W-10

OIM

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
LAK-1-26.51
ATB-1-0.00
MADISON TOWNSHIP AND VILLAGE OF MADISON, LAKE COUNTY, HARPERSFIELD TOWNSHIP, ASHTABULA COUNTY

I-1103(15)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

1/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

~~LAK 90-2251-3226~~
LAK-90-2732-27.29
ATB-90-0.00-2.50

Reviewed and Approved: K. E. Schlandt
Date 9/5/57 Engineer of Traffic

LIMITED ACCESS

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

The Standard Specifications of the State of Ohio Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

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

The Right-of-Way necessary for this improvement will be provided by the State of Ohio.

Approved: R. J. Lehman
Date: 9-9-57 Chief Engineer, Interstate Projects

Approved: C. H. Makemson
Date: 9-19-57 Deputy Director, Planning and Programming

Approved: P. E. Masheter
Date: 9-18-57 Deputy Director, Design and Construction

Approved:
Date: First Assistant Director

Approved: Gerald J. Thormyer
Date: 9/19/57 Acting Director of Highways.

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CITY OR VILLAGE LINE
CENTER LINE
PROPERTY LINE
FENCE LINE
GUARD RAIL — New — Exist.
POLE LINES — Telephone — Power
RAILROAD
DRAINAGE PIPES — New — Exist.

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* Sheet 109 Includes Erosion Control at Bridges Detail

LINE DATA

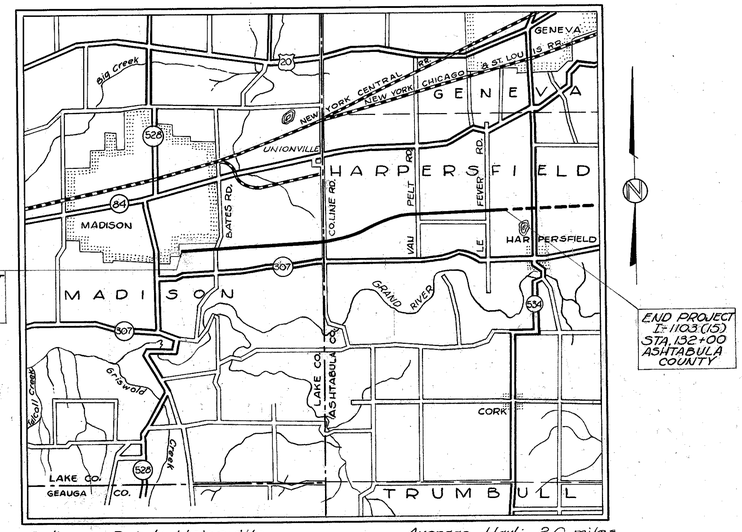
BEGIN PROJECT I-1103(15) STA. 19+00 LAKE COUNTY
TO STA. 119+07.39 (LAKE-ASHTABULA COUNTY LINE) = 10007.39 LIN. FT.
STATION EQUATION: 119+07.39 LAKE CO. = 0+44.61 ASHTABULA CO.
END PROJECT I-1103(15) STA. 132+00.00 ASHTABULA CO. = 13155.39 " "

NET LENGTH PROJECT I-1103(15) = 23162.78 LIN. FT.
OR 4.387 MI.

WORK I-1103(15)

ADD 100' AT BEGIN OF PROJECT			100	
BATES RD.	STA. 11+25	TO 33+10	= 2185	LIN. FT.
COUNTY LINE RD.	STA. 11+50	TO 33+00	= 2150	" "
VAN PELT RD.	STA. 12+75	TO 28+50	= 1575	" "
LE FEVER RD.	STA. 12+75	TO 29+25	= 1650	" "
ADD 100' AT END OF PROJECT			100	" "
			7760	LIN. FT.

TOTAL WORK I-1103(15) = 7760.00 LIN. FT. + 23162.78 LIN. FT.
= 30922.78 LIN. FT.
OR 5.856 MI.



Delivery Point: Unionville
Average Haul: 2.0 miles

LOCATION PLAN

0 1
Scale of Miles

Portion to be improved
State Roads
County Roads
Future Construction

SCALES

PLAN: 1"=50'
PROFILE: Hor. 1"=50'
Vert. 1"=5'
CROSS SECTIONS: 1"=10'

Sheet No. 124 Rev. 2-24-58 substituted for original sh. no. 124

SEP 7 1961
GROUND PHOTOLAB

STANDARD CONSTRUCTION DRAWINGS

DRAWING No.	DATE	DRAWING No.	DATE	DRAWING No.	DATE
DR-1	1-3-55	I-15 No. 2	6-1-57	I-12, 3 & 4	2-20-56
R1-1	1-3-55	I-15 No. 2-B	6-1-57	I.C.B. B-3 & 2-4	5-1-52
T-35	1-2-56	I-15 No. 3	10-1-54	I.C.B. 2-2A & B	8-1-56
L-1	4-1-50	F-1	4-1-57	I.C.B. No. 3	5-1-52
L-2	4-1-50			I.C.B. No. 3-A	5-1-52
L-3	4-1-50			I.C.B. No. 4	6-1-57
L-3-A	4-1-50	L.J. No. 1	7-1-55	I.C.B. No. 5	6-1-57
B-T-50-70-71E No. 1	10-1-47	T-J	5-1-56	I.C.M.H. No. 1	5-1-52
B-T-71E	3-2-53	R.P. No. 4-A	7-1-57	I.C.M.H. No. 1-A	1-3-55
G-7.07	6-1-56	R.P. No. 4-B	7-1-57	I-16 G	1-2-52
I-12	7-1-54	R.P. No. 4-C	7-1-57	S.C.P. PC 3	2-20-56
I-15 No. 1	8-1-55	R.P. No. 1	7-2-56	S.C.P. PC 4	1-4-54

CSB-2-56 Sheet 2	12-3-56
CSB-2-56 " 3	12-3-56
RB-1-55	3-1-55
AR-1-57	4-9-57
SP 53	7-21-53
HW-A & B	7-15-57
HW-C	7-15-57

SUPPLEMENTAL SPECIFICATIONS

I-127	Rev.	9-18-57
5		6-8-55
E-101		1-1-57
B-119	REV.	8-11-57
18	REV.	2-6-57
S-114	REV.	8-1-57

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER DATE

000035

FILE No.	LAK-1-26.51 ATB-1-0.00
	DATE OF LETTING
	CONTRACT No.

PLANS BY CHARLES L. BARBER & ASSOCIATES TOLEDO, OHIO

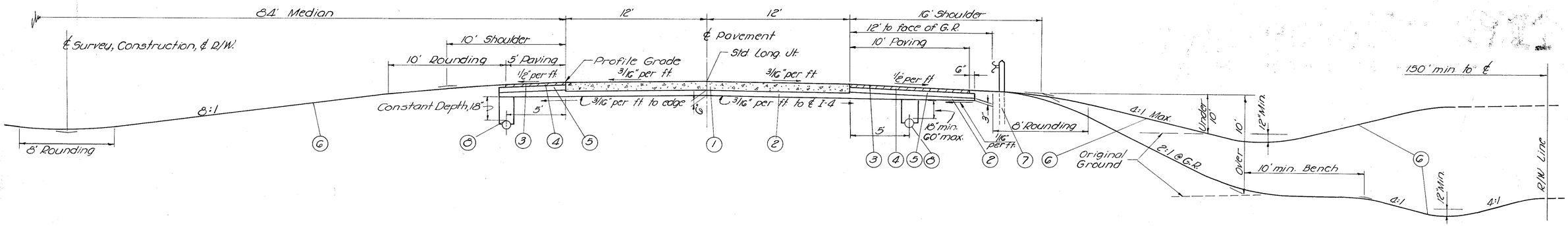
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

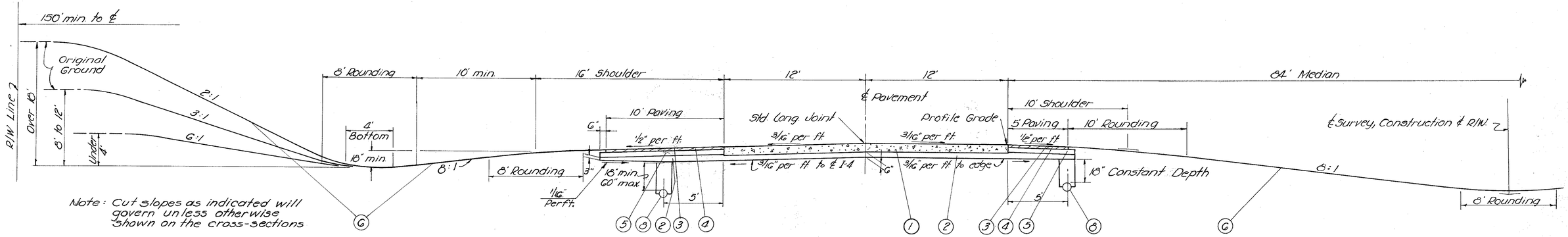
2/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

TYPICAL SECTION

TYPE T-71





Note: Cut slopes as indicated will govern unless otherwise shown on the cross-sections

Sta. 19+00.00 to Sta. 119+07.39 (LAKE CO.) = 10007.39 Lin. Ft.
Sta. 0+44.61 to Sta. 132+00.00 (ASHTABULA CO.) = 13155.39 Lin. Ft.
23162.78 Lin. Ft.

Station Equation: 119+07.39 LAKE CO. back
= 0+44.61 ASHTABULA CO. ahead

1. Item T-71, 10" Reinforced Portland Cement Concrete Pavement
2. Item I-22, 6" Subbase (or as shown) Grading "A" or "B" as per Plan
3. Item T-31, Bituminous Surface Treatment (See Proposal Note)
4. Item B-33 3" Bituminous Macadam Base Course
5. Item I-18, 5" Stabilized Crushed Aggregate Shoulder Material
6. Item L-9, Seeding & Protecting
7. Item I-15, Guard Rail Steel Beam Type, (Deep)
8. Item I-4, 6" Underdrain

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.-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.

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 and at the expense of their respective owners, unless otherwise noted on the plans.

ROUNDING OF CORNERS ON CROSS-SECTIONS: The rounded corners, shown on Standard Drawing RI-1, apply to all cross sections even though otherwise noted on these plans.

R/W MONUMENTS, FEDERAL PROJECT MARKERS AND 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 Sec. 9-709 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 search 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.

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.

REMOVAL OF EXISTING HOUSE DRAINS: The removal of all existing house connections, which included 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.

I-22 SUBBASE GRADING A and B as per PLAN: Material for this item shall meet the requirements for Item I-22 grading A or B, except that for both gradings the percent passing the number 200 sieve shall not exceed ten.

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.

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.

SUBGRADE COMPACTION FOR DRIVES AND MAIL BOX TURNOUTS: The subgrade under B-119 or I-10 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-119: Excavation for B-119 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-119 material shall be made by the Contractor at his own expense if he builds the embankment up to finish grade before placing the B-119 material.

DRAINAGE OF SUBBASE MATERIAL: Where the subbase material is drained by I-3 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-3 Underdrain shall not be seeded.

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 layer of embankment, compacted subgrade 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.

EXISTING FLEXIBLE PAVEMENT: Within the limits of construction where the existing flexible pavement will have less than six 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. 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 the detail shown elsewhere in the plans. Cost of providing and installing necessary anchors shall be included in the unit price bid per lineal foot for 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."

ITEMS L-10 SODDING, I-10 RIPRAP and I-14 PAVED GUTTER: These items are provided on the plans for erosion control. The Engineer shall check and make adjustments in location and quantity 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 pounds per 1000 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 three pounds per 1000 square feet except as otherwise noted in the plans. Seeding formula for all seeded areas shall be in accordance with the following:

65% Kentucky 31 Fescue — 5% Redtop
25% Kentucky Bluegrass — 5% Alsike Clover

SODDING: 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.

AGRICULTURAL LIMING MATERIAL: The location and need for agricultural liming materials will be determined by laboratory tests after rough grading operations have been performed. Quantities of agricultural liming materials as shown on the plans are sufficient for treating the entire project and may be partially non-performed because of areas where tests indicate liming material is not needed. Where used, agricultural liming material shall be applied at the rate of 100 pounds per 1000 square feet.

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 at a depth of two inches below ground level and the upper six inch 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.

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 of Roadway Excavation for payment.

FIELD OFFICE: The Contractor shall install wiring and outlets suitable for connecting to office equipment, and provide 110 volt alternating current during the construction of this project.

E-9 REMOVAL OF TREES AND STUMPS: The number of trees and stumps to be removed are listed below only for the information of the Contractor and the State of Ohio does not guarantee the accuracy thereof. All trees and stumps 16" or more in diameter that are marked for removal by the Engineer shall be removed and paid for under Item E-9, lump sum removal of trees and stumps.

ESTIMATED TREES & STUMPS TO BE REMOVED

12"-18",	1610	24"-30",	114	Over 36",	3
18"-24",	400	30"-36",	17		

PIPE: When bell and spigot 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 groove pipe is used the length of pipe next to the end length shall be cut and butt joint formed with a collar 12" or 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.

PIPE CONNECTIONS: Longitudinal pipe lines, where connected to pipe culverts, shall be joined to culvert 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"x24" 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" 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.

SODDING: A quantity of 600 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.

SEEDING FOR SIDE ROADS: Seeding quantities for side roads are calculated to a point 10 feet outside construction limits.

SPECIAL DITCHES: For special ditch grades, see Cross Sections.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

GENERAL NOTES (CONT.)

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 excavations. 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 I-20A. 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 new outlet provided. New tile ordered by the Engineer shall be paid for at the unit price bid for Pipe Outlets for Roadway Drainage, Item I-3. 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, 8" Pipe Outlets for Roadway Drainage	100 Lin. Ft.
I-3, 10" Pipe Outlets for Roadway Drainage	50 Lin. Ft.
I-3, 12" Pipe Outlets for Roadway Drainage	50 Lin. Ft.

TILE FOR SUBGRADE DRAINAGE: 10 lin. ft. of 8" CMP, 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.

PRIVATE DRIVES: A number of private drives to residences have been set up in the plans providing access from County roads. These drives may have to be shifted from their proposed alignment after R/W settlements have been made with the respective property owners. Adjustment of drive locations and their quantities will be made by the Engineer in accordance with instructions from the R/W Section of Division No. 4 of the Ohio Department of Highways.

COOPERATION BETWEEN CONTRACTORS: The work covered by these plans adjoins other construction sections of S.R. 1 to the West and to the East. In the event that construction on the adjoining sections is being carried on simultaneously with this section, the Contractor shall plan and coordinate his work with that of the other Contractor (s) so that a minimum of interference and inconvenience will result.

EXCAVATION FOR STRUCTURES: A quantity of 180 cubic yards of Item E-2, Excavation for Structures has been included in the General Summary, to provide for all headwall excavation under Item I-2, Storm Sewers.

STONE UNDERDRAIN NO. 2: A quantity of 2400 lin. ft. of No. 2 Stone Underdrain has been estimated for cross road drainage at 50 foot intervals on each side where I-4 drainage is not provided. They shall not be placed over 50 feet apart. This quantity is to be used in its entirety.

TRAFFIC NOTE: Bates, Van Pelt and Lefever Roads shall be closed to traffic during the construction of bridges and approaches. During the closing of each of the above roads, partial barricades will be erected and maintained at the locations shown on Sheet 5 of the plans. Cost of the above shall be included in the Lump Sum bid for Maintenance of Traffic.

MAINTAINING LOCAL TRAFFIC: Local traffic shall be maintained at all times in accordance with Sec. G-4.05, and shall be understood to include maintaining access to adjacent properties affected by any of the construction operations. Quantities of 200 cubic yards of T-10, Traffic Compacted Surface Course, and 4 tons of M-10, Calcium Chloride have been provided for the maintenance of local traffic. Cost of the above, except for the furnishing and placing of T-10 and M-10 shall be included in the Lump Sum bid for Maintenance of Traffic.

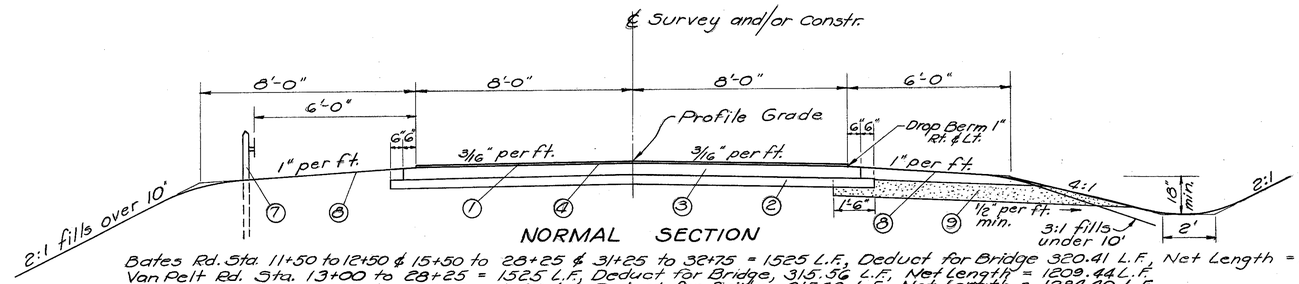
CRUSHED AGGREGATE BASE COURSE: The completed crushed aggregate base course B-119 may be used for maintaining local traffic on this project. Any damage done to the base, subbase or subgrade by local traffic shall be repaired by reshaping, recompacting and by addition of extra B-119 material at no additional expense to the State.

S-15, TEMPORARY RUNAROUND ROAD: A temporary runaround road using Class "B" pavement shall be constructed in accordance with the plans for County Line Road. Two way traffic shall be maintained at all times.

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 Removed.

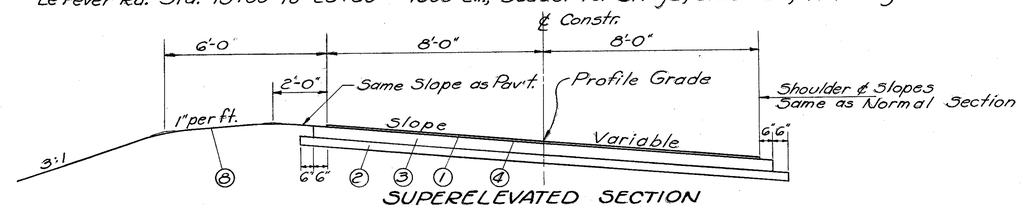
PAVEMENT JOINTS: Where speed change lanes and approaches merge with the through pavement, longitudinal key joints with hook bolts or tie bars as per Standard Drawing C.J. No. 1 shall be used unless otherwise shown on the plans. Transverse joints of the speed change lanes will be matched with those of the primary lanes.

TYPICAL SECTIONS
CROSSROADS



NORMAL SECTION

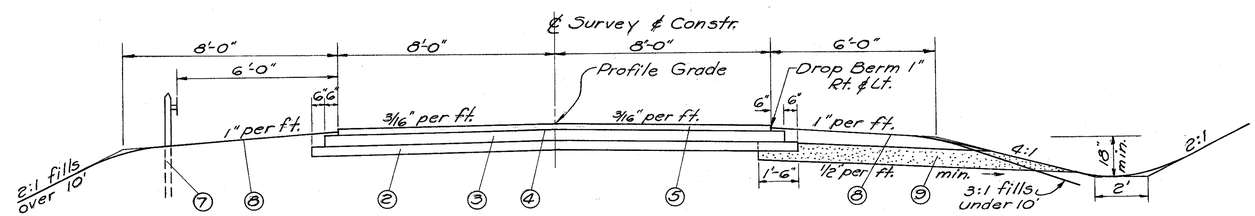
Bates Rd. Sta. 11+50 to 12+50 & 15+50 to 28+25 & 31+25 to 32+75 = 1525 L.F., Deduct for Bridge 320.41 L.F., Net Length = 1204.59 L.F.
Van Pelt Rd. Sta. 13+00 to 28+25 = 1525 L.F., Deduct for Bridge, 315.56 L.F., Net Length = 1209.44 L.F.
Le Fever Rd. Sta. 13+00 to 29+00 = 1600 L.F., Deduct for Bridge, 315.60 L.F., Net Length = 1284.40 L.F.



SUPERELEVATED SECTION

Bates Rd. Sta. 12+50 to 15+50 & 28+25 to 31+25 = 600 L.F.

Note: Bridge deductions include approach slabs



NORMAL SECTION

County Line Rd. Sta. 13+00 to 31+50 = 1850 L.F., Deduct for Bridge 352.46 L.F., Net Length = 1497.54 L.F.

(1) Item T-32, Bituminous Road Mix, Method "B" or "C" using 0.056 Cu. Yd. No. 46 Aggregate per Sq. Yd. and 0.9 gal. Sec. M-5.7, RT-8 or 9 or Sec. M-5.3, MC-4 or 5 per Sq. Yd.
Item T-32, Bituminous Choke and Seal Coat using 0.004 cu. Yd. No. 6 or 9 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 10 or Sec. M-5.3, MC-4 or 5 per Sq. Yd. for Seal.

(2) Item I-22, 4" Subbase Grading "A" or "B" as per Plan

(3) Item B-119 5" Crushed Aggregate Base Course

* (4) Item T-30, Bituminous Prime Coat Sec. M-5.7, RT-2 or 3, or Sec. M-5.3, MC-0 or MC-1, applied at the rate of 0.35 gal. per Sq. Yd.

(5) Item T-35, 1 1/2" Asphaltic Concrete Surface Course Type "A" (35-100)

(7) Item I-15 Guard Rail, Wire Cable Type, 3 Cables

(8) Item L-9 Seeding and Protecting

(9) Item I-9 Stone Underdrain (No. 2) Staggered at 50' Intervals Rt. & Lt.

* Item to be non-performed if granulated slag is used for Item B-119 Crushed Aggregate Base Course

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
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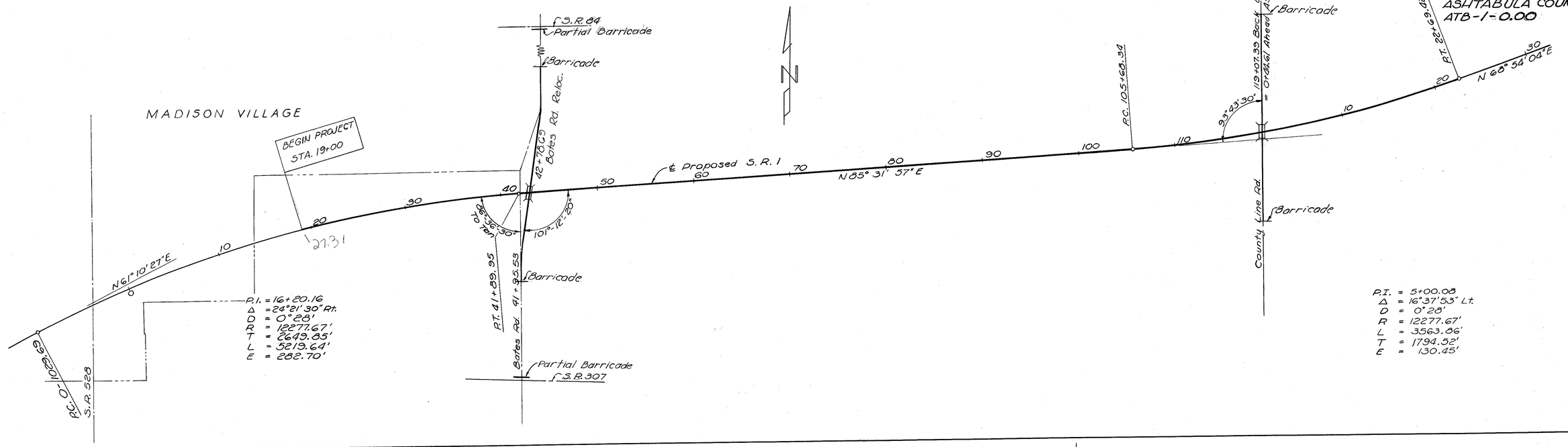
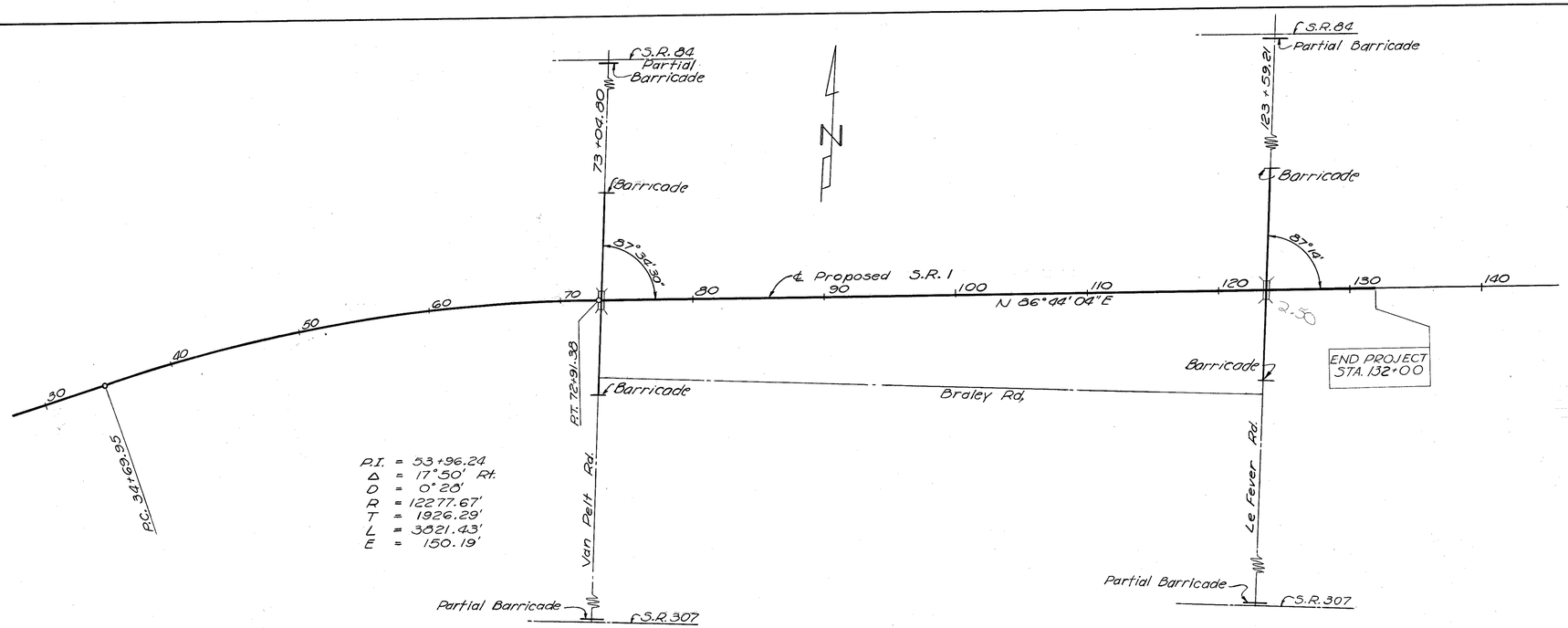
ATB-1-0.00

SCHEMATIC LAYOUT PLAN



P.I. = 5+00.08
Δ = 16°37'53" Lt.
D = 0°28'
R = 12277.67'
L = 3563.86'
T = 1794.52'
E = 130.45'



P.I. = 53+96.24
Δ = 17°50' Rt.
D = 0°28'
R = 12277.67'
T = 1926.29'
L = 3821.43'
E = 150.19'

NOTE

Lights, signs, and barricades shall be provided and maintained at each location indicated on the schematic plan. Barricades shall meet the requirements for the movable gate detailed on Standard Construction Drawing No. G-7.07. Lights shall meet the requirements of Sec. G-7.07 of the Specifications. Standard Road Closed signs shall be 40" x 28" size. Contractor shall furnish, erect, maintain, and remove barricades, lights, and signs, cost of which shall be included in the lump sum bid for Maintaining Traffic.

Scale: 1" = 500'

SCHEMATIC LAYOUT PLAN

GENERAL SUMMARY (1 OF 3 SHEETS)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

3	9	10	11	12	13	16	17	18	19	20	21	22	23	24	25	65	66	67	69	70	71	73	74	75	77	78	79	117	159	160	109	← Sheet Numbers	Item	Quantity	Unit	Description
																																		USE		ROADWAY
	625446																																E-101	625446	Cu.Yds.	Roadway Excavation as per Plan
	200745		473											473			3363			2815			2385			2436		21401					E-101	234091	Sq.Yds.	Compacted Subgrade
	53053																																E-4	53053	Cu.Yds.	Borrow
																96																	E-8	96	Sq.Ft.	Removal & Disposal of Existing Sidewalk
Lump																																	E-9	Lump	Lump	Removal of Trees & Stumps
	3680																																E-11	3680	M-Gal.	Water
																	561			36			58										E-12	655	Lin.Ft.	Pipe Removed 24" & Under
																																See Location Plan	I-8	29	Each	Furnishing & Setting Monuments as per Plan
																10												5149					I-13	5159	Sq.Ft.	4" Concrete Sidewalk
		725.0	387.5	800.0	500.0	625.0	1130.0	532.5	450.0	1075.0	425.0	787.5	687.5	1000.0	737.5													1750.0					I-15	11612.5	Lin.Ft.	Guard Rail, Steel Beam Standard Type (deep) as per Standard Drawing I-15 No. 2-B
				50			50					50			50																		I-15	200	Lin.Ft.	Guard Rail, Steel Beam Barrier Type (deep) as per Standard Drawing I-15 No. 2-B
																302.4	1003.6		736.8	543.2		688.4	751.6		1088.3	111.7							I-15	5232	Lin.Ft.	Guard Rail, Wire Cable Type, 3 Cables
																												60					I-13	60	Lin.Ft.	Concrete Steps
	496389																	2276.9			1528.8			1648.7			1541.7	5718.8					L-9	623848	Sq.Yds.	Seeding and Protecting
	58.46																											5.18					L-9	63.64	Tons	Commercial Fertilizer 12-12-12
	292.27																											25.90					L-9	318.17	Tons	Agricultural Liming Material
	24483																																L-10	24483	Sq.Yds.	Sodding as per Plan
																												Lump					E-9	Lump	Lump	Removal of Trees and Stumps in Rest Areas
																				Lump													S-15	Lump	Lump	Temporary Runaround Roads using Class 'B' Pavement as per Plan
																													19490	23051			SS-18	42541	Lin.Ft.	Fence Type "A" as per Plan
																												1787					SS-18	1787	Lin.Ft.	Rest Area Fence
200																																	T-10	200	Cu.Yds.	Traffic Compacted Surface Course for Maintaining Local Traffic
4																																	M-10	4	Tons	Calcium Chloride Furnished & Applied for Maintaining Local Traffic
																																	I-127	316	Each	Delineators
	17.76																																Spec.	17.76	Miles	Edge Lines
	3.29																																Spec.	3.29	Miles	Center Lines
																																	Spec.	Lump	Lump	Curb & Island Marking
																												2					Spec.	2	Each	Bulletin Board
																												12					Spec.	12	Each	Charcoal Grill and Serving Table
																												2934					L-13	2934	Each	Rosa Multiflora - Japanese Rose 2' to 3'
																												540					L-13	540	Each	Cornus Paniculata - Gray Dogwood 2' to 3' B&B. 12"
																												80					L-13	80	Each	Ribes Alpinum - Alpine Currant 18" to 24" B&B. 10"
																												7					L-14	7	Each	Acer Saccharum - Sugar Maple 1½" to 1¾" B.&B. 20"
																												15					L-14	15	Each	Gleditsia Triacanthos Inermis - Thornless Honeylocust 1½" to 1¾" B&B 20"
																												6					L-14	6	Each	Aesculus Glabra - Ohio Buckeye 1½" to 1¾" B.&B. 20"
																												7					L-14	7	Each	Quercus Palustris - Pin Oak 1½" to 1¾" B&B. 20"
																												20					L-15	20	Each	Acer Saccharum - Sugar Maple 1¾" to 2" B.&B. 22"
																												20					L-14	20	Each	Cornus Florida - White Flowering Dogwood 4' to 5' B&B 16"
																												32					L-14	32	Each	Malus Coronaria - Wild Sweet Crab 4' to 5' B&B 16"
																												Lump					L-17	Lump	Lump	Pruning Existing Trees (See General Note Sheet No. 115)
																												2					Spec.	100	Lin.Ft.	Drilled Well
																												2					Spec.	2	Each	Well Shelter
																												2					Spec.	2	Each	Privy and Storage Shed
																												28					Spec.	28	Each	Table
																															1159		L-10	1159	Sq.Yds.	Sodding for Special Berm and Slope Protection
																																				PAVEMENT
	77209.3		473											473														2576					B-33	80732	Sq.Yds.	3" Bituminous Macadam Base Course
																88.6	584.0		28.0	425.2		28.9	381.8		11.9	442.0						B-119	1991	Cu.Yds.	Crushed Aggregate Base
																	154			152			152			152							I-7	610	Sq.Yds.	Reinforced Concrete Approach Slabs T=13"
																												1178					I-12	1178	Lin.Ft.	Standard Type 6 Concrete Curb
																												892					I-12	892	Lin.Ft.	Special Portland Cement Concrete Curb (as per Plan)
																												3482					I-12	3482	Lin.Ft.	Special Portland Cement Concrete Curb Modified (as per Plan)
	35087.3		108.5											108.5			426.8			358.1			303.2			310.8		3760					I-22	40464	Cu.Yds.	Subbase Grading "A" or "B" (as per Plan)
																	1123.2			932.1			781.6			799.4							T-30	3637	Gals.	Bituminous Prime Coat Sec. M-5.7, RT-2 or RT-3; or Sec. M-5.2, RC-1 or RC-2
	38604.7		236.6											236.6														1296					T-31	40374	Gals.	Bituminous Surface Treatment - Bituminous Material as per Plan
	617.7		3.8											3.8														21					T-31	647	Cu.Yds.	Bituminous Surface Treatment No. 46 Aggregate
	617.7		3.8											3.8														21					T-31	647	Cu.Yds.	Bituminous Surface Treatment No. 6 Aggregate
																268.2	3106.8					88.2	2009.7			231.2							T-32	7735	Gals.	Road Mix Bituminous Material, Sec. M-5.7, RT-8 or RT-9; or Sec. M-5.3, MC-4 or MC-5
																74.6	863.1					24.5	558.3			642.0							T-32	2163	Gals.	Seal Coat Bituminous Material, Sec. M-5.7, RT-9 or RT-10; or Sec. M-5.3, MC-4 or MC-5
																16.8	193.4					5.5	125.1			143.9							T-32	485	Cu.Yds.	No. 46 Aggregate for Road Mix
																1.3	13.9					0.4	8.9			10.4							T-32	35	Cu.Yds.	No. 6 or 9 Aggregate for Choke
																2.6	27.7					0.8	17.9			20.5							T-32	70	Cu.Yds.	No. 6 Aggregate for Seal Coat
																			8.2	116.5													T-35	125	Cu.Yds.	Asphaltic Concrete Surface Course Type "A" (85-100)
	123534.9																											12825					T-71	142360	Sq.Yds.	10" Reinforced Portland Cement Concrete Pavement
	11560		70.6											70.6														401					I-18	12103	Cu.Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
																												71					I-21	71	Sq.Yds.	4" Portland Cement Concrete Traffic Island Pavement

GENERAL SUMMARY (2 OF 3 SHEETS)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

Sheet Number 4	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	65	66	70	74	77	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	117	Item	Quantity	Unit	Description
																																																							DRAINAGE
180																						146	157	290	118	175	117	89	308	165	303	97	356	730	301	220	90	90	167	224	534	100	116	593	185	138	49	112	716	2		E-2	6868	Cu.Yds.	Excavation for Structures
																						28	237	210	47	55		27	134	26	122	6	29	30	83	81	17	35	78	94	110	20	30	817	196	27	9	72	191		E-3	2811	Cu.Yds.	Channel Excavation
																	86		36	114	120																															I-1	356	Lin.Ft.	12" Pipe for Driveways
																		26																																		I-1	26	Lin.Ft.	15" Pipe for Driveways
			56	112		124		112	56	112	112	112	56	56		56																																			I-2	964	Lin.Ft.	8" Class A Storm Sewer Under Pav't, Sec. M-6.5(b) or M-6.8(b)
																	313		276																																		I-2	589	Lin.Ft.	12" Class A Storm Sewer
		101						10					22			44																																				I-2	177	Lin.Ft.	15" Class A Storm Sewer
															36																																					I-2	36	Lin.Ft.	15" Class A Storm Sewer, Sec. M-6.4(c)
		203	199	209	217	261			110	203			108	217	88	96																																				I-2	1911	Lin.Ft.	15" Class A Storm Sewer Under Pav't, Sec M-6.5(b) or M-6.8(b)
								104																																												I-2	104	Lin.Ft.	18" Class A Storm Sewer Under Pav't Sec. M-6.5(b) or M-6.8(b)
					91	189																																														I-2	280	Lin.Ft.	21" Class A Storm Sewer Under Pav't, Sec. M-6.6(a) or M-6.8(b)
					121																																															I-2	121	Lin.Ft.	24" Class A Storm Sewer Under Pav't, Sec. M-6.6(a) or M-6.8(b)
																		378																																		I-2	378	Lin.Ft.	36" Class A Storm Sewer
																																																		136	I-2	136	Lin.Ft.	4" Class B Storm Sewer
																																																		150	I-2	150	Lin.Ft.	4" Class B Storm Sewer Under Pav't.
																																																		429	I-2	429	Lin.Ft.	12" Class B Storm Sewer Under Pav't.
						291	411				592					396																																		159	I-2	1849	Lin.Ft.	15" Class B Storm Sewer
																																																		44	I-2	44	Lin.Ft.	15" Class B Storm Sewer Under Pav't
						276	225	74	416		424		59	30		374																																			I-2	1878	Lin.Ft.	18" Class B Storm Sewer
							146																																													I-2	146	Lin.Ft.	24" Class B Storm Sewer
							92																																													I-2	92	Lin.Ft.	24" Class B Storm Sewer Under Pav't
																		10	26																																	I-3	36	Lin.Ft.	6" Outlets for Roadway Drainage
100		100	30	60	80	70	10	60	30	60	60	20	70	70	40	90																																		10	I-3	960	Lin.Ft.	8" Outlets for Roadway Drainage
50																																																			I-3	50	Lin.Ft.	10" Outlets for Roadway Drainage
50																																																			I-3	50	Lin.Ft.	12" Outlets for Roadway Drainage
	2800	6563	6107	6289	6292	6526	6198	6015	6003	6197	6332	5984	6304	6271	6168	6286																																		3398	I-4	39849	Lin.Ft.	6" Pipe Underdrains
		2	2	4	7	3	1	2	2	4			2	5	1	2																																		6	I-5	43	Ea.	Pipe Specials 6" 60° Bend
		1	1	2		2		4	1	2	2	2	1	2	2	2																																		6	I-5	30	Ea.	Pipe Specials 6" 90° Bend
		12	2	4	4	5	4	2	1	3	6		6	3	2	6																																			I-5	60	Ea.	Pipe Specials 6"x6"x6" 60° Wye
		3			1	1					4		4		1	1																																		1	I-5	16	Ea.	Pipe Specials 6"x6"x6" Tee
			1	2		2		2	1	2	2	2	1	1		1																																			I-5	17	Ea.	Pipe Specials 6"x8" Increaser
			1	2		2		2	1	2	2	2	1	1																																					I-5	16	Ea.	Pipe Specials 8"x8"x6" Tee
																1																																				I-5	1	Ea.	Pipe Specials 8"x6" Double Tee Branch
						2																																														I-5	2	Ea.	Pipe Specials 8" 60° Bend
															2																																					I-5	2	Ea.	Pipe Specials 15" 30° Bend
					1																																																I-5	1	Ea.	Pipe Specials 15"x15" Tee
																																	1																				I-5	1	Ea.	Pipe Specials 24"x18" Tee
																									1																												I-5	1	Ea.	Pipe Specials 42"x15" Tee
																																																1				I-5	1	Ea.	Pipe Specials 48"x15" Tee
																																	1																				I-5	1	Ea.	Pipe Specials 54"x15" Tee
																																																				I-5	1	Ea.	Pipe Specials 36"x15" Tee
																		1																																		I-8	1	Ea.	Standard No. 2-4 Catch Basin
																																																		1	I-8	1	Ea.	Type A Catch Basin (as per plan)
						1											2		1																															1	I-8	5	Ea.	Standard No 2-2A Catch Basin
																	1																																		I-8	1	Ea.	Standard No 2-2B Catch Basin
																																																	2	I-8	2	Ea.	Standard No 3 Catch Basin
					2																																													4	I-8	6	Ea	Standard No 3-A Catch Basin
		3	2	2	2	2		3	1	2	3	1	2	2	1	4																																		I-8	30	Ea.	Standard No 4 Catch Basin
					2	3	1			1						1																																		I-8	8	Ea	Standard No 5 Catch Basin
					3	1		1																																											I-8	5	Ea	Standard No 1 Manhole
																																																1			I-8	1	Ea	Standard No 1-A Manhole
2400																																																			I-9	2400	Lin.Ft.	Stone Underdrain
																									49	52			35			21.4	27.1	27	40	55				41	31.4		53	40.1.7	30	46			31.1			I-10	1220.6	Sq.Yds.	Riprap Type A
			12.3	25		33			12	60	15		18	39	16	13	10.8	17				18.5	22		23	23		22.2	28	22.2	27.8	12	32.2	26	27.8		33.2	18.5	27.8	33	37.5	21	21	25		27.8	13.9	22.2	52			I-10	891.7	Cu.Yds.	Dumped Rock Channel Protection
																																																			228	I-14	1436	Lin.Ft.	Type I Paved Gutter
			69			255			86		100			110		74	45	40.4		35	20																																I-5-1	765.4	Cu.Yds.	Concrete for Structures Class "C"
		6.4	6.4	6.4	11.5	11.5		3.2	3.2	6.4			3.2	6.4	3.2	3.2						19.8	13.4	18.8	26.4	20.4		14.2	15.2	26.0	12.8	10.2	16.1	13.7	30.0	21.0	16.0	21.0	36.0	30.0	23.8	36.0	40.8	63.2	13.4	31.0	14.6	30.0	72.6			I-5-1	12.61	Cu.Yds.	Concrete for Structures Class "E"
																	0.46	1.18	0.69								5.48				0.62		0.50	0.50			0.67		0.55		0.69					0.55			0.46	0.26					
		292	292	292	510	510		146	146	292			146	292	146	146						836	578	832	1214	738		690	696	1142	560	436	758	567	1198	660	838	986	708	1198	1024	708	1820	2986	574	1576	632	1198	2962			I-5-4	33,341	Lbs.	Reinforcing Steel
																											1																		1					1	1		I-5-8	Lump	Lump	Removal of Existing Structures

Revised 10/2/57 RHJ

GENERAL SUMMARY (3 OF 3 SHEETS)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

170	172	175	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	Item	Quantity	Unit	Description
																															— Sheet Numbers				DRAINAGE (Continued)
																														50		5-27	50	Lin.Ft.	12" Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b) or Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b)
													300												220							5-27	520	Lin.Ft.	24" Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b) or Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b)
																										212				208		5-27	420	Lin.Ft.	27" Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b) or Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b)
				216	412							306																202				5-27	1176	Lin.Ft.	30" Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b) or Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b)
															366																	5-27	366	Lin.Ft.	30" Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M-6.6(d)
										234								218														5-27	452	Lin.Ft.	36" Pipe for Roadway Culverts
														346																		5-27	346	Lin.Ft.	36" Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M-6.6(d) or Paved Bituminous Coated Corrugated Metal Pipe, Sec. M-6.4(d)
									204										204													5-27	408	Lin.Ft.	36" Pipe for Roadway Culverts Sec. M-6.6(b). M-6.8(b)
			232																													5-27	232	Lin.Ft.	42" Extra Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(c) or 12 Gage Paved Bit. Coated Corrugated Metal Pipe, Sec. M-6.4(d)
											272																			206		5-27	478	Lin.Ft.	48" Pipe for Roadway Culverts
																													216			5-27	216	Lin.Ft.	48" Extra Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(c) or 12 Gage Paved Bit. Coated Corrugated Metal Pipe, Sec. M-6.4(d)
																						226										5-27	226	Lin.Ft.	48" Extra Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(c) or 10 Gage Paved Bit. Coated Corrugated Metal Pipe, Sec. M-6.4(d)
																									150							5-27	150	Lin.Ft.	48" Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M-6.6(d) or 8 Gage Paved Bit. Coated Corrugated Metal Pipe, Sec. M-6.4(d)
																				206					202							5-27	408	Lin.Ft.	54" Pipe for Roadway Culverts
																											218					5-27	218	Lin.Ft.	54" Extra Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(c) or 8 Gage Paved Bit. Coated Corrugated Metal Pipe, Sec. M-6.4(d)
																														146		5-27	146	Lin.Ft.	54" Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M-6.6(d) or 8 Gage Paved Bit. Coated Corrugated Metal Pipe, Sec. M-6.4(d)
																								208								5-27	208	Lin.Ft.	60" Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b) or 5-28 60" 10-10 Gage Sectional Corrugated Metal Pipe, Sec. M-6.4(g)
							200										212															5-27	412	Lin.Ft.	53"x34" Reinforced Elliptical Concrete Culvert Pipe, Sec. M-206.6(b)
								76																								5-27	76	Lin.Ft.	72"x44" No. 8 Gage Paved Bituminous Coated Corrugated Metal Arch with Integral Base, Sec. M-6.4(d) & (1)
						194										224					206											5-27	624	Lin.Ft.	42" Pipe for Roadway Culverts Sec. M-6.6(b)
																							198									5-27	198	Lin.Ft.	48" Pipe for Roadway Culverts Sec. M-6.6(b)

Item	Quantity	Unit	Description
			ROADWAY (CONTINUED) REMOVAL OF
5-24	Lump	Lump	1 - 2 Story Frame Residence, and 1 - Frame Garage, Parcel No. 21-16.
5-24	Lump	Lump	1 - Frame Barn with living quarters, and 2 - Frame sheds, Parcel No. 21-24 LA.
5-24	Lump	Lump	1 - 1 Story Frame Residence and 5 Sheds, Parcel No. 21-26 LA.

FORCE ACCOUNT WORK

American Telephone and Telegraph Company
See Sheet No. 169

STRUCTURES OVER 20' SPAN

LAK-1-2696 see Sheet No. 131 - 137
LAK-1-2841 see Sheet No. 138 - 144
ATB-1-0138 see Sheet No. 145 - 151
ATB-1-0233 see Sheet No. 152 - 158

Revised 10/2/57

COMPUTATIONS & SUB-SUMMARIES

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

L-9 COMMERCIAL FERTILIZER (12-12-12)

TONS = $\frac{A \times 9 \times 20}{1000 \times 2000}$

Area Seeded	623848	S.Y.
Area Sodded	25642	S.Y.
Total Area	649490	S.Y.
TONS =	58.46	

L-9 AGRICULTURAL LIMING MATERIAL

TONS = $\frac{A \times 9 \times 100}{1000 \times 2000}$

Area Seeded	623848	S.Y.
Area Sodded	25642	S.Y.
Total Area	649490	
TONS =	292.27	

E-11 WATER M.GAL = $\frac{Vol. \times 5}{1000}$

Embankment +20%	C.Y.	681310
I-22	"	40464
I-18	"	11961
B-119	"	2160
Total Volume	C.Y.	735895
M-GALS =		3680

EDGE LINES

Length as per Typical Section
S.R.1 = 23162.78 , 4 Edges
23162.78 x 4 = 92651.12 Lin. Ft.
Add for Ramp Exits 202 " "
Add for Ramp Entr. 892 " "
93745.12 Lin. Ft.
93745.12 ÷ 5280 = 17.76 Miles

CENTERLINES

Length as per Typical Section
S.R.1 = 23162.78 2 Pavements
15 Ft. Lines Spaced @ 25 Ft.
23162.78 x 2 x 15/40 ÷ 5280
= 3.29 Miles

I-18, STABILIZED CRUSHED AGGREGATE SHOULDER MATERIAL

Total Length as per S.R.1
Typical Section = 23162.78 Lin.Ft.
Width, 2 Shoulders @ 5.67' = 11.34 Ft.
& 2 Shoulders @ 10.50' = 21.00 Ft.
Total Width = 32.34 Ft.
Depth = 5 in.
23162.78 x 32.34 ÷ 9 x 5/36 = 11560.0 Cu.Yds.

B-33, 3" BITUMINOUS MACADAM BASE COURSE

Total Length as per S.R.1
Typical Section = 23162.78 Lin.Ft.
Width, 2 Shoulders @ 5' = 10 Ft.
& 2 Shoulders @ 10' = 20 Ft.
Total Width = 30 Ft.
23162.78 x 30 ÷ 9 = 77209.3 Sq.Yds.

T-31, BITUMINOUS SURFACE TREATMENT

Bituminous Material, 2 Seal Operations of 0.25 gal. per Sq.Yd. of B-33, each
Area B-33 as above = 77209.3 Sq.Yds.
(77209.3 x 0.25) 2 = 38604.7 Gals.

No. 46 Aggregate (1st Operation):
Applied @ 0.008 Cu.Yd. per Sq.Yd of B-33
77209.3 x 0.008 = 617.7 Cu.Yds.

No. 6 Aggregate (2nd Operation):
Applied @ same rate as No. 46 Aggregate
= 617.7 Cu.Yds.

L-9 SEEDING

Length as per Typical Section S.R.1
= 23162.78 Lin.Ft.
Deduct 3000 Lin.Ft. for Roadside Rest
= 20162.78 Lin.Ft.
Av. Width R/W to R/W = 310.5 Ft.
Deduct 78 Ft. Width for Paved Areas
= 232.5 Ft.
20162.78 x 232.5 ÷ 9 = 520872 Sq.Yds.
Deduct for Sodded Areas = 24483
NET SEEDING AREA = 496389 Sq.Yds.

L-10 SODDING

Sheet No.	Sq. Yds.
3	600
10	422
11	994
12	1141
13	1784
14	1143
15	453
16	1109
17	1271
18	1126
19	876
20	1264
21	1579
22	1722
23	1286
24	1190
25	1056
65	524
66	388
70	917
74	738
77	294
81	87
82	166
83	178
84	32
85	34
87	67
88	17
89	60
90	112
91	10
92	6
93	37
94	53
95	17
96	70
97	89
98	71
99	47
100	7
101	76
102	11
103	51
104	29
105	10
106	52
107	6
108	111
117	500
TOTAL	24483

EARTHWORK

Sheet No.	Station From	Station To	E-101 Roadway Excavation Cu.Yds.	Embankment +20% Cu.Yds.
10	18+00	26+00	6461	35532
11	26+00	41+00	34182	18254
12	41+00	56+00	63061	19612
13	56+00	71+00	94263	5222
14	71+00	86+00	32313	32218
15	86+00	101+00	37007	59866
16	101+00	116+00	19572	41665
17	116+00	12+00	18057	31356
18	12+00	27+00	33799	18260
19	27+00	42+00	24344	15961
20	42+00	57+00	34967	43808
21	57+00	72+00	25471	23164
22	72+00	87+00	32879	9906
23	87+00	102+00	27254	30839
24	102+00	117+00	26517	46237
25	117+00	132+00	69244	9356
26	132+00	133+00	3698	0
67	Bates Rd.		4639	42167
71	County Line Rd.		1434	33002
75	Van Pelt Rd.		3828	50188
79	Le Fever Rd.		1034	41309
125	Roadside Rest		31422	78388
TOTALS			625446	681310

E-4 BORROW

Embankment +20% = 681310
E-101 Roadway Excav. = - 625446
55864
Deduct E-3 Channel Excav. 2811
E-4 NET BORROW = 53053 Cu.Yds.

T-71, 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

Total Length as per S.R.1
Typical Section = 23162.78 Lin.Ft.
Width, 4 Lanes @ 12' = 48 Ft.
23162.78 x 48 ÷ 9 = 123534.9 Sq.Yds.

I-22, SUBBASE

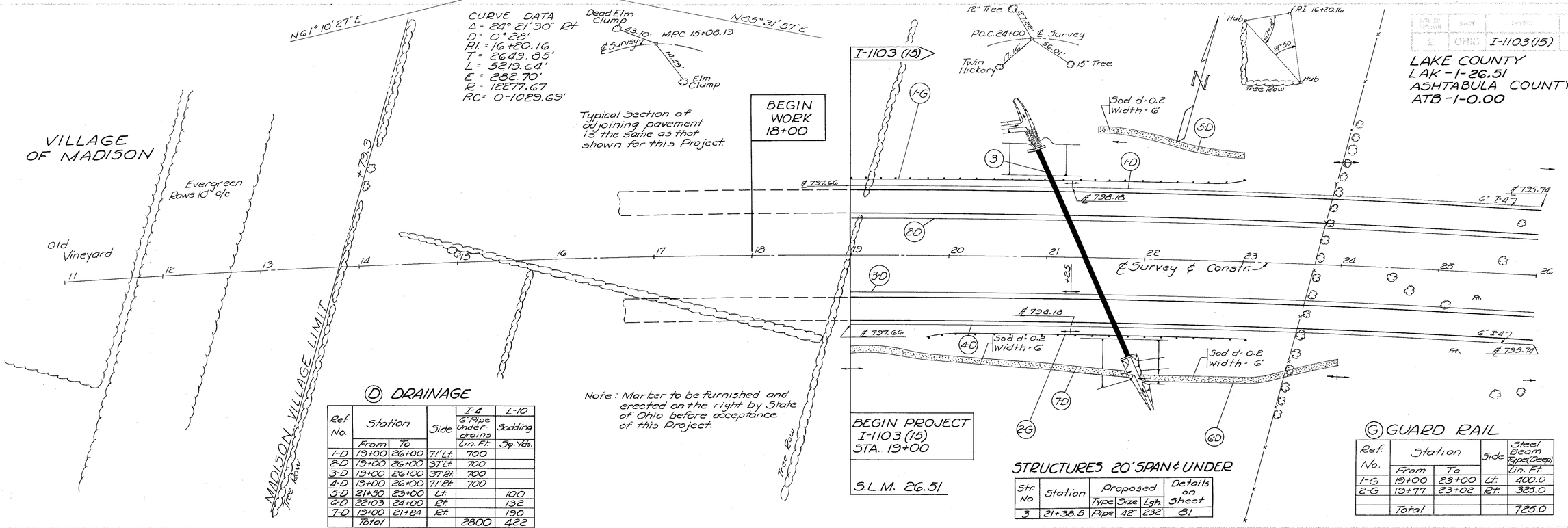
Total Length as per
S.R.1 Typical Section = 23162.78 Lin.Ft.
End Area, 4 Lanes = 40.90 Sq.Ft.
23162.78 x 40.90 ÷ 27 = 35087.3 Cu.Yds.

E-101 COMPACTED SUBGRADE

Area as T-71 =	123535	Sq.Yds.
Area as B-33 =	77210	" "
TOTAL =	200745	Sq.Yds.

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Ⓓ DRAINAGE

Ref. No.	Station From	Station To	Side	I-4 6" Pipe Under-drains Lin. Ft.	L-10 Sodding Sq. Yds.
1-D	19+00	26+00	71' Lt.	700	
2-D	19+00	26+00	37' Lt.	700	
3-D	19+00	26+00	37' Rt.	700	
4-D	19+00	26+00	71' Rt.	700	
5-D	21+50	23+00	Lt.		100
6-D	22+03	24+00	Rt.		132
7-D	19+00	21+84	Rt.		190
	Total			2800	422

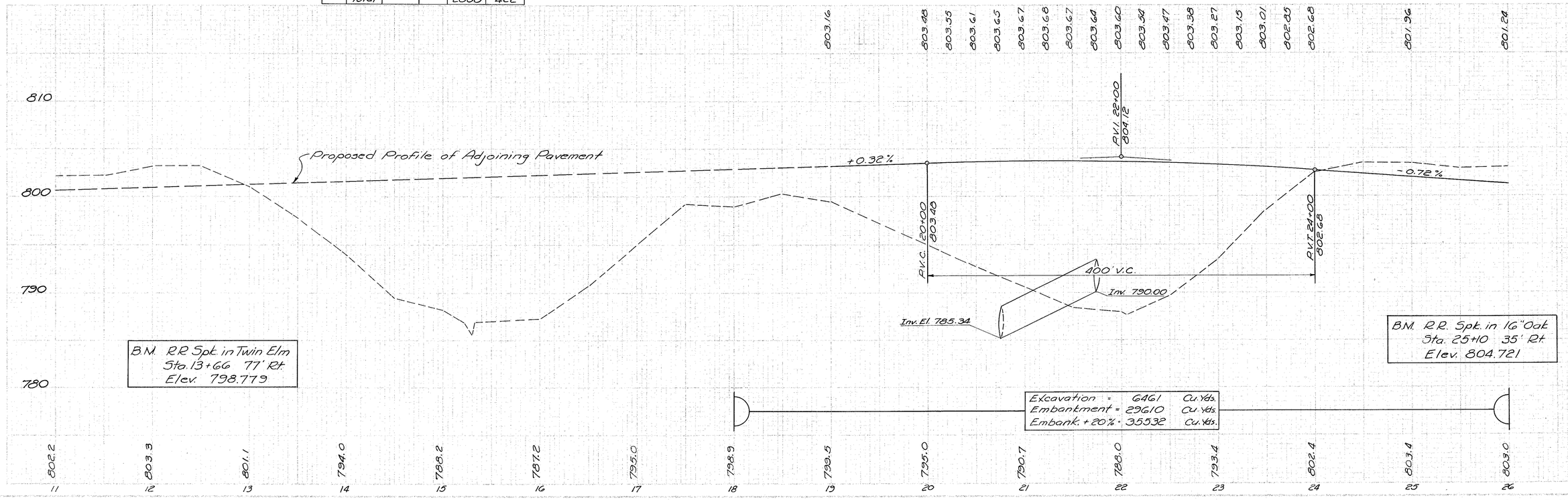
Note: Marker to be furnished and erected on the right by State of Ohio before acceptance of this Project.

STRUCTURES 20' SPAN & UNDER

Str. No	Station	Proposed Type	Proposed Size	Proposed Lgth.	Details on Sheet
3	21+38.5	Pipe	42"	232'	81

Ⓖ GUARD RAIL

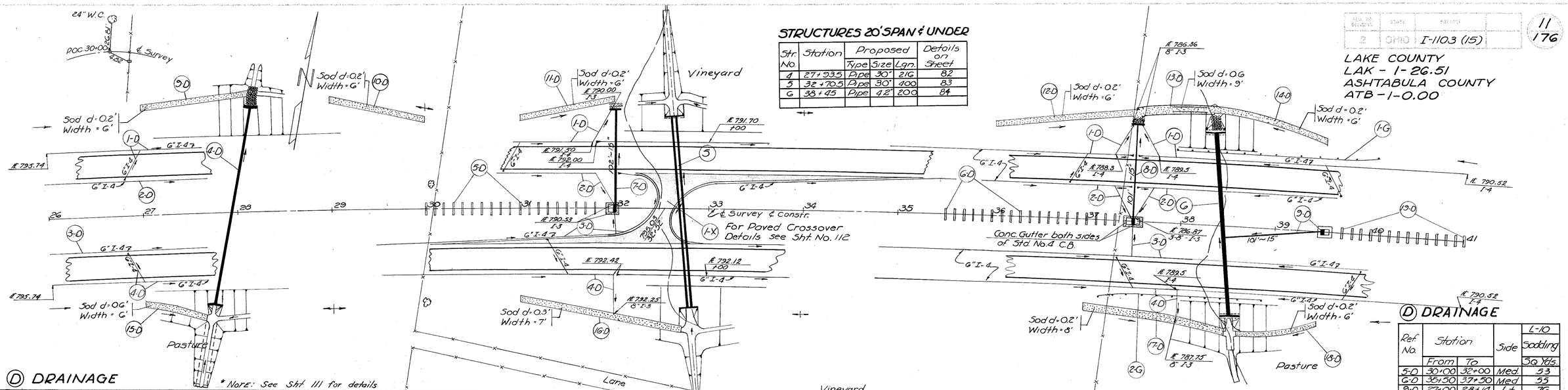
Ref. No.	Station From	Station To	Side	Steel Beam Type (Deep) Lin. Ft.
1-G	19+00	23+00	Lt.	400.0
2-G	19+77	23+02	Rt.	325.0
	Total			725.0



LAKE COUNTY 11+00 - 26+00

SHEET NO.	STATE	FEDERAL PROJECT	
2	OHIO	I-110.3 (15)	

LAKE COUNTY
LAK - I - 26.51
ASHTABULA COUNTY
ATB - I - 0.00



STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Size	Lgn.	Details on Sheet
4	27+93.5	Pipe	30"	216	82
5	32+70.5	Pipe	30"	100	83
6	38+45	Pipe	42"	200	84

D DRAINAGE

* NOTE: See Sht. 111 for details

Ref. No.	Station From	Station To	Side	I-2 18" Class "A" Storm Sewer Under 20' H.F. Sec. 4.6.2.3(b), 7.1-6.8.1(b)	I-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Underdrn	I-5 6"x6" 60° Wye	I-5 6" 60° Bend	I-5 6"x6"x6" Tee	I-5 6" 90° Bend	I-8 Std. No. 4 Catch Basin	I-1 Conc. for Struct. Class "C"	I-4 Reinf. Steel	I-2 15" Class "A" Storm Sewer
				Lin. Ft.			Each						
1-D*	26+00	41+00	71' Lt.		30	1730	6	1					
2-D*	26+00	41+00	37' Lt.		30	1509	2	1					
3-D*	26+00	41+00	37' Rt.		20	1616			2				
4-D*	26+00	41+00	71' Rt.		20	1708	4		1	1			
7-D	32+00		Lt.	102							1	3.2	146
8-D	37+50		Lt.	101							1	3.2	146
9-D	38+48	39+50	Med.								1			101
Totals				203	100	6563	12	2	3	1	3	6.4	292	101

X MEDIAN CROSSOVER PAVEMENT

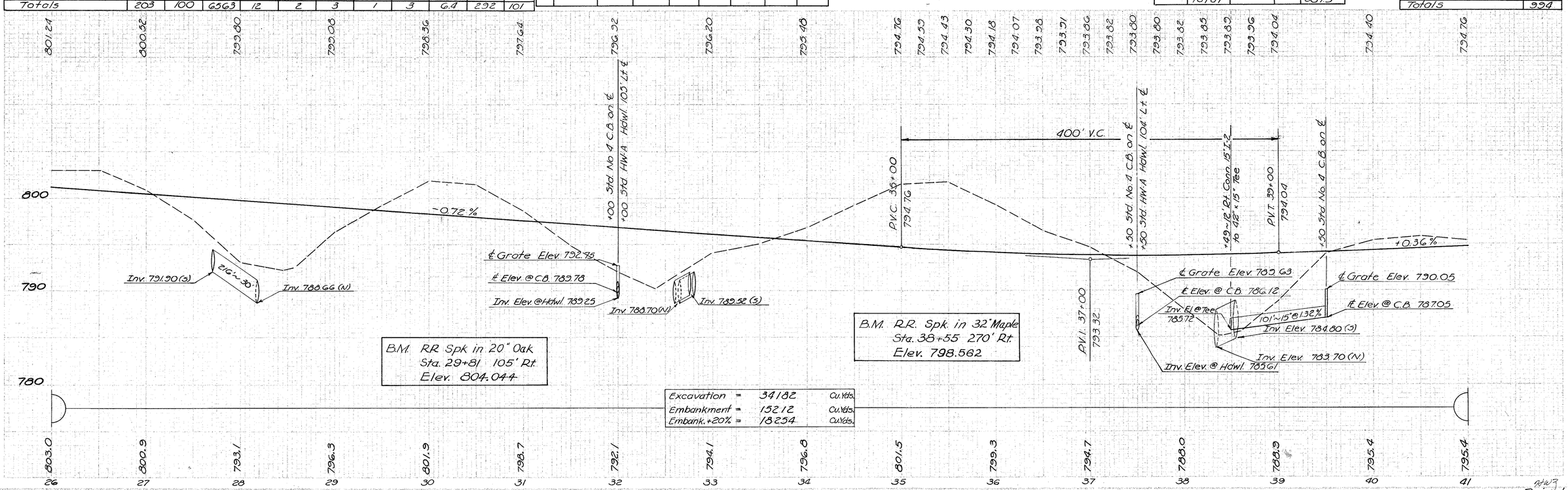
Ref. No.	Station	E-1 Compact. Subgrd.	T-31 No. 4G Aggreg.	T-31 No. 6 Aggreg.	T-31 Bitum. Water	B-33 3"	I-18 5"	I-22 6"
		Sq. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Sq. Yd.	Cu. Yd.	Cu. Yd.
1-X	32+52	473	3.8	3.8	236.6	473	70.6	108.5

G GUARD RAIL I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep)
				Lin. Ft.
1-G	37+96	40+08.50	Lt.	212.5
2-G	37+17	38+92	Rt.	175.0
	Total			387.5

D DRAINAGE

Ref. No.	Station From	Station To	Side	L-10 Sodding Sq. Yds.
5-D	30+00	32+00	Med.	53
6-D	35+50	37+50	Med.	55
9-D	27+00	28+14	Lt.	76
10-D	29+00	30+00	Lt.	67
11-D	31+00	32+00	Lt.	67
12-D	36+00	37+50	Lt.	100
13-D	37+50	38+30	Lt.	80
14-D	38+30	39+50	Lt.	80
15-D	27+00	27+66	Rt.	44
16-D	31+00	32+75	Rt.	136
17-D	37+00	38+52	Rt.	135
18-D	38+66	39+50	Rt.	56
19-D	39+50	41+00	Med.	45
Totals				994



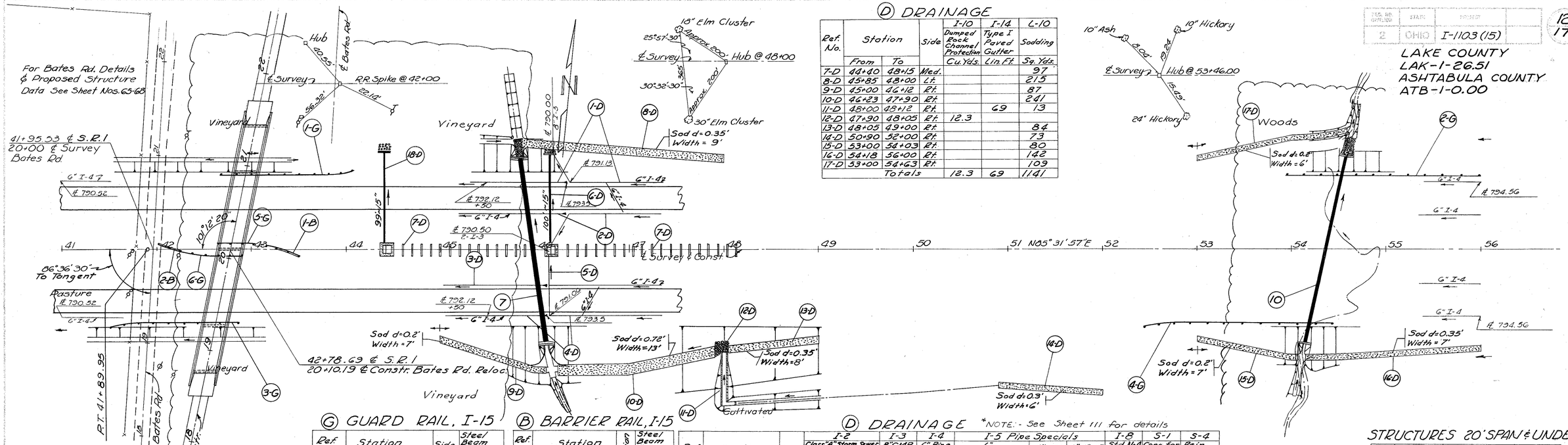
LAKE COUNTY 26+00 - 41+00

Revised 10/2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

12
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-10 Dumped Rock Channel Protection Cu.Yds.	I-14 Type I Paved Gutter Lin.Ft.	L-10 Sodding Sq.Yds.
7-D	44+40	48+15	Med.			97
8-D	45+85	48+00	Lt.			215
9-D	45+00	46+12	Rt.			87
10-D	46+23	47+90	Rt.			241
11-D	48+00	48+12	Rt.		69	13
12-D	47+90	48+05	Rt.	12.3		
13-D	48+05	49+00	Rt.			84
14-D	50+90	52+00	Rt.			73
15-D	53+00	54+03	Rt.			80
16-D	54+18	56+00	Rt.			142
17-D	53+00	54+63	Rt.			109
	Totals			12.3	69	1141

(G) GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (Deep) Lin.Ft.
1-G	42+71	44+08.50	Lt.	137.5
2-G	54+00	56+00	Lt.	200.0
3-G	41+49.50	42+87	Rt.	137.5
4-G	52+45	54+45	Rt.	200.0
5-G	42+64.7	43+27.2	Med	62.5
6-G	42+30.2	42+92.7	Med.	62.5
	Total			800.0

(B) BARRIER RAIL, I-15

Ref. No.	Station From	Station To	Median	Steel Beam Type (Edge) Lin.Ft.
1-B	43+27.2	43+52.2		25
2-B	42+05.2	42+30.2		25
	Total			50

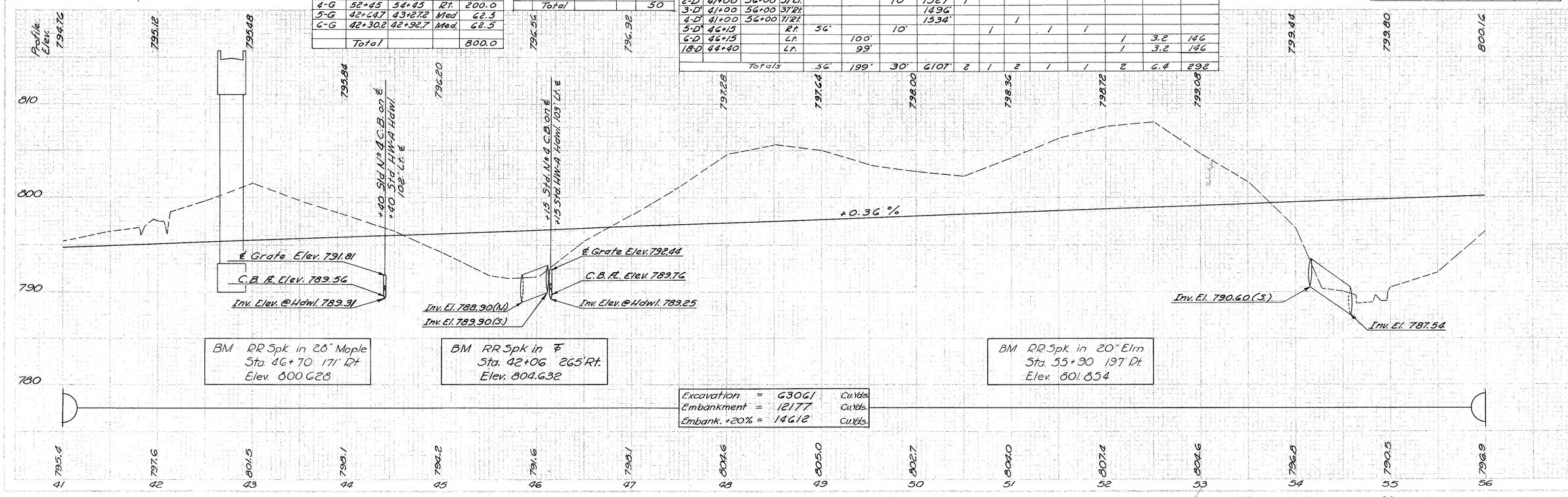
(D) DRAINAGE

*NOTE:- See Sheet 111 for details

Ref. No.	Station From	Station To	Side	I-2 Class "A" Storm Sewer Under Pav't Sec. M-6.5(a)+M4.8(b) 8"	I-2 15"	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Under-drain	I-5 Pipe Specials 6" 60° Bend	90° Bend	60° Wye	6"x8" Increaser	8"&8"x6" Tee	I-8 Std. No. 4 Catch Basin	S-1 Conc. for Structures Class "C" Cu.Yds.	S-4 Rein-forcing Steel Lbs.
				Lin.Ft.				Each							
1-D*	41+00	56+00	71' Lt.			10'	1550'	1		1					
2-D*	41+00	56+00	37' Lt.			10'	1527'	1							
3-D*	41+00	56+00	37' Rt.				1496'								
4-D*	41+00	56+00	71' Rt.				1534'			1					
5-D*	46+15		Rt.	56'		10'			1		1	1			
6-D	46+15		Lt.		100'								1	3.2	146
18-D	44+40		Lt.		99'								1	3.2	146
	Totals			56'	199'	30'	6107'	2	1	2	1	1	2	6.4	292

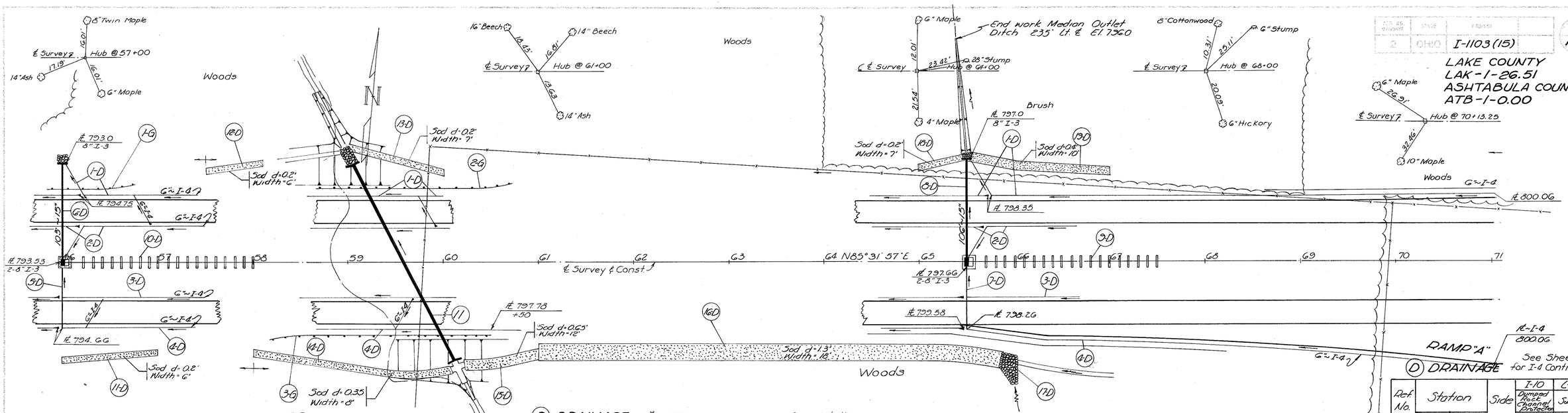
STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Size	Lgth.	Details on Sheet
7	45+98	Pipe	53"x84"	200'	85
10	54+37	Pipe	36"	204'	87



LAKE COUNTY 41+00 - 56+00

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed			Details on Sheet
		Type	Size	Lgh.	
11	59+58	Pipe	36"	234'	88
	Total				

G GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-G	56+00	56+75	Lt.	75
2-G	58+72	60+72	Lt.	200
3-G	58+13	60+44	Rt.	225
	Total			500

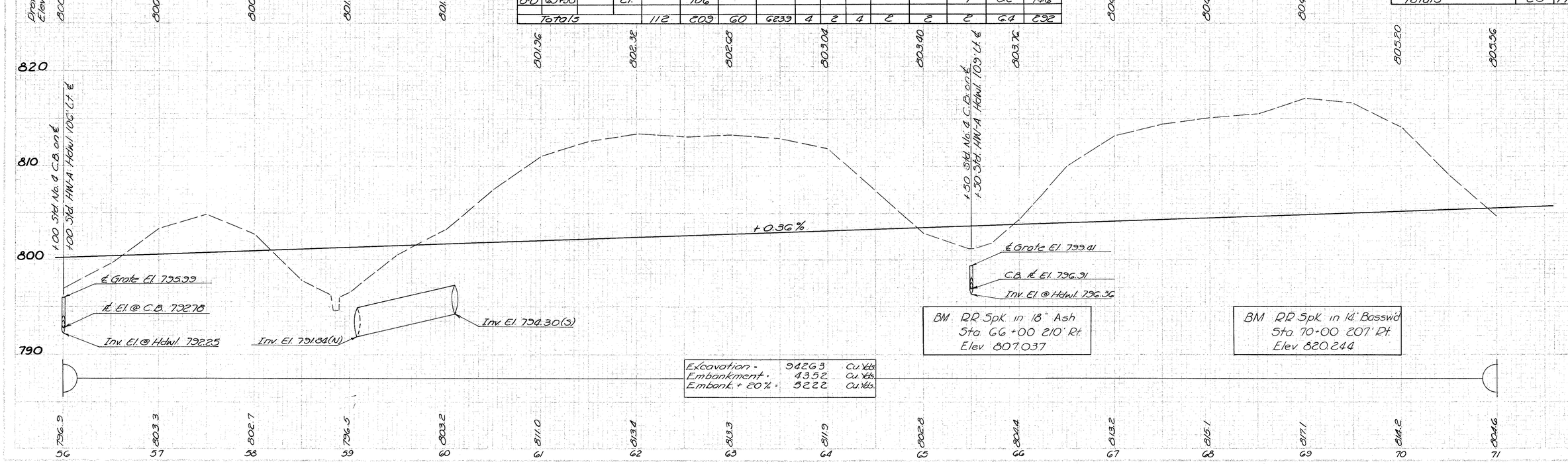
D DRAINAGE

*NOTE: - See Sheet 111 for details

Ref. No.	Station From	Station To	Side	I-2 C.I."A" St. Sewer U.P. Sec. M-6-5(b)-M.6.0(b) 8"	I-2 15"	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Under-drains	I-5 60° Bend	I-5 6" 30° Bend	I-5 60° Wye	I-5 6"x8" Increaser	I-5 8"&6"x6" Tee	I-8 Std. No. 4 Catch Basin	I-1 Conc. for Struct. Cl. "C"	I-4 Reinf. Steel
				Lin. Ft.				Each					Each	Cu. Yds.	Lbs.
1-D	56+00	71+00	71 Lt.			20	1623	2		2					
2-D	56+00	71+00	37 Lt.			20	1354	2							
3-D	56+00	71+00	37 Rt.				1492								
4-D	56+00	71+00	71 Rt.				1564			2					
5-D	56+00		Rt.	56		10			1		1	1			
6-D	56+00		Lt.		103								1	3.2	146
7-D	65+50		Rt.	56		10			1		1	1			
8-D	65+50		Lt.		106								1	3.2	146
Totals				112	209	60	6239	4	2	4	2	2	2	6.4	292

D DRAINAGE

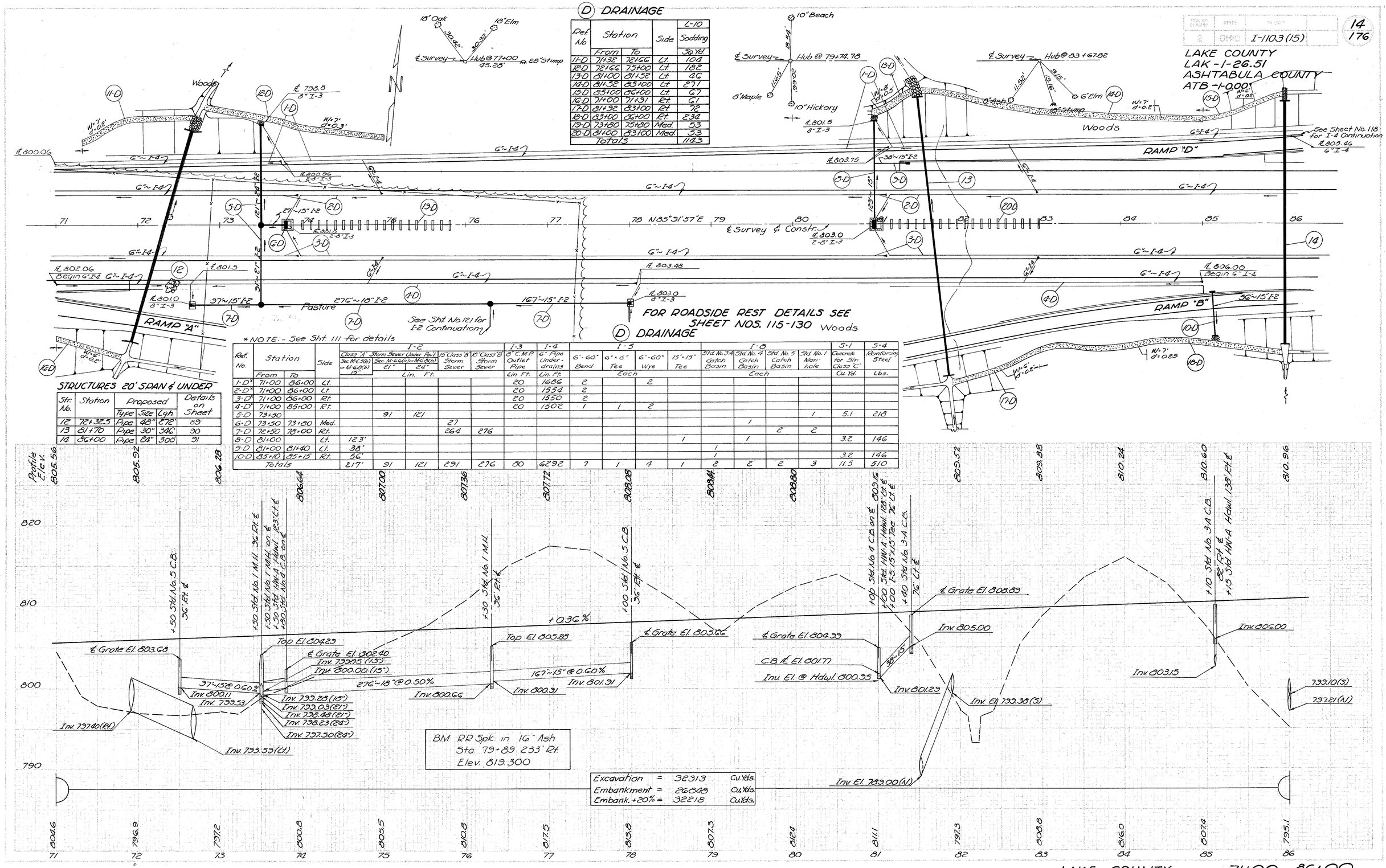
Ref. No.	Station From	Station To	Side	I-10 Dumped Rock Channel Protection Cu. Yds.	I-10 Sodding Sq. Yds.
9-D	65+50	67+50	Med.		53
10-D	56+00	58+00	Med.		53
11-D	56+00	57+00	Rt.		67
12-D	57+50	58+10	Lt.		40
13-D	59+05	60+00	Lt.		74
14-D	58+00	60+08	Rt.		185
15-D	60+12	61+00	Rt.		113
16-D	61+00	65+34	Rt.		388
17-D	65+34	66+06	Rt.	25	
18-D	65+00	65+50	Lt.		39
19-D	65+50	67+00	Lt.		167
Totals				25	1784



LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	L-10 Sodding Sq. Yd.
11-D	71+32	72+66	Lt.	104
12-D	72+66	75+00	Lt.	182
13-D	81+00	81+32	Lt.	46
14-D	81+32	83+00	Lt.	271
15-D	83+00	86+00	Lt.	67
16-D	71+00	71+31	Rt.	61
17-D	81+32	83+00	Rt.	72
18-D	83+00	86+00	Rt.	230
19-D	73+80	75+80	Med.	53
20-D	81+00	83+00	Med.	53
Totals				1143



(D) DRAINAGE

* NOTE:- See Sht. 111 for details

Ref. No.	Station From	Station To	Side	I-2 Class "A" Storm Sewer Under Pav't Sec. M-6.20(a) or M-6.8(b) 12"	I-2 Class "A" Storm Sewer Under Pav't Sec. M-6.20(a) or M-6.8(a) 21"	I-2 Class "A" Storm Sewer Under Pav't Sec. M-6.20(a) or M-6.8(a) 24"	I-2 15" Class "B" Storm Sewer	I-2 18" Class "B" Storm Sewer	I-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Under-drains	I-5 6"-60° Bend	I-5 6"×6" Tee	I-5 6"-60° Wye	I-5 15"×15" Tee	I-8 Std. No. 3-A Catch Basin	I-8 Std. No. 4 Catch Basin	I-8 Std. No. 5 Catch Basin	I-8 Std. No. 1 Man-hole	S-1 Concrete for Str. Class "C"	S-4 Reinforcing Steel
				Lin. Ft.					Lin. Ft.	Lin. Ft.	Each				Each				Cu. Yd.	Lbs.
1-D*	71+00	86+00	Lt.						20	1686	2		2							
2-D*	71+00	86+00	Lt.						20	1554	2									
3-D*	71+00	86+00	Rt.						20	1550	2									
4-D*	71+00	85+00	Rt.						20	1502	1	1	2							
5-D	73+50				91	121												1	5.1	218
6-D	73+50	73+80	Med.				27									1				
7-D	72+50	78+00	Rt.				264	276									2	2		
8-D	81+00		Lt.	123'										1		1			3.2	146
9-D	81+00	81+40	Lt.	38'											1					
10-D	85+10	85+15	Rt.	56'											1				3.2	146
Totals				217'	91	121	291	276	80	6292	7	1	4	1	2	2	2	3	11.5	510

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgh.	Details on Sheet
12	72+32.5	Pipe	48"	272'	89
13	81+70	Pipe	30"	346'	90
14	86+00	Pipe	24"	300'	91

FOR ROADSIDE REST DETAILS SEE SHEET NOS. 115-130 Woods

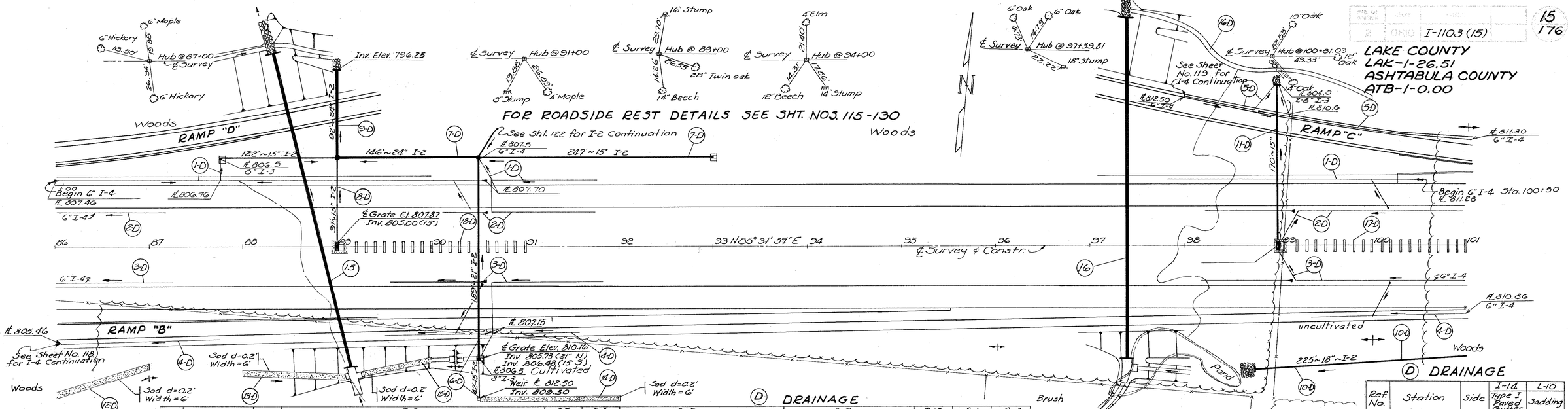
BM RR Spk. in 16" Ash
Sta. 79+89 233' Rt.
Elev. 819.300

Excavation	=	32313	Cu. Yds.
Embankment	=	26848	Cu. Yds.
Embank. +20%	=	32218	Cu. Yds.

PROJ. NO.	DATE	REVISIONS	
2	0-1-10		

I-1103 (15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



(D) DRAINAGE

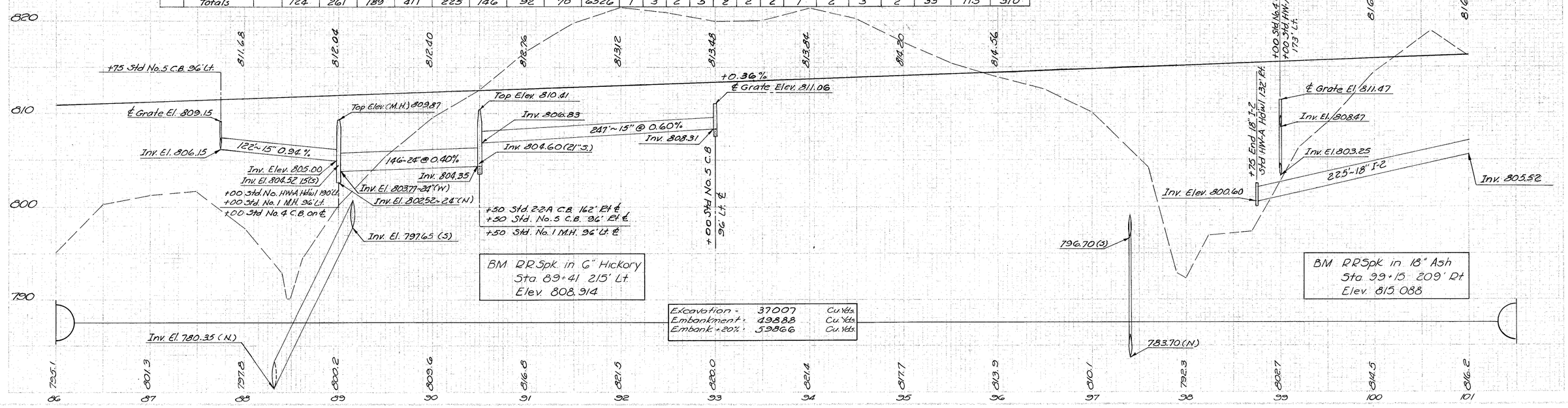
Ref. No.	Station From	Station To	Side	Class A Storm Sewer Sec. M6.5(b) or M6.8(b) 9"	15"	I-2 Class A Storm Sewer Sec. M6.6(a) or M6.8(b) 15"	18" Class "B" Storm Sewer	24" Class "B" Storm Sewer	24" Class "B" Stm. Sewer Undr. Pavt.	I-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Under-drains	I-5 6"x6"x6" Tee	6"-60° Bend	6"-90° Bend	6"-60° Wye	8"-60° Bend	6"x8" Increaser	8"x8"x6" Tee	I-8 Std. No. 22A Catch Basin	Std. No. 4 Catch Basin	Std. No. 5 Catch Basin	Std. No. 1 Manhole	I-10 Dumped Rock Channel Protection	S-1 Concrete for Strs. Class "C"	S-4 Reinforcing Steel
				Lin. Ft.								Each										Cu. Yds.		Lbs.
1-D	86+00	100+50	Lt.	17						20	1531	1			2	1		1							
2-D	86+00	101+00	37' Lt.	34						10	1523		1	1			1								
3-D	86+00	101+00	37' Rt.	56						10	1521		1	1			1								
4-D	86+00	101+00	Rt.	17						10	1606				2	1		1							
5-D	98+00	101+00	Lt.							20	345		1		1										
6-D	90+50					189	42												1		1				
7-D	87+75	93+00	Lt.				369		146												2	2			
8-D	89+00				91															1					
9-D	89+00								92														6	5.1	218
10-D	98+60	101+00						225															22	3.2	146
11-D	99+00				170															1				5	3.2	146
	Totals			124	261	189	411	225	146	92	70	6326	1	3	2	5	2	2	2	1	2	3	2	33	11.5	510

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Size	Lght.	Details on Sheet
15	88+88	Pipe	36"	346	92
16	97+40	Pipe	30"	366	93

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-14 Type I Paved Gutter Lin. Ft.	L-10 Sodding Sq. Yds.
12-D	86+00	87+00	Rt.		67
13-D	88+00	89+09	Rt.		73
14-D	90+50	92+00	Rt.		100
15-D	89+25	90+00	Rt.		50
16-D	97+45	100+00	Lt.	255	57
17-D	98+95	101+00	Med		53
18-D	88+95	91+00	Med		53
	Totals			255	453



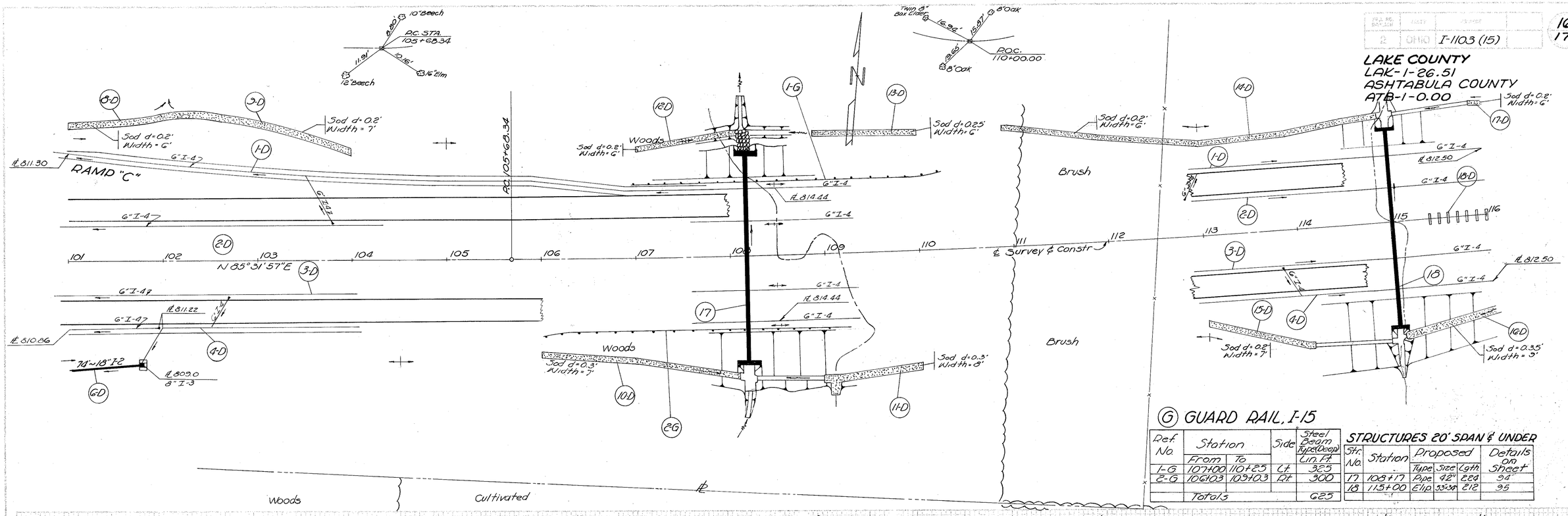
BM RR Spk. in 6" Hickory
Sta. 89+41 215' Lt.
Elev. 808.914

BM RR Spk. in 18" Ash
Sta. 99+15 209' Rt.
Elev. 815.088

Excavation =	37007	Cu. Yds.
Embankment =	49888	Cu. Yds.
Embank. + 20% =	59866	Cu. Yds.

LAKE COUNTY 86+00 - 101+00

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



(G) GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (Deep) Lin. Ft.
I-G	107+00	110+25	Lt.	325
2-G	106+03	109+03	Rt.	300
Totals				625

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Size	Lgth.	Details on Sheet
17	108+17	Pipe	42"	224	94
18	115+00	Ellip.	33"x53"	212	95

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-2 18" Cl "B" Storm Sewer	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Under-drains	I-5 6"-60° Bend	I-5 6"-60° Wye	I-8 Std. No. 5 Catch Basin		
				Lin. Ft.			Each				
1-D*	101+00	116+00	71' Lt.			1592		2			
2-D*	101+00	116+00	37' Lt.			1500					
3-D*	101+00	116+00	37' Rt.			1500					
4-D*	101+00	116+00	71' Rt.		10	1606	1	2			
6-D	101+00	101+75	Rt.	74					1		
Totals				74	10	6198	1	4	1		

*NOTE: - See Sheet 111 for details

(D) DRAINAGE

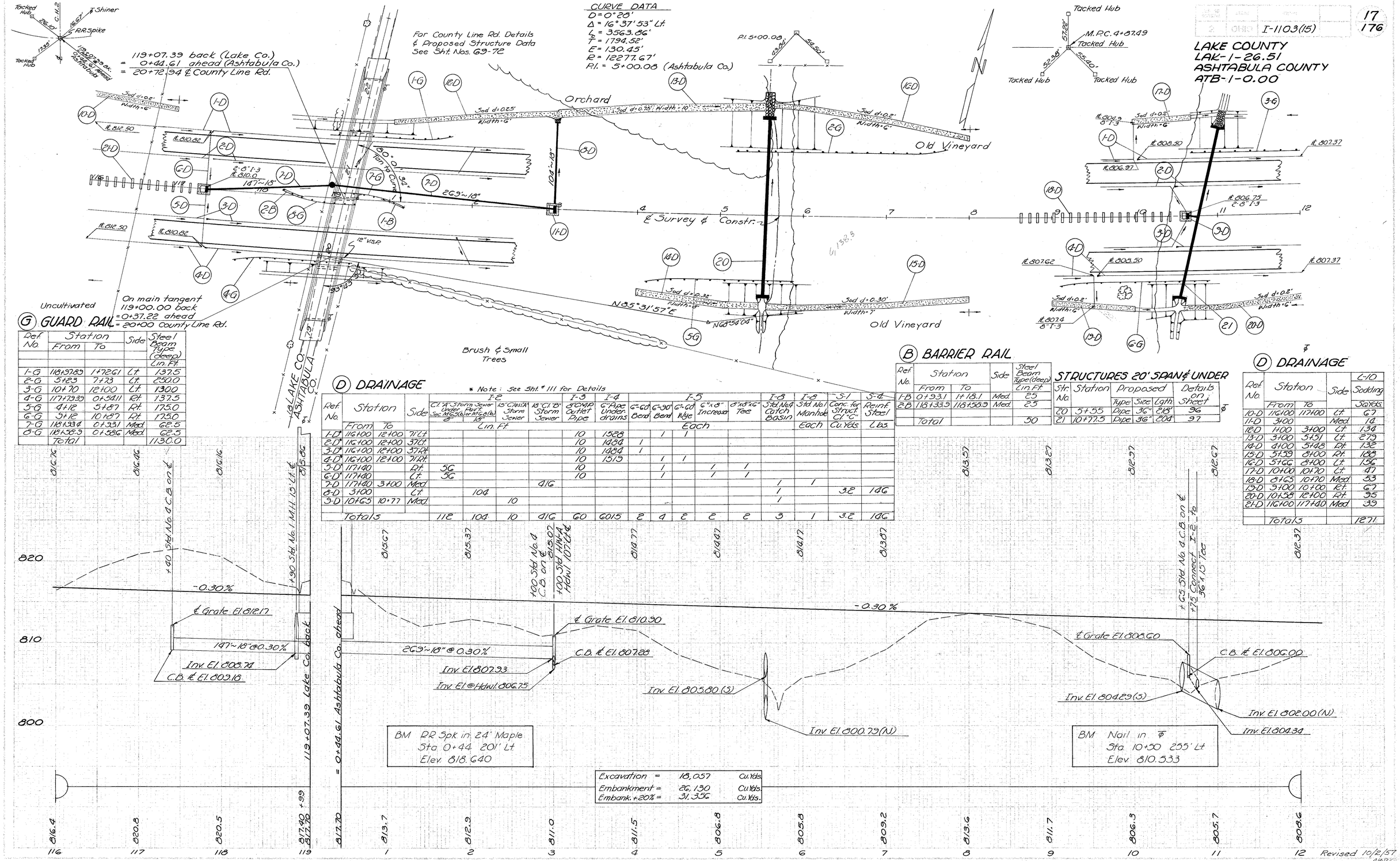
Ref. No.	Station From	Station To	Side	C-10 Sodding Sq. Yds.
8-D	101+00	108+00	Lt.	67
9-D	108+00	108+00	Lt.	156
10-D	106+00	108+05	Rt.	162
11-D	108+90	110+00	Rt.	105
12-D	107+00	108+10	Lt.	73
13-D	108+90	110+00	Lt.	73
14-D	110+90	115+00	Lt.	274
15-D	113+00	114+10	Rt.	86
16-D	115+05	116+00	Rt.	32
17-D	115+90	116+00	Lt.	7
18-D	115+40	116+00	Med.	14
Totals				1109

Excavation =	19,572	Cu. Yds.
Embankment =	34,721	Cu. Yds.
Embank. +20% =	41,665	Cu. Yds.

Revised 10/2/57

2	OHio	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Revised 10/2/57

116+00 (LAK) - 12+00 (ATB)

(G) GUARD RAIL

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-G	118+37.83	1+72.61	Lt.	137.5
2-G	5+23	7+73	Lt.	250.0
3-G	10+70	12+00	Lt.	130.0
4-G	117+39.9	0+54.11	Rt.	137.5
5-G	4+12	5+87	Rt.	175.0
6-G	9+12	10+87	Rt.	175.0
7-G	118+39.4	0+93.1	Med.	62.5
8-G	118+58.9	0+58.6	Med.	62.5
	Total			1130.0

(D) DRAINAGE

* Note: See Sht. # 111 for Details

Ref. No.	Station From	Station To	Side	I-2 C.I. "A" Storm Sewer Under Fill "F" Sec. M6.2(b) or M6.2(b) 24"	I-2 C.I. "A" Storm Sewer Under Fill "F" Sec. M6.2(b) or M6.2(b) 18"	I-2 15" Class "A" Storm Sewer	I-2 15" C.I. "B" Storm Sewer	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Under drains	I-5 6"×60' Bend	I-5 6"×90° Bend	I-5 6"×60' Wye	I-5 6"×8" Increaser	I-5 8"×8"×6" Tee	I-8 Std. No. 4 Catch Basin	I-8 Std. No. 1 Manhole	I-9 Conc. for Struct. Cl. "C" Cu. Yds.	S-4 Reinf. Steel Lbs.
	Lin. Ft.									Each								
1-D	116+00	121+00	71' Lt.					10	152.8		1	1						
2-D	116+00	121+00	37' Lt.					10	148.4	1								
3-D	116+00	121+00	37' Rt.					10	148.4	1								
4-D	116+00	121+00	71' Rt.					10	151.3		1	1						
5-D	117+40		Rt.	5G				10			1		1	1				
6-D	117+40		Lt.	5G				10			1		1	1				
7-D	117+40	3+00	Med.				41.6								1	1		
8-D	3+00		Lt.		10.4										1		3.2	14.6
9-D	10+65	10+77	Med.			10									1			
Totals				11.2	10.4	10	41.6	60	601.5	2	4	2	2	2	3	1	3.2	14.6

(B) BARRIER RAIL

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-B	0+93.1	1+18.1	Med.	25
2-B	118+33.9	118+58.9	Med.	25
Total				50

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgth.	Details on Sheet
20	5+55	Pipe	36"	21.8'	96
21	10+77.5	Pipe	36"	20.0'	97

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	C-10 Sodding Sq. Yds.
10-D	116+00	117+00	Lt.	67
11-D	3+00		Med.	10
12-D	1+00	3+00	Lt.	134
13-D	3+00	5+51	Lt.	279
14-D	4+00	5+48	Rt.	132
15-D	5+39	8+00	Rt.	188
16-D	5+66	8+00	Lt.	156
17-D	10+00	10+70	Lt.	47
18-D	8+65	10+70	Med.	53
19-D	9+00	10+00	Rt.	67
20-D	10+55	12+00	Rt.	95
21-D	116+00	117+40	Med.	39
Totals				1271

2	OHIO	I-1103(15)	

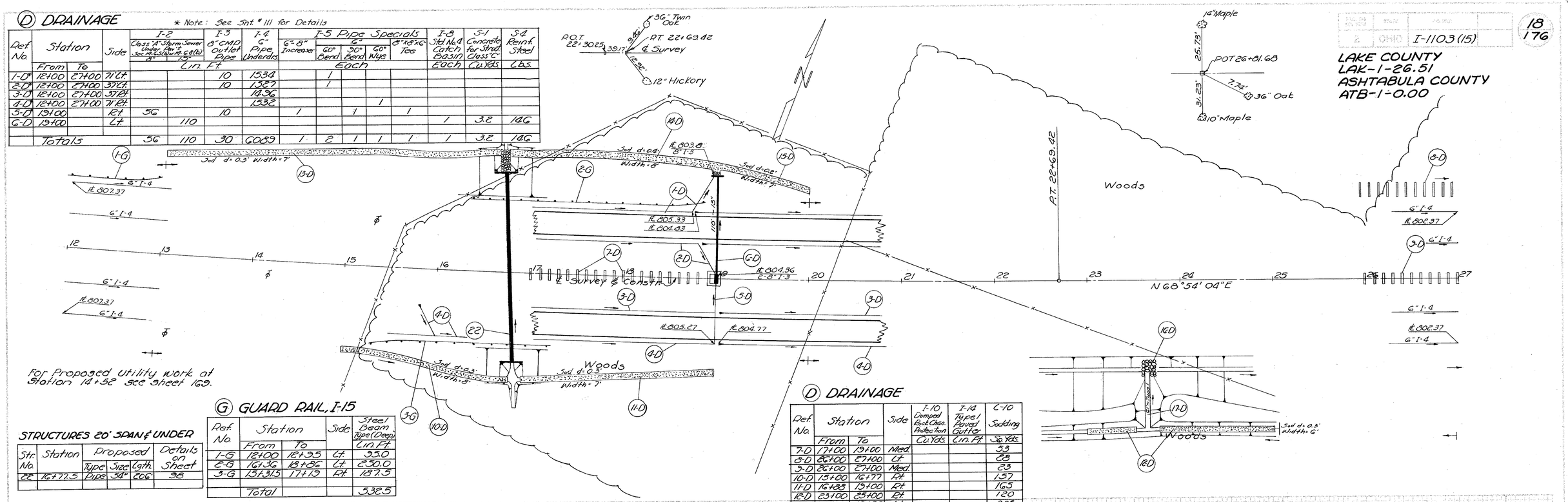
18
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

(D) DRAINAGE

* Note: See Sht. # 111 for Details

Ref. No.	Station From	Station To	Side	I-2 Class 'A' Storm Sewer Under Fills 1' Sec. M.C.S. (Sup. M. C.B.(Ty) 3"	I-2 Class 'A' Storm Sewer Under Fills 1' Sec. M.C.S. (Sup. M. C.B.(Ty) 12"	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Underdrain	I-5 Pipe Specials 6"-8" Increaser	I-5 Pipe Specials 60° Bend	I-5 Pipe Specials 30° Bend	I-5 Pipe Specials 60° Wye	I-5 Pipe Specials 8"-15"x6" Tee	I-9 Std. No. 4 Catch Basin	S-1 Concrete for Struct. Class 'C'	S-4 Reinf. Steel
				Lin. Ft.				Each				Each	Cu. Yds.	Lbs.
1-D	12+00	27+00	71' Lt.			10	1534		1					
2-D	12+00	27+00	37' Lt.			10	1527		1					
3-D	12+00	27+00	37' Rt.				1436							
4-D	12+00	27+00	71' Rt.				1532			1				
5-D	13+00		Rt.	56		10		1		1		1		
6-D	13+00		Lt.		110								1	3.2	126
	Totals			56	110	30	6089	1	2	1	1	1	1	3.2	126



For Proposed utility work at Station 14+52 see Sheet 169.

(G) GUARD RAIL, I-15

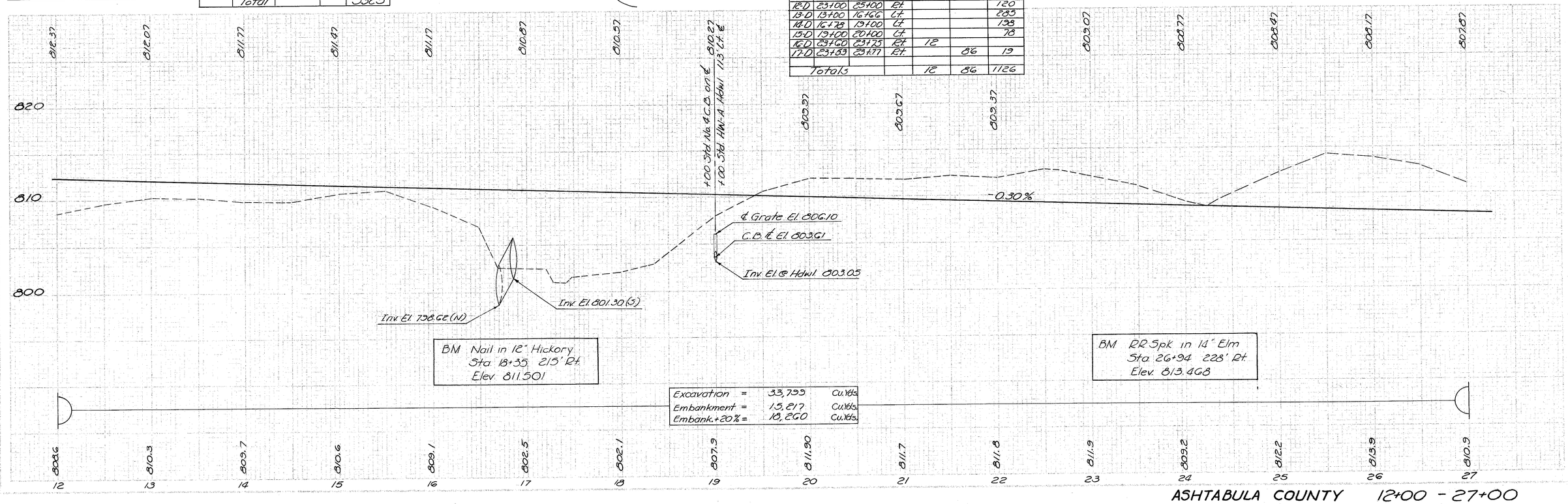
Ref. No.	Station From	Station To	Side	Steel Beam Type (Deep) Lin. Ft.
1-G	12+00	12+95	Lt.	95.0
2-G	16+36	18+86	Lt.	250.0
3-G	15+31.5	17+19	Rt.	187.5
	Total			532.5

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgth.	Details on Sheet
22	16+77.5	Pipe	54"	206'	98

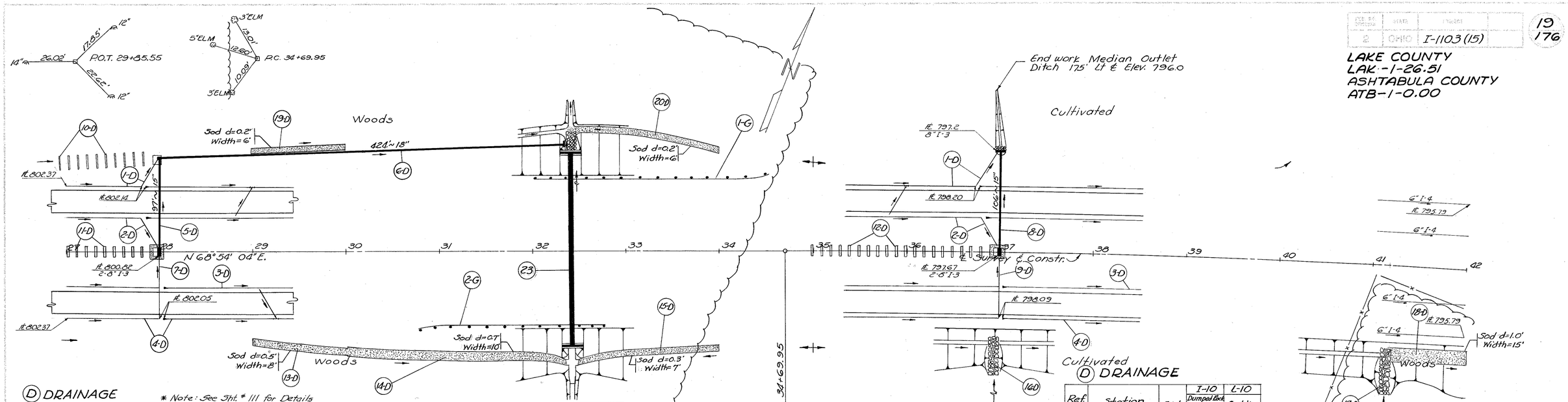
(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-10 Dumped Rock Chan. Protection Cu. Yds.	I-14 Type 1 Paved Gutter Lin. Ft.	C-10 Sodding Sq. Yds.
7-D	17+00	19+00	Med.			33
8-D	26+00	27+00	Lt.			28
9-D	26+00	27+00	Med.			23
10-D	15+00	16+77	Rt.			157
11-D	16+88	19+00	Rt.			165
12-D	23+00	25+00	Rt.			120
13-D	13+00	16+66	Lt.			285
14-D	16+78	19+00	Lt.			198
15-D	19+00	20+00	Lt.			78
16-D	23+60	23+75	Rt.	12		
17-D	23+53	23+77	Rt.		86	19
	Totals			12	86	1126



ASHTABULA COUNTY 12+00 - 27+00

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



(D) DRAINAGE

* Note: See Sht. * 111 for Details

Ref No.	Station From	Station To	Side	I-2 Class A Storm Under Pav't Sec. M-6.5(b) or M-6.6(b) 4"	I-2 Sewer 15"	I-2 18" C.I.P. Storm Sewer	I-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Underdrns	I-5 6" 60° Bend	I-5 6" 90° Bend	I-5 6" 60° Wye	I-5 6"-8" Increaser	I-5 8"x8"x6" Tee	I-8 Std. No.4 Catch Basin	I-8 Std. No.5 Catch Basin	S-1 Conc. for Structures Class "C"	S-4 Reinf. Steel
				Lin. Ft.					Each							Cu. Yds.	Lbs.
1-D	*27+00	42+00	71' Lt.				20	1622	2		2						
2-D	*27+00	42+00	37' Lt.				20	1554	2								
3-D	*27+00	42+00	37' Rt.					1492									
4-D	*27+00	42+00	71' Rt.					1529			1						
5-D	28+00		Lt.		97									1			
6-D	28+00	32+25	Lt.			424									1	3.2	146
7-D	*28+00		Rt.	56'			10			1		1	1				
8-D	37+00		Lt.		106									1		3.2	146
9-D	*37+00		Rt.	56'			10			1		1	1				
Totals				112	203	424	60	6197	4	2	3	2	2	2	1	6.4	292

STRUCTURES 20' SPAN & UNDER

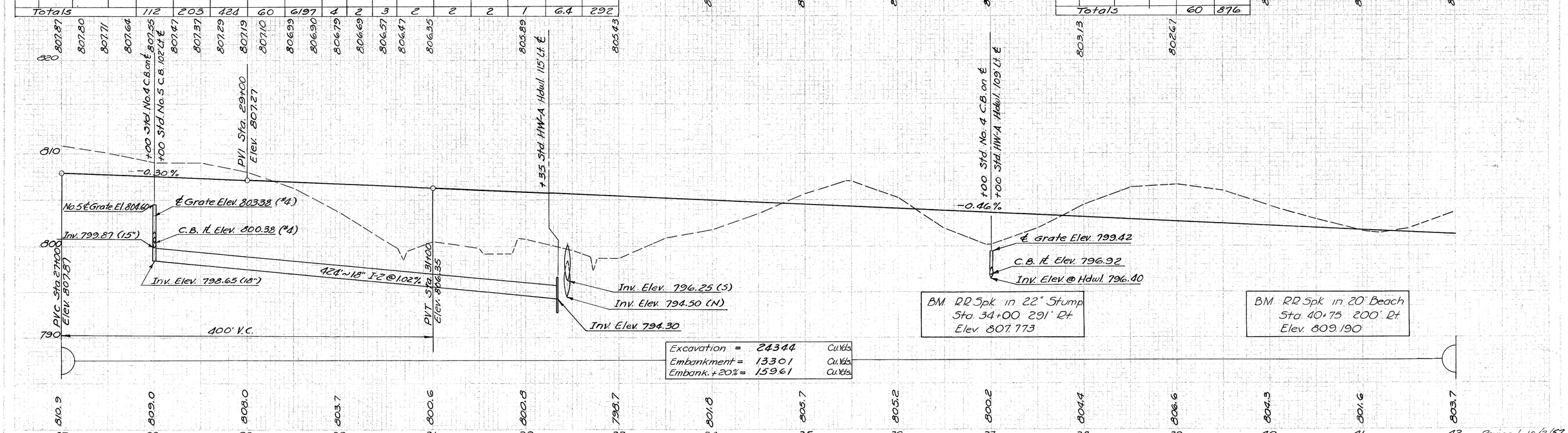
Str. No.	Station	Proposed Type	Size	Lgn.	Detail on Sheet
23	32+41	Pipe	42"	206	99

(D) DRAINAGE

Ref No.	Station From	Station To	Side	I-10 Dumped Rock Channel Protection Cu. Yds.	L-10 Sodding Sq. Yds.
10-D	27+00	28+00	Lt.		23
11-D	27+00	28+00	Med.		30
12-D	35+00	37+00	Med.		53
13-D	29+00	30+00	Rt.		89
14-D	30+00	32+36	Rt.		262
15-D	32+49	34+00	Rt.		118
16-D	36+95		Rt.	27	
17-D	41+18		Rt.	33	
18-D	41+24	42+00	Rt.		127
19-D	29+00	30+00	Lt.		67
20-D	32+40	34+00	Lt.		107
Totals				60	876

(G) GUARD RAIL, I-15

Ref No.	Station From	Station To	Side	Steel Beam Type (Deep) Lin. Ft.
1-G	32+04	34+54	Lt.	250
2-G	30+78	32+78	Rt.	200
	Total			450



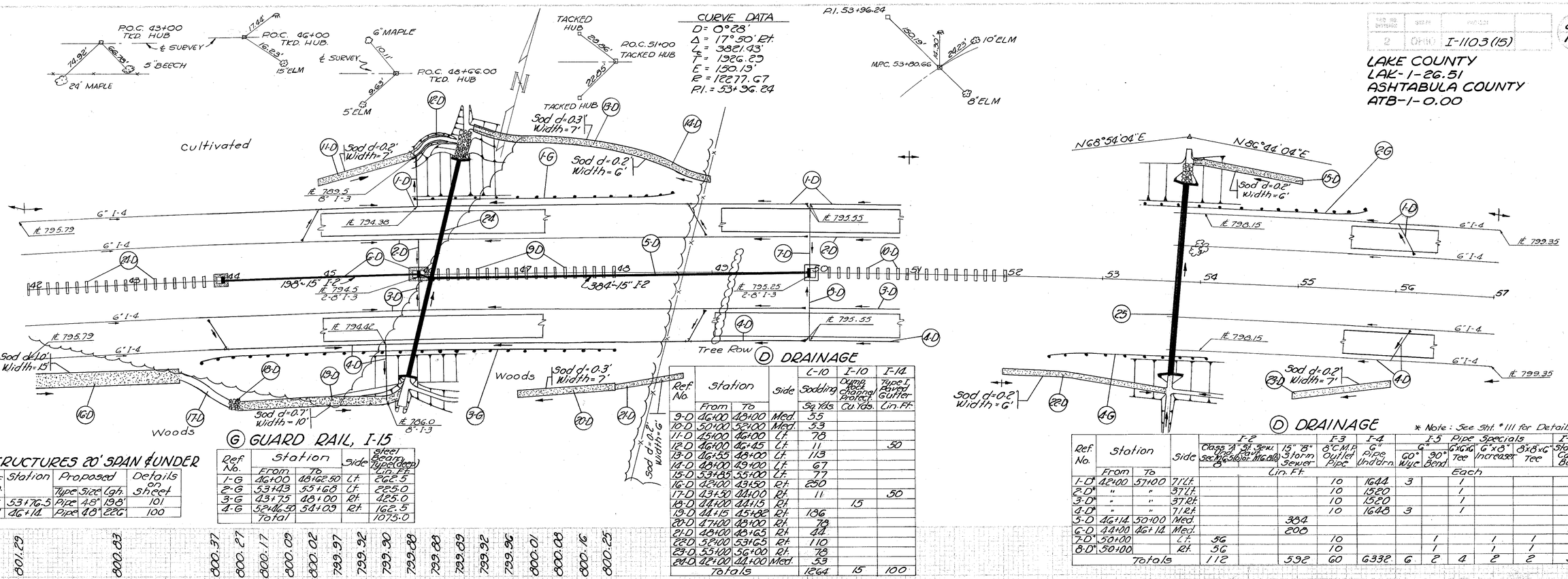
Excavation =	24344 Cu. Yds.
Embankment =	13301 Cu. Yds.
Embank. +20% =	15961 Cu. Yds.

Revised 10/2/59

ASHTABULA COUNTY 27+00 - 42+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



CURVE DATA

D = 0°28'
Δ = 17°50' Rt.
L = 3821.03
T = 1926.29
E = 150.19'
R = 12277.67
P.I. = 53+96.24

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-10 Sodding Sq. Yds.	I-10 Dump Rock Channel Protect. Cu. Yds.	I-14 Type F Paved Gutter Lin. Ft.
9-D	46+00	46+00	Med.	55		
10-D	50+00	52+00	Med.	53		
11-D	45+00	46+00	Lt.	78		
12-D	46+00	46+45	Lt.	11		50
13-D	46+55	48+00	Lt.	113		
14-D	48+00	49+00	Lt.	67		
15-D	53+85	55+00	Lt.	77		
16-D	42+00	43+50	Rt.	250		
17-D	43+50	44+00	Rt.	11		50
18-D	44+00	44+15	Rt.		15	
19-D	44+15	45+82	Rt.	186		
20-D	47+00	48+00	Rt.	78		
21-D	48+00	48+65	Rt.	44		
22-D	52+00	53+65	Rt.	110		
23-D	55+00	56+00	Rt.	78		
24-D	42+00	44+00	Med.	53		
Totals				1264	15	100

(G) GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (Deep) Lin. Ft.
1-G	46+00	48+62.50	Lt.	262.5
2-G	53+43	55+68	Lt.	225.0
3-G	43+75	48+00	Rt.	425.0
4-G	52+46.50	54+09	Rt.	162.5
Total				1075.0

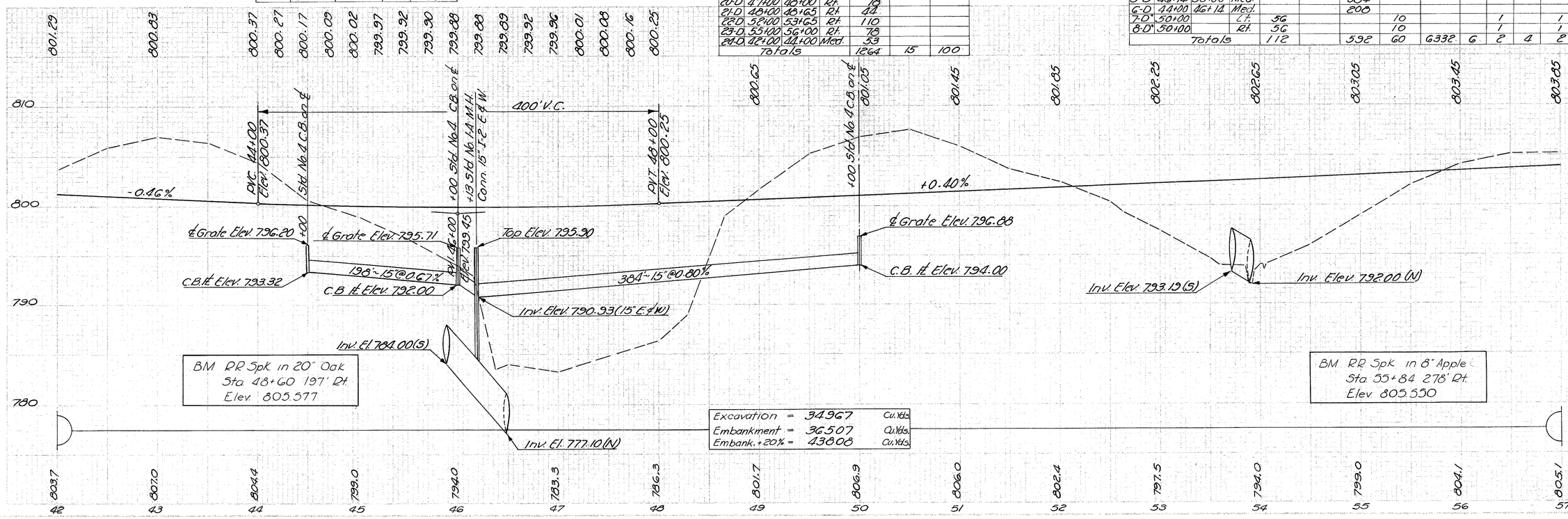
STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgh.	Details on Sheet
25	53+76.5	Pipe	48"	198'	101
24	46+14	Pipe	48"	226'	100

(D) DRAINAGE

* Note: See Sht. * 111 for Details

Ref. No.	Station From	Station To	Side	I-2 Class "A" 3" Sew. Pipe Sch. 40 Galv. Mg. Coat.	I-2 Pavt. Drain.	I-2 15" "B" Storm Sewer	F-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Und'drn.	F-5 Pipe Specials 6" Wye	F-5 6" 90° Bend	F-5 6"x6" Tee	F-5 6"x8" Increaser	F-5 8"x8"x6" Tee	I-8 Std. No. 4 Catch Basin
	Lin. Ft.								Each					
1-D*	42+00	57+00	Rt.				10	1644	3		1			
2-D*	"	"					10	1520			1			
3-D*	"	"					10	1520			1			
4-D*	"	"					10	1648	3		1			
5-D	46+14	50+00	Med.			384								1
6-D	44+00	46+14	Med.			208								2
7-D*	50+00		Lt.	56			10			1		1	1	
8-D*	50+00		Rt.	56			10			1		1	1	
Totals				112		592	60	6332	6	2	4	2	2	3



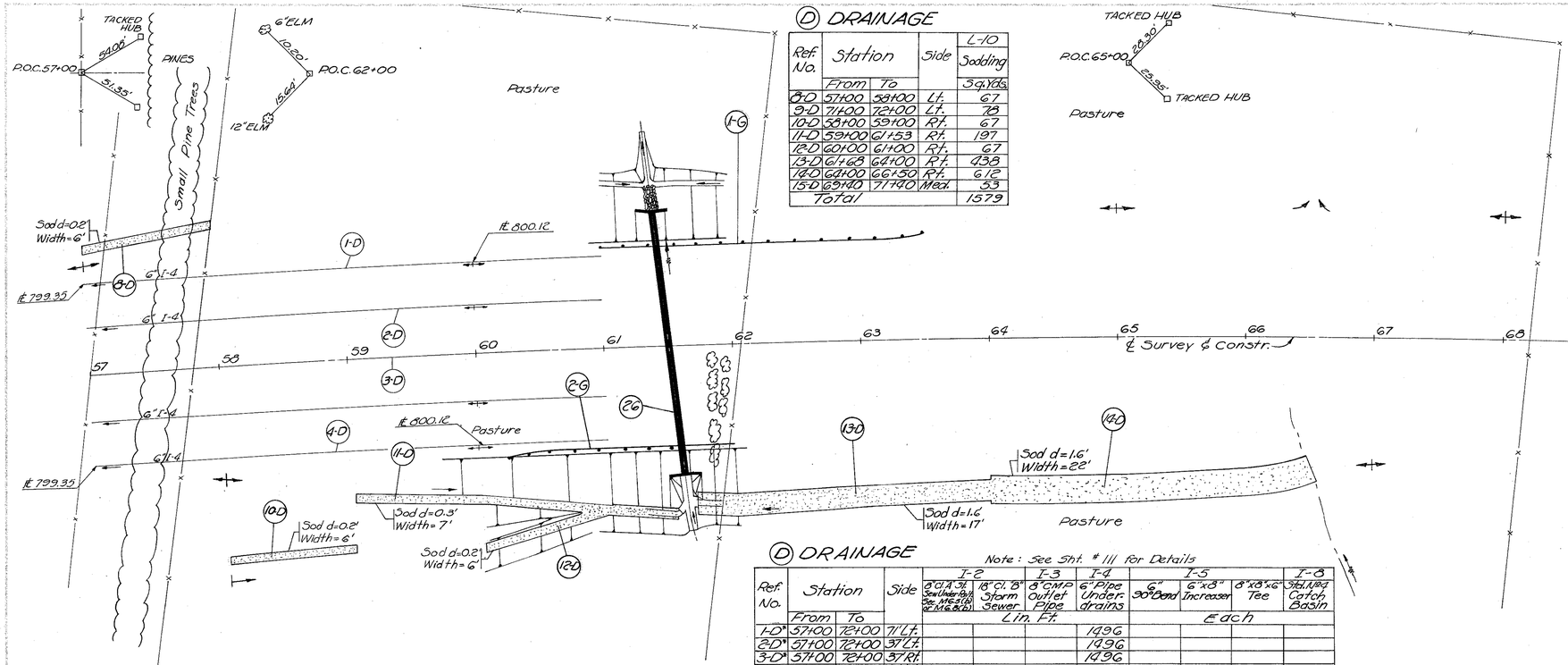
Excavation =	34967	Cu. Yds.
Embankment =	36507	Cu. Yds.
Embank. + 20% =	43808	Cu. Yds.

Revised 10/2/57

ASHTABULA COUNTY 42+00 - 57+00

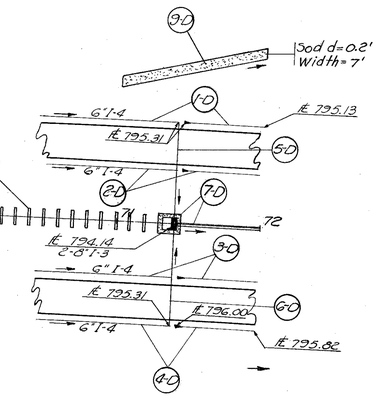
STATE	PROJECT
OHIO	I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



(D) DRAINAGE

Ref. No.	Station From	Station To	Side	L-10 Sodding Sq. Yds.
8-D	57+00	58+00	Lt.	67
9-D	71+00	72+00	Lt.	78
10-D	58+00	59+00	Rt.	67
11-D	59+00	61+53	Rt.	197
12-D	60+00	61+00	Rt.	67
13-D	61+68	64+00	Rt.	438
14-D	64+00	66+50	Rt.	612
15-D	69+40	71+40	Med.	53
Total				1579



Old Vineyard

(D) DRAINAGE

Note: See Sht. # 111 for Details

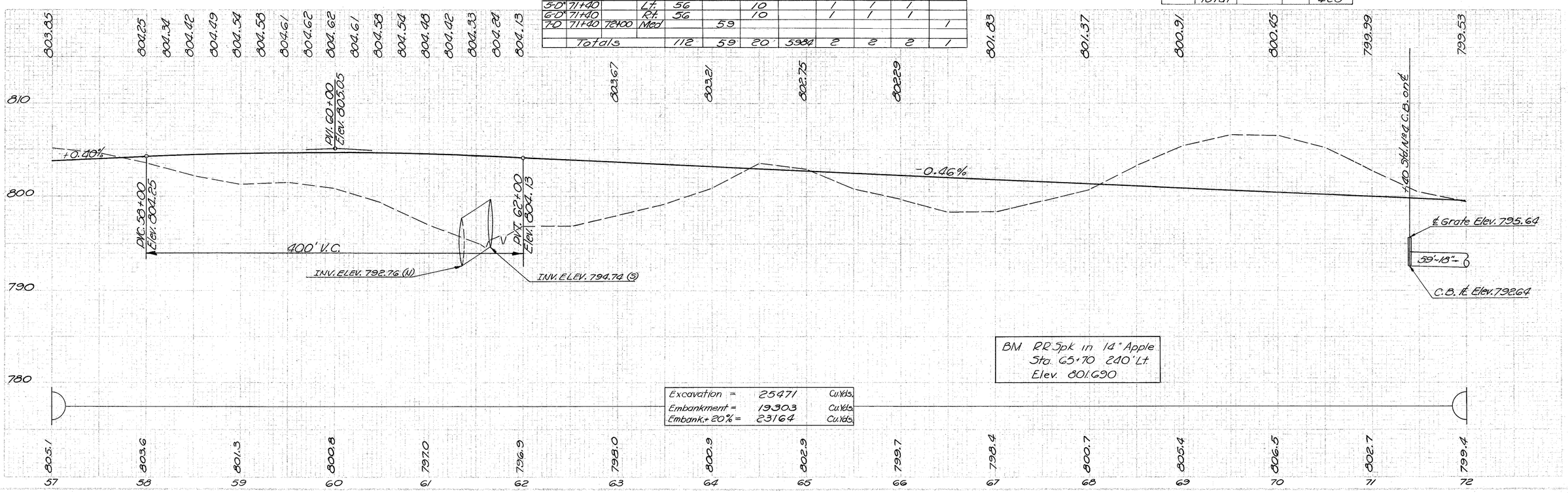
Ref. No.	Station From	Station To	Side	I-2 8" Cl. A St. Sewer Under Rds. & Str. M&S (Lb.)	I-2 18" Cl. B Storm Sewer	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Under-drains	I-5 6" 90° Bend	I-5 6"x3" Increaser	I-5 8"x8"x6" Tee	I-8 Std. A 1.96 Catch Basin
				Lin. Ft.				Each			
1-D*	57+00	72+00	71' Lt.				1496				
2-D*	57+00	72+00	37' Lt.				1496				
3-D*	57+00	72+00	37' Rt.				1496				
4-D*	57+00	72+00	71' Rt.				1496				
5-D*	71+40		Lt.	56		10		1	1	1	
6-D*	71+40		Rt.	56		10		1	1	1	
7-D	71+40	72+00	Med.		59						1
Totals				112	59	20	5984	2	2	2	1

(G) GUARD RAIL. I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-G	61+02	63+52	Lt.	250
2-G	60+22	61+97	Rt.	175
	Total			425

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Size	Lgth.	Details on Sheet
26	61+50	Pipe	60"	208'	102

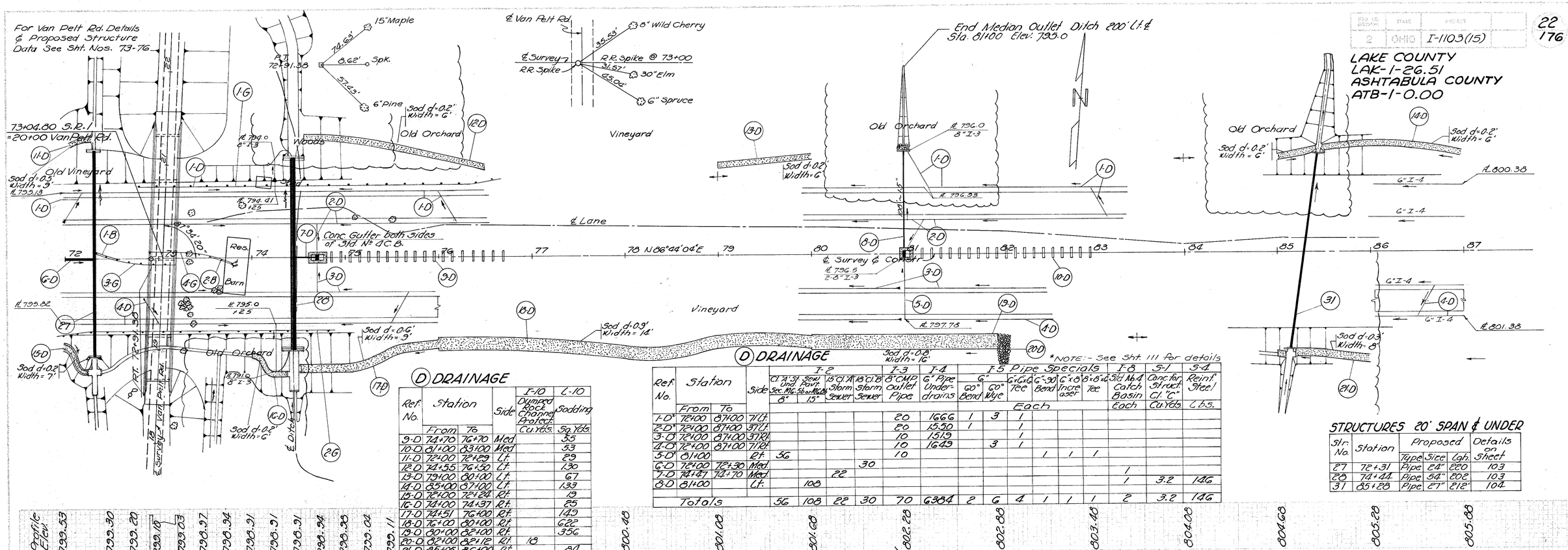


BM RR Spk in 14" Apple
Sta. 65+70 240' Lt.
Elev. 801.690

Excavation =	25471	Cu. Yds.
Embankment =	19303	Cu. Yds.
Embank. + 20% =	23164	Cu. Yds.

ASHTABULA COUNTY 57+00 - 72+00

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-10 Dumped Rock Channel Protect. Cu.Yds.	L-10 Sodding Sq.Yds.
9-D	74+70	76+70	Med		35
10-D	81+00	83+00	Med		53
11-D	72+00	72+29	Lt.		29
12-D	74+55	76+50	Lt.		130
13-D	79+00	80+00	Lt.		67
14-D	85+00	87+00	Lt.		133
15-D	72+00	72+24	Rt.		19
16-D	74+00	74+37	Rt.		25
17-D	74+51	76+00	Rt.		149
18-D	76+00	80+00	Rt.		622
19-D	80+00	82+00	Rt.		356
20-D	82+00	82+12	Rt.	18	
21-D	85+05	86+00	Rt.		84
Totals				18	1722

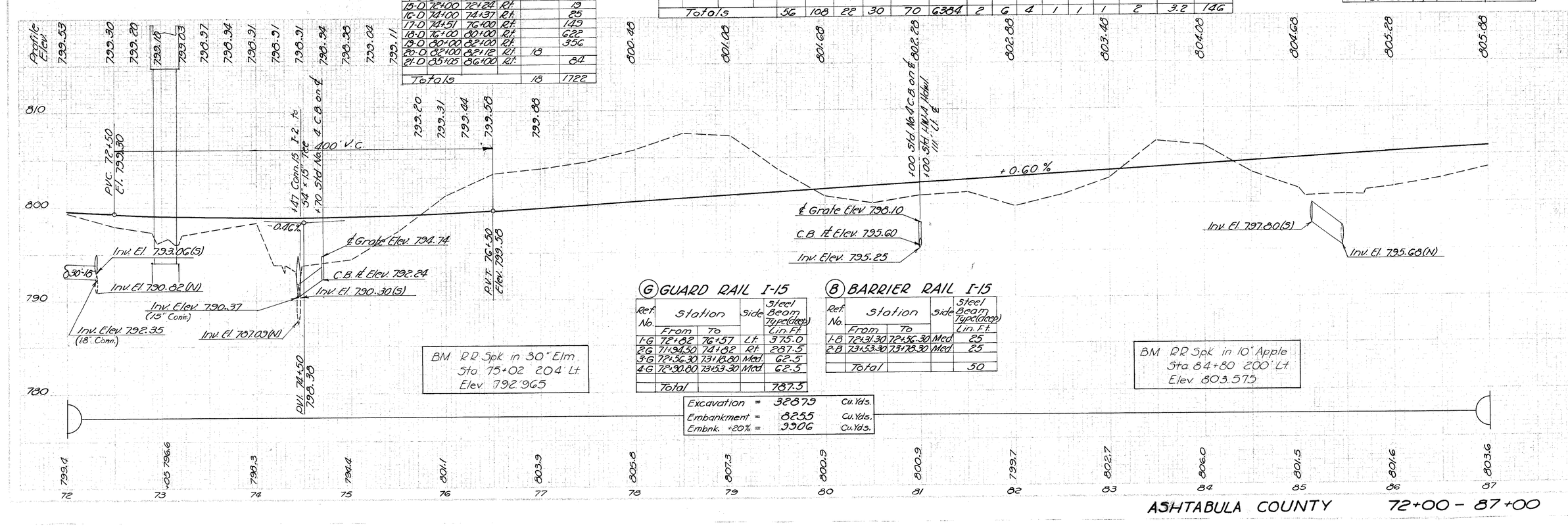
(D) DRAINAGE

*NOTE:- See Sht. 111 for details

Ref. No.	Station From	Station To	Side	I-2 Cl "A" Std. Sec. Mk. 8"	I-2 Sewer Pavt. Sec. Mk. 15"	I-2 15 Cl "A" Storm Sewer	I-2 18 Cl "B" Storm Sewer	I-3 8" CMP Outlet Pipe	I-4 6" Pipe Underdrains	I-5 Pipe Specials 6" 60° Bend	I-5 6" 60° Wye	I-5 6"x6"x6" Tee	I-5 6"x90° Bend	I-5 6"x8" Increaser	I-5 8"x8"x6" Tee	I-8 Std. No. 4 Catch Basin Each	I-5.1 Conc. for Struct. Cl. "C" Cu.Yds.	I-5.4 Reinf. Steel Lbs.
				Each														
1-D*	72+00	87+00	71 Lt.					20	1666	1	3	1						
2-D*	72+00	87+00	37 Rt.					20	1530	1		1						
3-D	72+00	87+00	37 Rt.					10	1519			1						
4-D	72+00	87+00	71 Rt.					10	1649		3	1						
5-D	81+00		12 Rt.	56				10					1	1	1			
6-D	74+00	72+30	Med				30									1		
7-D	74+47	74+70	Med			22										1		
8-D	81+00		Lt.		108											1	3.2	146
Totals				56	108	22	30	70	6384	2	6	4	1	1	1	2	3.2	146

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgh.	Details on Sheet
27	72+31	Pipe	24"	220	103
28	74+44	Pipe	54"	202	103
31	85+28	Pipe	27"	212'	104



(G) GUARD RAIL I-15

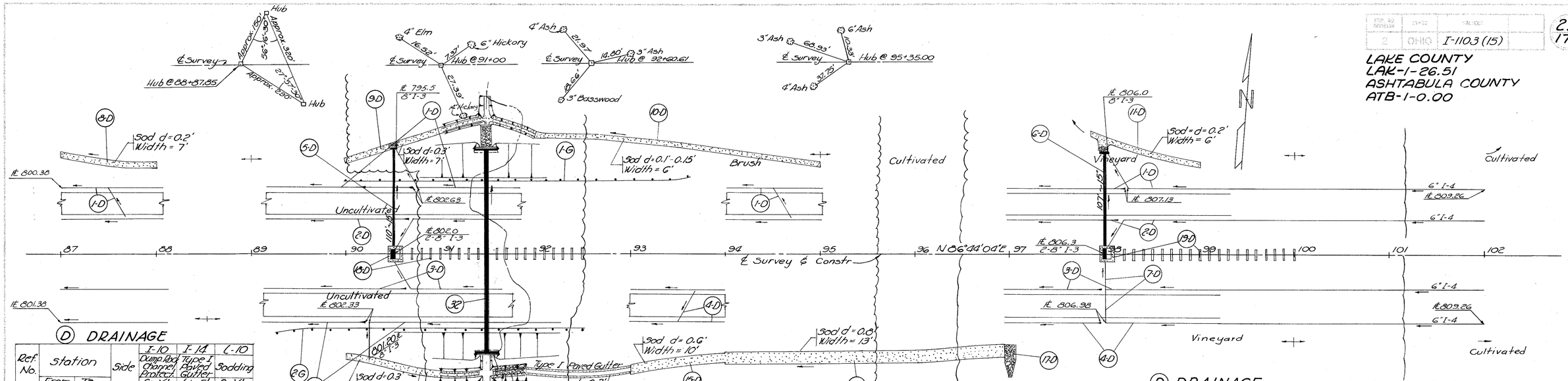
Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-G	72+82	76+57	Lt.	375.0
2-G	77+94.50	79+62	Rt.	287.5
3-G	72+36.30	73+18.80	Med	62.5
4-G	72+30.80	73+93.30	Med	62.5
	Total			787.5

(B) BARRIER RAIL I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-B	72+31.30	72+56.30	Med	25
2-B	73+53.30	73+78.30	Med	25
	Total			50

Excavation =	32879	Cu.Yds.
Embankment =	8255	Cu.Yds.
Embnk. +20% =	9906	Cu.Yds.

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-10 Dump Rock Channel Protect. Cu. Yds.	I-14 Type I Paved Gutter Lin. Ft.	L-10 Sodding Sq. Yds.
8-D	87+00	88+00	Lt.			78
9-D	90+00	91+46	Lt.			113
10-D	91+50	95+00	Lt.			234
11-D	97+85	99+00	Lt.			77
12-D	90+00	91+40	Rt.			109
13-D	91+55	91+90	Rt.	18		
14-D	91+90	93+00	Rt.		110	24
15-D	93+00	94+00	Rt.			111
16-D	94+00	97+00	Rt.			434
17-D	97+00		Rt.	19		
18-D	90+50	92+50	℄			53
19-D	98+00	100+00	℄			53
Totals				37	110	1286

(G) GUARD RAIL I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-G	90+00	93+62.50	Lt.	362.5
2-G	89+25	92+50	Rt.	325.0
	Total			687.5

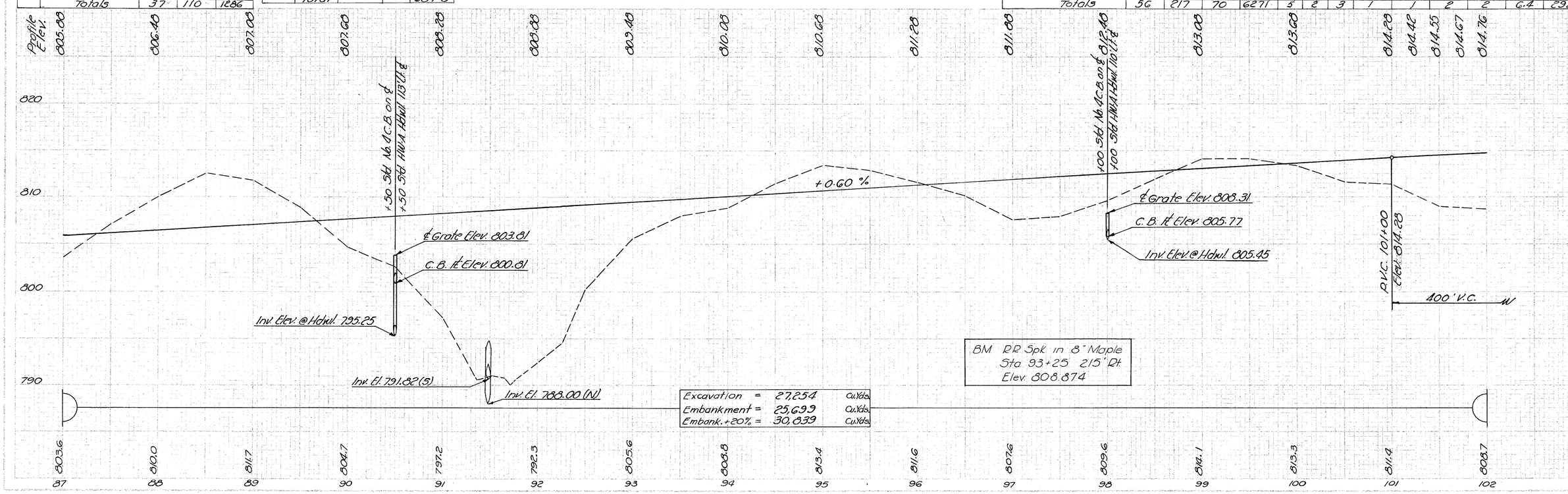
STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Size	Lgh.	Details on Sheet
32	91+48	Pipe	54"	218'	105

(D) DRAINAGE

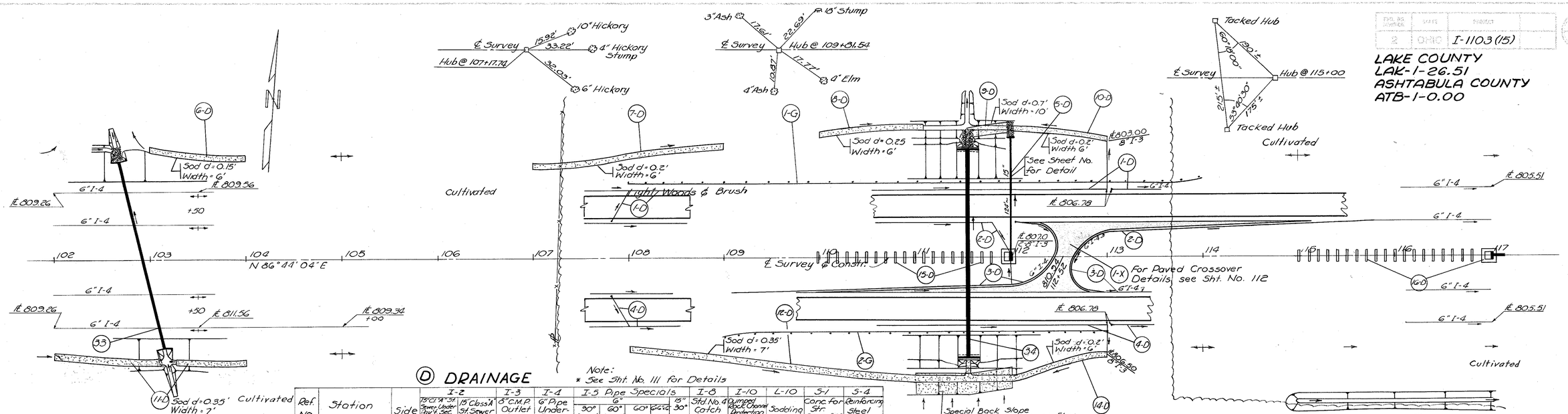
* Note: See Sht. No 111 for Details

Ref. No.	Station From	Station To	Side	I-2 Class "A" 18" Sewer Pipe Lin. Ft.	I-2 Class "A" 36" Sewer Pipe Lin. Ft.	I-3 C.M.P. Outlet Pipe Lin. Ft.	6" Pipe Under Drains Lin. Ft.	I-5 Pipe Specials 6" 60° Bend Each	6" 30° Bend Each	6" 60° Wye Each	6"x6" Increaser Each	6"x6"x6" Tee Each	I-8 Std. No. 4 Catch Basin Each	I-10 Dumped Rock Chan. Protection Cu. Yds.	S-1 Conc. for Str. Class "C" Cu. Yds.	S-4 Reinf. Steel Lbs.
1-D*	87+00	102+00	71' Lt.			20	1639	2		2						
2-D*	87+00	102+00	37' Lt.			20	1554	2								
3-D*	87+00	102+00	37' Rt.			10	1521	1								
4-D*	87+00	102+00	71' Rt.			10	1557		1	1						
5-D	90+50		Lt.		110								1	2	3.2	146
6-D	98+00		Lt.		107								1		3.2	146
7-D*	98+00		Rt.	56		10			1		1	1				
Totals				56	217	70	6271	5	2	3	1	1	2	2	6.4	292



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-110.3 (15)	

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



Note:
* See Sht. No. 111 for Details

D DRAINAGE

Ref. No.	Station From	Station To	Side	I-2 18" Cl "A" or 15" Class "A" Pipe Under Fill Over 8'-0" or 15" Class "A" Sewer Sec MC-8	I-2 15" Class "A" St Sewer Sec MC-8	I-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Under-Drains	I-5 Pipe Specials 30° Bend	60° Bend	60° Wye	60° Tee	15" 30° Bend	I-8 Std. No. 4 Catch Basin	I-10 Dumped Rock Channel Protection	L-10 Sodding	S-1 Conc. for Str. Class "C"	S-4 Reinforcing Steel
						Lin. Ft.		Each					Each	Cu. Yds.	Sq. Yds.	Cu. Yds.	Lbs.
1-D*	102+00	117+00	71' Lt.			10	1571	1		1							
2-D*	102+00	117+00	37' Lt.			10	1452		1								
3-D*	102+00	117+00	37' Rt.			10	1592				1						
4-D*	102+00	117+00	71' Rt.			10	1553	1		1							
5-D*	112+00		Lt.	88	36							2	1	16		32	146
6-D	103+00	104+00	Lt.												67		
7-D	107+00	109+00	Lt.												134		
8-D	110+00	111+10	Lt.												74		
9-D	111+57	112+00	Lt.												48		
10-D	112+00	113+00	Lt.												67		
11-D	102+00	104+00	Rt.												148		
12-D	108+00	111+00	Rt.												234		
13-D	111+00	112+00	Rt.												245		
14-D	112+00	113+00	Rt.												67		
15-D	110+00	112+00	Med.												53		
16-D	115+00	117+00	Med.												53		
	Totals			88	36	40	6168	2	1	2	1	2	1	16	1190	32	146

STRUCTURES 20' SPAN & UNDER

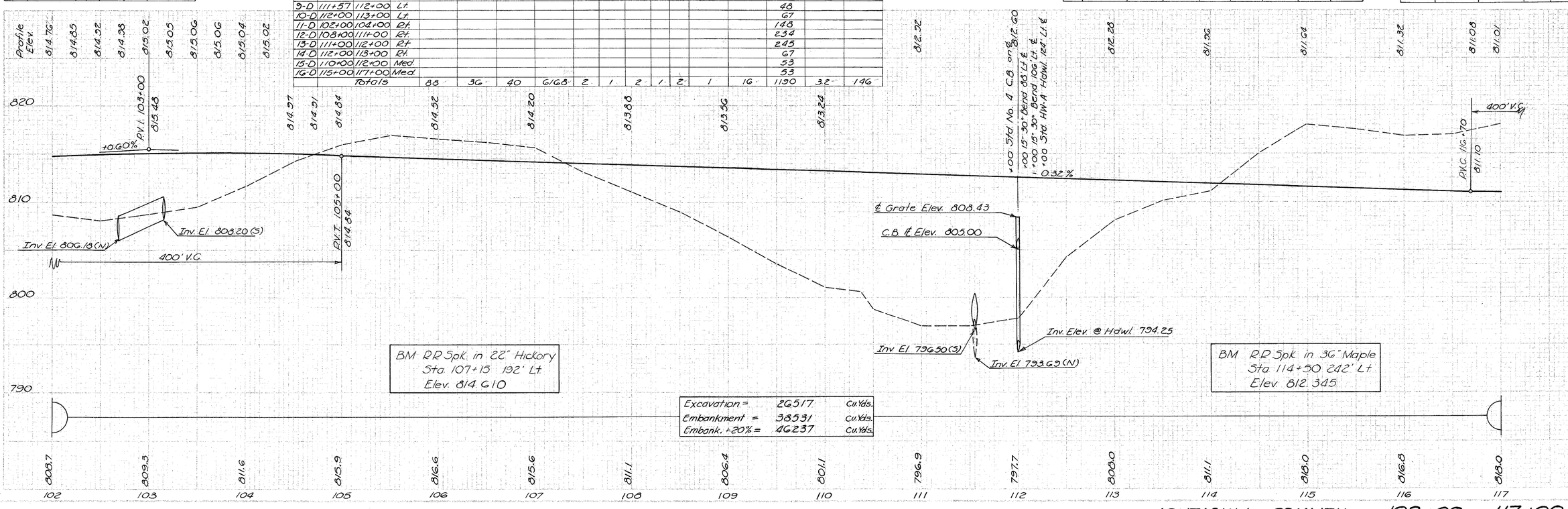
Str. No.	Station	Proposed Type	Size	Lgh.	Details on Sheet
33	102+32	Pipe	30"	202	106
34	111+55	Pipe	48"	216	107

X MEDIAN CROSSOVER PAVEMENT

Ref. No.	Station	E-1 Compact Subgrd.	T-31 No. 4G Aggreg.	T-31 No. 6 Aggreg.	T-31 Bitum. Mater.	B-33 3"	I-15 5"	I-22 6"
		Sq. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Sq. Yds.	Cu. Yd.	Cu. Yd.
1-X	112+52	473	3.8	3.8	236.6	473	70.6	108.5

G GUARD RAIL I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (Deep)
				Lin. Ft.
1-G	108+00	114+00	Lt.	600
2-G	109+00	113+00	Rt.	400
	Total			1000



Excavation =	26517	cu. Yds.
Embankment =	38531	cu. Yds.
Embank. +20% =	46237	cu. Yds.

ASHTABULA COUNTY 102+00 - 117+00

FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Note: Marker to be furnished & erected on the left by State of Ohio before acceptance of this Project.

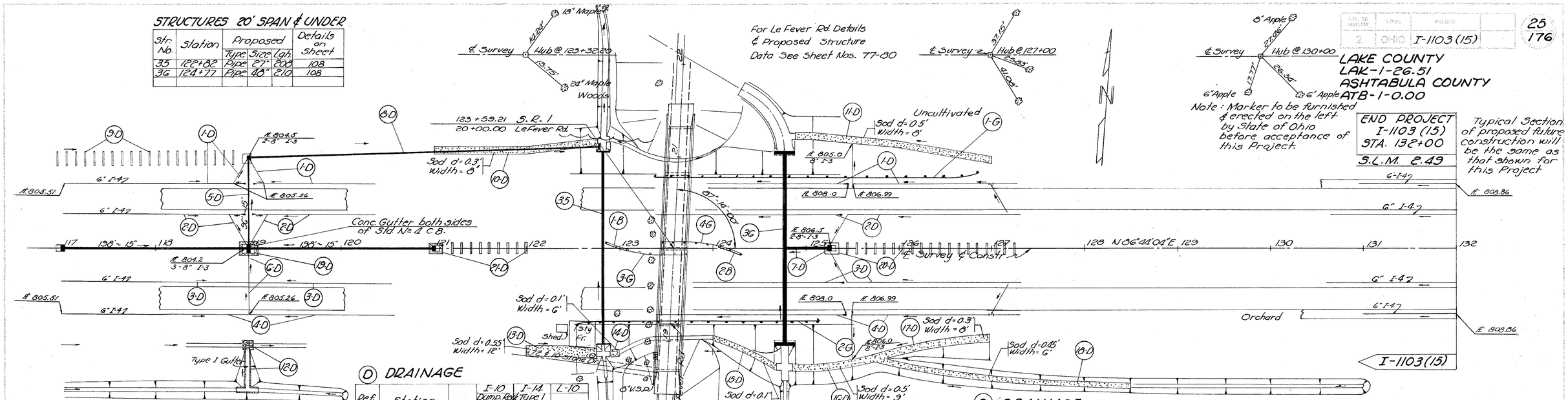
END PROJECT
I-1103 (15)
STA. 132+00

S.L.M. 2.49

Typical Section of proposed future construction will be the same as that shown for this Project

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgh.	Details on Sheet
35	122+82	Pipe	27"	200	108
36	124+77	Pipe	48"	210	108



(G) GUARD RAIL I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-G	123+39	126+89	Lt.	350.0
2-G	122+50	125+14	Rt.	262.5
3-G	123+10.7	123+73.2	Med.	62.5
4-G	123+45.2	124+07.7	Med.	62.5
Total				737.5

(B) BARRIER RAIL I-15

Ref. No.	Station From	Station To	Side	Steel Beam Type (deep) Lin. Ft.
1-B	122+85.7	123+10.7	Med.	25
2-B	124+07.7	124+32.7	Med.	25
Total				50

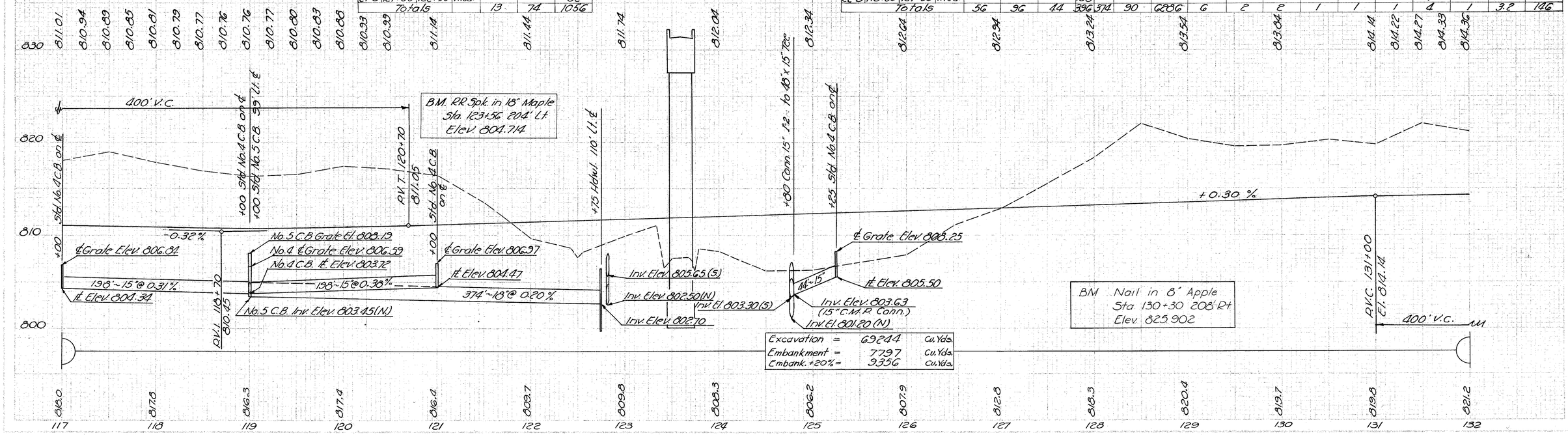
(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-10 Dump Rock Channel Protection Cu.Yds.	I-14 Type I Paved Gutter Lin.Ft.	L-10 Sodding Sq.Yds.
9-D	117+00	119+00	Lt.			51
10-D	121+00	122+77	Lt.			157
11-D	124+87	127+00	Lt.			189
12-D	118+88	119+12	Rt.	13	74	16
13-D	122+00	122+75	Rt.			100
14-D	122+90	123+00	Rt.			7
15-D	124+00	124+62	Rt.			46
16-D	124+85	125+70	Rt.			85
17-D	125+70	127+00	Rt.			116
18-D	125+70	128+50	Rt.			187
19-D	119+00		Med.			17
20-D	125+25	127+25	Med.			33
21-D	121+00	122+00	Med.			32
Totals				13	74	1056

(D) DRAINAGE

* Note: See Sheet 111 for Details

Ref. No.	Station From	Station To	Side	I-2 Class "A" Std. Pipe Culvert No. 4 (Lin. Ft.)	I-2 Class "A" Std. Pipe Culvert No. 4 (Lin. Ft.) 15"	I-2 15" Cl. "A" Storm Sewer (Lin. Ft.)	I-2 Class "B" Std. Pipe Culvert 15" (Lin. Ft.)	I-3 8" C.M.P. Outlet Pipe	I-4 6" Pipe Underdrains	I-5 Pipe Specials 6"x6" Wye (Each)	I-5 6" 90° Bend (Each)	I-5 6" 90° Bend (Each)	I-5 6"x6"x6" Tee (Each)	I-5 6"x6" Increaser (Each)	I-5 8"x6" Double Tee Branch (Each)	I-8 Std. No. 4 Catch Basin (Each)	I-8 Std. No. 5 Catch Basin (Each)	S-1 Conc. for Str. Class "C" (Cu.Yd.)	S-4 Reinf. Steel (Lbs.)
1-D*	117+00	132+00	71' Lt.					30	1606	3		1							
2-D*	117+00	132+00	37' Lt.					30	1585	2	1								
3-D*	117+00	132+00	37' Rt.					10	1524		1								
4-D*	117+00	132+00	71' Rt.					10	1571	1		1							
5-D	119+00		Lt.		96											1	1		
6-D*	119+00		Rt.	56				10					1	1	1				
7-D	124+80	125+25	Med.			44										1			
8-D	119+00	122+75	Lt.				374											3.2	146
21-D	117+00	119+00	Med.				198									1			
22-D	119+00	121+00	Med.				198									1			
Totals				56	96	44	396 374	90	6286	6	2	2	1	1	1	4	1	3.2	146

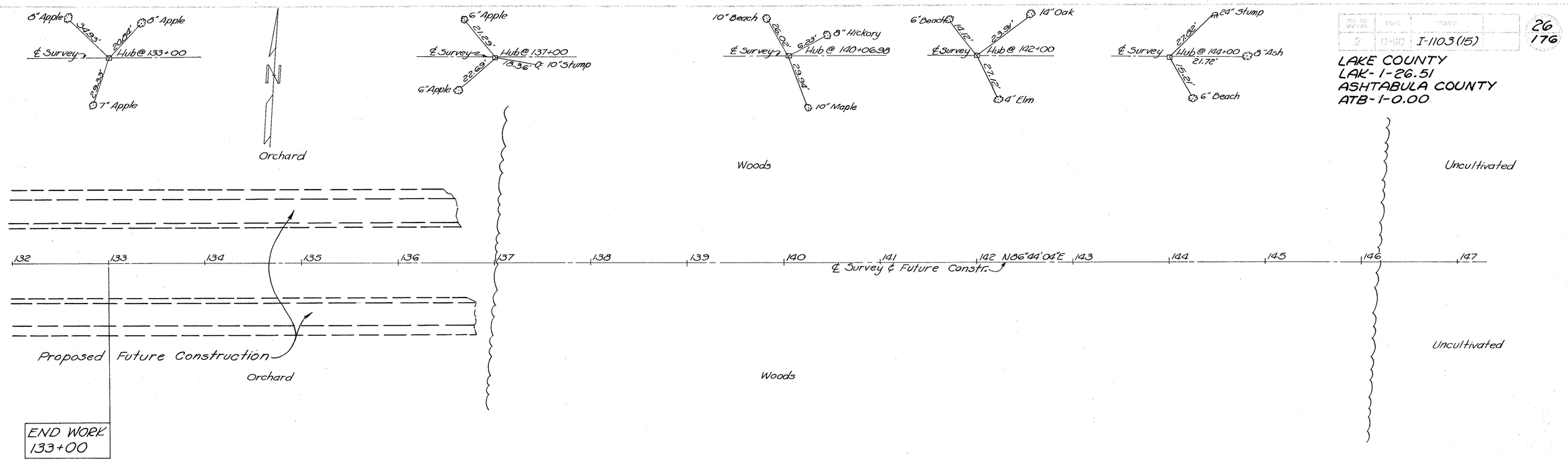


Excavation =	69244	Cu.Yds.
Embankment =	7797	Cu.Yds.
Embank. +20% =	9356	Cu.Yds.

ASHTABULA COUNTY 117+00 — 132+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



ASHTABULA COUNTY 132+00 - 147+00

01-M

W-10

LAK-90-27.31-29.21 ATB-90-0.00-2.50

2	0410	I-1103(15)		

27
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Seeding	
Lin.Ft.	Sq.Yds.

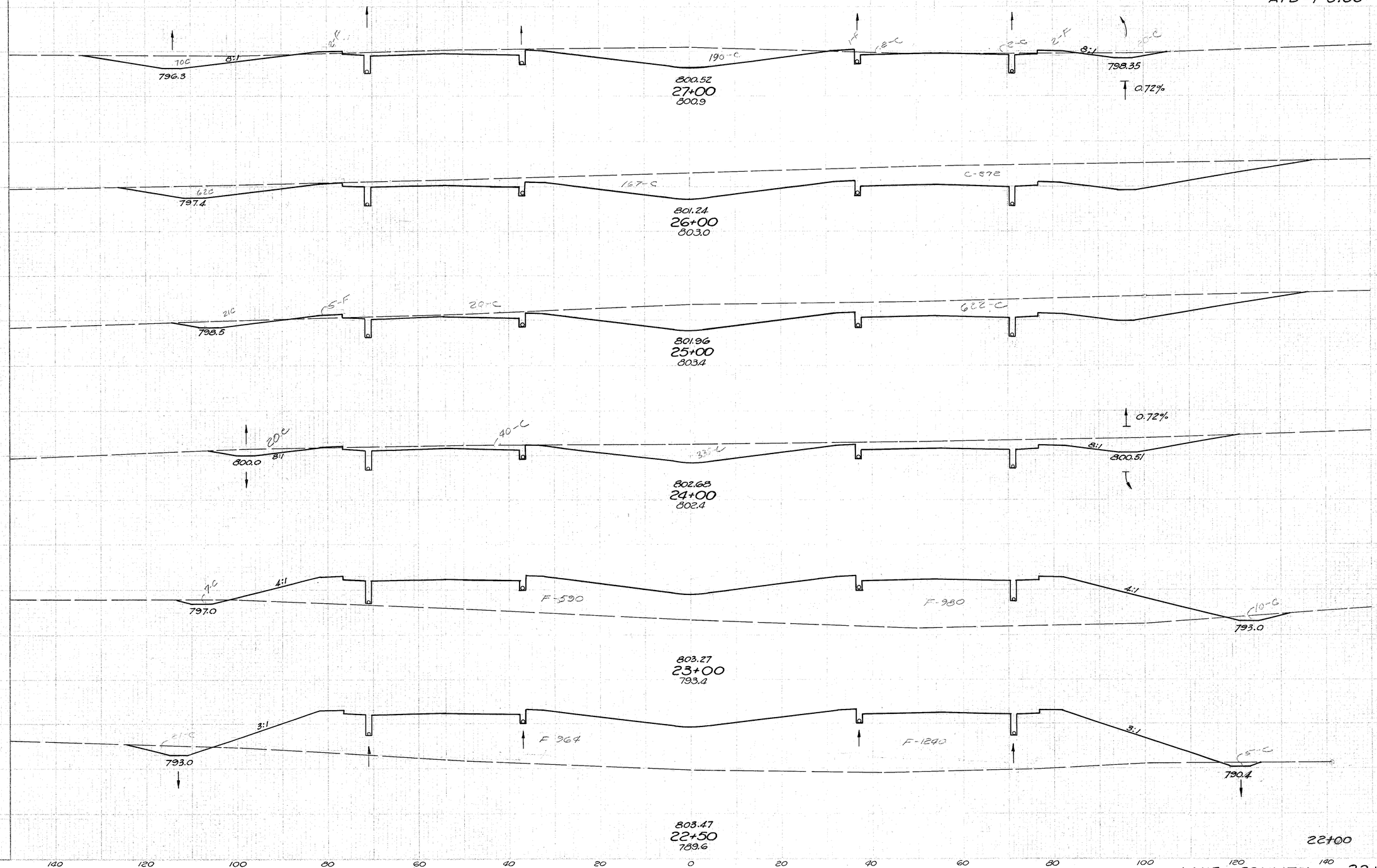
End Area		Cu. Yds.	
cut	Fill	Cut	Fill
50	2428		
		111	4457
70	2385		
		97	4135
35	2080		
		167	6267
55	1304		
		322	3228
119	439		
		220	813
0	0		

LAKE COUNTY 18+00 - 22+00

FED. ROAD DIST.	STATE	SHEET
2	OHIO	I-1103(15)

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

Seeding Lin. Ft.	Seeding Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		284	5		
				2009	9
		801	0		
				2711	9
		663	5		
				1959	9
		395	0		
				763	2908
		17	1570		
				40	3495
		26	2204		
				71	4289
		50	2428		

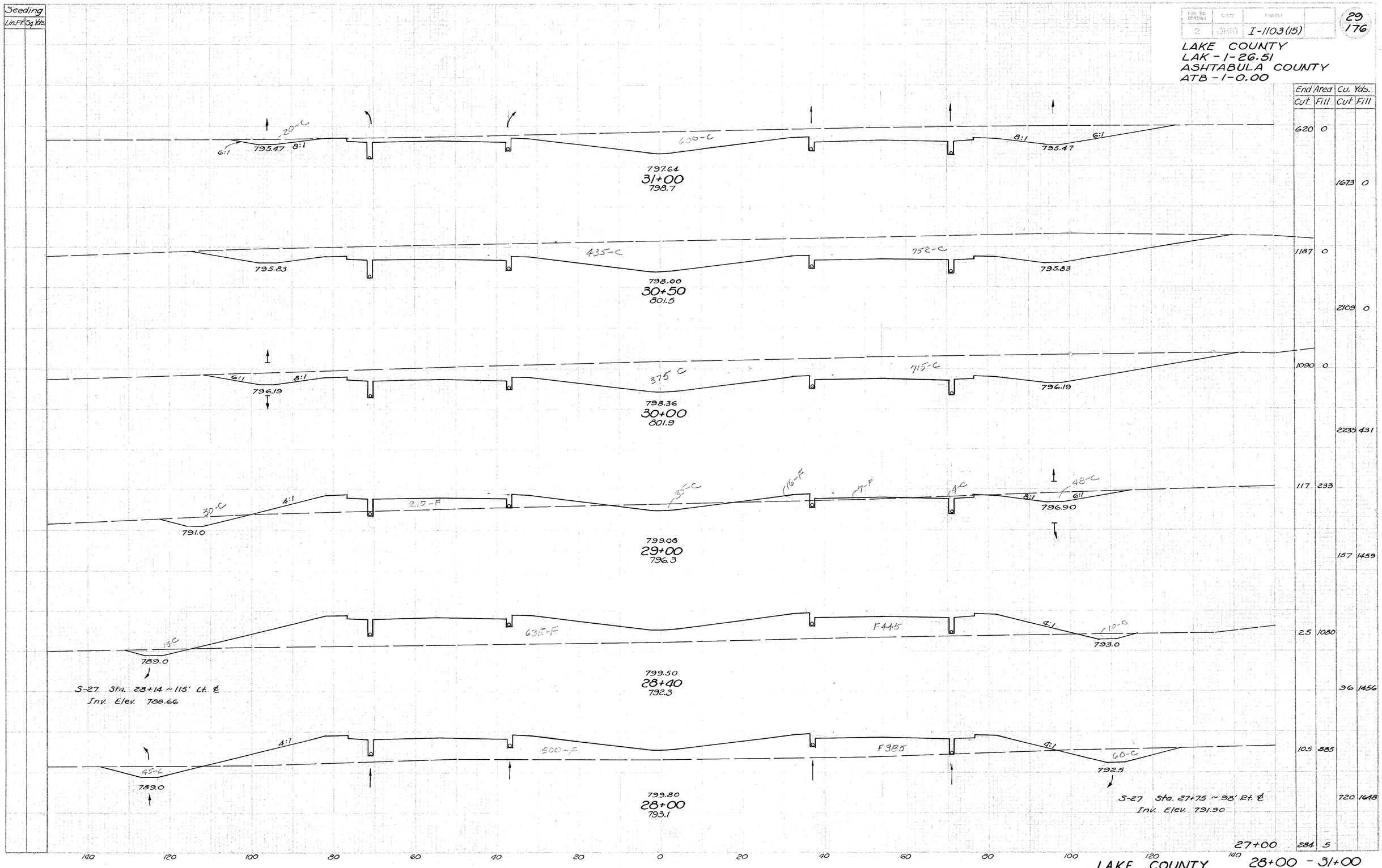


LAKE COUNTY 22+50 - 27+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

29
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



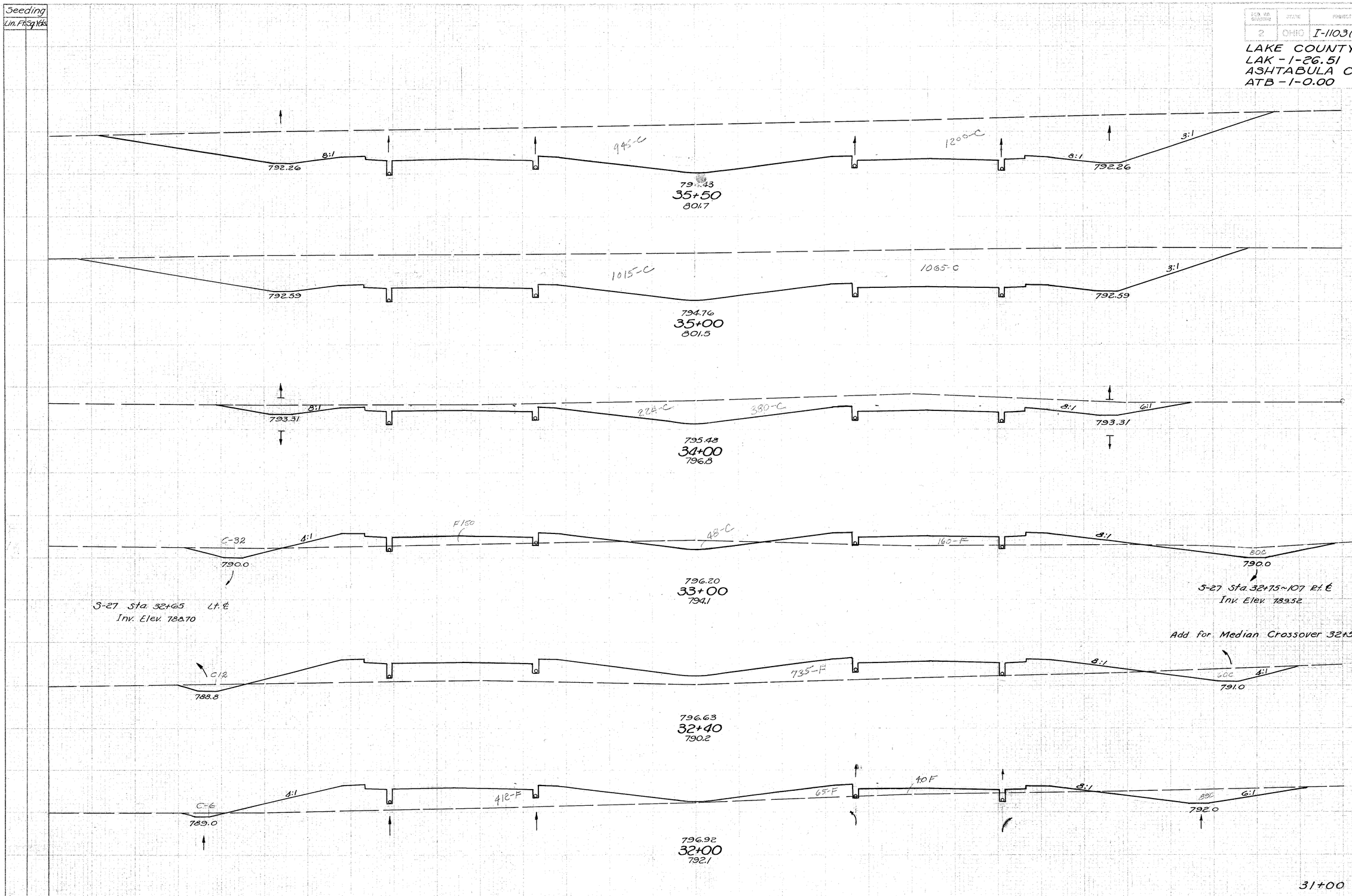
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	620	0		
			1673	0
	1187	0		
			2109	0
	1090	0		
			2235	431
	117	233		
			157	1459
	2.5	1080		
			36	1456
	105	885		
			720	1648
27+00	284	5		

LAKE COUNTY 28+00 - 31+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

30
176

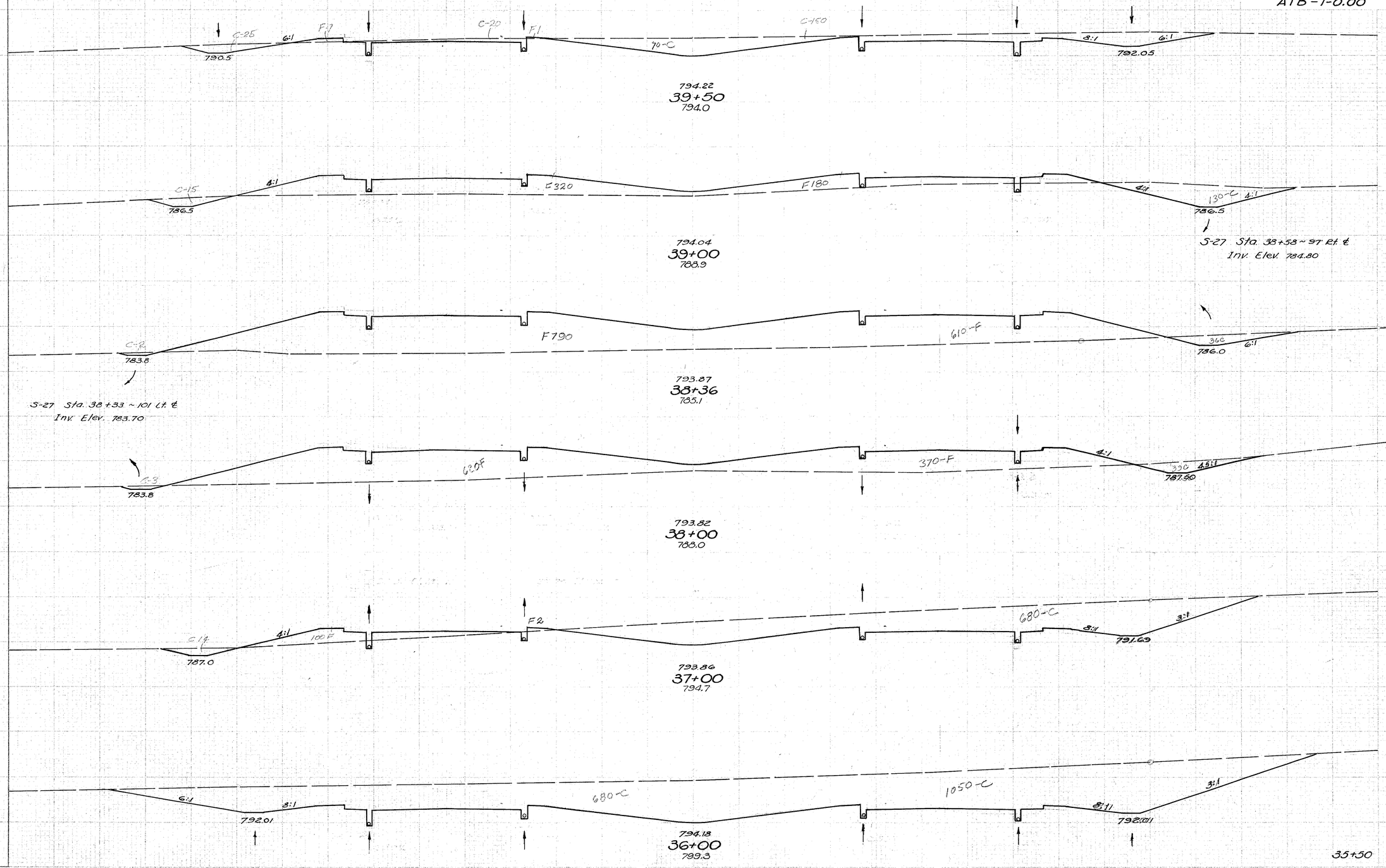
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Seeding	
Lin. Ft.	Sq. Yds.

FOR RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

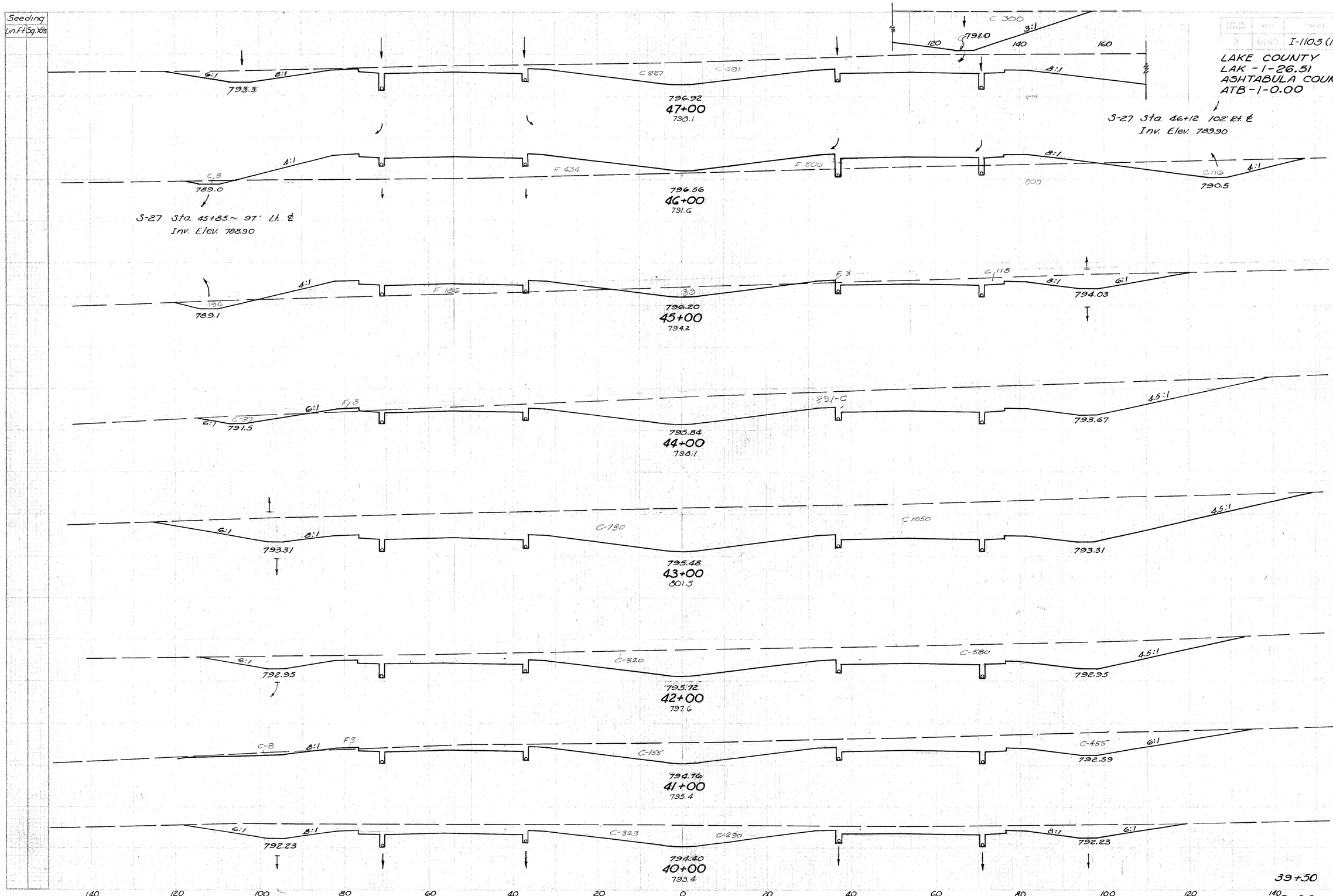


End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
265	8		
		380	471
145	300		
		217	2252
38	1400		
		54	1593
42	990		
		1363	2022
694	102		
		4489	188
1730	0		
		3588	0
35+50	2145	0	

LAKE COUNTY 36+00 - 39+50

I-1103 (15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
1018	0		
		2109	1191
121	643		
		593	1541
199	189		
		2087	363
928	8		
		5015	15
1780	0		
		4963	0
900	0		
		2811	6
618	3		
		2280	6
613	0		
		813	8
39+50			
265	8		

LAKE CO. 40+00 - 47+00

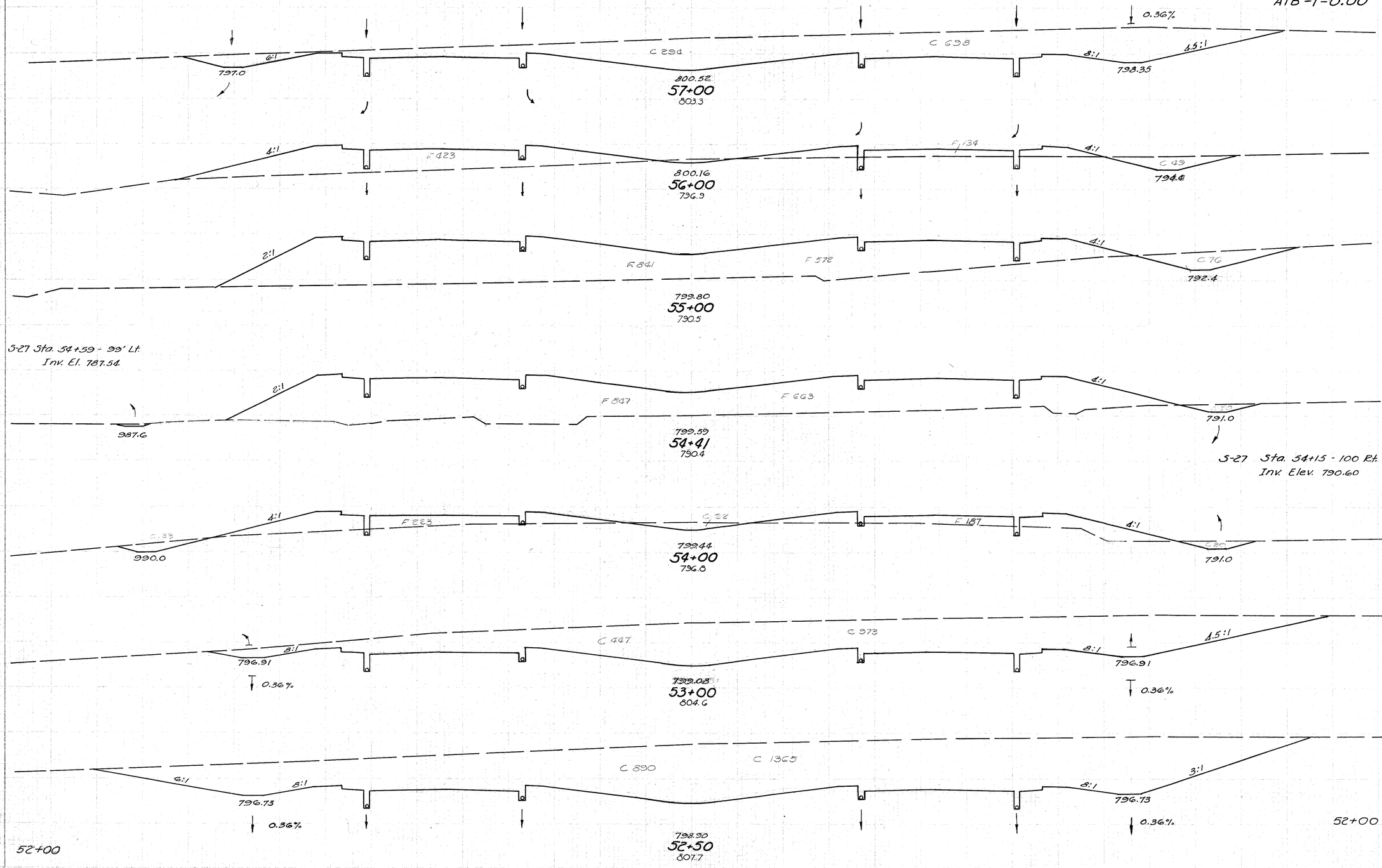
I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

LAKE COUNTY 48+00 - 52+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

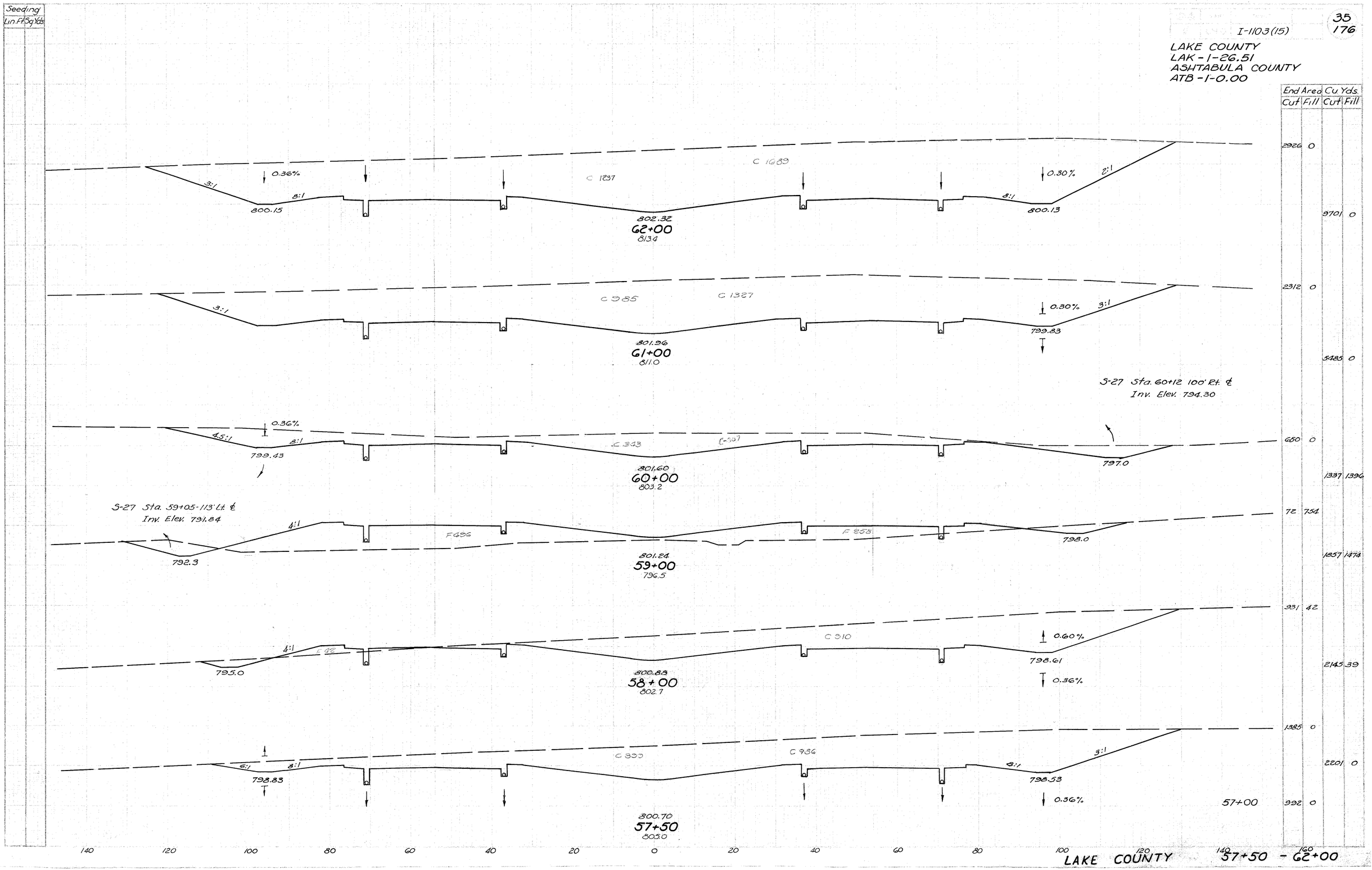


Seeding		End Area		Cu. Yds.	
Lin. Ft.	Sq. Yds.	Cut	Fill	Cut	Fill
		992	0		
				1945	1031
		58	557		
				243	3648
		76	1413		
				580	3194
		22	1510		
		66	1460		
		65	410		
		2750	759		
		1420	0		
		3402	0		
		2255	0		
		4249	0		
		2334	0		

LAKE COUNTY 52+50 - 57+00

I-110.3(15)

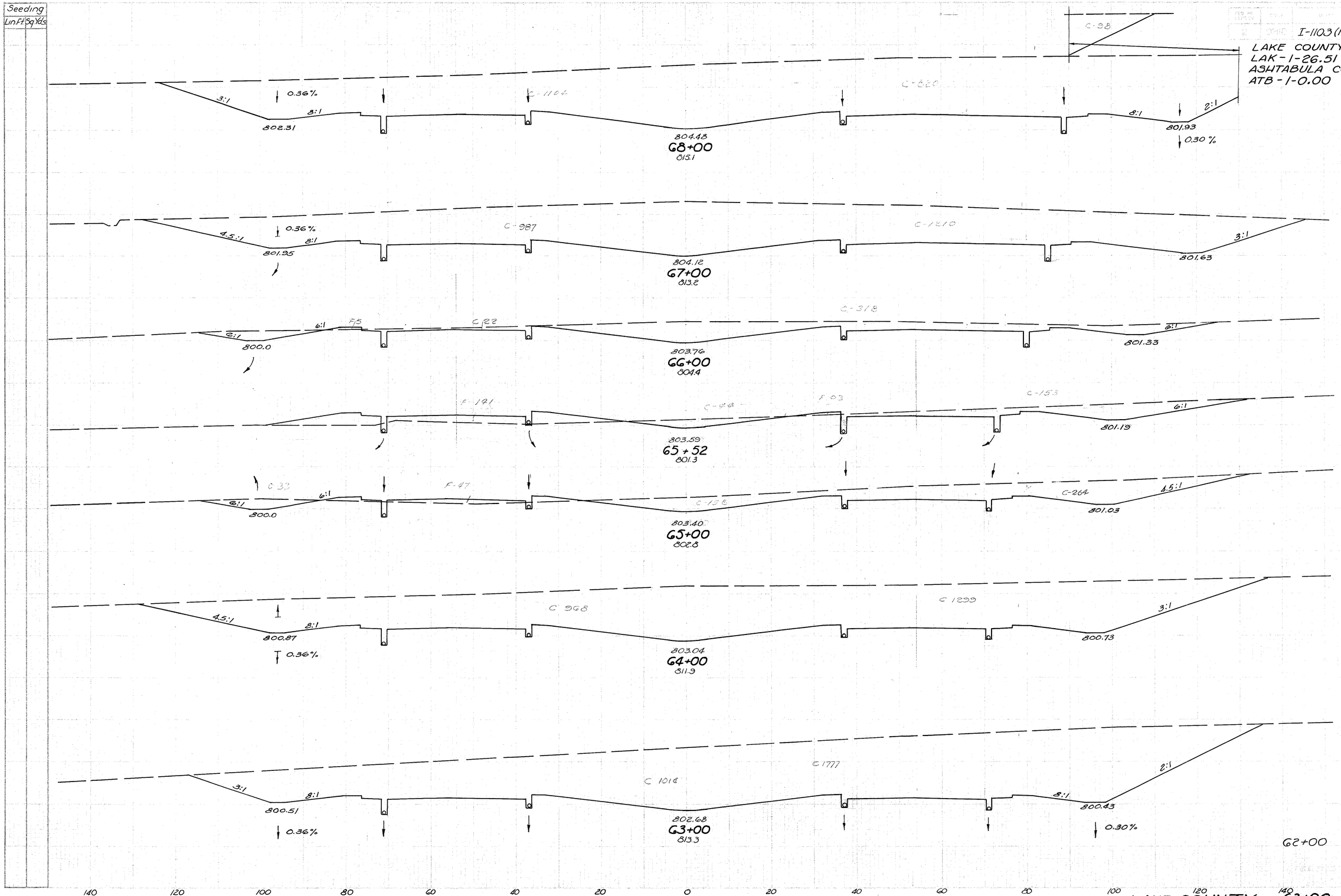
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



LAKE COUNTY 57+50 - 62+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

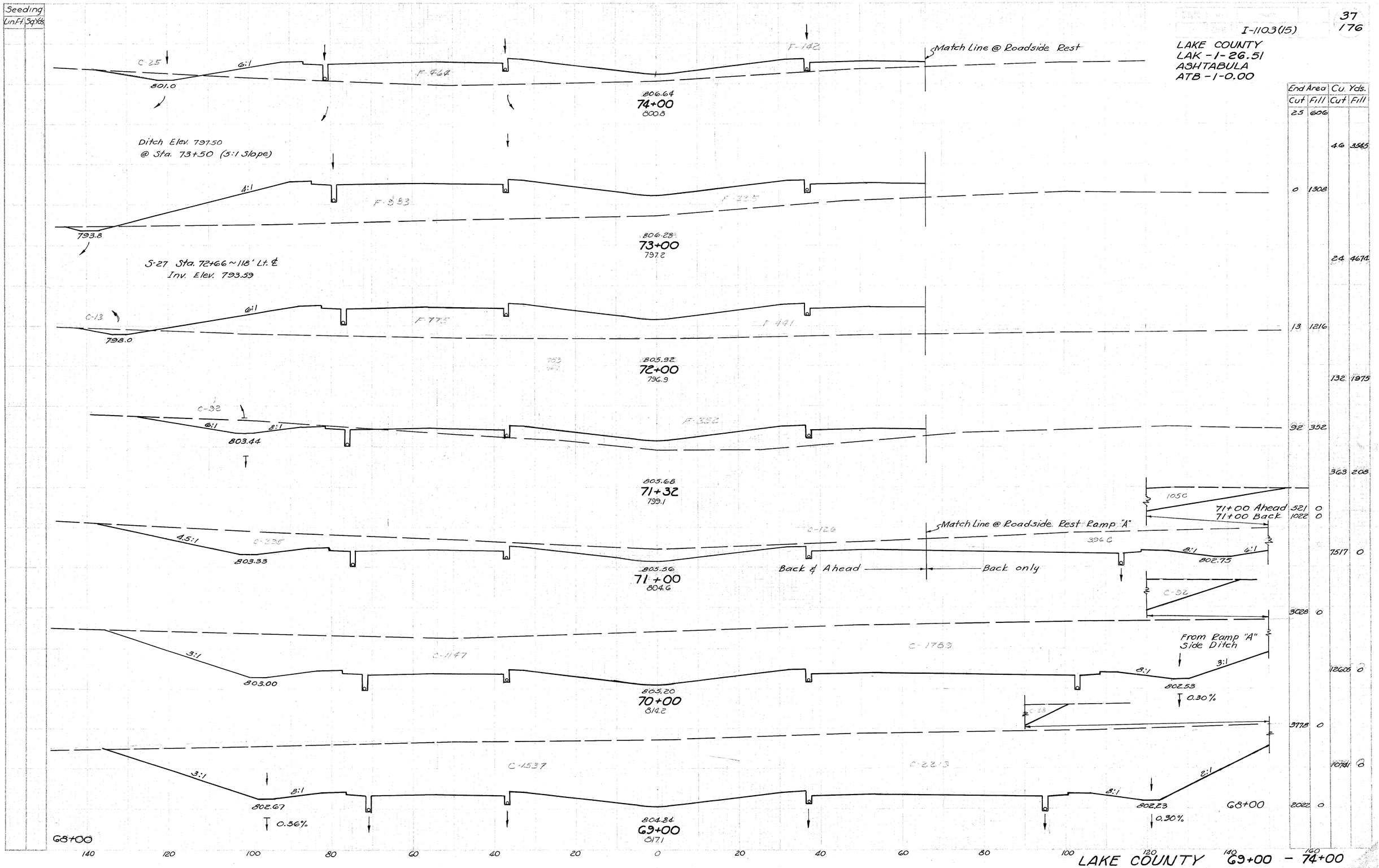


End Area		Cu Yds	
Cut	Fill	Cut	Fill
2022	0		
		7814	0
2197	0		
		4776	9
382	5		
		515	132
197	144		
		628	184
455	47		
		5041	87
2267	0		
		3367	0
2191	0		
		10588	0
2926	0		

LAKE COUNTY 63+00 - 68+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA
ATB-1-0.00

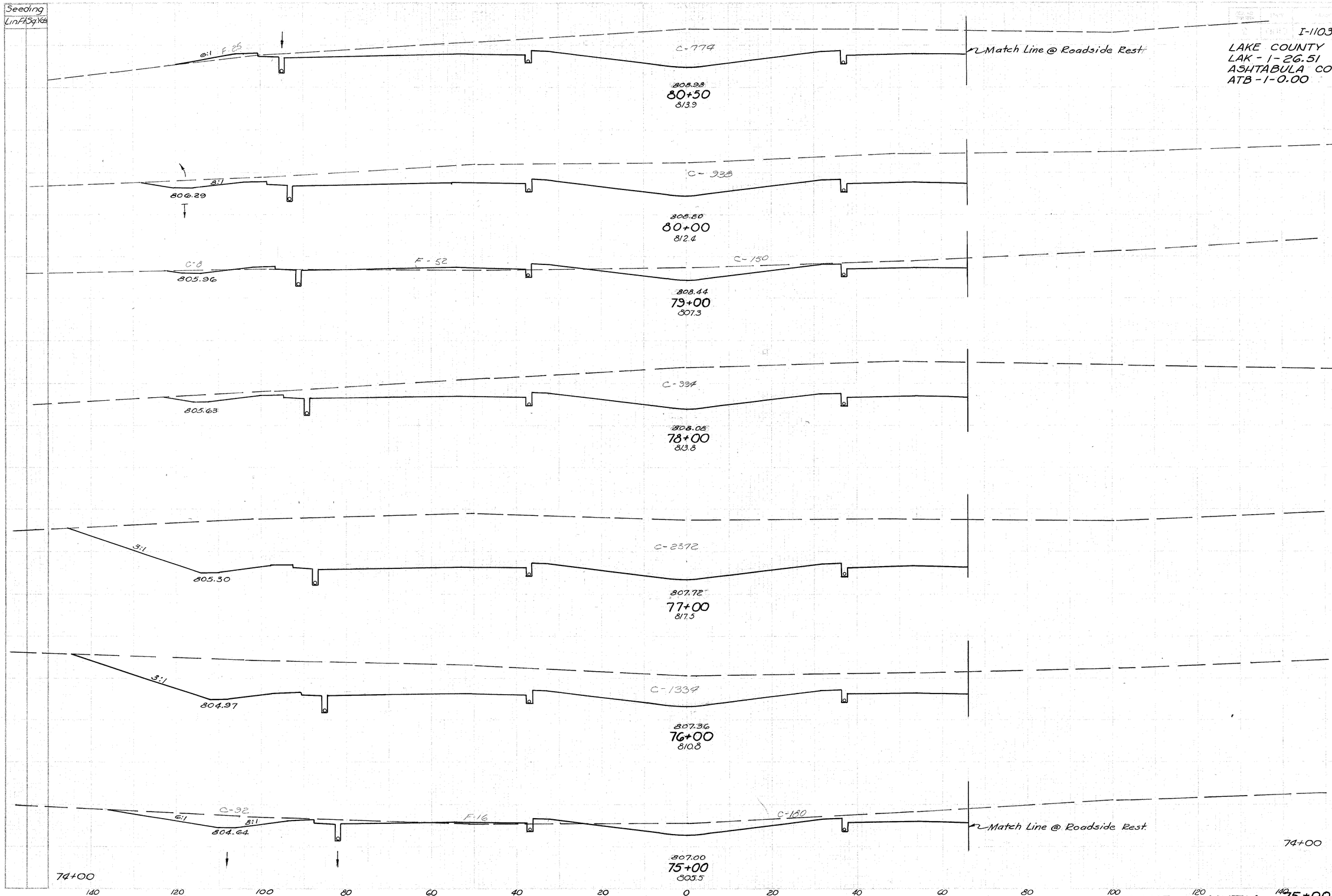


End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
25	606		
		46	3545
0	1308		
		24	4674
13	1216		
		132	1875
92	352		
		363	208
521	0		
1022	0		
		7517	0
3028	0		
		12608	0
3178	0		
		10741	0
2022	0		

LAKE COUNTY 69+00 - 74+00

I-1103(15)

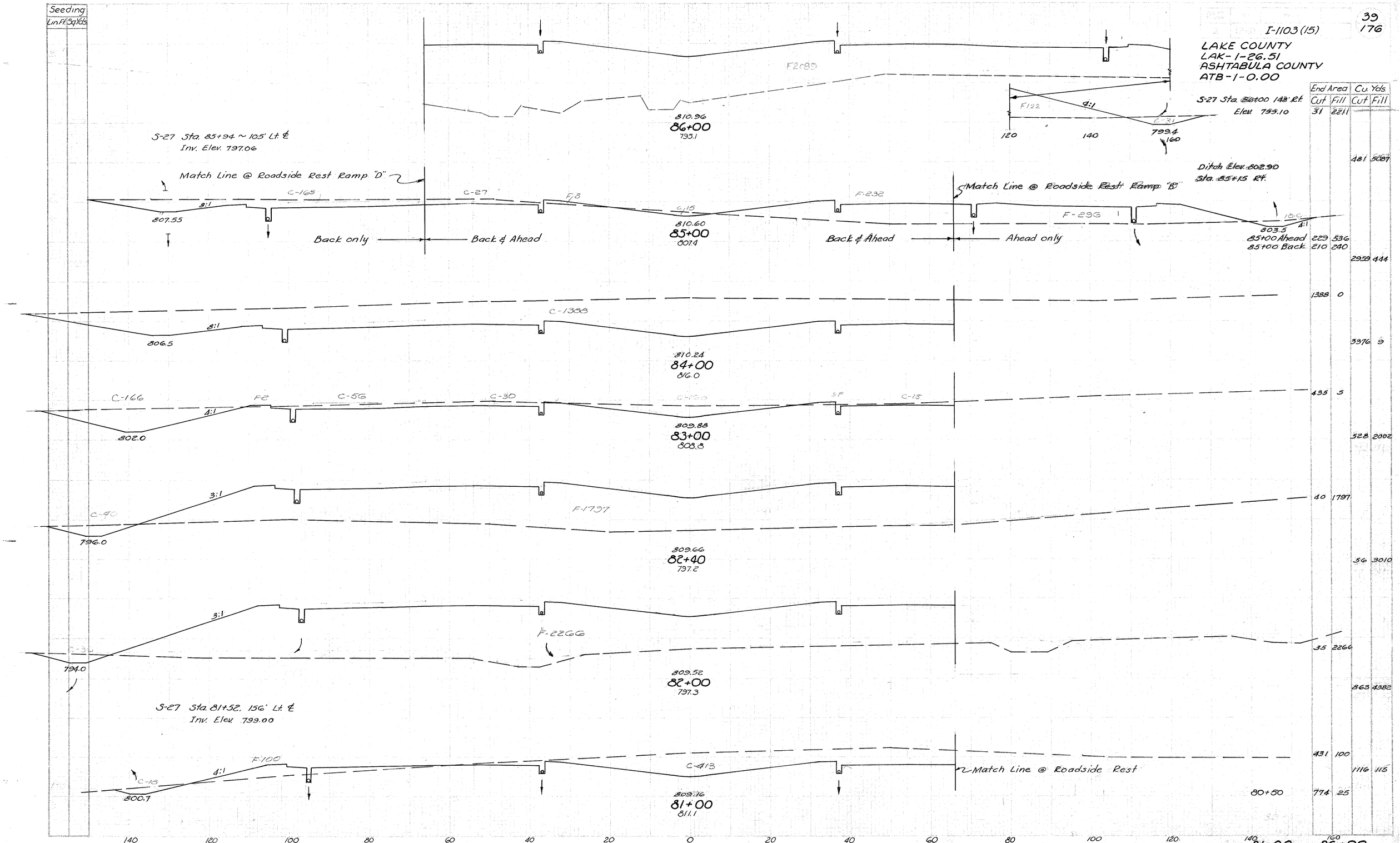
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
774	25		
		1585	23
938	0		
		2030	96
158	52		
		2133	96
394	0		
		6234	0
2372	0		
		6863	0
1334	0		
		2974	30
272	16		
		550	1152
74+00	25	606	

I-1103 (15)

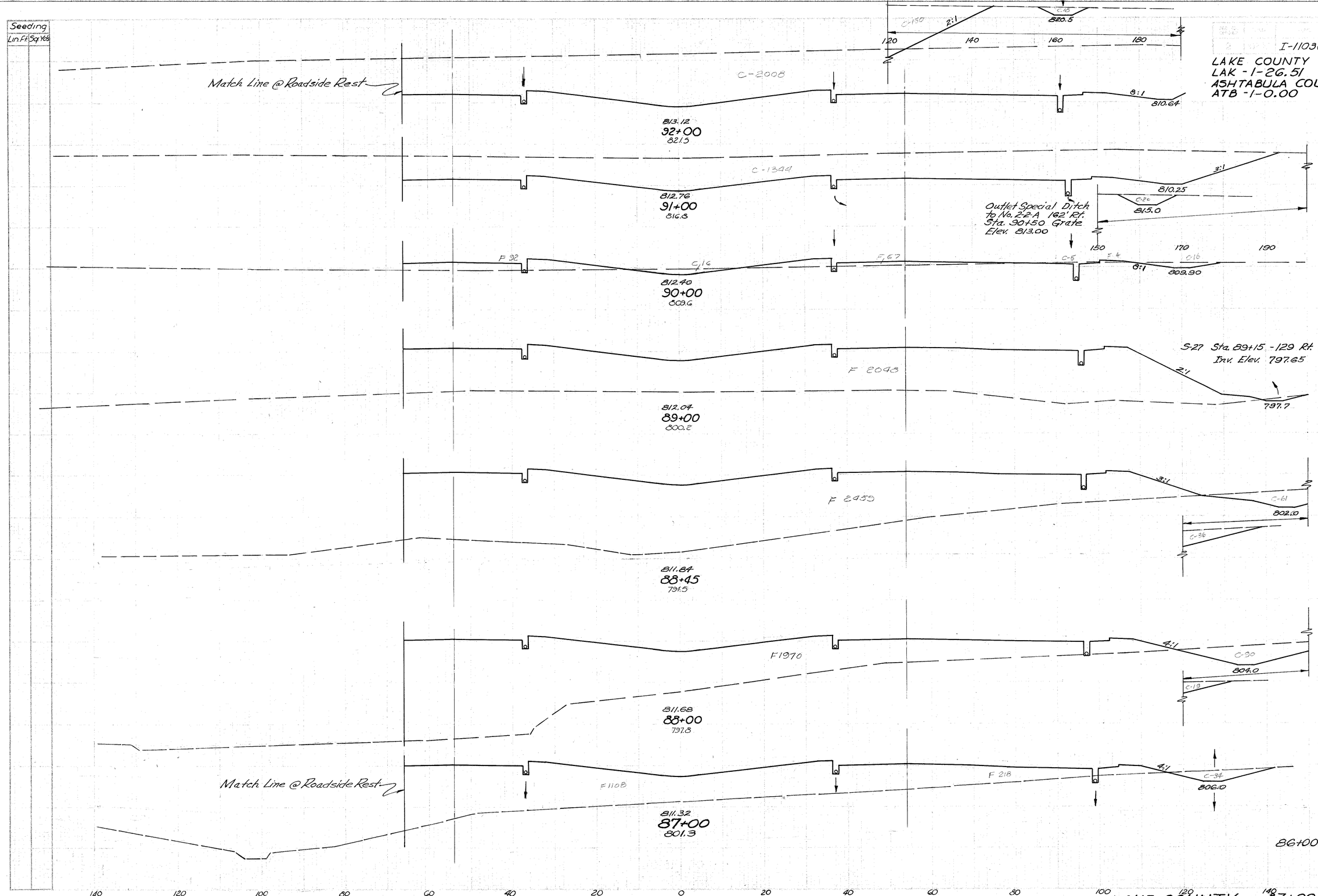
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



End Area Cut	End Area Fill	Cu Yds Cut	Cu Yds Fill
31	2811		
		481	5087
229	536		
210	240		
		2959	444
1388	0		
		3376	9
435	5		
		528	2002
40	1797		
		56	3010
35	2266		
		863	4382
431	100		
		1116	115
774	25		

I-1103(15)

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00

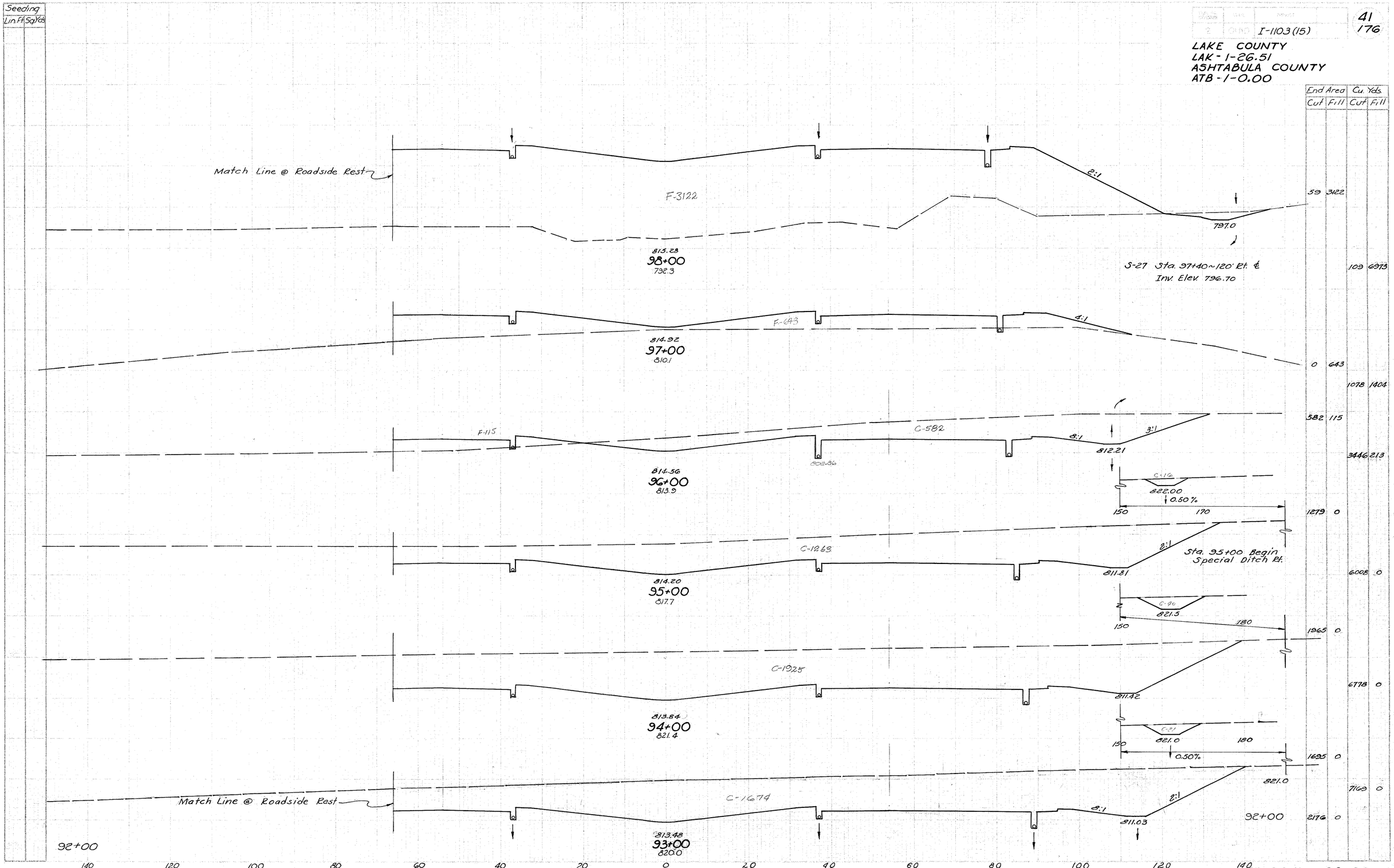


End Area Cut	End Area Fill	Cu Yds Cut	Cu Yds Fill
2176	0	6556	0
1364	0		
		2595	302
37	163		
		80	5947
6	2048		
		105	4591
97	2459		
		171	3691
109	1970		
		265	6104
34	1326		
		120	6550
86+00	31	2211	

LAKE COUNTY 87+00 - 92+00

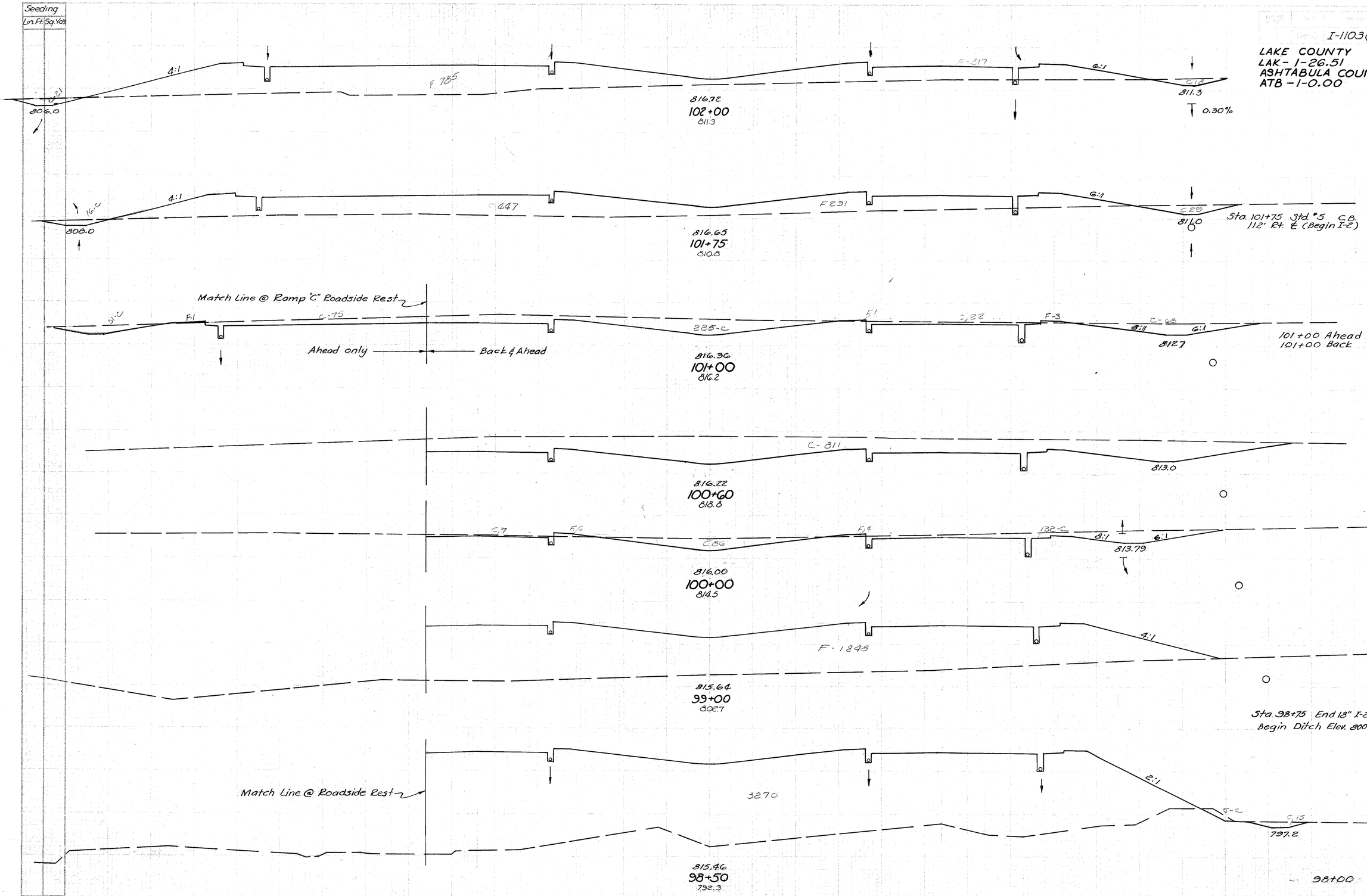
I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

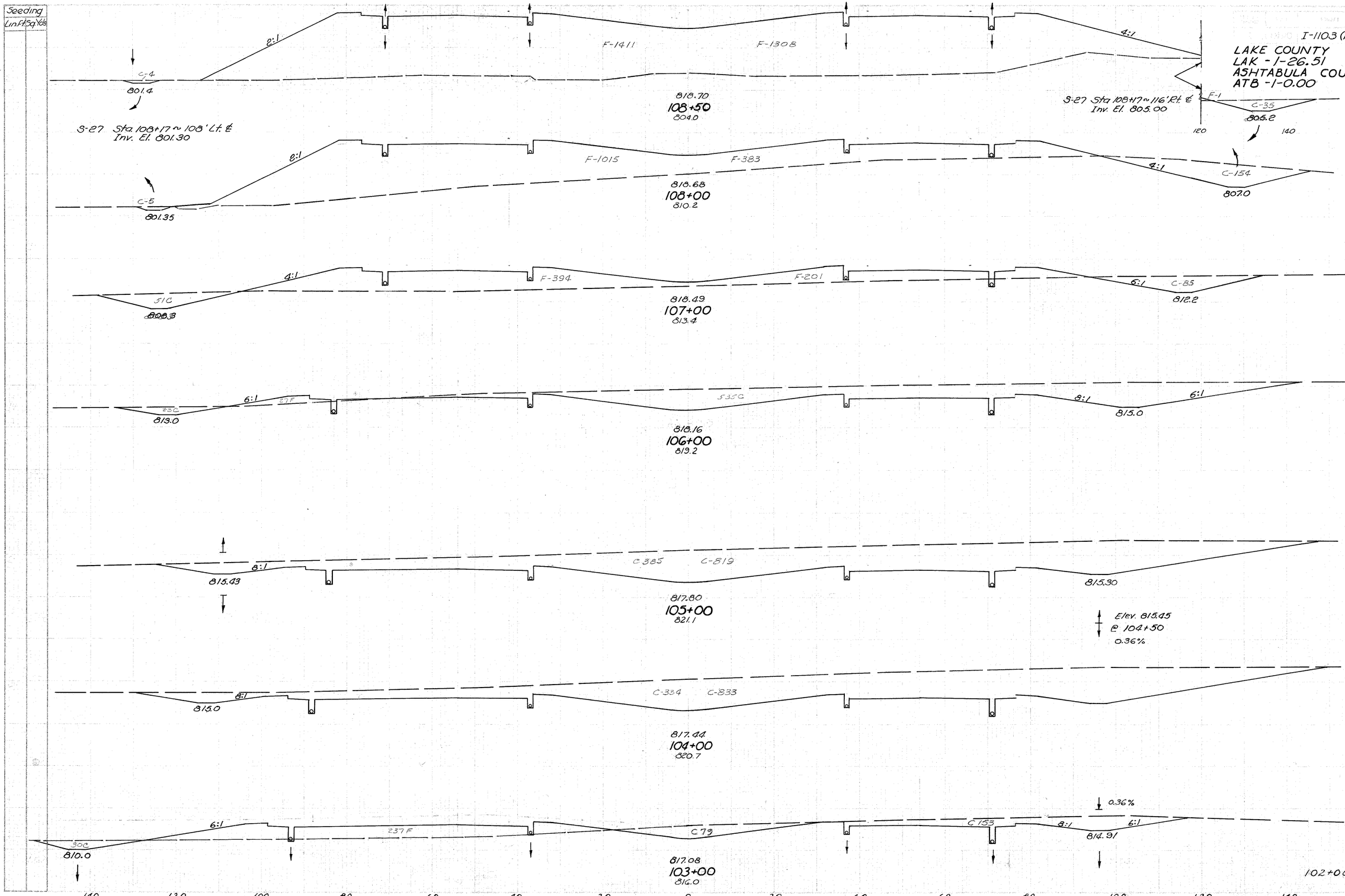


	End Area Cut	End Area Fill	Cu Yds. Cut	Cu Yds. Fill
	39	1102		
			39	852
	45	738		
			647	1032
101+00 Ahead	421	5		
101+00 Back	315	4		
			1251	3
	811	0		
			768	11
	225	10		
			417	344.1
	0	1848		
			18	4739
	20	3270		
			73	5919
98+00	59	3122		

LAKE COUNTY 98+50 - 102+00

I-110.3 (15)

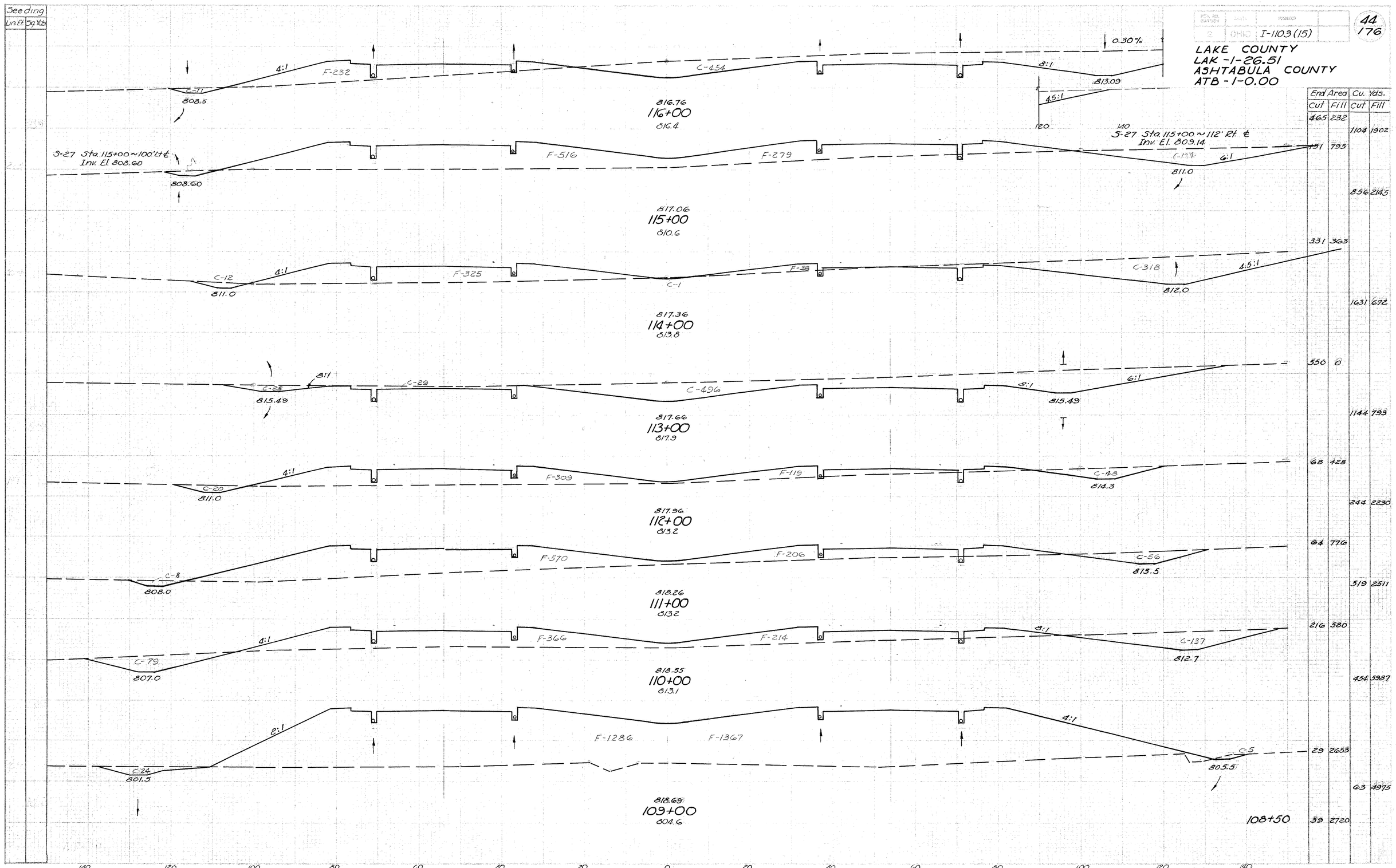
LAKE COUNTY
LAK -1-26.51
ASHTABULA COUNTY
ATB -1-0.00



End Area Cut	End Area Fill	Cu Yds Cut	Cu Yds Fill
39	2720		
		183	3813
159	1398		
		546	3691
136	595		
		1285	1152
558	27		
		3263	50
1204	0		
		4391	0
1167	0		
		2646	439
262	237		
		557	2477
102+00	39	1102	

FED. RD. DIVISION | STATE | PROJECT
2 | OHIO | I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

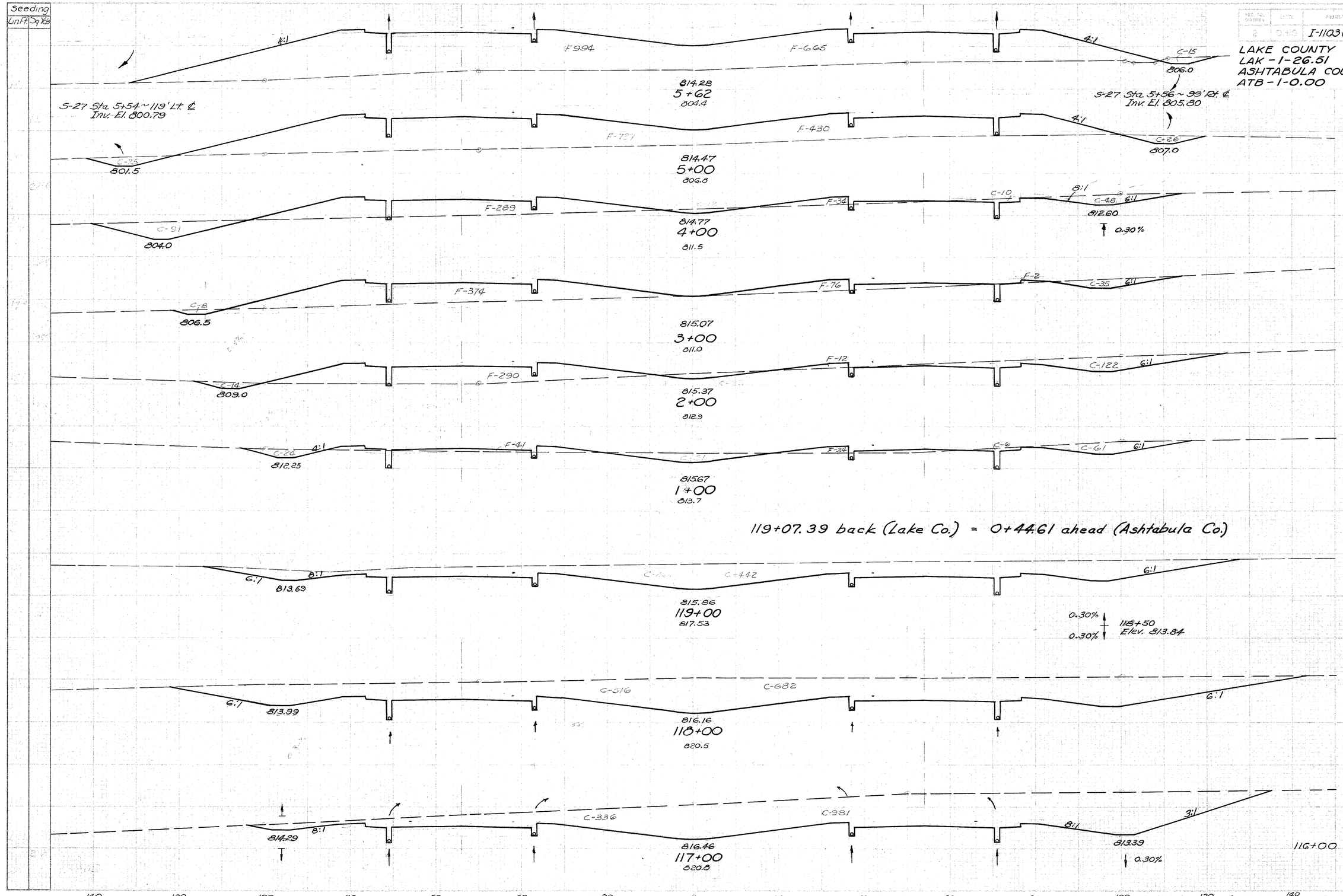


End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
465	232		
		1104	1902
151	795		
		856	2145
331	363		
		1631	672
550	0		
		1144	793
68	428		
		244	2230
64	776		
		519	2511
216	380		
		454	3987
29	2653		
		63	4975
39	2720		

LAKE COUNTY 109+00 - 116+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



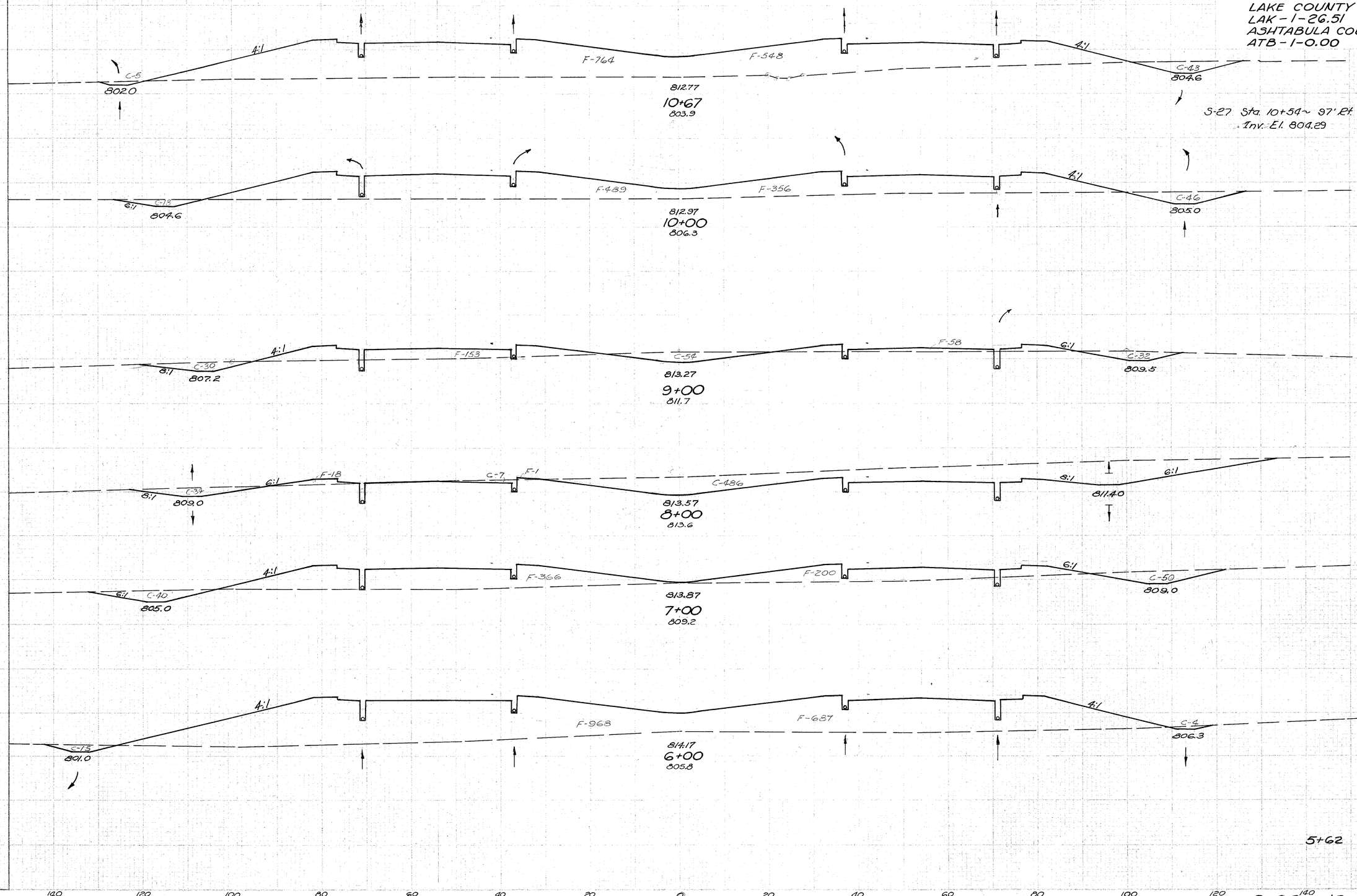
End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
15	1689		
		76	3248
51	1167		
		393	2759
161	323		
		378	1435
43	452		
		374	396
159	302		
		557	698
142	75		
		1569	139
705	0		
		3524	0
1198	0		
		4658	0
1317	0		
		3300	430
465	232		

Seeding	
Lin Ft	Sq Yds

TRS NO. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

46
176

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

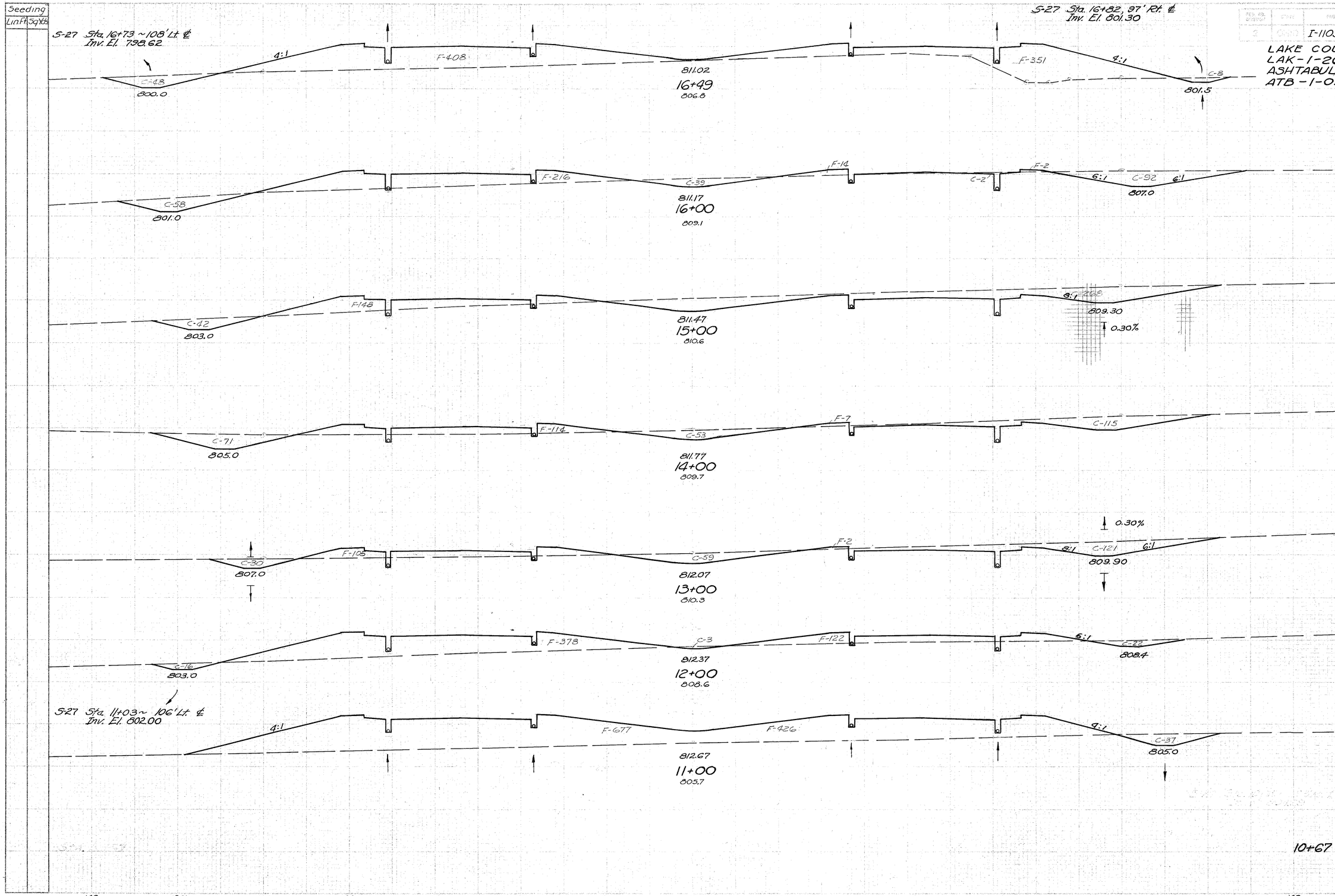


	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
	48	1312		
			139	2670
	64	845		
			333	1956
	116	211		
			1191	426
	527	19		
			1143	1083
	90	566		
			202	4113
	19	1655		
			24	2330
5+62	15	1659		

ASHTABULA COUNTY 6+00 - 10+67

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
56	759		
		224	902
191	233		
		928	706
310	148		
		1017	498
239	121		
		831	422
210	107		
		465	1124
41	500		
		144	2963
37	1103		
		52	1478
10+67	48	1312	

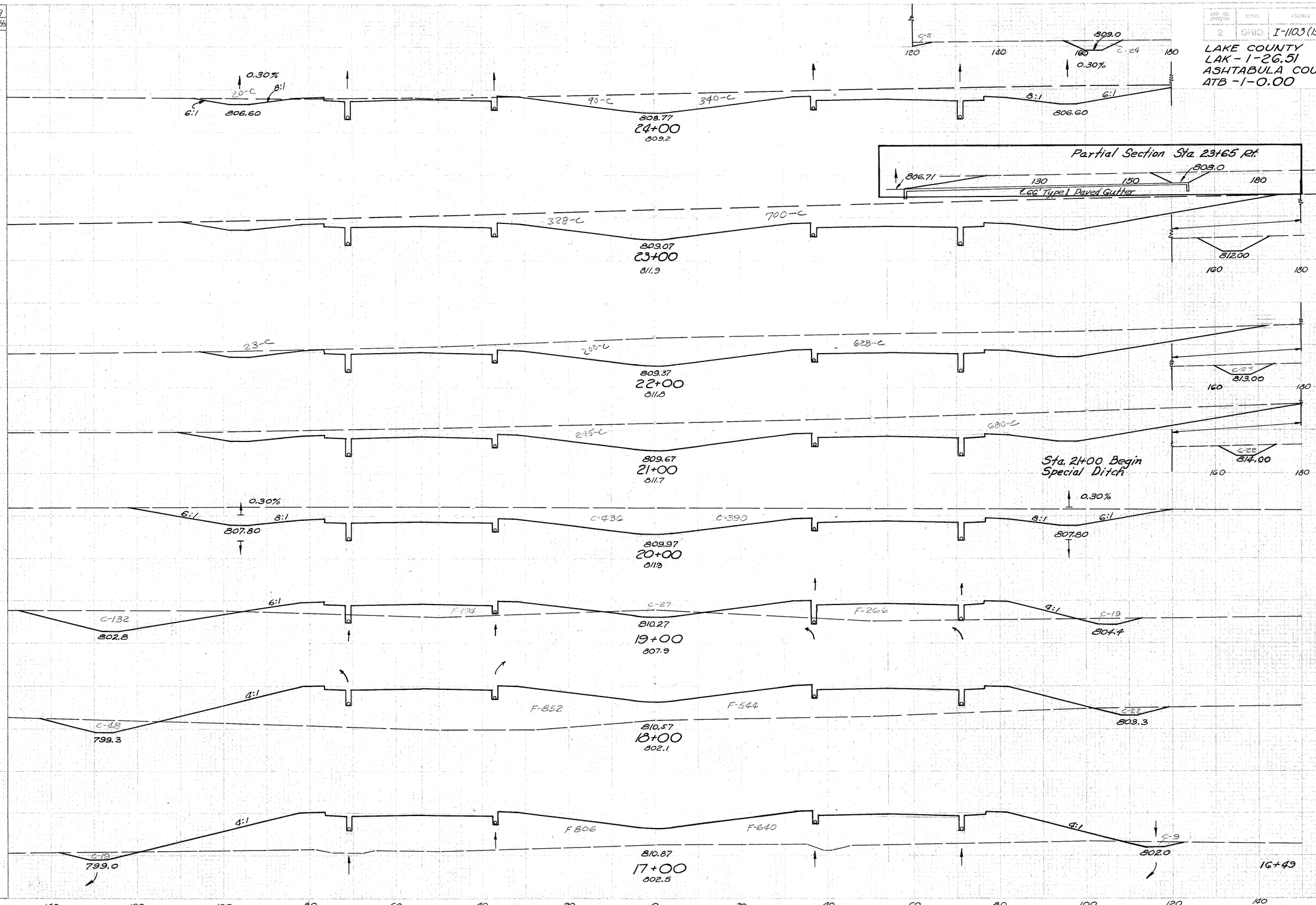
ASHTABULA COUNTY 11+00 - 16+49

Seeding	
Lin Ft	Sq Yds

DIST. NO. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

48
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

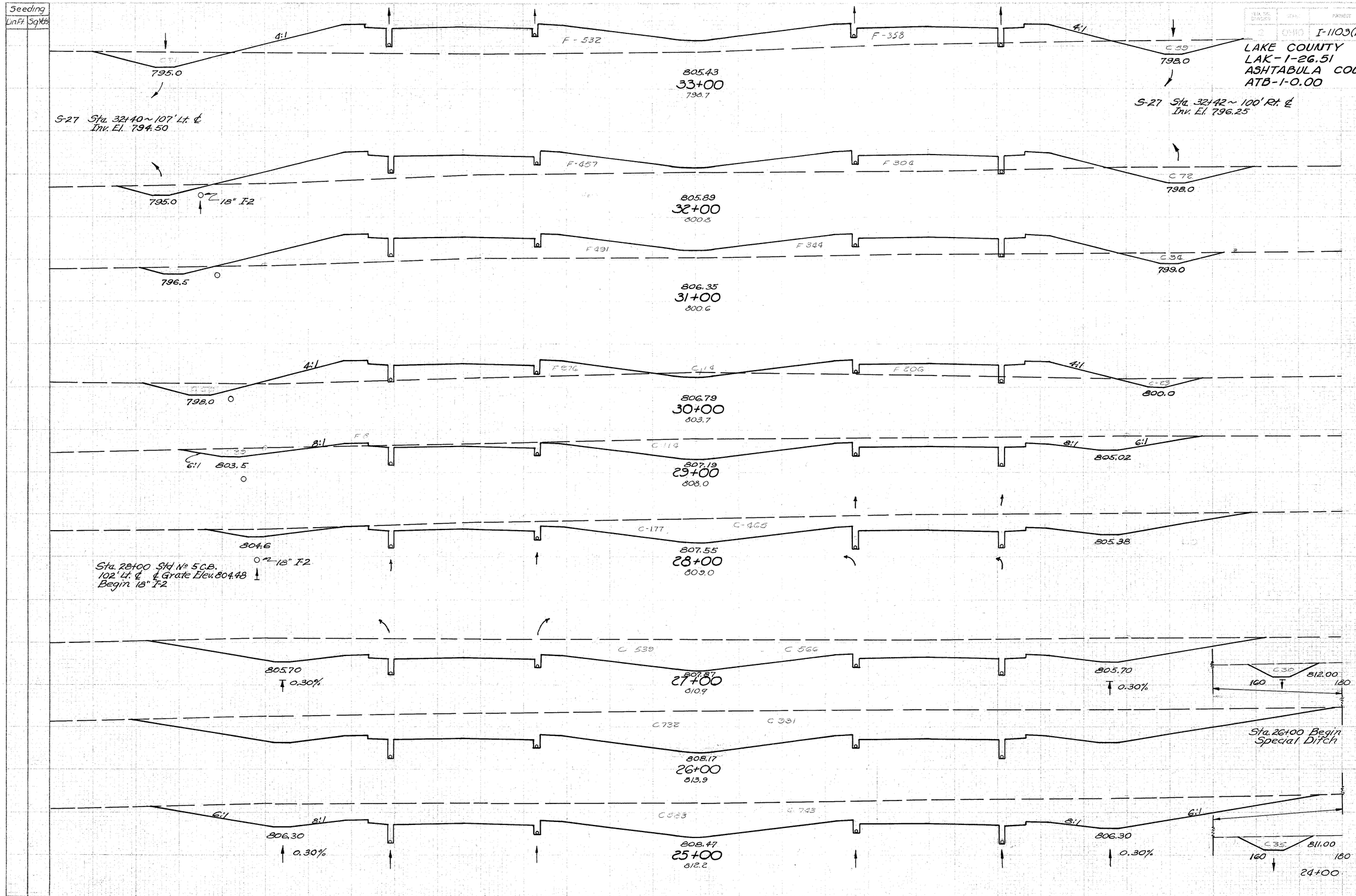


End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
520	1		
		2332	2
1063	0		
		3624	0
874	0		
		3502	0
997	0		
		3376	0
826	0		
		1859	815
178	440		
		459	3400
70	1396		
		181	5263
28	1446	80	2083
56	759		

ASHTABULA COUNTY 17+00 - 24+00

SECTION	FED. RD. DIVISION	STATE	FAI-ROUTE
2	5	OHIO	I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



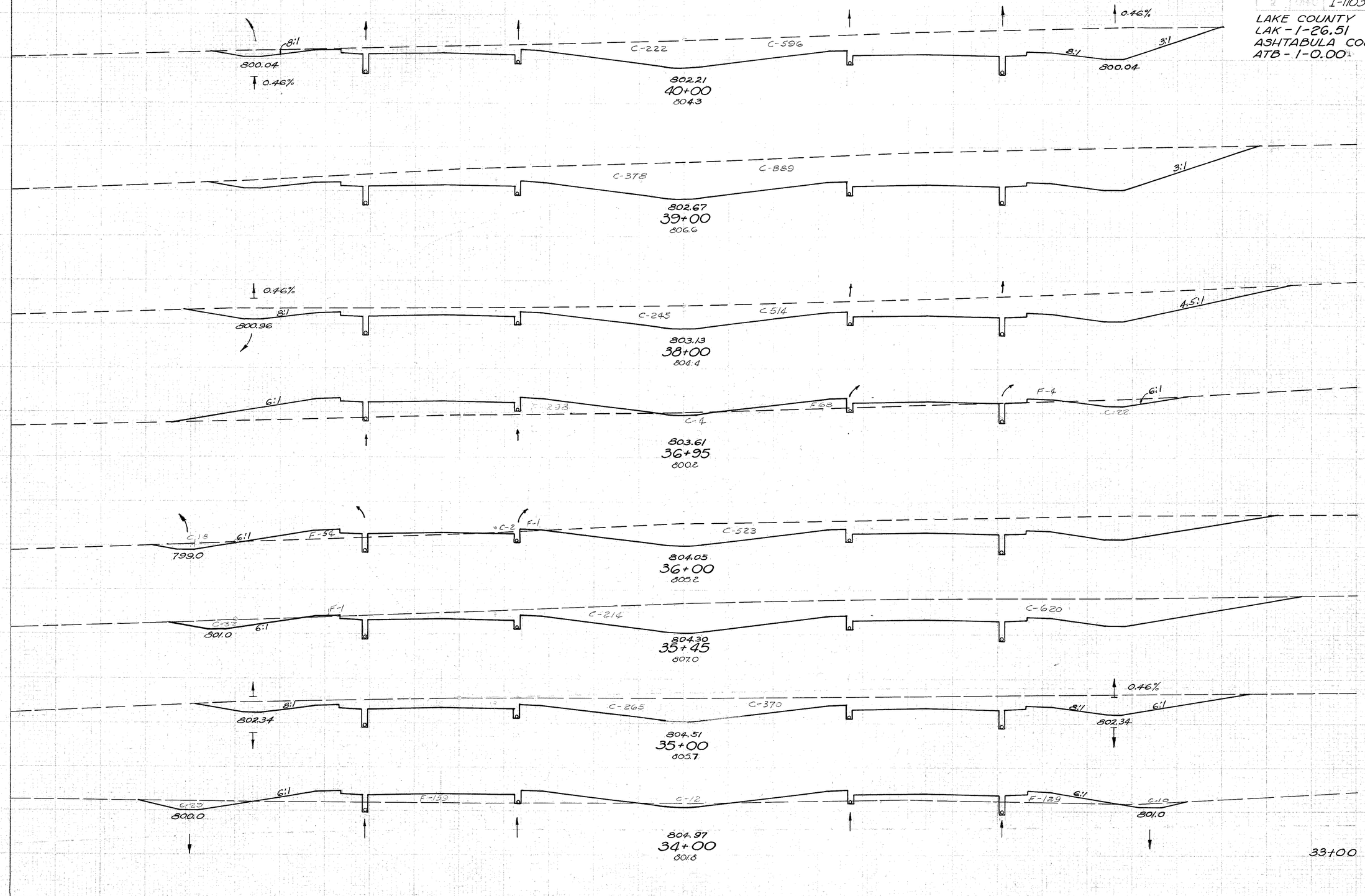
End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
130	890		
		433	3058
104	761		
		293	2956
54	835		
		261	2439
87	482		
		952	907
427	8		
		2035	15
672	0		
		3291	0
1105	0		
		5182	0
1693	0		
		5656	0
1361	0		
		3483	2
520	1		

ASHTABULA COUNTY 25+00 - 33+00

2	ORIG	I-1103 (15)

LAKE COUNTY
LAK - I-26.51
ASHTABULA COUNTY
ATB - I-0.00

Seeding	
Un. Ft.	Sq. Yds.



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
818	0		
		3861	0
1267	0		
		3752	0
759	0		
		825	388
26	370		
		540	405
543	55		
		775	57
866	1		
		1258	1
635	0		
		1270	533
51	288		
		335	2182
130	890		

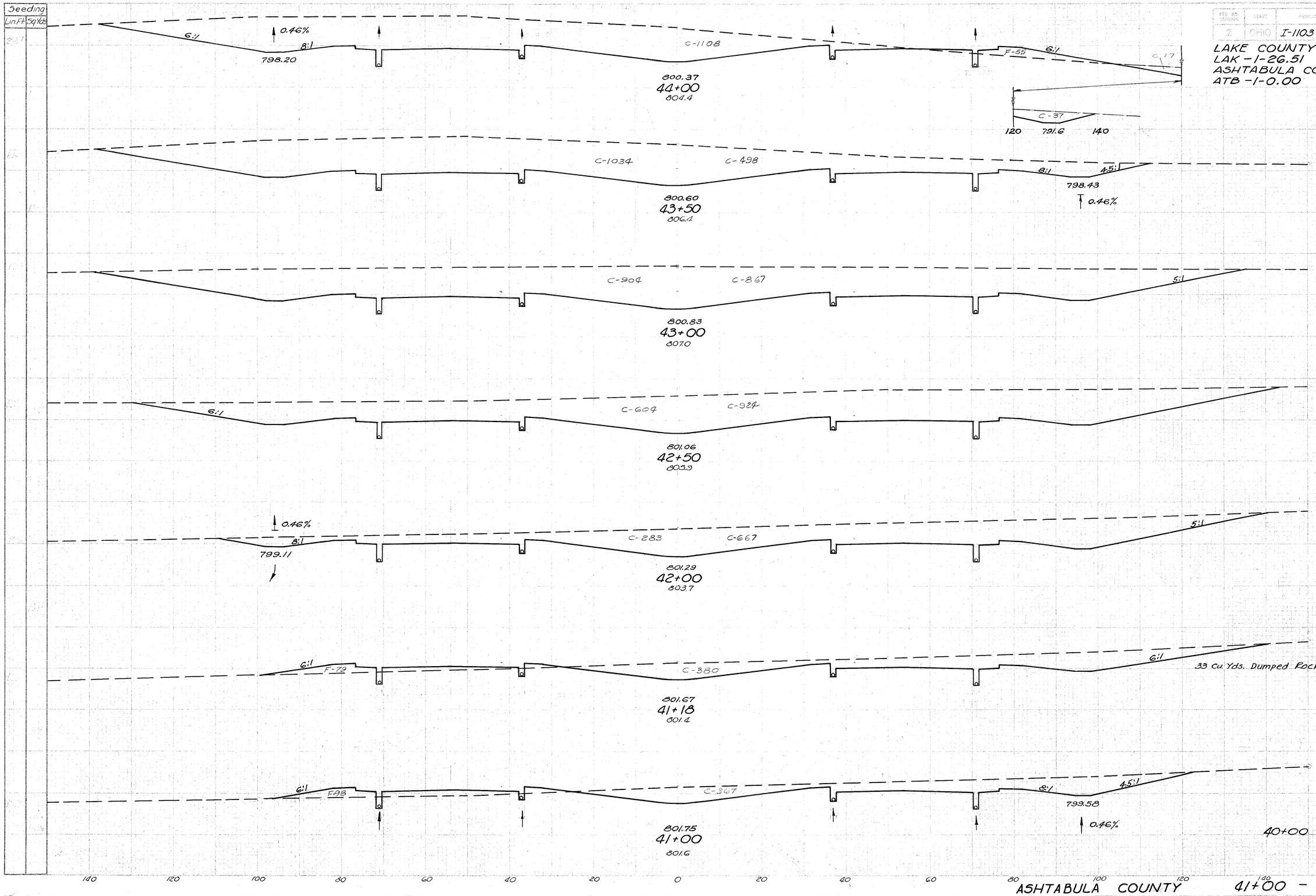
33+00

ASHTABULA COUNTY 34+00 - 40+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

51
176

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
1162	55		
		2495	189
1532	0		
		3058	0
1771	0		
		3056	0
1528	0		
		2294	0
950	0		
		2019	120
380	79		
		249	59
367	98		
		2195	181
818	0		

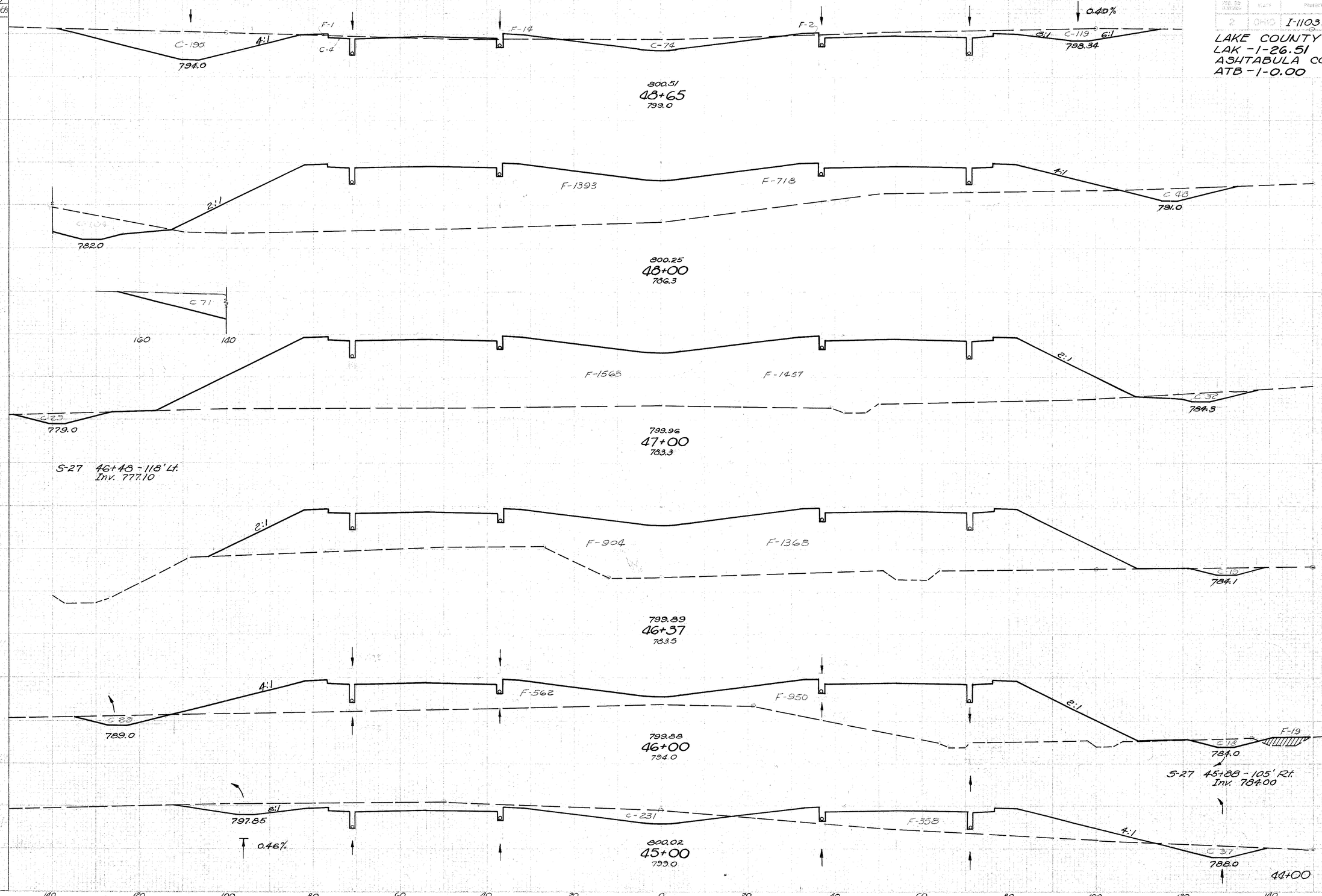
ASHTABULA COUNTY 41+00 - 44+00

Seeding	
Un. Ft.	Sq. Yds.

SHEET NO. OF TOTAL SHEETS	STATE	PROJECT
2	OHIO	I-1103(15)

52
176

LAKE COUNTY
LAK -1-26.51
ASHTABULA COUNTY
ATB -1-0.00



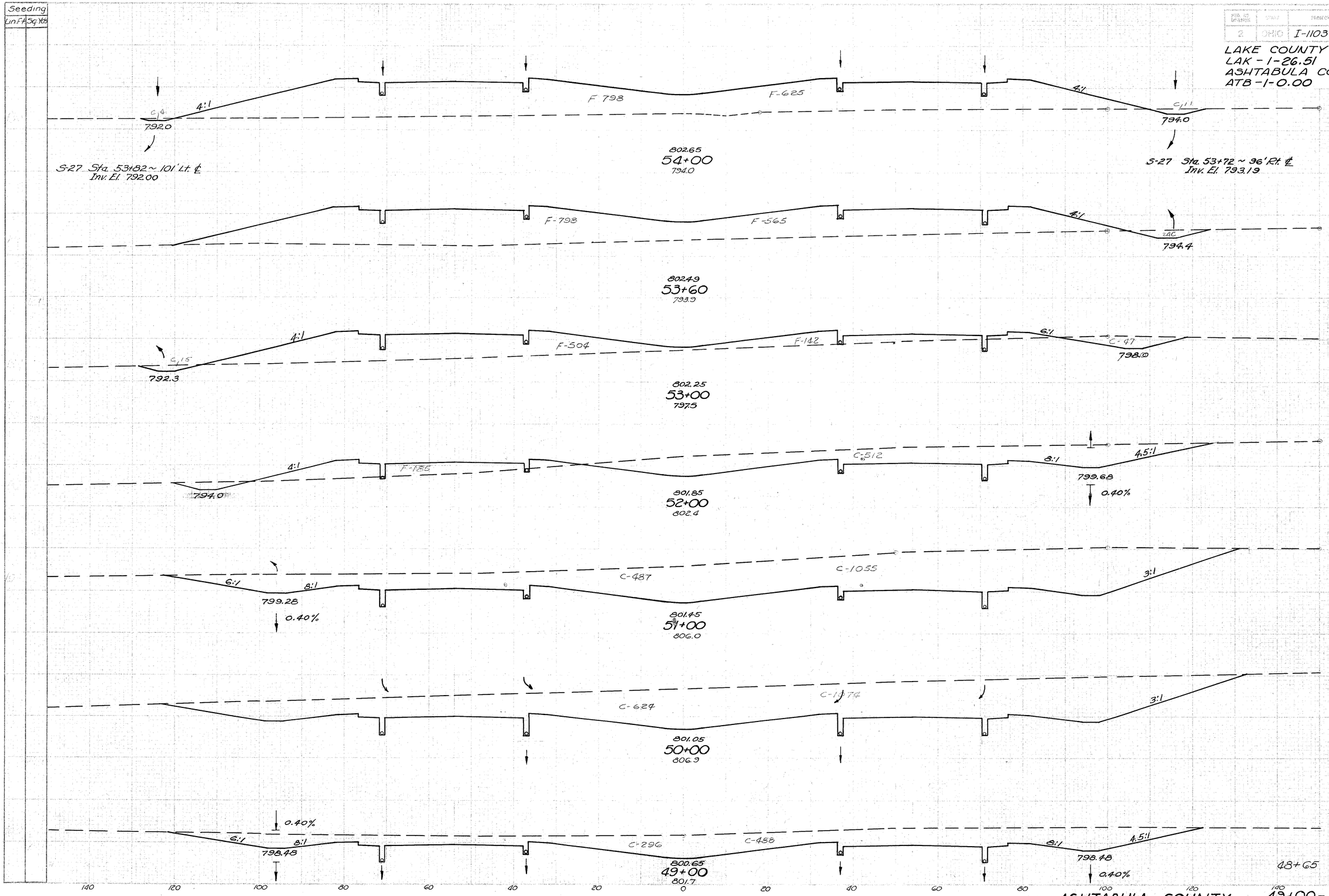
End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
392	17		
		741	2562
223	2111		
		526	9512
61	3025		
		94	6180
19	2272		
		45	2606
47	1531		
		583	3498
268	358		
		2648	765
1162	55		

ASHTABULA COUNTY 45+00 - 48+65

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

53
176

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



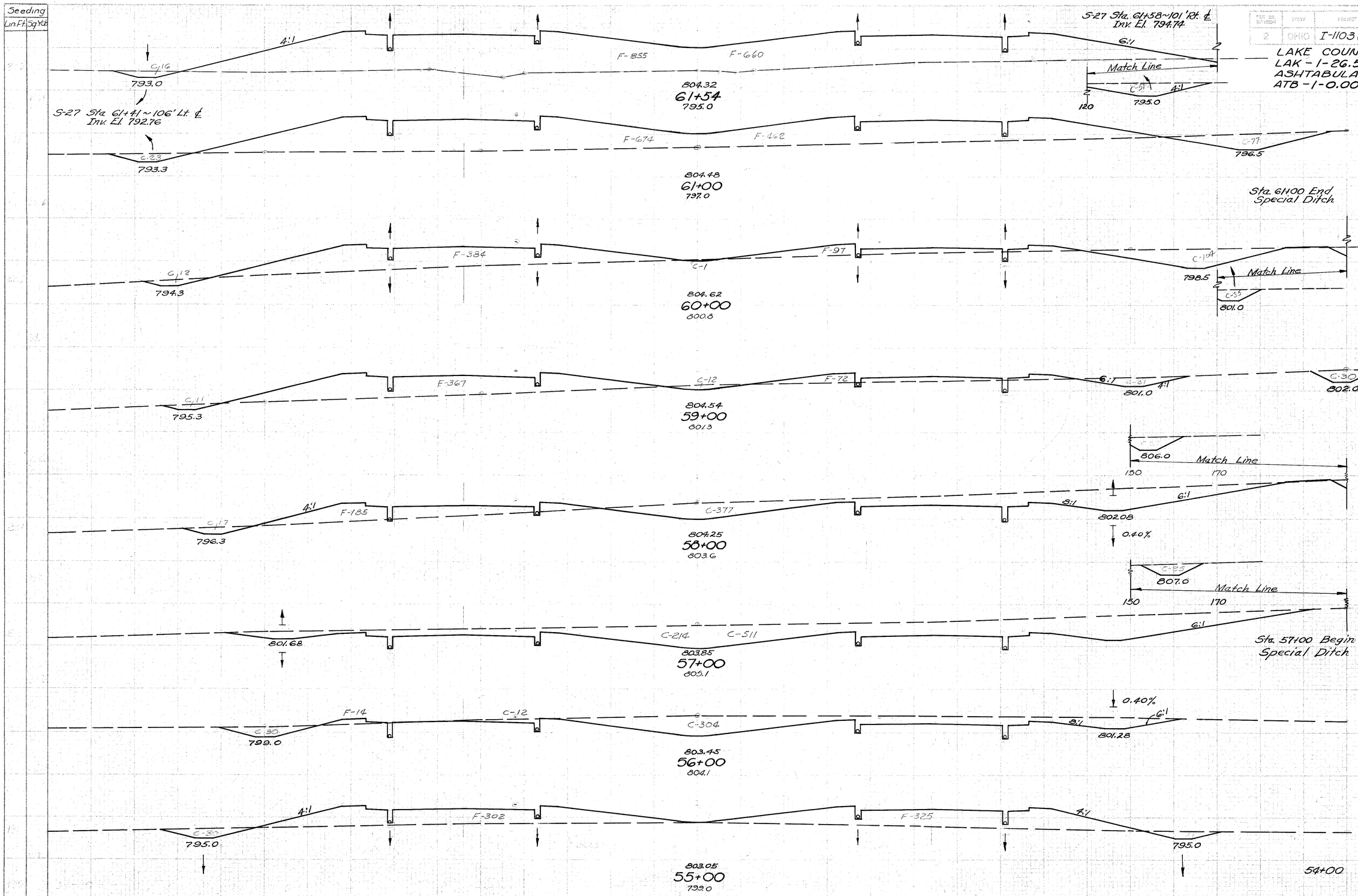
End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
15	1423		
		29	2060
24	1363		
		96	2232
62	646		
		1106	1539
535	185		
		3847	343
1542	0		
		6000	0
1698	0		
		4597	0
784	0		
		761	11
392	17		

48+65

ASHTABULA COUNTY 49+00 - 54+00

FED. ROAD DIV.	STATE	PROJECT	
2	OHIO	I-1103 (15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
	73	1515		
			320	2651
	100	1136		
			465	2995
	152	481		
			435	1704
	84	439		
			943	1156
	425	185		
			2176	343
	750	0		
			2030	26
	346	14		
			735	1187
	51	627		
			226	3797
54+00	15	1423		

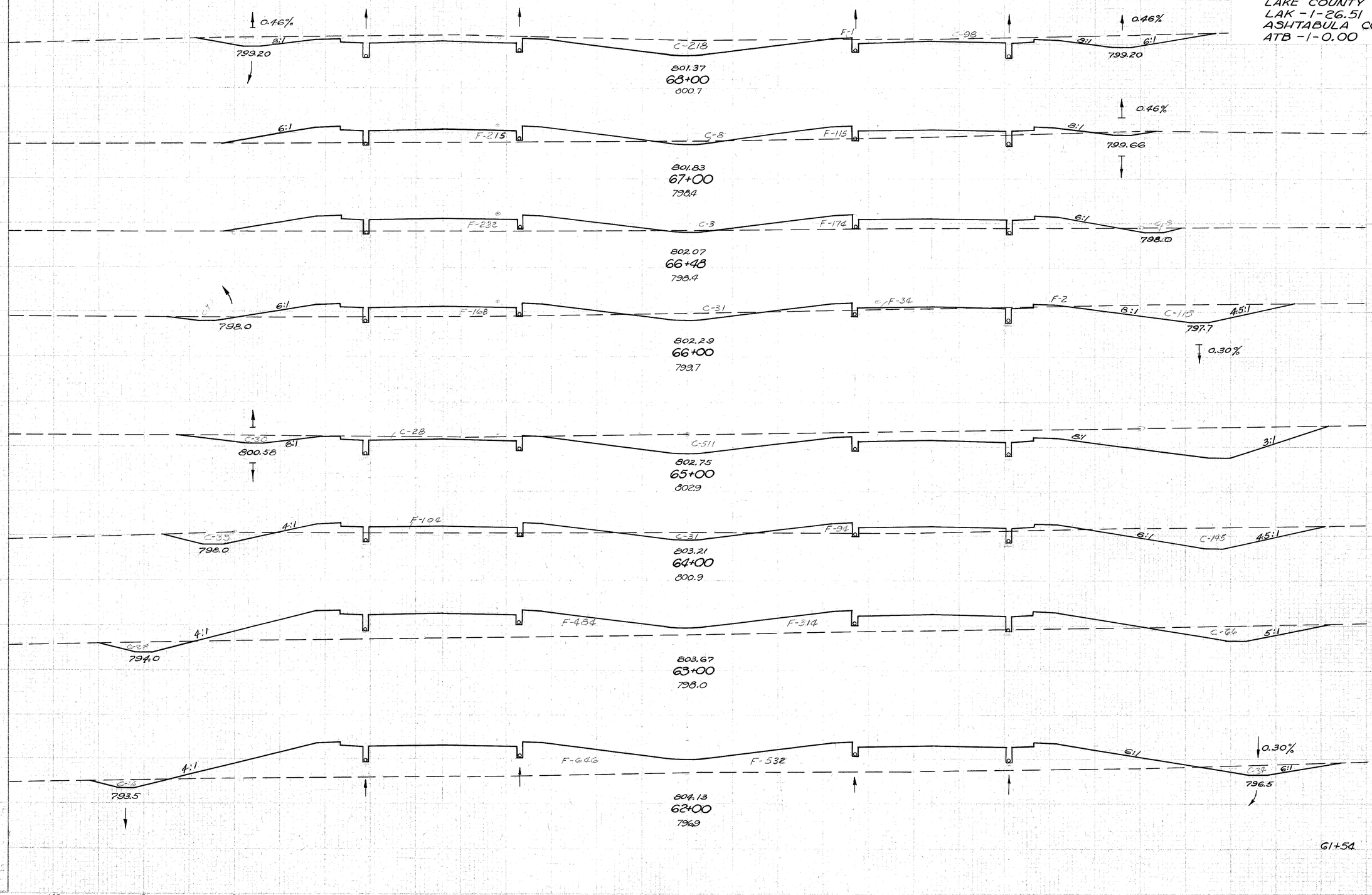
ASHTABULA COUNTY 55+00 - 61+54

Seeding	
Un Ft	Sq Yds

NO. OF DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

55
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

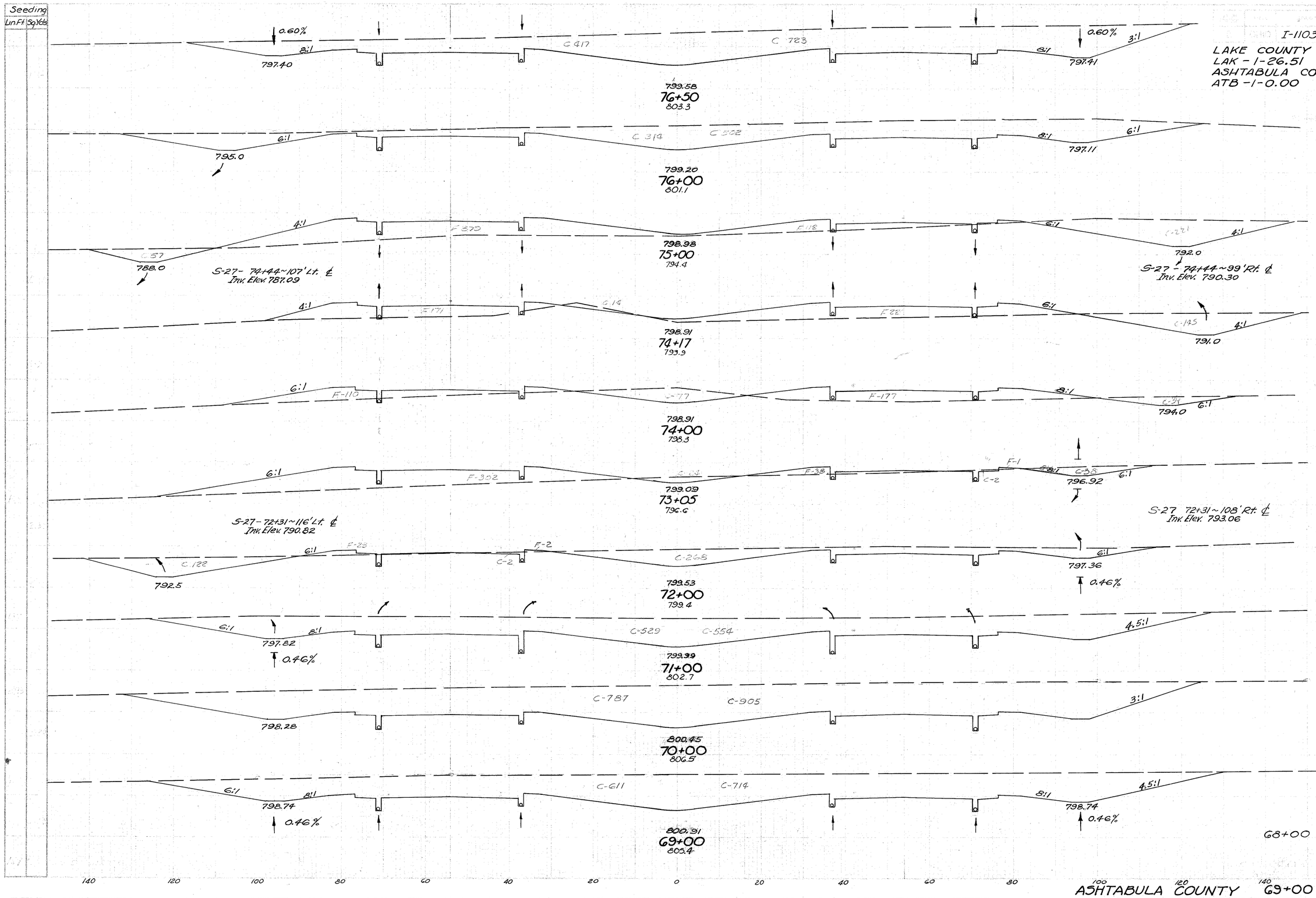


End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
316	1		
		613	613
15	330		
		25	709
11	406		
		147	542
155	204		
		1341	378
569	0		
		1452	367
215	198		
		572	1844
94	798		
		267	3659
50	1178		
		218	2294
73	1515		

ASHTABULA COUNTY 62+00 - 68+00

I-1103(15)

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00



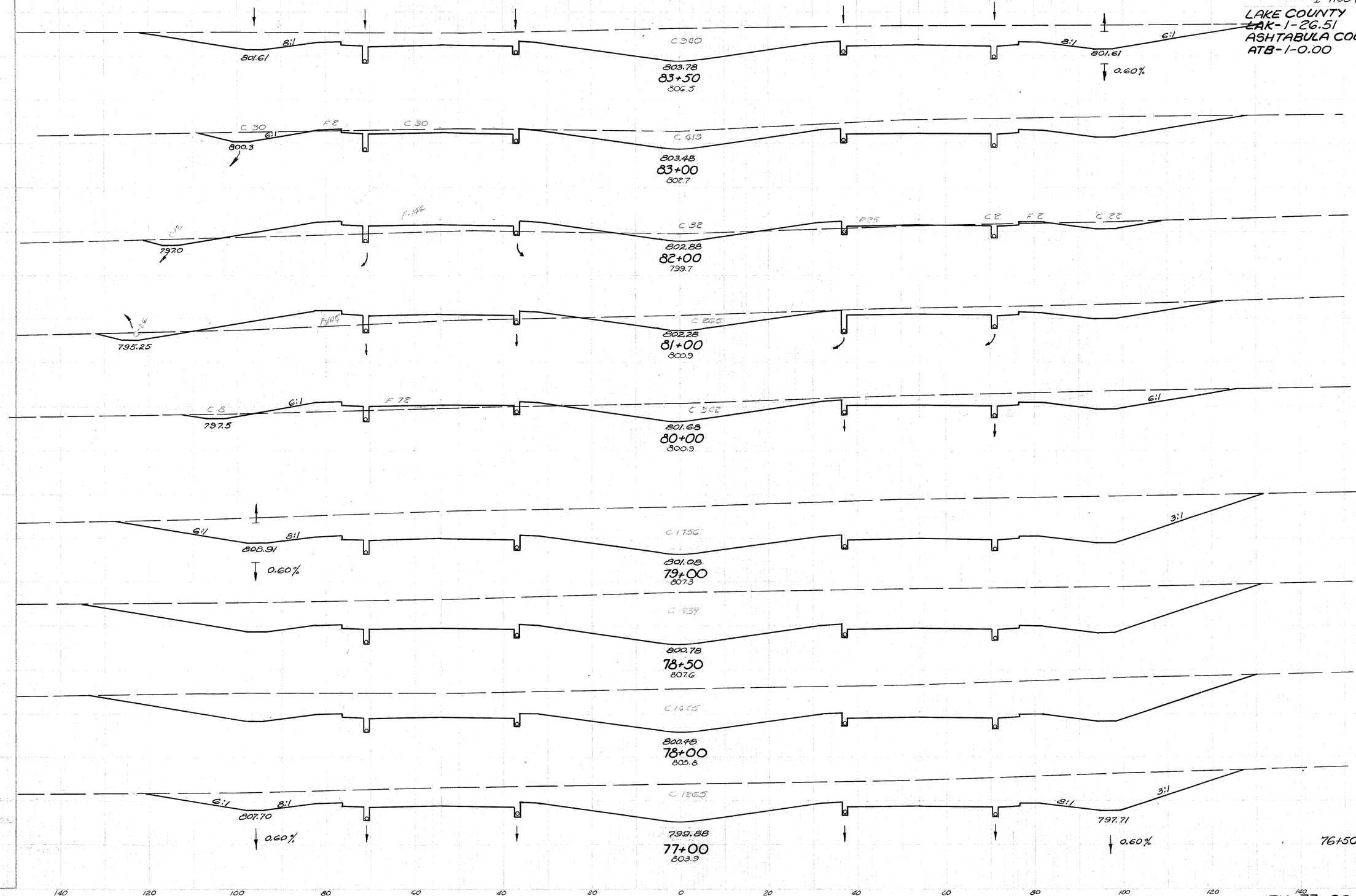
End Area Cut	End Area Fill	Cu Yds Cut	Cu Yds Fill
1140	0		
		1811	0
816	0		
		2026	909
278	491		
		671	1355
159	391		
		87	213
113	287		
		311	1105
64	341		
		889	712
392	25		
		2732	46
1083	0		
		5139	0
1692	0		
		5587	0
1325	0		
		3039	2
316	1		

ASHTABULA COUNTY 69+00 - 76+50

I-1103 (15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Seeding Lin.Ft.	Seeding Sq.Yds.

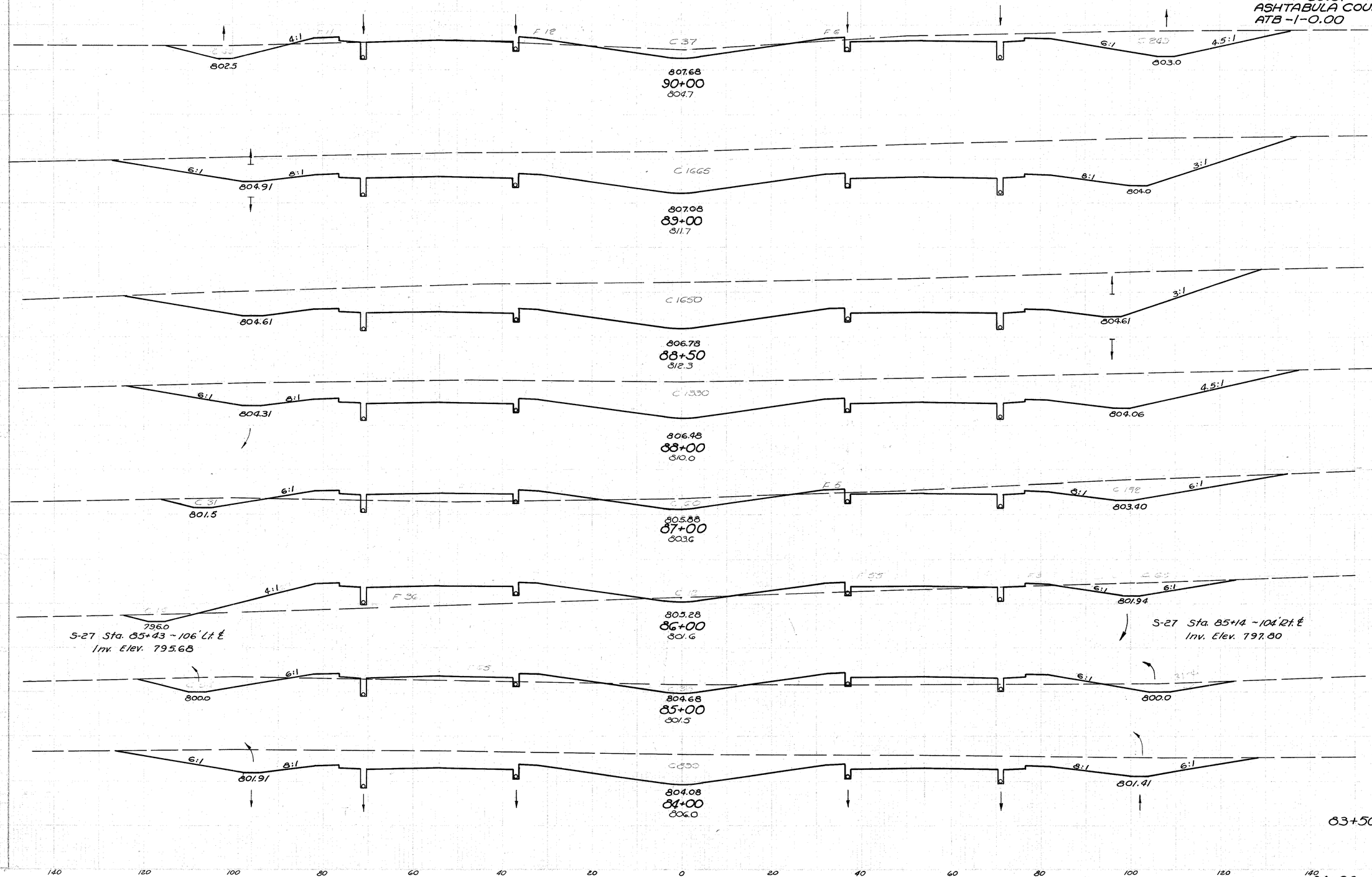


End Area Cut	End Area Fill	Cu Yds. Cut	Cu Yds. Fill
940	0		
		1314	2
479	2		
		1013	320
68	171		
		661	587
289	146		
		1183	404
350	72		
		3900	133
1756	0		
		3420	0
1939	0		
		3337	0
1665	0		
		5426	0
1265	0		
		2228	0
76+50	1140	0	

ASHTABULA COUNTY 77+00 - 83+50

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

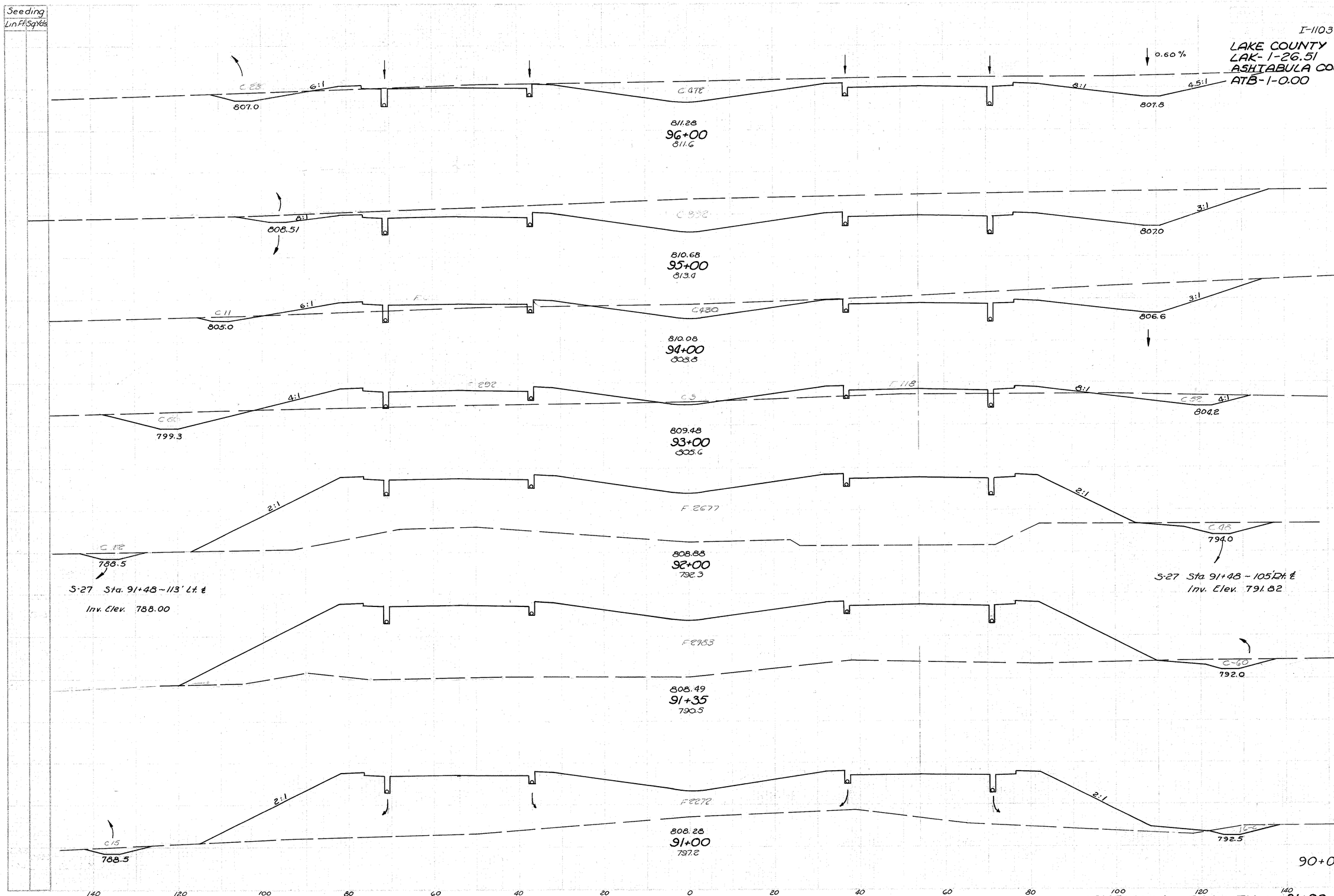


	End Area Cut	End Area Fill	Cu Yds. Cut	Cu Yds. Fill
	332	29		
			3698	54
	1665	0		
			3069	0
	1650	0		
			2759	0
	1330	0		
			2987	215
	283	116		
			693	1002
	91	425		
			339	1150
	123	196		
			1876	363
	890	0		
			1694	0
83+50	940	0		

ASHTABULA COUNTY 84+00 – 90+00

I-1103 (15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

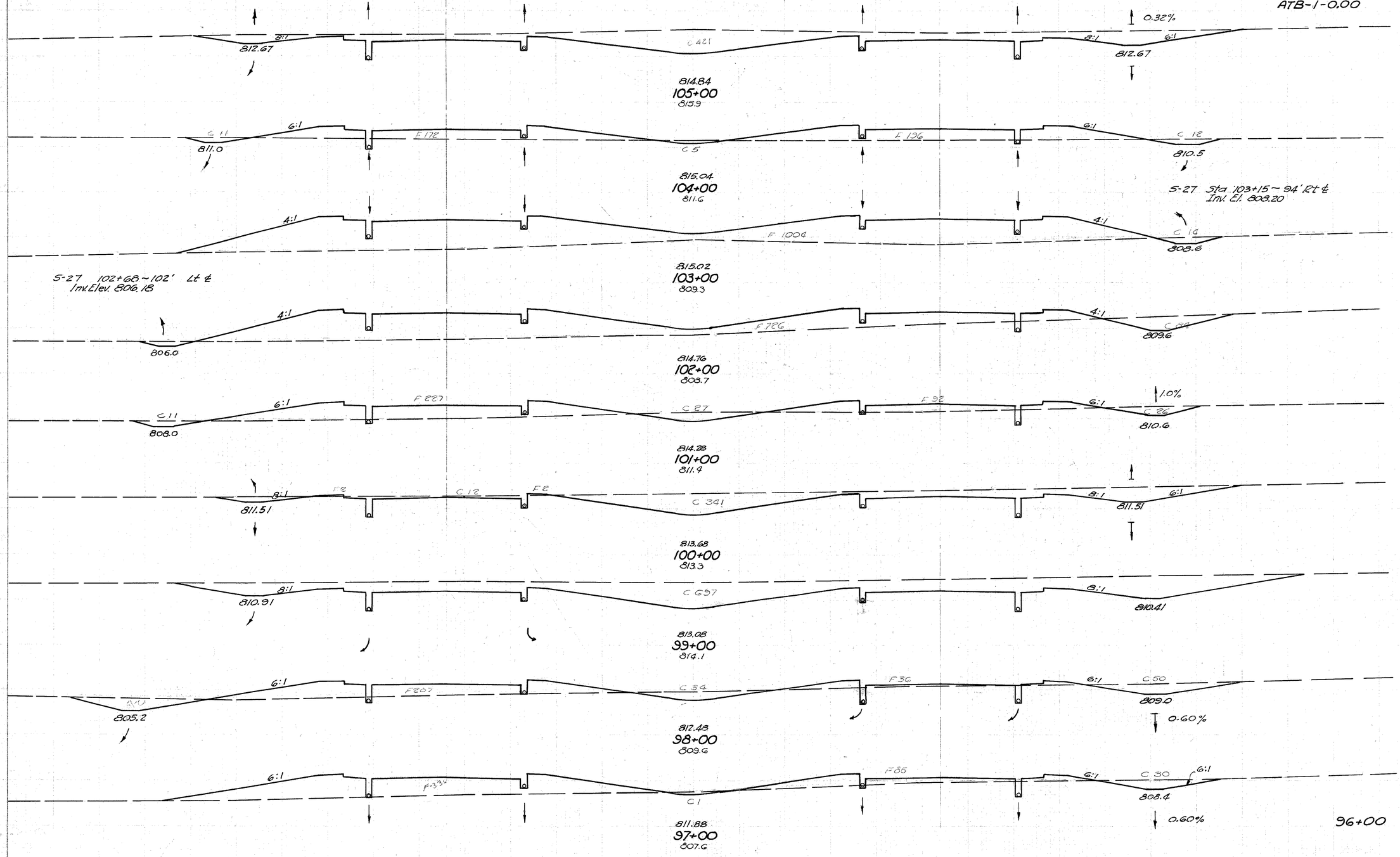


End Area Cut	End Area Fill	Cu. Yds Cut	Cu. Yds Fill
500	9		
		2763	17
992	0		
		2654	181
441	98		
		1067	941
135	410		
		361	5717
60	2677		
		144	6813
60	2983		
		319	3406
31	2272		
		672	4261
90+00	332	29	

ASHTABULA COUNTY 91+00 – 96+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Seeding Lin Ft	Seeding Sq Yds	End Area Cut	End Area Fill	Cu Yds. Cut	Cu Yds. Fill
		421	0		
				831	681
		28	368		
				78	2548
		14	1004		
				196	3204
		92	726		
				761	1463
		319	64		
				1274	126
		369	4		
				1974	7
		697	0		
				1541	461
		135	249		
				228	1241
		31	421		
				983	796
		500	9		

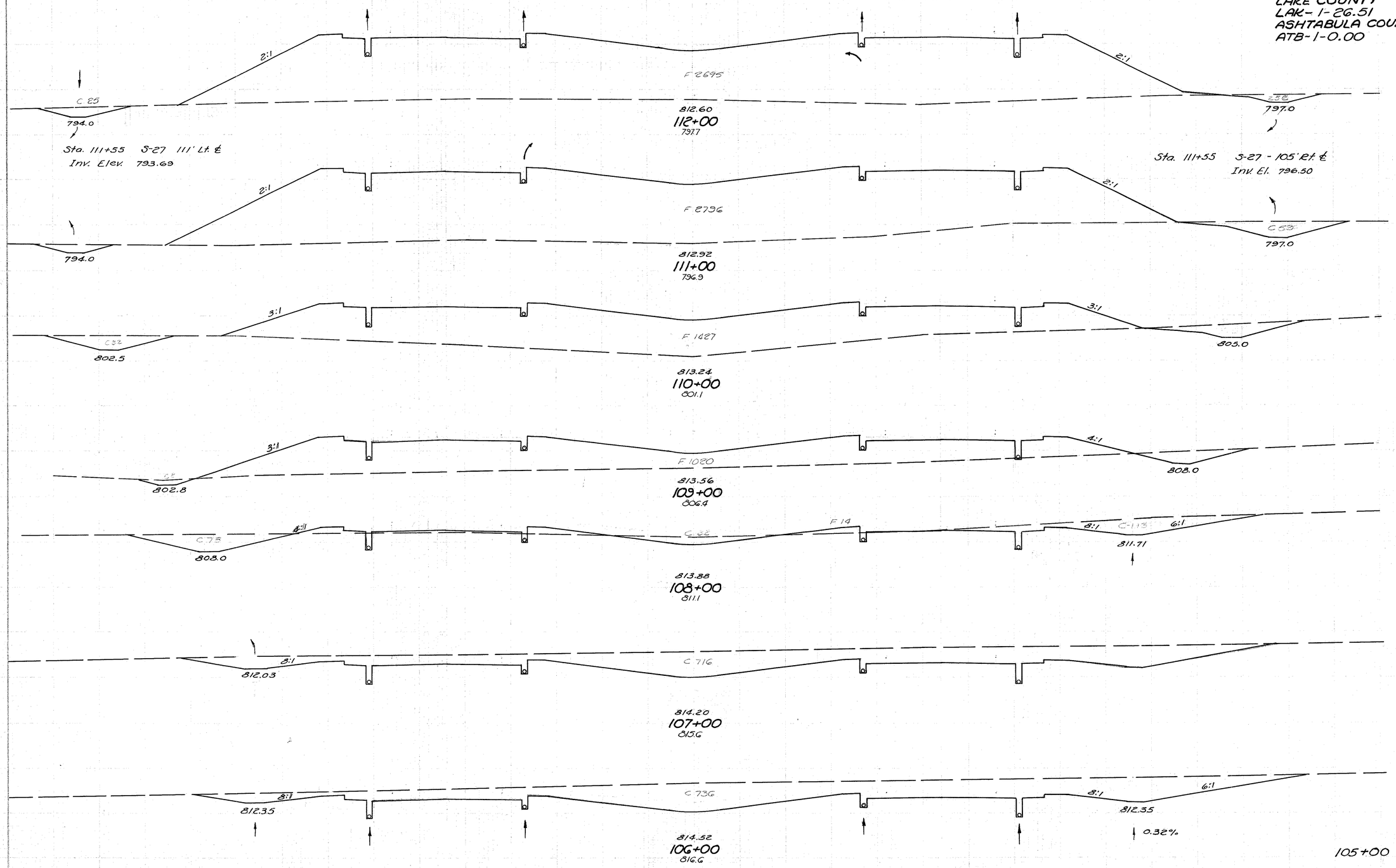
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160

ASHTABULA COUNTY 97+00 – 105+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Seeding	
Lin.Ft.	Sq.Yds.

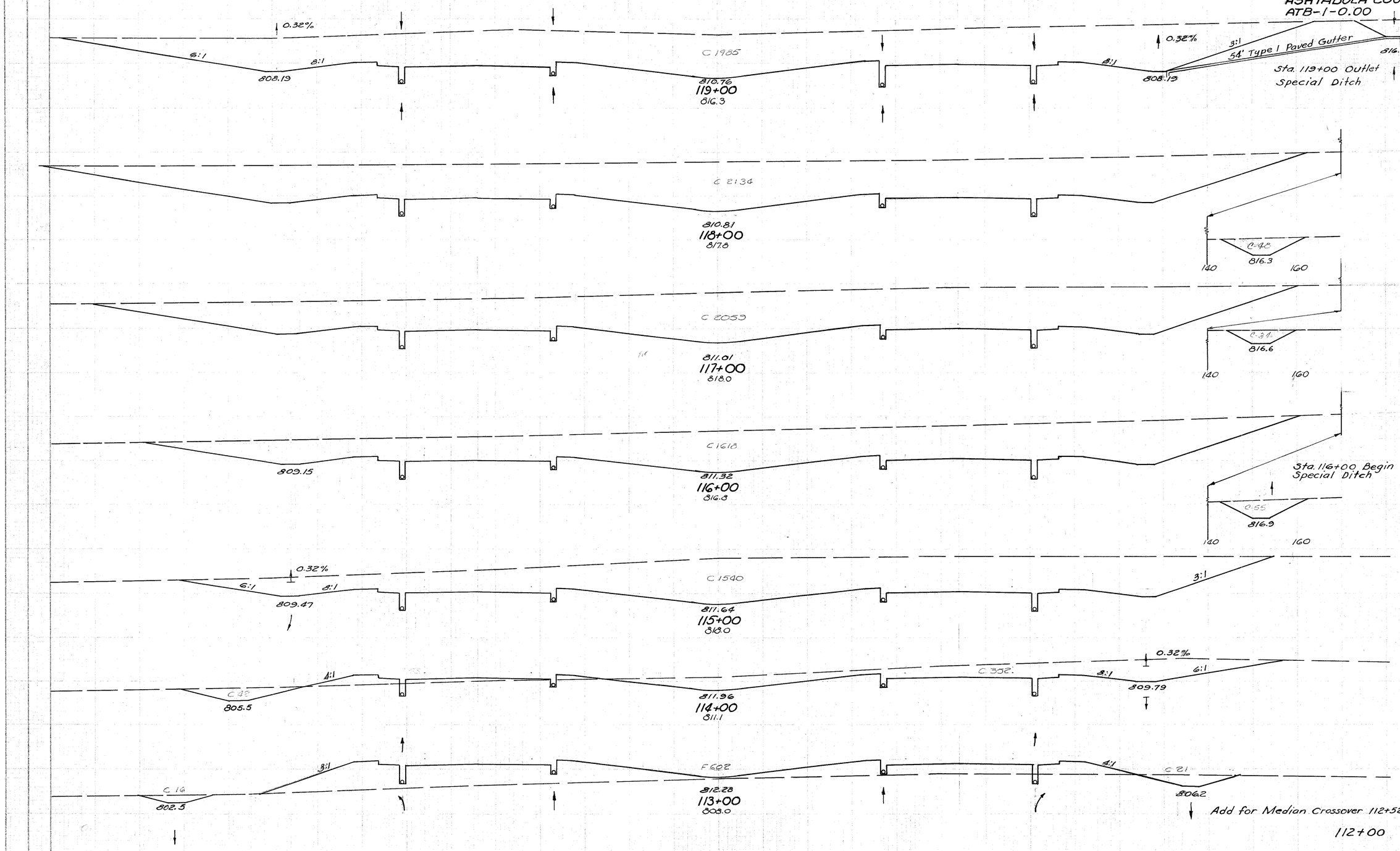


End Area Cut	End Area Fill	Cu Yds. Cut	Cu Yds. Fill
50	2695		
		237	1016
78	2796		
		346	782
109	1427		
		283	453
47	1020		
		500	199
223	55		
		1739	102
716	0		
		2689	0
736	0		
		2143	0
421	0		

ASHTABULA COUNTY 106+00 - 112+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

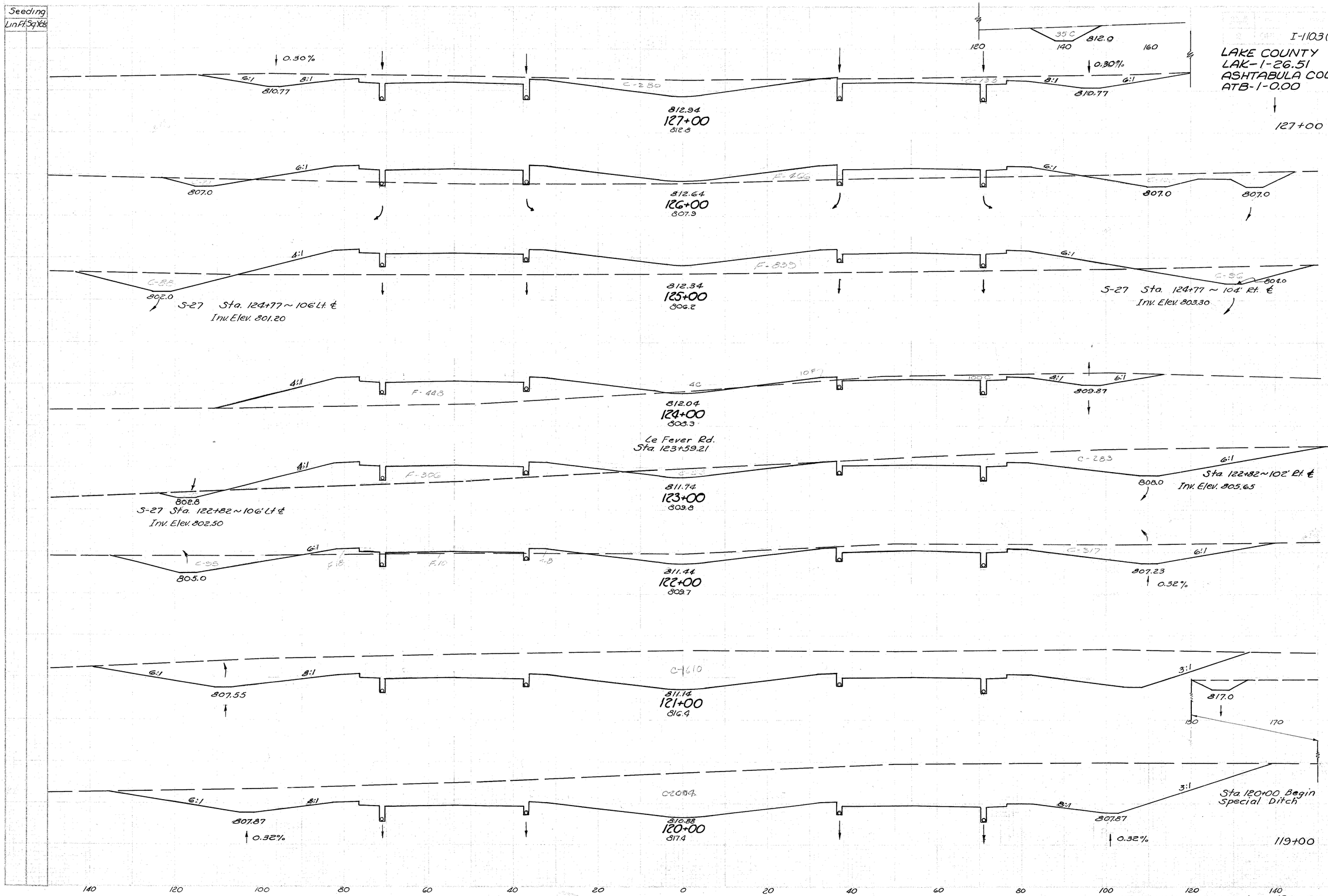


End Area Cut	End Area Fill	Cu Yds Cut	Cu Yds Fill
2030	0		
		7801	0
2182	0		
		7916	0
2093	0		
		6879	0
1673	0		
		5950	0
1540	0		
		3582	107
394	58		
		797	1222
37	602		
		161	6196
			48
50	2695		

ASHTABULA COUNTY 113+00 — 119+00

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

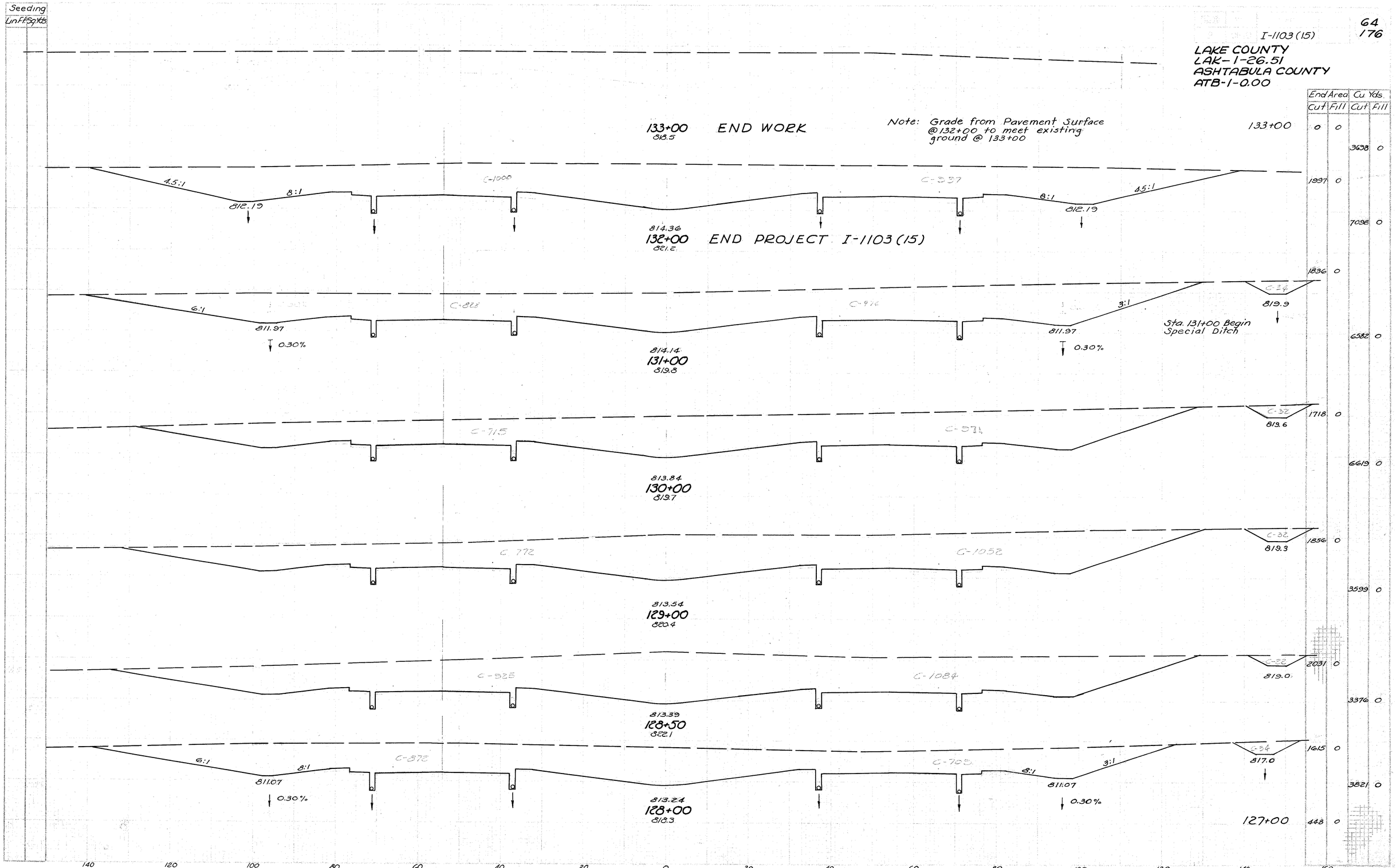


End Area Cut	End Area Fill	Cu Yds. Cut	Cu Yds. Fill
448	0		
		1068	863
129	466		
		580	2417
184	839		
		526	2401
104	458		
		837	1416
348	306		
		1407	633
412	36		
		3745	67
1610	0		
		6745	0
2032	0		
		7523	0
2030	0		

ASHTABULA COUNTY 120+00 - 127+00

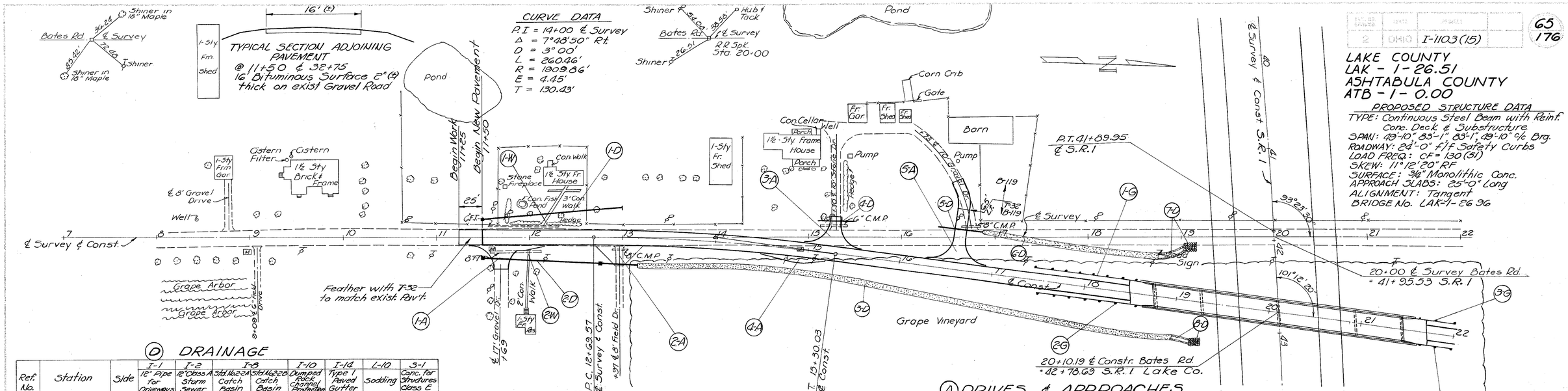
I-1103 (15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



ASHTABULA COUNTY 128+00 - 133+00

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00



PROPOSED STRUCTURE DATA

TYPE: Continuous Steel Beam with Reinf. Conc. Deck & Substructure
SPAN: 49'-10", 83'-1", 83'-1", 49'-10" o/c Brg.
ROADWAY: 24'-0" f/f Safety Curbs
LOAD FREQ.: CF = 130 (51)
SKEW: 11°12'20" RF
SURFACE: 3½" Monolithic Conc.
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Tangent
BRIDGE No. LAK-1-26.96

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	I-1 12" Pipe for Driveways	I-2 12" Class A Storm Sewer	I-8 Std. No. 22-A Catch Basin	I-8 Std. No. 22-B Catch Basin	I-10 Dumped Rock Channel Protection	I-14 Type I Paved Gutter	L-10 Sodding	S-1 Conc. for Structures Class E
				Lin. Ft.		Each		Cu. Yds.	Lin. Ft.	Sq. Yds.	Cu. Yds.
1-D	11+50	13+00	Lt.		149	1					0.23*
2-D	11+50	13+17	Rt.		164	1	1				0.23*
3-D	13+17	19+00	Rt.							388	
4-D	15+12	15+48	Lt.	38							
5-D	16+40	16+88	Lt.	48							
6-D	16+88	18+75	Lt.							125	
7-D	18+75	19+12	Lt.					5.4	25	6	
8-D	19+00	19+32	Rt.					5.4	20	5	
Totals				86	313	2	1	10.8	45	524	0.46

* Note: Endwalls per Std. Const. Dwg S-27 P.C.4

(W) SIDEWALK

Ref. No.	Station	Side	I-13 4" Conc. Sidewalk Replace	E-8 Remove Exist. Conc. Walk
			Sq. Ft.	Sq. Ft.
1-W	12+20	Lt.	6	66
2-W	12+00	Rt.	4	30
Totals			10	96

Replace Conc. Walk to Const. Limits

(G) GUARD RAIL, I-15

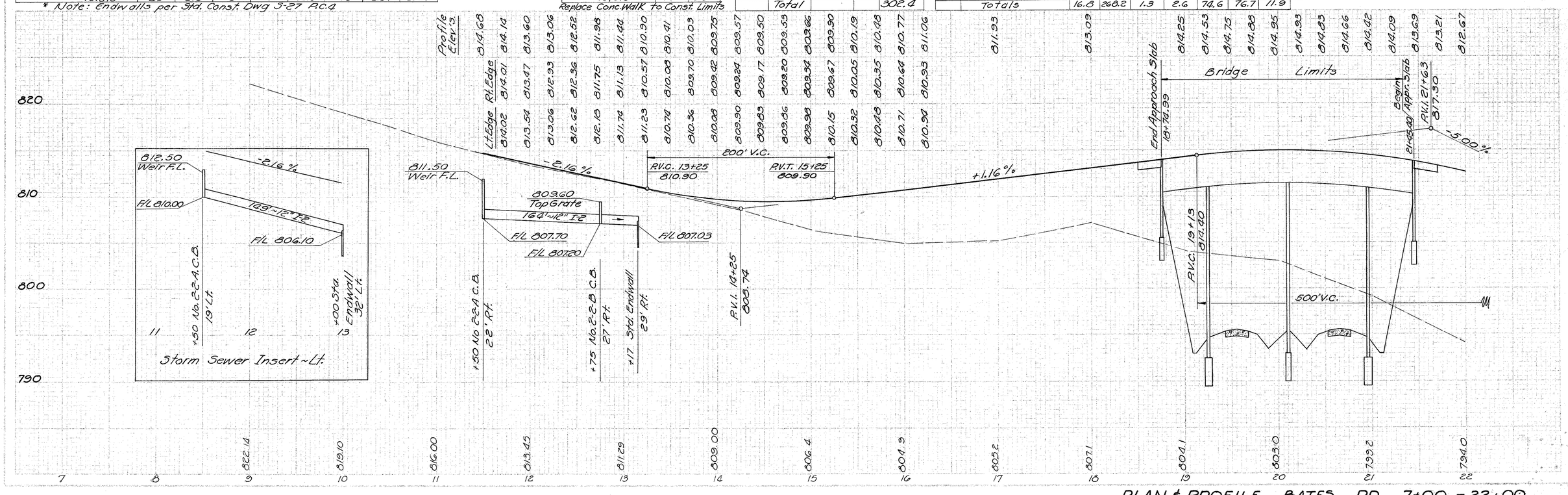
Ref. No.	Station From	Station To	Side	Wire Cable
				Lin. Ft.
1-G	17+44.8	18+56.8	Lt.	112.0
2-G	17+50.4	18+62.4	Rt.	112.0
3-G	21+58.0	22+00	Lt.	42.0
4-G	21+63.6	22+00	Rt.	36.4
Total				302.4

(A) DRIVES & APPROACHES

Ref. No.	Station	Side	Type	Width	T-32 No. 46 Aggreg. Rd. Mix.	T-32 Bitum. Mater. Rd. Mix.	T-32 No. 67-9 Aggreg. Choke	T-32 No. 6 Aggreg. Seal	T-32 Bitum. Mater. Seal	B-119 8"	B-119 6"
				Ft.	Cu. Yds.	Gal.	Cu. Yds.	Cu. Yd.	Gal.	Cu. Yd.	Cu. Yd.
1-A	11+69	Rt.	Res. M.B.	16	4.7	74.7	0.4	0.7	20.8	18.5	
2-A	12+97	Rt.	Field	12							11.9
3-A	15+30	Lt.	Res.	12	4.4	70.2	0.3	0.7	19.5	17.3	
4-A	14+93	Rt.	MB		1.8	27.9	0.2	0.3	7.8	6.9	
5-A	16+60±	Lt.	Res.	12	5.9	95.4	0.4	0.9	26.5	34.0	
Totals					16.8	268.2	1.3	2.6	74.6	76.7	11.9

Note: For erosion control at approach slabs see detail Sht. 109

℄ Constr. Station



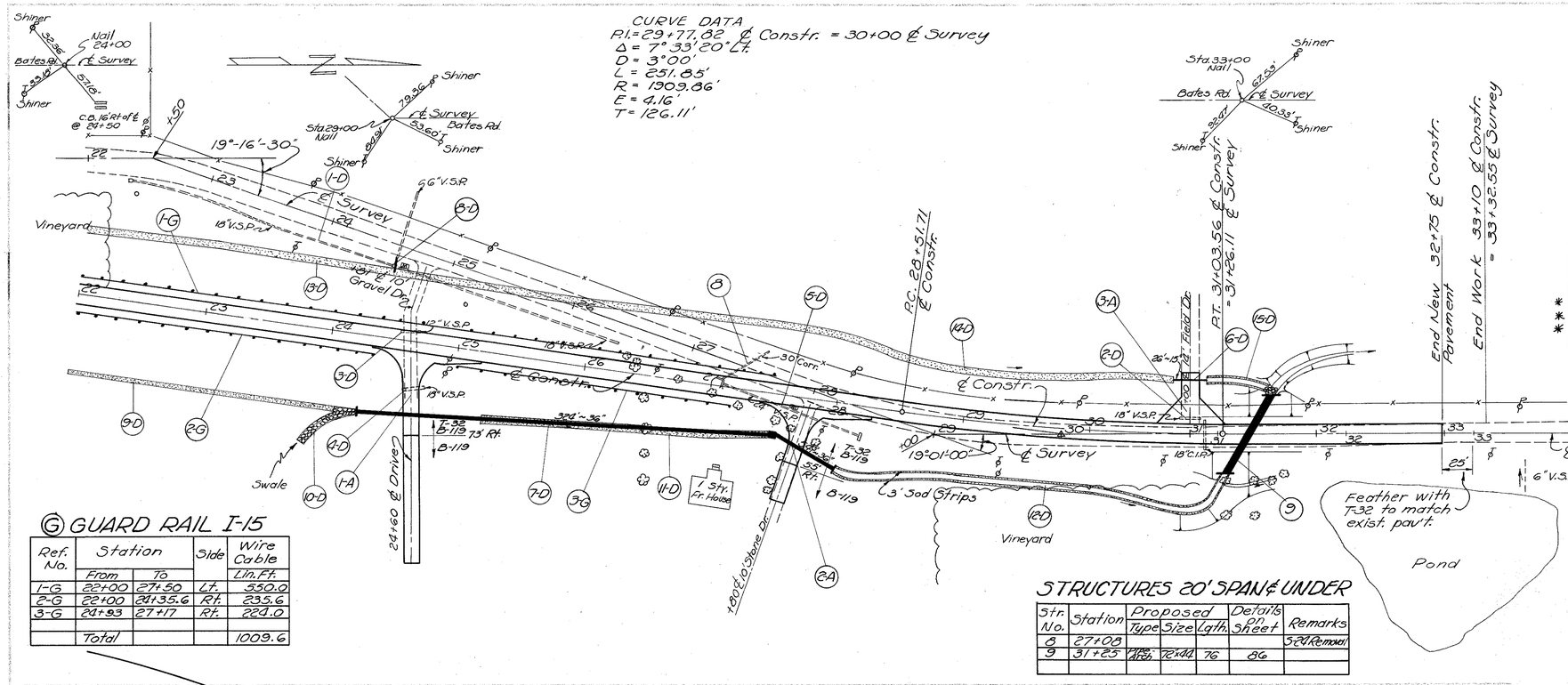
PLAN & PROFILE BATES RD. 7+00 - 22+00

DIST.	STATE	PROJECT	
2	OHIO	I-1103(15)	

66
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

CURVE DATA
P.I.=29+77.82 ℄ Constr. = 30+00 ℄ Survey
Δ = 7°33'20" Lt.
D = 3°00'
L = 251.85'
R = 1909.86'
E = 4.16'
T = 126.11'



(A) DRIVES & APPROACHES

	Ref. No.	Station	Side	Type	Width	T-32 No. 46 Aggreg. Rd. Mix.	T-32 Bitum. Mater. Rd. Mix.	T-32 No. 6 or 9 Aggreg. Choke	T-32 No. 6 Aggreg. Seal.	T-32 Bitum. Mater. Seal.	B-119 8"	B-119 6"
						Cu. Yd.	Gal.	Cu. Yd.	Cu. Yd.	Gal.	Cu. Yd.	Cu. Yd.
*	1-A	24+60(±)	Rt.	M.S. M.S.	12'	7.6	121.5	0.6	1.1	33.8	59.6	
*	2-A	27+80(±)	Rt.	M.S. M.S.	12'	6.1	97.2	0.4	0.9	27.0	33.1	
*	3-A	30+78(±)	Lt.	Field	14'							17.8
		Totals				13.7	218.7	1.0	2.0	60.8	92.7	17.8

* ℄ Constr. Station

Note: Exist. topography is plotted on ℄ Survey Stationing. Exist. & Proposed profiles are plotted on ℄ Constr. Stationing

(G) GUARD RAIL I-15

Ref. No.	Station From	Station To	Side	Wire Cable Lin. Ft.
1-G	22+00	27+50	Lt.	550.0
2-G	22+00	24+35.6	Rt.	235.6
3-G	24+93	27+17	Rt.	224.0
	Total			1009.6

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgth.	Details on Sheet	Remarks
8	27+08					S.P. Removal
9	31+25	Pipe Arch.	72"x44"	76	86	

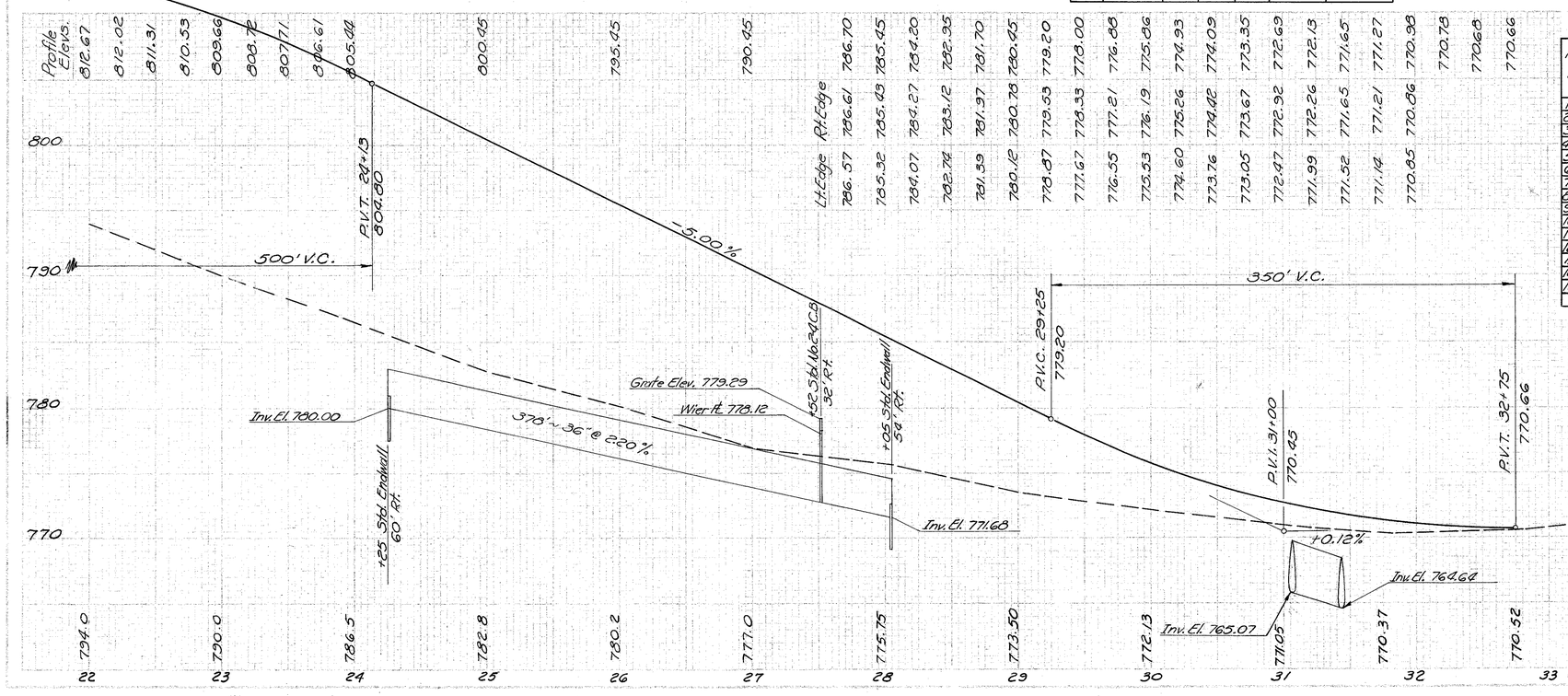
ESTIMATED QUANTITIES

Item	Description	Unit	Quantity
T-32	No. 46 Aggregate for Road Mix.	Cu. Yds.	179.7
T-32	Bituminous Material for Road Mix.	Gals.	2888.1
T-32	No. 6 or 9 Aggregate for Choke	Cu. Yds.	12.9
T-32	No. 6 Aggregate for Seal Coat	Cu. Yds.	25.7
T-32	Bituminous Material for Seal Coat	Gals.	802.3
B-119	5" Crushed Aggregate Base Course	Cu. Yds.	473.5
T-22	4" Subbase	Cu. Yds.	426.8
T-30	Bituminous Prime Coat	Gals.	1123.2
E-101	Compacted Subgrade	Sq. Yds.	3363
I-7	Reinforced Concrete Approach Slabs	Sq. Yds.	154

DRAINAGE

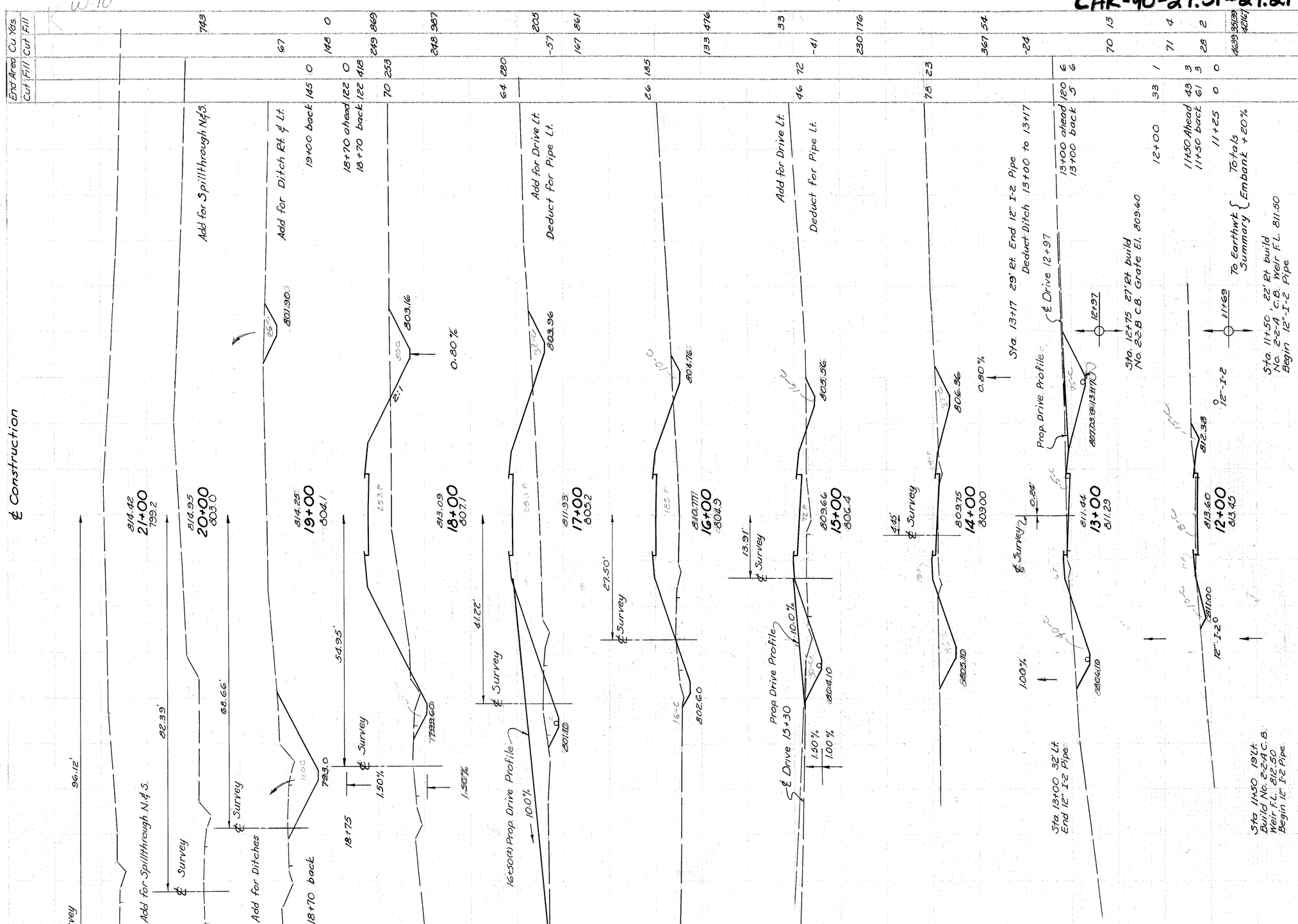
Ref. No.	Station From	Station To	Side	E-12 Pipe Removed (Lin. Ft.)	I-1 15" Pipe for Driveways (Lin. Ft.)	I-2 36" Cl. "A" Storm Sewer (Lin. Ft.)	I-3 6" Pipe Outlet (Lin. Ft.)	I-8 Std. No. 24 Catch Basin Each	I-10 Dumped Rock Channel Protection Cu. Yd.	I-14 Std. Type Paved Gutter Lin. Ft.	L-10 Sodding Sq. Yd.	S-1 Cl. "E" Conc. for Structure Cu. Yd.
1-D	22+92	26+24	Lt.	402								
2-D	30+70	30+85	Lt.	15								
3-D	24+54	24+69	Lt.	14								
4-D	24+60	24+75	Rt.	16								
5-D	27+09	28+21	Rt.	114								
6-D	30+65	30+91	Lt.		26							
7-D	24+25	28+05	Rt.			378		1				1.18*
8-D	24+43		Lt.				10					
9-D	22+00	24+10	Rt.								117	
10-D	23+90	24+25	Rt.						14	32		
11-D	25+25	27+52	Rt.								126	
12-D	28+05	31+07	Rt.							320	213	
13-D	22+00	26+00	Lt.								222	
14-D	26+00	30+65	Lt.								310	
15-D	30+91	31+47	Lt.						3	52		
	Totals			561	26	378	10	1	17	404	988	1.18

*Note: Endwall per Std. Const. Dwg. S-27 P.C. 4

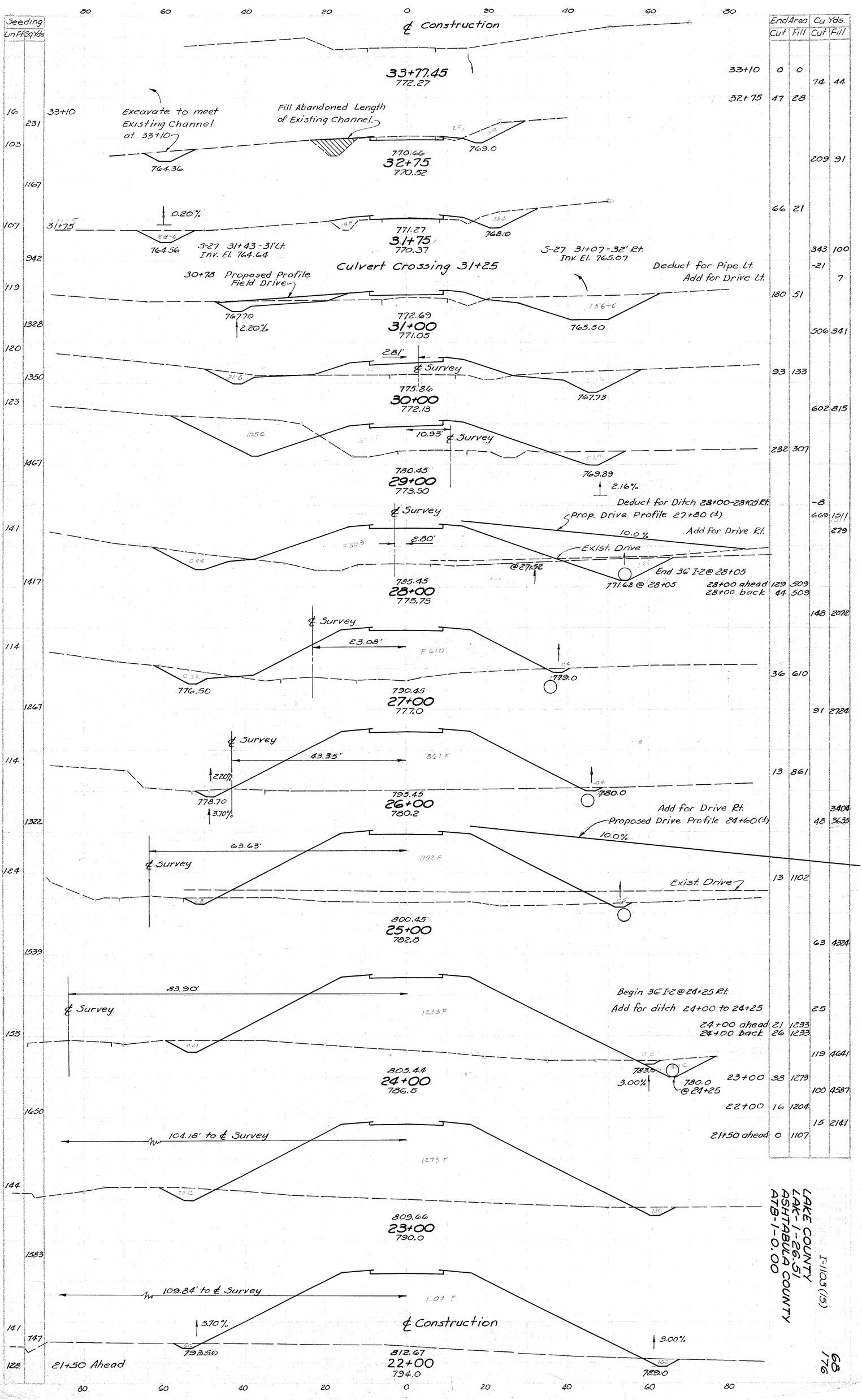


PLAN & PROFILE BATES RD. 22+00 - 35+00

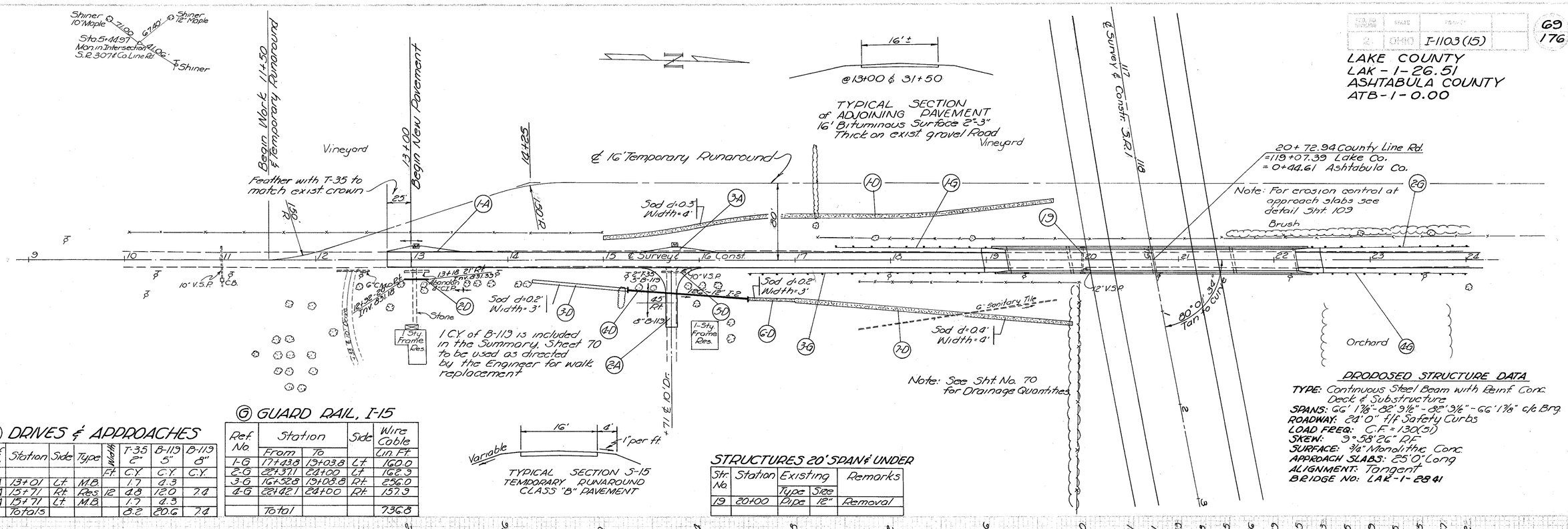
I-1103 (15)
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



BATES RD. CROSS SECTIONS 10+00 - 21+00


Seeding
Un Ft Sq Yds
End Area
Cu Yds.
Cut Fill Cut Fill
℄ Construction
33+77.45
772.27
33+10 0 0
74 44
32+75 47 28
Excavate to meet Existing Channel at 33+10
Fill Abandoned Length of Existing Channel.
764.36
770.66
32+75
770.52
769.0
209 91
66 21
0.20%
764.56
771.27
31+75
770.37
768.0
S-27 31+43 - 31' Lt. Inv. El. 764.64
S-27 31+07 - 32' Rt. Inv. El. 765.07
343 100
Culvert Crossing 31+25
Deduct for Pipe Lt.
Add for Drive Lt.
-21
7
30+78 Proposed Profile Field Drive
180 51
767.70
2.20%
772.69
31+00
771.05
765.50
506 341
2.81'
℄ Survey
93 133
775.86
30+00
772.13
767.73
602 815
10.93'
℄ Survey
232 307
780.45
29+00
773.50
769.89
2.16%
Deduct for Ditch 28+00-28+05 Rt.
-8
℄ Survey
Prop. Drive Profile 27+80 (±)
669 1511
10.0%
Add for Drive Rt.
279
2.80'
Exist. Drive
@ 27+92
End 36" I-2 @ 28+05
785.45
28+00
775.75
771.68 @ 28+05
28+00 ahead 129 509
28+00 back 44 509
148 2072
℄ Survey
23.08'
776.50
790.45
27+00
777.0
779.0
36 610
91 2724
℄ Survey
43.35'
2.20%
778.70
3.70%
795.45
26+00
780.2
780.0
13 861
Add for Drive Rt.
3404
Proposed Drive Profile 24+60 (±)
48 3635
10.0%
63.63'
℄ Survey
Exist. Drive
13 1102
800.45
25+00
782.8
63 4324
83.90'
℄ Survey
Begin 36" I-2 @ 24+25 Rt.
Add for ditch 24+00 to 24+25
25
24+00 ahead 21 1233
24+00 back 26 1233
119 4641
805.44
24+00
786.5
783.0
3.00%
780.0 @ 24+25
23+00 38 1273
100 4587
22+00 16 1204
21+50 ahead 0 1107
15 2141
104.18' to ℄ Survey
809.66
23+00
790.0
109.84' to ℄ Survey
3.70%
℄ Construction
3.00%
793.50
812.67
22+00
794.0
789.0
21+50 Ahead
BATES RD. CROSS SECTIONS 22+00 - 33+77.45
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00
I-1103 (15)
68
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Ⓐ DRIVES & APPROACHES

Ref. No.	Station	Side	Type	Width	T-35 2"	B-119 5"	B-119 8"
				Ft.	C.Y.	C.Y.	C.Y.
1-A	13+01	Lt.	M.B.		1.7	4.3	
2-A	15+71	Rt.	Res.	12	4.8	12.0	7.4
3-A	15+71	Lt.	M.B.		1.7	4.3	
	Totals				8.2	20.6	7.4

Ⓖ GUARD RAIL, I-15

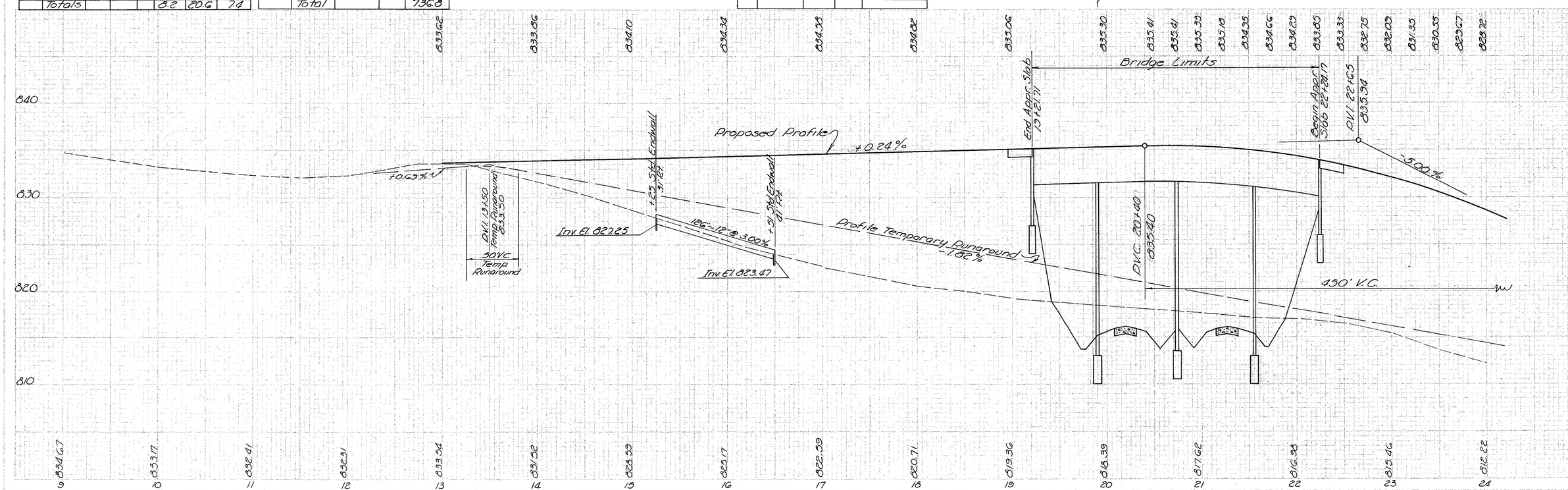
Ref. No.	Station From	Station To	Side	Wire Cable Lin. Ft.
1-G	17+43.8	19+03.8	Lt.	160.0
2-G	22+37.1	24+00	Lt.	162.9
3-G	16+52.8	19+08.8	Rt.	256.0
4-G	22+42.1	24+00	Rt.	157.9
	Total			736.8

STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Existing Type	Existing Size	Remarks
19	20+00	Pipe	12"	Removal

PROPOSED STRUCTURE DATA

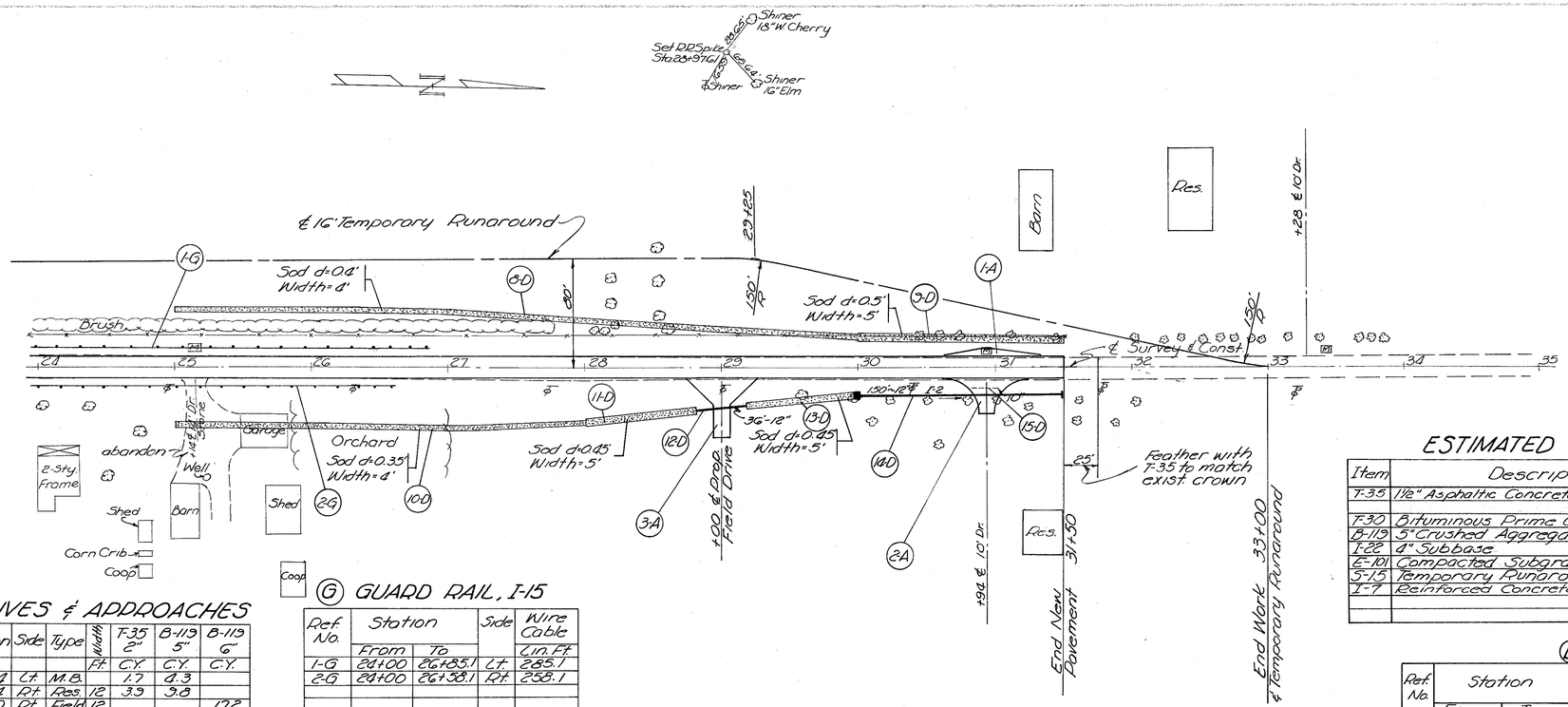
TYPE: Continuous Steel Beam with Reinf. Conc. Deck & Substructure
SPANS: 66' 1⅞" - 82' 9½" - 82' 9⅛" - 66' 1⅞" c/c Brg.
ROADWAY: 24' 0" f/f Safety Curbs
LOAD FREQ: C.F. = 130(51)
SKEW: 9°58'26" R.F.
SURFACE: ¾" Monolithic Conc.
APPROACH SLABS: 25' 0" Long
ALIGNMENT: Tangent
BRIDGE NO: LAK-1-2841



PLAN & PROFILE COUNTY LINE RD. 9+00 - 24+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



ESTIMATED QUANTITIES

Item	Description	Unit	Quantity	
I-35	1½" Asphaltic Concrete Surface Course	Cu.Yds.	110.9	
I-30	Bituminous Prime Coat	Gals.	332.1	
B-119	5" Crushed Aggregate Base Course	Cu.Yds.	333.9	
I-22	4" Subbase	Cu.Yds.	358.1	
E-101	Compacted Subgrade	Sq.Yds.	2815	
S-15	Temporary Runaround using Class "B" Pav't.	Lump	Lump	
I-7	Reinforced Concrete Approach Slabs	Sq.Yd.	152	

(A) DRIVES & APPROACHES

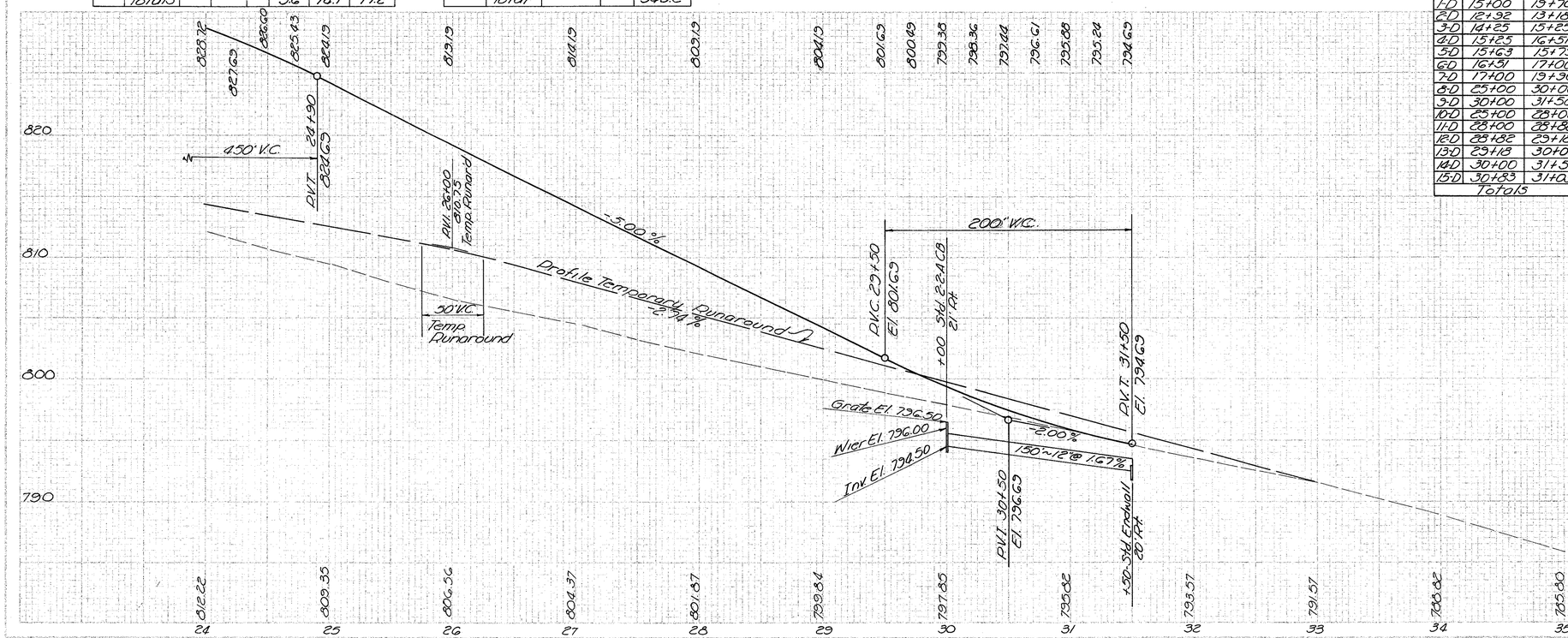
Ref. No.	Station	Side	Type	Width	I-35 2"	B-119 5"	B-119 6"
				Ft.	C.Y.	C.Y.	C.Y.
1-A	30+30	Lt.	M.B.		1.7	2.3	
2-A	30+30	Rt.	Res.	12	3.9	5.8	
3-A	29+00	Rt.	Field	12			17.2
	Totals				5.6	10.1	17.2

(G) GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Wire Cable Lin.Ft.
1-G	24+00	26+85.1	Lt.	285.1
2-G	24+00	26+58.1	Rt.	258.1
	Total			543.2

(D) DRAINAGE

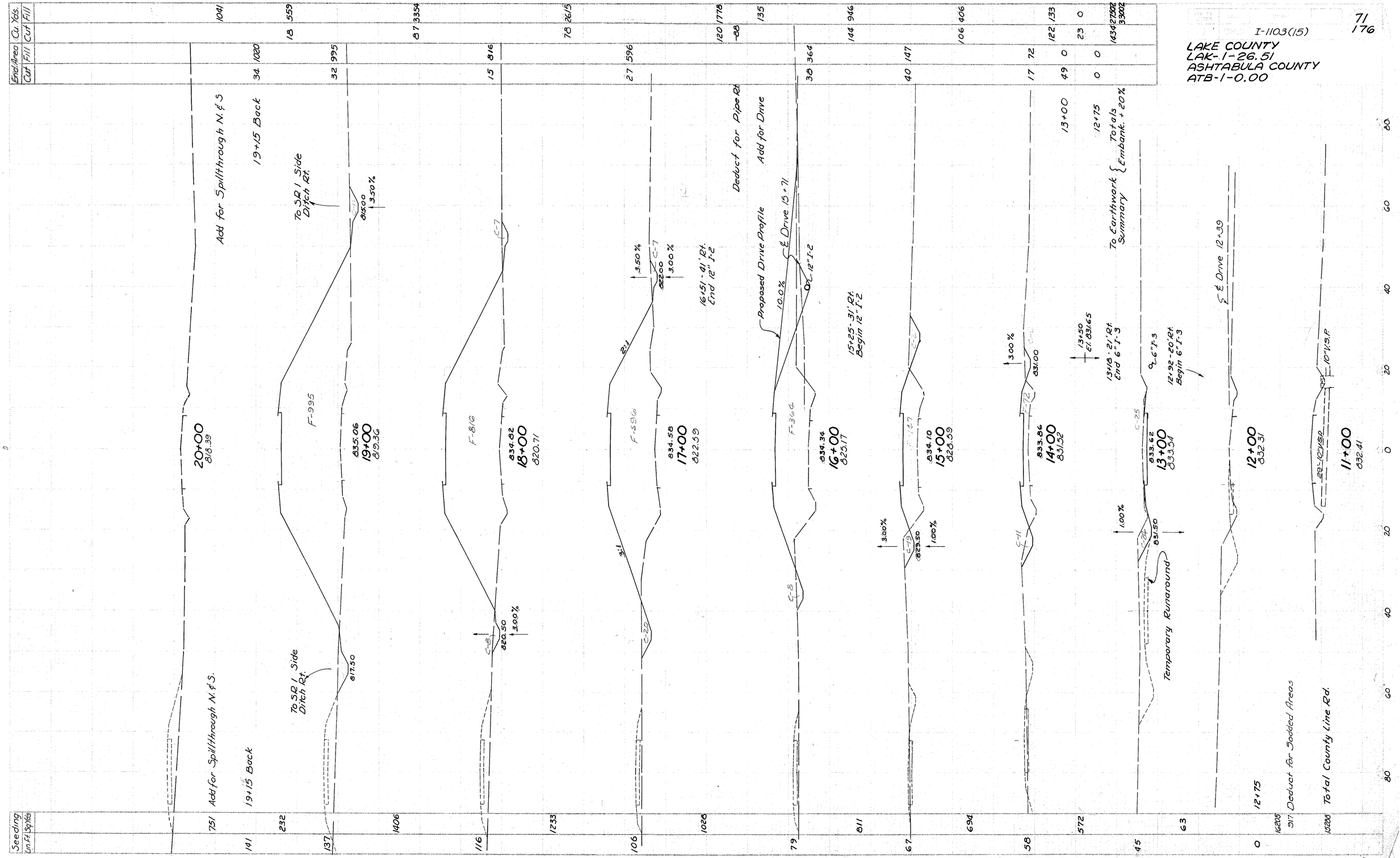
Ref. No.	Station From	Station To	Side	E-12 Pipe Removed Lin.Ft.	I-2 12" Class A Storm Sewer Lin.Ft.	I-3 6" Rdwy Drainage Lin.Ft.	I-8 Std. #22A Catch Basin for Endwalls Each	S-1 Cl. "E" Conc. Cu.Yds.	L-10 Sodding Sq.Yds.	I-1 12" Pipe for Driveways Lin.Ft.	See Sht. No.
1-D	15+00	19+70	Lt.						209		69
2-D	12+92	13+18	Rt.			26					69
3-D	14+25	15+25	Rt.						33		69
4-D	15+25	16+51	Rt.		126			0.46			69
5-D	15+63	15+79	Rt.	16							69
6-D	16+51	17+00	Rt.						16		69
7-D	17+00	19+30	Rt.						129		69
8-D	25+00	30+00	Lt.						222		70
9-D	30+00	31+50	Lt.						83		70
10-D	25+00	28+00	Rt.						133		70
11-D	28+00	28+82	Rt.						46		70
12-D	28+82	29+18	Rt.							36	70
13-D	29+18	30+00	Rt.						46		70
14-D	30+00	31+50	Rt.		150		1	0.23			70
15-D	30+83	31+03	Rt.	20							70
	Totals			36	276	26	1	0.69	317	36	



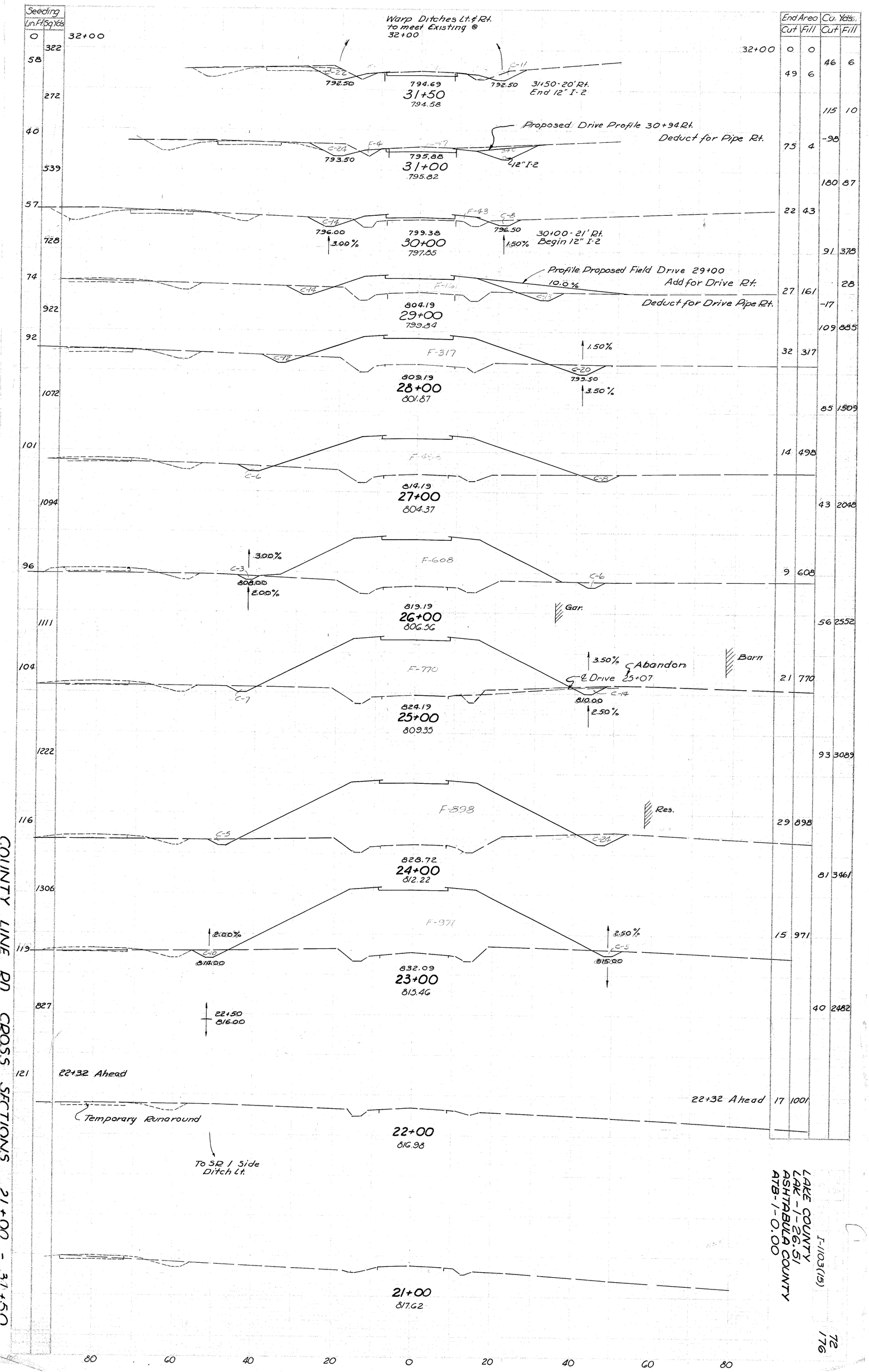
PLAN & PROFILE COUNTY LINE RD. 24+00 - 35+00

I-1103(15)

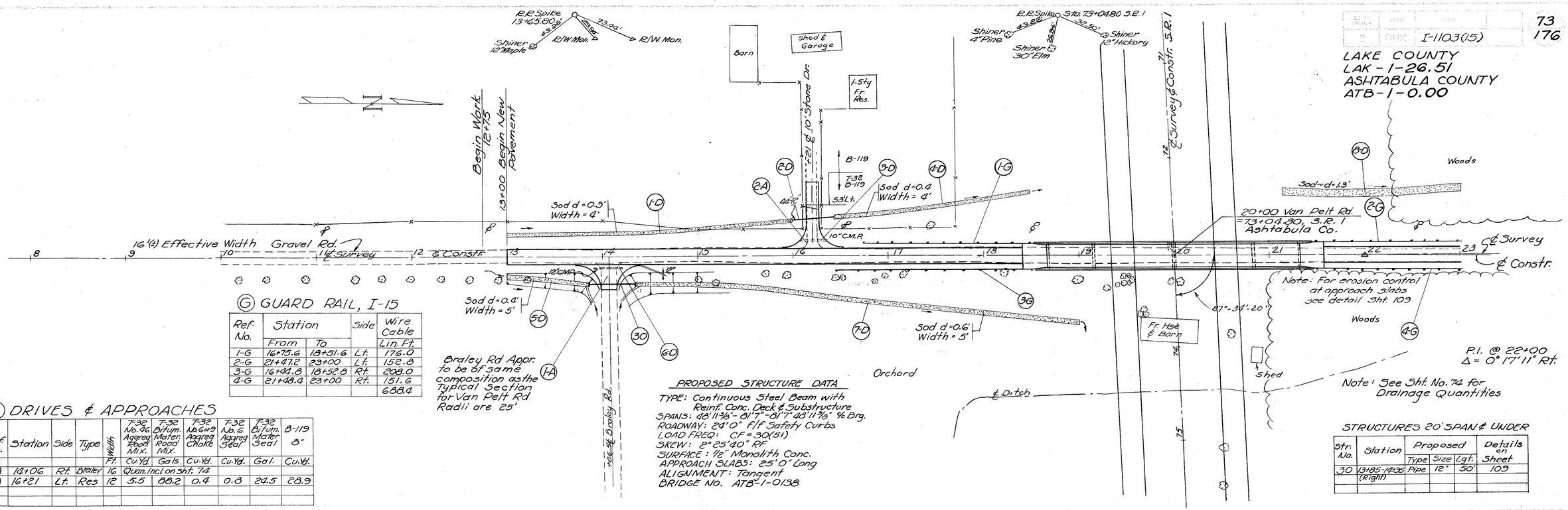
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



COUNTY LINE RD. CROSS SECTIONS 11+00 - 20+00


Seeding
Un. Ft. Sq. Yds.
Warp Ditches Lt. & Rt. to meet Existing @ 32+00
32+00
31+50
794.69
794.58
792.50
792.50
31+50 - 20' Rt.
End 12" I-2
Proposed Drive Profile 30+94 Rt.
Deduct for Pipe Rt.
31+00
795.88
795.82
793.50
12" I-2
30+00
799.38
797.85
796.00
796.50
3.00%
1.50%
30+00 - 21' Rt.
Begin 12" I-2
Profile Proposed Field Drive 29+00
10.0%
Add for Drive Rt.
Deduct for Drive Pipe Rt.
29+00
804.19
799.84
F-317
1.50%
28+00
809.19
801.87
799.50
3.50%
F-498
27+00
814.19
804.37
F-608
3.00%
2.00%
808.00
26+00
819.19
806.56
Gar.
F-770
3.50%
Abandon
℄ Drive 25+07
Barn
25+00
824.19
809.35
810.00
2.50%
F-898
Res.
24+00
828.72
812.22
F-971
2.00%
2.50%
814.00
815.00
23+00
832.09
813.46
22+50
816.00
22+32 Ahead
Temporary Runaround
22+00
816.98
To SR 1 Side Ditch Lt.
21+00
817.62
End Area
Cut Fill
Cu. Yds.
Cut Fill
COUNTY LINE RD CROSS SECTIONS 21+00 - 31+50
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00
I-1103(15)
72
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PROPOSED STRUCTURE DATA

TYPE: Continuous Steel Beam with Reinf. Conc. Deck & Substructure
SPANS: 48'11⅜" - 81'7" - 81'7" - 48'11⅜" % Brg.
ROADWAY: 24'0" f/f Safety Curbs
LOAD FREQ: CF=30(51)
SKEW: 2°25'40" RF
SURFACE: ½" Monolith Conc.
APPROACH SLABS: 25'0" Long
ALIGNMENT: Tangent
BRIDGE NO. ATB-1-0138

(G) GUARD RAIL, I-15

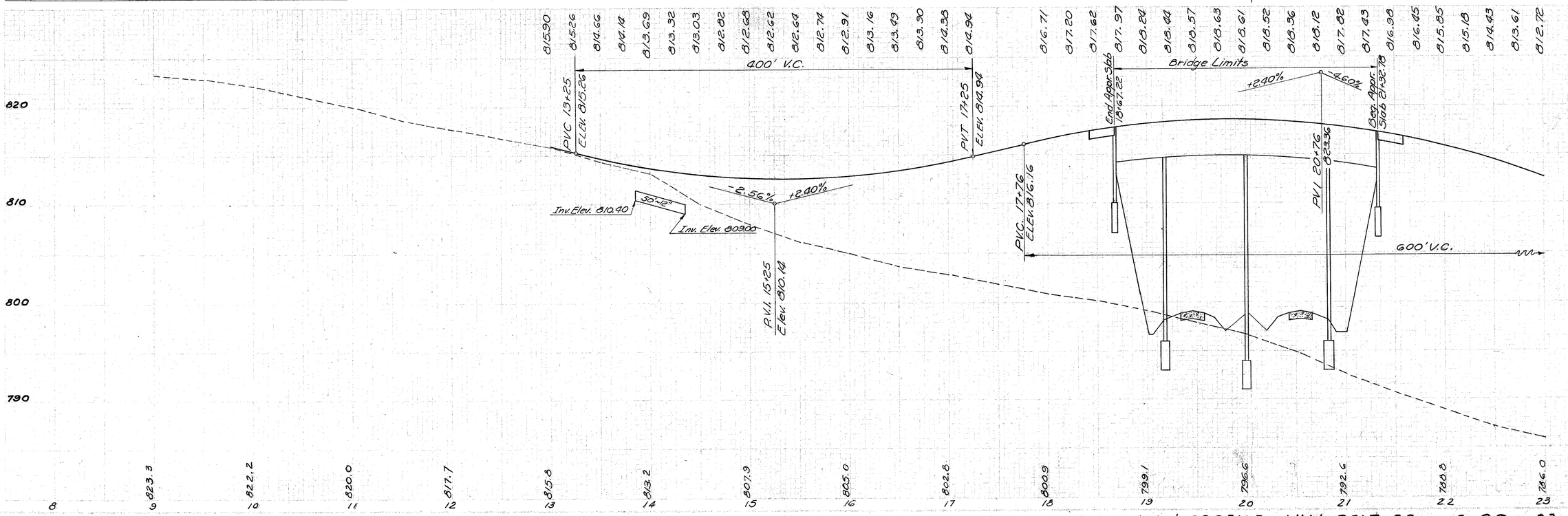
Ref. No.	Station From	Station To	Side	Wire Cable Lin. Ft.
1-G	16+75.6	18+51.6	Lt.	176.0
2-G	21+47.2	23+00	Lt.	152.8
3-G	16+44.8	18+52.8	Rt.	208.0
4-G	21+48.4	23+00	Rt.	151.6
				688.4

(A) DRIVES & APPROACHES

Ref. No.	Station	Side	Type	Width	T-32 No. 66 Aggreg Road Mix.	T-32 Bitum. Mater. Road Mix.	T-32 No. 6 or 9 Aggreg Choke	T-32 No. 6 Aggreg Seal	T-32 Bitum. Mater. Seal	B-119 8"
				Ft.	Cu. Yd.	Gals.	Cu. Yd.	Cu. Yd.	Gal.	Cu. Yd.
1-A	12+06	Rt.	Braley	16	Quan. Incl. on Sht. 74					
2-A	16+21	Lt.	Res	12	5.5	88.2	0.4	0.8	24.5	28.9

STRUCTURES 20' SPAN & UNDER

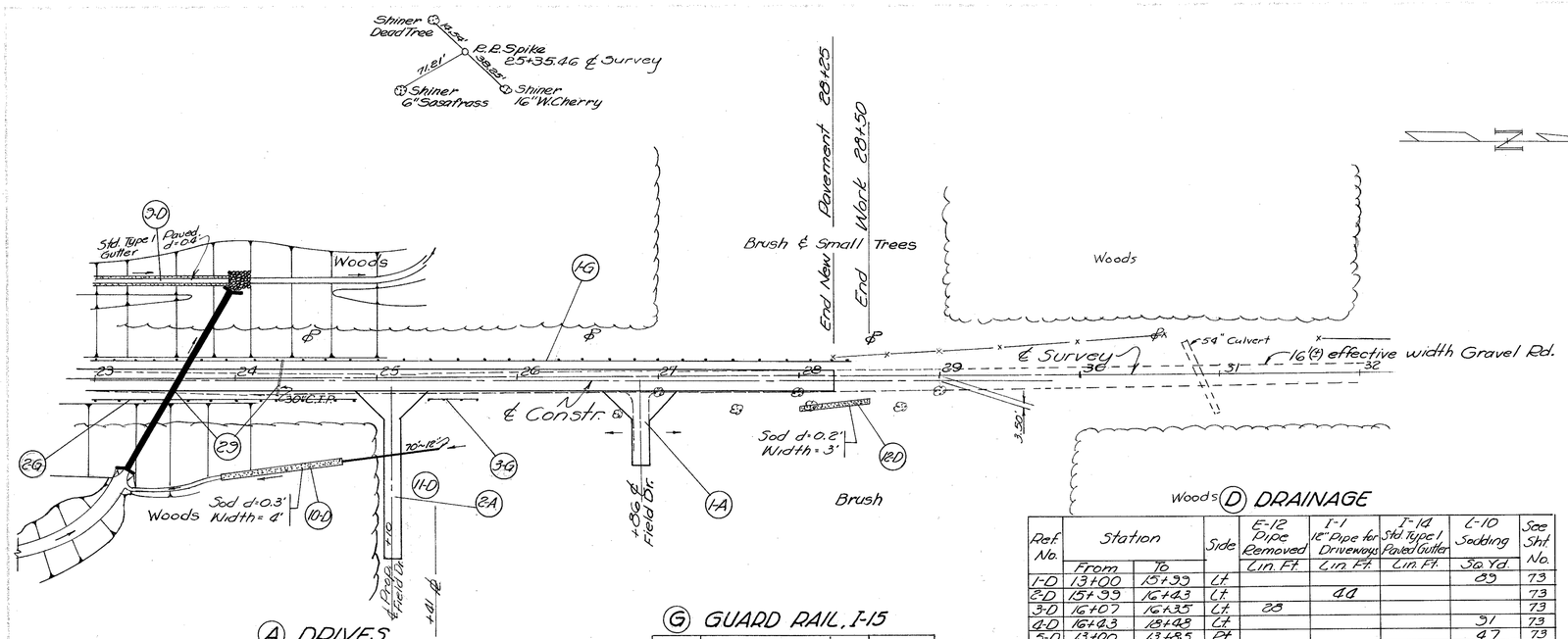
Str. No.	Station	Proposed Type	Size	Lgt.	Details on Sheet
30	13+85-14+35 (Right)	Pipe	12"	50'	109

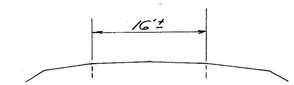


PLAN & PROFILE VAN PELT RD. 8+00 - 23+00

I-1103(15)

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00





TYPICAL SECTION EXISTING ROAD
16'± Effective Width
Unsurfaced Gravel

(A) DRIVES

Ref. No.	Station	Side	Type	Width	B-119 6"	
				Ft.	C.Y.	
1-A	26+86	Rt.	Field	12	19.0	
2-A	25+10	Rt.	Field	12	34.1	
	Total				53.1	

(G) GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Wire Cable Lin. Ft.
1-G	23+00	28+352	Lt.	535.2
2-G	23+00	24+840	Rt.	184.4
3-G	25+38	25+60	Rt.	32
				751.6

(D) DRAINAGE

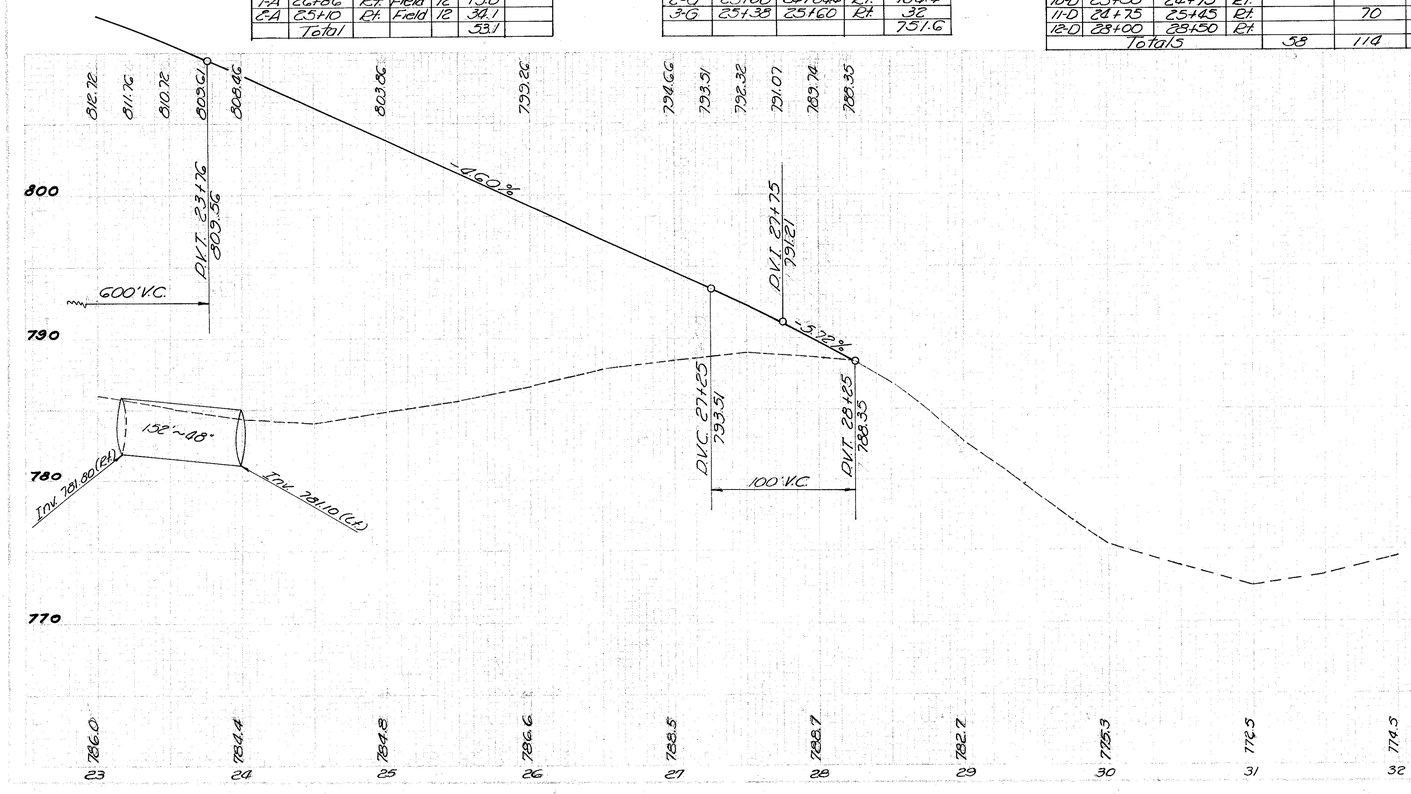
Ref. No.	Station From	Station To	Side	E-12 Pipe Removed Lin. Ft.	I-1 12" Pipe for Driveways Lin. Ft.	I-1d Std. Type 1 Paved Gutter Lin. Ft.	L-10 Sodding Sq. Yd.	See Sht. No.
1-D	13+00	15+99	Lt.				89	73
2-D	15+99	16+43	Lt.		44			73
3-D	16+07	16+35	Lt.	28				73
4-D	16+43	18+48	Lt.				91	73
5-D	13+00	13+85	Rt.				47	73
6-D	13+51	14+21	Rt.	30				73
7-D	14+35	19+00	Rt.				238	73
8-D	21+13	23+00	Lt.				166	73
9-D	23+00	23+35	Lt.			35	32	74
10-D	23+30	24+75	Rt.				38	74
11-D	24+75	25+45	Rt.		70			74
12-D	28+00	28+50	Rt.				17	74
Totals				58	114	35	738	

ESTIMATED QUANTITIES

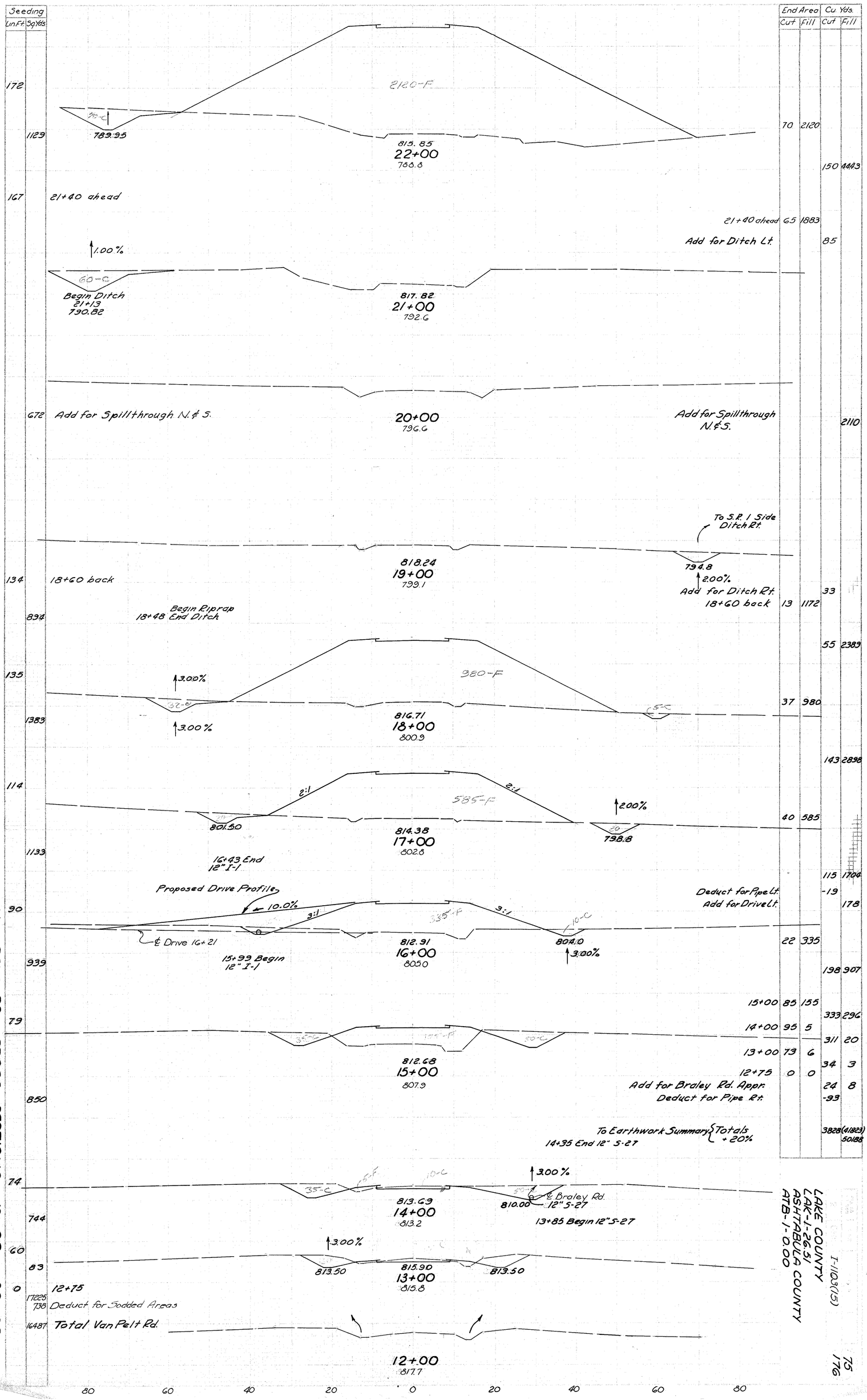
Item	Description	Unit	Quantity
T-32	No. 16 Aggregate for Road Mix	Cu.Yd.	125.1
T-32	Bituminous Material for Road Mix	Gal.	2009.7
T-32	No. 6 or 9 Aggregate for Choke	Cu.Yd.	8.5
T-32	No. 6 Aggregate for Seal Coat	Cu.Yd.	17.5
T-32	Bituminous Material for Seal Coat	Gal.	538.3
T-30	Bituminous Prime Coat	Gal.	781.6
B-119	5" Crushed Aggregate Base Course	Cu.Yd.	328.7
T-22	4" Subbase	Cu.Yd.	303.2
E-101	Compacted Subgrade	Sq.Yd.	2385
I-7	Reinforced Concrete Approach Slabs	Sq.Yd.	152

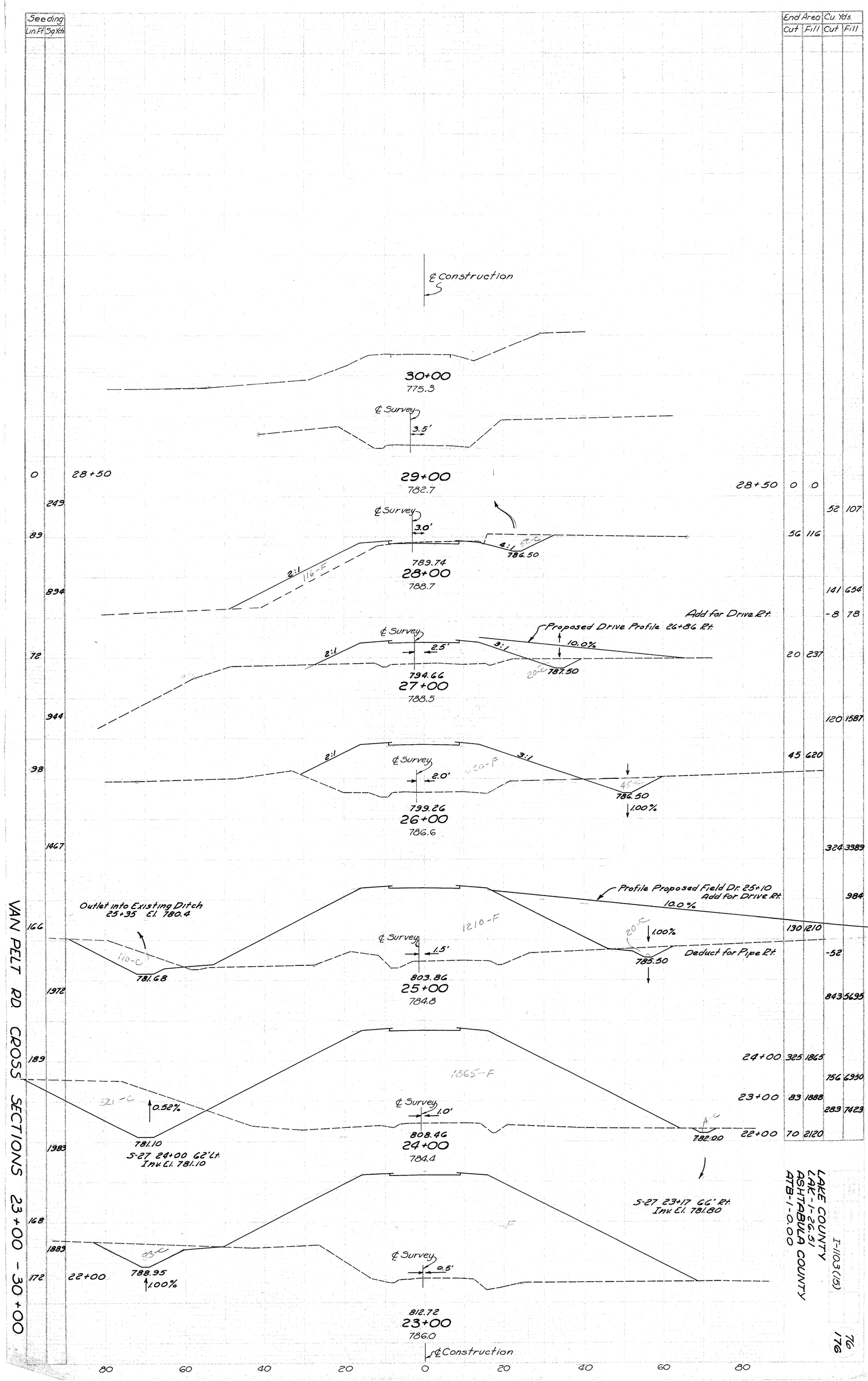
STRUCTURES 20' SPAN & UNDER

Str. No.	Station	Proposed Type	Proposed Size	Proposed Lgth.	Details on Sheet
29	23+60	Pipe	48"	132'	103

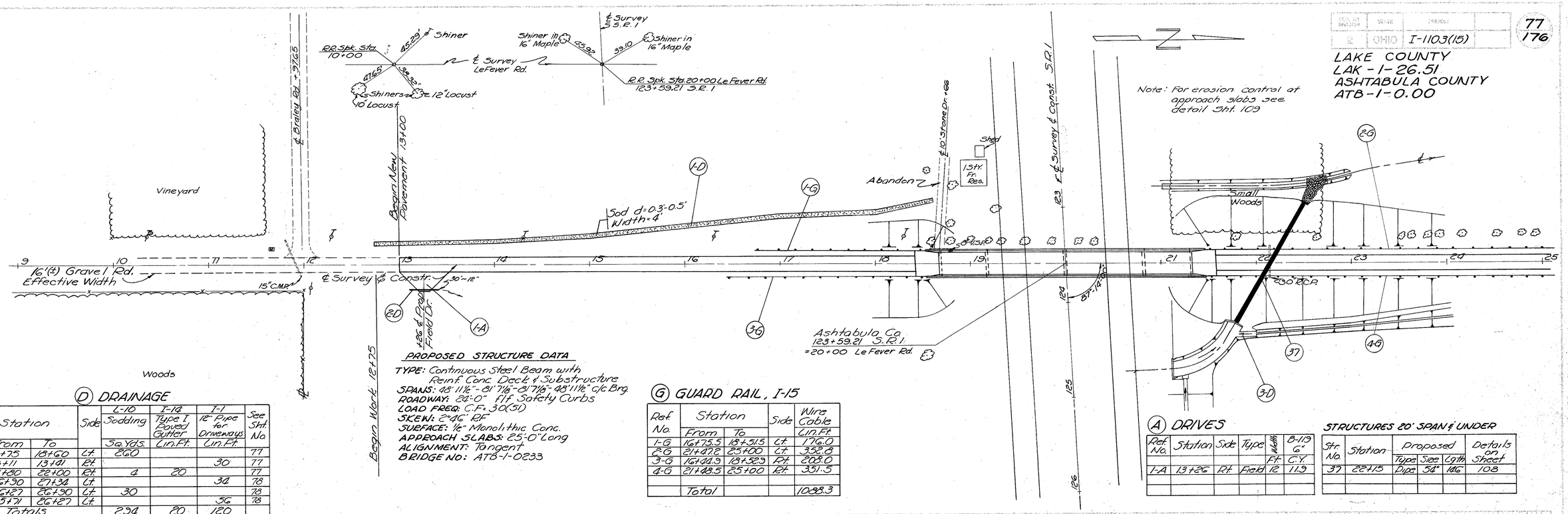


PLAN & PROFILE VAN PELT RD. 23+00 - 32+00


Seeding
Lin Ft
Sq Yds
End Area
Cut
Fill
Cu. Yds.
Cut
Fill
172
2120-F
789.95
1129
815.85
22+00
786.8
70 2120
150 4443
167
21+40 ahead
21+40 ahead 65 1883
Add for Ditch Lt.
85
1.00%
60-C
Begin Ditch
21+13
790.82
817.82
21+00
792.6
672 Add for Spillthrough N. & S.
20+00
796.6
Add for Spillthrough
N. & S.
2110
To S.R. 1 Side
Ditch Rt.
818.24
19+00
799.1
794.8
134
18+60 back
2.00%
Add for Ditch Rt.
18+60 back 13 1172
33
834
Begin Riprap
18+48 End Ditch
55 2389
135
3.00%
980-F
62-C
65-C
37 980
1383
3.00%
816.71
18+00
800.9
143 2898
114
2:1
585-F
2:1
2.00%
801.50
814.38
17+00
802.8
20
798.8
40 585
1133
16+43 End
12" I-1
115 1704
Proposed Drive Profile
Deduct for Pipe Lt.
-19
Add for Drive Lt.
178
90
10.0%
3:1
335-F
3:1
10-C
℄ Drive 16+21
812.91
16+00
805.0
804.0
3.00%
22 335
939
15+93 Begin
12" I-1
198 907
15+00 85 155
333 296
79
14+00 95 5
311 20
35-C
50-C
13+00 73 6
34 3
812.68
15+00
807.9
12+75 0 0
Add for Braley Rd. Appr.
24 8
Deduct for Pipe Rt.
-93
850
To Earthwork Summary { Totals + 20%
3828 (41823)
50188
14+35 End 12" S-27
74
35-C
15-F
10-C
3.00%
813.69
14+00
813.2
810.00
℄ Braley Rd.
12" S-27
13+85 Begin 12" S-27
744
60
3.00%
83
813.50
815.90
13+00
815.8
813.50
0
12+75
17225
738 Deduct for Sodded Areas
16487 Total Van Pelt Rd.
12+00
817.7
80
60
40
20
0
20
40
60
80
VAN PELT RD. CROSS SECTIONS 12+00 - 22+00
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00
I-1103(15)
75
176


Seeding
Lin. Ft. Sq. Yds.
End Area
Cut Fill
Cu Yds.
Cut Fill
℄ Construction
30+00
775.3
℄ Survey
3.5'
0
28+50
29+00
782.7
28+50 0 0
249
52 107
℄ Survey
3.0'
89
56 116
4:1
786.50
2:1
116-F
789.74
28+00
788.7
894
141 654
Add for Drive Rt.
-8 78
℄ Survey
Proposed Drive Profile 26+86 Rt.
10.0%
2:1
2.5'
3:1
72
20 237
787.50
794.66
27+00
788.5
944
120 1587
2:1
℄ Survey
3:1
98
45 620
2.0'
786.50
1.00%
799.26
26+00
786.6
1467
324 3389
Profile Proposed Field Dr. 25+10
Add for Drive Rt.
984
Outlet into Existing Ditch
25+35 El. 780.4
10.0%
166
1210-F
130 1210
℄ Survey
1.00%
1.5'
Deduct for Pipe Rt.
-52
110-C
781.68
785.50
803.86
25+00
784.8
1972
843 5695
189
24+00 325 1865
1865-F
756 6950
23+00 83 1888
321-C
0.52%
℄ Survey
1.0'
283 7423
781.10
S-27 24+00 62' Lt.
Inv. El. 781.10
808.46
24+00
784.4
1983
782.00
22+00 70 2120
S-27 23+17 66' Rt.
Inv. El. 781.80
168
1883
℄ Survey
0.5'
172
22+00
788.95
1.00%
812.72
23+00
786.0
℄ Construction
80
60
40
20
0
20
40
60
80
VAN PELT RD. CROSS SECTIONS 23+00 - 30+00
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00
I-1103(15)
76
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PROPOSED STRUCTURE DATA

TYPE: Continuous Steel Beam with Reinf. Conc. Deck & Substructure
SPANS: 48'-11½"-81'-7⅛"-81'-7⅛"-48'-11½" c/c Brg.
ROADWAY: 24'-0" F/F Safety Curbs
LOAD FREQ: C.F. 30(5D)
SKEW: 2°-46' RF
SURFACE: ½" Monolithic Conc.
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Tangent
BRIDGE NO: ATB-1-0233

(D) DRAINAGE

Ref. No.	Station From	Station To	Side	L-10 Sodding Sq. Yds.	I-14 Type I Paved Gutter Lin. Ft.	I-1 12" Pipe for Driveways Lin. Ft.	See Sht. No.
1-D	12+75	13+60	Lt.	260			77
2-D	13+11	13+41	Rt.			30	77
3-D	21+80	22+00	Rt.	4	20		77
4-D	26+90	27+34	Lt.			34	78
5-D	26+27	26+90	Lt.	30			78
6-D	25+71	26+27	Lt.			56	78
	Totals			294	20	120	

(G) GUARD RAIL, I-15

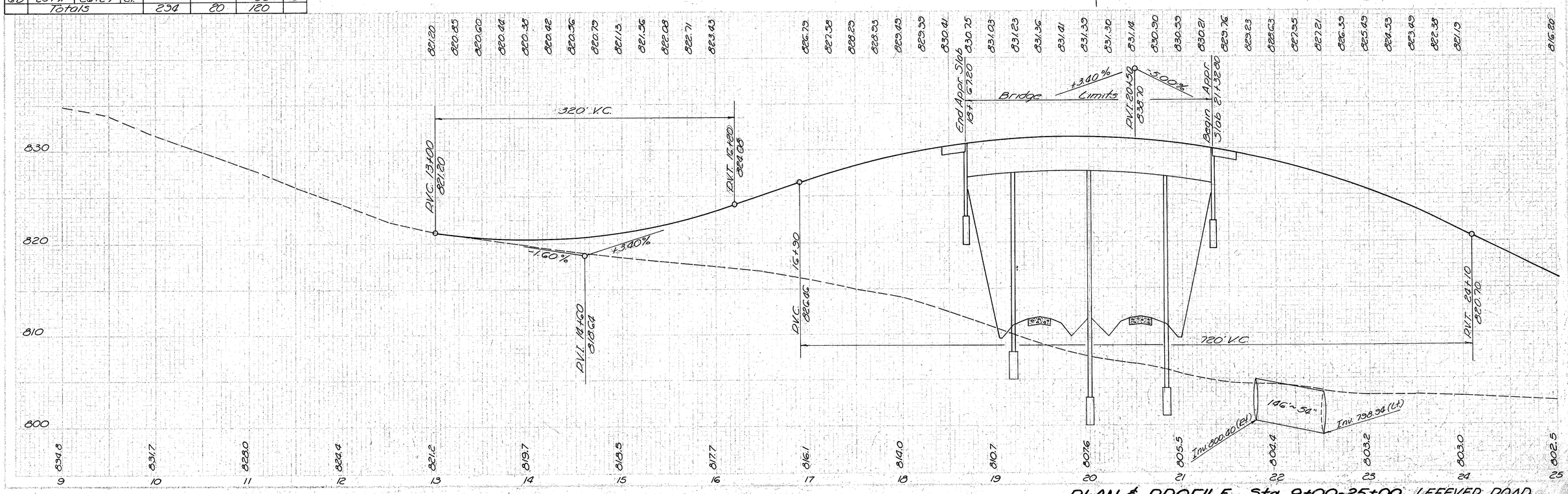
Ref. No.	Station From	Station To	Side	Wire Cable Lin. Ft.
1-G	16+75.5	18+31.5	Lt.	176.0
2-G	21+47.2	25+00	Lt.	352.8
3-G	16+44.9	18+52.9	Rt.	208.0
4-G	21+48.5	25+00	Rt.	351.5
	Total			1088.3

(A) DRIVES

Ref. No.	Station	Side	Type	Width Ft.	B-119 6" C.Y.
1-A	13+26	Rt.	Field	12	11.9

STRUCTURES 20' SPAN & UNDER

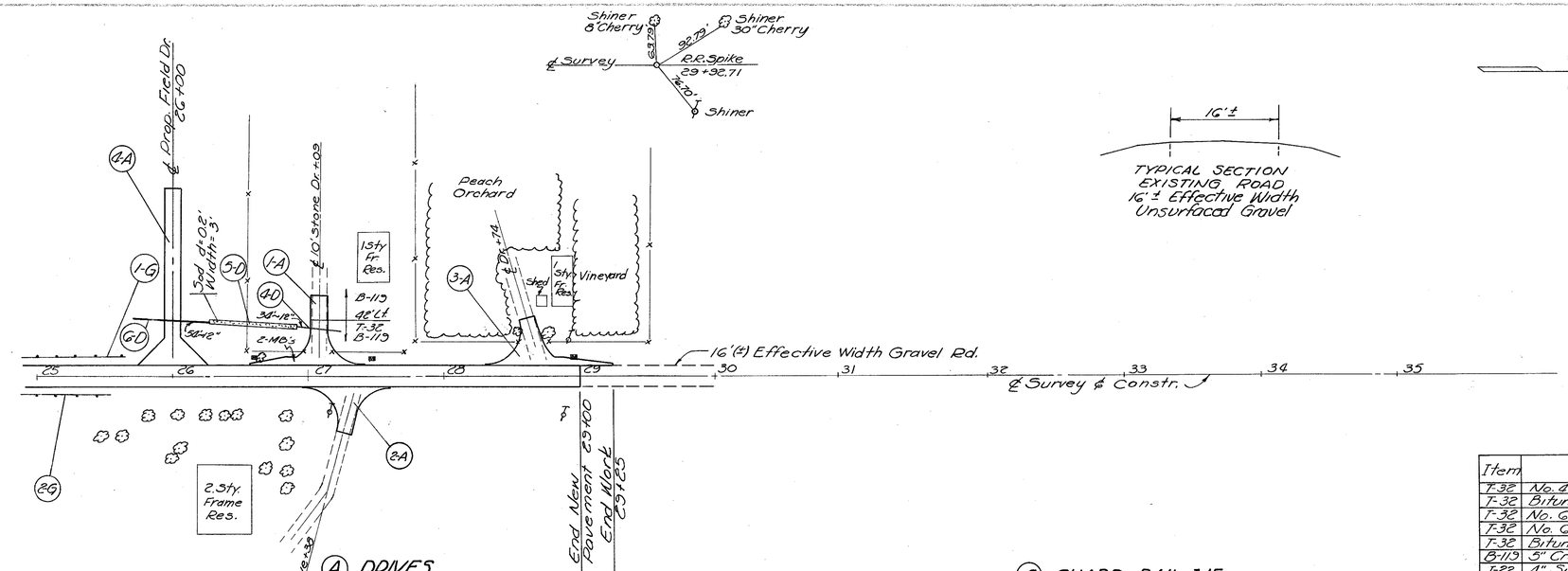
Str. No.	Station	Proposed Type	Size	Lgth.	Details on Sheet
37	22+15	Pipe	54"	146'	108



PLAN & PROFILE Sta. 9+00-25+00 LEFEVER ROAD

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



TYPICAL SECTION
EXISTING ROAD
16' ± Effective Width
Unsurfaced Gravel

(A) DRIVES

Ref. No.	Station	Side	Type	Width	T-32 No. 4G Aggreg. Road Mix	T-32 Bitum. Mater. Road Mix	T-32 No. 6 or 9 Aggreg. Choke	T-32 No. 6 Aggreg. Seal	T-32 Bitum. Mater. Seal	B-119 8" Base	B-119 6"
				Ft.	Cu. Yd.	Gal.	Cu. Yd.	Cu. Yd.	Gal.	Cu. Yd.	Cu. Yd.
1-A	27+09	Lt.	2-3, 2-MB	12	4.4	71.1	0.3	0.6	19.8	22.9	
2-A	27+30	Rt.	Res.	12	3.0	80.1	0.4	0.7	22.3	19.8	
3-A	28+74	Lt.	2-3, 2-MB	12	6.6	105.3	0.5	0.9	29.3	26.0	
4-A	26+00	Lt.	Field	12							36.3
	Totals				16.0	256.5	1.2	2.2	71.4	68.7	36.3

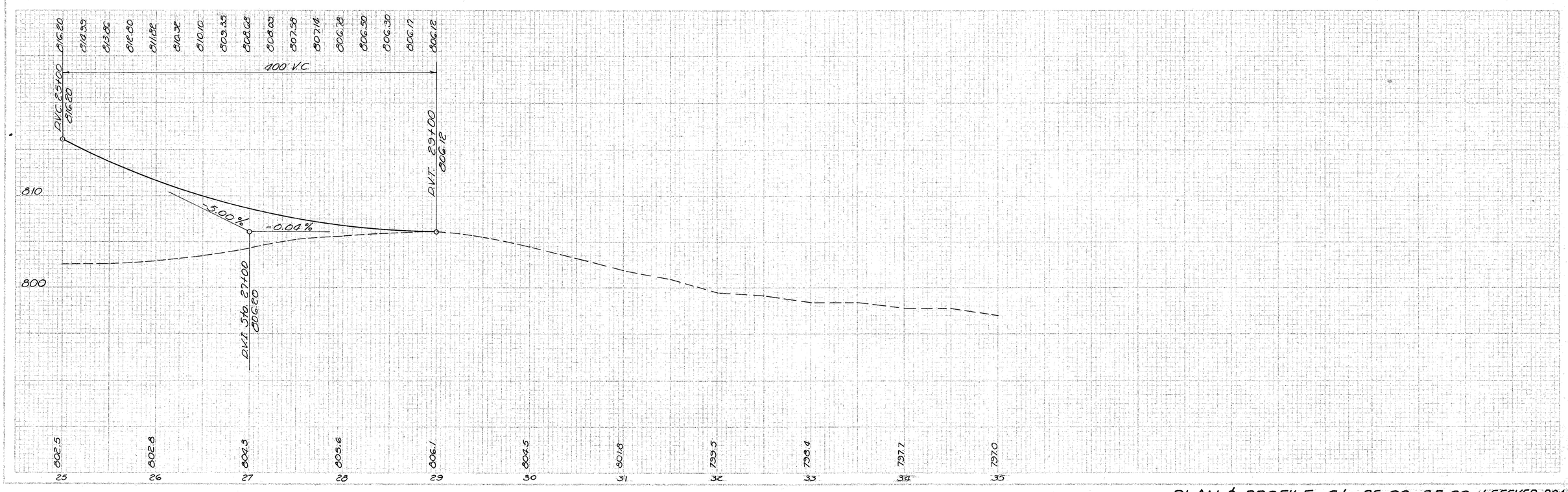
(G) GUARD RAIL, I-15

Ref. No.	Station From	Station To	Side	Wire Cable Lin. Ft.
1-G	25+00	25+63.2	Lt.	63.2
2-G	25+00	25+48.5	Rt.	48.5
	Total			111.7

ESTIMATED QUANTITIES

Item	Description	Unit	Quantity
T-32	No. 4G Aggregate for Road Mix	Cu. Yd.	127.9
T-32	Bituminous Material for Road Mix	Gals.	2055.6
T-32	No. 6 or 9 Aggregate for Choke	Cu. Yd.	9.2
T-32	No. 6 Aggregate for Seal Coat	Cu. Yd.	18.3
T-32	Bituminous Material for Seal Coat	Gals.	571.0
B-119	5" Crushed Aggregate Base Course	Cu. Yd.	337.0
I-22	4" Subbase	Cu. Yd.	310.8
T-30	Bituminous Prime Coat	Gals.	799.4
E-101	Compacted Subgrade	Sq. Yd.	24.36
I-7	Reinforced Concrete Approach Slabs	Sq. Yd.	152

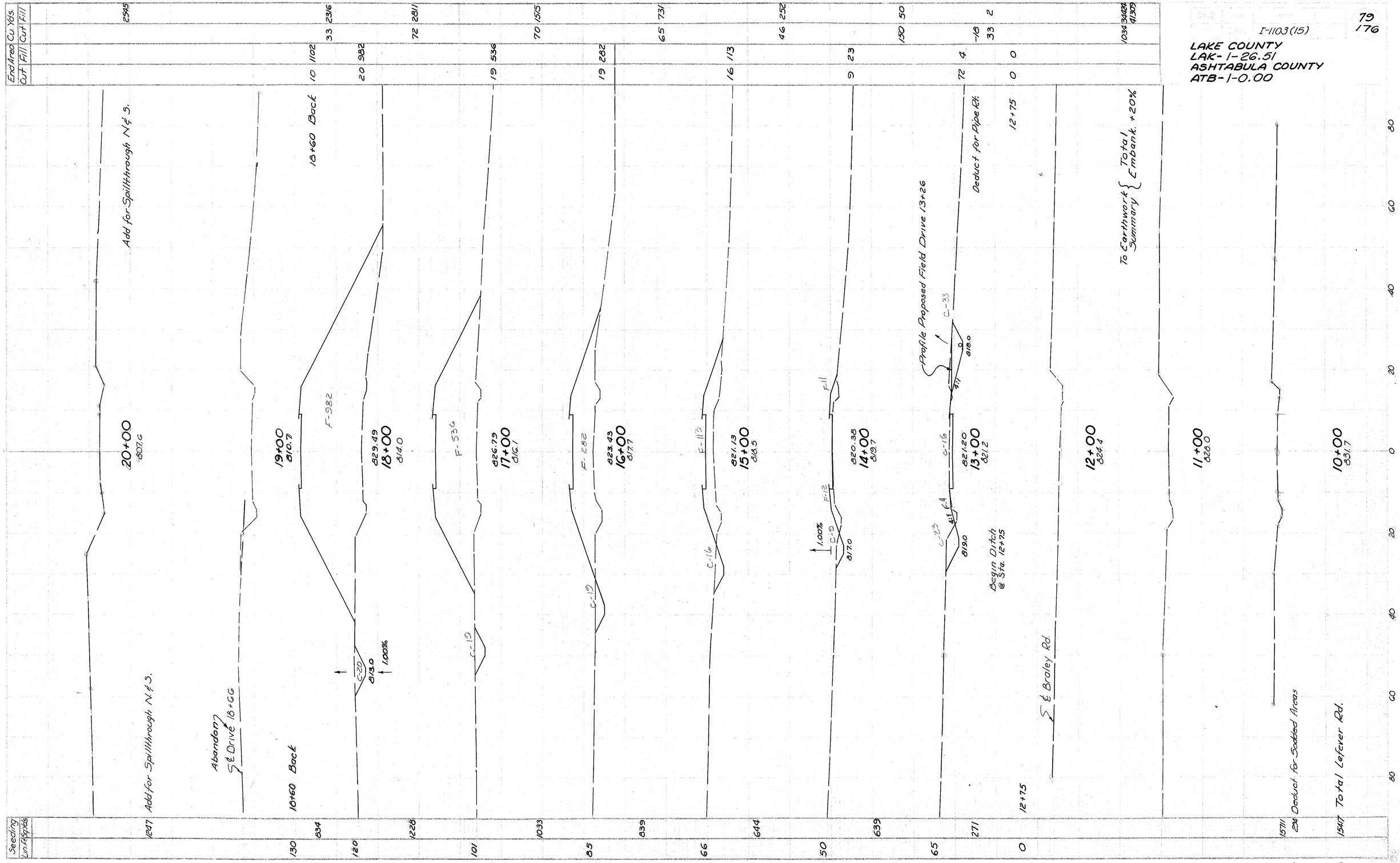
Note: See Sheet No. 77 for Drainage Quantities



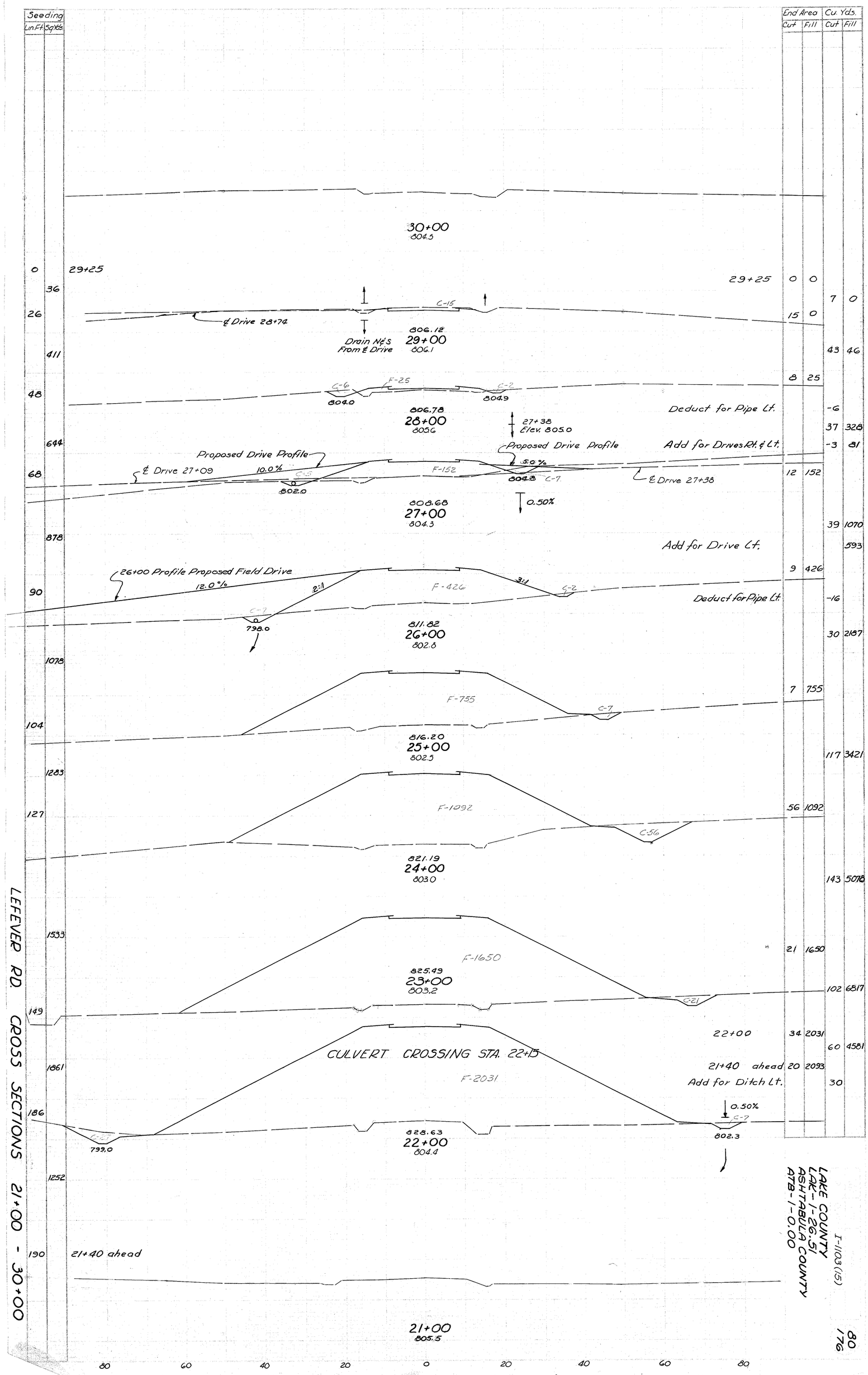
PLAN & PROFILE Sta. 25+00-35+00 (LEFEVER ROAD)

I-1103(15)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



LEFEVER RD. CROSS SECTIONS 10+00 - 20+00


Seeding
Ln.Ft. Sq.Yds.
End Area
Cut Fill
Cu. Yds.
Cut Fill
30+00
804.5
0
29+25
36
26
411
48
644
68
878
90
1078
104
1283
127
1533
149
1861
186
1252
190
21+40 ahead
29+25
0 0
7 0
15 0
43 46
8 25
-6
37 328
-3 81
12 152
39 1070
593
9 426
-16
30 2187
7 755
117 3421
56 1092
143 5078
21 1650
102 6817
34 2031
60 4581
20 2093
30
C-15
℄ Drive 28+74
Drain N℄'S From ℄ Drive
806.12
29+00
806.1
C-6
F-25
C-2
804.0
804.9
806.78
28+00
805.6
Deduct for Pipe Lt.
27+38
Elev. 805.0
Proposed Drive Profile
Add for Drives Rt. & Lt.
Proposed Drive Profile
10.0%
℄ Drive 27+09
C-3
F-152
50.%
804.8
C-7
℄ Drive 27+38
802.0
0.50%
808.68
27+00
804.3
Add for Drive Lt.
26+00 Profile Proposed Field Drive
12.0%
2:1
F-426
3:1
C-2
C-2
798.0
Deduct for Pipe Lt.
811.82
26+00
802.6
F-755
C-7
816.20
25+00
802.5
F-1092
C-56
821.19
24+00
803.0
F-1650
825.49
23+00
803.2
C-21
22+00
CULVERT CROSSING STA. 22+15
F-2031
Add for Ditch Lt.
0.50%
C-7
C-21
799.0
828.63
22+00
804.4
802.3
21+00
805.5
80 60 40 20 0 20 40 60 80
LEFEVER RD. CROSS SECTIONS 21+00 - 30+00
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00
I-1103 (15)
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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

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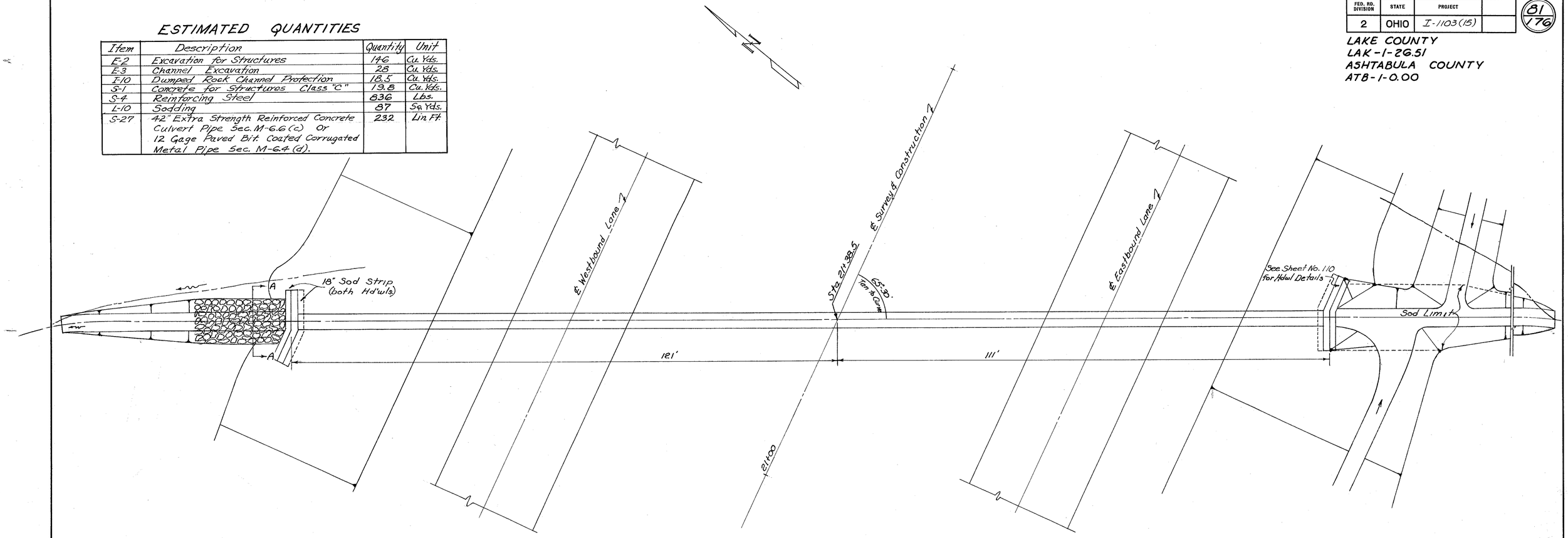
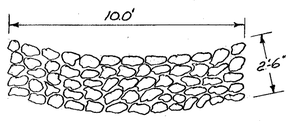
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

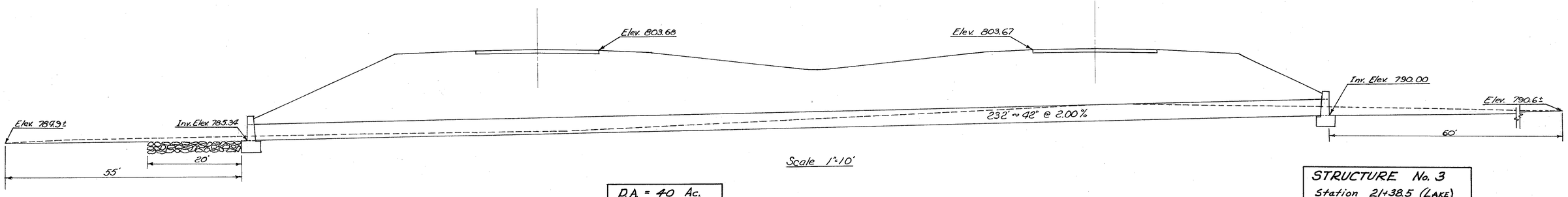
ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	146	Cu. Yds.
E-3	Channel Excavation	28	Cu. Yds.
F-10	Dumped Rock Channel Protection	18.5	Cu. Yds.
S-1	Concrete for Structures Class "C"	19.8	Cu. Yds.
S-4	Reinforcing Steel	836	Lbs.
L-10	Sodding	87	Sq. Yds.
S-27	42" Extra Strength Reinforced Concrete Culvert Pipe Sec. M-6.6 (c) or 12 Gage Paved Bit. Coated Corrugated Metal Pipe Sec. M-6.4 (d).	232	Lin. Ft.





SECTION A-A
Dumped Rock Channel Protection



Scale 1"=10'

D.A. = 40 Ac.
Q_{50} = 78 c.f.s.

STRUCTURE No. 3
Station 21+38.5 (LAKE)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

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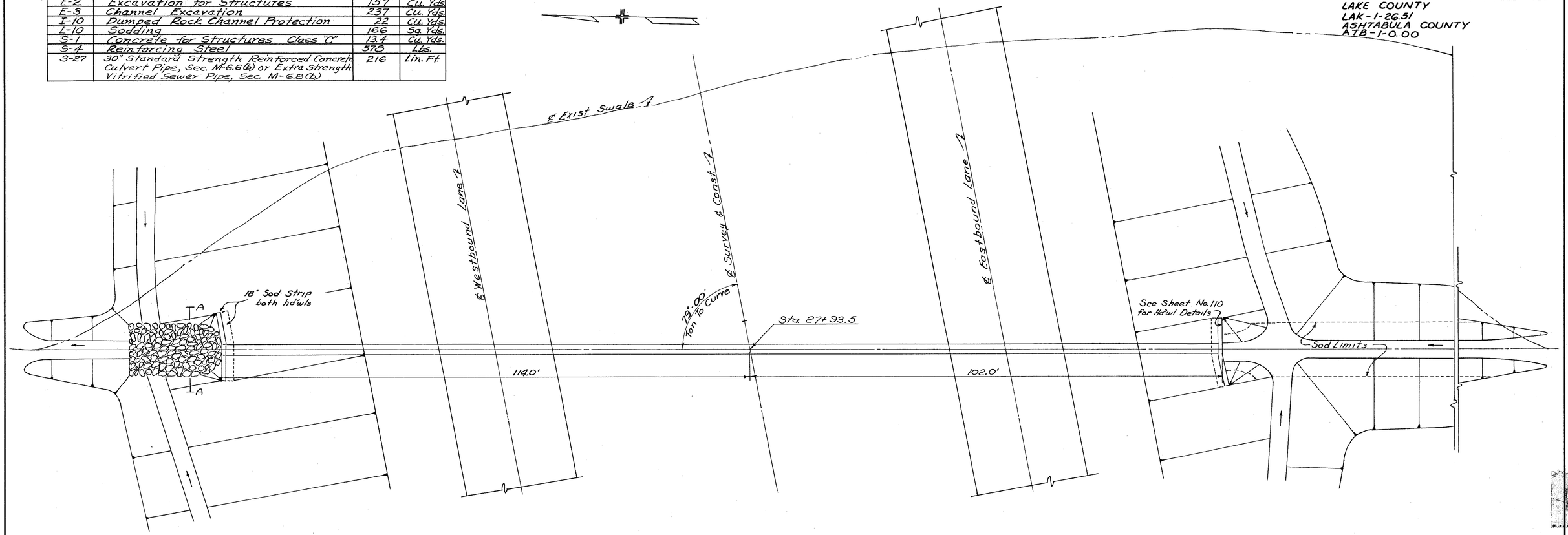
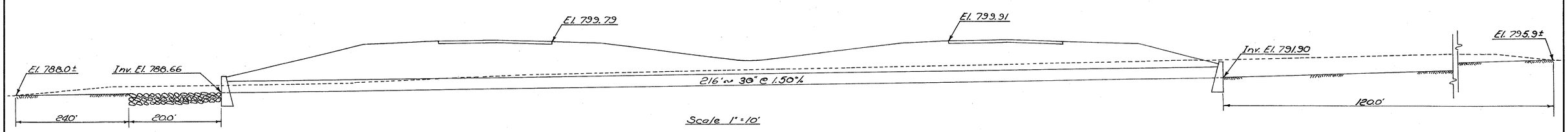
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	157	Cu. Yds.
E-3	Channel Excavation	237	Cu. Yds.
I-10	Dumped Rock Channel Protection	22	Cu. Yds.
L-10	Sodding	166	Sq. Yds.
S-1	Concrete for Structures Class "C"	13.4	Cu. Yds.
S-4	Reinforcing Steel	578	Lbs.
S-27	30" Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b) or Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b)	216	Lin. Ft.



SECTION A-A



Scale 1" = 10'

D.A. = 19 Ac.
Q_{50} = 43 cfs

STRUCTURE No. 4
Station 27+93.5 (Lake)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

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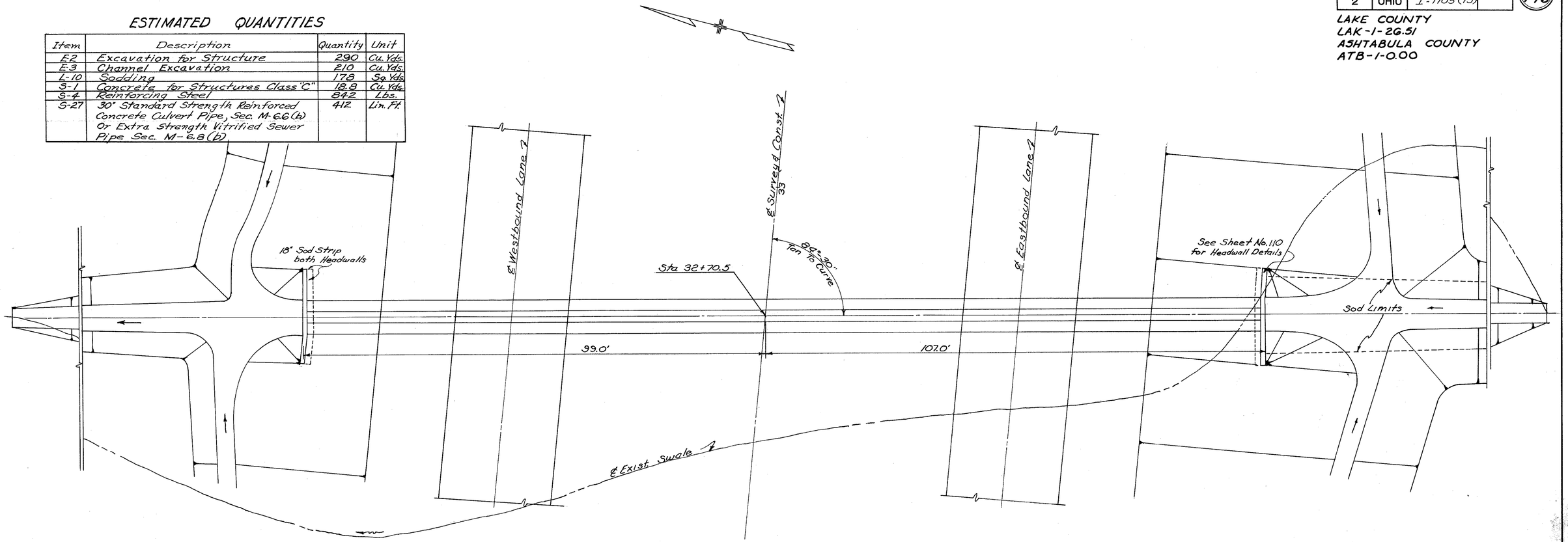
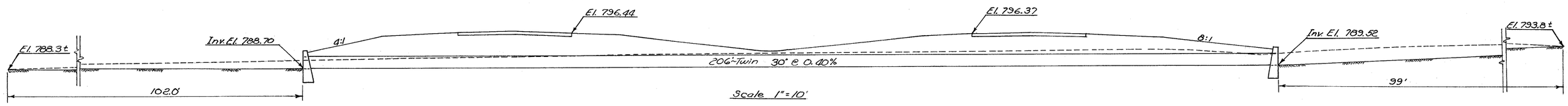
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structure	290	Cu. Yds.
E-3	Channel Excavation	210	Cu. Yds.
L-10	Sodding	178	Sq. Yds.
S-1	Concrete for Structures Class "C"	18.8	Cu. Yds.
S-4	Reinforcing Steel	842	Lbs.
S-27	30" Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6 (b) Or Extra Strength Vitrified Sewer Pipe Sec. M-6.8 (b)	412	Lin. Ft.





D.A. = 22 Ac.
Q_{50} = 49 cfs

STRUCTURE No. 5
Station 32+70.5 Lake

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

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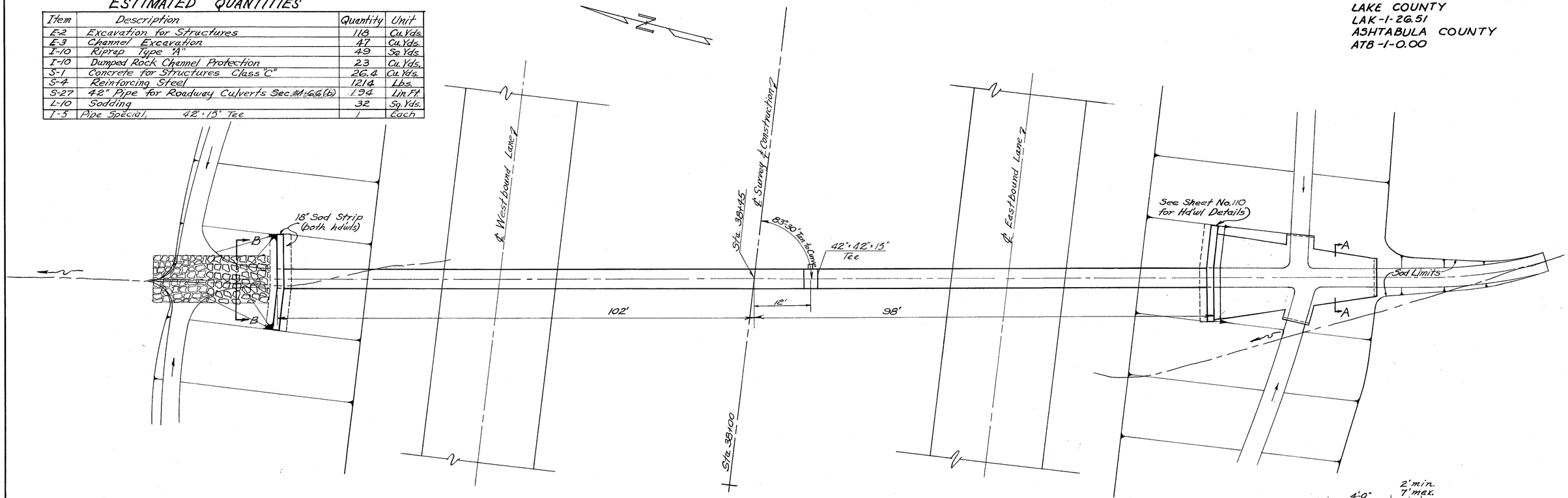
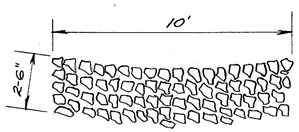
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

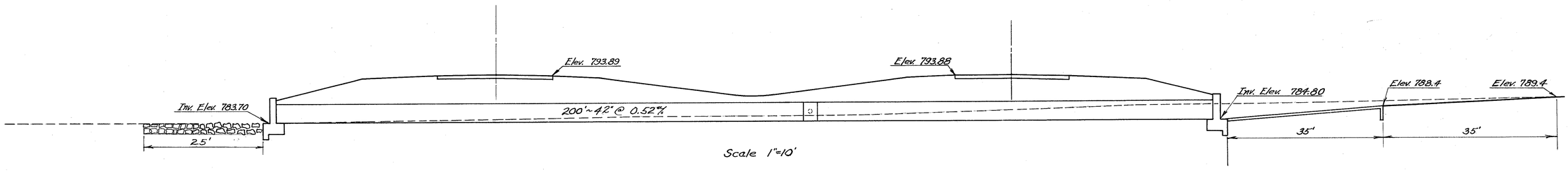
Item	Description	Quantity	Unit
E-2	Excavation for Structures	118	Cu. Yds.
E-3	Channel Excavation	47	Cu. Yds.
I-10	Riprap Type "A"	49	Sq. Yds.
I-10	Dumped Rock Channel Protection	23	Cu. Yds.
S-1	Concrete for Structures Class "C"	26.4	Cu. Yds.
S-4	Reinforcing Steel	1214	Lbs.
S-27	42" Pipe for Roadway Culverts Sec. 1M:6G.6.(b)	194	Lin. Ft.
L-10	Sodding	32	Sq. Yds.
T-5	Pipe Special, 42" x 15" Tee	1	Each



Section "A A"
TYPE "A" RIPRAP



Section "BB"
DUMPED ROCK CHANNEL PROTECTION



Scale 1"=10'

D.A. = 33 Ac.
Q_{50} = 69 c.f.s.

STRUCTURE No. 6
Station 38+45 (LAKE)

Revised 10/2/57

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

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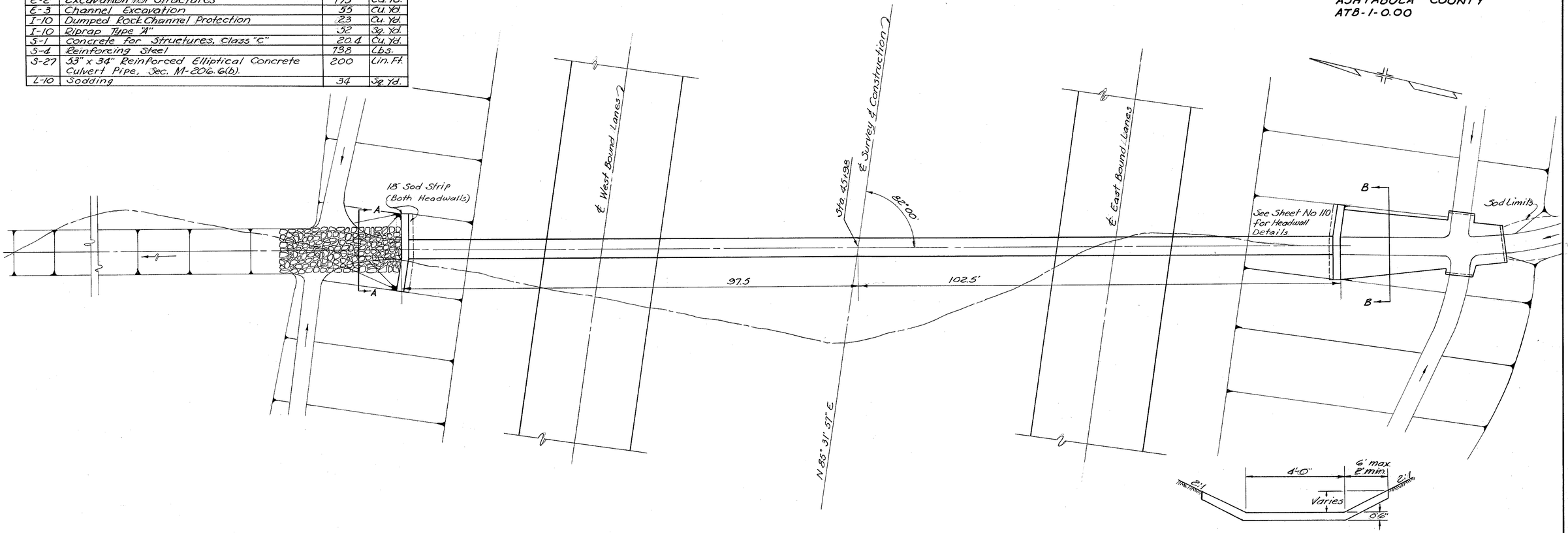
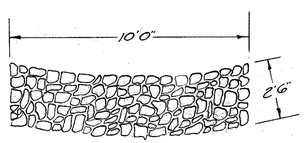
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

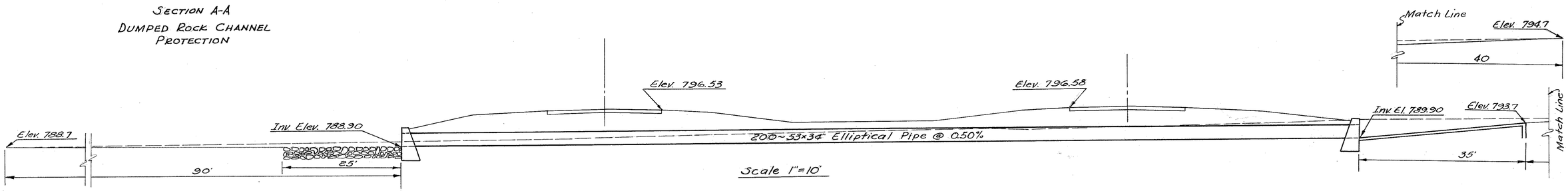
Item	Description	Quantity	Unit
E-2	Excavation for Structures	175	Cu. Yd.
E-3	Channel Excavation	55	Cu. Yd.
I-10	Dumped Rock Channel Protection	23	Cu. Yd.
I-10	Riprap Type "A"	32	Sq. Yd.
S-1	Concrete for Structures, Class "C"	20.4	Cu. Yd.
S-4	Reinforcing Steel	738	Lbs.
S-27	53" x 34" Reinforced Elliptical Concrete Culvert Pipe, Sec. M-206.6(b).	200	Lin. Ft.
L-10	Sodding	34	Sq. Yd.



SECTION B-B
TYPE "A" RIPRAP



SECTION A-A
DUMPED ROCK CHANNEL PROTECTION



Scale 1"=10'

D.A. = 32 Ac.
Q_{50} = 68 c.f.s.

STRUCTURE No. 7
Station 45+98 (LAK)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

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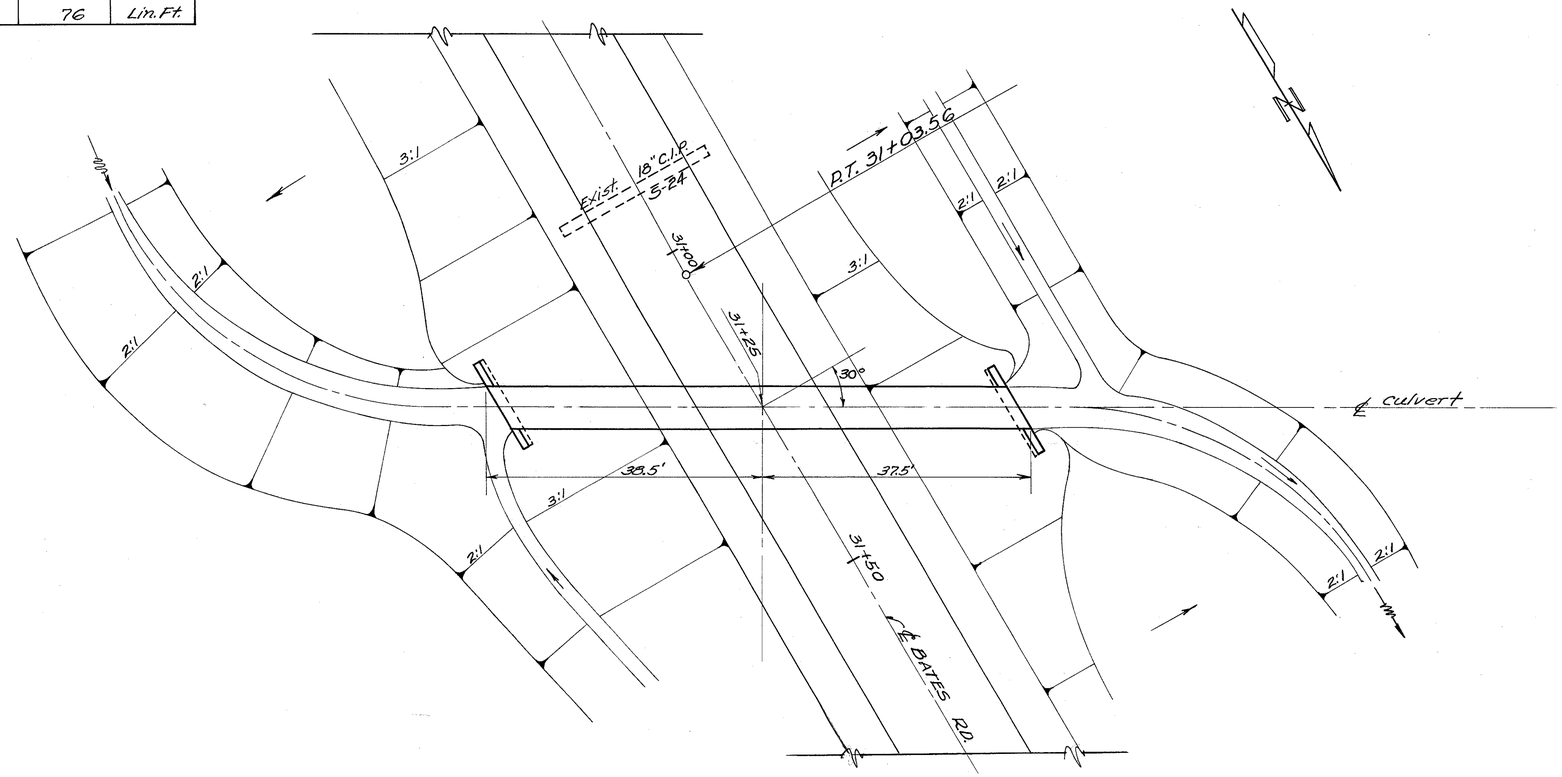
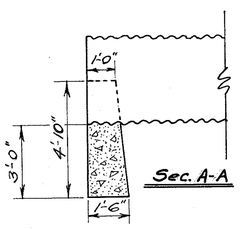
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

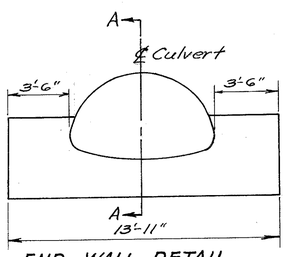
ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	117	Cu.Yds.
S-1	Concrete for Structures, Class "E"	5.48	Cu.Yds.
S-24	Removal of Existing Structures	Lump	Sum
S-27	72"x44" No. 8 Gage Paved Bituminous Coated Corrugated Metal Arch with Integral Base Sec. M-6.4(A) & (D)	76	Lin.Ft.

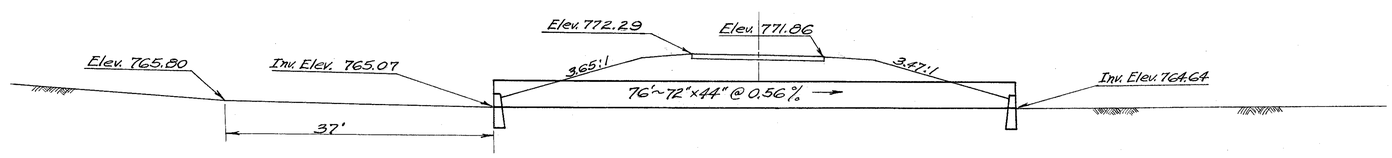




Sec. A-A



END WALL DETAIL



Scale: 1" = 10'

D.A. = 40 AC.
Q_{10} = 59 c.f.s.

STRUCTURE Nº 9
ON BATES RD.
STA. 31+25

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

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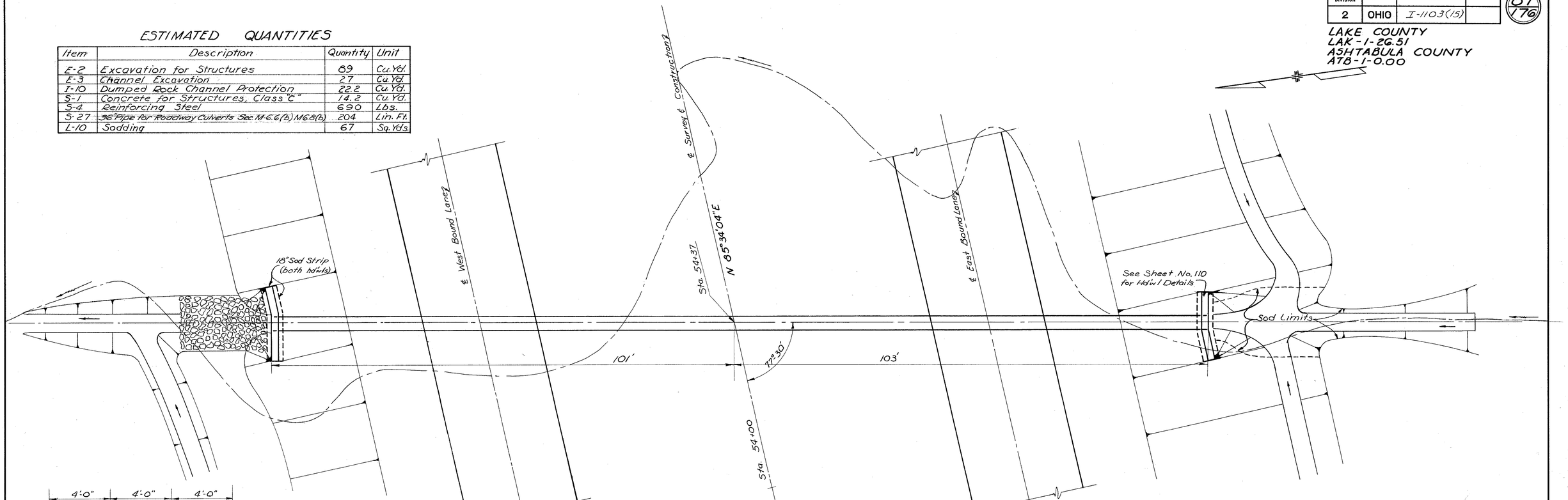
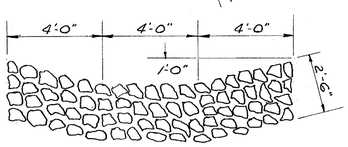
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

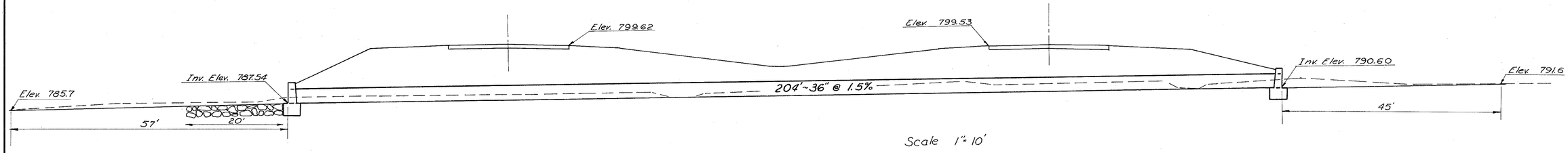
ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	89	Cu. Yd.
E-3	Channel Excavation	27	Cu. Yd.
I-10	Dumped Rock Channel Protection	22.2	Cu. Yd.
S-1	Concrete for Structures, Class "C"	14.2	Cu. Yd.
S-4	Reinforcing Steel	690	Lbs.
S-27	36" Pipe for Roadway Culverts Sec. M-6.6(b) M6.8(b)	204	Lin. Ft.
L-10	Sodding	67	Sq. Yds.





Section A-A
DUMPED ROCK CHANNEL PROTECTION



Scale 1" = 10'

D.A. = 41 Ac.
Q_{50} = 63 c.f.s.

STRUCTURE No. 10
Station 54+37 (LAKE)

Revised 10/2/57 H.U.B.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

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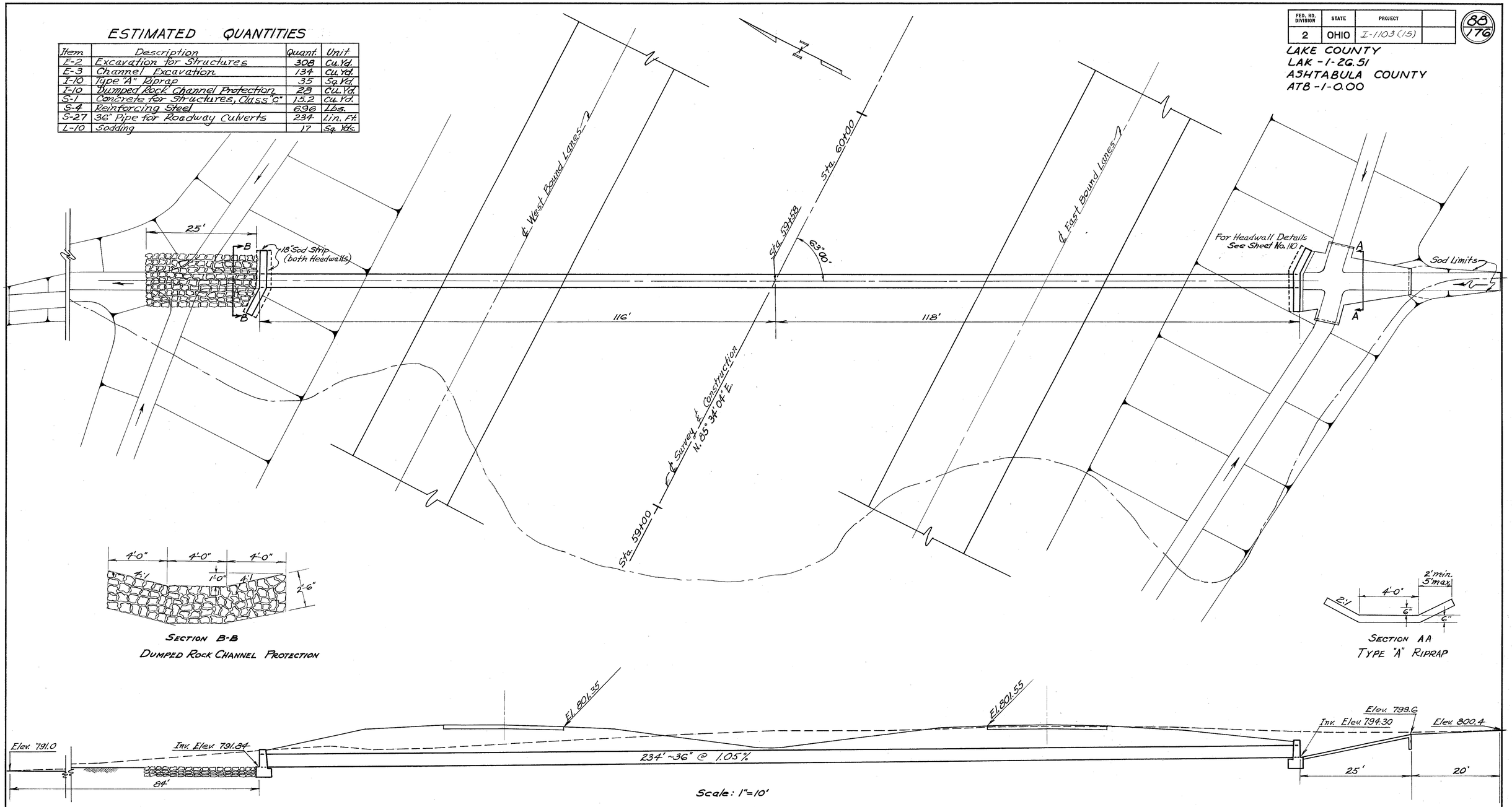
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quant.	Unit
E-2	Excavation for Structures	308	Cu.Yd.
E-3	Channel Excavation	134	Cu.Yd.
I-10	Type "A" Riprap	35	Sq.Yd.
I-10	Dumped Rock Channel Protection	28	Cu.Yd.
S-1	Concrete for Structures, Class "C"	15.2	Cu.Yd.
S-4	Reinforcing Steel	696	Lbs.
S-27	36" Pipe for Roadway Culverts	234	Lin. Ft.
L-10	Sodding	17	Sq. Yds.



D.A. = 44 Ac.
Q_{50} = 46 c.f.s.

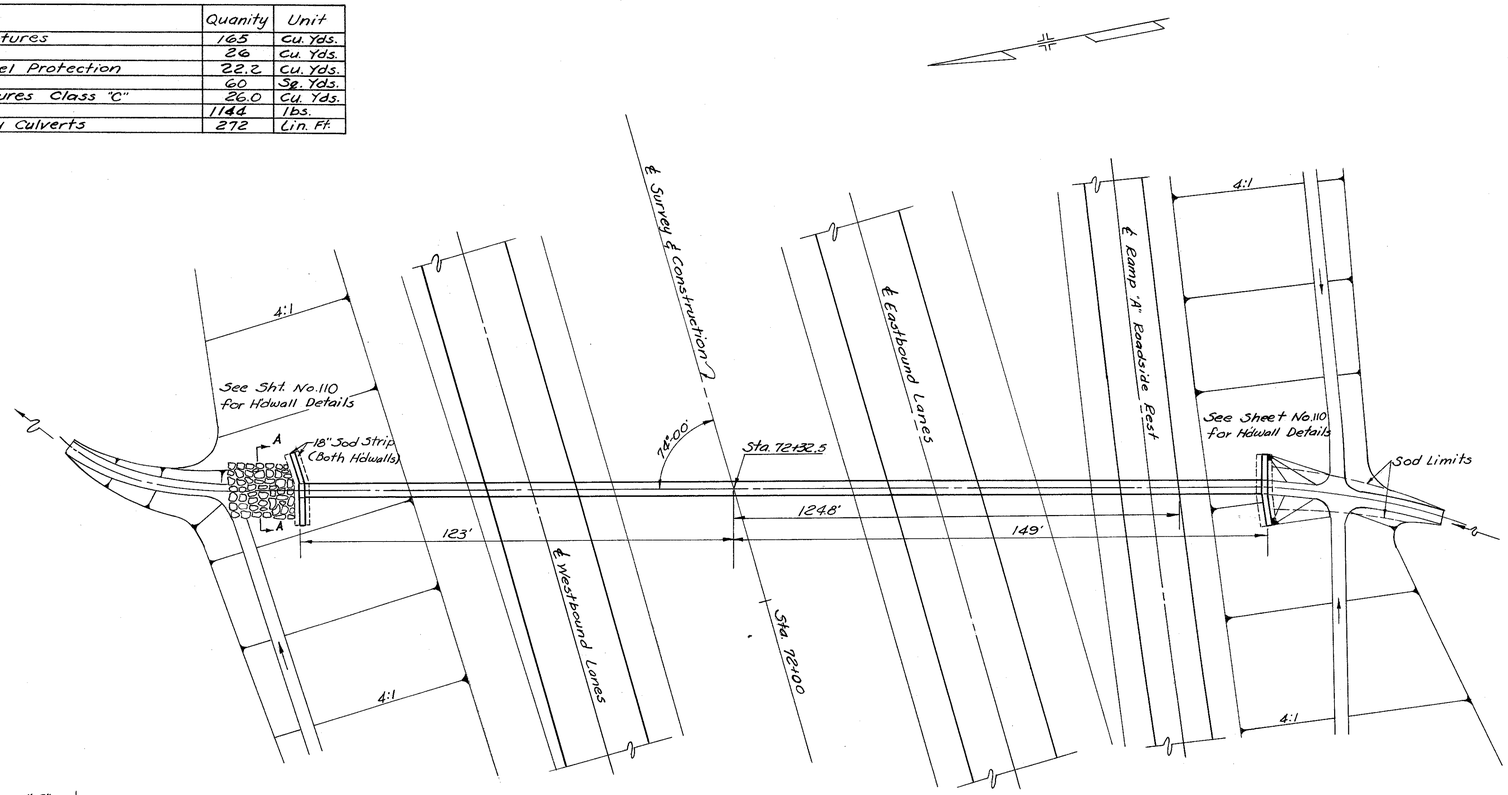
STRUCTURE No. 11
Station 59+58 (LAK)

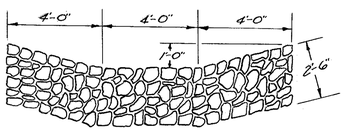
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

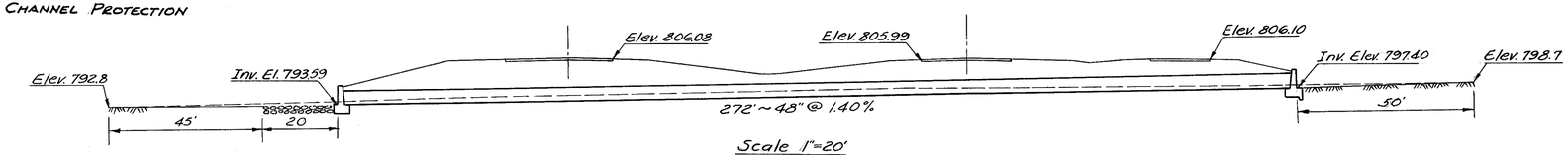
ESTIMATED QUANITIES

Item	Description	Quanity	Unit
E-2	Excavation for Structures	165	Cu. Yds.
E-3	Channel Excavation	26	Cu. Yds.
I-10	Dumped Rock Channel Protection	22.2	Cu. Yds.
L-10	Sodding	60	Sq. Yds.
S-1	Concrete for Structures Class "C"	26.0	Cu. Yds.
S-4	Reinforcing Steel	1144	lbs.
S-27	48" Pipe for Roadway Culverts	272	Lin. Ft.





Section A-A
DUMPED ROCK CHANNEL PROTECTION



Scale 1"=20'

D.A. = 43 Ac.
Q_{50} = 90 c.f.s.

STRUCTURE No. 12
Station 72+32.5

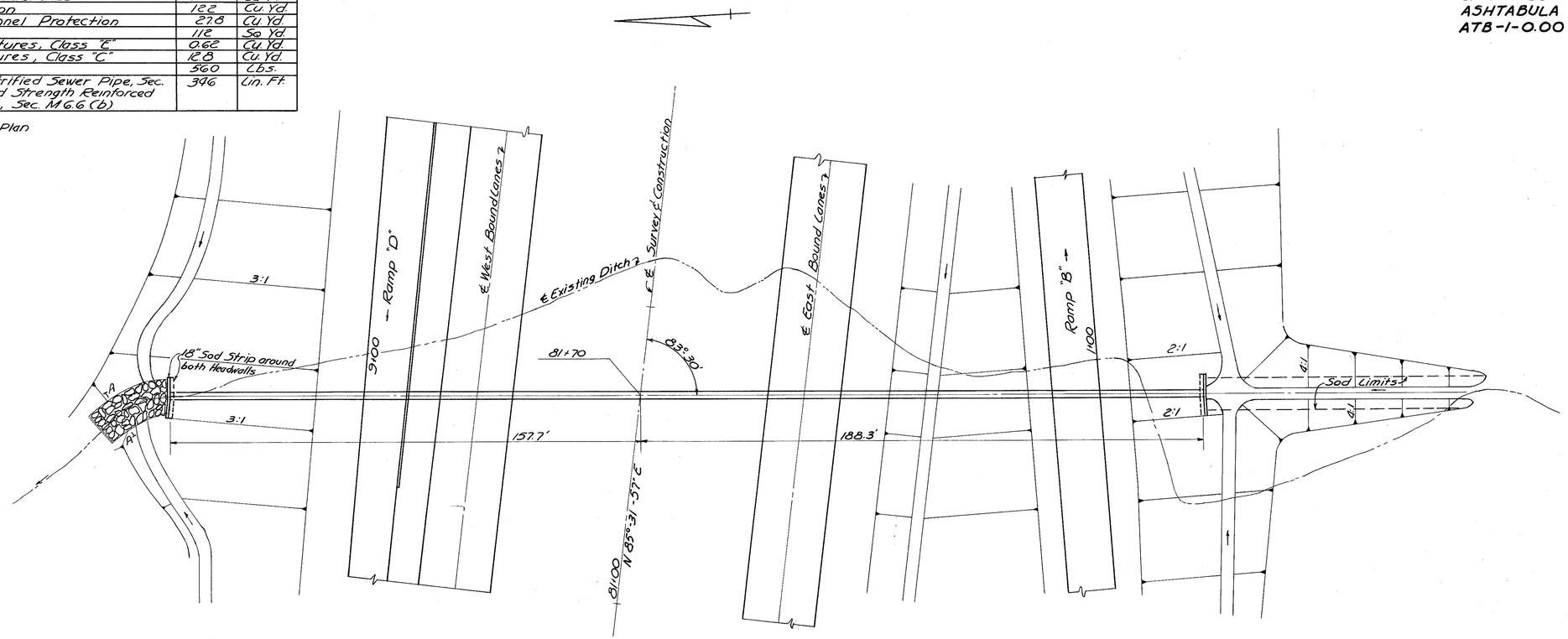
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

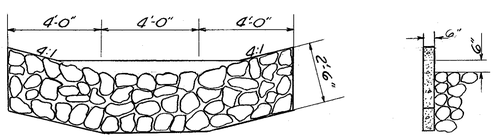
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	303	Cu. Yd.
E-3	Channel Excavation	122	Cu. Yd.
I-10	Dumped Rock Channel Protection	27.8	Cu. Yd.
L-10	Sodding	112	Sq. Yd.
S-1 *	Concrete for Structures, Class "E"	0.62	Cu. Yd.
S-1	Concrete for Structures, Class "C"	12.8	Cu. Yd.
S-4	Reinforcing Steel	560	Lbs.
S-27	30" Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b) or Standard Strength Reinforced Concrete Culvert Pipe, Sec. M 6.6 (b)	346	Lin. Ft.

* Concrete for Endsill as per Plan

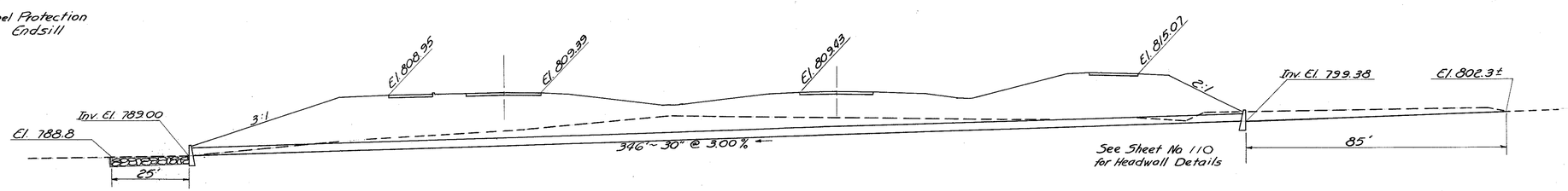




Section "A-A"

Dumped Rock Channel Protection With Concrete Endsill

Scale 1" = 20'



D.A. = 28 Ac.
Q_{50} 46. cfs.

STRUCTURE NO. 13
STA. 81+70 (Lak.)

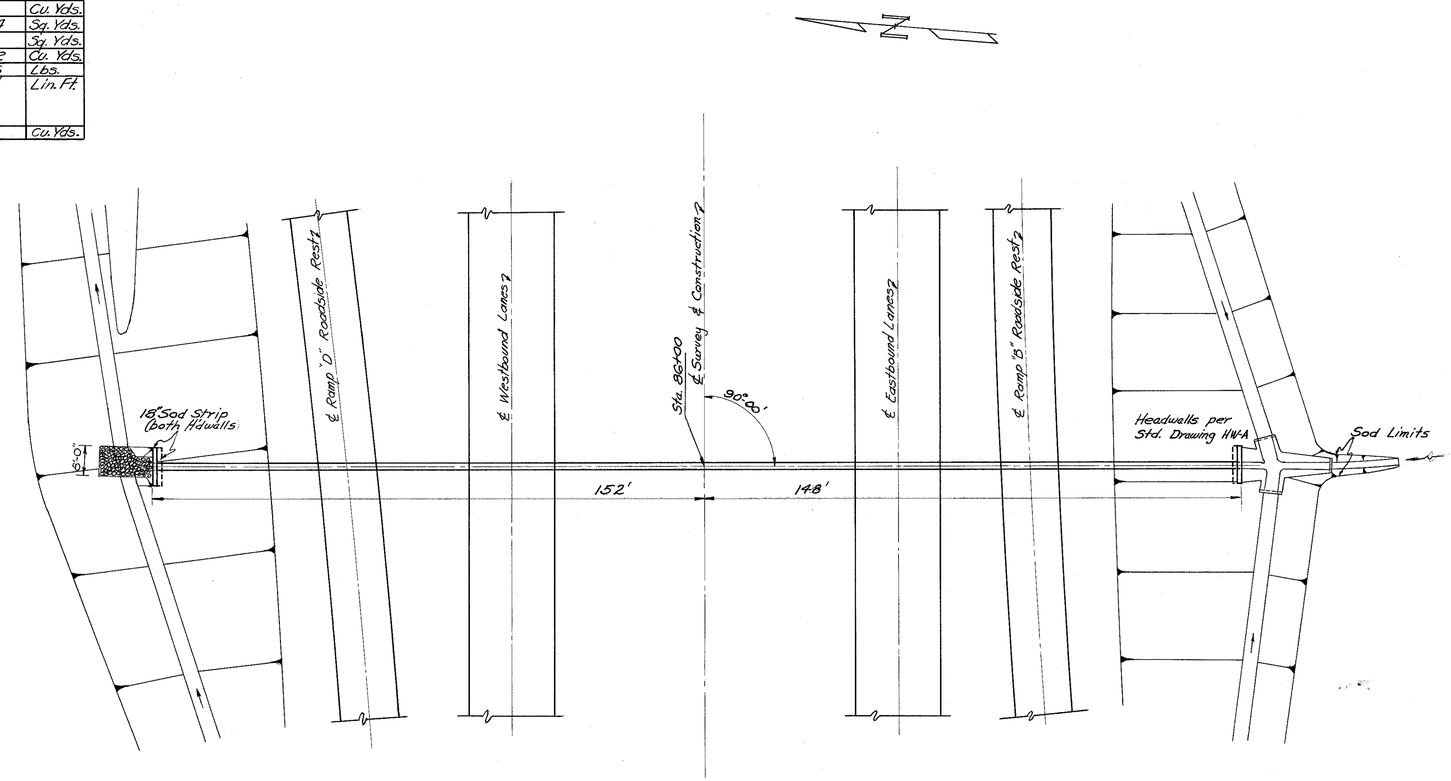
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

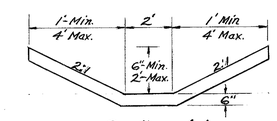
91
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

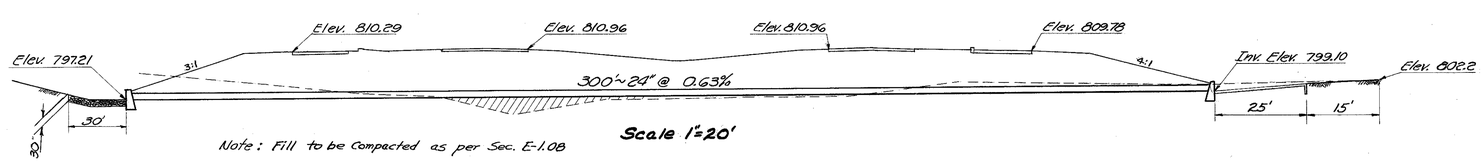
ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	37	Cu. Yds.
E-3	Channel Excavation	6	Cu. Yds.
I-10	Type A Riprap	21.4	Sq. Yds.
L-10	Sodding	10	Sq. Yds.
S-1	Concrete for Structures, Class C	10.2	Cu. Yds.
S-4	Reinforcing Steel	436	Lbs.
S-27	24" Extra Strength Vitrified Sewer Pipe, Sec. M6.8(b) or Standard-Strength Reinforced Concrete Culvert Pipe Sec. M-6.6 (b)	300'	Lin. Ft.
I-10	Dumped Rock Channel Protection	12	Cu. Yds.





Section A-A
TYPE "A" RIPRAP



Note: Fill to be Compacted as per Sec. E-1.08

D.A. = 14 Ac.
Q_{50} = 16 cfs.

STRUCTURE No. 14
Station 86+00 (Lake)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

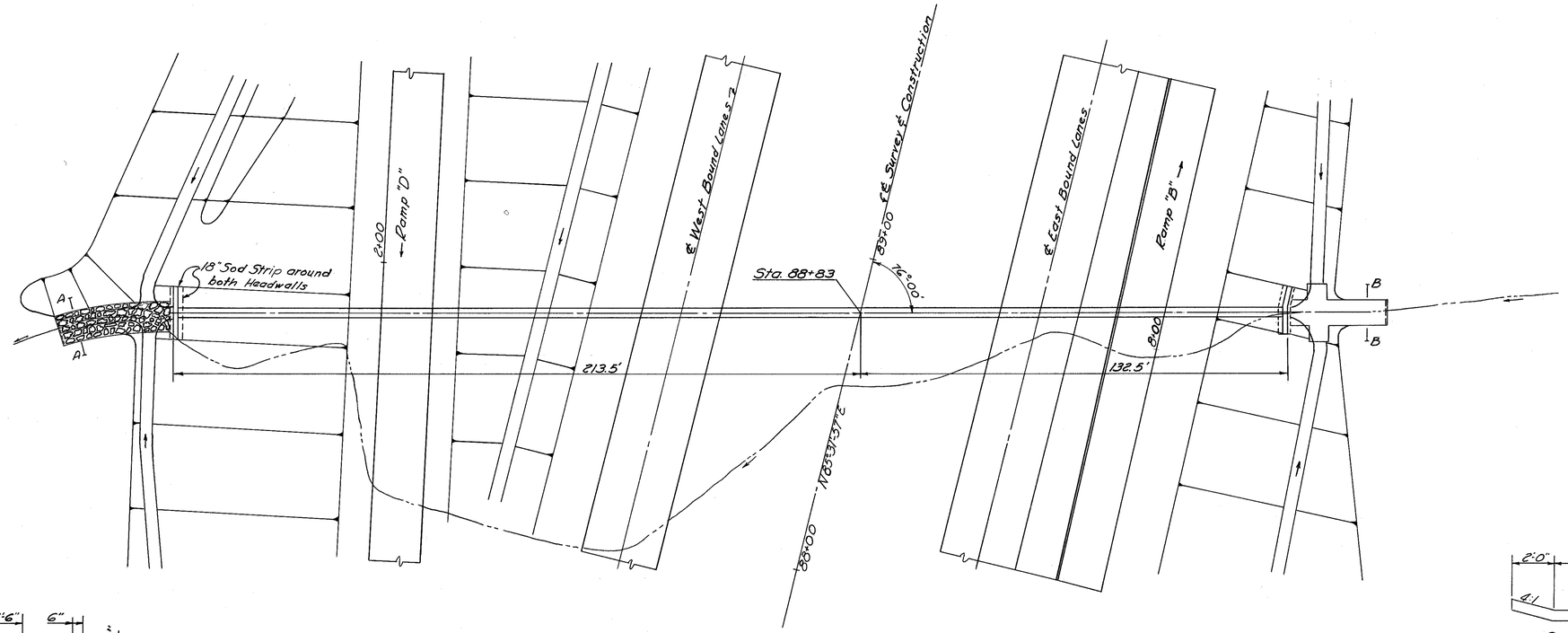
92/176

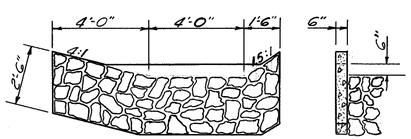
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	356	Cu. Yd.
E-3	Channel Excavation	29	Cu. Yd.
I-10	Dumped Rock Channel Protection	32.2	Cu. Yd.
I-10	Riprap, Type "A"	27.1	Sq. Yd.
L-10	Sodding	6	Sq. Yd.
S-1 *	Concrete for Structures, Class "E"	0.50	Cu. Yd.
S-1	Concrete for Structures, Class "C"	16.1	Cu. Yd.
S-4	Reinforcing Steel	758	Lbs.
S-27	36" Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M.6.6(d) or Paved Bituminous Coated Corrugated Metal Pipe, Sec. M.6.4(d)	346	Lin. Ft.

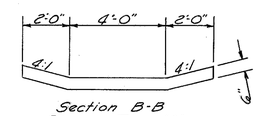
* Concrete for Endsill as per Plan





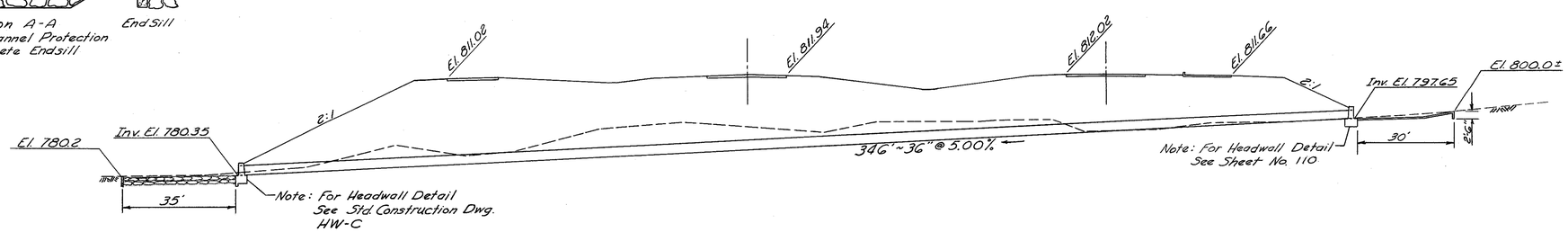
Section A-A
Dumped Rock Channel Protection
With Concrete Endsill

End Sill



Section B-B
Riprap, Type "A"

Scale 1"=20'



D.A. = 29 Ac.
Q_{50} = 50 c.f.s.

STRUCTURE NO. 15
STA. 88+83 (Lake)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

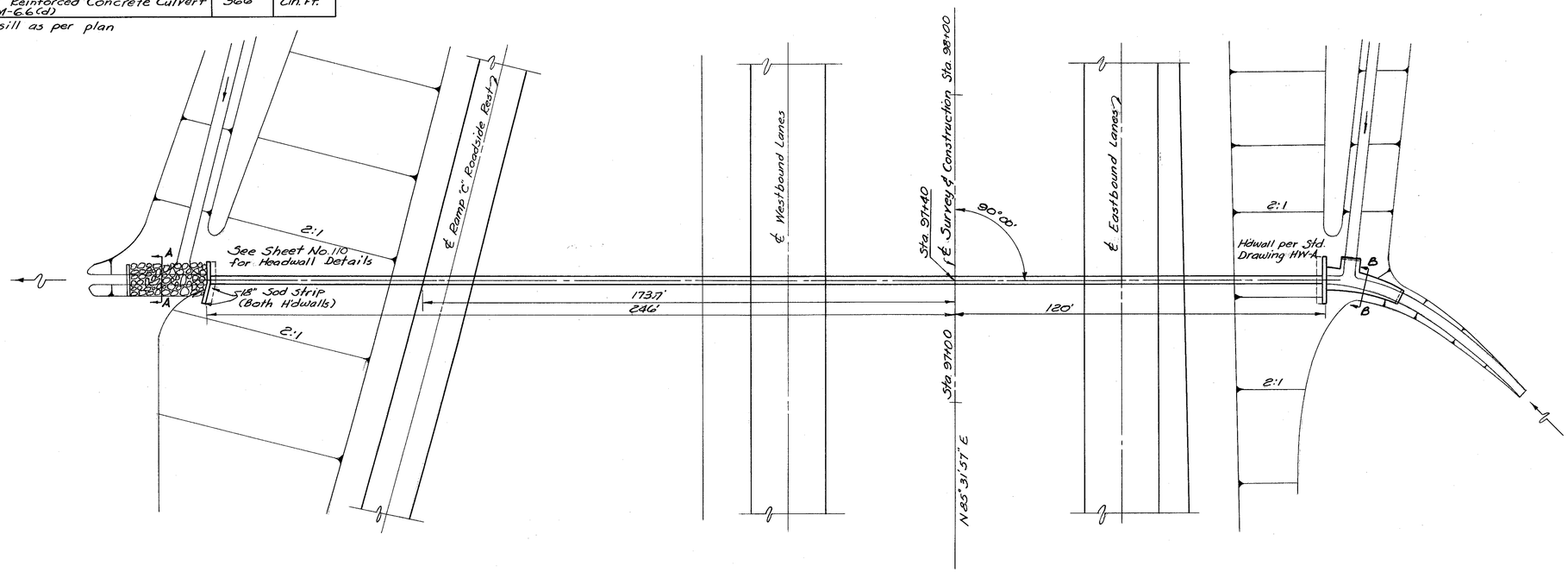
93
176

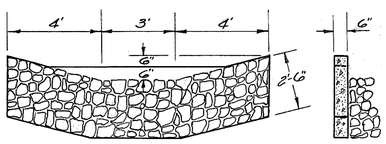
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

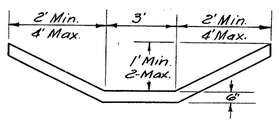
Item	Description	Quantity	Unit
E-2	Excavation for Structures	730	Cu. Yds.
E-3	Channel Excavation	30	Cu. Yds.
I-10	Dumped Rock Channel Protection	26	Cu. Yds.
I-10	Type "A" Riprap	27	Sq. Yds.
L-10	Sodding	37	Sq. Yds.
S-1	Concrete for Structures Class "C"	13.7	Cu. Yds.
S-1*	Concrete for Structures Class "E"	0.5	Cu. Yds.
S-4	Reinforcing Steel	567	Lbs.
S-27	30" Heavy Duty Reinforced Concrete Culvert Pipe Sec. M-6.6(d)	366	Lin. Ft.

* Class "E" Conc. for endsill as per plan

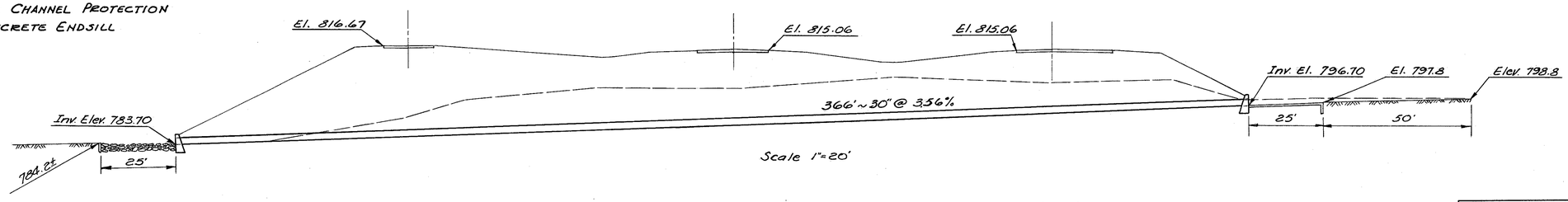




SECTION A-A
DUMPED ROCK CHANNEL PROTECTION
WITH CONCRETE ENDSILL



SECTION B-B
TYPE "A" RIPRAP



Scale 1"=20'

D. A. = 40 Ac.
Q_{50} = 50 c.f.s.

STRUCTURE NO. 16
Station 97+40 (Lake)

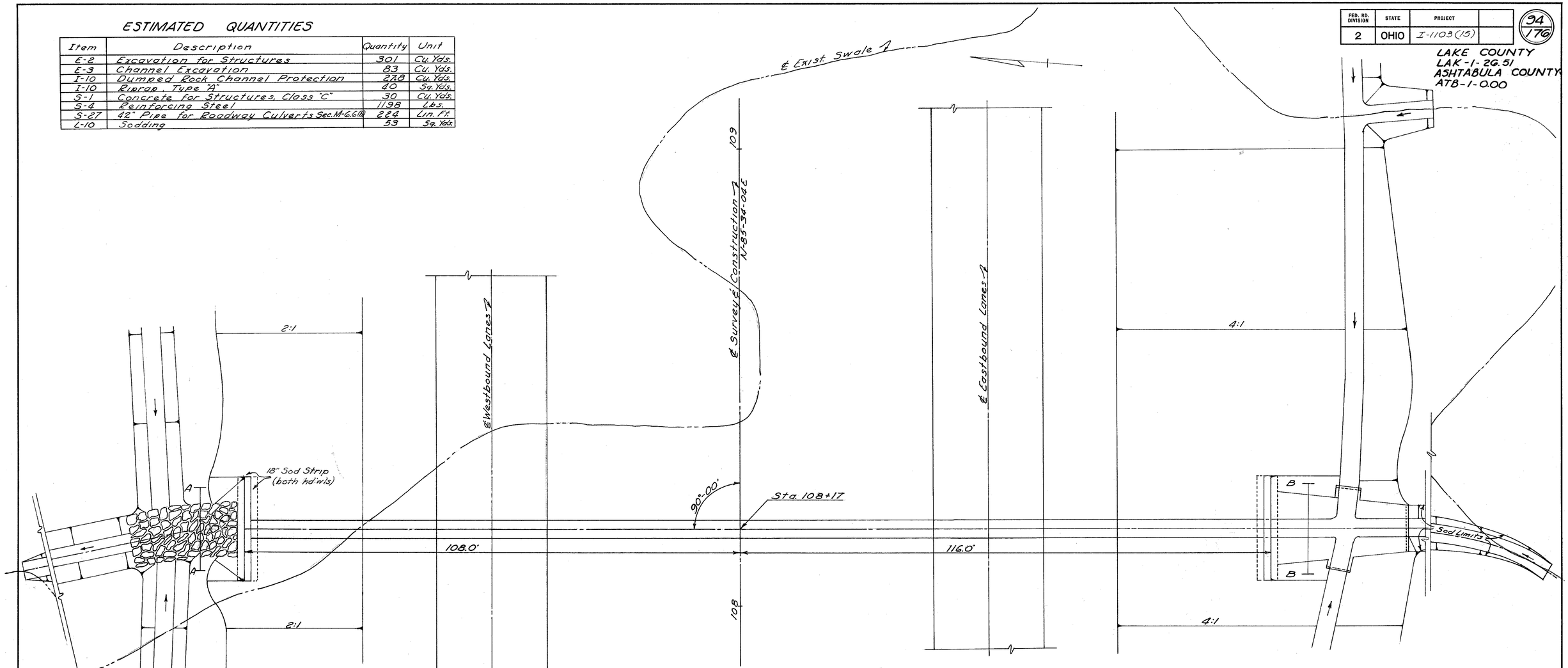
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

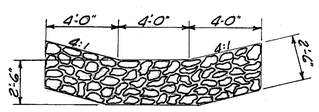
94/176

LAKE COUNTY
LAK-1-2G.51
ASHTABULA COUNTY
ATB-1-0.00

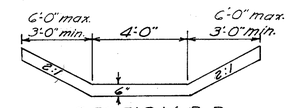
ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	301	Cu. Yds.
E-3	Channel Excavation	83	Cu. Yds.
I-10	Dumped Rock Channel Protection	228	Cu. Yds.
I-10	Riprap, Type "A"	40	Sq. Yds.
S-1	Concrete for Structures, Class "C"	30	Cu. Yds.
S-4	Reinforcing Steel	1198	Lbs.
S-27	42" Pipe for Roadway Culverts Sec. M-6.6(a)	224	Lin. Ft.
L-10	Sodding	53	Sq. Yds.

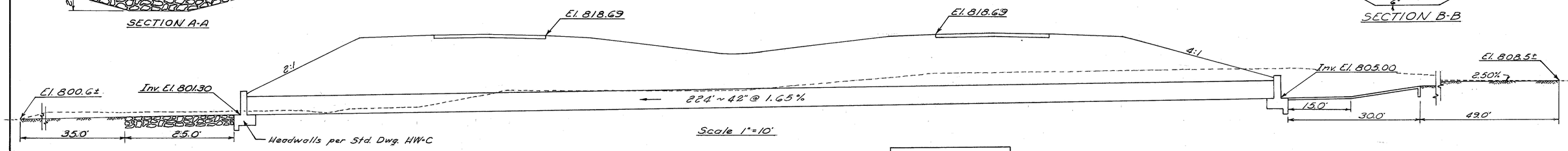




SECTION A-A



SECTION B-B



D.A. = 41 Ac.
Q_{50} = 88 c.f.s.

STRUCTURE NO. 17
Station 108+17 (Lake)

Revised 10/2/57

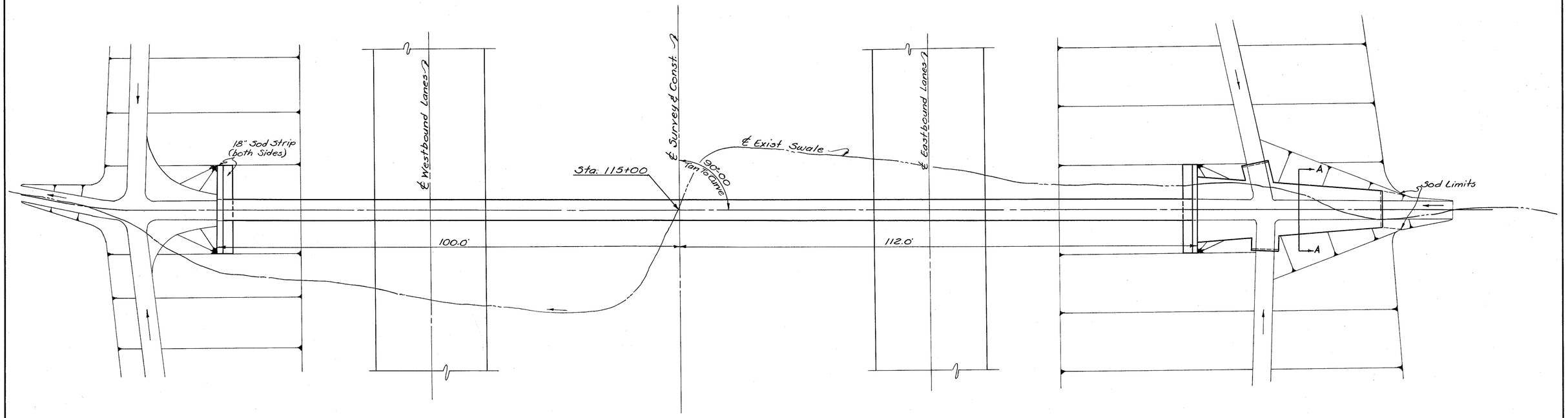
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

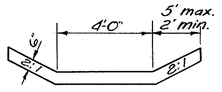
95/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

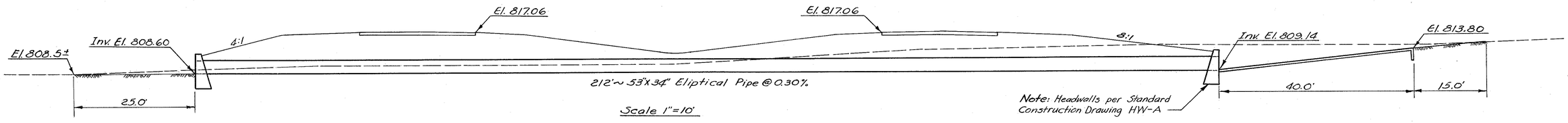
ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	220	Cu. Yds.
E-3	Channel Excavation	81	Cu. Yds.
I-10	Riprap Type "A"	55	Sq. Yds.
L-10	Sodding	17	Sq. Yds.
S-1	Concrete for Structures Class "C"	21.0	Cu. Yds.
S-4	Reinforcing Steel	660	Lbs
S-27	53"x34" Reinforced Elliptical Concrete Culvert Pipe Sec. M-206.6(b)	212	Lin. Ft.





SECTION A-A



Scale 1"=10'

D. A. = 16 Ac.
Q_{50} = 48 c.f.s.

STRUCTURE NO. 18
Station 115+00 (Lake)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

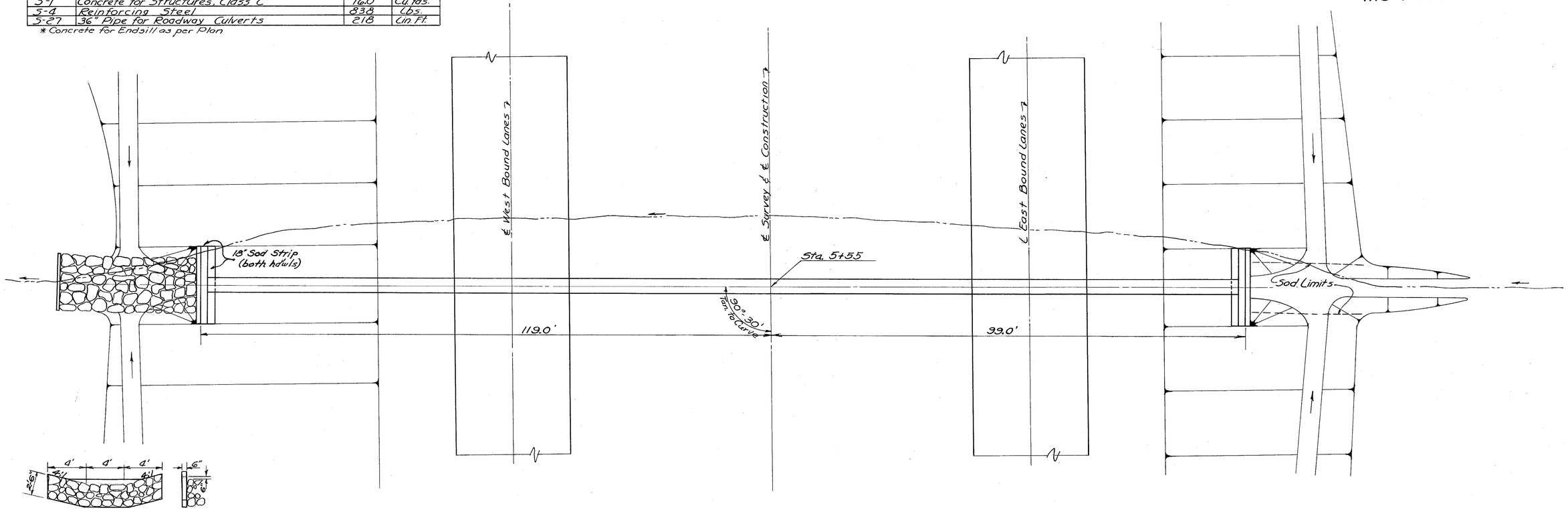
96/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

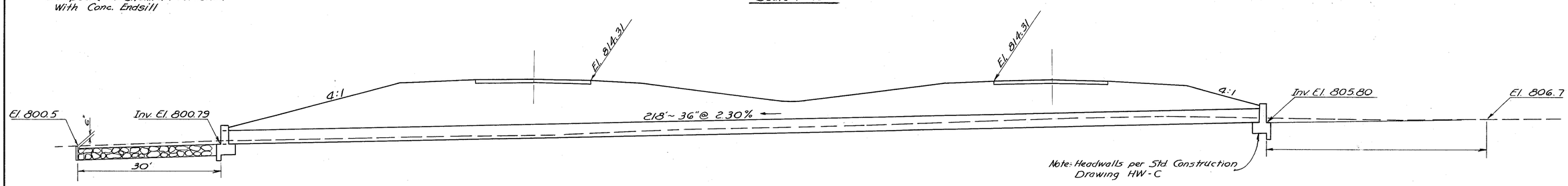
Item	Description	Quantity	Unit
E-2	Excavation for Structures	90	Cu. Yds.
E-3	Channel Excavation	17	Cu. Yds.
I-10	Dumped Rock Channel Protection	33.2	Cu. Yds.
L-10	Sodding	70	Sq. Yds.
S-1*	Concrete for Structures, Class "E"	0.67	Cu. Yds.
S-1	Concrete for Structures, Class "C"	16.0	Cu. Yds.
S-4	Reinforcing Steel	838	Lbs.
S-27	36" Pipe for Roadway Culverts	218	Lin. Ft.

* Concrete for Endsill as per Plan



Section A-A
Dumped Rock Channel Protection
With Conc. Endsill

Scale 1"=10'



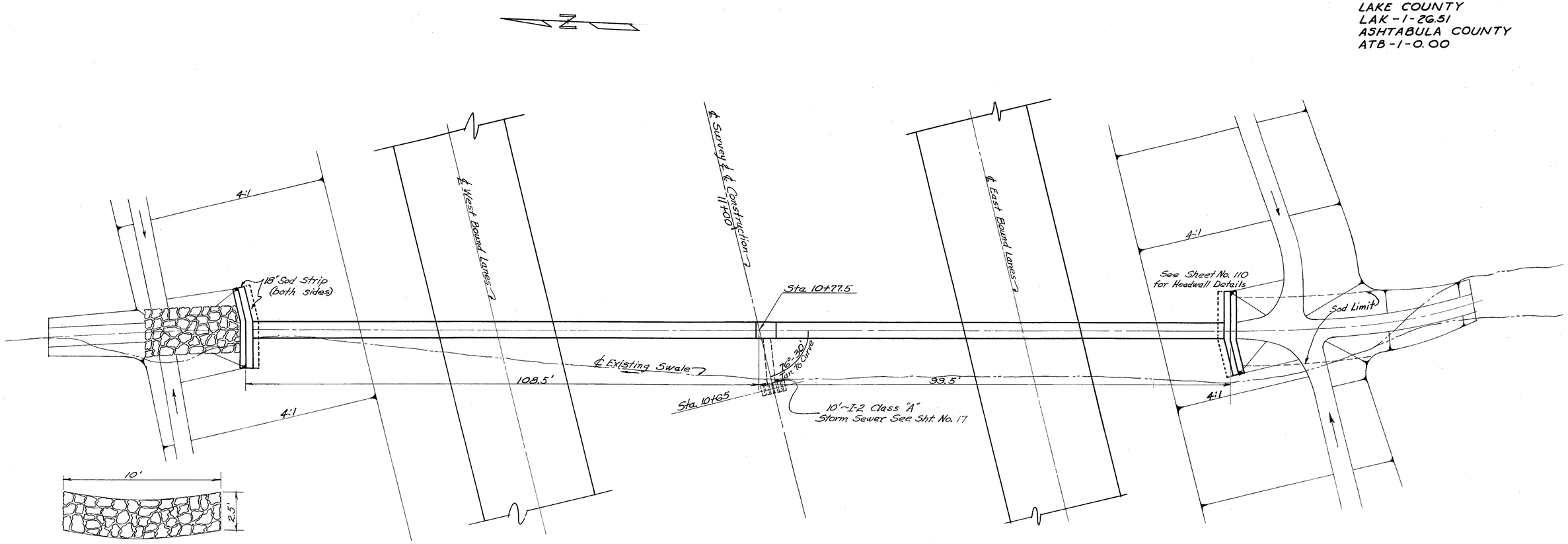
D.A. = 34 Ac.
Q_{50} = 66 cfs.

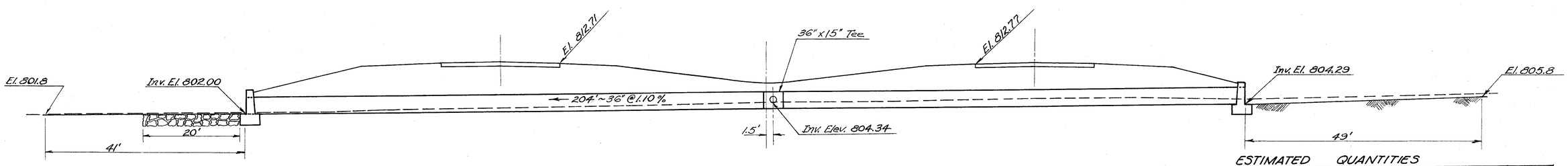
STRUCTURE NO. 20
Sta. 5+55 (ATB)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

97/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00





ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	90	Cu. Yd.
E-3	Channel Excavation	35	Cu. Yd.
I-10	Dumped Rock Channel Protection	18.5	Cu. Yd.
S-1	Concrete for Structures, Class "C"	21.0	Cu. Yd.
S-4	Reinforcing Steel	986	Lbs.
S-27	36" Pipe for Roadway Culverts Sec. M-6.6(b) M-6.8(b)	204	Lin. Ft.
L-10	Sodding	89	Sq. Yd.
I-5	Pipe Specials, 36" x 15" Tee	1	Each

D.A. = 31 Ac.
Q_{50} = 64 c.f.s.

STRUCTURE NO. 21
Sta. 10+77.5 (ATB)

Revised 10/2/57

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

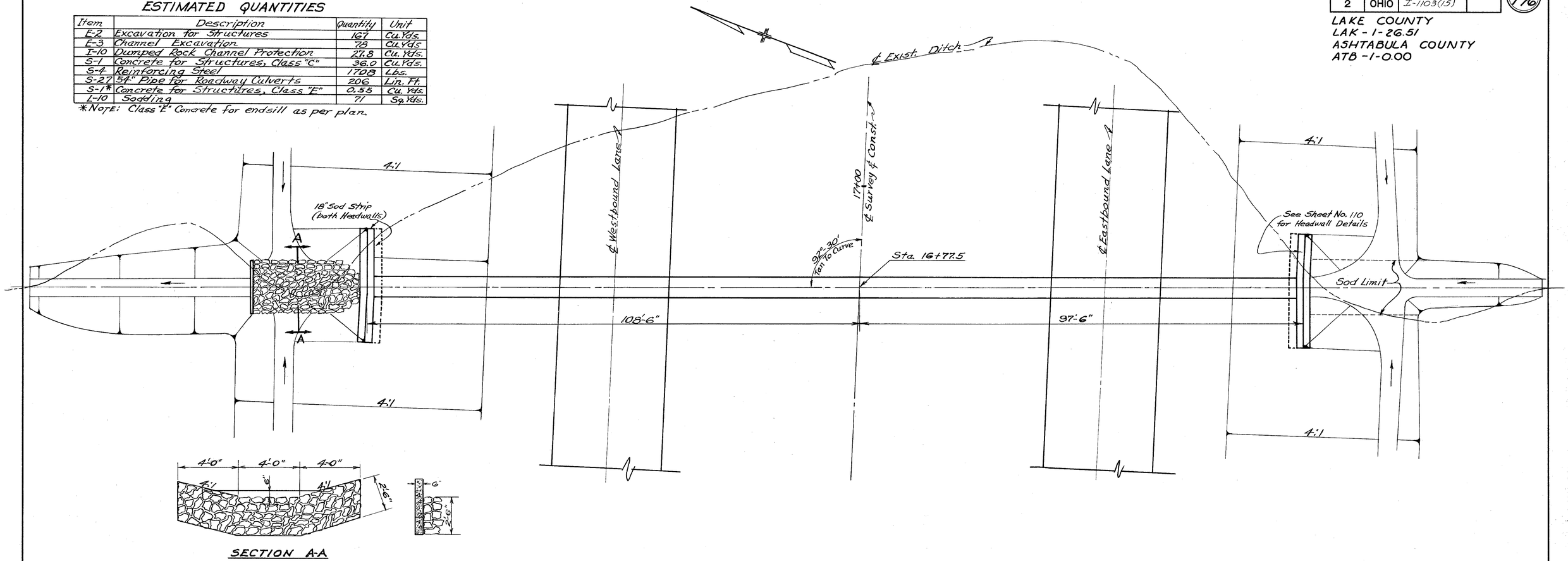
98/176

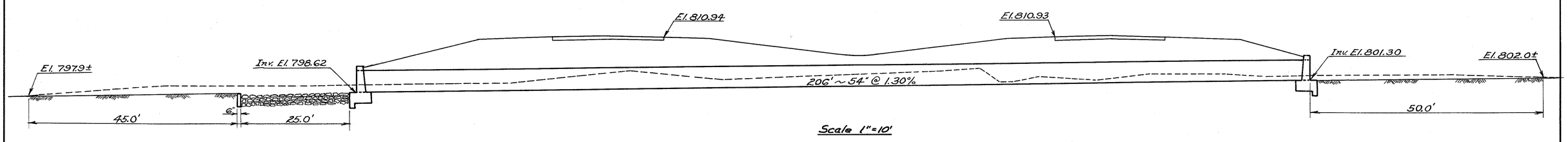
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	167	Cu. Yds.
E-3	Channel Excavation	78	Cu. Yds.
I-10	Dumped Rock Channel Protection	27.8	Cu. Yds.
S-1	Concrete for Structures, Class "C"	36.0	Cu. Yds.
S-4	Reinforcing Steel	1708	Lbs.
S-27	54" Pipe for Roadway Culverts	206	Lin. Ft.
S-1*	Concrete for Structures, Class "E"	0.55	Cu. Yds.
L-10	Sodding	71	Sq. Yds.

*NOTE: Class "E" Concrete for endsill as per plan.





D.A. = 67 Ac.
Q_{50} = 119 c.f.s.

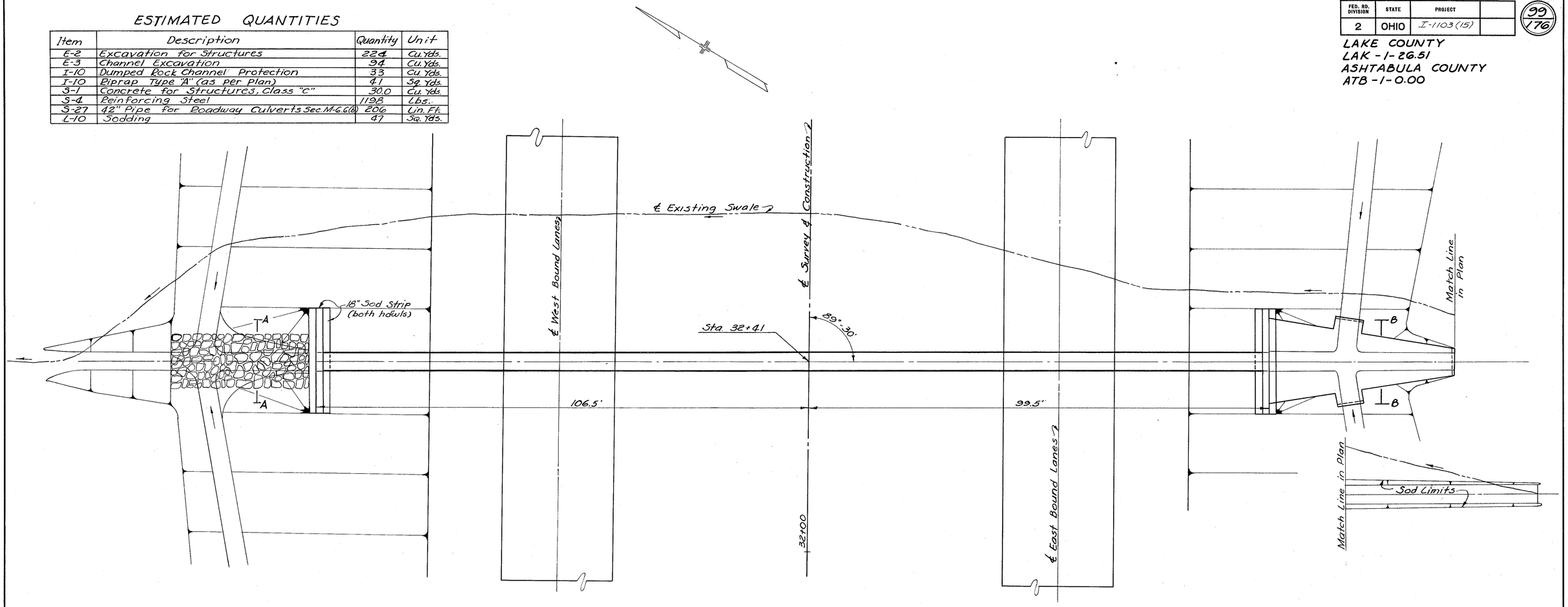
STRUCTURE No. 22
STATION 16+77.5 (ASH)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

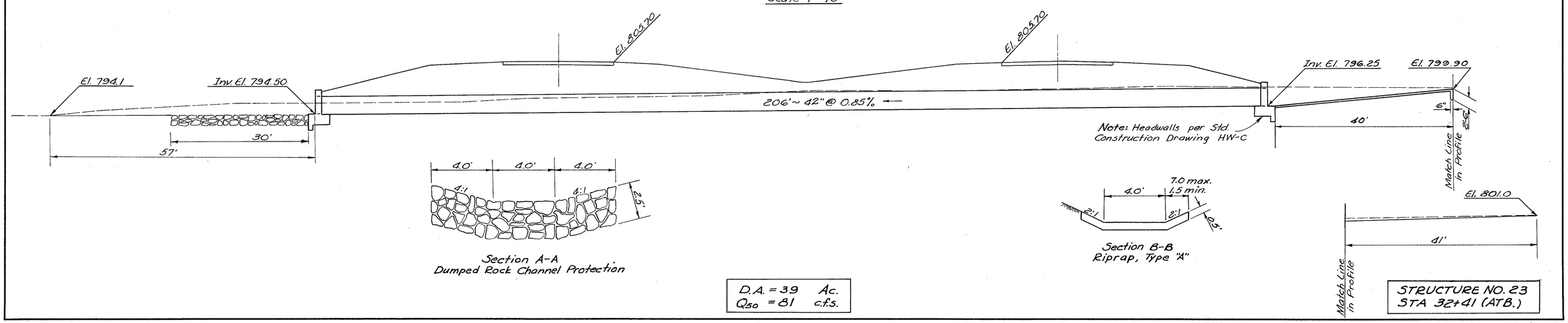
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	224	Cu. Yds.
E-3	Channel Excavation	94	Cu. Yds.
I-10	Dumped Rock Channel Protection	33	Cu. Yds.
I-10	Riprap Type "A" (as per Plan)	41	Sq. Yds.
S-1	Concrete for Structures, Class "C"	30.0	Cu. Yds.
S-4	Reinforcing Steel	1198	Lbs.
S-27	42" Pipe for Roadway Culverts Sec. M-6.6(b)	206	Lin. Ft.
L-10	Sodding	47	Sq. Yds.



Scale 1" = 10'



D.A. = 39 Ac.
Q_{50} = 81 c.f.s.

STRUCTURE NO. 23
STA 32+41 (ATB.)

Revised 10/2/57 MWJ

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

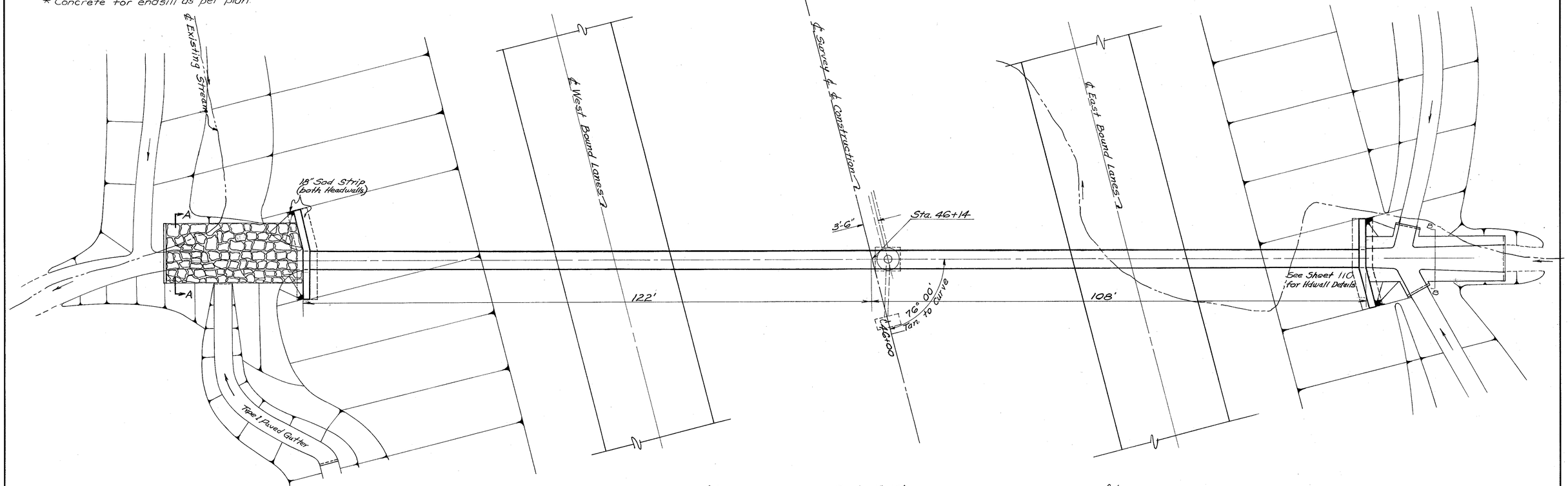
100
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

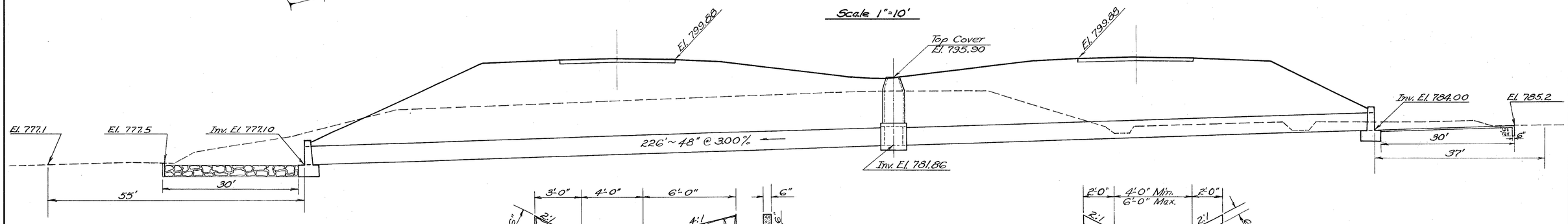
ESTIMATED QUANTITIES

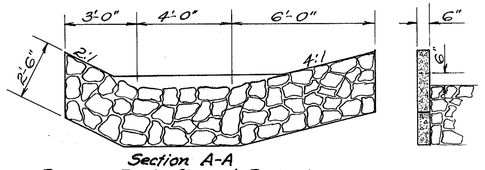
Item	Description	Quantity	Unit
E-2	Excavation for Structures	534	Cu. Yd.
E-3	Channel Excavation	110	Cu. Yd.
I-10	Dumped Rock Channel Protection	37.5	Cu. Yd.
I-10	Riprap, Type "A"	31.4	Sq. Yd.
S-1 *	Concrete for Structures, Class "E"	0.69	Cu. Yd.
S-1	Concrete for Structures, Class "C"	23.8	Cu. Yd.
S-4	Reinforcing Steel	1024	Lbs.
S-27	48" Extra Strength Reinforced Concrete Culvert Pipe, Sec. N-6.6(c) or 10 Gage Paved Bituminous Coated Corrugated Metal Pipe, Sec. N-6.4(d)	226	Lin. Ft.
I-8	Std. No. 1-A Manhole	1	Each
L-10	Sodding	7	Sq. Yds.

* Concrete for endsill as per plan

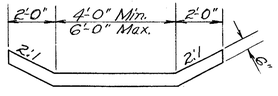


Scale 1" = 10'





Section A-A
Dumped Rock Channel Protection
With Concrete Endsill



Section B-B
Riprap, Type "A"

D.A. = 96 Ac.
Q_{50} = 105 c.f.s.

STRUCTURE NO. 24
STA. 46+14 (ATB)

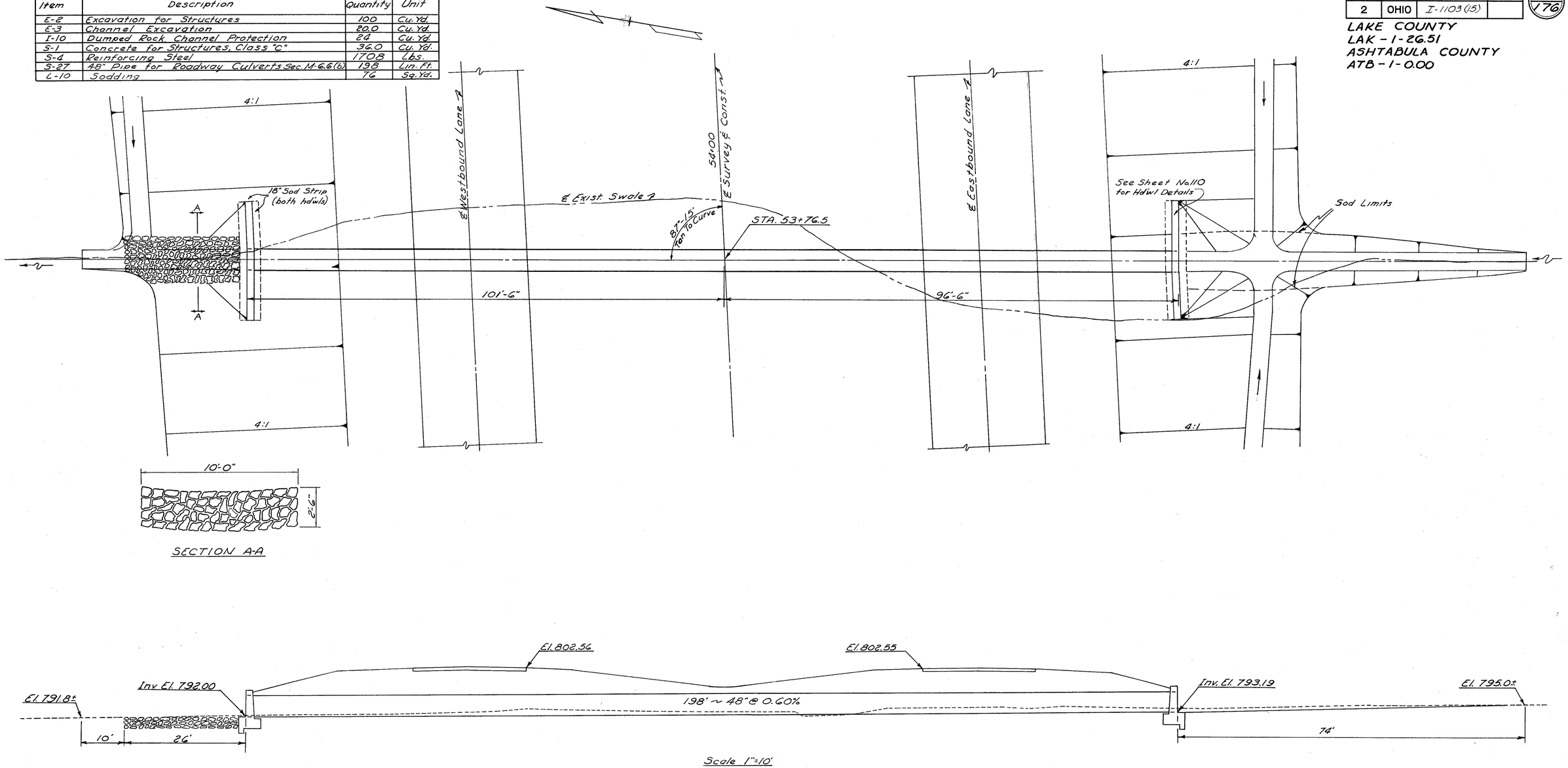
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

101/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	100	Cu. Yd.
E-3	Channel Excavation	20.0	Cu. Yd.
I-10	Dumped Rock Channel Protection	24	Cu. Yd.
S-1	Concrete for Structures, Class "C"	36.0	Cu. Yd.
S-4	Reinforcing Steel	1708	Lbs.
S-27	48" Pipe for Roadway Culverts Sec. M-6.6(b)	198	Lin. Ft.
L-10	Sodding	76	Sq. Yd.



D.A. = 70 Ac.
Q_{50} = 104 c.f.s.

STRUCTURE No. 25
Station 53+76.5 (ATB)

Revised 10/2/57

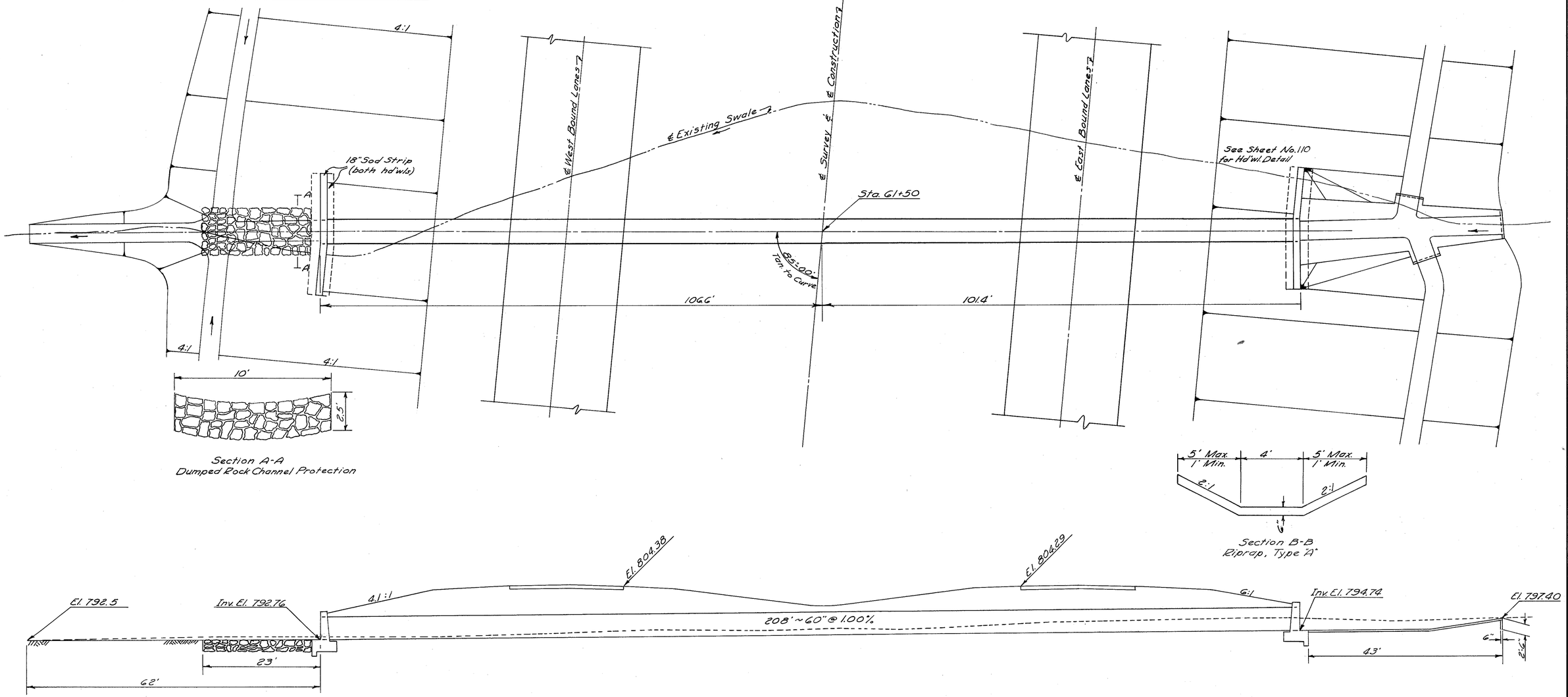
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

102/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	116	Cu. Yd.
E-3	Channel Excavation	30	Cu. Yd.
I-10	Dumped Rock Channel Protection	21	Cu. Yd.
I-10	Riprap Type "A" (As per Plan)	53	Sq. Yd.
S-1	Concrete for Structures, Class "C"	40.8	Cu. Yd.
S-4	Reinforcing Steel	1824	Lbs.
S-27	60" Standard Strength Reinforced Concrete Culvert Pipe Sec. M-6.6(b) or S-28 60" 10-10 Gage Sectional Corrugated Metal Pipe Sec. M-6.4(g)	208	Lin. Ft.
L-10	Sodding	11	Sq. Yd.



D.A. = 7.9 Ac.
Q_{50} = 114 c.f.s.

STRUCTURE No. 26
Station 61+50 (ATB)

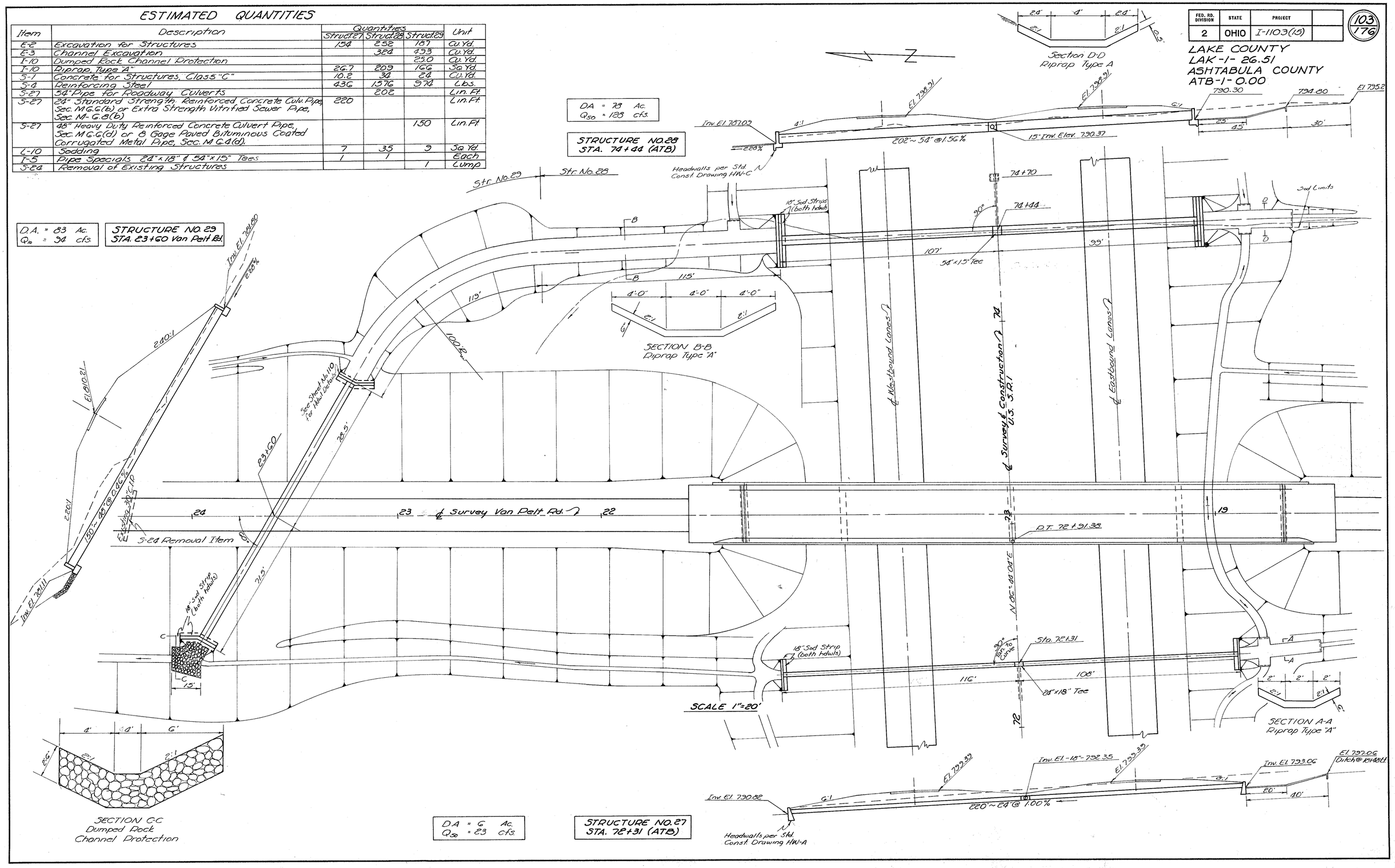
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

103
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantities Struct27	Struct28	Struct29	Unit
E-2	Excavation for Structures	154	232	187	Cu.Yd.
E-3	Channel Excavation		324	433	Cu.Yd.
F-10	Dumped Rock Channel Protection			230	Cu.Yd.
F-10	Riprap, Type "A"	26.7	209	166	Sq.Yd.
S-1	Concrete for Structures, Class "C"	10.2	34	24	Cu.Yd.
S-4	Reinforcing Steel	436	1576	974	Lbs.
S-27	54" Pipe for Roadway Culverts		202		Lin.Ft.
S-27	24" Standard Strength Reinforced Concrete Culv. Pipe, Sec. M.6.6(b) or Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b)	220			Lin.Ft.
S-27	48" Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M.6.6(d) or 8 Gage Paved Bituminous Coated Corrugated Metal Pipe, Sec. M.6.4(d).			150	Lin.Ft.
L-10	Sodding	7	35	9	Sq.Yd.
T-5	Pipe Specials 24"x18" & 54"x15" Tees	1	1		Each
S-24	Removal of Existing Structures			1	Lump



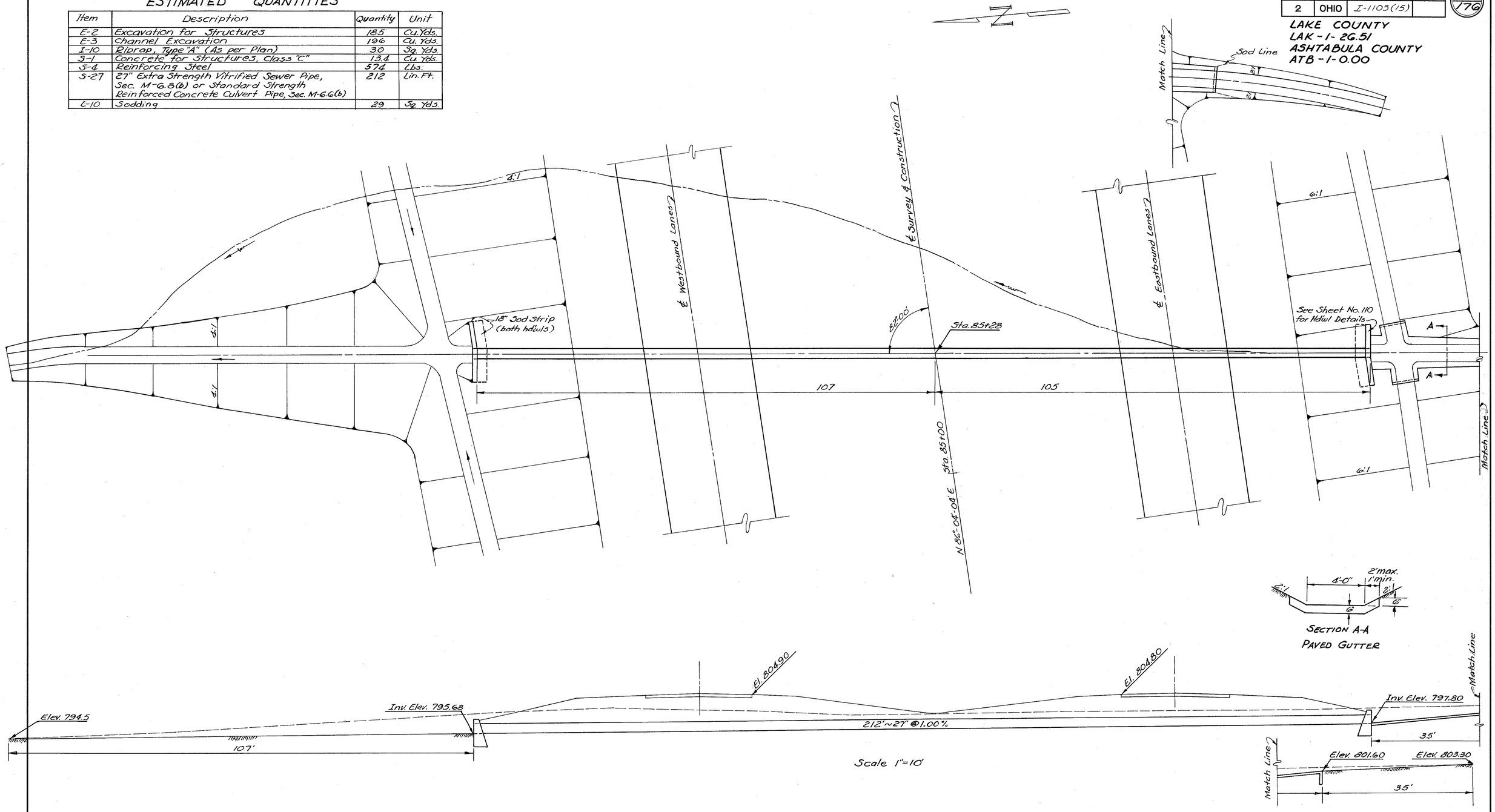
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

104
176

LAKE COUNTY
LAK-1-2G.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	18.5	Cu. Yds.
E-3	Channel Excavation	196	Cu. Yds.
I-10	Riprap, Type "A" (As per Plan)	30	Sq. Yds.
S-1	Concrete for Structures, Class "C"	13.4	Cu. Yds.
S-4	Reinforcing Steel	574	Lbs.
S-27	27" Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b) or Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b)	212	Lin. Ft.
L-10	Sodding	29	Sq. Yds.



D. A. = 17 Ac.
Q_{50} = 31 c.f.s.

STRUCTURE No. 31
Station 85+28 (ATB)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

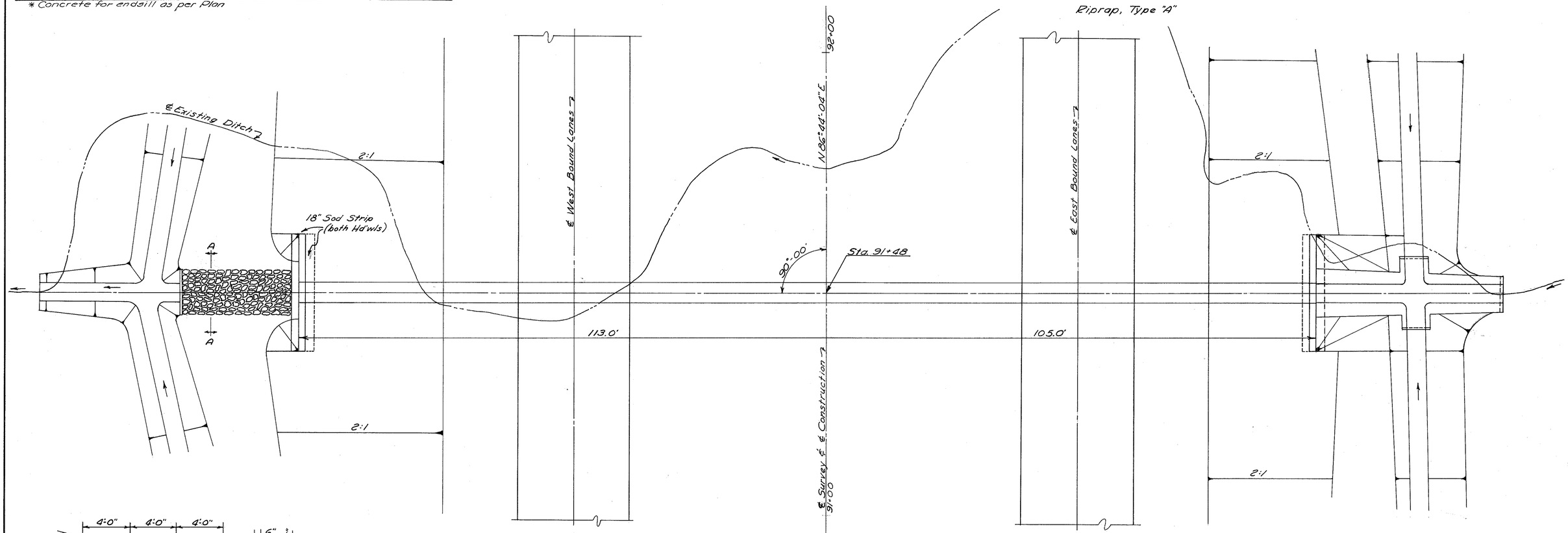
105/176

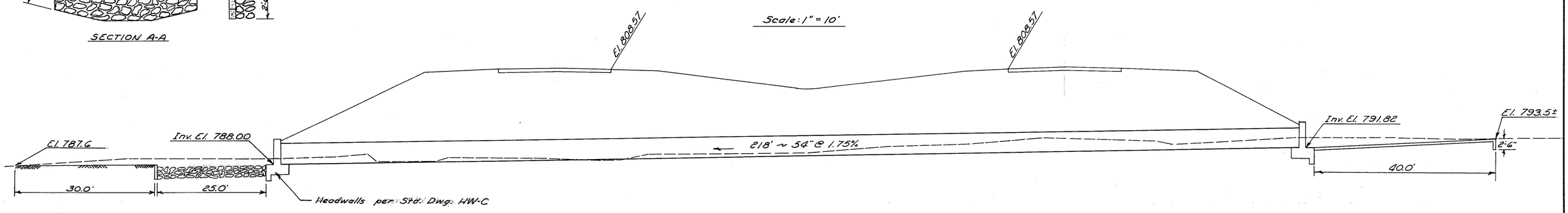
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
S-27	54" Extra Strength Reinforced Concrete Culvert Pipe,	218	Lin. Ft.
	Sec. M-6.6.(c) or 8 Gage Paved Bituminous Coated		
	Corrugated Metal Pipe, Sec. M-6.4.(d)		
I-10	Dumped Rock Channel Protection, (as per plan)	27.8	Cu. Yds.
I-10	Riprap, Type "A" (as per plan)	46	Sq. Yds.
S-1	Concrete for Structures, Class "C"	34.0	Cu. Yds.
E-2	Excavation for Structures	138	Cu. Yds.
E-3	Channel Excavation	27	Cu. Yds.
S-4	Reinforcing Steel	1576	Lbs.
S-1*	Concrete for Structures, Class "E"	0.55	Cu. Yds.
L-10	Sodding	10	Sq. Yds.

* Concrete for endsill as per Plan





D.A. = 83 Ac.
Q_{50} = 125 c.f.s.

STRUCTURE NO. 32
STA. 91+48 (ATB)

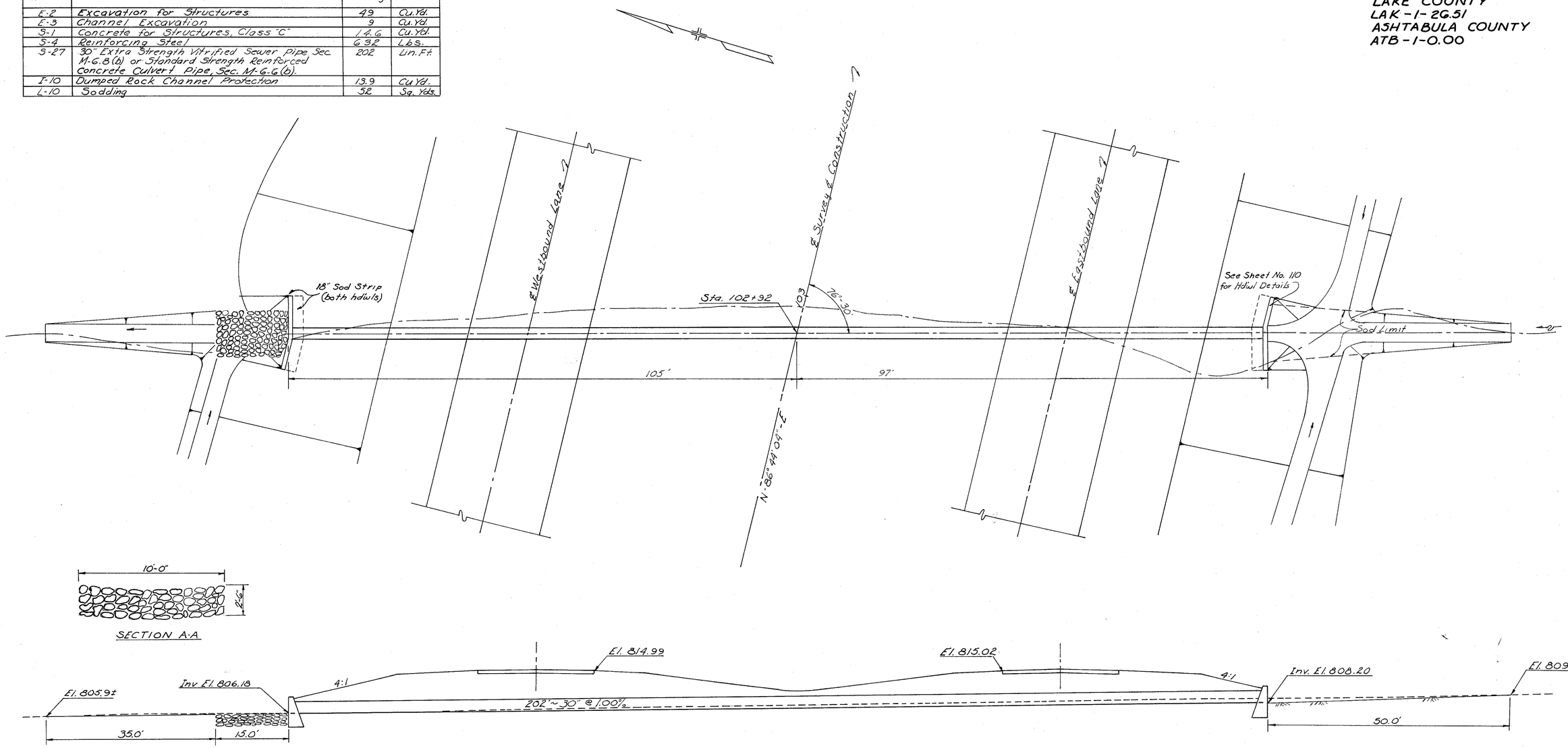
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

106/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	49	Cu.Yd.
E-3	Channel Excavation	9	Cu.Yd.
S-1	Concrete for Structures, Class "C"	14.6	Cu.Yd.
S-4	Reinforcing Steel	632	Lbs.
S-27	30" Extra Strength Vitrified Sewer Pipe Sec. M-6.8(b) or Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b).	202	Lin.Ft.
I-10	Dumped Rock Channel Protection	13.9	Cu.Yd.
L-10	Sodding	52	Sq.Yds.



Scale 1"=10

D.A. = 18 Ac
Q_{50} = 33 cfs.

STRUCTURE NO. 33
STA 102+92 ATB

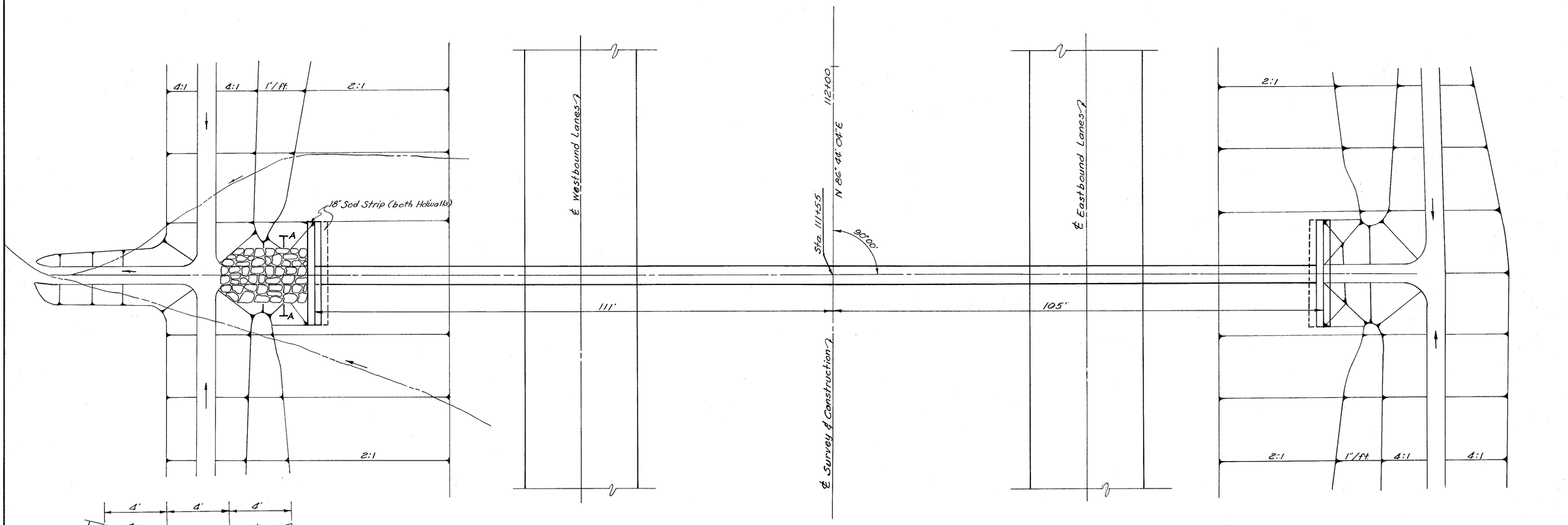
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

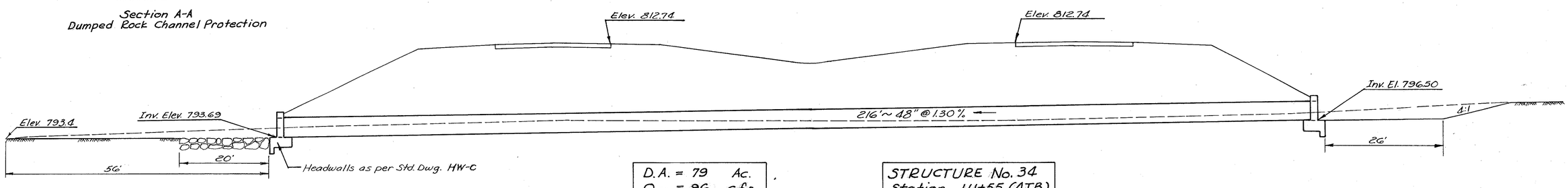
107/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	112	Cu. Yds.
E-3	Channel Excavation	72	Cu. Yds.
I-10	Dumped Rock Channel Protection	22.2	Cu. Yds.
S-1	Concrete for Structures, Class "C"	30	Cu. Yds.
S-4	Reinforcing Steel	1198	Lbs.
S-27	48" Extra Strength Reinforced Concrete Culvert Pipe, Sec. M6.6(c) or 12 Gage Paved Bituminous Coated Corrugated Metal Pipe Sec. M6.4 (d.)	216	Lin. Ft.
L-10	Sodding	6	Sq. Yds.





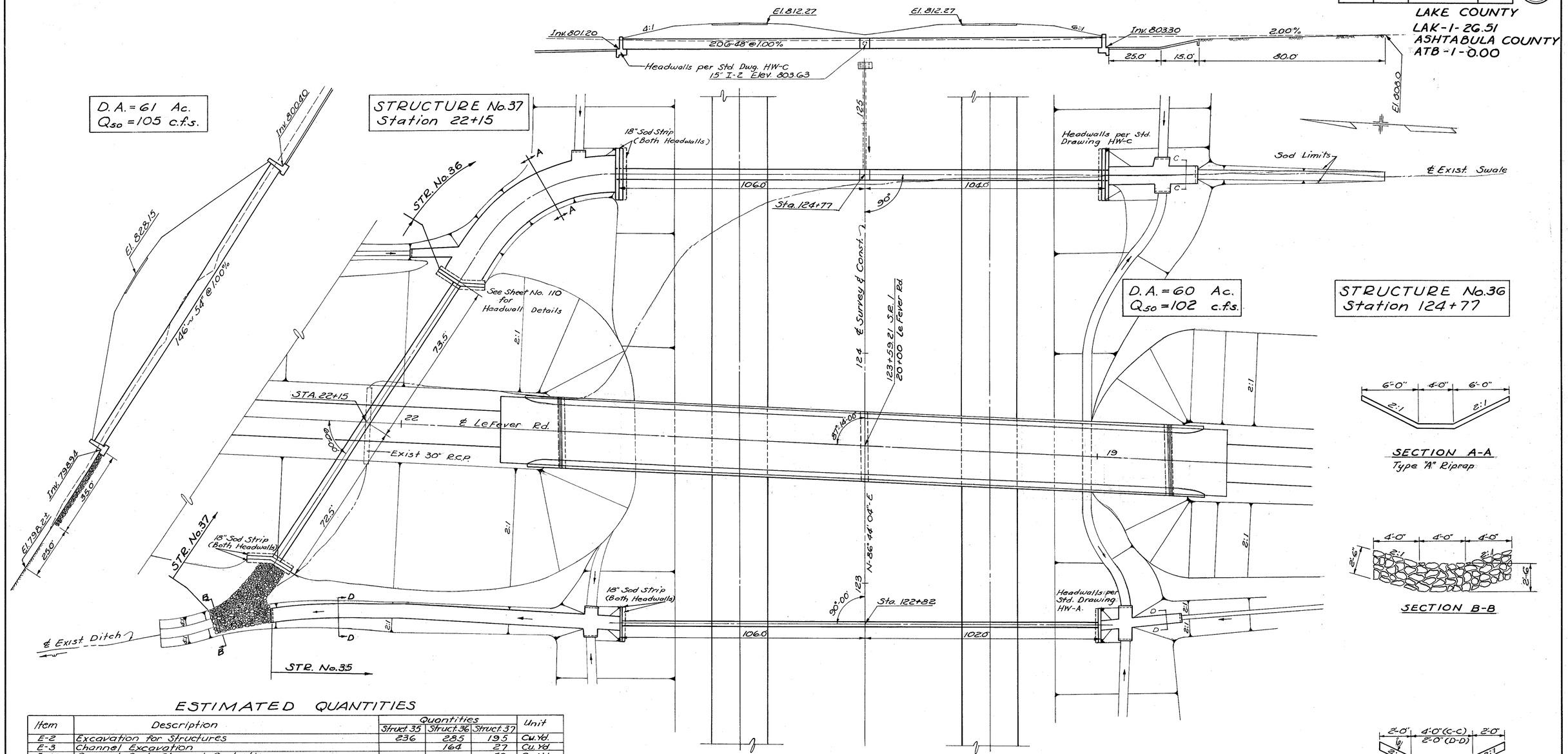
D.A. = 79 Ac.
Q_{50} = 96 c.f.s.

STRUCTURE No. 34
Station 111+55 (ATB)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

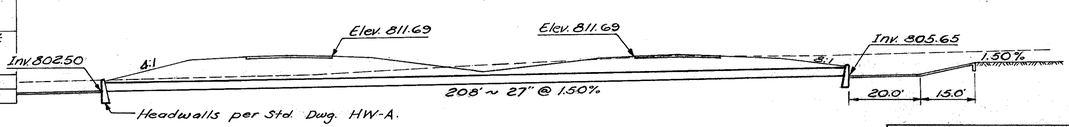
108/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



ESTIMATED QUANTITIES

Item	Description	Quantities Struct. 35	Struct. 36	Struct. 37	Unit
E-2	Excavation for Structures	236	285	19.5	Cu. Yd.
E-3	Channel Excavation		164	27	Cu. Yd.
I-10	Dumped Rock Channel Protection			52	Cu. Yd.
I-10	Riprap, Type "A"	108	203		Sq. Yd.
S-1	Concrete for Structures, Class "C"	14.6	30	28	Cu. Yd.
S-4	Reinforcing Steel	572	1198	1192	Lbs.
S-24	Removal of Existing Structures			1	Lump
S-27	48" Pipe for Roadway Culverts		206		Lin. Ft.
S-27	27" Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b), or Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b).	208			Lin. Ft.
S-27	54" 8 Gage Paved Bituminous Coated Corrugated Metal Pipe, Sec. M-6.4(d) or Heavy Duty Reinforced Concrete Culvert Pipe, Sec. M-6.6(d).			146	Lin. Ft.
L-10	Sodding	6	61	44	Sq. Yd.
I-5	Pipe Special 48"x15" Tee		1		Ea.



Scale 1" = 20'

D.A. = 12 Ac.
Q50 = 33 c.f.s.

STRUCTURE No. 35
Station 122+82

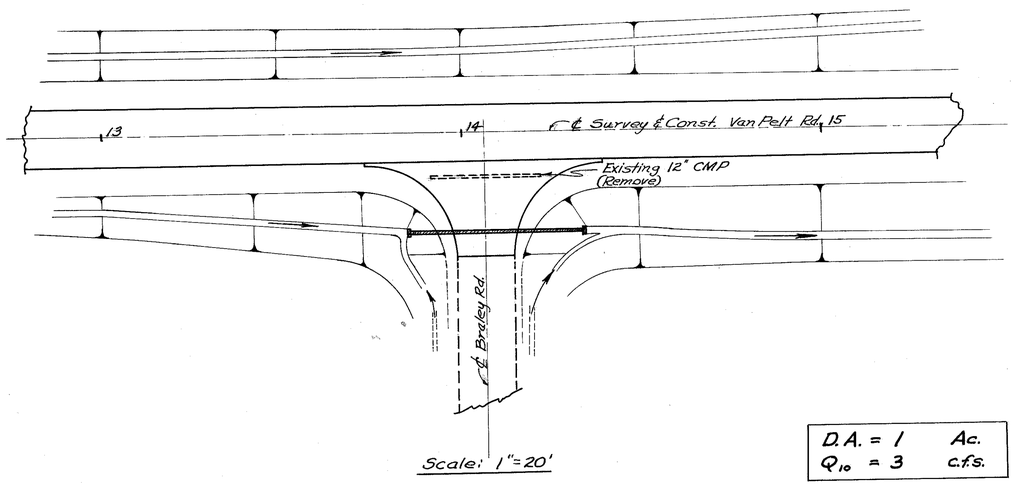
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

109/176

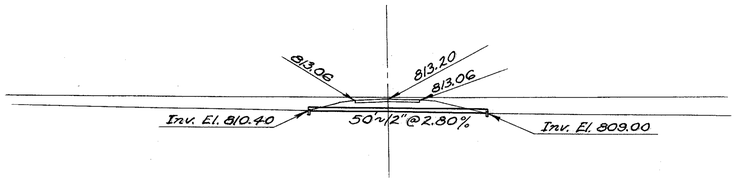
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-2	Excavation for Structures	2	Cu. Yds.
S-1	Concrete for Structures Class "E"	0.46	Cu. Yds.
S-24	Removal of existing Structures	Lump	Lump
S-27	12" Extra Strength Vitrified Sewer Pipe, Sec. M-6.8(b) or Standard Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6(b)	50	Lin. Ft.

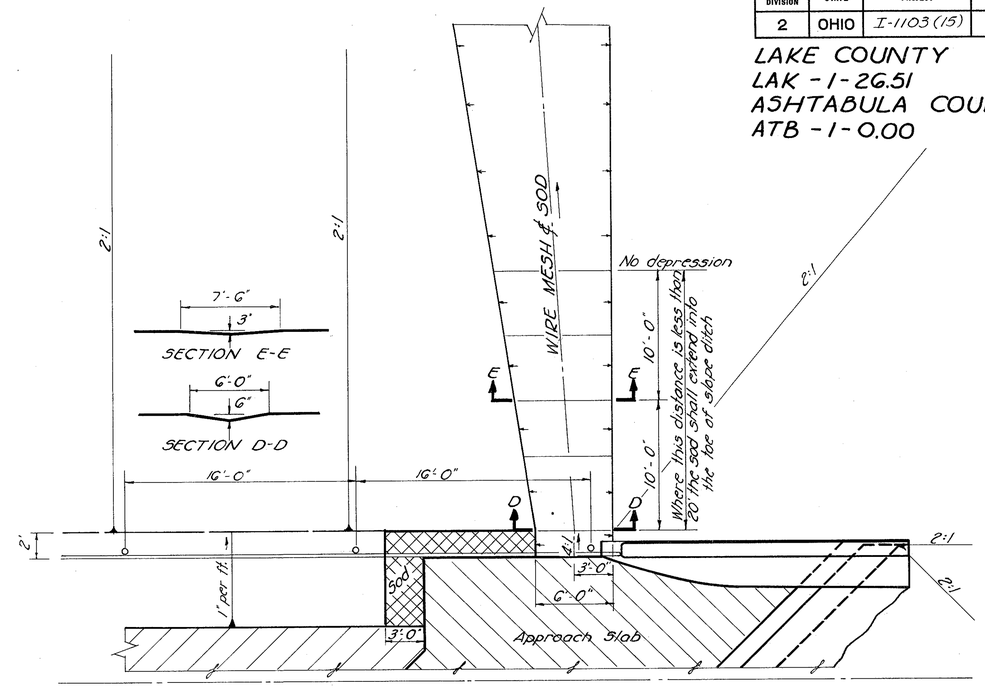


D.A. = 1 Ac.
Q_{10} = 3 c.f.s.



NOTE: Endwalls per Std. Const. Dwg. S-27 P.C. 4

STRUCTURE No. 30
Van Pelt Rd.



TYPICAL APPROACH SLAB EROSION CONTROL

ESTIMATED QUANTITIES
Sodding for Special Berm and Slope Protection

Location	North Approach	South Approach	Total
	Sq. Yds.	Sq. Yds.	Sq. Yds.
Bates Road	174	72	246
County Line Road	122	113	235
Van Pelt Road	205	117	322
Le Fever Road	229	127	356
Total			1159

SPECIAL BERM AND 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"x1"x8" 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.

Each strand 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.

(1)-10

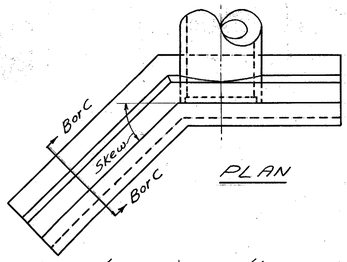
01-M

LAK-90-27.31-29.21 ATB-90-0.00-2.50

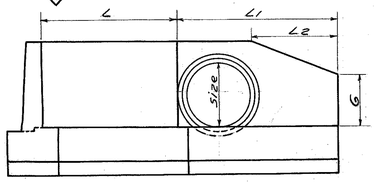
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

110/176

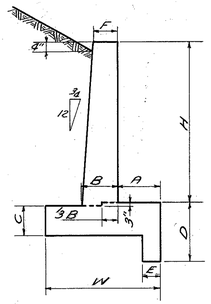
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



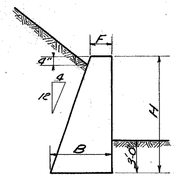
PLAN



ELEVATION



SECTION "B-B"



SECTION "C-C"

HEADWALL DIMENSIONS

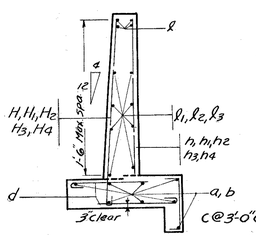
Structure No.	SIZE	H	L	L1	L2	W	A	B	C	D	E	F	G
31	27"	6'-6"	6'-5¾"	7'-9"	5'-3"			3'-2"				1'-0"	6'-4"
4	30"	6'-6"	6'-6"	8'-0"	4'-11"			3'-2"				1'-0"	5'-9½"
5	"	6'-6	6'-2	12'-3				3'-2				1'-0	
13	"	6'-6	6'-3	7'-6	4'-8½"			3'-2				1'-0	6'-1½"
16	"	6'-6	6'-6	7'-6	4'-5			3'-2				1'-0	5'-6
33	"	6'-6	6'-2	9'-3	6'-5½"			3'-2				1'-0	6'-0
7	53x34	7'-3	6'-9	10'-6	5'-4			3'-8				1'-3	7'-0
10,11,15	36	4'-0	6'-6	8'-3	4'-11	3'-9	1'-0	1'-9½"	1'-9	2'-6		1'-6	3'-9
1,2,21	42	4'-9	7'-6	10'-0	6'-1½	4'-3	1'-3	1'-9½"	1'-9	3'-6	1'-0	1'-6	4'-6
3	42	4'-9	7'-6	9'-0	5'-1½	4'-3	1'-3	1'-9½	1'-9	2'-6		1'-6	4'-0
12(Rt.) 6	48	5'-3	9'-0	11'-6	7'-1	4'-9	1'-5	1'-10	1'-9	3'-6	1'-0	1'-6	4'-9
12(Lt.)	"	5'-3	9'-0	11'-6	7'-1	4'-9	1'-5	1'-10	1'-9	2'-6		1'-6	4'-9
24	"	5'-3	9'-0	10'-6	6'-1	4'-9	1'-5	1'-10	1'-9	2'-6		1'-6	4'-3
29	"	5'-3	9'-0	9'-6	5'-1	4'-9	1'-5	1'-10	1'-9	2'-6		1'-6	3'-6
22,25	54	5'-9	10'-0	16'-3		5'-0	1'-7½	1'-10½	1'-9	3'-6	1'-0	1'-6	
37	"	5'-9	10'-0	10'-3	5'-3½	5'-0	1'-7½	1'-10½	1'-9	2'-6		1'-6	3'-9
26	60	6'-9	11'-0	15'-0	9'-6	5'-6	1'-10½	1'-11	1'-9	3'-6	1'-0	1'-6	6'-0

REINFORCING STEEL LIST & CONCRETE QUANTITIES

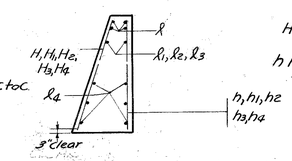
				Mark a	No.	Mark b	No.	Mark c	No.	Mark d	No.	Mark l	No.	Mark l1	No.	Mark l2	No.	Mark l3	No.	Mark l4	No.	Mark H	No.	Mark H1	No.	Mark H2	No.	Mark H3	No.	Mark H4	No.	Mark h	No.	Mark h1	No.	Mark h2	No.	Mark h3	No.	Mark h4	No.			5-4* Reinforcing Steel Lbs.	5-1* Class "C" Concrete Cu. Yds.	Structure Details Sheet No.
Structure No.	Station	Pipe Size	Skew																																											
Void 1	8+51	42"	7°30'	7'-4"	8	9'-10"	8	4'-2"	6	3'-6"	24	11'-2"	4	6'-0"	2	7'-2"	6	5'-7"	6			6'-11"	4	6'-8"	1	6'-9"	1	6'-10"	2			4'-7"	4	4'-4"	1	4'-5"	1	4'-6"	2					491#	10.3	85
Void 2	16+28	"	5°40'	7'-4"	8	9'-10"	8	4'-2"	6	3'-6"	24	11'-2"	4	6'-0"	2	7'-2"	6	5'-7"	6			6'-11"	4	6'-8"	1	6'-9"	1	6'-10"	2			4'-7"	4	4'-4"	1	4'-5"	1	4'-6"	2					491	10.3	86
3	21+38.5	"	24°30'	8'-8"	6	10'-2"	6			3'-6"	24	11'-2"	4	5'-0"	2	7'-4"	6	4'-7"	6			6'-11"	4	6'-2"	1	6'-6"	1	6'-10"	1			4'-7"	4	3'-10"	1	4'-2"	1	4'-6"	1					418	9.9	81
4	27+93.5	30	11°00'									9'-6"	4	4'-9"	2	6'-3"	2	4'-11"	2	14'-4"	6	6'-4"	4	5'-6"	1	5'-10"	1	6'-2"	1			6'-1"	4	5'-4"	1	5'-8"	1	6'-0"	1					289	6.7	82
5	32+70.5	"	5°30'									20'-1"	4			5'-10"	2	5'-8"	2	20'-3"	6	6'-4"	10									6'-1"	10											421	9.4	83
6	38+59	48	6°30'	9'-2"	8	11'-8"	8	4'-2"	8	3'-10"	30	13'-3"	4	6'-11"	2	8'-8"	6	6'-4"	6			7'-5"	5	6'-11"	1	7'-0"	1	7'-2"	1	7'-4"	1	5'-1"	5	4'-7"	1	4'-8"	1	4'-10"	1	5'-0"	1			607	13.2	84 & 89
12 (Rt.)	38+59	48	6°30'									13'-3"	4	6'-11"	2	8'-8"	6	6'-4"	6			7'-1"	4	6'-10"	1	6'-11"	1	7'-0"	1			6'-10"	4	6'-7"	1	6'-8"	1	6'-9"	1					369	10.2	85
7	45+98	53x34	8°00'									11'-9"	4	5'-9"	2	6'-5"	4	5'-0"	4	17'-1"	6	7'-1"	4	6'-10"	1	6'-11"	1	7'-0"	1			3'-10"	4	3'-7"	1	3'-8"	1	3'-9"	1					345	7.1	87
10	54+37	36	12°30'	7'-6"	6	9'-3"	6			3'-6"	20	9'-8"	4	4'-9"	2	6'-4"	4	4'-6"	4			6'-2"	4	5'-11"	1	6'-0"	1	6'-1"	1			3'-10"	4	3'-7"	1	3'-8"	1	3'-9"	1					348	7.6	88
11	59+58	"	27°00'	7'-9"	6	9'-6"	6			3'-6"	20	9'-8"	4	4'-9"	2	6'-4"	4	4'-6"	4			6'-2"	4	5'-11"	1	6'-0"	1	6'-1"	1			3'-10"	4	3'-7"	1	3'-8"	1	3'-9"	1					348	7.6	88
12(Lt)	72+32.5	48	16°00'	9'-10"	6	12'-4"	6			3'-10"	30	13'-3"	4	6'-11"	2	8'-8"	6	6'-4"	6			7'-5"	5	6'-11"	1	7'-0"	1	7'-2"	1	7'-4"	1	5'-1"	5	4'-7"	1	4'-8"	1	4'-10"	1	5'-0"	1			537	12.8	89
13	81+77.5	30	8°30'									8'-10"	4	4'-6"	2	6'-1"	2	4'-1"	2	13'-7"	6	6'-4"	4	5'-11"	1	6'-0"	1	6'-2"	1			6'-1"	4	5'-8"	1	5'-9"	1	6'-0"	1					280	6.4	90
14	85+94	21	0°00'	See Std. Dwg. HW-A & B																																										91
15(Rt)	88+83	36	14°00'	7'-0"	6	8'-9"	6			3'-6"	20	9'-8"	4	4'-9"	2	6'-4"	4	4'-6"	4			6'-2"	4	5'-11"	1	6'-0"	1	6'-1"	1			3'-10"	4	3'-7"	1	3'-8"	1	3'-9"	1					339	7.1	92
16(Lt)	97+73	30	10°30'									9'-5"	4	4'-3"	2	6'-4"	2	4'-1"	2	13'-10"	6	6'-4"	4	5'-3"	1	5'-8"	1	6'-2"	1			6'-1"	4	5'-1"	1	5'-6"	1	5'-11"	1					281	6.5	93
17	108+17	48	0°00'	See Std. Dwg. HW-C																																										94
18	115+00	53x34	0°00'	See Std. Dwg. HW-A & B																																										95
20	5+55	36	0°30'	See Std. Dwg. HW-C																																										96
21	10+77.5	36	13°30'	7'-6"	8	10'-0"	8	4'-2"	6	3'-6"	24	11'-2"	4	6'-0"	2	7'-2"	6	5'-7"	6			6'-11"	4	6'-8"	1	6'-9"	1	6'-10"	2			4'-7"	4	4'-4"	1	4'-5"	1	4'-6"	2					493	10.5	97
22	16+77.5	54	2°30'	10'-0"	8	15'-3"	8	4'-2"	9	3'-10"	34	25'-1"	4			9'-8"	6	9'-6"	6			7'-11"	12									5'-7"	12											854	18.0	98
23	32+41	48	0°30'	See Std. Dwg. HW-C																																										99
24	46+14	48	14°00'	9'-8"	6	11'-2"	6			3'-10"	28	13'-3"	4	5'-11"	2	8'-10"	6	5'-4"	6			7'-5"	5	6'-5"	1	6'-9"	1	7'-0"	1	7'-4"	1	5'-1"	5	4'-1"	1	4'-5"	1	4'-9"	1	5'-0"	1			512	11.9	100
25	53+76.5	48	28°5'	10'-0"	8	15'-3"	8	4'-2"	9	3'-10"	34	25'-1"	4			9'-8"	6	9'-6"	6			7'-11"	12									5'-7"	12											854	18.0	101
26	61+50	60	5°00'	11'-2"	8	15'-2"	8	4'-2"	9	4'-1"	36	16'-4"	4	9'-4"	2	10'-10"	8	8'-8"	8			8'-11"	6	8'-2"	2	8'-5"	1	8'-8"	1	8'-10"	1	6'-7"	6	5'-10"	2	6'-1"	1	6'-4"	1	6'-6"	1			912	20.4	102
27	72+31	24	0°00'	See Std. Dwg. HW-A & B																																										103
28	74+44	54	0°00'	See Std. Dwg. HW-C																																										103
29	* 23+60	48	30°00'	10'-9"	6	11'-3"	6			3'-10"	26	13'-3"	4	4'-11"	2	8'-10"	6	4'-4"	6			7'-5"	5	5'-7"	1	6'-5"	1	7'-4"	1			5'-1"	5	3'-4"	1	4'-2"	1	5'-0"	1					487	12.0	103
31	85+28	27	8°00'									8'-9"	4	5'-1"	2	6'-1"	2	4'-8"	2	14'-0"	6	6'-4"	4	6'-2"	1	6'-3"	1	6'-4"	1			6'-1"	4	5'-11"	1	6'-0"	1	6'-1"	1					287	6.7	104
32	91+48	54	0°00'	See Std. DWG. HW-C																																										105
33	102+92	30	13°30'									8'-9"	4	6'-3"	2	6'-0"	2	5'-10"	2	15'-3"	6	6'-4"	4	5'-10"	1	6'-0"	1	6'-2"	1	6'-3"	1	6'-1"	4	5'-7"	1	5'-9"	1	5'-11"	1	6'-0"	1			316	7.3	106
34	111+55	48	0°00'	See Std. Dwg. HW-C																																										107
35	122+82	27	0°00'	See Std. Dwg. HW-A & B																																										108
36	124+77	48	0°00'	See Std. Dwg. HW-C																																										108
37	** 22+15	54	30°00'	11'-9"	6	12'-0"	6			3'-10"	28	14'-3"	4	5'-1"	2	9'-10"	6	4'-6"	6			7'-11"	6	5'-11"	1	6'-11"	1	7'-11"	1			5'-7"	6	3'-7"	1	4'-7"	1	5'-6"	1					596	14.0	108

* Stationing on Van Pelt Rd.
** Stationing on LeFever Rd.

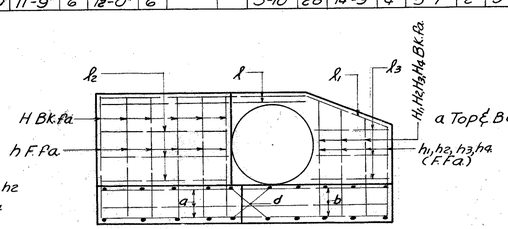
* NOTE:- Quantities shown are for one Hdwl.



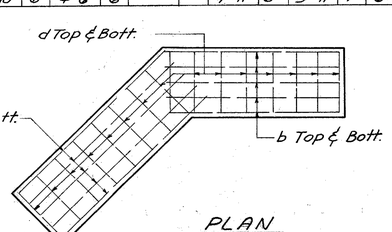
SECTION "B-B"



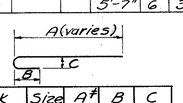
SECTION "C-C"



ELEVATION

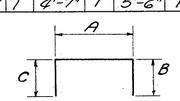


PLAN



Mark	Size	A#	B	C
H, H1, H2, H3, H4	⅜		4'-3¼	4'-4
d	⅜		4'-3¼	4'-4

#Varies



Mark	A	B	C
C	3'-2"	6"	6"

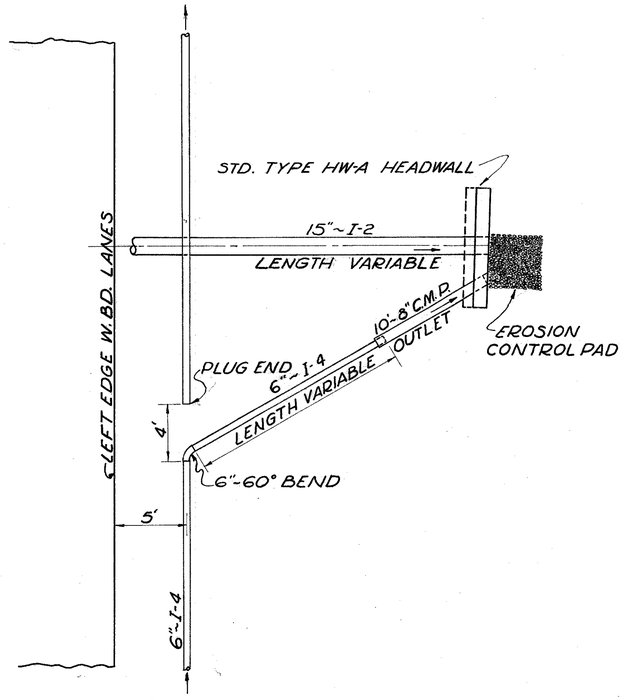
NOTE:- For additional information see Std. Const. Dwgs. Hdwl. A, B, & C. Mark l and l4 bars to be bent in field

SKEWED HEADWALL DETAILS Revised 10/2/57

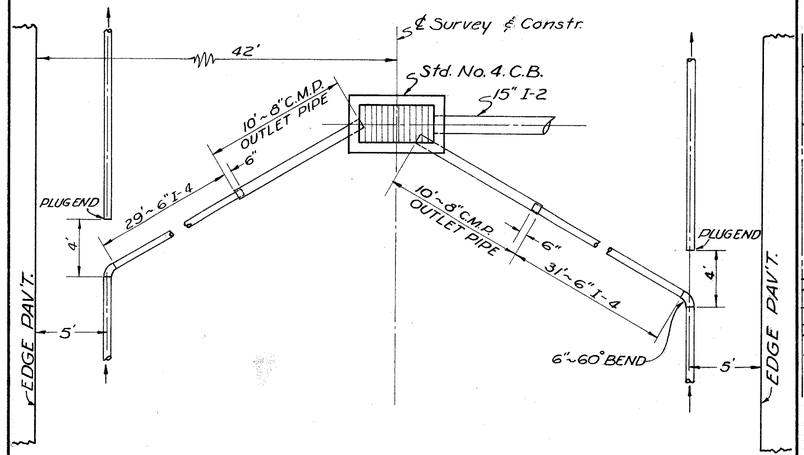
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

111/176

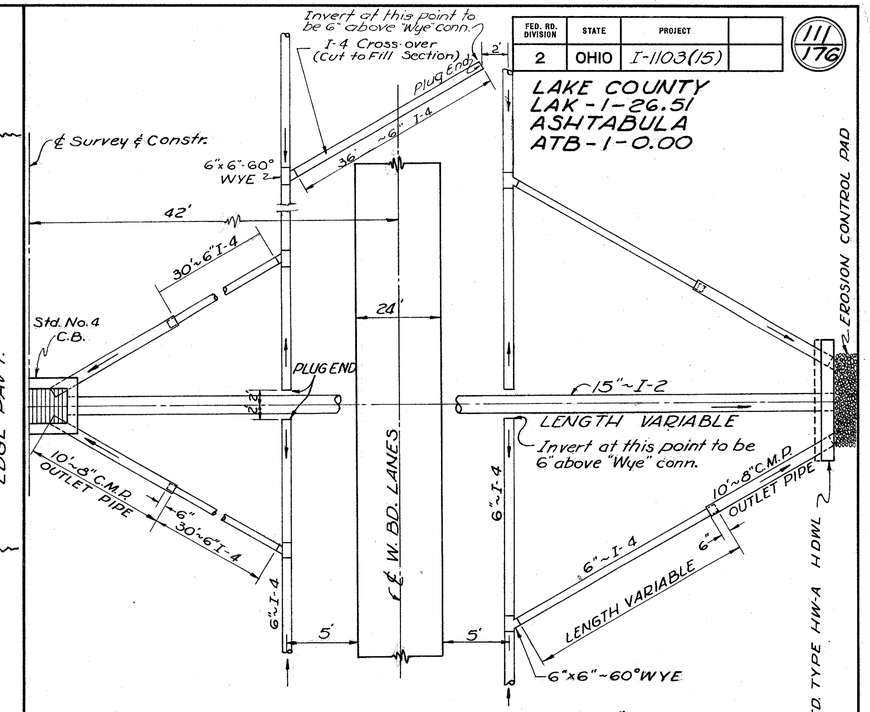
LAKE COUNTY
LAK-1-26.51
ASHTABULA
ATB-1-0.00



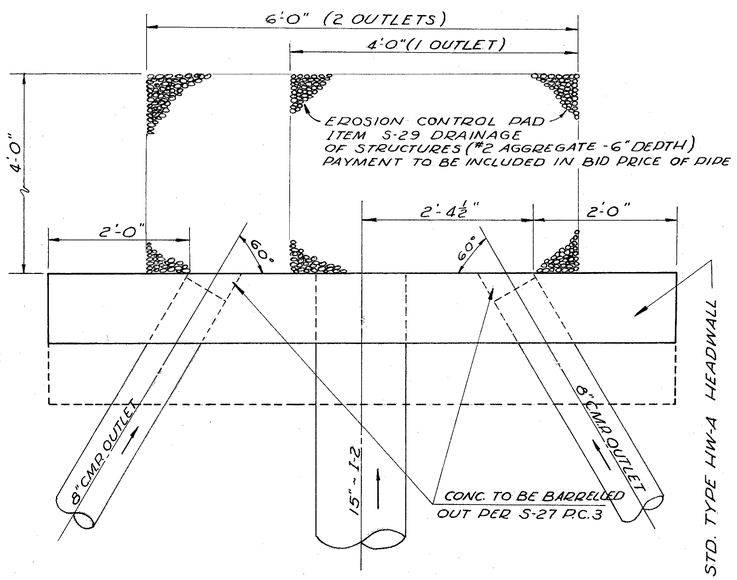
UNDERDRAIN OUTLET DETAIL "A"



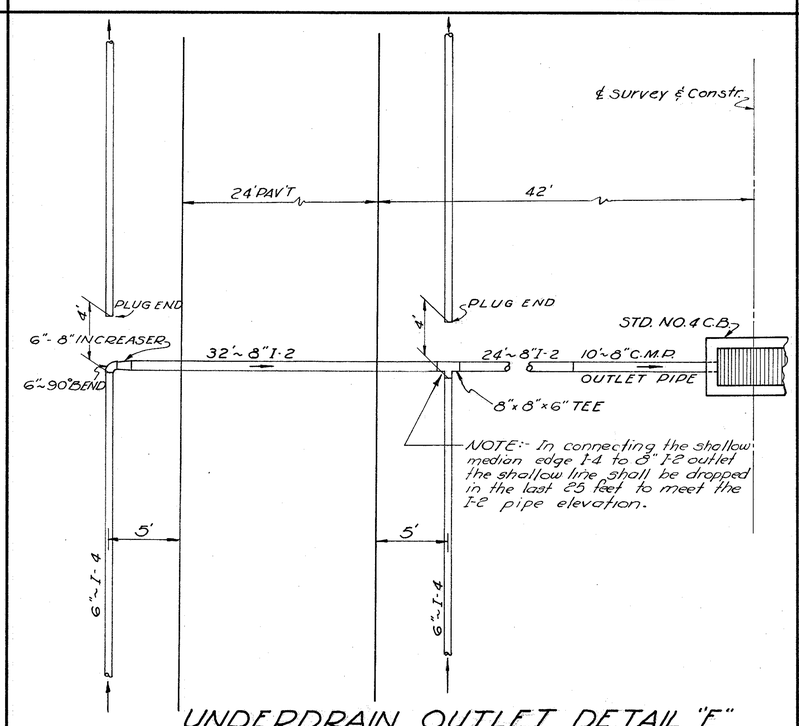
UNDERDRAIN OUTLET DETAIL "B"



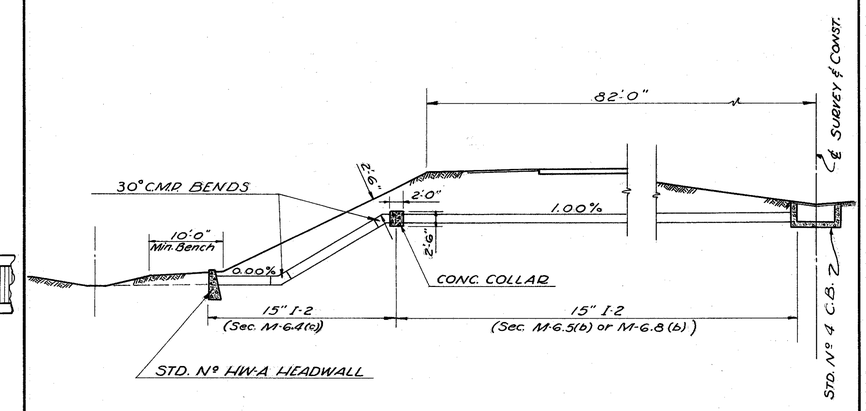
UNDERDRAIN OUTLET DETAIL "C"



UNDERDRAIN OUTLET DETAIL "D"



UNDERDRAIN OUTLET DETAIL "E"



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

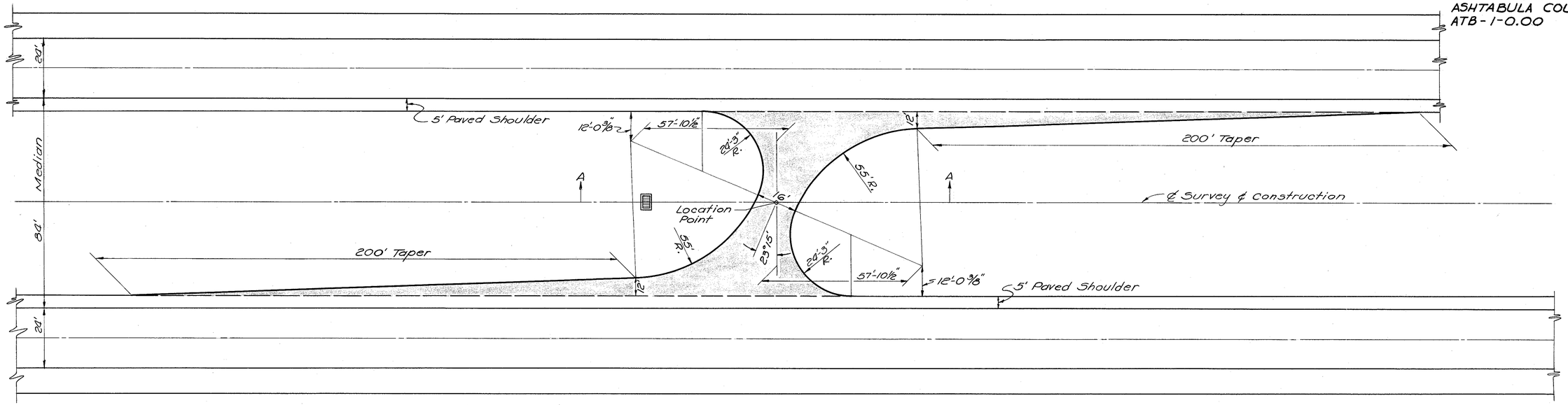
MEDIAN OUTLET DETAIL IN HIGH FILL

DRAINAGE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

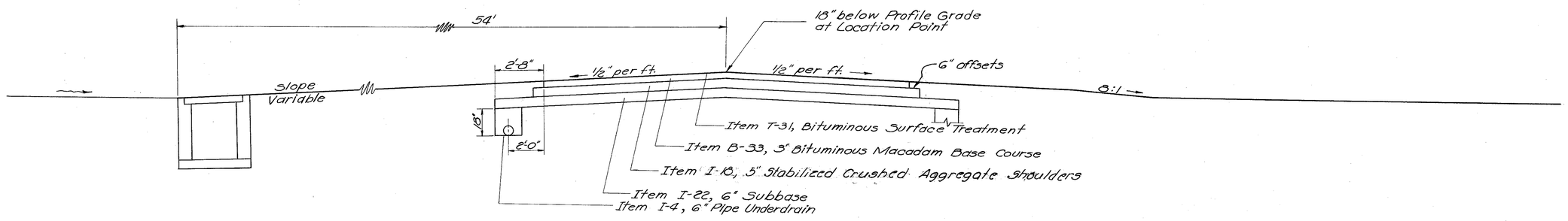
112/176

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00



PLAN

Scale : 1" = 20'



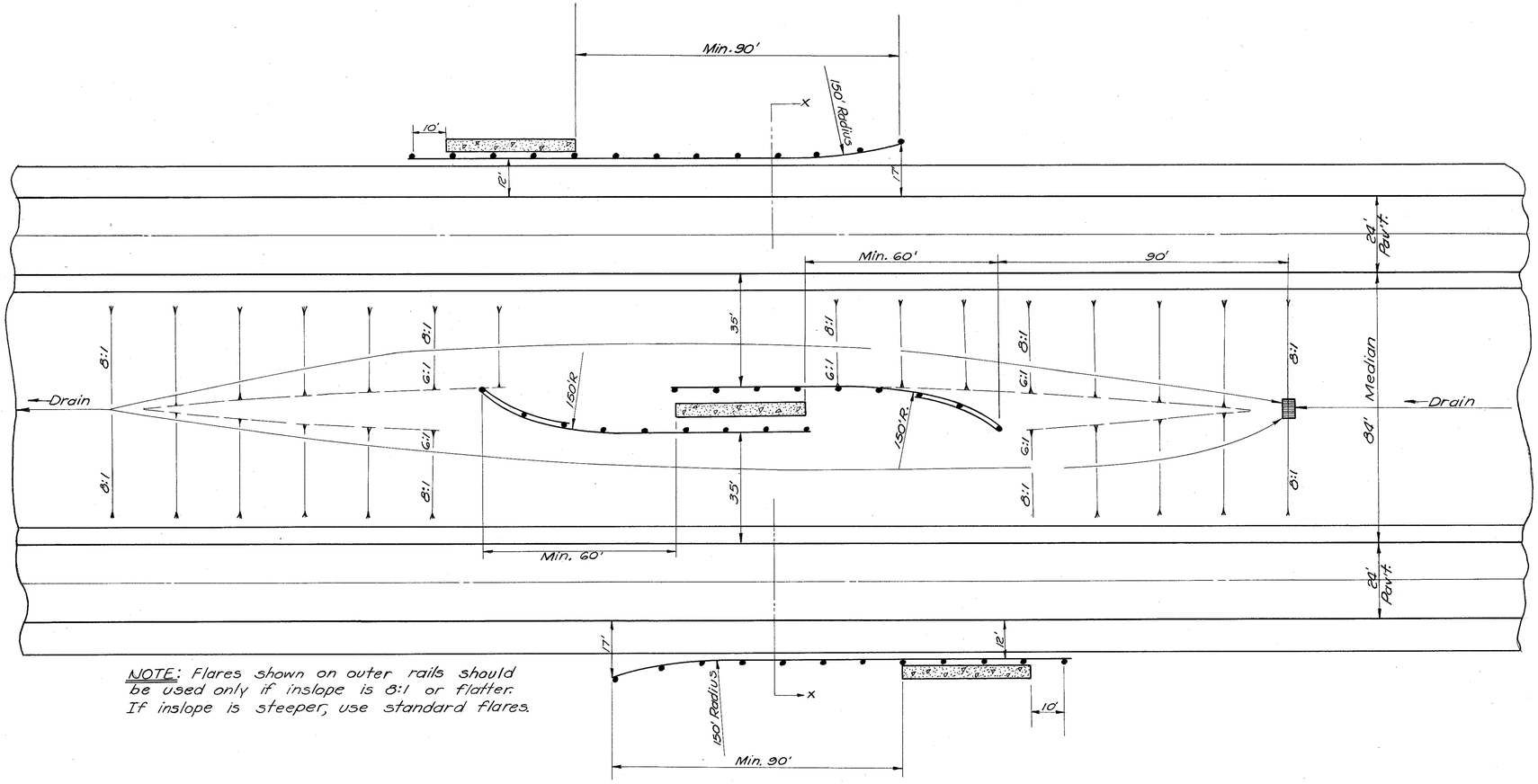
SECTION A-A

TYPICAL CROSSOVER DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

113/176

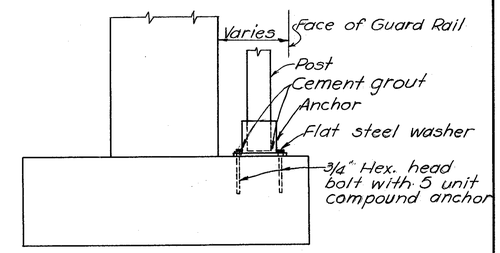
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



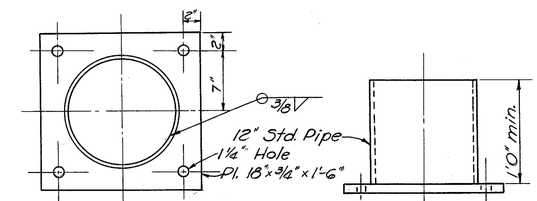
NOTE: Flares shown on outer rails should be used only if inslope is 8:1 or flatter. If inslope is steeper, use standard flares.

PLAN
Scale 1" = 20'

GUARD RAIL POST TO FOOTING ANCHOR



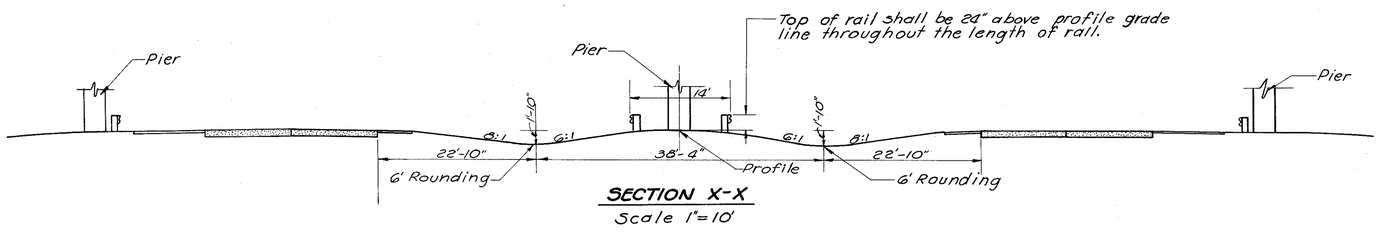
FOOTING END VIEW



ANCHOR PLAN

ANCHOR ELEVATION

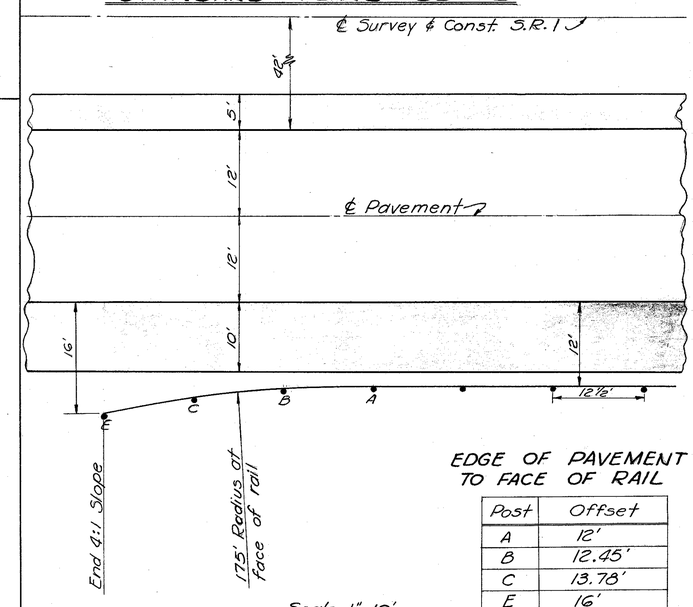
NOTE: Where posts fall over footings and less than 3'-0" of earth is provided above the top of footing, the above detail shall be used.



SECTION X-X
Scale 1" = 10'

GUARD RAIL FOR BRIDGE PIER PROTECTION

STANDARD FLARE DETAIL



EDGE OF PAVEMENT TO FACE OF RAIL

Post	Offset
A	12'
B	12.45'
C	13.78'
E	16'

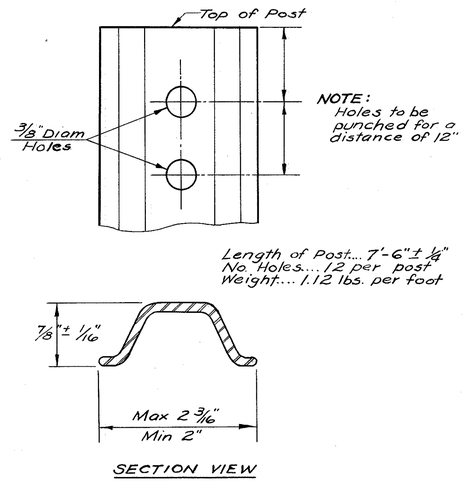
Scale 1" = 10'

GUARD RAIL DETAILS

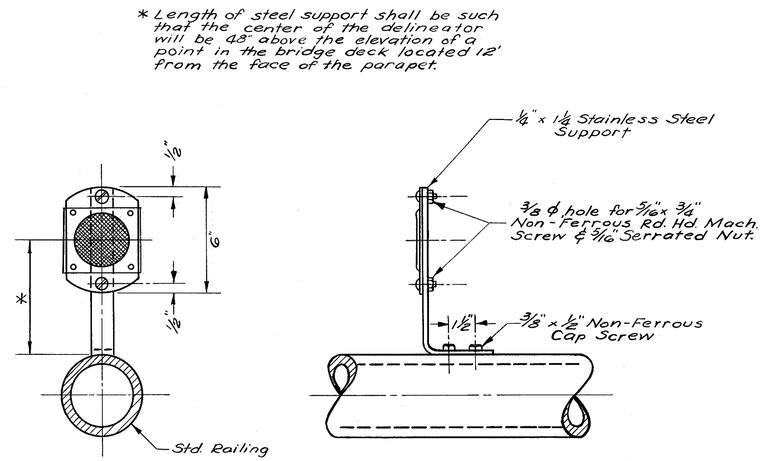
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

114/176

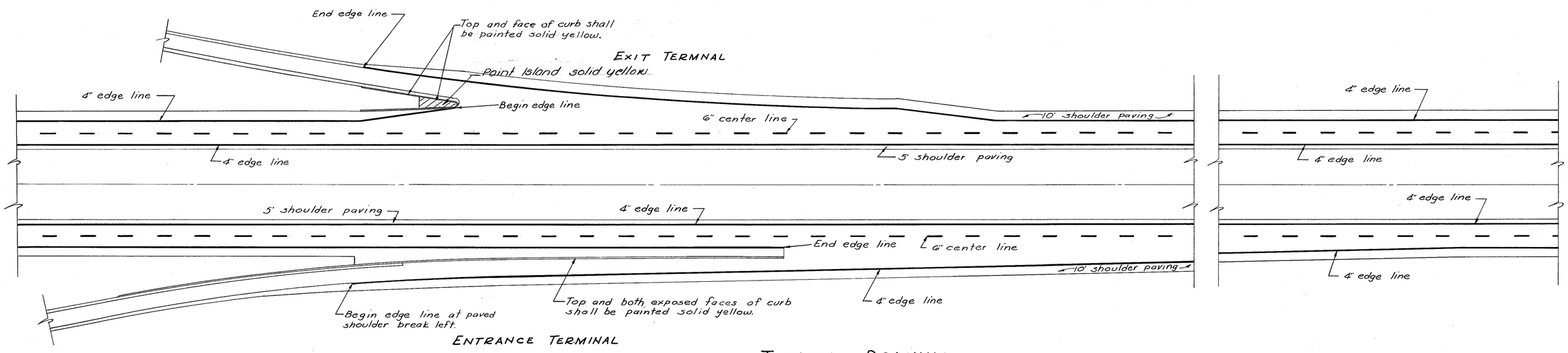
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



DETAIL OF STEEL DRIVE POST FOR DELINEATOR



DELINEATOR AND BRIDGE RAIL BRACKET
Scale: 3" = 1'-0"



TYPICAL DRAWING
EDGE LINE STRIPING
CENTER LINE STRIPING
CURB PAINTING

Scale 1" = 50'

DELINEATOR, & PAVEMENT STRIPING & PAINTING DETAILS

ROADSIDE REST GENERAL NOTES

ITEM SPECIAL — WELL SHELTER

METHOD OF MEASUREMENT

The well shelter and all appurtenances as detailed on sheet N.9.s.130-A, 130-B, 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. Std. Drwg. R.P.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 as 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.P. 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 — DRILLED WELLS

(See Notes in Proposal)

ITEM SPECIAL — PRIVY AND STORAGE SHED

METHOD OF MEASUREMENT

The privy and storage shed with all appurtenances as detailed on Std. Drwg. R.P. 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 unit 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.

SEEDING AND PROTECTING

Seeding shall conform to Specifications L-9, except that the areas to be seeded shall be thoroughly loosened to a depth of at least 2 inches and harrowed before seeding. All rough, uneven areas including fencerows shall be graded to eliminate humps or depressions that would interfere with future mowing of the grass with a hand propelled power mower. All stone and debris larger than 2" in any dimension shall be removed from the surface before mulching.

Seed Mixture Shall Be As Follows
45% Poa Pratensis (Kentucky Blue Grass)
35% Festuca Rubra Var. (Illahee Fescue)
20% Agrostis alba (Red Top)

Rest 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.

Areas to be seeded are estimated for the entire rest area. Portions of this area may be non-performed at the direction of the Engineer.

LOCATIONS OF REST AREAS STRUCTURES, PLANT MATERIAL AND APPURTENANCES

The location of Tables, Charcoal Grills and Serving Tables, Well Shelters, Privy and Storage Sheds, Bulletin Boards and Plant Material as shown on the plans are approximate only, Exact locations will be determined by the Engineer during construction.

TOPSOIL FOR L-ITEMS

This shall be obtained from stock piles provided for by E-1.03 (a).

ITEM L-13

Areas indicated on plans for this item shall be prepared as beds excavated to a depth of 18 inches and backfilled with topsoil.

ITEM E-9 REMOVAL OF TREES AND STUMPS

Within te Rest Areas only those trees indicated by the Engineer shall be removed. Care shall be exercised by the Contractor in performance of this work so that no damage is done to trees indicated by Engineer to be saved.

The Rest Areas shall be cleared and grubbed in accordance with Section E-1.03 of the Construction and Material Specifications. Areas under this item are considered to be all rest areas outside of the limited access Right-of-Way.

The average size of trees and stumps and approx. percentage to be removed are shown on the plan. The State of Ohio will not be responsible for any variation found during construction. The lump sum bid for Item E-9 Removal of Trees and Stumps, shall constitute full payment for this item and no additional compensation will be allowed.

ITEM L-17 PRUNING EXISTING TREES

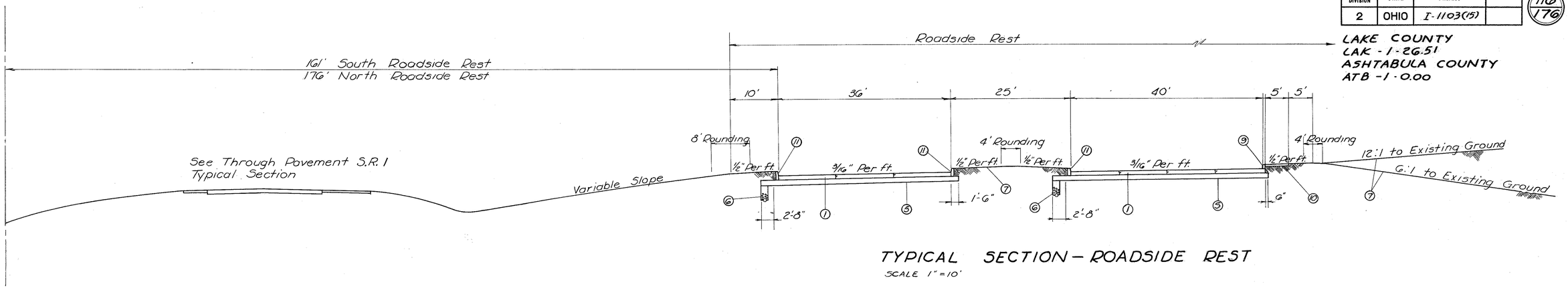
All trees within the Rest Areas that are indicated to be saved by the Engineer, shall be pruned in accordance with Item L-17 of the Construction and Material Specifications. In addition to the work specified above, low limbs shall be removed to obtain seven (7) foot clearance above the ground as directed. Rest Areas are considered to be all Areas outside of the limited access Right-of-Way.

The number and size of trees to be pruned may be estimated from information shown on the plan relative to existing trees and the percentage to be removed. The State of Ohio will not be responsible for any variations found during construction. The lump sum bid for Item L-17 Pruning Existing Trees shall constitute full payment for this item and no additional compensation will be allowed.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(5)	

116
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

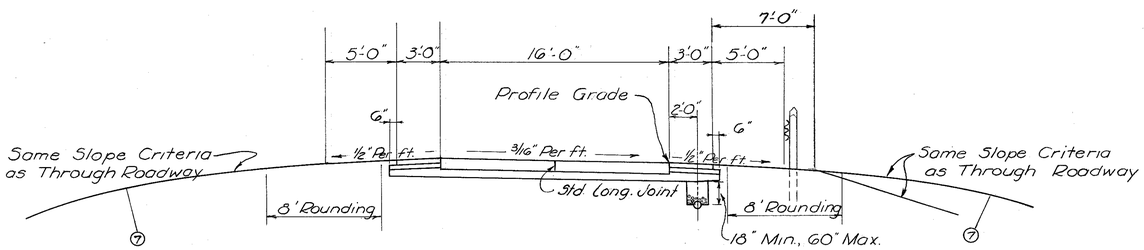


TYPICAL SECTION – ROADSIDE REST

SCALE 1" = 10'

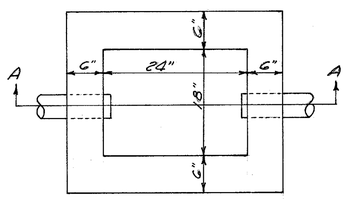
LEGEND

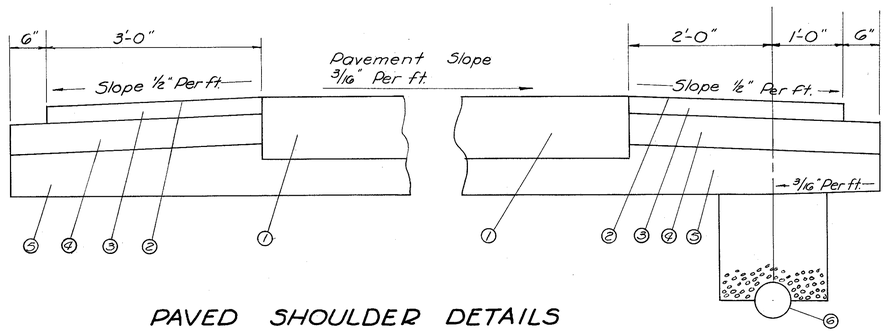
1. Item T-71, 10" Reinforced Portland Cement Concrete Pavement.
2. Item T-31, Bituminous Surface Treatment.
3. Item B-33, 3" Bituminous Macadam Base Course.
4. Item I-18, 5" Stabalized Crushed Aggregrate Shoulders and Approaches.
5. Item I-22, Subbase (Variable Depth).
6. Item I-4, 6" Pipe Underdrain.
7. Item L-9, Seeding and Protecting Roadway Areas.
9. Item I-12, Portland Cement Concrete Curb, Type 6.
10. Item I-13, Portland Cement Concrete Sidewalk.
11. Item I-12, Special Portland Cement Concrete Curb.



NORMAL RAMP SECTION

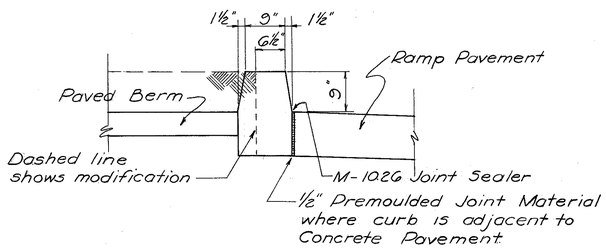
SCALE 1" = 5'





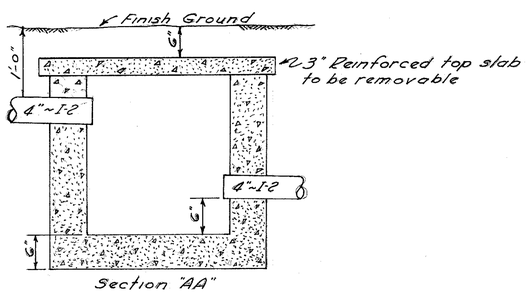
PAVED SHOULDER DETAILS

SCALE 1" = 1'



SPECIAL PORTLAND CEMENT CONCRETE CURB DETAIL

SCALE 3/4" = 1'-0"



TYPE A CATCH BASIN

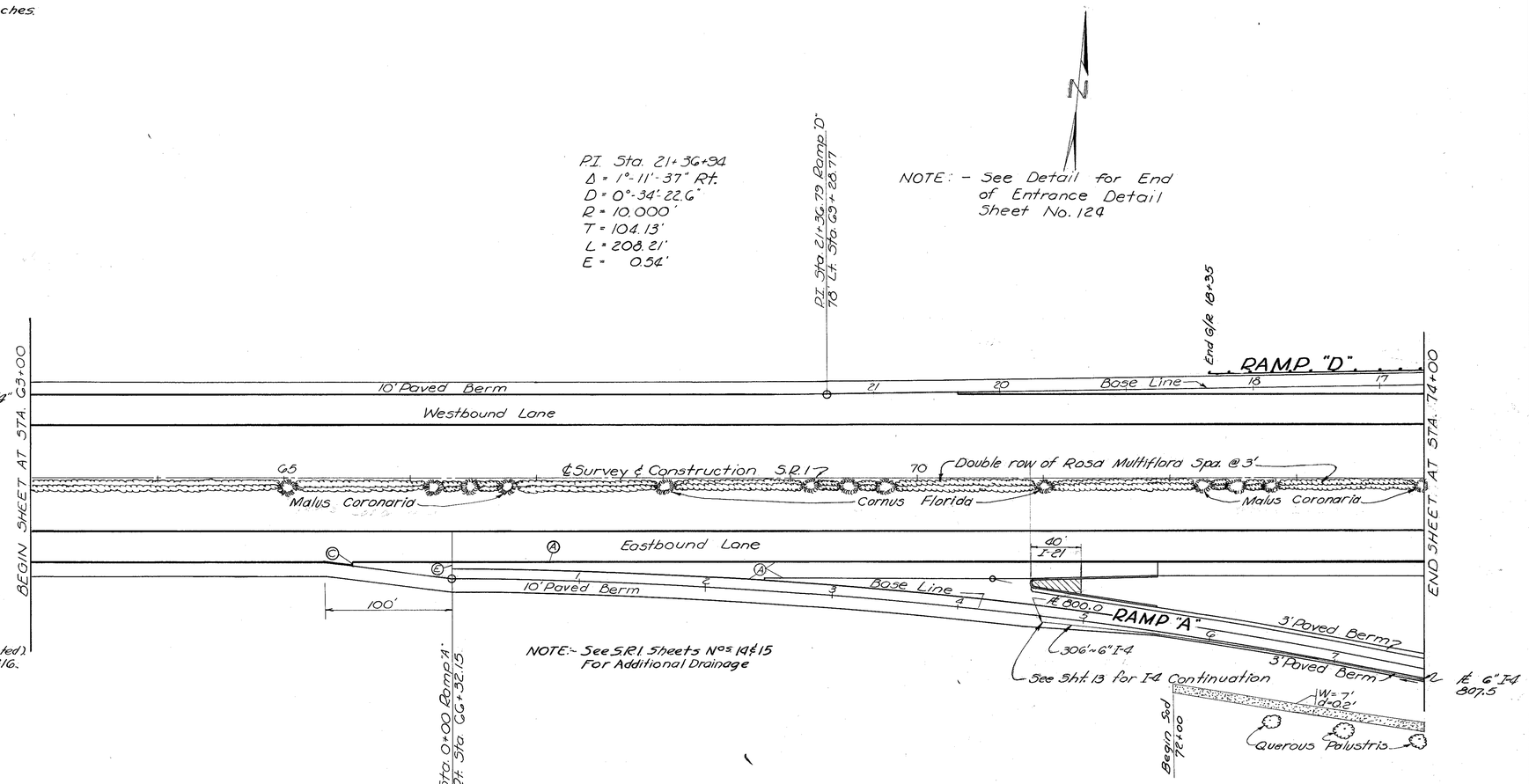
ROADSIDE REST TYPICAL SECTIONS & SPECIAL DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

117
176

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00

ITEM	QUANITY	UNIT	DESCRIPTION
T-71	18,825	S.Y.	10" Reinforced Cement Concrete Pavement.
T-31	1,296	gals	Bituminous Surface Treatment - Bituminous Material.
T-31	21	Cu.Yds	Bituminous Surface Treatment No. 96 Aggregate.
T-31	21	Cu.Yds	Bituminous Surface Treatment No. 6 Aggregate.
B-33	2,576	S.Y.	3" Bituminous Macadam Base Course.
I-18	401	Cu.Yds	5" Stabilized Crushed Aggregate Shoulders and Approaches.
I-22	3,760	Cu.Yds	Subbase (Variable Depth).
I-4	3,398	Lin.ft.	6" Pipe Underain.
L-9	57,498	S.Y.	Seeding and protecting Roadway Areas.
L-9	5.18	Tons	12-12-12 Commercial Fertilizer.
L-9	25.90	Tons	Agricultural Liming Material.
I-12	1,178	Lin.ft.	Portland Cement Concrete Curb Type 6.
I-12	892	Lin.ft.	Special Portland Cement Concrete Curb.
I-12	3,082	Lin.ft.	Special Portland Cement Concrete Curb Modified.
I-13	5,149	Sq.ft.	Portland Cement Concrete Sidewalk.
I-13	60	Lin.ft.	Concrete Steps (As Per Plan).
I-15	1,750	Lin.ft.	Guard Rail Steel Beam Type (Deep).
E-101	31,422	Cu.Yds.	Excavation
I-2	150	Lin.ft.	4" Class B Storm Sewer Under Pavement.
I-2	136	Lin.ft.	4" Class B Storm Sewer.
I-2	429	Lin.ft.	12" Class B Storm Sewer Under Pavement.
I-2	44	Lin.ft.	15" Class B Storm Sewer Under Pavement.
I-2	159	Lin.ft.	15" Class B Storm Sewer.
I-3	10	Lin.ft.	8" Outlets for Roadway Drainage
I-5	6	each	6"-60° Bends
I-5	6	each	6"-90° Bends
I-5	1	each	6x6x6" Tee
I-8	2	each	Standard No. 3 Catch Basin.
I-8	4	each	Standard No. 3-A Catch Basin (As Per Plan).
I-8	1	each	Type A Catch Basin (As Per Plan)
I-8	1	each	Standard No. 2-2-A Catch Basin
I-14	228	Lin.ft.	Standard Type 1 Paved Gutter.
L-10	500	S.Y.	Sodding
S-1	0.26	Cu.Yds.	Concrete For Structure Class "E".
E-101	21,401	Sq.Yds.	Compacted Subgrade
I-21	71.0	Sq.yd.	Portland Cement Concrete Traffic Island Pav't. (4" thickness)
L-13	2,934	each	Rosa Multiflora - Japanese Rose 2' to 3'.
L-13	540	each	Cornus Paniculata - Grey Dogwood 2' to 3'.
L-13	80	each	Ribes Alpinum - Alpine Currant 18" to 24".
L-14	7	each	Acer Saccharum - Sugar Maple 1½" to 1¾".
L-14	15	each	Gleditsia Triacanthos Inermis - Thornless Honeylocust 1½" to 1¾".
L-14	6	each	Aesculus Glabra - Ohio Buckeye 1½" to 1¾".
L-14	7	each	Querous Palustris - Pin Oak 1½" to 1¾".
L-15	20	each	Acer Saccharum - Sugar Maple 1¾" to 2" (Place As Directed).
L-14	20	each	Cornus Florida - White Flowering Dogwood 4' to 5' B&B Blg.
L-14	32	each	Malus Coronaria - Wild Sweet Crab 4' to 5' B&B Blg.
Special	2	each	Drilled Well (See Note in proposal).
Special	2	each	Well Shelter
Special	2	each	Privy And Storage Shed.
Special	28	each	Table
Special	12	each	Charcoal Grill & Serving Table.
Special	2	each	Bulletin Board.
SS-18	1787'	Lin.ft.	Rest Area Fence (See Fence Plan Sheet No. 159. For location).
L-17		Lump	Pruning Existing Trees (See General Notes Sheet No. 119).
E-9		Lump	Removal of Trees & Stumps in Rest Area.



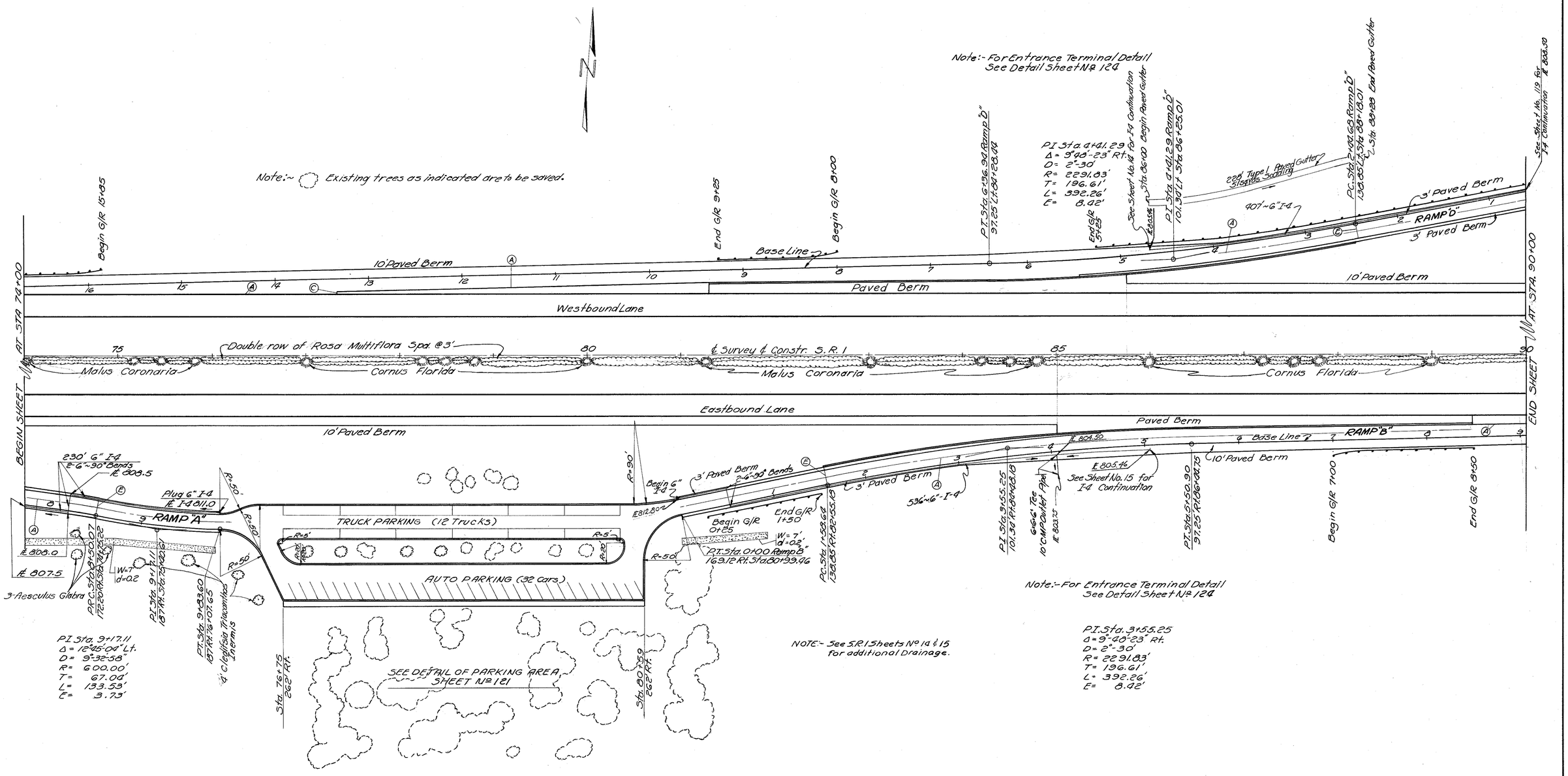
ROADSIDE REST PLAN

ROADSIDE REST STA. 63+00 to 74+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

118
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



ROADSIDE REST
PLAN

ROADSIDE REST STA. 74+00 to 90+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I 1103(15)	

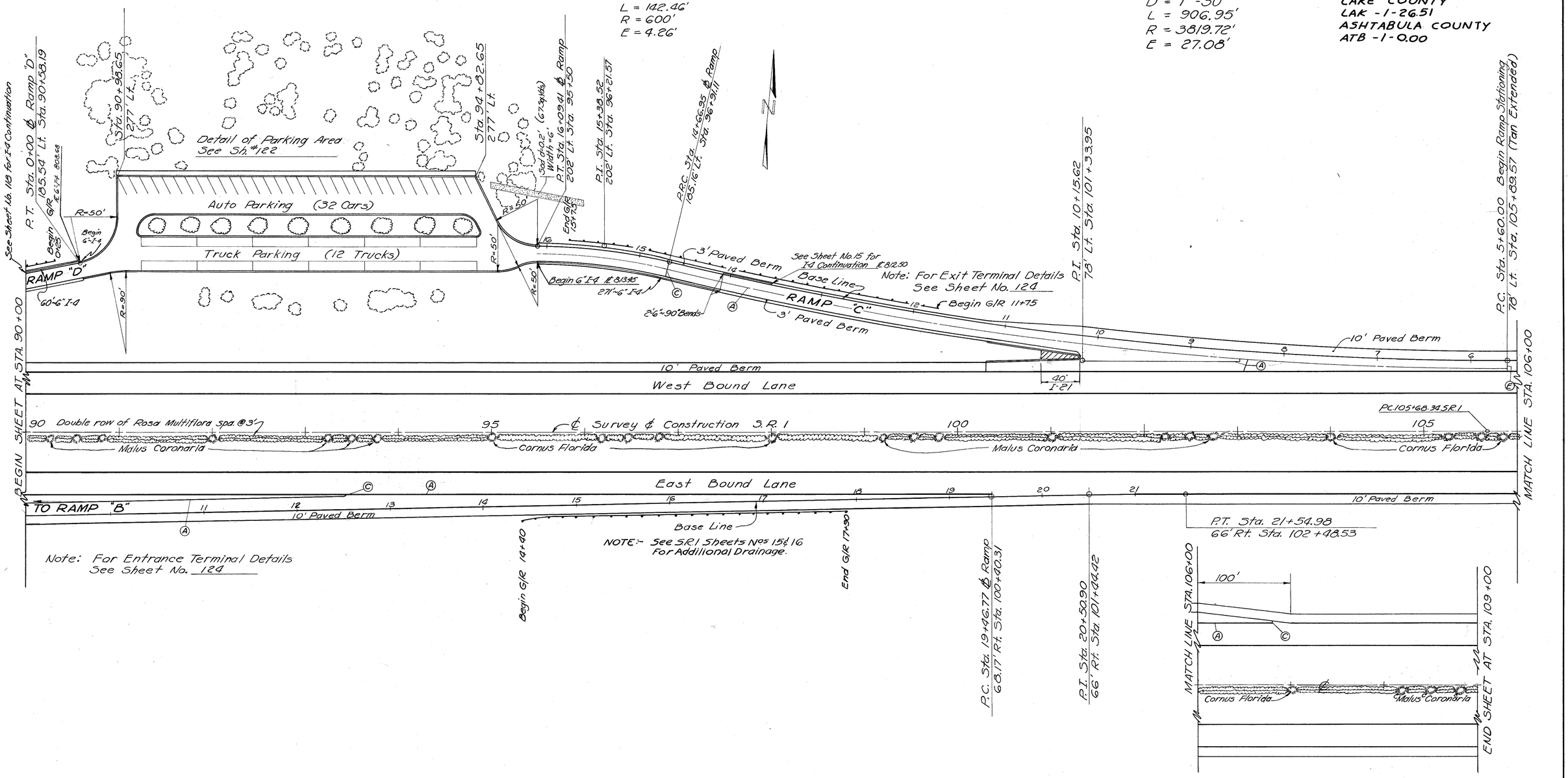
119/176

LAKE COUNTY
LAK -1-26.51
ASHTABULA COUNTY
ATB -1-0.00

Note:- Existing trees as indicated are to be saved.

P.I. Sta. 96+21.57
Δ = 15°36'15"
T = 71.57'
D = 9°32'58"
L = 142.46'
R = 600'
E = 4.26'

P.I. Sta. 101+33.95
Δ = 13°36'15" Rt.
T = 455.62'
D = 1°-30'
L = 906.95'
R = 3819.72'
E = 27.08'



P.I. Sta. 101+44.42
Δ = 1°11'37" Rt.
T = 104.13'
D = 0°34'22.6"
L = 208.21'
R = 10,000'
E = 0.54'

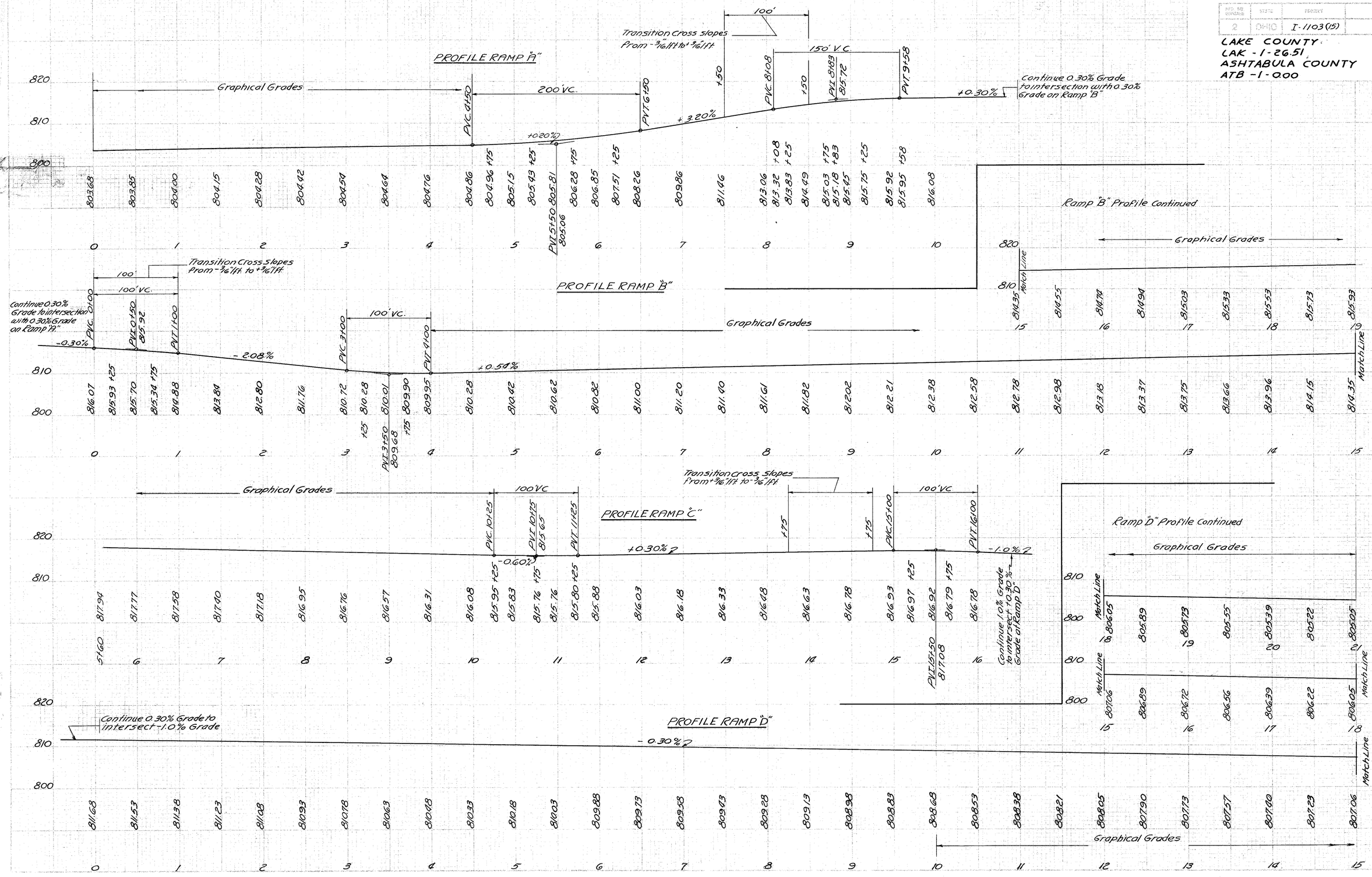
ROADSIDE REST
PLAN

ROADSIDE REST STA. 90+00 to 109+00

NO. OF CONTRACTS	STATE	PROJECT	
2	OHIO	I-1103(15)	

120
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

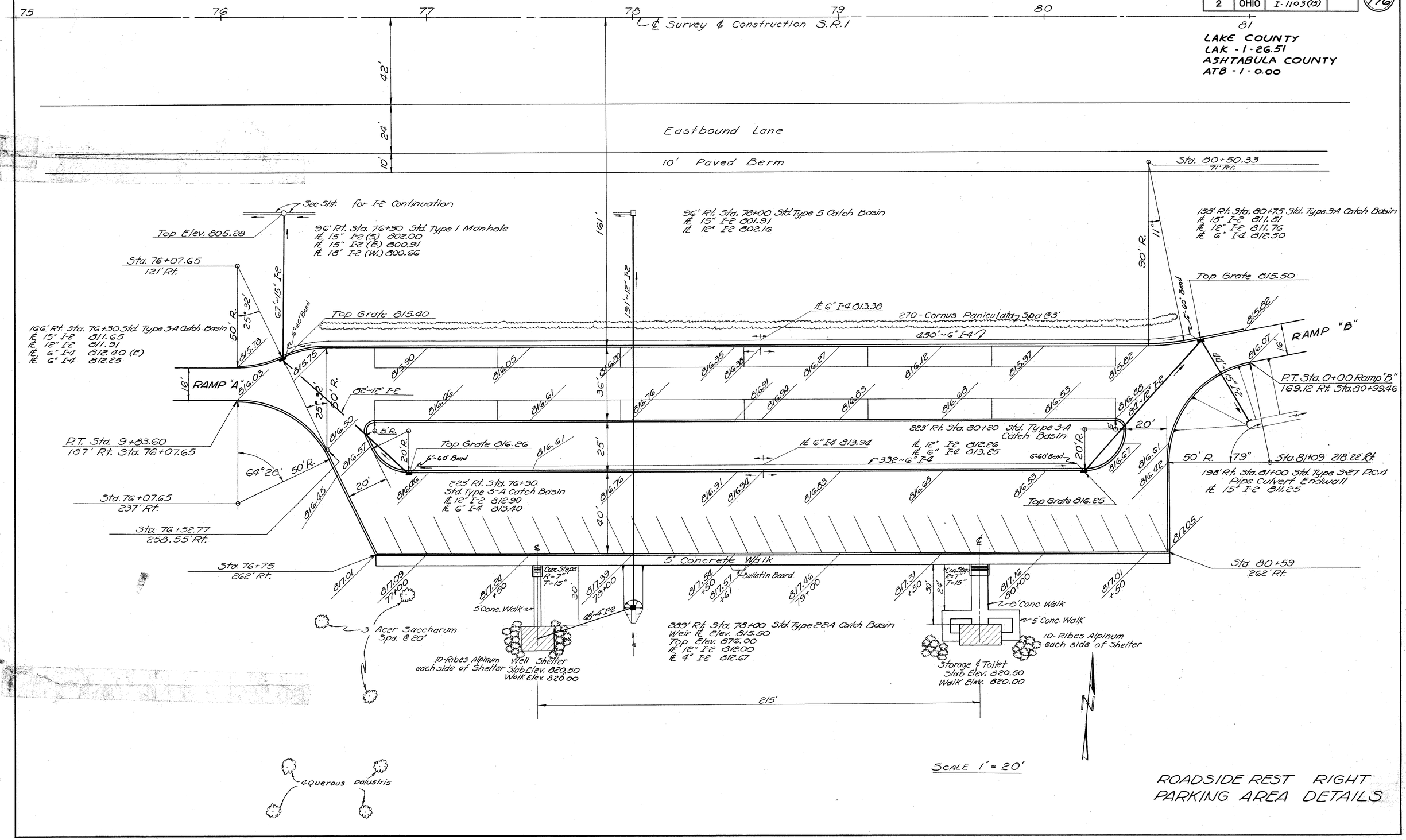


ROADSIDE REST RAMP GRADES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

121/176

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00



SCALE 1" = 20'

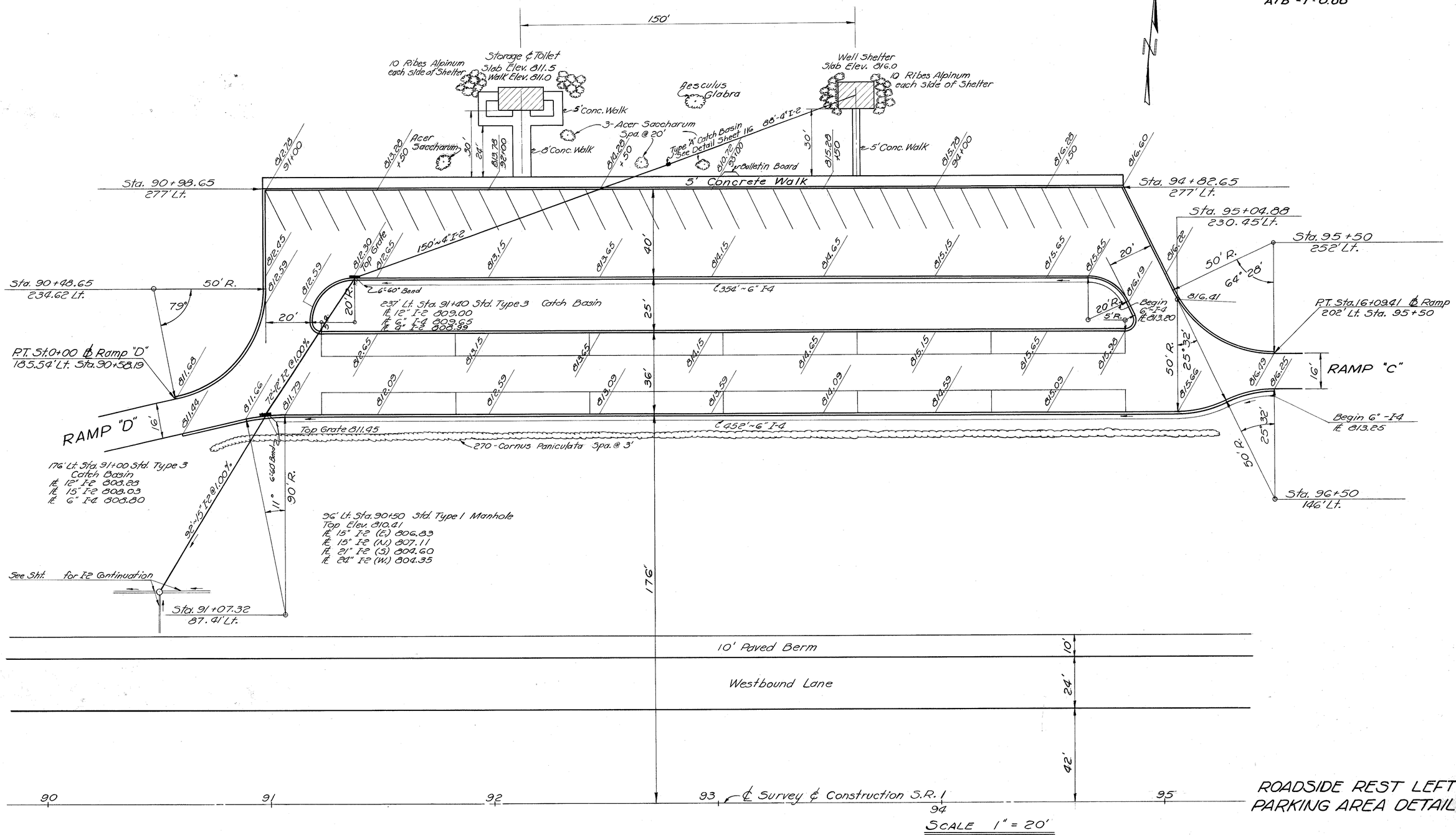
ROADSIDE REST RIGHT
PARKING AREA DETAILS

ROADSIDE REST LAKE COUNTY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

122/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

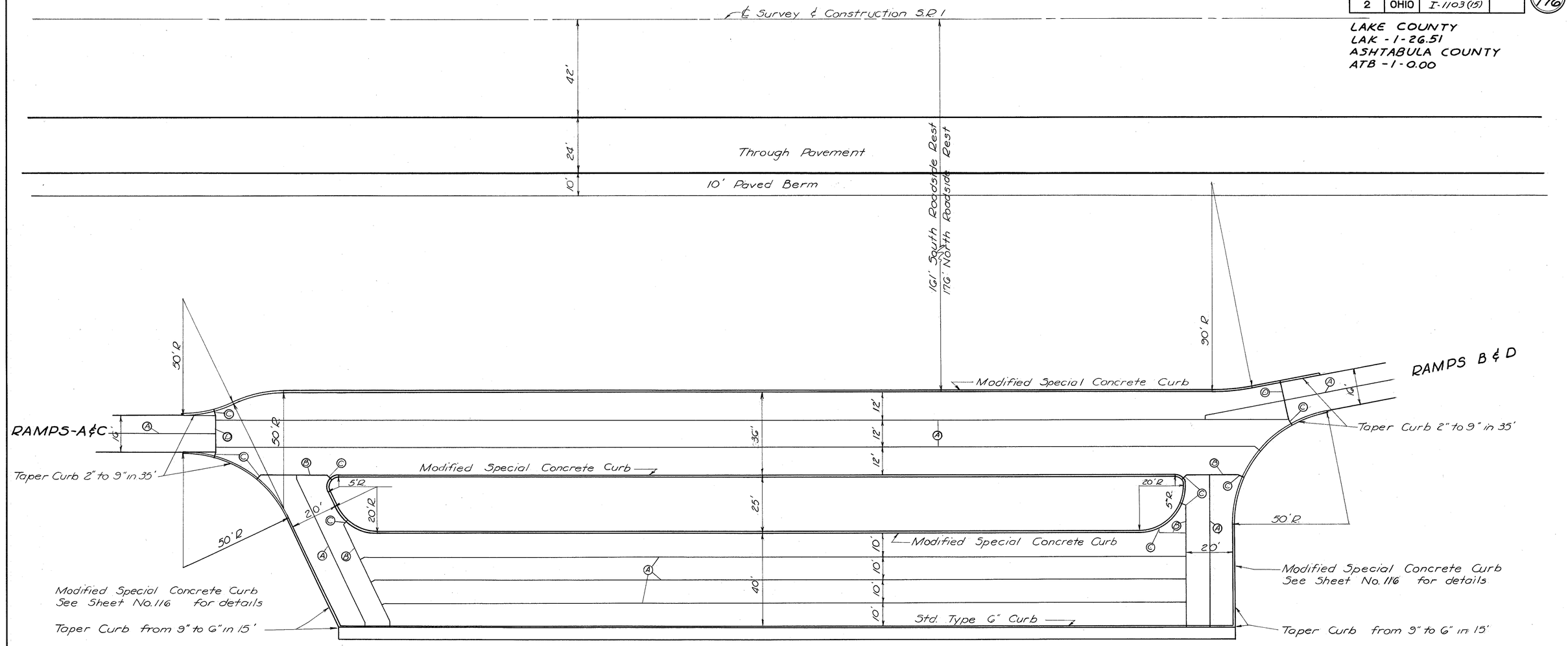


ROADSIDE REST LEFT
PARKING AREA DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

123
176

LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00



Ⓐ Standard Longitudinal Joint
Ⓑ Standard Key Joint Without Tie Bars
Ⓒ Expansion Joint Without Dowels
Ⓓ Standard Expansion Joint
Ⓔ Standard Contraction Joint

SCALE 1" = 20'

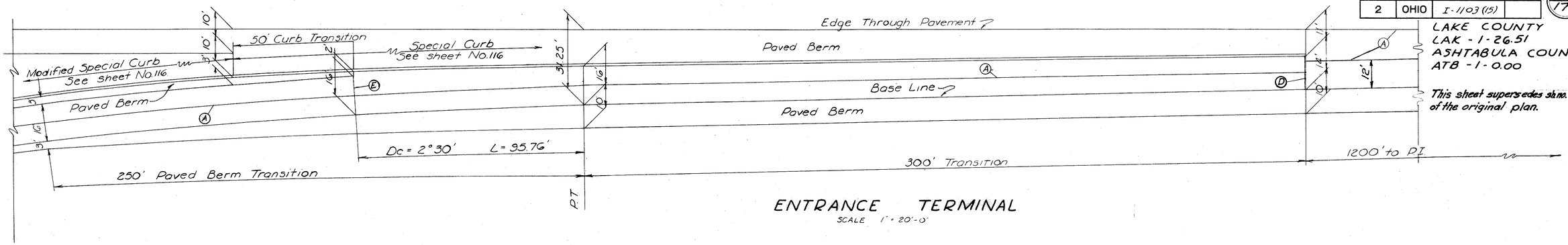
ROADSIDE REST PARKING AREA
TYPICAL JOINT & CURB LAYOUT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103 (15)	

124
176

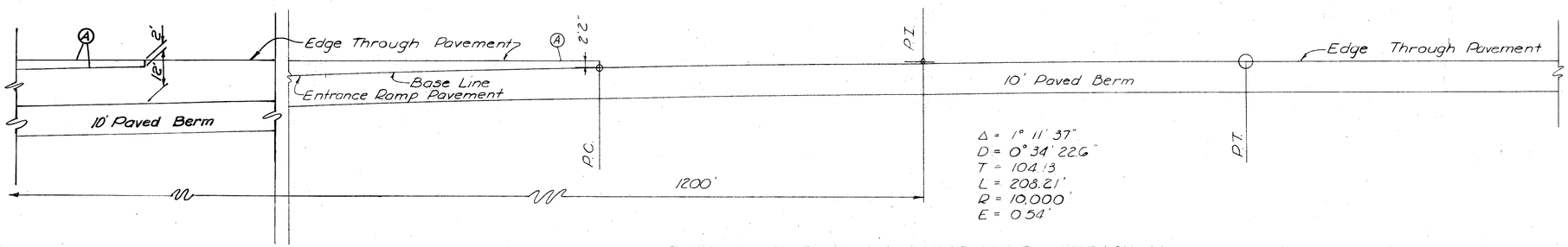
LAKE COUNTY
LAK - 1 - 26.51
ASHTABULA COUNTY
ATB - 1 - 0.00

This sheet supersedes sh. no. 124 of the original plan.



ENTRANCE TERMINAL

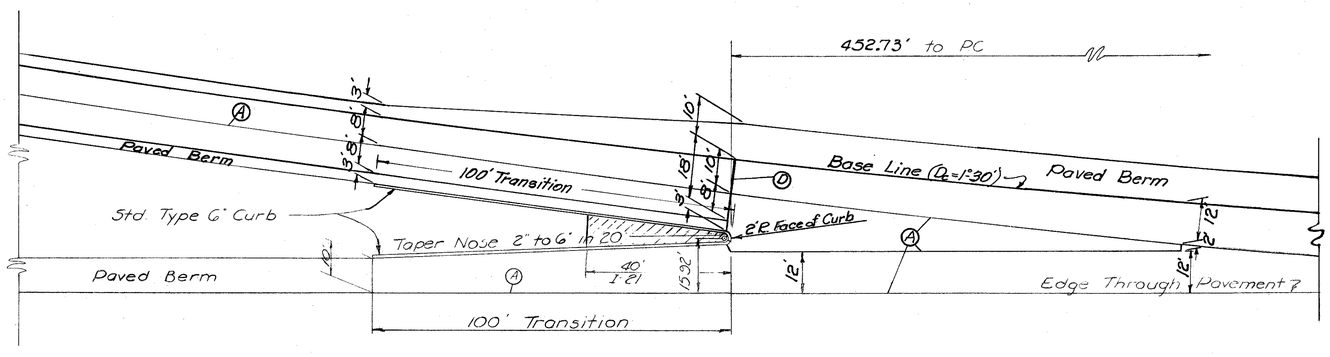
SCALE 1" = 20'-0"



DETAIL AT END OF ENTRANCE TERMINAL

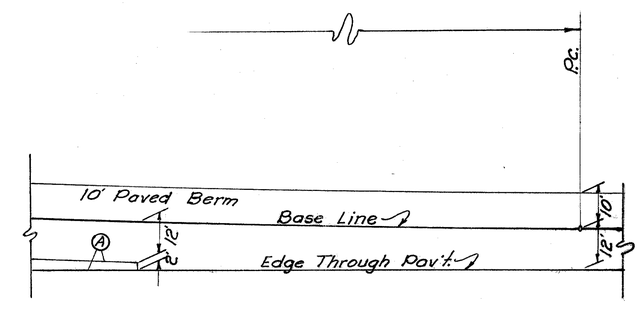
SCALE 1" = 20'-0"

- (A) Standard Longitudinal Joint
- (B) Standard Key Joint Without Tie Bars
- (C) Expansion Joint Without Dowels
- (D) Standard Expansion Joint
- (E) Standard Contraction Joint



EXIT TERMINAL

SCALE 1" = 20'-0"



ROADSIDE REST RAMP DETAILS

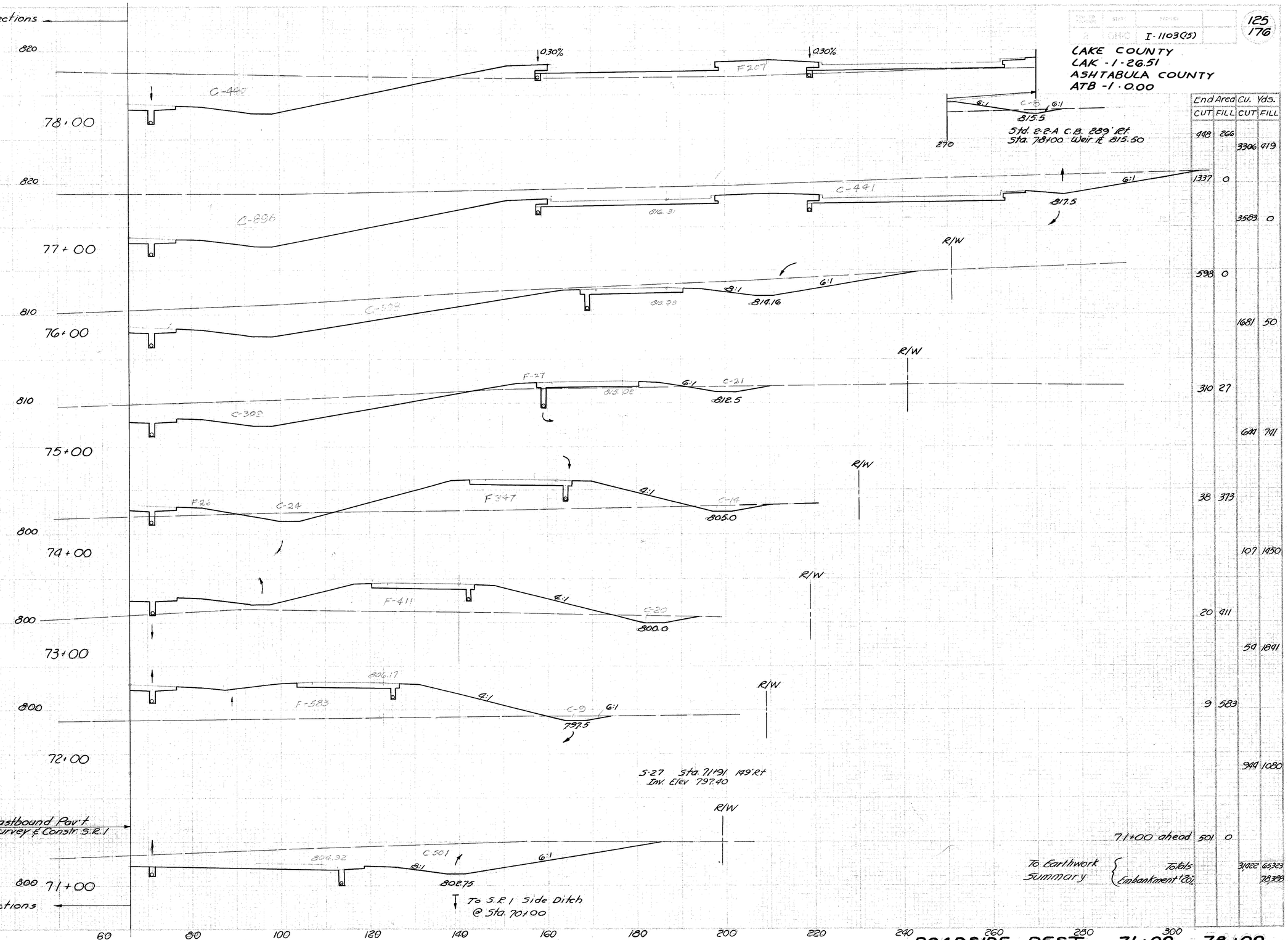
Revised 2-24-58 CWG

ROADSIDE REST

I-1103(5)

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Seeding Lin. Ft.	Seeding Sq. Yds.
303	
	3178
269	
	2289
143	
	1561
138	
	1283
129	
	1372
118	
	1228
103	
	1050
86	

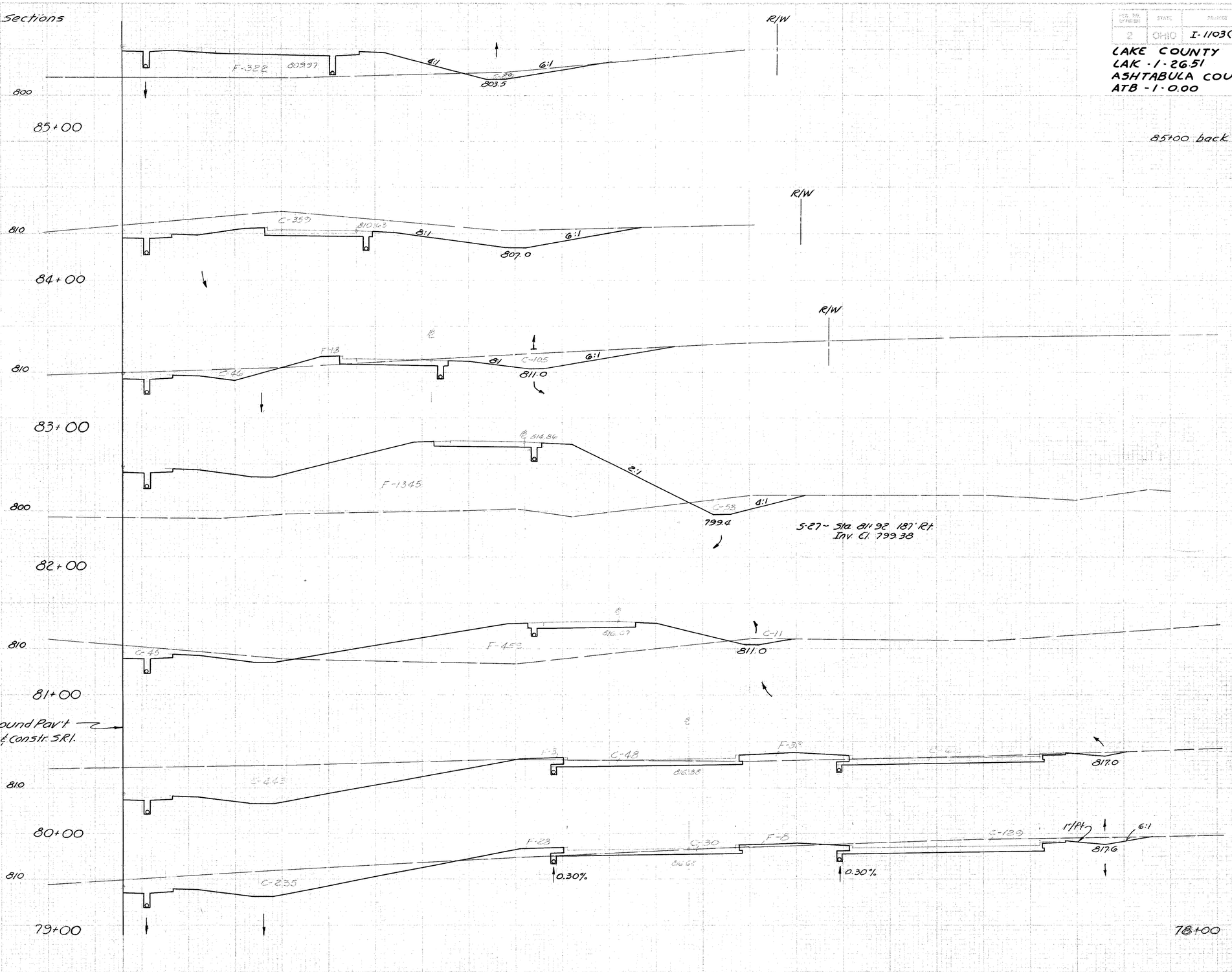


End Area CUT	End Area FILL	Cu. Yds. CUT	Cu. Yds. FILL
948	266		
		3306	419
1337	0		
		3583	0
598	0		
		1681	50
310	27		
		641	701
38	373		
		107	1450
20	911		
		59	1891
9	583		
		949	1080
71+00 ahead	501	0	
To Earthwork Summary — Totals		31,922	68,323
To Earthwork Summary — Embankment 120%			78,388

ROADSIDE REST 71+00 - 78+00

Seeding Lin. Ft.	Sq. Yds.
80	
	1028
105	
	1217
114	
	2522
390	
	3106
327	
	3323
271	
	3006
270	
	3184
303	

See SR.1 Cross Sections



CO. NO.	STATE	PROJECT	
2	OHIO	I-1103(15)	

126
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

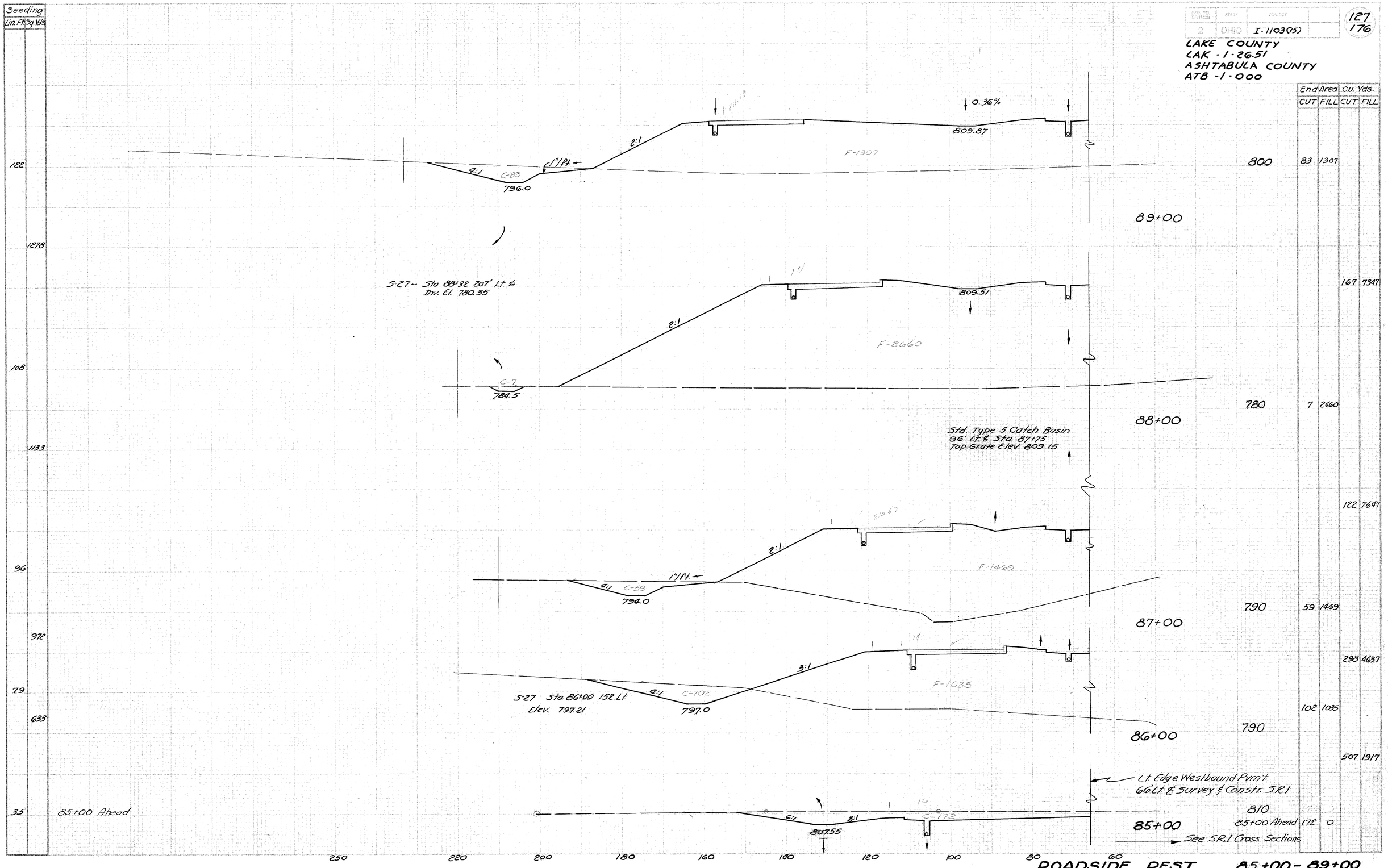
	End Area CUT	End Area FILL	Cu. Yds. CUT	Cu. Yds. FILL
85+00 back	29	322		
			719	596
	359	0		
			944	33
	151	18		
			378	2524
	53	1345		
			202	3391
	56	459		
			1137	926
	558	41		
			1763	143
	394	36		
			1559	985
78+00	448	226		

ROADSIDE REST 79+00 - 85+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

127
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-000



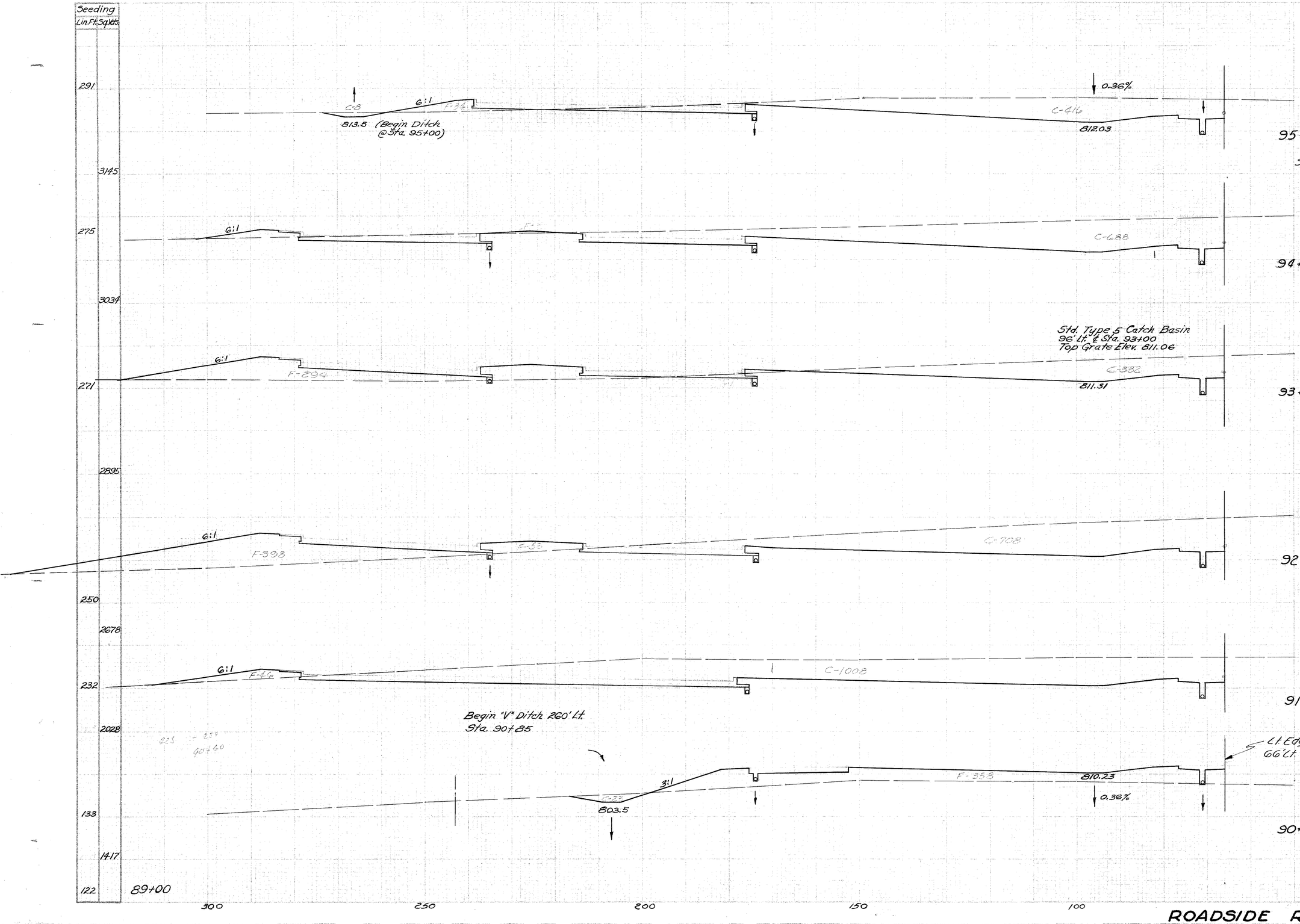
End Area		Cu. Yds.	
CUT	FILL	CUT	FILL
		167	7347
		122	7647
		298	4637
		507	1917
172	0		

ROADSIDE REST 85+00 - 89+00

STATE	PROJECT
OHIO	I-1103(15)

128
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



End Area		Cu. Yds.	
CUT	FILL	CUT	FILL
480	34		
		2285	126
754	34		
		2028	613
341	297		
		1943	1385
708	451		
		3178	920
1008	46		
		1909	748
23	358		
		196	3083
83	1307		

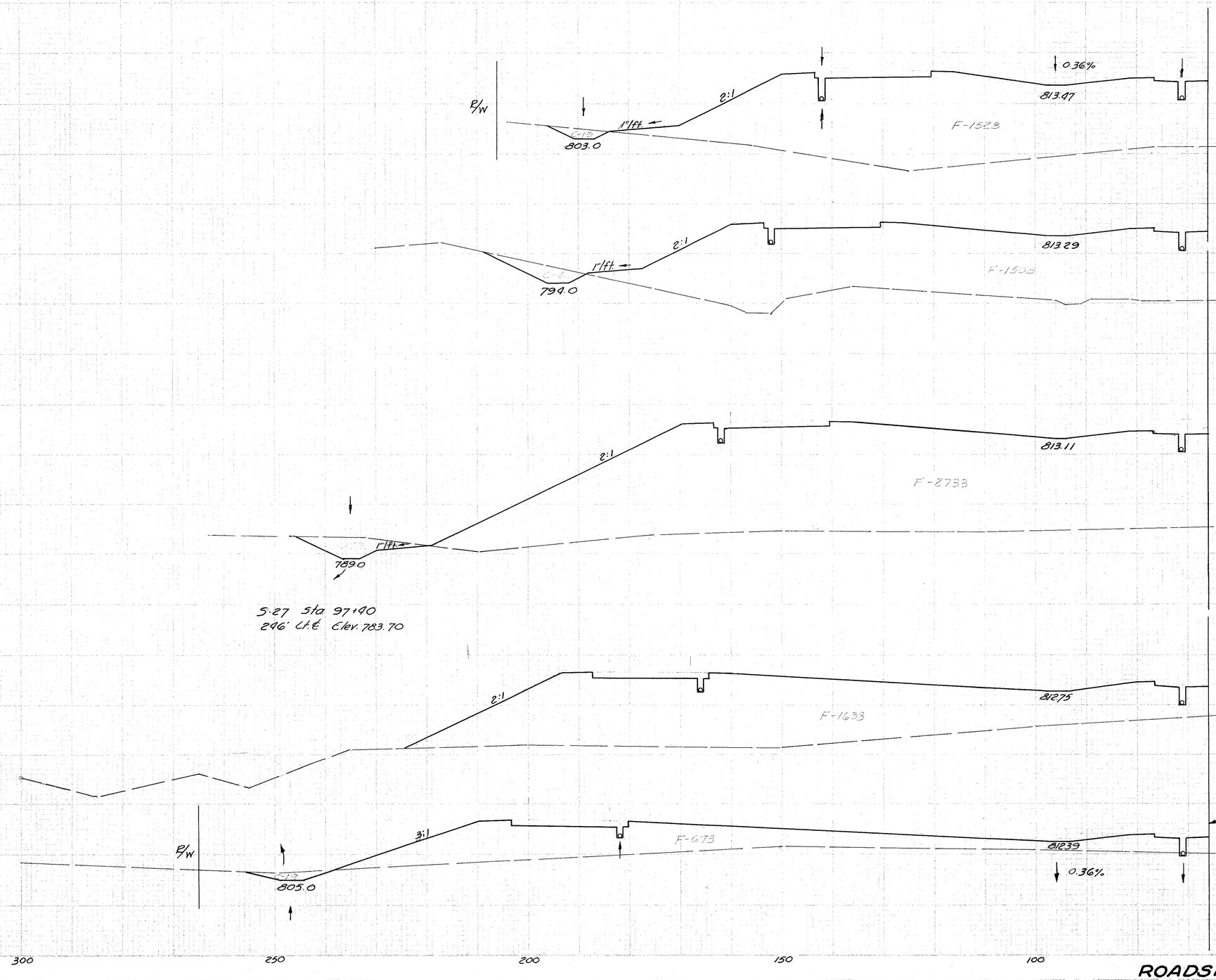
ROADSIDE REST 90+00 - 95+00

SHEET NO. OF SHEETS DRAWING	STATE	PROJECT	
2	OHIO	I-1103(15)	

129
176

LAKE COUNTY
LAK 1-26.51
ASHTABULA COUNTY
ATB -1-0.00

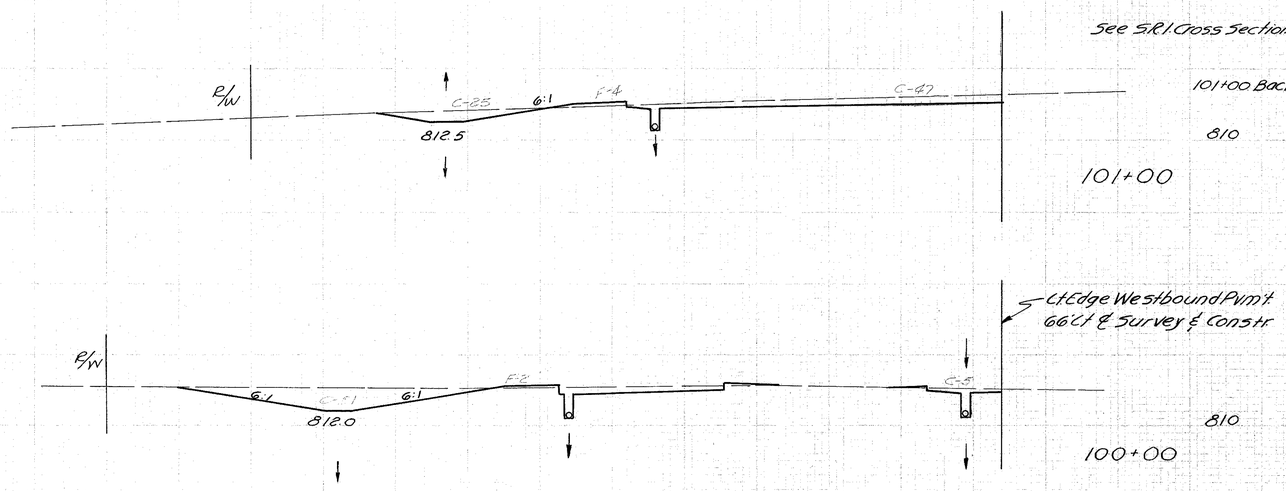
Seeding Lin.Ft.	Seeding Sq.Yds.	Station	Elevation	End Area CUT	End Area FILL	cu. Yds. CUT	cu. Yds. FILL
		See S.R.1 Cross Sections					
109	684	99+00	800	19	1528		
138						57	2812
	764	98+50	790	42	1508		
						92	3927
138		98+00	790	57	2733		
	1539	5+27 Sta. 97+40 296' Lt.℄ Elev. 783.70				106	8095
						0	1638
139		97+00	800				
	1617					35	4280
152		Lt. Edge Westbound Pvm't. 66' Lt. ℄ Survey ℄ Constr.		19	673		
	2861	96+00	800			924	1309
291		95+00	95+00	480	34		



ROADSIDE REST 96+00 - 99+00

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Seeding Lin. Ft.	Seeding Sq. Yds.		End Area CUT	End Area FILL	Cu. Yds. CUT	Cu. Yds. FILL
35		101+00 Back				
	66					
74						
	1017					
109		99+00				



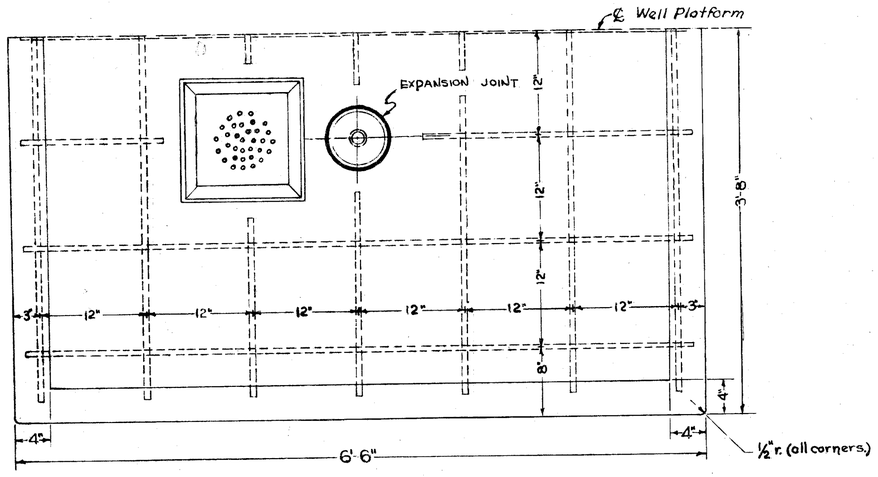
300 250 200 150 100 50

ROADSIDE REST 100+00-101+00

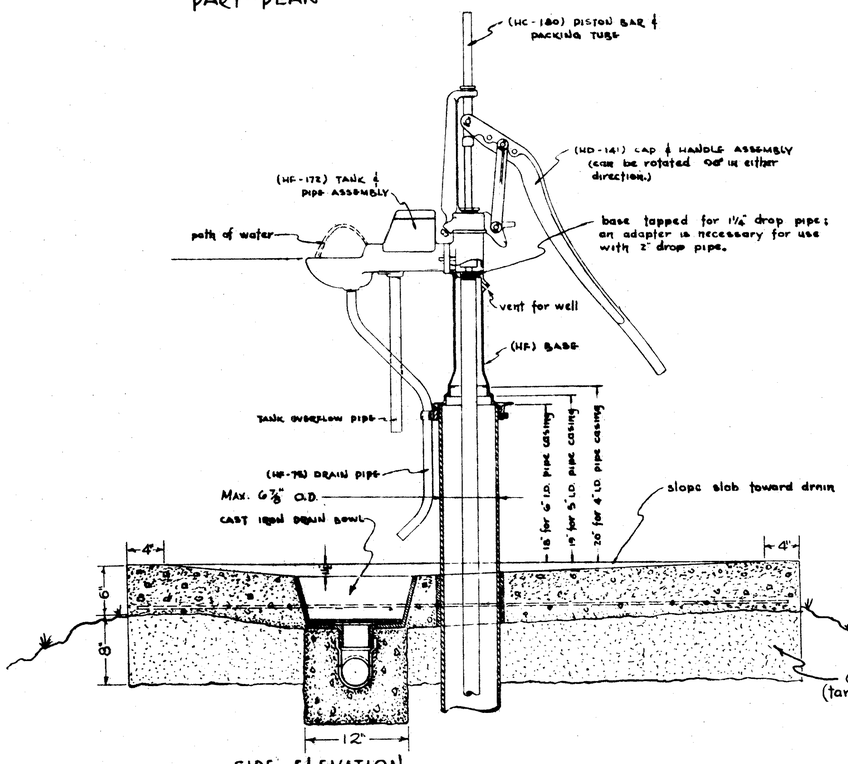
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	I-1103(15)	

130A
176

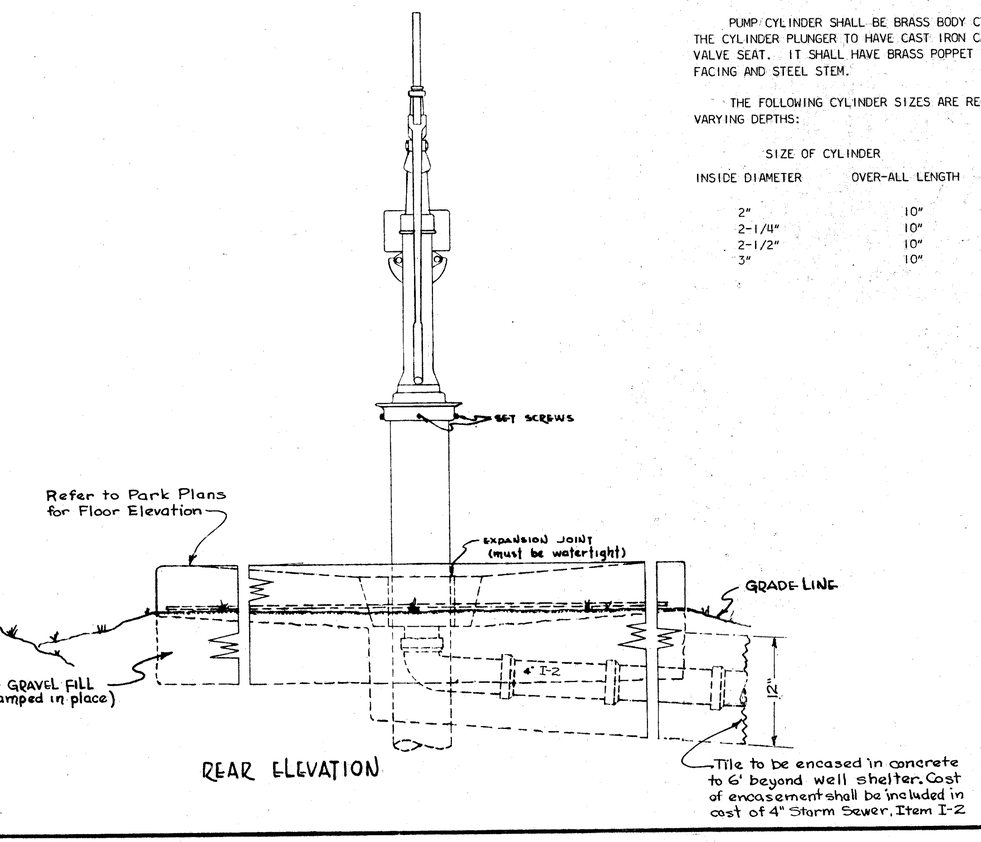
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PART-PLAN



SIDE ELEVATION



REAR ELEVATION

BILL OF MATERIAL

PAYMENT INCLUDED IN UNIT PRICE BID FOR "ITEM SPECIAL WELL SHELTER."

- 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" X 12" X 6" CAST IRON DRAIN
- 2 3/4" Ø X 1' 9" REINFORCING STEEL
- 2 3/4" Ø X 4' 0" REINFORCING STEEL
- 5 3/4" Ø X 6' 0" REINFORCING STEEL
- 3 3/4" Ø X 6' 10" REINFORCING STEEL

NOTES

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 I-H F 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
INSIDE DIAMETER	OVER-ALL LENGTH	RECOMMENDED FOR SIZE OF CYLINDER
2"	10"	200'
2-1/4"	10"	175'
2-1/2"	10"	150'
3"	10"	75'

FEB. 28, 1947
JAN. 28, 1953
DEC. 7, 1955

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
ROADSIDE REST

PUMP & WELL PLATFORM

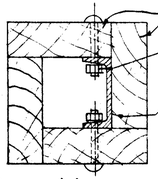
DATE	DESIGNED	TRACED	APPROVED
JUNE 11, 1937	C.A.W.	F.R.	W.J.G.

SCALE 1½" = 1'-0"

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	I-1103(15)	

130-B
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



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

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

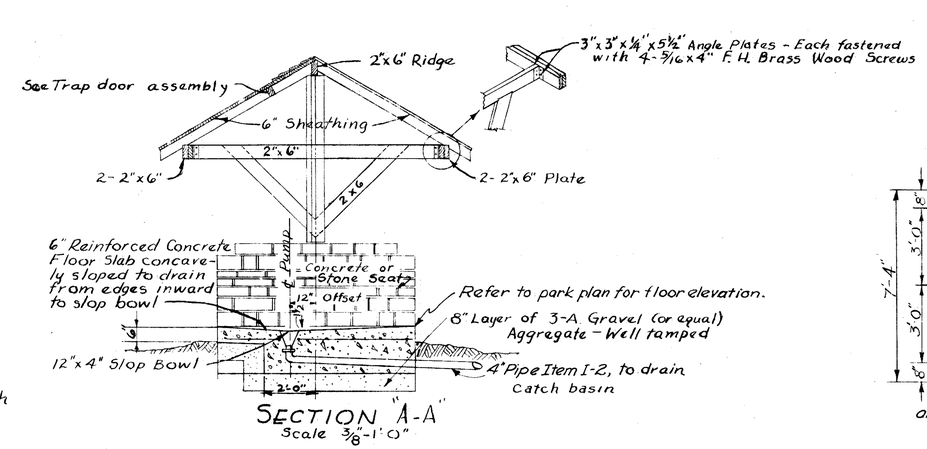
BILL OF MATERIALS

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.

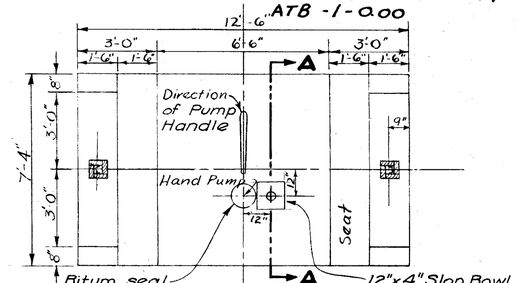
Hardware

24 each ⅜"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

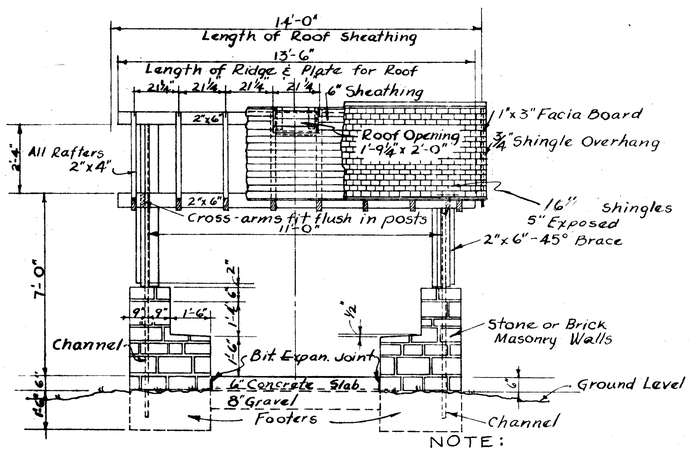
2 pcs (11 lin. ft. each) - Channel iron
8 ea. 3"x3"x¼"x5½" - Angle plates
46 " 5/16"x4" - F.H. brass wood screws
2 " 2½" - Screen door hooks - complete
4 " ½"x15" (2" spread) - U-Bolts, alternate with used well casing posts



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

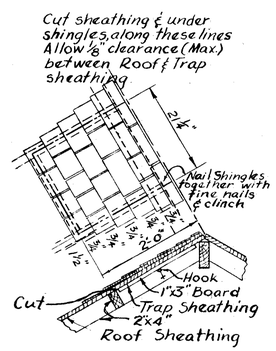


PLAN
Scale 3/8" = 1'-0"

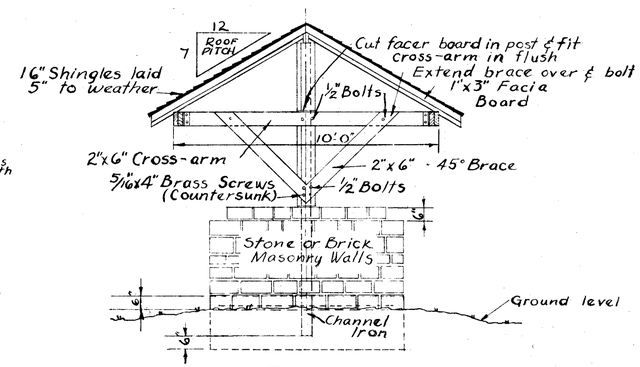


ELEVATION
Scale 3/8" = 1'-0"

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-8.6.

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 ways. 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, or copper bearing.

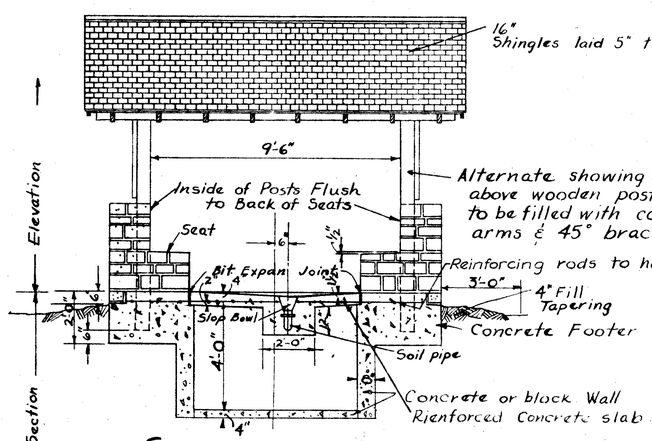
In all shelters containing a well & pump these are offset from center of 6" concrete slab, and trap door is built into roof of shelter as shown, all to allow for drawing of pump and/or casing, in the event repairs have to be made.

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

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

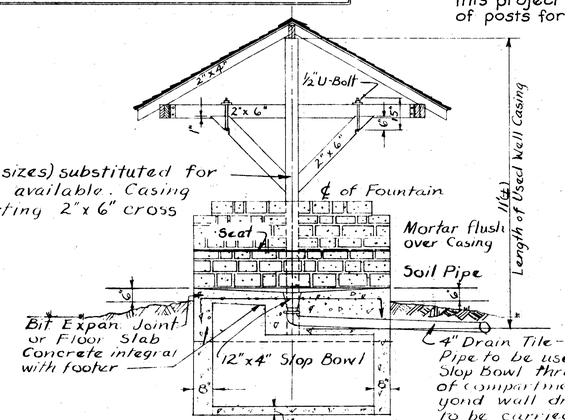
This Well Shelter Design is the "TRADE MARK" of the Roadside Parks in Ohio. It will be erected as standard.

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

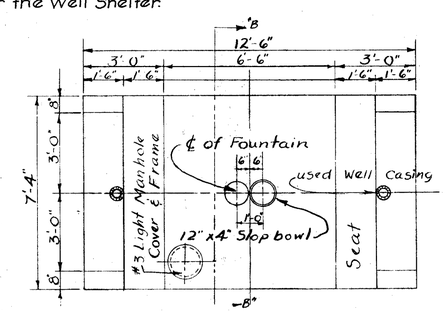


Alternate showing Used Well Casing (5½" - 7" O.D. sizes) substituted for above wooden post construction where readily available. Casing to be filled with concrete after ½ bolts supporting 2"x6" cross arms & 45° braces are in place.

SECTION - ELEVATION
3/8" = 1'-0"
Compartment Under Slab & Fountain Where City Water is Used To Allow Repairing



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



PLAN
Showing Used Well Casing Posts
Scale 3/8" = 1'-0"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
WELL SHELTER

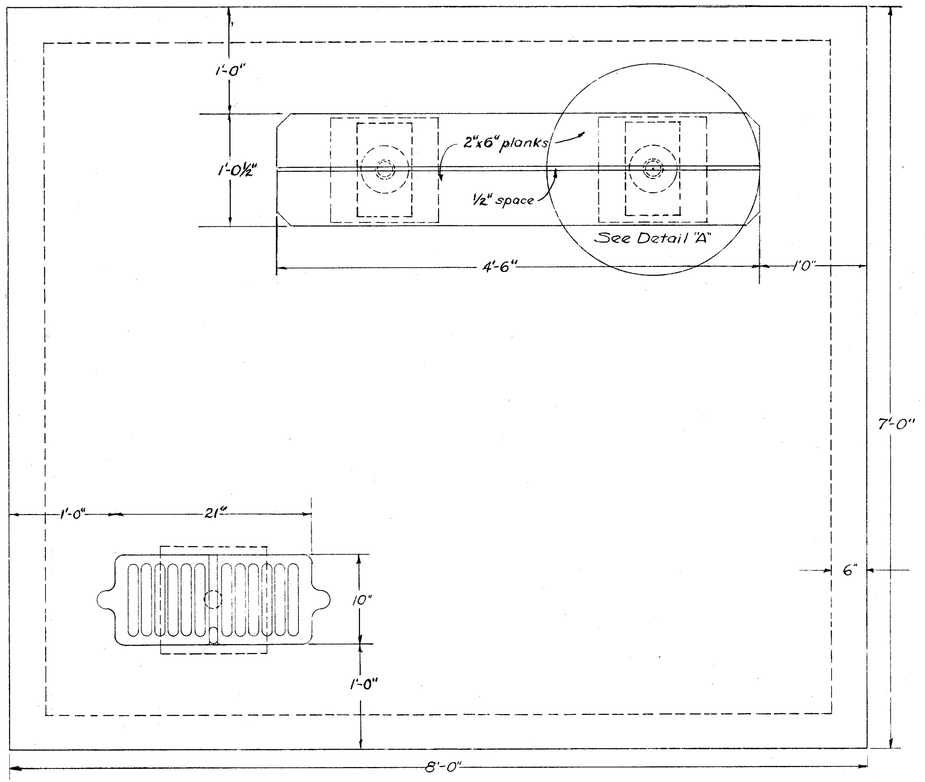
ROADSIDE PARKS

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

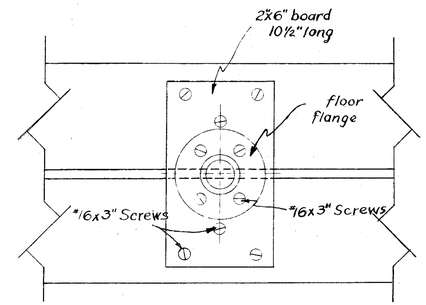
130-C
176

LAKE COUNTY
CAK -1-26.51
ASHTABULA COUNTY
ATB -1-0.00



PLAN

Scale 1½"=1'-0"



DETAIL "A"
Method of Attaching Pipe to Table Top

Scale – 3"=1'-0"

BILL of MATERIALS

1 Charcoal Grill
2-1½"x3'-6" Pipe for serving table. (Galvanized.)
2-2"x6"x10½" Boards for serving table.
2- Floor flanges. for 1½" I.D. pipe
2-2"x6"x4'-6" Planks for table top.
20-#16x3" Cadmium plated screws, or Brass Screws

Concrete for Structures Class "C" reinforced with Type "A" Mesh Fabric. Std. Drawing B-T-71R or ¾" ϕ Bars

NOTES

All lumber shall be S4S, Std., K.D., #1 common and better, Southern Yellow Pine, Item M-8 Specifications for lumber.
All lumber shall be treated in accordance with the requirements for "Pentachlorophenol Treatment," Sec. M-8.6.
All screws shall be brass
Concrete slab shall be finished so that water will drain from top of slab.

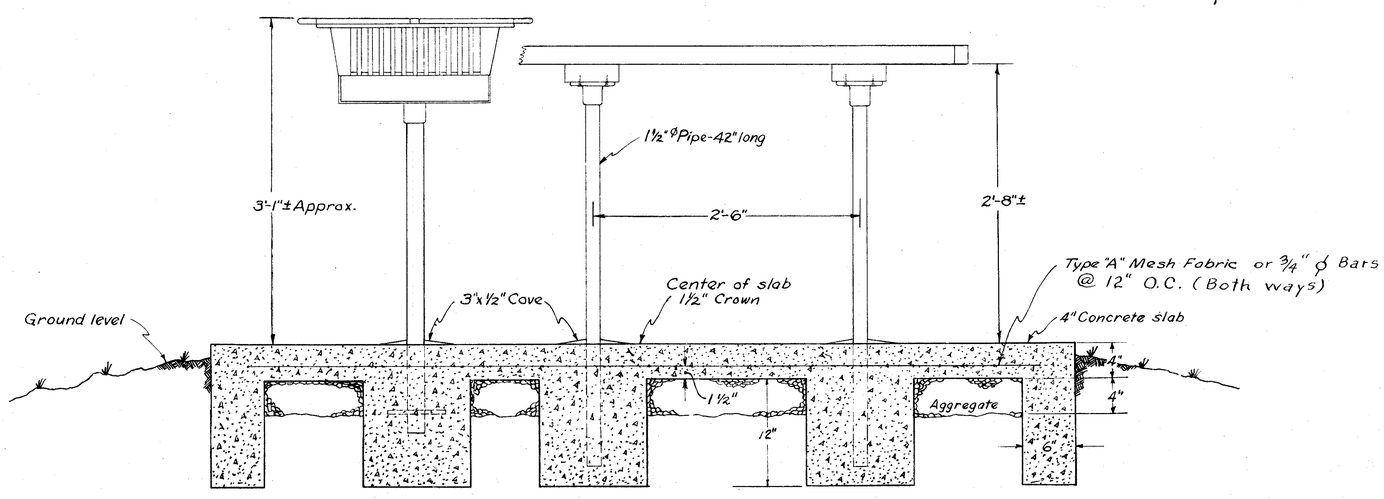
Concrete shall be class "C" and constructed in accordance with the requirements of Item S-I of the Specifications.
Aggregate subbase for concrete slab shall meet the requirements of Item I-22 Subbase Grading "C" or "D."
The pipe supports for the Serving Table shall meet the requirements of Sec. M-6.9 and shall be galvanized in accordance with Sec. M-7.4(d) of the Specifications.
The charcoal grill shall be model P manufactured by Modern Products Company, Tiffin, Ohio or approved equal.
The necessary excavation shall be performed in accordance with the requirements of Item E-2 of the Specifications.

Item Special - Charcoal Grill and Serving Table
Method of Measurement.

The charcoal grill and serving table 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 Charcoal Grill and Serving 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.



ELEVATION

Scale 1½"=1'-0"

Revisions

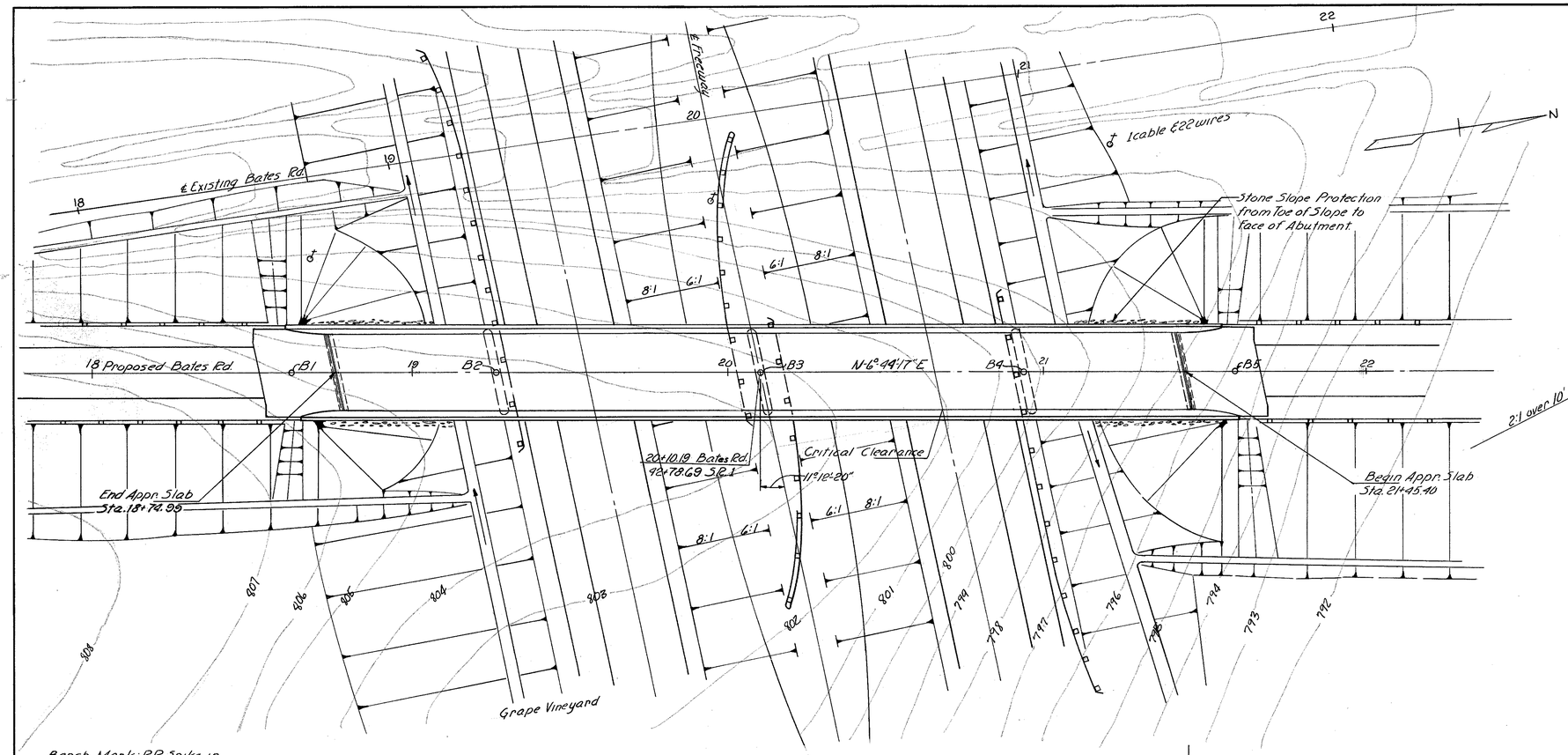
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
Charcoal Grill & Serving Table
ROADSIDE PARKS

DESIGNED	TRACED	APPROVED

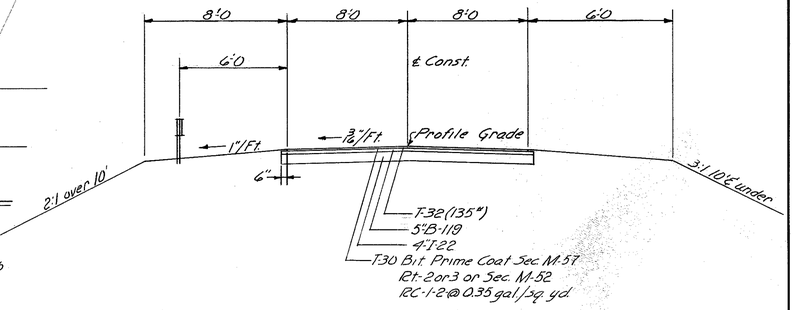
CO. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-I103(15)	

131
176

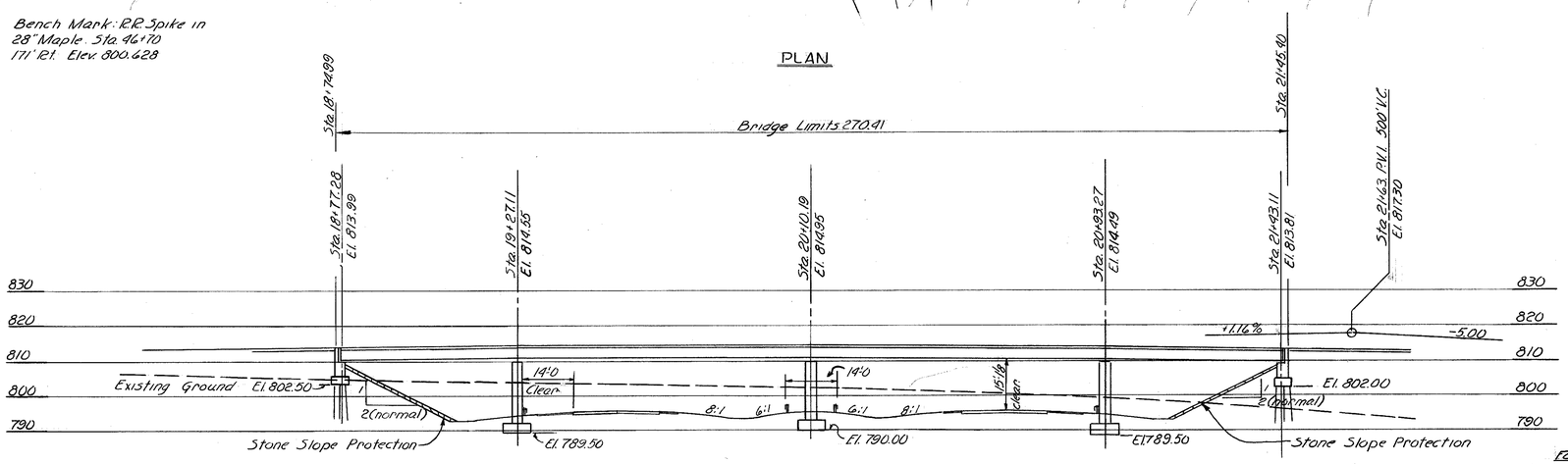
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PLAN



TYPICAL SECTION THRU APPROACH PAVEMENT



SECTION ALONG ℄

Note: Estimated pile lengths are:
Abutment #1 - 42'
Abutment #5 - 48'
Piles to be 12" cast in place reinforced concrete piles

PROPOSED STRUCTURE
Type: Continuous Steel Beam with Reinforced Concrete Deck and Substructure
Span: 49'-10, 83'-1, 83'-1, 49'-10 ℄ Brg.
Roadway: 24'-0" Safety Curbs.
Load Frequency: C.F. 130(51)
Skew: 11°12'-20" RF
Wearing Surface: 3/4" Monolithic Conc.
Approach Slabs: 25'-0 long.
Alignment: Tangent
Safety Curbs: 2'-0 Each side.

Notes

Foundation Soundings - Foundation design and foundation quantities are based on a study of soil sampling soundings made at the site. This sounding information may be inspected at the Interstate Projects Office in Columbus or in the Division office, but the State assumes no responsibility for the accuracy thereof.

1955 TRAFFIC - 240 VPD with under 30 combination trucks. Road closed during construction. Traffic to be detoured over S.R. 528.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SITE PLAN

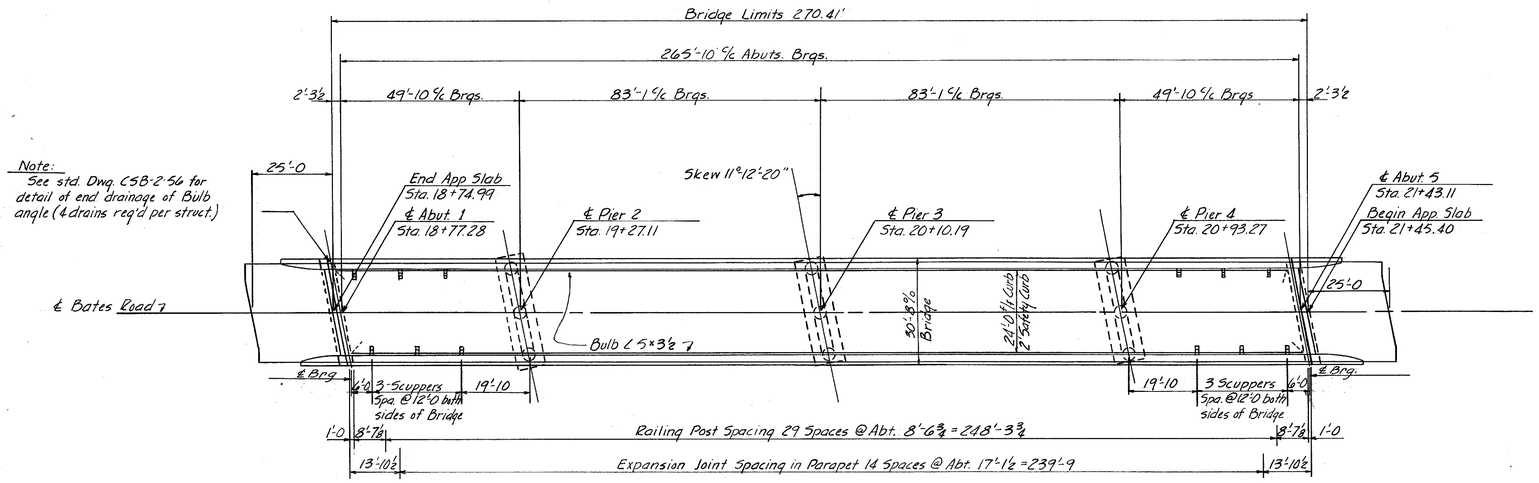
BRIDGE No. LAK-1-2696
SR 1 UNDER BATES RD.
LAKE CO. SR 1
STA 42+78.69

SCALE 1" = 20'-0

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
VAL	LCH	RGE	DKM	DKM	ACA

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR	132 / 176
2	OHIO	I-1103(15)		

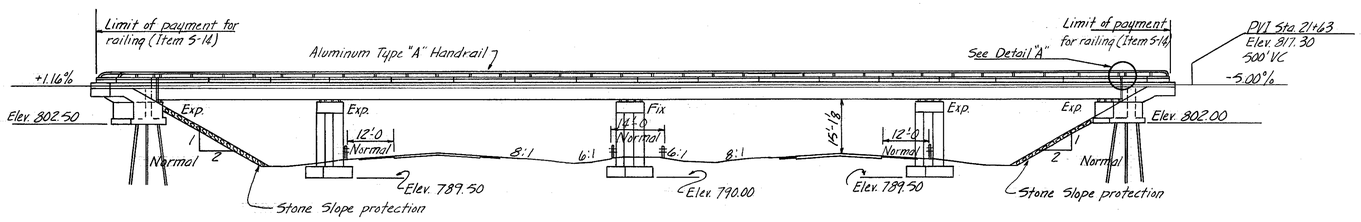
LAKE COUNTY
LAK I-26.51
ASHTABULA COUNTY
ATB-1-0.00



Note
Railing posts, expansion joints, and scupper spa. Symmetrical by rotation of the plan

GENERAL PLAN

Note
See std. dwg. AR-1-57 for handrail and parapet expansion joint details



ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-2-56 sheets 2 of 6 and 3 of 6 dated, December 3, 1956 RB 1-55 dated March 1, 1955, AR-1-57, dated April 9, 1957, and supplemental specifications No. S-114, revised August 1, 1957.

DESIGN SPECIFICATIONS This Structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated October 1, 1951, together with revisions thereof dated July 15, 1952, April 1, 1954 and February 1, 1955.

CONCRETE Superstructure, columns, caps and abutments above footings shall be "Class C Concrete" Abutment footings and Pier footings shall be "Class E Concrete."

DECK CONSTRUCTION PROCEDURE In order to facilitate water curing of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections between transverse construction joints which are normal to the center line of the bridge and are located near the center of any span.

EXCAVATION QUANTITIES shall be as outlined in Sec. E-2 and includes the removal of material from the finished grade down or original ground down, whichever is the lower in elevation. Abutment excavation quantities includes the removal of till material between the surface of embankment and the bottom of the Abut. Backfilling will be included in the cost of excavation.

STONE SLOPE PROTECTION extending from face of Abutment to invert of ditch shall be provided at all abutments. Protection shall be minimum of 12 inches thick, measured perpendicular to the slope, and shall be extended 3 ft. past outside limits of structure. Stone material shall meet the requirements of Section S-29.02 for porous drains.

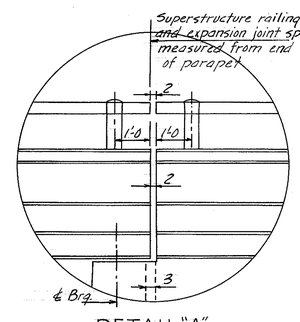
WELDING All welding shall be "Class "A" unless otherwise shown. Any weld shown as field weld may be made in the shop at the option of the contractor.

WELDED STEEL The steel for all rolled beams and moment plates with a thickness greater than 1" shall conform to ASTM Designation A-373. All other structural steel shall conform to either ASTM A-7 (per Sec. M-7.4(a) of the Construction and Material Specifications) or to A-373.

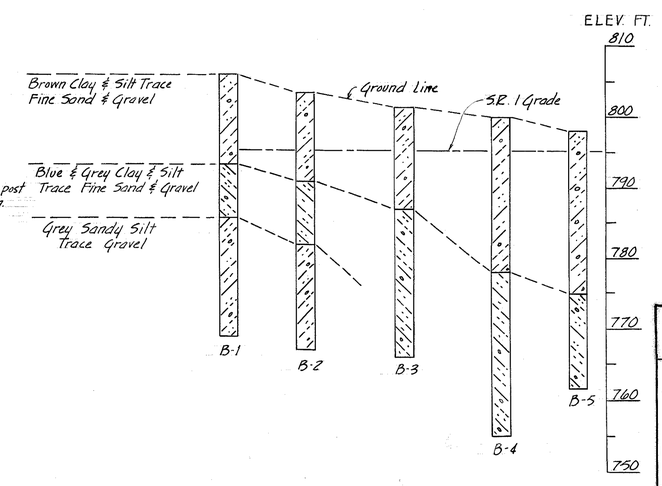
BAR SIZE for reinforcing steel is indicated in the bar mark. The first digit indicates bar size number. For example, 5601 is a No. 6 size bar and A1014 is a No. 10 size.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super Struct.	Abut. 1	Abut 5	Pier 2	Pier 3	Pier 4	Gen'l
E-2	409	Cu. Yd.	Excavation for Structures		88	92	74	81	74	
E-2	L.S.	L.S.	Cofferdams, Cribs, Sheeting							L.S.
S-1	240	Cu. Yd.	Class "C" Concrete (Superstructure)	240						
S-1	60	Cu. Yd.	Class "C" Concrete (Pier caps & Cols)				20	20	20	
S-1	74	Cu. Yd.	Class "C" Concrete (Abutment above Footings)		37	37				
S-1	151	Cu. Yd.	Class "E" Concrete (Pier & Abutment Footings)		25	25	33	35	33	
S-4	102,269	Lbs.	Reinforcing Steel	67,007	4815	4815	←	25,632	→	
S-7	231,000	Lbs.	Structural Steel	231,000						
S-8	231,000	Lbs.	Field Painting of Structural Steel	231,000						
S-14	587	Lin. ft.	Railing (Aluminum Type A and Concrete Parapet)	535	26	26				
S-16	L.S.	L.S.	First Test Pile							L.S.
S-18	950	Lin. ft.	12" Cast-in-Place Concrete Pile		420	530				
S-29	20	Cu. Yd.	Porous Backfill		10	10				
S-29	98	Cu. Yd.	Stone Slope Protection (1'-0 thick)							98



DETAIL "A"



SOIL PROFILE

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION

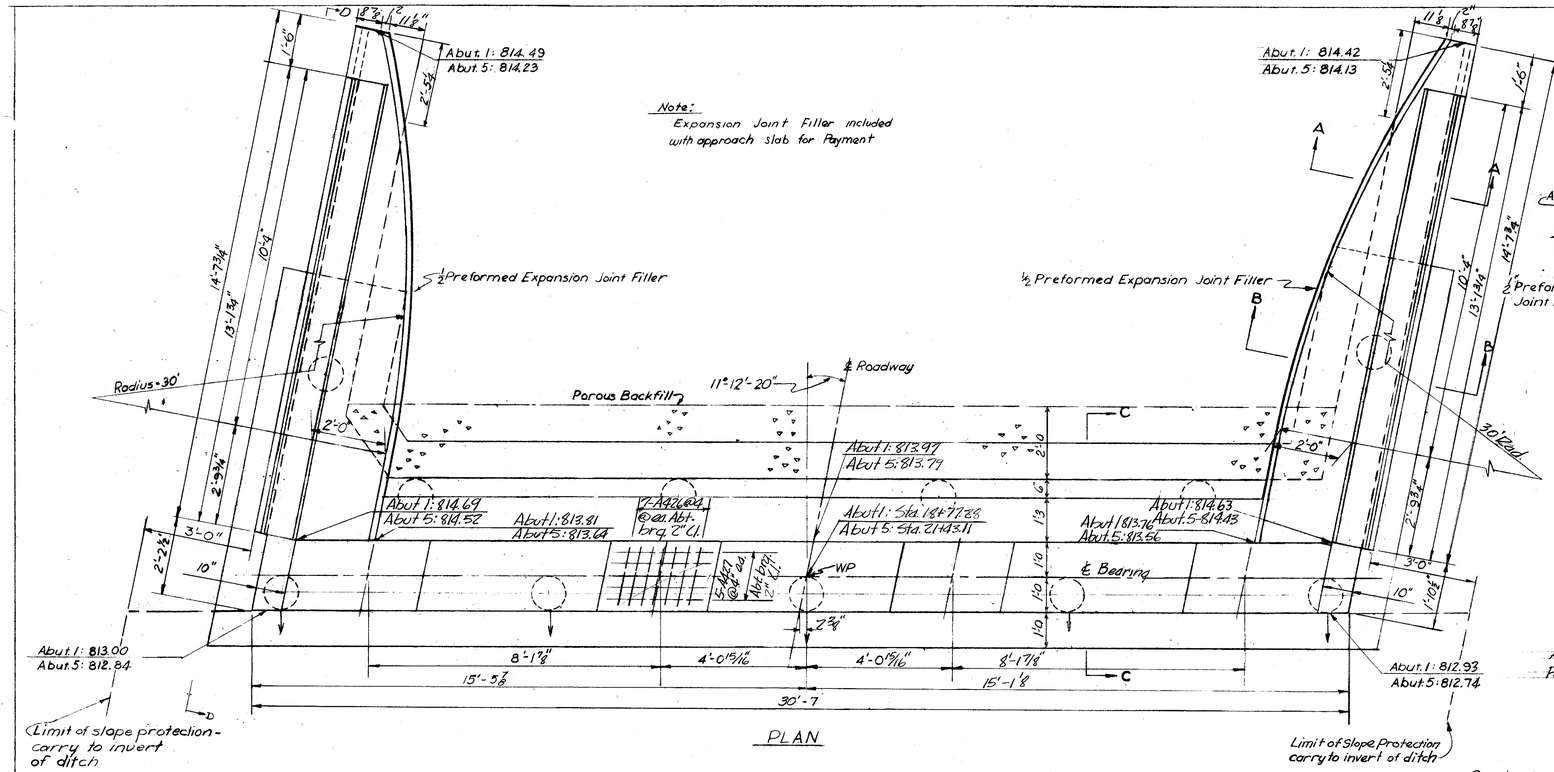
BRIDGE № LAK-1-2696
SR 1 UNDER BATES RD.
LAKE CO.
SR 1
STA. 42+78.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LTT	RS	RGW	RGE	ACA	8/28/57	

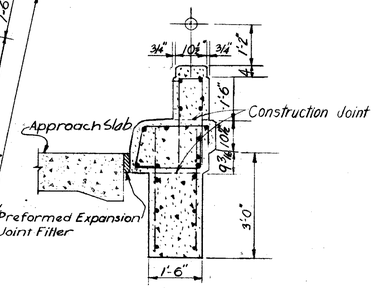
FED. RD DIVISION	STATE	FED AID PROJECT	FISCAL YEAR
2	OHIO	I-1103(15)	

133 / 176

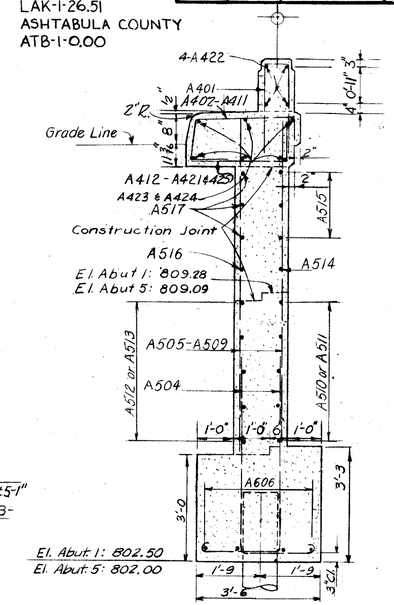
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PLAN

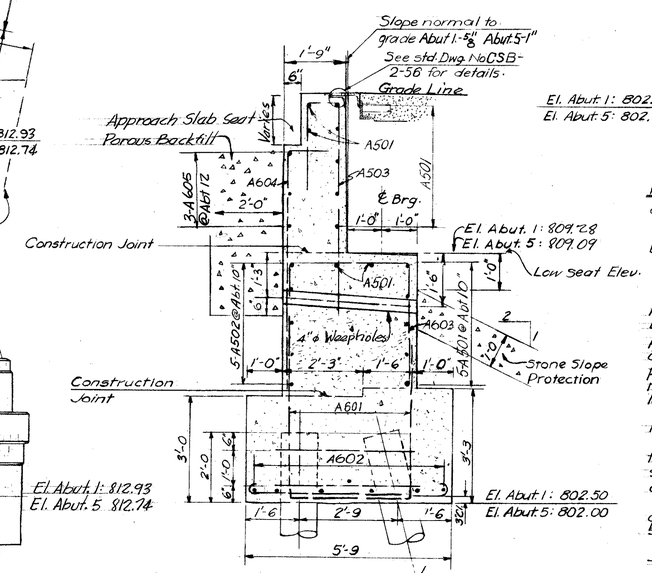


SECTION A-A



SECTION B-B

PROCEDURE:- The embankment shall be placed and compacted to subgrade elevations after which excavation shall be made for the Abutments.



SECTION C-C

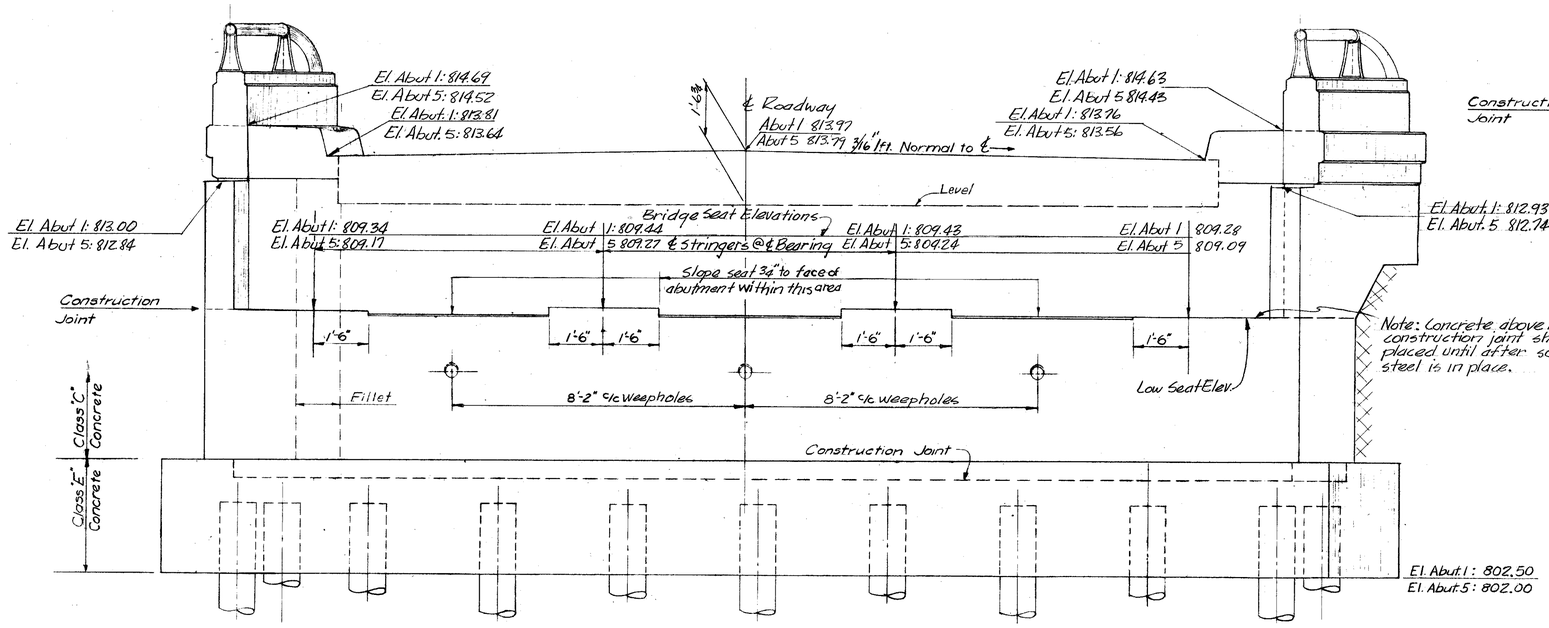
NOTE: Piles shall be driven to a minimum bearing capacity of 40 tons. The length of penetration of every pile shall be at least 80% of the estimated average length of penetration of the piles in the pertinent abutment as indicated on the site plan unless a lesser penetration is approved by the director.

Piles marked thus, O→, to be battered 1:4 in direction of arrow.

Holes for piles shall be pre-drilled through fill material. Hole size through fill shall be 1" less in diameter than calculated diameter of in-place pile at base of fill.

Test pile as indicated on footing plan required at Abut. 1 only and shall be used as a service pile.

All piles shall be 12" butt diameter cast-in-place reinforced concrete piles.



Note: Concrete above bridge seat construction joint shall not be placed until after superstructure steel is in place.

ELEVATION

Note:
Reinforcing steel shall clear the face of the concrete 2", unless otherwise noted.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

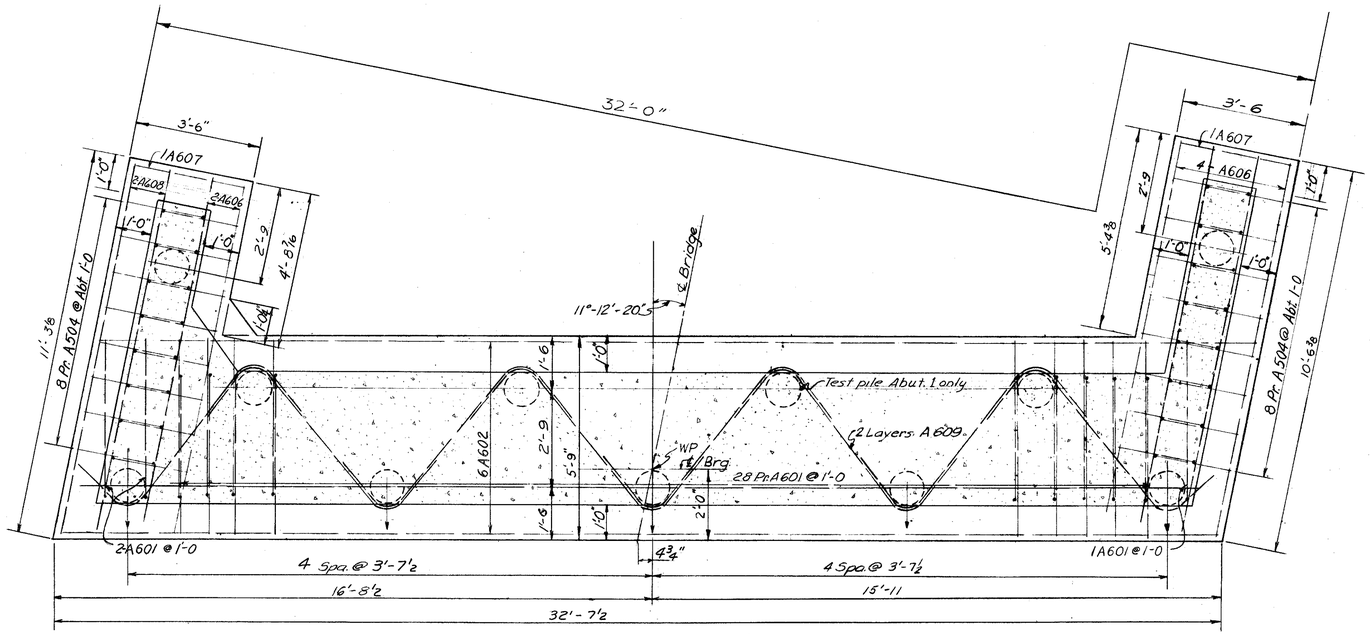
BRIDGE No. LAK-1-2696
SR1 UNDER BATES RD.
LAKE CO. SR1
STA. 42+78.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LTT	EFS		JPR	ACA	8/28/57	

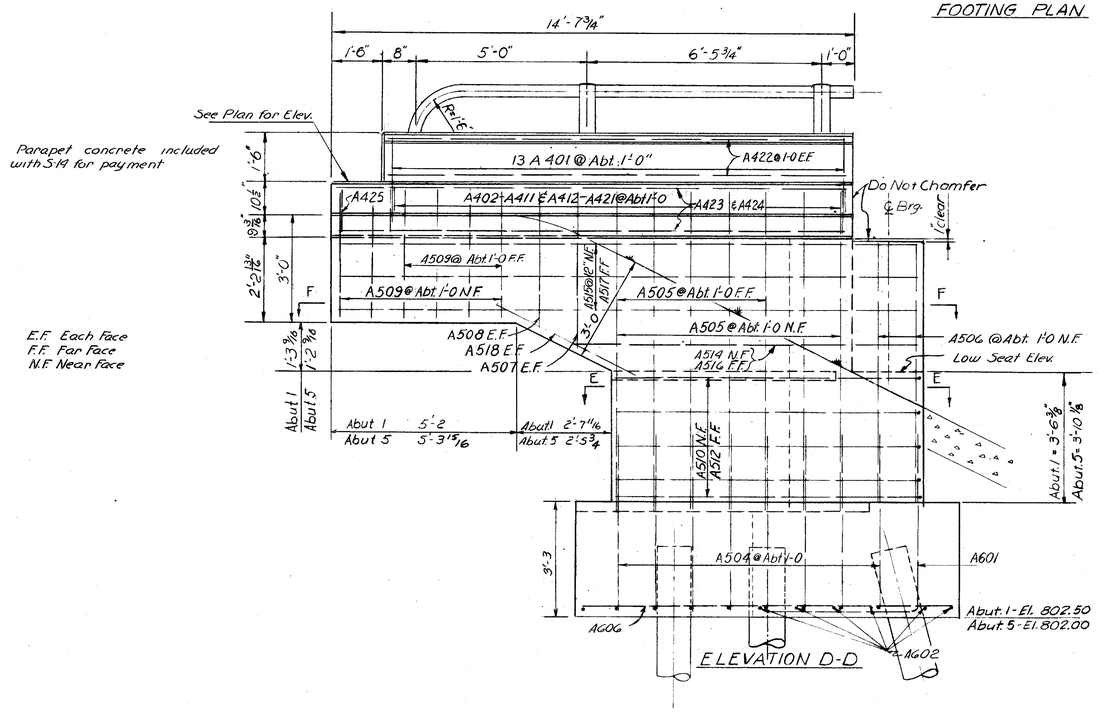
FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

134
176

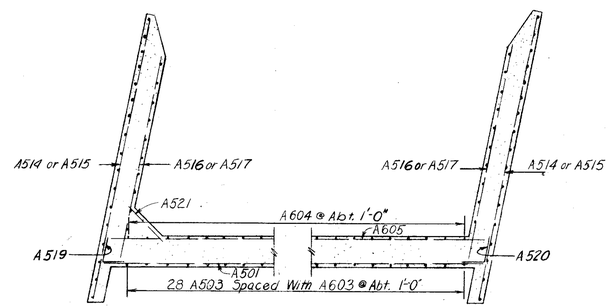
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



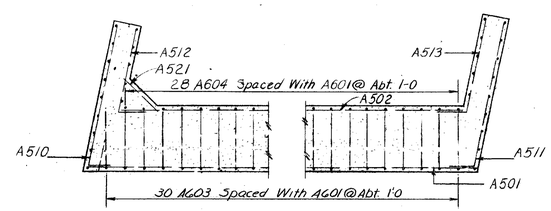
FOOTING PLAN



ELEVATION D-D



SECTION F-F



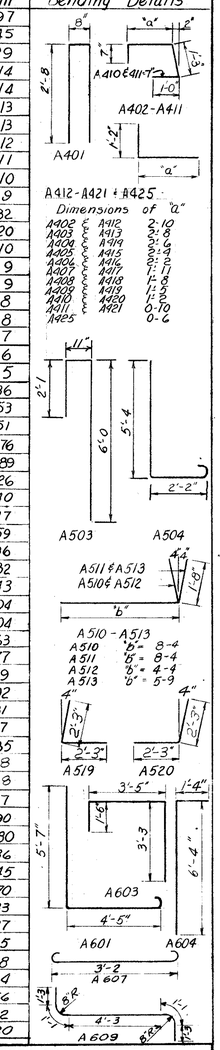
SECTION E-E

REINFORCING STEEL LIST

BOTH ABUTMENTS

MK	Length	Shape	No.	Weight
A401	5-8	Bent	52	197
A402	5-8	Bent	12	45
A403	5-6	Bent	8	29
A404	5-4	Bent	4	14
A405	5-2	Bent	4	14
A406	5-0	Bent	4	13
A407	4-9	Bent	4	13
A408	4-6	Bent	4	12
A409	4-3	Bent	4	11
A410	3-7	Bent	4	10
A411	3-3	Bent	4	9
A412	4-0	Bent	12	32
A413	3-10	Bent	8	20
A414	3-8	Bent	4	10
A415	3-6	Bent	4	9
A416	3-4	Bent	4	9
A417	3-1	Bent	4	8
A418	2-10	Bent	4	8
A419	2-7	Bent	4	7
A420	2-4	Bent	4	6
A421	2-0	Bent	4	5
A422	12-9	Str.	16	136
A423	10-0	Str.	8	53
A424	14-2	Str.	16	151
A501	30-0	Str.	28	876
A502	27-8	Str.	10	289
A503	9-0	Bent	56	526
A504	8-1	Bent	64	540
A505	8-4	Str.	48	417
A506	7-1	Str.	8	59
A507	4-4	Str.	8	36
A508	3-10	Str.	8	32
A509	3-5	Str.	40	143
A510	10-0	Bent	10	104
A511	10-0	Bent	10	104
A512	6-0	Bent	10	63
A513	7-5	Bent	10	77
A514	9-4	Str.	4	39
A515	16-2	Str.	12	202
A516	7-4	Str.	4	31
A517	11'-9	Str.	12	147
A518	4-3	Str.	8	35
A519	4-6"	Bent	8	38
A520	4-6"	Bent	8	38
A521	4-0	Str.	16	67
A601	10-8	Bent	118	1890
A602	32-2	Str.	12	580
A603	8-2	Bent	60	736
A604	7-8	Bent	56	645
A605	30-0	Str.	6	270
A606	10-2	Str.	12	183
A607	4-6	Str.	4	27
A608	10-10	Str.	4	65
A609	8-11	Bent	32	928
A425	1-8	Bent	4	4
A426	1'-6	Str.	56	56
A427	2'-4	Str.	40	62
			Total	9630

Bending Details



CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

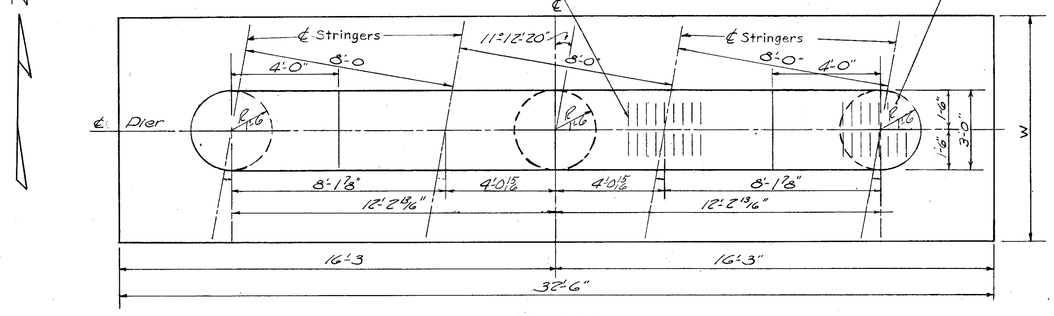
BRIDGE No. LAK-1-2696
SR 1 UNDER BATES RD.
LAKE CO. SR 1
STA. 42+78.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LTT	EFS		JPR	ACA	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

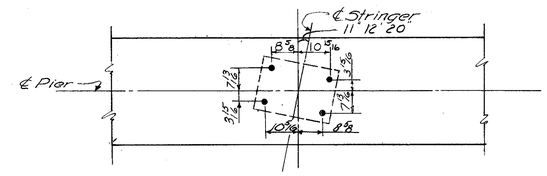
Note:
P402 @ 4" c.c., 8 under each exterior stringer & 9 under each interior stringer at all piers, space to clear anchor bolts at pier 3, clear concrete2.



PLAN

Note:
All quantities shown for reinforcing steel are for three (3) Piers

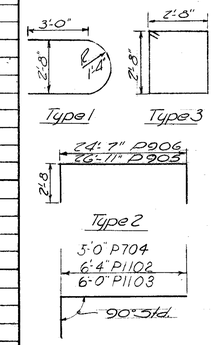
	Elev. A	Elev. B	Elev. C	Elev. D	Elev. Bott. Flg.	W.	H.
Pier 2	809.34	809.48	809.50	809.39	789.50	9'-0"	13'-10⅛
Pier 3	809.64	809.76	809.76	809.64	790.00	9'-9"	13'-7⅜
Pier 4	809.33	809.44	809.42	809.28	789.50	9'-0"	13'-9⅜

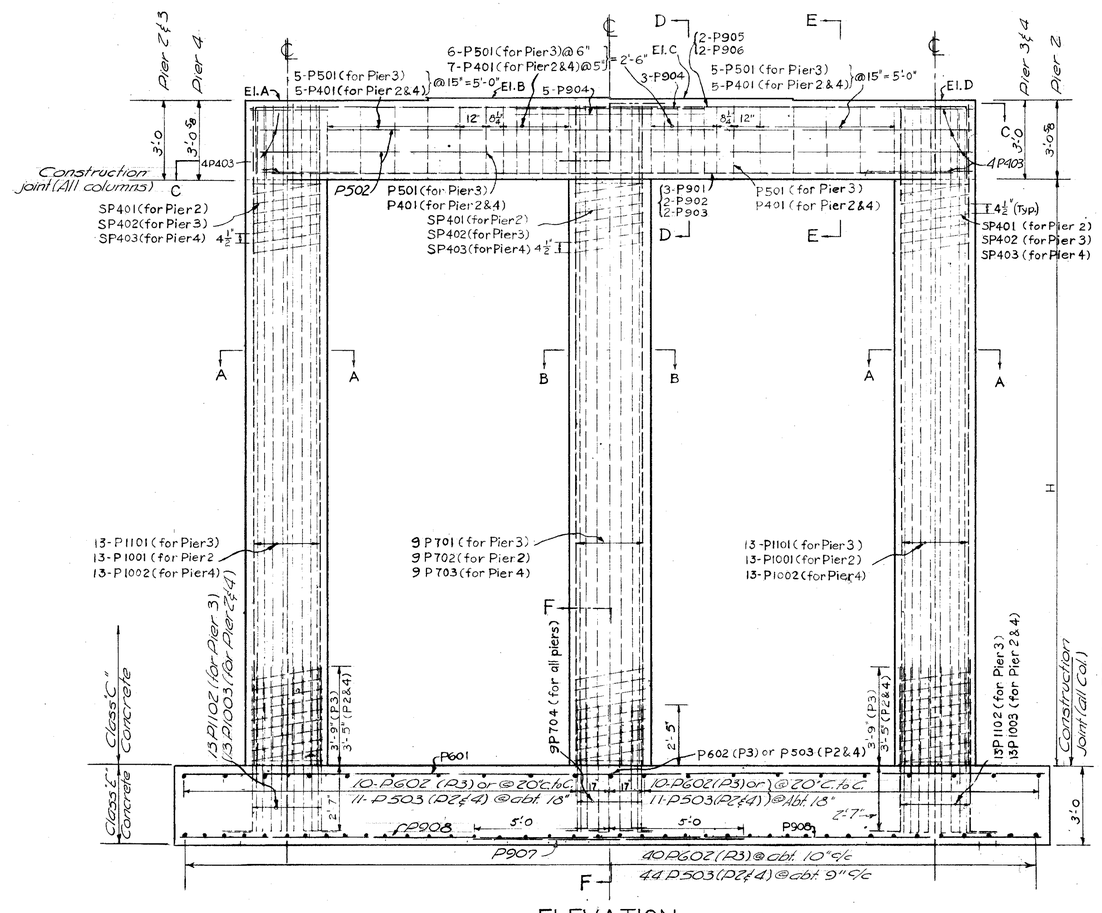


TYPICAL ANCHOR BOLT DETAIL
B-200 BOLSTERS PIER 3

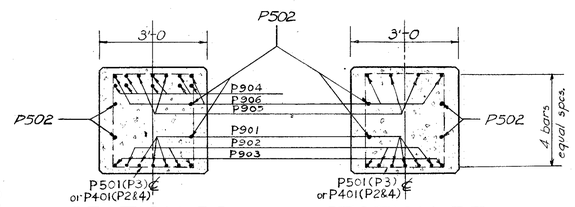
REINFORCING STEEL LIST

Mark	No.	Shape	Length	Weight
P1101	26	Str.	16'-4"	2256
P1102	26	Bent-4	7'-1"	978
P1001	26	Str.	16'-6"	1846
P1002	26	Str.	16'-5"	1837
P1003	52	Bent-4	6'-8"	1492
P901	9	Str.	26'-11"	824
P902	6	Str.	26'-6"	541
P903	6	Str.	24'-3"	495
P904	24	Str.	7'-0	571
P905	6	Bent-2	32'-3"	658
P906	6	Bent-2	29'-11"	610
P907	32	Str.	10'-0	1088
P908	35	Str.	32'-2	3828
P701	9	Str.	16'-4"	300
P702	9	Str.	16'-6"	304
P703	9	Str.	16'-5"	302
P704	27	Bent-4	5'-5"	299
P601	35	Str.	32'-2	1691
P602	61	Str.	9'-5"	863
P501	24	Bent-3	11'-8"	292
P502	12	Str.	24'-5"	306
P503	134	Str.	8'-8"	1212
P401	52	Bent-3	11'-8	405
P402	102	Str.	2'-0"	136
P403	24	Bent-1	10'-2	163
			Total	23,297

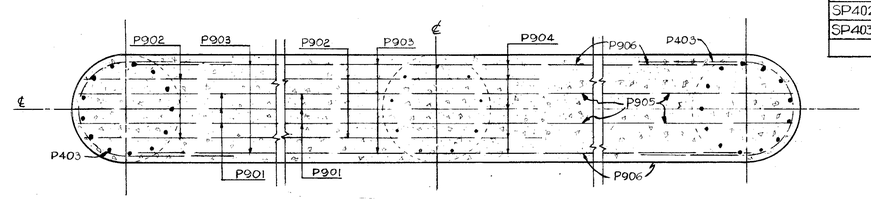




ELEVATION



SECTION D-D SECTION E-E

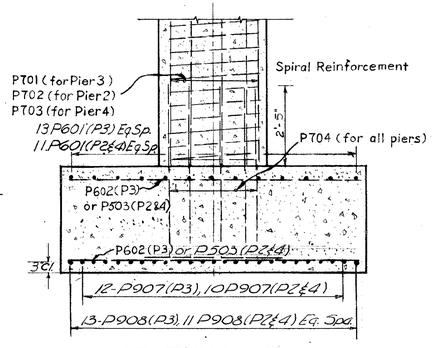


SECTION C-C

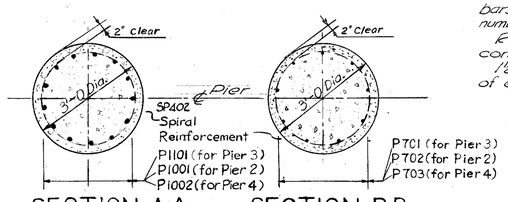
SPIRAL REINFORCING STEEL LIST

Mark	NO	Size		Length	Pitch	No. Turns	Weight
SP401	3	½" ϕ	2"	13.84	4½"	40	785
SP402	3	½" ϕ	2"	13.64	4½"	39	766
SP403	3	½" ϕ	2"	13.78	4½"	40	784
						Total	2335

Notes:
Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4.
Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.
The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.
The "No. Turns" shown in the steel list for the spiral bars is the length divided by the Pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.
Reinforcing steel shall clear the face of the concrete by 2" unless otherwise noted.
1½ closed coils shall be provided at the ends of each spiral unit.



SECTION F-F



SECTION A-A SECTION B-B

Note:
Maximum Footing Pressure for Piers 4.5 k/□'

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

PIER DETAILS

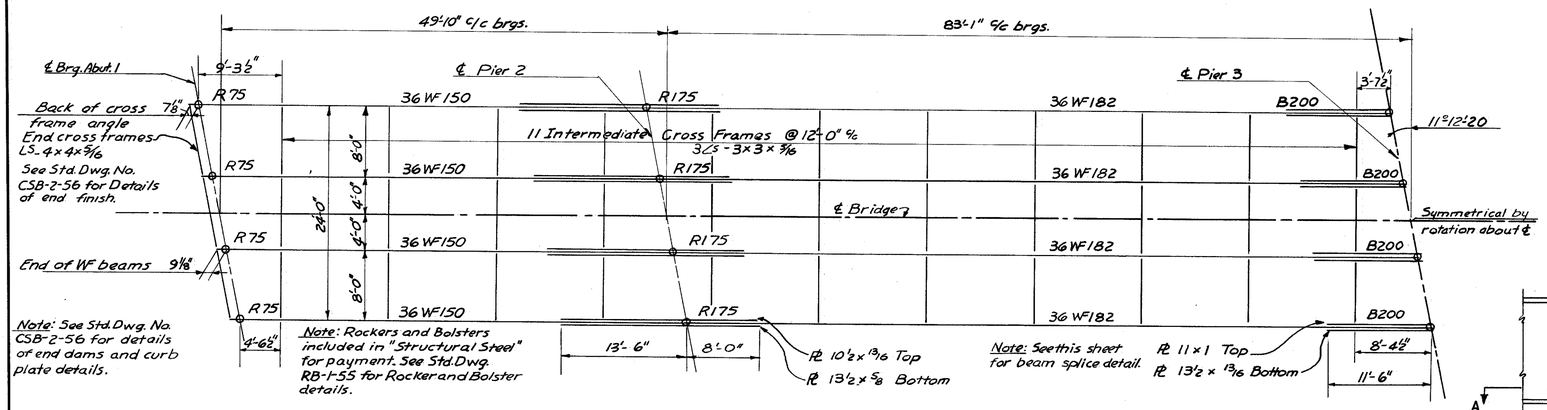
BRIDGE Nº LAK-1-2696
SR 1 UNDER BATES RD.
LAKE COUNTY SR 1
STA. 42+78.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.M.S.	C.T.L.		J.B.	A.C.A.	8/28/57	

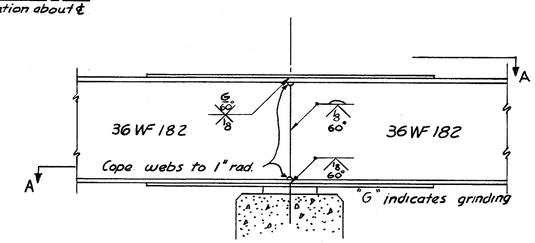
FED RD DIVISION	STATE	FED AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

136
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



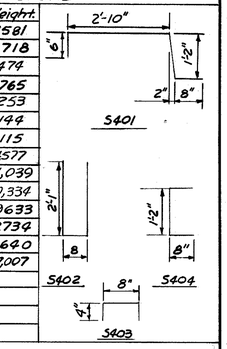
HALF FRAMING PLAN



BEAM SPLICE DETAIL
PIER # 3

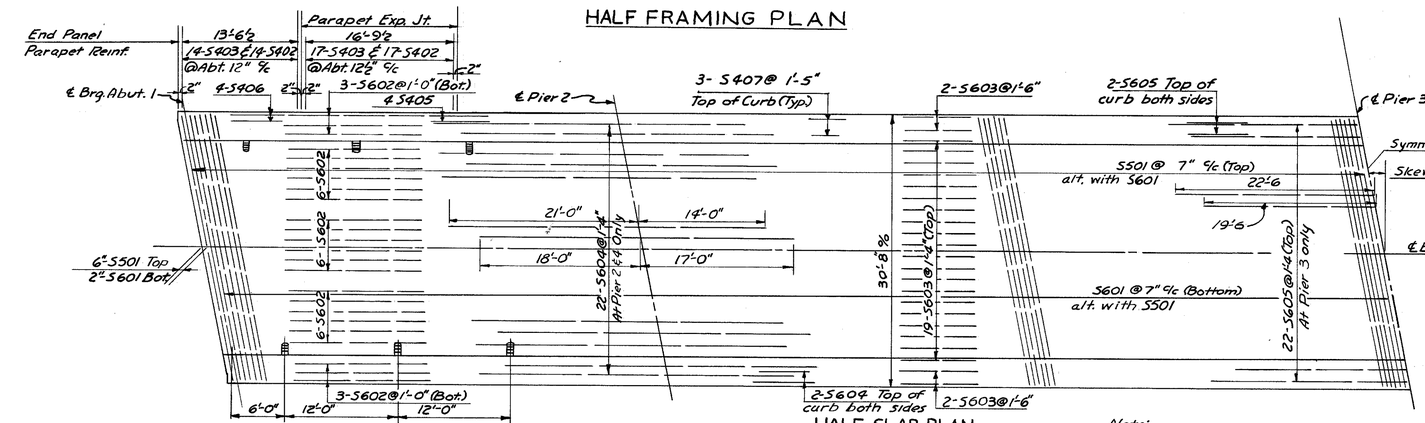
REINFORCING STEEL LIST
SUPERSTRUCTURE

Mark	Length	Shape	No.	Weight
S401	5'-2"	Bent	458	1581
S402	4'-10"	Bent	532	1718
S403	1'-4"	Bent	532	474
S404	2'-6"	Bent	458	765
S405	16'-9"	Str.	112	1253
S406	13'-6"	Str.	16	144
S407	30'-11"	Str.	54	1115
S501	30'-7"	Str.	457	14,577
S601	30'-7"	Str.	458	21,039
S602	28'-8"	Str.	240	10,334
S603	39'-10"	Str.	161	9633
S604	35'-0"	Str.	52	2734
S605	42'-0"	Str.	26	1640
			Total	67,007



REPLACEMENT BARS			
MARK	LENGTH	SHAPE	NO.
RB401	5'-3	Str.	1
RB501	5'-7	Str.	1
RB601	5'-11	Str.	3
RB701	6'-3	Str.	1
RB901	6'-10	Str.	1
RB1001	7'-3	Str.	1
RB1101	7'-4	Str.	1

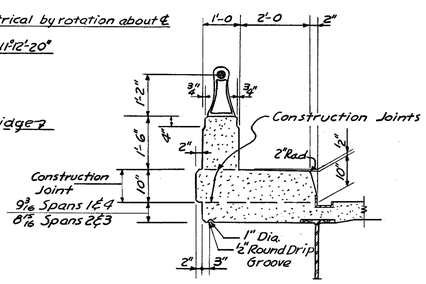
Note:
REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in sec. S-4.02 need not be furnished and replacement bars will not be required.



NOTE: Gutters & Scuppers included in "Structural steel for payment. See Std. Dwg. NO. CSB-2-56 for details.

HALF SLAB PLAN

Note:
See General Notes for Slab Pouring Sequence.

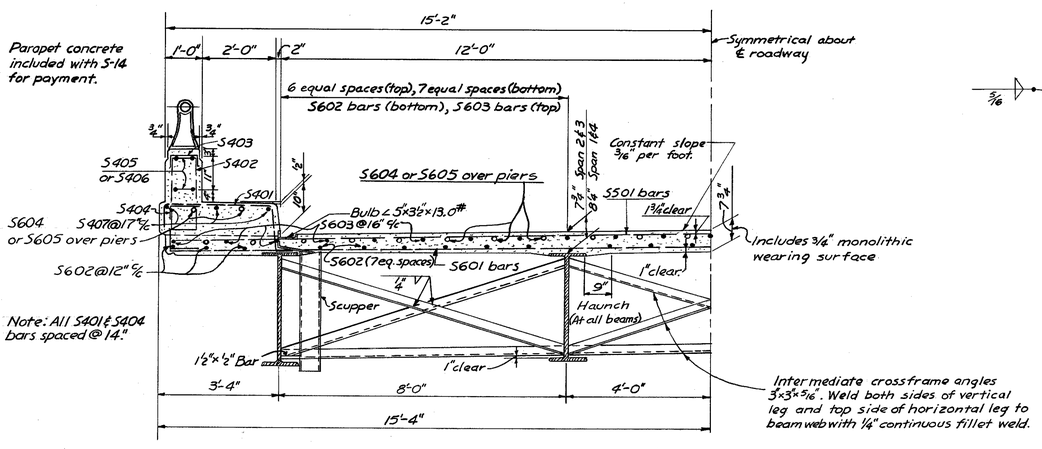


PARAPET DETAILS

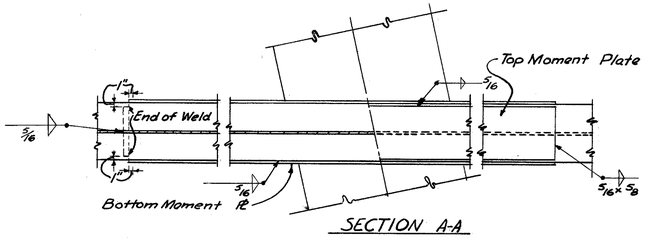
DEFLECTIONS AND CAMBERS

LOCATION	OUTSIDE BEAM SPAN 1	OUTSIDE BEAM SPAN 2	OUTSIDE BEAM SPAN 3	OUTSIDE BEAM SPAN 4	INSIDE BEAMS SPAN 1	INSIDE BEAMS SPAN 2	INSIDE BEAMS SPAN 3	INSIDE BEAMS SPAN 4
DEFLECTION DUE TO WEIGHT OF STEEL	0	3/16"	3/16"	0	0	3/16"	3/16"	0
DEFLECTION DUE TO REMAINING DEAD LOAD	1/16"	1"	1"	1/16"	1/16"	1/2"	1/2"	1/16"
CONVEXITY REQUIRED FOR VERTICAL CURVE	0	1 5/16"	1 5/16"	1/2"	0	1 5/16"	1 5/16"	1/2"
SUM OF DEFLECTION AND CONVEXITY	1/16"	2 1/2"	2 1/2"	9/16"	1/16"	2	2	9/16"
REQUIRED CAMBER	0	2 1/2"	2 1/2"	0	0	2	2	0

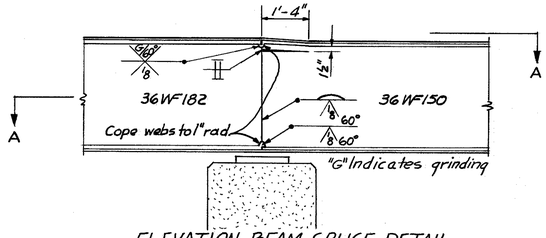
Where No Camber is Required the Beams Shall Be So Fabricated that Any Curved Beam Will Be Placed With Convex Flange Up.



HALF CROSS-SECTION



SECTION A-A



ELEVATION BEAM SPLICE DETAIL
PIER #2 & PIER # 4

BEAM SPLICE WELDING PROCEDURE

1. Erect Span 2 and 3 Beams First.
2. Raise the Pier No. 2 End of Span No. 2 Beams 4"
3. Butt Weld the Beam Flanges and Webs at Pier No. 3, Using the Following Sequence: Make One Pass On Each Flange, then One On the Web; Repeat Until Welds are Complete.
4. Weld the Bottom and Top Moment Pl's
5. Lower the Pier No. 2 End of Span No. 2 to the Final Position
6. Raise the Abutment End of Span No. 1 7/8".
7. Repeat Steps 3 and 4 at Pier No. 2
8. Lower Abutment End of Span No. 1 to Final Position.
9. Repeat Steps 3, 4, 6, & 8 at Pier 4 and Abut. 5

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE No. LAK-1-2696
SR 1 UNDER BATES ROAD
LAKE CO
SR 1
STA. 42+78.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.T.T.	L.H.	A.J.S.	R.G.E.	A.C.A.	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
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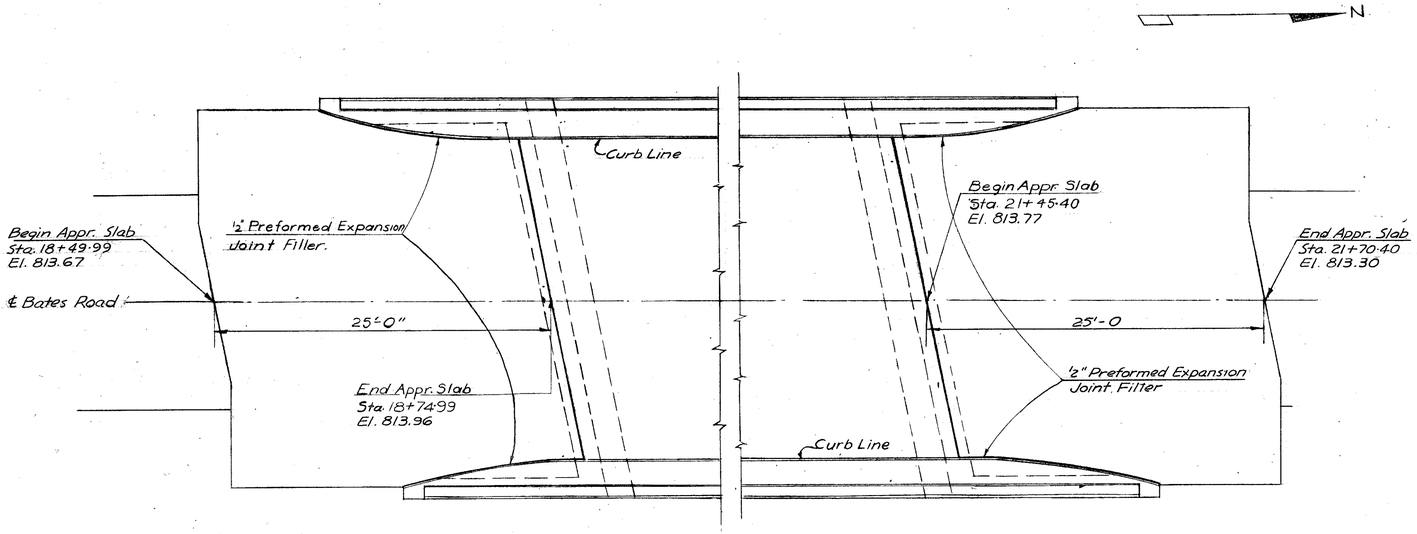
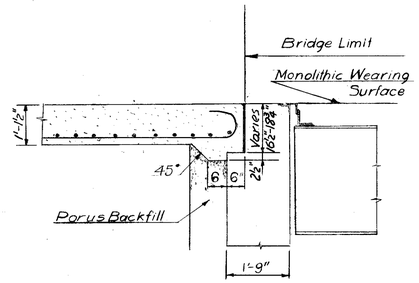
LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



GENERAL PLAN



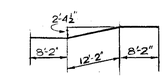
SECTION C-C

✱ NOTE:- This Reinforcing Steel is included in the item "Reinforced Concrete Approach Slab Item I-7 and is not paid for Separately.

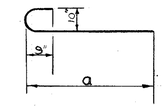
REINFORCING STEEL LIST ✱

BOTH APPROACH SLABS

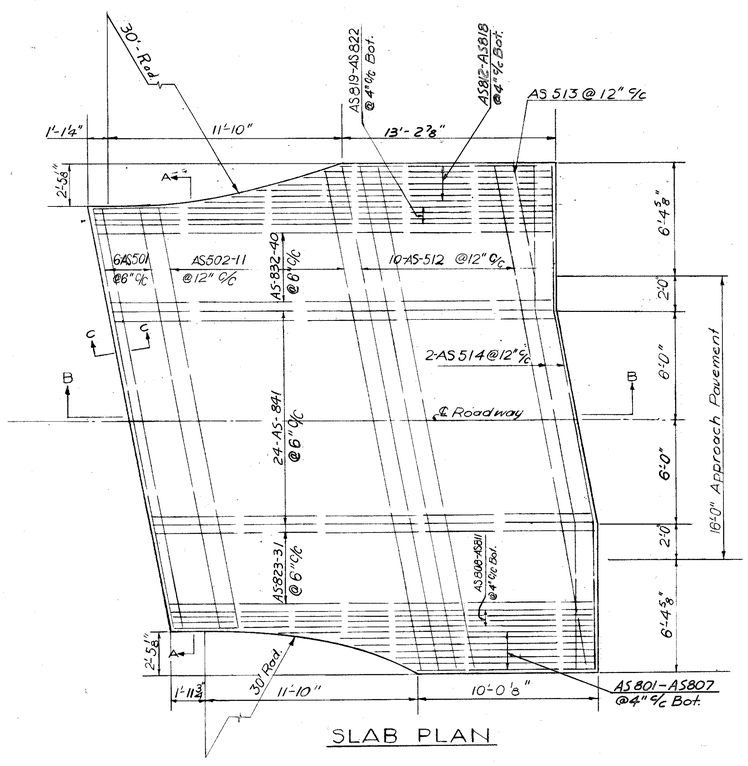
MARK	LENGTH	SHAPE	NO	WT.	BAR DIAGRAM.
AS 501	24'-0"	Str.	12	300	
AS 502	24'-1"	Str	2	50	
AS 503	24'-3"	Str	2	51	
AS 504	24'-7"	Str.	2	51	
AS 505	25'-1"	Str.	2	52	
AS 506	25'-3"	Str.	2	53	
AS 507	25'-8"	Str	2	54	
AS 508	26'-2"	Str	2	55	
AS 509	26'-8"	Str	2	56	
AS 510	27'-5"	Str	2	57	
AS 511	28'-2"	Str	2	59	
AS 512	29'-0"	Str	20	60	
AS 513	8'-5"	Str	2	18	
AS 514	28'-6"	Bent	4	119	
AS 801	9'-7"	Str.	2	51	
AS 802	10'-11"	Str.	2	58	
AS 803	12'-0"	Str.	2	64	
AS 804	13'-0"	Str	2	69	
AS 805	14'-1"	Str	2	75	
AS 806	15'-9"	Str	2	84	
AS 807	17'-5"	Str.	2	93	
AS 808-9	24'-7"	Bent	4	263	
AS 810-11	24'-9"	Bent	4	264	
AS 812	20'-10"	Str	2	111	
AS 813	18'-8"	Str	2	100	
AS 814	17'-0"	Str	2	91	
AS 815	16'-0"	Str.	2	85	
AS 816	15'-0"	Str.	2	80	
AS 817	14'-0"	Str	2	75	
AS 818	12'-10"	Str	2	69	
AS 819-20	26'-10"	Bent	4	287	
AS 821-22	28-8"	Bent	4	306	
AS 823	24-11"	Bent	2	133	
AS 824	25'-0"	Bent	2	134	
AS 825	25'-1"	Bent	2	134	
AS 826	25'-3"	Bent	2	135	
AS 827	25'-4"	Bent	2	135	
AS 828	25'-5"	Bent	2	136	
AS 829	25'-6"	Bent	2	136	
AS 830	25'-7"	Bent	2	137	
AS 831	25'-8"	Bent	2	137	
AS 832	25'-10"	Bent	2	138	
AS 833	25'-11"	Bent	2	138	
AS 834	26'-0"	Bent	2	139	
AS 835	26'-1"	Bent	2	139	
AS 836	26'-2"	Bent	2	140	
AS 837	26'-3"	Bent	2	140	
AS 838	26'-4"	Bent	2	141	
AS 839	26'-6"	Bent	2	142	
AS 840	26'-7"	Bent	2	142	
AS 841	25'-9"	Bent	48	3300	
		Total.		9036	



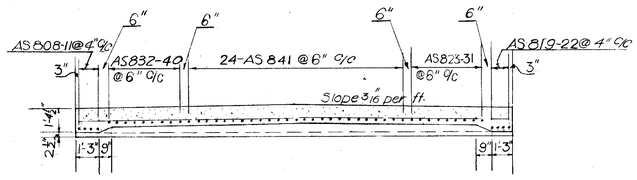
AS 514



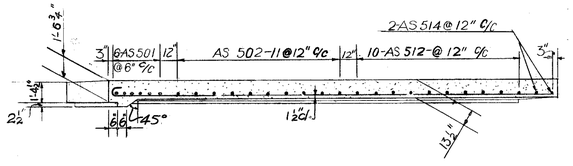
AS808-AS809	a = 23'-6"
AS810-AS811	a = 23'-8"
AS819-AS820	a = 25'-9"
AS821-AS822	a = 27'-7"
AS823-	a = 23'-10"
AS824	a = 23'-11"
AS825	a = 24'-0"
AS826	a = 24'-2"
AS827	a = 24'-3"
AS828	a = 24'-4"
AS829	a = 24'-5"
AS830	a = 24'-6"
AS831	a = 24'-7"
AS832	a = 24'-9"
AS833	a = 24'-10"
AS834	a = 24'-11"
AS835	a = 25'-0"
AS836	a = 25'-1"
AS837	a = 25'-2"
AS838	a = 25'-3"
AS839	a = 25'-5"
AS840	a = 25'-6"
AS841	a = 24'-8"



SLAB PLAN



SECTION A-A



SECTION B-B

Notes: Approach slabs to be class "C" concrete. In the reinforcing steel bar marks, the numeral following the second letter is the Bar Number which indicates the size of the bar.

Note: ½" Preformed expansion joint filler included in Item I-7 for payment.

STATION To STATION	REINFORCED CONCRETE APPROACH SLABS ITEM I-7
18+49.99-18+74.99	77 Sq. yd.
21+45.40-21+70.40	77 Sq. yd.
TOTAL	154 Sq. yd.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

APPROACH SLAB DETAILS

BRIDGE No LAK-I-2696
SR I UNDER BATES RD
LAKE CO.
SR I
STA. 42+78.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.T.S.	M.S.		J.P.R.	A.C.A.	8/28/57	

FED. RD. DIVISION	STATE	FED. AID. PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

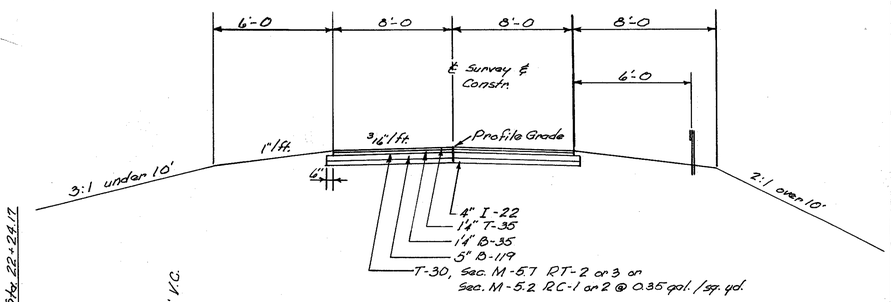
138
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

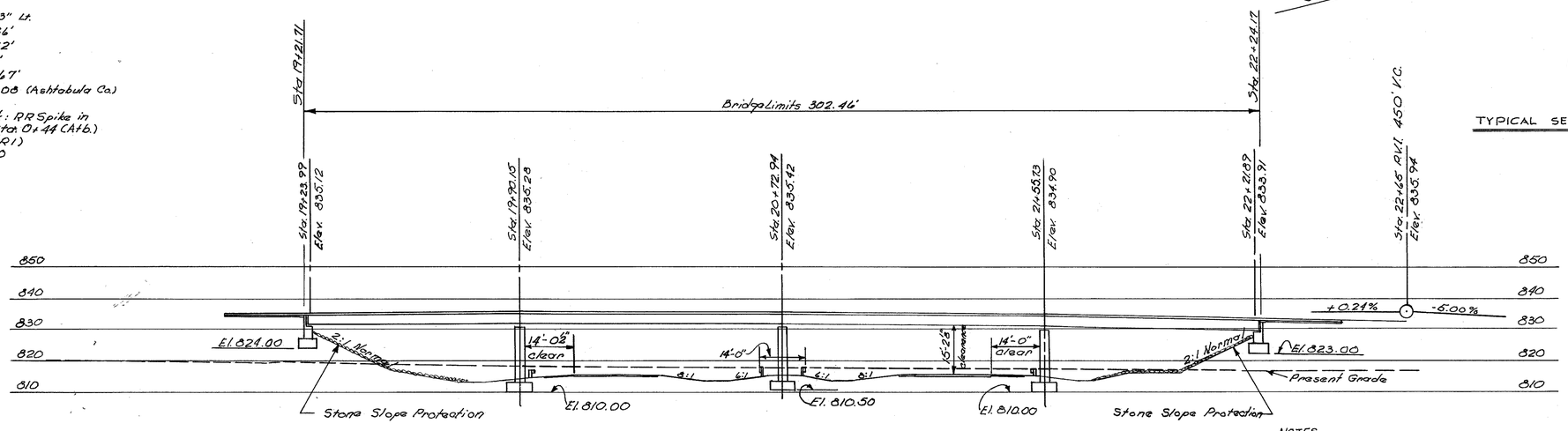
PLAN

SR 1 CURVE DATA
D= 0° 28'
Δ= 16° 37' 53" Lt.
Lc = 3563.86'
T = 1794.52'
E = 130.45'
R= 12277.67'
P.I.= 5+00.00 (Ashtabula Co.)

Bench Mark: RR Spike in 24" Maple Sta. 0+44 (Atb.) 20' Lt. (℄ SR 1) Elev. 818.640



TYPICAL SECTION THRU APPROACH PAVEMENT



SECTION ALONG ℄ COUNTY LINE ROAD

PROPOSED STRUCTURE
Type: Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
Spans: 66'-1⅞" 82'-9⅞" 82'-9⅞" 66'-1⅞" ⅝ Brg.
Roadway: 24'-0 f/f Safety Curbs
Load Frequency: C.F. = 1.30 (51)
Skew: 9°58'-26" RF
Wearing Surface: ¾" Monolithic Conc.
Approach Slabs: 25'-0 Long
Alignment: Tangent
Safety Curbs: 2'-0 each side

NOTES

Foundation Soundings - Foundation design and foundation quantities are based on a study of soil sampling soundings made at the site. This sounding information may be inspected at the Interstate Projects Office in Columbus or in the Division office, but the State assumes no responsibility for the accuracy thereof.

1955 TRAFFIC - 420 VPD with under 30 combination trucks.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SITE PLAN

BRIDGE No LAK-1-2841
SR 1 UNDER COUNTY LINE RD.

LAKE CO. SR 1 STA. 119+07.39

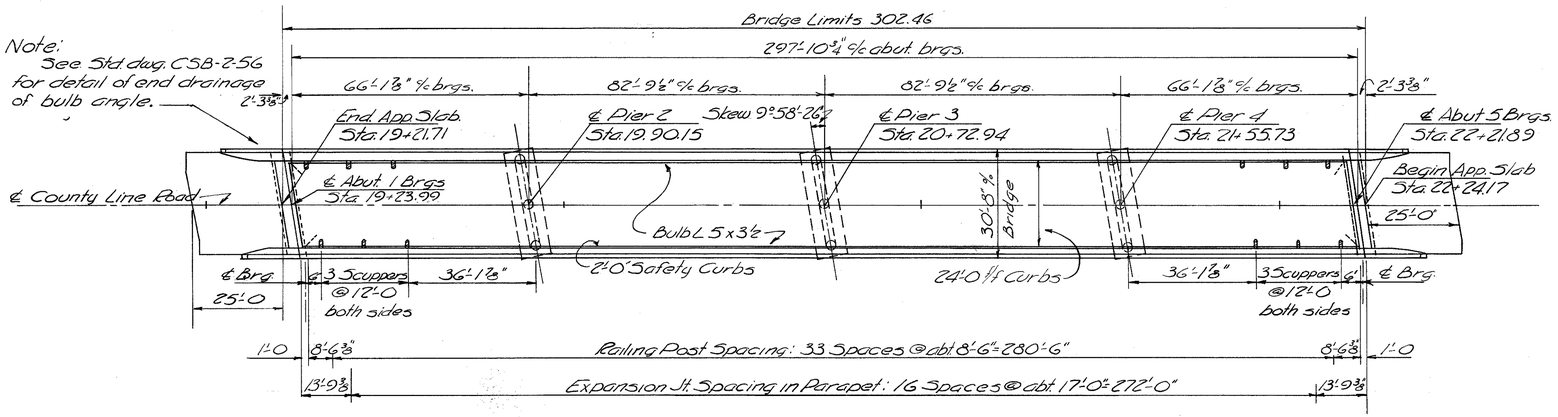
SCALE 1" = 20'-0

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
VAL	LTT	LTT	DKM	DKM	ACA

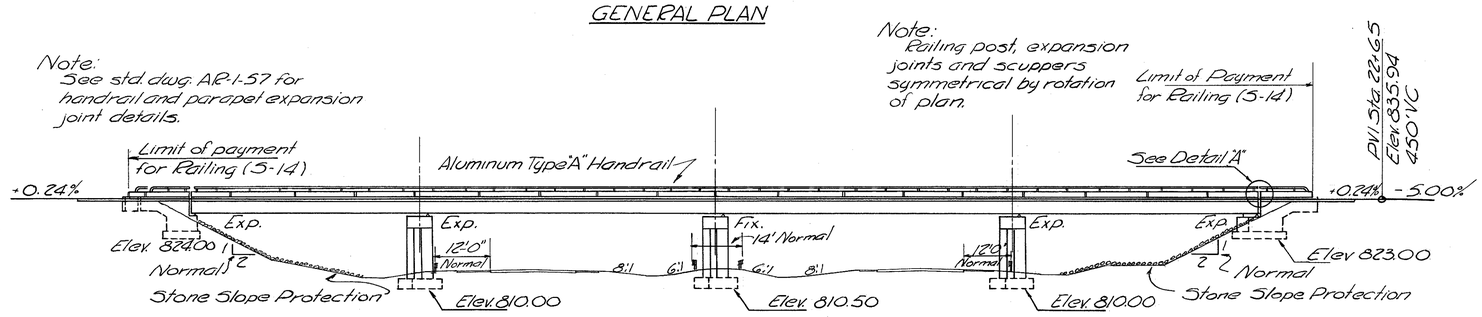
FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR	
2	OHIO	I-1103(15)		139/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

N



GENERAL PLAN



ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-2-56 sheets 2 of 6 and 3 of 6 dated December 3, 1956, RB-1-55, dated March 1, 1955, AR-1-57, dated April 9, 1957 and supplemental specifications No. S-114, revised August 1, 1957.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated October 1, 1951, together with revisions thereof dated July 15, 1952, April 1, 1954 and February 1, 1955.

CONCRETE Superstructure, columns, caps and abutments above footings shall be "Class C Concrete." Abutment footings and pier footings shall be "Class E Concrete."

DECK CONSTRUCTION PROCEDURE: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections between transverse construction joints which are normal to the center line of bridge and are located near the center of any span.

EXCAVATION QUANTITIES shall be as outlined in Sec. E-2 and includes the removal of material from from the finished grade down or original ground down, whichever is the lower in elevation. Abutment excavation quantities includes the removal of fill material between the surface of embankment and the bottom of the abutment. Back-filling will be included in the cost of excavation.

STONE SLOPE PROTECTION extending from face of abutment to invert of ditch shall be provided at all abutments. Protection shall be a minimum of 12 inches thick, measured perpendicular to the slope, and extend 3 feet past outside limits of structure. Stone material shall meet the requirements of Section S-29.02 for porous drains.

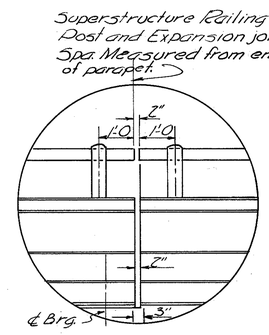
WELDING: All welding shall be Class "A" unless otherwise shown. Any weld shown as field weld may be made in the shop at the option of the Contractor.

WELDED STEEL: The steel for all rolled beams and moment plates with a thickness greater than 1" shall conform to ASTM Designation A-373. All other structural steel shall conform to either ASTM A-7 (per Sec. M-7.4 (a) of the Construction and Material Specifications or to A-373.

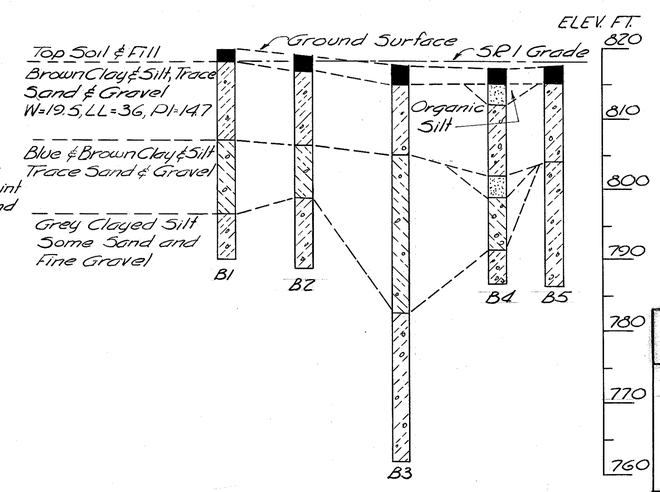
BAR SIZE for reinforcing steel is indicated in the bar mark. The first digit indicates bar size number. For example, S601 is a No. 6 size bar and A1014 is a No. 10 size.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super structure	Abut. 1	Abut. 5	Pier 2	Pier 3	Pier 4	Gen'l
E-2	368	Cu.Yd.	Excavation For Structures	-	82	82	67	70	67	-
E-2	L.S.	L.S.	Cofferdams, Cribs, & Sheeting							L.S.
S-1	269	Cu.Yd.	Class "C" Concrete (Superstructure)	269	-	-	-	-	-	-
S-1	60	Cu.Yd.	Class "C" Concrete (Pier caps, Columns)				20	20	20	
S-1	76	Cu.Yd.	Class "C" Concrete (Abutment above footings)	-	38	38	-	-	-	-
S-1	130	Cu.Yd.	Class "E" Concrete (Pier & Abutment footings)	-	18	18	31	32	31	-
S-4	108,785	Lbs.	Reinforcing Steel	74,397	4412	4412	←	25,564	→	-
S-7	265,652	Lbs.	Structural Steel	265,652	-	-	-	-	-	-
S-8	265,652	Lbs.	Field Painting of Structural Steel	265,652	-	-	-	-	-	-
S-14	652	Lin. ft.	Railing (Aluminum Type A & Concrete Parapet)	600	26	26	-	-	-	-
S-29	20	Cu.Yd.	Porous Backfill	-	10	10	-	-	-	-
S-29	149	Cu.Yd.	Stone Slope Protection (1'-0" thick)	-	68	81	-	-	-	-



DETAIL "A"



SOIL PROFILE

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION

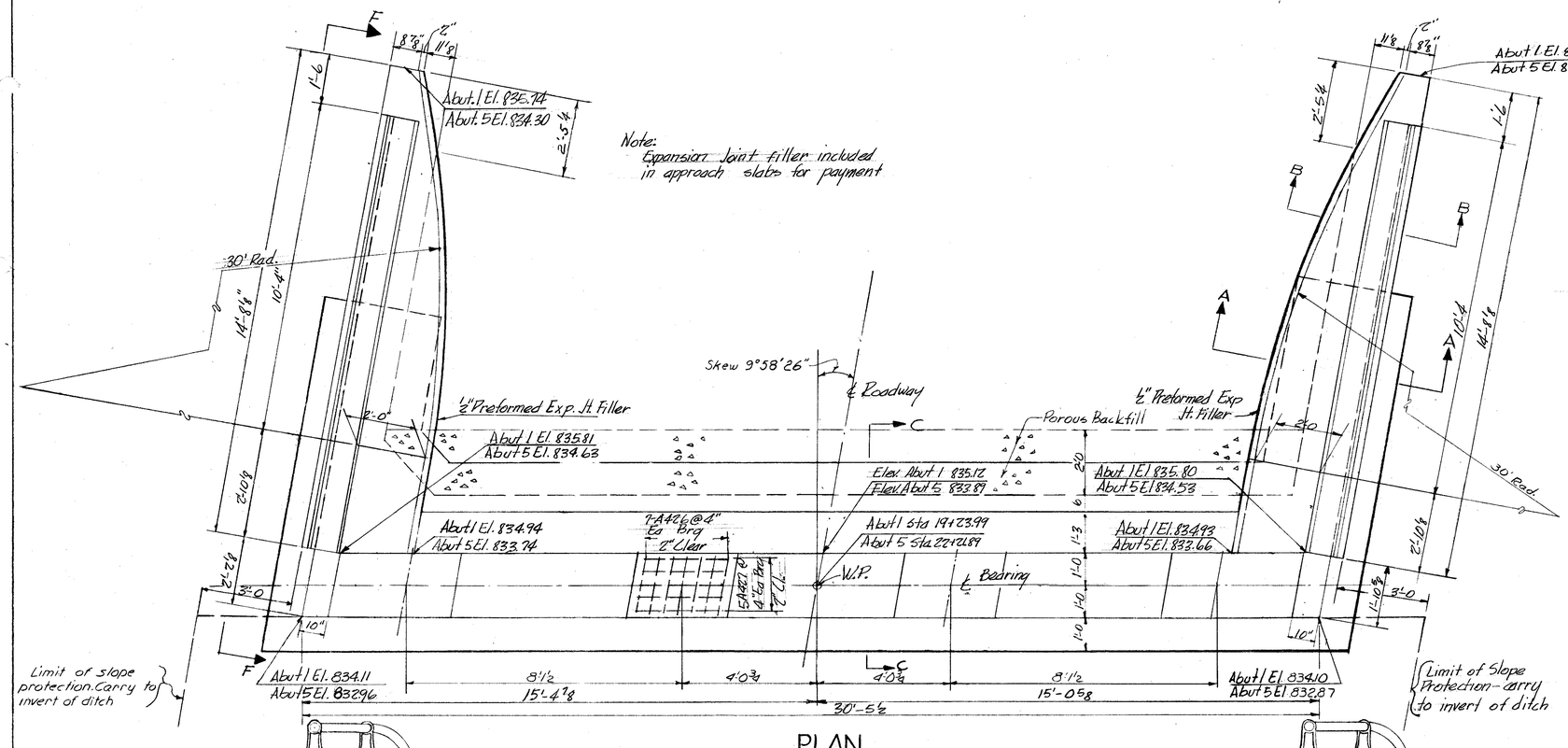
BRIDGE No. LAK-1-2841
SR 1 UNDER COUNTY LINE RD.
LAKE CO
SR 1
STA. 119+07.39

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RGE	MS	AL	RGE	ACA	8/28/57	

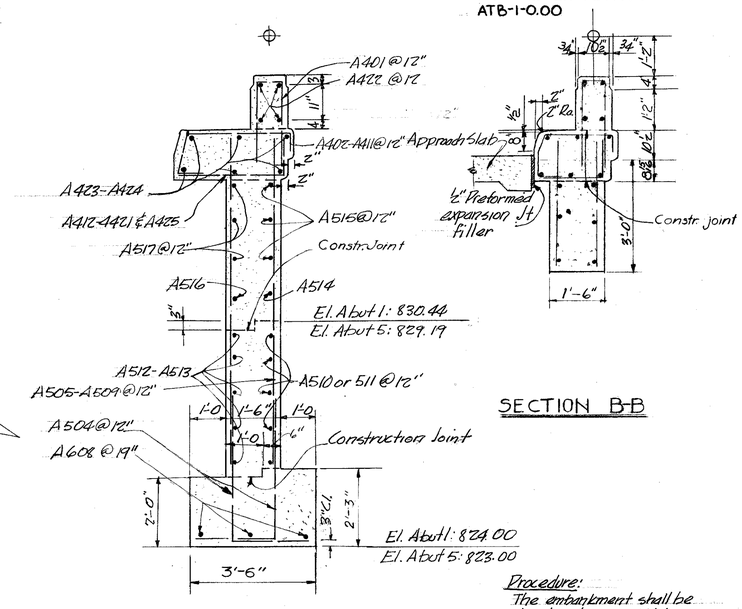
FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

140
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PLAN

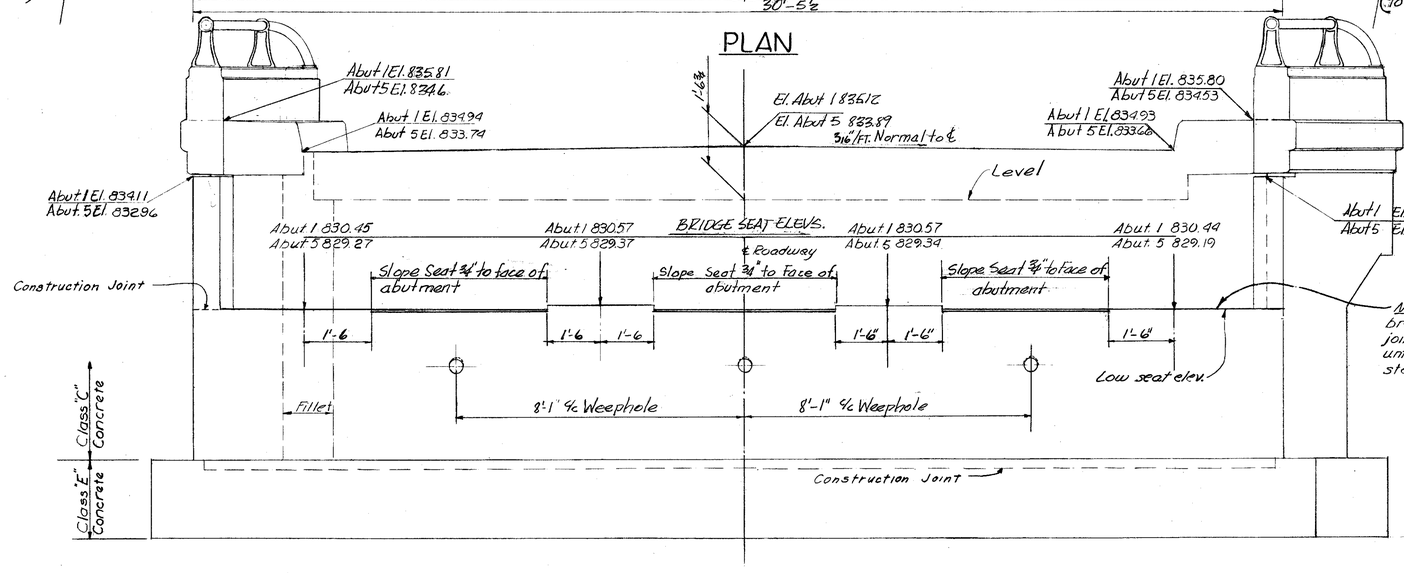


SECTION B-B

SECTION A-A

Procedure:
The embankment shall be placed and compacted to subgrade elevation, after which excavation shall be made for the abutment

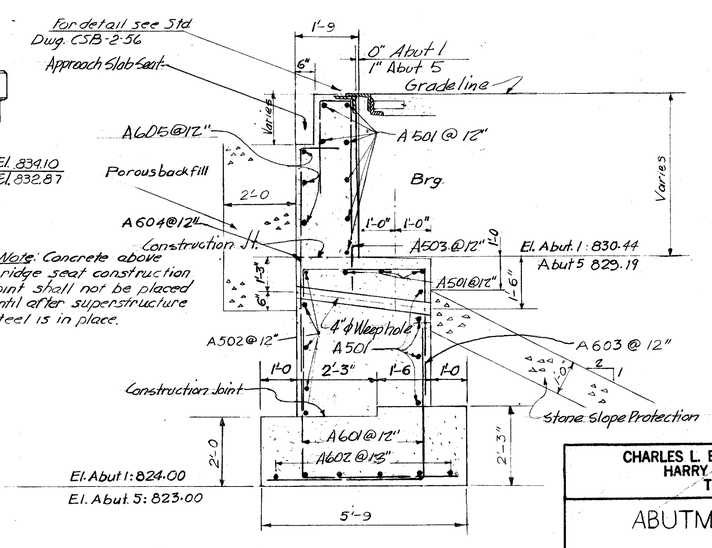
Note:
Reinforcing steel shall clear the face of concrete 2" unless otherwise noted



Note: Concrete above bridge seat construction joint shall not be placed until after superstructure steel is in place.

Note:
Maximum Footing Pressure 3.1 K/□'

ELEVATION



SECTION C-C

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

BRIDGE No. LAK-1-2841
SR 1 UNDER COUNTY LINE RD.
LAKE CO.
SR 1
STA. 119+07.39

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LTT	MS		JPR	ACA.	8/29/57	

FED. RD DIVISION	STATE	FED AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

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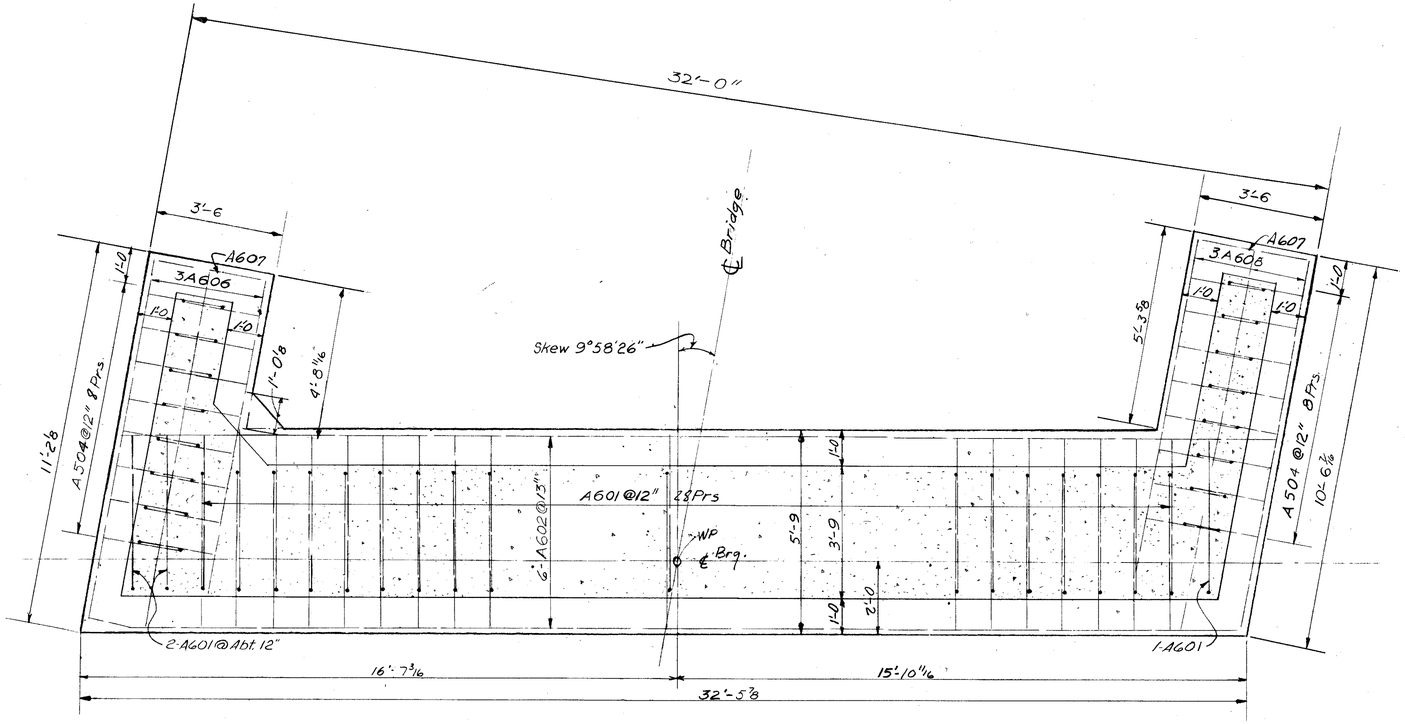
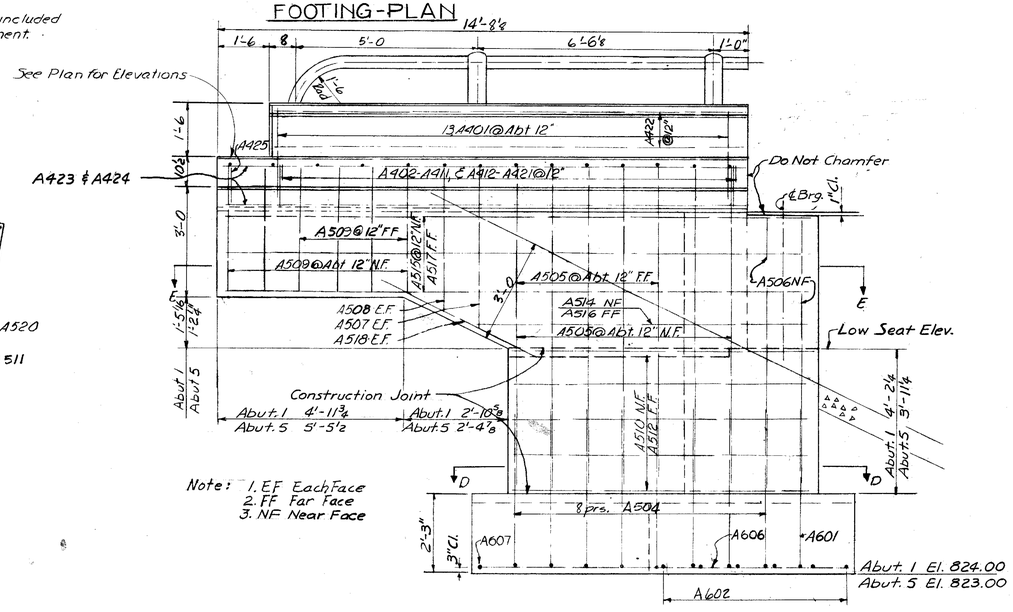
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

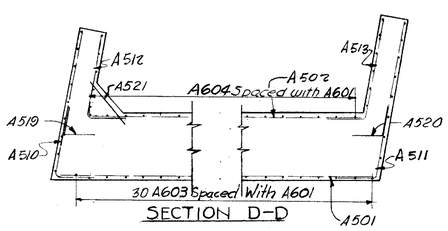


FOOTING-PLAN

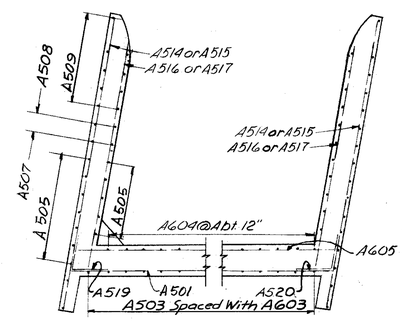
Parapet Concrete included with 5-14 for Payment.



ELEVATION-FF



SECTION D-D



SECTION E-E

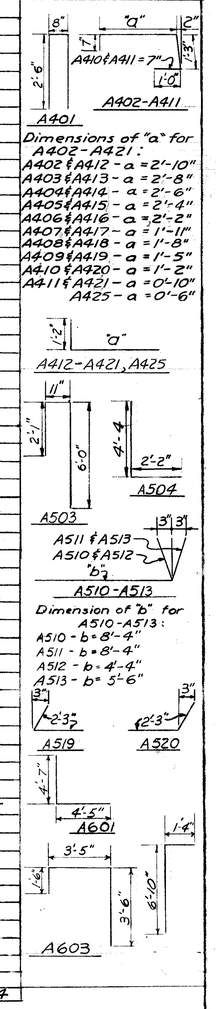
Note: 1. EF Each Face
2. FF Far Face
3. NF Near Face

REINFORCING STEEL LIST

BOTH ABUTMENTS

Mark	Length	Shape	No.	Weight
A401	5'-8"	Bent	52	197
A402	5'-8"	Bent	12	45
A403	5'-6"	Bent	8	29
A404	5'-4"	Bent	4	14
A405	5'-2"	Bent	4	14
A406	5'-0"	Bent	4	13
A407	4'-9"	Bent	4	13
A408	4'-6"	Bent	4	12
A409	4'-3"	Bent	4	11
A410	3'-7"	Bent	4	10
A411	3'-3"	Bent	4	9
A412	4'-0"	Bent	12	32
A413	3'-10"	Bent	8	20
A414	3'-8"	Bent	4	10
A415	3'-6"	Bent	4	9
A416	3'-4"	Bent	4	9
A417	3'-1"	Bent	4	8
A418	2'-10"	Bent	4	8
A419	2'-7	Bent	4	7
A420	2'-4"	Bent	4	6
A421	2'-0"	Bent	4	5
A422	12'-10"	Str.	16	137
A423	10'-0"	Str.	8	53
A424	14'-2"	Str.	16	151
A501	30'-0"	Str.	28	876
A502	27'-8"	Str.	10	289
A503	9'-0"	Bent	56	526
A504	6'-6"	Bent	64	434
A505	8'-10"	Str.	48	442
A506	7'-8"	Str.	8	64
A507	4'-4"	Str.	8	36
A508	3'-10"	Str.	8	32
A509	3'-5"	Str.	40	143
A510	10'-0"	Bent	10	104
A511	10'-0"	Bent	10	104
A512	6'-0"	Bent	10	63
A513	7'-2"	Bent	10	75
A514	9'-4"	Str.	4	39
A515	16'-0"	Str.	12	200
A516	7'-4	Str.	4	31
A517	11'-10"	Str.	12	148
A518	4'-3"	Str.	8	35
A519	4'-6"	Bent	8	38
A520	4'-6"	Bent	8	38
A521	4'-0	Str.	16	67
A601	9'-0"	Bent	118	1595
A602	32'-0"	Str	12	577
A603	8'-6"	Bent	60	759
A604	8'-2"	Bent	56	687
A605	30'-0"	Str.	6	270
A606	10'-8"	Str.	6	96
A607	3'-2"	Str.	4	19
A608	10'-2	Str.	6	93
A425	1'-8"	Bent	4	4
A426	1'-6	Str.	56	56
A427	2'-4	Str.	40	62
			Total	8824

Bar Diagram



CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

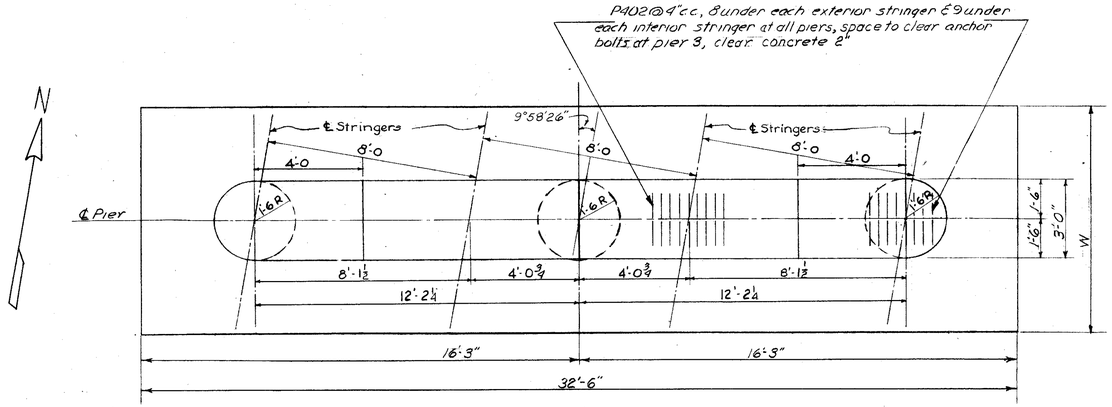
BRIDGE Nº LAK-1-2841
SR 1 UNDER COUNTY LINE RD.
LAKE CO.
SR 1
STA. 119+07.39

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LTT	MS	A.J.S.	JPR	ACA	8/28/57	

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

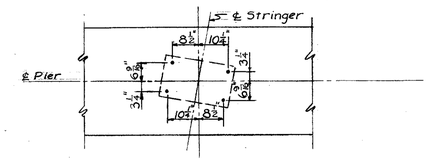
142 / 176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

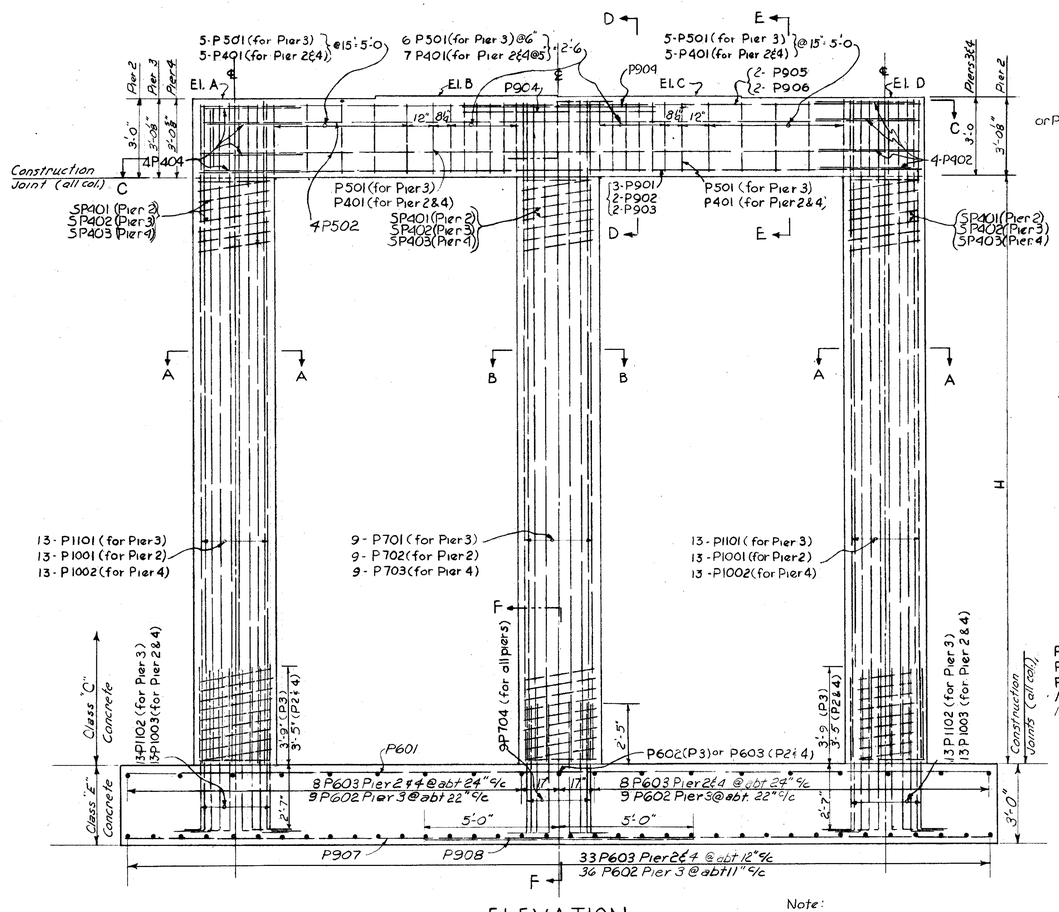


PLAN

	Elev. A	Elev. B	Elev. C	Elev. D	El. bim. fig	W	H
Pier 2	830.09	830.22	830.22	830.10	810.00	8'-6	14'-1⅛
Pier 3	830.23	830.35	830.35	830.22	810.50	9'-0	13'-8⅝
Pier 4	829.74	829.85	829.83	829.49	810.00	8'-6	13'-8¼

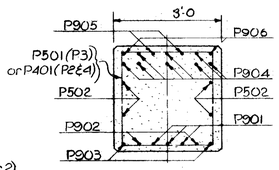


TYPICAL ANCHOR BOLT DETAIL
PIER 3 BOLSTER ONLY

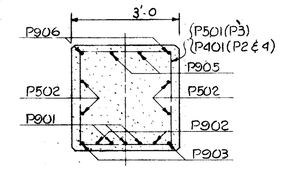


ELEVATION

Note:
Maximum Footing Pressure for Piers
4.9 ⁵⁄₀'



SECTION D-D



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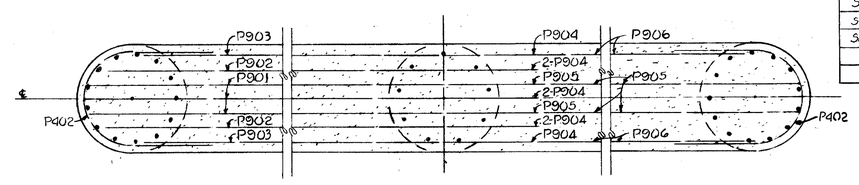
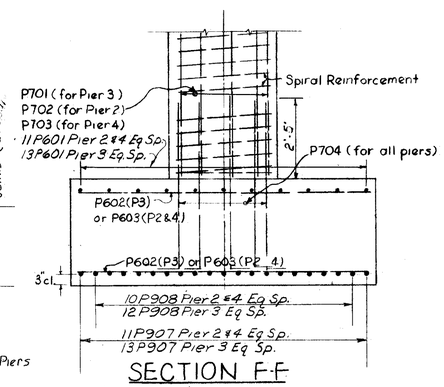
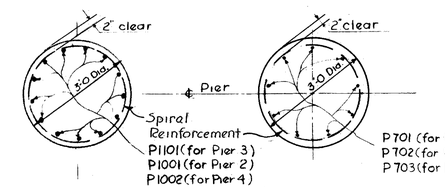


SECTION C-C



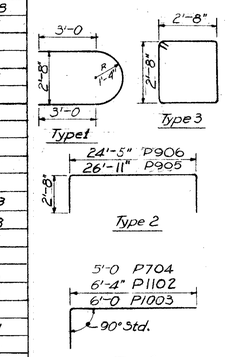
SECTION F-F



SECTION A-A SECTION B-B

REINFORCING STEEL LIST

Mark	No.	Shape	Length	Weight
P1101	26	Str.	16'-5"	2268
P1102	26	Bent-4	7'-1"	978
P1001	26	Str.	16'-9"	1874
P1002	26	Str.	16'-4"	1827
P1003	52	Bent-4	6'-8"	1492
P901	9	Str.	26'-11"	824
P902	6	Str.	26'-4"	537
P903	6	Str.	24'-3"	495
P904	24	Str.	7'-0"	571
P905	6	Bent-2	32'-3"	658
P906	6	Bent-2	29'-9"	607
P907	35	Str.	32'-2"	3828
P908	32	Str.	10'-0"	1088
P701	9	Str.	16'-5"	302
P702	9	Str.	16'-9"	308
P703	9	Str.	16'-4"	300
P704	27	Bent-4	5'-5"	299
P601	35	Str.	32'-2"	1691
P602	55	Str.	8'-8"	716
P603	100	Str.	8'-2"	1227
P501	24	Bent-3	11'-8"	292
P502	12	Str.	24'-5"	306
P401	52	Bent-3	11'-8"	405
P402	24	Bent-1	10'-2	163
P403	102	Str.	2'-0	136
			Total	23,192



Note: Quantities shown in Reinforcing Lists are for three (3) Piers.

SPIRAL REINFORCING STEEL LIST

Mark	No.	Size	Core Dia. % Spiral	Length	Pitch	No. Turns	Weight
SP401	3	½" ϕ	32"	14.09	4½	41	804
SP402	3	½" ϕ	32"	13.72	4½	40	784
SP403	3	½" ϕ	32"	13.69	4½	40	784
						Total	2,372

Notes:

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

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

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

The "No. of Turns" shown in the steel list for the spiral bars is the "Length" divided by the "Pitch", plus 3 turns (total number of closed coils), expressed as the nearest whole number.

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

Reinforcing steel shall clear the face of the concrete by 2" unless otherwise noted.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

PIER DETAILS

BRIDGE No. LAK-1-2841
SR 1 UNDER COUNTY LINE RD.
LAKE CO. SR 1
STA. 119 + 07.39

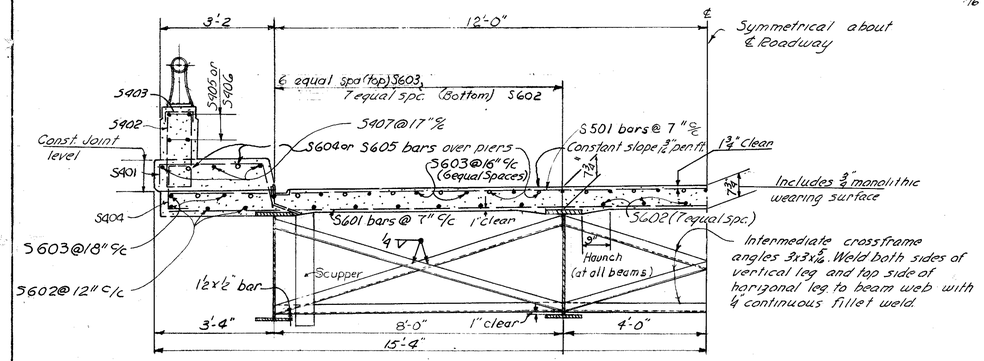
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DMS	CTL		JB	A.C.A	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

143/176

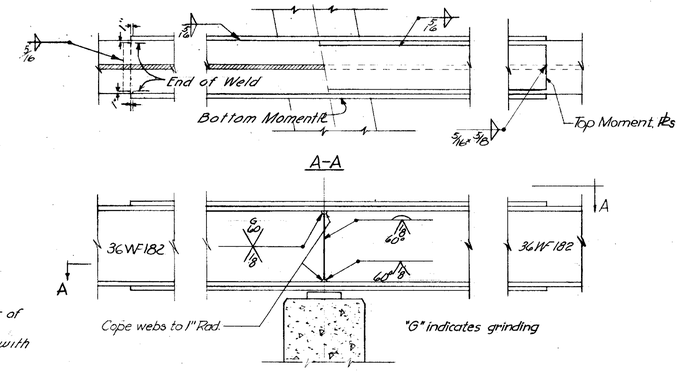
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Parapet concrete included with S-14 for payment.

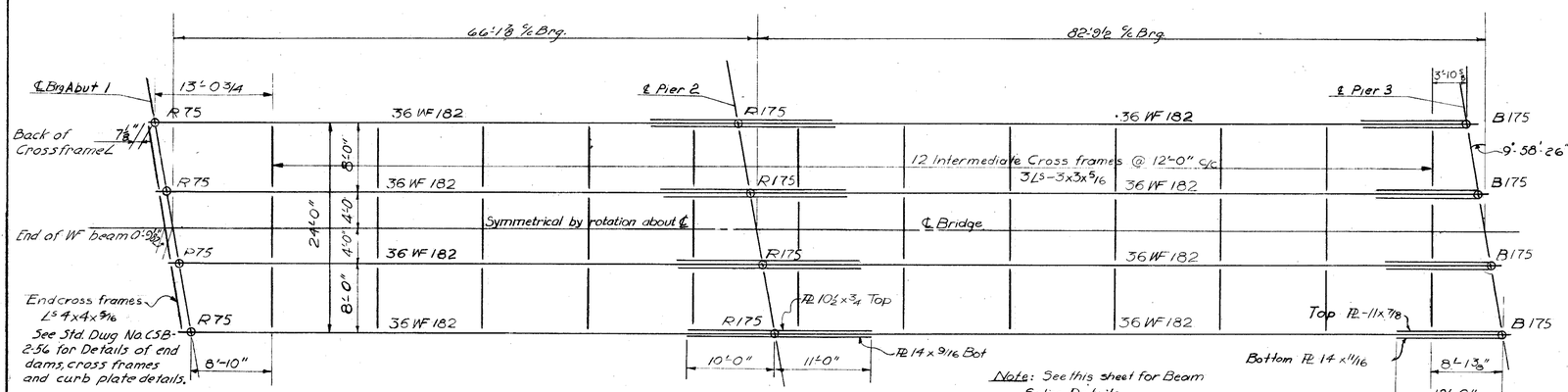


Note: All S401, and S404 bars spaced @14"

HALF CROSS SECTION



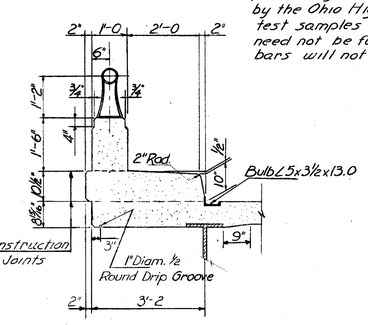
BEAM SPLICE DETAIL



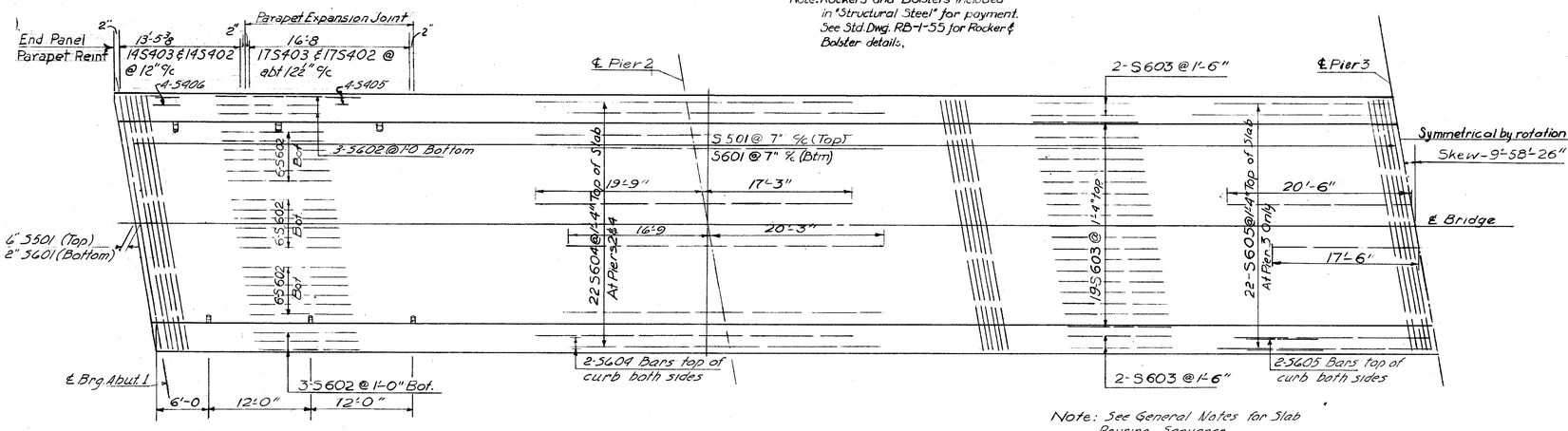
Note: See this sheet for Beam Splice Details

HALF FRAMING PLAN

Note: Rockers and Bolsters included in "Structural Steel" for payment. See Std. Dwg. RB-1-55 for Rocker & Bolster details.



PARAPET DETAILS



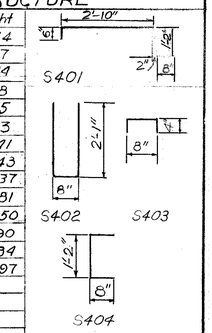
NOTE:
Gutters & Scuppers included in Structual steel for payment. See Std. Dwg. No. CSB-2-56 for details.

HALF SLAB PLAN

Note: See General Notes for Slab Pouring Sequence.

REINFORCING STEEL LIST
SUPER STRUCTURE

Mark	Length	Shape	No.	Weight
S401	5'-2"	Bent	514	1774
S402	4'-10"	Bent	600	1937
S403	1'-4"	Bent	600	534
S404	2'-6"	Bent	514	858
S405	16'-8"	Str.	128	1425
S406	13'-5"	Str.	16	143
S407	34'-5"	Str.	54	1241
S501	30'-5"	Str.	512	16,243
S601	30'-5"	Str.	513	23,937
S602	35'-1"	Str.	216	11,381
S603	29'-1"	Str.	253	11,050
S604	37'-0"	Str.	52	2890
S605	38'-0"	Str.	26	1484
			Total	74,397



Note
Replacement Bars: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Labratory, test samples as provided in Sec. S-402 need not be furnished and replacement bars will not be required.

REPLACEMENT BARS				
MARK	LENGTH	SHAPE	NO.	
RB401	5-3	Str.	1	
RB501	5-7	Str.	2	
RB601	5-11	Str.	3	
RB701	6-3	Str.	1	
RB901	6-10	Str.	1	
RB1001	7-3	Str.	1	
RB1101	7-7	Str.	1	

DEFLECTIONS and CAMBERS

LOCATION	OUTSIDE BEAM SPAN 1	SPAN 2	SPAN 3	SPAN 4	INSIDE BEAM SPAN 1	SPAN 2	SPAN 3	SPAN 4
DEFLECTION DUE TO WEIGHT OF STEEL	3/32	1/8	1/8	3/32	3/32	1/8	1/8	3/32
DEFLECTION DUE TO REMAINING DEAD LOAD	27/32	1 3/16	1 3/16	27/32	1/2	23/32	11/16	1/2
CONVEXITY REQUIRED FOR VERTICAL CURVE	0	0	1 3/16	3/4	0	0	1 3/16	3/4
SUM OF DEFLECTION AND CONVEXITY	15/16	1 5/16	2 1/2	1 11/16	19/32	27/32	2	1 3/8
REQUIRED CAMBER	1	1 5/16	2 1/2	1 11/16	0	1	2	1 3/8

Where No Camber is required the Beams shall be so fabricated that any curved Beam will be placed with Convex Flange up.

BEAM SPLICE WELDING PROCEDURE

1. Erect Span 2 & 3 Beams first.
2. Raise the Pier No. 2 end of Span No. 2 Beams 4".
3. Butt Weld the Beam Flanges and Webs at Pier No. 3, Using the following sequence: Make one pass on each Flange, then one on the Web; repeat until welds are complete.
4. Weld the Bottom and Top Moment ℔s.
5. Lower the Pier No. 2 end of Span No. 2 to the final position.
6. Raise the abutment end of Span No. 1 - 1 5/8".
7. Repeat steps 3 and 4 at Pier No. 2
8. Lower abutment end of Span No. 1 to final position.
9. Repeat steps 3, 4, 6, & 8 at Pier 4 and abutment 5.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

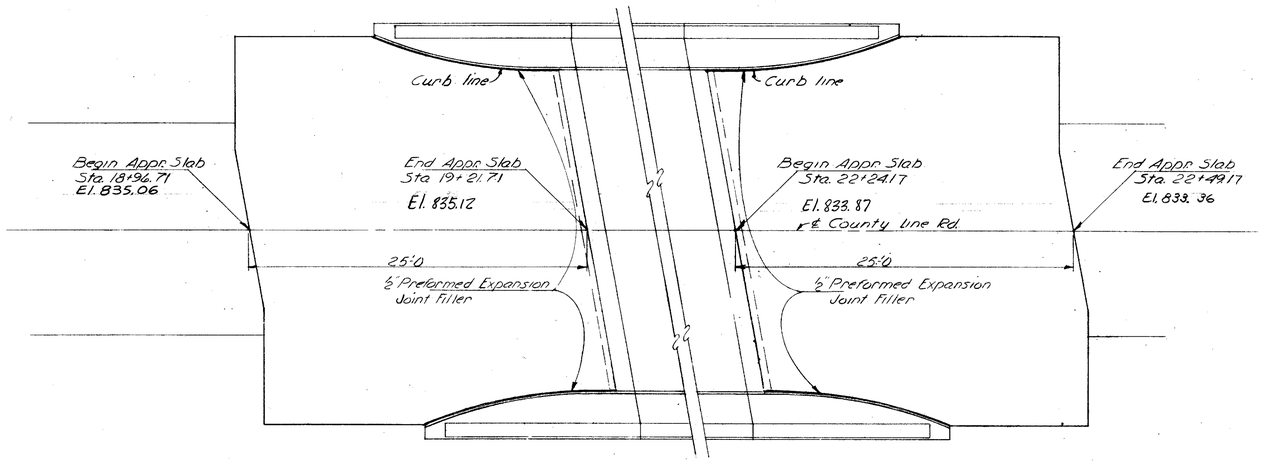
SUPERSTRUCTURE DETAILS

BRIDGE Nº LAK-1-2841
SR 1 UNDER COUNTY LINE RD.
LAKE CO. SR 1
STA. 119+07.39

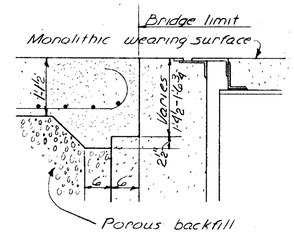
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.G.E	W.H.		R.G.E	A.C.A.	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

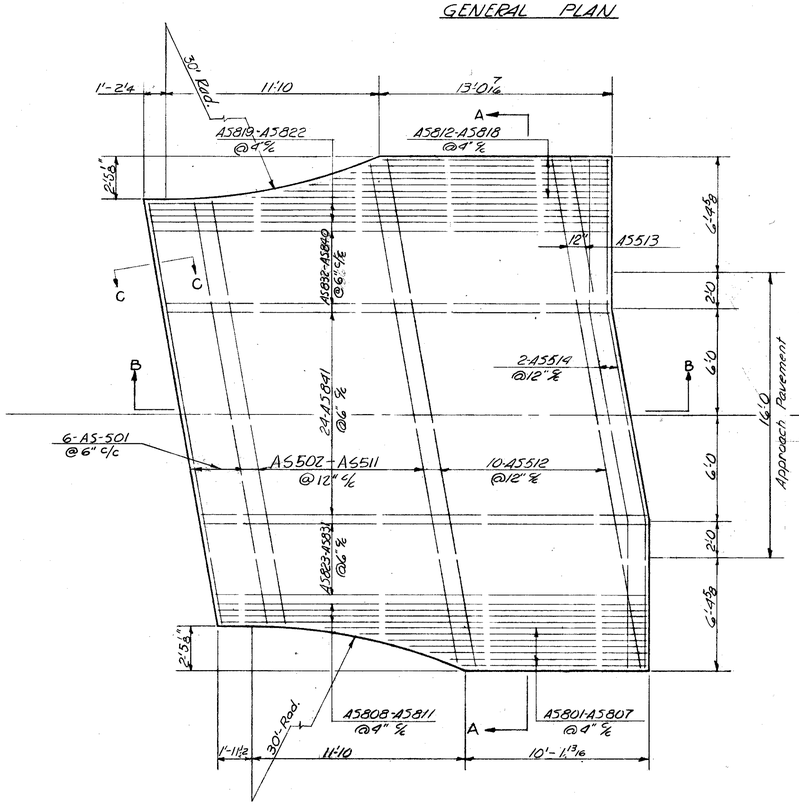
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



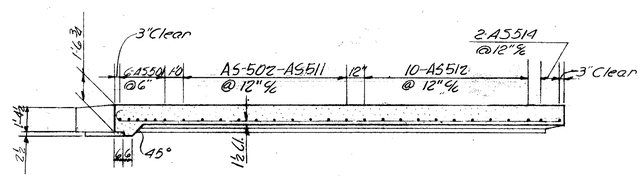
GENERAL PLAN



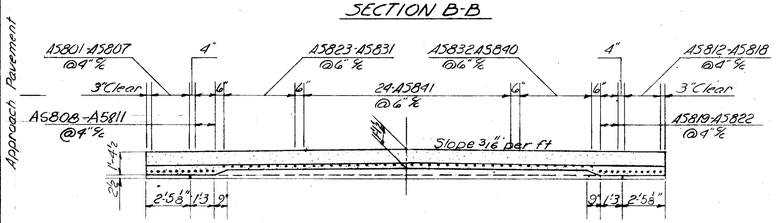
SECTION C-C



PLAN



SECTION B-B



SECTION A-A

✱NOTE:—This Reinforcing Steel is included in the item "Reinforced Concrete Approach Slab Item I-7" and is not paid for separately.

NOTE:
½" preformed expansion joint filler included in Item I-7 for payment.

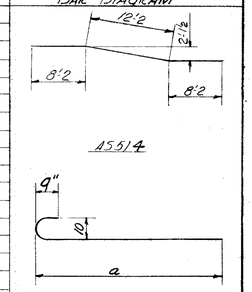
Notes:
Approach Slabs to be class "C" concrete.
In the reinforcing steel bar marks the numeral following the second letter is the Bar Number which indicates the size of the bar.

STATION TO STATION	REINFORCED CONCRETE APPROACH SLABS ITEM I-7
18+96.71 - 19+21.71	76 sq. yd.
22+24.17 - 22+49.17	76 sq. yd.
TOTAL	152 sq. yd.

REINFORCING STEEL LIST ✱
BOTH APPROACH SLABS

MARK	LENGTH	SHAPE	NO.	WT.
A5501	24'-0	Str.	12	300
A5502	24'-1	Str.	2	50
A5503	24'-3	Str.	2	51
A5504	24'-7	Str.	2	51
A5505	25'-1	Str.	2	52
A5506	25'-3	Str.	2	53
A5507	25'-8	Str.	2	54
A5508	26'-2	Str.	2	55
A5509	26'-8	Str.	2	56
A5510	27'-5	Str.	2	57
A5511	28'-2	Str.	2	59
A5512	29'-0	Str.	20	60
A5513	8'-5	Str.	2	18
A5514	28'-6	Bent	4	119
A5801	9'-9	Str.	2	52
A5802	10'-11	Str.	2	58
A5803	12'-0	Str.	2	64
A5804	13'-0	Str.	2	69
A5805	14'-1	Str.	2	75
A5806	15'-9	Str.	2	84
A5807	17'-5	Str.	2	93
A5808-9	24'-7	Bent	4	263
A5810-11	24'-9	Bent	4	264
A5812	20'-10	Str.	2	111
A5813	18'-8	Str.	2	100
A5814	17'-0	Str.	2	91
A5815	16'-0	Str.	2	85
A5816	15'-0	Str.	2	80
A5817	14'-0	Str.	2	75
A5818	12'-8	Str.	2	68
A5819-20	26'-10	Bent	4	287
A5821-22	28'-8	Bent	4	306
A5823	24'-11	Bent	2	133
A5824	25'-0	Bent	2	134
A5825	25'-1	Bent	2	134
A5826	25'-3	Bent	2	135
A5827	25'-4	Bent	2	135
A5828	25'-5	Bent	2	136
A5829	25'-6	Bent	2	136
A5830	25'-7	Bent	2	137
A5831	25'-8	Bent	2	137
A5832	25'-10	Bent	2	138
A5833	25'-11	Bent	2	138
A5834	26'-0	Bent	2	139
A5835	26'-1	Bent	2	139
A5836	26'-2	Bent	2	140
A5837	26'-3	Bent	2	140
A5838	26'-4	Bent	2	141
A5839	26'-6	Bent	2	142
A5840	26'-7	Bent	2	142
A5841	25'-9	Bent	48	3,300
		Total		9036

BAR DIAGRAM



A5808-A5809	a = 23'-6
A5810-A5811	a = 23'-8
A5819-A5820	a = 25'-0
A5821-A5822	a = 27'-7
A5823	a = 23'-10
A5824	a = 23'-11
A5825	a = 24'-0
A5826	a = 24'-2
A5827	a = 24'-3
A5828	a = 24'-4
A5829	a = 24'-5
A5830	a = 24'-6
A5831	a = 24'-7
A5832	a = 24'-9
A5833	a = 24'-10
A5834	a = 24'-11
A5835	a = 25'-0
A5836	a = 25'-1
A5837	a = 25'-2
A5838	a = 25'-3
A5839	a = 25'-5
A5840	a = 25'-6
A5841	a = 24'-8

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

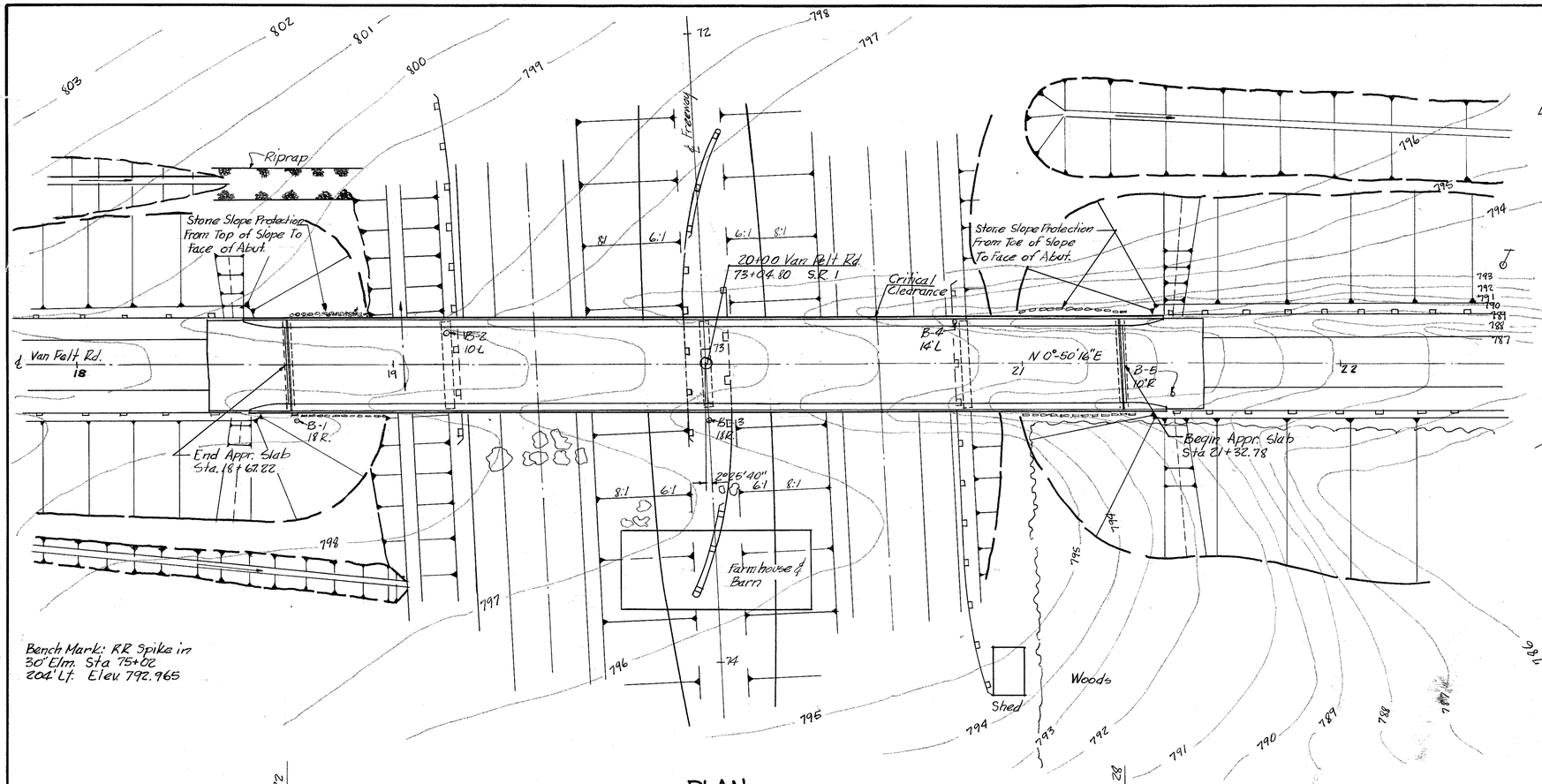
APPROACH SLAB DETAILS

BRIDGE Nº LAK-1-2841
SR 1 UNDER COUNTY LINE RD.
LAKE CO. SR 1
STA. 119+07.39

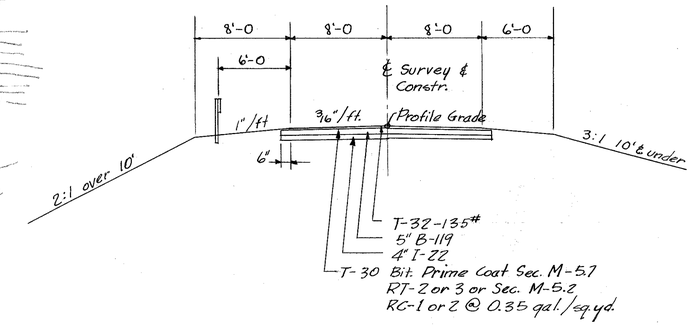
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RTS	D.G.		JPR	ACA	8/28/57	

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR	145 / 176
2	OHIO	I-1103(15)		

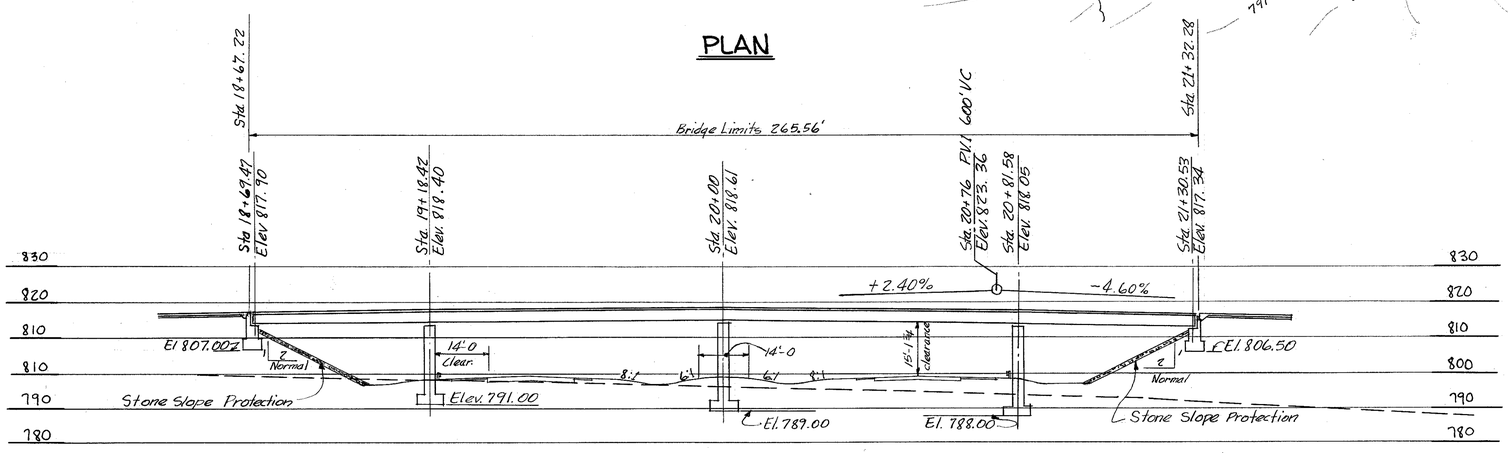
LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



PLAN



TYPICAL SECTION THRU APPROACH PAVEMENT



SECTION ALONG ℄

PROPOSED STRUCTURE

Type: Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
Span: 48'-11¾", 81'-7", 81'-7", 48'-11¾" ℄ Brg.
Roadway: 24'-0 ±/r Safety Curbs
Load Frequency: C.F. = 30 (51)
Skew: 2° 25'40" R.F.
Wearing Surface: ½" Monolithic Conc.
Approach Slabs: 25'-0 Long
Alignment: Tangent
Safety curb: 2'-0 each side

NOTES
Foundation Soundings - Foundation design and foundation quantities are based on a study of soil sampling soundings made of the site. This sounding information may be inspected at the Inter-State Projects Office in Columbus or in the Division office, but the State assumes no responsibility for the accuracy thereof.

1955 TRAFFIC 60 VPD with under 30 combination trucks

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SITE PLAN

BRIDGE No. ATB-I-0138
SR1 UNDER VAN PELT RD.
ASHTABULA CO. SR1
STA: 73+04.80

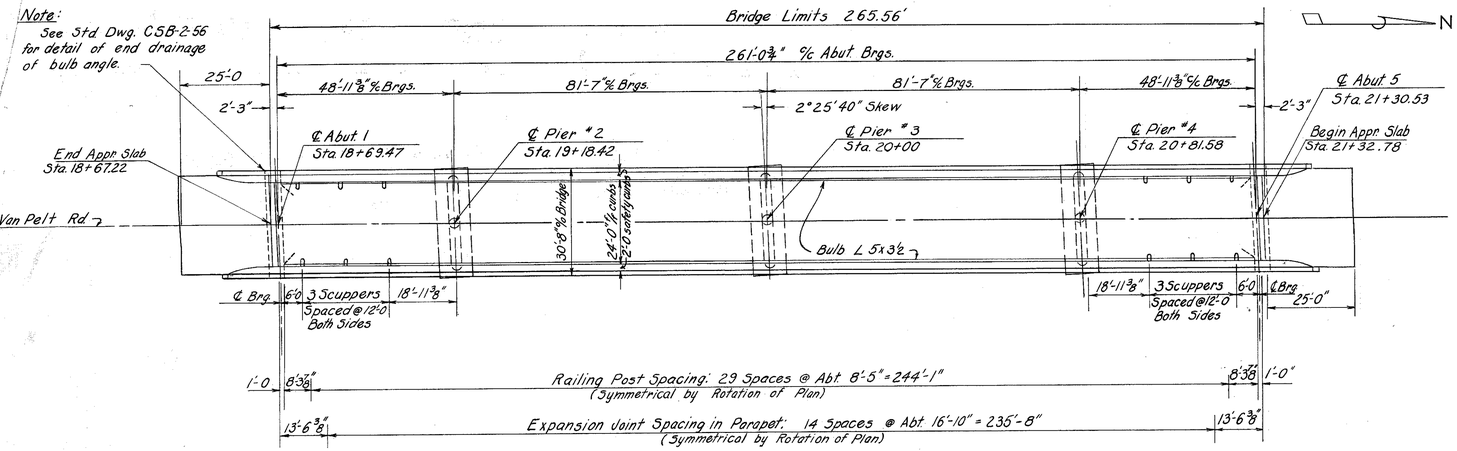
SCALE: 1" = 20'-0"

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
VAL	DAP	RGE	DKM	JJB	A.C.A

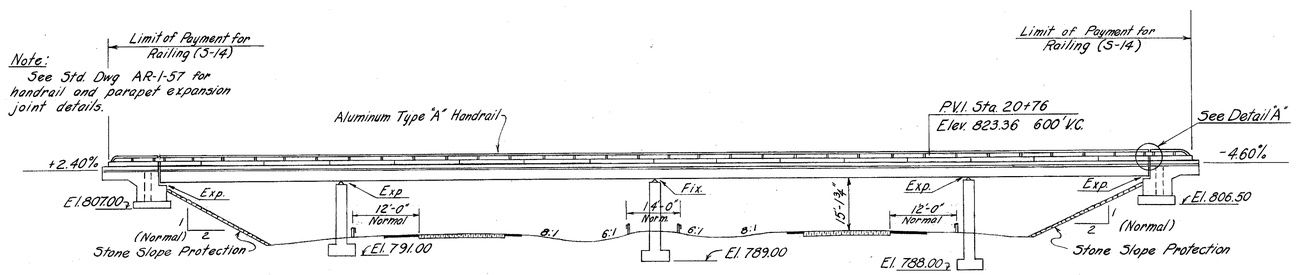
FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

146
176

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00



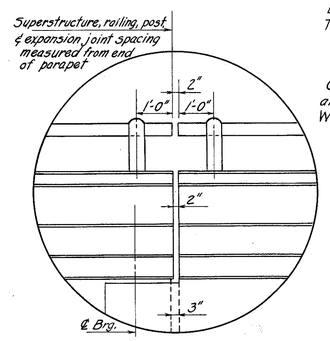
GENERAL PLAN



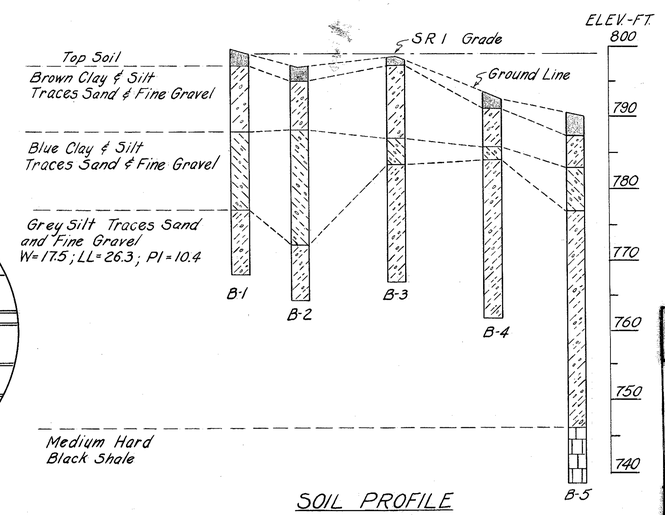
ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Abut 1	Abut 5	Pier 2	Pier 3	Pier 4	Genl.
E 2	452	Cu. Yd.	Excavation for Structures	–	85	85	99	106	77	
E 2	L. S.	L. S.	Cofferdams, Cribs, & Sheeting							L. S.
S 1	231	Cu. Yd.	Class "C" Concrete (Superstructure)	231						
S 1	70	Cu. Yd.	Class "C" Concrete (Pier Caps & Cols.)				22	24	24	
S 1	74	Cu. Yd.	Class "C" Concrete (Abutment above footings)		37	37				
S 1	131	Cu. Yd.	Class "E" Concrete (Pier & Abutment Footings)		17	17	33	32	32	
S 4	93,696	Lbs.	Reinforcing Steel	60,605	4408	4409	←	24,274	→	
S 7	214,814	Lbs.	Structural Steel	214,814						
S 8	214,814	Lbs.	Field Painting of Structural Steel	214,814						
S 14	578	Lin. Ft.	Railing (Aluminum Type "A" & Concrete Parapet)	526	26	26				
S 29	18	Cu. Yd.	Porous Backfill		9	9				
S 29	93	Cu. Yd.	Stone Slope Protection (1'-0" thick)		47	46				



DETAIL "A"



SOIL PROFILE

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-2-56 sheets 2 of 6 and 3 of 6 dated December 3, 1956, RB-1-55 dated March 1, 1955, AR-1-57, dated April 3, 1957, and supplemental specifications No. S-114, revised August 1, 1957.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated October 1, 1951, together with revisions thereof dated July 15, 1952, April 1, 1954 and February 1, 1955.

CONCRETE: Superstructure, columns, caps and abutments above footings shall be "Class C concrete". Abutments footings and pier footings shall be "Class E concrete."

DECK CONSTRUCTION PROCEDURE: 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 normal to the center line of bridge and are located near the center of any span.

EXCAVATION QUANTITIES: shall be as outlined in Sec. E-2 and includes the removal of material from finished grade down or original ground down, whichever is the lower in elevation. Abutment excavation quantities include the removal of fill material between the surface of the embankment and the bottom of the abutment. Backfilling will be included in the cost of excavation.

STONE SLOPE PROTECTION extending from face of abutment to invert of ditch shall be provided at all abutments. Protection shall be a minimum of 12 inches thick, measured perpendicular to the slope, and shall extend 3 feet past outside limits of structure. Stone material shall meet the requirements of Section S-29.02 for porous drains.

WELDING: All welding shall be Class "A" unless otherwise shown. Any weld shown as field weld may be made in the shop at the option of the Contractor.

WELDED STEEL: The steel for all rolled beams and moment plates with a thickness greater than 1" shall conform to ASTM Designation A-373. All other structural steel shall conform to either ASTM A-7 (per Sec. M-7.4(a) of the Construction and Material Specifications) or to A-373.

BAR SIZE for reinforcing steel is indicated in the bar mark. The first digit indicates bar size number. For example, S601 is a No. 6 size bar and A1014 is a No. 10 size.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

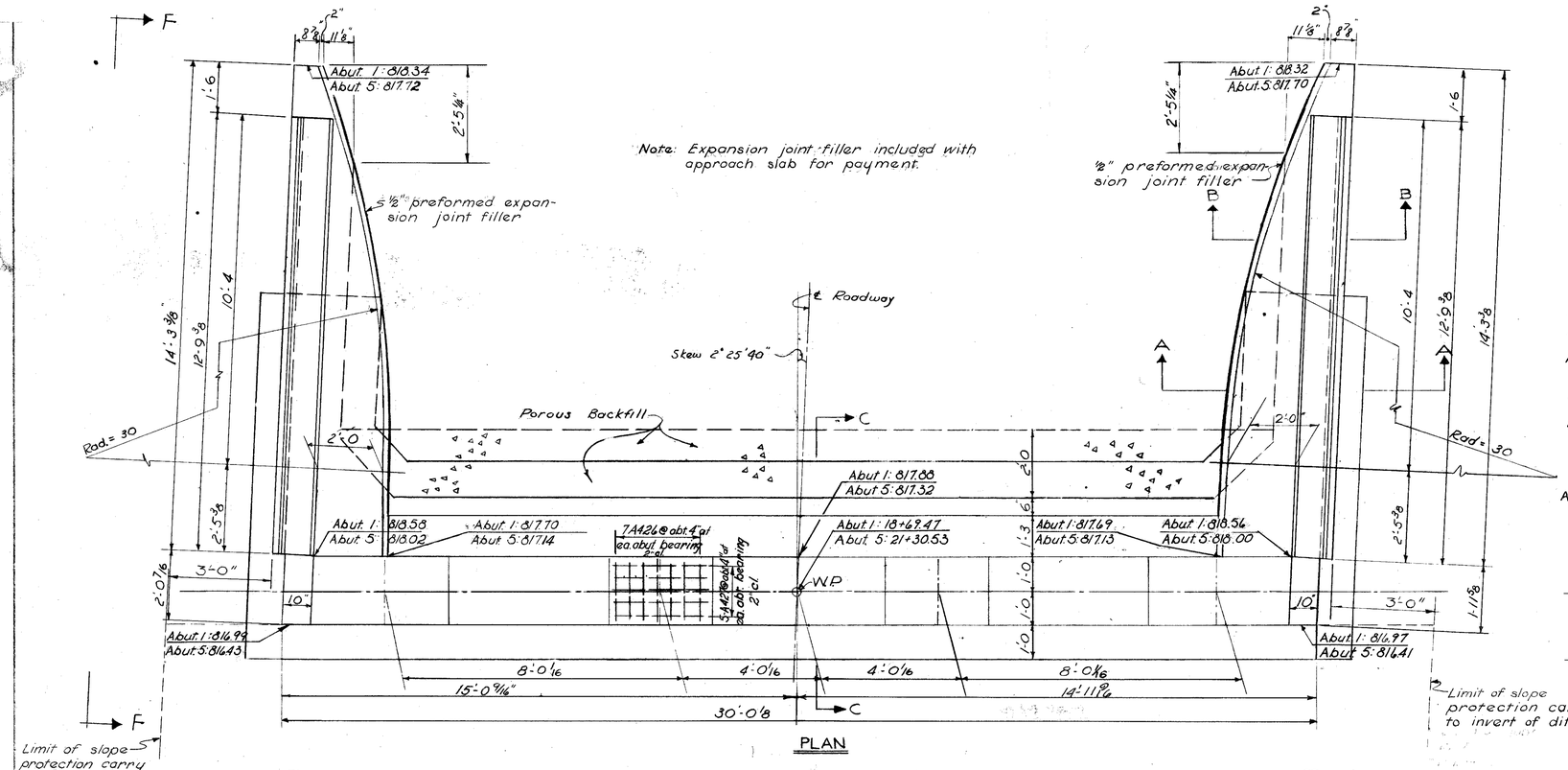
GENERAL PLAN & ELEVATION

BRIDGE Nº ATB-1-0138
SR 1 UNDER VAN PELT RD.
ASHTABULA CO. SR 1
STA. 73+04.80

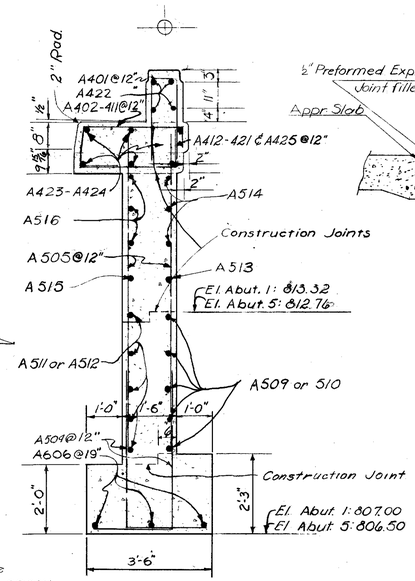
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.T.L.	MS		R.G.E.	ACA	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

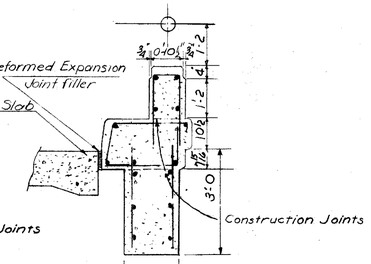
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



PLAN



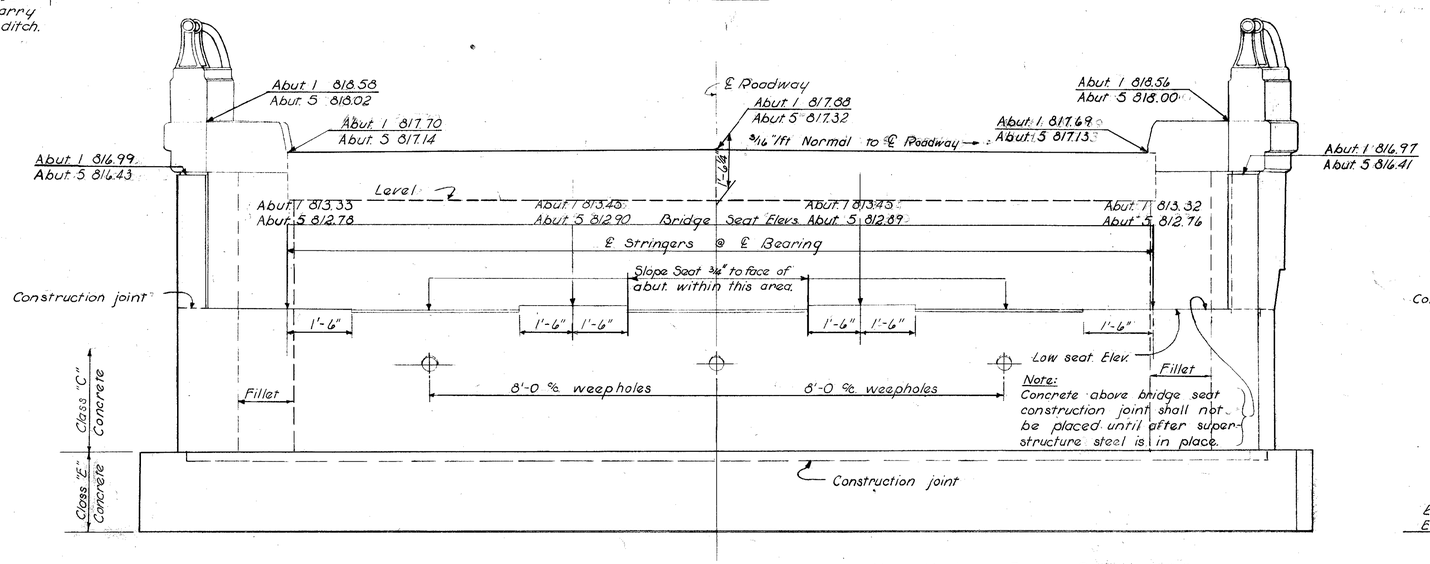
SECTION A-A



SECTION B-B

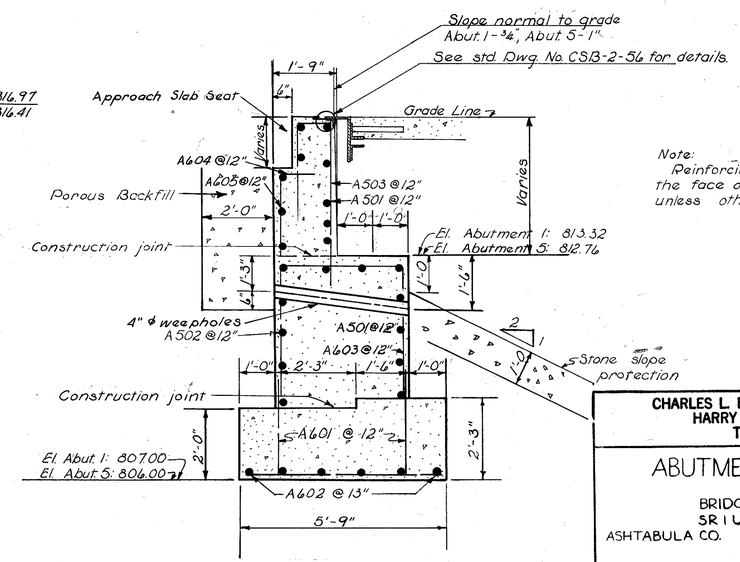
PROCEDURE: The embankment shall be placed and compacted to the subgrade elevation after which excavation shall be made for the Abutments.

~~PROCEDURE: The embankment shall~~



ELEVATION

Note: Maximum Footing Pressure 3.0 K/□'.



SECTION C-C

Note:
Reinforcing steel shall clear the face of the concrete by 2" unless otherwise noted.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

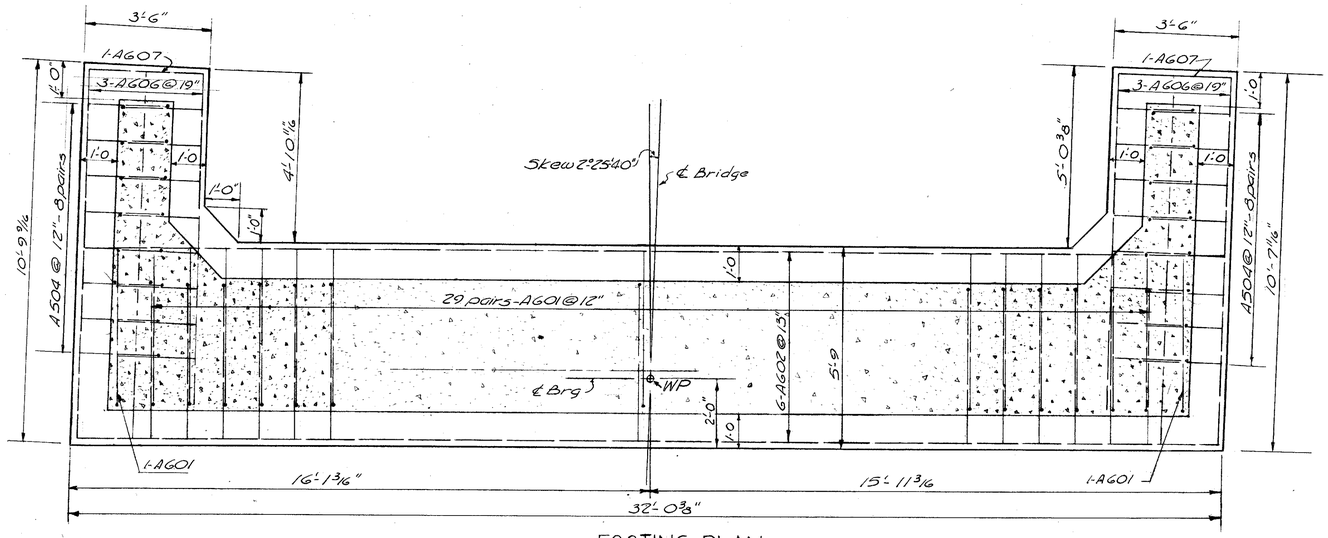
BRIDGE No. ATB- 1-0138
SR 1 UNDER VAN PELT RD.
ASHTABULA CO. SR 1
STA. 73+04.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CTL	GS		JPR	ACA	8/28/57	

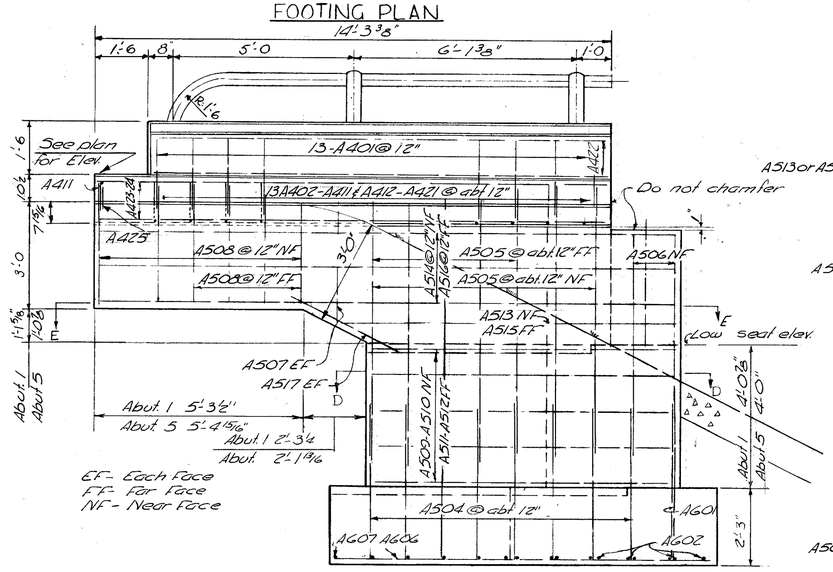
FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

148
176

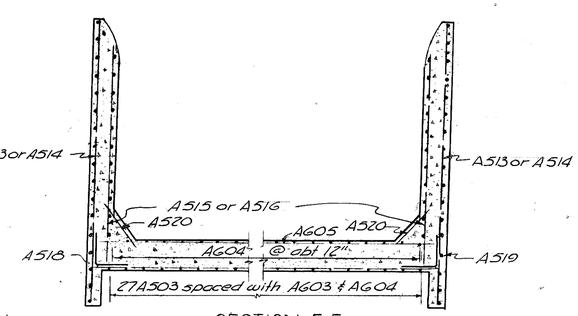
LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



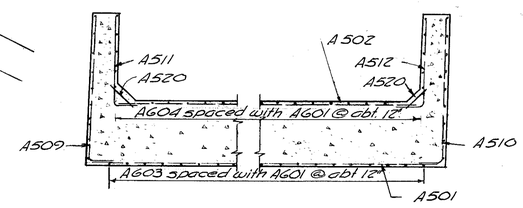
FOOTING PLAN



ELEVATION F-F



SECTION E-E

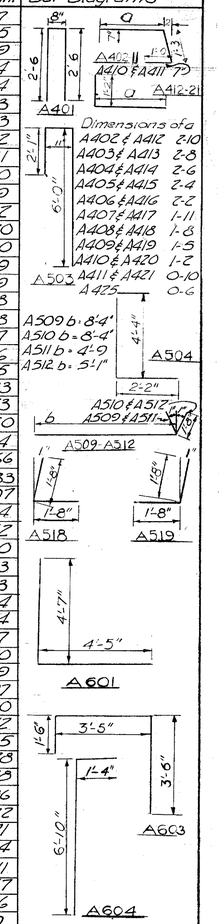


SECTION D-D

REINFORCING STEEL LIST
BOTH ABUTMENTS

Mark	Length	Shape	No.	Weight
A401	5'-8"	Bent	52	197
A402	5'-8"	Bent	12	45
A403	5'-6"	Bent	8	29
A404	5'-4"	Bent	4	14
A405	5'-2"	Bent	4	14
A406	5'-0"	Bent	4	13
A407	4'-9"	Bent	4	13
A408	4'-6"	Bent	4	12
A409	4'-3"	Bent	4	11
A410	3'-7"	Bent	4	10
A411	3'-3"	Bent	4	9
A412	4'-0"	Bent	12	32
A413	3'-10"	Bent	8	20
A414	3'-8"	Bent	4	10
A415	3'-6"	Bent	4	9
A416	3'-4"	Bent	4	9
A417	3'-1"	Bent	4	8
A418	2'-10"	Bent	4	8
A419	2'-7"	Bent	4	7
A420	2'-4"	Bent	4	6
A421	2'-0"	Bent	4	5
A422	12'-5"	Str.	16	133
A423	10'-0"	Str.	8	53
A424	14'-0"	Str.	16	150
A425	1'-8"	Bent	4	4
A501	29'-8"	Str.	28	866
A502	27'-2"	Str.	10	283
A503	9'-0"	Bent	54	507
A504	6'-6"	Bent	64	434
A505	8'-10"	Str.	48	442
A506	7'-3"	Str.	8	60
A507	3'-11"	Str.	8	33
A508	3'-5"	Str.	40	143
A509	10'-0"	Bent	10	104
A510	10'-0"	Bent	10	104
A511	6'-5"	Bent	10	67
A512	6'-9	Bent	10	70
A513	9'-4"	Str.	4	39
A514	15'-9"	Str.	12	197
A515	7'-3"	Str.	4	30
A516	11'-4"	Str.	12	142
A517	4'-3"	Str.	8	35
A518	3'-4"	Bent	8	28
A519	3'-4"	Bent	8	28
A520	3'-2"	Str.	32	106
A601	9'-0"	Bent	120	1622
A602	31'-8"	Str.	12	571
A603	8'-5"	Bent	62	784
A604	8'-2"	Bent	58	711
A605	29'-8"	Str.	6	267
A606	10'-4"	Str.	12	186
A607	3'-2"	Str.	4	19
A426	1'-6"	Str.	56	56
A427	2'-4"	Str.	40	62
		Total.....		8817

Bar Diagrams



CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

BRIDGE No. ATB-~~21~~ 1-0138-0138
SR 1 UNDER VAN PELT RD.
ASHTABULA CO. SR 1
STA. 73+04.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CTL	EFS		JPR	ACA	8/28/57	

FED. RD DIVISION	STATE	FED AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

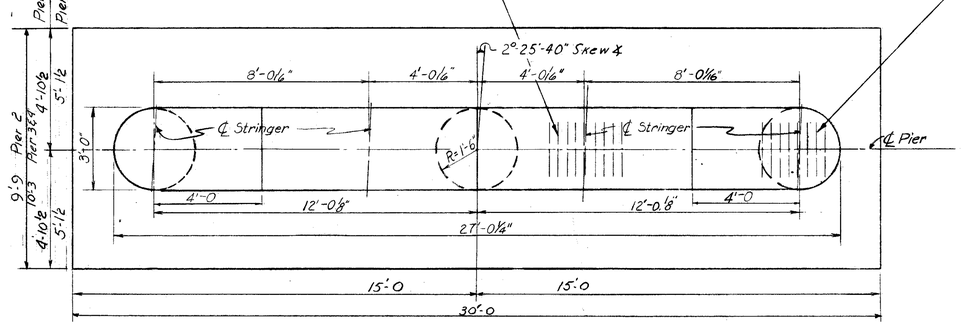
149 / 176

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

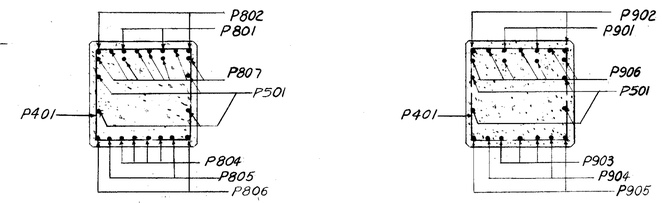
Note:
P403 @ 4" c-c, 8 under each exterior stringer & 9 under each interior stringer at all piers. Space to clear anchor bolts at pier 3. Clear concrete 2".

Note:
Reinforcing steel shall clear the face of the concrete by 2" unless otherwise noted.

	Elev. A	Elev. B	Elev. C	Elev. D	El. Bott. Ftg.	H
Pier 2	813.47	813.59	813.60	813.47	791.00	16'-5 5/8"
Pier 3	813.53	813.65	813.65	813.53	789.00	18'-6 5/8"
Pier 4	813.13	813.25	813.25	813.12	788.00	19'-1 1/16"

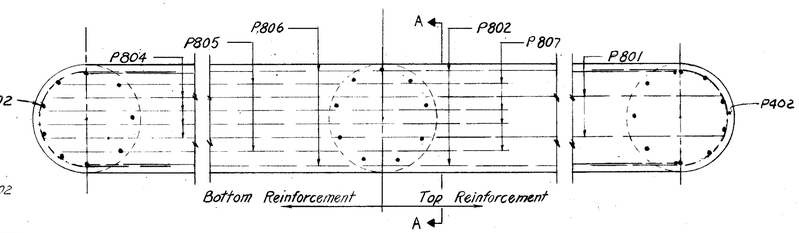


PLAN

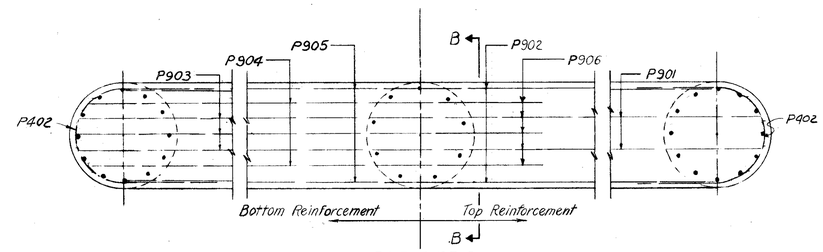


SECTION A-A

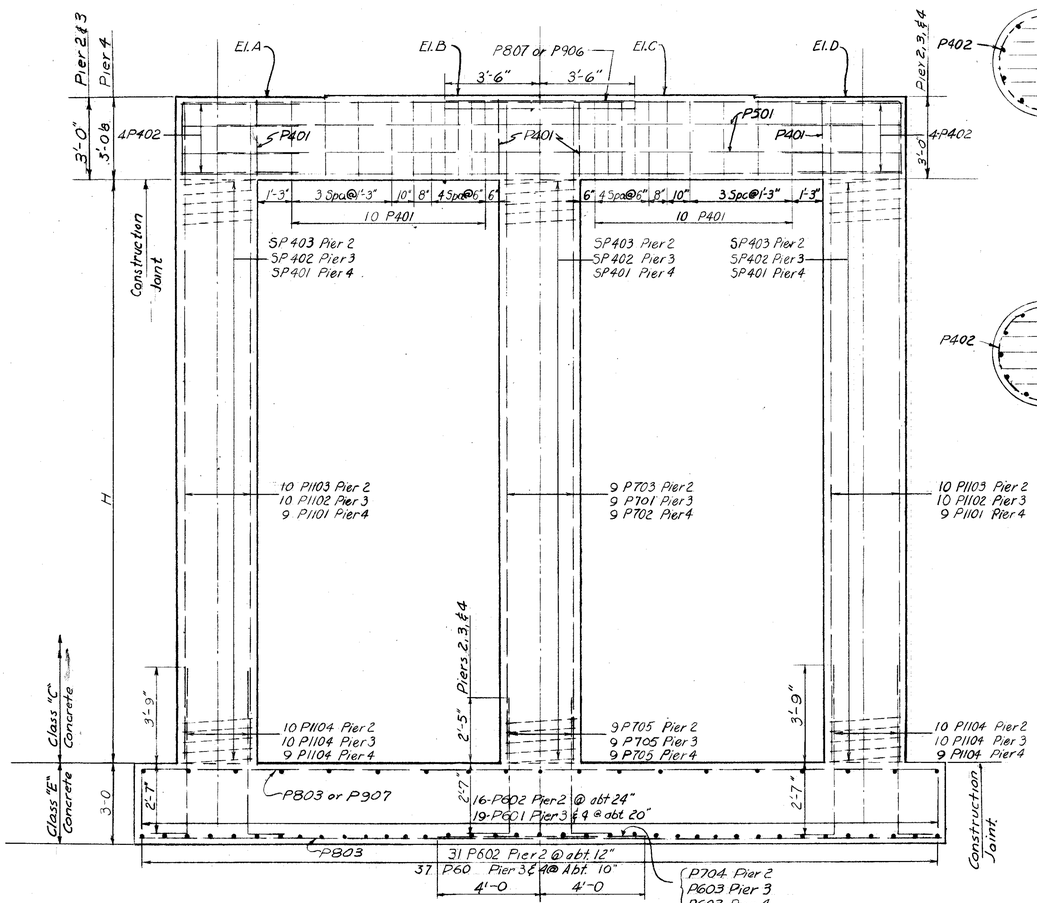
SECTION B-B



CAP PIER 2 OR PIER 4
(PIER 4 COLUMN STEEL SHOWN)

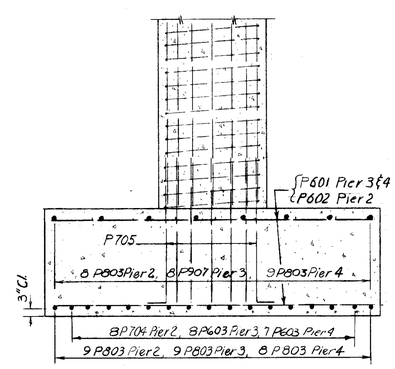


CAP PIER 3
(PIER 2 & 3 COLUMN STEEL SHOWN)

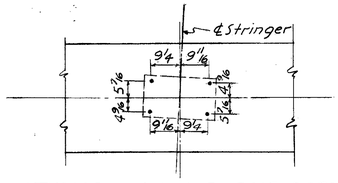


ELEVATION

Note: Maximum footing pressure 4.9 #/□".



SECTION THROUGH INTERIOR COLUMN

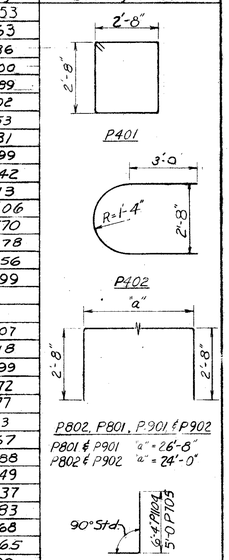


TYPICAL ANCHOR BOLT DETAIL
B175 BOLSTER PIER 3

REINFORCING STEEL LIST
THREE PIERS

Mk	Length	Shape	No	Weight
P401	11'-6"	Bent	72	553
P402	10'-2	Bent	24	163
P403	2'-0	Str.	102	136
P501	24'-0	Str.	12	300
P701	21'-2"	Str.	9	389
P702	21'-10"	Str.	9	402
P703	19'-2"	Str.	9	353
P704	8'-0	Str.	8	131
P705	5'-5"	Bent	27	299
P801	32-0	Bent	4	342
P802	29'-4"	Bent	4	313
P803	29'-8"	Str.	43	3406
P804	26-8"	Str.	8	570
P805	26-0	Str.	4	278
P806	24'-0	Str.	4	256
P807	7'-0	Str.	16	299
P907	29'-8	Str.	8	807
P901	32-0	Bent	2	218
P902	29'-4"	Bent	2	199
P903	26-8	Str.	3	272
P904	26-0	Str.	2	177
P905	24'-0	Str.	2	163
P906	7-0	Str.	7	167
P1101	21'-10"	Str.	18	2088
P1102	21'-2"	Str.	20	2249
P1103	19'-2"	Str.	20	2037
P1104	7'-1"	Bent	58	2183
P601	9'-11	Str.	112	1668
P602	9'-5	Str.	47	665
P603	8'-0	Str.	15	180
			Total	21,263

Bending Schedule



SPIRAL REINFORCING LIST

Mark	No.	Size	Core dia.	Length	Pitch	No. of Turns	Weight
SP401	3	1/2" ϕ	2'-8	19.12	4 1/2"	54	1063
SP402	3	1/2" ϕ	2'-8	18.53	4 1/2"	52	1024
SP403	3	1/2" ϕ	2'-8	16.97	4 1/2"	47	924
						Total	3011

Notes:

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

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

The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown in the steel list for the spiral bars is the "Length" divided by the "Pitch", plus 3 turns (total number of closed coils), expressed as the nearest whole number.

1 1/2 closed coils shall be provided at the ends of each spiral unit.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

PIER DETAILS

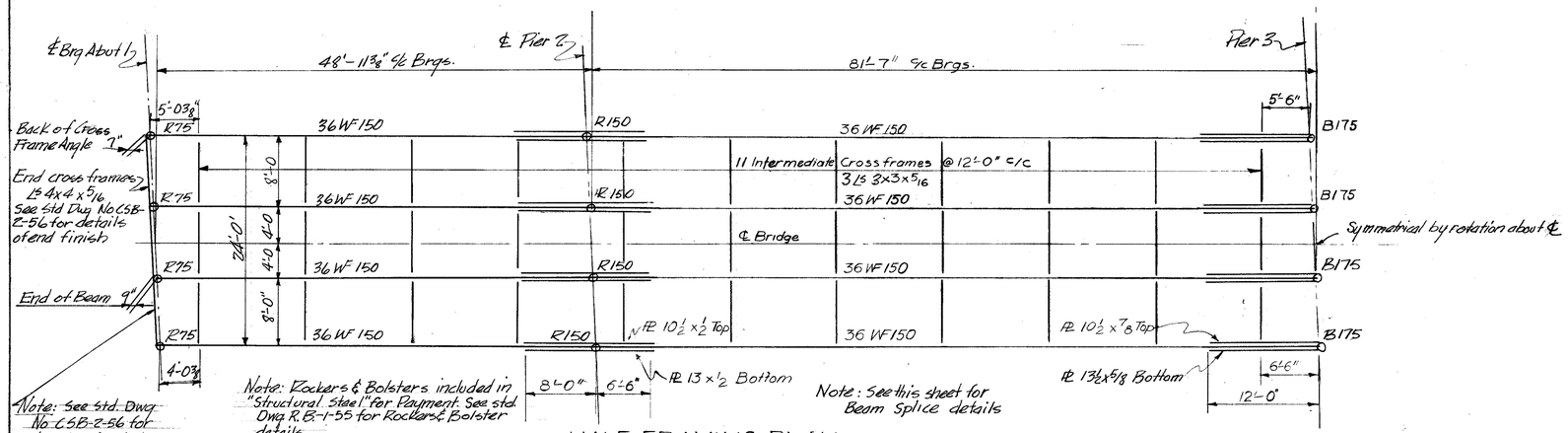
BRIDGE No. ATB-1-0138
SR 1 UNDER VAN PELT RD.
ASHTABULA CO.
SR 1
STA. 73+04.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DMS	CTL		JB	A.C.A.	8/28/57	

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

150 / 176

LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

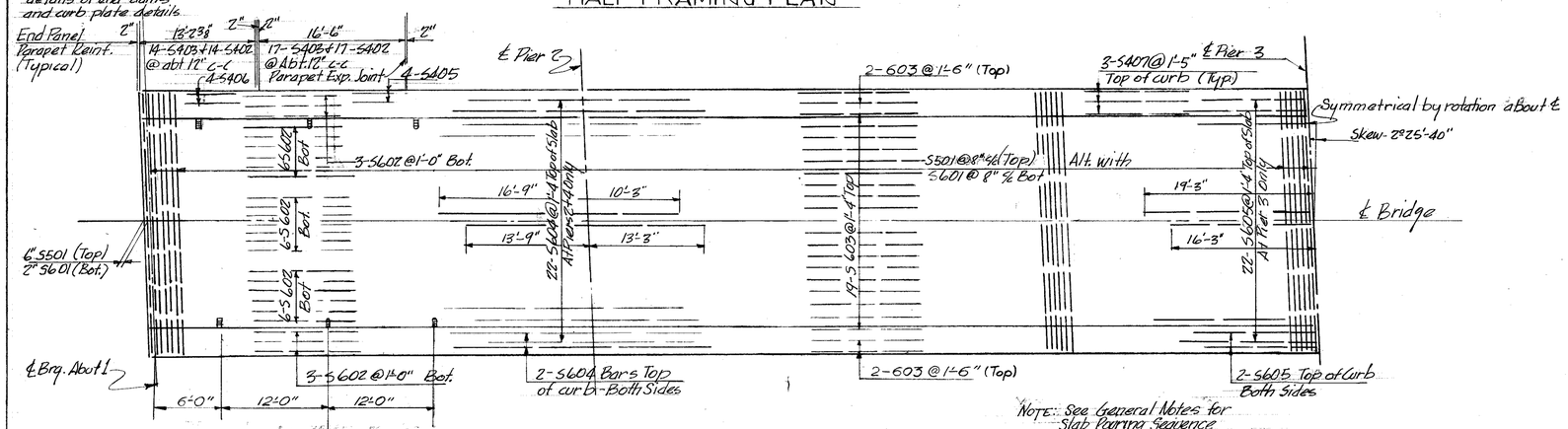


Note: See Std. Dwg No. CSB-2-56 for details of end dams and curb plate details

Note: Rockers & Bolsters included in "Structural Steel" for Payment. See std. Dwg. R.B.-1-55 for Rockers & Bolster details

Note: See this sheet for Beam Splice details

HALF FRAMING PLAN

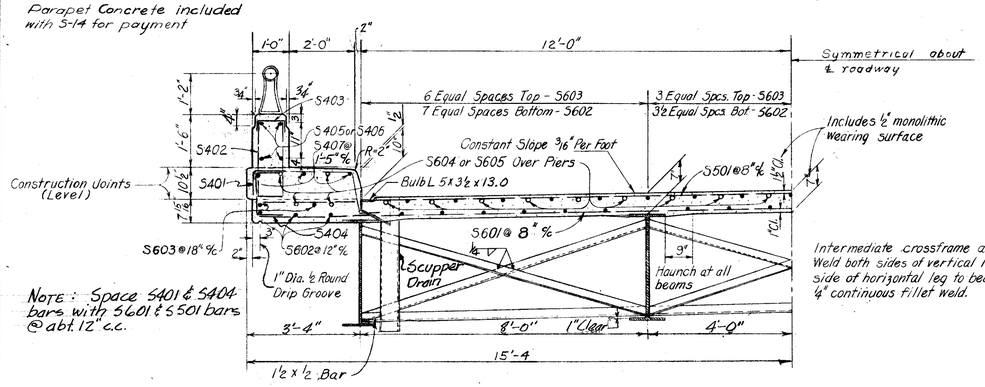


Note: Gutters & Scuppers included in "Structural steel" for payment. See Std Dwg. No. CSB-2-56 for details

NOTE: See General Notes for Slab Pouring Sequence

HALF SLAB PLAN

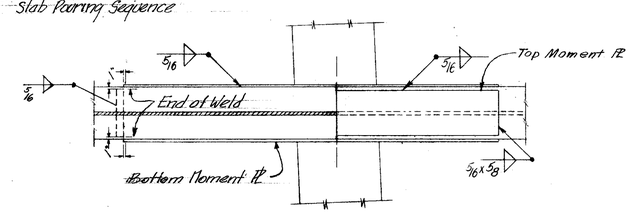
Parapet Concrete included with S-14 for payment



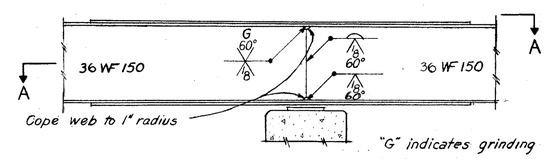
Intermediate crossframe angles 3 x 3 x 5/16. Weld both sides of vertical leg and top side of horizontal leg to beam web with ¼" continuous fillet weld.

NOTE: Space S401 & S404 bars with S601 & S501 bars @ abt. 12" c.c.

HALF CROSS SECTION



SECTION A-A



BEAM SPLICE DETAIL

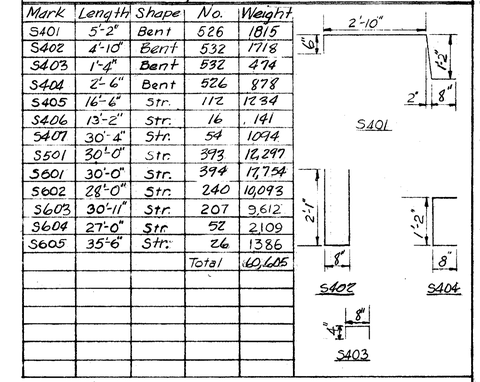
BEAM SPLICE WELDING PROCEDURE

1. Erect span 2 and 3 beams first.
2. Raise the pier no. 2 end of span no. 2 beams 3¾".
3. Butt weld the beam flanges and webs at pier no. 3 using the following sequence: Make one pass on each flange, then one on the web; repeat until welds are complete.
4. Weld the bottom and top moment plates.
5. Lower the pier no. 2 end of span no. 2 to the final position.
6. Raise the abutment end of span No. 1 ¾".
7. Repeat steps 3 and 4 at pier no. 2.
8. Lower abutment end of span no. 1 to final position.
9. Repeat steps 3, 4, 6, & 8 at pier no. 4 and abutment no. 5.

REINFORCING STEEL LIST

Superstructure

Mark	Length	Shape	No.	Weight
S401	5'-2"	Bent	526	1815
S402	4'-10"	Bent	532	1718
S403	1'-4"	Bent	532	474
S404	2'-6"	Bent	526	878
S405	16'-6"	Str.	112	1234
S406	13'-2"	Str.	16	141
S407	30'-4"	Str.	54	1094
S501	30'-0"	Str.	393	12,297
S601	30'-0"	Str.	394	12,754
S602	28'-0"	Str.	240	10,093
S603	30'-11"	Str.	207	9,612
S604	27'-0"	Str.	52	2,109
S605	35'-6"	Str.	26	1386
			Total	60,605



Note: REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

REPLACEMENT BARS

Mark	Length	Shape	No.
RB401	5'-3"	Str.	1
RB501	5'-7"	Str.	1
RB601	5'-11"	Str.	3
RB701	6'-3"	Str.	1
RB801	6'-6"	Str.	1
RB901	6'-10"	Str.	1
RB1101	7'-7	Str.	1

DEFLECTION AND CAMBER

Location	Outside Beam Span 1	Span 2	Span 3	Span 4	Inside Beam Span 1	Span 2	Span 3	Span 4
Deflection due to weight of steel	0	1/8	1/8	0	0	1/8	1/8	0
Deflection due to remaining dead load	1/16	1 1/16	1 1/16	1/16	0	1/2	1/2	0
Convexity required for vertical curve	7/16	1 3/16	1 3/16	7/16	7/16	1 3/16	1 3/16	7/16
Sum of deflection and convexity	1/2	2 3/8	2 3/8	1/2	7/16	1 13/16	1 13/16	7/16
Required camber	0	2 3/8	2 3/8	0	0	1 13/16	1 13/16	0

Where no camber is required, the beams shall be so fabricated that any curved beam will be placed with convex flange up.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS

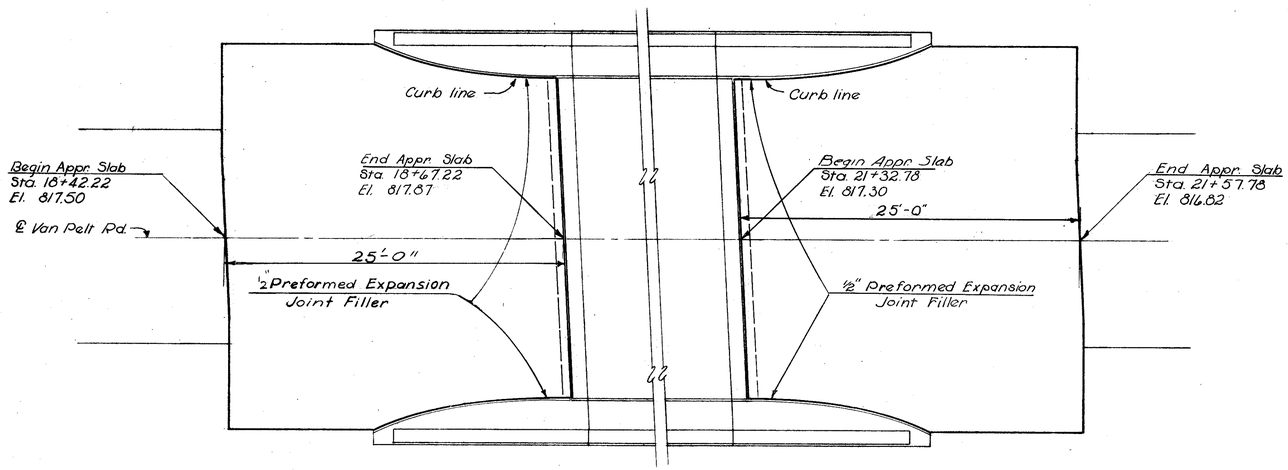
BRIDGE No. ATB-I-0138
SR 1 UNDER VAN PELT RD.
ASHTABULA CO. SR 1
STA. 73+04.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CTL	JB		RGE	ACA	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

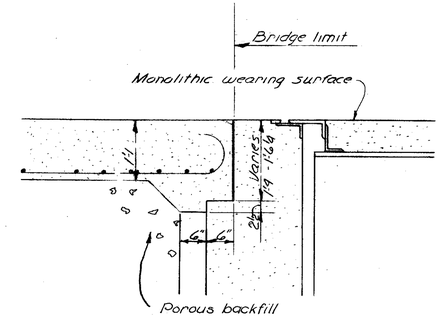
151
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



GENERAL PLAN

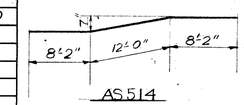
Note: ½" Preformed expansion joint filler included in Item I-7 for payment.



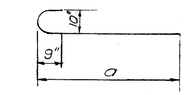
SECTION C-C

Notes: Approach Slabs to be class "C" Concrete.
In the reinforcing steel bar marks, the numeral following the second letter is the Bar Number which indicates the size of the bar.

REINFORCING STEEL LIST BOTH APPROACH SLABS				
Mark	Length	Shape	No.	Wt.
AS501	23'-7"	Str.	12	295
AS502	23'-9"	"	2	50
AS503	23'-11"	"	2	50
AS504	24'-3"	"	2	51
AS505	24'-7"	"	2	51
AS506	25'-1"	"	2	52
AS507	25'-7"	"	2	53
AS508	26'-1"	"	2	54
AS509	26'-9"	"	2	56
AS510	27'-5"	"	2	57
AS511	28'-1"	"	2	59
AS512	28'-4"	"	22	650
AS513	8'-0"	"	2	17
AS514	28'-4"	Bent	2	59
AS801	11'-9"	Str	2	63
AS802	12'-8"	"	2	68
AS803	13'-8"	"	2	73
AS804	14'-10"	"	2	79
AS805	16'-2"	"	2	86
AS806	17'-6"	"	2	93
AS807	19'-11"	"	2	106
AS808-AS811	25'-3"	Bent	8	539
AS812	19'-10"	Str.	2	106
AS813	18'-3"	"	2	97
AS814	16'-11"	"	2	90
AS815	15'-6"	"	2	83
AS816	14'-6"	"	2	77
AS817	13'-6"	"	2	72
AS818	12'-6"	"	2	67
AS819-AS822	25'-10"	Bent	8	552
AS823	25'-4"	"	2	135
AS824	25'-5"	"	2	136
AS825	25'-5"	"	2	136
AS826	25'-5"	"	2	136
AS827	25'-6	"	2	136
AS828	25'-6	"	2	136
AS829	25'-6"	"	2	136
AS830	25'-7"	"	2	137
AS831	25'-7"	"	2	137
AS832	25'-7"	"	2	137
AS833	25'-7"	"	2	137
AS834	25'-8"	"	2	137
AS835	25'-8"	"	2	137
AS836	25'-8"	"	2	137
AS837	25'-9"	"	2	138
AS838	25'-9"	"	2	138
AS839	25'-9"	"	2	138
AS840	25'-10"	"	2	138
AS841	25'-7"	"	48	3279
		Total		9546

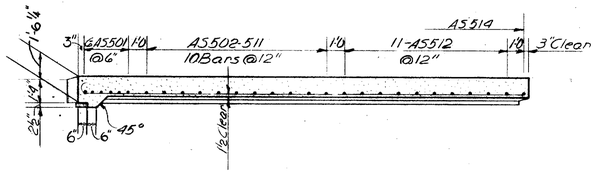


AS514

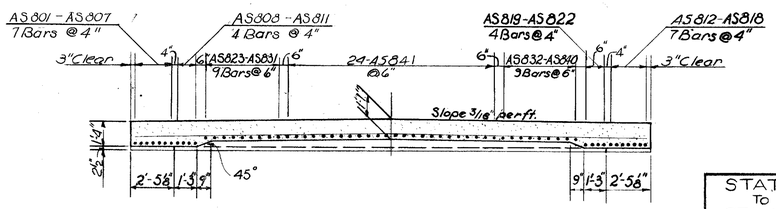


AS808 - AS811	a = 24'-2"
AS819-AS822	a = 24'-9"
AS823	a = 24'-3"
AS824	a = 24'-4"
AS825	a = 24'-4"
AS826	a = 24'-4"
AS827	a = 24'-5"
AS828	a = 24'-5"
AS829	a = 24'-5"
AS830	a = 24'-6"
AS831	a = 24'-6"
AS832	a = 24'-6"
AS833	a = 24'-6"
AS834	a = 24'-7"
AS835	a = 24'-7"
AS836	a = 24'-7"
AS837	a = 24'-8"
AS838	a = 24'-8"
AS839	a = 24'-8"
AS840	a = 24'-9"
AS841	a = 24'-6"

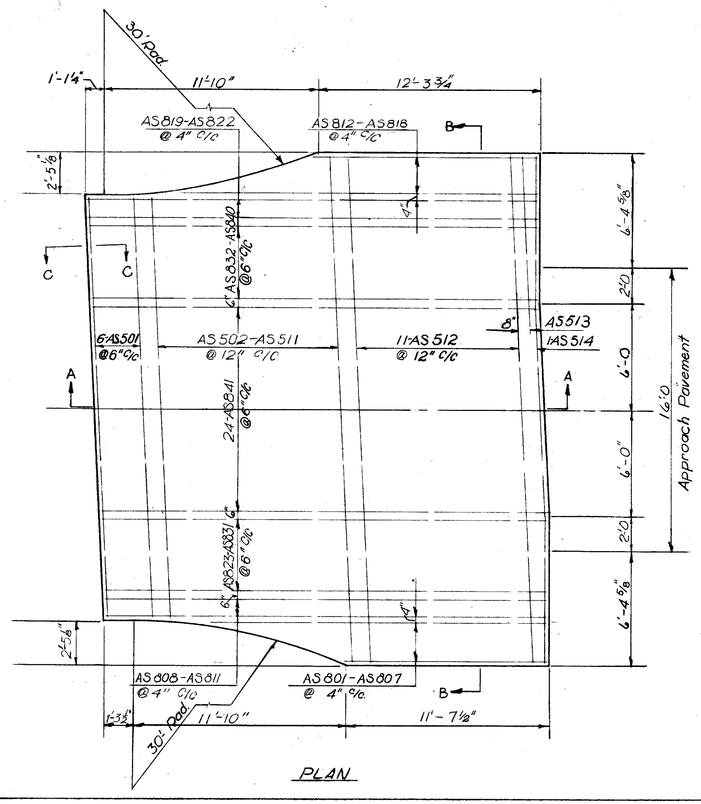
✱ Note:
This reinforcing steel is included in the item "Reinforced Concrete Approach Slab Item I-7" and is not paid for separately.



SECTION A-A



SECTION B-B



PLAN

STATION To STATION	REINFORCED CONCRETE APPROACH SLABS ITEM I-7
18+42.22 To 18+67.22	76 Sq. yd.
21+32.78 To 21+57.78	76 Sq. yd.
TOTAL	152 Sq. yd.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

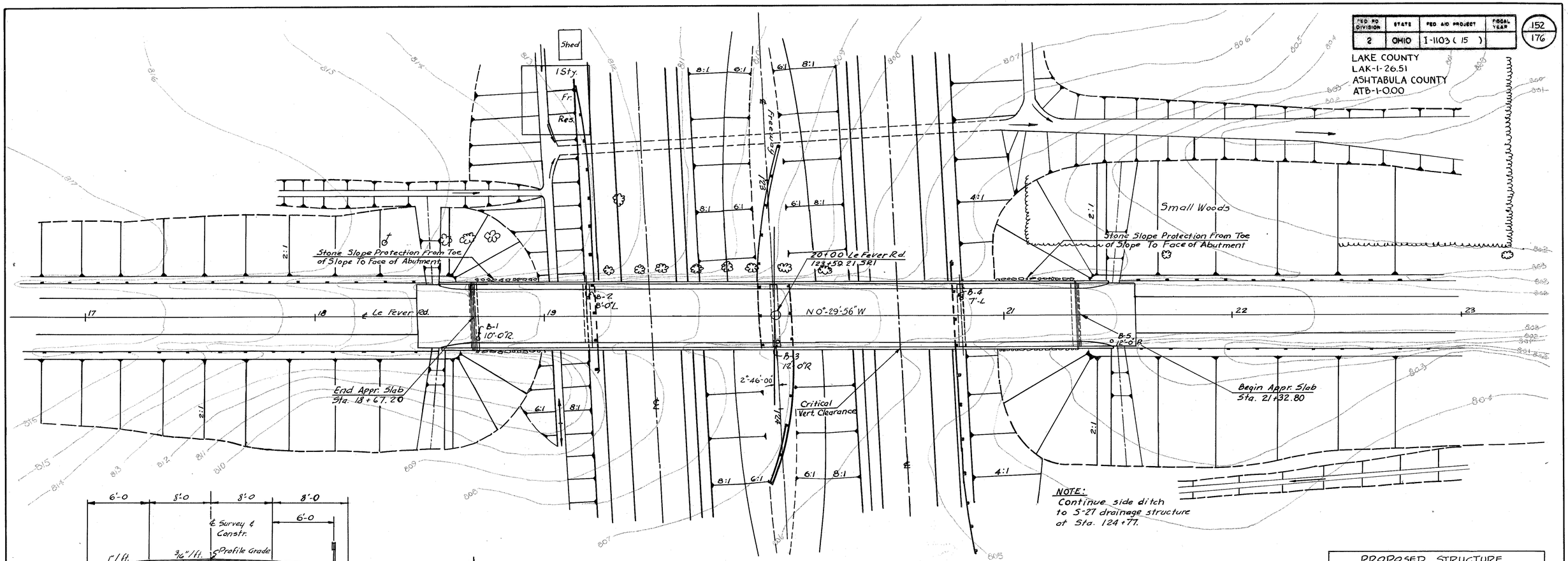
APPROACH SLAB DETAILS

BRIDGE NO. ATB-1-0138
SR1 UNDER VANPELT RD.
ASHTABULA CO. SR1
STA. 73+04.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RTS	MS		JPR	ACA	8/28/57	

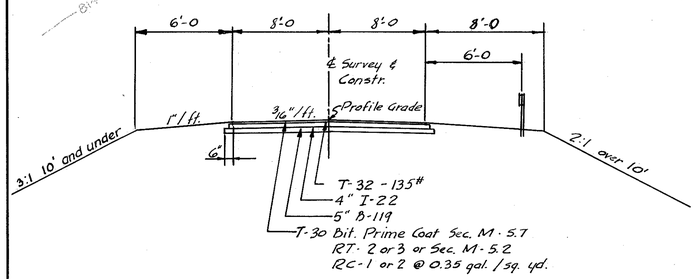
FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



NOTE:
Continue side ditch to S-21 drainage structure at Sta. 124+77.

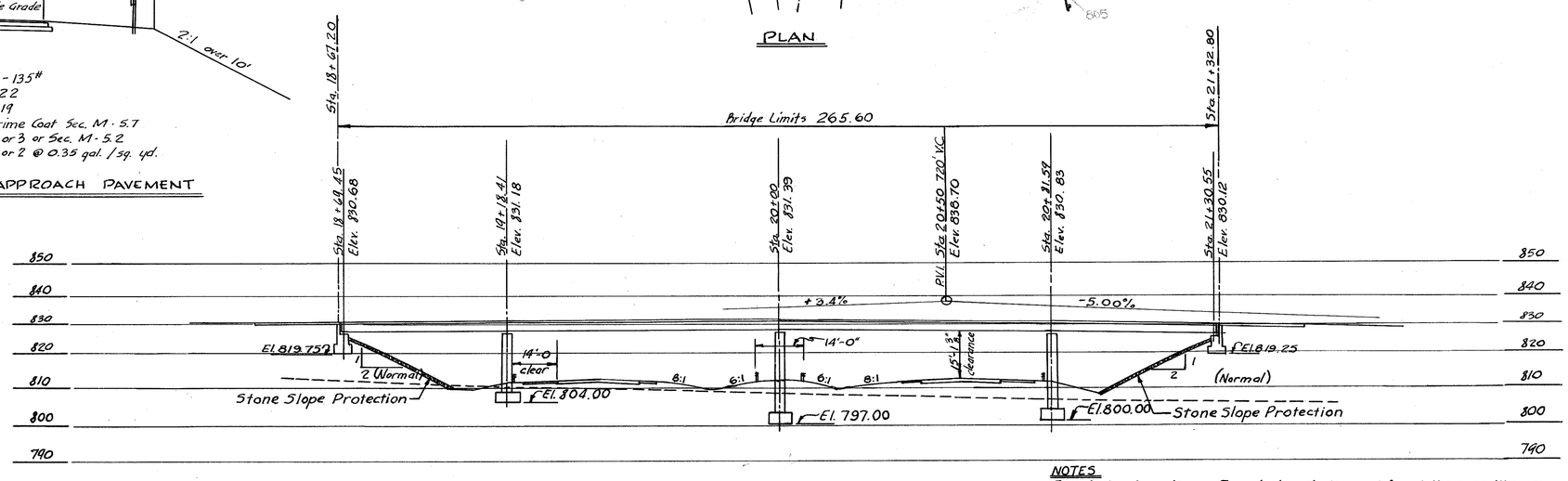
PLAN



TYPICAL SECTION THRU APPROACH PAVEMENT

PROPOSED STRUCTURE
Type: Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
Span: 48'-11½", 81'-7⅞", 81'-7⅞", 48'-11½" ℄ Brg.
Roadway: 24'-0 F/F Safety Curbs.
Load Frequency: C.F.=30(51)
Skew: 2° 46' RF
Wearing Surface: ½" Monolithic Conc.
Approach Slabs: 25'-0 Long
Alignment: Tangent
Safety Curb: 2'-0 each side.

BenchMark: R.R. Spike in 18" Maple. Sta. 123+56 204' Lt. Elev. 804.71



SECTION ALONG ℄

NOTES
Foundation Soundings - Foundation design and foundation quantities are based on a study of soil sampling soundings made at the site. This sounding information may be inspected at the Interstate Projects Office in Columbus or in the Division office, but the State assumes no responsibility for the accuracy thereof.

1955 TRAFFIC - 110 VPD with under 30 combination trucks.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SITE PLAN

BRIDGE No. ATB-1-0233
SR1 UNDER LEFEVER RD.
ASHTABULA CO. SR1
STA. 123+59.21

SCALE: 1" = 20'-0

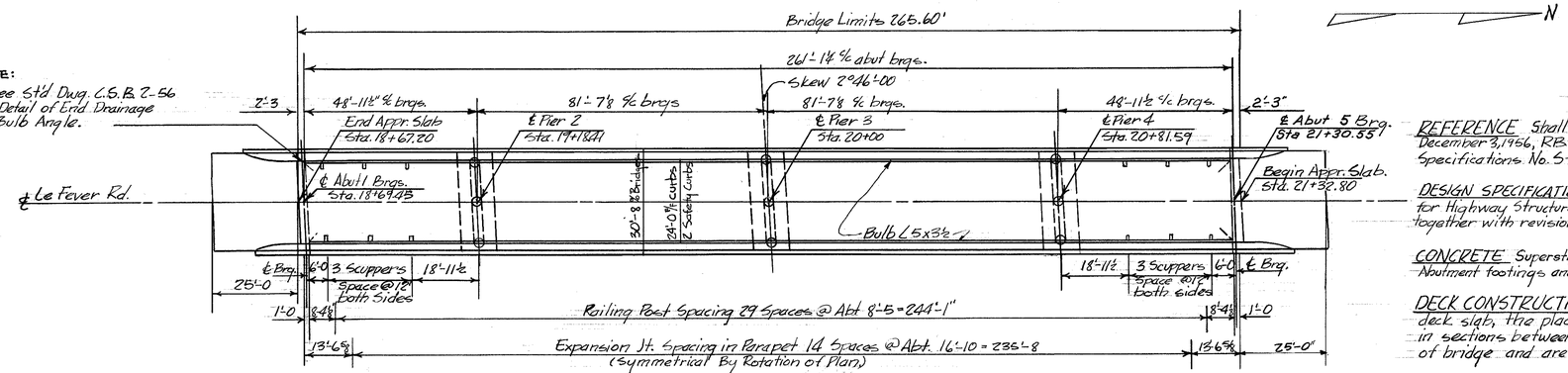
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
VAL	WAB	RGE	DKM	DKM	ACA

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103(15)	

153 / 176

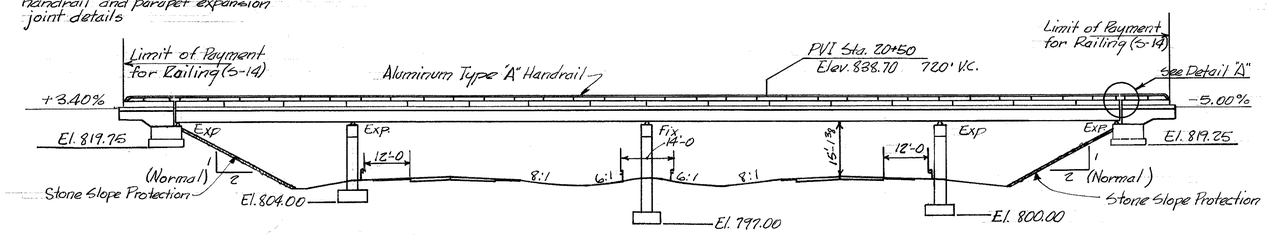
LAKE COUNTY
LAK-1-26.81
ASHTABULA COUNTY
ATB-1-0.00

NOTE:
See Std Dwg. C.B. 2-56 For Detail of End Drainage of Bulb Angle.



GENERAL PLAN

NOTE:
See Std Dwg. AR-1-57 For handrail and parapet expansion joint details



ELEVATION

GENERAL NOTES

REFERENCE Shall be made to Standard Drawing CBS-2-56 sheets 2 of 6 and 3 of 6 dated December 3, 1956, RB-1-55 dated March 1, 1955, AR-1-57 dated April 9, 1957 and supplemental Specifications No. S-114, revised August 1, 1957.

DESIGN SPECIFICATIONS: This Structure Conforms to the requirements of "Design specifications for Highway Structures" of the State of Ohio, Department of Highways, dated October 1, 1951 together with revisions thereof dated July 15, 1952, April 1, 1954 and February 1, 1955

CONCRETE Superstructure, columns, caps and abutments above footings shall be "Class C Concrete." Abutment footings and pier footings shall be "Class E Concrete."

DECK CONSTRUCTION PROCEDURE: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections between transverse construction joints which are normal to the center line of bridge and are located near the center of any span.

EXCAVATION QUANTITIES: Shall be as outlined in Sec. E-2, and includes the removal of material from the finished grade or original ground down, whichever is the lower in elevation. Abutment excavation quantities includes the removal of fill material between the surface of the embankment and the bottom of the abutment. Backfilling will be included in the cost of excavation.

STONE SLOPE PROTECTION extending from face of abutment to invert of ditch shall be provided at all abutments. Protection shall be a minimum of 12 inches thick, measured perpendicular to the slope, and shall extend 3 feet past outside limits of structure. Stone material shall meet the requirements of Section S-29.02 for Porous drains.

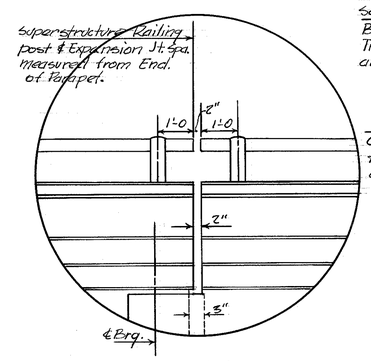
WELDING: All welding shall be Class "A" unless otherwise shown. Any weld shown as field weld may be made in the shop at the option of the Contractor.

WELDED STEEL: The steel for all rolled beams and moment plates with a thickness greater than 1" shall conform to ASTM Designation A-373. All other structural steel shall conform to either ASTM A-7 (per Sec M-7.4(a) of the Construction and Material Specifications) or to A373.

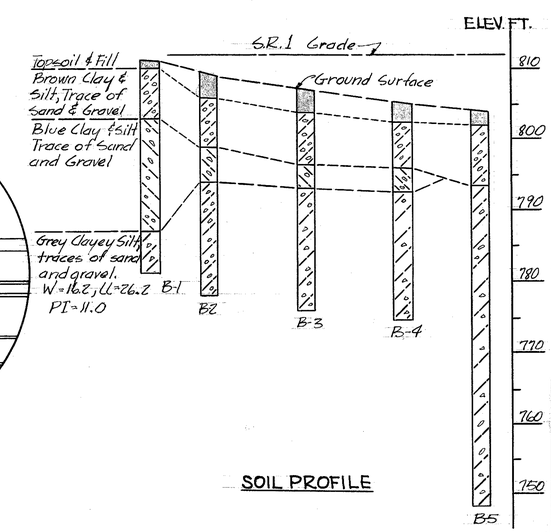
BAR SIZE for reinforcing steel is indicated in the bar mark. The first digit indicates bar size number. For Example, S601 is a No. 6 Bar size and A1014 is a No. 10 size.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER STR	ABUT 1	ABUT 5	PIER 2	PIER 3	PIER 4	GENL.
E2	544	Cu. Yd.	Excavation For Structures	—	85	85	94	184	96	—
E-2	L.S.	L.S.	Cofferdams, Cribs, Sheeting	—	—	—	—	—	—	LS
B1	231	Cu. Yd.	Class "C" Concrete (Superstructure)	231	—	—	—	—	—	—
S-1	73	Cu. Yd.	Class "C" Concrete (Pier Caps & Cols.)	—	—	—	22	27	24	—
S-1	76	Cu. Yd.	Class "C" Abutments above footings	—	38	38	—	—	—	—
S-1	147	Cu. Yd.	Class "E" Concrete (Piers & Abut. footings)	—	17	17	36	40	37	—
S-4	95,413	Lbs.	Reinforcing Steel	60605	4408	4409	—	25991	→	
S-7	214,814	Lbs	Structural Steel	24814	—	—	—	—	—	—
S-8	214,814	Lbs.	Field Painting of Structural Steel 214814	24814	—	—	—	—	—	—
S-14	578	Lin. ft.	Railing (Aluminum Type A & Concrete Parapet)	526	26	26	—	—	—	—
S-29	18	Cu. Yd.	Porous Backfill	—	9	9	—	—	—	—
S-29	100	Cu. Yd.	Stone Slope Protection (1'-0 thick)	—	50	50	—	—	—	—



DETAIL "A"



SOIL PROFILE

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION

BRIDGE No. ATB-1-0233
SR 1 UNDER LE FEVER RD.
ASHTABULA CO. SR 1
STA. 123+59.21

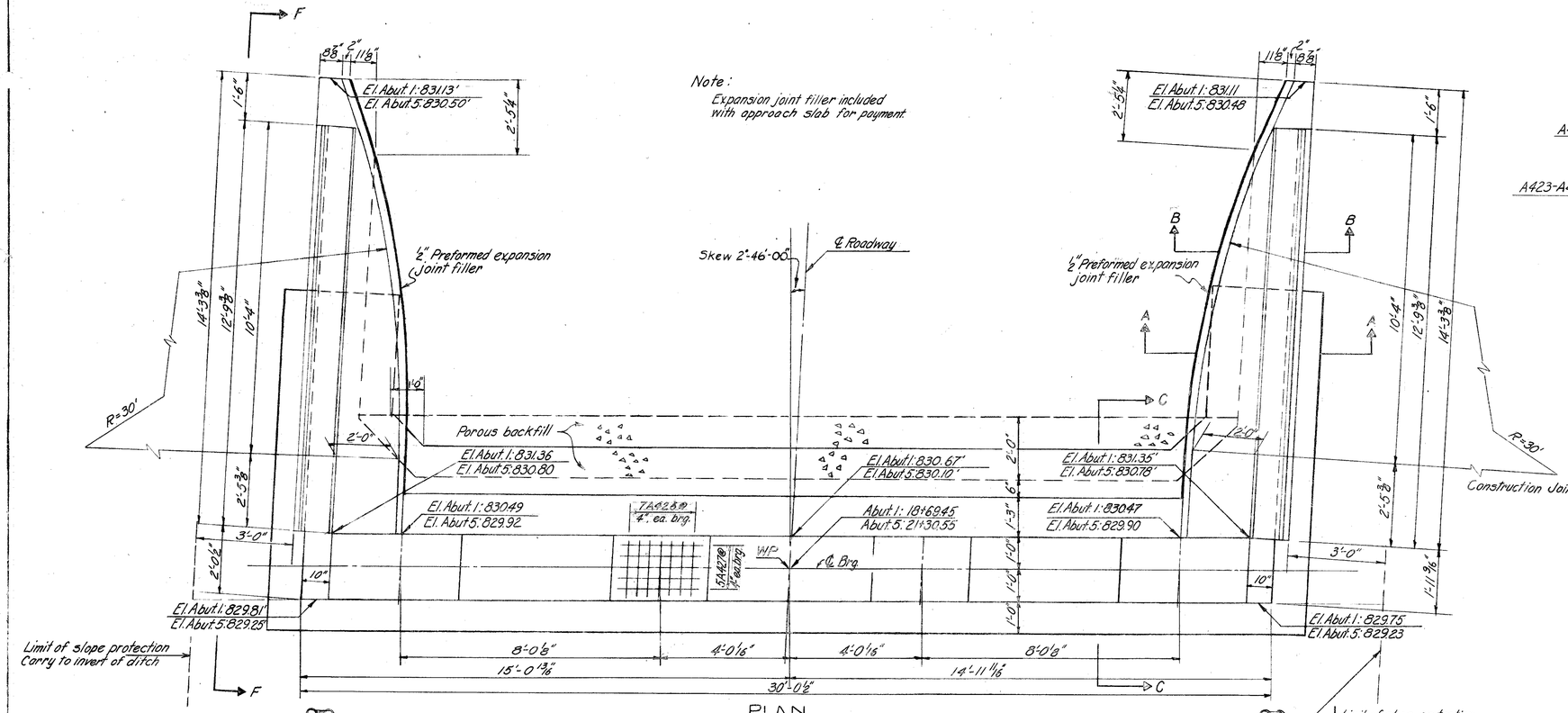
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.T.L.	G.S.	L.C.H.	R.G.E.	ACA	8/29/57	

FED. RD DIVISION	STATE	FED AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

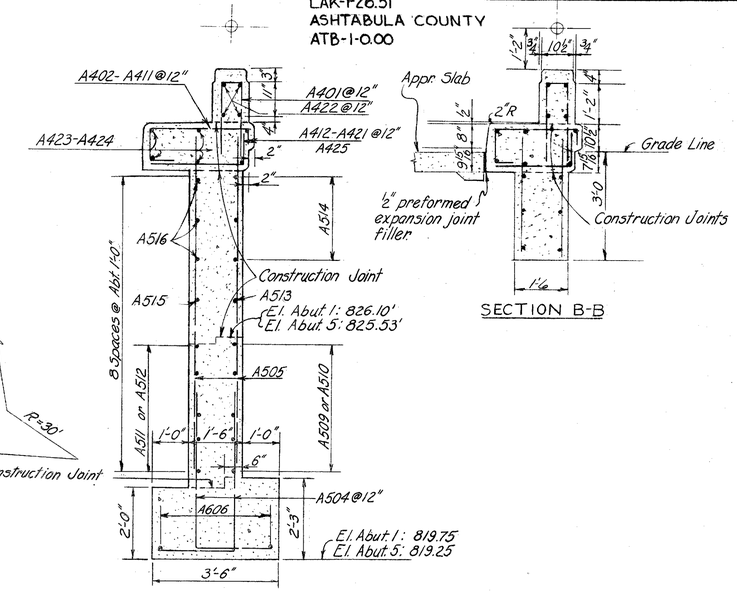
154/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

Note:
Expansion joint filler included with approach slab for payment.



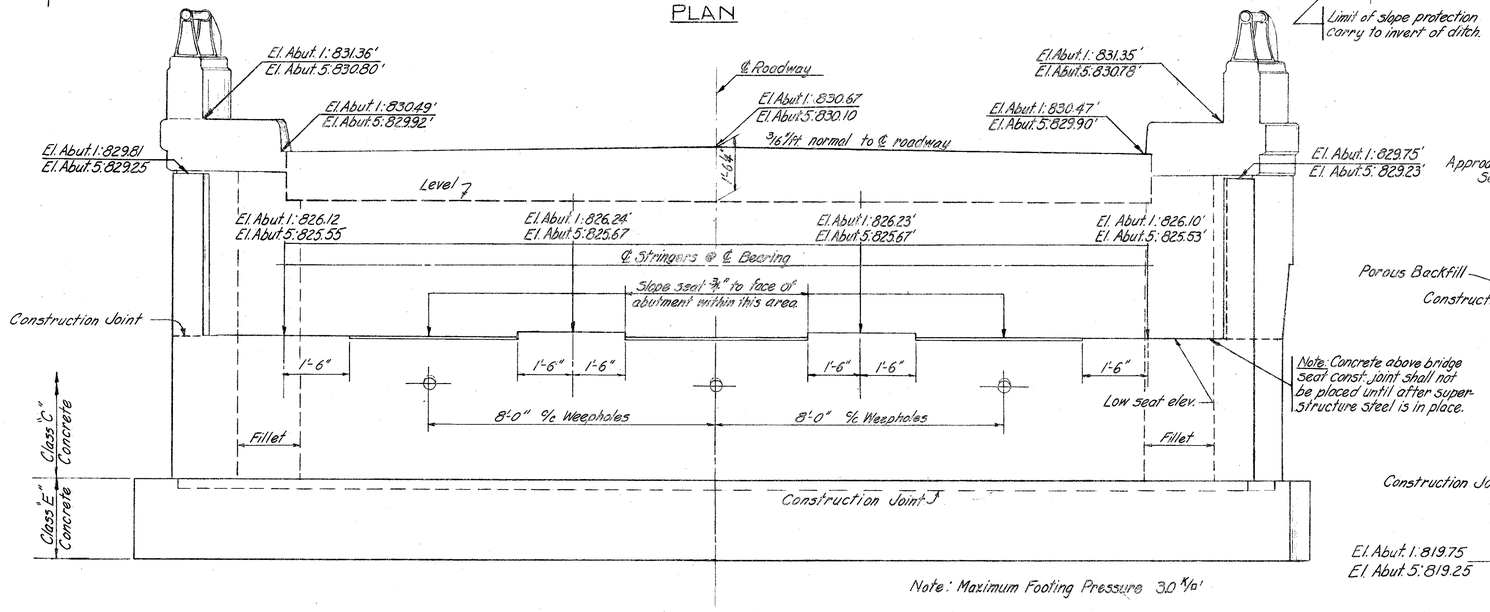
PLAN



SECTION A-A

SECTION B-B

PROCEDURE: The embankment shall be placed and compacted to subgrade elevation after which excavation shall be made for the abutments.

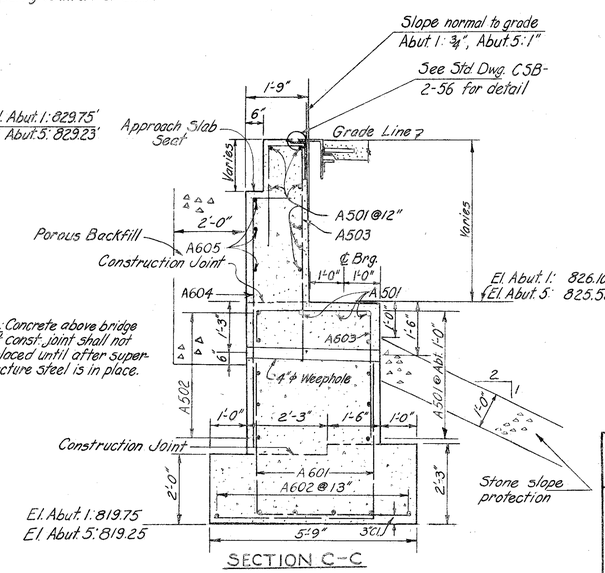


Note: Concrete above bridge seat const. joint shall not be placed until after superstructure steel is in place.

Note: Maximum Footing Pressure 3.0 K/□'

ELEVATION

Note:
Reinforcing steel shall clear the face of the concrete by 2" unless otherwise noted.



SECTION C-C

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

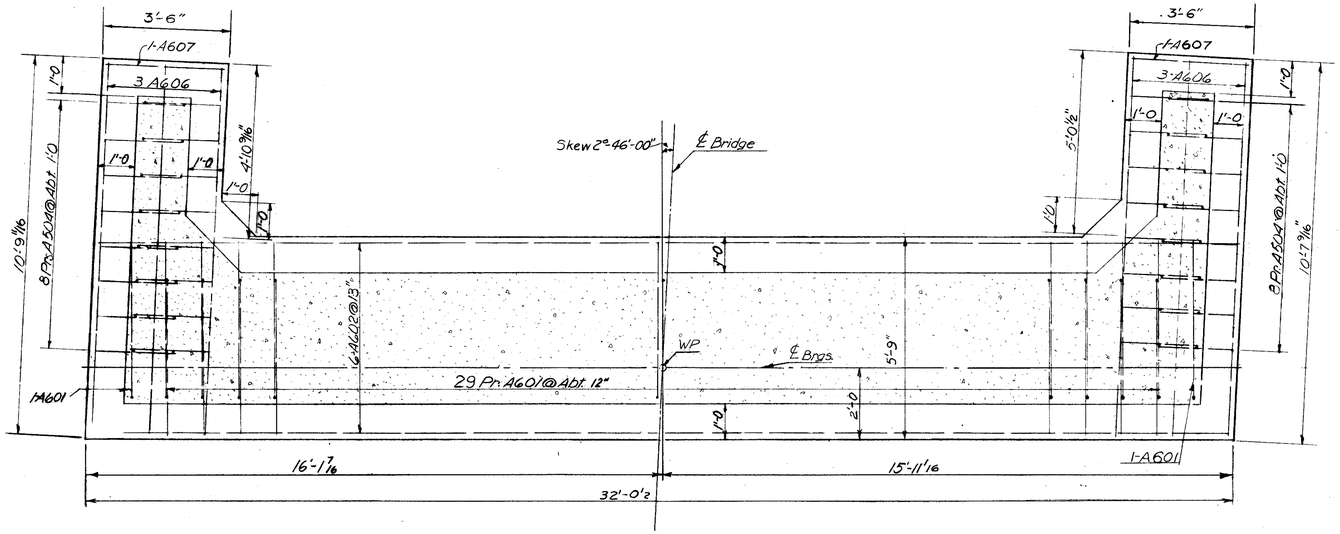
BRIDGE No. ATB-1-0233
SR 1 UNDER LEFEVER RD.
ASHTABULA CO.
SR 1
STA. 123+59.21

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CTL	MS		JPR	A.C.A.	8/28/57	

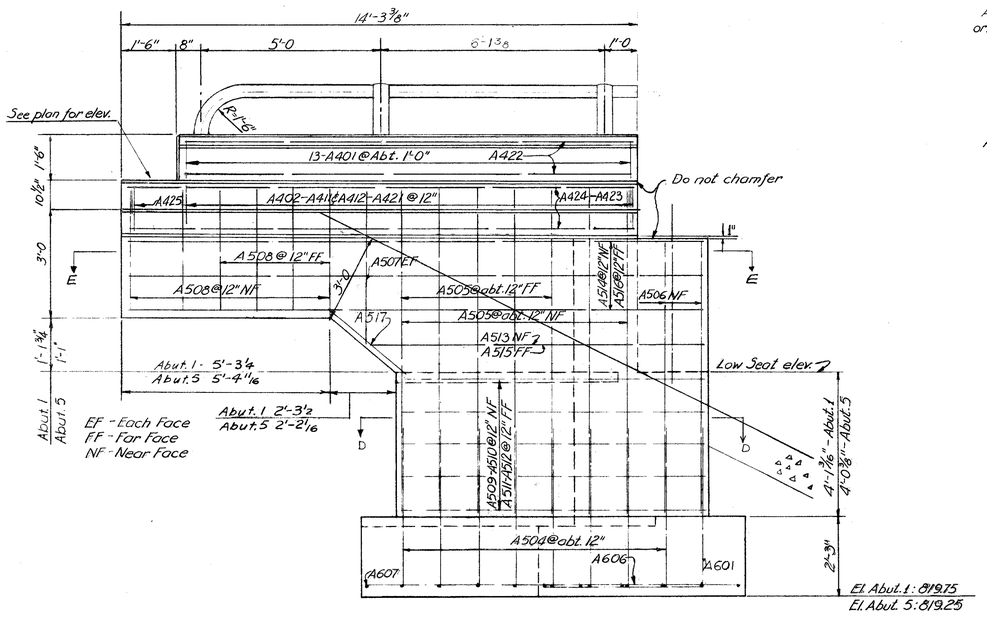
FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

155
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

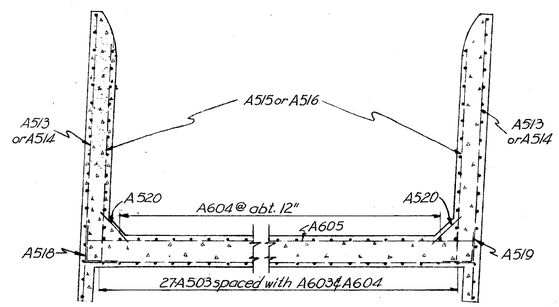


FOOTING PLAN

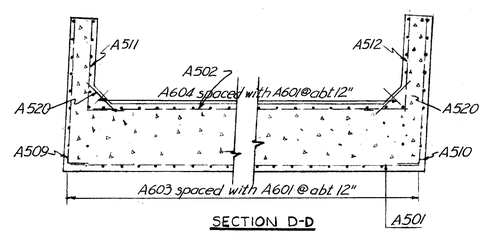


Parapet Concrete included with S-14 for payment.

ELEVATION F-F



SECTION E-E



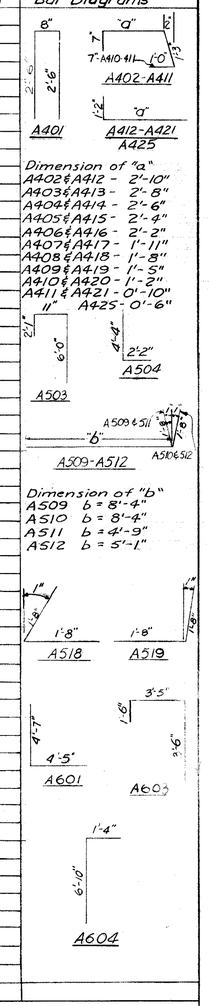
SECTION D-D

REINFORCING STEEL LIST

Both Abutments

Mark	Length	Shape	No.	Weight
A401	5'-8"	Bent	52	197
A402	5'-8"	Bent	12	45
A403	5'-6"	Bent	8	29
A404	5'-4"	Bent	4	14
A405	5'-2"	Bent	4	14
A406	5'-0"	Bent	4	13
A407	4'-9"	Bent	4	13
A408	4'-6"	Bent	4	12
A409	4'-3"	Bent	4	11
A410	3'-7"	Bent	4	10
A411	3'-3"	Bent	4	9
A412	4'-0"	Bent	12	32
A413	3'-10"	Bent	8	20
A414	3'-8"	Bent	4	10
A415	3'-6"	Bent	4	9
A416	3'-4"	Bent	4	9
A417	3'-1"	Bent	4	8
A418	2'-10"	Bent	4	8
A419	2'-7"	Bent	4	7
A420	2'-4"	Bent	4	6
A421	2'-0"	Bent	4	5
A422	12'-5"	Str.	16	133
A423	10'-0"	Str.	8	53
A424	14'-0"	Str.	16	150
A425	1'-8"	Bent	4	4
A501	29'-8"	Str.	28	866
A502	27'-2"	Str.	10	283
A503	9'-0"	Bent	54	507
A504	6'-6"	Bent	64	434
A505	8'-10"	Str.	48	442
A506	7'-3	Str.	8	60
A507	3'-11"	Str.	8	33
A508	3'-5"	Str.	40	143
A509	10'-0"	Bent	10	104
A510	10'-0"	Bent	10	104
A511	6'-5"	Bent	10	67
A512	6'-9"	Bent	10	70
A513	9'-4"	Str.	4	39
A514	15'-9"	Str.	12	197
A515	7'-3"	Str.	4	30
A516	11'-4"	Str.	12	142
A517	4'-3"	Str.	8	35
A518	3'-4"	Bent	8	28
A519	3'-4"	Bent	8	28
A520	3'-2"	Str.	32	106
A601	9'-0"	Bent	120	1622
A602	3'-8"	Str.	12	571
A603	8'-5"	Bent	62	784
A604	8'-2"	Bent	58	711
A605	29'-8"	Str.	6	267
A606	10'-4"	Str.	12	186
A607	3'-2"	Str.	4	19
A426	1'-6"	Str.	56	56
A427	2'-4"	Str.	40	62
		Total		8817

Bar Diagrams



CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

ABUTMENT DETAILS

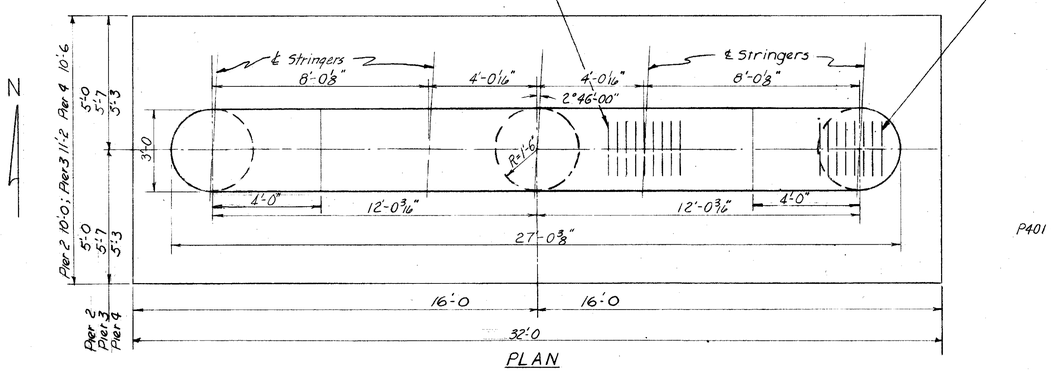
BRIDGE Nº ATB-1-0233
SR 1 UNDER LEFEVER RD.
ASHTABULA CO.
SR 1
STA. 123+59.21

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CTL	MS		JPR	A.C.A.	8/28/57	

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR	
2	OHIO	I-1103 (15)		156 / 176

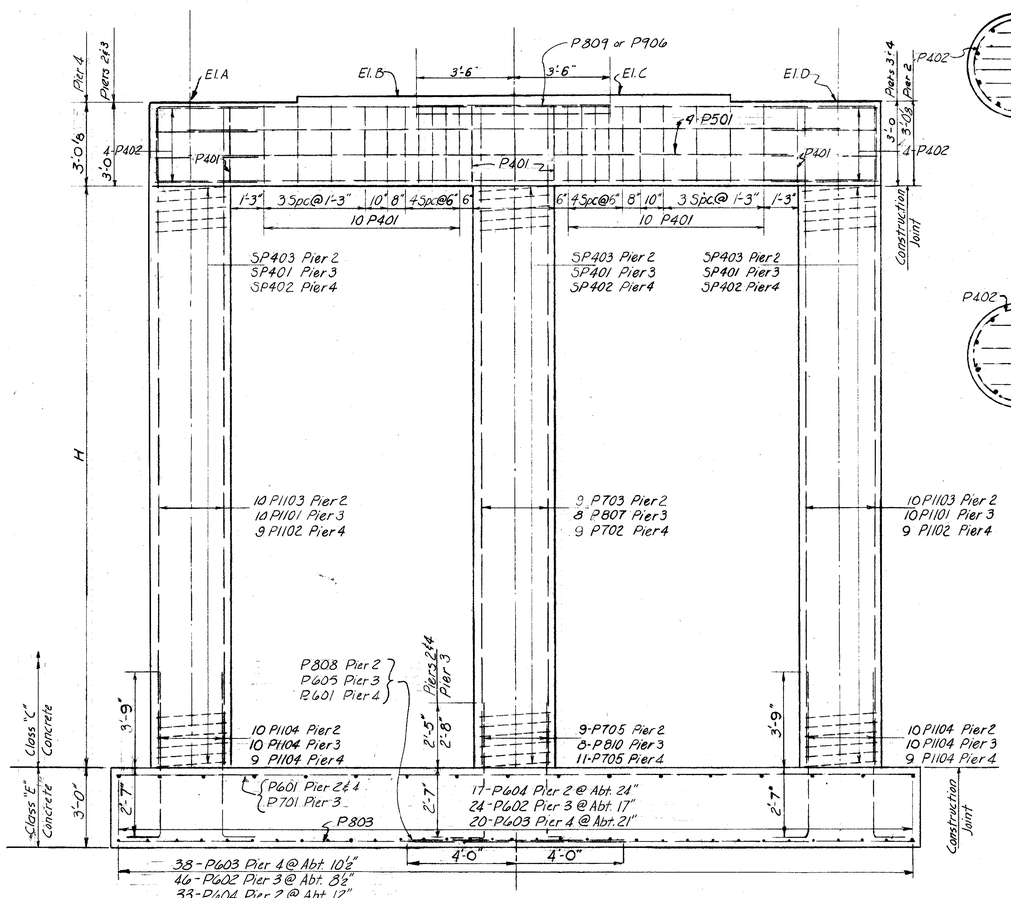
LAKE COUNTY
LAK-I-26.51
ASHTABULA COUNTY
ATB-I-0.00

Note:
P403 @ 4" c.c., 8 under each exterior stringer & 9 under each interior stringer at each pier, space as shown to clear anchor bolts at pier 3. Clear concrete by 2".



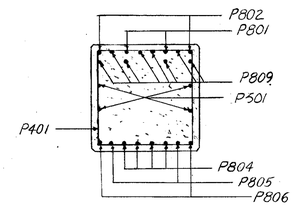
PLAN

	El. A	El. B	El. C	El. D	El. Bot Ftg.	H
Pier 2	826.25	826.38	826.38	826.26	804.00	16'-3
Pier 3	826.31	826.44	826.44	826.31	797.00	23'-3¾
Pier 4	825.91	826.03	826.03	825.90	800.00	19'-10 13/16

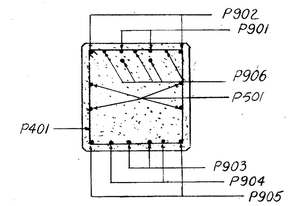


ELEVATION

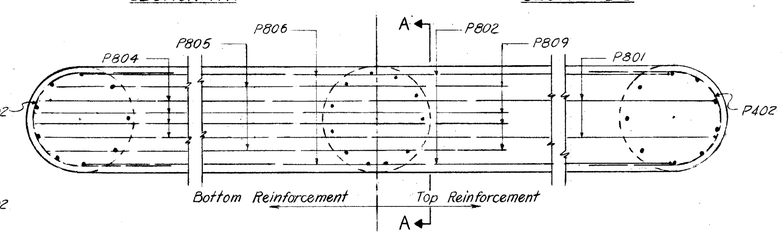
Note: Maximum Footing Pressure 4.5 K/□'



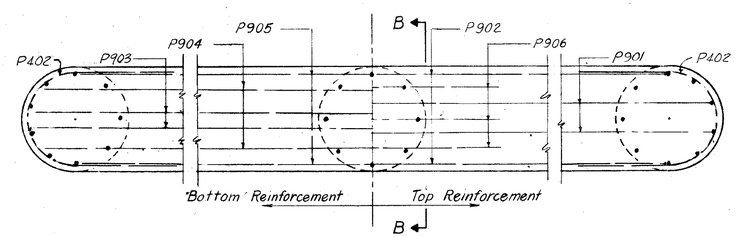
SECTION A-A



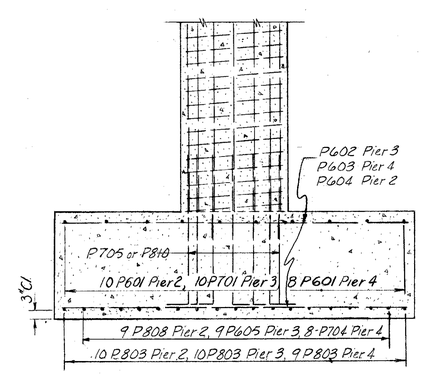
SECTION B-B



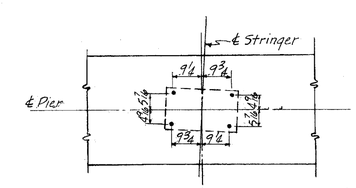
CAP PIER 2 OR PIER 4
(PIER 4 COLUMNS SHOWN)



CAP PIER 3



SECTION THROUGH INTERIOR COLUMN

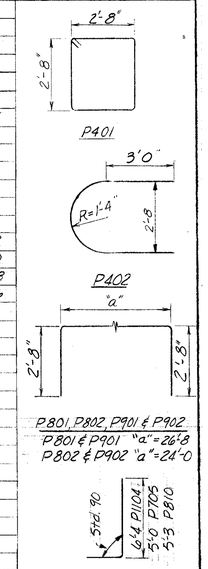


TYPICAL ANCHOR BOLT DETAIL
B175 BOLSTER PIER 3

REINFORCING STEEL LIST
THREE PIERS

MK	Length	Shape	No.	Weight
P401	11'-6	Bent	72	553
P402	10'-2	Bent	24	163
P501	24'-0	Str.	12	300
P601	31'-8	Str.	19	904
P602	10'-10	Str.	70	1139
P603	10'-2	Str.	58	886
P701	31'-8	Str.	10	647
P702	21'-7	Str.	9	397
P703	17'-11	Str.	9	330
P704	8'-0	Str.	8	131
P705	5'-5	Bent	20	221
P801	32'-0	Bent	4	342
P802	29'-4	Bent	4	313
P803	31'-8	Str.	29	2,452
P804	26'-8	Str.	8	570
P805	26'-0	Str.	4	278
P806	24'-0	Str.	4	256
P807	23'-0	Str.	8	491
P808	8'-0	Str.	9	192
P809	7'-0	Str.	16	299
P810	5'-9	Bent	8	123
P901	32'-0	Bent	2	218
P902	29'-4	Bent	2	199
P903	26'-8	Str.	2	272
P904	26'-0	Str.	2	177
P905	24'-0	Str.	2	163
P906	7'-0	Str.	5	119
P1101	23'-0	Str.	20	2444
P1102	21'-7	Str.	18	2064
P1103	17'-11	Str.	20	1904
P1104	7'-1	Bent	58	2183
P403	2'-0	Str.	102	136
P604	9'-8	Str.	50	726
P605	8'-0	Str.	9	108
			Total	21,700

Bending Schedule



SPIRAL REINFORCING LIST

MK	No	Size	Core Dia.	Length	Pitch	No. of Turns	Weight
SP401	3	½"φ	2'-8	23.31	4½"	65	2282
SP402	3	½"φ	2'-8	19.90	4½"	56	1103
SP403	3	½"φ	2'-8	16.25	4½"	46	906
						Total	4291

Notes:

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 54.

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

The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown in the steel list for the spiral bars is the "Length divided by the Pitch" plus 3 turns (total number of closed coils), expressed as the nearest whole number.

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

Reinforcing steel shall clear the face of the concrete by 2" unless otherwise noted.

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

PIER DETAILS

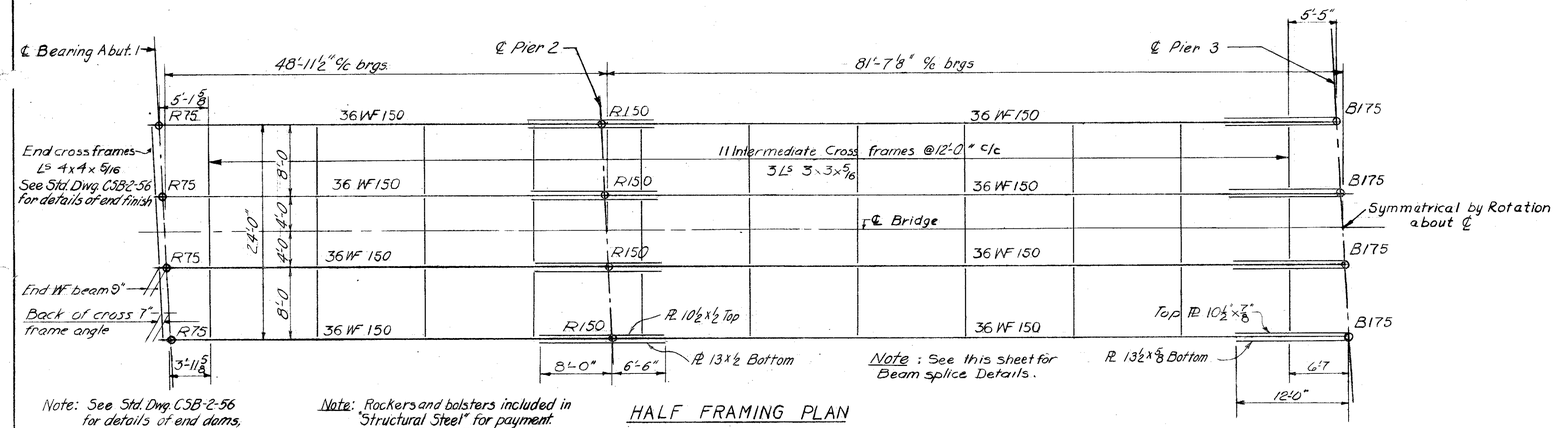
BRIDGE No ATB-I-0233
SR I UNDER LEFEVER RD.
ASHTABULA CO. SR I
STA. 123+59.21

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.T.L.	C.T.L.		J.B.	A.C.A.	8/28/57	

FED. RD DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

157/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00

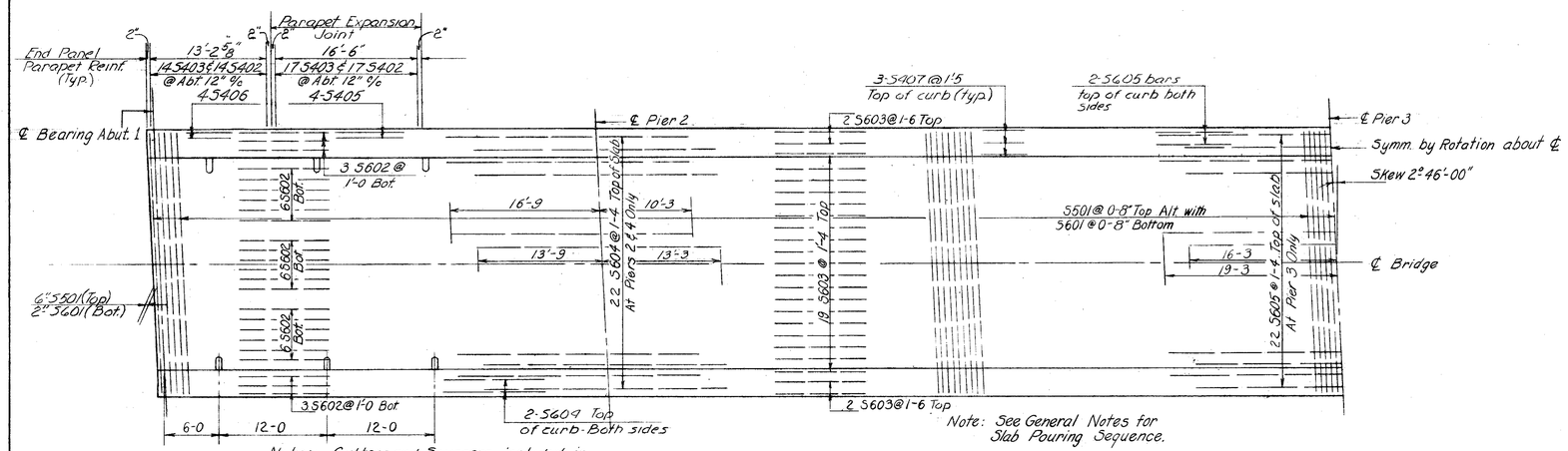


Note: See Std. Dwg. CSB-2-56 for details of end dams, and curb plate details.

Note: Rockers and bolsters included in "Structural Steel" for payment. See Std. Dwg. R.B.-1-55 for rocker and bolster details

Note: See this sheet for Beam splice Details.

HALF FRAMING PLAN

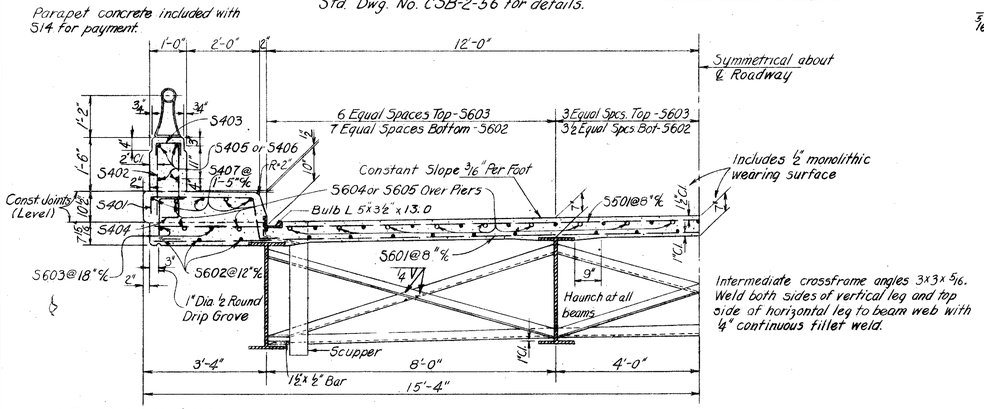


Note: Gutters and Scuppers included in "Structural Steel" for payment. See Std. Dwg. No. CSB-2-56 for details.

Note: See General Notes for Slab Pouring Sequence.

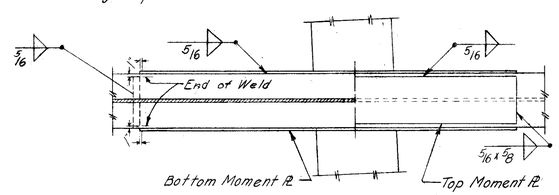
HALF SLAB PLAN

Parapet concrete included with S14 for payment.

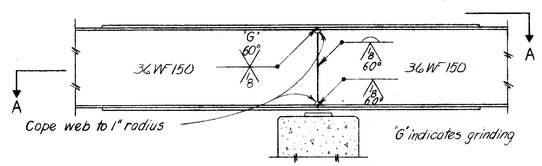


Note: Space all S401 & S404 bars with S601 & S501 bars @ Abt. 12" %.

HALF CROSS SECTION



SECTION A-A

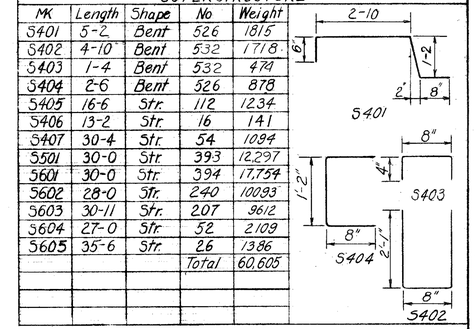


ELEVATION
BEAM SPLICE DETAIL

REINFORCING STEEL LIST

SUPERSTRUCTURE

MK	Length	Shape	No	Weight
S401	5-2	Bent	526	1815
S402	4-10	Bent	532	1718
S403	1-4	Bent	532	474
S404	2-6	Bent	526	878
S405	16-6	Str.	112	1234
S406	13-2	Str.	16	141
S407	30-4	Str.	54	1094
S501	30-0	Str.	393	12,297
S601	30-0	Str.	394	17,754
S602	28-0	Str.	240	10093
S603	30-11	Str.	207	9612
S604	27-0	Str.	52	2109
S605	35-6	Str.	26	1386
			Total	60,605



Note: REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-402 need not be furnished and replacement bars will not be required.

REPLACEMENT BARS

Mark	Length	Shape	No.
RB401	5'-3	Str.	1
RB501	5'-7	Str.	1
RB601	5'-11	Str.	3
RB701	6'-3	Str.	1
RB801	6'-6	Str.	1
RB901	6'-10	Str.	1
RB1101	7'-7	Str.	1

DEFLECTION AND CAMBER

Location	Outside Beam Span 1	Outside Beam Span 2	Outside Beam Span 3	Outside Beam Span 4	Inside Beam Span 1	Inside Beam Span 2	Inside Beam Span 3	Inside Beam Span 4
Deflection due to weight of steel	0	1/8	1/8	0	0	1/8	1/8	0
Deflection due to remaining dead load	1/16	1 1/16	1 1/16	1/16	0	1/2	1/2	0
Convexity required for vertical curve	7/16	1 3/16	1 3/16	7/16	7/16	1 3/16	1 3/16	7/16
Sum of deflection and convexity	1/2	2 3/8	2 3/8	1/2	7/16	1 13/16	1 13/16	7/16
Required camber	0	2 3/8	2 3/8	0	0	1 13/16	1 13/16	0

Where no camber is required the beams shall be so fabricated that any curved beam will be placed with convex flange up.

BEAM SPLICE WELDING PROCEDURE:

1. Erect span 2 and 3 beams first.
2. Raise the pier no.2 end of span no.2 beams 3 3/4".
3. Butt weld the beam flanges and webs at pier no.3 using the following sequence: Make one pass on each flange then one on the web; repeat until welds are complete.
4. Weld the bottom and top moment plates.
5. Lower the pier no.2 end of span no.2 to the final position.
6. Raise the abutment end of span no.1 3/4".
7. Repeat steps 3 and 4 at pier no.2.
8. Lower the abutment end of span no.1 to the final position.
9. Repeat steps 3, 4, 6, and 8 at pier no.4 and abutment no.5

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS

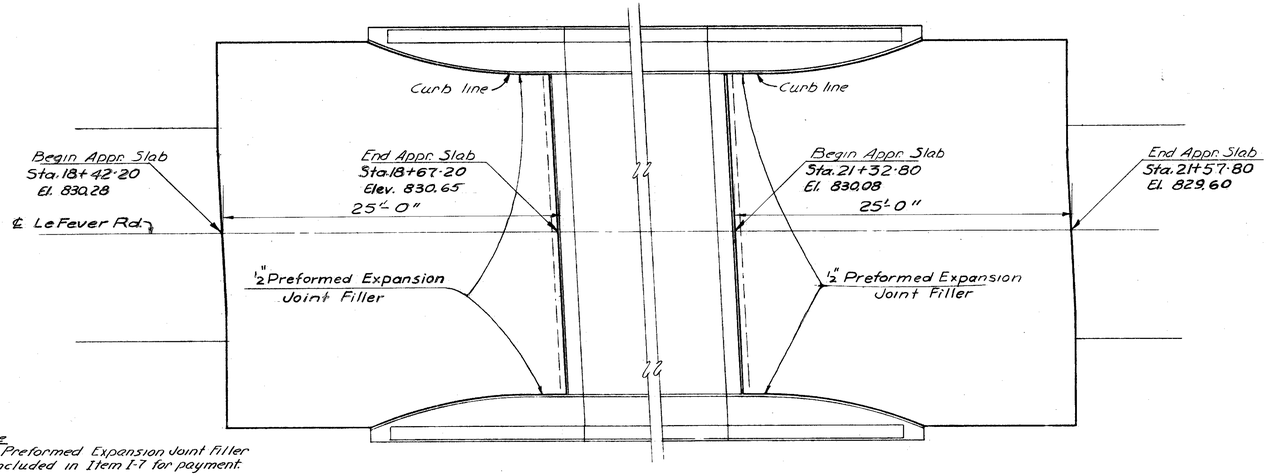
BRIDGE No. ATB-1-0233
SR 1 UNDER LE FEVER RD.
ASHTABULA CO. SR 1
STA 123+59.21

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.T.L.	W.S.		R.G.E.	A.C.A.	8/28/57	

FED. RD. DIVISION	STATE	FED. AID PROJECT	FISCAL YEAR
2	OHIO	I-1103 (15)	

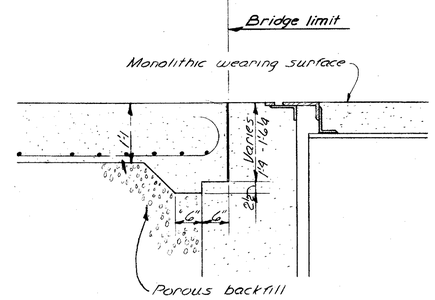
158
176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Note
1/2" Preformed Expansion Joint Filler included in Item I-7 for payment.

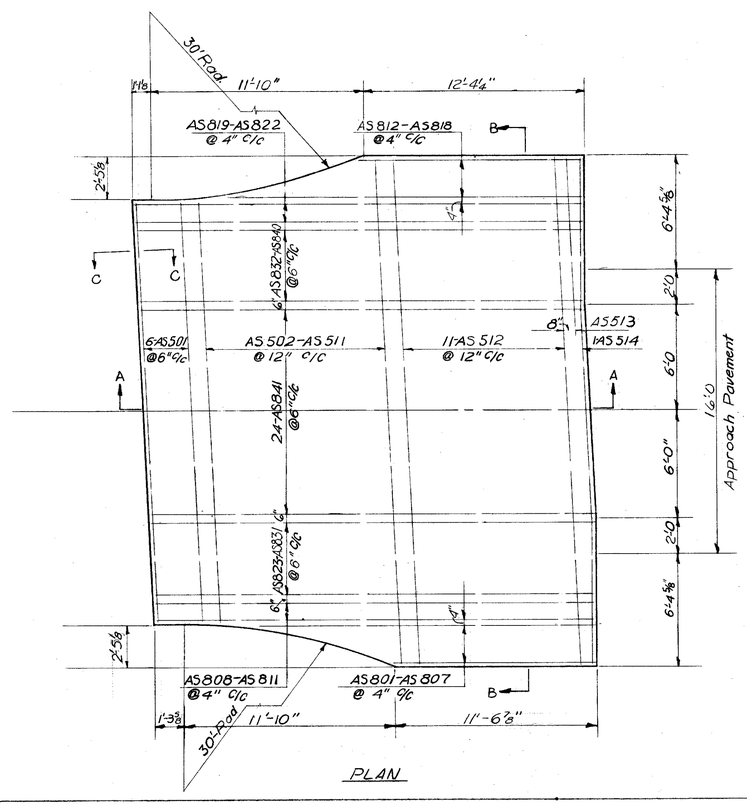
GENERAL PLAN



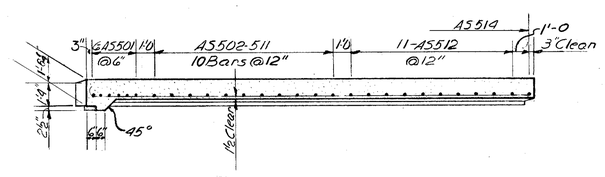
SECTION C-C

Notes: Approach Slabs to be class "C" Concrete.
In the reinforcing steel bar marks, the numeral following the Second letter is the Bar Number which indicates the size of the bar.

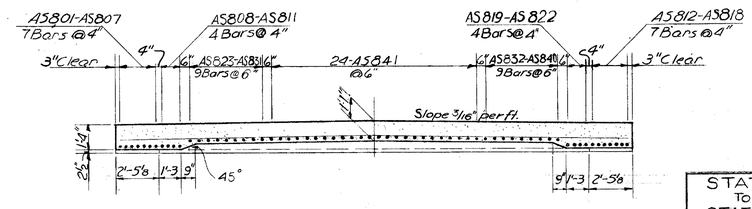
✱ Note:
This Reinforcing Steel is included in the item "Reinforced Concrete Approach Slab Item I-7" and is not paid for separately.



PLAN



SECTION A-A



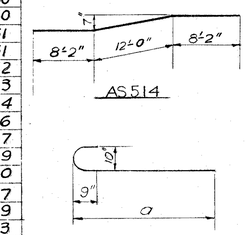
SECTION B-B

STATION To STATION	REINFORCED CONCRETE APPROACH SLABS ITEM I-7
18+42.20 to 18+67.20	76 Sq. yd.
21+32.80 to 21+57.80	76 Sq. yd.
TOTAL	152 Sq. yd.

REINFORCING STEEL LIST ✱

BOTH APPROACH SLABS

Mark	Length	Shape	No.	Wt.
AS501	23'-7"	Str.	12	295
AS502	23'-9"	"	2	50
AS503	23'-11"	"	2	50
AS504	24'-3"	"	2	51
AS505	24'-7"	"	2	51
AS506	25'-1"	"	2	52
AS507	25'-7"	"	2	53
AS508	26'-1"	"	2	54
AS509	26'-9"	"	2	56
AS510	27'-5"	"	2	57
AS511	28'-1"	"	2	59
AS512	28'-4"	"	22	650
AS513	8'-0"	"	2	17
AS514	28'-4"	Bent	2	59
AS801	11'-9"	Str.	2	63
AS802	12'-8"	"	2	68
AS803	13'-8"	"	2	73
AS804	14'-10"	"	2	79
AS805	16'-2"	"	2	86
AS806	17'-6"	"	2	93
AS807	19'-11"	"	2	106
AS808-AS811	25'-3"	Bent	8	539
AS812	19'-10"	Str.	2	106
AS813	18'-3"	"	2	97
AS814	16'-11"	"	2	90
AS815	15'-6"	"	2	83
AS816	14'-6"	"	2	77
AS817	13'-6"	"	2	72
AS818	12'-6"	"	2	67
AS819-AS822	25'-10"	Bent	8	552
AS823	25'-4"	"	2	135
AS824	25'-5"	"	2	136
AS825	25'-5"	"	2	136
AS826	25'-5"	"	2	136
AS827	25'-6"	"	2	136
AS828	25'-6"	"	2	136
AS829	25'-6"	"	2	136
AS830	25'-7"	"	2	137
AS831	25'-7"	"	2	137
AS832	25'-7"	"	2	137
AS833	25'-7"	"	2	137
AS834	25'-8"	"	2	137
AS835	25'-8"	"	2	137
AS836	25'-8"	"	2	137
AS837	25'-9"	"	2	138
AS838	25'-9"	"	2	138
AS839	25'-9"	"	2	138
AS840	25'-10"	"	2	138
AS841	25'-7"	"	48	3279
		Total.		9546



AS808-AS811.	a = 24'-2"
AS819-AS822	a = 24'-9"
AS823	a = 24'-3"
AS824	a = 24'-4"
AS825	a = 24'-4"
AS826	a = 24'-4"
AS827	a = 24'-5"
AS828	a = 24'-5"
AS829	a = 24'-5"
AS830	a = 24'-6"
AS831	a = 24'-6"
AS832	a = 24'-6"
AS833	a = 24'-6"
AS834	a = 24'-7"
AS835	a = 24'-7"
AS836	a = 24'-7"
AS837	a = 24'-8"
AS838	a = 24'-8"
AS839	a = 24'-8"
AS840	a = 24'-9"
AS841	a = 24'-6"

CHARLES L. BARBER AND ASSOCIATES
HARRY BALKE ENGINEERS
TOLEDO, OHIO

APPROACH SLAB DETAILS

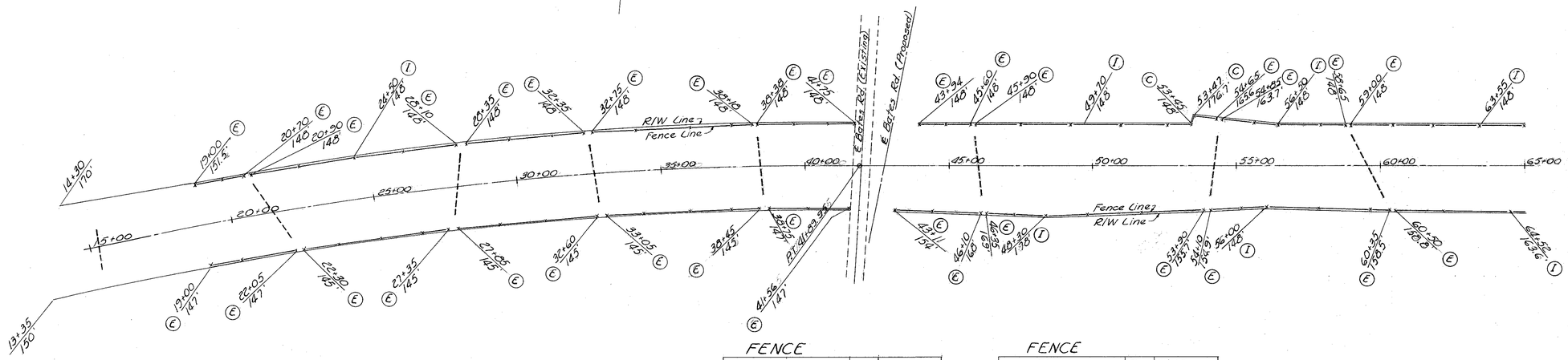
BRIDGE No. ATB-1-0233
SRI UNDER LE.FEVER RD.
ASHTABULA CO. SRI
STA. 123+59.21

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RTS.	M.S.		J.R.	ACA.	8/28/57	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

159/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



Scale 1" = 20'

LEGEND
End Post — (E)
Corner Post — (C)
Intermediate Anchor Post — (I)

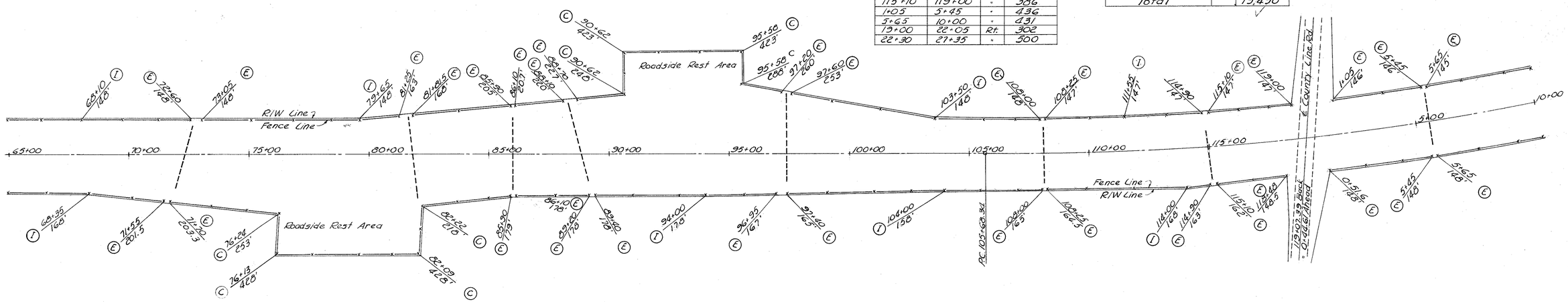
FENCE

Station From	Station To	Side	R/W Fence Lin. Ft.
19+00	20+70	"	170
20+90	28+10	"	729
28+35	32+35	"	390
32+75	38+18	"	554
38+38	41+75	"	341
43+94	45+60	"	166
45+90	54+65	"	902
54+85	58+65	"	381
59+00	72+60	"	1360
73+05	81+25	"	822
81+81	85+90	"	413
86+10	88+10	"	202
88+70	90+62	"	194
90+60	95+60	"	*
95+58	97+20	"	166
97+60	108+00	"	1080
108+25	114+90	"	658
115+10	119+00	"	386
1+05	5+45	"	436
5+65	10+00	"	431
13+00	22+05	Rt.	902
22+30	27+35	"	500

FENCE

Station From	Station To	Side Rt.	R/W Fence Lin. Ft.
27+85	32+60	"	470
33+05	38+45	"	535
38+75	41+56	"	278
43+11	46+10	"	300
46+35	53+90	"	755
54+10	60+35	"	625
60+50	71+55	"	1107
71+70	76+28	"	457
76+22	82+22	"	*
82+22	85+90	"	370
86+10	89+20	"	310
89+40	96+95	"	755
97+40	108+00	"	1060
108+25	114+90	"	673
115+10	118+48	"	341
0+51.6	5+45	"	461
5+65	10+00	"	440
Total			19,490

* See Sht. No. 117 for Roadside Rest Area Fence

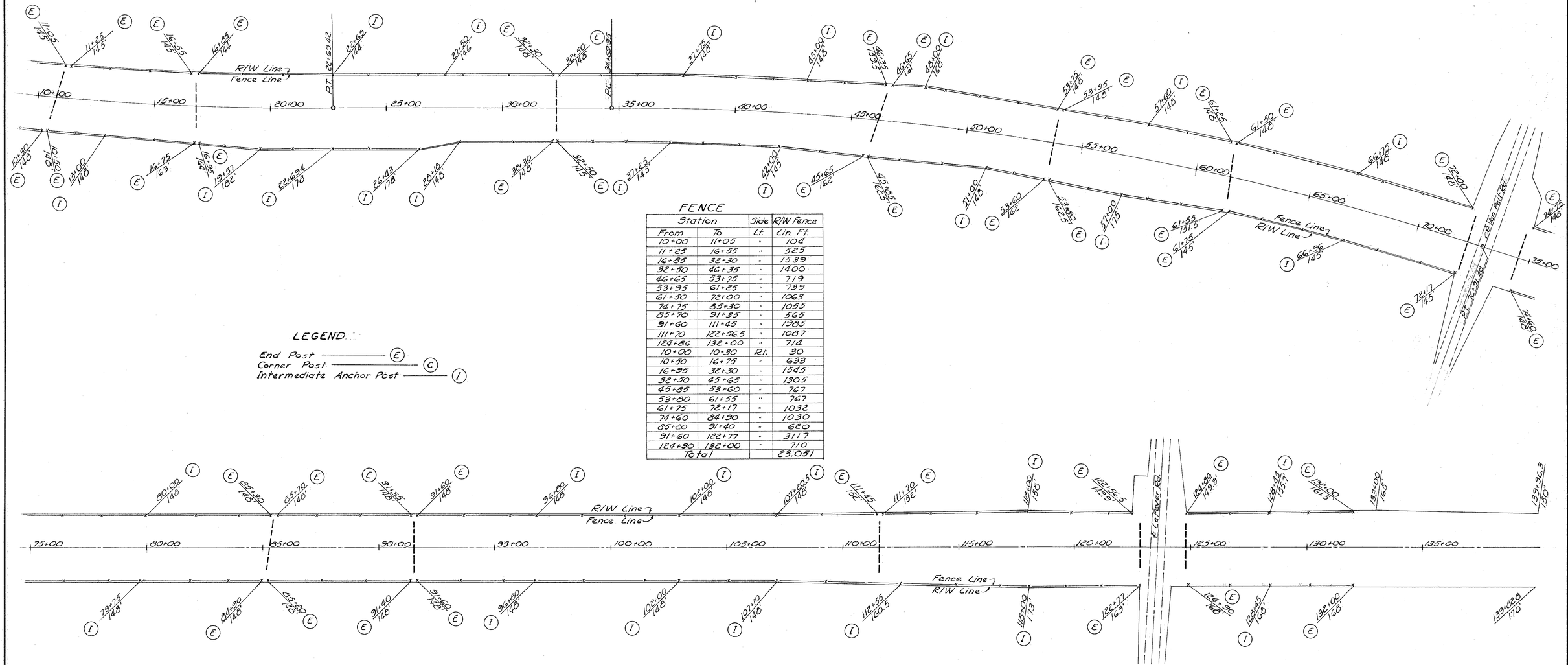


FENCE PLANS 19+00 - 119+07.39 LAK., 0+44.61-10+00 ATB.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-1103(15)	

160/176

LAKE COUNTY
LAK-1-26.51
ASHTABULA COUNTY
ATB-1-0.00



FENCE

Station From	Station To	Side Lt.	R/W Fence Lin. Ft.
10+00	11+05	"	104
11+25	16+55	"	525
16+85	32+30	"	1539
32+50	46+35	"	1400
46+65	53+75	"	719
53+95	61+25	"	739
61+50	72+00	"	1063
74+75	85+30	"	1055
85+70	91+35	"	565
91+60	111+45	"	1985
111+70	122+56.5	"	1087
124+86	132+00	"	714
10+00	10+30	Rt.	30
10+50	16+75	"	633
16+95	32+30	"	1545
32+50	45+65	"	1305
45+85	53+60	"	767
53+80	61+55	"	767
61+75	72+17	"	1032
74+60	84+90	"	1030
85+20	91+40	"	620
91+60	122+77	"	3117
124+90	132+00	"	710
Total			23,051

LEGEND

End Post — (E)
Corner Post — (C)
Intermediate Anchor Post — (I)

Scale 1" = 20'

FENCE PLAN 10+00-132+00 ATB.