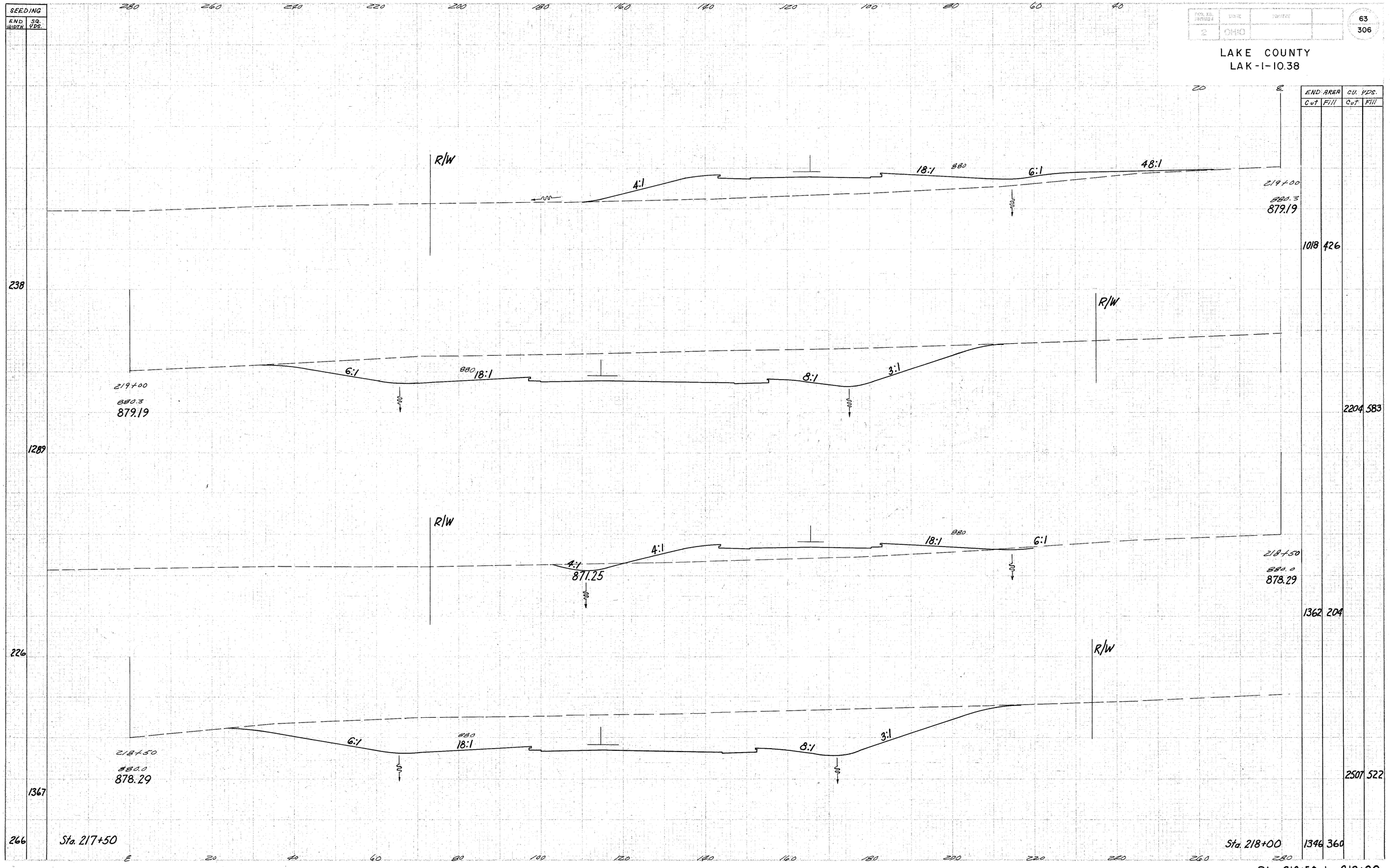
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1346	360		
		2667	658
1534	351		

Sta. 218+00

FED. RD. DIVISION	STATE	FOLDER	
2	OHIO		

63
306

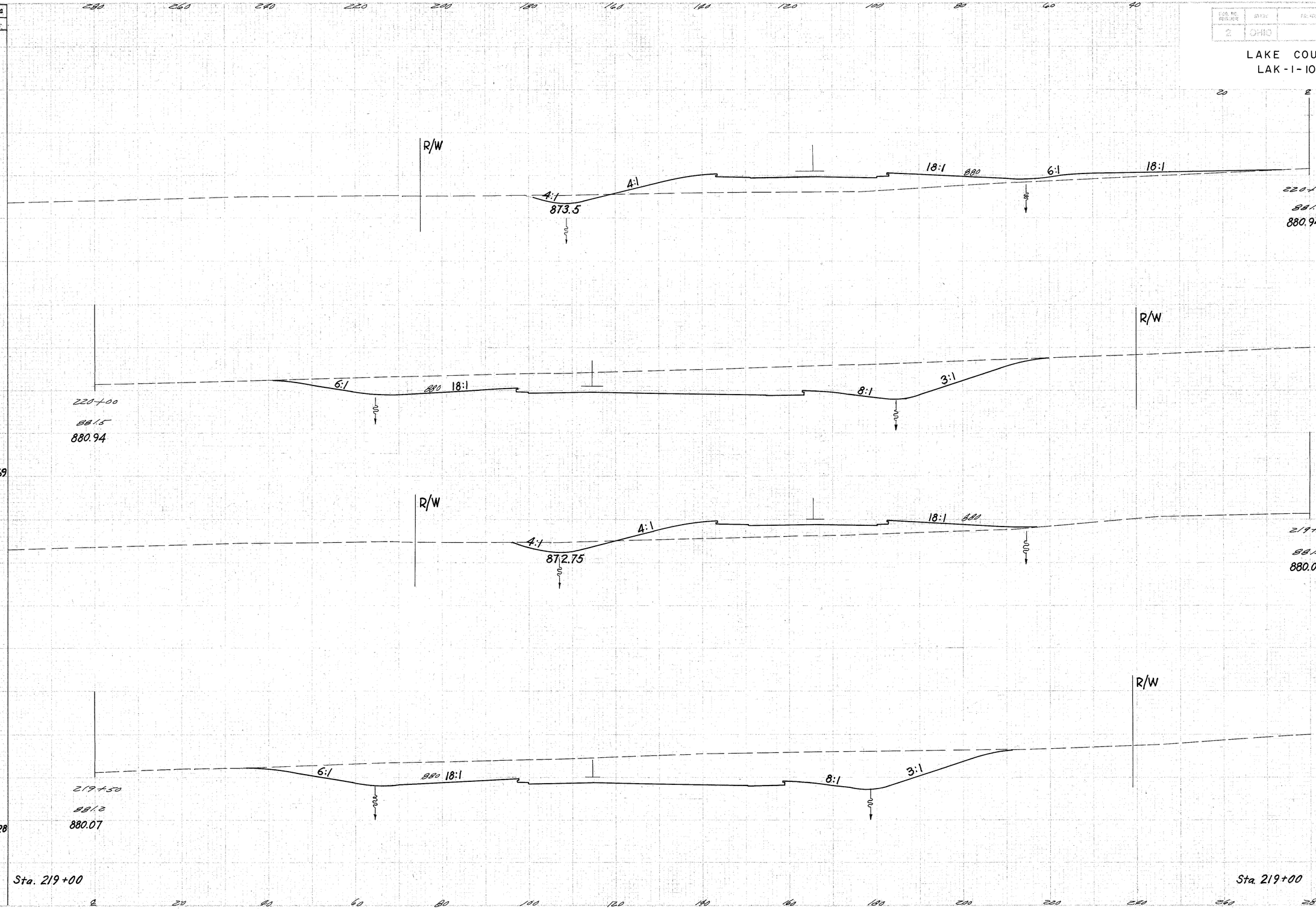
LAKE COUNTY
LAK-1-10.38



Sta. 218+50 to 219+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LAKE COUNTY
LAK-1-10.38



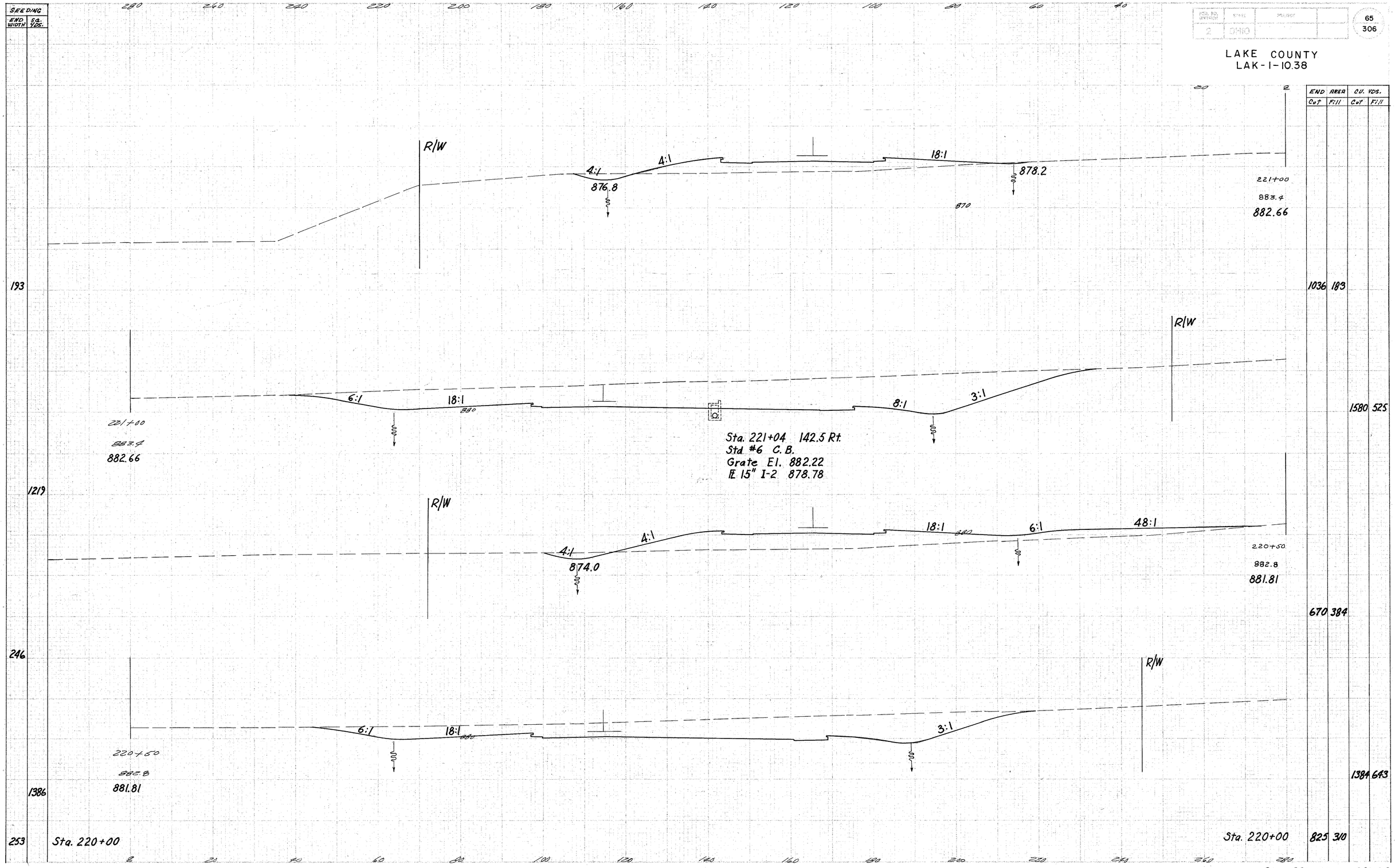
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
825	310		
		1622	480
927	208		
		1801	587
1018	426		

Sta. 219+50 to 220+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

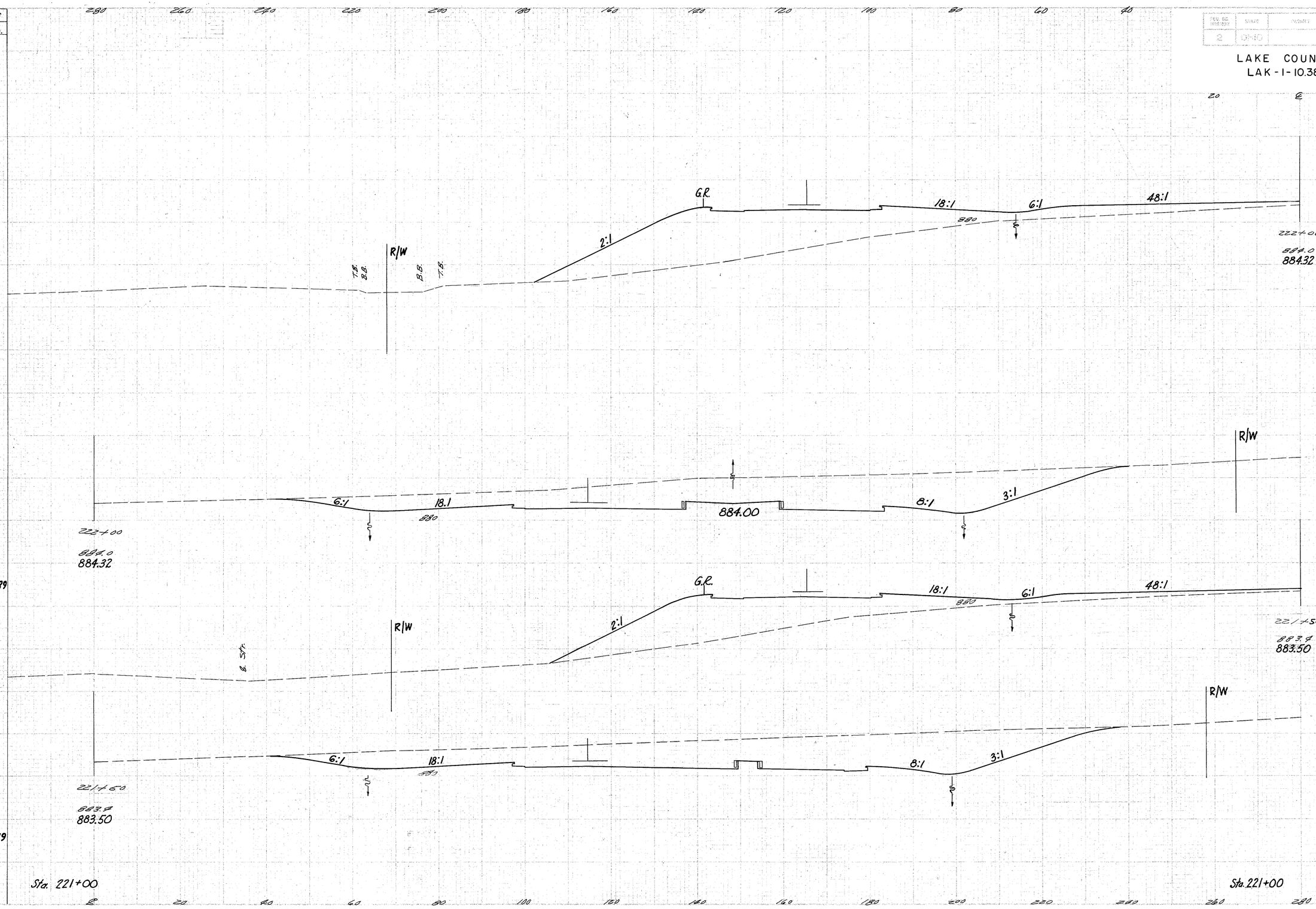
65
306

LAKE COUNTY
LAK-1-10.38



Sta. 220+50 to 221+00

SEEDING	
END WIDTH	SQ. YDS.
290	
1589	
282	
1319	
193	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1016	934		
		1892	1485
1027	670		
		1910	790
1036	183		

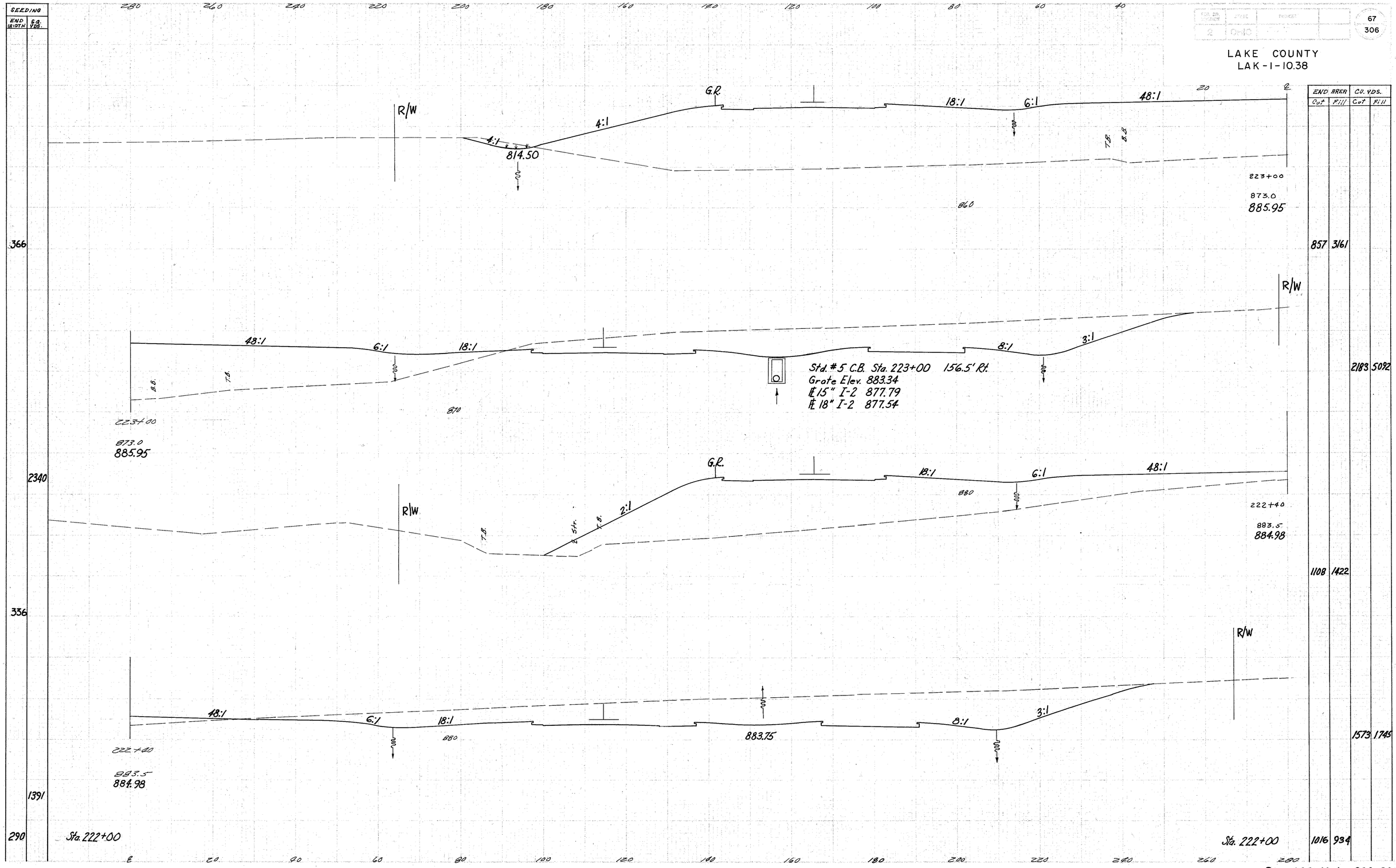
REV. BY INITIALS	STATE	PROJECT	
2	OHIO		

66
306

LAKE COUNTY
LAK-1-10.38

Sta. 221+50 to 222+00

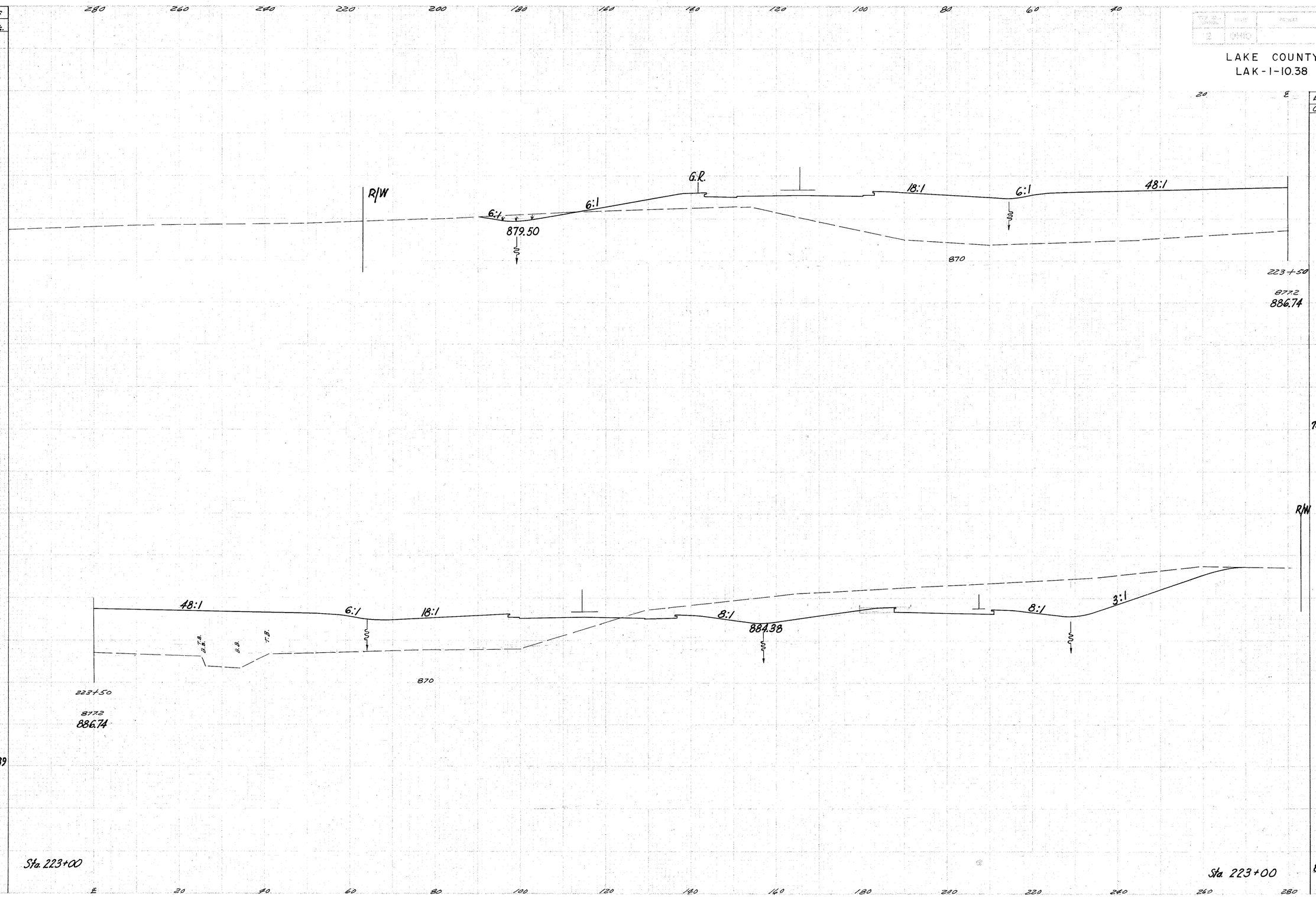
LAKE COUNTY
LAK-1-10.38



Sta. 222+40 to 223+00

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
368	
2039	
366	

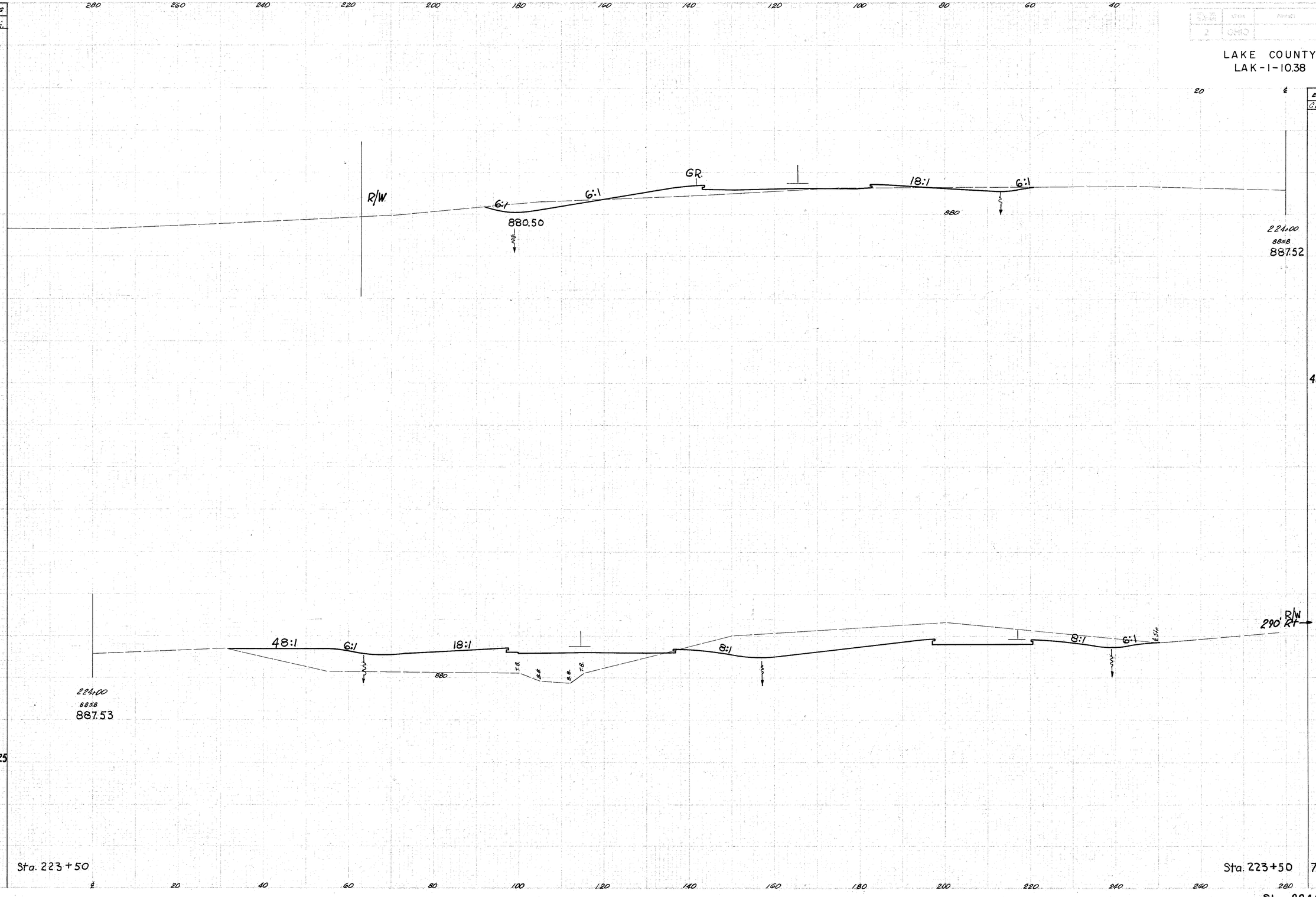


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
744	2362		
1482	5114		
857	3161		

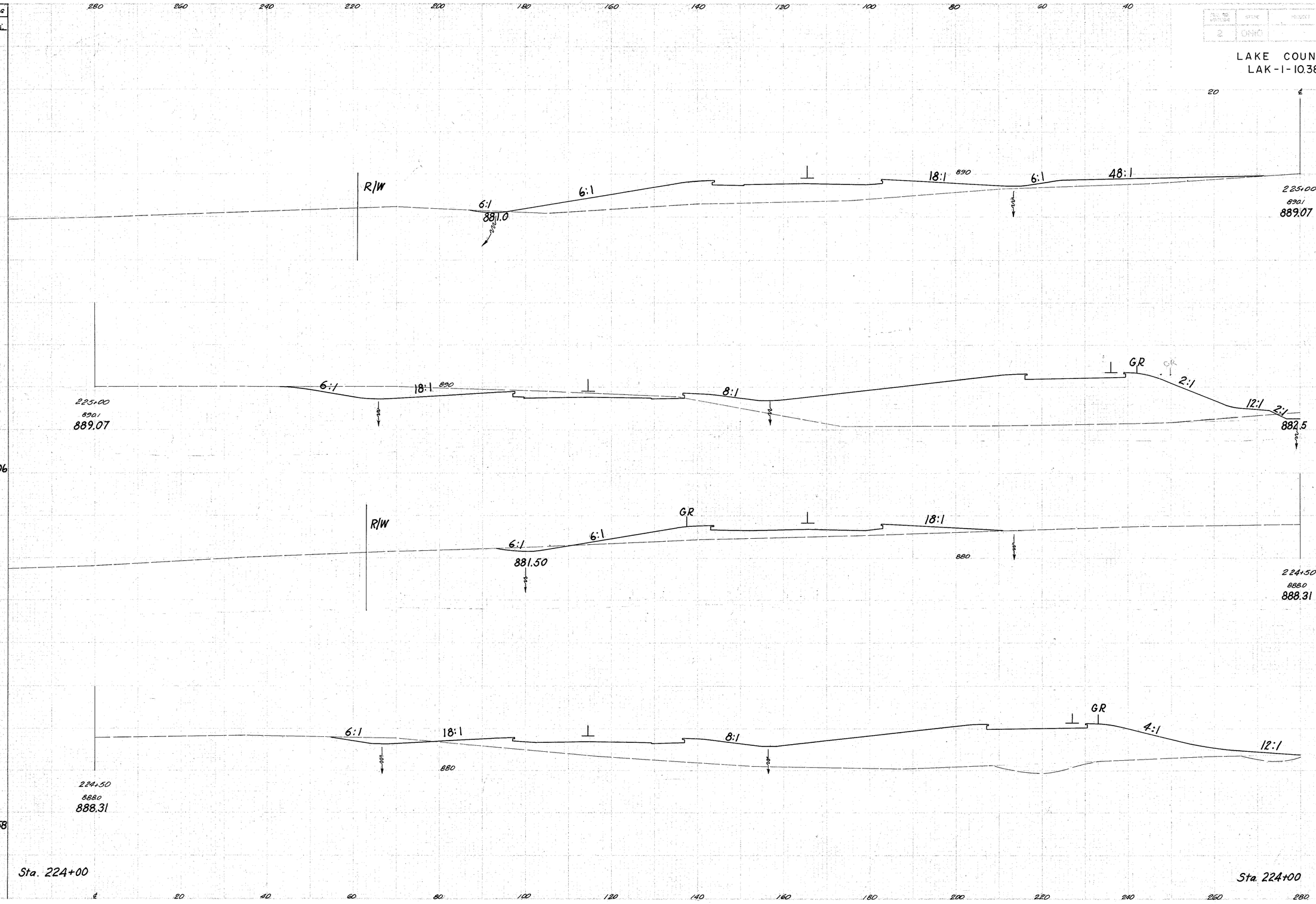
LAKE COUNTY
LAK-1-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.
253	
1725	
368	

END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
452	494		
1107	2644		
744	2362		



SEEDING	
END WIDTH	SQ. YDS.
342	
1706	
272	
1458	
253	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
124	1461		
		161	2508
50	1248		
		465	1613
452	494		

	STATE	PROJECT	
2	OHIO		

70
306

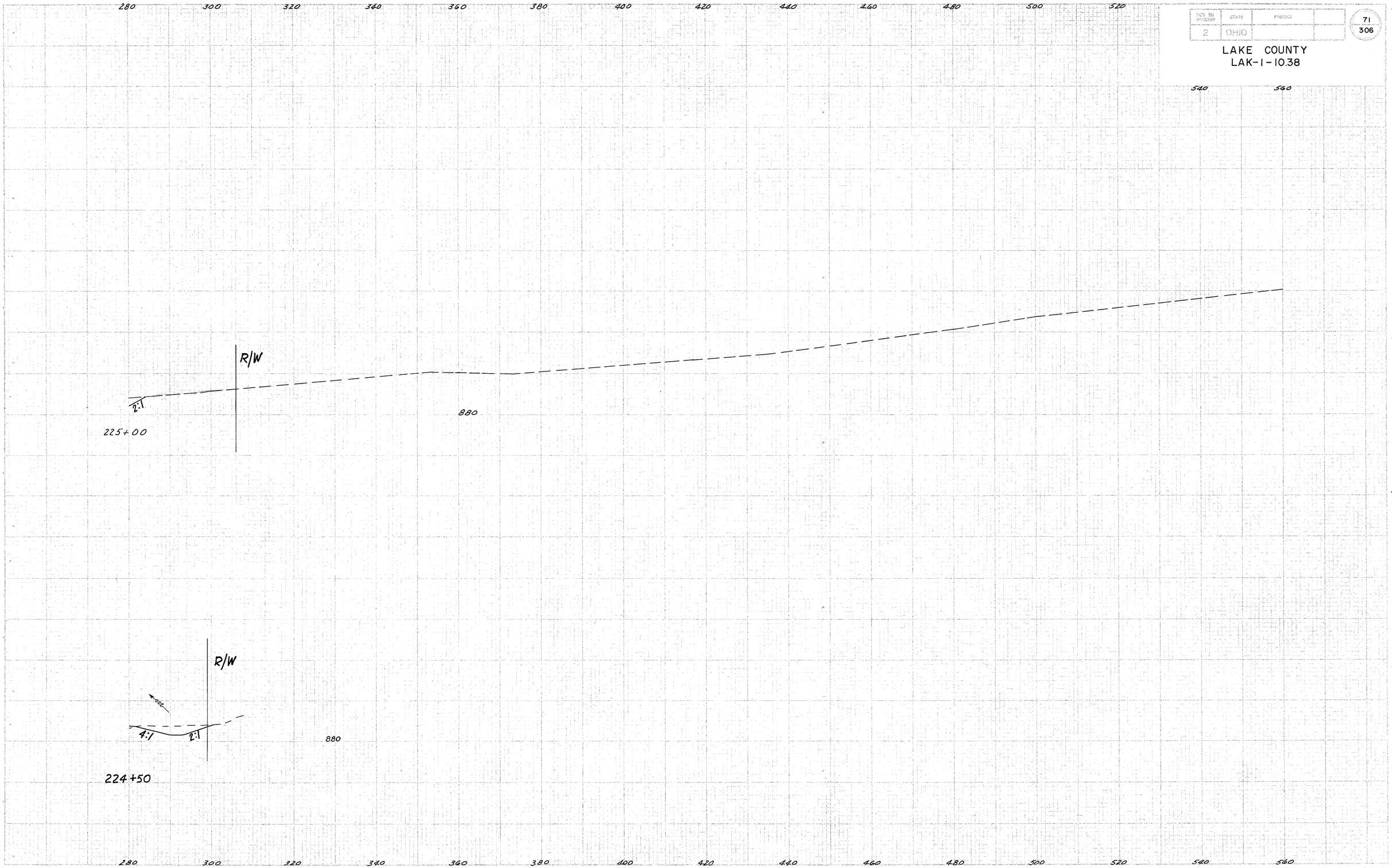
LAKE COUNTY
LAK-1-10.38

Sta. 224+50 to 225+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

71
306

LAKE COUNTY
LAK-I-10.38



Extended X Sections Sta. 224+50 to 225+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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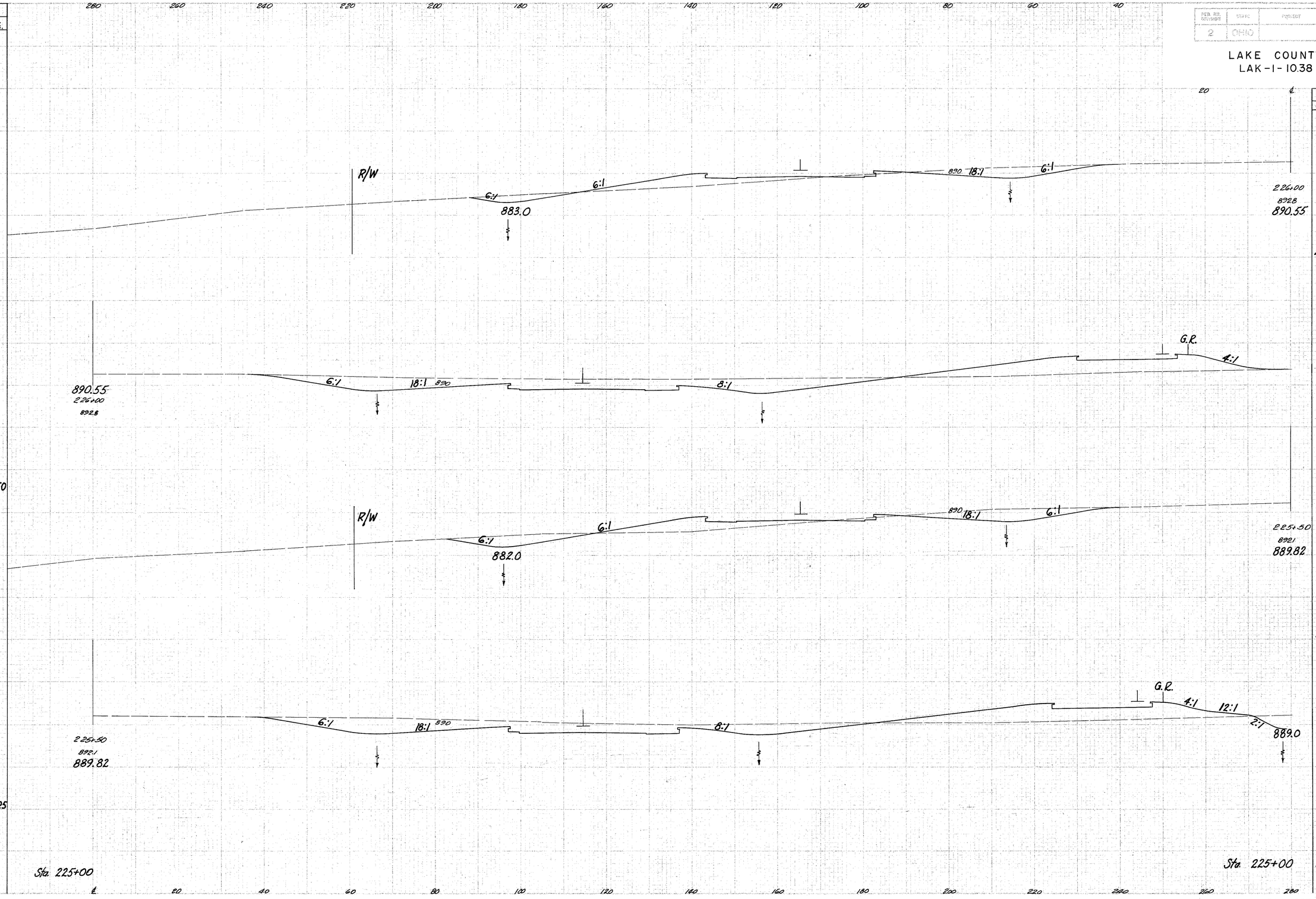
306

LAKE COUNTY
LAK-1-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.
315	
1750	
315	
1825	
342	



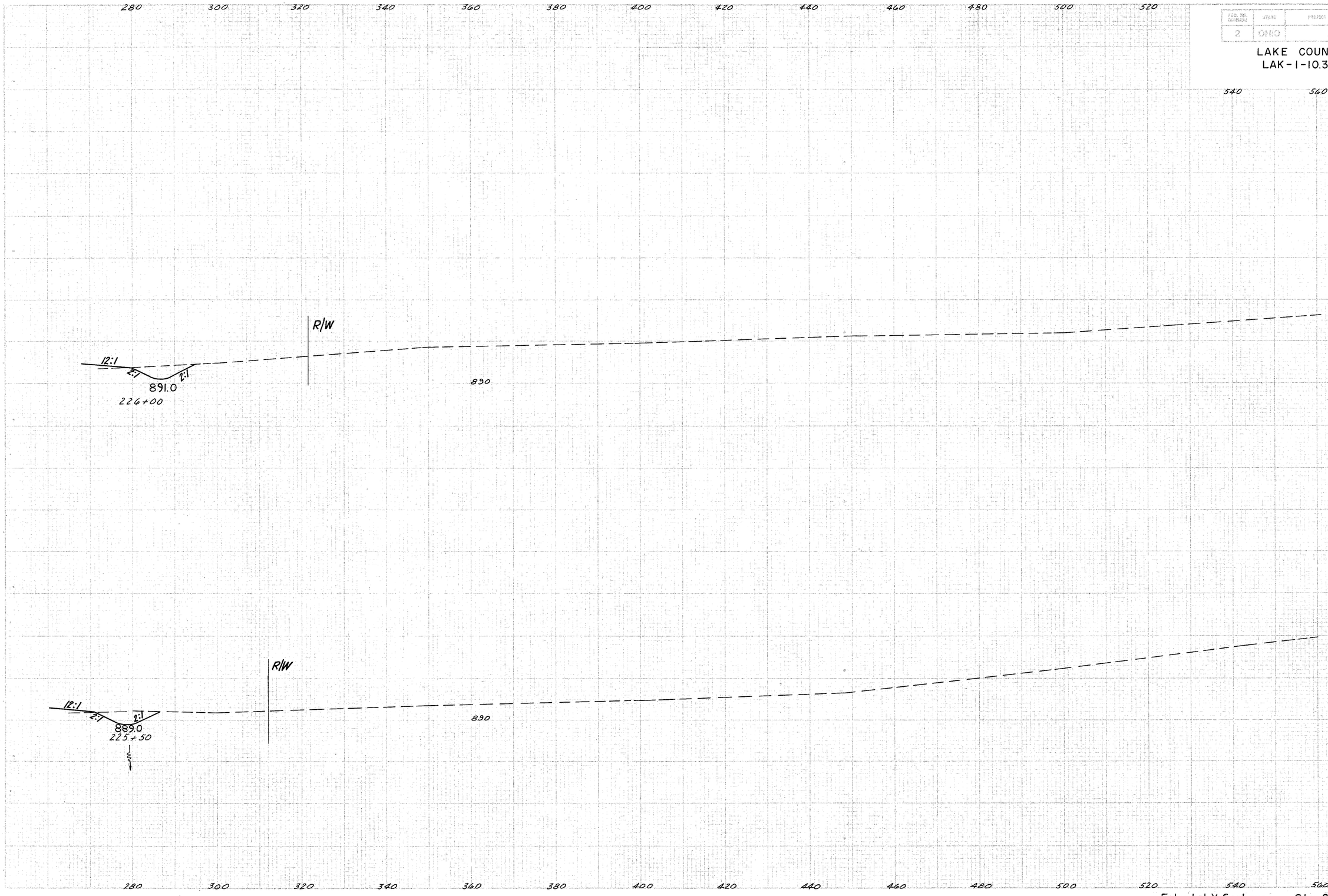
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
432	295		
		849	544
485	293		
		564	1624
124	1461		

Sta. 225+50 to 226+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

73
306

LAKE COUNTY
LAK-1-10.38

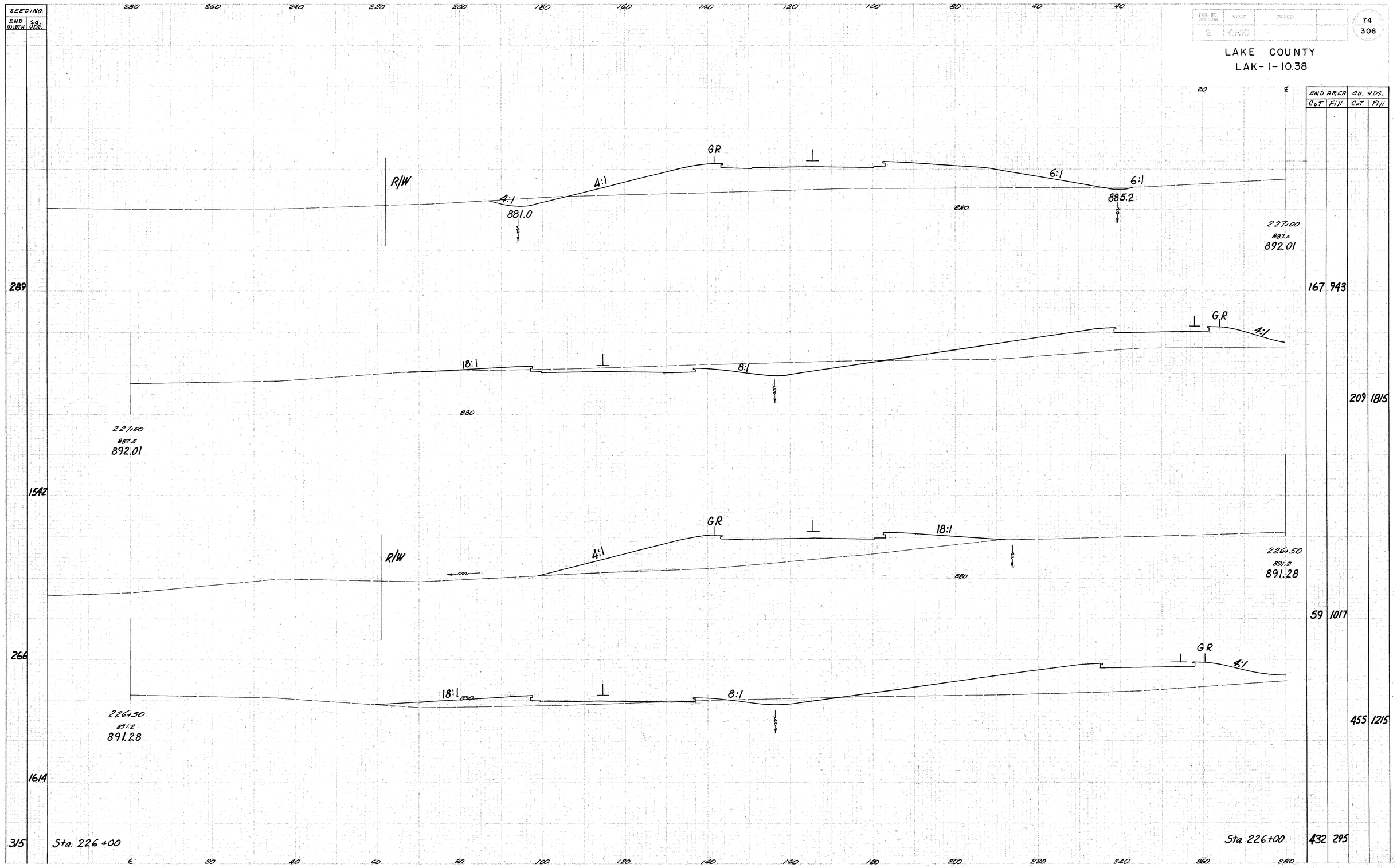


Extended X Sections Sta. 225+50 to 226+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

74
306

LAKE COUNTY
LAK-1-10.38

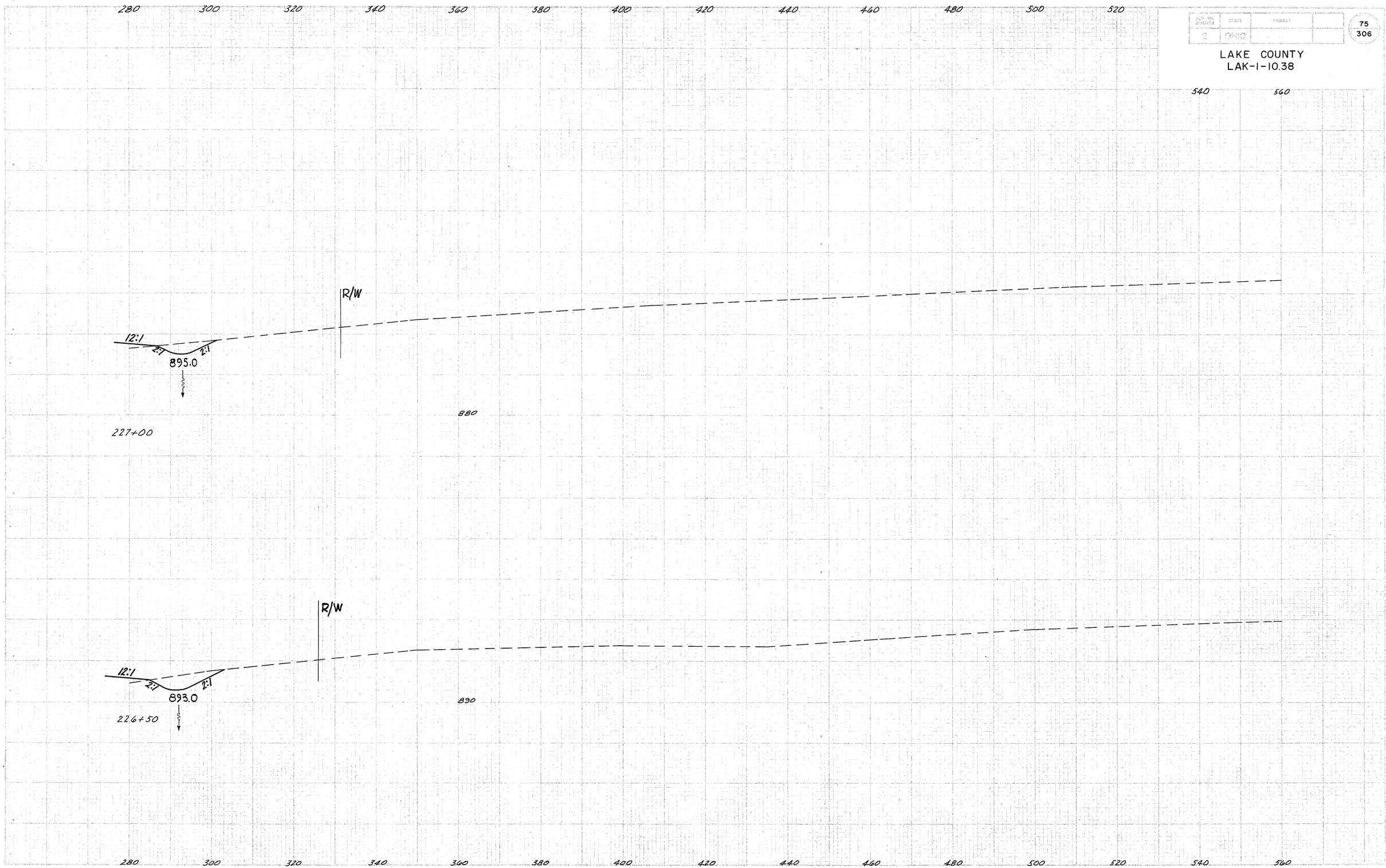


Sta. 226+50 to 227+00

CITY NO. DIVISION	STATE	PROJECT	
2	OHIO		

75
306

LAKE COUNTY
LAK-I-10.38

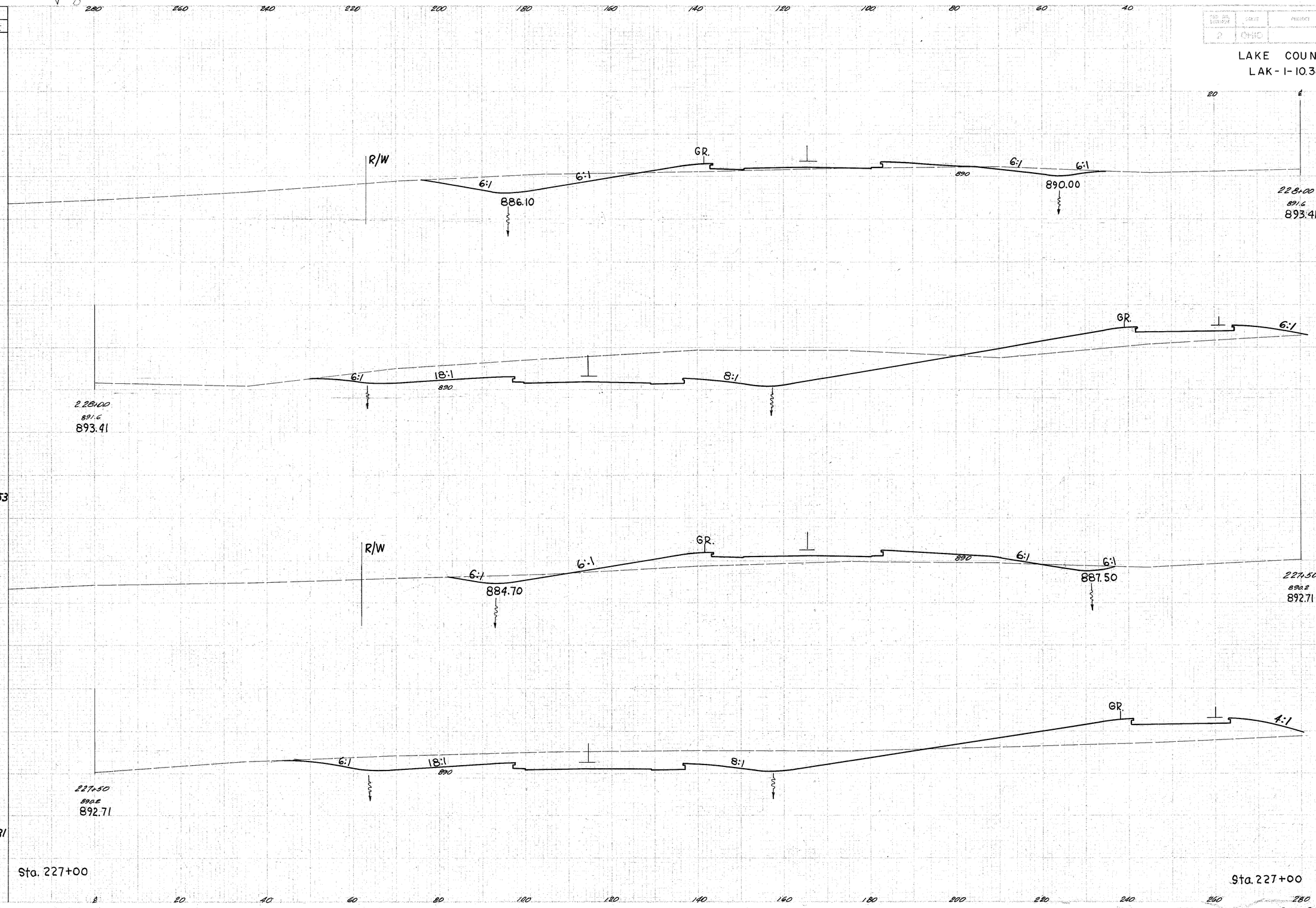


Extended X Sections Sta. 226+50 to 227+00

8-A

V-8

SEEDING	
END WIDTH	SQ. YDS.
315	
1753	
316	
1681	
289	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
890	248		
		1298	682
512	489		
		629	1326
167	943		

DIST. NO.	STATE	PROJECT	
2	OHIO		

76
306

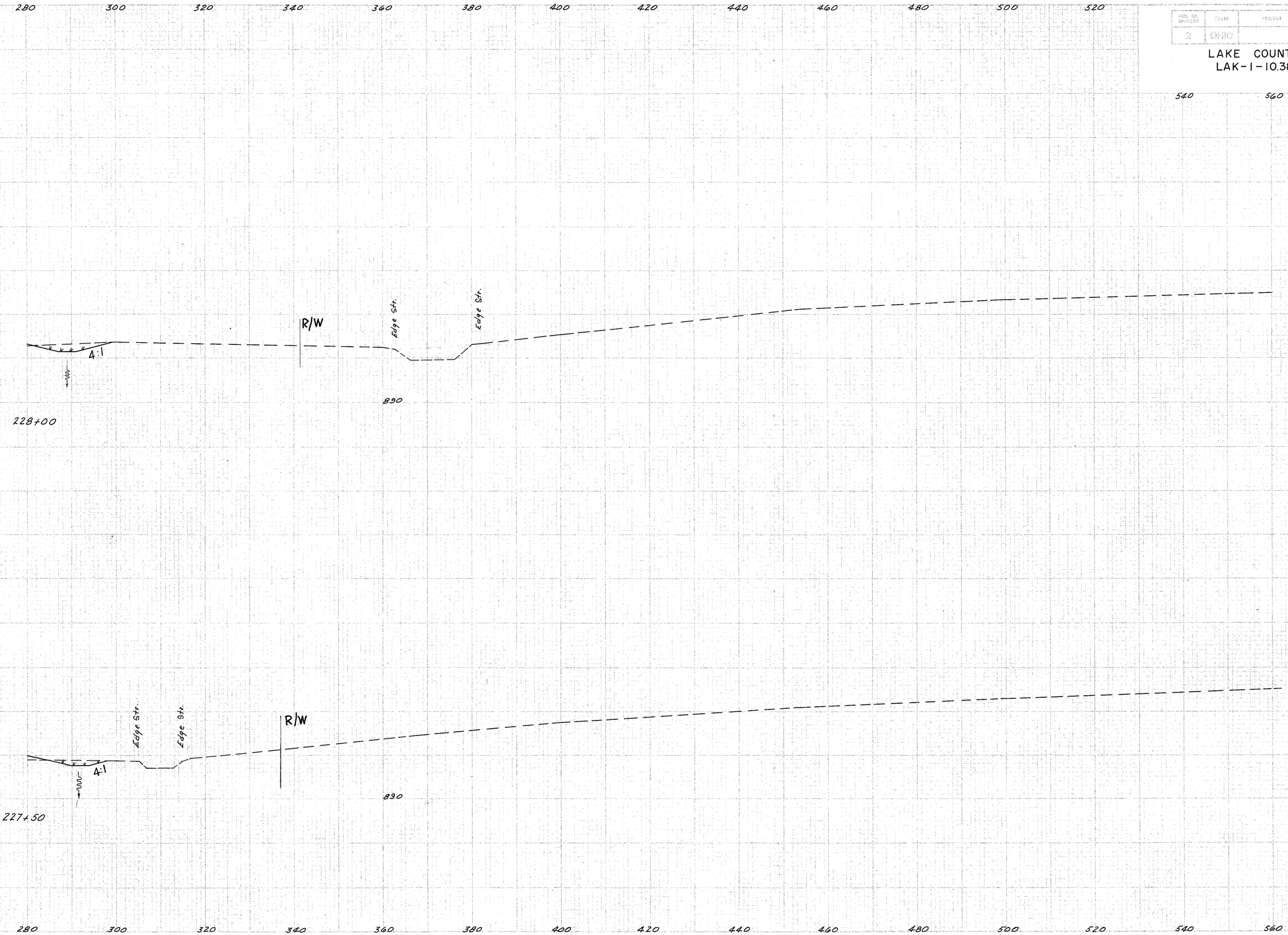
LAKE COUNTY
LAK-I-10.38

Sta. 227+50 to 228+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

77
306

LAKE COUNTY
LAK-I-10.38



Extended X-Sections Sta. 227+50 to 228+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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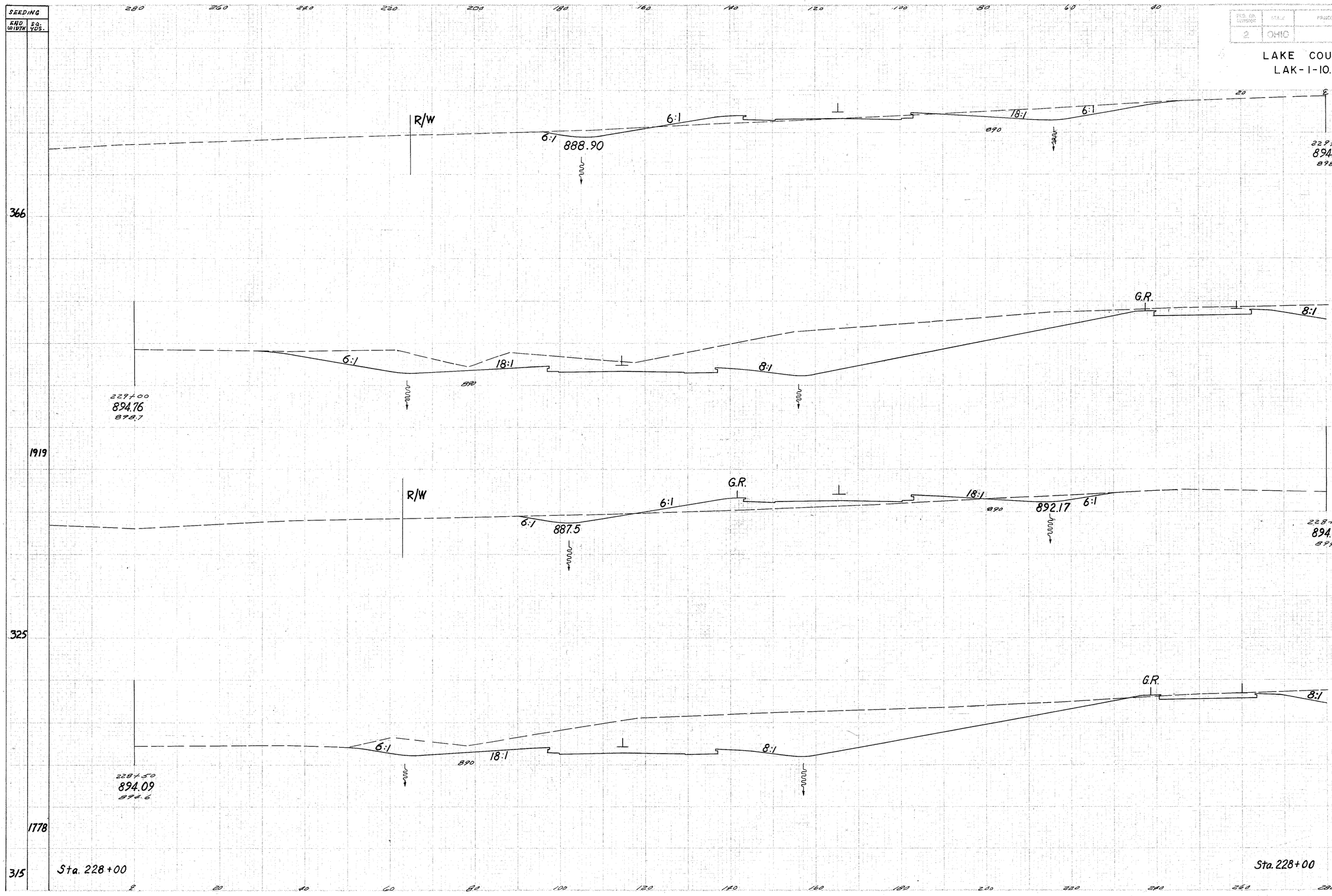
306

LAKE COUNTY
LAK-1-10.38



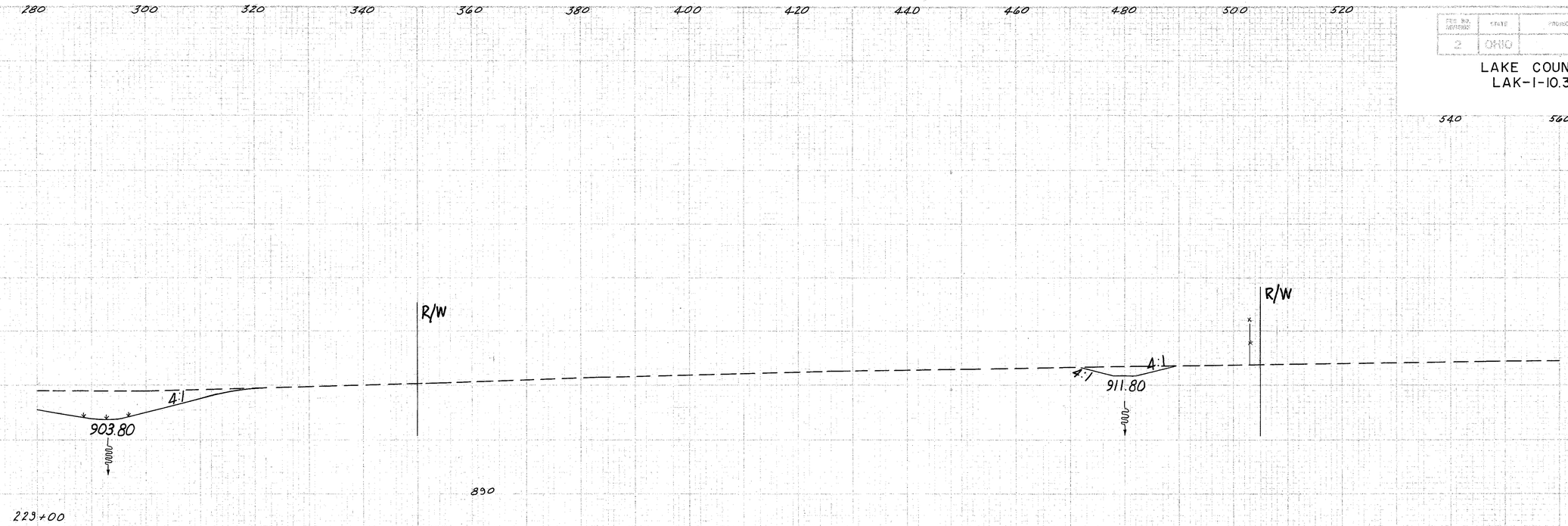
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1277	32		
		2318	121
1226	99		
		1959	321
890	248		

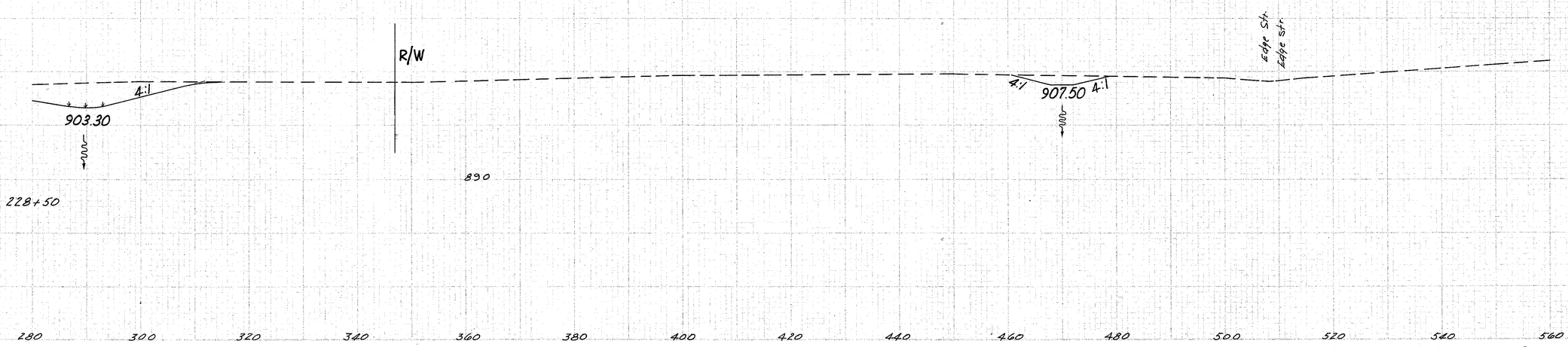
Sta. 228+50 to 229+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

79
306

LAKE COUNTY
LAK-I-10.38



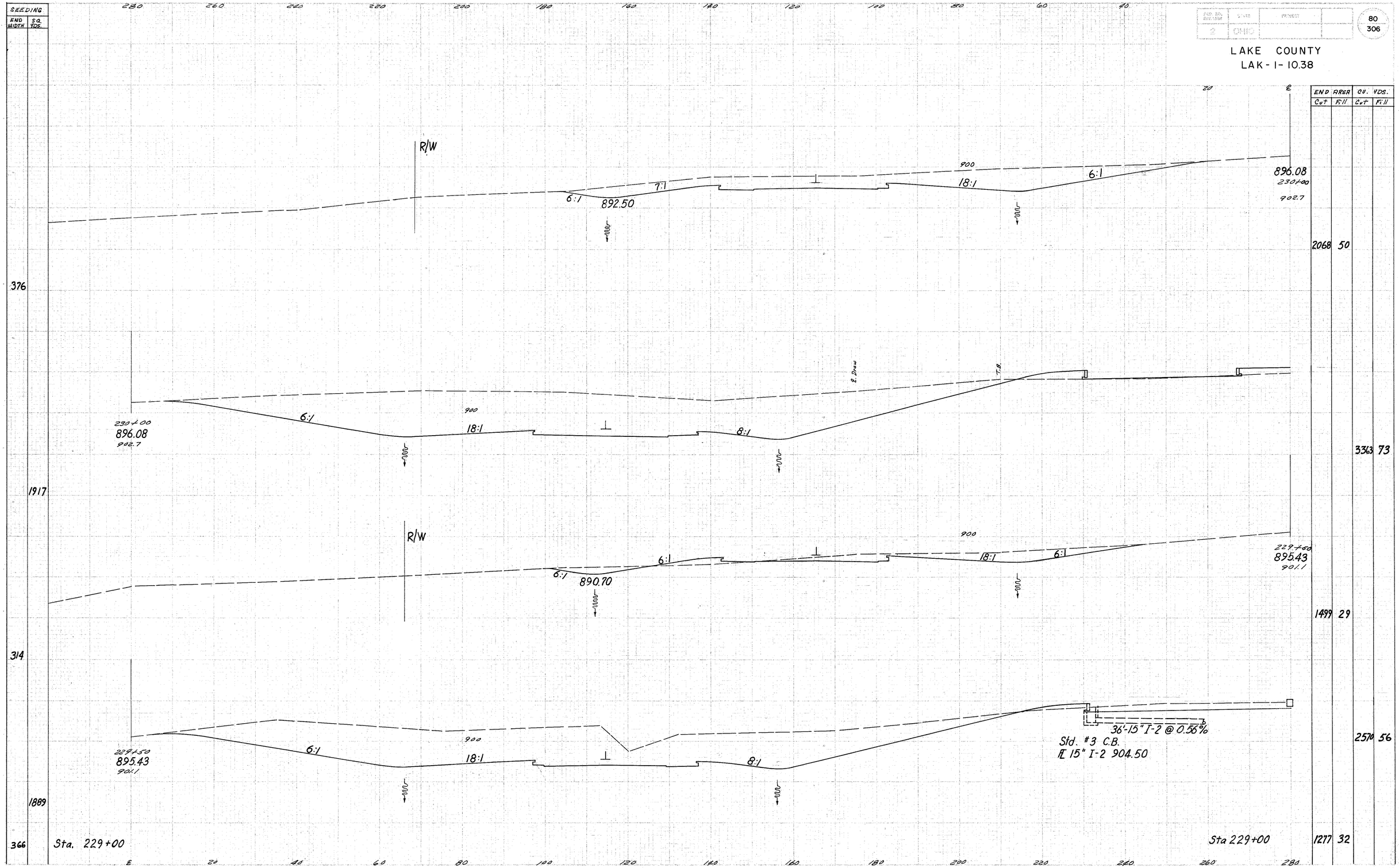


Extended X- Sections Sta. 228+50 to 229+00

FED. RD. DIV. NO.	STATE	PROJECT		
2	OHIO			

80
306

LAKE COUNTY
LAK-I-10.38



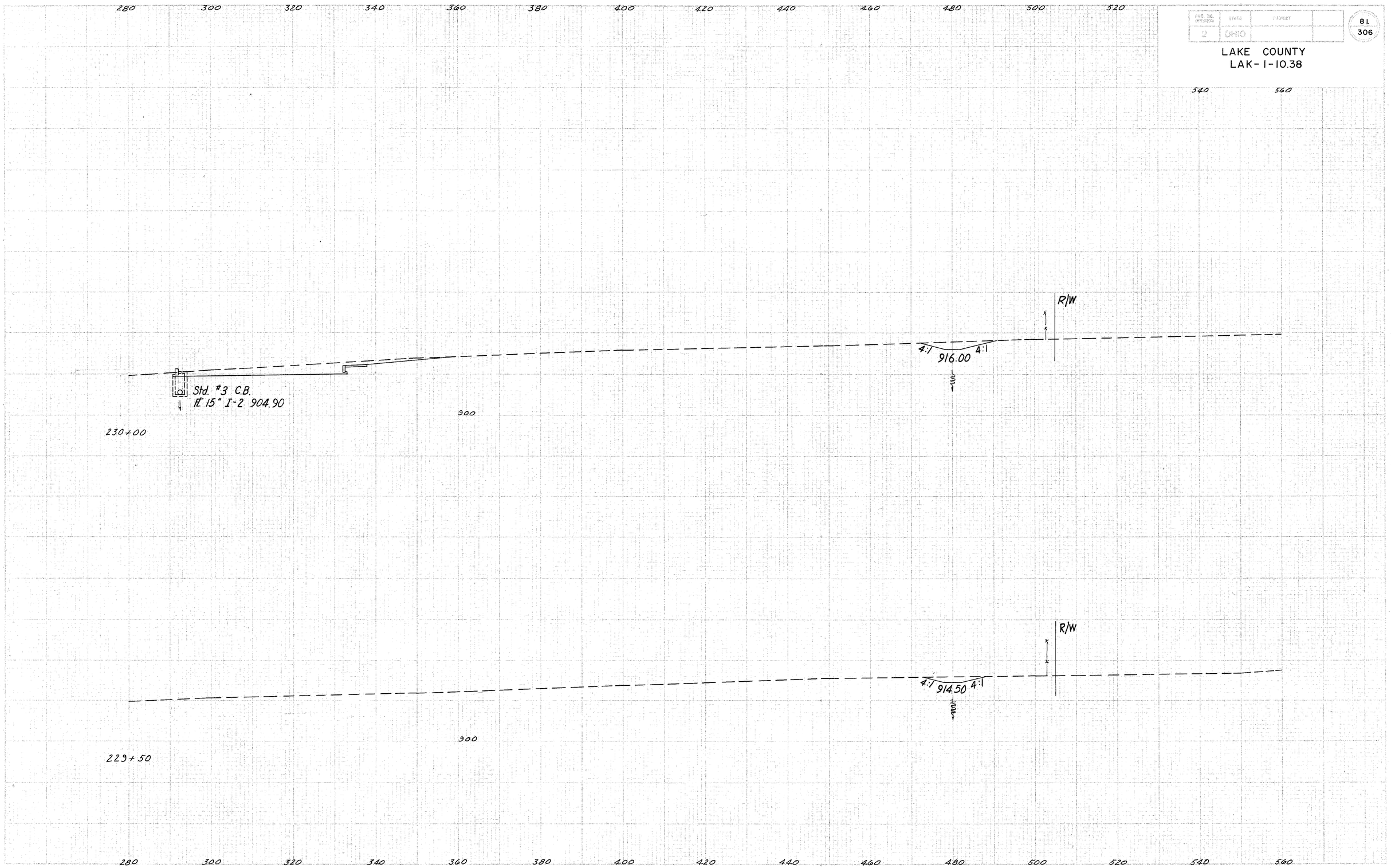
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
2068	50		
		3363	73
1499	29		
		2570	56
1277	32		

Sta. 229+50 to 230+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

81
306

LAKE COUNTY
LAK-I-10.38



Extended X-Sections Sta. 229+50 to 230+00

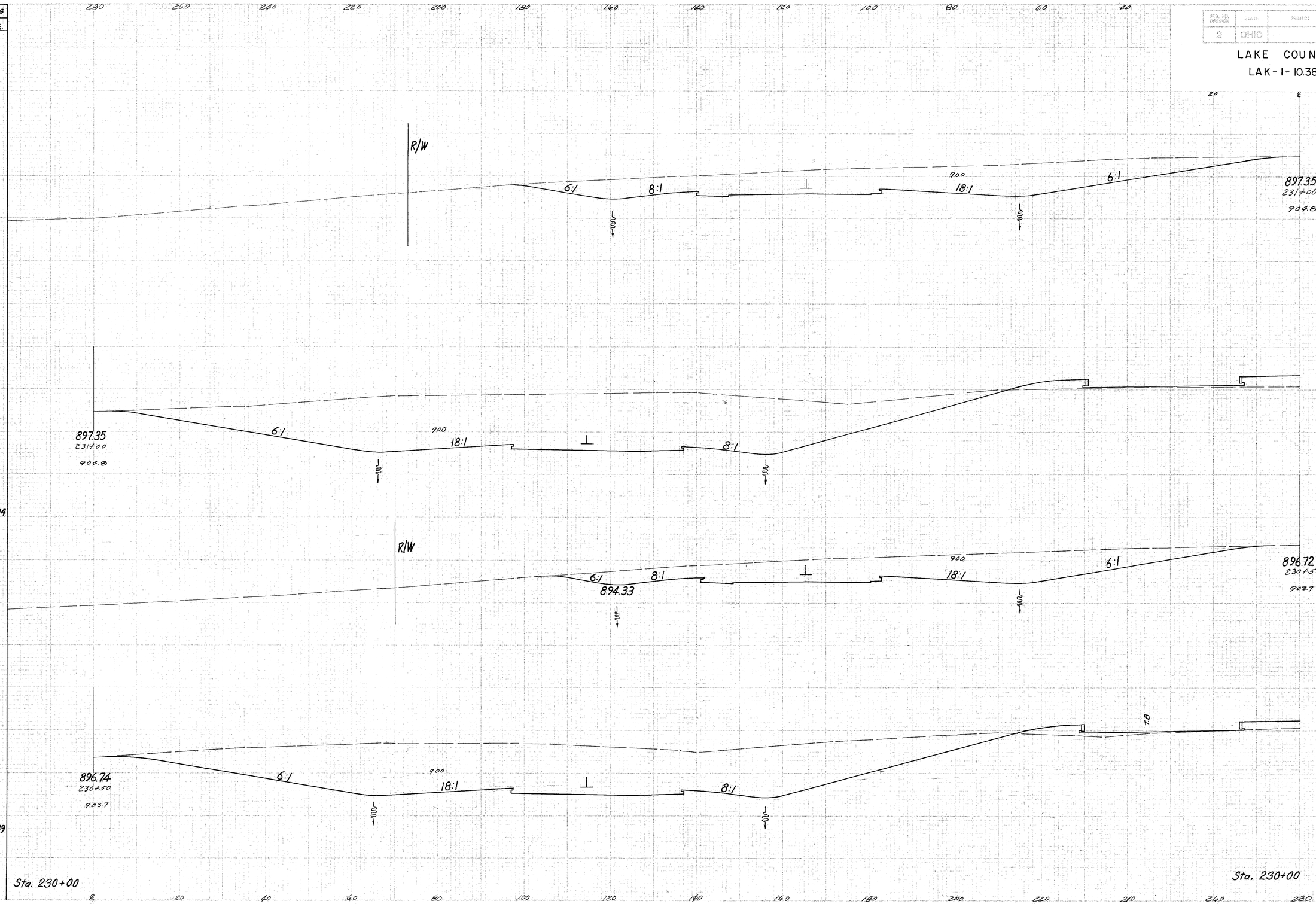
REG. NO. DIVISION	STATE	PROJECT	
2	OHIO		

82
306

LAKE COUNTY

LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
414	
2194	
376	
2089	
376	



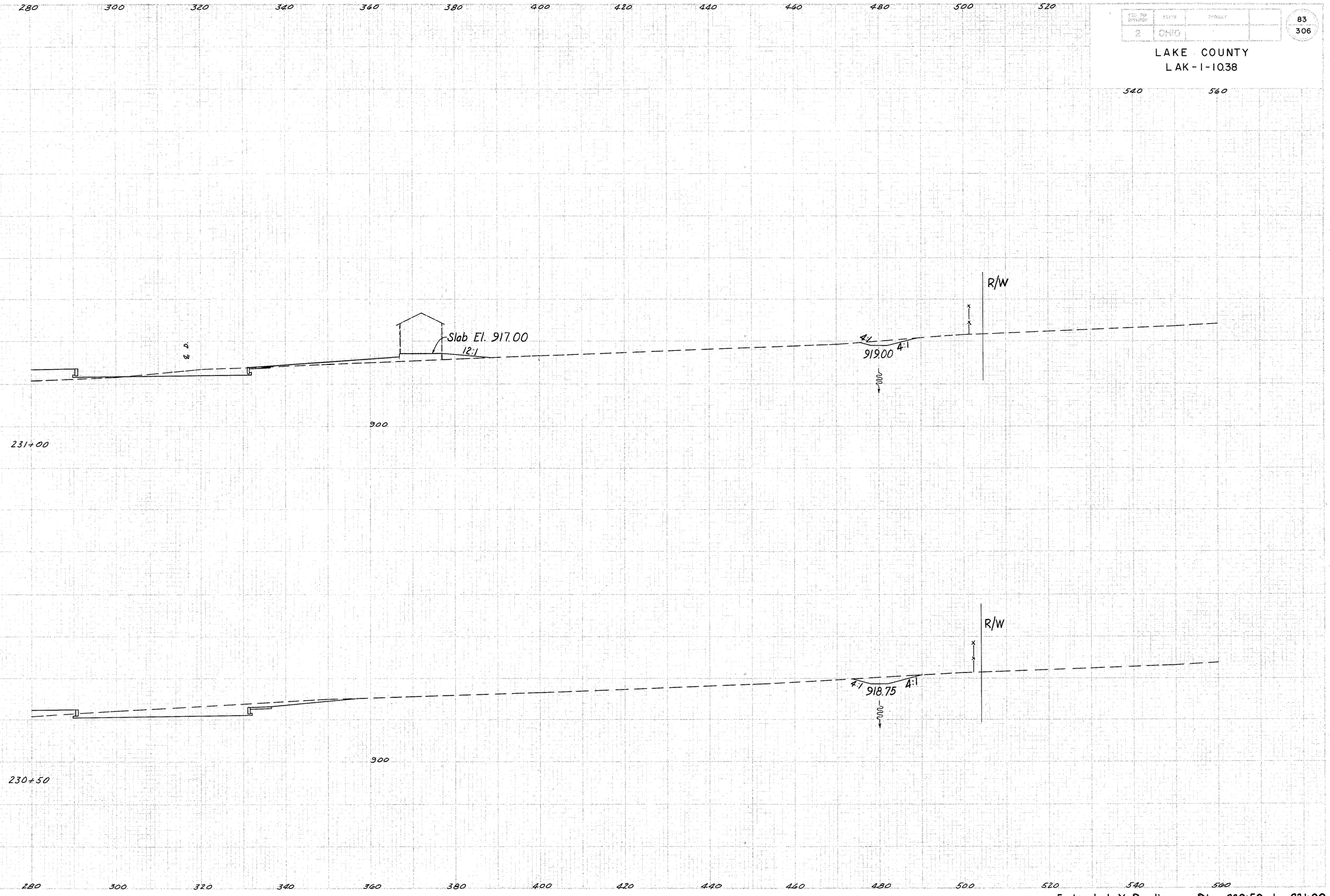
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2722	106		
		4848	168
2514	75		
		4243	116
2068	50		

Sta. 230+50 to 231+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

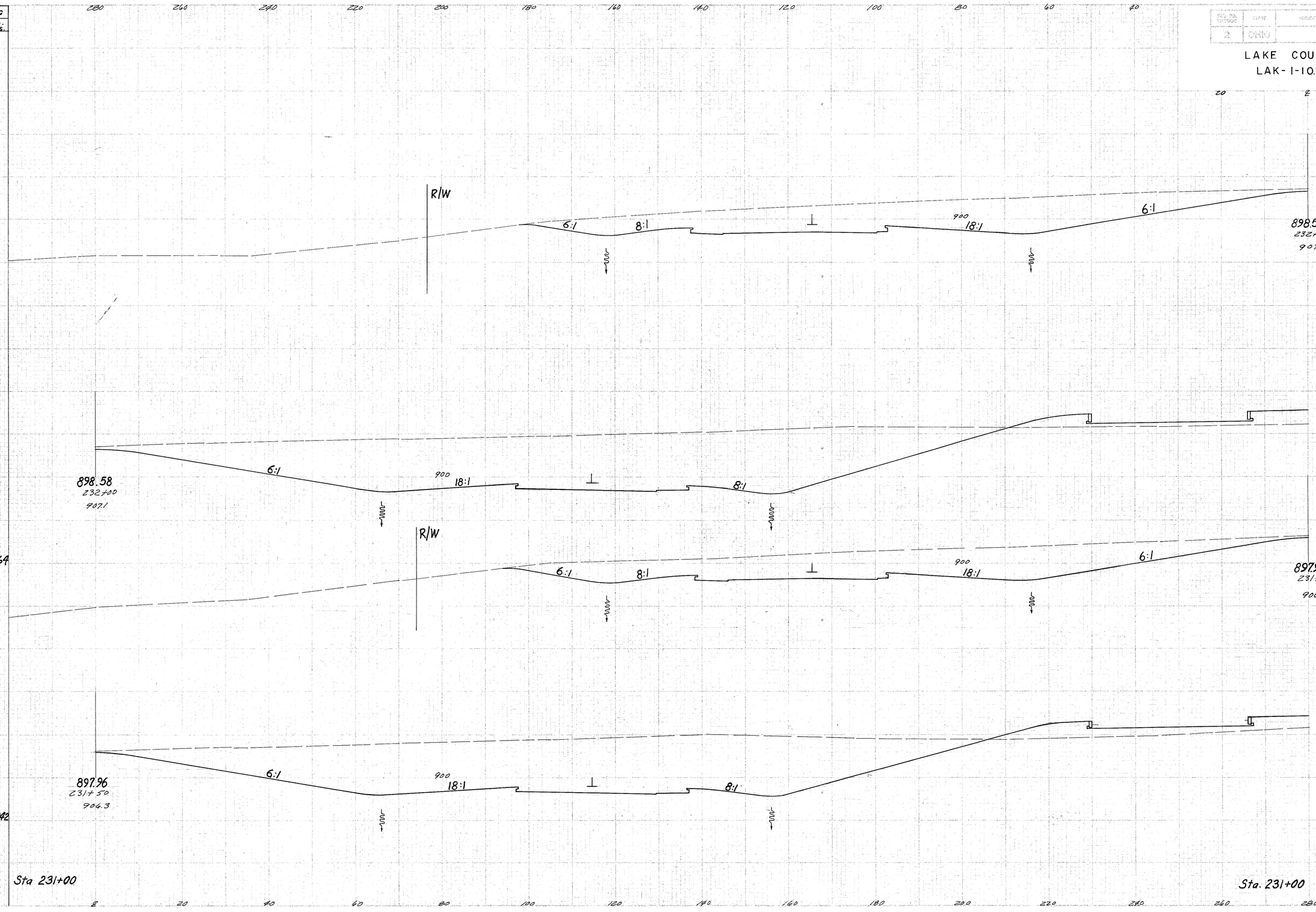
83
306

LAKE COUNTY
LAK-I-10.38



Extended X-Sections Sta. 230+50 to 231+00

SEEDING	
END WIDTH	SQ. YDS.
386	
2164	
393	
2242	
414	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2872	145		
		5213	324
2758	205		
		5074	205
2722	106		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

84
306

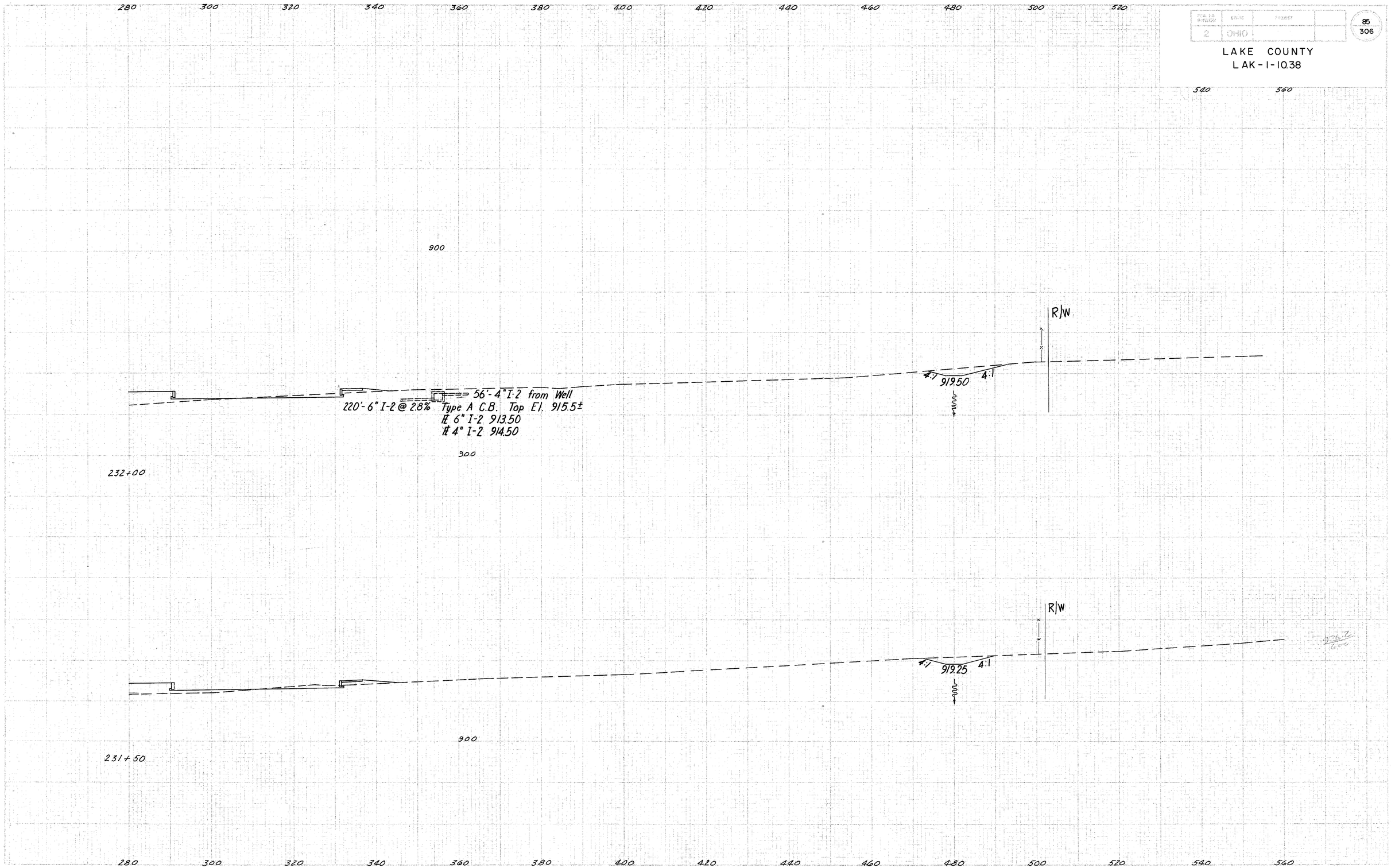
LAKE COUNTY
LAK-I-10.38

Sta. 231+50 to 232+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

85
306

LAKE COUNTY
LAK-1-10.38

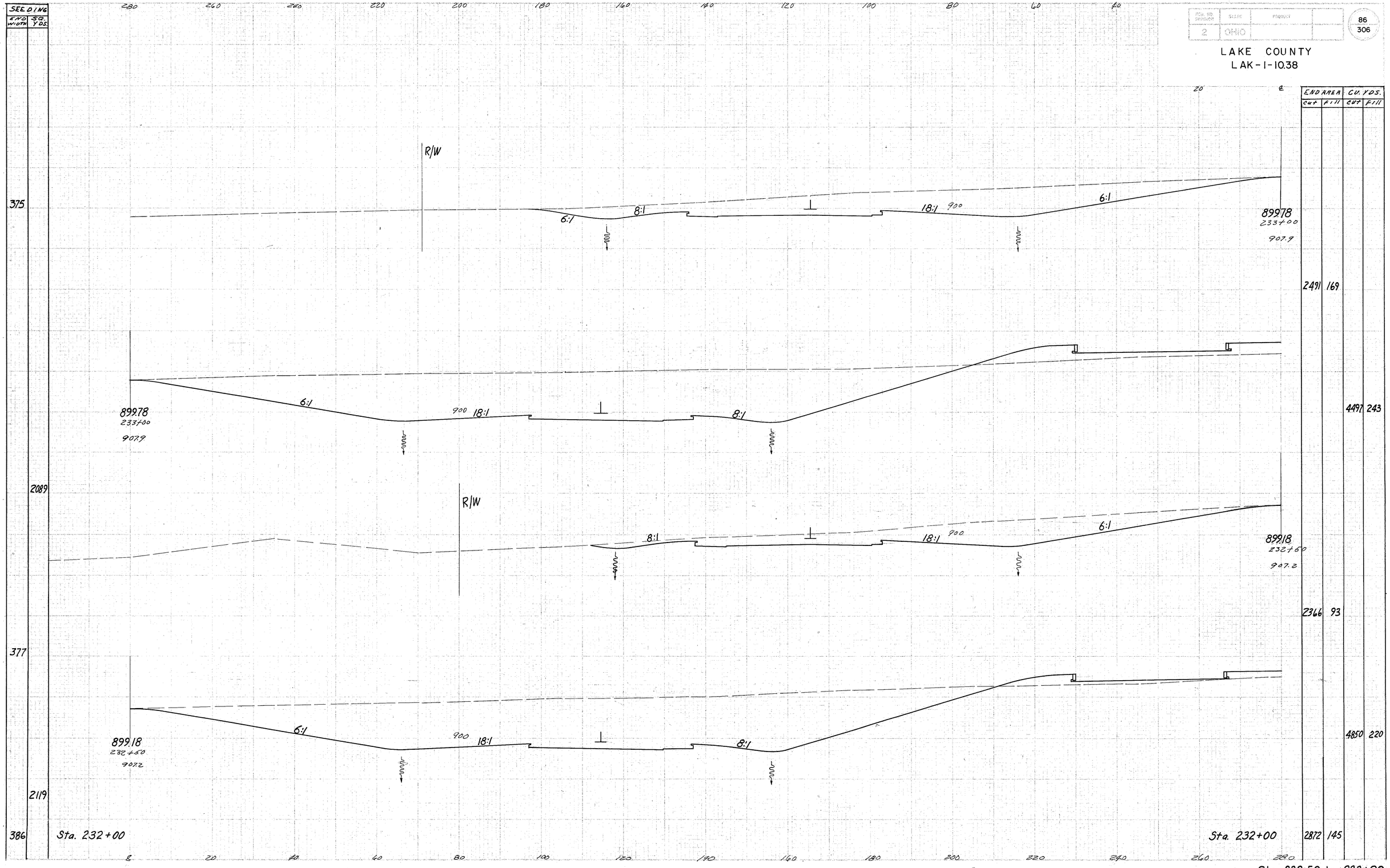


Extended X-Sections Sta. 231+50 to 232+00

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	
2	OHIO		

86
306

LAKE COUNTY
LAK-I-10.38

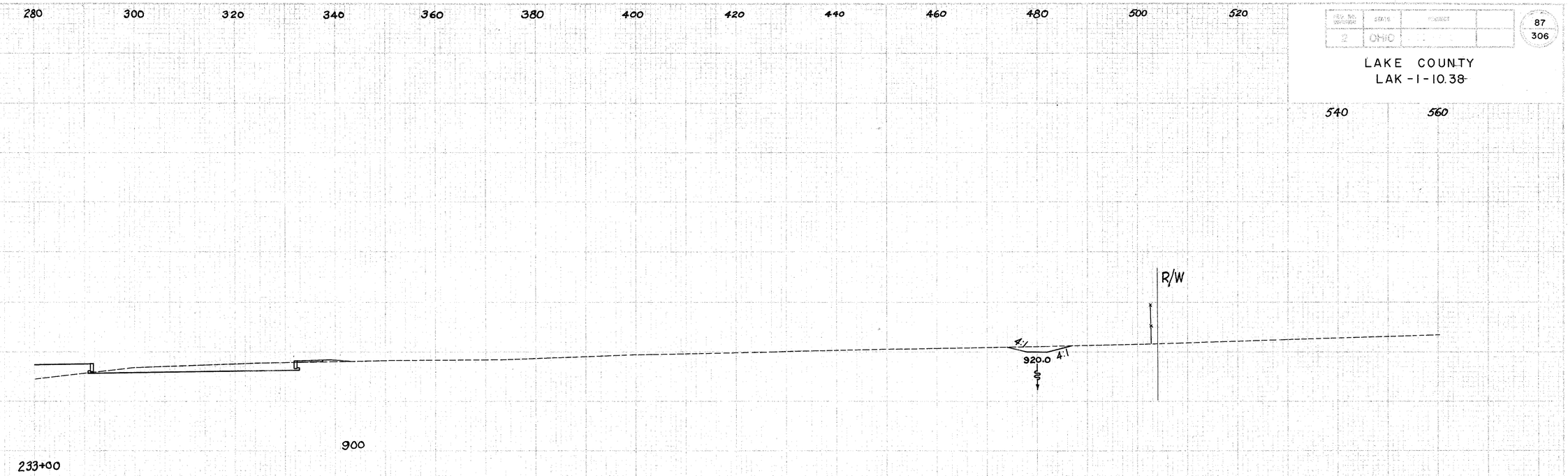


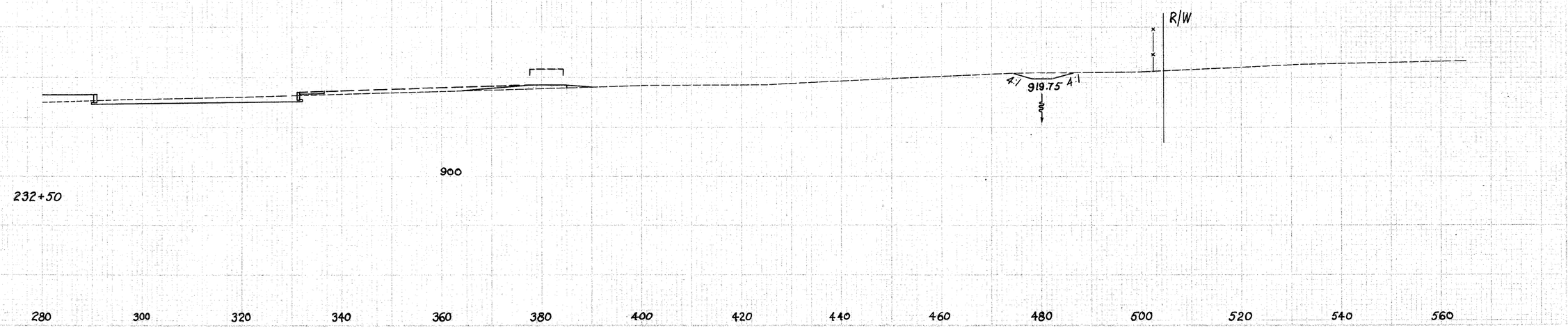
Sta. 232+50 to 233+00

REV. NO. DIVISION	STATE	PROJECT	
2	OHIO	-	

87
306

LAKE COUNTY
LAK-1-10.38



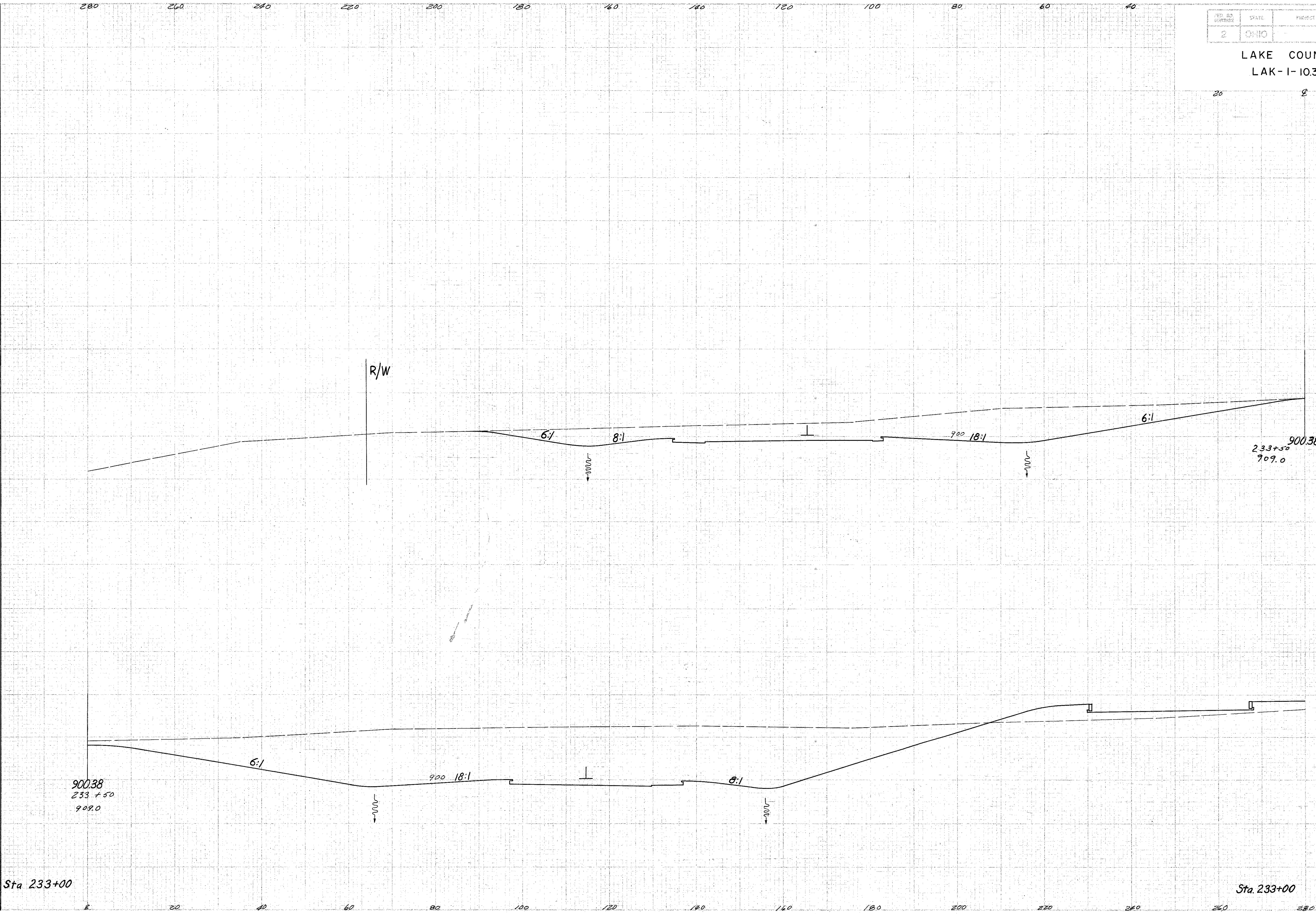


Extended X Sections Sta. 232+50 to 233+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			88 306

LAKE COUNTY

LAK-1-10.38



SEEDING	
END WIDTH	SQ. YDS.
395	
	2139
375	

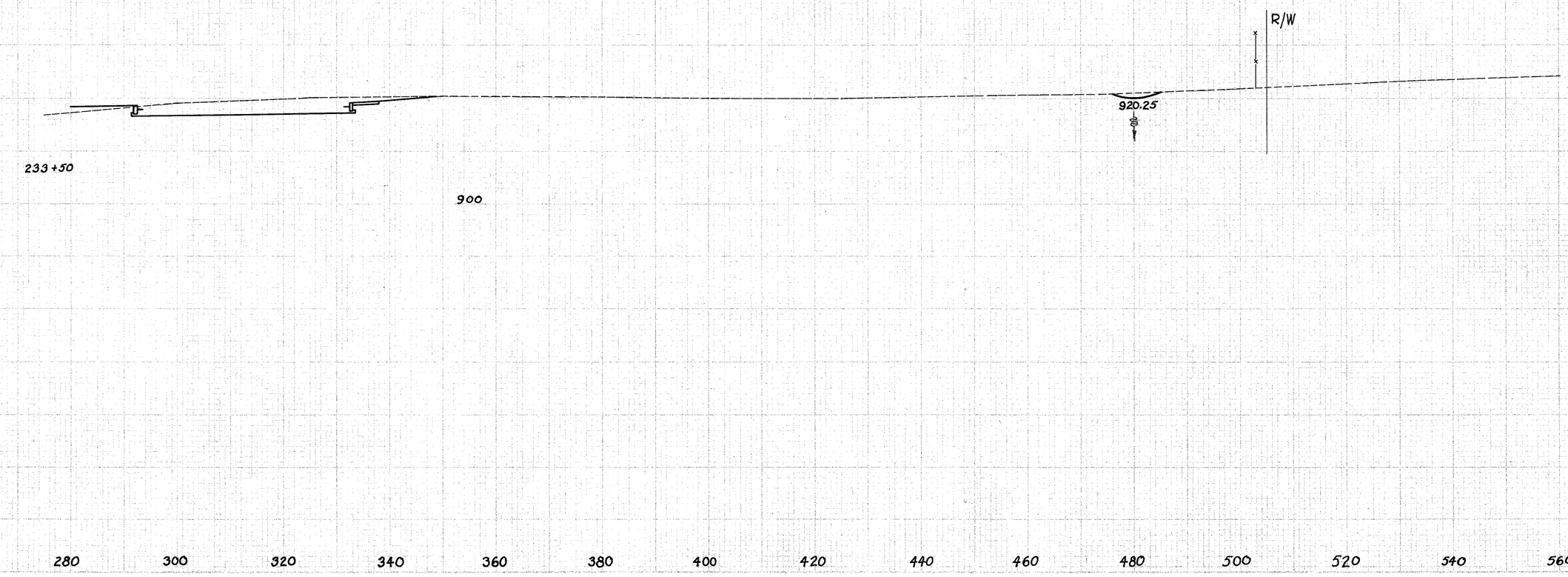
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2852	144		
		4947	290
2491	169		

Sta. 233+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

89
306

LAKE COUNTY
LAK-I-10.38



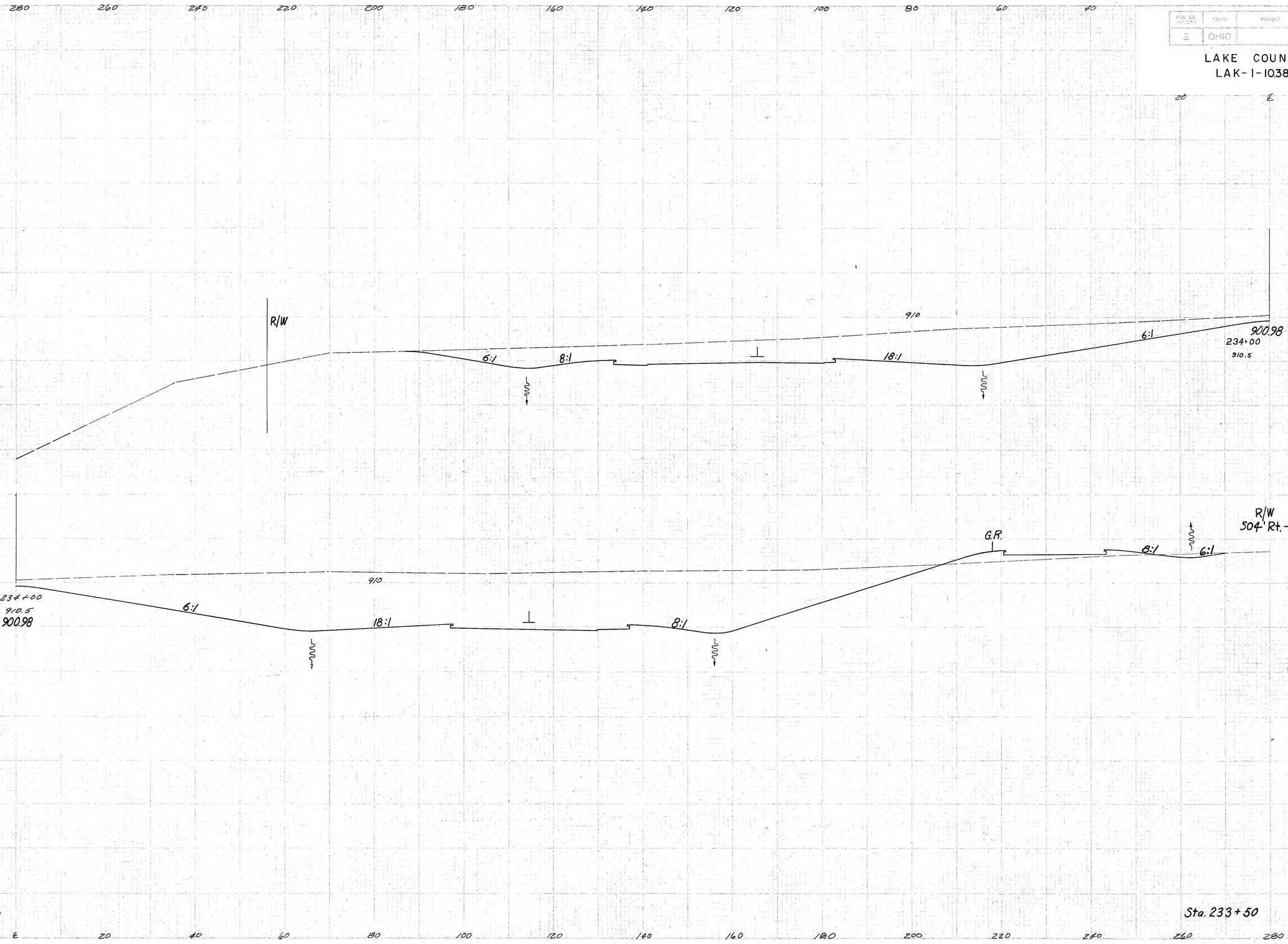
Extended X Sections Sta. 233+50

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

90
306

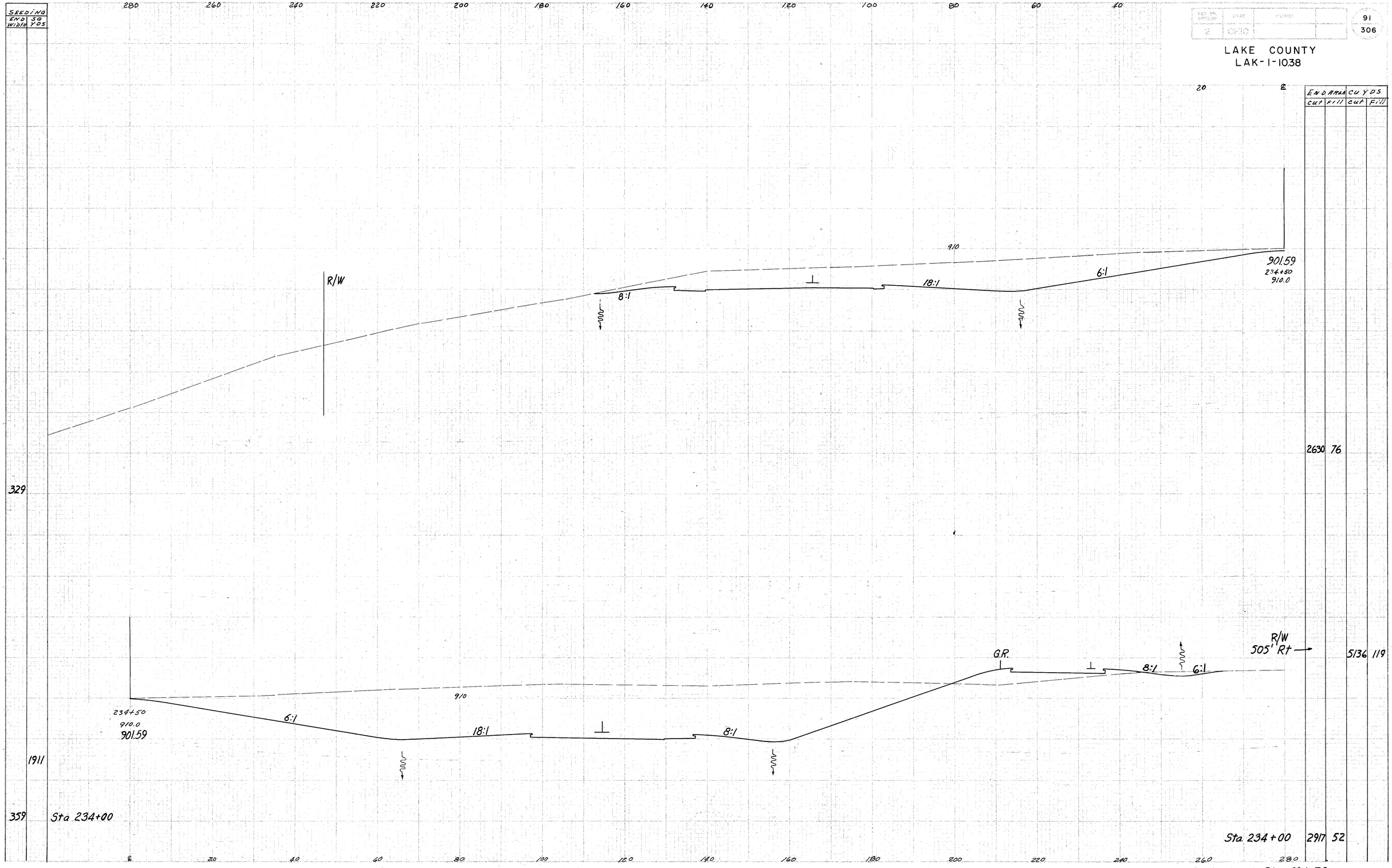
LAKE COUNTY
LAK-I-1038

SEEDING	
END WIDTH	SQ. YDS.
359	
2094	
395	



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2917	52		
		5342	181
2852	144		

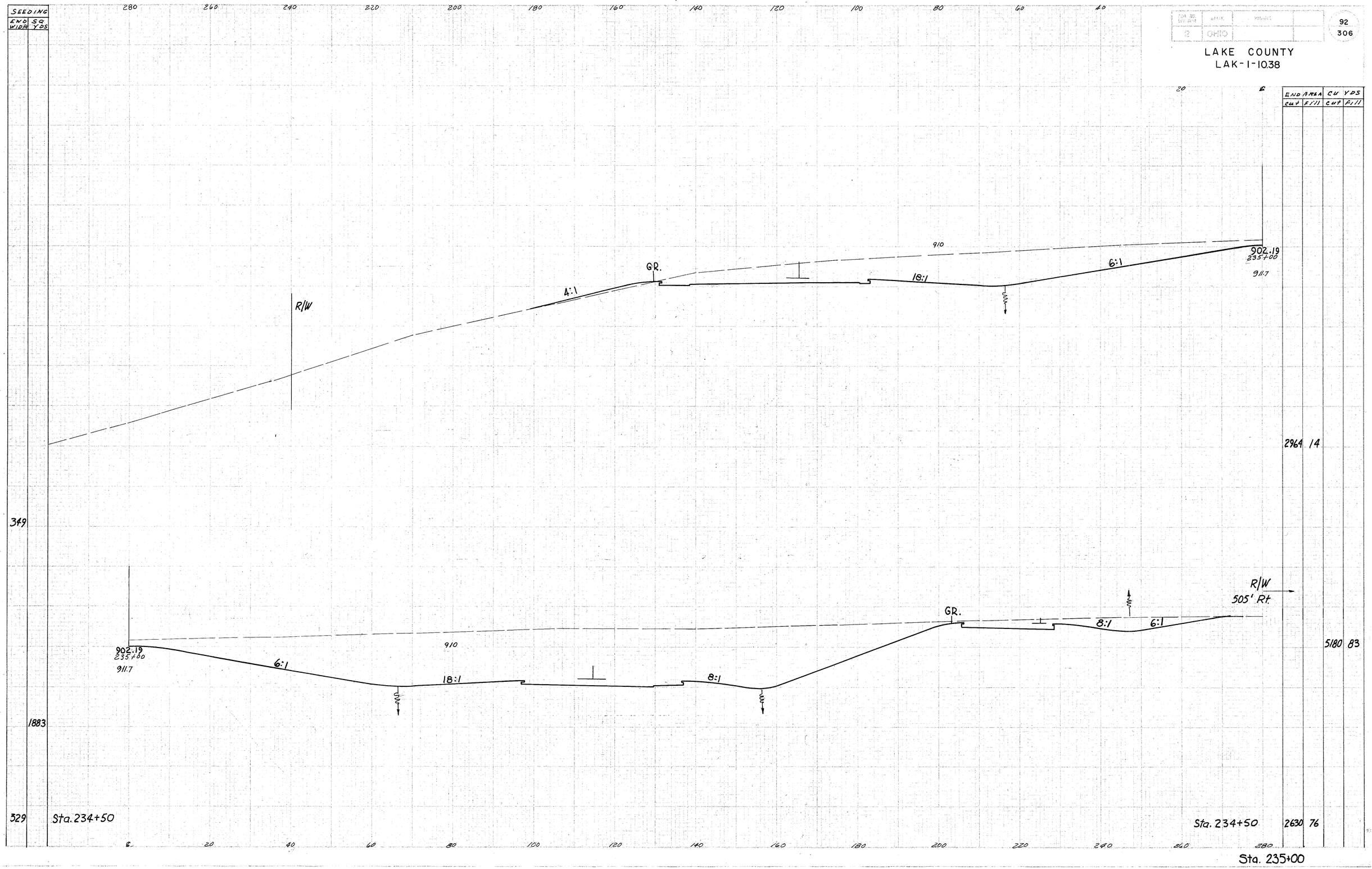
LAKE COUNTY
LAK-I-10.38



Sta. 234+50

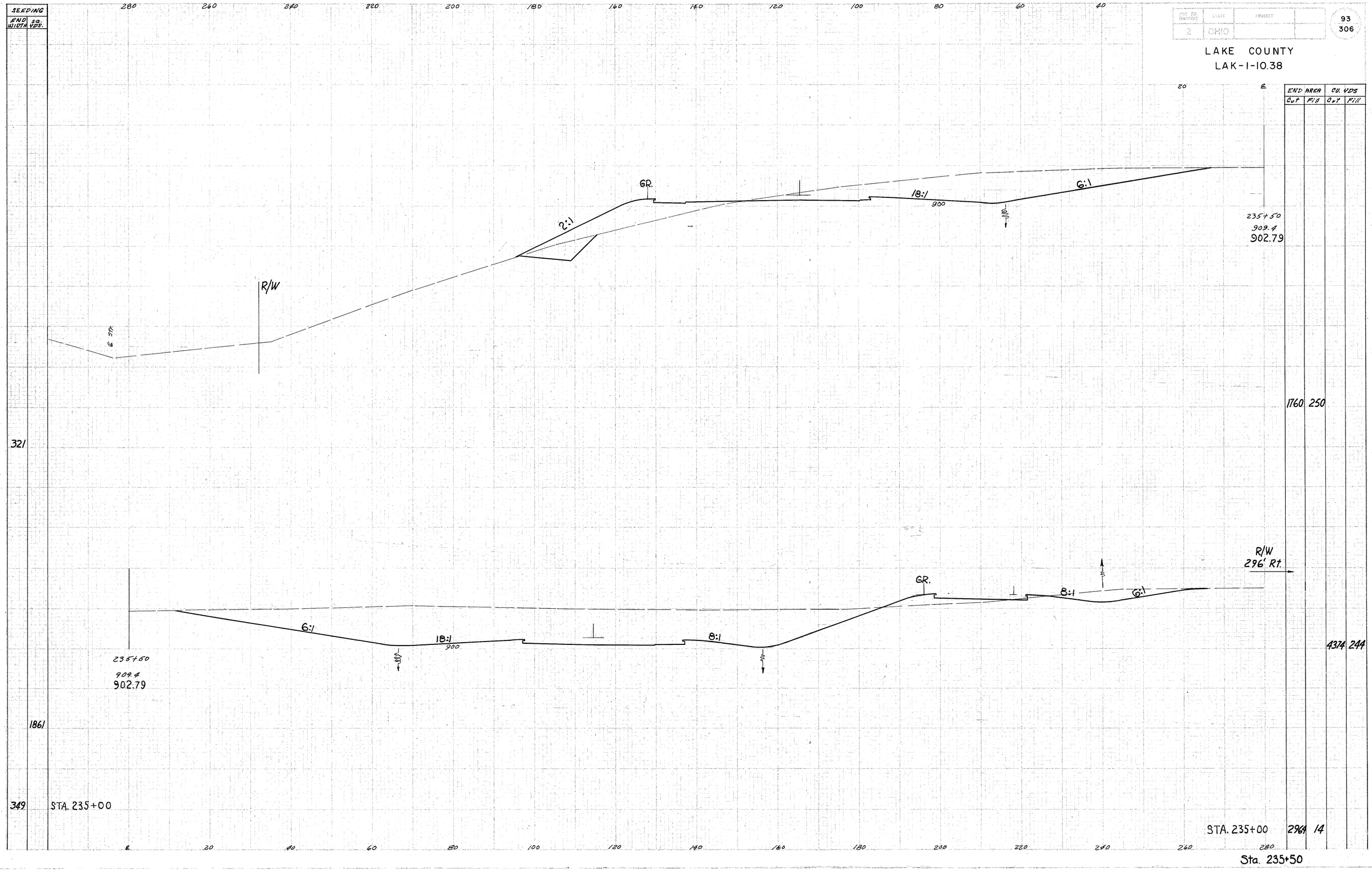
FED. RD. DIV. NO.	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38



END AREA		CU YDS	
cut	fill	cut	fill
2964	14		
		5180	83
2630	76		

Sta. 235+00



LAKE COUNTY
LAK-1-10.38

Sta. 235+50

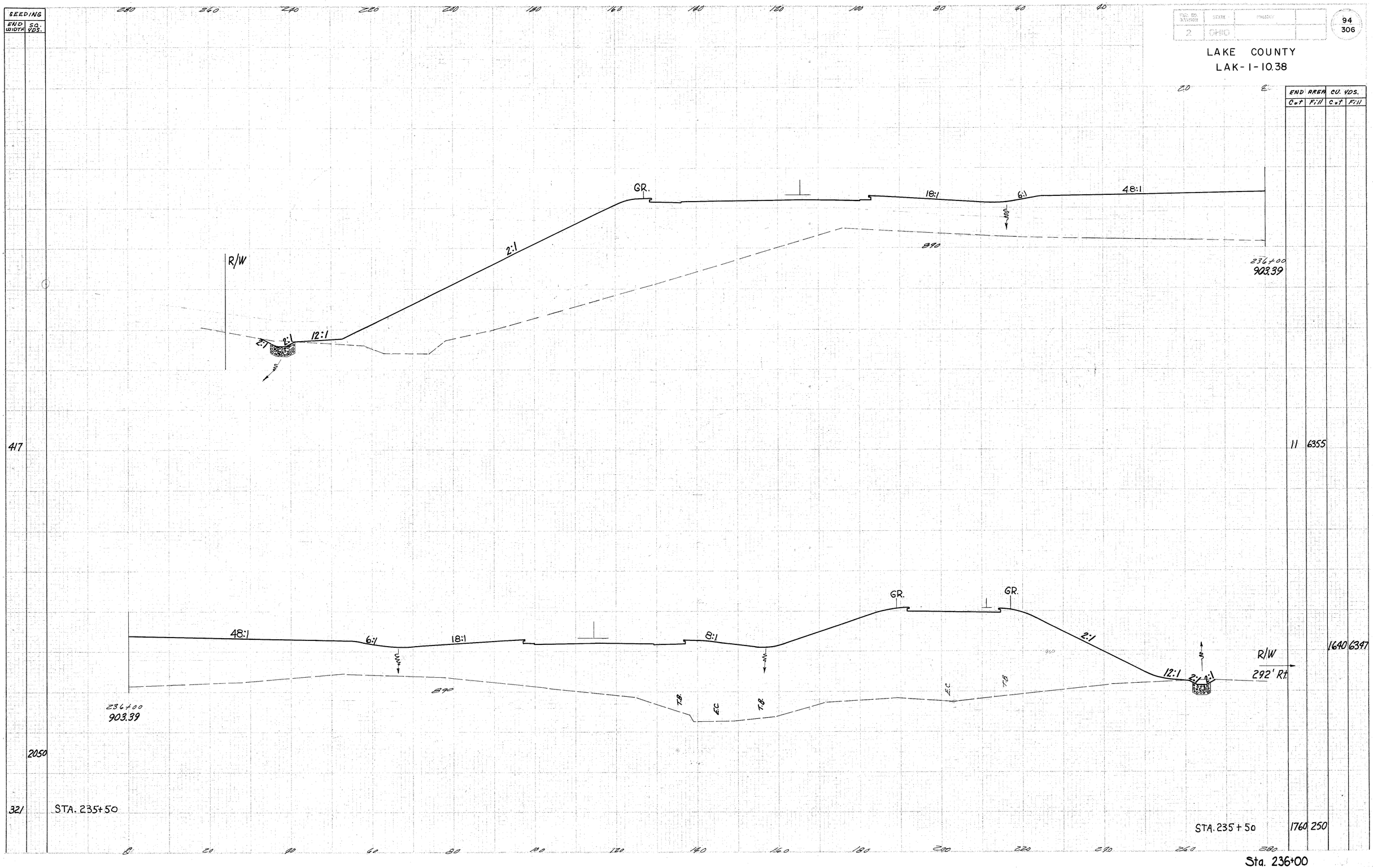
SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
		11	6355
		1640	6347
		1760	250

FED. RD. DIVISION	STATE	FUNDING	
2	OHIO		

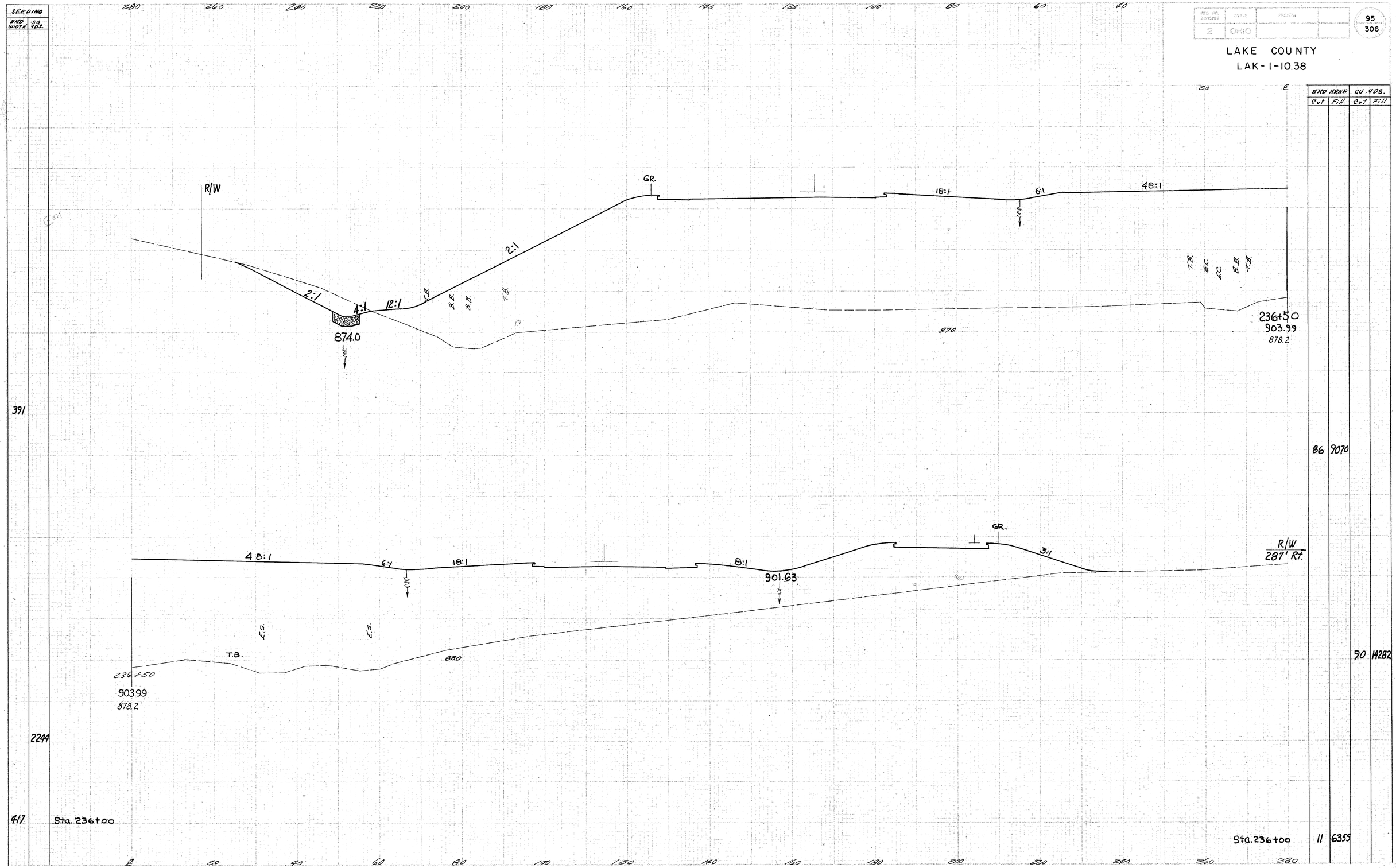
94
306

LAKE COUNTY
LAK-1-10.38



FED. RD. DIVISION 2 | STATE OHIO | PROJECT
95
306

LAKE COUNTY
LAK-1-10.38



END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
86	9070		
		90	14282
11	6355		

Sta. 236+50

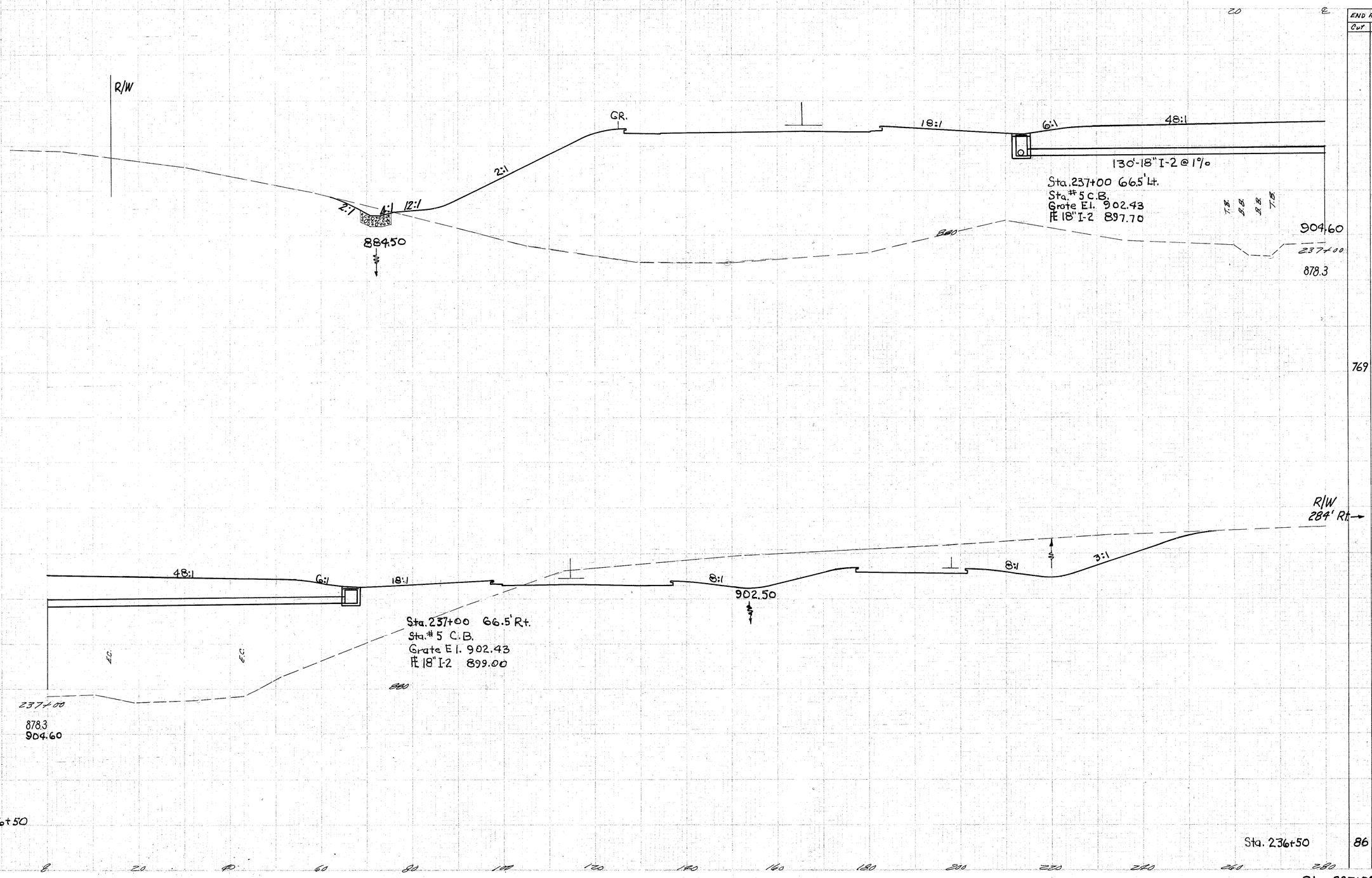
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

96
306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
366	
2103	
391	

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
769	6653		
792	14558		
86	9070		



Sta. 237+00

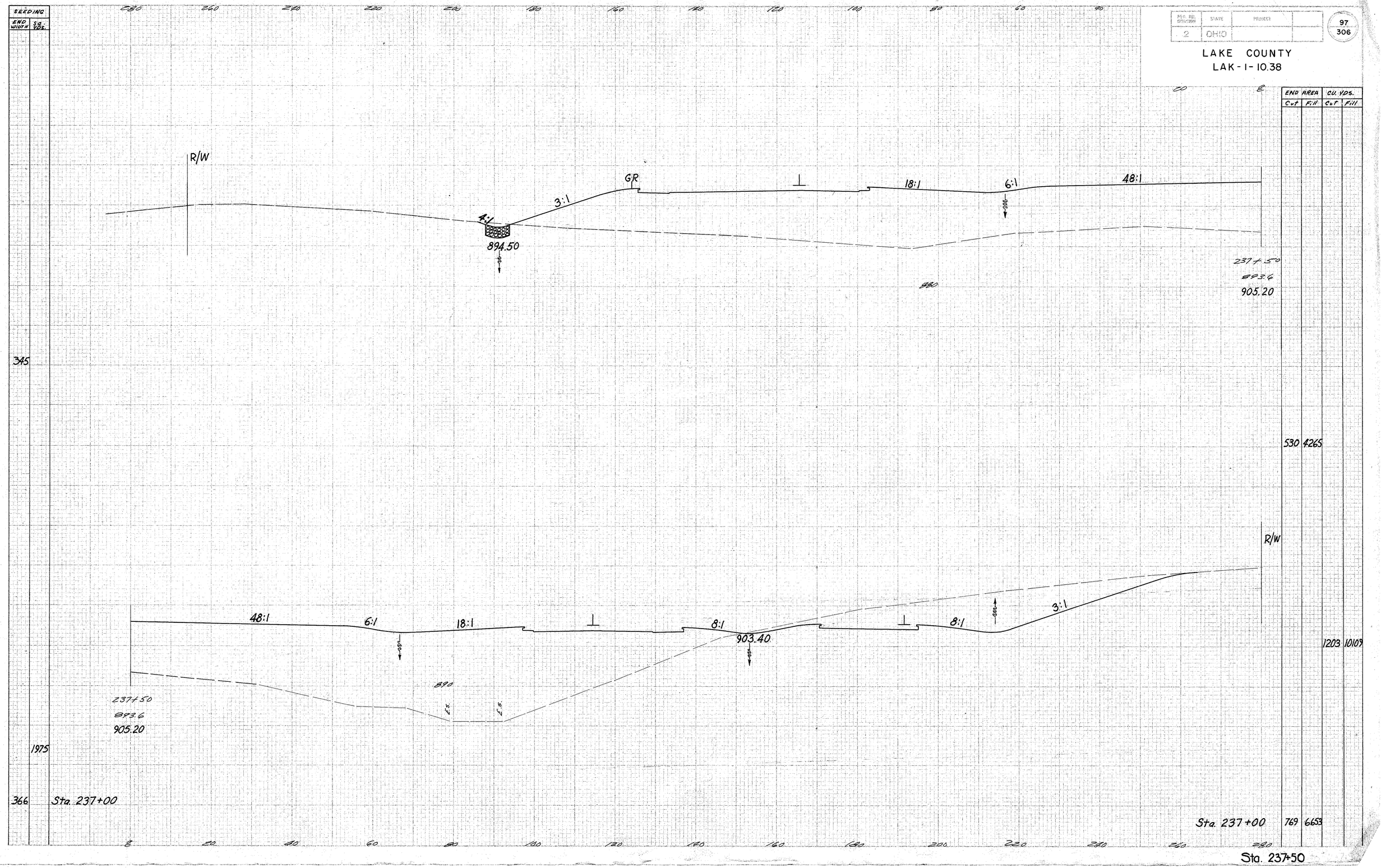
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

97
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

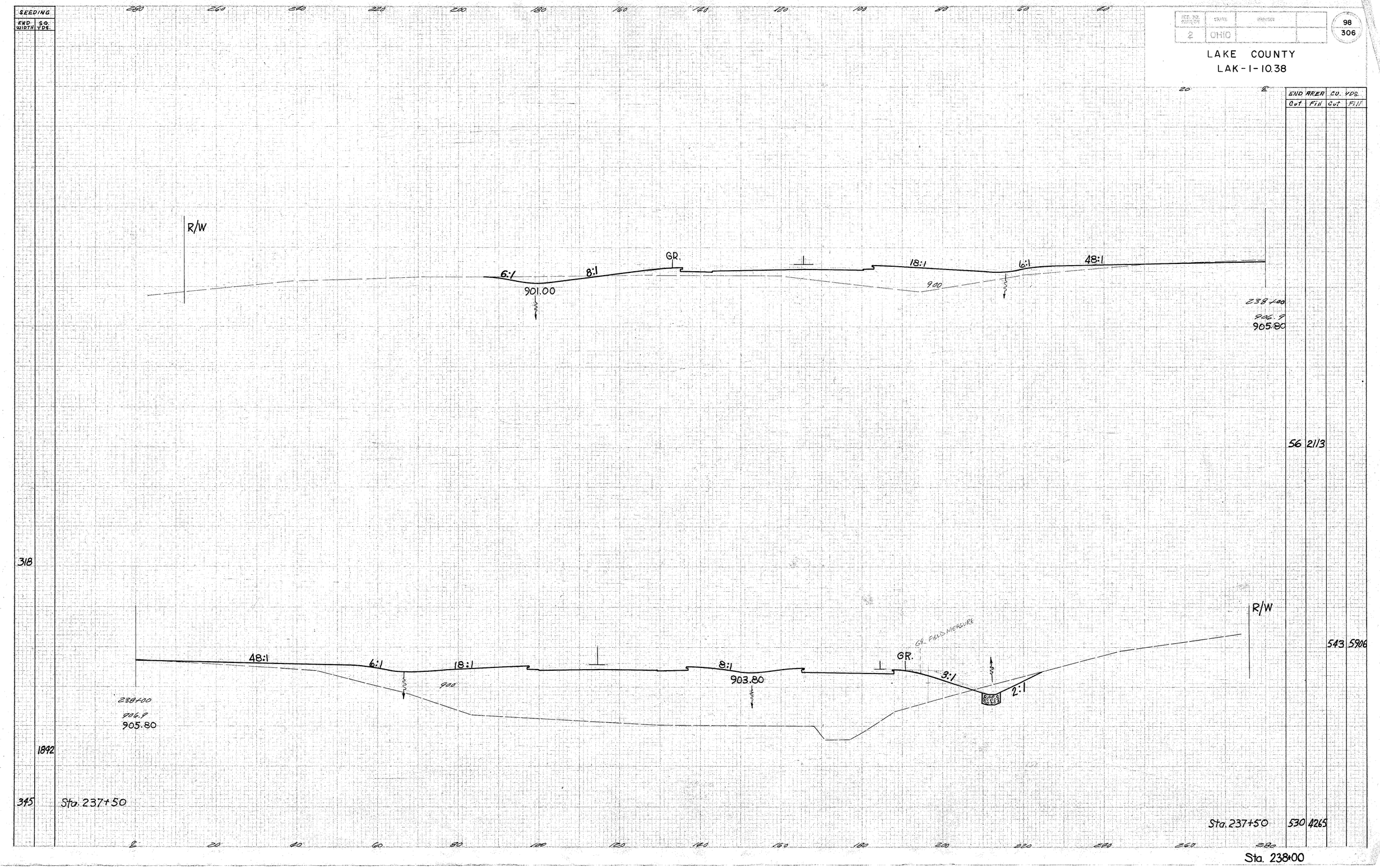


SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

98
306

LAKE COUNTY
LAK-1-10.38



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
56	2113		
		543	5906
530	4265		

318

1842

345

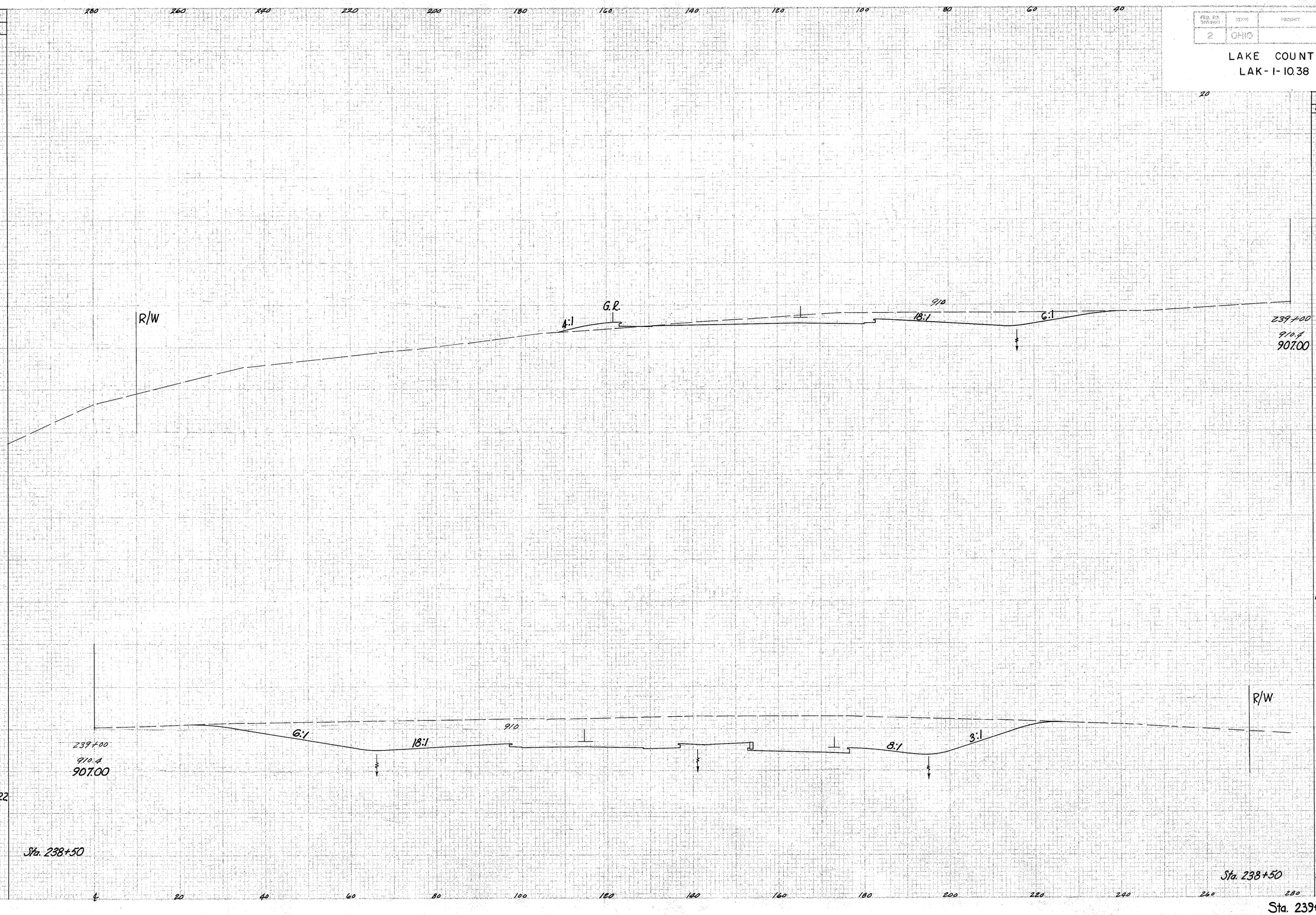
Sta. 238+00

FED. RD. DIVISION
STATE
PROJECT
2
OHIO
99
306
LAKE COUNTY
LAK-1-10.38
SEEDING
END WIDTH
SQ. YDS.
END AREA
CU. YDS.
Cut
Fill
Cut
Fill
R/W
T.B.
6:1
8:1
G.R.
18:1
900
6:1
238+50
909.9
906.40
223
340
448
238+50
909.9
906.40
6:1
18:1
900
G.R.
2:1
E.C.
E.C.
2:1
R/W
367
2371
1503
318
Sta. 238+00
Sta. 238+00
56
2113
Sta. 238+50

FED. RD. DIST. NO.	STATE	PROJECT		TOTAL SHEETS
2	OHIO			100 / 306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
217	
1222	
223	



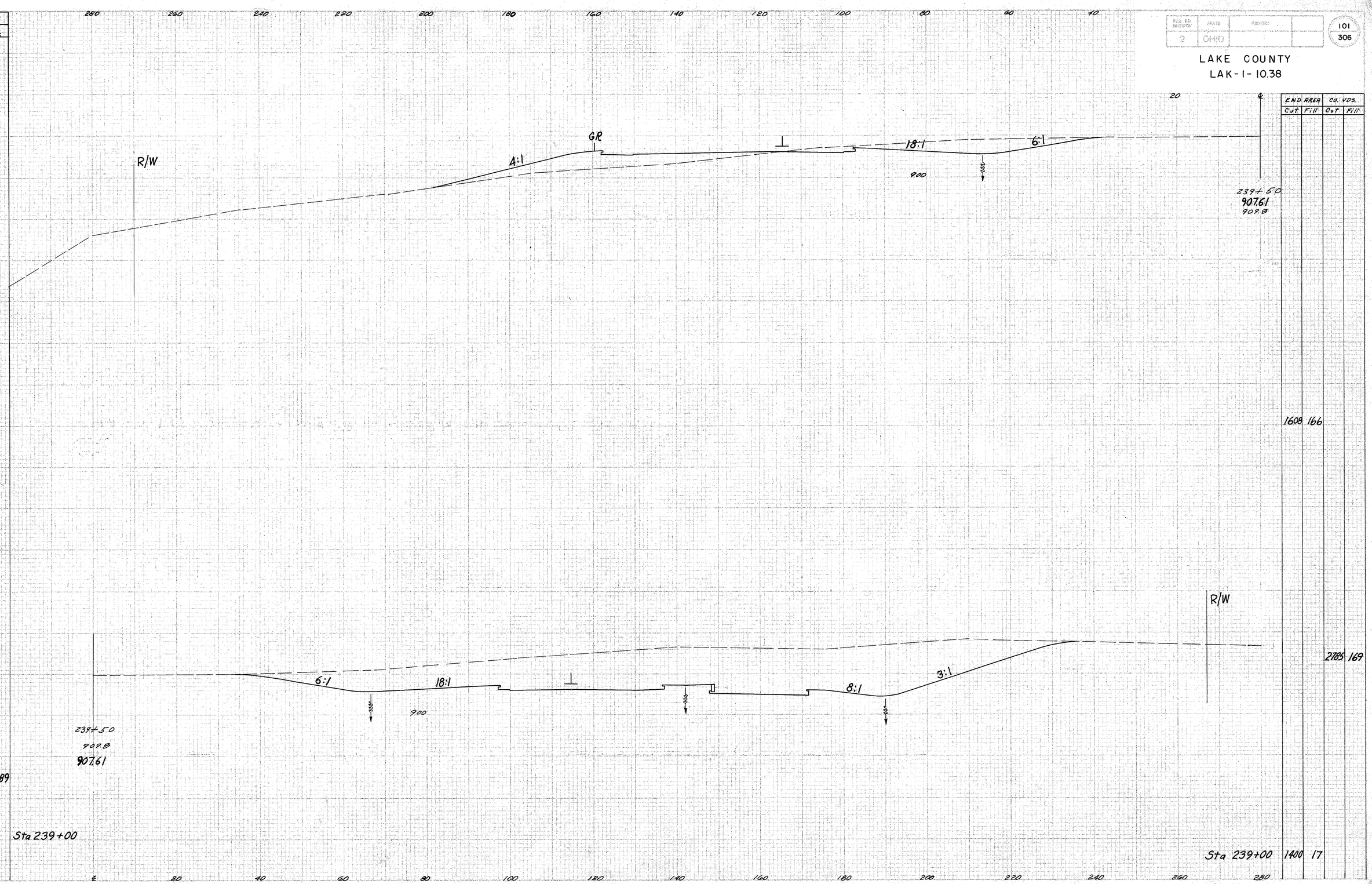
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1400	17		
1611	431		
340	448		

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	
2	OHIO		

101
306

LAKE COUNTY
LAK-I-10.38

SEEDING		
END WIDTH	SQ YDS	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

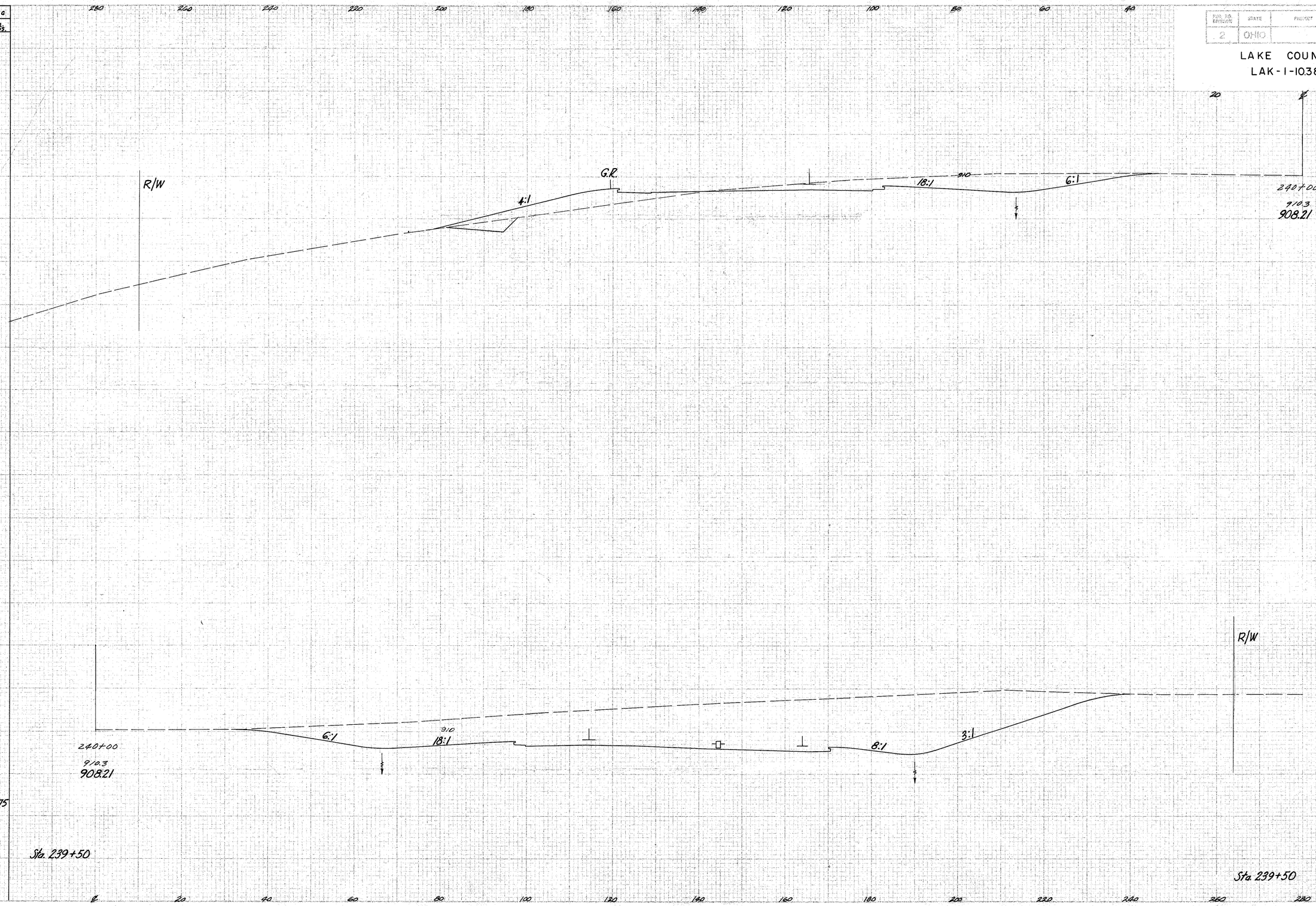
Sta. 239+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

102
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.



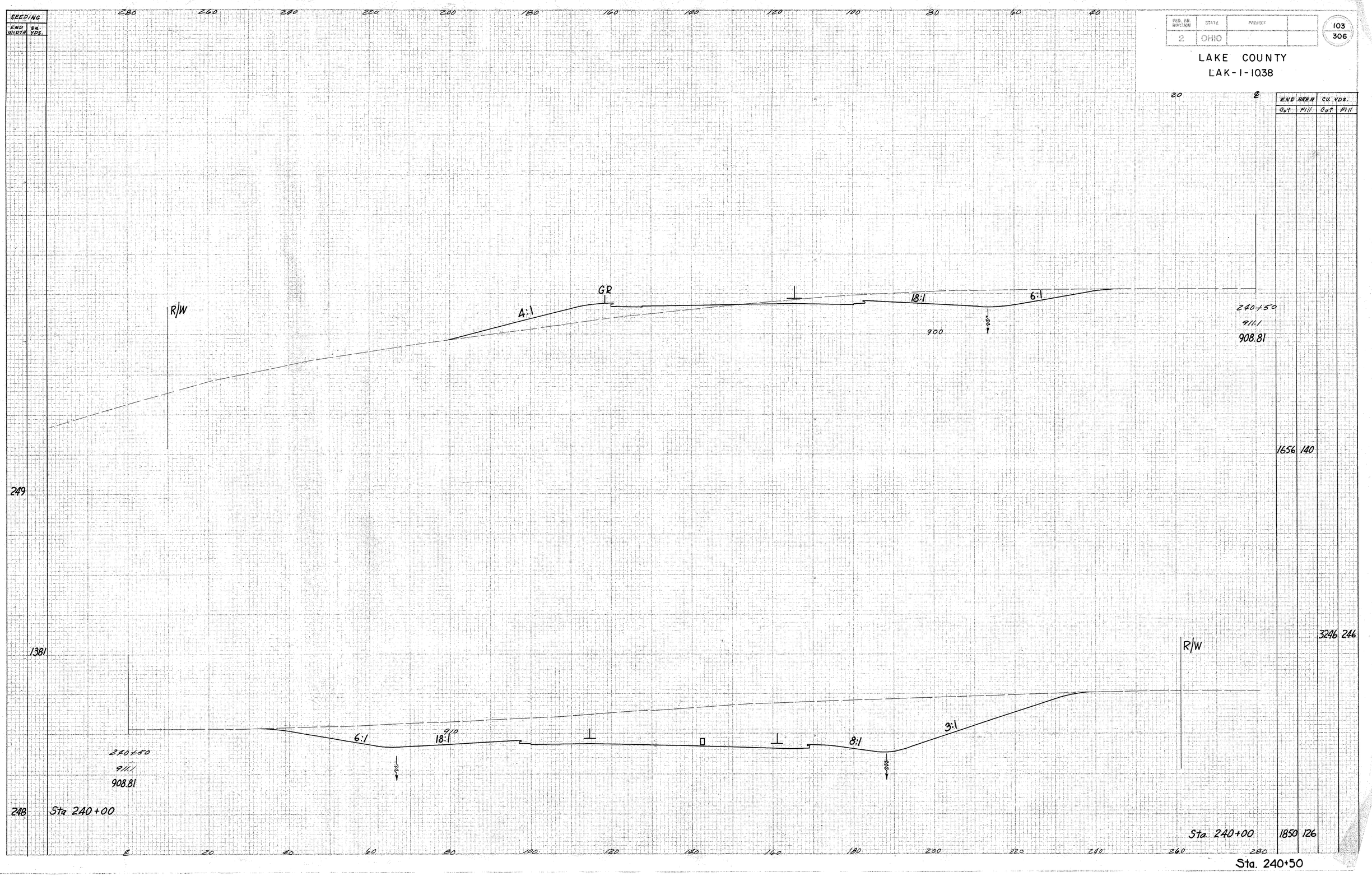
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1850	126		
		3202	270
		1608	166

Sta. 240+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

103
306

LAKE COUNTY
LAK-I-1038



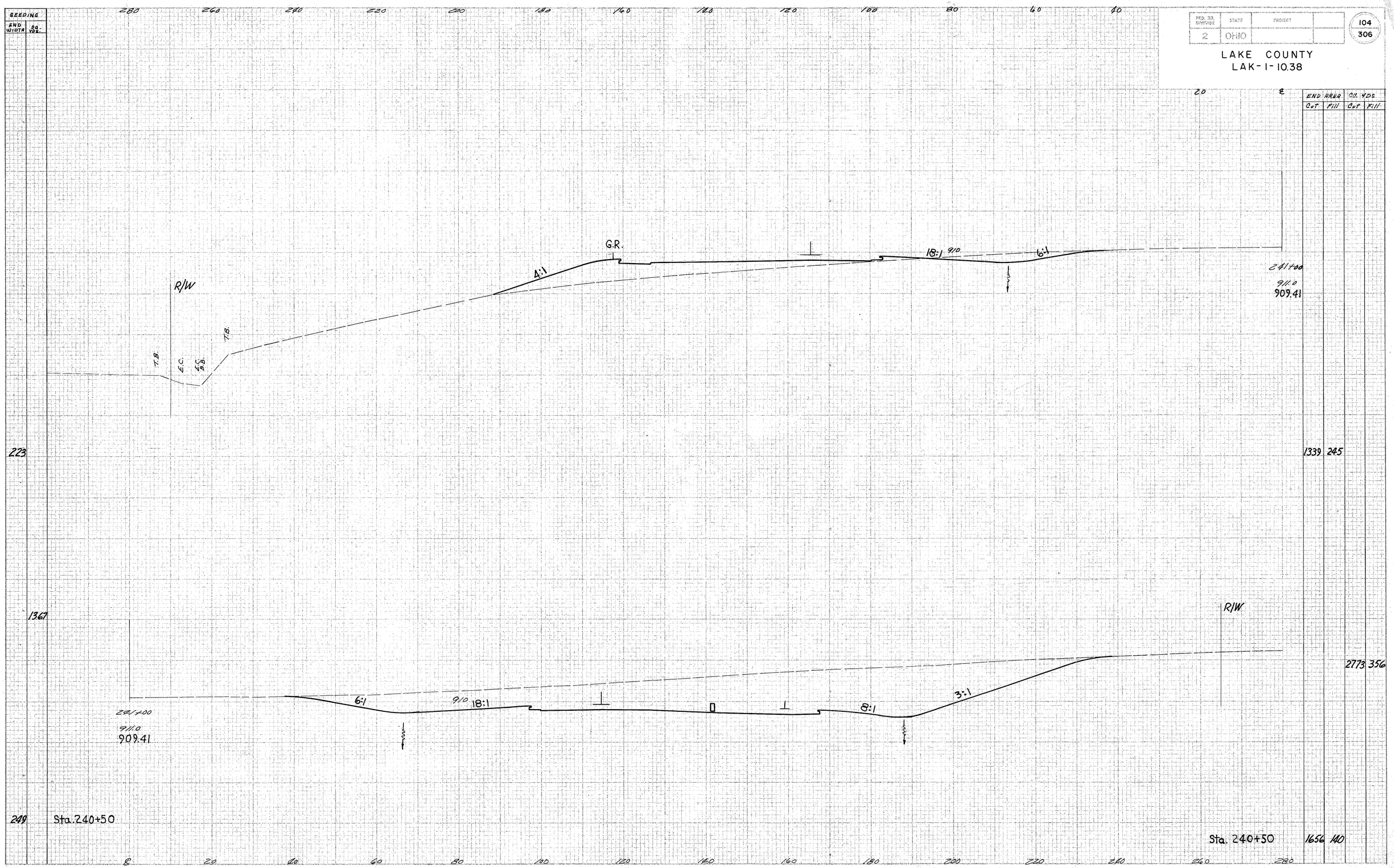
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

104
306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



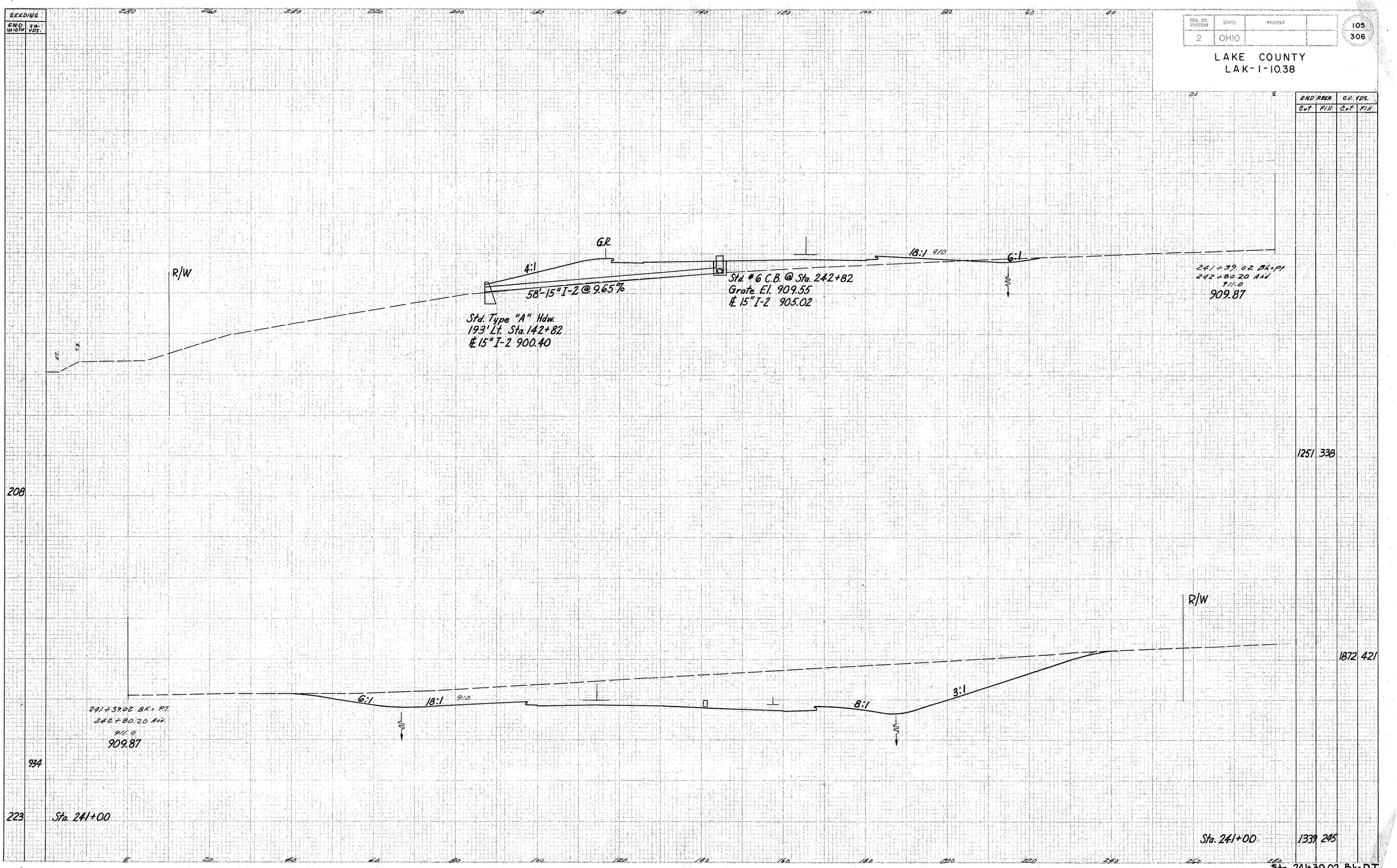
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

105
306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.

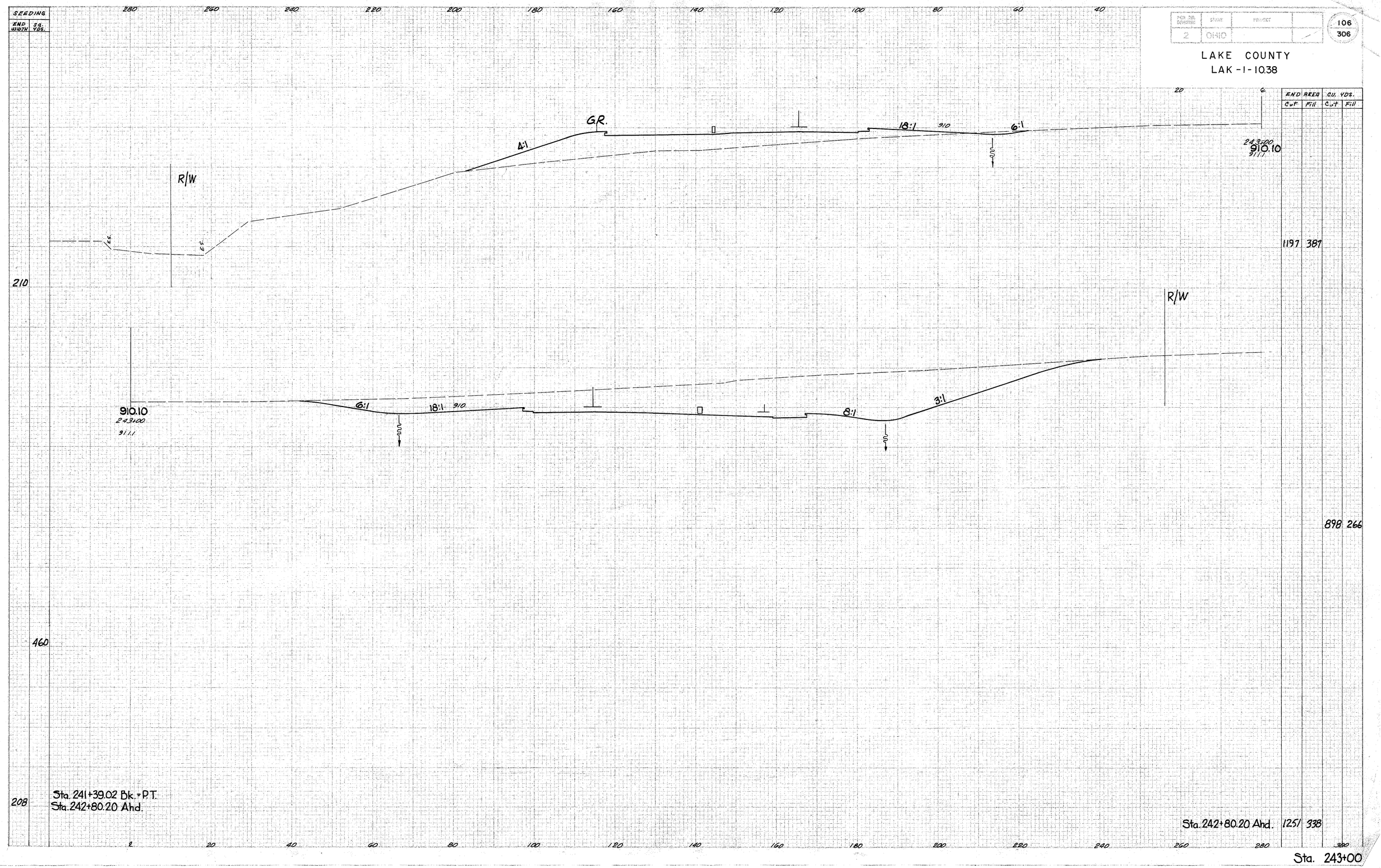
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



Sta. 241+39.02 Bk=P.T.
Sta. 242+80.20 Ahd.

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			106 / 306

LAKE COUNTY
LAK-1-1038

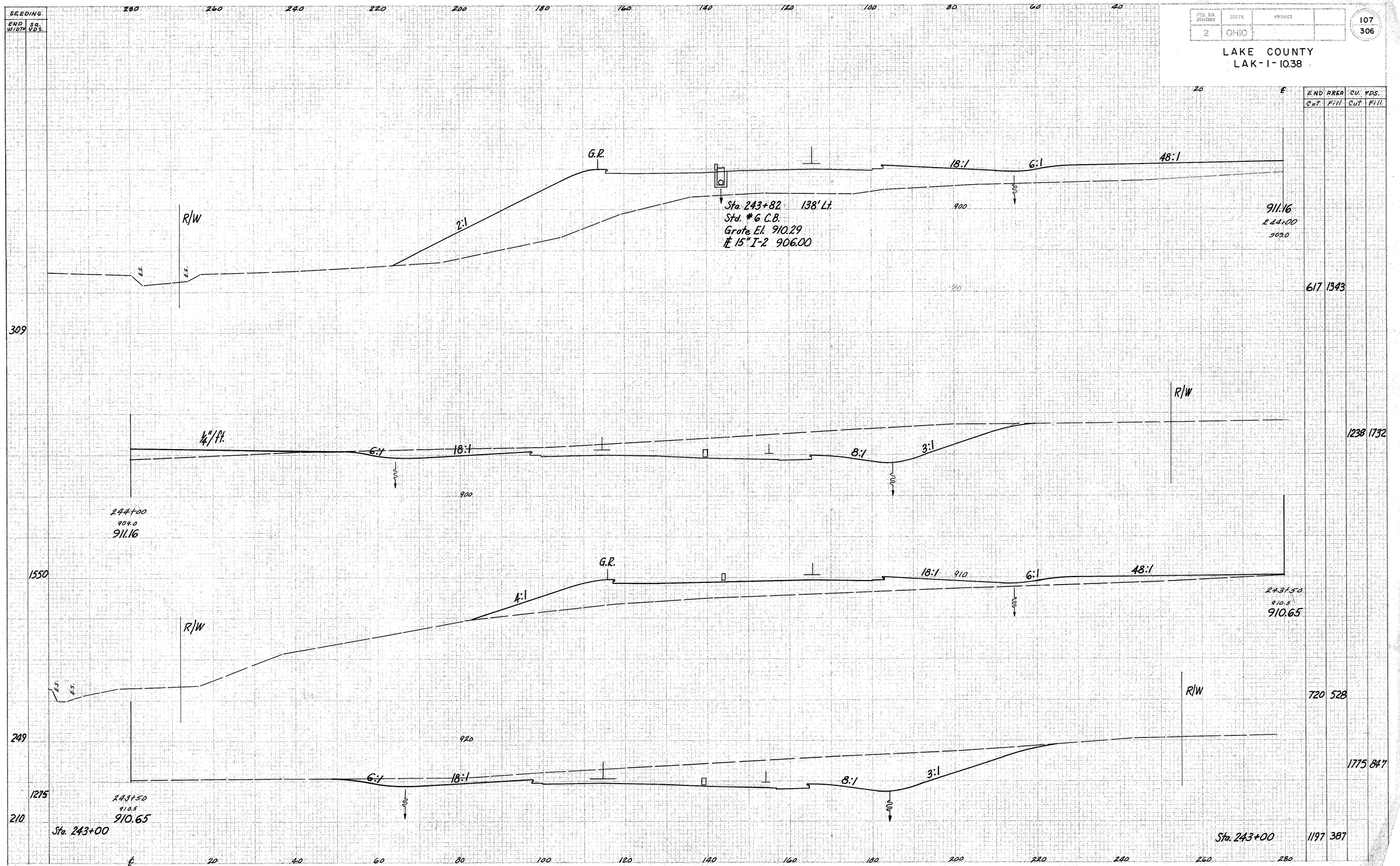


END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1197	387		
898	266		
1251	338		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

107
306

LAKE COUNTY
LAK-I-1038



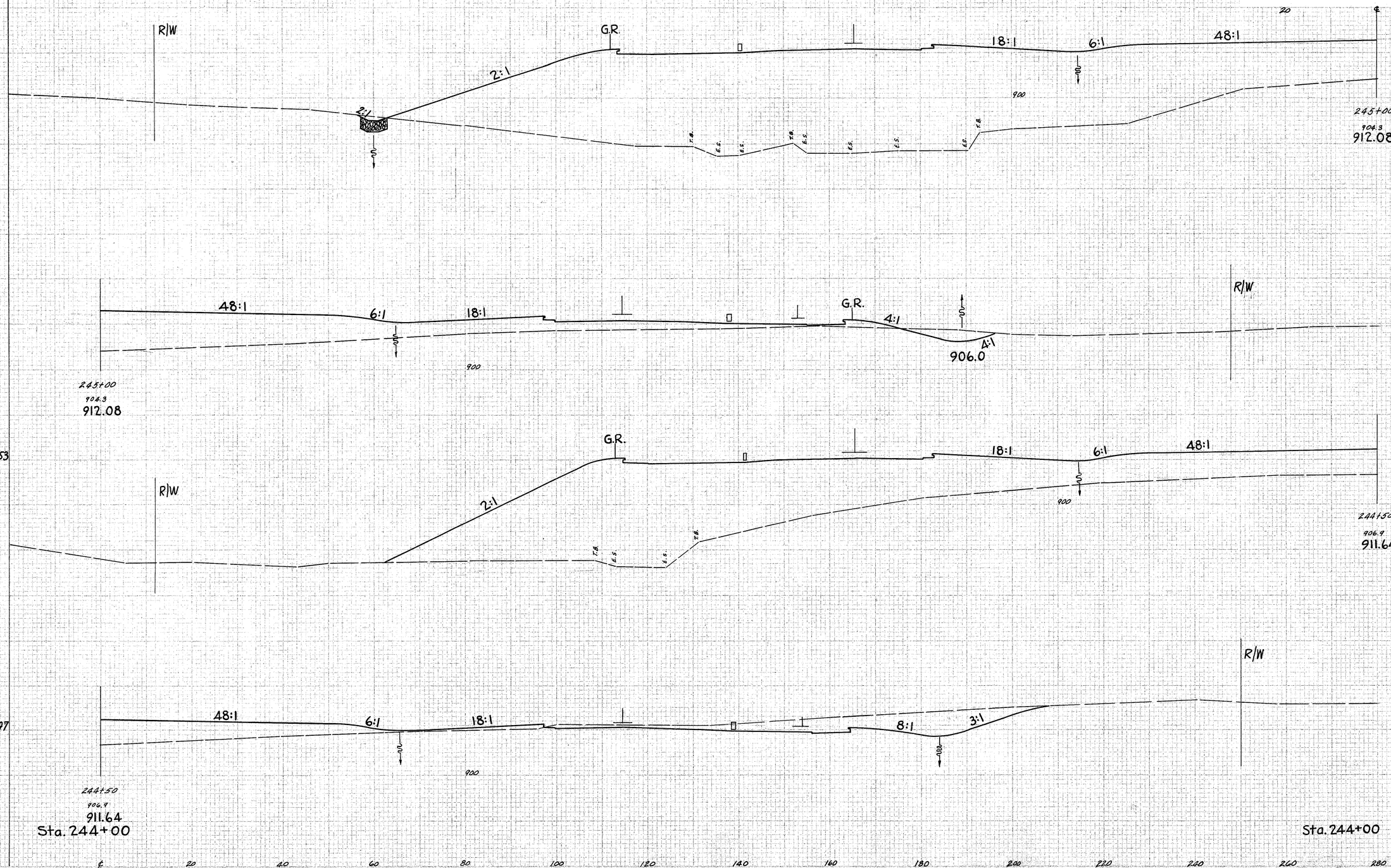
Sta. 243+50 to 244+0

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

108
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.

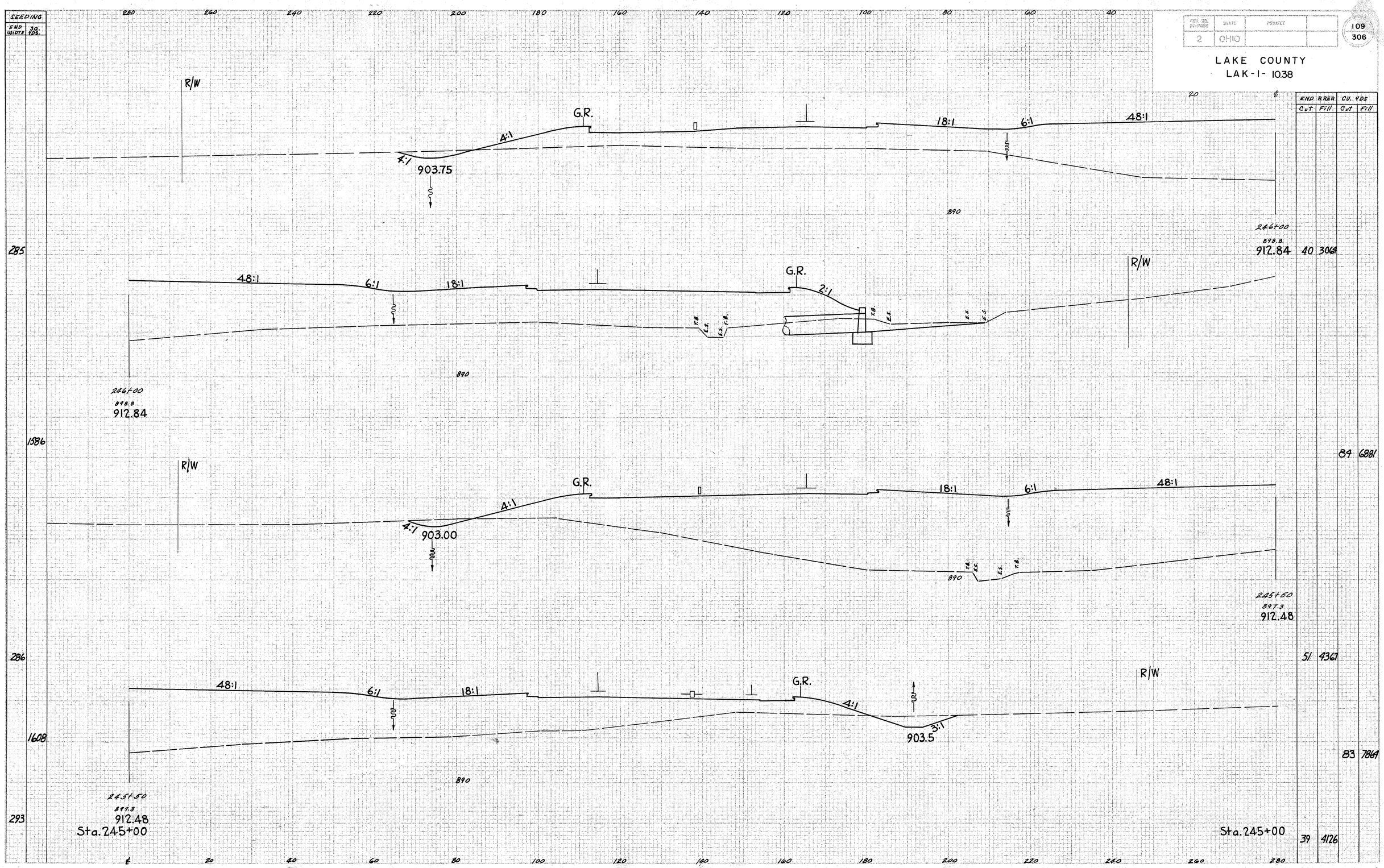


END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
39	4126		
		262	6160
244	2527		
797	3583		
617	1393		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

109
306

LAKE COUNTY
LAK-I-1038

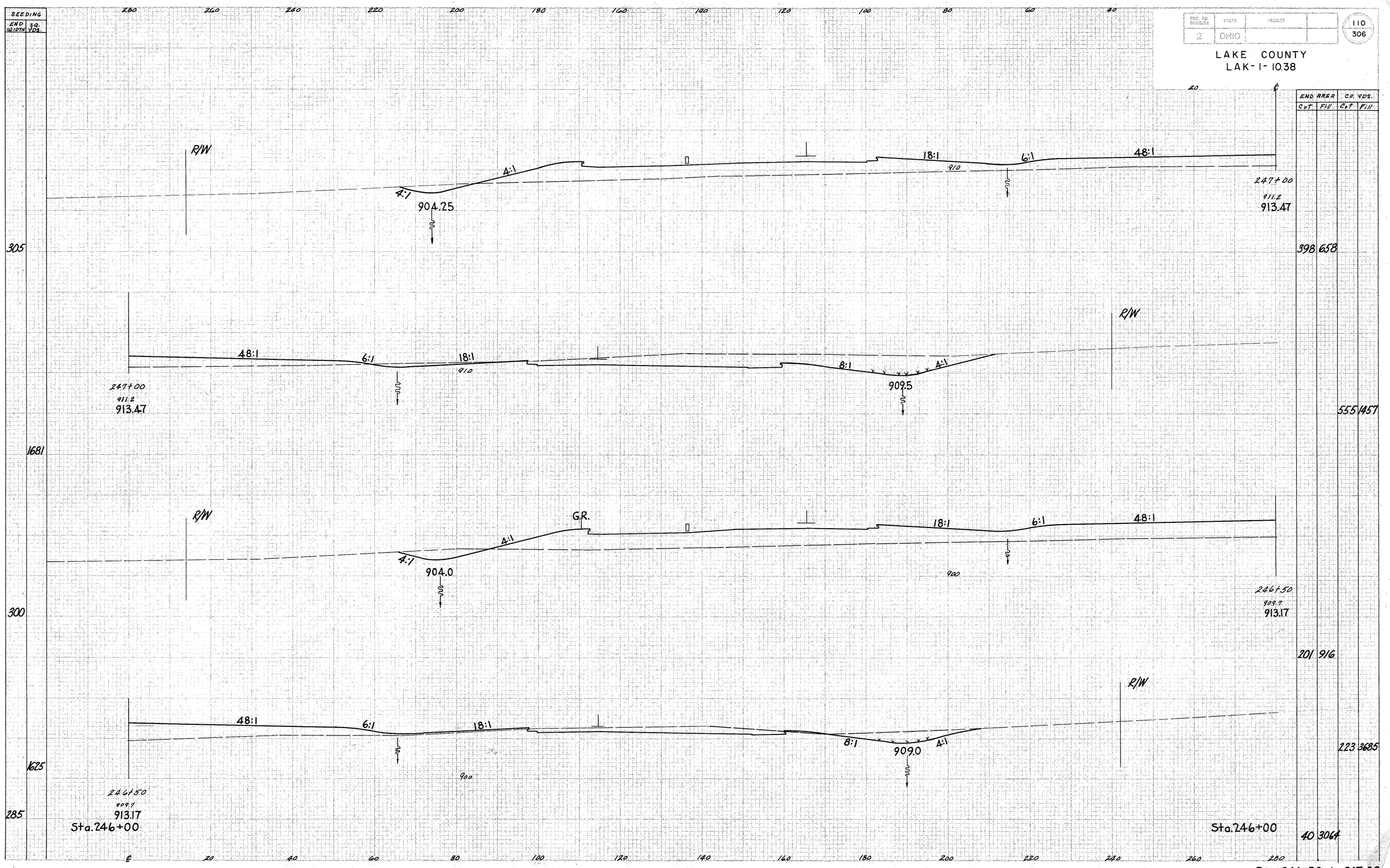


Sta. 245+50 to 246+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

110
306

LAKE COUNTY
LAK-1-10.38



Sta. 246+50 to 247+00

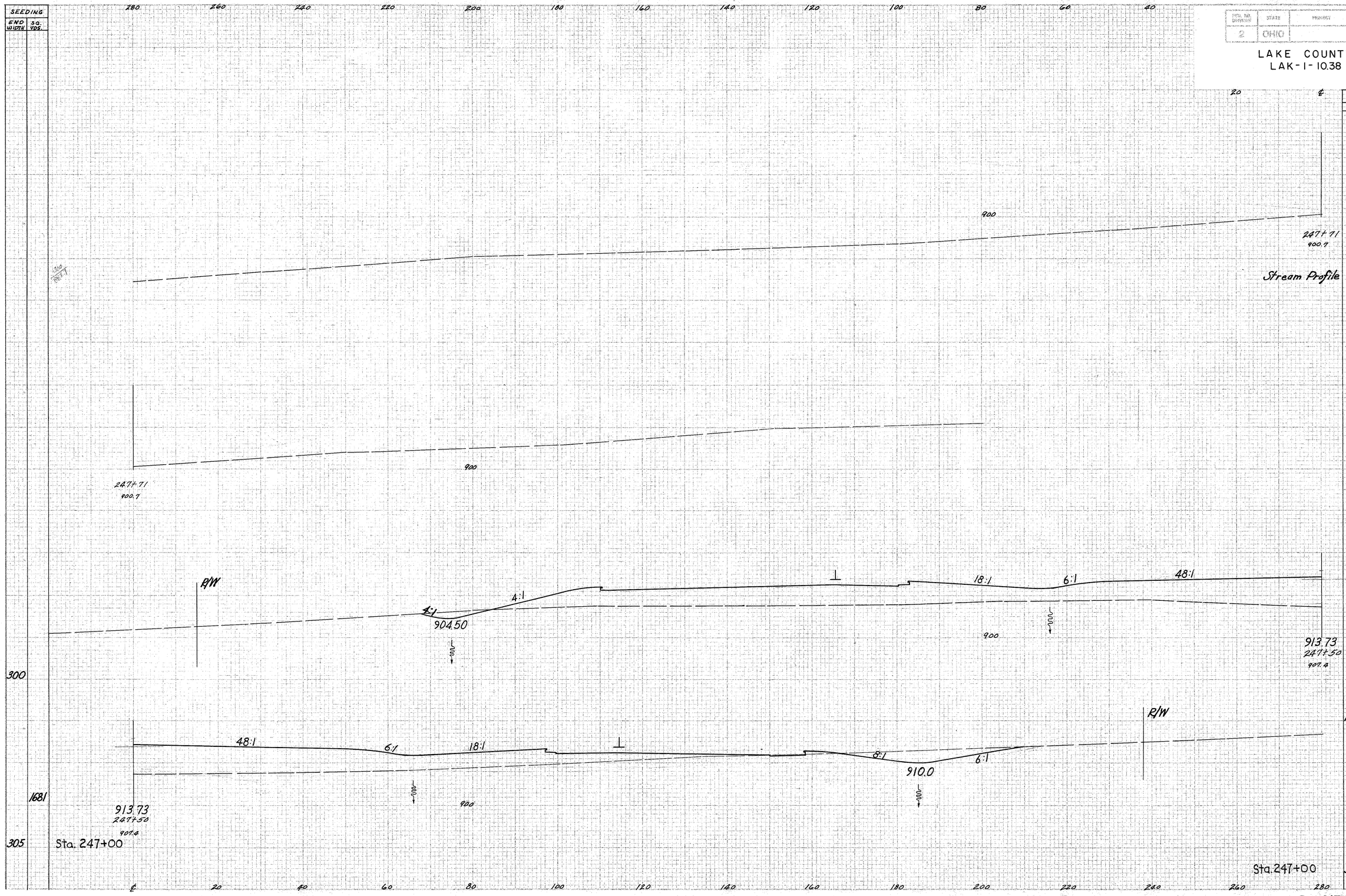
SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

111
306

LAKE COUNTY
LAK-1-10.38

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
112	1423		
472	1927		
398	658		



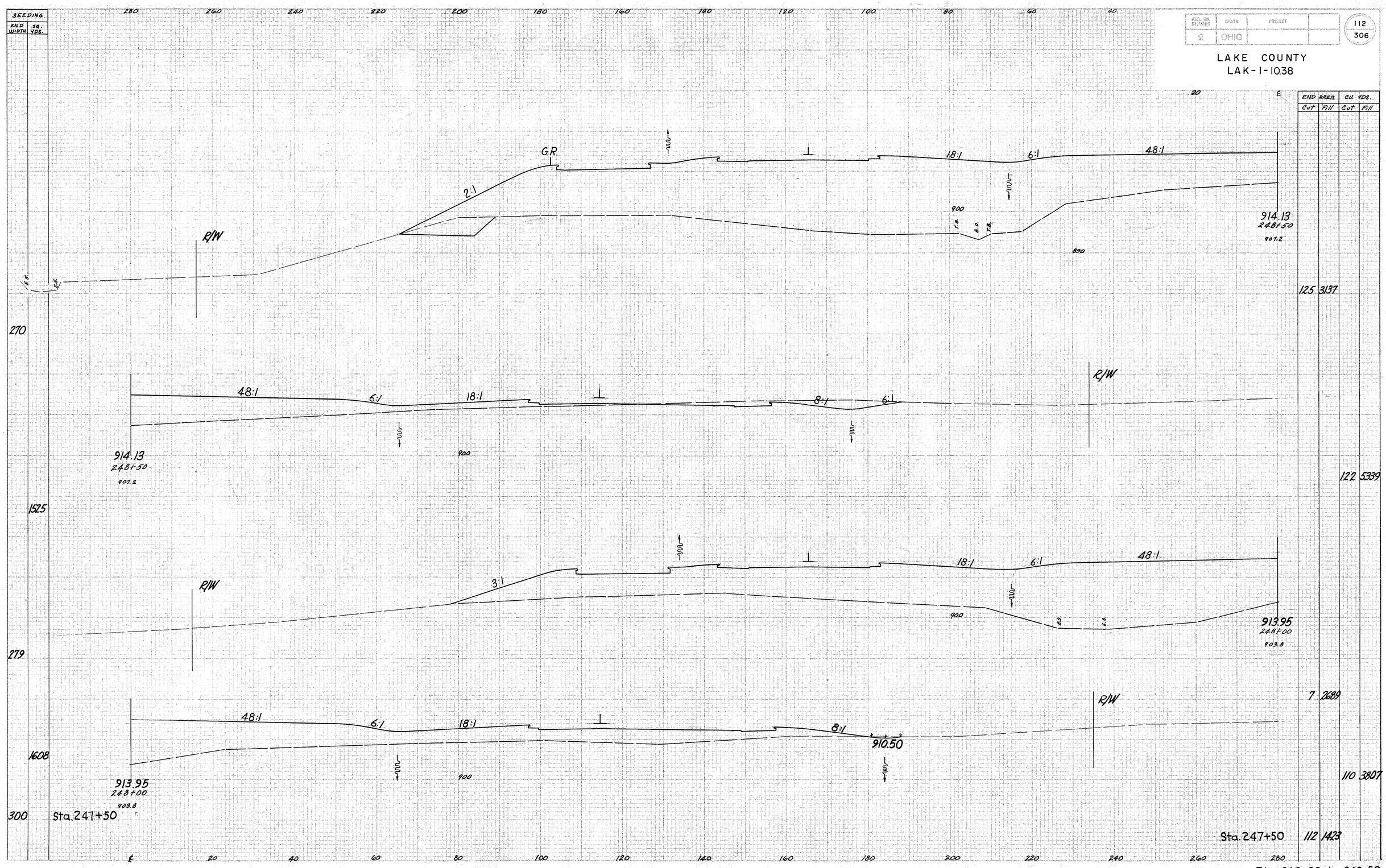
Sta. 247+50 to 247+71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

112
306

LAKE COUNTY
LAK-I-1038

SEEDING	
END WIDTH	SQ. YDS.



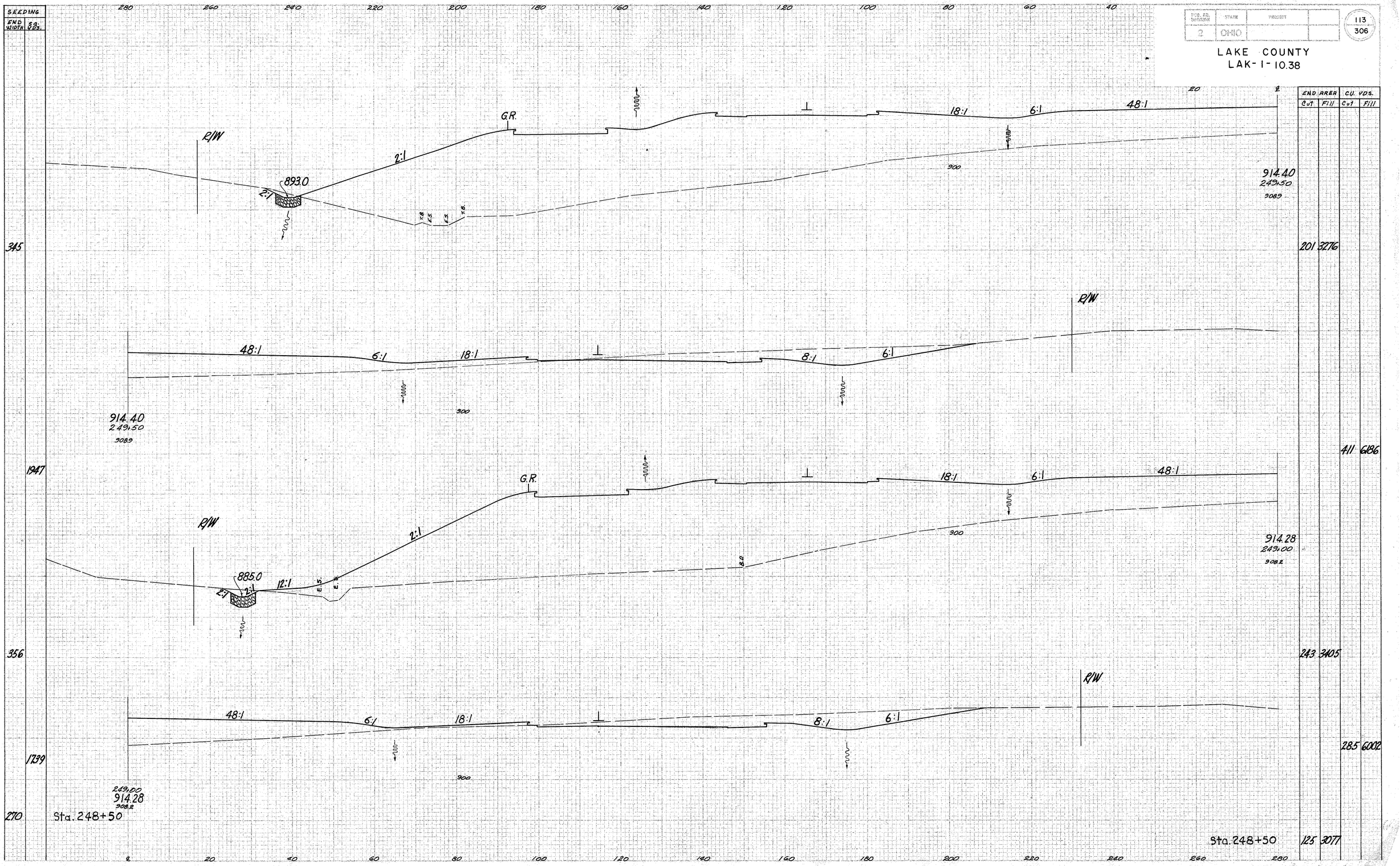
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
125	3137		
122	5339		
7	2689		
110	3807		
112	1423		

Sta. 248+00 to 248+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

113
306

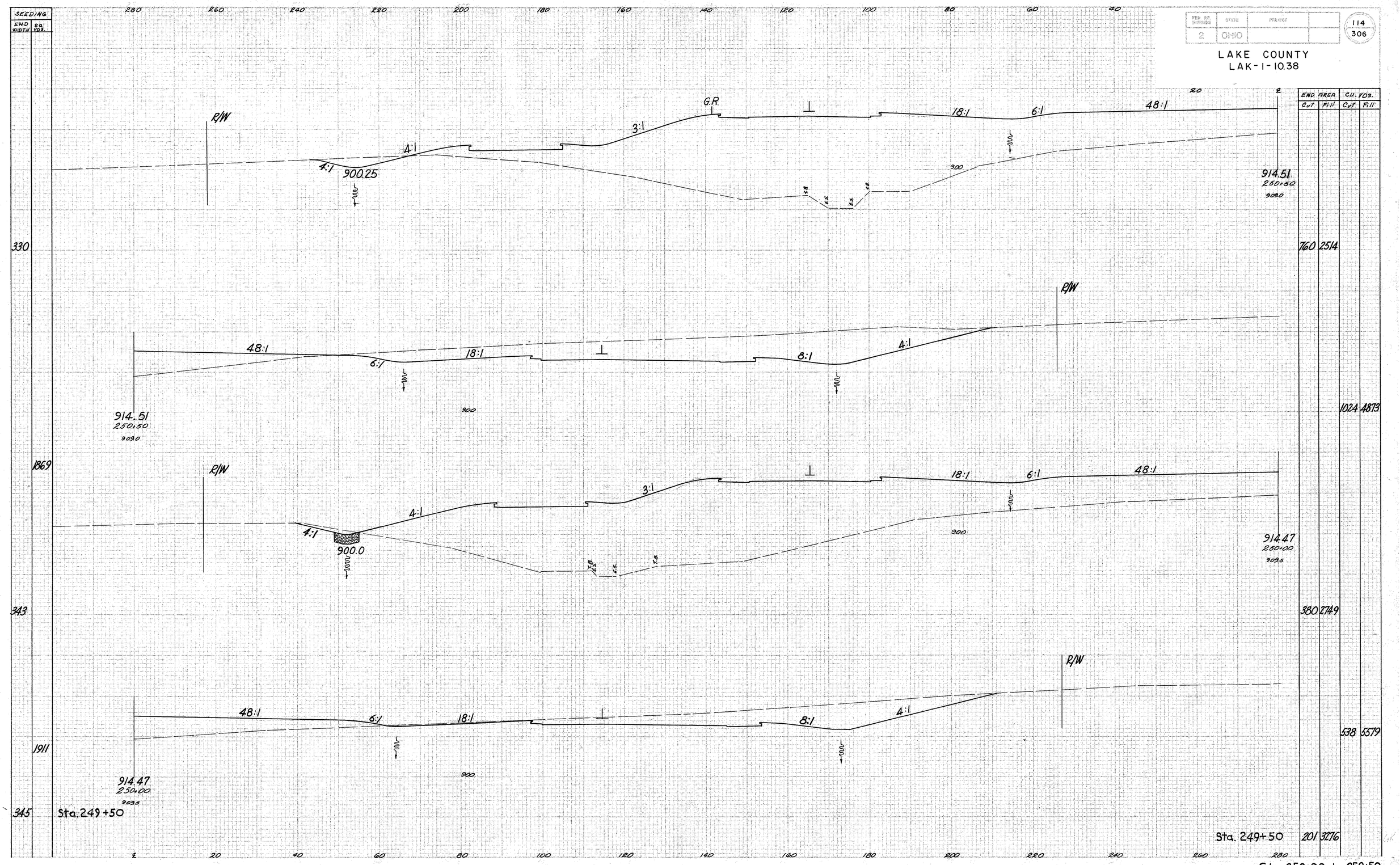
LAKE COUNTY
LAK-I-10.38



REG. NO. DIVISION	STATE	PROJECT	
2	OHIO		

114
306

LAKE COUNTY
LAK-I-10.38



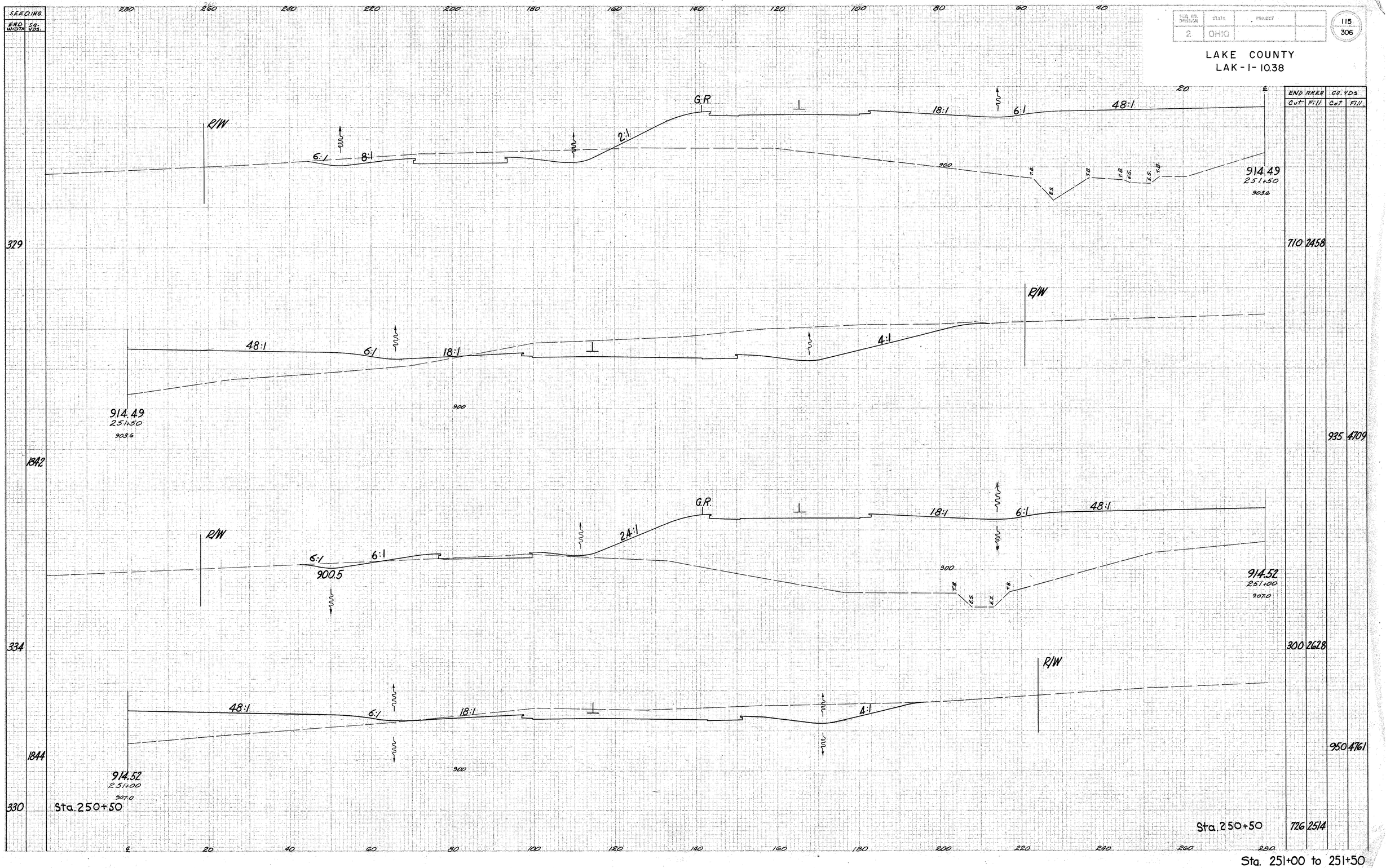
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

Sta. 250+00 to 250+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

115
306

LAKE COUNTY
LAK-1-10.38

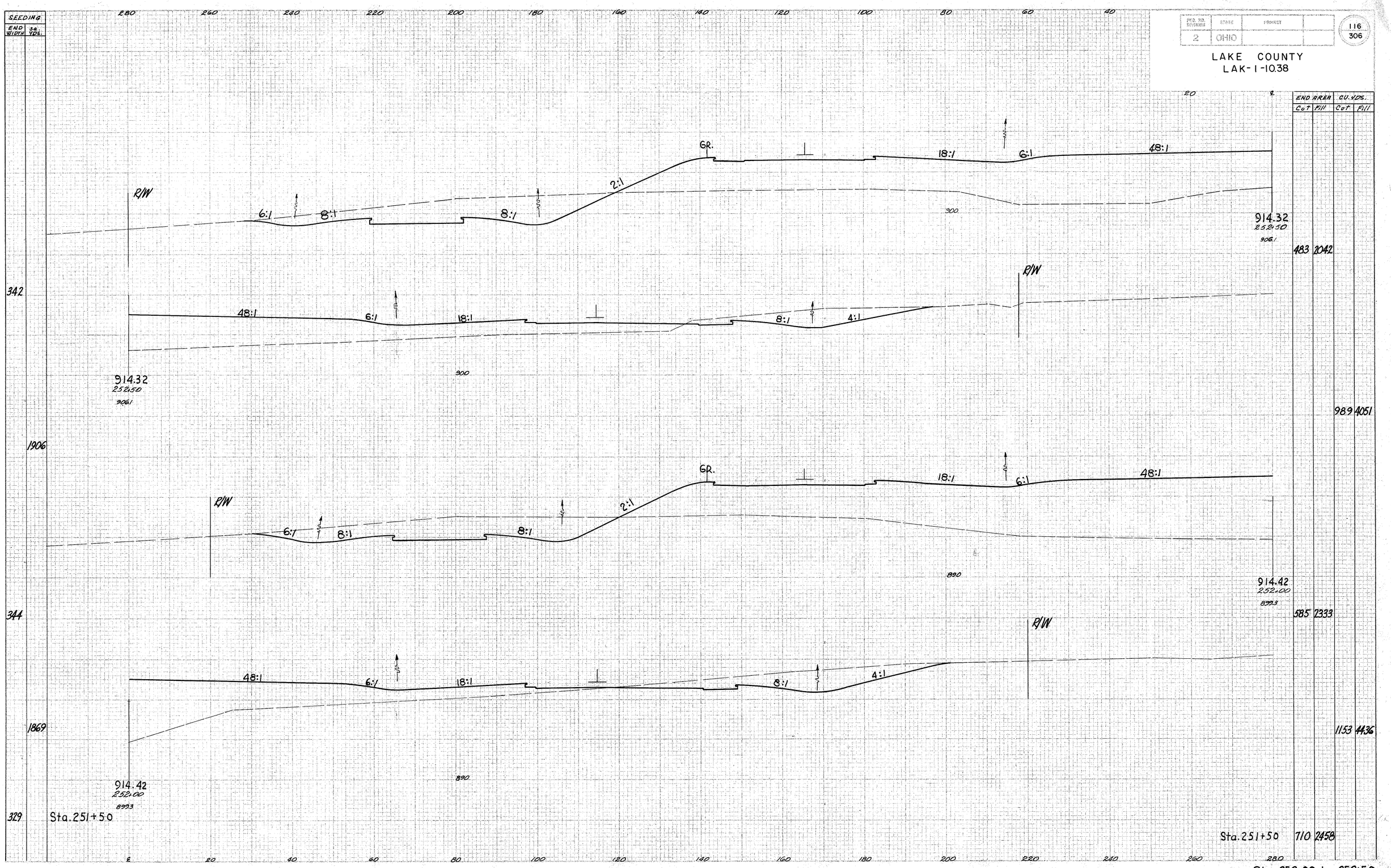


Sta. 251+00 to 251+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

116
306

LAKE COUNTY
LAK-I-10.38



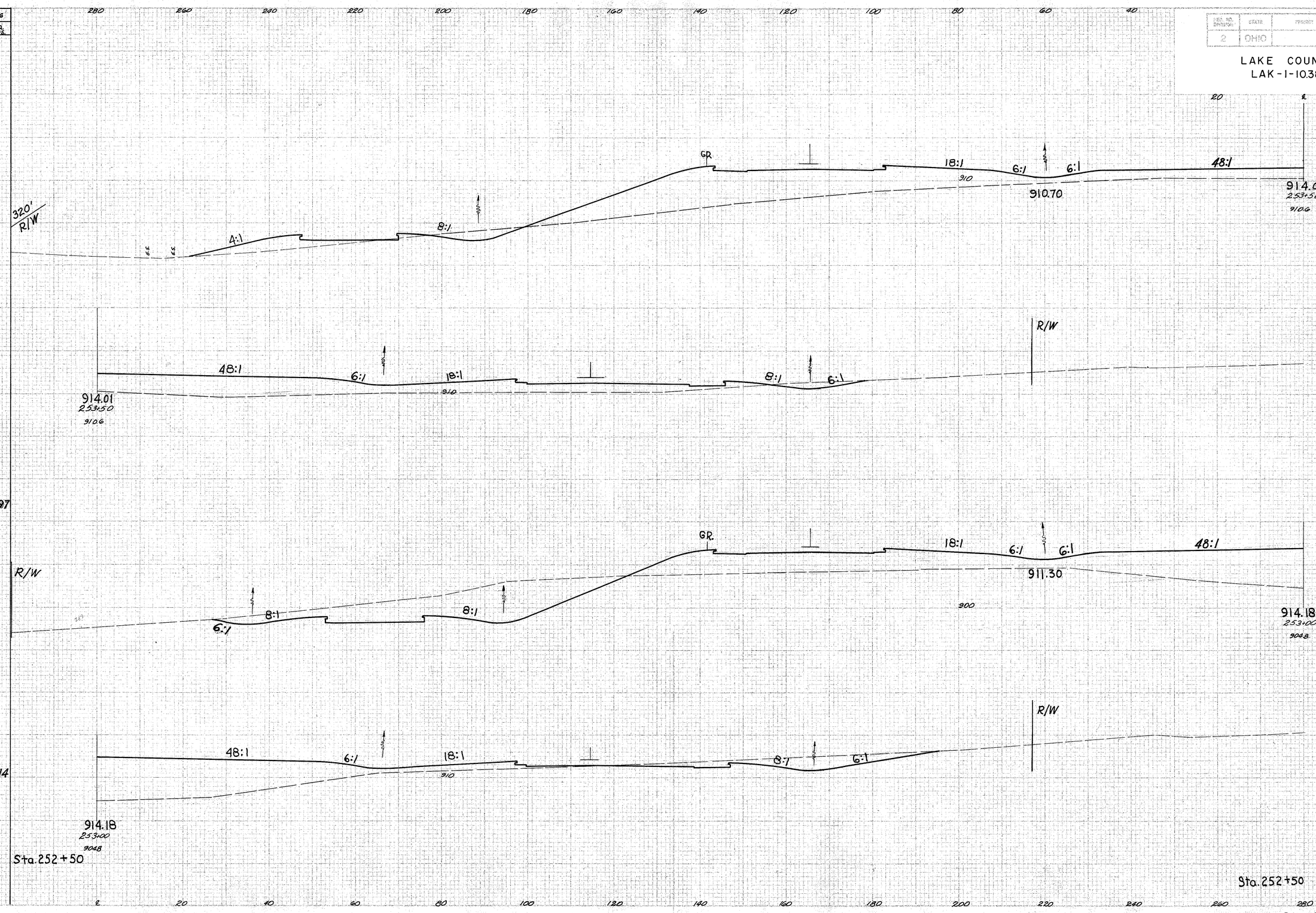
Sta. 252+00 to 252+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

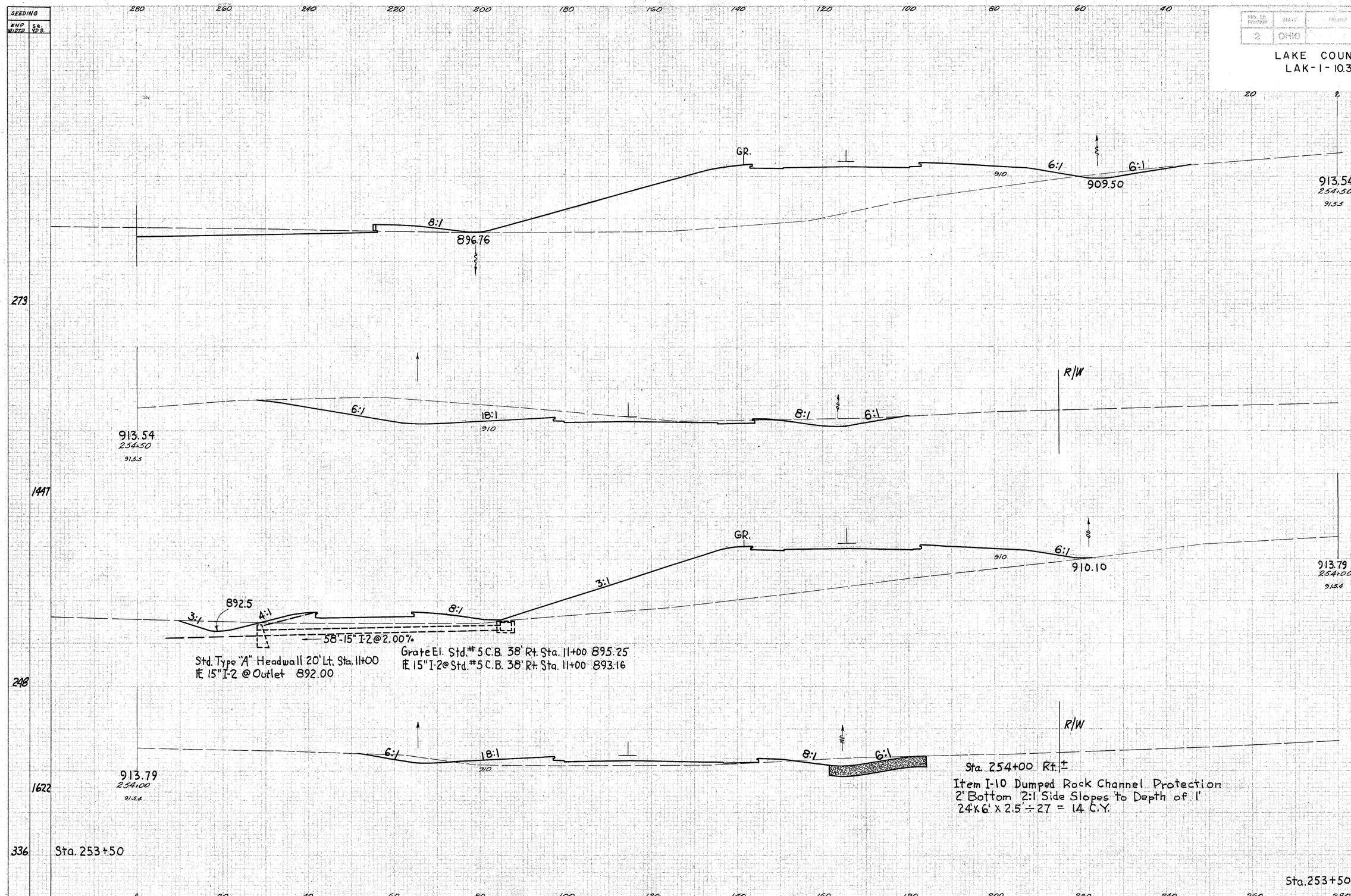
117
306

LAKE COUNTY
LAK-1-10.38

SEEDING		END AREA		CU. YDS	
END WIDTH	SQ. YDS.	Cut	Fill	Cut	Fill
336	1897	49	1306		
347	1914	548	1253		
342		955	3051		
		433	2042	553	2369



Sta. 253+00 to 253+50



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

118
306

LAKE COUNTY
LAK-I-10.38

Sta. 254+00 to 254+50

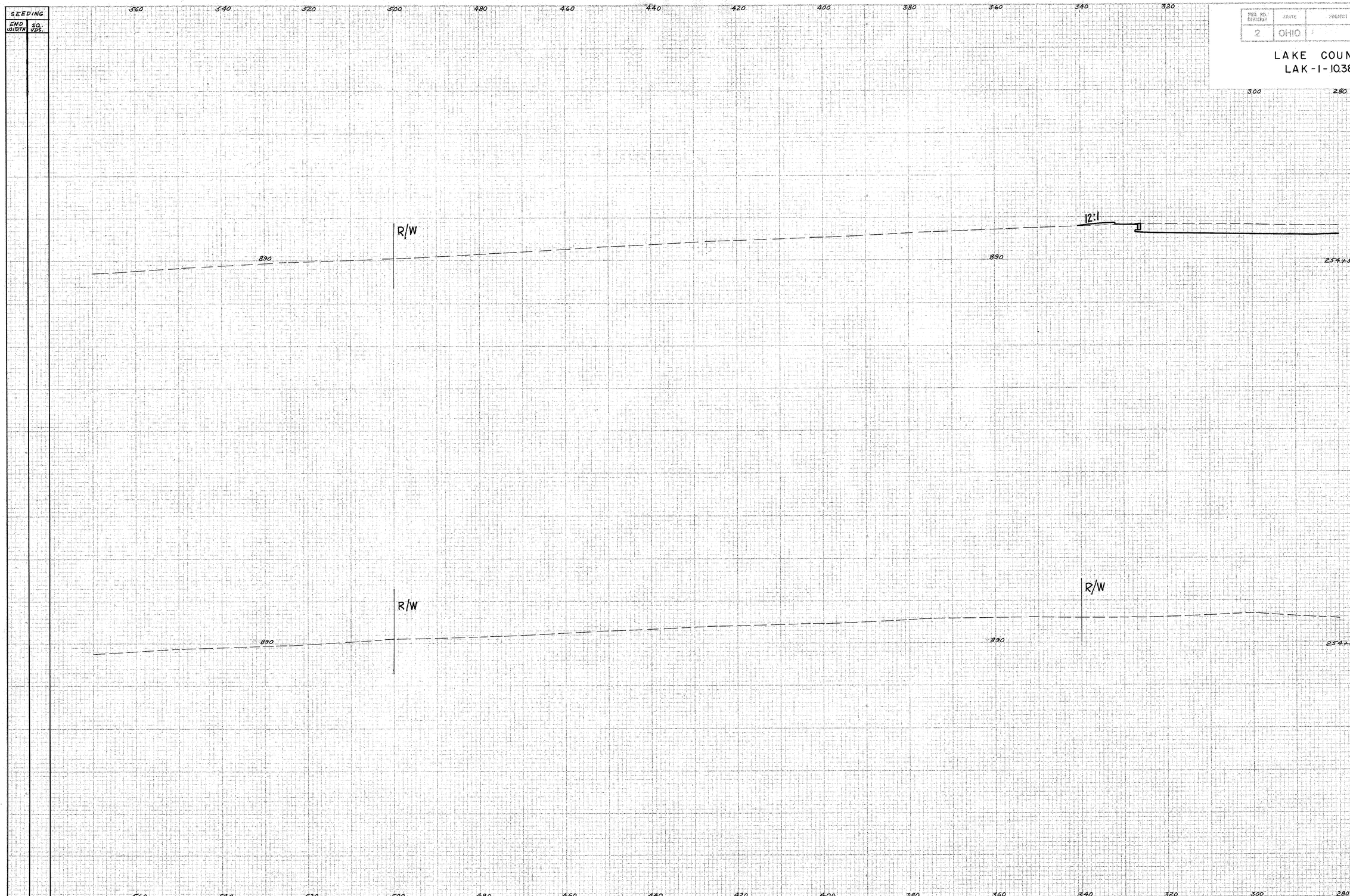
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

119
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



Plotted CEB

Extension Left of Sta. 254+00 to 254+50

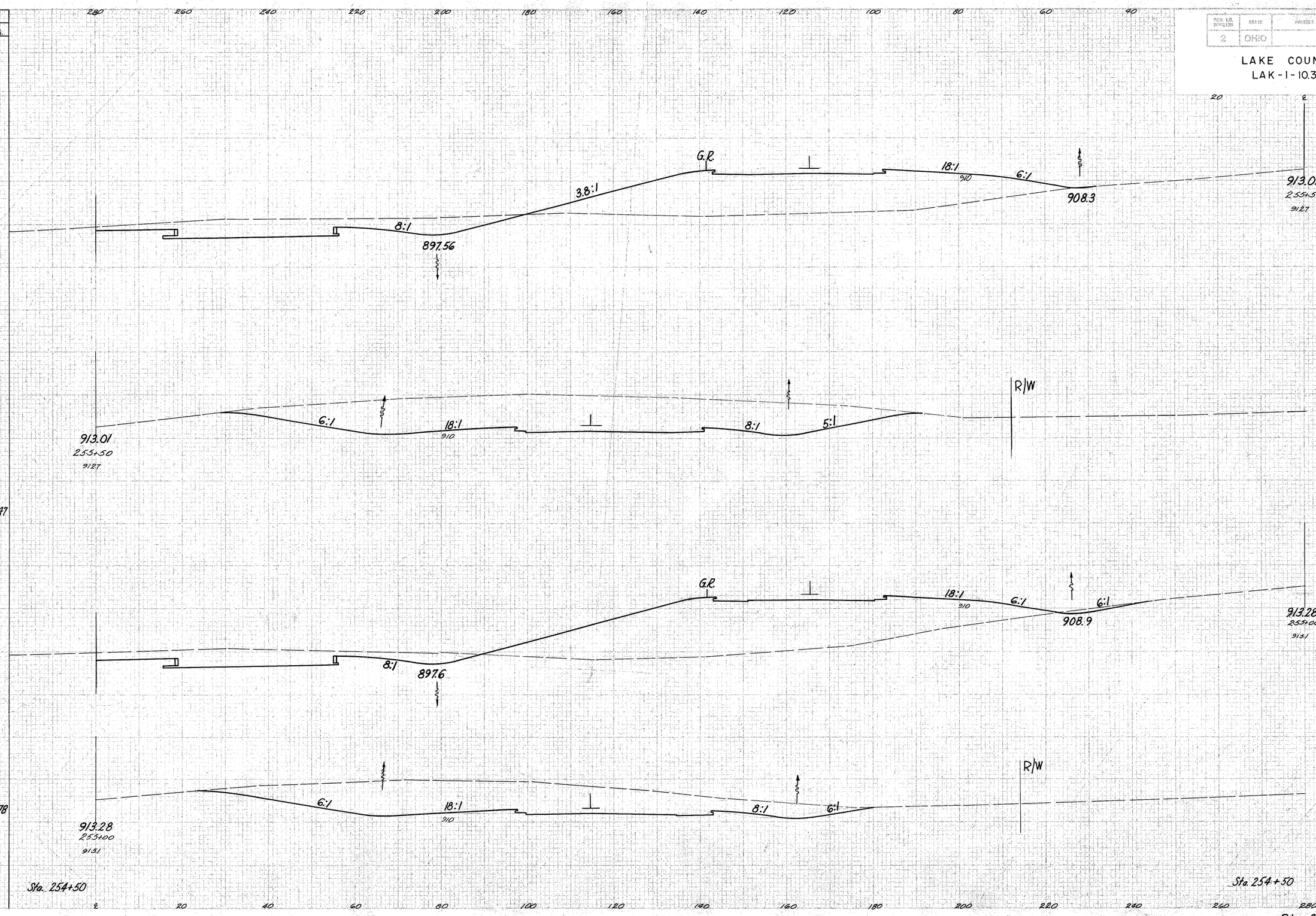
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

120
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
298	
164.7	
295	
157.8	
273	

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1368	861		
		2350	1769
1170	1050		
		1568	1969
523	1076		



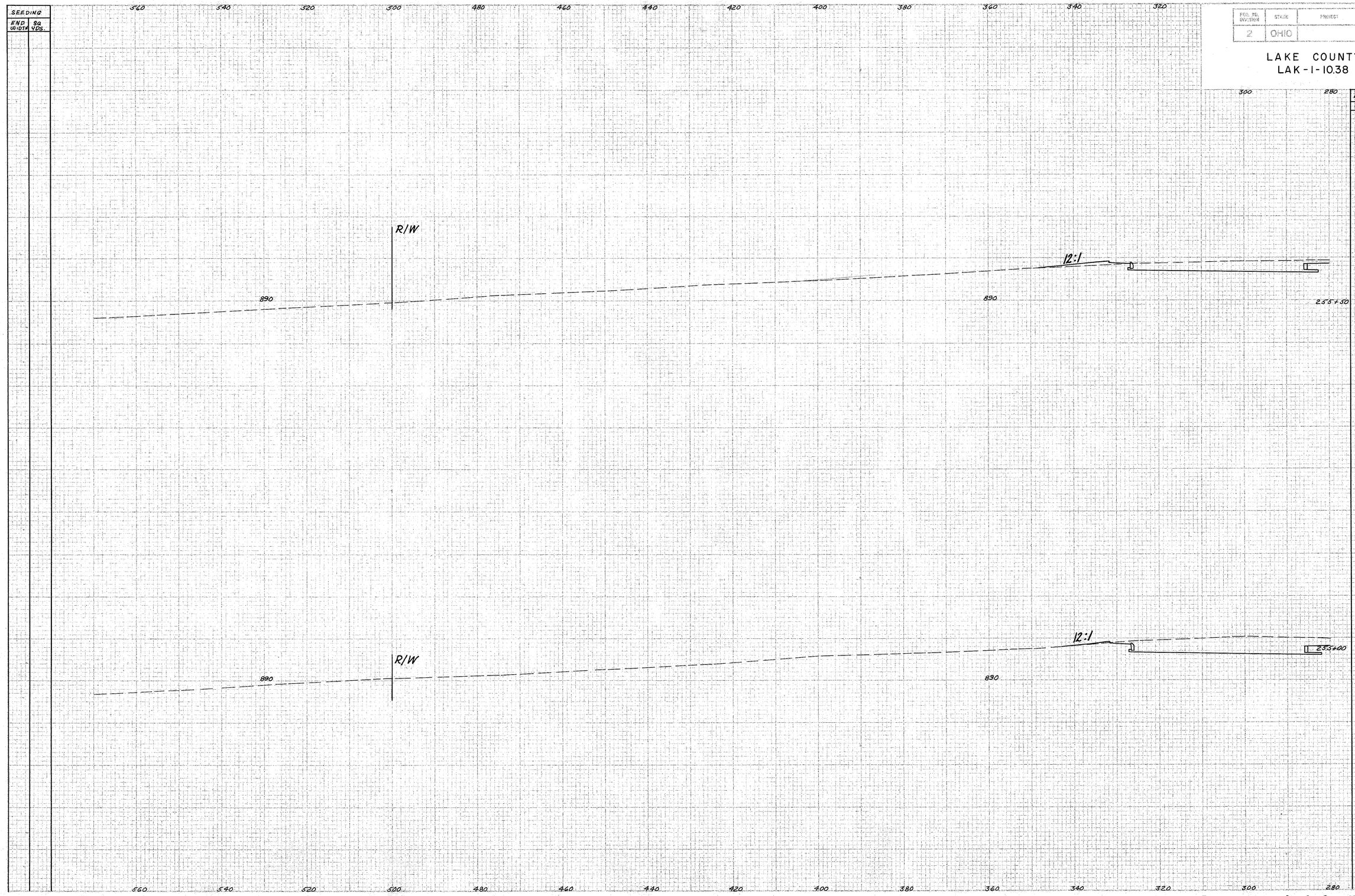
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

121
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



Plotted CEB

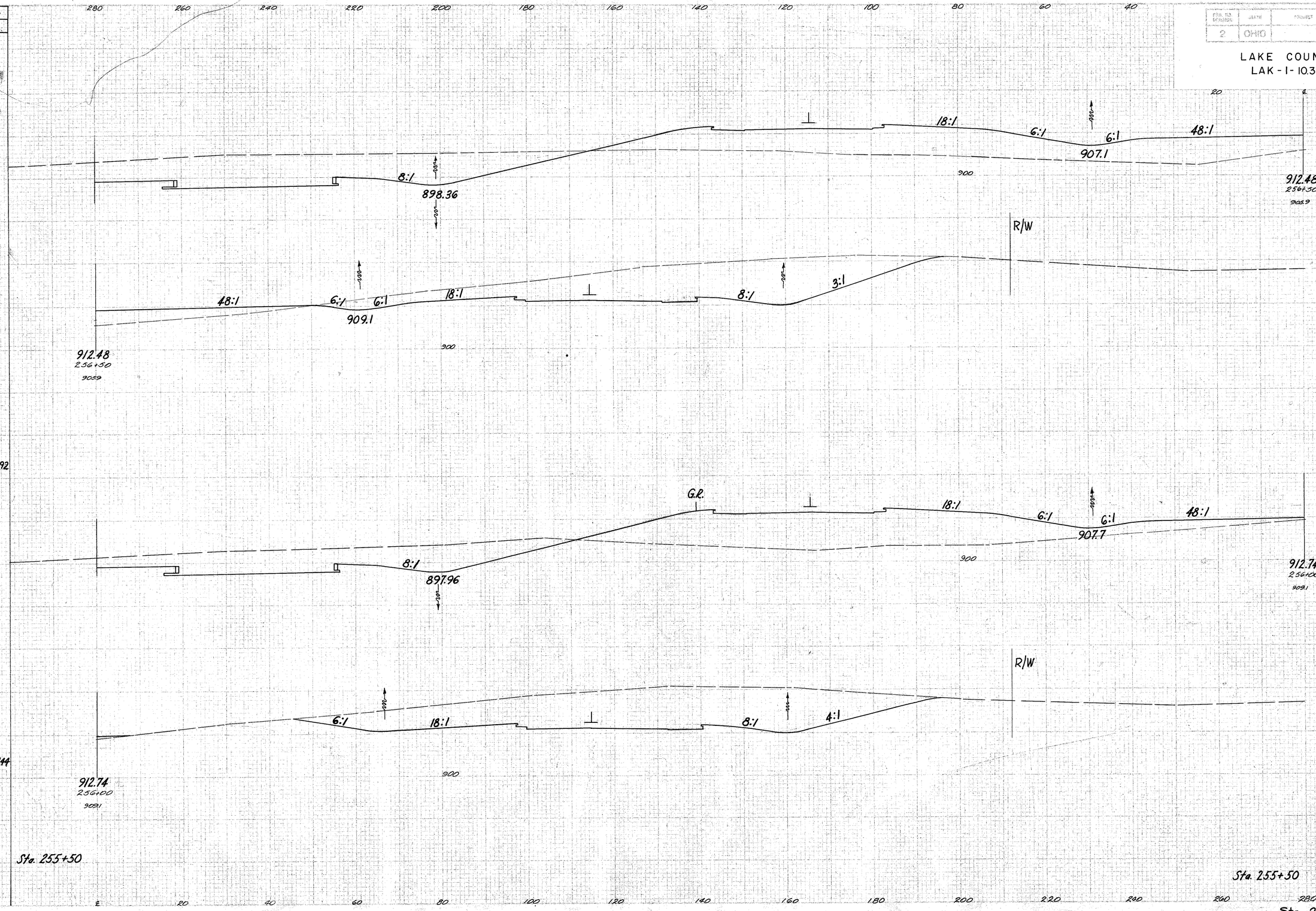
Extension Left of Sta. 255+00 to 255+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

122
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
387	
2092	
366	
1844	
278	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1613	970		
		2950	1744
1573	913		
		2723	1643
1368	861		

Sta. 256+00 to 256+50

8-A

V-8

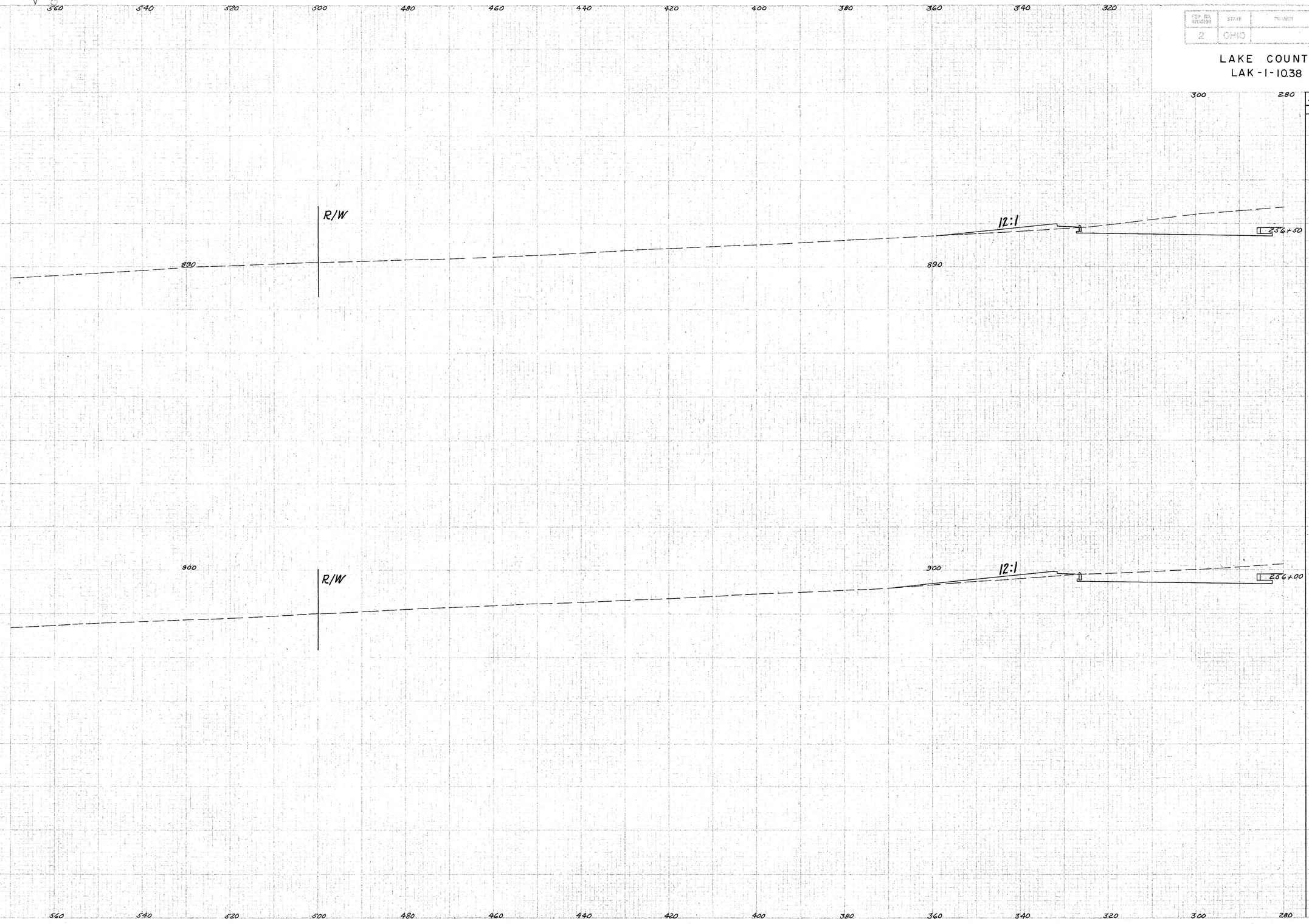
SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

123
306

LAKE COUNTY
LAK-I-1038

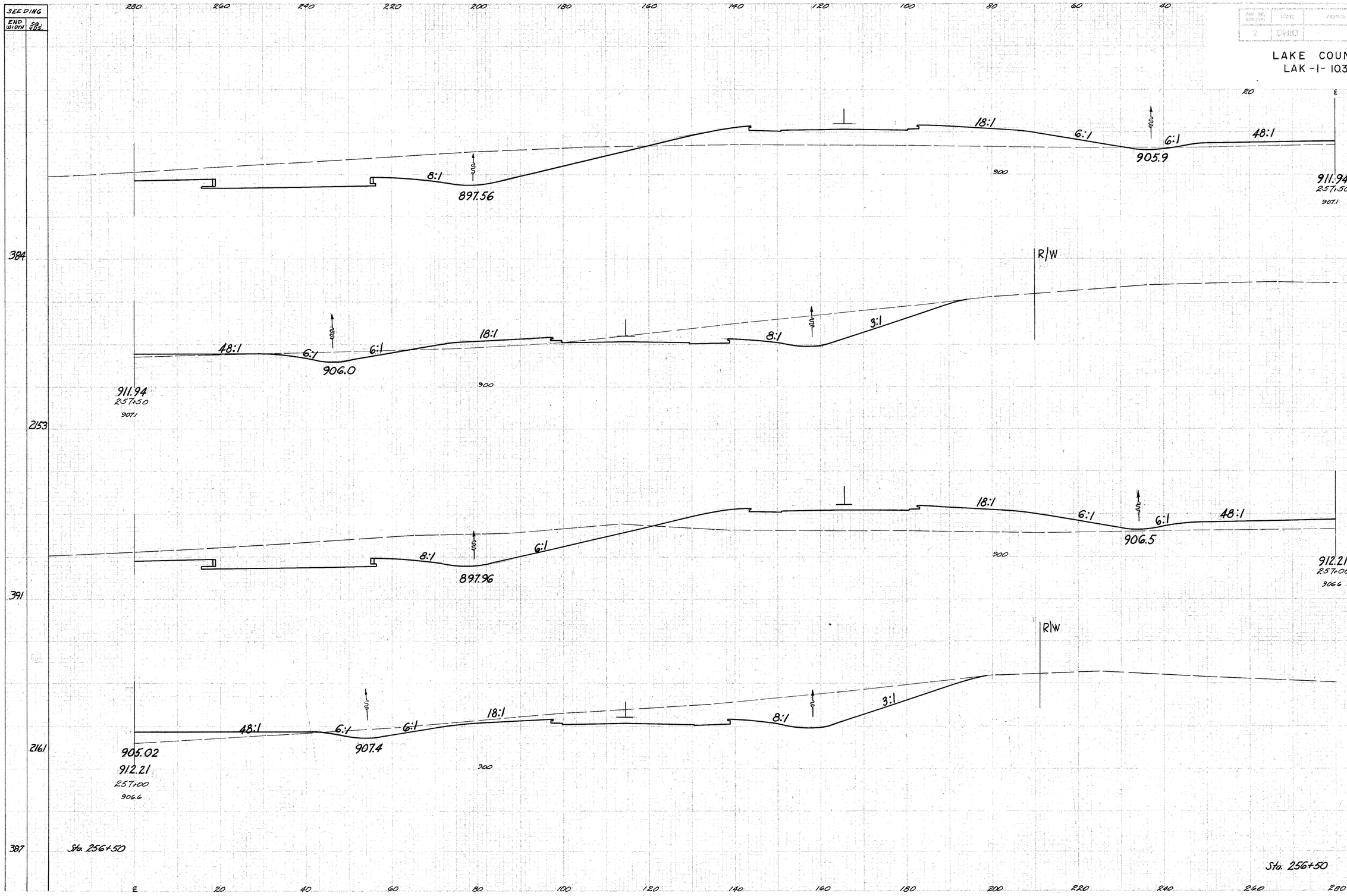
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



Plotted DEB

Extension Left of Sta. 256+00 to 256+50

LAKE COUNTY
LAK-1-10.38



Sta. 257+00 to 257+50

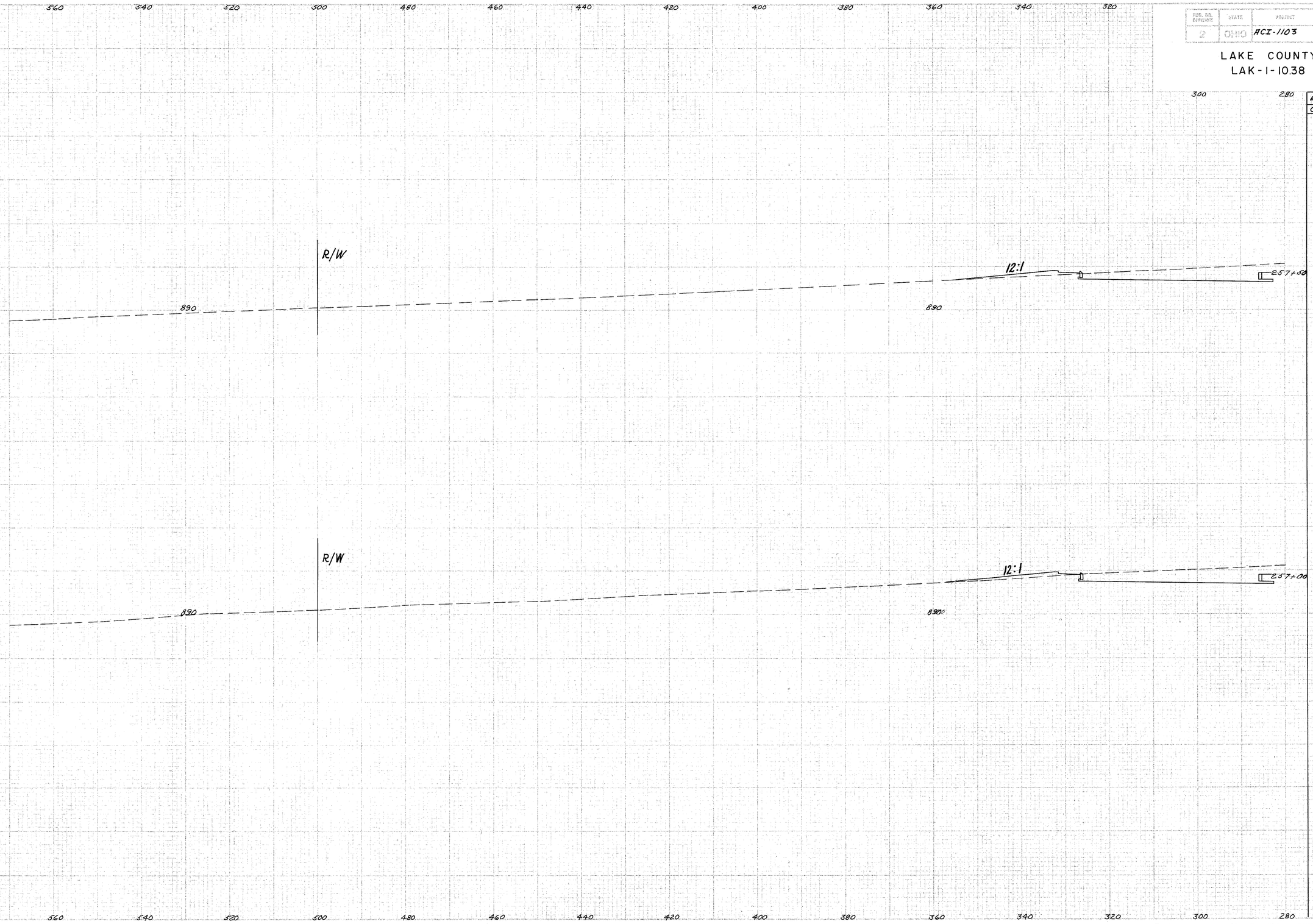
SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	ACI-1103	

125
306

LAKE COUNTY
LAK-1-10.38

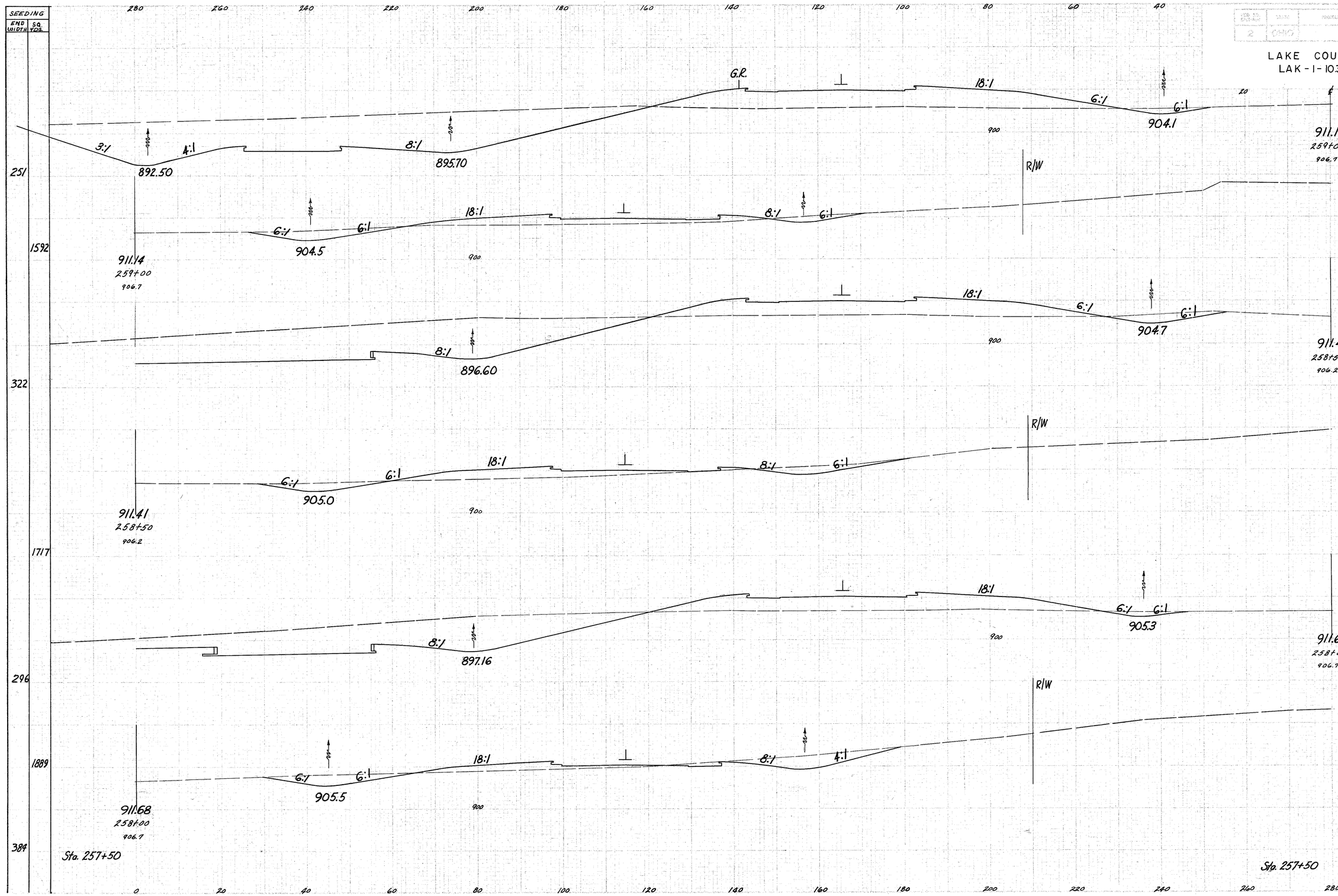
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



Plotted CEB

Extension Left of Sta. 257+00 to 257+50

LAKE COUNTY
LAK-1-10.38



END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
964	486		
		1822	844
1004	425		
		1717	739
850	373		
		1749	768
1039	456		

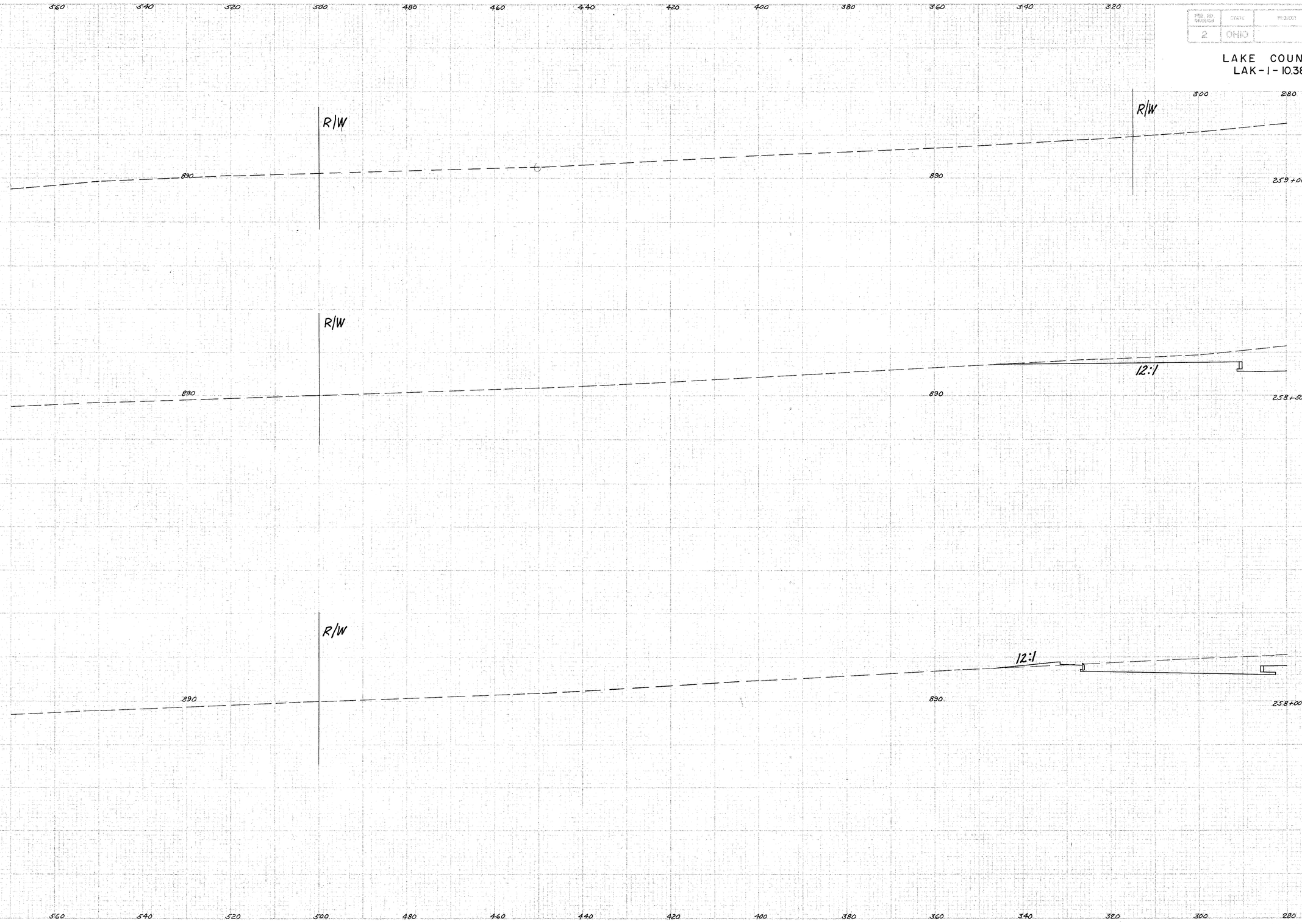
Sta. 258+00 to 259+00

SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

127
306

LAKE COUNTY
LAK-I-10.38



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

Printed 02B

Extension Left of Sta. 258+00 to 259+00

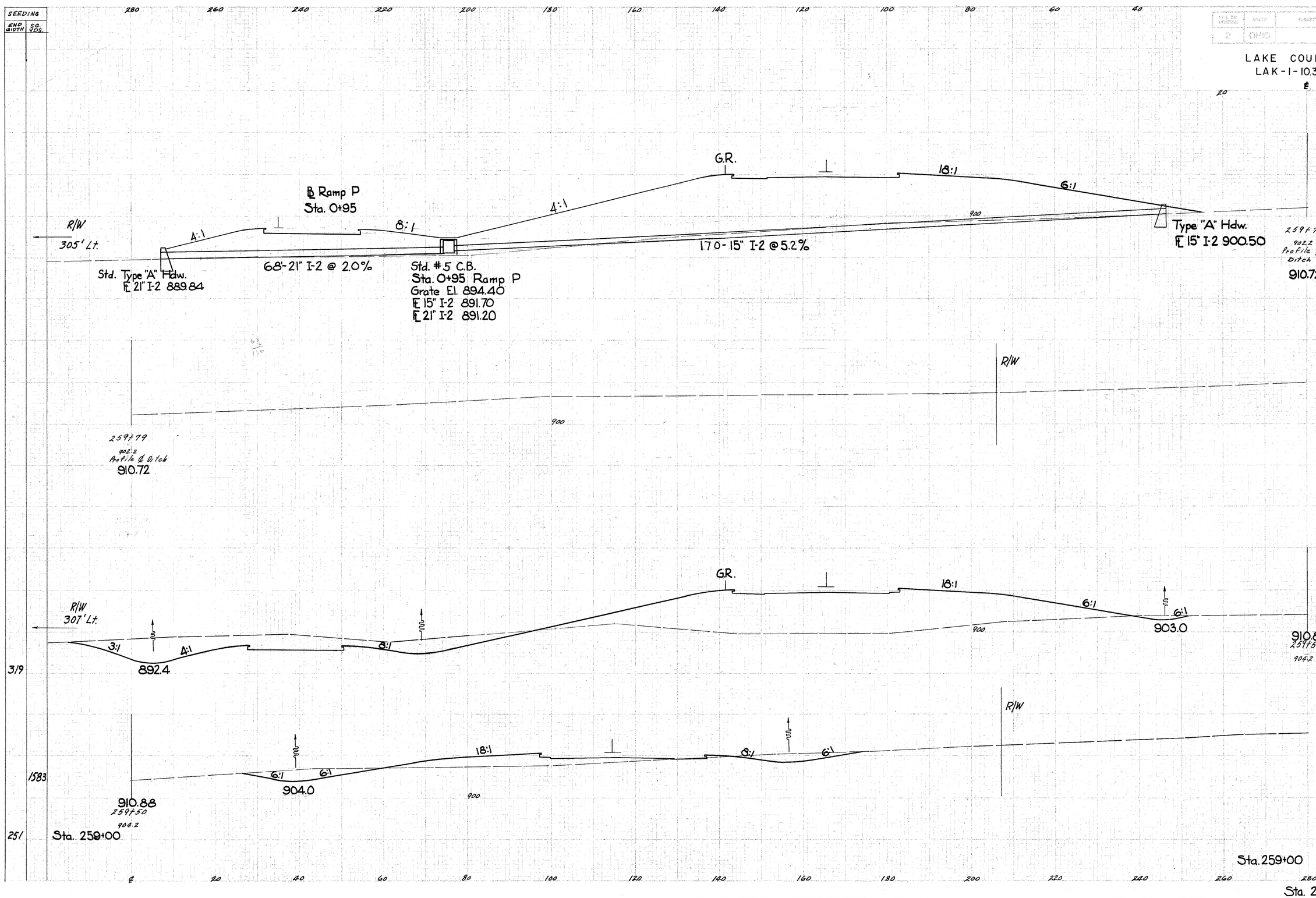
SEEDING	
END WIDTH	SQ. YDS.

FED. ROAD DISTRICT	STATE	PROJECT	
2	OHIO		

128
306

LAKE COUNTY
LAK-I-10.38

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

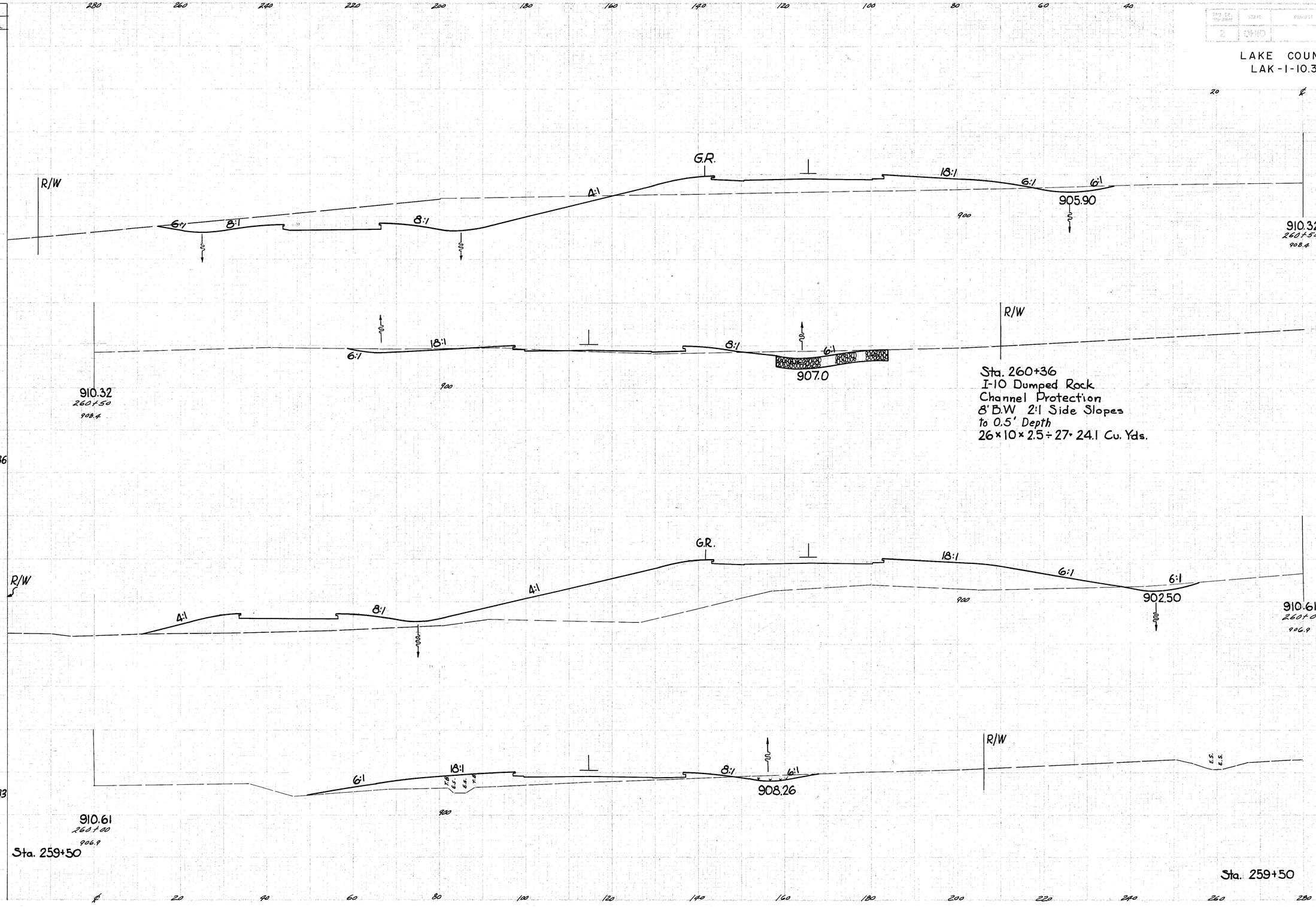


Sta. 259+50 to 259+79

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
248	
	1436
269	
1633	
319	

END AREA		CU. YDS	
Cut	Fill	Cut	Fill
488	281		
		472	1487
22	1325		
		353	2195
359	1046		

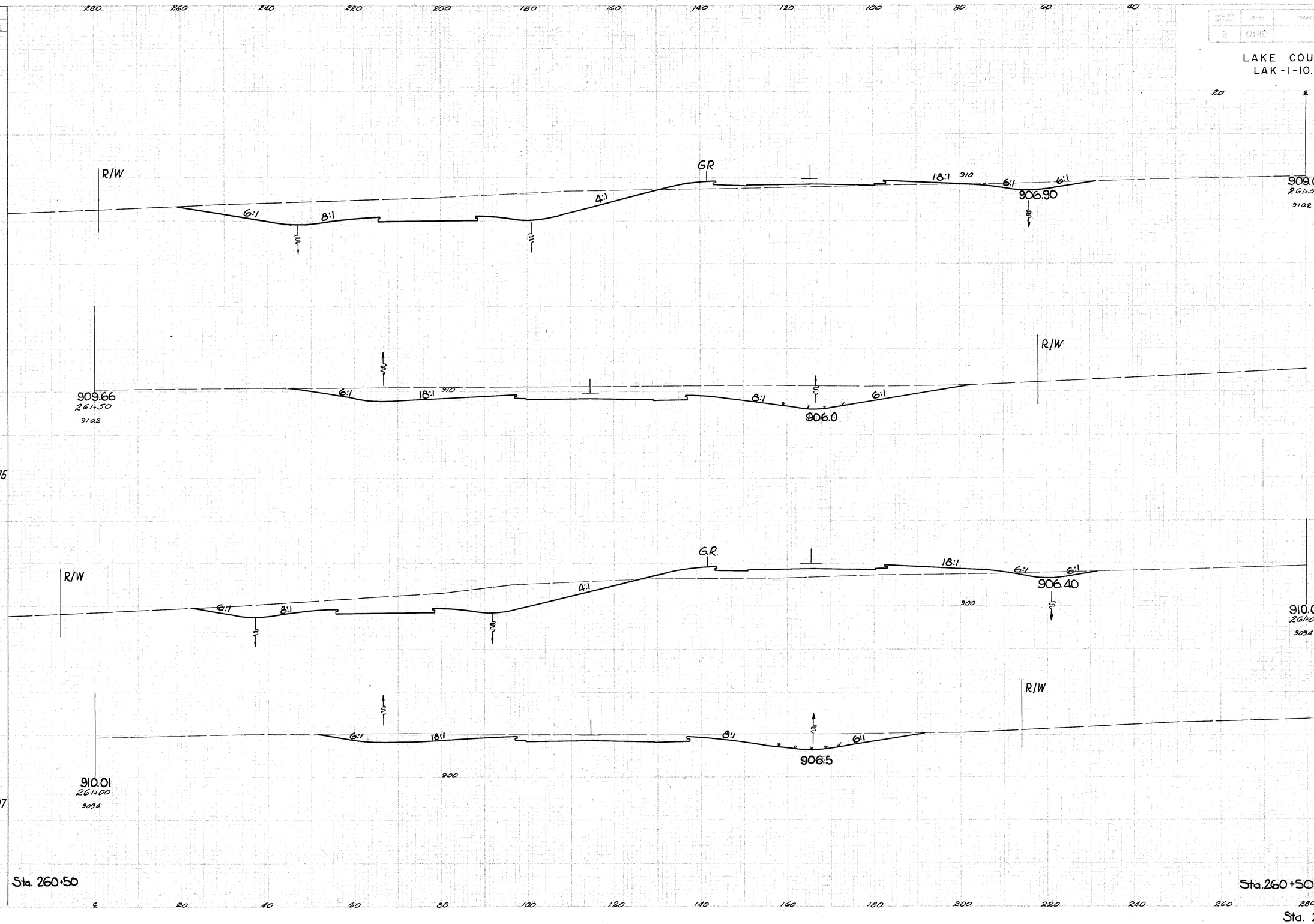


Sta. 260+00 to 260+50

LAKE COUNTY
LAK-1-10.38

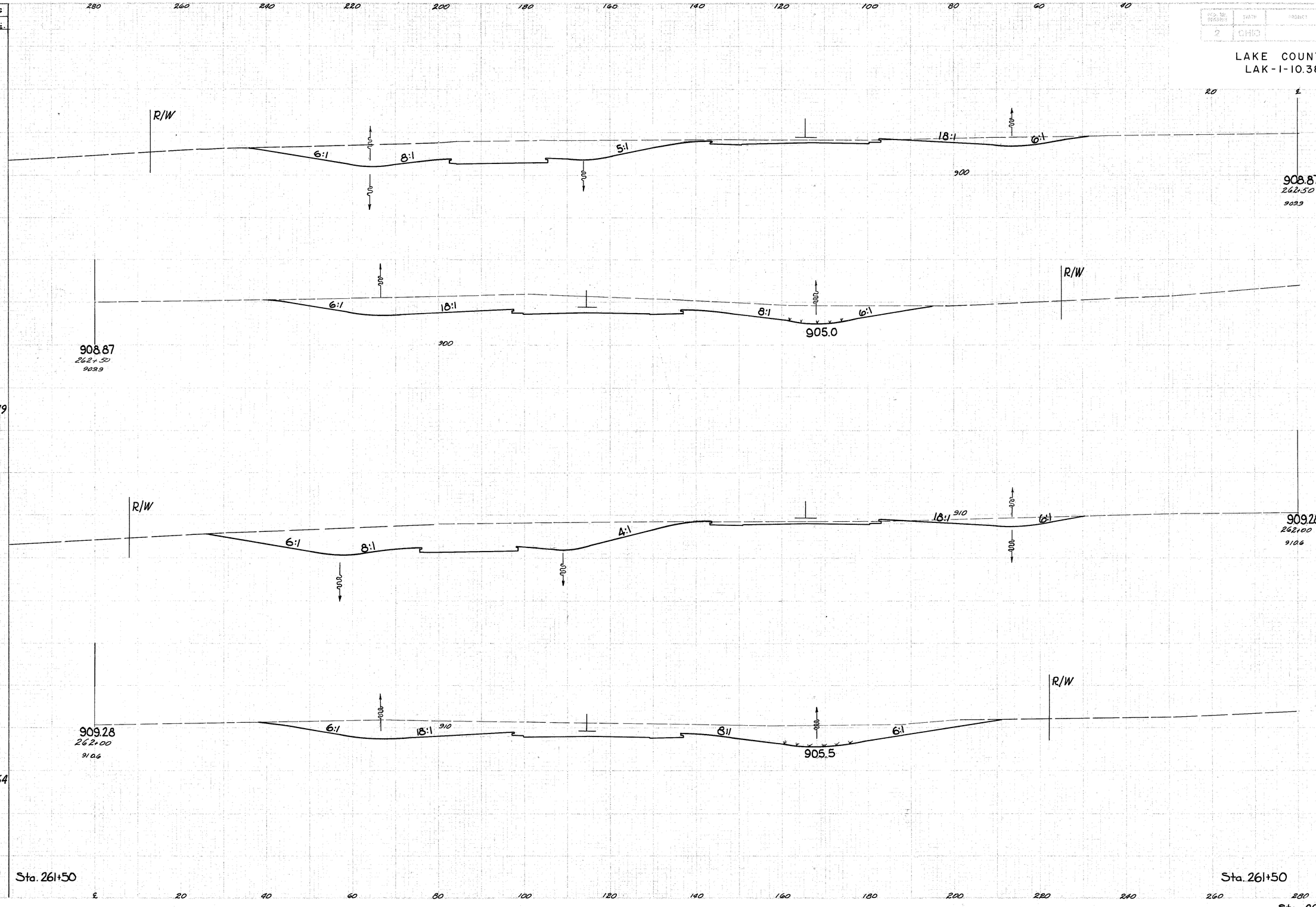
SEEDING	
END WIDTH	SQ. YDS.
276	
	1475
255	
	1397
248	

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
932	42		
		1422	164
604	135		
		1011	385
488	281		



Sta. 261+00 to 261+50

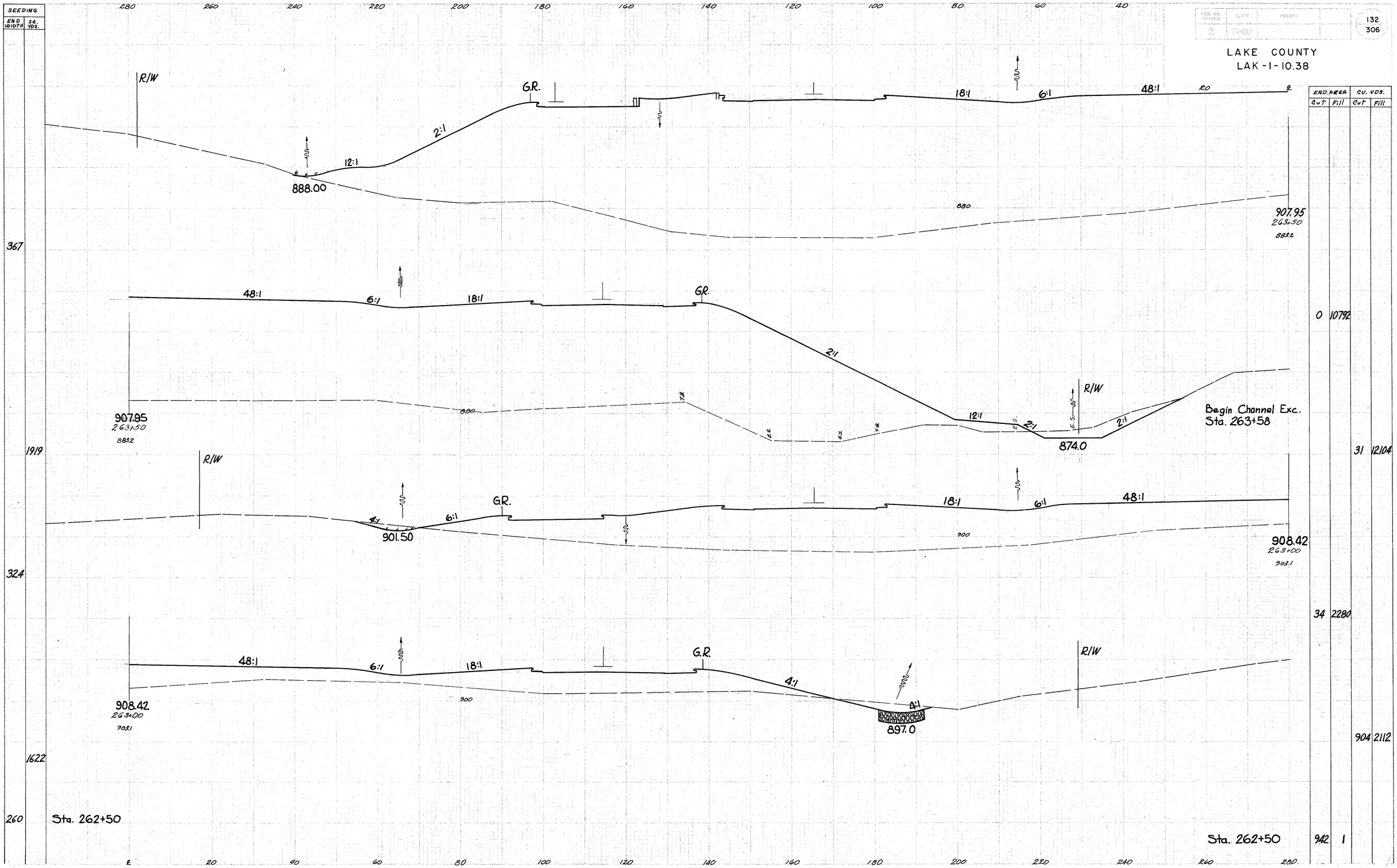
LAKE COUNTY
LAK-1-10.38



END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
942	1		
		1909	3
1120	2		
		1900	41
932	42		

Sta. 262+00 to 262+50

LAKE COUNTY
LAK-1-10.38

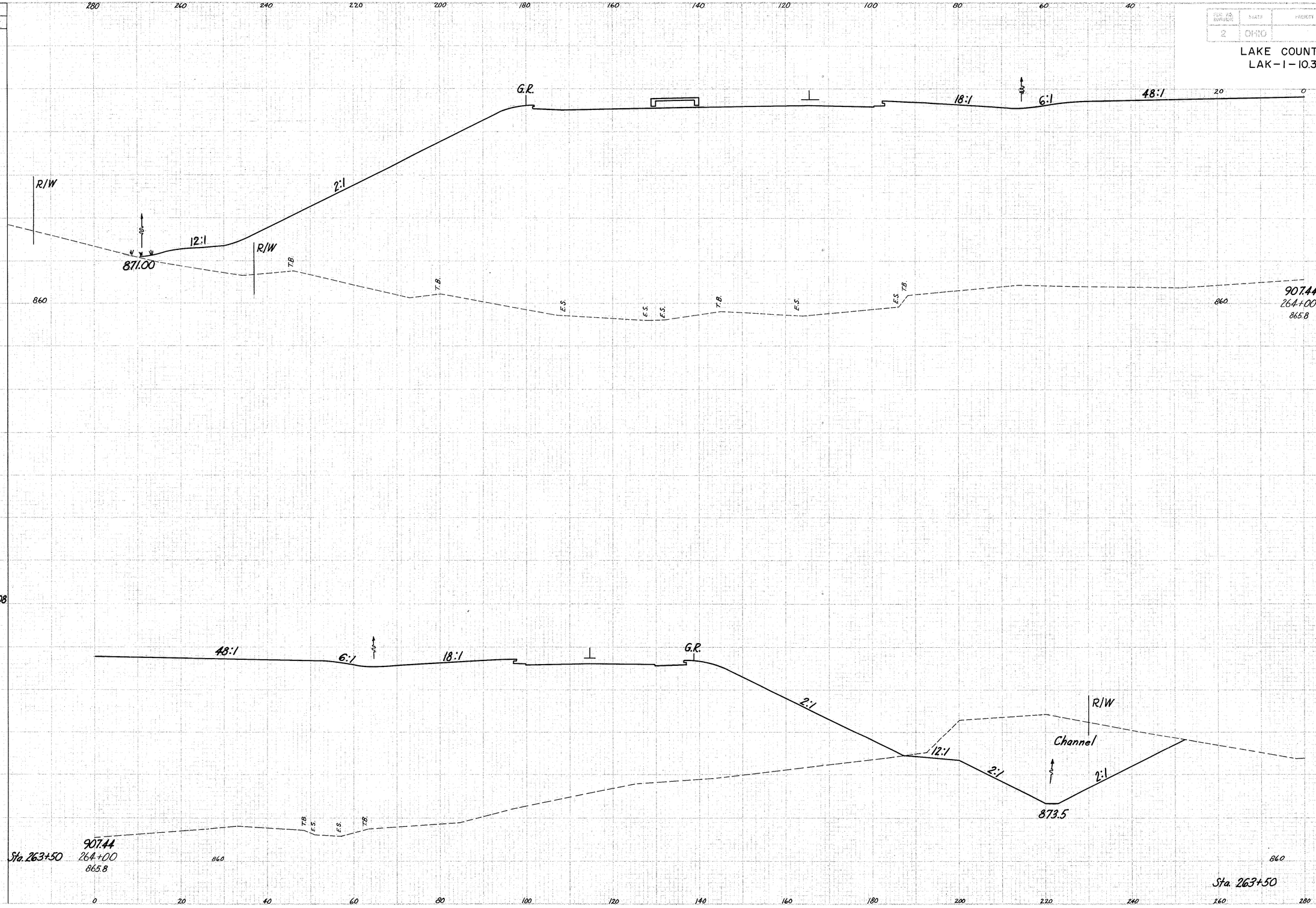


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

133
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
356	
2008	
367	



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		15885	
		24701	
		10792	

Sta. 264+00

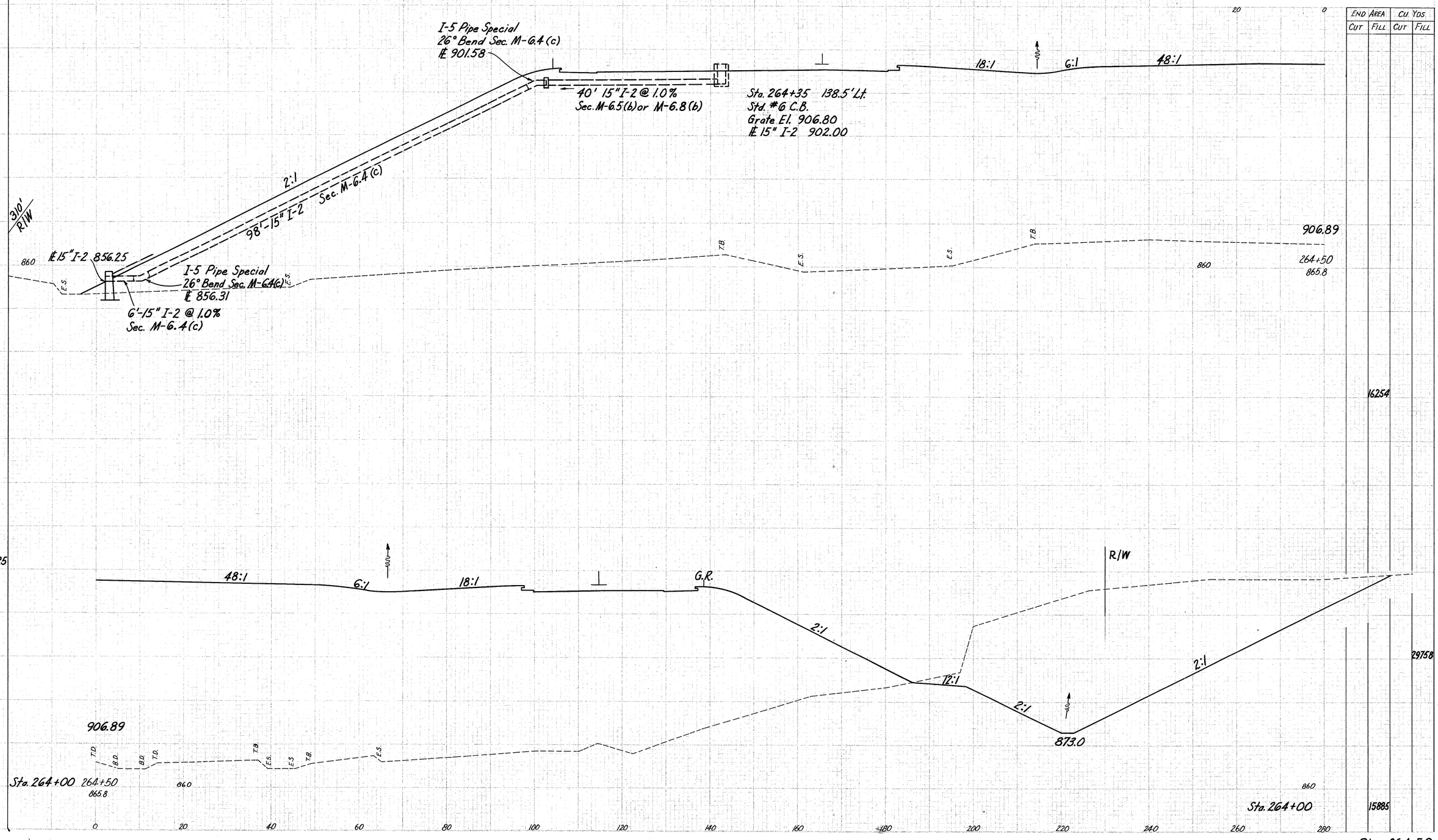
SEEDING	
END WIDTH	SQ. YDS.
373	
2025	
356	

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		16254	
		29758	
		15885	

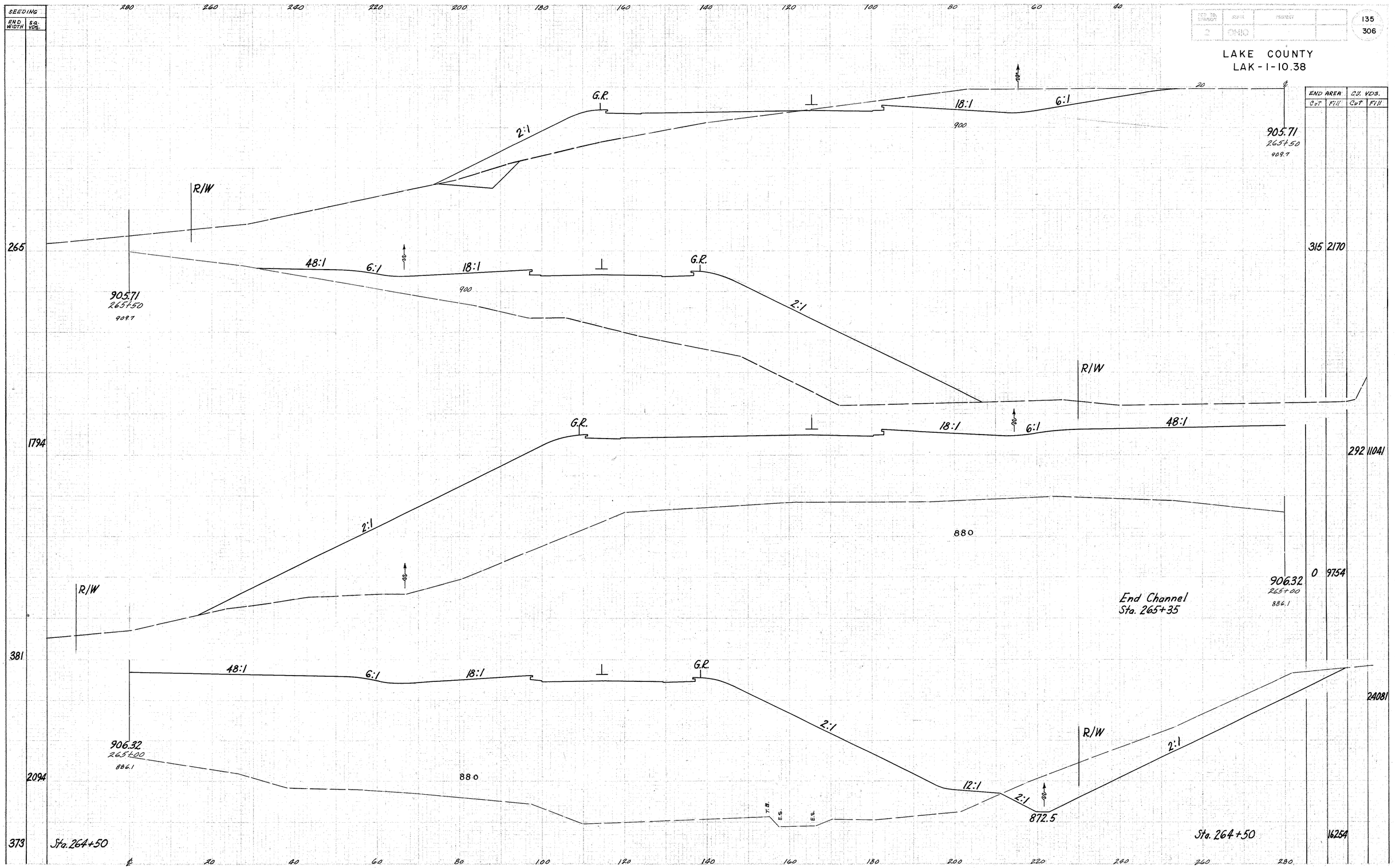
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

134
306

LAKE COUNTY
LAK-1-10.38



Sta. 264+50

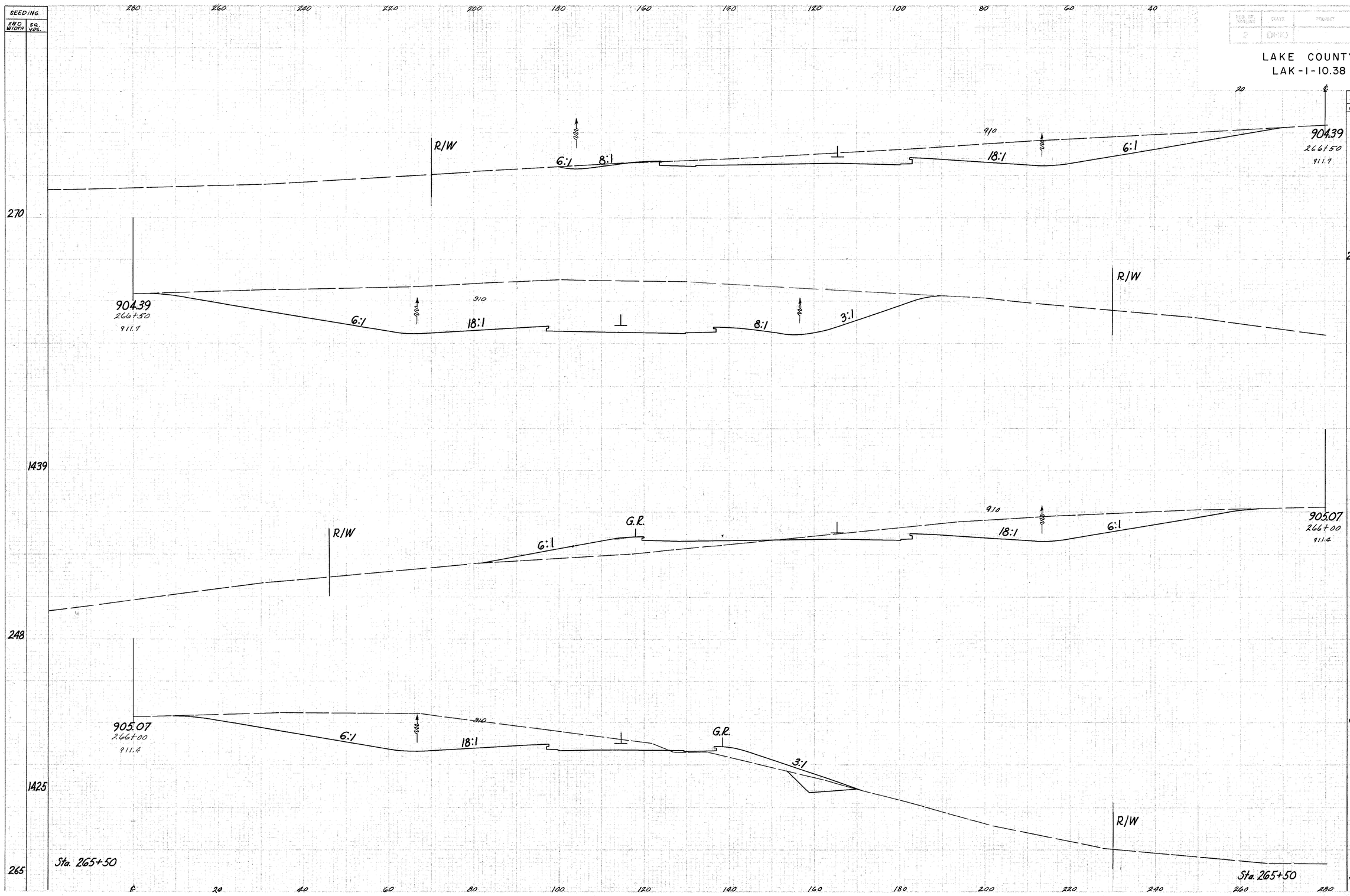


Sta. 265+00 to 265+50

NO. OF SHEETS	DATE	PROJECT	
2	08-90		

136
306

LAKE COUNTY
LAK-1-10.38

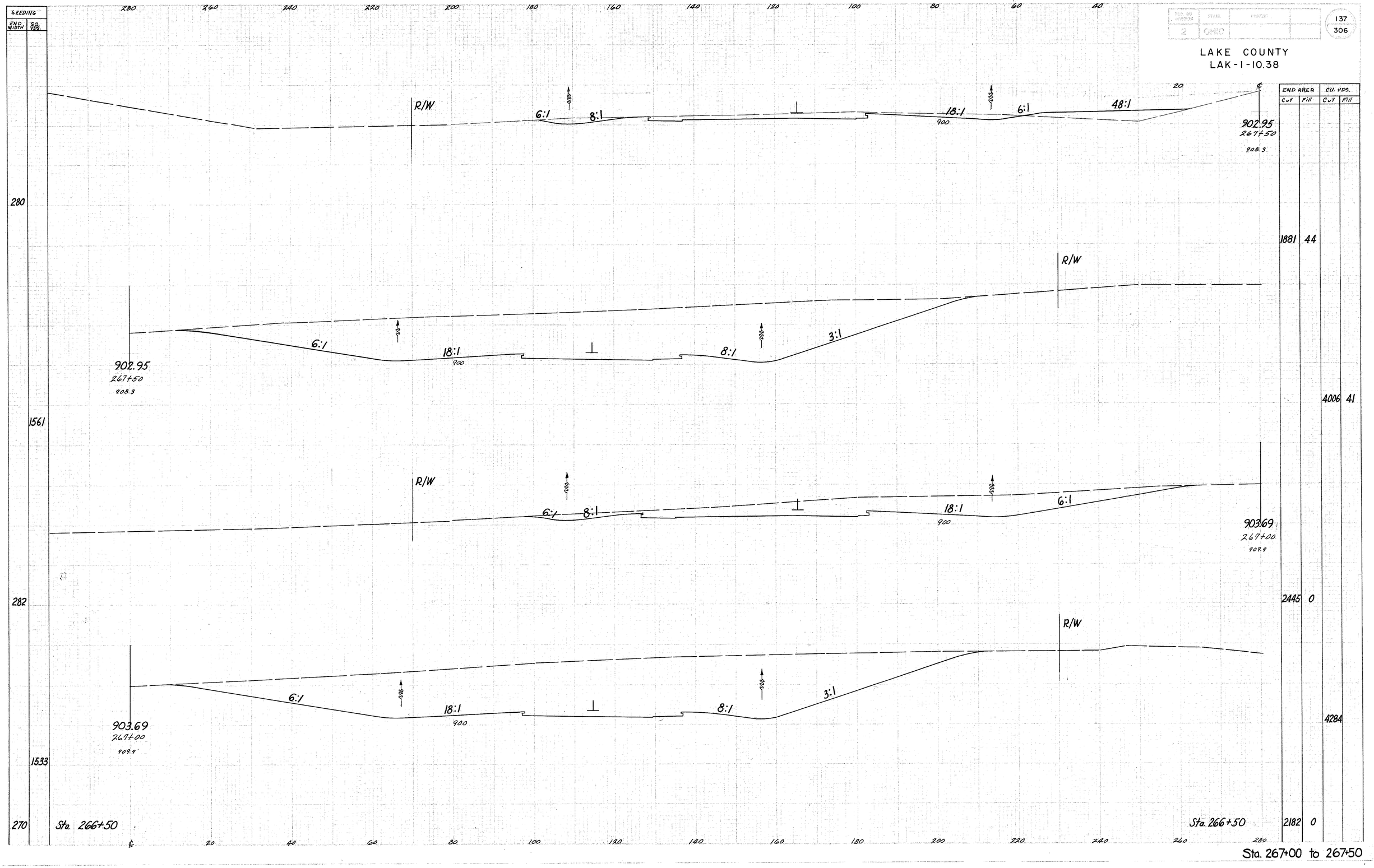


END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
2182	0		
2824	177		
868	191		
1095	2186		
315	2170		

Sta. 266+00 to 266+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

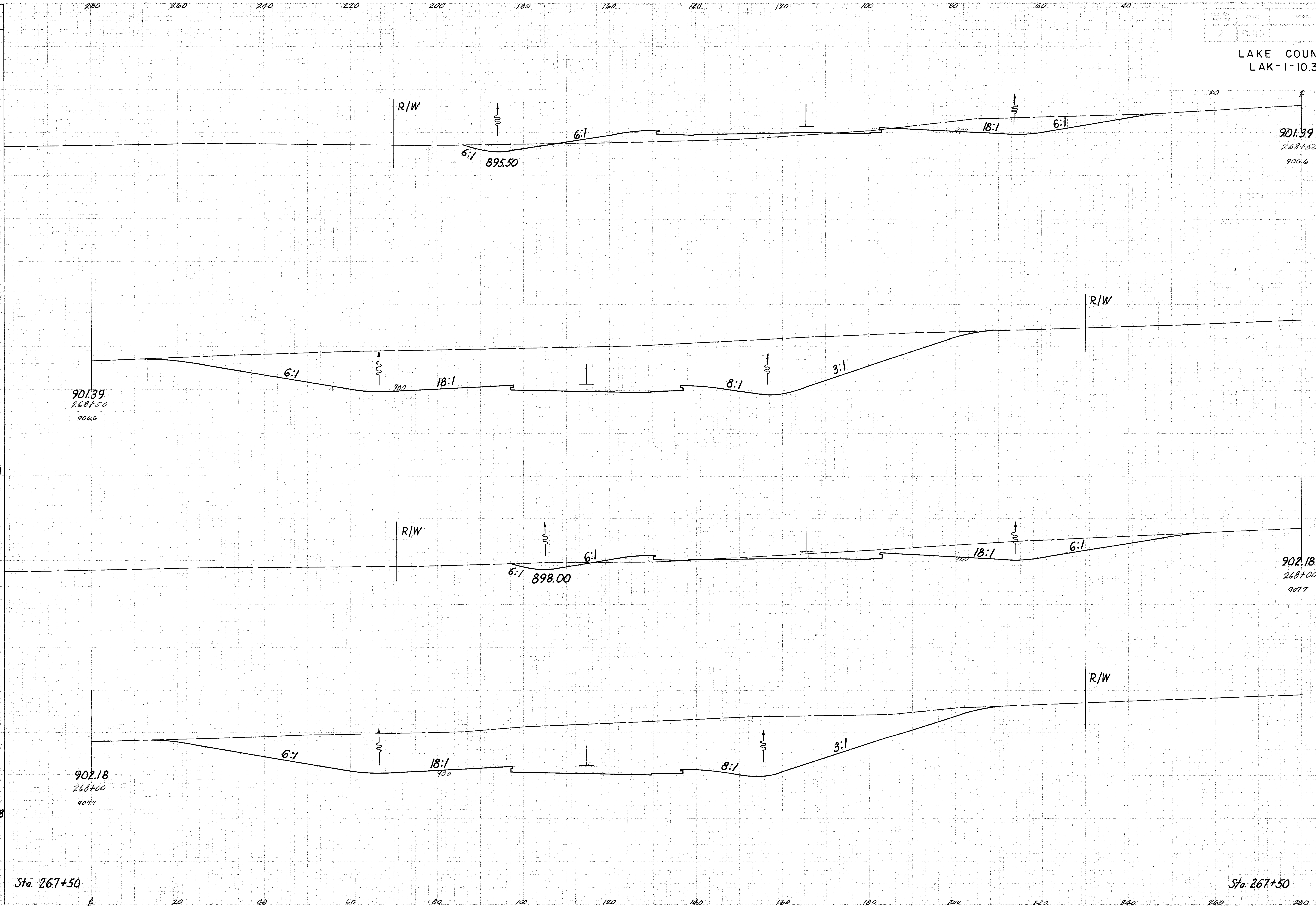


END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
1881	44		
		4006	41
2445	0		
		4284	
2182	0		

Sta. 267+00 to 267+50

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
274	
	1511
270	
	1523
280	

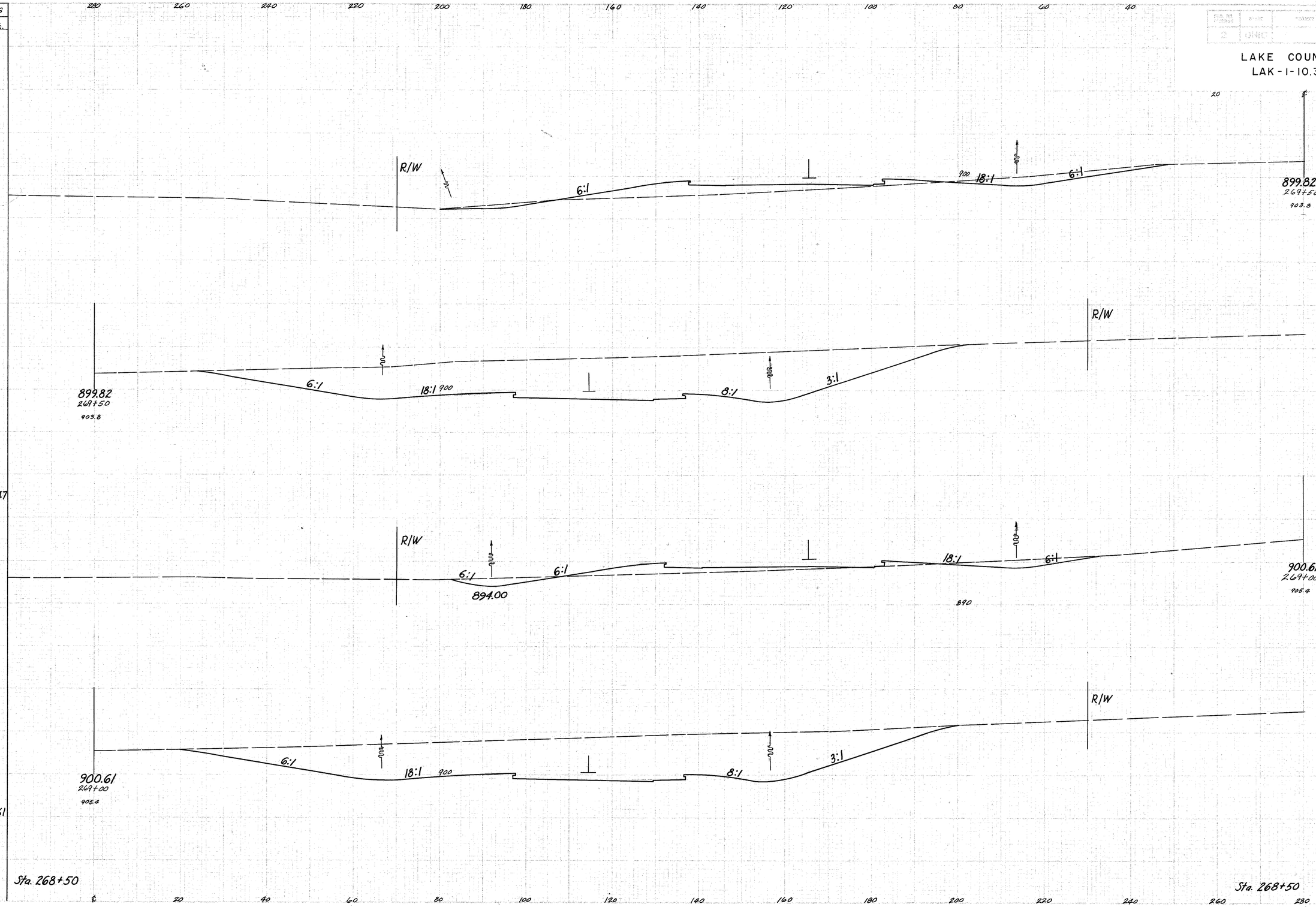


END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1653	80		
		3209	89
1813	16		
		3420	56
1881	44		

Sta. 268+00 to 268+50

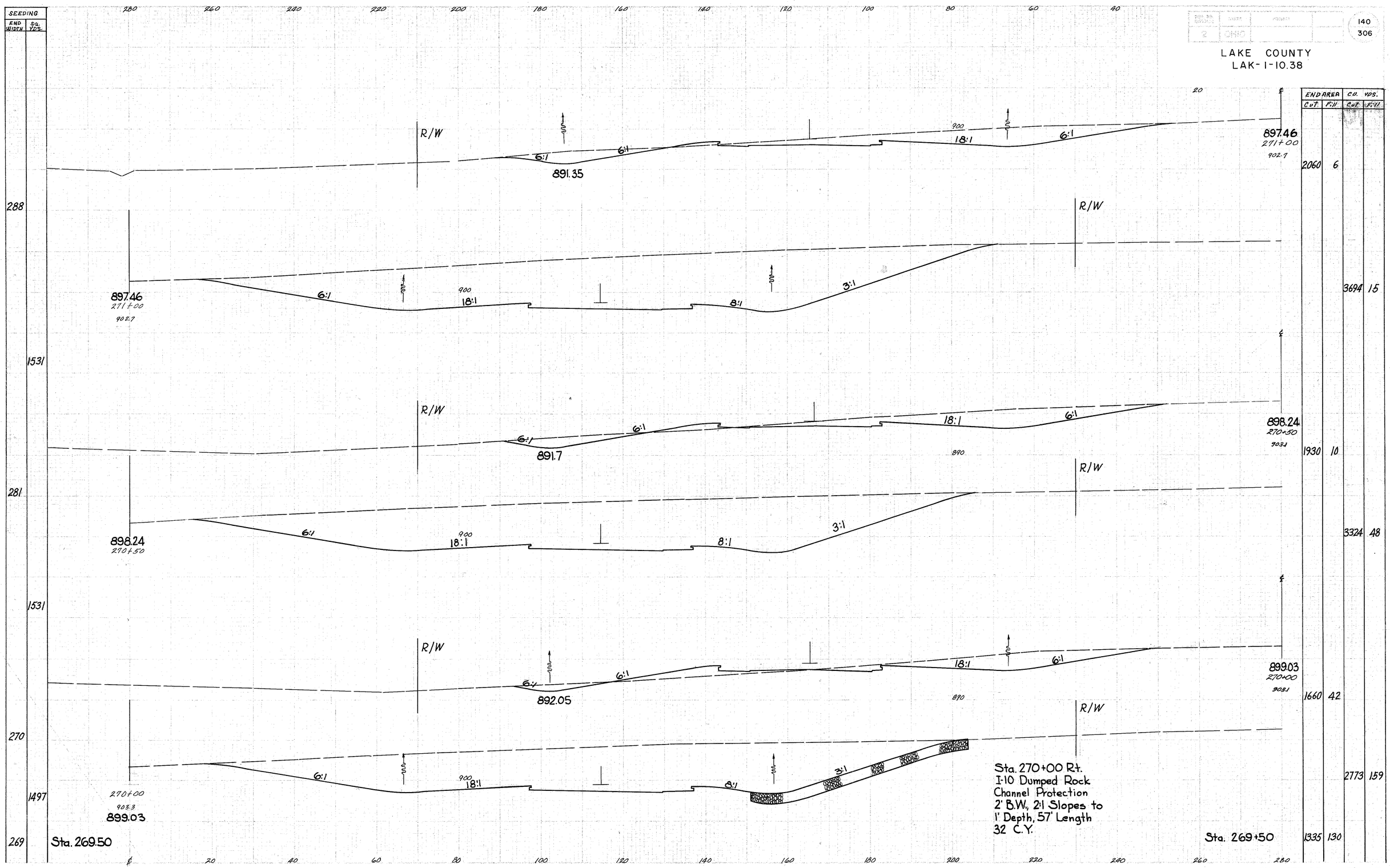
LAKE COUNTY
LAK-1-10.38

SEEDING		END AREA		CU. YDS.	
END WIDTH	SQ. YDS.	Cut	Fill	Cut	Fill
269	1447	1335	130	2511	191
252	1461	1377	76	2806	144
274		1653	80		



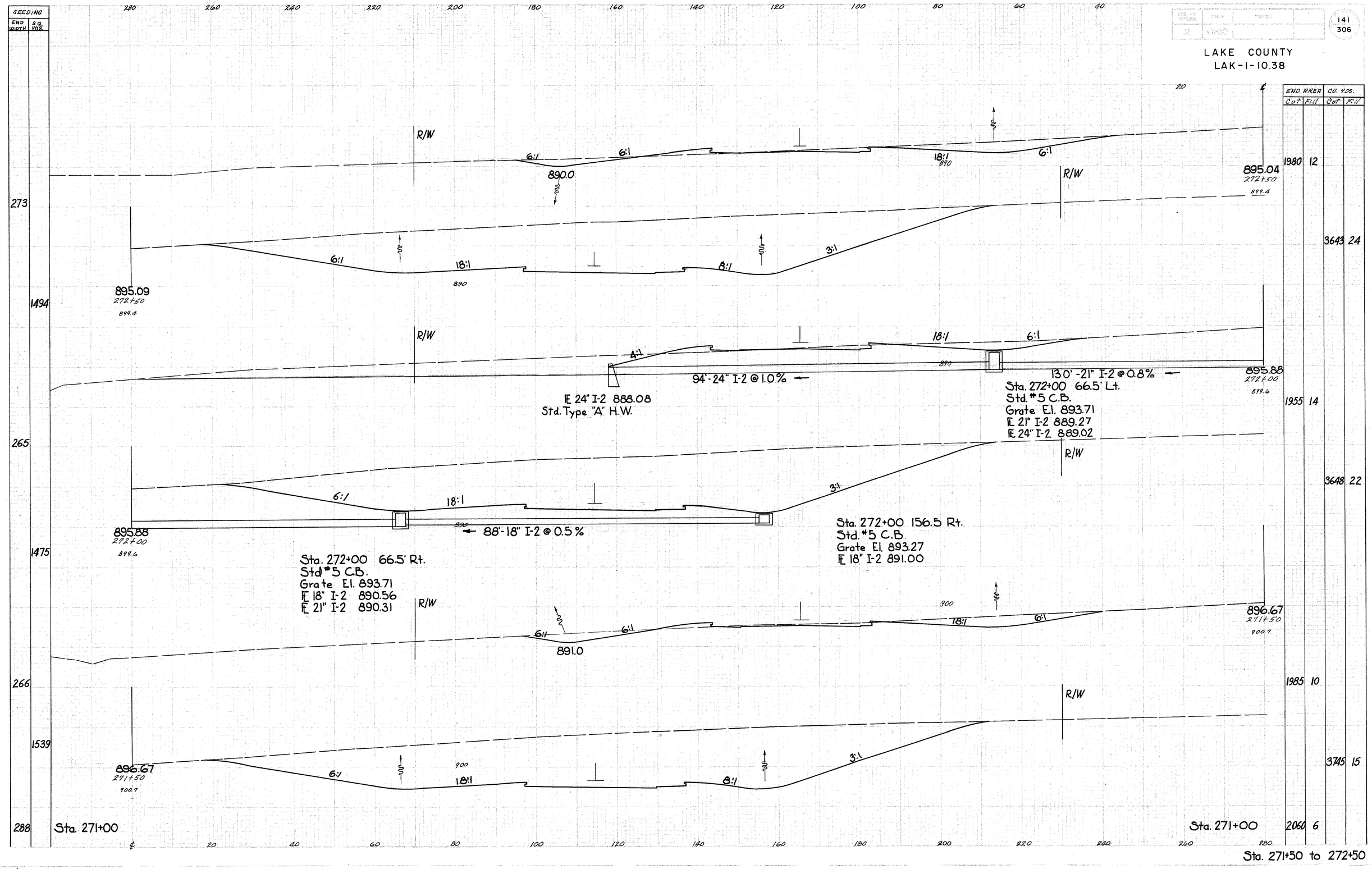
Sta. 269+00 to 269+50

LAKE COUNTY
LAK-I-10.38



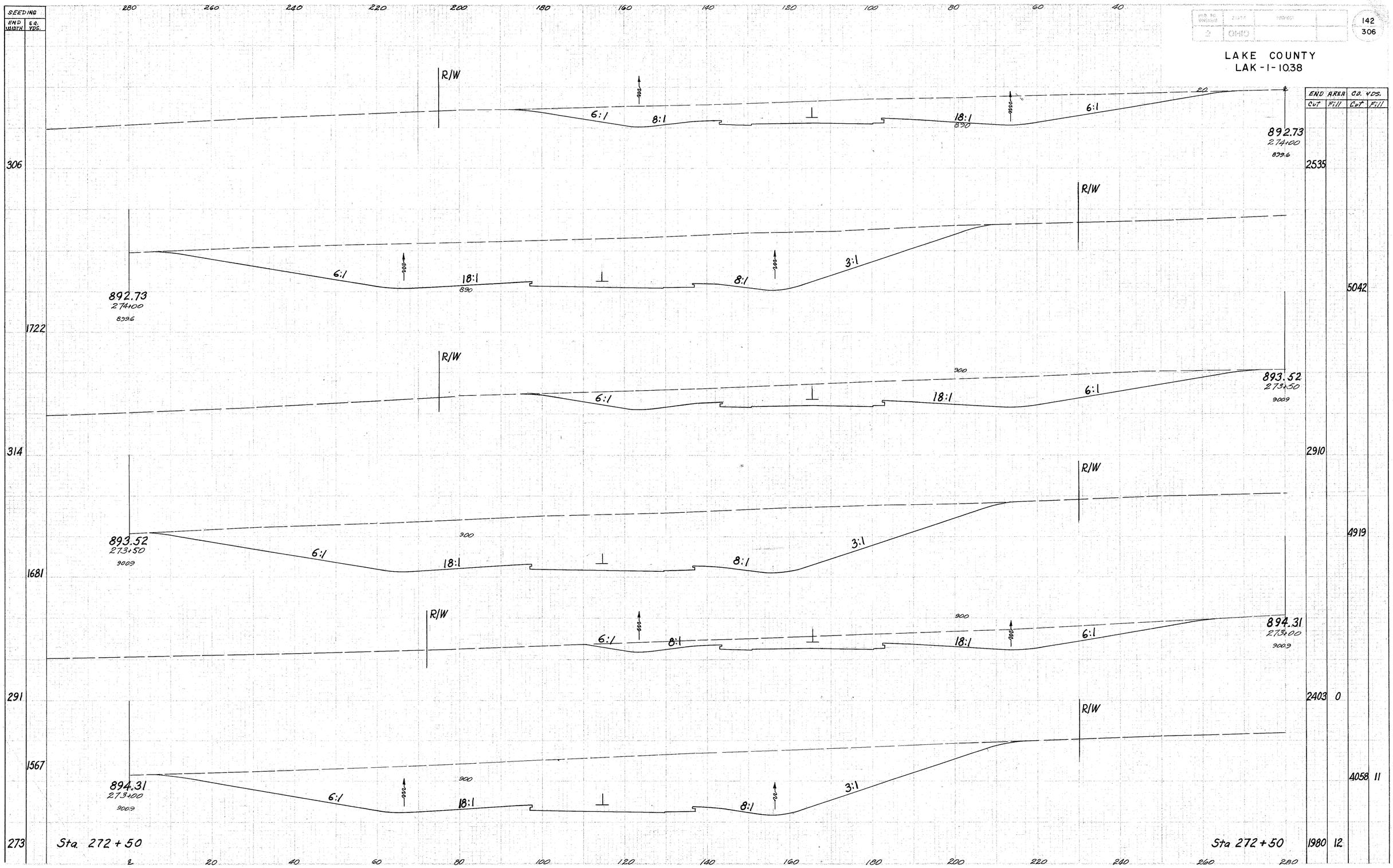
Sta. 270+00 to 271+00

LAKE COUNTY
LAK-1-10.38



Sta. 271+50 to 272+50

LAKE COUNTY
LAK-1-10.38



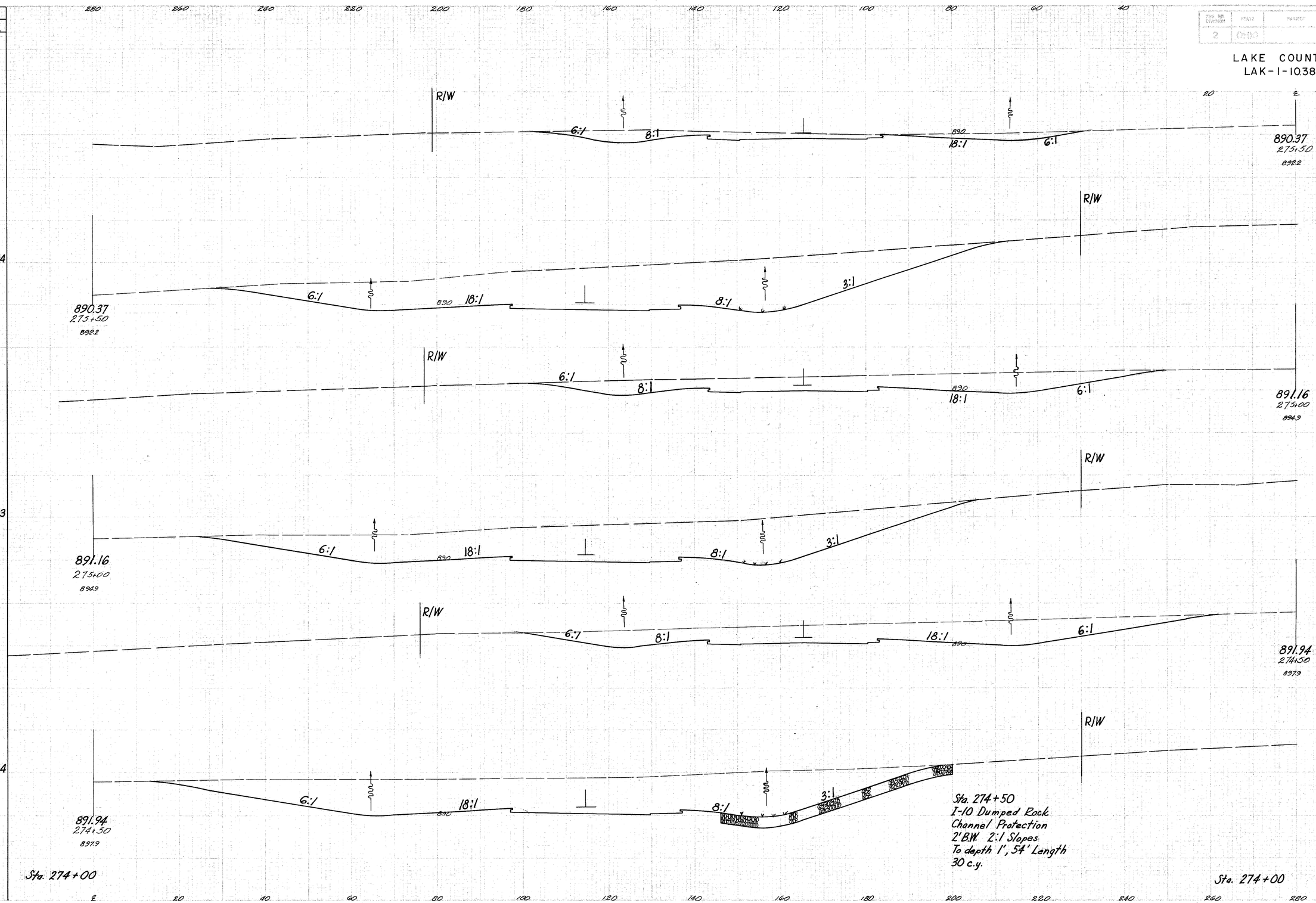
Sta. 273+00 to 274+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

143
306

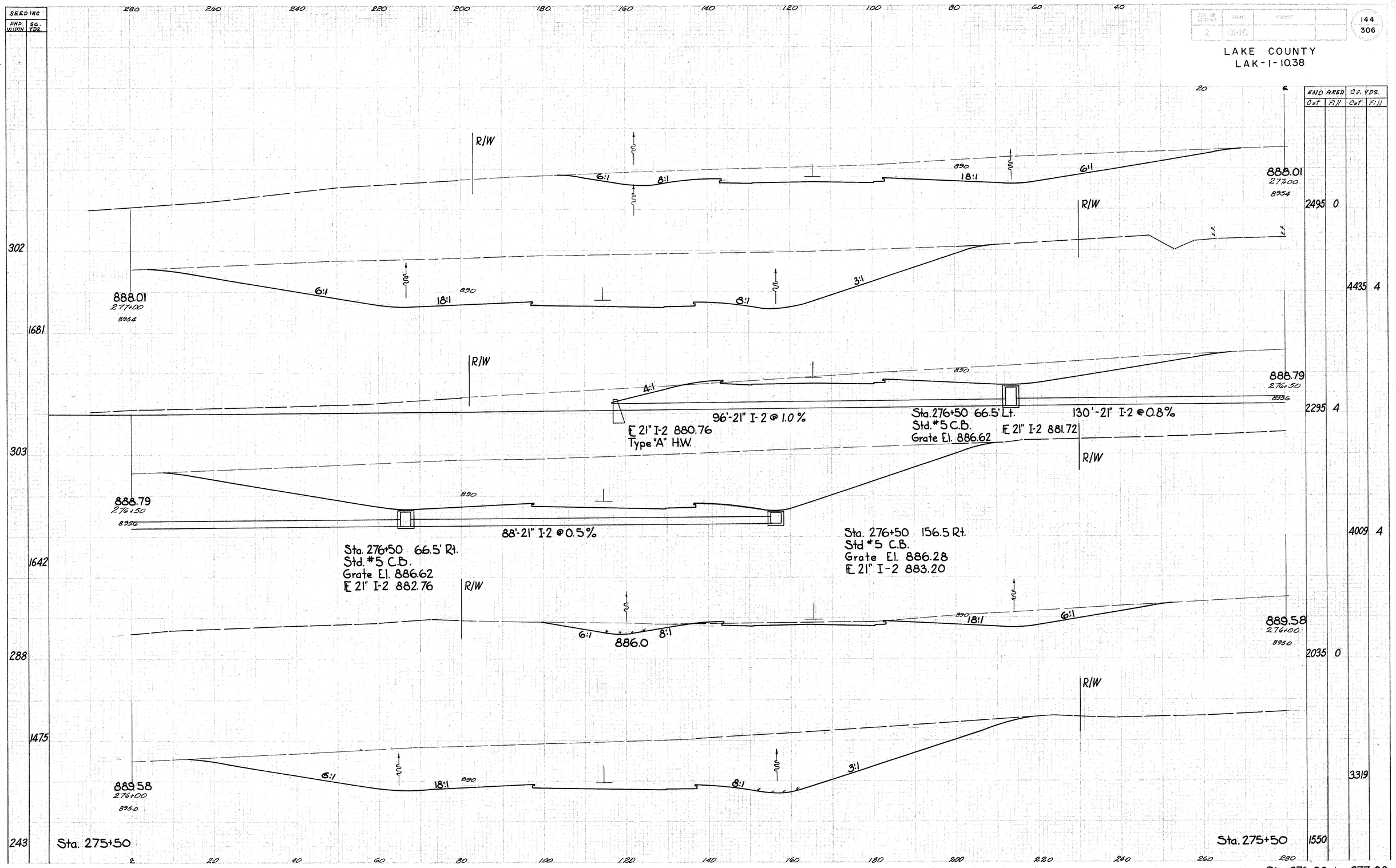
LAKE COUNTY
LAK-I-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
243		1550			
	1394			2926	
259		1610			
	1483			3231	
275		1880			
	1614			4088	
306		2535			

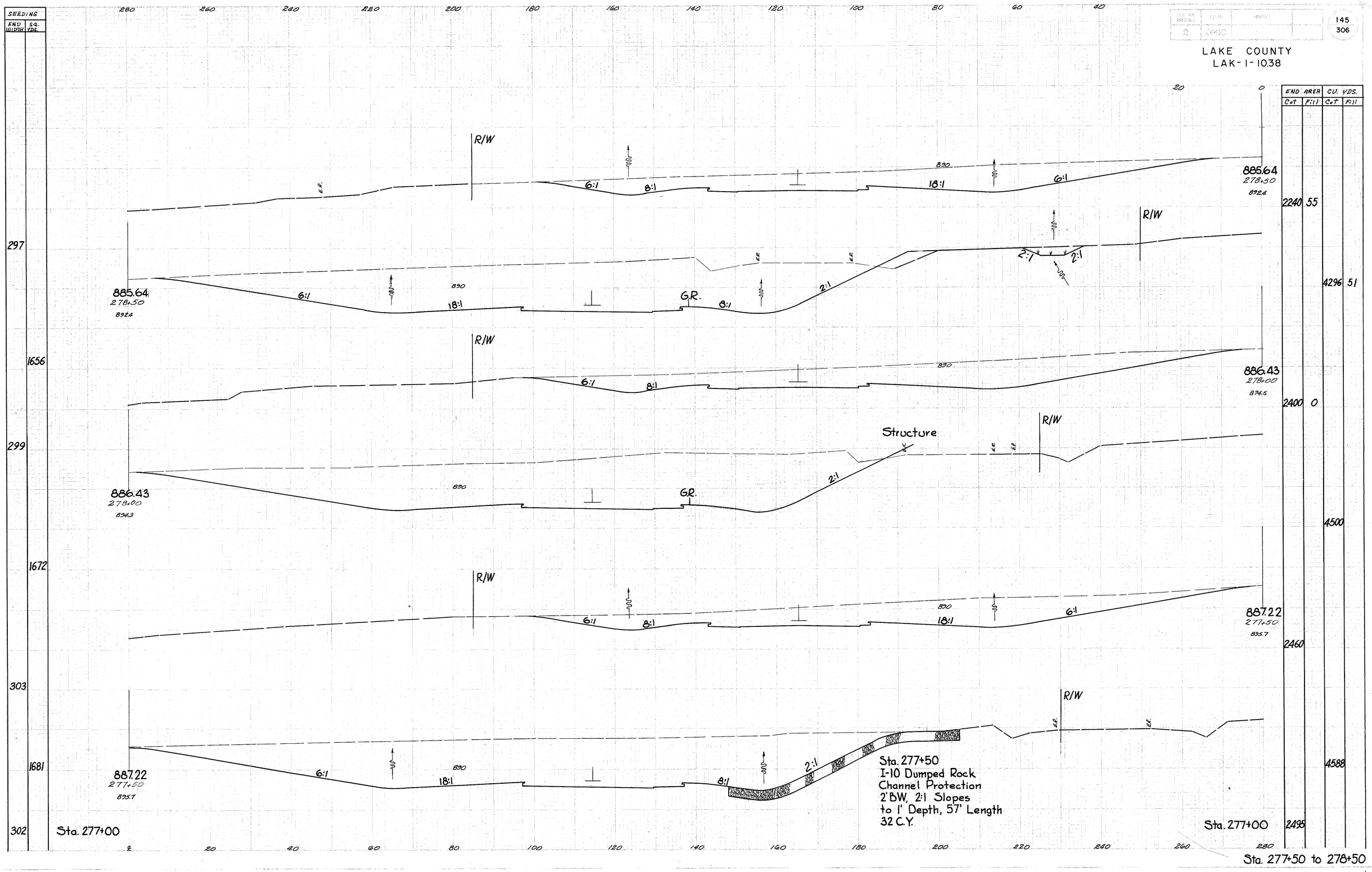


Sta. 274+50 to 275+50

LAKE COUNTY
LAK-1-10.38



LAKE COUNTY
LAK-I-10.38

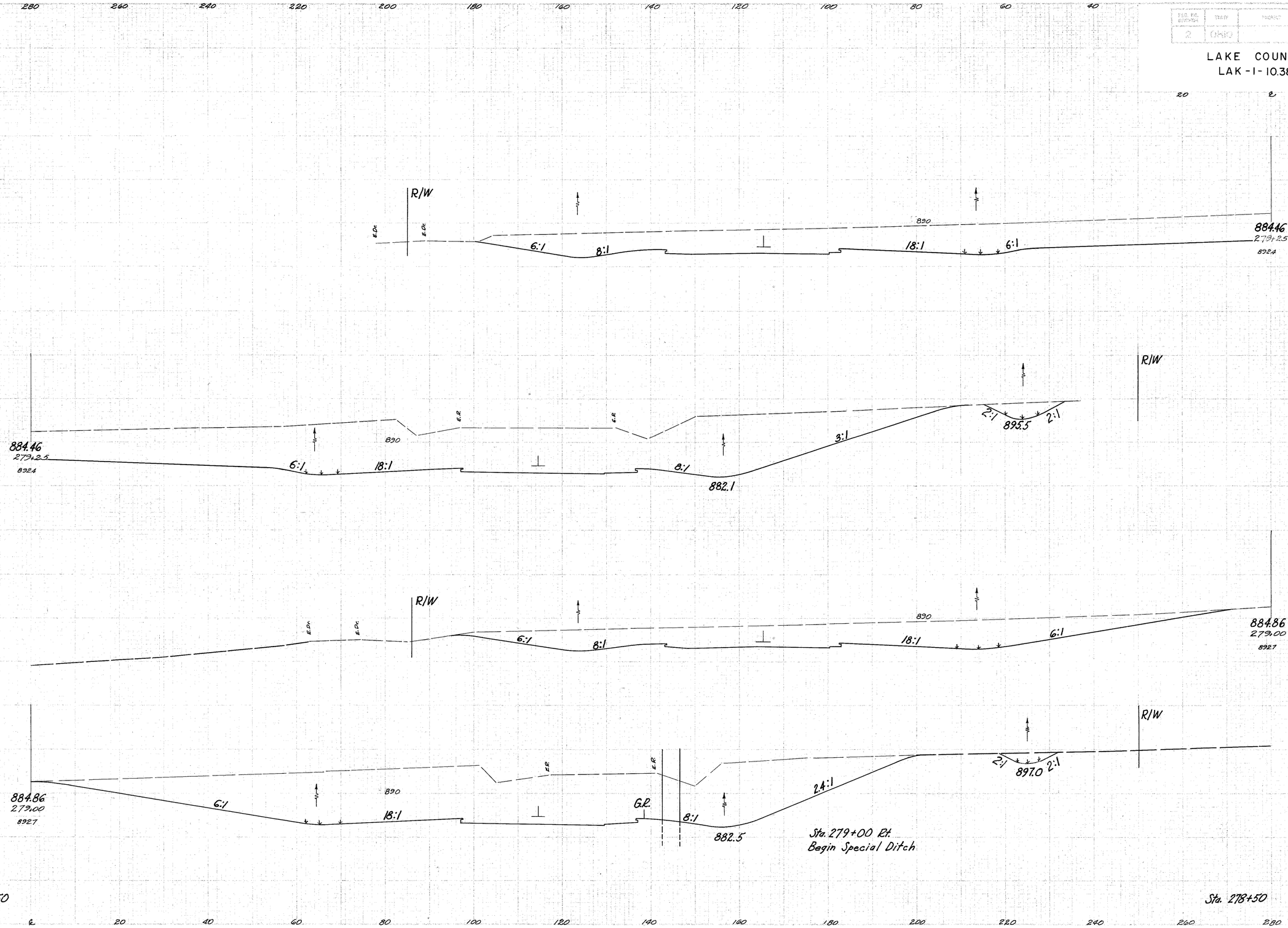


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

146
306

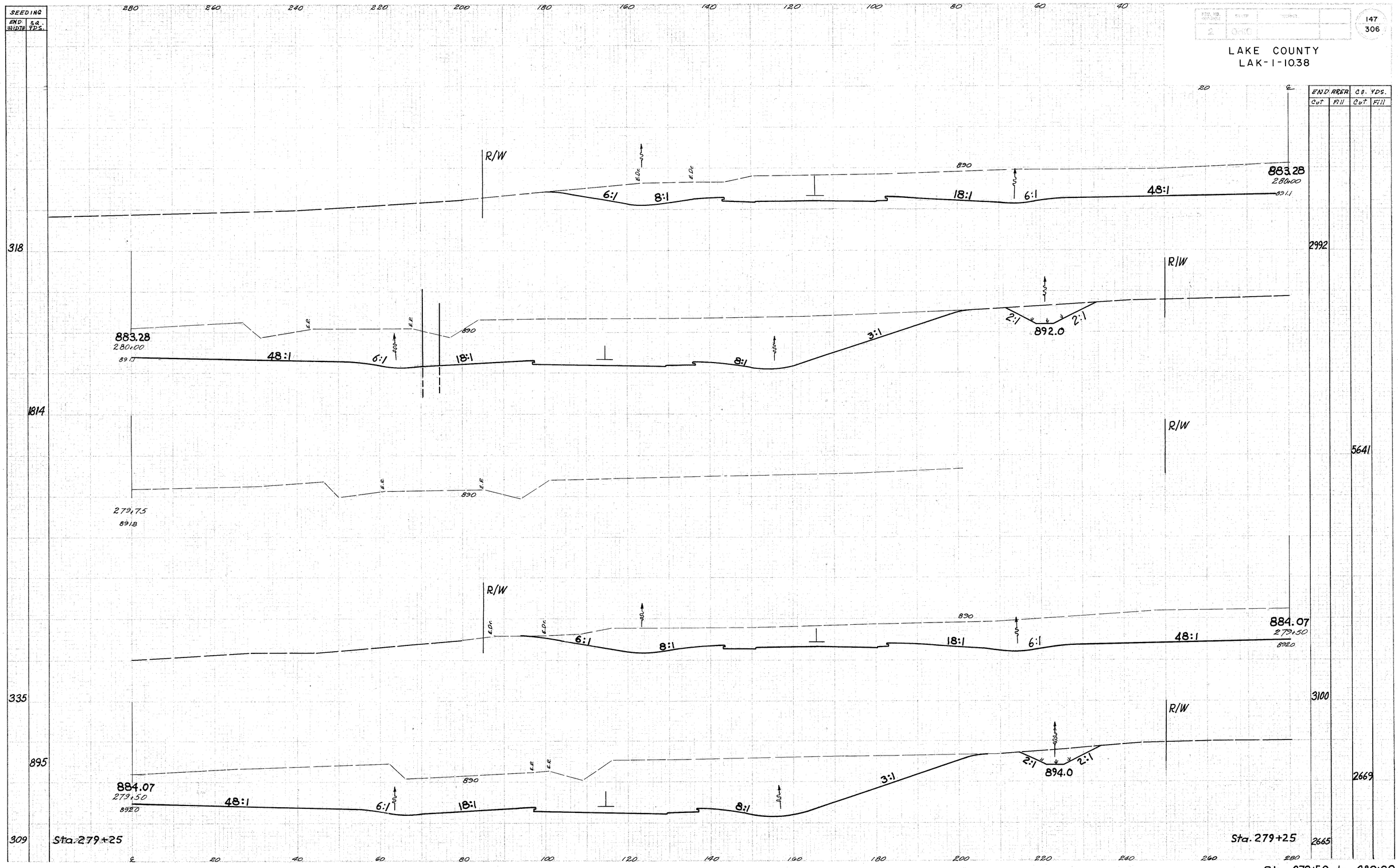
LAKE COUNTY
LAK-1-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
309		2665			
870				2419	
323		2560	0		
1722				4444	51
297	Sta. 278+50	2240	55		



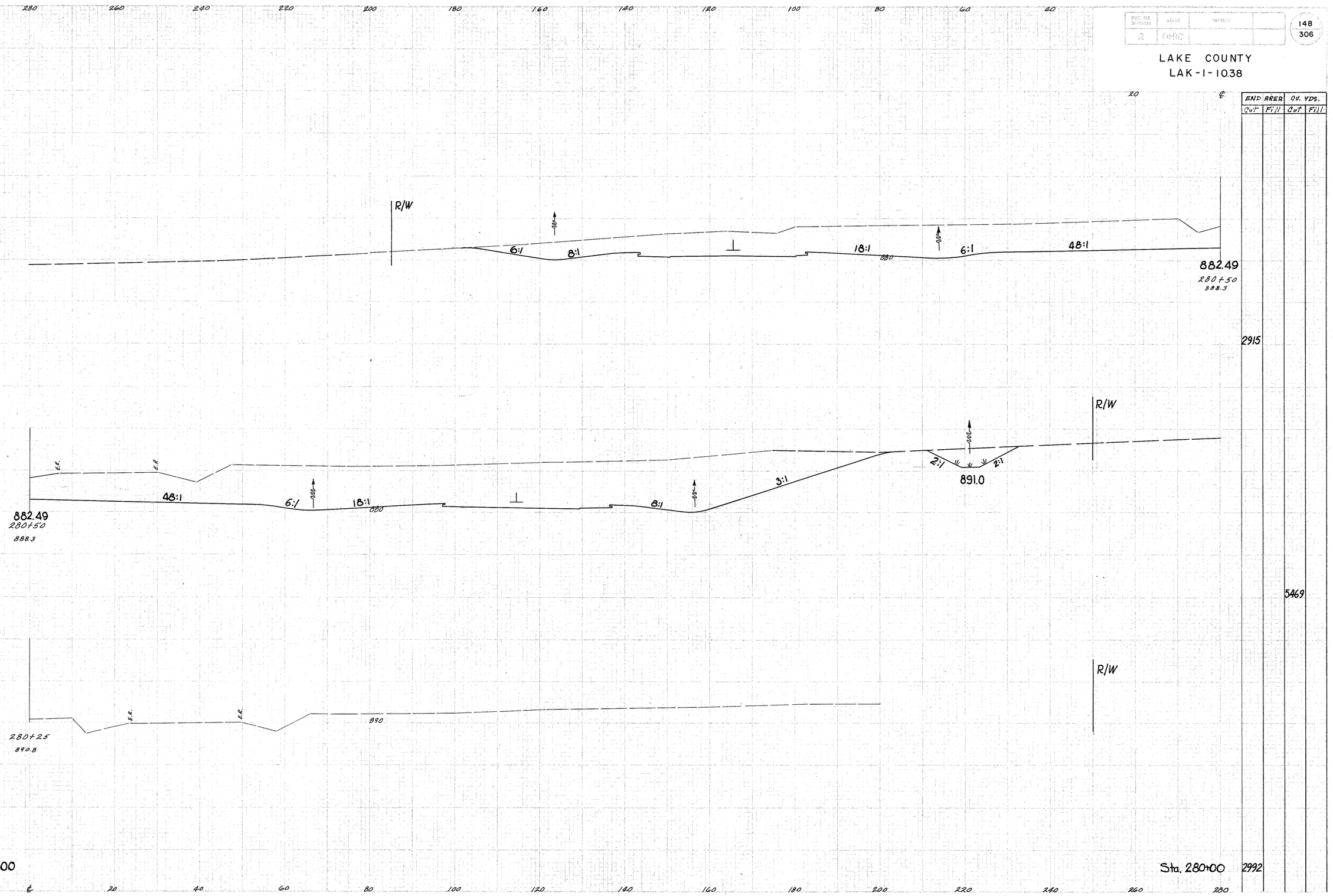
Sta. 279+00 to 279+25

LAKE COUNTY
LAK-I-10.38



Sta. 279+50 to 280+00

LAKE COUNTY
LAK-1-10.38



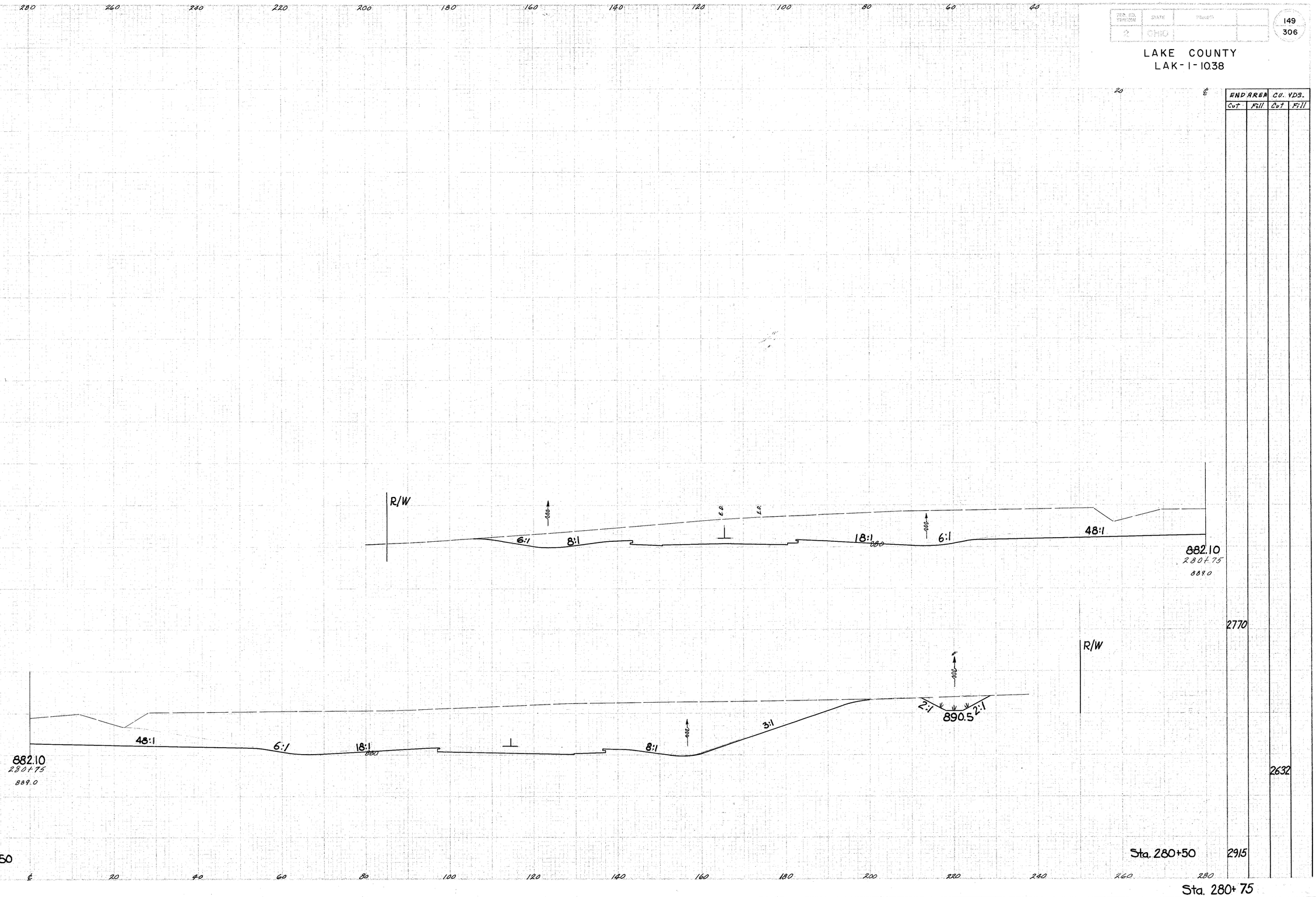
SEEDING	
END WIDTH	SQ. YDS.
246	
778	
314	

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
		2770	
		2632	
		2915	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

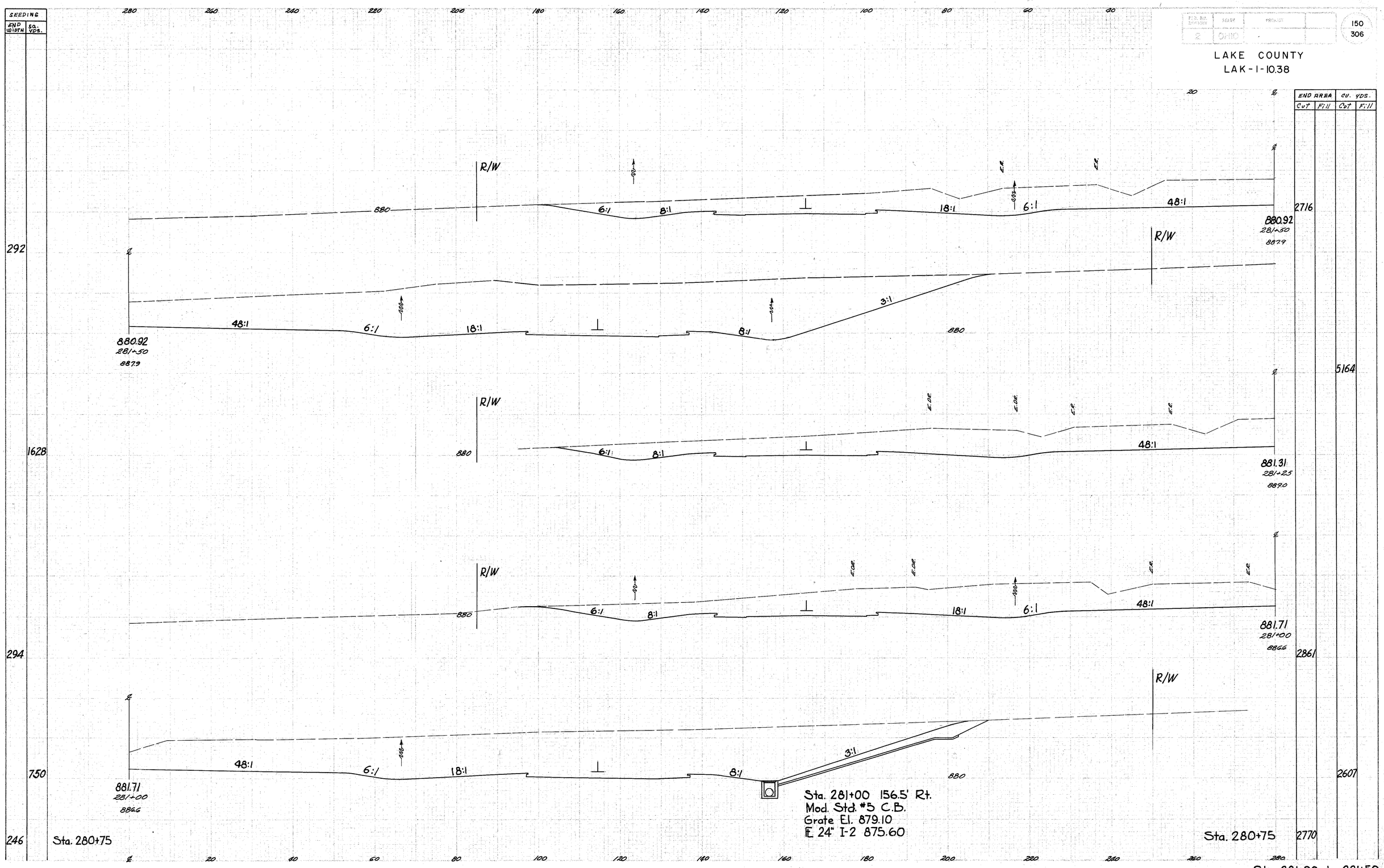
149
306

LAKE COUNTY
LAK-I-1038



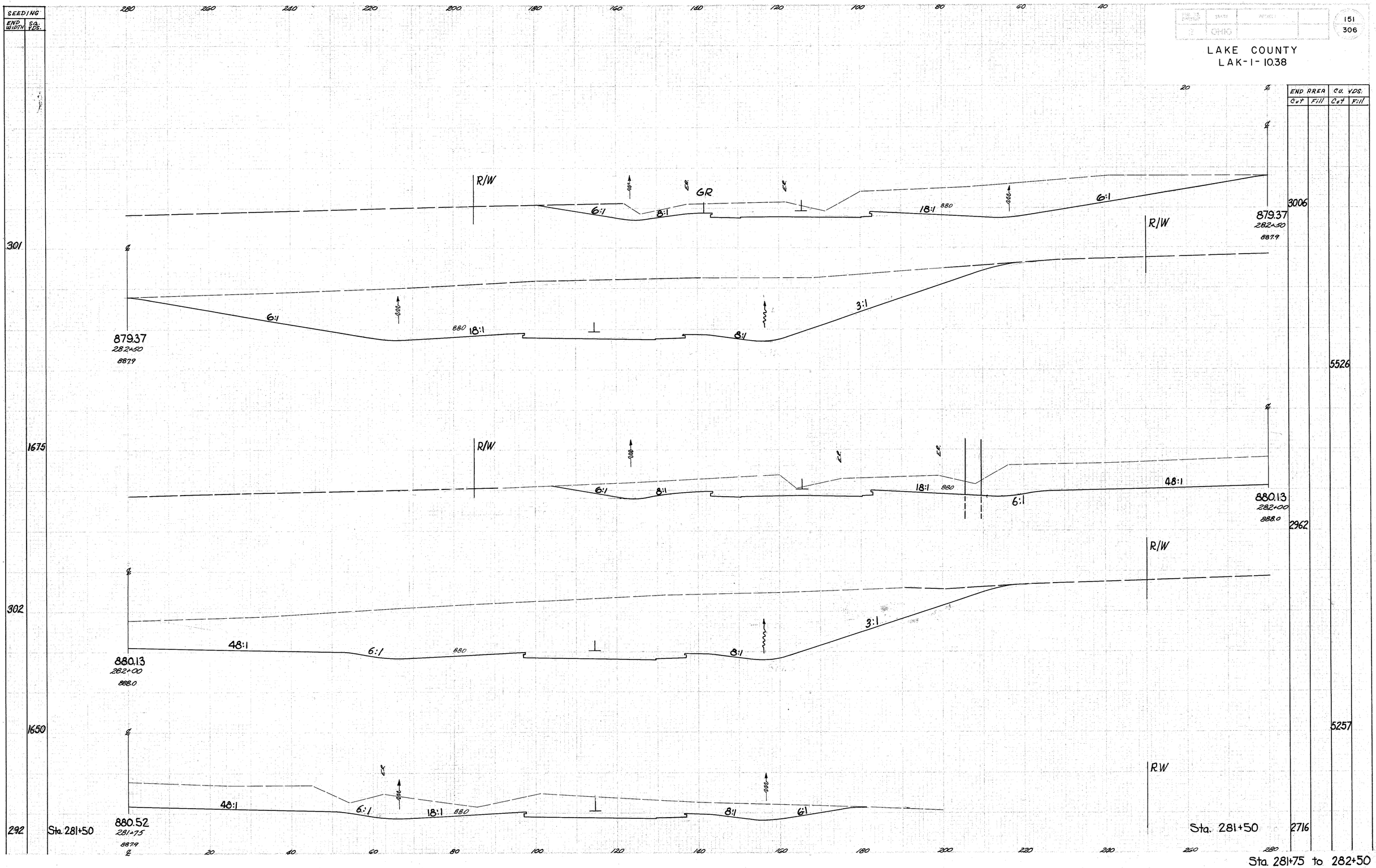
Sta. 280+ 75

LAKE COUNTY
LAK-1-10.38

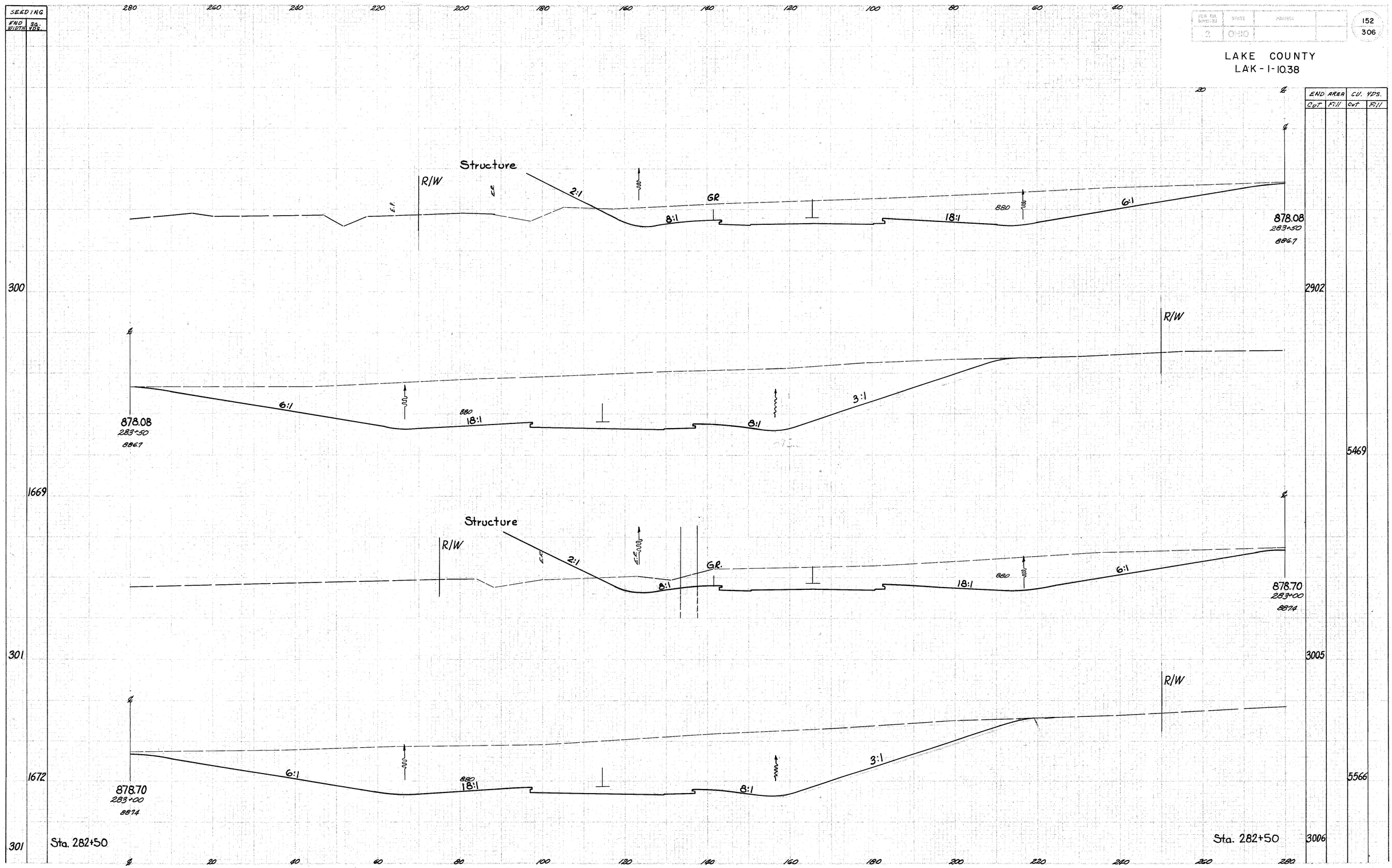


Sta. 281+00 to 281+50

LAKE COUNTY
LAK-1-10.38



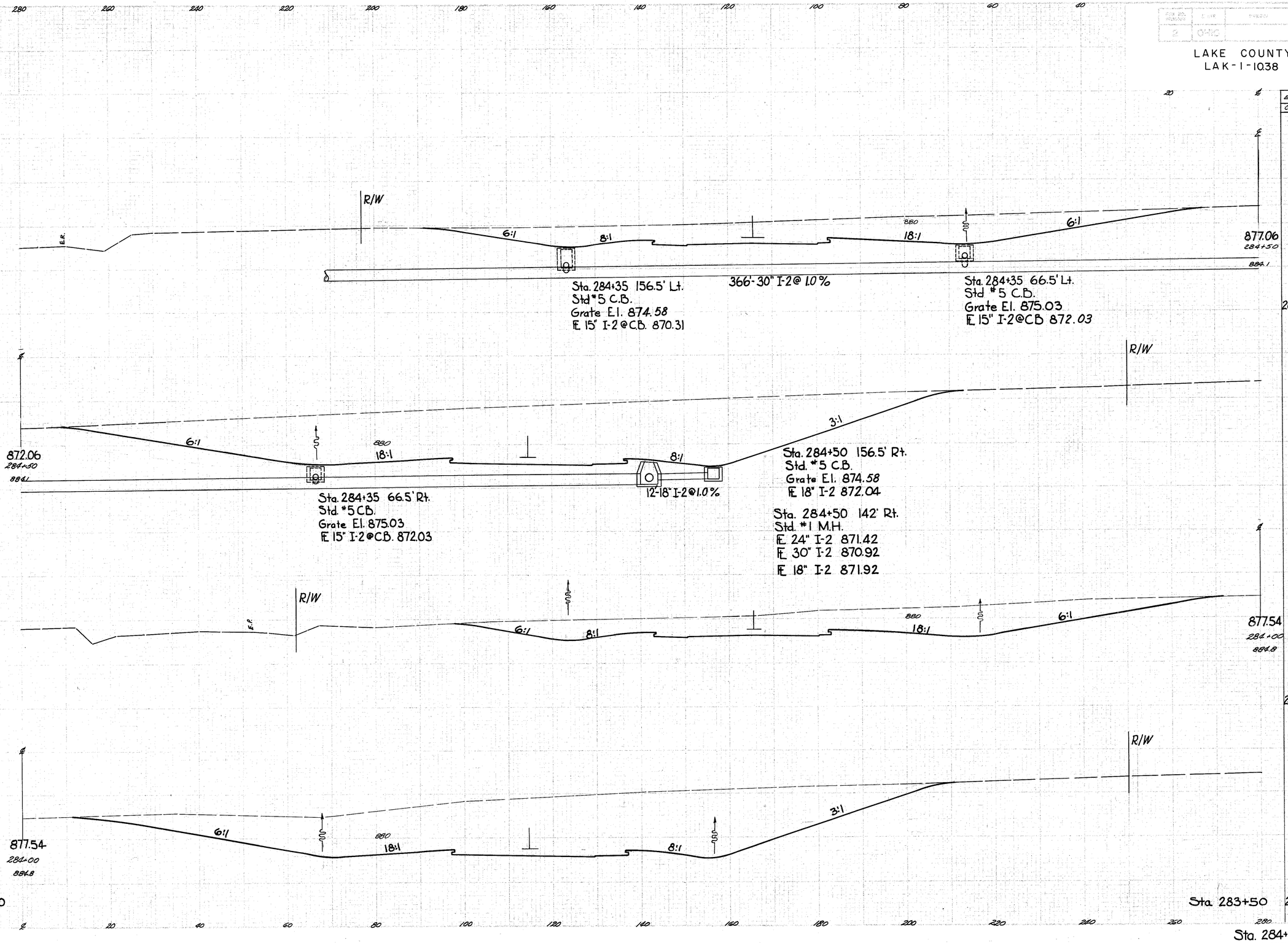
LAKE COUNTY
LAK-1-10.38



Sta. 283+00 to 283+50

LAKE COUNTY
LAK-I-1038

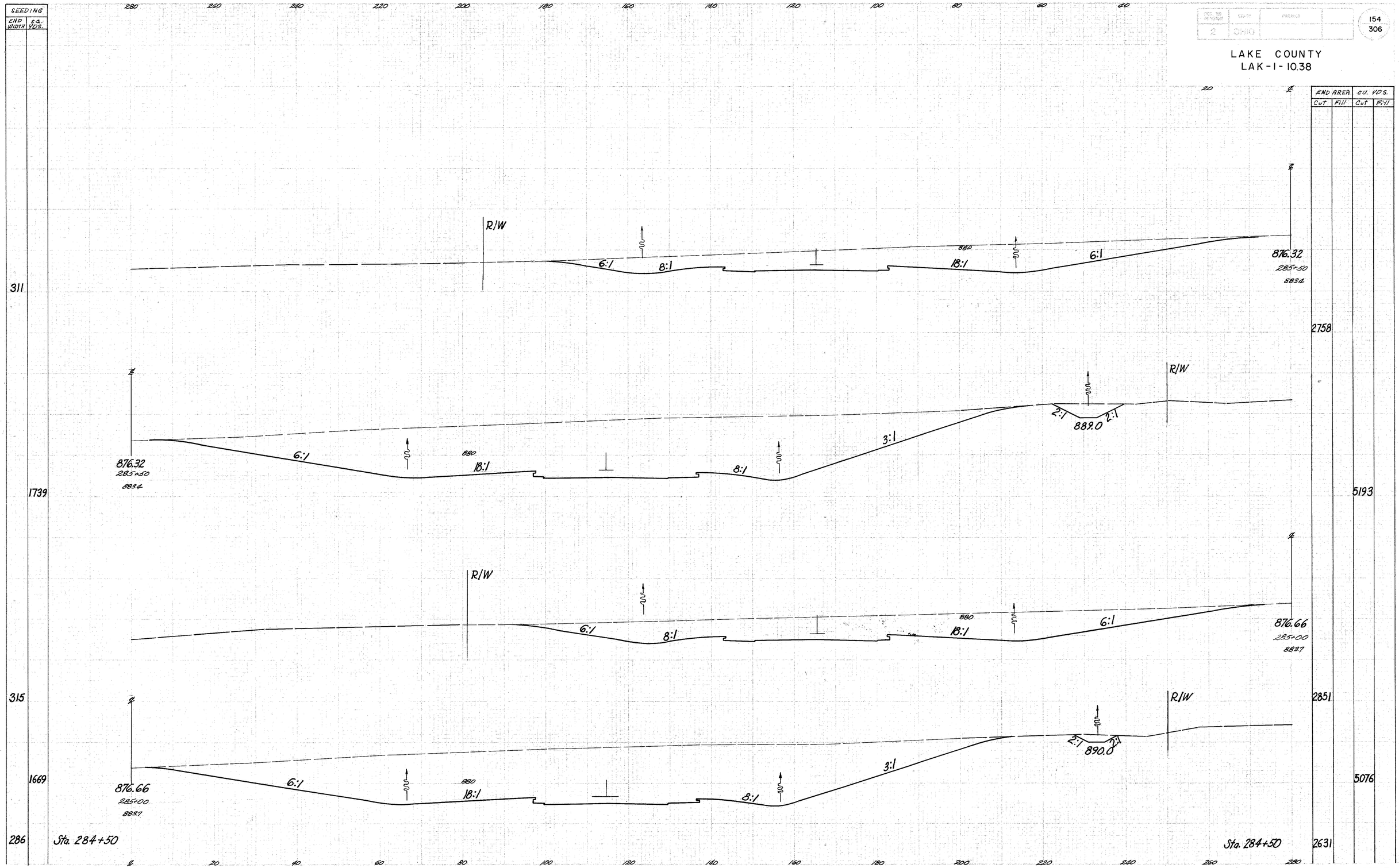
SEEDING	
END WIDTH	SQ. YDS.
286	
1583	
284	
1622	
300	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2631			
		4728	
2475			
		4979	
2902			

Sta. 284+00 to 284+50

LAKE COUNTY
LAK-1-10.38



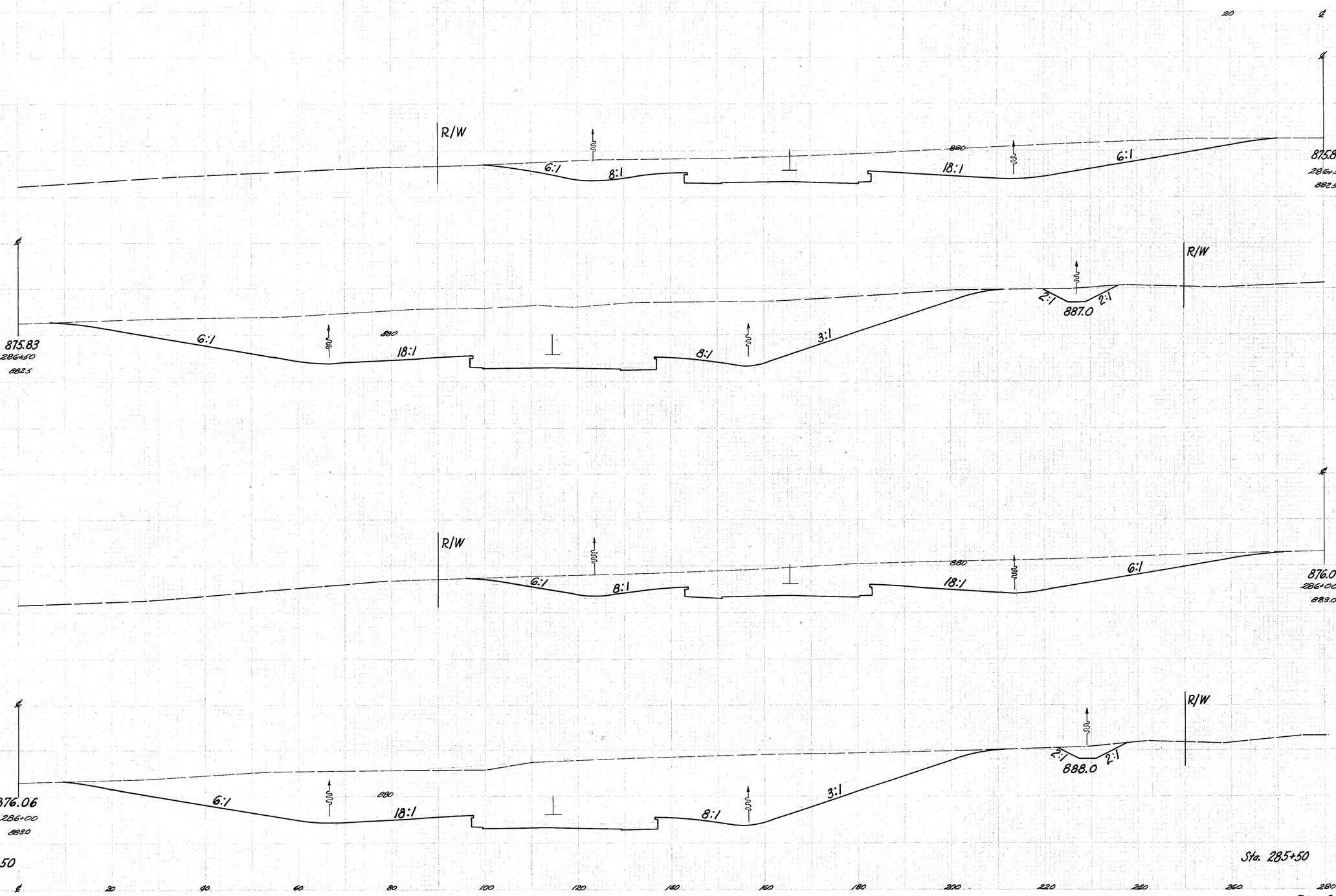
Sta. 285+00 to 285+50

TOTAL SHEETS	STATE	PROJECT	
2	OHIO		

155
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
312	
1725	
309	
1722	
311	



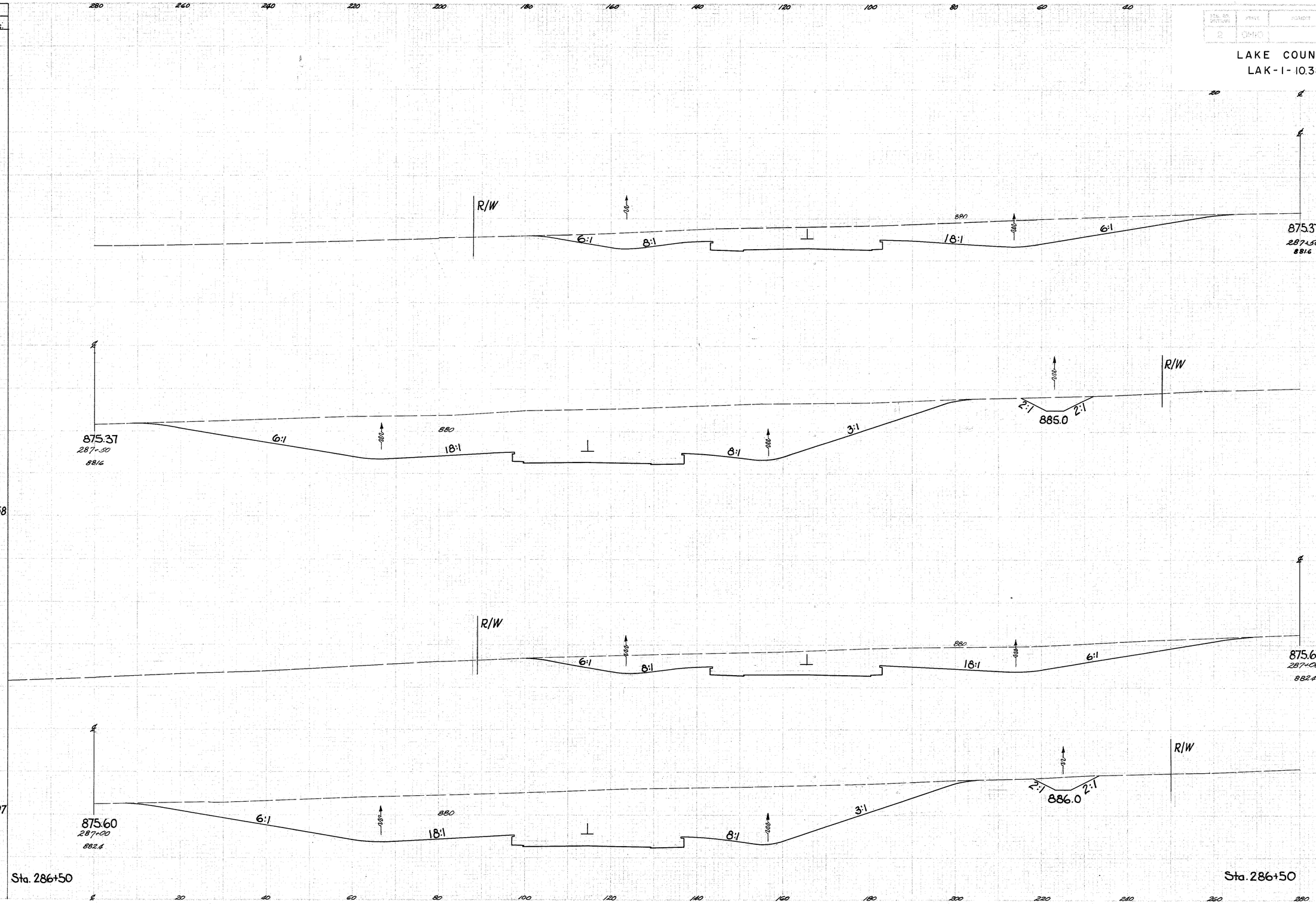
END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2590			
		4926	
2730Ah 2650Bh			
		5007	
2758			

Sta. 286+00 to 286+50

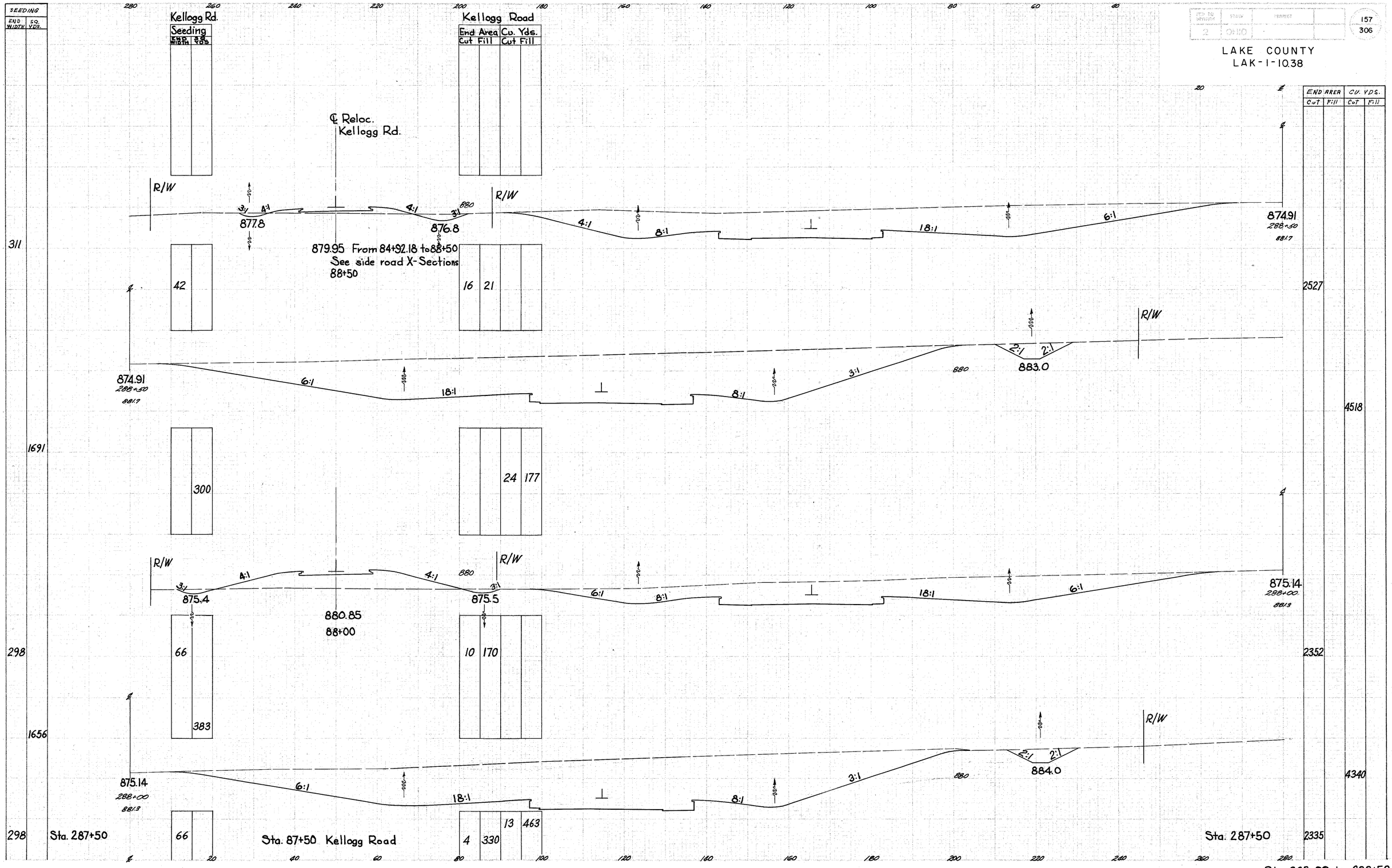
LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
298	
	1658
299	
	1697
312	

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2335			
		4400	
2417			
		4636	
2590			

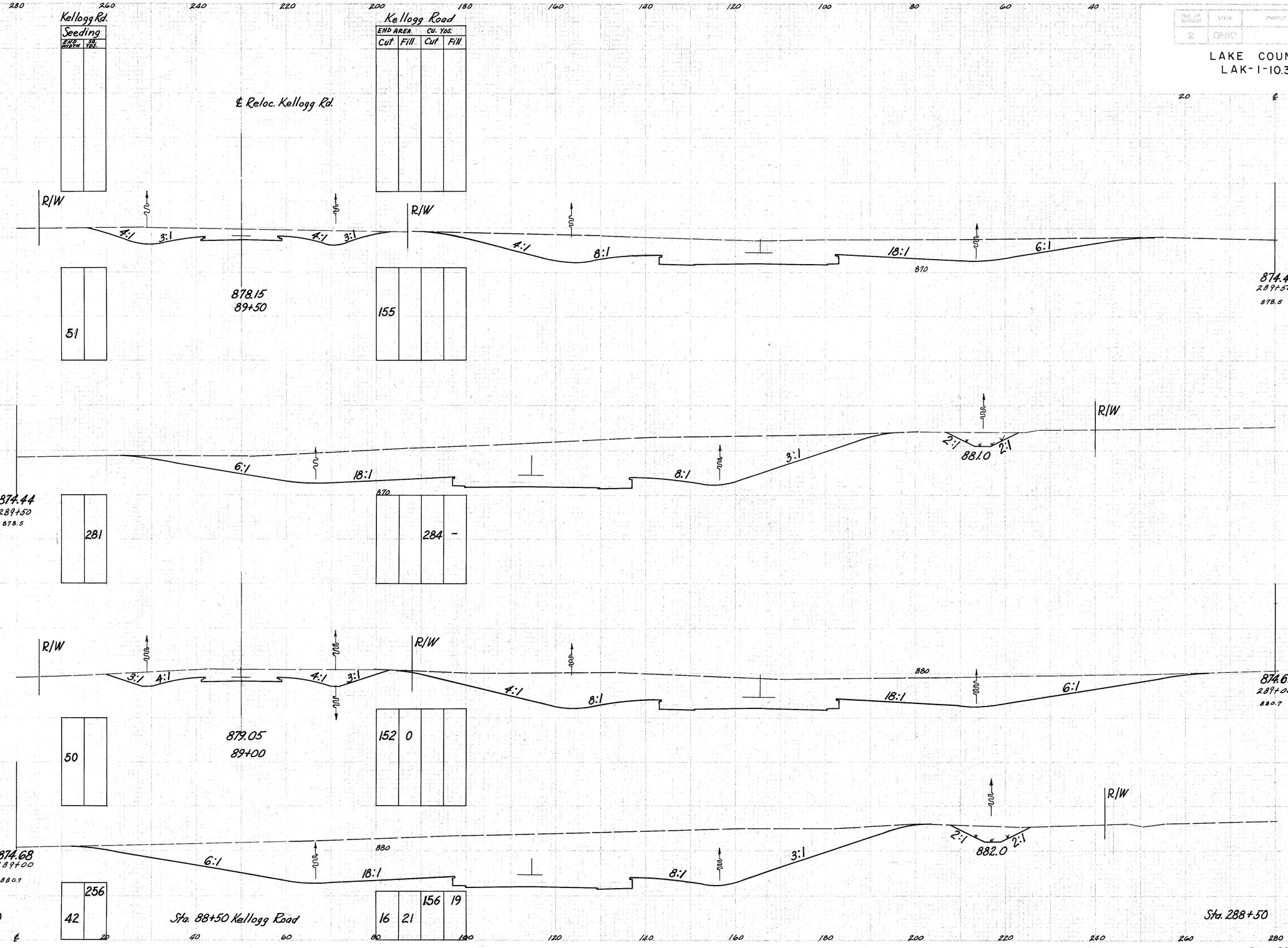


LAKE COUNTY
LAK-1-10.38



Sta. 288+00 to 288+50

SEEDING	
END WIDTH	SQ. YDS
269	
1600	
307	
1717	
311	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
1841			
		3987	
2465			
		4622	
2527			

RESURVEY	YEAR	PROJECT	
2	OHIO		

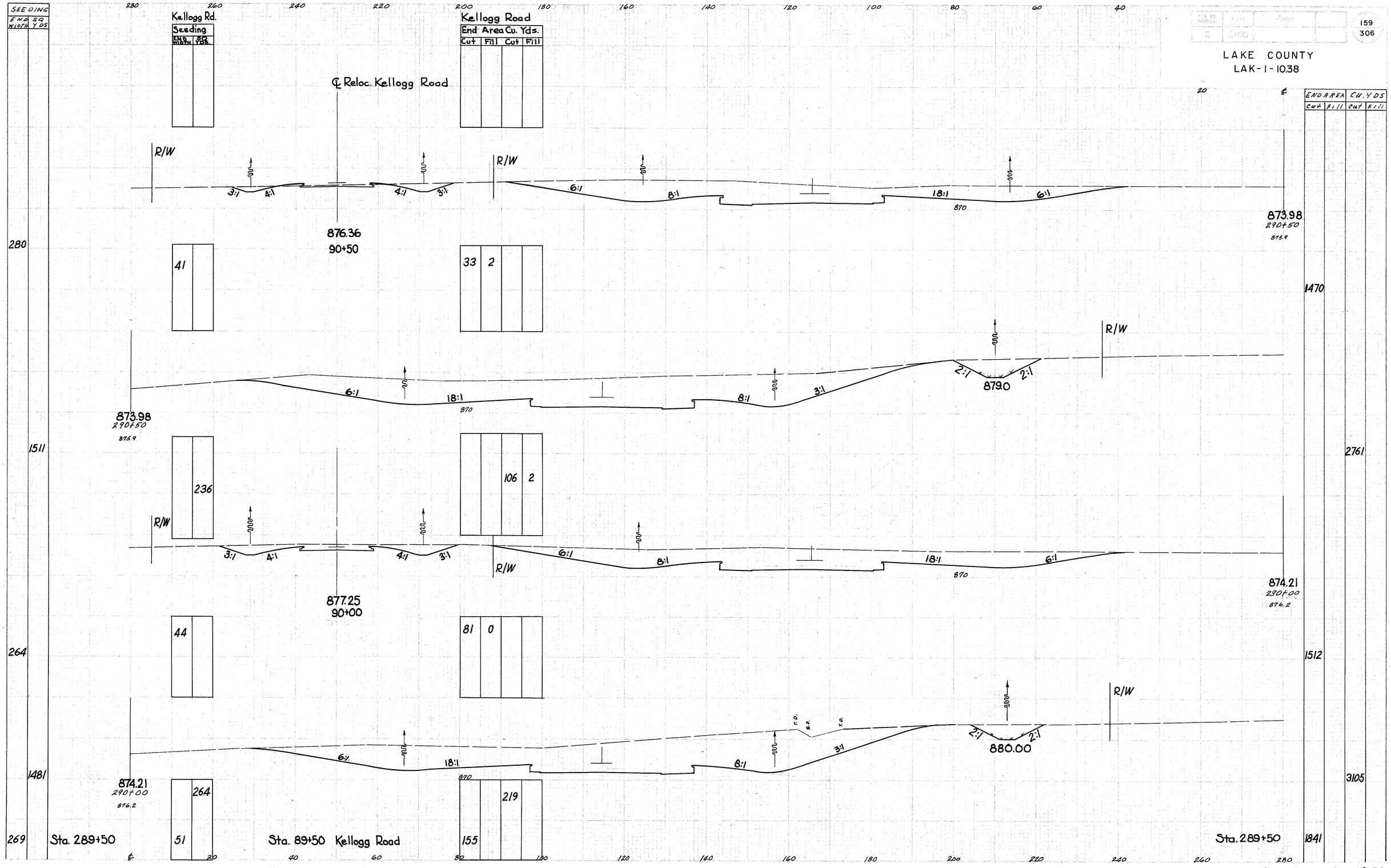
158
306

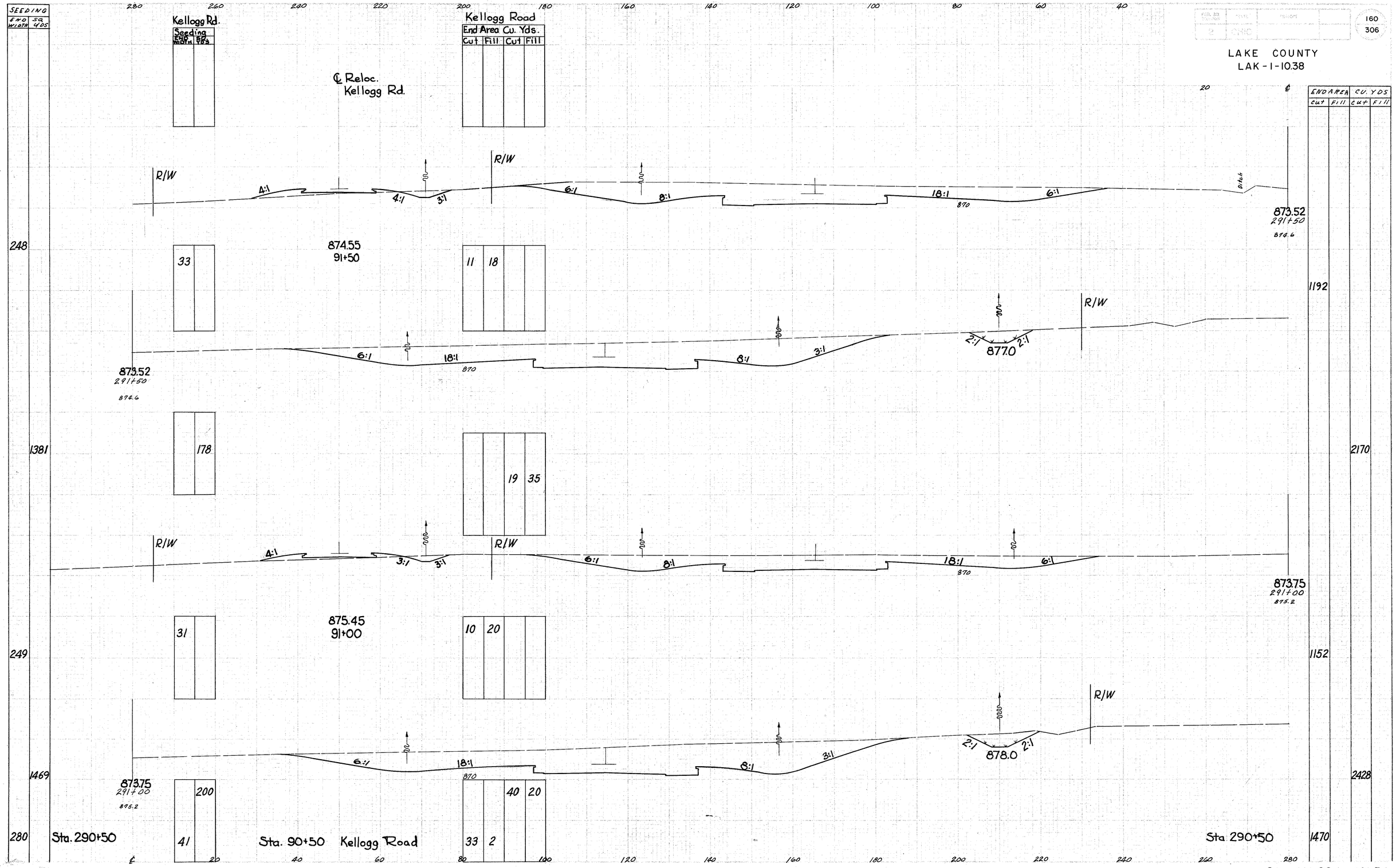
LAKE COUNTY
LAK-I-10.38

Sta. 289+00 to 289+50

159
306

LAKE COUNTY
LAK-1-10.38



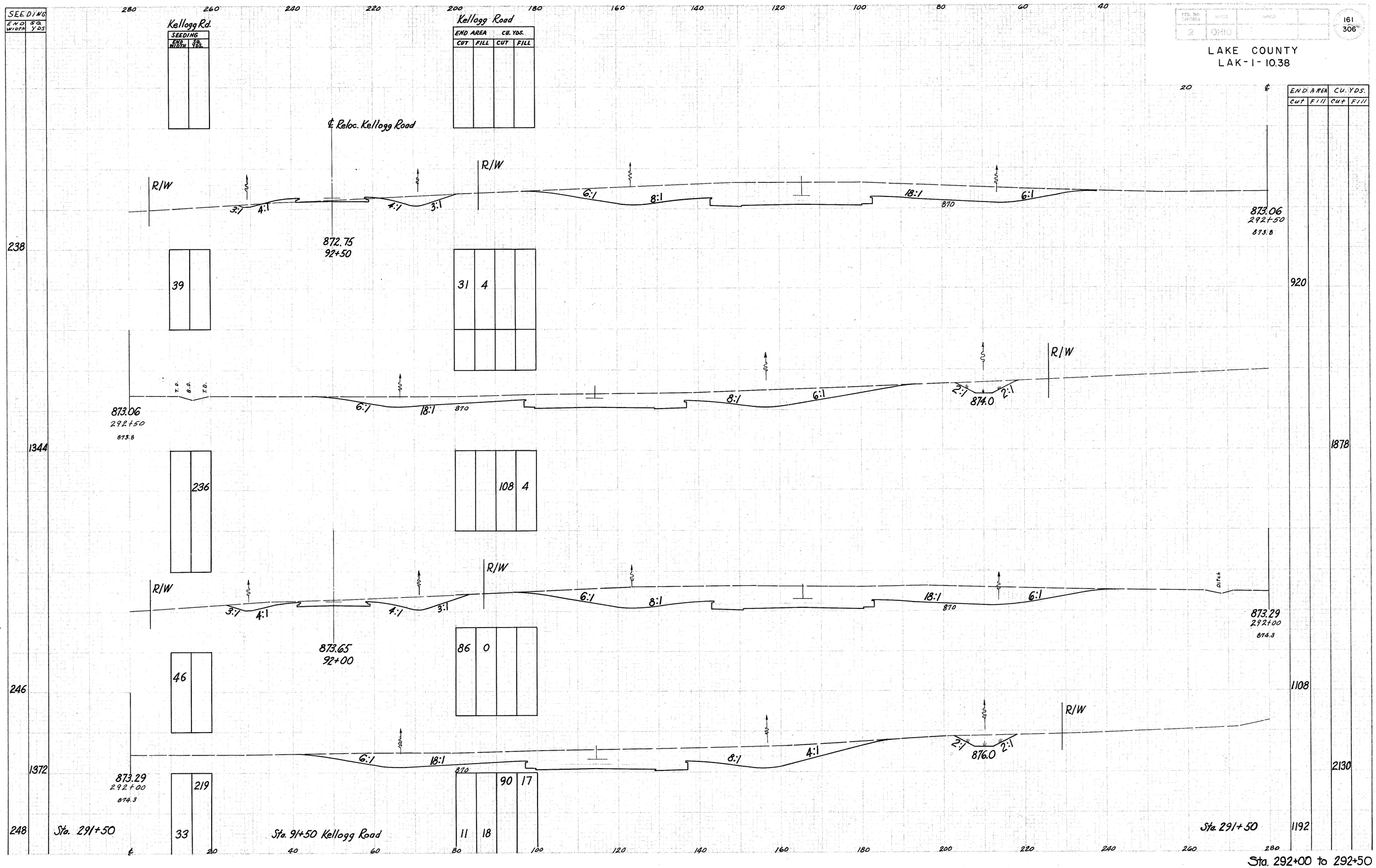


160
306
LAKE COUNTY
LAK-1-10.38
SEEDING
END WIDTH
SQ YDS
Kellogg Rd.
Seeding
END WIDTH
SQ YDS
Kellogg Road
End Area Cu. Yds.
Cut
Fill
Cut
Fill
℄ Reloc.
Kellogg Rd.
R/W
4:1
4:1
3:1
6:1
8:1
18:1
6:1
870
Ditch
873.52
291+50
874.6
874.55
91+50
33
11
18
1192
2:1
877.0
2:1
873.52
291+50
874.6
178
19
35
2170
873.75
291+00
875.2
875.45
91+00
31
10
20
1152
2:1
878.0
2:1
873.75
291+00
875.2
200
40
20
41
33
2
1470
248
1381
249
1469
280
Sta. 290+50
Sta. 90+50 Kellogg Road
Sta. 290+50
Sta. 291+00 to 291+50

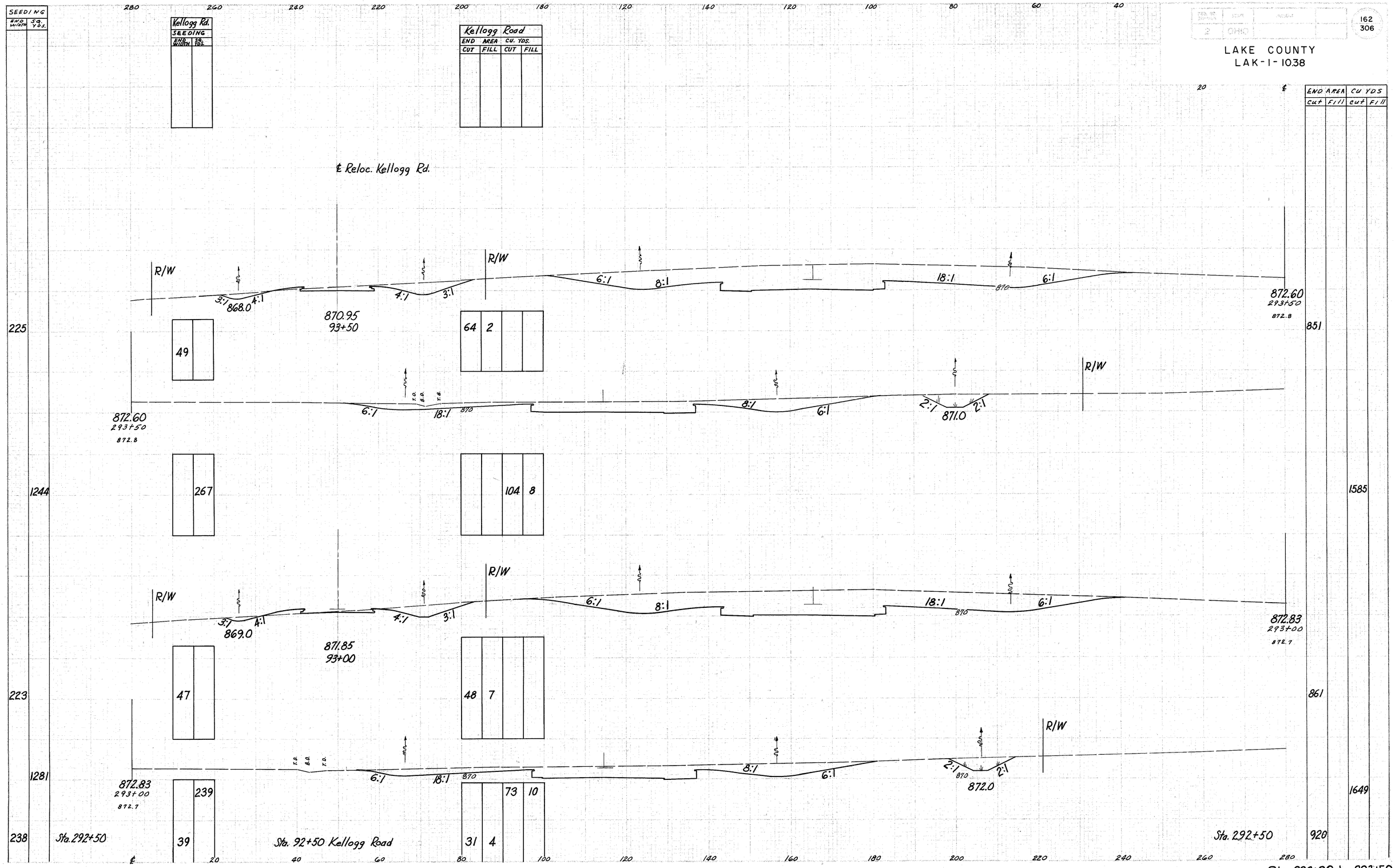
FED. RD. DIVISION	STATE	FUNDING	
2	OHIO		

161
306

LAKE COUNTY
LAK-1-10.38

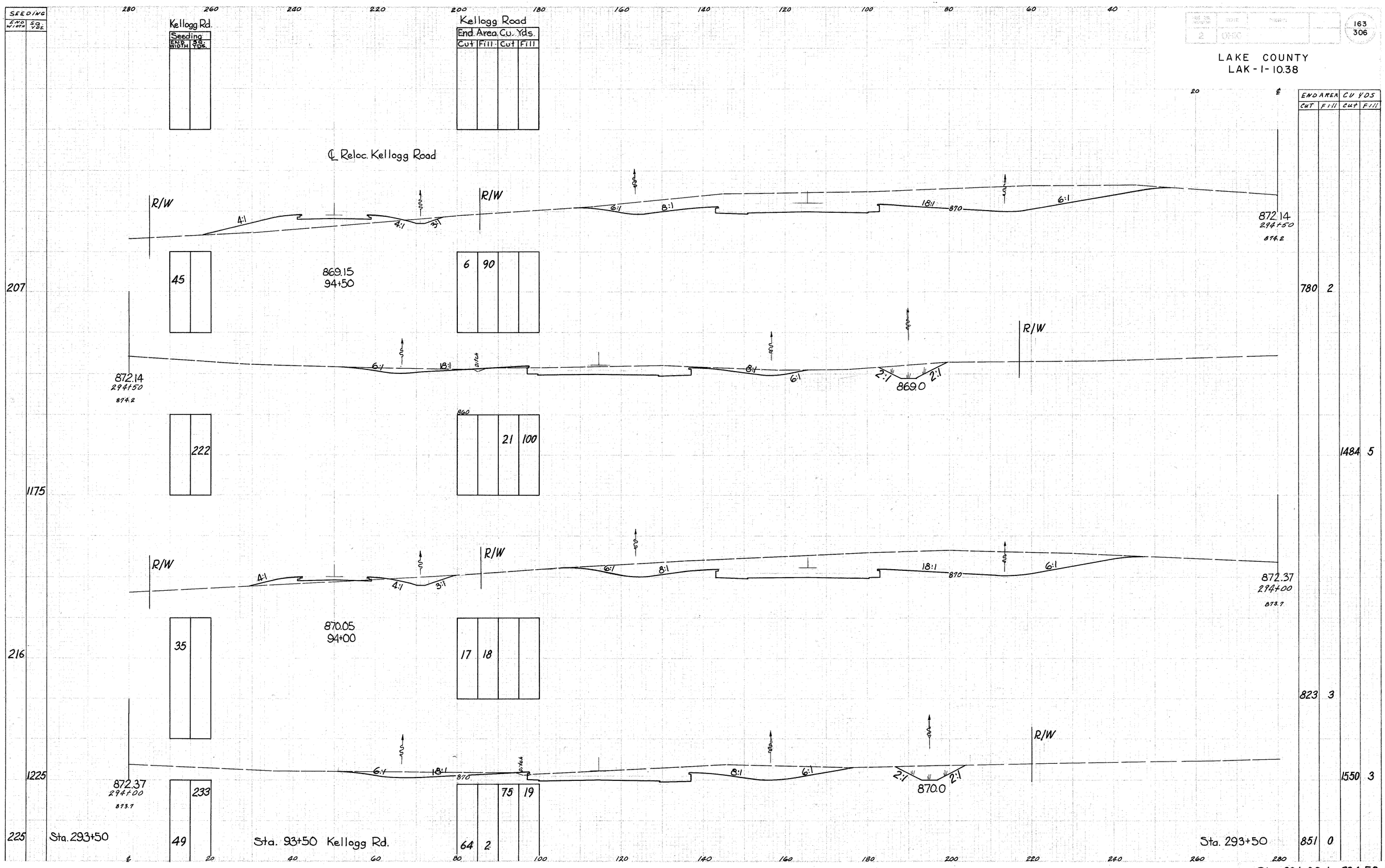


LAKE COUNTY
LAK-1-10.38



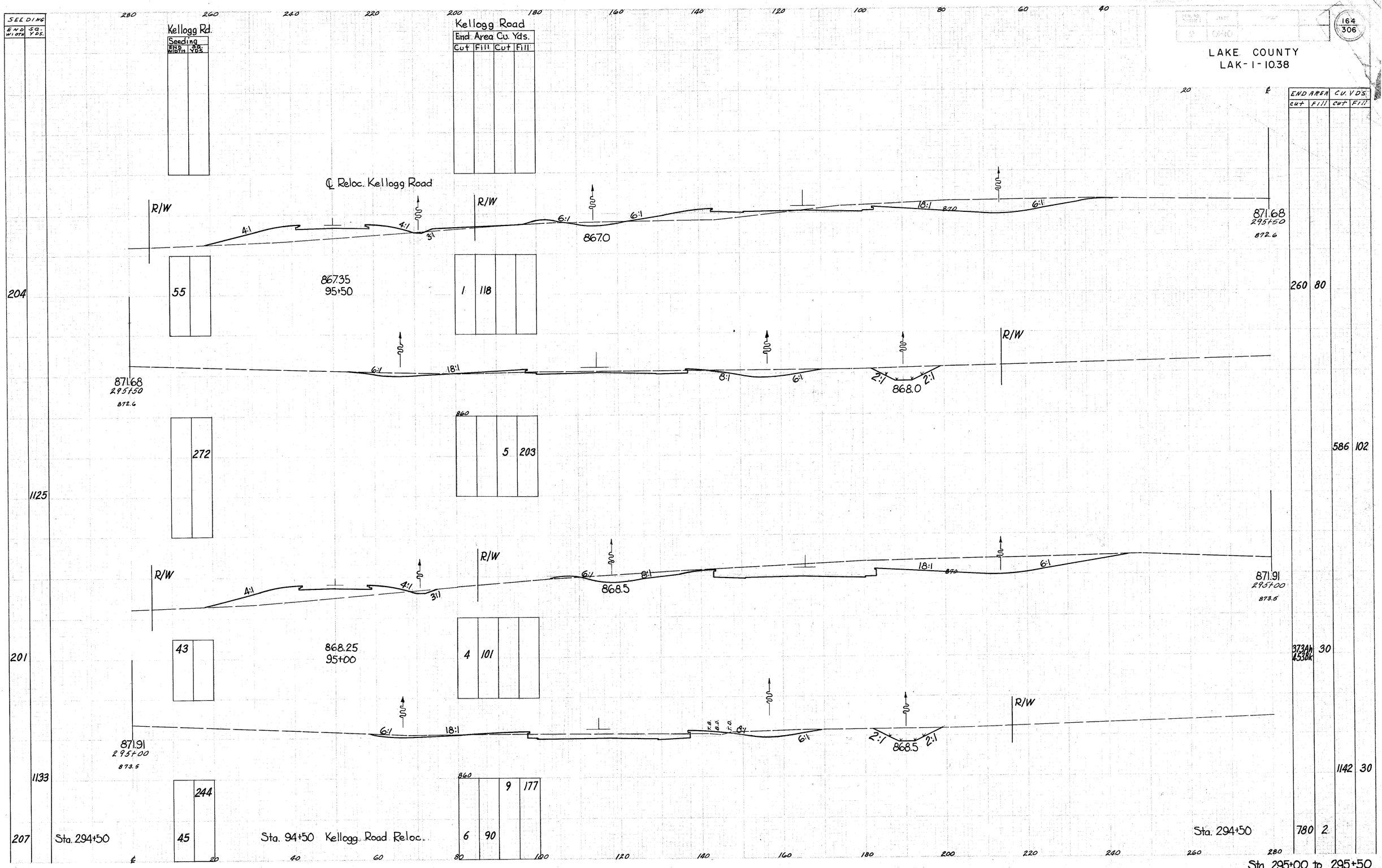
Sta. 293+00 to 293+50

LAKE COUNTY
LAK-1-10.38



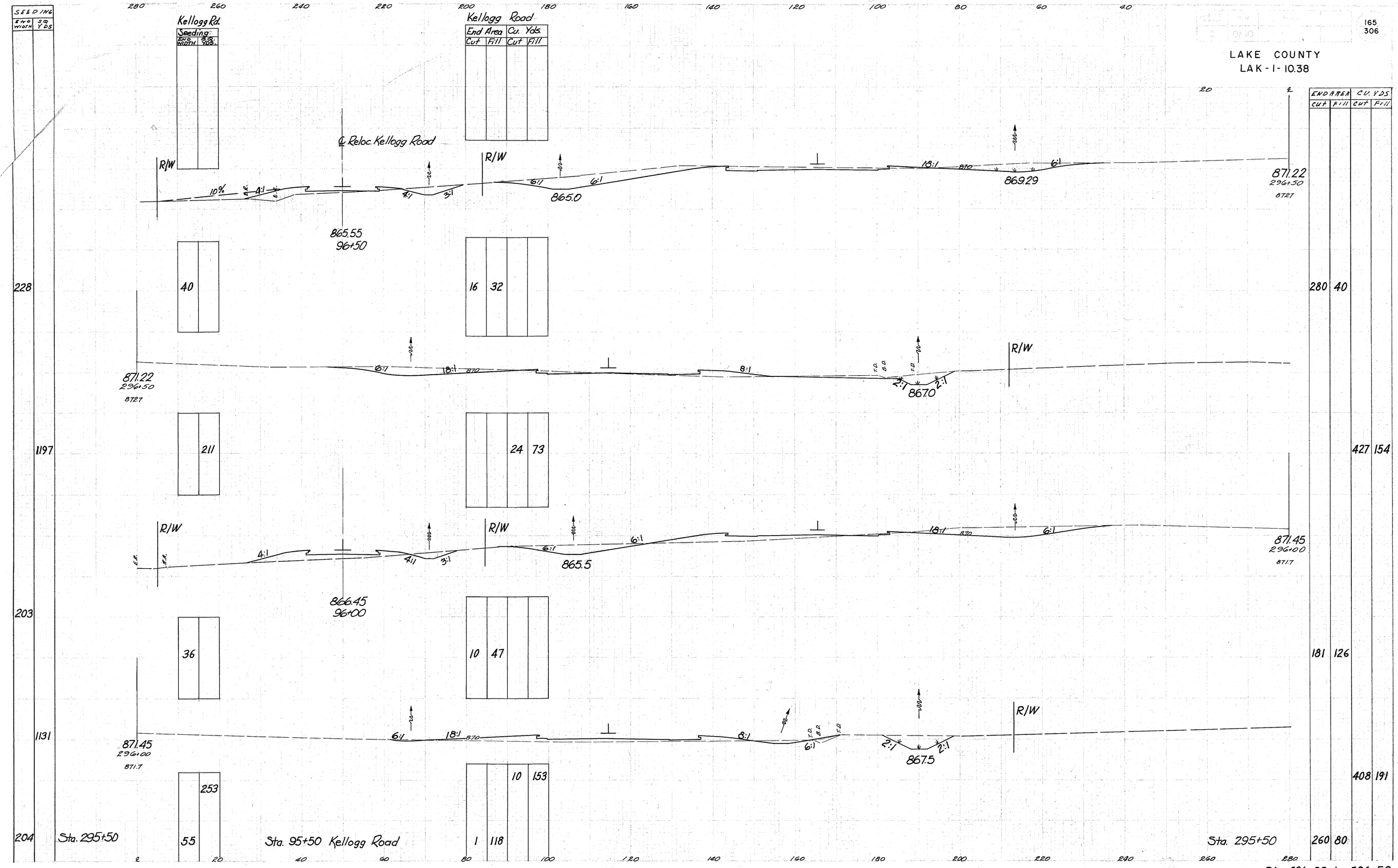
Sta. 294+00 to 294+50

LAKE COUNTY
LAK-1-10.38



Sta. 295+00 to 295+50

LAKE COUNTY
LAK-1-10.38



6-A

V-9

SEEDING	
END WIDTH	SQ YDS
196	
1256	
256	
1344	
228	

Kellogg Rd.

SEEDING	
END WIDTH	SQ YDS

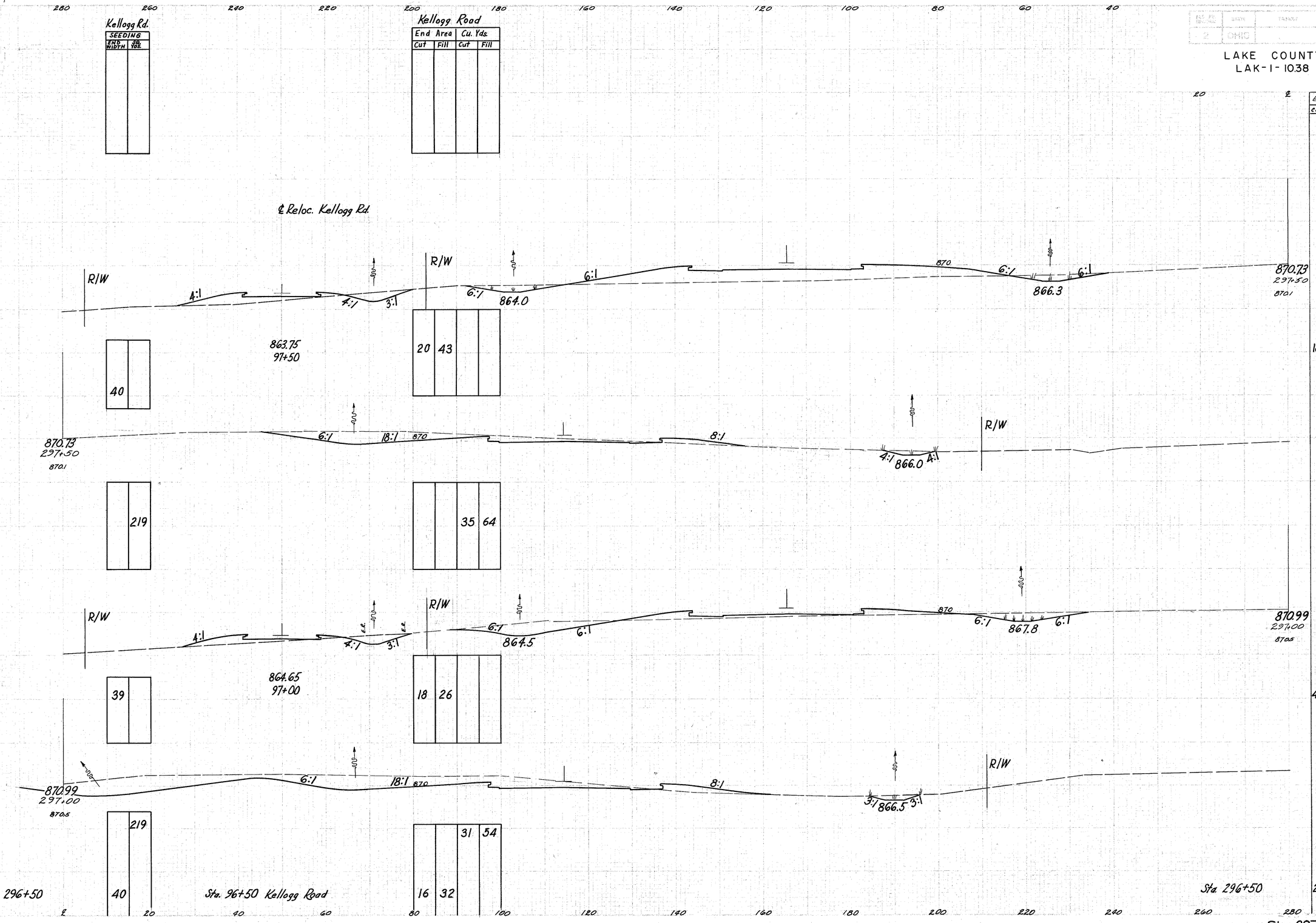
Kellogg Road

End Area		Cu. Yds.	
Cut	Fill	Cut	Fill

STATE	FEDERAL AID PROJECT
OHIO	

166
306

LAKE COUNTY
LAK-I-10.38

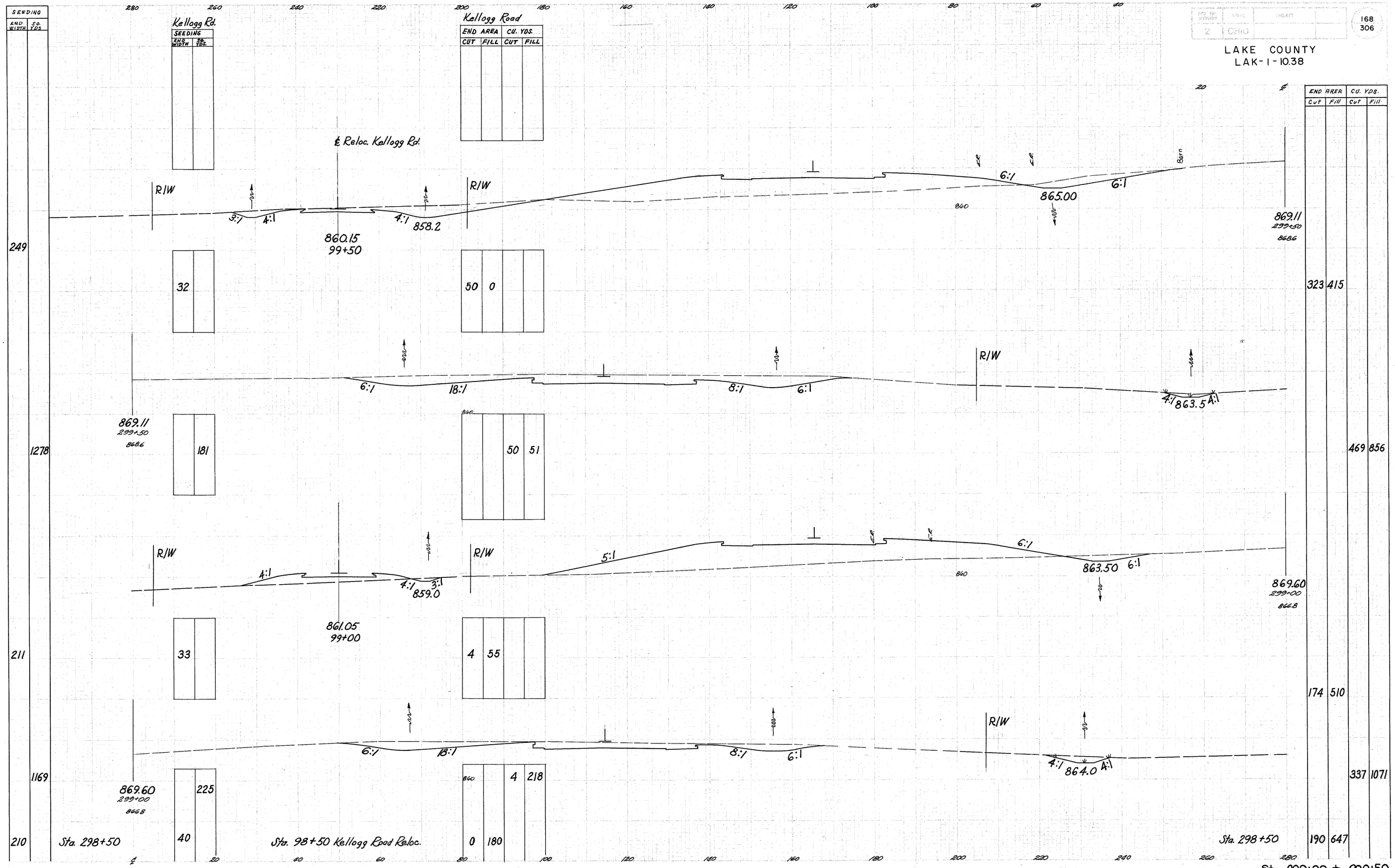


END AREA		CU. YDS	
cut	Fill	cut	Fill
184	264		
		550	322
410	84		
		639	115
280	40		

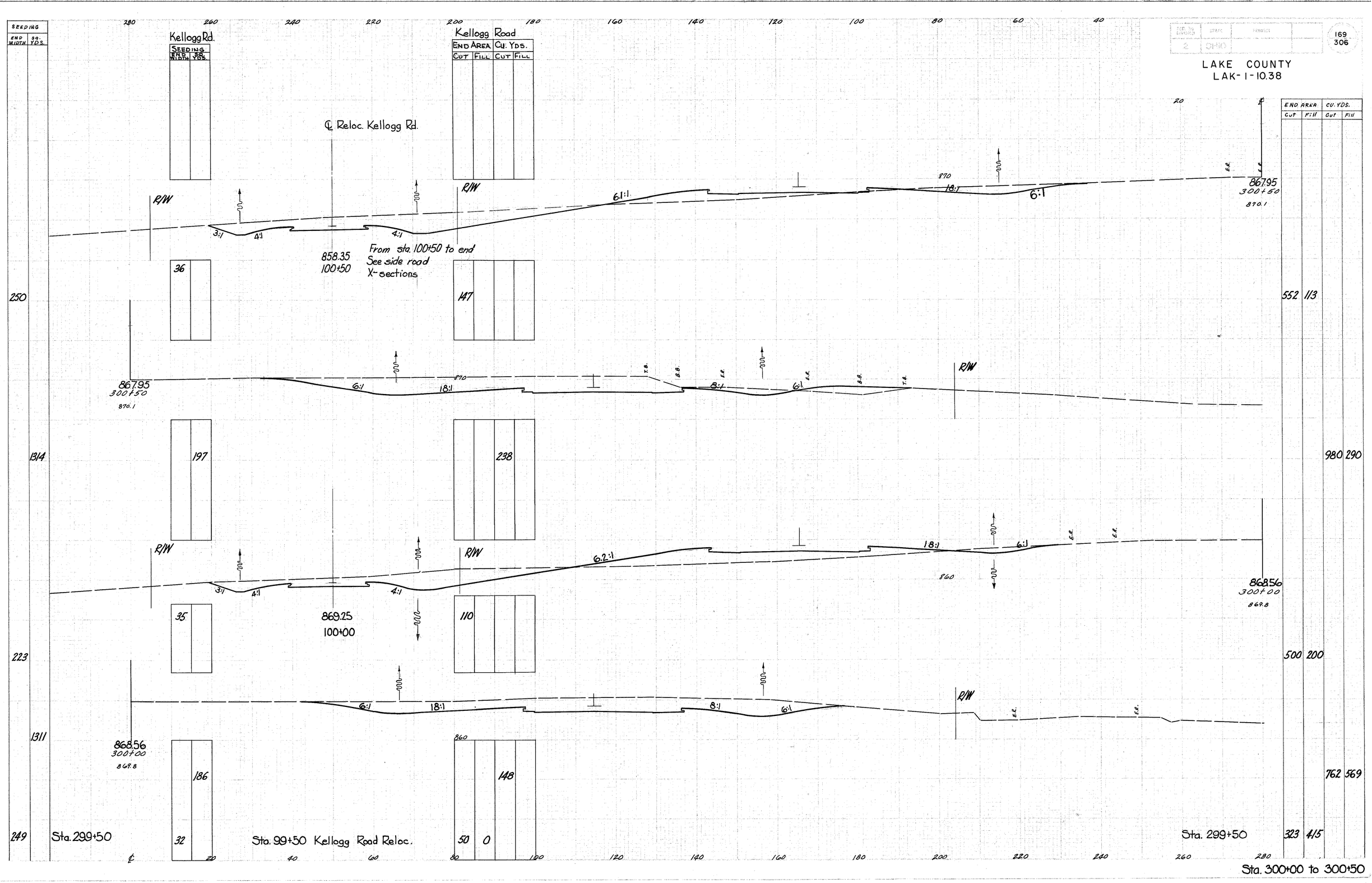
Sta. 297+00 to 297+50

LAKE COUNTY
LAK-1-10.38

LAKE COUNTY
LAK-1-10.38



Sta. 299+00 to 299+50



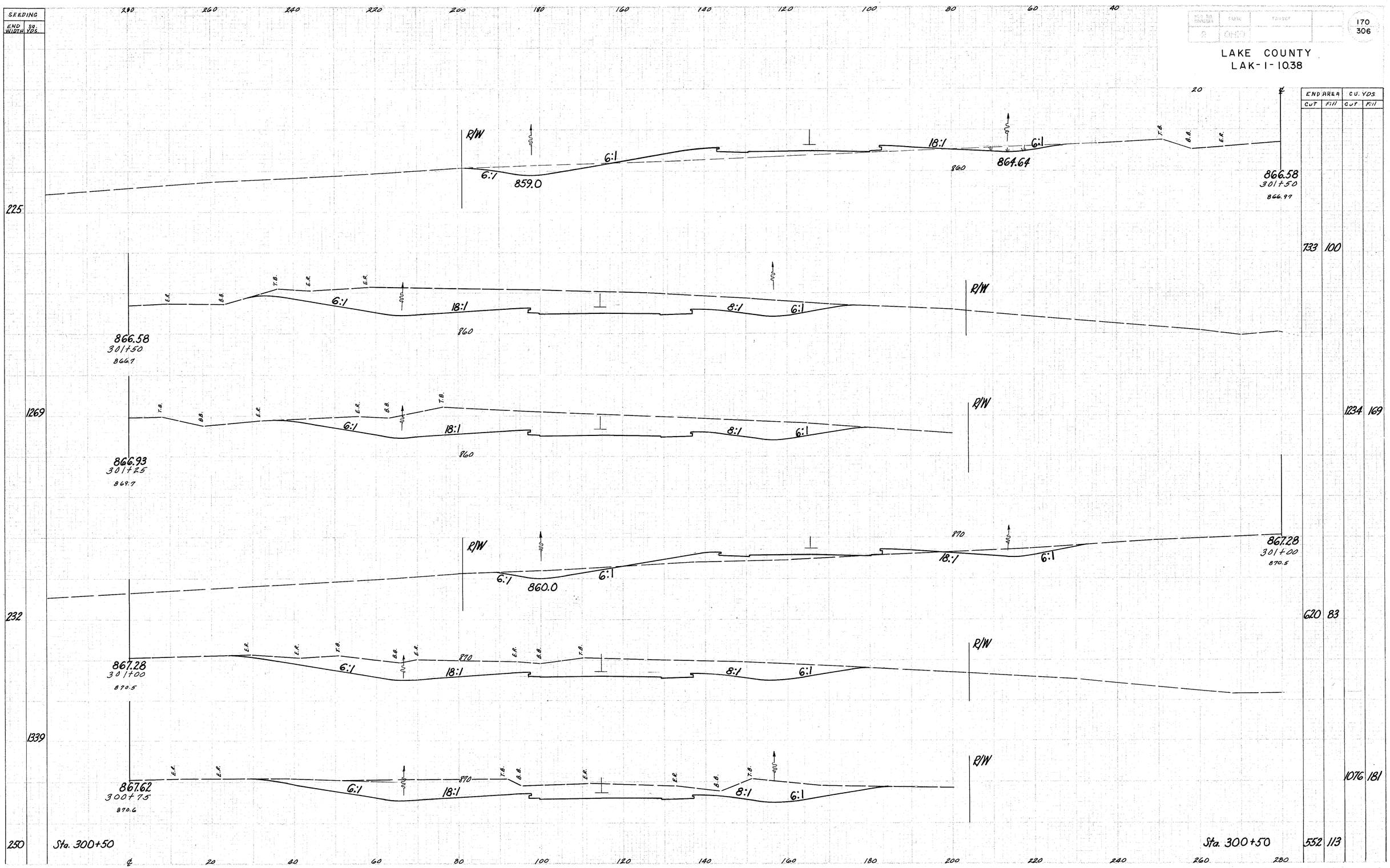
169
306
LAKE COUNTY
LAK-1-10.38
SEEDING
END WIDTH
SQ. YDS.
Kellogg Rd.
Kellogg Road
END AREA
CU. YDS.
CUT
FILL
℄ Reloc. Kellogg Rd.
R/W
858.35
100+50
From sta. 100+50 to end
See side road
X-sections
867.95
300+50
870.1
869.25
100+00
868.56
300+00
869.8
Sta. 299+50
Sta. 99+50 Kellogg Road Reloc.
Sta. 299+50
Sta. 300+00 to 300+50

SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS	
CUT	FILL	CUT	FILL

LAKE COUNTY
LAK-1-10.38

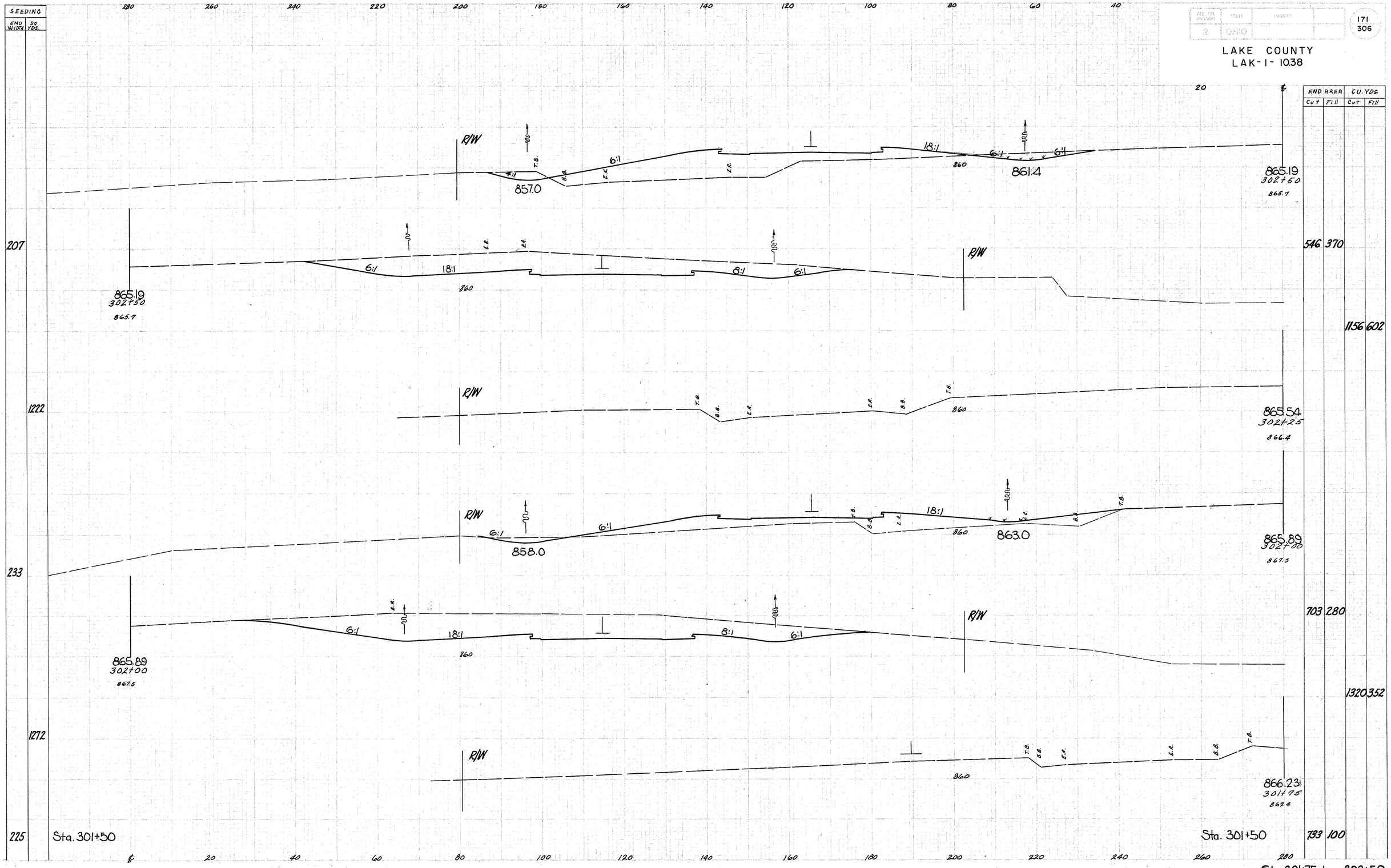
170
306



		END AREA CUT	END AREA FILL	CU. YDS CUT	CU. YDS FILL
225		733	100		
1269				1234	169
232		620	83		
1339				1076	181
250		552	113		

Sta. 300+75 to 301+50

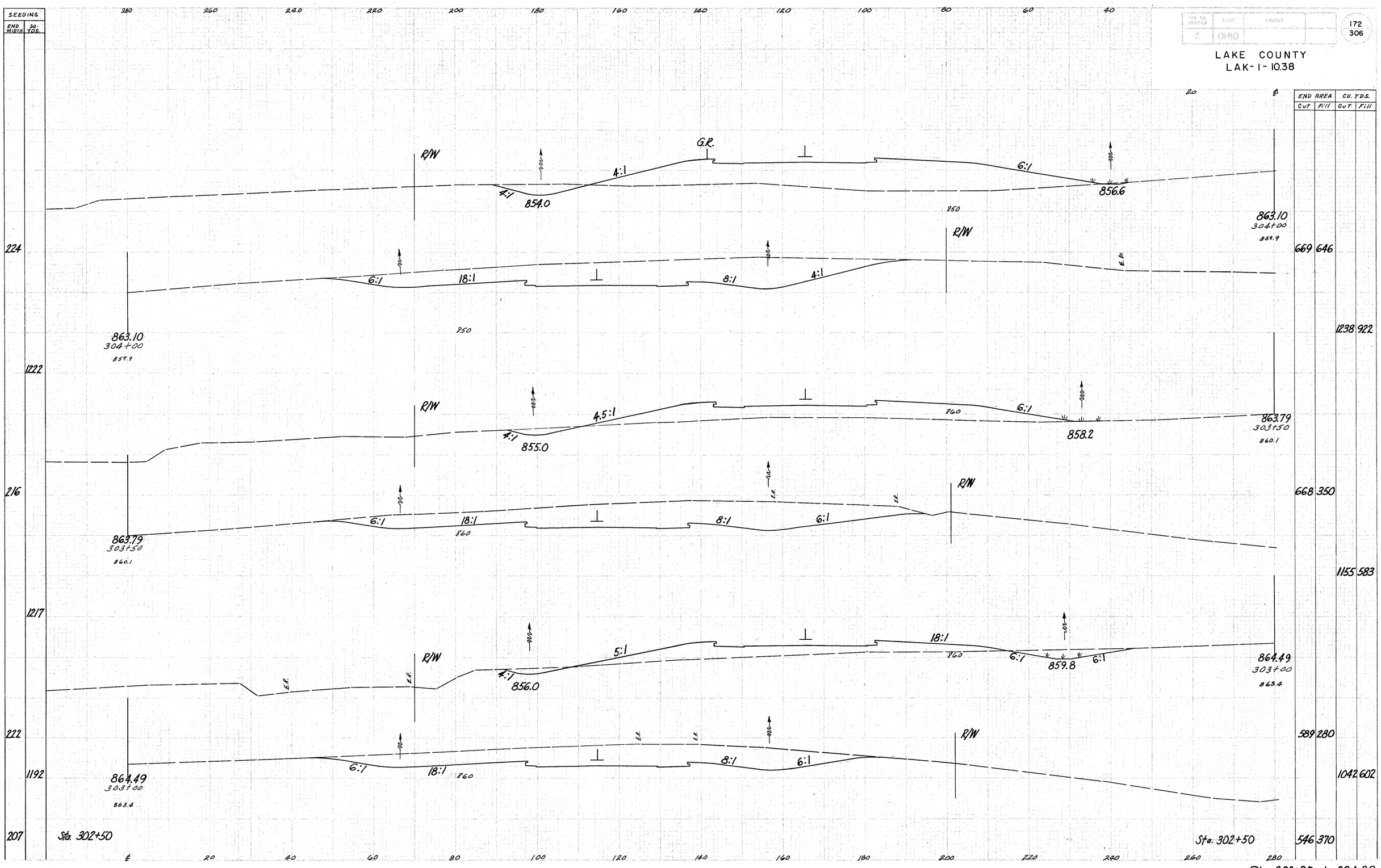
LAKE COUNTY
LAK-1-10.38



Sta. 301+75 to 302+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LAKE COUNTY
LAK-1-10.38

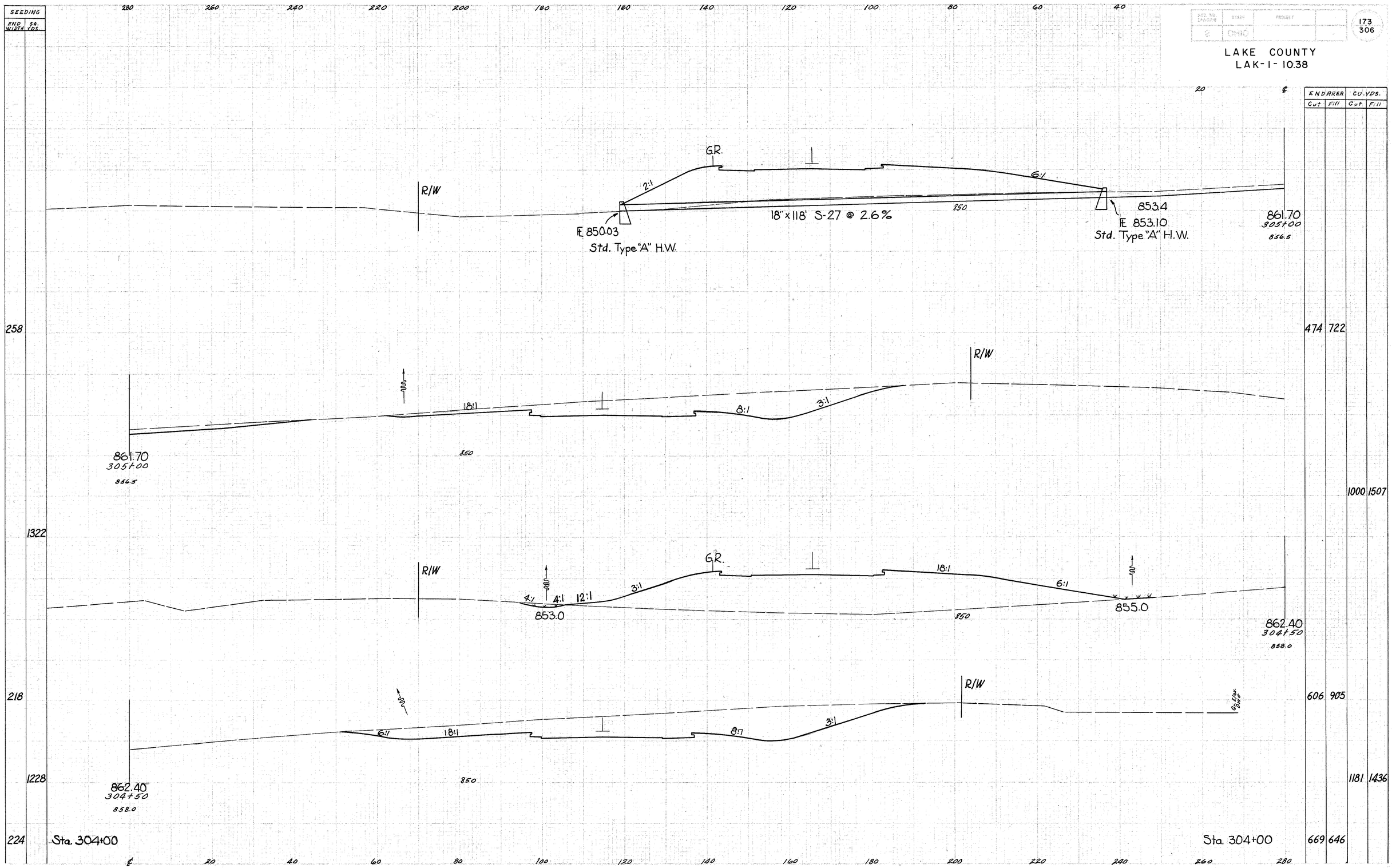


Sta. 303+00 to 304+00

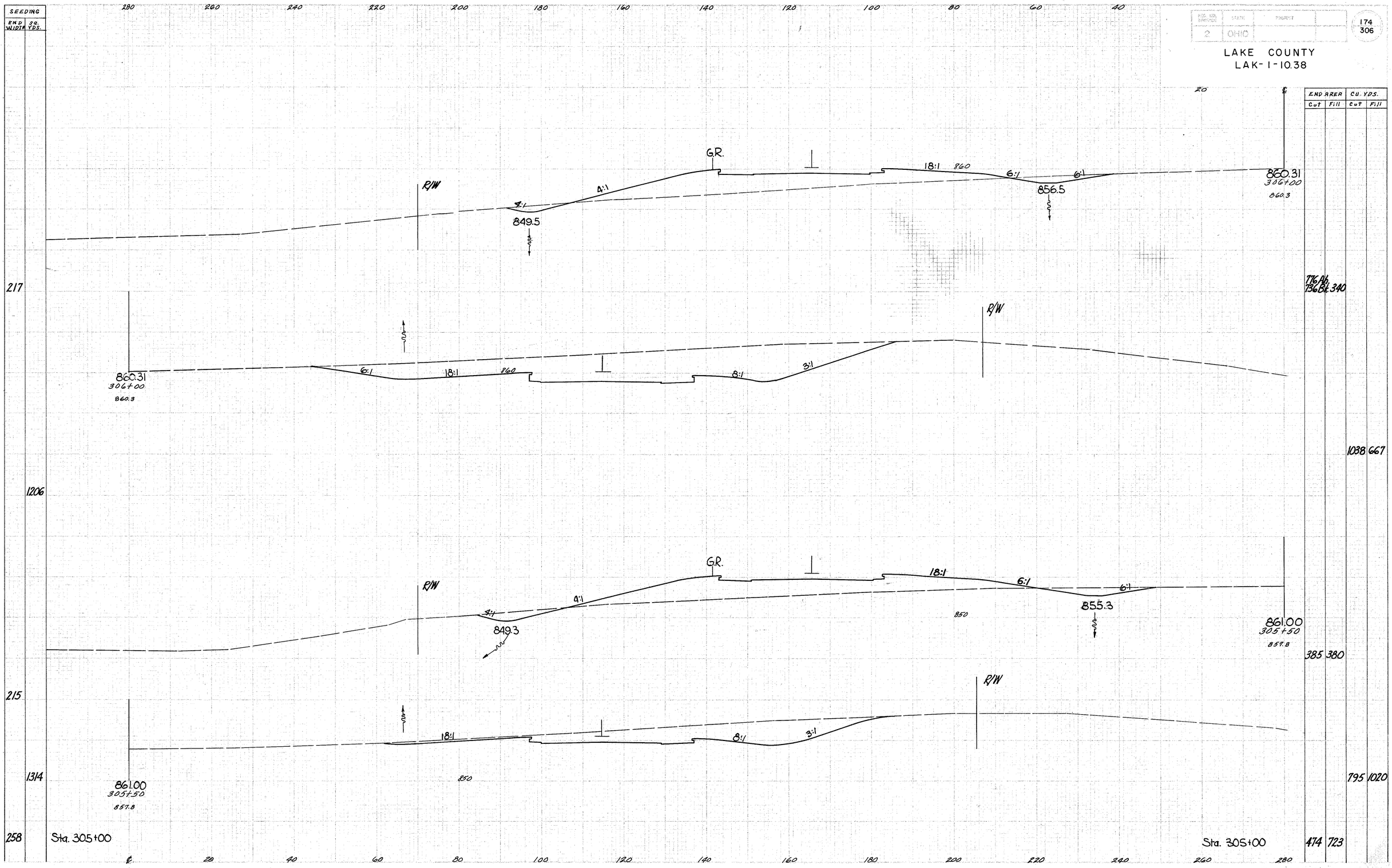
SEED. NO. SHEETS	STATE	PROJECT		
2	OHIO			

173
306

LAKE COUNTY
LAK-I-10.38



Sta. 304+50 to 305+00



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

174
306

LAKE COUNTY
LAK-1-10.38

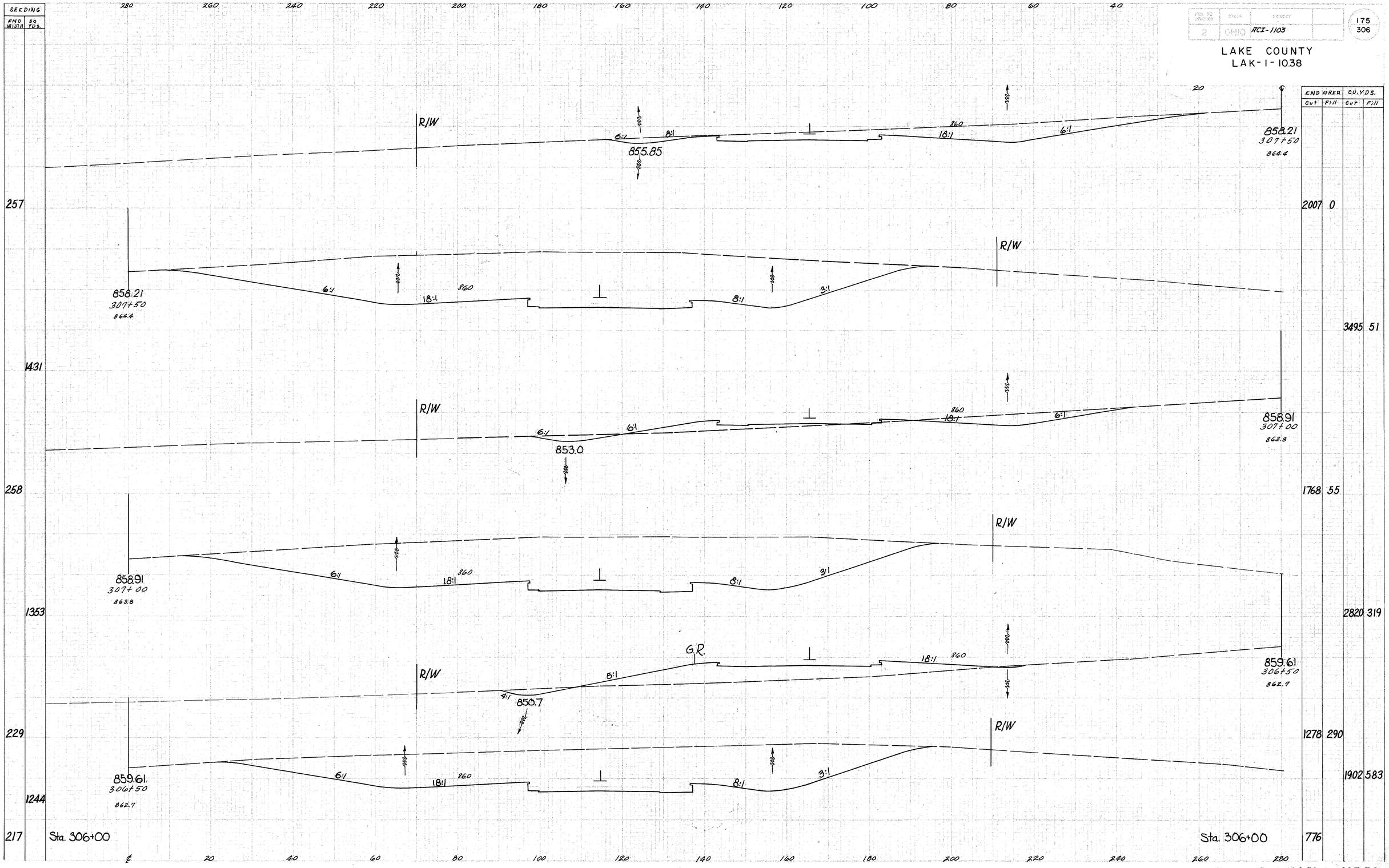
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
776 Ab. 736 Bk.	340		
		1038	667
385	380		
		795	1020
474	723		

Sta. 305+50 to 306+00

PER SE DRAWING	STATE	PROJECT	
2	OHIO	ACI-1103	

175
306

LAKE COUNTY
LAK-1-10.38



END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
257	2007	0	
1431		3495	51
258	1768	55	
1353		2820	319
229	1278	290	
1244		1902	583
217	776		

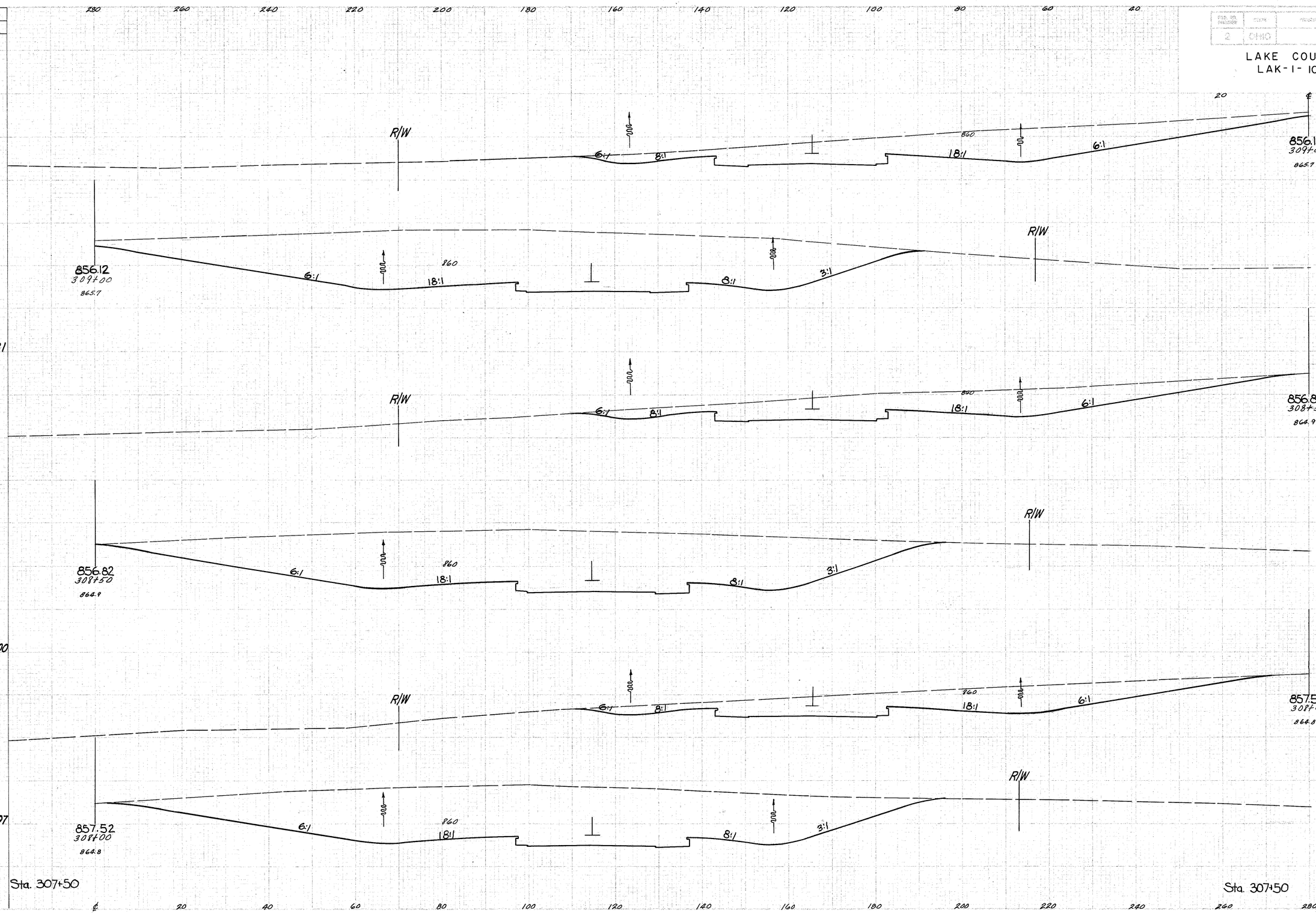
Sta. 306+50 to 307+50

FED. RD. DIST. NO.	STATE	PROJECT	
2	OHIO		

176
306

LAKE COUNTY
LAK-I-1038

SEEDING	
END WIDTH	SQ YDS.
293	
	1631
294	
	1600
282	
	1497
257	



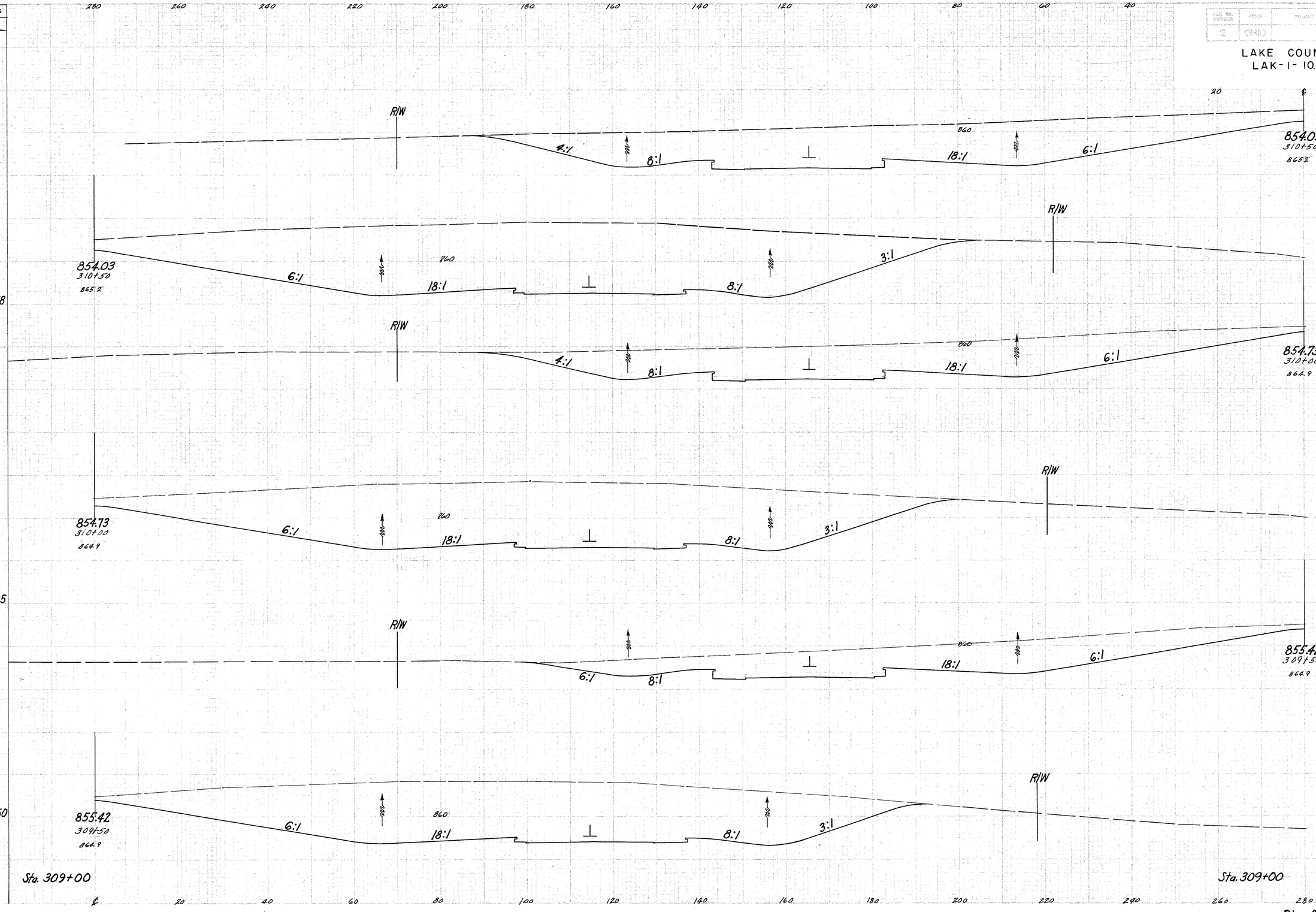
END AREA		CU YDS	
Cut	Fill	Cut	Fill
2635	Ahd		
2675	Bk.		
		4782	
2490			
		4500	
2370			
		4053	
2007			

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

177
306

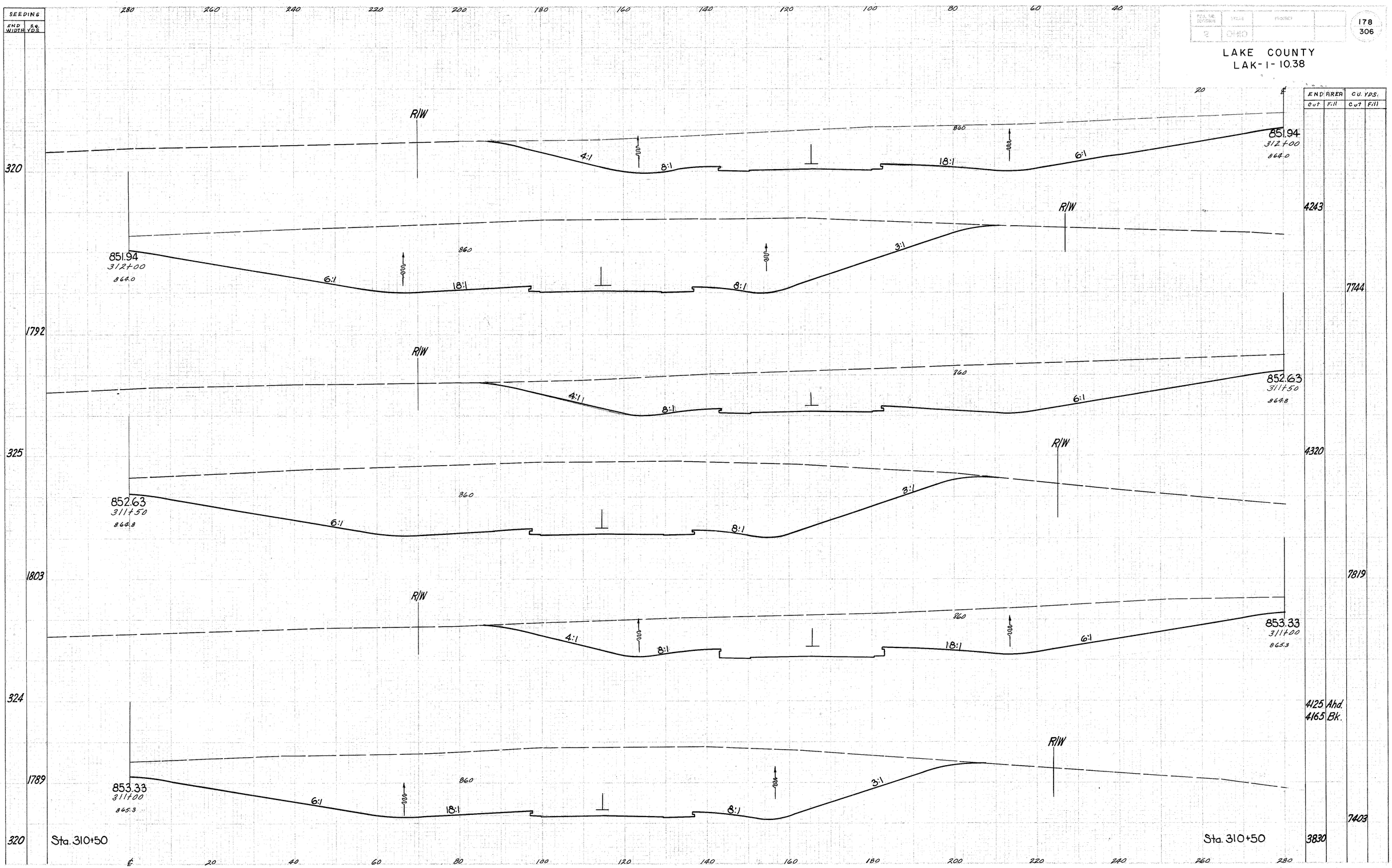
LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
320	
	1778
320	
	1725
301	
	1650
293	



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
3830		6653	
3355		5736	
2840		5069	
2535			

Sta. 309+50 to 310+50



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

178
306

LAKE COUNTY
LAK-1-10.38

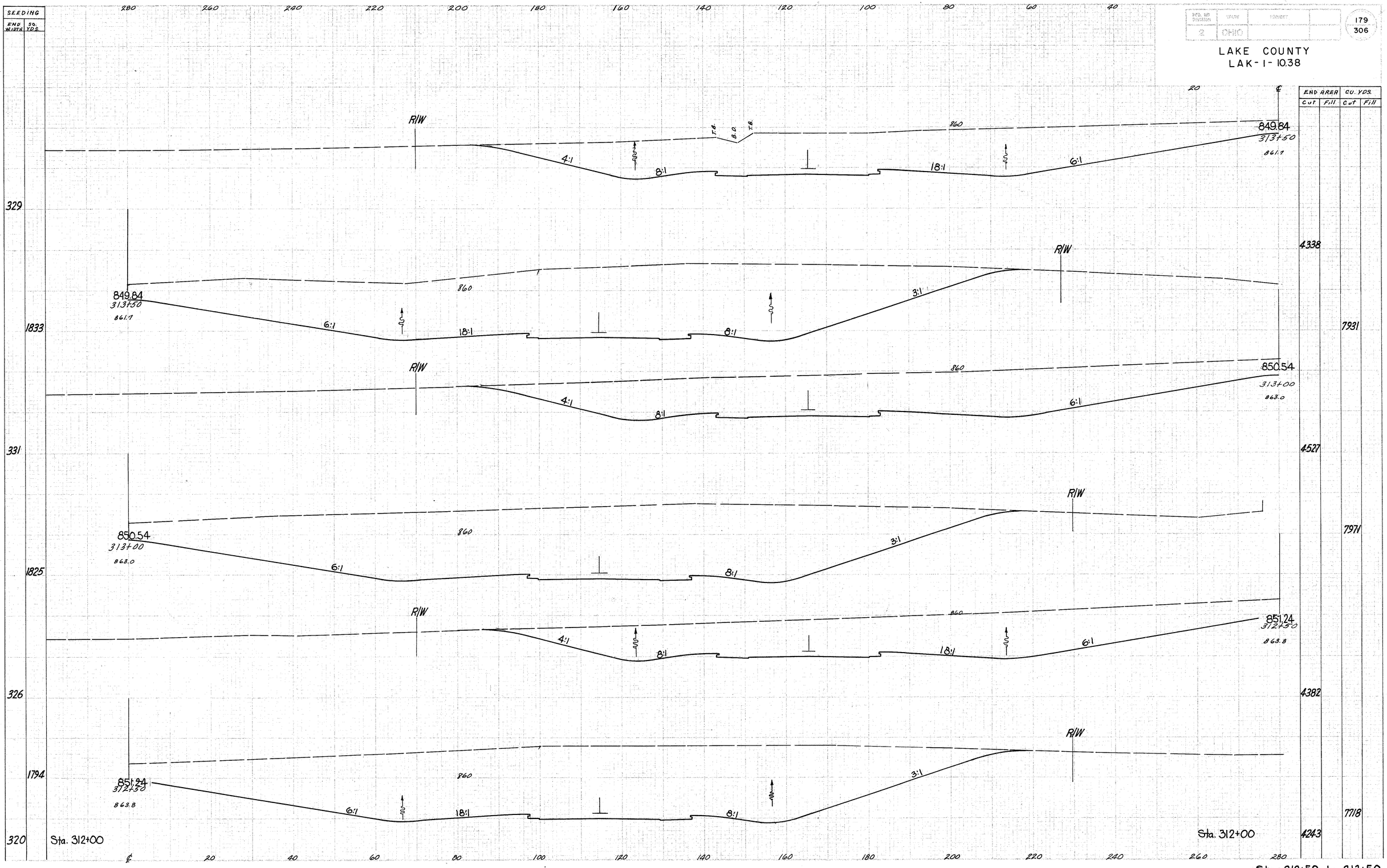
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill

Sta. 311+00 to 312+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

179
306

LAKE COUNTY
LAK-1-10.38



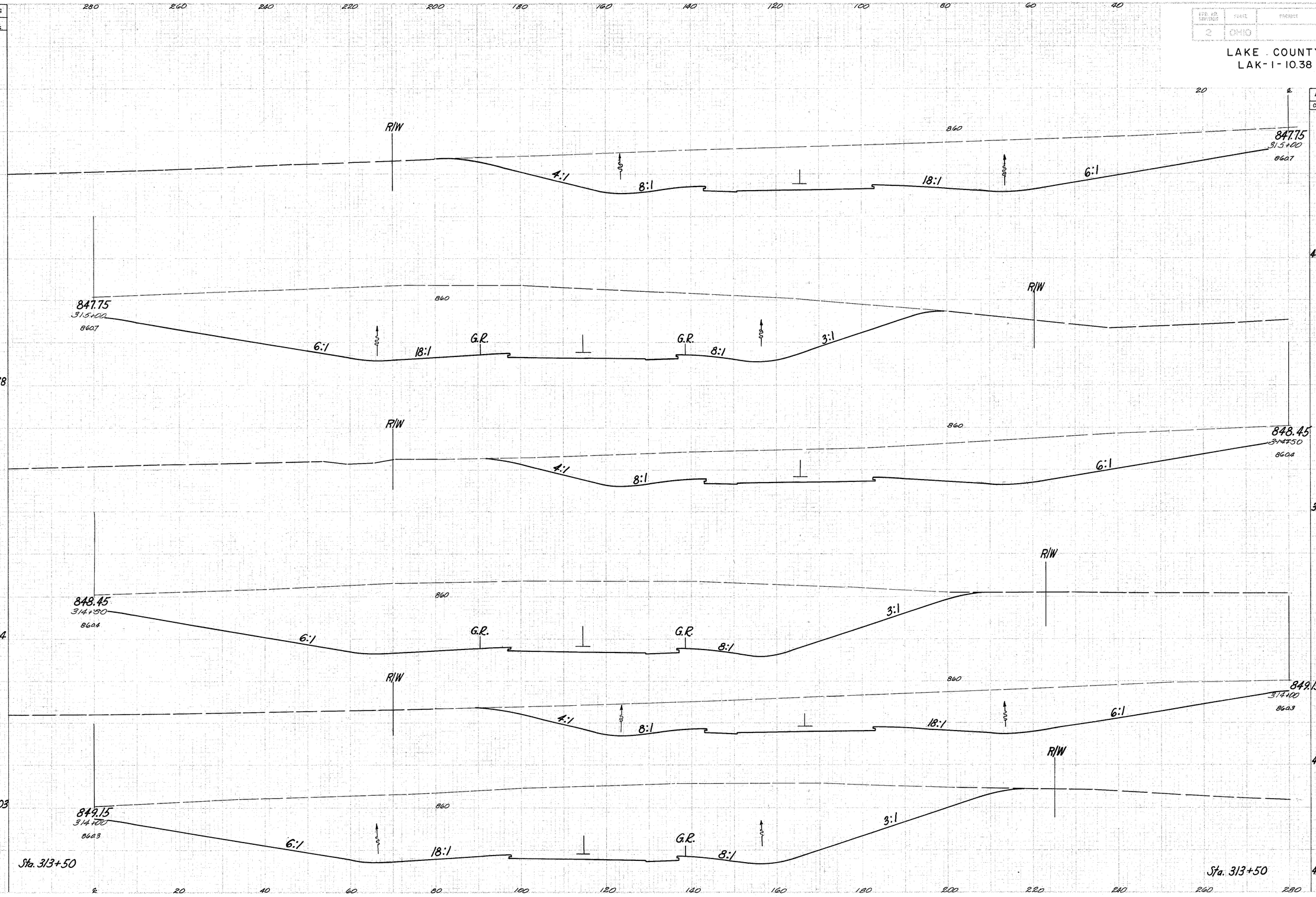
Sta. 312+50 to 313+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

180
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
325	1778
315	1764
320	1803
329	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
	4203		7483
	3930		7281
	4135		7568
	4188		

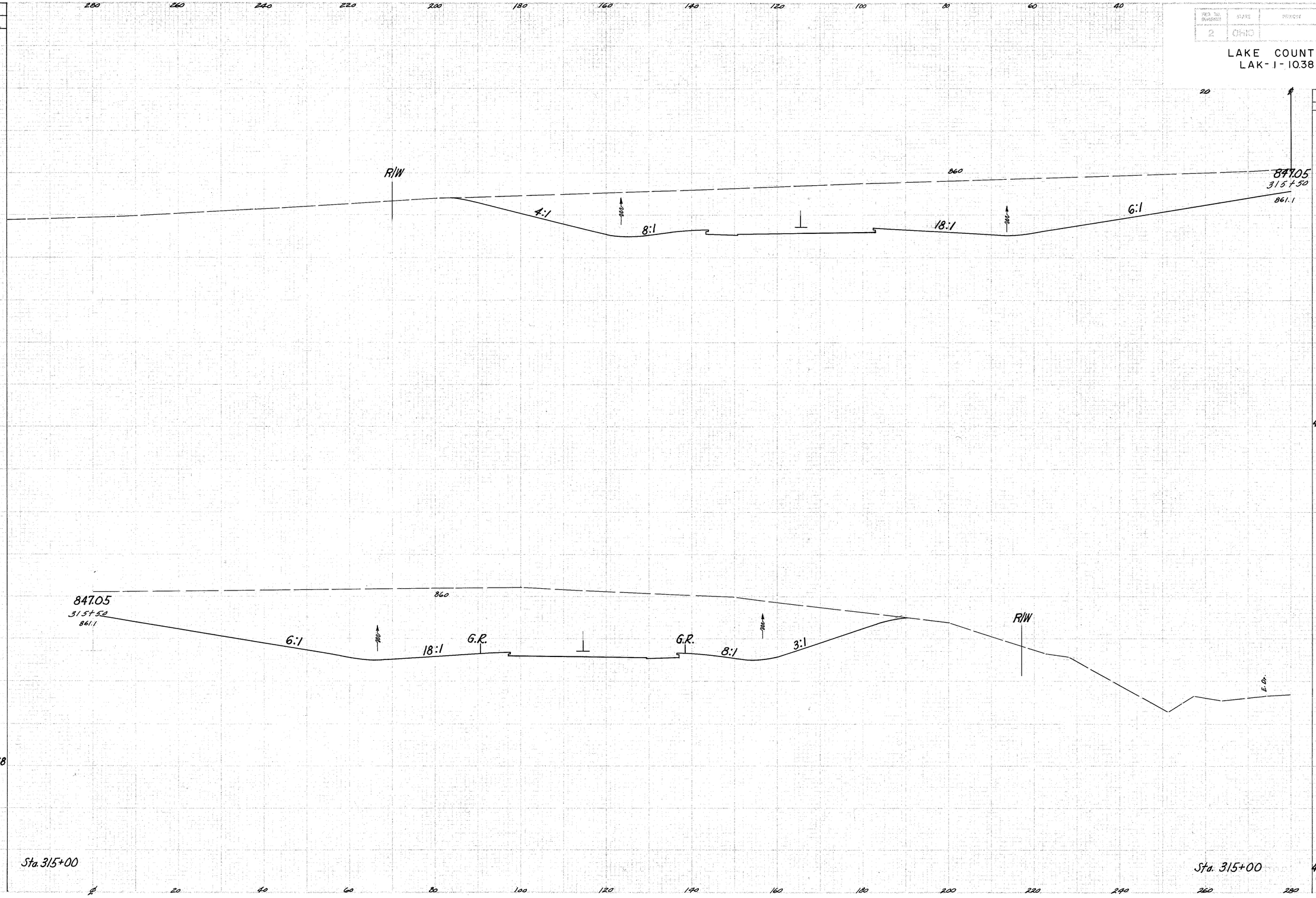
Sta. 314+00 to 315+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

181
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
315	
1778	
325	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
4290			
		7864	
4203			

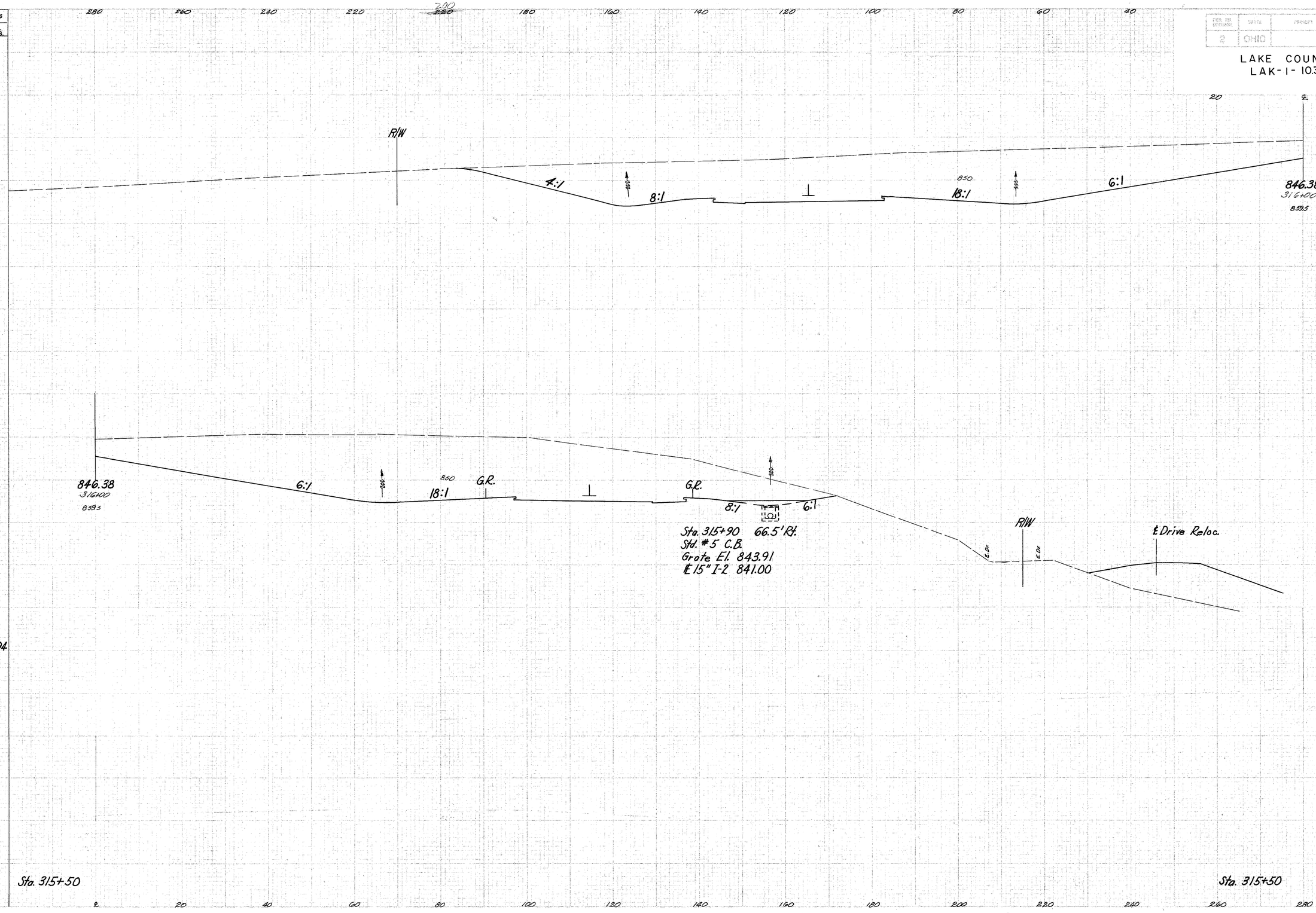
Sta. 315+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

182
306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
295	
169.4	
315	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
361.0		731.5	
429.0			

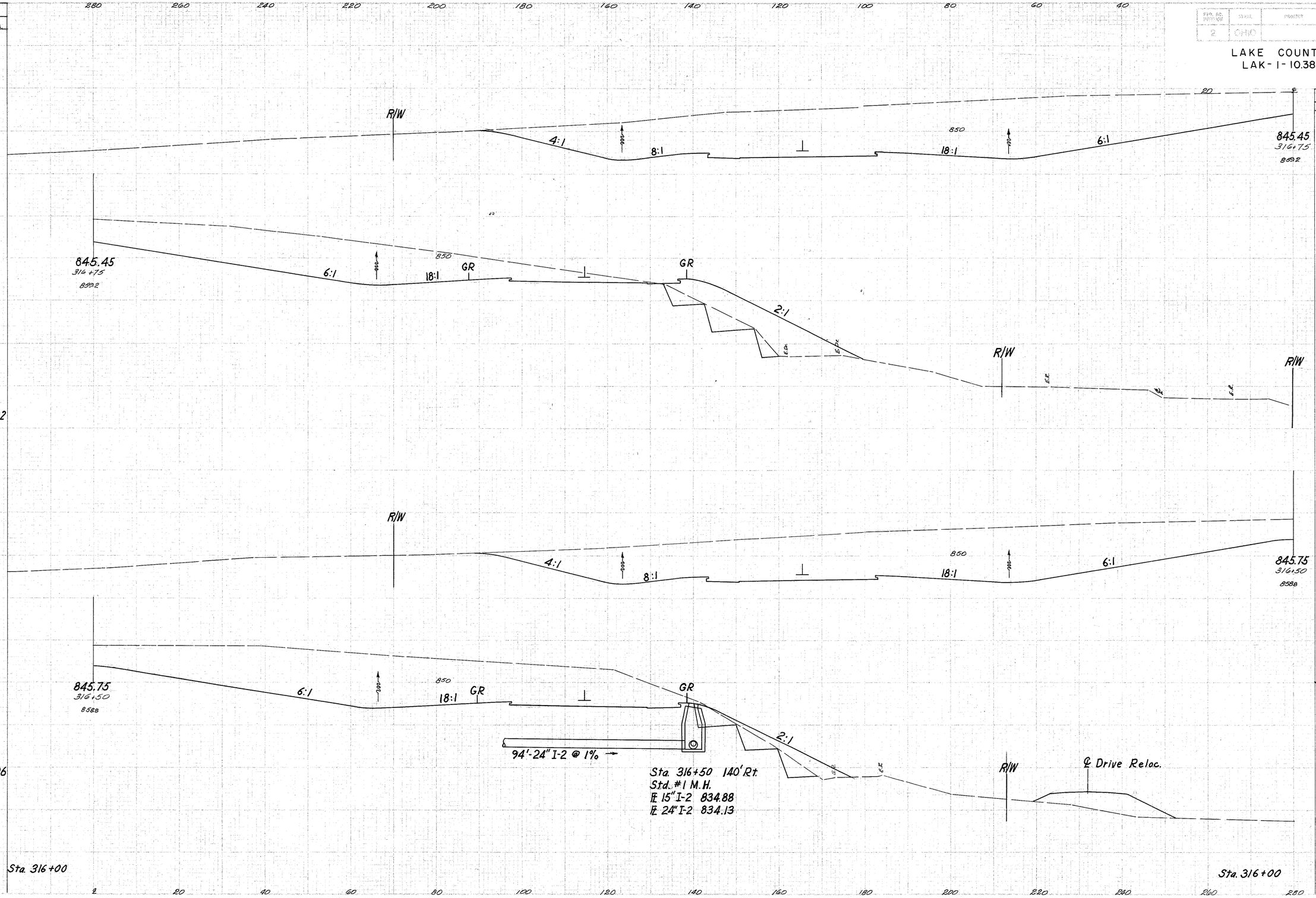
Sta. 316+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

183
306

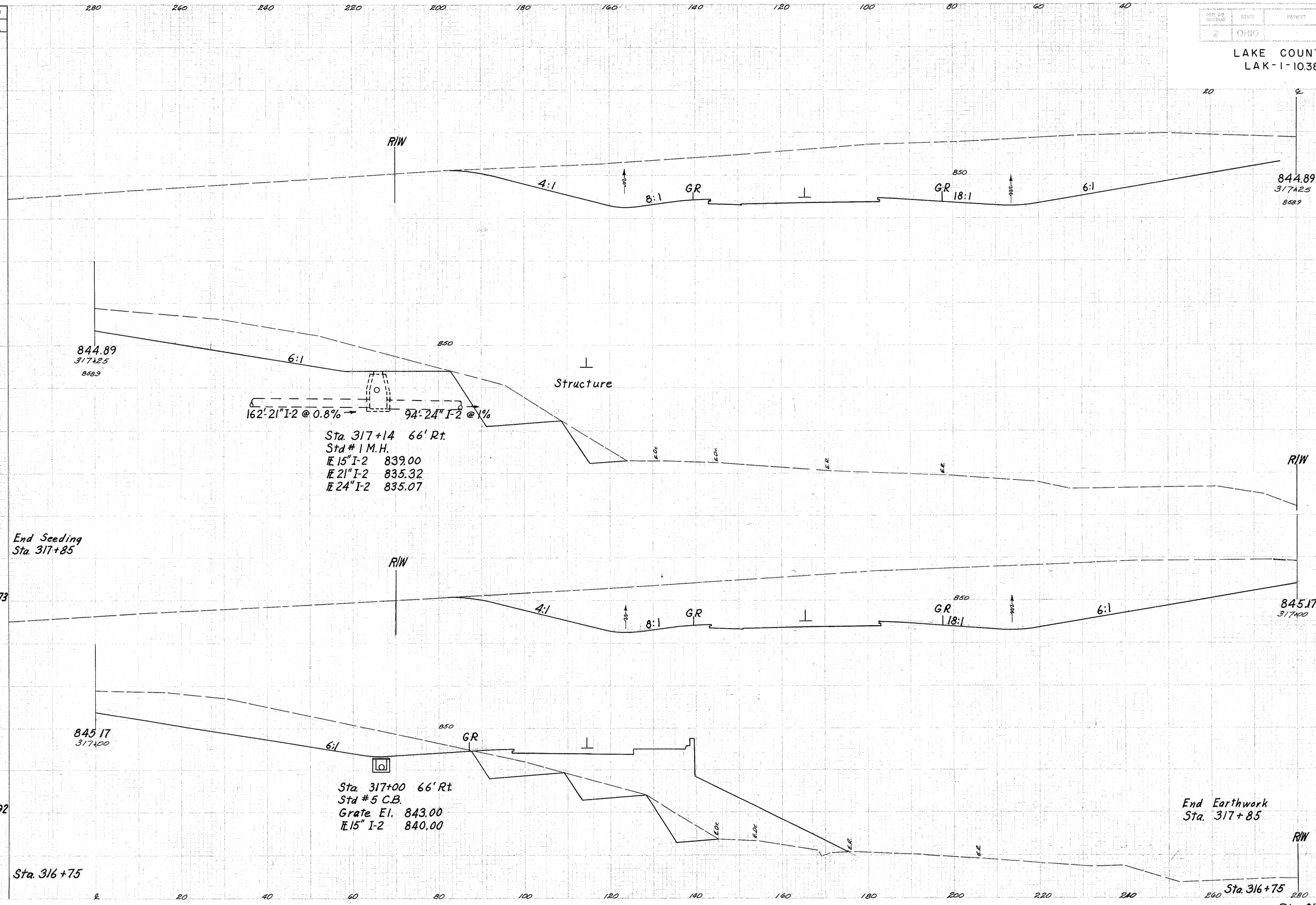
LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
326	
	1792
319	
	1706
295	



END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2745	216		
2680	126		
3043	55		
6160	51		
3610			

Sta. 316+50 to 316+75



SEED. LB. DIVISION	STATE	PROJECT	
2	OHIO		

184
306

LAKE COUNTY
LAK-1-10.38

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
2745	216		
		11,183	880
2745	216		

Sta. 317+00 to 317+25

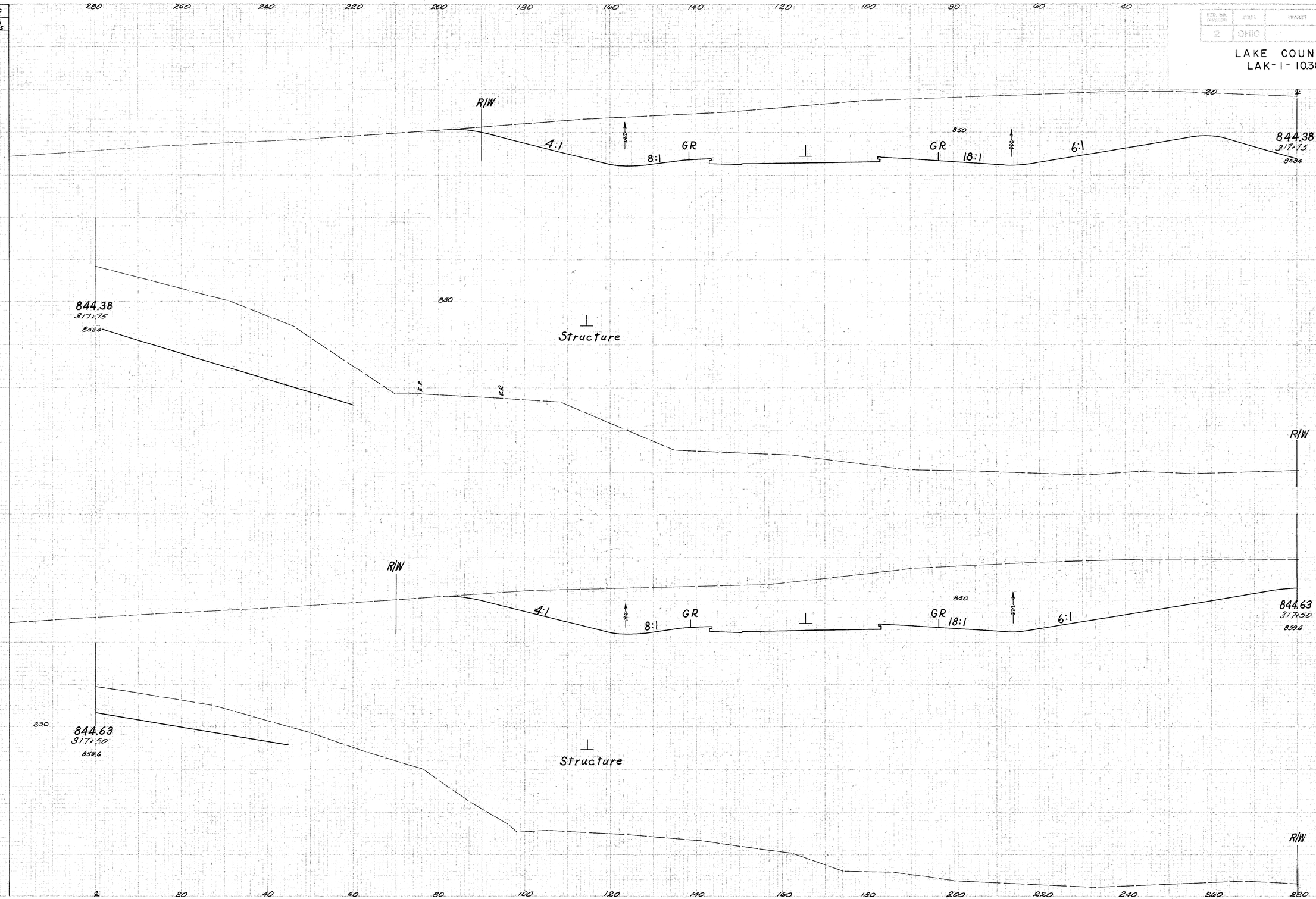
SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

185
306

LAKE COUNTY
LAK-1-10.38



Sta. 317+75

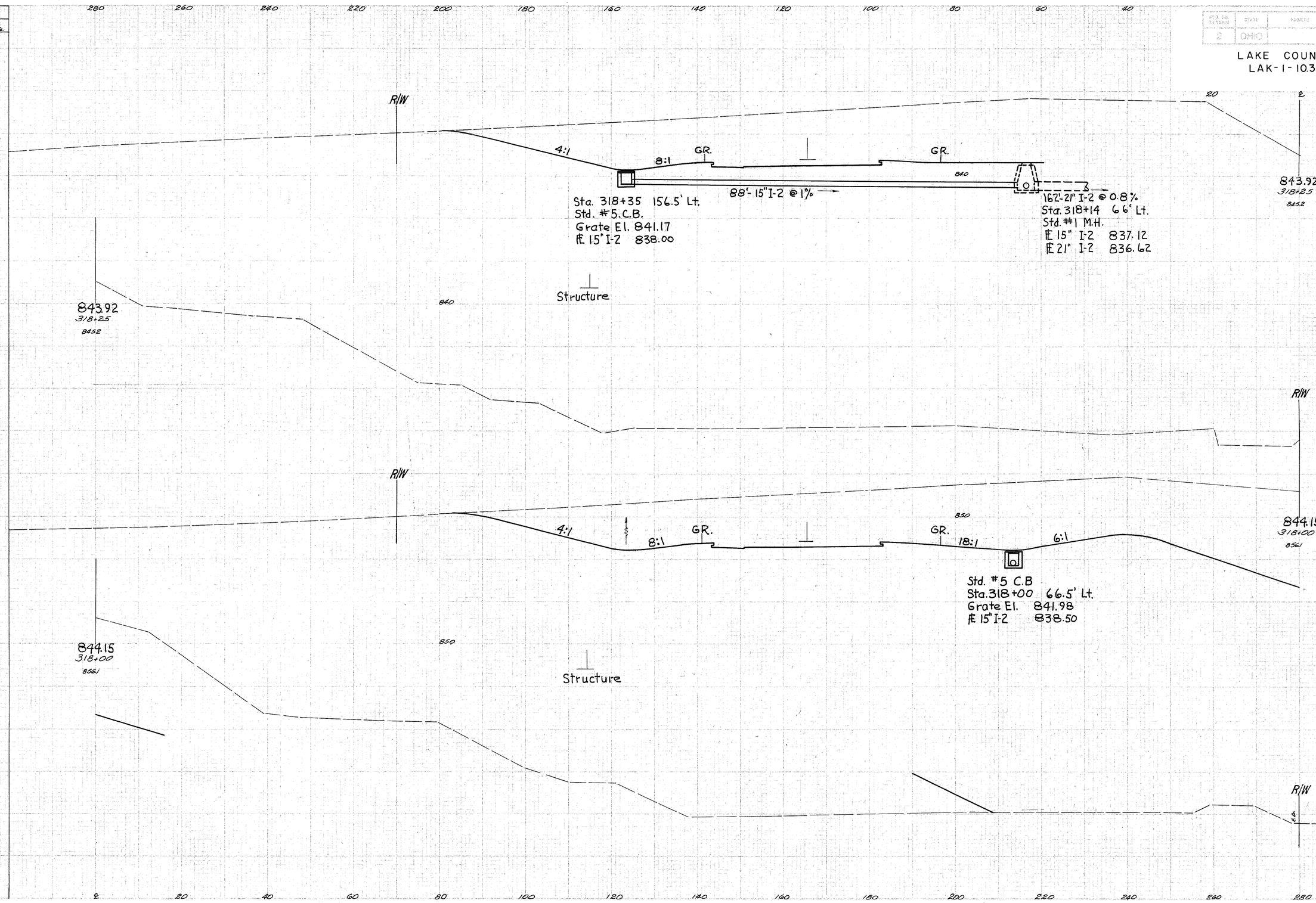
SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

186
306

LAKE COUNTY
LAK-1-10.38

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL



Sta. 318+00 to 318+25

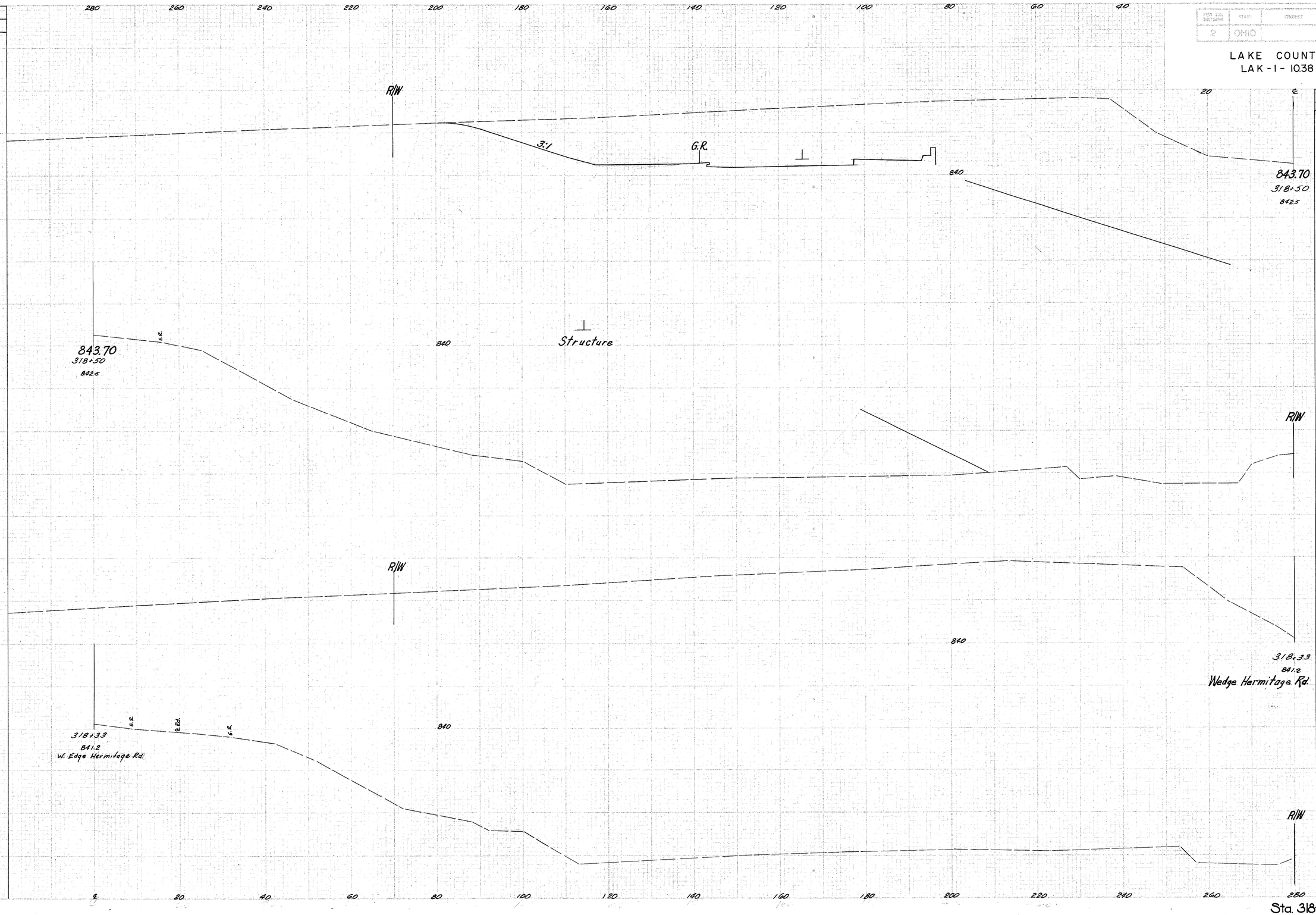
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

187
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	CU. YDS.

END AREA		CU. YDS.	
Cut	Fill	Cut	Fill



Sta. 318+33 to 318+50

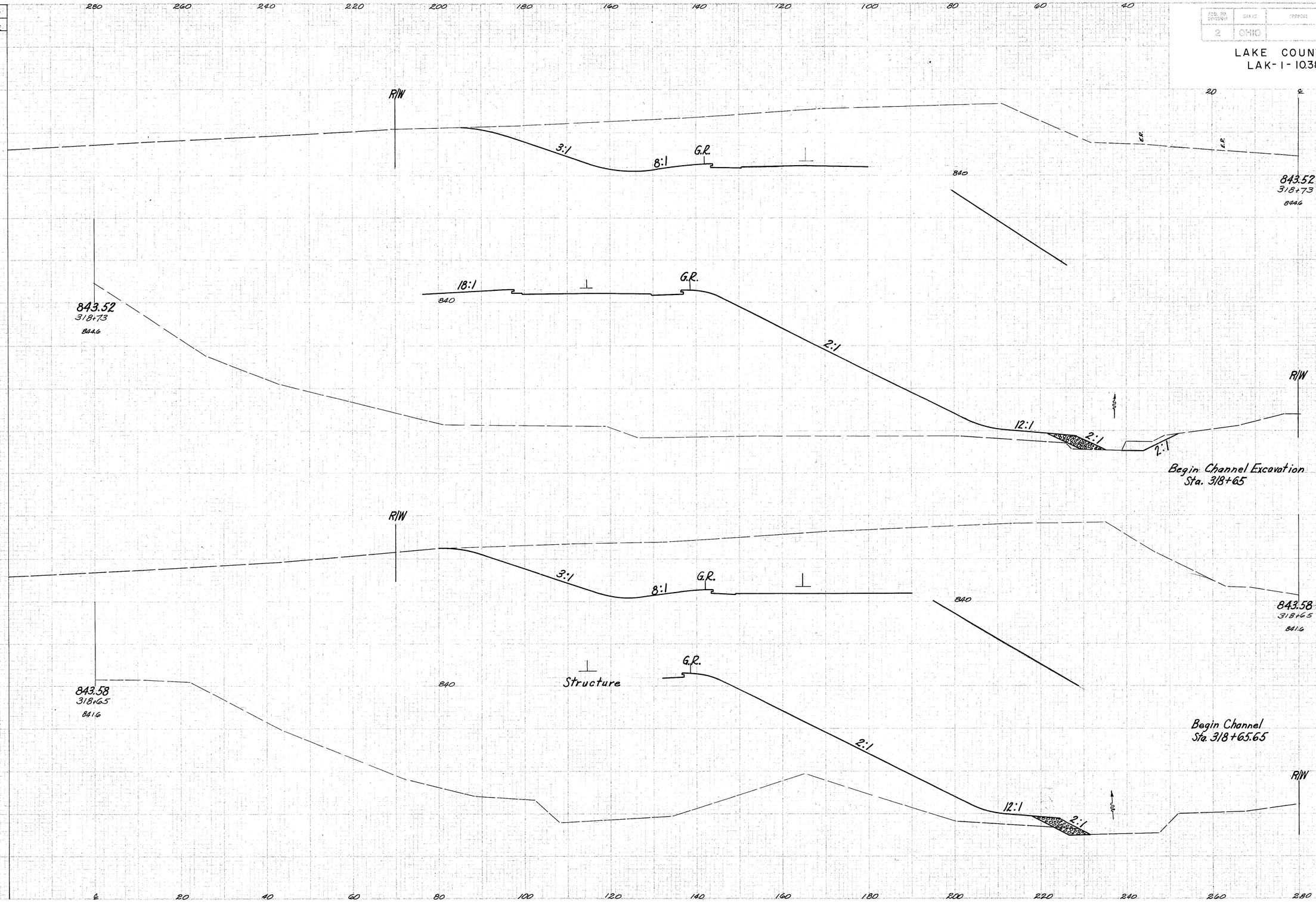
FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	
2	OHIO		

188
306

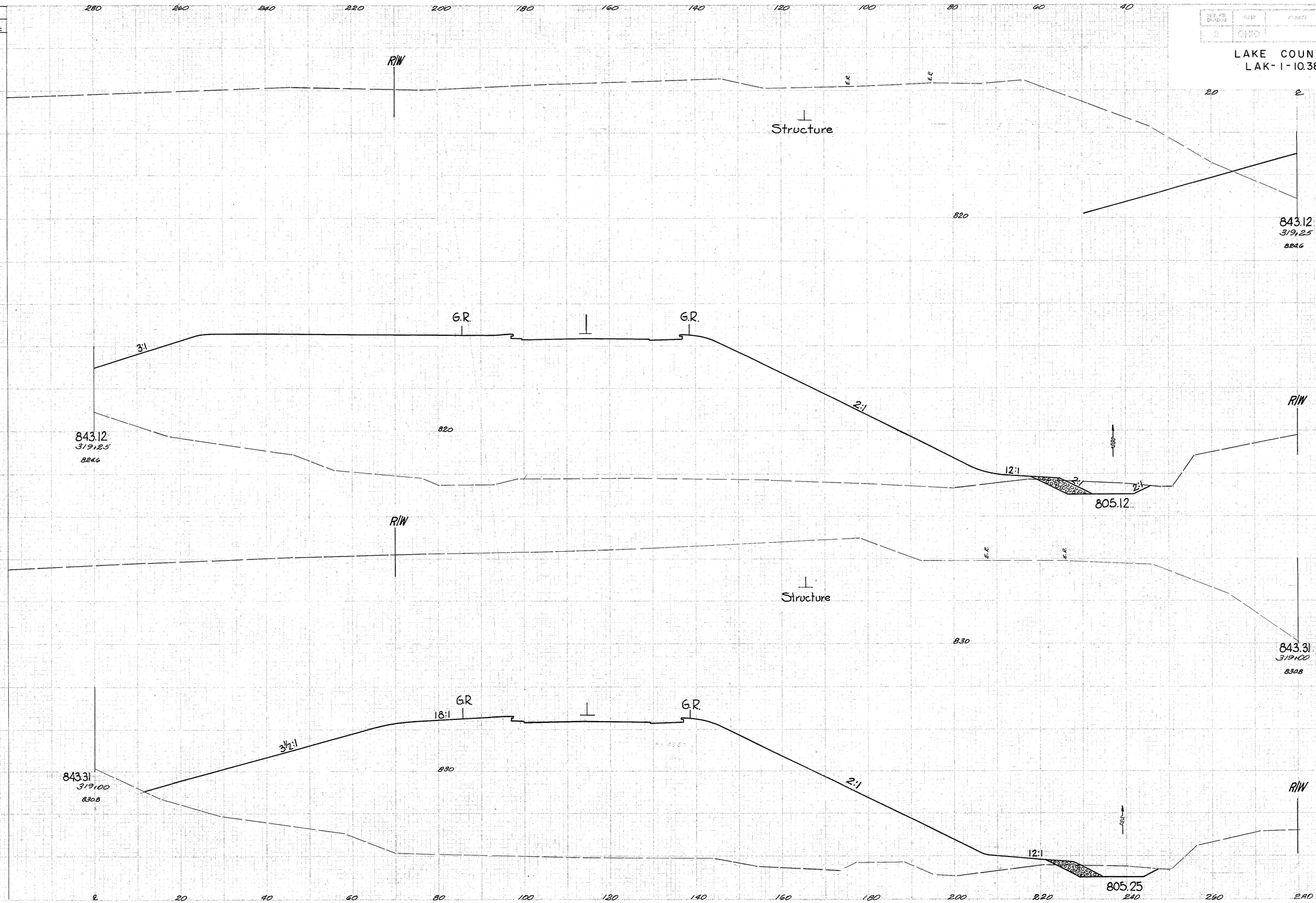
LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	CU. YDS.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL

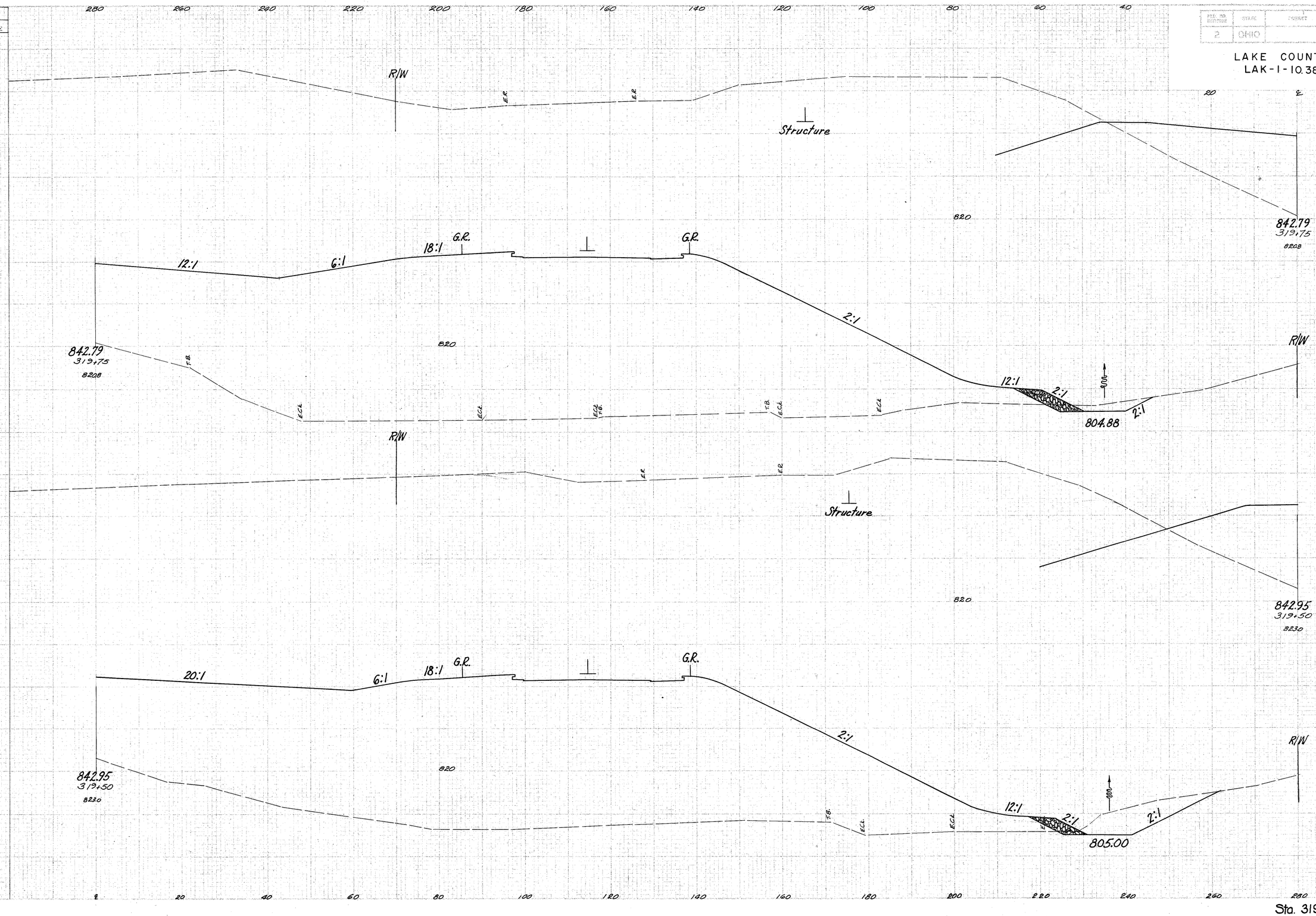


Sta. 318+65 to 318+73



LAKE COUNTY
LAK-1-10.38

Sta. 319+00 to 319+25



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

190
306

LAKE COUNTY
LAK-1-10.38

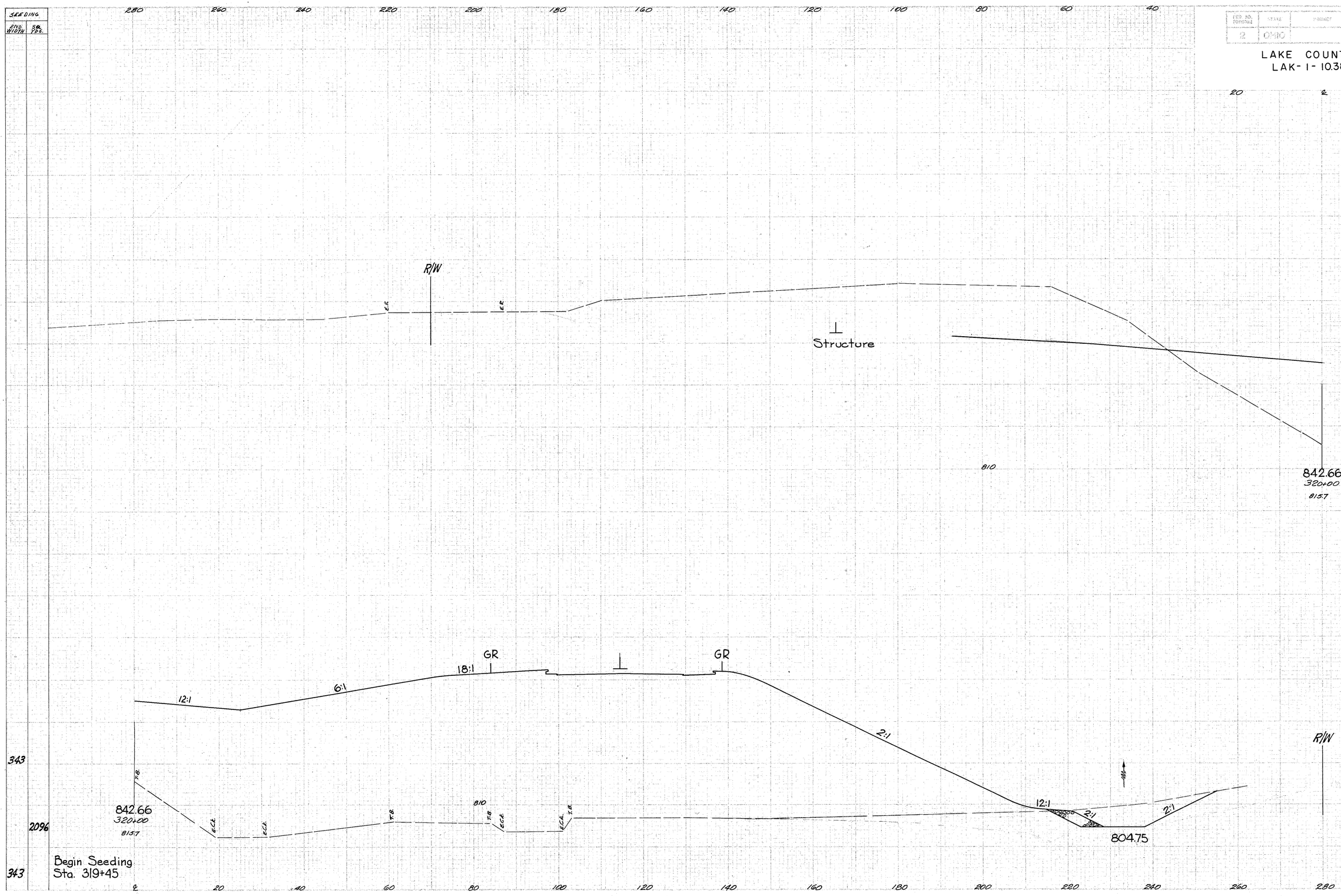
Sta. 319+50 to 319+75

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

191
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.



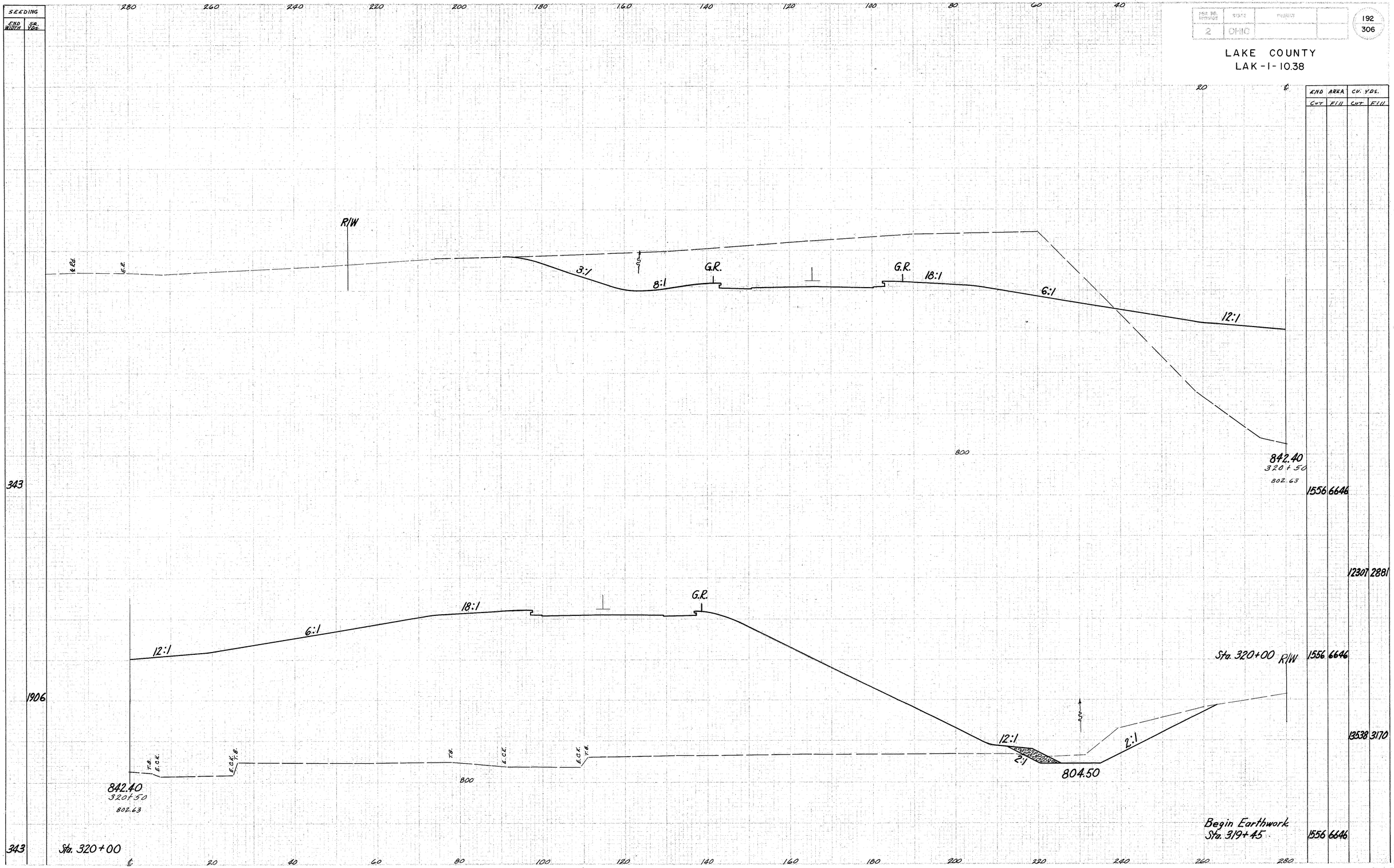
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL

Sta. 320+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

192
306

LAKE COUNTY
LAK-I-10.38



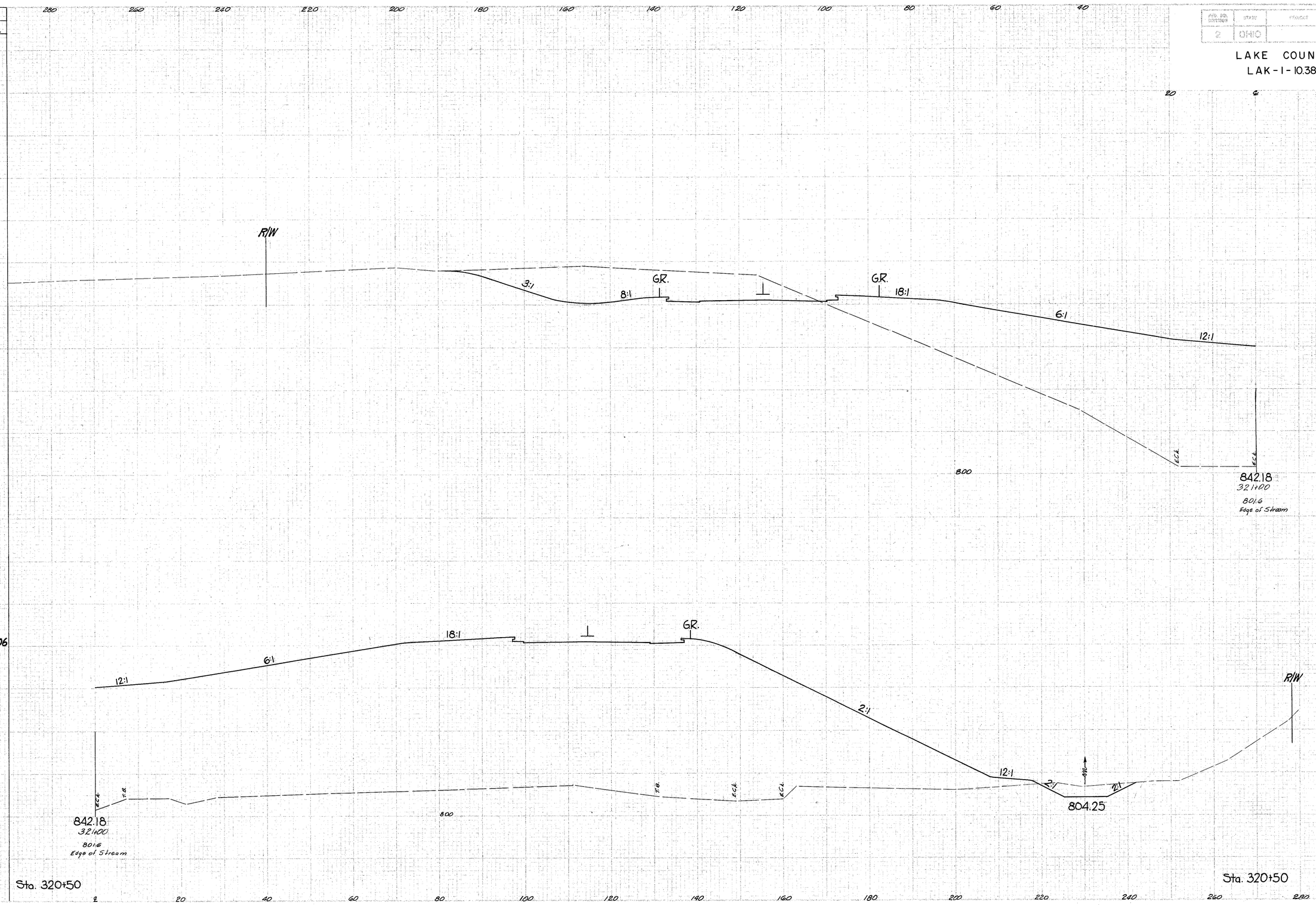
Sta. 320+50

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

193
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
343	
1906	
390	

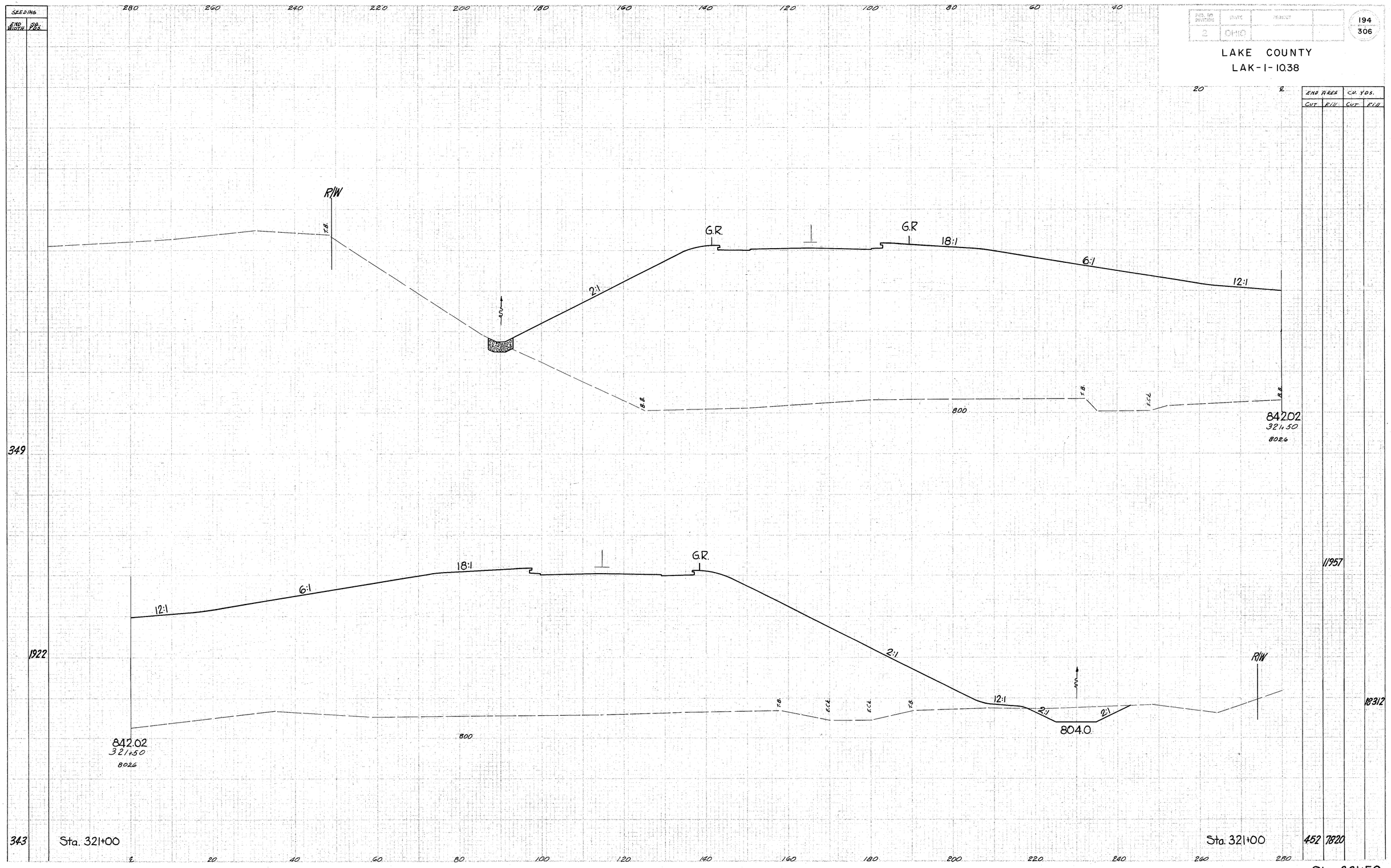


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
452	7820		
		6572	8681
		1556	6646

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

194
306

LAKE COUNTY
LAK-1-10.38

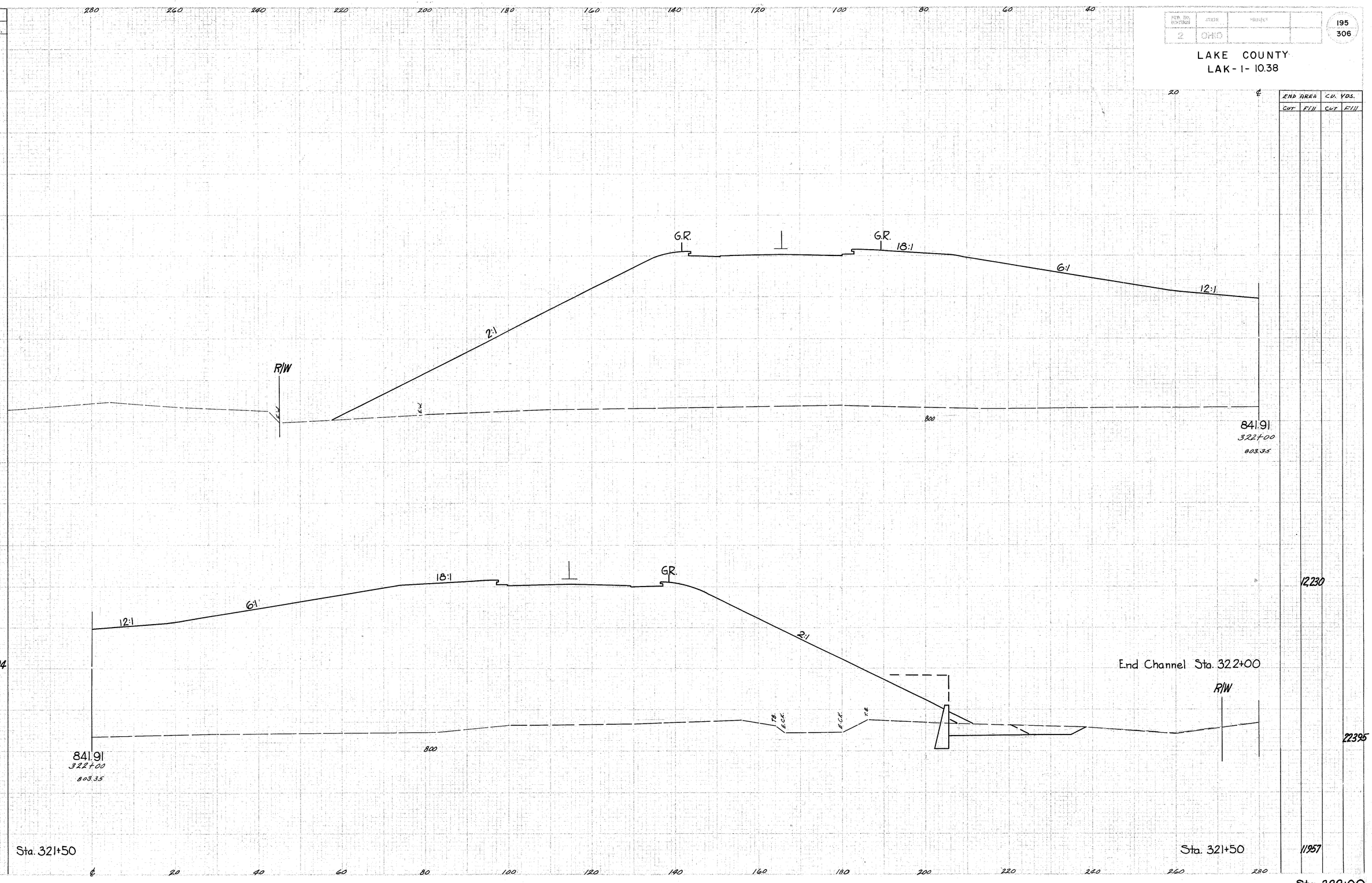


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

195
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	CR. YDS.
369	
1994	
378	



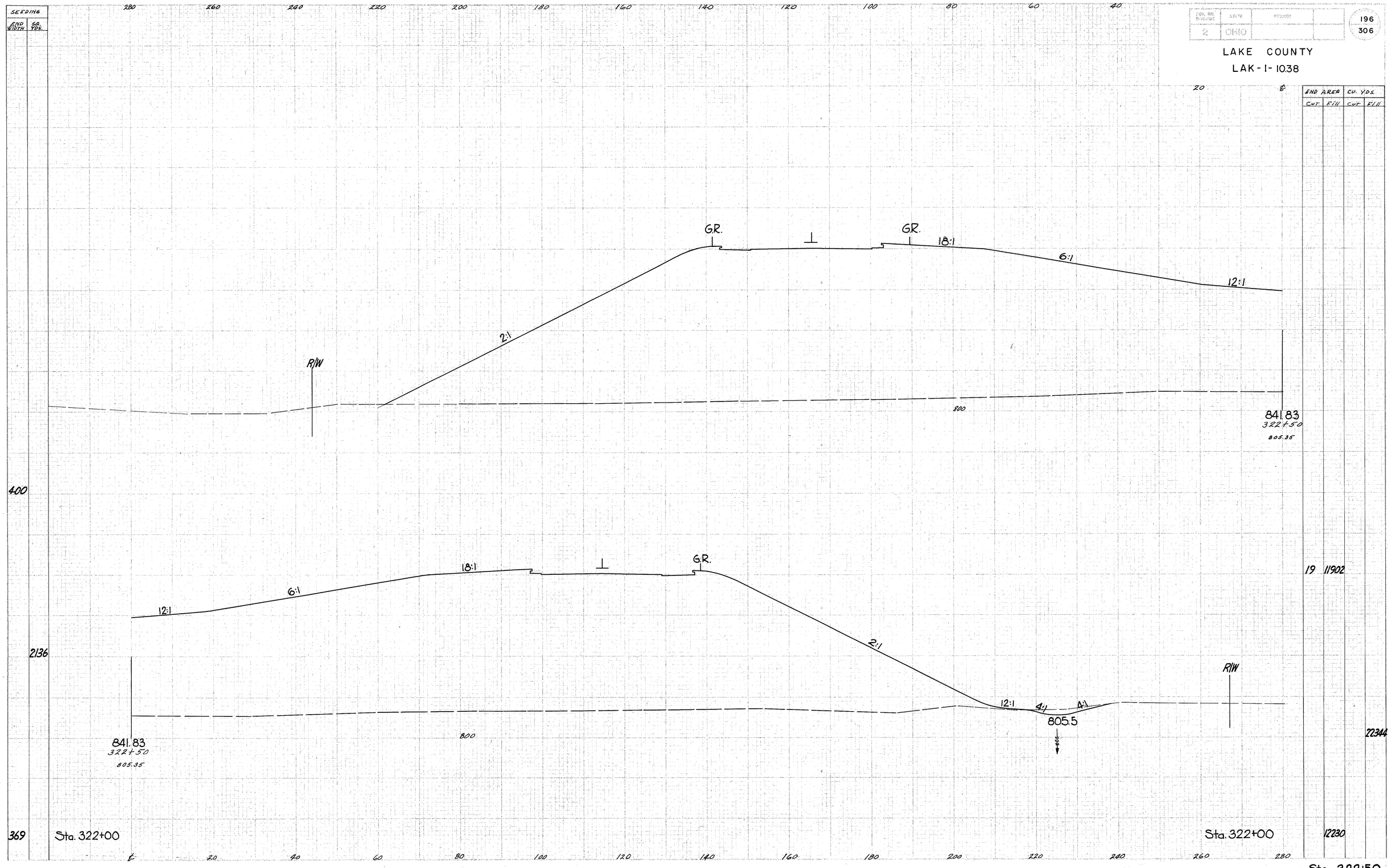
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		12,230	
		22,395	
		11,957	

FED. RD. DISTRICT	STATE	PROJECT		
2	OHIO			

196
306

LAKE COUNTY
LAK-1-1038

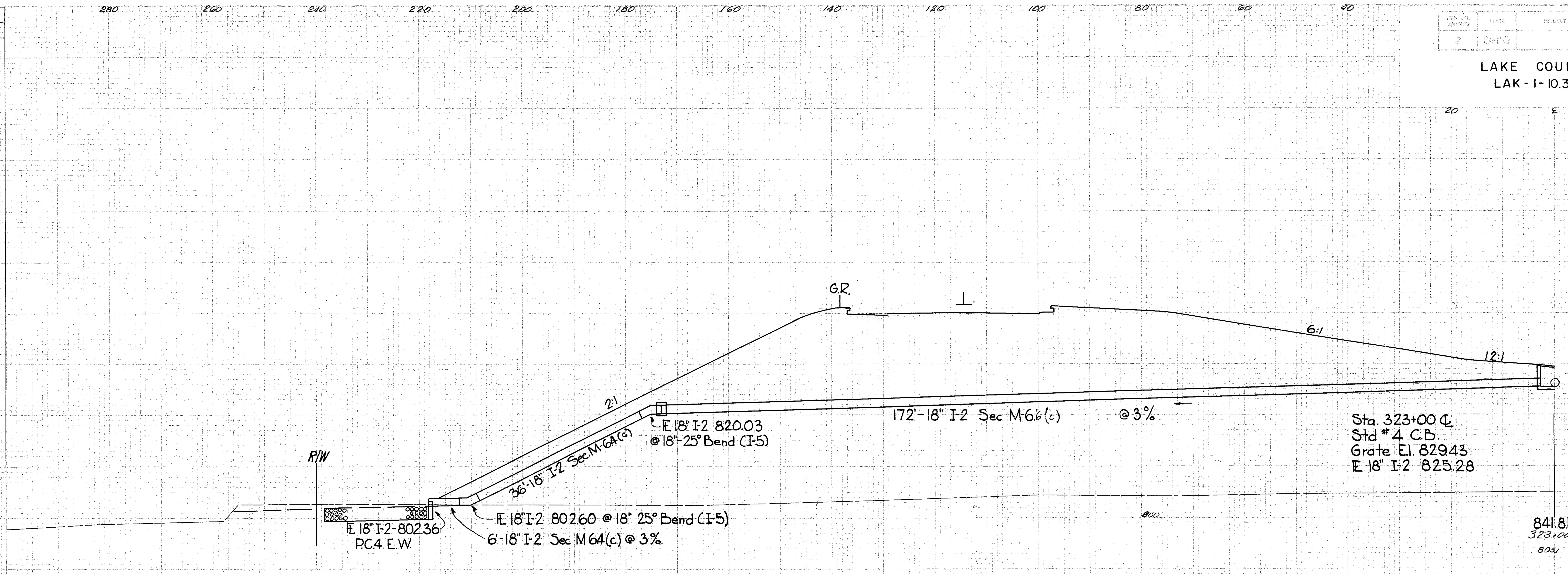
SEEDING	
END WIDTH	SQ. YDS.

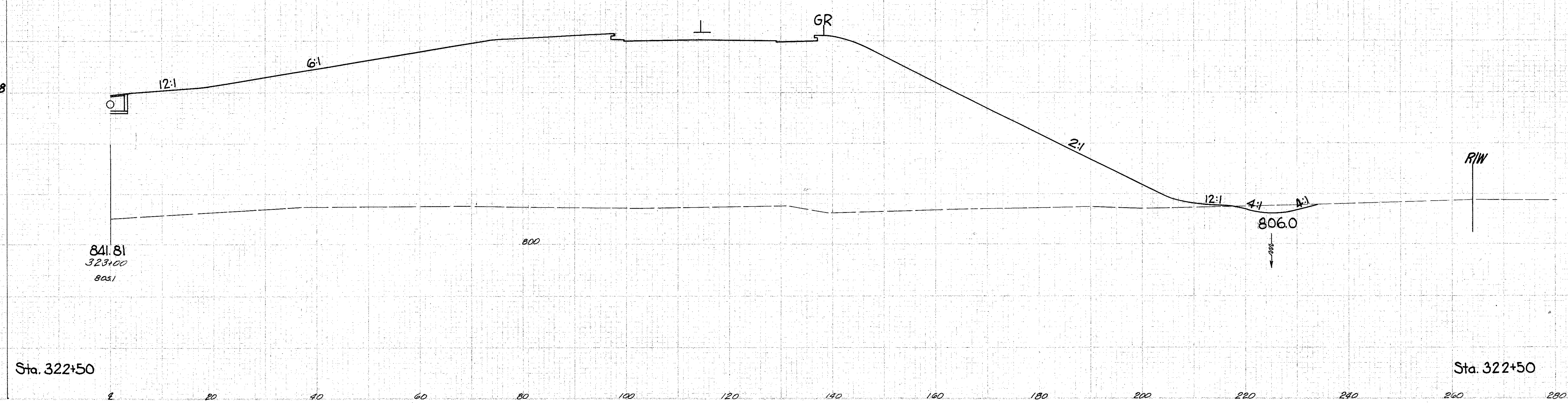


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		19	11902
			22344
			12230

LAKE COUNTY
LAK - 1 - 10.38

SEEDING END WIDTH	SEEDING SQ. YDS.
395	
	2208
400	





Sta. 322+50

Sta. 322+50

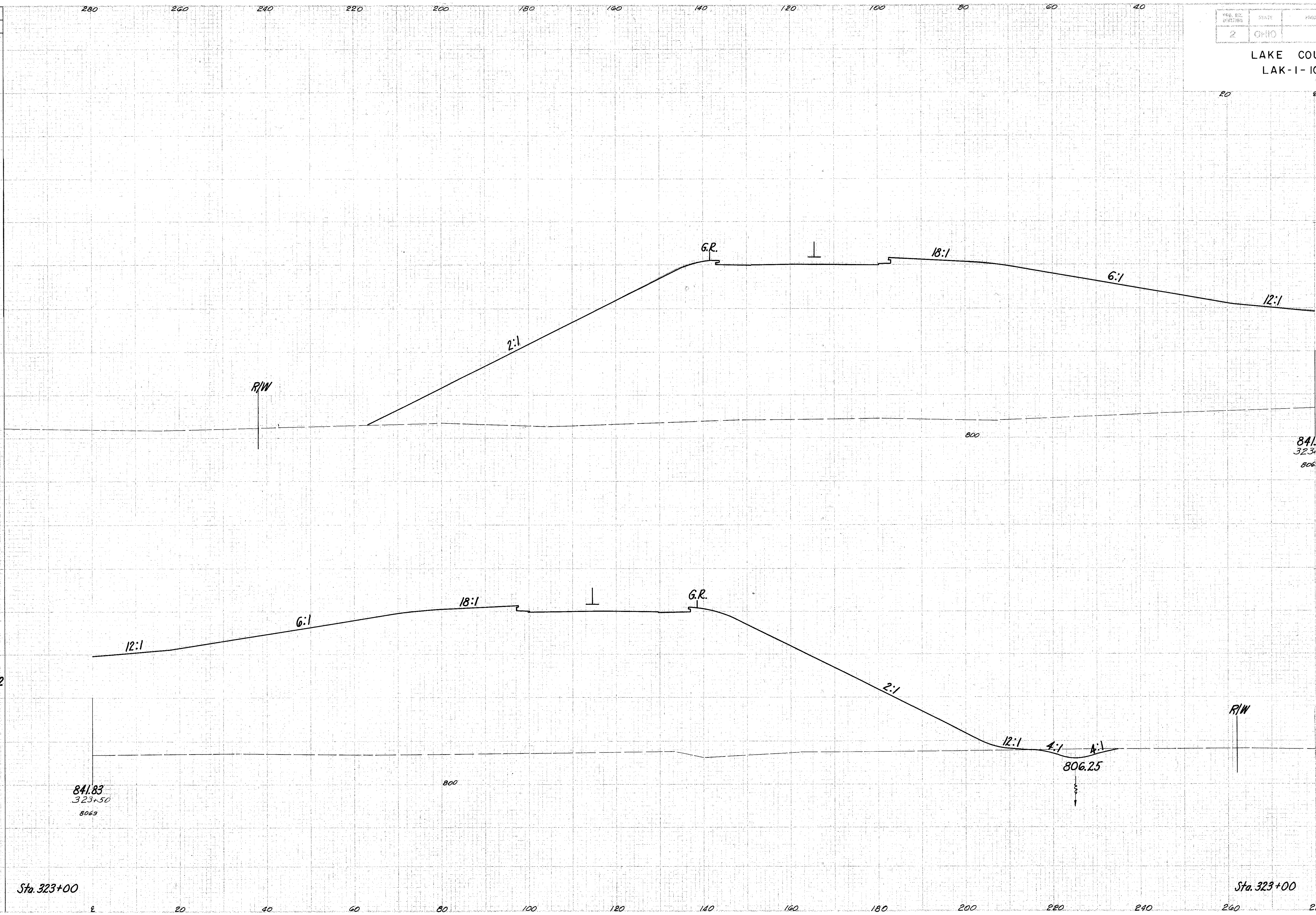
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
14	11704		
		31	21857
19	11902		

Sta. 323+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.
394	
	2192
395	

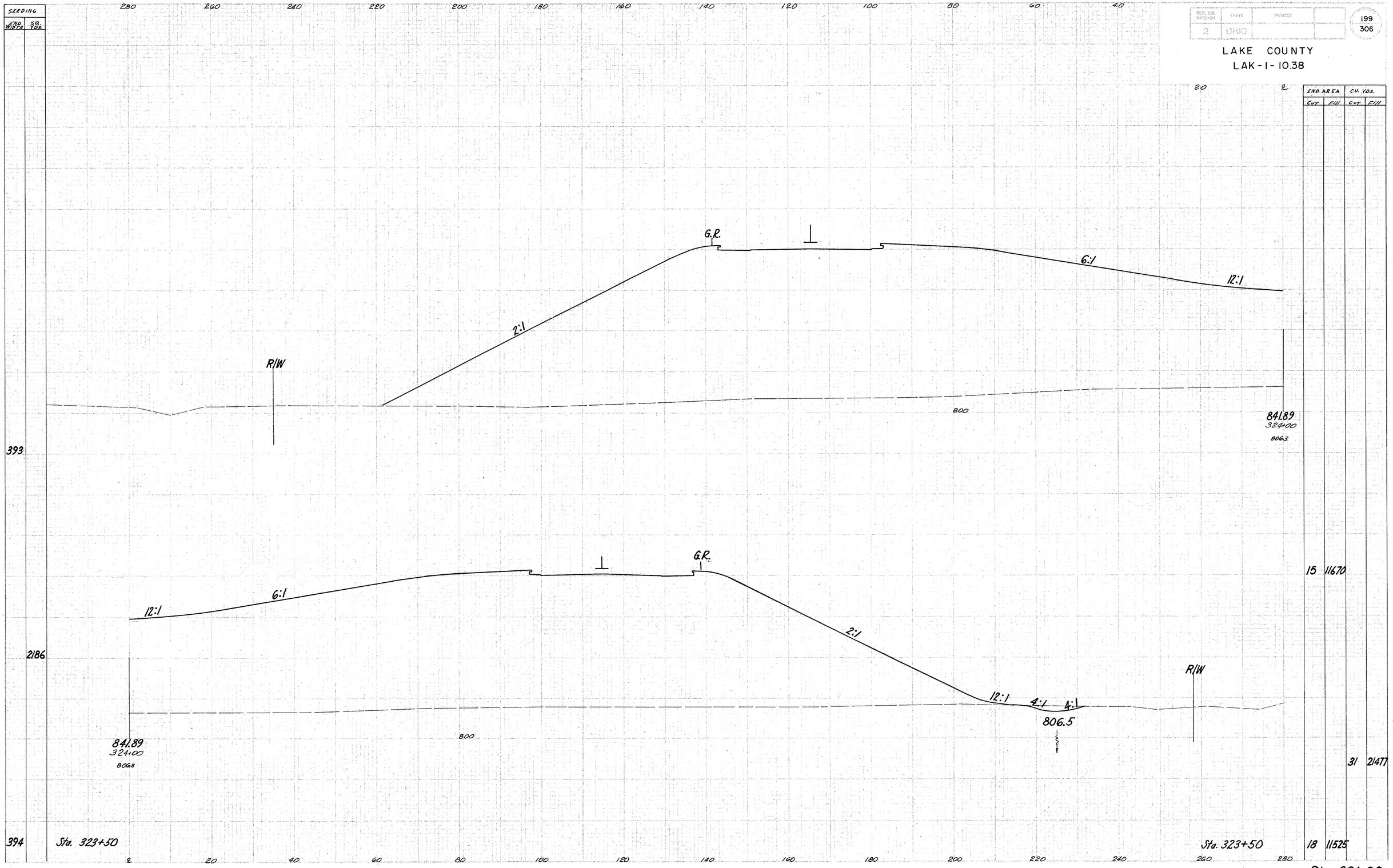


END AREA		CU. YDS.	
Cut	Fill	Cut	Fill
18	11525		
		30	21508
14	11704		

SEC. NO. DIVISION	STATE	PROJECT	
2	OHIO		

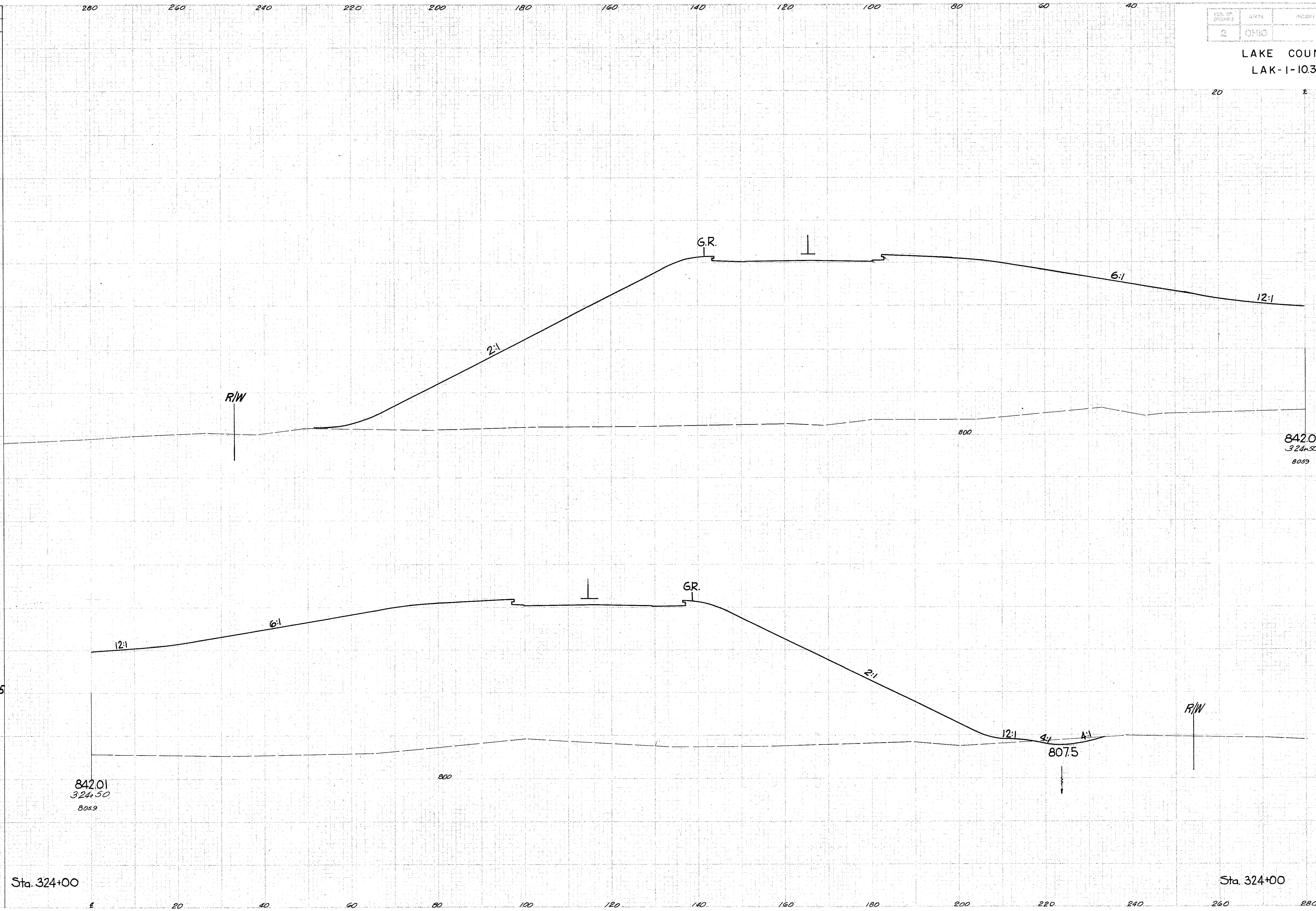
199
306

LAKE COUNTY
LAK-1-10.38



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		15	11670
		31	21477
		18	11525

LAKE COUNTY
LAK-1-10.38



SEEDING	
END WIDTH	SQ. YDS.
408	
	2225
393	

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
15	11913		
		28	21836
15	11670		

Sta. 324+50

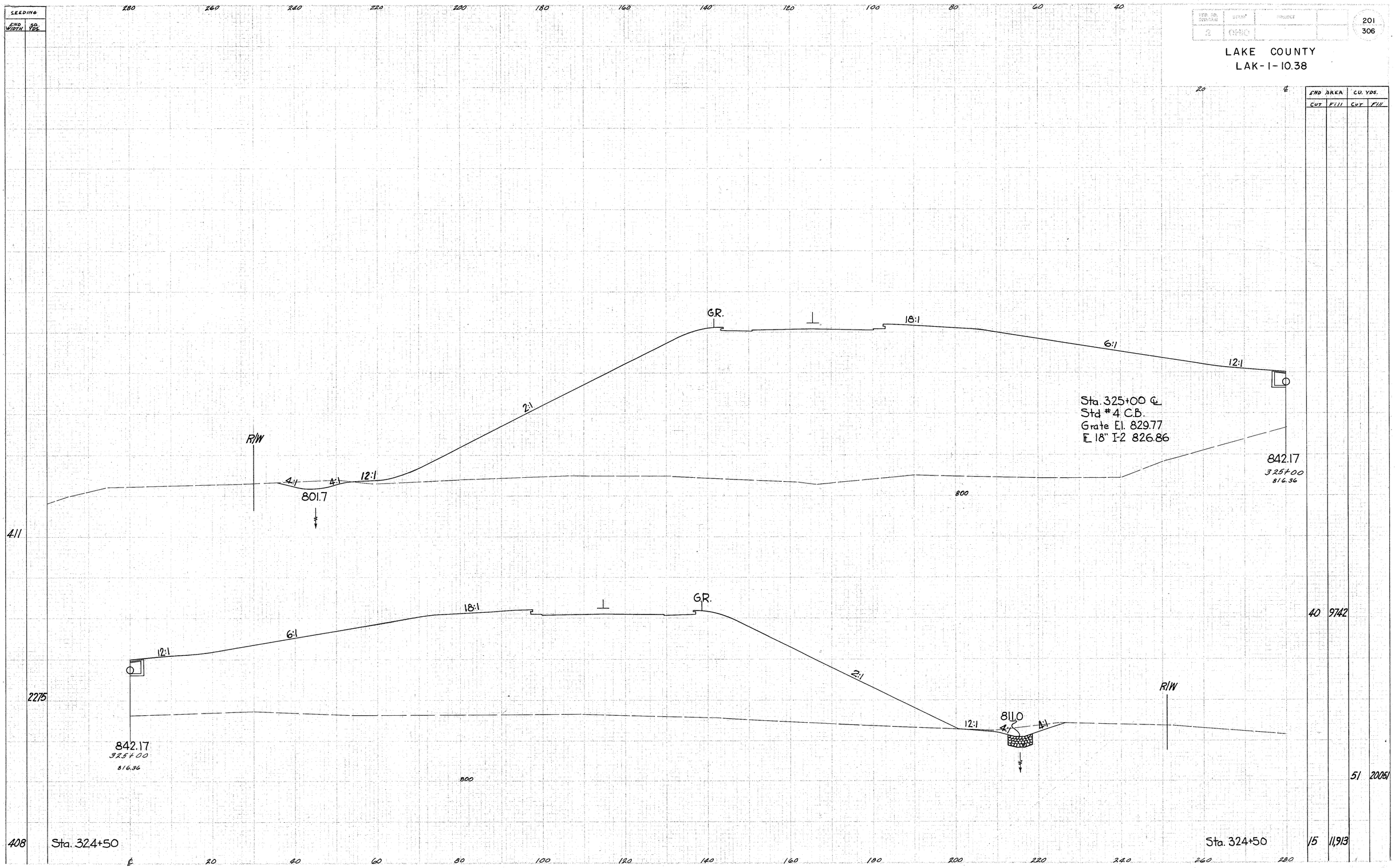
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

201
306

LAKE COUNTY
LAK-1-10.38

SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
40	9742		
		51	20051
15	11,913		



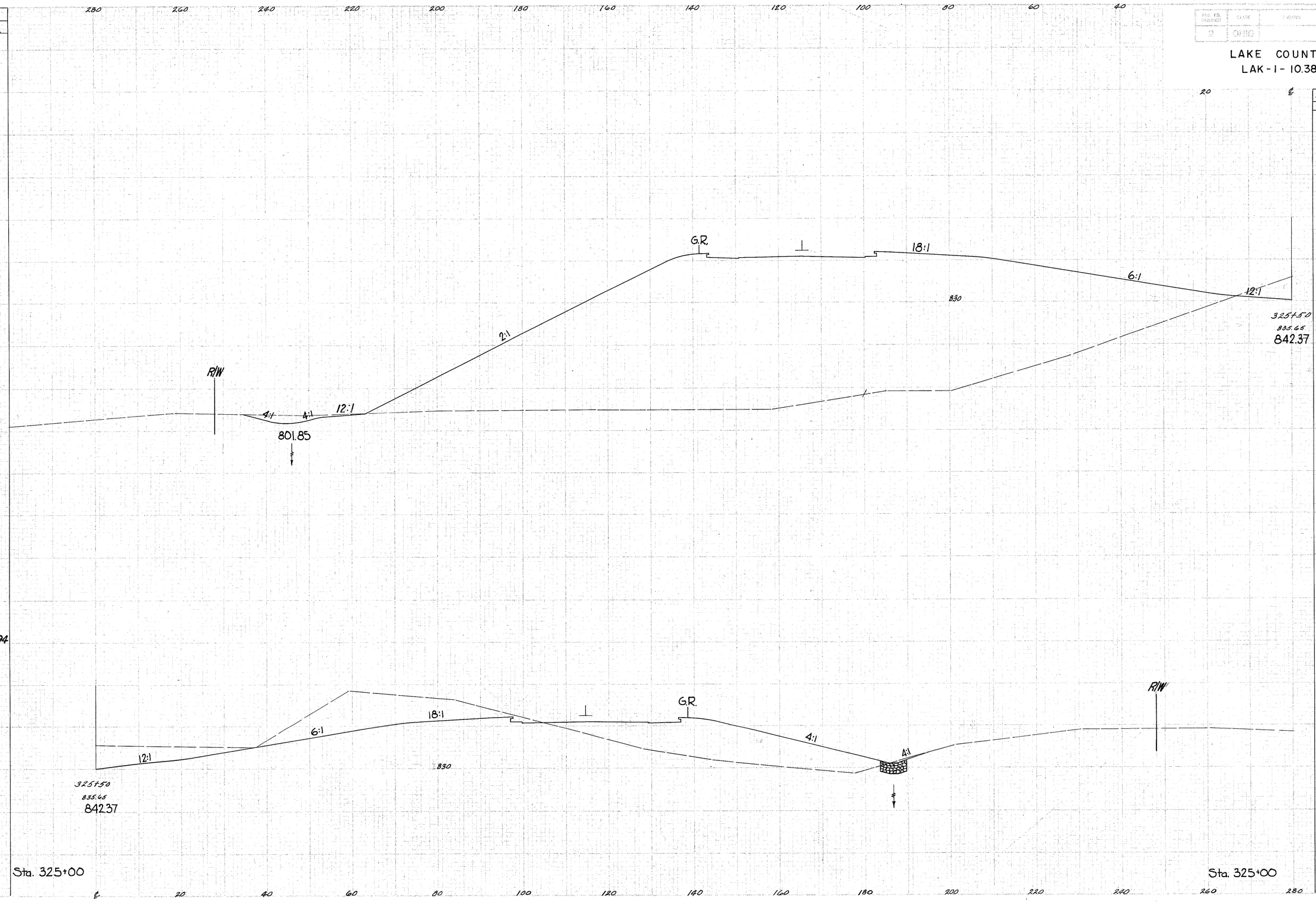
Sta. 325+00

PROJ. NO.	STATE	PROJECT	
2	OHIO		

202
306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
379	
2194	
411	



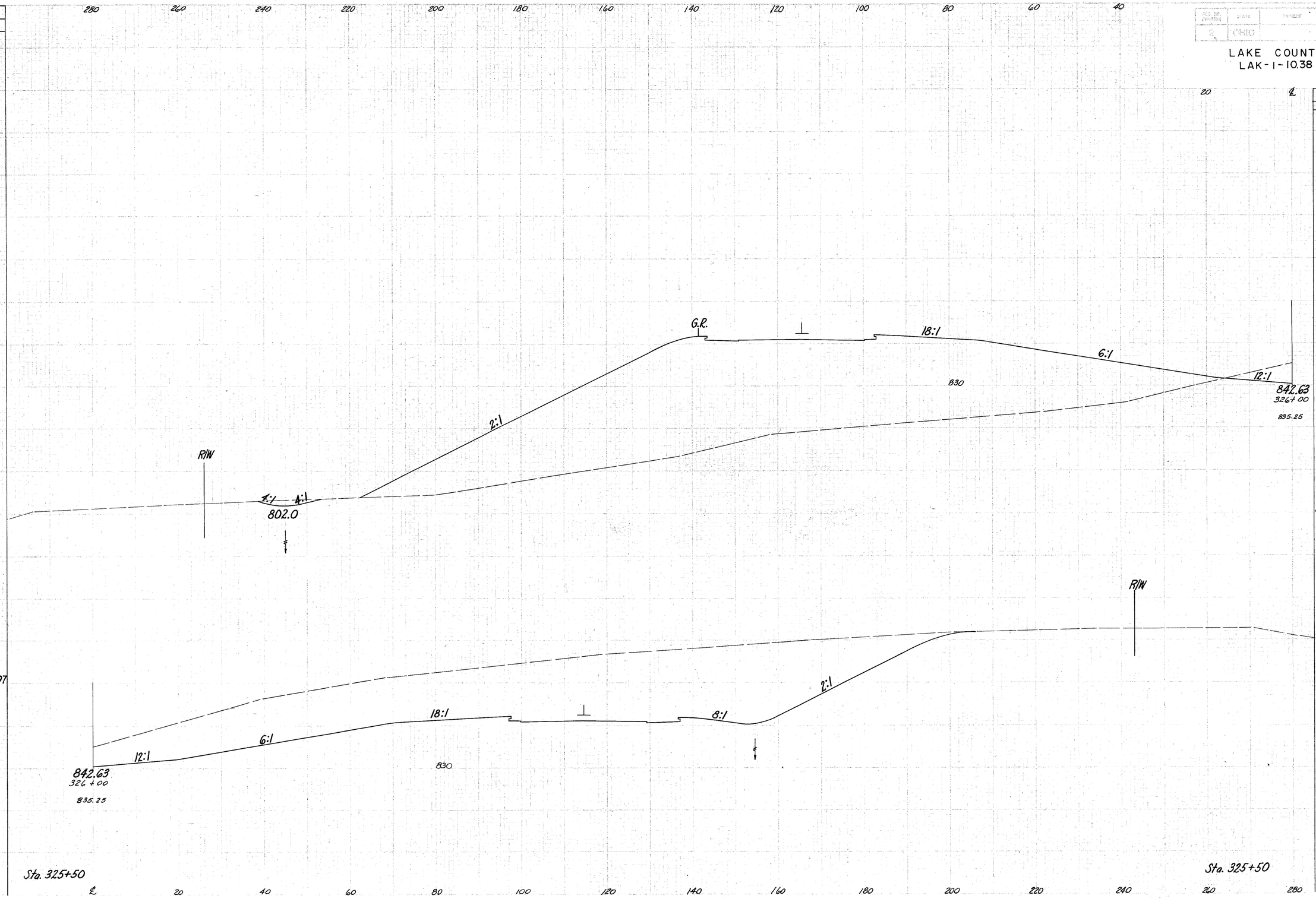
END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
505	5110		
505	13752		
40	9742		

NO. OF SHEETS	STATE	SHEET
2	OHIO	

203
306

LAKE COUNTY
LAK-1-10.38

SEED & MULCH	
END WIDTH	SQ. YDS.
376	
2097	
379	



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2368	3247		
		2660	7738
505	5110		

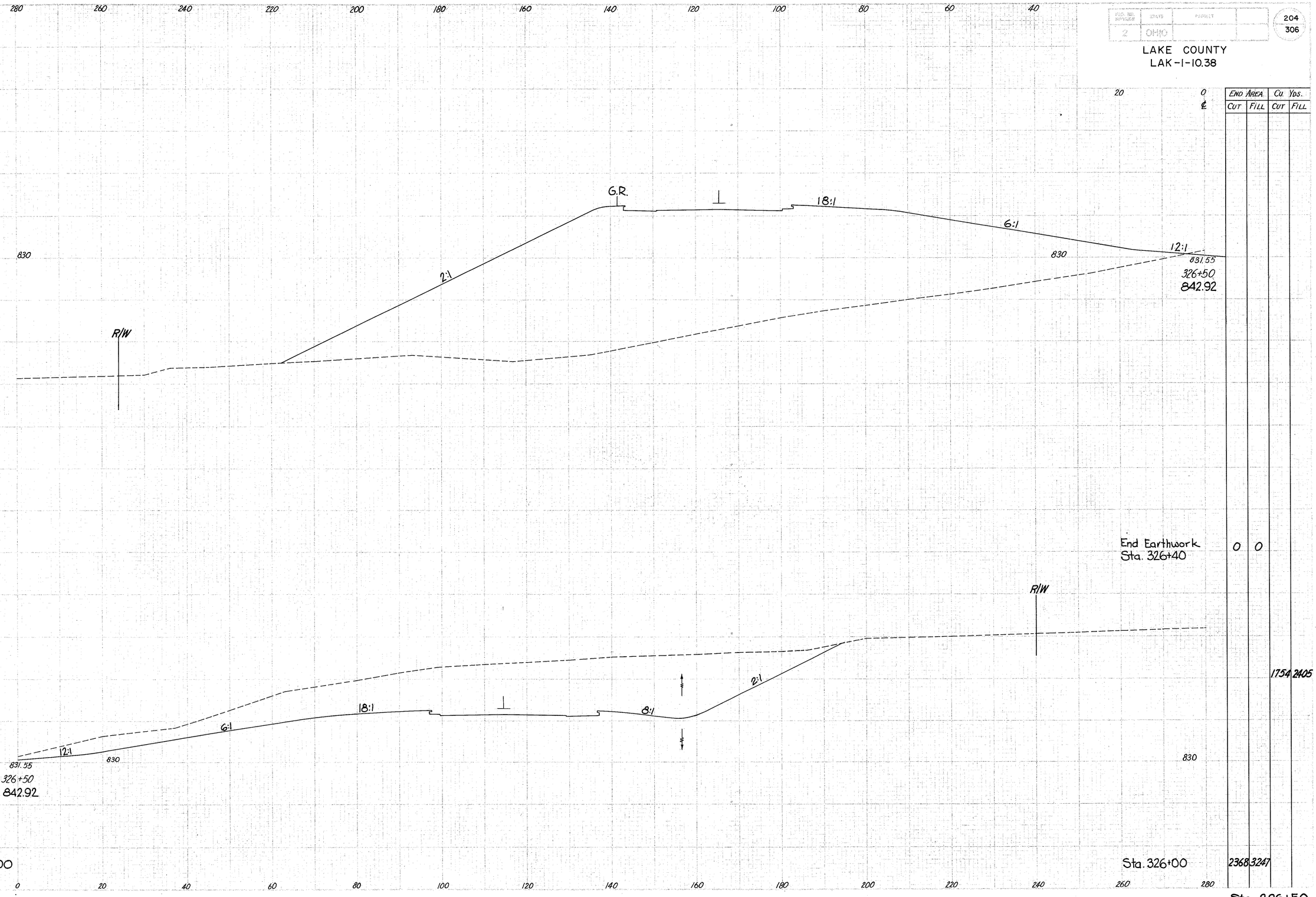
Sta. 326+00

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	
2	OHIO		

204
306

LAKE COUNTY
LAK-I-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.
351	
2019	
376	

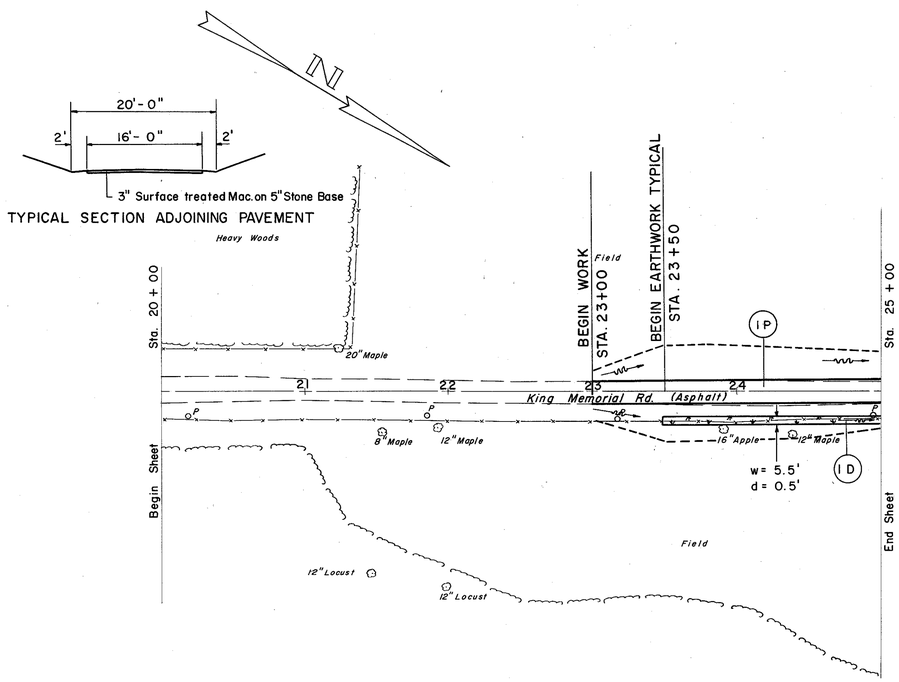


END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	0		
		1754	2405
2368	3247		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

205
306

LAKE COUNTY
LAK-I-10.38

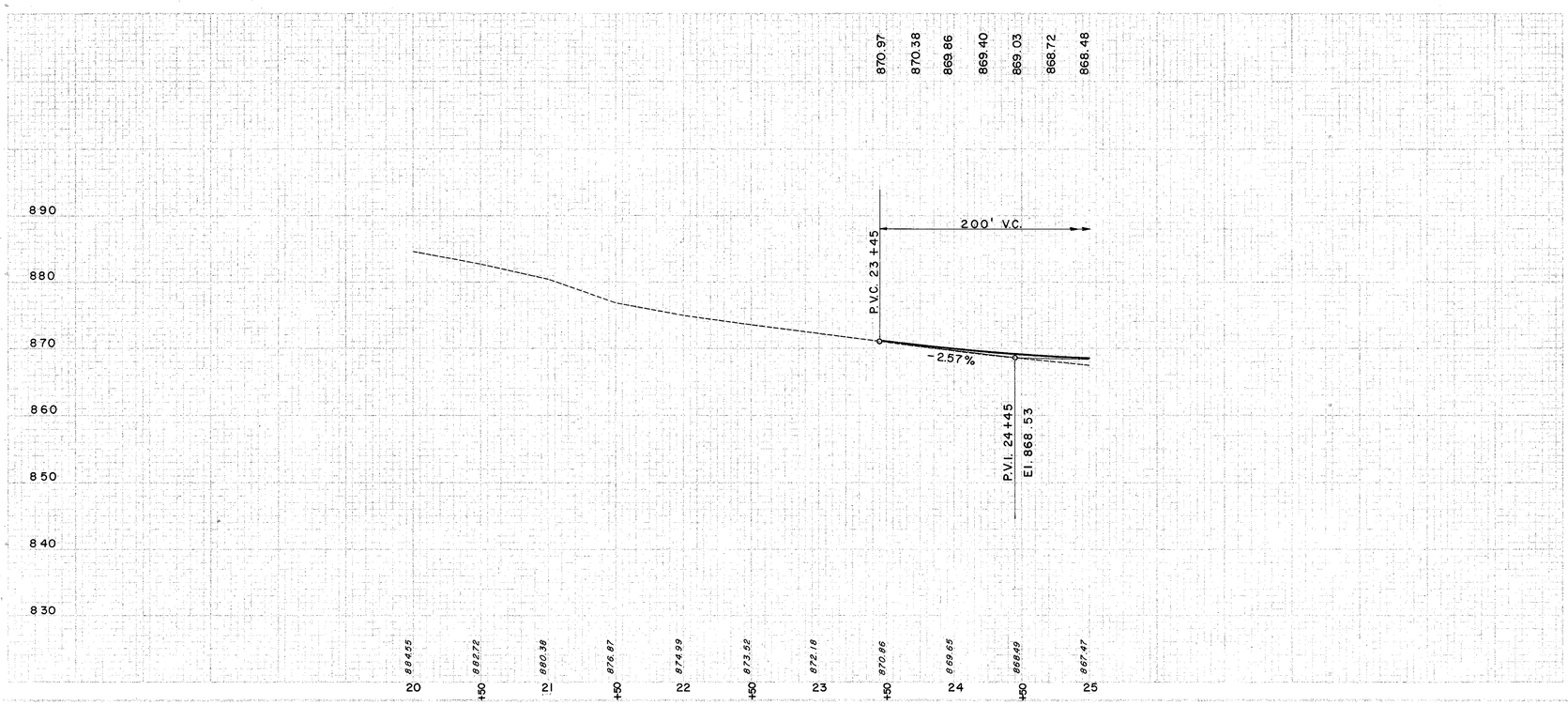


(P) PAVEMENT

REF. NO.	STATION		SIDE ℄	T-32					T-30	B-19	I-22	E-1	I-9
				ROAD MIX BIT. MATL.	SEAL COAT BIT. MATL.	#46 AGGR. FOR ROAD MIX	#6 AGGR. FOR CHOKE	#6 AGGR. FOR SEAL COAT	BIT. PRIME COAT	5" AGGR. BASE COURSE	4" SUB-BASE	COMP. SUB-GRADE	STONE UNDER DRAIN NO. 2
	FROM	TO		GAL.		C.Y.			GAL.	C.Y.		S.Y.	L.F.
1-P	23+00	25+00		320	89	20	1	3	142	52	44	356	81

(D) DRAINAGE

REF. NO.	STATION		SIDE	L-10 SODDING
	FROM	TO		S.Y.
1-D	23+50	25+00	RT.	92



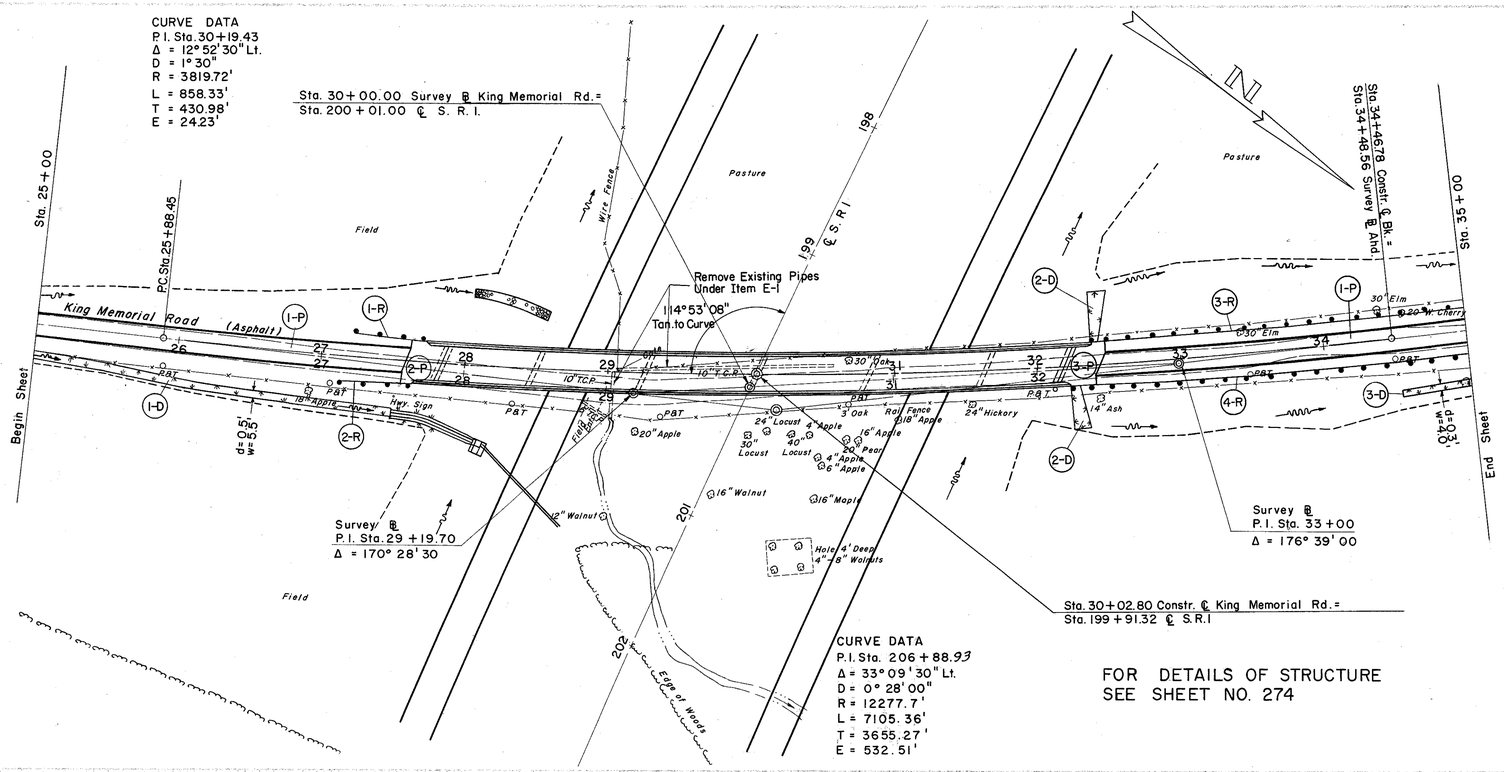
EXCAVATION		379 C.Y.
EMBANKMENT		43 C.Y.
EMBANKMENT	18	51 C.Y.

Rev. 3-1-60

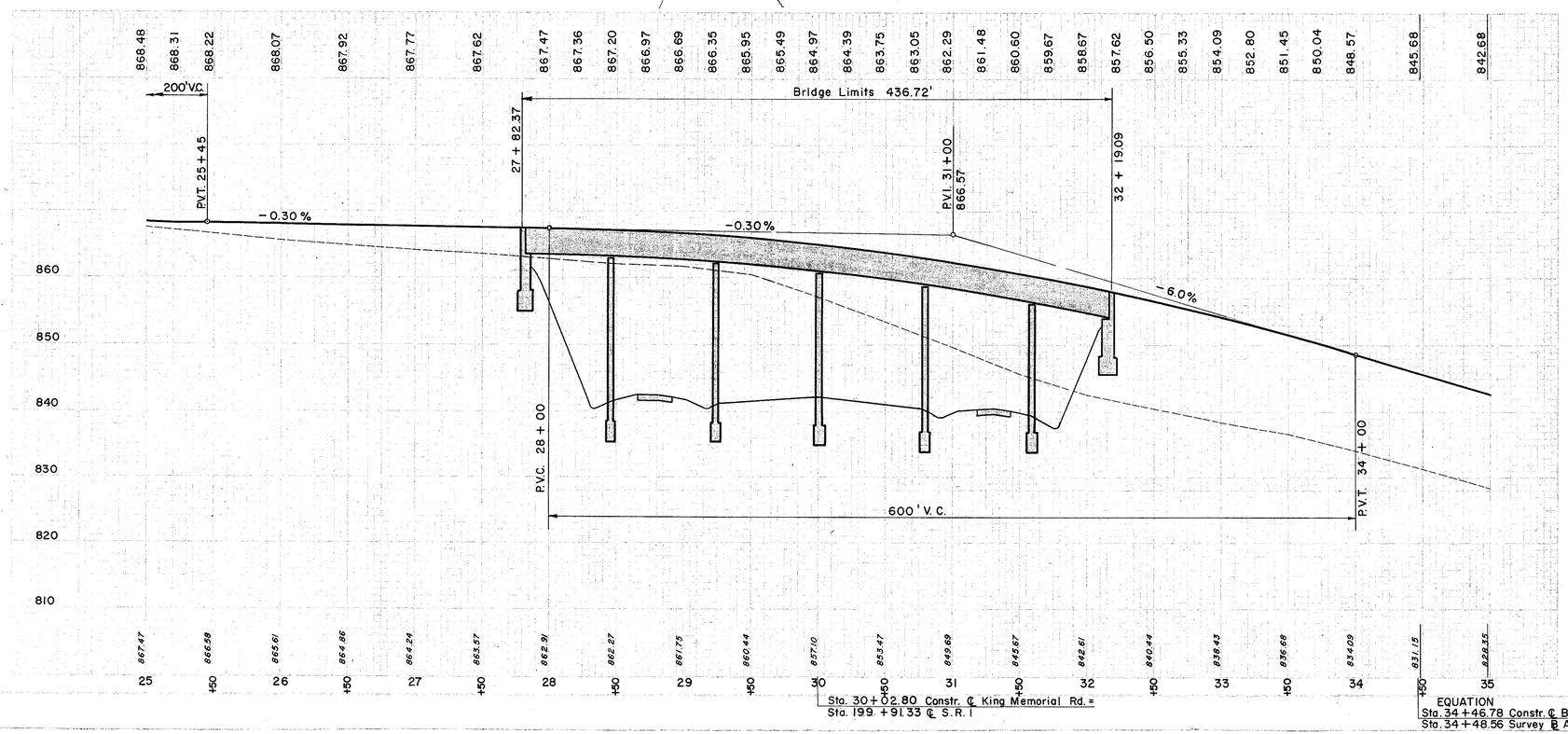
KING MEMORIAL ROAD STA. 20 + 00 TO STA. 25 + 00

MICROFILMED
JUN 27 1985

LAKE COUNTY
LAK-1-10.38



FOR DETAILS OF STRUCTURE
SEE SHEET NO. 274



SUPERELEVATION TABULATION

STATION	LT. EDGE (B')	CENTERLINE	RT. EDGE (B')
25+00	868.35	868.48	868.35
+25	868.18	868.31	868.20
+50	868.08	868.22	868.17
+75	868.01	868.14	868.17
26+00	867.91	868.07	868.23
+25	867.79	867.99	868.19
+50	867.72	867.92	868.12
+75	867.64	867.84	868.04
27+00	867.57	867.77	867.97
+25	867.49	867.69	867.89
+50	867.42	867.62	867.82
+75	867.34	867.54	867.74
28+00	867.27	867.47	867.67
+25	867.16	867.36	867.56
+50	867.00	867.20	867.40
+75	866.77	866.97	867.17
29+00	866.49	866.69	866.89
+25	866.15	866.35	866.55
+50	865.75	865.95	866.15
+75	865.29	865.49	865.69
30+00	864.77	864.97	865.17
+25	864.19	864.39	864.59
+50	863.55	863.75	863.95
+75	862.85	863.05	863.25
31+00	862.09	862.29	862.49
+25	861.28	861.48	861.68
+50	860.40	860.60	860.80
+75	859.47	859.67	859.87
32+00	858.47	858.67	858.87
+25	857.42	857.62	857.82
+50	856.30	856.50	856.70
+75	855.13	855.33	855.53
33+00	853.89	854.09	854.29
+25	852.60	852.80	853.00
+50	851.25	851.45	851.65
+75	849.84	850.04	850.24
34+00	848.37	848.57	848.77
+25	846.87	847.07	847.27
+50	845.55	845.68	845.77
+75	844.05	844.18	844.16
35+00	842.55	842.68	842.63
+25	841.05	841.18	841.05

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	ROAD MIX BIT. MATL. GAL.	SEAL COAT BIT. MATL. GAL.	T-32 #46 AGGR. FOR ROAD MIX C.Y.	#6 AGGR. FOR CHOKE C.Y.	#6 AGGR. FOR SEAL COAT C.Y.	T-30 BIT. PRIME COAT GAL.	B-19 5" AGGR. BASE COURSE C.Y.	T-22 4" SUB-BASE C.Y.	I-7 REINF. CONC. APPR. SLABS (1=13') S.Y.	E-1 COMP. SUB-GRADE S.Y.	I-9 STONE UNDER DRAIN (NO. 2) L.F.
1-P	25+00	35+00		818	227	51	4	7	364	134	114	8	909	135
2-P	27+57.37	27+82.37									8	69	69	
3-P	32+19.09	32+44.09									8	69	69	
TOTALS				818	227	51	4	7	364	134	130	138	1047	135

(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	SODDING L.F.	L-10 SODDING FOR SPECIAL SLOPE & BERM PROTECT. L.F.
1-D	25+00	27+50	RT.	153	
2-D	32+30	35+00	Lt. & RT.		68
3-D	34+50	35+00	RT.	22	

(R) ROADWAY

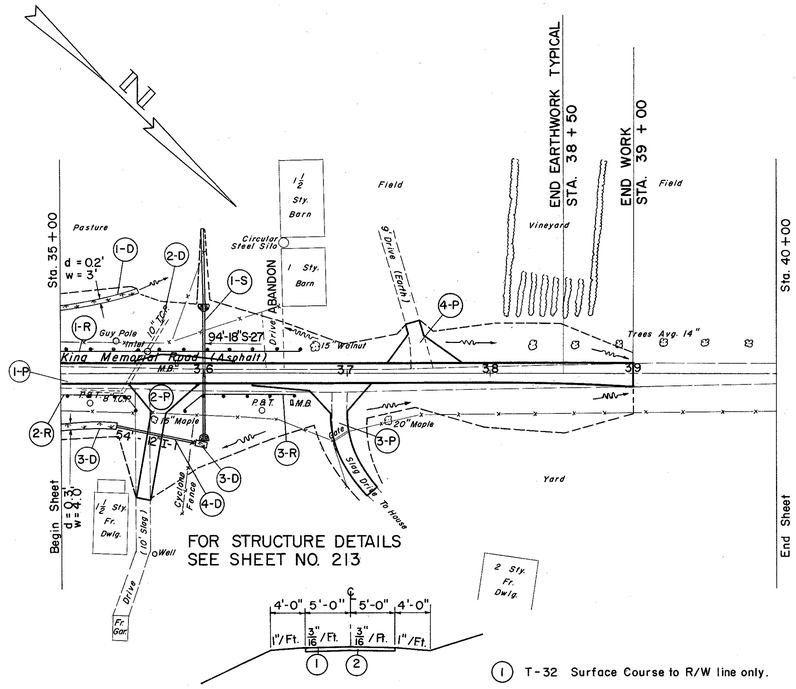
REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-15 GUARD RAIL WIRE CABLE TYPE (3 CABLES) L.F.
1-R	27+20	27+68	LT.	48
2-R	27+14	27+62	RT.	48
3-R	32+35	34+91	LT.	256
4-R	32+24	34+96	RT.	272
TOTAL				624

EXCAVATION	=	576 C.Y.
EMBANKMENT	=	9,808 C.Y.
EXPANSION	18 % =	11,573 C.Y.

Rev. 3-1-60

KING MEMORIAL ROAD STA. 25+00 TO STA. 35+00

LAKE COUNTY
LAK-1-10.38



TYPICAL SECTION DRIVES

(1) T-32 Surface Course to R/W line only.

(2) 5" B-19 to R/W line, 8" beyond.

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-32 ROAD MIX BITUM. MATL.	T-32 SEAL COAT BITUM. MATL.	T-32 NO. 46 AGGR. FOR ROAD MIX	T-32 NO. 6 AGGR. FOR CHOKE	T-32 NO. 6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT	B-19 5" AGGR. BASE COURSE	I-22 4" SUBBASE	E-1 COMP. SUBGR.	I-9 STONE UNDER-DRAIN (NO. 2)
				GAL.		C.Y.			GAL.	C.Y.	C.Y.	S.Y.	L.F.
1-P	35 + 00	39 + 00		640	178	40	3	6	284	105	89	711	144
2-P	35 + 70		RT.	95	26	6	0.4	1	42	21		136	
3-P	36 + 95		RT.	105	29	7	0.5	1	47	24		152	
4-P	37 + 50		LT.	70	19	4	0.3	1	31	11		78	
	TOTALS			910	252	57	4	9	404	161	89	1077	144

(D) DRAINAGE

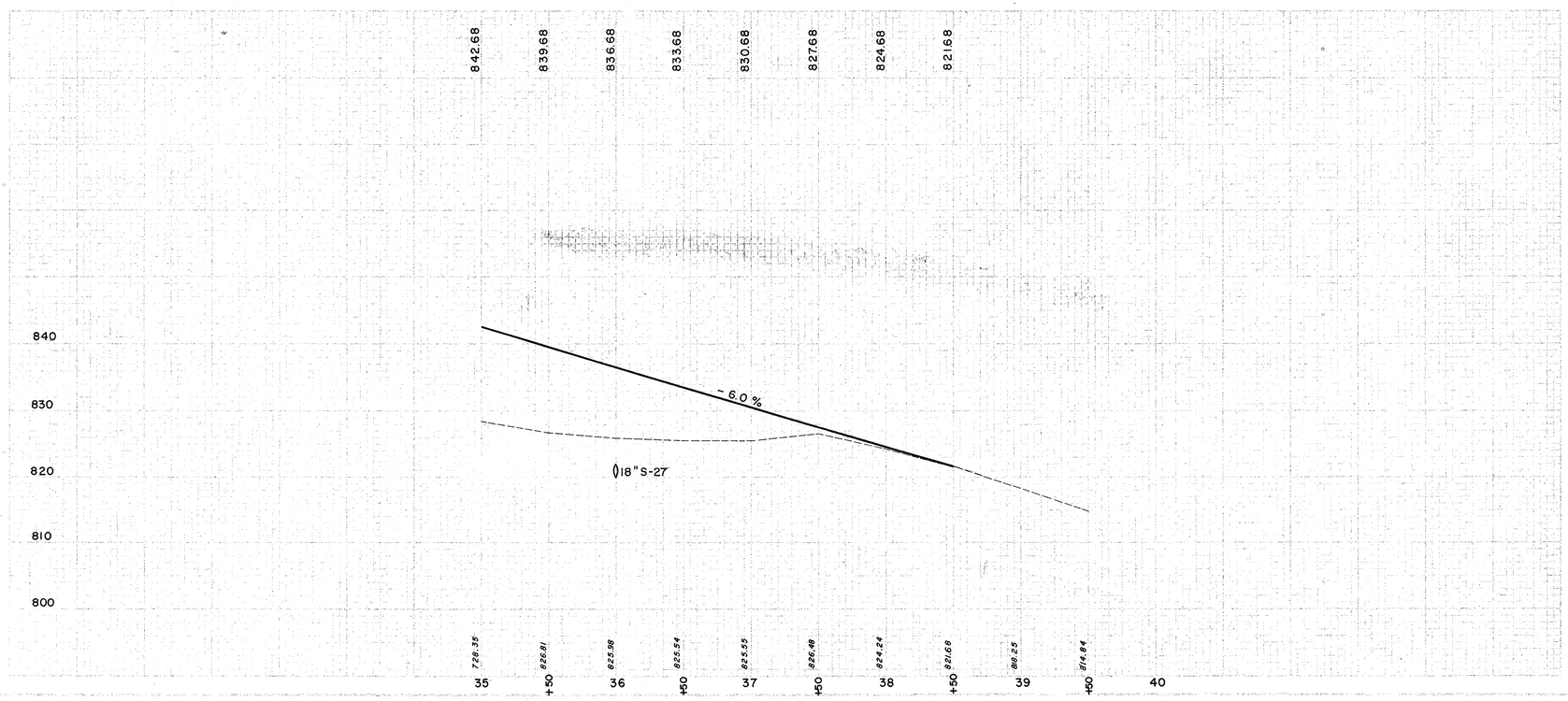
REF. NO.	STATION FROM	STATION TO	SIDE	I-1 12" PIPE FOR DRIVE-WAYS	L-10 SODDING	E-12 PIPE REMOVED 15" & UNDER
				L.F.	S.Y.	L.F.
1-D	35+00	35+50	Lt.		17	
2-D	35+10	35+70				100
3-D	35+00	36+30	Rt.		22	
4-D	35+40	35+90	Rt.	54		

(S) STRUCTURES

REF. NO.	STATION	E-2 EXC. FOR STRUCT.	E-3 CHANNEL EXC.	S-1 CONC. FOR STRUCT. CL. "E"	L-10 SODDING	S-27 18" PIPE FOR RDWY. CULVERTS SEC. M-6.6(c)
		C.Y.			S.Y.	L.F.
S-1	36 + 00	33	8	0.60	2	94

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL WIRE CABLE TYPE (3 CABLES)
				L.F.
1-R	34 + 91	36 + 67	Lt.	176
2-R	34 + 96	35 + 60	Rt.	80
3-R	35 + 85	36 + 65	Rt.	80
		TOTAL		336



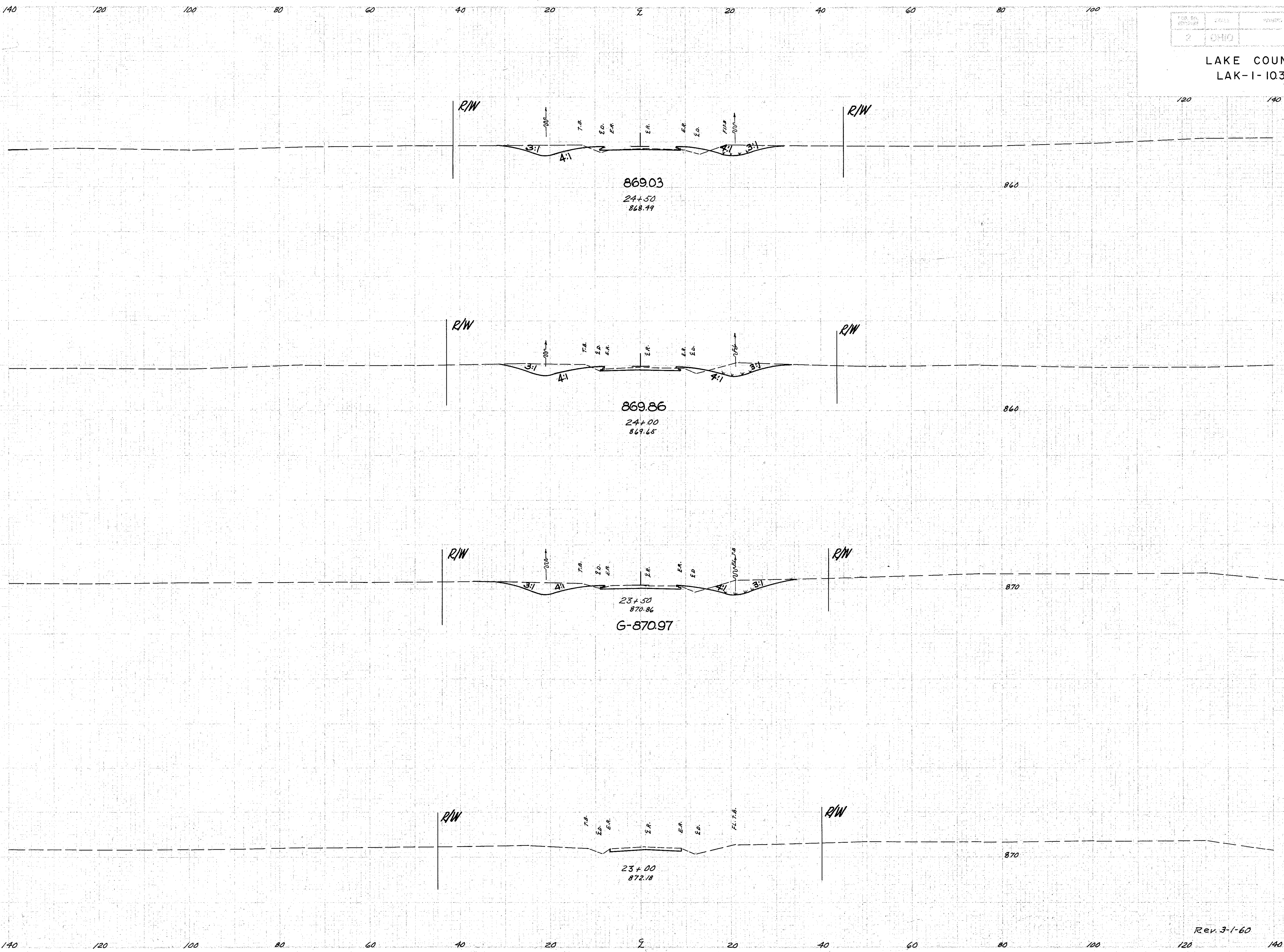
EXCAVATION	=	676 C.Y.
EMBANKMENT	=	4,319 C.Y.
EMBANKMENT 18 %	=	5,096 C.Y.

Rev. 3-1-60

KING MEMORIAL ROAD STA. 35 + 00 TO STA. 40 + 00

2 OHIO

LAKE COUNTY
LAK-1-10.38



SEEDING END WIDTH	SEEDING SQ. YDS.
49	
	278
51	
	289
53	
	147
0	

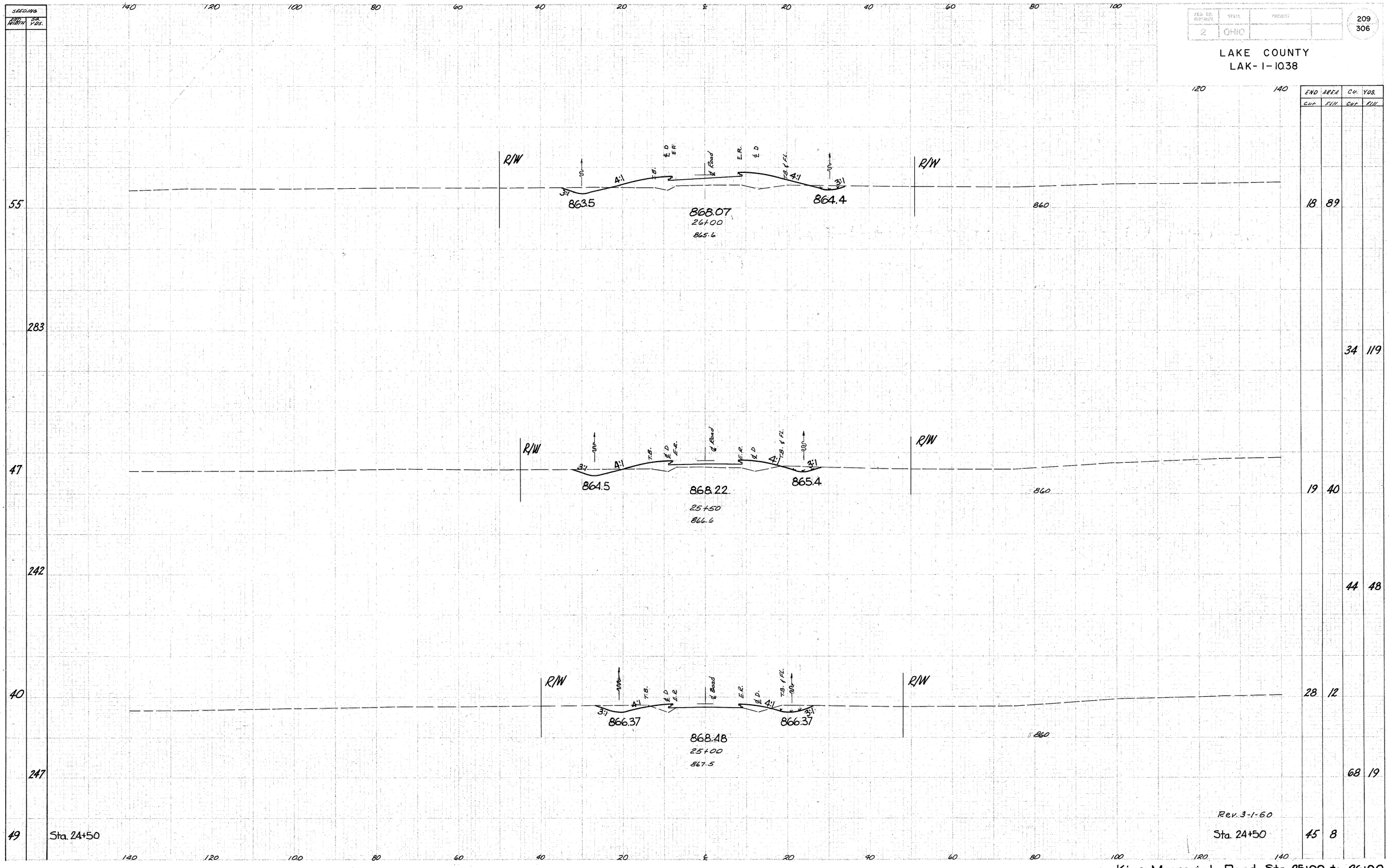
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
45	8		
		102	12
65	5		
		131	8
76	4		
		78	4
8	0		

King Memorial Road Sta. 23+00 to 24+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

209
306

LAKE COUNTY
LAK-1-10.38

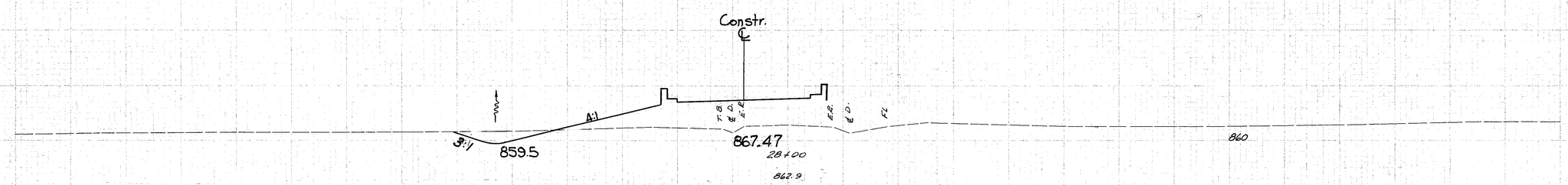
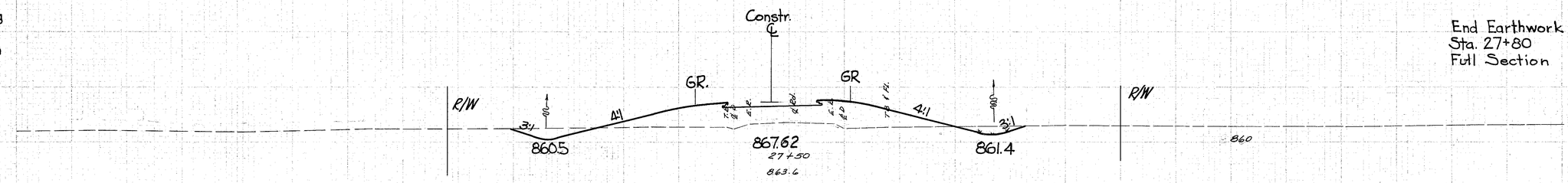
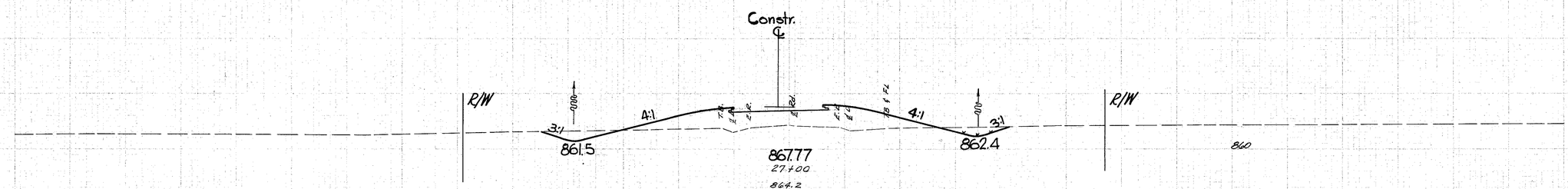
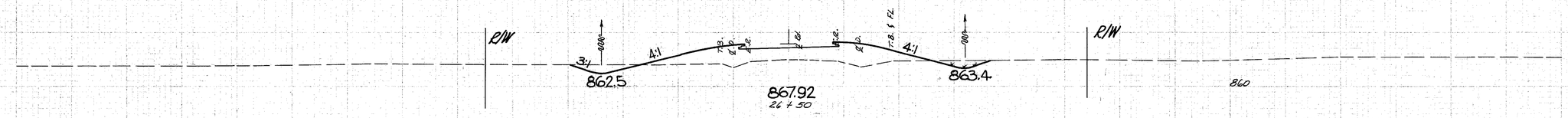


King Memorial Road Sta. 25+00 to 26+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

210
306

LAKE COUNTY
LAK-1-10.38

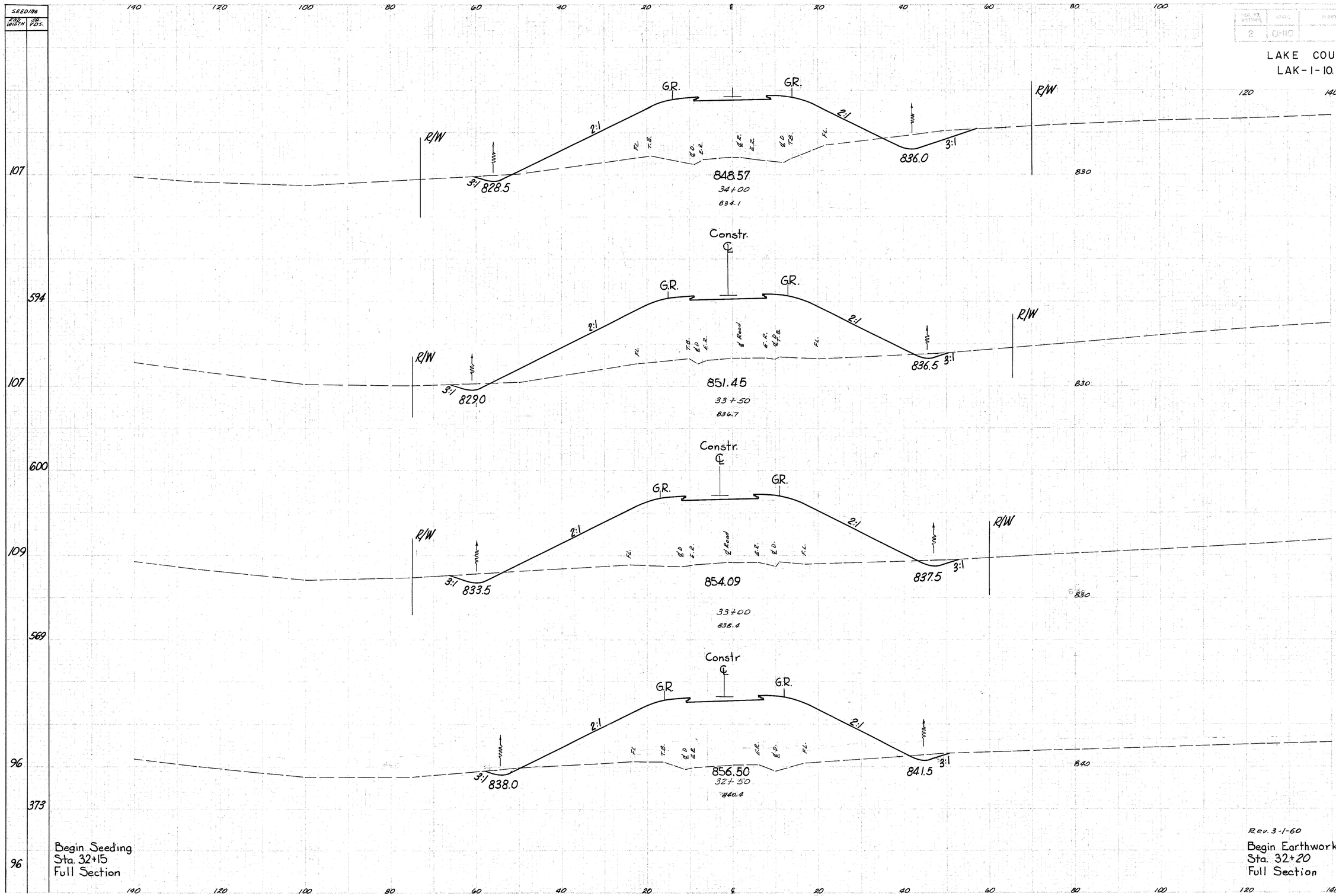
SEEDING			END AREA		CU. YDS.	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
						
80		End Seeding Sta. 27+80 Full Section				
	267		28	182		
80			28	182	31	202
	419				50	298
71			26	140		
	372				43	244
63			20	124		
	328				35	197
55		Sta. 26+00	18	89		

End Earthwork
Sta. 27+80
Full Section

Rev. 3-1-60
Sta. 26+00

King Memorial Road Sta. 26+50 to 28+00

LAKE COUNTY
LAK-1-10.38



END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
48	802		
		59	1643
16	972		
		39	1820
26	994		
		38	1797
15	947		
		17	1052
15	947		

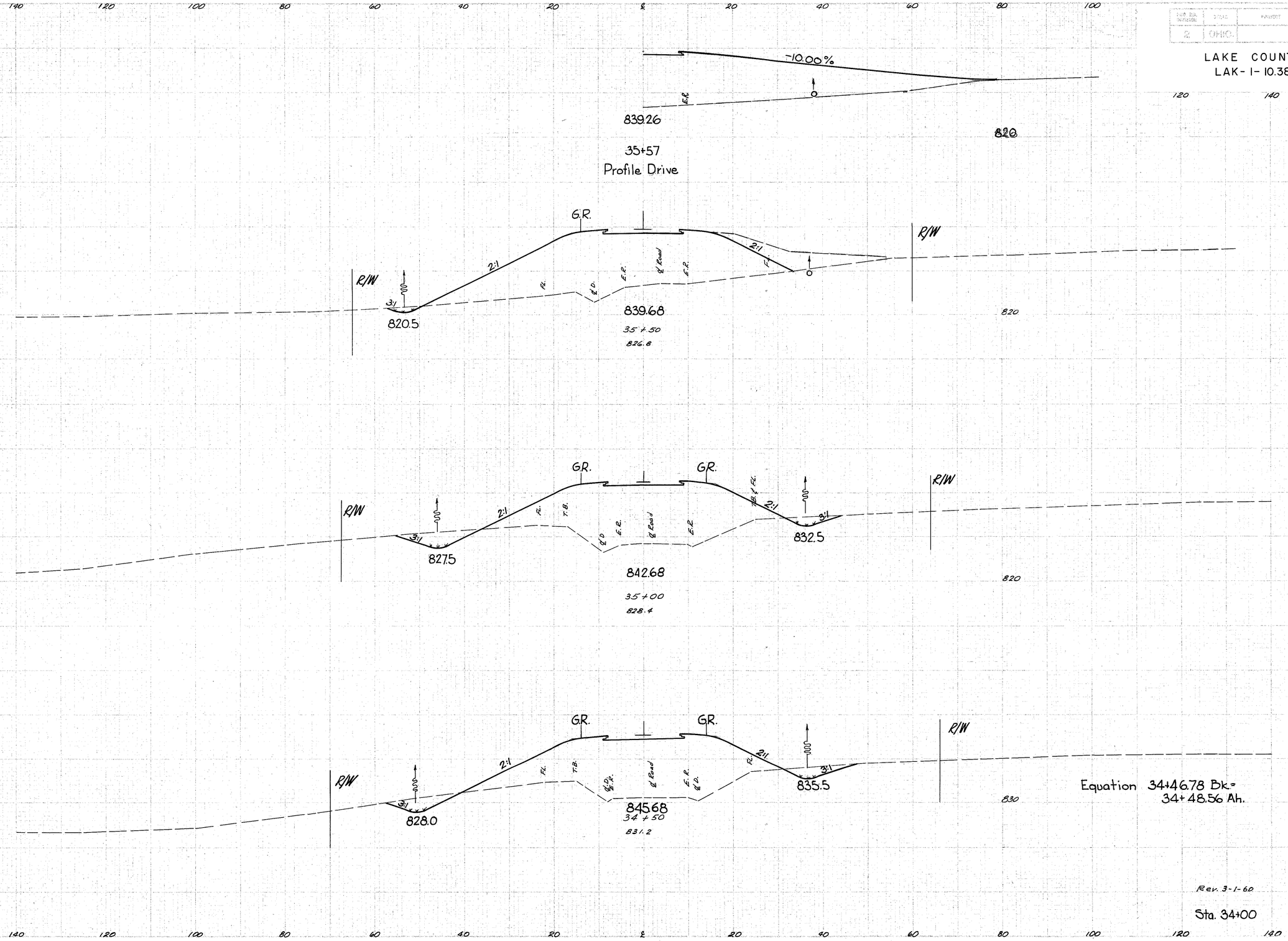
King Memorial Road Sta. 32+50 to 34+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

212
306

LAKE COUNTY
LAK-I-10.38

SEEDING SOD WIDTH	SQ. YDS.
82	483
92	528
98	569
107	



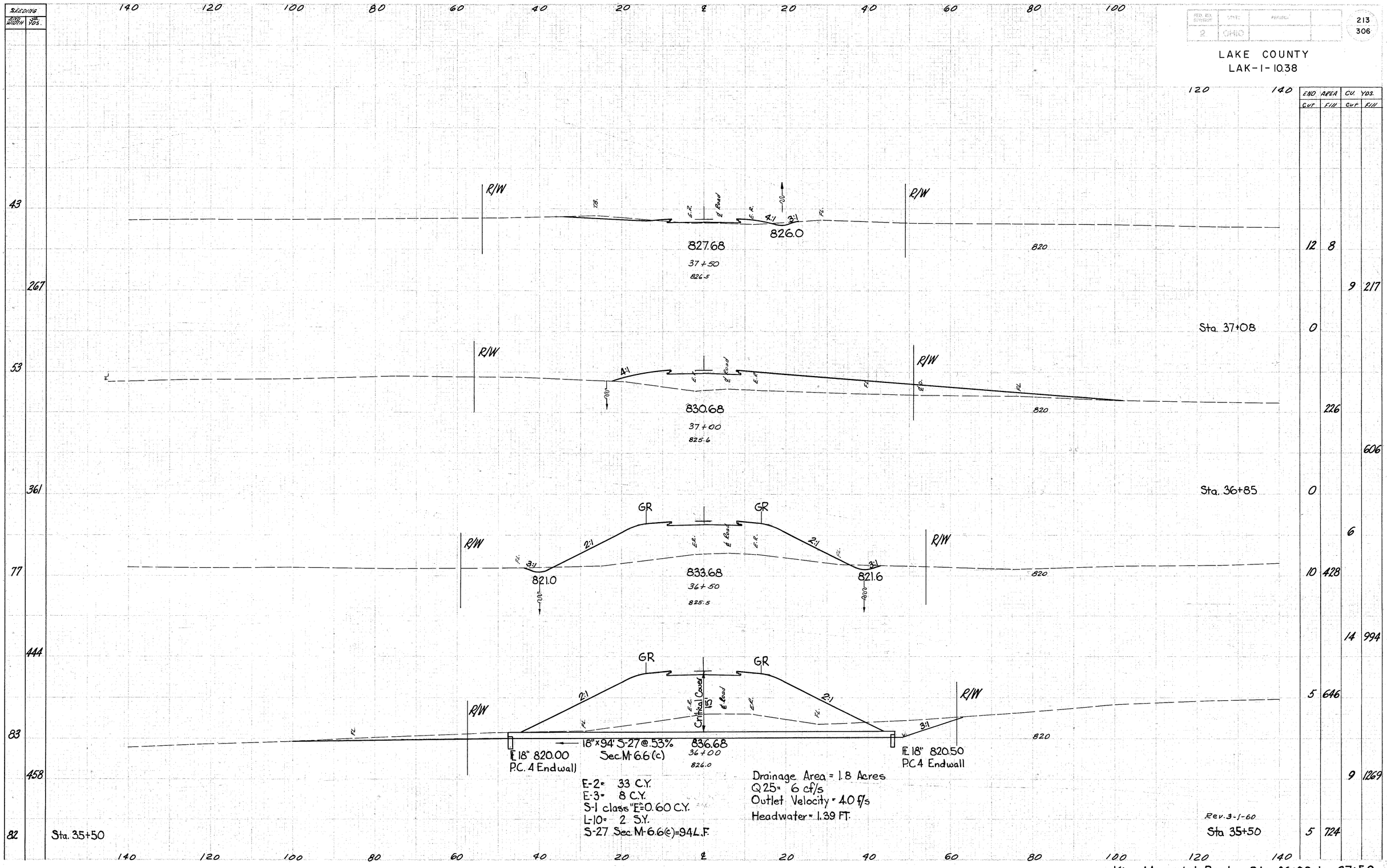
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
5	724		
		54	1226
53	600		
		97	1124
52	614		
		89	1264
48	802		

Equation 34+46.78 Bk. = 34+48.56 Ah.

Rev. 3-1-60

King Memorial Road Sta. 34+50 to 35+57

LAKE COUNTY
LAK-1-10.38

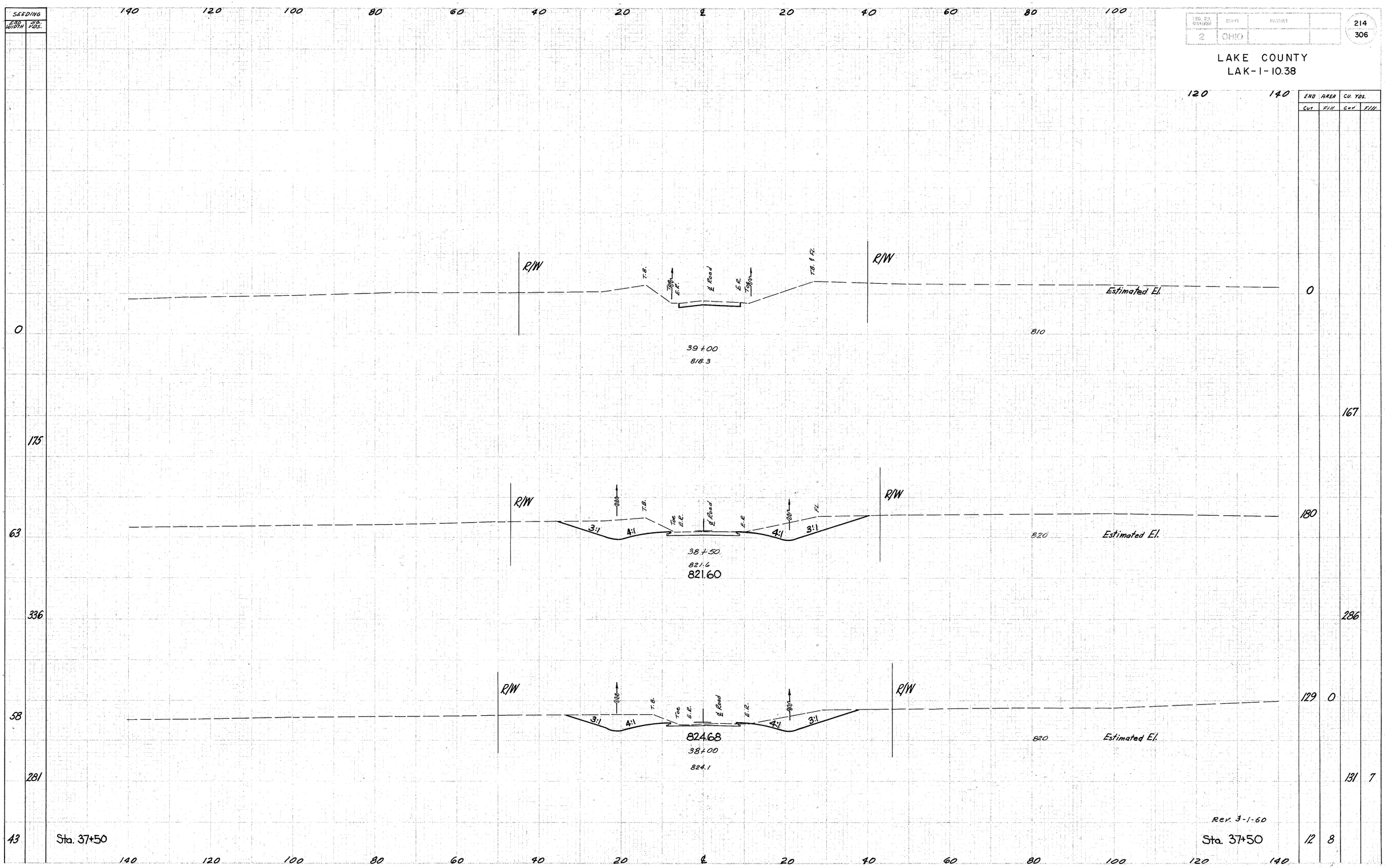


King Memorial Road Sta. 36+00 to 37+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

214
306

LAKE COUNTY
LAK-1-10.38



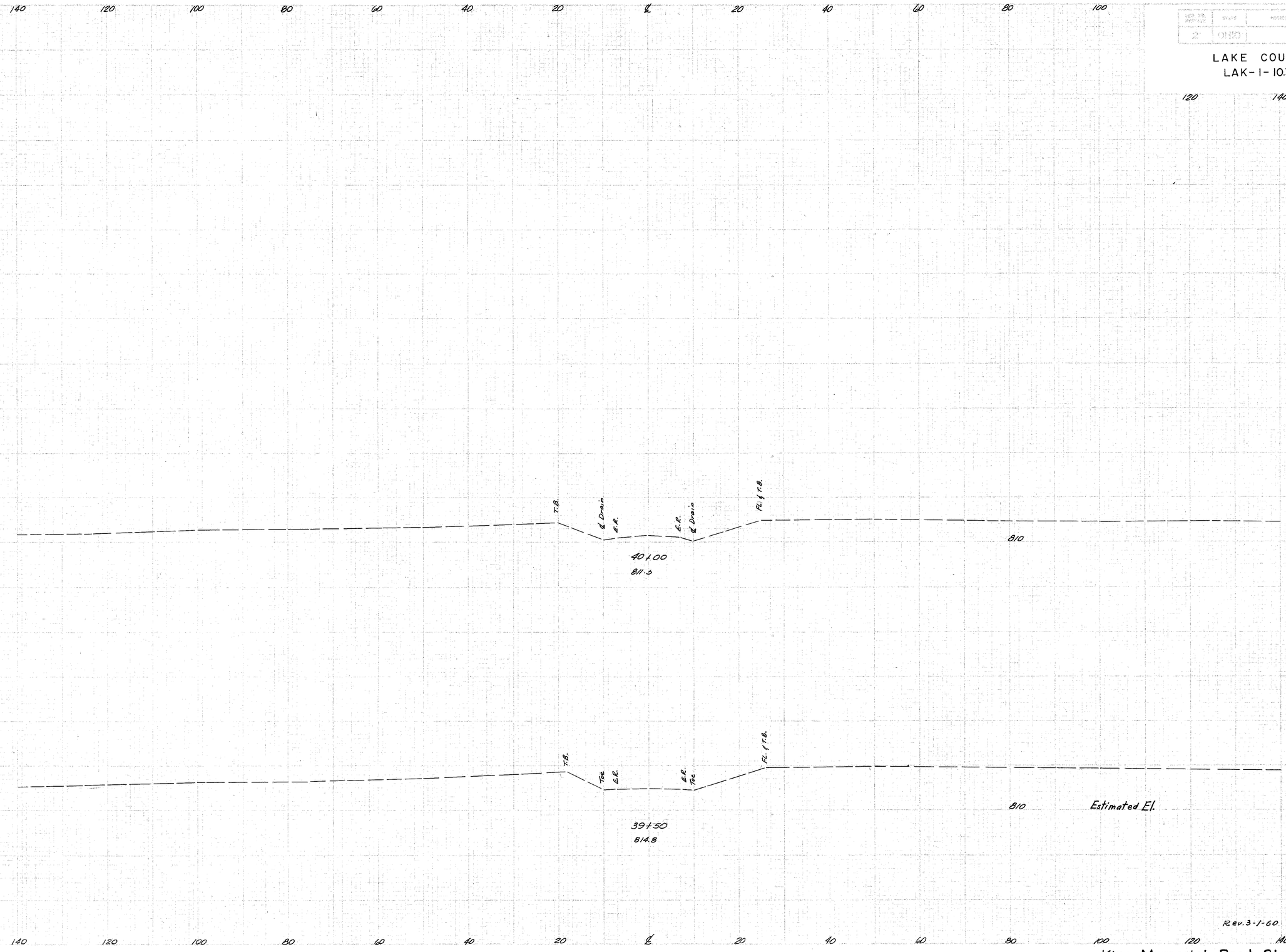
King Memorial Road Sta. 38+00 to 39+00

SEEDING	
END WIDTH	SQ. YDS.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL

215
306

LAKE COUNTY
LAK-1-10.38

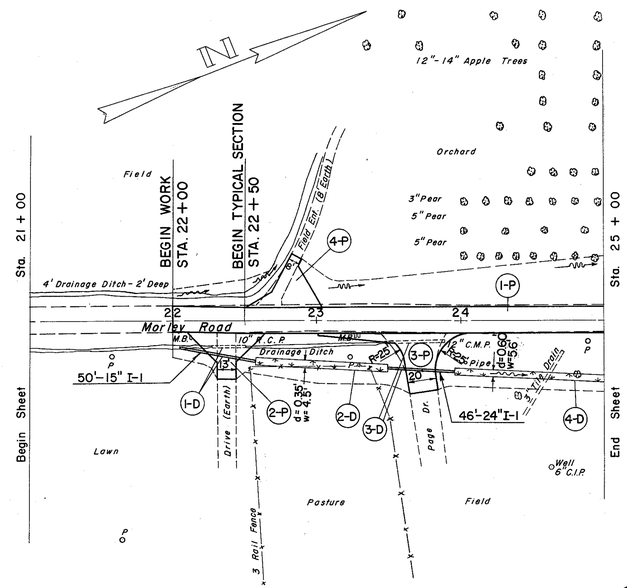


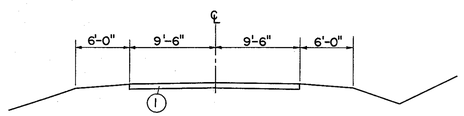
King Memorial Road Sta. 39+50 to 40+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

216
306

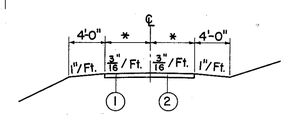
LAKE COUNTY
LAK-1-10.38





1 3" Bit. Mac. on 5" Stone Base

TYPICAL SECTION EXISTING MORLEY ROAD



** TYPICAL SECTION DRIVES

1 T-32 To R/W Line Only

2 B-19 5" To R/W Line, 8" Beyond
** 5" B-19 Only on Drive Lt. Sta. 22+80

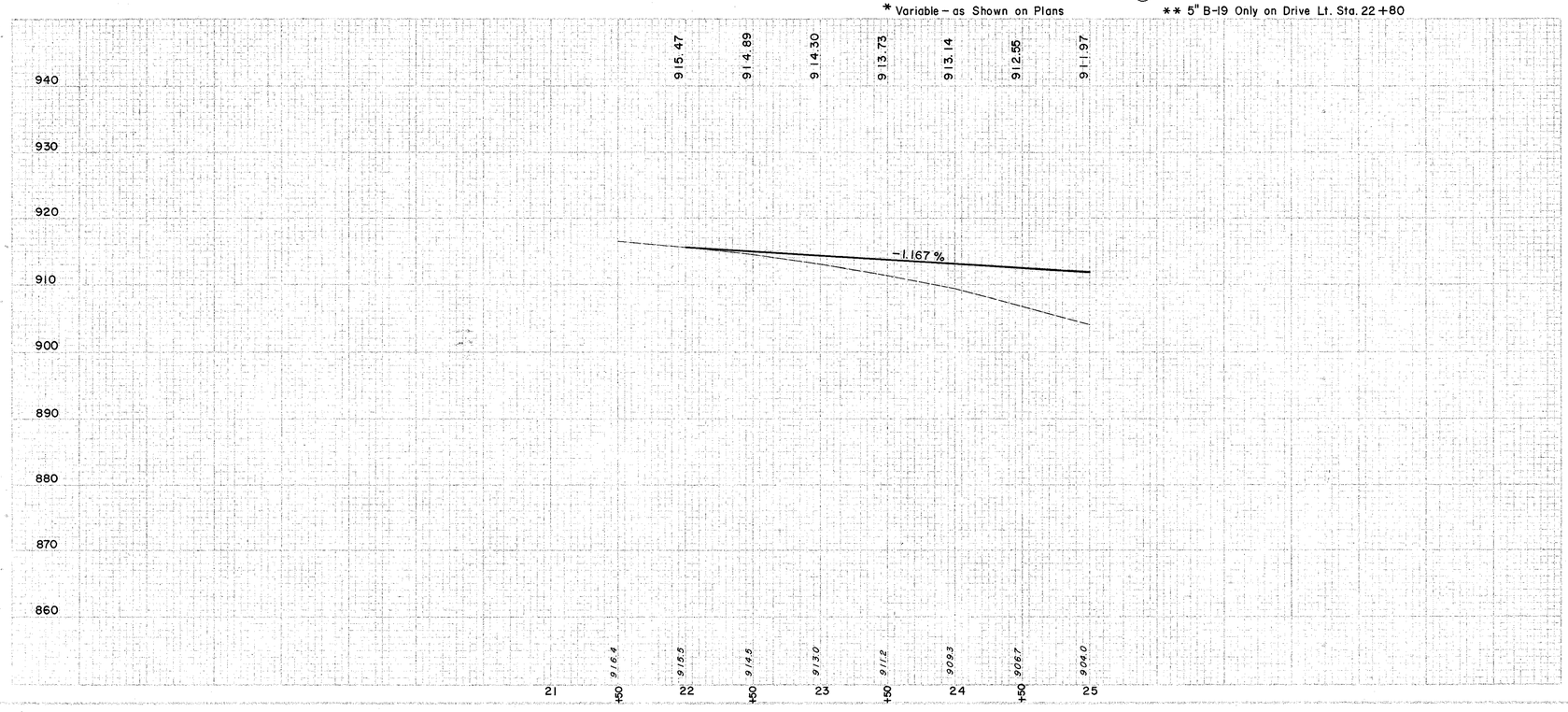
* Variable – as Shown on Plans

D DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-1 PIPE FOR DRIVEWAYS 15"	I-1 PIPE FOR DRIVEWAYS 24"	L-10 SODDING	E-12 PIPE REMOVED 15" & UNDER
				L. F.		S.Y.	L.F.
1-D	22+08	22+58	Rt.	50			24
2-D	22+58	23+51	Rt.			47	
3-D	23+51	23+97	Rt.		46		42
4-D	23+97	25+00	Rt.			57	

P PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-32 ROAD MIX BITUM. MATL.	T-32 SEAL COAT BITUM. MATL.	T-32 NO. 46 AGGR. FOR ROAD MIX	T-32 NO. 6 AGGR. FOR CHOKE	T-32 NO. 6 AGGR. FOR SEAL COAT	T-30 BITUM. PRIME COAT	B-19 AGGR. BASE COURSE	I-22 4" SUBBASE	E-1 COMP. SUBGR.	I-9 STONE UNDER-DRAIN (NO.2)
				GAL.		C.Y.			GAL.	C.Y.		S.Y.	L.F.
1-P	22+00	25+00		543	151	34	2	5	241	88	74	603	117
2-P	22+38		Rt.	82	23	5	1	1	36	13		91	
3-P	23+75		Rt.	142	40	9	1	1	63	22		158	
4-P	22+80		Lt.							13		96	
TOTALS				767	214	48	4	7	340	136	74	948	117



EXCAVATION	=	483 C.Y.
EMBANKMENT	=	1518 C.Y.
EMBANKMENT + 18 %	=	1791 C.Y.

Rev. 3-1-60

MORLEY ROAD STA. 21+00 TO STA. 25+00

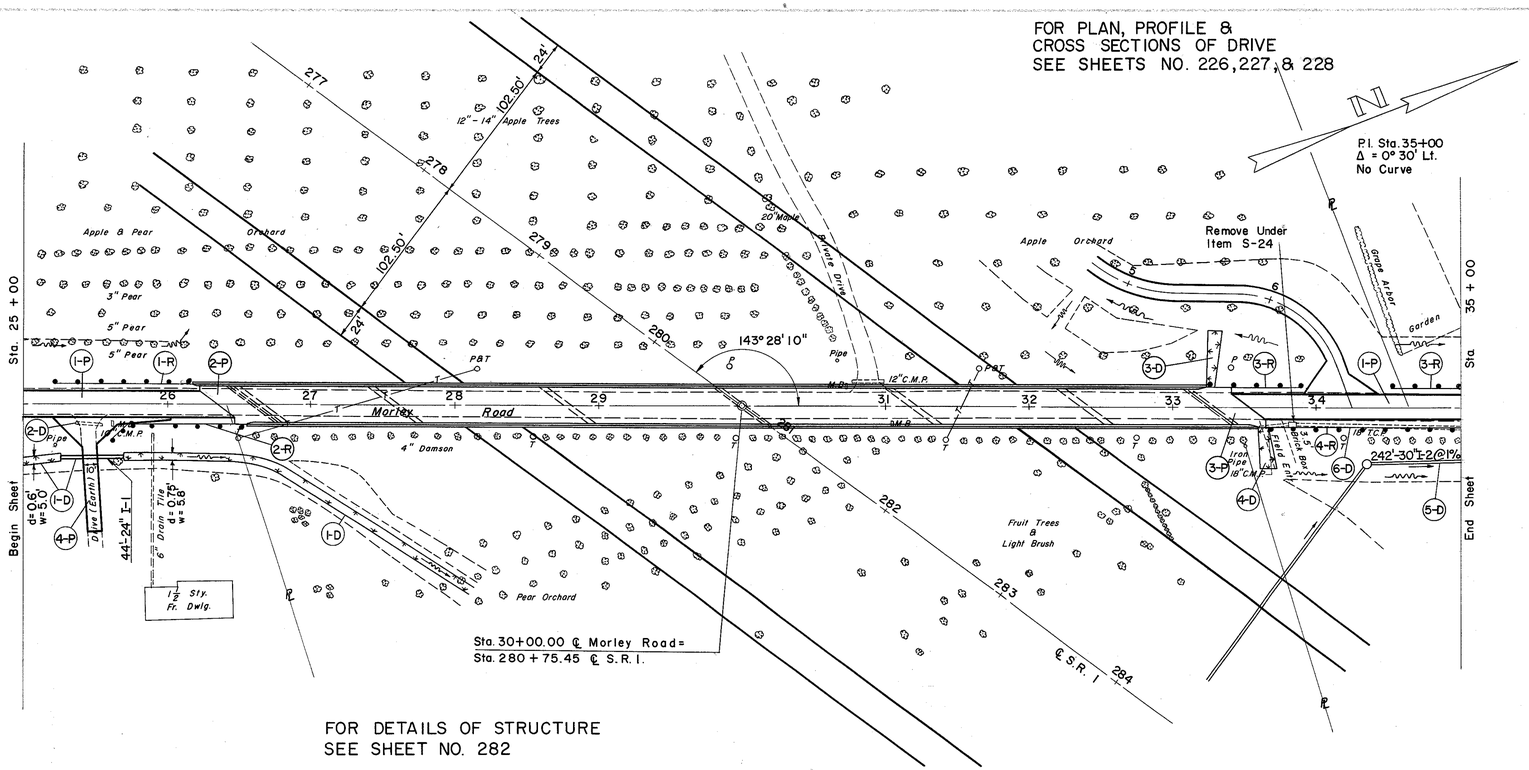
MICROFILMED
JUN 27 1955

REGN. NO.	DIVISION	STATE	PROJECT	
2		OHIO		

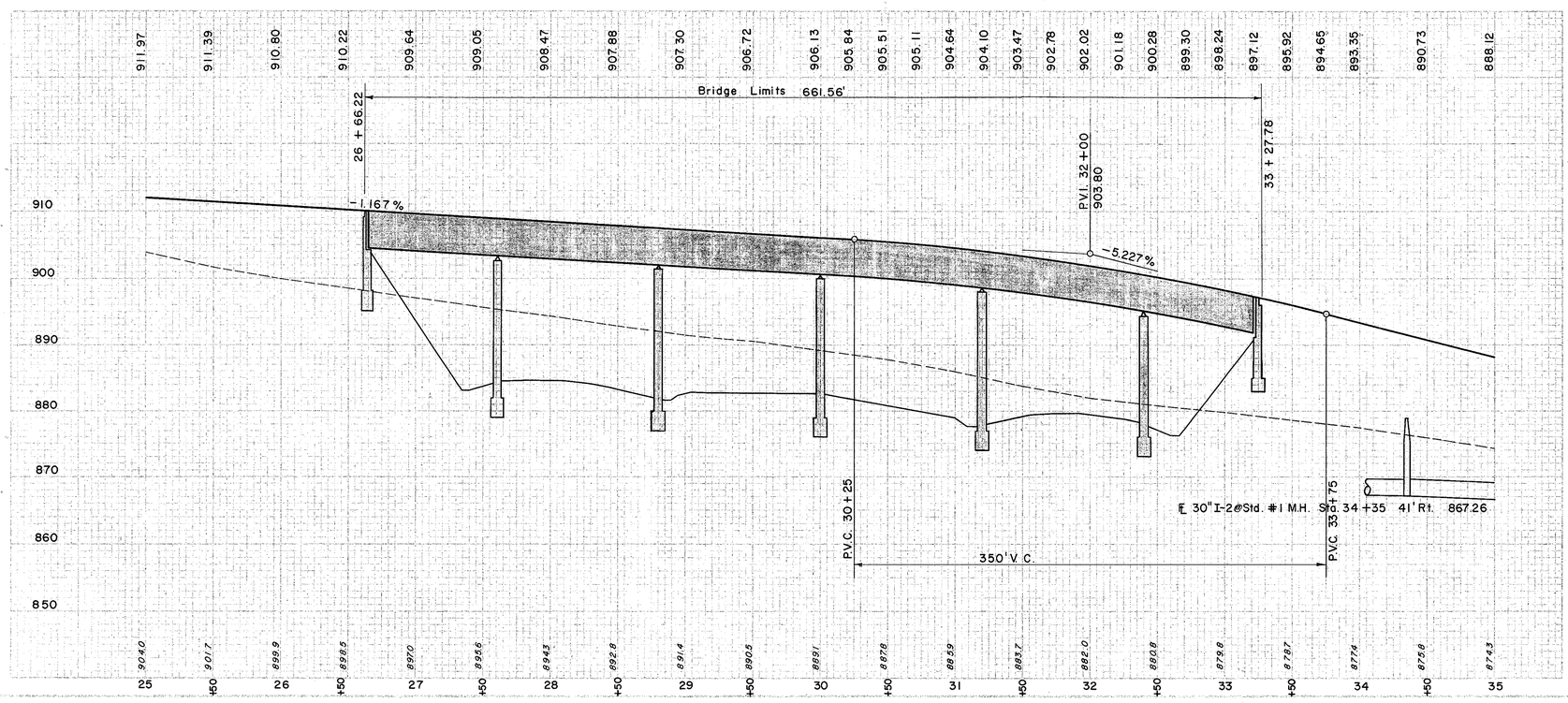
217
306

LAKE COUNTY
LAK-1-10.38

FOR PLAN, PROFILE & CROSS SECTIONS OF DRIVE SEE SHEETS NO. 226, 227, & 228



FOR DETAILS OF STRUCTURE SEE SHEET NO. 282



(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	ROAD MIX BIT. MATL.	SEAL COAT BIT. MATL.	T-32 #46 AGGR. FOR ROAD MIX	#6 AGGR. FOR CHOKE	#6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT	B-19 AGGR. BASE COURSE	I-22 4" SUB-BASE	T-7 REINF. CONC. APPR. SLABS (t = 13")	E-1 COMP. SUB-GRADE	T-9 STONE UNDER DRAIN NO. 2
				GAL.		C.Y.			GAL.	C.Y.		S.Y.		L.F.
1-P	25+00	35+00	—	519	144	32	2	5	231	85	71		577	117
2-P	26+41.22	26+66.22	—								8	69	69	
3-P	33+27.78	33+52.78	—								8	69	69	
4-P	25+45													
	TOTALS		RT.	105 624	29 173	7 39	1 3	1 6	47 278	23 108	87	138	148 863	117

(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-1 PIPE FOR DRIVE WAYS 24"	I-2 CLASS "A" STD. SHEET UNDER PAVT. SEC. M-8.8.1 OR M-8.8.2	I-8 STD. #1 M.H.	L-10 SODDING	L-10 SODDING FOR SPECIAL BERM & SLOPE PROTECT.	E-12 PIPE REMOVED 15" & UNDER	E-12 PIPE REMOVED OVER 15"	S-24 REMOVAL OF EXIST. STRUCT.
				L.F.		EA.	S.Y.		L.F.		LUMP
1-D	25+00	27+00	RT.	44			99		18		
2-D	25+37	25+55	RT.								
3-D	33+25		LT.					41			
4-D	34+65		RT.					30			
5-D	34+35	35+00	RT.		62	1					
6-D	33+61	35+00	RT.							135	LUMP

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, WIRE CABLE TYPE (3 CABLES) L.F.
1-R	25 + 22	26 + 18	LT.	96
2-R	26 + 62	26 + 54	RT.	96
3-R	33 + 23	35 + 10	LT.	128
4-R	33 + 64	35 + 08	RT.	144
		TOTAL		464

EXCAVATION	=	245 C.Y.
EMBANKMENT	=	9,882 C.Y.
EMBANKMENT = 18 %	=	11,660 C.Y.

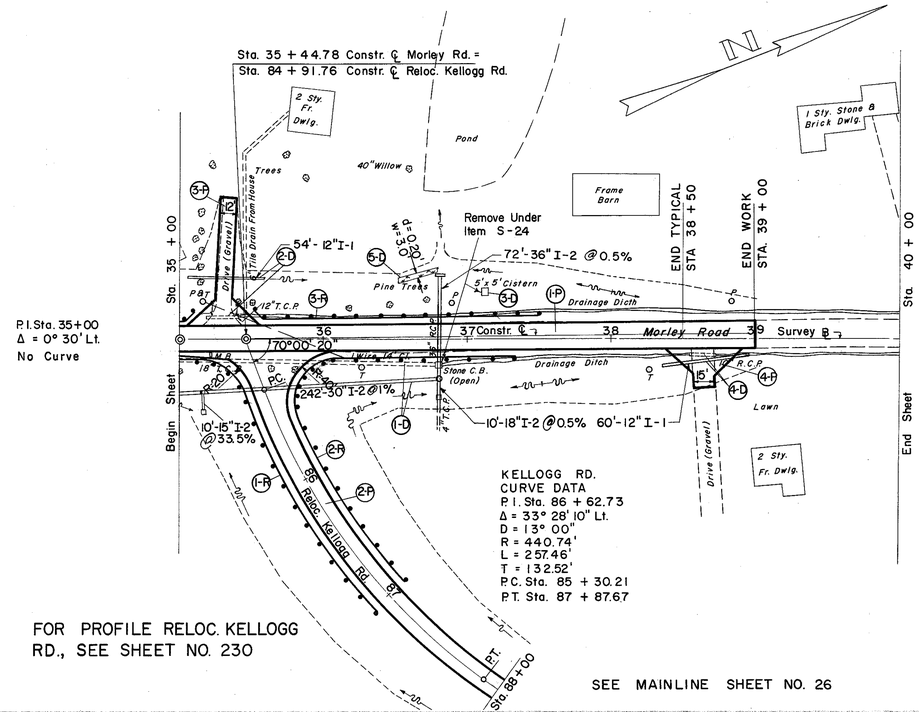
Rev. 3-1-60

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

218
306

LAKE COUNTY
LAK-1-10.38



P.I. Sta. 35+00
Δ = 0° 30' Lt.
No Curve

KELLOGG RD.
CURVE DATA
P.I. Sta. 86 + 62.73
Δ = 33° 28' 10" Lt.
D = 13° 00'
R = 440.74'
L = 257.46'
T = 132.52'
P.C. Sta. 85 + 30.21
P.T. Sta. 87 + 87.67

FOR PROFILE RELOC. KELLOGG RD., SEE SHEET NO. 230

SEE MAINLINE SHEET NO. 26

(D) DRAINAGE

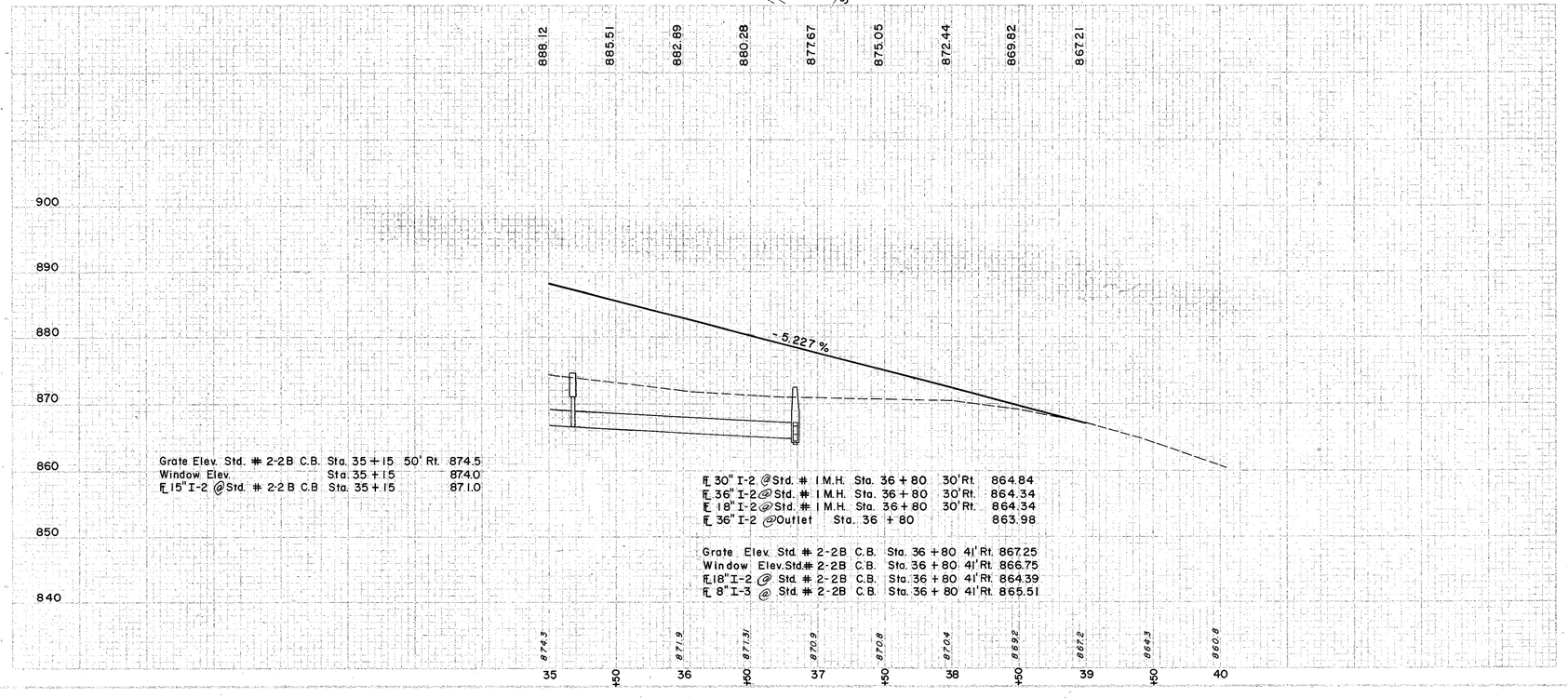
REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-1 PIPE FOR DRIVEWAYS 12"	I-2 CLASS "A" STORM SEWER SEC. M-6.5(a) OR M-6.8(a) 15"	18"	CLASS "A" STORM SEWER UNDER PAVT SEC. M-6.6(b) OR M-6.8 (b) 30"	36"	I-5 15"X30" TEE, SEC. M-6.6(b) OR M-6.8(b)	I-8 STD. NO. 2-2B CATCH BASIN	STD. NO. 1 M.H.	L-10 SODDING	S-1 CONC. FOR STRUCT. CL. "E"	S-24 REMOVED OF EXISTING STRUCT.	E-12 PIPE REMOVED 15" & UNDER	OVER 15"	E-2 EXC. FOR STRUCT.	I-3 8" OUTLET PIPE FOR ROADWAY DRAINAGE
				L.F.					EA.			S.Y.	C.Y.	LUMP	L.F.		C.Y.	L.F.
1-D	35+00	36+80	RT.		10	10		176	72	1	2	1	2	0.51	LUMP		2	10
2-D	35+06	35+60	LT.	54												22		
3-D	37+13		LT.												LUMP			
4-D	38+44	38+90	RT.	60												18		
5-D	36+50	36+80	LT.									10						

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-32 ROAD MIX BIT. MATL.	SEAL COAT BIT. MATL.	NO. 46 AGGR. FOR ROAD MIX	NO. 6 AGGR. FOR CHOKE	NO. 6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT	B-19 AGGR. BASE COURSE	I-22 4" SUBBASE	E-1 COMP. SUBGR.	I-9 STONE UNDER DRAIN (NO. 2)
				GAL.		C.Y.			GAL.	C.Y.	C.Y.	S.Y.	L.F.
1-P	35+00	39+00		723	201	45	3	6	321	118	99	803	153
2-P	85+01.13	88+00		561	156	35	2	5	249	92	77	623	117
3-P	35+30		LT.	106	29	7	1	1	47	27		164	
4-P	38+65		RT.	85	24	5	1	1	38	13		94	
	TOTALS			1475	410	92	7	13	655	250	176	1684	270

(R) ROADWAY

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-15 GUARD RAIL, WIRE CABLE TYPE (3 CABLES)
				L.F.
1-R	35+08 RT.	87+04 KELLOGG ROAD	RT.	240
2-R	87+00 KELLOGG ROAD	37+32	RT.	320
3-R	35+50	37+50	LT.	200
		TOTAL		760



SUPERELEVATION TABLE KELLOGG ROAD RELOC.

STATION	LT. EDGE	CENTERLINE	RT. EDGE
85 + 00	885.23	885.65	886.07
+ 25	884.84	885.26	885.68
+ 50	884.45	884.87	885.29
+ 75	884.06	884.48	884.90
86 + 00	883.67	884.09	884.51
+ 25	883.28	883.70	884.12
+ 50	882.89	883.31	883.73
+ 75	882.50	882.92	883.34
87 + 00	882.11	882.53	882.95
+ 25	881.71	882.14	882.57
+ 50	881.35	881.75	882.15
+ 75	881.07	881.30	881.52
88 + 00	880.70	880.85	881.00
+ 25	880.27	880.40	880.42
+ 50	879.82	879.95	879.90
+ 75	879.37	879.50	879.38
89 + 00	878.92	879.05	878.92

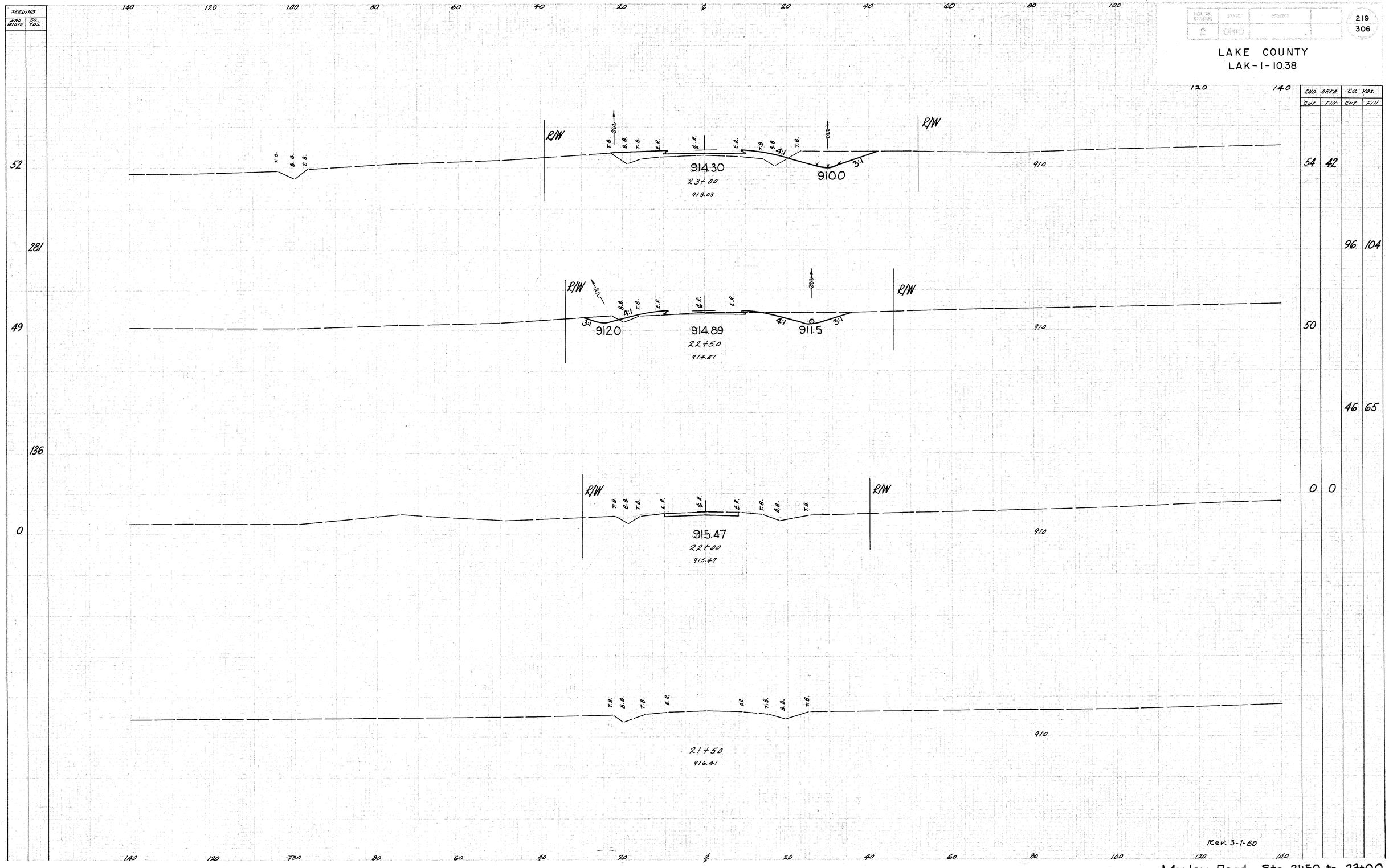
STA. 85 + 30.21 TO STA. 88 + 00 KELLOGG RD.
EXCAVATION = 149 C.Y.
EMBANKMENT = 4464 C.Y.
EMBANKMENT + 18 % = 5268 C.Y.

STA. 35 + 00 TO STA. 39 + 00
EXCAVATION = 836 C.Y.
EMBANKMENT = 5056 C.Y.
EMBANKMENT + 18 % = 5966 C.Y.

Rev. 3-1-60

MORLEY ROAD STA. 35+00 TO STA. 40+00

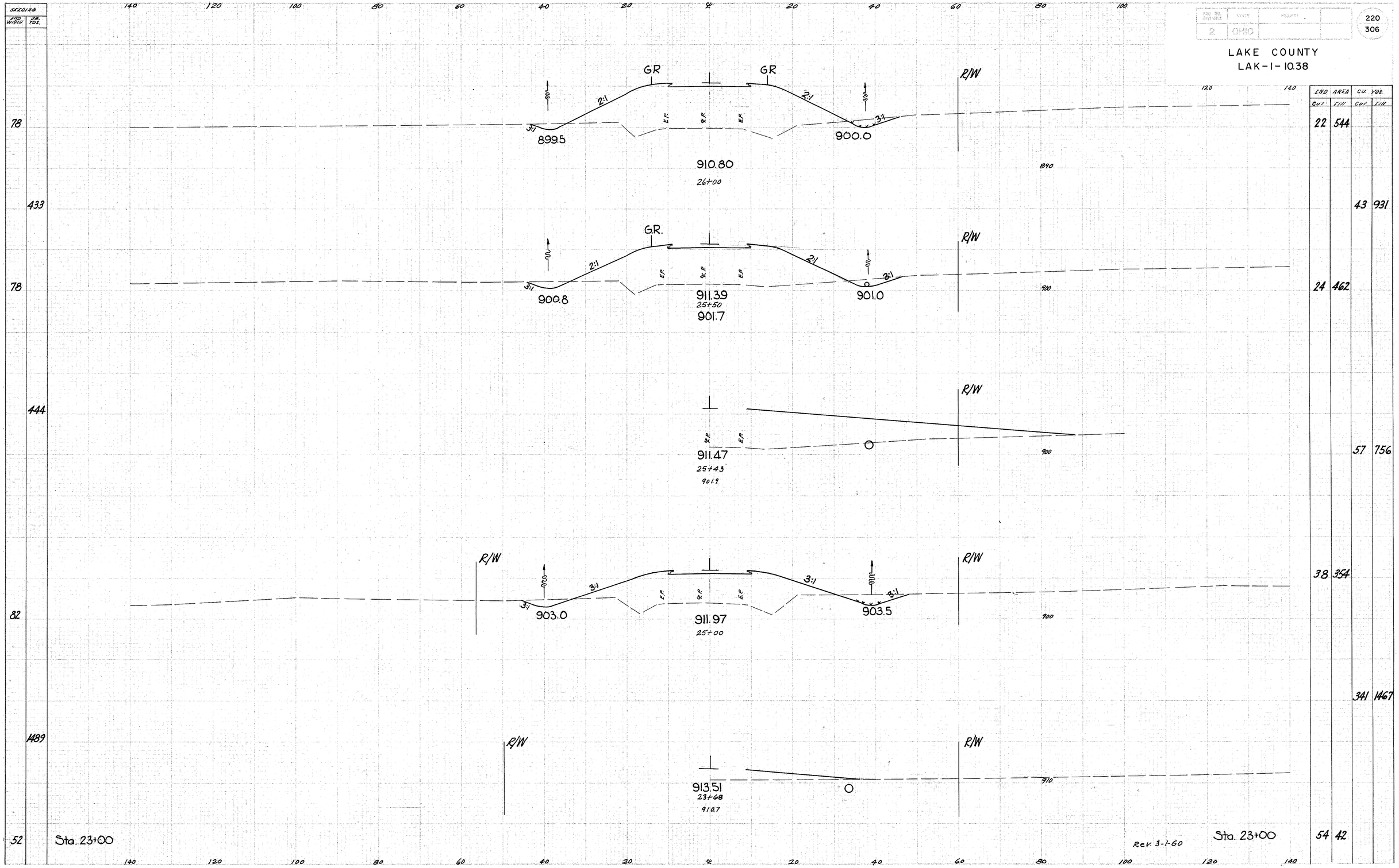
LAKE COUNTY
LAK-1-10.38



Morley Road Sta. 21+50 to 23+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

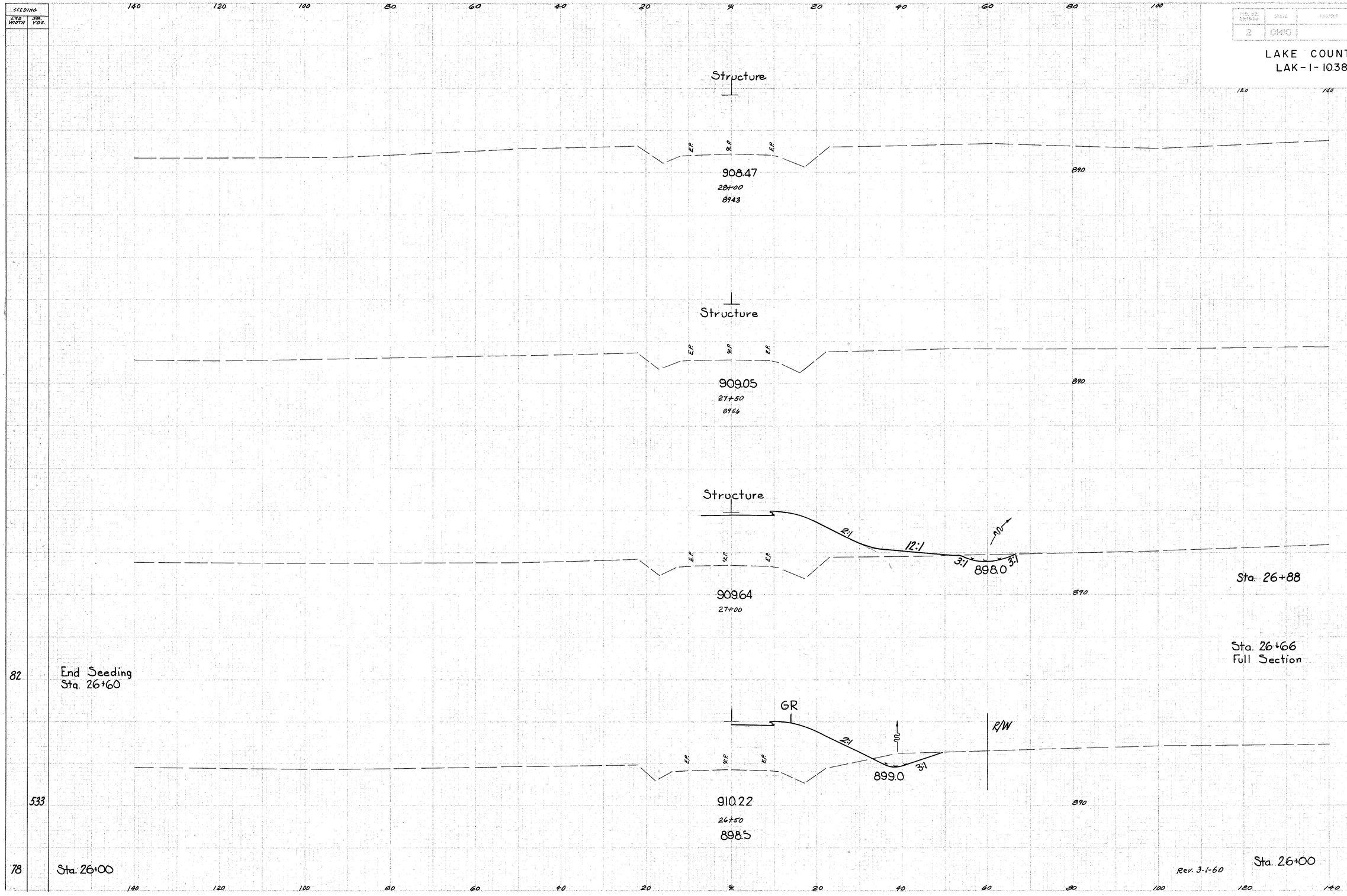


Morley Road Sta. 23+68 to 26+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

221
306

LAKE COUNTY
LAK-1-10.38



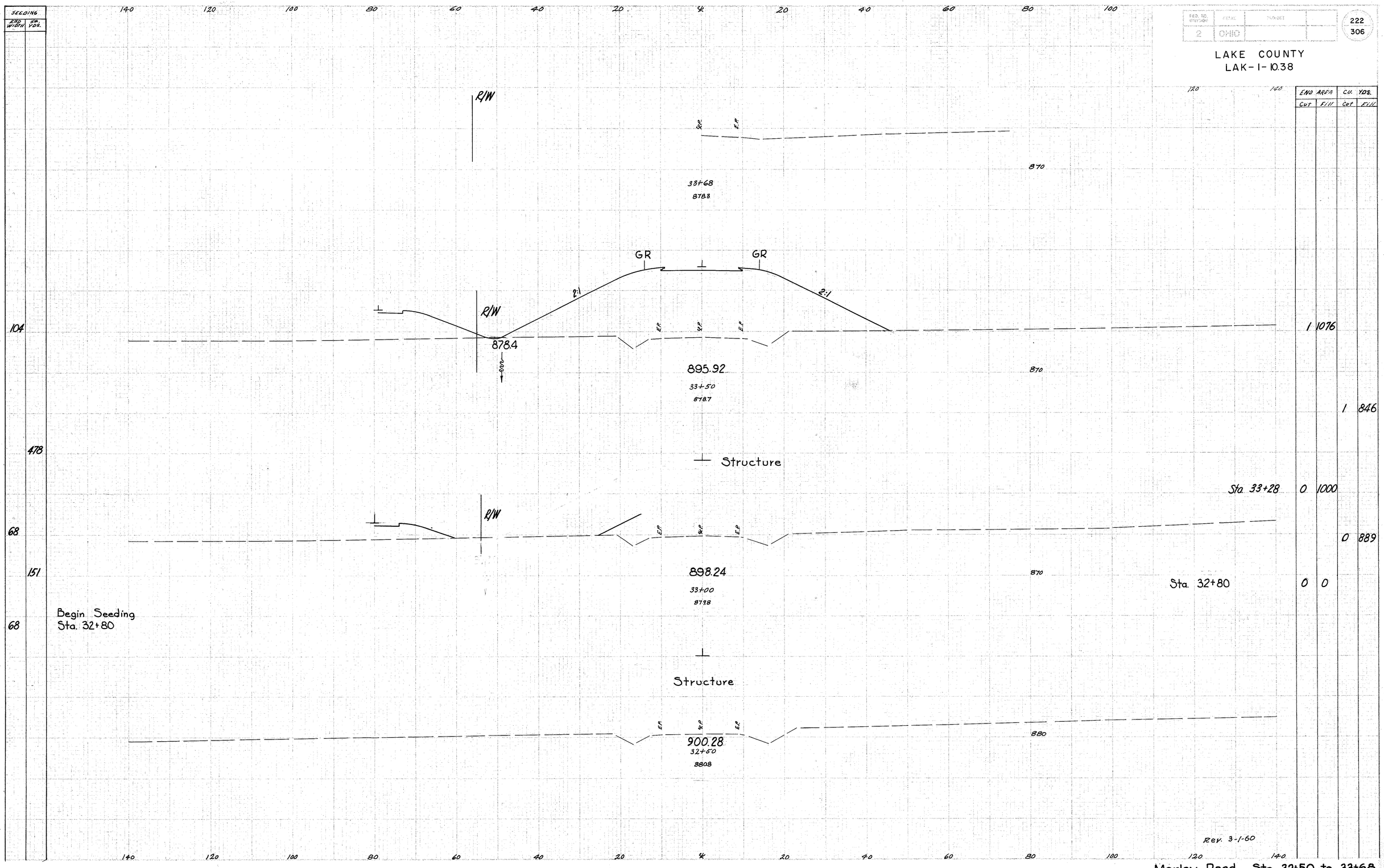
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	0		
		15	240
36	590		
		71	1386
22	544		

Morley Road Sta. 26+50 to 28+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

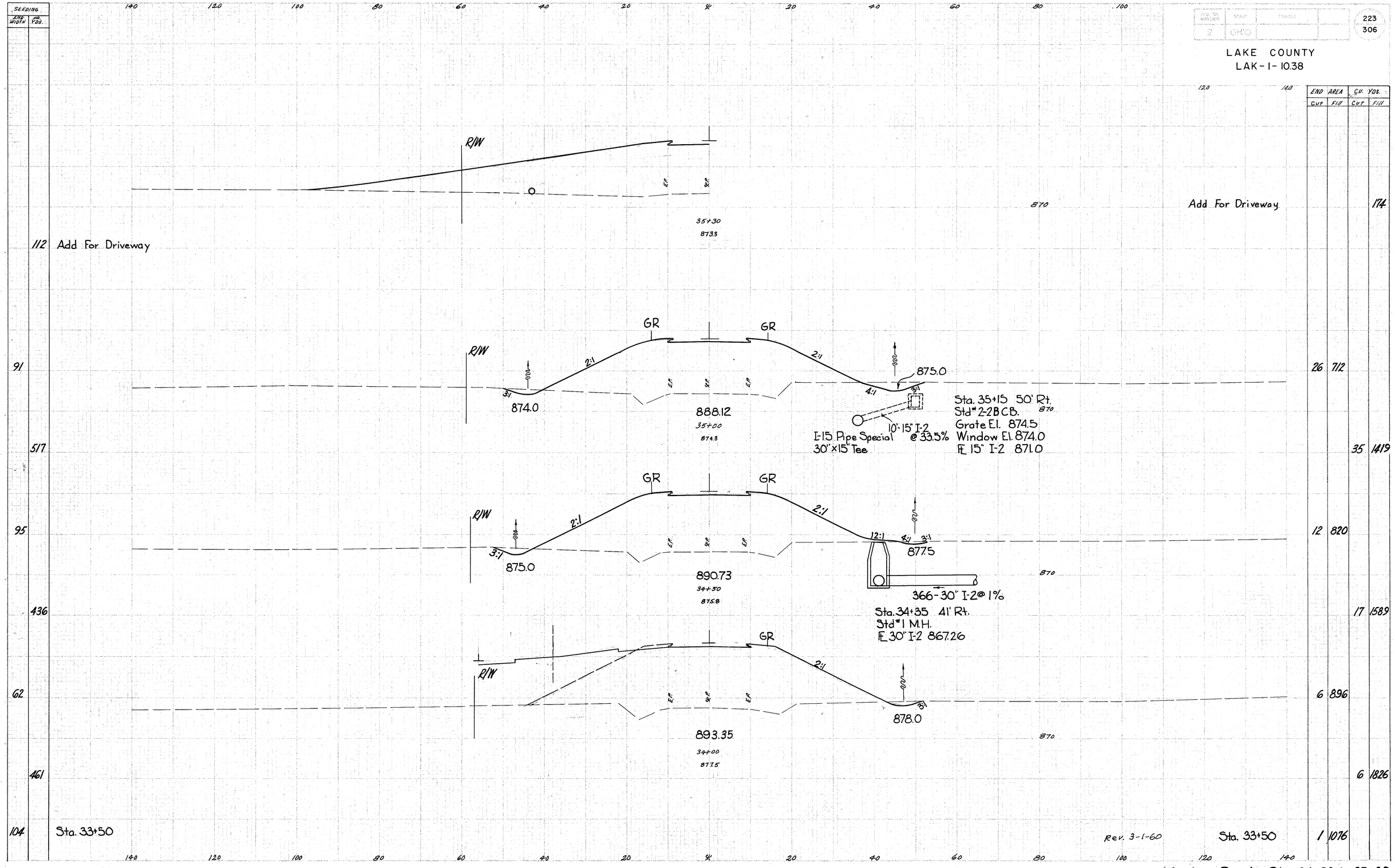
222
306

LAKE COUNTY
LAK-1-10.38



Morley Road Sta. 32+50 to 33+68

LAKE COUNTY
LAK-1-10.38

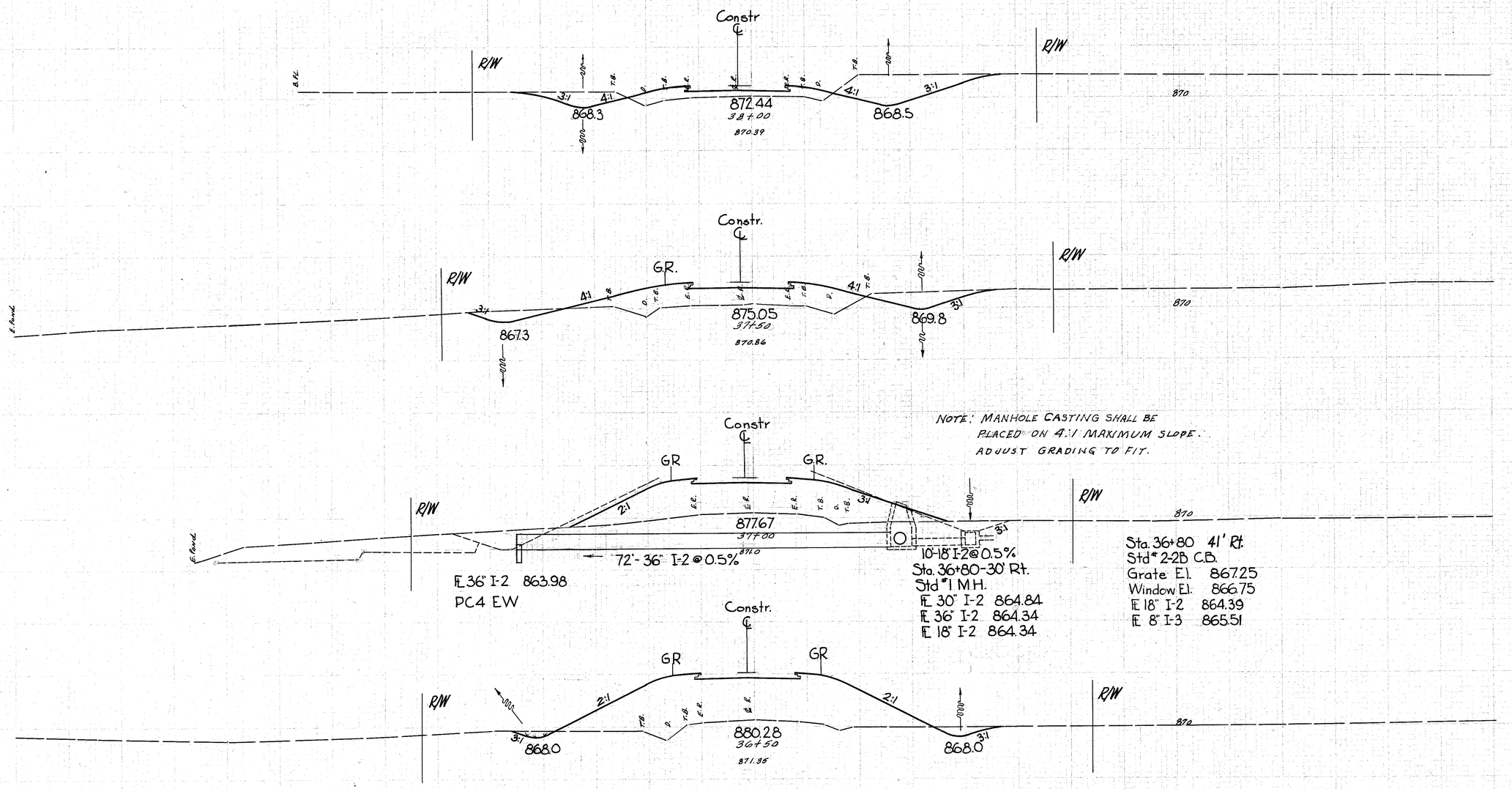


Morley Road Sta. 34+00 to 35+30

224
306

LAKE COUNTY
LAK-I-10.38

SEEDING	
END WIDTH	SQ. YDS.
79	
	464
88	
508	
95	
494	
83	
	1450
91	



NOTE: MANHOLE CASTING SHALL BE PLACED ON 4:1 MAXIMUM SLOPE. ADJUST GRADING TO FIT.

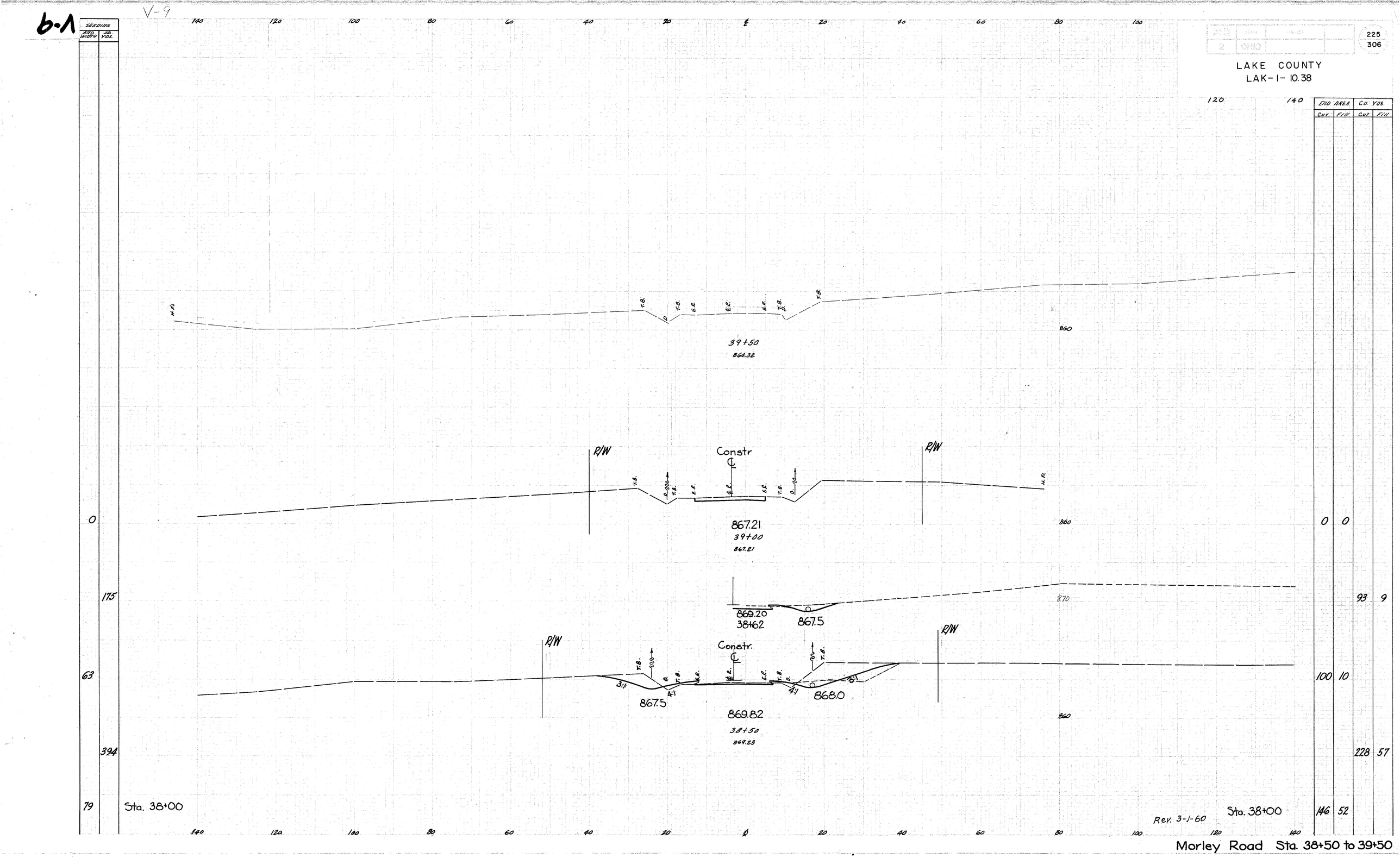
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
146	52		
		200	213
70	178		
		117	475
56	335		
		70	770
20	497		
		128	3358
26	712		

Sta. 35+00

Rev. 3-1-60

Sta. 35+00

Morley Road Sta. 36+50 to 38+00



Morley Road Sta. 38+50 to 39+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

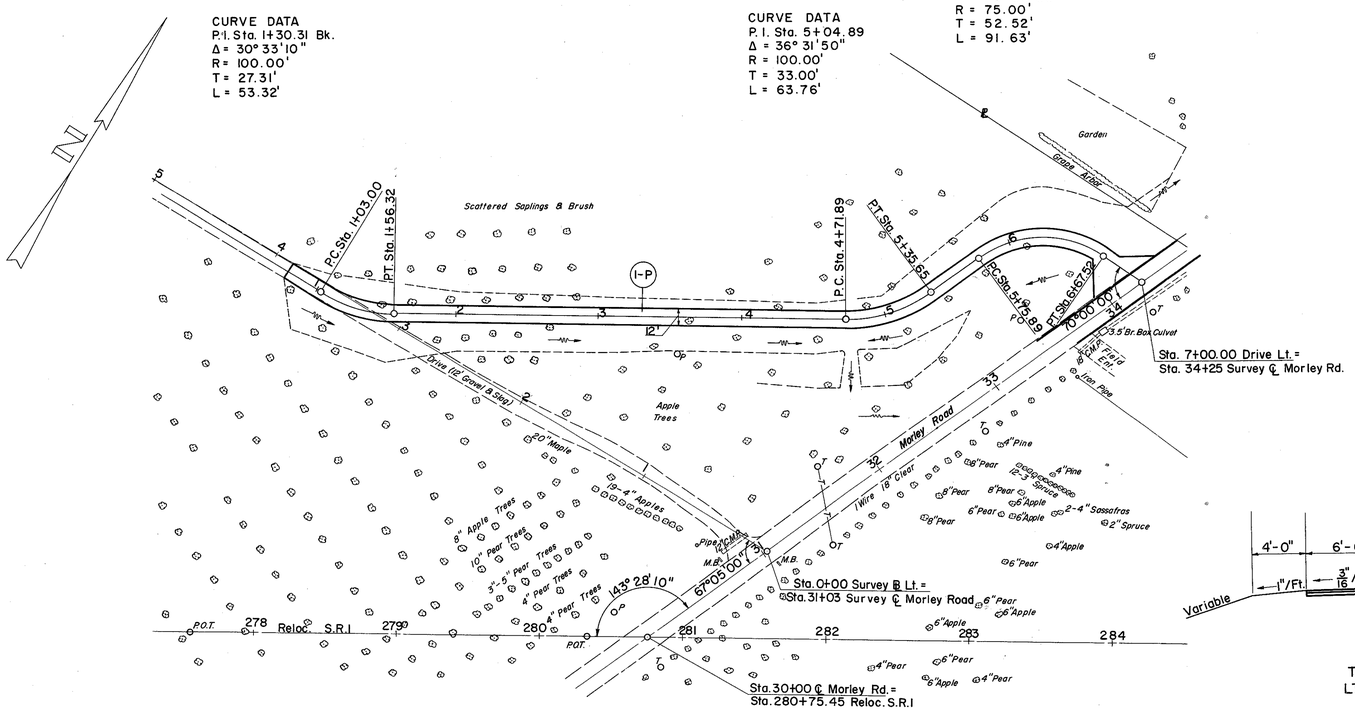
226
306

LAKE COUNTY
LAK-I-10.38

CURVE DATA
P.I. Sta. 1+30.31 Bk.
Δ = 30° 33' 10"
R = 100.00'
T = 27.31'
L = 53.32'

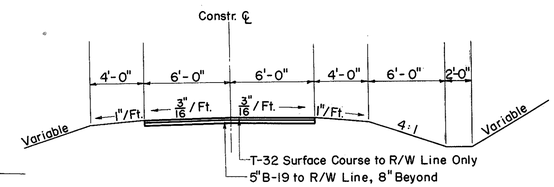
CURVE DATA
P.I. Sta. 5+04.89
Δ = 36° 31' 50"
R = 100.00'
T = 33.00'
L = 63.76'

CURVE DATA
P.I. Sta. 6+28.41
Δ = 70° 00' 00"
R = 75.00'
T = 52.52'
L = 91.63'

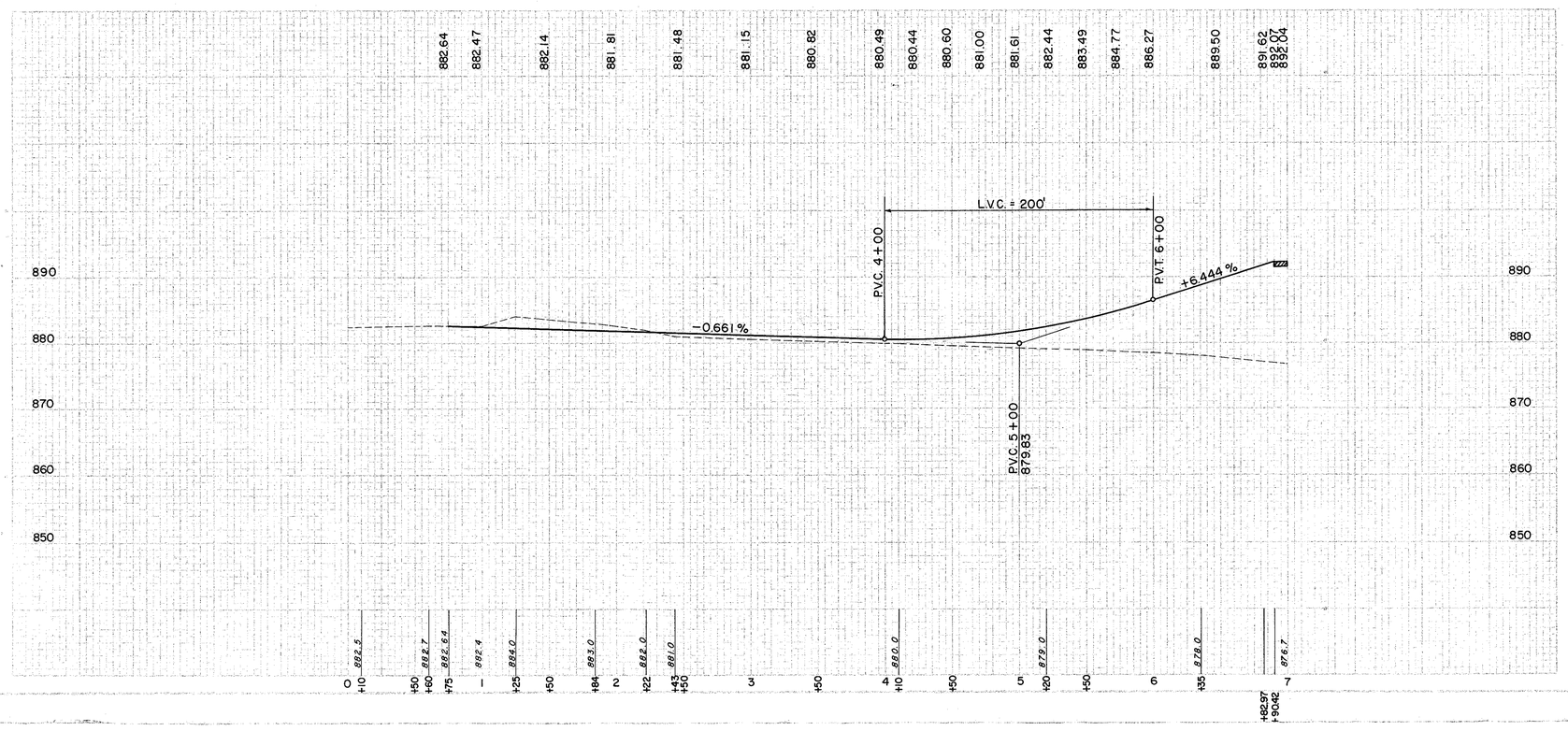


Ⓟ PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE	B-19 5" & 8" AGGR. BASE COURSE	E-1 COMPACT. SUBGR.	T-32 ROAD MIX BIT. MAT'L.	T-32 SEAL COAT BIT. MAT'L.	T-32 #46 AGGR. FOR ROAD MIX	T-32 #6 AGGR. FOR CHOKE	T-32 #6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT
				C.Y.	S.Y.	GAL.		C.Y.			GAL.
1-P	0+75	6+91		183	866	106	29	7	1	1	41



TYPICAL SECTION DRIVE
LT. STA. 34+25 MORLEY RD.



Excavation		513 C.Y.
Embankment		1823 C.Y.
Embankment	18 %	2151 C.Y.

Rev. 3-1-60

DRIVE LT. STA. 34+25 - MORLEY ROAD STA. 0+75 TO STA. 7+00

Fed. Rd. Division	State	Project	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

	4+00	3+50	3+00	2+50	2+00	1+50	1+00	0+75
End Area Cut	23	12	18	20	22	124	43	0
End Area Fill	2	7	8	9	13	0	2	0
Seeding End Width	26	26	28	29	31	46	35	

Interval	4+00–3+50	3+50–3+00	3+00–2+50	2+50–2+00	2+00–1+50	1+50–1+00	1+00–0+75
Cu. Yds. Cut	32	28	35	39	135	155	20
Cu. Yds. Fill	8	14	16	20	12	2	1
Seeding Sq. Yds.	144	150	158	167	214	225	49

Rev. 3-1-60

Drive Lt Morley Rd.
Sta. 34+25

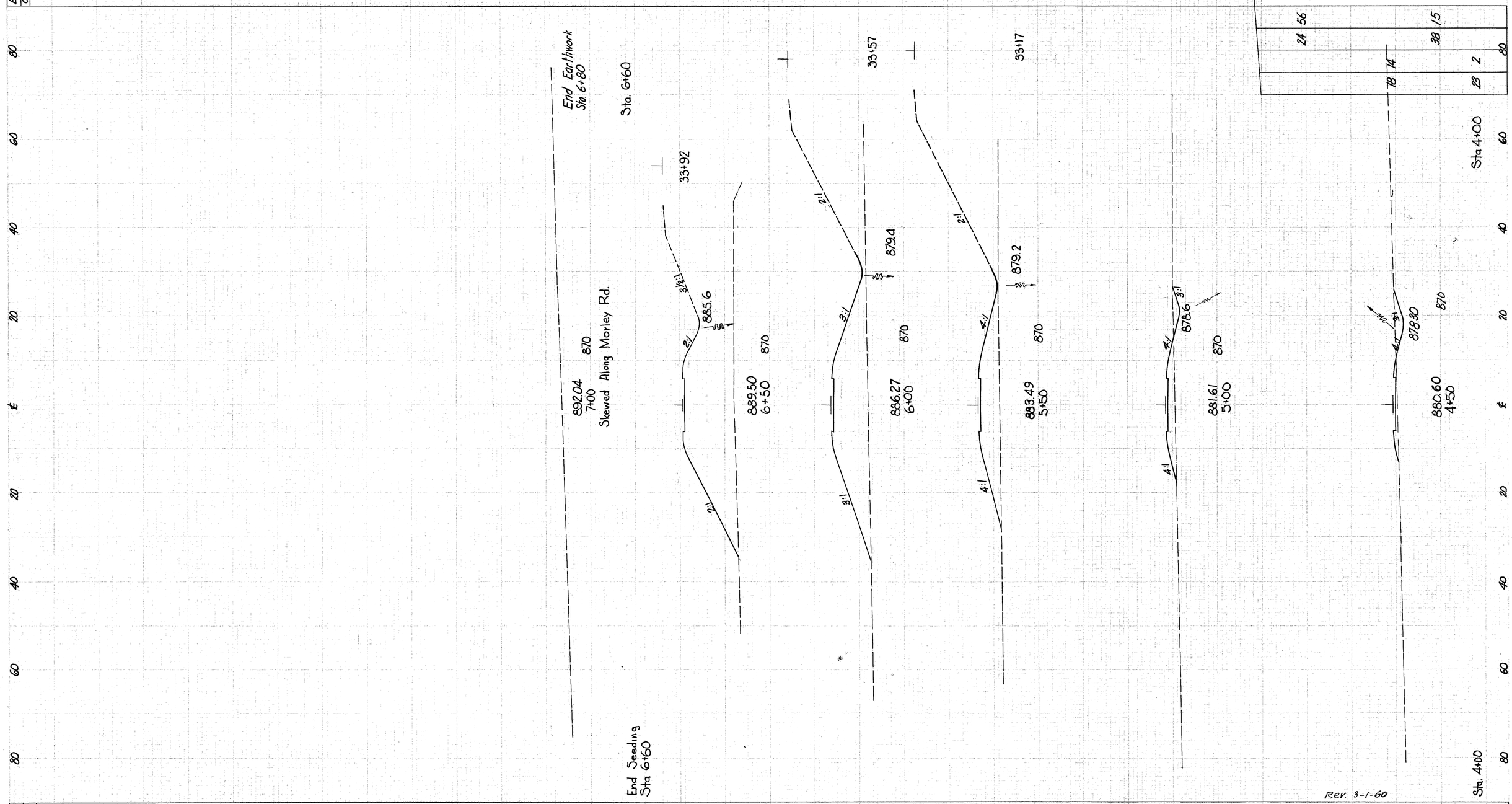
Sta. 0+75 to 4+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

228
306

LAKE COUNTY
LAK-1-10.38

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
0			
435		161	
435		161	
342		719	
0 150		456	
8 47		7 182	



Seeding End Area Width	Seeding Cu. Yds.
0	23
41	250
49	239
37	169
24	133
24	139
26	

Drive Lt. Morley Rd
Sta 34+25

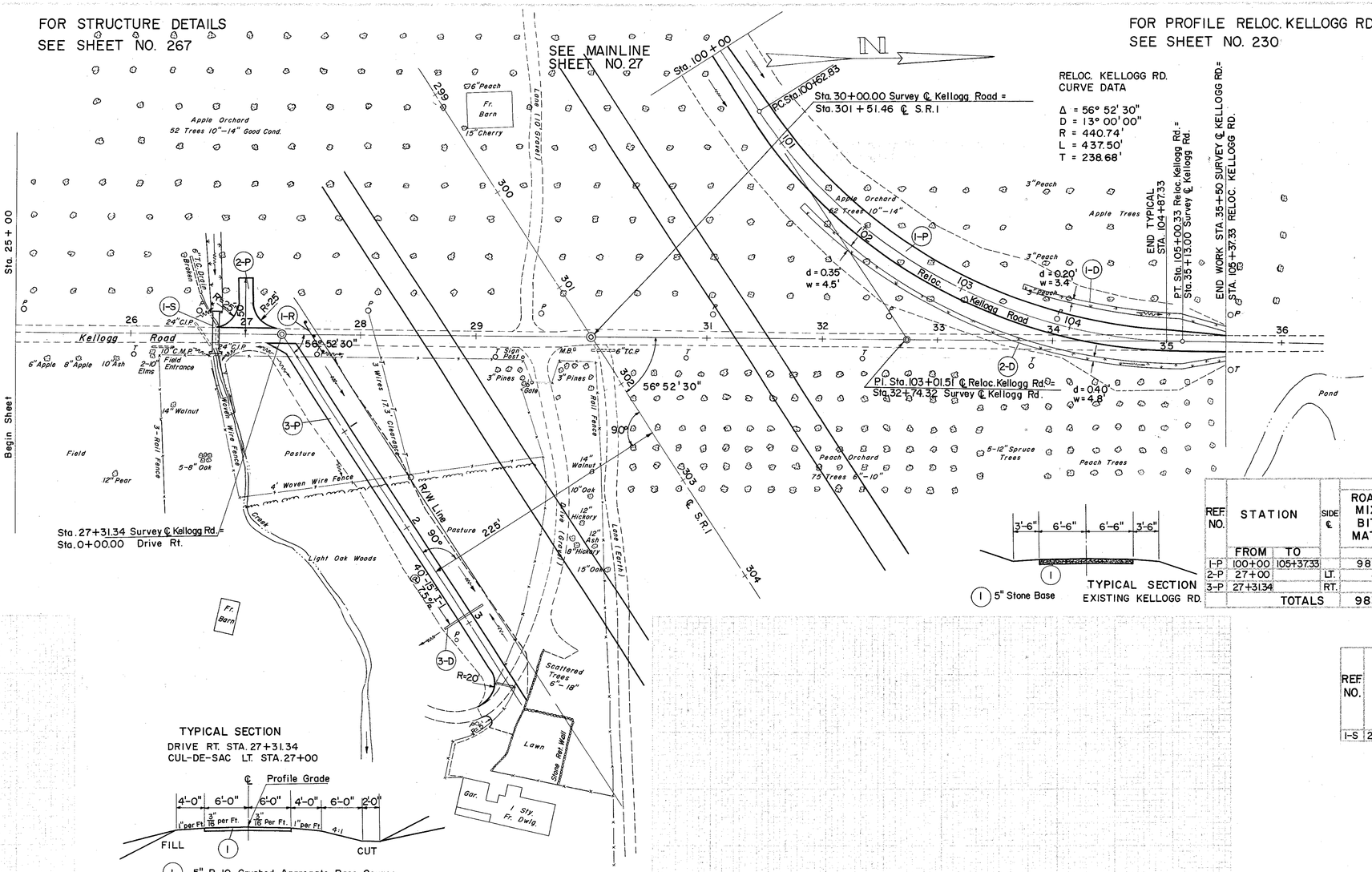
Sta. 4+50 to 7+00

LAKE COUNTY
LAK-1-10.38

FOR STRUCTURE DETAILS
SEE SHEET NO. 267

SEE MAINLINE
SHEET NO. 27

FOR PROFILE RELOC. KELLOGG RD.
SEE SHEET NO. 230

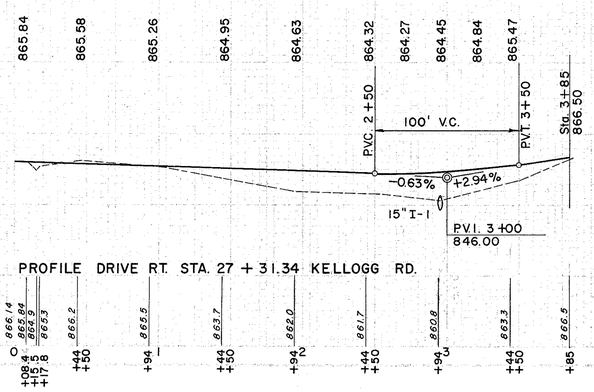


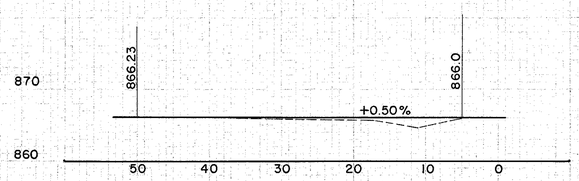
1 5" Stone Base

TYPICAL SECTION
EXISTING KELLOGG RD.

TYPICAL SECTION
DRIVE RT. STA. 27+31.34
CUL-DE-SAC LT. STA. 27+00

1 5" B-19 Crushed Aggregate Base Course
Scale: 1/8" = 1'-0"





PROFILE CUL-DE-SAC
LT. STA. 27+00 KELLOGG RD.
SCALE: 1" = 10'

SUPERELEVATION TABULATION RELOC. KELLOGG ROAD

STATION	LT. EDGE	CENTER LINE	RT. EDGE	WIDTH LT.
+25	860.47	860.60	860.47	8.0
+50	860.02	860.15	860.04	8.0
+75	859.57	859.70	859.64	8.0
100+00	859.10	859.25	859.28	8.2
+25	858.48	858.80	858.95	8.9
+50	857.87	858.35	858.63	9.6
+75	857.20	857.87	858.26	10.7
101+00	856.50	857.31	857.84	11.1
+25	855.84	856.69	857.33	11.9
+50	854.99	855.99	856.65	12.0
+75	854.23	855.23	855.89	12.0
102+00	853.40	854.40	855.06	12.0
+25	852.49	853.49	854.15	12.0
+50	851.52	852.52	853.18	12.0
+75	850.48	851.48	852.14	12.0
103+00	849.37	850.37	851.03	12.0
+25	848.19	849.19	849.85	12.0
+50	846.98	847.94	848.58	11.8
+75	845.85	846.65	847.17	10.9
104+00	844.72	845.36	845.75	10.0
+25	843.66	844.08	844.29	8.9
+50	842.47	842.79	842.93	8.2
+75	841.35	841.51	841.52	7.3
105+00	840.07	840.22	840.16	6.4
+25	838.79	838.94	838.82	5.5

(P) PAVEMENT

REF. NO.	STATION FROM	STATION TO	SIDE ℄	T-32 ROAD MIX BIT. MATL.	T-32 SEAL COAT BIT. MATL.	T-32 #46 AGGR. FOR ROAD MIX	T-32 #6 AGGR. FOR CHOKE	T-32 #6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT	B-19 5" AGGR. BASE COURSE	I-22 4" SUB-BASE	E-1 COMP. SUB-GRADE	I-9 STONE UNDER DRAIN NO. 2
				GAL.		C.Y.			GAL.	C.Y.		S.Y.	L.F.
1-P	100+00	105+37.33		983	273	61	4	9	437	160	135	1092	198
2-P	27+00		LT.							12		88	
3-P	27+31.34		RT.							85		610	
	TOTALS			983	273	61	4	9	437	257	135	1790	198

(S) STRUCTURES

REF. NO.	STATION	SIDE ℄	E-2 EXC. FOR STRUCT.	E-3 CHANNEL EXC.	S-1 CONC. FOR STRUCT. CL. "E"	L-10 SODDING	S-27 58" x 36" PIPE FOR RDWY. CULVERTS SEC. M-64.1(1)(d)
			C.Y.	C.Y.	C.Y.	S.Y.	L.F.
1-S	26+75	℄	37	13	1.80	7	36

(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	I-1 15" PIPE FOR DRIVE-WAYS	L-10 SODDING
				L.F.	S.Y.
1-D	102+50	105+37	LT.		71
2-D	101+50	105+37	RT.		193
3-D	2+95 Dr		℄	40	

(R) ROADWAY

REF. NO.	STATION	SIDE ℄	I-15 GUARD RAIL, WIRE CABLE TYPE (3 CABLES)
			L.F.
1-R	27+58 KELLOGG RD.	℄	32

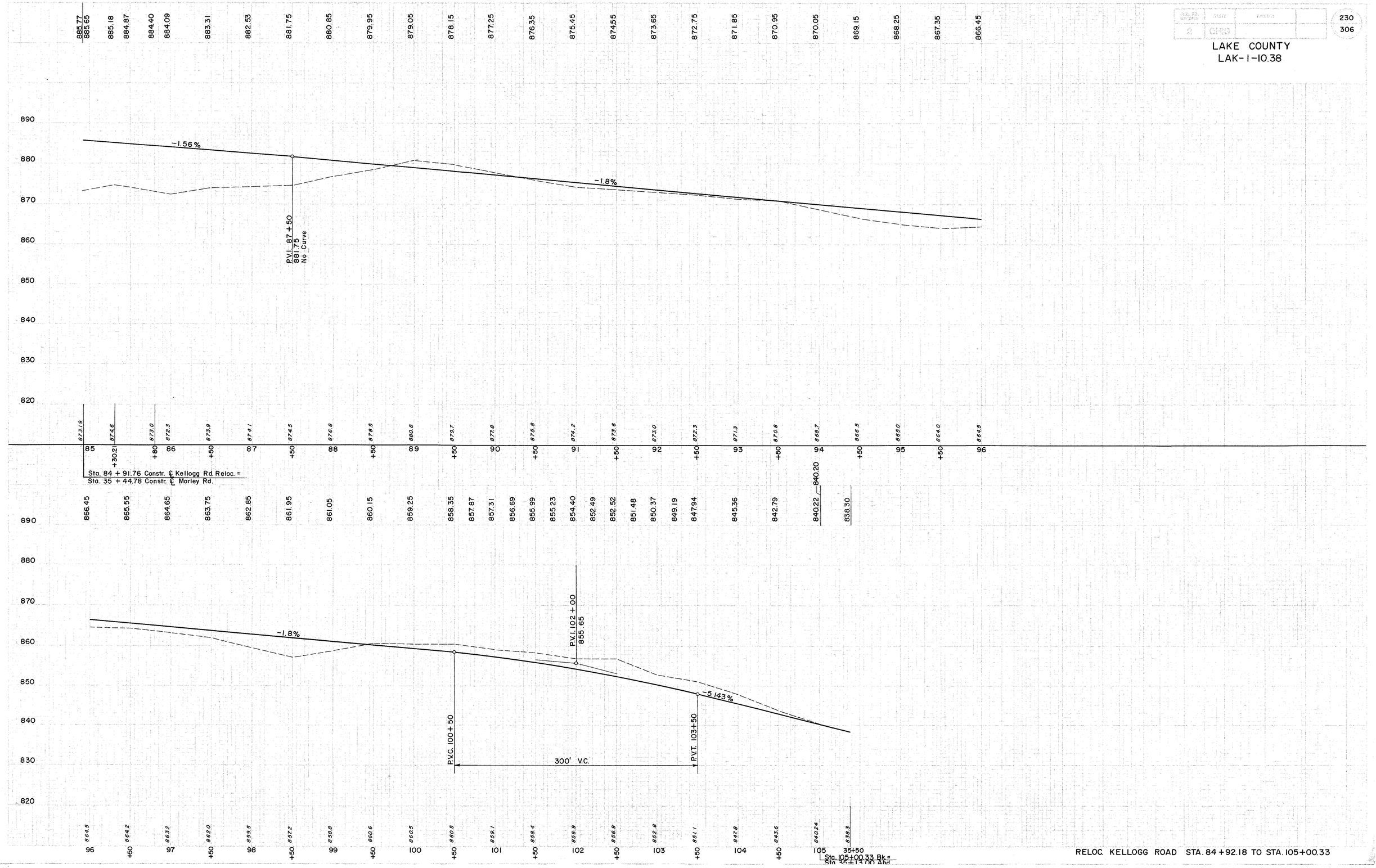
EXCAVATION	=	3720 C.Y.
EMBANKMENT	=	11 C.Y.
EMBANKMENT + 18 %	=	13 C.Y.

RELOC. KELLOGG ROAD STA. 100+00 TO STA. 105+37.33

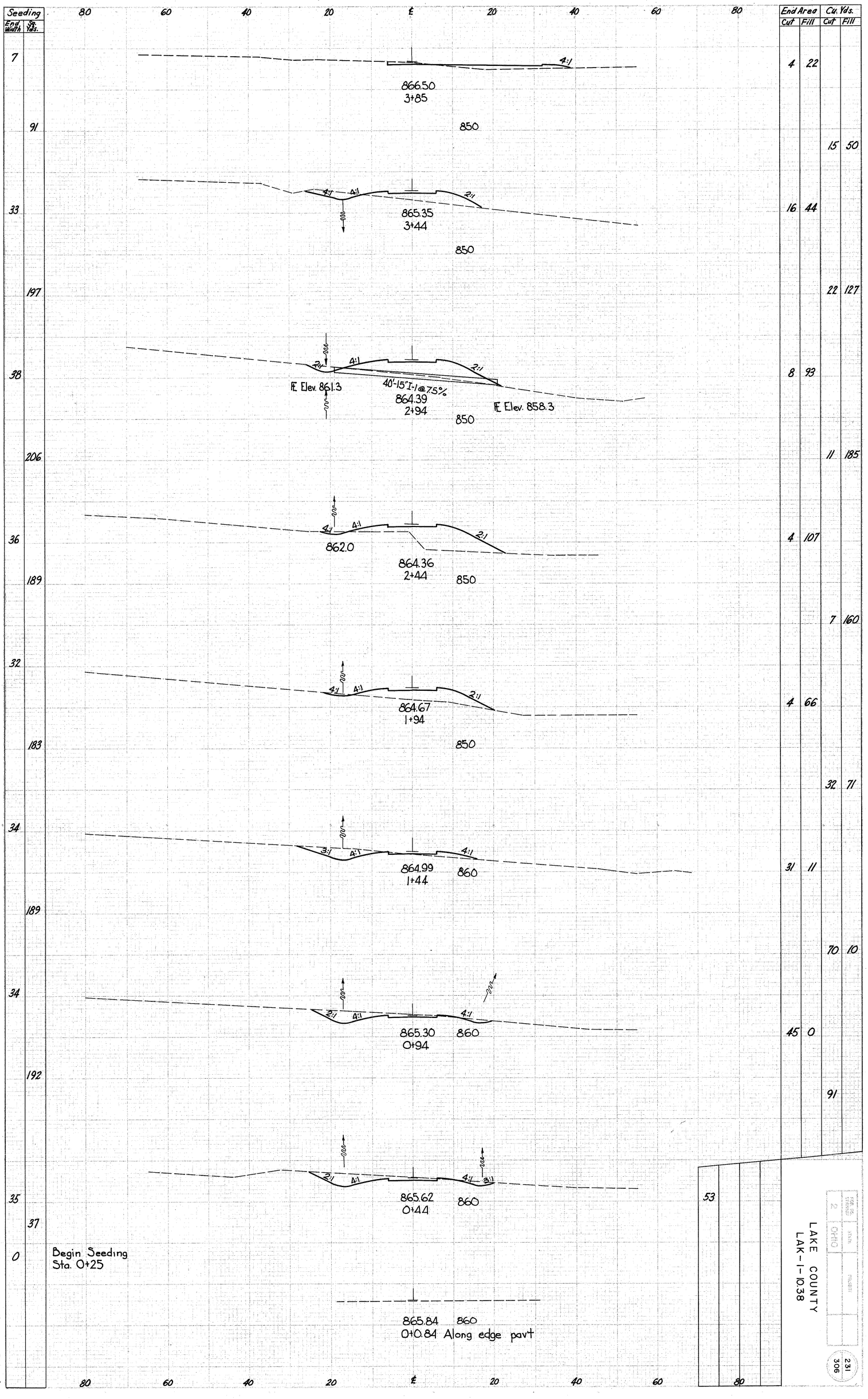
SHEET NO. OF TOTAL SHEETS	STATE	PROJECT	
2	OHIO		

230
306

LAKE COUNTY
LAK-I-10.38



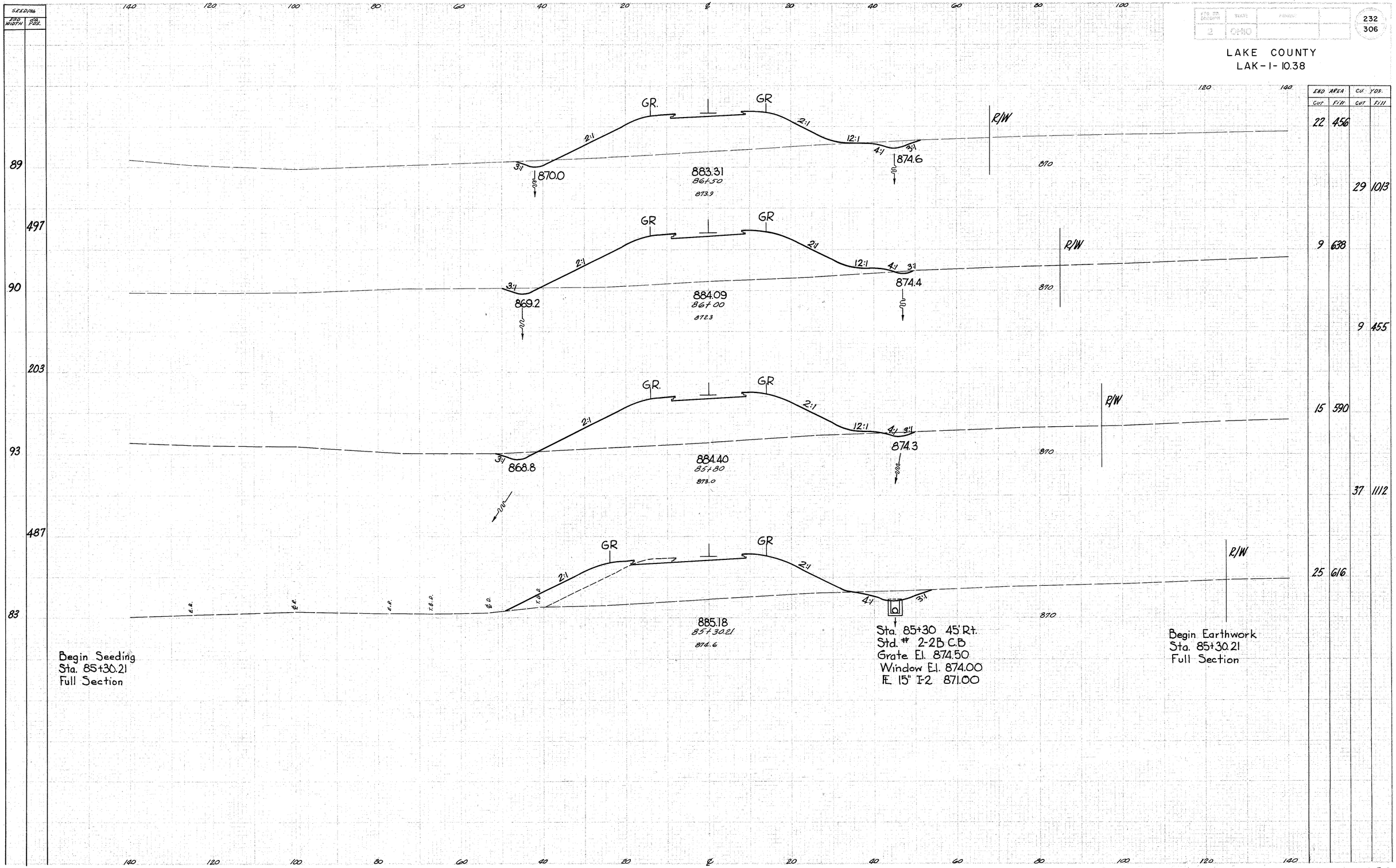
RELOC. KELLOGG ROAD STA. 84+92.18 TO STA. 105+00.33



Seeding
End Width
Sq. Yds.
End Area
Cut
Fill
Cu. Yds.
Cut
Fill
7
91
33
197
38
206
36
189
32
183
34
189
34
192
35
37
0
4:1
866.50
3+85
850
4:1
4:1
2:1
865.35
3+44
850
2:1
4:1
2:1
℄ Elev. 861.3
40'-15"I-1@7.5%
864.39
2+94
℄ Elev. 858.3
850
4:1
4:1
2:1
862.0
864.36
2+44
850
4:1
4:1
2:1
864.67
1+94
850
3:1
4:1
4:1
864.99
1+44
860
2:1
4:1
4:1
865.30
0+94
860
2:1
4:1
4:1
3:1
865.62
0+44
860
Begin Seeding
Sta. 0+25
865.84
0+0.84 Along edge pavt
860
4 22
15 50
16 44
22 127
8 93
11 185
4 107
7 160
4 66
32 71
31 11
70 10
45 0
91
53
LAKE COUNTY
LAK-I-10.38
2
OHIO
231
306
Drive Rt. Sta. 27+31.34 Kellogg Road

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

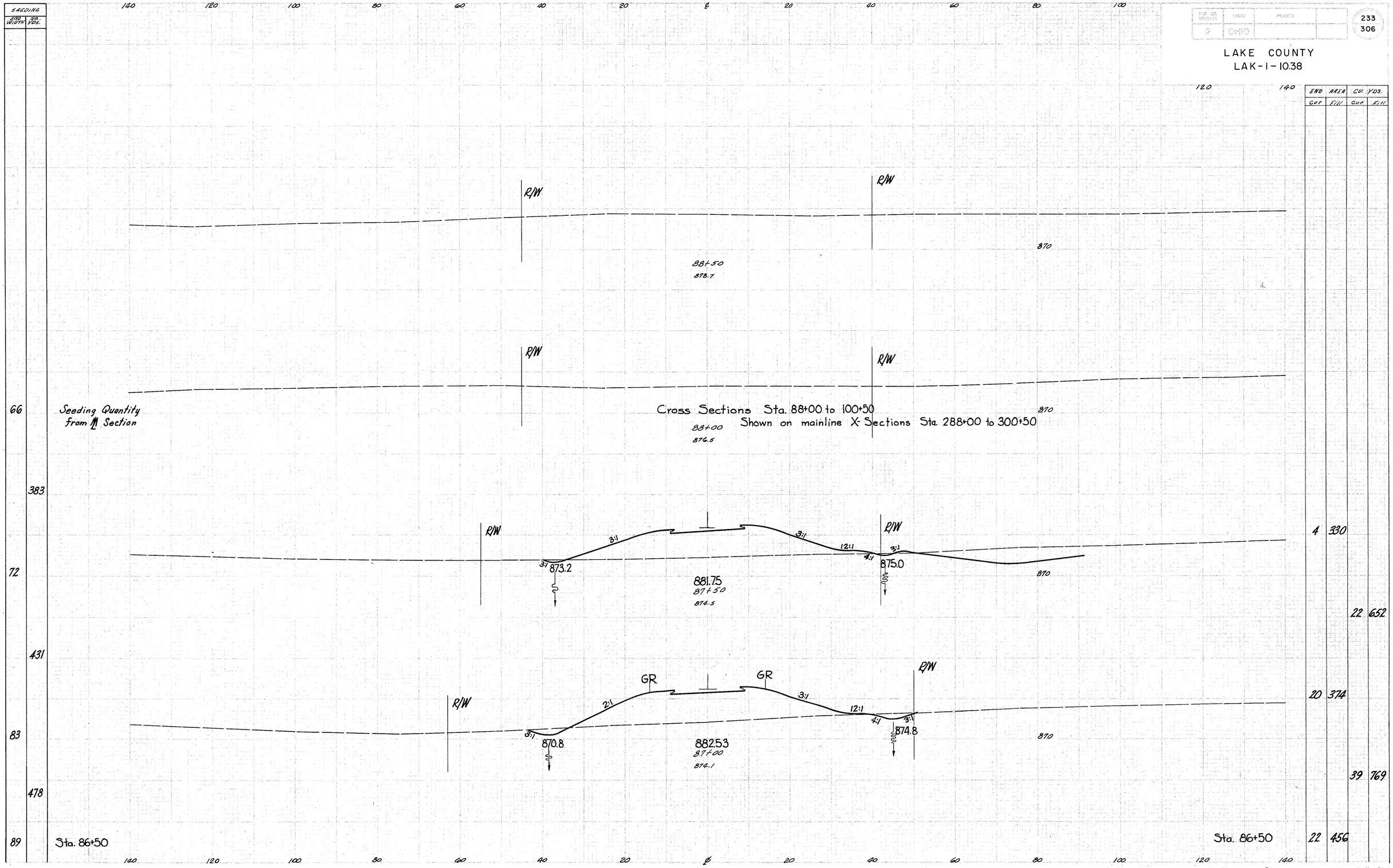
LAKE COUNTY
LAK-1-10.38



Reloc. Kellogg Road Sta. 85+30.21 to 86+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38



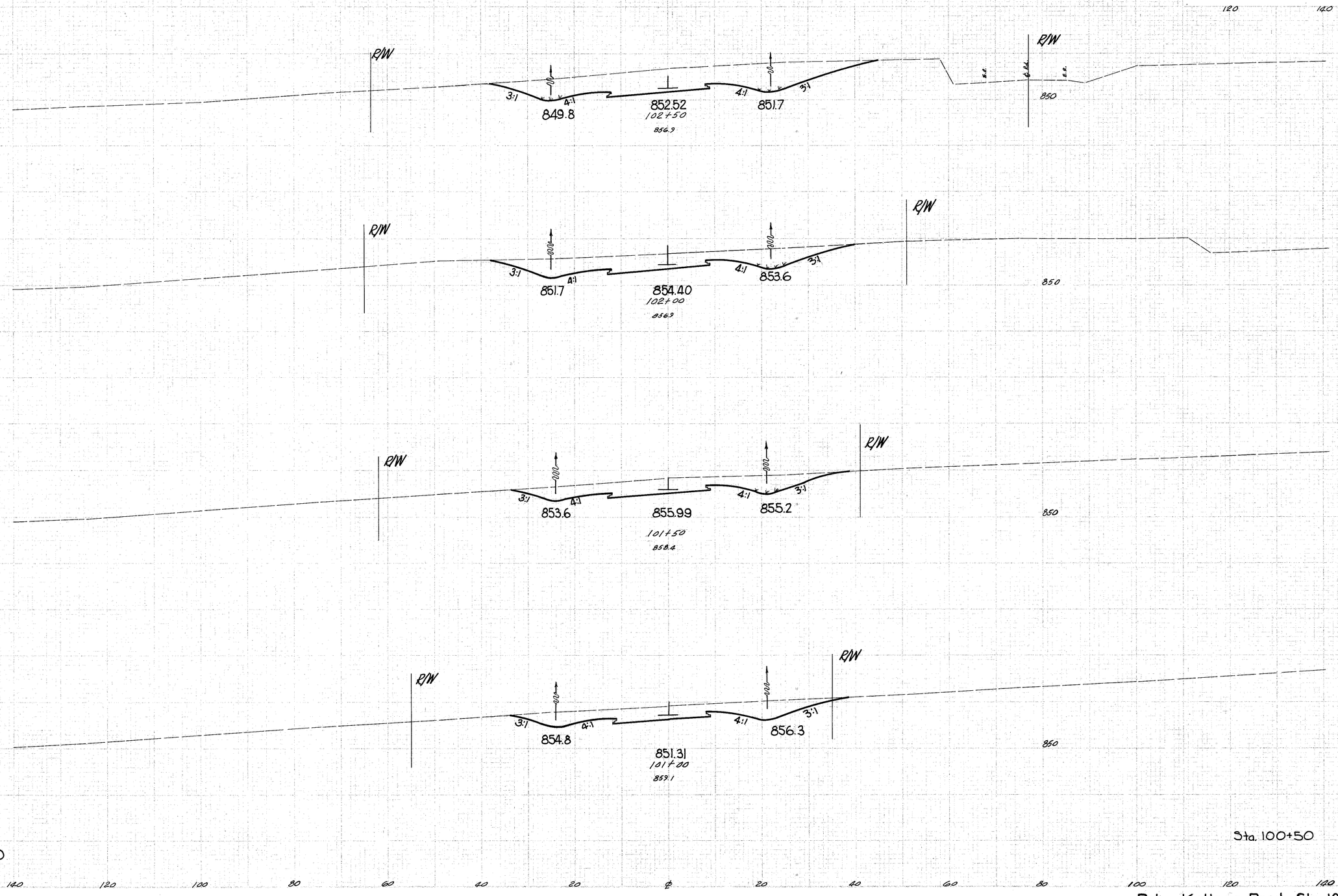
Reloc. Kellogg Road Sta. 87+00 to 88+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

234
306

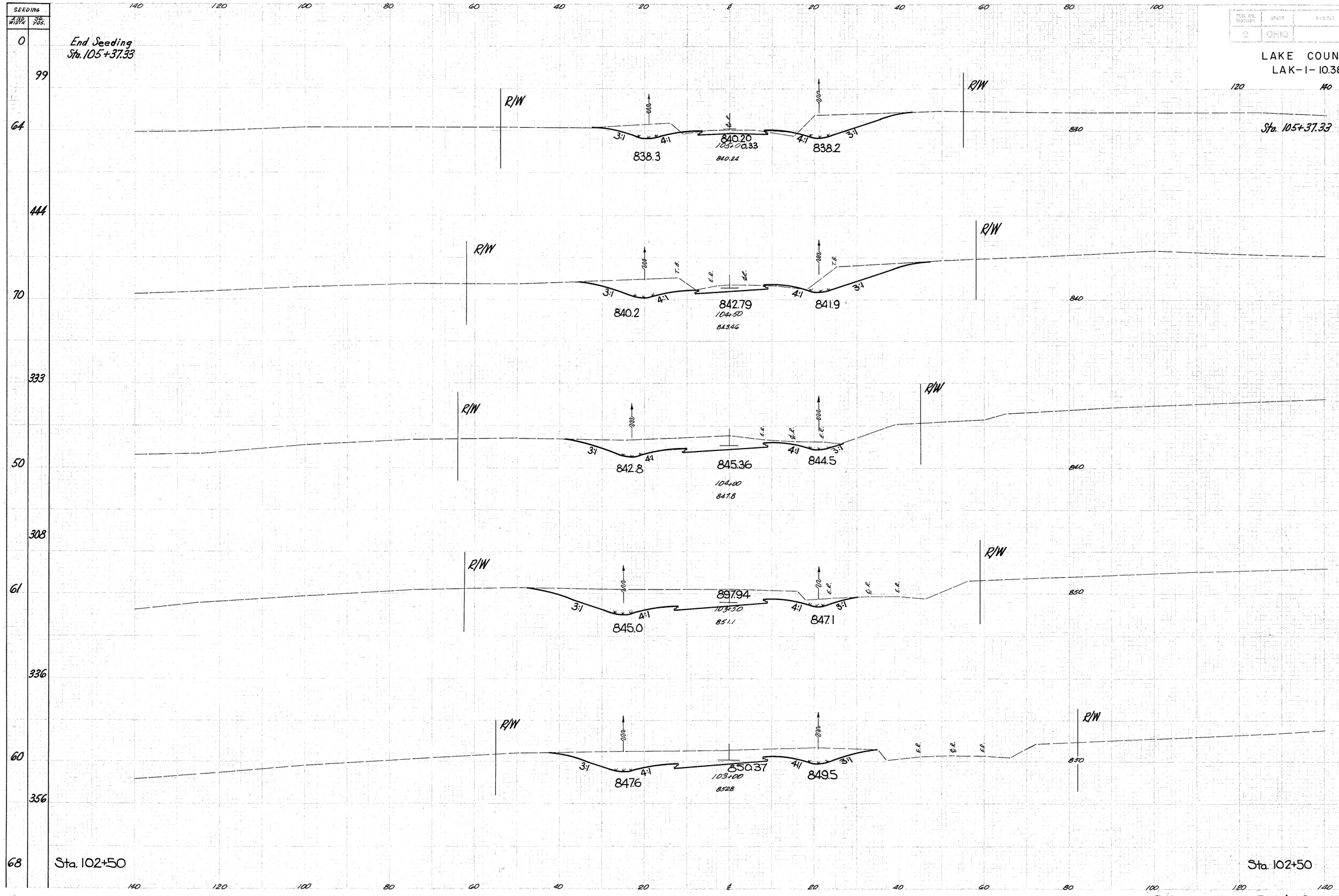
LAKE COUNTY
LAK-1-10.38

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
68			330			
					510	
	364					
63			221			
					368	
	325					
54			176			
					324	
	306					
56			174			
					297	
	256					
36			147			



Reloc. Kellogg Road Sta. 101+00 to 102+50

LAKE COUNTY
LAK-1-10.38

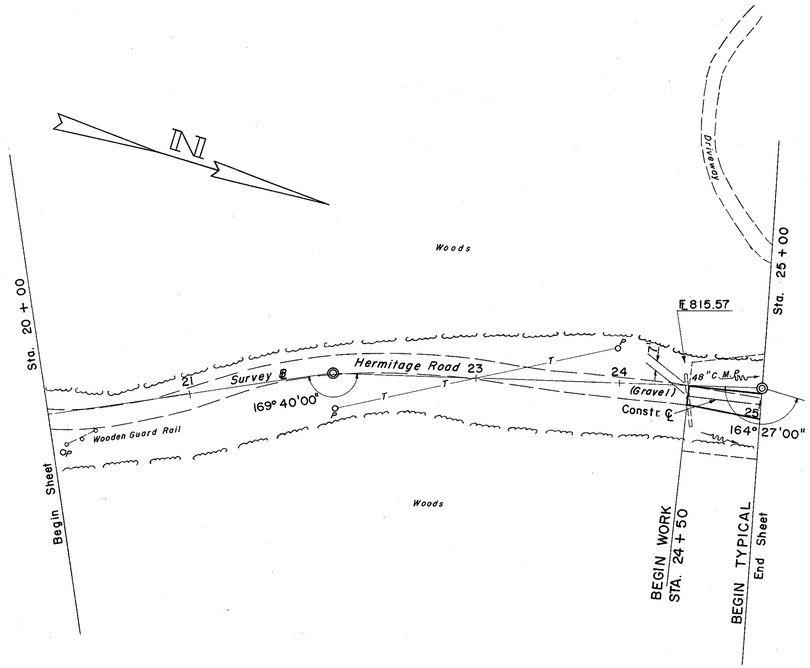


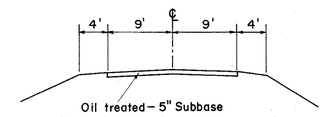
Reloc. Kellogg Road Sta. 103+00 to 105+00.3

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

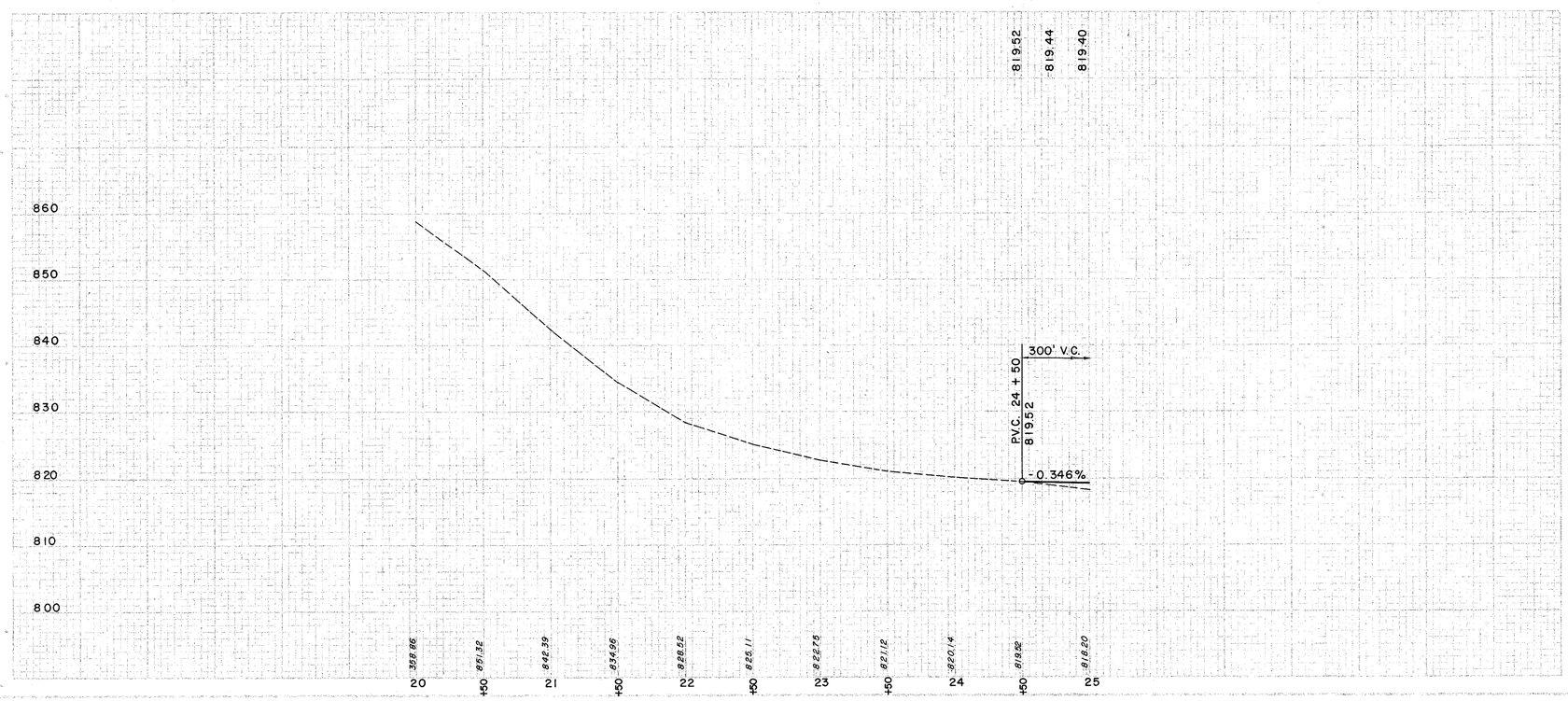
236
306

LAKE COUNTY
LAK-1-10.38





TYPICAL SECTION
EXISTING HERMITAGE RD.



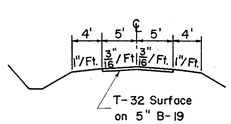
EXCAVATION	=	49 C.Y.
EMBANKMENT	=	40 C.Y.
EMBANKMENT + 18 %	=	47 C.Y.

HERMITAGE ROAD STA. 20 + 00 TO STA. 25 + 00

MICROFILMED JUL 27 1966

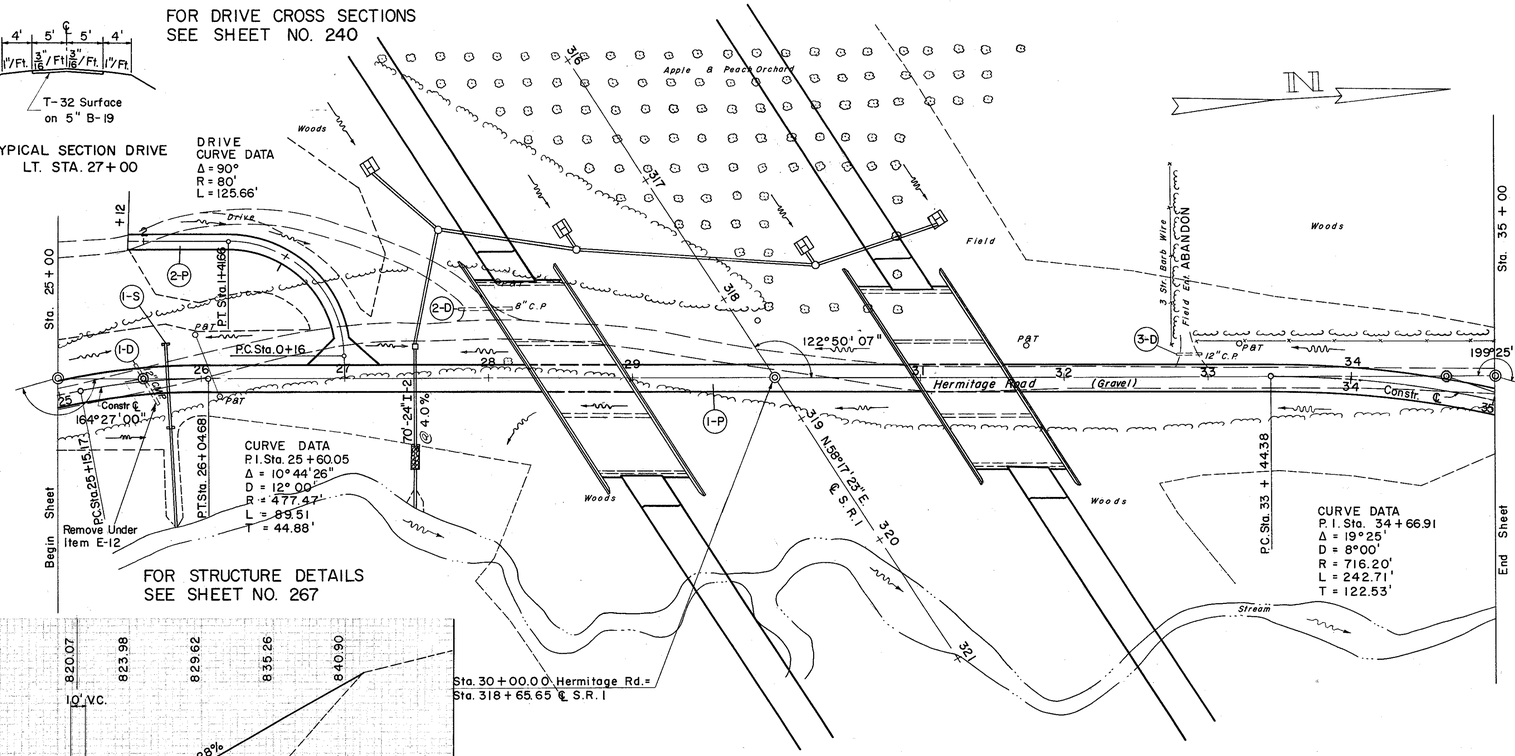
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38



TYPICAL SECTION DRIVE
LT. STA. 27+00

FOR DRIVE CROSS SECTIONS SEE SHEET NO. 240



FOR STRUCTURE DETAILS SEE SHEET NO. 267

(P) PAVEMENT

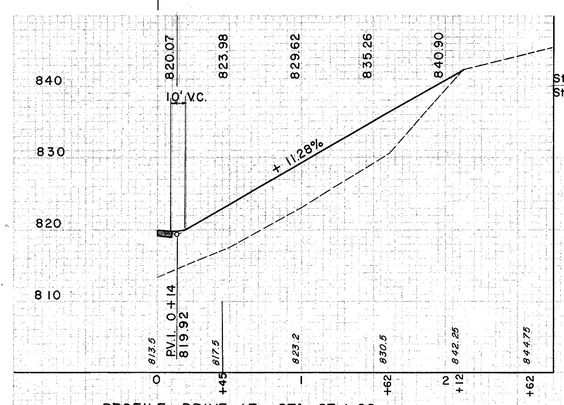
REF. NO.	STATION FROM	STATION TO	T-32 ROAD MIX BIT. MATL.	T-32 SEAL COAT BIT. MATL.	T-32 NO.46 AGGR. FOR ROAD MIX	T-32 NO.6 AGGR. FOR CHOKE	T-32 NO.6 AGGR. FOR SEAL COAT	T-30 BIT. PRIME COAT	E-1 COMPACT. SUBGR.	B-19 5" AGGR. BASE COURSE	I-9 STONE UNDER DRAIN (NO.2)	I-22 4" SUBBASE
			GAL.		C.Y.			GAL.	S.Y.	C.Y.	L.F.	C.Y.
1-P	24+50	39+00	2610	725	162	12	23	1160	2900	425	423	358
2-P	0+09	2+12	243	68	15	1	2	108	270	38		
	TOTALS		2853	793	177	13	25	1268	3170	463	423	358

(S) STRUCTURES

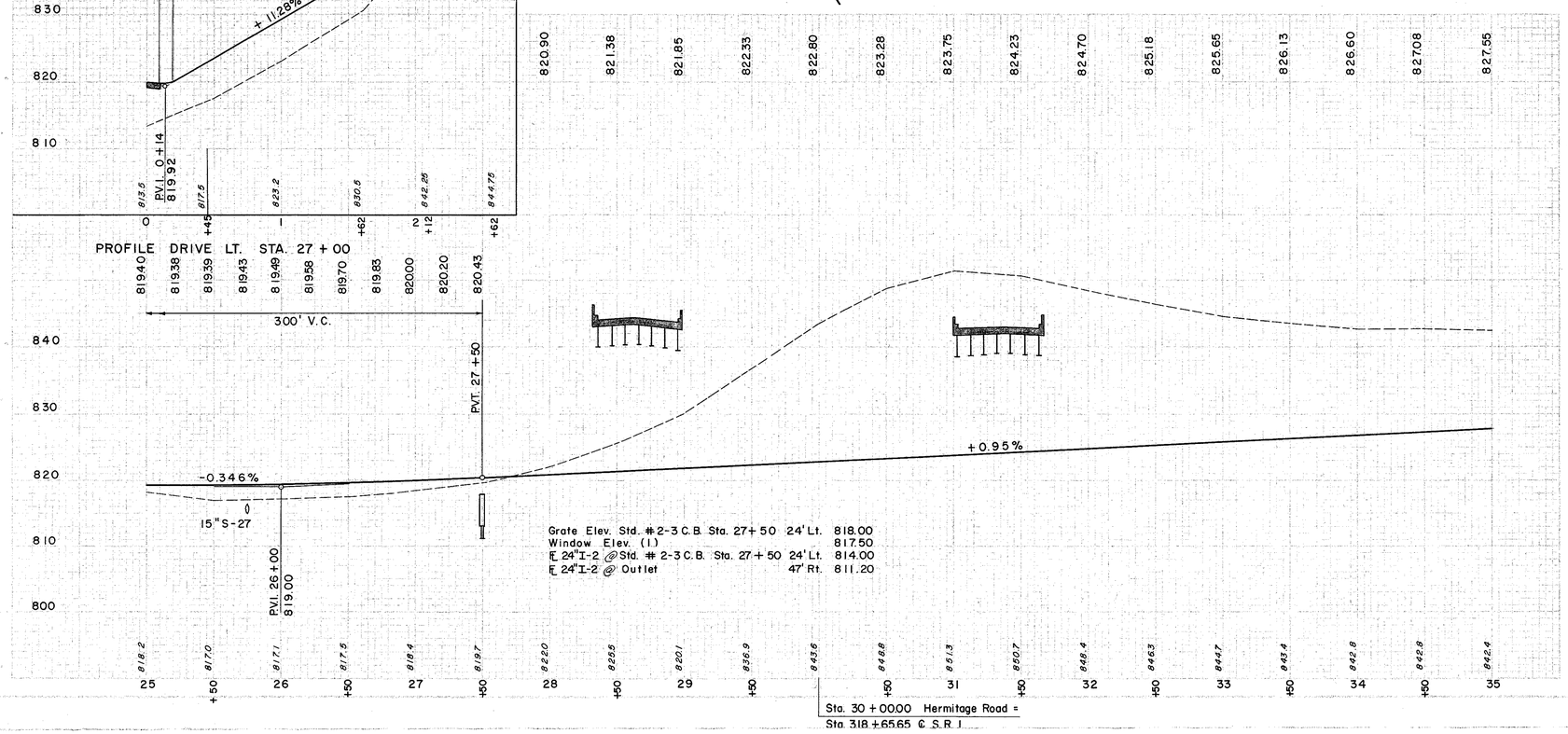
REF. NO.	STATION	SIDE ℄	E-2 EXC. FOR STRUCT.	E-3 CHANNEL EXC.	S-1 CONC. FOR STRUCT. CLASS "E"	L-10 SODDING	S-27 15" PIPE FOR RDWY. CULV.
			C.Y.			S.Y.	L.F.
1-S	25+75	℄	16	12	0.56	6	60

(D) DRAINAGE

REF. NO.	STATION FROM	STATION TO	SIDE ℄	E-12 PIPE REMOVED, 15" & UNDER
				L.F.
1-D	25+60		℄	32
2-D	27+80	28+18	Lt.	38
3-D	32+79	32+97	Lt.	17



PROFILE DRIVE LT. STA. 27+00



SUPERELEVATION TABULATION

STATION	LT. EDGE	℄	RT. EDGE
25+00	819.55	819.40	819.25
+25	819.67	819.38	819.09
+50	819.82	819.39	818.96
+75	819.95	819.43	818.91
26+00	819.89	819.49	819.09
+25	819.85	819.58	819.31
+50	819.85	819.70	819.55
+75	819.85	819.83	819.69
27+00	819.95	820.00	819.86
+25	820.09	820.20	820.06
+50	820.29	820.43	820.29
32+00	824.56	824.70	824.56
+25	824.83	824.94	824.80
+50	825.13	825.18	825.04
+75	825.44	825.41	825.27
33+00	825.80	825.65	825.50
+25	826.17	825.89	825.61
+50	826.53	826.13	825.73
+75	826.89	826.36	825.83
34+00	827.25	826.60	825.95
+25	827.59	826.84	826.09
+50	827.83	827.08	826.33
+75	828.06	827.31	826.56
35+00	828.30	827.55	826.80
+25	828.48	827.79	827.10
+50	828.59	828.03	827.47
+75	828.66	828.22	827.78
36+00	828.66	828.35	828.04
+25	828.59	828.40	828.21
+50	828.43	828.37	828.23
+75	828.23	828.26	828.12
37+00	827.99	828.08	827.94
+25	827.68	827.82	827.68

EXCAVATION	=	43,172 C.Y.
EMBANKMENT	=	11,064 C.Y.
EMBANKMENT × 18 %	=	13,056 C.Y.

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

238
306

LAKE COUNTY
LAK-1-10.38

EXCAVATION	=	5529 C.Y.
EMBANKMENT	=	2 C.Y.
EMBANKMENT + 18 %	=	2 C.Y.

HERMITAGE ROAD STA. 35 + 00 TO STA. 40 + 00

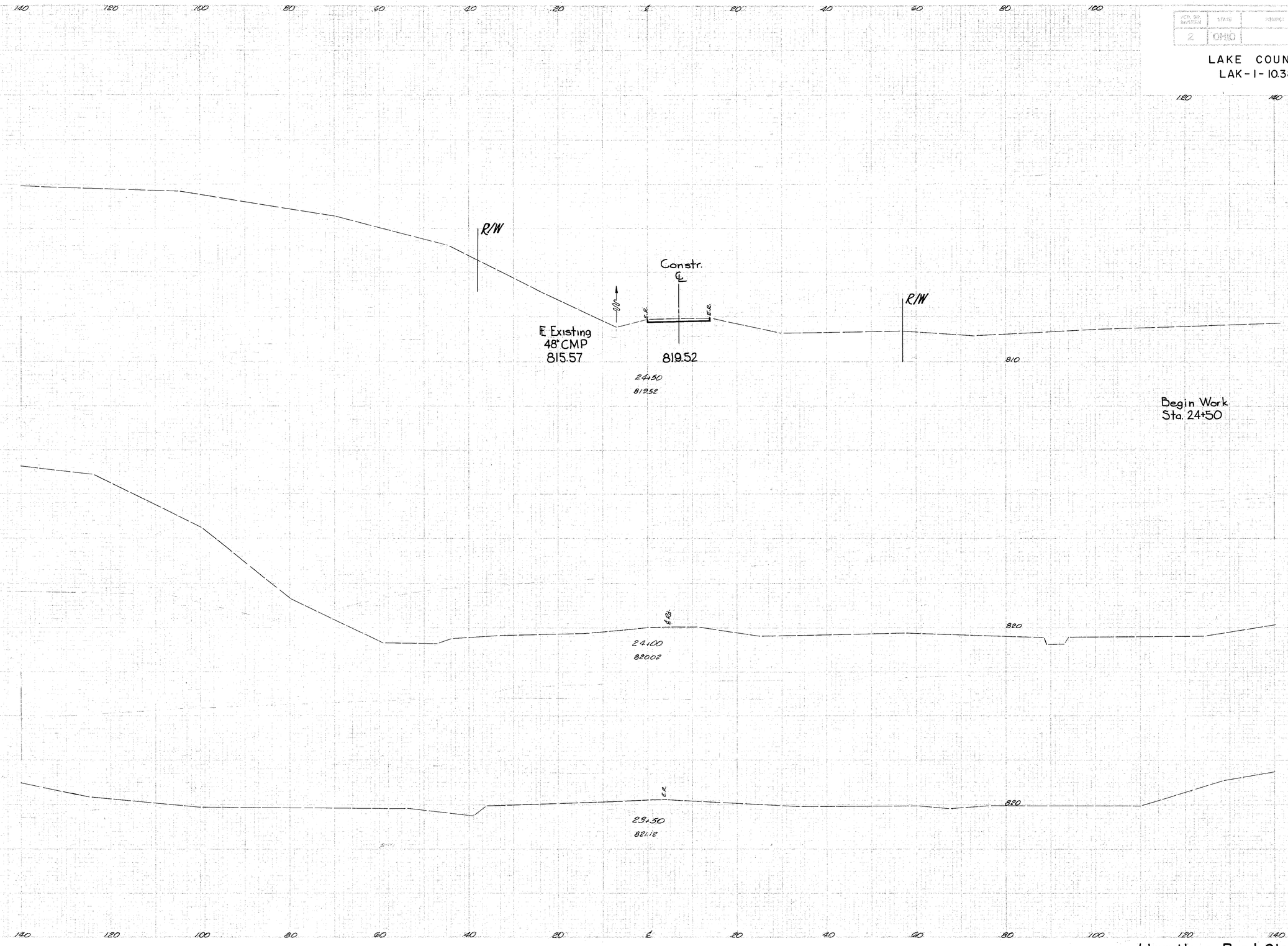
Seeding	
End Width	Sq. Yds.
0	

FED. RD. SECTION	STATE	PROJECT		
2	OHIO			

239
306

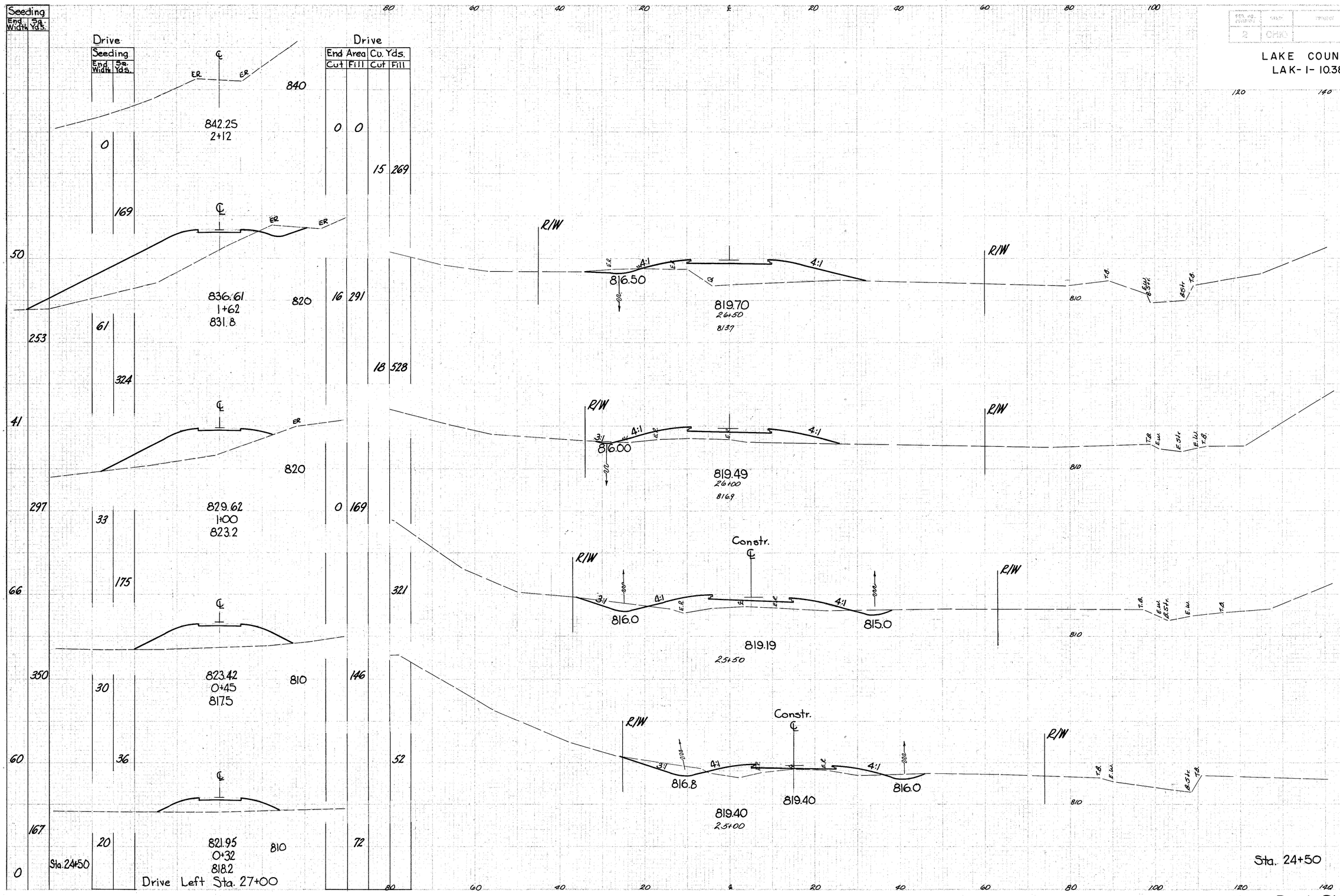
LAKE COUNTY
LAK-1-10.38

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
11	0		



Hermitage Road Sta. 23+50 to 24+50

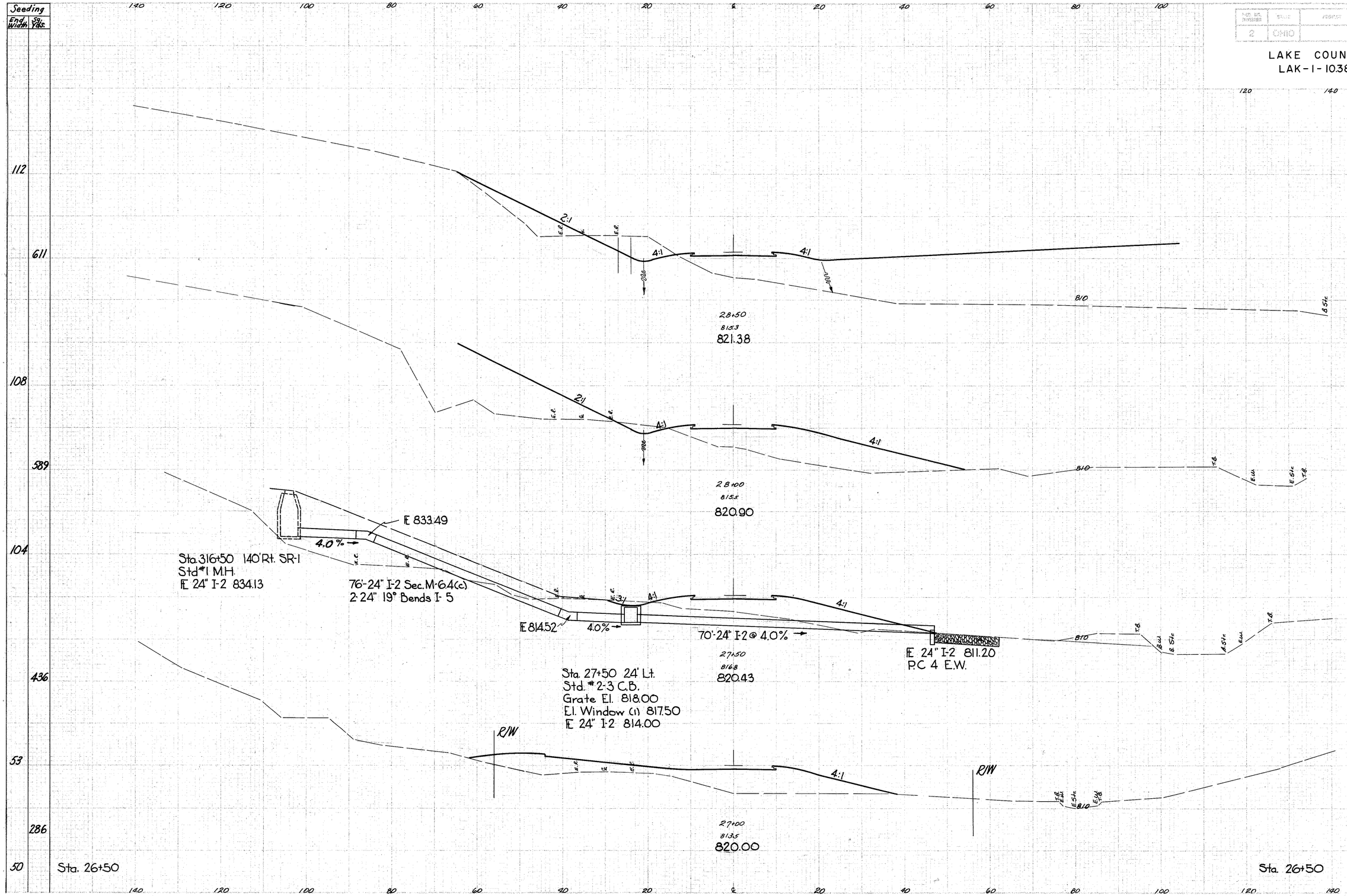
LAKE COUNTY
LAK-1-10.38



Hermitage Road Sta. 25+00 to 26+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38



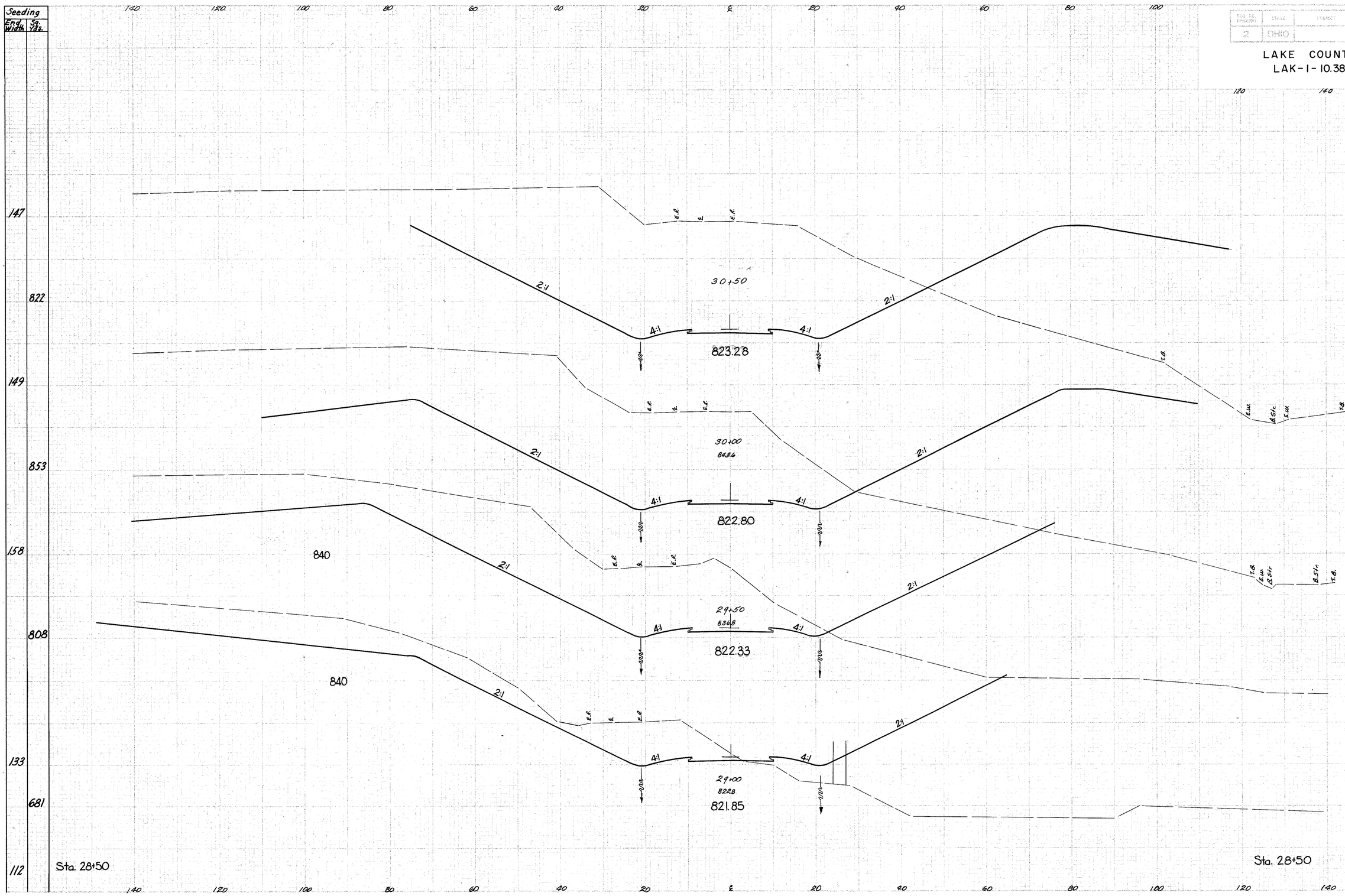
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
68	646		
		76	1088
14	529		
		19	684
6	210		
		6	493
0	322		
		7	457
8	172		

Hermitage Road Sta. 27+00 to 28+50

RTE. NO.	STATE	PROJECT	
2	OHIO		

242
306

LAKE COUNTY
LAK-I-10.38



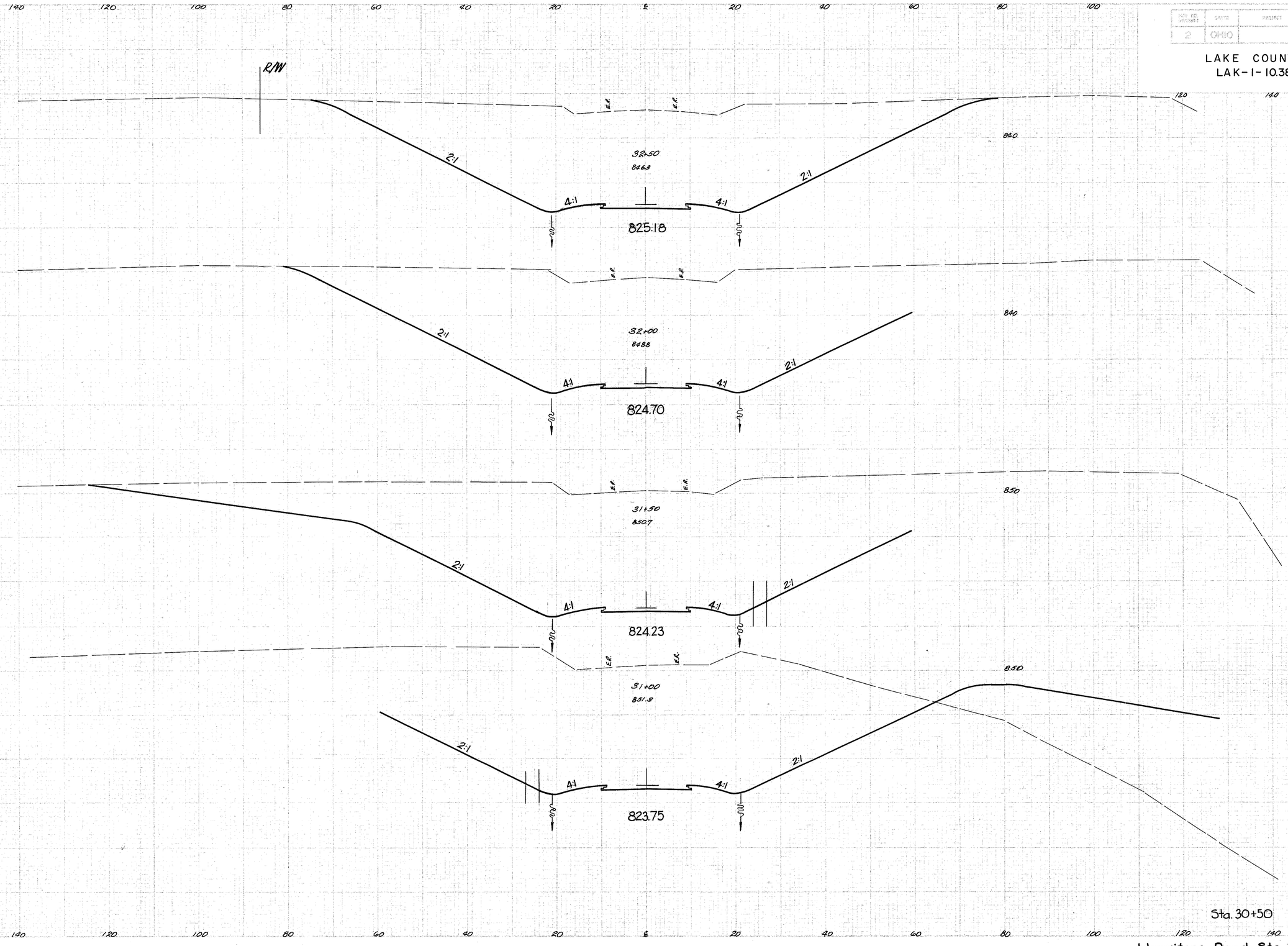
Hermitage Road Sta. 29+00 to 30+50

SHT. NO.	STATE	PROJECT	
2	OHIO		

243
306

LAKE COUNTY
LAK-1-10.38

Seeding End Width	Seeding Sq. Yds.
148	
	781
133	
	692
116	
	669
125	
	756
147	



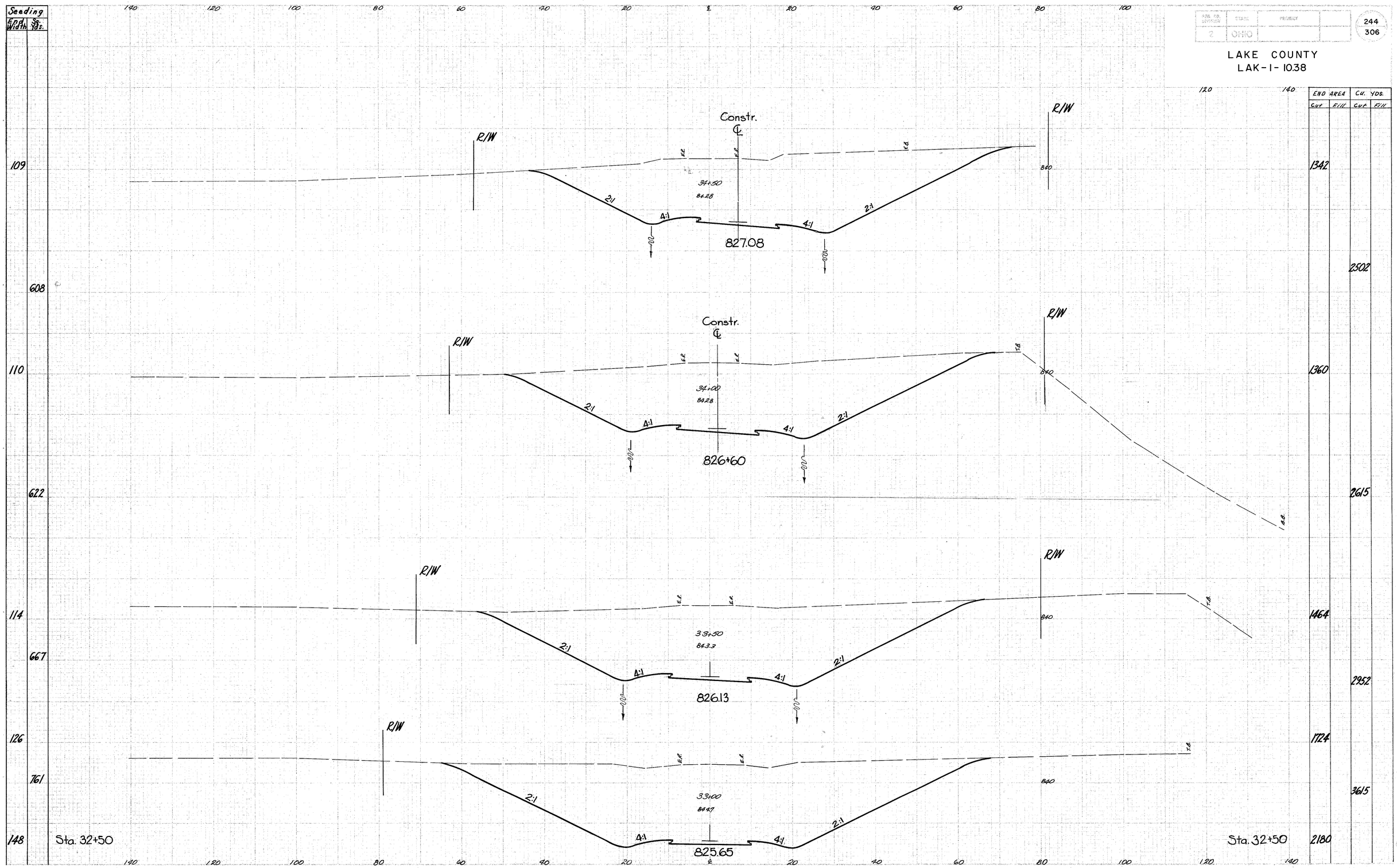
END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
2180			
		4458	
2635			
		5065	
2835	0		
		5257	26
2843	28		
		4991	365
2547	366		

Hermitage Road Sta. 31+00 to 32+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

244
306

LAKE COUNTY
LAK-1-10.38

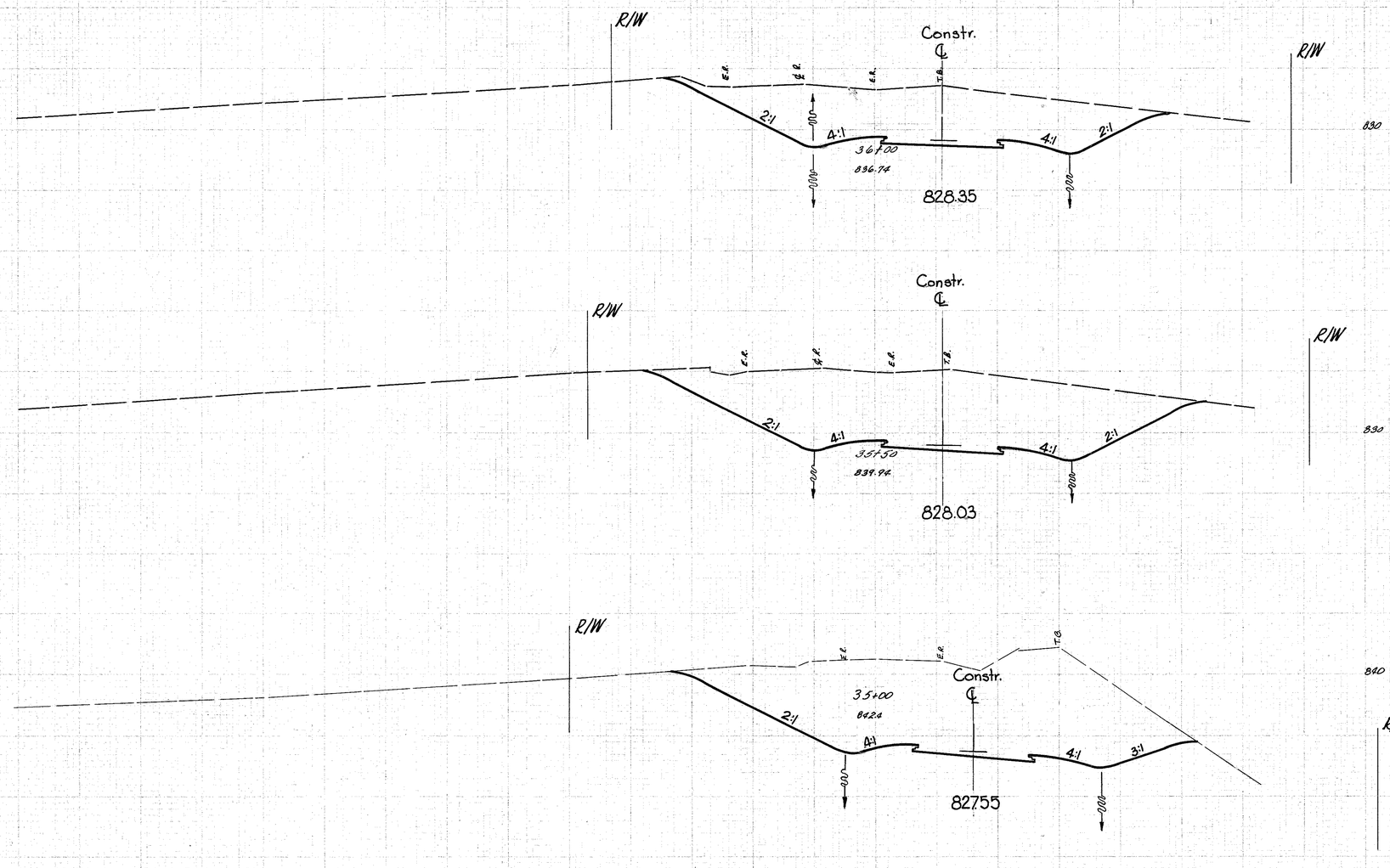


Hermitage Road Sta. 33+00 to 34+50

FED. ROAD DIVISION	STATE	PROJECT		TOTAL SHEETS
2	OHIO			245 / 306

LAKE COUNTY
LAK-1-10.38

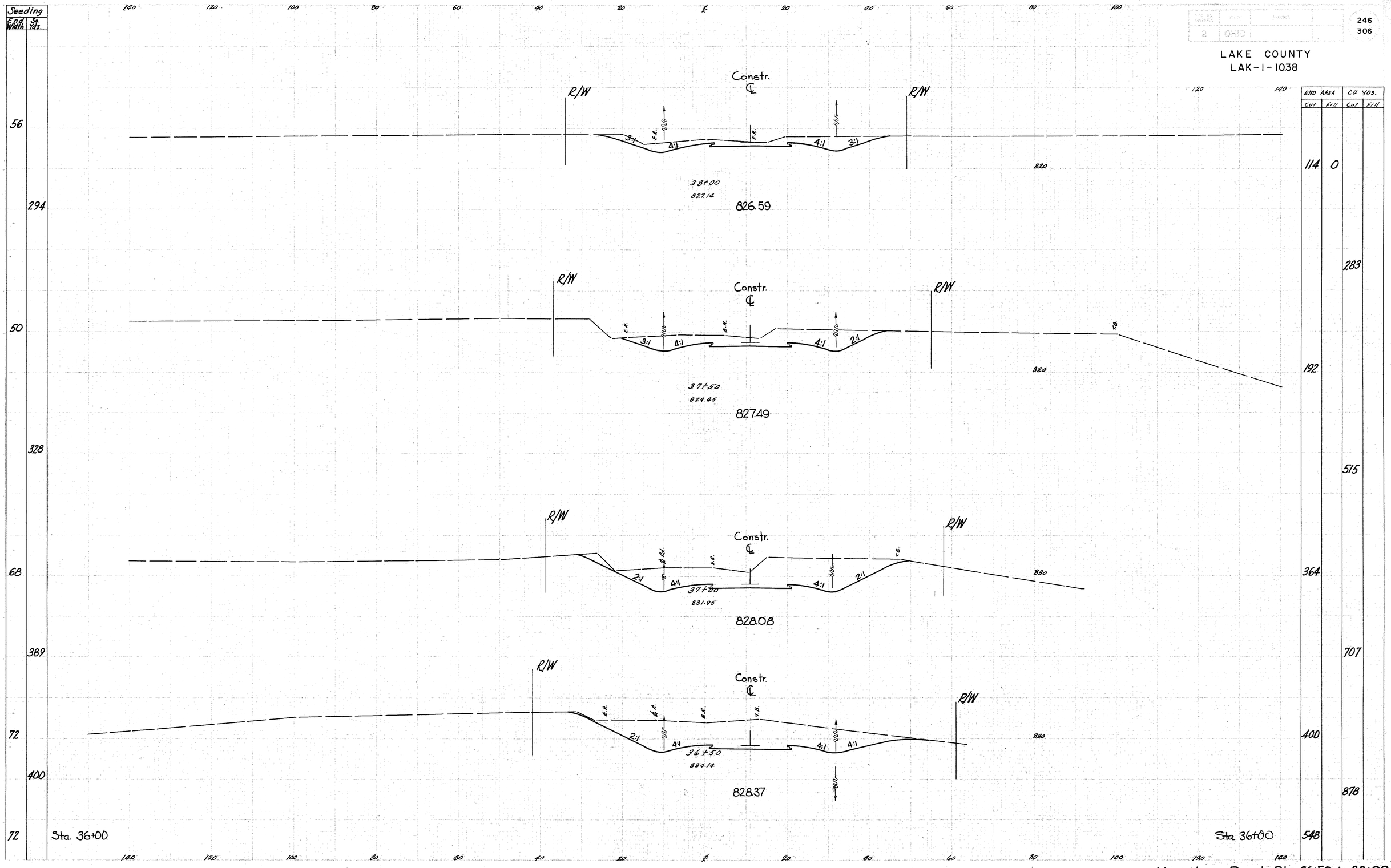
Seeding Epd. Width	Seeding Sq. Yds.		END AREA Cut	END AREA Fill	CU. YDS. Cut	CU. YDS. Fill
72	425		548		1276	
81	428		830		1672	
73	506		976		2146	
109		Sta. 34+50	1342			



Sta. 34+50

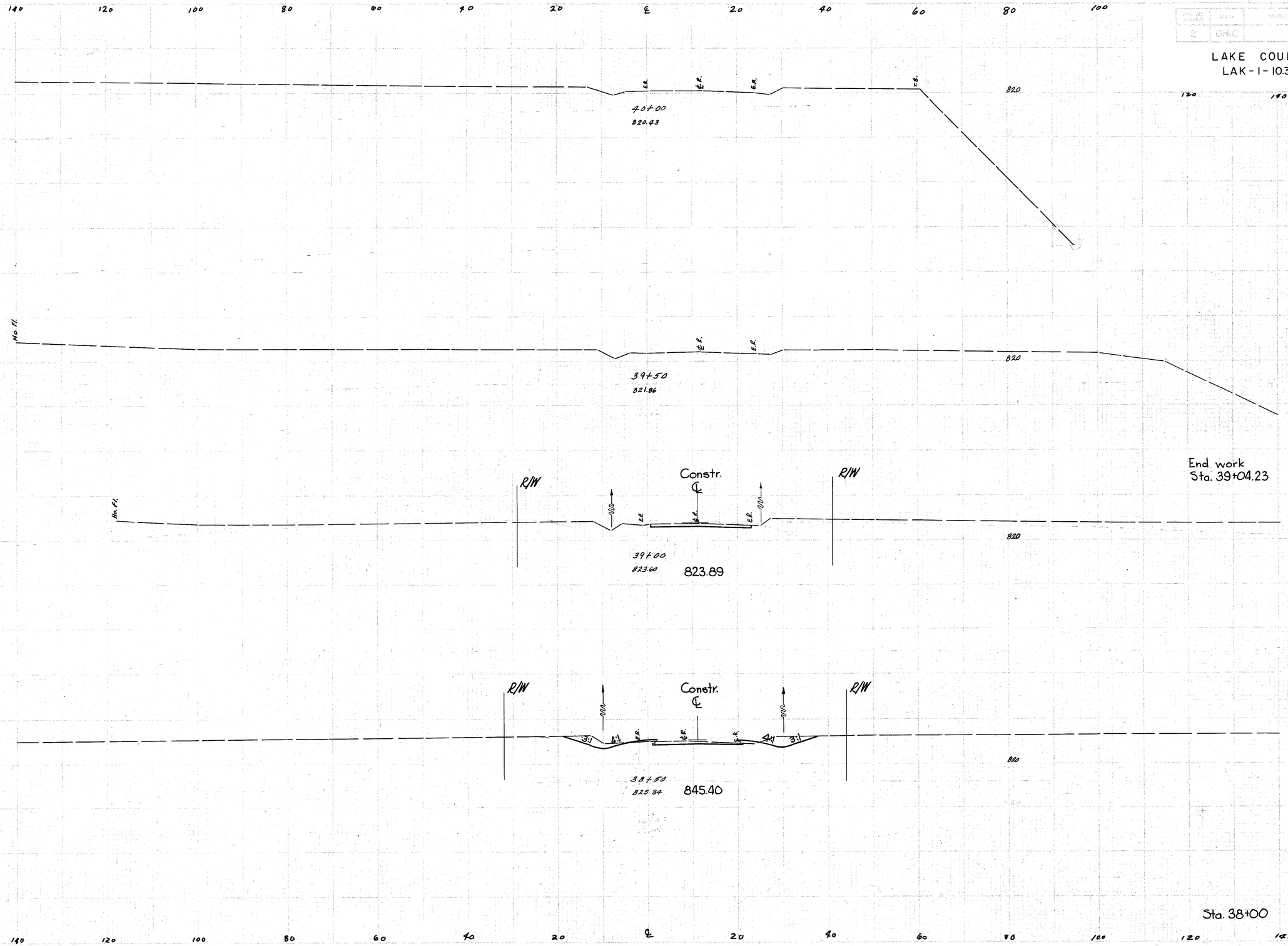
Hermitage Road Sta. 35+00 to 36+00

LAKE COUNTY
LAK-1-10.38



Hermitage Road Sta. 36+50 to 38+00

LAKE COUNTY
LAK-1-10.38



Seeding End Width	Seeding Sq. Yds.
0	
100	
36	
256	
56	

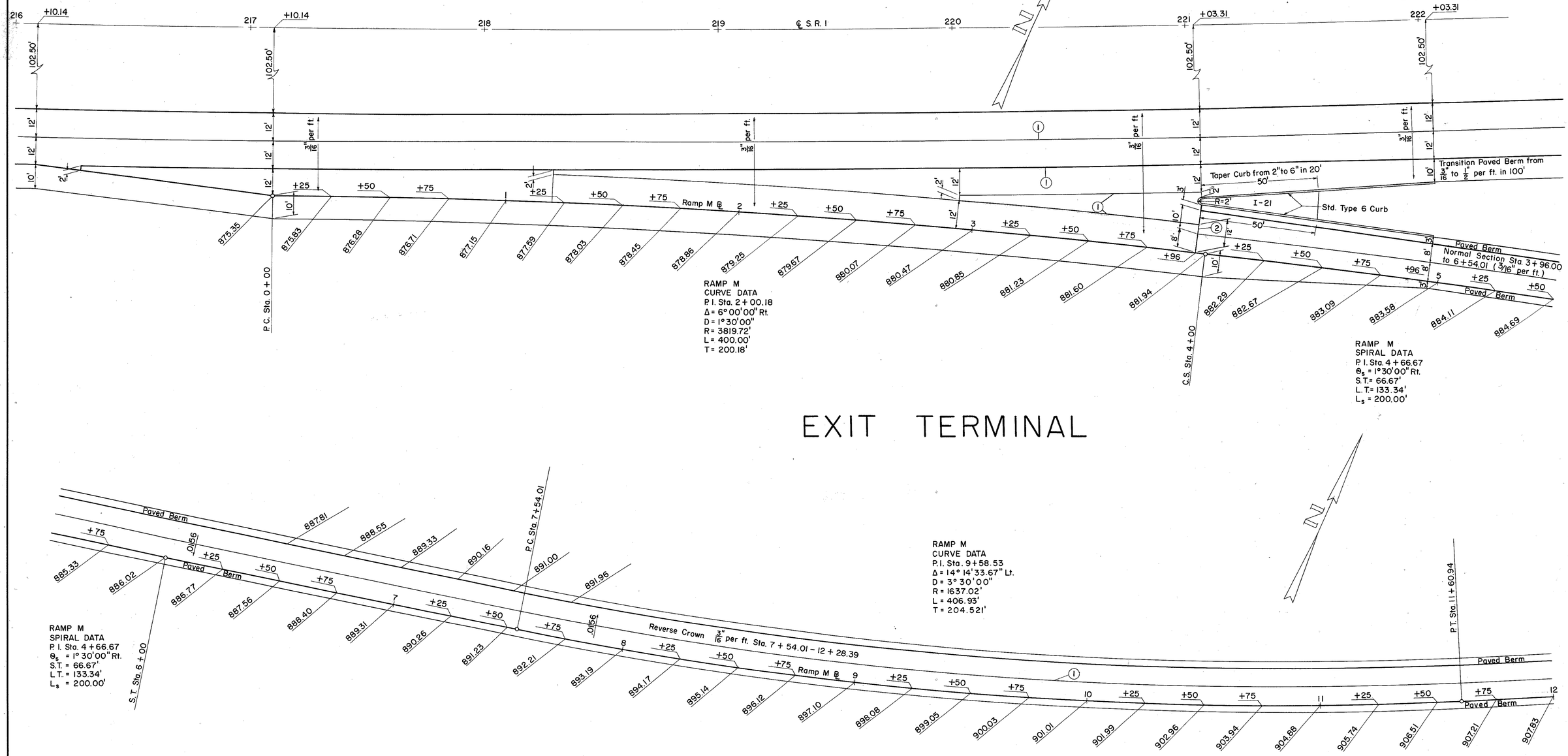
End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
0			
13	0		1
		52	1
43	1		
		145	1
114	0		

Hermitage Road Sta. 38+50 to 40+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

248
306

LAKE COUNTY
LAK-I-10.38



CONSTRUCTION JOINT LEGEND

① Standard Longitudinal Joint.

② Standard Expansion Joint.

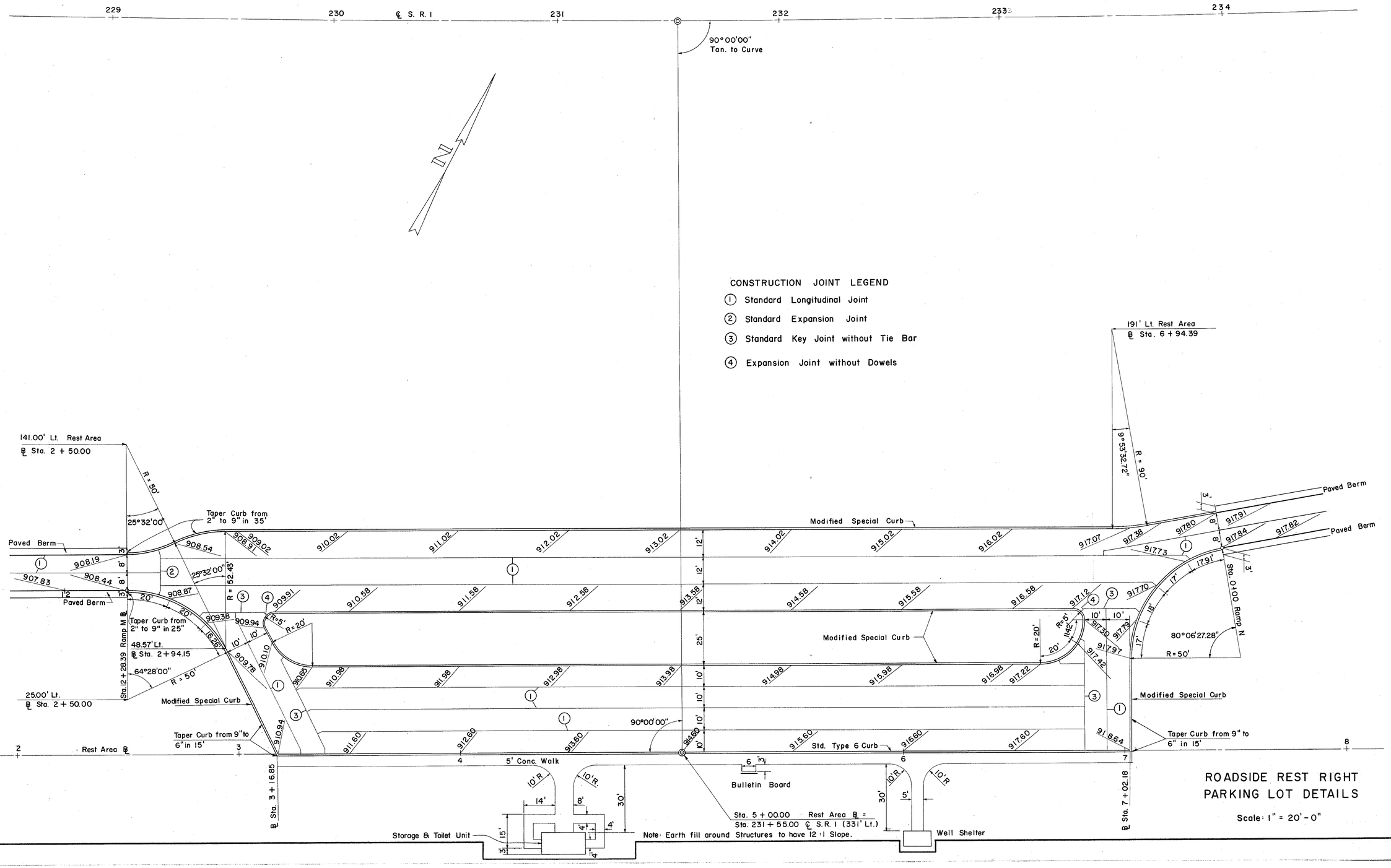
ROADSIDE REST
RAMP M DETAIL

SCALE: 1" = 20'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

249
306

LAKE COUNTY
LAK-1-10.38



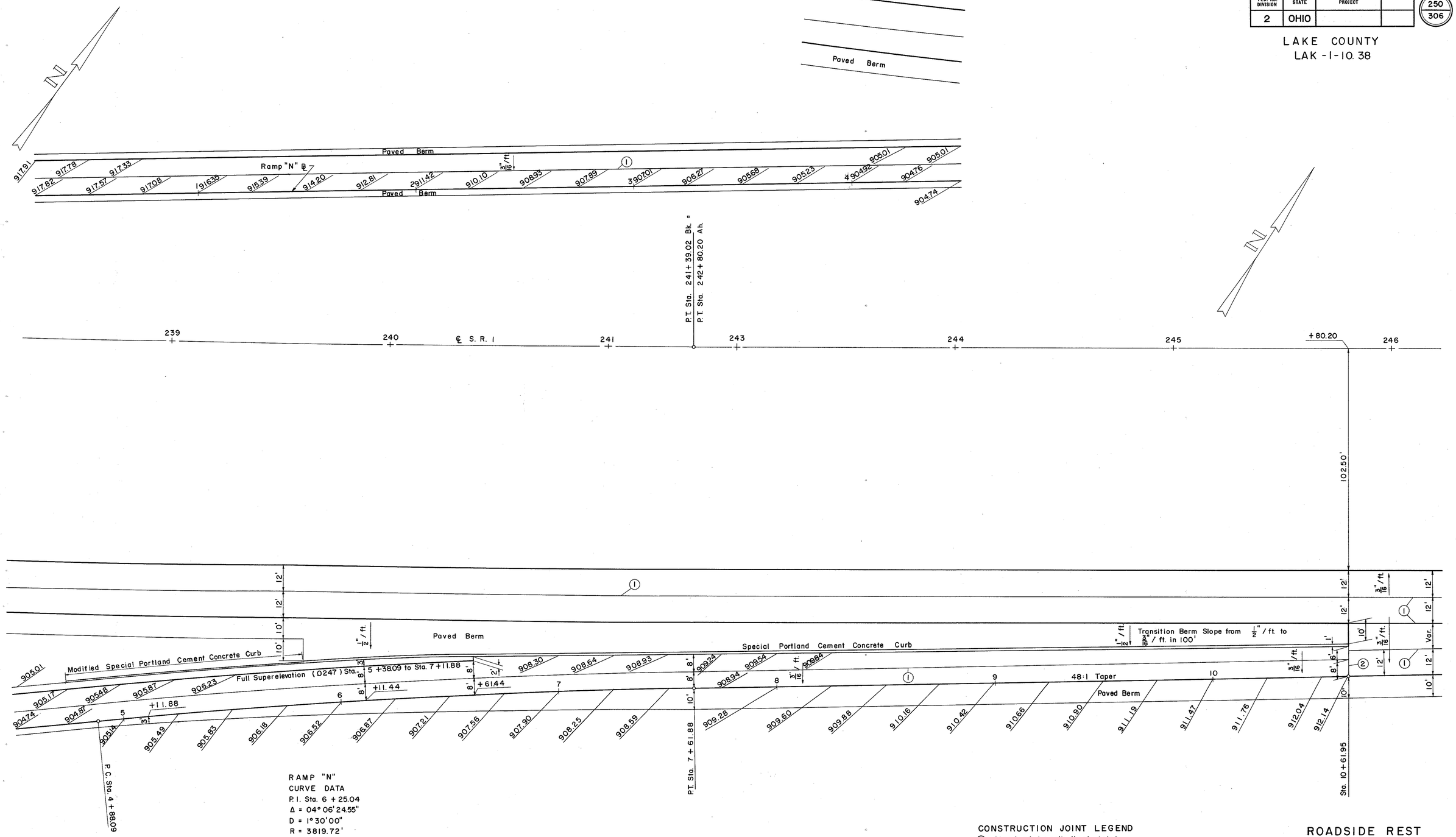
ROADSIDE REST RIGHT
PARKING LOT DETAILS

Scale: 1" = 20'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

250
306

LAKE COUNTY
LAK-1-10.38



RAMP "N"
CURVE DATA
P.I. Sta. 6 + 25.04
Δ = 04° 06' 24.55"
D = 1° 30' 00"
R = 3819.72'
L = 273.79'
T = 136.95'

ENTRANCE TERMINAL

CONSTRUCTION JOINT LEGEND
① Standard Longitudinal Joint.
② Standard Expansion Joint.

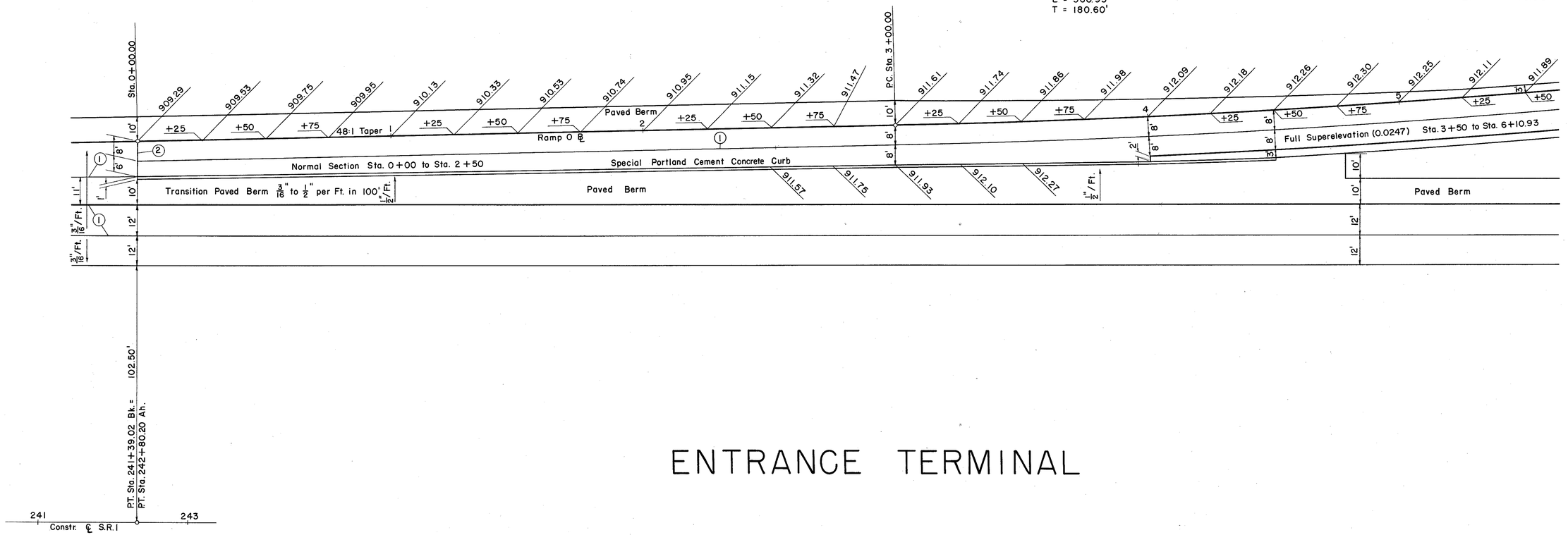
ROADSIDE REST
RAMP N DETAIL
SCALE: 1" = 20'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

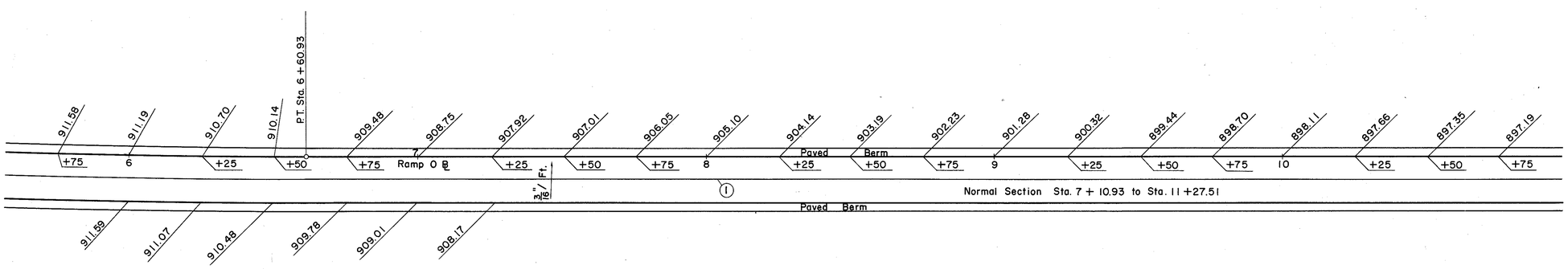
251
306

LAKE COUNTY
LAK-1-10.38

RAMP O
CURVE DATA
P.I. Sta. 4 + 80.60
Δ = 5° 24' 50.44" Lt.
D = 1° 30' 00"
R = 3819.72'
L = 360.93'
T = 180.60'



ENTRANCE TERMINAL



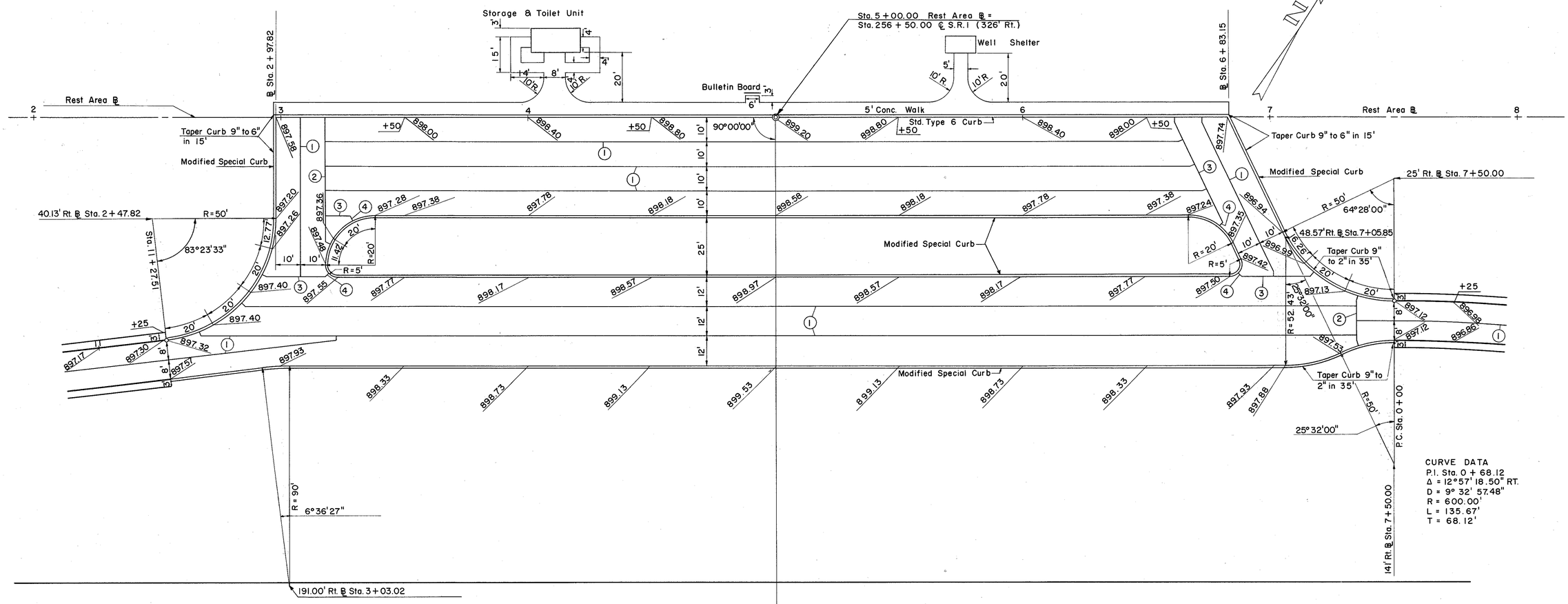
CONSTRUCTION JOINT LEGEND
① Standard Longitudinal Joint.
② Standard Expansion Joint.

ROADSIDE REST
RAMP O DETAIL
SCALE: 1"=20'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

Note: Earth fill around Structures to have 12:1 Slope.



CURVE DATA
P.I. Sta. 0+68.12
Δ = 12°57' 18.50" RT.
D = 9° 32' 57.48"
R = 600.00'
L = 135.67'
T = 68.12'

CONSTRUCTION JOINT LEGEND

1. Standard Longitudinal Joint
2. Standard Expansion Joint
3. Standard Key Joint without Tie Bar
4. Expansion Joint without Dowels

ROADSIDE REST LEFT
PARKING LOT DETAILS

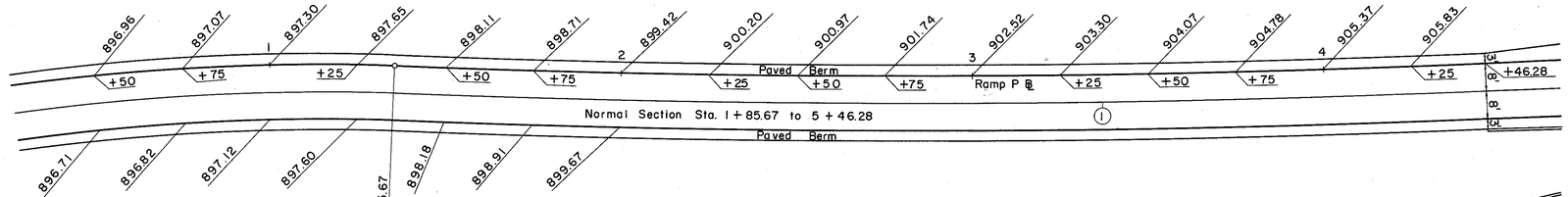
Scale: 1" = 20'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

253
306

LAKE COUNTY
LAK-I-10.38

RAMP P
CURVE DATA
P.I. Sta. 5+69.36
Δ = 12°57'18.50" Lt.
D = 1° 30'00"
R = 3819.72'
L = 863.68'
T = 433.69'



RAMP P
CURVE DATA
P.I. Sta. 0+68.12
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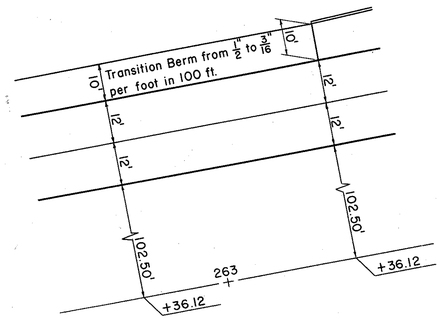
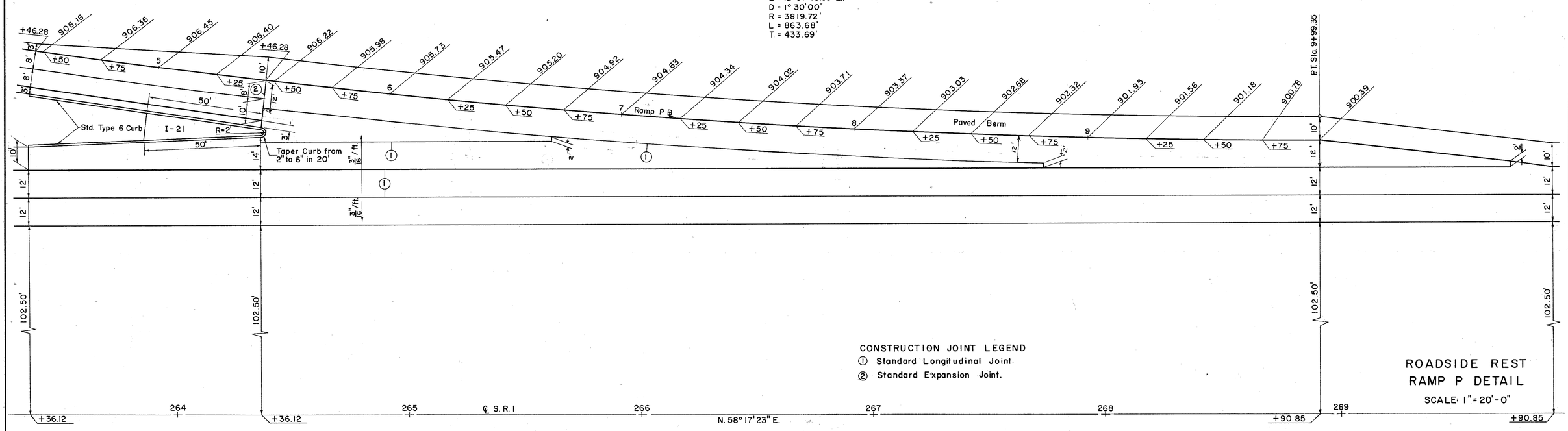
D = 9°32'57.48"
R = 600.00'
L = 135.67'
T = 68.12'



EXIT TERMINAL

RAMP P
CURVE DATA
P.I. Sta. 5+69.36
Δ = 12°57'18.50" Lt.
D = 1° 30'00"
R = 3819.72'
L = 863.68'
T = 433.69'



CONSTRUCTION JOINT LEGEND
① Standard Longitudinal Joint.
② Standard Expansion Joint.

ROADSIDE REST
RAMP P DETAIL
SCALE: 1" = 20'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

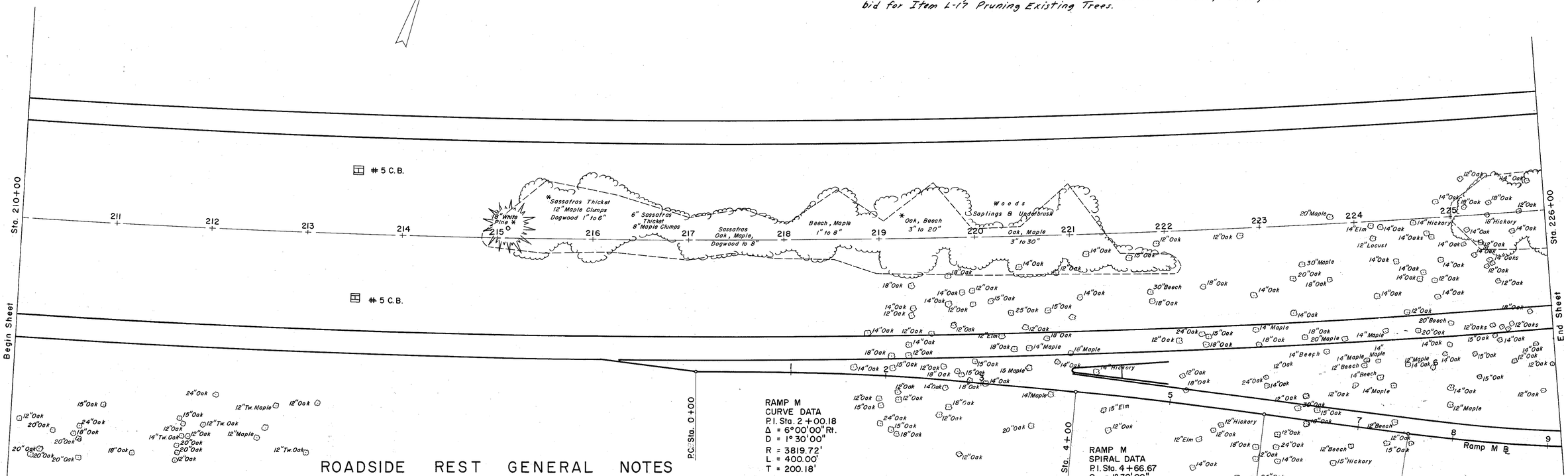
254
306

LAKE COUNTY
LAK-1-10.38

CURVE DATA
P.I. Sta. 206+88.93
Δ = 33°09'33" Lt.
D = 0°28'00"
R = 12,277.66
L = 7105.36
T = 3655.27
E = 532.51'

All trees within the Roadside Rest Areas, except those marked by the Engineer for removal, shall be pruned in accordance with the provisions of Item L-17. In lieu of the provisions of Sec. L-17.07 and L-17.08, All work necessary to complete this Item shall be paid for at the contract lump sum price bid for Item L-17 Pruning Existing Trees.

The number of trees to be pruned has been estimated at 75. This estimate is approximate. Payment for the pruning of any additional trees within the park area shall be included in the lump sum price bid for Item L-17 Pruning Existing Trees.



ROADSIDE REST GENERAL NOTES

ITEM SPECIAL–WELL SHELTER:

METHOD OF MEASUREMENT

THE WELL SHELTER AND ALL APPURTENANCES AS DETAILED ON SHEET NO. 25 OF 28 SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETE AND ACCEPTED.

BASIS OF PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM SPECIAL WELL SHELTER" COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, AND FOR FURNISHING, HAULING AND PLACING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

ITEM SPECIAL – PARK TABLE:

METHOD OF MEASUREMENT

THE PARK TABLE AND SUPPORTING SLAB AS DETAILED ON STD. DRWG. R.R.A. NO. 2 SHALL BE CONSIDERED ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETE AND ACCEPTED.

BASIS OF PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT PRICE BID FOR EACH "ITEM SPECIAL PARK TABLE" COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, AND FOR FURNISHING, HAULING AND PLACING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

ITEM SPECIAL–BULLETIN BOARD:

METHOD OF MEASUREMENT

THE BULLETIN BOARD WITH ALL APPURTENANCES AS DETAILED ON STD. DRWG. R.R.A. NO. 3 SHALL BE CONSIDERED ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETE AND ACCEPTED.

BASIS OF PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM SPECIAL BULLETIN BOARD" COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, AND FOR FURNISHING, HAULING AND PLACING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

ITEM SPECIAL– PRIVY AND STORAGE SHED:

METHOD OF MEASUREMENT

THE PRIVY AND STORAGE SHED WITH ALL APPURTENANCES AS DETAILED ON STD. DRWG. R.R.A. NO. 4A, 4B, 4C SHALL BE CONSIDERED ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETE AND ACCEPTED. CONCRETE WALKS ARE NOT A PART OF THIS ITEM.

BASIS OF PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT PRICE BID FOR EACH "ITEM SPECIAL PRIVY AND STORAGE SHED" COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, AND FOR FURNISHING, HAULING AND PLACING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

NOTE:

THE "TOILET RISER WITHOUT SEAT" SPECIFIED ON STD. DRWG. NO. R.R.A. NO. 4-C SHALL BE AS MANUFACTURED BY MANSFIELD SANITARY POTTERY INC., PERRYSVILLE, OHIO, OR AN APPROVED EQUAL.

SEEDING AND PROTECTING:

SEEDING SHALL CONFORM TO ITEM L-9 OF THE SPECIFICATIONS, EXCEPT THAT THE SEED BED SHALL BE PREPARED TO A MINIMUM DEPTH OF TWO INCHES AND PROVIDE A SMOOTH SURFACE, FREE OF LOW AREAS WHERE WATER MAY POOL. ALL STONES LARGER THAN ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE SURFACE OF THE SEED BED. HAND RAKING WILL BE REQUIRED IN LAWN AREAS INACCESSIBLE TO MACHINES, AND HAND RAKING MAY BE REQUIRED, IF DIRECTED BY THE ENGINEER, IN ALL LAWN AREAS, IF MACHINES USED DO NOT PROVIDE RESULTS EQUIVALENT TO RESULTS OBTAINED BY HAND RAKING. COST OF THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ROADWAY EXCAVATION, ITEM E-1,

SEED MIXTURE SHALL BE AS FOLLOWS

20% POA PRATENSIS (KENTUCKY BLUE GRASS)
40% FESTUCA RUBRA VAR. (ILLAHEE FESCUE)
40% FESTUCA ELEATIOR VAR (KENTUCKY 31 FESCUE)

PARK AREAS, OTHER THAN THE PARKING LOT, SHALL NOT BE USED FOR STORAGE OF MATERIALS, PARKING OF EQUIPMENT, VEHICLES OR FOR THE LOCATION OF BUILDINGS OF ANY KIND DURING CONSTRUCTION BY THE CONTRACTOR.

L-17 PRUNING EXISTING TREES

IN ADDITION TO THE WORK SPECIFIED, LOW LIMBS SHALL BE REMOVED TO OBTAIN 8 FOOT CLEARANCE ABOVE THE GROUND AS DIRECTED.

ITEM SPECIAL–DRILLED WELLS: (SEE NOTES IN PROPOSAL)

ITEM L-12 – In lieu of mulching as required by Sec. L-12.23, vine planting areas shall be seeded and mulched in accordance with Item L-9 Seeding and Protecting within 48 hours after the vines are planted.

TOPSOIL FOR L-ITEMS

THIS SHALL BE OBTAINED FROM STOCKPILES PROVIDED FOR BY E-1.03 (a). IT SHALL BE USED FOR PREPARATION OF THE FINISH GRADE FOR SEEDING IN THE REST AREAS IN ADDITION TO SHOULDERS SLOPES AND DITCHES PROVIDED FOR BY E-1.05 (d). IT SHALL BE USED AS DIRECTED TO FILL ALL DEPRESSIONS TO OBTAIN EXTRA SMOOTH FINE GRADING AND TO PROVIDE A MINIMUM DEPTH OF 4 INCHES OF TOPSOIL FOR THE REST AREA LAWNS.

ITEM E-9 REMOVAL OF TREES AND STUMPS:

WHERE TREES ARE TO BE REMOVED WITHIN TEN FEET OF TREES THAT ARE TO REMAIN, THE STUMPS SHALL NOT BE GRUBBED AS PER E-1.03 DUE TO DAMAGING ROOTS OF REMAINING TREES. THE STUMPS SHALL BE CUT TO A MINIMUM DEPTH OF EIGHT INCHES BELOW FINISH GRADE WITH A STUMP CHIPPER OR SIMILAR EQUIPMENT. IN ORDER TO PREVENT DAMAGE TO TREE ROOTS, NO CLEAT TRACK EQUIPMENT SHALL BE OPERATED WITHIN TEN FEET OF TREES AND NO EQUIPMENT SHALL BE ALLOWED TO DISTURB THE SOIL SURFACE IN THE VICINITY OF TREES DEEPER THAN SIX INCHES. NO SOIL SHALL BE STOCKPILED OR WASTED BENEATH TREES DURING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY TREES DAMAGED BY VIOLATION OF THE ABOVE NOTE WITH EQUIVALENT DIAMETER TREES OR ENOUGH TREES OF FIVE INCH TO SEVEN INCH DIAMETER TO EQUAL THE DIAMETER OF TREES DAMAGED. THE VARIETY AND NUMBER OF TREES TO BE REPLACED SHALL BE DETERMINED BY THE ENGINEER.

PLANTING PLAN
ROADSIDE REST AREA

SCALE: 1" = 50'

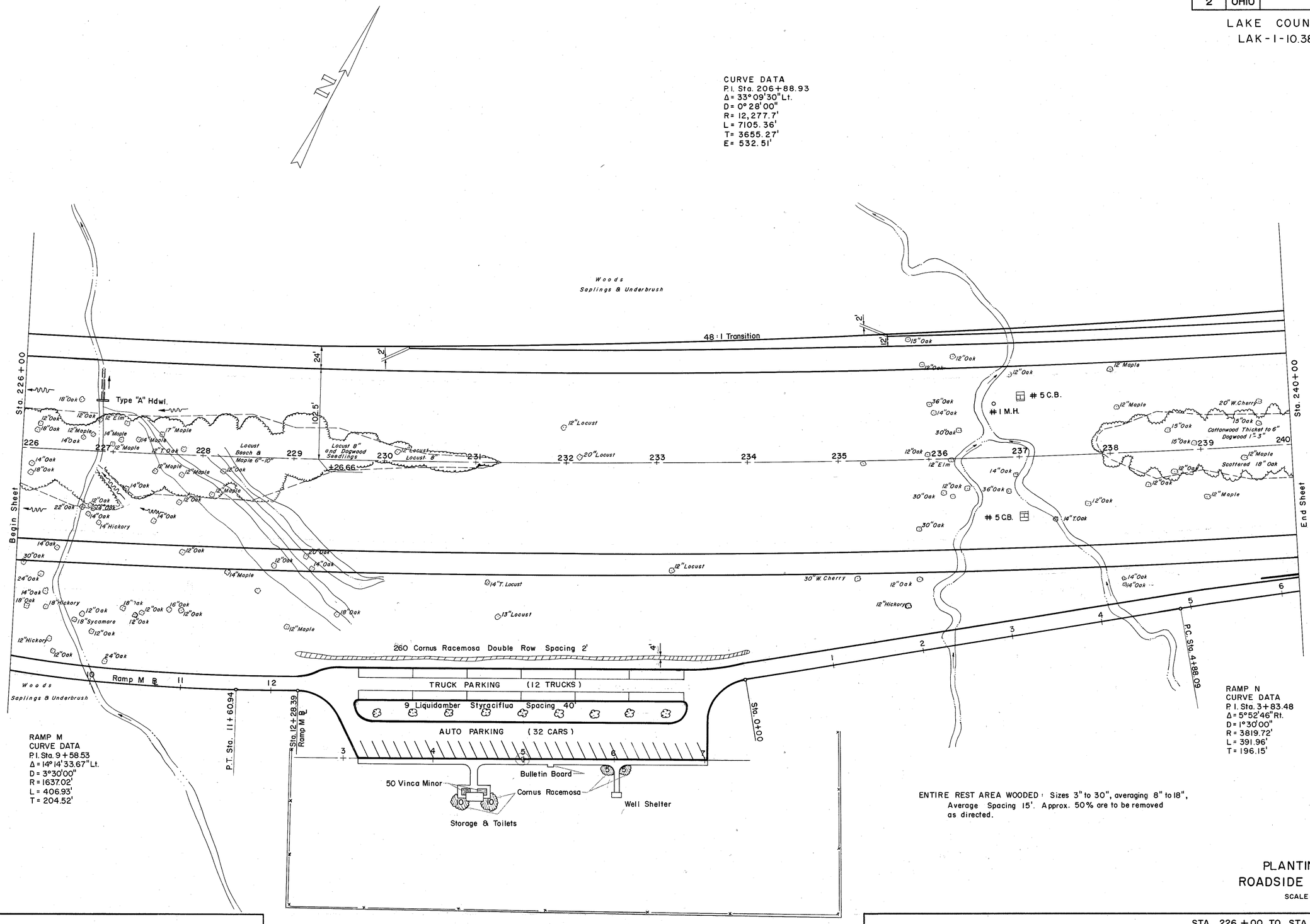
STA. 210 + 00 TO STA. 226 + 00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

255
306

LAKE COUNTY
LAK-I-10.38

CURVE DATA
P.I. Sta. 206+88.93
Δ = 33°09'30" Lt.
D = 0°28'00"
R = 12,277.7'
L = 7105.36'
T = 3655.27'
E = 532.51'



ENTIRE REST AREA WOODED: Sizes 3" to 30", averaging 8" to 18", Average Spacing 15'. Approx. 50% are to be removed as directed.

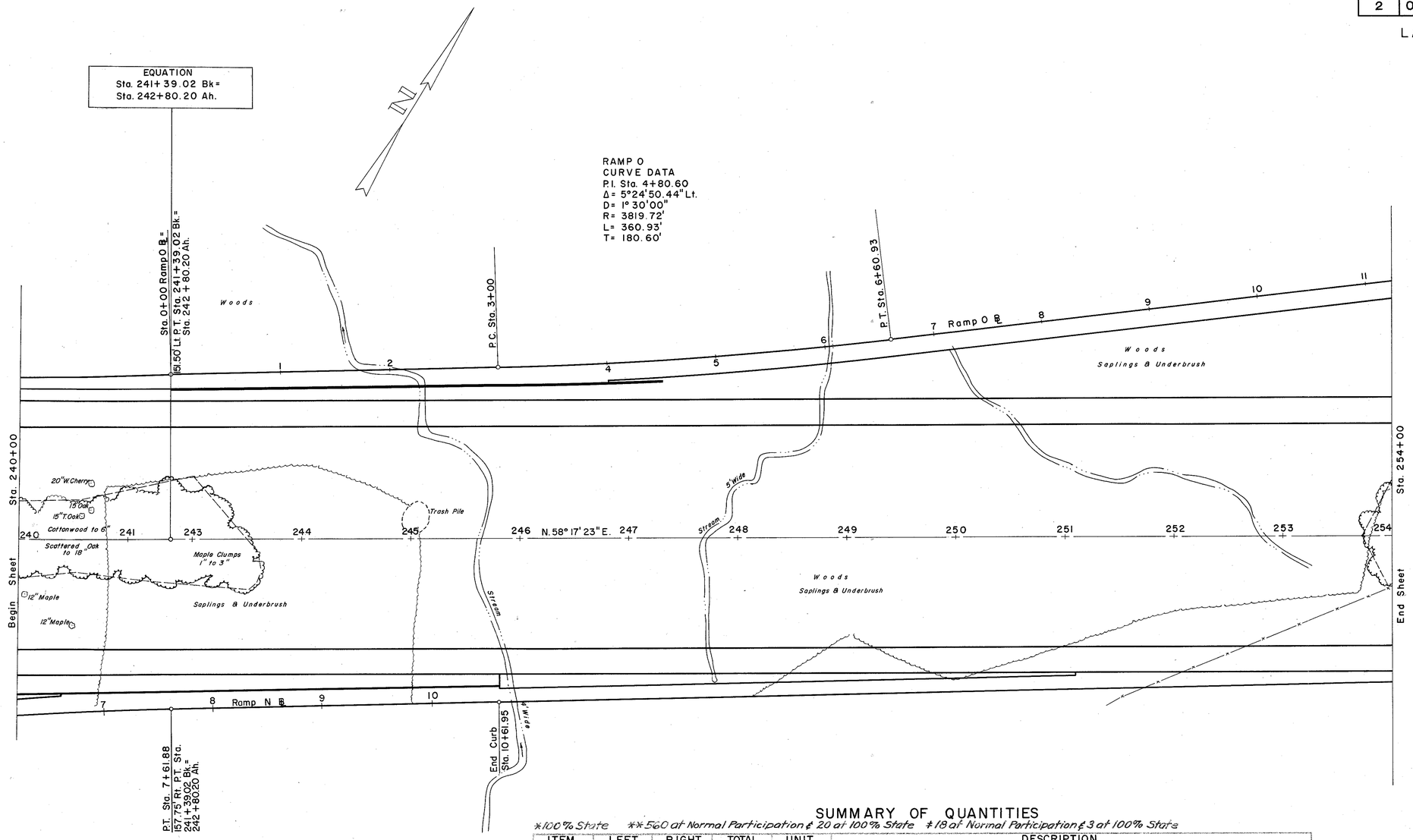
PLANTING PLAN
ROADSIDE REST AREA
SCALE: 1" = 50'

STA. 226 + 00 TO STA. 240 + 00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

256
306

LAKE COUNTY
LAK-1-10.38



SUMMARY OF QUANTITIES

*100% State **560 at Normal Participation & 20 at 100% State *18 at Normal Participation & 3 at 100% State

ITEM	LEFT	RIGHT	TOTAL	UNIT	DESCRIPTION
L-12	50	50	100	Each	Vinca Minor - Myrtle 2 yr.
L-13	290	290	580**	Each	Cornus Racemosa - Gray Dogwood 2-3' B & B 12"
L-14	1		1 *	Each	Aesculus Glabra - Ohio Buckeye 1½" to 1¾" B & B 22"
L-14	12	9	21 *	Each	Liquidamber Styrciflua - Sweet Gum 1½" to 1¾" B & B 22"
L-17			Lump	Lump	Pruning Existing Trees (See general notes Sheet No. 254)
Special	112	113	225 *	Lin. Ft.	Drilled Well (See note in proposal)
Special	1	1	2 *	Each	Well Shelter
Special	1	1	2 *	Each	Toilet & Storage Building
Special	14	14	28 *	Each	Park Table
Special	6	6	12 *	Each	Charcoal Grill & Service Table
Special	1	1	2 *	Each	Bulletin Board

NOTE: No Staking or Bracing required on 4' to 5' L-14 Items

Rev. 11-20-61

PLANTING PLAN
ROADSIDE REST AREA

SCALE: 1" = 50'

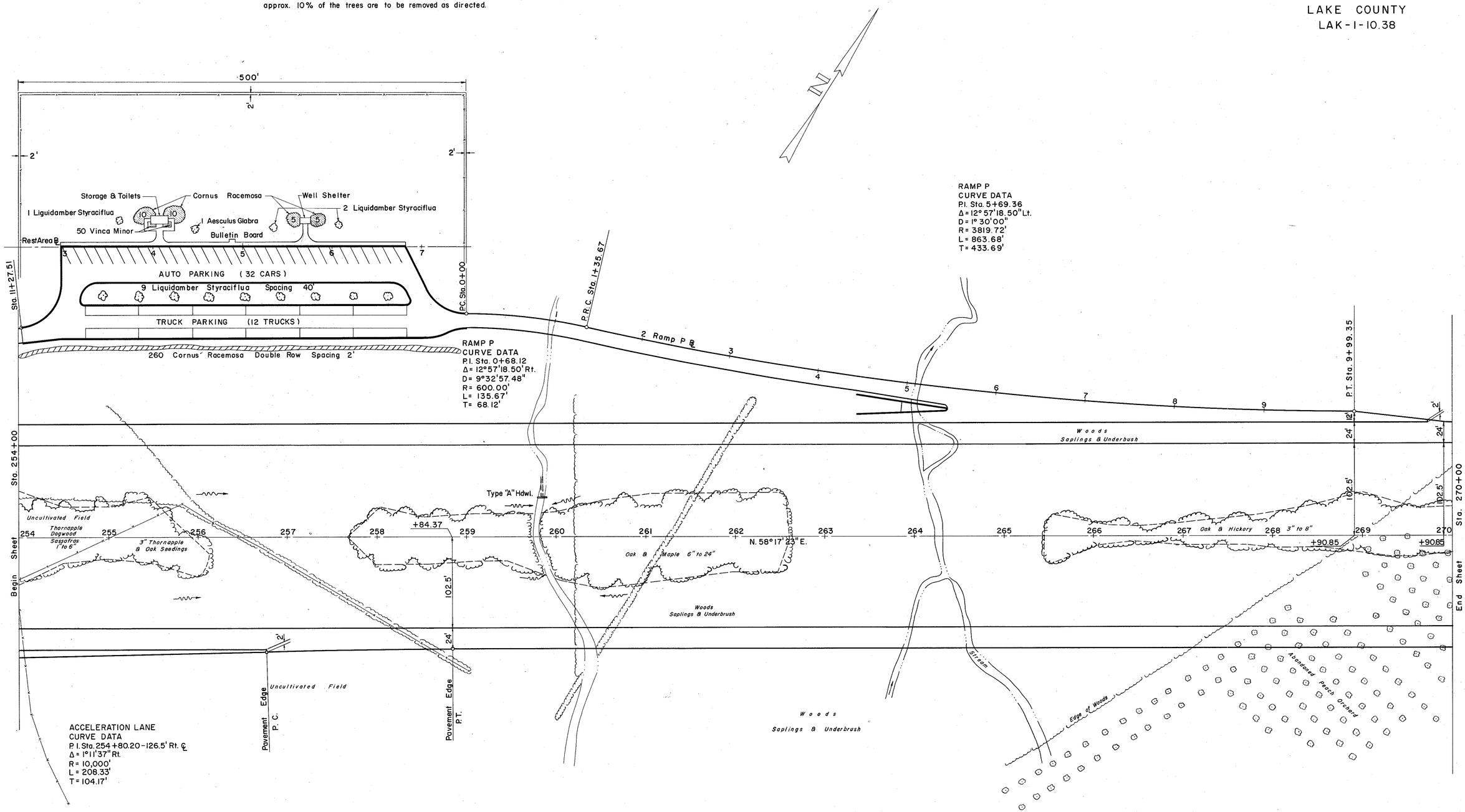
STA. 240+00 TO STA. 254+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

257
306

LAKE COUNTY
LAK-I-10.38

ENTIRE REST AREA WOODED: Size 2" to 18" averaging 4" to 6" average Spacing 30' approx. 10% of the trees are to be removed as directed.



PLANTING PLAN
ROADSIDE REST AREA
SCALE: 1" = 50'

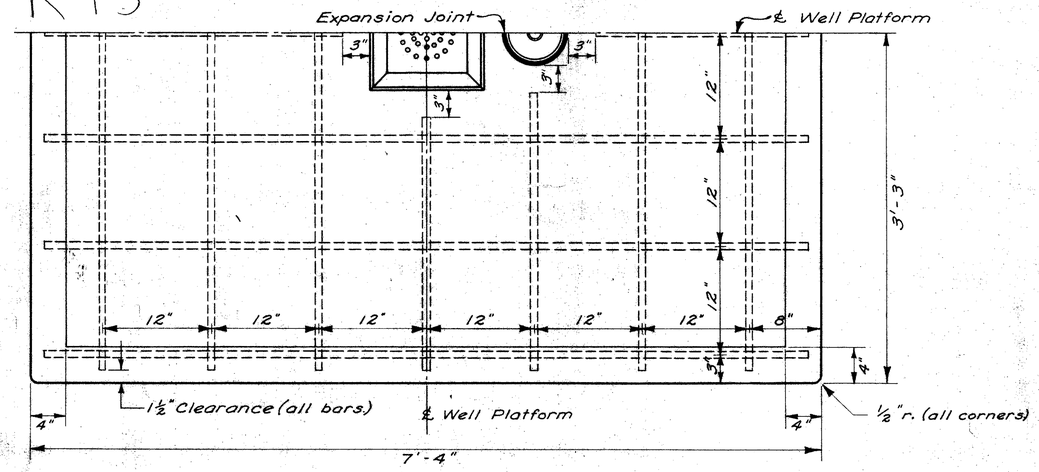
STA. 254 + 00 TO STA. 270 + 00

K 13

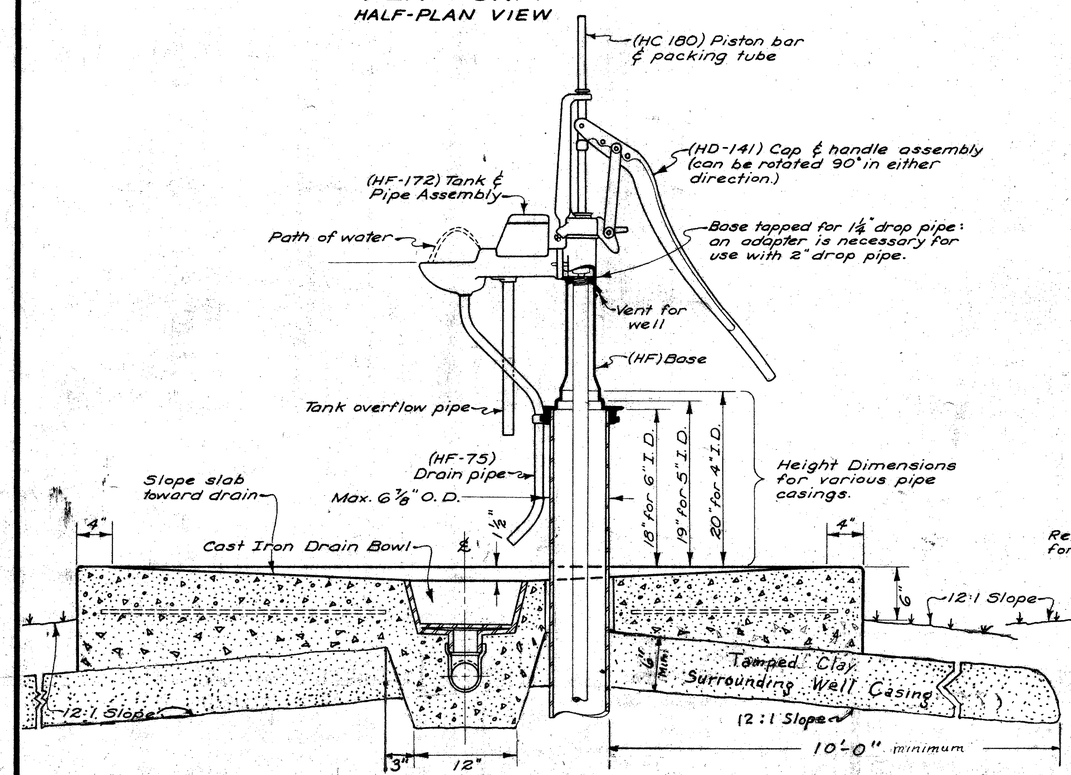
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

257-A
306

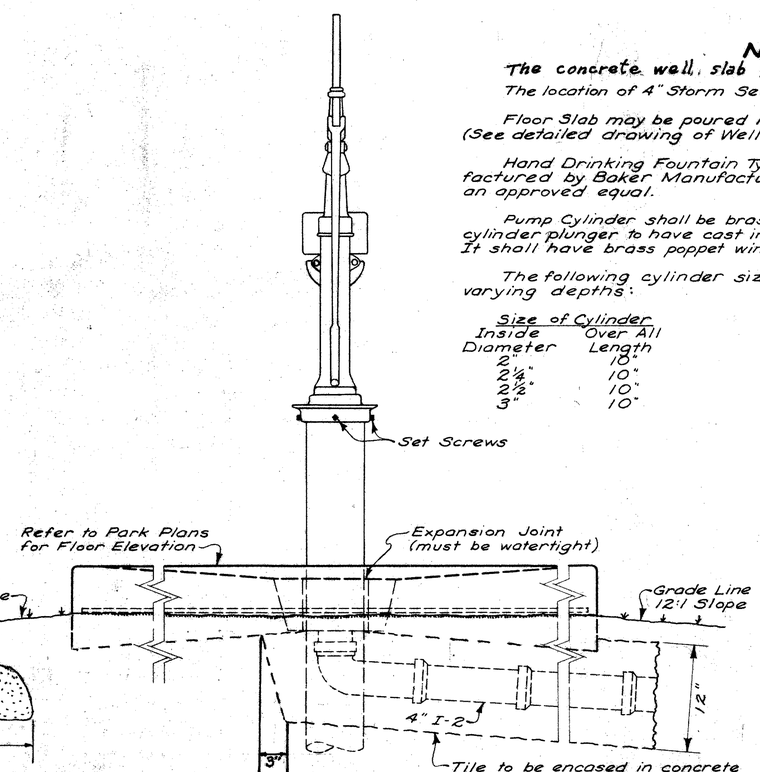
LAKE COUNTY
LAK - 1 - 10.38



PLATFORM
HALF-PLAN VIEW



PUMP & PLATFORM
SIDE ELEVATION



PUMP & PLATFORM
REAR ELEVATION

Tile to be encased in concrete to 6' beyond well shelter. Cost of encasement shall be included in cost of 4" Storm Sewer, Item I-2.

BILL OF MATERIALS*

1 Hand Drinking Fountain Type Pump (Including pump cylinder.)
1 Cu. Yd. Class "C" Concrete Aggregate (shall conform to I-22 Grading "C" or "D"
1 12"x12"x6" Cast Iron Drain

¾" ϕ REINFORCING STEEL	
QUANTITY	LENGTH
1	2'-0"
1	2'-9"
2	2'-4"
2	2'-7"
5	6'-3"
6	7'-1"

* Payment included in Unit Price Bid for "Item Special Well Shelter."

NOTES

The concrete well slab shall have a minimum thickness of 6 inches

The location of 4" Storm Sewer shall be furnished on Rest Area plan.

Floor Slab may be poured integral with the Well Shelter Footer. (See detailed drawing of Well Shelter.)

Hand Drinking Fountain Type Pump shall be Model 1-HF as manufactured by Baker Manufacturing Company, Evansville, Wisconsin, or an approved equal.

Pump Cylinder shall be brass body cylinder or brass lined. The cylinder plunger to have cast iron cage, brass follower and valve seat. It shall have brass poppet wing valve with rubber facing and steel stem.

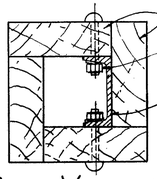
The following cylinder sizes are recommended for wells of varying depths:

Size of Cylinder		Maximum Depth of Setting Recommended for Size of Cylinder
Inside Diameter	Over All Length	
2"	10"	200'
2¼"	10"	175'
2½"	10"	150'
3"	10"	75'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

257-B
306

LAKE COUNTY
LAK - 1 - 10.38



PLAN VIEW OF POST CONSTRUCTION
Scale 3" = 1'-0"

1 pc. 1"x3"x8' - Trap door cleats
1 " 2"x4"x2' - Trap door framing

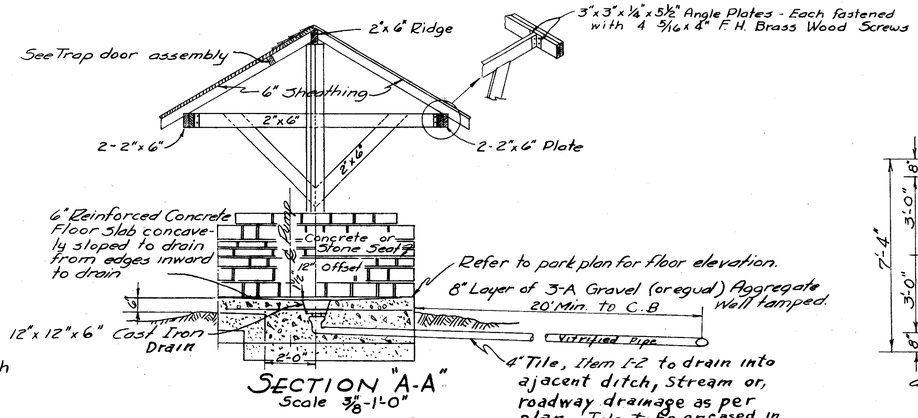
ESTIMATED BILL OF MATERIALS

4 pcs. 2"x6"x10' - Cross members for roof and angular Supports
5 " 2"x6"x14' - Ridge & plate for roof
8 " 2"x4"x14' - Roof rafters
4 " 2"x6"x16' Boxing around Channel iron, for column Supports
2 " 6"x6"x10' - Wood posts (alternate column Supports)
2 " 5½"-7" O.D. x 11' - Used well casing (alt. column supports)
28 " 1"x6"x14' - Roof sheathing
2 " 1"x3"x14' - Facia boards
10 bundles - 16" - Random width wood shingles, grade xxxxx cedar.

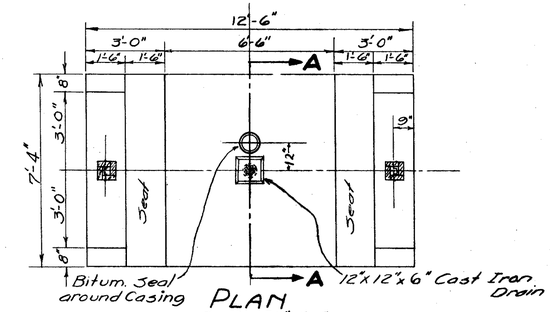
Hardware

24 each 3/8"x3" - Carriage bolts in column supports
4 " ½"x11" - C-Bolts, column & braces
4 " ½"x9" - C-Bolts, column & cross-arms
4 " ½"x5" - C-Bolts, braces & cross-arms
1 " 12x12x6" Cast Iron Drain Bowl
1 " 14' - Copper or Aluminum Ridge Roll

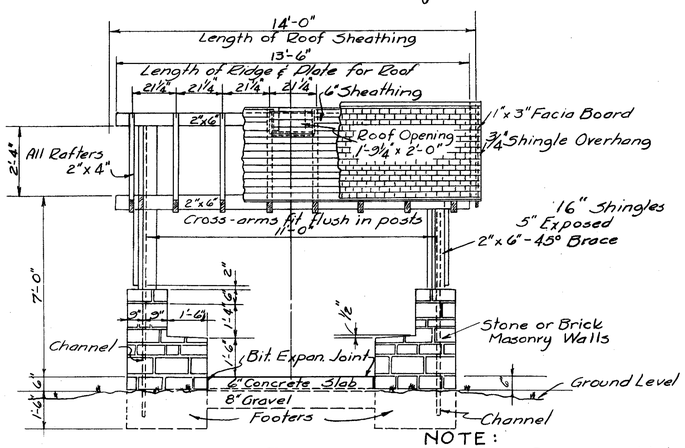
2 pcs. (11 lin. ft. each) - Channel iron
8 ea. 3"x3"x¼x5½" - Angle plates
46 " 5/16"x4" - F. H. brass wood screws
2 " 2½" - Screen door hooks - complete
4 " ½"x15" (2" spread) - U-Bolts, alternate with used well casing posts.



SECTION "A-A"
Scale 3/8" - 1'-0"

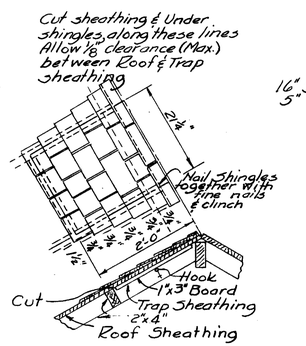


PLAN
Scale 3/8" = 1'-0"

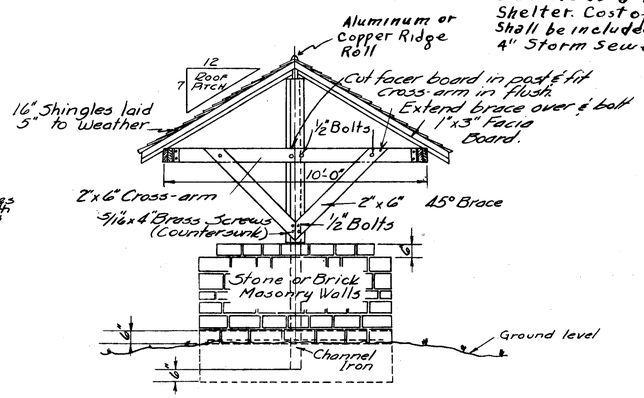


ELEVATION
Scale 3/8" = 1'-0"

NOTE: Bituminous Expansion Joint will not be necessary if concrete well slab is placed integral with footers for Well Shelter.



DETAIL OF TRAP DOOR
Scale ¾" = 1'-0"



ELEVATION
Scale 3/8" = 1'-0"

NOTES

All outside vertical surface joints shall be raked to a depth of ¼" to ½".

All stone masonary shall comply with specification for Item S-20. No masonary, stone or brick shall be painted.

Brick shall be size number 3 or 4, made from clay and comply with specification for Item I-8.

The posts constructed from 2"x6" boards shall be fastened with suitable nails, also 5/16"x4" brass screws at 24" intervals.

All lumber shall be S4S, Std., KD, #1 common and better, Southern Yellow Pine or Douglas Fir.

All lumber and shingles be treated in accordance with the requirements for "Pentachlorophenol Treatment," Sec. M-8.3.

Concrete shall be Class "C" and constructed in accordance with the requirements of Item S-1 of the Specifications.

Reinforcing steel in 6" reinforced concrete floor slab shall be ¾" steel rods spaced 12" apart O.C. both ends. Reinforcing steel not required in footers, nor in 8" walls or 4" floor slab of compartment.

Large sized washers shall be used with all bolts, one at each end; a lock washer shall also be used at the nut end. Bolts shall be cut off ¼" beyond the nut & then hammered. All bolt holes shall be soaked with 5% Pentachlorophenol Solution, thoroughly before inserting bolts.

Bolts shall be good quality Hot Galvanized, Cadmium Plated or, Copper Bearing.

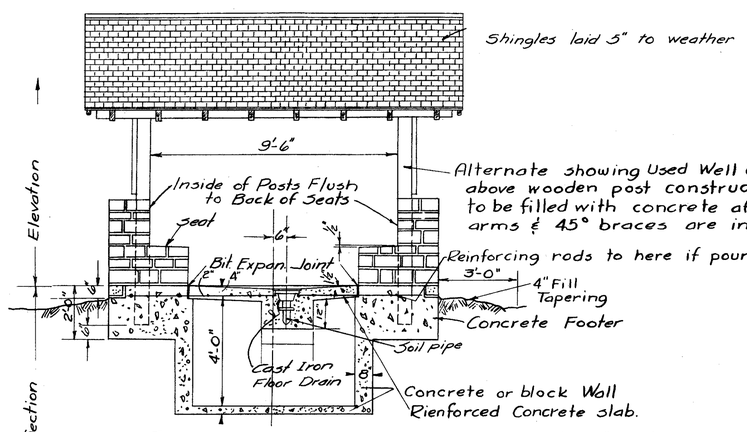
In all shelters containing a well & pump these are offset from center of 6" concrete slab, and trap door is built into roof of shelter as shown. all to allow for drawing of pump and/or casing, In the event repairs have to be made.

Should local conditions warrent, drainage of excess ground water from compartment beneath fountains, it shall be carried off either by gravity flow or sump drains as required, by topography of the individual park ared affected.

Aggregate subbase for concrete slab shall meet the requirements of Item I-22 Subbase, Grading "C" or "D."

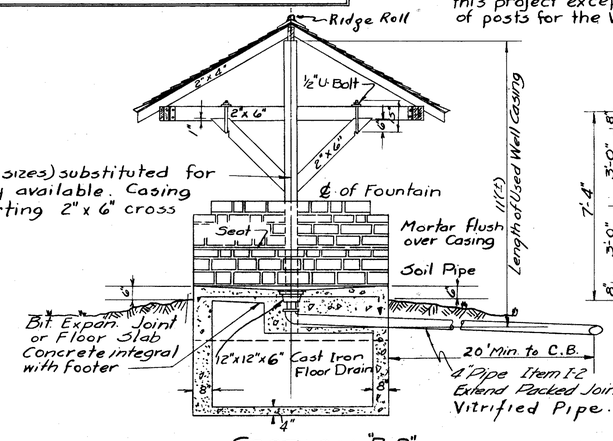
This Well Shelter Design is the "TRADE MARK" of the Roadside Parks in Ohio. It will be erected as standard.

NOTE: Details below this line do not apply to this project except for alternate design of posts for the Well Shelter.

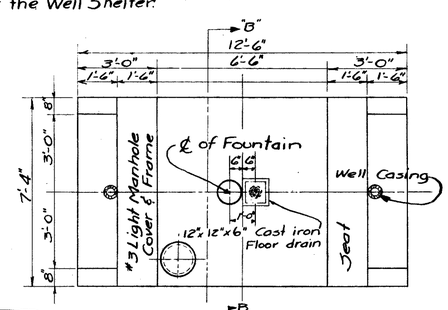


SECTION - ELEVATION
Scale 3/8" = 1'-0"

Compartment Under Slab & Foundation Where City Water is Used To Allow Repairing



SECTION "B-B"
Scale 3/8" = 1'-0"



PLAN
Showing Used Well Casing Posts

Scale 3/8" = 1'-0"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
WELL SHELTERS
ROADSIDE PARKS

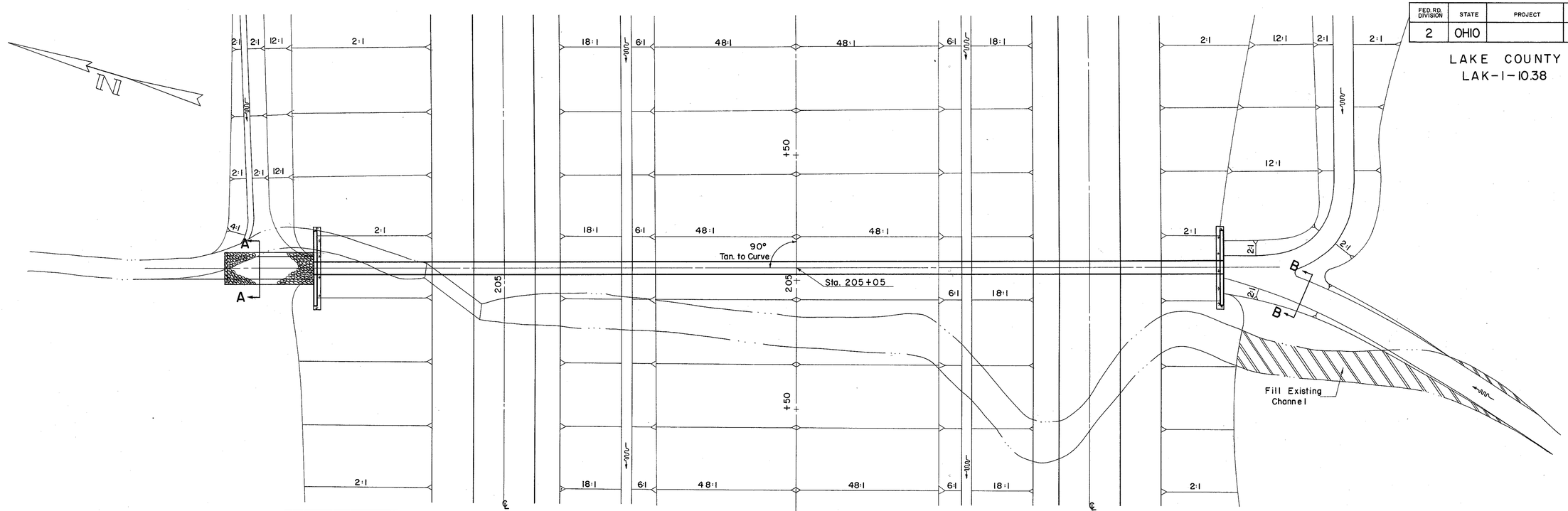
Jan. 1958

DESIGNED	TRACED	APPROVED
C.A.W.	R.C.B.	H.J.G

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

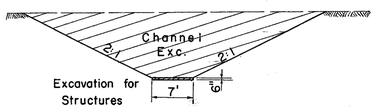
258
306

LAKE COUNTY
LAK-1-10.38

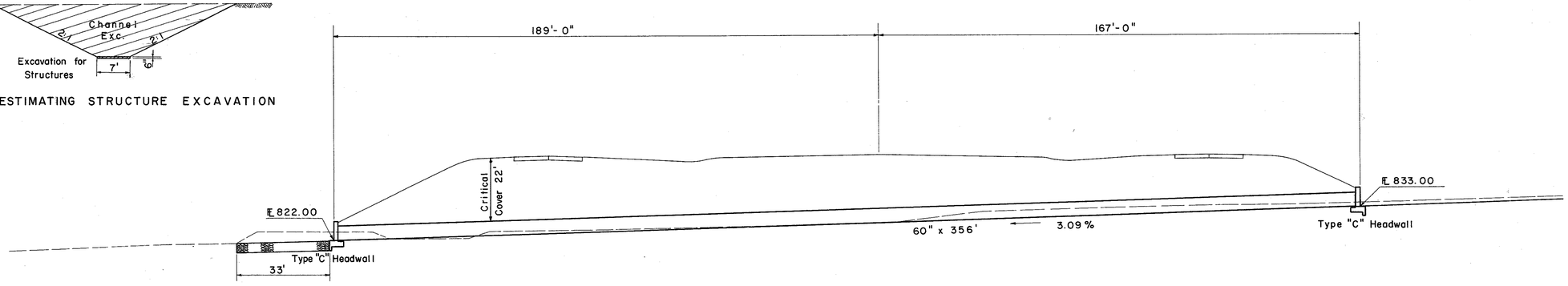


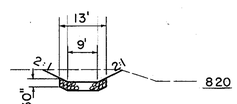
AREA = 420 ACRES
Q_{50} = 190 C.F.S.

HEADWATER = 7.1 FT
OUTLET VELOCITY = 14.5 F.P.S.

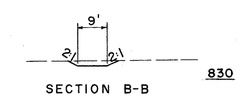


METHOD OF ESTIMATING STRUCTURE EXCAVATION





SECTION A-A



SECTION B-B

CULVERT DATA

SIZE: 60" x 356'

WORK REQ'D.: Build a Pipe Culvert with Std. Type "C" Headwalls. Exc. Channel & Sod Lt. & Rt. Place Dumped Rock Lt. as shown.

ESTIMATED QUANTITIES

E-2	Excavation For Structures	100	C.Y. *
E-3	Channel Excavation	210	C.Y.
L-10	Sodding	12	S.Y.
S-1	Concrete for Structures Class "C"	44	C.Y.
S-4	Reinforcing Steel	1954	Lbs.
S-28	60" Sec. Cor. Met. Structure, Sec. M-6.4 (g) 10-10 Ga.	356	L.F.
I-10	Dumped Rock Channel Protection	40	C.Y.

*Includes Headwall Excavation

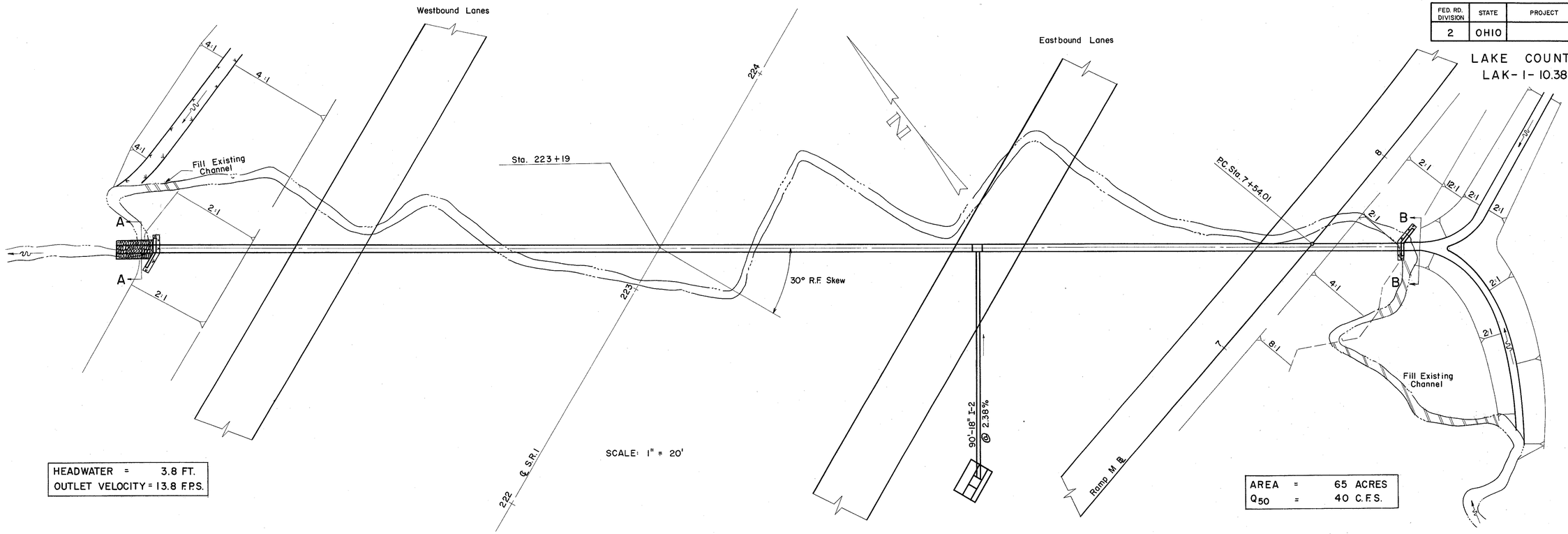
STRUCTURE NO. LAK-1-1060

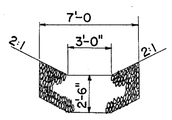
PIPE CULVERT STA. 205+05

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

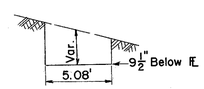
259
306

LAKE COUNTY
LAK-1-10.38

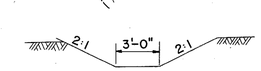




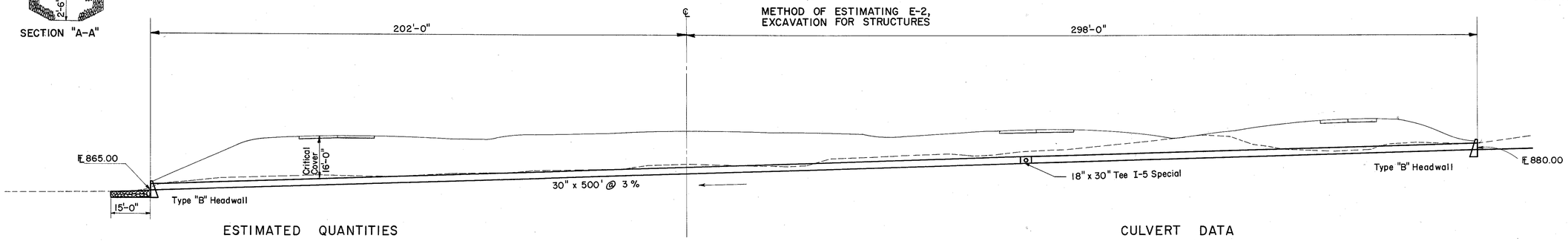
SECTION "A-A"



METHOD OF ESTIMATING E-2, EXCAVATION FOR STRUCTURES



SECTION "B-B"



ESTIMATED QUANTITIES

*	E-2	Excavation for Structures	430 Cu. Yd.
	E-3	Channel Excavation	163 Cu. Yd.
	L-10	Sodding	6 Sq. Yd.
	I-10	Dumped Rock Channel Protection	10 Cu. Yd.
	S-1	Concrete for Structures Class "C"	11.4 Cu. Yd.
	S-4	Reinforcing Steel	484 Lbs.
	S-27	30" Pipe for Roadway Culverts Sec. M-6.6 (c)	496 L.F.
	I-5	18" x 30" Tee Pipe Special Sec. M-6.6 (c)	1 Each

* Includes Excavation for Headwalls

CULVERT DATA

TYPE: Pipe Culvert S-27 Sec. M-6.6 (c), Type B Headwalls

SIZE: 30" x 496' (4' Deducted for I-5 Pipe Special)

WORK REQUIRED: Build a Pipe Culvert with Type "B" Headwalls Lt. & Rt. Excavate Channel Right. Place dumped rock channel protection Lt. Place sod as shown.

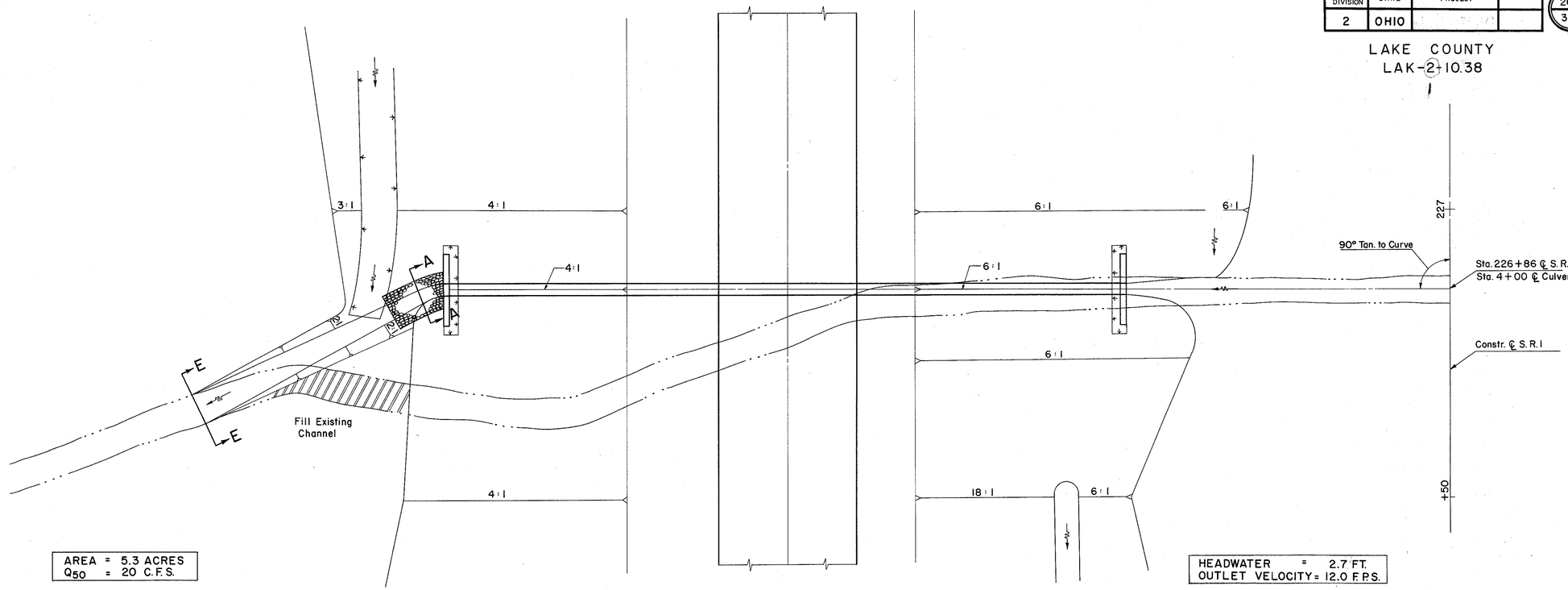
STRUCTURE NO. LAK-1-1094

PIPE CULVERT STA. 223+19

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

260
306

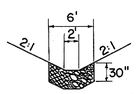
LAKE COUNTY
LAK-2-10.38



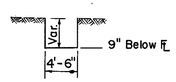
AREA = 5.3 ACRES
Q_{50} = 20 C.F.S.

HEADWATER = 2.7 FT.
OUTLET VELOCITY = 12.0 F.P.S.

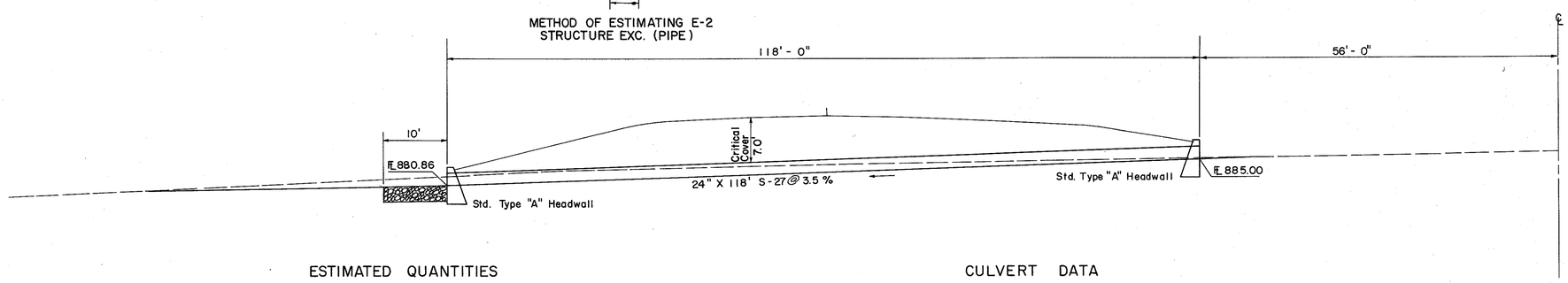
SCALE: 1" = 10'



SECTION A-A



METHOD OF ESTIMATING E-2 STRUCTURE EXC. (PIPE)



ESTIMATED QUANTITIES

E-2	Excavation for Structures	52	C.Y.*
E-3	Channel Excavation	7	C.Y.
L-10	Sodding	6	S.Y.
I-10	Dumped Rock Channel Protection	6	C.Y.
S-1	Conc. for Structures Class "C"	10.0	C.Y.
S-4	Reinforcing Steel	436	LBS.
S-27	24" Pipe for Roadway Culverts Sec. M-6.8 (b) or M-6.6 (b)	118	L.F.

* Includes Headwall Exc.

CULVERT DATA

TYPE: Pipe Culvert, S-27, Sec. M-6.8 (b) or M-6.6 (b), Std. Type "A" Headwalls
SIZE: 24" x 118'
WORK REQUIRED: Build a Pipe Culvert with Std. Type "A" Headwalls, Excavate Channel on Left and provide Dumped Rock on Lt. Place Sodding Rt. and Lt. as shown.

STRUCTURE NO. LAK-1-1101

Traced 8-13-59 L.G.L.

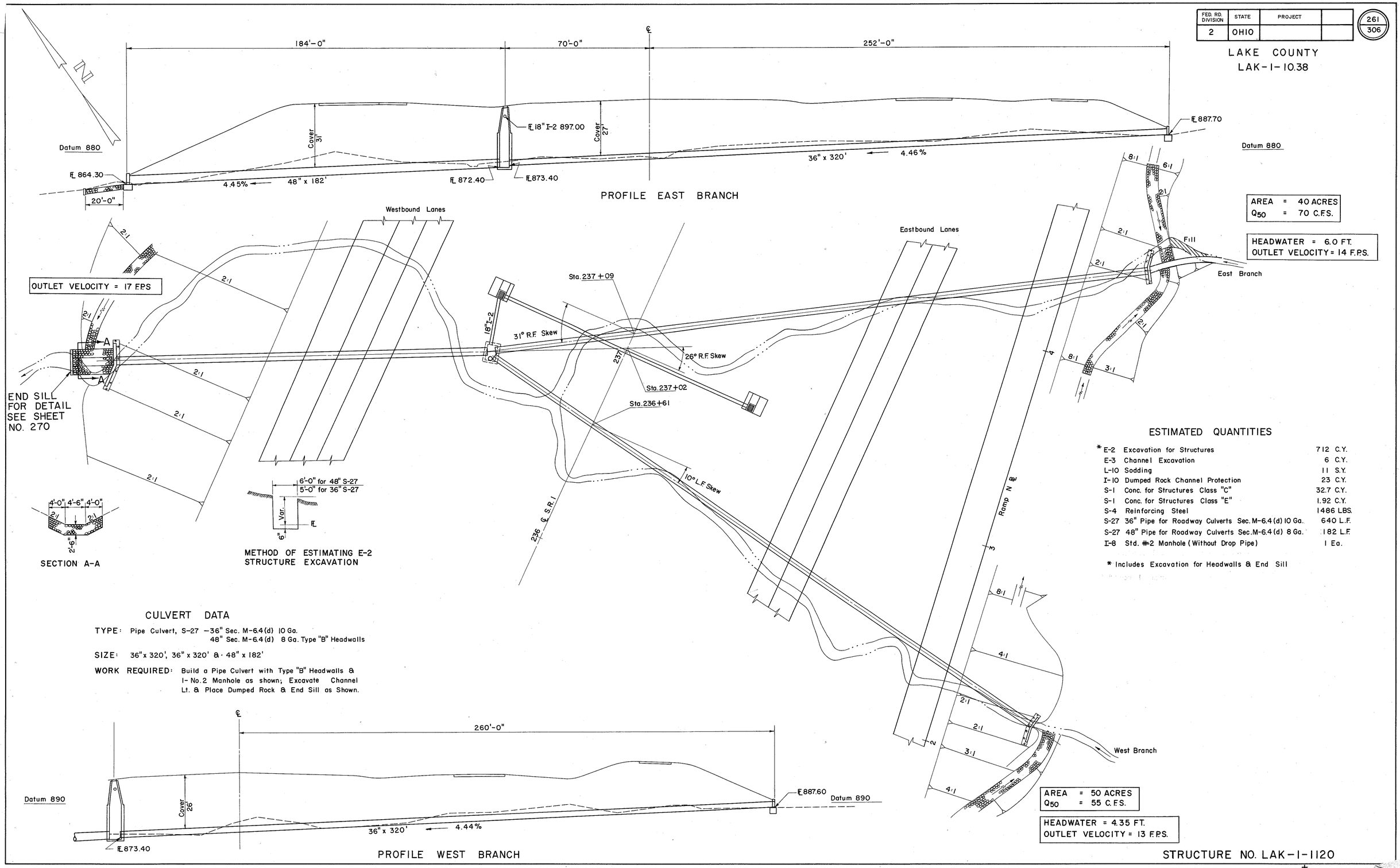
PIPE CULVERT STA. 226+86

b-1

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

261
306

LAKE COUNTY
LAK-1-10.38



AREA = 40 ACRES
Q_{50} = 70 C.F.S.

HEADWATER = 6.0 FT.
OUTLET VELOCITY = 14 F.P.S.

AREA = 50 ACRES
Q_{50} = 55 C.F.S.

HEADWATER = 4.35 FT.
OUTLET VELOCITY = 13 F.P.S.

ESTIMATED QUANTITIES

*E-2	Excavation for Structures	712 C.Y.
E-3	Channel Excavation	6 C.Y.
L-10	Sodding	11 S.Y.
I-10	Dumped Rock Channel Protection	23 C.Y.
S-1	Conc. for Structures Class "C"	32.7 C.Y.
S-1	Conc. for Structures Class "E"	1.92 C.Y.
S-4	Reinforcing Steel	1486 LBS.
S-27	36" Pipe for Roadway Culverts Sec. M-6.4 (d) 10 Ga.	640 L.F.
S-27	48" Pipe for Roadway Culverts Sec. M-6.4 (d) 8 Ga.	182 L.F.
I-8	Std. #2 Manhole (Without Drop Pipe)	1 Ea.

* Includes Excavation for Headwalls & End Sill

CULVERT DATA

TYPE: Pipe Culvert, S-27 – 36" Sec. M-6.4 (d) 10 Ga.
48" Sec. M-6.4 (d) 8 Ga. Type "B" Headwalls

SIZE: 36" x 320', 36" x 320' & 48" x 182'

WORK REQUIRED: Build a Pipe Culvert with Type "B" Headwalls & 1- No. 2 Manhole as shown; Excavate Channel Lt. & Place Dumped Rock & End Sill as Shown.

STRUCTURE NO. LAK-1-1120

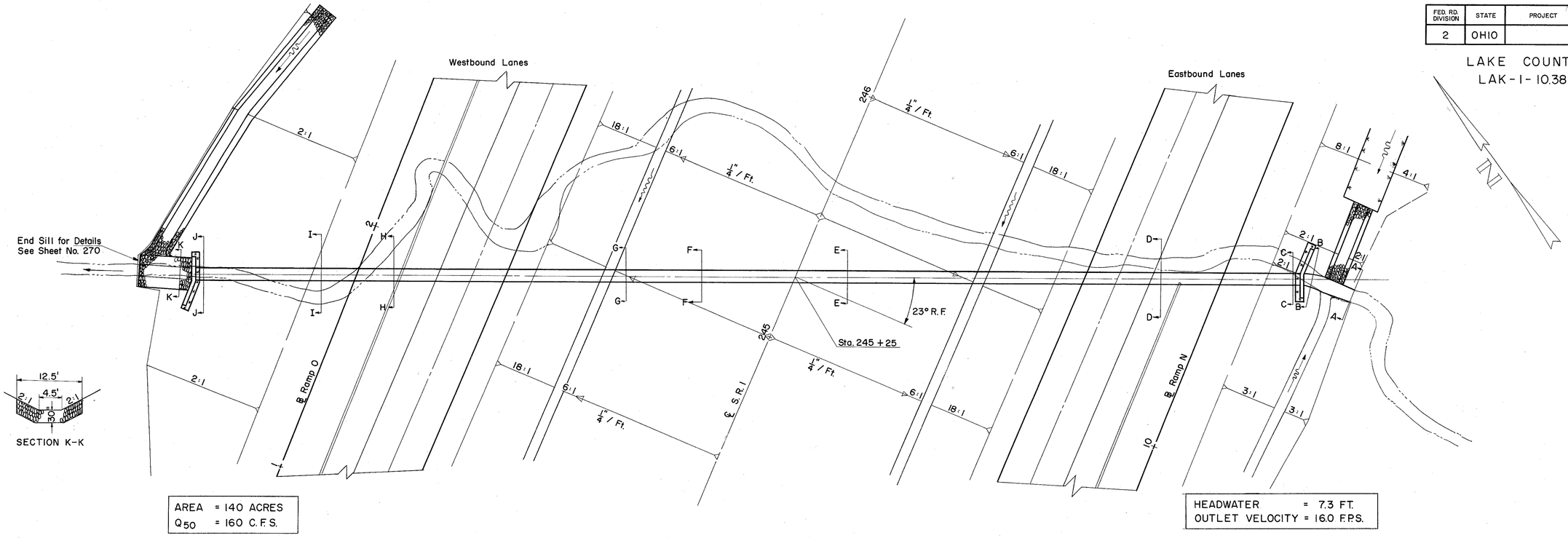
PIPE CULVERT STA. 237 + 00±

L.G.L. 7-23-59

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

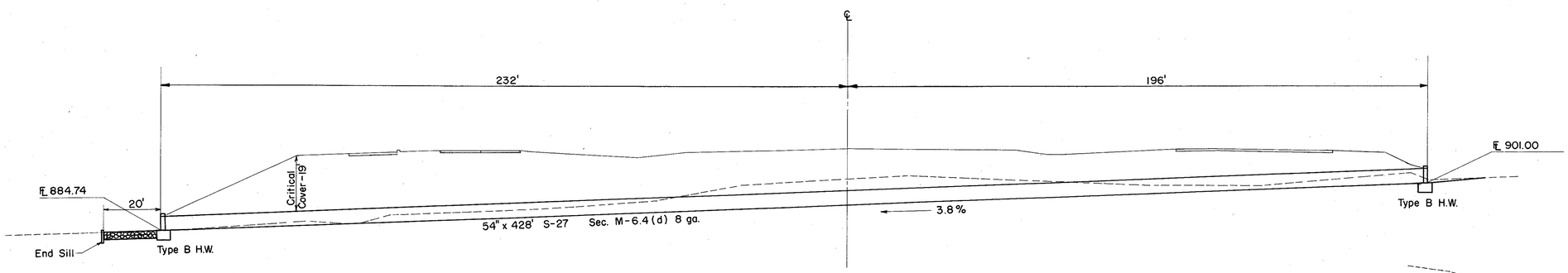
262
306

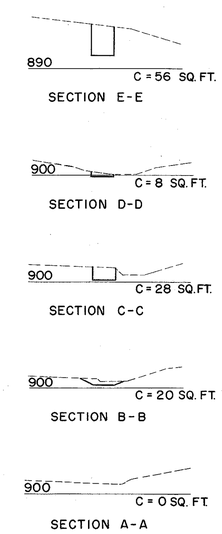
LAKE COUNTY
LAK-1-10.38

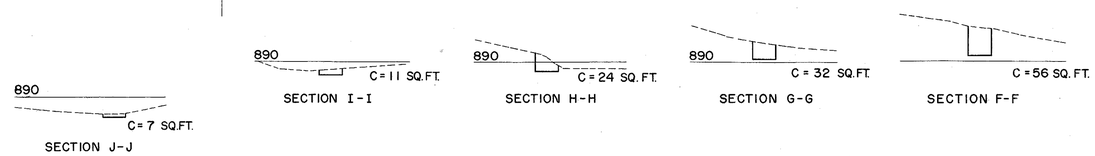


AREA = 140 ACRES
Q_{50} = 160 C.F.S.

HEADWATER = 7.3 FT.
OUTLET VELOCITY = 16.0 F.P.S.







ESTIMATED QUANTITIES

*E-2	Excavation for Structures	510 C.Y.
E-3	Channel Excavation	6 C.Y.
S-1	Conc. for Structures Class "C"	323 C.Y.
S-1	Conc. for Structures Class "E"	1.92 C.Y.
S-4	Reinforcing Steel	1382 LBS.
L-10	Sodding	9 S.Y.
I-10	Dumped Rock Channel Protection	23 C.Y.
S-27	54" Pipe for Rdwy. Culverts Sec. M-6.4 (d) 8 Ga.	428 L.F.

* Includes Excavation for Headwalls

CULVERT DATA

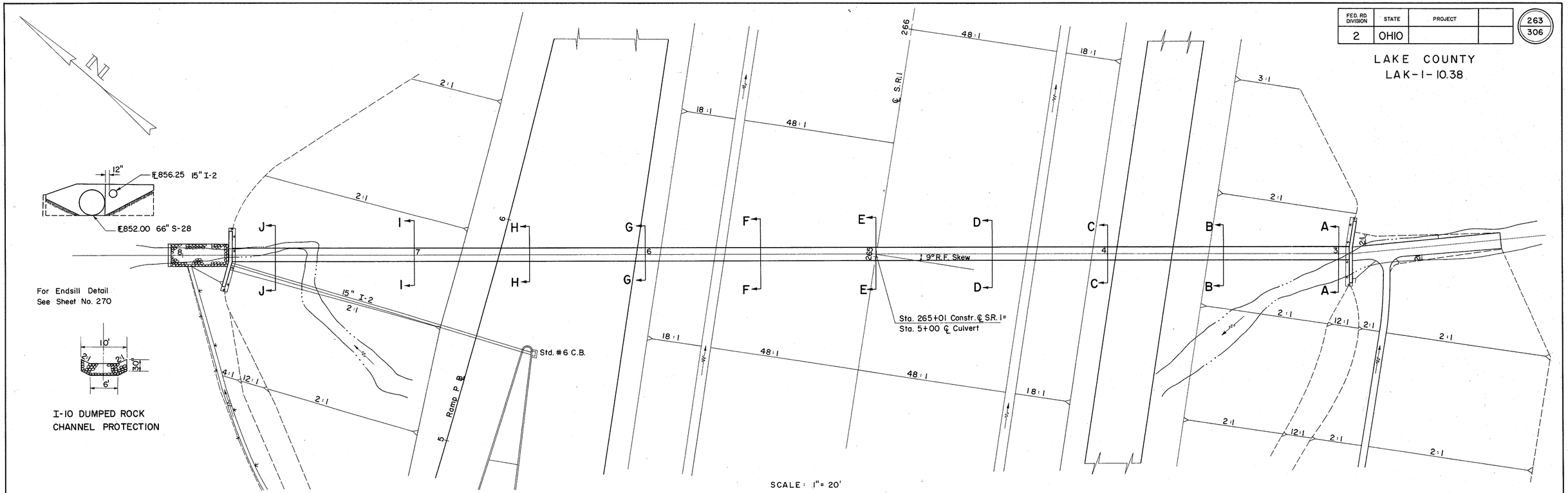
TYPE: Pipe Culvert, Type "B" and S-27.
SIZE: 54" x 428'
WORK REQ'D.: Build a pipe culvert with Type B Headwalls, with Dumped Rock Lt., Sodding Rt. and Lt. as shown, Excavate Channel Rt.

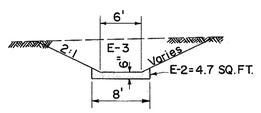
STRUCTURE NO LAK-1-1136
PIPE CULVERT STA. 245 + 25

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

263
306

LAKE COUNTY
LAK-I-10.38

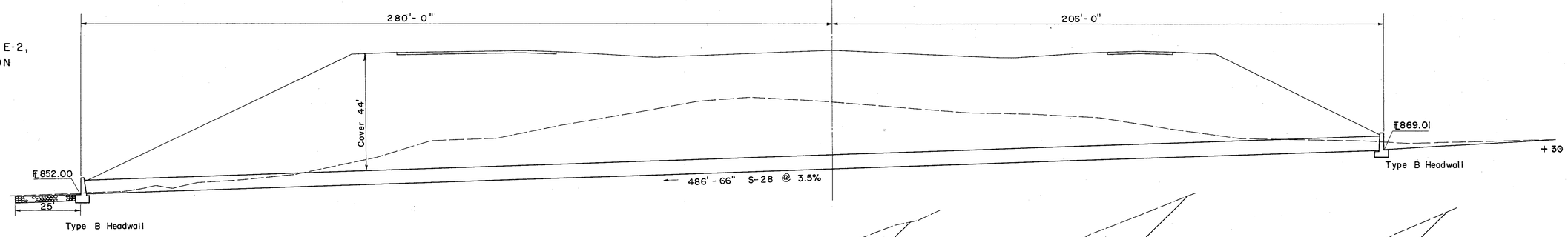




METHOD OF ESTIMATING E-2,
STRUCTURE EXCAVATION

AREA = 250 ACRES
Q_{50} = 254 C.F.S.

HEADWATER = 8.25 FT.
OUTLET VELOCITY = 14.5 F.P.S.



CULVERT DATA

TYPE: S-28 Sec. M-6.4(g) 10-8 Gage

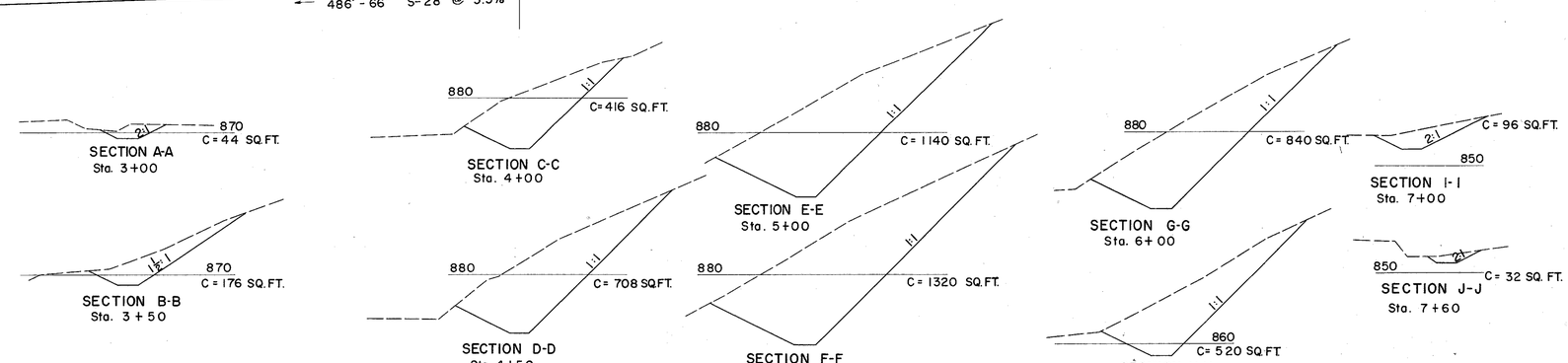
SIZE: 486'x 66"

WORK REQ'D.: Build a pipe culvert with Type "B" Headwalls and Sodding Rt. & Lt. as shown. Excavate Channel on Rt. and place dumped rock at Outlet as shown.

ESTIMATED QUANTITIES

*E-2	Excavation for Structures	139 C.Y.
E-3	Channel Excavation	9837 C.Y.
I-10	Dumped Rock Channel Protection	23 C.Y.
L-10	Sodding	11 S.Y.
S-1	Concrete for Structures Class "C"	49.0 C.Y.
S-1	Concrete for Structures Class "E"	1.37 C.Y.
S-4	Reinforcing Steel	2111 LBS.
S-28	66" Sectional Corrugated Metal Structures Sec. M-6.4(g) 10-8 Gage	486 L.F.

* Includes Excavation for Headwalls



STRUCTURE NO. LAK-I-1173

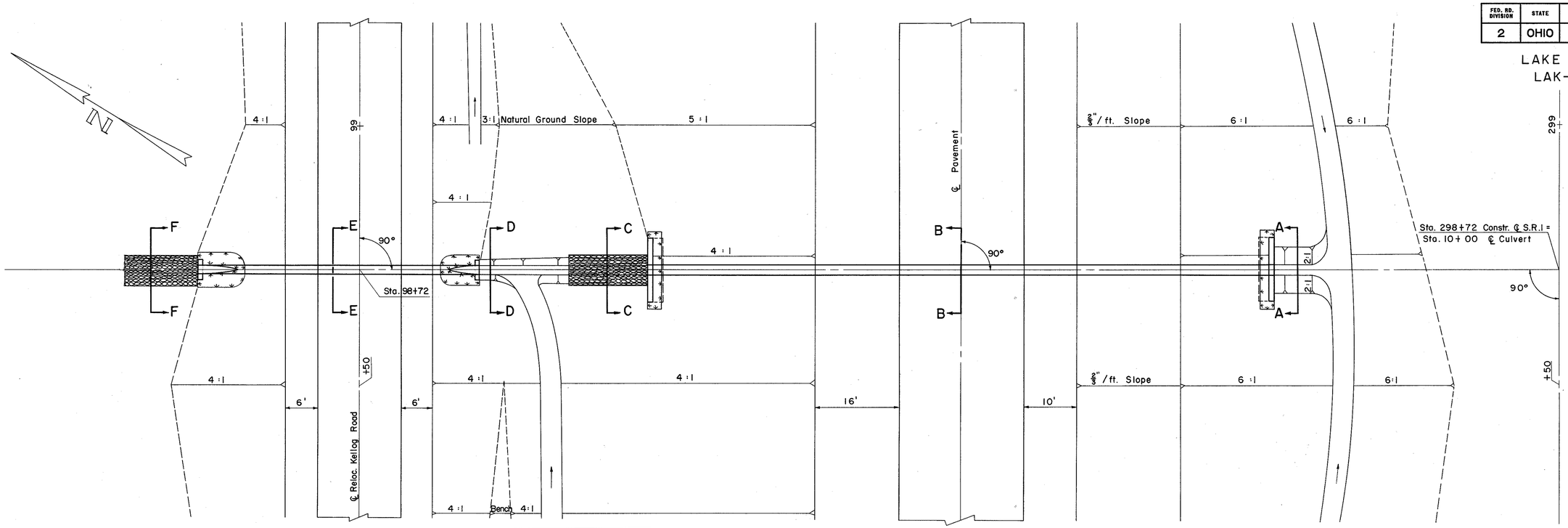
PIPE CULVERT STA. 265+01

L.G.L. 7-21-39

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

264
306

LAKE COUNTY
LAK-1-10.38



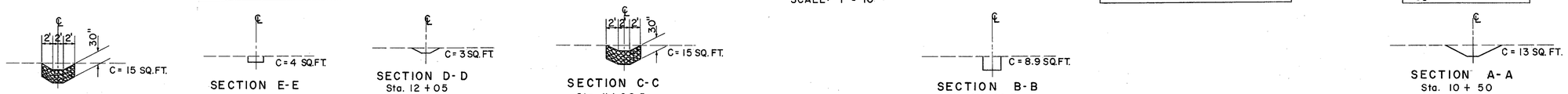
HEADWATER = 2.4 FT.
OUTLET VELOCITY = 10.8 F.P.S.

AREA = 5.6 ACRES
Q_{25} = 18 C.F.S.

SCALE: 1" = 10'

HEADWATER = 2.3 FT.
OUTLET VELOCITY = 11.0 F.P.S.

AREA = 4.6 ACRES
Q_{50} = 17 C.F.S.



SECTION F-F
Sta. 12 + 70

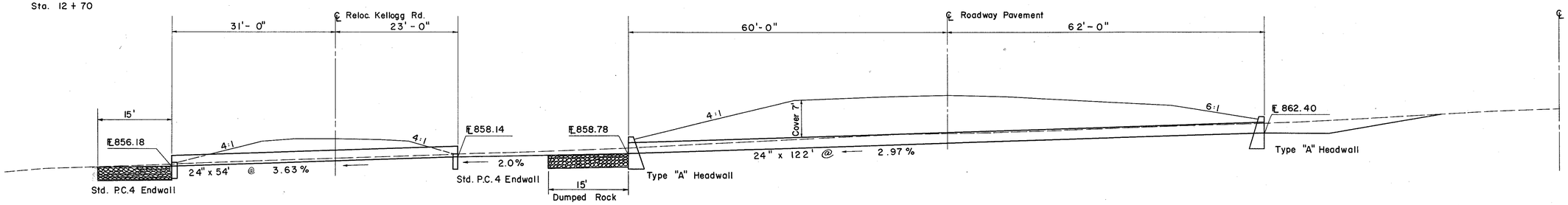
SECTION E-E
Sta. 12 + 35

SECTION D-D
Sta. 12 + 05

SECTION C-C
Sta. 11 + 82.5

SECTION B-B
Sta. 11 + 14.5

SECTION A-A
Sta. 10 + 50



ESTIMATED QUANTITIES

* E-2	Excavation for Structures	11 C.Y.
L-10	Sodding	8 S.Y.
S-1	Concrete for Structures Class "E"	0.82 C.Y.
S-27	24" Pipe for Roadway Culverts Sec. M-6.6 (b) or Sec. M-6.8 (b)	54 L.F.
I-10	Dumped Rock Channel Protection	8 C.Y.

*Includes Excavation for Headwalls

CULVERT DATA

TYPE: Pipe Culvert with P.C. 4 Endwalls S-27 M-6.6 (b) or M-6.8 (b)

SIZE: 24" x 54'

WORK REQ'D. Build a Pipe Culvert with P.C. 4 Endwalls and Sodding Lt. and Rt. as shown. Place Dumped Rock on Lt. as shown.

ESTIMATED QUANTITIES

* E-2	Excavation for Structures	49 C.Y.
S-1	Concrete for Structures Class "C"	10.5 C.Y.
S-27	24" Pipe for Roadway Culverts Sec. M-6.6 (b) or M-6.8 (b)	122 L.F.
L-10	Sodding	6 S.Y.
E-3	Channel Excavation	8 C.Y.
S-4	Reinforcing Steel	436 Lbs.
I-10	Dumped Rock Channel Protection	8 C.Y.

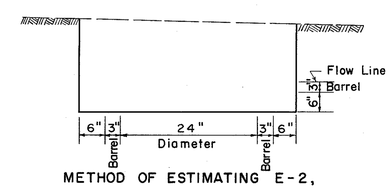
*Includes Excavation for Headwalls

CULVERT DATA

TYPE: Pipe Culvert S-27 M-6.6(b) or M-6.8(b)

SIZE: 24" x 122'

WORK REQ'D.: Build a Pipe Culvert with Type "A" Headwalls and Sodding Rt. & Lt. as shown. Place Dumped Rock on Lt. as shown.



METHOD OF ESTIMATING E-2, EXCAVATION FOR STRUCTURES

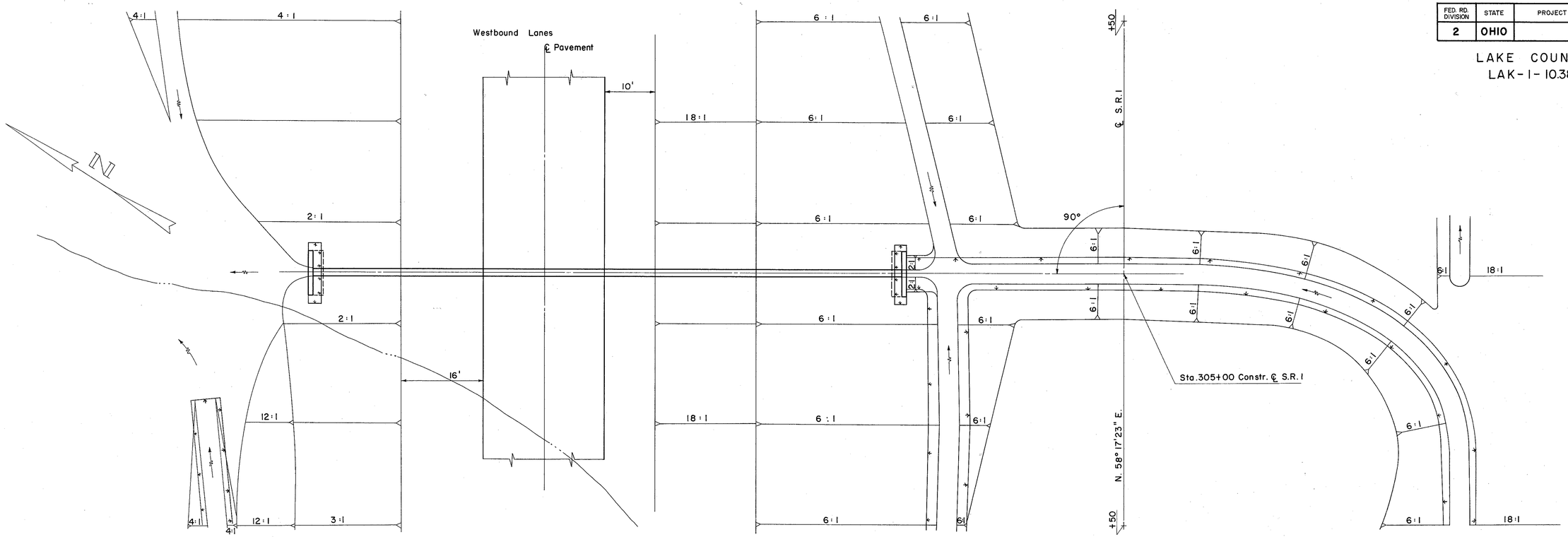
STRUCTURE NO. LAK-1-1237

PIPE CULVERT STA. 298 + 72

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

265
306

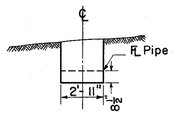
LAKE COUNTY
LAK-1-10.38



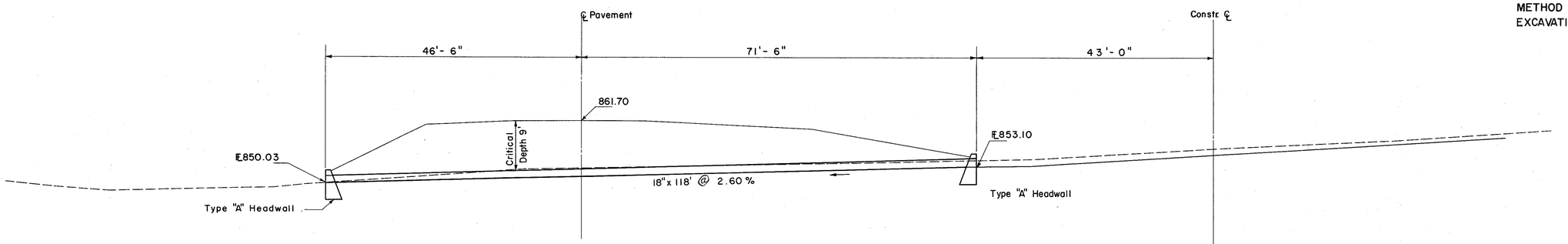
HEADWATER	1.80 FT.
OUTLET VELOCITY	9.8 F.P.S.

SCALE: 1" = 10'

AREA	3.7 ACRES
Q_{50}	8.3 C.F.S.



METHOD OF ESTIMATING E-2, EXCAVATION FOR STRUCTURES



ESTIMATED QUANTITIES

* E-2	Excavation for Structures	39	Cu. Yd.
S-1	Concrete for Structures Class "C"	6.2	Cu. Yd.
S-27	18" Pipe for Roadway Culverts Sec. M-6.6 (b) or Sec. M-6.8 (b)	118	L.F.
L-10	Sodding	5	Sq. Yd.
S-4	Reinforcing Steel	292	Lbs.

* Includes Exvacation for Headwall

CULVERT DATA

TYPE: Pipe Culvert S-27 Sec. M-6.6(b) or Sec. M-6.8(b)

SIZE: 18" x 118'

WORK REQUIRED: Build a Pipe Culvert with Type "A" Headwalls and sodding Lt. and Rt. as shown.

STRUCTURE NO. LAK.-1-1249

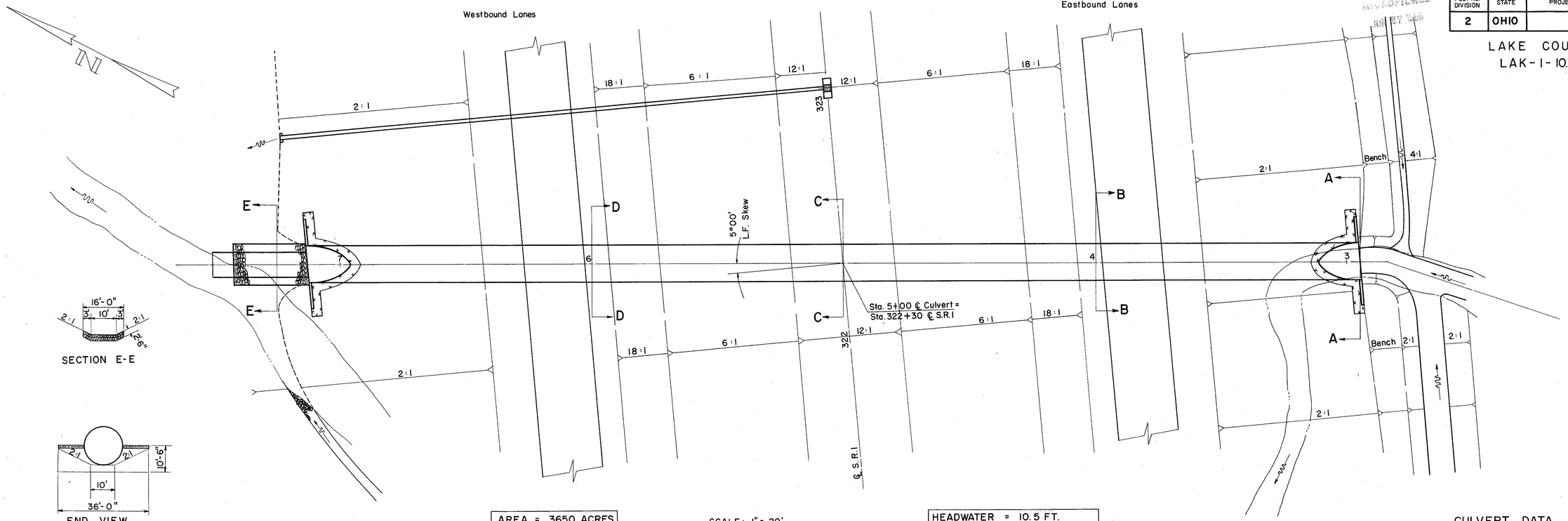
L.G.L. 7-24-59

PIPE CULVERT STA. 305+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

266
306

LAKE COUNTY
LAK-1-10.38



For further details, see Standard Drawing No. S.P. 53.

AREA = 3650 ACRES
Q_{50} = 1100 C.F.S.

SCALE: 1" = 20'

HEADWATER = 10.5 FT.
OUTLET VELOCITY = 11.6 F.P.S.

CULVERT DATA

TYPE: S-28 Sec. M-6.4(g) 1-1 Ga.

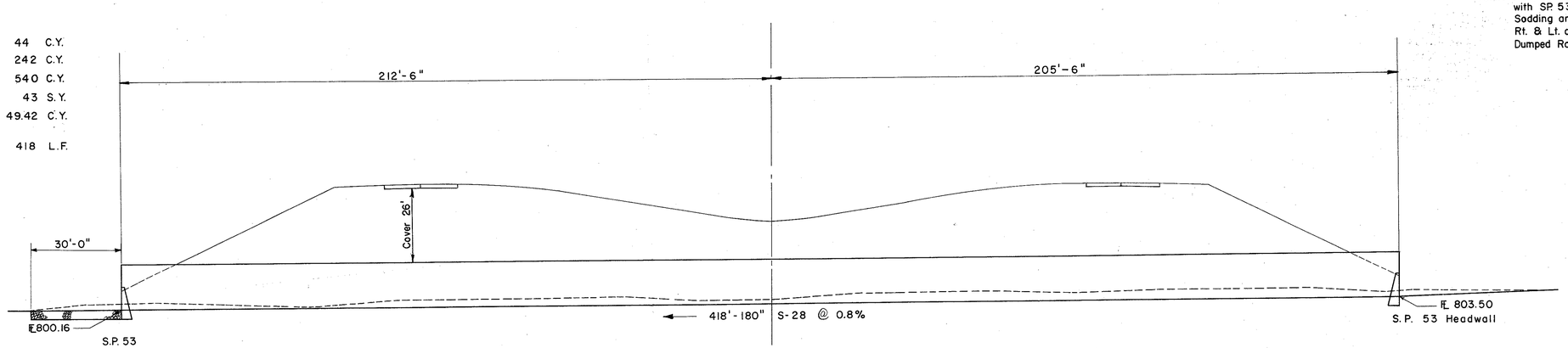
SIZE: 418' - 180"

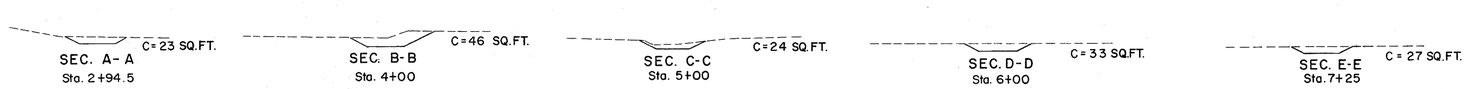
WORK REQ'D.: Build a Pipe Culvert with SP. 53 Headwalls. Place Sodding and Excavate Channel Rt. & Lt. as shown. Place Dumped Rock at Outlet.

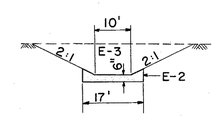
ESTIMATED QUANTITIES

I-10	Dumped Rock Channel Protection	44 C.Y.
*E-2	Excavation for Structures	242 C.Y.
E-3	Channel Excavation	540 C.Y.
L-10	Sodding	43 S.Y.
S-1	Concrete for Structures Class "E"	49.42 C.Y.
S-28	180" Sectional Corrugated Metal Structures Sec. M-6.4(g) 1-1 Gage	418 L.F.

* Includes Excavation for Headwalls







METHOD OF ESTIMATING E-2, EXCAVATION FOR STRUCTURES

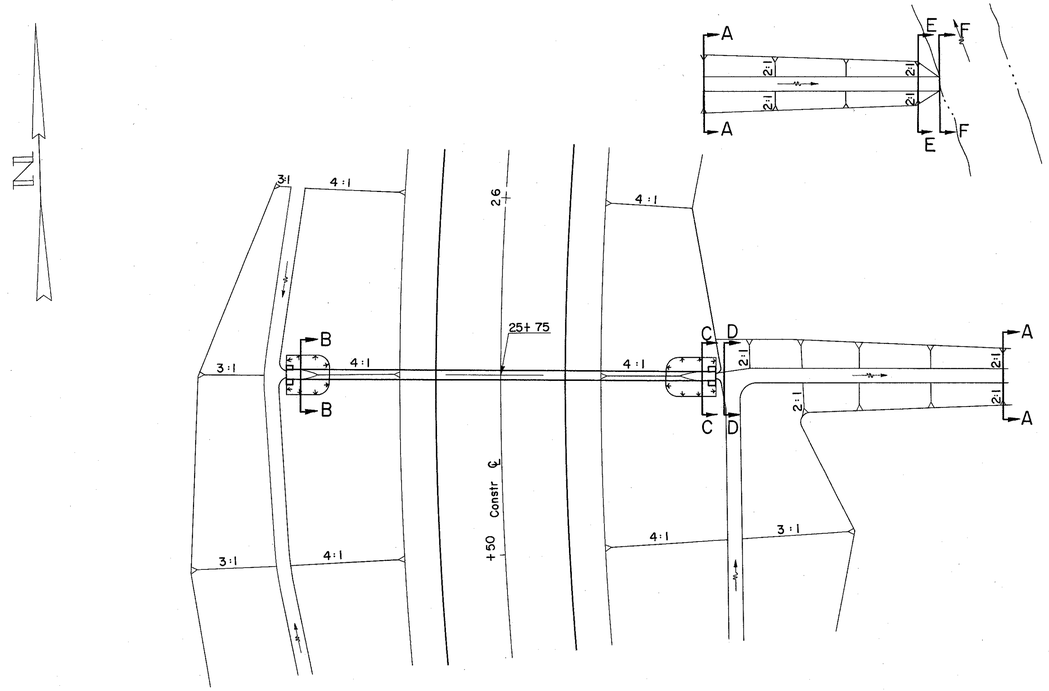
STRUCTURE NO. LAK-1-1279

PIPE CULVERT STA. 322 + 30

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

267
306

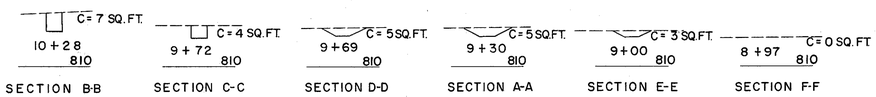
LAKE COUNTY
LAK-1-10.38



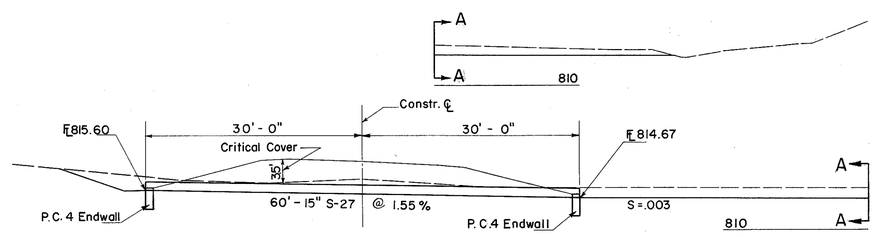
SCALE : 1" = 10'-0"

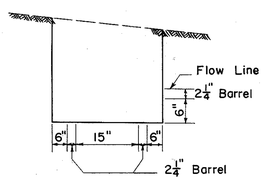
HEADWATER = 1.16 FT.
OUTLET VELOCITY = 5.6 F.P.S.
4.0 F.P.S.

AREA = 1.0 ACRE
Q_{25} 3.6 C.F.S.



SECTION B-B SECTION C-C SECTION D-D SECTION A-A SECTION E-E SECTION F-F





METHOD OF ESTIMATING E-2,
EXCAVATION FOR STRUCTURES

CULVERT DATA

TYPE: S-27 with P.C.4 Endwalls

SIZE: 15" x 60'

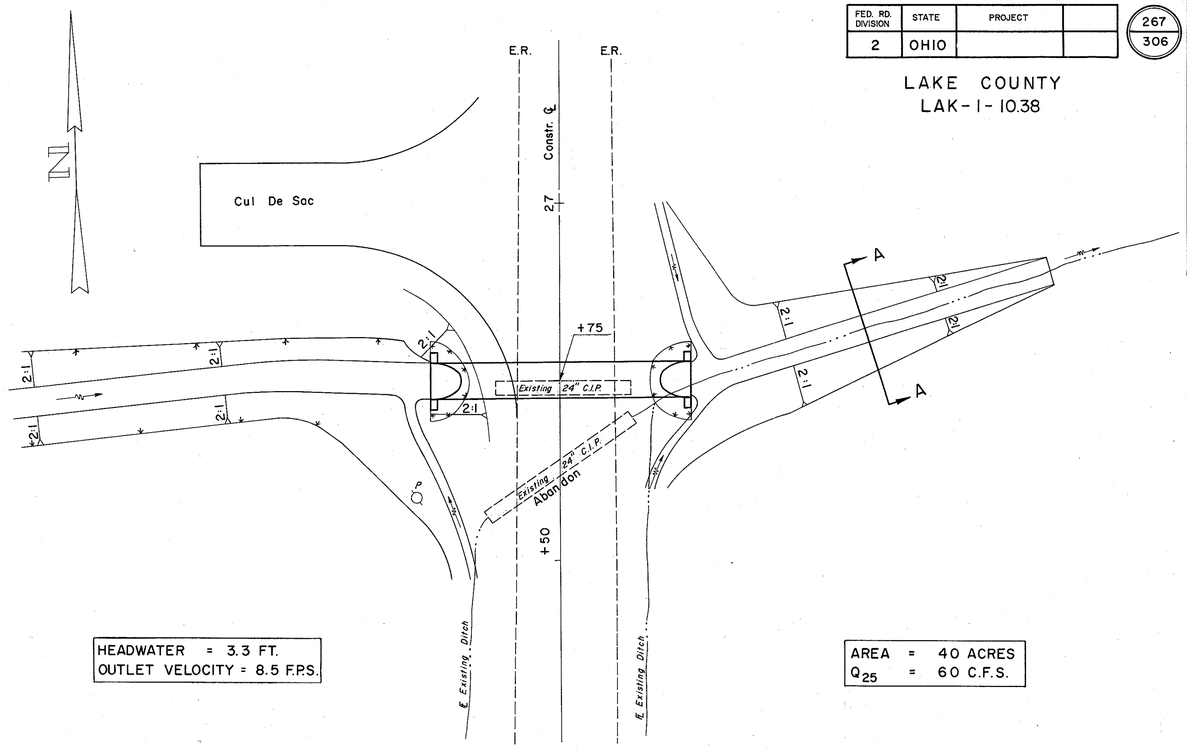
WORK REQ'D: Build a Pipe Culvert with PC-4 Endwalls, Excavate Channel on Rt.as shown. Place Sodding Rt. & Lt.as shown.

ESTIMATED QUANTITIES

* E-2	Excavation for Structures	16 C.Y.
E-3	Channel Excavation	12 C.Y.
S-1	Concrete for Structures Cl. "E"	0.56 C.Y.
L-10	Sodding	60 S.Y.
S-27	15" Pipe for Roadway Culverts	60 L.F.

* Includes Excavation for Headwalls

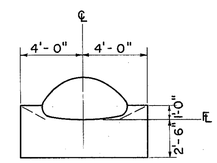
PIPE CULVERT HERMITAGE RD. STA. 25+75



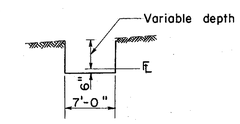
HEADWATER = 3.3 FT.
OUTLET VELOCITY = 8.5 F.P.S.

AREA = 40 ACRES
Q_{25} = 60 C.F.S.

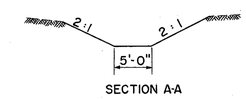
SCALE : 1" = 10'-0"



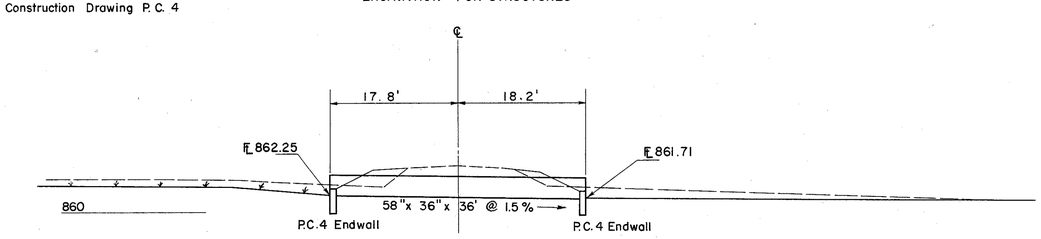
P.C. 4 ENDWALL
For Futher Details See Standard Construction Drawing P.C. 4



METHOD OF ESTIMATING E-2
EXCAVATION FOR STRUCTURES



SECTION A-A



CULVERT DATA

TYPE: P.C. 4, Sec. M-6.4 (i) 8ga.

SIZE: 58"x 36"x 36'

WORK REQ'D: Build a Pipe Culvert with P.C. 4 Endwalls. Excavate Channel Rt. Place Sodding Lt. & Rt. as shown.

Note: Replacement of existing pavement shall be at the direction of the Engineer. Payment for replacement shall be at the unit price bid for the pertinent items.

ESTIMATED QUANTITIES

* E-2	Excavation for Structures	37 C.Y.
E-3	Channel Excavation	13 C.Y.
S-1	Concrete for Structures Cl."E"	1.8 C.Y.
L-10	Sodding	7 S.Y.
S-27	58"x 36" Corrugated Metal Arch Sec. M-6.4 (i)(d).	36 L.F.

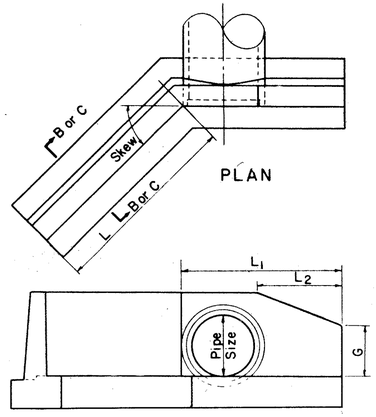
* Includes Excavation for Headwalls

PIPE CULVERT KELLOGG RD. STA. 26+75

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

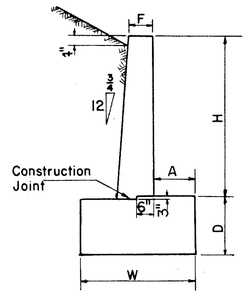
268
306

LAKE COUNTY
LAK-1-10.38



PLAN

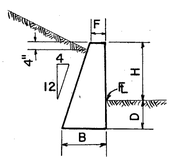
ELEVATION



SECTION B-B

HEADWALL DIMENSIONS

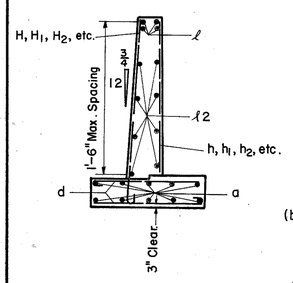
STRUCTURE NO.	STATION*	PIPE SIZE	H	L	L_1	L_2	W	A	B	C	D	E	F	G
LAK-1-1094	223+19 LT.	30"	3'-6"	7'-0"	6'-0"	3'-0"	—	—	3'-2"	—	3'-0"	—	1'-0"	2'-4"
LAK-1-1094	223+19 RT.	30"	3'-6"	6'-6"	5'-6"	2'-6"	—	—	3'-2"	—	3'-0"	—	1'-0"	1'-5"
LAK-1-1120	237+02 LT.	48"	5'-3"	11'-0"	9'-0"	4'-6"	4'-6"	1'-5"			3'-0"		1'-6"	3'-5"
LAK-1-1120	236+61 RT.	36"	4'-0"	6'-6"	7'-0"	3'-6"	3'-6"	1'-0"			3'-0"		1'-6"	2'-6"
LAK-1-1120	237+09 RT.	36"	4'-0"	7'-0"	7'-0"	3'-6"	3'-6"	1'-0"			3'-0"		1'-6"	2'-6"
LAK-1-1136	245+25 LT.	54"	5'-9"	9'-6"	10'-0"	5'-2"	4'-9"	1'-7½"			3'-0"		1'-6"	3'-8"
LAK-1-1136	245+25 RT.	54"			Same	as	Left	Side						
LAK-1-1173	265+01 LT.	66"	6'-9"	11'-6"	13'-6"	7'-7"	5'-3"	1'-10½"			3'-0"		1'-6"	4'-9"
LAK-1-1173	265+01 RT.	66"	6'-9"	11'-0"	16'-0"	10'-1"	5'-3"	1'-10½"			3'-0"		1'-6"	5'-10"



SECTION C-C

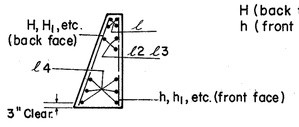
REINFORCING STEEL LIST & CONCRETE QUANTITIES

STRUCTURE NO.	STATION*	PIPE SIZE	SKEW	MARK a	NO.	MARK b	NO.	MARK c	NO.	MARK d	NO.	MARK ℓ	NO.	MARK ℓ1	NO.	MARK ℓ2	NO.	MARK ℓ3	NO.	MARK ℓ4	NO.	MARK H	NO.	MARK H1	NO.	MARK H2	NO.	MARK H3	NO.	MARK H4	NO.	MARK h	NO.	MARK h1	NO.	MARK h2	NO.	MARK h3	NO.	MARK h4	NO.	S-4* REINFORCING STEEL LBS.	S-1* CLASS "C" CONCRETE CU. YDS.	STRUCTURE DETAILS SHEET NO.
LAK-1-1094	223+19 LT.	30"	30°	—	—	—	—	—	—	—	—	9'-10"	4	4'-10"	2	6'-8"	2	2'-8"	3	13'-6"	6	6'-2"	5	5'-11"	1	5'-5"	1	4'-11"	1	—	—	6'-1"	5	5'-11"	1	5'-5"	1	4'-11"	1	—	—	256	6.0	259
LAK-1-1094	223+19 RT.	30"	40°	—	—	—	—	—	—	—	—	9'-3"	4	4'-4"	2	6'-2"	2	2'-2"	2	12'-10"	6	6'-2"	4	5'-11"	1	5'-0"	1	4'-0"	1	—	—	6'-1"	4	5'-11"	1	5'-0"	1	4'-0"	1	—	—	228	5.4	259
LAK-1-1120	237+02 LT.	48"	25°	11'-8"	8	9'-8"	8	—	—	4'-9"	32	15'-4"	4	6'-4"	2	10'-8"	8	4'-2"	6	—	—	8'-3"	7	8'-3"	1	7'-8"	1	7'-1"	1	6'-7"	1	4'-11"	7	4'-11"	1	4'-4"	1	3'-9"	1	3'-3"	1	673	16.0	261
LAK-1-1120	236+61 RT	36"	18°	6'-10"	8	7'-4"	8	—	—	3'-9"	22	9'-10"	4	5'-4"	2	6'-2"	6	3'-2"	6	—	—	7'-0"	5	7'-0"	1	6'-4"	1	5'-8"	1	—	—	3'-8"	5	3'-8"	1	3'-0"	1	2'-4"	1	—	—	400	8.1	261
LAK-1-1120	237+09 RT.	36"	24°	7'-7"	8	7'-7"	8	—	—	3'-9"	22	10'-4"	4	5'-4"	2	6'-8"	6	3'-2"	6	—	—	7'-0"	5	7'-0"	1	6'-4"	1	5'-8"	1	—	—	3'-8"	5	3'-8"	1	3'-0"	1	2'-4"	1	—	—	413	8.6	261
LAK-1-1136	245+25 LT.	54"	21°	10'-3"	8	10'-9"	8	—	—	5'-0"	30	14'-2"	4	7'-0"	2	9'-2"	8	4'-10"	6	—	—	8'-9"	6	8'-9"	1	8'-1"	1	7'-5"	1	6'-10"	1	5'-5"	6	5'-5"	1	4'-9"	1	4'-1"	1	3'-6"	1	691	16.13	262
LAK-1-1136	245+25 RT.	54"	21°															Same	as	Left	Side																					691	16.13	262
LAK-1-1173	265+01 LT.	66"	17°	12'-1"	10	14'-1"	10	—	—	5'-6"	38	17'-3"	4	9'-5"	2	11'-2"	10	7'-3"	8	—	—	9'-9"	7	9'-9"	1	9'-3"	1	8'-10"	1	8'-4"	1	6'-5"	7	6'-5"	1	5'-11"	1	5'-6"	1	5'-0"	1	1004	23.6	263
LAK-1-1173	265+01 RT.	66"	9°	11'-3"	10	16'-3"	10	—	—	5'-6"	42	16'-9"	4	11'-11"	2	10'-8"	10	9'-9"	10	—	—	9'-9"	7	9'-9"	1	9'-7"	1	9'-5"	1	9'-3"	1	6'-5"	7	6'-5"	1	6'-3"	1	6'-1"	1	5'-11"	1	1107	25.4	263
																																h5		h6									
																						H5		H6								4'-7"	1									
LAK-1-1173	265+01 LT.	66"	17°																			7'-11"	1									5'-9"	1	5'-8"	1							
																						9'-1"	1	9'-0"	1																	

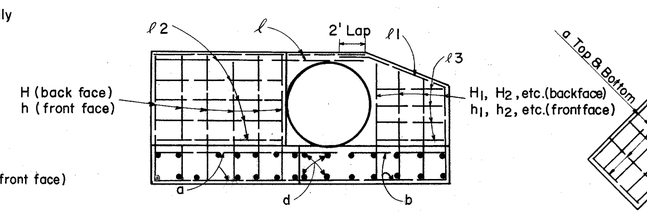


SECTION B-B

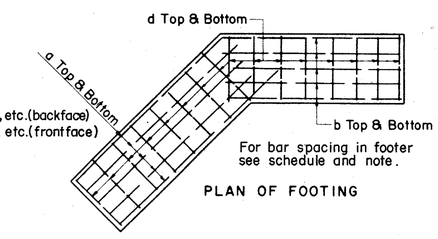
NOTE:
The number of a & b bars shown above shall be equally spaced across the footer.



SECTION C-C

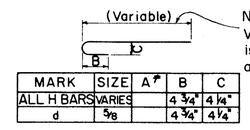


ELEVATION



For bar spacing in footer see schedule and note.

PLAN OF FOOTING



MARK	SIZE	A*	B	C
ALL H BARS	VARIES		4 3/4"	4 1/4"
d	5/8		4 3/4"	4 1/4"

*Varies

NOTE:
Variable length as shown is length of H bar shown above less $7\frac{3}{16}$"

NOTE:
For additional information see Std. Constr. Dwgs. Hdwl. A, B & C.
Mark ℓ and ℓ4 bars to be bent in field.

*NOTE:
Quantities shown are for one Hdwl.
Vertical Bars spaced @ 2'-0" c-c. Max.
Horizontal Bars spaced @ 1'-6" c-c Max.

Reinforcing shall have 2" clearance unless otherwise indicated.

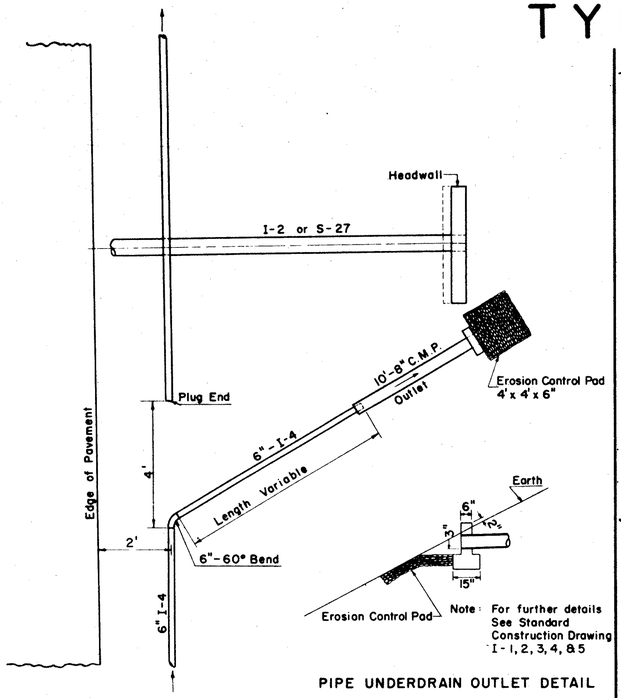
TYPE B HEADWALL DETAIL

TYPICAL DETAILS I-4 & I-2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

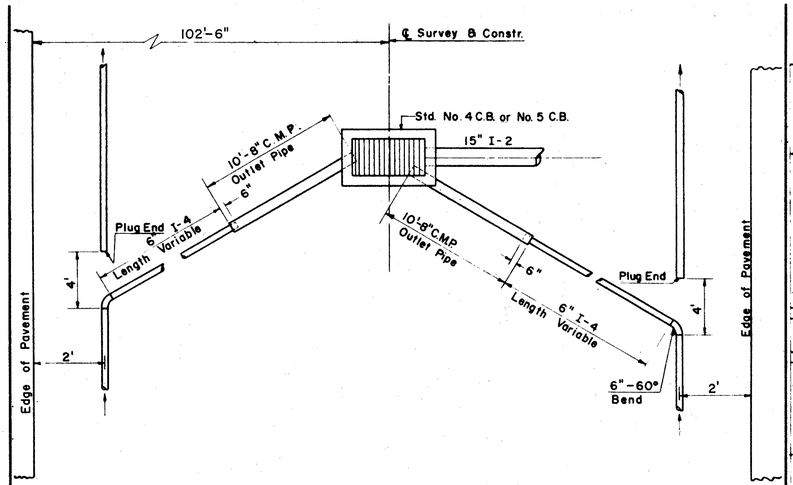
269
306

LAKE COUNTY
LAK-I-10.38

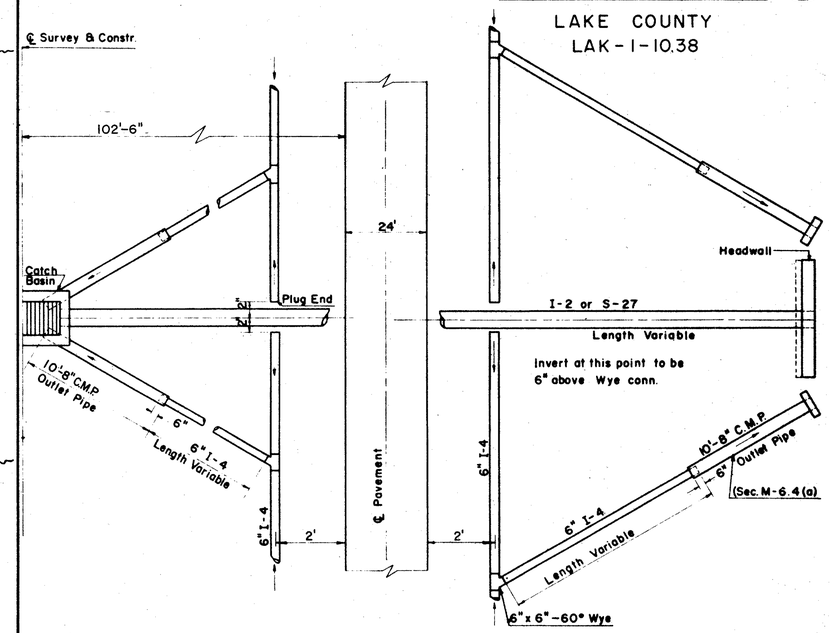


PIPE UNDERDRAIN OUTLET DETAIL

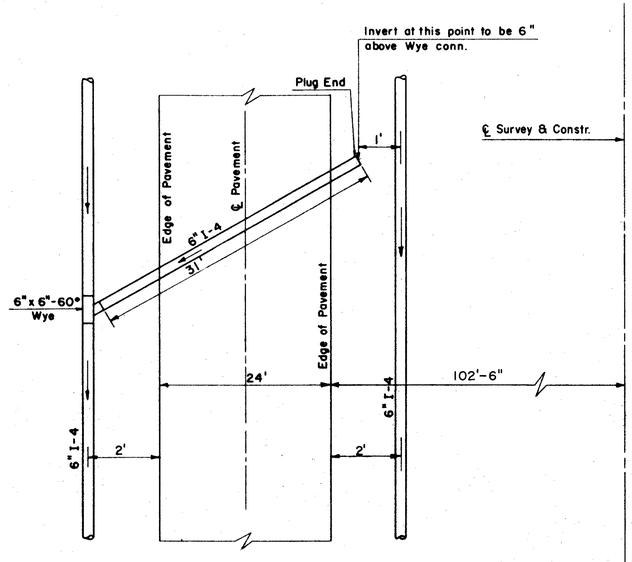
UNDERDRAIN OUTLET DETAIL A



UNDERDRAIN OUTLET DETAIL B

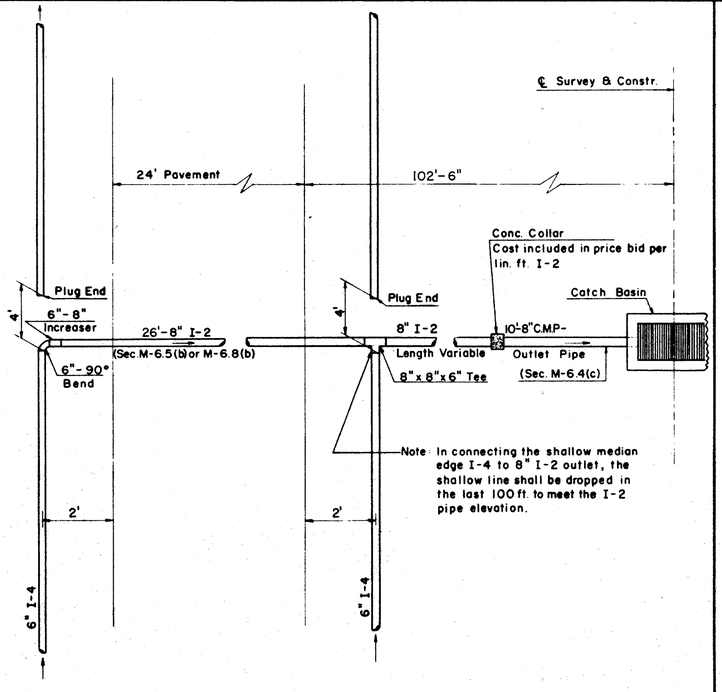


UNDERDRAIN OUTLET DETAIL C

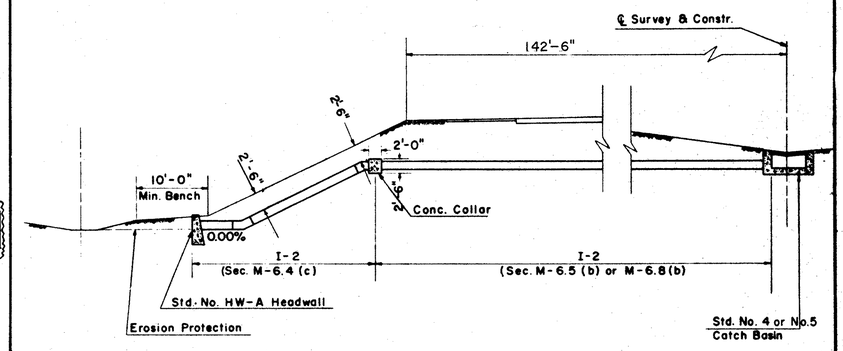


DETAIL I-4 CROSSOVER

CUT TO FILL SECTION



UNDERDRAIN OUTLET DETAIL E



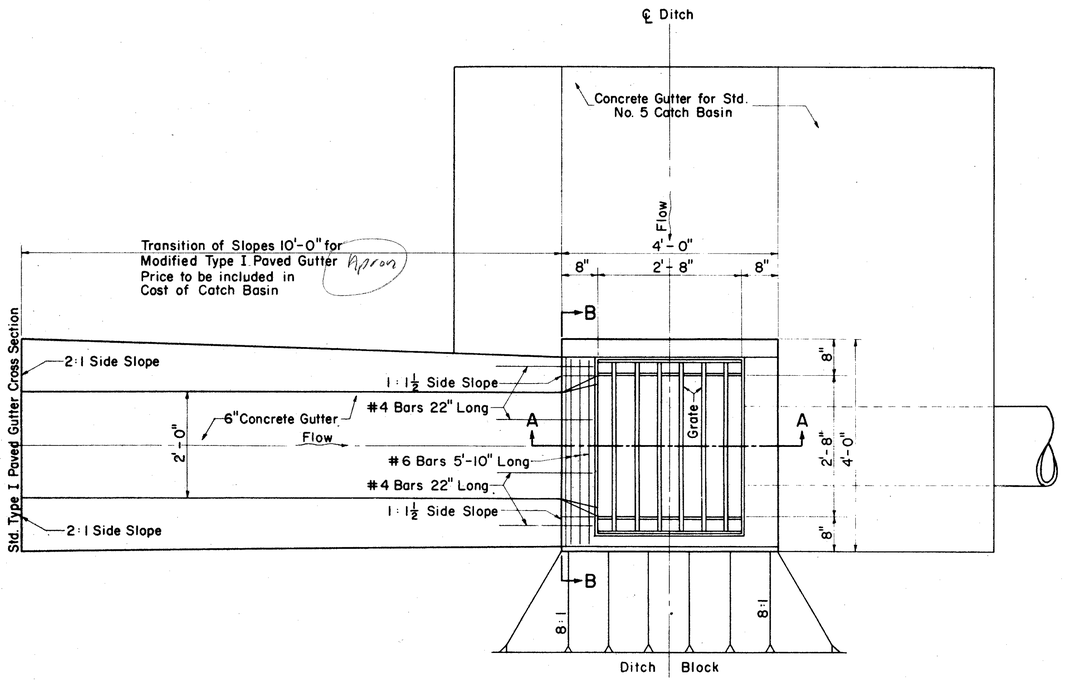
Note: Concrete collar to be included in bid price for I-2 pipe.

MEDIAN OUTLET DETAIL IN HIGH FILL

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

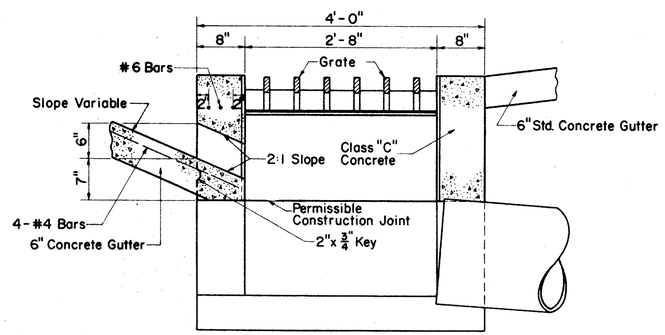
270
306

LAKE COUNTY
LAK-1-10.38

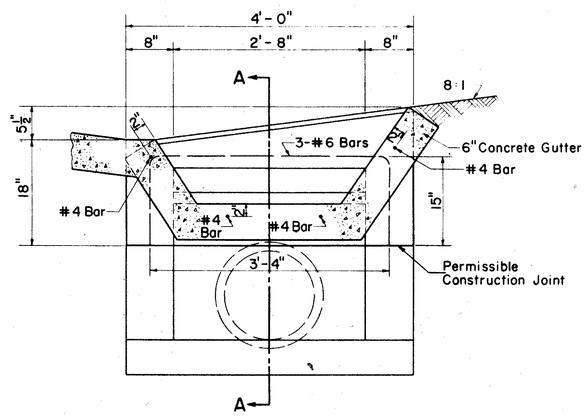


PLAN
SCALE: $\frac{3}{4}$" = 1'-0"

NOTE:
Unless otherwise shown, Details and Notes shall conform to STANDARD DRAWING NO. I-8 C.B. No. 5.

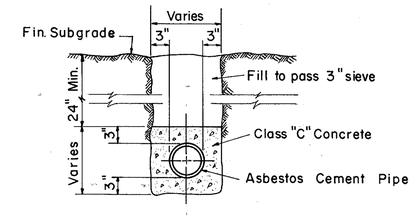


SECTION A-A
SCALE: 1" = 1'-0"

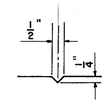


SECTION B-B
SCALE: 1" = 1'-0"

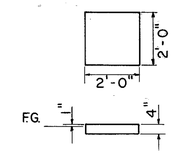
MODIFIED STANDARD NO. 5 CATCH BASIN
WITH MODIFIED TYPE I PAVED GUTTER



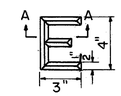
ONE WAY DUCT SECTION
SCALE: 1" = 1'



SECTION A-A



CONCRETE MARKER
SCALE: $\frac{3}{8}$" = 1'



TYPICAL SYMBOL
SCALE: $\frac{3}{16}$" = 1"

Dimensions shown are for all symbols impressed in Concrete Marker

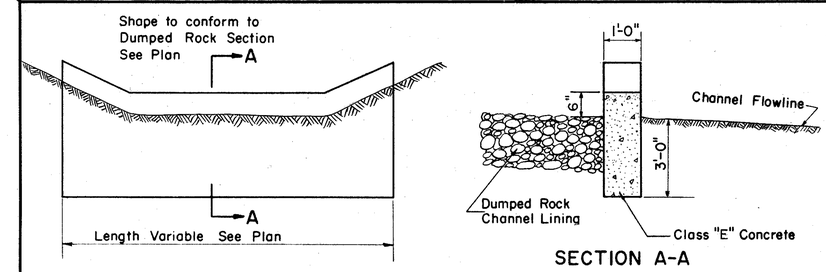
UNDERGROUND ELECTRICAL DUCT. Ducts shall be encased by Class C Concrete having a minimum thickness of three inches, shall have at least 24" cover below subgrade and shall be pitched to drain. Ends of ducts shall extend two feet beyond edge of shoulder pavement or back of curb. One No. 10 AWG galvanized steel drag wire shall be left in each duct and ends of ducts shall be closed with capped bushings

EXCAVATION AND BACKFILL. Excavation and backfill shall conform with the applicable provisions of Item E-2.

DUCT MARKERS. Concrete markers, manufactured in accordance with details shown on the plan shall be placed over each end of each underground duct. Markers shall be installed flat on the ground, projecting one inch above finished grade. Cost of furnishing and installing markers shall be included in the unit price bid for conduit.

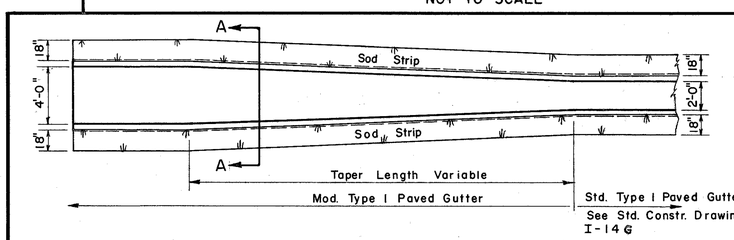
Payment for all of the materials and work necessary to complete this item as described hereon shall be included in the unit price bid for Item S-25, Asbestos Cement Conduit, Sec. M-206.14, as per plan.

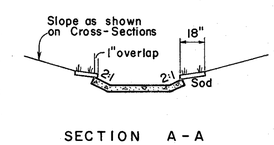
NOTE:
Impress the word "Duct" in the top of Concrete Marker using letters of the type and dimensions per details.



SECTION A-A

DETAIL CONCRETE END SILL
NOT TO SCALE





SECTION A-A

DETAIL OF SOD STRIP ALONG PAVED GUTTER & MODIFICATION OF TYPE I PAVED GUTTER FOR 4' BOTTOM WIDTH DITCH

DRAINAGE DETAILS
AND UNDERGROUND ELECTRICAL DUCT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

SPECIAL BERM & SLOPE PROTECTION

Prior to placement of sod in the berm and slope, galvanized poultry fence shall be placed on the finished grade in strands which shall be at right angles to the direction of flow. Each strand shall be staked securely on top and bottom with stakes spaced at four foot intervals and alternated in rows four feet apart.

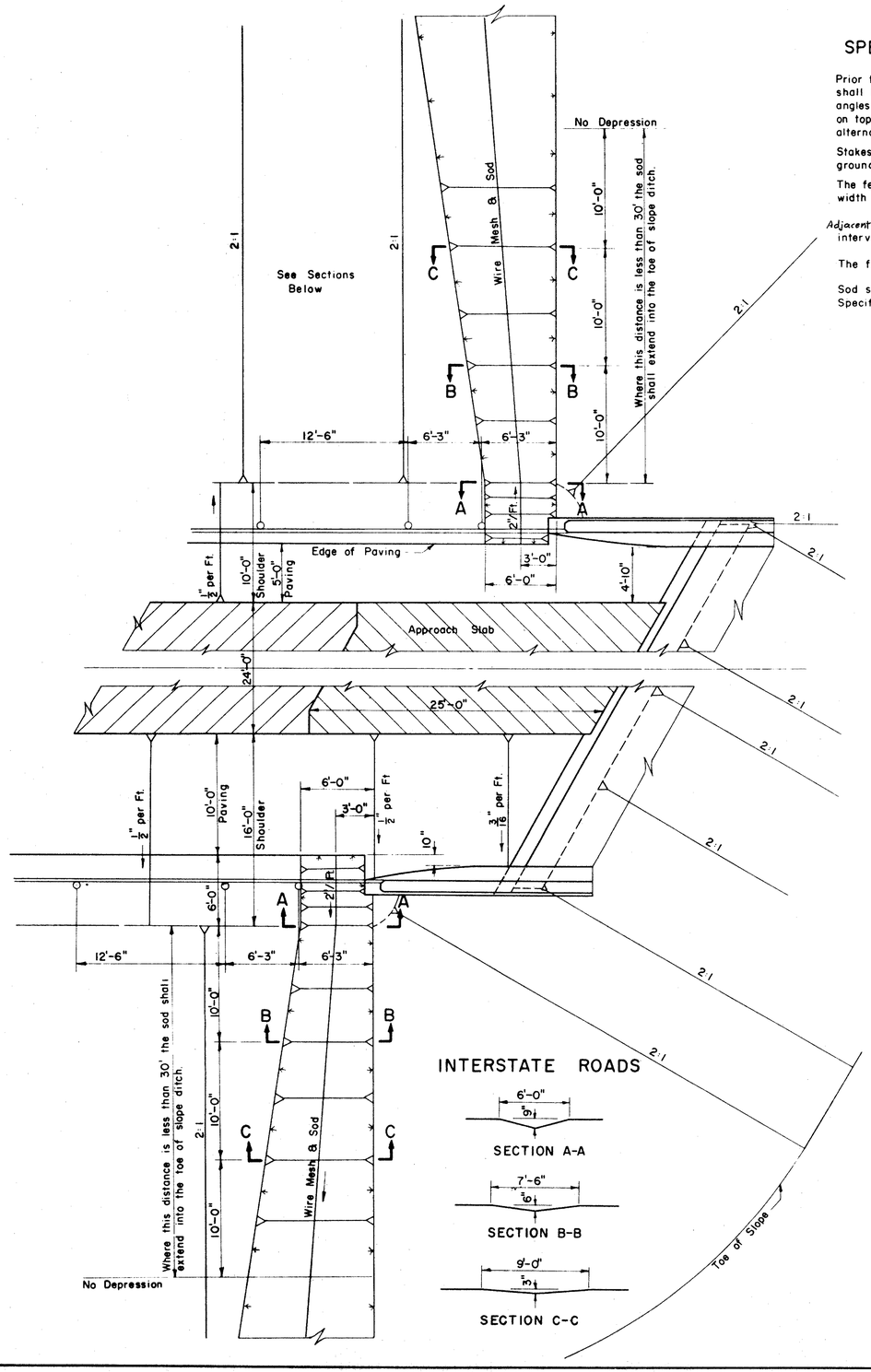
Stakes shall be 1" x 1" x 8" wood stakes and shall be perpendicular to the ground and flush with the finished grade.

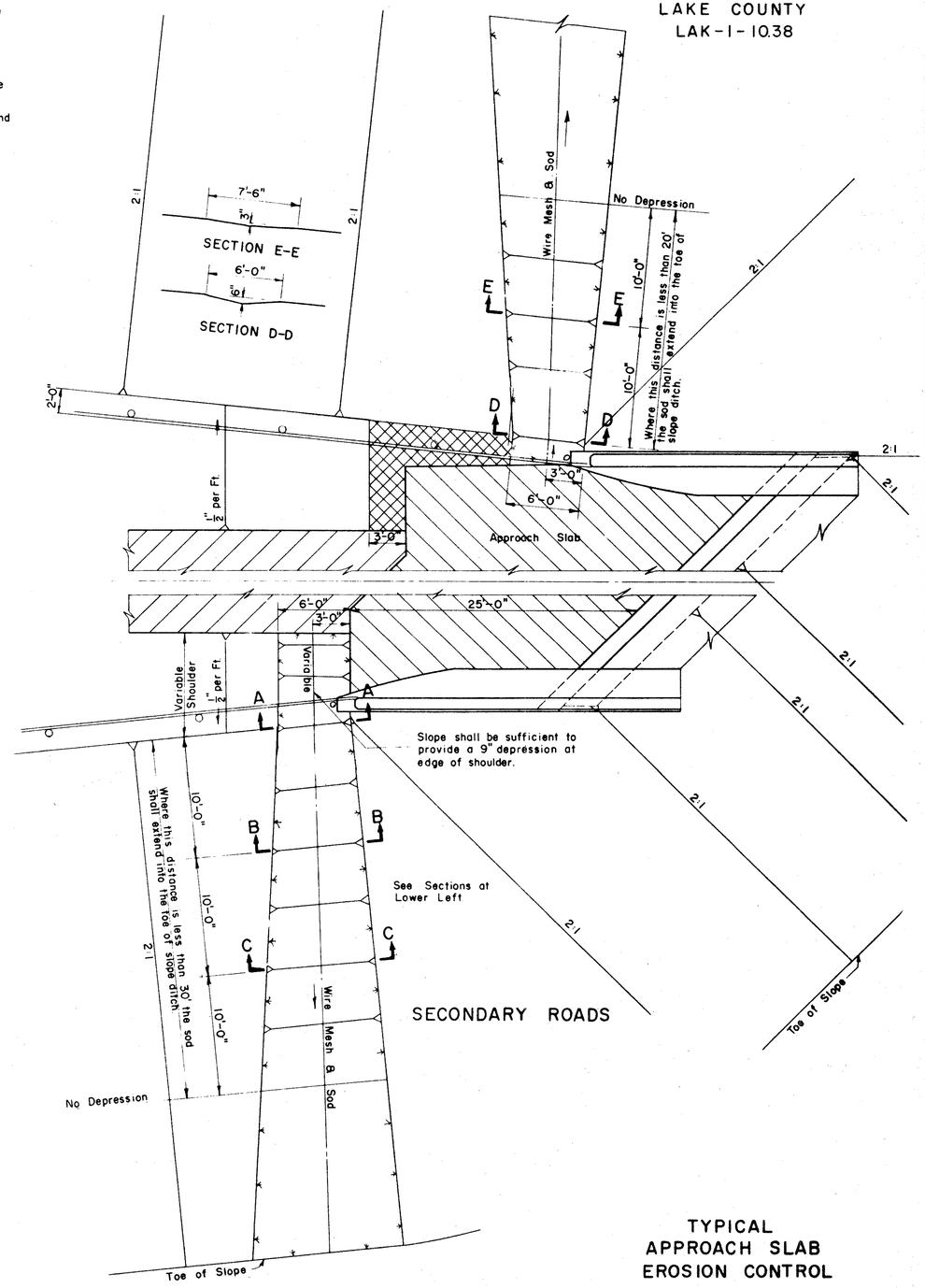
The fence shall be Straight Line Poultry Fence or equivalent with strand width of four feet, having a two inch mesh and all wires No. 20 Gauge

Adjacent strands of fencing shall be fastened together at twelve inch intervals by means of hog rings

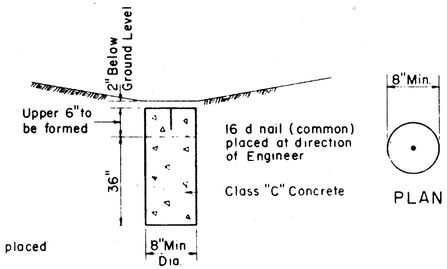
The fence shall be secured to the wood stakes by metal staples

Sod shall be laid in accordance with Construction and Materials Specifications Section L-10.07.





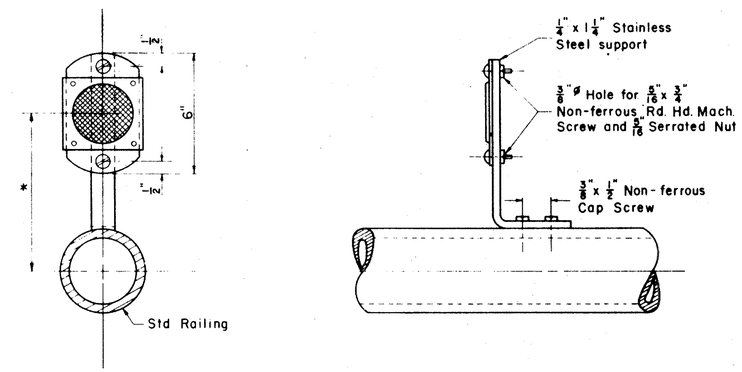
TYPICAL
APPROACH SLAB
EROSION CONTROL



Note.
Monuments to be placed by Contractor

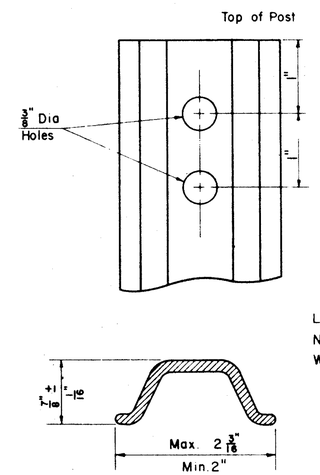
SECTION

DETAIL OF CENTERLINE REFERENCE MONUMENTS



* Length of steel support shall be such that the center of the delineator will be 48" above the elevation of a point in the bridge deck located 12' from the face of the parapet.

DELINEATOR AND BRIDGE RAIL BRACKET



Note:
Holes to be punched for a distance of 12"

Length of Post 7'-6" ± 1/4"
No. Holes ..... 12 per Post
Weight..... 1.12 lbs. per foot

SECTION VIEW

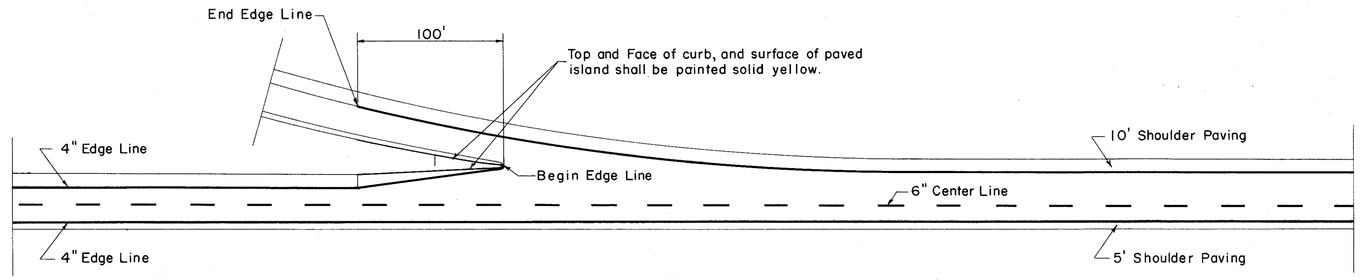
DETAIL OF STEEL DRIVE POST FOR DELINEATOR

Note :
Delineators have been estimated at intervals of 200 lin. ft. along the right side of each pavement. The actual spacing to be used will be determined at the time of construction.

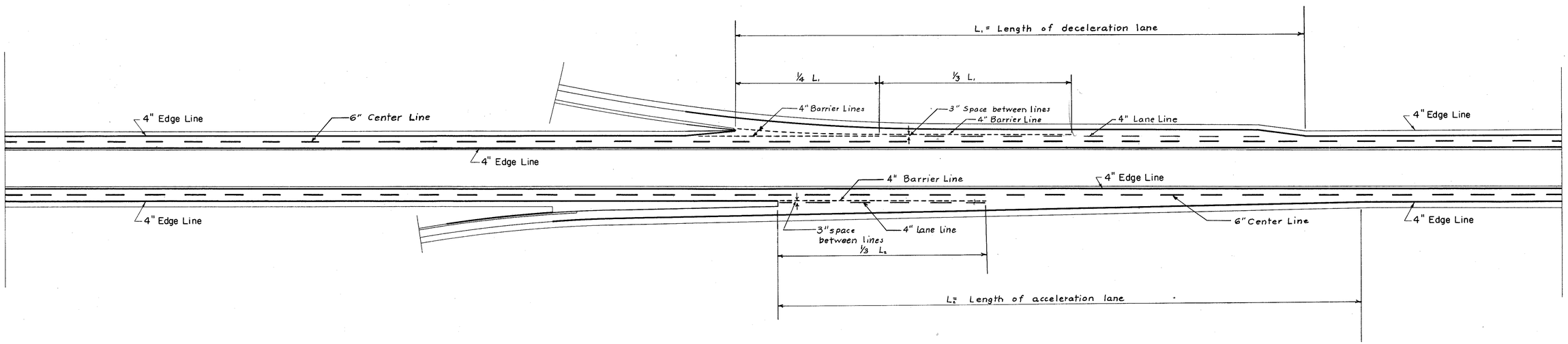
REFERENCE MONUMENT & DELINEATOR DETAIL

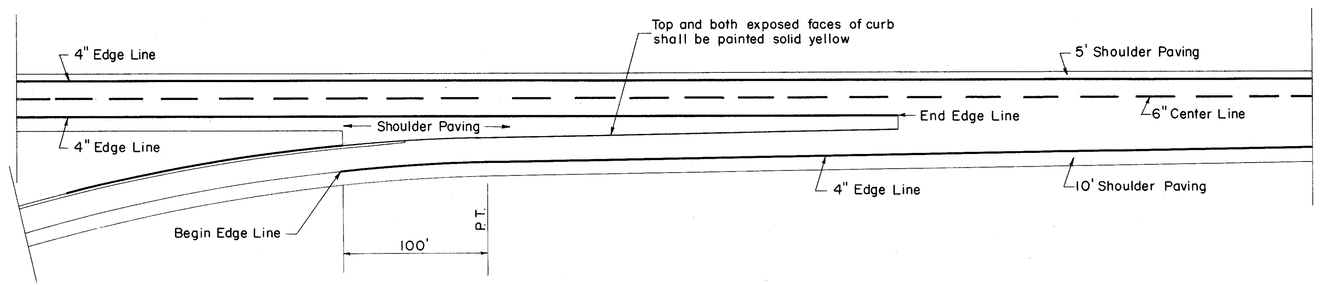
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
LAK-1-10.38

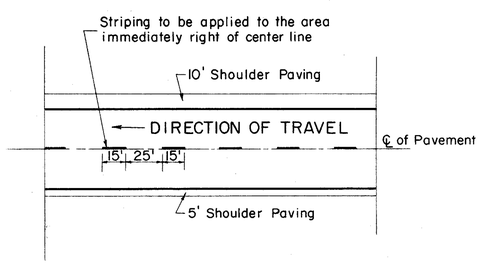


EXIT TERMINAL





ENTRANCE TERMINAL



TYPICAL CENTER LINE STRIPING

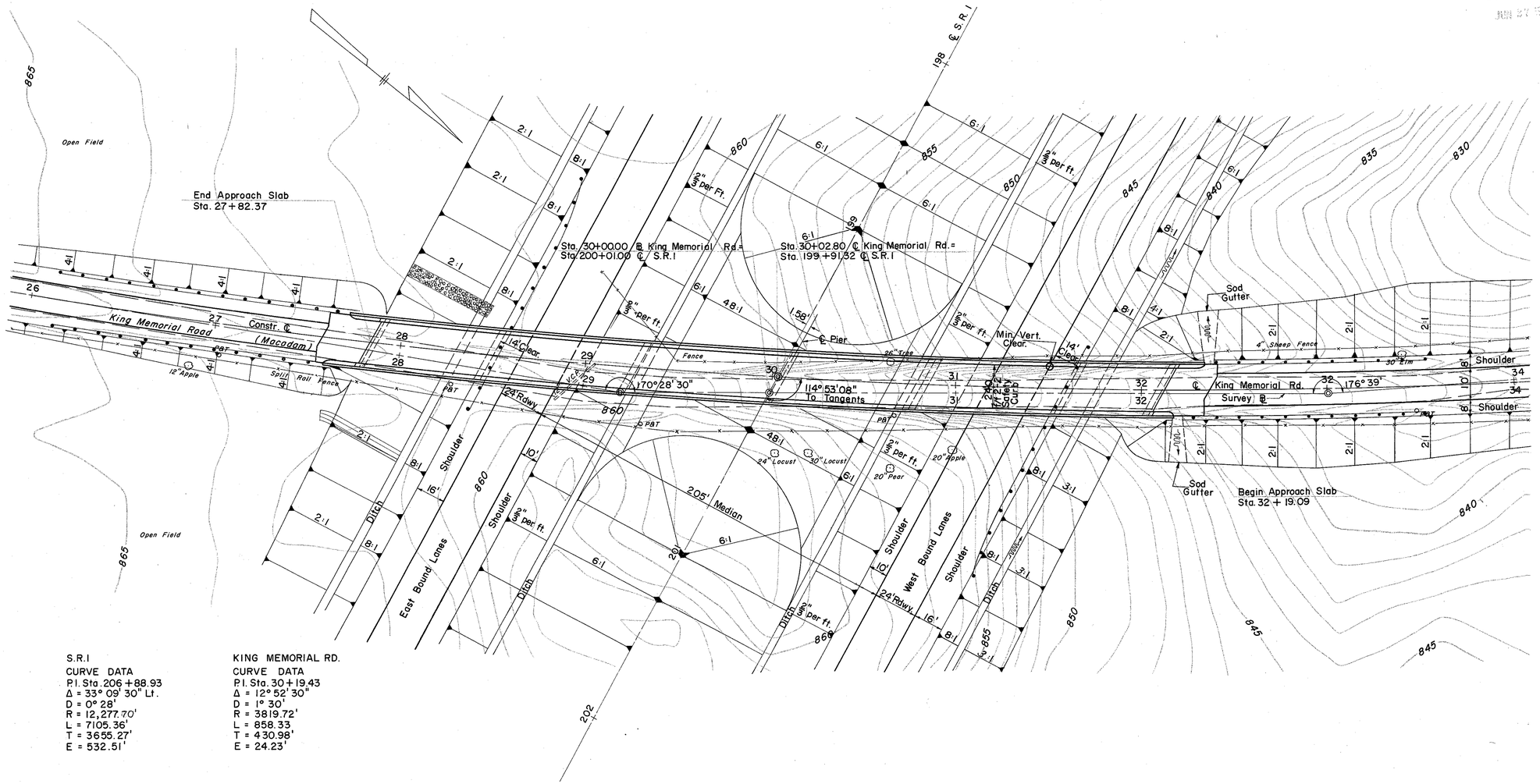
PAVEMENT MARKING DETAIL

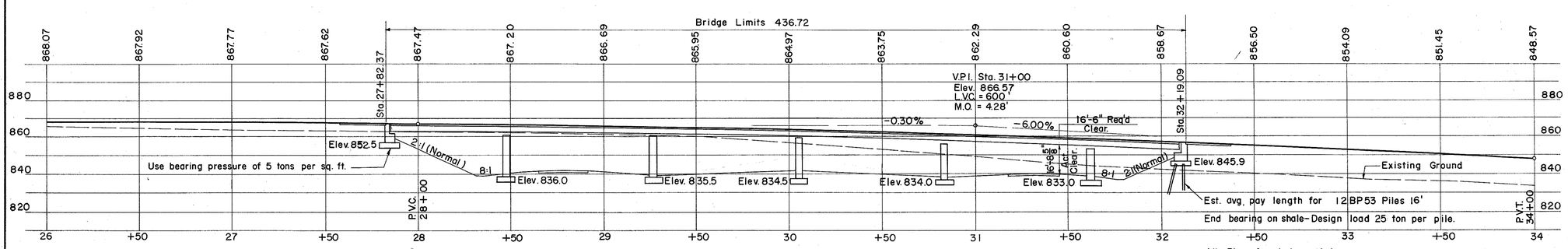
Scale: 1" = 50'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

274/306

LAKE COUNTY
SEC. LAK-1-10.38





FOUNDATION SOUNDINGS:

Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the Bureau of Bridges in Columbus or in the Division Office, but the State does not guarantee the accuracy thereof.

PROPOSED STRUCTURE

TYPE: 6-Span Continuous Rolled Beam with reinforced Concrete Deck & Substructure.

SPANS: 62'-9", 78'-6", 78'-6", 78'-6", 78'-6", 55'-0".

ROADWAY: 24'-0" f/f 2'-2" Safety Curb.

LOAD FREQUENCY: CF = 130

SKEW: 24° 53' 08" Lt.

WEARING SURFACE: 8½" Monolithic.

APPROACH SLABS: 25' Long.

ALIGNMENT: 1° 30' Curve Left

SUPERELEVATION: 0.025'/ft.

TRAFFIC COUNT: 230 (1955), 460 A.D.T. 1975

B.M. #22 Lag Bolt in Root of 18" Triple Poplar
168' ± Left of ℄ Sta. 194+10
Elev. 843.14'

B.M. #23 Lag Bolt in North Root 14" Twin Maple
250' ± Right of ℄ Sta. 204+37
Elev. 869.06'.

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

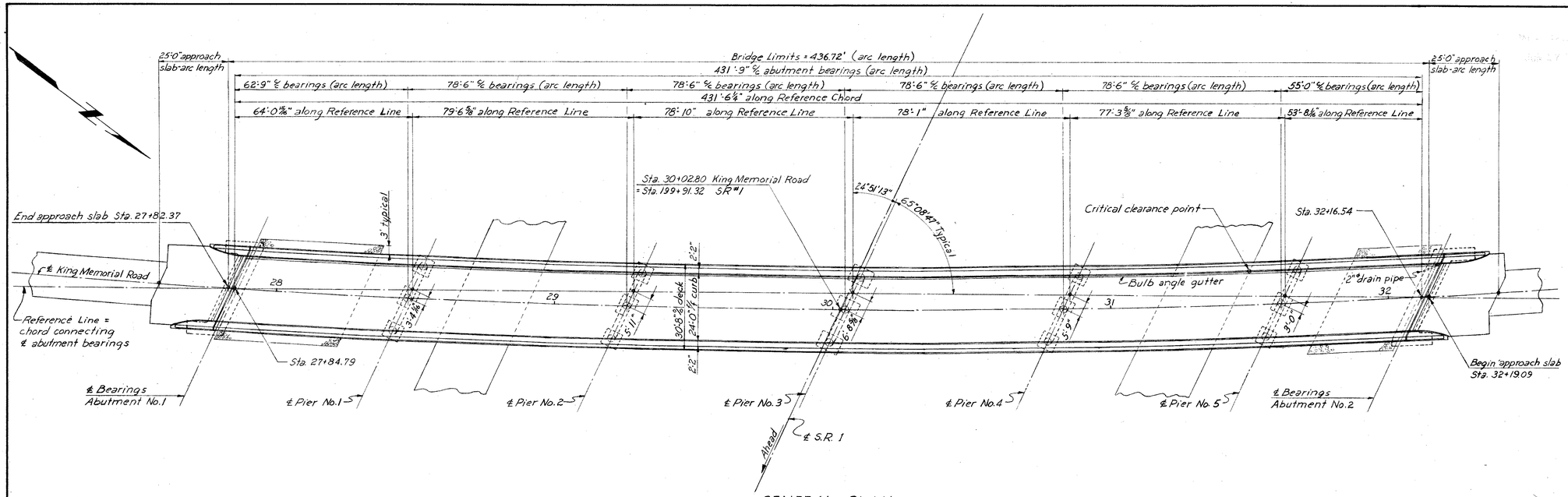
SITE PLAN
BRIDGE NO. LAK-1-1050
S.R.I UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199+91.32

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
		JJS 6-18-59				3-1-60

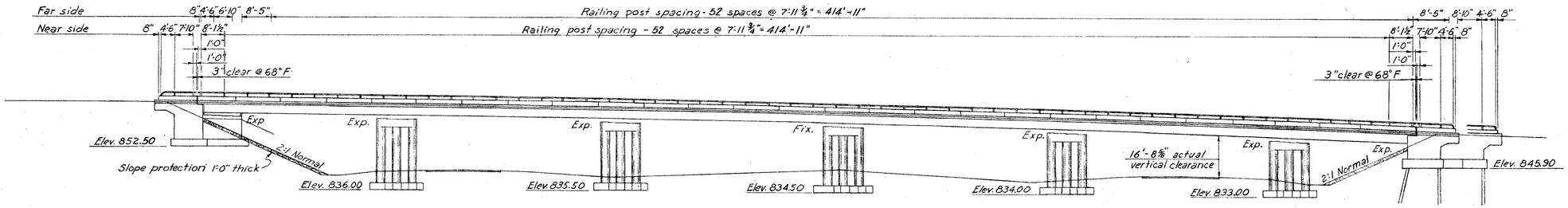
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

275
306

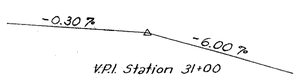
LAKE COUNTY
SEC. LAK-1-10.38



GENERAL PLAN



ELEVATION



V.P.I. Station 31+00
Elevation 866.57
L.V.C. 600'
M.O. 4.28'

VERTICAL CURVE DATA

GENERAL NOTES

- DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.
- CRUSHED AGGREGATE SLOPE PROTECTION (I-10.04), one foot thick, shall be provided as indicated on the General Plan.
- REFERENCE shall be made to Standard Drawings RB-1-55, revised 2-2-59; CSB-2-56, sheets 2 and 3 of 6, revised 2-2-59; and AR-1-57, revised 2-2-59.

PROPOSAL NOTES: See Proposal for notes concerning the requirements for A-373 Steel and Machine Finishing of Bridge Deck Slabs.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTR.	ABUTS.	PIERS	GENERAL		
E-2	331	Cu.Yds.	Unclassified excavation		316	15			
E-2	138	Cu.Yds.	Shale excavation		8	130			
S-1	416	Cu.Yds.	Class "C" concrete, superstructure	416					
S-1	130	Cu.Yds.	Class "C" concrete, pier caps & columns			130			
S-1	107	Cu.Yds.	Class "E" concrete, abutments, above footings		107				
S-1	121	Cu.Yds.	Class "E" concrete, footings		61	60			
S-4	154,814	Lbs.	Reinforcing steel	108,225	12,163	34,426			
S-7	353,400	Lbs.	Structural steel	353,400					
S-8	353,400	Lbs.	Field painting of structural steel as per plan	353,400					
S-14	924	Lin.Ft.	Railing (aluminum rail and supports, concrete parapet)	868	56				
S-16	Lump	Sum	First test pile				Lump		
S-18	272	Lin.Ft.	Steel piles, 12 BP 53		272				
S-29	26	Cu.Yds.	Porous backfill		26				
I-10	365	Sq.Yds.	Crushed aggregate slope protection				365		

SEC. C-31A

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DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

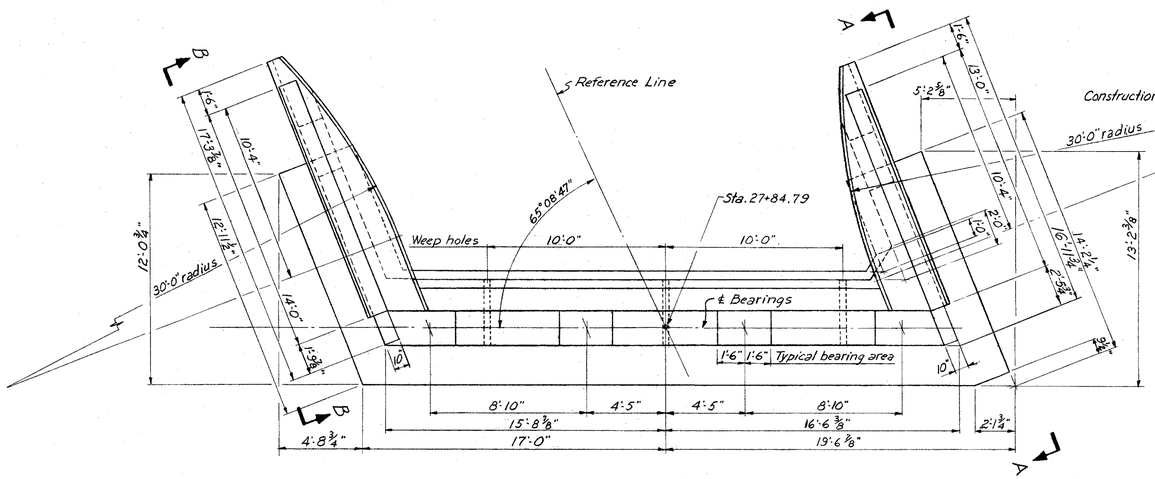
GENERAL PLAN
BRIDGE NO. LAK-1-1050
S.R.1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199+91.32

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
JJM	JJM		RLK		3-1-60

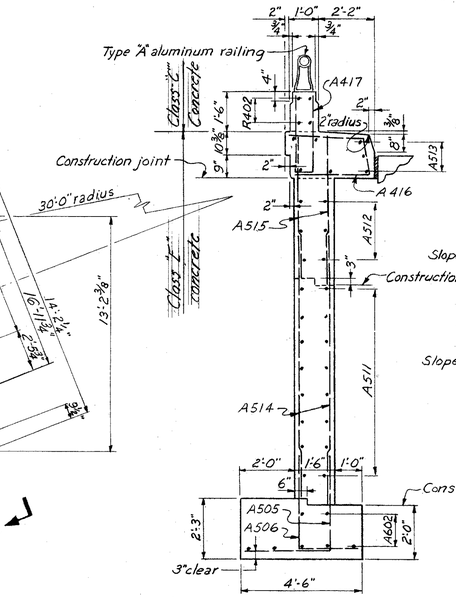
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

276 / 306

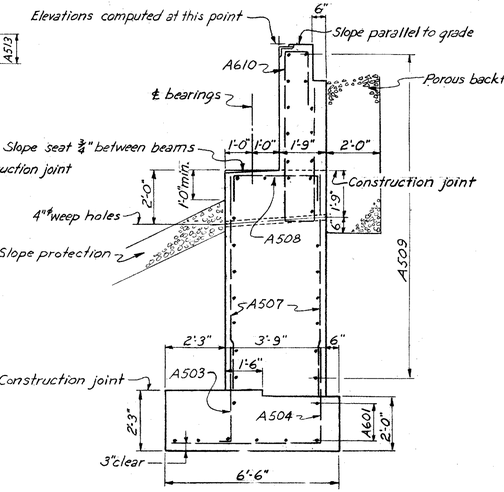
LAKE COUNTY
SEC. LAK-1-10.38



PLAN - ABUTMENT NO. 1



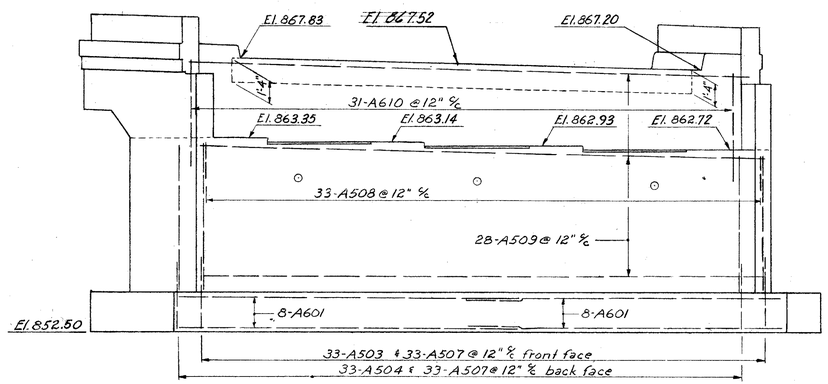
TYPICAL WING SECTION



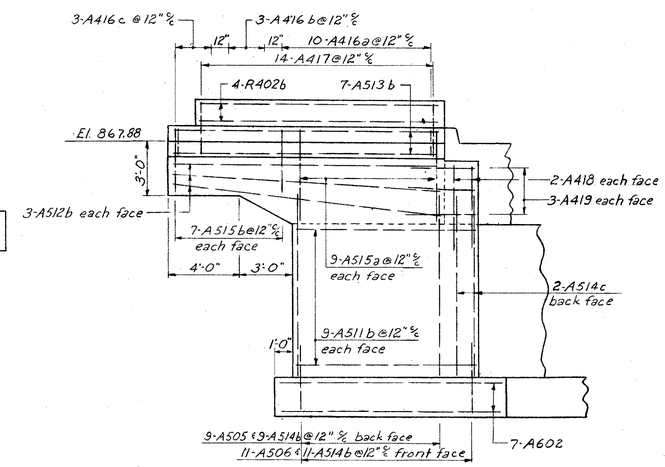
TYPICAL ABUTMENT SECTION

NOTES

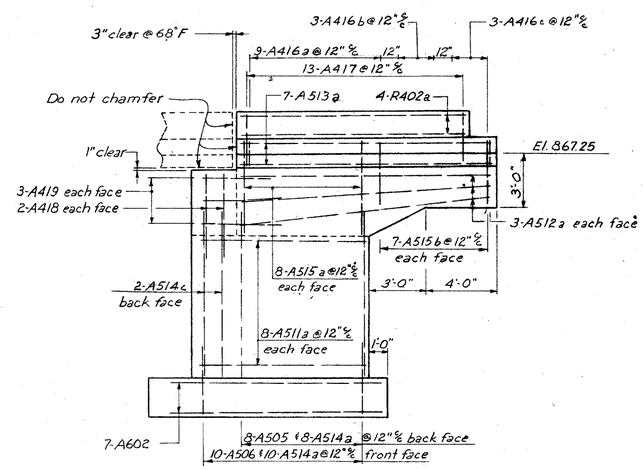
- POROUS BACKFILL, 2 feet thick, full length of the abutment shall extend up to the underside of the approach slab and outward to the wings. Excavation therefore, in excess of that required for the abutment shall be considered as included in the bid price per cu. yd. for porous backfill.
- FOUNDATION BEARING PRESSURE: Abutment No. 1 footings are designed for a maximum bearing pressure of 2.3 tons per square foot.
- All abutment concrete shall be Class "E".
- EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of footings.
- FOOTINGS shall extend a minimum of 3" into shale or to the elevation shown, whichever is lower.



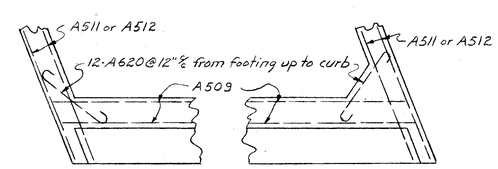
ELEVATION - ABUTMENT NO. 1



ELEVATION B-B



ELEVATION A-A



PART PLAN
SHOWING CORNER REINFORCING

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

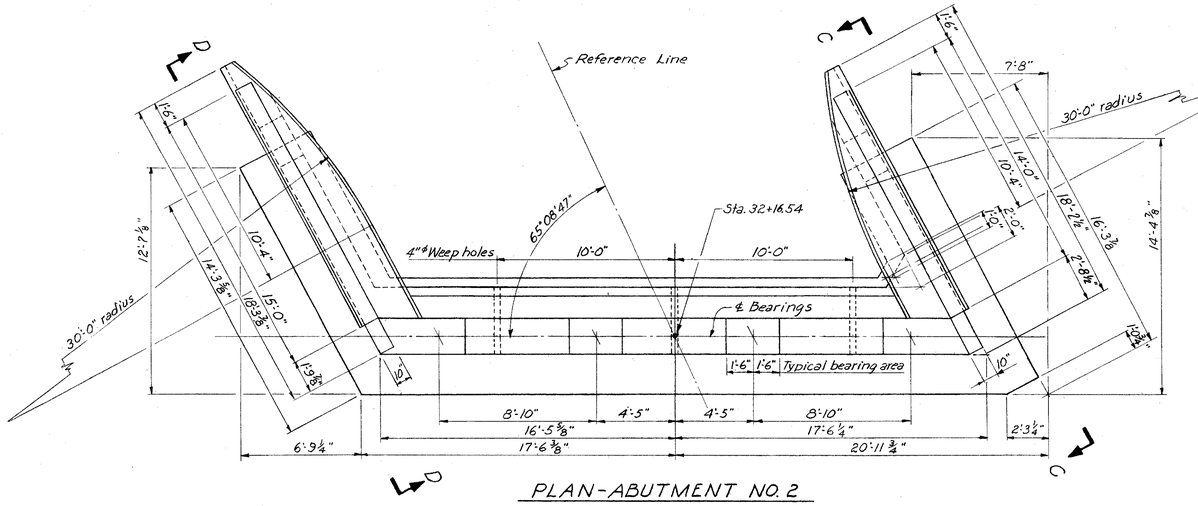
ABUTMENT NO. 1
BRIDGE NO. LAK-1-1050
S.R. 1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199 + 91.32

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
JFN	JFN		BLK		3-1-60

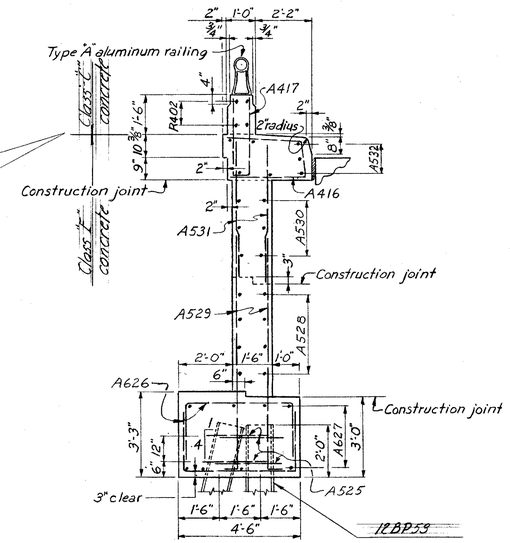
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

277
306

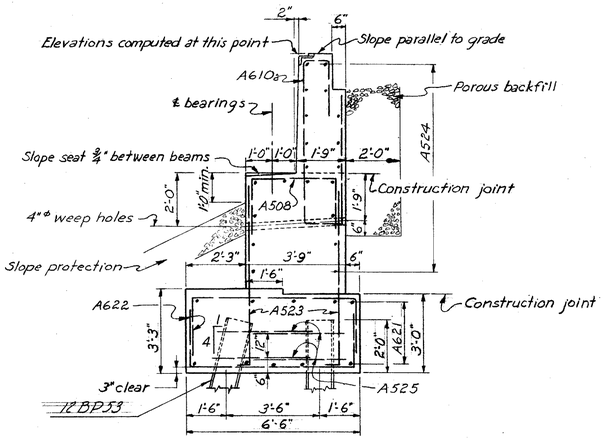
LAKE COUNTY
SEC. LAK-1-10.38



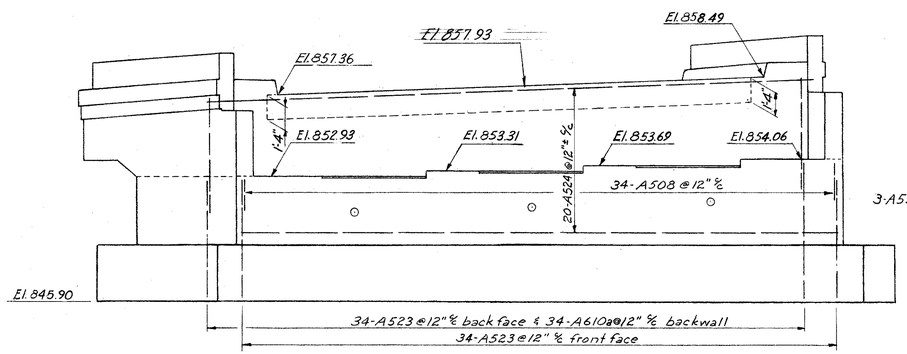
PLAN-ABUTMENT NO. 2



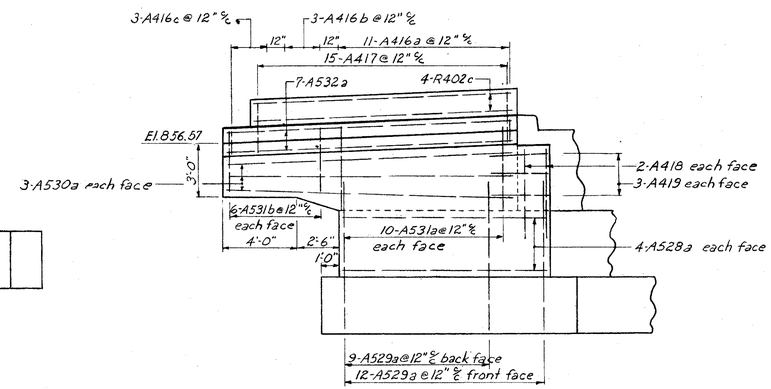
TYPICAL WING SECTION



TYPICAL ABUTMENT SECTION



ELEVATION - ABUTMENT NO. 2

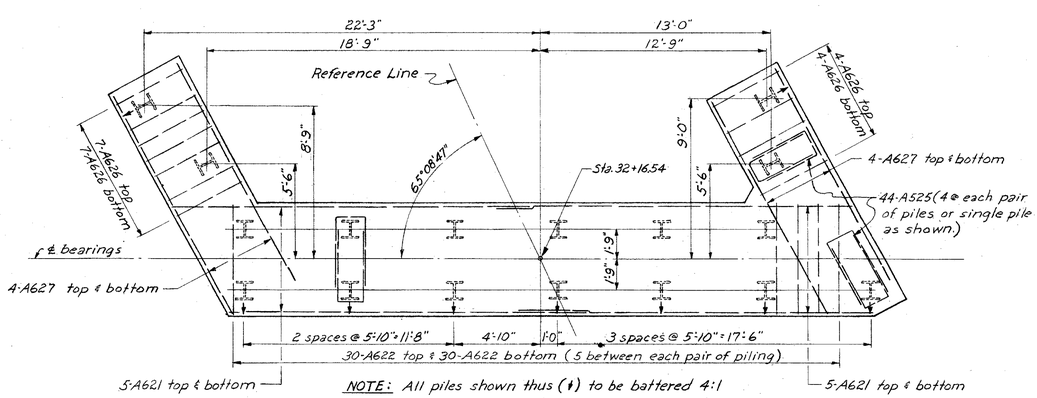


ELEVATION D-D

NOTES

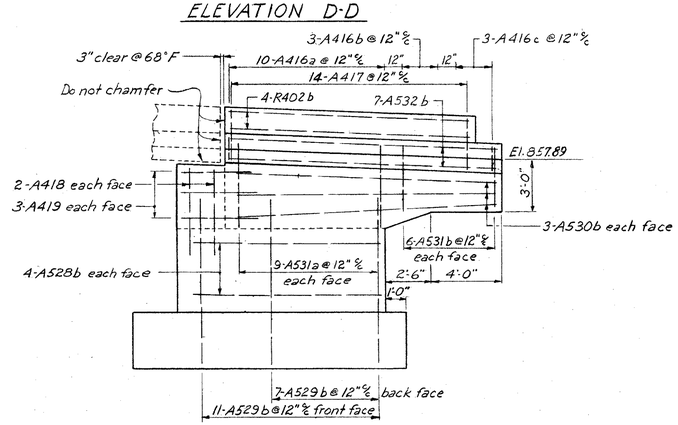
- PILES shall be driven to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:
  - 43 tons per pile using a 7,000 ft. lb. hammer
  - 36 tons per pile using a 11,000 ft. lb. hammer
  - 34 tons per pile using a 15,000 ft. lb. hammer

  If the energy rating of the hammer is between the ratings shown above, the required formula capacity shall be determined by interpolation. The design load is 25 tons per pile.
- ADDITIONAL NOTES: For additional notes, see Abutment No. 1



NOTE: All piles shown thus (◊) to be battered 4:1

PILE LAYOUT & FOOTING REINFORCING



ELEVATION C-C

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

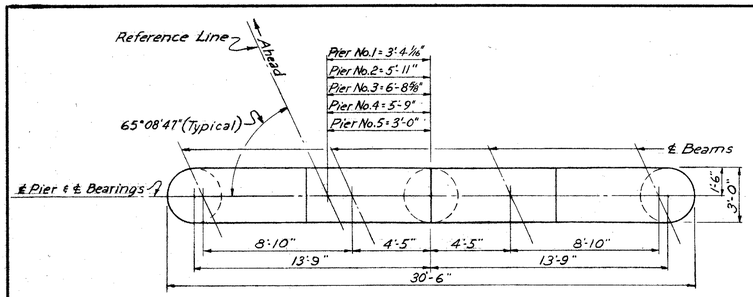
ABUTMENT NO. 2
BRIDGE NO. LAK-1-1050
S.R. 1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199 + 91.32

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
JJM	JJM		R.K.		3-1-60

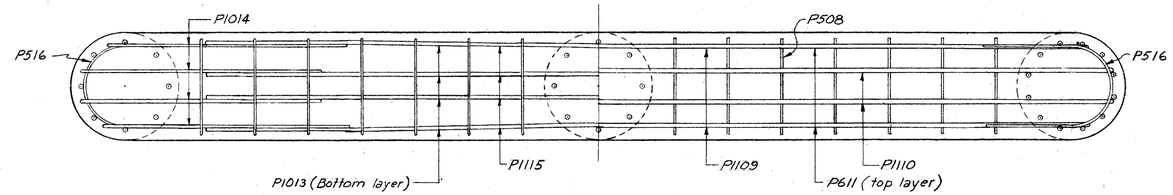
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

278
306

LAKE COUNTY
SEC. LAK-1-10.38

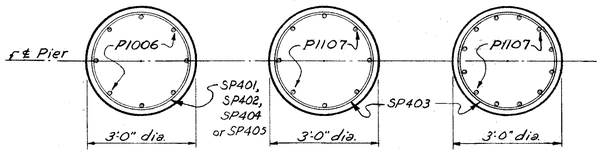


TYPICAL PIER CAP PLAN



SECTION A-A

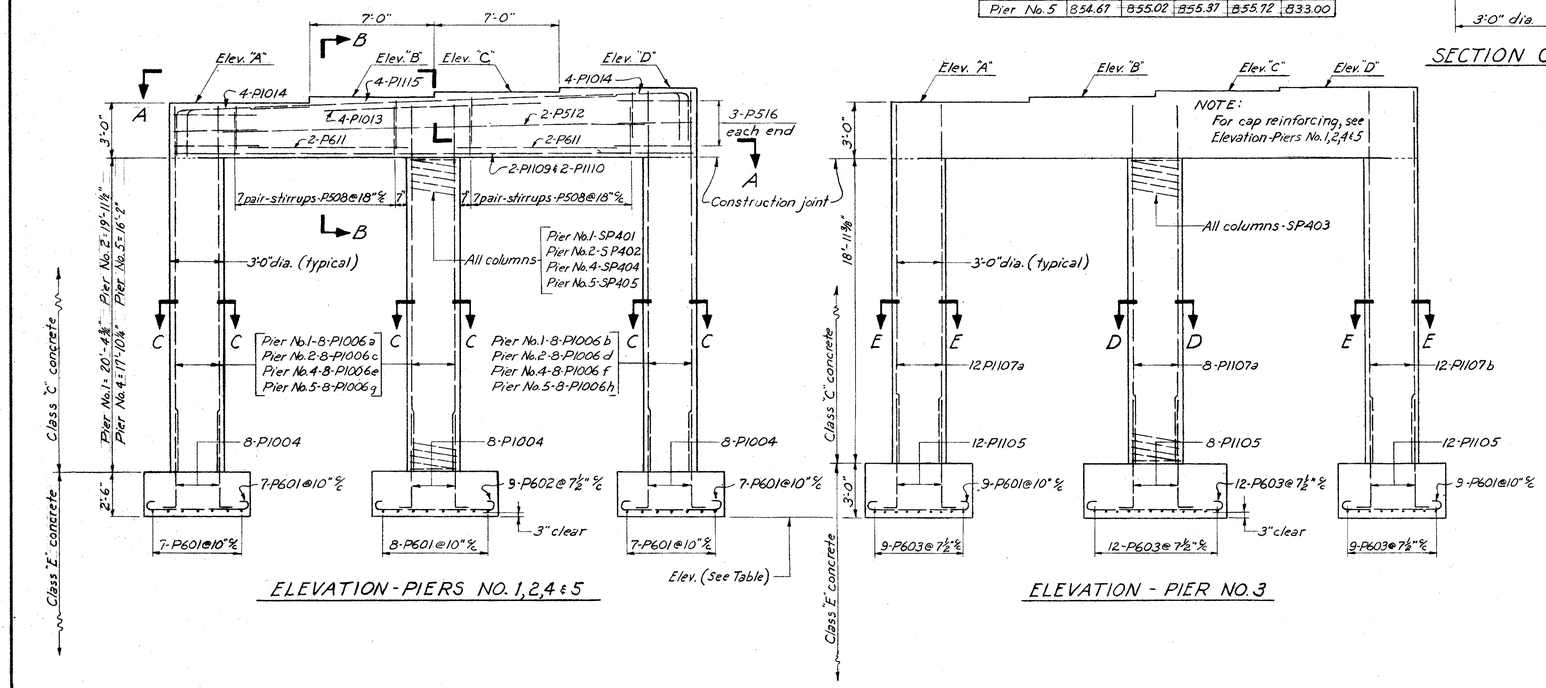
TABLE OF ELEVATIONS					
	A	B	C	D	Footing
Pier No. 1	861.90	862.13	862.35	862.57	836.00
Pier No. 2	860.96	861.22	861.47	861.72	835.50
Pier No. 3	859.45	859.73	860.02	860.30	834.50
Pier No. 4	857.35	857.66	857.98	858.30	834.00
Pier No. 5	854.67	855.02	855.37	855.72	833.00



SECTION C-C SECTION D-D SECTION E-E

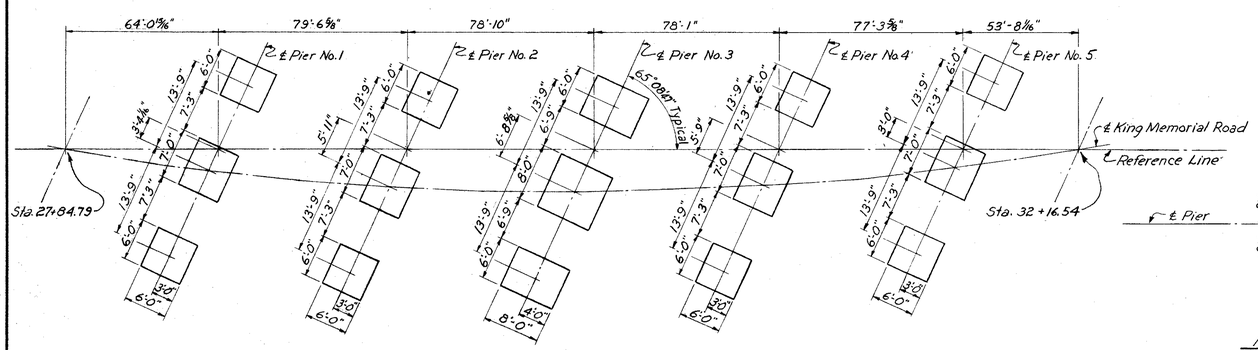
NOTES

- FOOTINGS shall extend a minimum of 3" into solid shale or to the elevation shown, whichever is lower.
- FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5 tons per square foot.
- Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes.

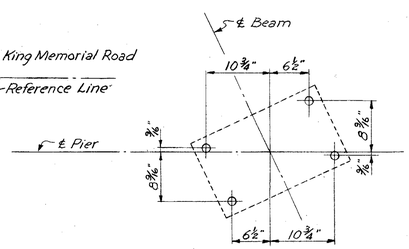


ELEVATION - PIERS NO. 1,2,4 & 5

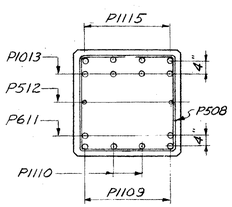
ELEVATION - PIER NO. 3



PIER FOOTING LAYOUT PLAN



ANCHOR BOLT LAYOUT
PIER NO. 3



SECTION B-B

SEC. C-31A

PREPARED BY
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FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS
BRIDGE NO. LAK-1-1050
S.R.1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199+91.32

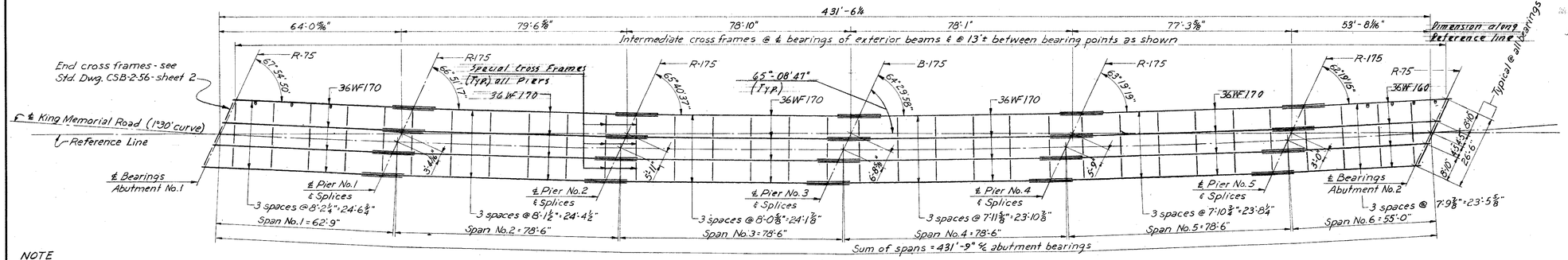
DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
JJM	JJM		R.L.K.		3-1-60

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

279
306

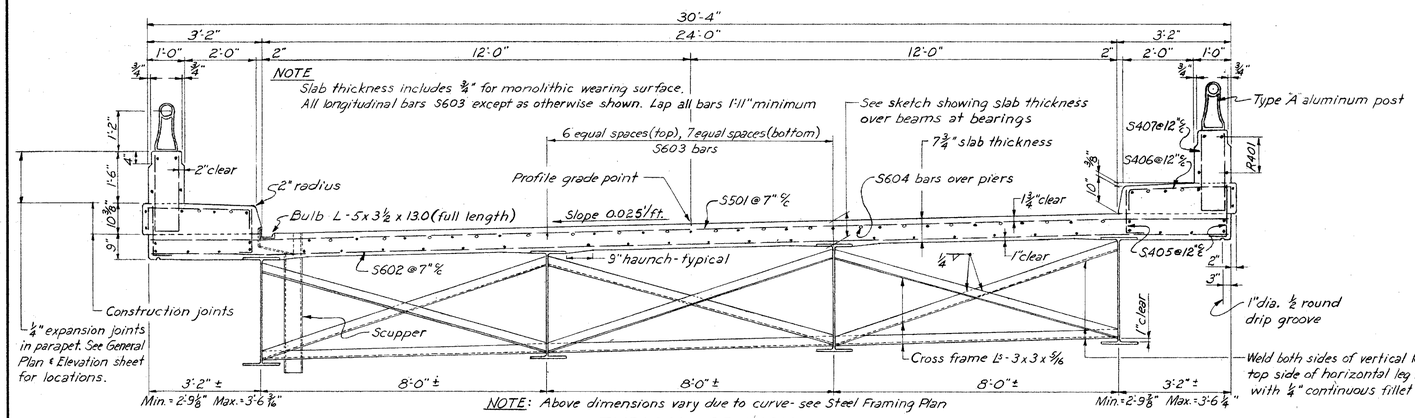
MICROFILMED
JUN 27 1960

LAKE COUNTY
SEC. LAK-1-10.38



NOTE
Beams are centered on and are parallel to the ℄ chord of each span.
⊖ denotes 6" ⌀ free drop scupper

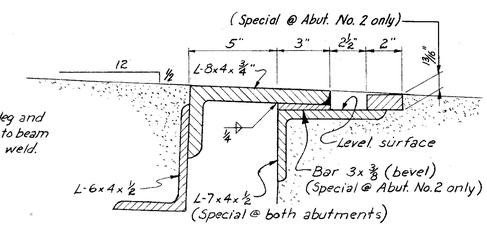
STEEL FRAMING PLAN



NOTE: Above dimensions vary due to curve - see Steel Framing Plan

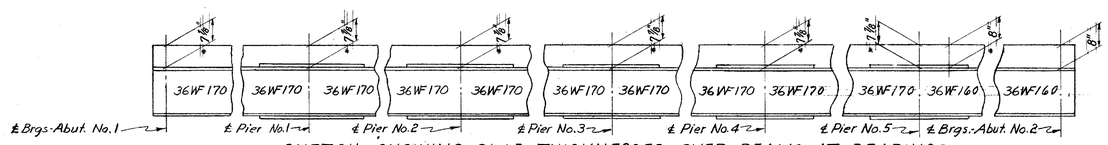
TYPICAL SECTION

DEFLECTION & CAMBER						
	SPAN NO.1	SPAN NO.2	SPAN NO.3	SPAN NO.4	SPAN NO.5	SPAN NO.6
Deflection due to weight of steel	1/16"	⅛"	⅛"	⅛"	⅛"	1/16"
Deflection due to remaining dead load	⅜"	7/16"	7/16"	⅜"	3/16"	⅛"
Convexity required for vertical curve	9/16"	⅞"	⅞"	⅞"	⅞"	7/16"
Sum of deflection and convexity	1"	1 1/16"	1 1/16"	1 3/8"	1 3/16"	⅝"
Required camber	1"	1 1/16"	1 1/16"	1 3/8"	1 3/16"	0

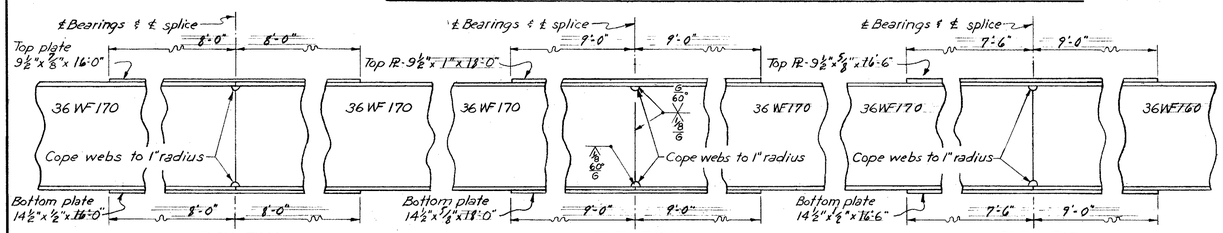


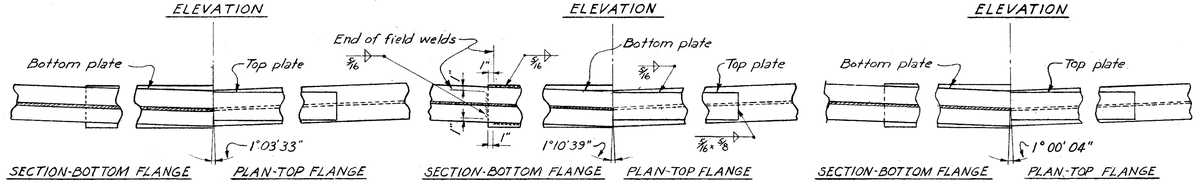
SPECIAL END DAM DETAIL

(For details not shown, see Standard Drawing CSB-2-56)



SKETCH SHOWING SLAB THICKNESSES OVER BEAMS AT BEARINGS





SPLICE DETAILS AT PIER NO.1

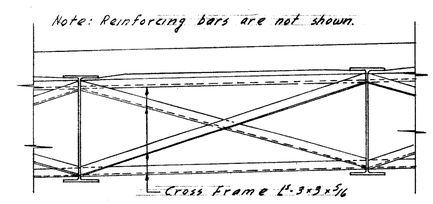
SPLICE DETAILS AT PIER NO. 2, 3 & 4

SPLICE DETAILS AT PIER NO. 5

NOTE
All welds are similar to those shown for splice details @ Pier No. 4

NOTES

- REFERENCE shall be made to Standard Drawing CSB-2-56, sheets 2 & 3 of 6, revised 2-2-59 for details of end dams, gutters, scuppers, pipe drains and curb plates.
- REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59 for details of rockers and bolsters.
- REFERENCE shall be made to Standard Drawing AR-1-57 revised 2-2-59 for details of aluminum railing Type "A" and concrete parapet details.
- WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.
- PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.
- DECK SLAB DEPTH: *This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.
- CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.
- BEAM SPLICE WELDING PROCEDURE: For stability during erection, splice procedure will begin at the fixed bearing as follows:
  1. Raise end of beam at Pier No.4 - 3"
  2. Butt-weld beam flanges and web at Pier No.3 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
  3. Weld top and bottom flange moment plates at Pier No. 3.
  4. Lower end of beam at Pier No.4.
  5. Make splices at Piers No.4 and 5 in the same manner, raising the ends of the beams 2¾" at Pier No.5 and 1" at Abutment No.2
  6. Then, make splices at Piers No. 2 and 1 in the same manner, raising the ends of the beams 2⅜" at Pier No.1 and 1¼" at Abutment No.1.
- CONCRETE shall be Class "C".
- Concrete and reinforcing steel above parapet construction joint included with railing for payment.
- 3. Weld special crossframes into place before lowering the ends of beams.



SPECIAL CROSS FRAME AT BEND POINTS

SEC. C-31A

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BUREAU OF BRIDGES

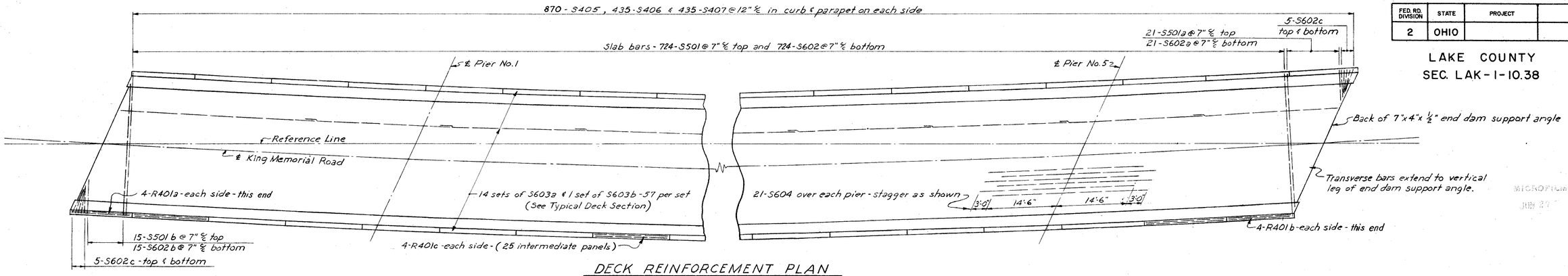
STEEL FRAMING PLAN
BRIDGE NO. LAK-1-1050
S.R.1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199 + 91.32

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
JFM	JFM		H. M.		3-1-60

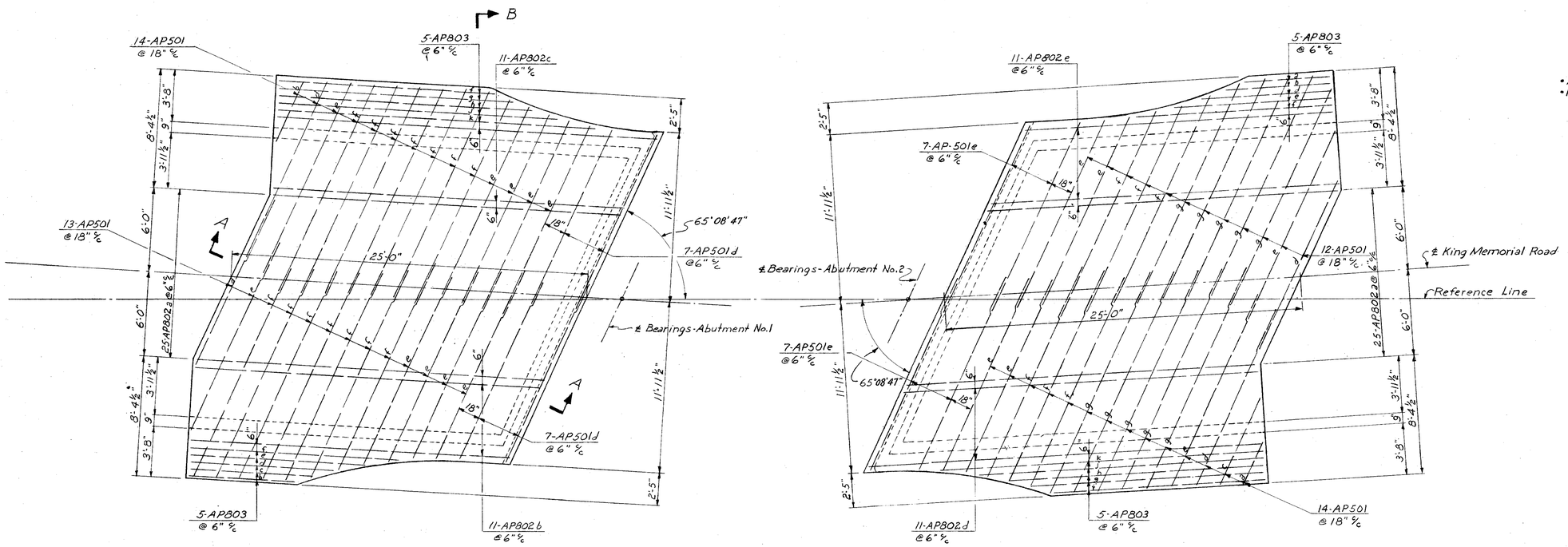
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

280
306

LAKE COUNTY
SEC. LAK-1-10.38



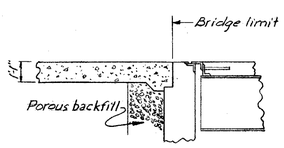
DECK REINFORCEMENT PLAN



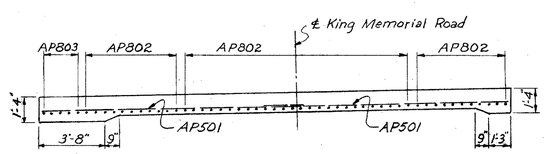
PLAN OF APPROACH SLABS

NOTES

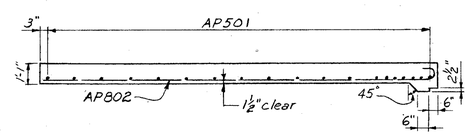
- Approach slabs shall be Class "C" Concrete
- Reinforcing steel and Premolded Expansion joint filler are included in Reinforced Concrete Approach Slab Item 1-7 and is not paid for separately.



TYPICAL SECTION OF SLAB AT BRIDGE



SECTION B-B



SECTION A-A

SEC. C-31A

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FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

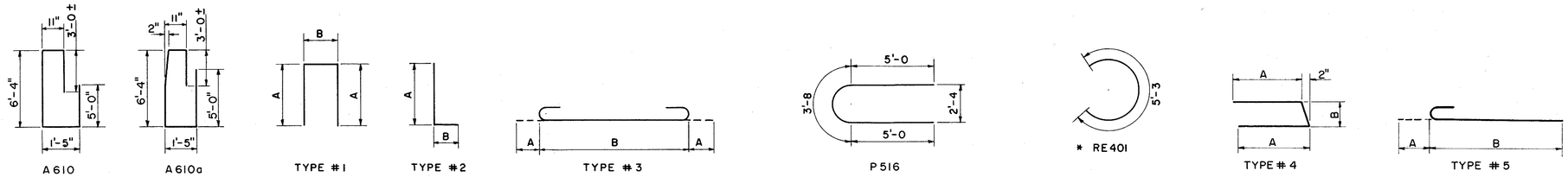
DECK & APPROACH SLABS
BRIDGE NO. LAK-1-1050
S.R. 1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199 + 91.32

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
ZFM	ZFM		RK		3-1-60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	ACI-1103( )	

281
306

LAKE COUNTY
SEC. LAK-1-10.38



REINFORCING STEEL LIST

ABUTMENTS

MARK	ABUT. #1	ABUT. #2	TOTAL	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	No. of Ea.
A 601	16		16	19'-2"	461	Str.				
A 602	14		14	12'-2"	254	Str.				
A 503	33		33	4'-0"	138	2	3'-7"	6"		
A 504	33		33	8'-10"	304	2	3'-4"	5'-7"		
A 505	17		17	6'-4"	113	2	3'-4"	3'-1"		
A 506	21		21	5'-7"	122	2	3'-7"	2'-1"		
A 507	66		66	7'-9"	534	Str.				
A 508	33	34	67	7'-3"	507	1	2'-0"	3'-5"		
A 509	28		28	31'-11"	932	Str.				
A 610	31		31	16'-2"	753	Bent				
A 610a		34	34	16'-0"	817	Bent				
A 511a	16		16	9'-0"	150	Str.				
A 511b	18		18	10'-0"	188	Str.				
A 512a	6		6	13'-10"	87	Str.				
A 512b	6		6	15'-2"	95	Str.				
A 513a	7		7	13'-4"	97	Str.				
A 513b	7		7	15'-2"	111	Str.				
A 514a	18		18	9'-8"	181	Str.				
A 514b	20		20	10'-3"	214	Str.				
A 514c	4		4	7'-9"	32	Str.				
A 515a	34		34	5'-0"	177	Str.				
A 515b	28		28	3'-6"	102	Str.				
A 416a	19	21	40	6'-9"	180	4	2'-10"	1'-3"		
A 416b	6	6	12	5'-1"	41	4	2'-0"	1'-3"		
A 416c	6	6	12	3'-5"	27	4	1'-2"	1'-3"		
A 417	27	29	56	6'-0"	224	1	2'-10"	6"		
A 418	8	8	16	5'-0"	54	Str.				
A 419	12	12	24	3'-10"	62	Str.				
A 620	24		24	5'-10"	210	3	8	4'-6"		
A 621		20	20	20'-0"	601	Str.				
A 622		60	60	10'-2"	916	1	2'-3"	6'-0"		
A 523		68	68	7'-0"	496	2	6'-7"	6"		
A 524		20	20	33'-7"	701	Str.				
A 525		44	44	9'-4"	428	1	4'-0"	1'-6"		
A 626		22	22	8'-2"	268	1	2'-3"	4'-0"		
A 627		16	16	13'-10"	332	Str.				
A 528a		8	8	11'-6"	96	Str.				
A 528b		8	8	10'-8"	89	Str.				
A 529a		21	21	8'-10"	193	2	8'-5"	6"		
A 529b		18	18	9'-10"	185	2	9'-5"	6"		
A 530a		6	6	16'-2"	101	Str.				
A 530b		6	6	14'-5"	93	Str.				
A 531a		38	38	4'-9"	188	Str.				
A 531b		24	24	3'-6"	88	Str.				
A 532a		7	7	16'-2"	118	Str.				
A 532b		7	7	14'-2"	103	Str.				
				TOTAL WT.	12,163					

SUPERSTRUCTURE

MARK	No.	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	of Ea.
S 501	724	30'-0"	22,654	Str.				
S 501a	21	7'-1" to 28'-9"	392	Str.			1'-1"	1
S 501b	15	7'-5" to 27'-10"	276	Str.			1'-5½"	1
S 602	724	30'-0"	32,623	Str.				
S 602a	21	7'-1" to 28'-9"	565	Str.			1'-1"	1
S 602b	15	7'-5" to 27'-10"	397	Str.			1'-5½"	1
S 602c	20	6'-0"	180	Str.				
S 603a	798	30'-0"	35,958	Str.				
S 603b	57	42'-0"	3,596	Str.				
S 604	105	32'-0"	5,047	Str.				
S 405	1740	1'-8"	1,937	2	6"	1'-3"		
S 406	870	3'-7"	2,082	1	6"	2'-9"		
S 407	870	4'-4"	2,518	1	2'-0"	6"		
		TOTAL WT.	108,225					

RAILING

R 401a	8	12'-8"		Str.				
R 401b	8	20'-8"		Str.				
R 401c	200	15'-7"		Str.				
R 402a	4	12'-7"		Str.				
R 402b	8	13'-7"		Str.				
R 402c	4	14'-7"		Str.				

NOTE: Railing bars are included with the railing for payment

PIERS

MARK	PIER #1	PIER #2	PIER #3	PIER #4	PIER #5	TOTAL	LENGTH	WEIGHT	TYPE	A	B
P 601	36	36	18	36	36	162	6'-10"	1,663	3	8"	5'-6"
P 602	9	9		9	9	36	7'-10"	423	3	8"	6'-6"
P 603			42			42	8'-10"	557	3	8"	7'-6"
P 1004	24	24		24	24	96	6'-3"	2,582	2	5'-6"	1'-0"
P 1105			32			32	7'-1"	1,204	2	6'-4"	1'-0"
P 1006a	16					16	23'-2"	1,595	Str.		
P 1006b	8					8	23'-10"	820	Str.		
P 1006c		16				16	22'-9"	1,566	Str.		
P 1006d		8				8	23'-6"	809	Str.		
P 1006e				16		16	20'-8"	1,423	Str		
P 1006f				8		8	21'-7"	742	Str.		
P 1006g					16	16	19'-0"	1,308	Str.		
P 1006h					8	8	20'-0"	688	Str.		
P 1107a			20			20	21'-9"	2,311	Str.		
P 1107b			12			12	22'-7"	1,440	Str.		
P 508	28	28	28	28	28	140	7'-7"	1,107	1	2'-7"	2'-8"
P 1109	2	2	2	2	2	10	28'-10"	1,532	Str.		
P 1110	2	2	2	2	2	10	29'-11"	1,589	Str.		
P 611	4	4	4	4	4	20	10'-0"	300	Str.		
P 512	2	2	2	2	2	10	26'-0"	271	Str.		
P 1013	4	4	4	4	4	20	12'-0"	1,033	Str.		
P 1014	8	8	8	8	8	40	9'-4"	1,606	2	6'-10"	2'-9"
P 1115	4	4	4	4	4	20	23'-0"	2,344	Str.		
P 516	6	6	6	6	6	30	13'-8"	427	Bent		
							TOTAL WT.	29,340			

SPIRALS

MARK	No.	SIZE	LENGTH	CORE DIA.	PITCH	No. of TURNS	WEIGHT
SP 401	3	4	20'-4"	32"	4½"	57	1,108
SP 402	3	4	19'-11"	32"	4½"	56	1,088
SP 403	3	4	18'-11"	32"	4½"	53	1,030
SP 404	3	4	17'-10"	32"	4½"	51	988
SP 405	3	4	16'-2"	32"	4½"	46	872
						TOTAL WEIGHT	5,086

REPLACEMENT BARS

MARK	No.	LENGTH	WEIGHT	TYPE
RE 400	1	5'-3		Str.
RE 401	1	5'-3		*
RE 500	2	5'-7		Str.
RE 600	5	5'-11		Str.
RE 700	0	6'-3		Str.
RE 800	0	6'-6		Str.
RE 900	0	6'-10		Str.
RE 1000	1	7'-3		Str.
RE 1100	1	7'-7		Str.

APPROACH SLABS

MARK	SLAB #1	SLAB #2	TOTAL	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	NO. OF EA
AP 501a		1	1	3'-6"		Str.				
AP 501b	1		1	4'-6"		Str.				
AP 501c		1	1	7'-0"		Str.				
AP 501d	16	2	18	13'-8"		Str.				
AP 501e	10	20	30	14'-9"		Str.				
AP 501f	14	6	20	16'-2"		Str.				
AP 501g		10	10	17'-2"		Str.				
AP 802a	25	25	50	25'-7"		5	1'-1"	24'-6"		
AP 802b	11		11	23'-6" to 25'-4½"		5	1'-1"	22'-5" to 24'-3"	2¼"	1
AP 802c	11		11	25'-9" to 27'-7½"		5	1'-1"	24'-8" to 26'-6"	2¼"	1
AP 802d		11	11	22'-7" to 25'-3½"		5	1'-1"	21'-6" to 24'-2"	3¼"	1
AP 802e		11	11	25'-10½" to 28'-7"		5	1'-1"	24'-9" to 27'-6"	3¼"	1

MARK	SLAB #1	SLAB #2	TOTAL	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	NO. OF EA
AP 803a		1	1	6'-0"		Str.				
AP 803b	1	1	2	7'-0"		Str.				
AP 803c	1		1	8'-0		Str.				
AP 803d	1	1	2	9'-6"		Str.				
AP 803e	1	1	2	11'-6"		Str.				
AP 803f	2	2	4	14'-0"		Str.				
AP 803g	1	1	2	16'-0"		Str.				
AP 802h	1	1	2	17'-6"		Str.				
AP 803j	1	1	2	19'-6"		Str.				
AP 803k	1	1	2	22'-0"		Str.				

NOTE: Approach Slab Bars are included with Approach Slab for payment.

NOTES:

All dimensions are out to out of the bar.

Bar Size is indicated in the bar mark. The first digit where three digits are used, and the first two where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar & A1014 is a No. 10 size.

The length shown in the bar list for the spiral bars is the distance from the top of the footing to the bottom of the cap.

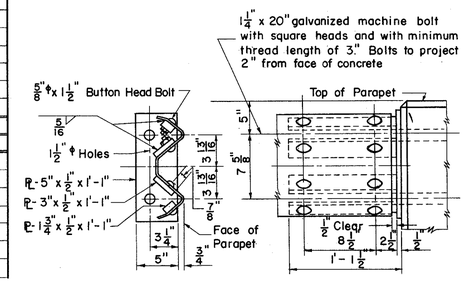
The number of turns shown is the length divided by the pitch, plus 3 turns (total number of closed coils) expressed as the nearest whole number.

Spiral bars shall not have deformations but shall in other respects conform to Item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lbs. per lin. ft., shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of spacers, based on 0.68 lbs. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

Replacement Bars: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.



NOTE:
Guard Rail End Connection Assembly shall be galvanized after welding.

GUARD RAIL DETAIL

Included with Item S-14 for payment

SEC. C-31A FED. AID PROJ. NO. ACI-1103( )

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING BAR LIST
BRIDGE NO. LAK-1-1050
S.R.1 UNDER KING MEMORIAL ROAD
LAKE COUNTY
STA. 199 + 91.32

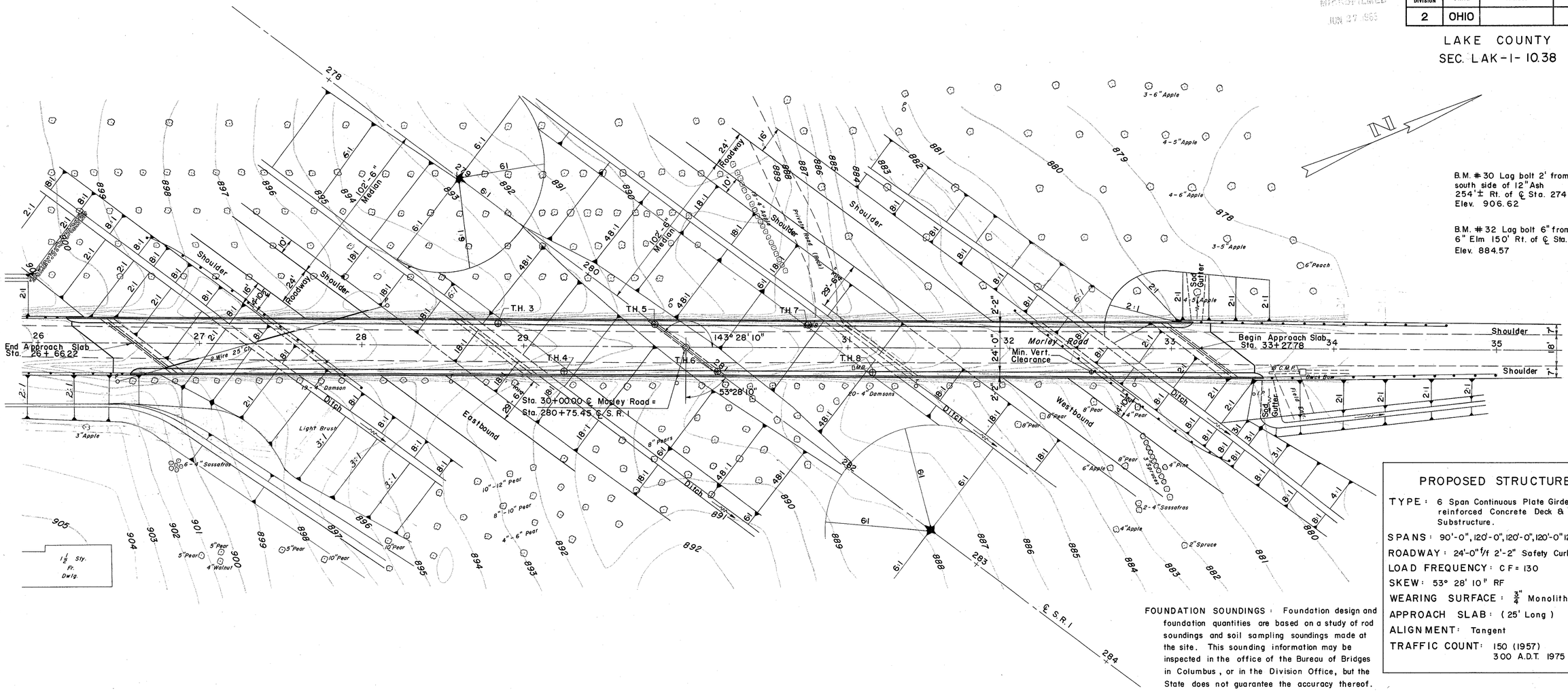
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
						3-1-60

MICROFILMED
JUN 27 1963

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

282
306

LAKE COUNTY
SEC. LAK-1-10.38



PROPOSED STRUCTURE

TYPE: 6 Span Continuous Plate Girder with reinforced Concrete Deck & Substructure.

SPANS: 90'-0", 120'-0", 120'-0", 120'-0" 120'-0", 84'-0" c/c

ROADWAY: 24'-0" f/f 2'-2" Safety Curb

LOAD FREQUENCY: CF = 130

SKEW: 53° 28' 10" RF

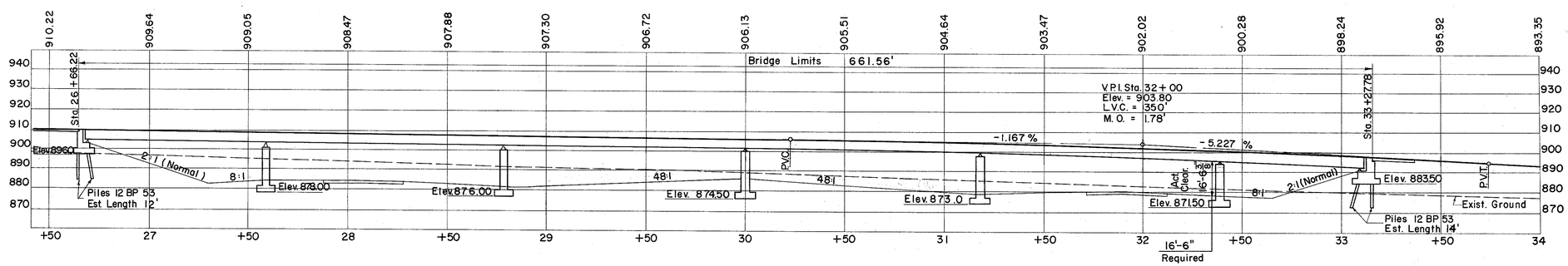
WEARING SURFACE: 4¾" Monolithic

APPROACH SLAB: (25' Long)

ALIGNMENT: Tangent

TRAFFIC COUNT: 150 (1957)
300 A.D.T. 1975

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus, or in the Division Office, but the State does not guarantee the accuracy thereof.



SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SITE PLAN
BRIDGE NO. LAK-1-1199
S.R.1. UNDER MORLEY ROAD
LAKE COUNTY
STA. 280+75.45

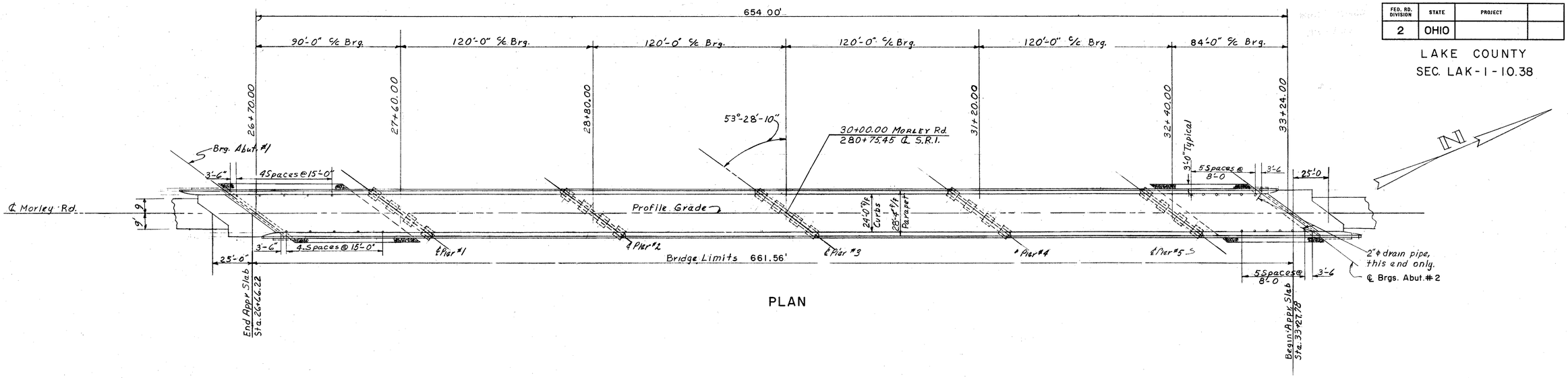
DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED 3-1-60

5613 C-3

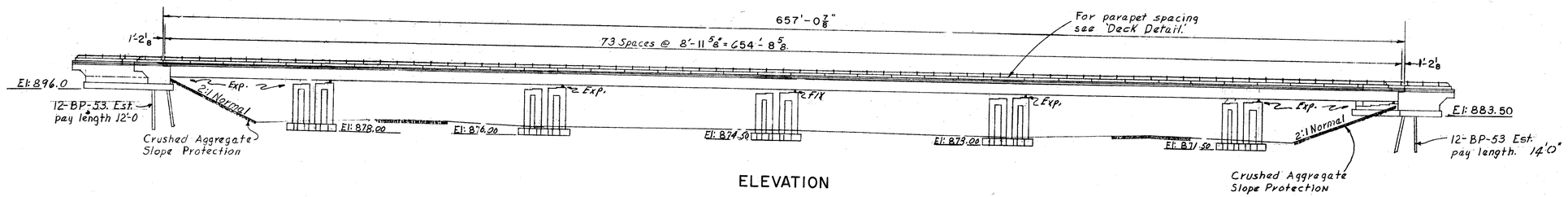
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

283/306

LAKE COUNTY
SEC. LAK-1-10.38



PLAN



ELEVATION

P.I. Sta. 32+00
Elev. 903.80
V.C. 350'
M.O. 1.78'

-1.167%

-5.227%

ESTIMATED QUANTITIES								
Item	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN.	
E-2	455	Cu. Yds.	Unclassified Excavation		390	65		
E-2	192	Cu. Yds.	Shale Excavation			192		
S-1	630	Cu. Yds.	Class C Concrete, Superstructure	630				
S-1	161	Cu. Yds.	Class C Concrete, Pier Columns & Caps.			161		
S-1	183	Cu. Yds.	Class E Concrete, Footings		103	80		
S-1	147	Cu. Yds.	Class E Concrete, Abutments above Footings		147			
S-4	217,202	Lbs.	Reinforcing Steel	159,441	20,775	36,986		
S-7	679,800	Lbs.	Structural Steel	679,800				
S-8	679,800	Lbs.	Field Painting of Structuctural Steel as per Plan	679,800				
S-14	1,394	Lin. Ft.	Railing (Aluminum Rail & Supports, & Conc. Parapet	1,314	80			
S-16		Lump Sum	First Test Pile				Lump	
S-18	820	Lin. Ft.	Piles (12 BP 53) Steel		820			
S-29	54	Cu. Yds.	Porous Backfill		54			
I-10	402	Sq. Yds.	Crushed Aggregate Slope Protection				402	

GENERAL NOTES

REFERENCE shall be made to Standard Drawings, CSB-2-56 Sheets 2 & 3 of 6 revised 2-2-59, RB-1-55 revised 2-2-59 & AR-1-57 revised 2-2-59 and Supplemental Specification S207 dated 4-28-55.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specification for Highway Structures" of the State of State, Department of Highways, dated 9-1-57 together with Current revisions thereof.

EXCAVATION QUANTITIES includes the removal of fill material between the surface of the proposed embankment & the bottom of the abutments.

FOUNDATION BEARING PRESSURE: Pier footings have a design bearing pressure of 10 tons per Sq. Ft. & shall extend a minimum of 3" into solid shale or to the elevation shown, whichever is lower. The actual maximum bearing pressure is 9.5 tons per sq. ft.
WELDING of Structural Steel shall be Class A except as otherwise shown. Welds shown as field welds may, at the option of the contractor, be made in the shop.

PROPOSAL NOTES: See Proposal for notes concerning the requirements for A-373 Steel and Machine Finishing of Bridge Deck Slabs.

PROCEDURE: The embankment shall be placed & compacted up to the finished spill-thru slope & to the level of the subgrade for a distance of 200 feet back of the abutments, before excavation for the abutment is made.

POROUS BACKFILL shall extend full length of abutment backwall and upward to the approach slab. Excavation thereof, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

CRUSHED AGGREGATE SLOPE PROTECTION (I-10.04) one ft. thick shall be provided as indicated on the General Plan.

PILES: shall be driven to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to bridge foundation investigation report. The firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a Pile Hammer of the indicated energy rating:

44 Tons per Pile using a 7000 Ft. Lb. Hammer
37 Tons per Pile using a 11,000 Ft. Lb. Hammer
35 Tons per Pile using a 15,000 Ft Lb. Hammer or greater

if the energy rating of the hammer is between the ratings given, the required formula capacity shall be determined by interpolation.

Allowable Pile Load = 25 Tons
Actual Max. Pile Load = 24.2 Tons

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES. DILLSBURG. PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

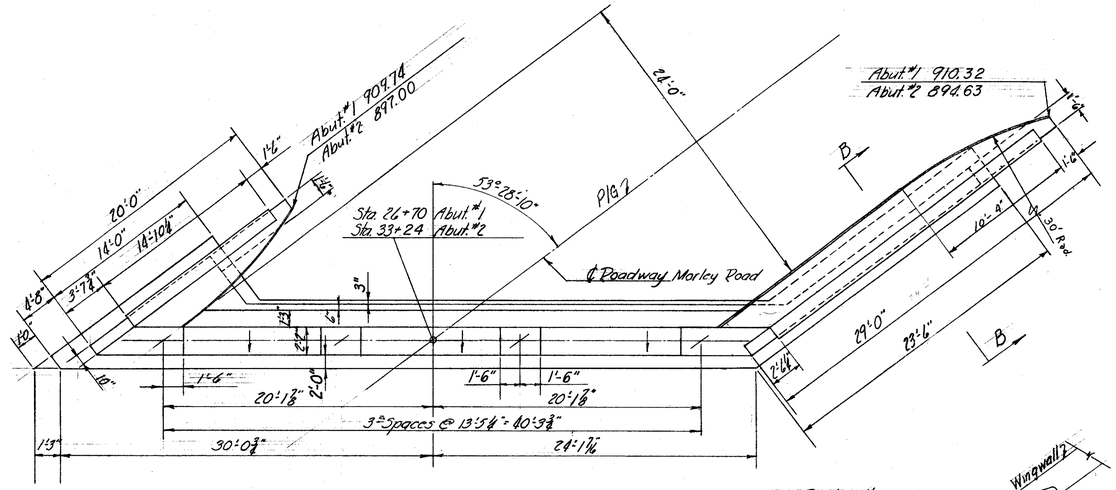
GENERAL PLAN
BRIDGE NO. LAK-1-1199
S.R. 1 UNDER MORLEY ROAD
LAKE COUNTY
STA. 280+75.45

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	J.T.A					3-1-60

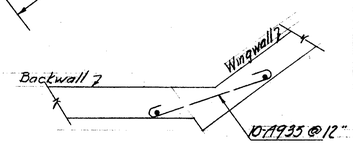
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

284
306

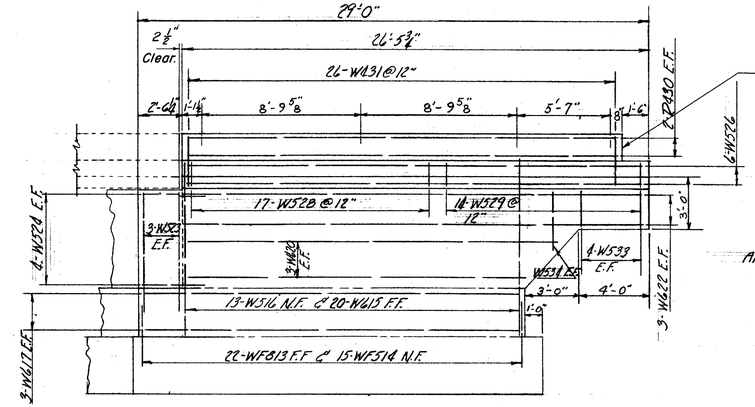
LAKE COUNTY
SEC. LAK-1-10.38



ABUTMENT #1 (Looking back)
ABUTMENT #2 (Looking ahead)
PLAN

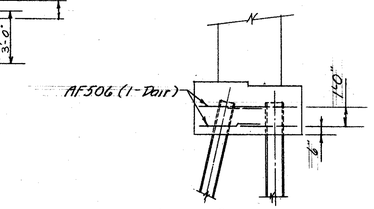


Corner Reinforcement



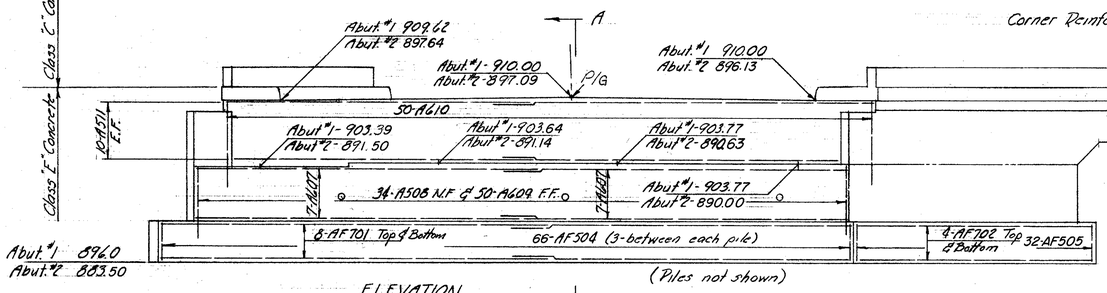
End of parapet to be placed normal to grade.

WINGWALL ELEVATION



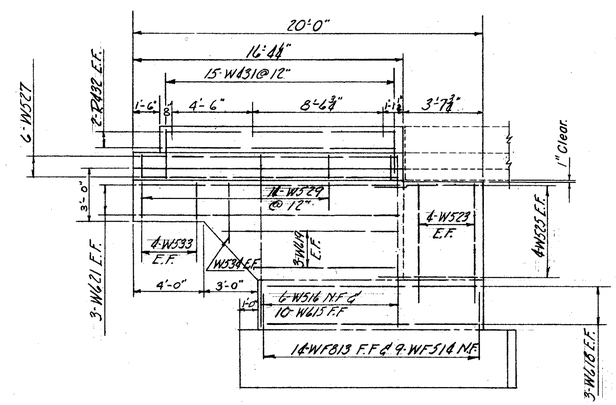
Placing of AF506 bar

NOTE:
All reinforcing steel to have 2" of cover except footing, which will have 3".
For additional notes see general notes.
F.F. Denotes far face
N.F. Denotes near face
E.F. Denotes each face
All bars shall have a minimum of 30 diameters lap.
All abutment concrete shall be class "E"

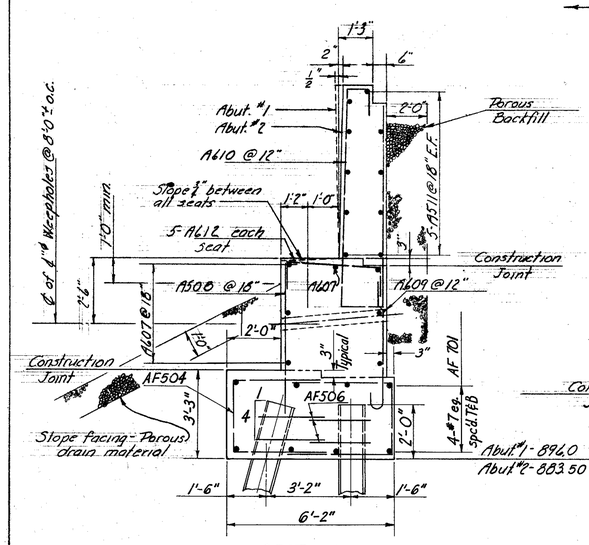


ELEVATION

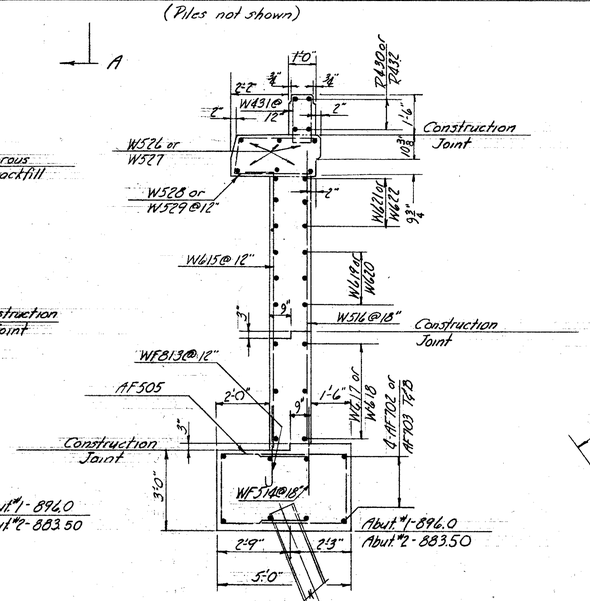
(Piles not shown)



WINGWALL ELEVATION

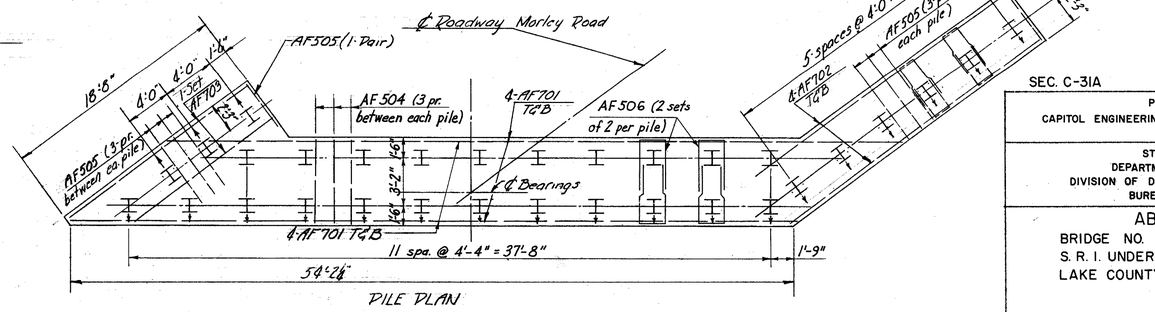


SECTION A-A



SECTION B-B

Denotes vertical pile
Denotes battered pile
Batter 1:4 in direction of arrow.



PILE PLAN

SEC. C-3IA

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENTS
BRIDGE NO. LAK-1-1199
S. R. I. UNDER MORLEY ROAD
LAKE COUNTY

STA. 280 + 75.45

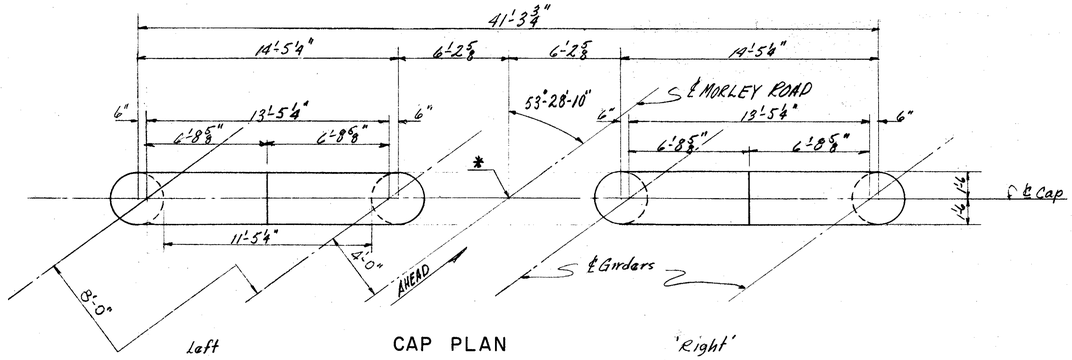
DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
DET 7-25-59			DET 8-11-59		3-1-60

OK-8-11-59

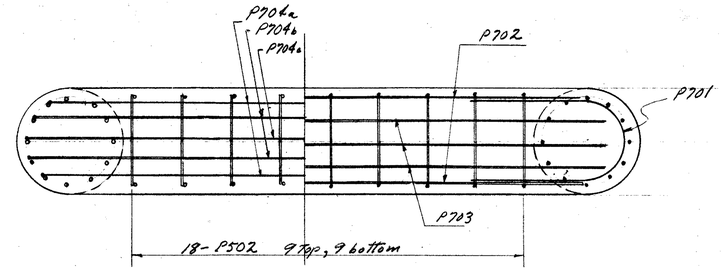
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

285/306

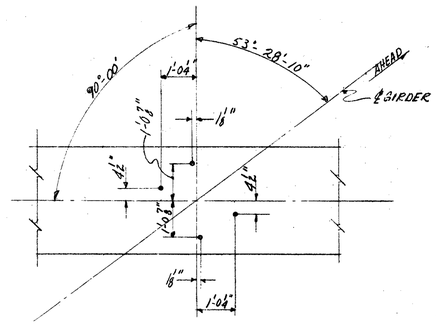
LAKE COUNTY
SEC. LAK-1-10.38



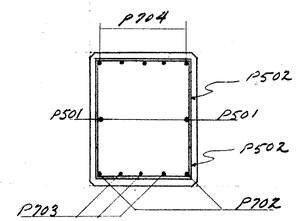
CAP PLAN



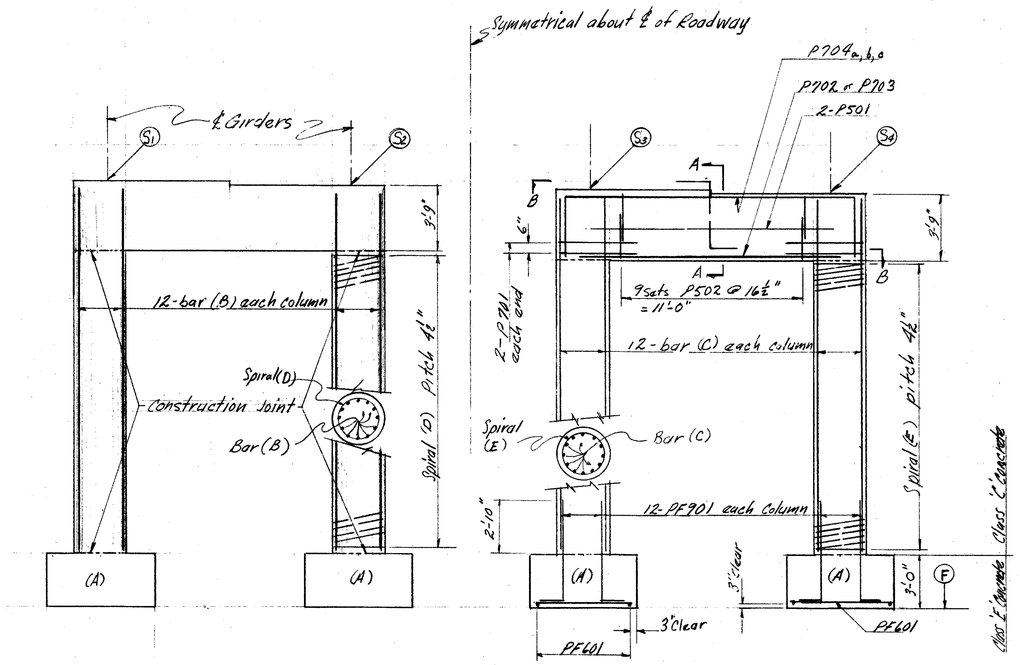
SECTION B-B



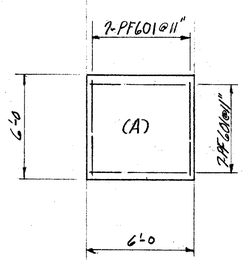
ANCHOR BOLT LAYOUT PIER #3



SECTION A-A



PIER ELEVATION



FOOTING PLAN

Location	Station *	S1	S2	S3	S4	F	BAR B	BAR C	Spiral D	Spiral E
PIER # 1	27+60.00	902.07	902.07	901.94	901.69	878.00	P901	P902	SP401	SP402
PIER # 2	28+80.00	900.65	900.65	900.52	900.27	876.00	P903	P904	SP403	SP404
PIER # 3	30+00.00	899.25	899.25	899.12	898.87	874.50	P903	P904	SP405	SP406
PIER # 4	31+20.00	897.49	897.38	897.14	896.75	873.00	P904	P902	SP406	SP407
PIER # 5	32+40.00	894.26	894.00	893.61	893.08	871.50	P905	P906	SP408	SP409

NOTES:

Reinforcing Steel is identical in all piers except as noted.

Special care shall be taken in placing the P704 Bars in the cap on Pier #3 so they do not interfere with the drilling of anchor bolt holes.

Reinforcing Steel shall have a minimum of 2" of cover from all faces except as otherwise shown.

Foundation pressure: 10 Ton per sq. ft. design load.
Actual maximum bearing pressure 9.5 tons per sq. ft.

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS
BRIDGE NO. LAK-1-1199
S.R. 1 UNDER MORLEY ROAD
LAKE COUNTY
STA. 280+75.45

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
DRT 7-20-59	DRT 7-21-59		RL			3-1-60

OK - 8-11-59

RADIOGRAPHIC EXAMINATION OF WELDS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

286
306

LAKE COUNTY
SEC. LAK-1-10.38

THIS WORK SHALL CONSIST OF THE PERFORMANCE AND INTERPRETATION OF A RADIOGRAPHIC EXAMINATION OF BUTT WELDS AS REQUIRED BY THESE SPECIFICATIONS. IT SHALL INCLUDE THE PREPARATION AND POSITIONING OF WELDS FOR EXAMINATION, THE RADIOGRAPHING OF WELDS, THE PROCESSING AND EXAMINATION OF RADIOGRAPHS, THE INTERPRETATION OF RADIOGRAPHS FOR COMPLIANCE WITH THESE SPECIFICATIONS, AND THE PERFORMANCE AND INTERPRETATION OF ANY RETAKES OF RADIOGRAPHS REQUIRED FOR WELDS MADE TO REPLACE UNSATISFACTORY WELDS.

APPROVAL OF DIRECTOR

THE CONTRACTOR SHALL FURNISH EVIDENCE, ACCEPTABLE TO THE DIRECTOR, OF THE ADEQUACY OF THE EQUIPMENT TO BE USED AND THE COMPETENCE OF THE PERSONNEL.

THE INTERPRETATION OF RADIOGRAPHS AND THE CORRECTION OF DEFECTIVE WELDS SHALL BE SUBJECT TO THE APPROVAL OF THE DIRECTOR.

SCOPE OF EXAMINATION

BY MEANS OF RADIOGRAPHIC EXAMINATION, THE CONTRACTOR SHALL FURNISH EVIDENCE OF THE ACCEPTABLE QUALITY OF THE BUTT WELDS OF ALL GIRDERS. THE PARTS OF THESE MEMBERS TO BE RADIOGRAPHED ARE AS FOLLOWS:

1. THE COMPLETE BUTT WELDS IN THE FLANGES OF EACH GIRDER EXCEPT THE BOTTOM FLANGE OVER THE BEARING DEVICES.

2. ONE FOOT AT EACH END OF EACH OF THE WEB SPLICE WELDS.

THE SHOP EXAMINATION OF THE BUTT WELDS OF THE FLANGE PLATES AND OF THE WEB PLATES SHALL BE DETERMINED TO BE ACCEPTABLE BEFORE THESE FLANGE AND WEB PLATES ARE ASSEMBLED AND WELDED TO FORM THE GIRDERS. THE EXAMINATION OF FIELD WELDS SHALL BE MADE AS SOON AS PRACTICABLE AFTER WELDING AT EACH FIELD SPLICE IS COMPLETED.

WELD CONDITION

ALL WELDED JOINTS WHICH ARE TO BE RADIOGRAPHED SHALL BE FREE OF PAINT, SCALE AND GREASE, AND SHALL BE GROUND FREE OF ALL WELD RIPPLES AND SURFACE IRREGULARITIES ON BOTH SIDES. THE DIRECTION OF GRINDING SHALL BE PERPENDICULAR TO THE LENGTH OF THE WELD. THE WELDS SHALL BE GROUND TO SUCH A DEGREE THAT THE RESULTING RADIOGRAPHIC CONTRAST, DUE TO REMAINING IRREGULARITIES, CANNOT MASK OR BE CONFUSED WITH THAT OF ANY OBJECTIONABLE DEFECT AND THAT THE WELD SURFACE WILL MERGE SMOOTHLY INTO THE PLATE SURFACE. UNLESS SPECIFIED TO BE GROUND FLUSH, THE FINISHED SURFACE OF THE REINFORCEMENT MAY HAVE A CROWN EQUAL TO ONE-EIGHTH THE THICKNESS OF THE METAL BUT NOT MORE THAN 1/8 INCH.

RADIOGRAPHIC TECHNIQUE

THE WELD SHALL BE RADIOGRAPHED WITH A TECHNIQUE WHICH WILL DETERMINE QUANTITATIVELY THE SIZE OF DEFECTS WITH THICKNESSES EQUAL TO OR GREATER THAN 2 PER CENT OF THE THICKNESS OF THE BASE METAL. IN THE CASE OF A WELD JOINING PLATES OF UNEQUAL THICKNESS, BOTH PLATES MUST BE RADIOGRAPHED AT 2 PER CENT SENSITIVITY TOGETHER OR SINGLY, WITH THE WELD JUNCTION EVIDENT IN BOTH VIEWS.

TO DETERMINE WHETHER THE RADIOGRAPHIC TECHNIQUE EMPLOYED IN DETECTING DEFECTS OF A THICKNESS EQUAL TO OR GREATER THAN 2 PER CENT OF THE THICKNESS OF THE BASE MATERIAL, THICKNESS GAGES OR PENETRAMETERS OF THE TYPE HEREINAFTER SPECIFIED SHALL BE PLACED ON THE SIDE OF THE WELDED PLATE NEAREST THE SOURCE OF RADIATION AT AN EXTREME EDGE OF THE RADIOGRAPHIC PLATE OR FILM.

THE MATERIAL OF THE PENETRAMETER SHALL BE SUBSTANTIALLY THE SAME AS THAT OF THE WELDED PLATE.

THE THICKNESS OF THE PENETRAMETER SHALL BE NOT MORE THAN 2 PER CENT OF THE THICKNESS OF THE PLATE EXCLUSIVE OF ANY WELD REINFORCEMENT. PENETRAMETERS DESIGNED FOR INCREMENTS OF 1/8" OF PLATE THICKNESS ARE ACCEPTABLE.

IN EACH PENETRAMETER THERE SHALL BE THREE HOLES WITH DIAMETERS EQUAL RESPECTIVELY TO TWO, THREE AND FOUR TIMES THE PENETRAMETER THICKNESS, BUT IN NO CASE SHALL LESS THAN 1/16" DIAMETER BE USED.

EACH PENETRAMETER SHALL CARRY AN IDENTIFYING NUMBER REPRESENTING IN TWO SIGNIFICANT FIGURES THE MINIMUM THICKNESS IN INCHES OF THE PLATE FOR WHICH IT MAY BE USED. PENETRAMETERS MAY BE ESTABLISHED FOR DIFFERENCES IN THICKNESS NOT TO EXCEED 1/8" SO THAT A SET OF PENETRAMETERS VARYING FOR INCREMENTS OF PLATE THICKNESS OF 1/8" WILL BE ADEQUATE TO SERVE PLATES HAVING THICKNESSES BETWEEN THESE 1/8" DIMENSIONS.

THE IMAGES OF IDENTIFYING NUMBERS AND THE HOLES OF EACH PENETRAMETER MUST APPEAR CLEARLY ON THE RADIOGRAPH TO ESTABLISH THE 2 PER CENT SENSITIVITY.

FOR PLATES UP TO AND INCLUDING 2-1/2" IN THICKNESS, EACH PENETRAMETER SHALL BE 1-1/2" LONG AND 1/2" WIDE. FOR PLATES THICKER THAN 2-1/2" EACH PENETRAMETER SHALL BE 2-1/4" LONG AND 1" WIDE.

THE FILM DURING EXPOSURE SHALL BE AS CLOSE TO THE WELD AS PRACTICABLE. IF POSSIBLE, THIS DISTANCE SHALL BE NOT GREATER THAN 1 INCH. IN ANY EVENT, THE RATIO

DISTANCE FROM SOURCE OF RADIATION TO WELD SURFACE TOWARD RADIATION
DISTANCE FROM WELD SURFACE TOWARD RADIATION TO FILM

SHALL BE AT LEAST 7 TO 1.

ALL RADIOGRAPHS SHALL BE FREE FROM EXCESSIVE MECHANICAL PROCESSING DEFECTS WHICH WOULD INTERFERE WITH PROPER INTERPRETATION OF THE RADIOGRAPH.

IDENTIFICATION MARKERS, THE IMAGES OF WHICH WILL APPEAR ON THE FILM, SHALL BE PLACED ADJACENT TO THE WELD AND THEIR LOCATIONS SHALL BE ACCURATELY AND PERMANENTLY MARKED ON THE OUTSIDE SURFACE NEAR THE WELD SO THAT A DEFECT APPEARING ON THE RADIOGRAPH MAY BE ACCURATELY LOCATED.

THE SIZE OF FILM TO BE USED SHALL BE 4" WIDE X 15" LONG UNLESS PERMISSION TO USE A DIFFERENT SIZE IS OBTAINED IN WRITING FROM THE DIRECTOR.

STANDARDS OF ACCEPTABILITY

THE ACCEPTABILITY OF THE WELDS EXAMINED BY RADIOGRAPHY SHALL BE JUDGED BY THE FOLLOWING STANDARDS:

(1) CRACKS:

DEFINITION - A DISCONTINUITY RESULTING FROM A VERY NARROW SEPARATION OF METAL.

STANDARD - NO WELD CONTAINING CRACKS REGARDLESS OF LENGTH, SIZE OR LOCATION SHALL BE CONSIDERED ACCEPTABLE.

(2) GAS POROSITY:

DEFINITION - GAS POCKETS OR VOIDS IN METAL.

STANDARD - THE MAXIMUM DIMENSION OF ANY INDIVIDUAL GAS POCKET SHALL NOT EXCEED 1/8 INCH. THE MAXIMUM ACCUMULATION OF GAS POCKETS SHALL NOT EXCEED THAT SHOWN IN THE "POROSITY STANDARDS" OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

(3) SLAG INCLUSIONS:

DEFINITION - NON-METALLIC, SOLID MATERIAL ENTRAPPED IN WELD METAL OR BETWEEN WELD METAL AND BASE METAL.

STANDARD - A. ELONGATED SLAG INCLUSIONS: NO ELONGATED SLAG INCLUSION SHALL EXCEED TWO-THIRDS OF THE THICKNESS OF THE THINNER PLATE OF THE JOINT IN LENGTH AND 1/16" IN WIDTH, EXCEPT THAT REGARDLESS OF THE PLATE THICKNESS NO SUCH INCLUSION SHALL BE LONGER THAN 3/4" AND EXCEPT THAT NO SUCH INCLUSION WHICH IS SHORTER THAN 1/4" SHALL BE CAUSE FOR REJECTION.

B. ISOLATED SLAG INCLUSIONS: IN ANY 12 INCH LENGTH OF WELD, THE MAXIMUM WIDTH OF ANY ISOLATED SLAG INCLUSION SHALL NOT EXCEED 1/8 INCH, THE SUMMATION OF LENGTHS OF ISOLATED SLAG INCLUSIONS SHALL NOT EXCEED 1 INCH, AND THERE SHALL BE NO MORE THAN FOUR ISOLATED SLAG INCLUSIONS OF THE MAXIMUM WIDTH OF 1/8 INCH. ANY TWO SUCH INCLUSIONS SHALL BE SEPARATED BY AT LEAST 2 INCHES OF SOUND WELD METAL.

(4) INCOMPLETE FUSION:

DEFINITION - FAILURE OF THE WELD METAL TO FUSE COMPLETELY WITH THE BASE METAL OR PRECEDING BEADS.

STANDARD - NO INDIVIDUAL LACK OF FUSION SHALL EXCEED 1/2 INCH IN LENGTH. IN ANY 12 INCH LENGTH OF WELD, THE SUMMATION OF LENGTHS OF LACK OF FUSION SHALL NOT EXCEED 3/4 INCH AND INDIVIDUAL DEFECTS SHALL BE SEPARATED BY AT LEAST 6 INCHES OF SOUND METAL.

(5) INCOMPLETE PENETRATION:

DEFINITION - ROOT PENETRATION WHICH IS LESS THAN COMPLETE OR FAILURE OF A ROOT PASS AND A BACKING PASS TO FUSE WITH EACH OTHER.

STANDARD - NO INDIVIDUAL LACK OF PENETRATION SHALL EXCEED 1/2 INCH IN LENGTH. IN ANY 12 INCH LENGTH OF WELD, THE SUMMATION OF LENGTHS OF LACK OF PENETRATION SHALL NOT EXCEED 3/4 INCH AND INDIVIDUAL DEFECTS SHALL BE SEPARATED BY AT LEAST 6 INCHES OF SOUND METAL.

REPAIR OF DEFECTIVE WELDS

DEFECTIVE WELDS SHALL BE REPAIRED BY CHIPPING OR MELTING OUT SUCH DEFECTS FROM ONE OR BOTH SIDES OF THE JOINT AS REQUIRED, REMOVING ONLY SUFFICIENT WELD METAL TO CORRECT THE DEFECT. THE JOINT SHALL THEN BE REWELDED AND AGAIN RADIOGRAPHED.

ADDITIONAL RADIOGRAPHS

WHEREVER AN UNACCEPTABLE WELD OCCURS, A RADIOGRAPH SHALL BE MADE OF THE ADJOINING 12-INCH LENGTHS OF WELD TO DETERMINE IF THE FLAWS EXTEND BEYOND THE LIMITS OF THE ORIGINAL RADIOGRAPH. IF UNACCEPTABLE FLAWS OCCUR IN THESE ADJOINING LENGTHS OF WELD, THESE DEFECTIVE WELDS SHALL BE REPAIRED AND THIS ENTIRE PROCEDURE REPEATED FOR THE NEXT ADJOINING 12-INCH LENGTH OF WELD.

CUSTODY OF RADIOGRAPHS

AS SOON AS THE RADIOGRAPHING OF THE WELDMENTS ON THE FULL LENGTH OF EACH FLANGE OR WEB PLATE BETWEEN FIELD SPLICES HAS BEEN COMPLETED, THE CONTRACTOR SHALL SEND TO THE STATE THE PROCESSED CONTACT FILM (THAT FILM CLOSEST TO THE SOURCE OF RADIATION) OF ALL ORIGINAL AND RETAKE RADIOGRAPHS. THESE RADIOGRAPHS SHALL BE ACCOMPANIED BY A CERTIFICATION FROM THE CONTRACTOR THAT THE RADIOGRAPHIC EXAMINATION WAS PERFORMED IN CONFORMANCE WITH THESE SPECIFICATIONS. THE RADIOGRAPHS SHALL BECOME THE PROPERTY OF THE STATE. EACH RADIOGRAPH SHALL BE CLEARLY IDENTIFIED TO SHOW THE LOCATION ON THE STRUCTURE AT WHICH IT WAS TAKEN. UNACCEPTABLE DEFECTS SHALL BE IDENTIFIED IN EACH RADIOGRAPH IN WHICH THEY OCCUR AND THE REPAIR OR REPLACEMENT OF EACH UNACCEPTABLE WELD DEFECT SHALL BE NOTED AND IDENTIFIED.

REPORT OF COST

AFTER THE COMPLETION OF THE RADIOGRAPHIC INSPECTION OF WELDS, THE CONTRACTOR SHALL FURNISH THE STATE A COMPLETE REPORT OF THE COST OF PERFORMING THIS WORK, SEPARATED INTO THE ITEMS MENTIONED IN THE FOLLOWING PARAGRAPH.

BASIS OF PAYMENT

PAYMENT FOR THIS WORK, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR S-7, STRUCTURAL STEEL.

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

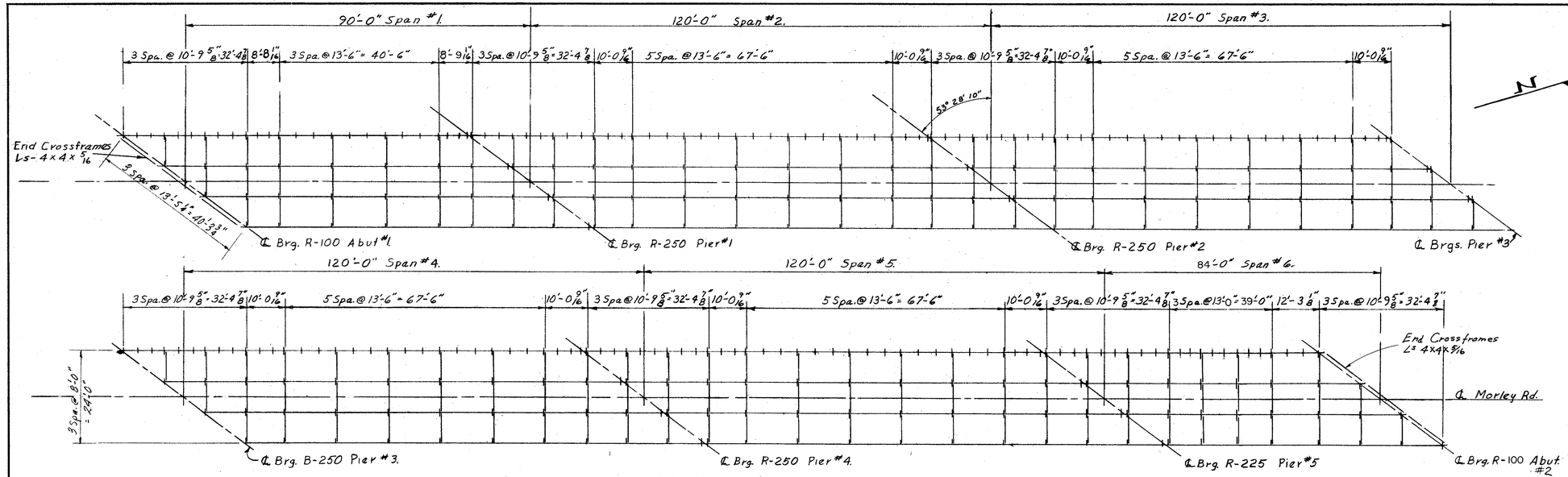
RADIOGRAPHIC EXAMINATION OF WELDS
BRIDGE NO. LAK-1-1199
S.R.1 UNDER MORLEY ROAD
LAKE COUNTY
STA. 280 + 75.45

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
						3-1-60

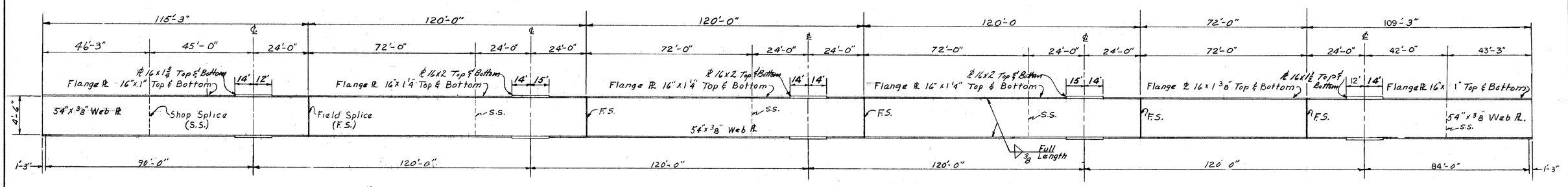
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

287
306

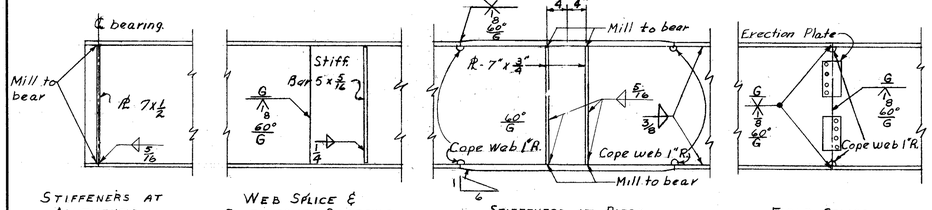
LAKE COUNTY
SEC. LAK-1-10.38



STEEL FRAMING PLAN



GIRDER ELEVATION



STIFFENERS AT ABUTMENTS

WEB SPLICE & INTERMEDIATE STIFFENER

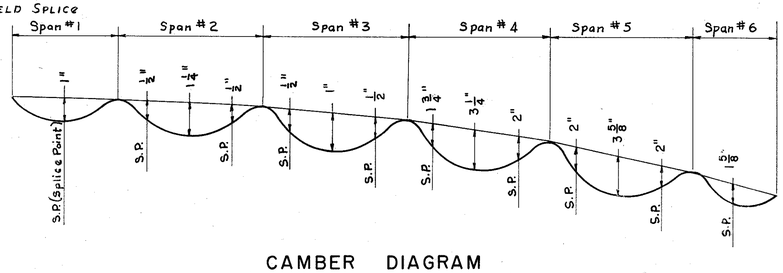
STIFFENERS AT PIERS

NOTE: V-Groove Butt welds to be finished smooth and flush with the base material on all surfaces.

Clip all Stiffeners to clear Flange-Web Welds as required.

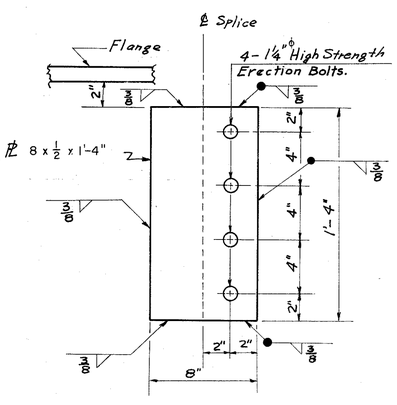
Stiffeners to be on both faces of all girders.

FIELD SPLICE



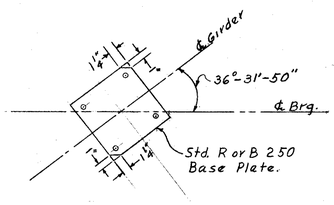
CAMBER DIAGRAM

DEFLECTION & CAMBER						
	SPAN NO.1	SPAN NO.2	SPAN NO.3	SPAN NO.4	SPAN NO.5	SPAN NO.6
Deflection due to weight of steel	3/16"	3/8"	1/4"	1/4"	3/8"	1/8"
Deflection due to remaining dead load	9/16"	7/8"	3/4"	3/4"	3/4"	1/4"
Convexity required for vertical curve	0"	0"	0"	2 1/4"	2 1/2"	1 1/4"
Sum of deflection and convexity	3/4"	1 1/4"	1"	3 1/4"	3 5/8"	1 5/8"
Required camber	1"	1 1/4"	1"	3 1/4"	3 5/8"	1 5/8"



ERECTION PLATE DETAIL

These Plates shall be used on interior face of girders only. After the girder welds have been completed the erection bolts in outside girders only shall be removed, the holes welded shut and the field welding of erection plates completed.



BASE PLATE DETAIL

REFERENCE shall be made to Standard Drawing CSB-2-56, Sheets 2, & 3 of 6, revised 2-2-59 for Details of End Dams, Gutters, Pipe Drains, Scuppers, Curb Plates and End Crossframes.

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59 for Details of Rockers and Bolsters.

REFERENCE shall be made to Standard Drawing AR-1-57 revised 2-2-59 for Details of Aluminum Railing Type A and Concrete Parapet Details.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel girders and all sides of the bottom flange.

SHOP DRAWINGS for the girders shall include an overall layout with dimensions showing the relative unloaded vertical position of each girder or girder segment with respect to the others in the same girder line and with respect to a full length base or work line taking into account (camber and) the profile of the highway.

SHOP ASSEMBLY: At least three adjacent girder segments shall be assembled in the shop in their correct unloaded positions as shown on the shop drawing layout required in the above note so that the faced joints for welding the segments together may be checked for proper fit-up.

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

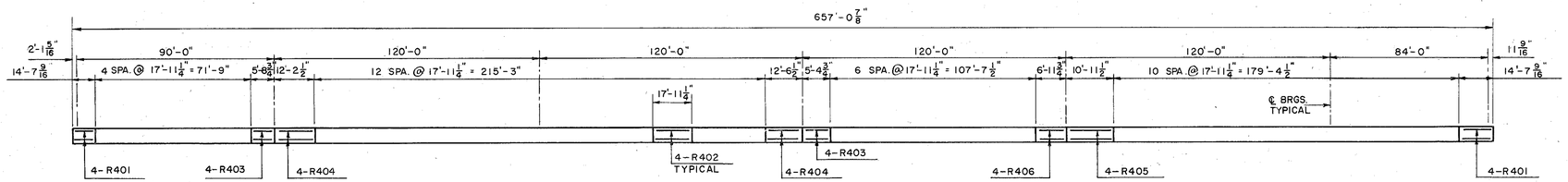
STEEL FRAMING PLAN
BRIDGE NO. LAK-1-1199
S.R.1 UNDER MORLEY ROAD
LAKE COUNTY
STA. 280+75.45

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
H. M.	J.T.A.		D.E.T. 8-11-59			3-1-60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

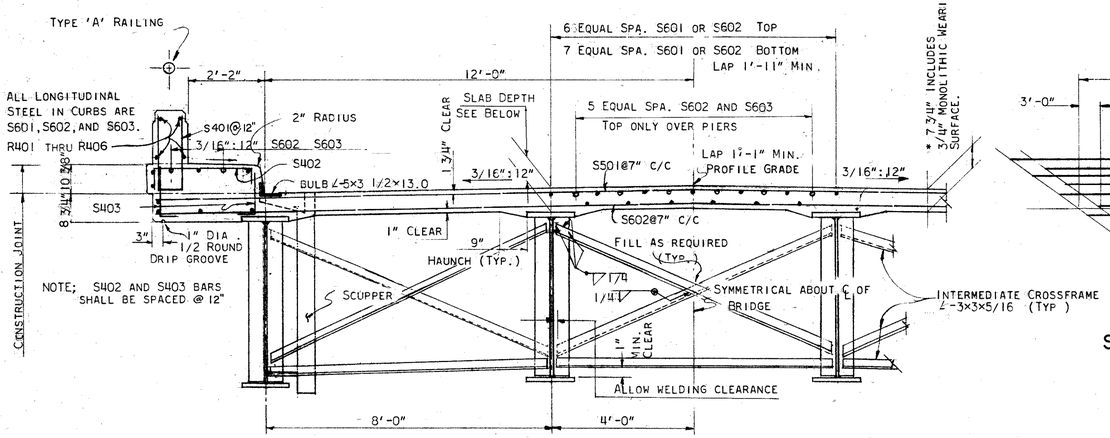
288
306

LAKE COUNTY
SEC. LAK-1-10.38



PLAN PARAPET PANEL SPACING AND REINFORCEMENT

RIGHT SIDE SHOWN, LEFT SIDE IDENTICAL

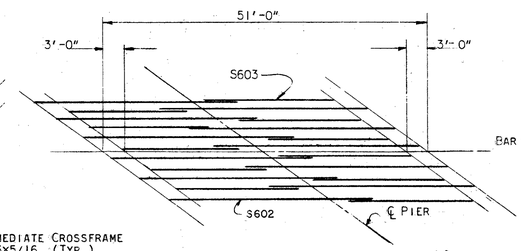


SECTION C-C

CONCRETE CLASS 'C'

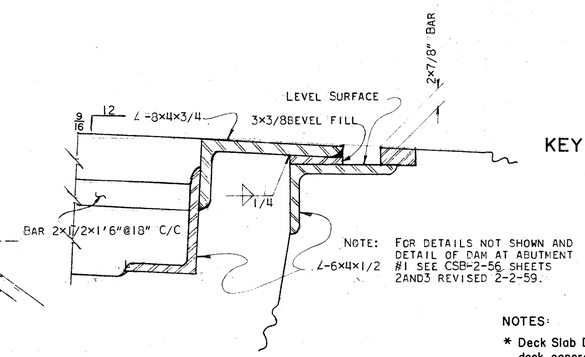
SLAB DEPTH

ABUT.	#1,2	7 7/8"
PIER	#1	7 1/8"
PIERS	#2,3,4	6 7/8"
PIER	#5	7 3/8"

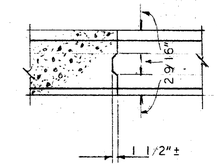


STAGGER DIAGRAM S602 & S603 OVER PIERS

(22-- S602 & 22 - S603 OVER EACH PIER)
110 OF EACH REQUIRED



END DAM DETAIL ABUTMENT NO. 2



KEYED CONSTRUCTION JOINT

NOTES:

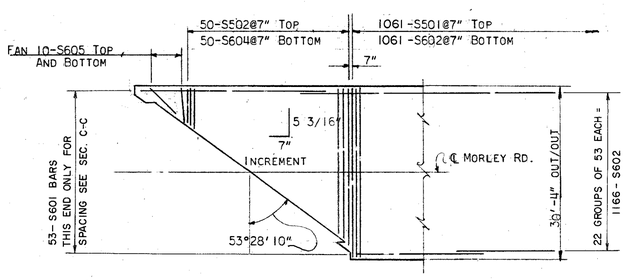
* Deck Slab Depth: This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

Concrete shall be Class C. Concrete & reinforcing steel above parapet construction joint included with railing for payment.

All reinforcing steel shall have a minimum of 2" of cover from all faces except as otherwise shown.

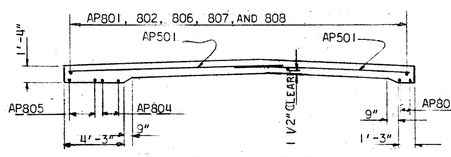
For details of Curb Plates, End Crossframe and Scuppers, see Standard Drawing CSB-2-56 Sheet No. 2 & 3 revised 2-2-59.

Concrete Deck Placing: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to trasverse reinforcing steel and are located near the center of any span.



PART SLAB PLAN AT ABUTMENT NO 1

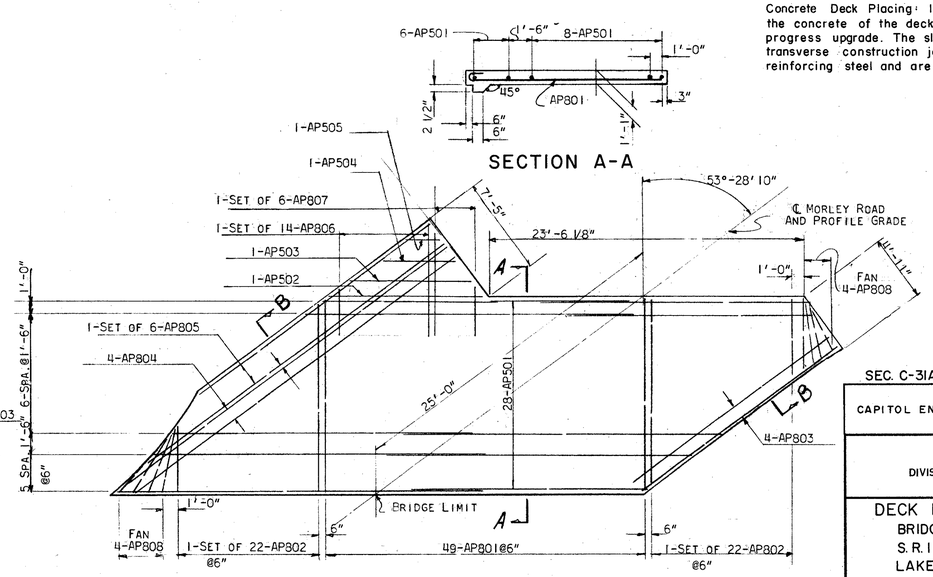
SLAB PLAN OF ABUTMENT NO. 2 OPPOSITE HAND



SECTION B-B

NOTES:

APPROACH SLAB SHALL BE CLASS 'C' CONCRETE. THE REINFORCING IS INCLUDED IN REINFORCED CONCRETE APPROACH SLAB ITEM 1-7 AND IS NOT PAID FOR SEPARATELY. REFERENCE IS MADE TO STD. DWG. AS-1-54 REVISED 12-1-54.



APPROACH SLAB PLAN

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

DECK DETAILS & APPROACH SLAB
BRIDGE NO. LAK-1-1199
S.R.1 UNDER MORLEY ROAD
LAKE COUNTY

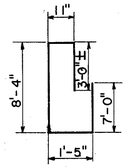
STA. 280+75.45

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
std. OHIO dwg	DET 7-20-59		J.T.A.			3-1-60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

289
306

LAKE COUNTY
SEC. LAK-1-10.38



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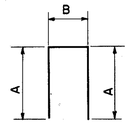
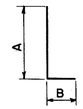


TYPE #1



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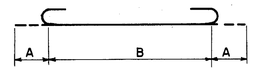

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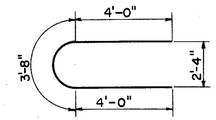

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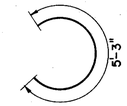

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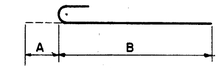


TYPE # 4

REINFORCING STEEL LIST

ABUTMENTS

MARK	ABUT. #1	ABUT. #2	TOTAL	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	No. of Ea.
AF 701	16	16	32	28'-9"	1880	Str.				
AF 702	8	8	16	23'-0"	752	Str.				
AF 703	8	8	16	18'-4" to 12'-3"	501	Str.			2'-0 5/16"	4
AF 504	66	66	132	10'-0"	1377	1	3'-10"	2'-6"		
AF 505	46	46	92	8'-5"	808	1	3'-1"	2'-6"		
AF 506	80	80	160	6'-7"	1098	1	2'-10"	1'-2"		
A 607	14	14	28	26'-2"	1101	Str.				
A 508	34	34	68	5'-10"	413	Str.				
A 609	50	50	100	6'-6"	976	4	8"	5'-10"		
A 610	50	50	100	20'-0"	3004	*				
A 511	20	20	40	26'-2"	1092	Str.				
A 612	20	20	40	5'-4"	320	1	1'-0"	3'-8"		
WF 813	36	36	72	6'-1"	1170	4	1'-1"	5'-0"		
WF 514	24	24	48	4'-2"	209	Str.				
W 615	30	30	60	11'-4"	1021	2	10'-4"	10"		
W 516	19	19	38	11'-6"	656	Str.				
W 617	6	6	12	21'-8"	391	Str.				
W 618	6	6	12	12'-8"	228	Str.				
W 619	6	6	12	12'-0" to 9'-0"	189	Str.			1'-6"	3
W 620	6	6	12	22'-0" to 19'-0"	369	Str.			1'-6"	3
W 621	6	6	12	16'-0"	288	Str.				
W 622	6	6	12	26'-4"	475	Str.				
W 523	14	14	28	7'-2"	209	Str.				
W 524	8	8	16	4'-0"	67	Str.				
W 525	8	8	16	5'-3"	88	Str.				
W 526	6	6	12	26'-3" to 29'-3"	347	Str.			1'-6"	4
W 527	6	6	12	16'-0" to 19'-0"	219	Str.			1'-6"	4
W 528	17	17	34	6'-5"	227	1	2'-8"	1'-4"		
W 529	28	28	56	5'-9" to 3'-1"	259	1	2'-7" to 1'-0"	1'-4"	3 11/16"	4
W 431	41	41	82	4'-4"	237	1	2'-0"	6"		
W 533	16	16	32	4'-4"	112	Str.				
W 534	4	4	8	5'-6"	46	Str.				
W 935	10	10	20	9'-6"	646	3	1'-3"	7'-0"		
				TOTAL	20,775					

SUPERSTRUCTURE

MARK	No.	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	No. of Ea.
S 401	1314	4'-4"	3,801	1	2'-0"	6"		
S 402	1314	3'-7"	3,142	1	6"	2'-9"		
S 403	2628	1'-8"	2,932	2	1'-3"	6"		
S 501	1061	30'-0"	33,199	Str.				
S 502	100	28'-0" to 6'-9"	1,813	Str.			5 3/16"	2
S 601	53	37'-9"	3,005	Str.				
S 602	2337	30'-0"	105,305	Str.				
S 603	110	20'-0"	3,304	Str.				
S 604	100	28'-0" to 6'-9"	2,610	Str.			5 3/16"	2
S 605	40	5'-6"	330	Str.				
		TOTAL	159,441					

RAILING

R 401	16	14'-3"	Include	Str.	
R 402	256	17'-6"	with	Str.	
R 403	16	5'-0"	Item	Str.	
R 404	16	12'-0"	S-14 for	Str.	
R 405	8	10'-6"	Payment	Str.	
R 430	8	24'-6"		Str.	
R 432	8	14'-6"		Str.	
R 406	8	6'-6"		Str.	

PIERS

MARK	PIER #1	PIER #2	PIER #3	PIER #4	PIER #5	TOTAL	LENGTH	WEIGHT	TYPE	A	B
PF 601	56	56	56	56	56	280	5'-6"	2,313	Str.		
PF 901	48	48	48	48	48	240	6'-3"	5,100	2	5'-6"	1'-0"
P 501	4	4	4	4	4	20	14'-3"	297	Str.		
P 502	36	36	36	36	36	180	7'-5"	1,393	1	2'-6"	2'-8"
P 701	8	8	8	8	8	40	11'-8"	914	*		
P 702	4	4	4	4	4	20	14'-3"	583	Str.		
P 703	6	6	6	6	6	30	15'-6"	950	Str.		
P 704a	4	4	4	4	4	20	21'-8"	885	1	3'-6"	15'-10"
P 704b	4	4	4	4	4	20	23'-4"	955	1	3'-6"	16'-8"
P 704c	2	2	2	2	2	10	23'-8"	484	1	3'-6"	17'-0"
P 901	24					24	20'-9"	1693			
P 902	24			24		48	20'-5"	3332			
P 903		24	24			48	21'-5"	3496			
P 904		24	24	24		72	21'-0"	5141			
P 905					24	24	19'-3"	1571			
P 906					24	24	18'-6"	1510			
						Total	Includes Spirals	36,986			

SPIRALS

MARK	No.	SIZE	LENGTH	CORE DIA.	PITCH	No. of TURNS	WEIGHT
SP 401	2	1/2" ϕ	17'-3 5/8"	32"	4 1/2"	49	644
SP 402	2		16'-10 1/2"			48	631
SP 403	2		17'-10 3/4"			51	669
SP 404	2		17'-6 1/4"			50	656
SP 405	2		18'-0"			51	670
SP 406	4		17'-7 3/8"			50	1314
SP 407	2		17'-0"			48	631
SP 408	2		15'-9"			45	591
SP 409	2		14'-10"	32	4 1/2"	43	563
					SPIRAL TOTAL		6,369

APPROACH SLABS

MARK	SLAB #1	SLAB #2	TOTAL	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	No. of Ea.
AP 501	28	28	56	23'-0"	Include	Str.				
AP 502	1	1	2	11'-6"	with	Str.				
AP 503	1	1	2	9'-0"	Item	Str.				
AP 504	1	1	2	6'-0"	I-7	Str.				
AP 505	1	1	2	2'-9"	for	Str.				
					payment					
AP 801	49	49	98	15'-7"		5	1'-1"	14'-6"		
AP 802	44	44	88	14'-0" to 6'-0"		5	1'-1"	12'-1 11/16" to 4'-1"	4 9/16"	4
AP 803	4	4	8	18'-6"		Str.				
AP 804	4	4	8	29'-0"		Str.				
AP 805	6	6	12	21'-6" to 28'-0"		Str.			1'-6"	2
AP 806	14	14	28	3'-6" to 8'-6"		Str.			3 1/8"	2
AP 807	6	6	12	3'-6" to 7'-6"		Str.			8"	2
AP 808	8	8	16	5'-0"		Str.				

REPLACEMENT BARS

MARK	No.	LENGTH	WEIGHT	TYPE
RE 401	1	5'-3"		*
RE 402	1	5'-3"		Str.
RE 501	3	5'-7"		Str.
RE 601	7	5'-11"		Str.
RE 701	1	6'-3"		Str.
RE 801	1	6'-6"		Str.
RE 901	1	6'-10"		Str.

NOTES:

All dimensions are out to out of the bar.

Bar Size is indicated in the bar mark. The first digit where three digits are used, and the first two where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar & A1014 is a No. 10 size.

The length shown in the bar list for the spiral bars is the distance from the top of the footing to the bottom of the cap.

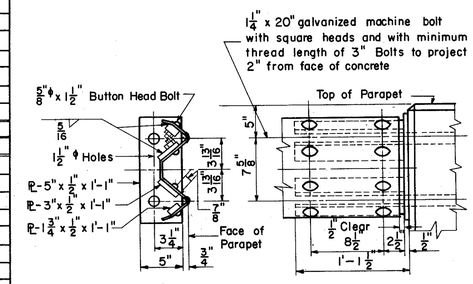
The number of turns shown is the length divided by the pitch, plus 3 turns (total number of closed coils) expressed as the nearest whole number.

Spiral bars shall not have deformations but shall in other respects conform to Item S-4.

$1\frac{1}{2}$ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lbs. per lin. ft., shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of spacers, based on 0.68 lbs. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

Replacement Bars: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.



NOTE:
Guard Rail End Connection Assembly shall be galvanized after welding.

GUARD RAIL DETAIL

Included with Item S-14 for payment

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

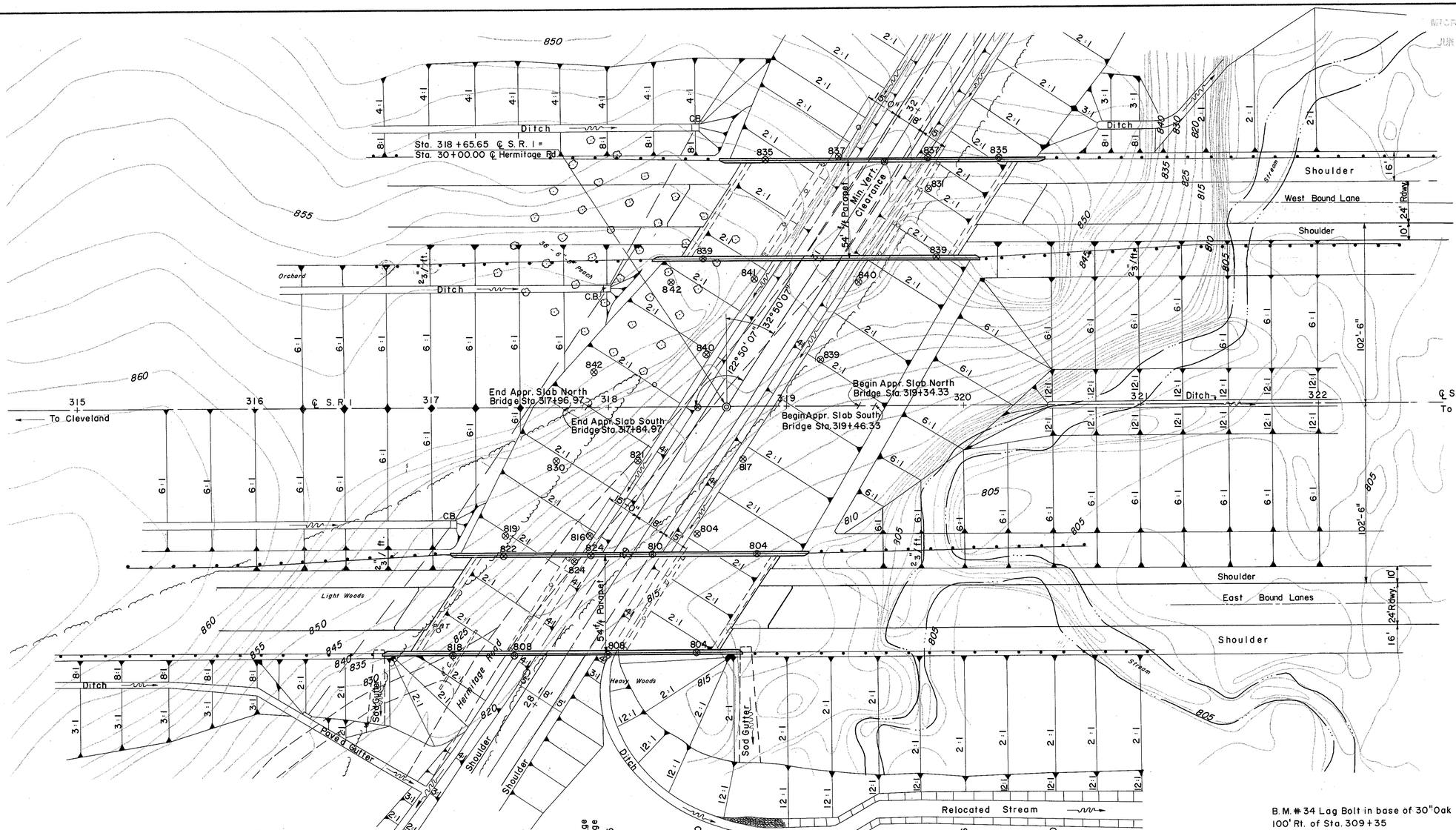
REINFORCING BAR LIST
BRIDGE NO. LAK-1-1199
S.R. 1 UNDER MORLEY ROAD
LAKE COUNTY
STA. 280 + 75.45

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
					3-1-60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

290
306

LAKE COUNTY
SEC. LAK-1-10.38

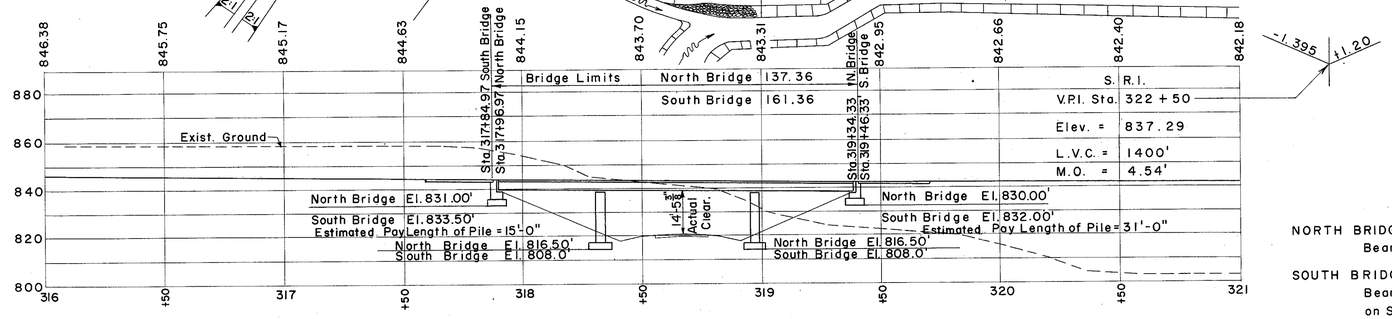


FOUNDATION SOUNDINGS: Foundation design and foundation quantites are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus, or in the Division Office, but the state does not guarantee the accuracy thereof.

819 ⊕ Borings or Rod Soundings with Elev. of Top of Rock.

PROPOSED STRUCTURES

TYPE:	Two 3-Span Continuous Rolled Beam with Reinforced Concrete Deck & Substructure.
SPANS:	North Bridge - 36'-0", 60'-0", 36'-0" South Bridge - 48'-0", 60'-0", 48'-0"
ROADWAY:	54'-0" f/f Parapet, 1'-2" Safety Curb
LOAD FREQUENCY:	CF = 2000 - Adequate for AASHO Alternate Loading
SKEW:	32° 50' 07" L.F.
WEARING SURFACE:	1" Monolithic Concrete
APPR. SLABS:	25' Long AS-1-54
ALIGNMENT:	Tangent - Both Roads
TRAFFIC COUNT:	80 (1955) 160 ADT 1975 (Hermitage Road)



B.M. # 34 Lag Bolt in base of 30" Oak 100' Rt. of Sta. 309+35 Elev. 869.63

B.M. # 35 Lag Bolt in 18" Oak E. Side of Hermitage Rd. opp. drive marked Porter Edds Elev. 819.80

B.M. # 36 Lag Bolt in root of 24" Beech 55' Lt. of Sta. 328+95 Elev. 856.52

NORTH BRIDGE: All Footings on Rock - Allow Bearing = 6T/Ft.²

SOUTH BRIDGE: Pier Footings on Rock - Allow Bearing = 6T/Ft.² Abutment Footings on Steel H Piles Point bearing on rock. 12 BP 53. Design Load 25 Tons/Pile.

SEC. C-3 i A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

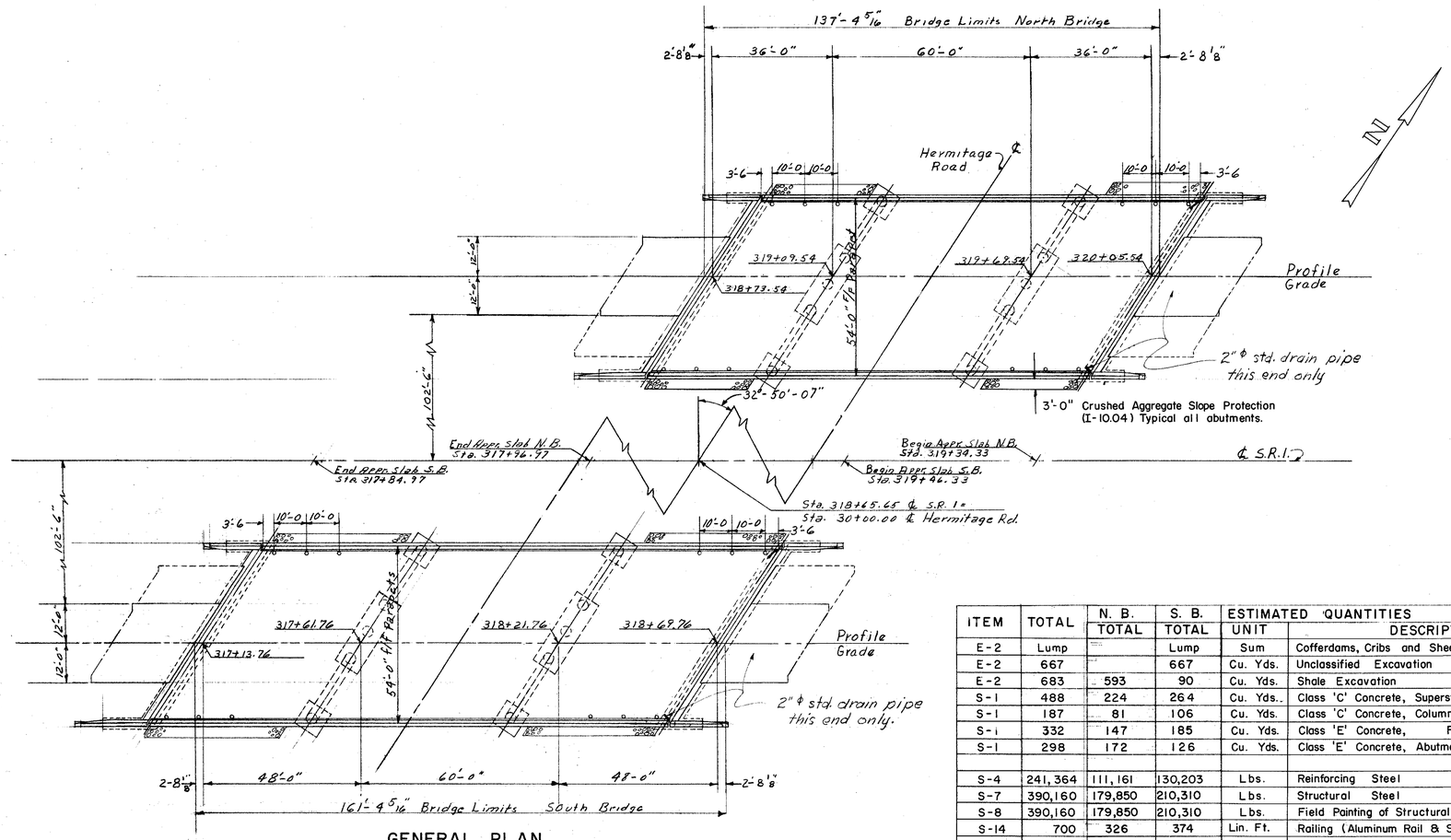
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SITE PLAN
BRIDGE NO. LAK-1-1271 N&S.
S.R.I. OVER HERMITAGE ROAD
LAKE COUNTY
STA. 318 + 65.65

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
SEC. LAK-1-10.38



GENERAL PLAN

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 revised 12-1-54, CSB-2-56 revised 2-2-59, Sheets 2 and 3 of 6, and AR-1-57 revised 2-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION QUANTITY for Abuts. 1, 2 & 3 in addition to that outlined in Sec. E-2.09, includes the removal of material bounded by the proposed slope, by the front vertical plane described in Sec. E-2.09 and by the finished slope of the cut. Backfill behind all the abutments shall be made with material meeting the requirements of Sec. I-22 and shall be compacted in accordance with the requirements for embankment compaction. The payment for this I-22 backfill shall be considered as included in payment for E-2 Unclassified Excavation.

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

EXCAVATION QUANTITY for Abutment #4 includes the removal of fill material between the surface of proposed embankment and the bottom of footings.

36 tons per pile using a 7000 ft. lb. hammer
27 tons per pile using a 11000 ft. lb. hammer
25 tons per pile using a 15000 ft. lb. or greater hammer

if the energy rating of the Hammer is between the ratings given, the required formula capacity shall be determined by interpolation. The design load is 25 Tons per pile.

POROUS BACKFILL: 2 ft. thick, full length of abutment backwall shall extend up to the underside of the approach slab or to the finished ground surface. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

WELDING of structural steel shall be Class A except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

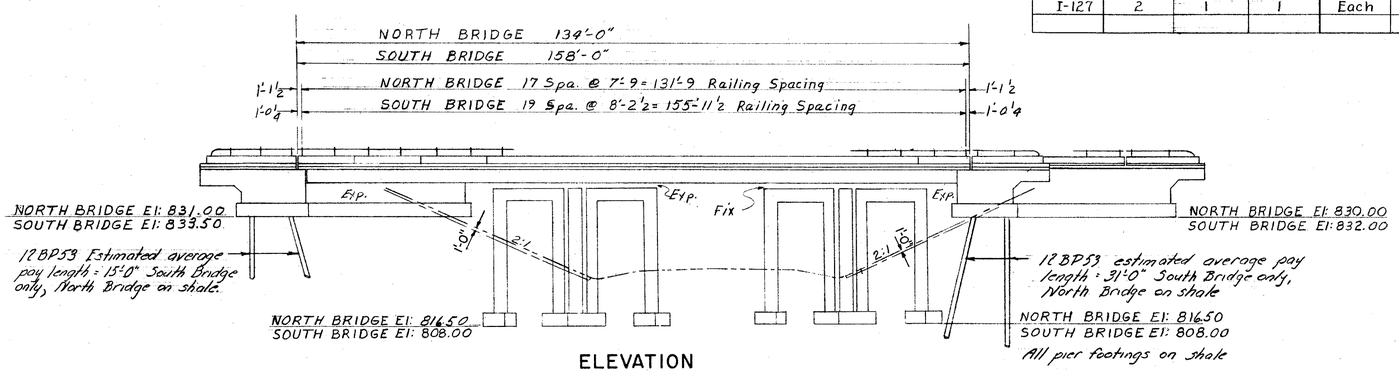
CRUSHED AGGREGATE SLOPE PROTECTION (I-10.04) one foot thick shall be provided as indicated on the General Plan.

FOOTINGS founded on shale shall extend a minimum of 3" in to the shale or to the elevation shown whichever is lower.

FIRST TEST PILE: Payment will be made for only one first test pile. It may be driven for either the North Bridge or the South Bridge.

ITEM	TOTAL	N. B. TOTAL	S. B. TOTAL	ESTIMATED QUANTITIES UNIT	DESCRIPTION	NORTH BRIDGE SUPER	ABUT.	PIER	GEN.	SOUTH BRIDGE SUPER	ABUT.	PIER	GEN.
E-2	Lump		Lump	Sum	Cofferdams, Cribs and Sheeting								Lump
E-2	667		667	Cu. Yds.	Unclassified Excavation						352	315	
E-2	683	593	90	Cu. Yds.	Shale Excavation		408	185				90	
S-1	488	224	264	Cu. Yds.	Class 'C' Concrete, Superstructure	224				264			
S-1	187	81	106	Cu. Yds.	Class 'C' Concrete, Columns and Caps			81				106	
S-1	332	147	185	Cu. Yds.	Class 'E' Concrete, Footings		70	77			108	77	
S-1	298	172	126	Cu. Yds.	Class 'E' Concrete, Abutments above Footings.		172				126		
S-4	241,364	111,161	130,203	Lbs.	Reinforcing Steel	68,207	15,480	27,474		80,066	16,953	33,184	
S-7	390,160	179,850	210,310	Lbs.	Structural Steel	179,850				210,310			
S-8	390,160	179,850	210,310	Lbs.	Field Painting of Structural Steel, as per Plan.								
S-14	700	326	374	Lin. Ft.	Railing (Aluminum Rail & Supports, & Conc. Parapet)	268	58			316	58		
S-16	Lump		Lump	Sum	First Test Pile								Lump
S-18	2640		2640	Lin. Ft.	12" BP 53 Steel Piles							2,640	
S-29	128	64	64	Cu. Yds.	Porous Backfill		64					64	
I-10	1243	540	703	Sq. Yds.	Crushed Aggregate Slope Protection				540				703
I-127	2	1	1	Each	Bridge Delineators	1				1			

PROPOSAL NOTES: See Proposal for notes concerning the requirements for A-373 Steel and Machine Finishing of Bridge Deck Slabs.



ELEVATION

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

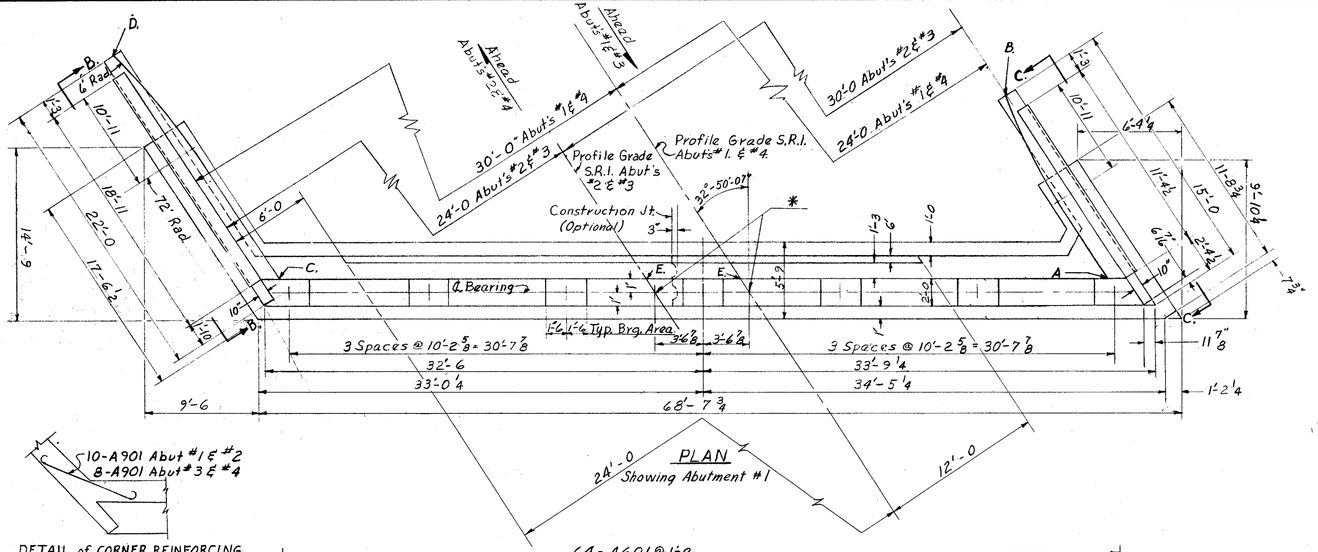
GENERAL PLAN
BRIDGE NO. LAK-1-1271 N&S
S.R.I. OVER HERMITAGE ROAD
LAKE COUNTY
STA. 318 + 65.65

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

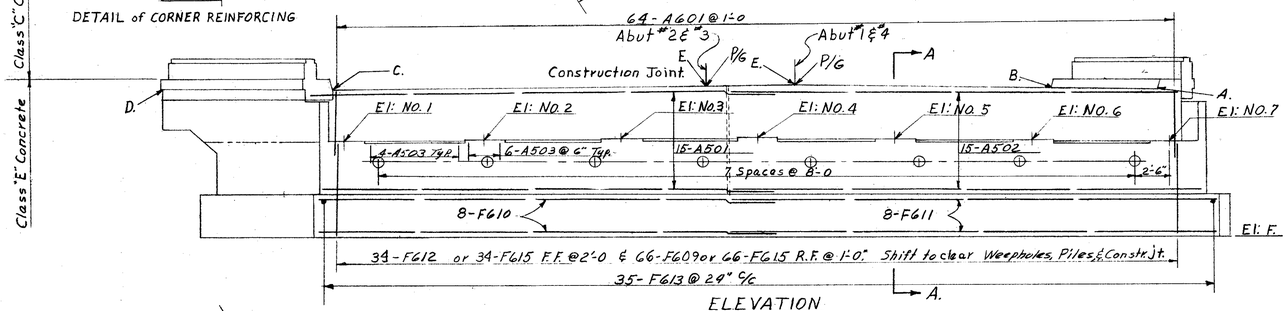
292 / 306

LAKE COUNTY
SEC. LAK-1-10.38



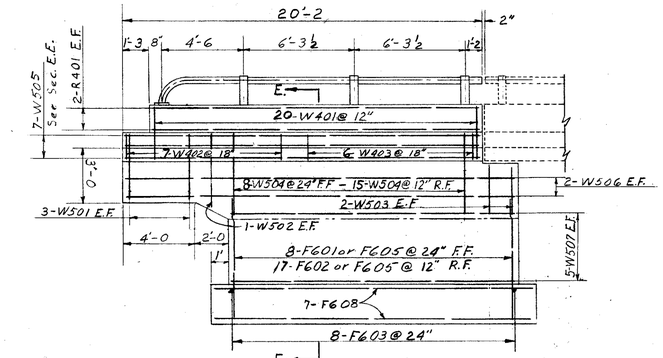
PLAN
Showing Abutment #1

DETAIL of CORNER REINFORCING

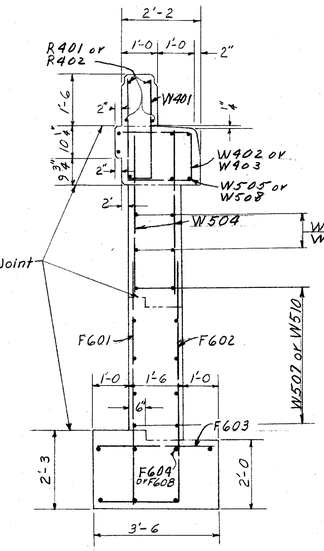


ELEVATION
Footing Reinforcing shown for Abut's #1 & #2

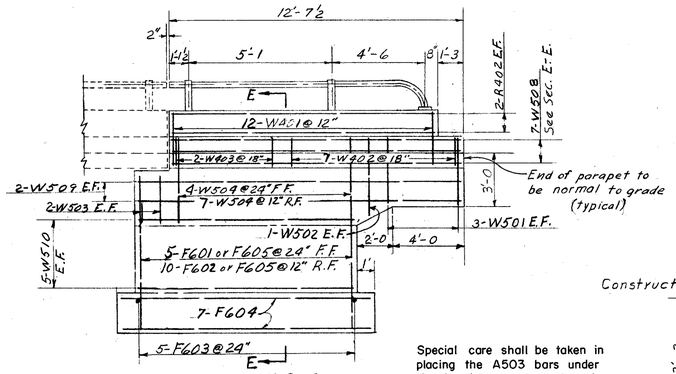
Class "C" Concrete
Class "E" Concrete



ELEVATION B~B



SECTIONS E~E

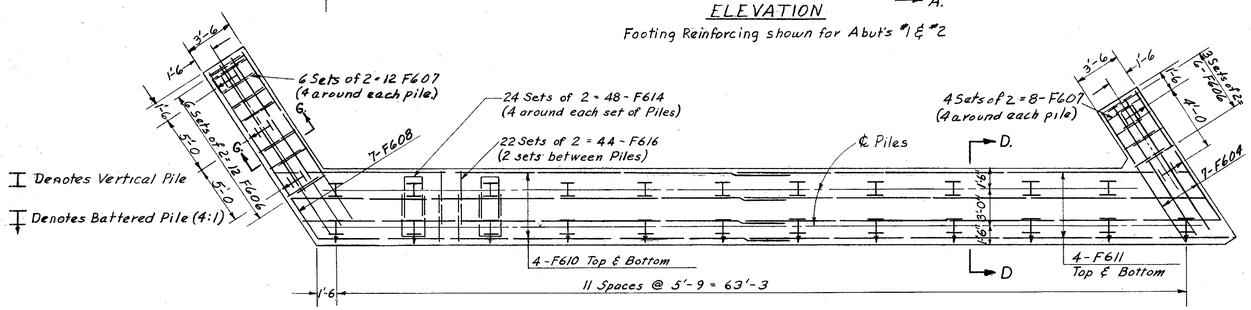


ELEVATION C~C

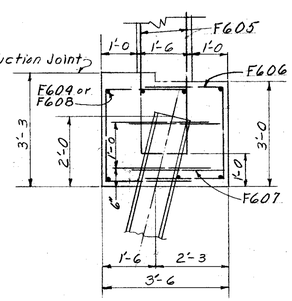
Special care shall be taken in placing the A503 bars under the bearing seats so they do not interfere with the drilling of anchor bolt holes.

R.F. Denotes Rear Face
F.F. Denotes Front Face
E.F. Denotes Each Face

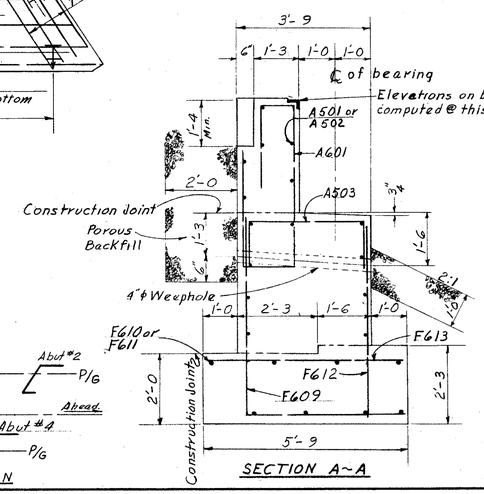
All reinforcing steel shall have 3" of cover in the bottom of the footing & 2" elsewhere. Reinforcing steel above footing construction joint is identical in all abutments.



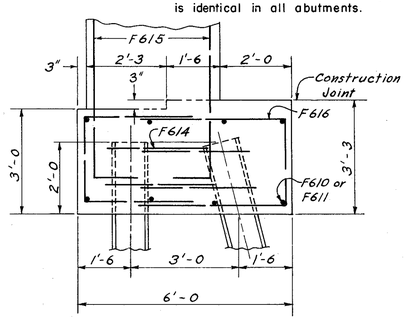
PILE LAYOUT & FOOTING REINFORCING



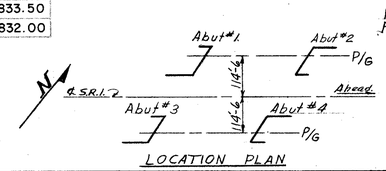
SECTION G~G



SECTION A~A



SECTION D~D



LOCATION PLAN

ELEVATIONS														
STATION *	LOCATION	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	A	B	C	D	E	F
318 + 73.54	Abut. # 1	839.27	839.36	839.46	839.55	839.45	839.28	839.11	843.05	843.06	843.22	843.22	843.52	831.00
320 + 05.54	Abut. # 2	838.26	838.41	838.57	838.66	838.54	838.44	838.34	842.27	842.02	842.18	841.99	842.62	830.00
317 + 13.76	Abut. # 3	840.90	840.96	841.03	841.01	840.81	840.63	840.43	844.38	844.33	844.84	844.99	845.03	833.50
318 + 69.76	Abut. # 4	839.01	839.19	839.36	839.55	839.54	839.45	839.37	843.29	843.12	842.94	842.60	843.53	832.00

NOTE:

Abutments #1 & 2: Allowable foundation bearing pressure 6 tons per sq. ft. Actual Max. bearing pressure 2.4 tons per sq. ft. Footings at abutments #1 & 2 shall extend a miminum of 3" into shale, or to the elevation shown, which ever is lower.

Abutments # 3 & 4: Allowable load per pile and the actual Max. load per pile equals 25 tons.

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

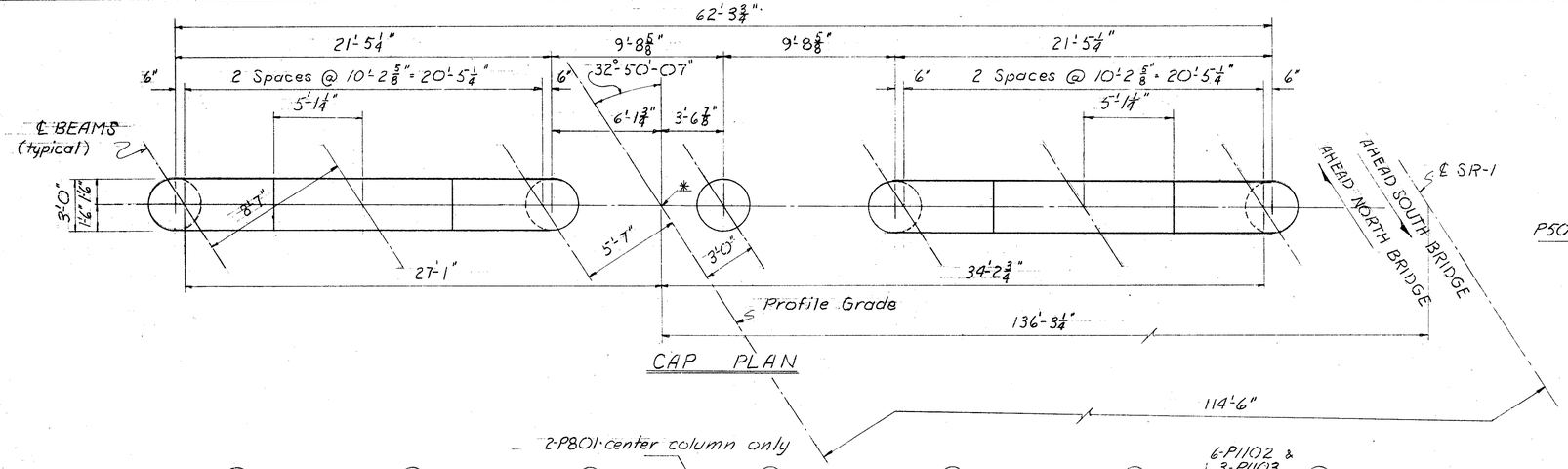
ABUTMENTS
BRIDGE NO. LAK-1-1271 N&S
S.R.I OVER HERMITAGE ROAD
LAKE COUNTY
STA. 318 + 65.65

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
F. M.	J.T.H.	H.T.H.	DET 8-19-59		

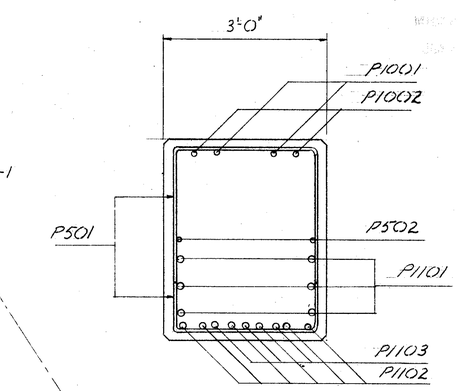
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

293/306

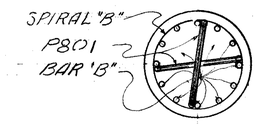
LAKE COUNTY
SEC. LAK-1-10.38



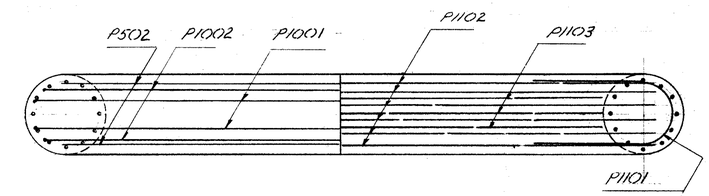
CAP PLAN



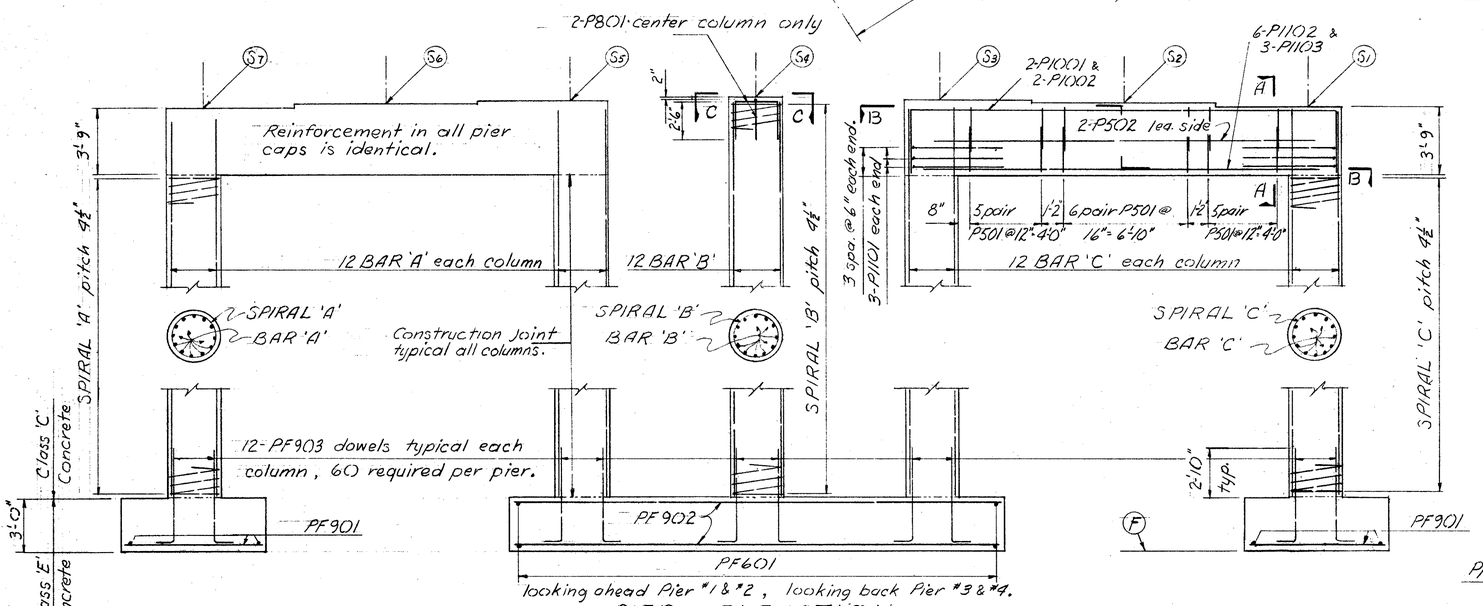
SECTION ~ A-A



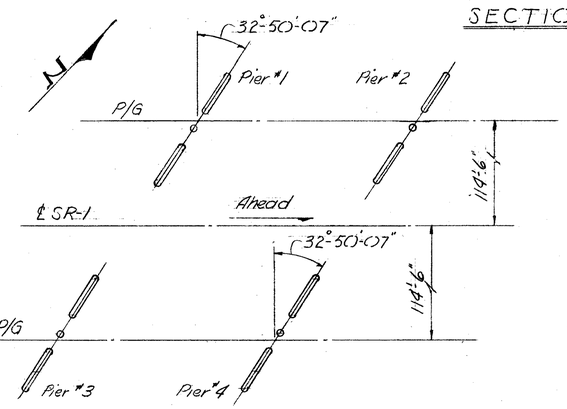
SECTION ~ C-C



SECTION ~ B-B



PIER ELEVATION



LOCATION PLAN

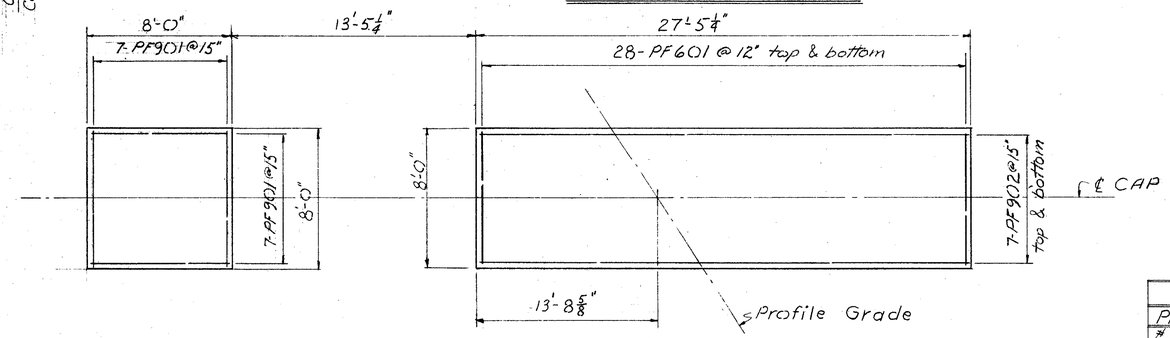
NOTES

Actual maximum bearing pressure equals 5 tons per sq. ft.

Footings shall extend a minimum of 3" into shale or to the elevation shown whichever is lower.

Reinforcing shall have 3" of cover in the footing and 2" elsewhere.

Special care shall be taken in placing the reinforcing steel in the caps so it does not interfere with the drilling of anchor bolt holes.



Reinforcement in footings is identical for each pier.

FOOTING PLAN

BAR LOCATION CHART

PIER	BAR A	BAR B	BAR C	SPIRAL A	SPIRAL B	SPIRAL C
#1	P901	P902	P903	SP401	SP402	SP403
#2	P904	P903	P901	SP404	SP403a	SP401
#3	P905	P905	P906	SP405	SP405a	SP406
#4	P906	P906	P907	SP406	SP406a	SP407

ELEVATIONS

PIER	STATION *	S1	S2	S3	S4	S5	S6	S7	F
#1	319+09.54	838.97	839.06	839.15	839.25	839.16	838.99	838.82	816.50
#2	319+69.54	838.63	838.72	838.82	838.93	838.85	838.67	838.52	816.50
#3	317+61.76	839.92	840.12	840.31	840.48	840.50	840.43	840.36	808.00
#4	318+21.76	839.47	839.64	839.82	840.01	840.02	839.93	839.85	808.00

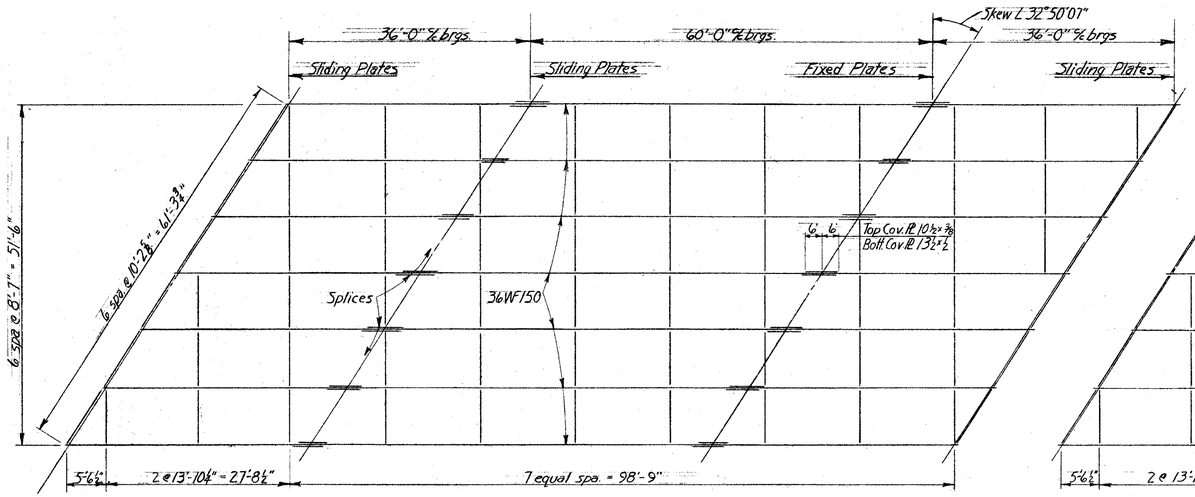
SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

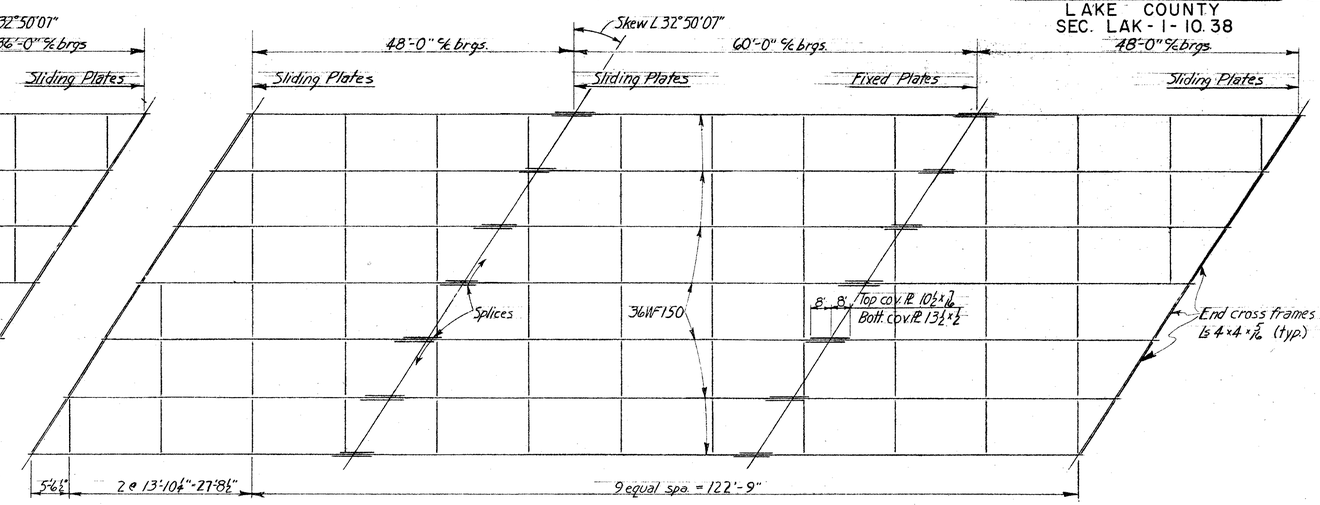
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS
BRIDGE NO. LAK-1-1271 N & S
S.R.1 OVER HERMITAGE ROAD
LAKE COUNTY
STA. 318 + 65.65

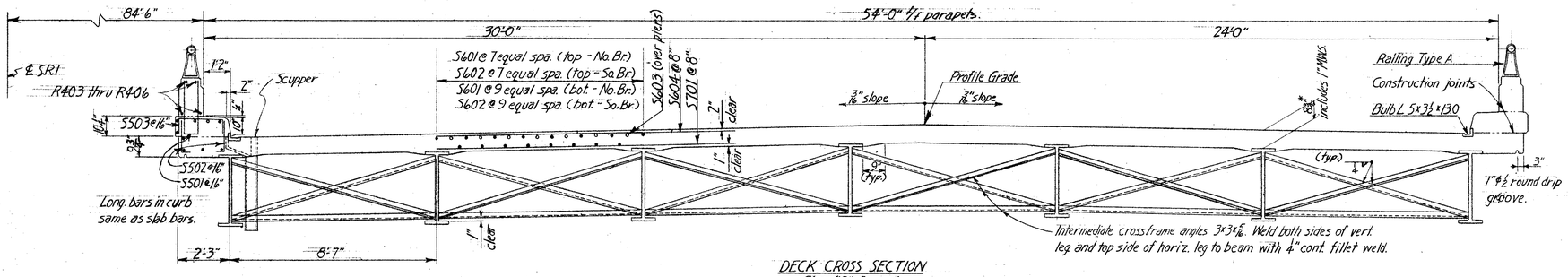
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
H. M.	DRT					



NORTH BRIDGE



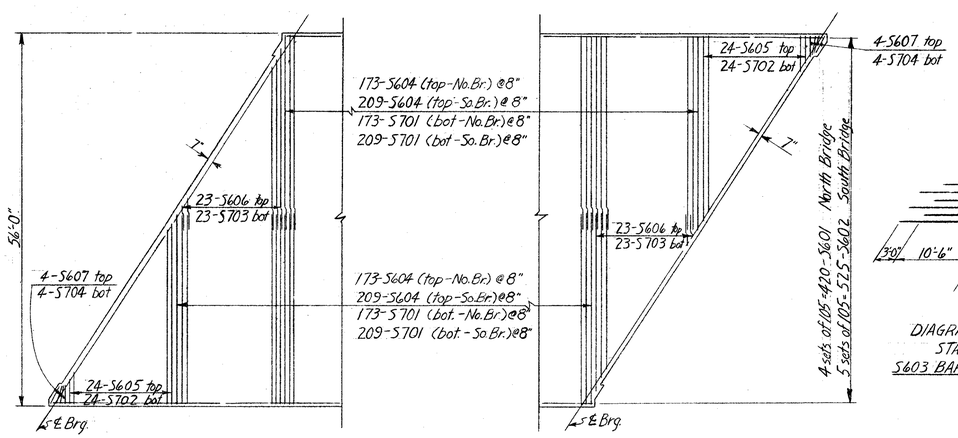
SOUTH BRIDGE



DECK CROSS SECTION
Class "C" Concrete
Looking back on North Bridge - Section
Looking ahead on South Bridge - Section

DEAD LOAD DEFLECTION	North Bridge		South Bridge	
	End Span	Mid-Span	End Span	Mid-Span
Deflect. due to wt. steel	1/64	1/32	1/32	1/32
Deflect. due to remaining DL	1/16	7/32	3/16	7/32
Convexity of vert. curve	1/8	1/4	1/8	0
Total	3/16	1/2	3/8	1/4
Camber required	0	0	0	0

Any convexity of beams shall be placed upward.



PART PLAN
Transverse Reinforcement Placement

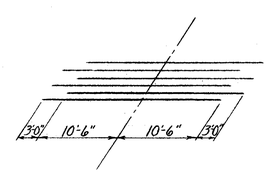


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

NOTES

Painting: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams, all sides of bottom flange.

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

Beam Splice Welding Procedure:

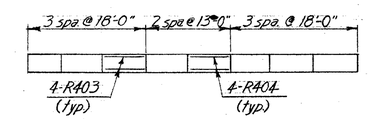
1. Raise abutment ends of the beams ⅜" North Br., ⅝" South Br.
2. Butt weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web, repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam ends to final position.

Reference shall be made to Standard Dwgs. CSB-2-56, sh. 2 & 3 of 6, revised 2-2-59 for details of end dams, gutters, scuppers, pipe drains, endframes and sliding plates.

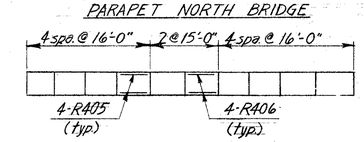
Reference shall be made to Standard Dwgs. AR-1-57, revised 2-2-59 for aluminum railing type "A", and conc. parapet details.

All reinforcing steel shall have 2" min. cover unless otherwise noted.

Concrete Deck Placing: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.



PARAPET NORTH BRIDGE



PARAPET SOUTH BRIDGE

SEC. C-31A

PREPARED BY,
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

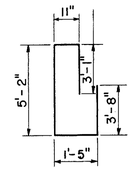
SUPERSTUCTURE DETAILS
BRIDGE NO. LAK-1-1271 N&S
S.R.1. OVER HERMITAGE ROAD
LAKE COUNTY
STA. 318 + 65.65

DESIGN	DRAWN	TRACED	CHECKED	REVISED DATE	REVISED
	CWB		DRT 8-6-59		

MICROFILMED
JUN 27 1983

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LAKE COUNTY
SEC. LAK-1-10.38



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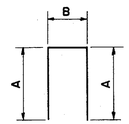

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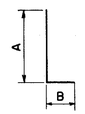

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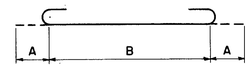

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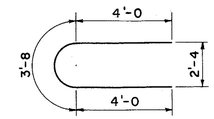
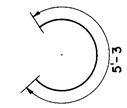


* P1101



* RE401

REINFORCING STEEL LIST

ABUTMENTS

MARK	ABUT. N.B.	ABUT. S.B.	LENGTH	WEIGHT N.B.	WEIGHT S.B.	TYPE	A	B	VARIES BY	No. of Ea.
F 601	26		10'-3"	400		Str.				
F 602	54		12'-2"	987		2	10'-3"	2'-2"		
F 603	26		3'-0"	117		Str.				
F 604	14	14	9'-9"	205	205	Str.				
F 605		80	9'-1"		1091	2	8'-9"	4"		
F 606		36	6'-11"		374	1	2'-4"	2'-7"		
F 607		40	5'-5"		326	1	2'-4"	1'-1"		
F 608	14	14	17'-0"	358	358	Str.				
F 609	132		11'-7"	2296		2	7'-6"	4'-3"		
F 610	16	16	35'-11"	863	863	Str.				
F 611	16	16	34'-0"	817	817	Str				
F 612	68		7'-6"	766		Str.				
F 613	70		5'-5"	570		Str.				
F 614		96	6'-5"		926	1	2'-10"	1'-1"		
F 615		200	6'-4"		1902	2	6'-0"	4"		
F 616		88	9'-4"		1233	1	3'-7"	2'-6"		
W 401	64	64	5'-10"	249	249	1	2'-9"	6"		
W 402	28	28	3'-11" to 2'-5"	60	60	1	1'-5" to 8"	1'-3"	3"	8
W 403	16	16	4'-5"	47	47	1	1'-8"	1'-3"		
W 501	24	24	3'-6"	88	88	Str.				
W 502	8	8	4'-0"	34	34	Str.				
W 503	16	16	2'-8"	45	45	Str.				
W 504	68	68	4'-3"	307	307	Str.				
W 505	14	14	19'-9"	289	289	Str.				
W 506	8	8	21'-8"	181	181	Str.				
W 507	20	20	15'-6"	324	324	Str.				
W 508	14	14	11'-6"	168	168	Str.				
W 509	8	8	14'-0"	117	117	Str.				
W 510	20	20	8'-0"	167	167	Str.				
A 501	30	30	33'-8"	1054	1054	Str.				
A 502	30	30	32'-1"	1004	1004	Str.				
A 503	132	132	5'-2"	713	713	1	1'-0"	3'-5"		
A 601	128	128	13'-7"	2611	2611	4				
A 901	20	16	10'-6"	643	643	3	1'-3"	8'-0"		
			TOTAL	15,480	16,196					

SUPERSTRUCTURE

MARK	No.	LENGTH	WEIGHT	TYPE	A	B	VARIES BY	of Ea.
NORTH BRIDGE								
S 501	200	4'-4"	903	1	2'-0"	0'-6"		
S 502	400	1'-11"	801	2	1'-6"	0'-6"		
S 503	200	2'-7"	538	1	0'-6"	1'-9"		
S 601	420	34'-9"	21,922	Str.				
S 603	92	24'-0"	3,316	Str.				
S 604	346	28'-9"	14,941	Str.				
S 605	48	4'-3" to 28'-0"	1,163	Str.			1'-0" Radius	2
S 606	46	3'-6" to 26'-6"	1,036	Str.			1'-0" Radius	2
S 607	8	3'-0"	36	Str.				
S 701	346	29'-0"	20,509	Str.				
S 702	48	4'-3" to 28'-0"	1,583	Str.			1'-0" Radius	2
S 703	46	3'-6" to 26'-6"	1,410	Str.			1'-0" Radius	2
S 704	8	3'-0"	49	Str.				
		TOTAL	68,207					
SOUTH BRIDGE								
S 501	234	4'-4"	1057	1	2'-0"	0'-6"		
S 502	468	1'-11"	937	2	1'-6"	0'-6"		
S 503	234	2'-7"	630	1	0'-6"	1'-9"		
S 602	525	33'-0"	26,022	Str.				
S 603	92	24'-0"	3,316	Str.				
S 604	418	28'-9"	18,050	Str.				
S 605	48	4'-3" to 28'-0"	1,163	Str.			1'-0" Radius	2
S 606	46	3'-6" to 26'-6"	1,036	Str.			1'-0" Radius	2
S 607	8	3'-0"	36	Str.				
S 701	418	29'-0"	24,777	Str.				
S 702	48	4'-3" to 28'-0"	1,583	Str.			1'-0" Radius	2
S 703	46	3'-6" to 26'-6"	1,410	Str.			1'-0" Radius	2
S 704	8	3'-0"	49	Str.				
		TOTAL	80,066					

RAILING

R 401	16	18'-6"	Include	Str.
R 402	16	11'-0"	with	Str.
R 403	48	17'-8"	Item	Str.
R 404	16	12'-8"	S-14	Str.
R 405	64	15'-8"	for	Str.
R 406	16	14'-8"	Payment	Str.

PIERS

MARK	PIER #1	PIER #2	PIER #3	PIER #4	LENGTH	WEIGHT N.B.	WEIGHT S.B.	TYPE	A	B	VARIES BY	No. of Ea.
PF601	56	56	56	56	7'-6"	1262	1262	Str.				
PF 901	28	28	28	28	7'-6"	1428	1428	Str.				
PF 902	14	14	14	14	27'-0"	2570	2570	Str.				
PF 903	60	60	60	60	6'-2"	2516	2516	2	5'-7"	7"		
P 501	64	64	64	64	7'-9"	1035	1035	1	2'-8"	2'-8"		
P 502	4	4	4	4	21'-6"	179	179	Str.				
P 801	2	2	2	2	7'-1"	83	83	1	2'-6"	2'-6"		
P 901	24	24	-	-	19'-0"	3101		Str.				
P 902	12	-	-	-	19'-6"	796		Str.				
P 903	24	12	-	-	19'-3"	2356		Str.				
P 904	-	24	-	-	18'-9"	1530		Str.				
P 905	-	-	36	-	29'-3"		3580	Str.				
P 906	-	-	24	36	28'-9"		5865	Str.				
P 907	-	-	-	24	28'-3"		2305	Str.				
P1001	4	4	4	4	30'-2"	1039	1039	1	3'-6"	23'-9"		
P1002	4	4	4	4	29'-4"	1010	1010	1	3'-6"	22'-11"		
P1101	12	12	12	12	11'-8"	1488	1488	*				
P1102	12	12	12	12	22'-6"	2869	2869	Str.				
P1103	6	6	6	6	18'-6"	1179	1179	Str.				
					TOTAL	27,474	33,184	(Includes Spirals)				

SPIRALS

MARK	No.	SIZE	LENGTH	CORE DIA.	PITCH	No. of TURNS	WGT. N.B.	WGT. S.B.
SP401	4	1/2" ϕ	15'-5"	32"	4 1/2"	44	1152	
SP402	1	1/2" ϕ	19'-7"	32"	4 1/2"	55	361	
SP403	2	1/2" ϕ	15'-8"	32"	4 1/2"	45	590	
SP404	2	1/2" ϕ	15'-3"	32"	4 1/2"	44	576	
SP405	2	1/2" ϕ	25'-7"	32"	4 1/2"	72		946
SP406	4	1/2" ϕ	25'-2"	32"	4 1/2"	71		1864
SP407	2	1/2" ϕ	24'-8"	32"	4 1/2"	69		906
SP403a	1	1/2" ϕ	19'-2"	32"	4 1/2"	54	354	
SP405a	1	1/2" ϕ	29'-3"	32"	4 1/2"	81		534
SP406a	1	1/2" ϕ	28'-10"	32"	4 1/2"	80		526

REPLACEMENT BARS

MARK	No.	LENGTH	WEIGHT	TYPE
RE 400	1	5'-3		Str.
RE 401	1	5'-3		*
RE 500	1	5'-7		Str.
RE 600	6	5'-11		Str.
RE 700	5	6'-3		Str.
RE 800	1	6'-6		Str.
RE 900	2	6'-10		Str.
RE 1000	1	7'-3		Str.
RE 1100	1	7'-7		Str.

N.B. denotes North Bridge
S.B. denotes South Bridge

NOTES:

All dimensions are out to out of the bar.

Bar Size is indicated in the bar mark. The first digit where three digits are used, and the first two where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar & A1014 is a No. 10 size.

The length shown in the bar list for the spiral bars is the distance from the top of the footing to the bottom of the cap.

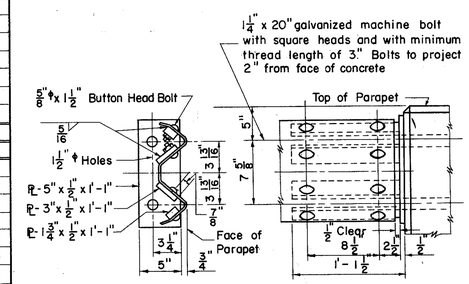
The number of turns shown is the length divided by the pitch, plus 3 turns (total number of closed coils) expressed as the nearest whole number.

Spiral bars shall not have deformations but shall in other respects conform to Item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lbs. per lin. ft., shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of spacers, based on 0.68 lbs. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

Replacement Bars: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.



NOTE:
Guard Rail End Connection Assembly shall be galvanized after welding.

GUARD RAIL DETAIL

Included with Item S-14 for payment

SEC. C-31A

PREPARED BY
CAPITOL ENGINEERING ASSOCIATES, DILLSBURG, PA.
FOR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING BAR SCHEDULE
BRIDGE NO. LAK-1-1271 N&S.
S.R.I. OVER HERMITAGE ROAD
LAKE COUNTY
STA. 318+65.65

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED

TE-54-A
200-1-58

K R

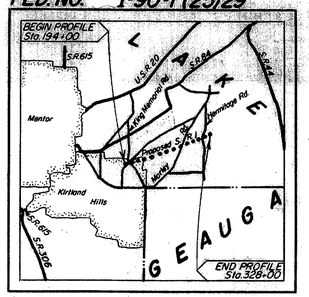
LAK I-90

SOIL PROFILE
LAKE COUNTY
LAK-1-10.38
STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

1/6

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

FED. NO. I-90-1 (25)29



LOCATION MAP

Recon.-H.C.H., J.S.M., R.C.C.-3-29-57
Auger-R.W.W., C.A.S., C.A.C.-1-3 & 8-57; 7-16 to 18-57
Core-R.L.S., C.S.C.-2-20 & 21-57; 8-28 to 9-4-57
Drafting-G.V.T., R.V.S., J.H.W., M.J.H., L.N.L., K.M.M.-8-6-57

REVISION DRAFTING
Recon. P.A.H.-4-8-59
Auger-J.R.G., B.D.L.-4-9 to 15-59
Drafting-L.N.L.-7-17-59

REVISED JULY 17, 1959

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 99 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Sandy silt	A-4 (8)	A-4a	8	6	10	44	32	27	9	16	5
Silt	A-4 (8)	A-4b	6	3	4	61	26	28	5	16	7
Silt and clay	A-6 (9)	A-6a	12	4	6	38	40	34	13	18	36
Silty clay	A-6 (10)	A-6b	23	3	4	35	35	38	17	18	9
Clay	A-7-6 (12)	A-7-6	8	3	3	35	51	44	19	22	17
Overburden	VISUAL CLASSIFICATION										
Weathered shale	VISUAL CLASSIFICATION										6
Shale	VISUAL CLASSIFICATION										19

Auger boring-plan view.

Drive sample-core boring-plan view.

Auger boring plotted to vertical scale only.

● Water content nearly equal to or greater than liquid limit.

X/Y Number of blows for "Standard Penetration" test.
X=number of blows for the first 6 inches.
Y=number of blows for the second 6 inches.

NOTE: Figures beside borings indicate water content in percent. e.g. 21

Sod and/or Topsoil=X'=Approximate depth.

Berm material

W Free Water

Indicates a non-plastic material with high water content.

Samples Tested
Lab. Nos. So.
17192-17206 incl; 18014-18015 incl,
18034-18050 incl; 56815-56828 incl,
56838-56843 incl; 57010-57011 incl,
58346-58349 incl; 58397-58399 incl,
59565-59566 incl; 68679-68682 incl,
68685-68699 incl; 68779-68789 incl.
72001-72003 incl; 72643.

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
*Denotes sample taken at or near grade.

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
		S.R. 1									
194+50	CL	0.2-4.0	0	1	2	41	56	34	11	21	A-6a
		4.0-7.0	8	3	3	57	29	28	7	11	A-4b
		7.0-12.0	Shale							9	Visual*
		12.0-17.0	Shale							7	Visual*
206+00	CL	0.2-4.0	3	2	1	36	58	41	20	19	A-7-6
		4.0-6.0	27	3	3	32	35	35	12	12	A-6a
209+00	CL	0.2-3.5	4	4	8	39	45	38	16	22	A-6b
		3.5-5.0	7	4	3	34	52	39	14	15	A-6a
		5.0-6.0	7	4	2	45	42	31	9	10	A-4a
222+00	CL	0.3-4.0	0	1	1	42	56	43	19	22	A-7-6*
		4.0-5.0	9	4	3	60	24	27	7	12	A-4b
226+00	CL	5.0-8.0	10	3	1	49	37	38	13	13	A-6a
231+00	CL	0.2-2.0	42	2	2	22	32	38	17	22	A-6b
235+00	CL	0.2-3.5	10	4	2	31	53	46	19	20	A-7-6
		3.5-6.0	14	5	3	34	44	33	12	14	A-6a
237+00	CL	0.3-4.5	43	4	3	31	19	46	17	26	A-7-6
241+30	CL	0.8-5.0	3	5	2	31	59	49	20	26	A-7-6*
		5.0-7.0	1	2	3	34	60	39	14	16	A-6a
247+00	CL	0.6-4.0	5	3	5	43	44	35	12	20	A-6a*
		4.0-5.0	7	5	2	33	53	37	12	16	A-6a
		5.0-6.0	13	3	3	33	48	40	18	15	A-6b
250+00	CL	0.6-4.0	2	7	3	25	63	48	19	28	A-7-6
		4.0-5.0	0	1	5	77	17	NP	NP	26	A-4b
		5.0-6.5	3	3	5	29	60	40	13	25	A-6a
252+50	112' Rt.	0.0-4.0	10	7	6	39	38	31	12	17	A-6a
		4.0-6.0	0	3	4	31	62	38	15	17	A-6a
		6.0-9.0	7	11	5	35	42	35	14	18	A-6a
254+50	20' Rt.	0.8-3.0	7	3	3	41	46	37	13	24	A-6a
		3.0-9.0	1	4	8	49	38	28	9	17	A-4a
		9.0-12.0	0	6	4	35	55	41	17	13	A-7-6
258+50	CL	0.3-2.0	31	7	4	37	21	41	18	30	A-7-6
		2.0-2.5	52	6	3	26	13	40	15	35	A-6a
264+65	CL	0.3-2.5	0	6	18	46	30	30	11	23	A-6a
268+00	CL	0.3-5.0	0	2	3	51	44	33	11	14	A-6a
		5.0-8.0	0	2	5	53	40	35	13	14	A-6a*
274+00	CL	0.3-2.5	0	3	2	37	58	45	20	27	A-7-6
		2.5-6.5	0	1	1	32	66	37	15	18	A-6a
		6.5-8.0	17	1	4	44	34	34	12	13	A-6a*
277+00	CL	0.4-2.0	0	1	4	31	64	43	18	24	A-7-6
		2.0-6.5	11	1	1	39	48	42	18	16	A-7-6
		6.5-9.0	Shale							8	Visual*
281+00	CL	0.2-2.0	18	4	5	35	38	38	16	24	A-6b
		2.0-4.0	17	1	2	46	34	32	15	13	A-6a
		4.0-9.0	Shale							13	Visual*
		9.0-9.5	Shale							7	Visual
289+75	CL	0.3-5.5	0	2	3	62	33	29	8	16	A-4b*
		5.5-8.0	8	1	4	42	45	36	14	14	A-6a*
301+70	CL	0.3-5.0	12	4	10	46	28	27	11	15	A-6a*
		5.0-10.0	8	6	14	48	24	22	7	14	A-4a
		10.0-14.5	19	6	11	37	27	26	9	23	A-4a
		14.5-19.0	Shale							8	Visual
315+00	CL	0.3-5.0	2	3	10	42	43	33	13	21	A-6a
		5.0-9.0	12	3	9	64	12	28	9	19	A-4b
		9.0-12.0	16	4	10	38	32	28	11	16	A-6a
318+50	CL	0.3-4.0	17	5	9	38	31	29	11	18	A-6a*
		4.0-12.0	Shale							11	Visual
		12.0-15.0	Shale							10	Visual
		15.0-16.0	Shale							7	Visual
324+50	CL	0.3-4.0	10	7	12	34	37	33	13	22	A-6a
		KING MEMORIAL ROAD									
20+00	10' Lt.	8.0-10.0	12	1	4	39	44	40	18	11	A-6b
24+00	10' Lt.	1.0-5.0	9	1	2	56	32	NP	NP	11	A-4b*
27+00	10' Lt.	1.0-10.0	7	1	5	34	53	51	24	26	A-7-6
		10.0-13.0	14	3	8	40	35	29	11	16	A-6a
30+00	10' Lt.	7.0-10.0	Gray Soft Shale							8	Visual
33+00	10' Lt.	12.0-14.0	24	1	2	55	18	34	16	18	A-6b
36+00	10' Rt.	1.0-7.0	8	10	13	42	27	26	9	18	A-4a
39+50	12' Lt.	0.4-8.0	26	5	5	29	35	42	21	17	A-7-6*
		8.0-10.0	23	1	3	33	40	35	15	12	A-6a
		MORLEY ROAD									
22+00	12' Rt.	5.0-6.0	0	2	2	29	67	44	21	22	A-7-6
26+00	12' Lt.	0.6-7.0	0	0	0	43	57	43	18	18	A-7-6
		7.0-12.0	Gray Soft Shale							11	Visual
33+00	12' Rt.	0.6-4.0	0	1	0	45	54	42	19	20	A-7-6
36+00	12' Lt.	1.0-7.0	17	10	9	35	29	32	15	18	A-6a
		7.0-10.0	Gray Soft Shale							7	Visual
		HERMITAGE ROAD									
20+00	CL	0.5-4.0	0	1	4	49	46	39	17	16	A-6b*
		4.0-10.0	Gray-Brown Soft Weathered Shale							17	Visual
23+00	12' Lt.	0.6-5.0	14	11	9	35	31	33	13	18	A-6a*
		5.0-8.0	Gray Soft Shale							10	Visual
26+10	CL	0.6-5.0	0	2	10	41	47	41	16	26	A-7-6*
		5.0-9.0	Gray Shale							7	Visual
28+60	8' Lt.	3.0-7.0	Gray Soft Shale							6	Visual*
29+00	26' Lt.	0.6-9.0	Gray Extremely Weathered Shale							15	Visual
		9.0-12.0	Gray Shale							20	Visual
32+00	12' Rt.	0.6-10.0	50	3	6	20	21	35	18	15	A-6b
		10.0-13.5	Gray Weathered Shale							18	Visual
35+00	12' Rt.	0.8-7.0	8	4	9	38	41	31	11	17	A-6a
		7.0-12.0	Gray Shale							11	Visual
		12.0-14.0	Gray Shale							6	Visual
36+00	17' Rt.	0.6-5.0	4	3	8	46	39	34	14	26	A-6a
		5.0-10.0	0	3	5	47	45	32	12	19	A-6a*
39+00	10' Lt.	0.6-5.0	42	5	6	24	23	38	18	21	A-6b*
		5.0-9.0	Gray Shale							8	Visual
		9.0-10.0	Gray Shale							4	Visual

TE-54-B
600-1-58

SOIL PROFILE
LAKE COUNTY
LAK-1-10.38
STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

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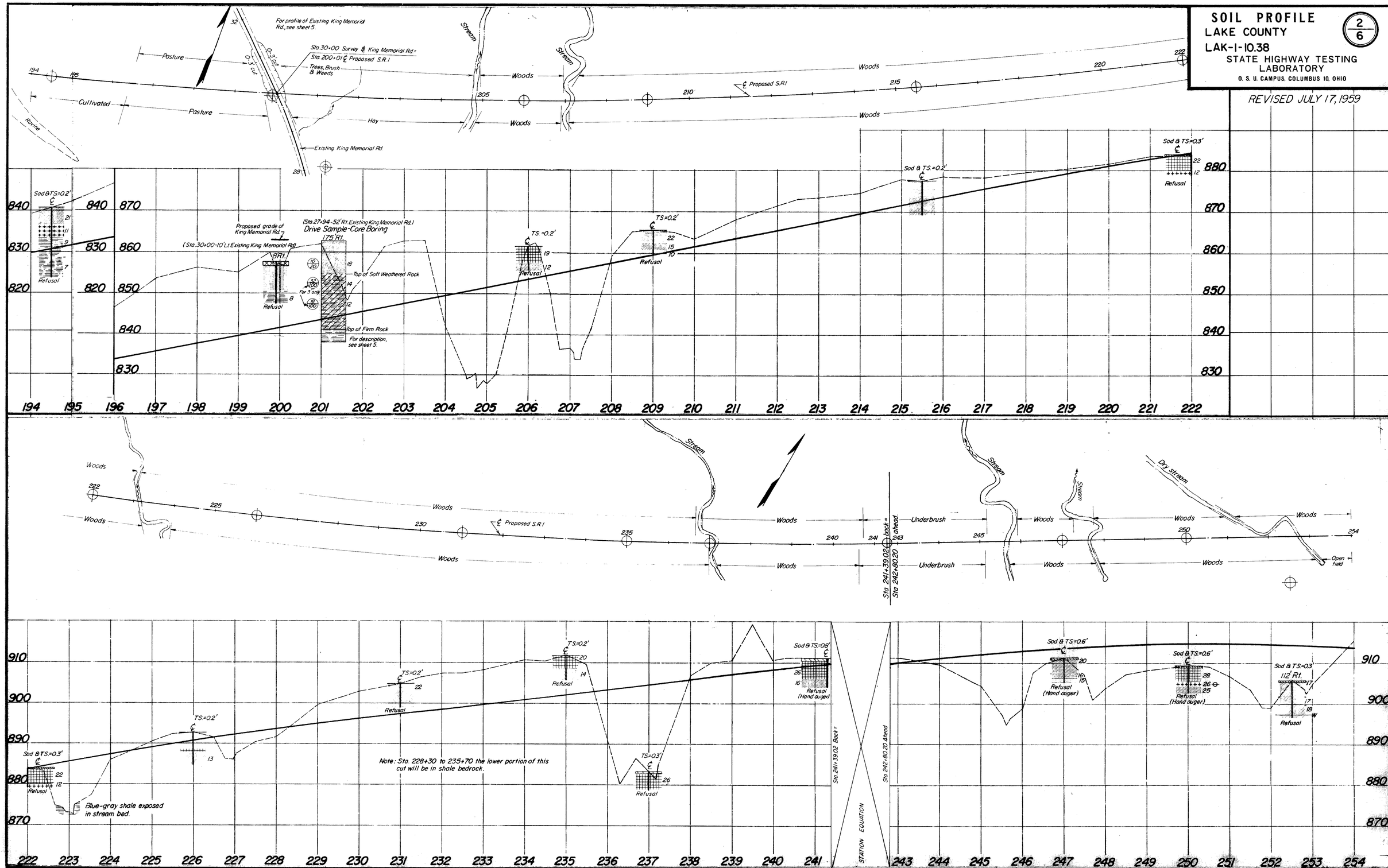

SOIL PROFILE
LAKE COUNTY
LAK-1-10.38

STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

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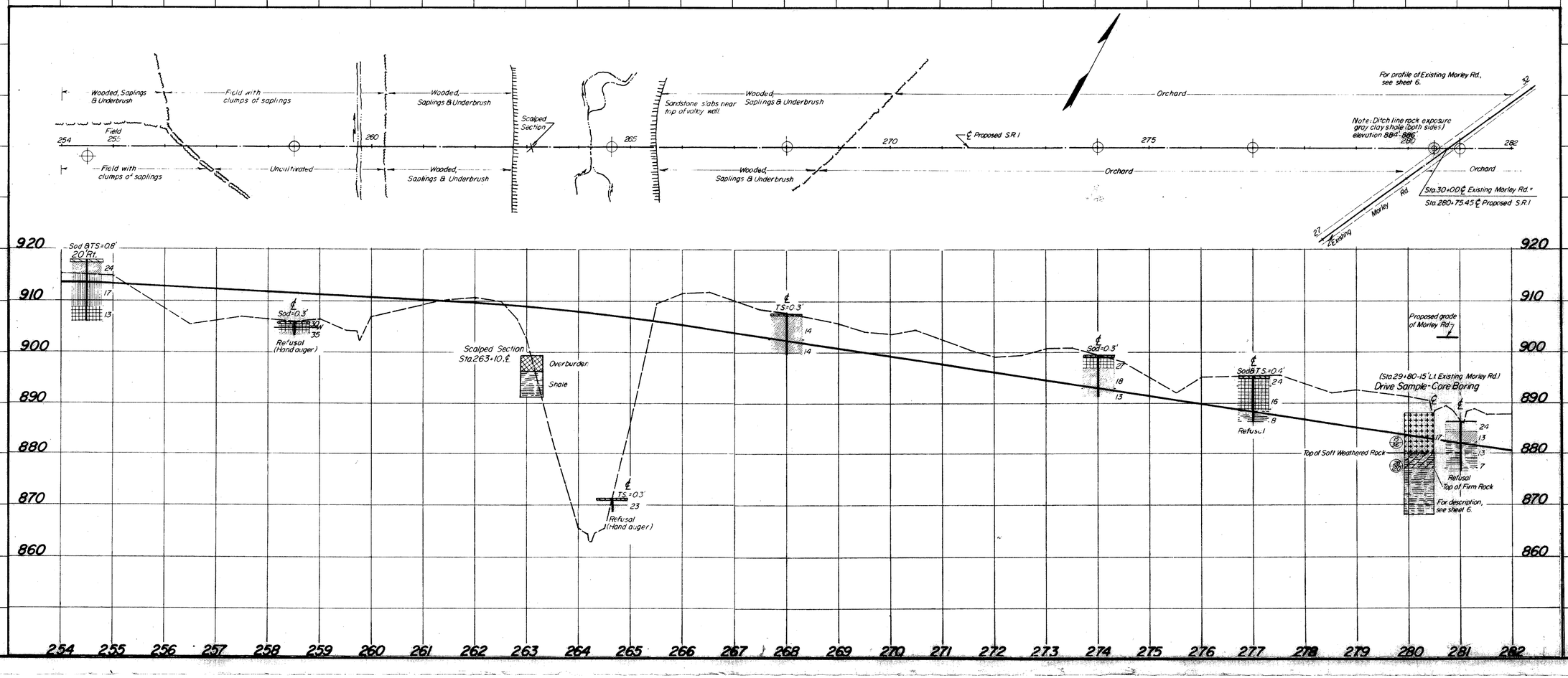

SOIL PROFILE
LAKE COUNTY
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O. S. U. CAMPUS, COLUMBUS 10, OHIO

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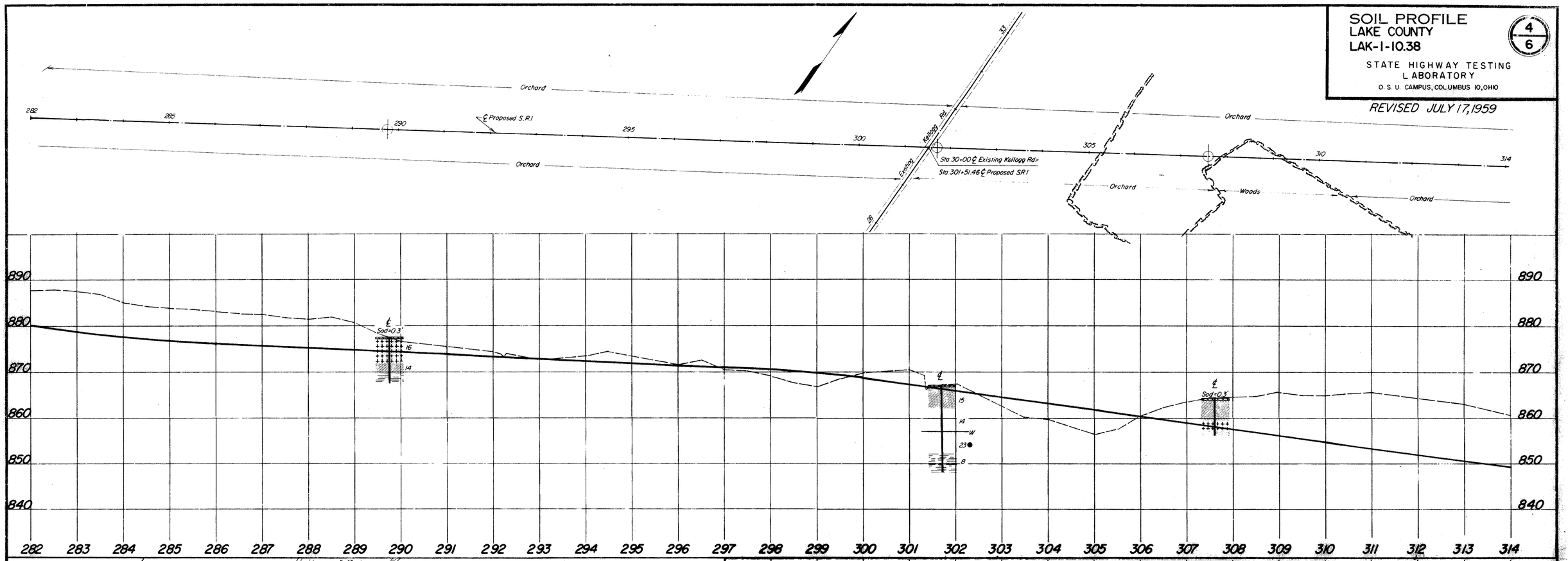

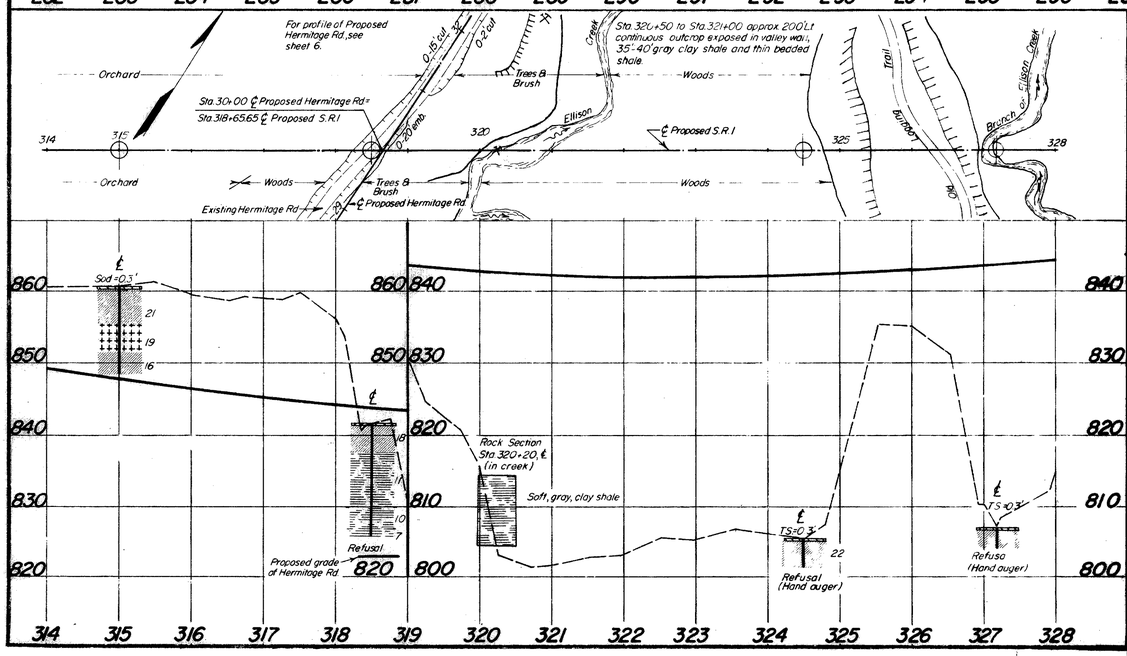

SOIL PROFILE

LAKE COUNTY

LAK-1-10.38

STATE HIGHWAY TESTING LABORATORY

O. S. U. CAMPUS, COLUMBUS 10, OHIO

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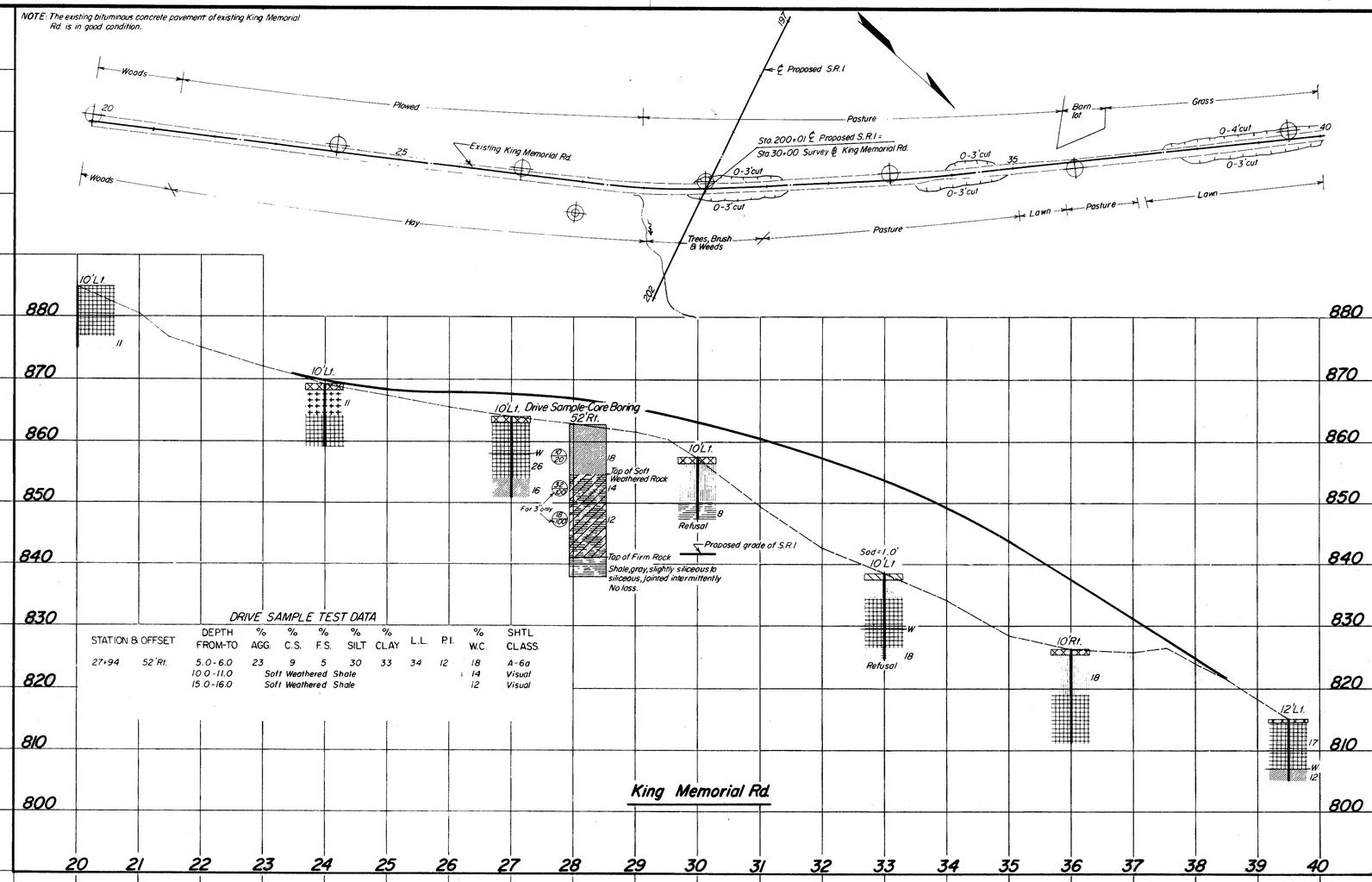
NOTE: The existing bituminous concrete pavement of existing King Memorial Rd. is in good condition.



DRIVE SAMPLE TEST DATA

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
27+94	52' Rt.	5.0-6.0	23	9	5	30	33	34	12	18	A-6a
		10.0-11.0	Soft Weathered Shale							14	Visual
		15.0-16.0	Soft Weathered Shale							12	Visual

SOIL PROFILE
LAKE COUNTY
LAK-1-10.38

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STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

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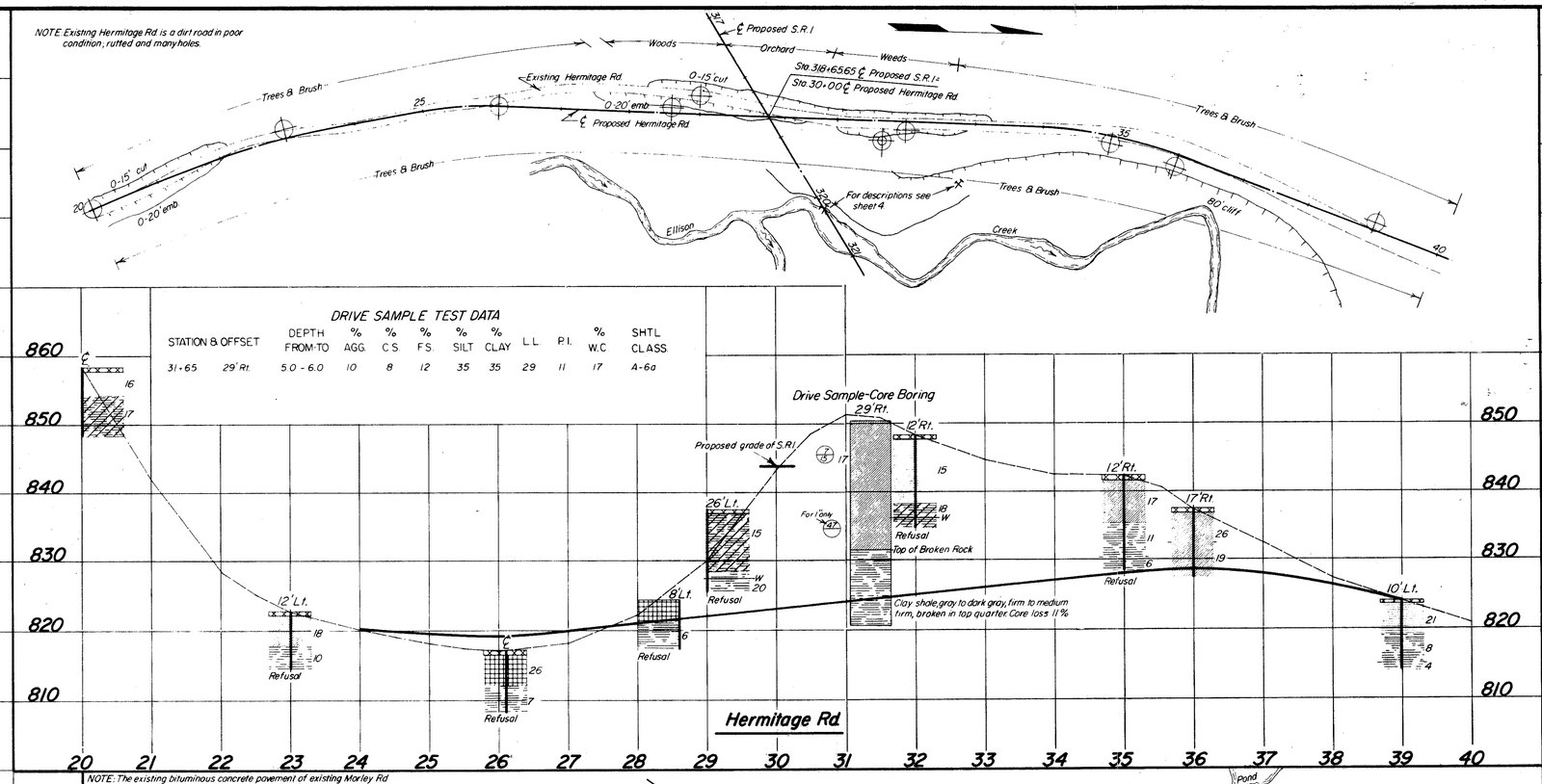
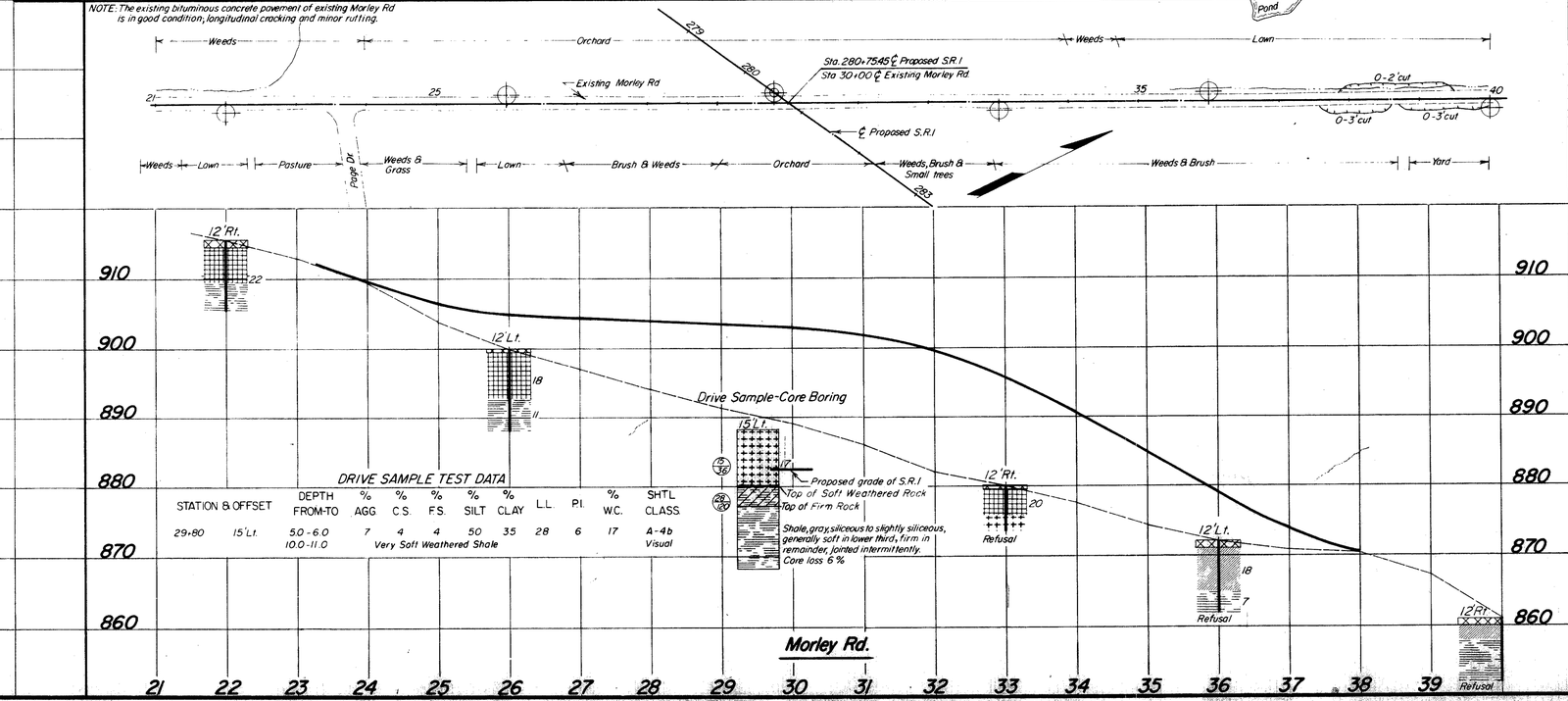


DRIVE SAMPLE TEST DATA

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
31+65	29' Rt.	5.0 - 6.0	10	8	12	35	35	29	11	17	A-6a



DRIVE SAMPLE TEST DATA

STATION & OFFSET		DEPTH FROM-TO	% AGG	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
29+80	15' Lt.	5.0 - 6.0	7	4	4	50	35	28	6	17	A-4b
		10.0 - 11.0	Very Soft Weathered Shale								Visual