

STATE OF OHIO DEPARTMENT OF HIGHWAYS LIC-70-(5.12-8.67) ETNA & HARRISON TOWNSHIPS LICKING COUNTY

I-70-7(29)117

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	1-70-7(29)117

1
250

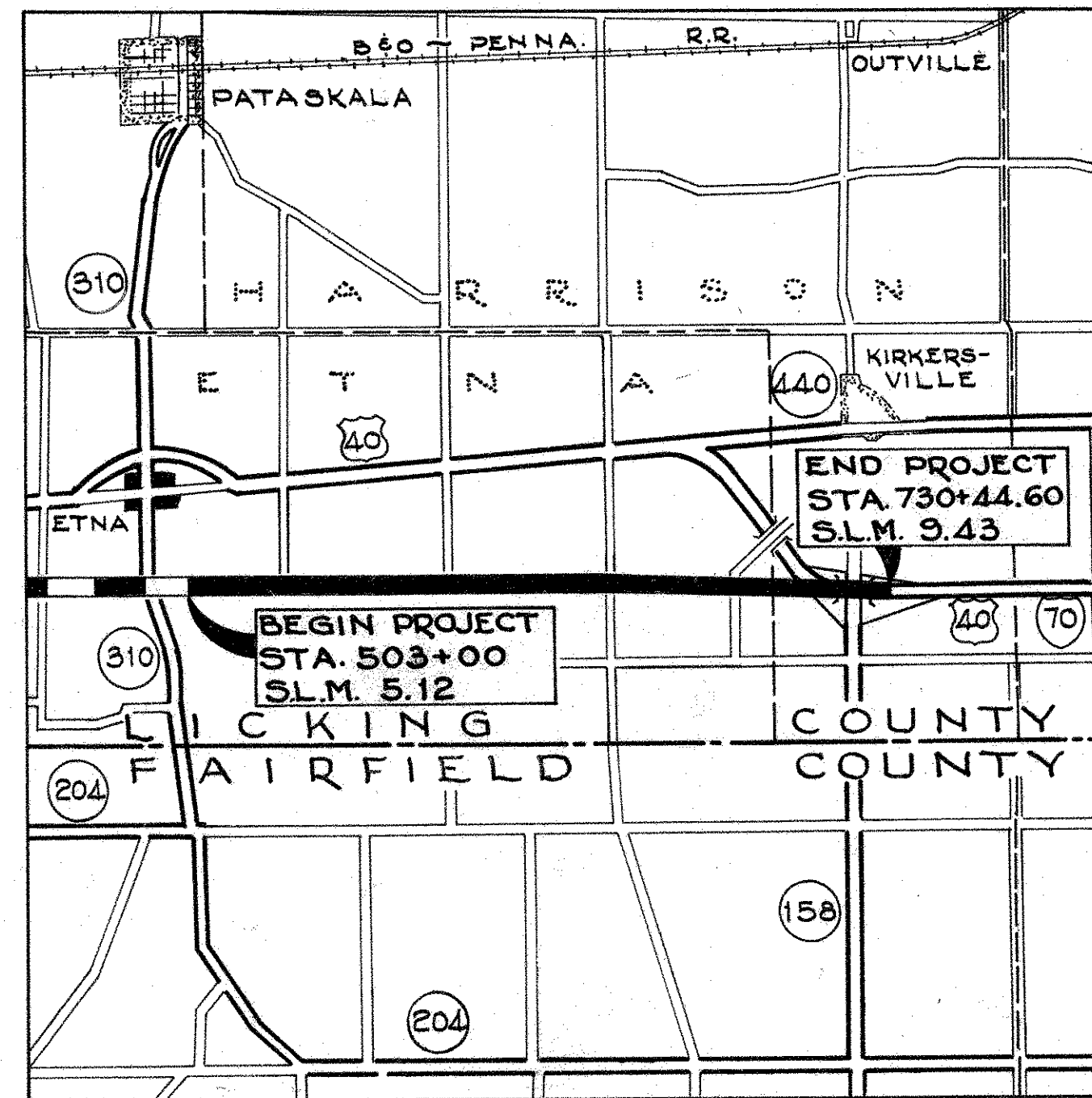
LIC-70-(5.12-8.67)
LICKING COUNTY

CONVENTIONAL SIGNS

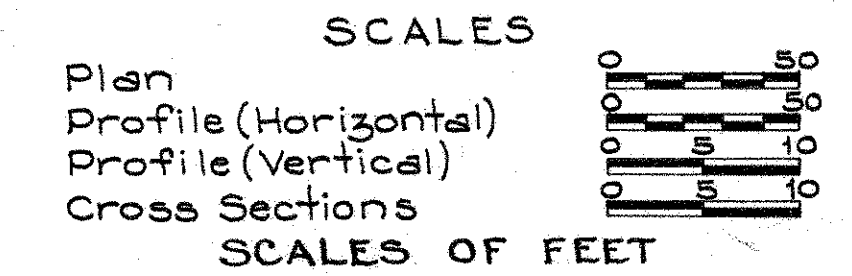
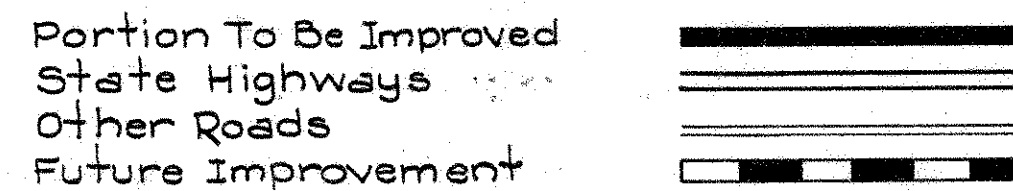
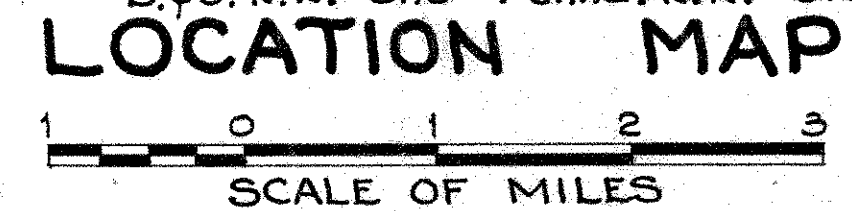
County Line	-----	Limited Access & Right of Way	LA/RW
Township Line	-----	Limited Access Only	LA
Corporation Line	-----	Right of Way Only	RW
Fence Line	-----	Existing Right of Way	-----
Center Line	-----	Right of Way Fence	-----
Railroad	-----	Property Line	-----
Guard Rail	-----	Trees & Stumps	OOO RAA
Pole Line	-----		
	Existing \circ New \bullet		
	Telephone ϕ Power ϕ		

INDEX OF SHEETS

Title Sheet	1	Township Road No 152	155-162
Location Plan	2-3	Township Road No 42	163-168
Typical Sections	4-8	County Road No 39	169-177
Typical Details	9-10	Township Road No 145	178-180 & 180-A
Special Details	10-A	S.R. 158 Connection	181-188
U-Turn Median Openings	11	Existing S.R. 158	189-196
General Notes	12-13	Structures 20' Span & Under	197-215
Summary of Tables	14-15	Structures Over 20' Span	216-223
Calculations	16	Pavement Marking & Delineator Details	224-225
General Summary	17	Right of Way	226-250
Superelevation Tables	18		
Plan and Profile I-70	19-40		
Cross Sections I-70	41-127		
Grading and Drainage Layout			
S.R. 158 Interchange	128		
Interchange of S.R. 158 with I-70	129-154		



Delivery Point: PATASKALA Average Haul 5.9 Mi.
B.O. R.R. and Penna. R.R. Sidings



1965 SPECIFICATIONS

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

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

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

Approved _____
Date 6-3-65 Division Deputy Director

Approved _____
Date 9-9-65 Engineer of Bridges

Approved _____
Date 2-15-65 Engineer of Location and Design

Approved _____
Date 9-15-65 Deputy Director of Design and Construction

Approved _____
Date 9-22-65 Deputy Director of Right of Way

Approved _____
Date 9-22-65 Deputy Director of Planning and Programming

Approved _____
Date _____ First Assistant Director

Approved _____
Date 9/22/65 Director of Highways

LINE DATA

Begin Project	Sta. 503+00		
End Project	Sta. 730+44.60		
Length of Project	22,744.60 Lin. Ft.	or	4.307 Miles
Begin Work	Sta. 503+00		
(Sta. Equation 733+97.69 Back = 550+00 Ahead)			
End Work	Sta. 572+30		
Gross Length of Work	25,327.69 Lin. Ft.	or	4.797 Miles
Work Additions			
Twp. Rd. No 152	Sta. 16+00 to Sta. 40+00	=	2,400.00 Lin. Ft.
Twp. Rd. No 42	Sta. 21+00 to Sta. 34+50	=	1,350.00 Lin. Ft.
Co. Rd. No 39	Sta. 16+00 to Sta. 34+50	=	1,850.00 Lin. Ft.
S.R. 158 (Conn. Rd.)	Sta. 512+00 to Sta. 532+68.43	=	2,068.43 Lin. Ft.
Exist. S.R. 158	Sta. 42+29 to Sta. 58+43	=	1,614.00 Lin. Ft.
Length of Work	= 9,282.43 Lin. Ft.	or	1.758 Miles
Total Length of Work	= 34,610.12 Lin. Ft.	or	6.554 Miles

STANDARD CONSTRUCTION DRAWINGS			
FACI-1	6-1-65	HW-3	6-1-65
FACI-2	6-1-65	HW-E	6-1-65
BP-1	6-1-65	SP-55	6-30-61
BP-2	6-1-65	MC-4	6-1-65
BP-6	6-1-65	CB-4	6-1-65
F-2	6-1-65	CB-5	6-1-65
F-3	6-1-65	CB-6	6-1-65
MC-3	6-1-65	CB-8	6-1-65
HW-1	6-1-65	BP-7	6-1-65
HW-2	6-1-65	GR-1	6-1-65
CSB-4-63	Sh. 12-30-63	SD-1-63	11-12-63
			BR-1-65
			Sh. 1 2-1-65

SUPPL. SPECIFICATIONS	
806	(See Proposal)
201	(See Proposal)
808	7-14-65
811	3-29-65

**DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS**

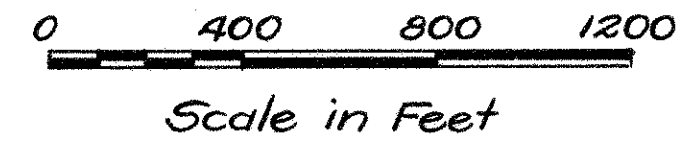
APPROVED:

DIVISION ENGINEER DATE

J-12

FILE NO	LICKING COUNTY
	SEC. LIC-70-(5.12-8.67)
	Date of Letting _____ 196
	Contract No _____

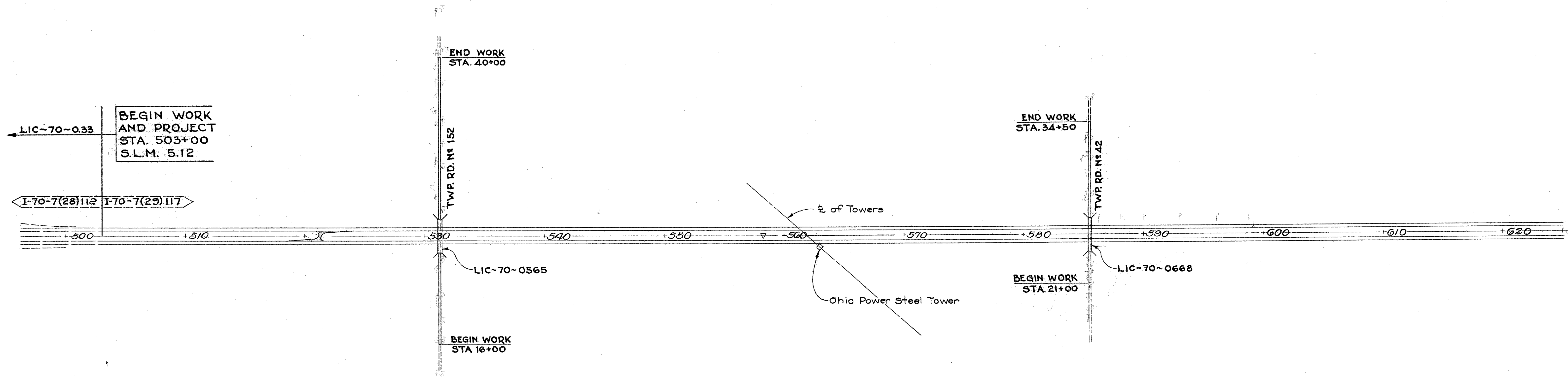
LOCATION PLAN



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

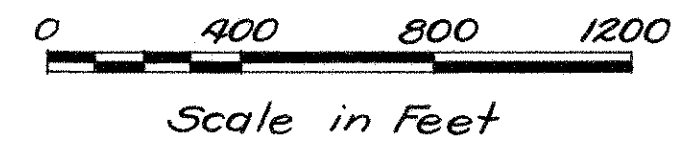
2
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LIC-70-(5.12-8.67)



J-12

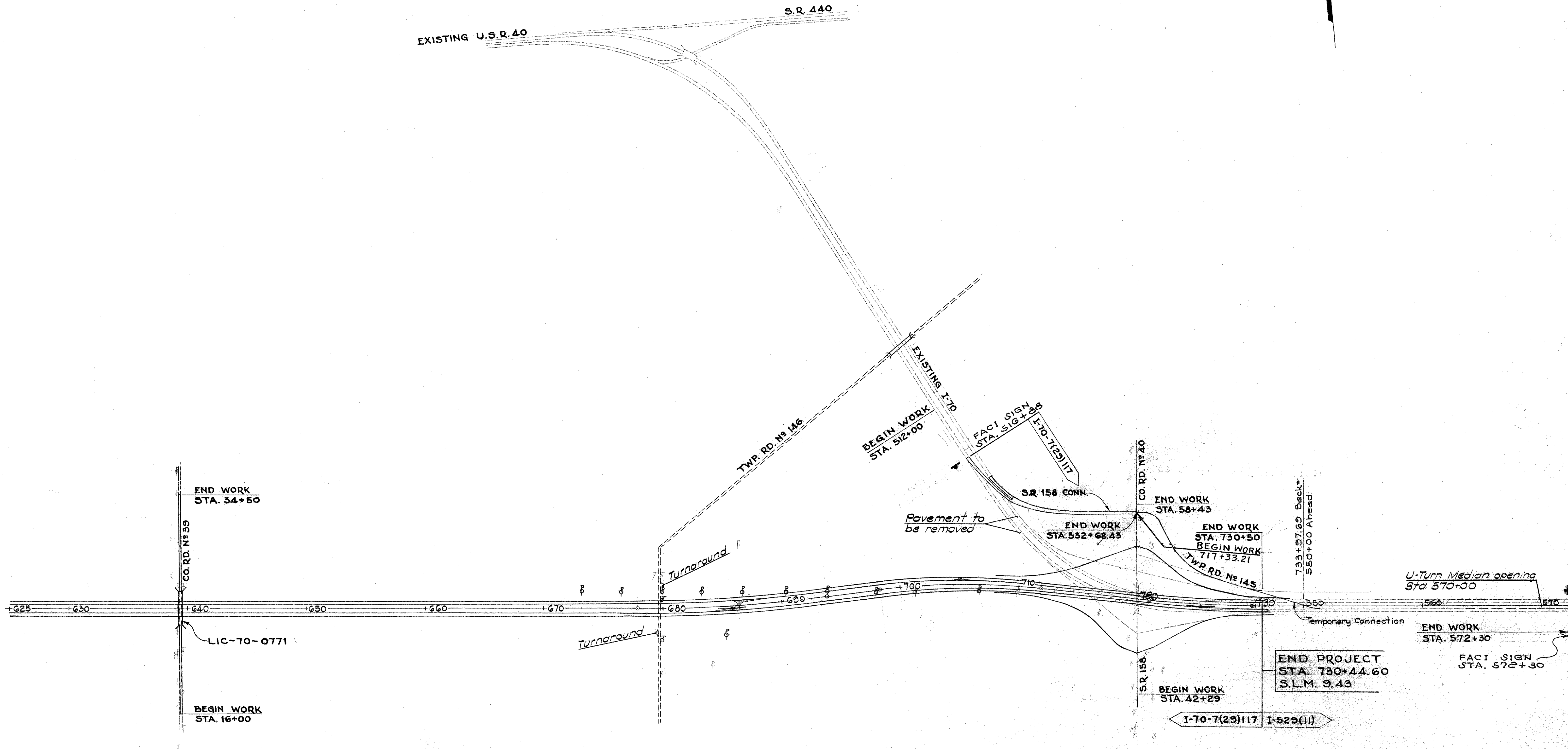
LOCATION PLAN



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

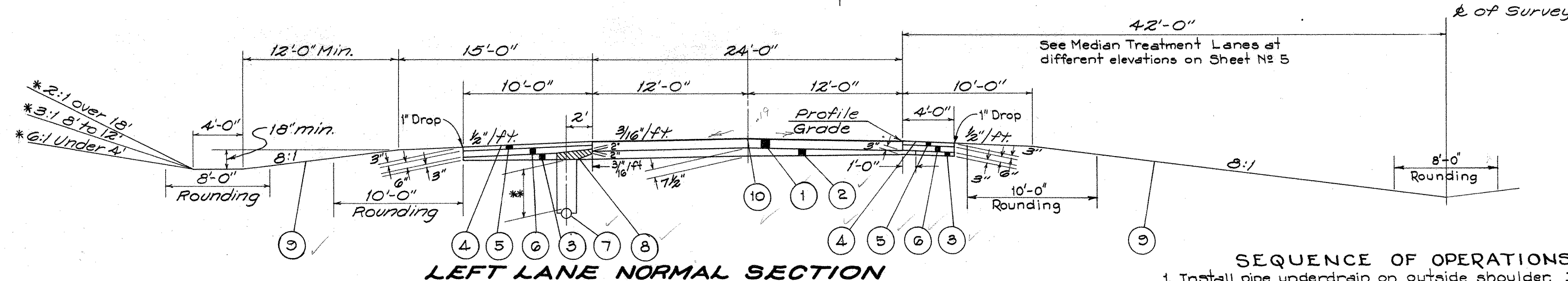
3
250

LIC-70-(5.12-8.67)



TYPICAL SECTION TYPE 451

*2 1/2" Asphalt
1/4" slope
x .40
P.G.*



LEFT LANE NORMAL SECTION

SCHEDULE OF STATIONING

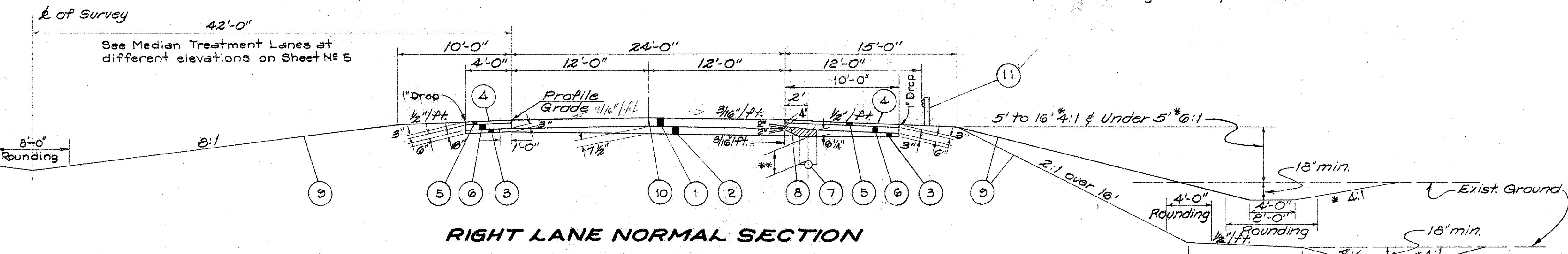
⊗ Sta. 503+00	to	Sta. 695+75	=	19,275 Lin. Ft.
Sta. 712+75	to	Sta. 720+25	=	750 Lin. Ft.
			Total Length =	20,025 Lin. Ft.

SEQUENCE OF OPERATIONS

1. Install pipe underdrain on outside shoulder. Installation of shallow underdrain in median may be deferred until 451 is placed.
2. Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrain is present.
3. Construct 451.
4. Remove subbase and any contaminated backfill over drain and replace with No 6 Aggregate as shown by 6.
5. Complete shoulder construction.

NOTE:
* Or as shown.
** 50" Cover in cut and 30" cover in fill.

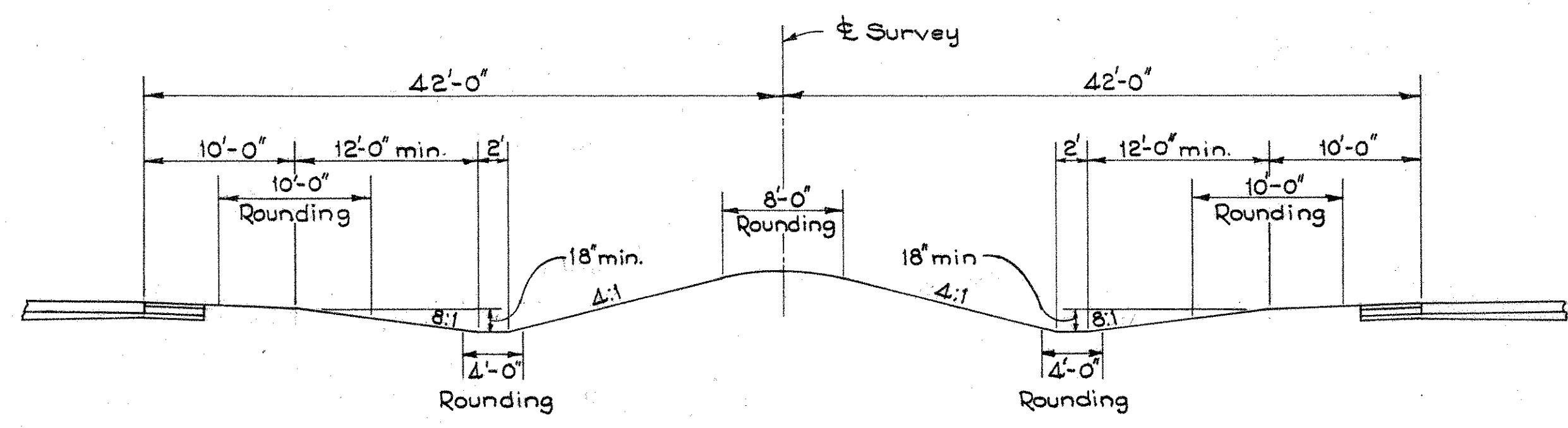
⊗ See Hump Median Detail
NOTE:
For details not shown refer to Standard Construction Drawing MC-1.



RIGHT LANE NORMAL SECTION

SCHEDULE OF STATIONING

⊗ Sta. 503+00	to	Sta. 697+25	=	19,425 Lin. Ft.
Sta. 714+50	to	Sta. 720+25	=	575 Lin. Ft.
			Total Length =	20,000 Lin. Ft.



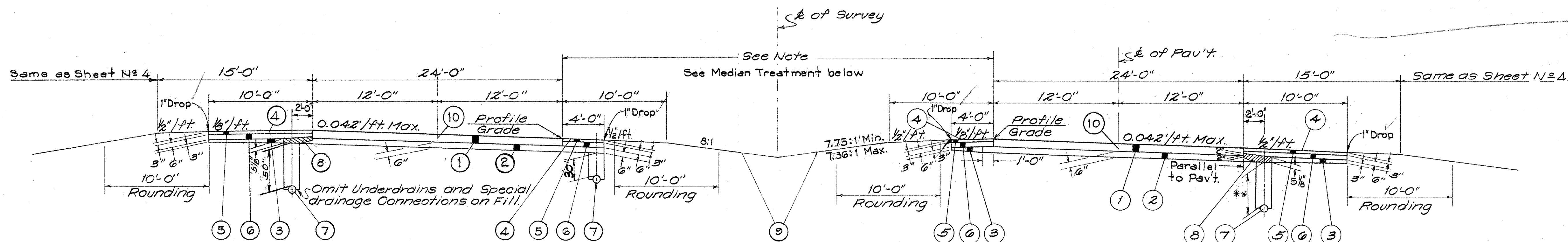
HUMP MEDIAN DETAIL

Sta. 503+00 to Sta. 520+50

- 1 451 8" Reinforced Portland Cement Concrete Pavement
- 2 310 Subbase, Grading 'A' or 'B', As per plan (See General Notes) (Thickness as shown)
- 3 310 Subbase, Regular Grading (Thickness as shown)
- 4 409 Seal Coat (using 0.008 Cu.Yds. No 8 Aggregate per Sq. Yd. and 0.25 Gal's bituminous material per Sq. Yd. (See note in proposal))
- 5 301 3" Bituminous Aggregate Base, 702.01 (85-100) or 702.09 RT-12 (See Note in proposal).
- 6 304 Aggregate Base. (Thickness as shown)
- 7 605 6" Shallow Pipe Underdrains and Deep Pipe Underdrains
- 8 Special Drainage Connection, using No 8 Aggregate (See note in proposal)
- 9 659 Seeding and Mulching
- 10 Standard Longitudinal Joint
- 11 606 Guard Rail, Type 4

TYPICAL SECTION TYPE 451

Note: See Normal Typical Section for Guard Rail Detail



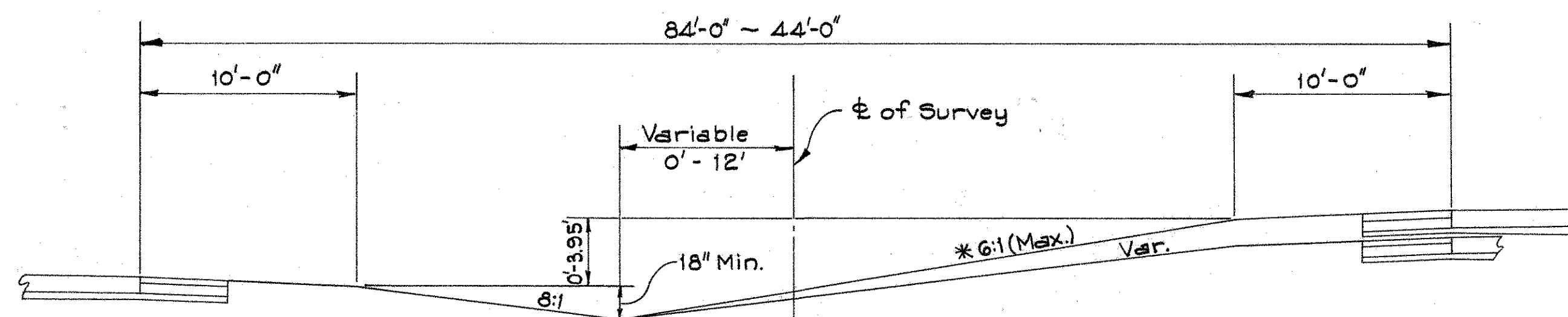
SUPERELEVATED SECTION

SCHEDULE OF STATIONING ~ LEFT LANE

Sta. 695+75 to Sta. 712+75	= 1,700	Lin. Ft.
Sta. 720+25 to Sta. 730+44.60	= 1,019.60	Lin. Ft.
Total Length = 2,719.60		Lin. Ft.

SCHEDULE OF STATIONING ~ RIGHT LANE

Sta. 697+25 to Sta. 714+50	= 1,725	Lin. Ft.
Sta. 720+25 to Sta. 731+57.30	= 1,132.30	Lin. Ft.
Total Length = 2,857.30		Lin. Ft.



MEDIAN TREATMENT LANES AT DIFFERENT ELEVATIONS

SCHEDULE OF STATIONING

Sta. 635+00 to Sta. 731+57.30

NOTE:

Sta. 698+22.55 to Sta. 711+89.22	Median Width Var. 84' to 44'
Sta. 711+89.22 to Sta. 720+99.45	Median Width 44'
Sta. 720+99.45 to Sta. 729+66.12	Median Width Var. 44' to 50'

- ① 451 9" Reinforced Portland Cement Concrete Pavement
- ② 310 Subbase, Grading "A" or "B", As per plan (See General Note) (Thickness as shown)
- ③ 310 Subbase, Regular Grading (Thickness as shown)
- ④ 409 Seal Coat, using 0.008 Cu. Yds. No. 8 Aggregate per Sq. Yd. and 0.25 Gal's. Bituminous Material per Sq. Yd. (See note in Proposal)
- ⑤ 301 3" Bituminous Aggregate Base, 70201 (85-100) or 70209 RT-12 (See Note in proposal.)
- ⑥ 304 Aggregate Base. (Thickness as shown)
- ⑦ 605 6" Shallow Pipe Underdrains and Deep Pipe Underdrains
- ⑧ Special Drainage Connection using No. 8 Aggregate (See note in Proposal)
- ⑨ 659 Seeding and Mulching
- ⑩ Standard Longitudinal Joint

SEQUENCE OF OPERATIONS

1. Install pipe underdrain on outside shoulder. Installation of shallow underdrain in median may be deferred until 451 is placed.
2. Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrain is present.
3. Construct 451.
4. Remove subbase and any contaminated backfill over drain and replace with No. 6 Aggregate as shown by ⑤.
5. Complete shoulder construction.

NOTE:

- * Median Swale will remain at ϕ of Survey until slope reaches 6:1.
- ** 50" cover in cut and 30" cover in fill.

NOTE

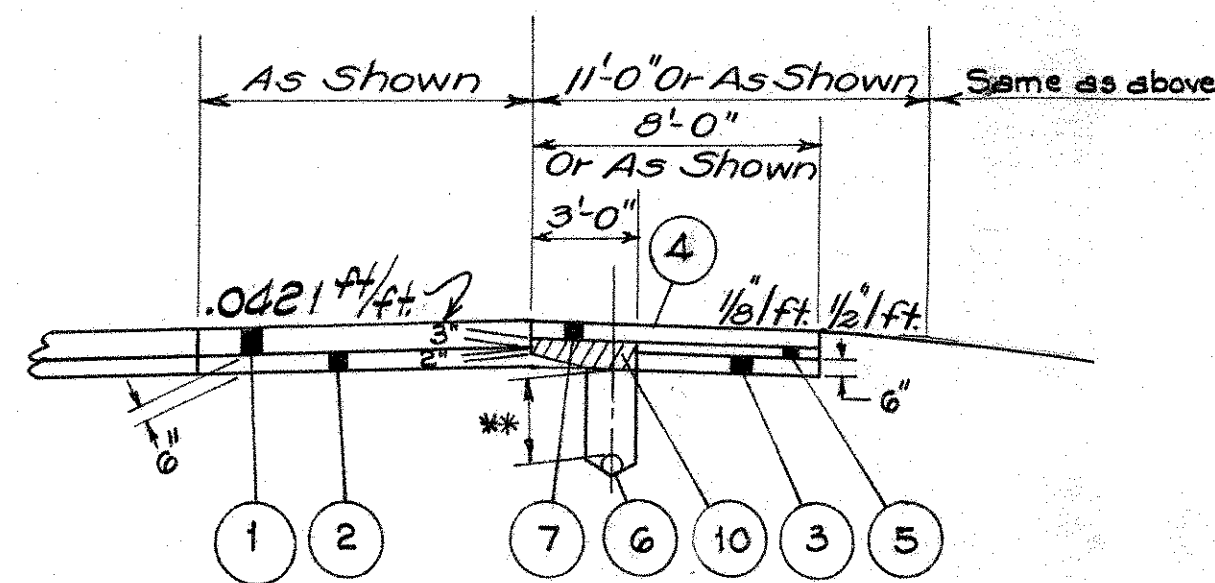
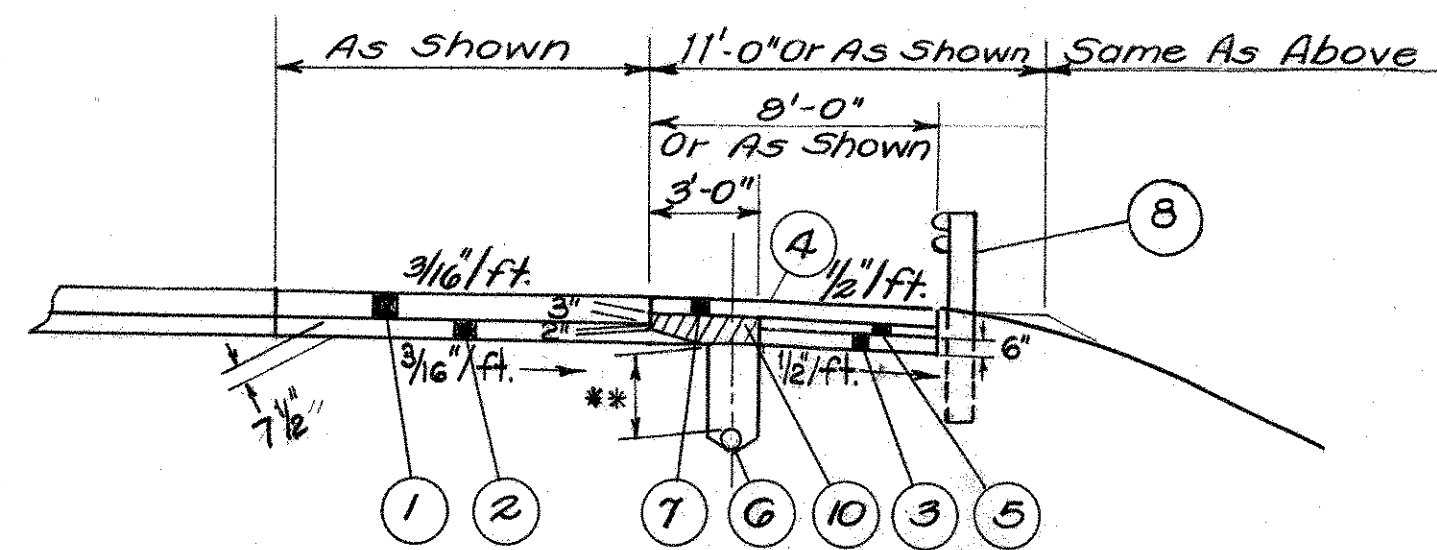
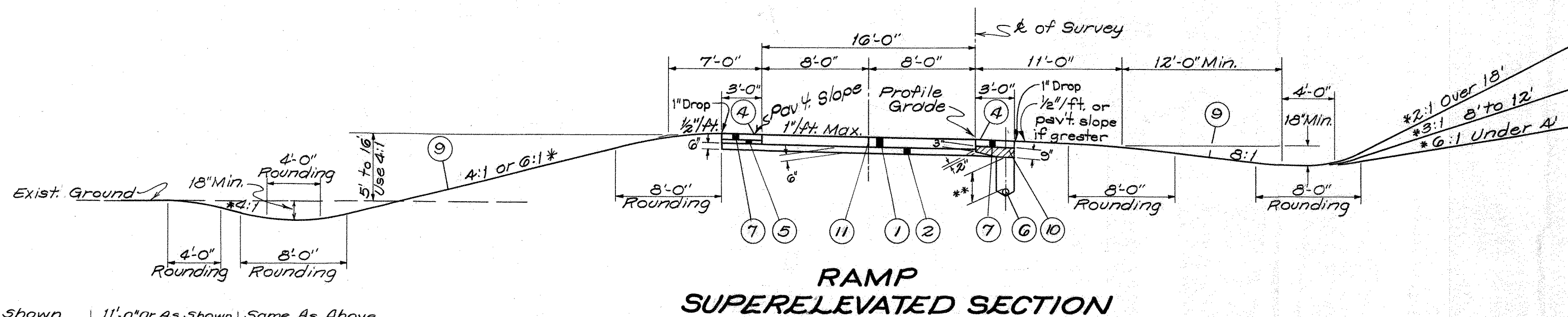
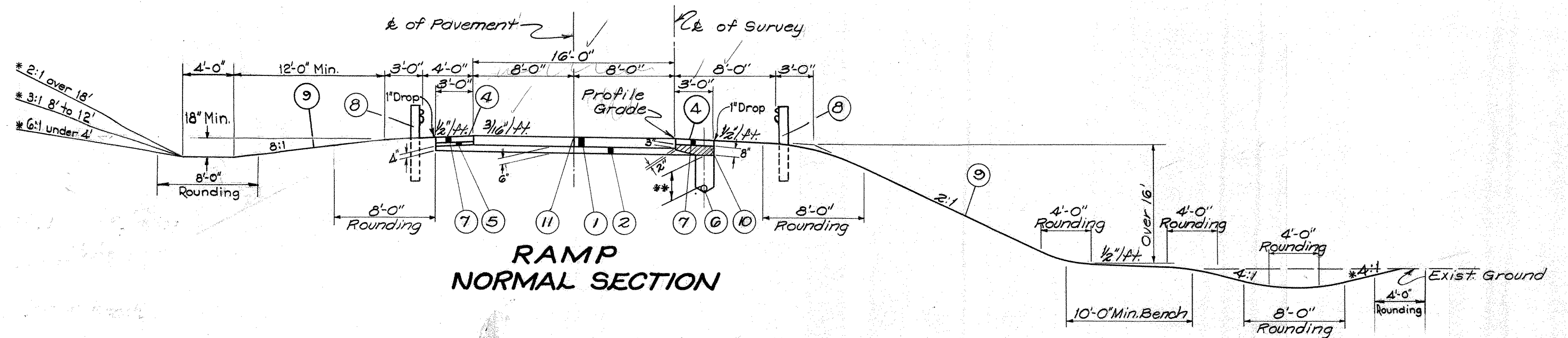
For details not shown refer to Standard Construction Drawing MC-1.

TYPICAL SECTION

TYPE 451

FED. RD. DIVISION	STATE	PROJECT	6
2	OHIO		250

LIC-70 (5.12-8.67)



SEQUENCE OF OPERATIONS

1. Install pipe underdrain on outside shoulder.
2. Place subbase out to outside edge of underdrain or to three feet beyond edge of pavement where no underdrain is present.
3. Construct 451.
4. Remove subbase and any contaminated backfill over drain and replace with No. 6 Aggregate as shown by 6.
5. Complete shoulder construction.

NOTE:
* Or as shown
** 50' Cover in cut and 30' cover in fill.

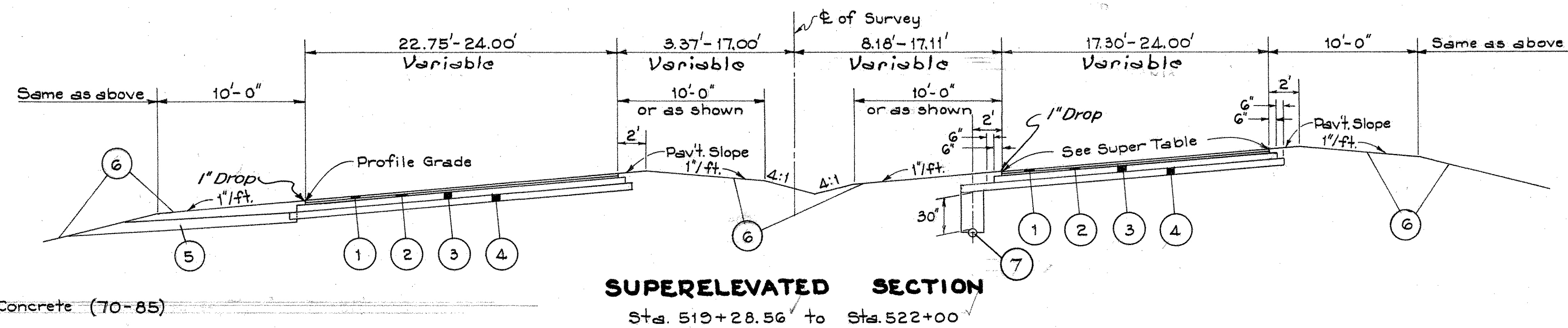
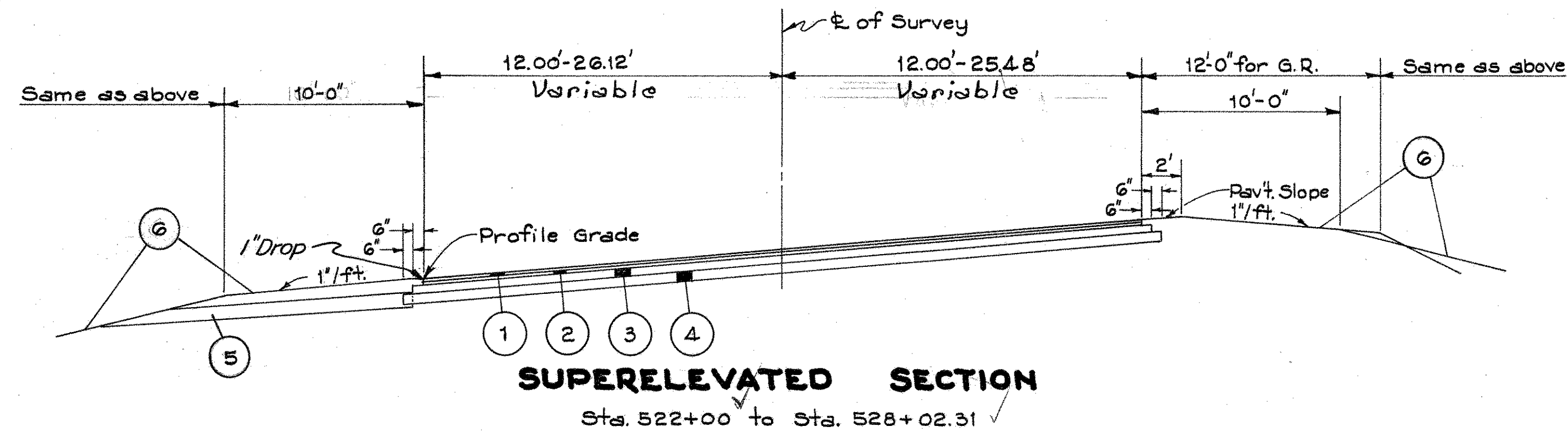
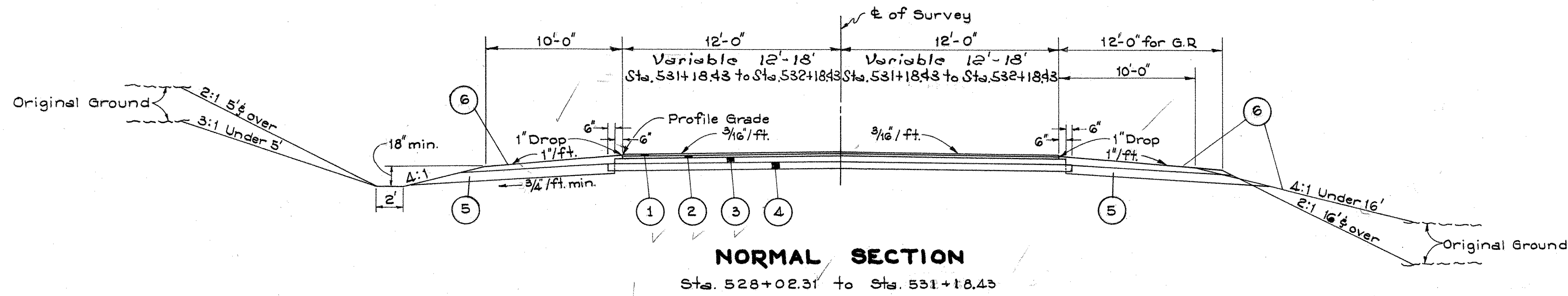
NOTE:
For details not shown refer to Standard Construction Drawing MC-1.
The Typical are detailed relative to the direction of traffic.

- 1 451 9" Reinforced Portland Cement Concrete Pavement
- 2 310 Subbase, Grading "A" or "B", As per plan (Thickness as shown) (See General Note)
- 3 310 Subbase, Regular Grading, Thickness as shown
- 4 409 Seal Coat, using 0.008 Cu. Yds. No. 8 Aggregate per Sq. Yd. and 0.25 Gal's. Bituminous Material per Sq. Yd. (See note in Proposal)
- 5 304 3" Aggregate Base Course
- 6 605 6" Shallow Pipe Underdrains and Deep Pipe Underdrains
- 7 301 6" Bituminous Aggregate Base, (2-3 Courses) 702.01 (85-100) or 702.09 RT-12 (See Note in proposal.)
- 8 606 Guard Rail, Type 4
- 9 659 Seeding and Mulching
- 10 Special Drainage Connections, using No. 8 Aggregate (See note in Proposal)
- 11 Standard Longitudinal Joint

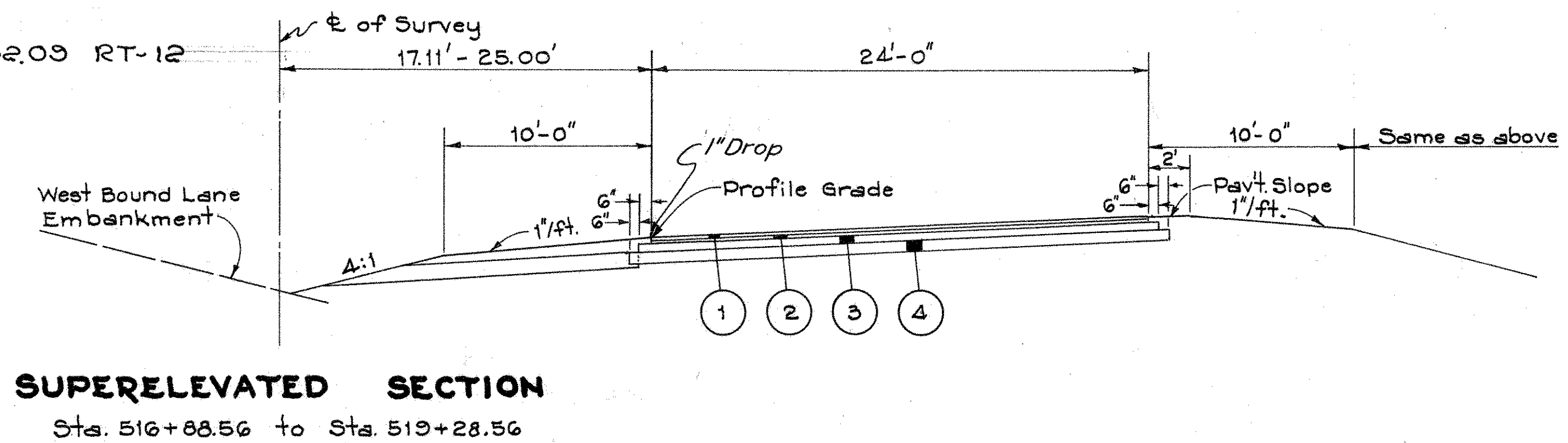
TYPICAL SECTIONS

TYPE 404 on 301

LIC-70-(5.12-8.67)



- ① 404 1 1/4" Asphalt Concrete (70-85)
- ② 402 1 1/4" Asphalt Concrete (70-85)
- ③ 301 5" Bituminous Aggregate Base (2-2 1/2 Courses) 702.01 (85-100) or 702.03 RT-12
- ④ 310 8" Subbase
- ⑤ 605 Aggregate Drains
- ⑥ 655 Seeding and Mulching
- ⑦ 605 6" Shallow Pipe Underdrains



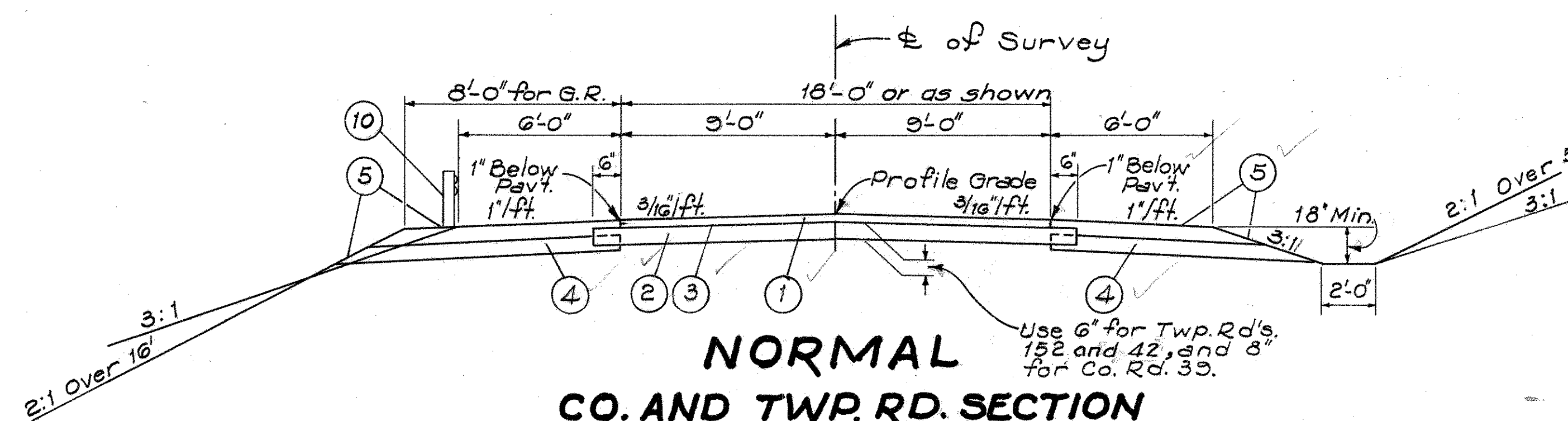
Note: ~
Variable Widths as indicated.

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

8
250

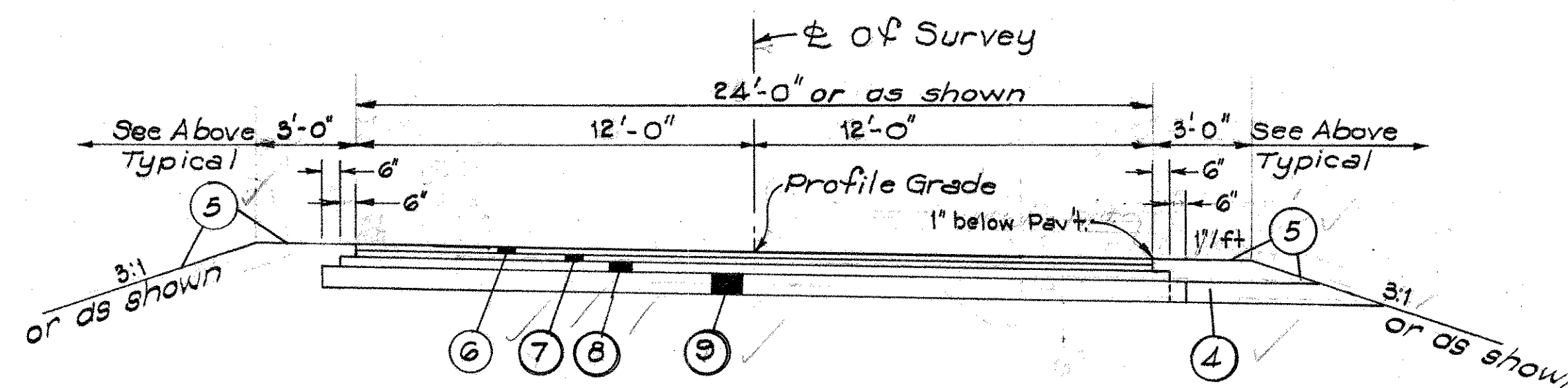
LIC-70-(5.12-8.67)



NORMAL CO. AND TWP. RD. SECTION

Schedule Of Stations

- TWP. RD. N^o 152
*Sta. 16+50 to Sta. 33+50 = 2018.5 Lin. Ft.
- TWP. RD. N^o 42
*Sta. 21+50 to Sta. 34+50 = 1018.5 Lin. Ft.
- Co. RD. N^o 33
*Sta. 16+50 to Sta. 34+00 = 1468.5 Lin. Ft.
- TWP. RD. N^o 145
Sta. 729+00 to Sta. 730+50 = 150.0 Lin. Ft. (See Sheets N^o 33 & 180-A for width of Pavement and Berms.)
- * 331.50' deducted for Bridge Sta. 23+34.25 to Sta. 26+65.75



SUPERELEVATED SECTION

Schedule Of Stations

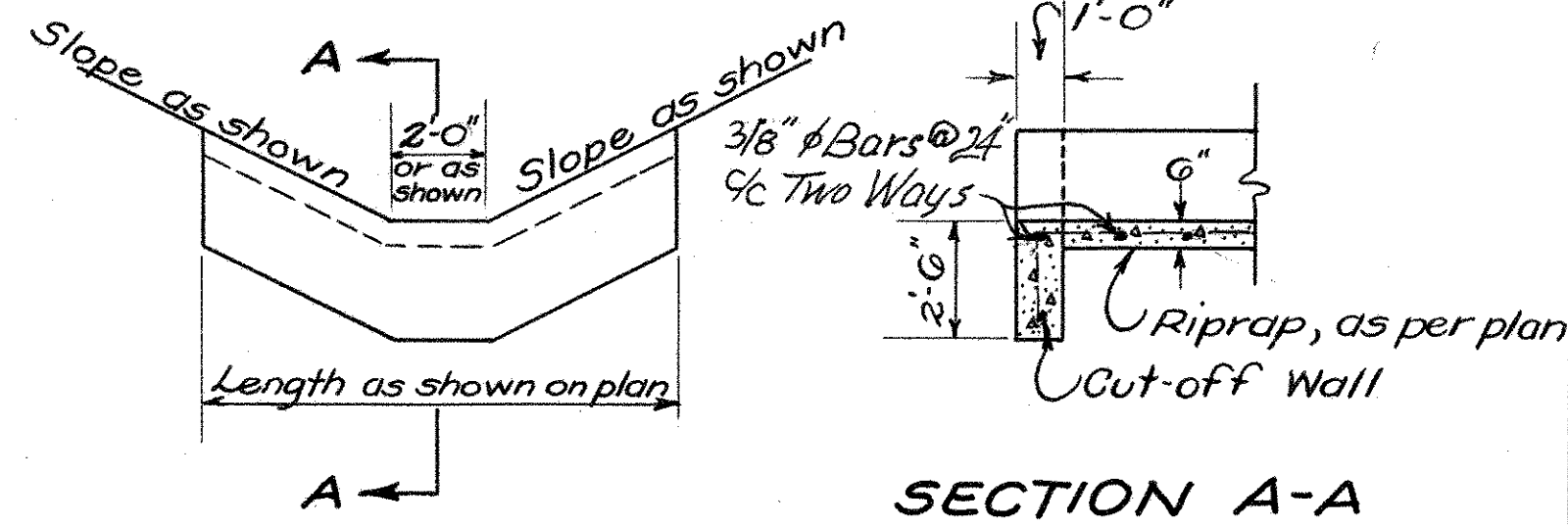
- TWP. RD. N^o 145
Sta. 719+50 to Sta. 729+00 = 950.00 Lin. Ft.

- ① 404 1/2" Asphalt Concrete (85-100)
- ② 304 Aggregate Base
- ③ 408 Bituminous Prime Coat, 702.09 RT-2 or RT-3 applied at the rate of 0.4 Gal./S.Y.
- ④ 605 Aggregate Drains
- ⑤ 659 Seeding and Mulching
- ⑥ 404 1/4" Asphalt Concrete (70-85)
- ⑦ 402 1/2" Asphalt Concrete (70-85)
- ⑧ 301 5" Bituminous Aggregate Base (2-2 1/2" Courses) 702.01 (85-100) or 702.09 RT-12
- ⑨ 310 8" Subbase
- ⑩ 606 Guard Rail, Type 4

NOTE:
For Details not shown see
Standard Drawings BP-5 and MC-1.

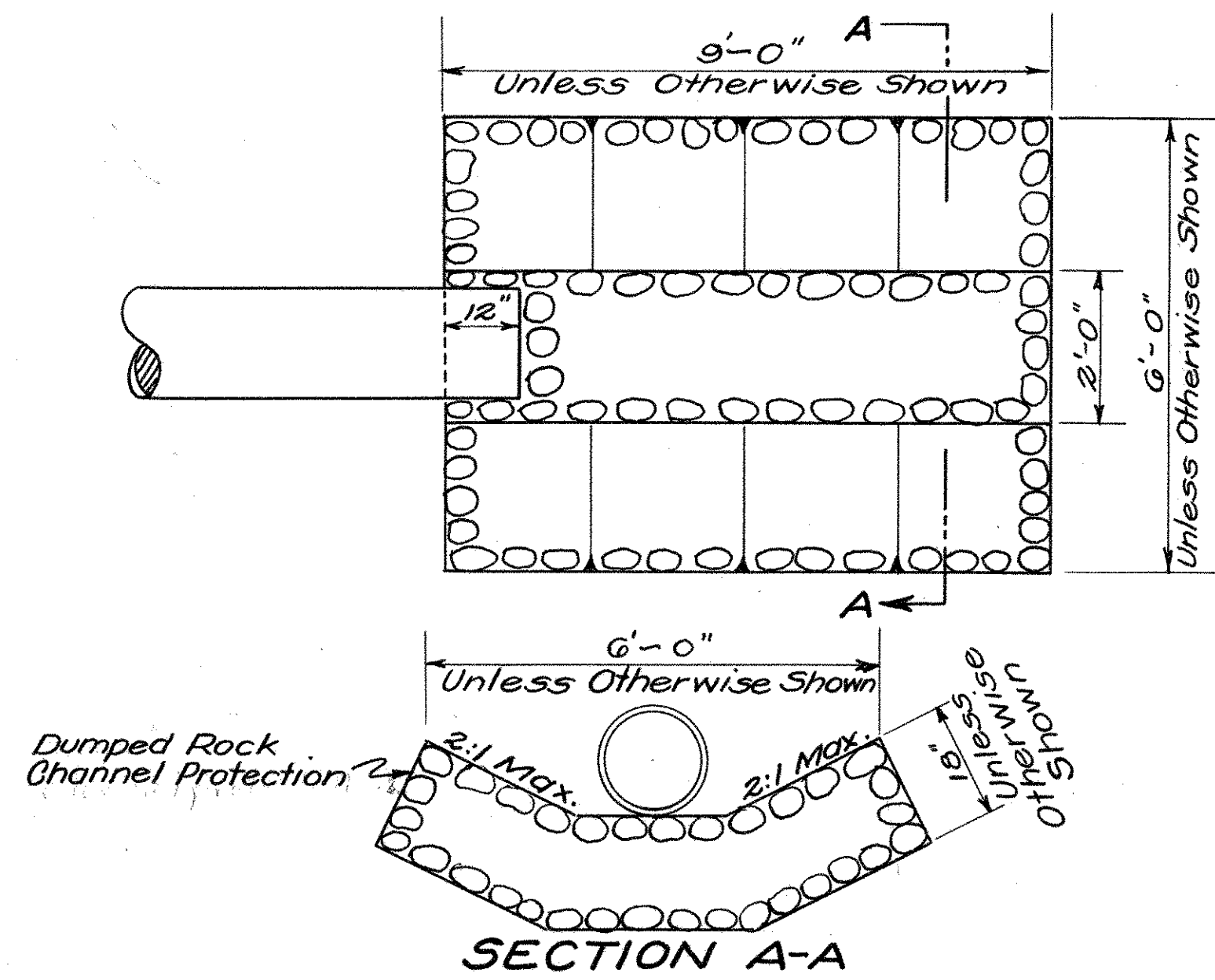
TYPICAL DETAILS

LIC-70-(5.12-8.67)

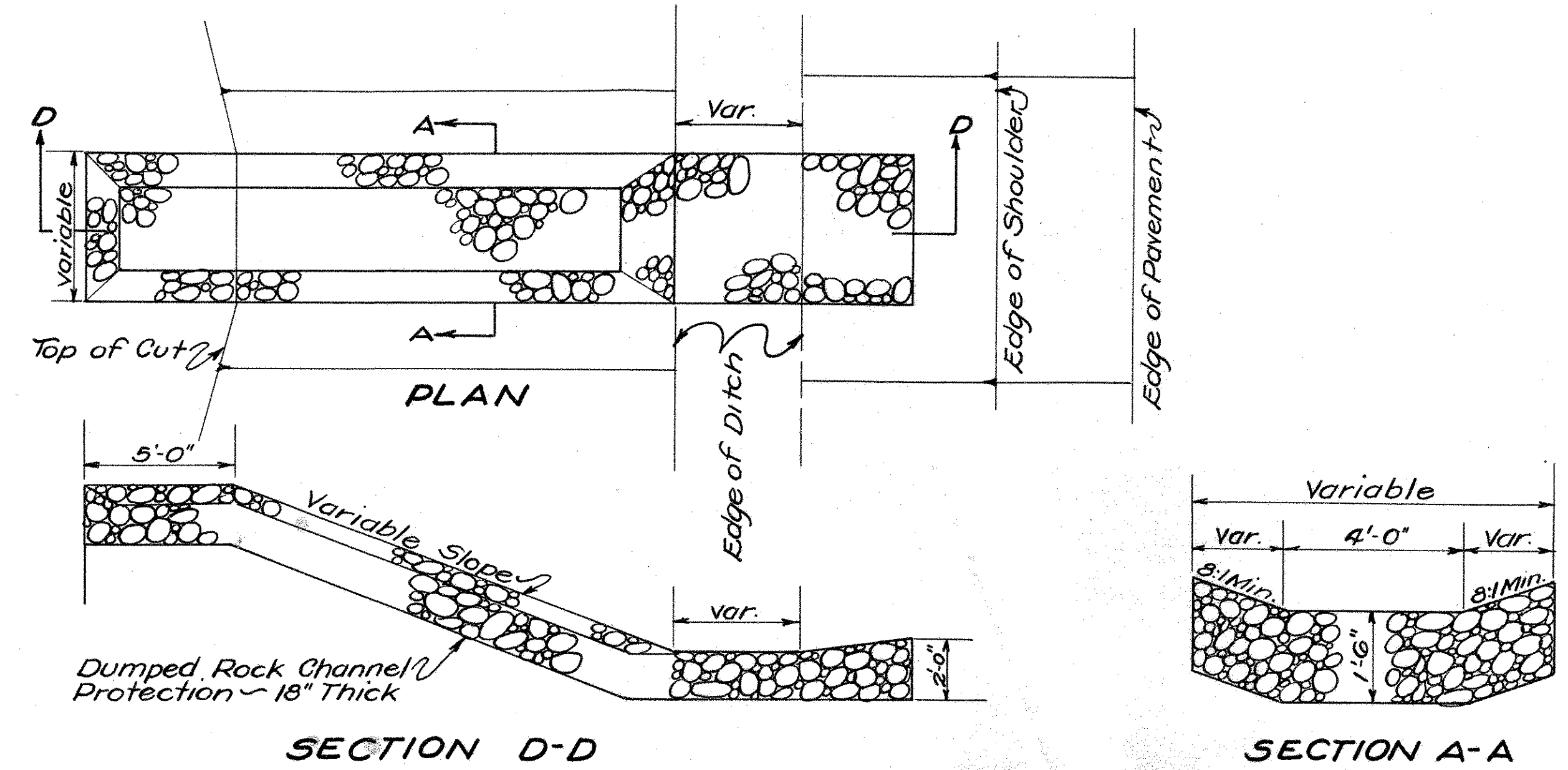


DETAIL OF CUT-OFF WALLS
TO BE PROVIDED FOR RIPRAP USING 6" REINFORCED CONCRETE, AS PER PLAN

Cost of cut-off walls to be included in unit price bid for 601, Riprap, as per plan.



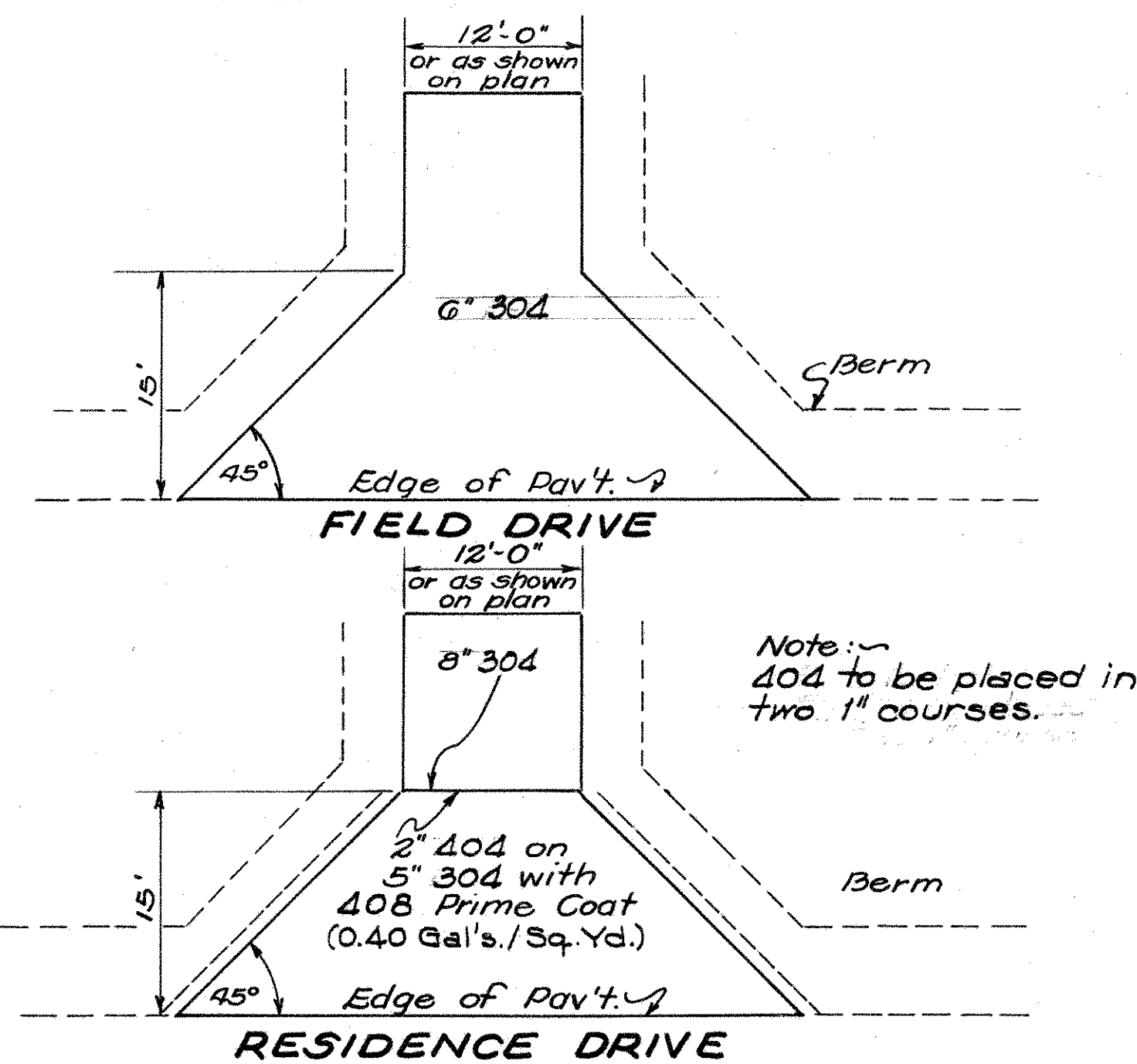
EROSION CONTROL AT PIPE OUTLETS



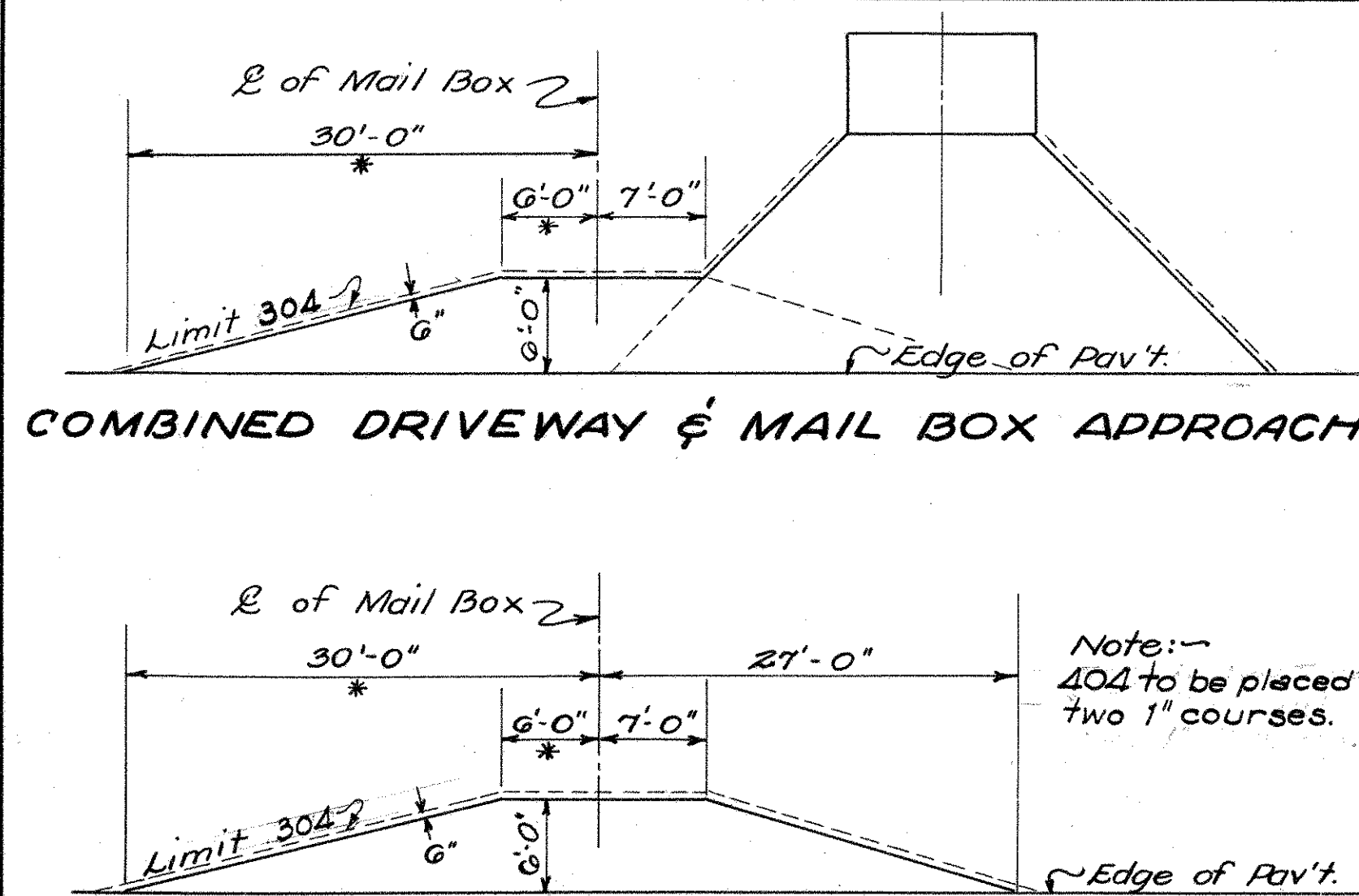
EROSION CONTROL AT SWALES

Estimated Quantity
601 Dumped Rock Channel Protection 20 Cu.Yds.

NOTE:
Location to be determined by the Engineer



DRIVES



TYPICAL MAIL BOX APPROACH

2" 404 on 5" 304 with 408 Prime Coat
* Add 2 feet for each additional Mail Box
Where feasible, Mail Box Turnouts shall be combined with residence drives and the quantities adjusted by the Engineer.

MAIL BOX TURNOUT (Separate from Residence Drives)

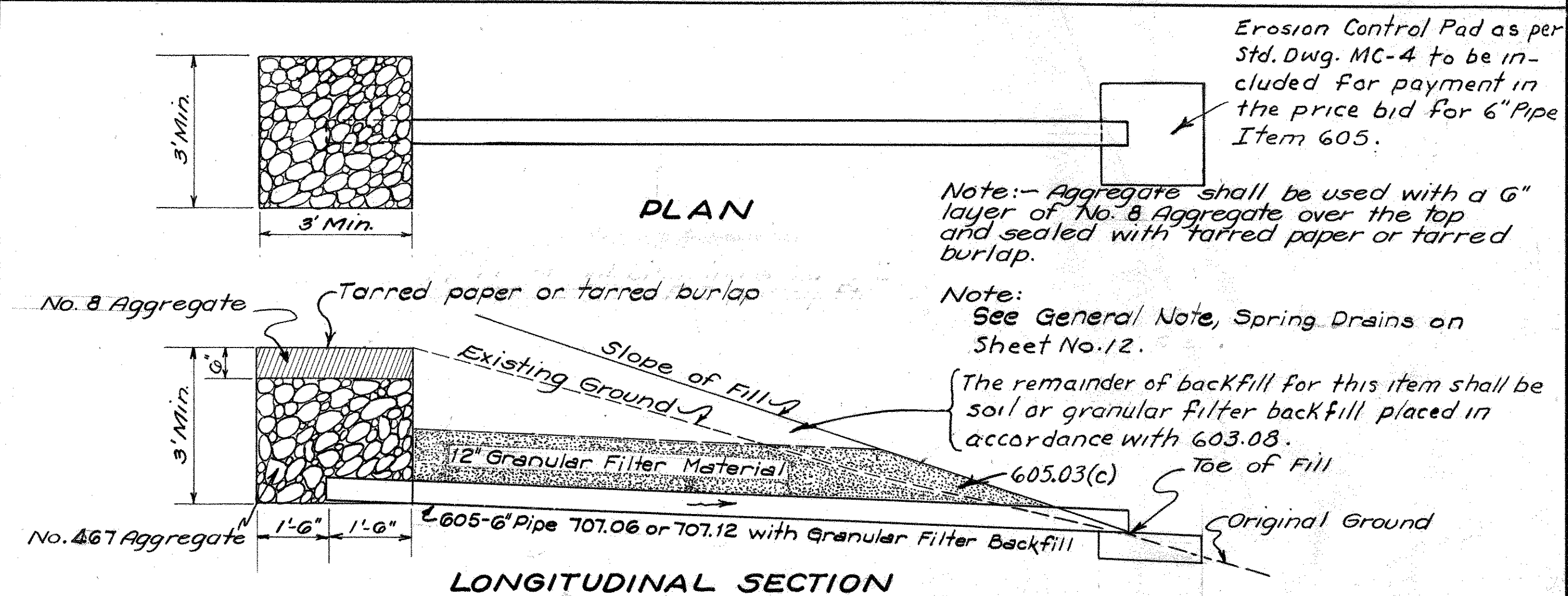
Item	Description	Quant. Each	Est. No.	Total	Unit
404	2" Asphalt Concrete	1.3	3	3.9	Cu. Yds.
304	5" Aggregate Base	3.7	3	11.1	Cu. Yds.
408	Bituminous Prime Coat	8.4	3	25.2	Gals.

MAIL BOX TURNOUT (Combined with Residence Drives)

Item	Description	Quant. Each	Est. No.	Total	Unit
404	2" Asphalt Concrete	0.82	10	8.2	Cu. Yds.
304	5" Aggregate Base	2.3	10	23.0	Cu. Yds.
408	Bituminous Prime Coat	5.9	10	59.0	Gals.

NOTE:~ Quantities carried to sheet N#15

DETAIL OF MAIL BOX APPROACHES



LONGITUDINAL SECTION

Erosion Control Pad as per Std. Dwg. MC-4 to be included for payment in the price bid for 6" Pipe Item 605.

Note:~ Aggregate shall be used with a 6" layer of No. 8 Aggregate over the top and sealed with tarred paper or tarred burlap.

Note: See General Note, Spring Drains on Sheet No. 12.

The remainder of backfill for this item shall be soil or granular filter backfill placed in accordance with 603.08.

Note: Aggregate, tarred paper or tarred burlap and necessary excavation for spring drains shall be included for payment in the price bid per linear foot for Item 605 Aggregate Drains for Springs. As Per Plan. Spring drains shall be placed at locations designated by the Engineer.

ESTIMATED QUANTITIES

Item 605-6" Unclassified Pipe Underdrain, 707.06 or 707.12, as per plan 500 Lin. Ft.
Item 605- Aggregate Drains for Springs As Per Plan. 30 Lin. Ft.

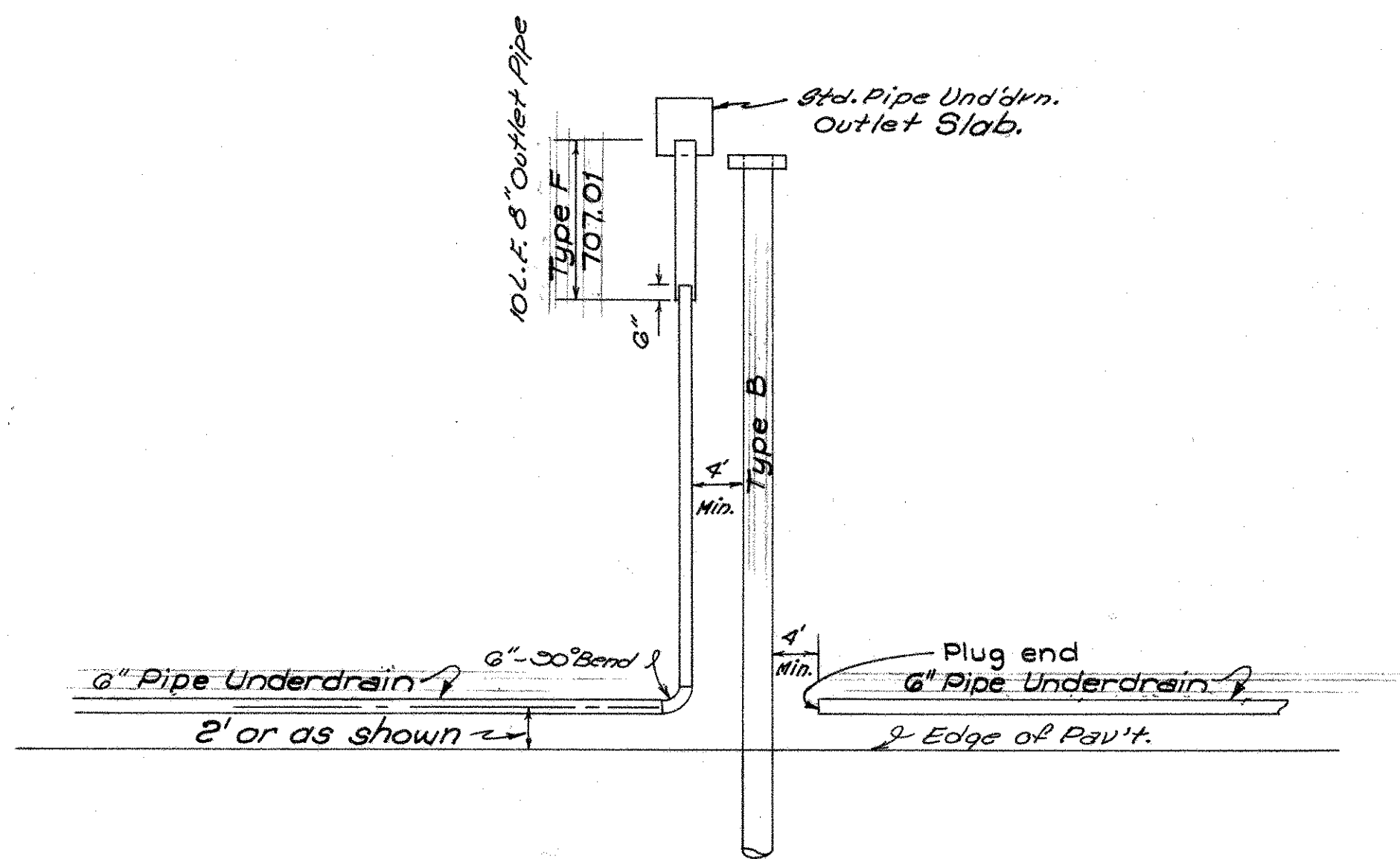
DETAIL OF SPRING DRAINS

TYPICAL DETAILS

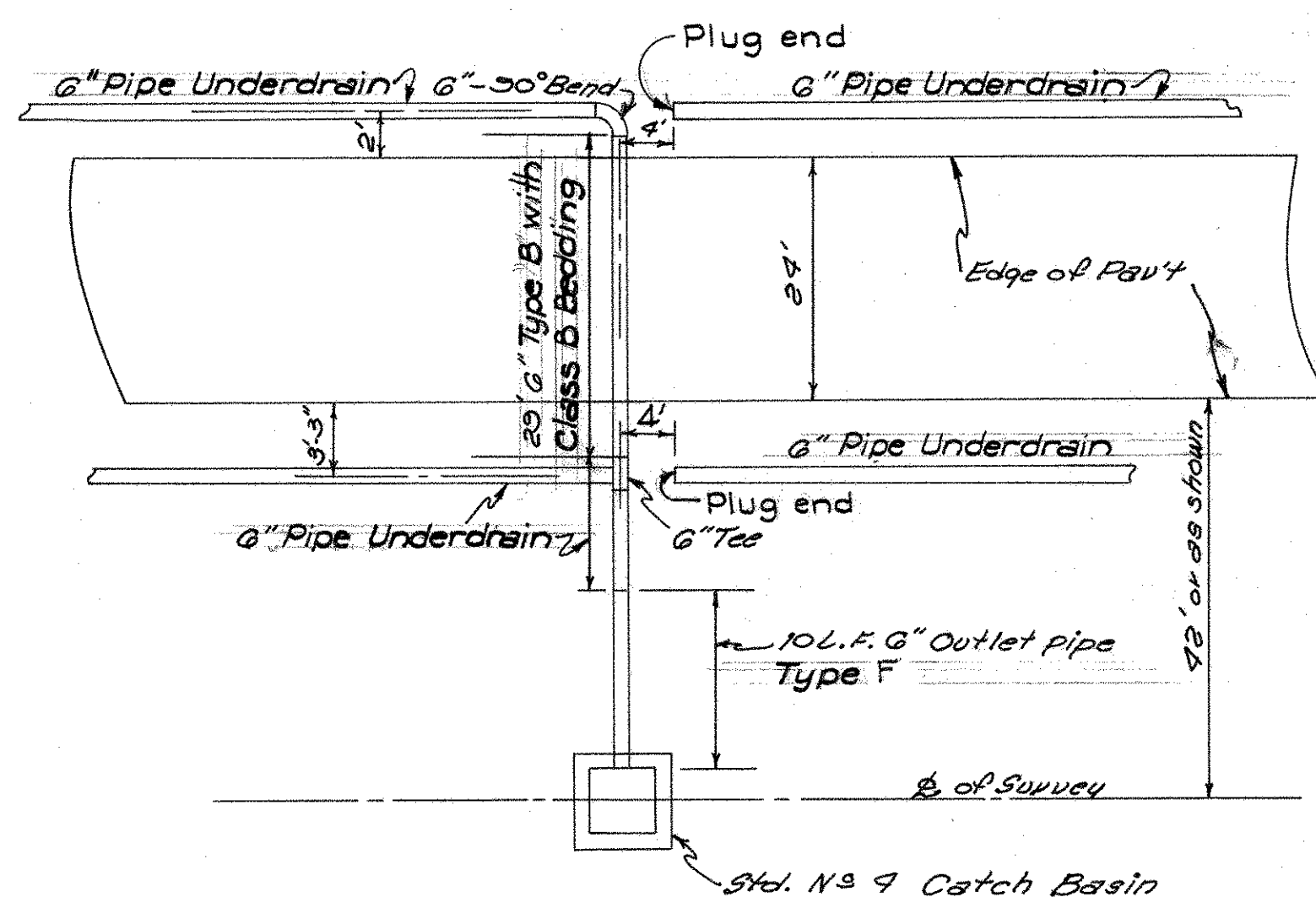
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

10
250

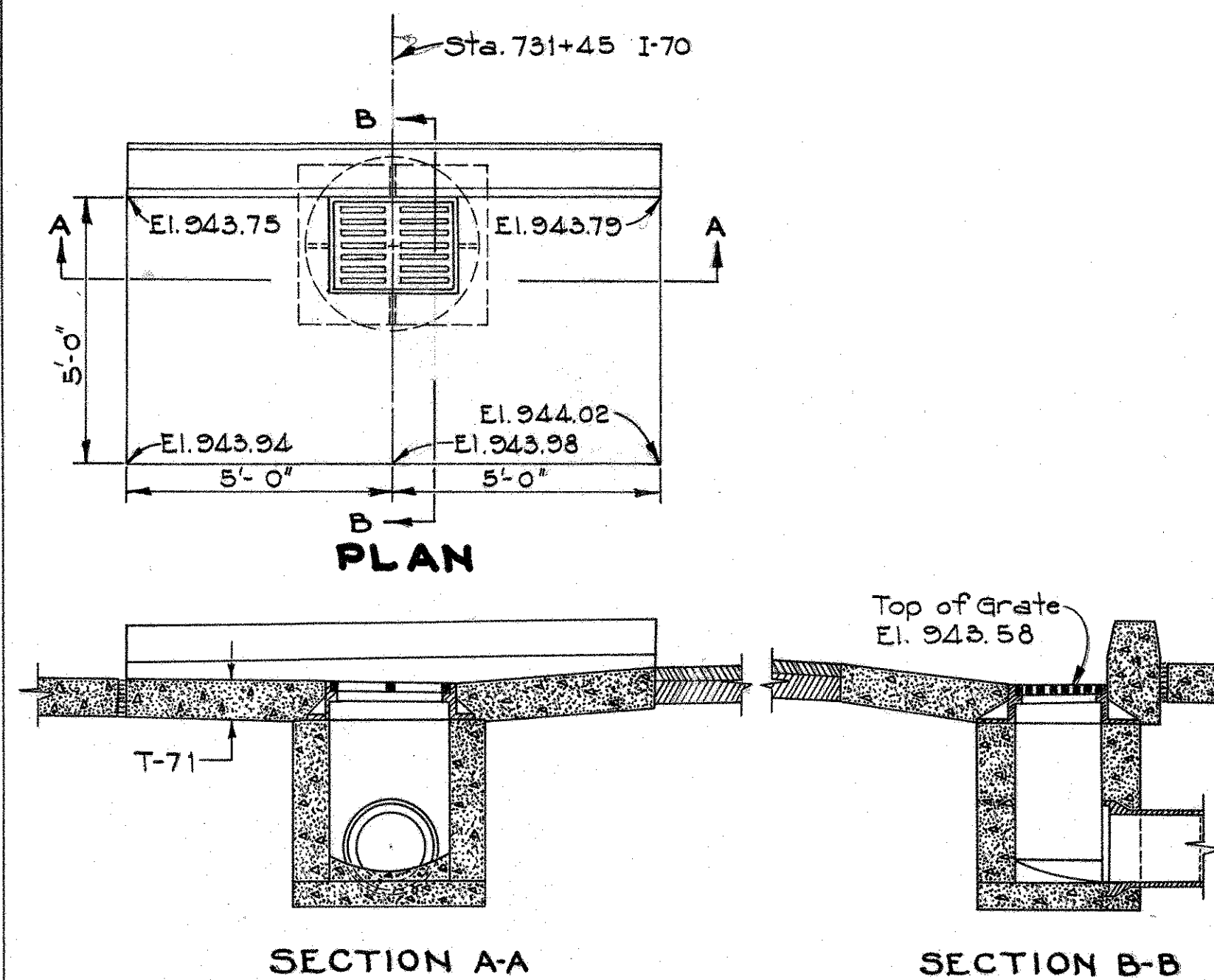
LIC-70-(5.12-8.67)



UNDERDRAIN OUTLET DETAIL

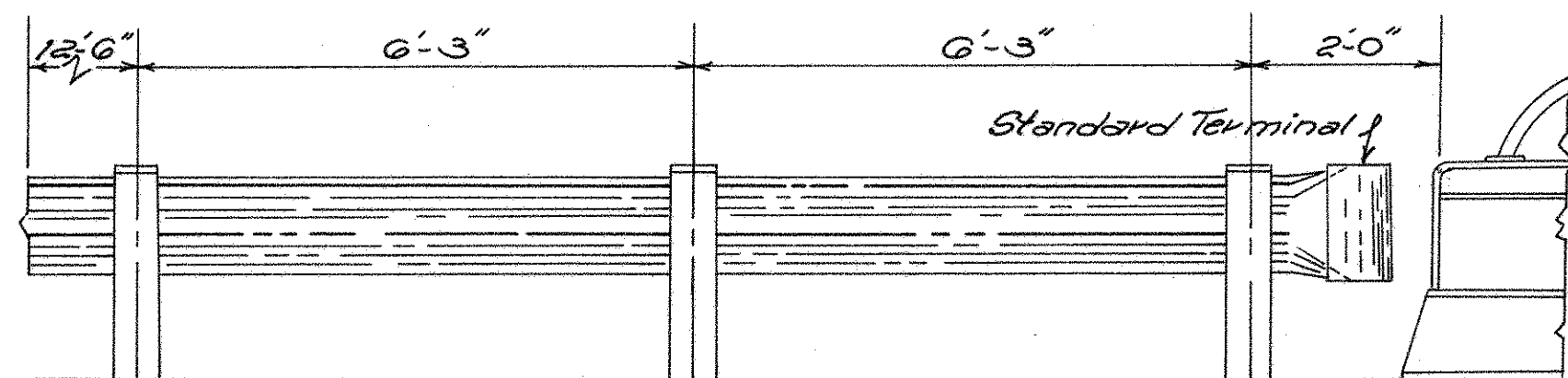


UNDERDRAIN OUTLET DETAIL UNDER PAVEMENT

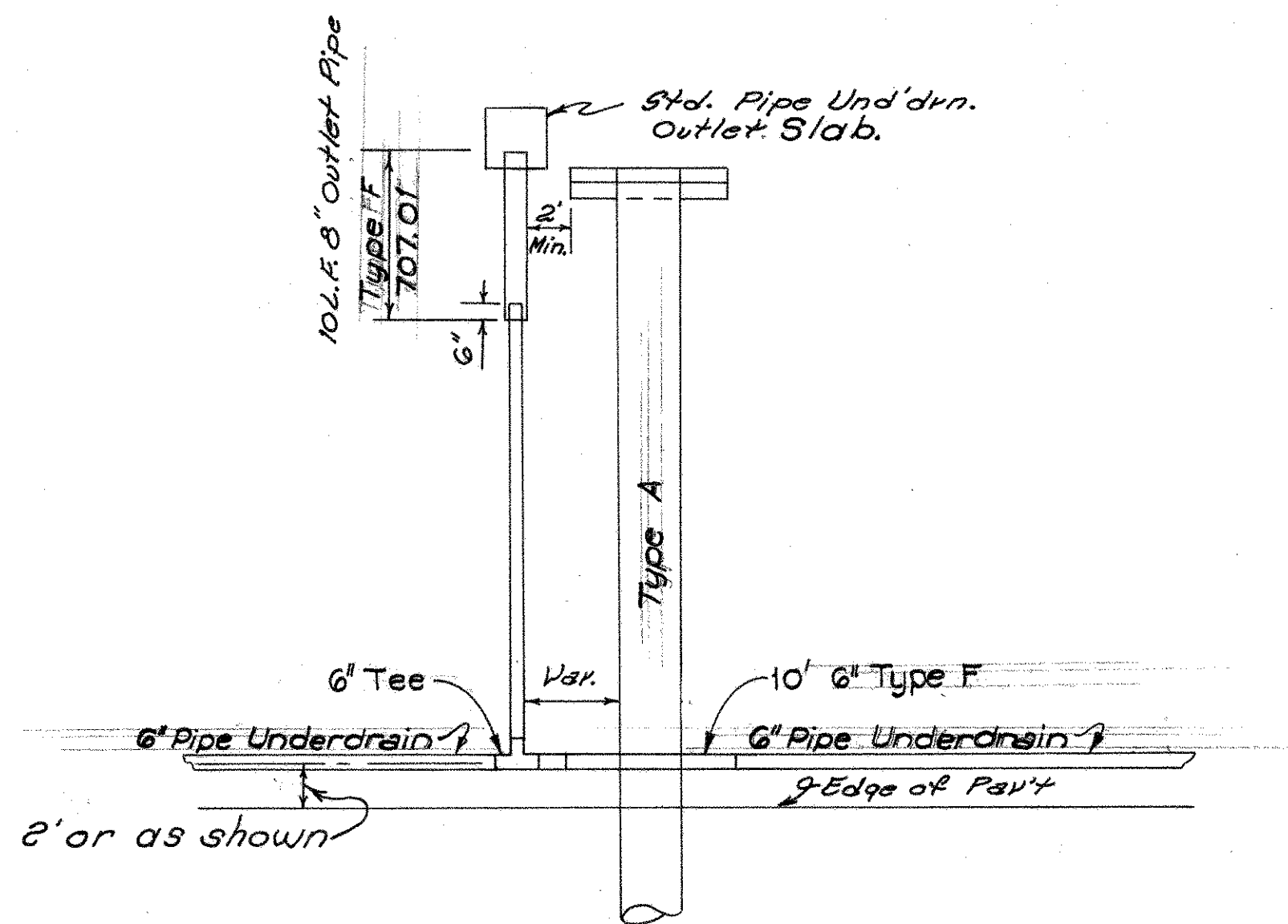


DETAILS OF STANDARD NO 6 CATCH BASIN MODIFIED

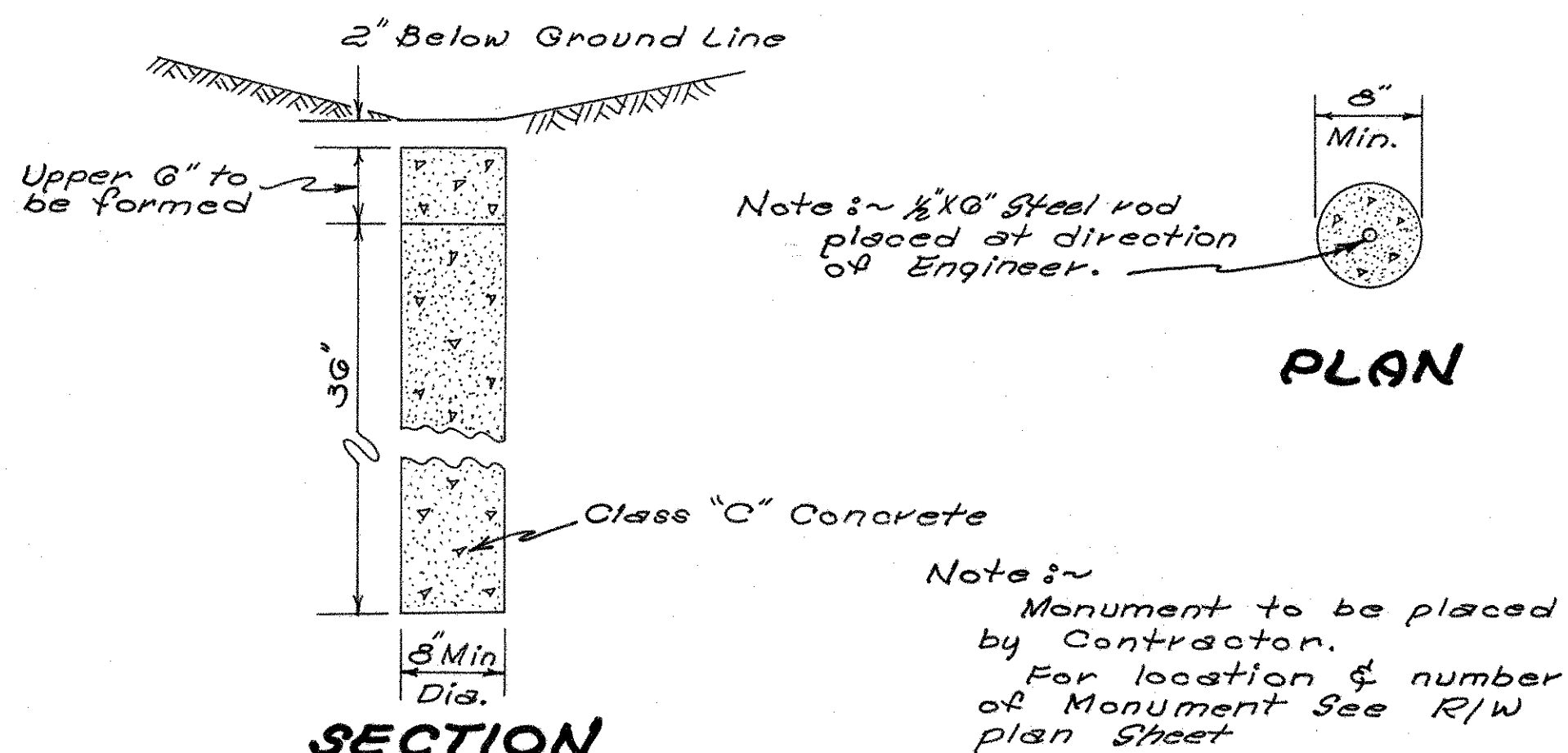
NOTE:
For Dimensions and Details not shown see Std. Drwg. CB-6
Cost of 3' 451 apron to be included in unit price bid for 604 Standard No 6 Catch Basin, Modified, As per plan.



GUARD RAIL DETAILS AT STRUCTURES



UNDERDRAIN OUTLET DETAIL

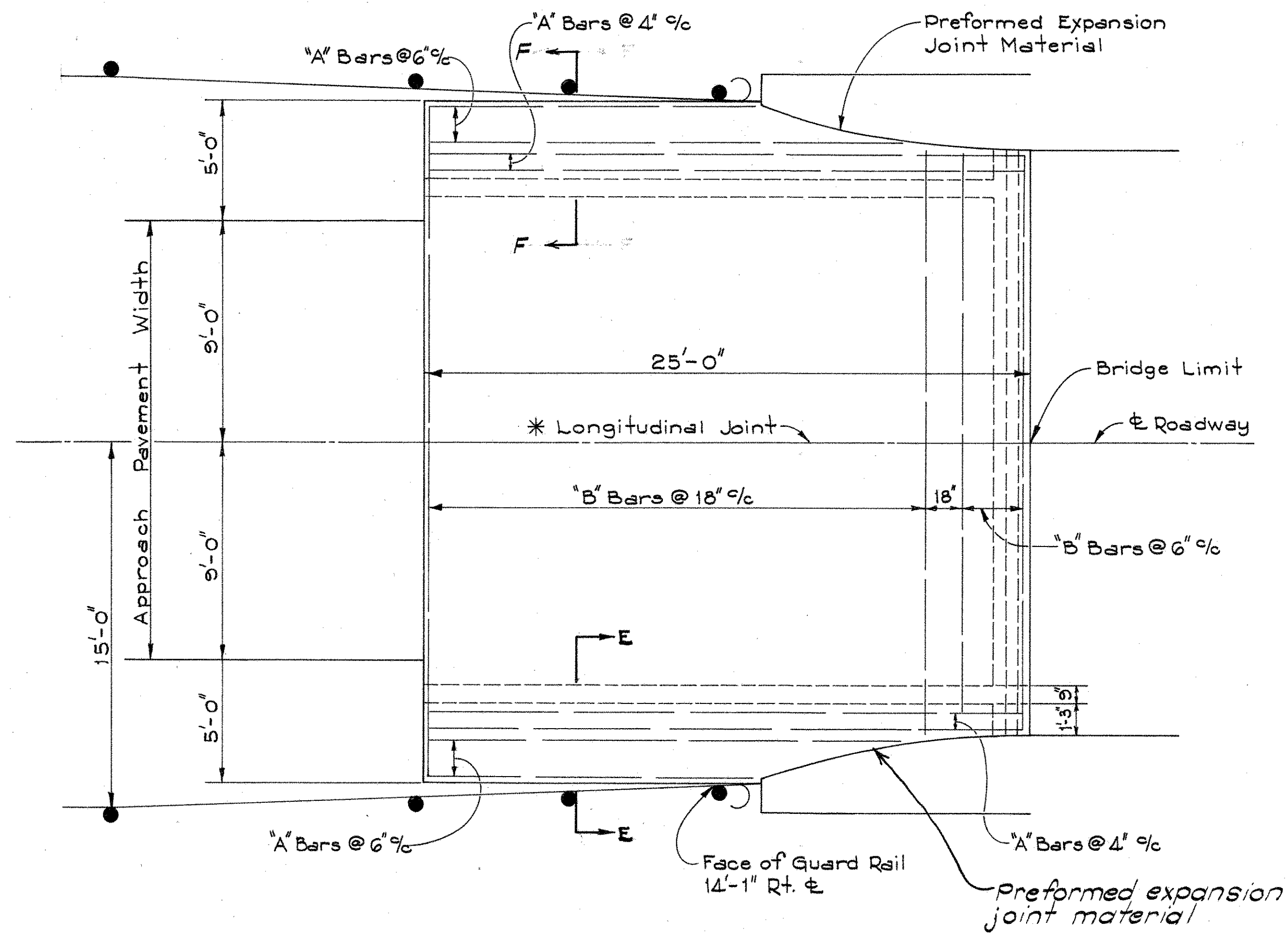


DETAIL OF 604 CENTERLINE REFERENCE MONUMENTS

SPECIAL DETAILS

FED. RD. DIVISION	STATE	PROJECT	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;"> 10-A 250 </div>
2	OHIO		

LIC-70-(5.12-8.67)



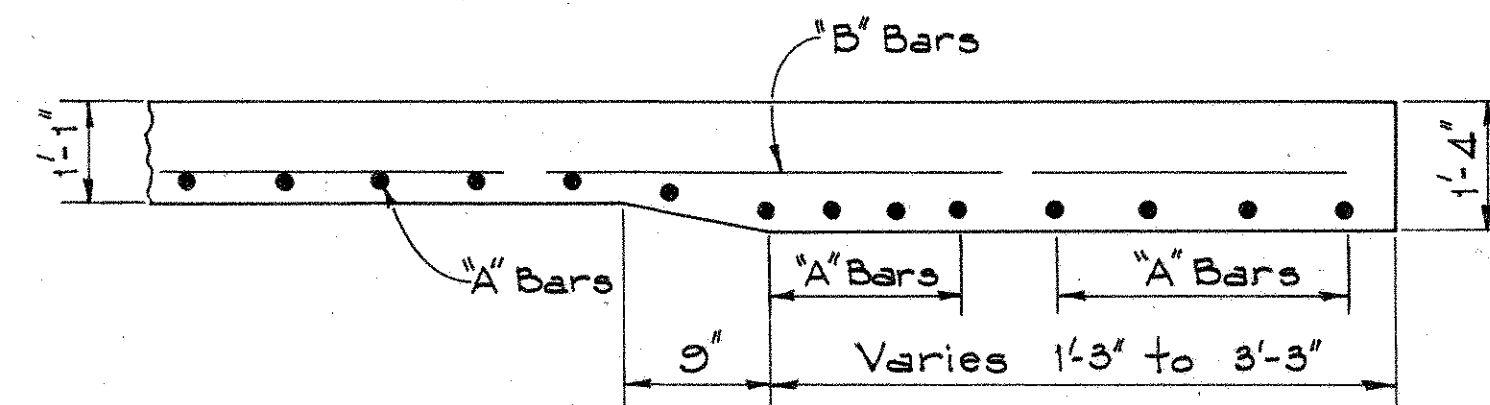
APPROACH SLAB DETAIL & GUARD RAIL DETAIL

LIC-70-0565
LIC-70-0668
LIC-70-0771

NOTE:

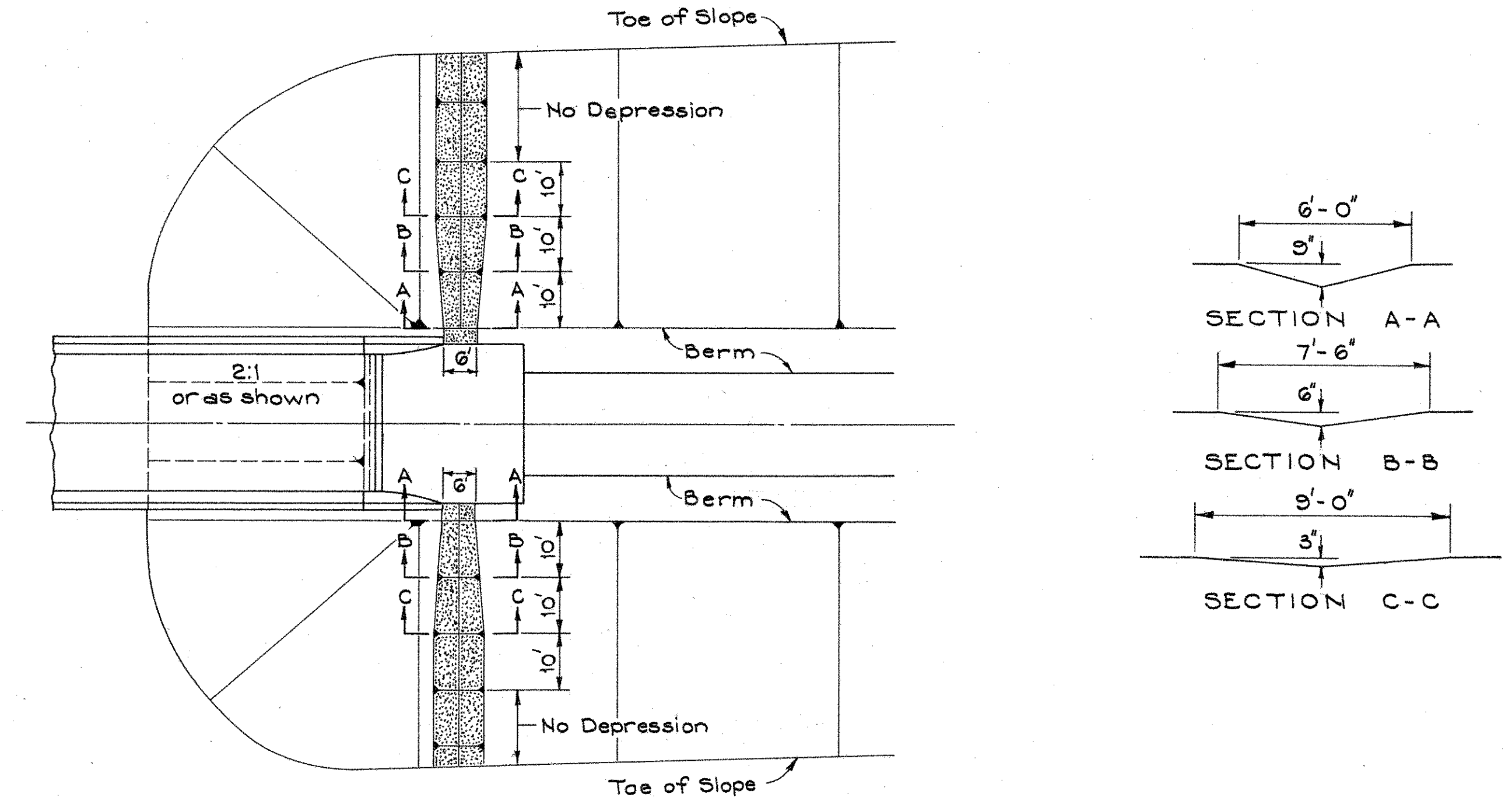
Refer to Standard Drawing AS-1-54 for typical sections and details of approach slabs. Standards to be modified as necessary to accommodate reinforcing plan as shown. Concrete to be Class "C". Preformed expansion joint filler shall be included in the price bid for Item 611 Reinforced Concrete Approach Slabs.

"A" Bars #8
"B" Bars #5



SECTION E-E
SECTION F-F

* Longitudinal sawed joints shall be provided between lane elements in accordance with Standard Construction Drawing BP-3.



NOTE:

Prior to placement of sod on the berm and slope, galvanized poultry fence shall be placed on the finished grade in strands, which shall be at right angles to the direction of flow. Each strand shall be staked securely on top and bottom with stakes spaced at four foot intervals and alternated in rows four foot 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 wires No 20 gage.

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

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

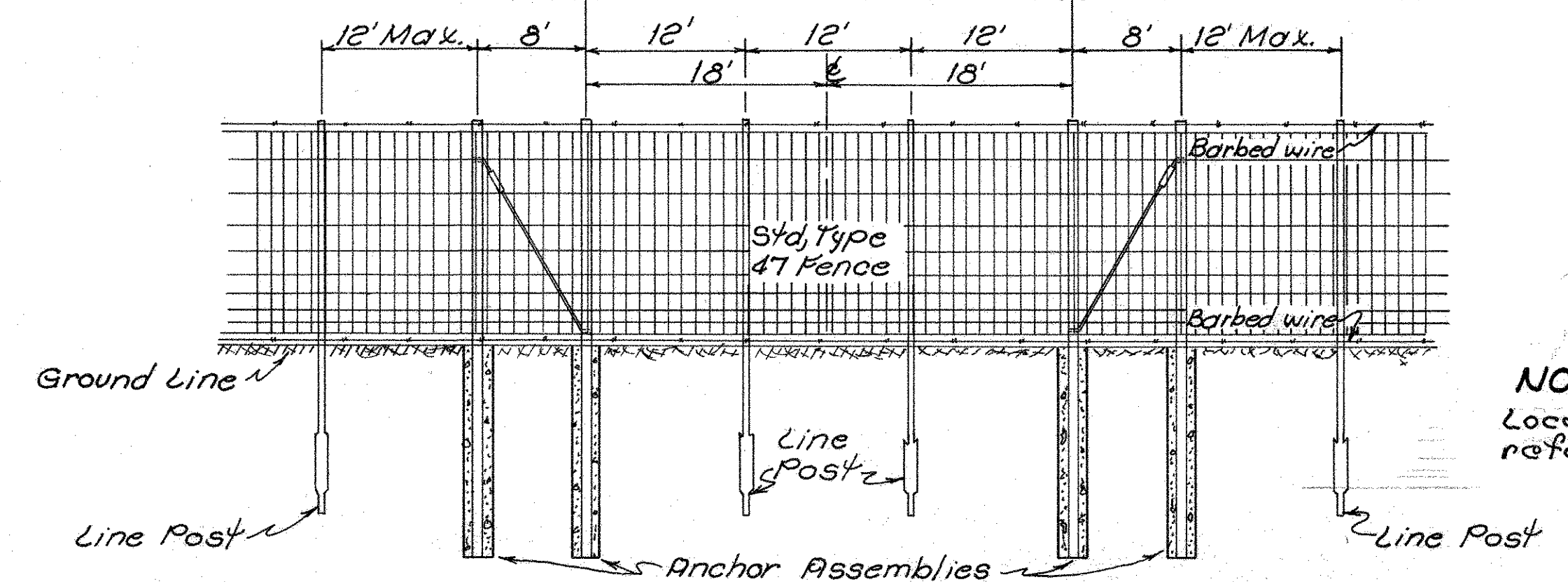
Sod shall be laid in accordance with the Construction and Materials Specifications 660.06.

Payment for all of the above shall be included in the unit price bid for Item 660, Sodding for Special Berm and Slope Protection, As per plan.

DETAIL OF SPECIAL BERM & SLOPE PROTECTION AT STRUCTURE

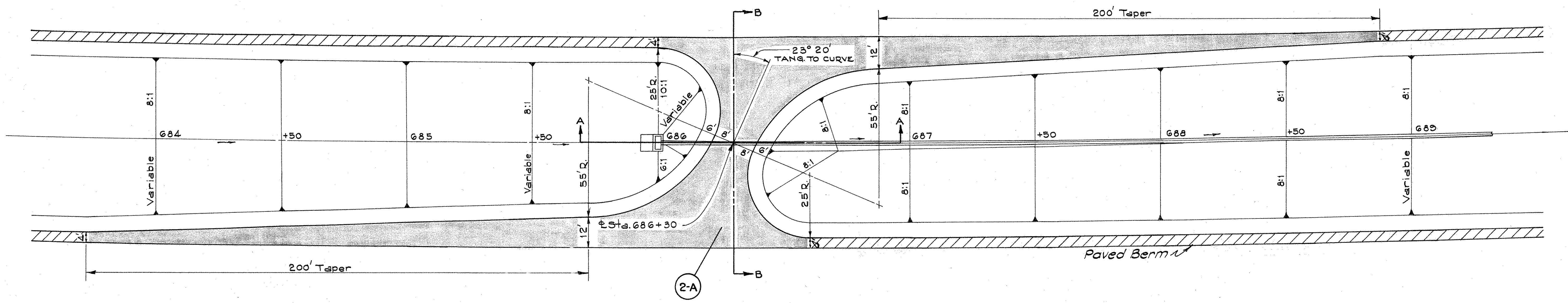
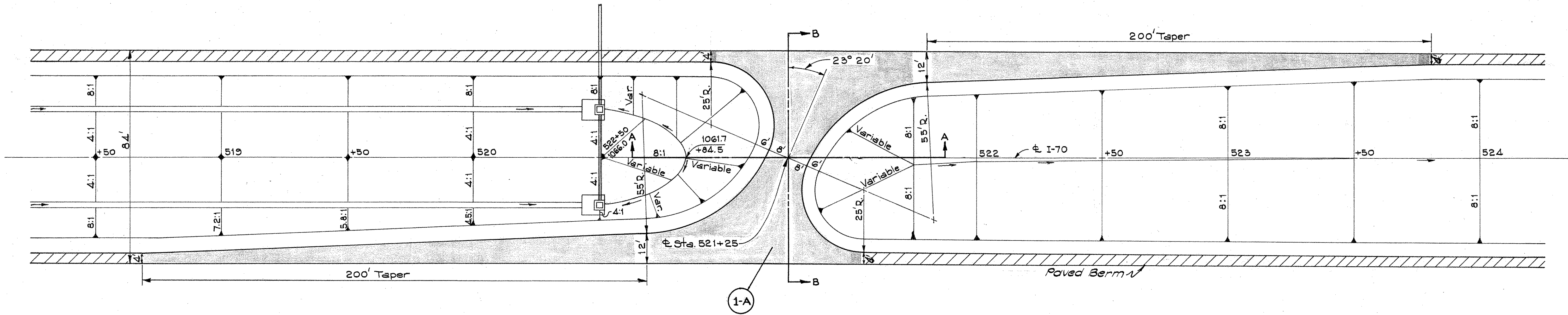
36' Future Maintenance Opening at intervals of not more than 606'

Not more than 660' from last anchor assembly Not more than 660' to next anchor assembly



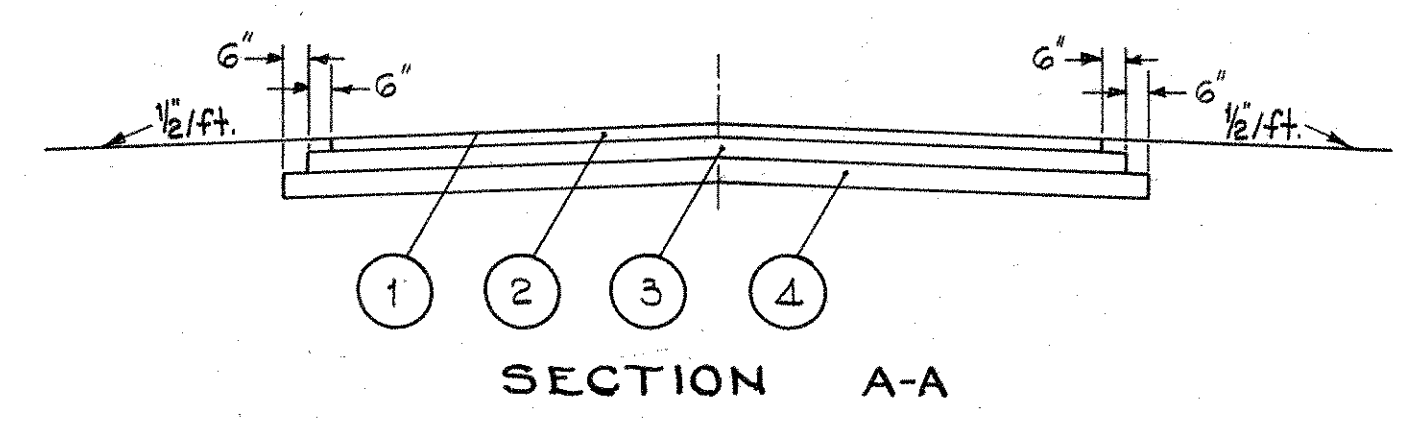
NOTE: ~ Locations on Right of Way refer to & as shown.

FUTURE MAINTENANCE OPENING

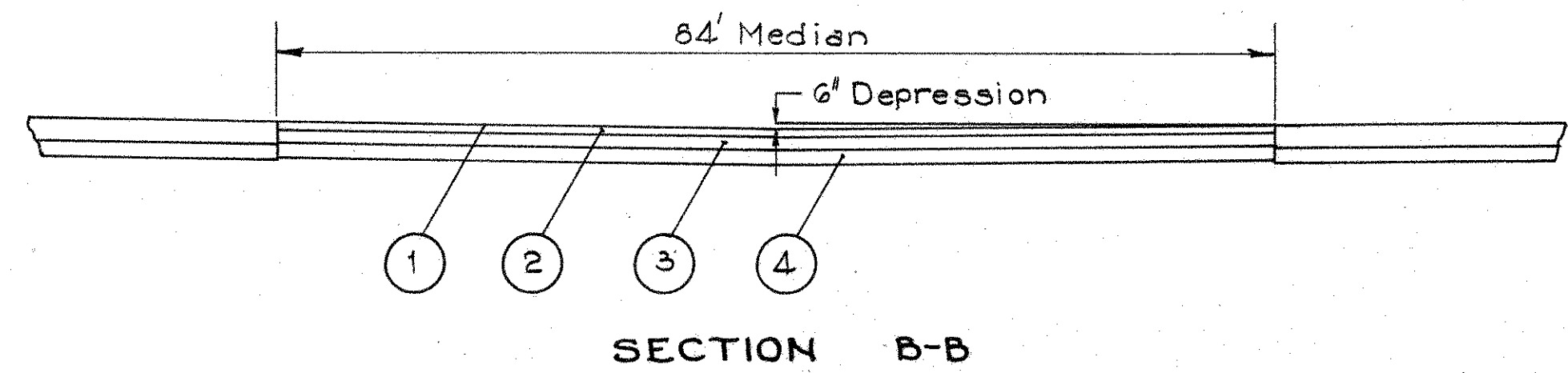


LEGEND
 Pavement Quantities are not included in quantities in Table on this sheet.

ITEM	DESCRIPTION
① 409	Seal Coat, using 0.008 Cu.Yds. No. 8 Aggregate per Sq. Yds. and 0.25 Gals. bituminous material per Sq.Yd. (See note in proposal).
② 301	3" Bituminous Aggregate Base, 702.01 (85-100) or 702.09 RT-12 (See Note in Proposal)
③ 304	5" Aggregate Base
④ 310	6" Subbase



SECTION A-A



SECTION B-B

Ref. No.	Details on Sheet	409 Sq. Yds.	301 3" Cu. Yds.	304 5" Cu. Yds.	310 6" Cu. Yds.	203 Subgrade Prep'n. Sq. Yds.
1-A		756.1	63.0	109.8	137.5	756
2-A		756.1	63.0	109.8	137.5	756
3-A	40					
Totals		1512.2	126.0	219.6	275.0	1512

NOTE~
Quantities carried to sheet No 15

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

12
250

LIC-70-(5.12-8.67)

DESIGN SPEED:

The geometrics for this project have been planned for a design speed of 70 miles per hour.

FIELD OFFICE:

The contractor shall in accordance with 105.152, provide for the exclusive use of the Department a suitable field office having a minimum of 500 square feet of floor space. The Contractor shall have a telephone installed and maintained in this field office during the construction of this project. The Contractor shall also provide and install wiring and outlets suitable for connecting electric lights and office equipment in the field office and provide 110-volt alternating current to the office during the entire period of construction of this project. The Contractor shall also provide and maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for Field Office.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:

The rounded corners shown on Standard Drawing MC-1 as modified by the typical sections, apply to all cross sections, even though otherwise shown on these plans.

UTILITY OWNERS:

Telephone: Ohio Central Telephone Co., Pataskala, Ohio
Electric: Ohio Power Co., Canton, Ohio
South Central Rural Electric Co., Lancaster, Ohio

U.S.G.S. DATUM:

All elevations refer to U.S.G.S Datum.

ESTIMATED QUANTITIES:

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

CONSTRUCTION LAYOUT STAKES:

See note in proposal describing the work included in this lump sum pay item.

SUPERELEVATION:

Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in the portion between the beginning of the transition and the point where the superelevation equals twice the crown.

PAVEMENT REMOVAL OUTSIDE NORMAL CONSTRUCTION LIMITS:

After the existing pavement as indicated on the plans has been removed, the old roadway shall be plowed, harrowed, and dragged to a smooth grade, the old ditches filled, and the entire area sloped to drain and left in a neat condition ready for seeding. Payment for this work shall be included in the unit price bid for pavement removal, Item 202. Seeding shall be measured and paid for in accordance with Item 659.

REMOVAL OF EXISTING PIPE:

The removal of all existing pipe drains within the limits of proposed excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans.

USE OF TEMPORARY PAVEMENT:

The limits and duration of use of temporary roadways shall be held to an absolute minimum, and in all cases shall be subject to the approval of the Engineer.

SPRING DRAINS:

Reference is made to the detail drawing on Sheet 9 showing the method of draining any springs that may be shown on the Plans or encountered during construction as determined by the Engineer. The following estimated quantities have been included in the General Summary for this project, purpose: Item 605-6" Unclassified Pipe Underdrains, 707.06 or 707.12, as per plan 500 L.F. Item 605-Aggregate Drains for Springs, as per plan 30 L.F.

The Contractor shall not order materials for "Spring Drains" until authorized by the Engineer and in the event no springs are encountered, the item shall be non-performed.

ITEM SPECIAL, DRILLED WELL ABANDONED:

The existing concrete or stone slab well cover and pumping equipment shall be removed and disposed of. The casing shall be cut off at least two feet below the proposed finished grade outside proposed pavement areas or at least two feet below the proposed subgrade elevation inside proposed pavement areas and capped with Class "E" Concrete or a standard threaded pipe cap.

The unit price bid for each "Drilled Well Abandoned" shall include payment for all labor, tools, materials and incidentals necessary to complete this item.

Estimated Quantity 1 Each

REMOVAL OF TREES AND STUMPS:

All trees and stumps lying within the construction limits of this project shall be removed under the lump sum price bid for Item 201, Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The following is an approximate estimate of the number of trees and stumps to be removed:

SIZES	12"-18"	18"-24"	24"-30"	30"-36"	36"-42"	42"-48"	Over 48"
Trees	429	166	70	28	6	4	0
Stumps	2	4	2	0	0	0	0

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201, Clearing and Grubbing.

UNDERGROUND UTILITIES

The location of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio does not guarantee their accuracy or completeness.

ITEM 605 AGGREGATE DRAINS:

Aggregate drains shall be placed at 50 foot intervals on each side of normal crowned sections and at 25 foot intervals on the low side only of superelevated sections, except where 605 Pipe Underdrains have been provided.

CROSS SECTIONS TO BE RERUN:

The cross sections between Sta. 654+00 and Sta. 661+00 shall be rerun by the Engineer prior to construction.

FARM DRAINS:

All farm drains which are encountered during construction shall be provided with unobstructed outlets under the direction of the Engineer. Existing collectors which are located below the roadway ditch elevations and which cross the roadway shall be replaced within the right-of-way by Item 603 Conduit, Type B with Class B Bedding.

Existing collectors and isolated farm drains which are encountered above the elevation of the roadway ditches shall be outletted into the roadway ditch, using 10 feet of Type "F" pipe to connect the drains to the ditch. The Type "F" pipe shall be the next standard size larger than the existing drain. The optimum outlet elevation shall be, if possible, one foot above the flowline elevation of the ditch. Lateral tile fields which cross the roadway shall be intercepted by Type "E" Pipe and carried in a longitudinal direction to an adequate outlet or roadway crossing.

The location, type, size and grade of required replacements shall be determined by the Engineer during construction and payment shall be made on final measurements.

The following estimated quantities have been included in the general summary for the work noted above.

603 6" Conduit, Type B with Class B Bedding	300 Lin. Ft.
603 8" Conduit, Type B with Class B Bedding	300 Lin. Ft.
603 10" Conduit, Type B with Class B Bedding	300 Lin. Ft.
603 6" Conduit, Type E	100 Lin. Ft.
603 8" Conduit, Type E	100 Lin. Ft.
603 10" Conduit, Type E	100 Lin. Ft.
603 8" Conduit, Type F	100 Lin. Ft.
603 10" Conduit, Type F	100 Lin. Ft.
603 12" Conduit, Type F	100 Lin. Ft.

The above listed items shall not be ordered by the Contractor until requested by the Engineer.

CONTRACTION AND EXPANSION JOINTS:

Although specific locations of certain expansion and contraction joints have been detailed on this plan, no waiver of the specifications is intended. Provision of expansion joints at all major structures and the maximum spacing between contraction joints shall in all cases be in accordance with Standard Construction Drawings and the Specifications.

CENTERLINE REFERENCE MONUMENTS, AS PER PLAN:

Monuments shall be constructed of Class "C" Concrete, cast-in-place in a circular hole 8 inches in diameter and 44 inches in depth. Top of concrete shall be finished at a depth of 2 inches below ground level and the upper 6 inch portion of the concrete shall be formed. 1/2 inch steel rods 6 inches long shall be embedded in the wet concrete as directed by the Engineer to mark the centerline and station.

For location, see sheets No. 226 & 227.

DRIVE LOCATION:

The location of drives on this project may be varied at the direction of the Engineer, providing there is no additional cost to the State and providing the drives are in areas not designated as Limited Access.

SPECIAL SEEDING PREPARATION AREAS:

The references in the first paragraph of 659.09 to preparation of the seed bed in front of residences, etc., shall, on this project, be considered to be particularly applicable in the following areas:

TWP. RD. No. 152 Sta. 35+50 - 40+00(Lt.) Sta. 16+00 - 17+75(Rt.)	CO. RD. No. 39 Sta. 20+35 - 21+00(Lt.)
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TWP. RD. No. 42 Sta. 21+00 - 23+00(Lt.)	Existing S.R. 158 Sta. 42+50 - 45+00(Rt.)
--	--

SEEDING FORMULA:

The following seed mixture shall, in lieu of the mixtures listed in 659.09 be used throughout the limits of this project:

65% Kentucky 31 Fescue
20% Kentucky Bluegrass
10% Creeping Red Fescue
5% Alsike Clover

GENERAL NOTES - Continued on Sheet No. 13

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		13 250

LIC-70 (5.12-8.67)

SEEDING:

Quantities for seeding of soil areas are calculated as follows:
INTERSTATE 70: Between the right of way fence lines, between the right of way lines in unfenced areas and within the work limits for areas outside the right of way lines covered by work agreement or slope easement.
S.R. 158 CONNECTION, TWP. RD. No. 152, TWP. RD. No. 42, CO. RD. No. 39 and TWP. RD. No. 145: Between the work limits as shown on the cross sections.

CONNECTIONS TO EXISTING PIPE:

At places where the plans provide for proposed pipe to be connected to existing pipes, it shall be the responsibility of the Contractor to locate the existing pipe both as to line and grade before he starts to lay the proposed pipe. The cost of this operation shall be included in the unit price bid for the pertinent 603 Conduit item.

SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS:

This plan makes no provision for connecting, nor shall the Engineer or Contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures including floor drains and sink drains or drains from livestock lots or barns or polluted water of any kind.
 Existing pipe carrying flow which comes within the category outlined above shall be plugged with Class "E" concrete at the right-of-way line. Payment for said plugging shall be included in the unit price bid for Item 203 Excavation, including Embankment Construction.

ITEM 203 PROOF ROLLING:

An estimated quantity for this item has been provided in the General Summary for use in proof rolling of subgrade on the mainline and ramp pavements, and for paved shoulders, in accordance with Supplemental Specifications 801.
 Estimated Proof Rolling 107 Hours
 Proof rolling will not be required where rock or shale occurs in subgrade or in areas where subbase has been thickened to replace frost susceptible silts, or to replace other unsuitable subgrade material, as determined by the Engineer.

ITEM SPECIAL FILL AND PLUG EXISTING CULVERT:

This item shall consist of the construction of bulkheads in the existing culvert and filling the area thus sealed off with sand or other granular material approved by the Engineer.
 Bulkheads shall be located at the limits of the area to be filled as indicated on the plans. The bulkheads shall consist of brick or concrete masonry with a minimum thickness of 12 inches.
 The fill material shall be pumped into place or placed by some other means approved by the Engineer, so that, after settlement, at least 90 percent of the cross-sectional area of the culvert for its entire length shall be filled. The footage of filled and plugged culvert to be paid for shall be the actual number of linear feet measured along the centerline of the culvert to outer face of bulkheads filled and plugged as described above.
 The footage measured as provided above shall be paid for at the contract unit price bid per linear foot for "Item Special, Fill and Plug Existing Culvert", which price and payment shall constitute full compensation for furnishing, hauling, and placing all the necessary materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

COOPERATION - TRAFFIC CONTROL DEVICES:

The Contractor is hereby advised that a separate contract may be awarded for the furnishing and erecting of certain traffic control devices within the work limits of this project prior to completion of construction operations.
 The Contractor shall cooperate with the separate Contractor to arrange a suitable work schedule, subject to the approval of the Engineer, to permit the separate Contractor to work and operate necessary equipment within work limits to carry out the provisions of his contract. The Engineer shall notify the Contractor a minimum of thirty (30) days prior to any scheduled work by the separate contractor.
 Each Contractor shall be held responsible for any damage by him, or his agents, to the work performed by the other Contractor.
 Compensation for the above cooperation, shall be incidental to the various pay items included within this construction project.

GUARD RAIL REMOVED AND REBUILT:

Items 202 and 606 guard rail removed and rebuilt shall be installed on Twp. Rd. No. 152, Twp. Rd. No. 42, Co. Rd. No. 39 and Existing S.R. 158. Also salvaged rail elements may be used for temporary guard rail on the temporary route. The salvaged guard rail shall not be used for mainline.

615 CLASS "A" TEMPORARY PAVEMENT, AS PER PLAN:

All provisions of Item 615 shall apply.
 The Class "A" Temporary Pavement shall have pavement widths of 24 feet and 16 feet with 3 feet wide berms as shown on Sheet No. 39. The pavement shall be Class "A" as defined in 615.05.
 An estimated quantity of 1,350 Sq. Yds. has been carried to the General Summary.

TRAFFIC MAINTENANCE:

EXISTING I-70: Two way traffic shall be maintained at all times by use of either the existing pavement, the proposed pavement, the proposed S.R. 158 Connection, relocated Twp. Rd. No. 145 or Item 615 Class "A" Temporary Pavement, as per plan.
S.R. 158 INTERSECTION: Traffic shall be maintained through the S.R. 158 interchange area by the following temporary routing; the Contractor shall first construct that portion of the N.E. Ramp between Sta. 731+00 and Sta. 552+23. Second, Twp. Rd. No. 145 shall be closed at Sta. 731+00 and the new Twp. Rd. No. 145 together with the 615 Run-around as shown on Sheet No. 39 shall be completed. At the same time, Part I of S.R. 158 Connection Road shall be constructed as shown on Sheet No. 181. Westbound traffic shall now be routed over the temporary route and Part II of S.R. 158 Connection Road shall be constructed as shown on Sheet No. 181. Eastbound traffic shall now be routed over the temporary route and Part III of the S.R. 158 Connection Road constructed, completing the construction of the Connection Road. All traffic shall be maintained on the temporary route during the construction of the S.R. 158 Interchange. This routing and interchange work shall be restricted to the final stages of construction. No work shall be started in this area prior to approval by the Engineer.

Until the temporary route is placed into effect, two-way traffic shall be maintained at all times. If the adjoining westerly sections are not open to traffic at the time of completion of the ramps of the S.R. 158 Interchange, the temporary route as described above shall be discontinued and traffic routed over the S.R. 158 Connecting Road, existing S.R. 158, and the N.E. Ramp and the S.E. Ramp.

After the temporary route is no longer required, Twp. Rd. No. 145 shall be completed as shown on the plans and superelevation tables. That portion of the Class "A" Temporary Pavement not incorporated in the completed Twp. Rd. No. 145 shall be removed and disposed of by the Contractor.

LOCAL TRAFFIC: Twp. Rd. No. 152, Twp. Rd. No. 42 and Co. Rd. 39: These roads may be closed to through traffic, provided that no two adjacent roads are closed at the same time.

In addition, quantities of Items 410 Type "A" or "B" and 410 Type "C" have been included in the General Summary, to be used as directed by the Engineer to maintain traffic.

410 Traffic Compacted Surface, Type A or B 50 Cu. Yds.
 410 Traffic Compacted Surface, Type C Maintaining Traffic 50 Cu. Yds.

616 Calcium Chloride 2 Tons.

ITEM 606 TEMPORARY GUARD RAIL:

Steel 55 gal. drums shall be used in lieu of posts for this item. The drums shall be painted yellow and shall be half filled with sand in order to hold them in position. The rail elements shall be steel beam type meeting the requirements of either 710.06 (Deep) or 710.07 (Shallow) except that in lieu of furnishing new rail, used rail which is in good condition and approved by the Engineer may be used. The rail shall be securely bolted to the traffic side of the drums in a manner satisfactory to the Engineer and the center of the rail element shall be approximately two feet above the surface of the pavement or ground.
 An estimated quantity of 1000 Lin. Ft. has been provided for this item to be used as directed by the Engineer.
 An estimated quantity of 40 Barrels has been provided for erecting Temporary Guard Rail Using Barrels Only, as per plan to be used as directed by the Engineer. The above items will be removed by others.

ITEM 310 SUBBASE, GRADING A OR B, AS PER PLAN:

Material for this item shall meet the requirements of grading "A" or "B" of 310.02 except that for either grading, no more than 10% of the material shall pass a No. 200 sieve after all operations of placing and compacting have been completed.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS:

The Contractor shall furnish, erect, maintain and subsequently remove Federal Aid Construction Identification Signs at each of the following locations:

- S.R. 158 Connection Sta. 516+88 (Right)
- I-70 Sta. 572+30 (Left)

Sign details shall be as specified on Standard Drawing FACI-1 Code N-55(1)-120(2) and the signs shall be erected in accordance with Standard Drawing FACI-2. Additional requirements shall be in accordance with notes in the proposal.

CONTRACTOR'S MAINTENANCE RESPONSIBILITY:

On this project, the Contractor's responsibility for maintenance of the existing pavement per Item 614 shall be limited to those portions of the existing pavement lying within the proposed work limits.

APPROACH SLAB LONGITUDINAL JOINTS

Longitudinal joints shall be provided between lane elements, on all approach slabs, in accordance with Standard Construction Drawing No. BP-3. Payment for the above shall be included in the unit price bid for Item 611, Reinforced Concrete Approach Slabs.

DUST CONTROL:

In accordance with Item 616 of the Construction and Materials Specifications, the following items for dust control have been included in the General Summary:

616 Water for Dust Control 20 M. Gals.
 616 Calcium Chloride for Dust Control 2 Tons

CALCULATIONS

LIC-70-(5.12-8.67)

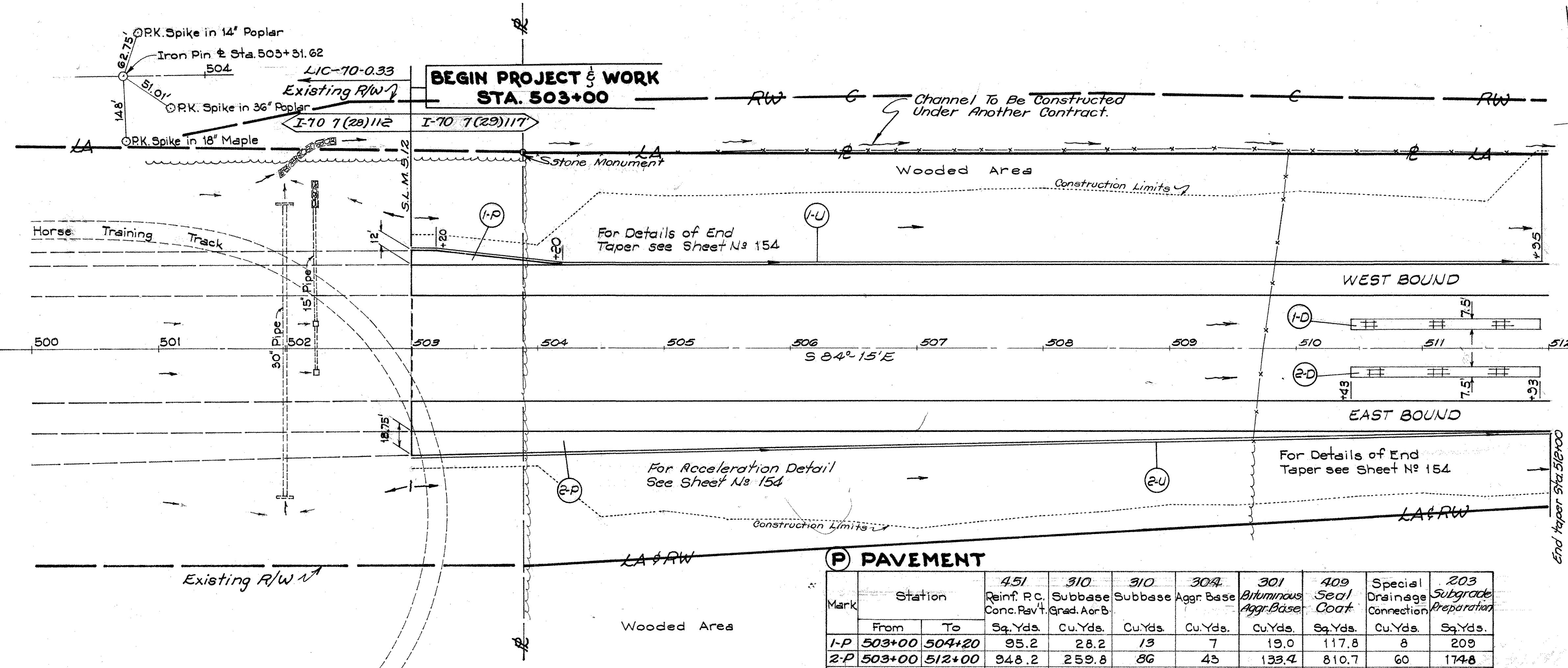
FED. RD. DIVISION	STATE	PROJECT	16
2	OHIO		250

LINE NO	CALCULATIONS	QUANTITY	UNIT
1	Length (From Typical Section, Sheets No 4 & 5)		
2	Rt. Lane, Normal Section = 20,000.00 Lin. Ft.		
3	Lt. Lane, Normal Section = 20,025.00 Lin. Ft.		
4	Rt. Lane, Super Section = 2,857.30 Lin. Ft.		
5	Lt. Lane, Super Section = 2,719.60 Lin. Ft.		
6	Length = 45,601.90 Lin. Ft.		
8	451' Reinforced Portland Cement Concrete		
9	Length = 45,601.90 Lin. Ft.		
10	45,601.90 x 24 ÷ 9 = 121,605.1 Sq. Yds.		
11	121,605.1 SY + 16,101.8 SY (Table 7) = 137,706.9 Sq. Yds.	Use	137,707 Sq. Yds.
14	310 Subbase Grading A or B		
15	20,000.00 Lin. Ft. x 0.5451 = 10,902.00 Cu. Yds.		
16	20,025.00 Lin. Ft. x 0.5451 = 10,915.63 Cu. Yds.		
17	1,725.00 Lin. Ft. x 0.5139 = 886.48 Cu. Yds.		
18	1,132.30 Lin. Ft. x 0.5694 = 644.73 Cu. Yds.		
19	1,700.00 Lin. Ft. x 0.5694 = 967.98 Cu. Yds.		
20	1,019.60 Lin. Ft. x 0.5139 = 523.97 Cu. Yds.		
21	Sub Total = 24,840.79 Cu. Yds.		
22	24,840.79 Cu. Yds + 3,625 Cu. Yds (Table 7) = 28,465.79 Cu. Yds.		
24	Deductions:		
26	Sta. 503+00 to 504+20 (N.E. Ramp S.R. 310), Sta. 503+00 to 512+00 (S.E. Ramp S.R. 310) = 1,020 Lin. Ft. (Normal Section)		
27	1,020 x 1.7188 ÷ 27 = 64.93 Cu. Yds.		
28	Sta. 518+68 Rt. to 521+55 Rt., Sta. 520+94 Lt. to 523+81 Lt. (U-Turn Median Opening)		
29	Sta. 683+73 Rt. to 686+60 Rt., Sta. 686+00 Lt. to 688+87 Lt. (U-Turn Median Opening) = 1,148 Lin. Ft. (Normal Section)		
30	1,148 x 0.25 ÷ 27 = 10.63 Cu. Yds.		
31	Sta. 696+00 to 708+00 (N.W. Ramp)		
32	Sta. 704+05.5 to 713+07.7 (S.W. Ramp) = 2,102.20 Lin. Ft. (Super Section)		
33	2,102.20 x 1.3750 ÷ 27 = 107.06 Cu. Yds.		
34	Sta. 727+18 to 730+44.6 (N.E. Ramp)		
35	Sta. 731+50 to 731+57.3 (S.E. Ramp) = 333.90 Lin. Ft. (Super Section)		
36	333.90 x 1.3750 ÷ 27 = 17.00 Cu. Yds.		
37	Total Deductions = 64.93 + 10.63 + 107.06 + 17.00 = 199.62 Cu. Yds.		
38	28,465.79 Cu. Yds. (Line 22) - 199.62 Cu. Yds. (Line 37) = 28,266.17 Cu. Yds.	Use	28,266 Cu. Yds.
40	310 Subbase Regular Grading		
41	20,000.00 Lin. Ft. x 0.1313 = 2,626.00 Cu. Yds.		
42	20,025.00 Lin. Ft. x 0.1313 = 2,629.28 Cu. Yds.		
43	1,725.00 Lin. Ft. x 0.1297 = 223.73 Cu. Yds.		
44	1,132.30 Lin. Ft. x 0.0909 = 102.93 Cu. Yds.		
45	1,700.00 Lin. Ft. x 0.0909 = 154.53 Cu. Yds.		
46	1,019.60 Lin. Ft. x 0.1297 = 132.24 Cu. Yds.		
47	Sub-total = 5,868.71 Cu. Yds.		
48	5,868.71 Cu. Yds. + 2,983 Cu. Yds. (Table 7) = 8,851.71 Cu. Yds.		
50	Deductions:		
51	Line 26 = 1,020 Lin. Ft. x 2.7942 ÷ 27 = 105.56 Cu. Yds.		
52	Lines 28 & 29 = 1,148 Lin. Ft. x 0.75 ÷ 27 = 31.89 Cu. Yds.		
53	Lines 31, 32, 34 & 35 = 2,436.10 Lin. Ft. x 2.4545 ÷ 27 = 221.40 Cu. Yds.		
54	Total Deductions = 358.91 Cu. Yds.		
55	8,851.71 Cu. Yds. (Line 48) - 358.91 Cu. Yds. = 8,492.80 Cu. Yds.	Use	8,493 Cu. Yds.
58	304 Aggregate Base		
59	20,000.00 Lin. Ft. x 0.2508 = 5,016.00 Cu. Yds.		
60	20,025.00 Lin. Ft. x 0.2508 = 5,022.27 Cu. Yds.		
61	2,857.30 Lin. Ft. x 0.2508 = 716.61 Cu. Yds.		
62	2,719.60 Lin. Ft. x 0.2508 = 682.08 Cu. Yds.		
63	Sub-total = 11,436.96 Cu. Yds.		
64	11,436.96 Cu. Yds. + 3,137.4 Cu. Yds. (Table 7) = 14,574.36 Cu. Yds.		
66	Deductions:		
67	Line 26 - 1,020 Lin. Ft. x 4.7709 ÷ 27 = 180.23 Cu. Yds.		
68	Lines 28 & 29 - 1,148 Lin. Ft. x 2.00 ÷ 27 = 85.04 Cu. Yds.		
69	Lines 31, 32, 34 & 35 - 2,436.10 Lin. Ft. x 4.7709 ÷ 27 = 430.46 Cu. Yds.		
70	Total Deductions = 695.73 Cu. Yds.		
71	14,574.36 Cu. Yds. (Line 64) - 695.73 = 13,878.63 Cu. Yds.	Use	13,879 Cu. Yds.
74	301 Bituminous Aggregate Base		
75	Line 6 - 45,601.90 Lin. Ft. x 0.1296 = 5,910.0 Cu. Yds.		
76	5,910.0 Cu. Yds. + 1,447.4 Cu. Yds. (Table 7) = 7,357.4 Cu. Yds.		

LINE NO	CALCULATIONS	QUANTITY	UNIT
78	Deductions: (301)		
79	Line 26 - 1,020 Lin. Ft. x 2.50 ÷ 27 = 94.44 Cu. Yds.		
80	Lines 28 & 29 - 1,148 Lin. Ft. x 1.00 ÷ 27 = 42.52 Cu. Yds.		
81	Lines 31, 32, 34 & 35 - 2,436.10 Lin. Ft. x 2.50 ÷ 27 = 225.56 Cu. Yds.		
82	Total Deductions = 362.52 Cu. Yds.		
83	7,357.4 Cu. Yds. (Line 76) - 362.52 Cu. Yds. = 6,994.88 Cu. Yds.	Use	6,995 Cu. Yds.
		From Sh. 15-Table 7	1,253 Cu. Yds.
		Total	8,248 Cu. Yds.
86	409 Seal Coat		
87	Line 6 - 45,601.90 Lin. Ft. x 1.5556 = 70,938.32 Sq. Yds.		
88	70,938.32 Sq. Yds + 9,955.9 Sq. Yds. (Table 7) = 80,894.22 Sq. Yds.		
90	Deductions:		
91	Line 26 - 1,020 Lin. Ft. x 10 ÷ 9 = 1,133.33 Sq. Yds.		
92	Lines 28 & 29 - 1,148 Lin. Ft. x 4 ÷ 9 = 510.22 Sq. Yds.		
93	Lines 31, 32, 34 & 35 - 2,436.10 Lin. Ft. x 10 ÷ 9 = 2,706.78 Sq. Yds.		
94	Total Deductions = 4,350.33 Sq. Yds.		
95	80,894.22 Sq. Yds. (Line 88) - 4,350.33 Sq. Yds. = 76,543.89 Sq. Yds.		
96	76,543.89 Sq. Yds. Line 95 x 0.008 Cu. Yds./Sq. Yd. = 612.35 Cu. Yds.	Use	612 Cu. Yds.
97	76,543.89 Sq. Yds. Line 95 x 0.25 Gall./Sq. Yd. = 19,135.97 Gall's.	Use	19,136 Gall's.
98	203 Subgrade Preparation		
99	Area of 451 (Line 10) = 121,605.1 Sq. Yds.		
100	Area of 409 (Line 87) = 70,938.3 Sq. Yds.		
101	Ramps, S.R. 158, Twp. & Co. Rds. (Table 7) = 44,607 Sq. Yds.		
102	237,150.4 Sq. Yds.		
103	409 Deductions (Line 94) = 4,350.3 Sq. Yds.		
104	Total = 232,800.1 Sq. Yds.	Use	232,800 Sq. Yds.
105	203 Water		
106	Emb. (Table 8) = 567,535 Cu. Yds. + 310 (Lines 38 & 55) 36,759 = 604,294 x 5 ÷ 1000 = 3,021.47 Use	3,022	M. Gals.
107	304 Water		
108	304 Line 71 = 13,879 Cu. Yds. x 5 ÷ 1000 = 69.40 Use	69	M. Gals.
109			
110	203 Proof Rolling		
111	232,800.1 (Line 104) - 19,330 (Twp. & County Roads) = 213,470 ÷ 2000 = 106.73 Use	107	Hours
113	659 Commercial Fertilizer		
114	683,195 (Table 8) + 10,025 (Table 3) + 482 (Table 3) = 693,702 Sq. Yds.		
115	Line 114 x 0.00009 = 62.43 Tons Use	62.43	Tons
117	659 Agricultural Liming		
118	Line 114 x 0.00045 = 312.17 Tons Use	312.17	Tons
121	Special Drainage Connection #8 Aggregate		
122	Lines 2 & 3 40,025.00 Lin. Ft. x 0.0562 = 2,249.41 Cu. Yds.		
123	Lines 4 & 5 5,576.90 Lin. Ft. x 0.0480 = 267.69 Cu. Yds.		
124	2,517.10 Cu. Yds.		
125			
126			
127	2,517.10 Cu. Yds. + 688.00 Cu. Yds. (Table 7) = 3,205.10 Cu. Yds.		
129	Deductions:		
130	Line 26 - 1,020 Lin. Ft. x 0.0562 = 57.32 Cu. Yds.		
131	Sta. 696+00 Lt. to 696+50 Lt., Sta. 704+05.5 Rt. to 713+08 Rt., Sta. 731+40 Rt. to Sta. 731+57.3 Rt. = 969.8 Lin. Ft.		
132	969.8 Lin. Ft. x 0.0480 = 46.55 Cu. Yds.		
133	Total Deductions = 57.32 Cu. Yds. + 46.55 Cu. Yds. = 103.87 Cu. Yds.		
134	3,205.10 Cu. Yds. (Line 127) - 103.87 Cu. Yds. (Line 133) = 3,101.23 Cu. Yds.	Use	3,101 Cu. Yds.
	202 REMOVAL AND DISPOSAL OF EXISTING PAVEMENT		
	Existing Eastbound Lanes U.S. 40:		
	Sta. 516+88.56 S.R. 158 Conn. to Sta. 731+57.3 & I-70 = 3,071.07 L.F. or 9,397 Sq. Yds.		
	Existing Westbound Lanes U.S. 40:		
	Sta. 519+28.56 S.R. 158 Conn. to Sta. 730+44.6 & I-70 = 2,718.37 L.F. or 7,861 Sq. Yds.		
	Existing N.W. Ramp 2,488 Sq. Yds.		
	Existing S.W. Ramp 2,112 Sq. Yds.		
	Existing S.E. Ramp 2,795 Sq. Yds.		
	Existing N.E. Ramp 2,535 Sq. Yds.		
	Sheet 195 61 Sq. Yds.		
	Use 27,249 Sq. Yds.		
	202 Removal and Disposal of Existing Curb (Existing Ramps) 568 Lin. Ft.	Use	568 Lin. Ft.

LIC-70-(5.12-8.67)

BEGIN PROJECT & WORK STA. 503+00



(D) DITCHES

Mark	Station		Side	667 Jute Matting Sq. Yds.
	From	To		
1-D	510+43	511+93	Lt	125
2-D	510+43	511+93	Rt	125
Total				250

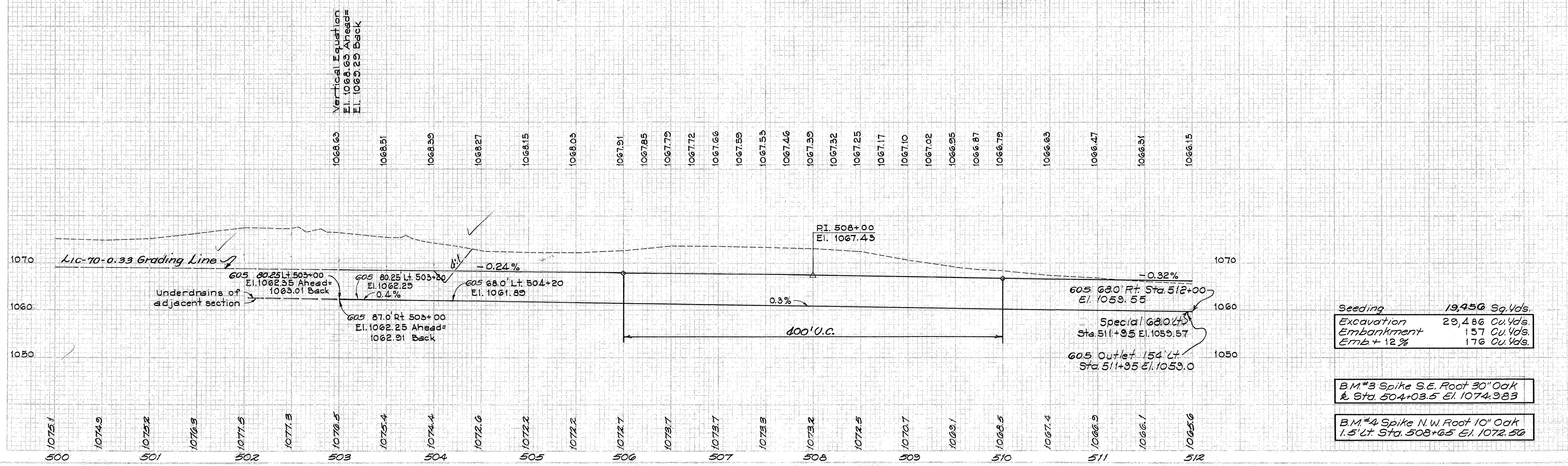
(U) DRAINS

Mark	Station		Side	605 G Pipe Underdrain	603 8" Conduit	6" Pipe Spec.
	From	To		Shallow Desc. Lin. Ft.	Type 'F' Lin. Ft.	Each 30' Bend
1-U	503+00	511+95	Lt	971	10	1
2-U	503+00	512+00	Rt	900		
Totals				1871	10	1

(P) PAVEMENT

Mark	Station		451	310	310	304	301	409	Special	203
	From	To	Reinf. R.C. Conc. Pav't Sq. Yds.	Subbase Grad. Aor B. Cu. Yds.	Subbase Cu. Yds.	Aggr. Base Cu. Yds.	Bituminous Aggr. Base Cu. Yds.	Seal Coat Sq. Yds.	Drainage Connection Cu. Yds.	Subgrade Preparation Sq. Yds.
1-P	503+00	504+20	95.2	28.2	13	7	19.0	117.8	8	209
2-P	503+00	512+00	948.2	259.8	86	45	133.4	810.7	60	1748
Totals			1043.4	288.0	99	50	* 152.4	928.5	68	1957

*As Per Plan

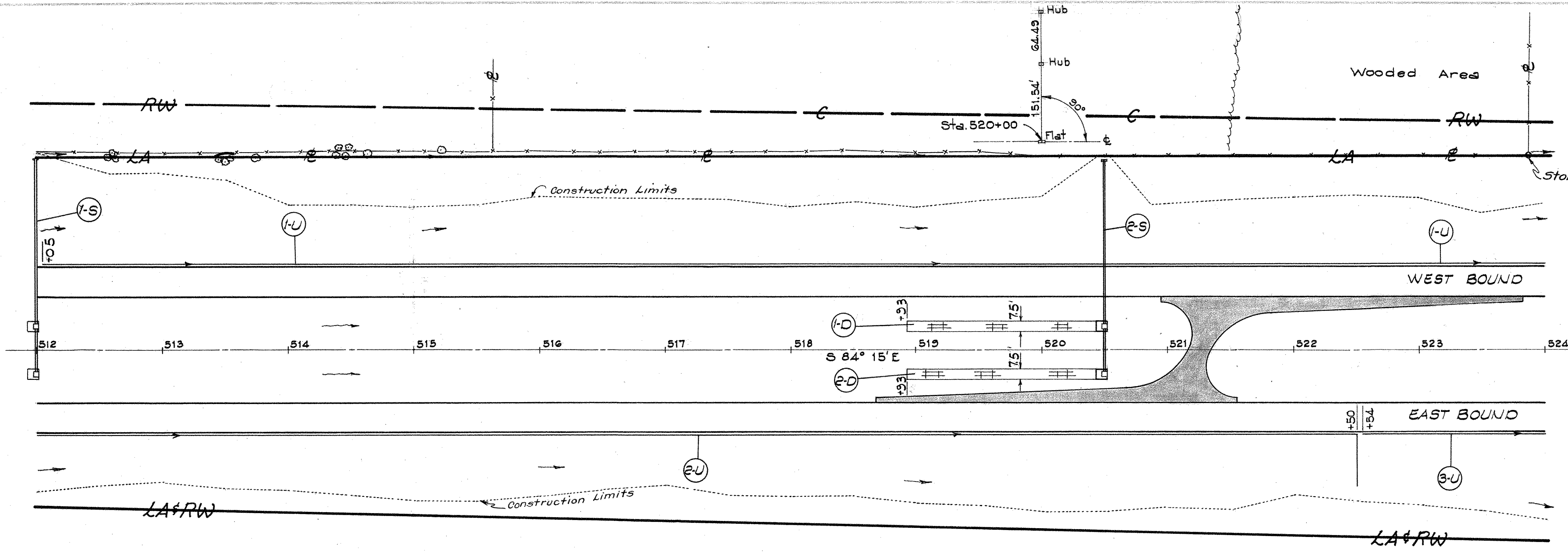


Seeding	19,456 Sq. Yds.
Excavation	29,486 Cu. Yds.
Embarkment	157 Cu. Yds.
Emb + 12%	176 Cu. Yds.

B.M. #3 Spike S.E. Root 30" Oak & Sta. 504+03.5 El. 1074.983

B.M. #4 Spike N.W. Root 10" Oak 1.5' Lt. Sta. 508+65 El. 1072.50

LIC-70-(5.12-8.67)



(S) SEWERS

Mark	Station		Side	608 15"	602	604
	From	To		Conduit Type 30" Lin. Ft.	Concrete Masonry Cu. Yds.	Catch Basin Each
1-S	512+00		Lt./Rt.	171	0.3	2
2-S	520+50		Lt./Rt.	170	0.3	2
Totals				341	0.6	4

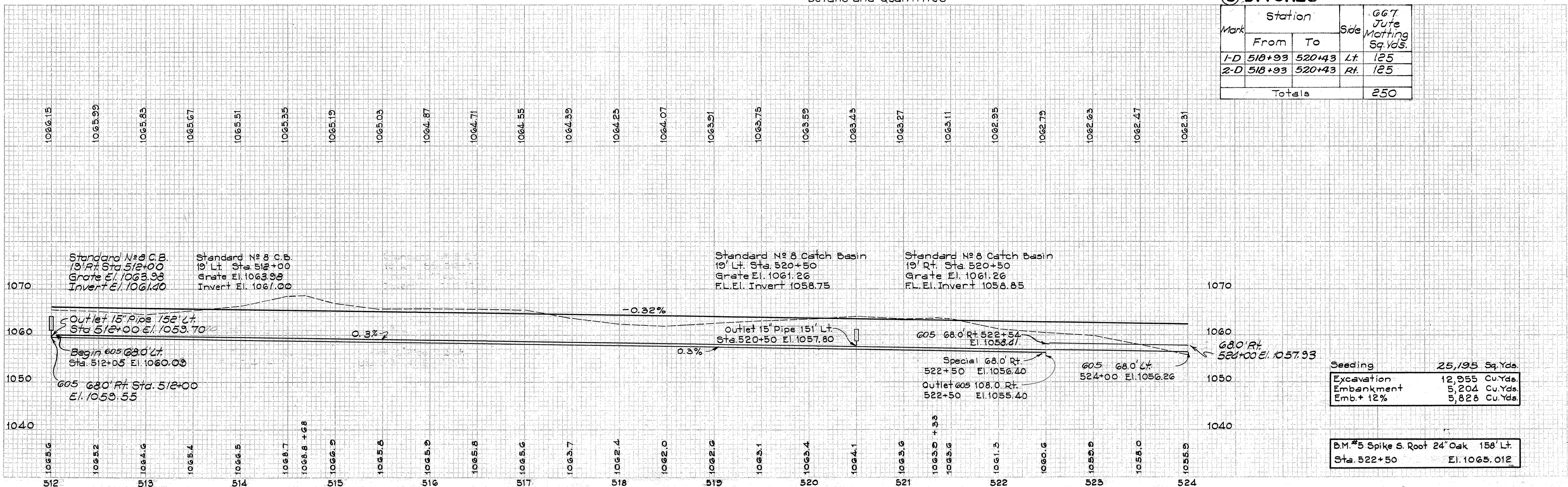
(U) DRAINS

Mark	Station		Side	605 6"	602 8"	6"
	From	To		Pipe Type Lin. Ft.	Conduit Type Lin. Ft.	Pipe Special Class I-3 Each
1-U	512+05	520+00	Lt.	1135		
2-U	512+00	522+50	Rt.	1080	10	1
3-U	522+54	524+00	Rt.	106		
Totals				106	2275	10

NOTE:
See Sheet No // for
U-Turn Median Opening
Details and Quantities

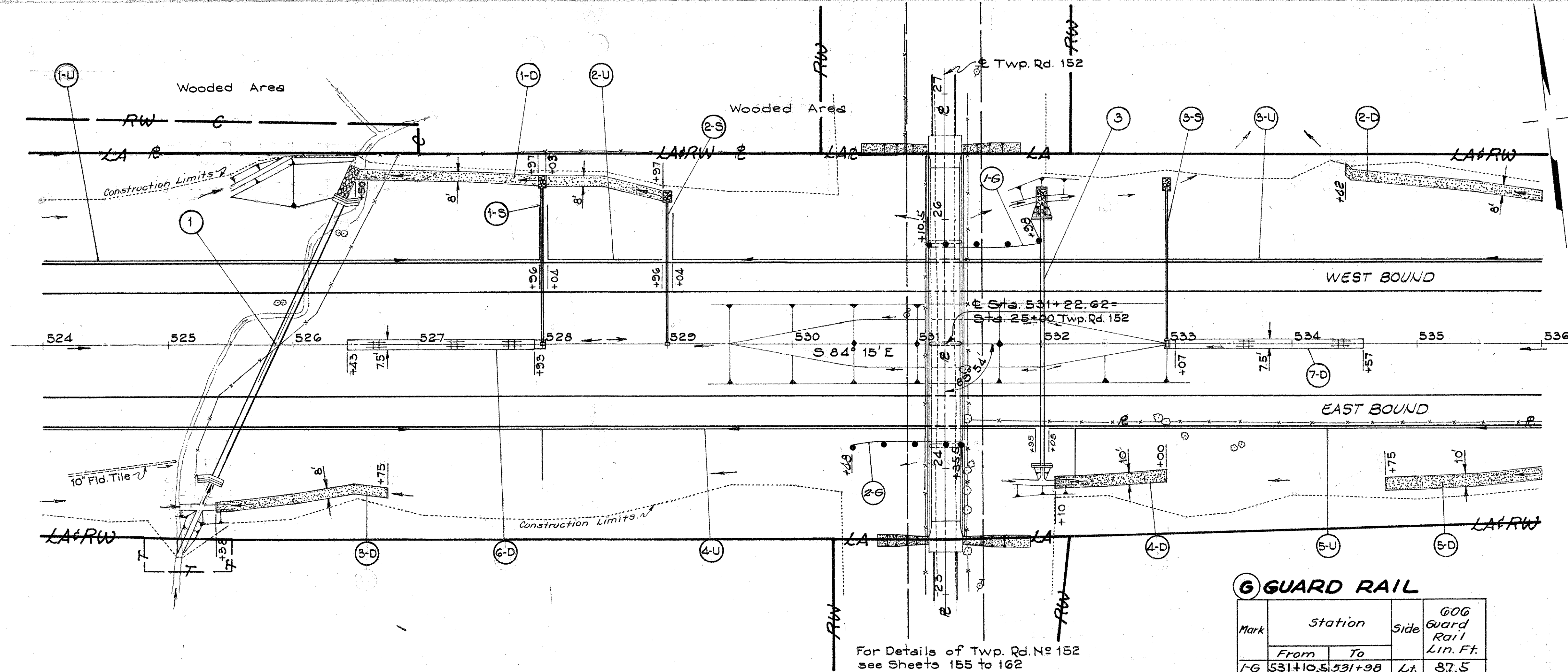
(D) DITCHES

Mark	Station		Side	667
	From	To		Jute Matting Sq. Yds.
1-D	518+93	520+43	Lt.	125
2-D	518+93	520+43	Rt.	125
Totals				250



Seeding	25,195 Sq. Yds.
Excavation	12,955 Cu. Yds.
Embankment	5,204 Cu. Yds.
Emb. + 12%	5,828 Cu. Yds.

D.M. #5 Spike S. Root 24" Oak 158' Lt.
Sta. 522+50 El. 1065.012



S SEWERS

Mark	Station		Side	603 15" Concrete Conduit Type B Lin. Ft.	602 Masonry Catch Basins Each Cu.Yds.	604 No. 4 Catch Basin Each Cu.Yds.	601 Dump Rock Channel Prot. Cu.Yds.
	From	To					
1-S	529+00		Lt.	125	0.3	1	3
2-S	529+00		Lt.	113	0.3	1	3
3-S	533+00		Lt.	123	0.3	1	3
Totals				361	0.9	3	9

U DRAINS

Mark	Station		Side	605 6" Pipe Underdrains Lin. Ft.		603 8" Conduit Type F Lin. Ft.	6" Pipe Special Tee Each		603 6" Conduit Type F Lin. Ft.
	From	To		Shallow	Deep		90° Bend	Tee	
1-U	524+00	527+96	Lt.		128	10			10
2-U	528+04	528+96	Lt.	186		10			
3-U	529+04	536+00	Lt.	703		10			20
4-U	524+00	531+95	Rt.	815		10			10
5-U	532+05	536+00	Rt.	423		10			
Totals				1667	851	50	3	2	40

D DITCHES

Mark	Station		Side	660 Sodding Sq.Yds.	667 Jute Matting Sq.Yds.
	From	To			
1-D	526+50	528+97	Lt.	214	
2-D	534+42	536+00	Lt.	141	
3-D	525+38	526+75	Rt.	124	
4-D	532+10	533+00	Rt.	100	
5-D	534+75	536+00	Rt.	139	
6-D	526+43	527+93	Med.		125
7-D	533+07	534+57	Med.		125
Totals				718	250

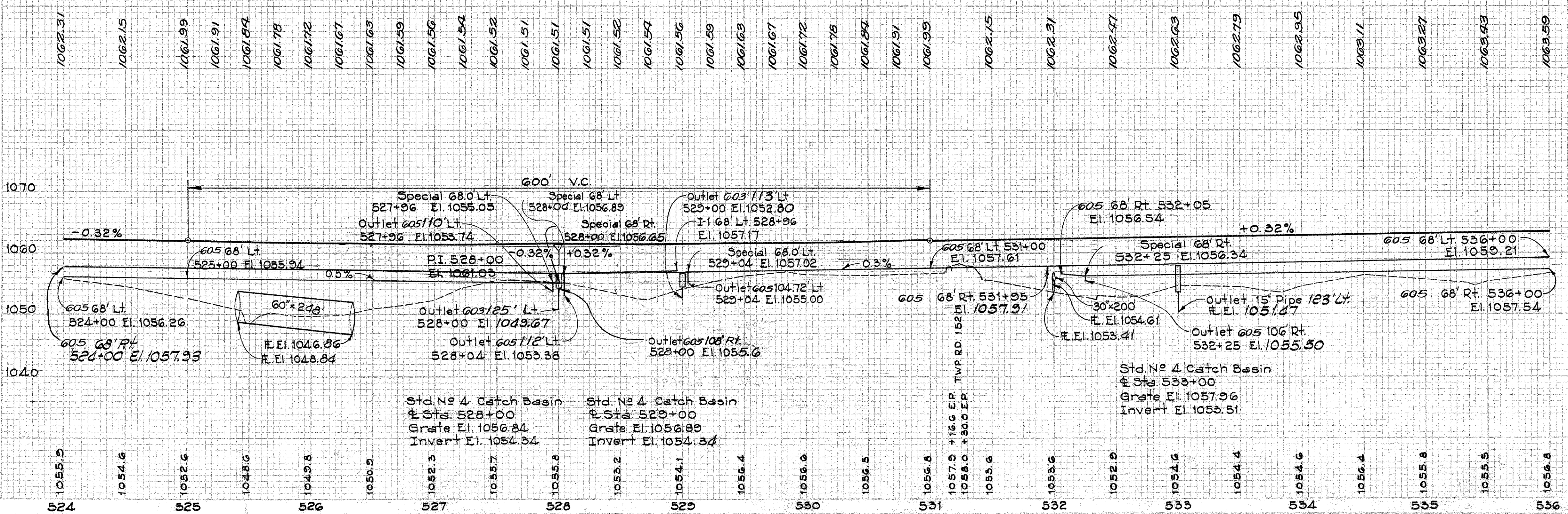
G GUARD RAIL

Mark	Station		Side	606 Guard Rail Lin. Ft.
	From	To		
1-G	531+10.5	531+98	Lt.	87.5
2-G	530+48	531+35.5	Rt.	87.5
Totals				175.0

For Details of Twp. Rd. No. 152 see Sheets 155 to 162

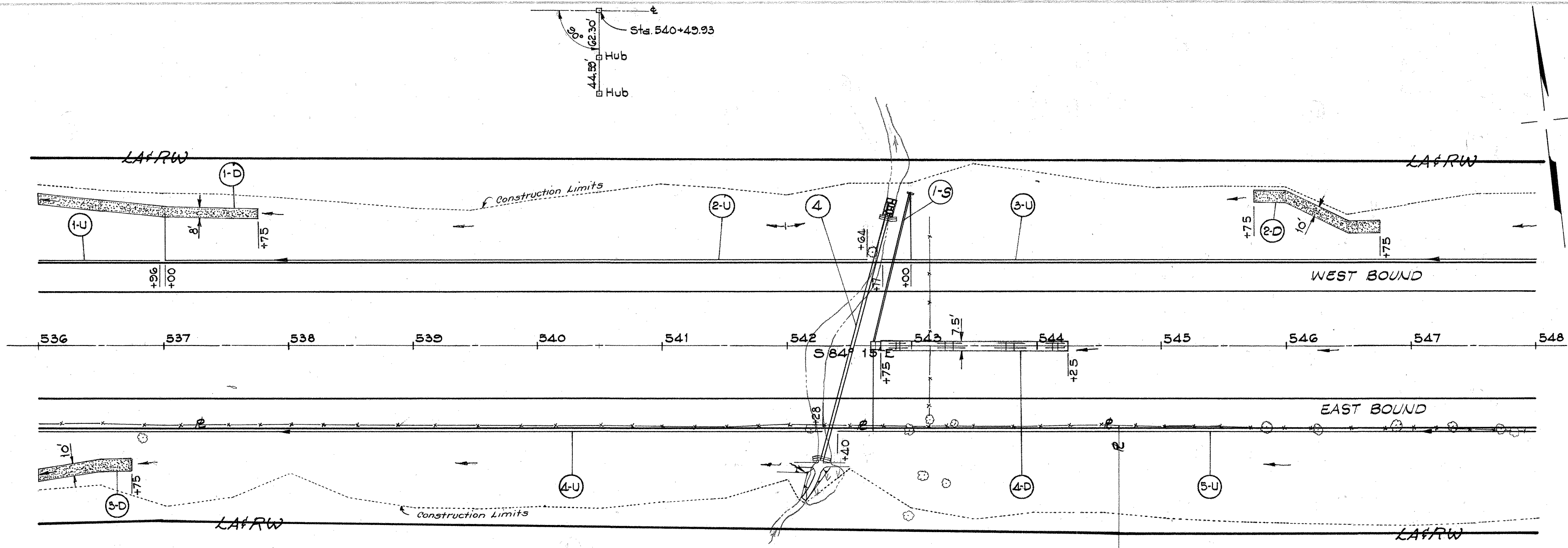
STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
1	0555 525+86	P.C.	60"	24.8	197
3	0567 532+00	P.C.	36"	2.00	199



Seeding	29,470	Sq. Yds.
Excavation	2270	Cu. Yds.
Embankment	54,530	Cu. Yds.
Emb.+12%	61,074	Cu. Yds.

B.M. #6 Spike in Power Pole 23.5' Lt.
Sta. 530+92.0 El. 1057.728



SEWERS

Mark	Station		Side	603 15"	602	604
	From	To		Conduit Type 'B'	Concrete Masonry	# Catch Basins
1-S	542+68	542+98	Lt.	126	0.3	1
Totals				126	0.3	1

U DRAINS

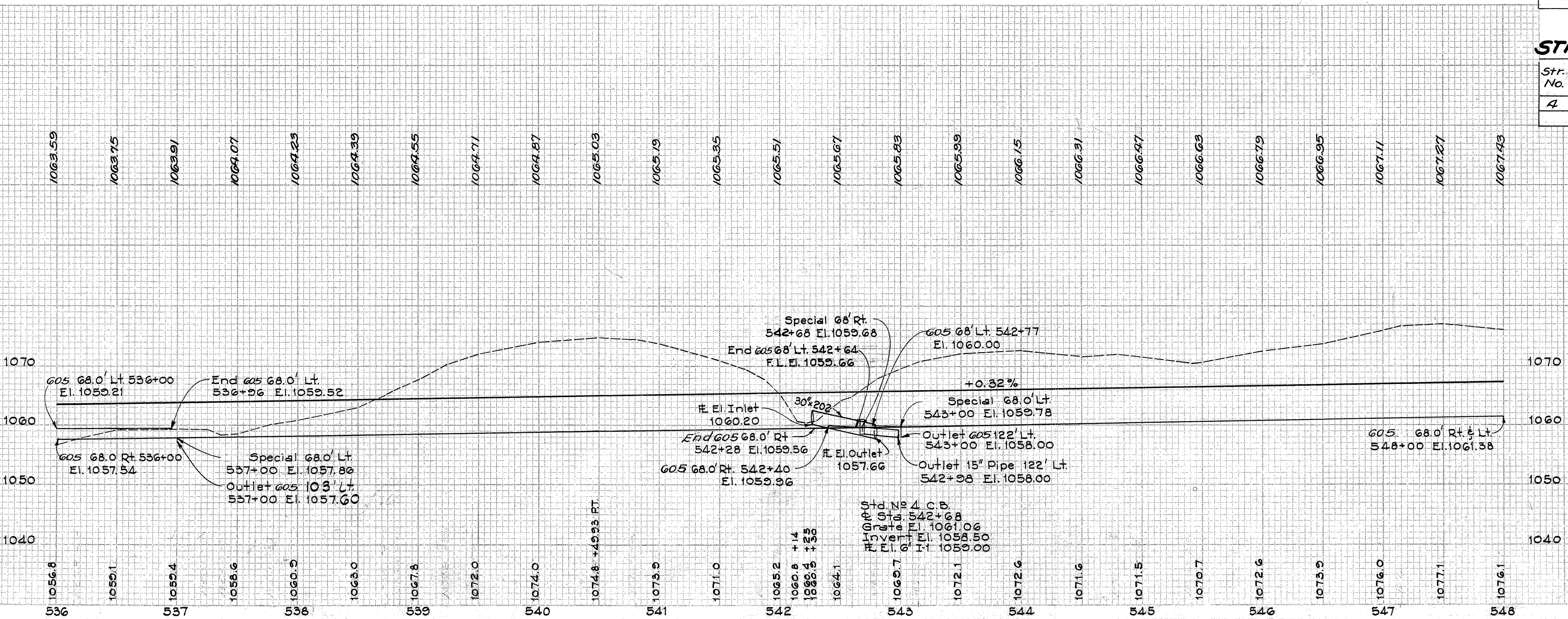
Mark	Station		Side	605 6" Pipe Underdrns		603 Conduit Type F		6" Pipe Special		603 6" Conduit Type 'B'
	From	To		Lin. Ft.	Shallow Deep	Lin. Ft.	Type F	90° Bend Tee	Lin. Ft.	
1-U	536+00	536+96	Lt.	96						
2-U	537+00	542+64	Lt.		589		10	1		
3-U	542+77	548+00	Lt.		557	10	10		1	
4-U	536+00	542+28	Rt.		628					
5-U	542+40	548+00	Rt.		500	10			1	58
Totals				96	2334	20	20	1	2	58

D DITCHES

Mark	Station		Side	660 Sodding		667 Jute Matting	
	From	To		Sq. Yds.	Sq. Yds.		
1-D	536+00	537+75	Lt.	157			
2-D	545+75	546+75	Lt.	119			
3-D	536+00	536+75	Rt.	83			
4-D	542+75	544+25	Med.		125		
Totals				359	125		

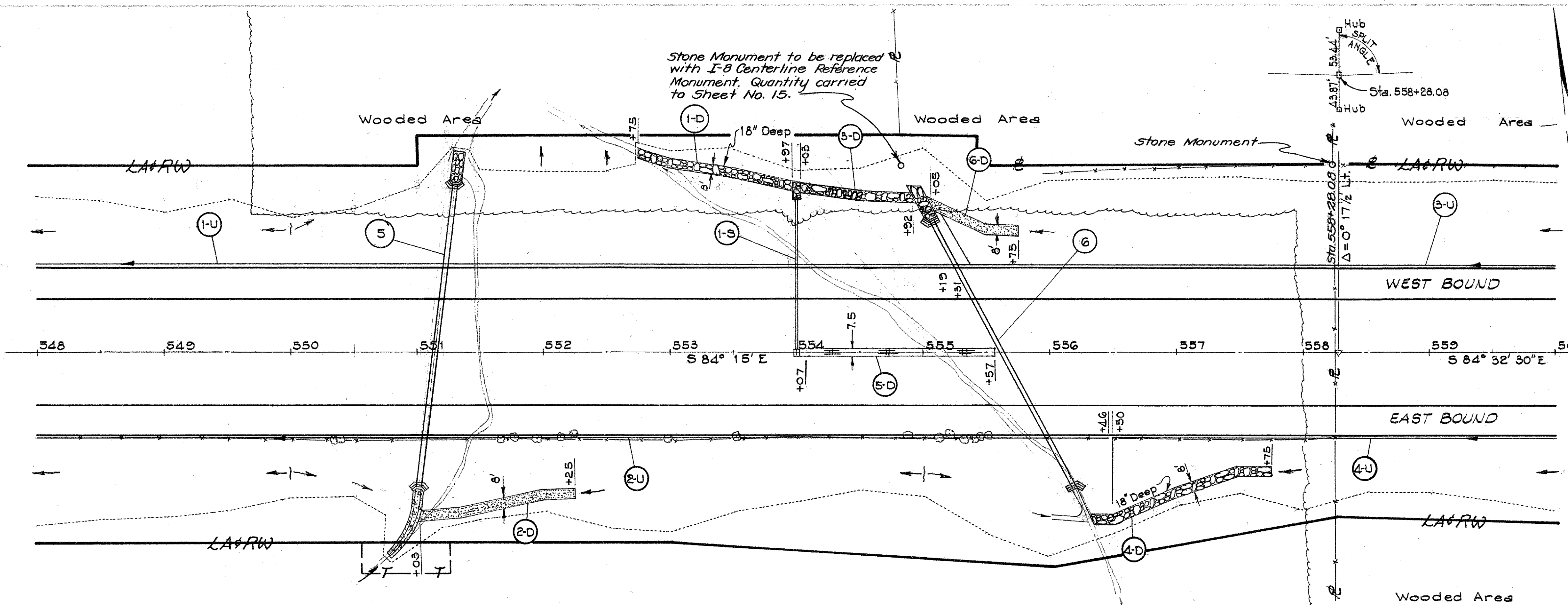
STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M.	Station	Proposed			Details or Sheet
			Type	Size	Length	
4	0587	542+52	P.C.	30"	202'	200



Seeding	29,064	Sq. Yds.
Excavation	55,855	Cu. Yds.
Embankment	5,582	Cu. Yds.
Emb.+12%	6,252	Cu. Yds.

B.M.#7 Spike S. Root 26" Maple 444'Lt
Sta: 542+88.0 El. 1067.823



(S) SEWERS

Mark	Station		Side	603 15" Conduit Type 'B'	602 Concrete Masonry	604 No. 4 Catch Basin	601 Dump Rock Chan. Prot.
	From	To		Lin. Ft.	Cu. Yds.	Each	Cu. Yds.
1-S	554+00		Lt.	120	0.3	1	5
Totals				120	0.3	1	5

(U) DRAINS

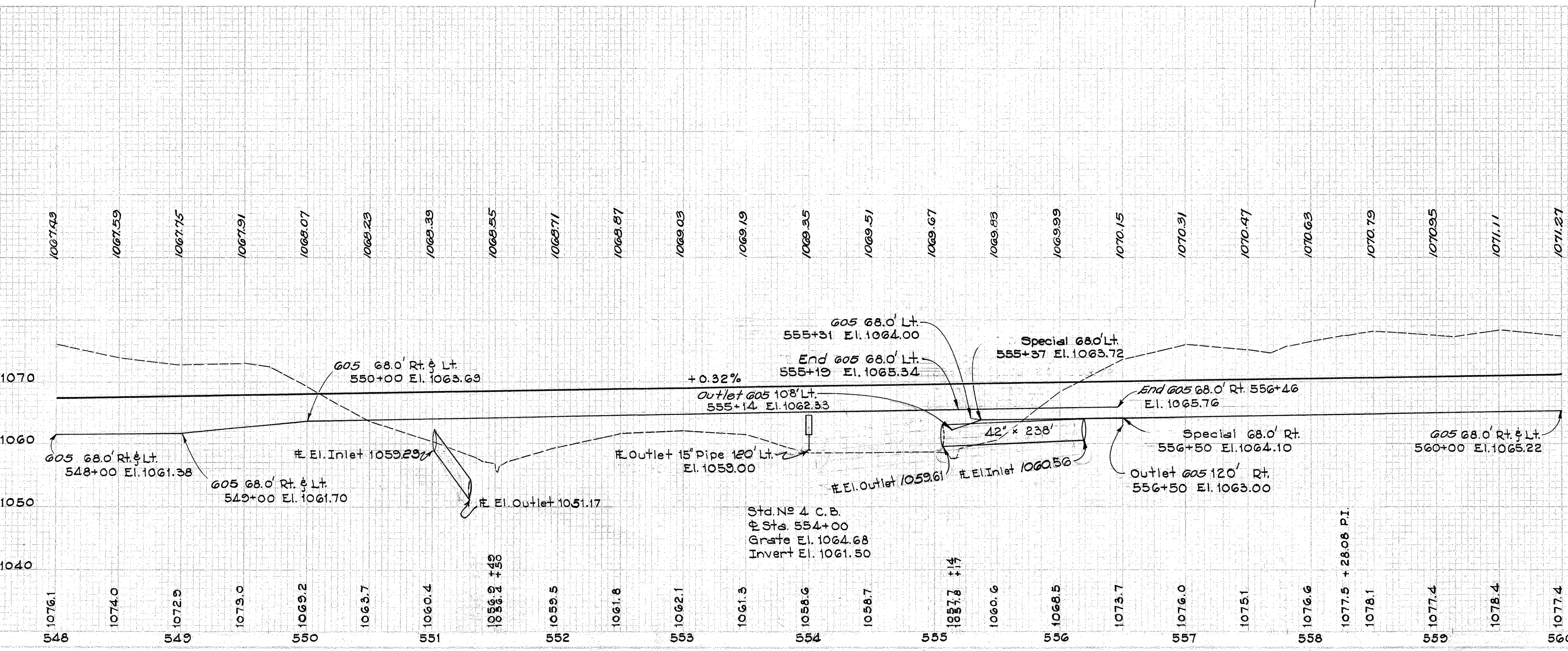
Mark	Station		Side	605 6" Pipe Underdrains		603 8" Conduit Type 'F'	6" Pipe Specials		603 6" Conduit Type 'F'
	From	To		Shallow	Deep	Lin. Ft.	Each	90° Bend Wye	Lin. Ft.
1-U	548+00	555+19	Lt.	599	100				20
2-U	548+00	550+90	Rt.	726	100				20
3-U	555+31	560+00	Lt.		505	10		1	
4-U	556+50	560+00	Rt.		392	10	1		
Totals				1325	1097	20	1	1	40

(D) DITCHES

Mark	Station		Side	660 Sodding	667 Jute Matting	601 Dump Rock Chan. Prot.
	From	To		Sq. Yds.	Sq. Yds.	Cu. Yds.
1-D	552+75	553+97	Lt.			56
2-D	551+03	552+25	Rt.	110		
3-D	554+03	554+92	Lt.			40
4-D	556+30	557+75	Rt.			67
5-D	554+07	555+57	Lt.		125	
6-D	555+05	555+75	Lt.	66		
Totals				176	125	163

STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
5	0603 551+14.5	R.C.	42"	240'	201
6	0612 555+62	R.C.	42"	238'	202

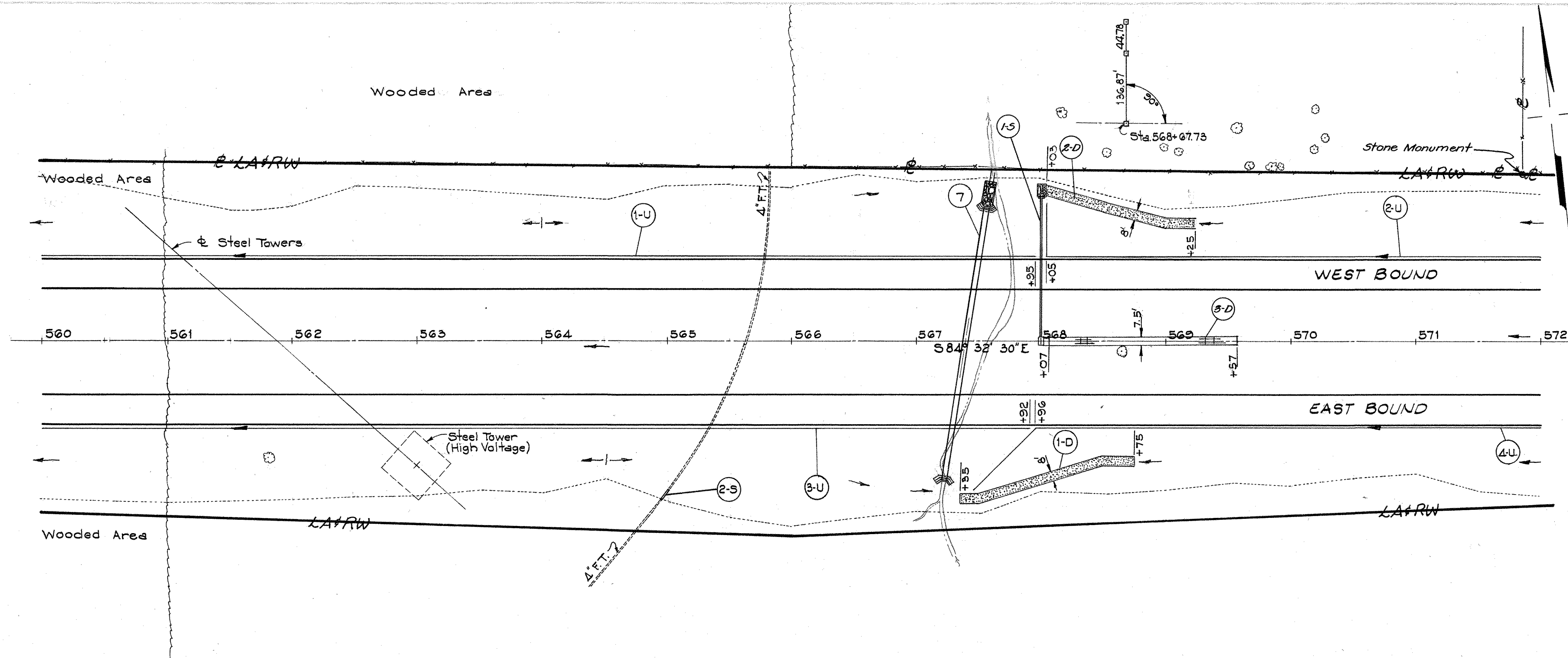


Seeding	30,280 Sq. Yds.
Excavation	36,000 Cu. Yds.
Embankment	30,353 Cu. Yds.
Emb. + 12%	34,002 Cu. Yds.

B.M. #9 Spike S. Root 24' Beech
Sta. 559+43.4 El. 1078.619

B.M. #8 N. Root 16' Twin W. Cherry 66' Rt.
Sta. 551+93.6 El. 1061.364

LIC-70-(5.12-8.67)



S SEWERS

Mark	Station		Side	603 15"	602	604	601	603 6"
	From	To		Conduit Type B	Concrete Masonry	No. 4 Catch Basin Each	Dump Rock Ch. Prof.	Conduit Type F
1-S	568+00		Lt.	116	0.3	1	3	
2-S	564+05	565+00	Rt.					10
Totals				116	0.3	1	3	10

U DRAINS

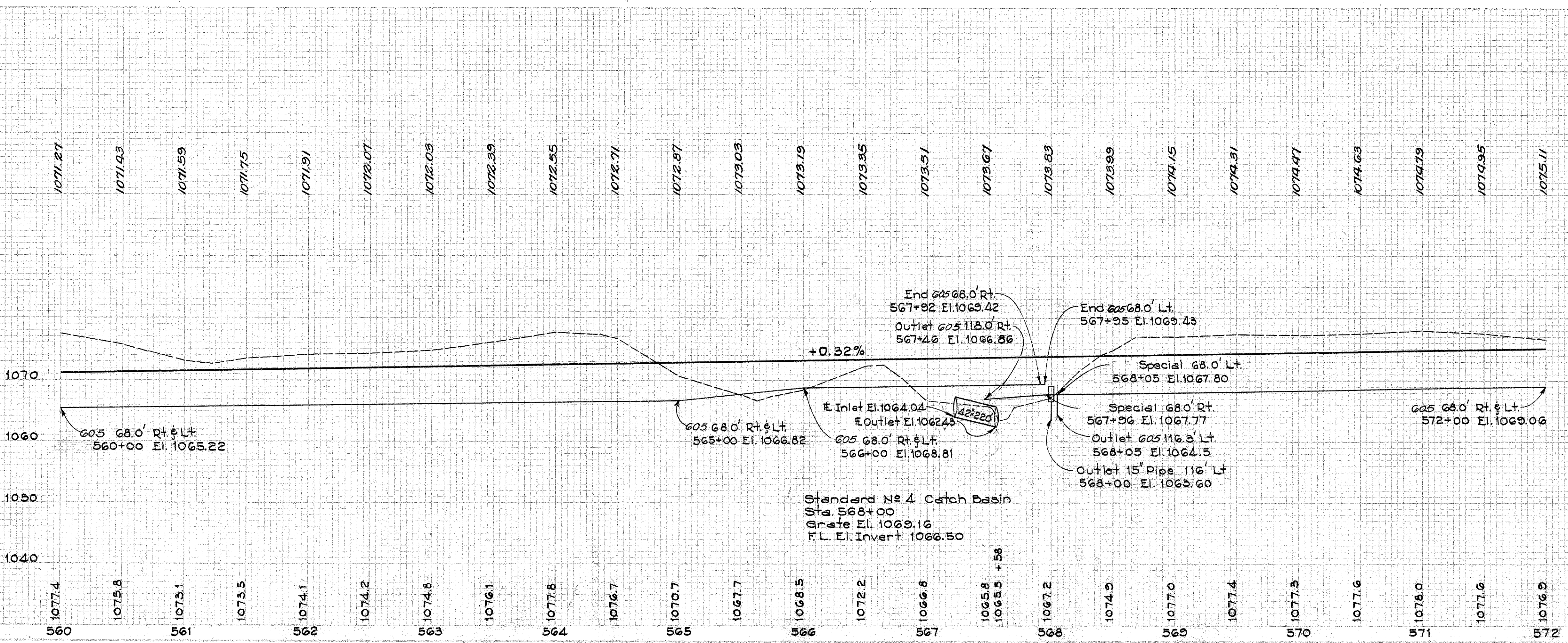
Mark	Station		Side	605 6" Pipe Underdrains	603 8" Conduit	6" Pipe Special		603 6" Conduit
	From	To		Lin. Ft.	Type F	Each	Each	Type F
1-U	560+00	567+95	Lt.	185	600			10
2-U	568+05	572+00	Lt.		433	10	1	
3-U	560+00	567+92	Rt.	182	600			10
4-U	567+96	572+00	Rt.		464	10		
Totals				367	2,097	20	1	20

D DITCHES

Mark	Station		Side	600 Sodding	607 Jute Matting
	From	To		Sq. Yds.	Sq. Yds.
1-D	567+35	568+75	Rt.	129	
2-D	568+03	569+25	Lt.	109	
3-D	568+07	569+57	Lt.		125
Totals				238	125

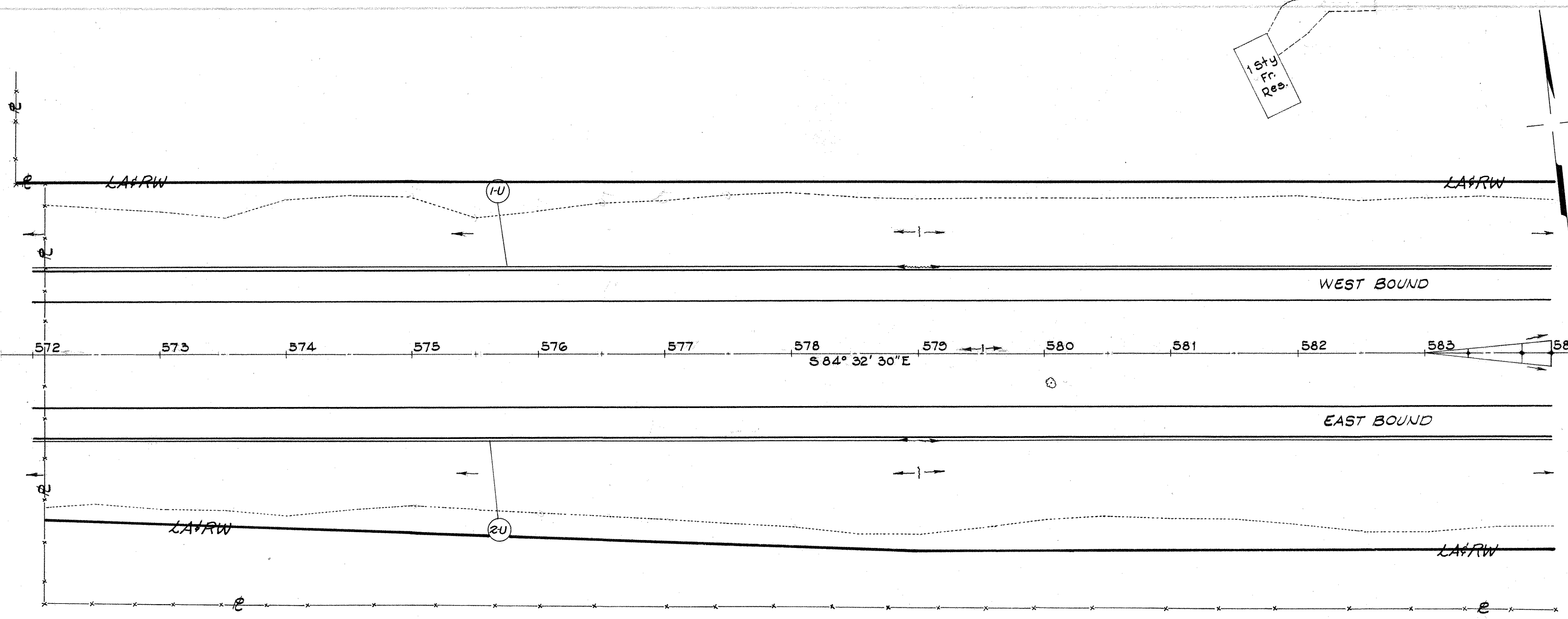
STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
7	0634 567+40	P.C.	42"	220'	203



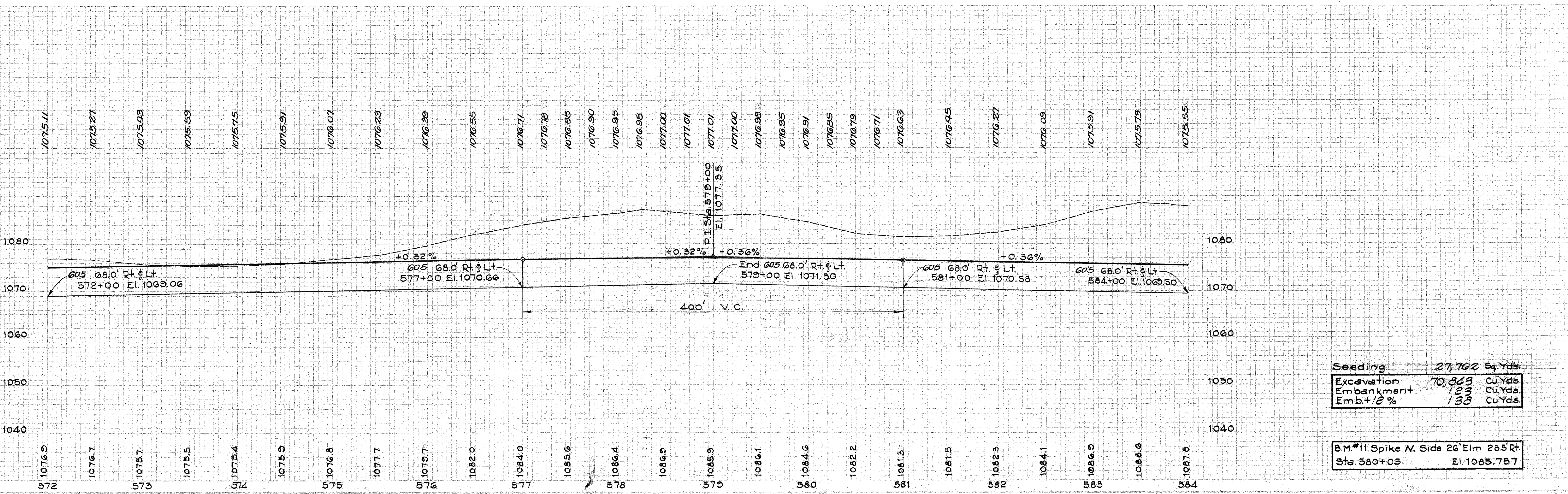
Seeding	27,493	Sq. Yds.
Excavation	29,300	Cu. Yds.
Embankment	3,176	Cu. Yds.
Emb. + 12%	10,217	Cu. Yds.

B.M. #10 Spike N. Side 12" Walnut 75' Rt.
Sta. 568+65 El. 1078.044



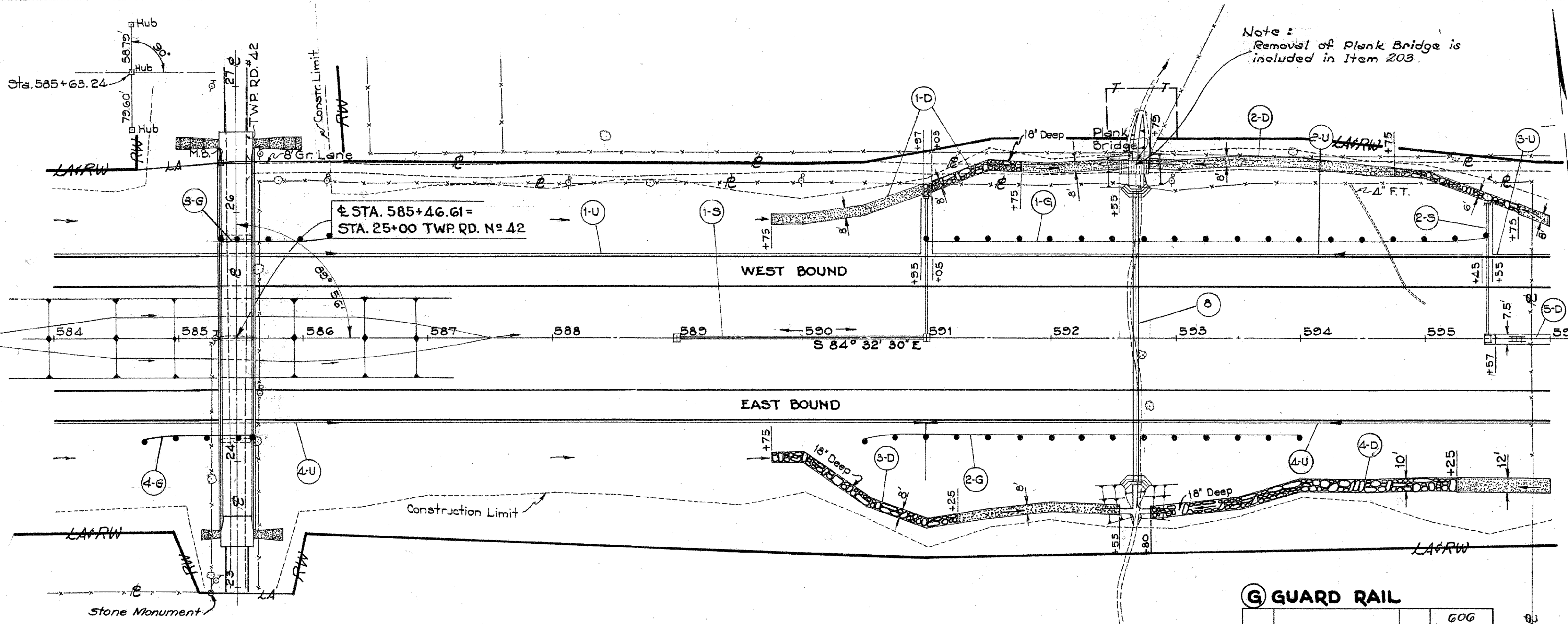
U DRAINS

Mark	Station		Side	605 G Pipe Underdrains Lin. Ft.	
	From	To		Shallow	Deep
1-U	572+00	584+00	Lt.	1,200	
2-U	572+00	584+00	Rt.	1,200	
Totals				2,400	



Seeding	27,762	Sq. Yds.
Excavation	70,803	Cu Yds.
Embankment	123	Cu Yds.
Emb.+2%	133	Cu Yds.

B.M.#11 Spike N. Side 26" Elm 235' Rt.
Sta. 580+05 El. 1085.757



S SEWERS

Mark	Station		Side	603 15" Conduit	602 Concrete Masonry	604 No. 4 Catch Basin	603 Conduit	601 Dump Rock
	From	To		Lin. Ft.	Cu. Yds.	Each	15" 18"	Cu. Yds.
1-S	589+00	591+00	Lt.	200	0.3	2	113	3
2-S	595+50		Lt.		0.3	1	108	
Totals				200	0.6	3	108 113	3

U DRAINS

Mark	Station		Side	603 6" Pipe Underdrains		603 8" Conduit	6" Pipe Special		603 6" Conduit
	From	To		Shallow	Deep	Lin. Ft.	90° Bend	Tee	Lin. Ft.
1-U	584+00	590+95	Lt.	731		10		1	
2-U	591+05	595+45	Lt.	466		10		1	10
3-U	595+55	596+00	Lt.		76	10			
4-U	584+00	596+00	Rt.	1226		10		1	10
Totals				466	2,033	40		3 1	20

D DITCHES

Mark	Station		Side	601 Dump Rock Channel	607 Jute Matting	600 Sodding
	From	To		Lin. Ft.	Sq. Yds.	Sq. Yds.
1-D	589+75	592+55	Lt.	34		182
2-D	592+79	596+00	Lt.	35		197
3-D	589+75	592+55	Rt.	73		116
4-D	592+80	596+00	Rt.	138		100
5-D	595+57	596+00	Rt.		36	
Totals				280	36	595

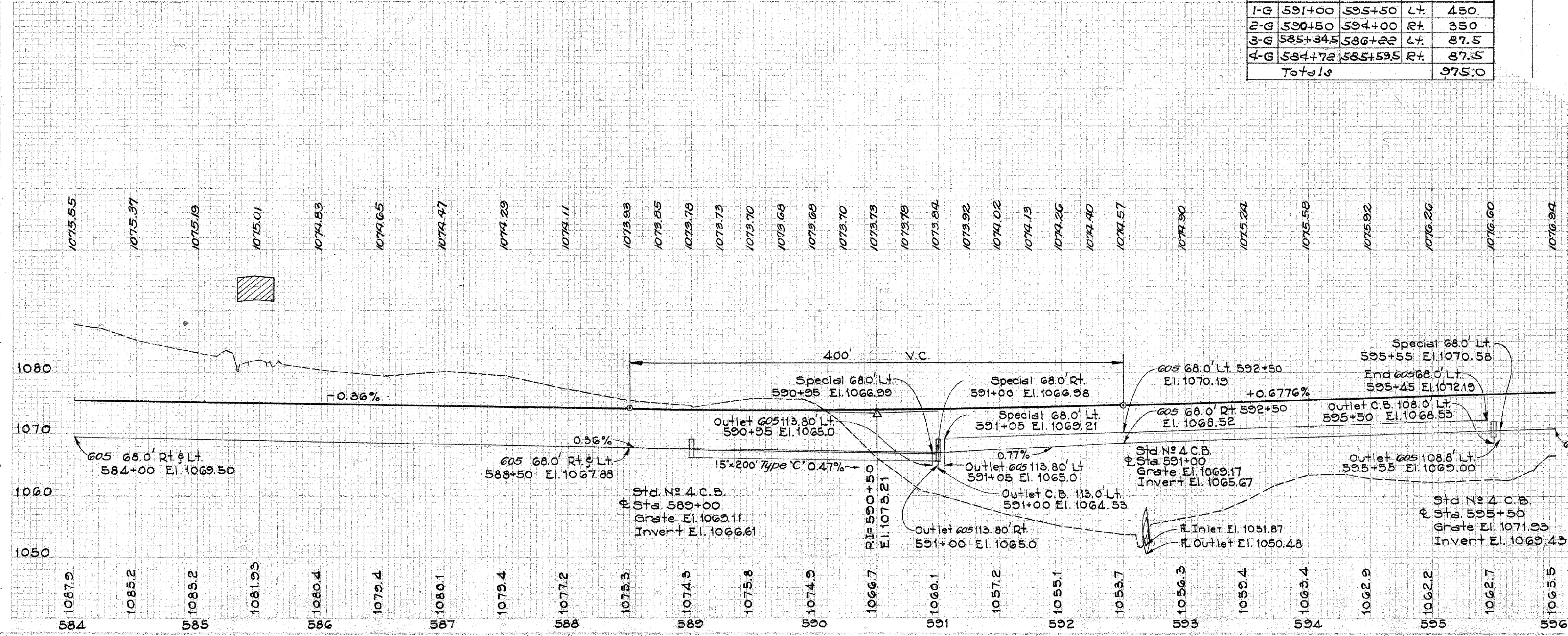
G GUARD RAIL

Mark	Station		Side	606 Guard Rail
	From	To		Lin. Ft.
1-G	591+00	595+50	Lt.	450
2-G	590+50	594+00	Rt.	350
3-G	585+34.5	586+22	Lt.	87.5
4-G	584+72	585+59.5	Rt.	87.5
Totals				975.0

For Details of Twp. Rd. No. 42 see Sheets 163 to 168

STRUCTURES 20' SPAN & UNDER

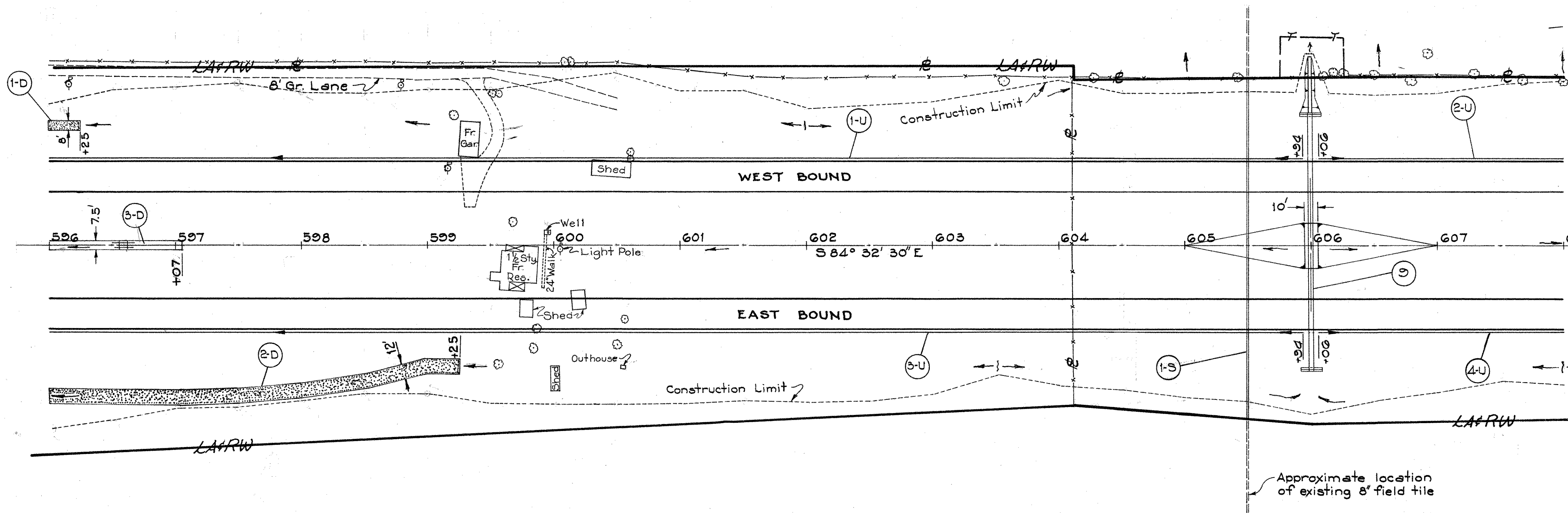
Str. No.	S.L.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
3	0682 592+68	R.C.	72"	232'	20d



Seeding	30,898	Sq. Yds.
Excavation	33,553	Cu. Yds.
Embankment	53,060	Cu. Yds.
Emb. + 12%	59,875	Cu. Yds.

B.M. #12 Spike S. Side Telephone Pole
Sta. 585+29.0 El. 1063.097

LIC~70~(5.12-8.67)



(D) DITCHES

Mark	Station		Side	600 Sodding Sq. Yds.	667 Jute Matting Sq. Yds.
	From	To			
1-D	596+00	596+25	Lt.	22	
2-D	596+00	599+25	Rt.	437	
3-D	596+00	597+07	E		89
Totals				459	89

STRUCTURES 20' SPAN & UNDER

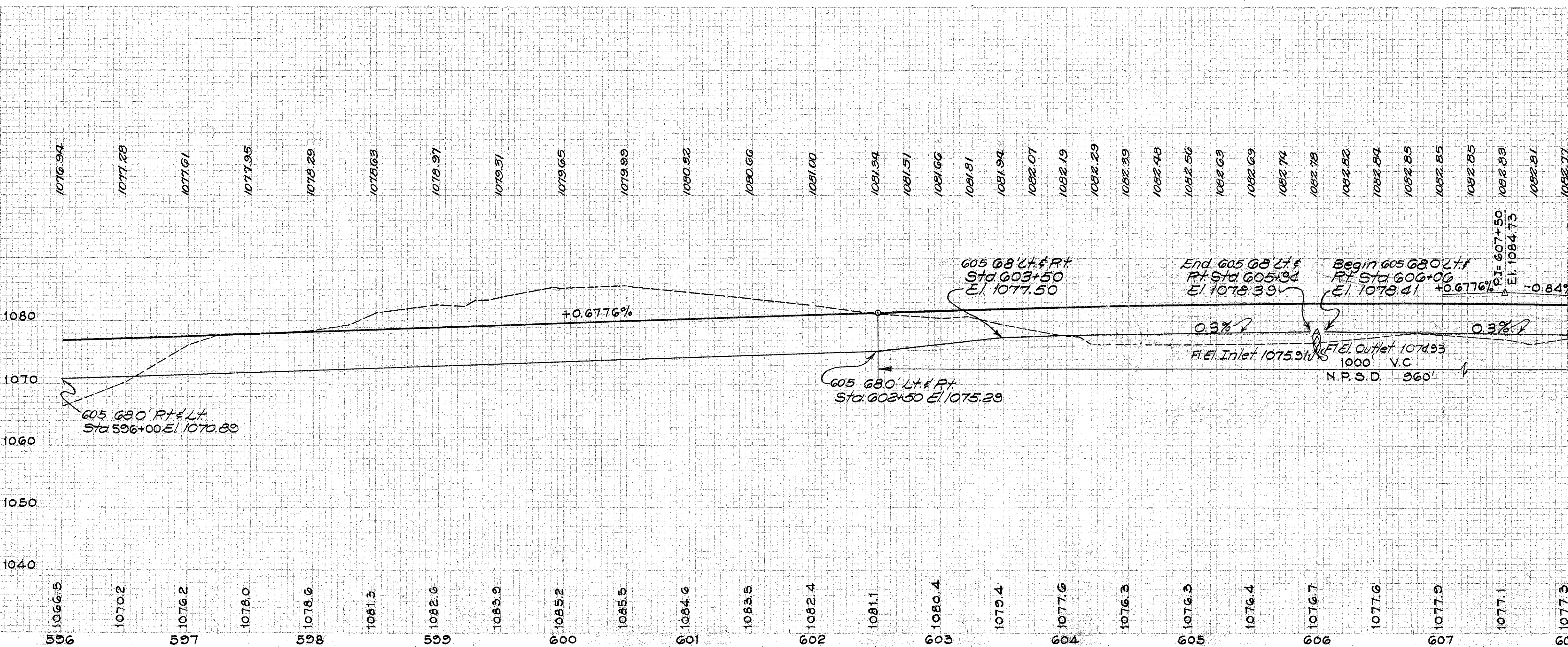
Str. No.	SLM Station	Proposed			Details on Sheet
		Type	Size	Length	
9	607+00	P.C.	36"	204'	205

(U) DRAINS

Mark	Station		Side	605 6" Pipe Underdrains Lin. Ft.		603 8" Conduit Type 'F' Lin. Ft.	6" Pipe Special Each 90° Bend Tee
	From	To		Shallow	Deep		
1-U	596+00	605+94	Lt.	344	650		
2-U	606+06	608+00	Lt.	194			
3-U	596+00	605+94	Rt.	344	650		
4-U	606+06	608+00	Rt.	194			
Totals				1,076	1,300		

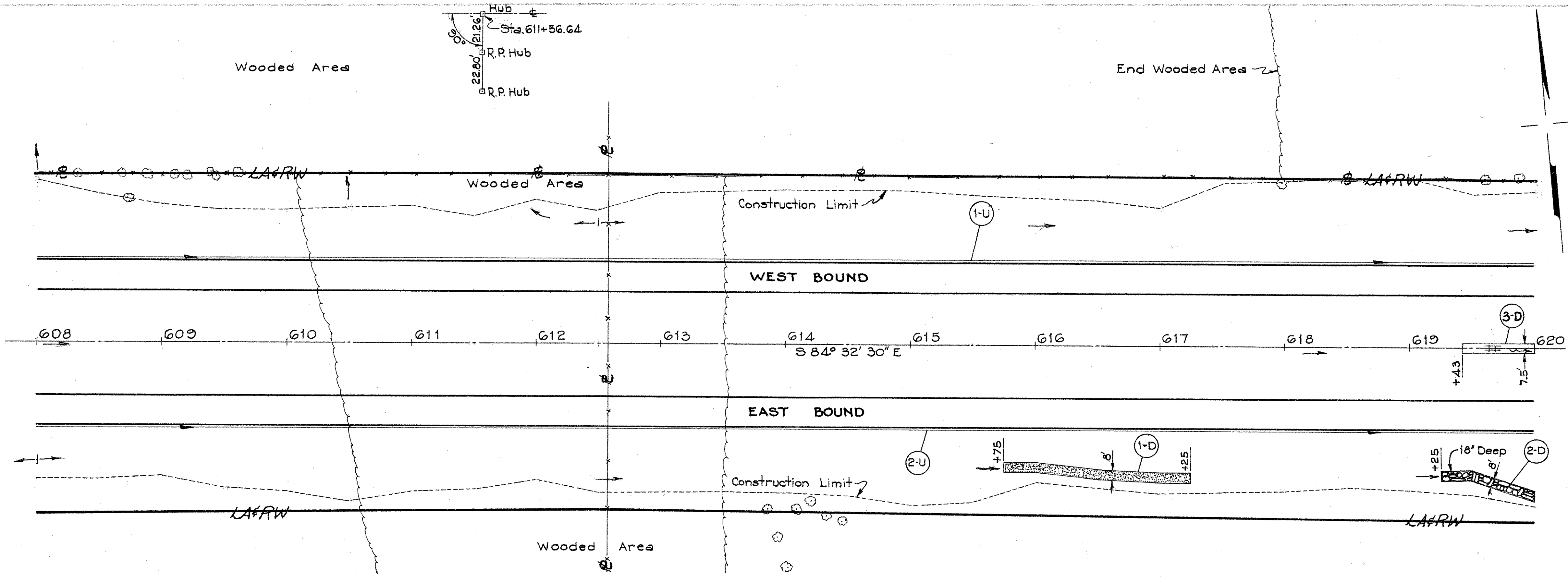
(S) SEWERS

Mark	Station		Side	603 12" Conduit Type 'B' Lin. Ft.
	From	To		
1-S	605+50		Lt./Rt.	272
Totals				272



Seeding	27,190	Sq. Yds.
Excavation	22,596	Cu. Yds.
Embankment	17,699	Cu. Yds.
Emb.+ 12%	19,863	Cu. Yds.

B.M.#130N.W. Cor. Conc. Well Platform
12' Lt. Sta. 599+22.5 El. 1085.272

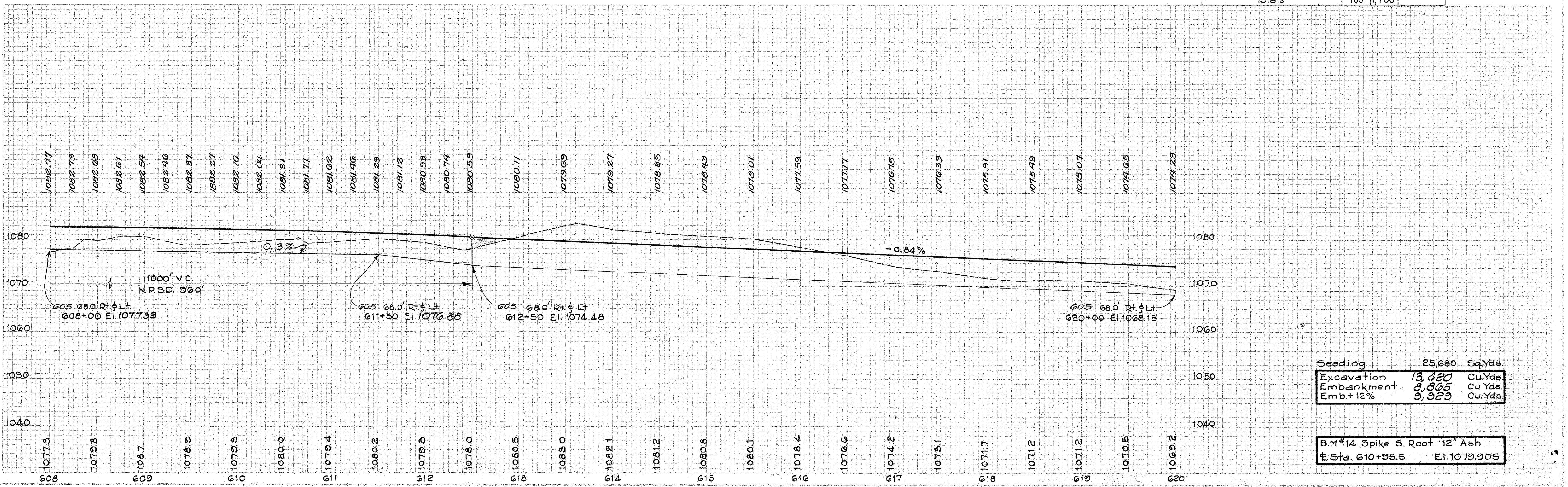


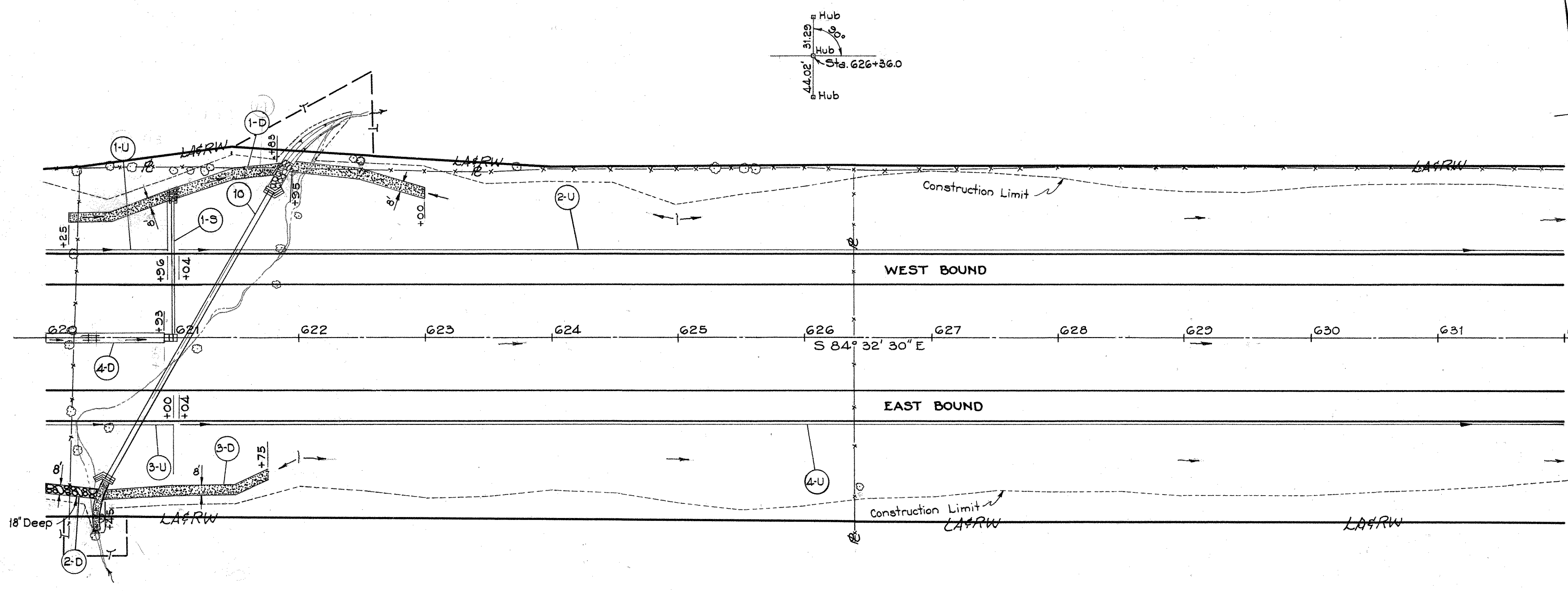
D DITCHES

Mark	Station		Side	600	601	607
	From	To		Sodding Sq.Yds.	Dump Rock Ch. Prot Cu.Yds.	Jute Matting Sq.Yds.
1-D	615+75	617+25	Rt.	133		
2-D	619+25	620+00	Rt.		35	
3-D	619+43	620+00	E.			48
Totals				133	35	48

U DRAINS

Mark	Station		Side	605 6" Pipe Underdrains
	From	To		Lin. Ft.
1-U	608+00	620+00	Lt.	350 850
2-U	608+00	620+00	Rt.	350 850
Totals				700 1,700





(S) SEWERS

Mark	Station		Side	603 15" Conduit Type B	602 Concrete Masonry	604 No. 4 Catch Basin Each	601 Dump Rock Ch. Prot. Cu. Yds.
	From	To		Lin. Ft.	Cu. Yds.		
1-S	621+00		Lt.	109	0.3	1	3
Totals				109	0.3	1	3

(U) DRAINS

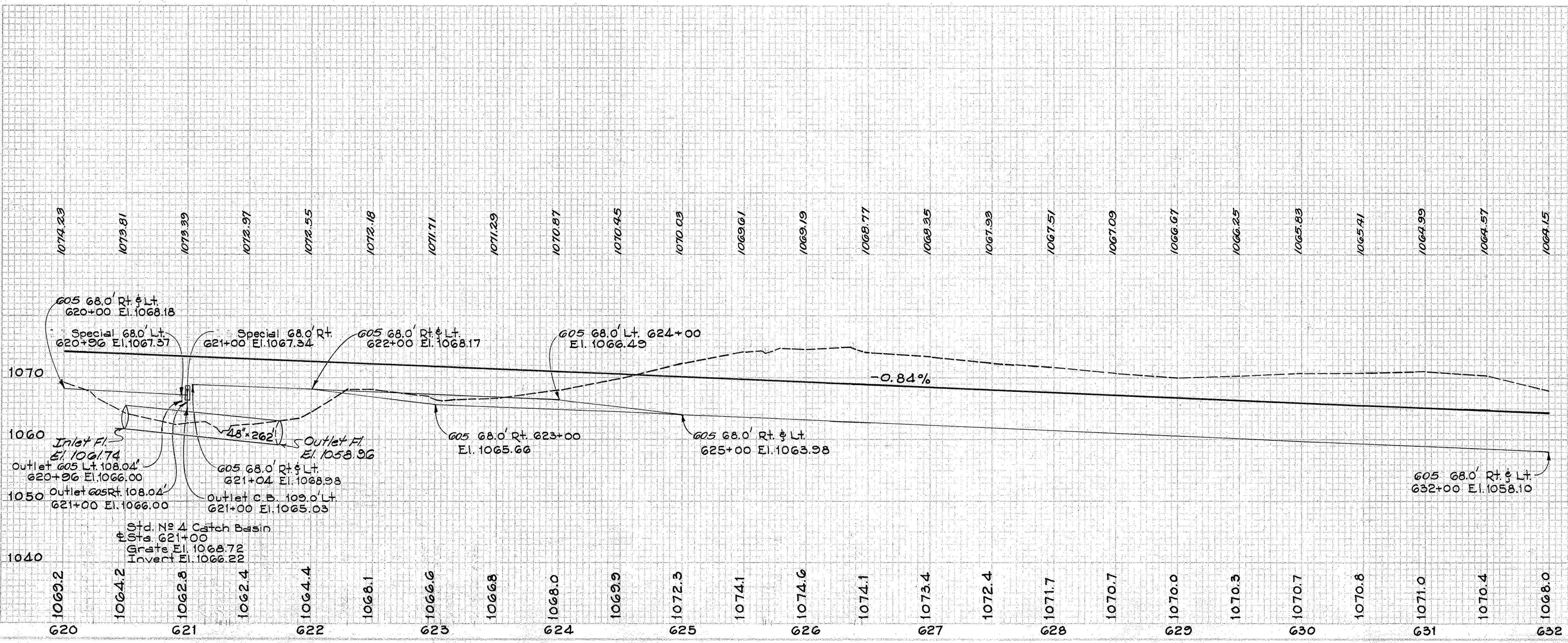
Mark	Station		Side	605 6" Pipe Underdrains Lin. Ft.		603 8" Conduit Type F	6" Pipe Special Each	603 6" Conduit Type F
	From	To		Shallow	Deep	Lin. Ft.	90° Bend Tee	Lin. Ft.
1-U	620+00	620+96	Lt.	126		10	1	
2-U	621+04	632+00	Lt.	286	800			10
3-U	620+00	621+00	Rt.		120	10	1	10
4-U	621+04	632+00	Rt.	96	1,000			
Totals				382	2,046	20	2	20

(D) DITCHES

Mark	Station		Side	607 Jute Matting	600 Sodding	601 Dump Rock Chan. Prot.
	From	To		Sq. Yds.	Sq. Yds.	Cu. Yds.
1-D	620+25	623+00	Lt.		240	
2-D	620+00	620+40	Rt.			18
3-D	620+45	621+75	Rt.		118	
4-D	620+00	620+93	Lt.	77		
Totals				77	358	18

STRUCTURES 20'SPAN & UNDER

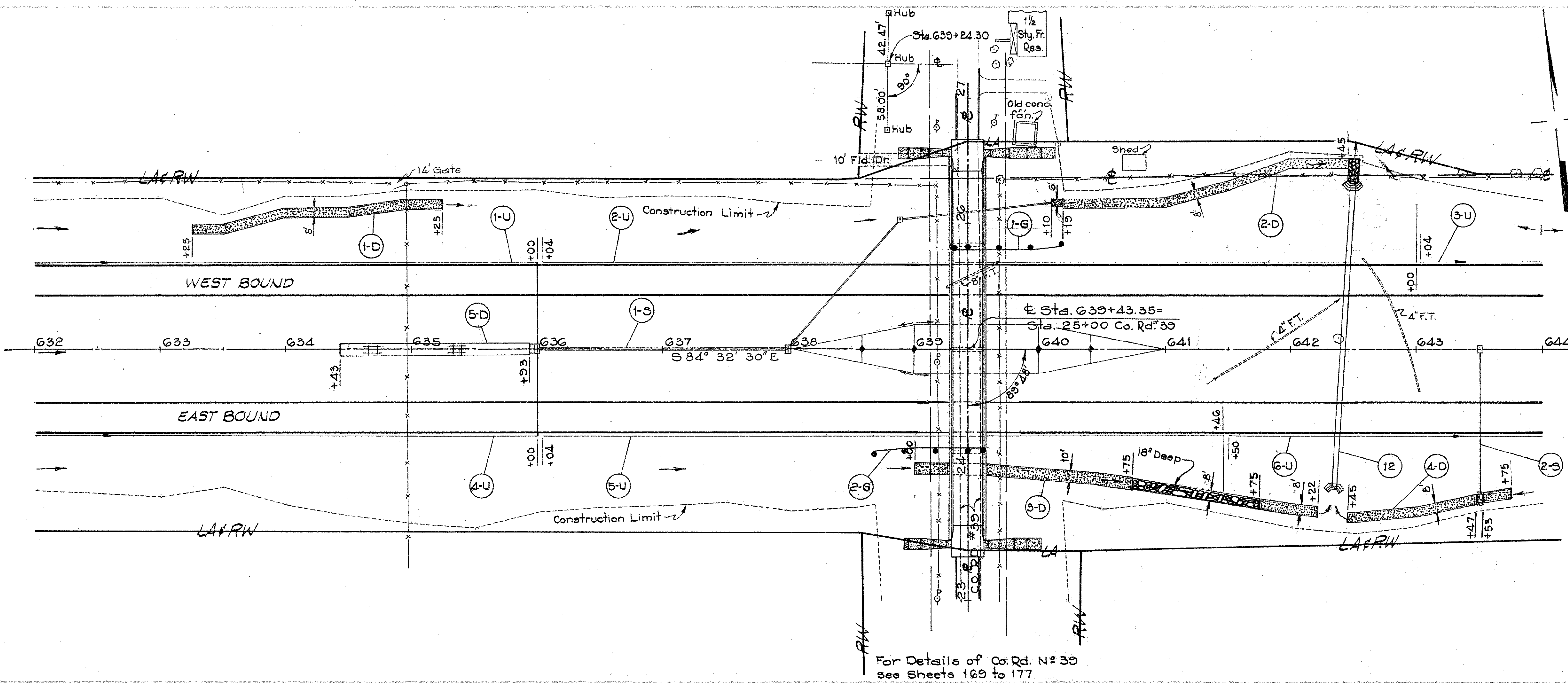
Str. No.	S.L.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
10	0736 621+11.5	P.C.	48"	262'	206



Seeding	27,344	Sq. Yds.
Excavation	37,050	Cu. Yds.
Embankment	14,310	Cu. Yds.
Emb. + 12%	16,032	Cu. Yds.

B.M. #16 Spike N. Side 10" W. Cherry
1' Lt. Sta. 626+41 El. 1075.380

B.M. #15 Spike N. Root 24" Ash 4.5 Rt.
Sta. 620+18.5 El. 1068.185



S SEWERS

Mark	Station		Side	603	602	604	601	603			
	From	To		Conduit Type & Lin. Ft.	Concrete Masonry Cu. Yds.	C. Basin No. 4 N#5	Dump Rock Chan. Prot. Cu. Yds.	Dump Rock Conduit Type 'B' Lin. Ft.			
1-S	636+00	640+10	Lt.	15' 137	0.4	2	1	3			
2-S	643+50		Rt.	114	0.3	1		3			
Totals				114	137	0.7	3	1	6	200	120

U DRAINS

Mark	Station		Side	605 G' Pipe Underdrains		603 Conduit Type 'F' Lin. Ft.		6' Pipe Special Each		603 G' Conduit Type 'B' Lin. Ft.
	From	To		Shallow	Deep	6'	8'	90° Bend Tee	Lin. Ft.	
1-U	632+00	636+00	Lt.		400	10			1	
2-U	636+04	643+00	Lt.	113		20	10		1	
3-U	643+04	644+00	Lt.			96			1	
4-U	632+00	636+00	Rt.		400	10				58
5-U	636+04	641+46	Rt.		577		10			
6-U	641+50	644+00	Rt.	230		20				
Totals				943	1473	60	20	4		116

D DITCHES

Mark	Station		Side	667	660	601
	From	To		Jute Matting Sq. Yds.	Sodding Sq. Yds.	Dump Rock Ch. Prot. Cu. Yds.
1-D	633+25	635+25	Lt.			180
2-D	640+19	642+45	Lt.			204
3-D	639+00	642+22	Rt.			237
4-D	642+45	643+75	Rt.			113
5-D	634+43	635+93	Lt.	125		
Totals				125	734	46

For Details of Co. Rd. N#39 see Sheets 169 to 177

STRUCTURES 20' SPAN & UNDER

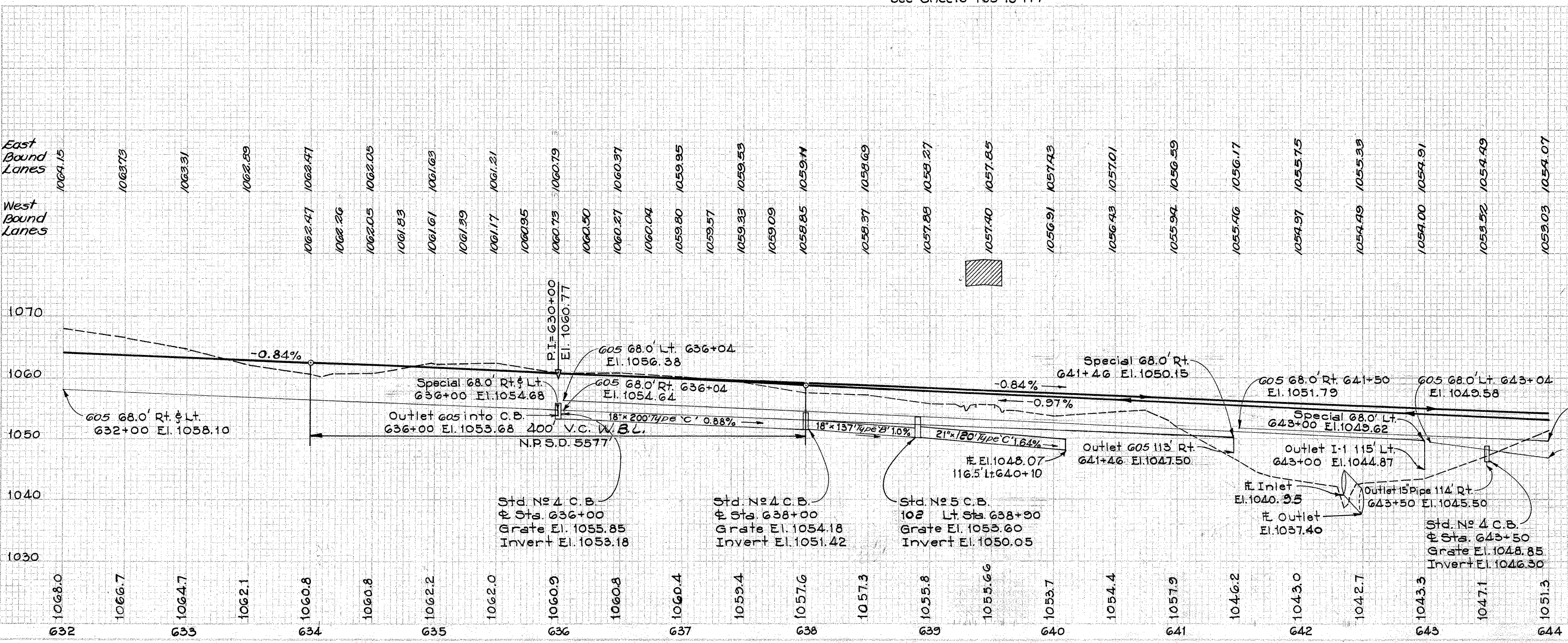
Str. No.	S.I.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
12	0776 642+41	P.C.	48"	248"	208

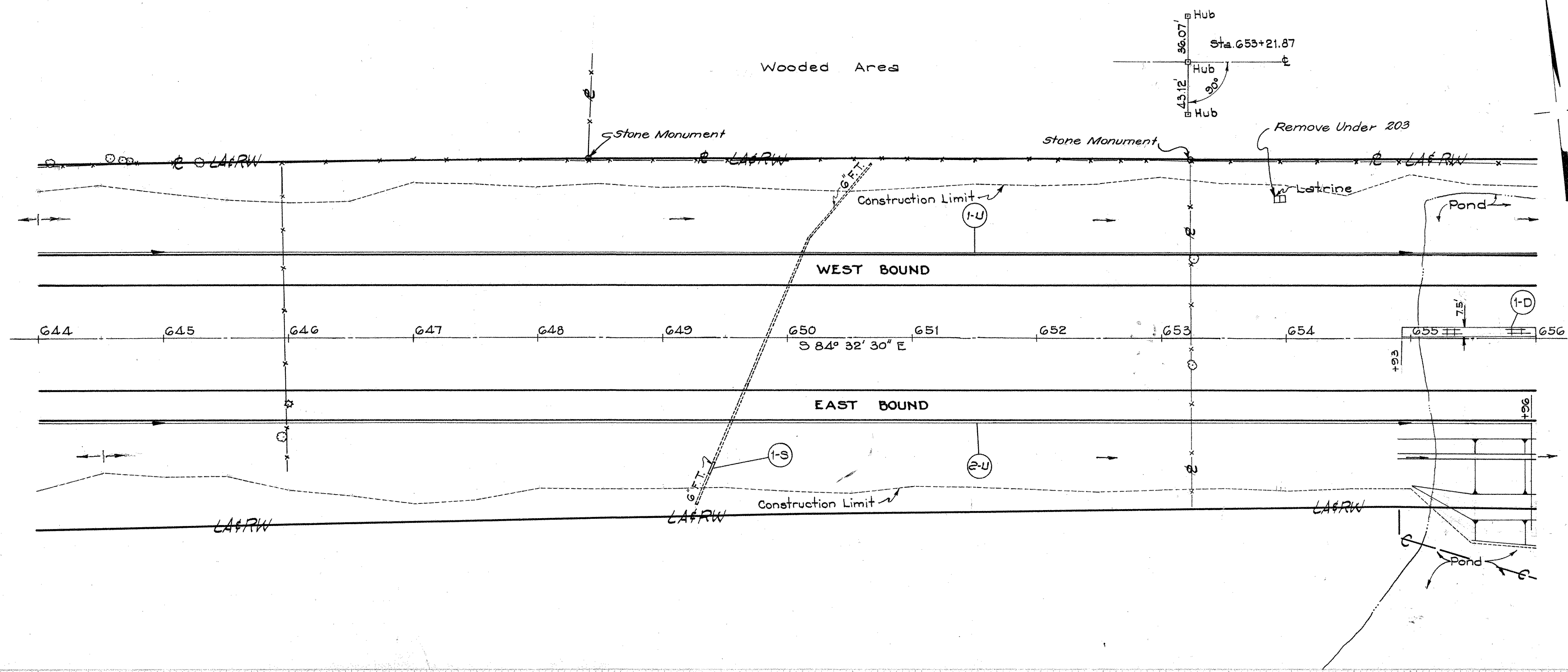
G GUARD RAIL

Mark	Station		Side	GOG Guard Rail Lin. Ft.
	From	To		
1-G	639+30.5	640+12	Lt.	87.5
2-G	638+68	639+55.5	Rt.	87.5
Totals				175.0

Seeding		28,150
Excavation	13,254	Cu. Yds.
Embankment	20,357	Cu. Yds.
Emb.+12%	22,800	Cu. Yds.

B.M. #17 Spike in Power Pole 11' Rt. Sta. 639+19 El. 1057.168





(D) DITCHES

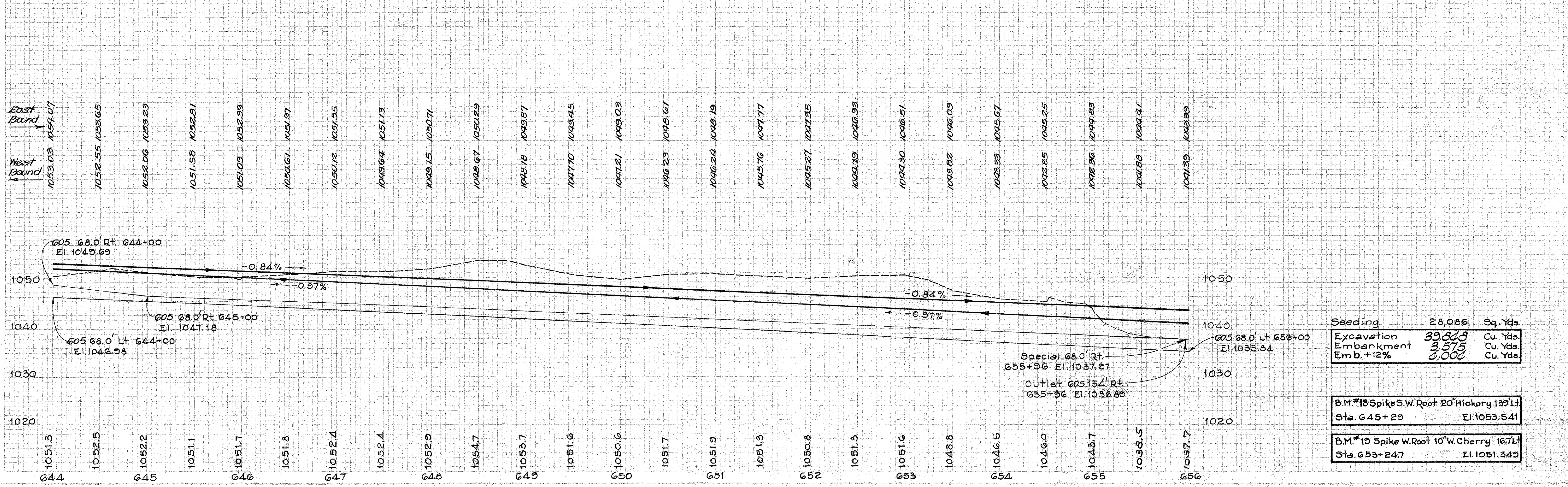
Mark	Station		Side	607 Jute Matting Sq. Yds.
	From	To		
1-D	654+93	656+00	Lt.	89
Totals				89

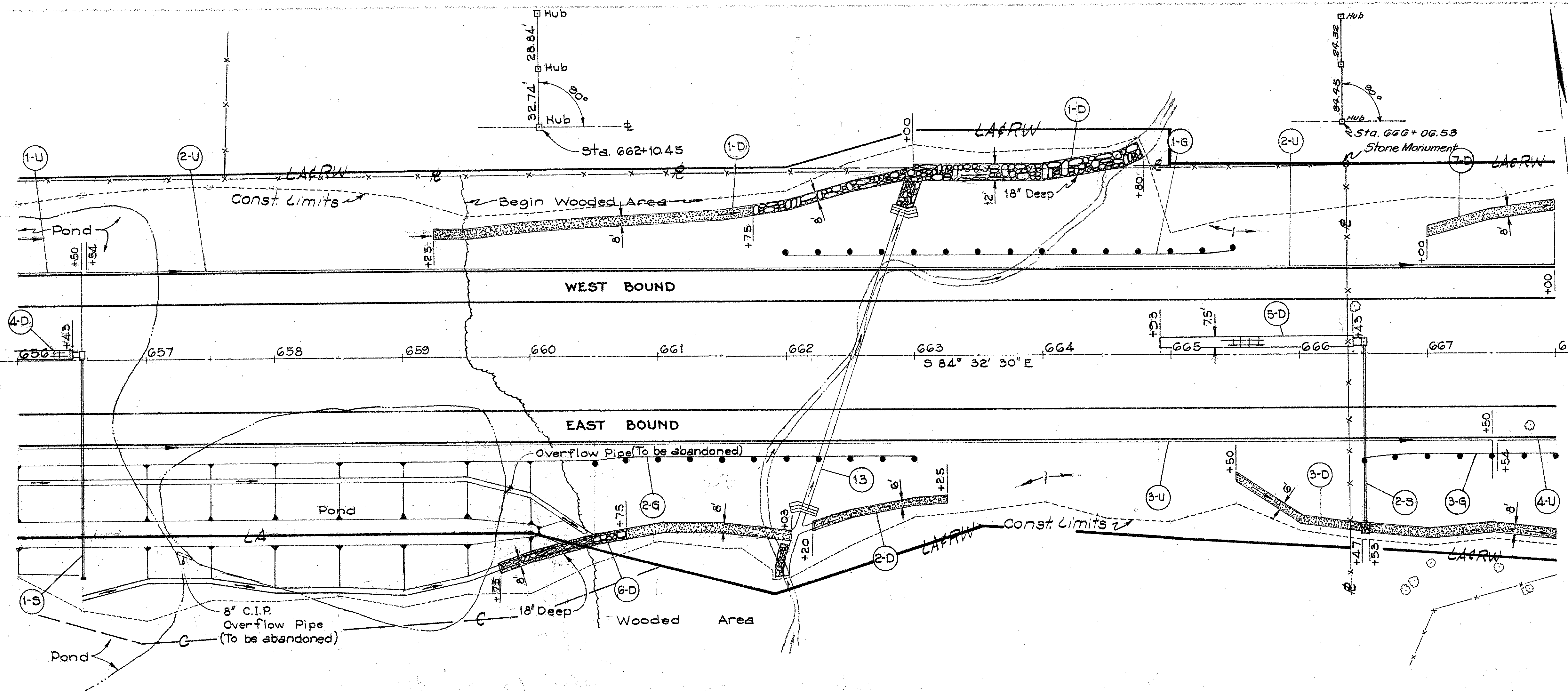
(S) SEWERS

Mark	Station		Side	603 6" Conduit Type 'F' Lin. Ft.
	From	To		
1-S	649+36	649+42	Rt.	10
Totals				10

(U) DRAINS

Mark	Station		Side	605 6" Pipe Underdrains Lin. Ft.		603 8" Conduit Type 'F' Lin. Ft.		6" Pipe Special Each	
	From	To		Shallow	Deep	Lin. Ft.	90° Bend Tee		
1-U	644+00	656+00	Lt.		1,200				
2-U	644+00	655+96	Rt.		1,272	10	1		
Totals					2,472	10	1		





(S) SEWERS

Mark	Station		603 15" Conduit Type B' Side	602 Concrete Masonry Cu.Yds.	604 No.4 Catch Basin Each	601 Dumped Rock Chan.Prot. Cu.Yds.
	From	To				
1-S	656+50	Lt. Rt.	174	0.3	1	
2-S	666+50	Lt. Rt.	140	0.3	1	3
Totals			314	0.6	2	3

(U) DRAINS

Mark	Station		605 6" Pipe Underdrains Lin. Ft.	603 Conduit Type F' Lin. Ft.		6" Pipe Special Each	603 6" Conduit Type B' Lin. Ft.		
	From	To		Shallow	Deep			90° Bend Tee	
1-U	656+00	656+50	Lt.	50	10	1	54		
2-U	656+54	668+00	Lt.	1,167	10	1			
3-U	656+00	667+50	Rt.	1,139	30	1			
4-U	667+54	668+00	Rt.	46					
Totals				1,185	1,217	50	20	3	54

(D) DITCHES

Mark	Station		Side	600 Sodding Sq.Yds.	607 Jute Matting Sq.Yds.	601 Dump.Rock Ch. Prot. Cu.Yds.
	From	To				
1-D	659+25	664+30	Lt.	223		175
2-D	662+20	663+25	Rt.	72		
3-D	665+50	668+00	Rt.	201		
4-D	656+00	656+43	Med.		36	
5-D	664+33	666+43	Med.		125	
6-D	659+75	662+03	Rt.	115		46
7-D	667+00	668+00	Lt.	89		
Totals				700	161	221

STRUCTURES 20' SPAN & UNDER

Str. No.	GLM	Station	Proposed			Details on Sheet
			Type	Size	Length	
13	0814	662+54	P.C.	60"	266	209

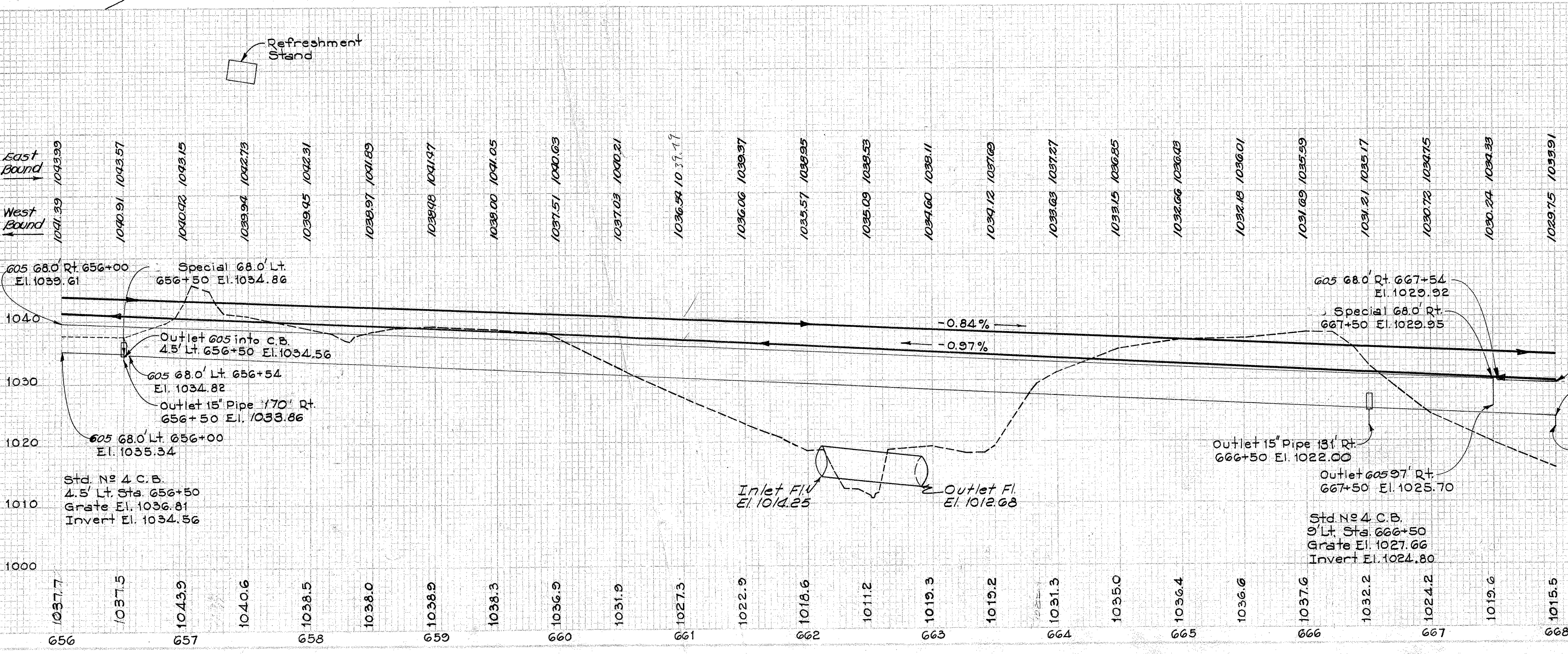
(G) GUARD RAIL

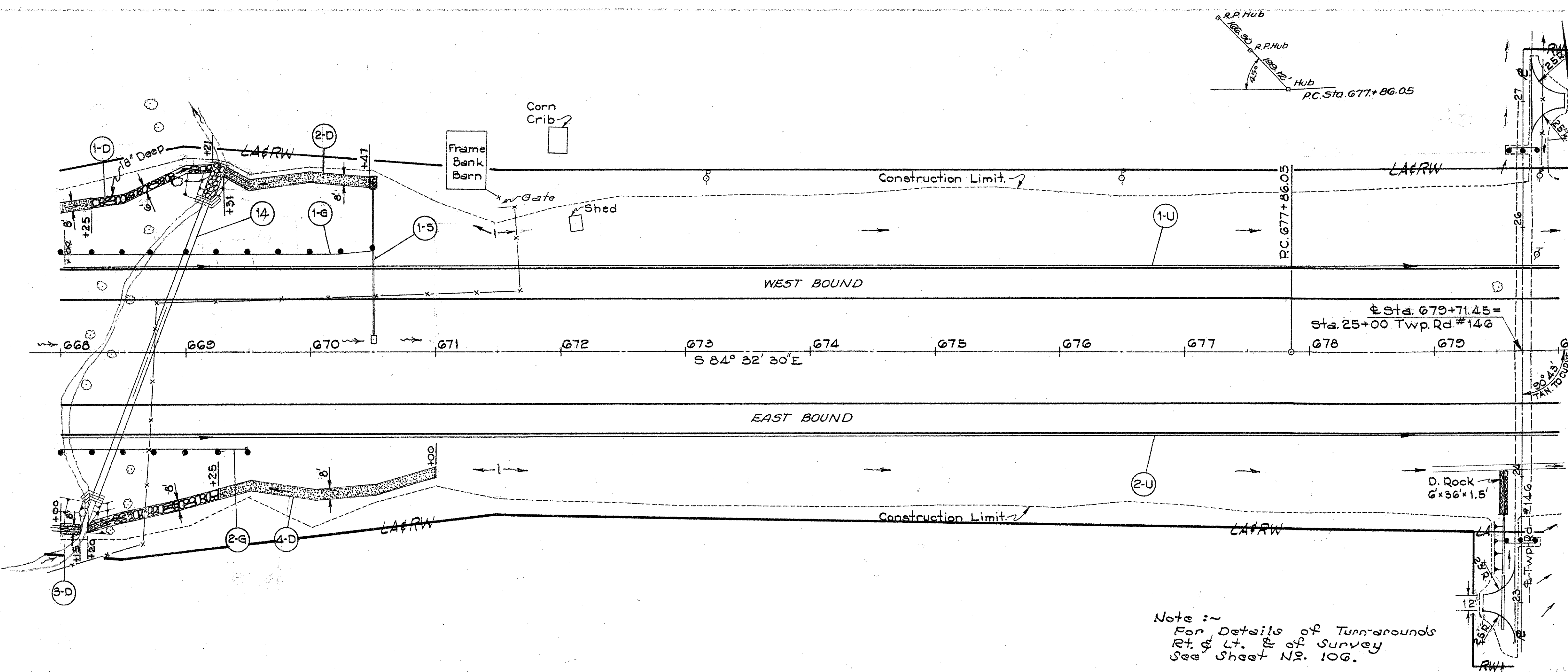
Mark	Station		Side	606 Guard Rail Lin. Ft.
	From	To		
1-G	662+00	665+50	Lt.	350
2-G	660+50	663+00	Rt.	250
3-G	666+50	668+00	Rt.	150
Totals				750

Seeding	31,859	Cu.Yds.
Excavation	14,209	Cu.Yds.
Embankment	66,696	Cu.Yds.
Emb.+12%	74,700	Cu.Yds.

B.M.#20 Spike S.Side 10" Ash	5' Lt.
Sta. 661+20	El. 1027.012

B.M.#21 Spike S.Root 15" Locust	
¢ Sta. 665+00	El. 1037.055





S SEWERS

Mark	Station		Side	603 15" Conduit Type B	602 Concrete Masonry	604 No. 4 Catch Basin Each	601 Dump Rock Chan. Prot.
	From	To		Lin. Ft.	Cu. Yds.		Cu. Yds.
1-S	670+50		Lt.	120	0.3	1	3
Totals				120	0.3	1	3

U DRAINS

Mark	Station		Side	605 6" Pipe underdrains	603 8" Conduit Type F	6" Pipe Special Each	603 6" Conduit Type F
	From	To		Shallow	Deep	90° Bend Tee	Lin. Ft.
1-U	668+04	680+00	Lt.	276	900		20
2-U	668+00	680+00	Rt.	290	900		10
Totals				566	1,800		30

D DITCHES

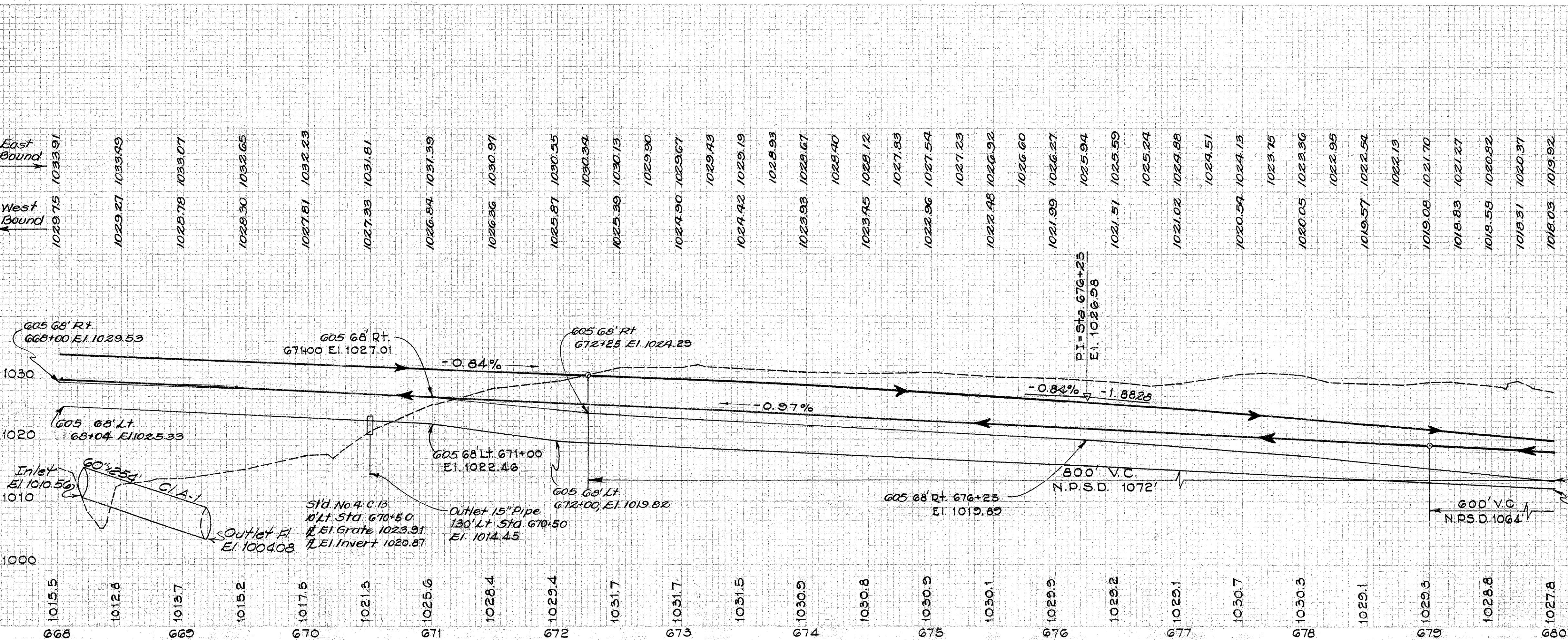
Mark	Station		Side	660 Sodding	667 Jute Matting	601 Dump Rock Chan. Prot.
	From	To		Sq. Yds.	Sq. Yds.	Cu. Yds.
1-D	668+00	669+21	Lt.	23		34
2-D	669+31	670+47	Lt.	106		
3-D	668+00	668+15	Rt.	14		48
4-D	668+20	671+00	Rt.	159		82
Totals				302		164

STRUCTURES 20' SPAN & UNDER

Str No.	S.L.M. Station	Proposed			Details on Sheet
		Type	Size	Length	
14	668+71.96	R.C.	60"	254'	210

G GUARD RAIL

Mark	Station		Side	606 Guard Rail
	From	To		Lin. Ft.
1-G	668+00	670+50	Lt.	250
2-G	668+00	669+50	Rt.	150
Totals				400

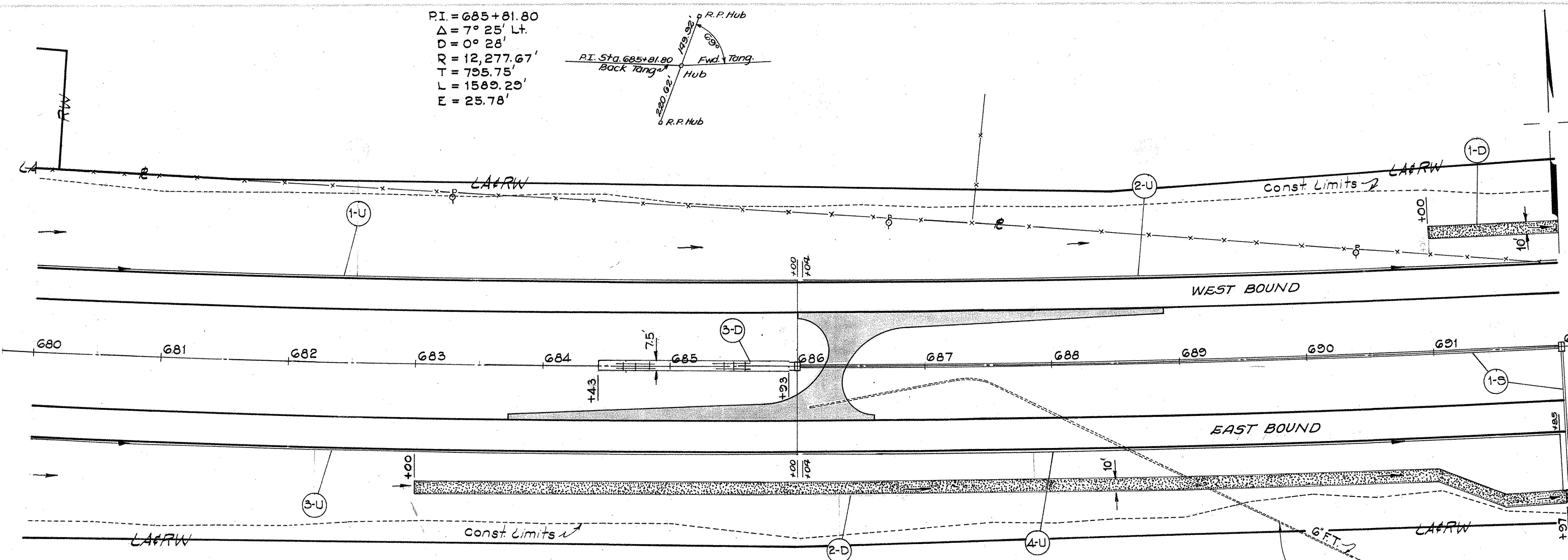
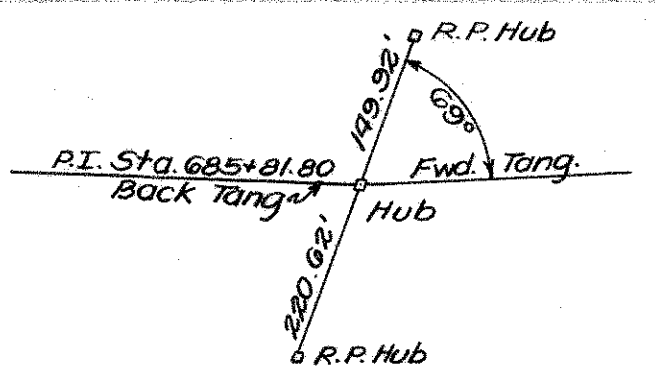


Item	Quantity	Unit
Seeding	28,718	Sq. Yds.
Excavation	54,247	Cu. Yds.
Embankment	27,106	Cu. Yds.
Emb. + 12%	30,359	Cu. Yds.

B.M. #22 Spike S. Root 12" Hickory 73.5' Lt. Sta. 672+83.5 El. 1030.990

B.M. #23 Spike S. Root 22" Maple 51.8' Lt. Sta. 679+53.0 El. 1029.937

P.I. = 685+81.80
 $\Delta = 7^\circ 25' \text{ Lt.}$
 $D = 0^\circ 28'$
 $R = 12,277.67'$
 $T = 795.75'$
 $L = 1589.29'$
 $E = 25.78'$



(S) SEWERS

Mark	Station		Side	603 18"	602	604	603	601
	From	To		Conduit Type 'C' Lin. Ft.	Concrete Cu. Yds.	No. & Catch Basin Each	Conduit Type 'B' Lin. Ft.	Dump Rock Chan. Prot. Cu. Yds.
1-S	686+00	692+00	Rt.	500	0.4	2	100 112	3
Totals				500	0.4	2	100 112	3

(U) DRAINS

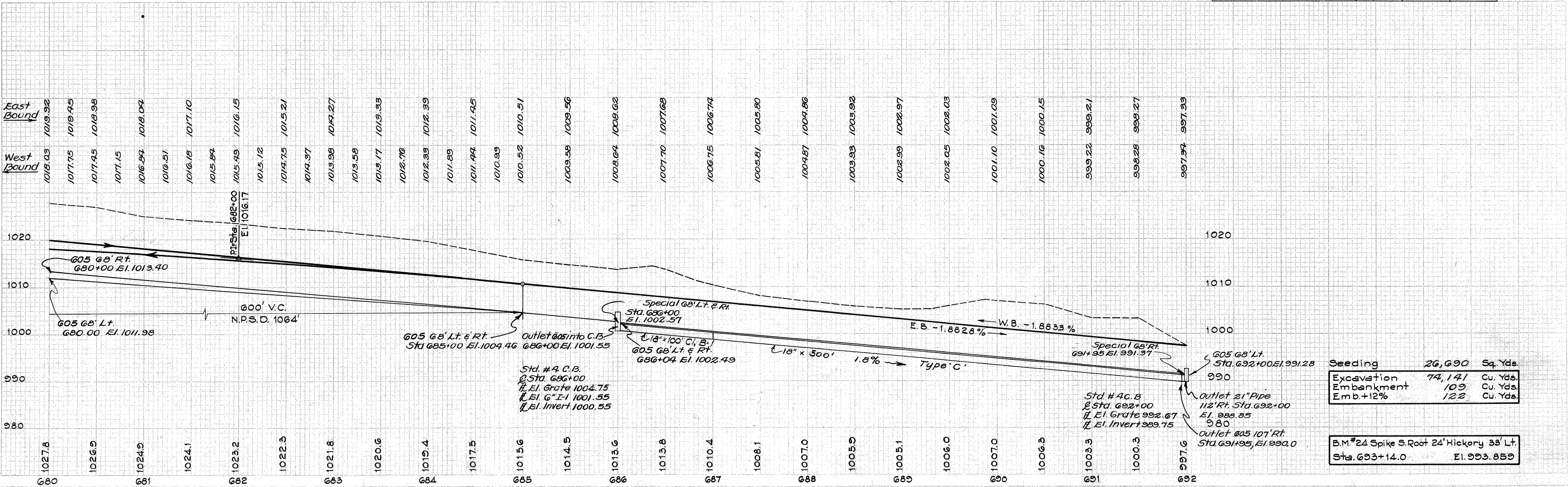
Mark	Station		Side	605 6" Pipe	603	6"	603 6"
	From	To		Underdrains Lin. Ft. Shallow Deep	Conduit Type 'F' Lin. Ft.	Pipe Special Each 90° Bend Tee	Conduit Type 'B' Lin. Ft.
1-U	680+00	686+00	Lt.	600	10	1	58
2-U	686+04	692+00	Lt.	596			
3-U	680+00	686+00	Rt.	600	10	1	58
4-U	686+04	691+95		620	10	1	
Totals				2,416	20	10	116

(D) DITCHES

Mark	Station		Side	600	607
	From	To		Sodding Sq. Yds.	Jute Matting Sq. Yds.
1-D	691+00	692+00	Lt.	111	
2-D	683+00	691+97	Rt.	1004	
3-D	684+13	685+33	E.		125
Totals				1,115	125

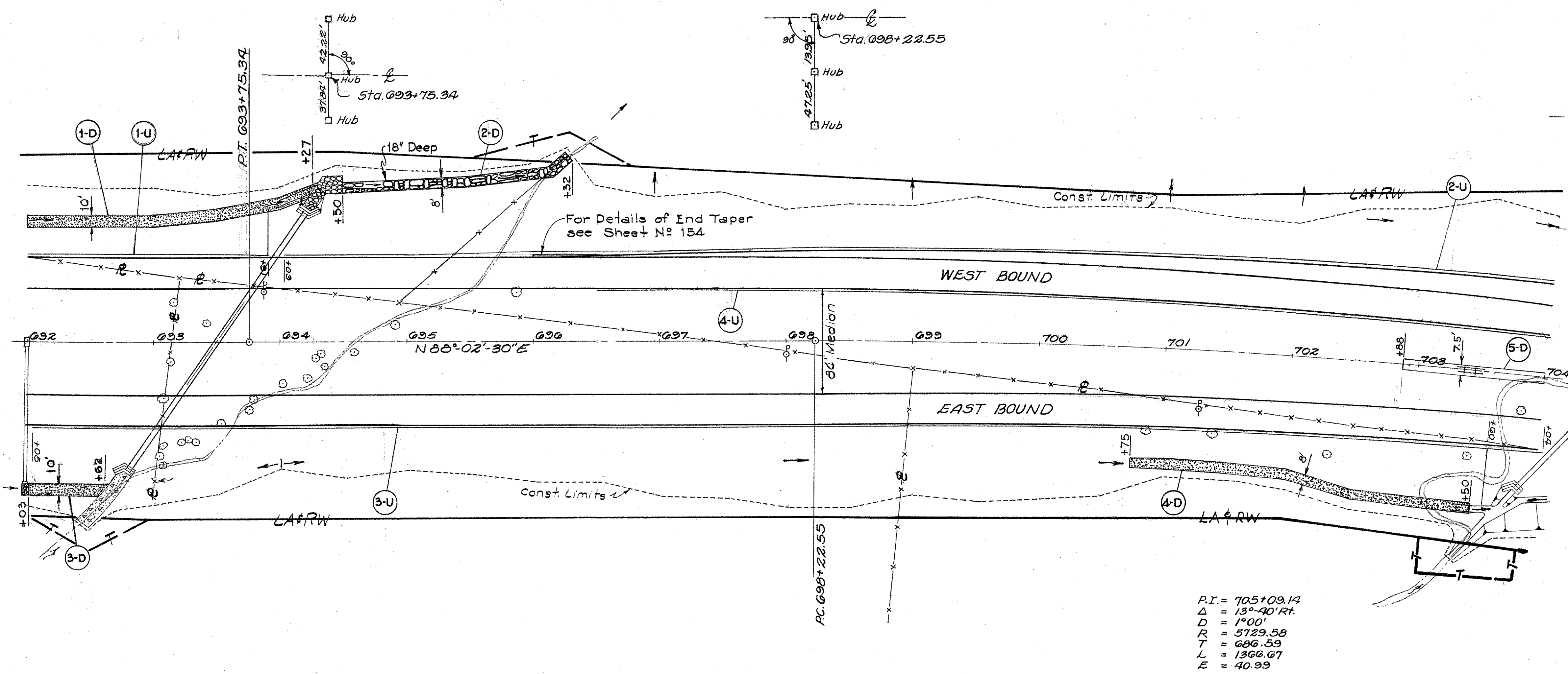
NOTE: See Sheet No. 11 for U-Turn Median Opening Details and Quantities

NOTE: Plug existing 6" field tile at upstream end



Seeding	26,690	Sq. Yds.
Excavation	74,141	Cu. Yds.
Embankment	109	Cu. Yds.
Emb.+12%	122	Cu. Yds.

B.M. #24 Spike S. Root 24' Hickory 33' Lt.
Sta. 693+14.0 El. 993.859



DITCHES

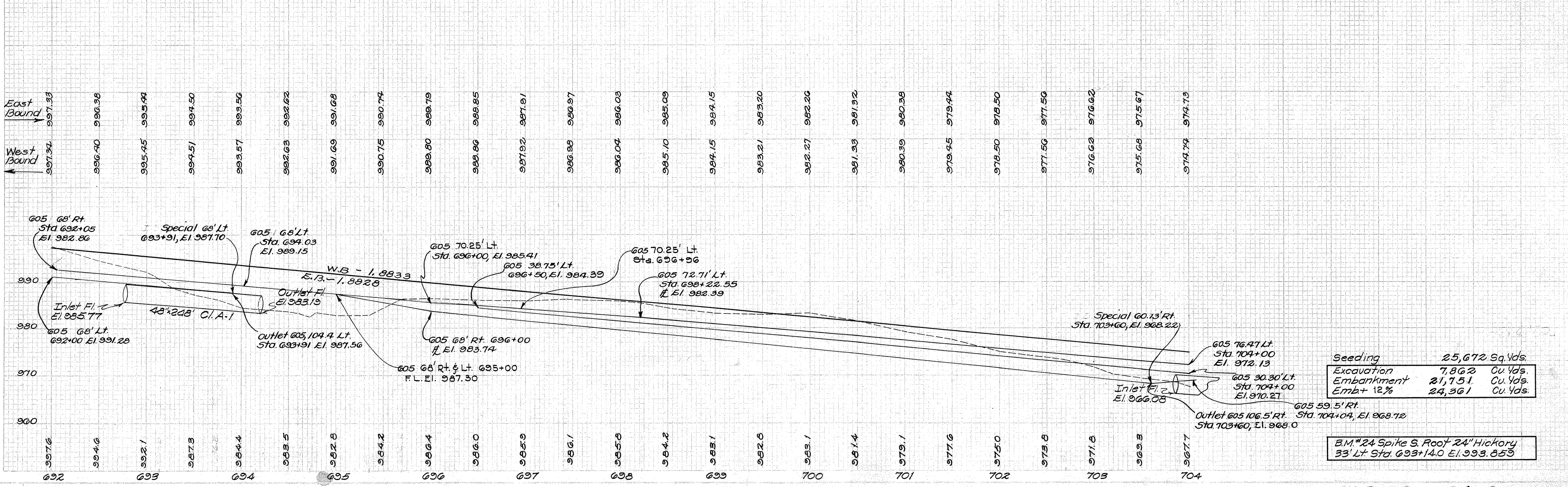
Mark	Station		Side	660 Sodding	601 Dump. Rock	667 Jute
	From	To		Sq. Yds.	Chan. Prot.	Matting
1-D	692+00	694+27	Lt	254		
2-D	694+50	696+32	Lt		82	
3-D	692+03	692+62	Rt	67		
4-D	700+75	703+50	Rt	242		
5-D	702+88	704+00	ℓ			93
Totals				563	82	93

STRUCTURES 20' SPAN & UNDER

Str. No.	s.l.m.	Station	Proposed			Details on Sheet
			Type	Size	Length	
15		693+50	P.C.	48"	248'	211

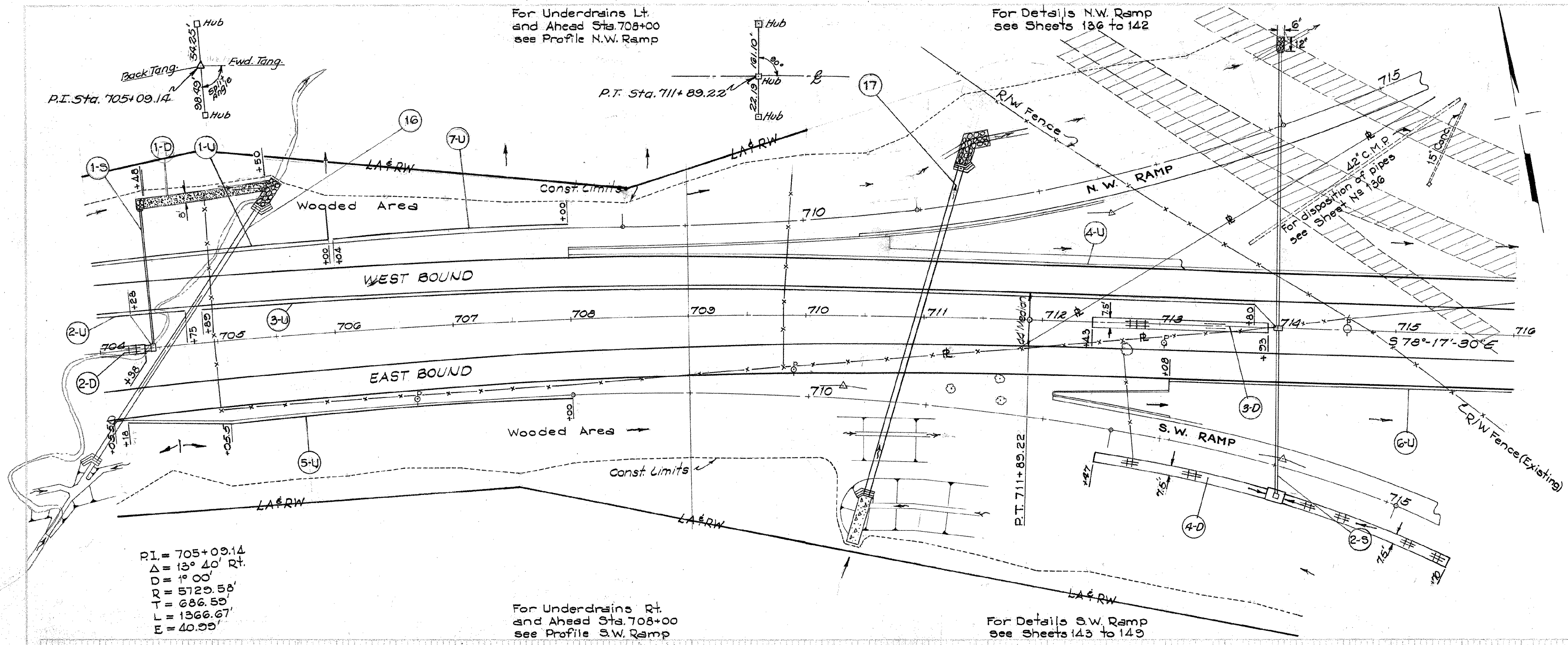
DRAINS

Mark	Station		Side	605 6" Pipe	603 8" Conduit	6" Pipe Special		603 6" Conduit
	From	To		Underdrains	Conduit	Each		Conduit
				Lin. Ft. <td>Type 'F' <td>90° Bend</td> <td>Tee</td> <td>Type 'F' </td></td>	Type 'F' <td>90° Bend</td> <td>Tee</td> <td>Type 'F' </td>	90° Bend	Tee	Type 'F'
1-U	692+00	693+31	Lt	218	10	1		
2-U	694+03	704+00	Lt	997				
3-U	692+05	704+04	Rt	285	940	10		10
4-U	696+50	704+00	Lt	750				
Totals				2,032	1,158	20	1	10



Seeding	25,672	Sq. Yds.
Excavation	7,862	Cu. Yds.
Embankment	21,751	Cu. Yds.
Emb+ 12%	24,361	Cu. Yds.

B.M. #24 Spike S. Root 24" Hickory
 33' Lt. Sta. 693+14.0 El. 993.853



(S) SEWERS

Station	Side	603 Conduit Type 18" Lin. Ft.	602 Concrete Masonry Cu. Yds.	604 Catch Basin Each	601 Dump Pk. Chain Prot. Cu. Yds.	605 2" Conduit Type 18" or 20" Lin. Ft.		
1-S 704+45	Lt.	118	0.3	1	3			
2-S 712+00	Rt.	142	0.4	1	4	235		
Totals		118	142	0.7	2	1	7	235

(U) DRAINS

Station	Side	605 6" Pipe Underdrains Lin. Ft.	603 Conduit Type 18" Lin. Ft.	604 Catch Basin Each	6" Pipe Special Wye		
1-U 704+00	Lt.	206	*10	10	1		
2-U 704+00	Lt.	90	20		1		
3-U 704+89	Lt.	899	20	1			
4-U 708+00	Lt.		780	*20			
5-U 704+18	Rt.		382				
6-U 713+08	Rt.		282	*10			
7-U 706+04	Lt.	196					
Totals		1391	1444	80	10	1	1

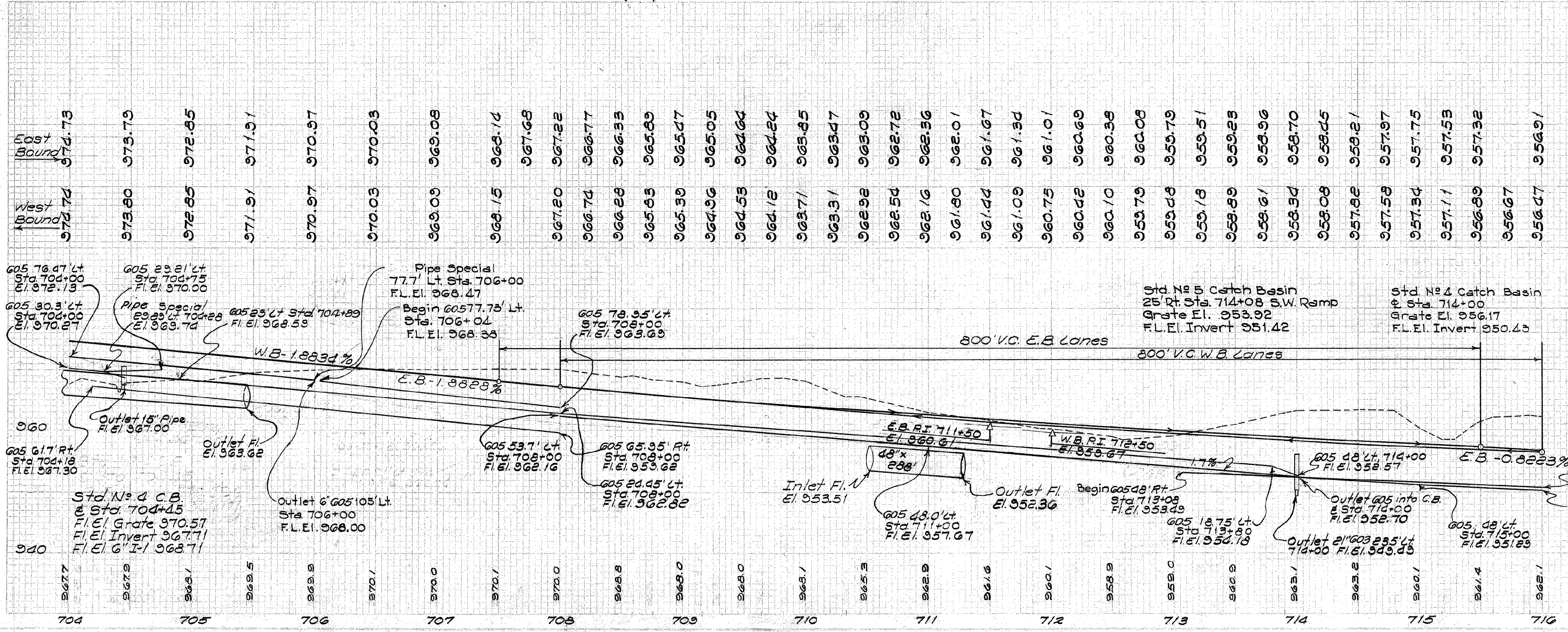
(D) DITCHES

Station	Side	660 Sodding Sq. Yds.	667 Jute Matting Sq. Yds.
1-D 704+48	Lt.	92	
2-D 704+00	Rt.		32
3-D 712+43	Rt.		125
4-D 712+47 S.W. Ramp	Rt.		250
Totals		92	407

* Underdrains over Type 'A' or 'B' Conduit see Underdrain Typical Details

STRUCTURES 20' SPAN & UNDER

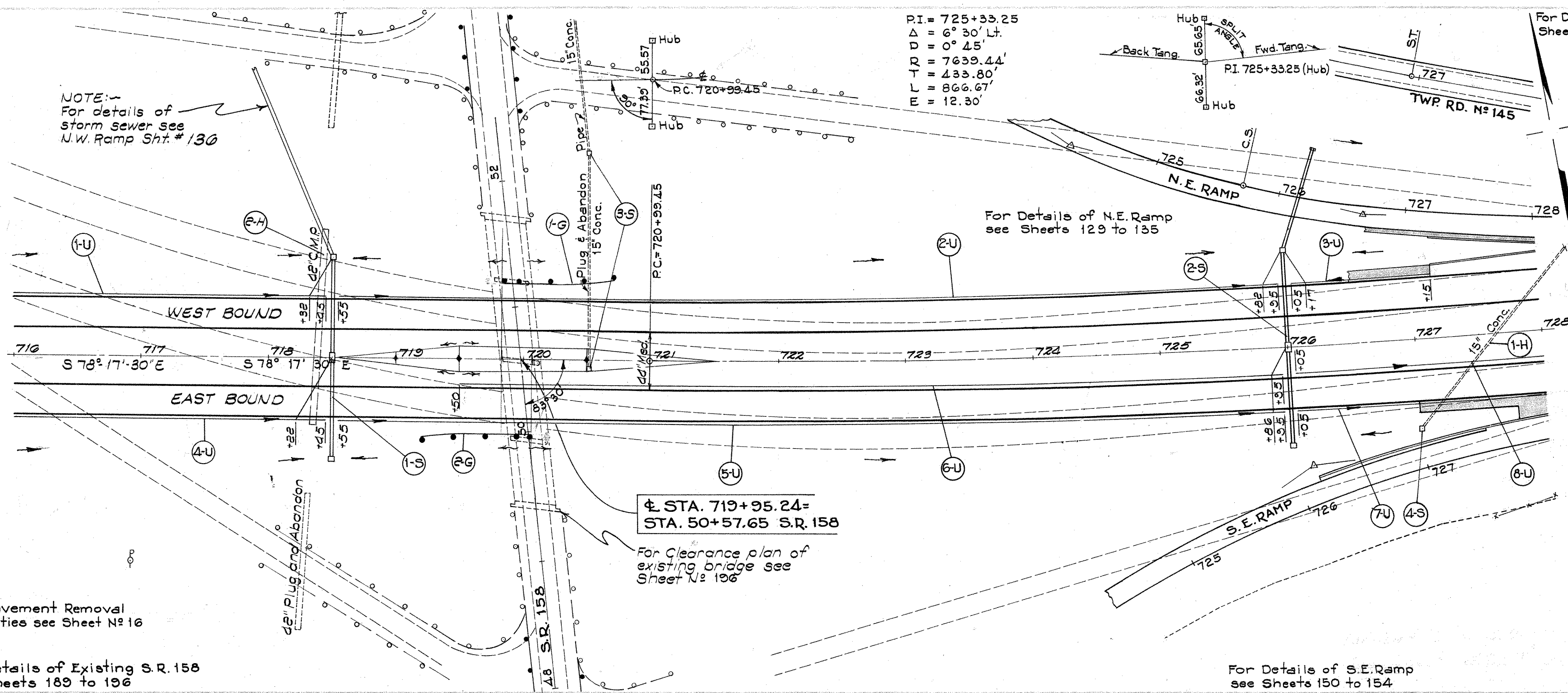
Str. No.	SLM	Station	Type	Size	Length	Details on Sheet
16	0894	704+59	P.C.	48"	256	2/2
17	0906	710+95	P.C.	48"	288	2/3



Seeding	19,137	Sq. Yds.
Excavation	30,005	Cu. Yds.
Embankment	6,317	Cu. Yds.
Emb't + 12%	7,075	Cu. Yds.

B.M. #25 Spike N. Root 24" Ash
2.5' Rt. Sta. 706+96 El. 970.793

B.M. #26 Spike N. Root 30" Ash
50' Rt. Sta. 711+65 El. 961.856



(S) SEWERS

Mark	Station		Side	603 18" Conduit Type 'B' Lin. Ft.	202 Catch Basin Removed Each	604 No. 4 Catch Basin Each	603 21" Conduit Type 'B' Lin. Ft.	604 No. 5 Catch Basin Each
	From	To						
1-S	718+50		Lt. Rt.	79			79	2
2-S	726+00		Lt. Rt.	154		1		2
3-S	720+50		Lt. Rt.		2			
4-S	727+07		Rt.		1			
Totals				233	3	2	79	4

(U) DRAINS

Mark	Station		Side	605 6" Pipe Underdrains Lin. Ft.		603 6" Conduit Type 'F' Lin. Ft.	6" Pipe Special Each		603 6" Conduit Type 'B' Lin. Ft.
	From	To		Shallow	Deep		60° Wye	Tee	
1-U	716+00	718+15	Lt.		270	10		1	
2-U	718+55	725+35	Lt.		760	10		1	
3-U	726+05	727+15	Lt.		130	10		1	
4-U	716+00	718+15	Rt.		245	10		1	46
5-U	718+55	725+35	Rt.		740				29
6-U	718+50	725+35	Rt.	660		10		1	
7-U	726+05	728+00	Rt.		195				
8-U	726+05	728+00	Rt.	195					
Totals				855	2340	50	5	1	75

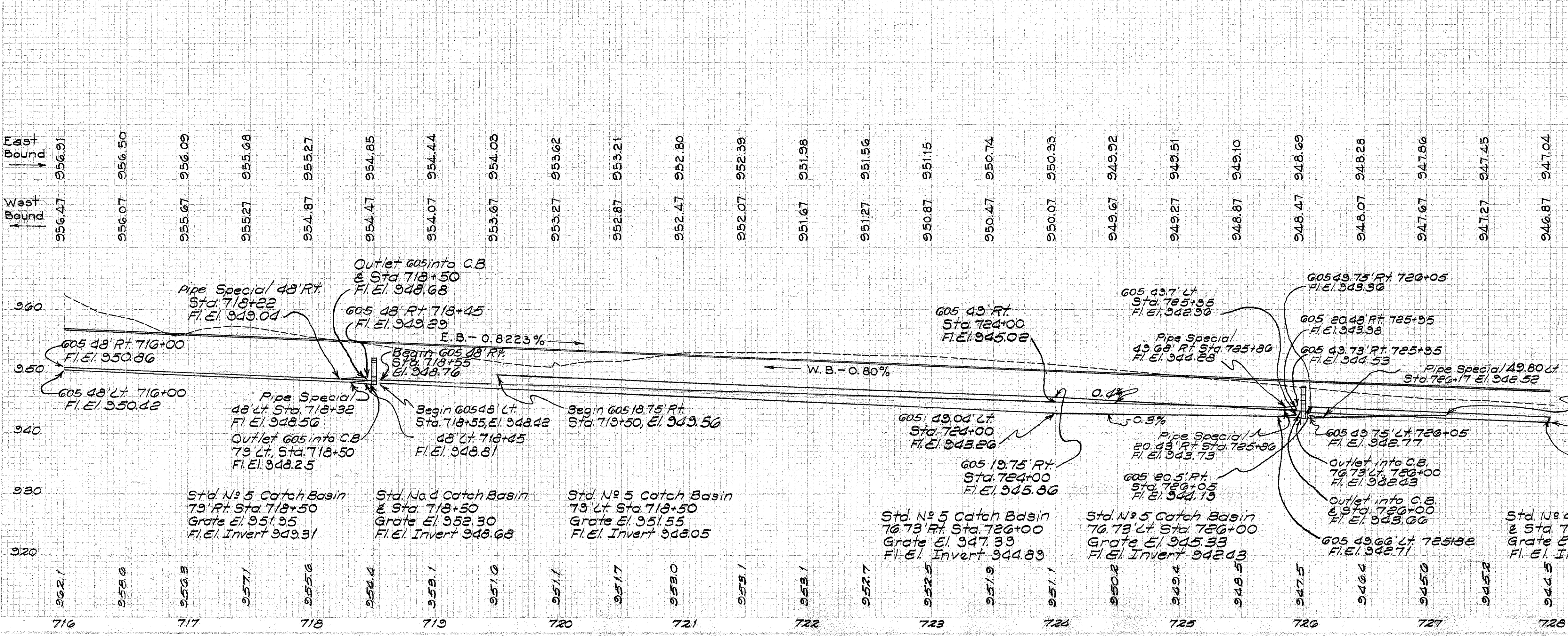
(H) PIPE REMOVED

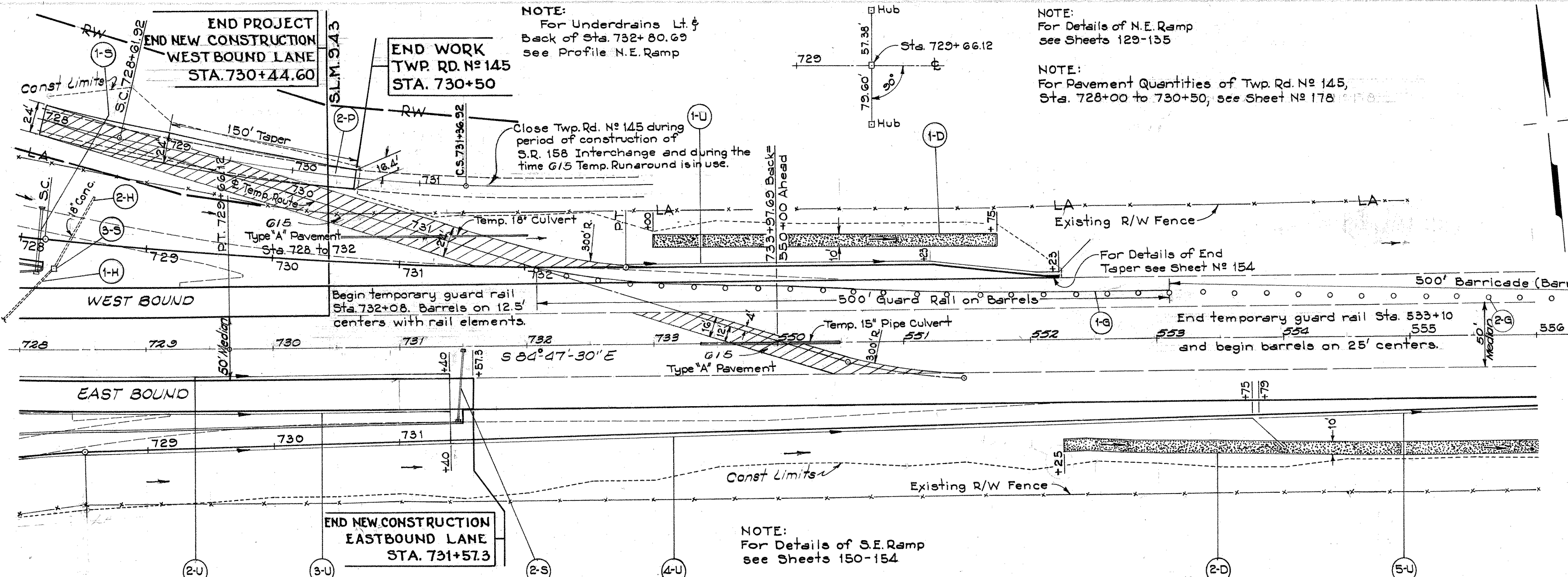
Mark	Station	Side	202 Pipe Removed Lin. Ft.	
			15' Under	Over 15'
1-H	727+07	Lt. Rt.	147	
2-H	718+38	Lt. Rt.		154
Totals			147	154

(G) GUARD RAIL

Mark	Station		Side	606 Guard Rail Lin. Ft.
	From	To		
1-G	719+83	720+71.5	Lt.	87.5
2-G	719+20	720+07.5	Rt.	87.5
Totals				175.0

*For details of Guard Rail, see Sheet # 196





D DITCHES

Mark	Station		Side	GGO Sodding Sq.Yds.
	From	To		
1-D	733+00	551+75	Lt	303
2-D	552+25	556+00	Rt	417
Totals				720

S SEWERS

Mark	Station		Side	G03 12" Conduit Type 'B' Lin. Ft.	G02 Concrete Masonry Cu.Yds.	G04 C. Basin Each No. 6 Mod.	202 Catch Basin Removed Each
	From	To					
1-S	728+10	728+17.5	Lt	52	0.2	1	
2-S	731+45	731+50	Rt	57	0.2		1
3-S	728+27		Lt				1
Totals				109	0.4	1	1

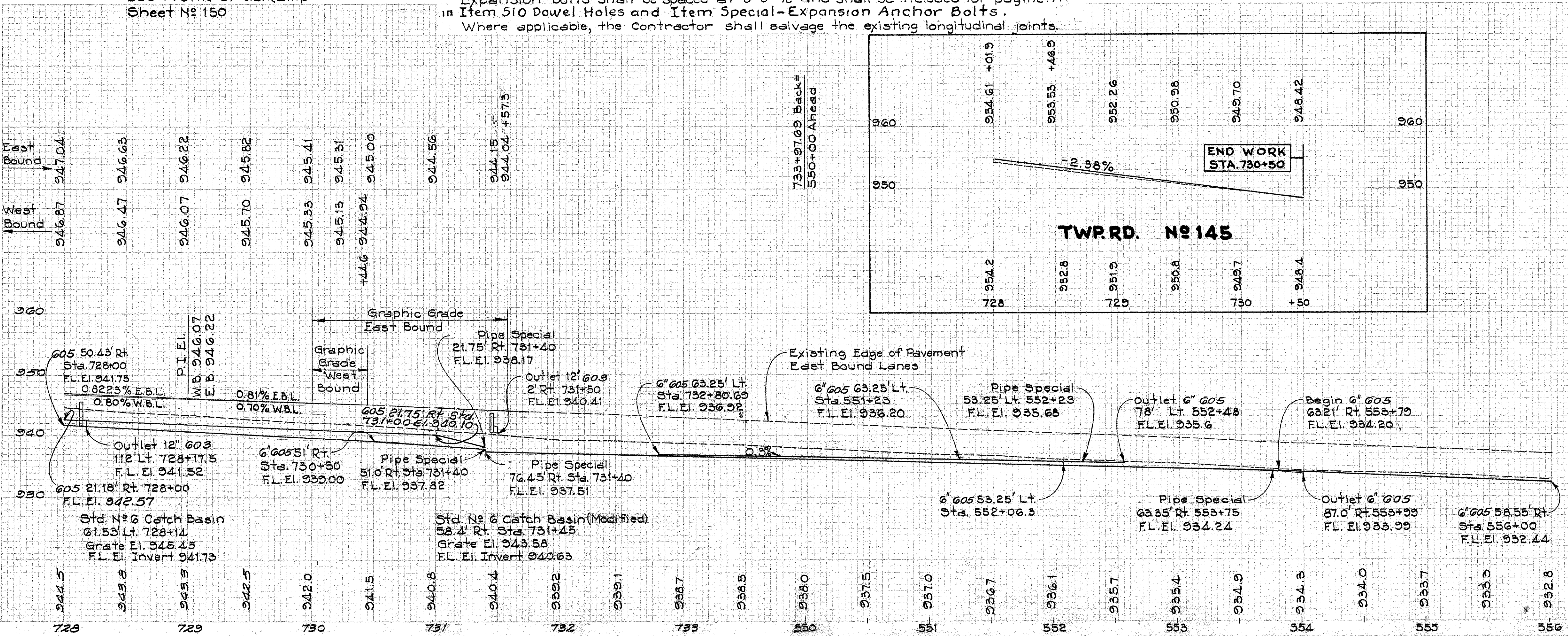
U DRAINS

Mark	Station		Side	G05 6" Pipe Underdrains Lin. Ft. Shallow/Deep	G03 8" Conduit Type 'F' Lin. Ft.	G" Pipe Special Each		G03 6" Conduit Type 'B' Lin. Ft.	
	From	To				45' RENO BEND	90' BEND		
1-U	732+00	552+48	Lt		377	10			
2-U	728+00	731+40	Rt	300	40		1	29	
3-U	728+00	731+10	Rt		340			2	
4-U	731+40	553+99	Rt	657	10	1			
5-U	553+79	556+00	Rt	221					
Totals				521	1,414	20	2	1	2

Note:- Barrels to conform to those described in General Note Captioned Item 606 Temporary Guard Rail shown on Sheet 13. Temporary Guard Rail and Barrels to be removed by Others.

NOTE: For Underdrains Rt. & Back of Sta. 731+40 see Profile of S.E. Ramp Sheet No 150

NOTE: Standard expansion bolt joints, as per Standard Drawing BP-3 shall be used to tie in the N.E. and S.E. Ramps with the existing East Bound and West Bound lanes. Expansion bolts shall be spaced at 5'-0" and shall be included for payment in Item 510 Dowel Holes and Item Special-Expansion Anchor Bolts. Where applicable, the contractor shall salvage the existing longitudinal joints.



H PIPE REMOVED

Mark	Station	Side	202 Pipe Removed Lin. Ft.	
			15' Under	Over 15'
1-H	728+00	Lt	37	
2-H	728+50	Lt		64
Totals			37	64

EXPANSION BOLTS

LOCATION	510 Dowel Holes Each	ITEM SPECIAL-EXP. ANCHOR BOLTS Each
S.E. RAMP Sta. 731+57 Sta. 559+52	239	239
N.E. RAMP Sta. 730+45 Sta. 552+23	116	116
TOTAL	355	355

G GUARD RAIL

Mark	Station		Side	G06 Temp. Guard Rail Lin. Ft.	Special Barrels Each
	From	To			
1-G	732+08	553+10	Lt	500	
2-G	553+10	556+00	Lt		11
Totals				500	11

Item	Quantity	Unit
Seeding	11,944	Sq. Yd.
Excavation	4,526	Cu. Yd.
Embarkment	1,128	Cu. Yd.
Emb+ 12%	1,263	Cu. Yd.

B.M. a Knuckle S. End of Bridge 115' Lt. 9rd. 560+00 Elev. 932.55

U DRAINS

Mark	Station		Side	605 G" Pipe Underdrains Lin. Ft.		603 8" Conduit Type 'C' Lin. Ft.	Pipe 6" Special 30° BEND Each
	From	To		Shallow	Deep		
1-U	556+00	559+52		368		10	1
Totals				368		10	1

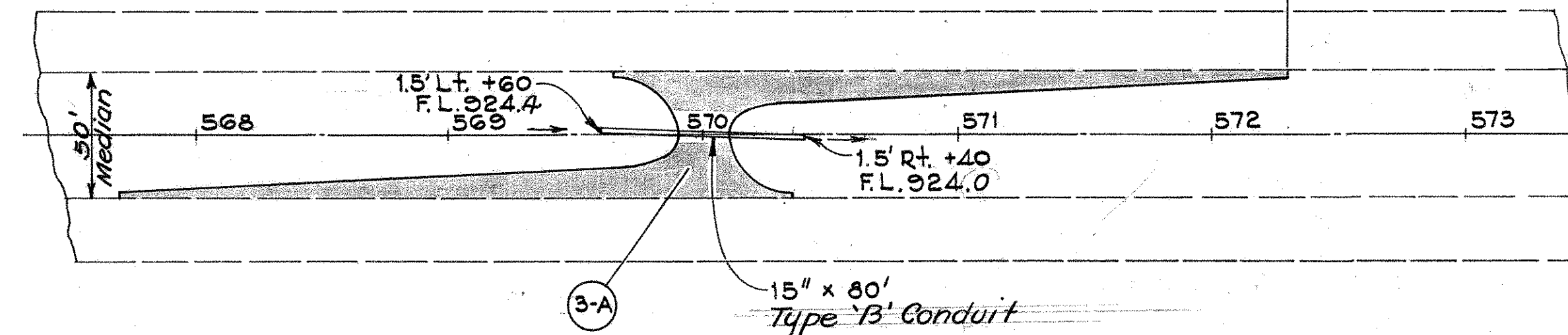
D DITCHES

Mark	Station		Side	600 Sodding Sq. Yds.
	From	To		
1-D	556+00	557+00	Rt.	111
Totals				111

G GUARD RAIL

Mark	Station		Side	606 Guard Rail Lin. Ft.	600 Guard Rail Removed Lin. Ft.	Special Barrels Each
	From	To				
1-G	557+00	558+50	Rt.	150		
2-G	557+25	558+25	Rt.		100	
3-G	556+00	558+10	Lt.			9
Totals				150	100	9

END WORK
STA. 572+30

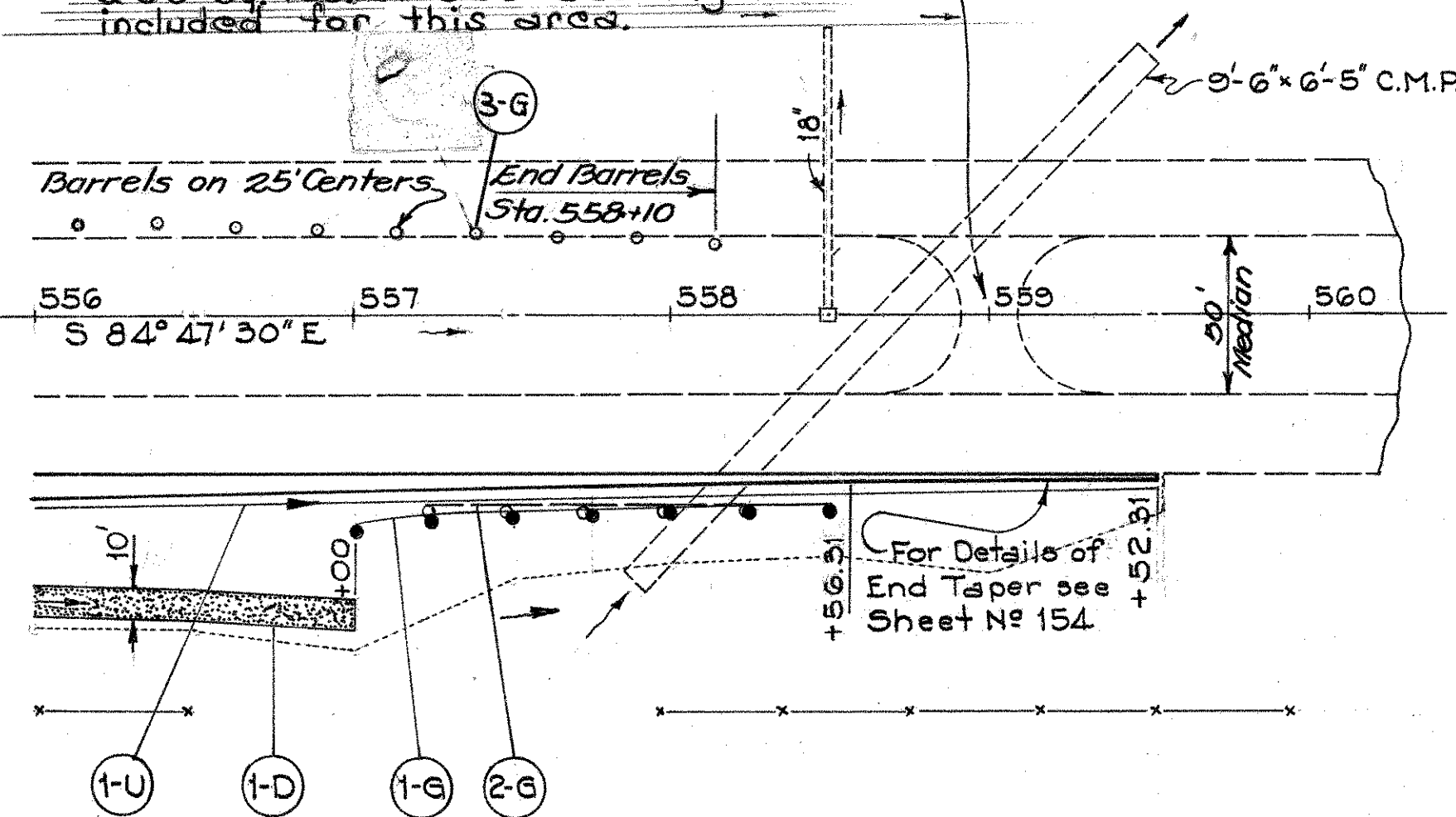


NOTE:
409 shall be applied to the existing 3' berms as shown by the cross hatched areas.

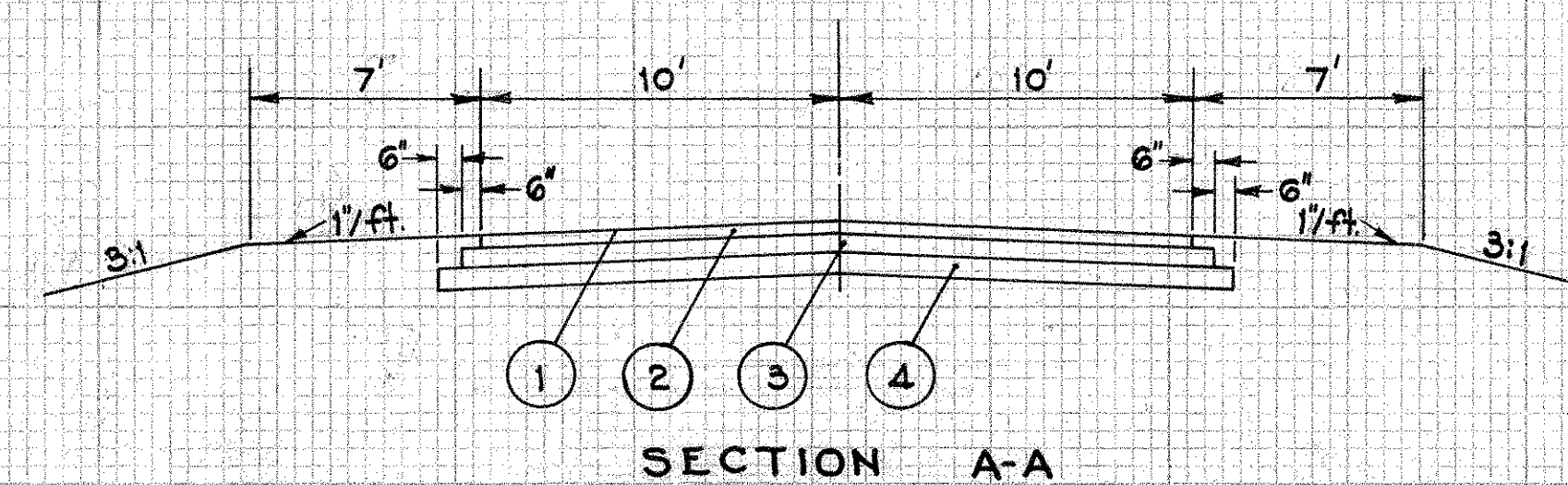
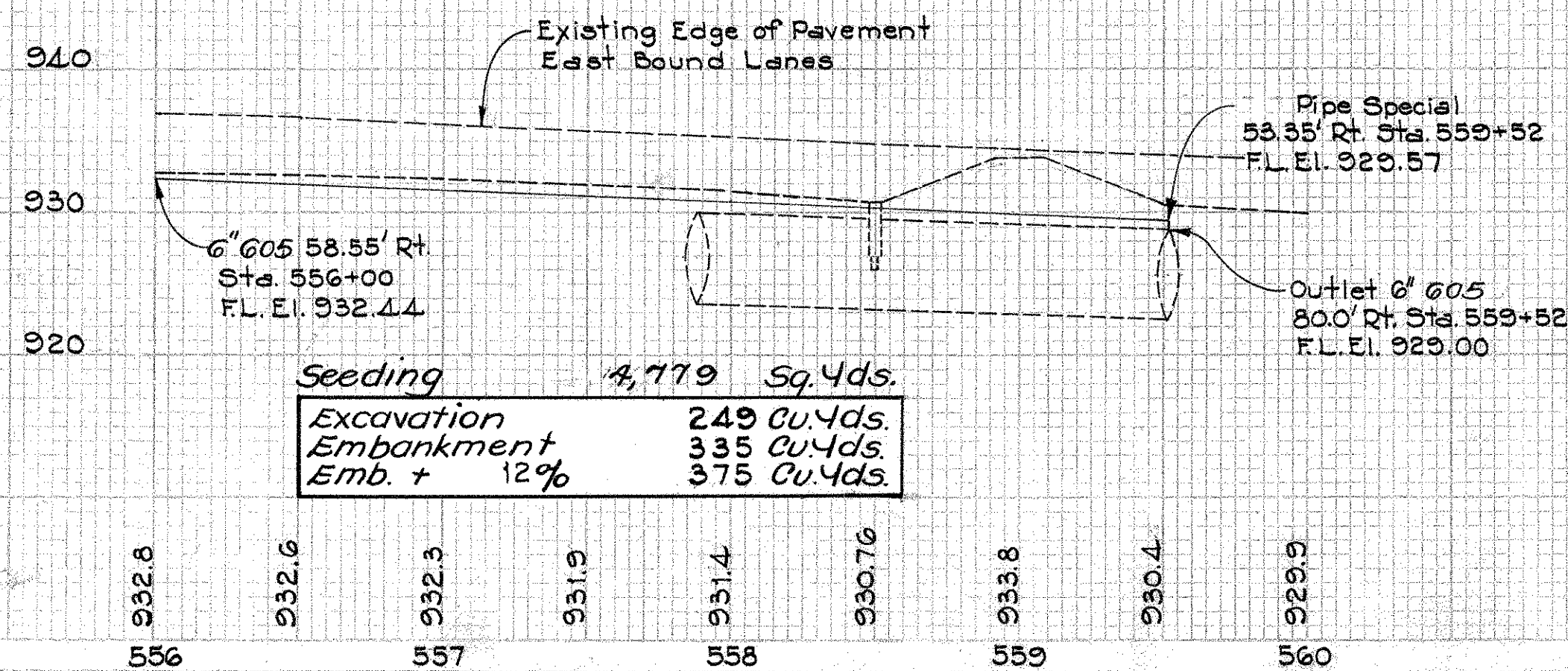
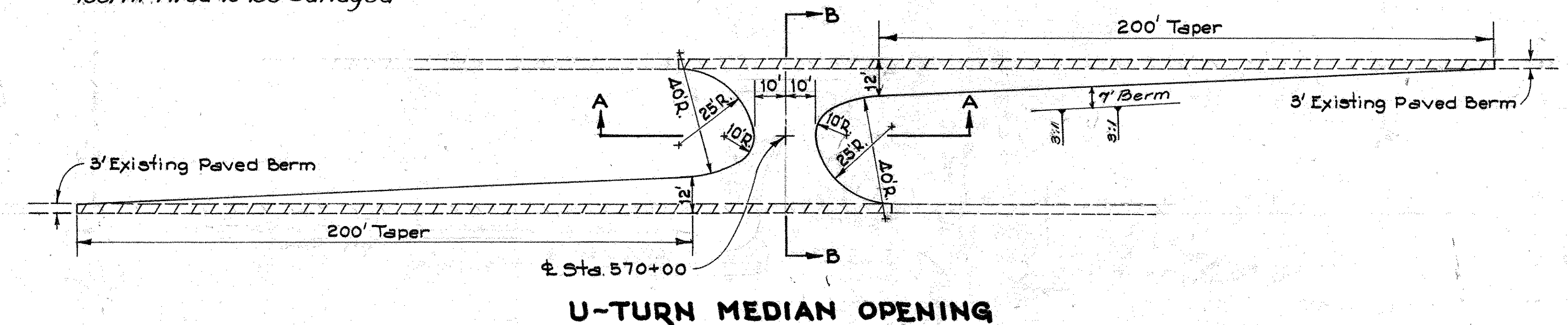
72 Cu. Yds. of 203 Embankment has been included for the U-Turn Median opening.

Thickness shown is 'designed' thickness as described in Sec. 8-210.

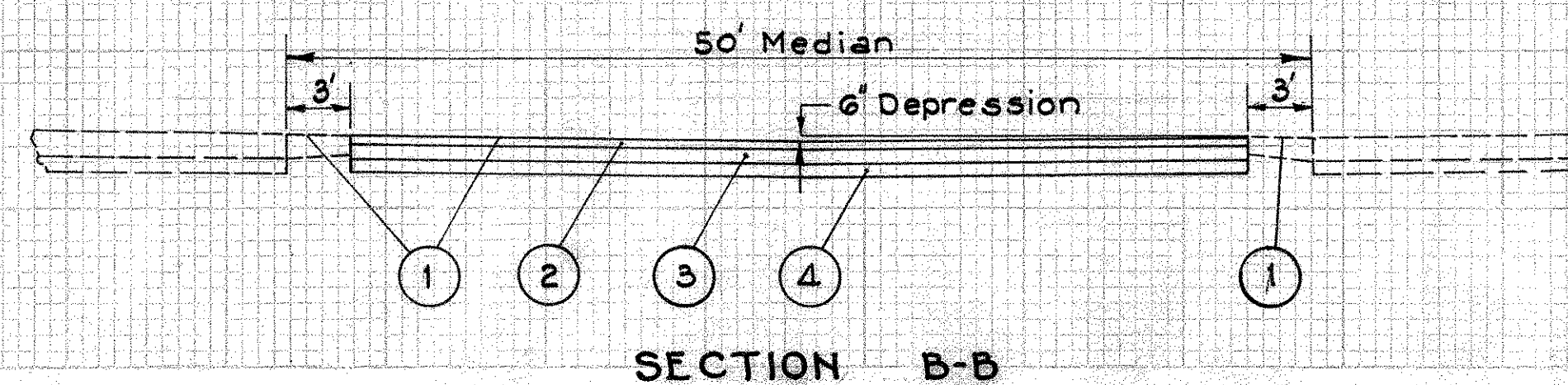
Remove existing U-Turn Median Opening.
66 Cu. Yds. of 203 Excavation has been included for this work.
200 Sq. Yds. of 659 Seeding has been included for this area.



NOTE: The 3' Existing Paved Berm Area to Be Salvaged



ITEM	DESCRIPTION
① 409	Seal Coat using 0.008 Cu. Yds. No. 8 Aggregate per Sq. Yds. and 0.25 Gal's bituminous material per Sq. Yd.
② 301	3' Bituminous Aggregate Base, 702.01 (85-100) or 702.09 RT-12 (See Note in Proposal)
③ 304	5" Aggregate Base
④ 310	6" Subbase



Ref. No.	603 15" Conduit, Type 'B' Lin. Ft.	409 Sq. Yds.	301 3' Cu. Yds.	304 5" Cu. Yds.	310 6" Cu. Yds.	203 Subgrade Preparation Sq. Yds.
3-A	80	550	31.2	56	71	374
Totals	80	550	31.2	56	71	374

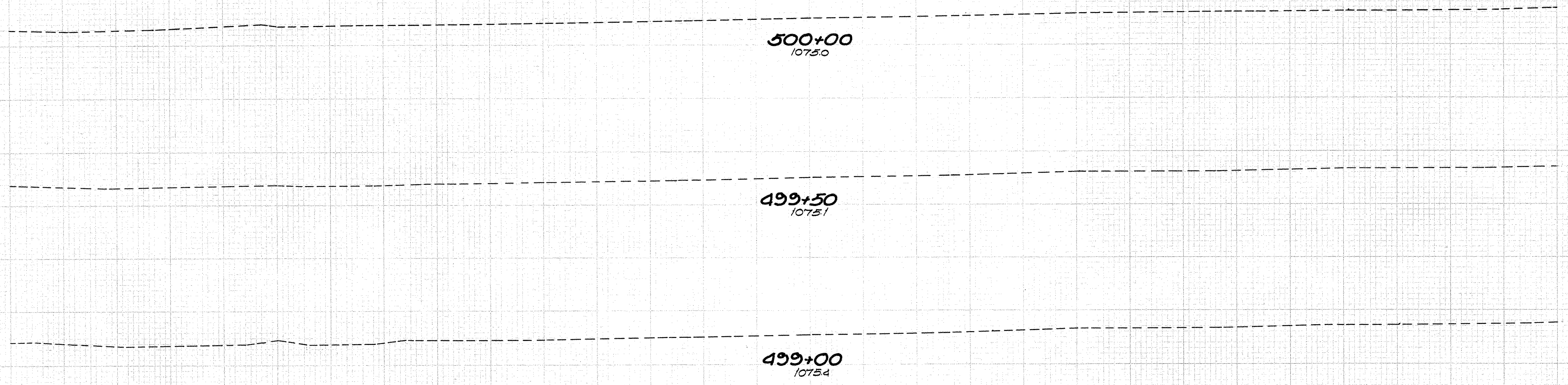
140 120 100 80 60 40 20 0 20 40 60 80 100

FED. RD. DISTRICT	STATE	PROJECT	41 250
2	OHIO		

LIC-70-(5.12-8.67)

120 140

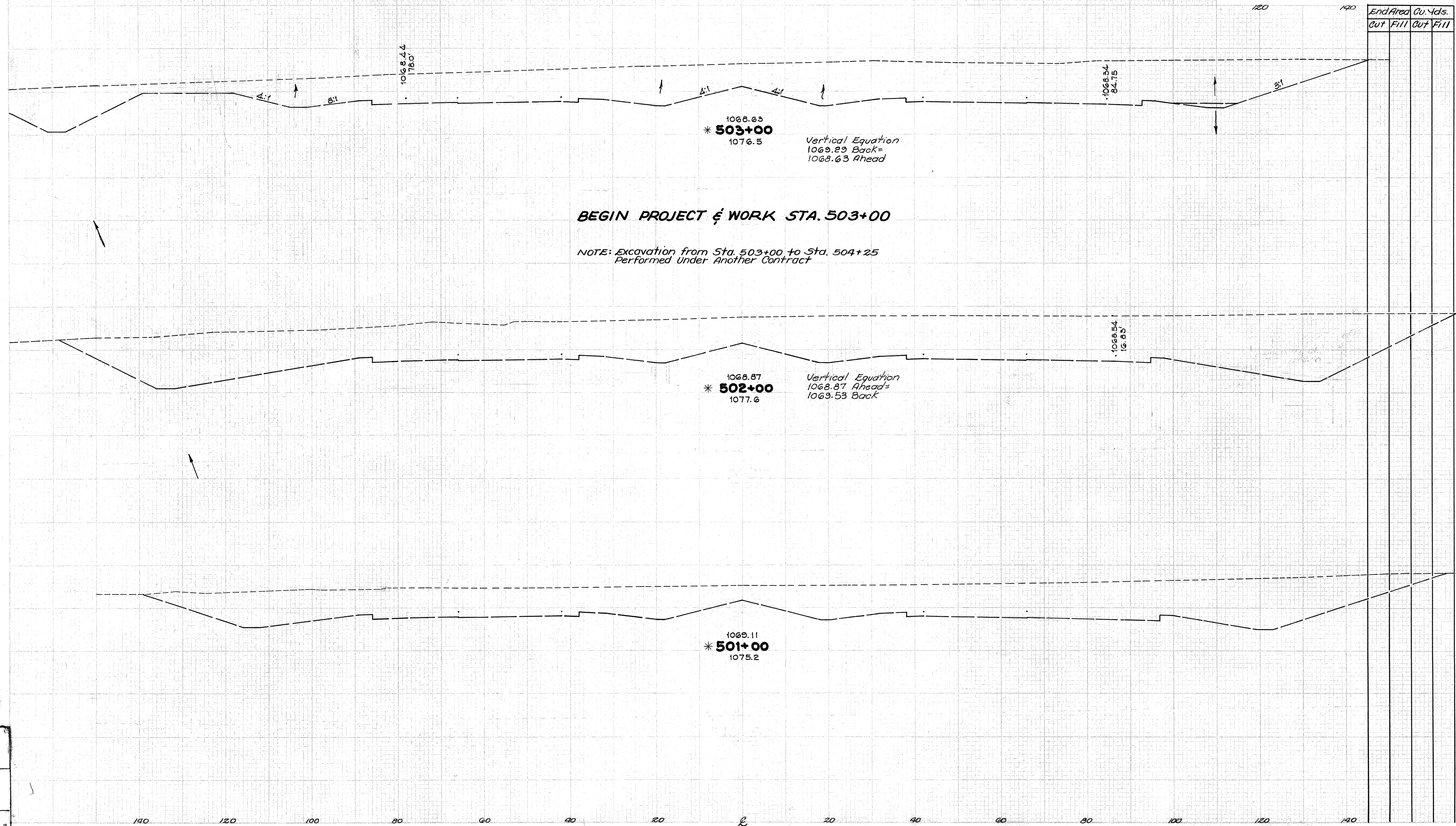
End Area		Cu. Yds.	
Out	Fill	Out	Fill



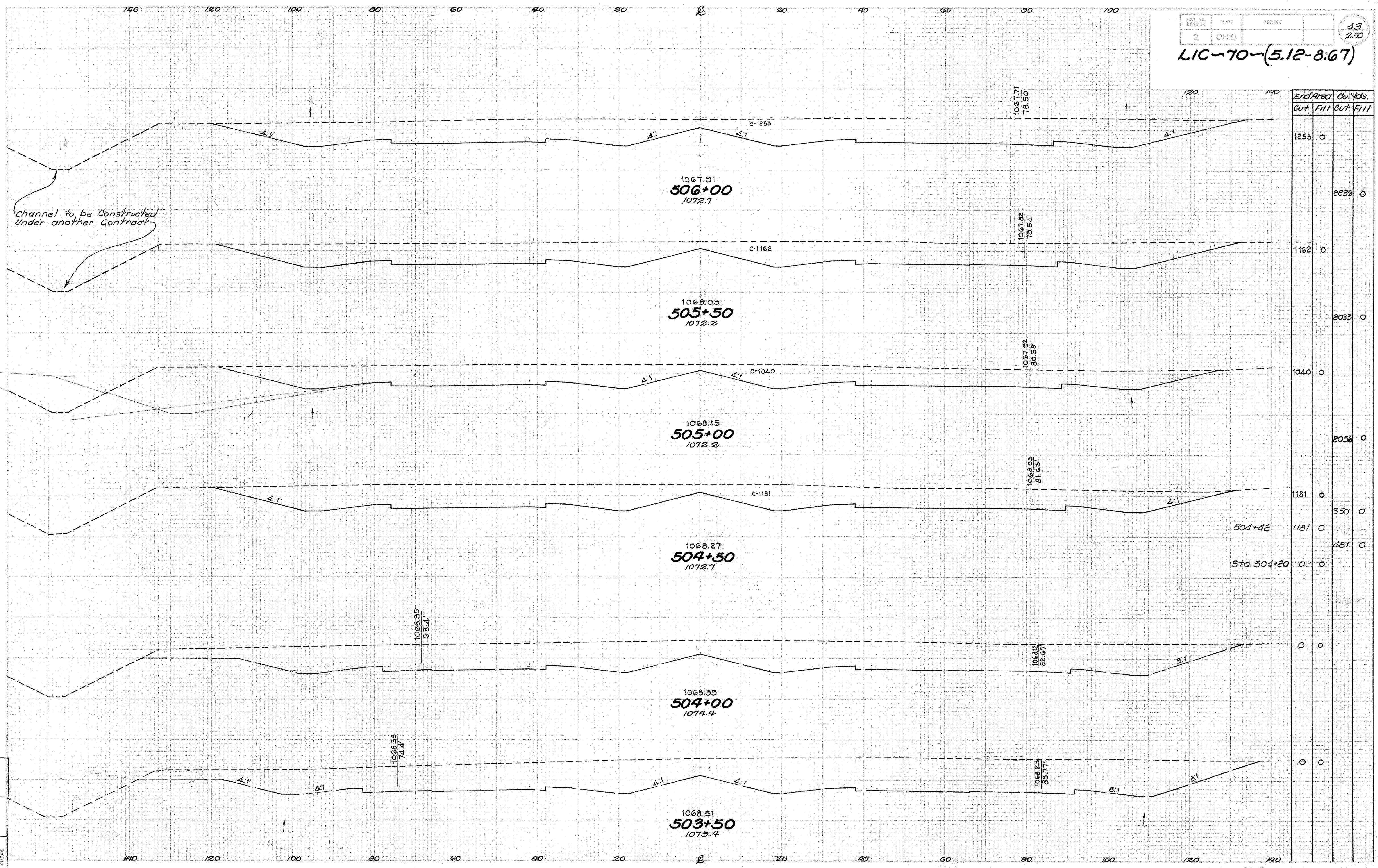
140 120 100 80 60 40 20 0 20 40 60 80 100

120 140
499+00 - 500+00

*ALL ELEVATIONS FROM BENCH MARKS ON LIC-70-(5.12-8.67)



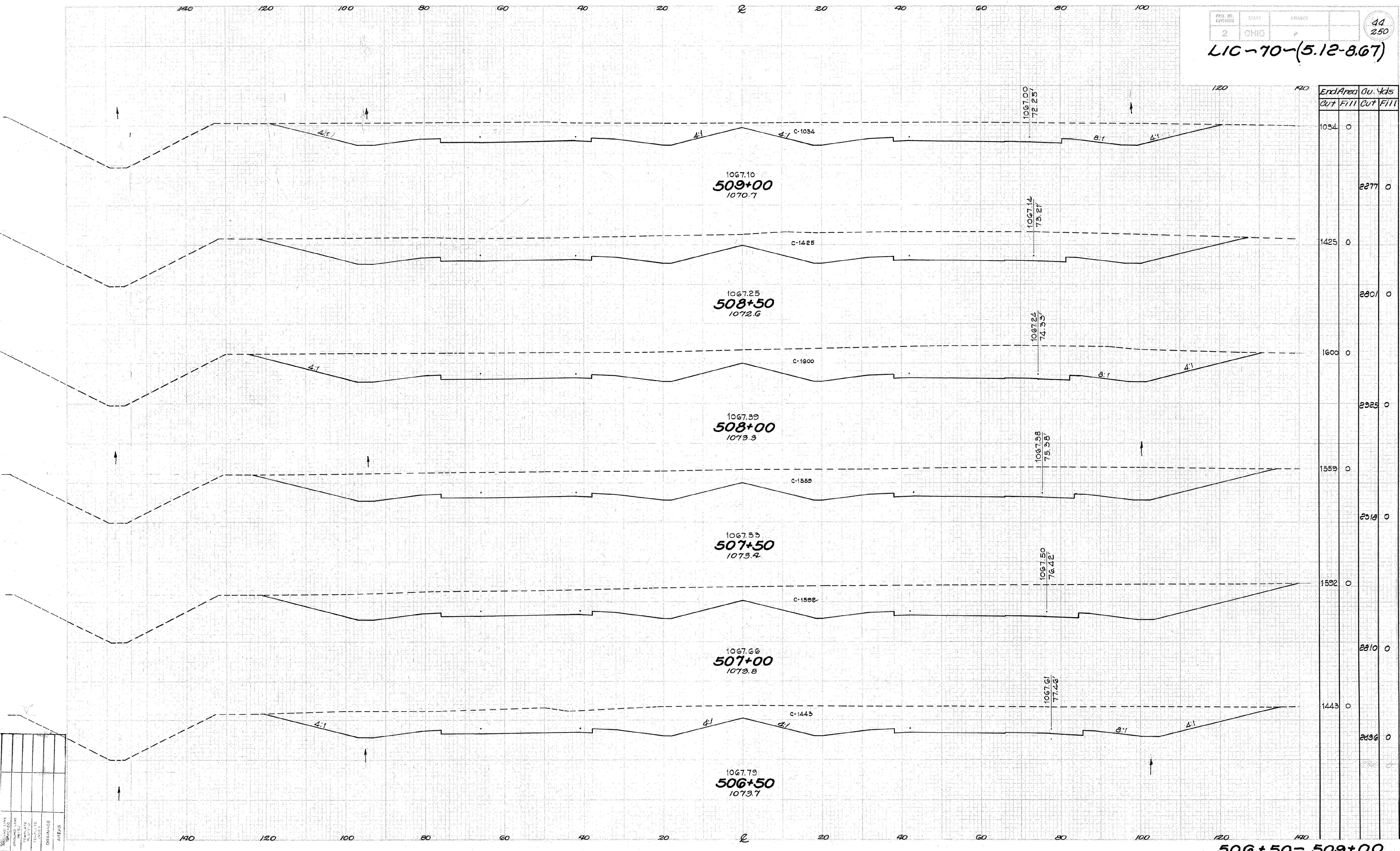
501+00 - 503+00



Station	End Area		Cu. Yds.	
	Out	Fill	Out	Fill
1253	0	0	0	0
1162	0	0	2236	0
1040	0	0	2039	0
1181	0	0	2056	0
504+12	1181	0	350	0
504+20	0	0	481	0
503+50	0	0	0	0

503+50 - 506+00

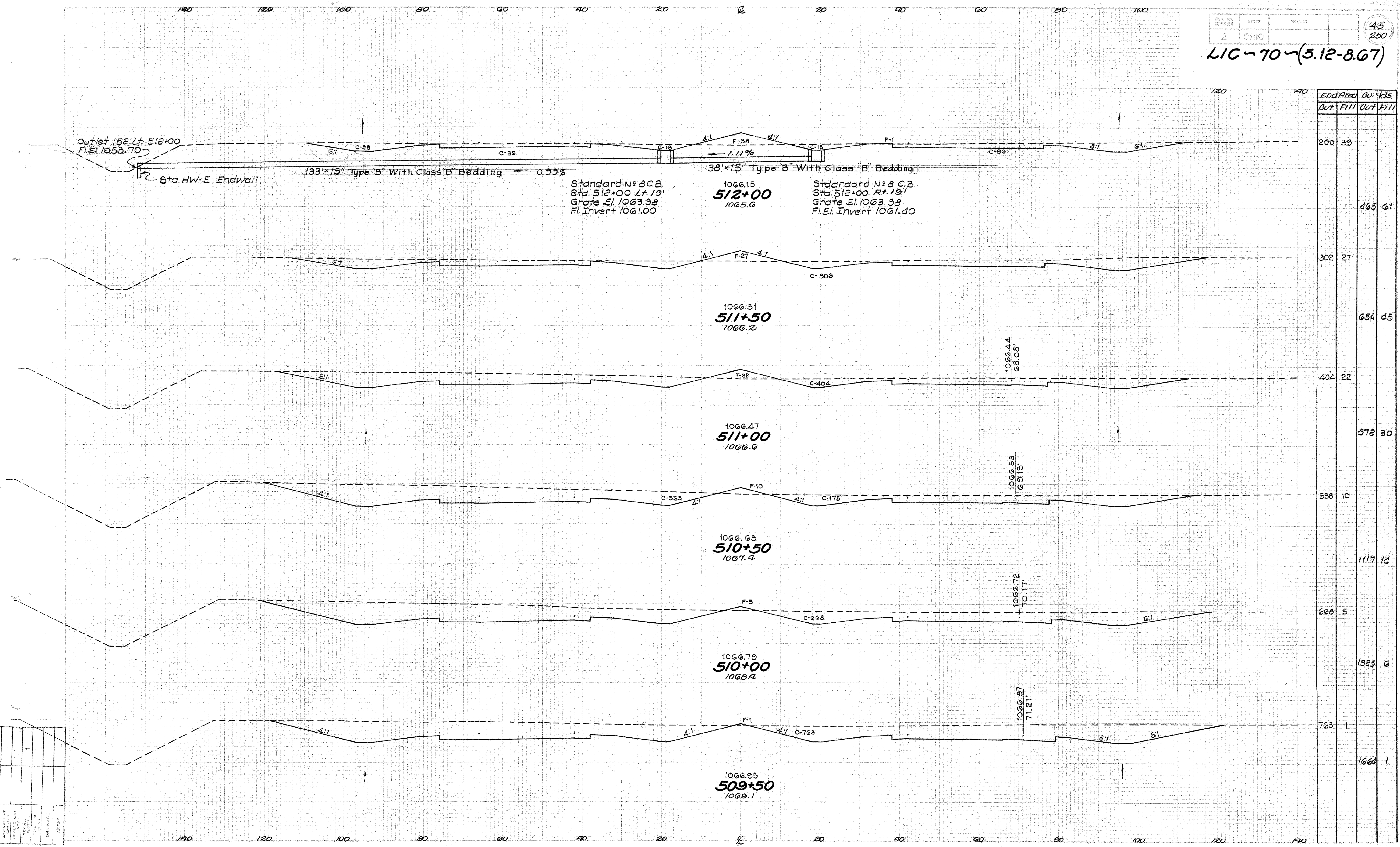
APPROXIMATE	
UNITS	
SCALE	
DATE	
DESIGNED BY	
CHECKED BY	
DATE	
PROJECT	
NO.	



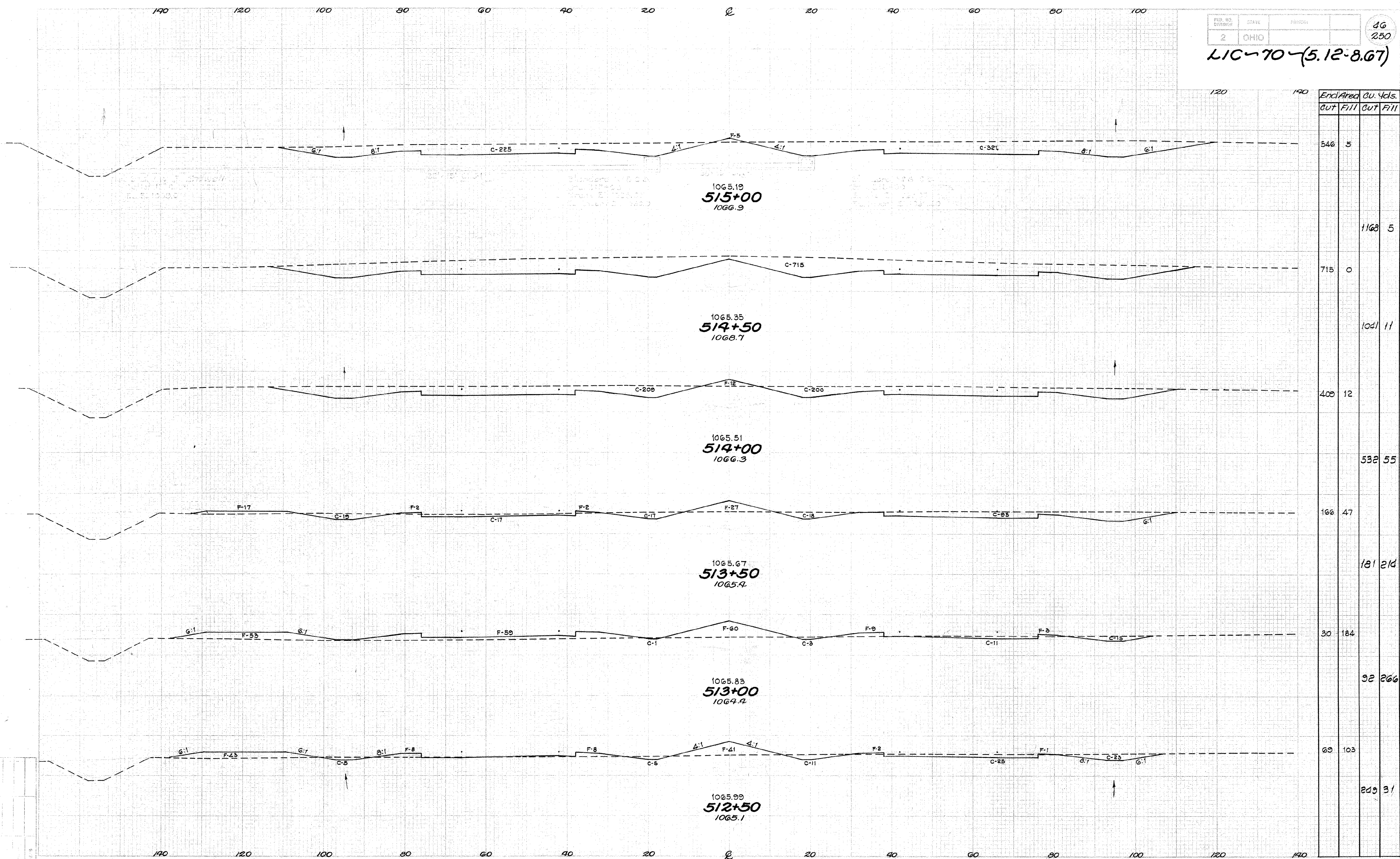
End Area	Cu. Yds	
	Cut	Fill
1054	0	
1425	0	2277
1600	0	2801
1559	0	2323
1592	0	2518
1443	0	2810
		2136

REVISION LINE	
DATE	
BY	
CHKD	
APP'D	
DRAINAGE	
AREAS	

506+50-509+00

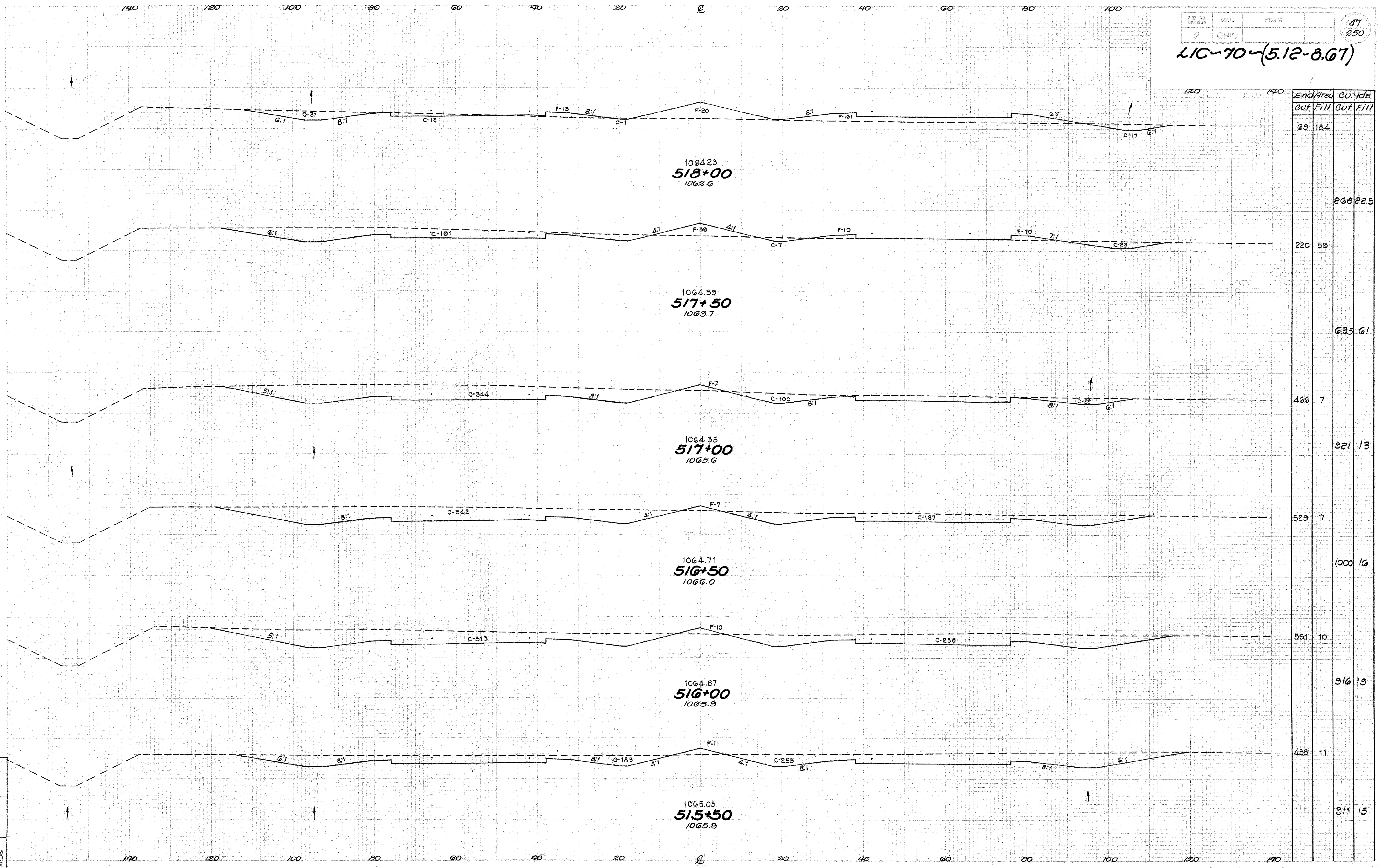


End Area		cu. Yds.	
Out	Fill	Out	Fill
200	39		
		465	61
302	27		
		654	45
404	22		
		872	30
538	10		
		1117	18
668	5		
		1325	6
763	1		
		1664	1



Encl Area		Cu. Yds.	
Out	Fill	Out	Fill
546	5		
		1168	5
715	0		
		1041	11
409	12		
		532	55
166	47		
		181	214
30	184		
		92	266
63	103		
		249	31

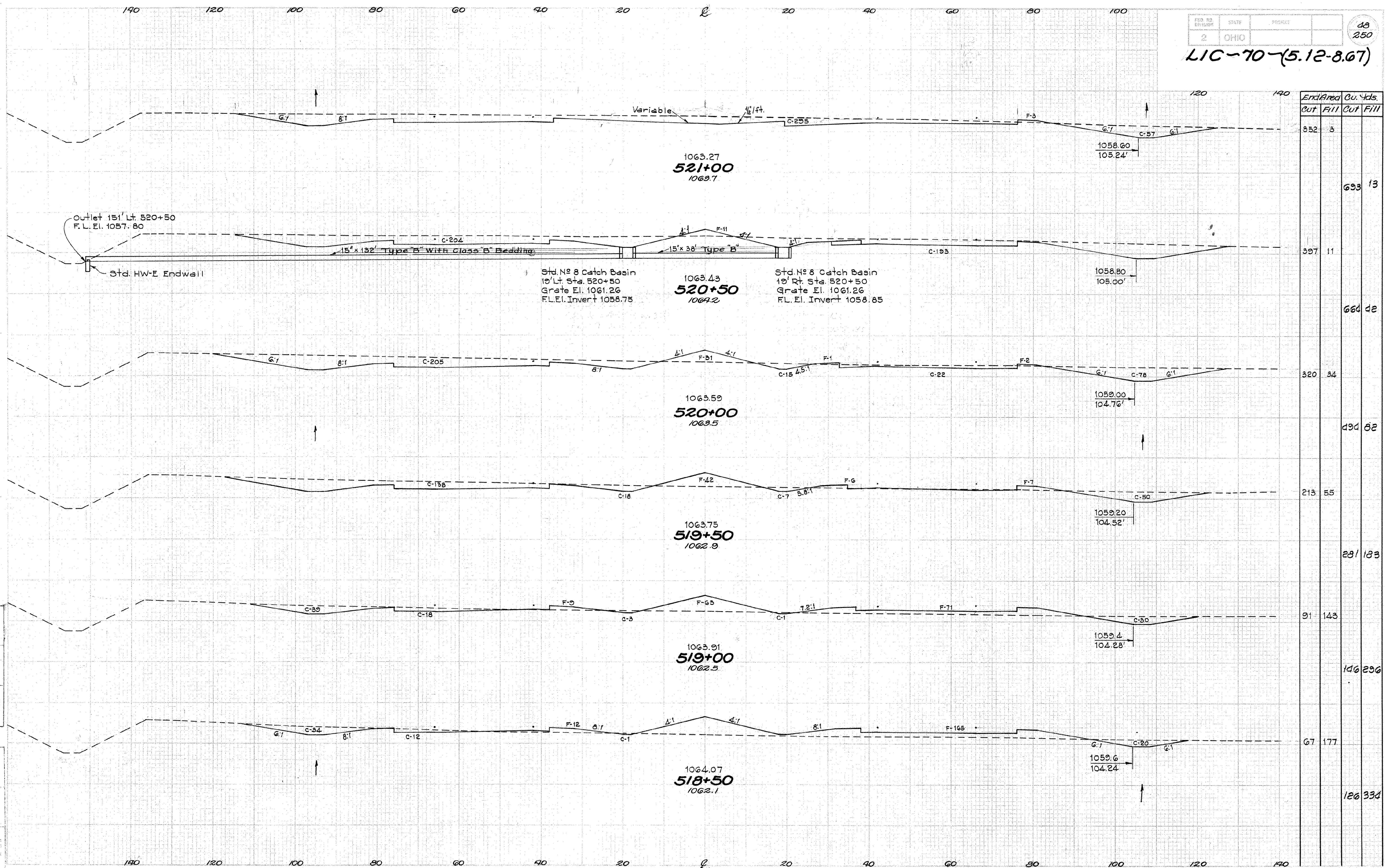
512+50 ~ 515+00



Sta.	End Area		Cu. Yds.	
	Out	Fill	Out	Fill
518+00	69	184		
517+50			268	225
517+00	220	59		
516+50			635	61
516+00	466	7		
515+50			321	13
516+50			529	7
516+00			1000	16
515+50			316	19
516+00			551	10
515+50			438	11
515+50			311	15

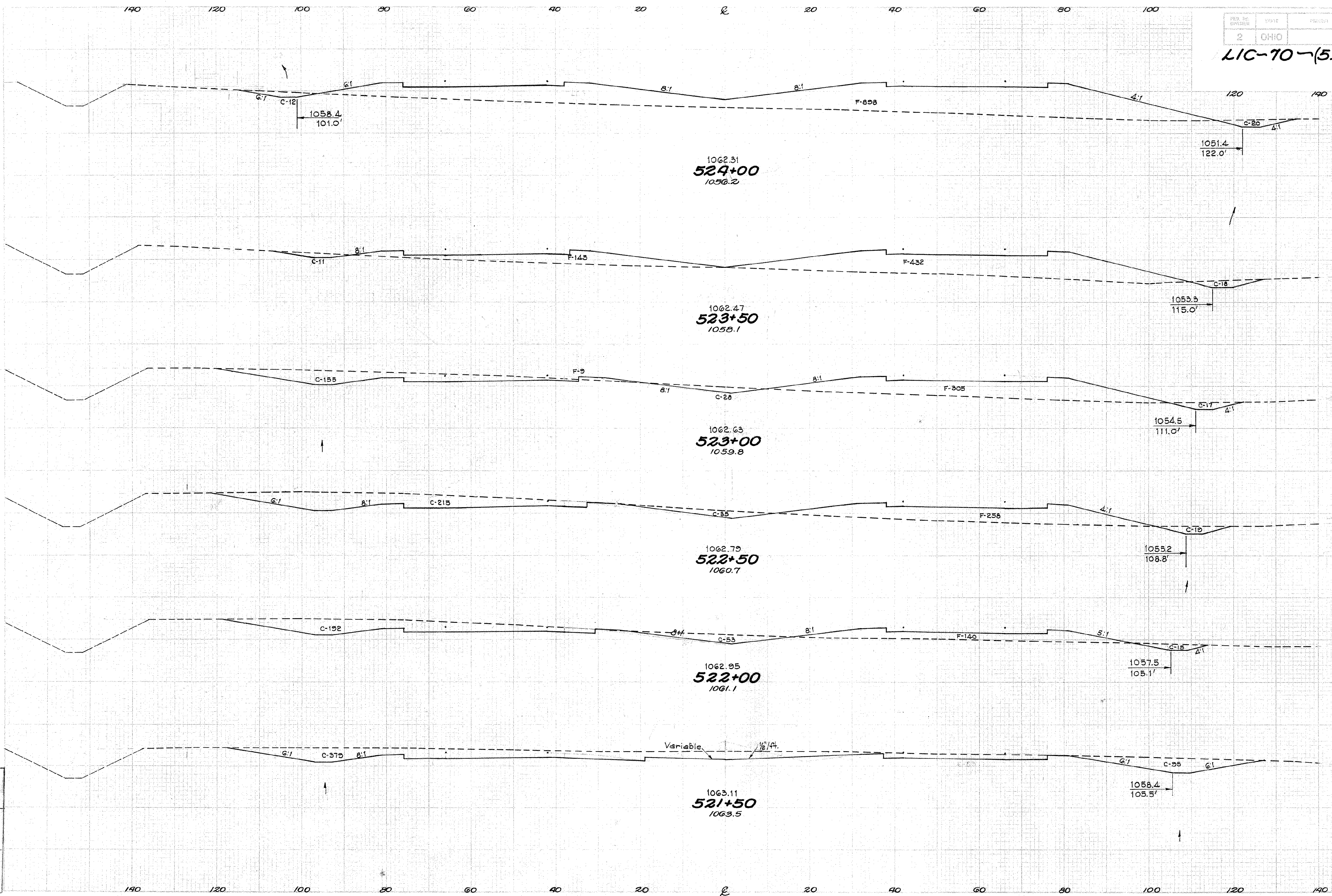
515+50 - 518+00

DATE	BY	CHKD.	APP.



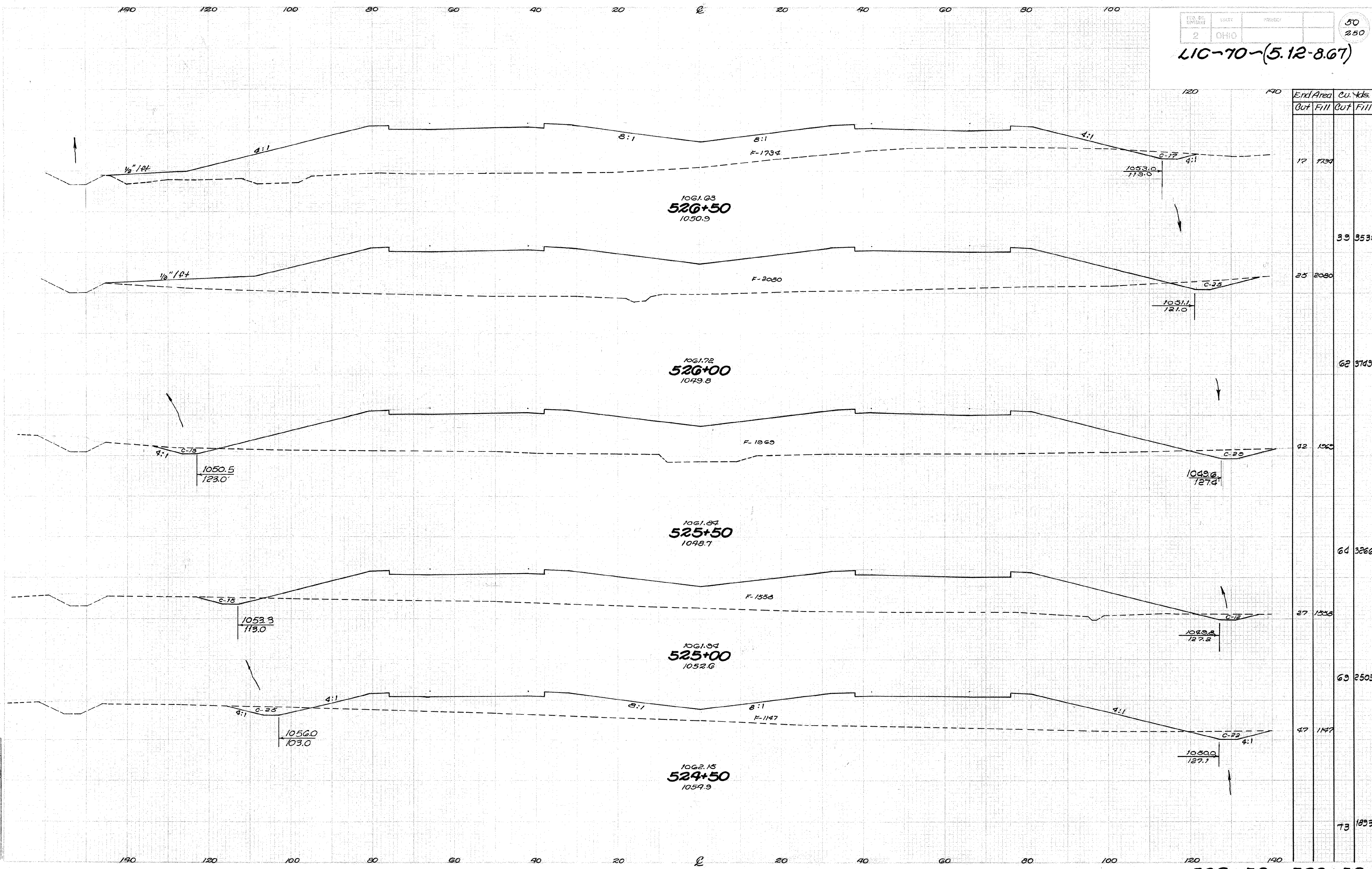
End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
352	3		
		693	13
397	11		
		664	42
320	34		
		494	62
213	55		
		231	133
91	143		
		146	296
67	177		
		126	334

518+50 ~ 521+00



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
32	898		
		56	1366
29	577		
		212	825
200	314		
		434	530
269	258		
		430	363
260	140		
		630	130
474	0		
		765	3

GROUND PLAN	
PROPOSED	
TEMPORARY	
PERMANENT	
DRAINAGE	
AREAS	



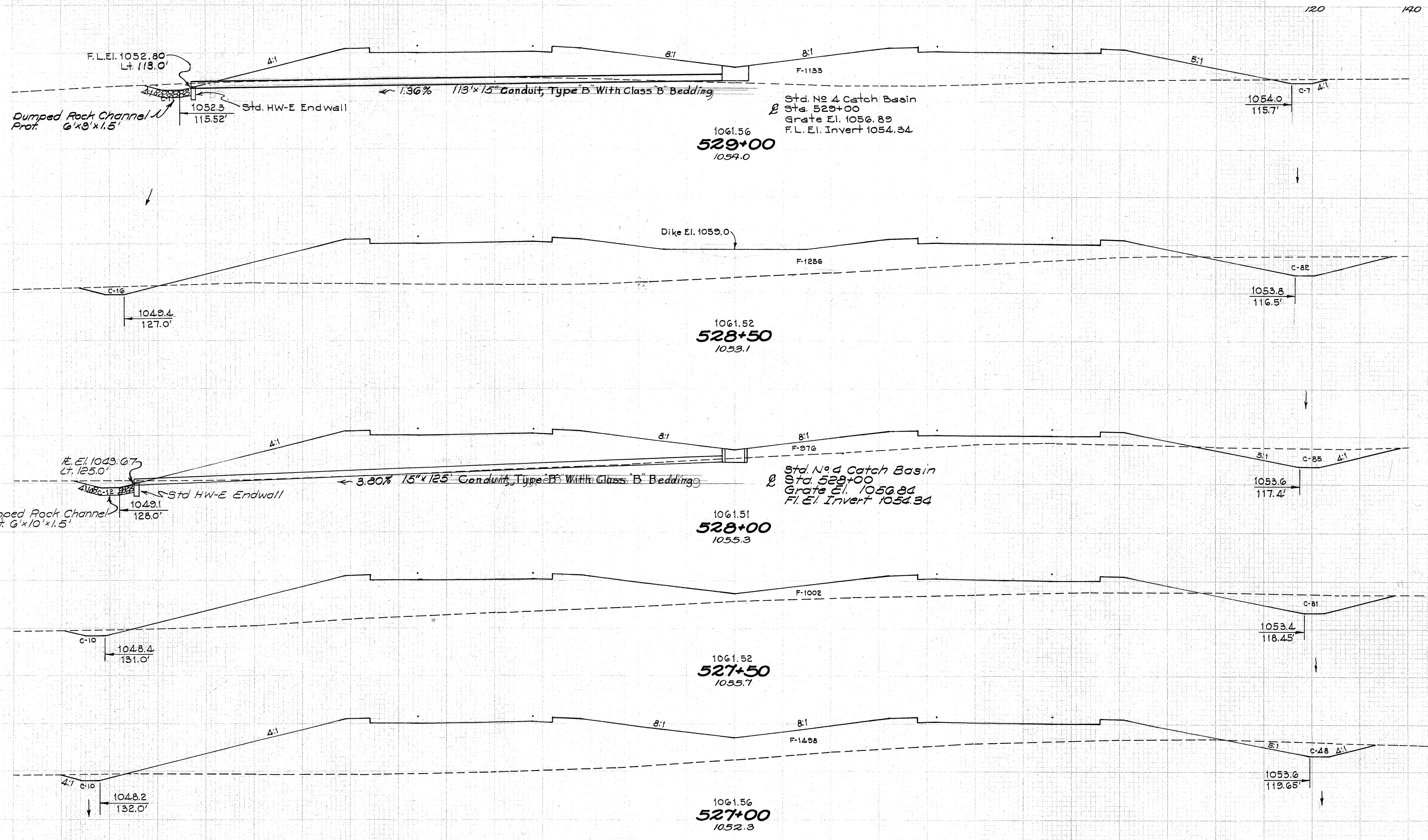
Station	End Area		Cu. Yds.	
	Out	Fill	Out	Fill
524+50	12	1739		
525+00			33	3531
525+50	25	2080		
526+50			62	3743
527+00	42	1560		
527+50			64	3266
528+00	27	1538		
528+50			69	2505
529+00	47	1147		
529+50			73	1853

524+50 - 526+50

GROUND LINE	
PROPOSED LINE	
ADJUSTED LINE	
PROPOSED LINE	
ADJUSTED LINE	
DRAINAGE	
AREAS	

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

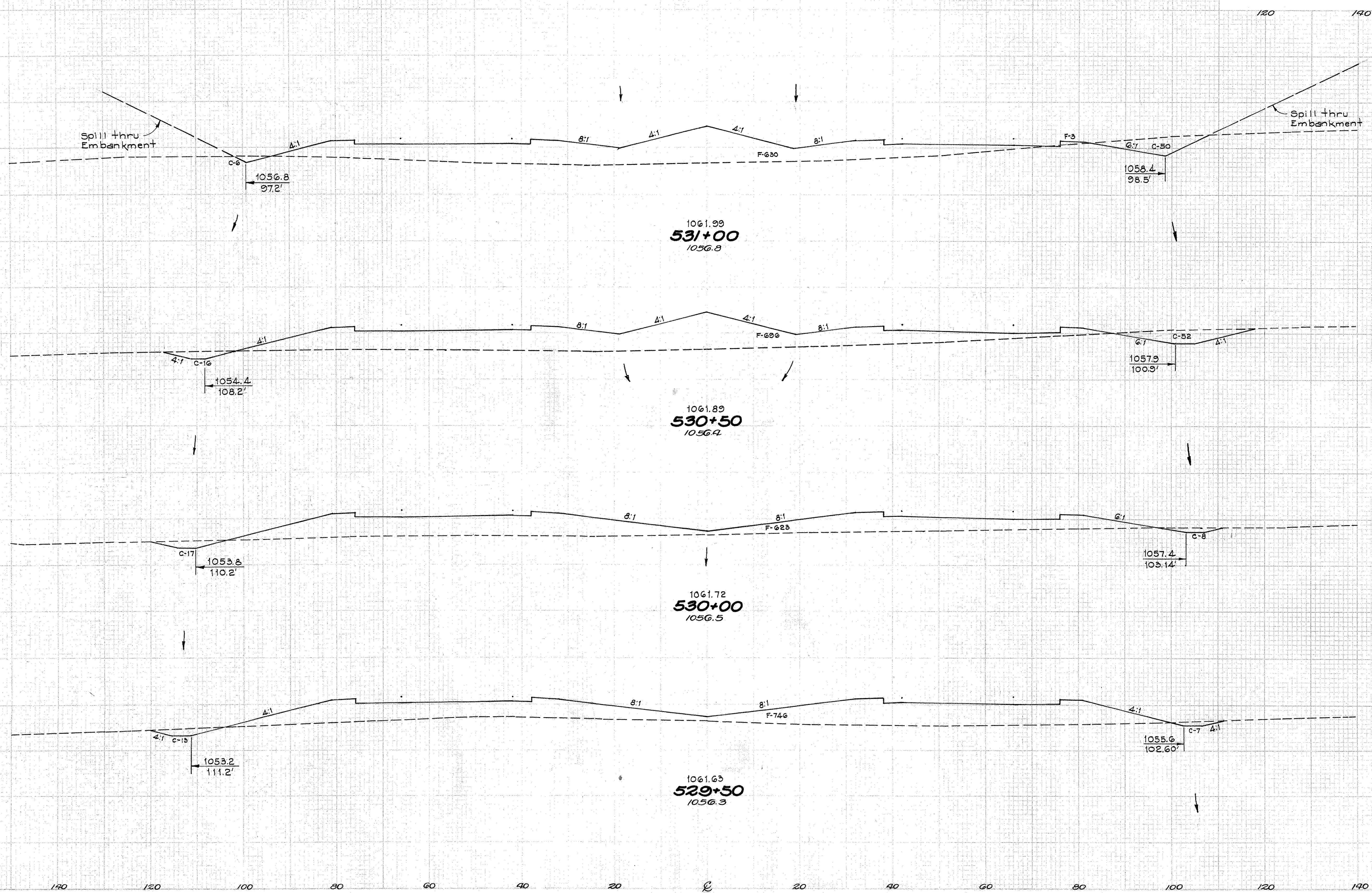
LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
529+00	18	1133		
528+50	98	1256	107	2212
528+00	97	976	181	2067
527+50	91	1002	174	1831
527+00	58	1498	138	2315
	69	2393		

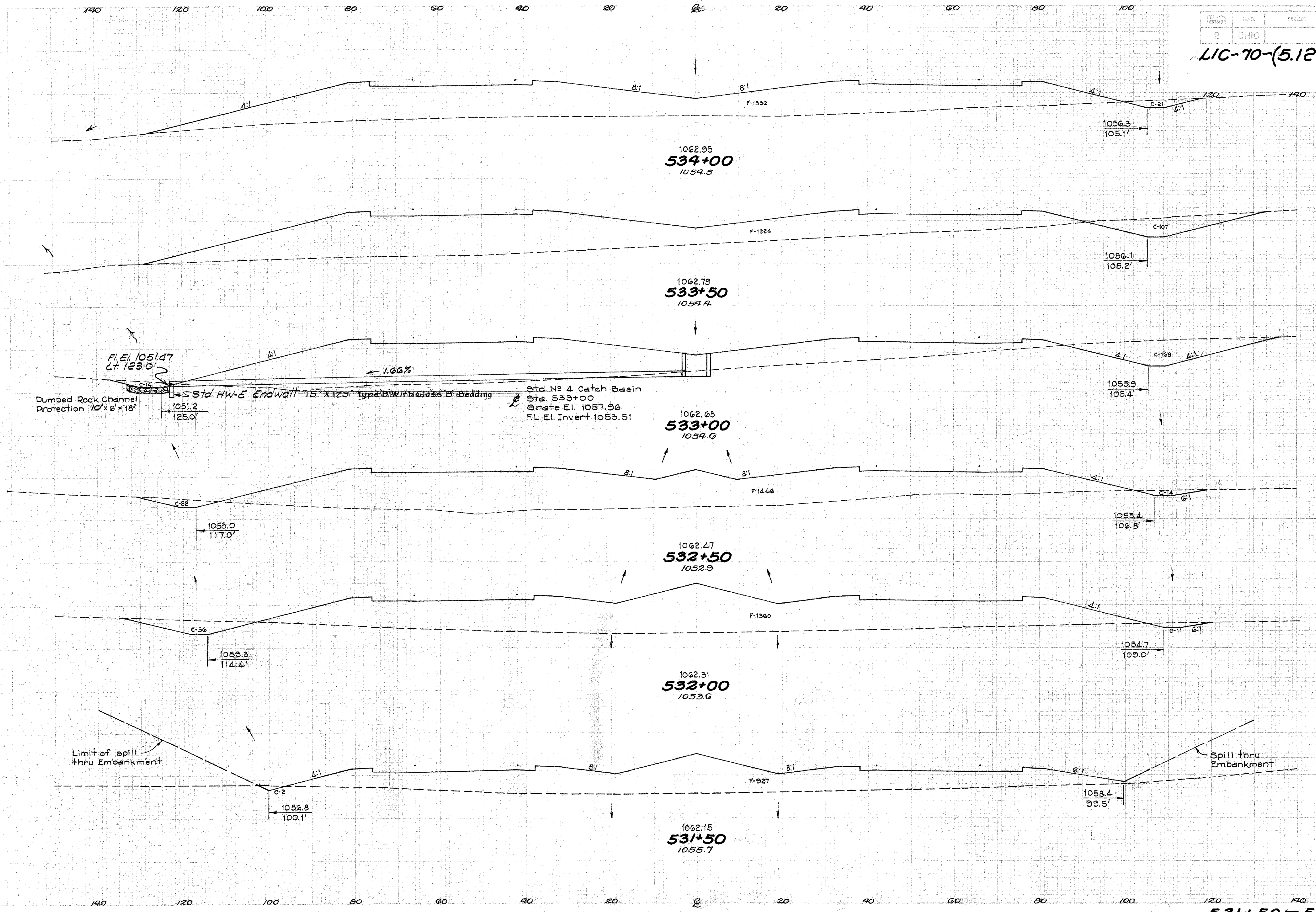
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527+00 - 529+00



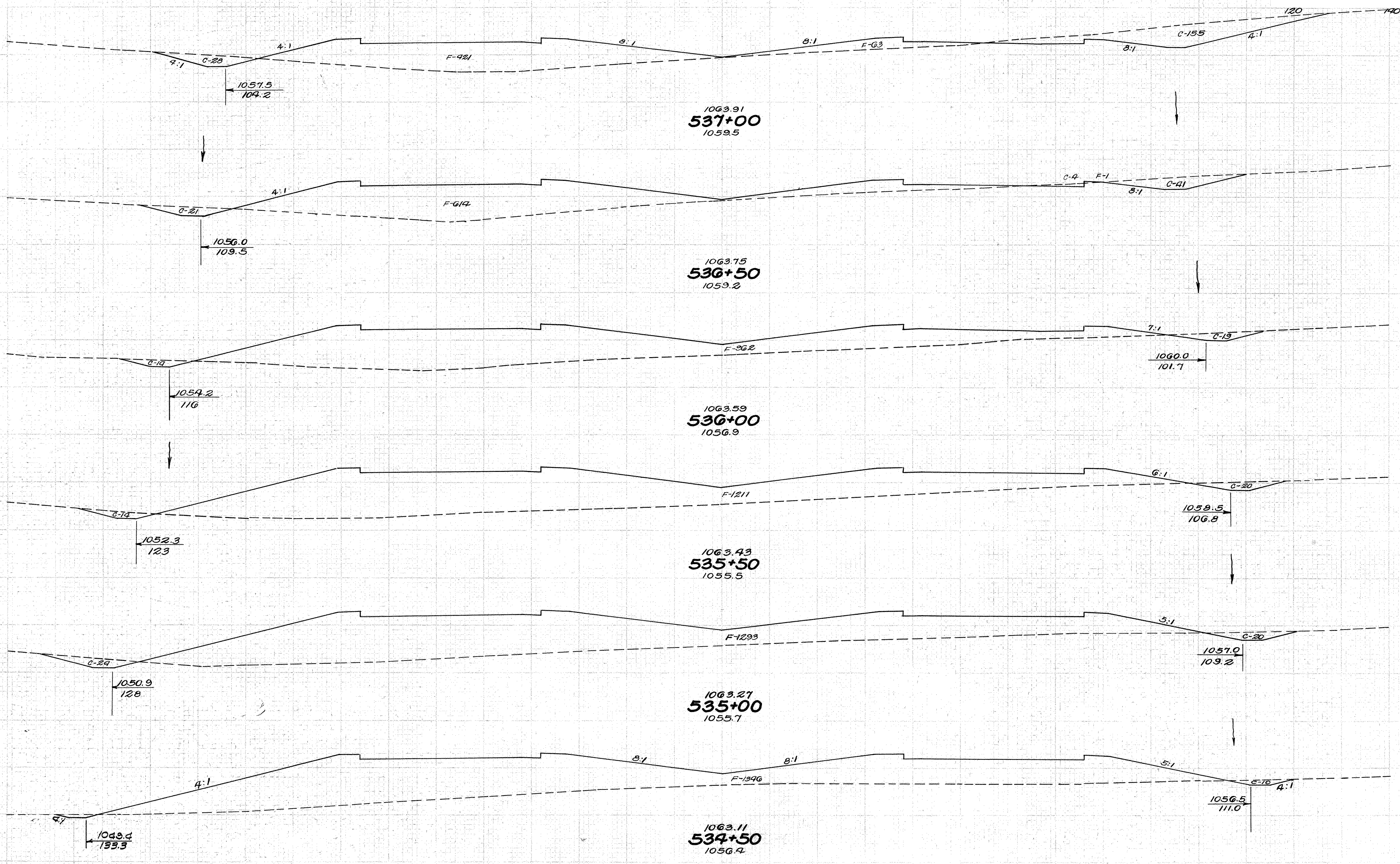
End Area		Cu. Yds.	
Out	Fill	Out	Fill
56	633		
		115	1231
68	696		
		86	1221
25	623		
		42	1268
20	746		
		35	1740

LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Out	Fill	Out	Fill
534+00	21	1336		
533+50			119	2463
533+00	107	1324		
532+50			268	2358
532+00	182	1223		
531+50			202	2471
531+00	36	1446		
530+50			55	2538
530+00	67	1360		
529+50			64	2118
529+00	2	927		
528+50			54	1444

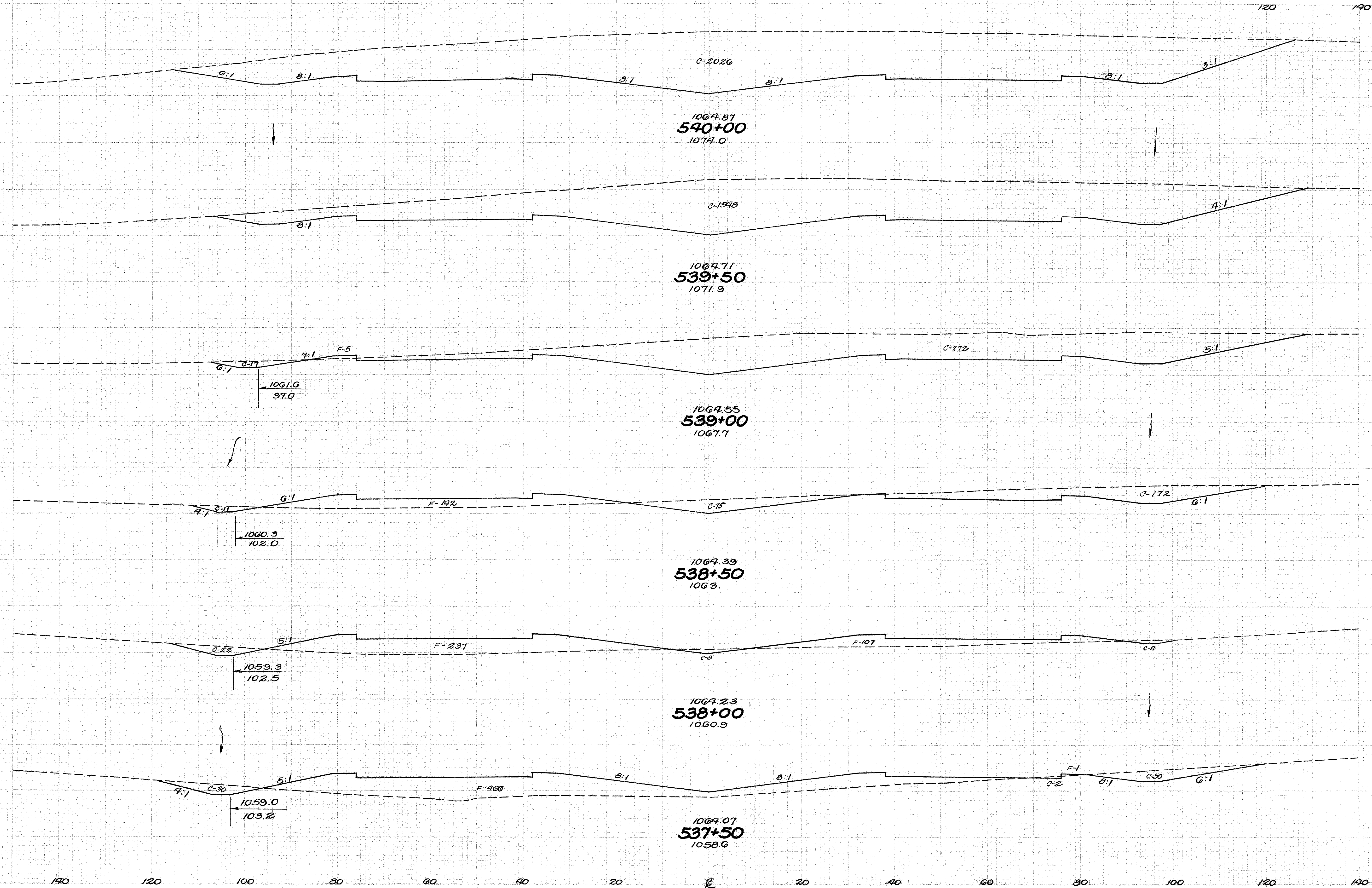
531+50 - 534+00



End Area	Cu. Yds.	
	Cut	Fill
183	422	
		231 108
66	615	
		32 160
33	962	
		62 202
34	1211	
		72 232
44	1293	
		51 243
14	1346	
		32 243

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

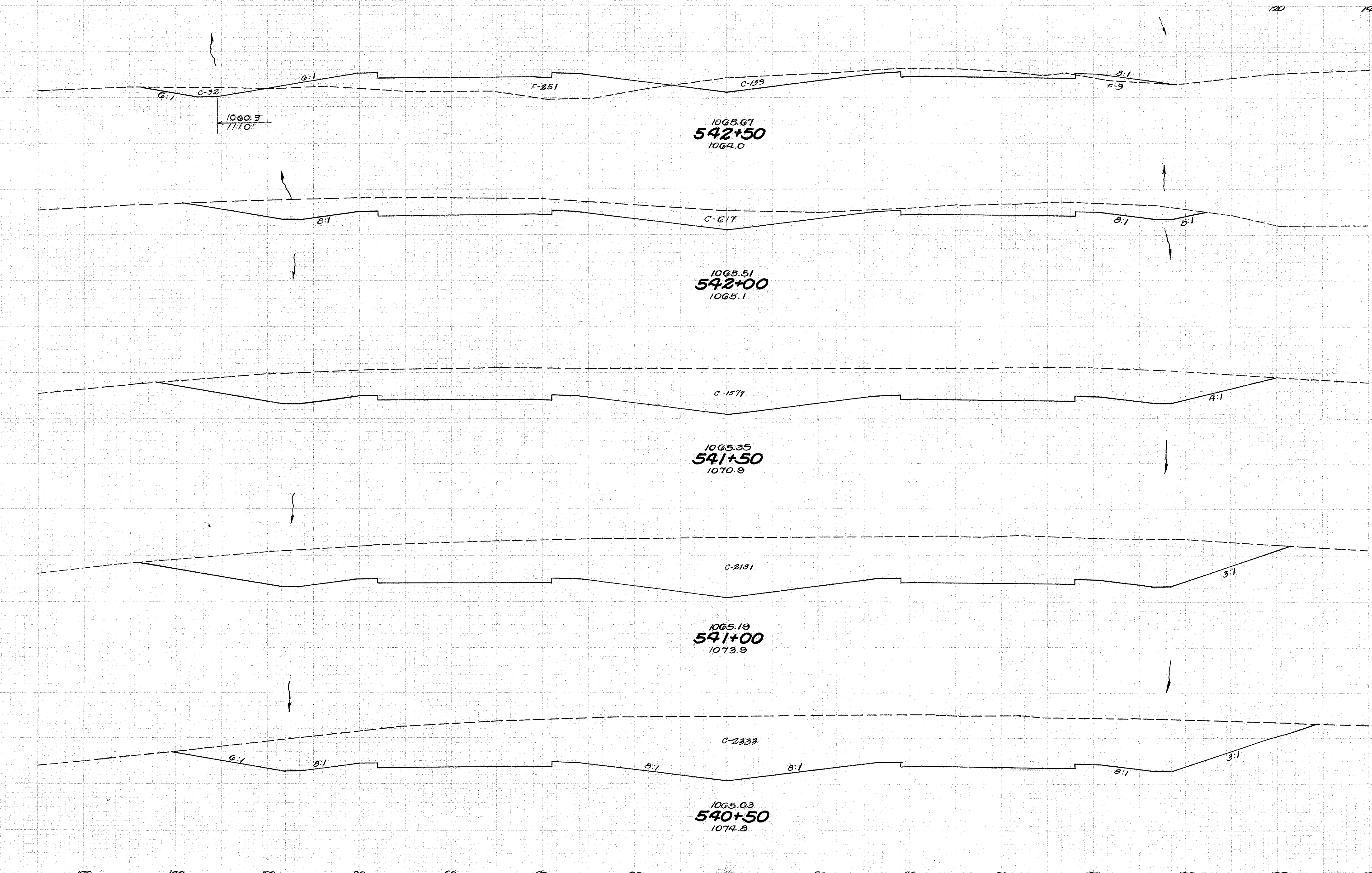
LIC-70-(5.12-8.67)

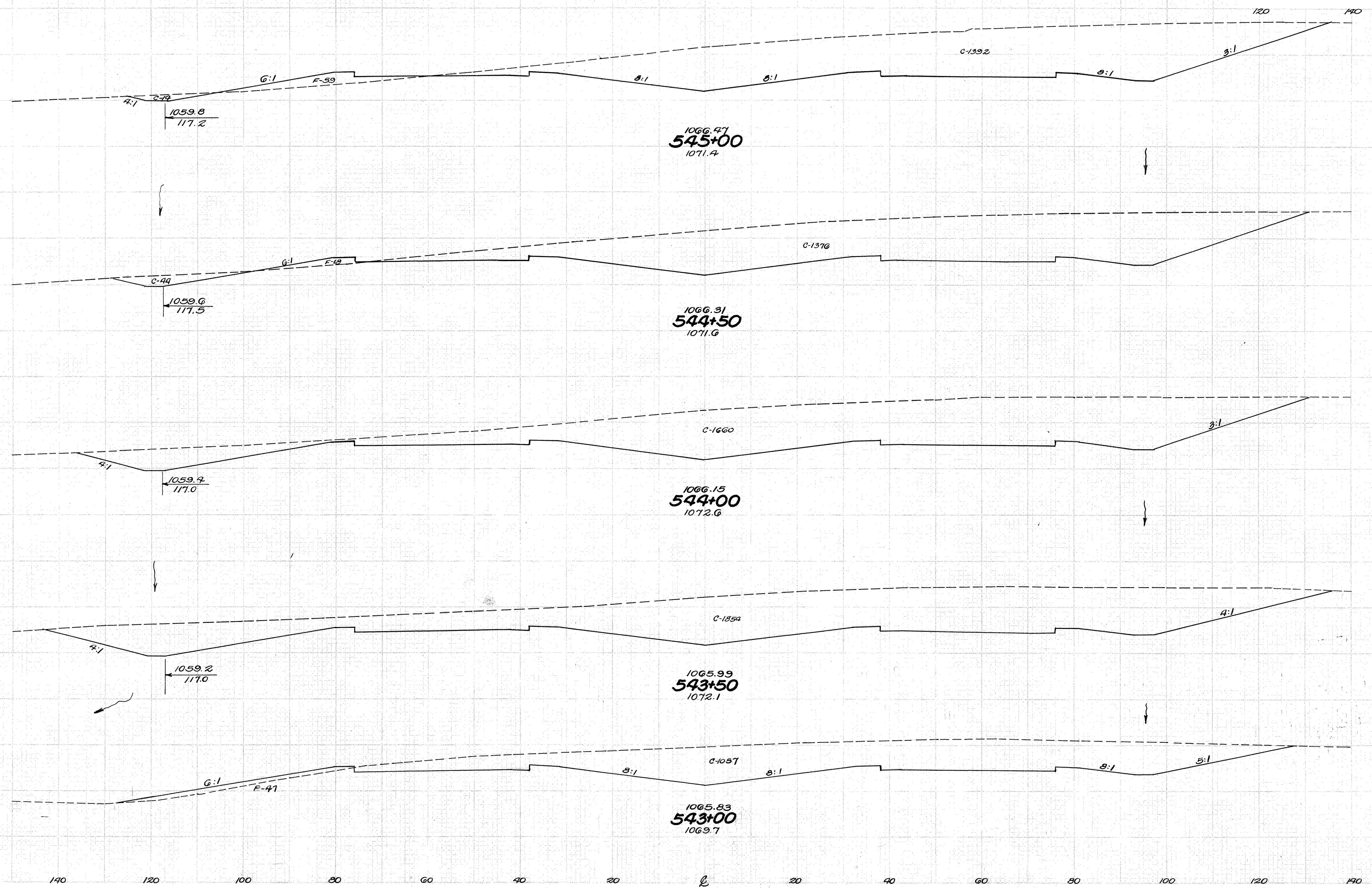


End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
2026	0	3308	0
1548	0	2256	5
889	5	1062	136
258	142	270	450
34	394	107	750
82	466	245	880

537+50 - 540+00

End Area		Cu. Yds	
Out	Fill	Cut	Fill
171	260		
		730	241
617	0		
		2033	0
1579	0		
		3431	0
2181	0		
		4180	0
2333	0		
		4036	0

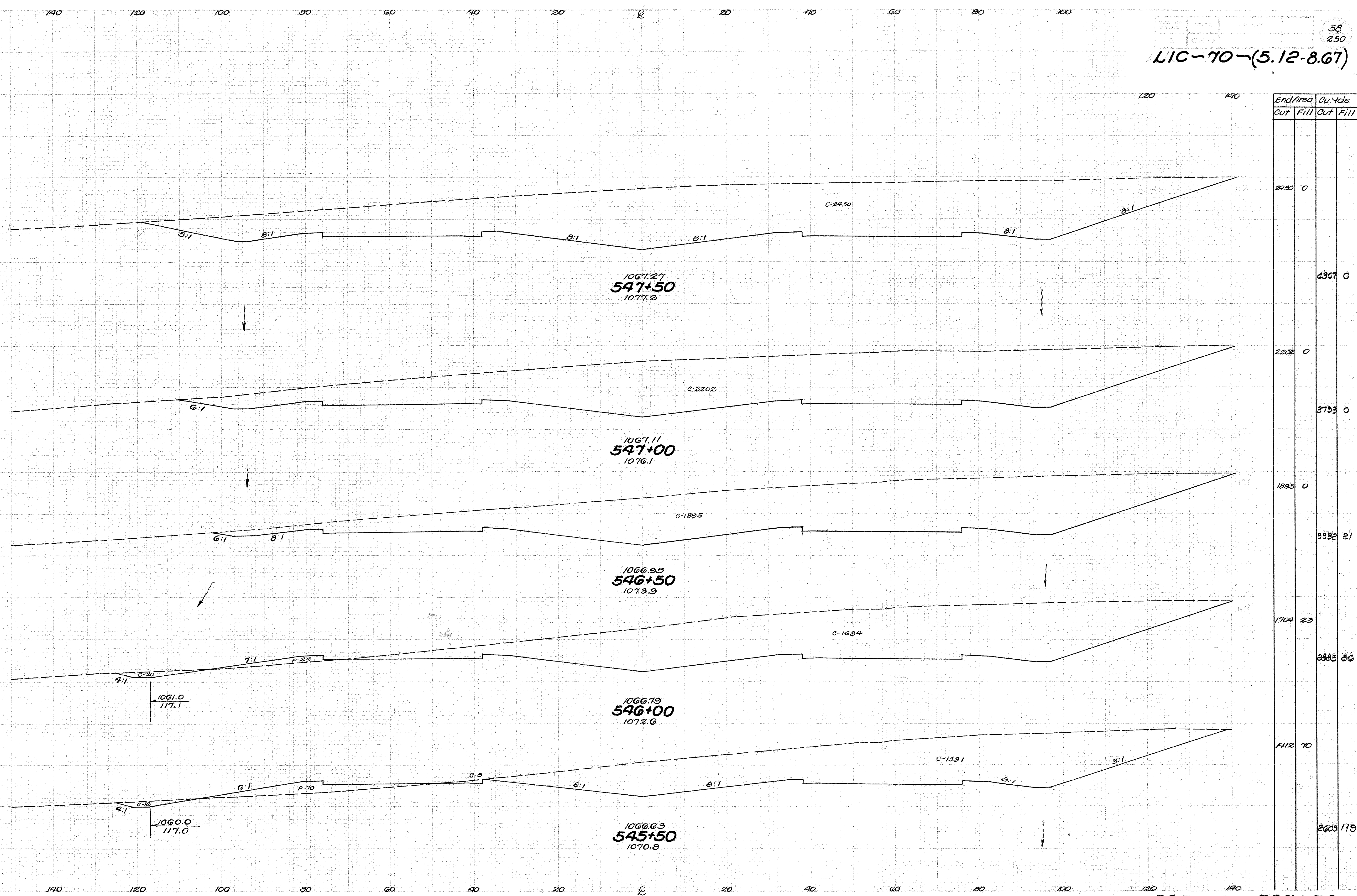




End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
1406	59	2617	71
1420	18	2852	17
1660	0	3254	0
1854	0	2695	44
1057	47	1137	284

543+00 ~ 545+00

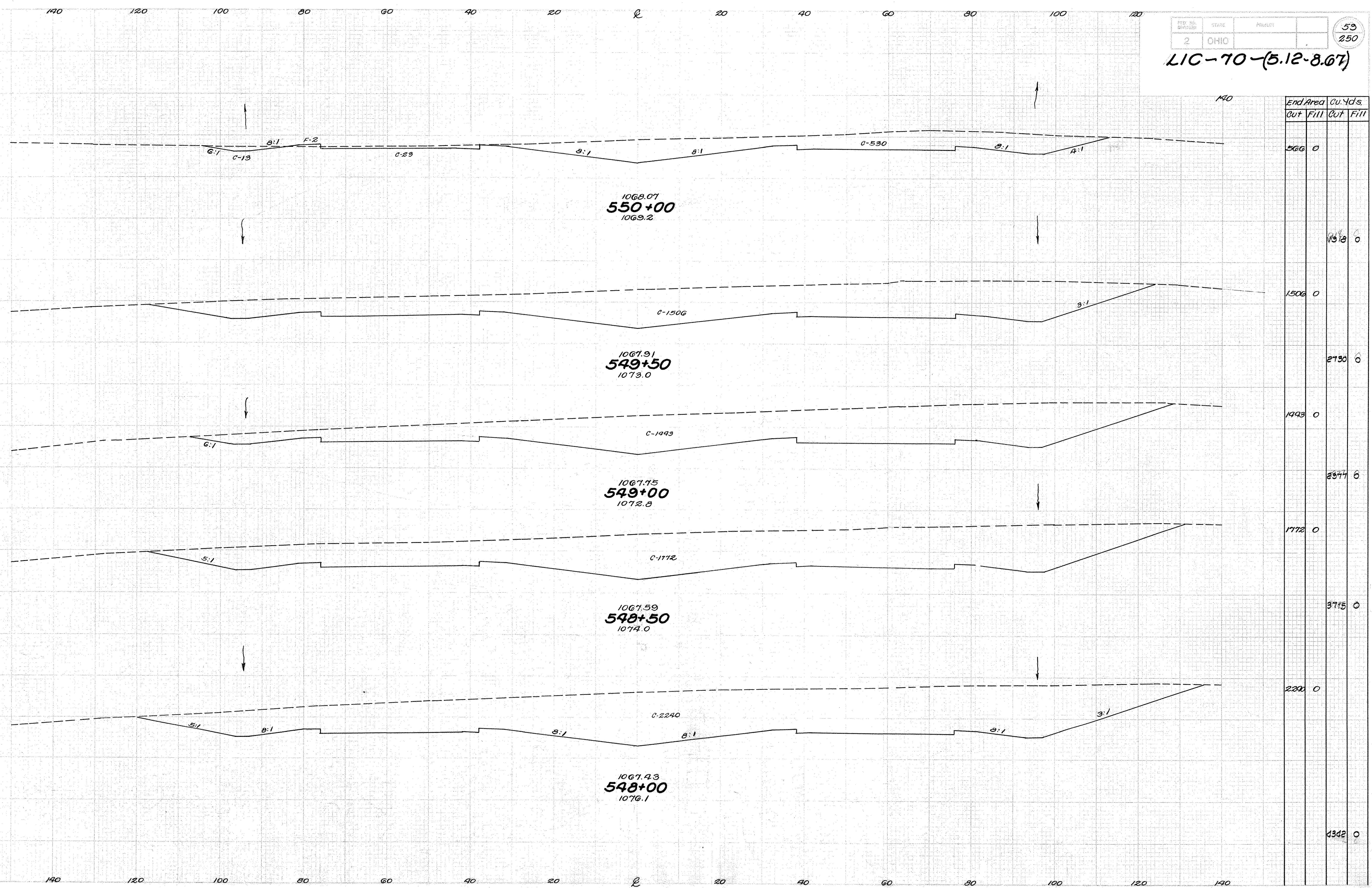
LIC-70-(5.12-8.67)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
2450	0	4307	0
2200	0	3793	0
1895	0	3332	21
1704	23	2885	86
1412	70	2603	119

545+50 ~ 547+50

LIC-70-(5.12-8.07)



Station	End Area		Cu. Yds.	
	Out	Fill	Out	Fill
550+00	566	0		
549+50	1506	0	938	0
549+00	1493	0	2730	0
548+50	1772	0	2977	0
548+00	2200	0	3715	0
548+00			4362	0

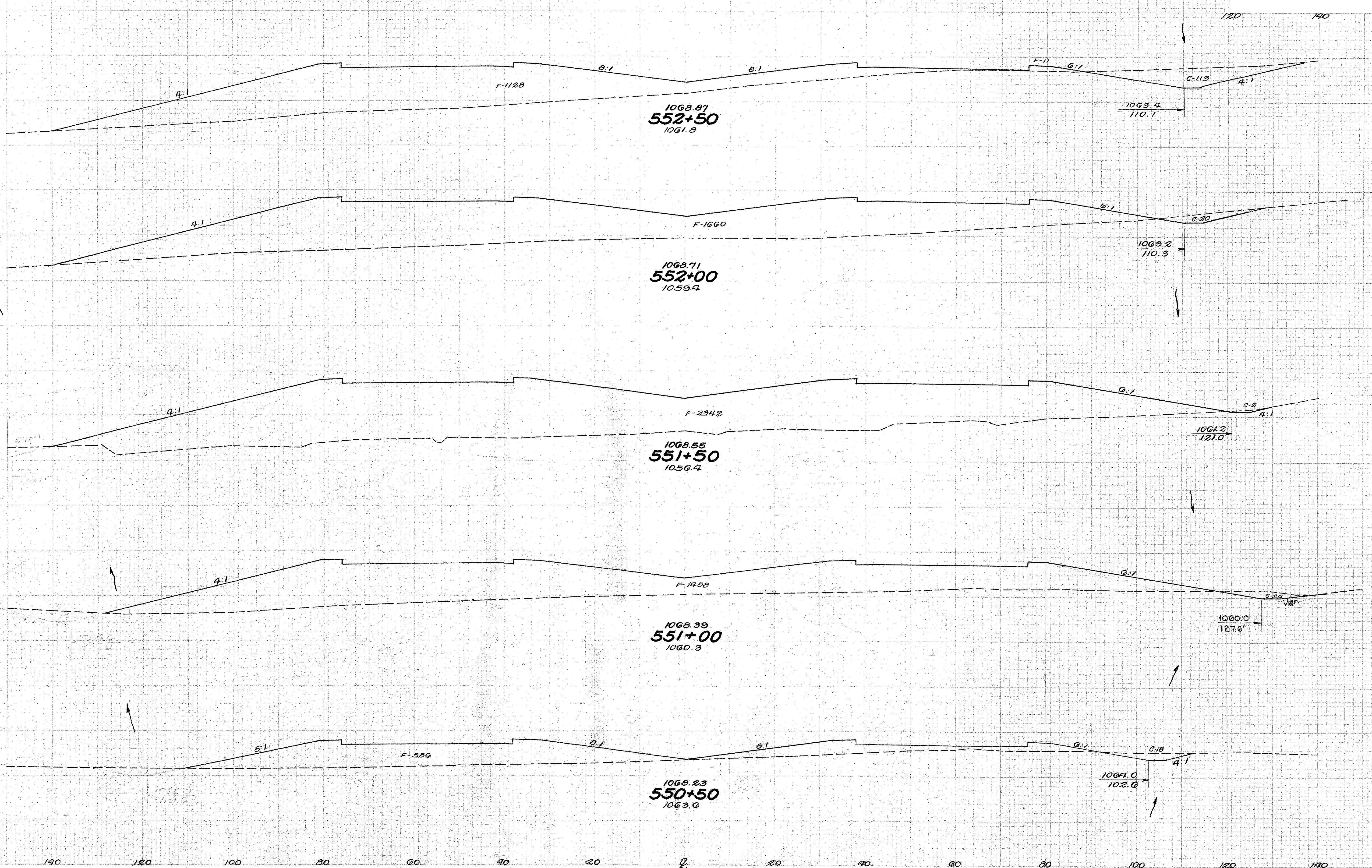
548+00 ~ 550+00

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

60
250

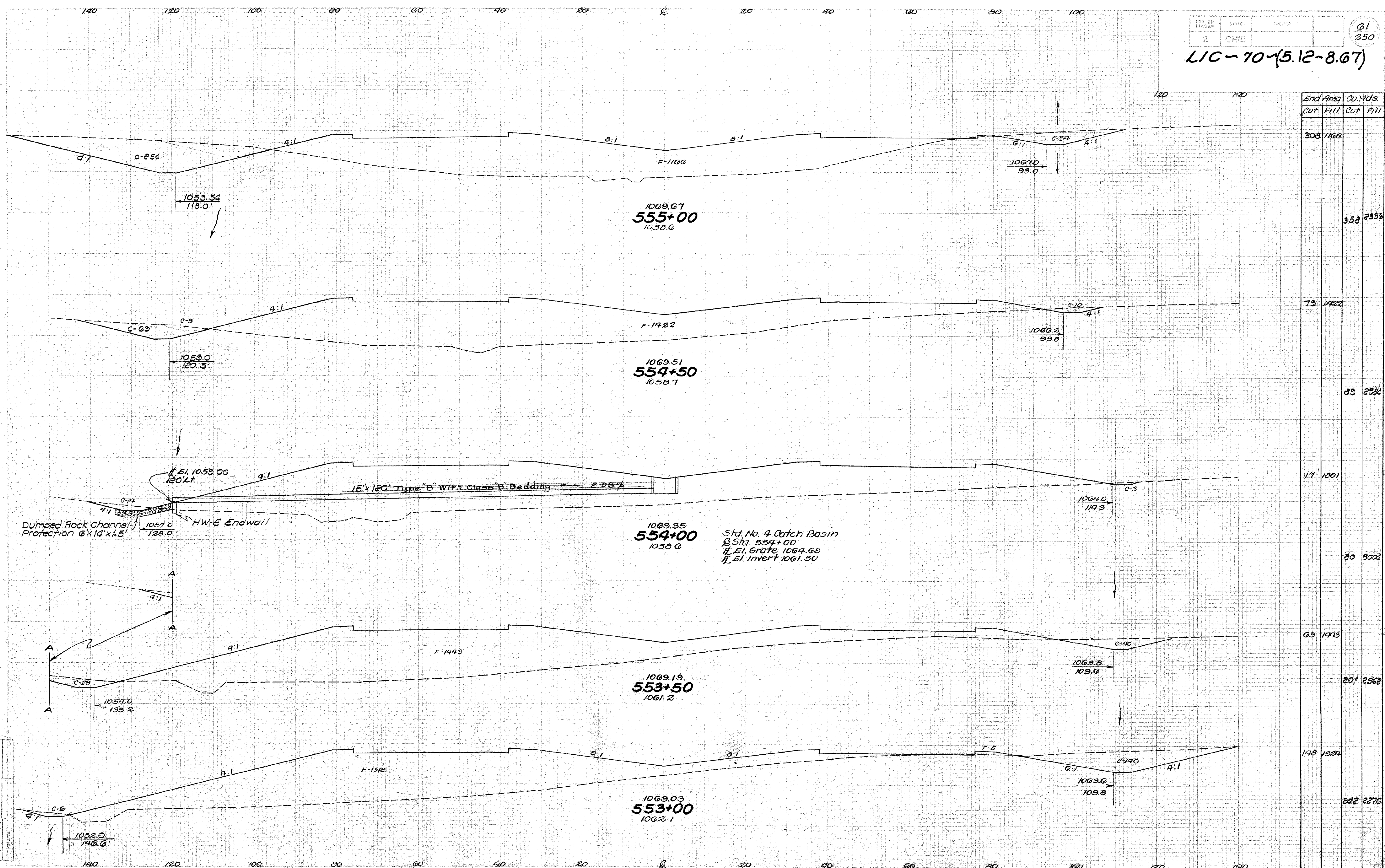
LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
552+50	113	1128		
552+00	20	1660	123	2581
551+50	2	2370	20	3705
551+00			20	3705
550+50	24	1450	33	1893
	18	586	541	543

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

550+50-552+50

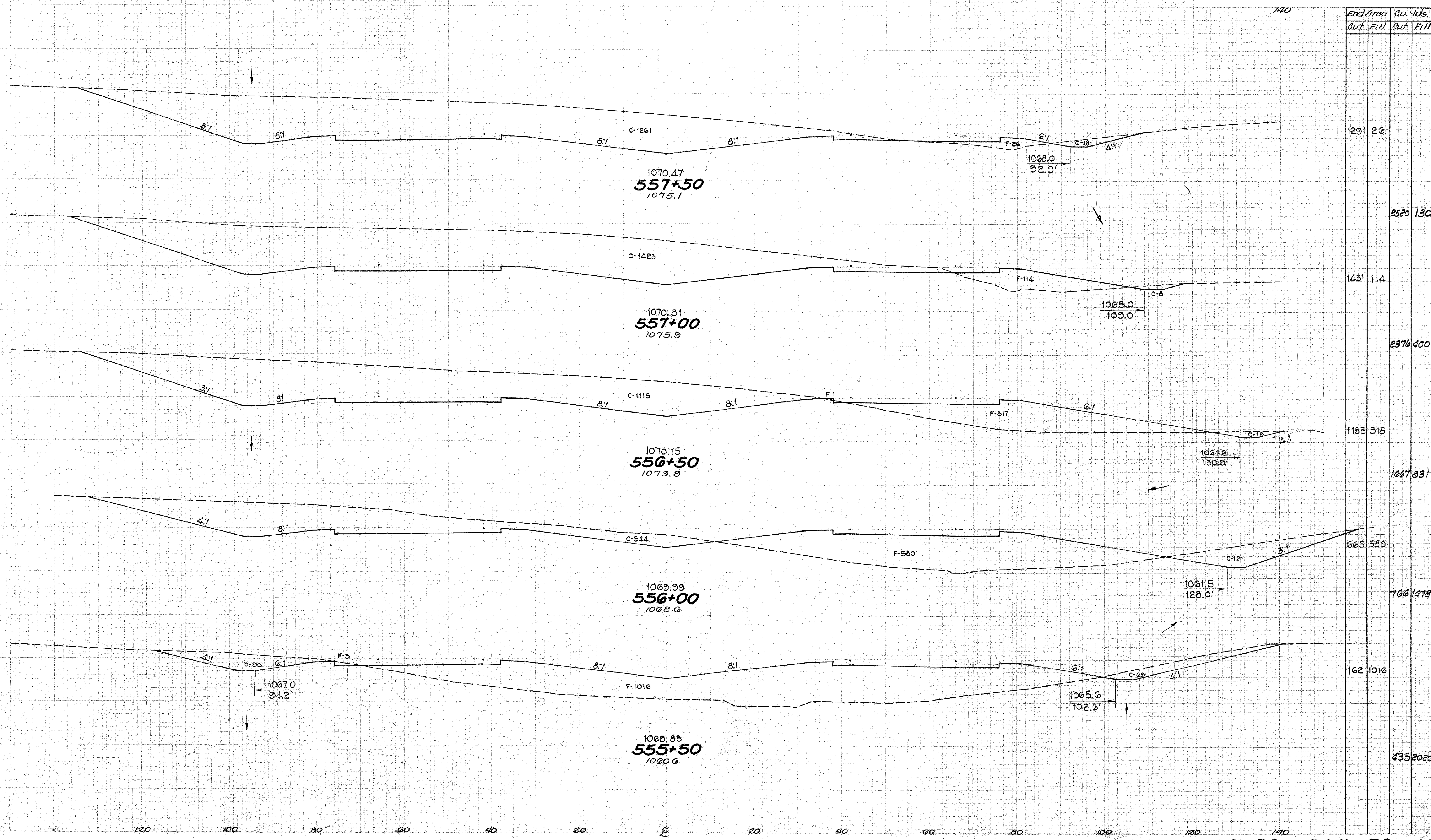


End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
308	1166		
		358	2336
79	1420		
		89	2584
17	1801		
		80	3004
69	1443		
		201	2562
148	1384		
		242	2270

553+00 - 555+00

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

LIC-70-(5.12-8.67)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
1291	26		
		2520	130
1431	114		
		2376	400
1155	318		
		1667	831
665	580		
		766	1478
162	1016		
		435	2020

555+50 - 557+50

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

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

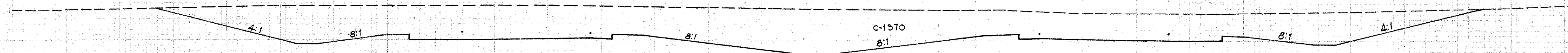
FED. RD DISTRICT	STATE	PROJECT
2	OHIO	

63
250

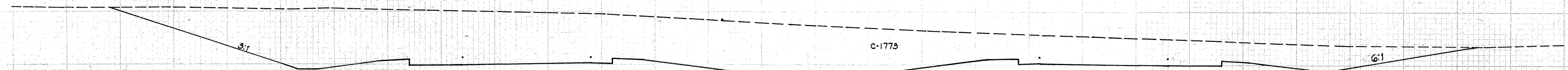
LIC-70-(5.12-8.67)

140

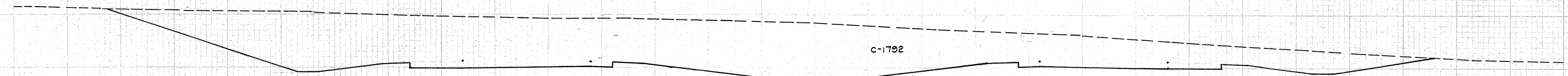
End Area	Cu. Yds	
	Out	Fill
1370	0	
		2910 0
1773	0	
		3301 0
1792	0	
		3180 0
1642	0	
		3168 0
1781	0	
		2552 10
1450	11	
		2538 34



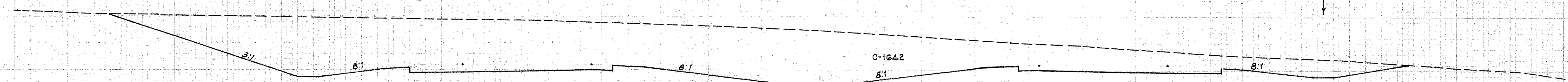
1071.43
560+50
1075.9



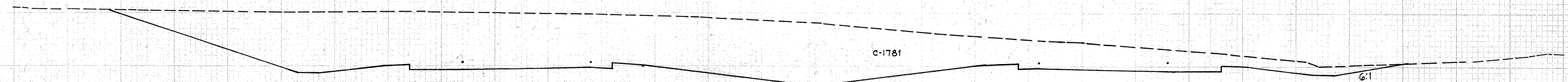
1071.27
560+00
1077.4



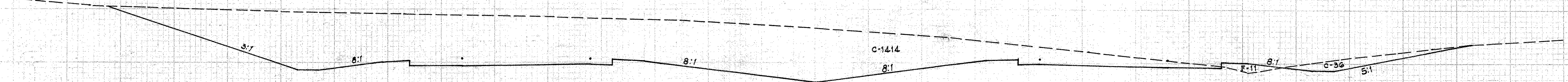
1071.11
559+50
1078.4



1070.95
559+00
1077.4



1070.79
558+50
1078.1



1070.63
558+00
1076.5

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

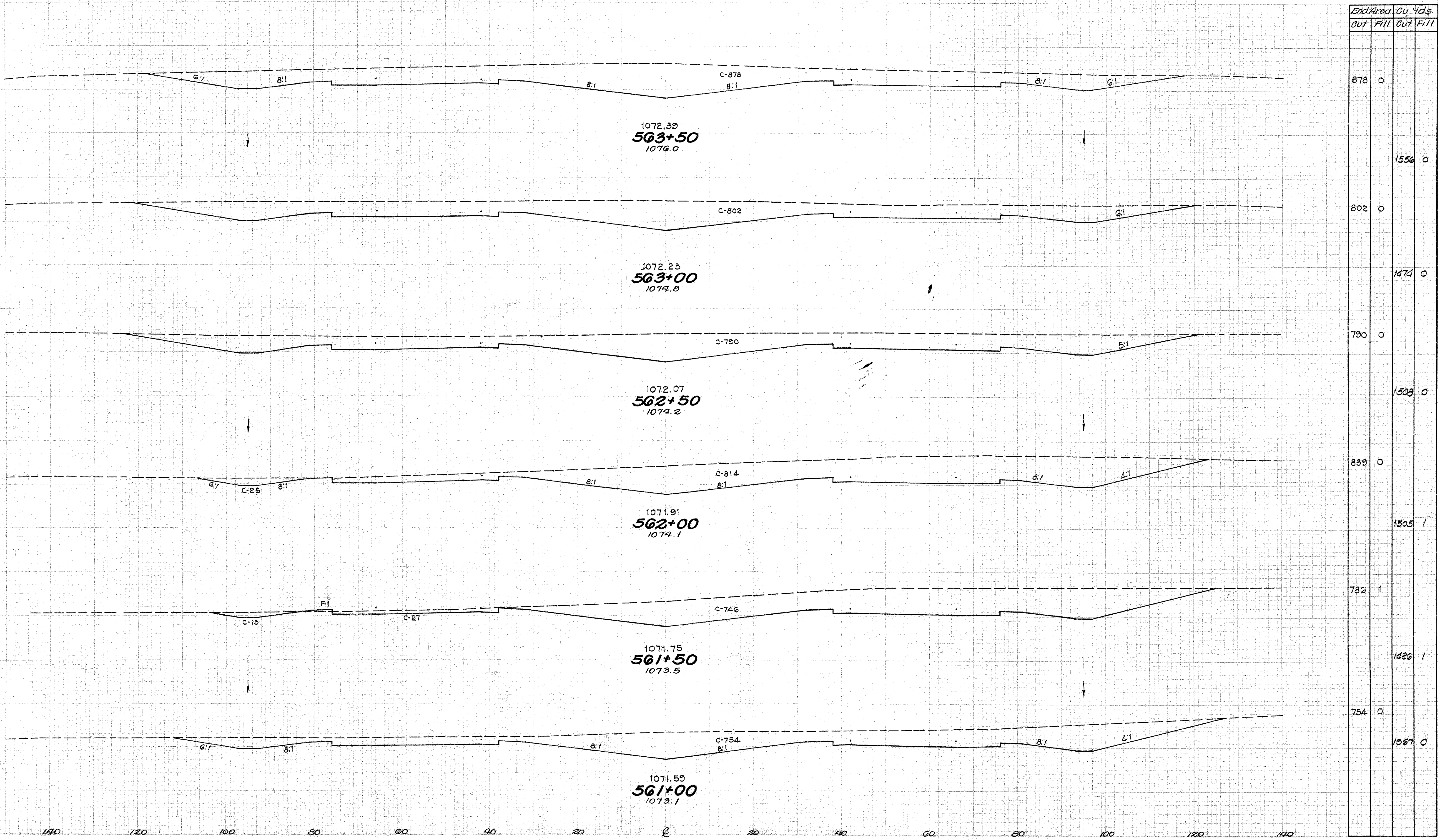
558+00 - 560+50

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

64
250

LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Out	Fill
878	0	1556
802	0	1471
790	0	1508
839	0	1505
786	1	1426
754	0	1567

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

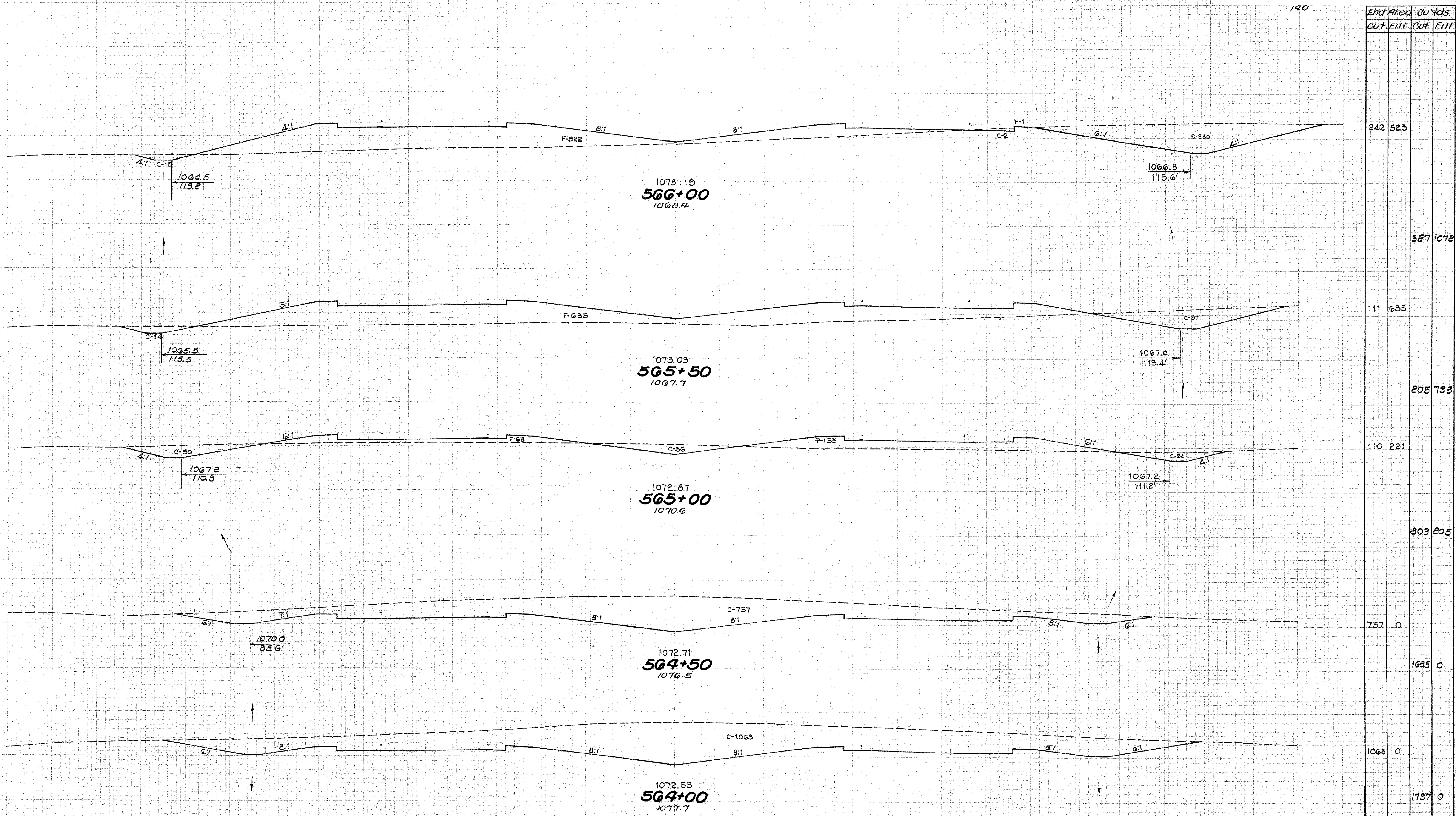
561+00 - 563+50

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

LIC-70-(5.12-8.67)

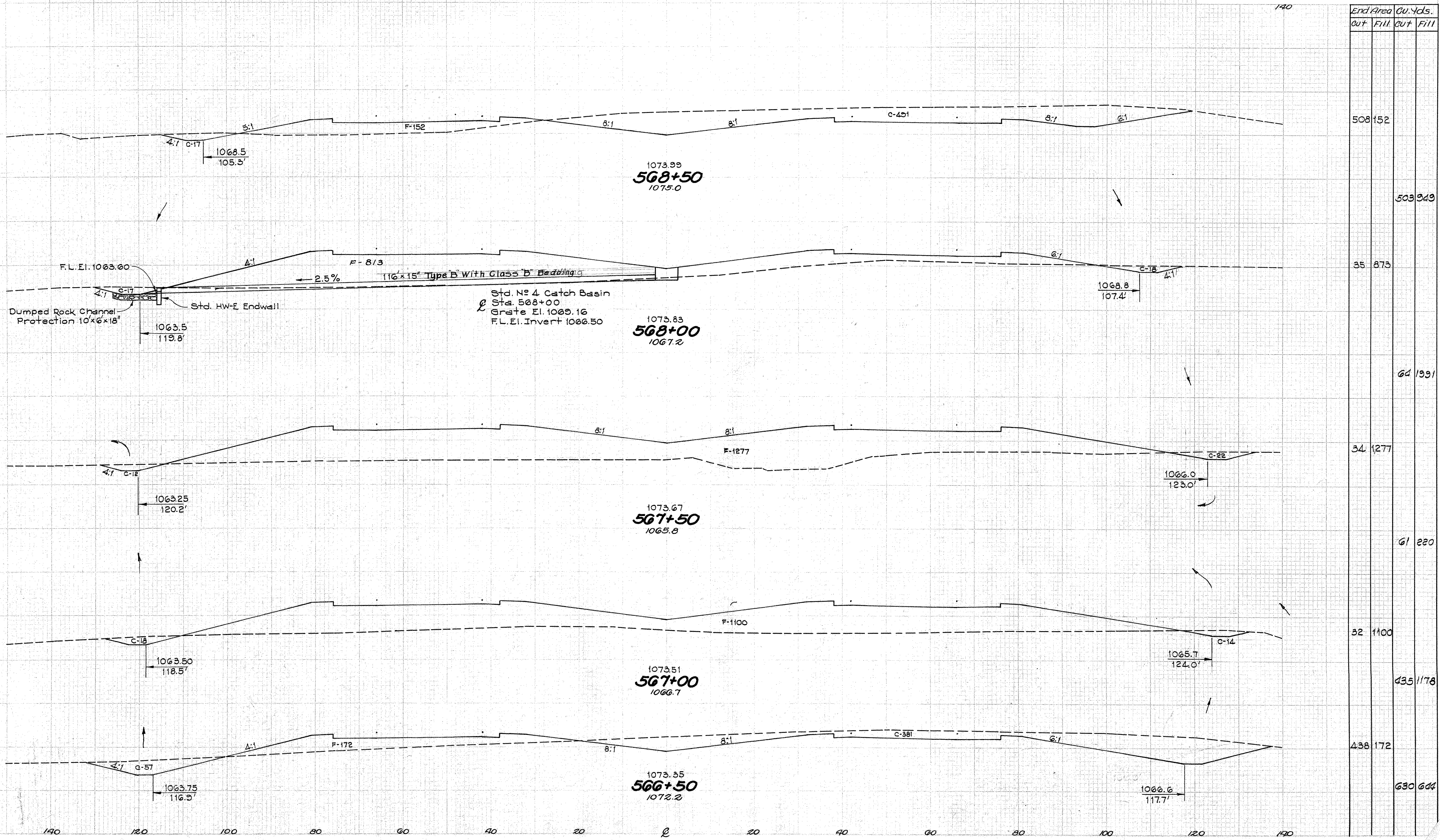
65
250



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
242	523		
		327	1072
111	635		
		205	793
110	221		
		803	205
757	0		
		1635	0
1063	0		
		1797	0

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

564+00 ~ 566+00



End Area	Cu. Yds.	
	Out	Fill
508	152	
503	349	
35	873	
64	1991	
34	1277	
61	220	
32	1100	
435	1178	
438	172	
630	644	

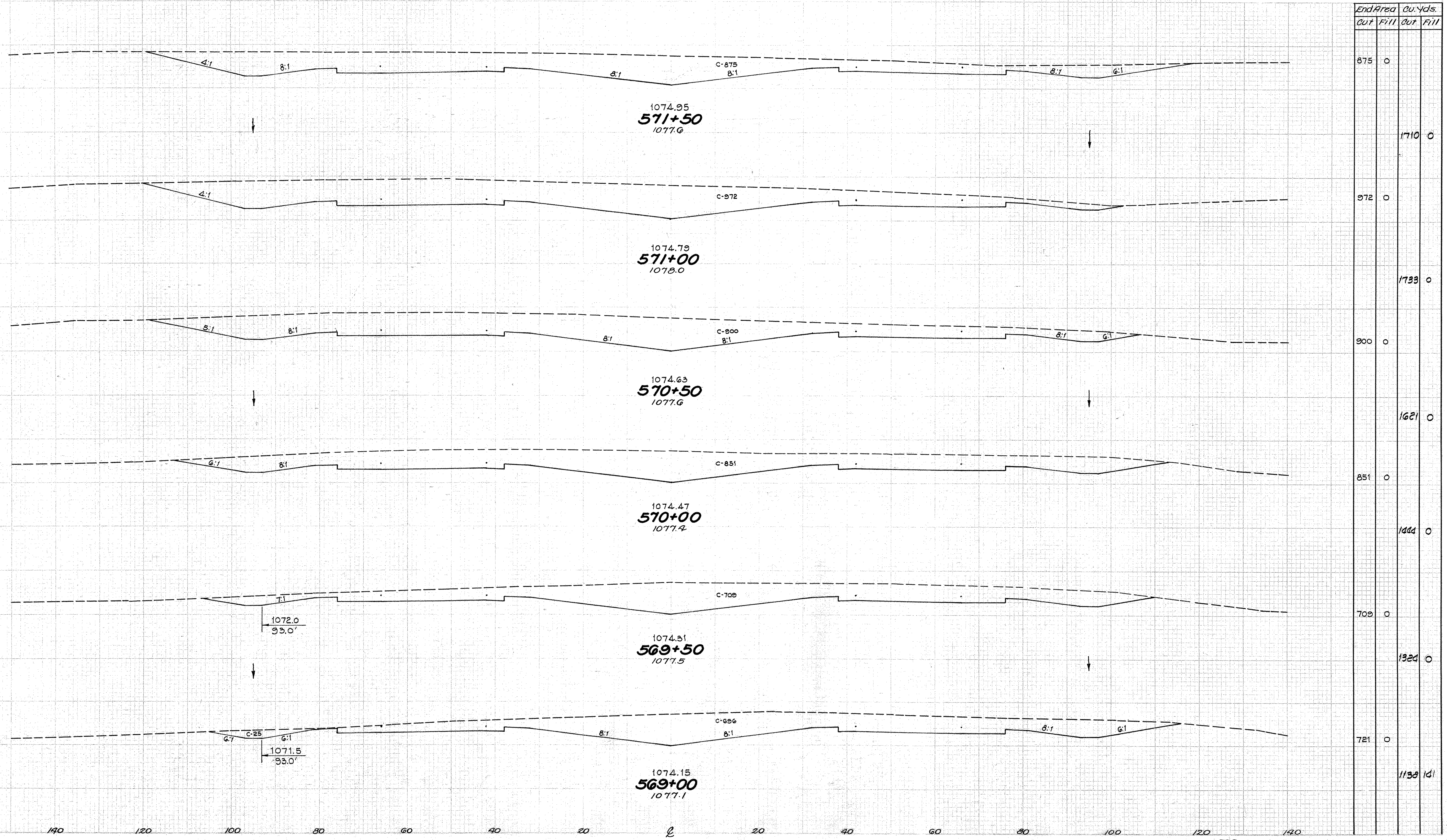
566+50-568+50

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

67
250

LIC-70-(5.12-8.67)

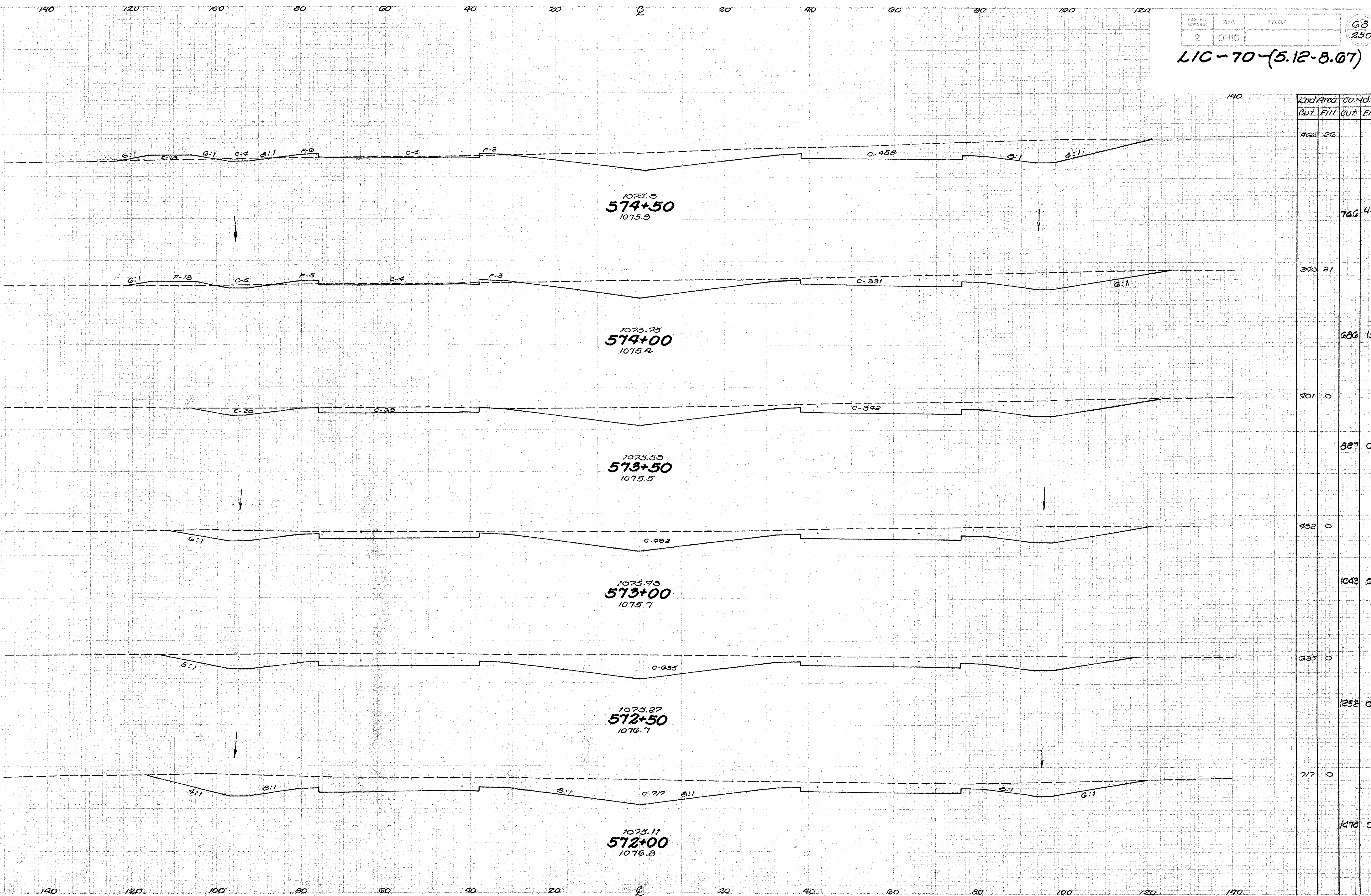


End Area		Cu. Yds.	
Out	Fill	Out	Fill
875	0		
		1710	0
972	0		
		1733	0
900	0		
		1621	0
851	0		
		1884	0
709	0		
		1324	0
721	0		
		1139	101

569+00 ~ 571+50

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

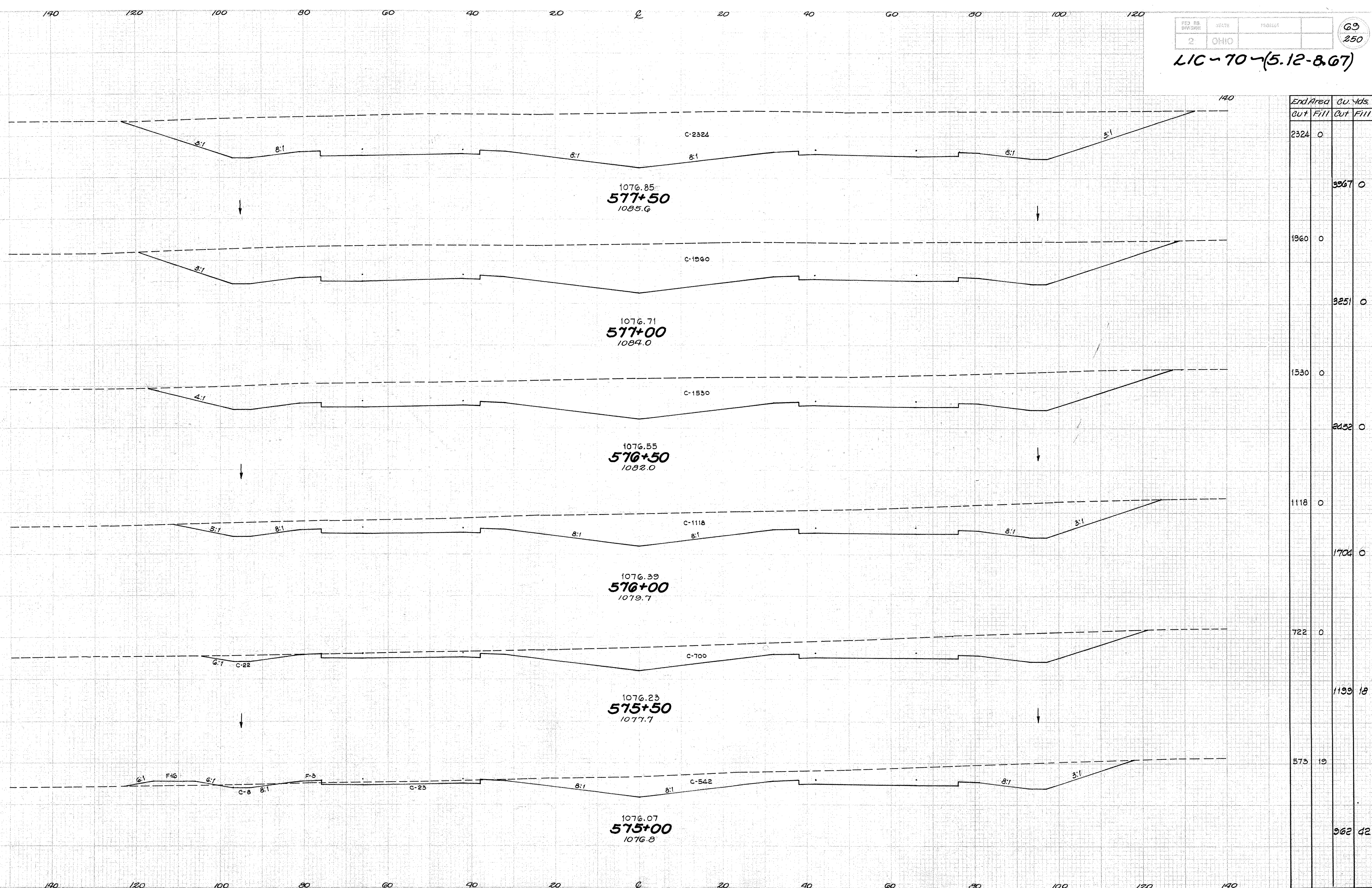
LIC-70-(5.12-8.07)



End Area		Cu. Yds	
Out	Fill	Out	Fill
466	26		
		746	44
390	21		
		686	19
401	0		
		827	0
482	0		
		1043	0
635	0		
		1252	0
717	0		
		1474	0

572+00 ~ 574+50

LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Out	Fill
2324	0	
		3367
1960	0	
		3251
1530	0	
		2452
1118	0	
		1704
722	0	
		1139
573	19	
		362
		42

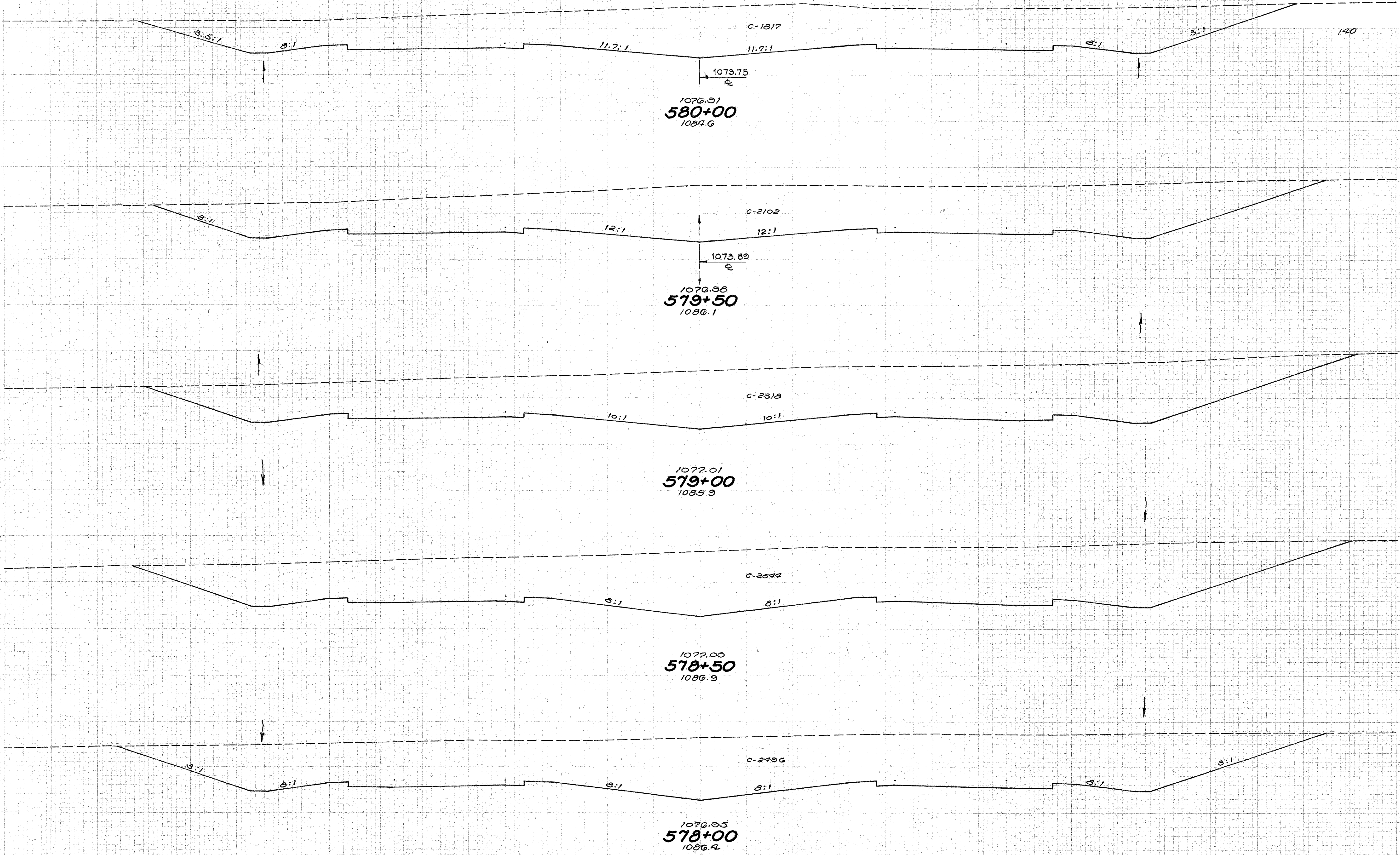
575+00 ~ 577+50

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

PER. NO.	STATE	PROJECT
2	OHIO	

70
250

LIC-70-(5.12-8.67)

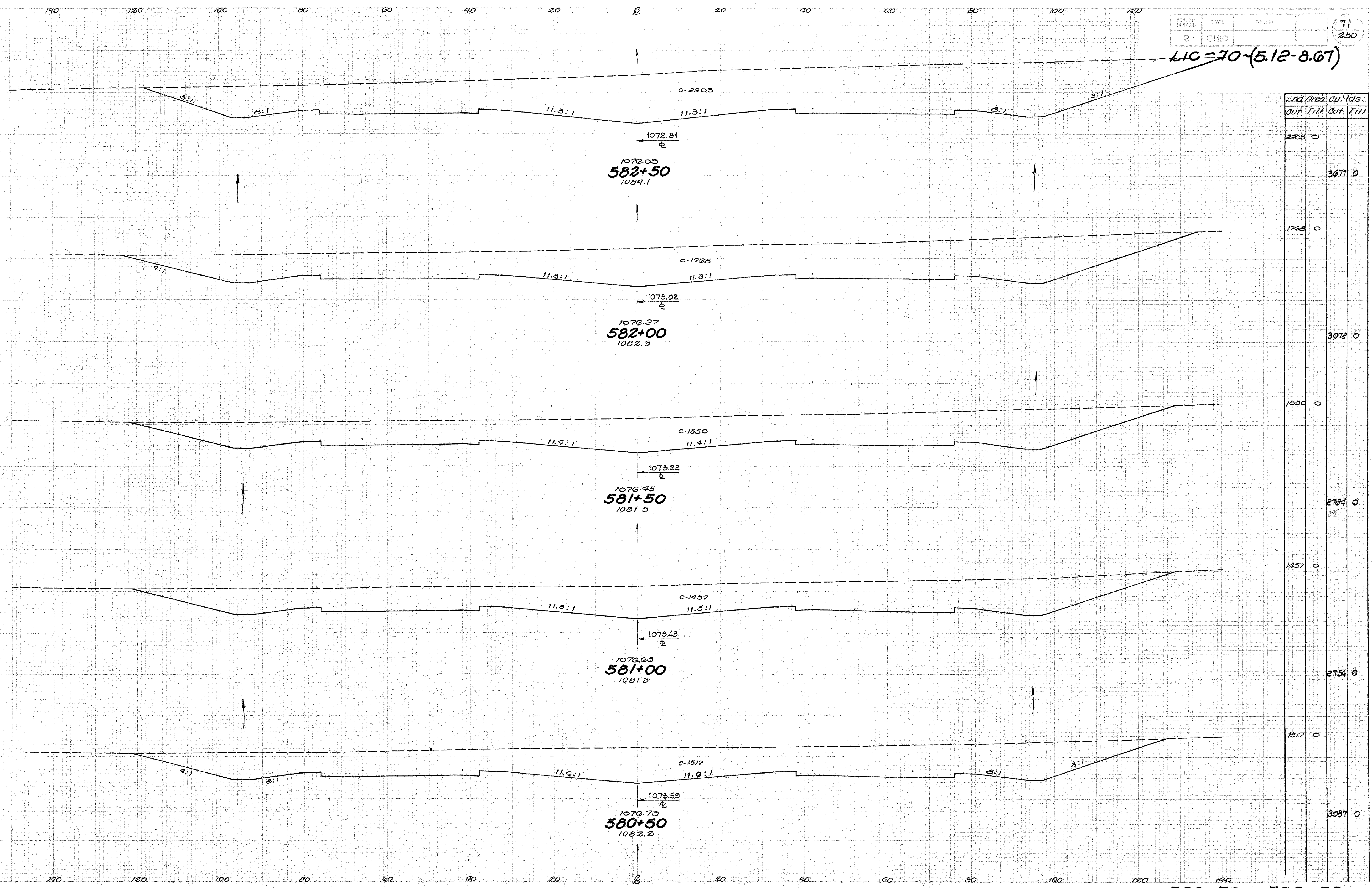


Sta.	End Area		Cu. Yds.	
	Out	Fill	Out	Fill
1817	0	0	0	0
2102	0	0	3623	0
2365	0	0	4092	0
2544	0	0	4502	0
2596	0	0	4667	0
2496	0	0	4463	0

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

578+00 ~ 580+00

LIC = 70-(5.12-8.67)

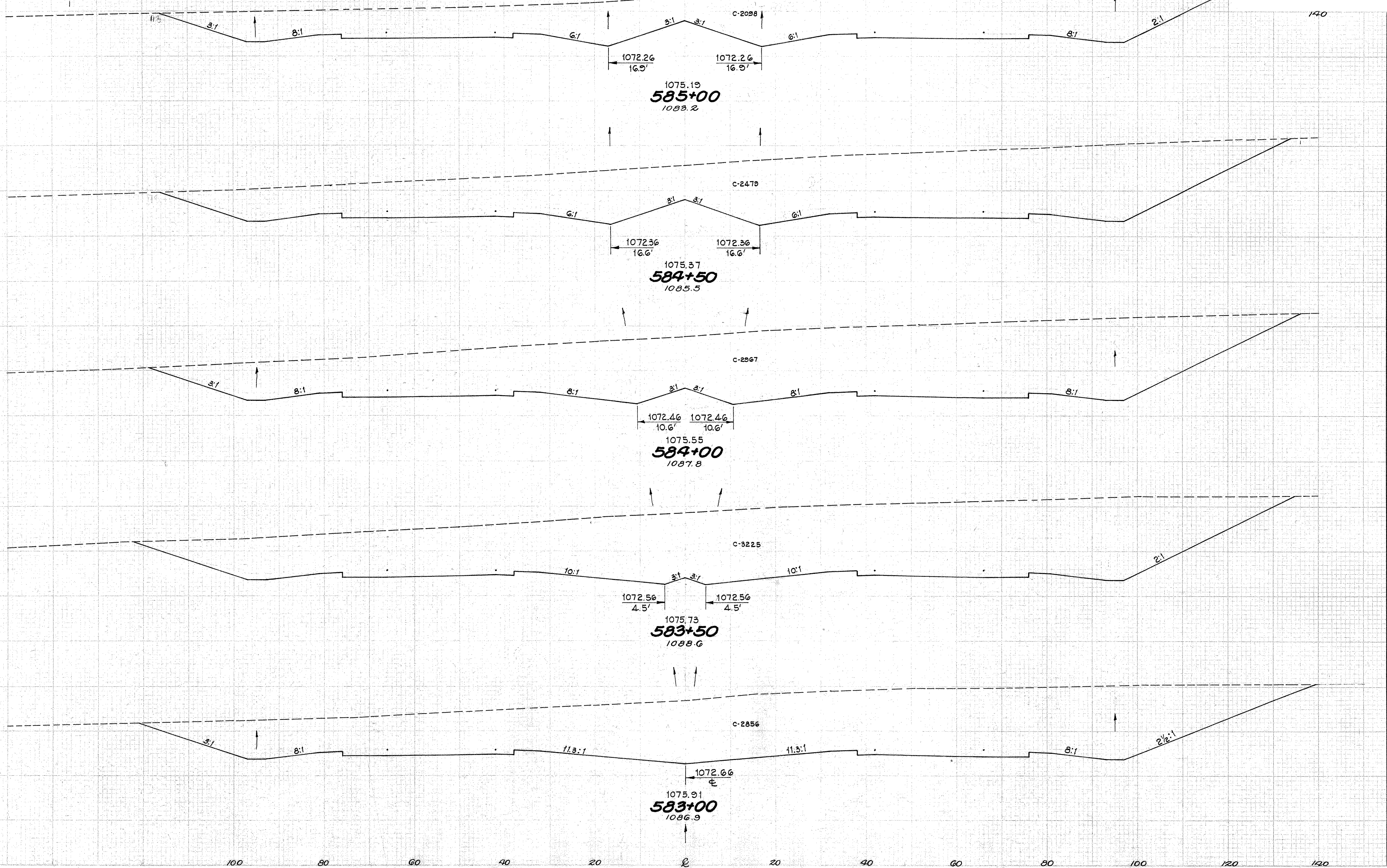


End Area	Cu. Yds.	
	Out	Fill
2203	0	3671
1768	0	3078
1550	0	2784
1457	0	2754
1517	0	3087

580+50 ~ 582+50

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

K10-70-(5.12-8.67)



End Area	Cu. Yds	
	Out	Fill
2098	0	
2479	0	4238
2967	0	5042
3225	0	5739
3630	0	5630
2856	0	6684

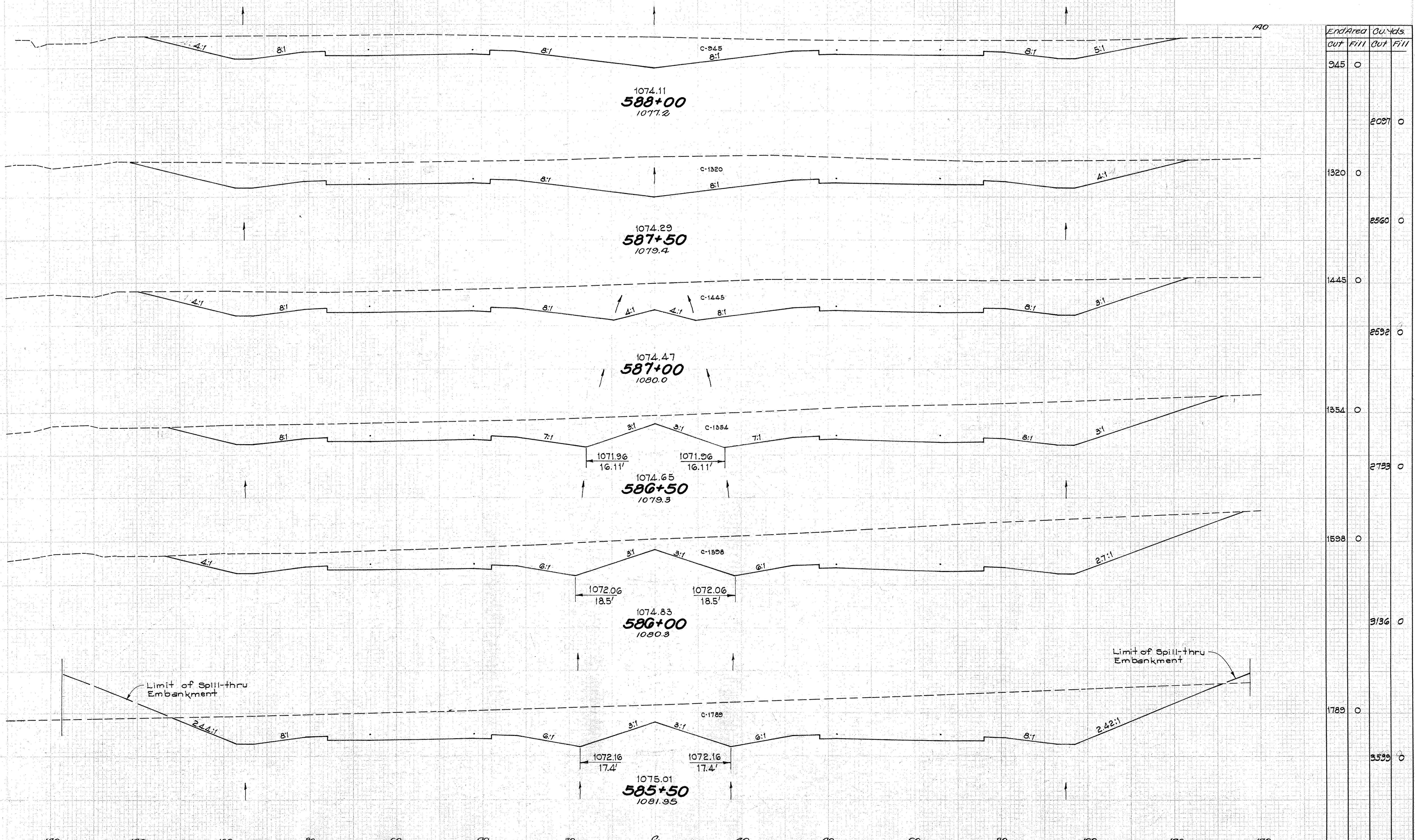
583+00 ~ 585+00

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

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

73
250

LIC-704(5.12-8.67)

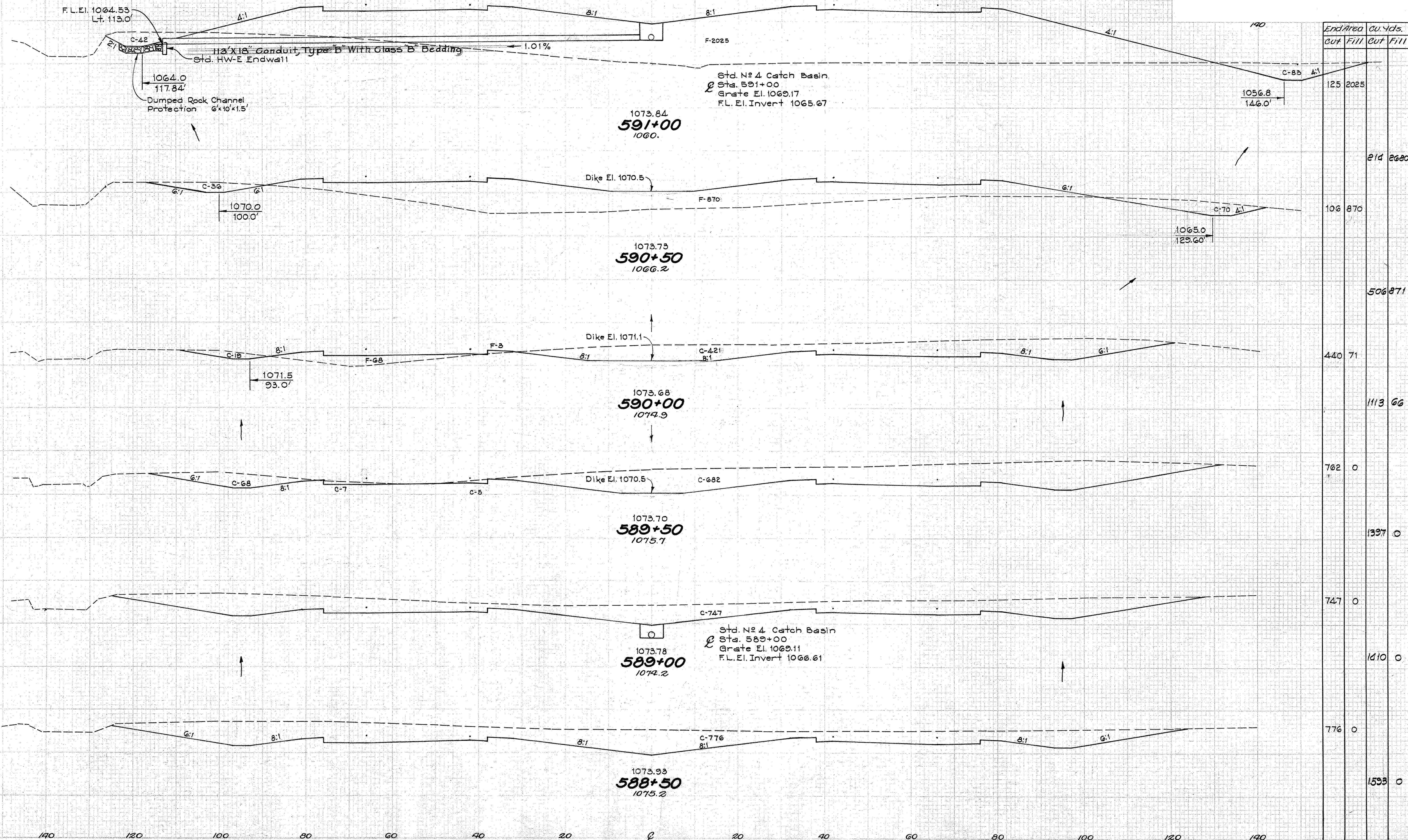


End Area	Cu. Yds.	
	Out	Fill
945	0	
1320	0	2097
1445	0	2560
1354	0	2592
1598	0	2733
1789	0	3136
		3599

585+50 ~ 588+00

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

LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
591+00	125	2025		
590+50	106	870	214	2680
590+00	440	71	506	871
589+50	762	0	1113	66
589+00	747	0	1397	0
588+50	776	0	1410	0
			1533	0

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

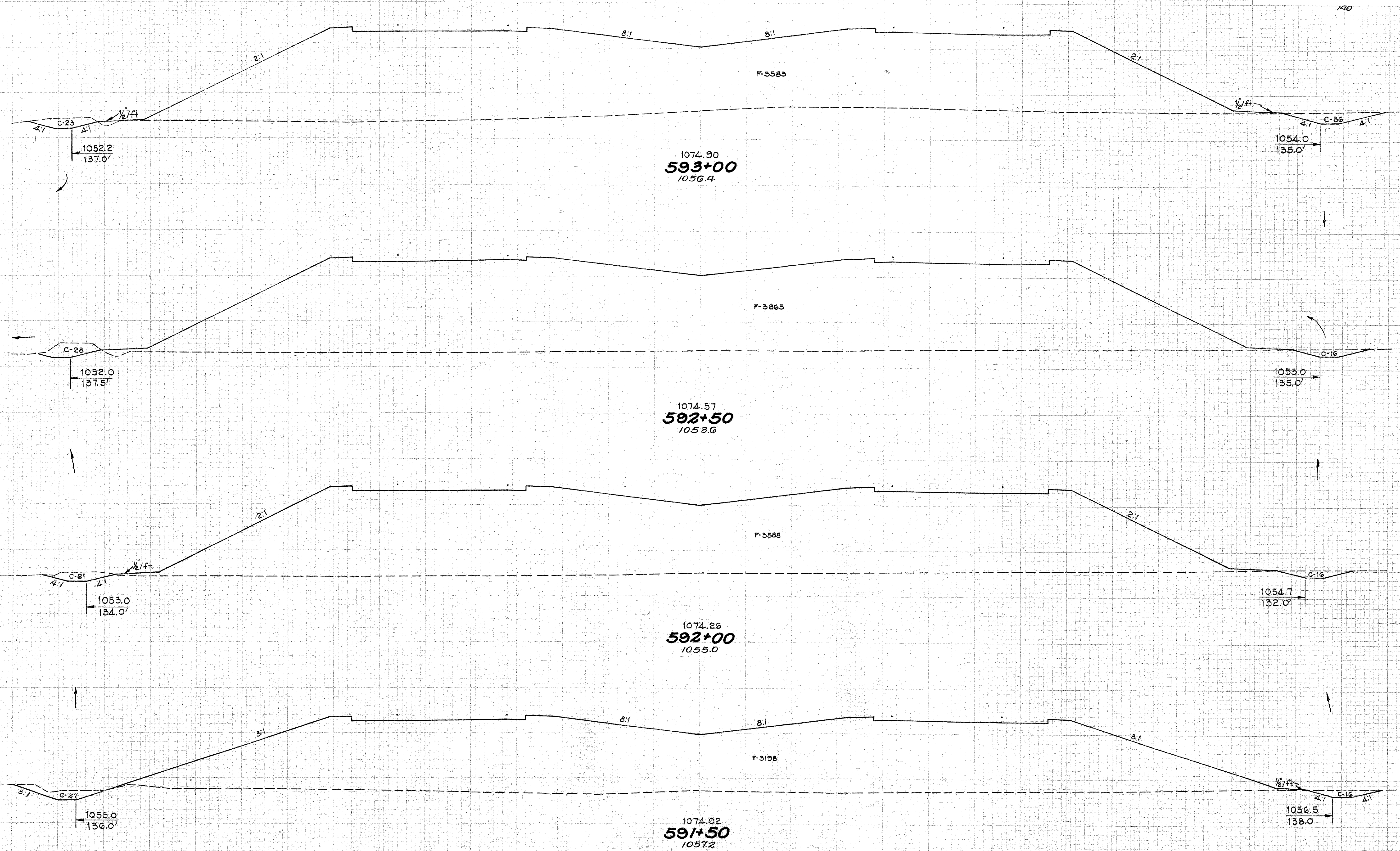
588+50-591+00

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

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

75
250

LIC-70-(5.12-8.07)

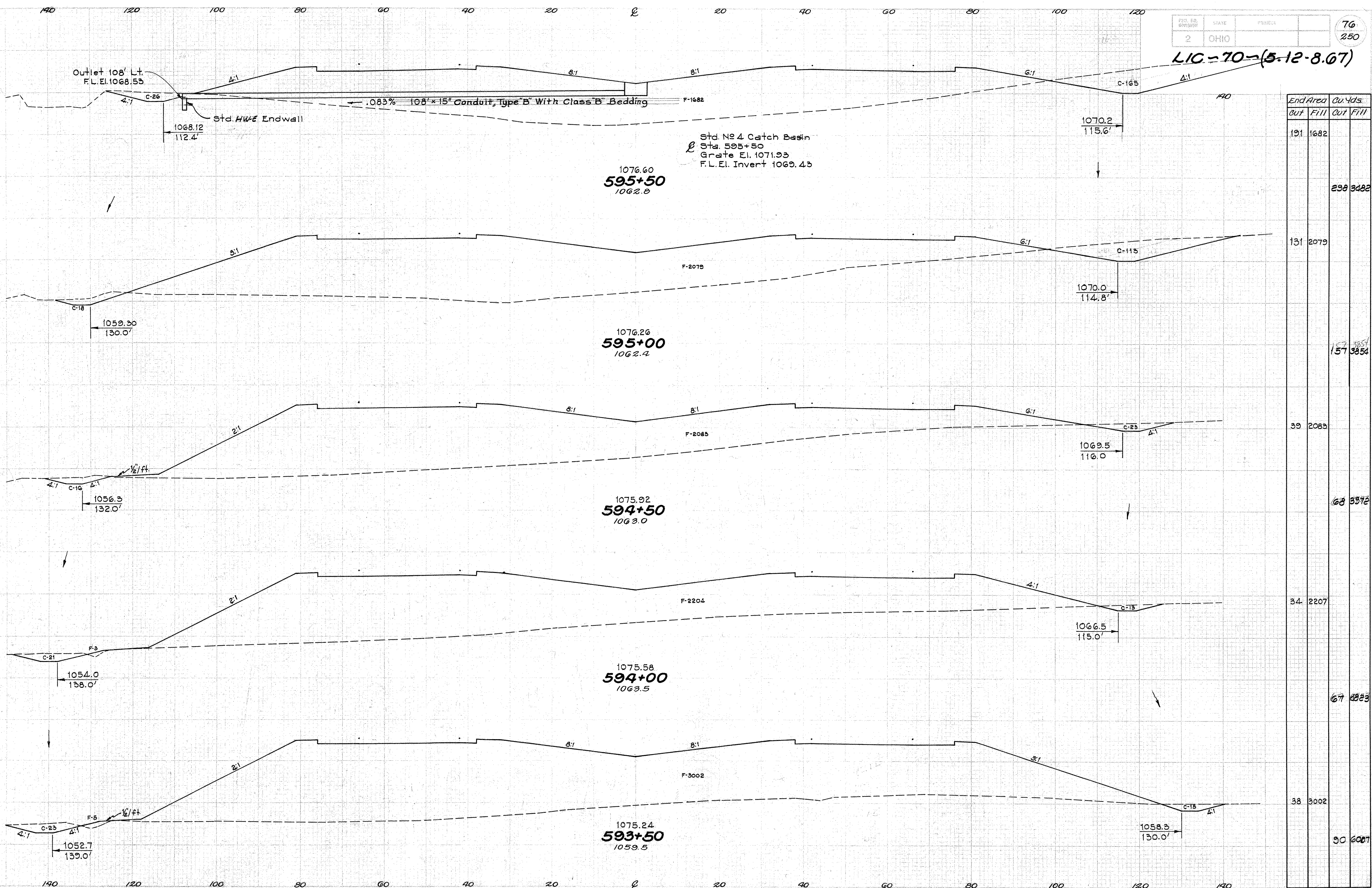


End Area	Cu. Yds.	
	Cut	Fill
59	3583	
		95 6896
44	3865	
		75 6901
37	3588	
		74 6283
43	3198	
		156 4896

591+50 - 593+00

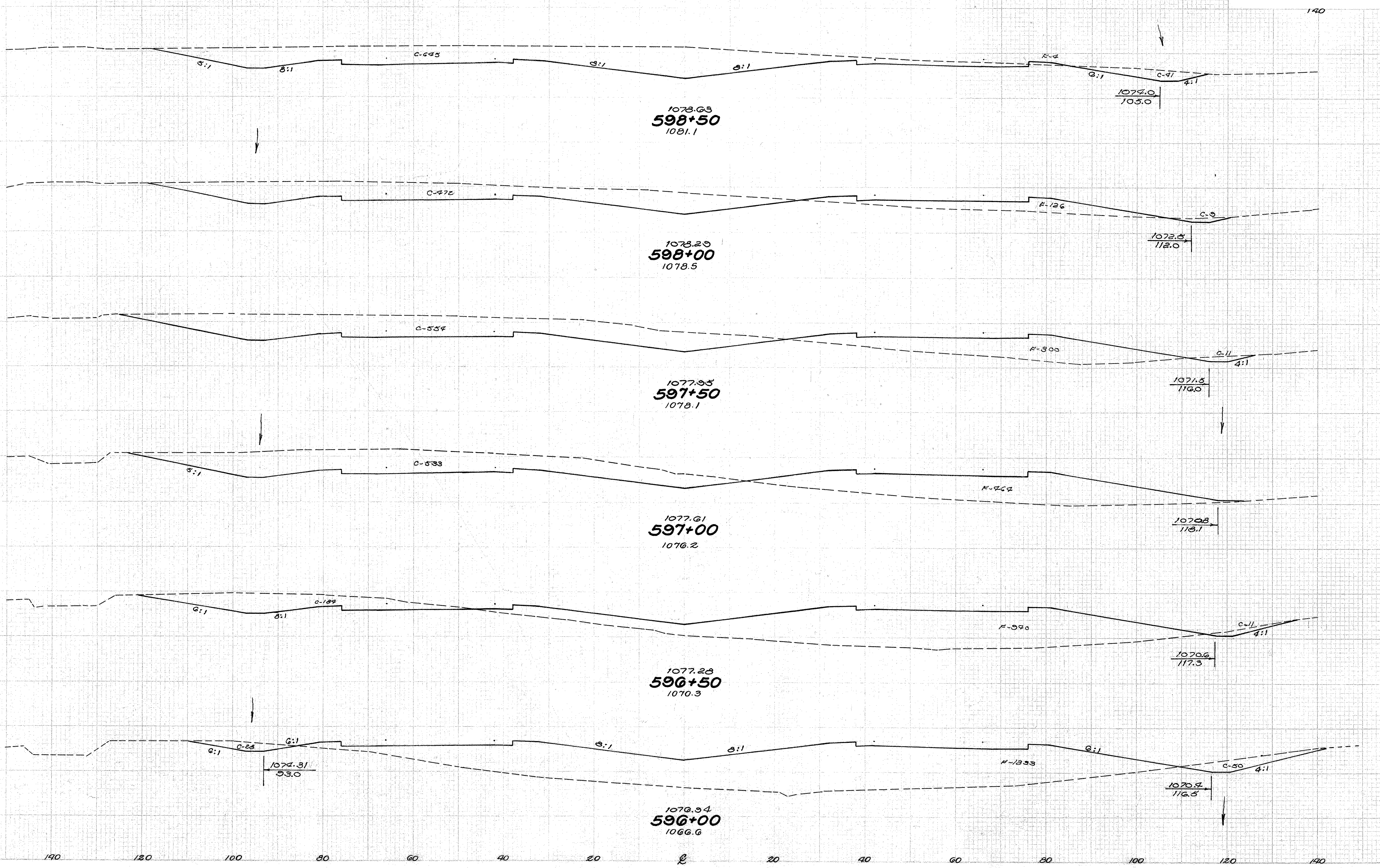
140 120 100 80 60 40 20 0 20 40 60 80 100 120

LIC-70-(5-12-8.67)



Sta.	End Area		Cu Yds.	
	Out	Fill	Out	Fill
191	1682			
			298	3482
131	2079			
			157	3854
39	2083			
			68	3372
34	2207			
			67	4823
38	3002			
			90	6087

593+50 ~ 595+50



End Area		Cu. Yds.	
Out	Fill	Out	Fill
685	4	1080	120
481	126	372	394
570	300	1011	707
513	467	656	1300
105	370	253	2012
73	1233	219	2639

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

78
250

LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Out	Fill
1091	0	
		2230
1332	0	
		2566
1821	0	
		3258
1698	0	
		2785
1310	0	
		2090
936	0	
		1501

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

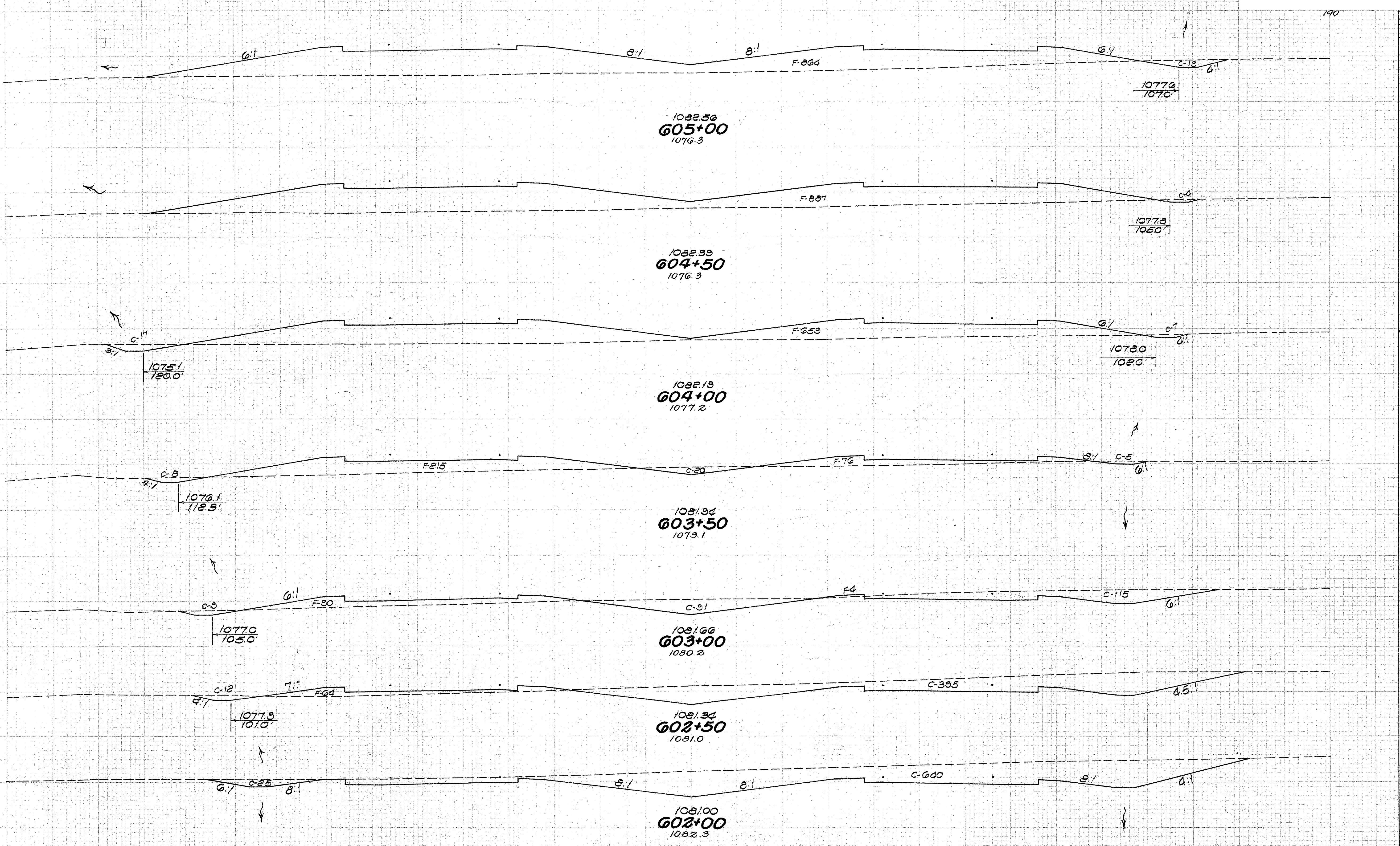
599+00-601+50

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

FED. DIV.	STATE	PROJECT
2	OHIO	

79
250

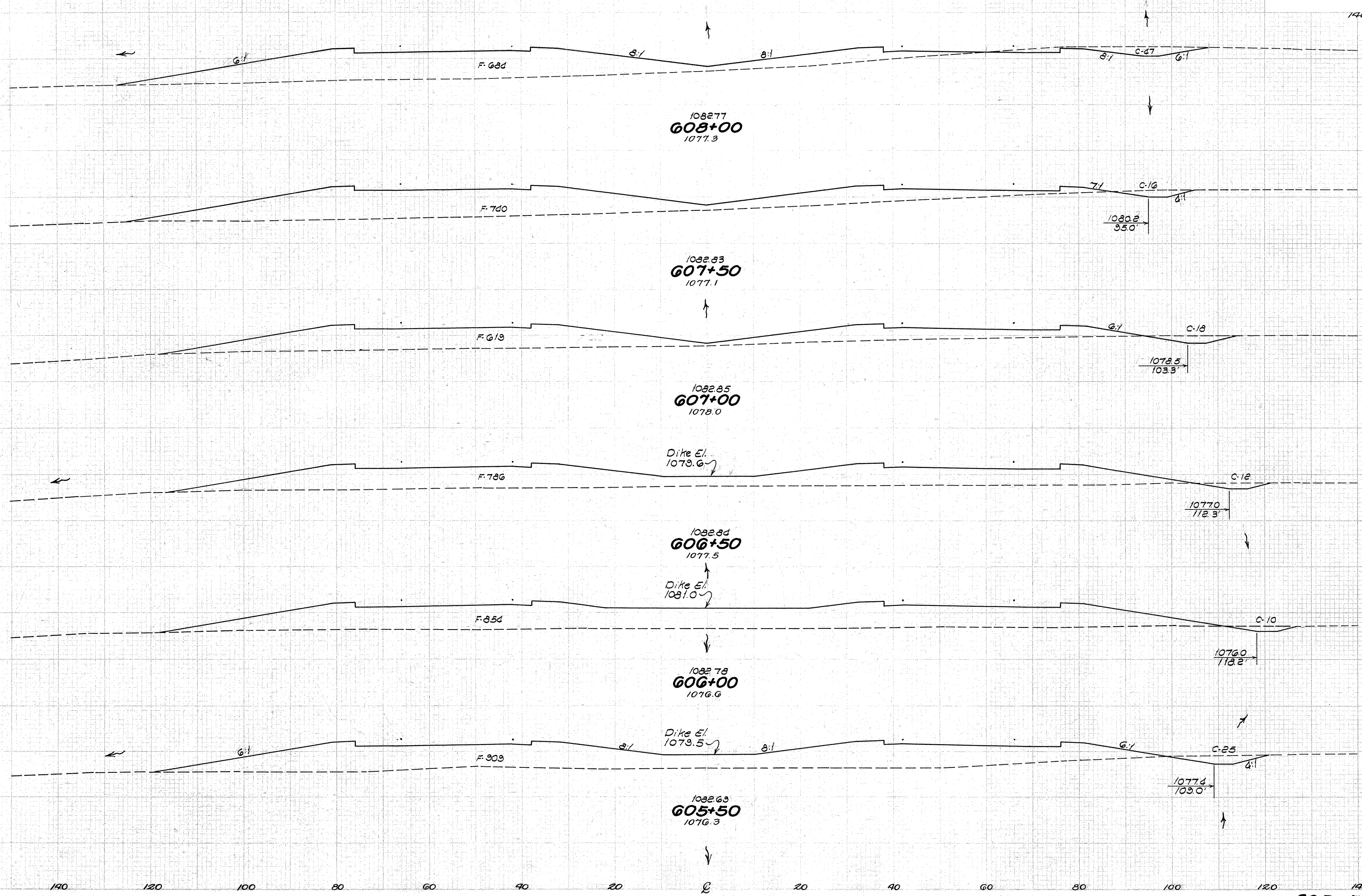
LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Out	Fill
19 864		
	21	1621
4 887		
	26	1431
24 659		
	53	880
33 291		
	230	356
215 94		
	576	146
407 64		
	993	59
665 0		
	1626	0

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
602+00-605+00

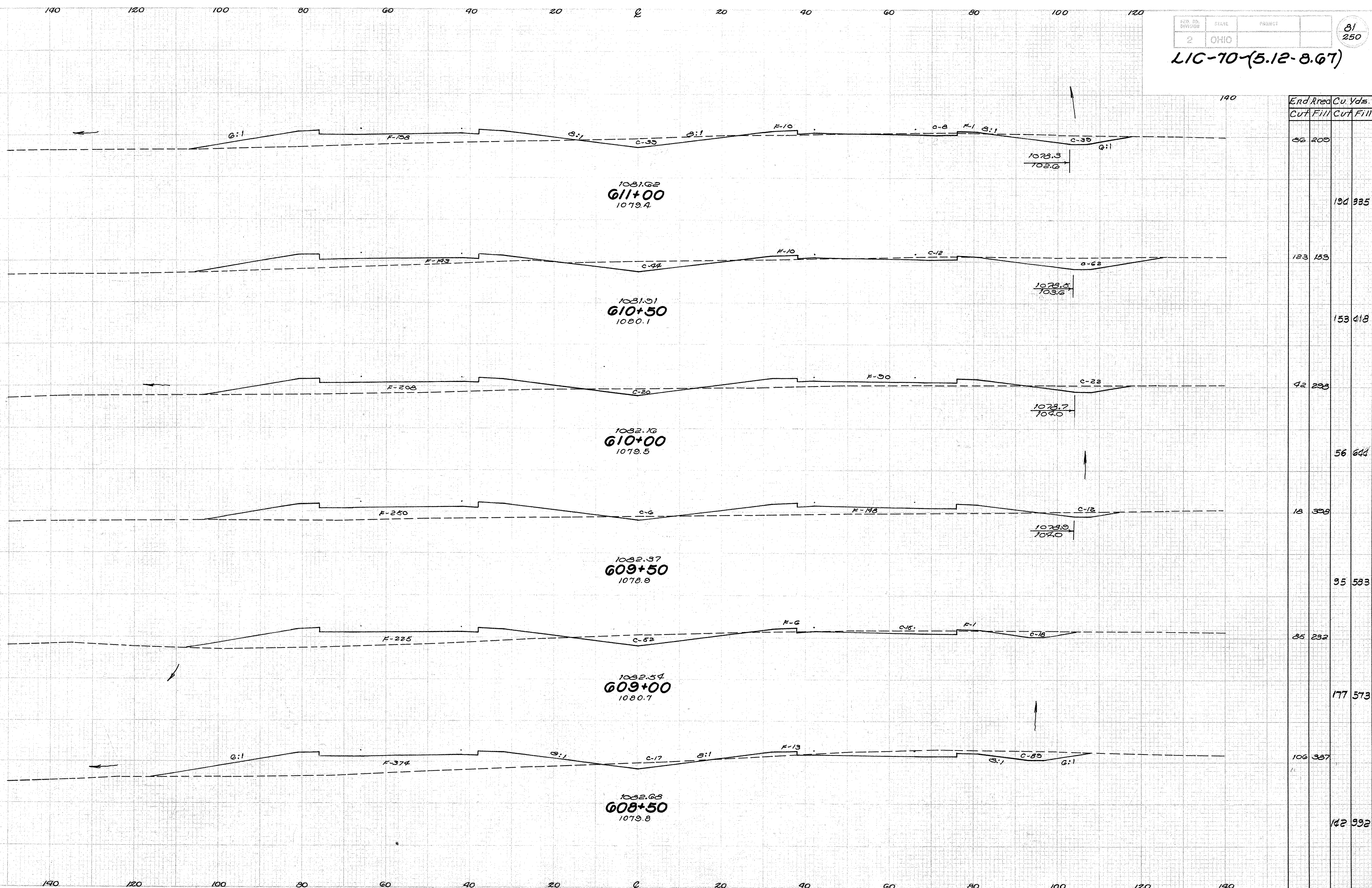
LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Out	Fill
47	684	
		58 1318
16	740	
		31 1258
18	619	
		28 1301
12	780	
		20 1518
10	854	
		32 1632
25	909	
		41 1642

605+50 - 608+00

LIC-70-(5.12-8.67)



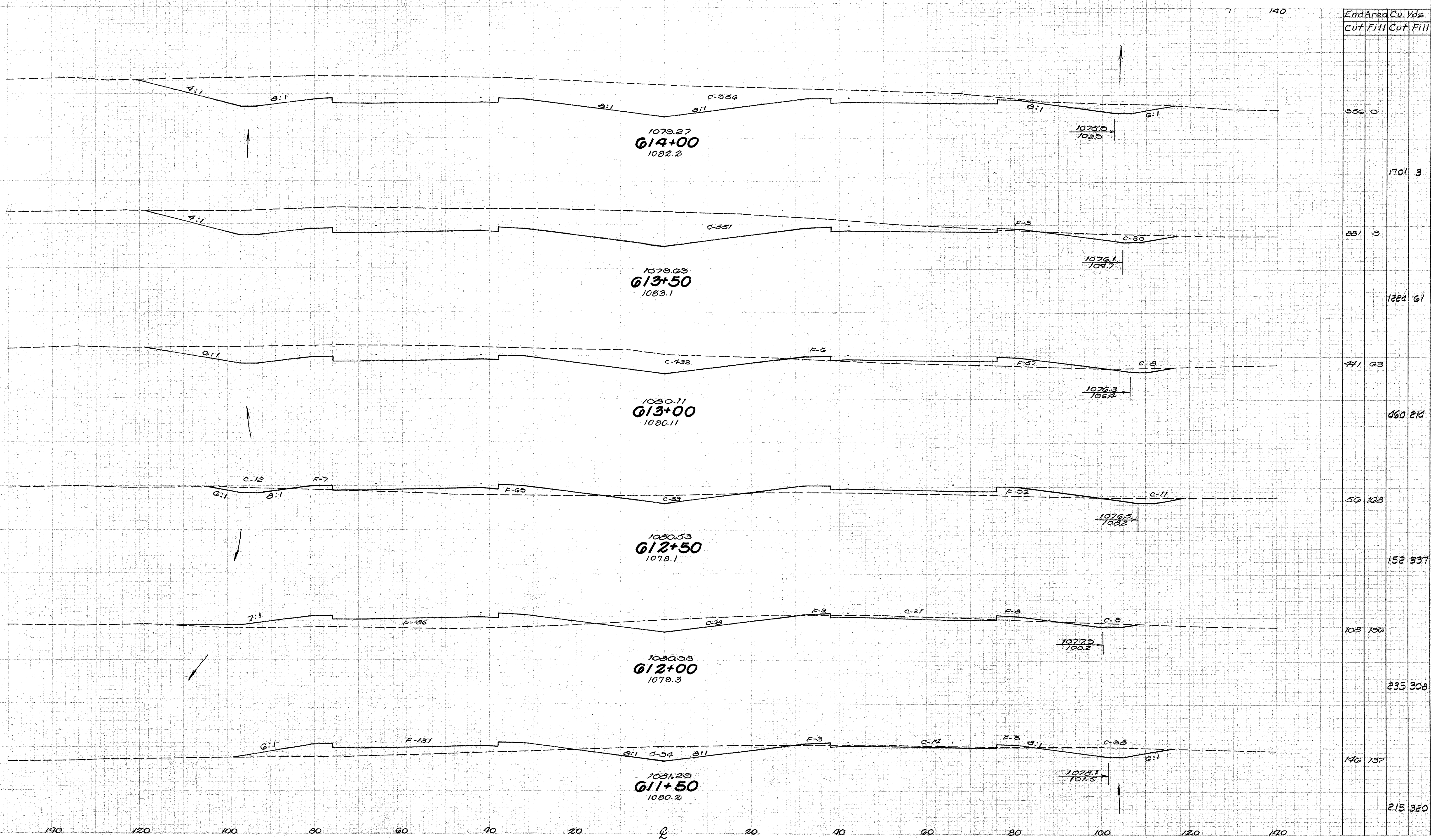
Sta.	Elev. Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
611+00	36	200	194	335
610+50	123	153	153	418
610+00	42	293	56	644
609+50	18	358	95	583
609+00	85	232	177	573
608+50	106	337	142	592

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

82
250

LIC-70-(5.12-8.67)

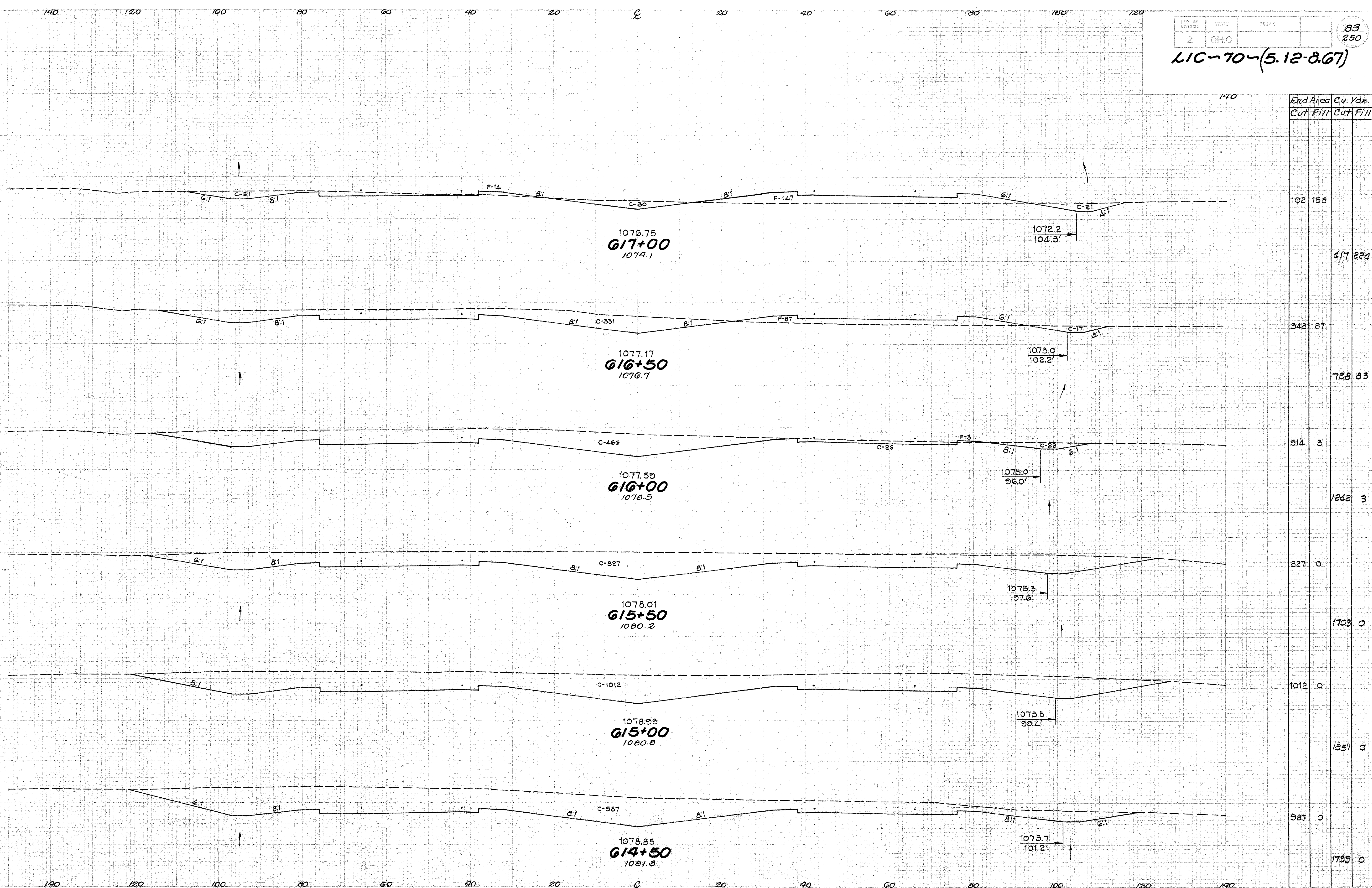


End Area	Cu. Yds.	
	Cut	Fill
956	0	
1701	3	
881	3	
1224	61	
441	23	
460	214	
56	128	
152	337	
103	196	
235	308	
146	137	
215	320	

611+50-614+00

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

LIC-704(5.12-8.67)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
102	155		
		417	224
348	87		
		758	83
514	3		
		1242	3
827	0		
		1703	0
1012	0		
		1851	0
987	0		
		1733	0

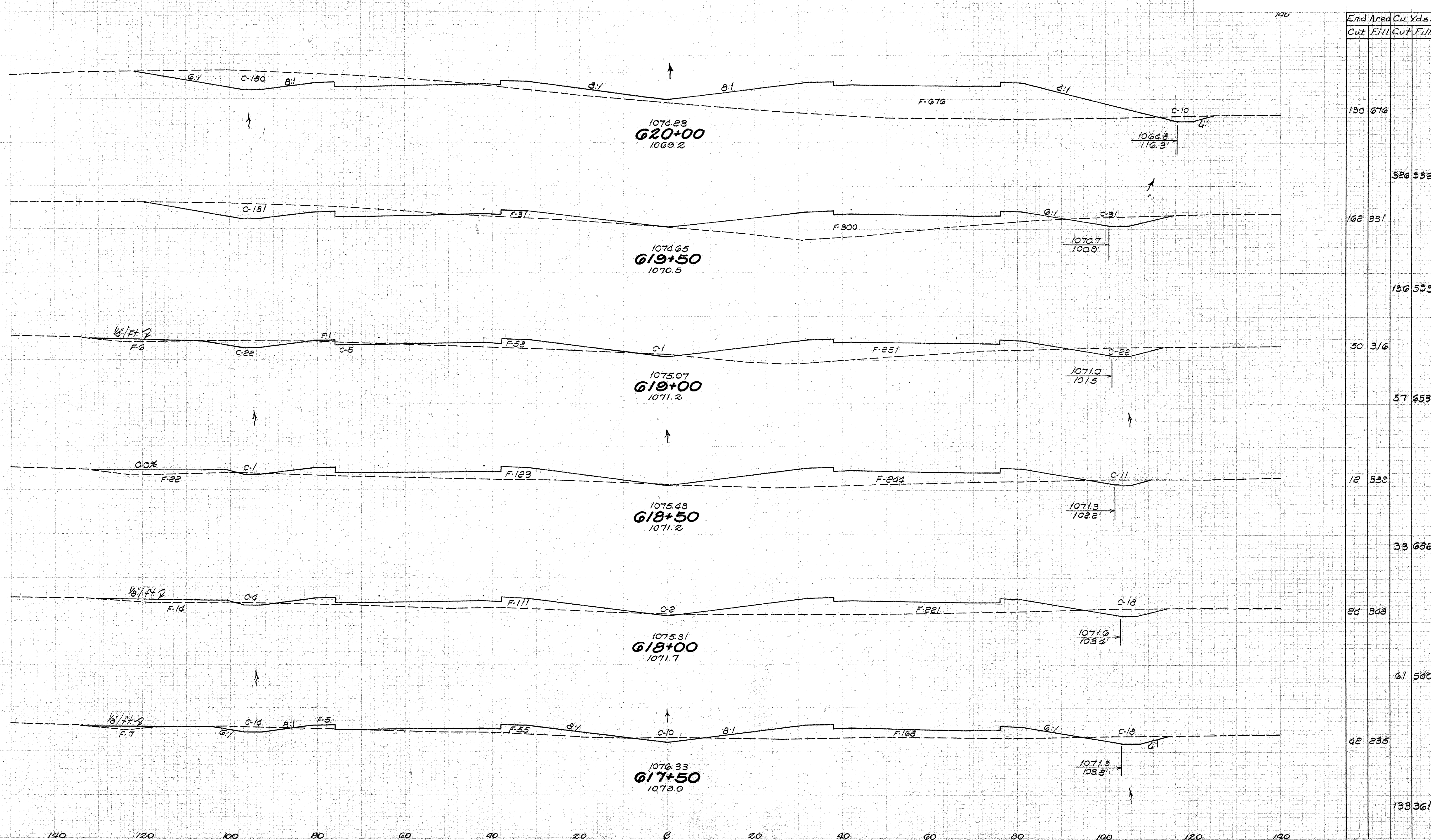
614+50 ~ 617+00

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

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

84
250

LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Cut	Fill
190	676	
	326	532
162	331	
	136	533
50	316	
	57	653
12	389	
	33	682
24	348	
	61	540
42	235	
	133	361

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

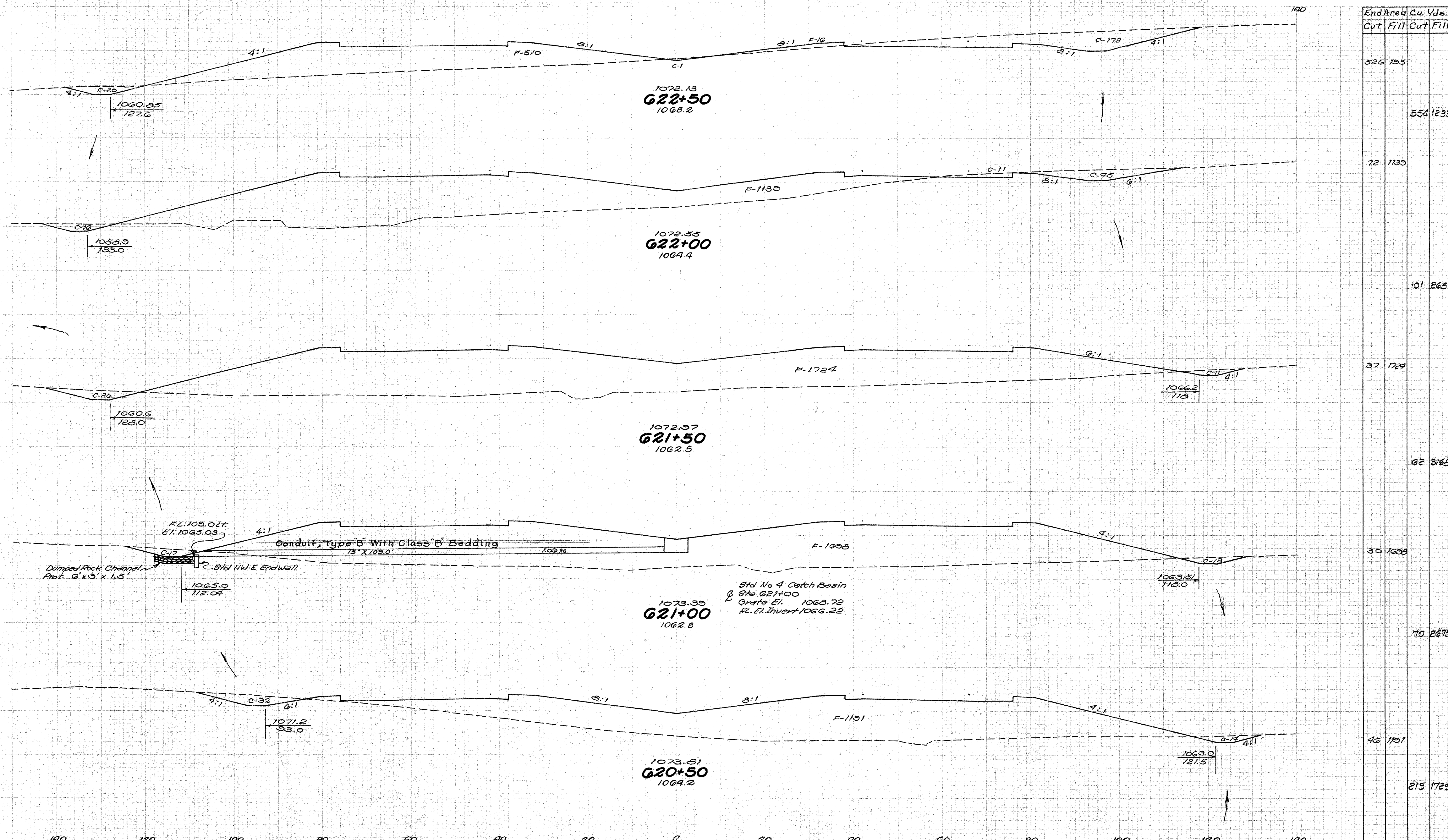
617+50-620+00

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

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

85
250

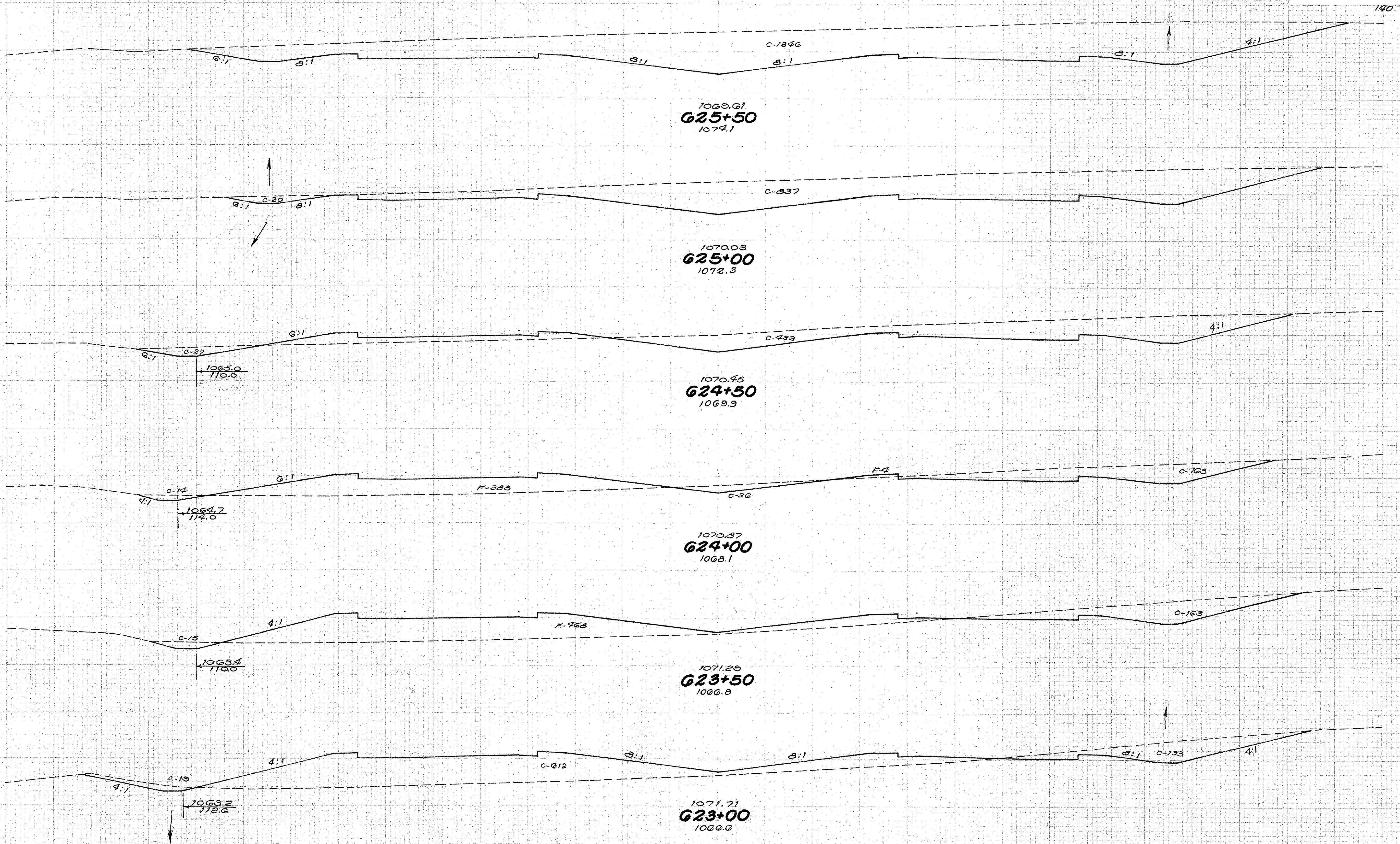
LIC-70-(5.12-8.67)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
326	293		
		554	1233
72	1139		
		101	2651
37	1724		
		62	3163
30	1699		
		70	2675
46	1191		
		219	1729

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

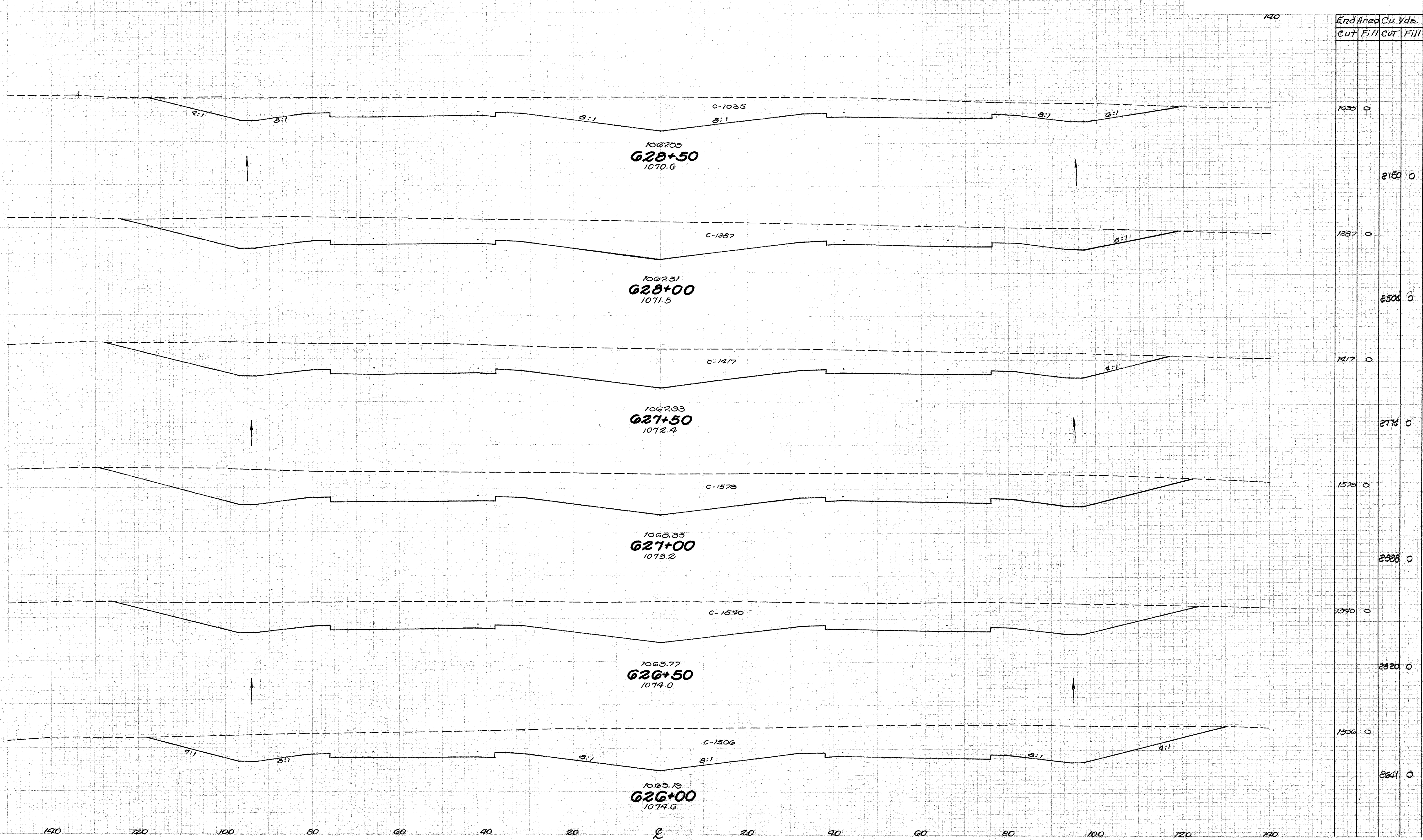
620+50 - 622+50



End Area	Cu. Yds.	
	Out	Fill
1346	0	
		2021 0
837	0	
		1201 75
460	81	
		614 341
203	287	
		353 639
178	468	
		306 1000
152	612	
		629 745

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

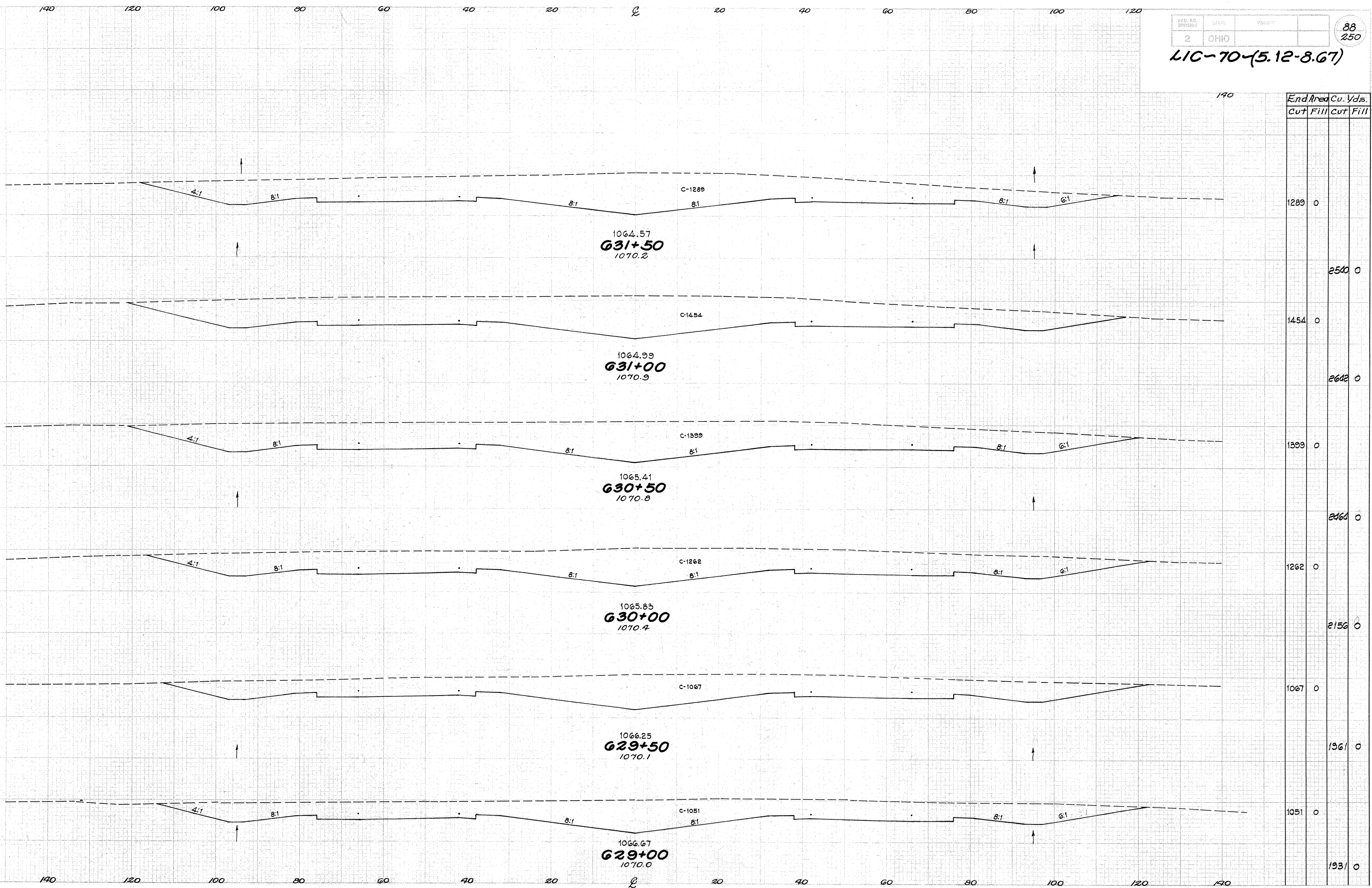
LIC-70-(5.12-8.67)



Station	Erod. Red. Cu. Yds.	
	Cut	Fill
1033.0	0	2150.0
1287.0	0	2500.0
1417.0	0	2770.0
1570.0	0	2888.0
1590.0	0	2820.0
1506.0	0	2641.0

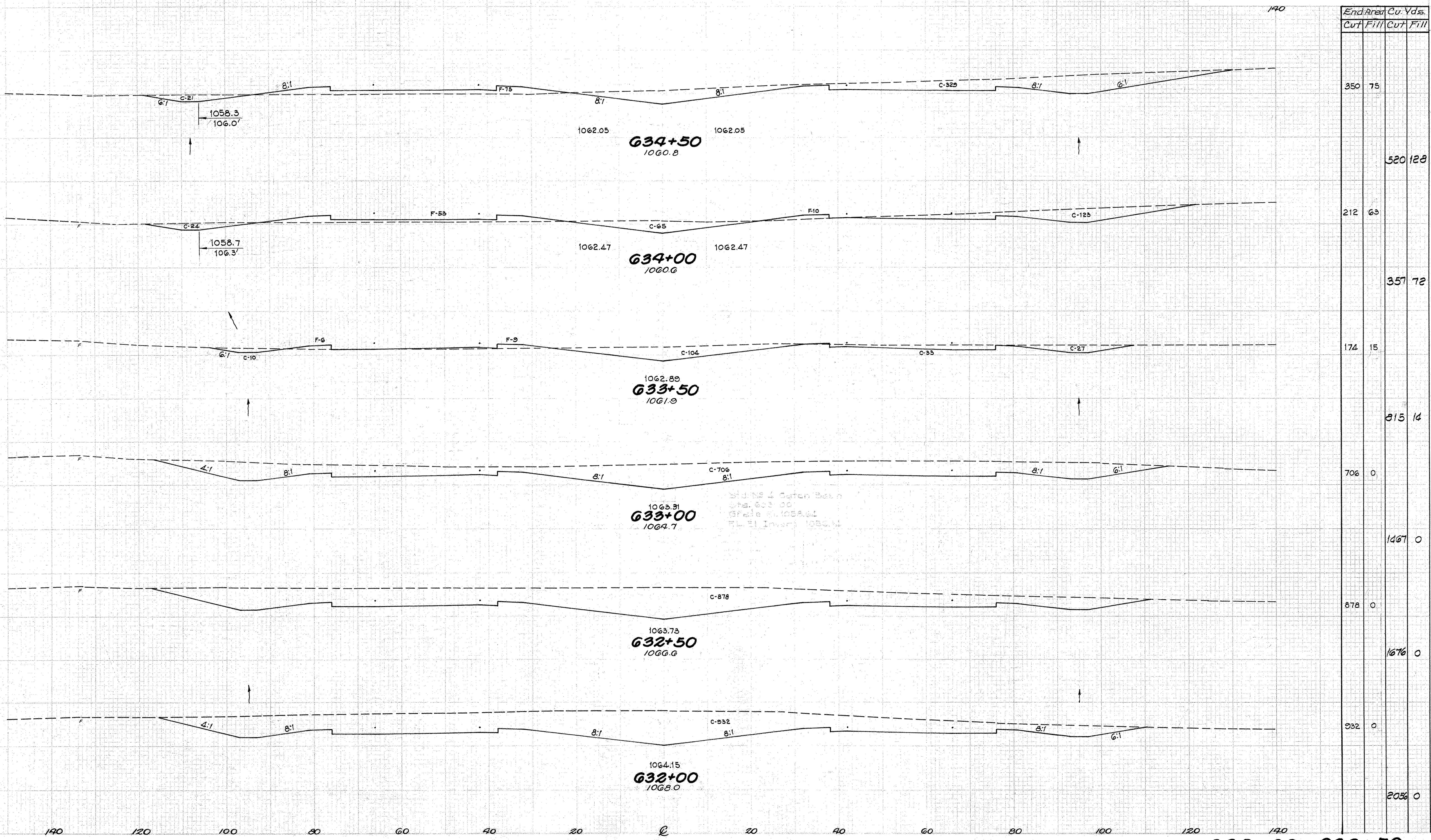
626+00 ~ 628+50

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



629+00 - 631+50

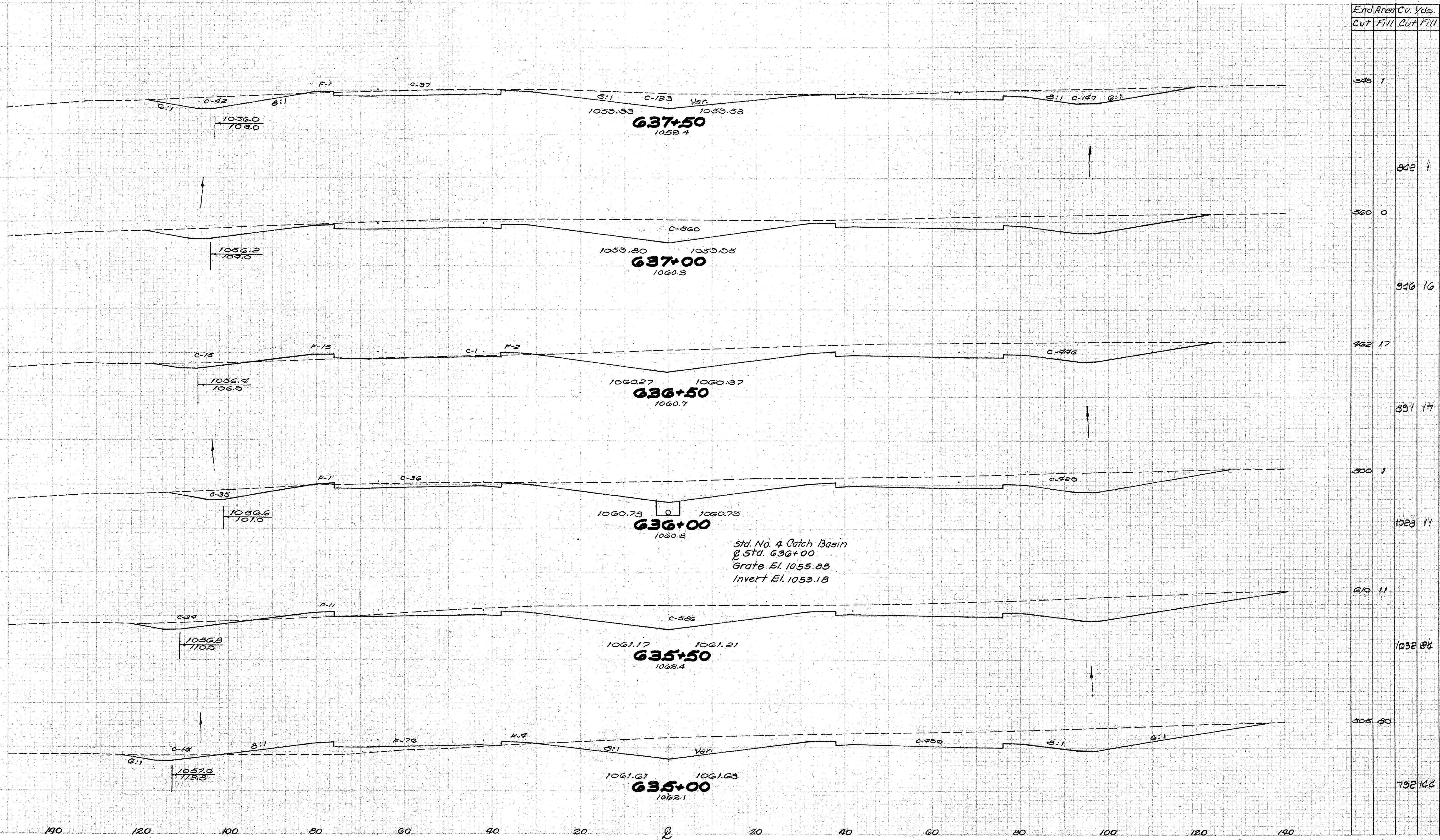
140 120 100 80 60 40 20 0 20 40 60 80 100 120



Sid. No. 4
Sta. 603.00
State of Ohio
P.L. 31 Invert 1060.14

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

LIC-70-(5.12-8.67)



Station	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
637+50	390	1		
637+00	560	0	842	4
636+50	462	17	946	16
636+00	500	1	894	177
635+50	670	11	1032	84
635+00	305	30	792	144

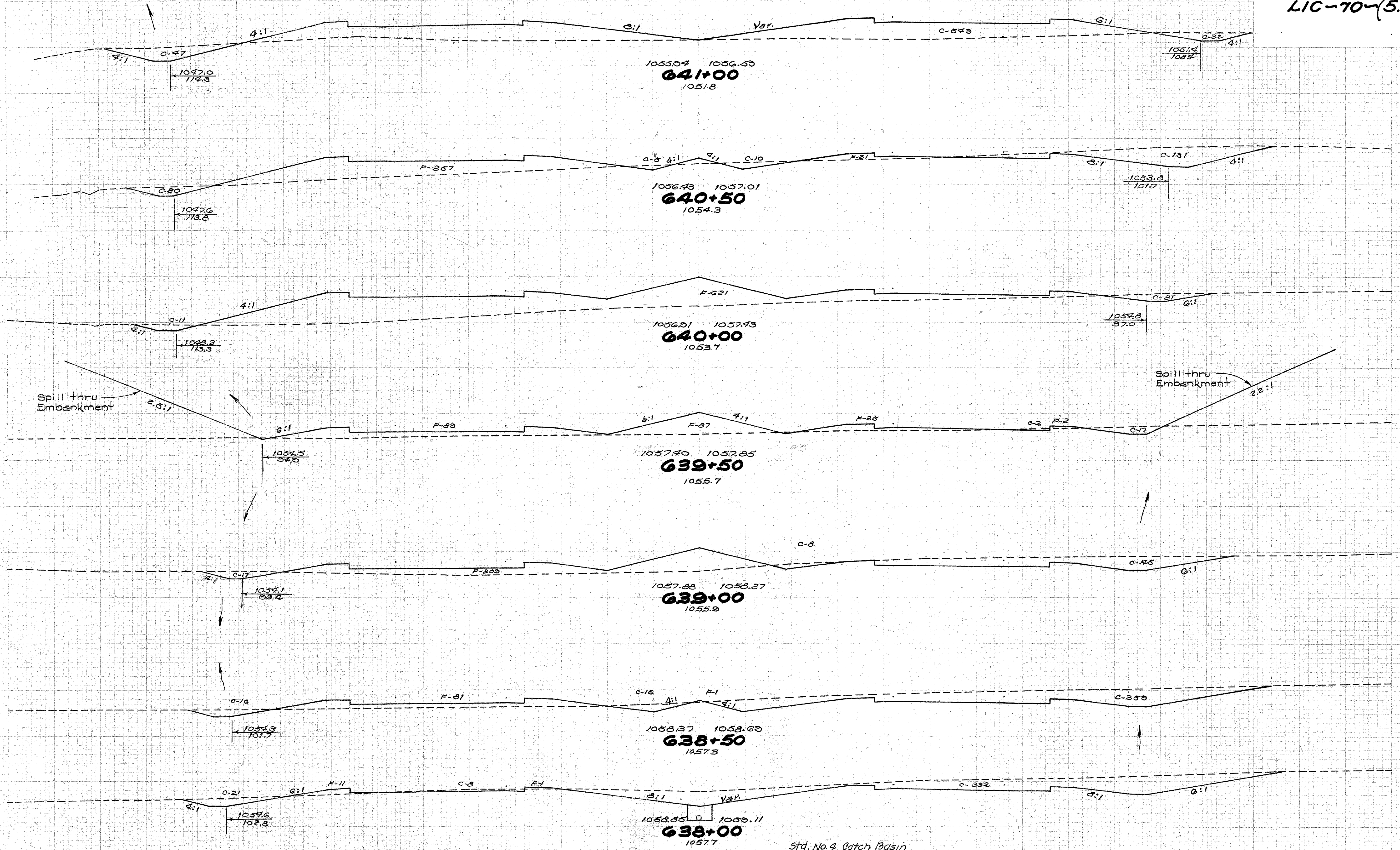
635+00 - 637+50

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

F.S. NO.	STATE	PROJECT
2	OHIO	

91
250

LIC-70-(5.12-8.67)



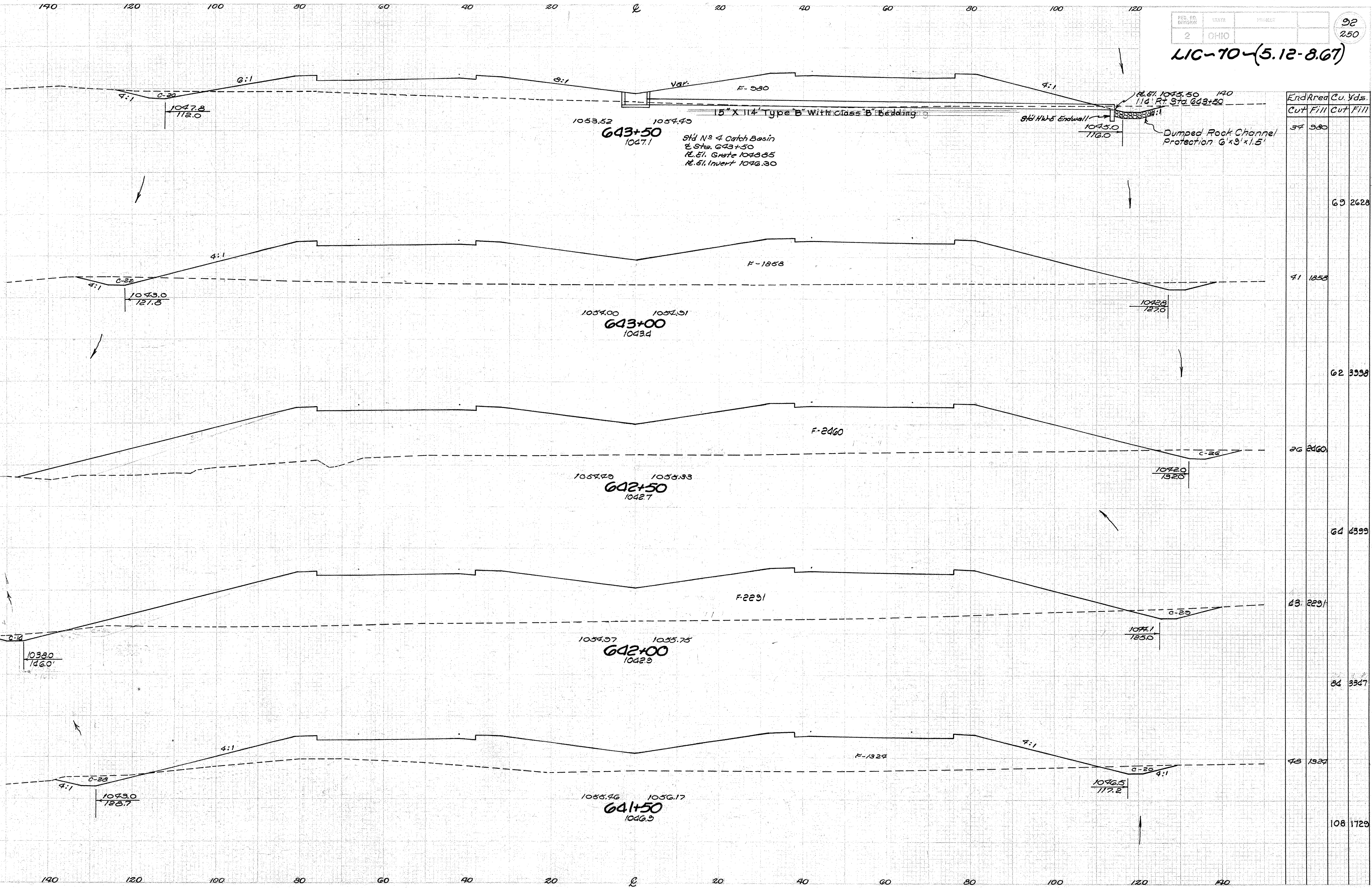
Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
641+00	69	573		
640+50	106	284	218	766
640+00	32	621	47	763
639+50	19	203	175	381
639+00	170	209	426	269
638+50	200	82	594	87
638+00	351	12	648	12

Std. No. 4 Catch Basin
@ Sta. 638+00
Grate El. 1054.18
Invert El. 1051.42

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

638+00-641+00

LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
643+50	37	980		
643+00			69	2628
642+50			62	3339
642+00			64	4399
641+50			84	3347
641+50 - 643+50	108	1729		

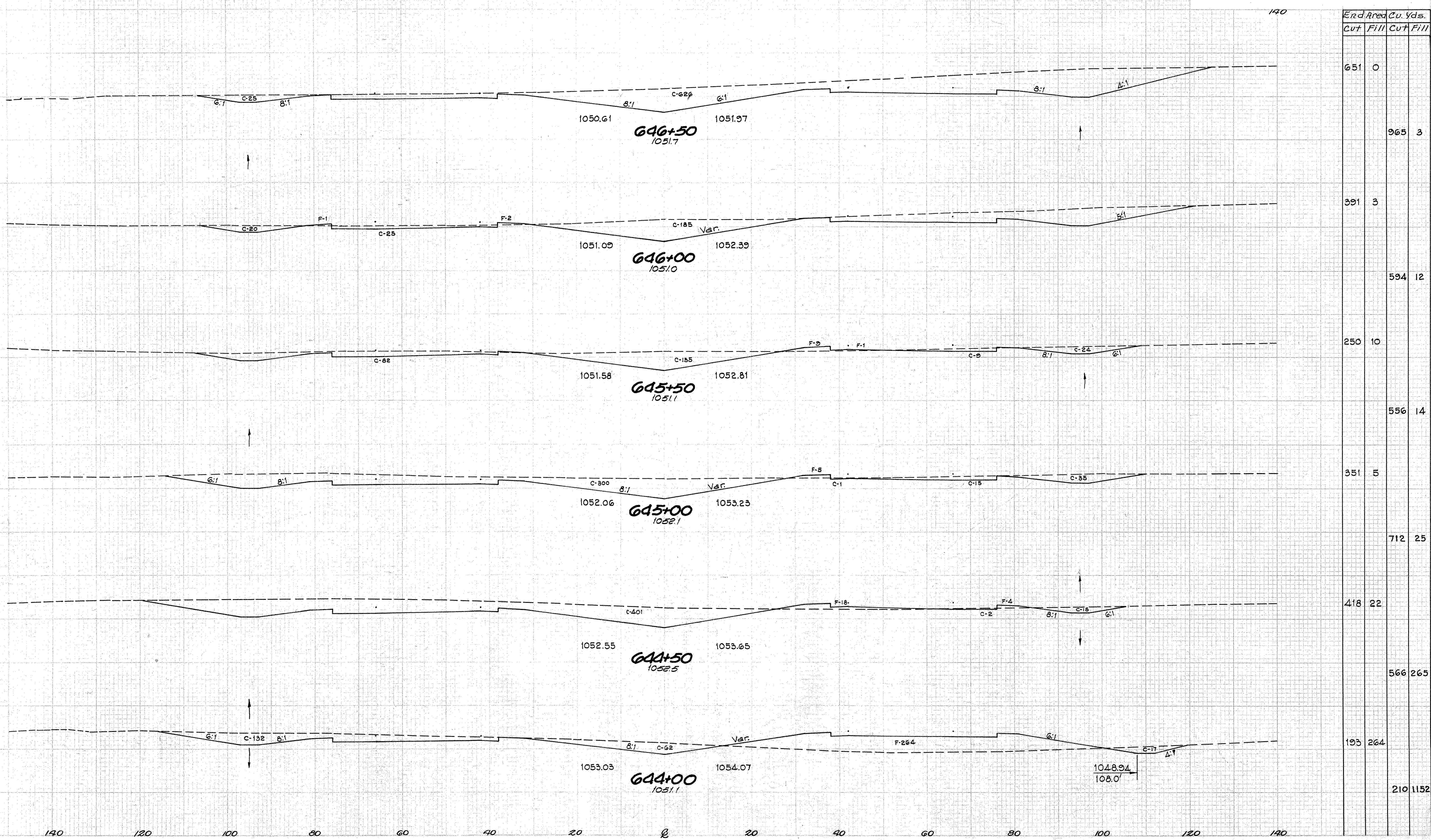
641+50 - 643+50

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

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

23
250

LIC-70-(5.12-8.67)



644+00 - 646+50

AREAS

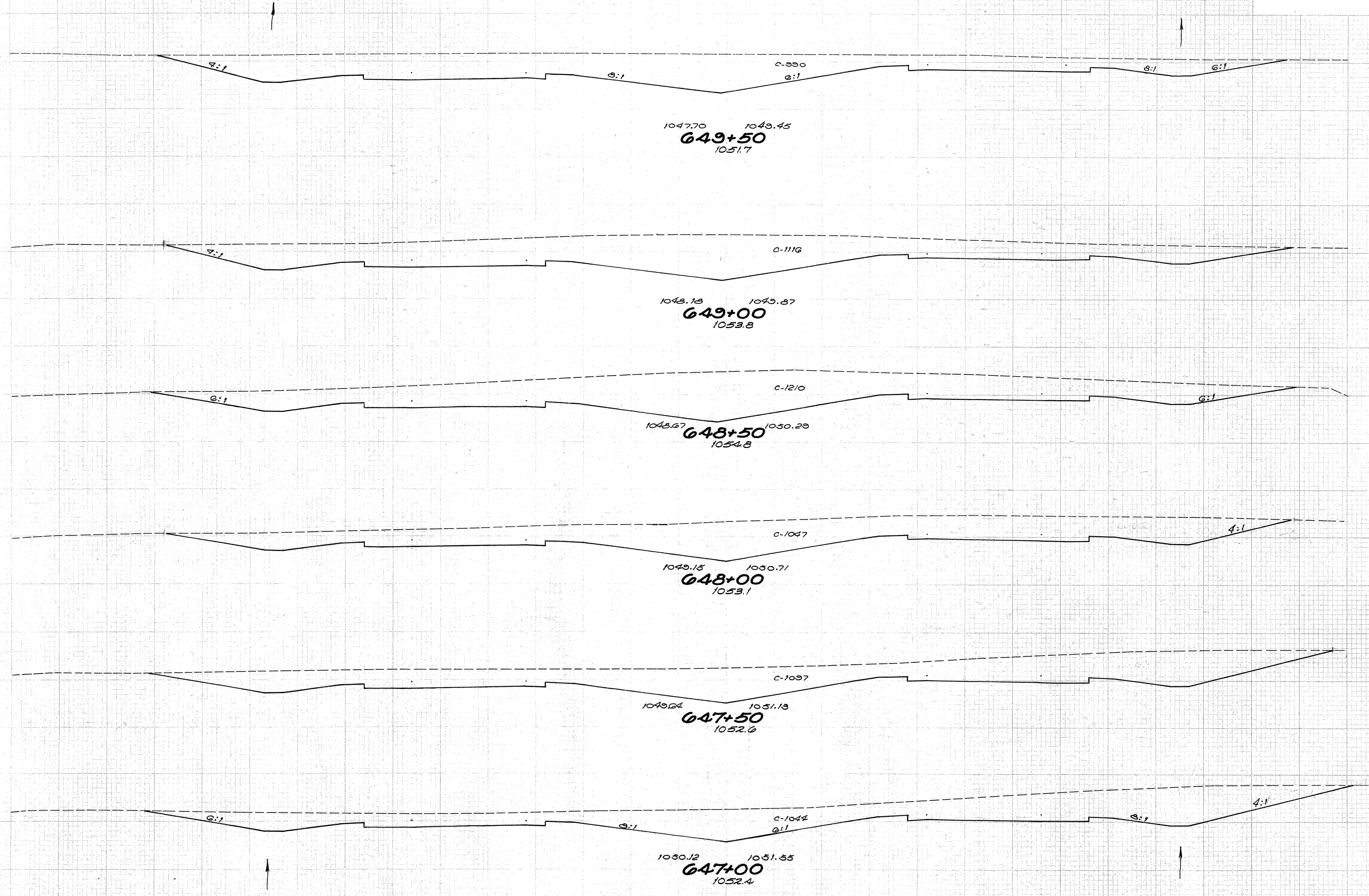
140 120 100 80 60 40 20 0 20 40 60 80 100 120

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

PLAN NUMBER	STATE	PROJECT	
2	OHIO		

94
250

LIC-70-(5.12-8.67)



End Area	Cu. Yds.	
	Cut	Fill
930 0		
1112 0		
1210 0		
1047 0		
1057 0		
1044 0		
1563 0		

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

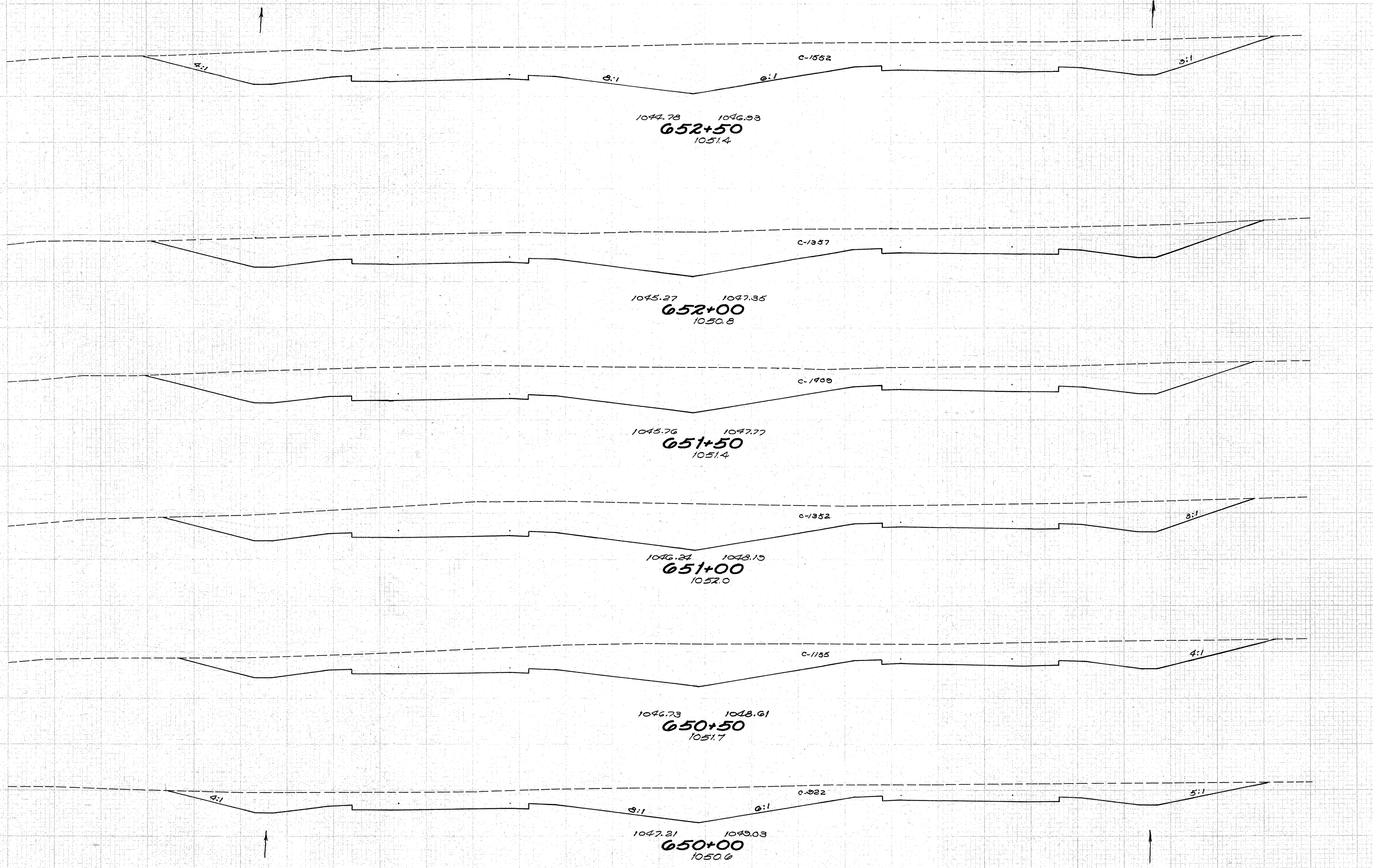
647+00~649+50

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

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

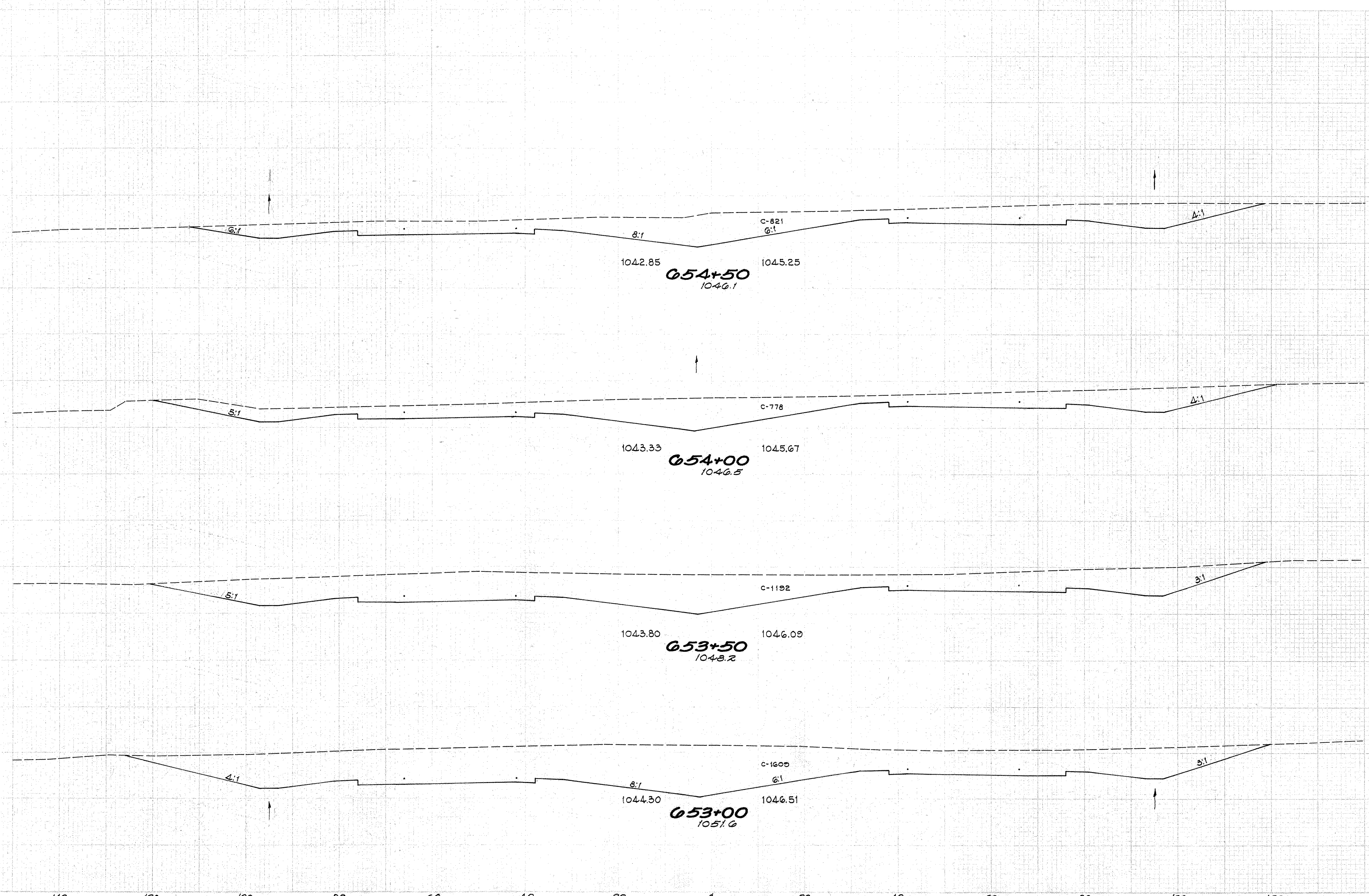
95
250

LIC-70-(5.12-8.67)



End Area	Cu. Yds.
Cut	Fill
1552	0
	2693
1337	0
	2561
1403	0
	2556
1352	0
	2321
1153	0
	1923
982	0
	1770

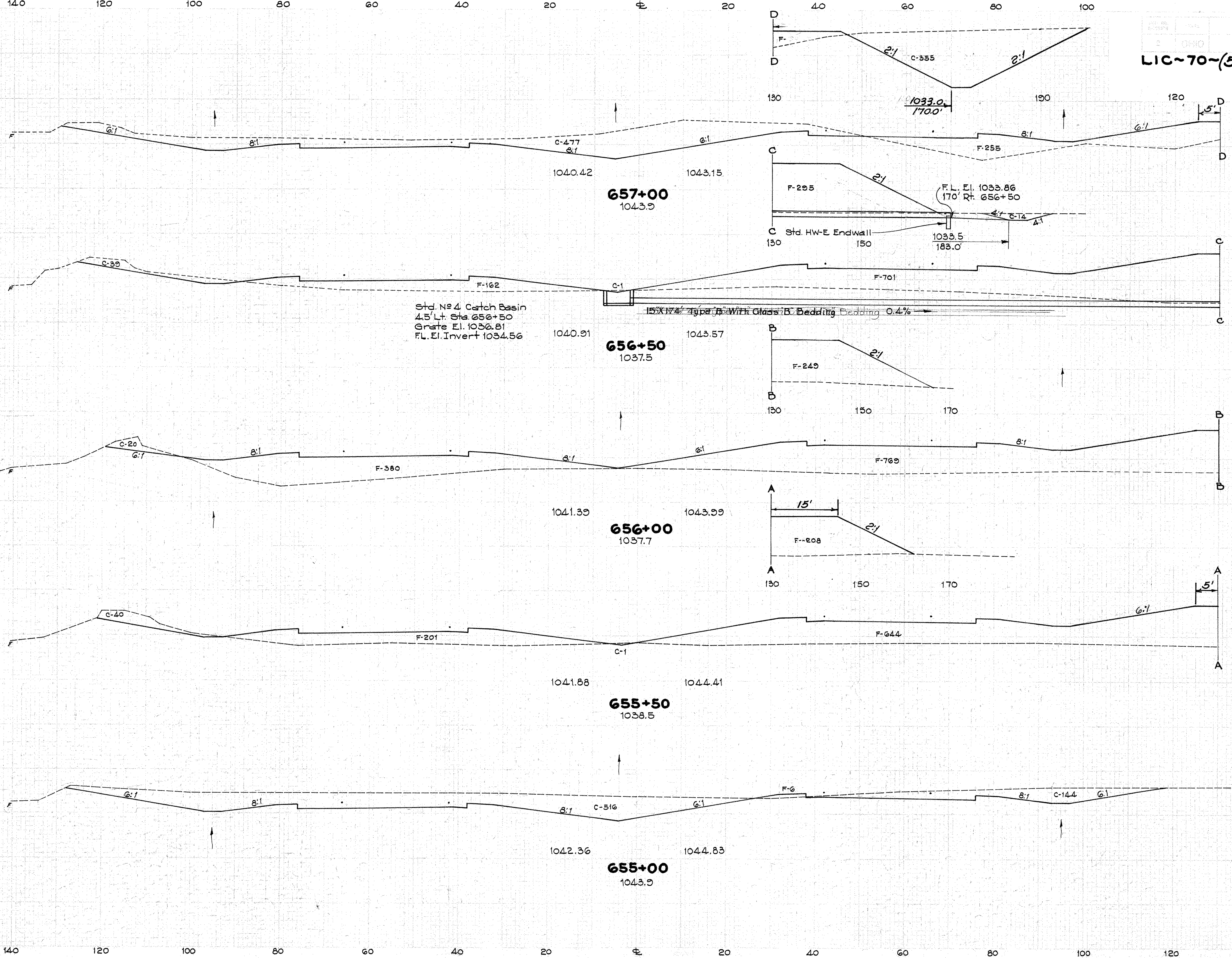
140 120 100 80 60 40 20 0 20 40 60 80 100 120 650+00-652+50



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
	821	0	
		1481	0
	778	0	
		1824	0
	1192	0	
		2593	0
	1609	0	
		2927	0

LIC-70-(5.12-8.67)

CROSS AREA		VOLUME	
EST.	FILL	EST.	FILL
832	310		
820	1359		
54	1158		
69	2367		
20	1398		
56	2269		
41	1053		
649	981		
660	6		
1371	6		



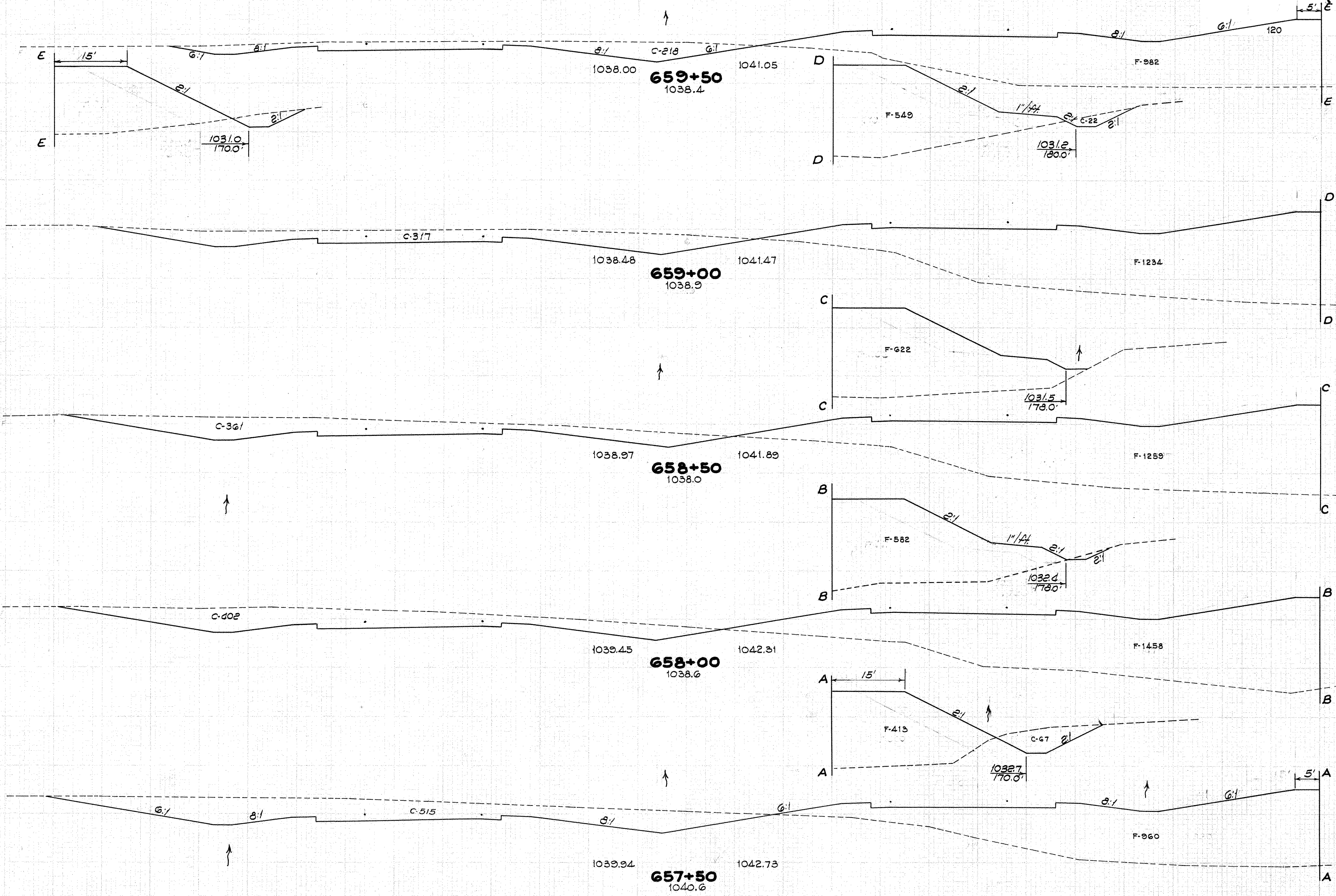
Std. No 4 Catch Basin
 4.5' Lt. Sta. 656+50
 Grate E.I. 1036.81
 F.L. E.I. Invert 1034.56

15' x 47 1/2' Type B With Class B Bedding Bedding 0.4%

F.L. E.I. 1033.86
 170' Rt. 656+50

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

LIC-70-(5.12-8.67)



CROSS AREA		VOLUME	
CUT	FILL	CUT	FILL
		246	1345
		542	2896
		339	1783
		648	3392
		36	1881
		709	3620
		405	2040
		914	3160
		582	1373
		1309	1558

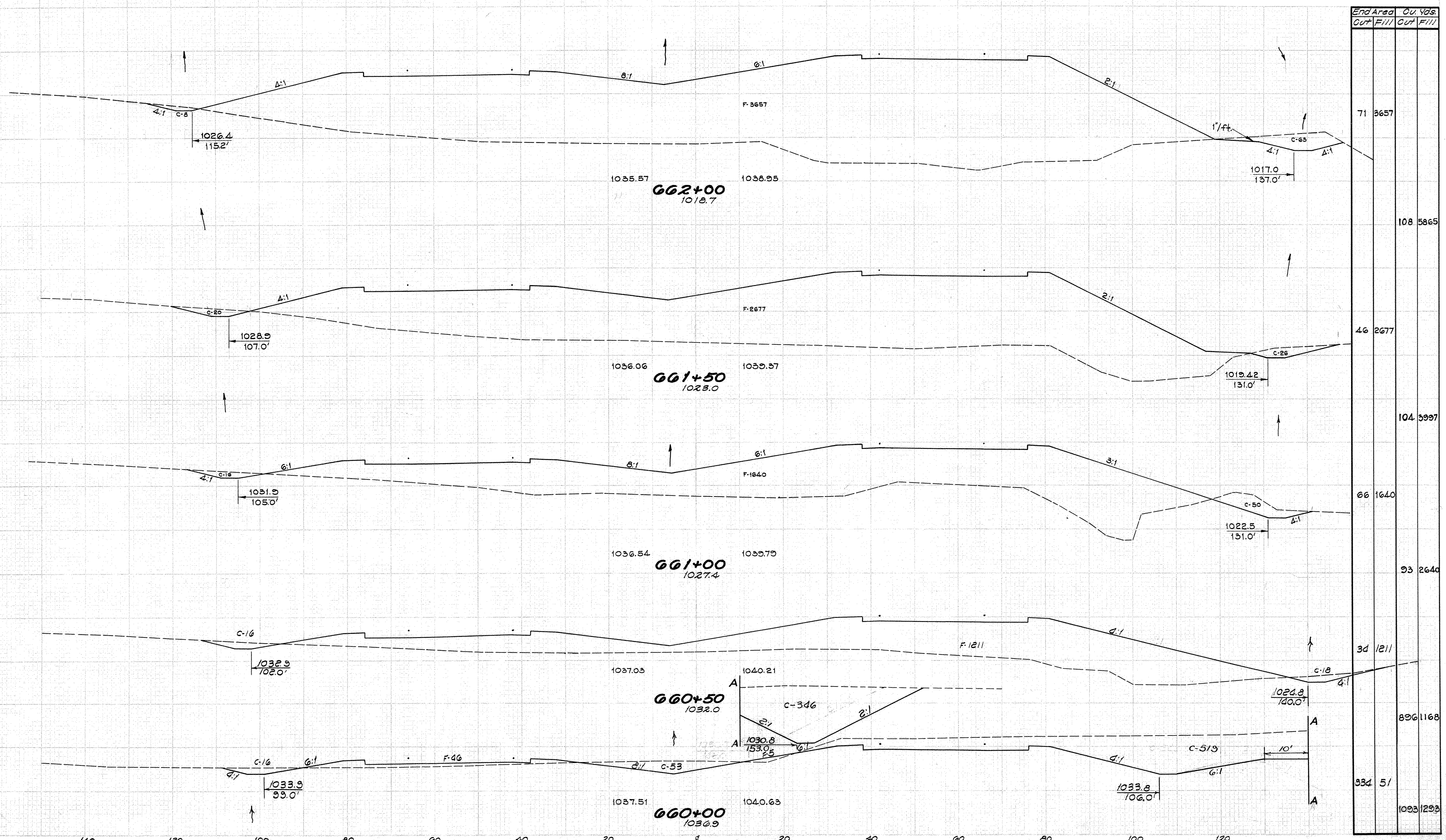
140 120 100 80 60 40 20 0 20 40 60 80 100

140 120 100 80 60 40 20 2 20 40 60 80 100

PROJ. NO.	STATE	PROJECT
2	OHIO	

99
250

LIC-70-(5.12-8.67)



Station	End Area		Cu Yds	
	Out	Fill	Out	Fill
662+00	71	3657		
661+50	46	2677		
661+00	66	1640		
660+50	34	1211		
660+00	334	51		
660+00 - 662+00	1093	1293		

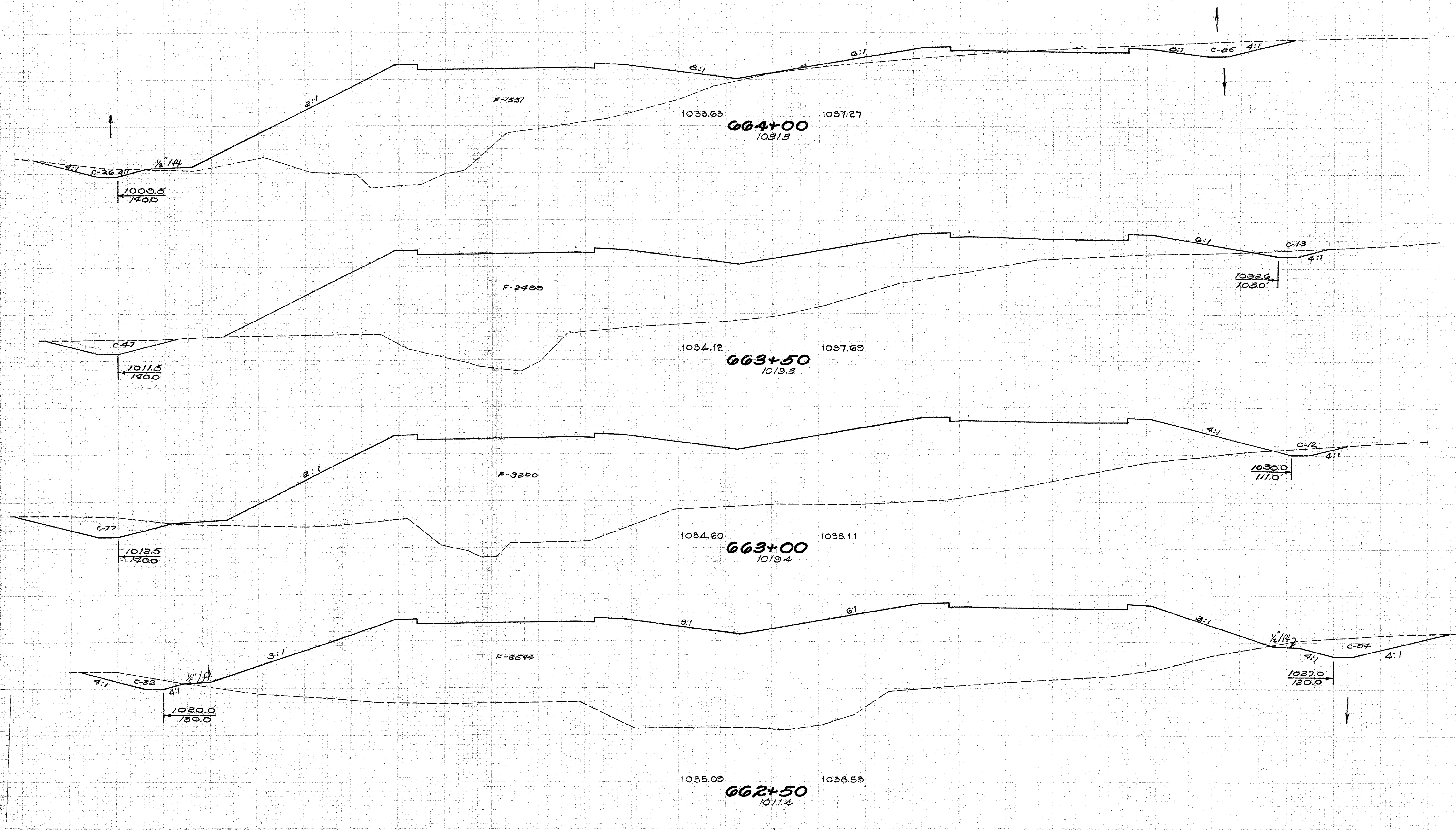
140 120 100 80 60 40 20 2 20 40 60 80 100 120 660+00-662+00

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

100
250

LIC-70-(5.12-8.67)

End Area		Cu. Yds.	
Out	Fill	Out	Fill
111	1551		
60	2700	158	3750
60	3200	138	5277
60	3200	199	6244
126	3594	182	6667



140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
662+50-664+00

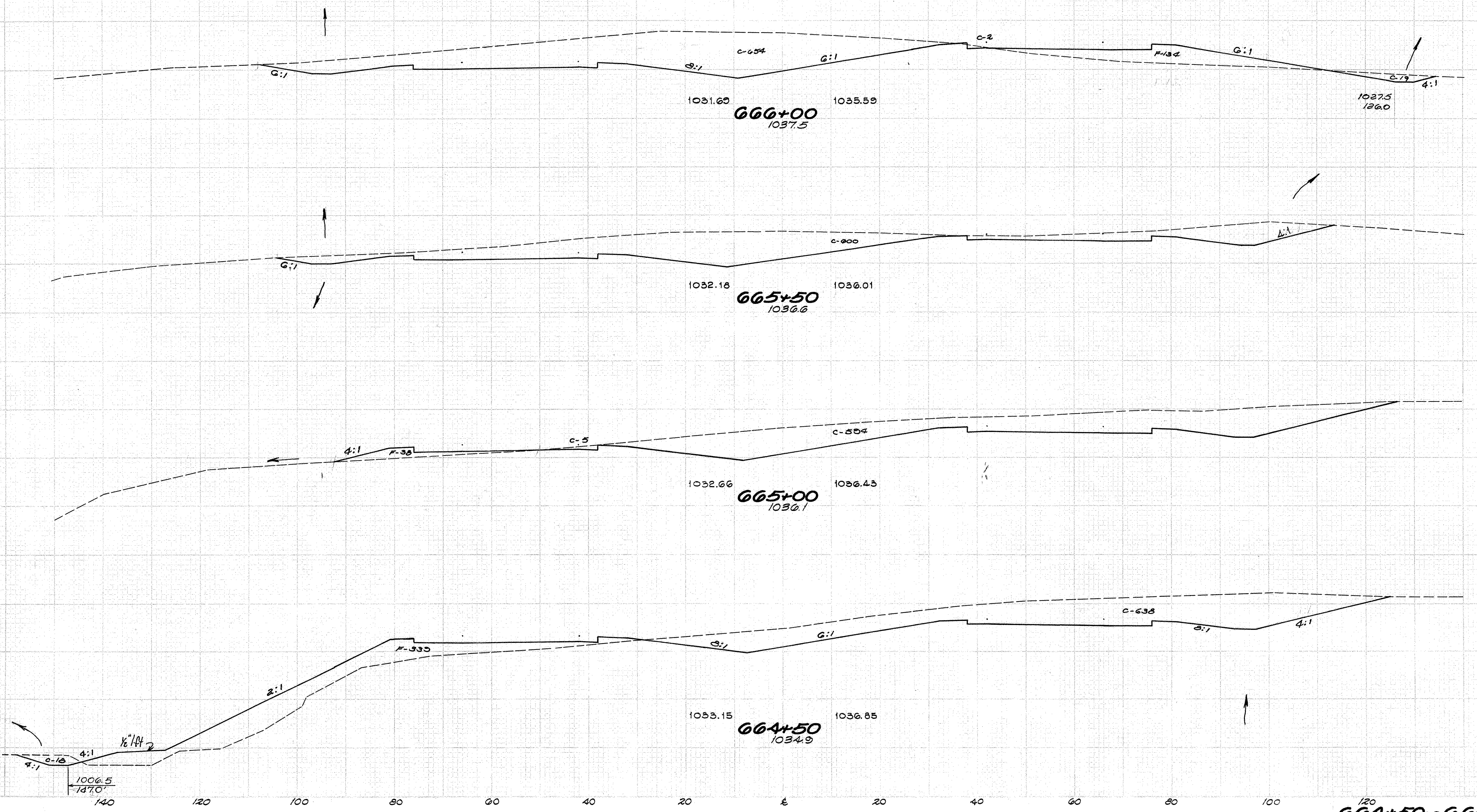
140 120 100 80 60 40 20 0 20 40 60 80 100

PROJECT NO.	STATE	DATE	SCALE
2	OHIO		

101
250

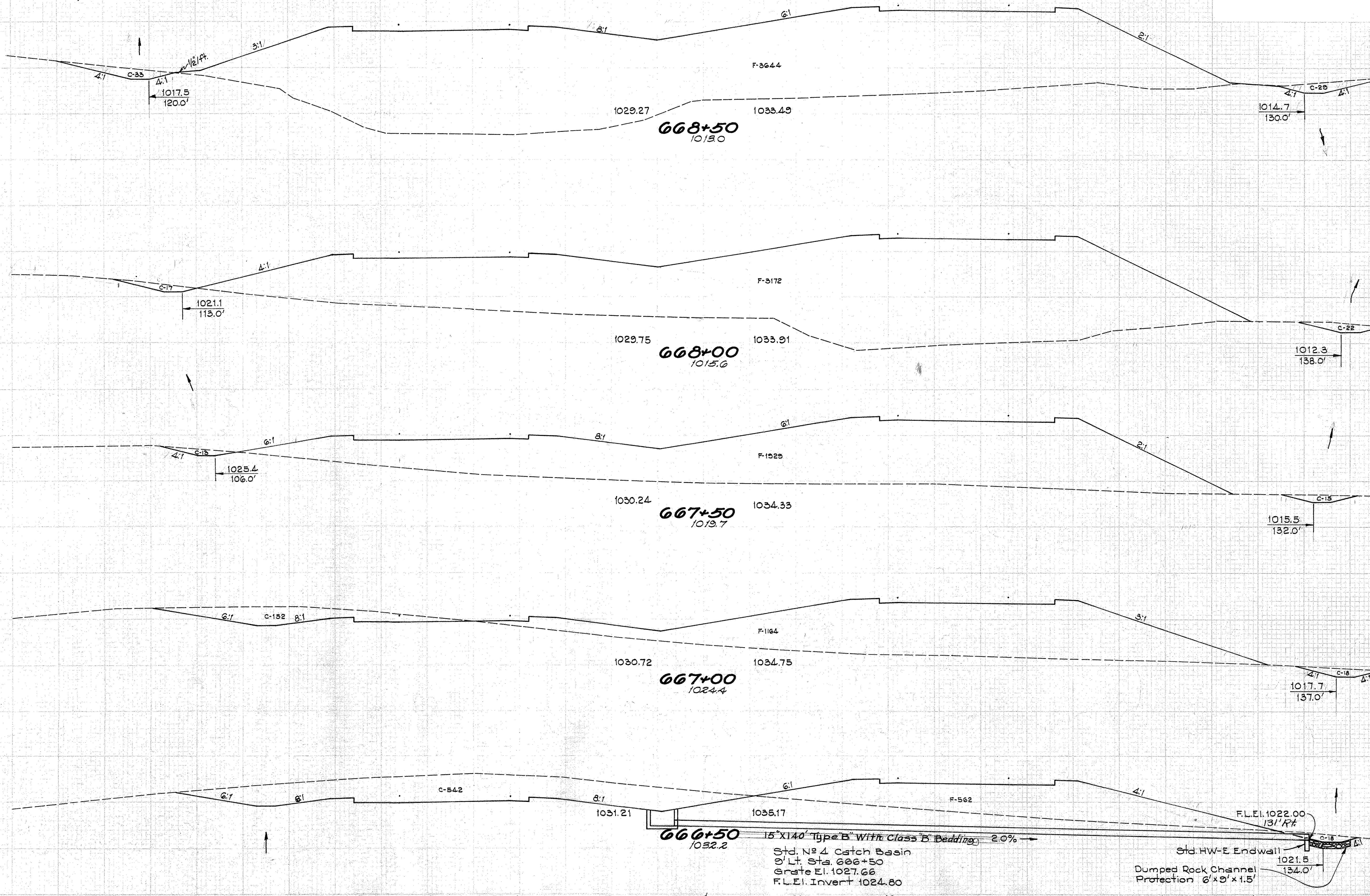
LIC-70-(5.12-8.67)

End Area	Cu. Yds.	
Cut/Fill	Cut	Fill
	1143	644
675	132	
	1181	124
600	0	
	1110	35
339	38	
	1162	349
656	335	
	710	1750



120
664+50-666+00

LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
62			3644	
94			6311	
39			3172	
62			4723	
28			1929	
183			2864	
170			1164	
676			1589	
560			562	

666+50
1032.2

15' x 140' Type B With Class B Bedding 2.0% →

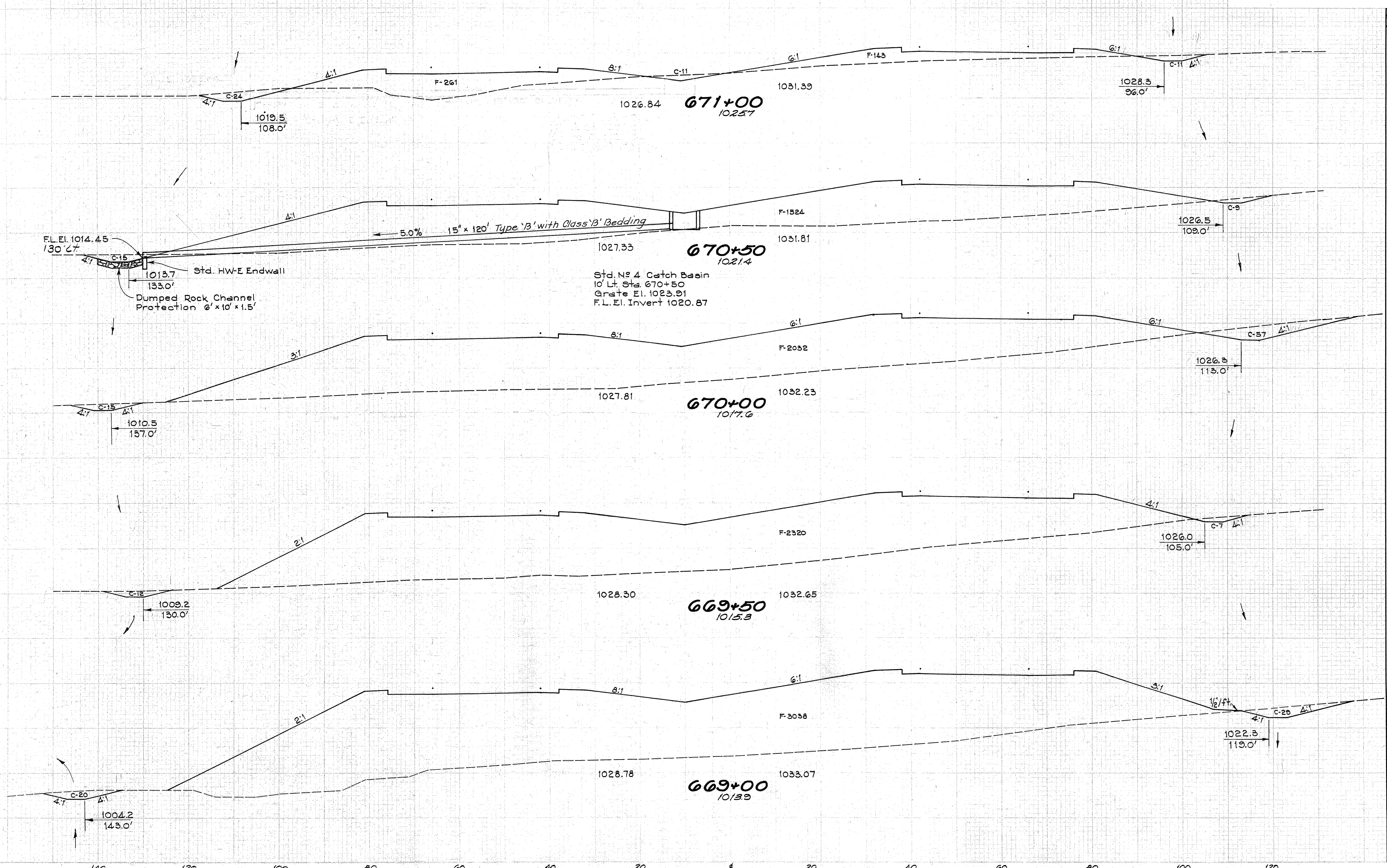
Std. No 4 Catch Basin
3' Lt. Sta. 666+50
Grate E.I. 1027.66
F.L.E.I. Invert 1024.80

Std. HW-E Endwall
Dumped Rock Channel Protection 6' x 9' x 1.5'

F.L.E.I. 1022.00
131' R#

1021.5
134.0'

LIC-70-(5.12-8.67)



Station	End Area Cut / Fill	Cu. Yds. Cut / Fill
671+00	46 / 404	
670+50		65 / 1785
670+00	24 / 1524	
669+50		89 / 3293
669+00	72 / 2032	
669+00		84 / 4030
669+00	19 / 2320	
669+00		63 / 5007
669+00	43 / 3088	
669+00		103 / 6233

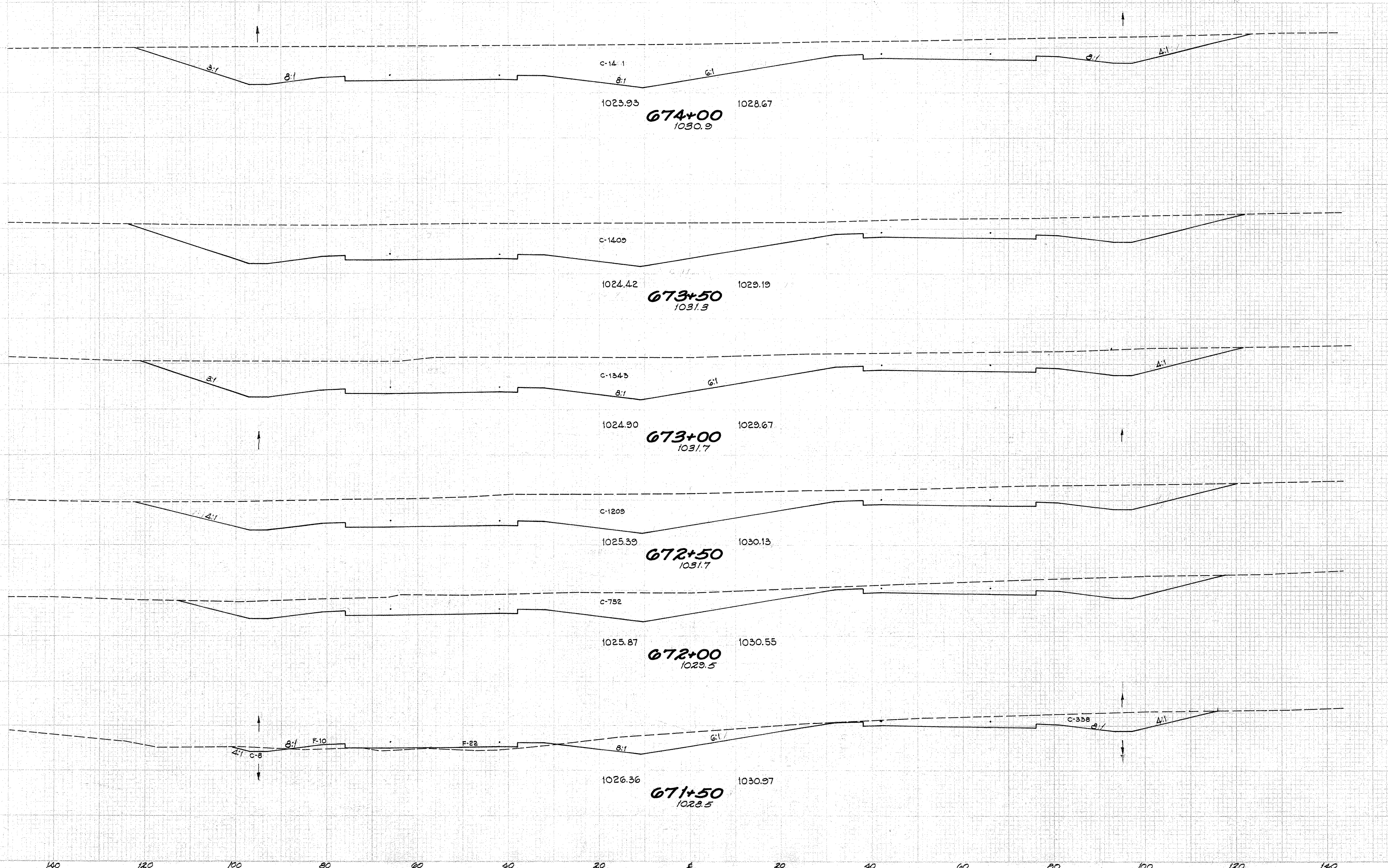
669+00-671+00

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

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

104
250

LIC-70-(5.12-8.67)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
1431	0	2630	0
1409	0	2548	0
1343	0	2363	0
1209	0	1816	0
752	0	1017	30
346	32	363	404

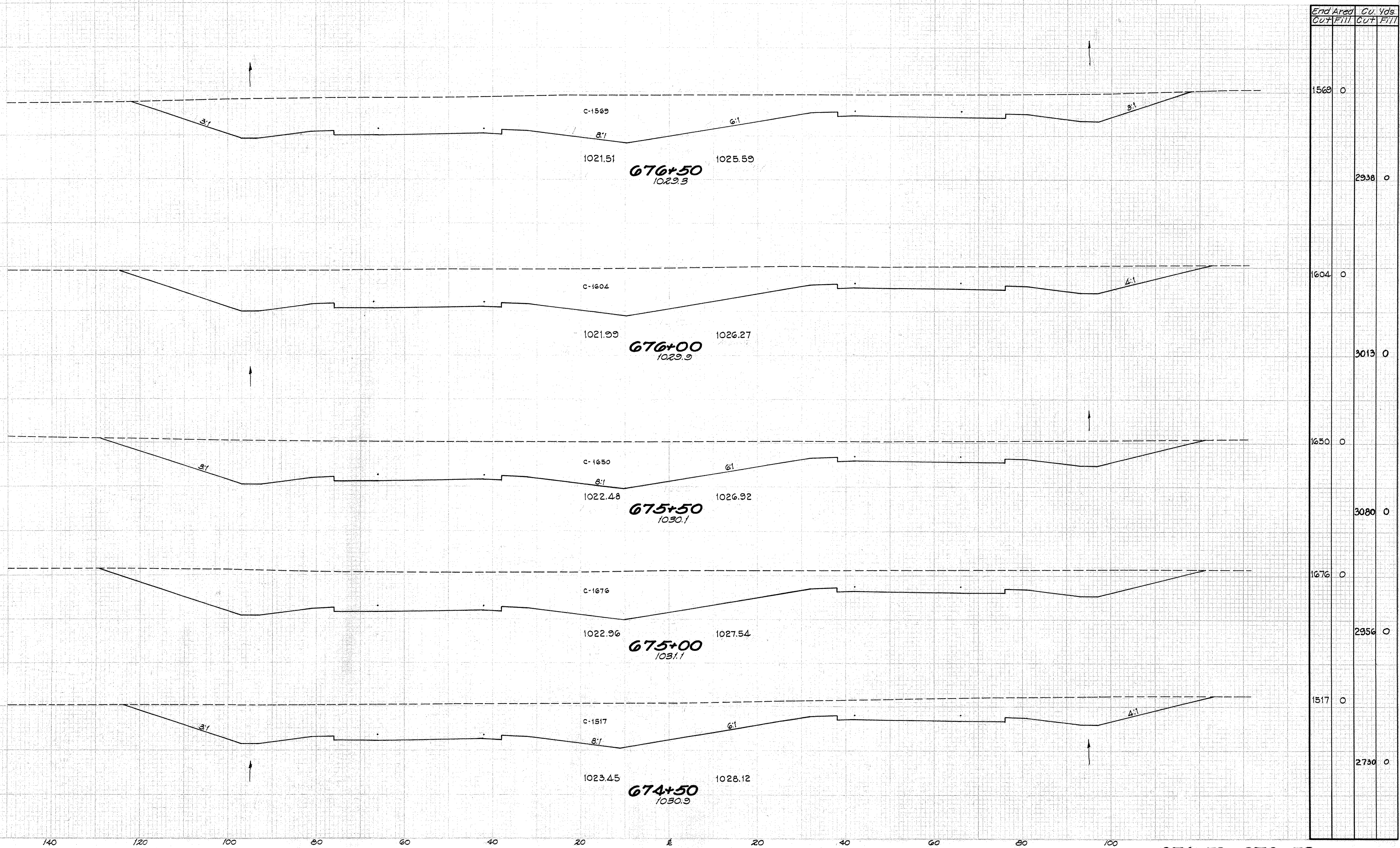
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
671+50 - 674+00

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

FED. DIST. DIVISION	STATE	PROJECT
2	OHIO	

105
250

LIC-70-(5.12-8.67)



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

674+50-676+50

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

**Turnaround
Twp. Rd. #146 Sta. 23+00 Lft. &
ESTIMATED QUANTITIES**

* 203	Excavation	51	Cu. Yds.
203	Embankment	8	Cu. Yds.
304	6" Aggr. Base	11	Cu. Yds.
603	12" Conduit, Type "D"	42	Lin. Ft.
606	Guard Rail	25	Lin. Ft.

* Includes 40 Cu. Yds. for ditch excavation

End Turnaround
Sta. 23+00 Lft. 23.7'
Twp. Rd. #146

End Turnaround
Sta. 27+00 Rft. 32.2'
Twp. Rd. #146

**Turnaround
Twp. Rd. #146 Sta. 27+00 Rft. &
ESTIMATED QUANTITIES**

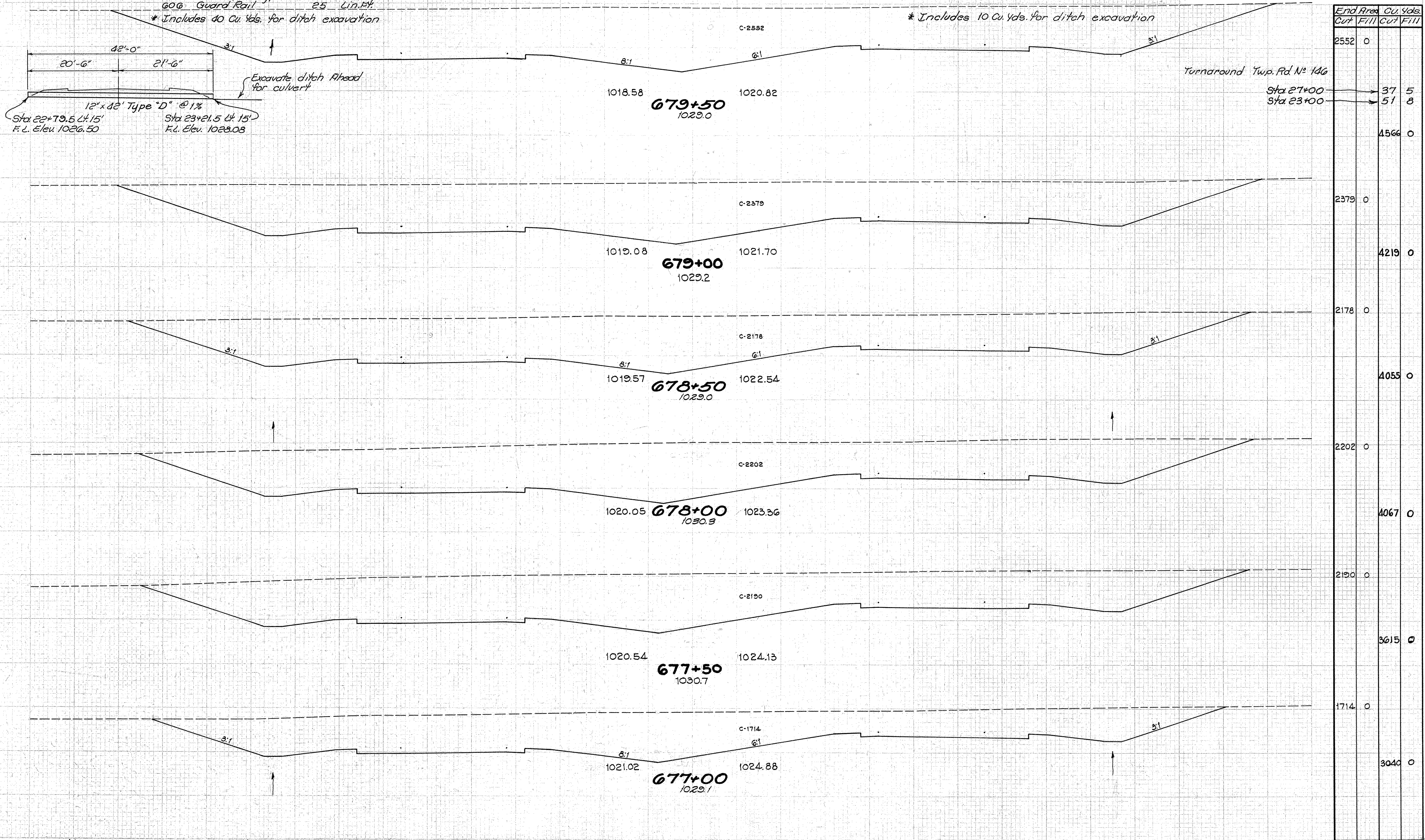
* 203	Excavation	37	Cu. Yds.
304	6" Aggr. Base	11	Cu. Yds.
203	Embankment	5	Cu. Yds.
606	Guard Rail	25	Lin. Ft.

* Includes 10 Cu. Yds. for ditch excavation

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

106
250

LIC-70-(5.12-8.67)

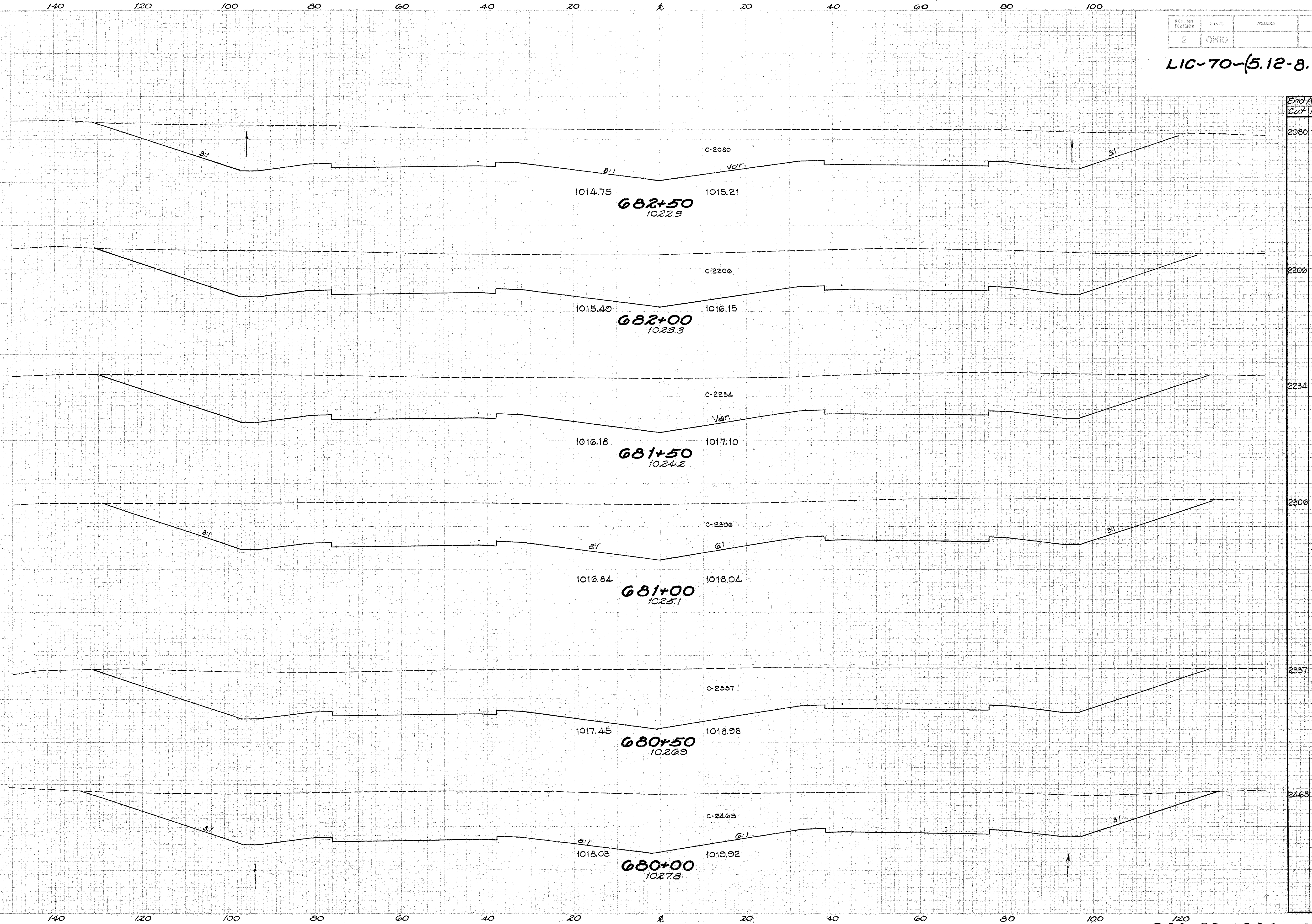


End Area	Cu. Yds.	
	Cut	Fill
2552	0	0
2379	0	0
2178	0	0
2202	0	0
2190	0	0
1714	0	0
2552	37	5
2379	51	8
2178	0	0
2202	0	0
2190	0	0
1714	0	0
2552	37	5
2379	51	8
2178	0	0
2202	0	0
2190	0	0
1714	0	0
2552	37	5
2379	51	8
2178	0	0
2202	0	0
2190	0	0
1714	0	0

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

677+00-679+50

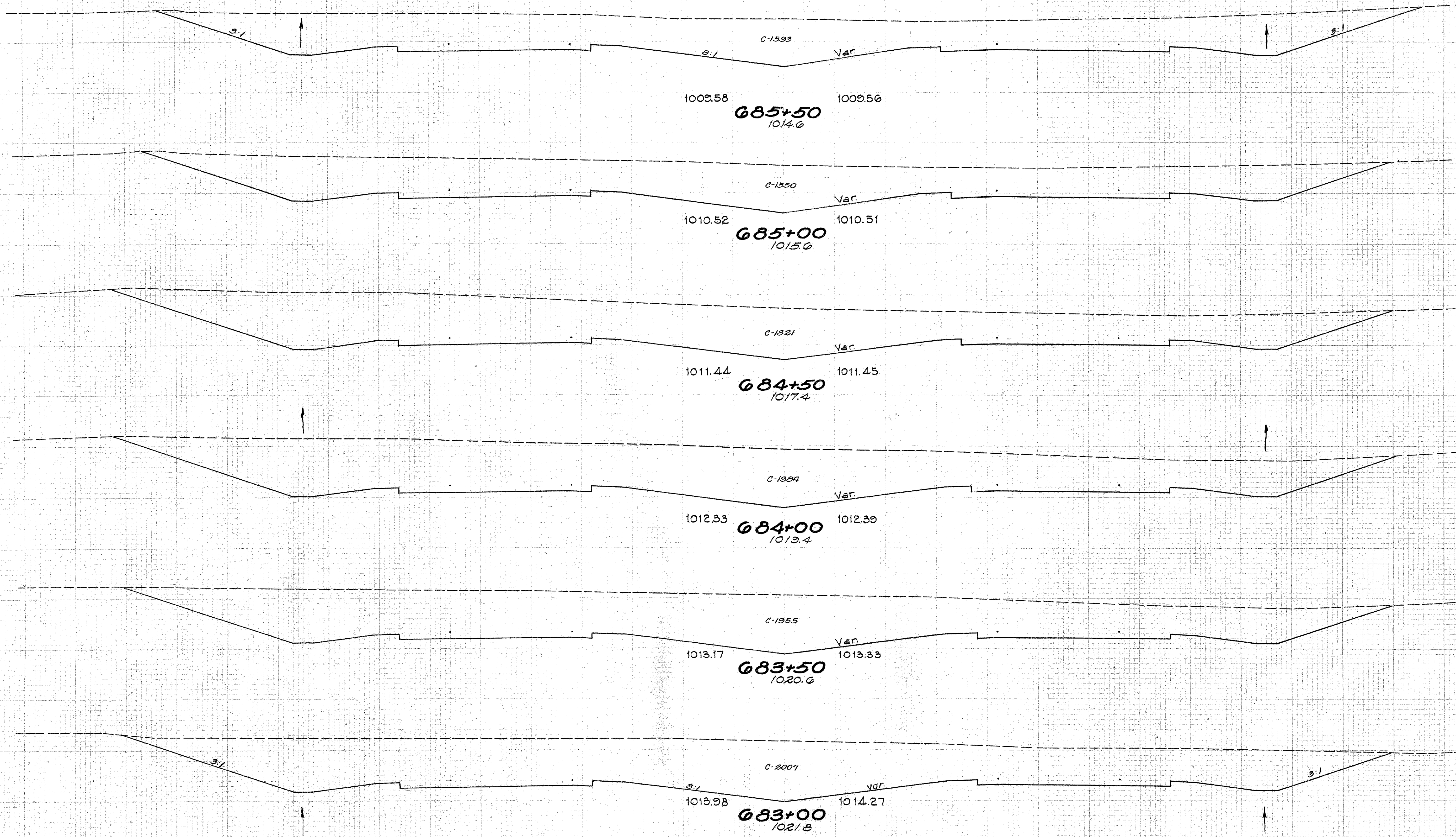
LIC-70-(5.12-8.67)



End Area	Cu	Vol
Cut	Fill	Cut
2080	0	
		3968
		0
2206	0	
		4111
		0
2234	0	
		4204
		0
2306	0	
		4299
		0
2337	0	
		4446
		0
2465	0	
		4645
		0

680+00-682+50

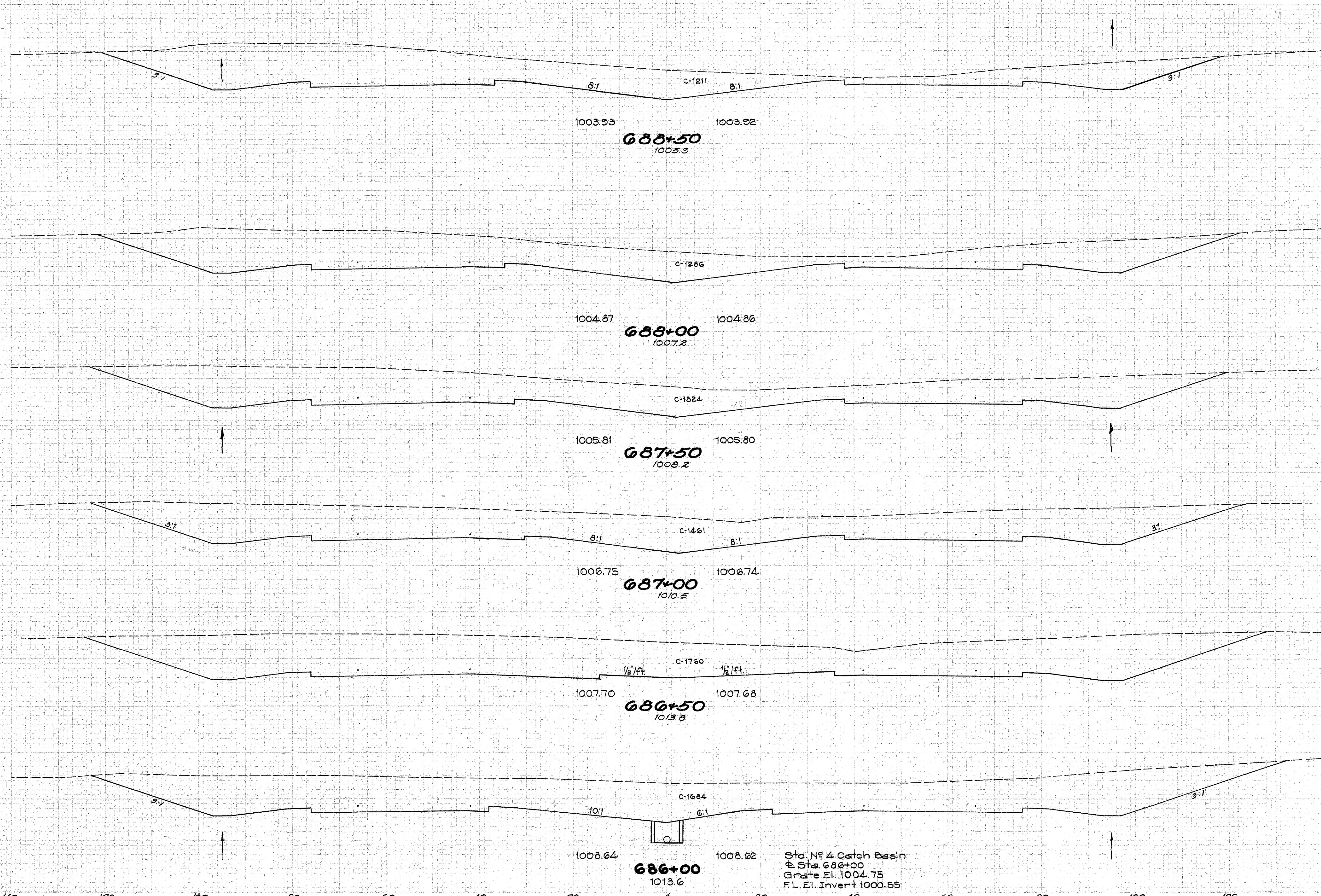
LIC-70-(5.12-8.67)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
1593	0		
		2911	0
1550	0		
		3122	0
1821	0		
		3523	0
1984	0		
		3647	0
1955	0		
		3668	0
2001	0		
		3784	0

120
683+00-685+50

LIC-70-(5.12.8.67)



End Area	Cu. Yds.	
	Cut	Fill
1211	0	
		2312
1286	0	
		2417
1324	0	
		2579
1461	0	
		2982
1760	0	
		3189
1684	0	
		3034

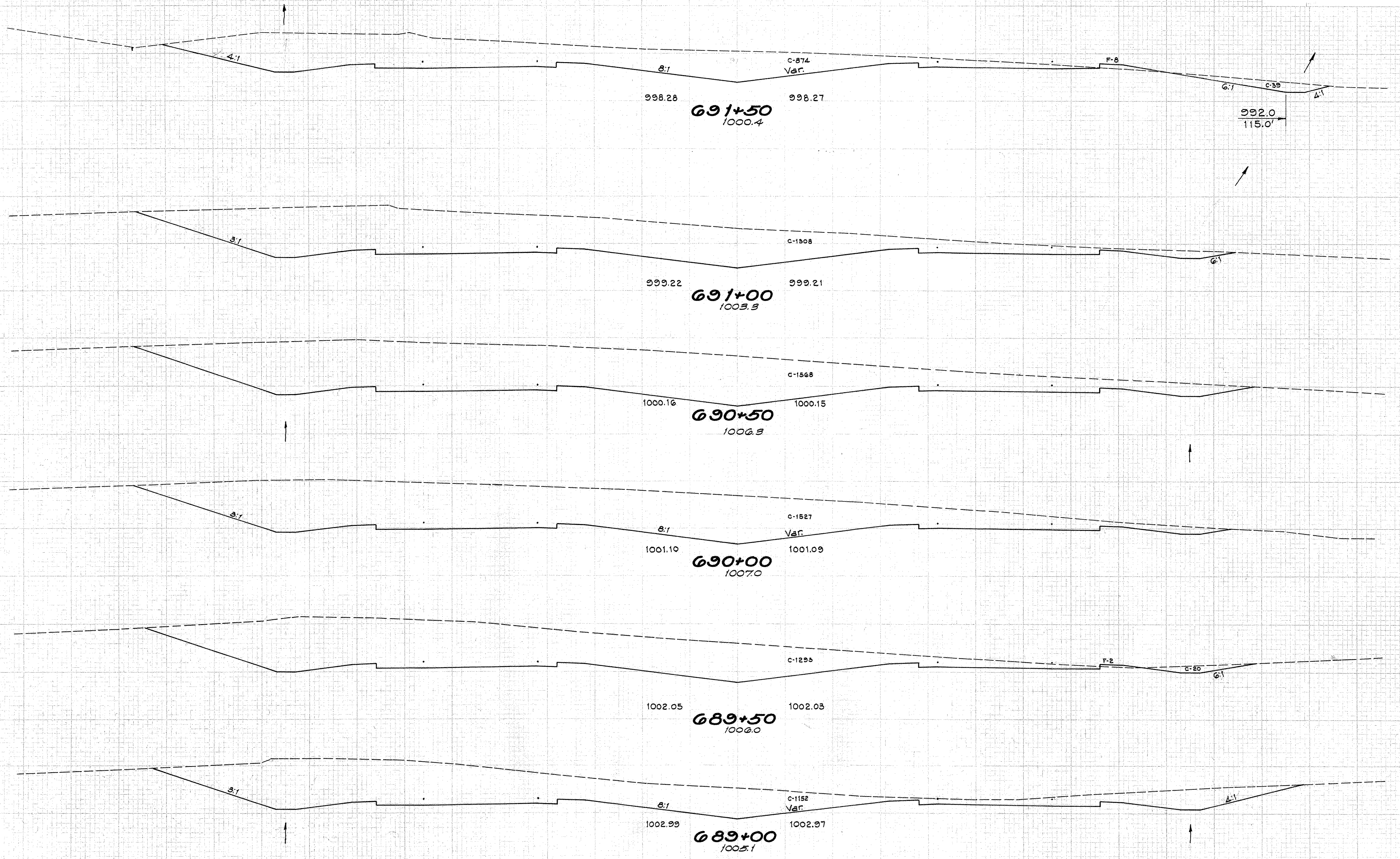
Std. No 4 Catch Basin
 @ Sta. 686+00
 Grate El. 1004.75
 F.L. El. Invert 1000.55

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

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

110
250

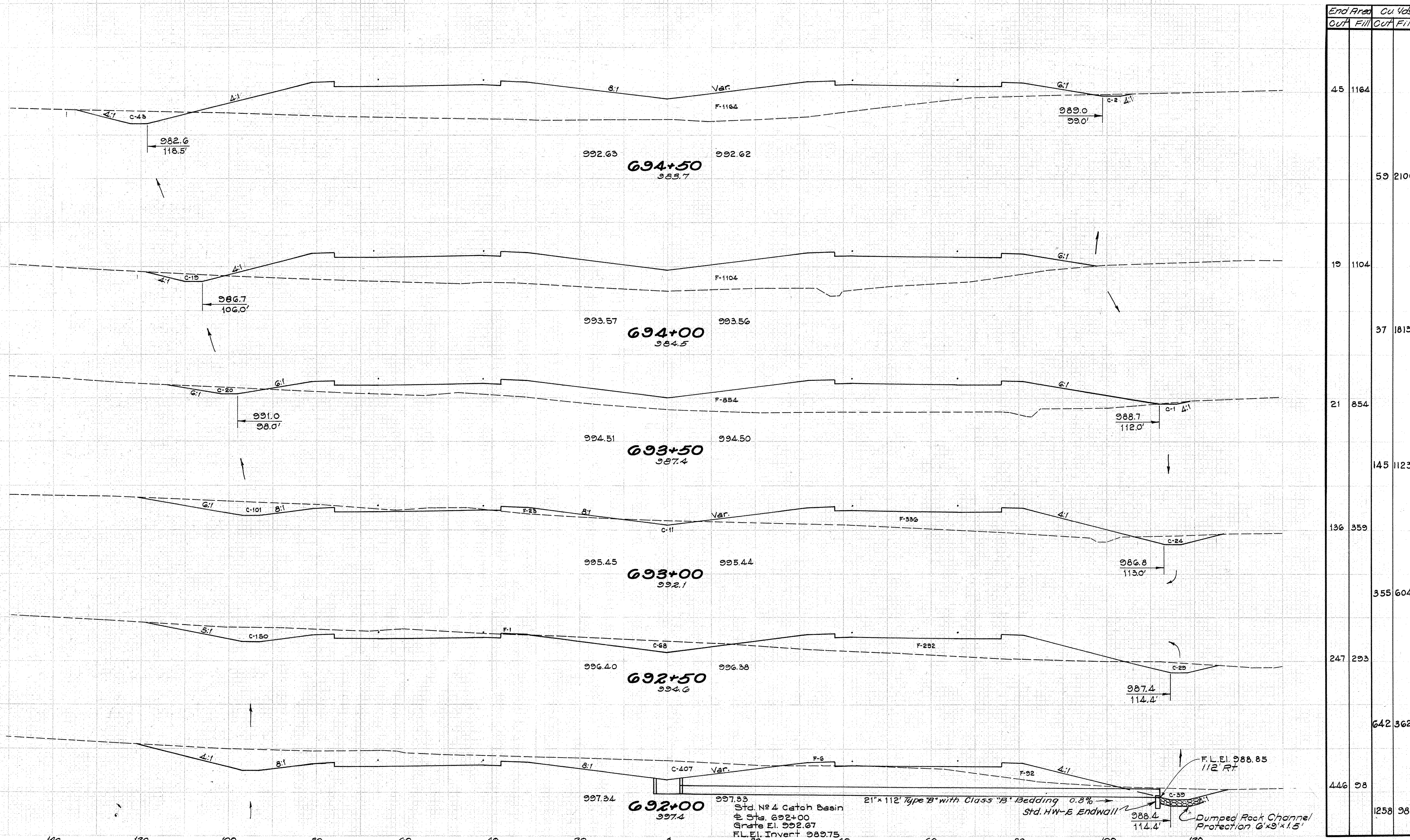
LIC-70-(5.12-8.67)



End Area	End Area	Cu Vols.	Cu Vols.
Out	Fill	Out	Fill
913	8		
		2056	7
1308	0		
		2663	0
1568	0		
		2866	0
1527	0		
		2630	2
1313	2		
		2282	2
1152	0		
		2188	0

140 120 100 80 60 40 20 0 20 40 60 80 100 120
689+00-691+50

LIC-70-(5.12-8.67)



End Area	Cu Yds	
	Cut	Fill
45	1164	
59	2100	
19	1104	
37	1813	
21	854	
145	1123	
136	359	
355	604	
247	293	
642	362	
446	98	
	1258	98

Std. No 4 Catch Basin
 ± Sts. 692+00
 Grate El. 992.67
 F.L. El. Invert 989.75

21' x 112' Type "B" with Class "B" Bedding 0.8%
 Std. HW-E Endwall

F.L. El. 988.85
 112' Rt.
 Dumped Rock Channel
 Protection 6' x 9' x 1.5'

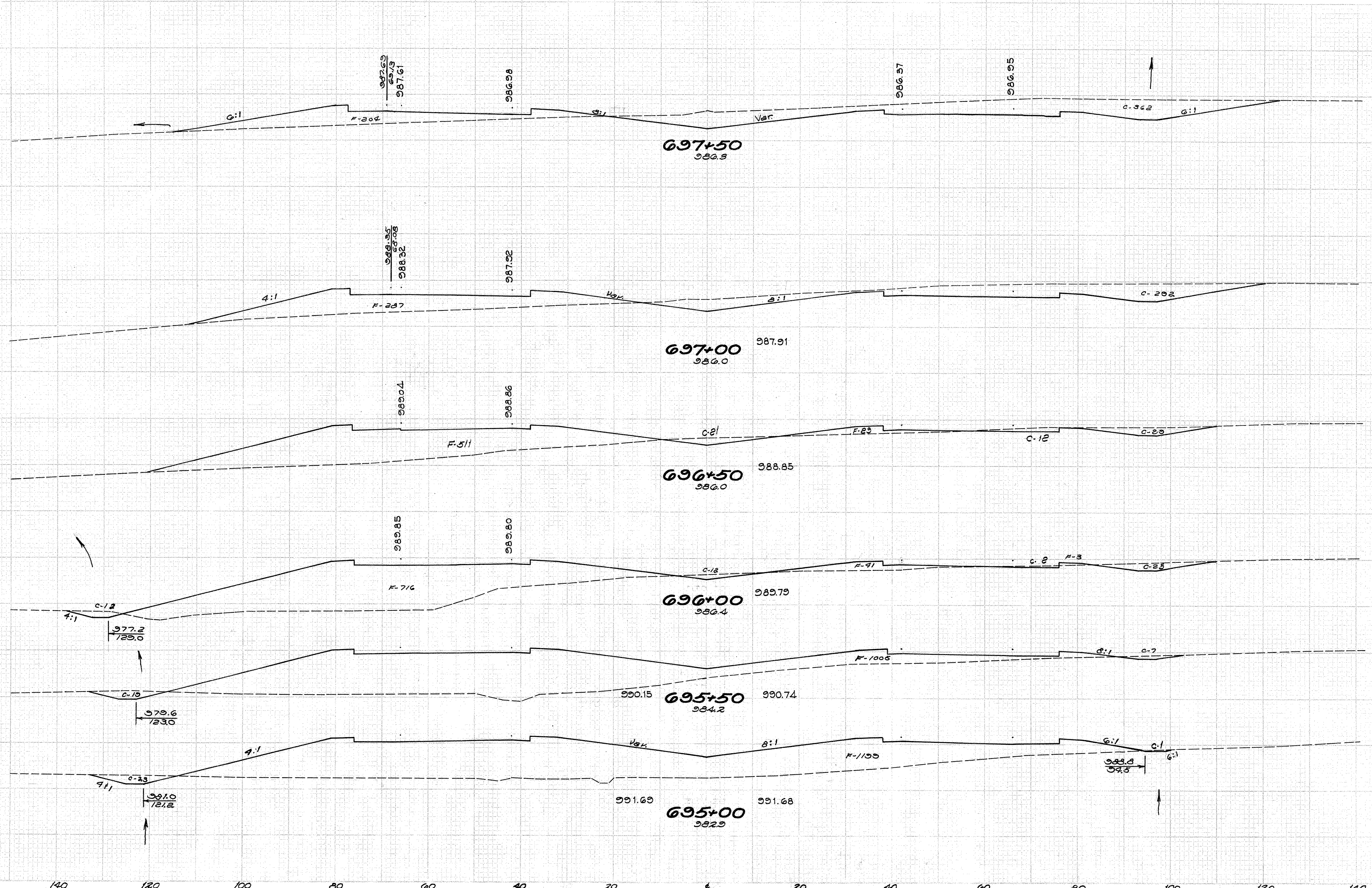
692+00-694+50

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

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

112
250

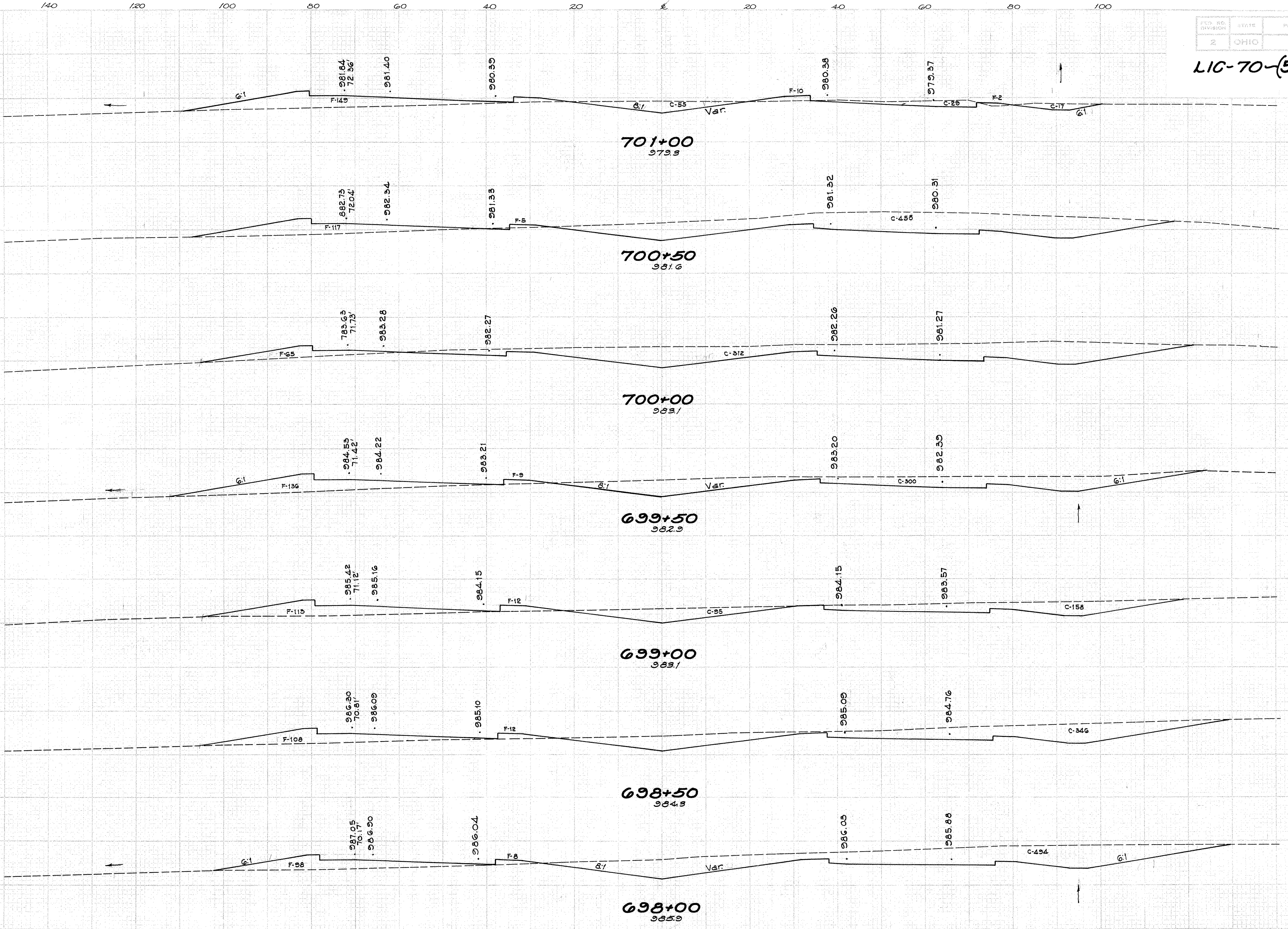
LIC-70-(5.12-8.67)



End Area	Out	Fill	Out	Fill
362	200		793	287
606			606	955
292			328	766
62			105	1201
51			71	1631
26			46	2041
24			64	2188

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
695+00 ~ 697+50

LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds	
	Cut	Fill	Cut	Fill
701+00	101	161		
700+50	459	122	519	262
700+00			389	173
699+50	512	65		
699+00			752	194
698+50	300	144		
698+00			512	299
698+50	253	125		
698+00			555	227
698+50	346	120		
698+00			778	209
698+00	434	106		

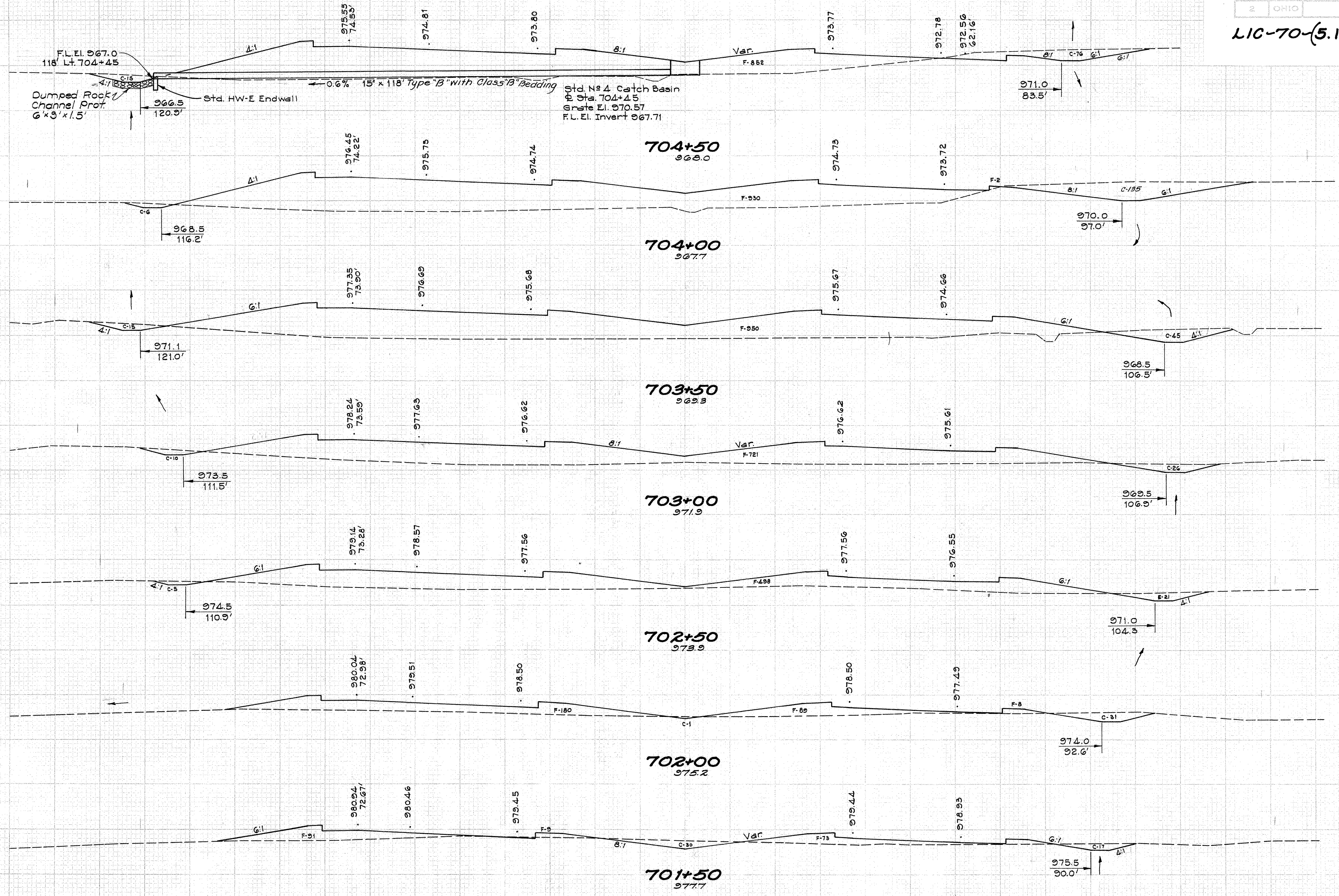
698+00-701+00

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

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

114
250

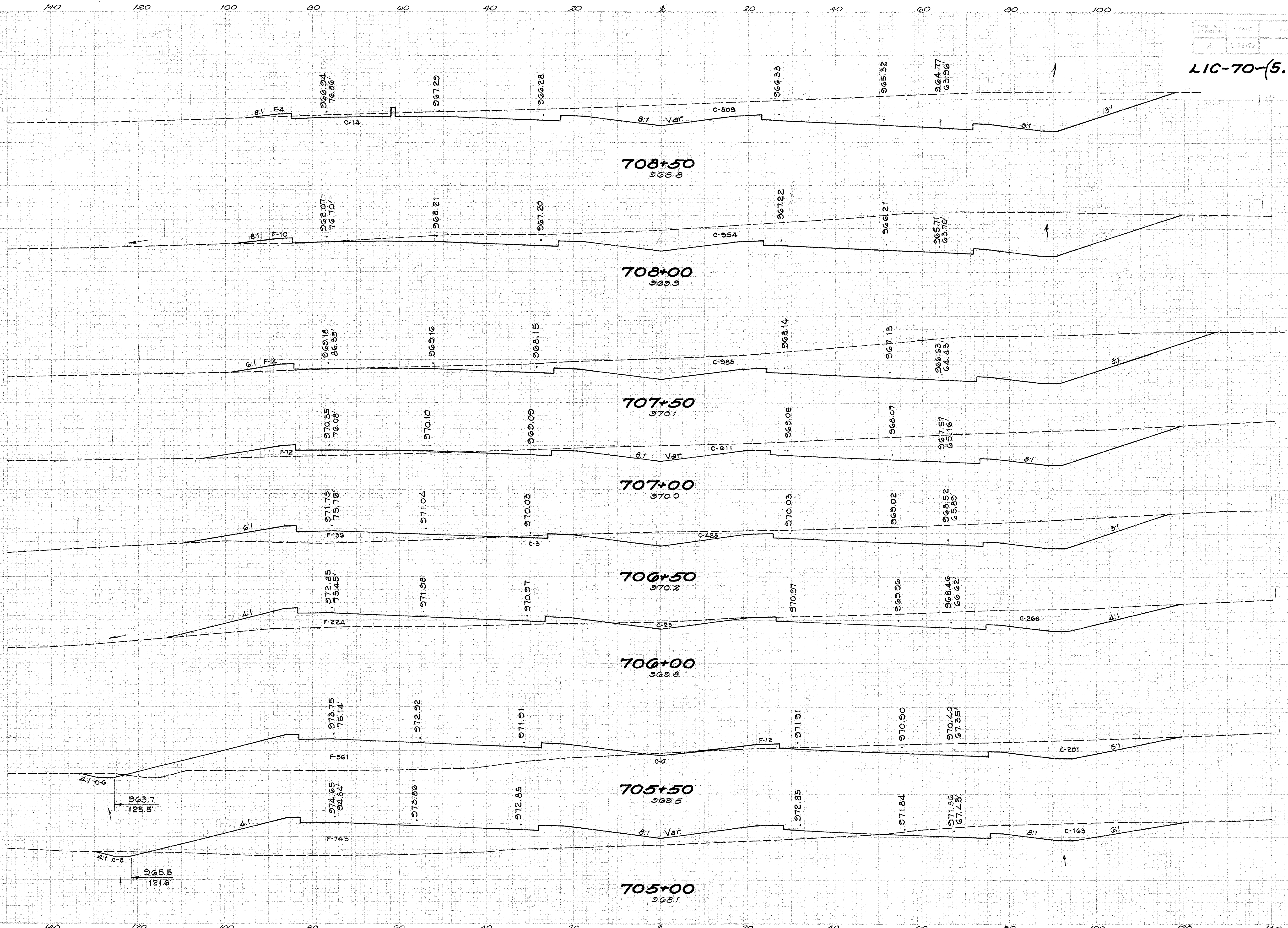
LIC-70-(5.12-8.67)



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
701+50	47	173	137	369
702+00	32	279	73	419
702+50	26	498	54	719
703+00	36	721	57	1129
703+50	60	950	89	1547
704+00	141	932	186	1743
704+50	91	852	215	1652

140 120 100 80 60 40 20 0 20 40 60 80 100 120 701+50-704+50

LIC-70-(5.12-8.67)



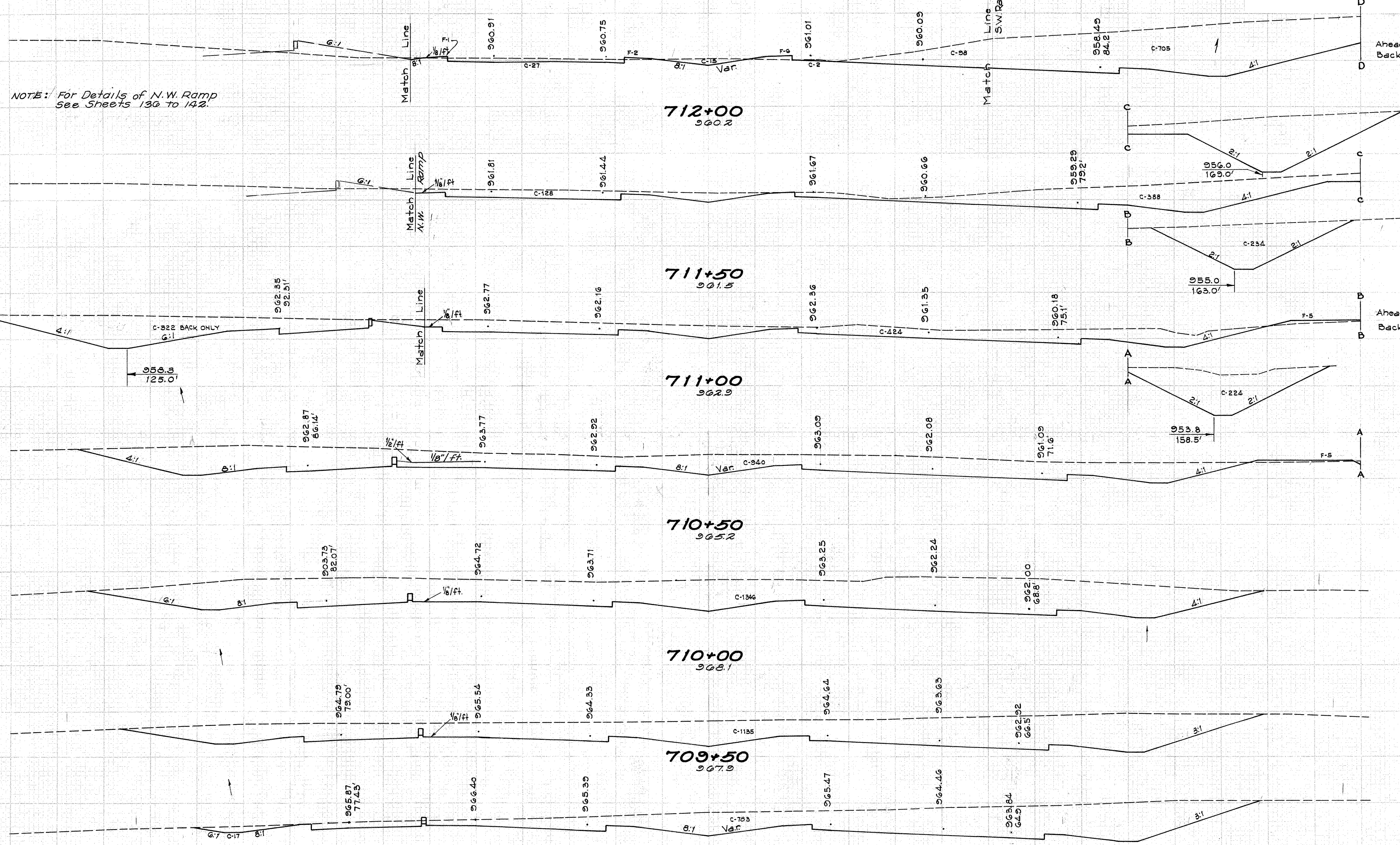
Station	End Area		Cu. Yds	
	Cut	Fill	Cut	Fill
708+50	823	4		
708+00	954	10	1645	13
707+50	988	14	1798	22
707+00	611	72	1481	80
706+50	428	136	962	193
706+00	293	224	668	333
705+50	211	573	467	738
705+00	171	745	211	1220
705+00			293	1479

705+00-708+50

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

LIC-70-(5.12-8.67)

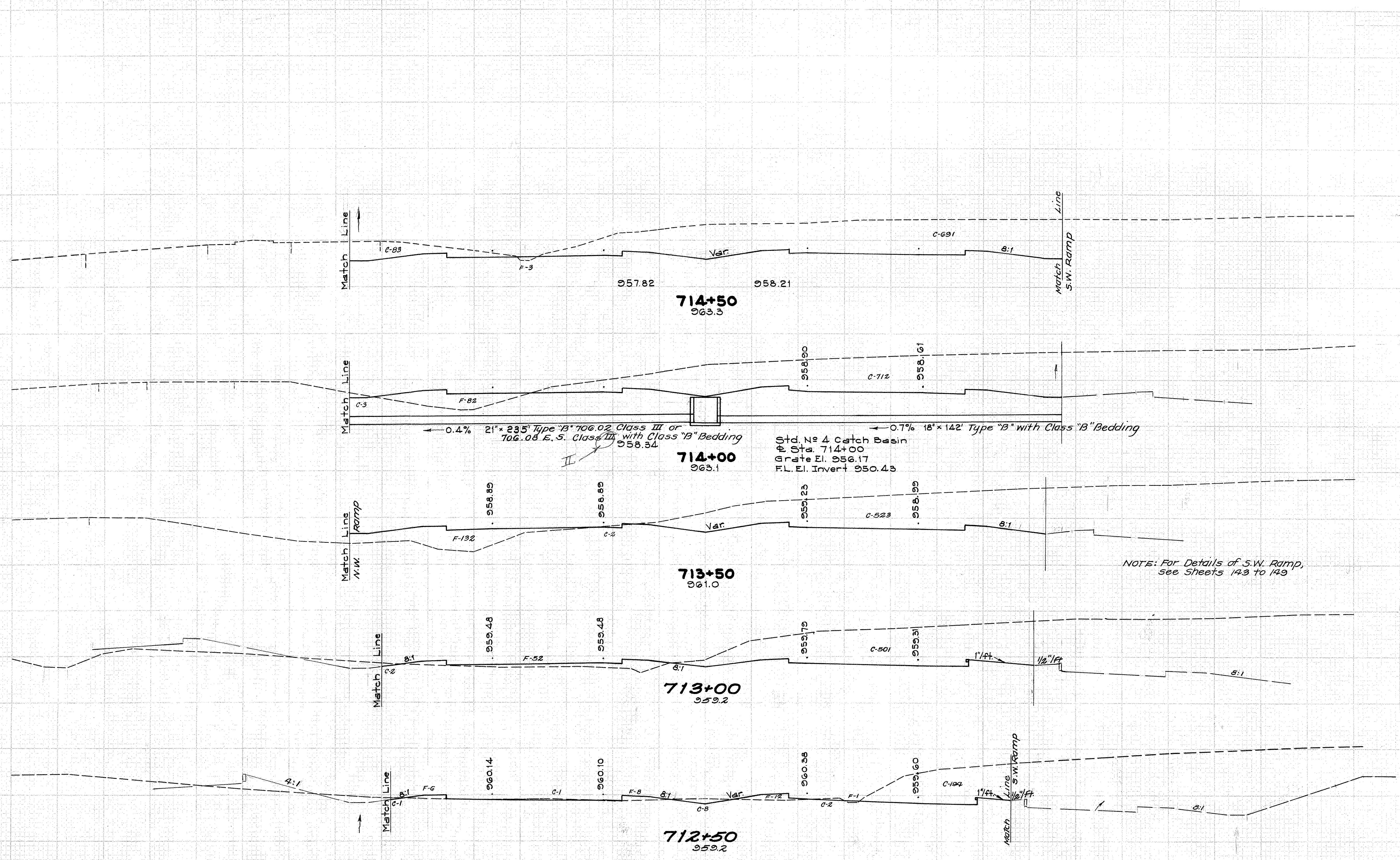
NOTE: For Details of N.W. Ramp See Sheets 136 to 142.



End Area	Cu. Yds.	
	Out	Fill
142	9	
1409	9	
		2114 8
		874 0
		1418 5
		658 5
		980 5
		1985 9
		1164 5
		2324 5
		1346 0
		2291 0
		1135 0
		1792 0
		800 0
		1503 4

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

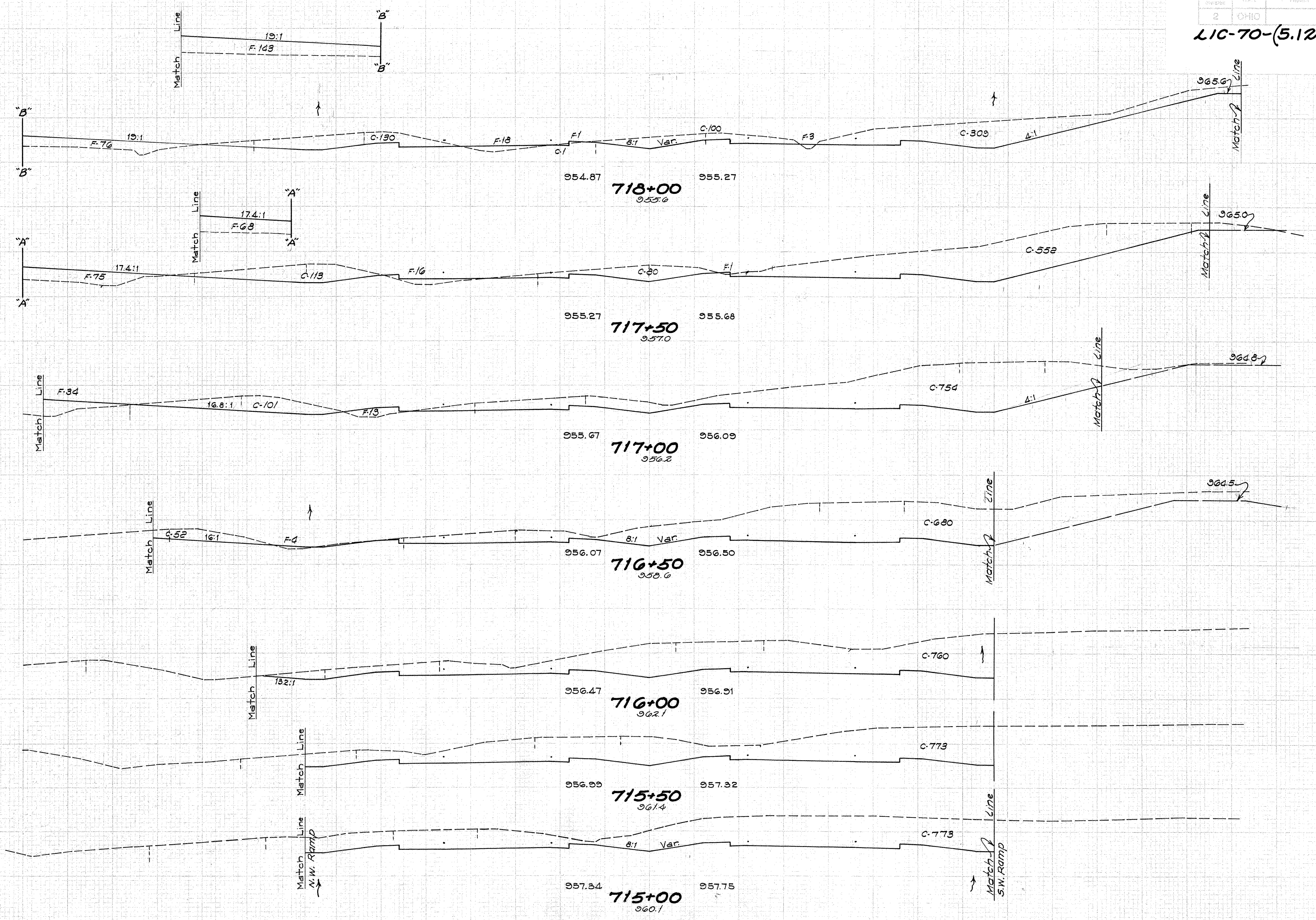
709+00-712+00



Sta.	End Area		Cu. Yds	
	Out	Fill	Out	Fill
714	3		1432	3
715	82		1379	79
715			1148	193
525	132		952	170
503	52		656	73
206	27			
			322	33

SEEDING
 200
 70%

LIC-70-(5.12-8.67)



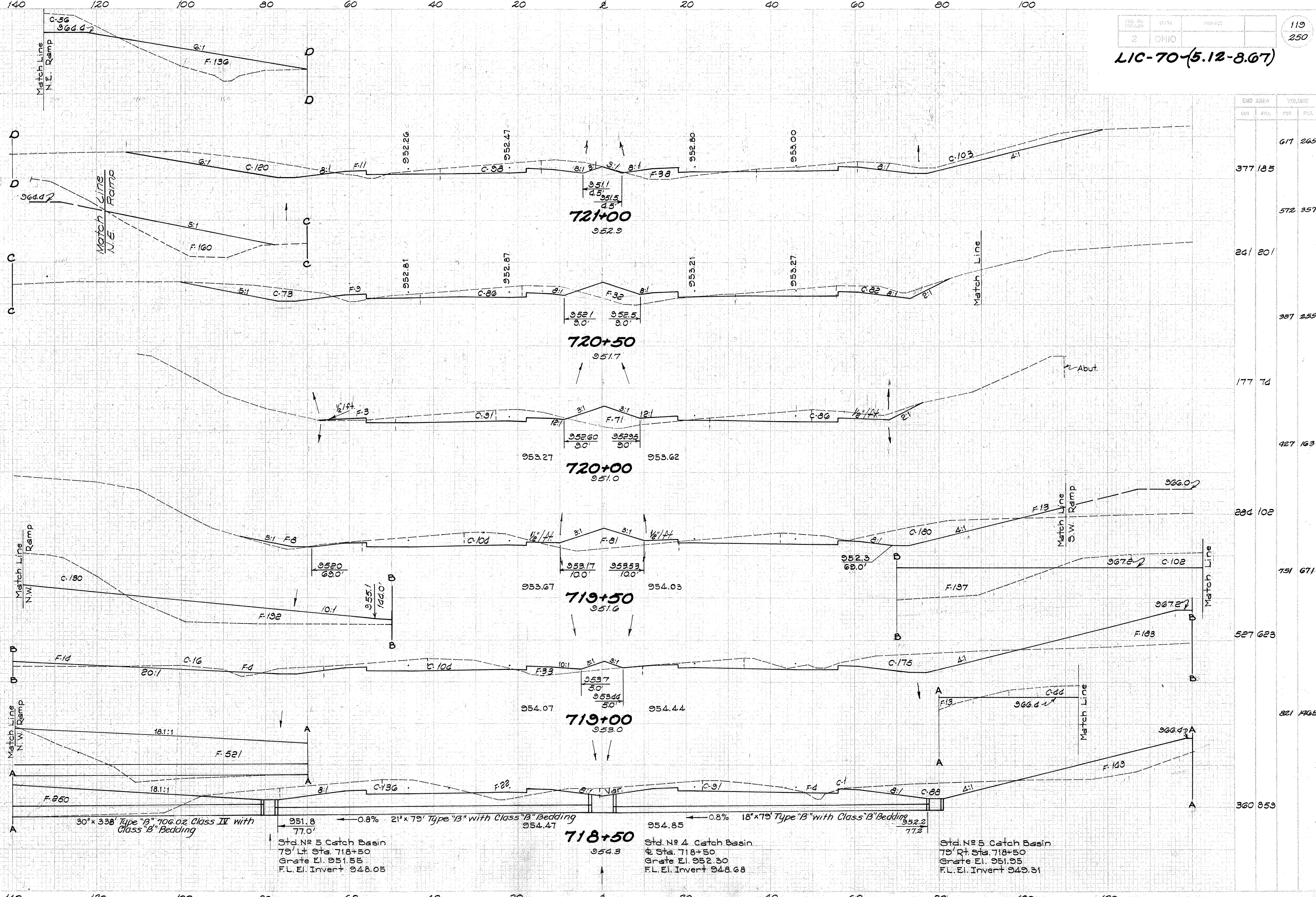
END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
718+00	540	241	1190	371
717+50	745	160	1381	137
717+00	855	53	1469	53
716+50	732	4	1391	4
716+00	760	0	1419	50
715+50	773	0	1431	0
715+00	773	0		

715+00-718+00

SECTION
NO. 101
SHEET NO. 2

PROJECT NO. 119
STATE OHIO
250

LIC-70-(5.12-8.67)



STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
718+50			360	953
719+00			527	623
719+50			791	671
720+00			294	102
720+50			427	163
721+00			177	74
721+50			387	255
722+00			241	201
722+50			377	185
723+00			617	265

Std. No 5 Catch Basin
79' Lt. Sta. 718+50
Grate El. 951.55
F.L. El. Invert 948.05

Std. No 4 Catch Basin
79' Rt. Sta. 718+50
Grate El. 952.30
F.L. El. Invert 948.68

Std. No 5 Catch Basin
79' Rt. Sta. 718+50
Grate El. 951.35
F.L. El. Invert 949.31

718+50-721+00

SEEDING
NO.
YDS.

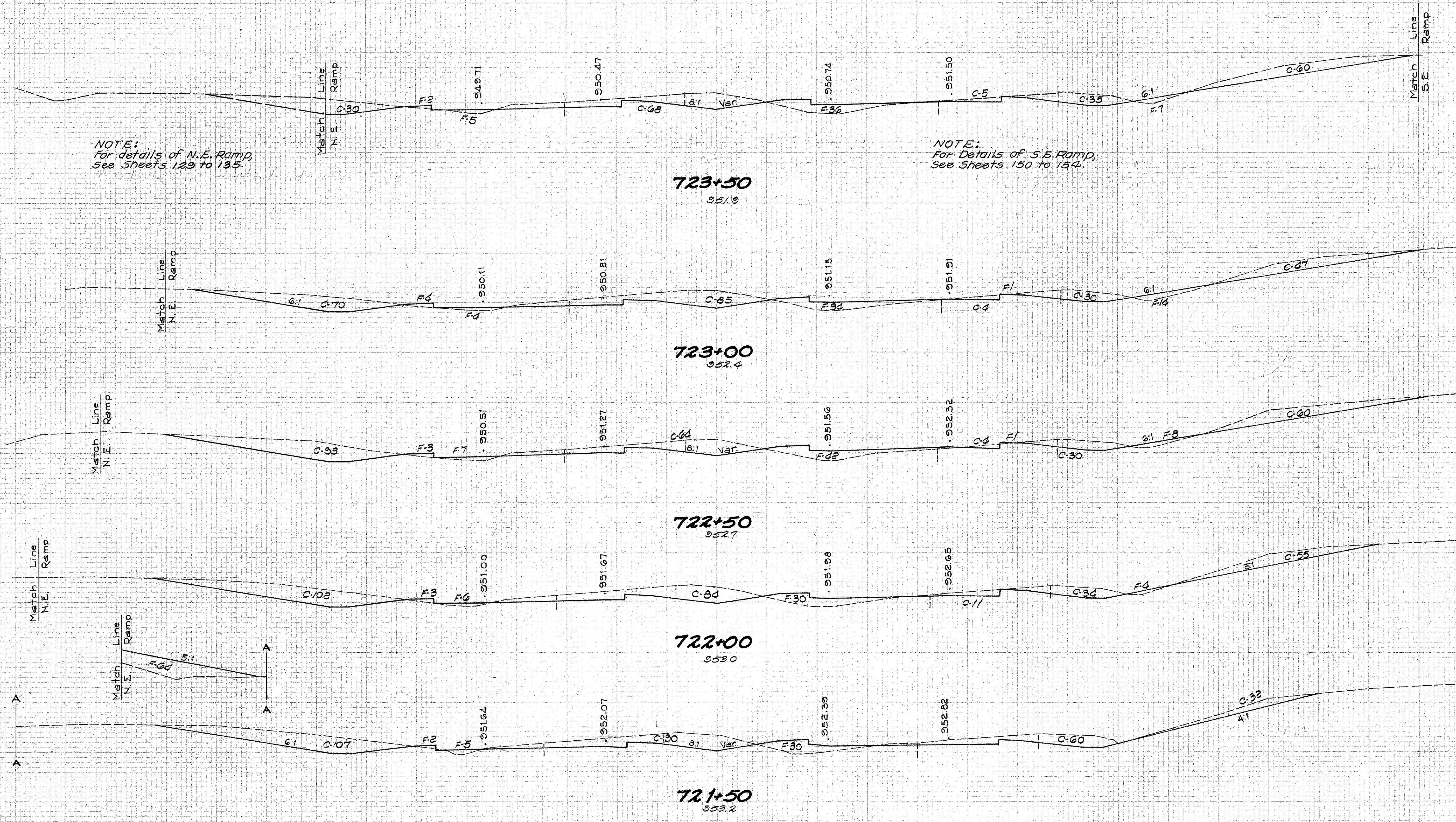
140 120 100 80 60 40 20 0 20 40 60 80 100

FED. RD. DISTRICT	STATE	PROJECT
2	OHIO	

120
250

LIC-70-(5.12-8.67)

END AREA	VOLUME	
	CUT	FILL
138	50	317
236	57	402
261	61	506
286	43	532
289	101	



NOTE:
For details of N.E. Ramp,
See Sheets 129 to 135.

NOTE:
For Details of S.E. Ramp,
See Sheets 150 to 154.

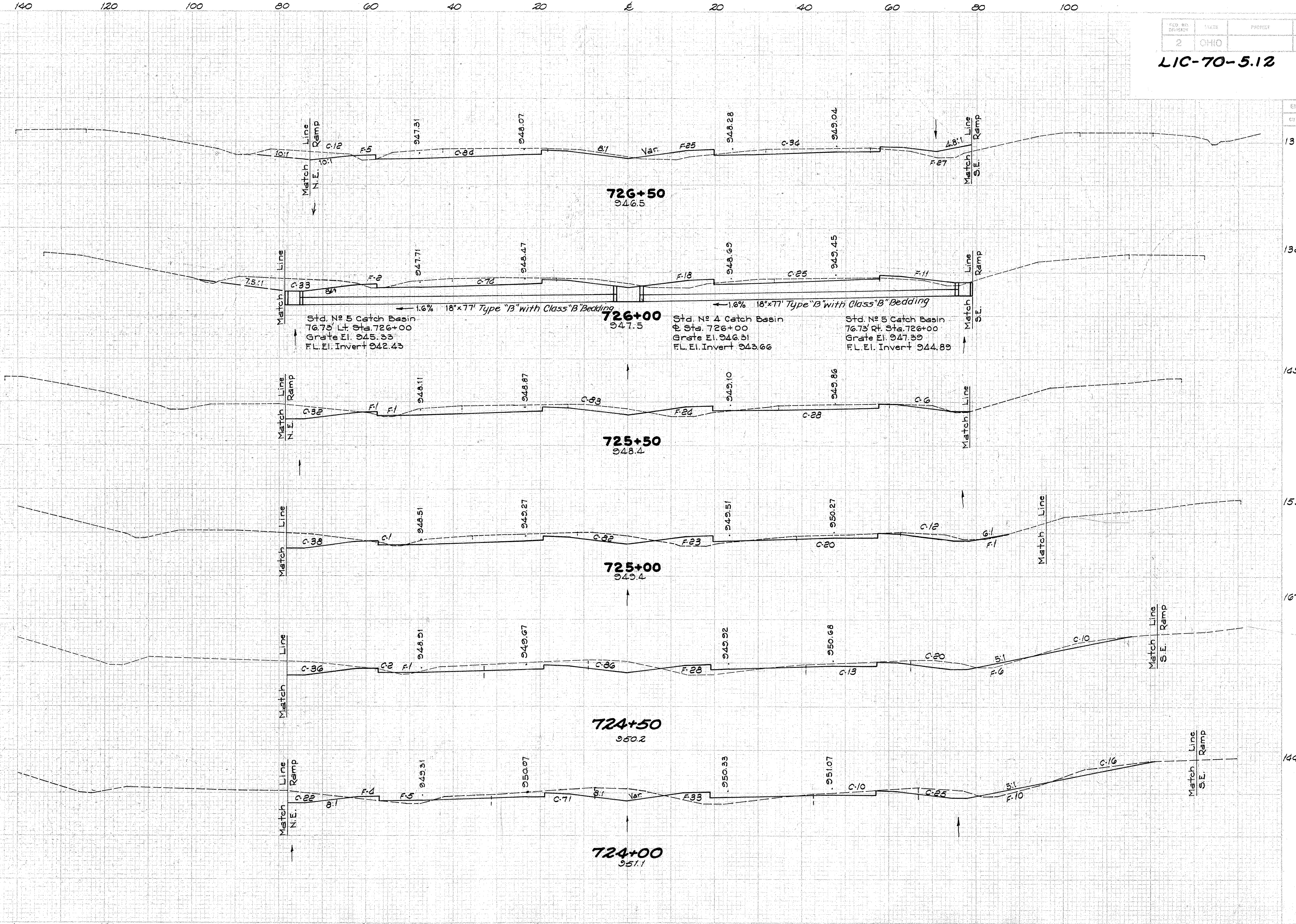
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
721+50-723+50

SECTION
NO. 2

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

121
250

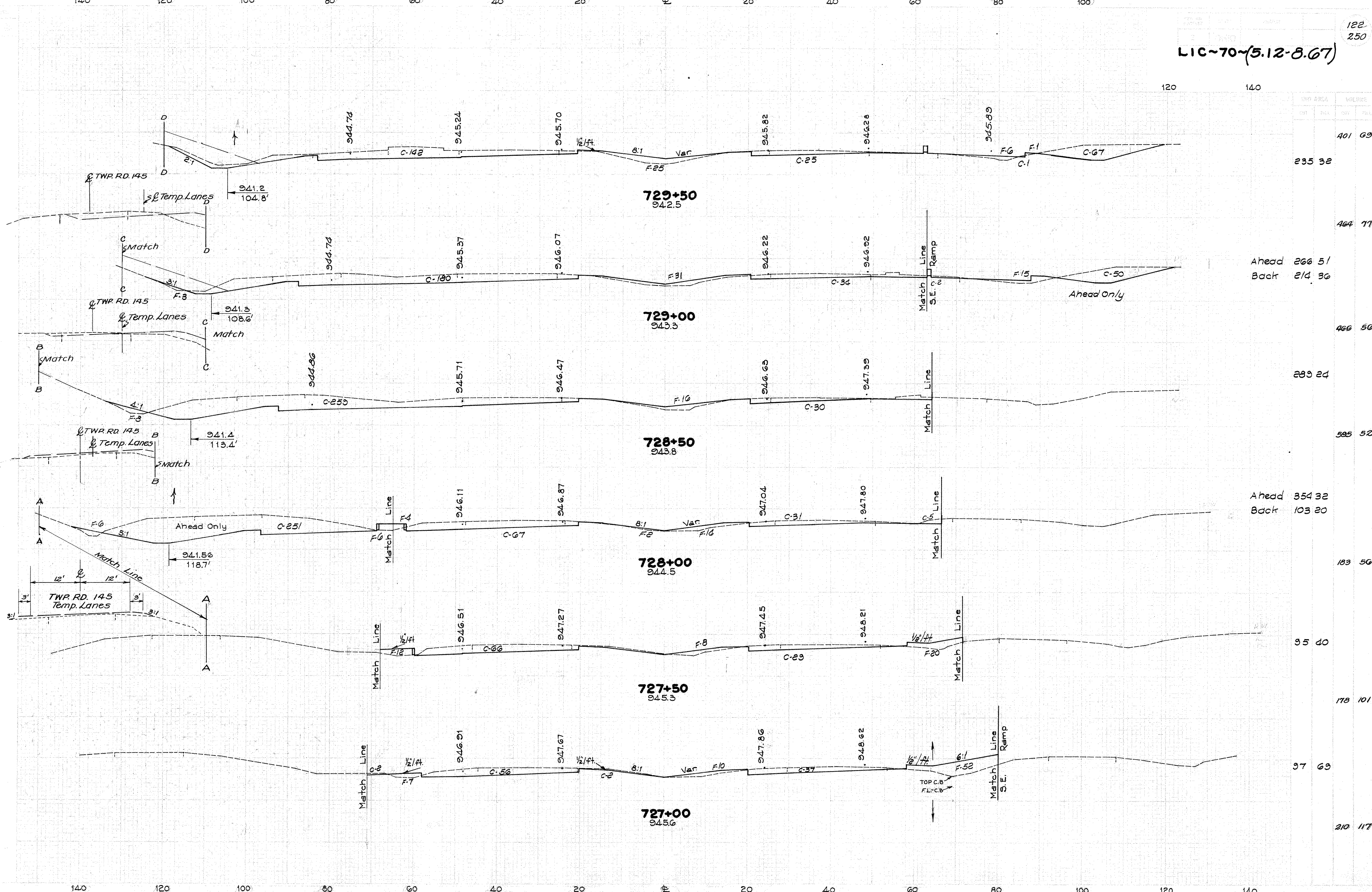
LIC-70-5.12



END AREA	VOLUME	
	CUT	FILL
130	57	
		243 81
132	31	
		260 53
149	26	
		280 41
153	24	
		296 55
167	35	
		288 81
144	52	

724+00 ~ 726+50

LIC-70-(5.12-8.67)

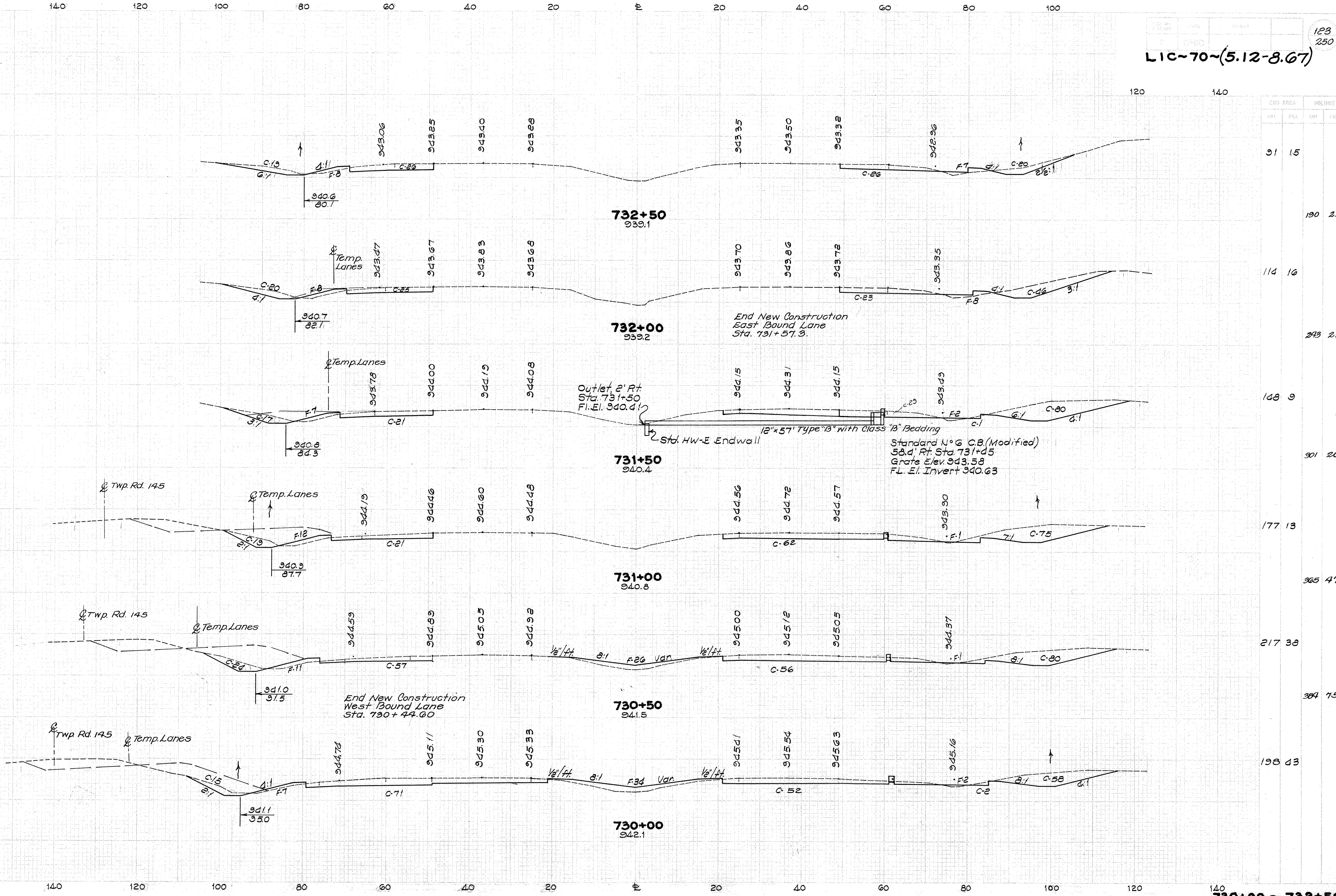


STATION	AREA		VOLUME	
	FT	IN	CU YD	CU FT
729+50	235	32	401	69
729+00	464	77	266	51
			214	36
728+50	289	24	466	50
			289	24
728+00	595	52	354	32
			103	20
727+50	183	50	95	40
			178	101
727+00	97	69	97	69
			210	117

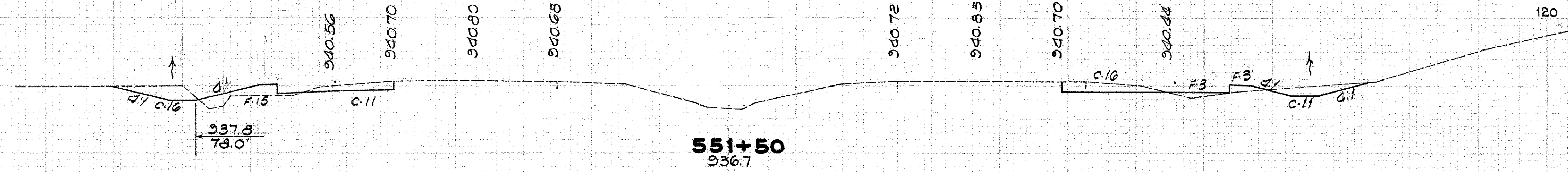
Ahead 266 51
Back 214 36

Ahead 354 32
Back 103 20

727+00 ~ 729+50

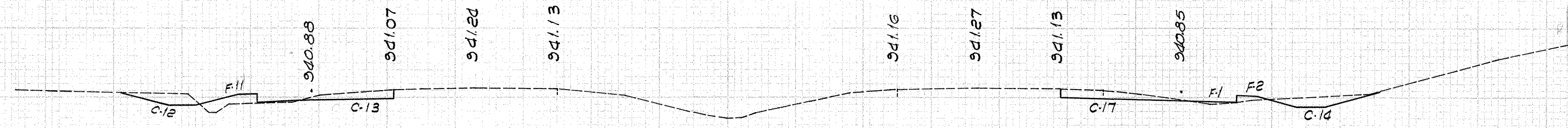


STATION	END AREA		VOLUME	
	CBT	PEL	CBT	PEL
732+50	91	15	190	29
732+00	114	16	273	23
731+50	108	9	301	20
731+00	177	13	365	47
730+50	217	38	384	75
730+00	198	43		



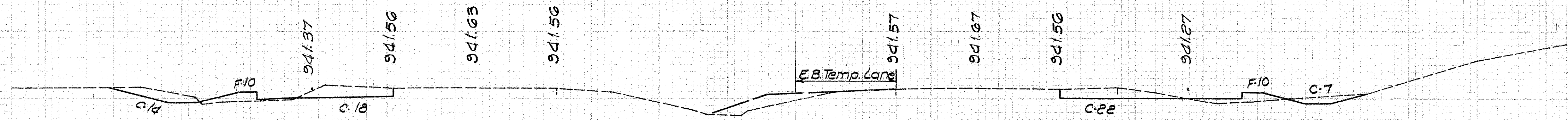
551+50
936.7

STA	EXP. AREA		VOLUME	
	EMB.	FILL	EMB.	FILL
54	21			
			102	32



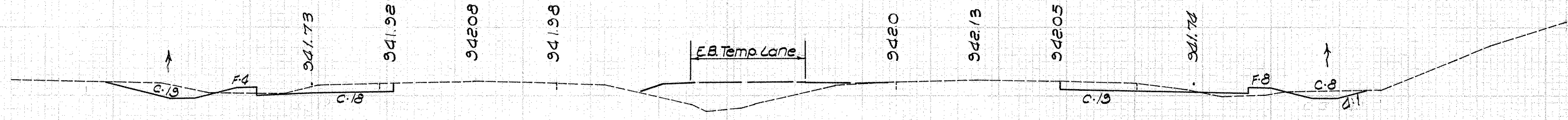
551+00
937.0

56	10			
			108	31



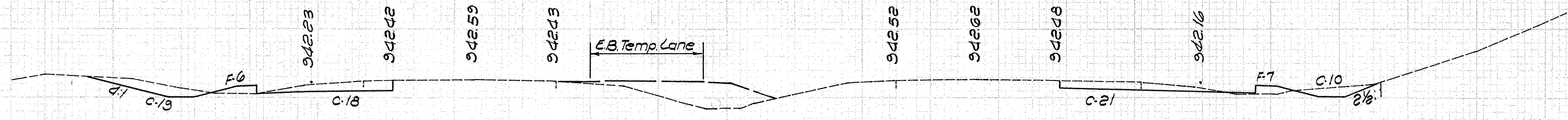
550+50
937.5

61	20			
			116	30



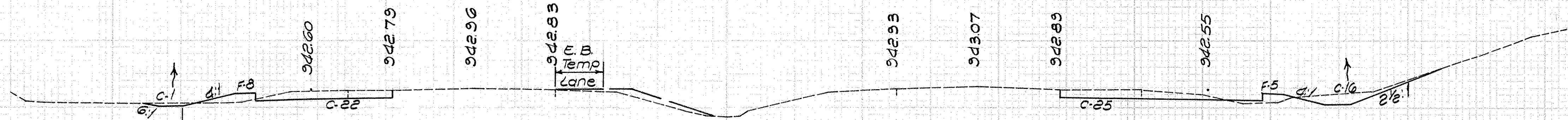
733+97.69 Back =
550+00 Ahead
938.00

64	12			
			117	20
68	13			



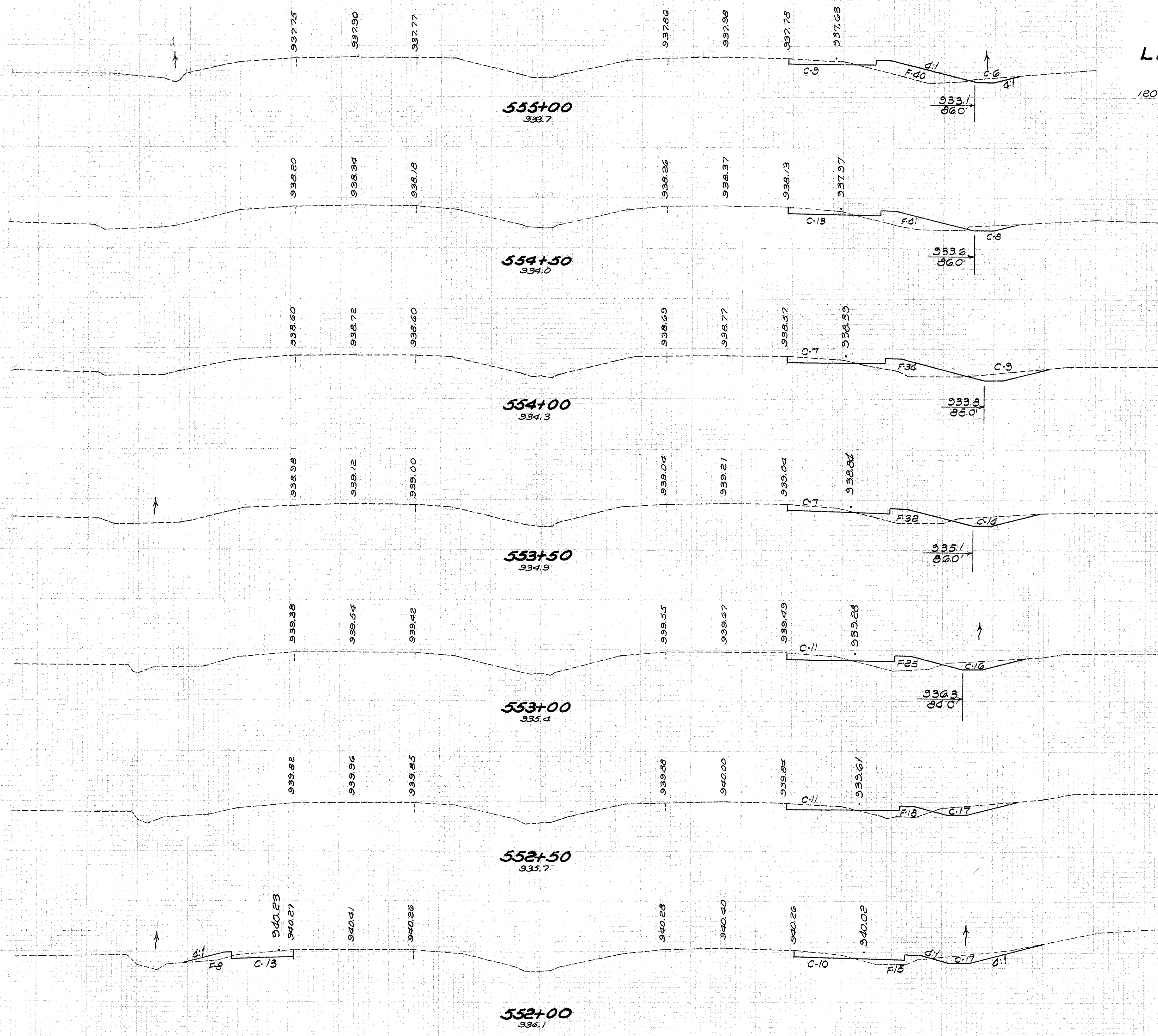
733+50
938.5

122	24			
-----	----	--	--	--



733+00
938.7

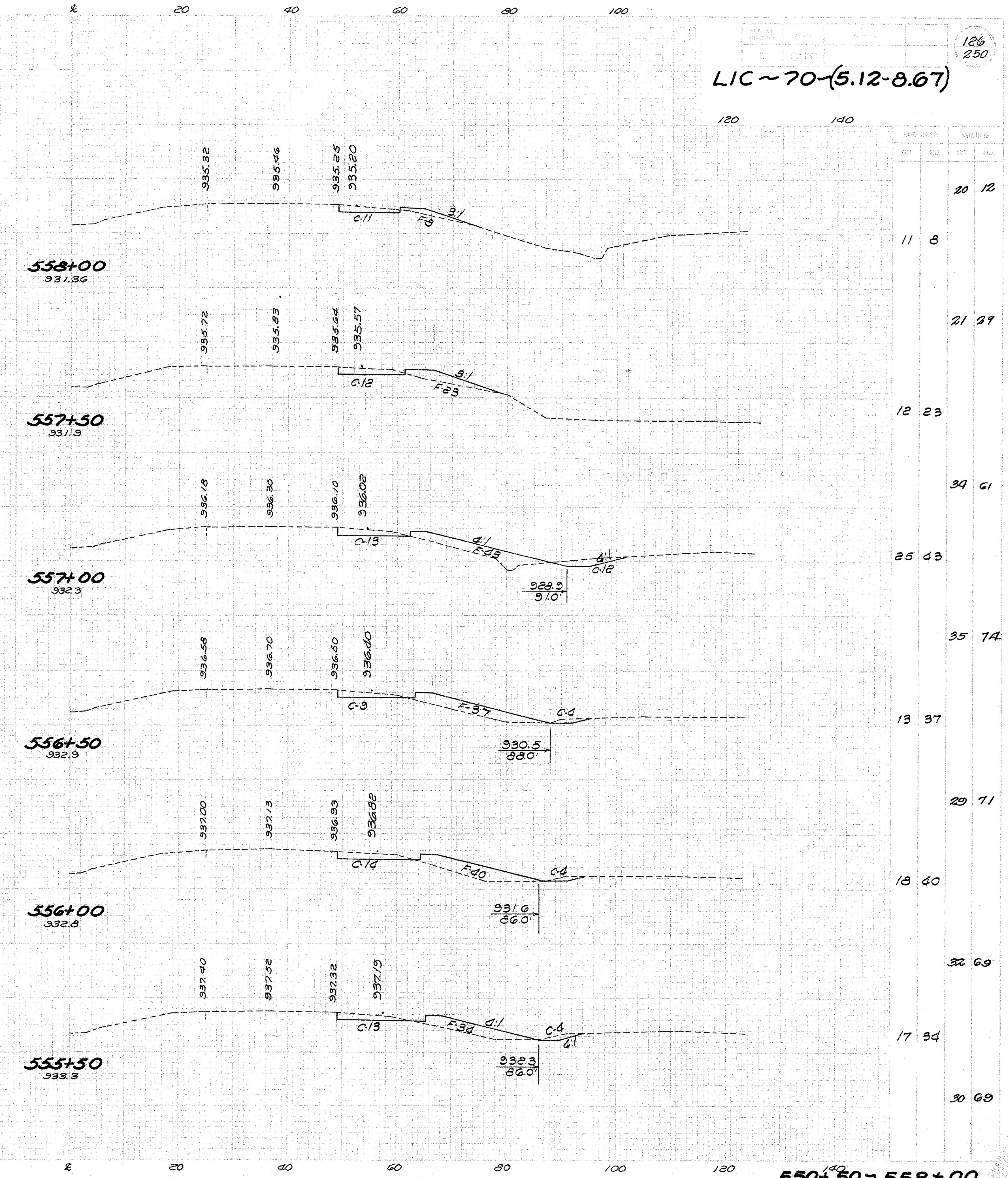
64	13			
			144	26



STATION	CROSS AREA		VOLUME	
	FILL	CUT	FILL	CUT
15	40			
			33	75
21	41			
			39	69
16	34			
			39	61
21	32			
			49	53
27	25			
			51	40
28	18			
			63	38
40	23			
			87	41

SECTION
 CHD
 1254

126
 250
 LIC~70-(5.12-8.67)
 120 140



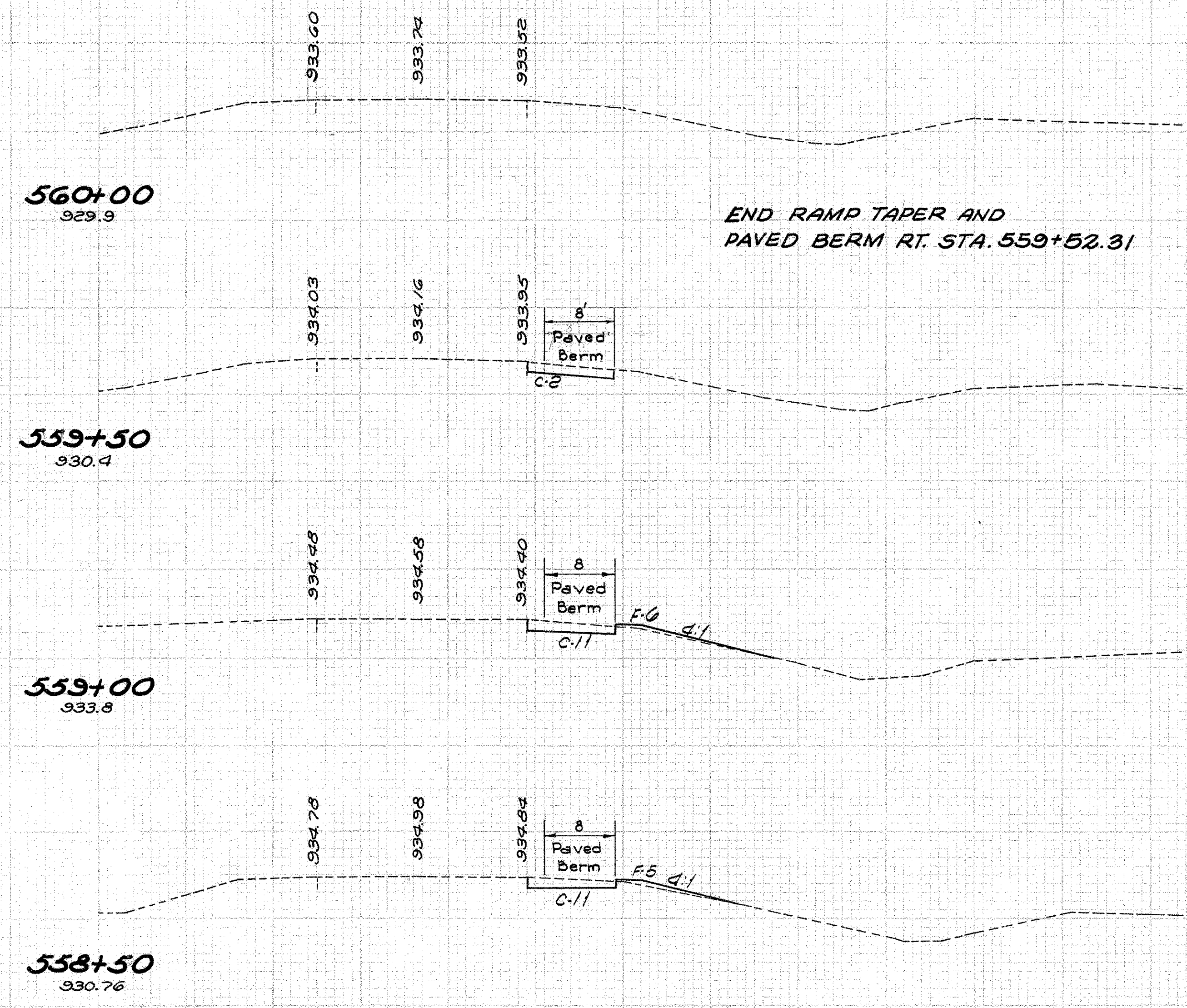
STATION	CROSS AREA		VOLUME	
	CUT	FILL	CUT	FILL
558+00			20	12
557+50			21	39
557+00			39	61
556+50			25	43
556+00			35	74
555+50			13	37
			29	71
			18	40
			32	69
			17	34
			30	69

550+50-558+00

LIC ~ 70-(5.12-8.67)

120 140

AREA		VOLUME	
FT	IN	CU	YD



END RAMP TAPER AND
PAVED BERM RT. STA. 559+52.31

Ahead
Sta. 559+52.31
Back

0	0
12	0
12	0

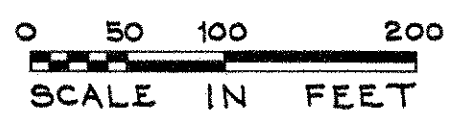
21 0

11 0

20 10

11 5

558+50 - 560+00



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

128
250

LIC-70~(5.12-8.67)



NOTE: For Details of N.W. Ramp See Sheets 136 to 142.

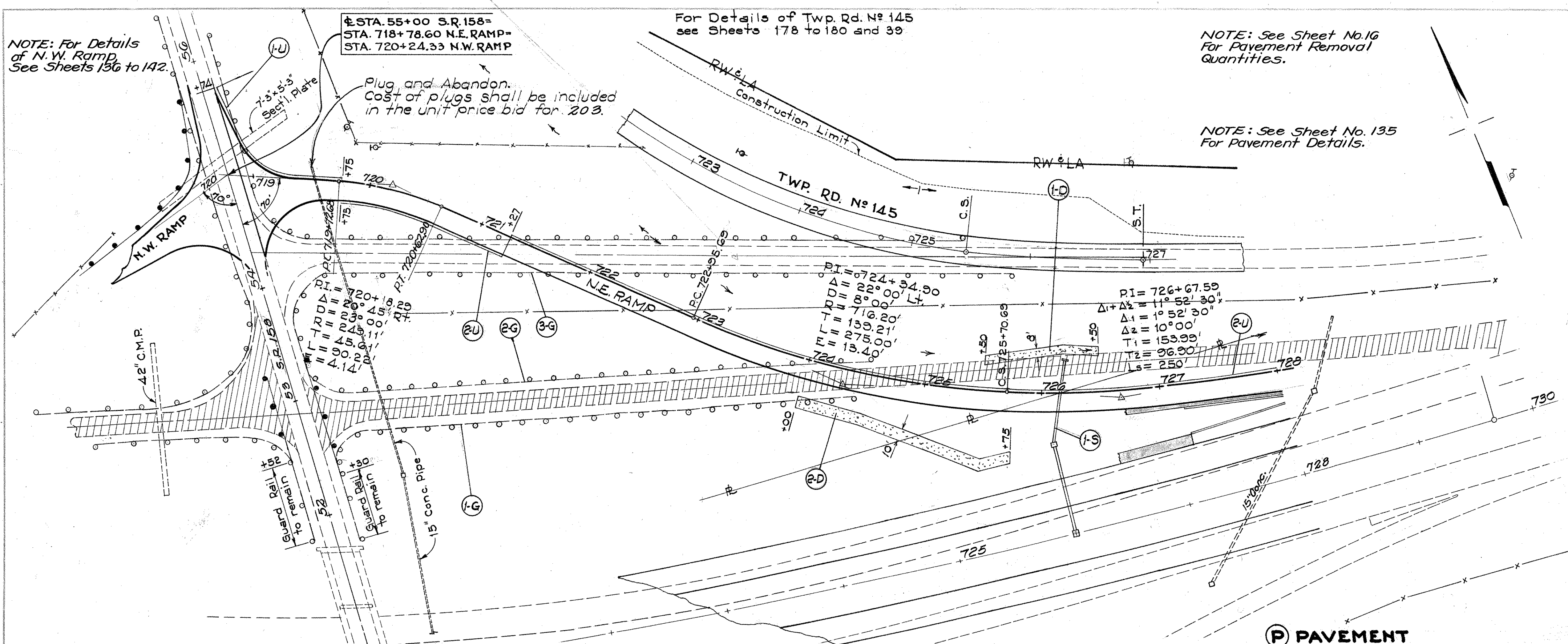
STA. 55+00 S.R. 158-
STA. 718+78.60 N.E. RAMP-
STA. 720+24.33 N.W. RAMP

For Details of Twp. Rd. No. 145 see Sheets 178 to 180 and 39.

NOTE: See Sheet No. 16 For Pavement Removal Quantities.

NOTE: See Sheet No. 135 For Pavement Details.

Plug and Abandon.
Cost of plugs shall be included in the unit price bid for 203.



G GUARD RAIL

Mark	Station		Side	G.R. Rem. Lin. Ft.
	From	To		
1-G	55+40	721+44	Rt.	153
2-G	55+75	721+51	Lt.	185
3-G	55+20	725+71	Lt.	673
Totals				1011

S SEWERS

Mark	Station		Side	603 21" Conduit Concrete Type "B" Lin. Ft.	602 Masonry Cu. Yds.
	From	To			
1-S	726+10	726+20	Lt.	72	0.4
Totals				72	0.4

D DITCHES

Mark	Station		Side	600 Sodding Sq. Yds.
	From	To		
1-D	725+50	726+50	Lt.	86
2-D	721+00	725+75	Rt.	211
Totals				297

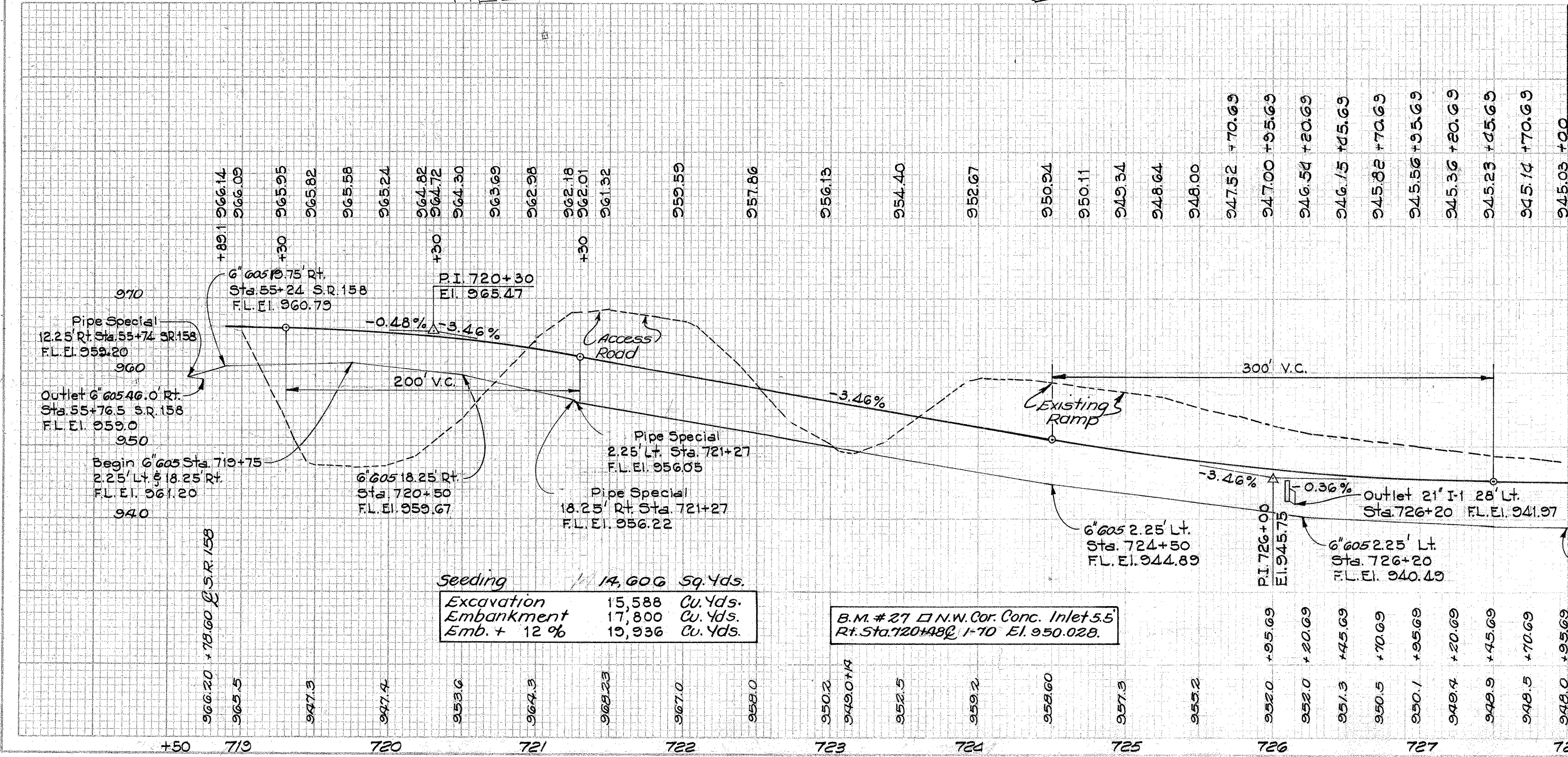
P PAVEMENT

Mark	Station		451 Reinf. PC Conc. Pavt. Sq. Yds.	310 Subbase Grad. Aar. B. Cu. Yds.	310 Subbase Cu. Yds.	304 Aggr. Base Cu. Yds.	301 Bituminous Aggr. Base Cu. Yds.	409 Seal Coat Sq. Yds.	Special Drainage Connection Cu. Yds.	203 Subgrade Preparation Sq. Yds.	609 Type G Curb Lin. Ft.	612 Conc. Median Sq. Yds.
	1-P	721+20	552+23	3481	789	81	66	* 232.3	1393	127	4896	134
Totals			3481	789	81	66	* 232.3	1393	127	4896	134	25

* As Per Plan

U DRAINS

Mark	Station		Side	605 6" Pipe Underdrains Lin. Ft.		603 8" Conduit Type "F" Lin. Ft.	6" Pipe Special Each 90° Bend	603 6" Conduit Type "B" Lin. Ft.
	From	To		Shallow	Deep			
1-U	55+76.5	719+75	Lt.	170	10	1		
2-U	719+75	728+00	Rt.	75	750	2	21	
Totals				75	920	3	21	



Seeding 14,600 Sq. Yds.
Excavation 15,588 Cu. Yds.
Embankment 17,800 Cu. Yds.
Emb. + 12% 19,936 Cu. Yds.

B.M. # 27 N.W. Cor. Conc. Inlet 5.5 Rt. Sta. 720+48.2 El. 950.028.

For Details of Twp. Rd. N^o 145
see Sheet N^o 178 to 180A and 39

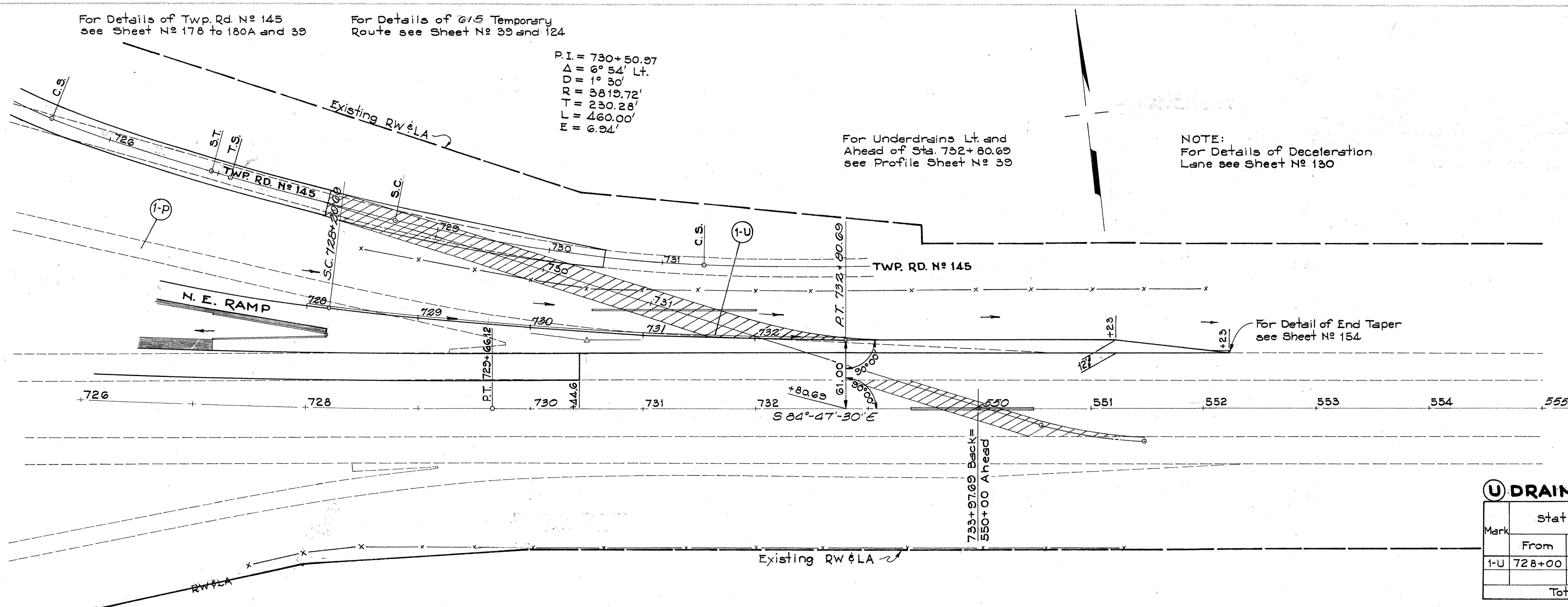
For Details of 6" 15 Temporary
Route see Sheet N^o 39 and 124

LIC-70-(5.12-8.67)

P.I. = 730+50.97
 $\Delta = 6^{\circ} 54' \text{ Lt.}$
 $D = 1^{\circ} 30'$
 $R = 3819.72'$
 $T = 230.28'$
 $L = 460.00'$
 $M = 6.94'$

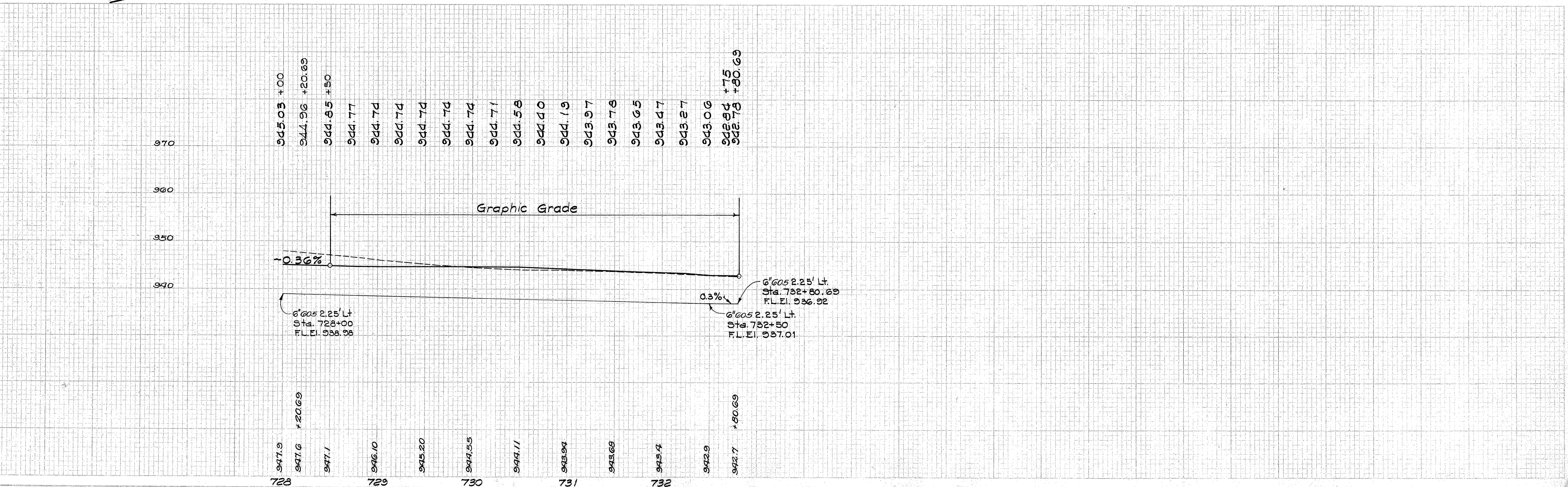
For Underdrains Lt. and
Ahead of Sta. 732+80.69
see Profile Sheet N^o 39

NOTE:
For Details of Deceleration
Lane see Sheet N^o 130



U DRAINS

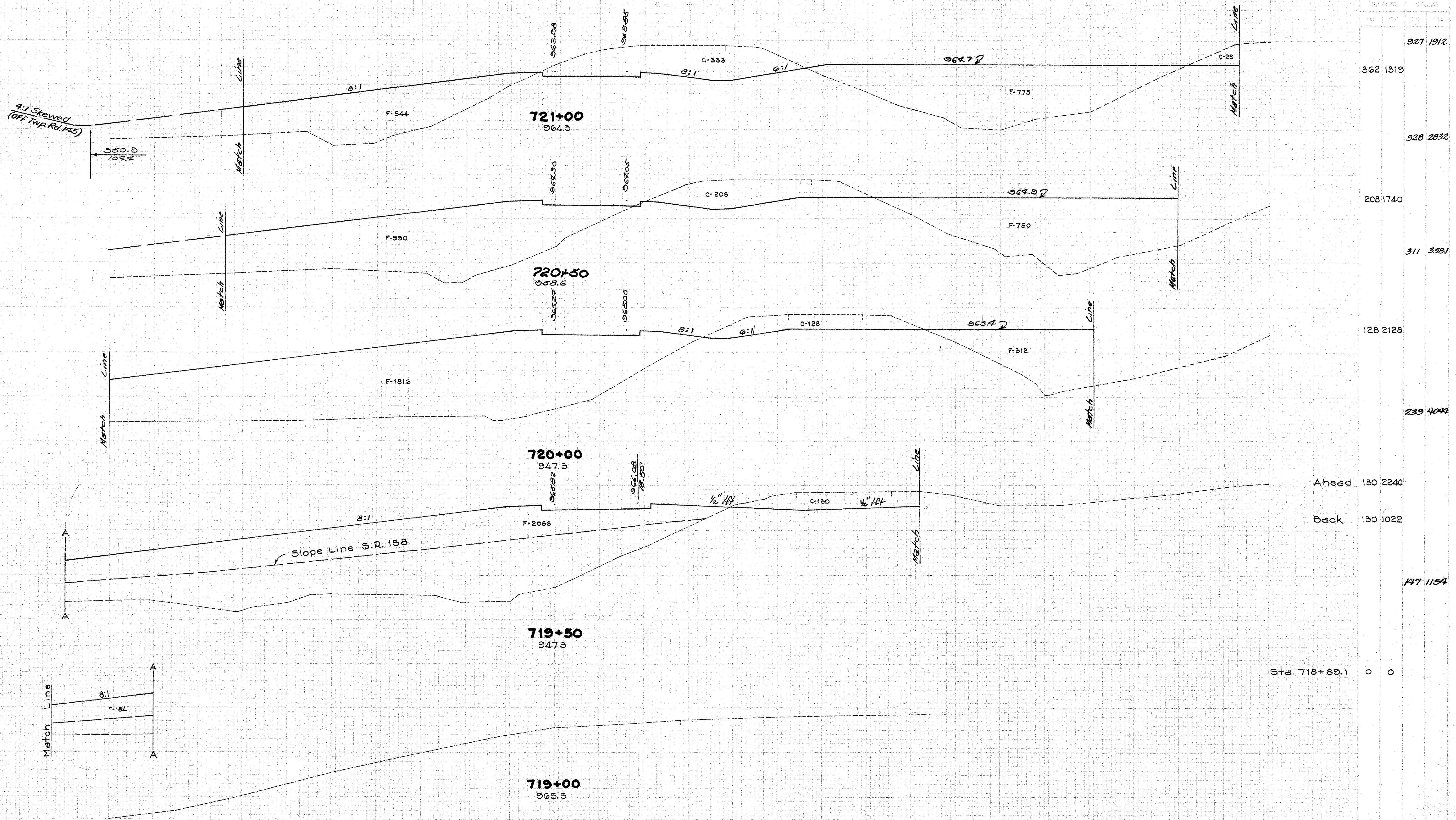
Mark	Station		Side	605 G" Pipe Underdrains Lin. Ft.	
	From	To		Shallow	Deep
1-U	728+00	732+80.69	Lt.		481
Totals					481



N.E. RAMP 728+00 ~ 732+80.69

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

131
230
LIC-70-(5.12-8.67)



SHP AREA		SLOPE	
BY	REF	SH	FL
		927	1912

362 1319

528 2832

208 1740

311 3581

128 2128

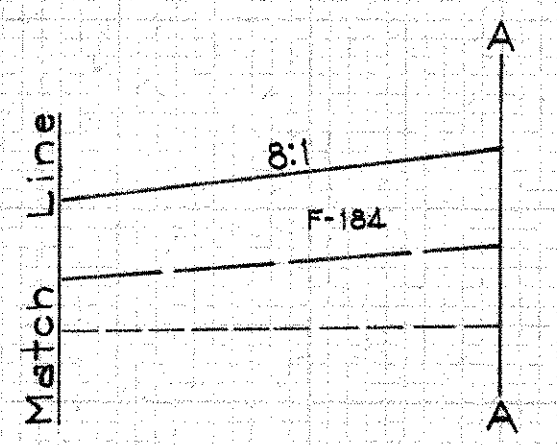
239 4091

Ahead 130 2240

Back 130 1022

147 1154

Sta. 718+89.1 0 0



120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 N.E. RAMP 719+00~721+00

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

LIC-70-(5.12-8.67)

160 180

CUT AREA		FILL AREA	
CU	FTL	CU	FTL

994 296

547 156

1182 430

730 308

1390 623

760 365

1334 770

789 467

1322 1123

639 746

Match Line

Match Line

Match Line

Match Line

Match Line

TWP. RD. N# 145

723+50
952.5

723+00
950.2

722+50
958.1

722+00
967.0

721+50
968.21

C-159
8:1

C-454

C-658
8:1

C-631

F-135
8:1

F-101
952.1
24.7

952.8
33.0

953.2
44.5

952.0
60.8

951.0
82.7

955.29

C-388
6:1

957.0±

F-55
6:1

956.73

956.70

C-276
6:1

960.5±

F-126

957.86

958.32

C-658
8:1

F-244

963.6±

C-121
6:1

C-631

959.87

959.84

F-441

963.0±

C-158

F-21

961.32

961.77

C-458
8:1

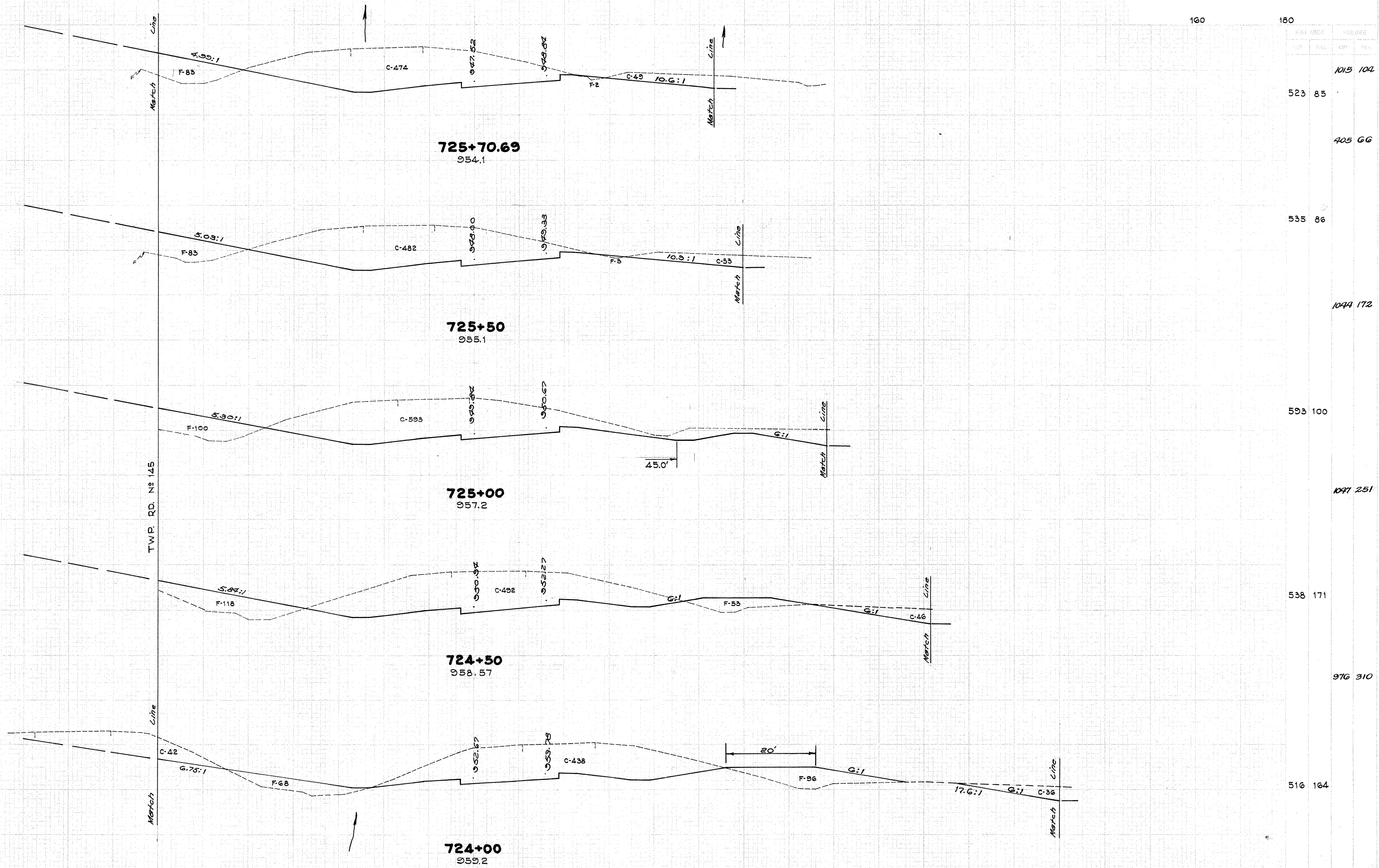
964.4±

C-81
6:1

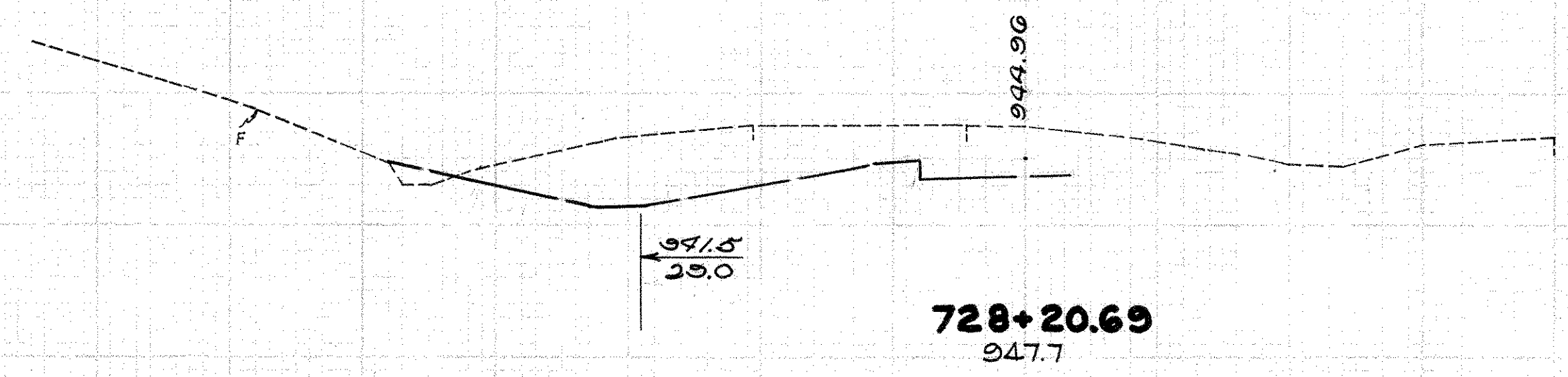
F-611

6:4:1 Skewed

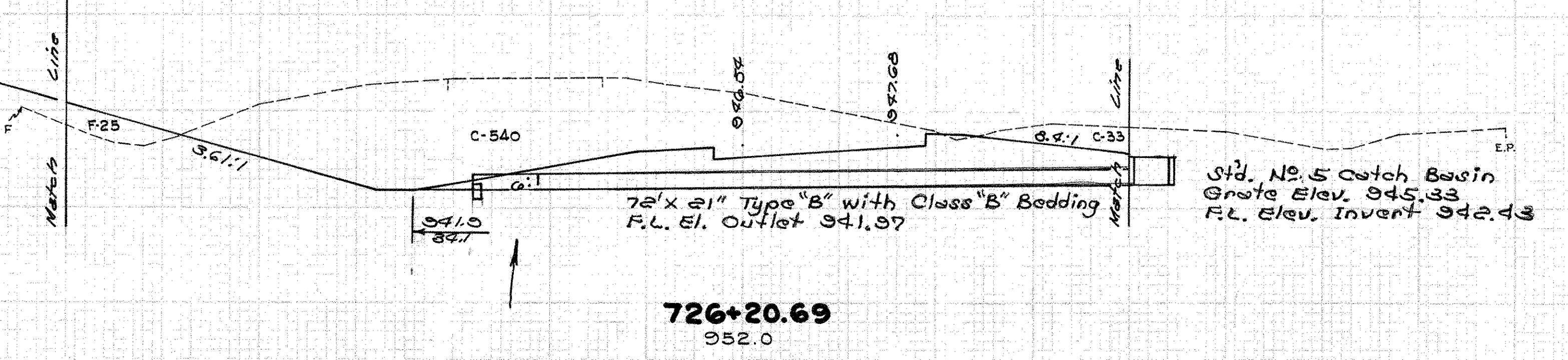
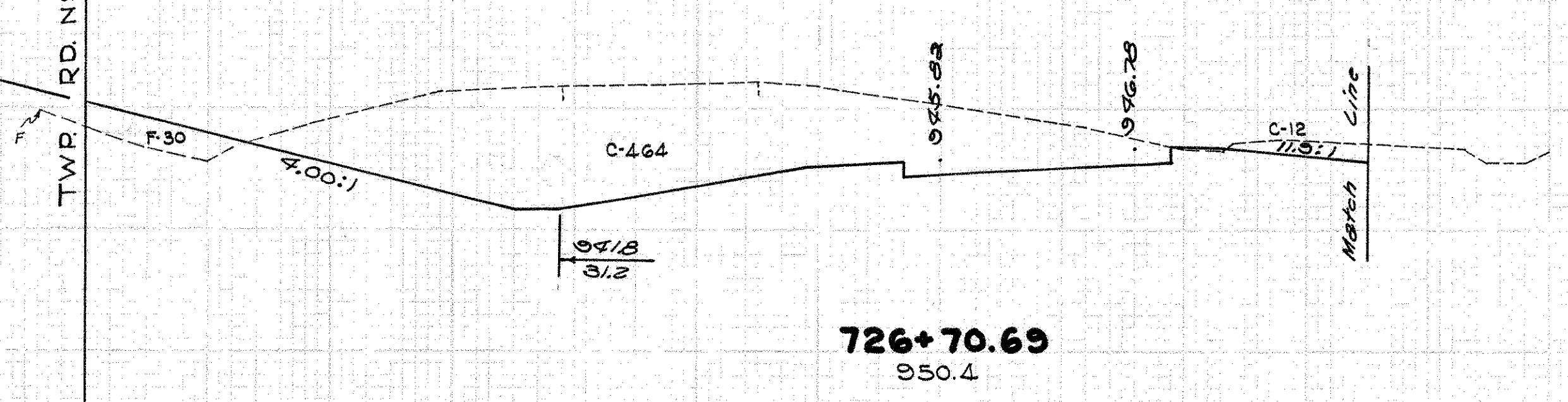
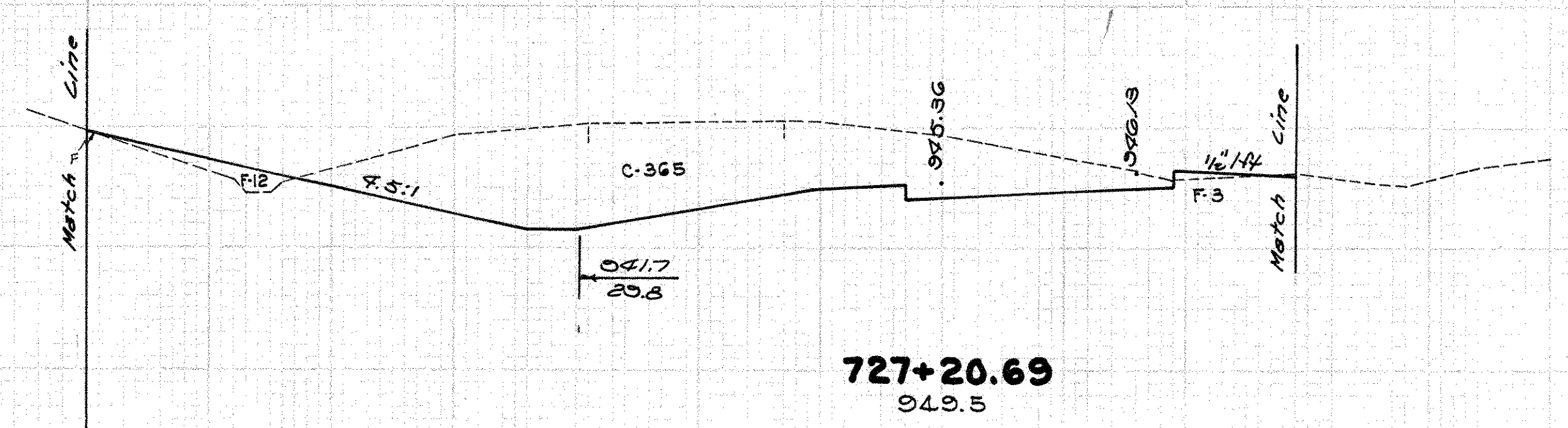
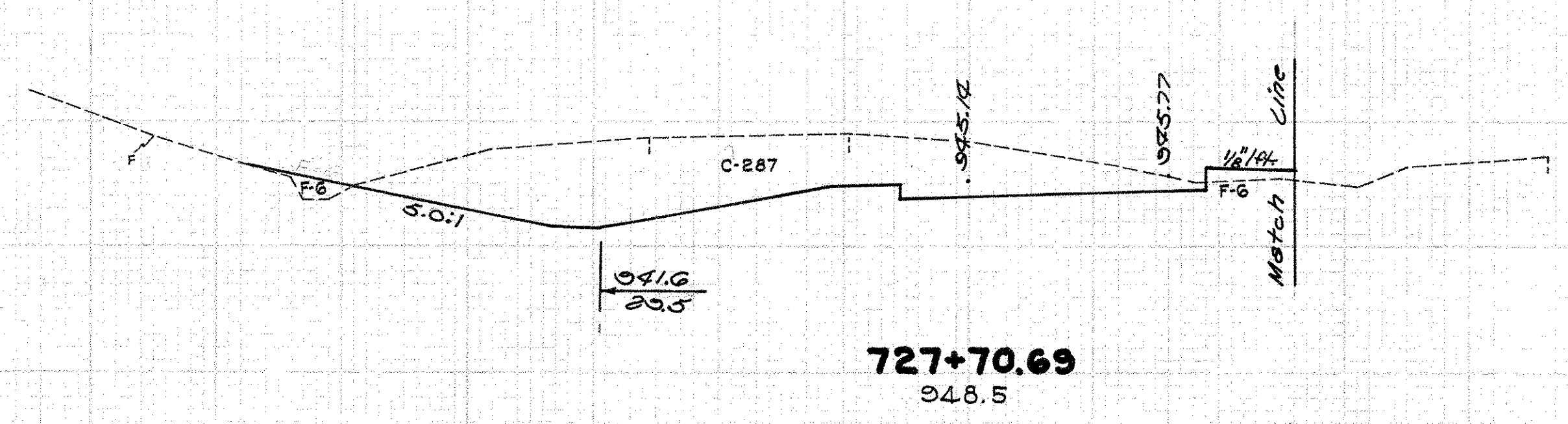
4:4:1 Skewed



STATION	CUT		FILL		TOTAL
	FT	CU	CU	CU	
725+70.69	523	85			1015 102
725+50	535	86			405 66
725+00	593	100			1049 172
724+50	538	171			1047 251
724+00	516	164			976 310



Sta. 728+00 Ahead 0 0
Back 251 6



Std. No. 5 Catch Basin
Grate Elev. 945.33
F.L. Elev. Invert 942.43

CUM. AREA		CUM. VOLUME	
BY	FULL	BY	FULL

289 10

287 12

604 25

365 15

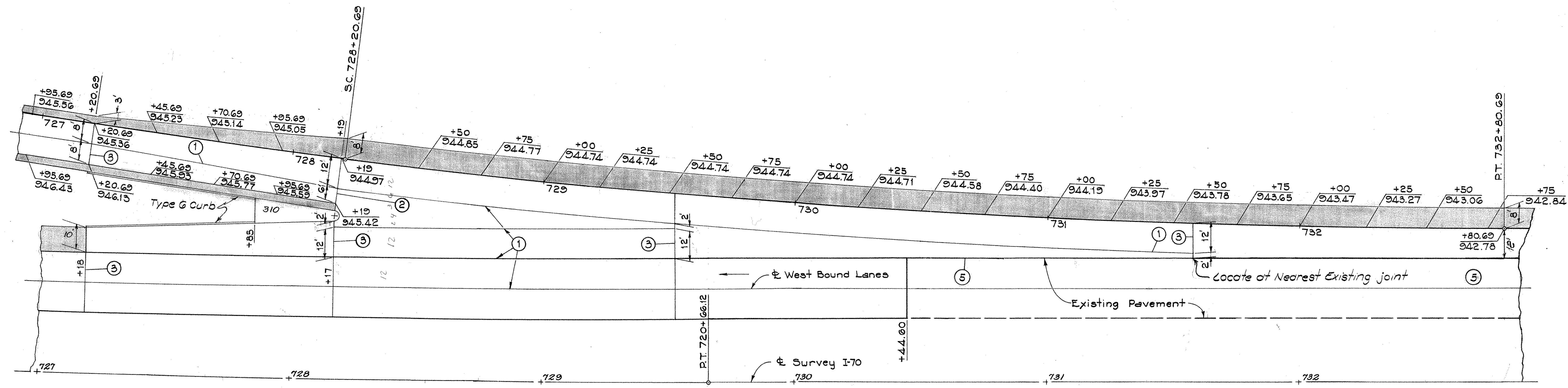
781 43

478 31

973 54

573 27

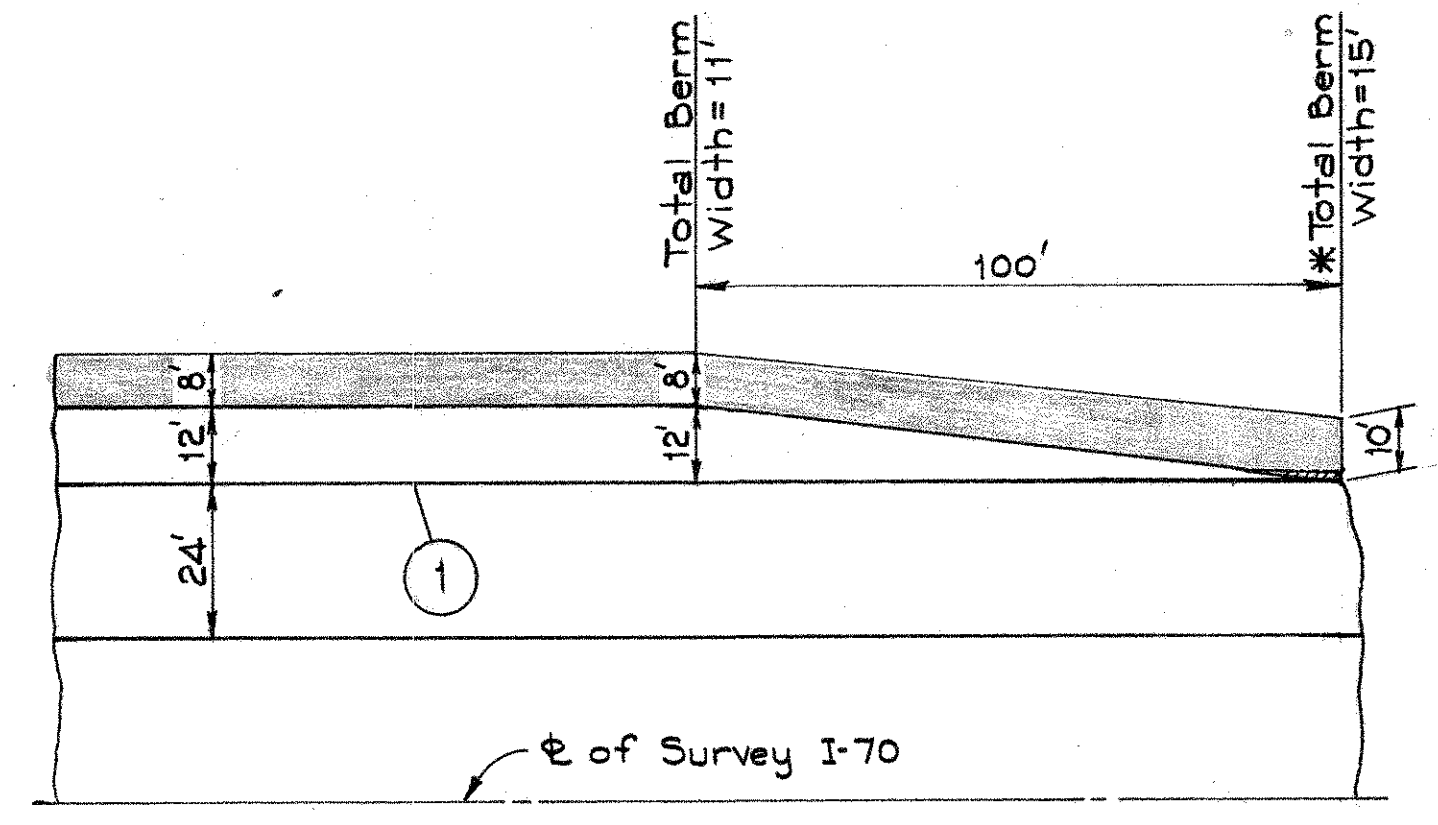
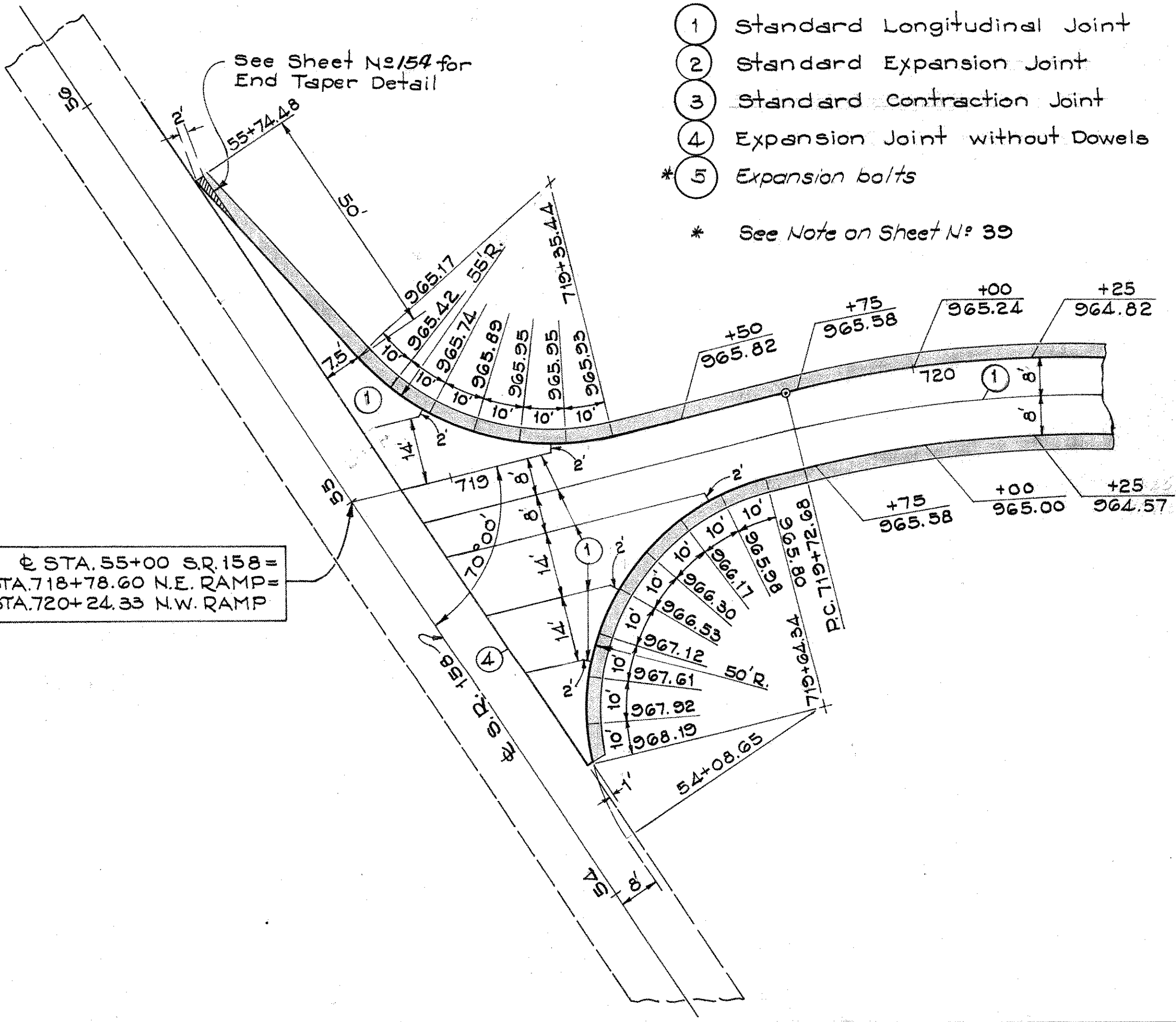
NORTHEAST RAMP PAVEMENT ELEVATIONS AND JOINT DETAILS



LEGEND

- ① Standard Longitudinal Joint
 - ② Standard Expansion Joint
 - ③ Standard Contraction Joint
 - ④ Expansion Joint without Dowels
 - * ⑤ Expansion bolts
- * See Note on Sheet N: 39

NOTE:
See Sheet N: 149
for Exit Nose Detail



DECELERATION LANE DETAIL
* TOTAL BERM WIDTH ON N.E. RAMP = 11'

NORTH EAST RAMP SUPERELEVATION		
Elevation Left Edge Pavement	Ramp Station	Elevation Right Edge Pavement
964.82	720+25	964.57
964.30	+50	964.05
+62.90		
963.68	+75	963.47
962.98	721+00	962.85
962.18	+25	962.18
961.32	+50	961.47
960.45	+75	960.70
959.59	722+00	959.84
958.73	+25	959.08
957.86	+50	958.32
957.00	+75	957.56
956.28	+95.69	956.93
956.13	723+00	956.79
955.27	+25	956.04
954.40	+50	955.29
953.54	+75	954.54
952.67	724+00	953.78
951.81	+25	953.03
950.94	+50	952.27
950.11	+75	951.44
949.34	725+00	950.67
948.64	+25	949.97
948.00	+50	949.33
947.52	+70.69	948.84
947.00	+95.69	948.24
946.54	726+20.69	947.68
946.15	+45.69	947.20
945.82	+70.69	946.78
945.56	726+95.69	946.43

(S) SEWERS

Mark	Station		Side	603 30" Conduit	602	601	202	Special
	From	To		Type: 18" 706.02	Concrete	Dump. Rock	Catch Basin	Fill & Plug
				Class IV with	Masonry	Channel	Removed	Existing
				Class 'B' Bedding	Cu. Yds.	Protection	Each	Culvert
				Lin. Ft.		Cu. Yds.		Lin. Ft.
1-S	715+12		Rt.				1	132
2-S	716+01	717+50	Rt.					151
3-S	717+77.5	718+00	Rt.	338	0.5			130
4-S	720+00		Lt.					130
Totals				338	0.5		1	281

P.I. = 712+58.46
 $\Delta = 22^\circ 35' Lt.$
 $\Delta c = 12^\circ 35' Lt.$
 $Dc = 4^\circ 00'$
 $Ls = 250'$
 $Ts = 411.34'$
 $Es = 30.16'$
 $Xc = 249.81'$
 $Yc = 7.27'$
 $Lc = 314.58'$
 $Rc = 1432.40'$
 $\theta s = 5^\circ 00'$

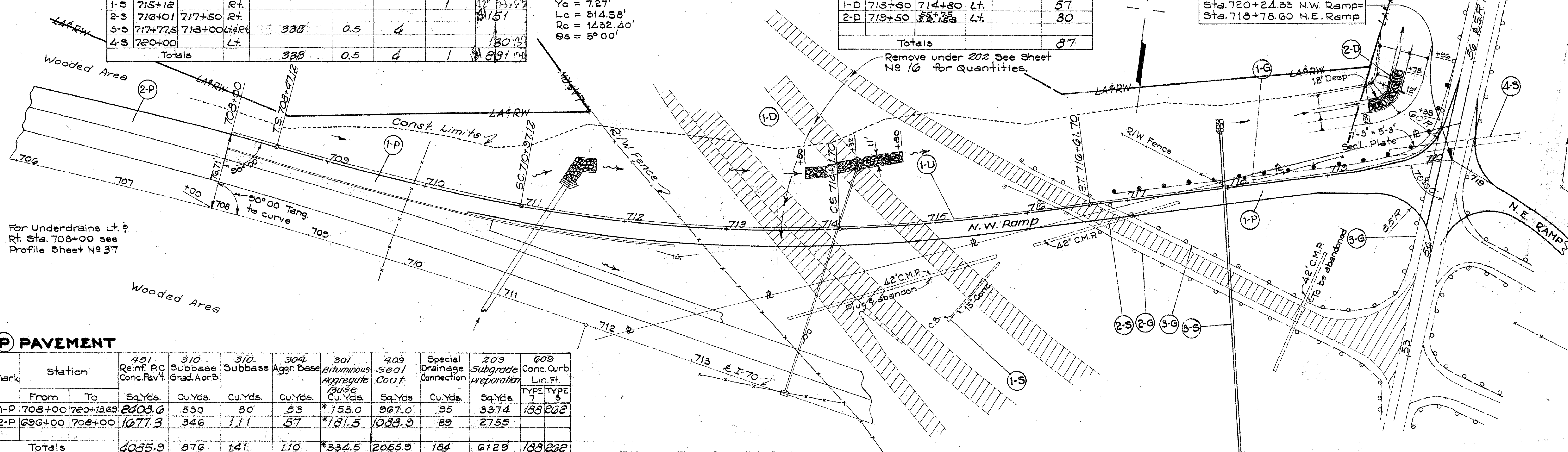
NOTE: For Pavement Details, See Sheet No. 142

(D) DITCHES

Mark	Station		Side	600	601
	From	To		Sodding	Dump. Rock
				Chen. Prot.	
			Sq. Yds.	Cu. Yds.	
1-D	713+80	714+80	Lt.		57
2-D	719+50	720+00	Lt.		30
Totals					87

Remove under 202 See Sheet No 16 for quantities.

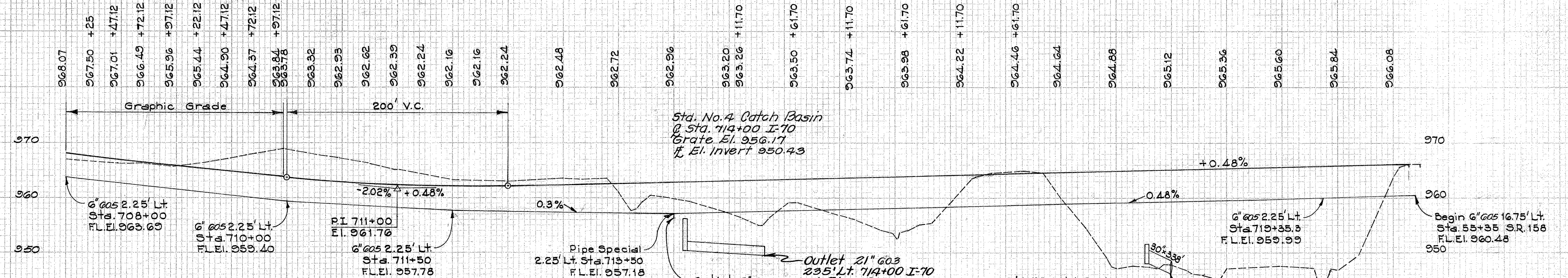
Sta. 55+00 S.R. 158 =
 Sta. 720+24.33 N.W. Ramp =
 Sta. 718+78.60 N.E. Ramp



(P) PAVEMENT

Mark	Station		451	310	310	304	301	409	Special	203	609	
	From	To	Reinf. P.C. Conc. Pavt.	Subbase	Subbase	Aggr. Base	Bituminous Aggregate	Seal Coat	Drainage Connection	Subgrade Preparation	Conc. Curb	
			Sq. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.	Cu. Yds.	Sq. Yds.	Lin. Ft.	
											TYPE 7	
											TYPE 8	
1-P	708+00	720+13.69	2408.6	530	30	53	*153.0	267.0	95	3374	133	262
2-P	696+00	708+00	1677.3	346	111	57	*131.5	1088.9	89	2755		
Totals			4085.9	876	141	110	*334.5	2055.9	184	6129	133	262

* As Per Plan



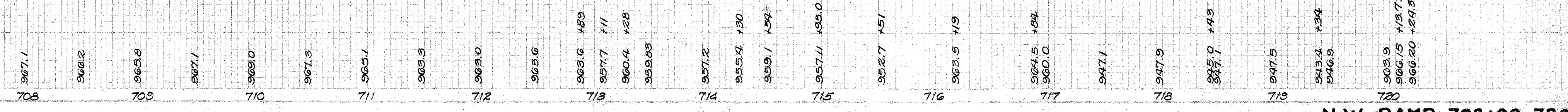
(U) DRAINS

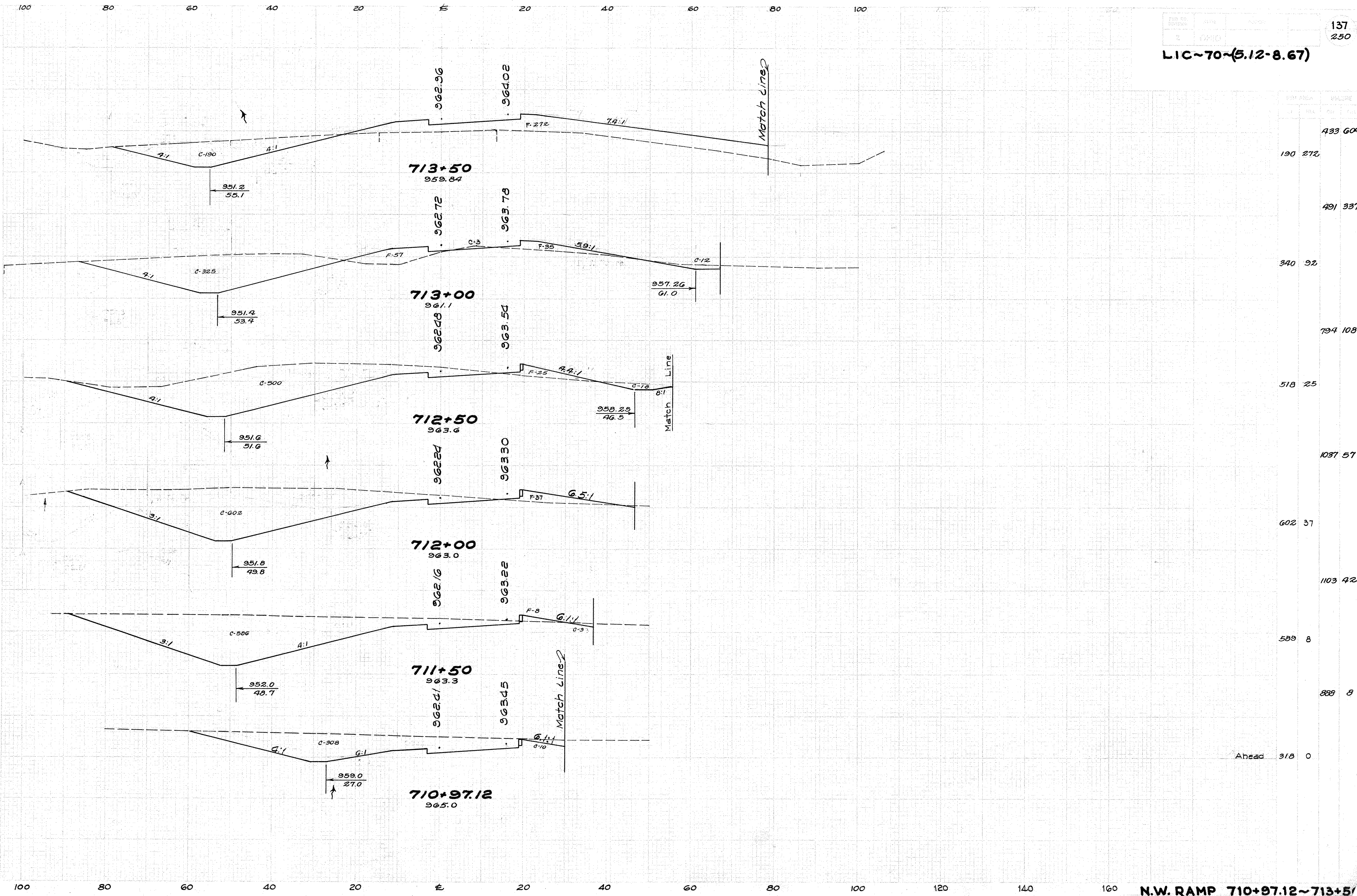
Mark	Station		Side	605 6" pipe	603 8" Conduit	6" Pipe Spec.	603 6" Conduit
	From	To		Underdrains	Type 'F'	Each	Type 'F'
				Lin. Ft.	Lin. Ft.	90° BEND	Lin. Ft.
			Shallow Deep				
1-U	708+00	55+35 S.R. 158	Lt.	1231	10	1	30
Totals				1231	10	1	30

(G) GUARD RAIL

Mark	Station		Side	606	Guard Rail
	From	To		Guard Rail	Removed
				Lin. Ft.	Lin. Ft.
1-G	716+88	55+36 S.R. 158	Lt.	600	
2-G	715+30	719+23 Lt. Rt.			440
3-G	716+00	55+36 S.R. 158	Lt. Rt.		650
Totals				600	1090

Seeding 19,249 Sq. Yds.
 Excavation 11,912 Cu. Yds.
 Embankment 26,130 Cu. Yds.
 Emb. + 12% 29,322 Cu. Yds.

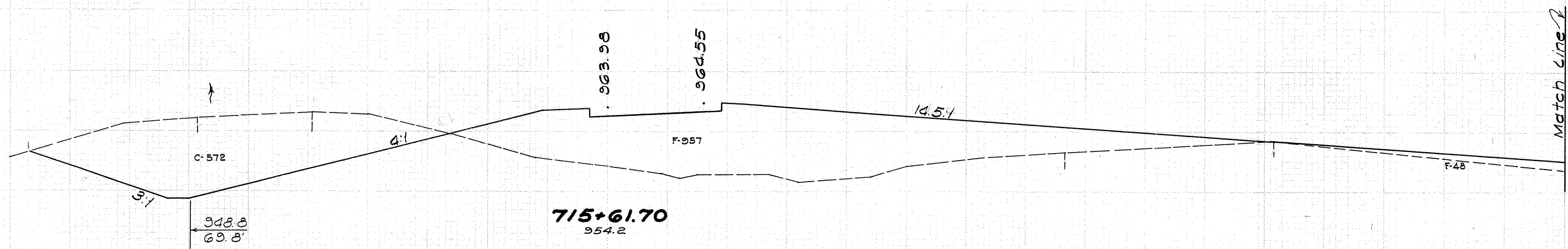




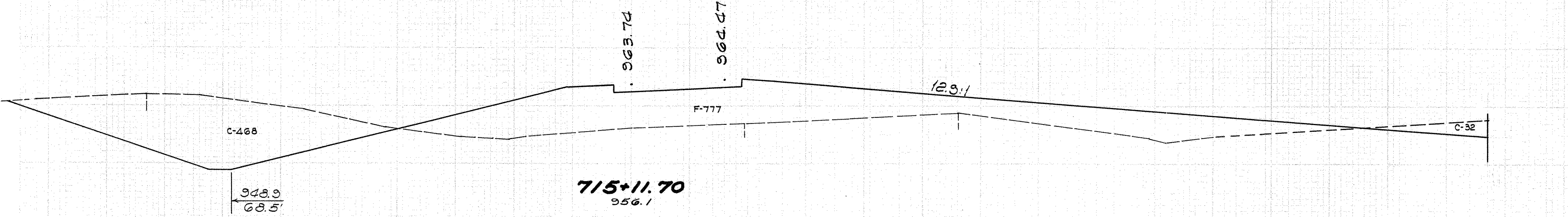
EST. STA.	EST. VOL.	EST. VOL.	EST. VOL.
190	272		433 602
340	92		491 337
340	92		794 108
518	25		1037 57
602	37		1103 42
588	8		888 8
Ahead	318	0	

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

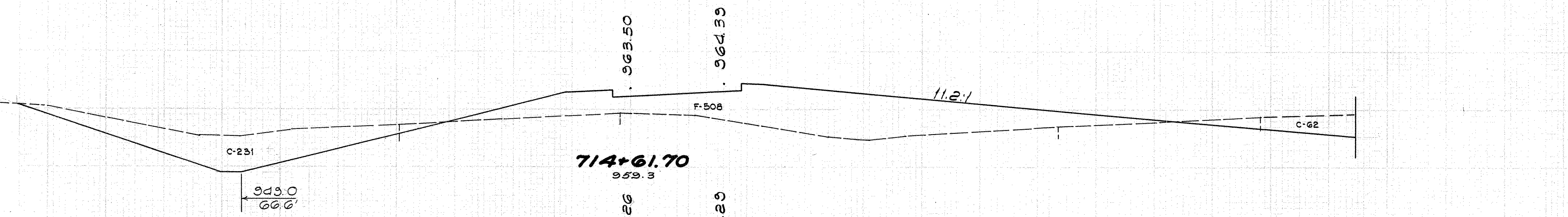
138
250
LIC-70-(5.12-8.67)



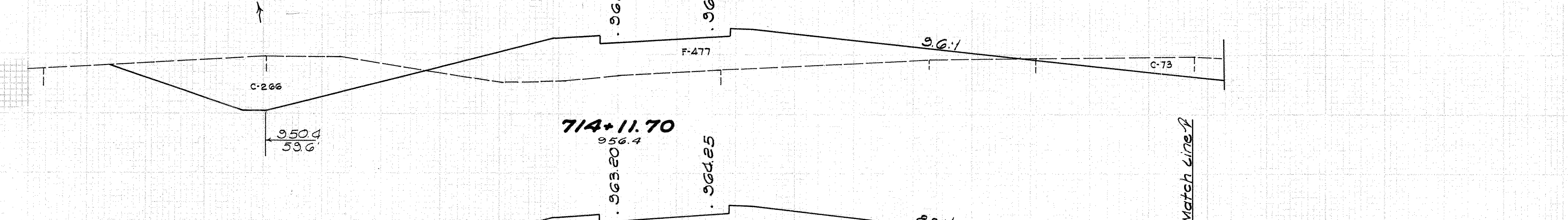
PRO AREA	VALUATION		
NO.	DATE	BY	AMOUNT
572	1005		898 1799



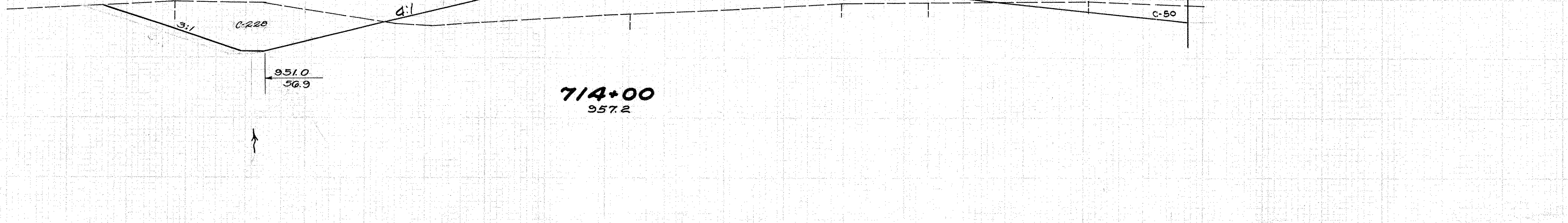
500	777		293 1690
-----	-----	--	----------



293	508		734 1190
-----	-----	--	----------



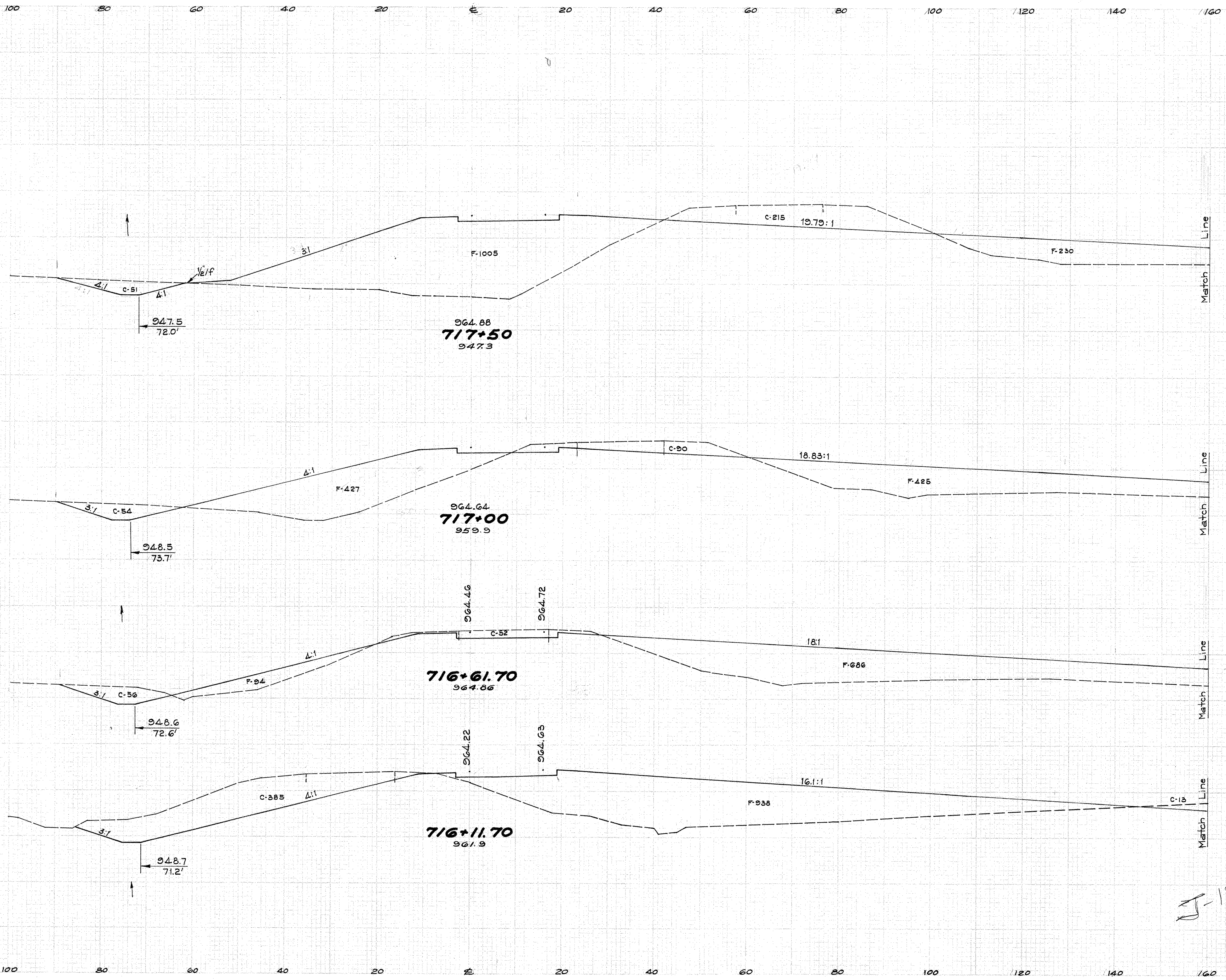
339	447		585 884
-----	-----	--	---------



278	380		134 179
-----	-----	--	---------

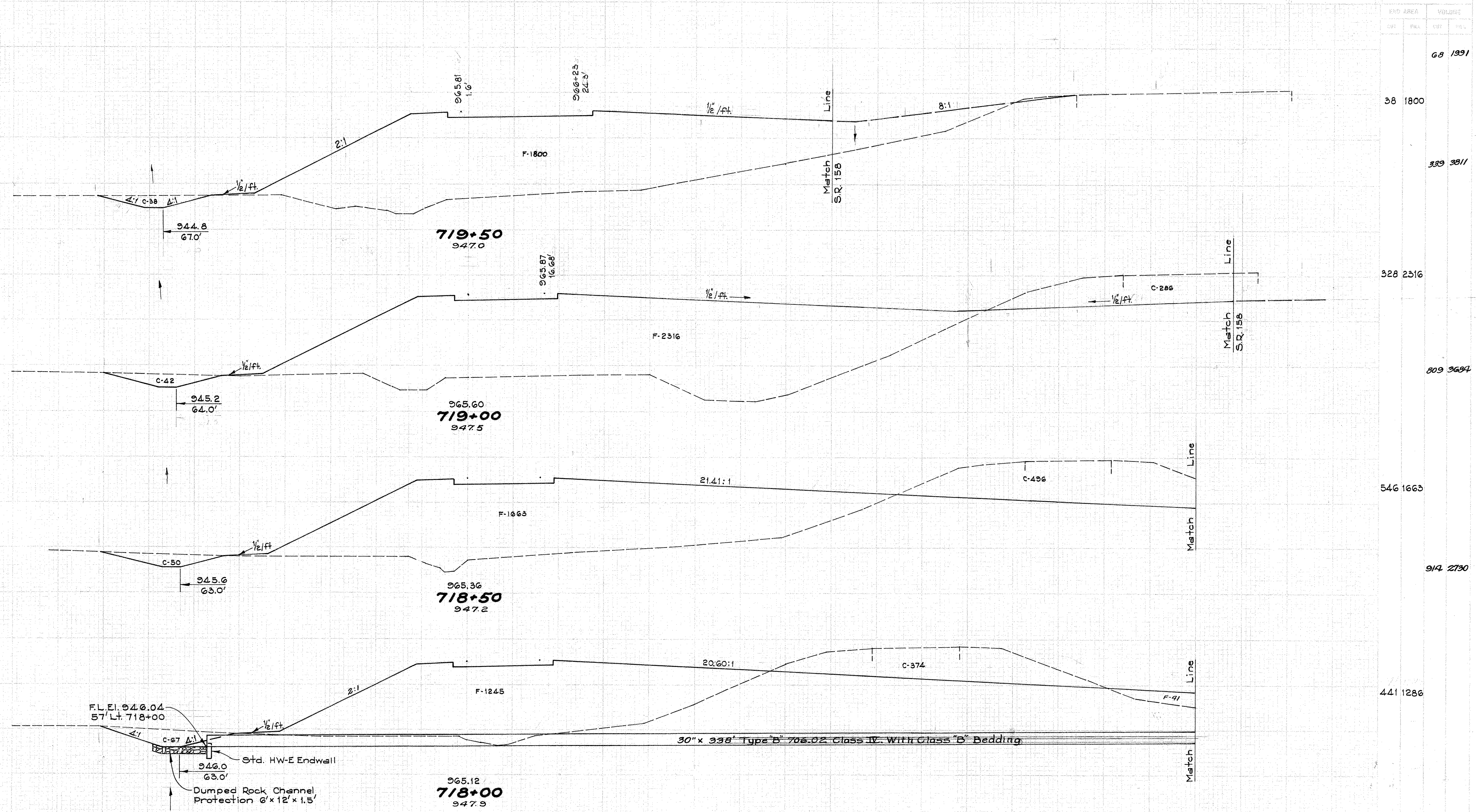
100 80 60 40 20 E 20 40 60 80 100 120 140 160

N.W. RAMP 714+00 ~ 715+61.70



STATION	CUT AREA		FILL AREA	
	SQ. FT.	CUB. YD.	SQ. FT.	CUB. YD.
717+50			655	2334
717+00			390	1932
716+61.70			144	852
716+11.70			179	1158
TOTAL			108	780
			469	1591
			398	938

5-12



STATION	CUT AREA		FILL AREA		TOTAL
	CUT	FILL	CUT	FILL	
718+00					441 1286
719+00					546 1663
719+50					328 2516
719+50					339 3811
719+50					68 1991

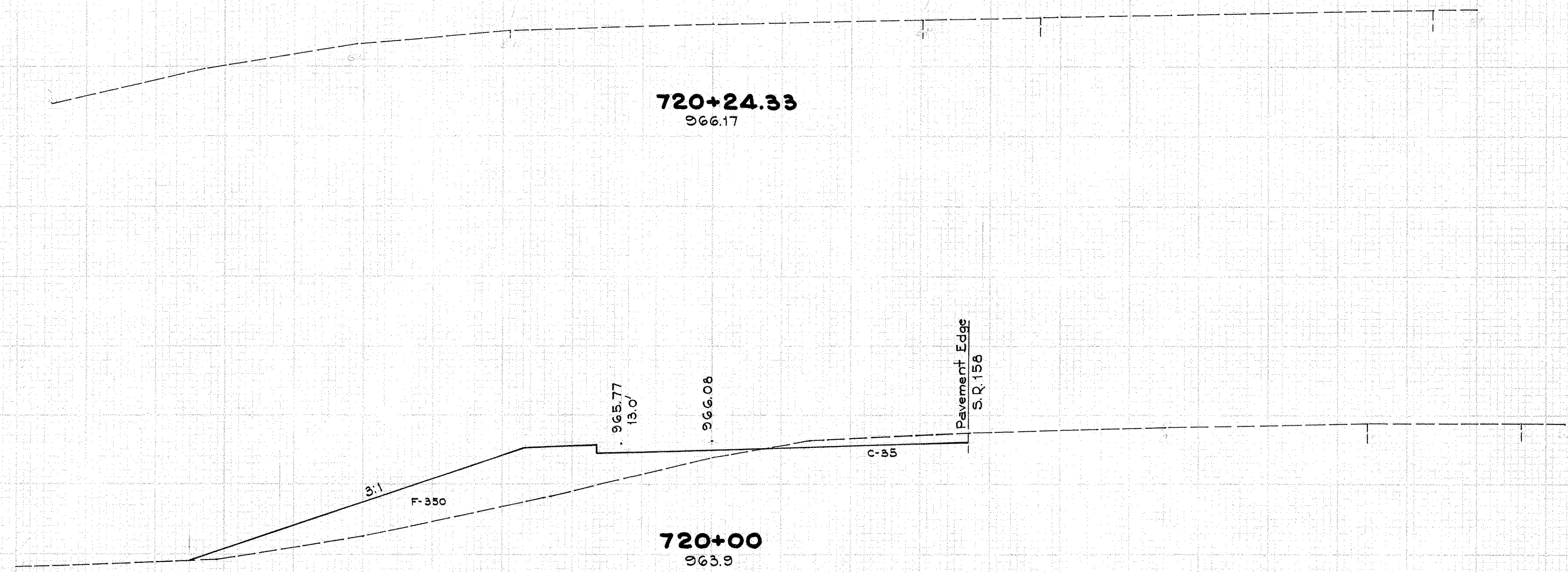
100 80 60 40 20 ± 20 40 60 80 100 120 140 160

NO. OF SHEETS	SHEET NO.	PROJECT	
2	0110		

141
250

LIC-70-5/2

END AREA		VOLUME	
BY	REMARKS	BY	REMARKS



Sta. 720+13.7 0 0

9 91

35 350

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

N.W. RAMP 720+00~720+24.33

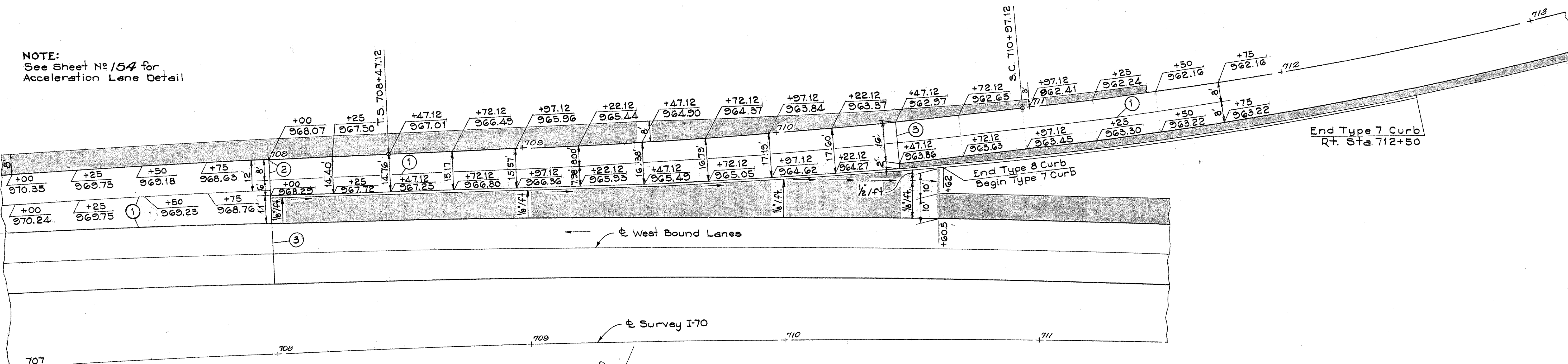
NORTHWEST RAMP PAVEMENT ELEVATIONS AND JOINT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

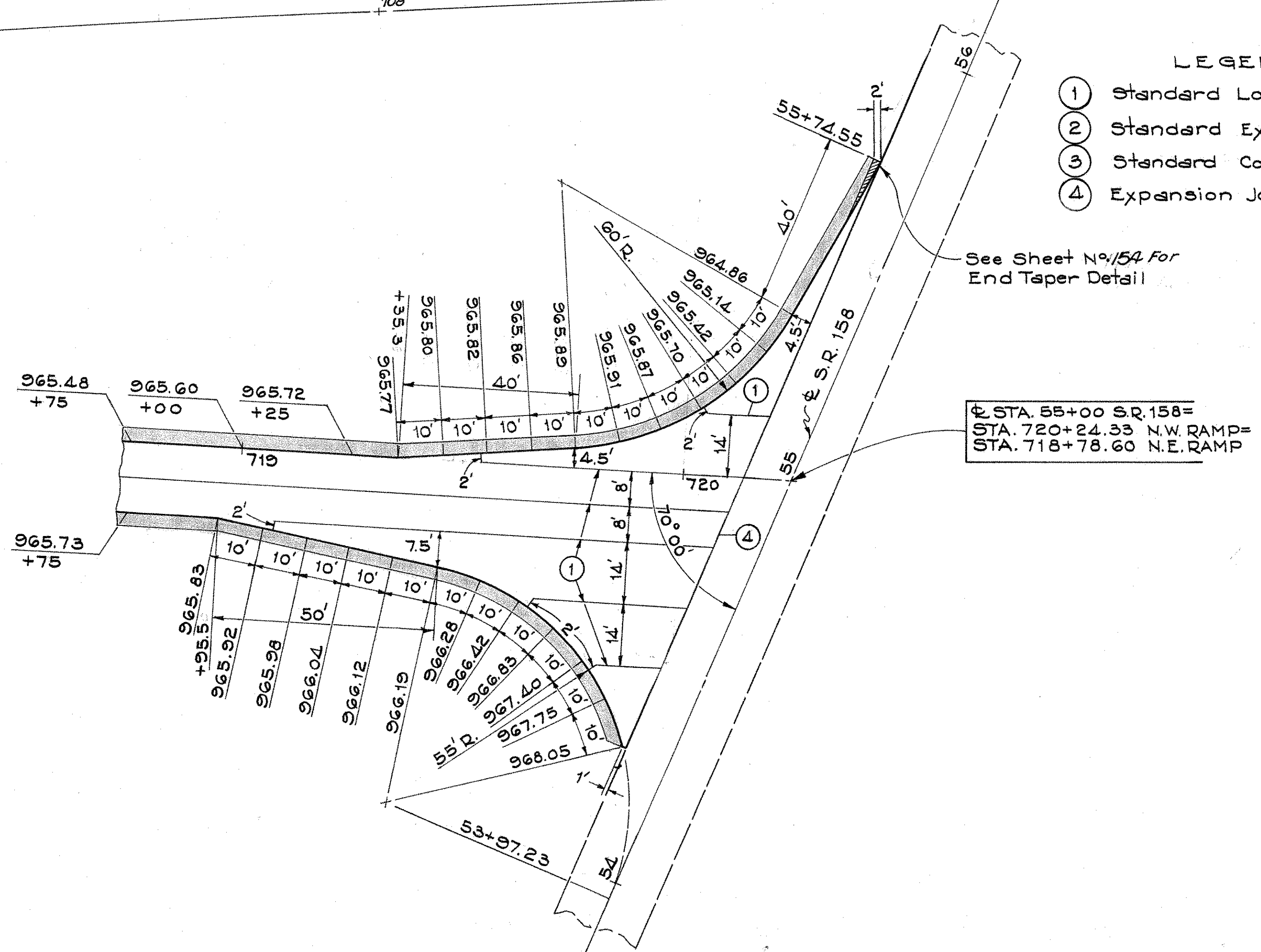
142
250

LIC-70-(5.12-8.67)

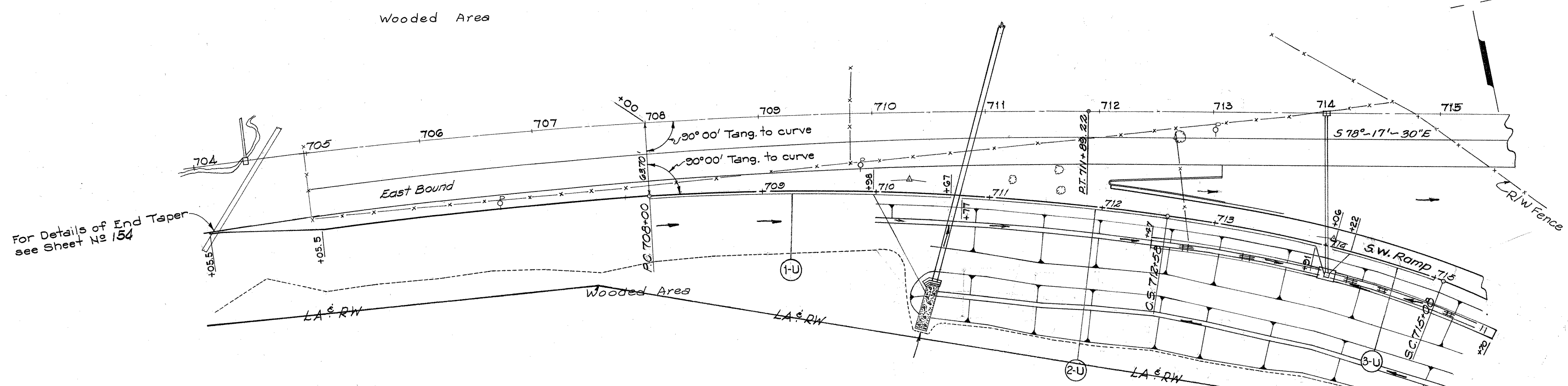
NOTE:
See Sheet No. 154 for
Acceleration Lane Detail



- LEGEND
- ① Standard Longitudinal Joint
 - ② Standard Expansion Joint
 - ③ Standard Contraction Joint
 - ④ Expansion Joint without Dowels



NORTH WEST RAMP SUPERELEVATION		
Elevation Left Edge Pavement	Ramp Station	Elevation Right Edge Pavement
962.16	711+75	963.22
962.24	712+00	963.30
962.36	+25	963.42
962.48	+50	963.54
962.60	+75	963.66
962.72	713+00	963.78
962.84	+25	963.90
962.96	+50	964.02
963.08	+75	964.14
963.20	714+00	964.25
963.26	+11.70	964.29
963.38	+36.70	964.35
963.50	+61.70	964.39
963.62	+86.70	964.43
963.74	715+11.70	964.47
963.86	+36.70	964.51
963.98	+61.70	964.55
964.10	+86.70	964.59
964.22	716+11.70	964.63
964.34	+36.70	964.67
964.46	716+61.70	964.72



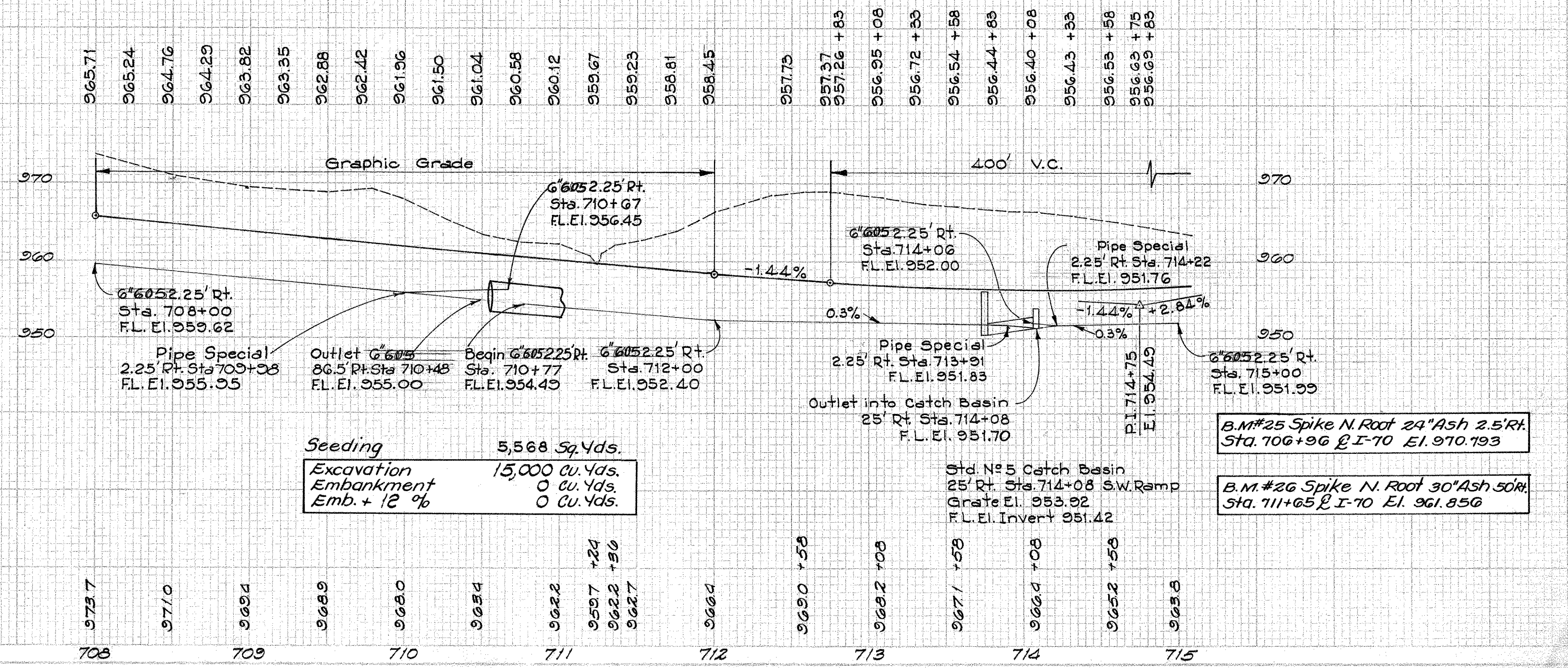
U DRAINS

Mark	Station		Side	605-6" Pipe Underdrains		603-6" Conduit		6" Pipe Special		603-8" Conduit	
	From	To		Shallow	Deep	Lin. Ft.	60° Bend	Wye	Lin. Ft.	Lin. Ft.	
1-U	708+00	710+67	Rt.		355			1		10	
2-U	710+77	714+08	Rt.		330	10		1			
3-U	714+08	715+00	Rt.		111	10		1			
Totals					796	20		2		10	

NOTE:
For Pavement Details
See Sheet No. 149.

PI = 710+29.77
 $\Delta = 11^\circ-27' Rt.$
 $D = 2^\circ-50'$
 $R = 2291.83$
 $T = 229.77$
 $L = 450.00$
 $E = 11.49$

PI = 714+05.43
 $\Delta_1 + \Delta_2 = 13^\circ-07.5' Rt.$
 $D_1 = 3^\circ-07.5'$
 $D_2 = 10^\circ-00'$
 $T_1 = 147.43$
 $T_2 = 103.69$
 $L_2 = 250$



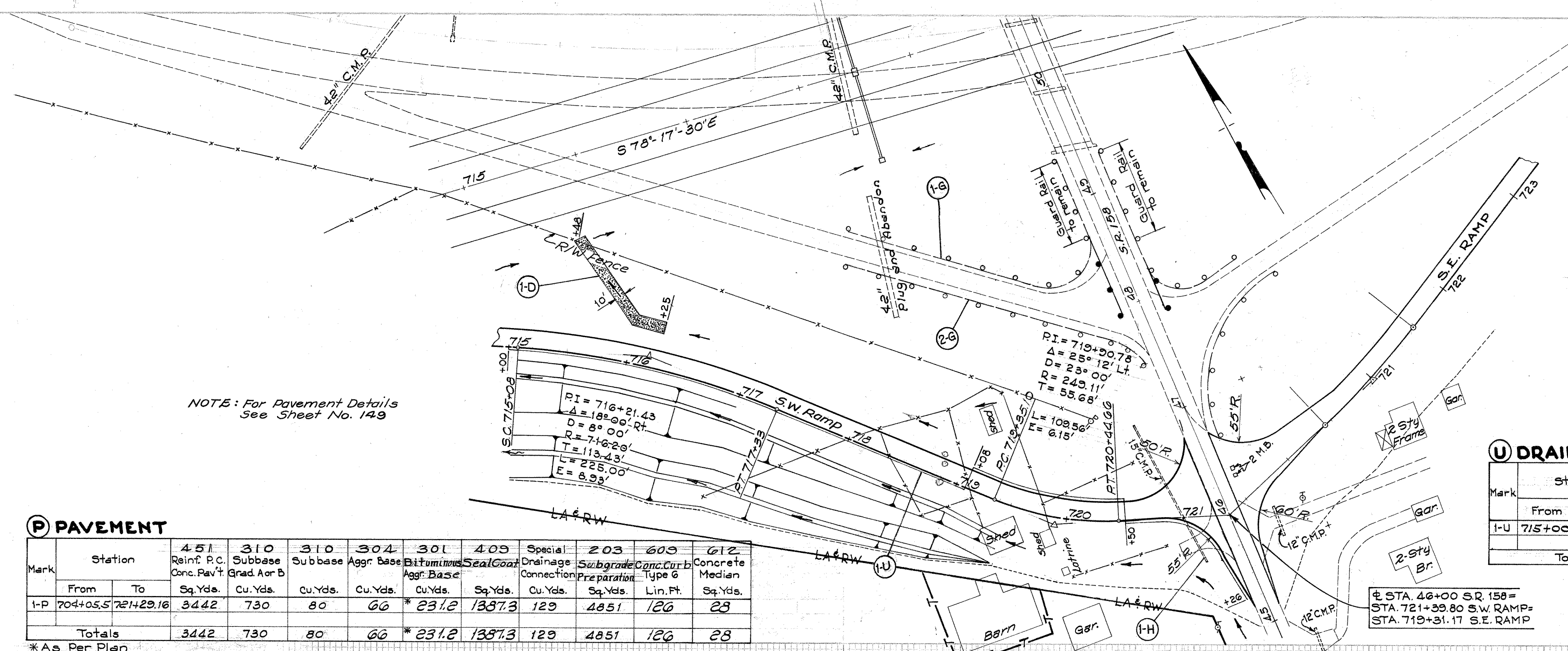
Seeding 5,568 Sq.Yds.
 Excavation 15,000 Cu.Yds.
 Embankment 0 Cu.Yds.
 Emb. + 12% 0 Cu.Yds.

Std. No. 5 Catch Basin
 25' Rt. Sta. 714+08 S.W. Ramp
 Grate El. 953.92
 F.L. El. Invert 951.42

B.M. #25 Spike N. Root 24" Ash 2.5' Rt.
 Sta. 706+96 I-70 El. 970.193

B.M. #26 Spike N. Root 30" Ash 50' Rt.
 Sta. 711+65 I-70 El. 961.850

For Details of S.E. Ramp see Sheets 150 to 154



P PAVEMENT

Mark	Station	451 Reinf. P.C. Conc. Pav't	310 Subbase Grad. A or B	310 Subbase	304 Aggr. Base	301 Bituminous Aggr. Base	409 Seal Coat	Special Drainage Connection	203 Subgrade Preparation	609 Conc. Curb Type 6	612 Concrete Median
	From To	Sq. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.	Cu. Yds.	Sq. Yds.	Lin. Ft.	Sq. Yds.
1-P	704+05.5 721+29.16	3442	730	80	66	* 231.2	1387.3	129	4851	126	28
Totals		3442	730	80	66	* 231.2	1387.3	129	4851	126	28

* As Per Plan

G GUARD RAIL

Mark	Station	Side	Guard Rail Removed Lin. Ft.
	From To		
1-G	717+32 718+08	Lt.	203
2-G	717+41 720+73	Lt.	275
Totals			518'

D DITCHES

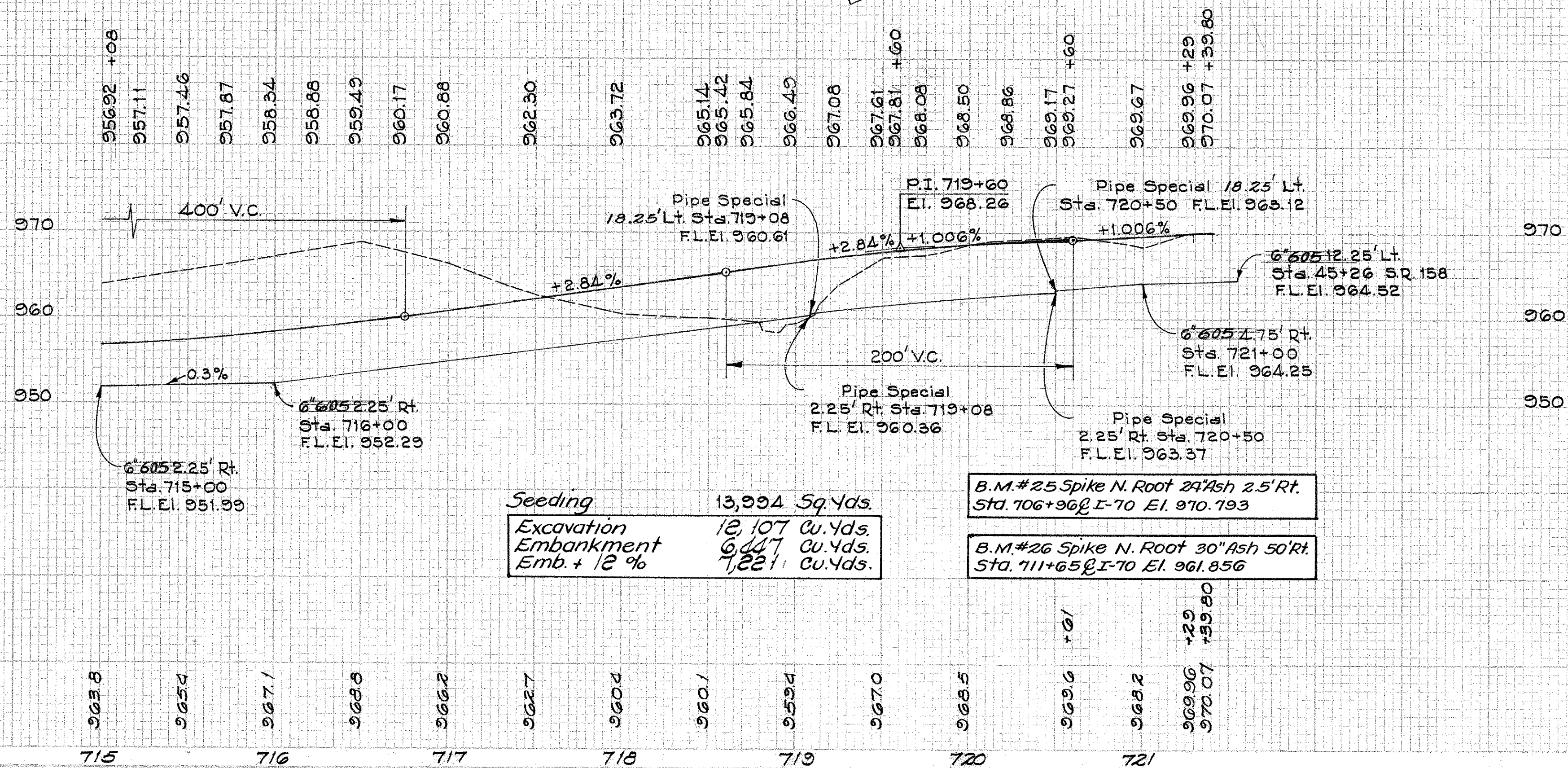
Mark	Station	Side	660 Sodding Sq. Yds
	From To		
1-D	715+48 716+25	Lt.	124
Totals			124

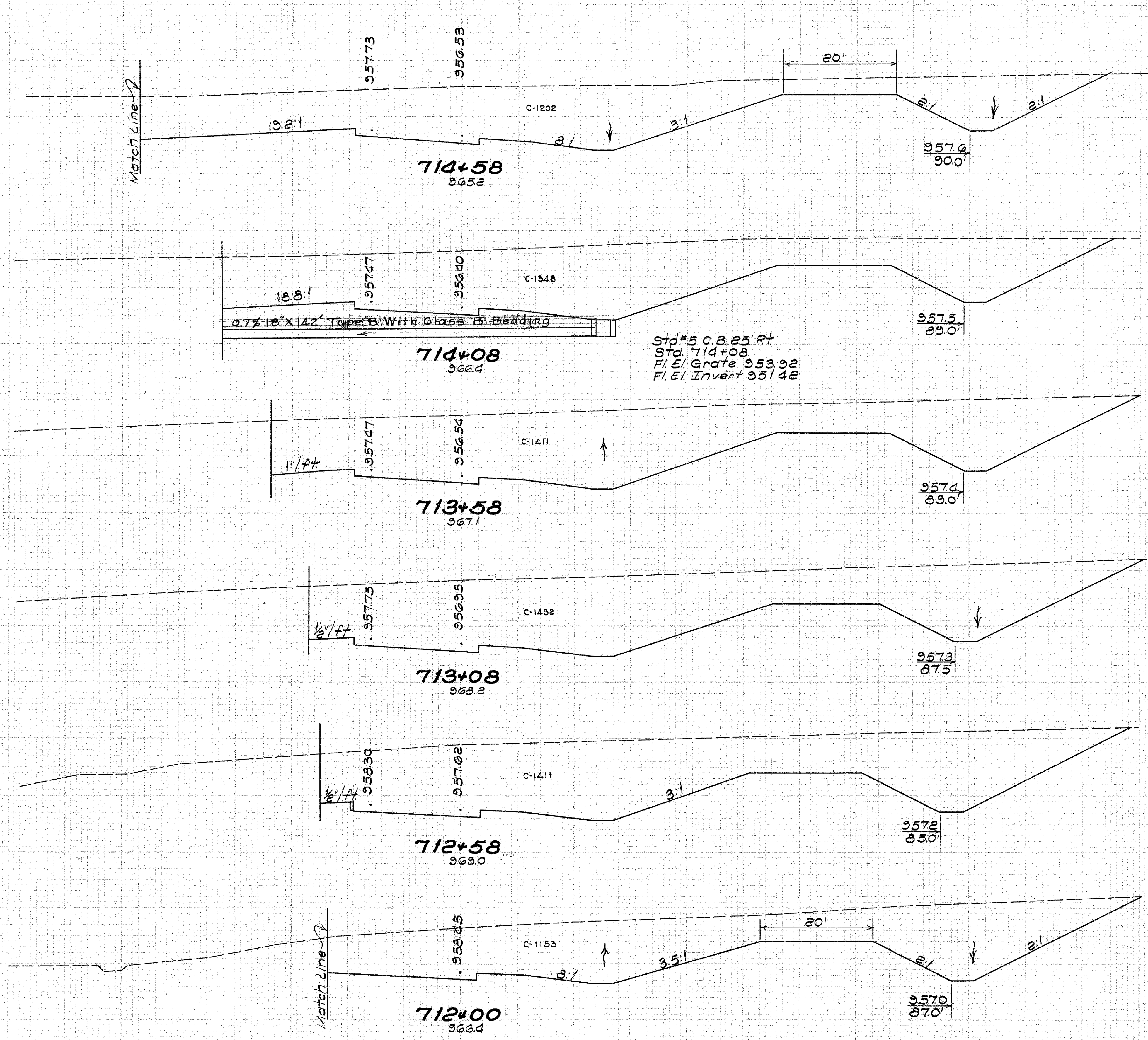
U DRAINS

Mark	Station	Side	605 Underdrains Lin. Ft.	603 Conduit Type B Lin. Ft.	Pipe Special Each
	From To		Shallow	Deep	90° Bend
1-U	715+00 721+39.80	Lt.	688	42	4
Totals			688	42	4

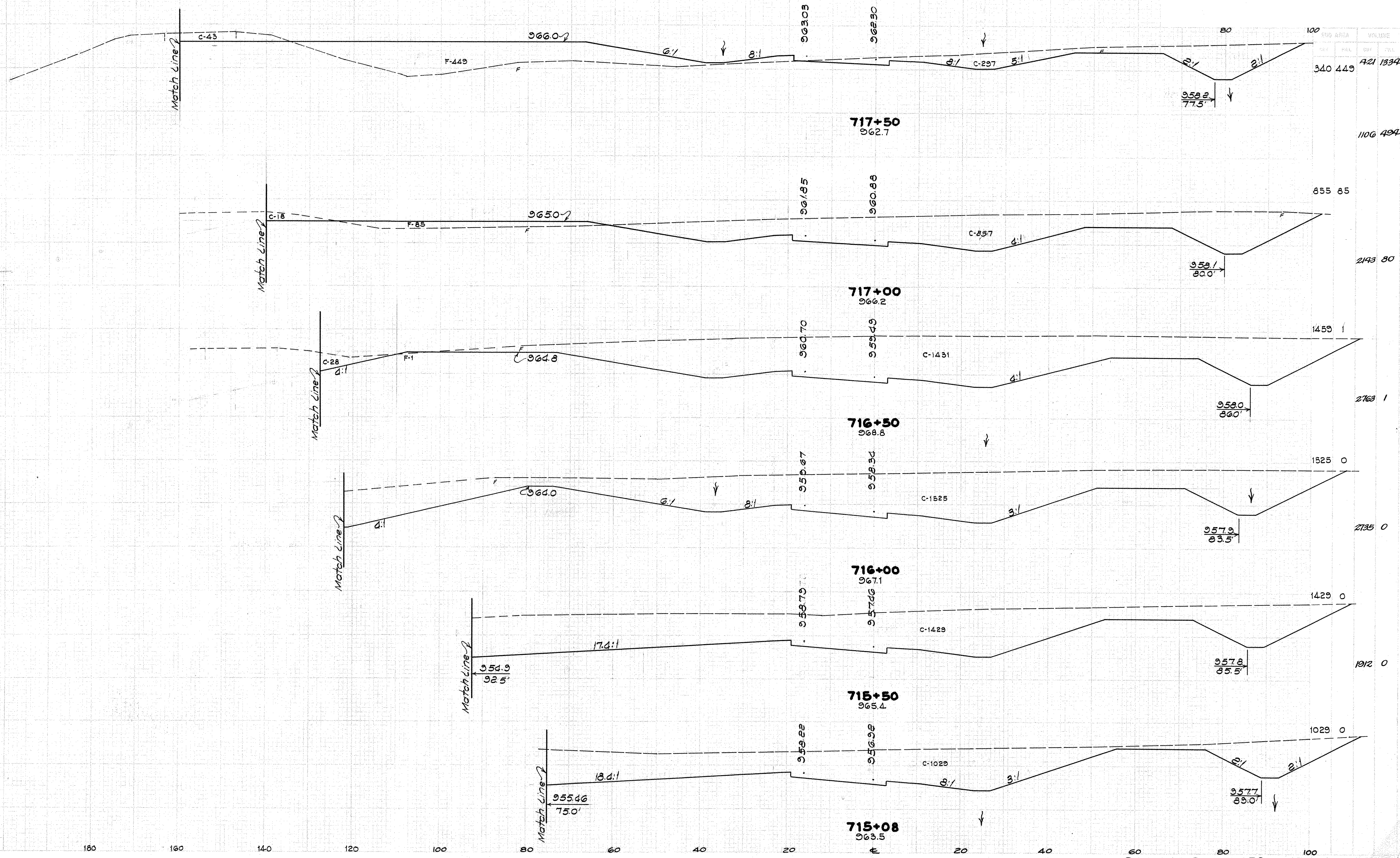
H PIPE REMOVED

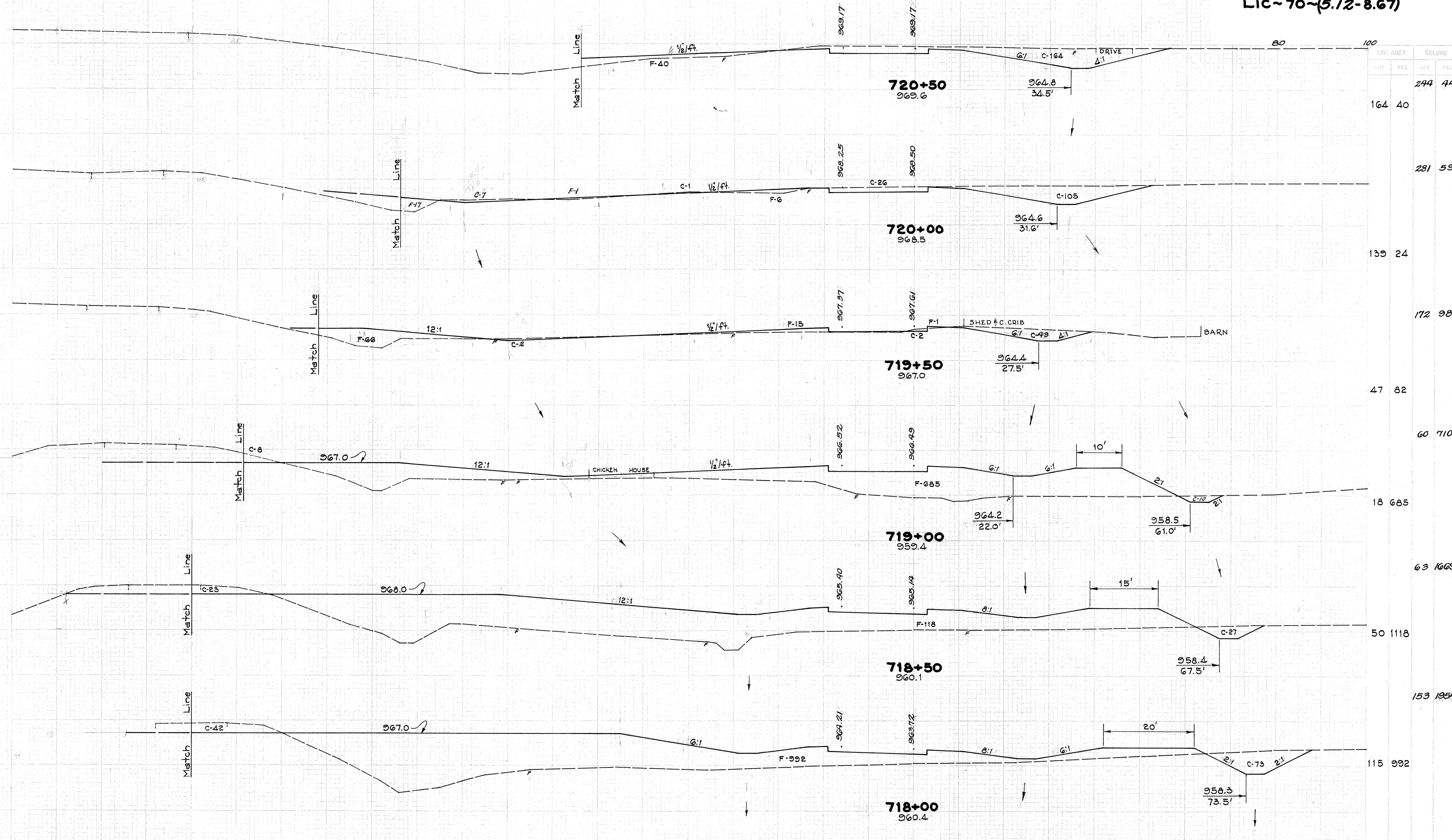
Mark	Station	Side	202 Pipe Removed Lin. Ft.
			15' Under Over 15'
1-H	721+00	Lt.	133
Totals			133





STATION	CROSS AREA		VOLUME	
	EXIST.	PROPOSED	CUT	FILL
1202	0	0	2066	0
1348	0	0	2361	0
1411	0	0	2555	0
1432	0	0	2632	0
1411	0	0	2632	0
1153	0	0	2154	0





END AREA		VOLUME	
CUT	FILL	CUT	FILL
		244	44

164 40

281 59

139 24

172 98

47 82

60 710

18 685

63 1669

50 1118

153 1954

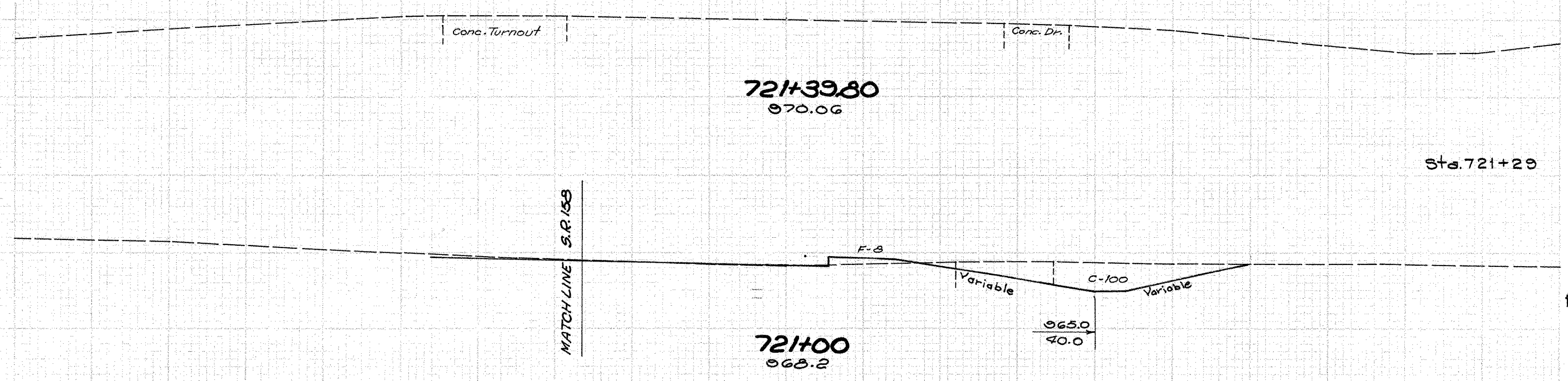
200 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200

DATE	NO.	BY	CHKD.	DATE
2				

148
250

LIC-70-5.12

80	100	120	140	160
100	120	140	160	180



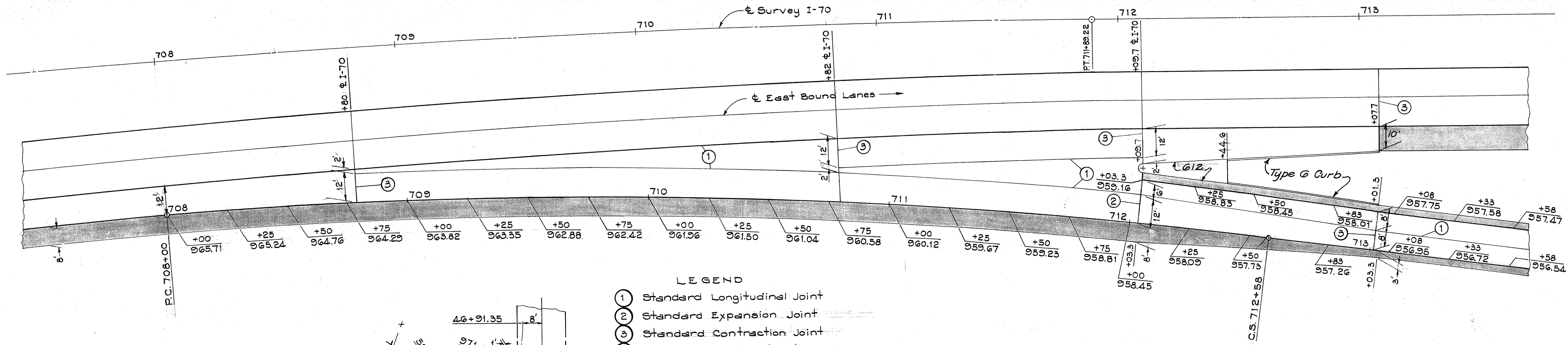
200 80 60 40 20 0 20 40 60 80 100

S.W. RAMP S.R. 158 721+00-721+39.80

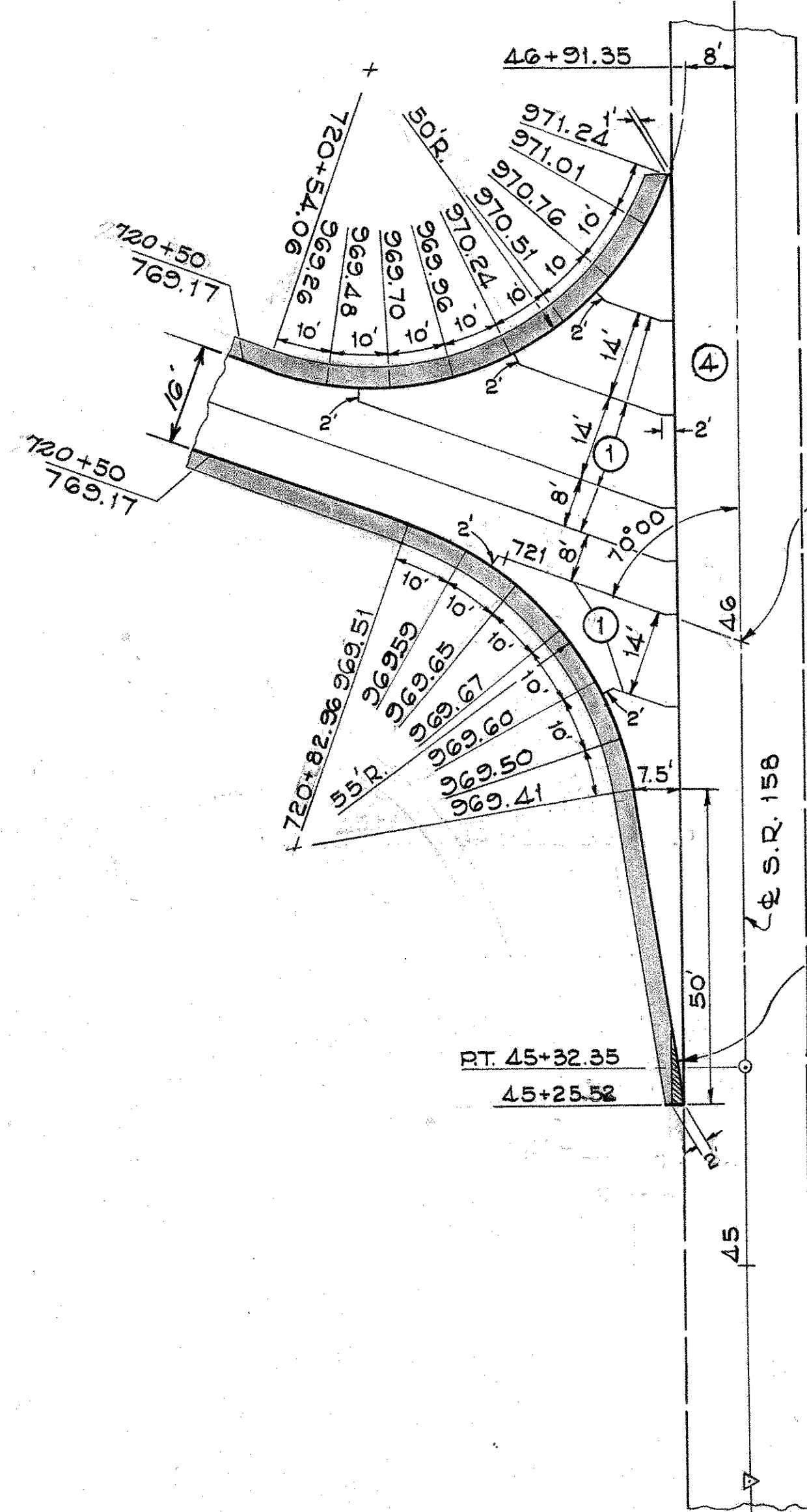
SOUTHWEST RAMP PAVEMENT ELEVATIONS AND JOINT DETAILS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	LIC-70-(5.12-8)

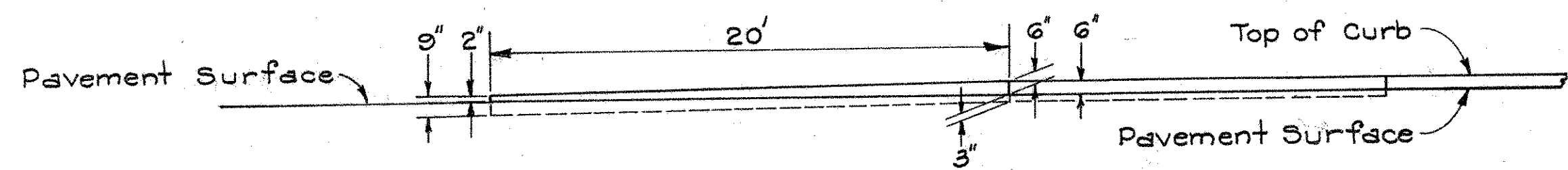
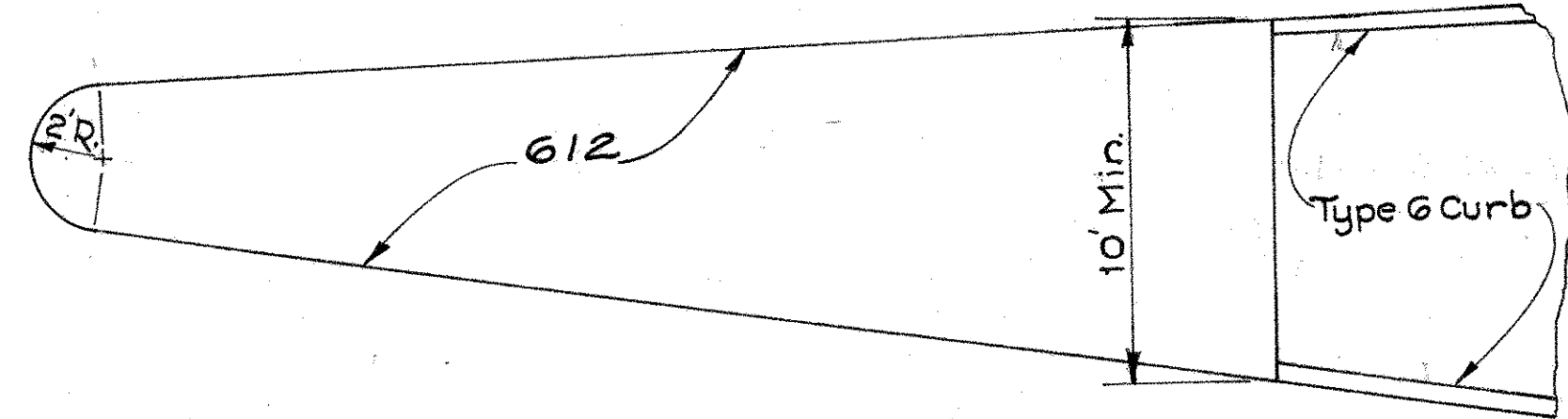
NOTE:
See Sheet No 135 for
Deceleration Lane Detail



- LEGEND
- ① Standard Longitudinal Joint
 - ② Standard Expansion Joint
 - ③ Standard Contraction Joint
 - ④ Expansion Joint without Dowels



STA. 46+00 S.R. 158 =
STA. 721+39.80 S.W. RAMP =
STA. 719+31.17 S.E. RAMP

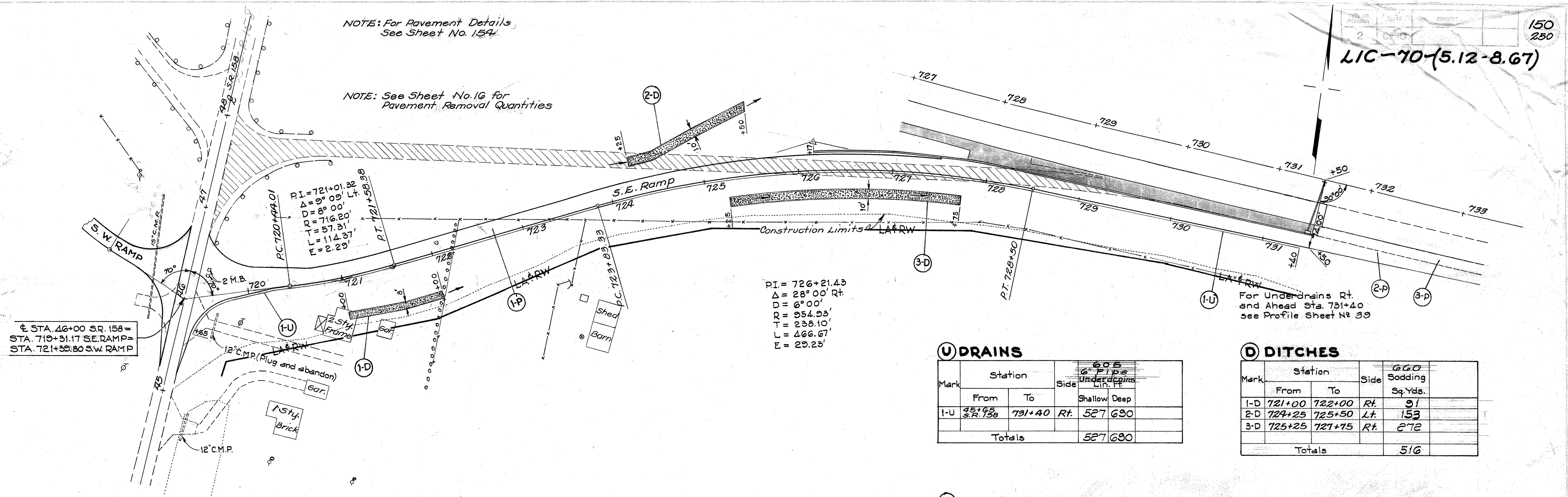


EXIT NOSE DETAIL

SOUTH WEST RAMP SUPERELEVATION		
Elevation Left Edge Pavement	Ramp Station	Elevation Right Edge Pavement
957.47	713+58	956.54
957.44	+83	956.44
957.47	714+08	956.40
957.56	+33	956.43
957.75	+58	956.53
957.87	+75	956.63
957.95	+83	956.69
958.22	715+08	956.92
958.44	+25	957.11
958.79	+50	957.46
959.20	+75	957.87
959.67	715+00	958.34
960.16	+25	958.88
960.70	+50	959.49
961.26	+75	960.17
961.75	716+00	960.88
962.44	+25	961.59
962.63	+33	961.82
963.03	+50	962.30
963.62	+75	963.01
964.21	718+00	963.72
964.80	+25	964.43
965.40	+50	965.14
966.01	+75	965.84
966.52	719+00	966.49
966.97	+25	967.08
	+35.10	
967.37	+50	967.61
967.83	+75	968.08
968.25	720+00	968.50
968.71	+25	968.86
969.07	+44.66	969.11
969.17	720+50	969.17

NOTE: For Pavement Details
See Sheet No. 154

NOTE: See Sheet No. 16 for
Pavement Removal Quantities



± STA. 46+00 S.R. 158 =
STA. 719+31.17 S.E. RAMP =
STA. 721+39.80 S.W. RAMP

For Underdrains Rt.
and Ahead Sta. 731+40
see Profile Sheet No. 33

U DRAINS

Mark	Station		Side	6" Pipe Underdrains Lin. Ft.	
	From	To		Shallow	Deep
1-U	45+65 S.R. 158	731+40	Rt.	527	630
Totals				527	630

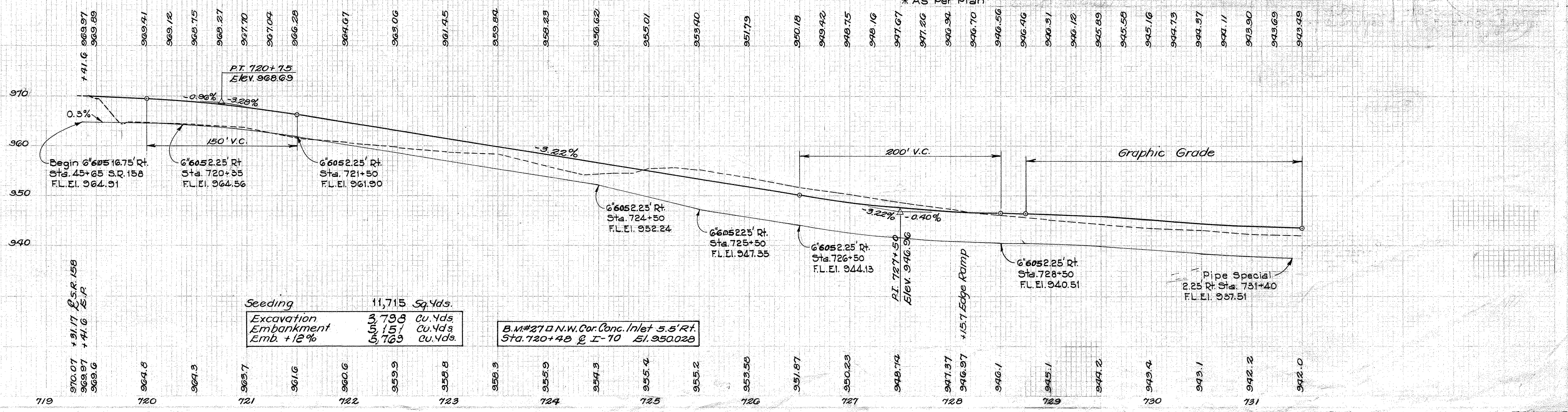
D DITCHES

Mark	Station		Side	6" Sodding Sq. Yds.	
	From	To		Sq. Yds.	Lin. Ft.
1-D	721+00	722+00	Rt.	91	
2-D	724+25	725+50	Lt.	153	
3-D	725+25	727+15	Rt.	272	
Totals				516	

P PAVEMENT

Mark	Station		4.5' Reinf. Conc. Pavt.	3'0" Subbase Grad. Aor. B	3'0" Subbase	3'0" Aggr. Base	3'0" Bituminous Aggr. Base	Special Drainage Connection	2'0" Subgrade Preparation	6'0" Conc. Curb
	From	To	Sq. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.	Cu. Yds.	Sq. Yds.	Lin. Ft.
1-P	719+41.81	731+50	2372.2	509.3	47.9	65.6	162	1052	91	3420
2-P	731+50	559+52.91	1677.3	432.8	111.1	57	177.8	1077	89	2733
Totals			4049.5	942	159	123	339.8	2129	180	6153

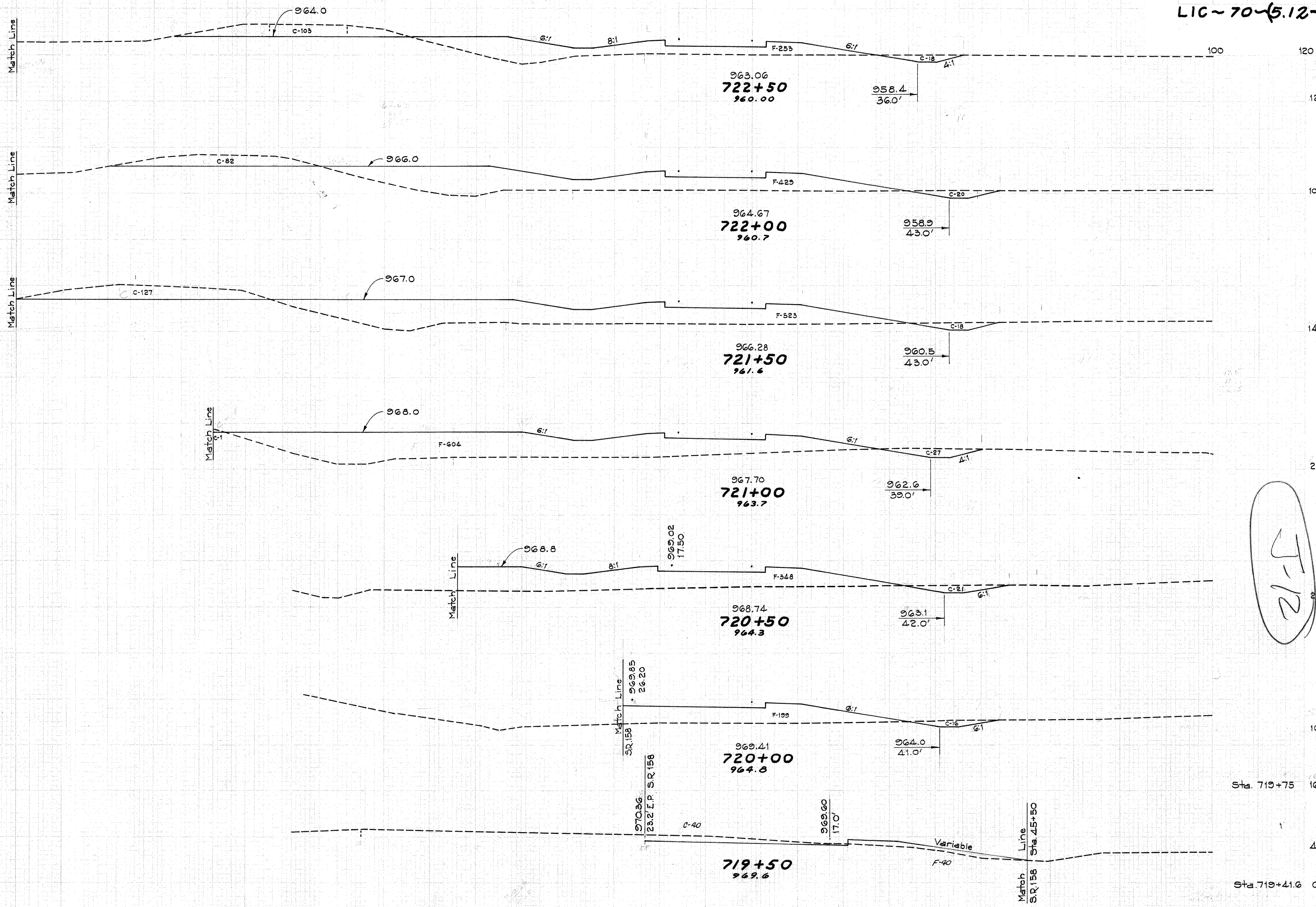
* As Per Plan



Seeding 11,715 Sq. Yds.

Excavation	3,798	Cu. Yds.
Embankment	5,151	Cu. Yds.
Emb. + 12%	5,763	Cu. Yds.

B.M. #27 D.N.W. Cor. Conc. Inlet 5.5' Rt.
Sta. 720+48 @ I-70 El. 950.028

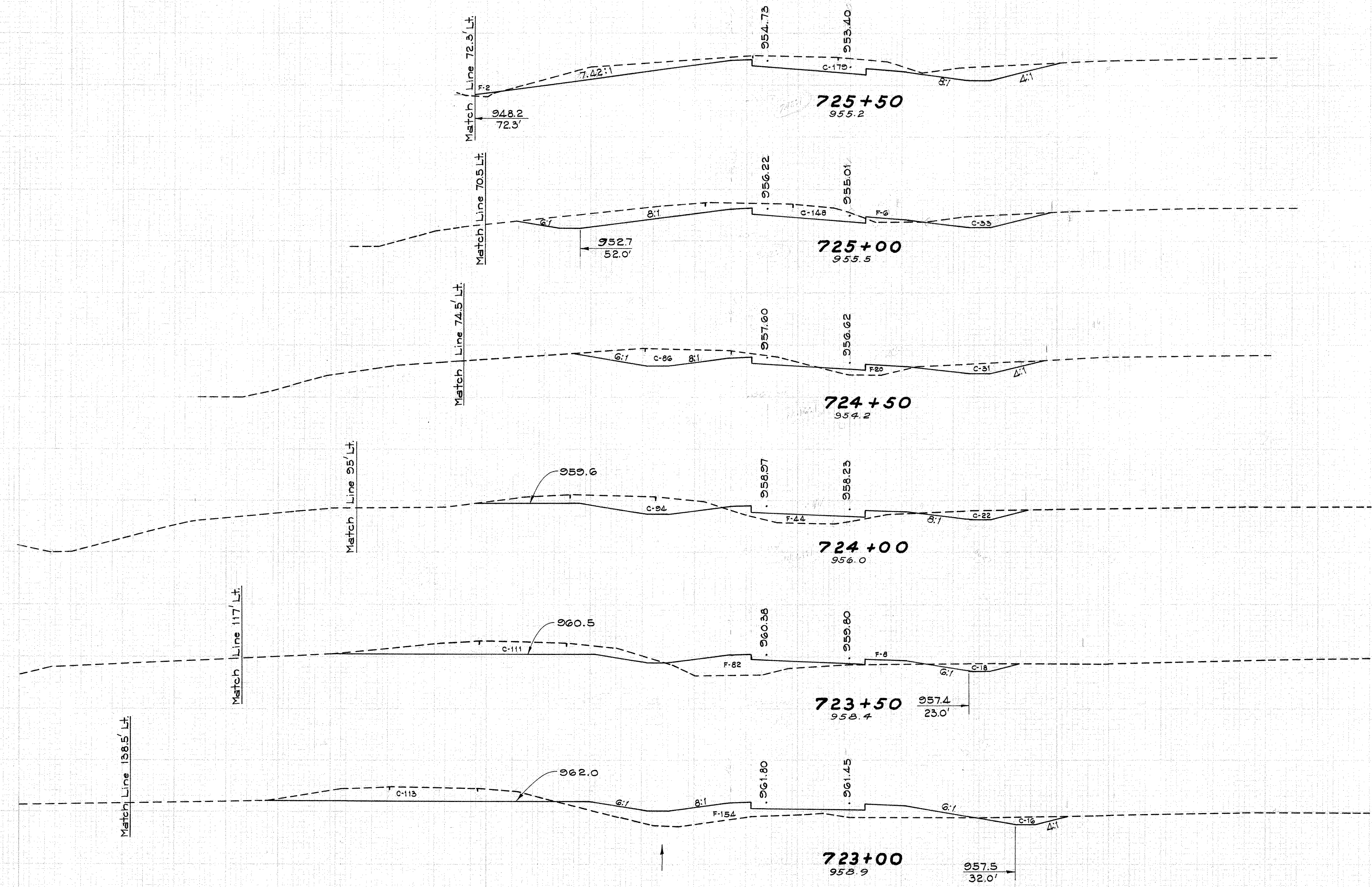


Station	Proposed Elevation	Ground Elevation
722+50	963.06	960.00
722+00	964.67	960.7
721+50	966.28	961.6
721+00	967.70	963.7
720+50	968.74	964.3
720+00	969.41	964.3
719+50	969.60	969.6

5-12

180 160 140 120 100 80 60 40 20 0 20 40 60 80

100 120

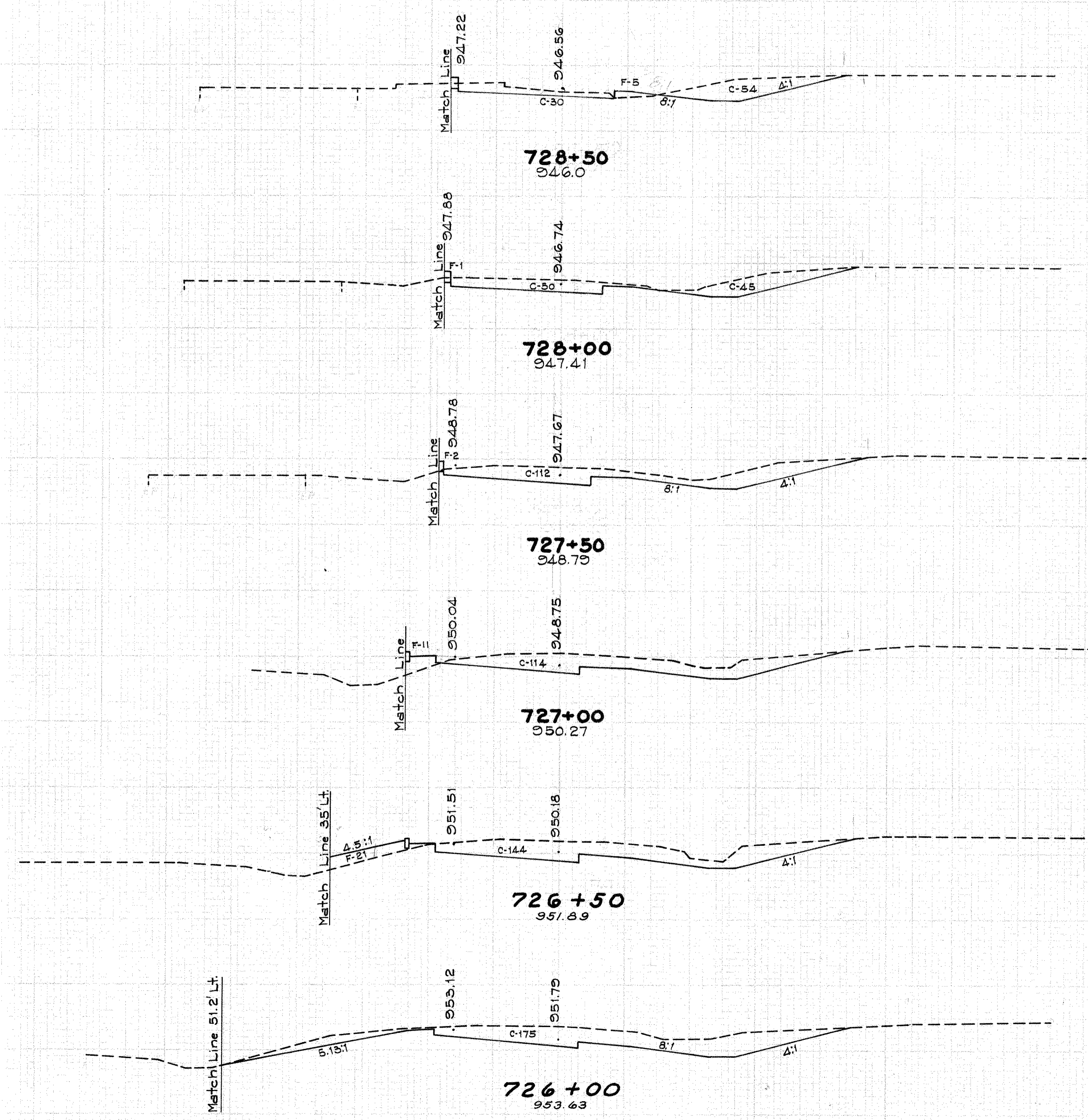


STATION	ELEVATION	REMARKS
328	2	
333	7	
181	6	
276	24	
117	20	
216	59	
116	44	
227	124	
129	90	
239	226	
129	154	
231	377	

180 160 140 120 100 80 60 40 20 0 20 40 60 80

Sta. 729+00 Ahead Back

0	0		
52	15		
		126	19
84	6		
		166	6
95	1		
95	1		
		192	3
112	2		
		209	12
114	11		
		239	30
144	21		
		295	19
175	0		

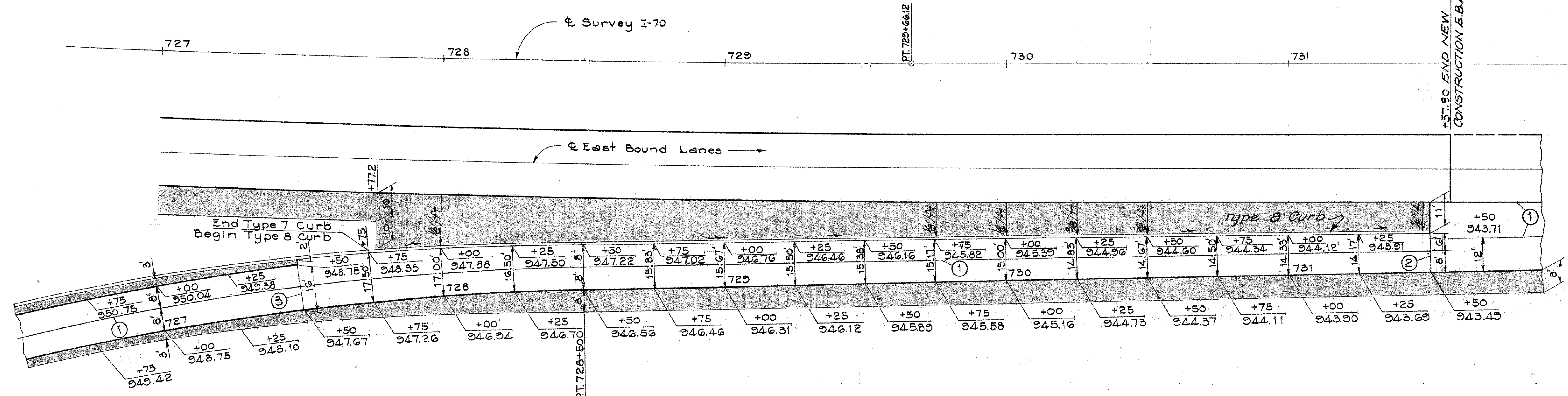


SOUTHEAST RAMP PAVEMENT ELEVATIONS AND JOINT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

154
250

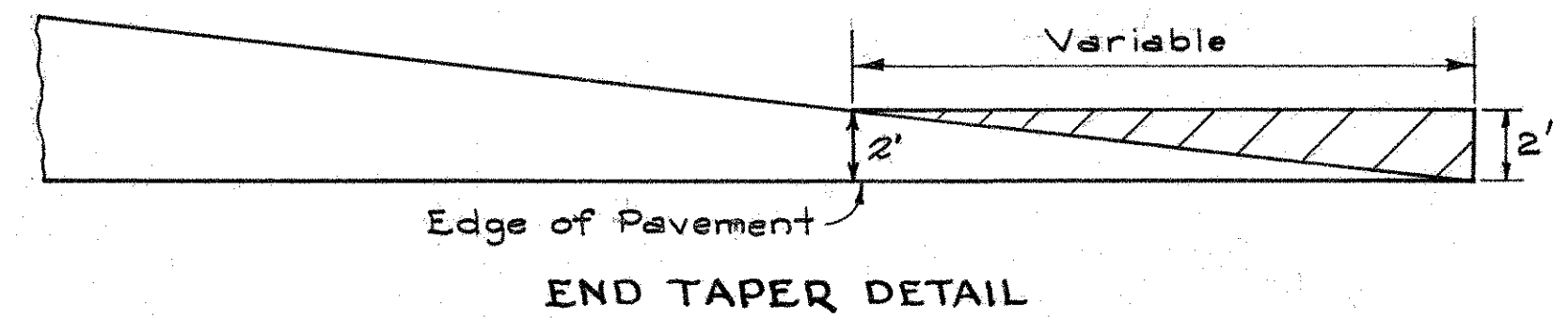
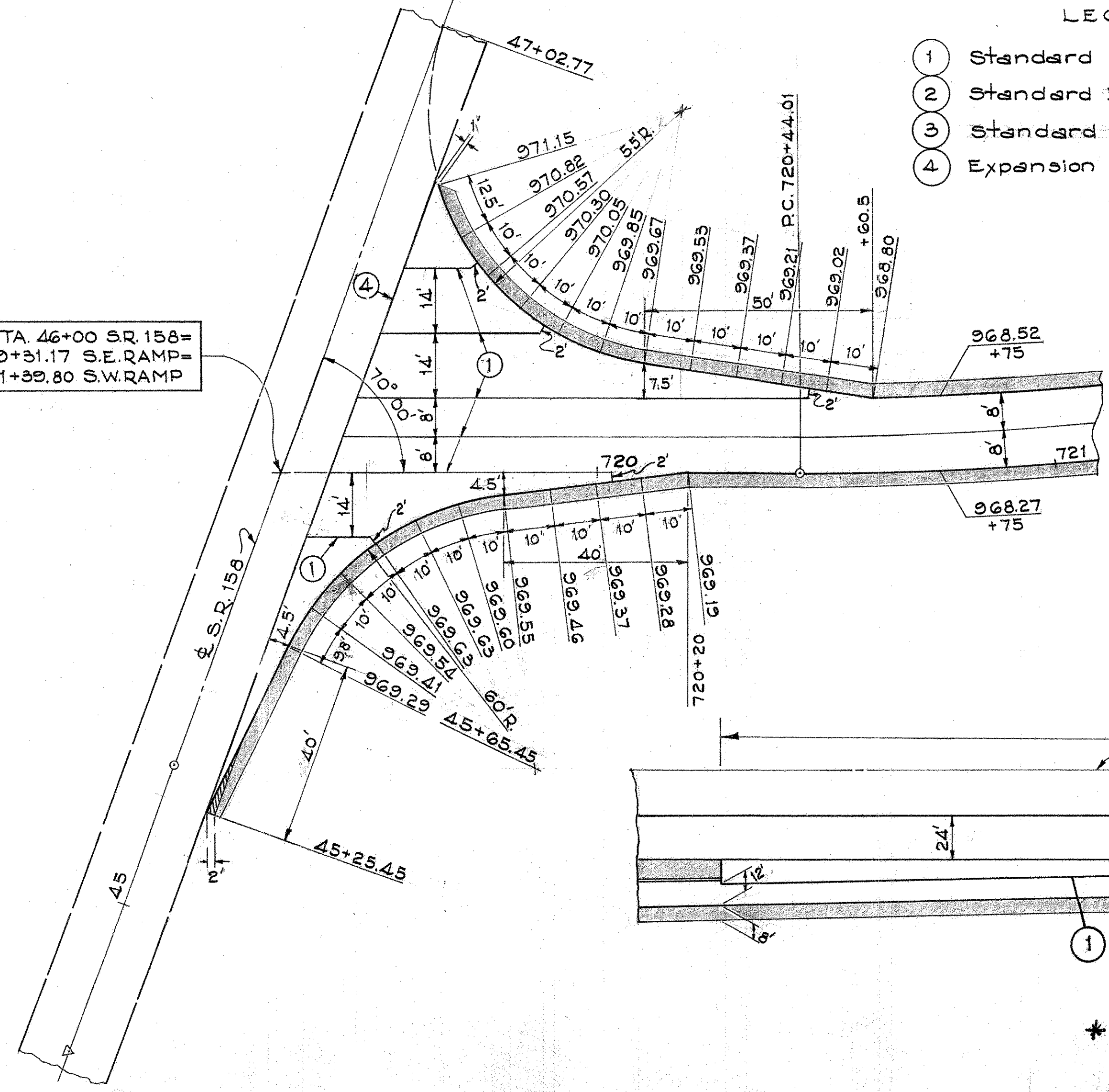
LIC-70-(5.12-8.67)



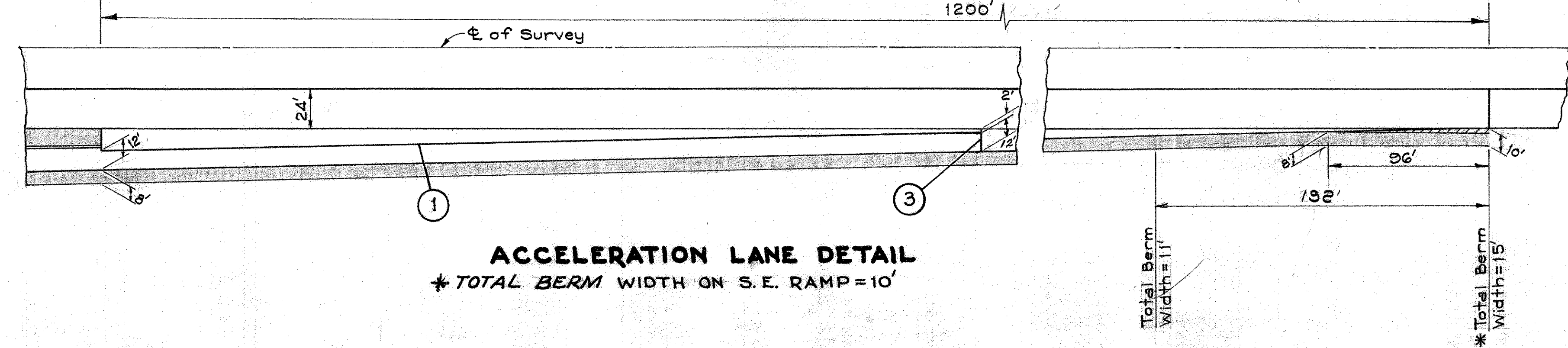
LEGEND

- ① Standard Longitudinal Joint
- ② Standard Expansion Joint
- ③ Standard Contraction Joint
- ④ Expansion Joint without Dowels

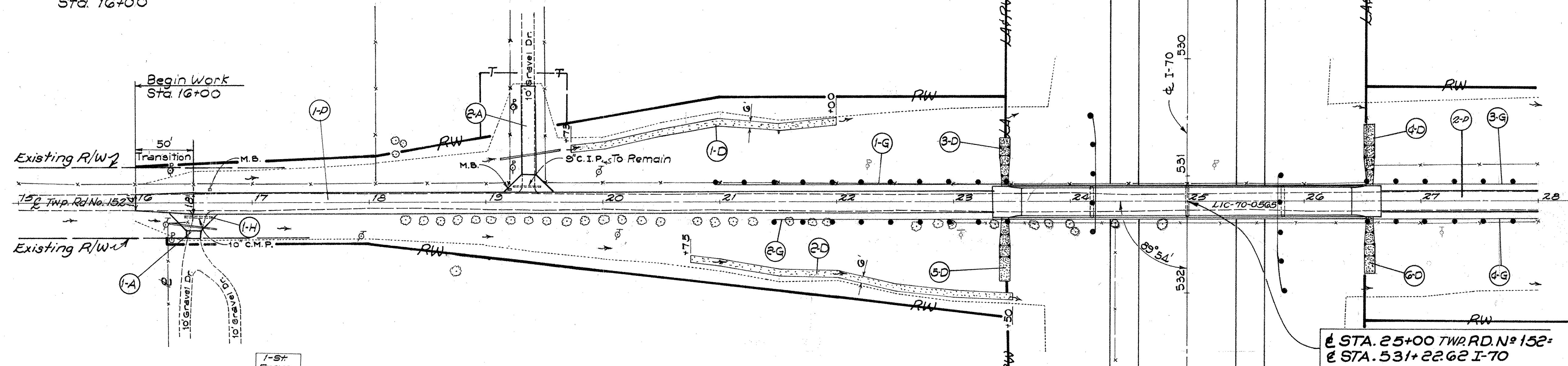
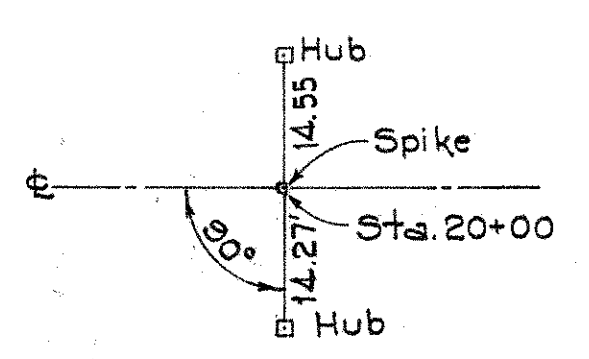
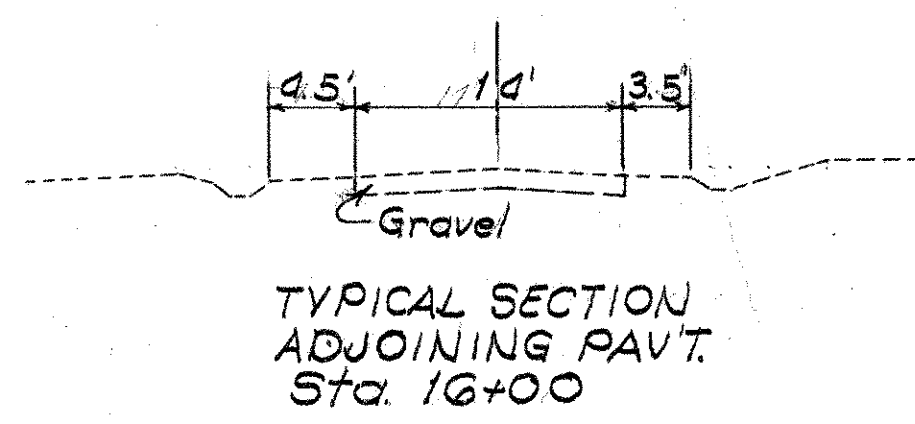
STA. 46+00 S.R. 158 =
 STA. 719+31.17 S.E. RAMP =
 STA. 721+39.80 S.W. RAMP



NOTE:
 The cross hatched area shown shall be constructed of concrete pavement to an elevation one half inch lower than the adjacent pavement and surfaced with 40# using No. 8 aggregate. The area shall be paid for as full depth 451 and the surface treatment shall be paid for as 409.
 The above Detail also applies to the Mainline acceleration and deceleration lanes.



Elevation Left Edge Pavement	Ramp Station	Elevation Right Edge Pavement
963.31	722+50	963.06
962.53	+75	962.26
961.80	723+00	961.45
961.09	+25	960.65
960.38	+50	959.84
959.67	+75	959.04
958.93	+83.33	958.77
958.97	724+00	958.23
958.29	+25	957.43
957.60	+50	956.62
956.91	+75	955.82
956.22	725+00	955.01
955.51	+25	954.21
954.73	+50	953.40
953.93	+75	952.60
953.12	726+00	951.79
952.32	+25	950.99
951.51	+50	950.18
950.75	+75	949.42
950.04	727+00	948.75



(H) PIPE REMOVED

Mark	Station	Side	202 Pipe Removed Lin. Ft.
1-H	16+50	Rt.	24
Totals			24

(G) GUARD RAIL

Mark	Station From	Station To	Side	606 Guard Rail Lin. Ft.	
1-G	20+26.5	23+46.5	Lt.	250	
2-G	21+46.5	23+46.5	Rt.	200	
3-G	26+53.5	28+00	Lt.	146.5	
4-G	26+53.5	28+00	Rt.	146.5	
Totals					743

(P) PAVEMENT

Mark	Station		404	304	408	203	605	611
	From	To	Asph. Conc. Cu. Yds.	Aggr. Base Cu. Yds.	Bit. Prime Coat Gal's	Subgrade Preparation Sq. Yds.	Aggregate Drains Lin. Ft.	
1-P	16+00	23+59.25	60.8	270	616	1532	250	75
2-P	26+40.75	28+00	11.2	60	113	344	55	75
Totals			72.0	330	729	1876	305	150

(D) DITCHES

Mark	Station		Side	660	601	660
	From	To		Sodding Sq. Yds.	Pump Rock Chan. Prot. Cu. Yds.	Sodding Spec. Berm Slope Prot. Sq. Yds.
1-D	19+73	22+00	Lt.	153		
2-D	20+75	23+50	Rt.	135		
3-D	23+44		Lt.			42
4-D	26+56		Lt.			54
5-D	23+44		Rt.			55
6-D	26+56		Rt.			49
Totals				338		200

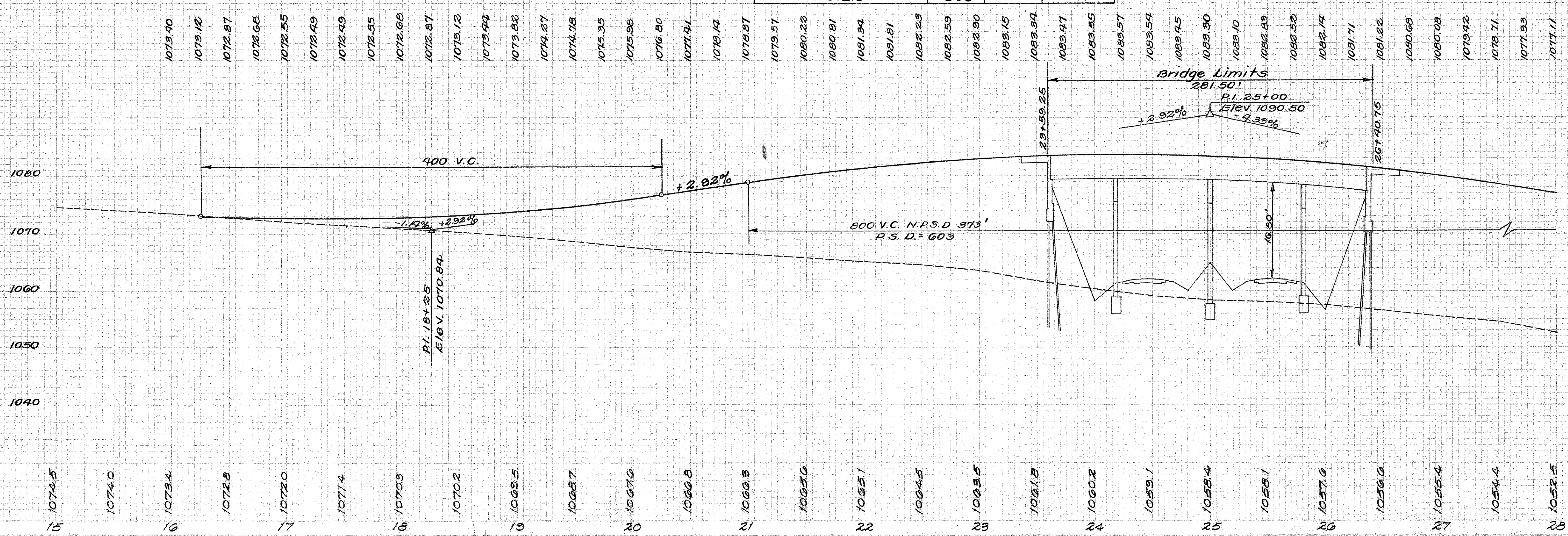
(A) DRIVES & APPROACHES

Mark	Station	Type	Side	404	304	408	603	Details on Sheet
				2" Asp. Conc. Cu. Yds.	Aggr. Base Cu. Yds.	Bit. Prime Coat Gal's	12" Conduit Type D Lin. Ft.	
1-A	16+50	Res.	Rt.	2.5	8.1	18.0	40	157
2-A	19+36	Res.	Lt.	2.5	29.1	18.0	52	157
Totals				5.0	37.5	36.0	92	

NOTE: For Structure LIC-70-0565 details, See Sheets 210 to 223

PROPOSED STRUCTURE

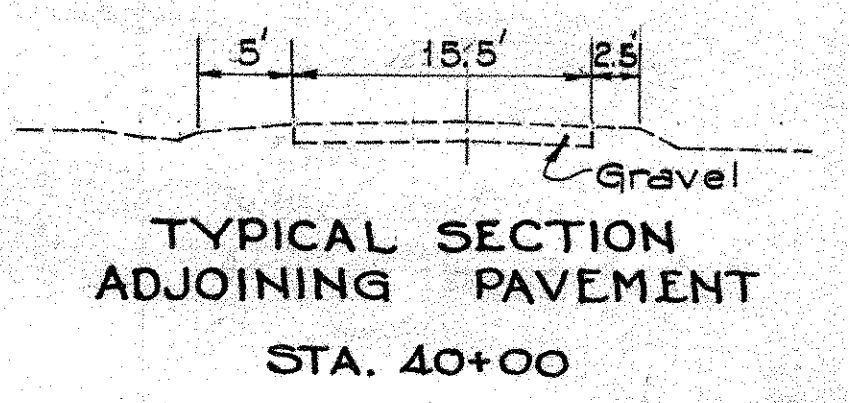
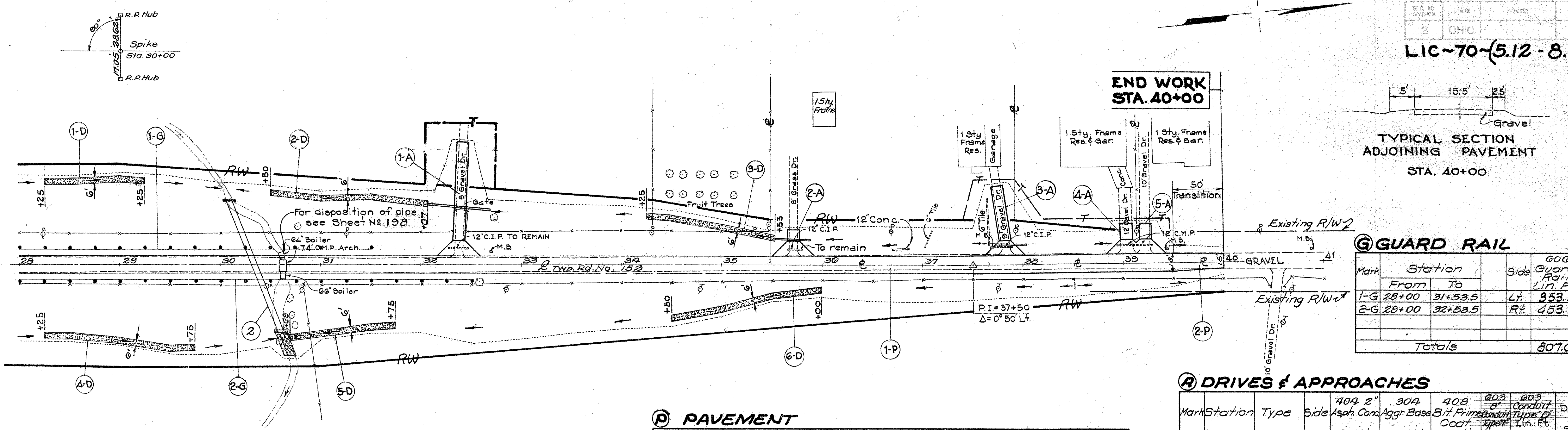
TYPE: Continuous steel beams with reinforced concrete deck and substructure.
 SPANS: 57.0'-81.5'-81.5'-57.0' 4% brgs.
 ROADWAY: 24'-0" f/f 2'-0" safety curbs
 LOAD FREQUENCY: CF-130 (57)
 SKEW: None
 WEARING SURFACE: 1" Monolithic Concrete.
 APPROACH SLABS: A5-1-54 (25' long) Special Alignment: Tangent



Seeding	10,153 Sq. Yd.
Excavation	955 Cu. Yd.
Embankment	29,520 Cu. Yd.
Embk. + 12%	33,062 Cu. Yd.

B.M. #6 Mine Spike in Power Pole
 23.5' Lt. Sta. 530+92.2 El. 1057.73

LIC-70-(5.12-8.67)



G GUARD RAIL

Mark	Station From	Station To	Side	606 Guard Rail Lin. Ft.
1-G	28+00	31+53.5	Lt.	353.5
2-G	28+00	32+53.5	Rt.	453.5
Totals				807.0

STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M.	Station	Existing			Proposed			Details on Sheet
			Type	Size	Length	Type	Size	Length	
2		30+34	P.C.	64"	28	P.C.	60	142	198

P PAVEMENT

Mark	Station	404 1 1/2"	304	408	203	605		
		Asph. Conc. Cu. Yds.	G" Aggr. Base Cu. Yds.	Bit. Prime Coat Gal's.	Subgrade Preparation Sq. Yds.	Aggregate Drains Lin. Ft.		
1-P	28+00	39+50	95.9	40.5	971	2300	420	
2-P	39+50	40+00	3.8	16.2	39	92	10	
Totals			99.7	421.2	1010	2392	430	

A DRIVES & APPROACHES

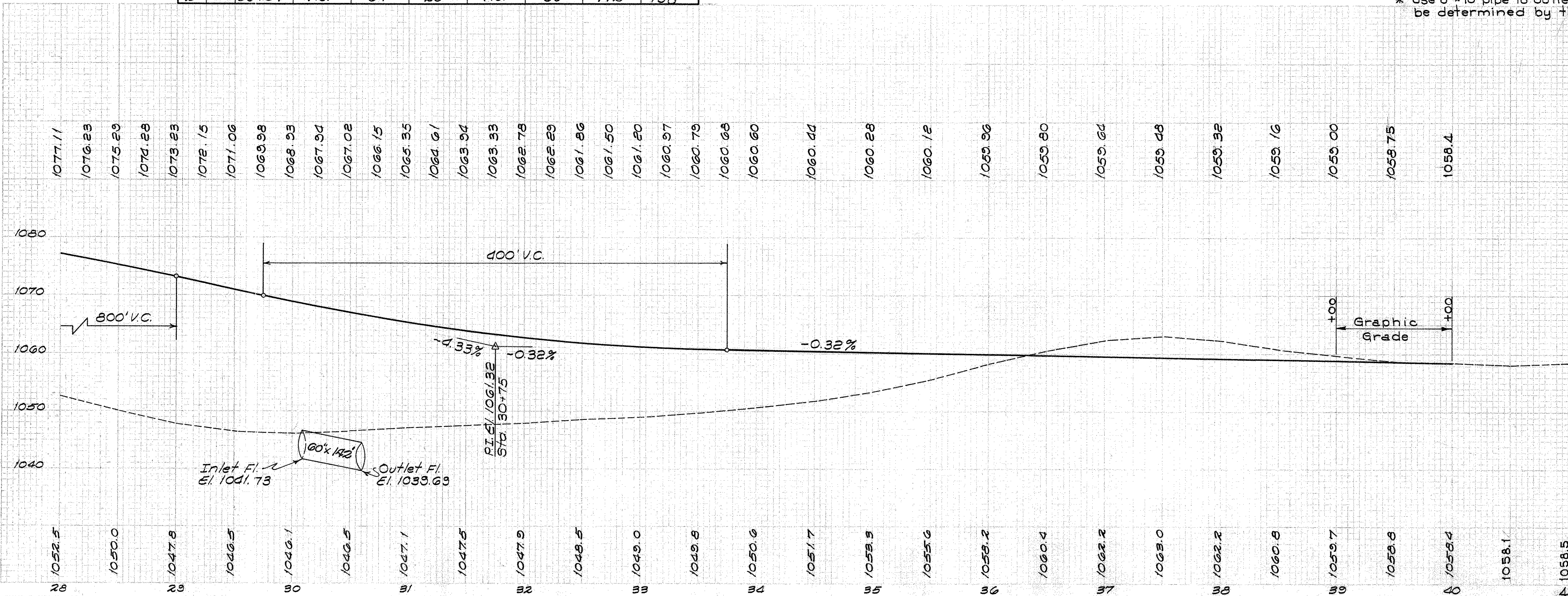
Mark	Station	Type	Side	404 2"	304	408	603	603	Details on Sheet
				Asph. Conc. Cu. Yds.	Aggr. Base Cu. Yds.	Bit. Prime Coat Gal's.	8" Conduit Type "D" Lin. Ft.		
1-A	32+38	Res.	Lt.	2.5	36	18.0		62	160
2-A	35+71	Res.	Lt.	2.5	10	18.0		36	161
3-A	37+85	Res.	Lt.	2.5	23	18.0	*10	38	161
4-A	39+04	Res.	Lt.	2.1	10	15			162
5-A	39+28	Res.	Lt.	2.1	10	15			162
Totals				11.7	89	84	10	76	62

* Use 8" x 10' pipe to outlet spout drain from Residence. Location to be determined by the Engineer.

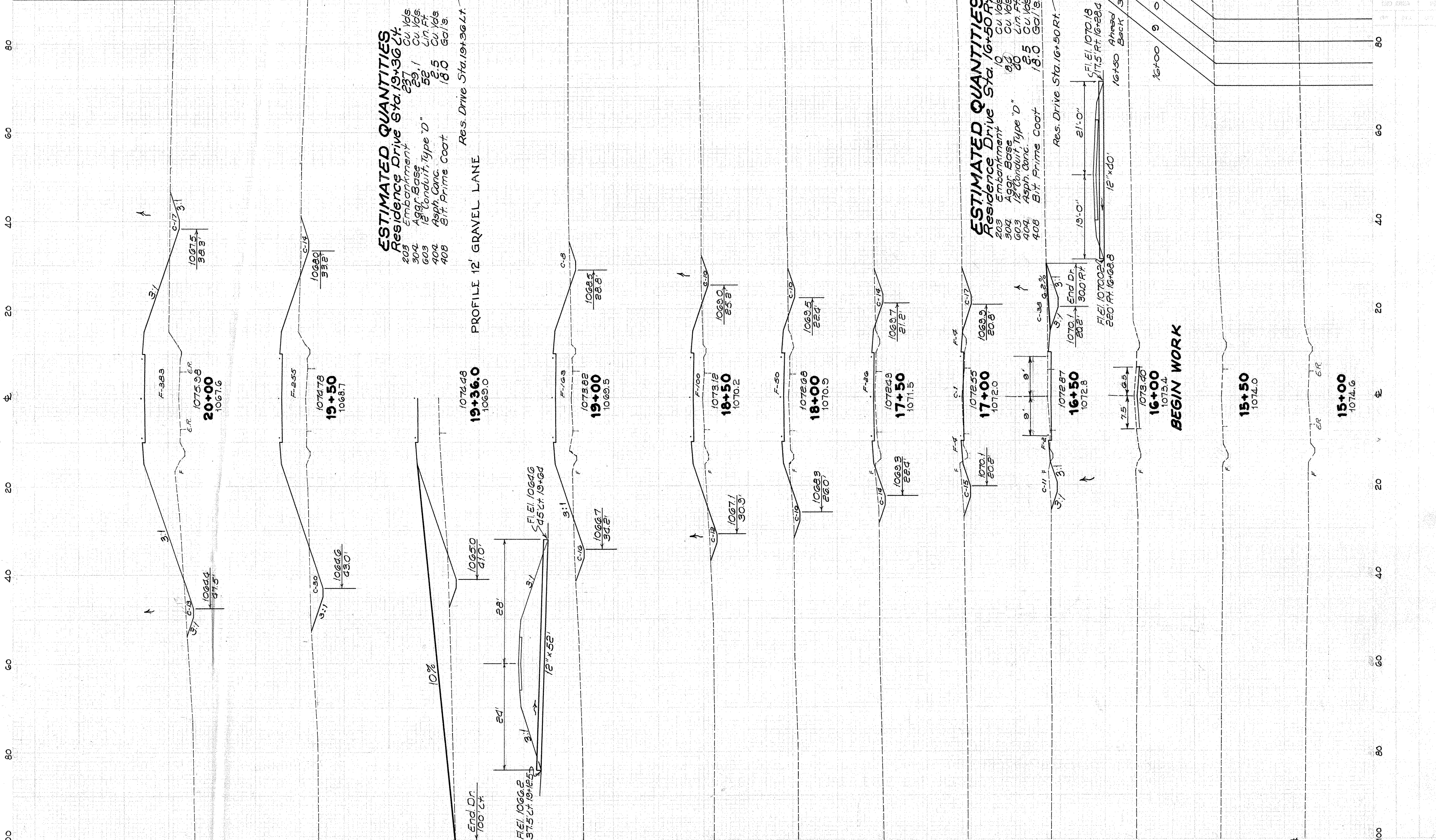
D DITCHES

Mark	Station		Side	600	601
	From	To		Sodding Sq. Yds.	Dump Rock Chain Prot. Cu. Yds.
1-D	28+25	29+25	Lt.	67	
2-D	30+50	32+07	Lt.	106	
3-D	34+25	35+53	Lt.	87	
4-D	28+25	29+75	Rt.	101	
5-D	30+69	31+75	Rt.	71	
6-D	34+50	36+00	Rt.	102	
Totals				534	

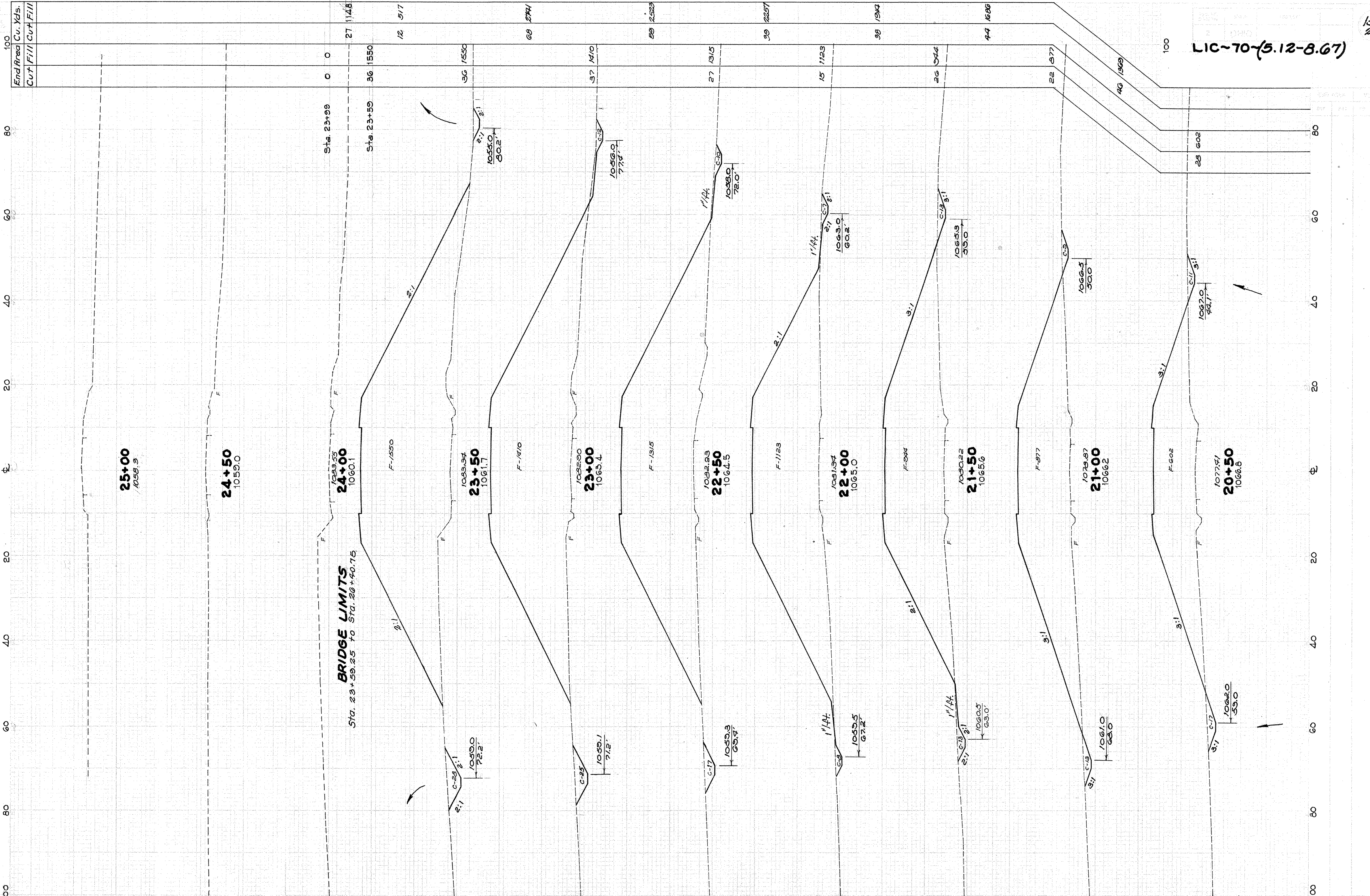
Seeding	13,589 Sq. Yd.
Excavation	3,532 Cu. Yd.
Embankment	30,327 Cu. Yd.
Emb. + 12%	30,446 Cu. Yd.



End Area Cu. Yds.	Cut	Fill
54	912	
69	591	
80	383	
94	253	
100	0	237
103	63	397
109	43	294
110	39	139
120	44	70
130	50	31
140	33	5
150	76	9
160	0	10
170	49	2
180	43	0
190	9	0
200	0	0



LIC-70-(5.12-8.67)



LIC-70-(5.12-8.67)

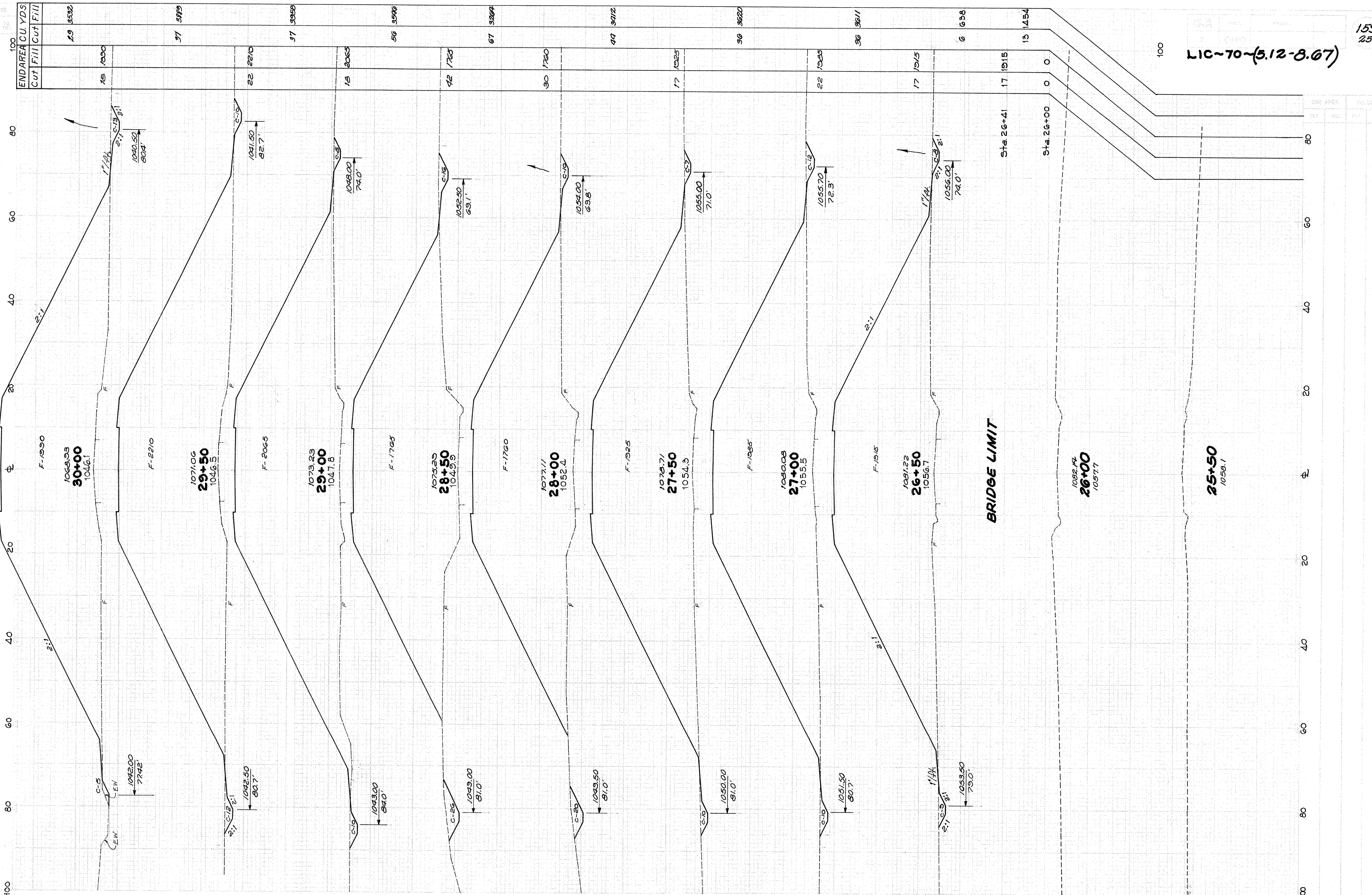
158
250

BRIDGE LIMITS

Sta. 23+59.25 to Sta. 24+40.75

TWR RD. #152 20+50 ~ 25+00

LIC-70-(5.12-8.67)

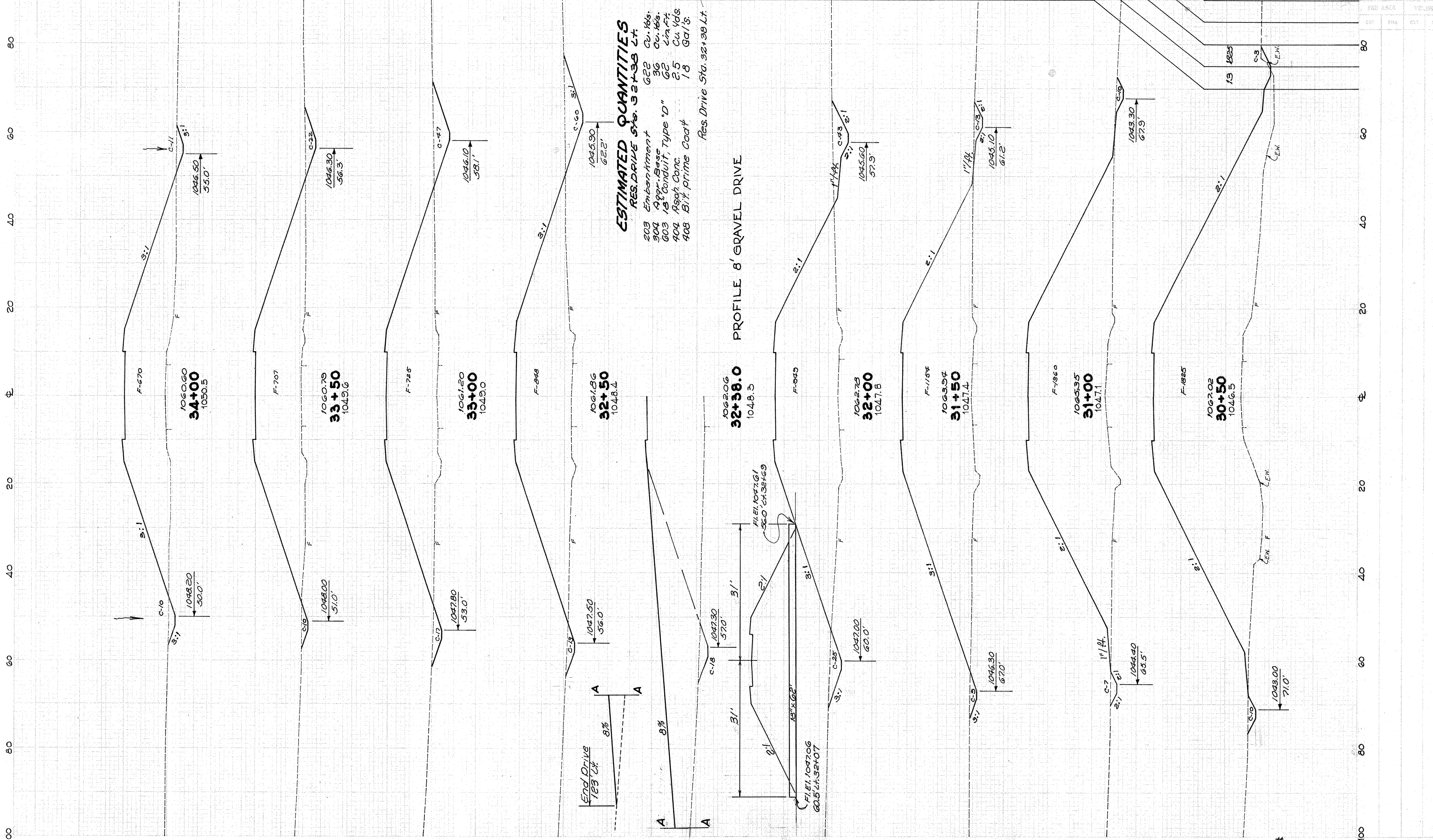


End Area Cu. Yds.
Cut Fill Cut Fill

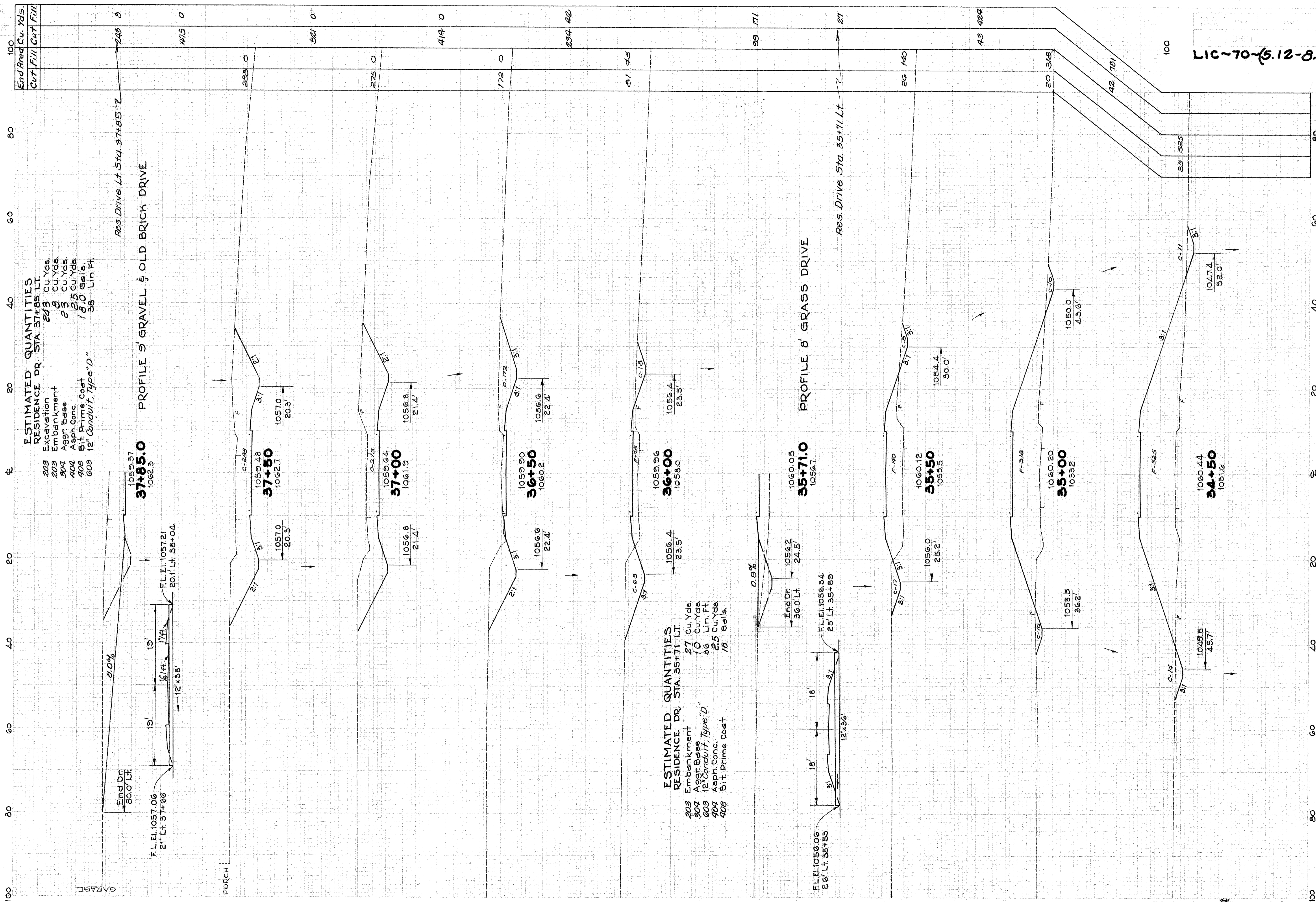
100	49	1000
80	21	670
60	32	707
40	64	725
20	73	648
0	127	1450
20	65	995
40	22	1554
60	17	1960
80	28	2349
100	13	1825

LIC-70-(5.12-8.67)

160
250



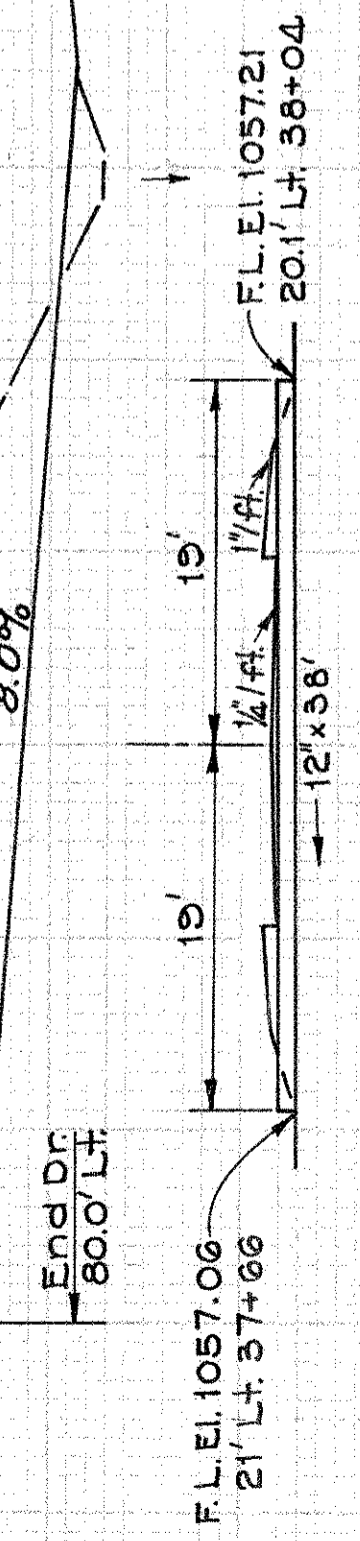
LIC-70-(5.12-8.67)



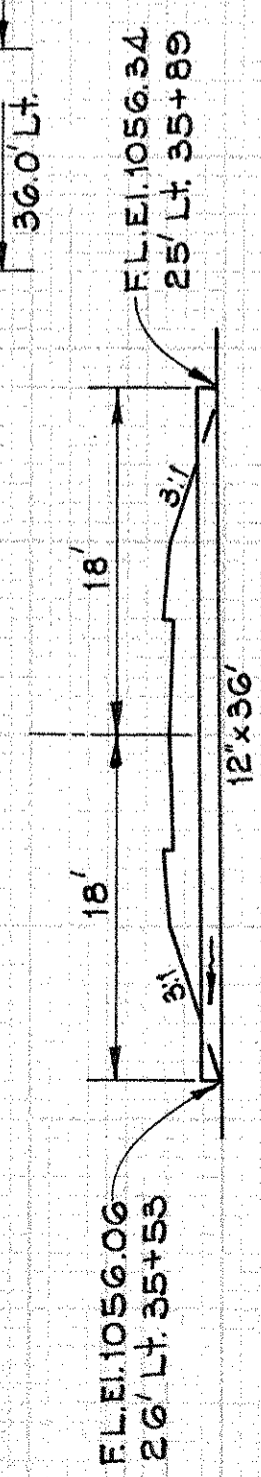
- ESTIMATED QUANTITIES
RESIDENCE DR. STA. 37+85 LT.**
- 203 Excavation 243 Cu. Yds.
 - 303 Embankment 9 Cu. Yds.
 - 304 Aggr. Base 23 Cu. Yds.
 - 404 Asp. Conc. 25 Cu. Yds.
 - 408 Bit. Prime Coat 18.0 Gal's
 - 603 12" Conduit, Type "D" 56 Lin. Ft.

PROFILE 9' GRAVEL & OLD BRICK DRIVE

37+85.0
1062.5



- ESTIMATED QUANTITIES
RESIDENCE DR. STA. 35+71 LT.**
- 203 Embankment 27 Cu. Yds.
 - 303 Aggr. Base 10 Cu. Yds.
 - 304 12" Conduit, Type "D" 36 Lin. Ft.
 - 404 Asp. Conc. 25 Cu. Yds.
 - 408 Bit. Prime Coat 18 Gal's



PROFILE 8' GRASS DRIVE

35+71.0
1056.7

END AREA [CU YDS.
Cut/Fill/ Cut/Fill]

100		
80		
60		
40		
20		
0		
20		
40		
60		
80		
100		

41+00
1058.5

40+56.0
1058.2

PROFILE 10' GRAVEL LANE

40+50
1058.1

1058.4
40+00 END WORK
1058.4

END WORK

1058.75
39+50
1058.7

ESTIMATED QUANTITIES
Residence Drive Sta. 39+22 Lt.

- 203 Excavation 6 Cu. Yds.
- 304 Appr. Base 10 Cu. Yds.
- 404 Asph. Conc. 2.1 Cu. Yds.
- 408 Bit. Prime Coat 1.5 Gal/s.

Res. Drive Lt. Sta. 39+22

1058.03
39+22.0
1058.1

PROFILE 10' GRAVEL DRIVE

1059.00
39+00
1059.5

ESTIMATED QUANTITIES
Residence Drive Sta. 39+04 Lt.

- 203 Excavation 12 Cu. Yds.
- 304 Appr. Base 10 Cu. Yds.
- 404 Asph. Conc. 2.1 Cu. Yds.
- 408 Bit. Prime Coat 1.5 Gal/s.

Res. Drive Lt. Sta. 39+04

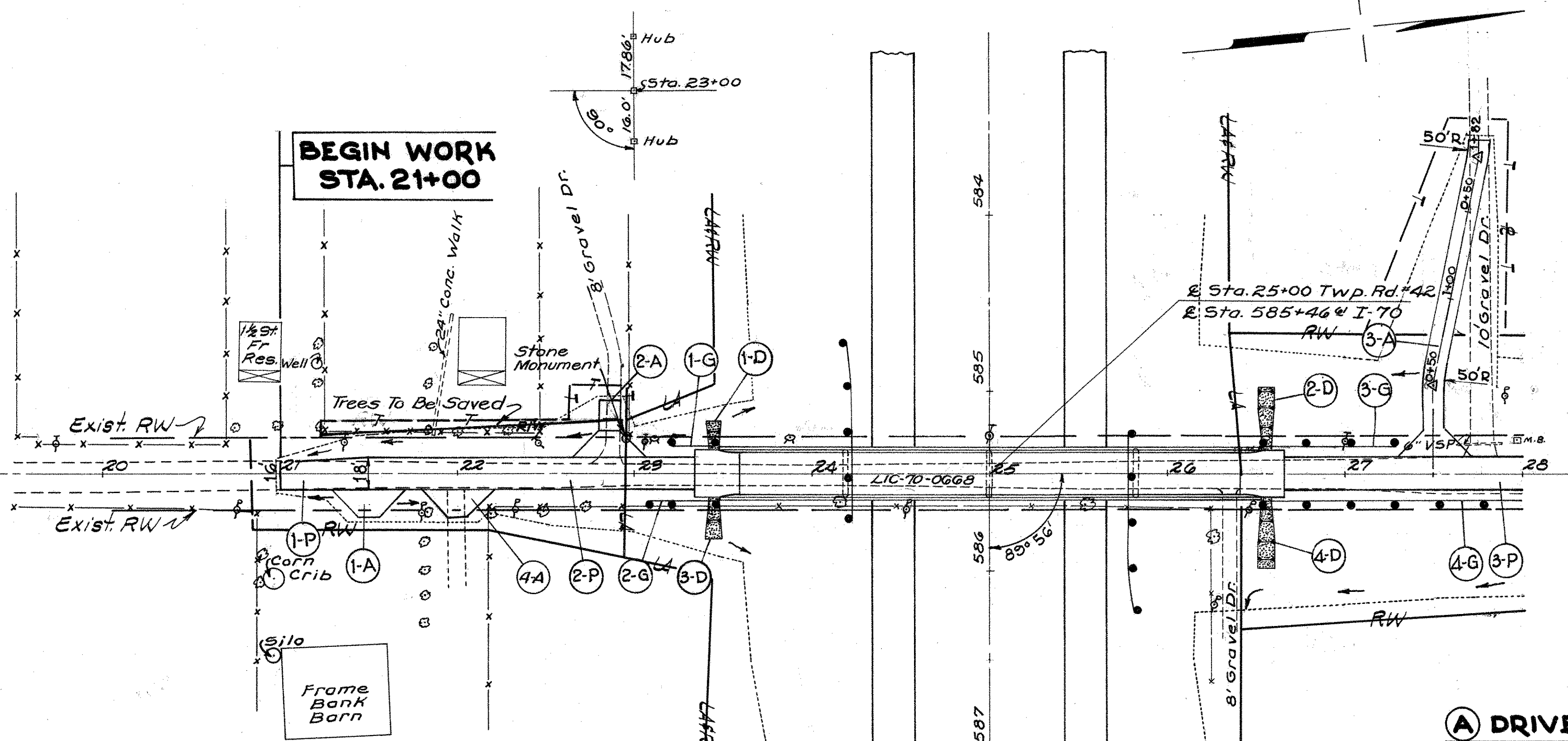
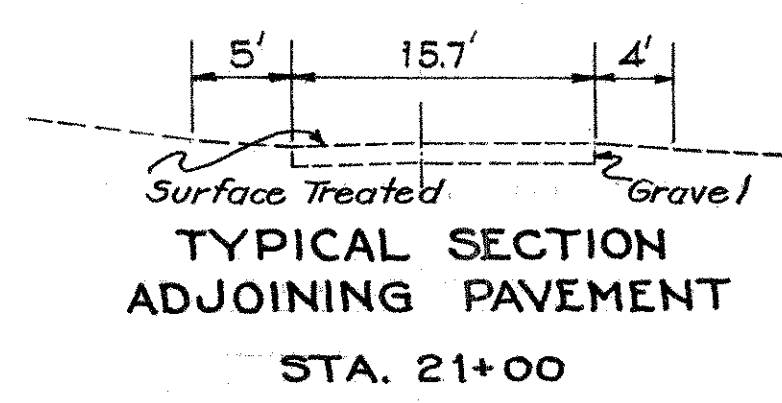
1059.16
38+50
1060.8

1059.32
38+00
1062.0

LIC-70-(5.12-8.67)

162
250

TWP. RD. #152 38+00 ~ 41+00



NOTE: Trees to be saved from Sta. 21+21 Lt. to Sta. 22+28 Lt.

P PAVEMENT

Mark	Station		40A 1/2" Asph. Conc.	30A 6" Aggr. Base	40B Bit. Prime Coat	203 Subgrade Preparation	605 Aggregate Drains	611 Appr. Slab
	From	To	Cu. Yds.	Cu. Yds.	Gal's.	Sq. Yds.	Lin. Ft.	Sq. Yds.
1-P	21+00	21+50	3.9	17	40	94		
2-P	21+50	23+59.25	15.4	78.3	150	444	75	75
3-P	26+40.75	28+00	11.2	60.7	113	344	55	75
Totals			30.5	*156	309	882	130	150

*Includes 27 Cu. Yds. for Approach Slabs

G GUARD RAIL

Mark	Station		Side	600 Guard Rail Lin. Ft.
	From	To		
1-G	23+21.5	23+46.5	Lt.	25
2-G	23+09	23+46.5	Rt.	37.5
3-G	26+53.5	27+28.5	Lt.	75
4-G	26+53.5	28+00	Rt.	140.5
Totals				284

A DRIVES & APPROACHES

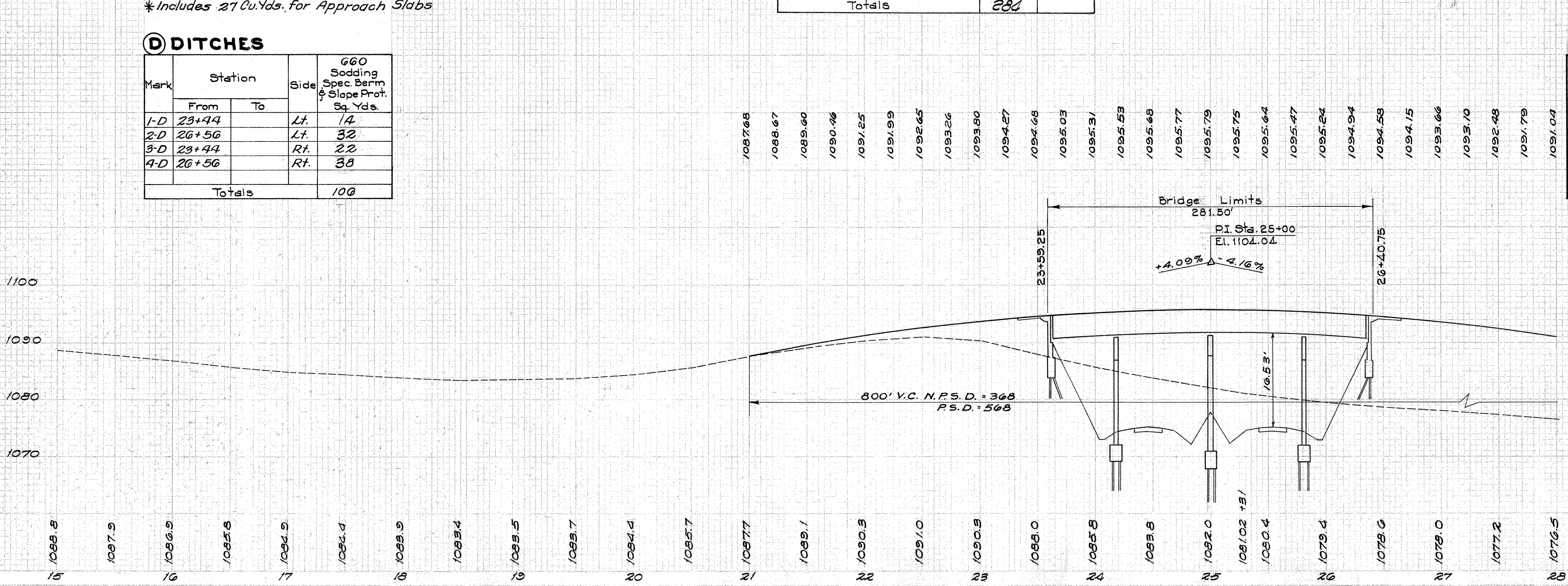
Mark	Station	Type	Side	40A Asph. Conc.	30A Aggr. Base	40B Bit. Prime Coat	Details on Sheet
				Cu. Yds.	Cu. Yds.	Gal's.	
1-A	21+50	Field	Rt.		8		165
2-A	22+84.5	Res.	Lt.	2.5	12	18	165
3-A	27+50	Res.	Lt.	2.5	50	18	167
4-A	22+00	Field	Rt.		8		165
Totals				5.0	84	36	

NOTE: For Struct. LIC-70-0668 Details, See Sheets 216 to 223

D DITCHES

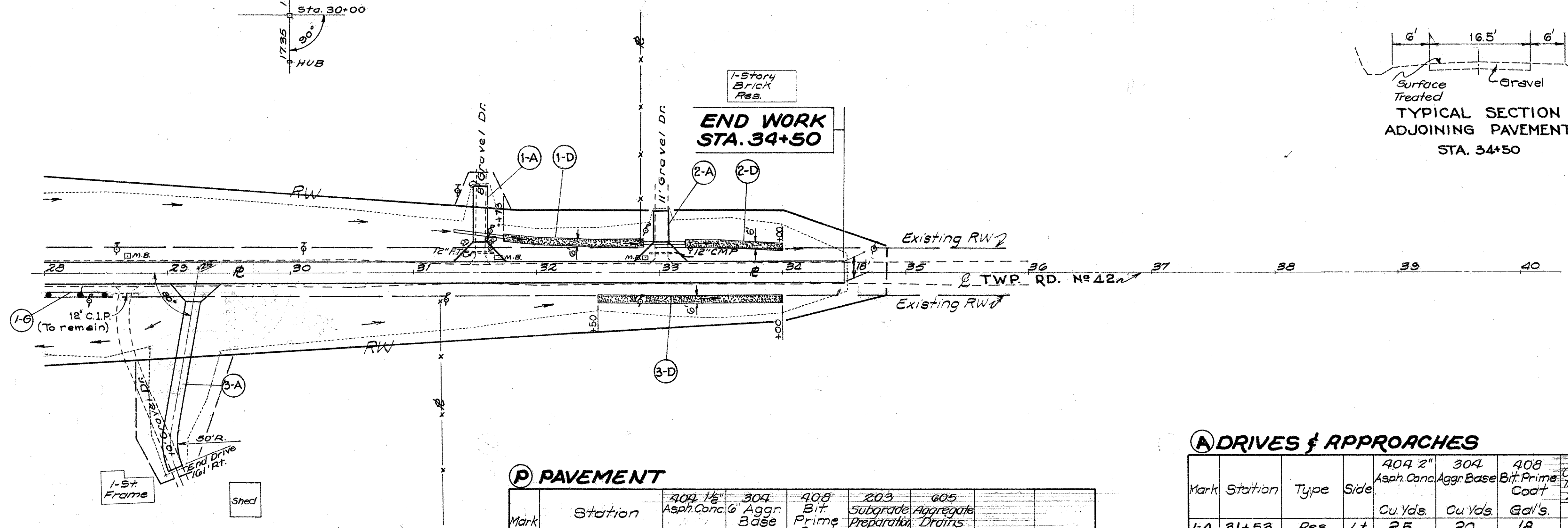
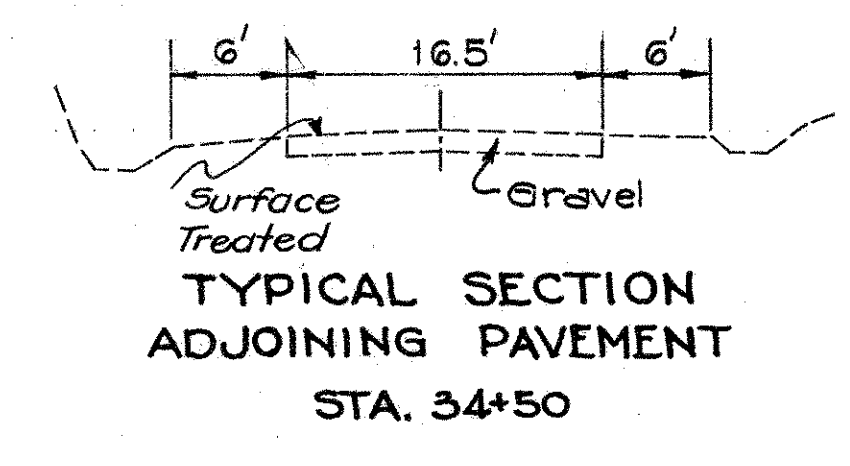
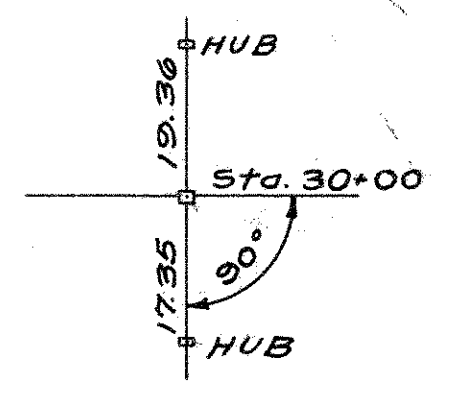
Mark	Station		Side	660 Sodding Spec. Berm & Slope Prot. Sq. Yds.
	From	To		
1-D	23+44		Lt.	14
2-D	26+56		Lt.	32
3-D	23+44		Rt.	22
4-D	26+56		Rt.	38
Totals				106

PROPOSED STRUCTURE
 TYPE: Continuous steel beams with reinforced concrete deck and substructure.
 SPANS: 57.0'-81.5'-81.5'-57.0' c/c brgs.
 ROADWAY: 24'-0" f/f 2'-0" Safety Curbs
 LOAD FREQUENCY: CF=130 (57)
 SKEW: None
 WEARING SURFACE: 1" Monolithic Concrete
 APPROACH SLABS: A5-1-54 (25' long) Special
 ALIGNMENT: Tangent



Seeding	3,736	Sq. Yd.
Excavation	221	Cu. Yd.
Emb + 12%	8,621	Cu. Yd.
	9,656	Cu. Yd.

B.M. #12 Spike S. Side Tel. Pole & Sta. 585+29.0 Elev. 1083.10



G GUARD RAIL

Mark	Station		Side	600 Guard Rail Lin. Ft.
	From	To		
1-G	28+00	28+53.5	Rt.	53.5
Totals				53.5

A DRIVES & APPROACHES

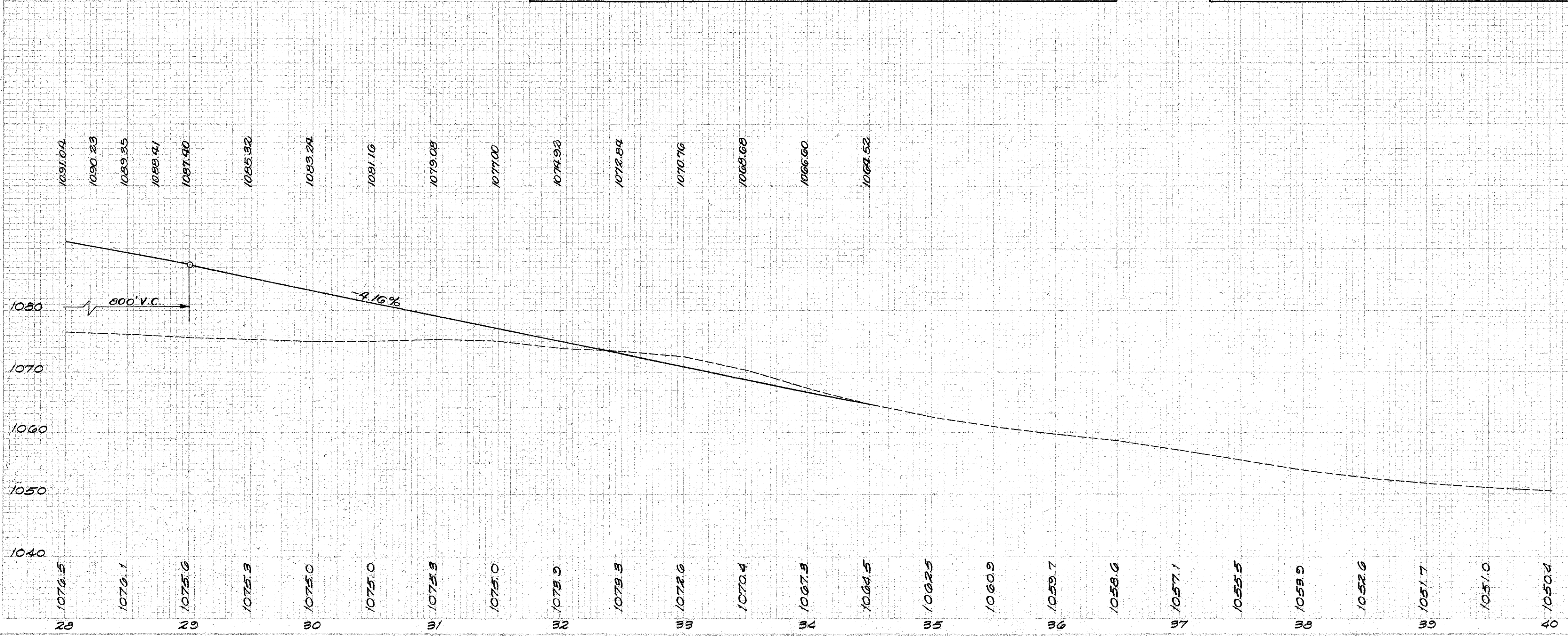
Mark	Station	Type	Side	404 2"	304	408	603	Details on Sheet
				Asph. Conc.	Aggr. Base	Bit. Prime Coat	Conduit Type "D" Lin. Ft.	
				Cu. Yds.	Cu. Yds.	Gal's.	24"	
1-A	31+53	Res.	Lt.	2.5	20	18	40	168
2-A	33+01.5	Res.	Lt.	2.5	12	18	36	168
3-A	29+25	Res.	Rt.	2.5	47	18		167
Totals				7.5	81	54	76	

P PAVEMENT

Mark	Station		404 1/2"	304	408	203	605	Details on Sheet
	From	To	Asph. Conc.	6' Aggr. Base	Bit. Prime Coat Gal's.	Subgrade Preparation Sq. Yds.	Aggregate Drains Lin. Ft.	
			Cu. Yds.	Cu. Yds.	Gal's.	Sq. Yds.	Lin. Ft.	
1-P	28+00	34+50	54.2	229	549	1300	240	
Totals			54.2	229	549	1300	240	

D DITCHES

Mark	Station		Side	600 Sodding Sq. Yds.
	From	To		
1-D	31+73	32+87	Lt.	76
2-D	33+20	34+00	Lt.	53
3-D	32+50	34+00	Rt.	100
Totals				229



Seeding	6,362 Sq. Yd.
Excavation	1,602 Cu. Yd.
Embankment	8,224 Cu. Yd.
Emb. + 12%	9,211 Cu. Yd.

B.M. #12 Spike S. Side Tel. Pole & Std. 585+29.0 Elev. 1083.10

End Area Cu. Yds.
Cut/Fill Cut/Fill

100
80
60
40
20
0
20
40
60
80
100

26.361

5 108

19 193

17

9 41

5 3

4 2

9 0

13 41

6 5

12 2

100

100

100

100

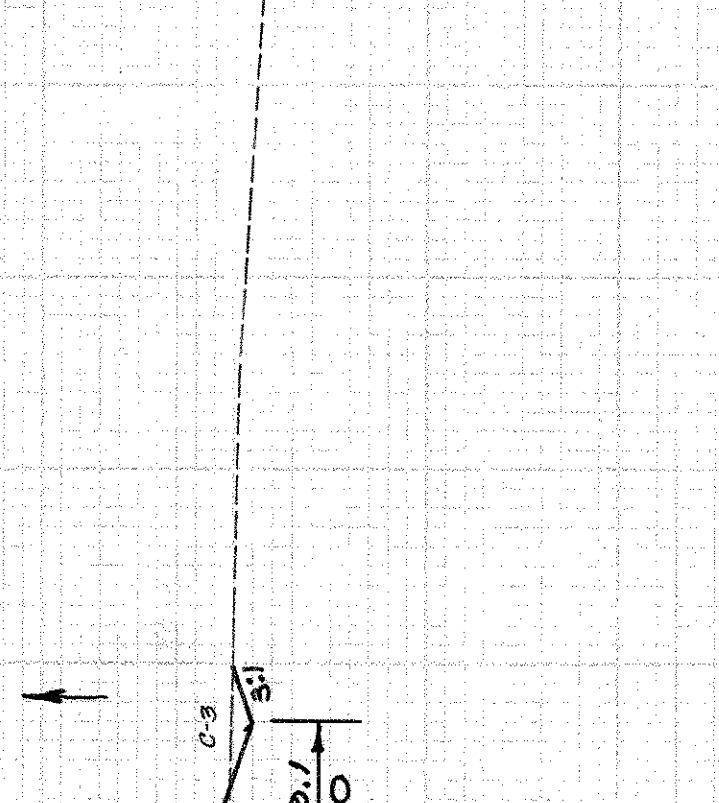
100

100

100

100

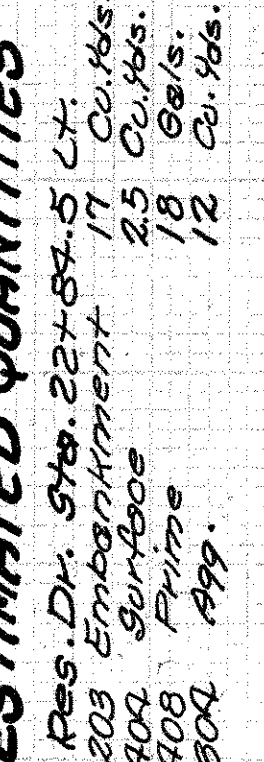
100



ESTIMATED QUANTITIES
Res. Dr. Sta. 22+84.5 Lt. Cu. Yds.
203 Embankment 17 Cu. Yds.
400 Surface 25 Cu. Yds.
408 Prime 18 Cu. Yds.
304 Agg. 12 Cu. Yds.

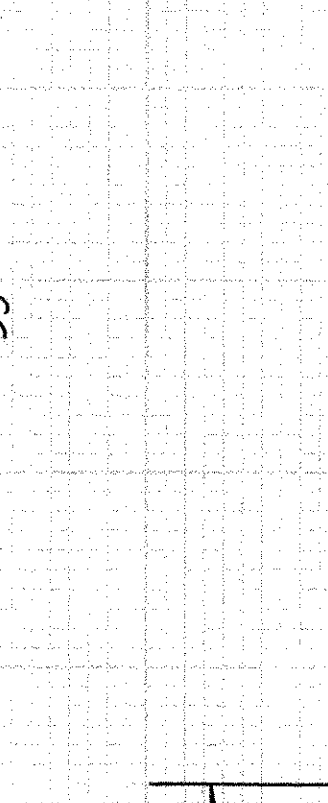
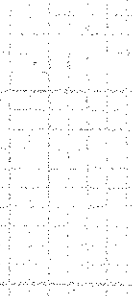
1093.47
22+84.5
1090.74

End B-13 Dr.
41.24



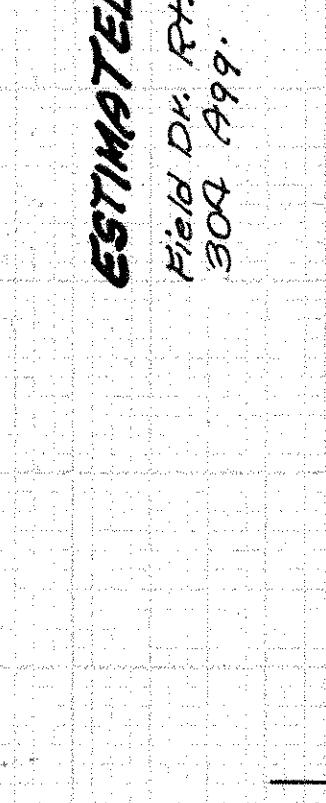
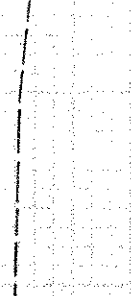
ESTIMATED QUANTITIES
Field Drive Rt. Sta. 22+00
304 Agg. 9 Cu. Yds.

1090.3
19.2
22+50
1091.01



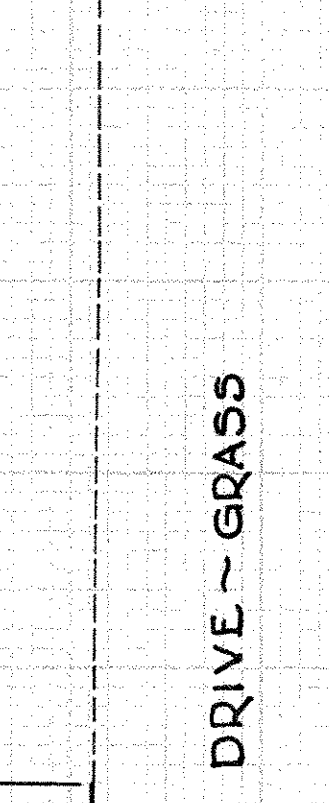
ESTIMATED QUANTITIES
Field Dr. Ft. Sta. 21+50
304 Agg. 8 Cu. Yds.

1090.3
17.0
22+00
1090.35

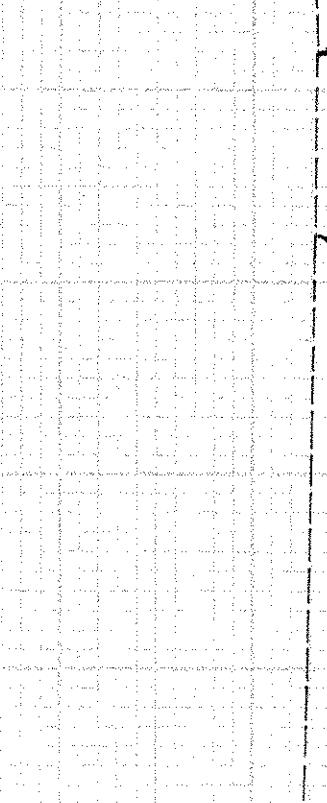


ESTIMATED QUANTITIES
DRIVE ~ GRASS

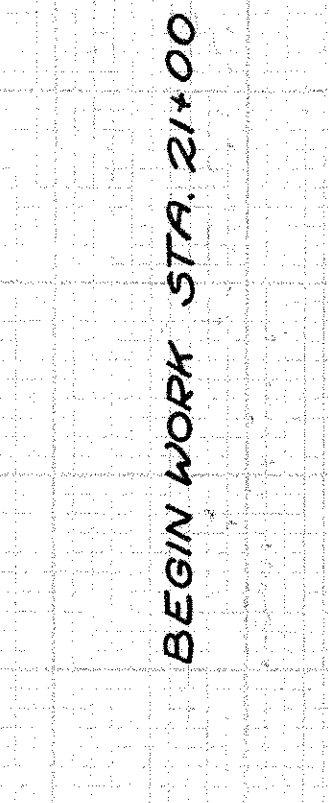
1087.68
17.0
21+50
1089.60
1089.11



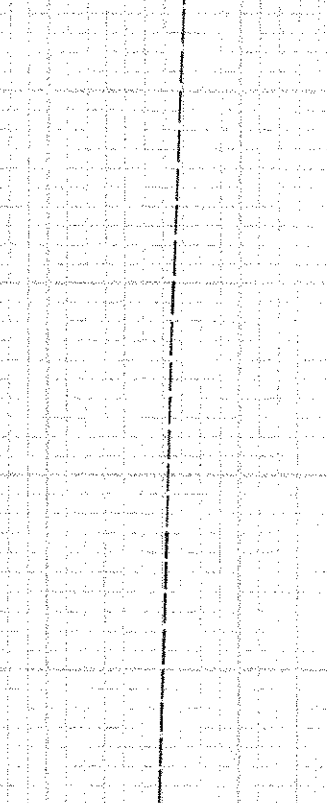
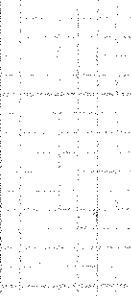
1087.68
17.0
21+00
1087.68



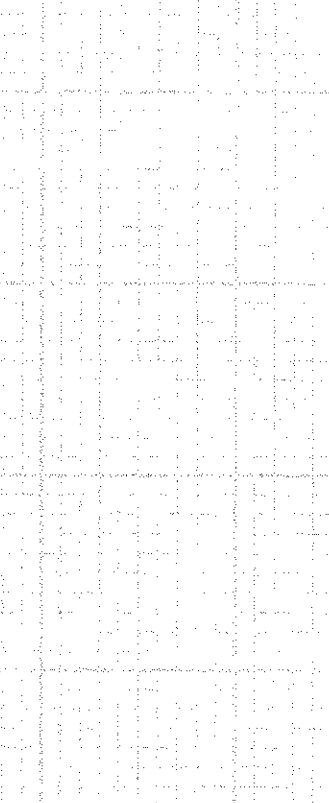
1087.68
17.0
20+50
1085.77



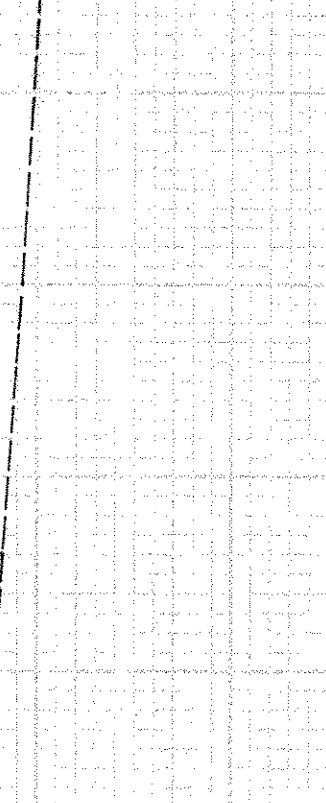
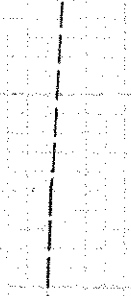
1087.68
17.0
20+00
1084.49



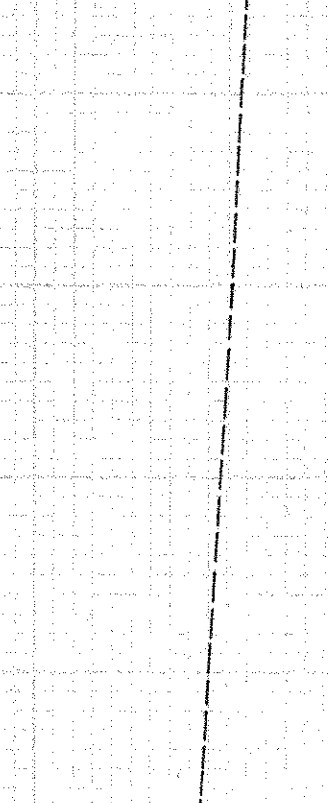
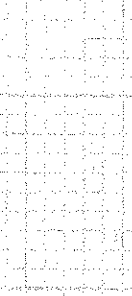
1087.68
17.0
19+50
1083.79



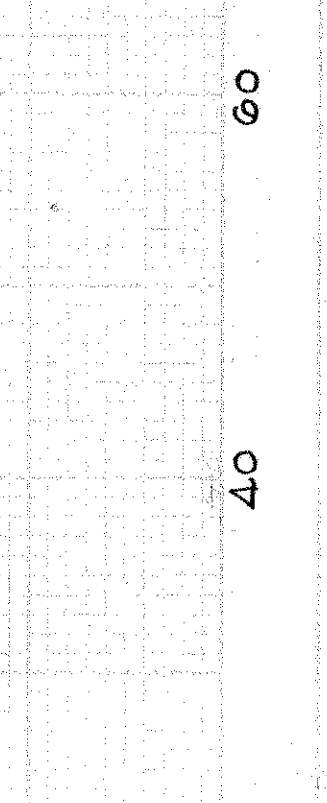
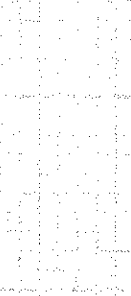
1087.68
17.0
19+00
1082.89



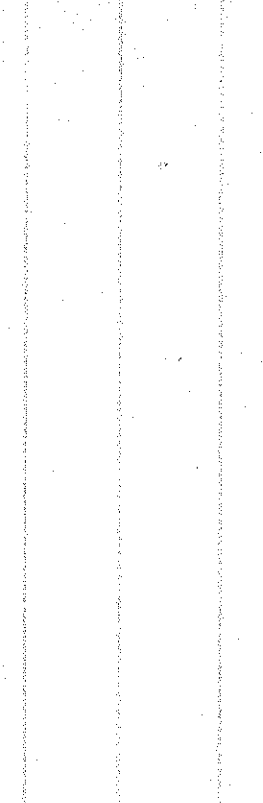
1087.68
17.0
18+50
1082.09



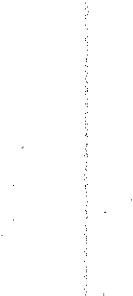
1087.68
17.0
18+00
1081.29



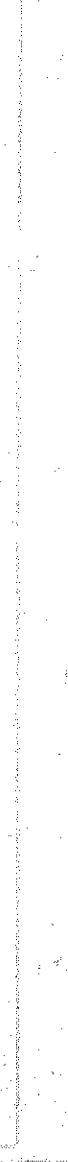
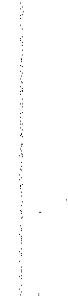
1087.68
17.0
17+50
1080.49



1087.68
17.0
17+00
1079.69

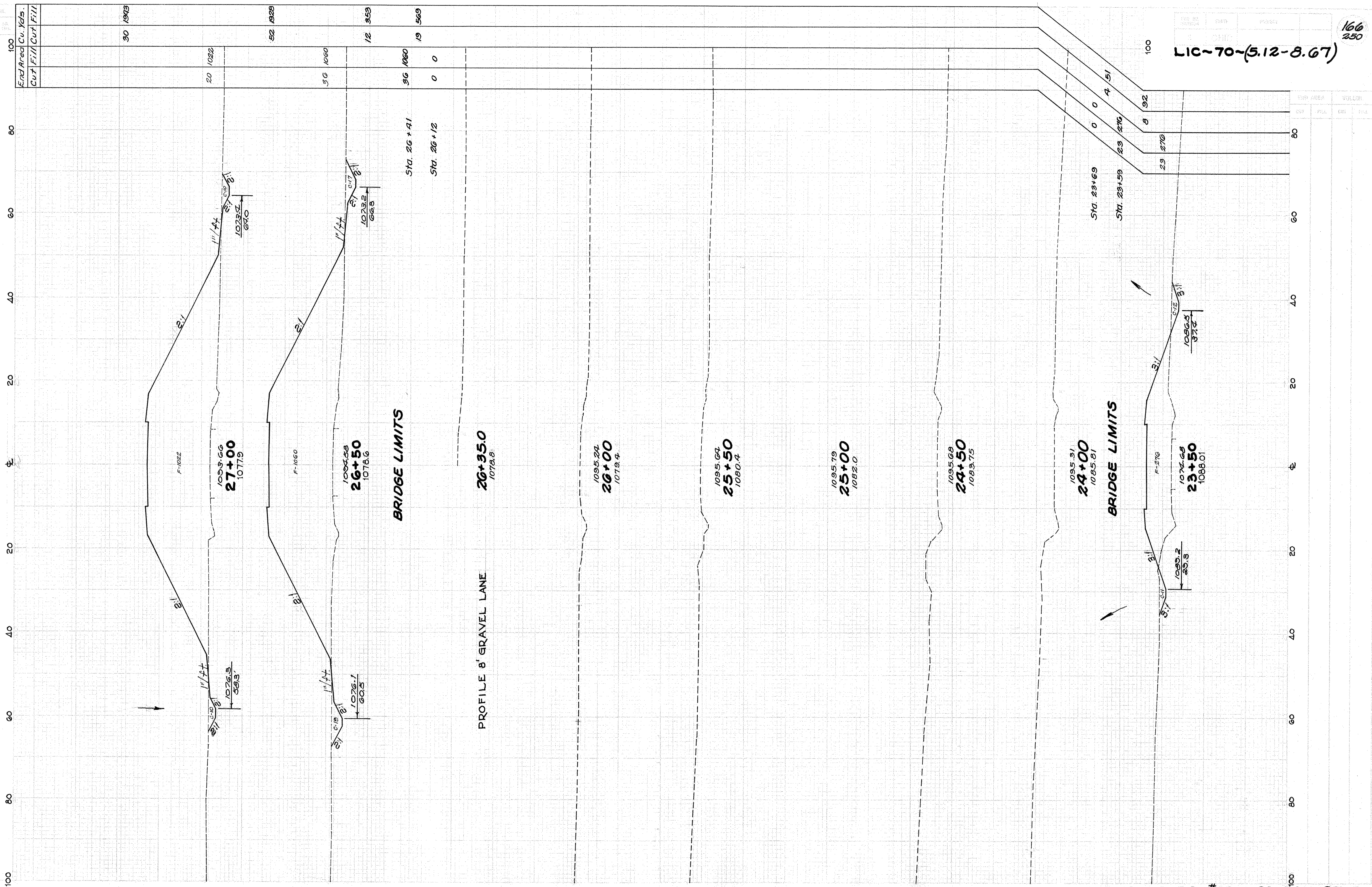


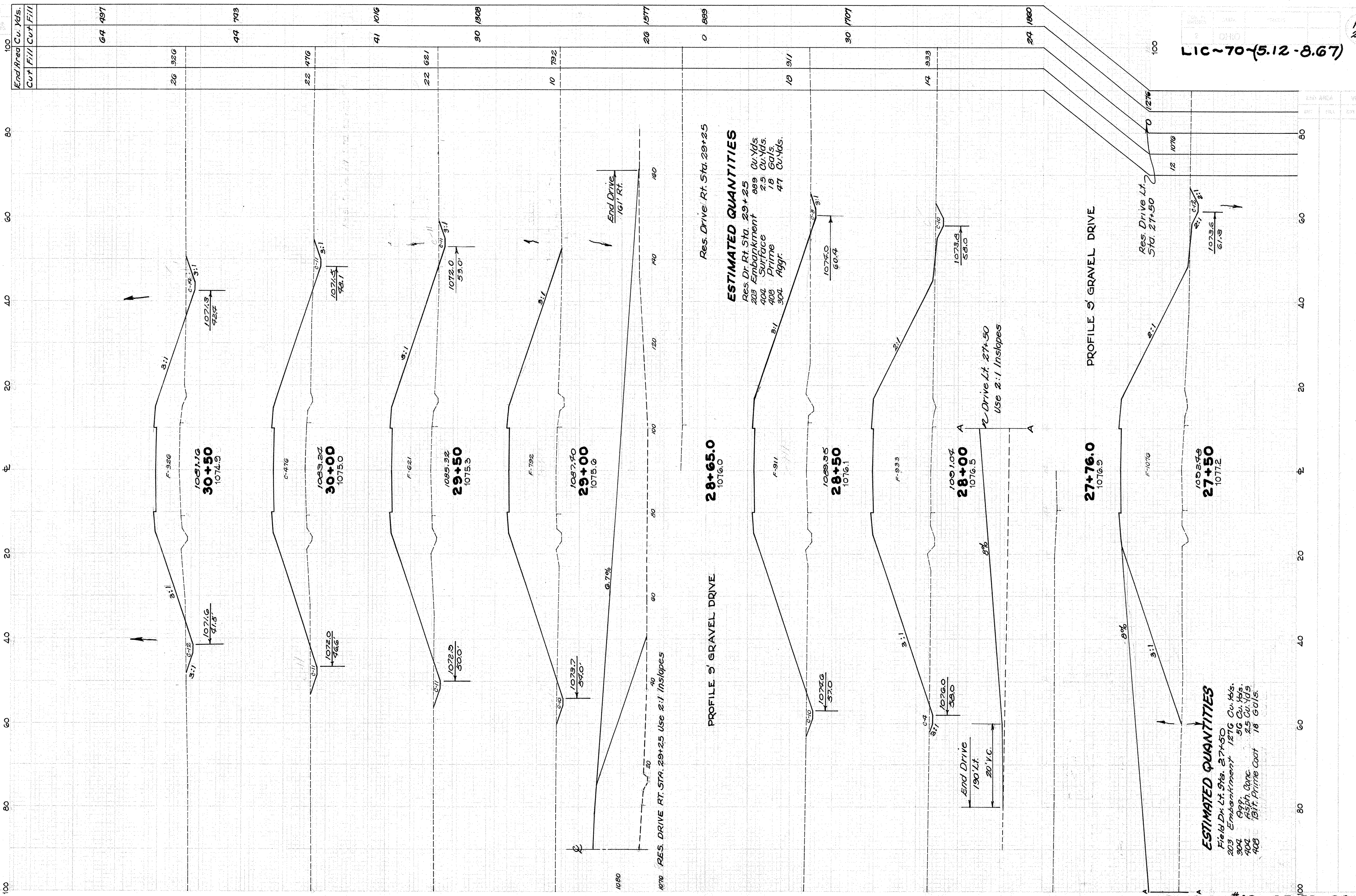
1087.68
17.0
16+50
1078.89



LIC-70-(5.12-8.67)

165
250

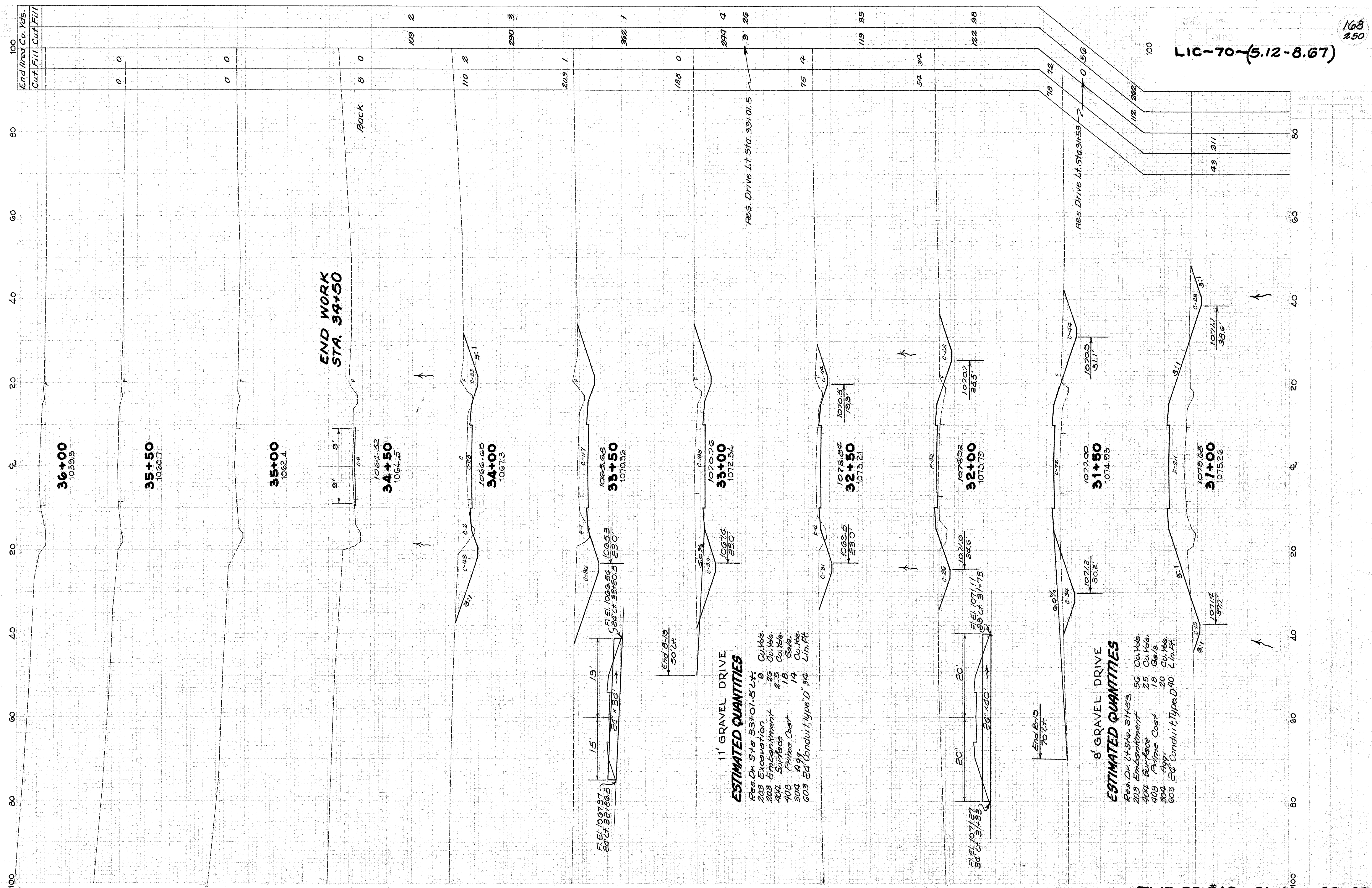




ESTIMATED QUANTITIES
 Res. Dr. Rt. Sta. 29+25
 203 Embankment 899 Cu. Yds.
 404 Surface 25 Cu. Yds.
 408 Prime 18 Gals.
 304 Aggr. 47 Cu. Yds.

ESTIMATED QUANTITIES
 Field Dr. Lt. Sta. 27+50
 203 Embankment 1276 Cu. Yds.
 304 Aggr. 56 Cu. Yds.
 404 Asph. Conc. 25 Cu. Yds.
 408 Bit. Prime Coat 18 Gals.

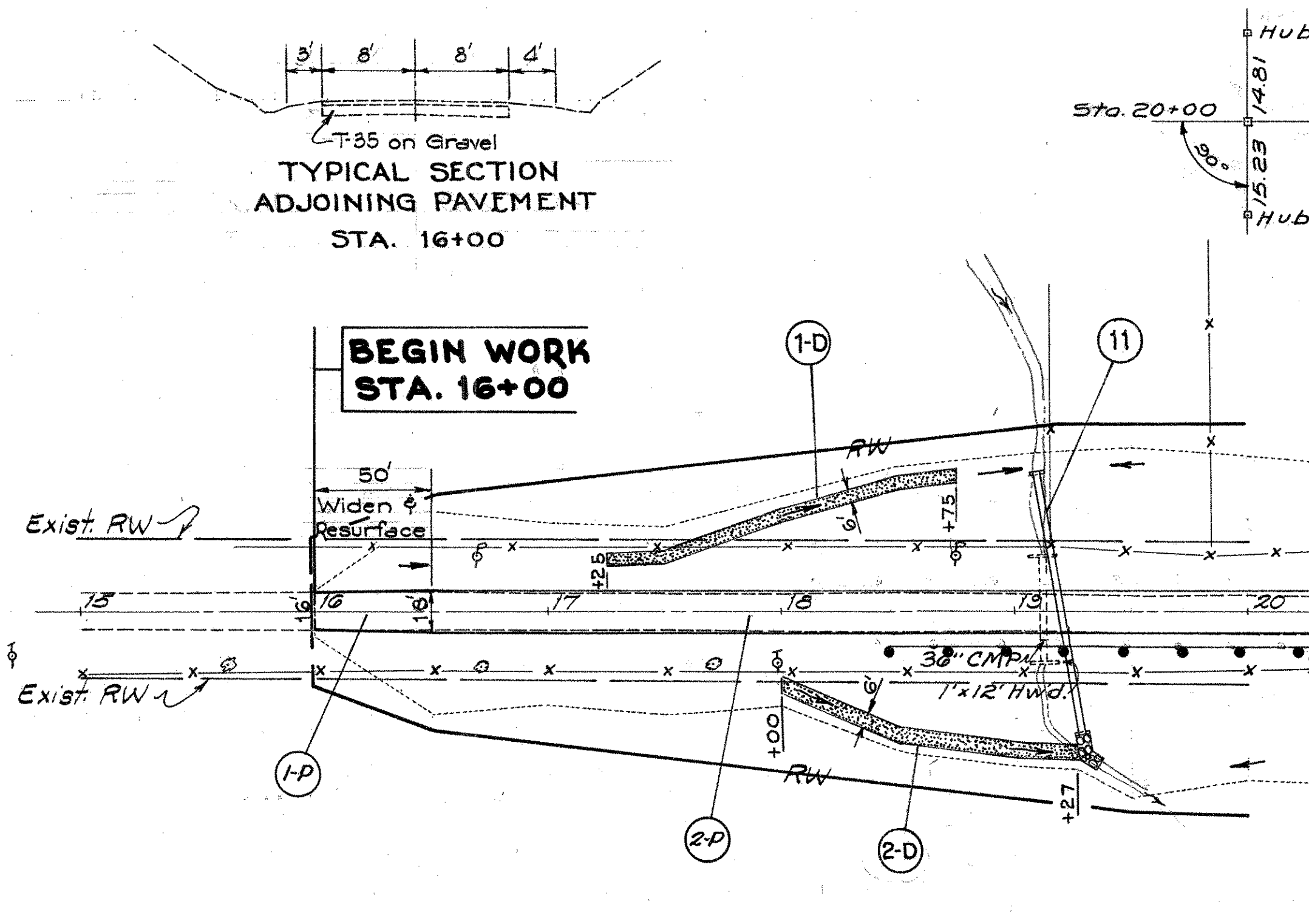
Station	End Area Cu. Yds.	Cut/Fill Cut/Fill
64 497		
44 793		
41 1016		
30 1308		
26 1577		
0 2099		
30 1707		
24 1860		
100		



100	End Area Cu. Yds.
100	Cut Fill Cut Fill

100	122.93
80	119.35
60	299.4
40	9.26
20	188.0
0	203.1
20	110.2
40	290.3
60	109.2
80	0
100	0

TYPICAL SECTION
 ADJOINING PAVEMENT
 STA. 16+00



NOTE: For Structure LIC-70-0771
 Details, See Sheets 216 to 223

(D) DITCHES

Mark	Station		Side	GGO Sodding	
	From	To		Sq. Yds.	Spec. Berm & Slope Prot. Sq. Yds.
1-D	17+25	18+75	Lt.	103	
2-D	18+00	19+27	Rt.	88	
3-D	23+44		Lt.		36
4-D	26+56		Lt.		40
5-D	23+44		Rt.		43
6-D	26+56		Rt.		57
Totals				191	176

**BEGIN WORK
 STA. 16+00**

(P) PAVEMENT

Mark	Station		404 1/2" Asph. Conc.		304 Aggr. Base		408 Bit. Prime Coat		203 Subgrade Preparation		605 Aggregate Drains		407 Bit. Tack Coat		611 Appr. Slab	
	From	To	Cu. Yds.	Sq. Yds.	Cu. Yds.	Sq. Yds.	Gal's.	Sq. Yds.	Lin. Ft.	Gal's.	Sq. Yds.	Gal's.	Sq. Yds.	Gal's.	Sq. Yds.	
1-P	16+00	16+50	5.2	3	3	6									75	
2-P	16+50	23+59.25	57.1	338	578	1444	260								75	
3-P	26+40.75	28+00	11.2	77	113	344	75								9	
Totals			73.5	*418	697	1788	335								150	

(A) DRIVES & APPROACHES

Mark	Station	Type	Side	404 2" Asph. Conc.		304 Aggr. Base		408 Bit. Prime Coat		Details on Sheet
				Cu. Yds.	Sq. Yds.	Cu. Yds.	Sq. Yds.	Gal's.	Sq. Yds.	
1-A	20+97.5	Res.	Lt.	2.5	38	18			173	
Totals				2.5	38	18				

(G) GUARD RAIL

Mark	Station		Side	GOG Guard Rail	
	From	To		Lin. Ft.	
1-g	22+46.5	23+46.5	Lt.	100	
2-g	18+46.5	23+46.5	Rt.	500	
3-g	26+53.5	28+00	Lt.	126.5	
4-g	26+53.5	28+00	Rt.	126.5	
Totals				853	

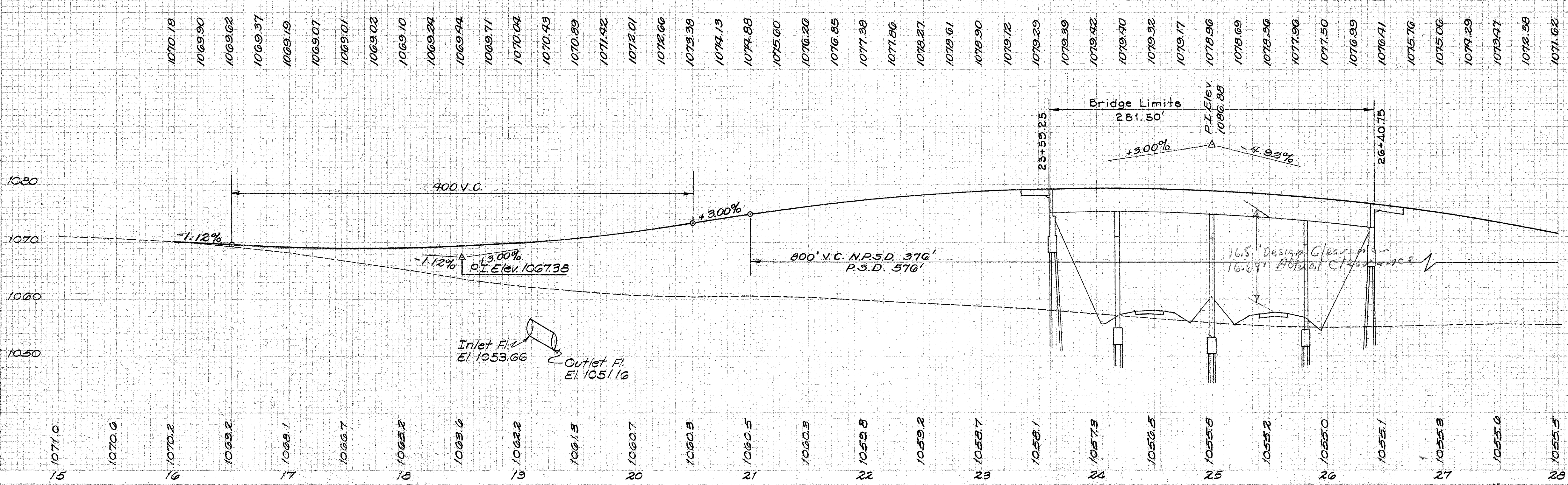
STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M.	Station	Existing			Proposed			Details on Sheet
			Type	Size	Length	Type	Size	Length	
11		19+20.5	P.C.	36"	43	P.C.	36"	114	207

* Includes 6" 304 Aggr. Base Course Under Approach Slab
 (See Sheet 10-A)

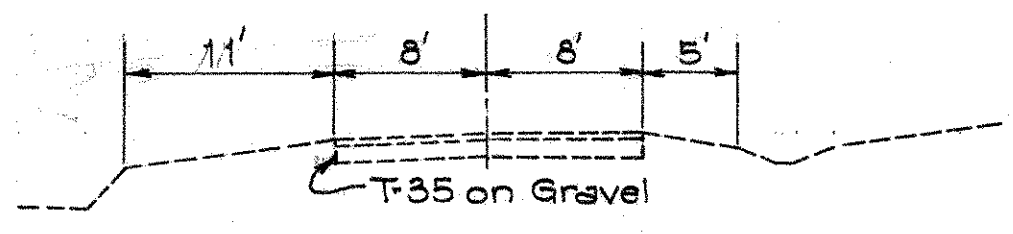
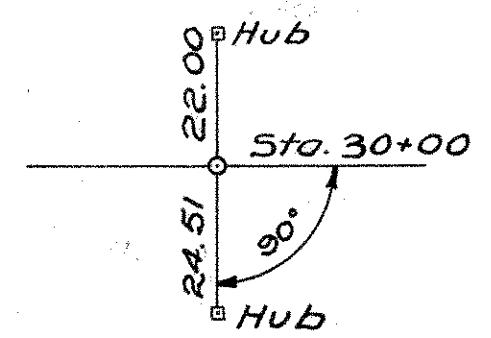
PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinforced concrete deck and substructure.
 SPANS: 57.0'-81.5'-81.5'-57.0' c/c brgs.
 ROADWAY: 24'-0" F/F 2'-0" safety Curbs
 LOAD FREQUENCY: CF=130 (57)
 SKEW: NONE
 WEARING SURFACE: 1" Monolithic Concrete.
 APPROACH SLABS: A5-1-54 (25' long) Special
 ALIGNMENT: Tangent

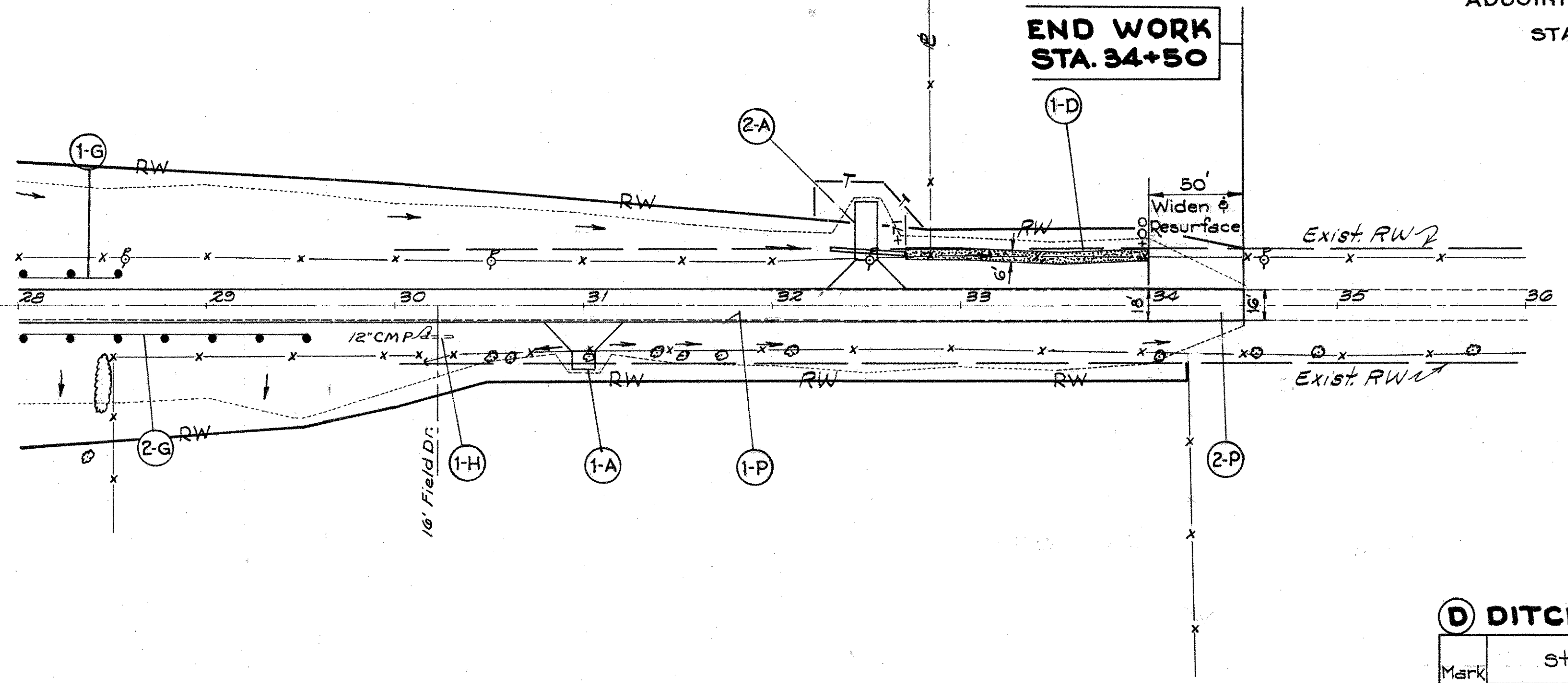


Seeding	11,185	Sq. Yds.
Excavation	1,620	Cu. Yds.
Embankment	30,815	Cu. Yds.
Emb+12%	34,513	Cu. Yds.

B.M. #17 Spike in Power Pole 11 Rt.
 Std. 639+19 Elev. 1057.17



TYPICAL SECTION
 ADJOINING PAVEMENT
 STA. 34+50



G GUARD RAIL

Mark	Station		Side	606 Guard Rail Lin. Ft.
	From	To		
1-G	28+00	29+53.5	Lt.	53.5
2-G	28+00	29+53.5	Rt.	153.5
Totals				207

H PIPE REMOVED

Mark	Station	Side	202 Pipe Removed Lin. Ft.	
			15' Under	Over 15'
1-H	30+20	Rt.	17	
Totals			17	

A DRIVES & APPROACHES

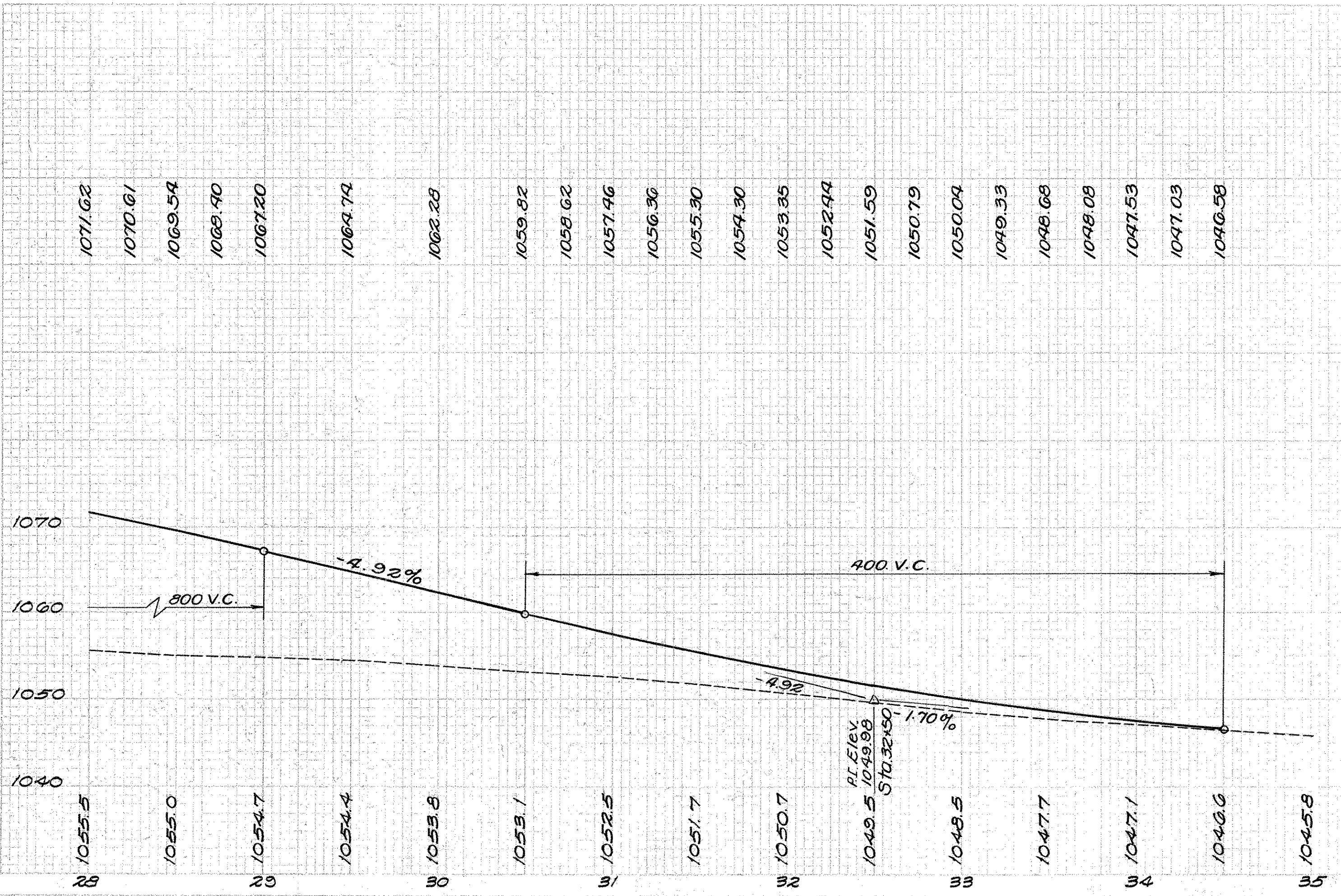
Mark	Station	Type	Side	304 Aggr. Base		605 Conduct Type "D"		Details on Sheet
				Cu. Yds.		24'		
1-A	31+00	Field	Rt.	10		24'		176
2-A	32+50	Field	Lt.	10		24'		176
Totals				20		24'		352

D DITCHES

Mark	Station		Side	660 Sodding	
	From	To		Sq. Yds.	
1-D	32+71	34+00	Lt.	86	
2-D					
Totals				86	

P PAVEMENT

Mark	Station		404 1/2 Asph. Conc.	304 6" Aggr. Base	408 Bit Prime Coat	203 Subgrade Prep'n.	605 Aggregate Drains	407 Bit. Tack Coat
	From	To	Cu. Yds.	Cu. Yds.	Gal's.	Sq. Yds.	Lin. Ft.	Gal's.
1-P	28+00	34+00	50.0	281	507	1200	215	
2-P	34+00	34+50	5.2	3	6			9
Totals			55.2	284	513	1200	215	9



Seeding	4,886	Sq. Yds.
Excavation	135	Cu. Yds.
Embankment	7,820	Cu. Yds.
Emb. + 12%	8,758	Cu. Yds.

B.M. #17 Spike in Power Pole 11' Rt.
 Sta. 639+19 Elev. 1057.17

END AREA	CU. YDS.
CUT	FILL
	CUT
	FILL

142 223

122 742

214 92

174 25

309 29

Ahead 296 G
Back 239 G

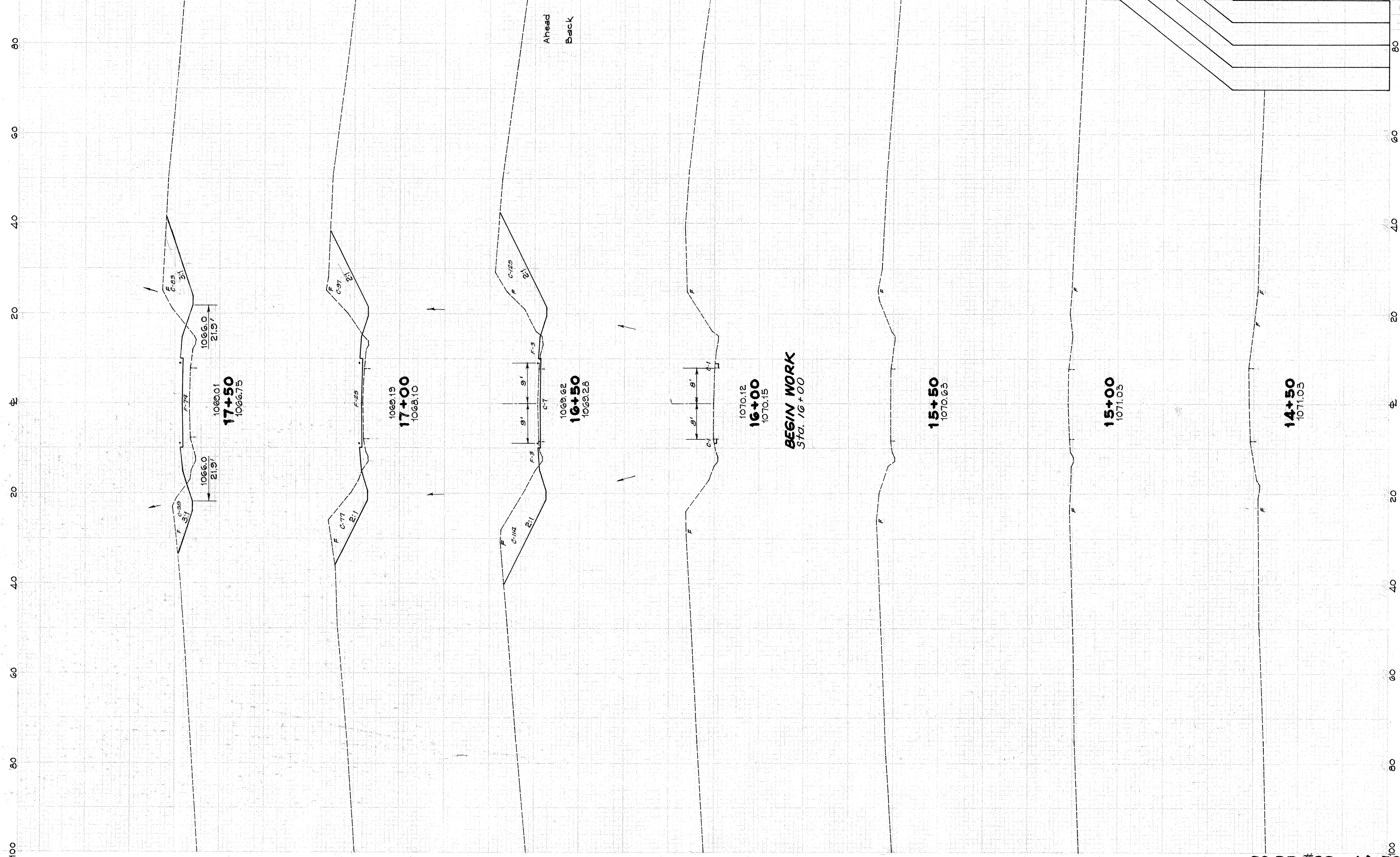
223 6

20

100

LIC~70~(5.12-8.67)

171
250



1066.01
1066.75
17+50

1068.19
1068.10
17+00

1069.62
1069.28
16+50

1070.12
1070.15
16+00

BEGIN WORK
Sta. 16+00

1070.63
15+50

1071.03
15+00

1071.03
14+50

CO. RD. # 39 14+50 ~ 17+50

END AREA	CU YDS.
CUT	FILL

45 1525

36 1571

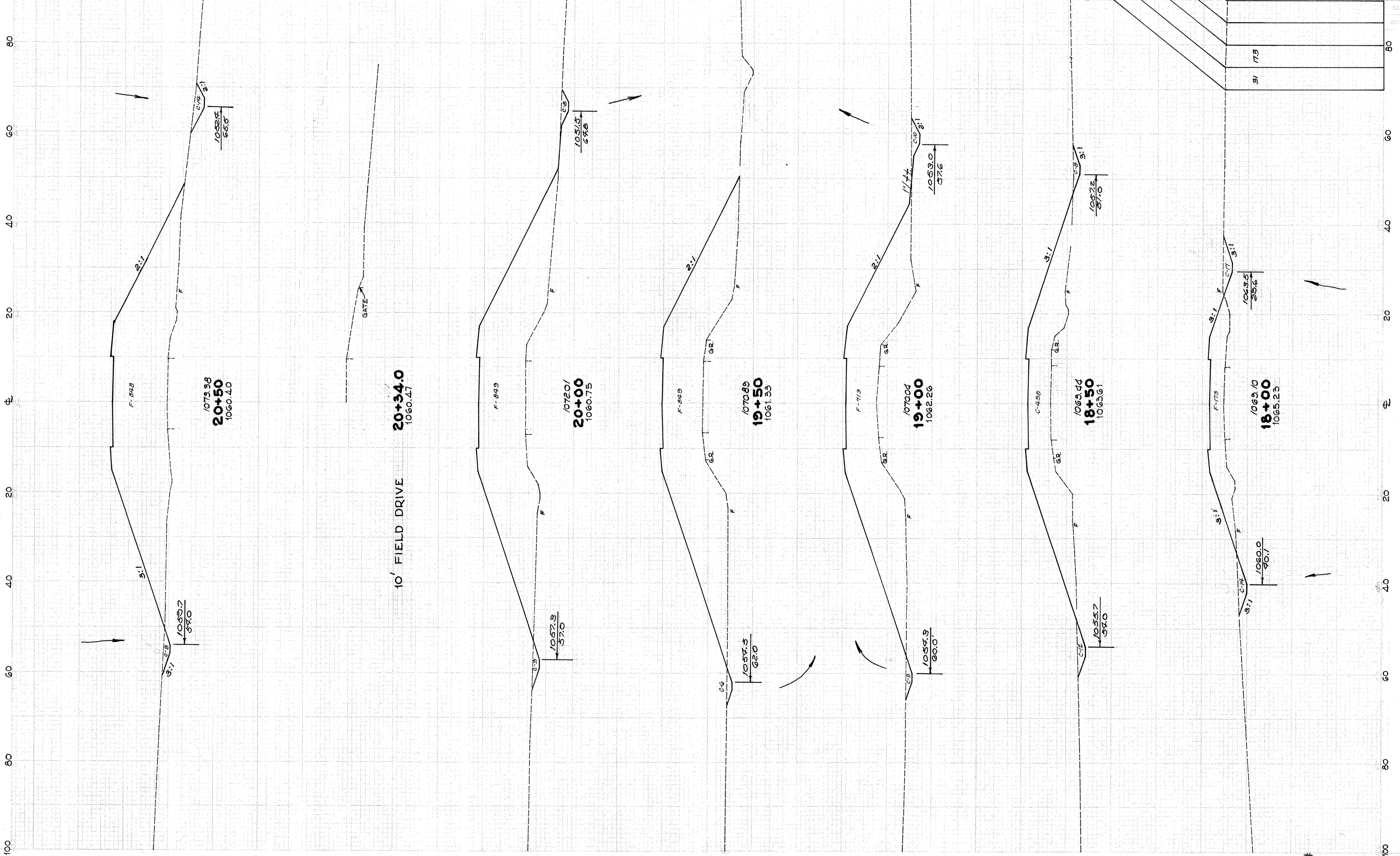
21 1572

22 1696

35 1681

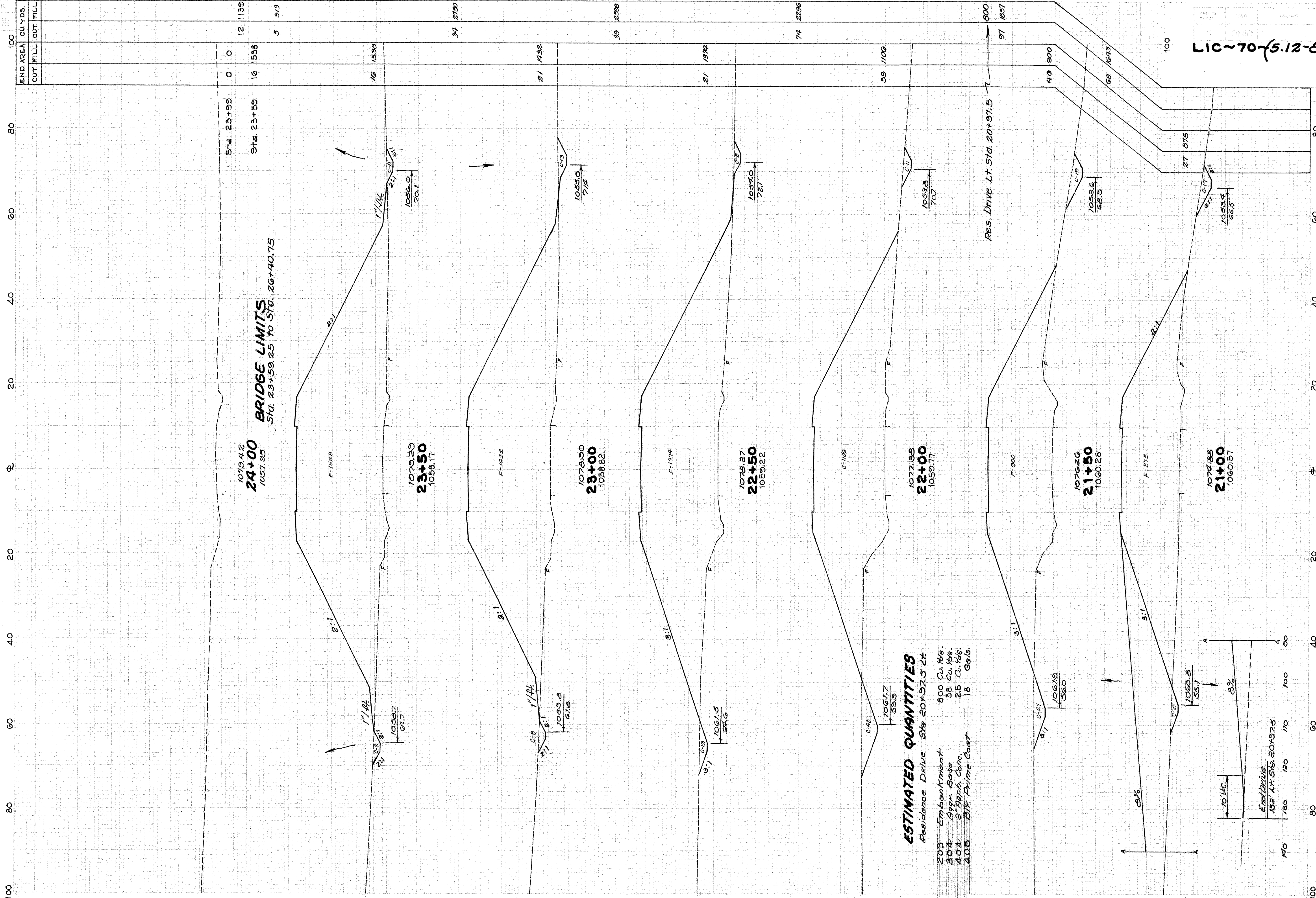
LIC-70-(5.12-8.67)

172
250



END AREA	CU YDS.
CUT	FILL

100
80
60
40
20
0

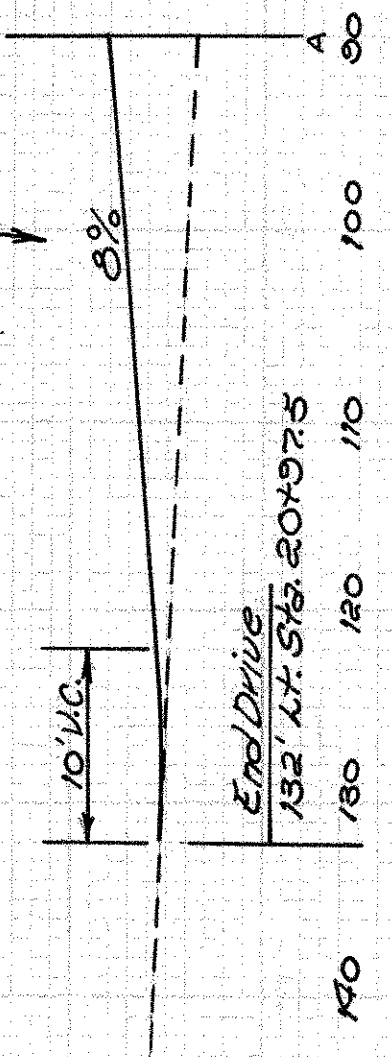


BRIDGE LIMITS
Sta. 23+59.25 TO Sta. 26+40.75

ESTIMATED QUANTITIES

Residence Drive Sta 20+97.5 Lt

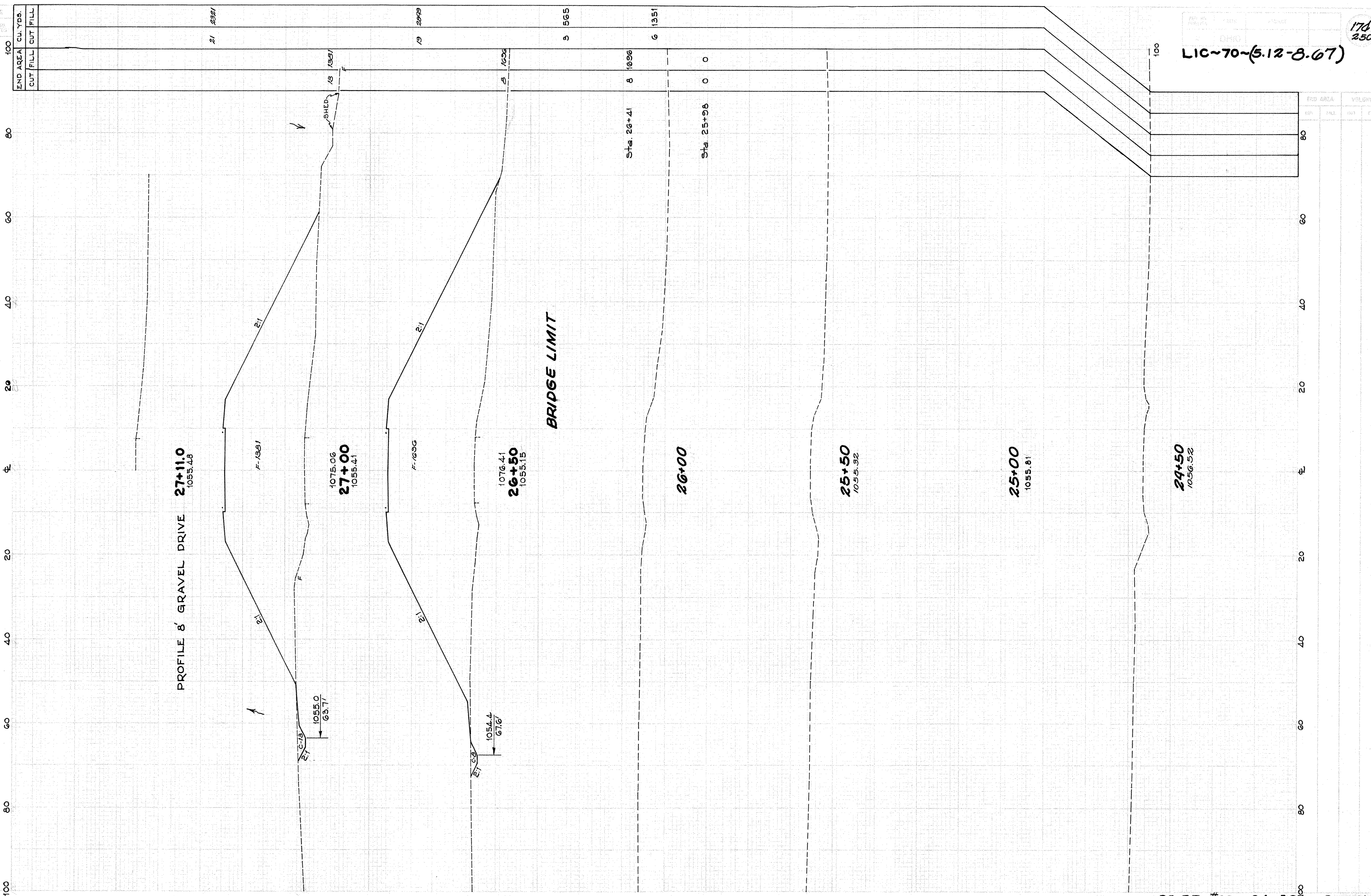
203 Embankment	800 Cu. Yds.
307 Grp. Base	38 Cu. Yds.
404 2" Sep. Conc.	25 Cu. Yds.
408 Bit. Prime Coat	18 Gals.



END AREA	CUT	FILL	CUT	FILL
0	0	12	1199	
16	1538	5	513	
10	1539	34	2750	
21	1932	39	2598	
21	1972	74	2296	
59	1106	97	1857	
40	900	100		

END AREA	CUT	FILL	CUT	FILL
0	0	12	1199	
16	1538	5	513	
10	1539	34	2750	
21	1932	39	2598	
21	1972	74	2296	
59	1106	97	1857	
40	900	100		

END AREA CUT FILL
CUT FILL CUT FILL



PROFILE 8' GRAVEL DRIVE
27+11.0
1055.48

1075.06
27+00
1055.41

1076.41
26+50
1055.15

BRIDGE LIMIT

26+00

25+50
1055.92

25+00
1055.81

24+50
1056.52

LIC-70-(5.12-8.67)

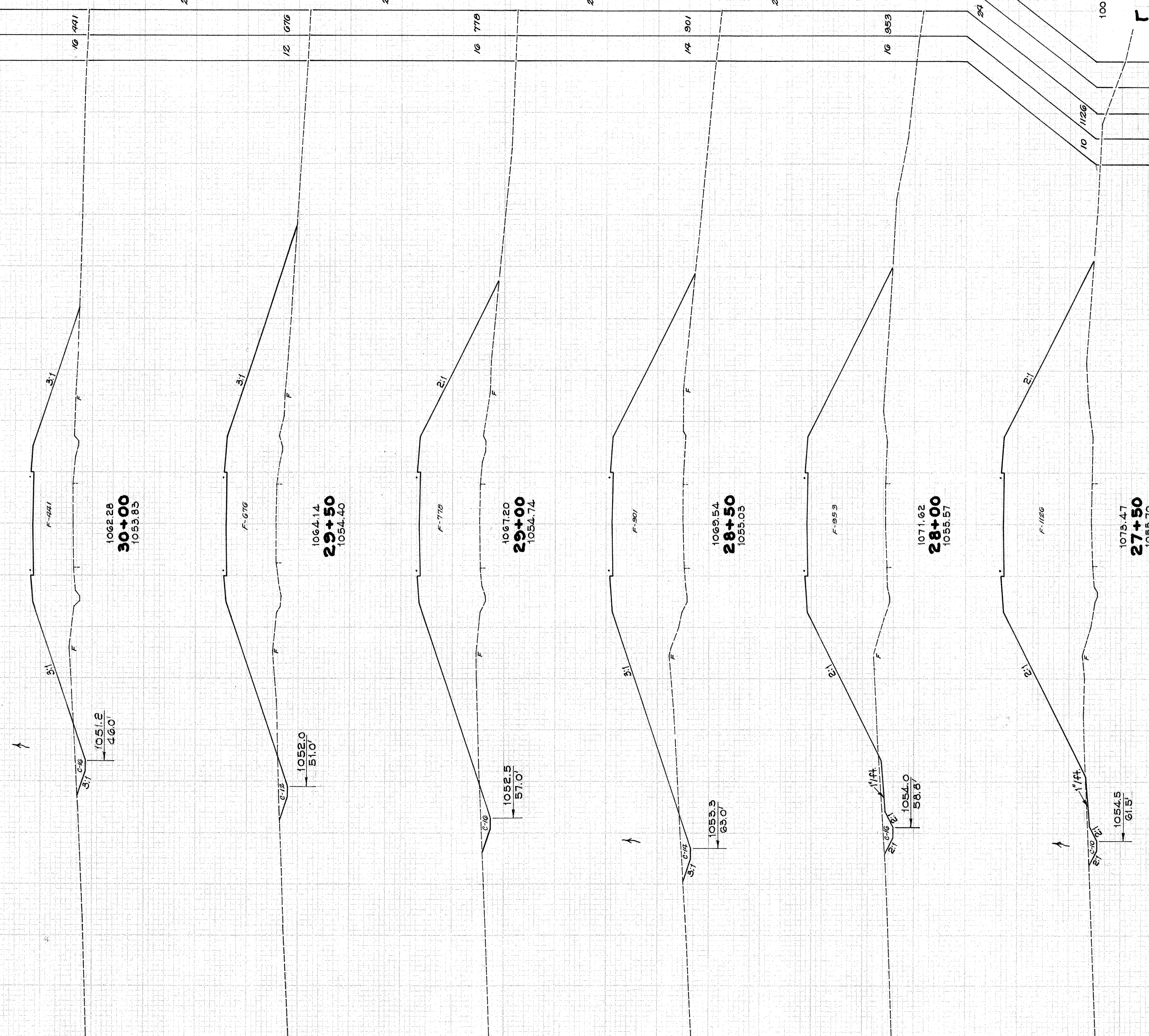
176
250

CO. RD. # 39 24+50 ~ 27+11.0

END AREA	CU. YDS.
CUT	FILL

100	25	26	26	28	28	24	100
80							
60							
40							
20							
0							
20							
40							
60							
80							
100							

PROFILE 10' FIELD DRIVE
 1061.30
30+20.0
 1053.56



CO. RD. # 39 27+50 ~ 30+20.0

LIC-70-(5.12-8.67)

175
250

END AREA	CUT	FILL	CUT	FILL
100				

39 34

42 63

44 110

60

25 70

41 167

36 223

28 319

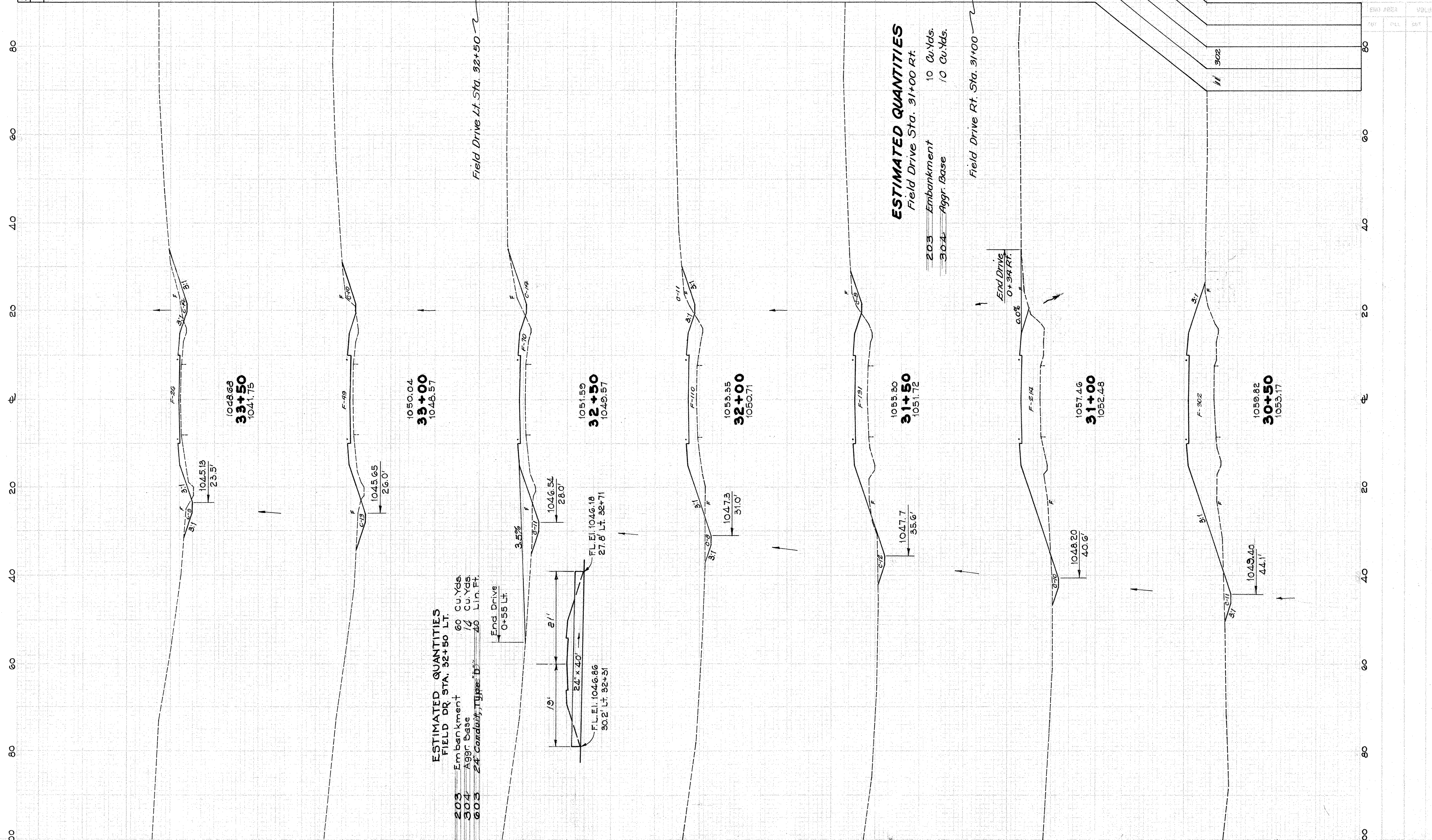
10

19 473

100

LIC-70-(5.12-8.07)

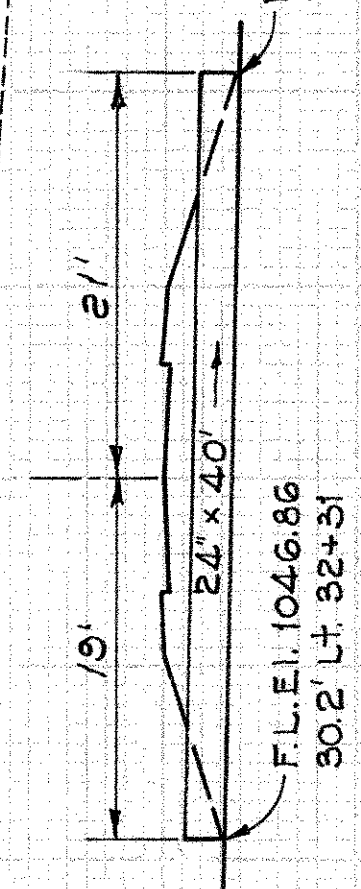
176
250



ESTIMATED QUANTITIES
FIELD DR. STA. 32+50 LT.

- 203 Embankment 60 Cu.Yds.
- 304 Aggr. Base 14 Cu.Yds.
- 603 24' Conduits, Type D 40 Lin.Ft.

End Drive
0+55 Lt.



ESTIMATED QUANTITIES
Field Drive Sta. 31+00 Rt.

- 203 Embankment 10 Cu.Yds.
- 304 Aggr. Base 10 Cu.Yds.

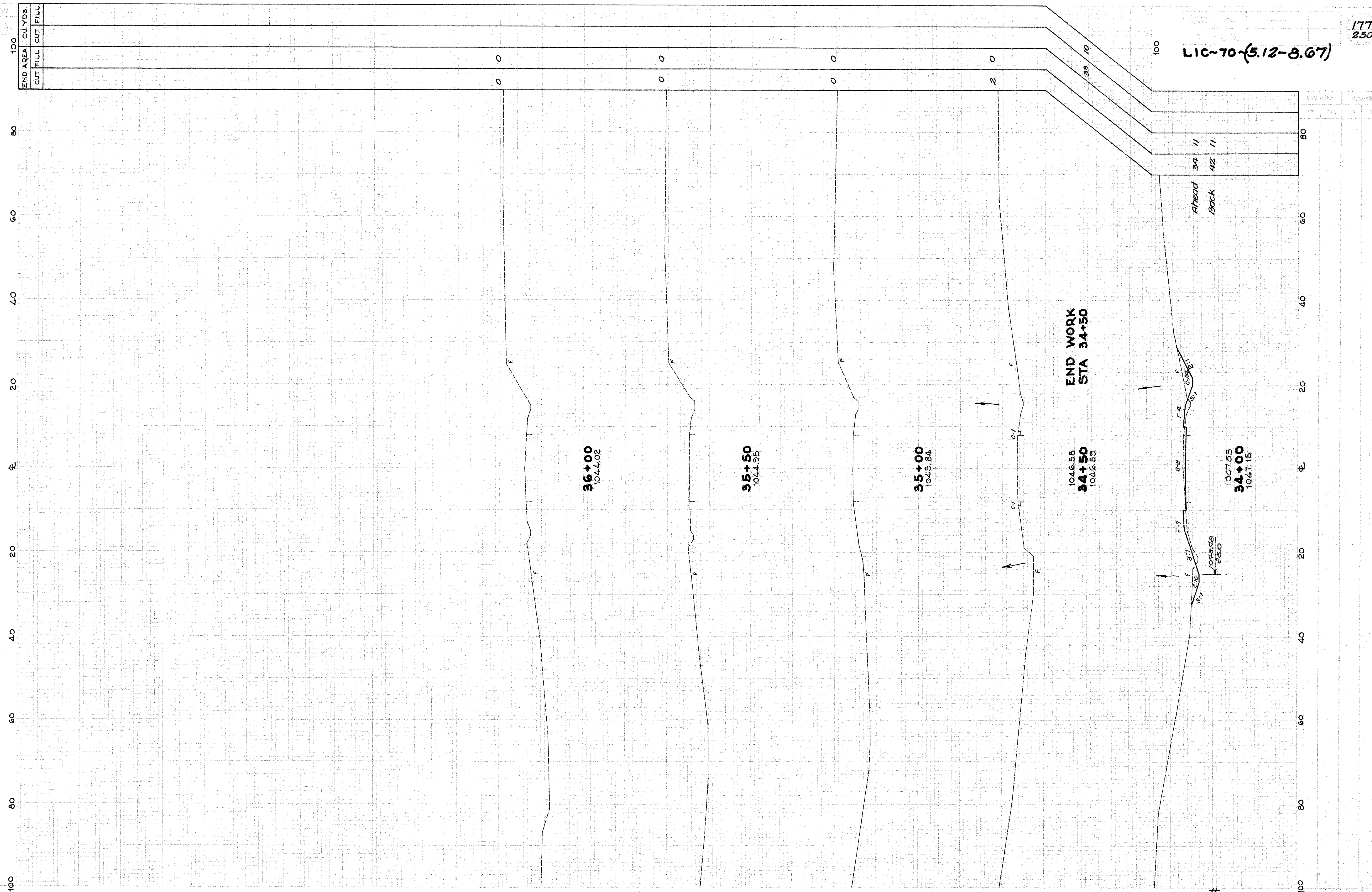
SECTION
NO.
DATE

END AREA	CU. YDS.
CUT	FILL
CUT	FILL

PROJ. NO.	STATE	DISTRICT
2	OHIO	

177
250

LIC-70-(5.12-8.67)

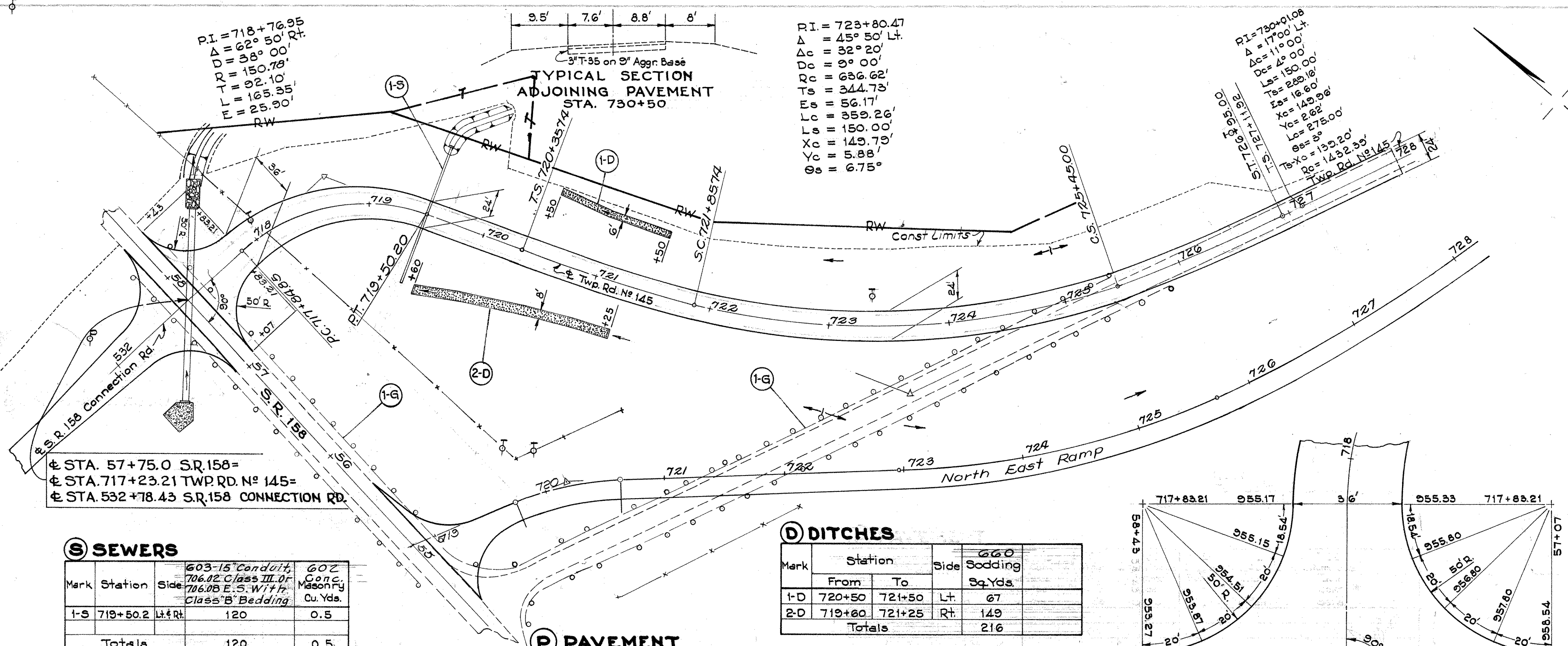


END AREA	VOLUME
CUT	FILL
CUT	FILL

CO. RD. # 39 34+00 ~ 36+00

LIC-70-(5.12-8.67)

NOTE: See Sheet No. 39 for Plan and profile of Twp. Rd. No. 145 Sta. 728+00 to 730+50



S SEWERS

Mark	Station	Side	603-15' Conduit, 706.02 Class III, or 706.08 E.S. With Class 'B' Bedding	602' Conc. Masonry Cu. Yds.
1-S	719+50.2	Lt. & Rt.	120	0.5
Totals			120	0.5

D DITCHES

Mark	Station		Side	660 Sodding	
	From	To		Sq. Yds.	
1-D	720+50	721+50	Lt.	67	
2-D	719+60	721+25	Rt.	149	
Totals				216	

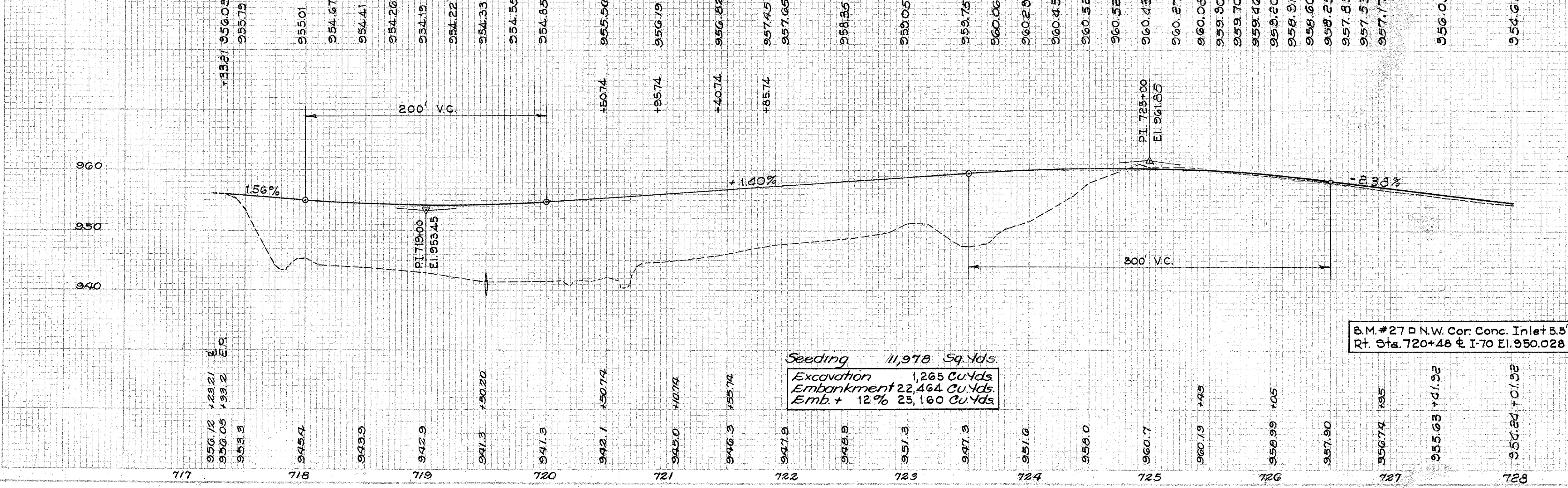
G GUARD RAIL

Mark	Station		Side	G.R. Rem. Lin. Ft.
	From	To		
1-G	717+33.21	725+43	Lt. & Rt.	956
Totals				956

P PAVEMENT

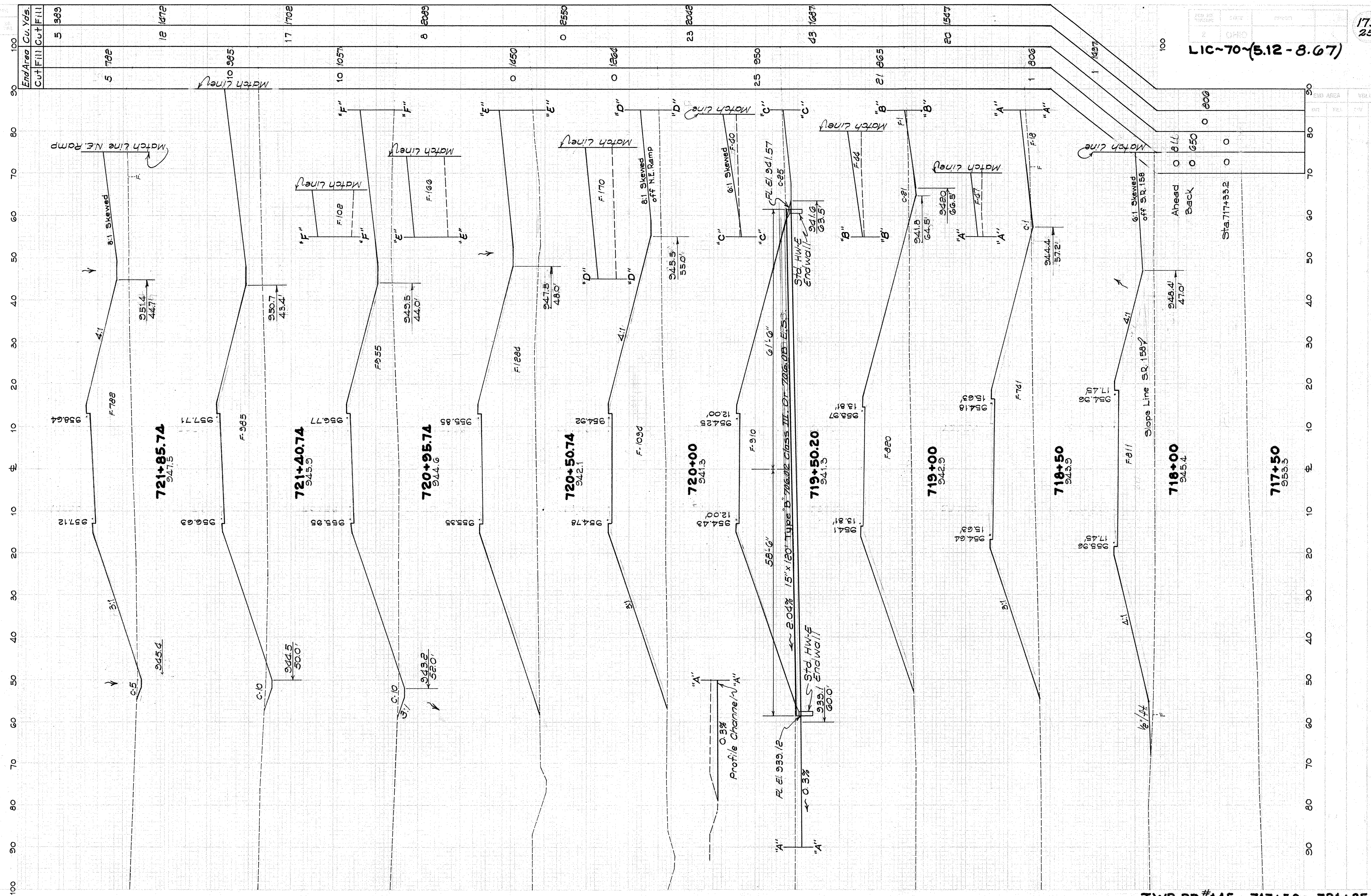
Mark	Station		4.04	3.01	2.03	6.05	4.02 1/4	3.10 8"	3.04	4.08
	From	To	Asph. Conc. 70-85 Cu. Yds.	Bit. Aggr. Base Cu. Yds.	Subgrade Preparation Sq. Yds.	Aggregate Drains Lin. Ft.	Asph. Conc. Course Cu. Yds.	Subbase Cu. Yds.	6" Aggr. Base Cu. Yds.	Bit. Prime Coat Gal's.
1-P	717+33.21	728+00	109.1	454.7	3144	250	109.1	756		
2-P	728+00	730+50	25.1		603	100			105	252
Totals			134.2	454.7	3747	350	109.1	756	105	252

* See Sheet No. 39 for Plan & Profile of Twp. Rd. No. 145 Sta. 728+00 to 730+50

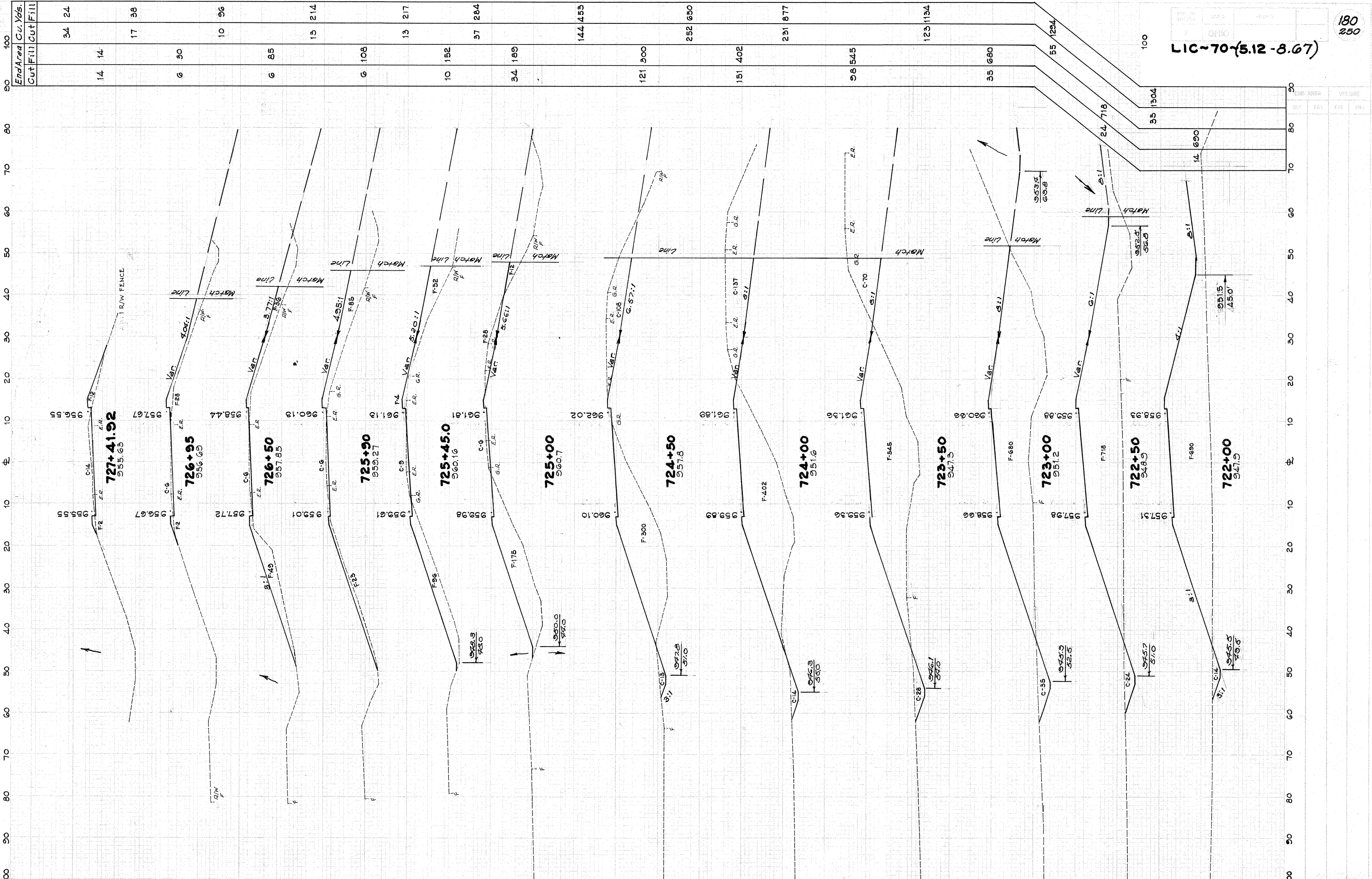


SUPERELEVATION TABLE
TOWNSHIP ROAD No. 145

Elevation Left Edge	Pav't Width	Station	Elevation	Elevation Right Edge
955.17	36.00	717+84.85	955.25	955.33
955.06	34.80	718+00	955.01	954.96
954.85	33.08	+25	954.67	954.49
954.65	31.26	+50	954.41	954.17
954.49	29.44	+75	954.26	954.03
954.41	27.62	719+00	954.19	953.97
954.39	25.80	+25	954.22	954.05
954.43	24.00	+50.20	954.34	954.25
954.56		+75	954.55	954.54
954.78		720+00	954.85	954.92
955.05		+25	955.20	955.35
955.16		+34.74	955.35	955.54
955.32		+50.74	955.56	955.80
955.47		+65.74	955.77	956.07
955.62		+80.74	955.98	956.34
955.77		+95.74	956.19	956.61
955.93		721+10.74	956.40	956.87
956.08		+25.74	956.61	957.14
956.23		+40.74	956.82	957.41
956.39		+55.74	957.03	957.77
956.54		+70.74	957.24	957.94
956.69		+85.74	957.45	958.21
956.84		722+00	957.65	958.46
957.10		+25	958.00	958.90
957.40		+50	958.35	959.30
957.71		+75	958.70	959.69
958.05		723+00	959.05	960.05
958.40		+25	959.40	960.40
958.75		+50	959.75	960.75
959.06		+75	960.06	961.06
959.29		724+00	960.29	961.29
959.45		+25	960.45	961.45
959.53		+50	960.52	961.51
959.56		+75	960.52	961.48
959.52		725+00	960.43	961.34
959.44		+25	960.27	961.10
959.32		+45	960.08	960.84
959.20		+60	959.90	960.60
959.06		+75	959.70	960.34
958.87		+90	959.46	960.05
958.67		726+05	959.20	959.73
958.41		+20	958.91	959.41
958.10		+35	958.60	959.10
957.75		+50	958.25	958.75
957.39		+65	957.89	958.39
957.03		+80	957.53	958.03
956.67		+95	957.17	957.67
956.55		727+00	957.05	957.55
956.27		+11.92	956.77	957.27
955.91		+26.92	956.41	956.91
955.55		+41.92	956.05	956.55
955.19		+56.92	955.69	956.19
954.83		+71.92	955.33	955.83
954.47		+86.92	954.97	955.47
954.11		728+01.92	954.61	955.11
953.75		+16.92	954.25	954.75
953.39		+31.92	953.89	954.39
953.03		+46.92	953.53	954.03
952.67		+61.92	953.17	953.67
951.76	24.00	729+00	952.26	952.76
950.48	21.50	+50	950.98	951.48
949.20	19.00	730+00	949.70	950.20
948.10	16.40	730+50	948.42	948.92

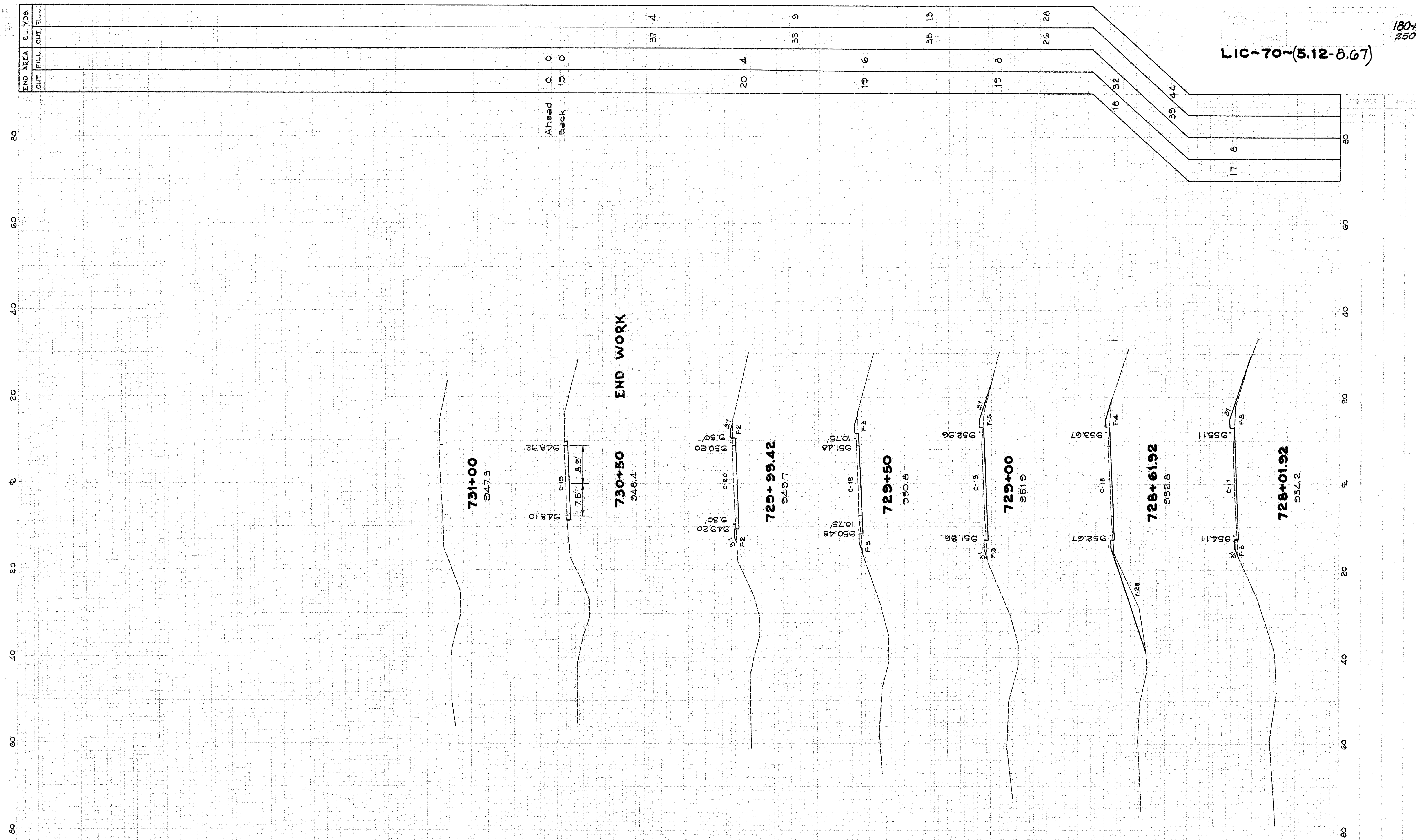


LIC-70(5.12-8.67)

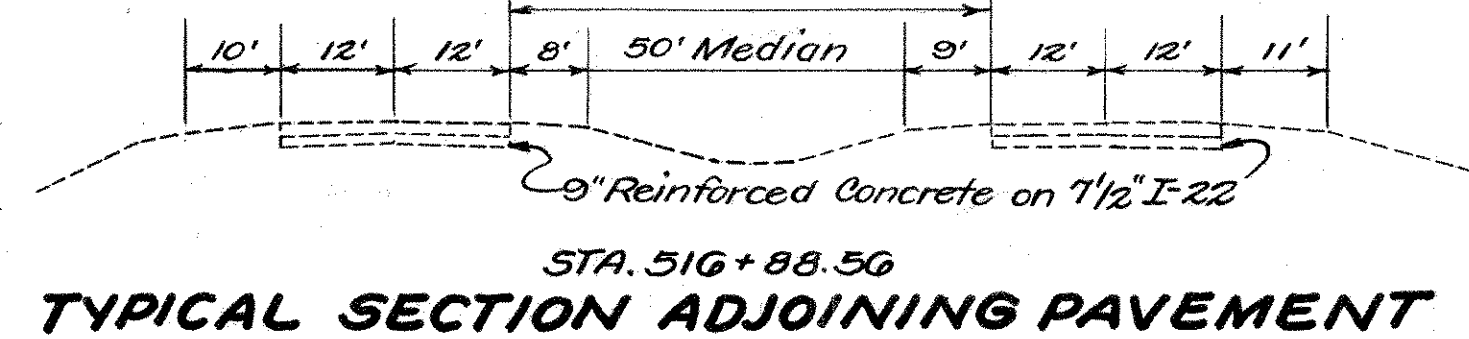


End Area	Cu. Yds.
34	24
14	14
6	90
6	85
6	108
10	152
34	189
144	455
121	300
151	402
98	545
35	680
55	1284
100	

End Area	Cu. Yds.
34	24
14	14
6	90
6	85
6	108
10	152
34	189
144	455
121	300
151	402
98	545
35	680
55	1284
100	

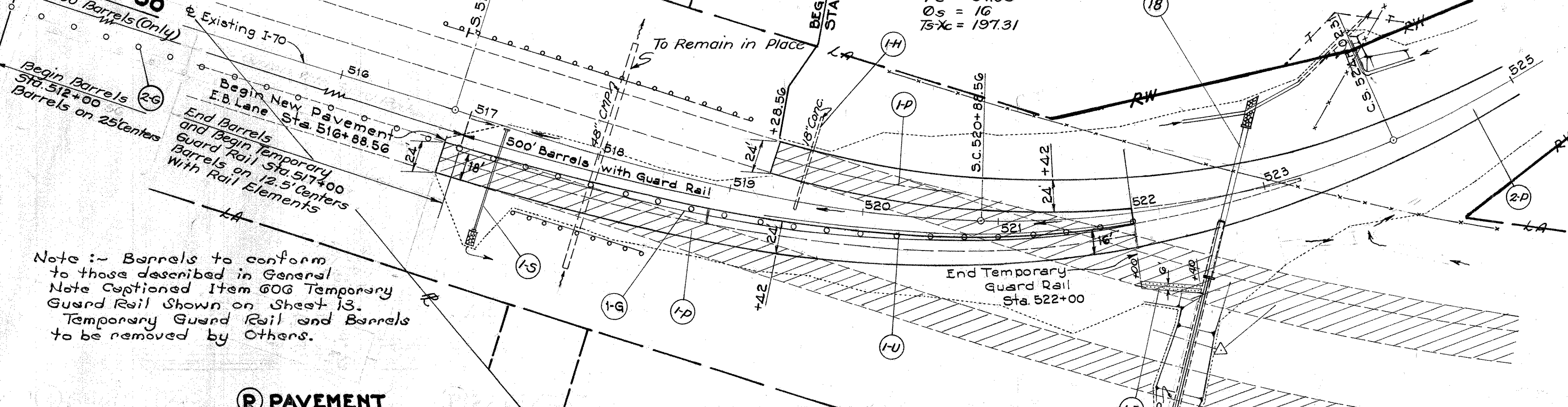


LIC-70-(5.12-8.67)



TYPICAL SECTION ADJOINING PAVEMENT

STA. 516+88.56
9\"/>



P.I. 522+82.76 Hub
 $\Delta = 57^{\circ}06' Lt.$
 $\Delta c = 25^{\circ}06'$
 $Dc = 8^{\circ}00'$
 $Ls = 400'$
 $Rc = 716.20$
 $Lc = 313.75$
 $Ts = 594.20$
 $Es = 109.70$
 $Xc = 396.89$
 $Yc = 37.03$
 $Os = 16$
 $Ts-Xc = 197.31$

NOTE:
For Pavement Details
see Sheet No 188

Note :- Barrels to conform to those described in General Note captioned Item 600 Temporary Guard Rail shown on Sheet 13. Temporary Guard Rail and Barrels to be removed by Others.

(P) PAVEMENT

Mark	Station		Side	404 1/4" Asphalt Conc.	402 1/4" Asphalt Conc.	301 Bituminous Aggr. Base	310 8" Subbase	605 Aggregate Drains	203 Subgrade Preparation	613 Traffic Dividers
	From	To								
1-P	516+88.56	522+00	Rt. & Lt.	68.9	68.9	288.2	480	312	1988	Each
2-P	522+00	525+00	E.	43.8	43.8	179.0	295	182	1260	* 11
Totals				112.7	112.7	467.8	775	494	3248	* 11

*NOTE: For Details of Traffic Dividers, See Sheet No. 188.

(S) SEWERS

Mark	Station	Side	603-15" Conduit Type 'A' With Cl. 8" Bedding	602 Conc. Masonry Cu. Yds.	601 Dump Rock Chan. Prot. Cu. Yds.
1-S	517+28.56	Rt.	80	0.5	6
Totals			80	0.5	6

(D) DITCHES

Mark	Station		Side	600 Sodding
	From	To		
1-D	522+00	522+40	Rt.	30
Totals				30

(H) PIPE REMOVED

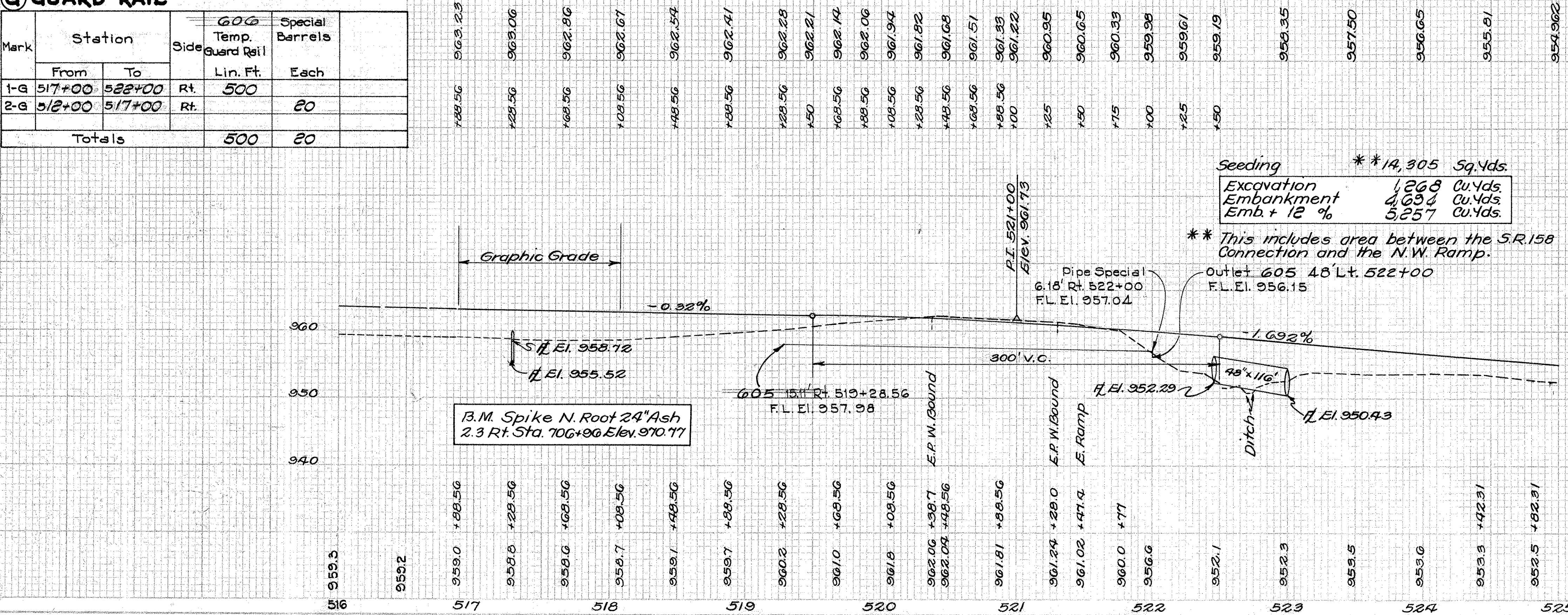
Mark	Station	Side	202 Pipe Removed Lin. Ft.	
			15" Under	Over 15"
1-H	519+50	Rt. & Lt.	72	
Totals			72	

STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M.	Station	Existing			Proposed			Details on Sheet
			Type	Size	Length	Type	Size	Length	
18		522+79.31	P.C.	48"	169'	P.C.	48"	116'	214

(G) GUARD RAIL

Mark	Station		Side	600 Temp. Guard Rail	Special Barrels
	From	To		Lin. Ft.	Each
1-G	517+00	522+00	Rt.	500	
2-G	512+00	517+00	Rt.		20
Totals				500	20



Seeding ** 14,305 Sq.Yds.
Excavation 1,268 Cu.Yds.
Emb. + 12% 4,634 Cu.Yds.
Emb. + 12% 5,257 Cu.Yds.

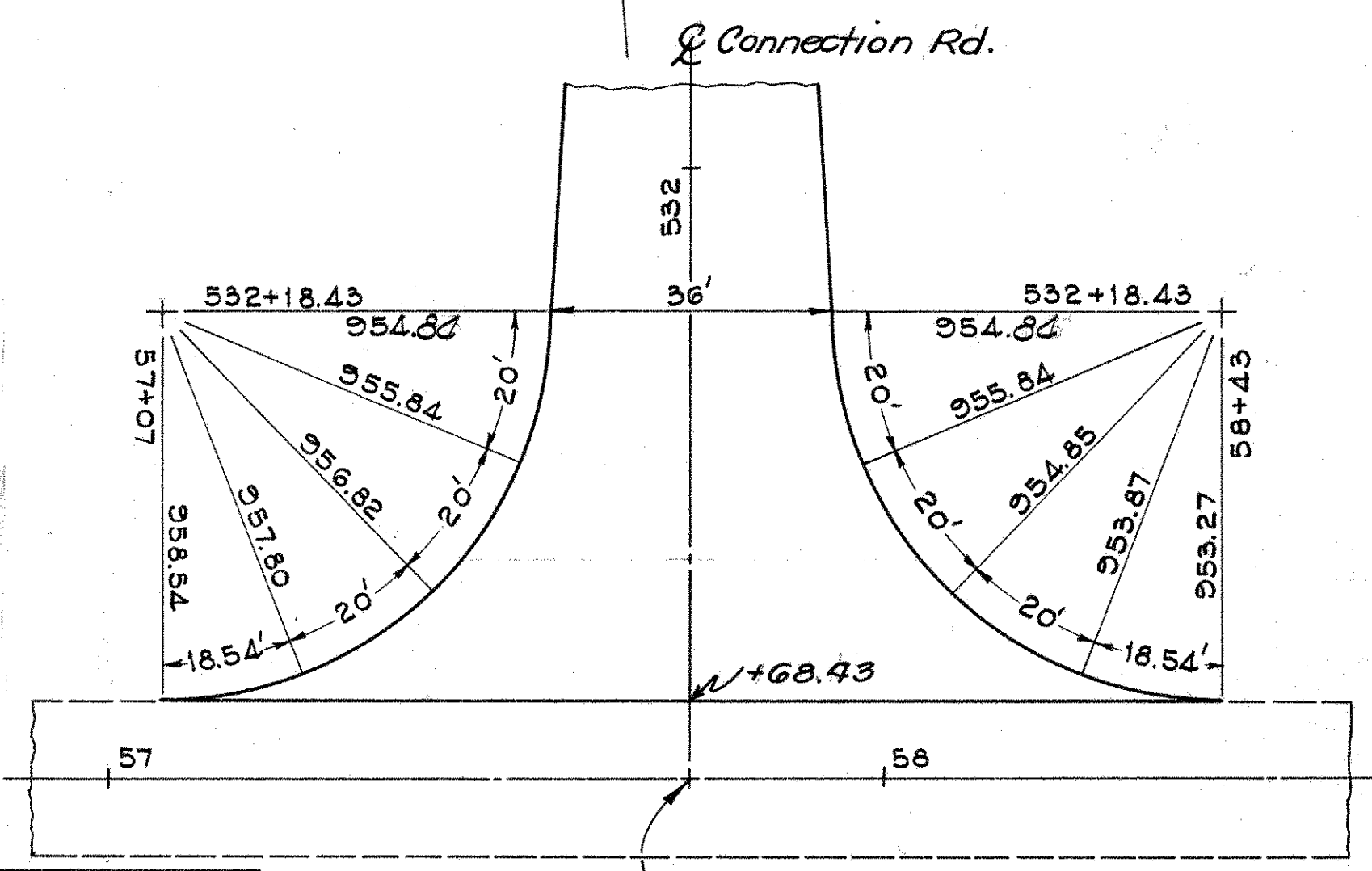
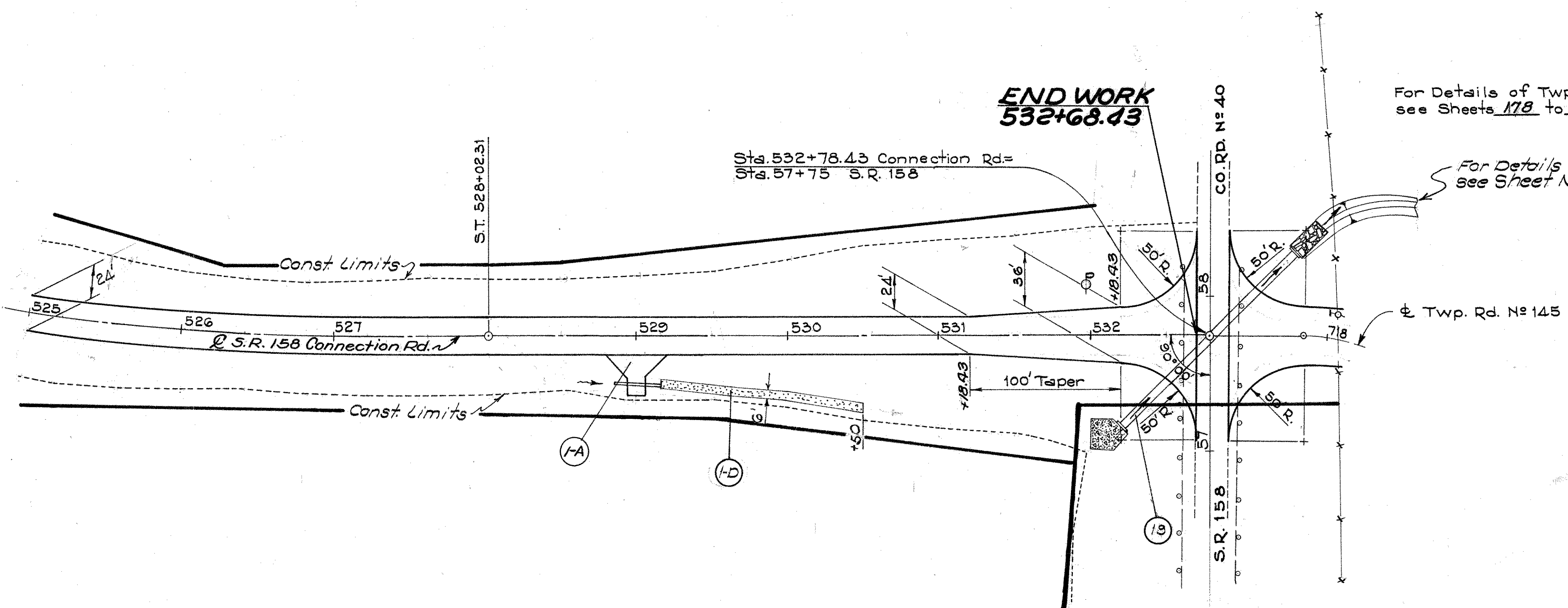
** This includes area between the S.R.158 Connection and the N.W. Ramp.

ORDER OF OPERATION - STAGE CONSTRUCTION FOR MAINTAINING TRAFFIC

PART-I - Construct North lane of the westbound lanes from Sta. 519+28.56 to existing edge of ramp pavement (Sta. 520+70) as shown by dashed line, Construct S.R.158 Connection from Sta. 520+70 to and 522+00 Rt. to Sta. 532+68.13.
PART-II - Construct south lane of the westbound lanes from Sta. 519+28.56 to Sta. 522+00, (Completion of the westbound lanes) Construct the north lane of the eastbound lanes from Sta. 516+88.56 to Sta. 518+93. Construct connection Rd. from Sta. 518+93 to Sta. 522+00
PART-III - Construct the South lane of the eastbound lanes from Sta. 516+88.56 to Sta. 522+00

NOTE: - If the Contractor so elects, he may submit alternate methods for the maintenance of traffic provided the intent of the above provisions is followed and no additional inconvenience to the traveling public results therefrom. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Director.

LIC-70-(5.12-8.67)



P PAVEMENT

Mark	Station		404 1 1/2	402 1 1/2	301 5'	310 3'	605	203
	From	To	Asph. Conc.	Asph. Conc.	Bitum. Aggregate Base	Subbase	Aggregate Drains	Subgrade Prep'n.
1-P	525+00	532+68.43	79.9	79.9	330.5	546	450	2302
Totals			79.9	79.9	330.5	546	450	2302

STRUCTURES 20' SPAN & UNDER

Str. No.	S.L.M.	Station	Proposed			Details on Sheet
			Type	Size	Length	
19		532+78.43	R.C.	54"	166	215

D DITCHES

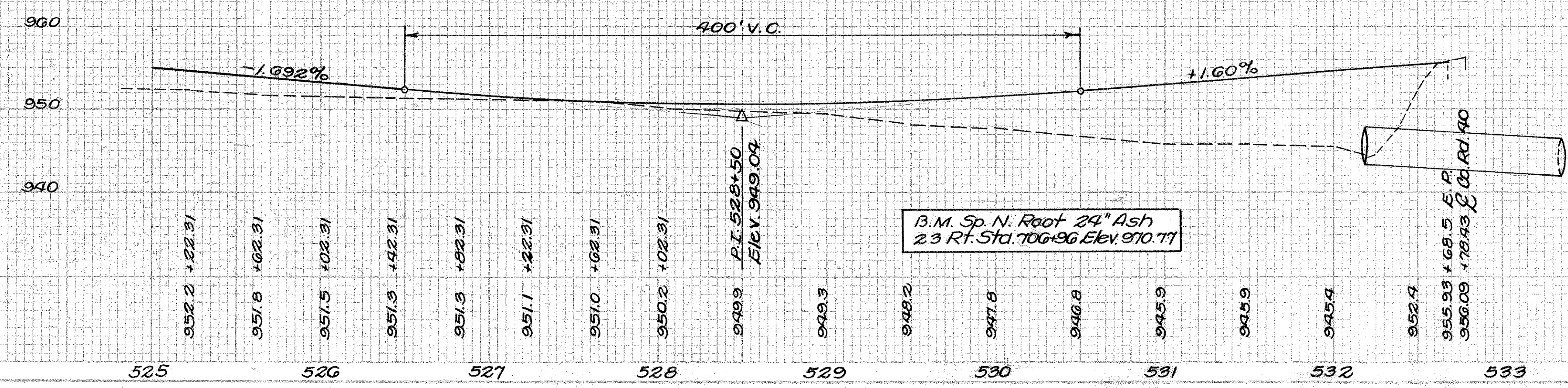
Mark	Station		Side	660 Sodding	
	From	To			
1-D	529+16	530+50	Rt.	91	
Totals					91

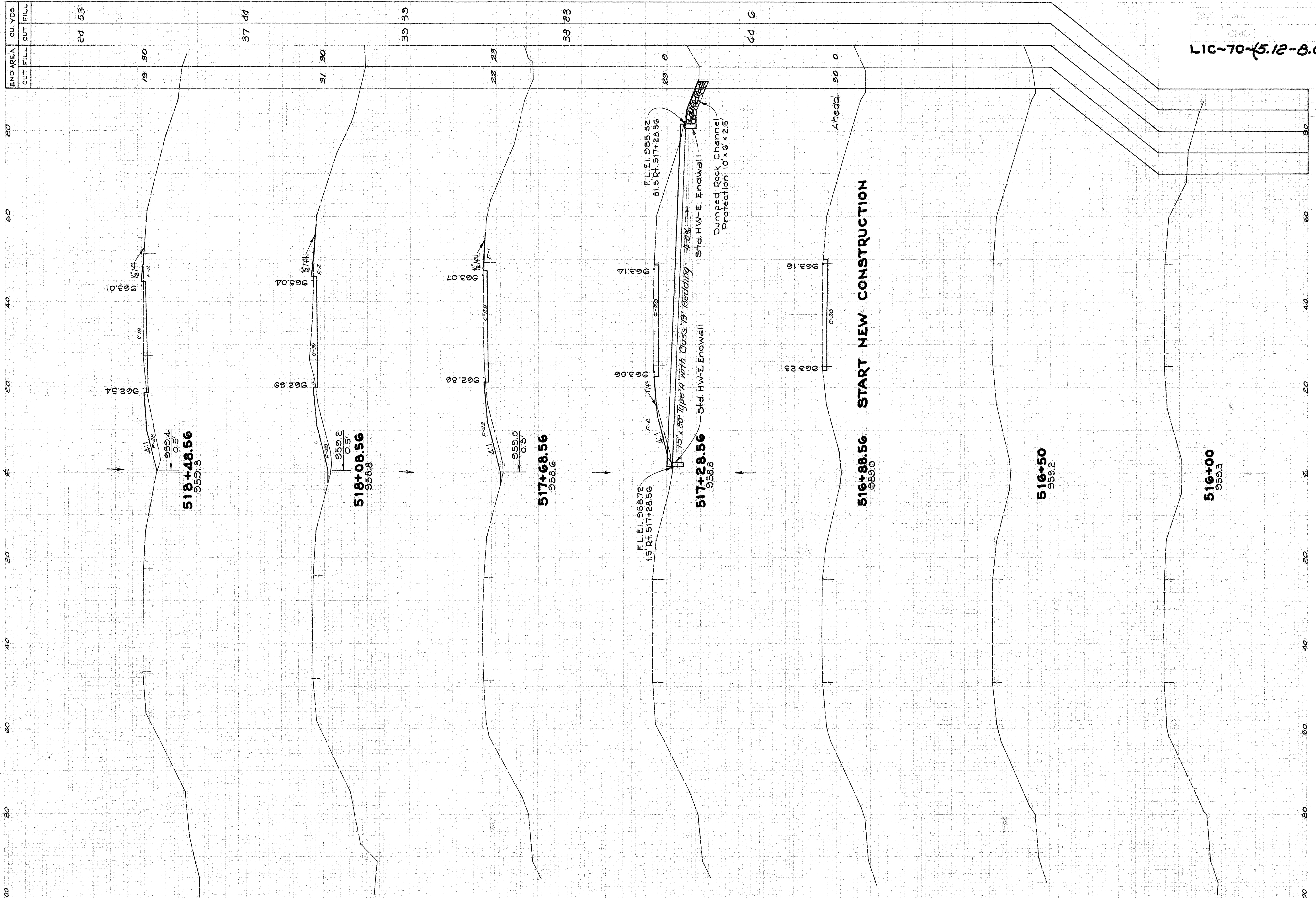
A DRIVES & APPROACHES

Mark	Station	Type	Side	304	603 15"	Details on Sheet
				Aggr. Base	Conduit	
1-A	529+00	Field	Rt.	7.0	30	186
Totals					7.0	30

954.96	954.58	953.91	953.23	952.55	952.23	951.92	951.65	951.41	951.21	951.04	950.91	950.80	950.72	950.69	950.70	950.77	950.88	951.05	951.27	951.54	951.87	952.24	953.04	953.84	954.64	955.44	955.74
122.31	102.31	102.31	102.31	102.31	102.31	102.31	102.31	102.31	102.31	102.31	102.31	12.5															168.5

Seeding 5,421 Sq. Yds.
 Excavation 637 Cu. Yds.
 Embankment 5,428 Cu. Yds.
 Emb. + 12% 6,079 Cu. Yds.

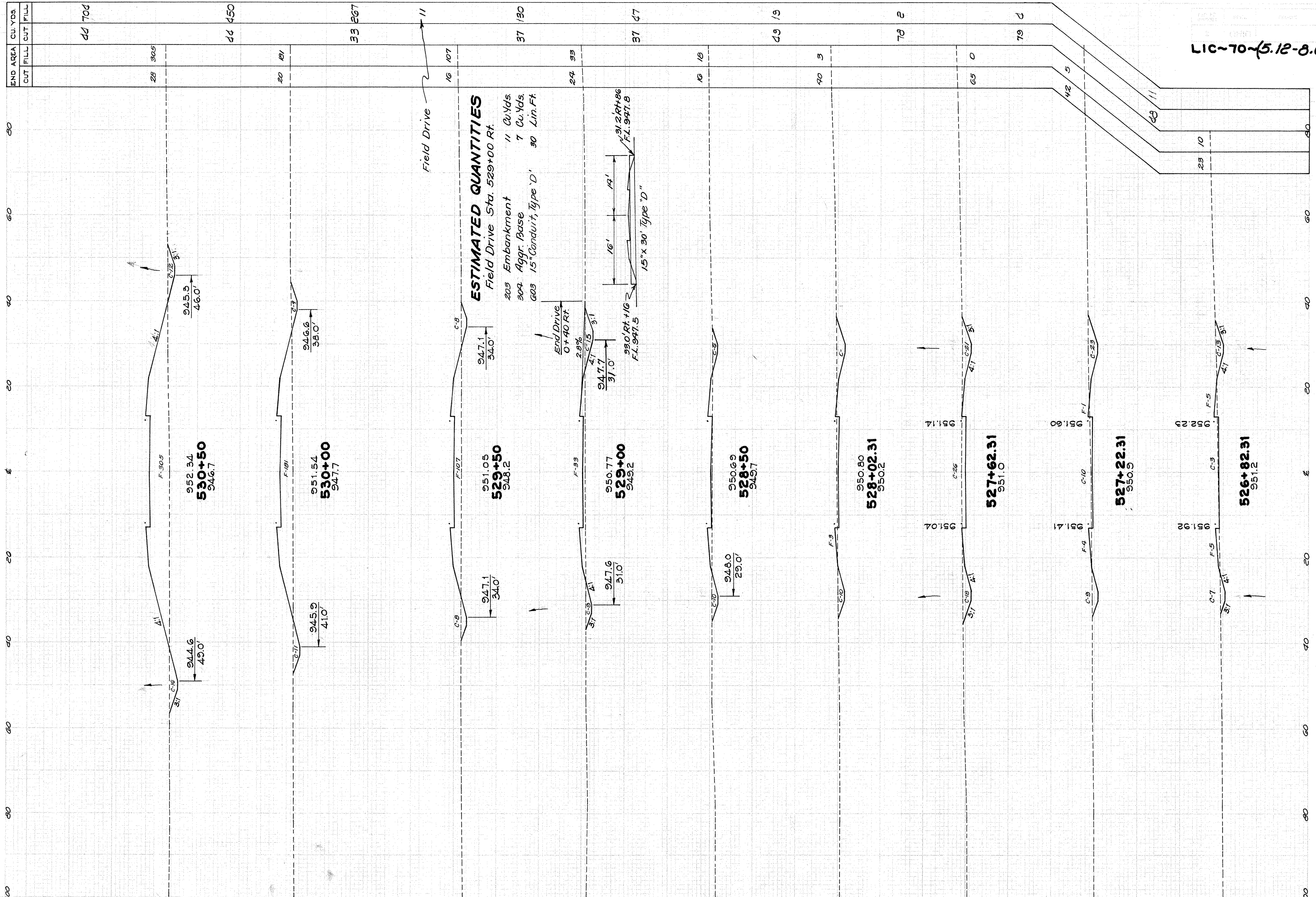




END AREA	CU. YDS.
CUT	FILL

24	53	19	30	31	30	33	33	38	23	41	6
----	----	----	----	----	----	----	----	----	----	----	---

END AREA	VOLUME
CUT	FILL



ESTIMATED QUANTITIES

Field Drive Sta. 529+00 Rt.
 203 Embankment 11 Cu.Yds.
 304 Aggr. Base 7 Cu.Yds.
 603 15" Conduit, Type 'D' 30 Lin. Ft.

Field Drive → 11

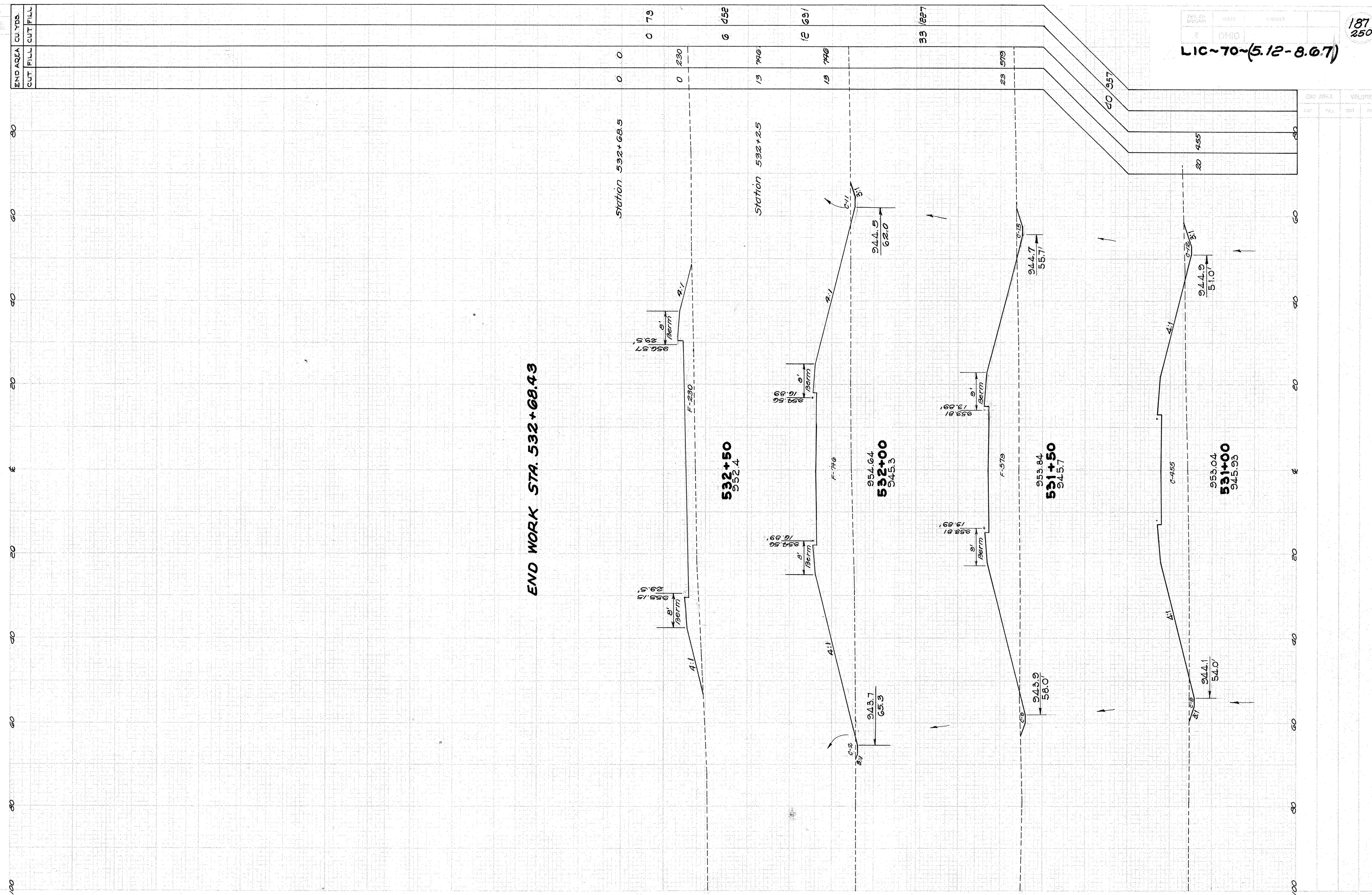
LIC-70-(5.12-8.67)

186
250

END AREA	CU. YDS.
CUT	FILL
28	305
44	704
20	181
44	450
16	107
33	267
16	19
37	190
24	33
16	19
40	3
78	2
65	0
42	5
79	4
23	10
48	11

END AREA CUT FILL CUT FILL

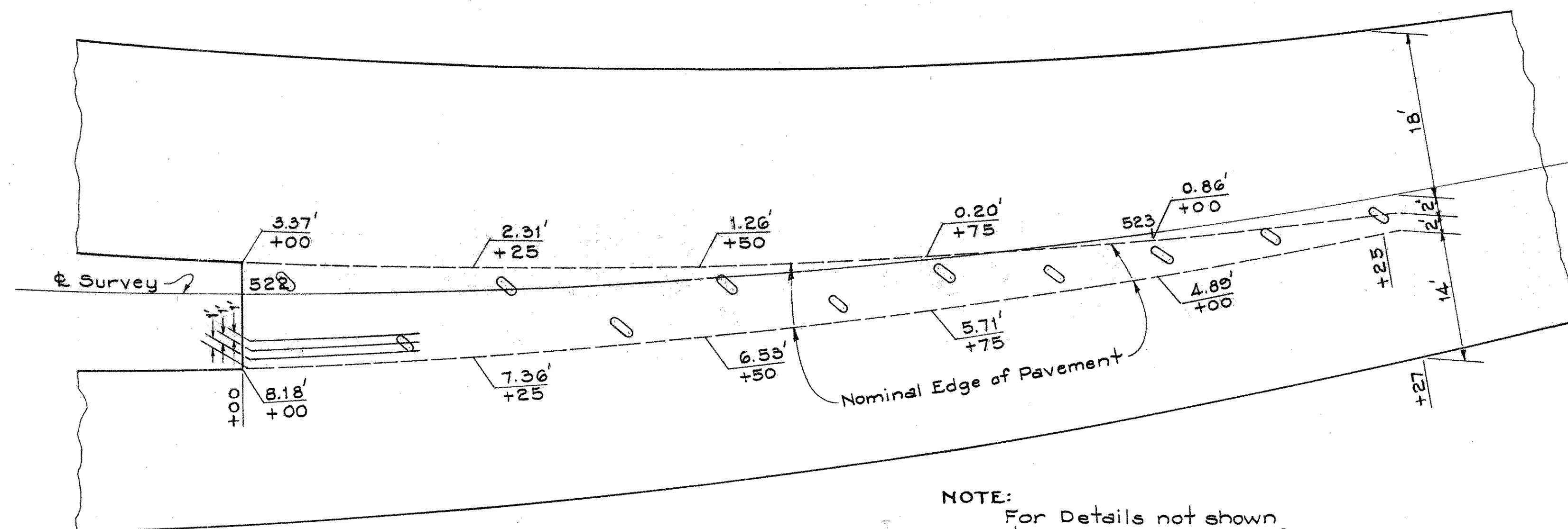
PROJECT: LIC-70-(5.12-8.6.7)
 SHEET: 187/250



END AREA		VOLUME	
CUT	FILL	CU	CY
0	0		

S.R. 158 CONNECTION

LIC-70-(5.12-6.87)



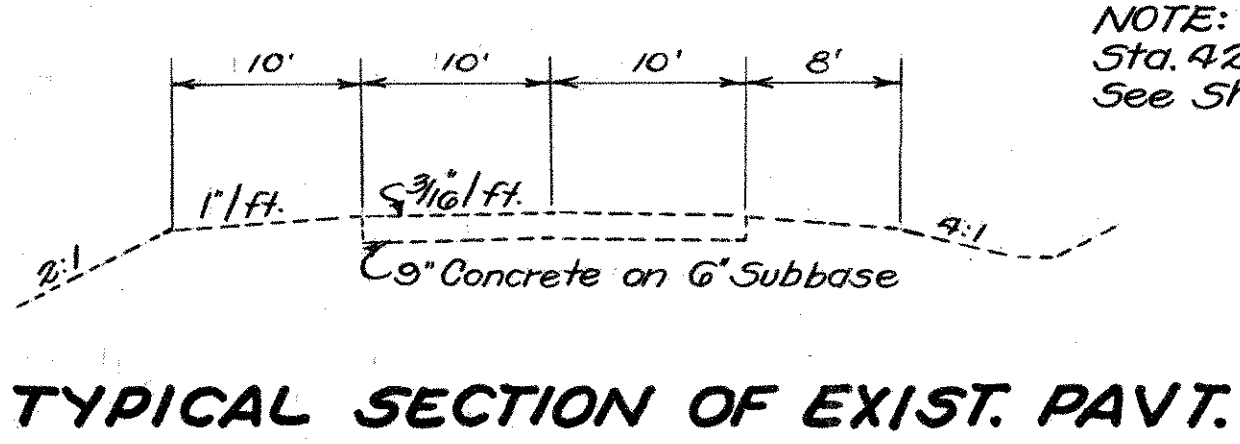
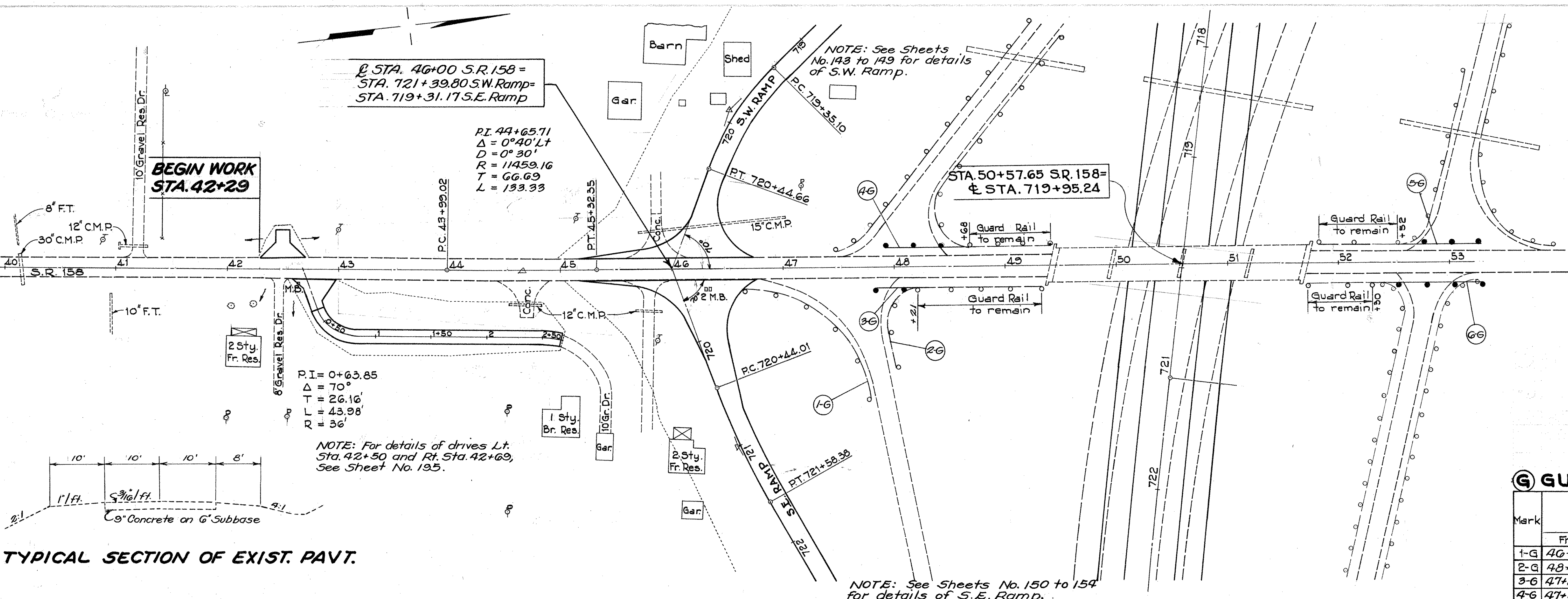
NOTE:
For Details not shown
see Standard Drawing MC-6

S.R. 158 CONNECTION ~ PAVEMENT DETAILS

Dc = 8° 00' Δ = 57° 06' Lt. Ts = 516+88.56					S = 0.0417 ft./ft.		S.C. = 520+88.56 C.S. = 524+02.31 S.T. = 528+02.31			
WEST BOUND LANE					EAST BOUND LANE					
Left Edge	℄ Pavement	Right Edge	Width of Pavement	Offset to Rt. Edge	℄ Survey Station	Offset to Lt. Edge	Width of Pavement	Left Edge	℄ Pavement	Right Edge
					516+88.56	25.00	24.00	963.23	963.36	963.16
					517+08.56	24.34		963.15	963.30	963.15
					+28.56	23.68		963.06	963.24	963.14
					+48.56	23.03		962.96	963.15	963.10
					+68.56	22.37		962.86	963.05	963.07
					+88.56	21.71		962.76	962.95	963.05
					518+08.56	21.05		962.67	962.86	963.04
					+28.56	20.40		962.60	962.81	963.02
					+48.56	19.74		962.54	962.77	963.01
					+68.56	19.08		962.47	962.73	962.99
					+88.56	18.42		962.41	962.69	962.98
					519+08.56	17.76		962.34	962.65	962.96
962.28	962.47	962.32	24.00	17.00	+28.56	17.11	24.00	962.28	962.61	962.94
962.22	962.41	962.29		15.40	+48.56	16.45	23.83	962.22	962.57	962.93
962.14	962.33	962.27		13.80	+68.56	15.79	23.31	962.14	962.51	962.88
962.06	962.25	962.25		12.50	+88.56	15.13	22.79	962.06	962.44	962.83
961.94	962.13	962.23		11.47	520+08.56	14.47	22.27	961.94	962.33	962.73
961.82	962.01	962.20		10.62	+28.56	13.82	21.75	961.82	962.23	962.64
961.68	961.91	962.14		9.78	+48.56	13.16	21.23	961.71	962.14	962.57
961.51	961.78	962.06		8.93	+68.56	12.50	20.71	961.65	962.08	962.51
961.33	961.64	961.96		8.08	+88.56	11.84	20.19	961.61	962.03	962.45
961.22	961.56	961.90		7.60	521+00	11.47	19.90	961.59	962.00	962.42
960.95	961.34	961.74	24.00	6.54	+25	10.64	19.25	961.54	961.94	962.34
960.65	961.10	961.55	23.83	5.49	+50	9.82	18.60	961.50	961.89	962.28
960.33	960.81	961.30	23.29	4.43	+75	9.00	17.95	961.45	961.82	962.20
959.98	960.45	960.93	22.75	3.37	522+00	8.18	17.30	961.34	961.70	962.06

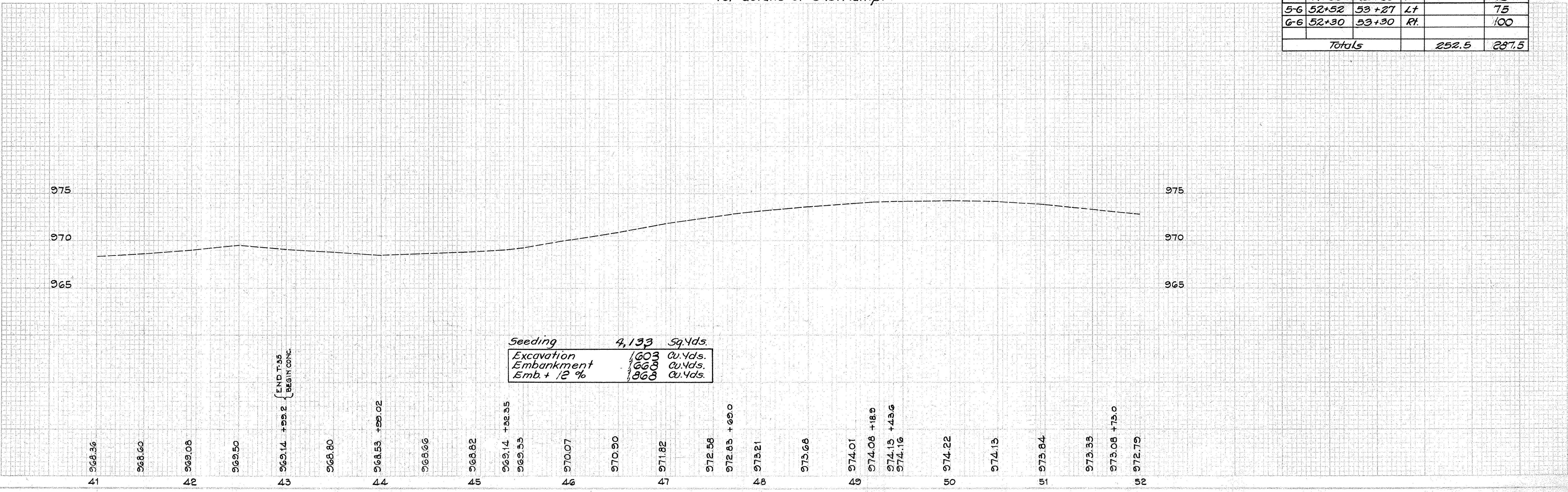
S.R. 158 CONNECTION

Dc = 8° 00' Δ = 57° 06' Lt. Ts = 516+88.56					S = 0.0417 ft./ft.		S.C. = 520+88.56 C.S. = 524+02.31 S.T. = 528+02.31		
Left Edge	℄ Dist. to Lt. Edge	℄ Survey Station	℄ Pavement	℄ Dist. to Rt. Edge	Right Edge				
959.98	26.12	522+00	961.05	25.48	962.06				
959.61	24.52	+25	960.63	24.01	961.63				
959.19	22.92	+50	960.15	22.53	961.09				
958.77	21.32	+75	959.66	21.06	960.54				
958.35	19.72	523+00	959.17	19.59	959.99				
957.89	18.00	+27	958.64	18.00	959.39				
957.50	17.20	+50	958.22	17.20	958.93				
957.08	16.34	+75	957.76	16.34	958.44				
956.65	15.47	524+00	957.30	15.47	957.94				
956.62	15.39	+02.31	957.26	15.39	957.90				
956.28	14.69	+22.31	956.86	14.69	957.44				
955.94	14.00	+42.31	956.47	14.00	957.00				
955.60	13.31	+62.31	956.07	13.31	956.54				
955.26	12.61	+82.31	955.68	12.61	956.10				
954.92	12.00	525+02.31	955.30	12.00	955.68				
954.58		+22.31	954.94		955.30				
954.25		+42.31	954.58		954.91				
953.91		+62.31	954.22		954.53				
953.57		+82.31	953.85		954.13				
953.23		526+02.31	953.49		953.75				
952.89		+22.31	953.13		953.37				
952.55		+42.31	952.77		952.99				
952.23		+62.31	952.42		952.61				
951.92		+82.31	952.11		952.23				
951.65		527+02.31	951.84		951.90				
951.41		+22.31	951.60		951.60				
951.21		+42.31	951.40		951.36				
951.04		+62.31	951.23		951.14				
950.91		+82.31	951.10		950.96				
950.80	12.00	528+02.31	950.99	12.00	950.80				

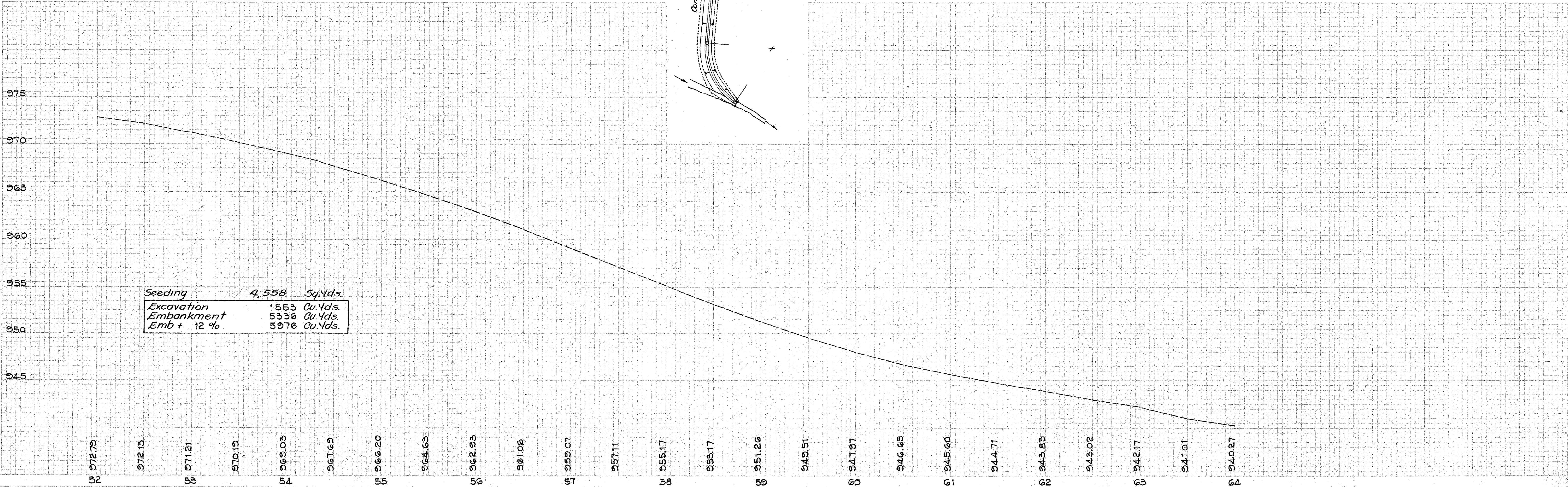
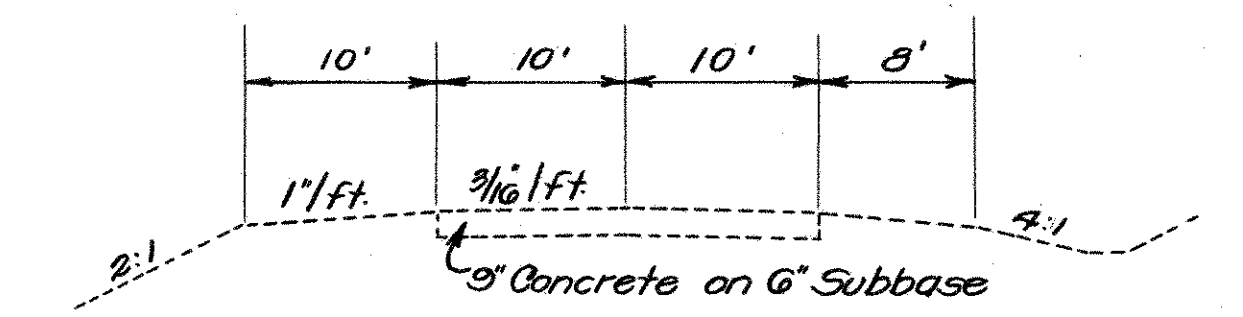
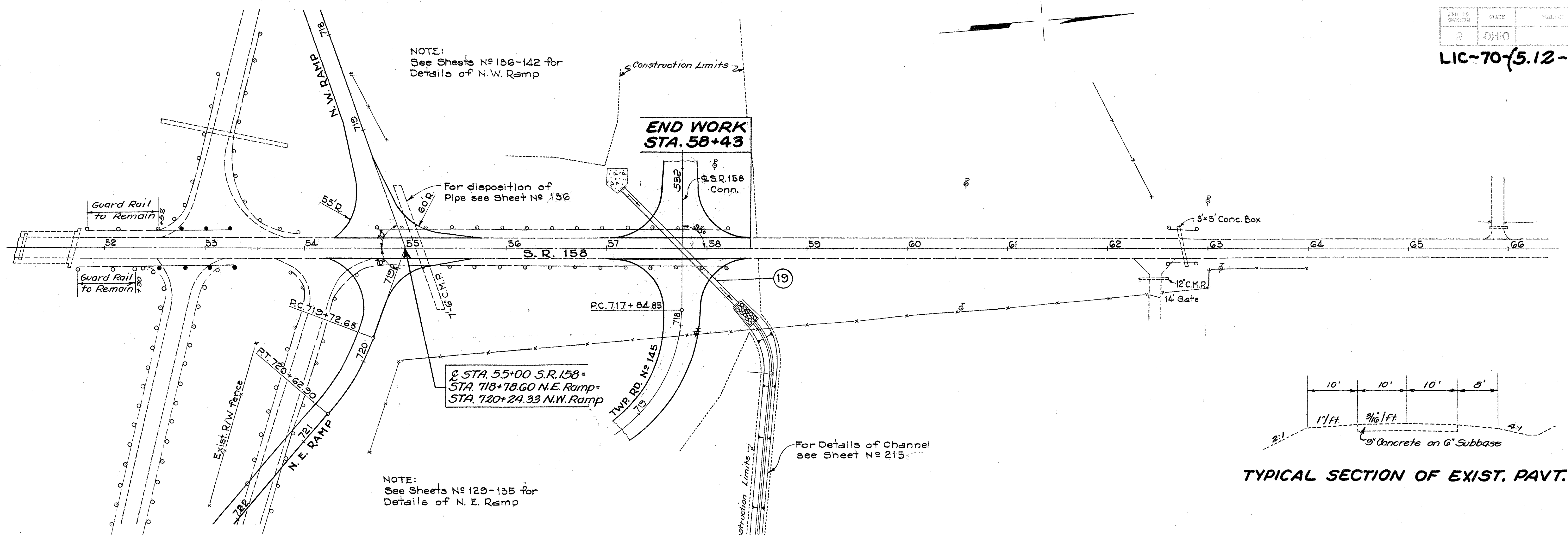


ⓐ GUARD RAIL

Mark	Station		Side	Guard Rail Removed Lin. Ft.	GOG Guard Rail Lin. Ft.
	From	To			
1-G	46+65	47+76	Rt.	165	
2-G	48+02	48+21	Rt.	87.5	
3-G	47+83.5	48+21	Rt.		37.5
4-G	47+93	48+68	Lt.		75
5-G	52+52	53+27	Lt.		75
6-G	52+30	53+30	Rt.		100
Totals				252.5	287.5

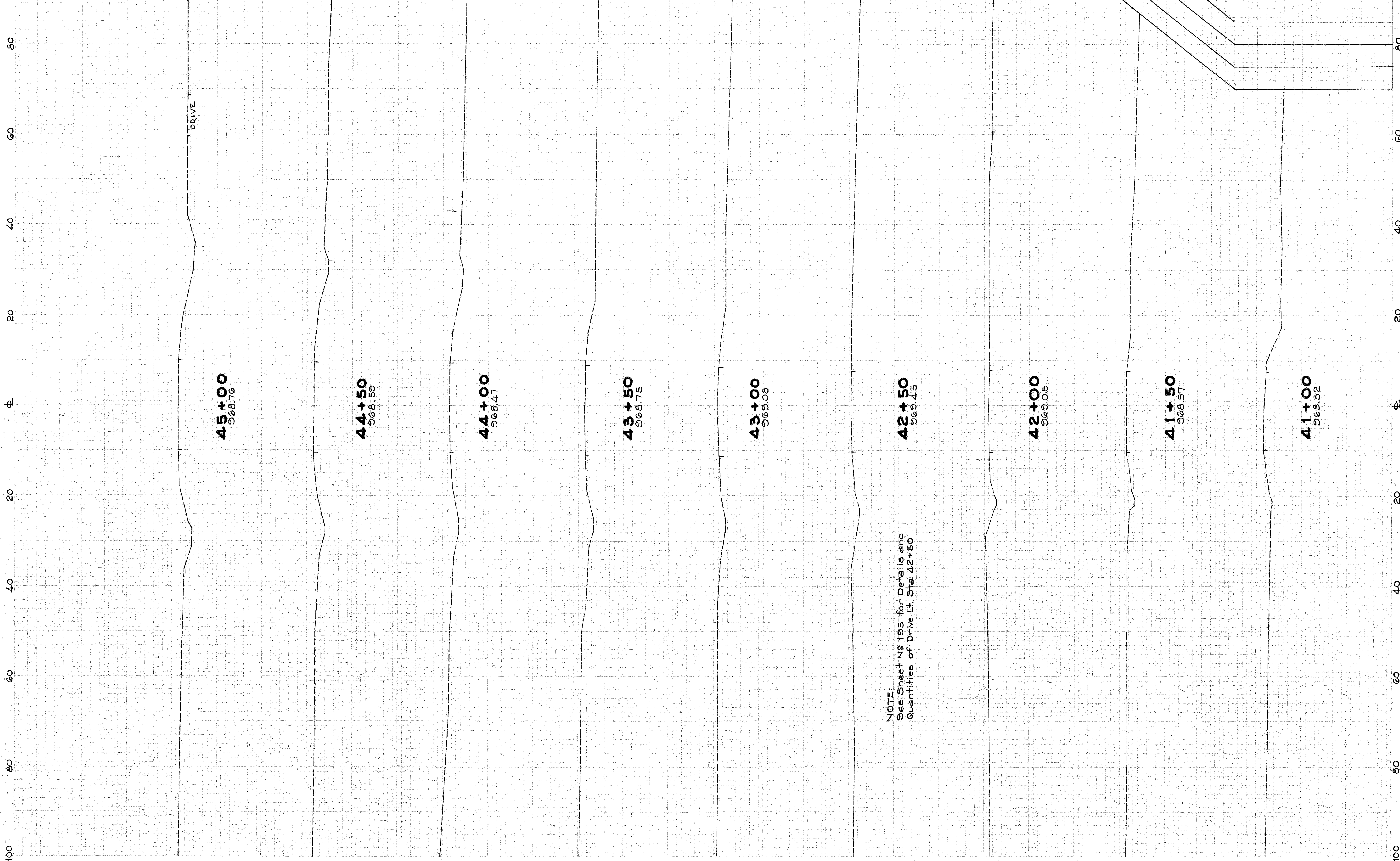


LIC-70(5.12-8.67)



END AREA CU. YDS.
OUT FILL OUT FILL

191
250
LIC-70~(5.12-8.67)

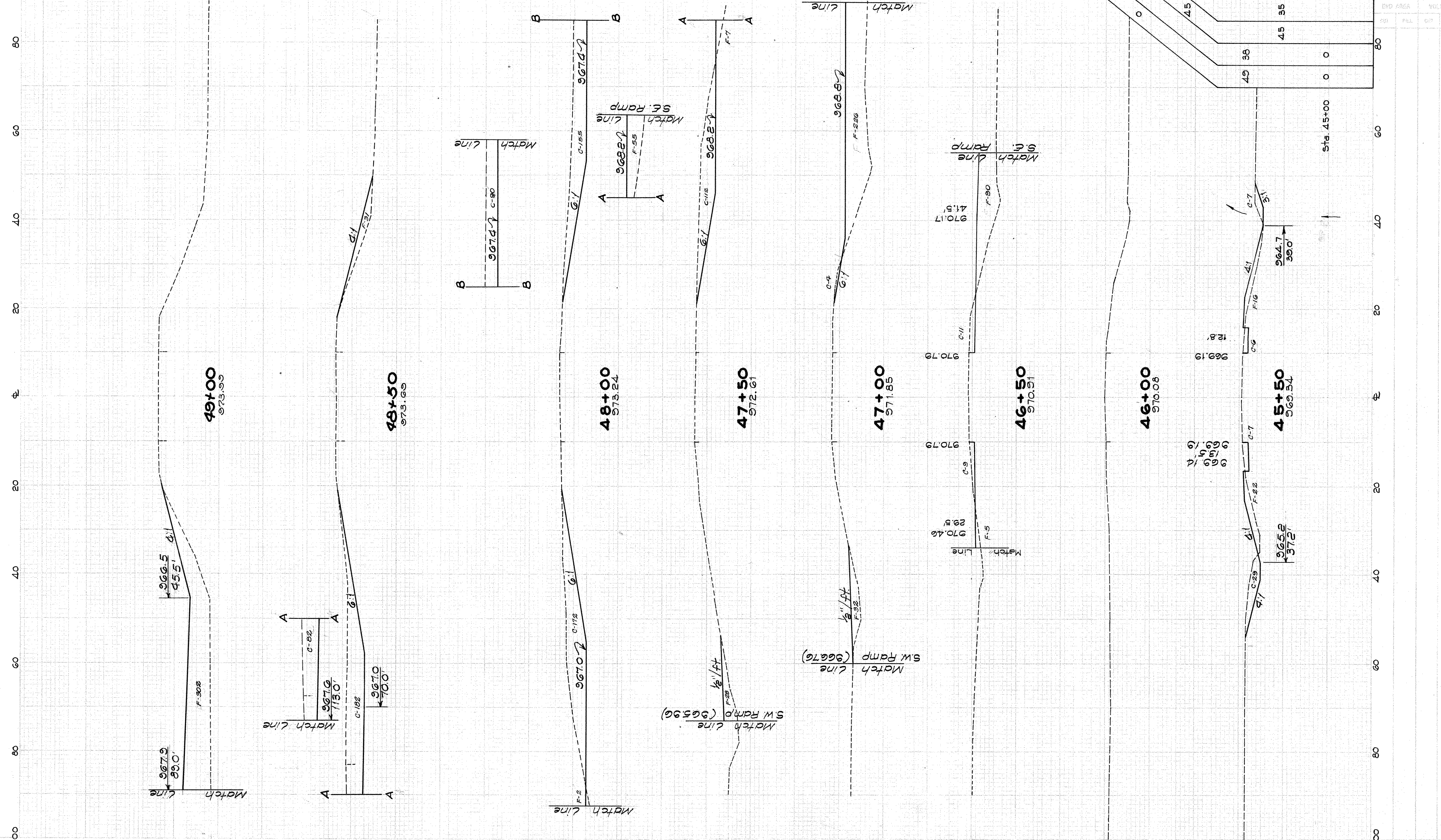


NOTE:
See Sheet No 195 for Details and
Quantities of Drive Lt. Sta. 42+50

EMP AREA
VOL. USE

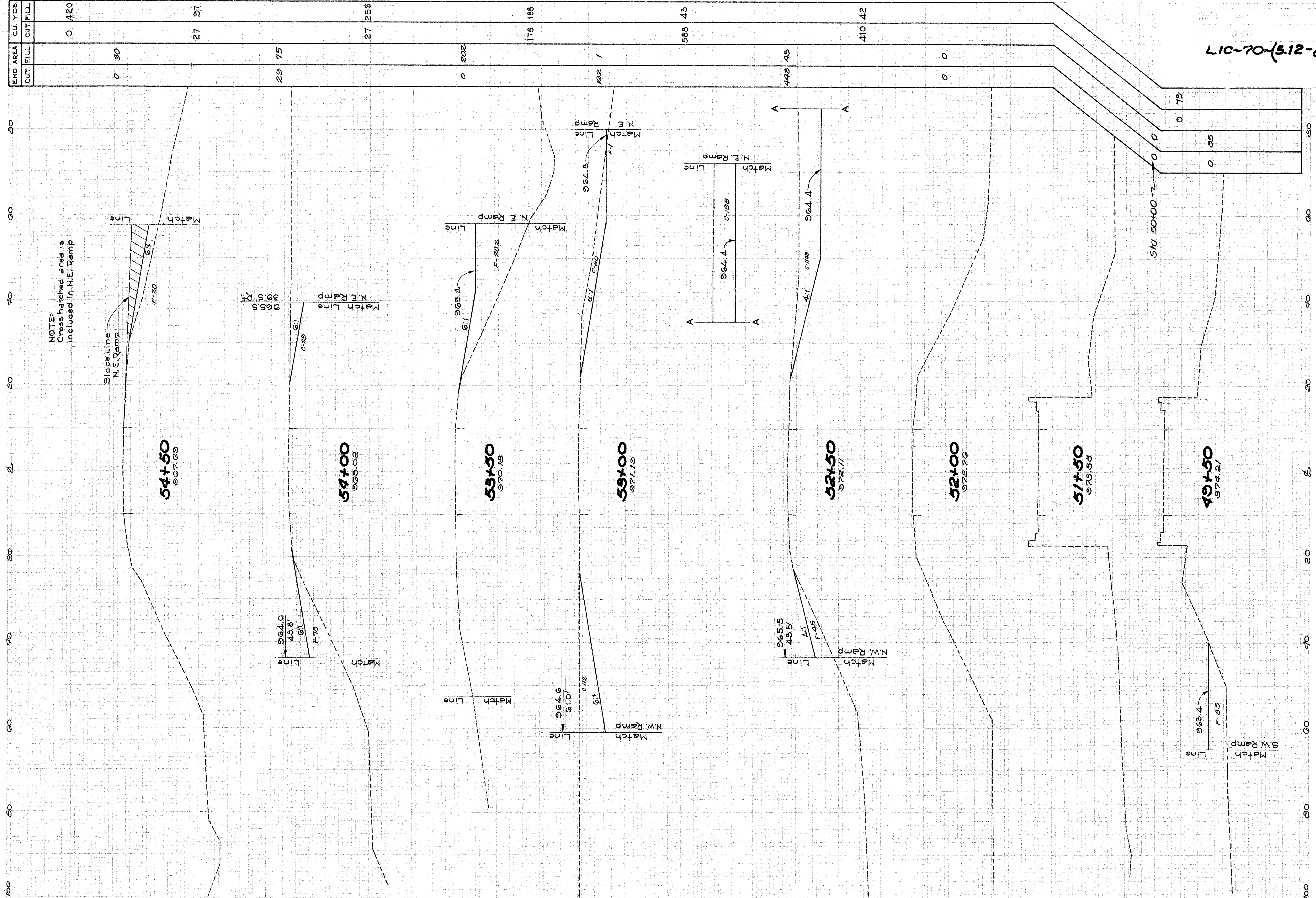
EXIST. S.R. 158 41+00~45+00

END AREA	CUT	FILL	CUT	FILL	CUT	FILL
100						
0	358					
0	302					
244	308					
264	31					
631	31					
490	85					
107	322					
22	327					
19	88					
100						



END AREA		VOLUME	
ST. 1	ST. 2	FILL	CUT
45+00	45+50	0	0
45+50	46+00	0	0
46+00	46+50	0	0
46+50	47+00	0	0
47+00	47+50	0	0
47+50	48+00	0	0
48+00	48+50	0	0
48+50	49+00	0	0
49+00	49+50	0	0

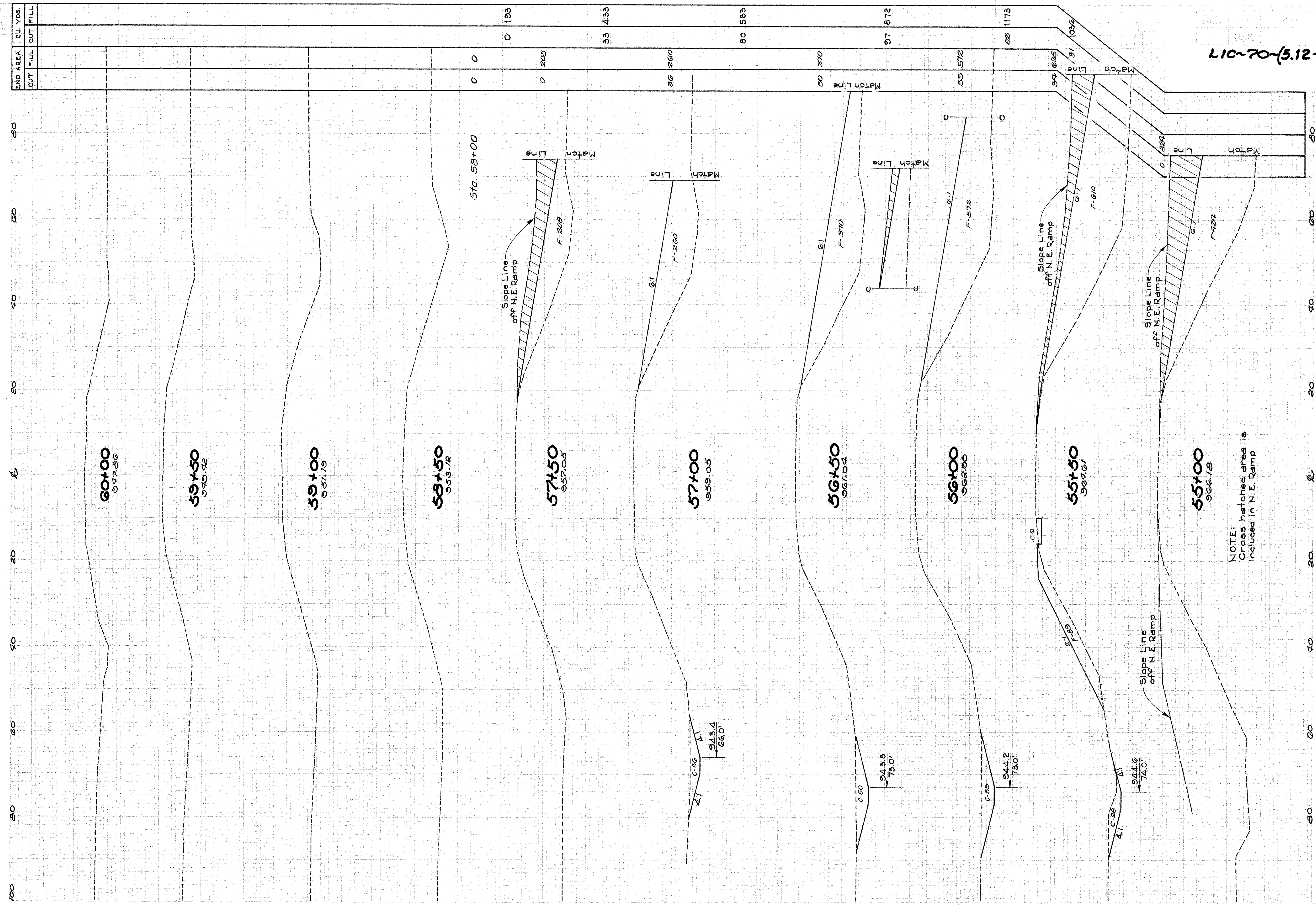
L10-70-(5.12-8.67)



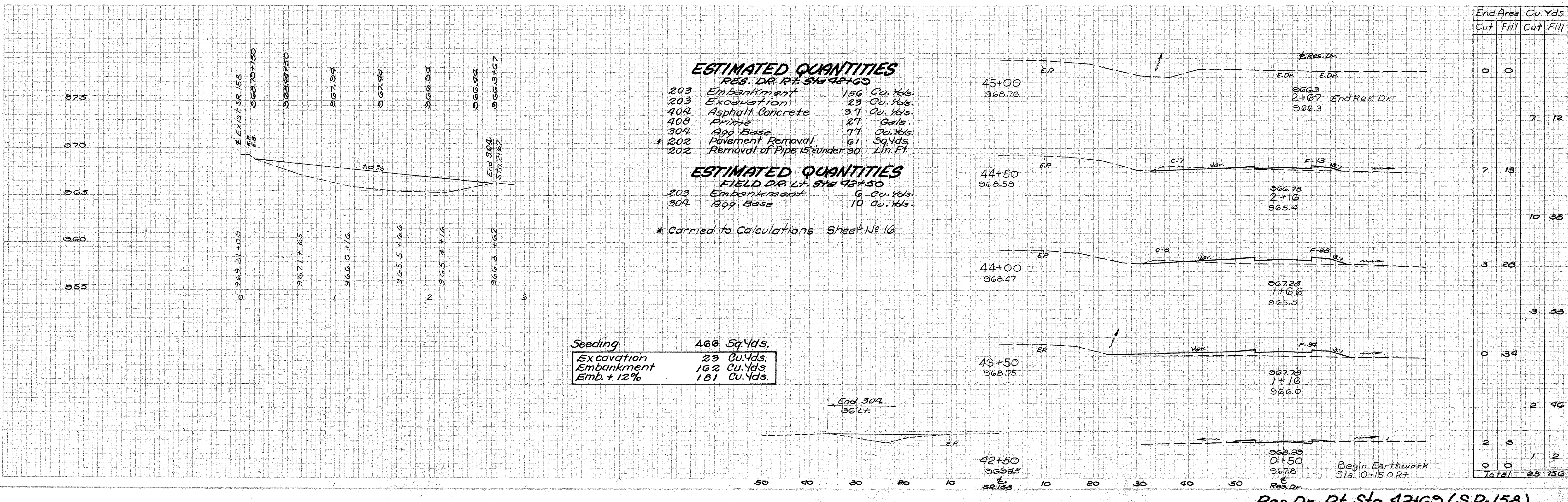
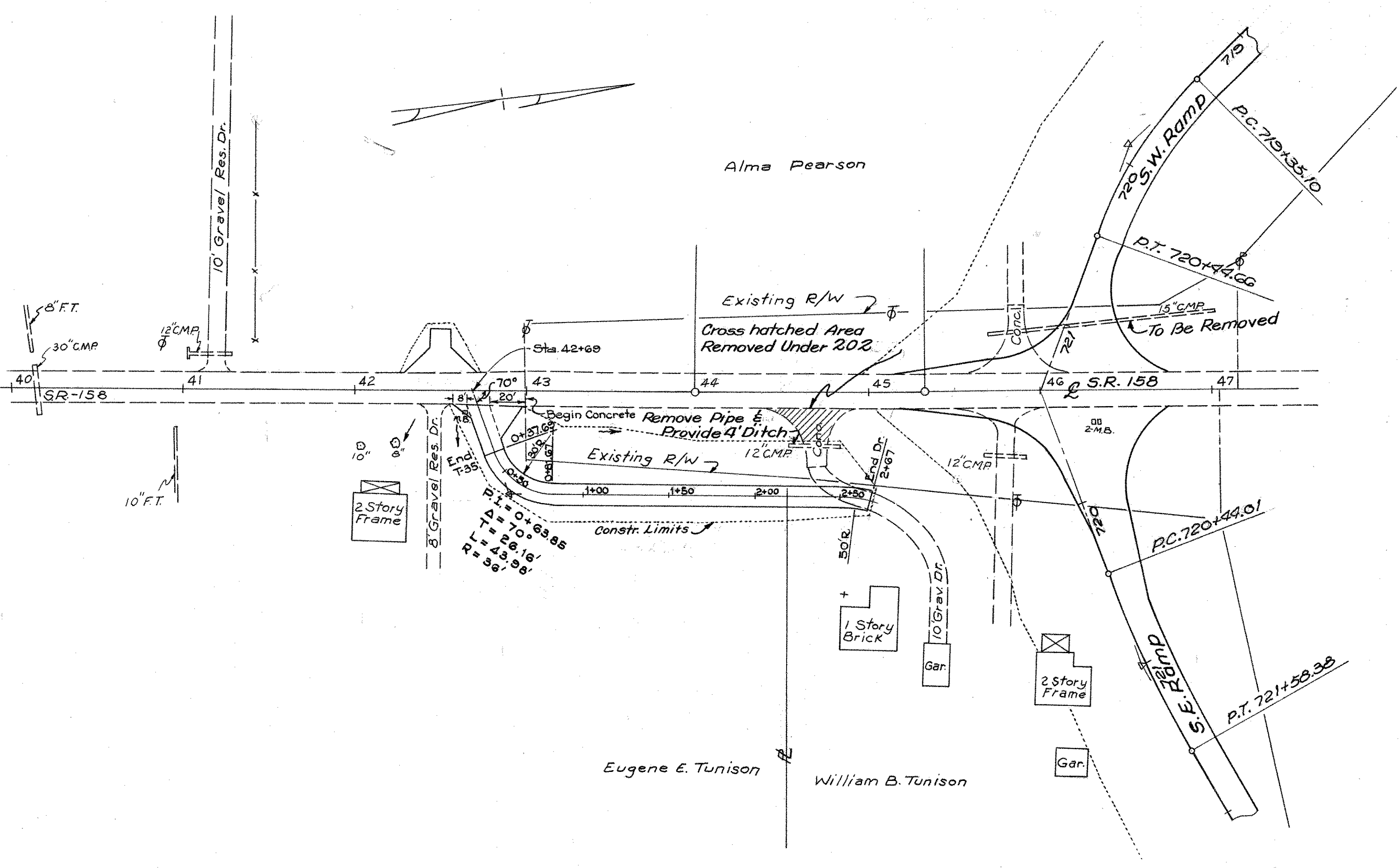
NOTE:
Cross hatched area is
included in N.E. Ramp

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	30	0	79
29	75	0	25
0	202	0	0
0	1	0	0
493	45	0	0
0	0	0	0

LIC-70-(5.12-8.67)



NOTE:
Cross hatched areas is
included in N. E. Ramp



ESTIMATED QUANTITIES

RES. DR. RT. STA 42+69

203	Embankment	156	Cu. Yds.
203	Excavation	23	Cu. Yds.
404	Asphalt Concrete	37	Cu. Yds.
408	Prime	27	Gals.
304	Agg. Base	77	Cu. Yds.
* 202	Pavement Removal	61	Sq. Yds.
202	Removal of Pipe 15" under 30'		Lin. Ft.

ESTIMATED QUANTITIES

FIELD DR. LT. STA 42+50

203	Embankment	6	Cu. Yds.
304	Agg. Base	10	Cu. Yds.

* Carried to Calculations Sheet No 16

Seeding	466	Sq. Yds.
Excavation	23	Cu. Yds.
Embankment	162	Cu. Yds.
Emb. + 12%	181	Cu. Yds.

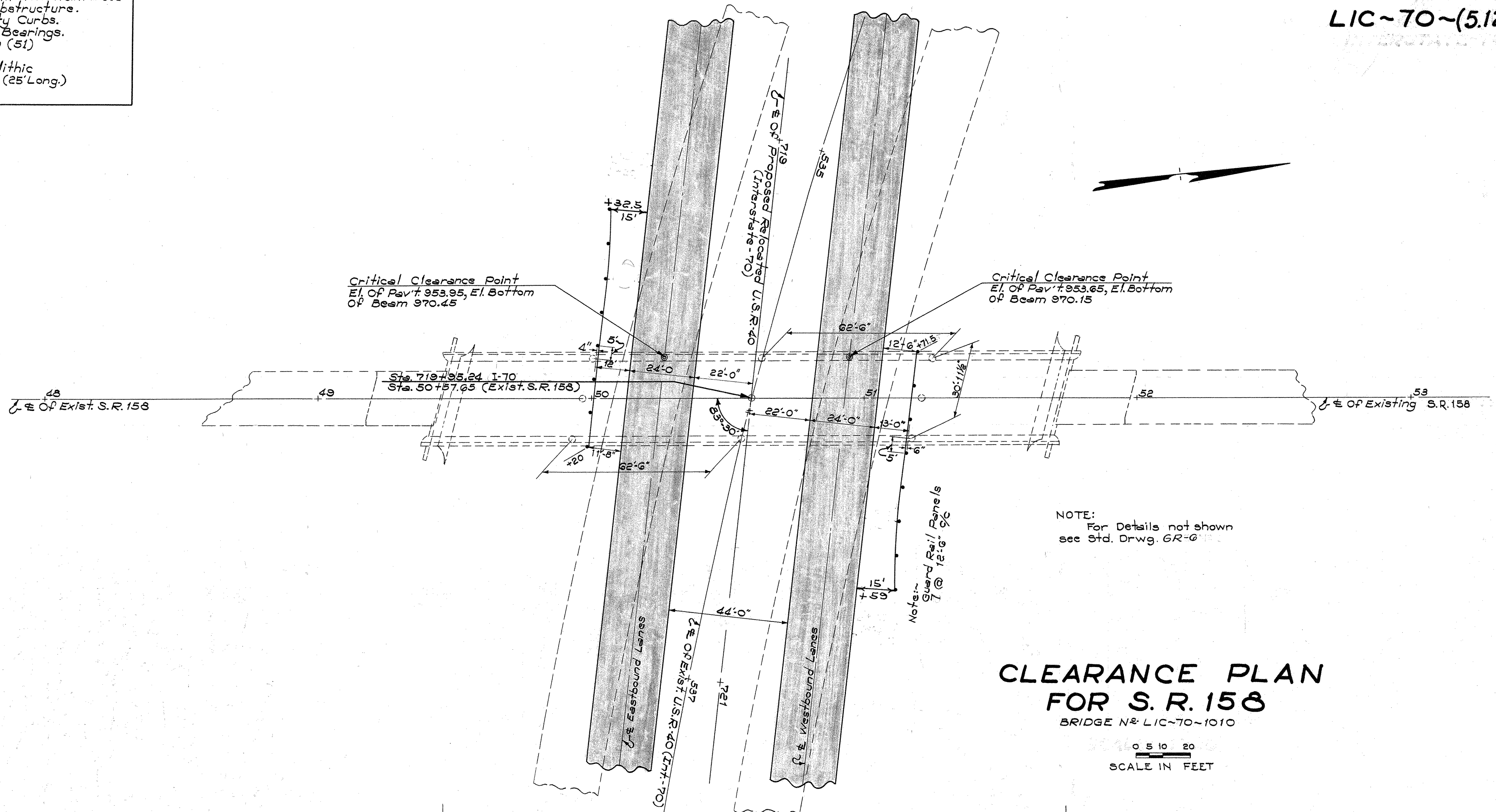
Station	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
45+00	0	0		
44+50	7	13		
44+00	3	23		
43+50	0	34		
42+50	2	5		
Total	23	75	23	156

EXISTING STRUCTURE

TYPE:- Continuous Steel Beam With Reinforced Concrete Deck And Substructure.
 ROADWAY:- 28'-0" w/ 2'-0" Safety Curbs.
 SPAN:- 50'-62.5'-62.5'-50' w/ Bearings.
 LOAN FREQUENCY:- C.F. = 400 (51)
 SKEW:- 14°-22' L.F.
 WEARING SURFACE:- 1" Monolithic
 APPROACH SLABS:- AS-1-54 (25' Long.)
 ALIGNMENT:- Tangent

FED. RD. DIVISION	STATE	PROJECT	196 250
2	OHIO		

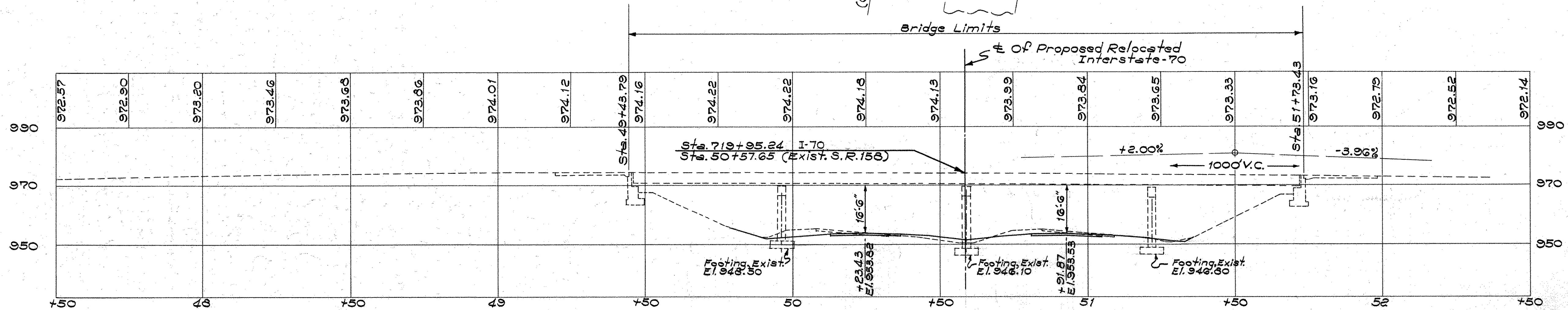
LIC-70-(5.12-8.67)

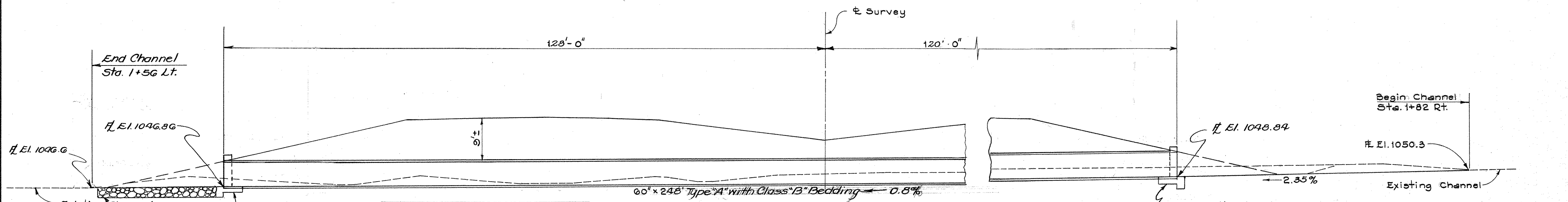
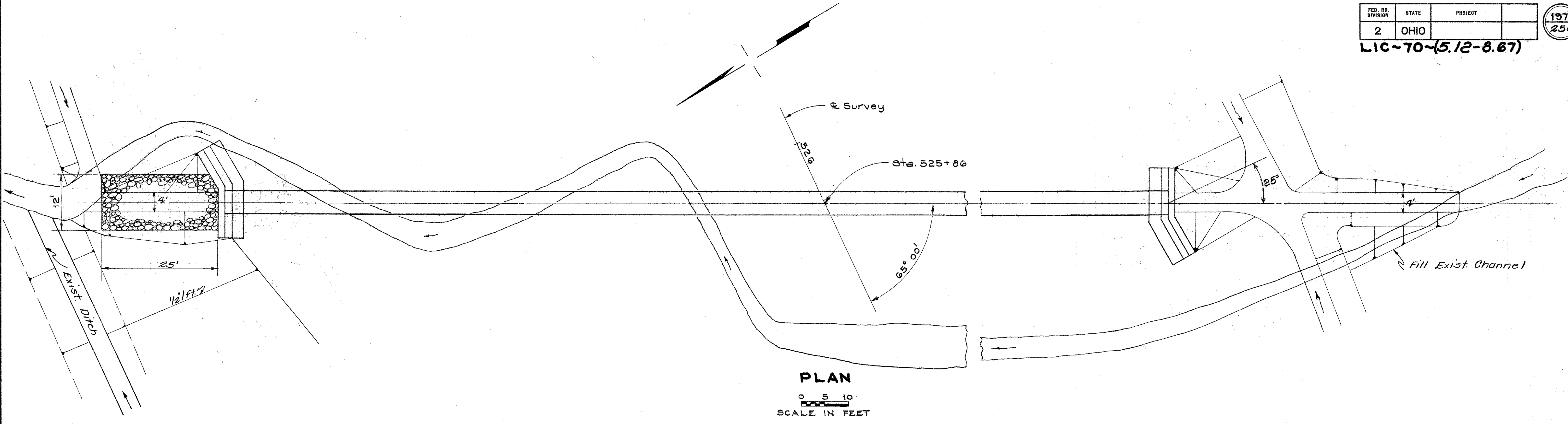


NOTE:
For Details not shown
see Std. Drwg. GR-6

**CLEARANCE PLAN
FOR S. R. 158**
BRIDGE N^o LIC-70-1010

0 5 10 20
SCALE IN FEET





	E.A.	C.Y.
1+82 End Channel Rt. 1050.3	0	
1+64 Rt. 1051.0	5	
1+20 Begin Channel Rt. 1050.3	15	
	25	
Total	30	

CROSS SECTIONS
Scale in Feet

LONGITUDINAL SECTION

CULVERT DATA

TYPE: Pipe Culvert
 SIZE: 60" x 248"
 WORK REQUIRED: Install Pipe Culvert as shown using 60" Conduit, Type "A" with Class "B" Bedding. Construct Std. HW-3 Headwalls using $\phi = 30^\circ$ for Headwall. Place Dumped Rock Channel Protection at outlet. Construct channel at inlet and outlet as shown.

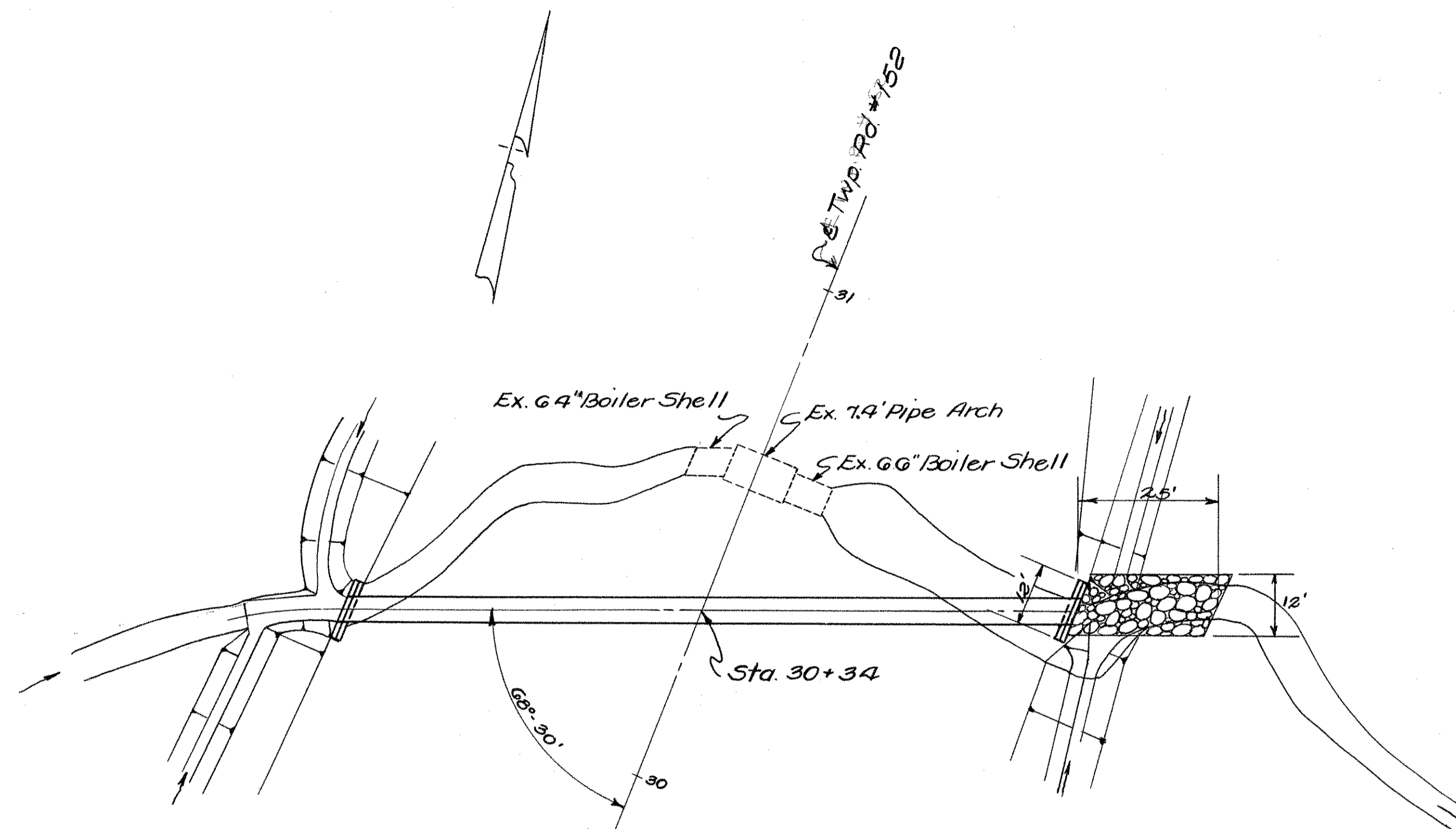
ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
603	60" Conduit, Type "A" with Class "B" Bedding	248	Lin. Ft.
602	Concrete Masonry	24.6	Cu. Yds.
601	Dumped Rock Channel Protection	28	Cu. Yds.
203	Excavation	30	Cu. Yds.

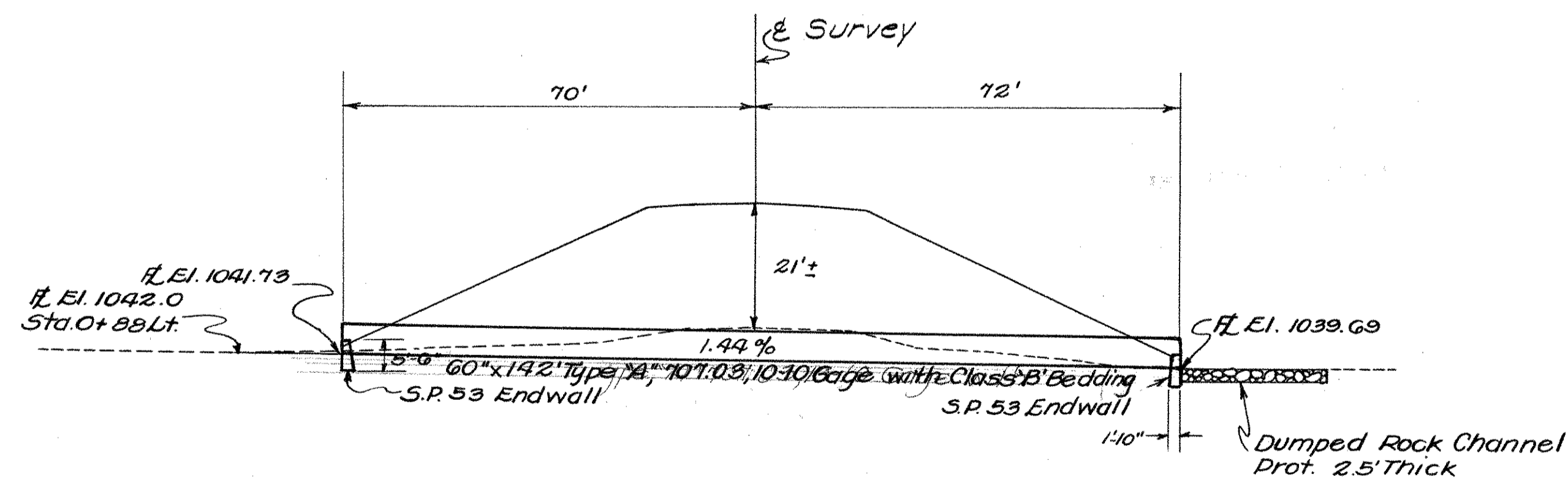
Drainage Area = 238 A² Q₅₀ = 0.65 x 0.8 x 1.21 x 335 = 211 c.f.s.

1	P.C. 60" x 248'	STA. 525+86	LIC-70-0555
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LIC-70-(5.12-8.67)



PLAN
Scale in Feet



LONGITUDINAL SECTION

CULVERT DATA

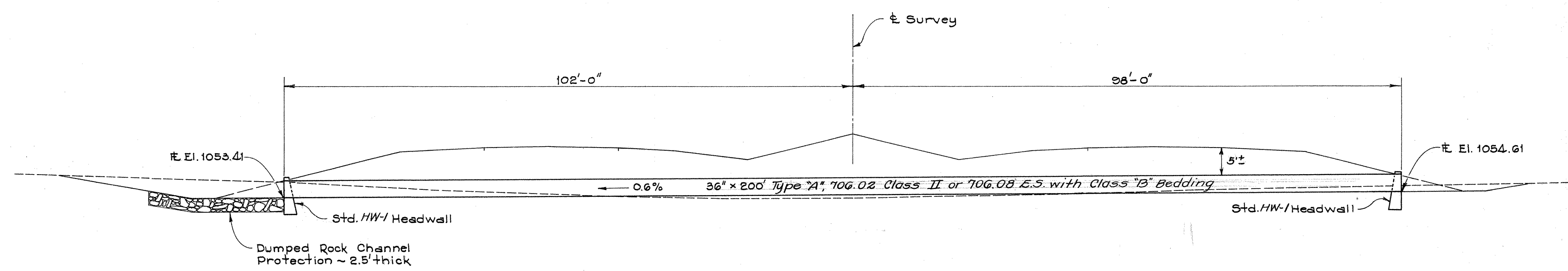
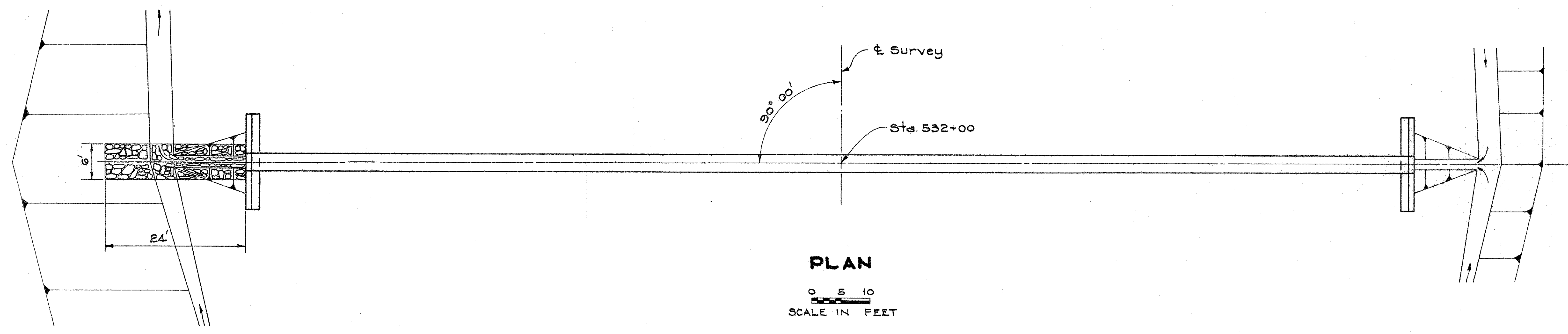
TYPE: Pipe Culvert Std. Drwg. MC-4 & S.P. 53
 SIZE: 60" x 142"
 WORK REQUIRED: Install Pipe Culvert as shown using 60" Conduit, Type A with Class B Bedding. Construct S.P. 53 Endwalls. Place dumped rock channel protection at outlet. Remove existing pipe arch and boiler shells.

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
603	60" Conduit, Type A, 107.03, 10-10 Gage with Class B Bedding	142	Lin. Ft.
601	Dumped Rock Channel Protection	28	Cu. Yds.
202	Pipe Removed Over 15"	28	Lin. Ft.
602	Concrete Masonry	6.1	Cu. Yds.

Drainage Area = 302 A^c Q₁₀ = 0.86 x 0.8 x 0.65 x 400 = 179 c.f.s.

E	Sta. 30+34 Twp. Rd. 152	P.C. 60" x 142'	LIC-70-
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CULVERT DATA

TYPE: Pipe Culvert
 SIZE: 36" x 200'
 WORK REQUIRED: Install Pipe Culvert as shown using 36" Conduit, Type 'A' with Class 'B' Bedding. Construct Std. HW-1 Headwalls. Place Dumped Rock Channel Protection at outlet.

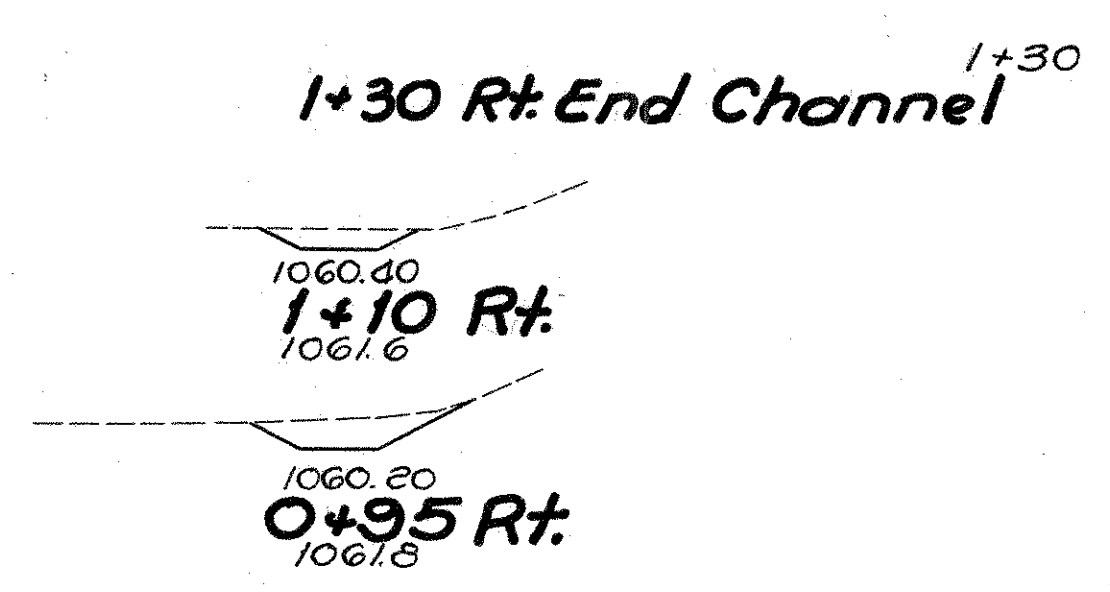
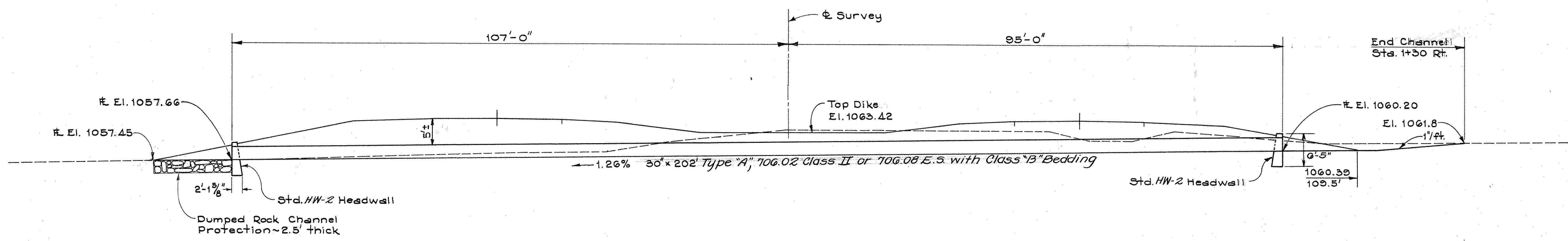
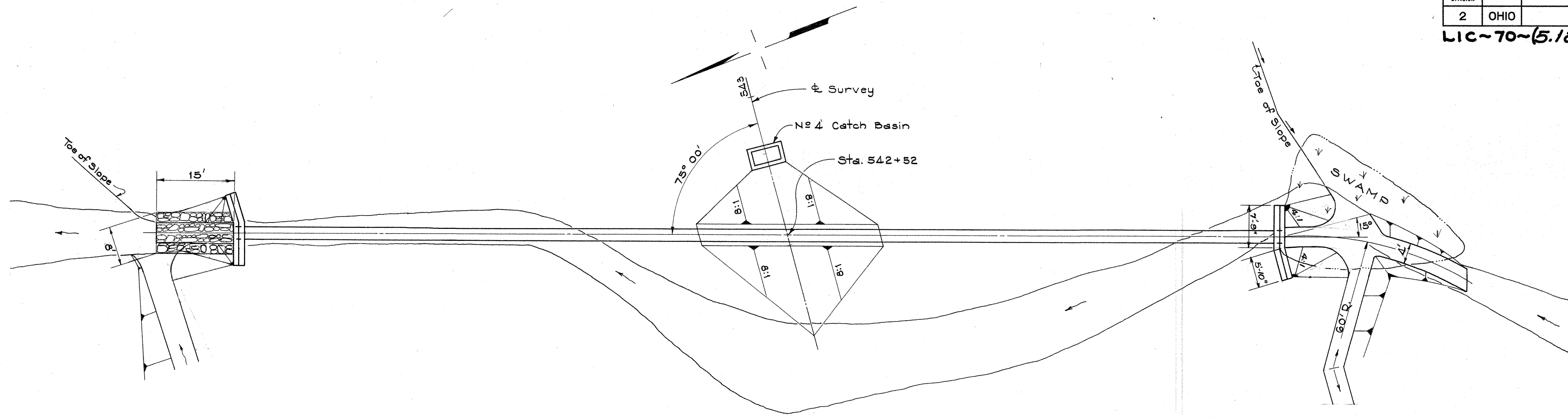
Std. Drwg. MC-4 & HW-1

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
603	36" Conduit, Type 'A', 706.02, Class II or 706.08 E.S. with Class 'B' Bedding	200	Lin. Ft.
601	Dumped Rock Channel Protection	13	Cu. Yds.
602	Concrete Masonry	13.0	Cu. Yds.

Drainage Area = 17A² Q₅₀ = 0.65 x 0.8 x 1.21 x 70 = 44 c.f.s.

3	STA. 532+00	P. C. 36"x200'	LIC-70~0567
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EA.	C.Y.
0	3
7	5
10	
Totals	8

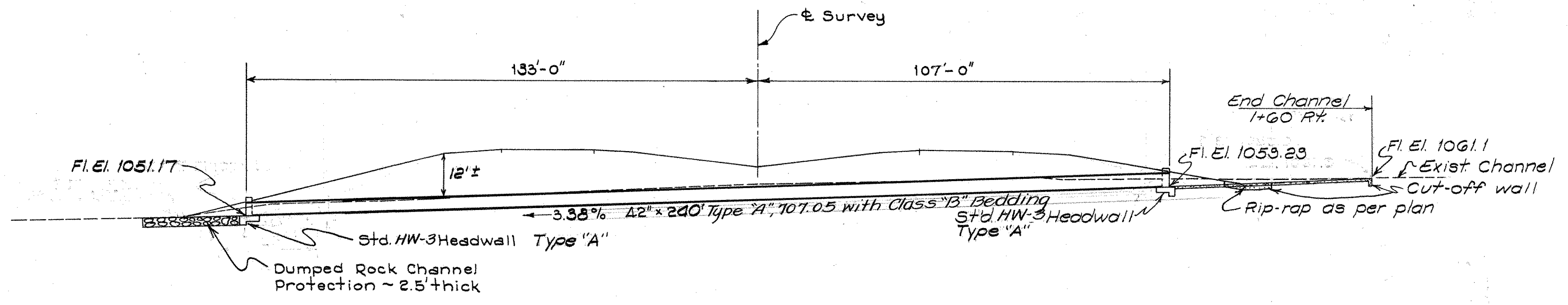
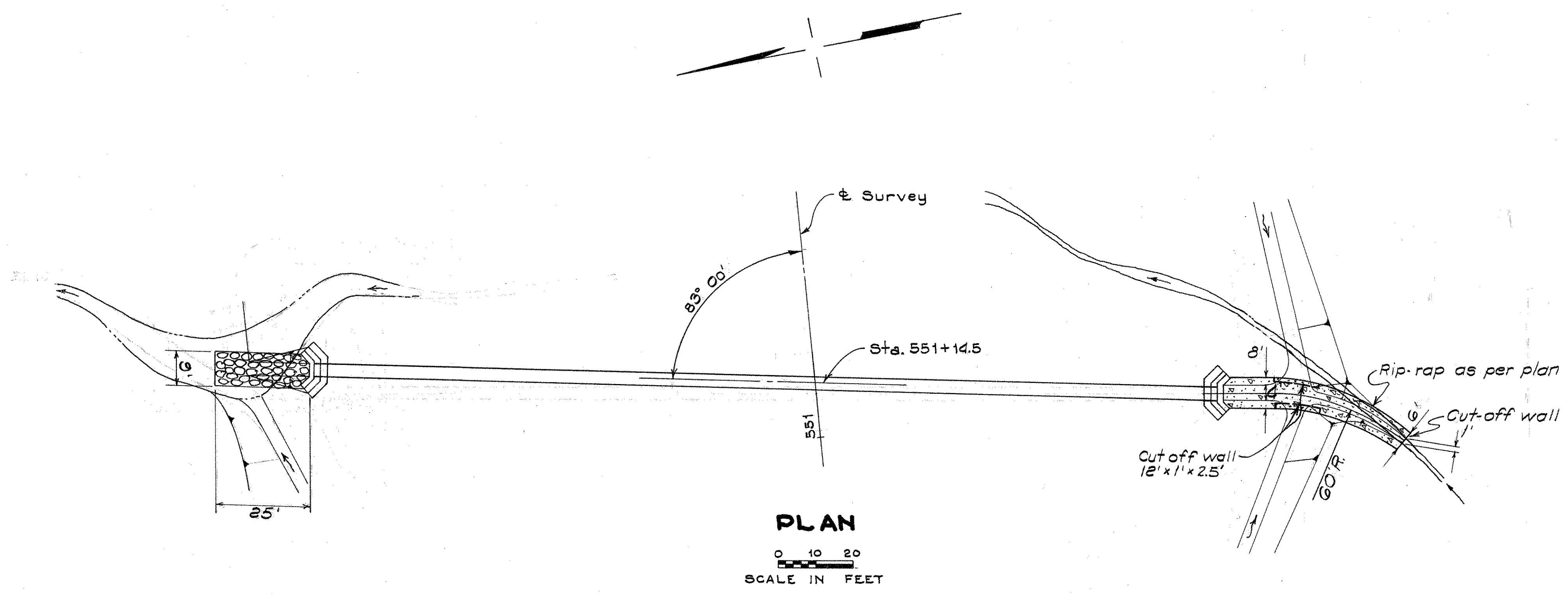
CULVERT DATA

TYPE: Pipe Culvert
 SIZE: 30" x 202'
 WORK REQUIRED: Install Pipe Culvert as shown using 30" Conduit, Type 'A' with Class 'B' Bedding. Construct Std. HW-2 Headwalls using $\phi=15^\circ$. Place Dumped Rock Channel Protection at outlet as shown.

ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
203	Excavation	8	Cu. Yds.
603	30" Conduit, Type 'A', 706.02 Class II or 706.08 E.S. with Class 'B' Bedding	202	Lin. Ft.
602	Concrete Masonry	9.6	Cu. Yds.
601	Dumped Rock Channel Protection	11	Cu. Yds.

Drainage Area = 17 A² Q₅₀ = 1.21 x 0.8 x 0.65 x 58 = 36 c.f.s.

4 STA. 542+52 P.C. 30" x 202' LIC-70~0587



CULVERT DATA

TYPE: Pipe Culvert
SIZE: 42" x 240"
Std. Drwg. MCA & HW-3
WORK REQUIRED: Install Pipe Culvert as shown using 42" Conduit Type "A" with Class "B" Bedding. Excavate channel at inlet to meet existing swale. Place Dumped Rock Channel Protection at outlet. Construct HW-3 Headwalls. Place rip-rap as per plan at inlet.

CROSS SECTIONS



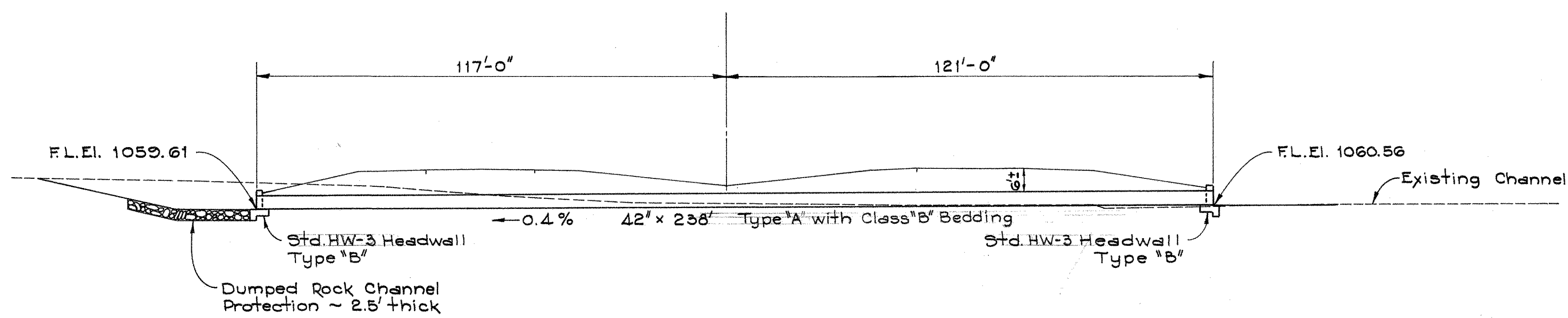
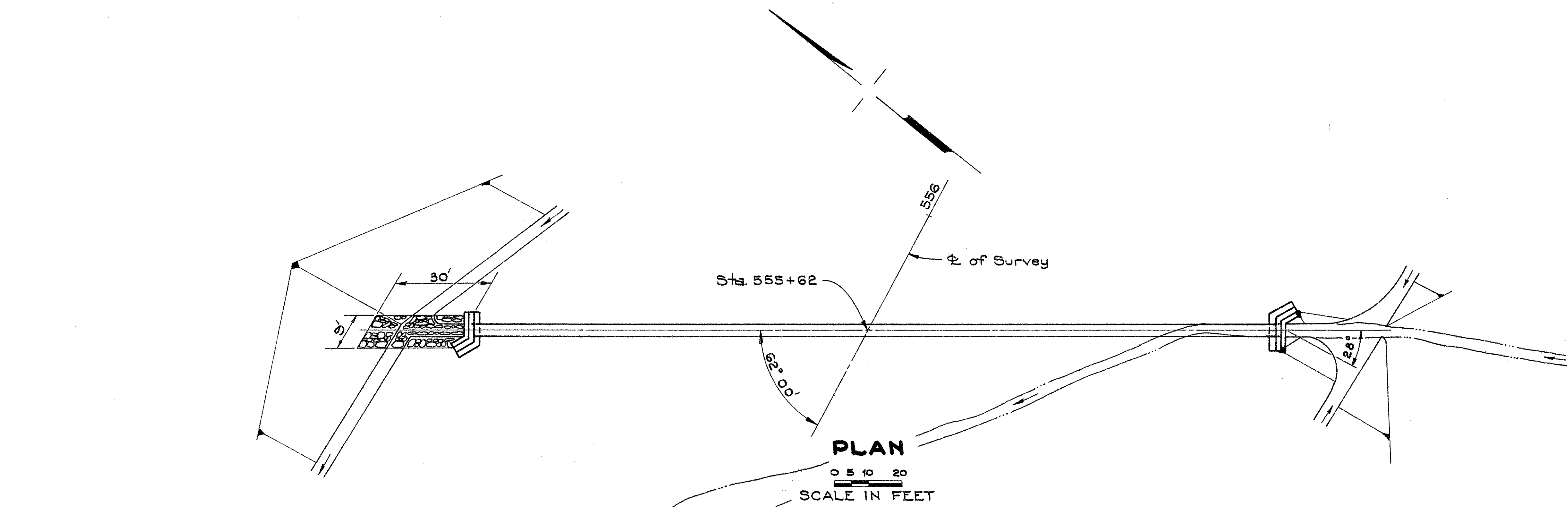
Station	Section Description	Elevations	E.A.C.V.
0	End Channel 1+60 R.		0
8			8
12			12
10	1+25 R.	1059.90, 1061.5	10
18	Begin Channel 1+07 R.	1059.23, 1061.5	18
Total			18

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
203	Excavation	18	Cu. Yds.
603	42" Conduit, Type "A", 107.05, with Class "B" Bedding	240	Lin. Ft.
601	Dumped Rock Channel Protection	21	Cu. Yds.
601	Rip-rap As per plan	42	Sq. Yds.
602	Concrete Masonry	14	Cu. Yds.

Drainage Area = 52 A± Q₅₀ = 1.21 x 0.8 x 0.65 x 125 = 79 c.f.s.

LIC-70-(5.12-8.67)



LONGITUDINAL SECTION

CULVERT DATA

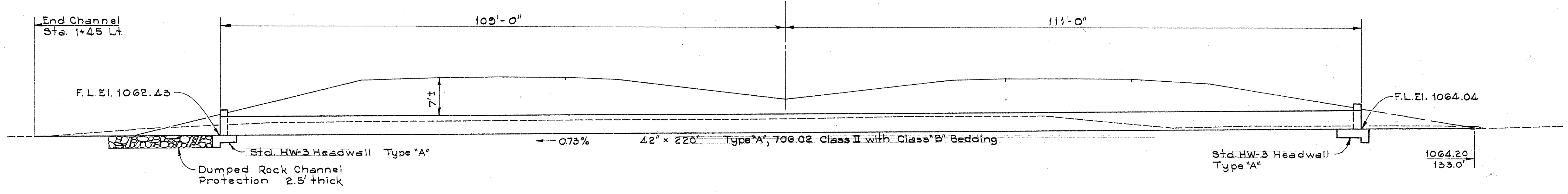
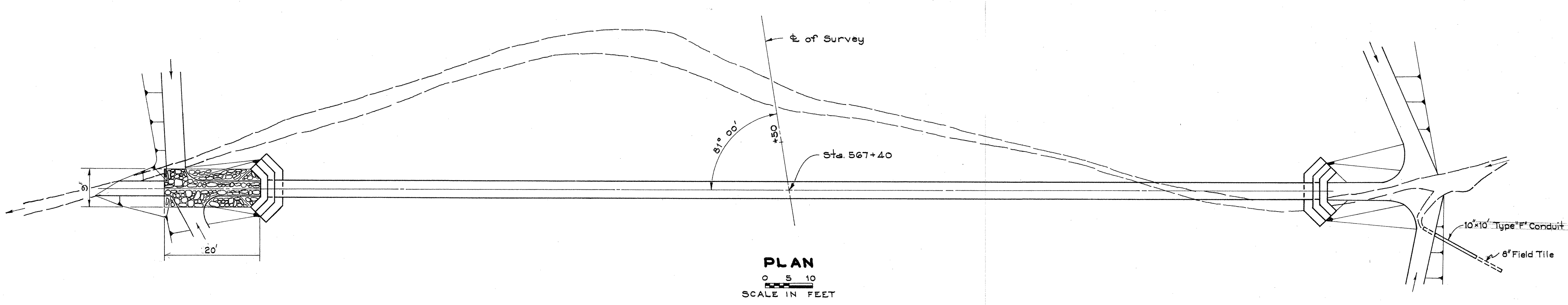
TYPE: Pipe Culvert Std. Drwgs. MC-4 & HW-3
 SIZE: 42" x 238'
 WORK REQUIRED: Install Pipe Culvert as shown using 42" Conduit, Type 'A' with Class 'B' Bedding. Construct Std. HW-3 Headwalls, Type 'B', using $\theta = 30^\circ$. Place Dumped Rock Channel Protection at outlet as shown.

ESTIMATED QUANTITIES

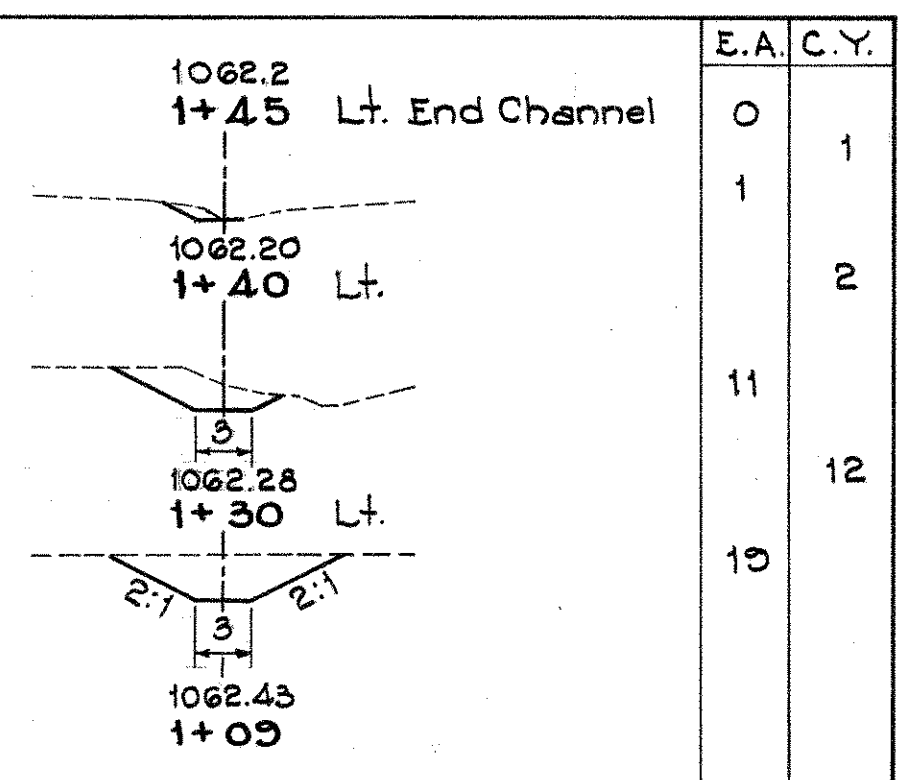
ITEM	DESCRIPTION	QUANTITY	UNIT
603	42" Conduit, Type 'A' with Class 'B' Bedding	238	Lin. Ft.
602	Concrete Masonry	15.0	Cu. Yds.
601	Dumped Rock Channel Protection	25	Cu. Yds.

Drainage Area = 57 A² Q₅₀ = 1.21 x 0.8 x 0.65 x 130 = 82 c.f.s.

6	STA. 555+62	PC. 42" x 238'	LIC-70-0612
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LONGITUDINAL SECTION



Station	E.A.	C.Y.
1+45 Lt. End Channel	0	1
1+40 Lt.	1	2
1+30 Lt.	11	12
1+05	10	
Total		15

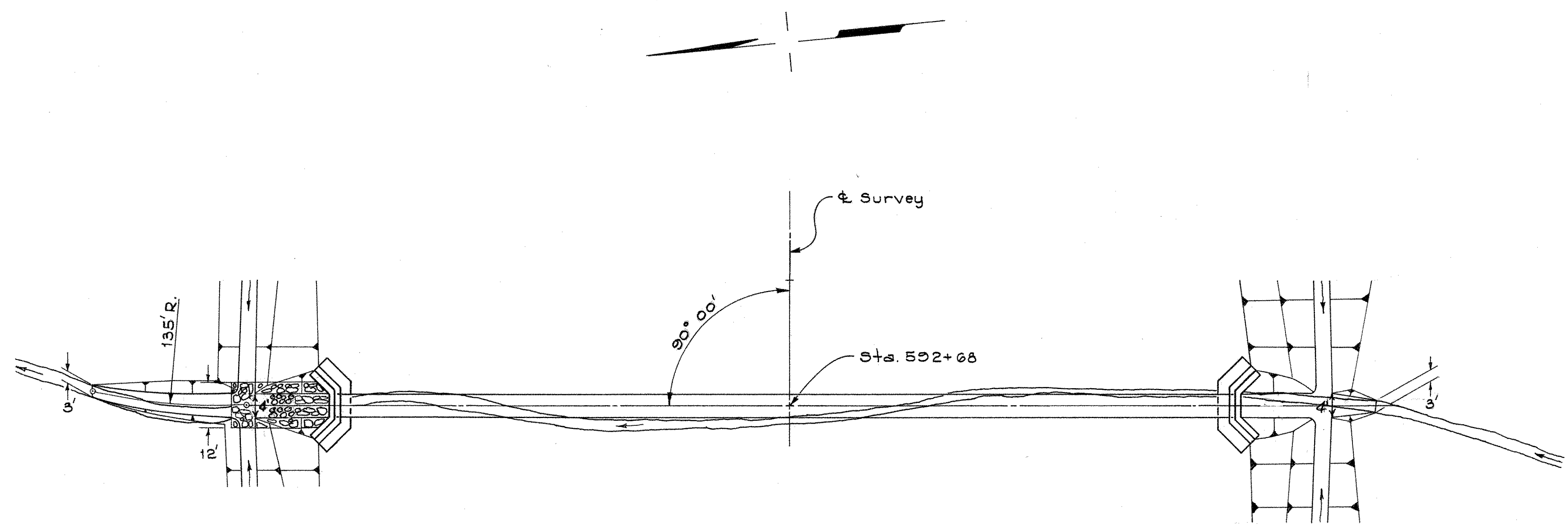
CULVERT DATA

TYPE: Pipe Culvert Std. Drwgs. MC-4 & HW-3
 SIZE: 42" x 220"
 WORK REQUIRED: Install pipe culvert as shown using 42" Conduit, Type "A" with Class "B" Bedding. Construct Std. HW-3 Headwall using Type "A" with a skew angle of zero degrees. Place Dumped Rock Channel Protection at outlet.

ESTIMATED QUANTITIES

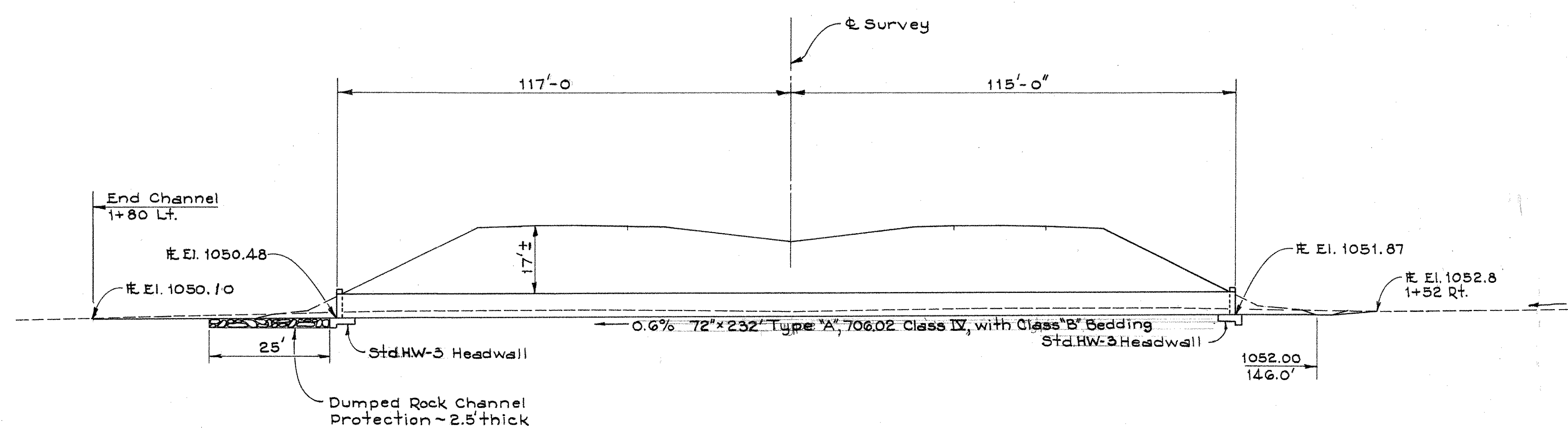
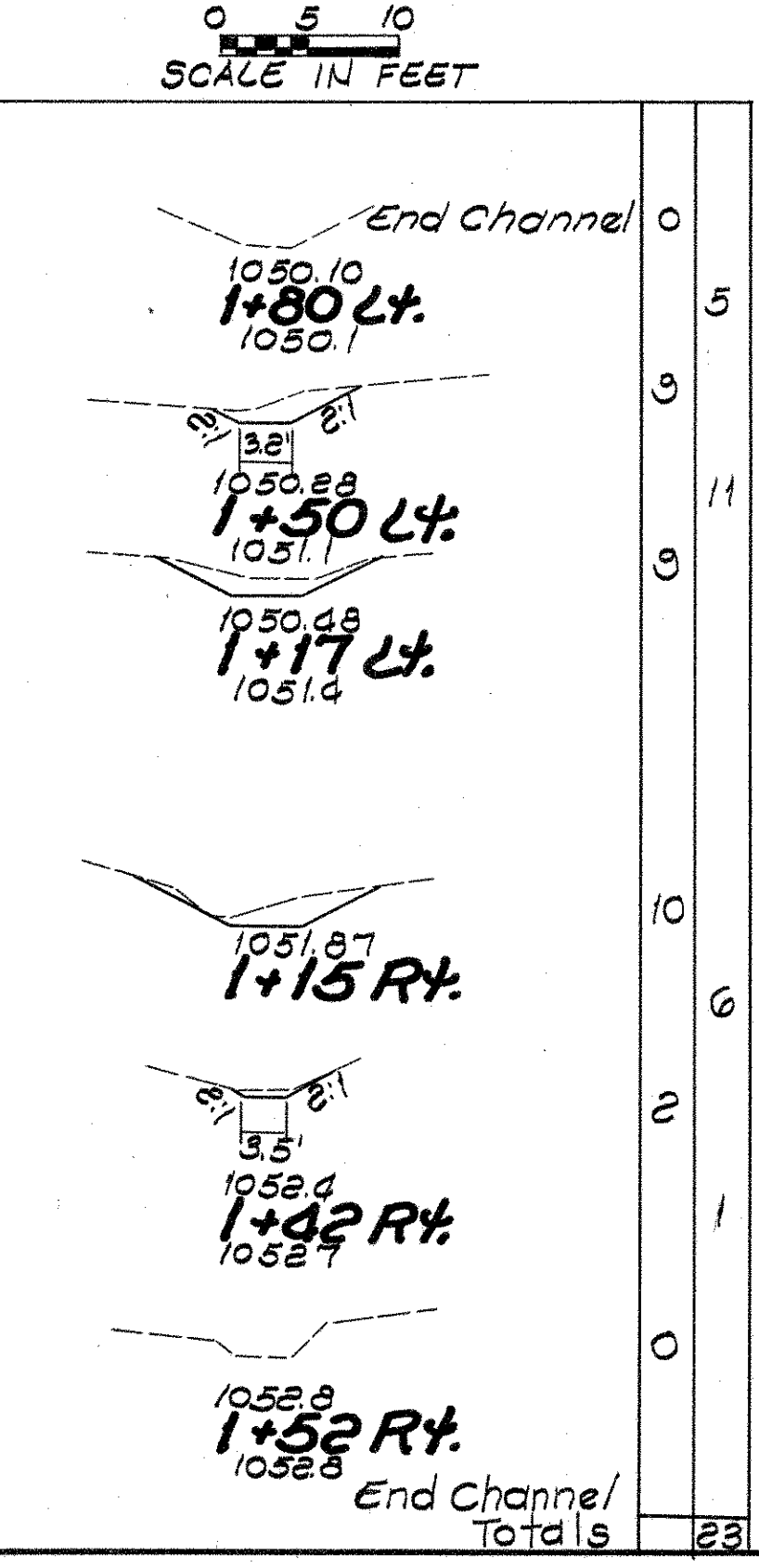
ITEM	DESCRIPTION	QUANTITY	UNIT
603	42" Conduit, Type "A" 706.02 Class II with Class "B" Bedding	220	Lin. Ft.
601	Dumped Rock Channel Protection	17	Cu. Yds.
603	10" Conduit, Type "F"	10	Lin. Ft.
203	Excavation	15	Cu. Yds.
602	Concrete Masonry	13.4	Cu. Yds.

Drainage Area = 7.8 A² Q₅₀ = 1.21 x 0.8 x 0.65 x 100 = 101 c.f.s.
 7 STA. 567+40 P.C. 42" x 220' LIC-70-0634



PLAN
0 5 10 20
SCALE IN FEET

CROSS SECTIONS



LONGITUDINAL SECTION

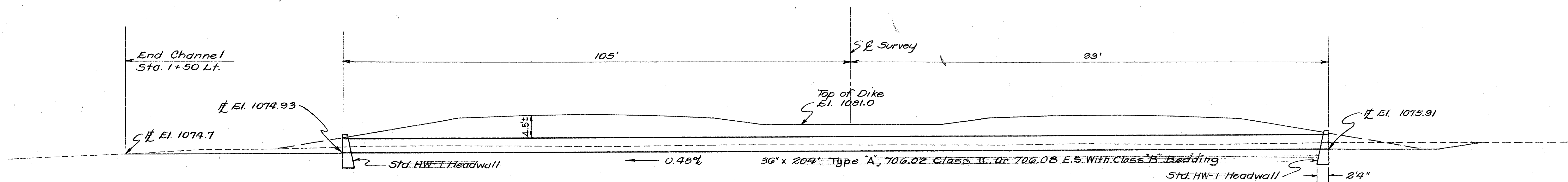
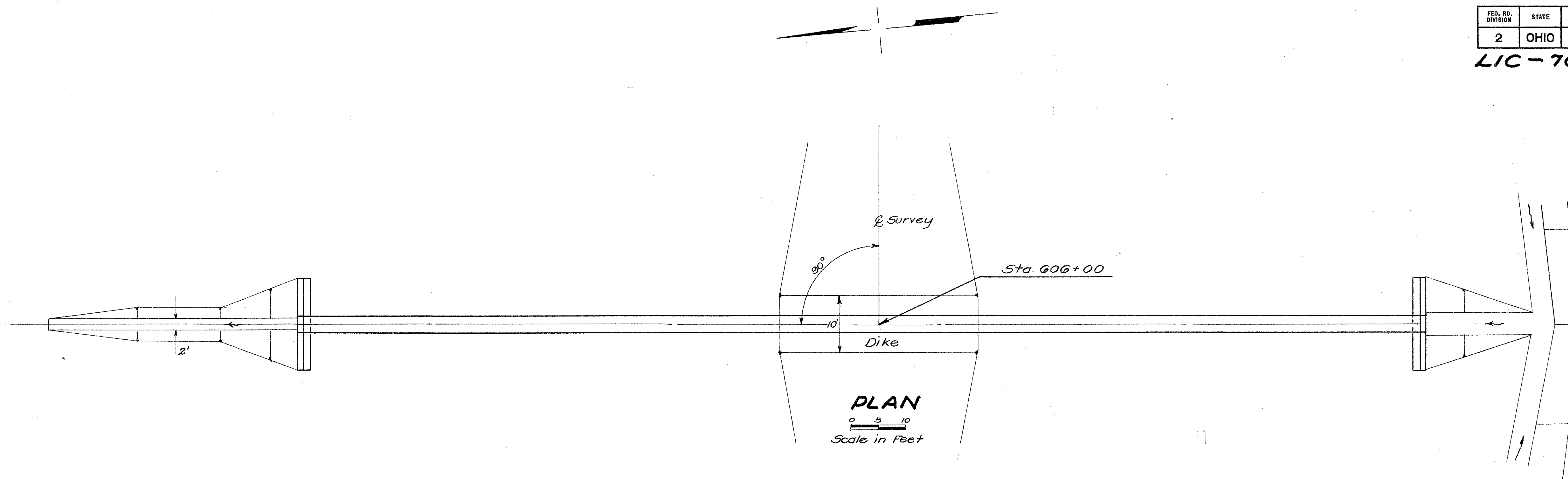
CULVERT DATA

TYPE: Pipe Culvert Std. Drwg. MC-4 & HW-3
 SIZE: 72" x 232"
 WORK REQUIRED: Install Pipe Culvert as shown using 72" Conduit, Type "A", 706.02 Class IV, with Class "B" Bedding. Construct Std. HW-3 Headwalls. Place Dumped Rock Channel Protection at outlet.

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
203	Excavation	23	Cu. Yds.
603	72" Conduit, Type "A", 706.02 Class IV, with Class "B" Bedding	232	Lin. Ft.
601	Dumped Rock Channel Protection	28	Cu. Yds.
602	Concrete Masonry	32.4	Cu. Yds.

Drainage Area = 322 A² Q₅₀ = 1.21 x 0.8 x 0.65 x 400 = 252 c.f.s.
 STA. 592+68 P.C. 72" x 232' LIC-70-0682



LONGITUDINAL SECTION

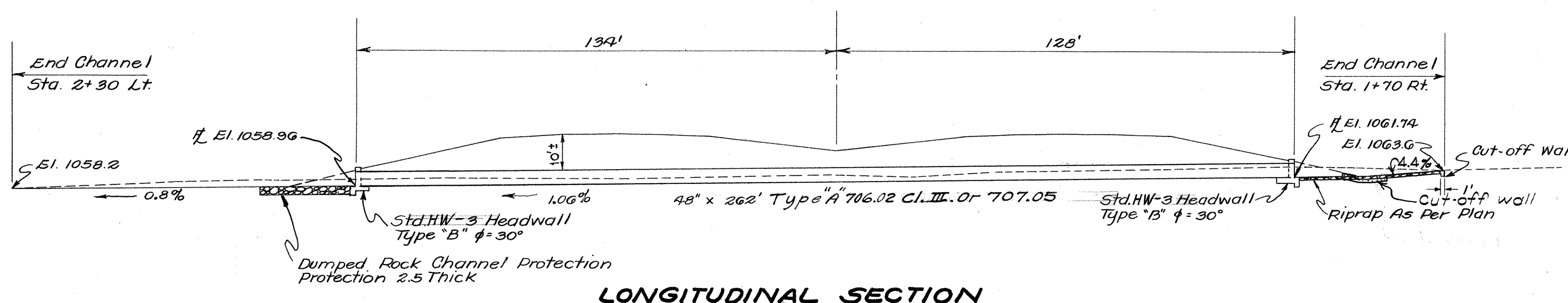
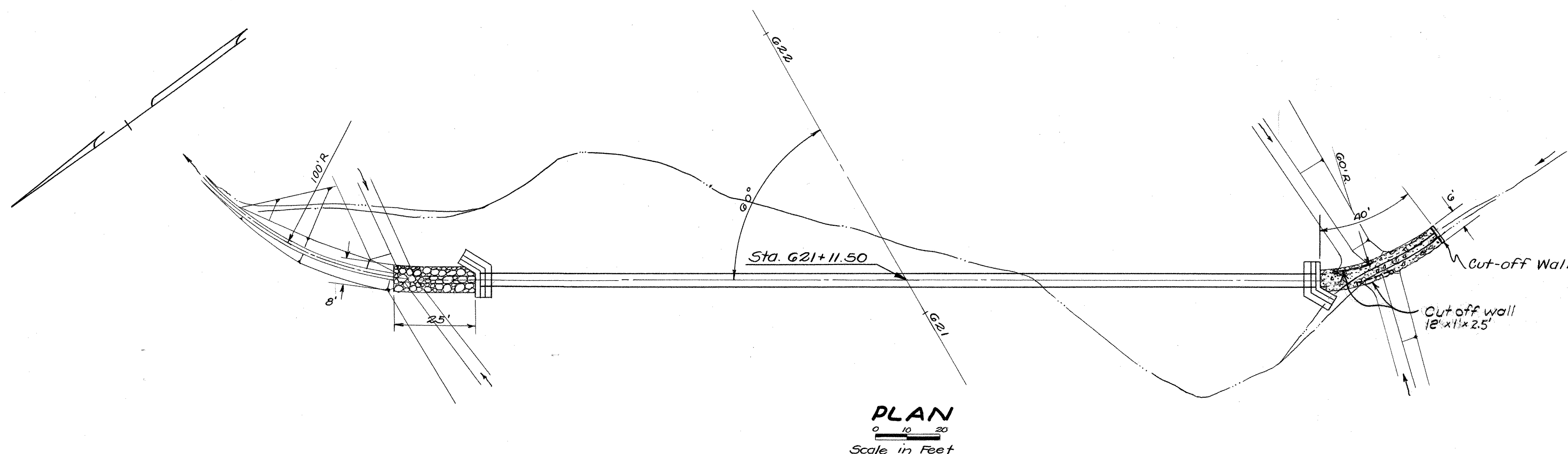
CULVERT DATA
 TYPE: Pipe Culvert Std. Drwg. MC-45 HW-1
 SIZE: 36" x 204"
 WORK REQUIRED: Install Pipe Culvert as shown using 36" Conduit Type A, 706.02 Cl. II. or 706.08 E.S. With Class B Bedding. Construct Std. HW-1 Headwalls. Excavate Channel at Outlet to Sta. 1+50.

	End Area	Cu. Yds.
-----	0	
1+50 End Channel Lt.	2	
-----	4	
1+34 Lt. 1075.7	5	
-----	5	
1074.93 1+05 Lt. 1076.2		
Total	7	

ESTIMATED QUANTITIES			
Item	DESCRIPTION	QUANTITY	UNIT
603	36" Conduit Type A, 706.02 Cl. II. or 706.08 E.S. With Class B Bedding	204	Lin. Ft.
602	Concrete Masonry	13.0	Cu. Yds.
203	Excavation	7	Cu. Yds.

Drainage Area = 22 A^c Q₅₀ = 1.21 x 0.8 x 0.65 x 70 = 44 c.f.s.
 3 STA. 606+00 PC. 36" x 204' LIC-70-0707

CROSS SECTIONS
 0 5 10
 Scale in Feet



	E.A.	C.Y.		E.A.	C.Y.
2+30 End Channel Lt. 1058.2	0	1	<p>1063.6 1+70 Rt. End Channel</p>	0	9
1058.31 2+15 1058.4	1	5		21	14
1058.51 1+30 1060.0	8	18		18	
1058.96 1+34 Begin Channel Lt.	9				
Total		24			23

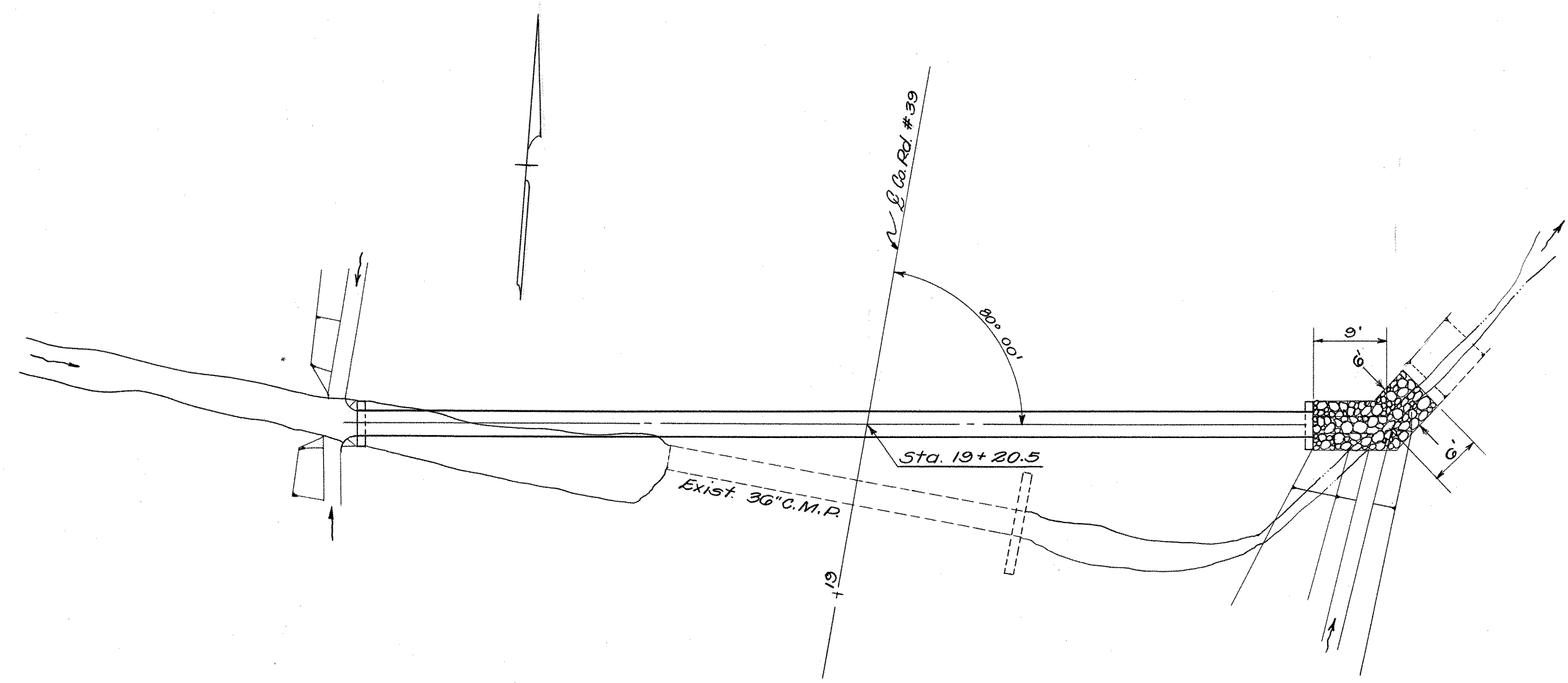
CULVERT DATA

TYPE: Pipe Culvert Std. Drwg. MC-4 & HW-3
 SIZE: 48" x 262'
 WORK REQUIRED: Install Pipe Culvert as shown using 48" Conduit, Type A 706.02 Class III. Or 707.05 With B Bedding. Excavate Channel at outlet. Place Dumped Rock Channel Protection at outlet and Riprap As per plan at inlet. Construct Std. HW-3 Headwalls, Type B with φ = 30°.

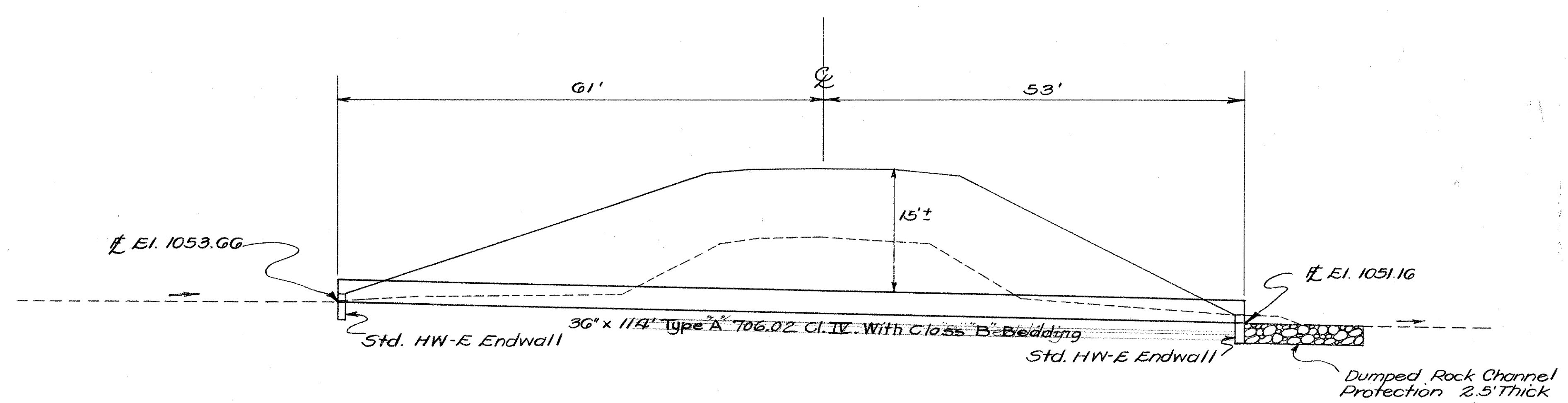
ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
203	Excavation	47	Cu. Yds.
603	48" Conduit, Type A 706.02 Cl. III. Or 707.05 With Cl. B Bedding	262	Lin. Ft.
602	Concrete Masonry	18.2	Cu. Yds.
601	Riprap, As Per Plan	27	Sq. Yds.
601	Dumped Rock Channel Protection	18	Cu. Yds.

Drainage Area = 80 A^c Q₅₀ = 1.21 x 0.8 x 0.65 x 165 = 103 c.f.s.

10	STA. 621+11.50	P.C. 48" x 262'	LIC-70-0736
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PLAN
Scale in Feet



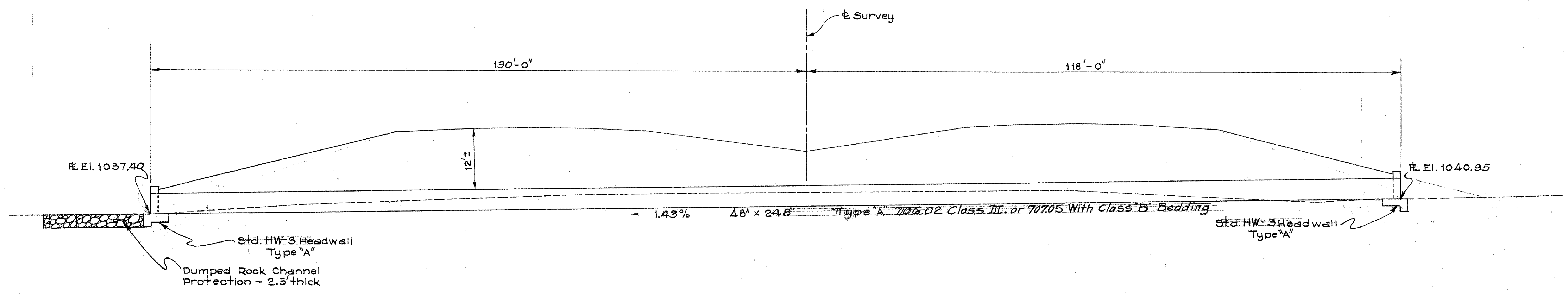
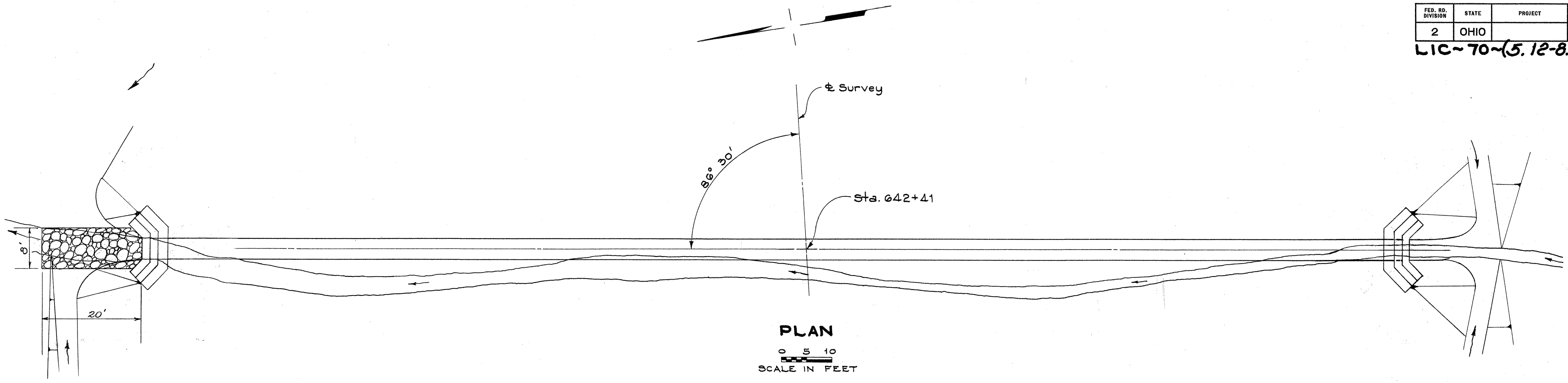
LONGITUDINAL SECTION

CULVERT DATA
 TYPE: Pipe Culvert
 SIZE: 36" x 114"
 WORK REQUIRED: Install Pipe Culvert as shown using 36" Conduit, Type A 706.02 Class IV, with Class B Bedding. Construct Std. HW-E Endwall. Place Dumped Rock Channel Protection at outlet. Remove existing 36" C.M.P. culvert.

ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
603	36" Conduit, Type A 706.02 Class IV, With Class B Bedding	114	Lin. Ft.
602	Concrete Masonry	1.2	Cu. Yds.
601	Dumped Rock Channel Protection	8	Cu. Yds.
202	Pipe Removed Over 15" Culvert	43	Lin. Ft.

Drainage Area = 55A² Q₁₀ = 0.86 × 0.8 × 0.65 × 130 = 58 cfs.

11	Sta. 19+20.5 Co. Rd. 39	P.C. 36" x 114'	LIC-70-
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LONGITUDINAL SECTION

CULVERT DATA

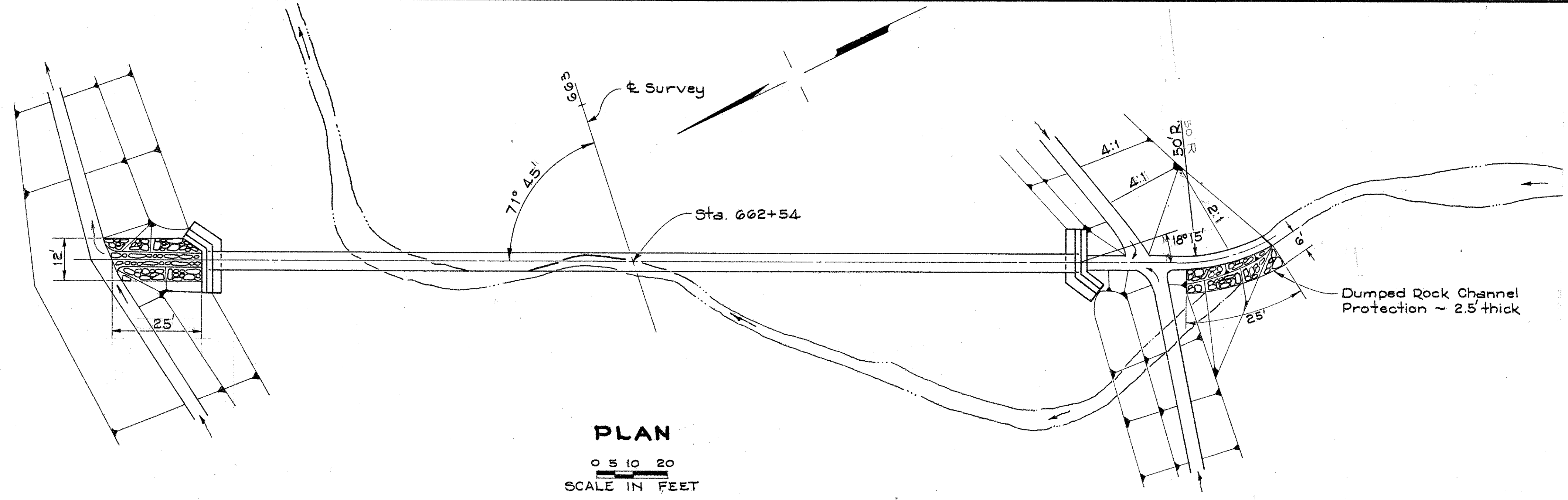
TYPE: Pipe Culvert Std. Drwg. MC-45 HW-3
 SIZE: 48" x 248"
 WORK REQUIRED: Install Pipe Culvert as shown using
 48" Conduit, Type "A" 706.02 Class III. or 70705
 With Class B Bedding. Construct Std. HW-3 Headwalls,
 Type "A". Place Dumped Rock Channel Protection at
 Outlet.

ESTIMATED QUANTITIES

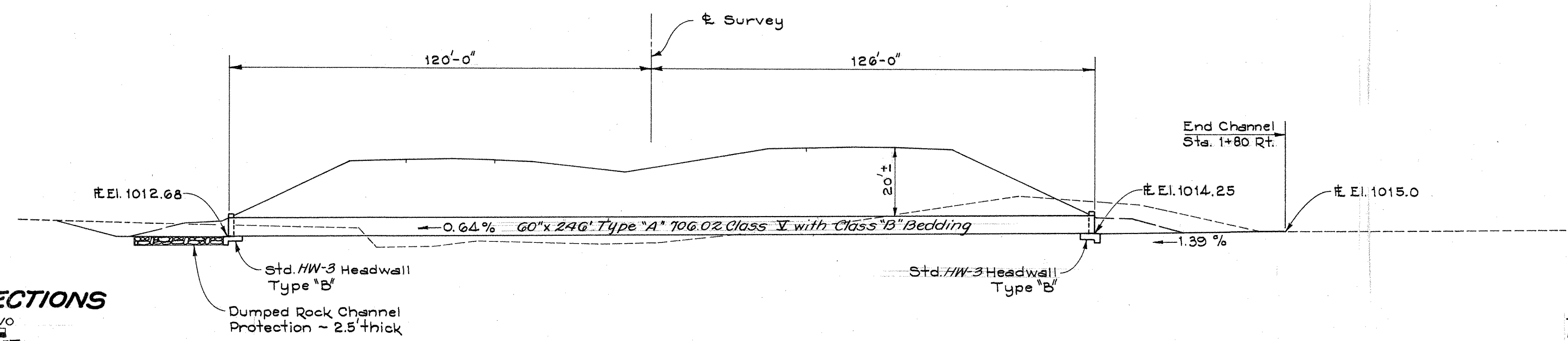
ITEM	DESCRIPTION	QUANTITY	UNIT
603	48" Conduit, Type "A" 706.02 Class III. or 70705 With Class B Bedding	248	Lin. Ft.
602	Concrete Masonry	16.4	Cu. Yds.
601	Dumped Rock Channel Protection	15	Cu. Yds.

Drainage Area = 100 A² Q₅₀ = 1.21 × 0.8 × 0.65 × 190 = 120 c.f.s.

12	STA. 642+41	P.C. 48" x 248'	LIC-70-0776
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PLAN
0 5 10 20
SCALE IN FEET



LONGITUDINAL SECTION

CROSS SECTIONS
0 5 10
SCALE IN FEET

END AREA	CU. YDS.
1015.0	0
1017.4	30
1018.0	80
1014.25	86
1015.0	57
TOTAL	116

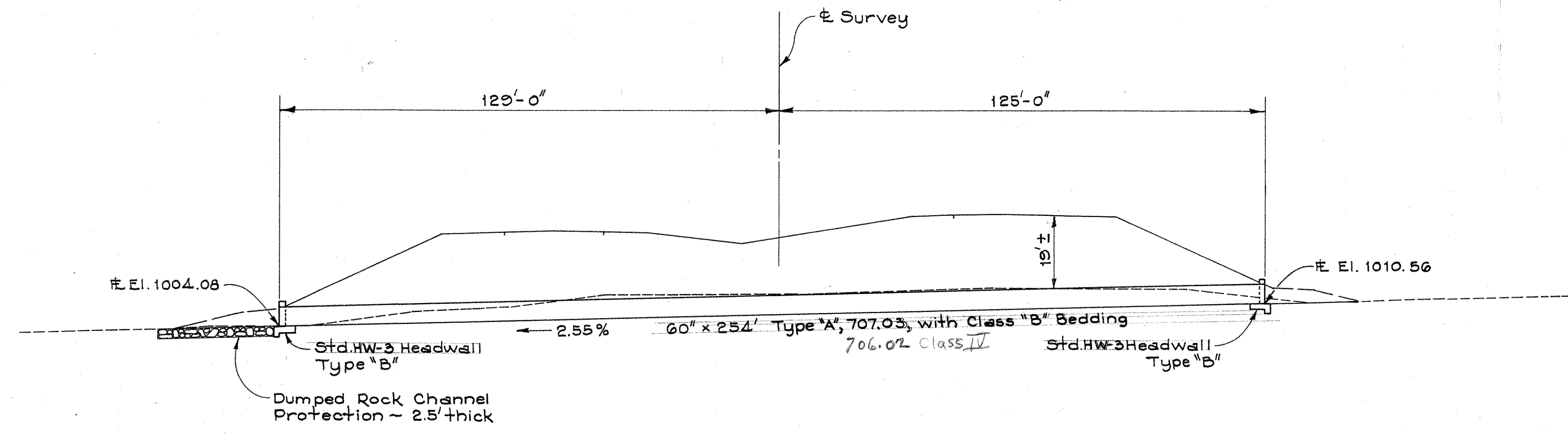
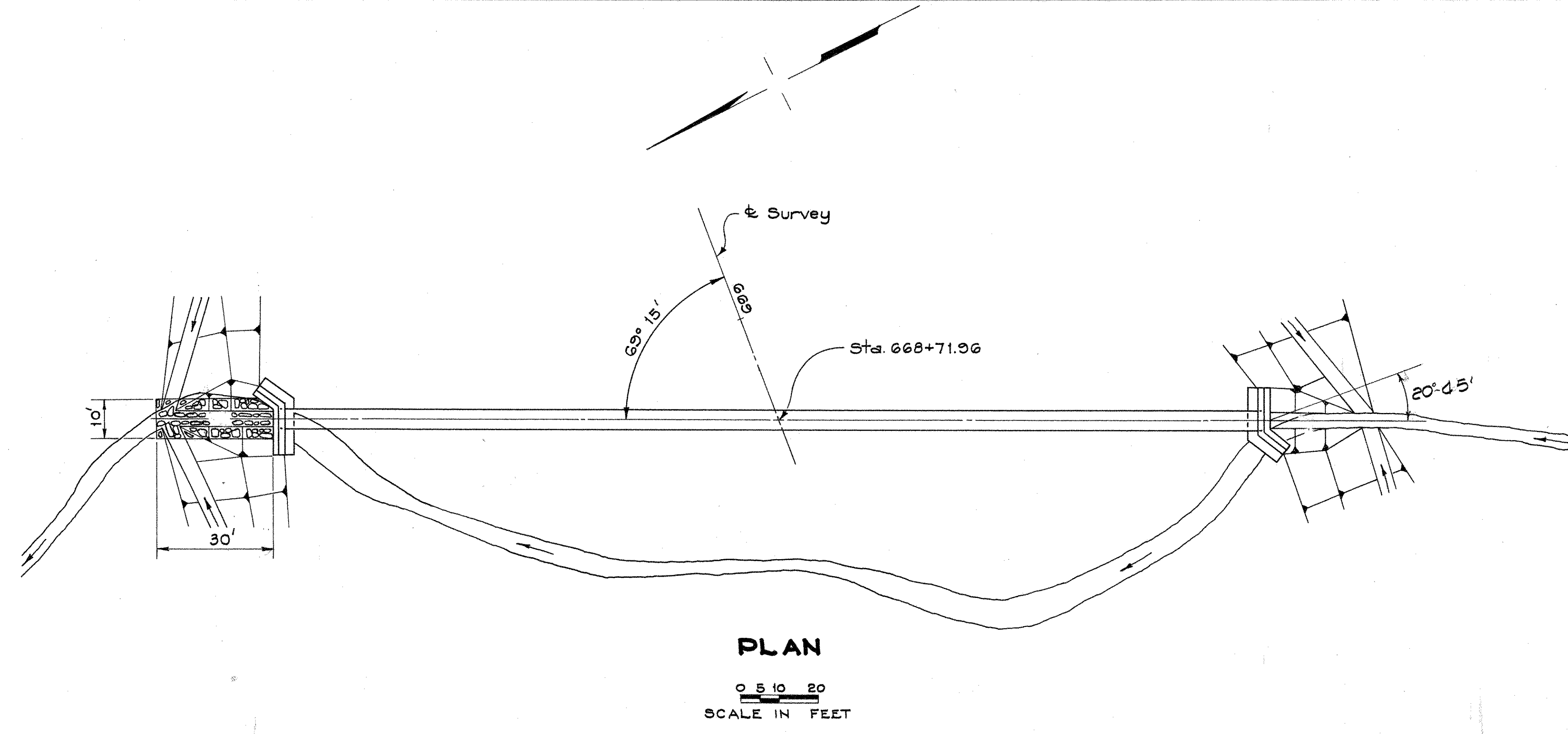
CULVERT DATA

TYPE: Pipe Culvert
 SIZE: 60" x 246"
 WORK REQUIRED: Install Pipe Culvert as shown using 60" Conduit, Type "A" 106.02 Class V with Class "B" Bedding. Construct Std. HW-3 Headwall using Type "B" and a $\phi=15^\circ$. Place Dumped Rock Channel Protection at inlet and outlet.
 Std. Drwg. ME 49 HW-3

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
203	Excavation	116	Cu. Yds.
603	60" Conduit, Type "A" 106.02 Class V with Class "B" Bedding	246	Lin. Ft.
601	Dumped Rock Channel Protection	42	Cu. Yds.
602	Concrete Masonry	24.8	Cu. Yds.

Drainage Area = 185 A^s Q₅₀ = 1.21 x 0.8 x 0.65 x 290 = 183 c.f.s.



CULVERT DATA

TYPE: Pipe Culvert
 SIZE: 60" x 254"
 WORK REQUIRED: Install Pipe Culvert as shown using 60" Conduit, Type "A", 707.03, 10-10 Gage, with Class "B" Bedding. Construct Std. HW-3 Headwalls, Type "B", using $\phi = 15^\circ$. Place Dumped Rock Channel Protection at outlet as shown.

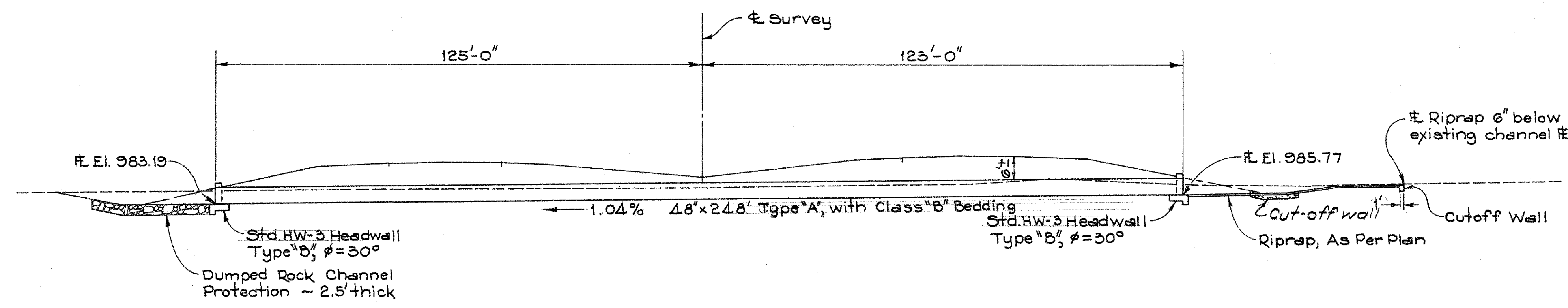
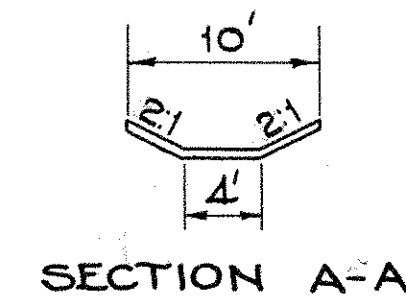
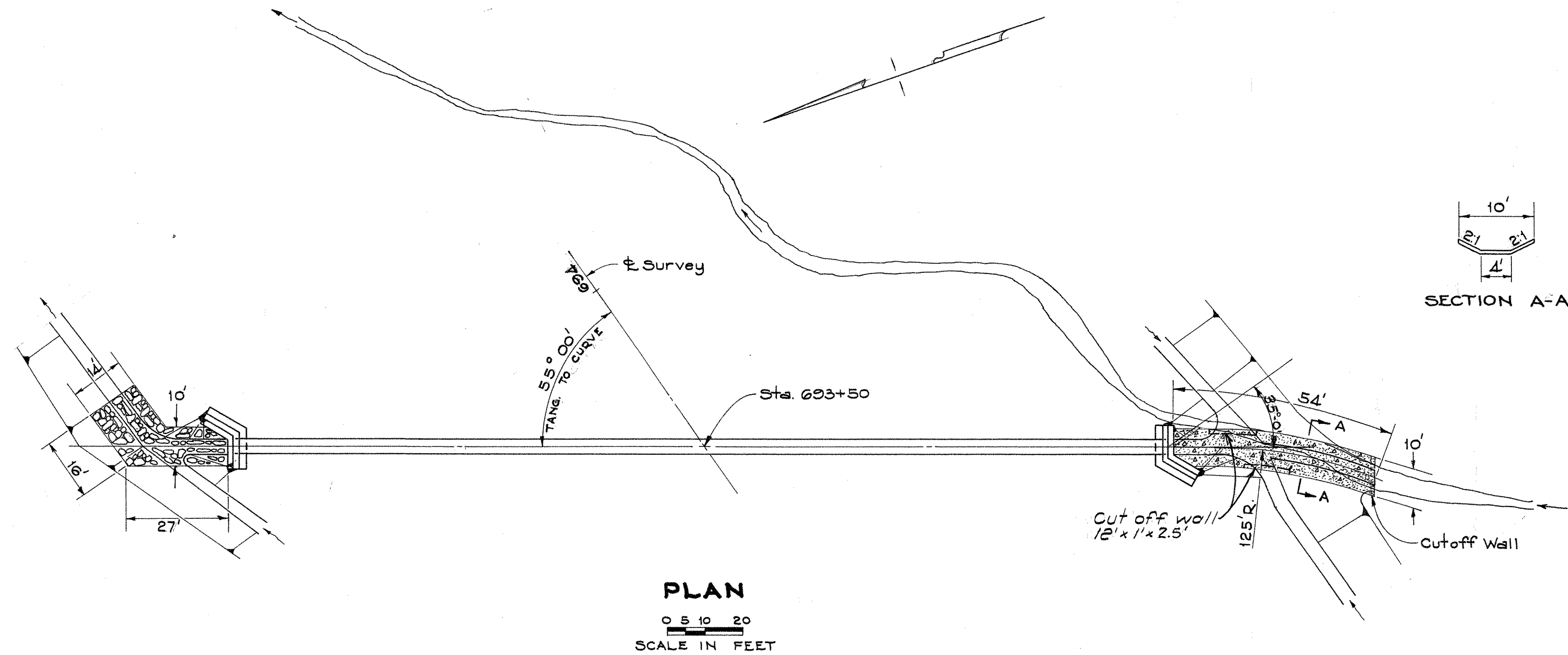
Std. Drwg. MC-4 & HW-3

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
603	60" Conduit, Type "A", 707.03, 10-10 Gage, with Class "B" Bedding	254	Lin. Ft.
601	Dumped Rock Channel Protection	28	Cu. Yds.
602	Concrete Masonry	25.8	Cu. Yds.

Drainage Area = 187A² Q₅₀ = 1.21 x 0.65 x 0.8 x 285 = 180 c.f.s

LIC-70-(5.12-8.67)



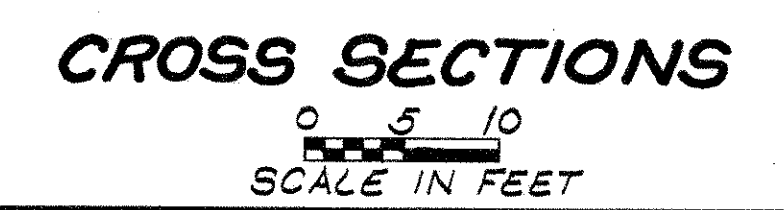
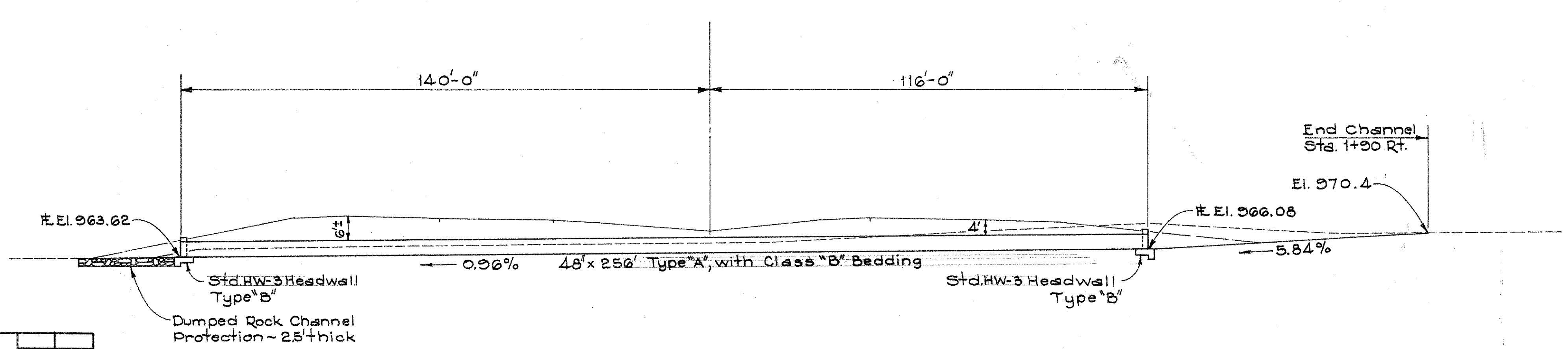
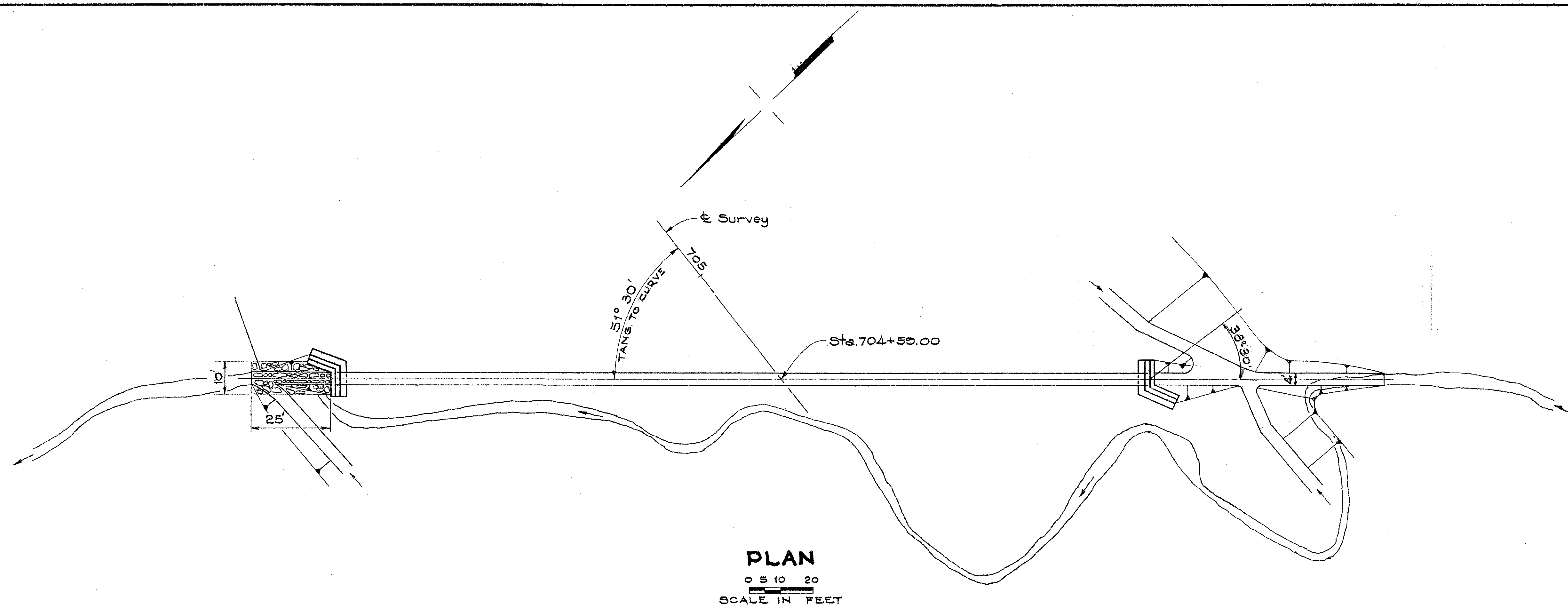
CULVERT DATA

TYPE: Pipe Culvert
 SIZE: 48" x 24.8"
 WORK REQUIRED: Install pipe as shown using 48" Conduit, Type "A", with Class "B" Bedding. Construct Std. HW-3 Headwalls, Type "B", using $\phi = 30^\circ$. Place Dumped Rock Channel Protection at outlet and Riprap, As Per Plan, at inlet as shown.

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
603	48" Conduit, Type "A", with Class "B" Bedding	248	Lin. Ft.
602	Concrete Masonry	18.2	Cu. Yds.
601	Dumped Rock Channel Protection	41	Cu. Yds.
601	Riprap, As Per Plan	60	Sq. Yds.

Drainage Area = 60 Acs. $Q_{50} = 1.21 \times 0.65 \times 0.8 \times 135 = 85$ c.f.s.



End Channel	0
1+90 Rt. 370.4	32
1+44 Rt. 367.72	38
Begin Channel	51
1+16 Rt. 366.08	60
Total	63

CULVERT DATA

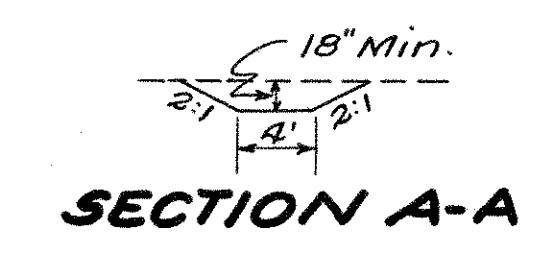
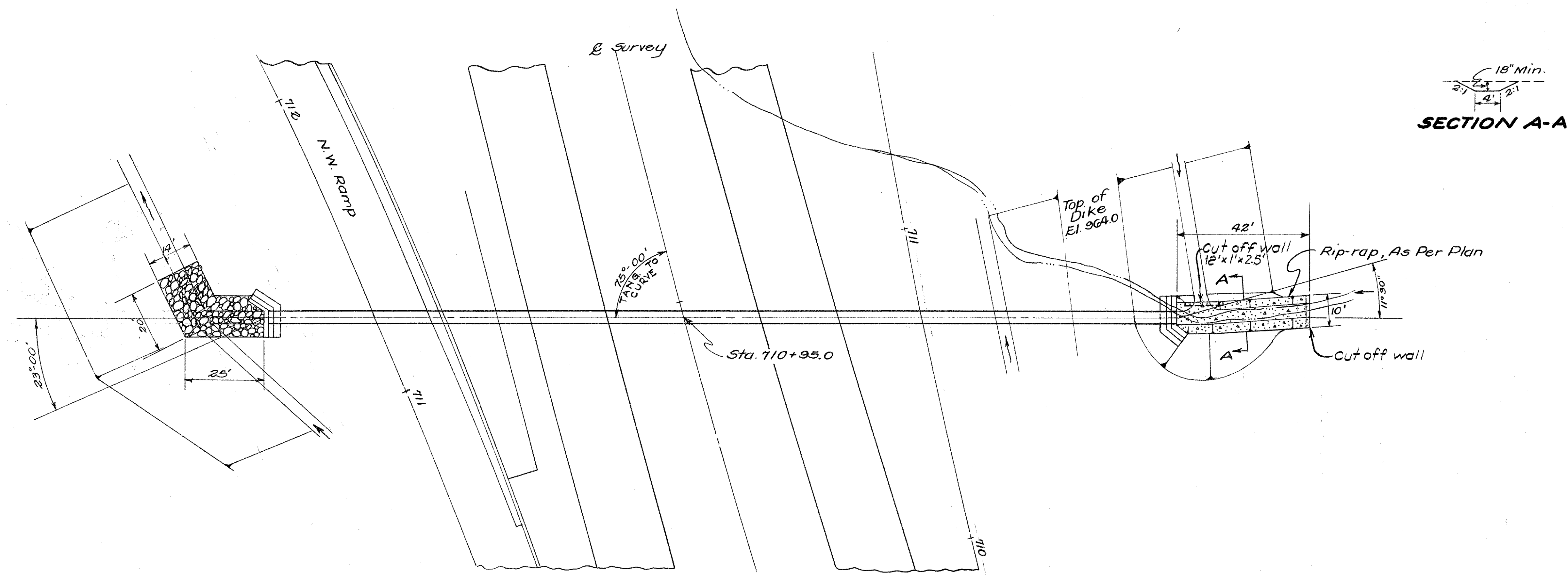
TYPE: Pipe Culvert Std. Drwg. MC-4 & HW-3
 SIZE: 48" x 256"
 WORK REQUIRED: Install Pipe Culvert as shown using 48" Conduit, Type "A", with Class "B" Bedding. Construct Std. HW-3 Headwalls, Type "B", using #4. Place Dumped Rock Channel Protection at outlet.

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
603	48" Conduit, Type "A", with Class "B" Bedding	256	Lin. Ft.
602	Concrete Masonry	20.6	Cu. Yds.
601	Dumped Rock Channel Protection	23	Cu. Yds.
203	Excavation	83	Cu. Yds.

Drainage Area = 70 A² Q₅₀ = 1.21 x 0.8 x 0.65 x 150 = 94 c.f.s.

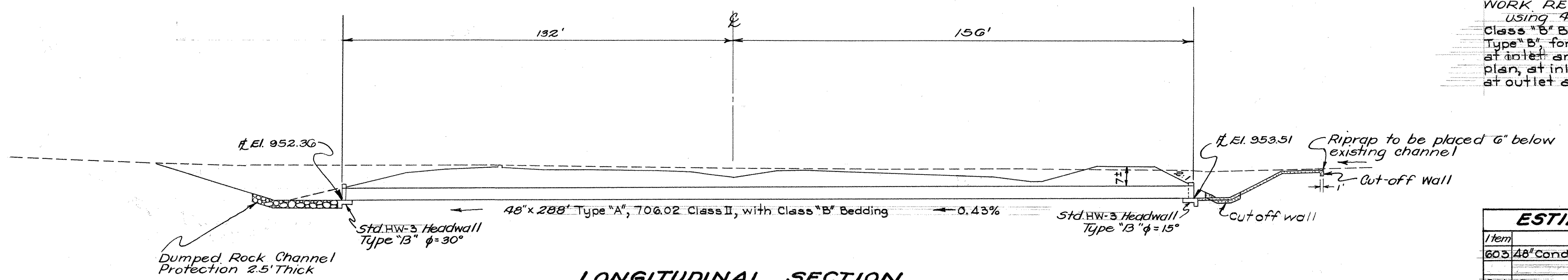
10	STA. 704+59.00	P.C. 48" x 256'	LIC-70~089d
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PLAN
Scale in Feet

CULVERT DATA

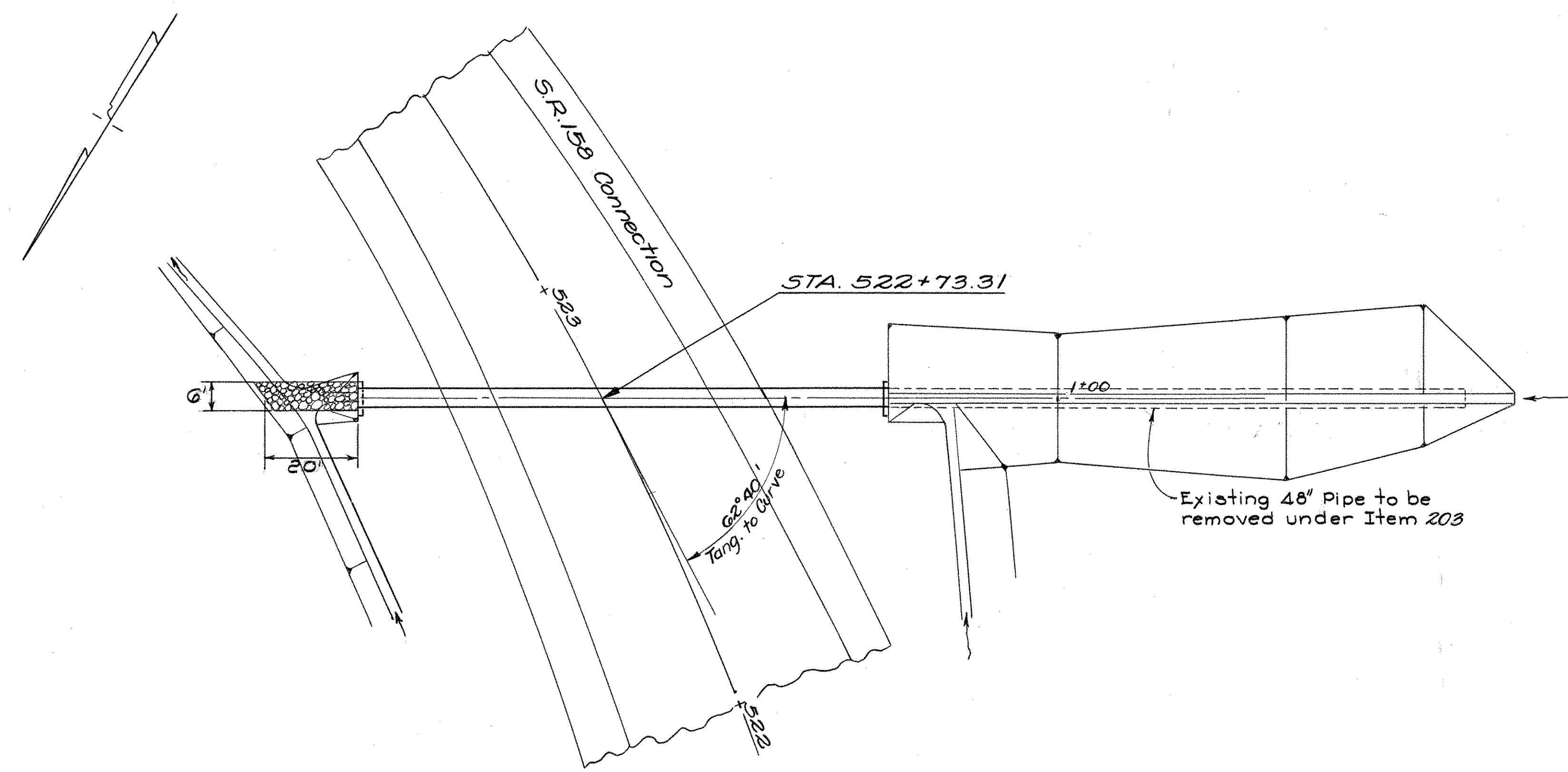
TYPE: Pipe Culvert Std. Drwg. MC-4 & HW-3
 SIZE: 48" x 288"
 WORK REQUIRED: Install Pipe Culvert as shown using 48" Conduit, Type "A", 706.02 Class II, with Class "B" Bedding. Construct Std. HW-3 Headwalls, Type "B", for dimensions and quantities, using $\phi = 15^\circ$ at inlet and $\phi = 30^\circ$ at outlet. Place Rip-rap, as per plan, at inlet and Dumped Rock Channel Protection at outlet as shown.



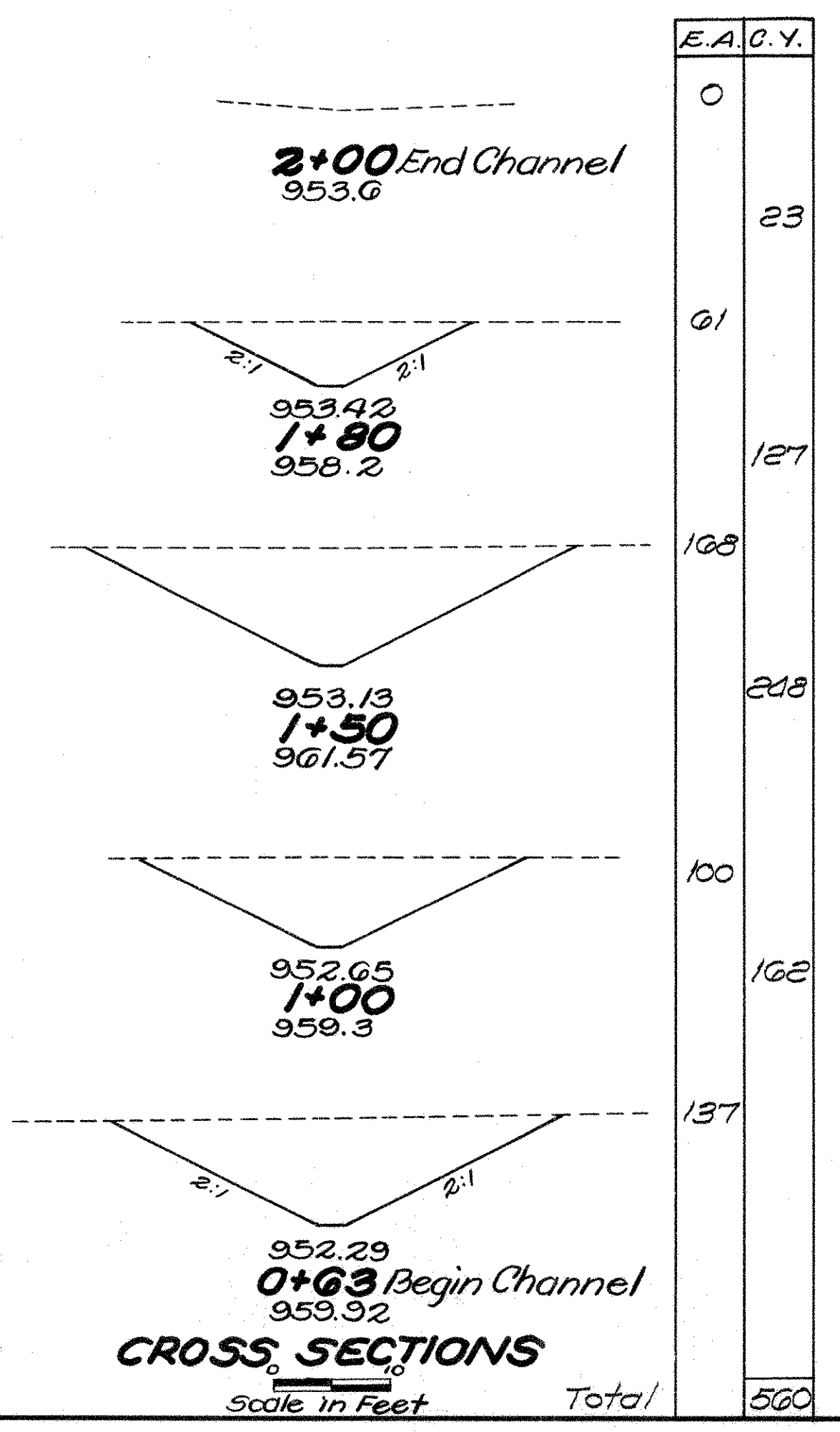
LONGITUDINAL SECTION

ESTIMATED QUANTITIES			
Item	Description	Quantity	Unit
603	48" Conduit, Type "A", 706.02 Class II, with Class "B" Bedding	288	Lin. Ft.
601	Dumped Rock Channel Protection	43	Cu. Yds.
601	Rip-rap, As Per Plan	47	Sq. Yds.
602	Concrete Masonry	17.5	Cu. Yds.

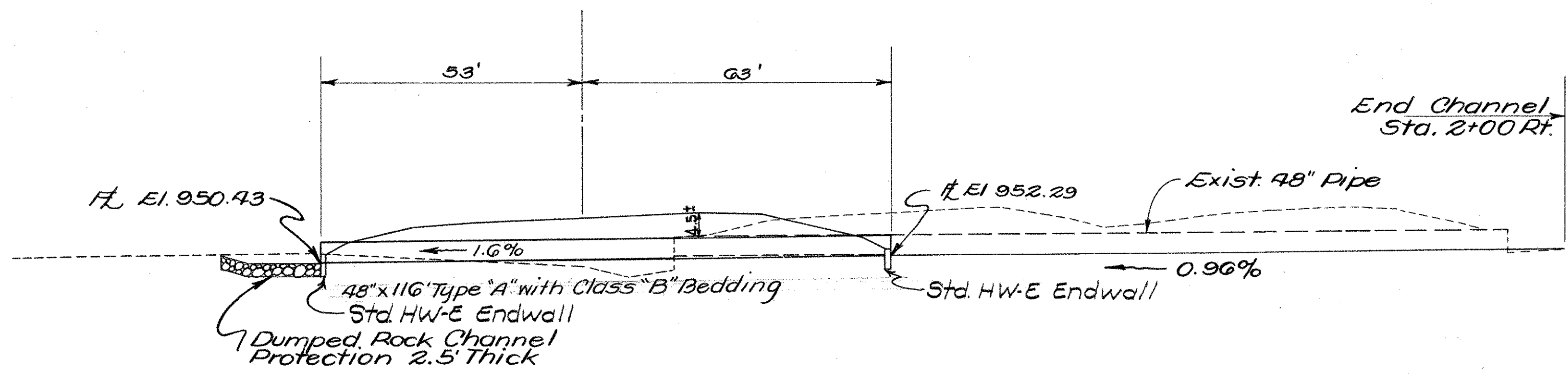
Drainage Area = 87 Ac $Q_{50} = 0.65 \times 0.8 \times 1.21 \times 175 = 110$ cfs
 17 Sta. 710+95.0 P.C. 48" x 288' LIC-70-0906



PLAN
Scale in Feet



CROSS SECTIONS
Scale in Feet



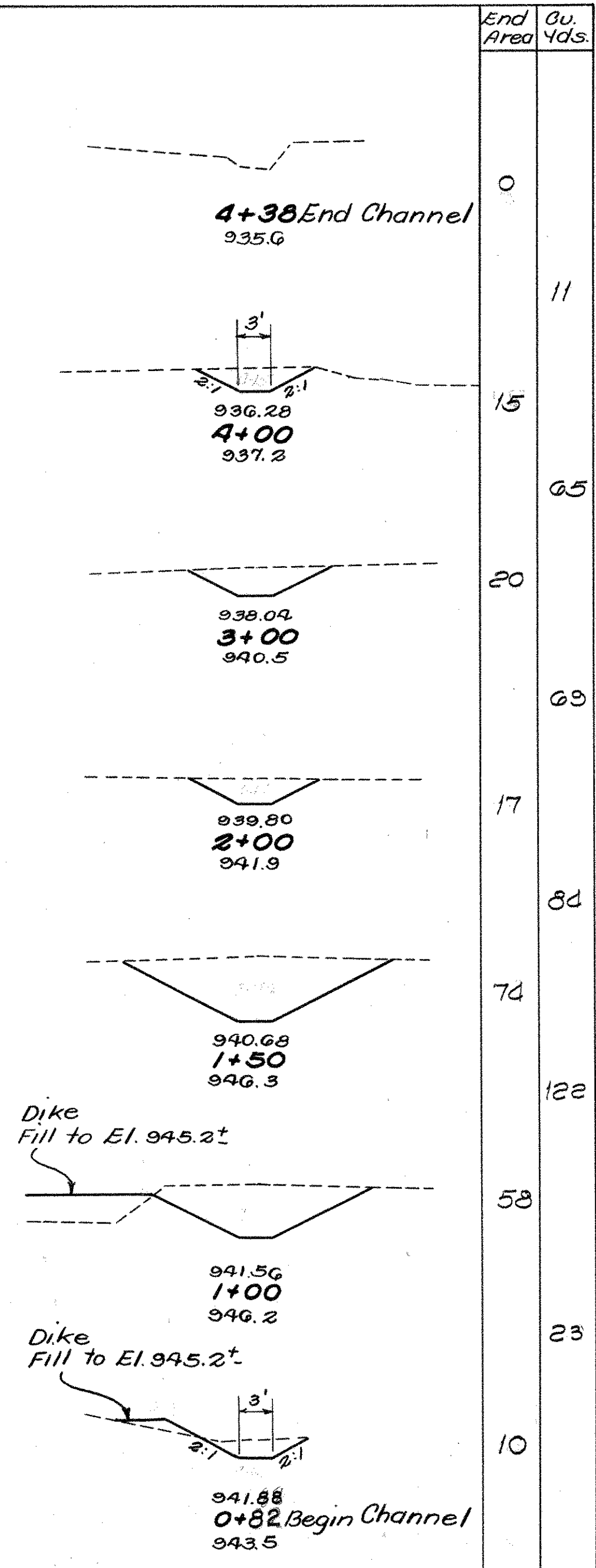
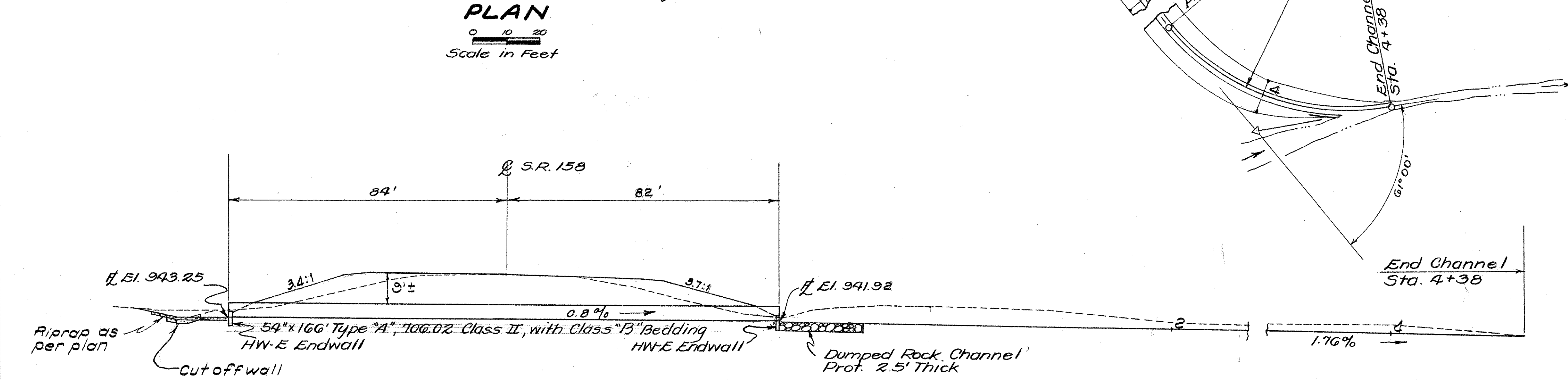
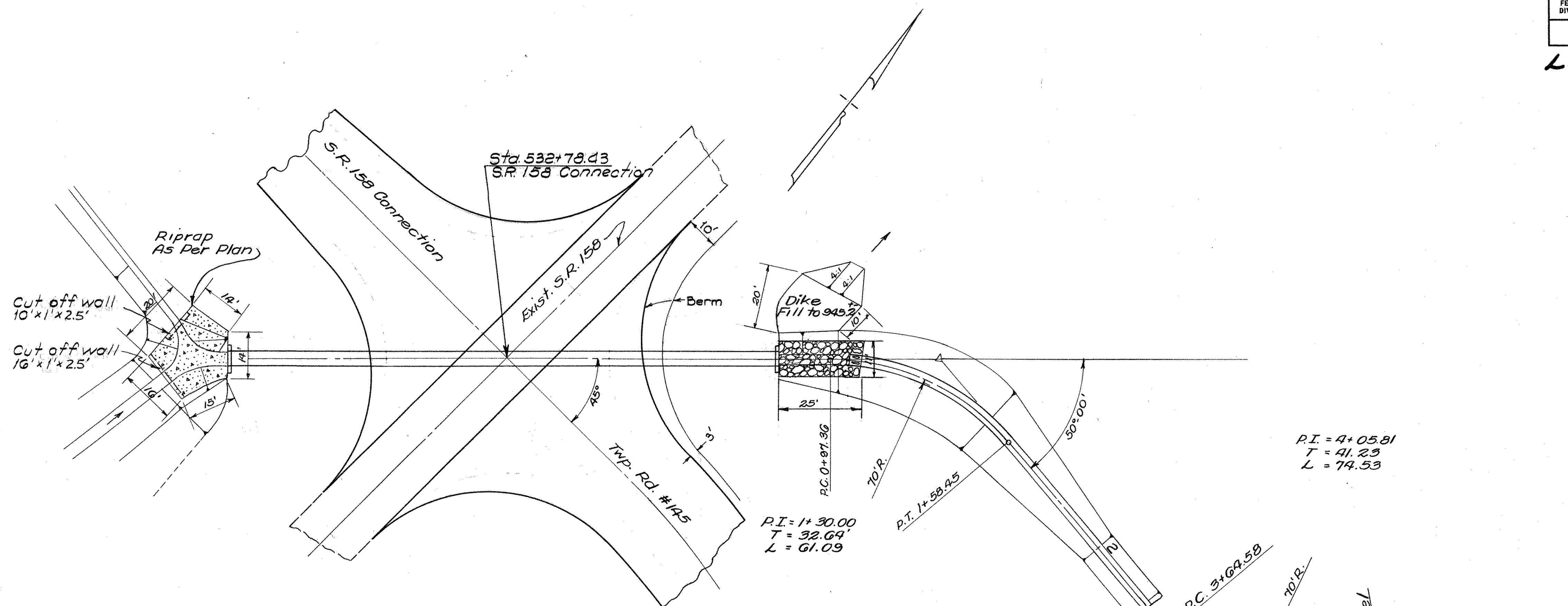
LONGITUDINAL SECTION

CULVERT DATA

TYPE: Pipe Culvert Std. Drwg MC-4e HW-E
 SIZE: 48"x116"
 WORK REQUIRED: Install pipe culvert as shown using 48" Conduit, Type "A" with Class "B" Bedding. Remove existing 48" conduit and excavate channel as shown. Construct Std. HW-E Endwalls. Place dumped rock channel protection at outlet.

ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
603	48" Conduit, Type "A" with Class "B" Bedding	116	Lin. Ft.
602	Concrete Masonry	1.7	Cu. Yds.
601	Dumped Rock Channel Protection	11	Cu. Yds.
203	Excavation	560	Cu. Yds.

Drainage Area = 78A^c Q₅₀ = 0.8 x 0.65 x 1.21 x 160 = 101 cfs.
 13 Sta. 522+73.31, S.R. 158 Connection P.C. 48"x116' LIC-70



CROSS SECTIONS
Scale in Feet
Total 374

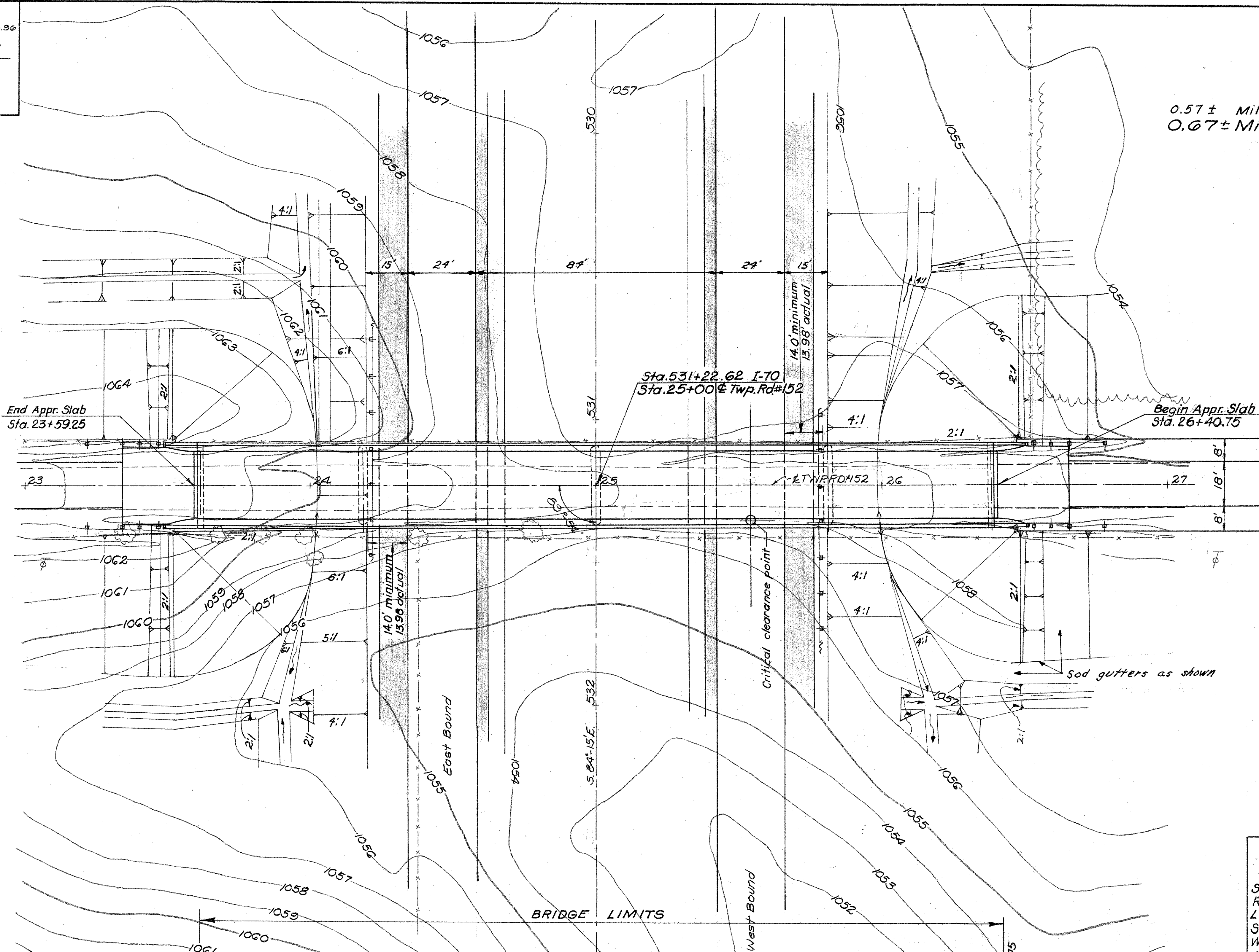
CULVERT DATA
 TYPE: Pipe Culvert Std. Drwg. MC-4 & HW-E
 SIZE: 54" x 106"
 WORK REQUIRED: Install pipe culvert as shown using 54" Conduit, Type "A", 706.02 Class II, with Class "B" Bedding. Construct Std. HW-E Endwalls. Place Riprap, As Per Plan at Inlet and Dumped Rock Channel Protection at Outlet. Excavate Outlet Channel as Shown.

ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	QUANTITY	UNIT
203	Excavation	374	Cu. Yds.
603	54" Conduit, Type "A", 706.02 Class II, with Class "B" Bedding	106	Lin. Ft.
601	Dumped Rock Channel Protection	25	Cu. Yds.
601	Riprap, As Per Plan	44	Sq. Yds.
602	Concrete Masonry	1.9	Cu. Yds.
Drainage Area = 105A ^c Q ₅₀ = 1.21 × 0.8 × 0.65 × 190 = 120 c.f.s.			
19	Sta 532+78.43 SR 158 conn.	PC. 54" x 106'	LIC-70

LIC-70-(512-867)
LICKING COUNTY

0.57 ± Miles East of Etna
0.67 ± Miles South of Existing U.S. 40

Sta. 531+00 = S.L.M. 5.65



B.M. Mine Spike in Power pole
23.3' Lt. 530+9.2 El. 1057.73

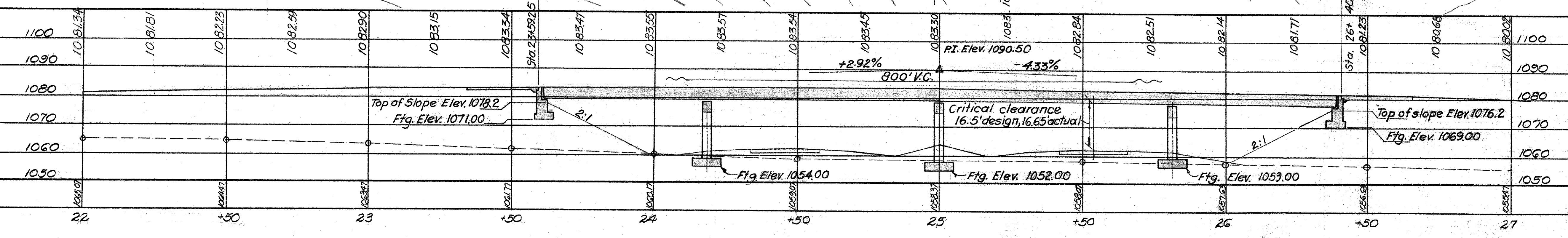
1975 A.D.T.
Twp. Rd. #152 P= 90
I.R. 70 P= 18880
C= 3860

PROPOSED STRUCTURE
Continuous steel beams with reinforced concrete deck and substructure
SPANS: 57.0'-81.5'-81.5'-57.0' % brgs.
ROADWAY: 24'-0" f/t 2'-0" safety curbs
LOAD FREQUENCY: CF=130(57)
SKEW: None
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54 (25' long) Special
ALIGNMENT: Tangent

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

SITE PLAN
BRIDGE NO. LIC-70-0565
I.R. 70 UNDER TWP. RD. 152

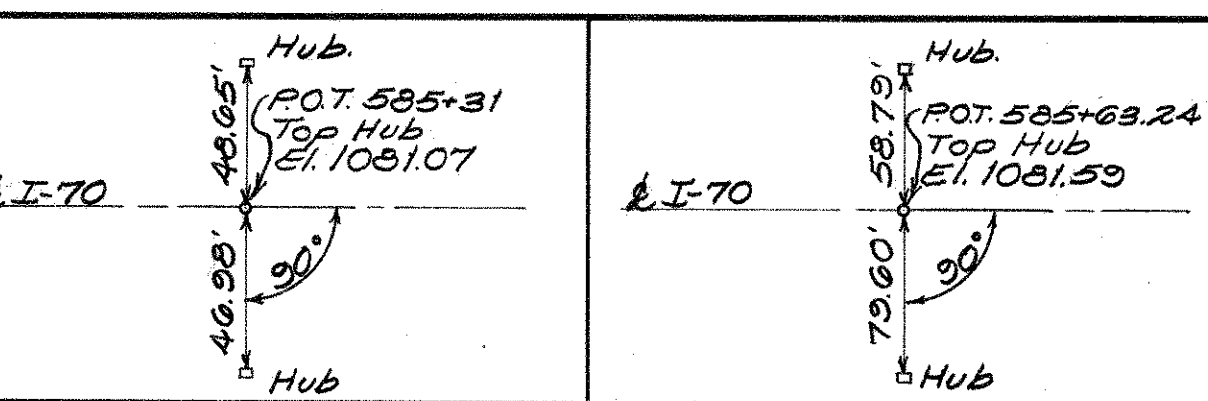
LICKING COUNTY
STA. 531+22.62



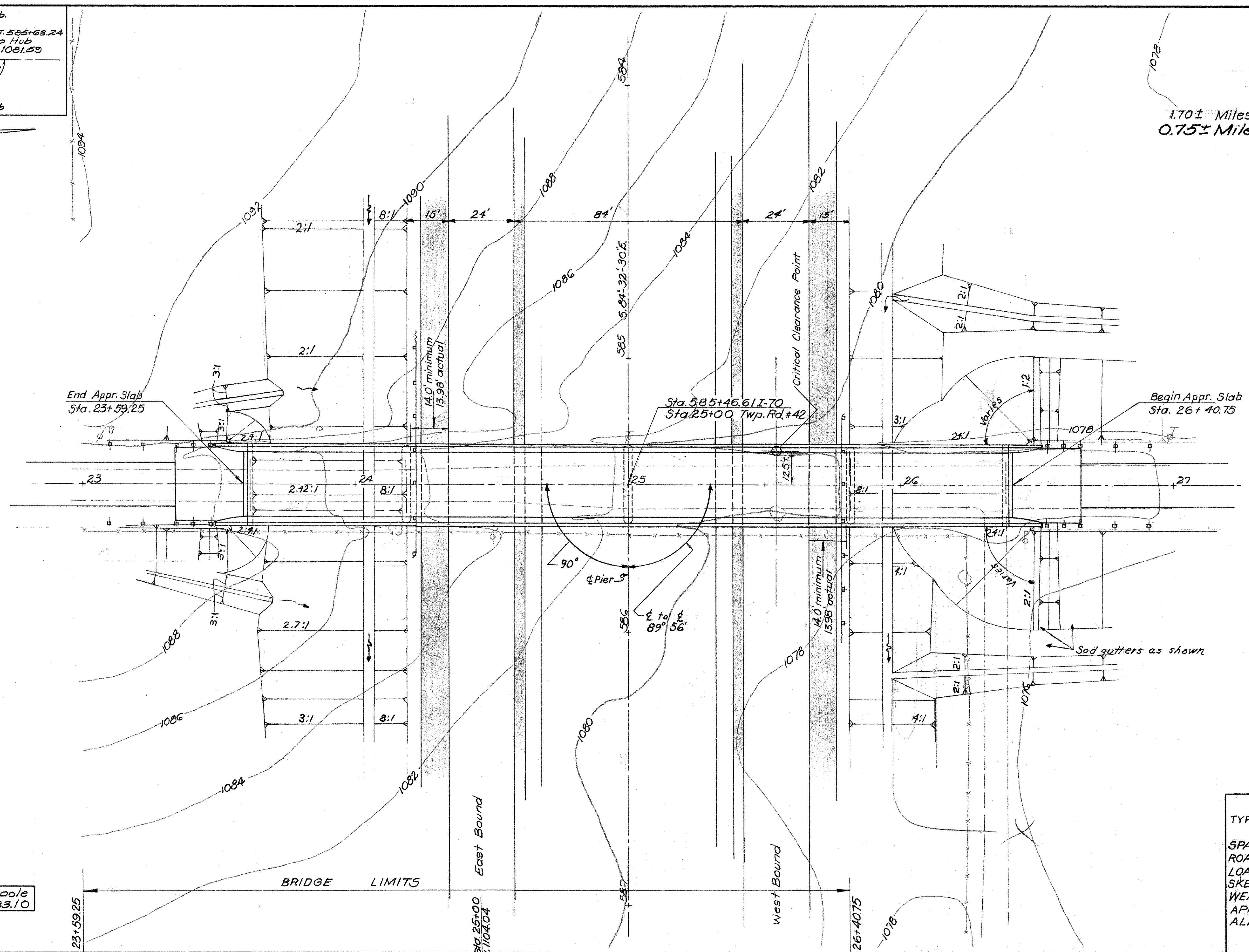
Present Topography		Proposed Work			
Surveyed	Drawn	Design	Drawn	Checked	Reviewed
		D.H.S.	D.H.S.	N.J.B.	P.E.S.

LIC-70-(5.12-8.67)
LICKING COUNTY

1.70± Miles East of Elna
0.75± Miles South of Existing U.S. 40



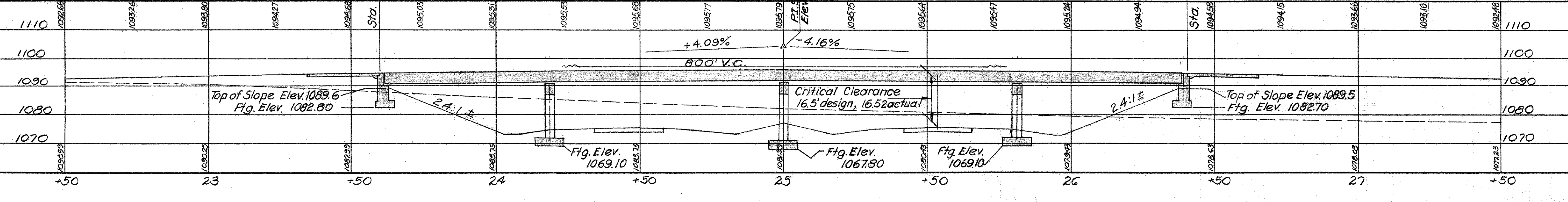
Sta. 585+00 = S.L.M. 067



B.M. Spike in S. side Telephone pole
& Sta. 585+23 El. 1083.10

1975 A.D.T.
Twp. Rd. #42 P= 90
I.R. 70 P= 18880
C= 3860

PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinforced concrete deck and substructure
SPANS: 57.0'-81.5'-81.5'-57.0' % brgs.
ROADWAY: 24'-0" f/f 2'-0" safety curbs
LOAD FREQUENCY: CF= 130 (57)
SKEW: None
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54 (25' long) Special
ALIGNMENT: Tangent



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

SITE PLAN
BRIDGE NO. LIC-70-0668
I.R. 70 UNDER TWP. RD. 42

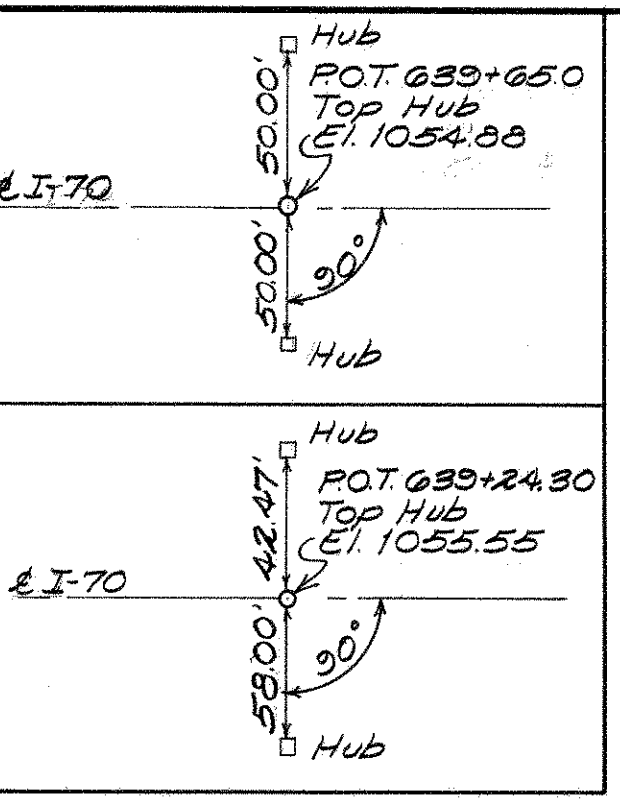
LICKING COUNTY
STA. 585+46.61

Present Topography	Proposed Work
Surveyed	Design
Drawn	Drawn
	Checked
	Reviewed
	DHS
	DHS
	R.E.J.
	P.E.S.

RF6 10/29/64

LIC-70-(5.12-8.67)
LICKING COUNTY

2.63 ± Miles East of Etna
0.85 ± Miles South of Existing U.S. 40



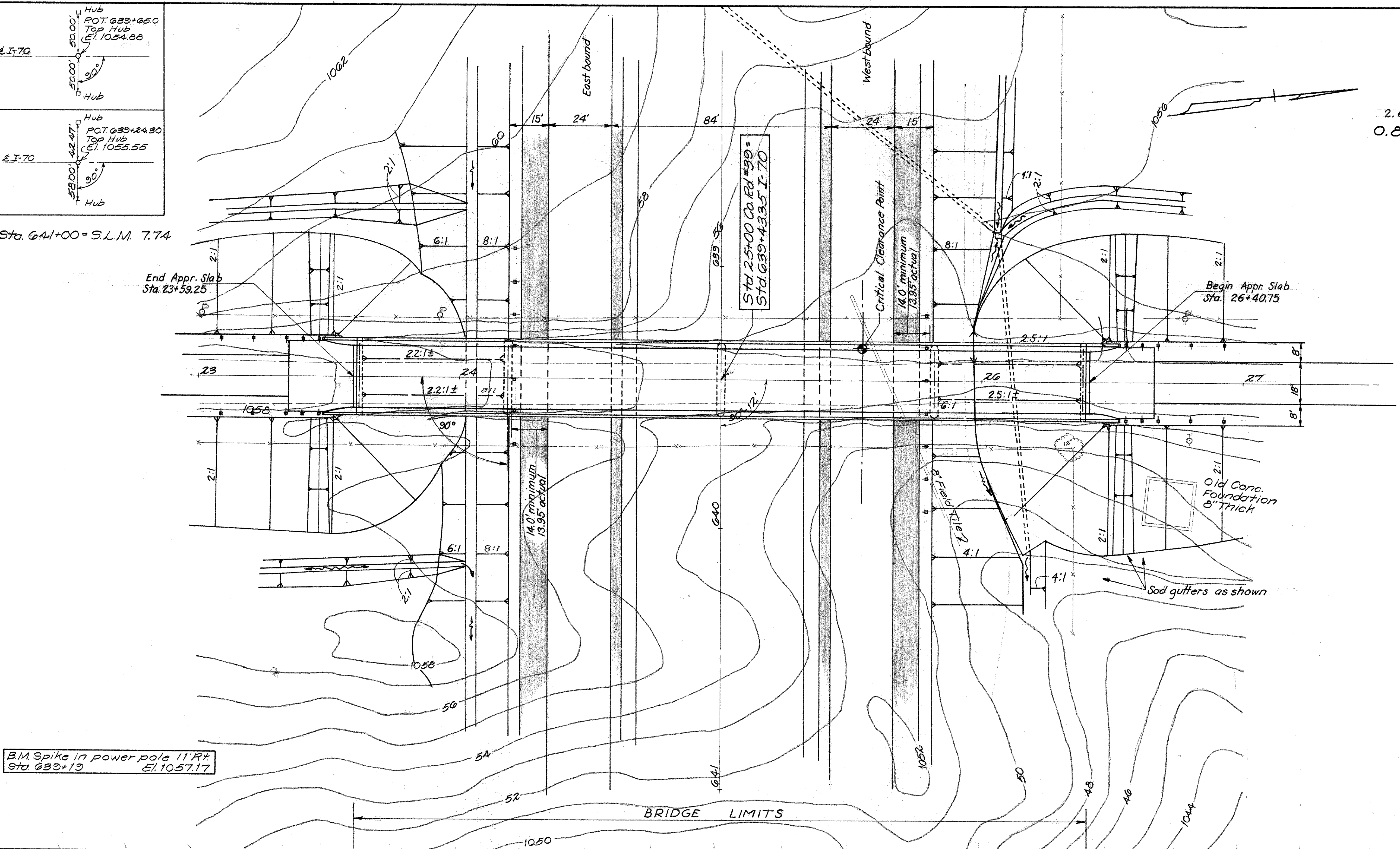
Sta. 641+00 = S.L.M. 7.74

End Appr. Slab
Sta. 23+59.25

Begin Appr. Slab
Sta. 26+40.75

Sta. 25+00 Co. Rd. #39 =
Sta. 639+43.35 I-70

B.M. Spike in power pole 11' Rk
Sta. 639+19
Elev. 1057.17



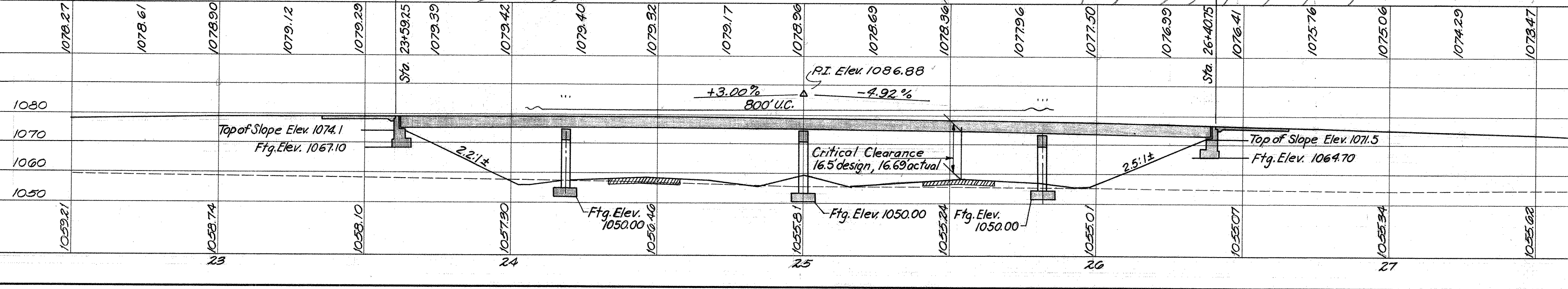
1975 A.D.T.
Co. Rd. # 39 P = 230
I. R. 70 P = 18880
C = 3860

PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinforced concrete deck and substructure
SPANS: 57.0'-81.5'-81.5'-57.0' c/c brgs.
ROADWAY: 24'-0" f/f 2'-0" safety curbs
LOAD FREQUENCY: CF = 130 (57)
SKEW: None
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: A5-1-54 (25' long) Special
ALIGNMENT: Tangent

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

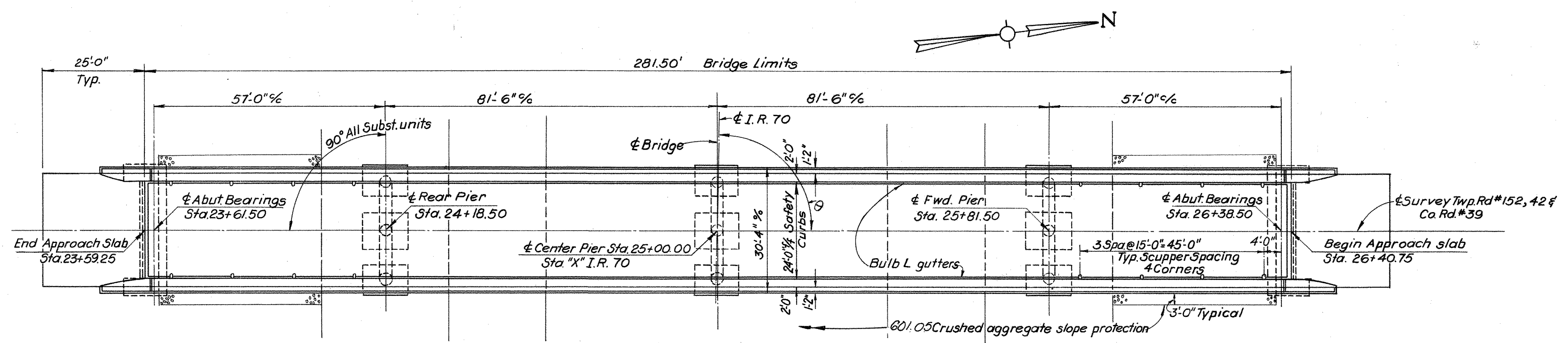
SITE PLAN
BRIDGE NO. LIC-70-0771
I.R. 70 under Co. Rd. 39

LICKING COUNTY
STA. 639+43.35



Present Topography		Proposed Work			
Surveyed	Drawn	Design	Drawn	Checked	Reviewed
R.K. & Beck	J. Ball	D.H.S.	D.H.S.	[initials]	P. E. S.

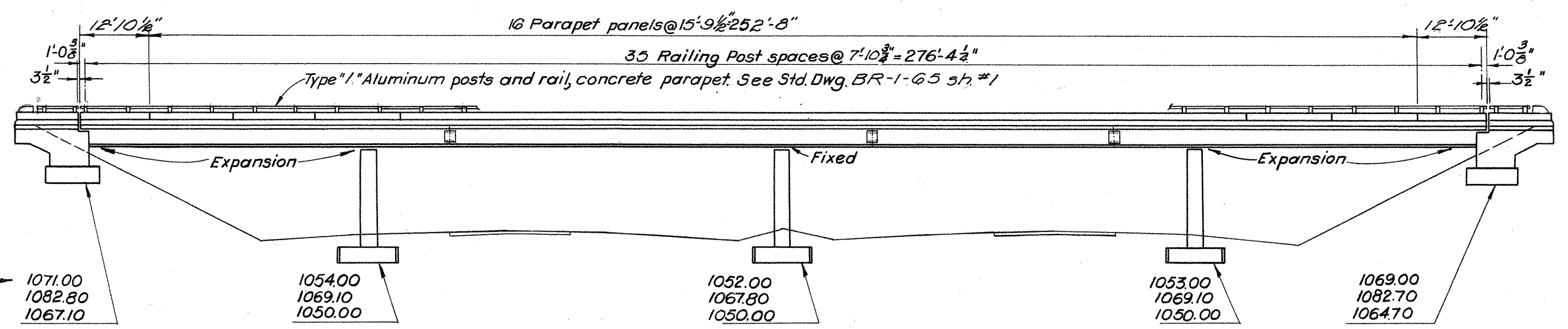
LIC-70 (5.12-8.67)
LICKING COUNTY



STATION "X" ON I.R. 70 & ANGLE θ

TWP. RD. #152	Sta. 531+22.62	89°54'
TWP. RD. #42	585+46.61	90°04'
Co. Rd. #39	639+43.35	89°48'

PLAN



BRIDGE NO.

LIC-70-0565	1071.00
LIC-70-0668	1082.80
LIC-70-0771	1067.10

ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-4-63, sheets 1 and 2 dated 12-30-63; SD-1-63, sheets 1 thru 4 dated 11-12-63; BR-1-65 Sh. #1 dated 2-1-65 FSB-1-62 revised 1-15-63; and to Supplemental Specifications 808 dated 7-14-65 and 811 dated 3-29-65.

DESIGN LOADING - CF 130 (57)

BASIC UNIT STRESSES

- Concrete Class "C" - 1,333 p.s.i.
- Concrete Class "E" - 1,133 p.s.i.
- Structural Steel - ASTM A36 - 20,000 p.s.i.

Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade - 20,000 p.s.i. Except, Spiral reinforcing may be plain, Structural Grade - 18,000 p.s.i.

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

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

FOUNDATION BEARING PRESSURE: All footings are designed for a maximum bearing pressure of 2 1/2 Tons per sq. ft.

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

GENERAL PLAN AND ELEVATION AND NOTES

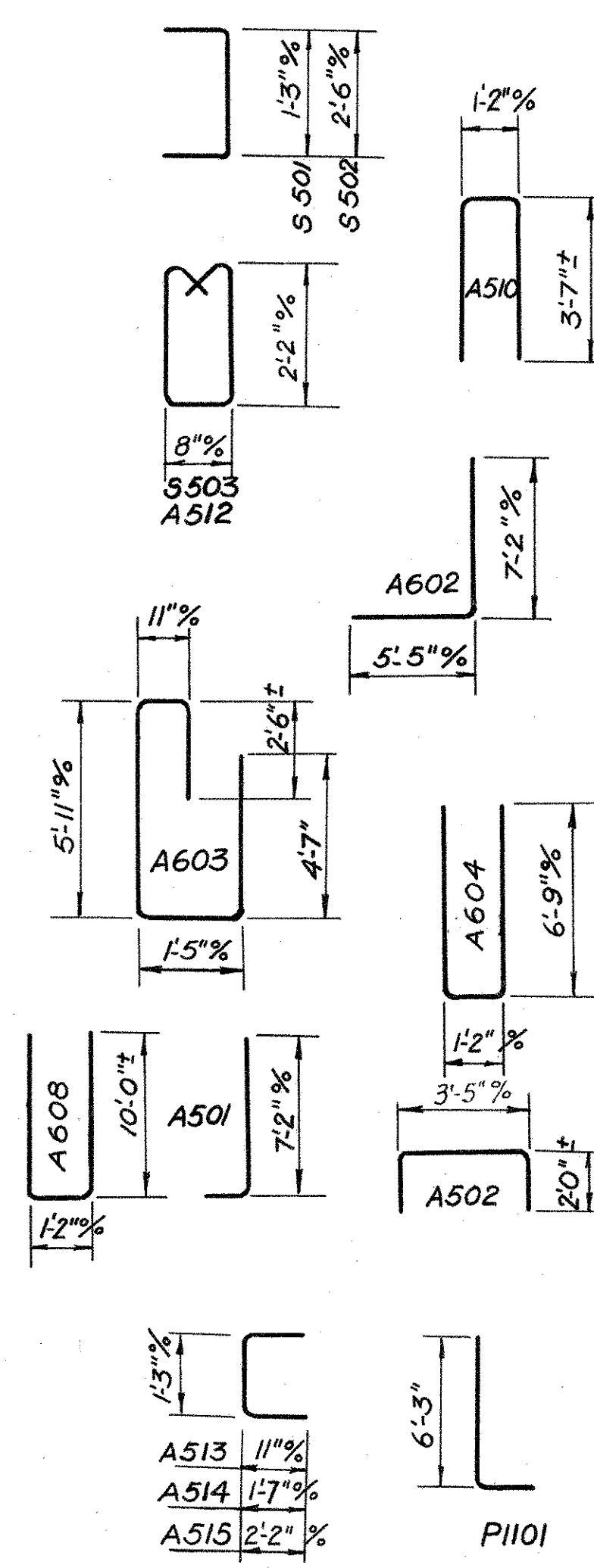
BRIDGE NOS. LIC-70-0565, 0668, 0771
I.R. 70 UNDER TWP. RD. 152, 42 & CO. RD. 39
LICKING COUNTY

Sta. 531+22.62
Sta. 585+46.61
Sta. 639+43.35

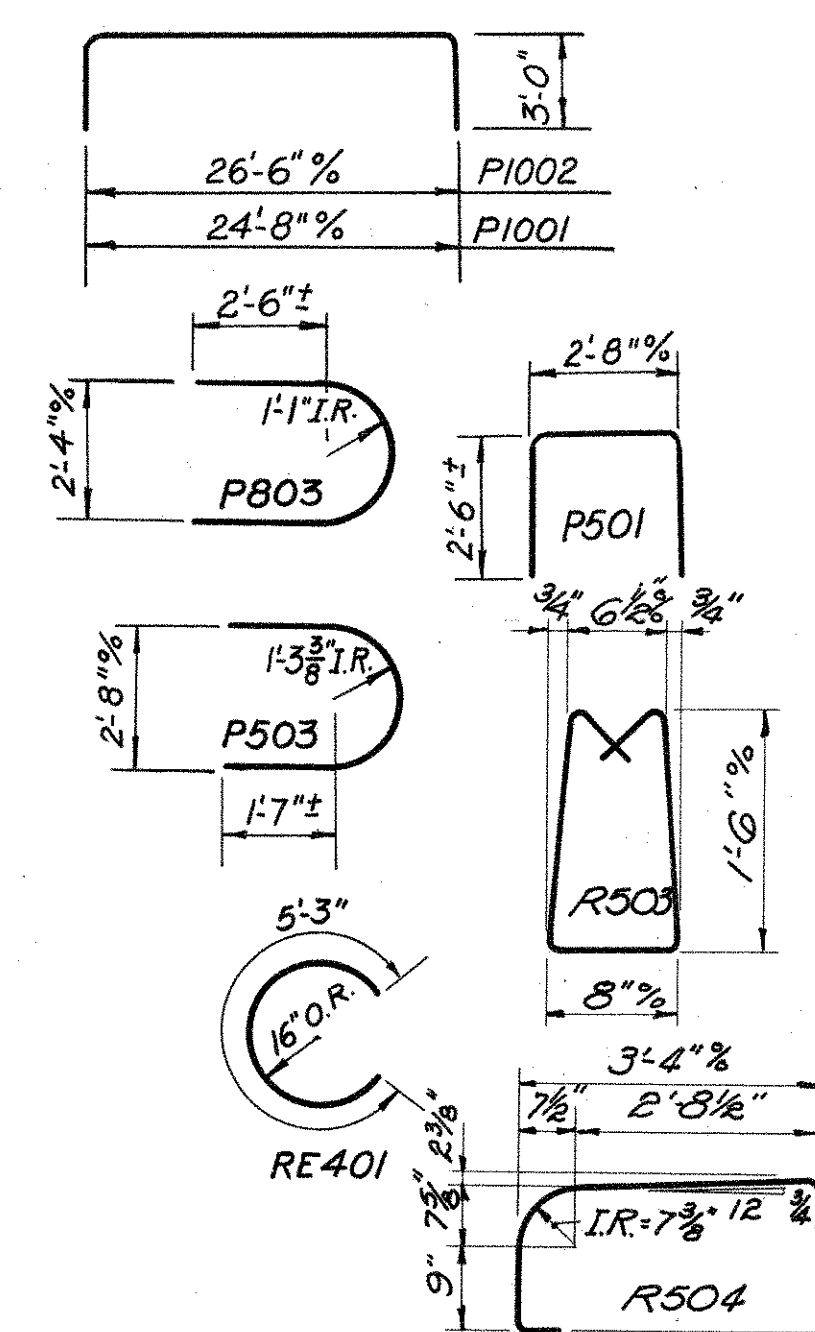
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.R.	J.D.R.	[Signature]	W.C.K.	B.F.G.	11/29/64	

LIC-70 (5.12-8.67)
LICKING COUNTY

REINFORCING STEEL LIST						
MARK	No.	LENGTH	WEIGHT	SHR.	BENDING DIAGRAMS	
Superstructure						
0565	0668	0771				
334	334	S 701	1002	29'-8"	60,760	S
334	334	S 601	1002	29'-8"	44,648	S
408	408	S 602	1224	36'-6"	67,103	S
57	57	S 603	171	32'-6"	8,347	S
744	744	S 501	2232	2'-3"	5,238	B
372	372	S 502	1116	3'-6"	4,074	B
372	372	S 503	1116	5'-7"	6,499	B
Abutments						
8	8	A 601	24	31'-4"	1,130	S
36	36	A 602	108	12'-5"	2,014	B
48	48	A 603	144	14'-8"	3,172	B
8	8	A 604	24	14'-4"	517	B
8	8	A 605	24	9'-10"	354	S
16	16	A 606	48	20'-10"	1,502	B
44	44	A 501	132	7'-8"	1,056	B
36	36	A 502	108	7'-2"	807	B
28	28	A 503	84	29'-4"	2,570	S
48	48	A 504	144	6'-10"	1,026	S
16	16	A 505	48	5'-0"	250	S
8	8	A 506	24	8'-6"	213	S
8	8	A 507	24	13'-8"	342	S
8	8	A 508	24	11'-8"	292	S
8	8	A 509	24	3'-7"	90	S
36	36	A 510	108	8'-1"	911	B
24	24	A 511	72	11'-6"	864	S
36	36	A 512	108	5'-7"	629	B
8	8	A 513	24	2'-10"	71	B
8	8	A 514	24	4'-2"	104	B
20	20	A 515	60	5'-4"	334	B
Piers						
94	94	P 1101	252	7'-5"	9,930	B
48	48	P 1102	72	21'-7"	8,256	S
36		P 1103	36	23'-3"	4,447	S
48		P 1104	48	18'-6"	4,718	S
36	24	P 1105	60	19'-11"	6,349	S
36		P 1106	36	20'-10"	3,985	S
6	6	P 1001	18	30'-1"	2,330	B
6	6	P 1002	18	31'-11"	2,472	B
6	6	P 1003	18	12'-0"	929	S
* Bend in field						



MARK	No.	LENGTH	WEIGHT	SHR.	BENDING DIAGRAMS			
Piers (Cont'd.)								
12	12	P 801	36	26'-0"	2,499	S		
6	6	P 802	18	24'-4"	1,169	S		
12	12	P 803	36	8'-6"	817	B		
48	48	P 804	144	10'-8"	4,101	S		
30	30	P 805	90	11'-2"	2,683	S		
66	66	P 601	198	6'-8"	1,983	S		
45	45	P 602	135	8'-8"	1,757	S		
96	96	P 501	288	7'-5"	2,228	B		
6	6	P 502	18	24'-0"	451	S		
6	6	P 503	18	7'-2"	135	B		
Railing Bars								
128	128	R 501	384	15'-5"		S		
16	16	R 502	48	12'-6"		S		
12	12	R 503	36	4'-2"		B		
8	8	R 504	24	5'-4"		B		
16	16	R 505	48	11'-4"		S		
Replacement Bars								
		RE 1101	2	7'-6"		S		
		RE 1001	1	7'-2"		S		
		RE 801	1	6'-6"		S		
		RE 701	4	6'-2"		S		
		RE 601	7	5'-11"		S		
		RE 501	2	5'-7"		S		
		RE 401	1	5'-3"		B		
Spiral reinforcing								
MARK	No.	Core dia.	LENGTH	Pitch	No. Turns	WEIGHT		
6	3	SP 401	9	32"	18'-7"	4 1/2"	53	3,074
3		SP 402	3	32"	20'-2"	4 1/2"	57	1,103
6		SP 403	3	32"	15'-6"	4 1/2"	45	1,735
3	3	SP 404	6	32"	16'-11"	4 1/2"	49	1,890
3		SP 405	3	32"	17'-10"	4 1/2"	51	986



Note: SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1/2 closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of 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.

ESTIMATED QUANTITIES			LIC-70-0565				LIC-70-0668				LIC-70-0771			
Item	Total	Unit	Super.	Abuts.	Piers	Gen'l	Super.	Abuts.	Piers	Gen'l	Super.	Abuts.	Piers	Gen'l
503	1343	Cu. Yds.		206	230			186	278			188	255	
511	789	Cu. Yds.					263				263			
511	220	Cu. Yds.			77				69				74	
511	258	Cu. Yds.			86				86				86	
511	356	Cu. Yds.		121				117				118		
509	284,944	lbs.	65,557	6,083	24,264		65,556	6,083	22,368		65,556	6,082	23,395	
513	639,000	lbs.	213,000				213,000				213,000			
314	639,000	lbs.	213,000				213,000				213,000			
517	1,814.01	lin. ft.	558.00	46.67			558.00	46.67			558.00	46.67		
518	70	Cu. Yds.		24				23				23		
518	135	lin. ft.		45				45				45		
518	221	lin. ft.		70				76				75		
518	48	each		16				16				16		
808	789	each		263				263				263		
601	1013	Sq. Yds.				319				347				347

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

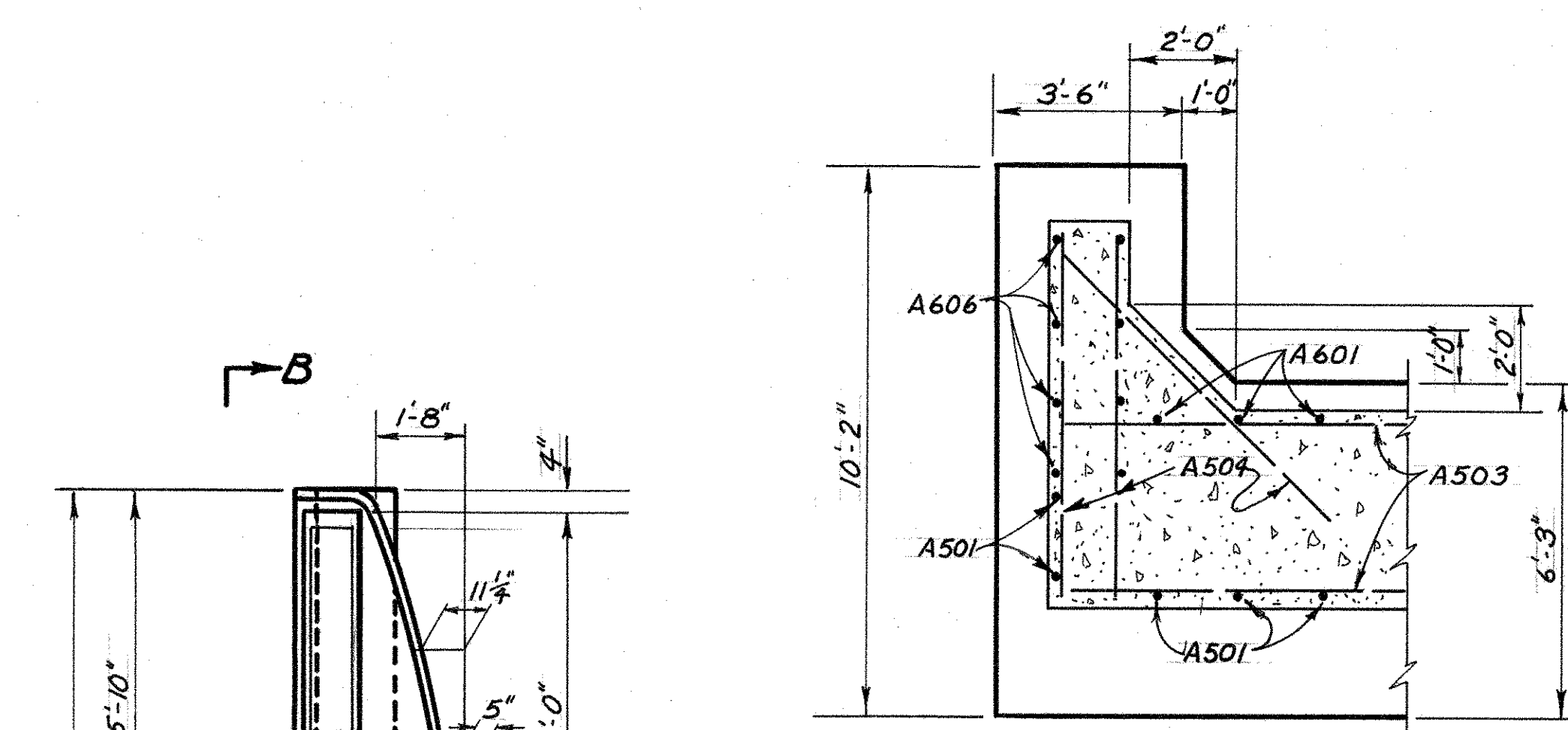
**REINFORCING STEEL LIST
& ESTIMATED QUANTITIES**

BRIDGE - NOS. LIC-70-0565, 0668, 0771
I.R. 70 UNDER TWP. RD. 152, 42 & CO. RD. 39
57A - 53H 22.62
585+46.61
639+43.35

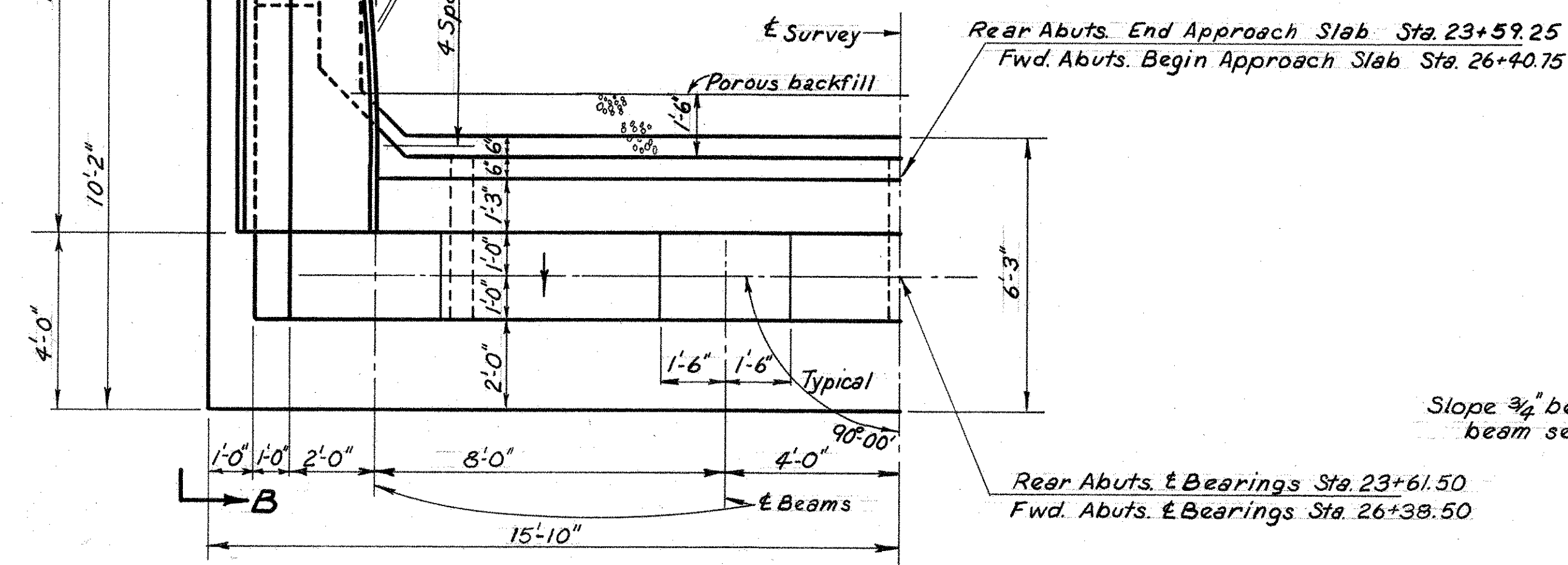
LICKING COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.R.			W.C.K.	B.F.G.	10/29/64	

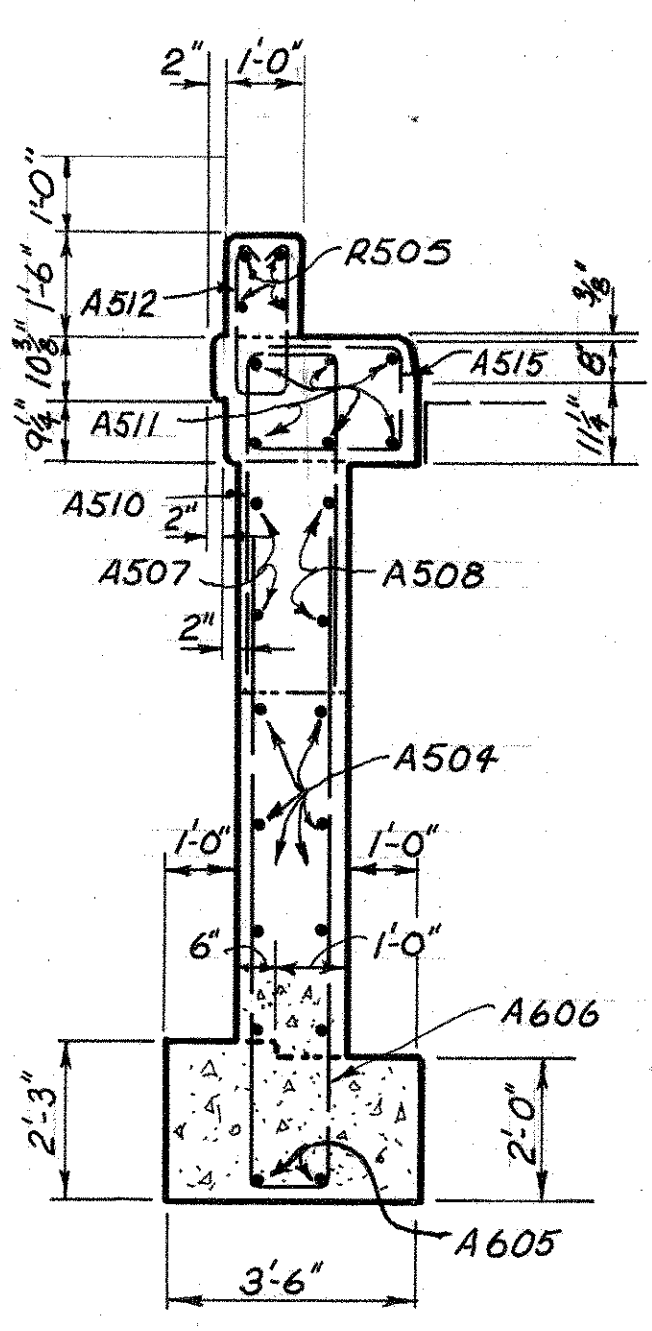
LIC-70 (5.12-8.67)
LICKING COUNTY



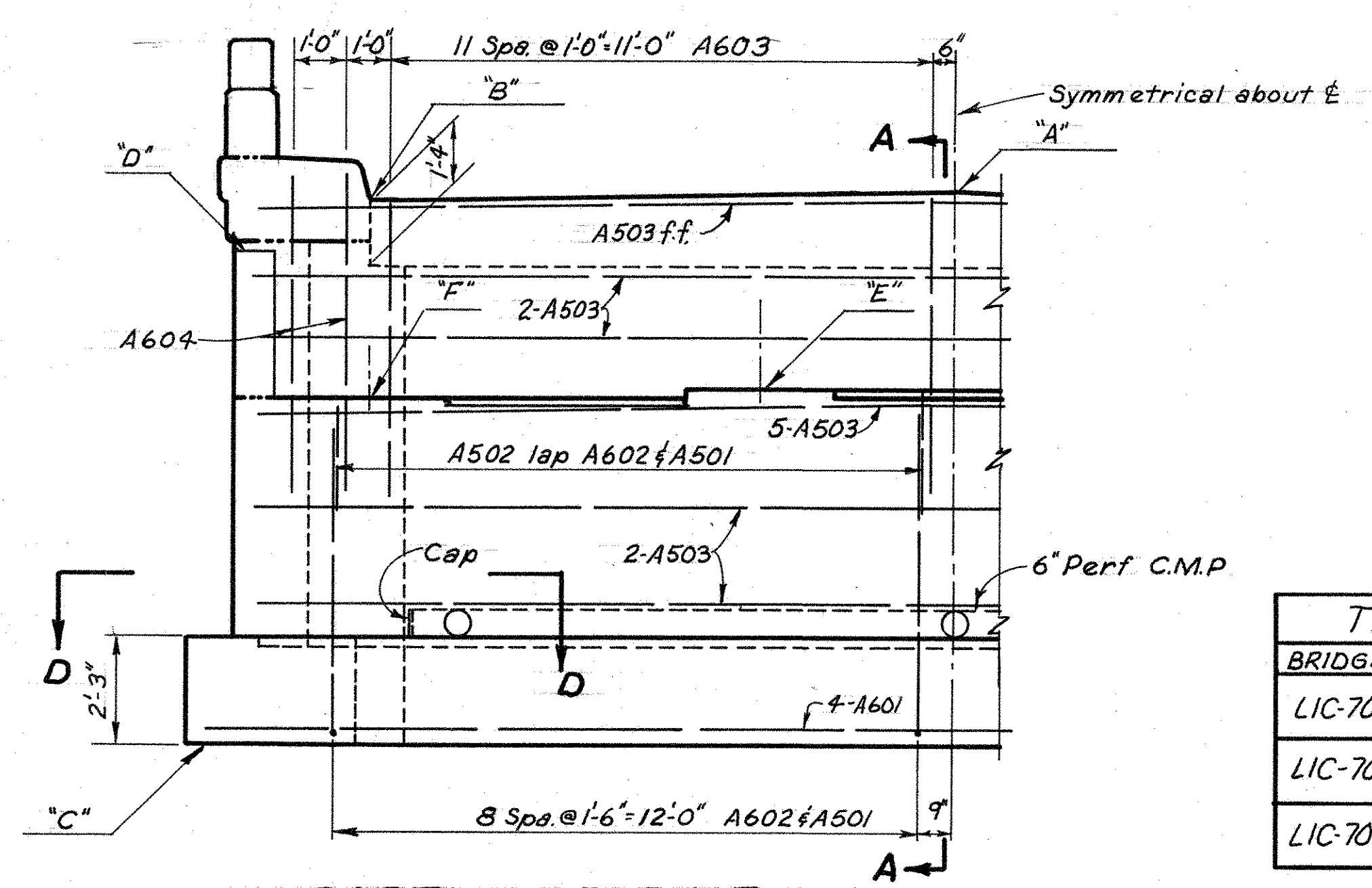
SECTION D~D



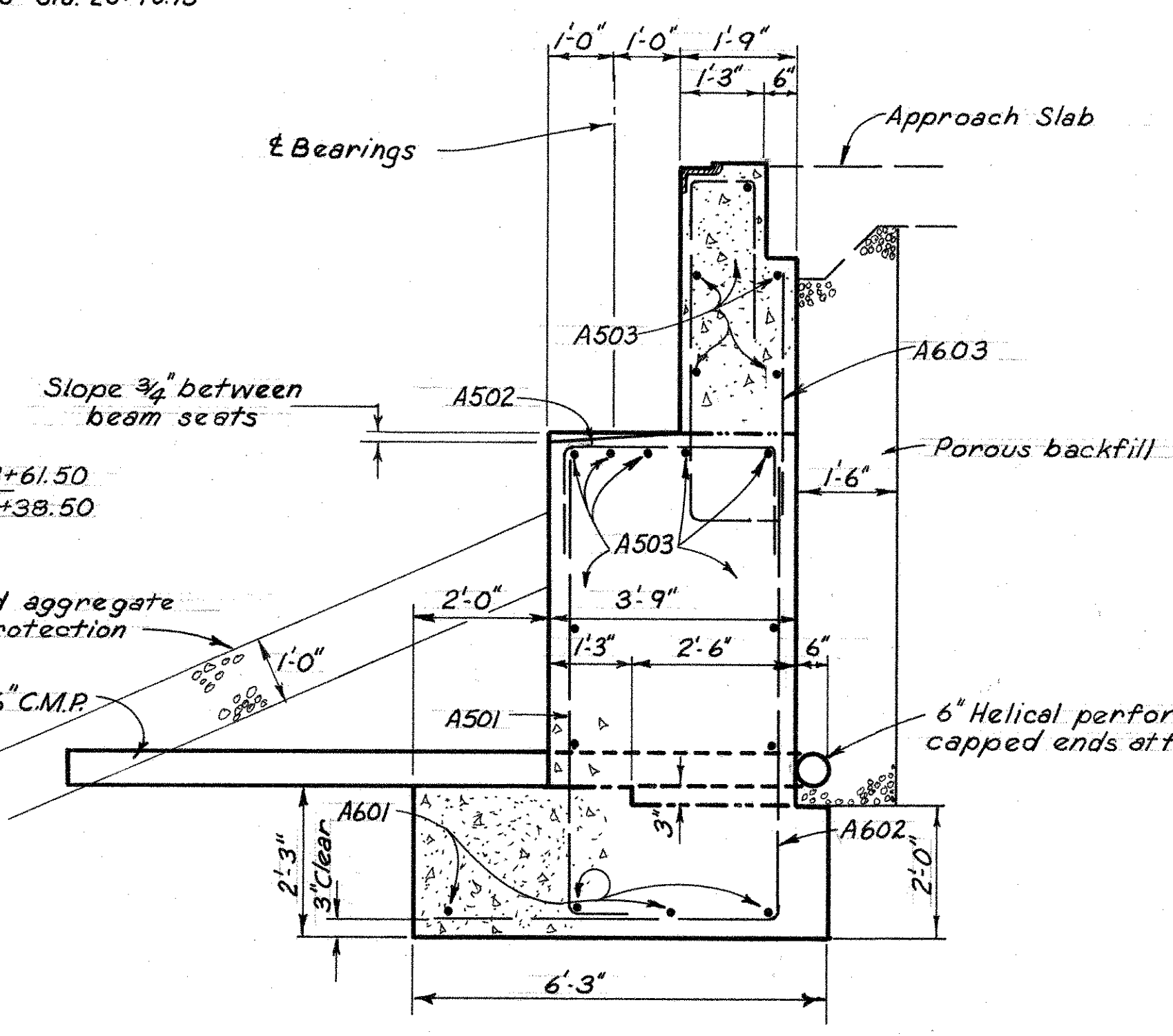
PARTIAL PLAN



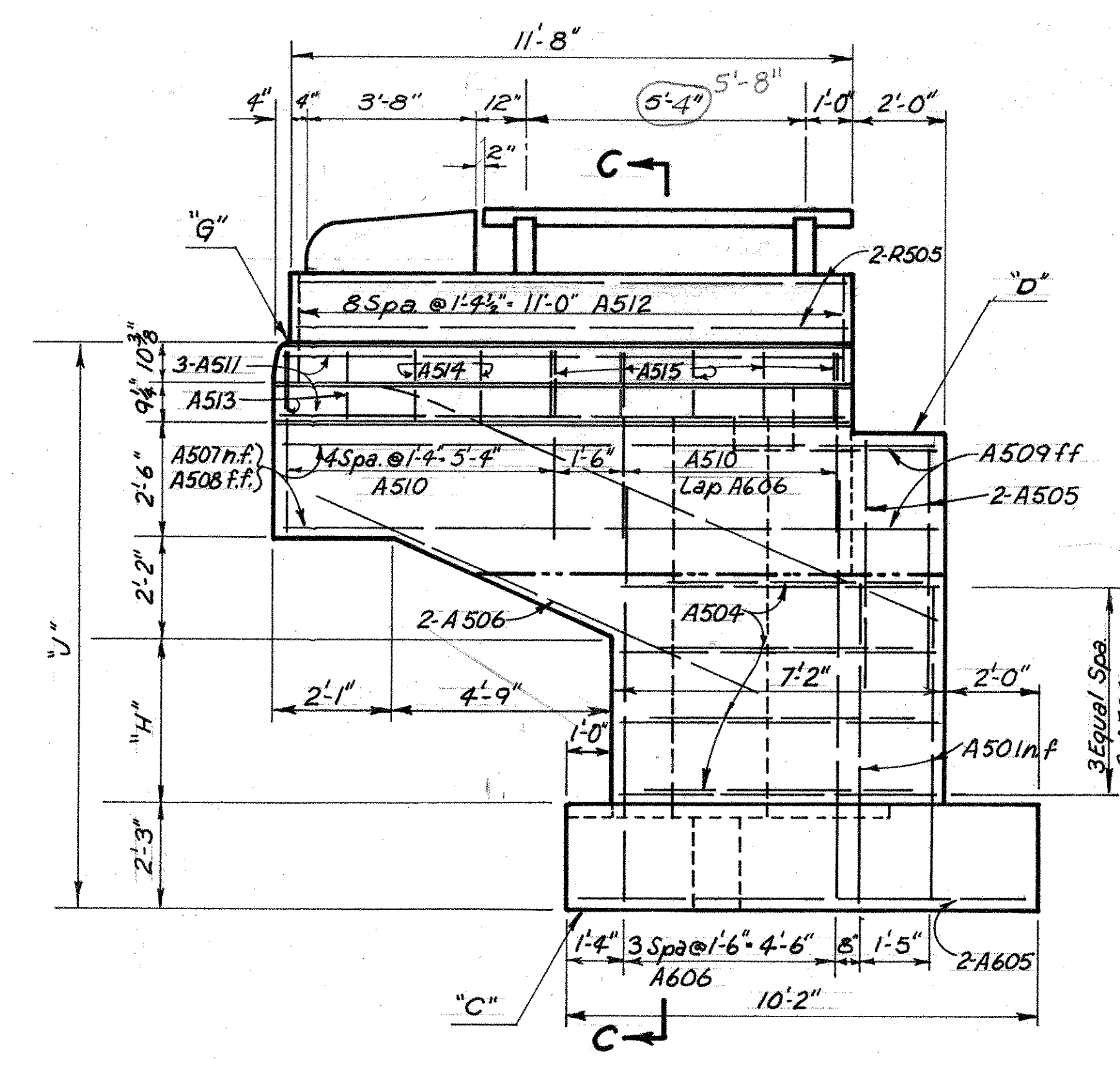
SECTION C~C



PARTIAL ELEVATION



SECTION A~A



VIEW B~B

TABLE OF ELEVATIONS AND DIMENSIONS

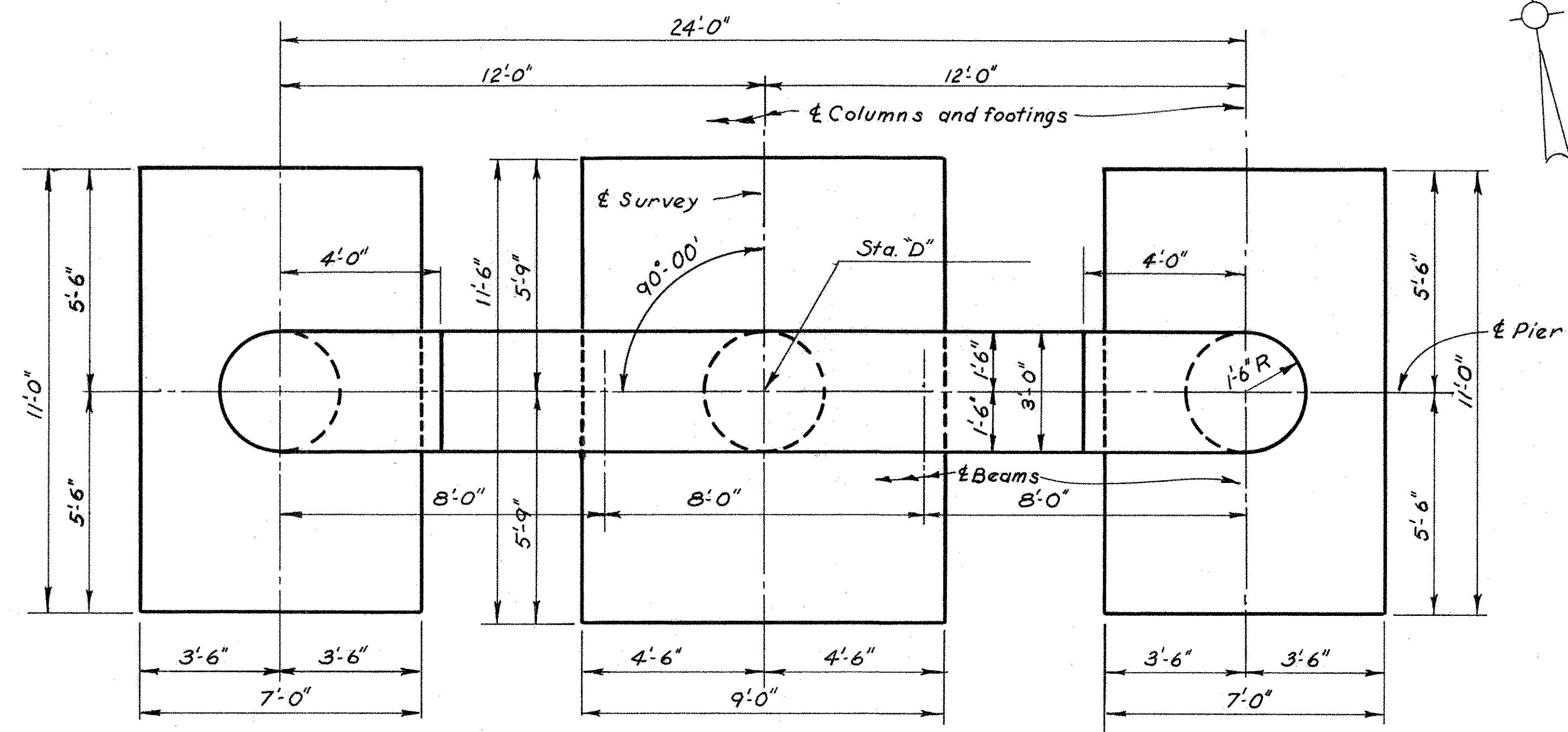
BRIDGE NO.	ABUTMENT	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"
LIC-70-0565	Rear	1083.40	1083.21	1071.00	1082.27	1079.34	1079.22	1084.01	4'-5 1/8"	13'-0 1/8"
	Forward	1081.43	1081.24	1069.00	1080.30	1077.40	1077.27	1081.88	4'-3 3/8"	12'-10 1/8"
LIC-70-0668	Rear	1094.84	1094.65	1082.80	1093.71	1090.78	1090.66	1095.34	3'-11 3/8"	12'-6 1/2"
	Forward	1094.74	1094.55	1082.70	1093.61	1090.68	1090.56	1095.24	3'-11 3/8"	12'-6 1/2"
LIC-70-0771	Rear	1079.34	1079.15	1067.10	1078.21	1075.27	1075.15	1079.96	4'-3 3/8"	12'-10 1/8"
	Forward	1076.66	1076.47	1064.70	1075.53	1072.61	1072.49	1077.06	3'-9 3/8"	12'-4 3/8"

n.f. denotes near face, f.f. denotes far face
 BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.
 BRIDGE NOS. LIC-70-0565 and LIC-70-0771:
 PROCEDURE: The embankments shall be placed and compacted up to the subgrade elevations for a minimum period of 30 days after which excavation shall be made for the abutments.

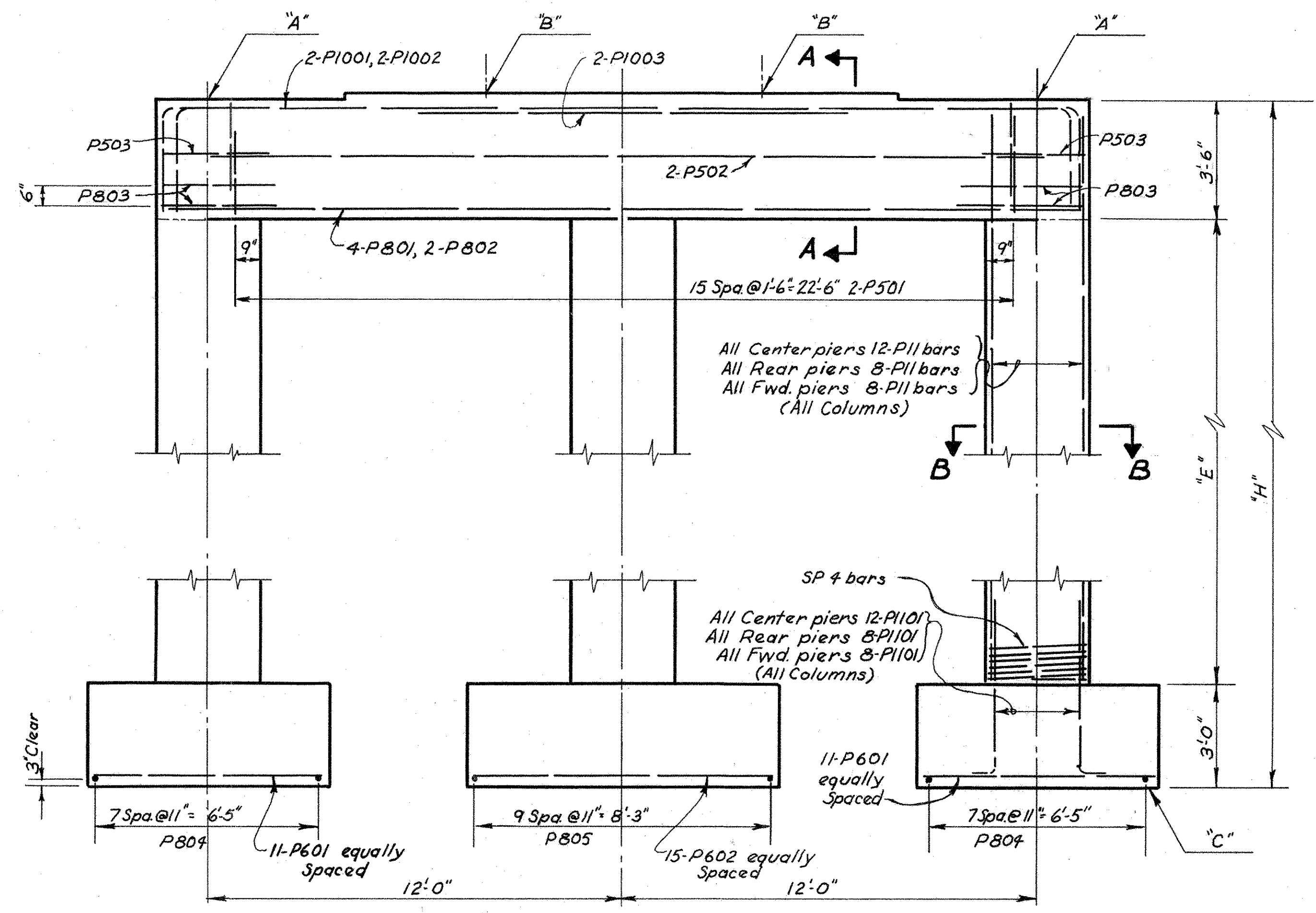
BRIDGE NO. LIC-70-0668
 PROCEDURE: Before the forward embankment is placed, the Contractor shall remove the upper three feet of subsoil within an area seven feet beyond the edges of the footing. This excavation shall then be replaced with compacted embankment. The cost of removing and replacing this material is included with item 203.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						
ABUTMENT DETAILS						
BRIDGE NOS. LIC-70-0565, 0668, & 0771						
R. 70 UNDER TWP RD. 152, 42 & CO. RD. 39						
LICKING COUNTY						
Sta. 531+22.62						
Sta. 585+46.61						
Sta. 639+43.35						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.R.	J.D.R.	J.R.	WCK	BFG	10/29/64	

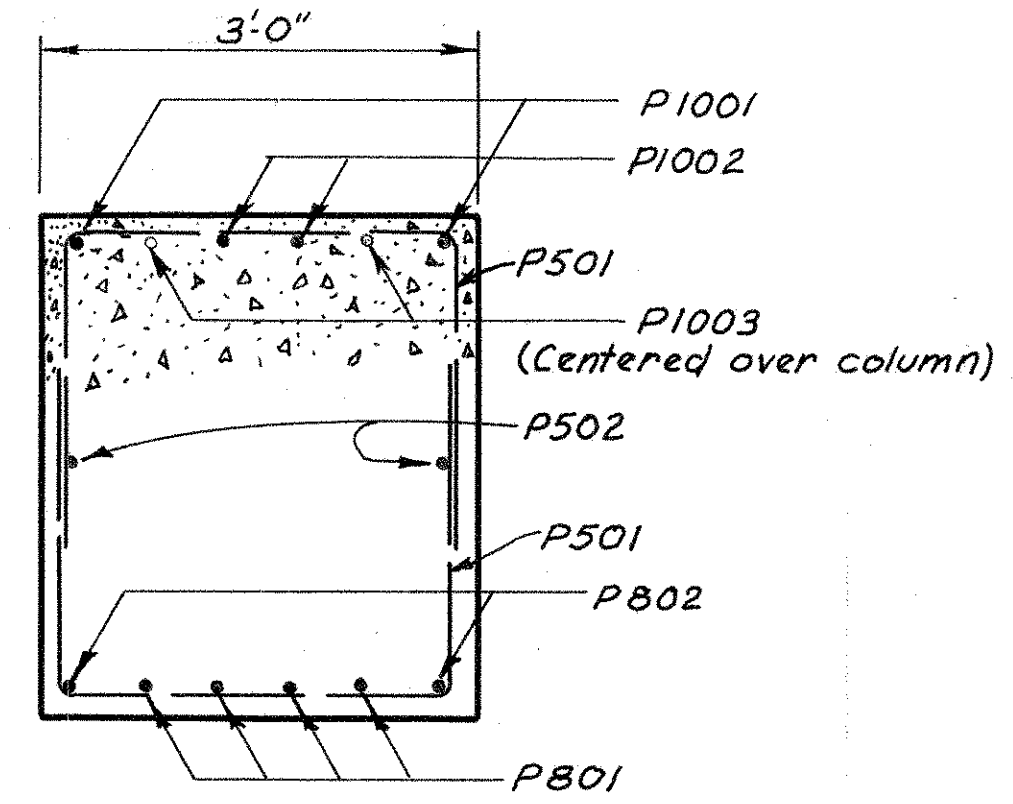
LIC-70 (5.12-867)
LICKING COUNTY



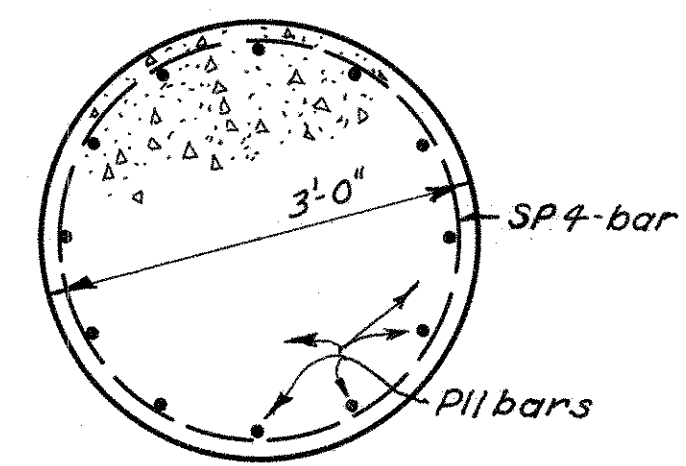
PLAN



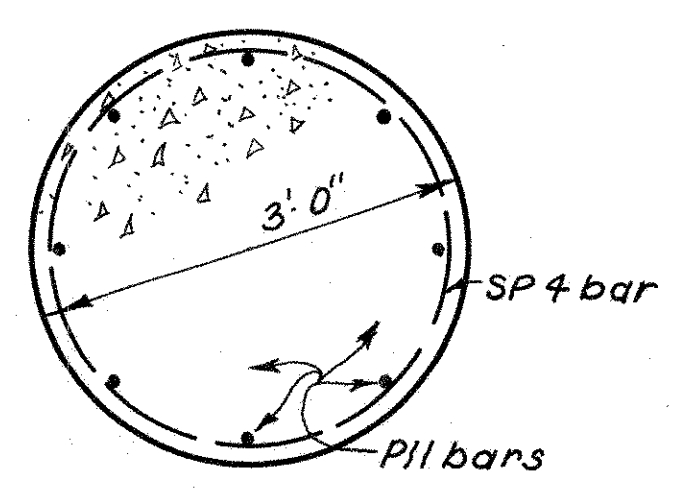
ELEVATION



SECTION A~A



SECTION B~B
Center Piers



SECTION B~B
Rear and Fwd. Piers

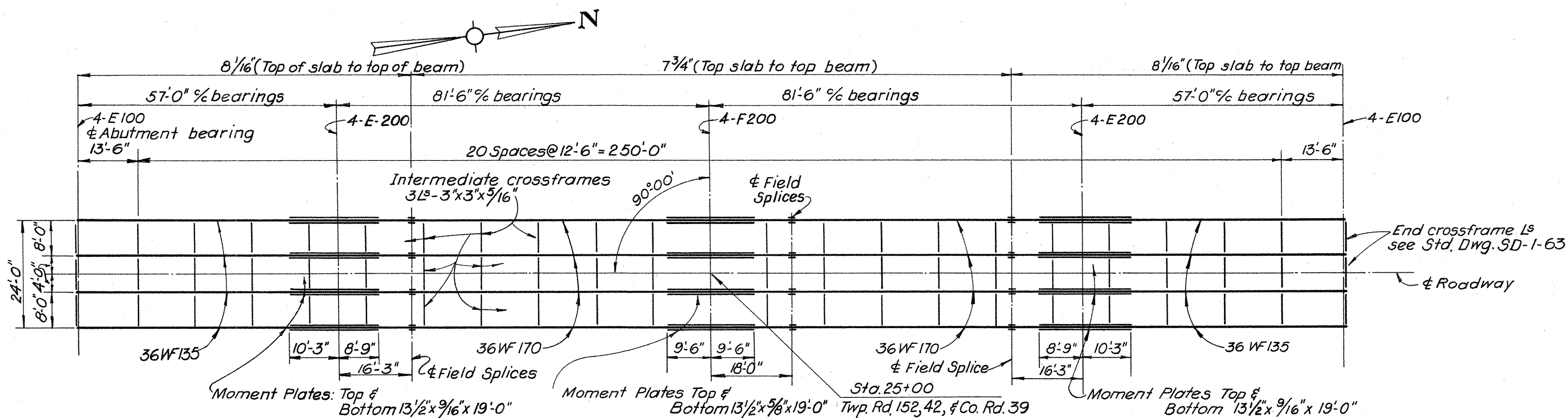
TABLE OF ELEVATIONS, DIMENSIONS AND BARS									
Bridge No.	Description	El. "A"	El. "B"	El. "C"	Station "D"	Dim. "E"	Dim. "H"	SP 4 bar	P11 bar
LIC-70-0565	Rear Pier	1079.34	1079.46	1054.00	24+18.50	18'-10 1/2"	25'-4 1/2"	SP401	P1102
	Center Pier	1078.74	1078.86	1052.00	25+00.00	20'-2 3/4"	26'-8 3/4"	SP402	P1103
	Forward Pier	1078.19	1078.32	1053.00	25+81.50	18'-8 1/2"	25'-2 1/4"	SP401	P1102
LIC-70-0668	Rear Pier	1091.24	1091.36	1069.10	24+18.50	15'-7 3/4"	22'-1 1/2"	SP403	P1104
	Center Pier	1091.23	1091.35	1067.80	25+00.00	16'-11 1/2"	23'-5 1/2"	SP404	P1105
	Forward Pier	1091.18	1091.30	1069.10	25+81.50	15'-7"	22'-1"	SP403	P1104
LIC-70-0771	Rear Pier	1075.17	1075.30	1050.00	24+18.50	18'-8"	25'-2"	SP401	P1102
	Center Pier	1074.40	1074.52	1050.00	25+00.00	17'-10 3/4"	24'-4 3/4"	SP405	P1106
	Forward Pier	1073.61	1073.73	1050.00	25+81.50	17'-1 3/8"	23'-7 3/8"	SP404	P1105

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of the anchor bar holes.

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

PIER DETAILS
BRIDGE NOS. LIC-70-0565, 0668, 0771
I.R. 70 UNDER TWP. RD. 152, 42 & CO. RD. 39
Sta. 531+22.62
LICKING COUNTY Sta. 585+46.61
Sta. 639+43.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.R.	J.D.R.	J.V.R.	W.C.K.	B.F.G.	10/29/64	



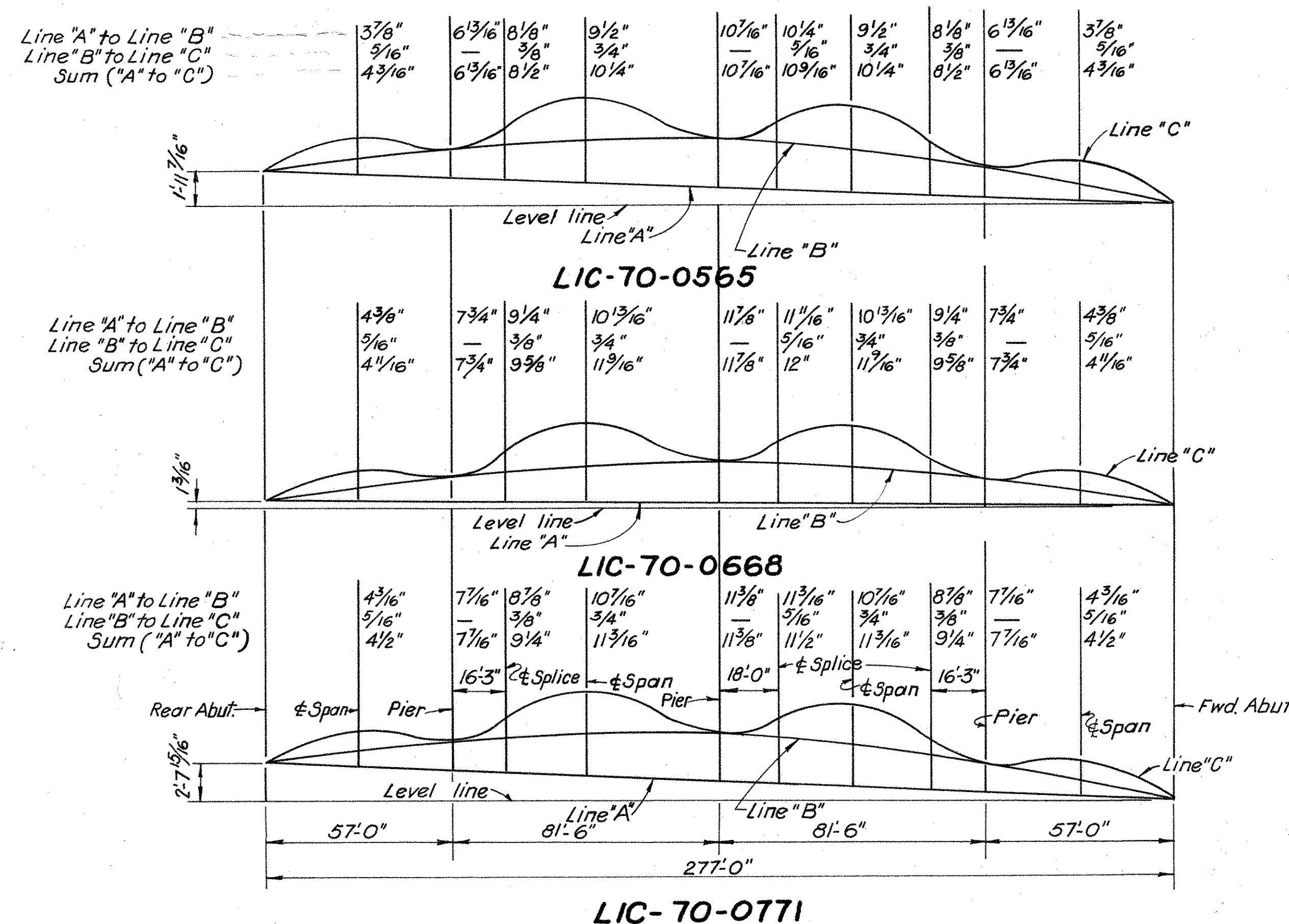
PLAN OF STEEL FRAMING

DEFLECTION AND CONVEXITY		
	End Spans	Mid Spans
Deflection due to dead load of steel	0	1/4"
Deflection due to remaining dead load	5/16"	1/2"
Convexity required due to vertical curve	1/2"	1"
Sum of Deflection and Convexity	13/16"	1 3/4"

Slab thickness is 7 3/8" which includes 1" for monolithic wearing surface.

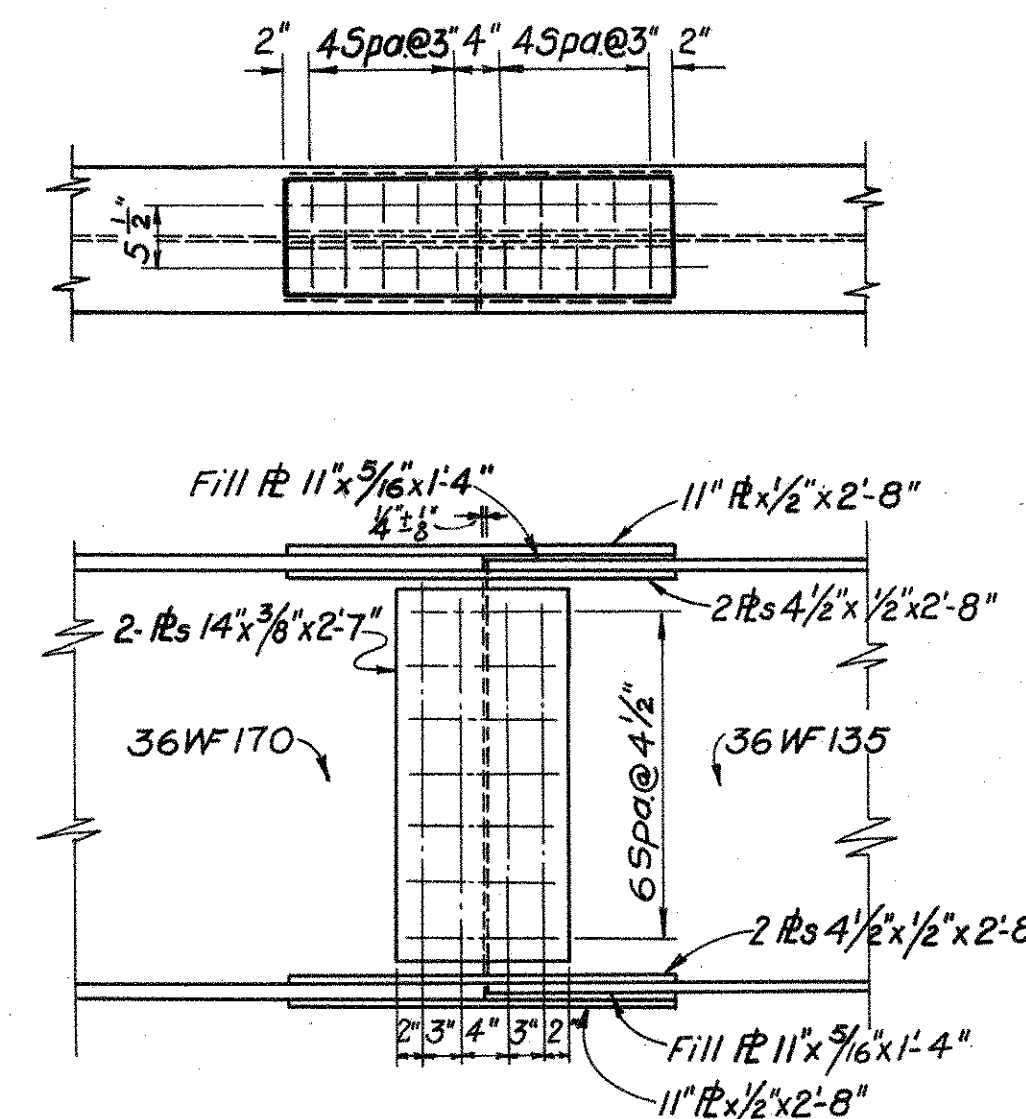
See Std. Dwg. CSB-4-63 Sheets 1 & 2 for additional details, for distance from top of slab to top of steel see "Plan of Steel Framing" above. Refer to Std. Dwg. SD-1-63 for the following:

1. Welding of Moment plates (shop welded.)
2. Scuppers (Type I).
3. End dam and curb plate details.
4. End crossframes.

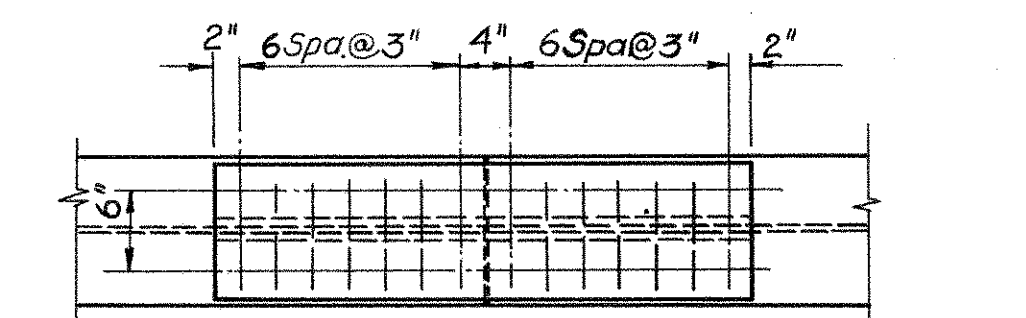


BEAM CAMBER LINES

Line "A"- Reference line Rear Abut. to Fwd. Abut.
Line "B"- Line parallel to profile grade
Line "C"- Theoretical camber line for beam.



FIELD SPLICE ADJACENT TO END PIERS
7/8" High Strength Bolts



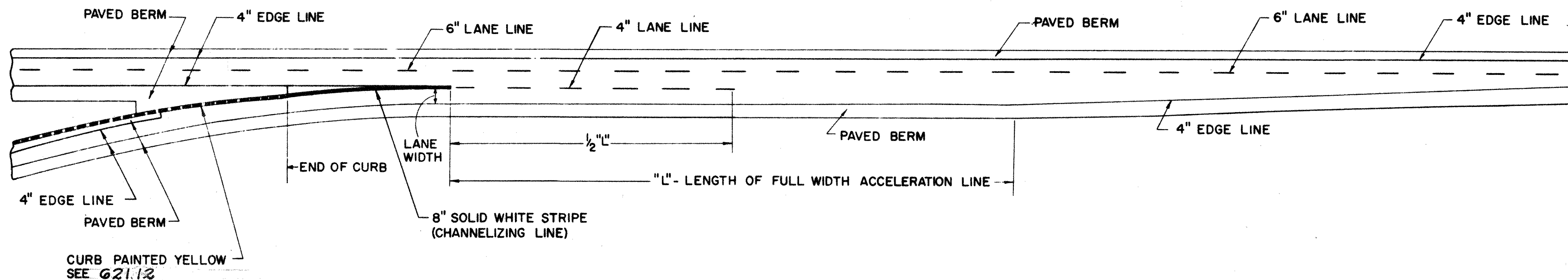
FIELD SPLICE ADJACENT TO CENTER PIER
7/8" High Strength Bolts

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						
SUPERSTRUCTURE DETAILS						
BRIDGE NOS-LIC-70-0565,0668,0771						
I.R.70 under TWP. RD. 152, 42 & CO. RD. 39						
LICKING COUNTY						
Sta. 531+22.62						
Sta. 585+46.61, &						
Sta. 639+43.35						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.R.	J.D.R.	W.C.K.	W.C.K.	B.F.G.	10/29/64	

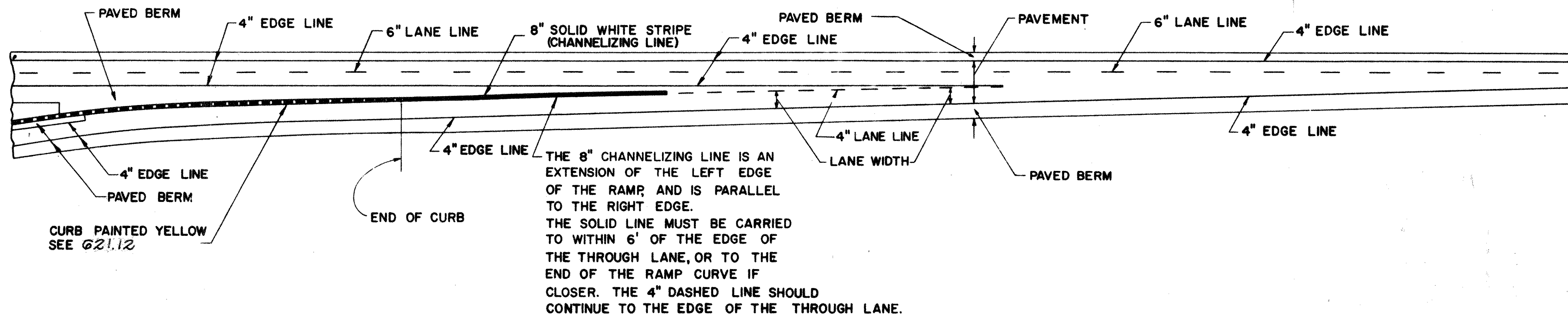
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

22A
250

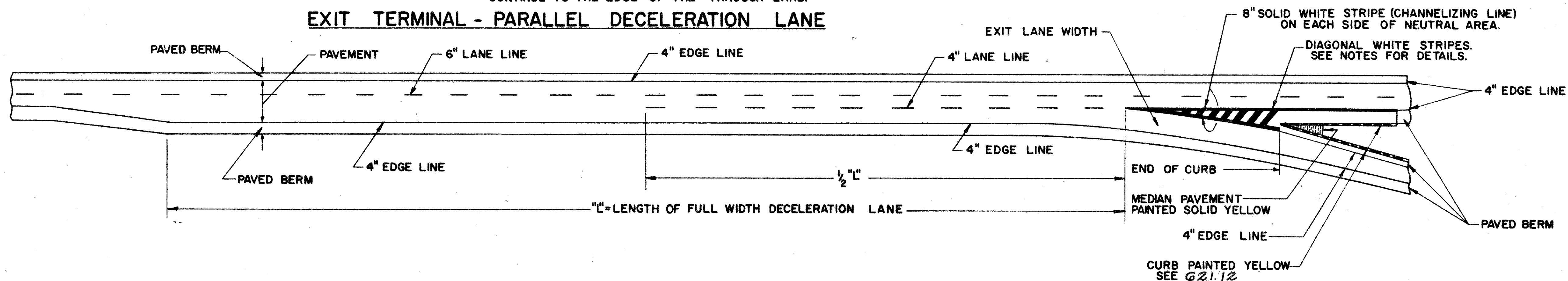
ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



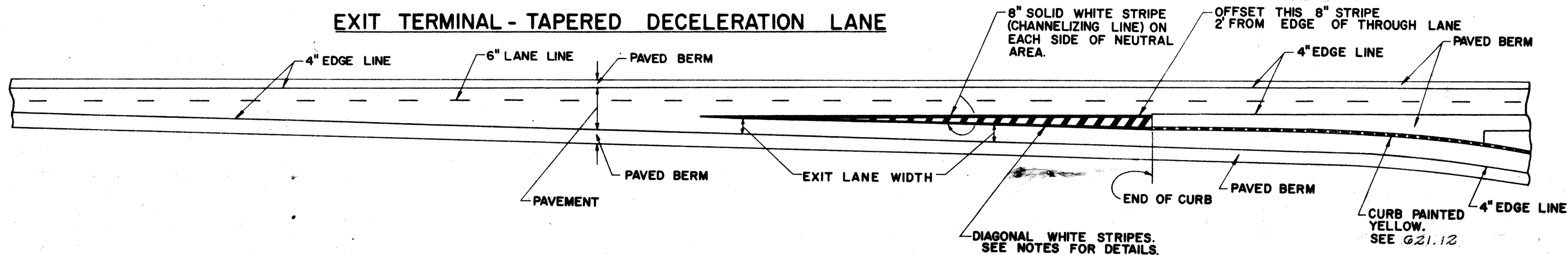
ENTRANCE TERMINAL - TAPERED ACCELERATION LANE



EXIT TERMINAL - PARALLEL DECELERATION LANE



EXIT TERMINAL - TAPERED DECELERATION LANE



NOTES

EDGE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SPECIFICATION G21 AND DEFINED IN G21.06.

LANE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SPECIFICATION G21 AND DEFINED IN G21.07.

CHANNELIZING LINES SHALL BE CONTINUOUS WHITE BEADED STRIPES 8" IN WIDTH PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SPECIFICATION G21 AND DEFINED IN G21.09.

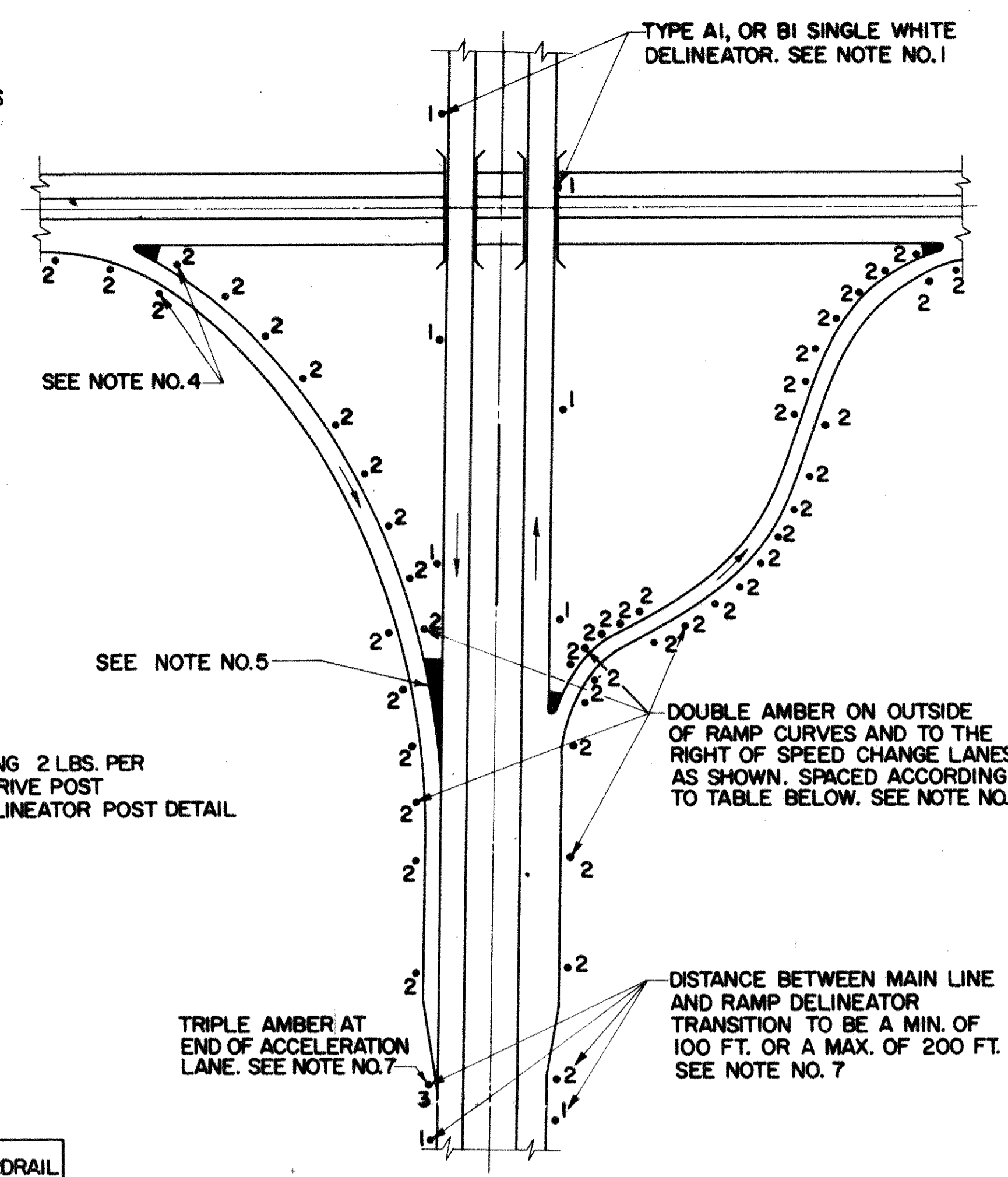
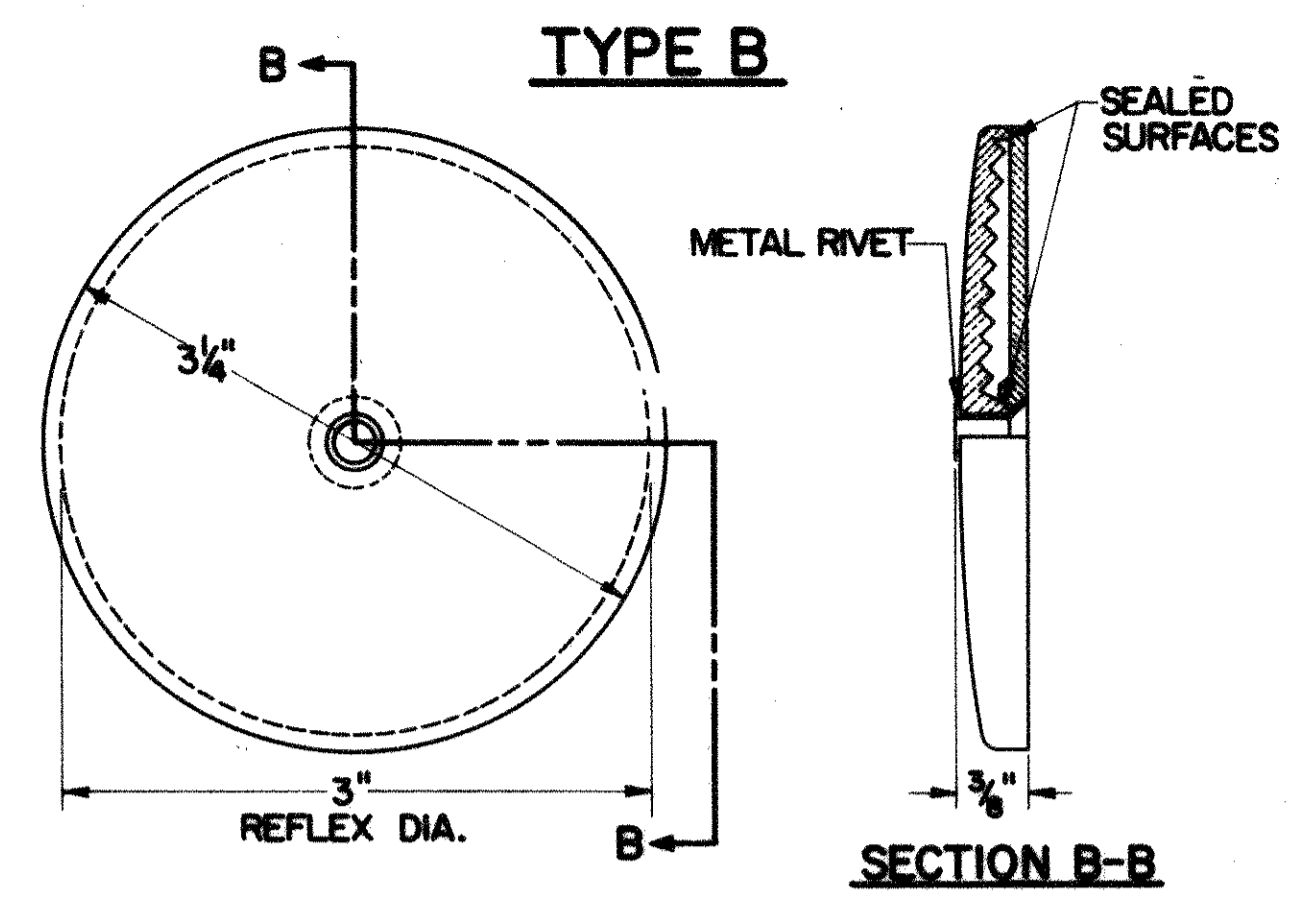
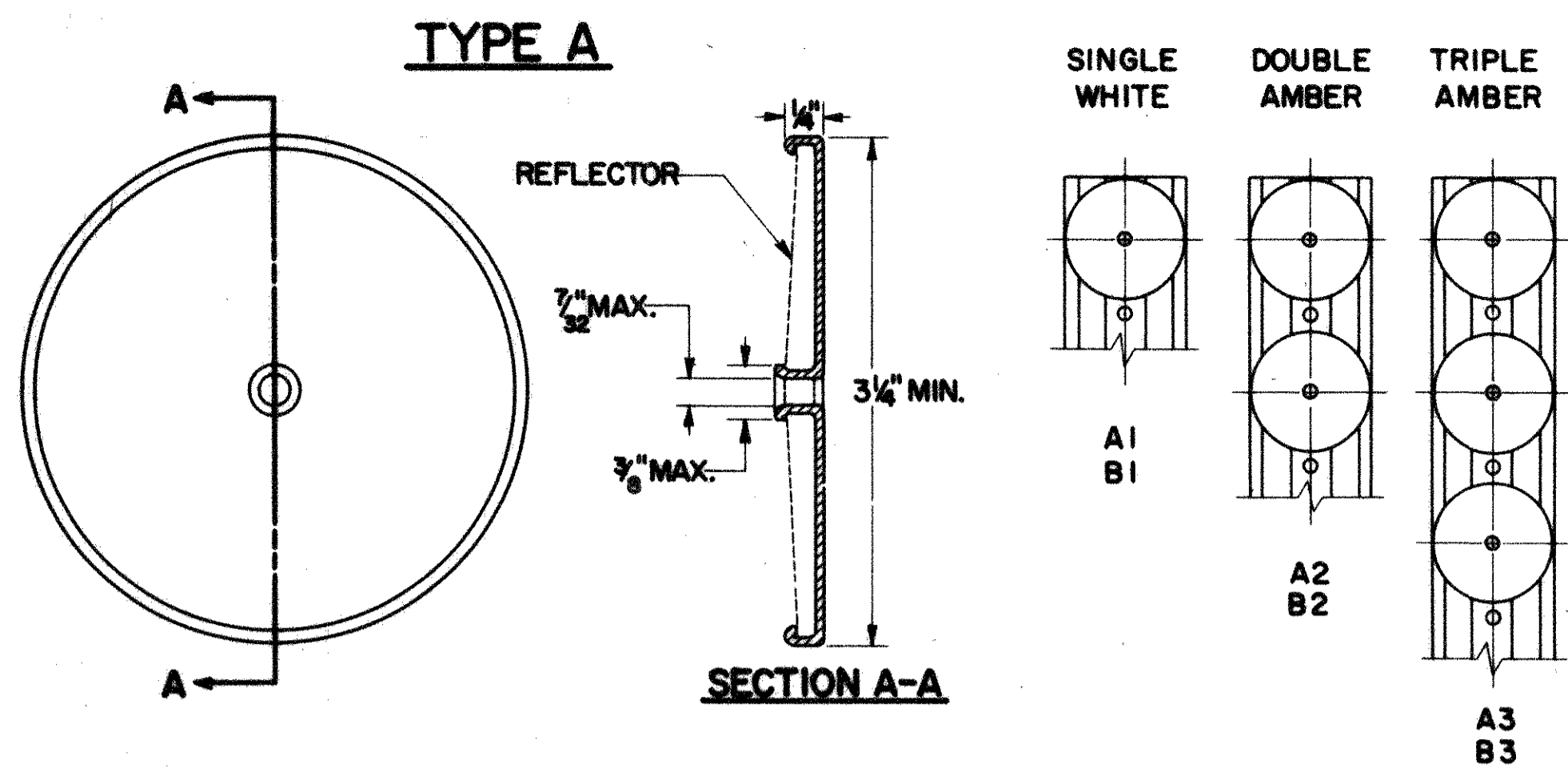
DIAGONAL STRIPES IN EXIT RAMP MARKINGS SHALL BE 2' WIDE WHITE BEADED STRIPES SET AT A 45° ANGLE TO THE CENTER LINE OF THE THROUGH PAVEMENT AND SLANTED IN THE DIRECTION OF THE FLOW OF TRAFFIC ON SAID PAVEMENT. SPACE BETWEEN THE 2' DIAGONAL STRIPES SHALL BE 6' AS MEASURED PARALLEL TO THE CENTER LINE OF THE THROUGH PAVEMENT. PAINT ON THE DIAGONAL STRIPES SHALL BE APPLIED AT THE RATE OF ONE GALLON TO EACH 100 SQUARE FEET AND GLASS BEADS SHALL BE APPLIED AT THE RATE OF SIX POUNDS PER GALLON OF PAINT. DIAGONAL WHITE STRIPES SHALL BE PLACED BETWEEN THE TWO 8" WHITE CHANNELIZING LINES AT EXIT RAMP AS SHOWN TO CONFORM TO SPECIFICATION G21 AND DEFINED IN G21.11.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING PM-1

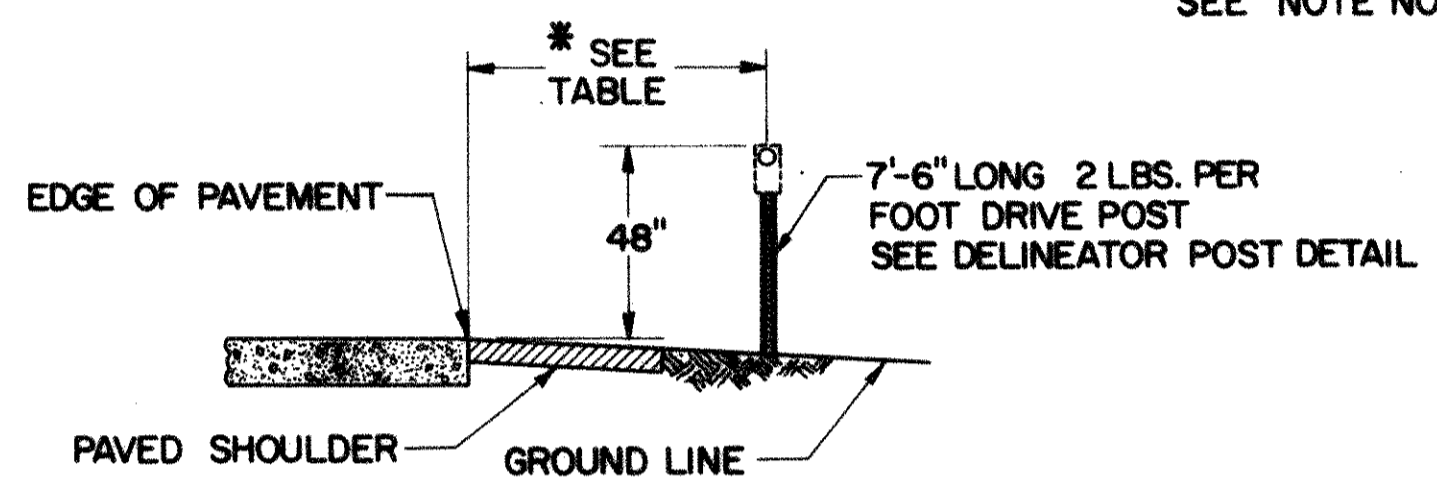
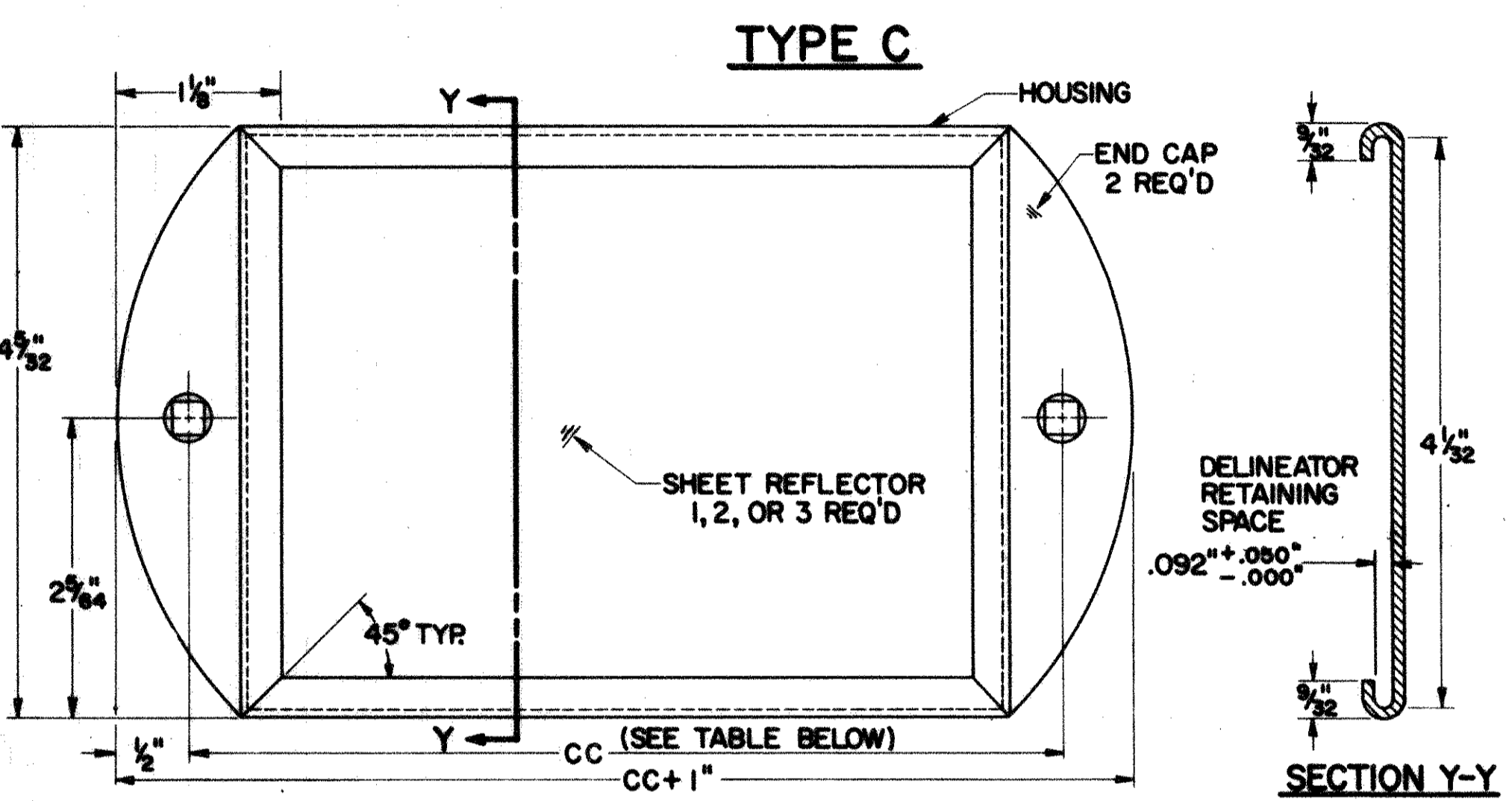
DATE
7-17-61
4-6-62

APPROVED *Robert E. Lower*
ENGINEER OF TRAFFIC



NOTES

- TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES, BEGINNING AT STA. +00, +25, +50, OR +75.
- DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH SPECIFICATION G20.
- PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM G20 DELINEATORS".
- WHEN CROSSING FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT ON THE RAMPS THE DELINEATORS AT THE POINT OF CROSSOVER ARE TO BE AT THE SAME STATION ON EACH SIDE.
- NO DELINEATORS ARE TO BE PLACED IN PAVED BERM.
- WHEN RADII OF CURVE ON RAMPS REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.
- RAMP DELINEATOR AT END OF ACCELERATION & BEGINNING OF DECELERATION LANES TO BE A MAXIMUM OF 5' FROM POINT OF TANGENCY AT MAIN LINE.
- ALL RAMP DELINEATORS SHALL BE PLACED TO THE NEAREST 5' INCREMENTS, SUCH AS +05, +10, +15, +20 AND SO ON.



LATERAL PLACEMENT OF DELINEATORS

* TABLE

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

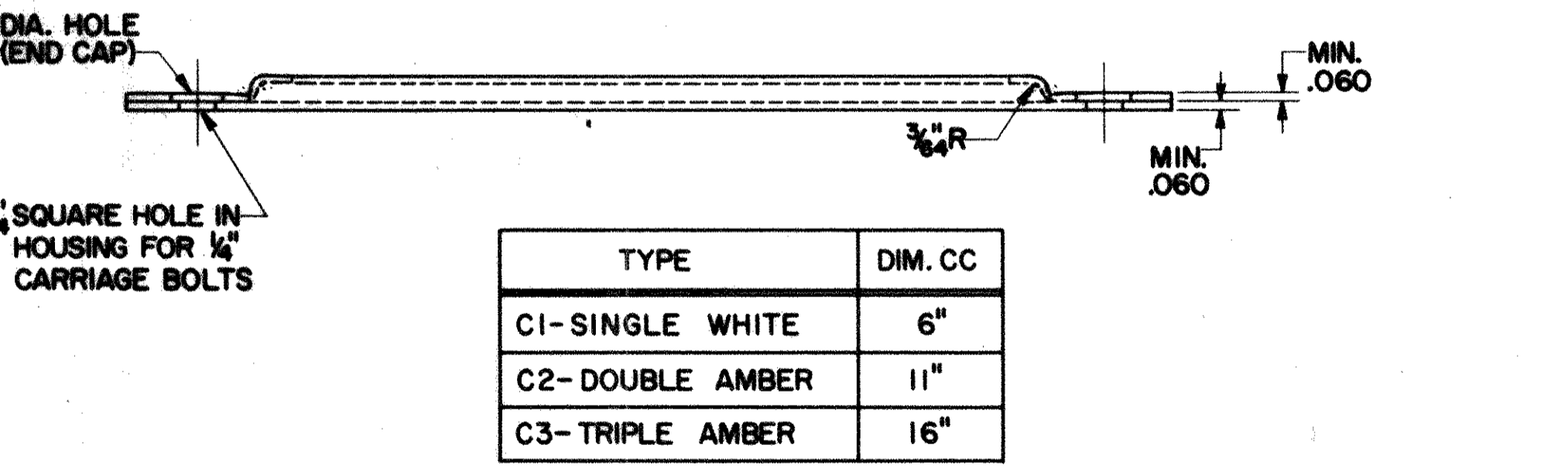
** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.

TYPICAL DELINEATOR PLACEMENT

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

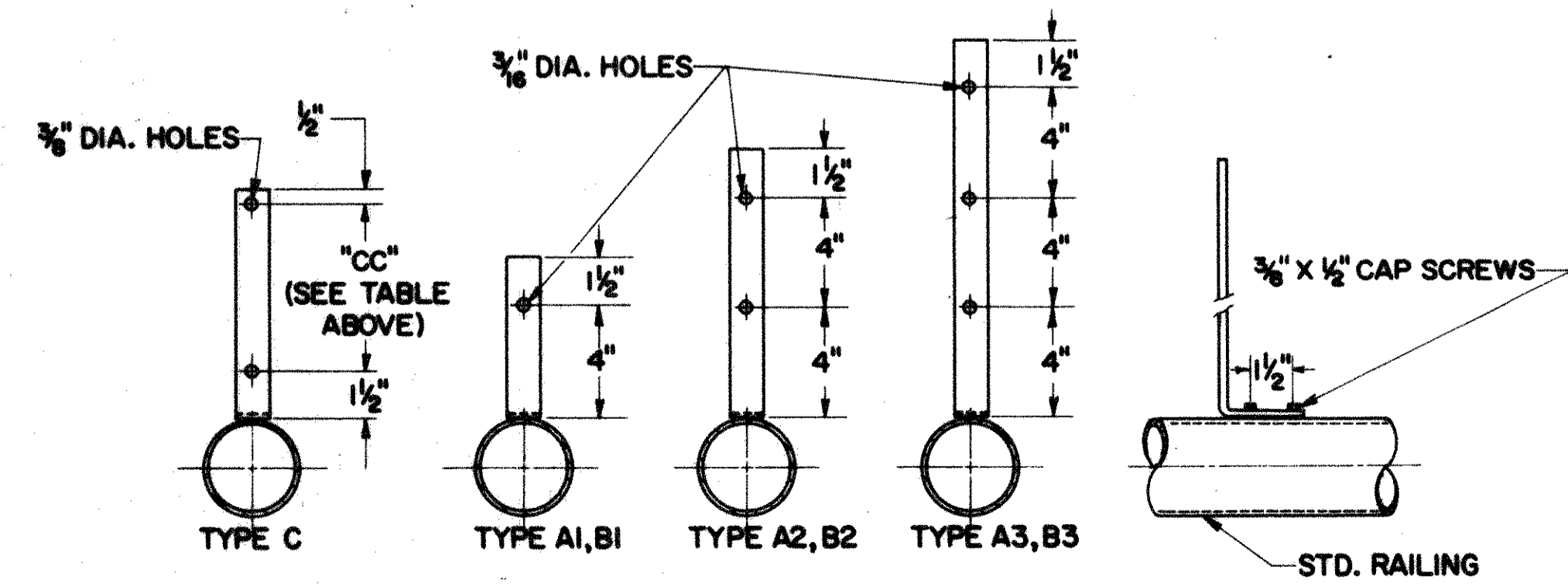
RADI, FT.		SPACING ON CURVE	* TRANSITION SPACING	
FROM	TO			
TANGENT	1,801	100'	100'	100'
	1,800	80'	100'	100'
	1,400	70'	100'	100'
	1,000	60'	100'	100'
	750	50'	80'	100'
	550	40'	70'	100'
	325	30'	60'	100'

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

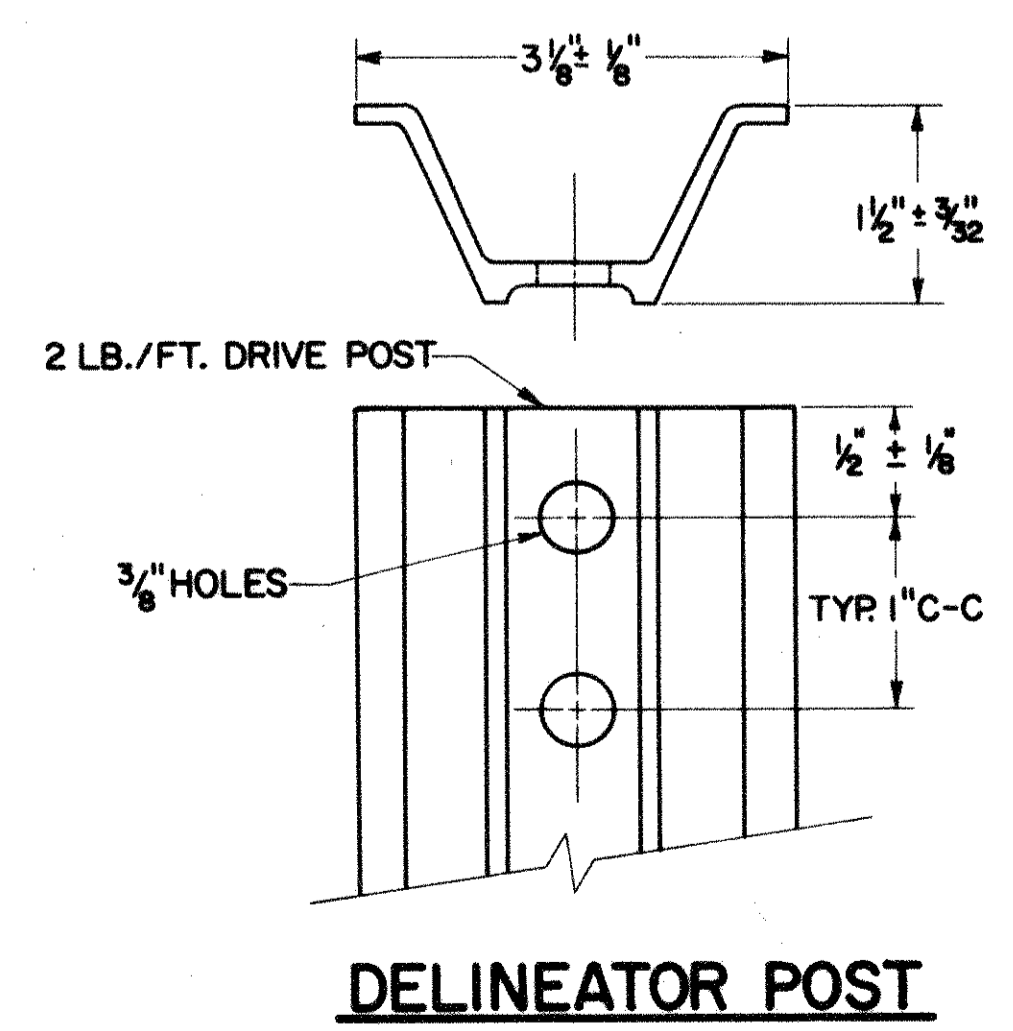


TYPE	DIM. CC
C1-SINGLE WHITE	6"
C2-DOUBLE AMBER	11"
C3-TRIPLE AMBER	16"

ALL BRACKETS 1/4" X 1/4" STAINLESS STEEL



BRIDGE RAIL BRACKET



DELINEATOR POST

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS

APPROVED *Robert C. ...*
ENGINEER OF TRAFFIC

DATE
9-25-62
10-2-63

620

Received July 30, 1965 Time 1:33 O'Clock P.M.
 Recorded July 30, 1965
 Plat Book 8 Page 195
 Signed Robert E. Wines Recorder, Licking Co., Ohio
 Fee \$ 8.28 Paid \$ 8.28

LOCATION PLAN

LIC-70-5.12, 8.67 LICKING COUNTY

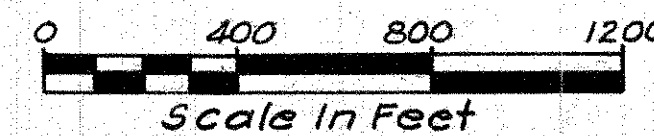
INTERSTATE ROUTE 70

Note: This Instrument Was Prepared By The Ohio
 Dept. Of Highways Under The Supervision
 Of James T. Holden, P.E. No. 14456.

Signed: James T. Holden
 Registered Surveyor No. 3766.
 Resident Division Deputy Director.

Date: 7-30-65

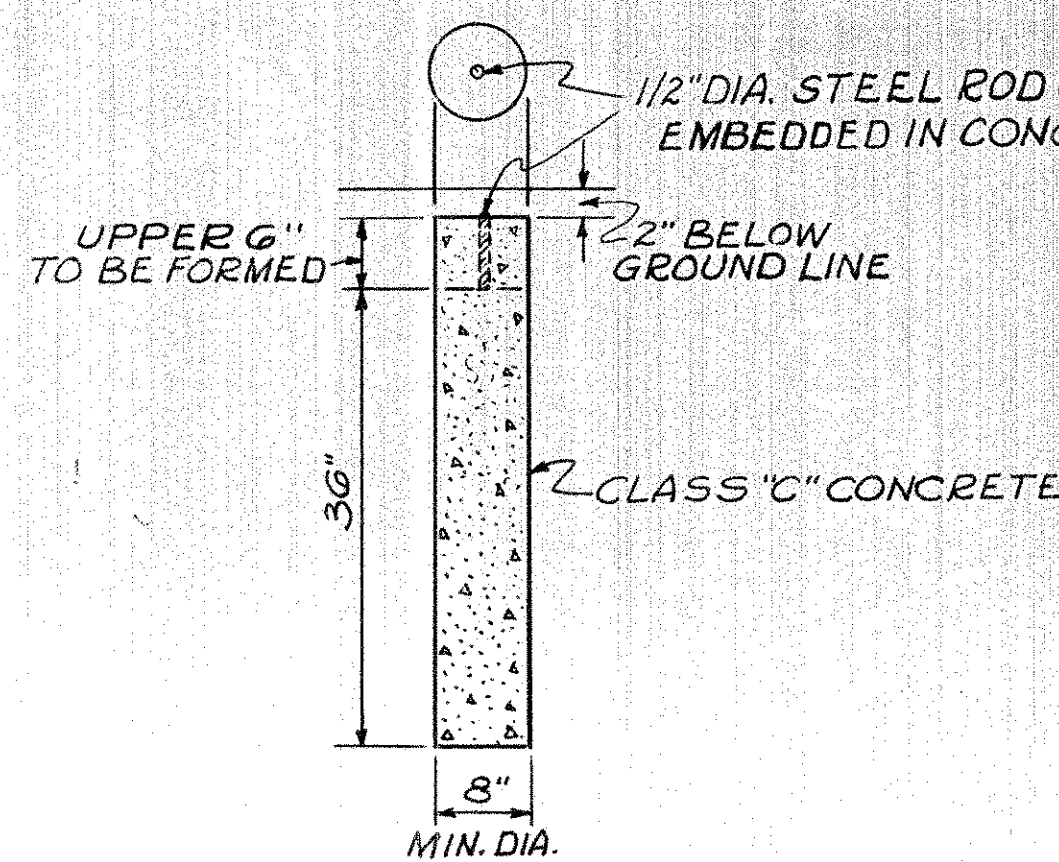
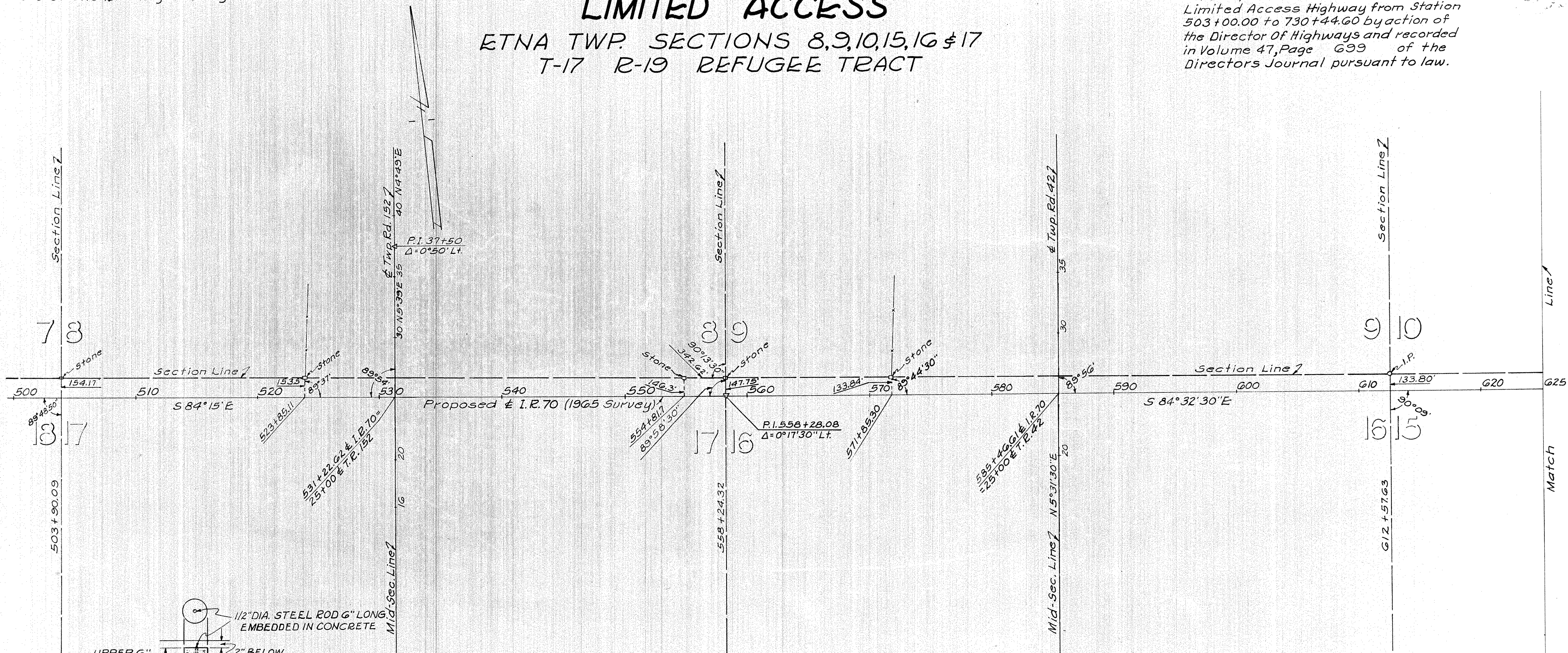
This improvement has been declared a
 Limited Access Highway from Station
 503+00.00 to 730+44.60 by action of
 the Director Of Highways and recorded
 in Volume 47, Page 699 of the
 Directors Journal pursuant to law.



LIMITED ACCESS

ETNA TWP. SECTIONS 8, 9, 10, 15, 16 & 17

T-17 R-19 REFUGEE TRACT



DETAIL OF CENTER LINE REFERENCE MONUMENT

TABLE OF CENTER LINE REFERENCE MONUMENTS

P.O.T. 507+00	P.O.T. 527+00	P.O.T. 550+00	P.O.T. 570+50	P.O.T. 594+00	P.O.T. 615+00
P.O.T. 512+00	P.O.T. 534+00	P.O.T. 555+00	P.O.T. 576+00	P.O.T. 599+00	P.O.T. 620+00
P.O.T. 517+00	P.O.T. 540+00	P.O.T. 560+00	P.O.T. 582+00	P.O.T. 604+00	P.O.T. 625+00
P.O.T. 522+00	P.O.T. 545+00	P.O.T. 565+00	P.O.T. 588+00	P.O.T. 609+00	

Received July 30, 1965 Time 1-33 8' Clock P.M.
 Recorded July 30, 1965
 Plat Book 8 Page 196
 Signed Robert E. White Recorder, Licking Co., Ohio
 Fee \$8.28 Paid \$8.28

LOCATION PLAN

LIC-70-5.12, 8.67 LICKING COUNTY INTERSTATE ROUTE 70

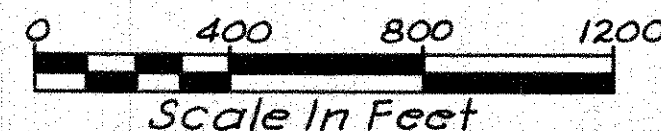
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

227
250
2
25

Note: This Instrument Was Prepared By The Ohio Dept. Of Highways Under The Supervision Of James T. Holder, P.E. No. 14456.

Signed: James T. Holder
 Registered Surveyor No. 3766.
 Resident Division Deputy Director.
 Date: 7-30-65

This improvement has been declared a Limited Access Highway from Station 503+00.00 to 730+44.60 by action of the Director of Highways and recorded in Volume 47, Page 699 of the Directors Journal pursuant to law.



LIMITED ACCESS

ETNA TWP. SECTIONS 10, 11, 14 & 15
 HARRISON TWP. SECTIONS 11, 12, 13 & 14
 T-17 R-19 REFUGEE TRACT
 CURVE DATA TABLES

PROPOSED I.R. 70

1	2	3
P.C. = 677+86.05	P.C. = 698+22.55	P.C. = 720+99.45
P.T. = 693+75.34	P.T. = 711+89.22	P.T. = 729+66.12
Δ = 7° 25' Lt.	Δ = 13° 40' Rt.	Δ = 6° 30' Lt.
D = 0° 28'	D = 1° 00'	D = 0° 45'
R = 12,277.67'	R = 5729.58'	R = 7639.44'
T = 795.75'	T = 686.59'	T = 433.80'
L = 1589.29'	L = 1366.67'	L = 866.67'
E = 25.78'	E = 40.99'	E = 12.30'

PROPOSED S.R. 158 CONNECTION

1	2	3
P.C. = 518+21.99	P.C.C. = 520+88.90(B)	P.C.C. = 524+02.31
P.C.C. = 520+88.90(B)	P.C.C. = 520+88.56(A)	P.T. = 526+69.22(B)
P.C.C. = 520+88.56(A)	P.C.C. = 524+02.31	P.T. = 526+68.88(A)
Δ = 16° 00' Lt.	Δ = 25° 06' Lt.	Δ = 16° 00' Lt.
D = 5,994.48°	D = 8° 00'	D = 5,994.48°
R = 955.81'	R = 716.20'	R = 955.81'
T = 134.33'	T = 159.43'	T = 134.33'
L = 266.91'	L = 313.75'	L = 266.91'

PROPOSED T.R. 145

1	2	3	4	5	6	7
P.C. = 717+84.85	P.C. = 720+85.74	P.C.C. = 721+85.76(B)	P.C.C. = 725+45.00	P.C. = 727+61.92	P.C.C. = 728+61.90(B)	P.C.C. = 731+36.92
P.T. = 719+50.20	P.C.C. = 721+85.76(B)	P.C.C. = 721+85.74(A)	P.T. = 726+45.02(B)	P.C.C. = 728+61.90(B)	P.C.C. = 728+61.92(A)	P.T. = 732+36.90(B)
Δ = 62° 50' Rt.	P.C.C. = 725+45.00	P.C.C. = 725+45.00	P.C.C. = 726+45.00(A)	P.C.C. = 728+61.92(A)	P.C.C. = 731+36.92	P.C.C. = 732+36.92(A)
D = 38° 00'	Δ = 6° 45' Lt.	Δ = 32° 20' Lt.	Δ = 6° 45' Lt.	Δ = 3° 00' Lt.	Δ = 11° 00' Lt.	Δ = 3° 00' Lt.
R = 150.78'	D = 6.7486°	D = 9° 00'	D = 6.7486°	D = 3.0005°	D = 4° 00'	D = 3.0005°
T = 92.10'	R = 849.00'	R = 636.62'	R = 849.00'	R = 1909.51'	R = 1432.39'	R = 1909.51'
L = 165.35'	T = 50.07'	T = 184.56'	T = 50.07'	T = 50.01'	T = 137.92'	T = 50.01'
E = 25.90'	L = 100.02'	L = 359.26'	L = 100.02'	L = 99.98'	L = 275.00'	L = 99.98'

EXISTING I.R. 70 (1956)

PI. = 532+10.51	Xc = 299.81'
Δ = 57° 06' 30" Lt.	Yc = 7.85'
Δc = 48° 06' 30"	Ls = 300'
Dc = 3° 00'	Os = 4° 30'
Rc = 1909.86'	Ts = 1190.35'
Lc = 1603.61'	Es = 266.71'

EXISTING S.R. 158 (1956)

P.C. = 43+99.02
P.T. = 45+32.35
Δ = 0° 40' Lt.
D = 0° 30'
R = 11,459.16'
T = 66.69'
L = 133.33'

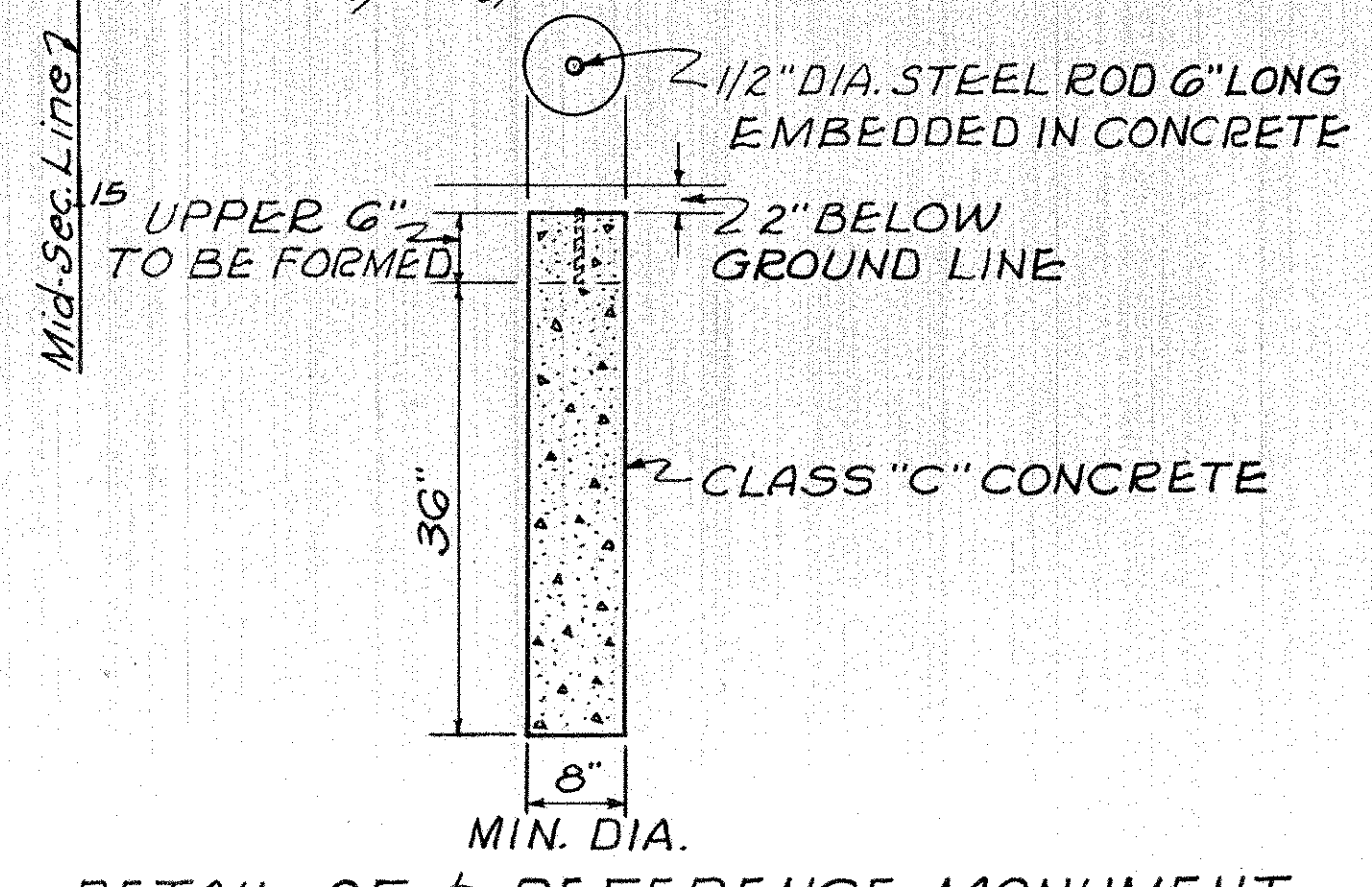
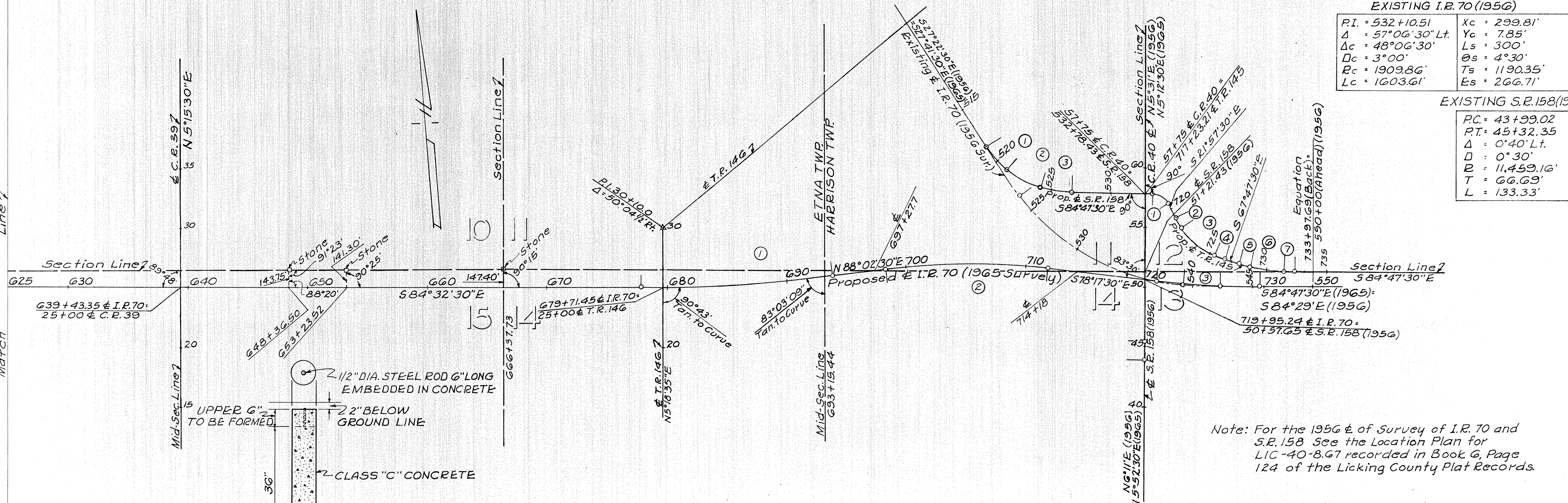


TABLE OF CENTER LINE REFERENCE MONUMENTS

P.O.T. 631+00	P.O.T. 653+00	P.C. 677+86.05	P.C. 698+22.55	P.O.T. 716+00
P.O.T. 637+00	P.O.T. 659+00	P.O.C. 683+00	P.O.C. 702+00	P.C. 720+99.45
P.O.T. 642+00	P.O.T. 666+00	P.O.C. 688+00	P.O.C. 707+00	P.O.C. 724+50
P.O.T. 648+00	P.O.T. 672+00	P.T. 693+75.34	P.T. 711+89.22	P.T. 729+66.12

Note: For the 1956 & of Survey of I.R. 70 and S.R. 158 See the Location Plan for LIC-40-8.67 recorded in Book 6, Page 124 of the Licking County Plat Records.

PROPERTY PLAN

Scale: 1" = 400'

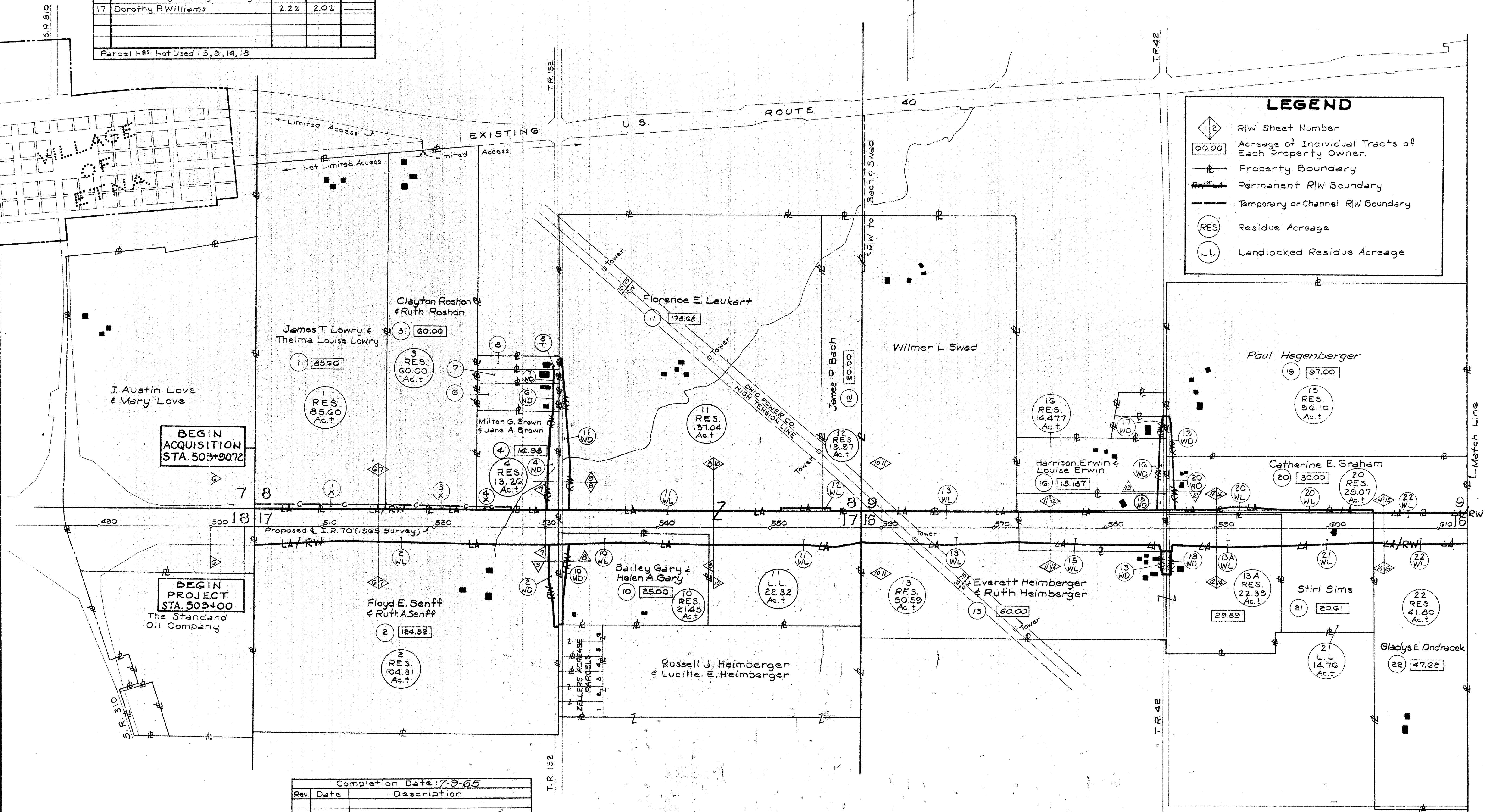


Par. No.	Owner	Acre	Residue	
			Left	Right
6	Enoch Hodge & Betty Hodge	4.00	3.75	
7	George R. Howell & Irma Howell	2.00	1.90	
8	Willis E. Purcell	2.00	1.92	
15	Jessie C. Sligh & Marjorie Sligh	15.187	4.597	1.57 (L.L.)
17	Dorothy P. Williams	2.22	2.02	

Parcel Nos. Not Used: 5, 9, 14, 18

LEGEND

- 12 RIW Sheet Number
- 00.00 Acreage of Individual Tracts of Each Property Owner.
- Property Boundary
- Permanent RIW Boundary
- Temporary or Channel RIW Boundary
- RES Residue Acreage
- LL Landlocked Residue Acreage



BEGIN ACQUISITION STA. 503+90.72

BEGIN PROJECT STA. 503+00
The Standard Oil Company

Completion Date: 7-9-65

Rev.	Date	Description

Licking Co. Etna Twp.

FUNDS - I

PROPERTY PLAN

LIC-70-5.12,8.67
R/W PLAN
LIMITED ACCESS

5
25

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

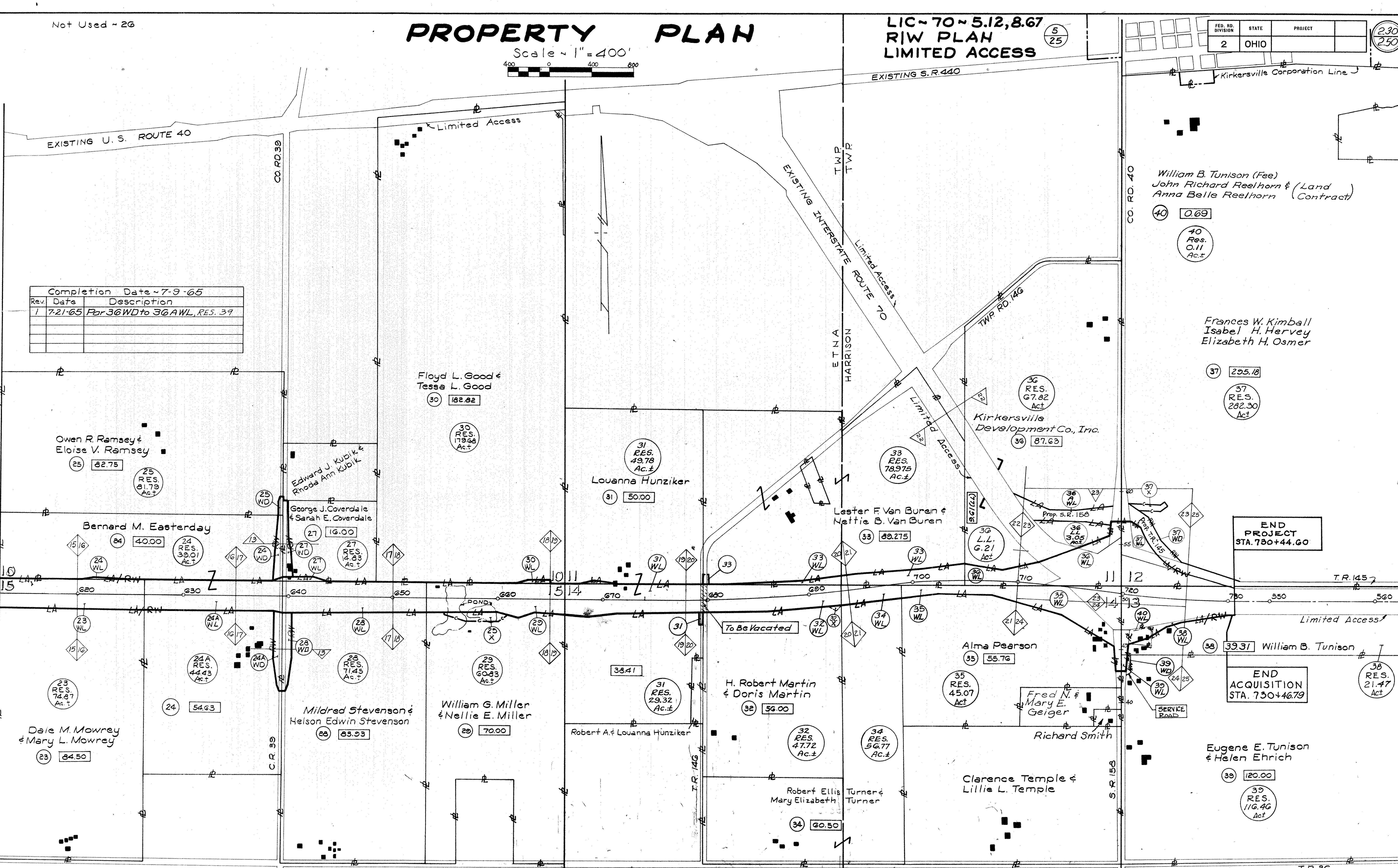
230
250

Scale - 1" = 400'



Rev.	Date	Description
1	7-21-65	Par 36 WD to 36 AWL, RES. 39

Completion Date - 7-9-65



William B. Tunison (Fee)
John Richard Reelhorn & (Land
Anna Belle Reelhorn (Contract)

40 Res. 0.11 Ac.±

Frances W. Kimball
Isabel H. Hervey
Elizabeth H. Osmer

37 295.18

37 RES. 282.30 Ac.±

END PROJECT STA. 730+44.60

END ACQUISITION STA. 730+46.79

38 39.31 William B. Tunison

38 RES. 21.47 Ac.±

Eugene E. Tunison
& Helen Ehrich

39 120.00

39 RES. 116.46 Ac.±

LICKING CO. ETNA TWP
 SEC. 7, 8, 17 & 18 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LIC-70-5.12, 8.67
 R/W PLAN
 LIMITED ACCESS

J. Austin Love & Mary Love

James T. Lowry & Thelma Louise Lowry
 (1 X) Cont. 1.07 Ac. ±

END ACQUISITION LIC-70-0.33 STA. 503+90.72
 BEGIN ACQUISITION LIC-70-5.12, 8.67 STA. 503+90.72

END PROJECT LIC-70-0.33 STA. 503+00.00
 BEGIN PROJECT LIC-70-5.12, 8.67 STA. 503+00.00

R/W FENCE LEGEND

- R/W Fence
- I.A.P.A. Intermediate Anchor Post Assembly
- C.P.A. Corner Post Assembly
- A.C. Abutment Connection
- E.P.A. End Post Assembly
- F.M.O. *Future Maintenance Opening

* For Details See Sheet No. 10-A

Floyd E. Senff & Ruth A. Senff
 (2 WL) Cont. 18.64 Ac. ±
 P.R.O. 0.21 Ac. ±

ITEM	QUANTITY
607	2402 Lin. Ft.
601	Cu. Yds.

FUNDS = 1

Rev.	Date	Description

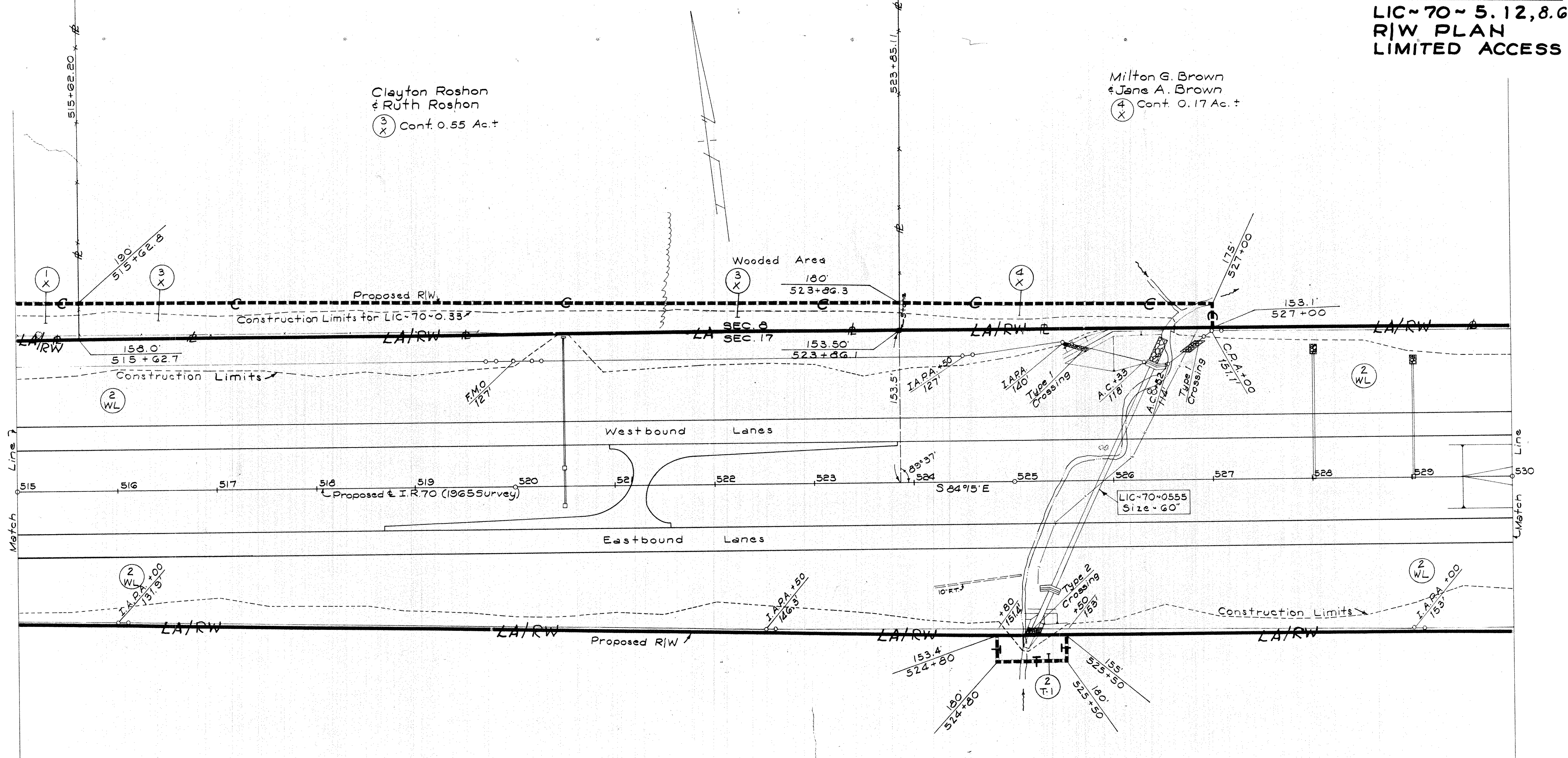
LICKING CO. ETNA TWP
 SEC. 8 & 17 T. 17 R. 19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LIC-70-5.12,8.67
 R/W PLAN
 LIMITED ACCESS

Clayton Roshon
 & Ruth Roshon
 (3) Cont. 0.55 Ac.±

Milton G. Brown
 & Jane A. Brown
 (4) Cont. 0.17 Ac.±



Line 7
 Match

Line
 Match

Floyd E. Senff
 & Ruth A. Senff
 (2) Cont. 18.64 Ac.±
 (WL) PRO. 0.21 Ac.±
 (2) Cont. 0.04 Ac.±

ITEM	QUANTITY
607	2,999 Lin. Ft.
601	30 Cu. Yds.

FUNDS = I

Completion Date: 7-9-65	
Rev.	Date

Milton G. Brown
& Jane A. Brown

4 Cont. 1.10 Ac.±
WD P.R.O. 0.62 Ac.±

LICKING CO. ETNA TWP
SEC. 8 & 17 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LIC-70-5.12,8.67
R/W PLAN
LIMITED ACCESS

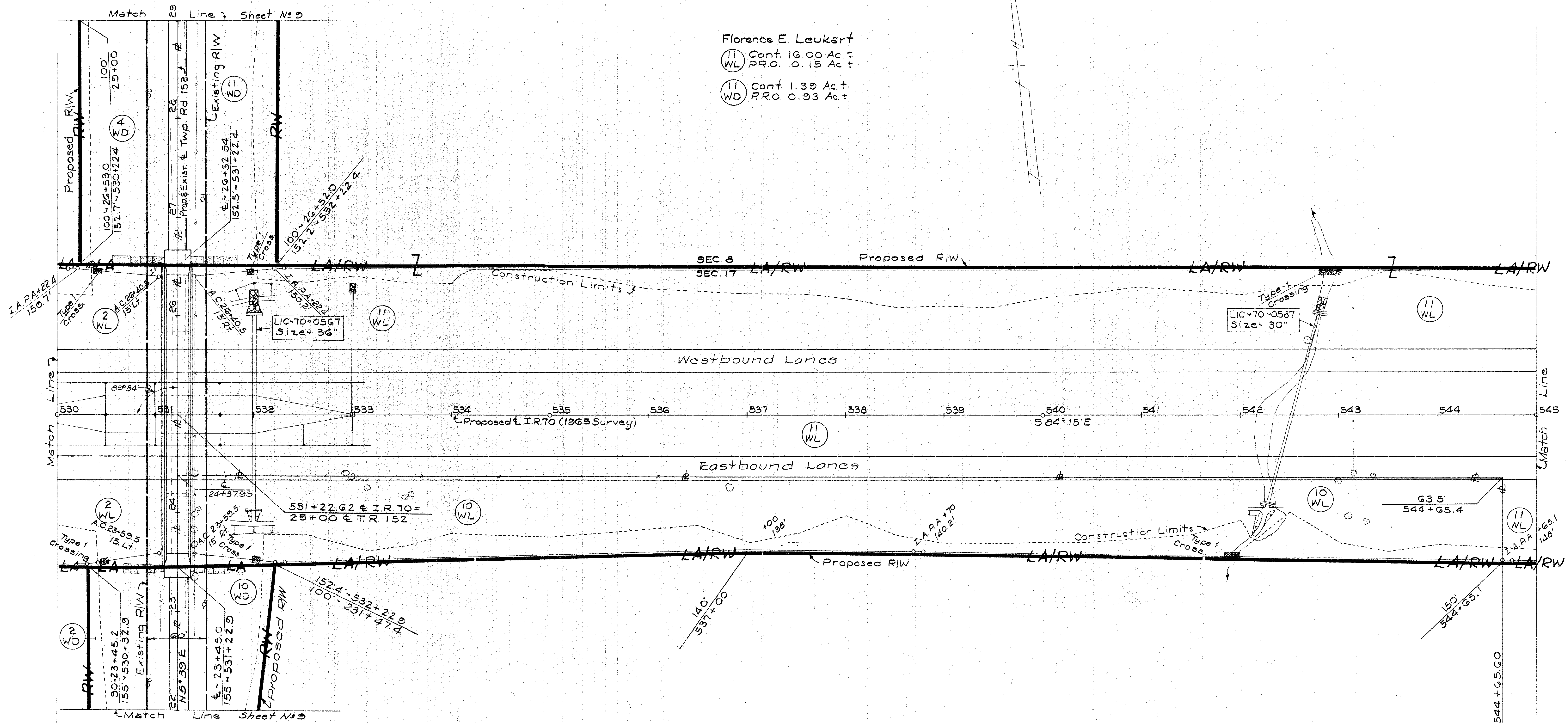
233
250

8
25

Florence E. Leukart

11 WL Cont. 16.00 Ac.±
P.R.O. 0.15 Ac.±

11 WD Cont. 1.39 Ac.±
P.R.O. 0.93 Ac.±



Floyd E. Senff
& Ruth A. Senff

2 WL Cont. 18.64 Ac.±
P.R.O. 0.21 Ac.±

2 WD Cont. 0.60 Ac.±
P.R.O. 0.51 Ac.±

Bailey Gary &
Helen A. Gary

10 WL Cont. 2.50 Ac.±
P.R.O. 0.07 Ac.±

10 WD Cont. 0.49 Ac.±
P.R.O. 0.49 Ac.±

ITEM	QUANTITY
607	2,951 Lin. Ft.
601	41 Cu. Yds.

FUNDS = I

Completion Date: 7-9-65

Rev.	Date	Description

LICKING CO. ETHA TWP
SEC. 17 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT	234 250
2	OHIO		

LIC-70-5.12,8.67
R/W PLAN
LIMITED ACCESS

Floyd E. Sentf
& Ruth A. Sentf
② Cont. 0.60 Ac.±
WD P.R.O. 0.51 Ac.±
② T-2 Cont. 0.08 Ac.±

Russell J. & Lucille E.
Heimberger

H. Elwood & Marilyn
Zellers

Russell J. & Lucille E.
Heimberger

Bailey Gary &
Helen A. Gary
⑩ Cont. 0.49 Ac.±
WD P.R.O. 0.49 Ac.±

ZELLERS
PLAT BK. 7

ACREAGE

PARCELS
PAGE 133

Milton G. Brown
& Jane A. Brown
④ Cont. 1.10 Ac.±
WD P.R.O. 0.62 Ac.±
④ T Cont. 0.10 Ac.±

Enoch Hodge &
Betty Hodge
⑥ Cont. 0.08 Ac.±
WD P.R.O. 0.17 Ac.±
⑥ T Cont. 0.04 Ac.±

George R. Howell
& Irma Howell
⑦ Cont. 0.02 Ac.±
WD P.R.O. 0.08 Ac.±
⑦ T Cont. 0.03 Ac.±

Willis E. Purcell
⑧ T Cont. 0.02 Ac.±

Ray E. & Goldie G. Tisdale

Florence E. Leukart
⑪ Cont. 1.39 Ac.±
WD P.R.O. 0.93 Ac.±

LICKING CO. ETHA TWP
SEC. 8 T-17 R-19 REFUGEE TRACT

FUNDS = 1

Completion Date: 7-9-65	
Rev	Date Description
1	7-12-65 Par. 8T.

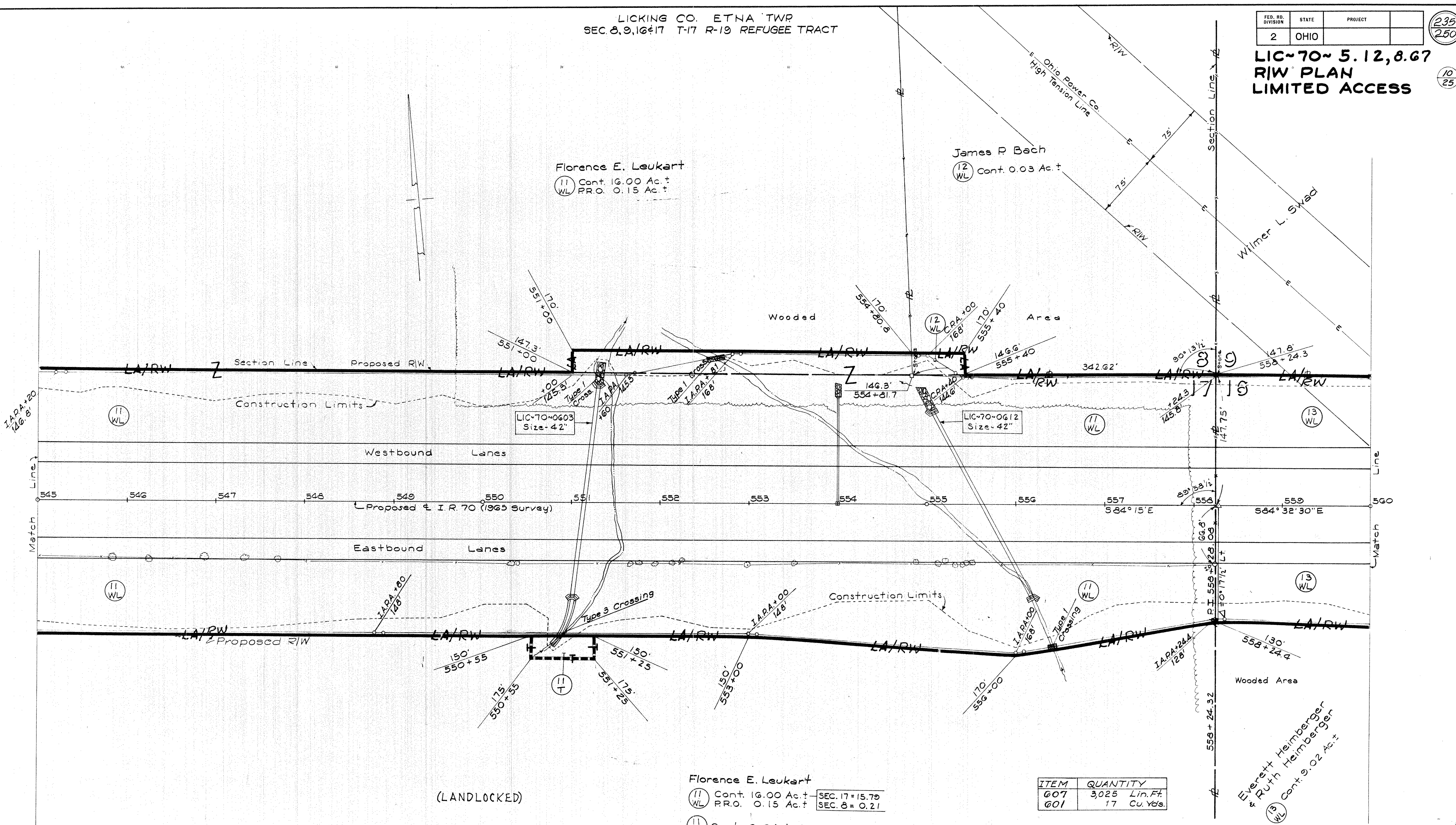
LIC-70-5.12,8.67 (TWP RD. 152) 29-41 LEFT
15-22 RIGHT

LICKING CO. ETNA TWP
 SEC. 8, 9, 16 & 17 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LIC-70-5.12, 8.67
 RIW PLAN
 LIMITED ACCESS

235
 250
 10
 25



(LANDLOCKED)

Florence E. Leukart
 (11 WL) Cont. 16.00 Ac. ± SEC. 17 = 15.79
 P.R.O. 0.15 Ac. ± SEC. 8 = 0.21
 (11 T) Cont. 0.04 Ac. ±

ITEM	QUANTITY
607	3,025 Lin. Ft.
601	17 Cu. Yds.

Everett Heimberger
 & Ruth Heimberger
 (13 WL) Cont. 9.02 Ac. ±

FUNDS - 1

Completion Date: 7-9-65		
Rev.	Date	Description

LICKING CO. ETNA TWP
 SEC. 9 & 16 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

236
250

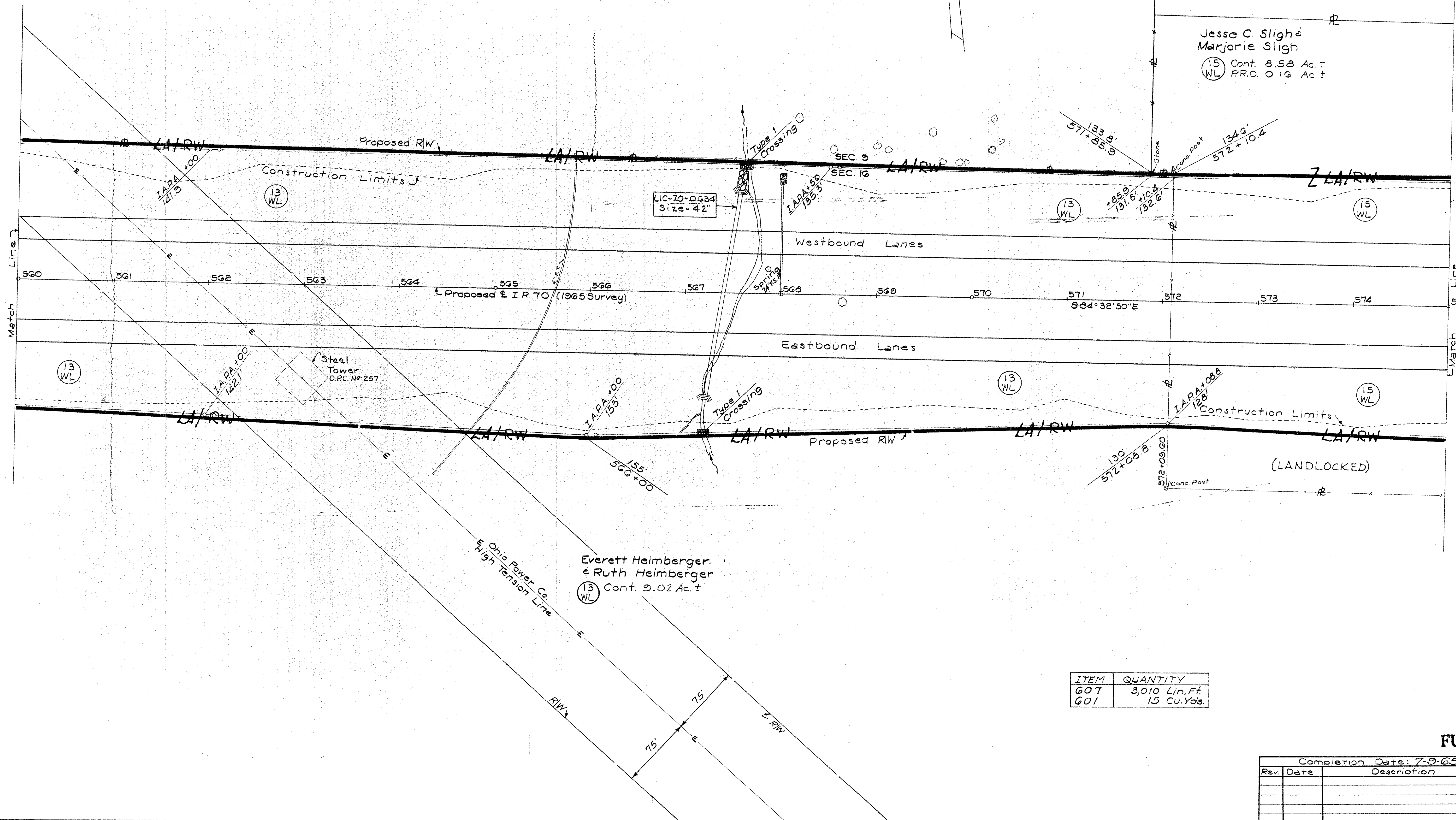
LIC-70-5.12,8.67
 RIW PLAN
 LIMITED ACCESS

11
25

Wilmer L. Swad

Harrison Erwin & Louise Erwin
 16

Jesse C. Sligh & Marjorie Sligh
 15 Cont. 8.58 Ac. ±
 P.R.O. 0.16 Ac. ±



ITEM	QUANTITY
G07	3,010 Lin. Ft.
G01	15 Cu. Yds.

FUNDS - I

Completion Date: 7-9-65	
Rev. Date	Description

16 Harrison Erwin & Louise Erwin

LICKING CO. ETNA TWP
SEC. 9 & 16 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

237
250

LIC-70-5.12, 8.67
R/W PLAN
LIMITED ACCESS

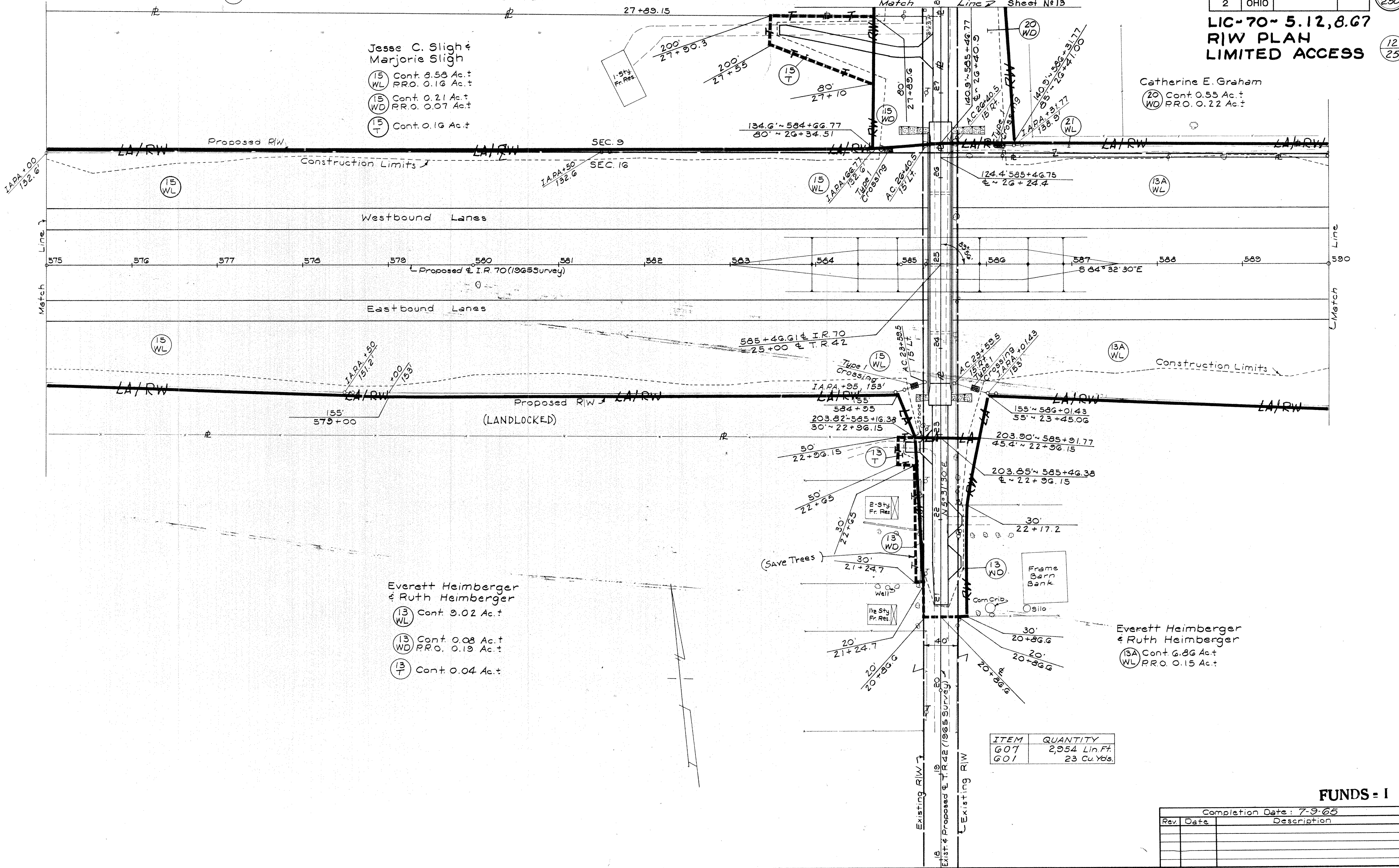
12
25

Jesse C. Sligh & Marjorie Sligh

- 15 WL Cont. 8.58 Ac.± P.R.O. 0.16 Ac.±
- 15 WD Cont. 0.21 Ac.± P.R.O. 0.07 Ac.±
- 15 T Cont. 0.16 Ac.±

Catherine E. Graham

- 20 Cont. 0.55 Ac.± P.R.O. 0.22 Ac.±



Everett Heimberger & Ruth Heimberger

- 13 WL Cont. 9.02 Ac.±
- 13 WD Cont. 0.08 Ac.± P.R.O. 0.19 Ac.±
- 13 T Cont. 0.04 Ac.±

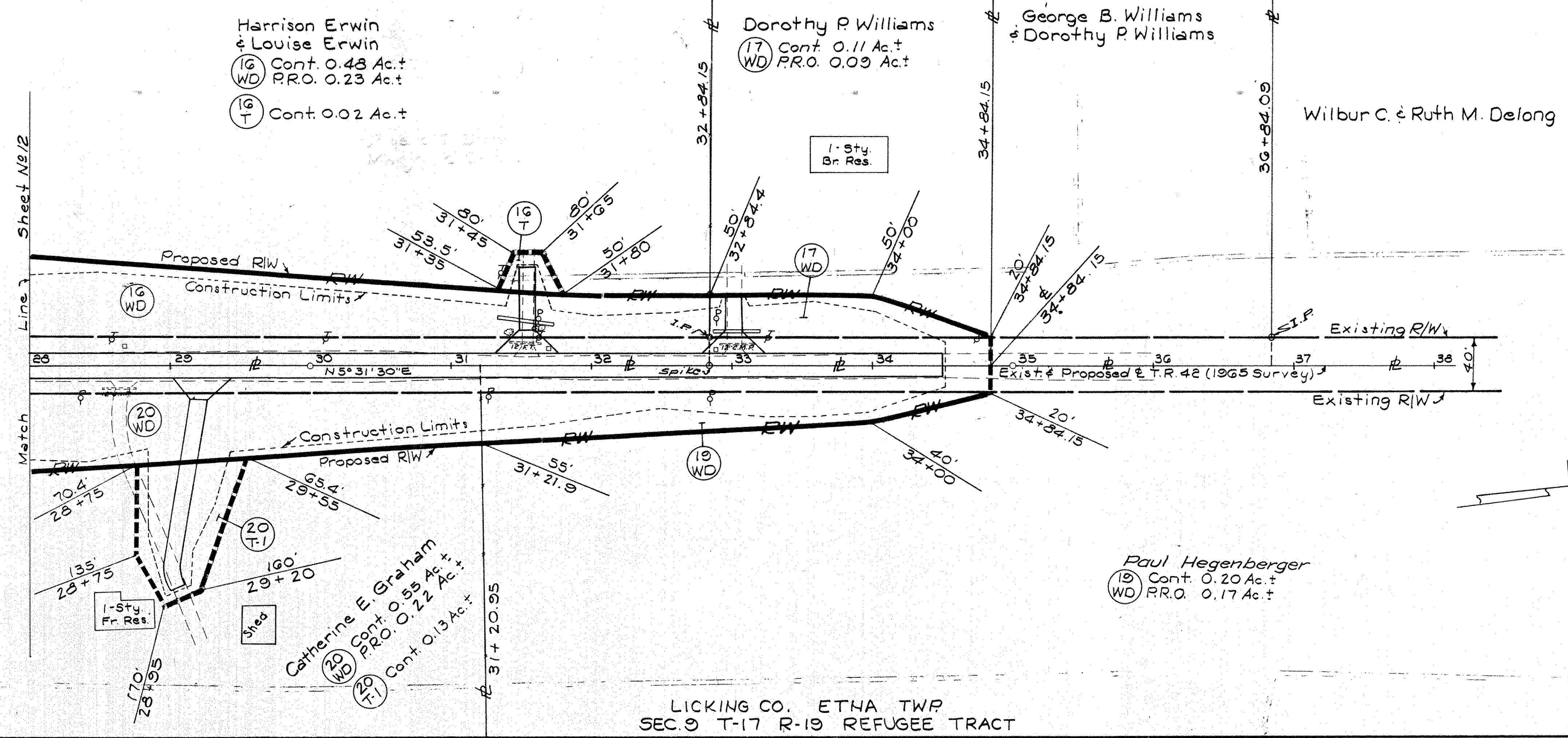
Everett Heimberger & Ruth Heimberger

- 13A Cont. 6.86 Ac.± WL P.R.O. 0.15 Ac.±

ITEM	QUANTITY
607	2,954 Lin. Ft.
601	23 Cu. Yds.

FUNDS = 1

Completion Date: 7-9-65		
Rev.	Date	Description

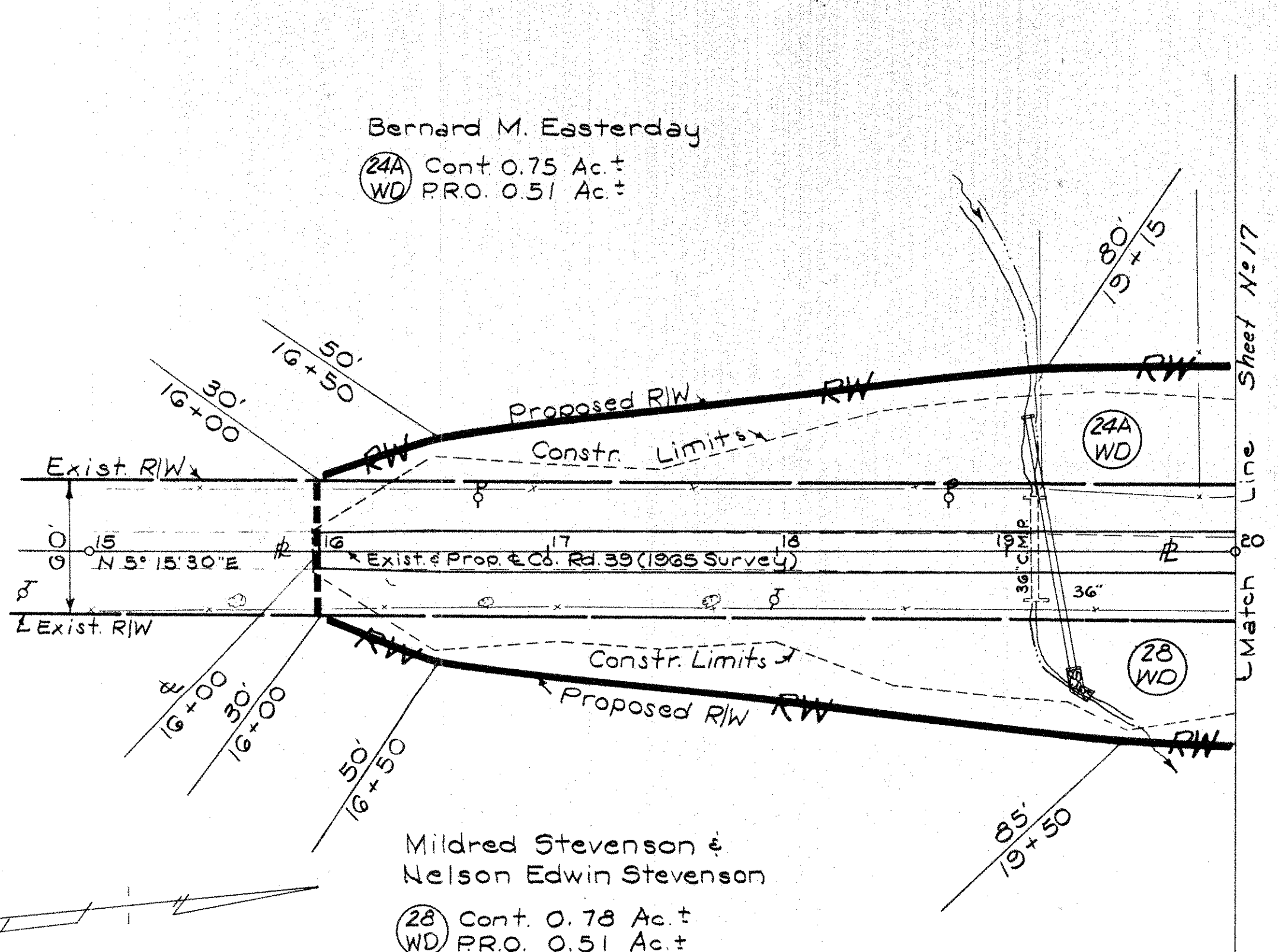


LICKING CO. ETNA TWP
 SEC. 9 T-17 R-19 REFUGEE TRACT

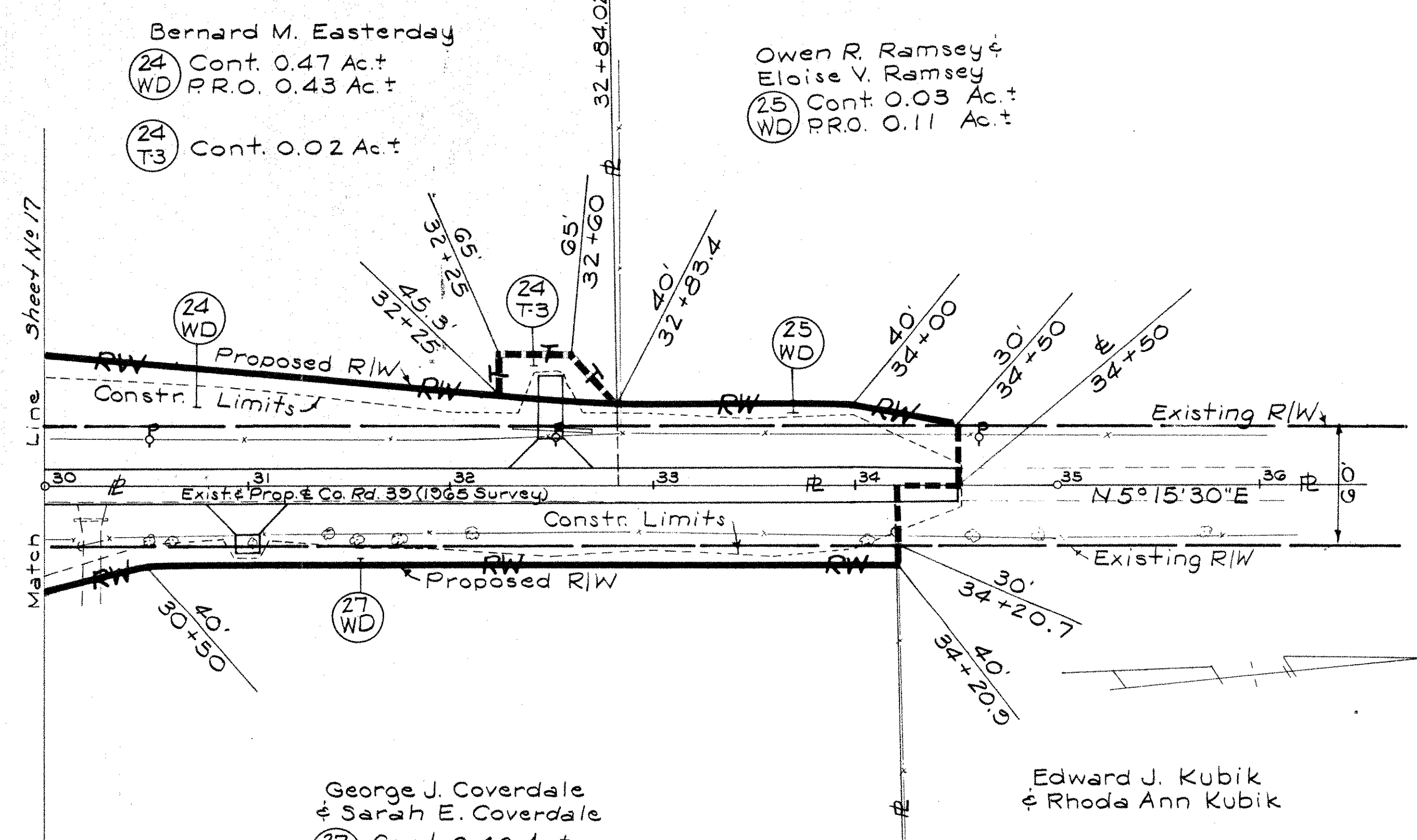
TWP RD. 42 - LEFT

LICKING CO. ETNA TWP
 SEC. 15 T-17 R-19 REFUGEE TRACT

LICKING CO. ETNA TWP
 SEC. 10 T-17 R-19 REFUGEE TRACT



CO. RD. 39 ~ RIGHT



CO. RD. 39 ~ LEFT

Completion Date: 7-9-65

Rev.	Date	Description

FUNDS - I

LICKING CO. ETNA TWP
SEC. 9&16 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

239
250

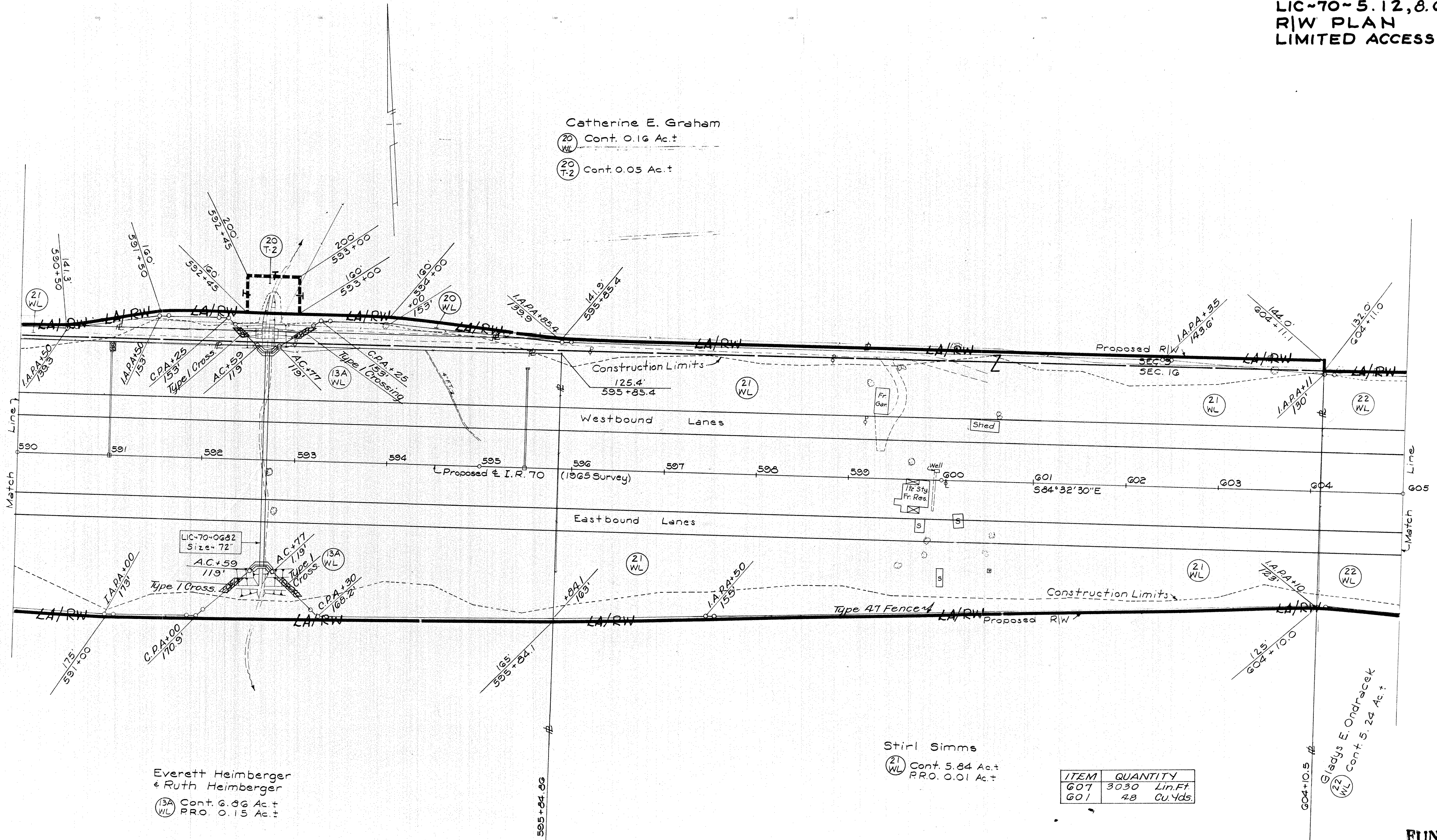
LIC-70-5.12, 8.67
R/W PLAN
LIMITED ACCESS

14
25

Catherine E. Graham

(20) Cont. 0.16 Ac. ±

(20) Cont. 0.05 Ac. ±



Everett Heimberger
& Ruth Heimberger
(13A) Cont. 6.88 Ac. ±
P.R.O. 0.15 Ac. ±

Stirl Simms
(21) Cont. 5.84 Ac. ±
P.R.O. 0.01 Ac. ±

ITEM	QUANTITY
G07	3030 Lin.Ft.
G01	48 Cu.Yds.

Gladys E. Ondracek
(22) Cont. 5.24 Ac. ±

(LANDLOCKED)

FUNDS - I

Rev.		Date		Description	

LICKING CO. ETNA TWP
 T-17 R-19 REFUGEE TRACT
 SEC. 9, 16, 10 & 15

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

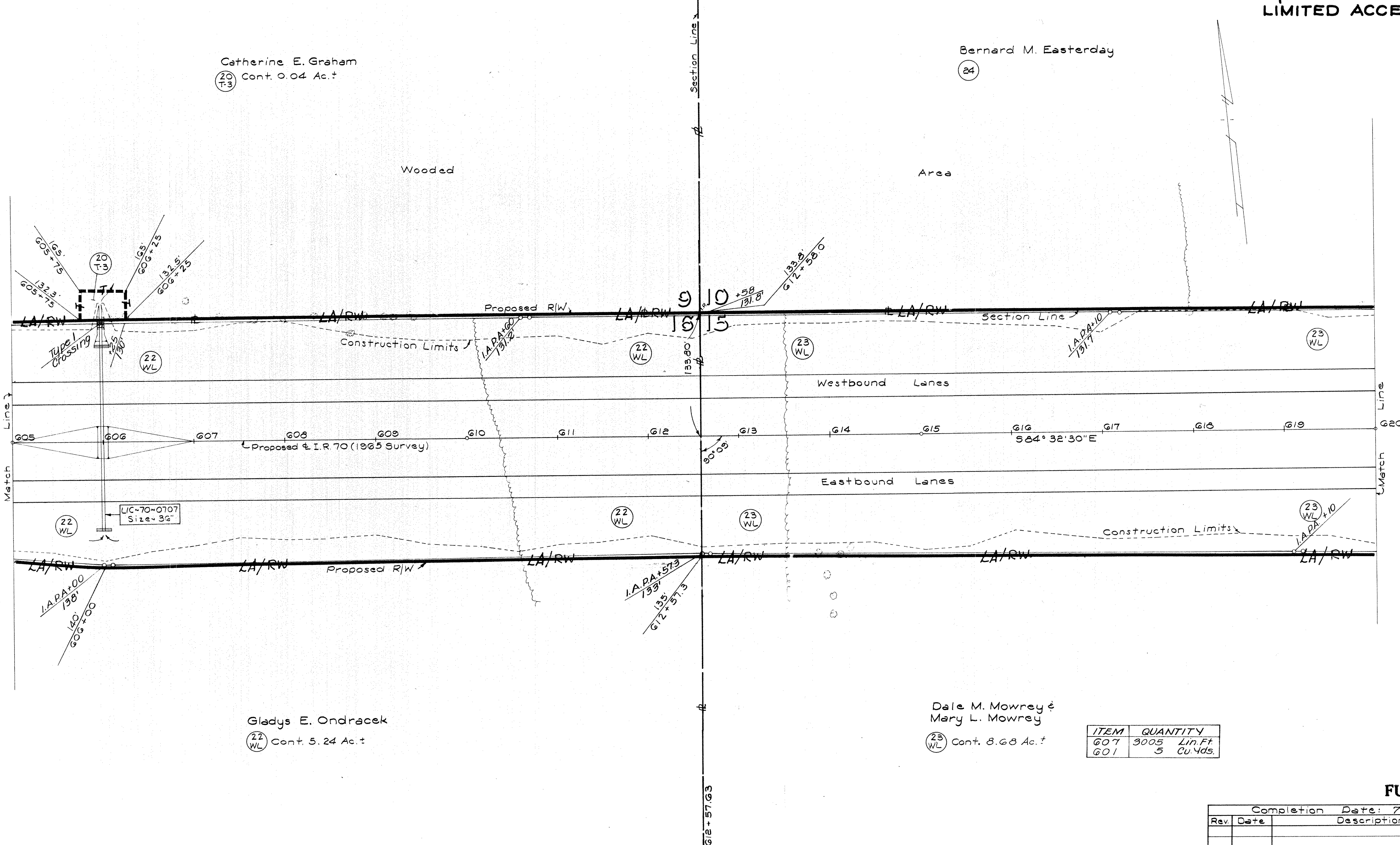
240
250

LIC-70-5.12, 8.67
 R/W PLAN
 LIMITED ACCESS

15
25

Catherine E. Graham
 (20 T-3) Cont. 0.04 Ac.±

Bernard M. Easterday
 (24)



Gladys E. Ondracek
 (22 WL) Cont. 5.24 Ac.±

Dale M. Mowrey &
 Mary L. Mowrey
 (23 WL) Cont. 8.68 Ac.±

ITEM	QUANTITY
607	3005 Lin.Ft.
601	5 Cu.Yds.

FUNDS = 1

Completion Date: 7-9-65		
Rev.	Date	Description

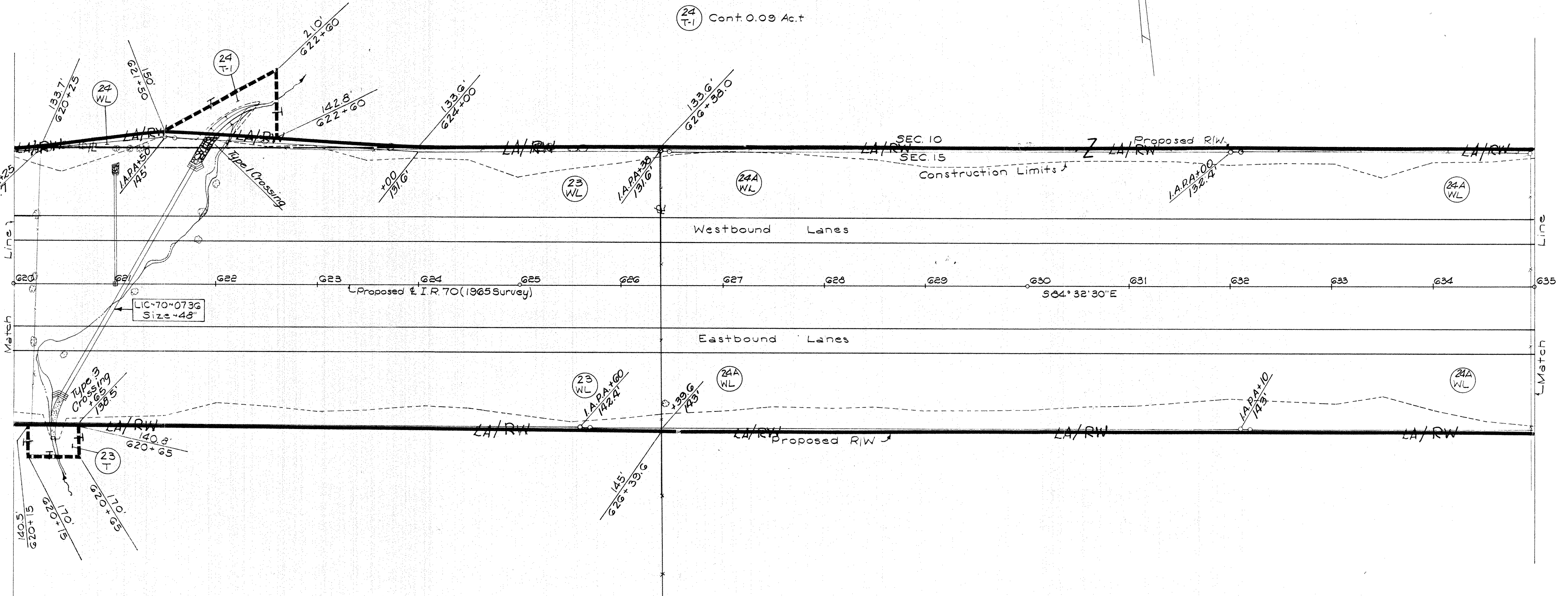
LICKING CO. ETHA TWP
SEC. 10 & 15 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LIC-70-5.12, 8.67
R/W PLAN
LIMITED ACCESS

Bernard M. Easterday

- (24) Cont. 0.07 Ac.±
WL
- (24) Cont. 0.09 Ac.±
T-1



- Dale M. Mowrey
& Mary L. Mowrey
- (23) Cont. 8.68 Ac.±
WL
 - (23) Cont. 0.03 Ac.±
T

- Bernard M. Easterday
- (24A) Cont. 8.20 Ac.±
WL
 - P.R.O. 0.22 Ac.±

ITEM	QUANTITY
607	3000 Lin.Ft.
601	6 Cu.Yds.

FUNDS - 1

Rev.		Date	Completion Date: 7-9-65
			Description

Bernard M. Easterday

(24) Cont. 0.47 Ac. +
 (WD) P.R.O. 0.43 Ac. +

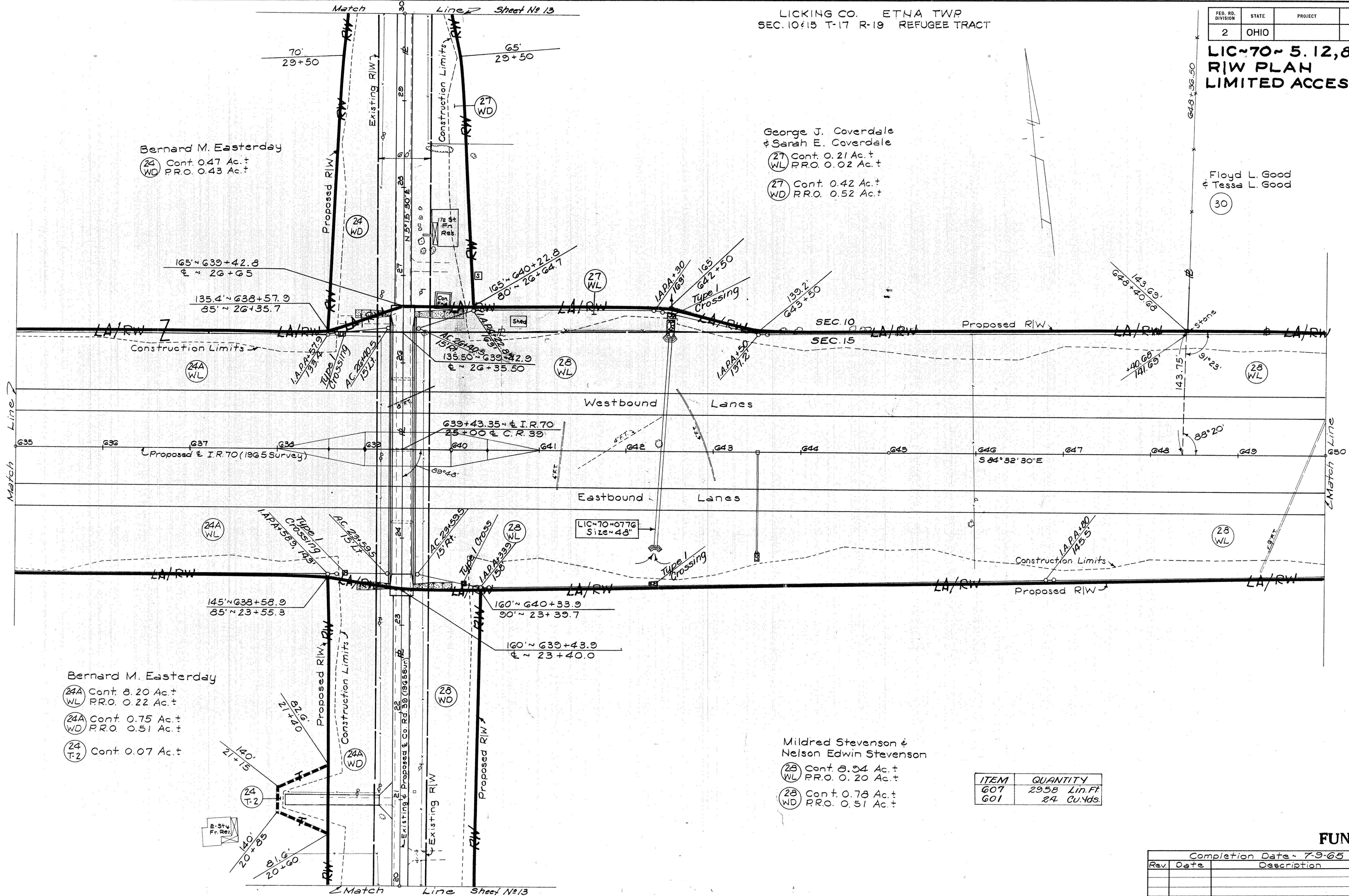
George J. Coverdale
 & Sarah E. Coverdale

(27) Cont. 0.21 Ac. +
 (WL) P.R.O. 0.02 Ac. +

(27) Cont. 0.42 Ac. +
 (WD) P.R.O. 0.52 Ac. +

Floyd L. Good
 & Tessa L. Good

(30)



Bernard M. Easterday

(24A) Cont. 8.20 Ac. +
 (WL) P.R.O. 0.22 Ac. +

(24A) Cont. 0.75 Ac. +
 (WD) P.R.O. 0.51 Ac. +

(24) T-2 Cont. 0.07 Ac. +

Mildred Stevenson &
 Nelson Edwin Stevenson

(28) Cont. 8.34 Ac. +
 (WL) P.R.O. 0.20 Ac. +

(28) Cont. 0.78 Ac. +
 (WD) P.R.O. 0.51 Ac. +

ITEM	QUANTITY
G07	2958 Lin.Ft
G01	24 Cu.Yds.

FUNDS - 1

Completion Date - 7-9-65		
Rev	Date	Description

LICKING CO. ETNA TWP
SEC. 10 & 15 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

243
250

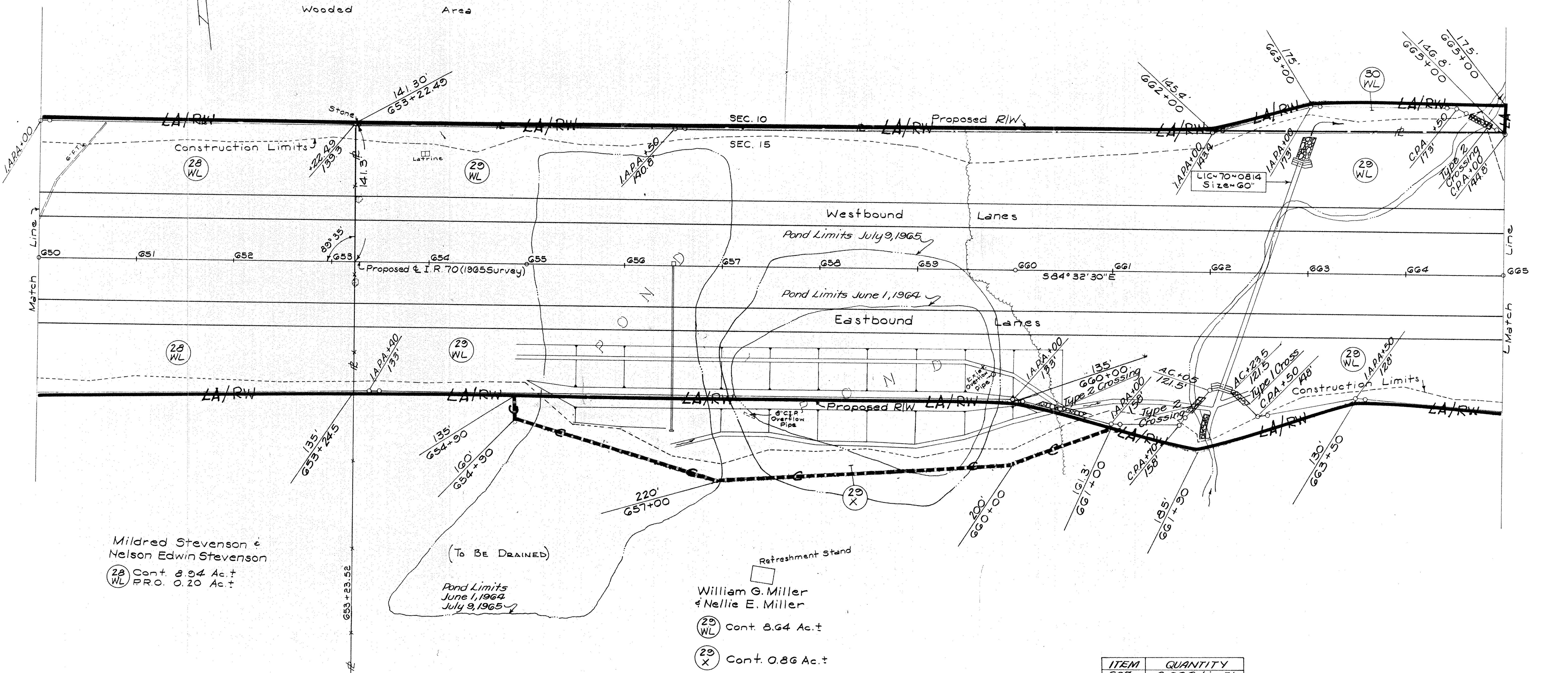
LIC-70-5.12,8.67
R/W PLAN
LIMITED ACCESS

18
25

Floyd L. Good &
Tessa L. Good

30
WL Cont. 0.17 Ac.±

Wooded Area



Mildred Stevenson &
Nelson Edwin Stevenson
28
WL Cont. 8.94 Ac.±
P.R.O. 0.20 Ac.±

(To BE DRAINED)
Pond Limits
June 1, 1964
July 9, 1965

Refreshment Stand
William G. Miller &
Nellie E. Miller
29
WL Cont. 8.64 Ac.±
29
X Cont. 0.86 Ac.±

ITEM	QUANTITY
607	3,033 Lin. Ft.
601	61 Cu. Yds.

FUNDS = 1

Completion Date: 7-9-65		
Rev	Date	Description

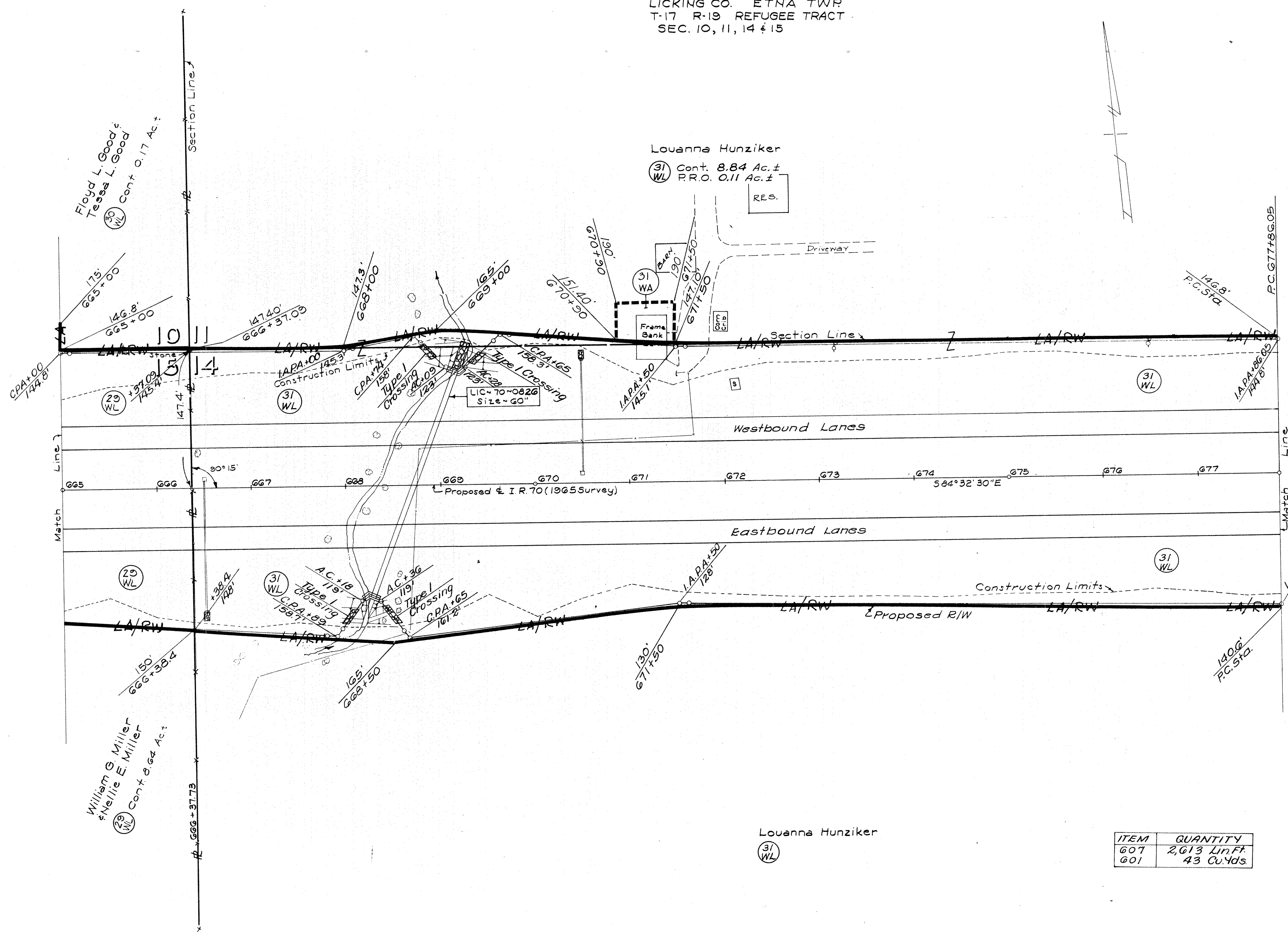
LICKING CO. ETNA TWP
 T-17 R-19 REFUGEE TRACT
 SEC. 10, 11, 14 & 15

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

244
250

LIC-70-5.12,8.67
 R/W PLAN
 LIMITED ACCESS

19
25



ITEM	QUANTITY
607	2,613 Lin.Ft
601	43 Cu.Yds

FUNDS - 1

Rev.		Date	Description

LICKING CO. ETNA TWP & HARRISON TWP
 SEC. 11 & 14 T-17 R-19 REFUGEE TRACT

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

245
250

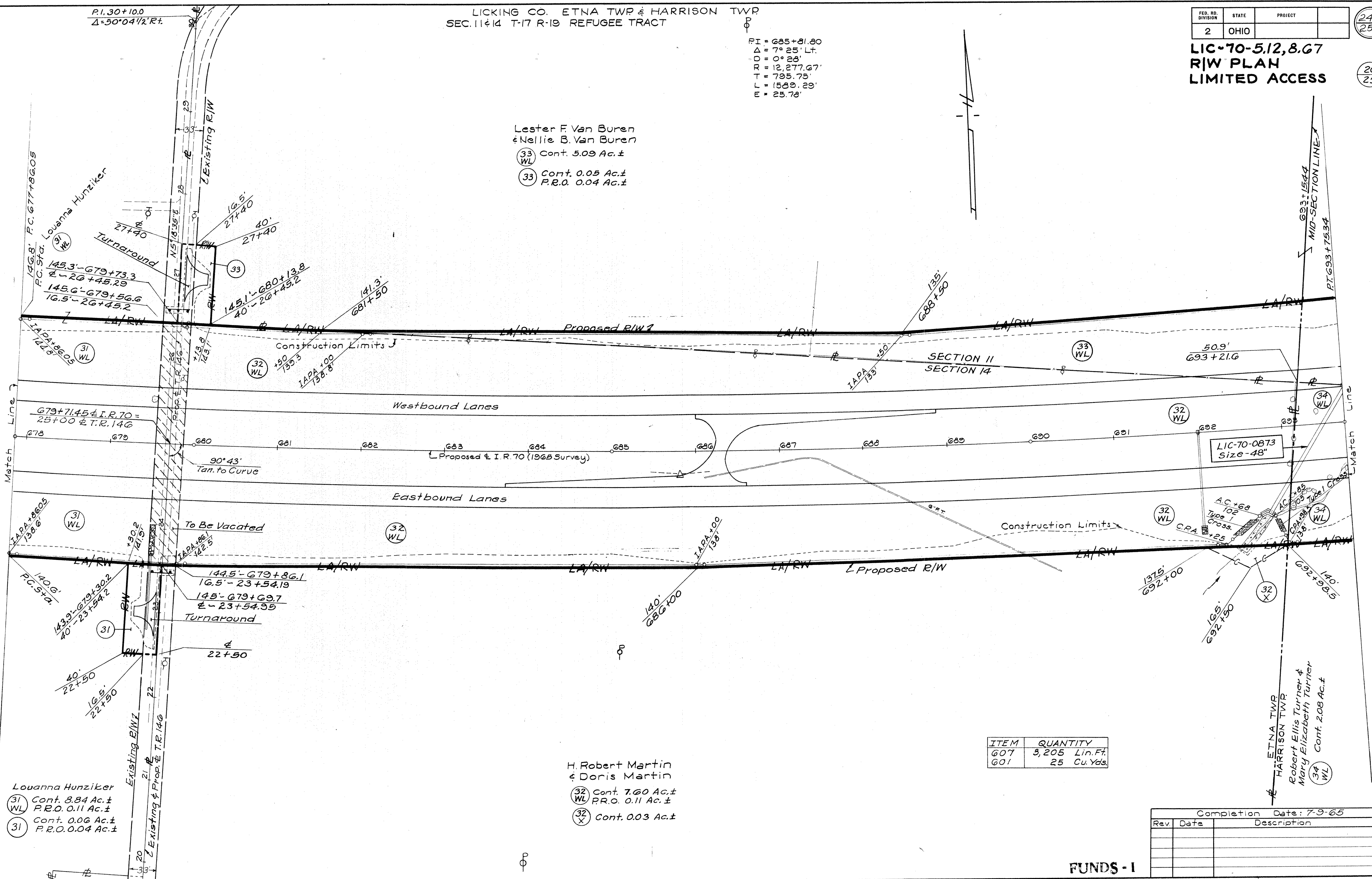
LIC-70-5.12, 8.67
 RW PLAN
 LIMITED ACCESS

20
25

PI = 685+81.80
 Δ = 7° 25' Lt.
 D = 0° 23'
 R = 12,277.67'
 T = 795.75'
 L = 1569.29'
 E = 25.78'

Lester F. Van Buren
 & Nellie B. Van Buren

- (33) Cont. 5.09 Ac. ±
- (33) Cont. 0.05 Ac. ±
- P.R.O. 0.04 Ac. ±



- (31) Louanna Hunziker Cont. 8.84 Ac. ± P.R.O. 0.11 Ac. ±
- (31) Cont. 0.06 Ac. ± P.R.O. 0.04 Ac. ±

H. Robert Martin
 & Doris Martin

- (32) Cont. 7.60 Ac. ± P.R.O. 0.11 Ac. ±
- (32 X) Cont. 0.03 Ac. ±

ITEM	QUANTITY
607	3,205 Lin. Ft.
601	25 Cu. Yds.

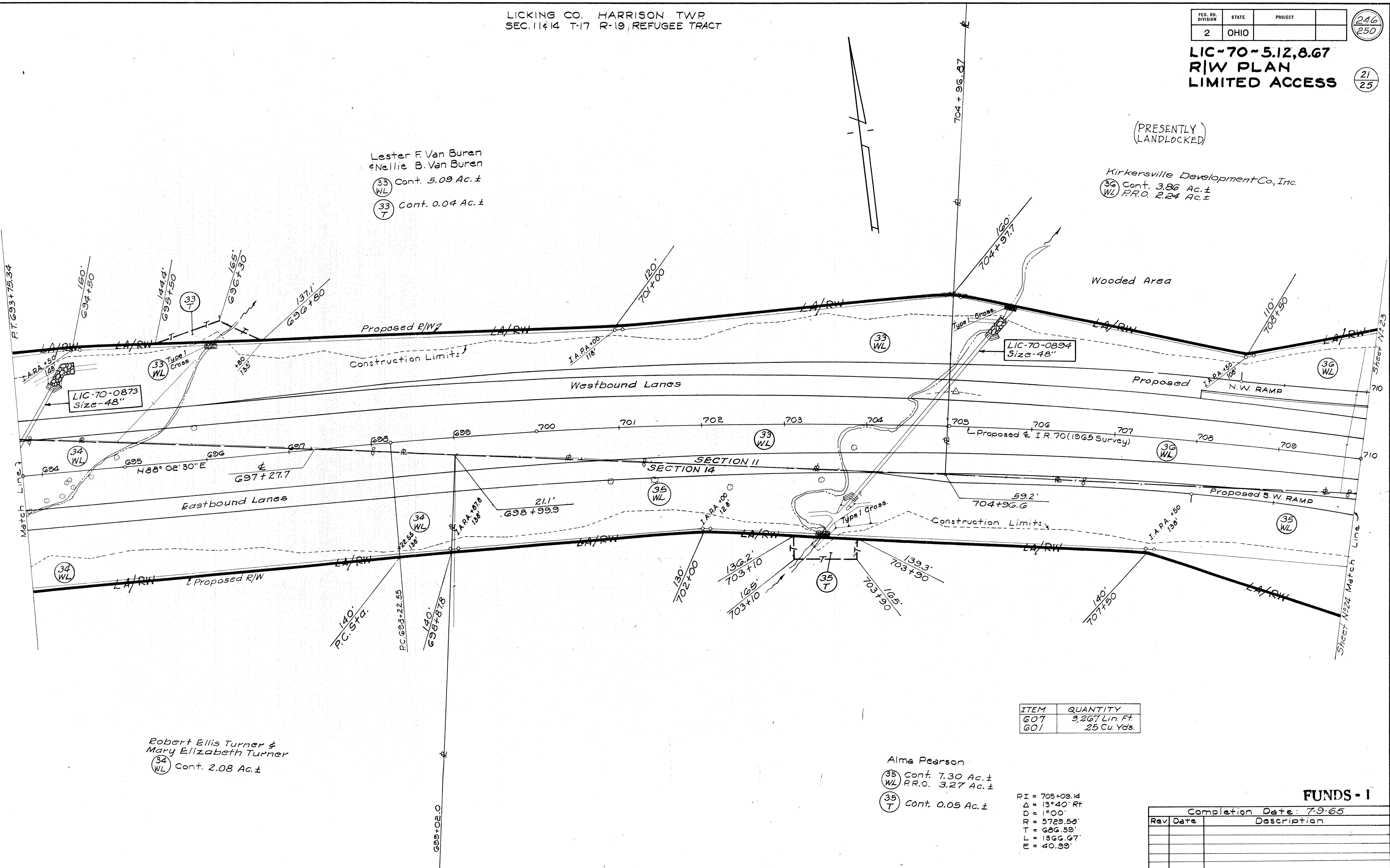
Completion Date: 7-9-65		
Rev	Date	Description

FUNDS - 1

(PRESENTLY
 LANDLOCKED)

Lester F. Van Buren
 & Nellie B. Van Buren
 (33) Cont. 5.09 Ac. ±
 (33) Cont. 0.04 Ac. ±

Kirkersville Development Co., Inc.
 (36) Cont. 3.86 Ac. ±
 WL P.R.O. 2.24 Ac. ±



Robert Ellis Turner &
 Mary Elizabeth Turner
 (34) Cont. 2.08 Ac. ±

Alma Pearson
 (35) Cont. 7.30 Ac. ±
 WL P.R.O. 3.27 Ac. ±
 (35) Cont. 0.05 Ac. ±

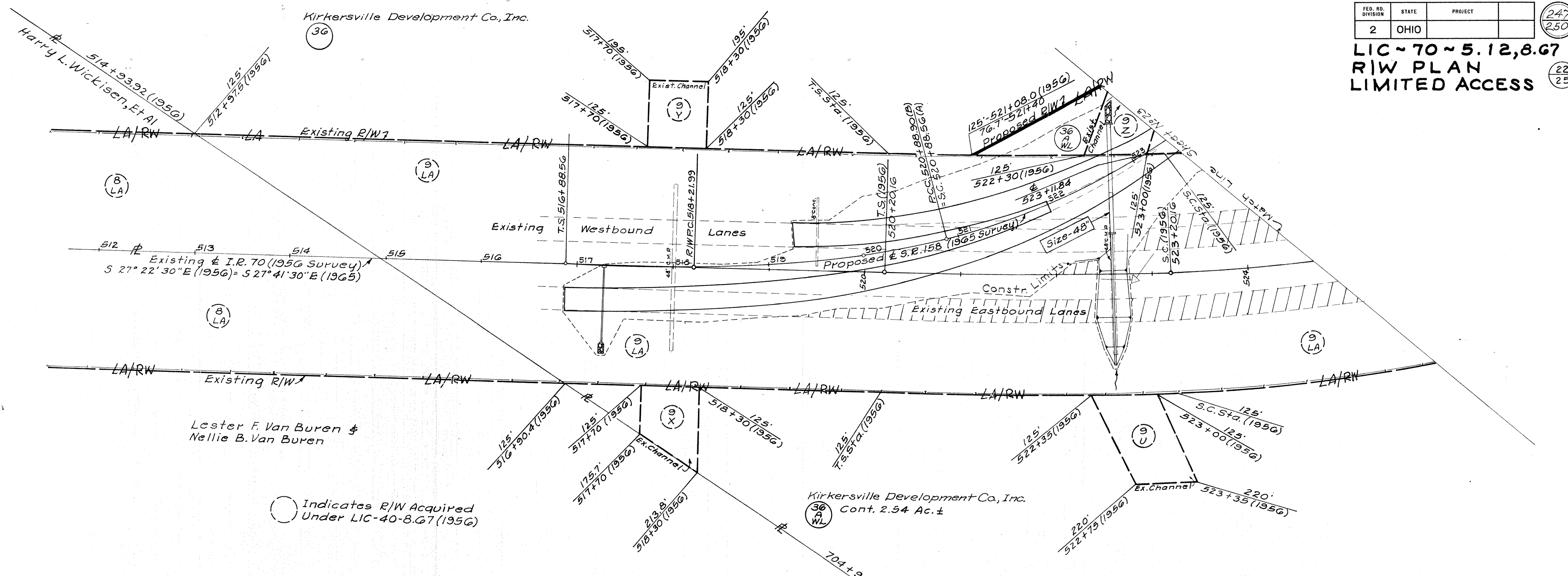
ITEM	QUANTITY
607	3,267 Lin. Ft.
601	25 Cu. Yds.

PI = 705+09.14
 Δ = 13°40' Rt
 D = 1°00'
 R = 5729.56'
 T = 686.59'
 L = 1366.67'
 E = 40.99'

FUNDS - I

Rev.		Date	Description

LIC-70-5.12,8.67
R/W PLAN
LIMITED ACCESS



(PRESENTLY
LANDLOCKED)

I.R. 70 Curve Data (1956)

PI. = 532+10.51	θs = 4°30'
Δ = 57°06'30"	Lc = 1603.61'
Δc = 48°06'30"	Xc = 299.81'
Dc = 3°00'	Yc = 7.85'
Rc = 1909.86'	Ts = 1190.35'
Ls = 300.00'	Es = 266.71'

S.R. 158 Curve Data

R/W		Construction	
Δ = 16°00'	Lt. = 599.448'	PI. = 522+82.76	Ts = 594.20'
Dc = 25°06'	Xc = 955.81'	Δ = 57°06'	Es = 109.70'
T = 134.33'	L = 266.91'	Δc = 8°00'	Xc = 396.89'
		Ls = 400.00'	Yc = 37.03'
		Rc = 716.20'	θs = 16°00'
		Lc = 313.75'	Ts-Xc = 197.31'
			Tc = 159.43'

Licking Co. Harrison Twp.
Sec. 11 T-17 R-19 Refuge Tract

FUNDS - I

Completion Date: 7-9-65		
Rev.	Date	Description
1	7-21-65	Par 36WD to 36AWL

S.R. 158 Curve Data

R/W	Construction
$\Delta = 16^{\circ}00' Lt.$	$PI = 522+82.76$
$D = 5994.48'$	$\Delta = 57^{\circ}06' Lt.$
$R = 955.81'$	$Dc = 8^{\circ}00'$
$T = 134.33'$	$Ls = 40000'$
$L = 266.91'$	$Rc = 716.20'$
	$Lc = 313.75'$
	$Ts = 594.20'$
	$Es = 109.70'$
	$Xc = 396.89'$
	$Yc = 37.03'$
	$\theta s = 16^{\circ}00'$
	$Ts-Xc = 197.31'$
	$Tc = 159.43'$

Licking Co. Harrison Twp.
Sec. 11, 12, 13, 14 T-17 R-19 Refugee Tract

I.R. 70 Curve Data (1956)

$PI = 532+10.51$	$\theta s = 4^{\circ}30'$
$\Delta = 57^{\circ}06'30" Lt.$	$Lc = 1003.61'$
$Dc = 48^{\circ}06'30"$	$Xc = 299.81'$
$Rc = 1909.86'$	$Yc = 7.85'$
$Ls = 300.00'$	$Ts = 1190.35'$
	$Es = 266.71'$

Indicates R/W acquired under LIC-40-8.67(1956)

Frances W. Kimball, Et Al

37 WL	Cont. 0.68 Ac. ±	37 X	Cont. 0.40 Ac. ±
37 WL	P.R.O. 4.70 Ac. ±	37 T	Cont. 0.10 Ac. ±
37 WD	Cont. 1.34 Ac. ±		
	P.R.O. 1.57 Ac. ±		

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LIC-70-5.12, 8.67
R/W PLAN
LIMITED ACCESS

T.R. 145 Curve Data

$PI = 718+76.95$	$\Delta = 6^{\circ}45' Lt.$
$D = 62^{\circ}50' Rt.$	$D = 6.7486'$
$R = 150.78'$	$R = 849.00'$
$T = 92.10'$	$T = 50.07'$
$L = 105.35'$	$L = 100.02'$
$E = 25.90'$	

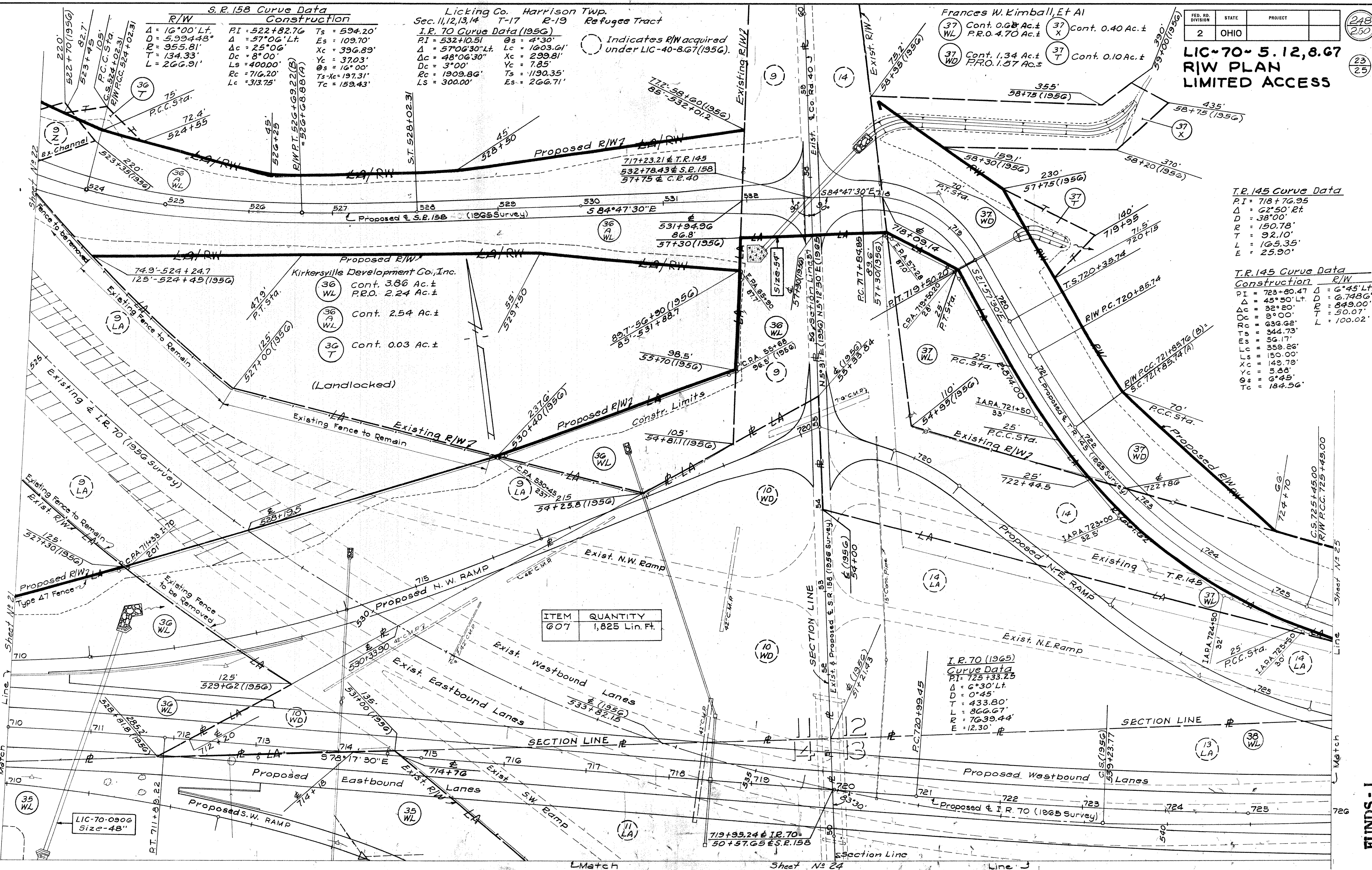
T.R. 145 Curve Data

Construction	R/W
$PI = 723+80.47$	$\Delta = 6^{\circ}45' Lt.$
$\Delta = 45^{\circ}50' Lt.$	$D = 6.7486'$
$Dc = 32^{\circ}20'$	$R = 849.00'$
$Rc = 9^{\circ}00'$	$T = 50.07'$
$Ts = 344.73'$	$L = 100.02'$
$Es = 56.17'$	
$Lc = 358.26'$	
$Xc = 149.79'$	
$Yc = 5.88'$	
$\theta s = 6^{\circ}45'$	
$Tc = 184.56'$	

ITEM	QUANTITY
607	1,825 Lin. Ft.

I.R. 70 (1965) Curve Data

$PI = 725+33.23$	$\Delta = 6^{\circ}30' Lt.$
$D = 0^{\circ}45'$	$T = 433.80'$
$L = 866.67'$	$R = 7639.44'$
$E = 12.30'$	



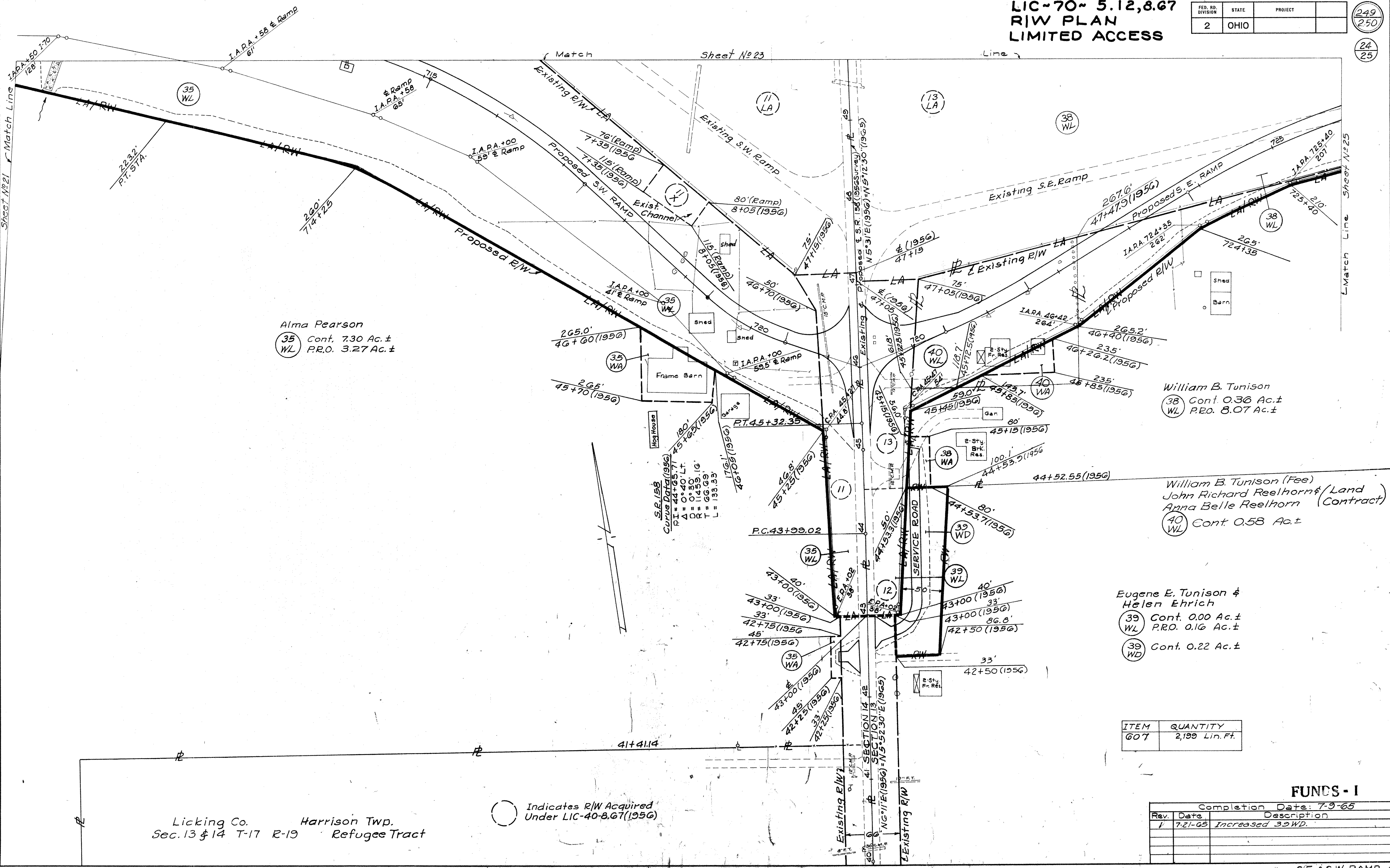
FUNDS - I

LIC-70-5.12,8.67
 R/W PLAN
 LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

249
250

24
25



Alma Pearson
 35 Cont. 7.30 Ac.±
 P.R.O. 3.27 Ac.±

William B. Tunison
 38 Cont. 0.36 Ac.±
 P.R.O. 8.07 Ac.±

William B. Tunison (Fee)
 John Richard Reelhorn & Anna Belle Reelhorn (Contract)
 40 Cont. 0.58 Ac.±

Eugene E. Tunison & Helen Ehrich
 39 Cont. 0.00 Ac.±
 P.R.O. 0.16 Ac.±
 39 Cont. 0.22 Ac.±

S.R. 158
 Curve Data (1956)
 P.I. = 44+65.71
 Δ = 0°40' LT.
 Q.R. = 114.99
 L = 133.33

ITEM	QUANTITY
607	2,199 Lin. Ft.

○ Indicates R/W Acquired Under LIC-40-8.67(1956)

Licking Co. Harrison Twp.
 Sec. 13 & 14 T-17 R-19 Refuges Tract

Completion Date: 7-9-65		
Rev.	Date	Description
1	7-21-65	Increased 39 WD.

FUNDS - I

T.R. 145 R/W
 Curve Data
 $\Delta = 6^{\circ}45' Lt.$
 $D = 6,748.6'$
 $R = 849.00'$
 $T = 50.07'$
 $L = 100.02'$

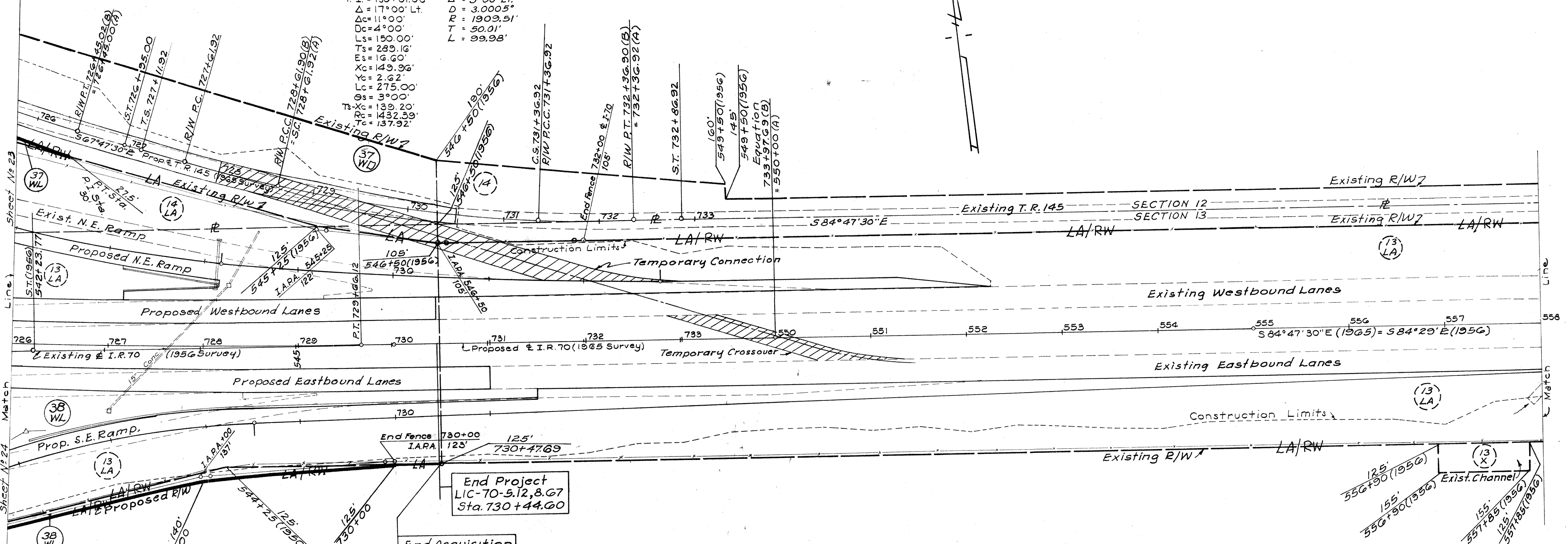
Frances W. Kimball, Et Al

Licking Co. Harrison Twp.
 Sec. 12 & 13 T-17 R-19 Refugee Tract

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LIC-70-5.12, 8.67
 R/W PLAN
 LIMITED ACCESS

T.R. 145 Curve Data
 Construction R/W
 $P.I. = 730+01.08$
 $\Delta = 17^{\circ}00' Lt.$
 $D = 3,000.5'$
 $R = 1909.51'$
 $T = 50.01'$
 $L = 99.98'$
 $Ls = 150.00'$
 $Ts = 289.16'$
 $Es = 16.60'$
 $Xc = 149.96'$
 $Yc = 2.62'$
 $Lc = 275.00'$
 $Os = 3^{\circ}00'$
 $Ts-Xc = 139.20'$
 $Rc = 432.39'$
 $Tc = 137.92'$



End Project
 LIC-70-5.12, 8.67
 Sta. 730+44.60

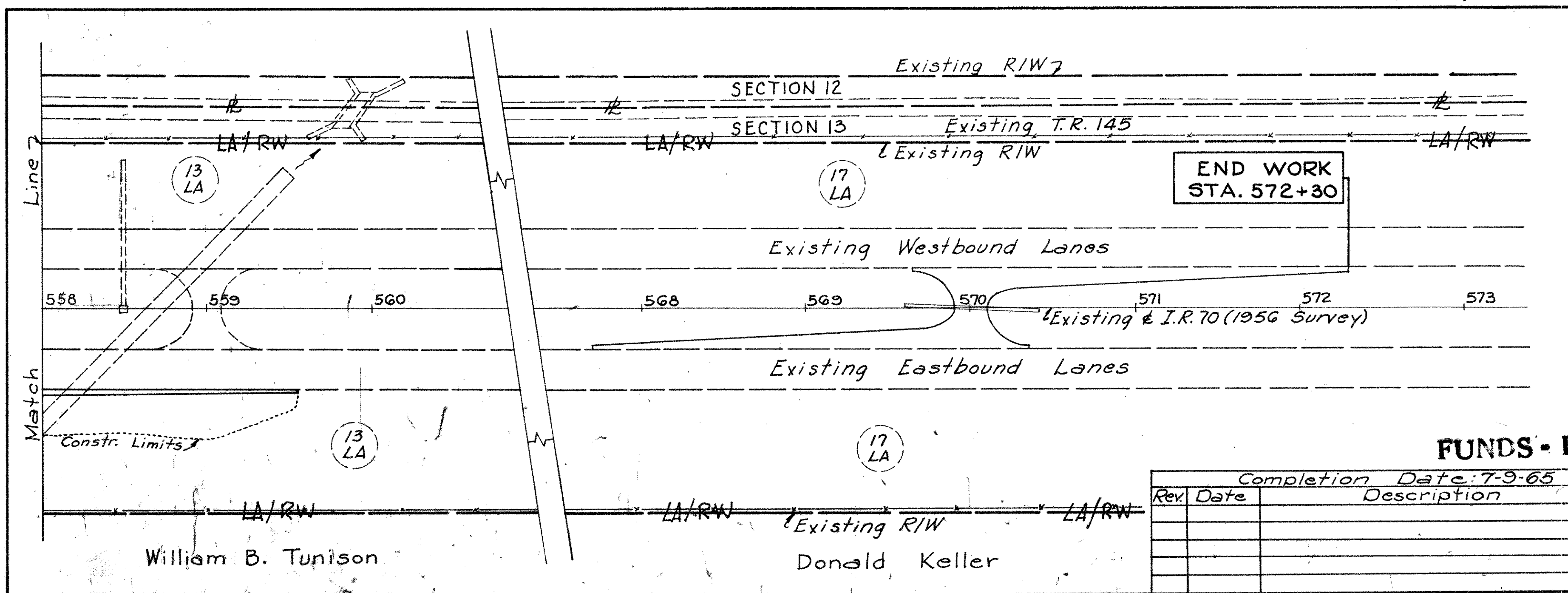
End Acquisition
 Left & Right
 Sta. 730+47.69

William B. Tunison
 (38) Cont. 0.36 Ac.±
 (38) P.R.O. 8.07 Ac.±

ITEM	QUANTITY
607	1,023 Lin. Ft.

Indicates R/W Acquired
 Under LIC-40-8.67 (1956)

I.R. 70 Curve Data (1965)
 $P.I. = 725+33.25$
 $\Delta = 6^{\circ}30' Lt.$
 $D = 0^{\circ}45'$
 $T = 433.80'$
 $L = 866.67'$
 $R = 7639.44'$
 $E = 12.30'$



END WORK
 STA. 572+30

William B. Tunison

Donald Keller

Completion Date: 7-9-65	
Rev. Date	Description

GENERAL INFORMATION

INTRODUCTION

The project consists of the proposed construction of a 4.3 mile section of IR 70, beginning 0.7 mile south of USR 40, 1500 feet east of SR 310, extending eastward generally paralleling existing USR 40, and terminating at the USR 40 and SR 158 interchange. Included in the report are profiles of Twp. Rds. 152 and 42, Co. Rd. 39, the SR 158 interchange ramps, SR 158 Connector, and Twp. Rd. 145.

Maximum proposed cuts and fill embankment are shown in the Project Index, on this sheet.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

The project is located on a gently rolling portion of the glaciated Mississippi Valley Plain, where the alignment traverses the south valley wall of South Fork Licking River. Moderately deep to deep moraine deposits overlie Mississippian age bedrock. Several intermediate streams were observed along the project, as well as several man-made ponds (vicinity stations 655+00 to 660+00).

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical soil auger and hand auger (in areas of difficult access), between April 9 to 15, 1964.

INVESTIGATIONAL FINDINGS

Materials occurring immediately below proposed grade consist predominantly of silt clays (A-6a and A-6b) with some sandy silts and clays, generally having moisture contents in the lower portion of the plastic range.

Frost susceptible sandy silts were encountered at IR 70 stations 679+50 and 690+00; Co. Rd. 39 station 16+50; and SR 158 Connector station 571+57.

Wet materials were encountered at, or below grade at 507+00, 512+00 and 614+00.

In the embankment foundations, materials are predominantly comprised of sandy silts (A-4a) and silt clays (A-6a), having moisture contents generally in the lower portions of, or below the plastic range.

Wet materials were encountered at IR 70 stations 513+50, 567+00, 610+00, 621+00, 639+50, and 662+50, and at Co. Rd. 39 stations 18+75 and 23+50.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS-- 153 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C SAND	% F SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Gravel with sand	A-1-b(0)	A-1-b	61	12	10	12	5	NP	NP	9	1
Sandy silt	A-4(5)	A-4a	16	9	15	35	25	24	7	15	57
Silt	A-4(8)	A-4b	3	5	9	56	27	26	6	22	7
Silt and clay	A-6(8)	A-6a	12	6	11	37	34	30	12	18	65
Silty clay	A-6(11)	A-6b	9	4	10	39	38	39	17	26	15
Clay	A-7-6(14)	A-7-6	10	3	5	42	40	44	23	28	8
Various other materials											

VISUAL CLASSIFICATION

- Sod and/or Topsoil: 'X' = Approximate depth.
- Berm material.
- Auger boring - plan view.
- Auger boring plotted to vertical scale only.
- Water content nearly equal to or greater than liquid limit.
- Indicates a non-plastic material with a high water content.
- Free water.

NOTE: Figures beside borings indicate water content in percent. e.g. 15

SOIL PROFILE

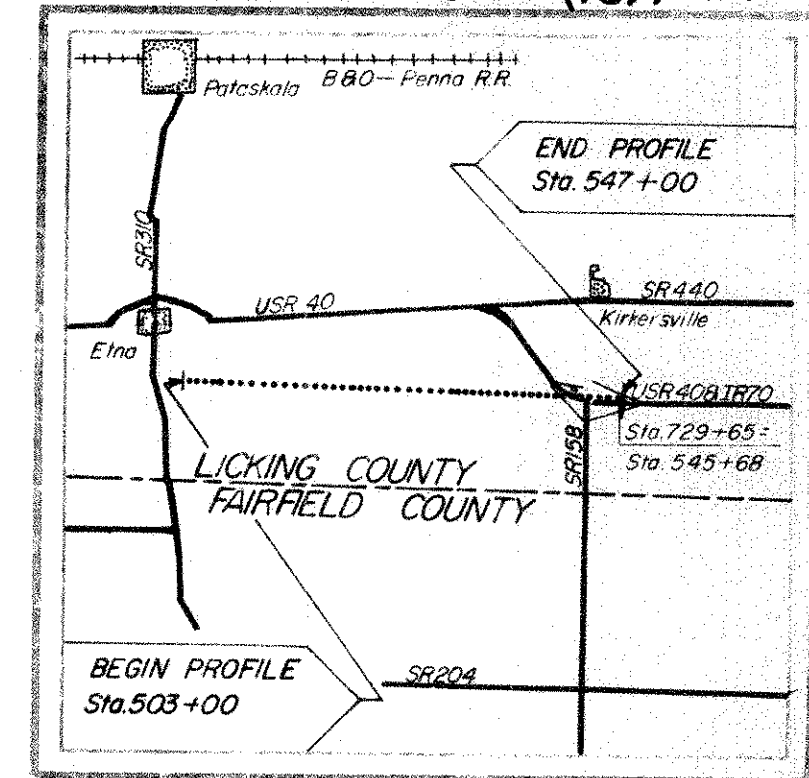
LICKING COUNTY
LIC-IR70-(5.12-8.67)

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

1
26

NOTE: INFORMATION SHOWN BY THIS SOIL PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT WARRANT THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

Fed. No. I-70-7(29)117



LOCATION MAP

Recon - P.D.B. - 2/28/64
Drilling - Auger - A.J.P., B.D.L. - 4/9/64 - 4/15/64
Drafting - R.L.M. - 6/19/64

PROJECT INDEX

STATIONS FROM - TO	PLAN VIEW SHEET	PROFILE SHEET	CUT (MAX.)	FILL EMB. (MAX.)
IR 70				
503+00 - 535+00	3	3	7'	13'
535+00 - 567+00	4	4	10'	11'
567+00 - 599+00	5	5	13'	21'
599+00 - 631+00	6	6	6'	11'
631+00 - 663+00	7	7	10'	25'
663+00 - 695+00	8	8	11'	21'
695+00 - 730+00	9	10	6'	9'
Twp. Rd. 152				
15+00 - 40+00	11	11	4'	25'
Twp. Rd. 42				
21+00 - 35+00	12	12	2'	16'
Co. Rd. 39				
15+00 - 35+00	13	13	2'	23'
SR 158 INTERCHANGE				
Ramp NW				
710+00 - 721+00	9	14	5'	20'
Ramp SW				
711+00 - 722+00	9	14	12'	7'
Ramp NE				
718+00 - 729+00	9	14	8'	19'
Ramp SE				
719+00 - 729+00	9	14	2'	5'
SR 158 CONNECTOR				
517+00 - 533+00	9	15	1'	10'
Twp. Rd. 145				
717+00 - 727+00	9	15	0'	14'

SOIL PROFILE

2
26

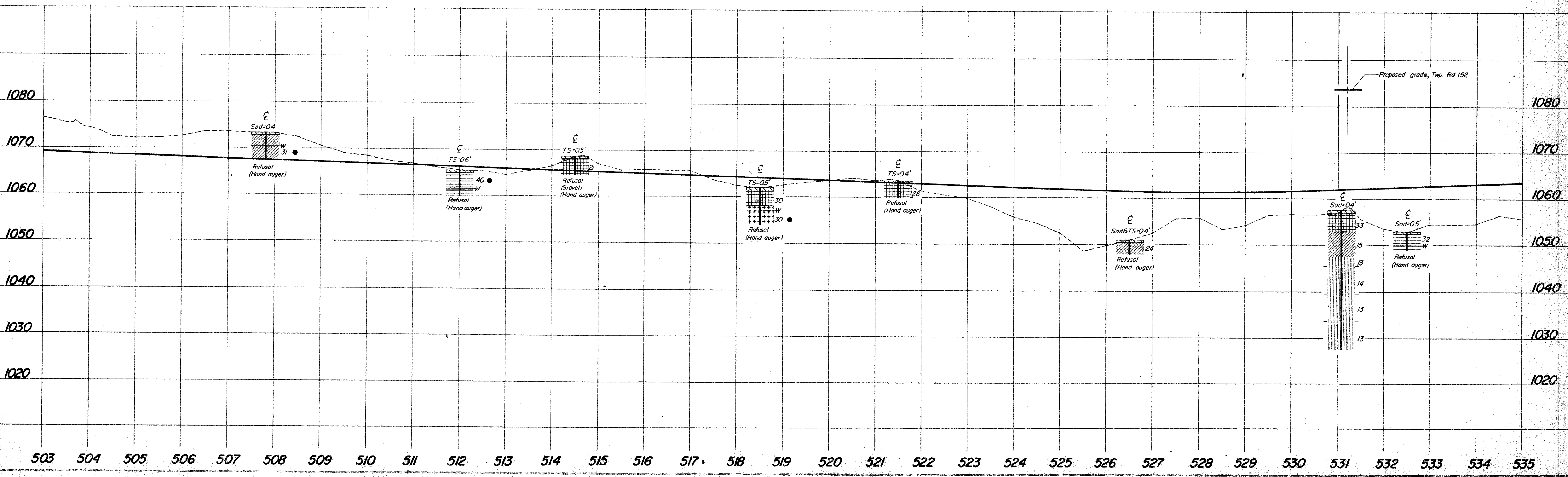
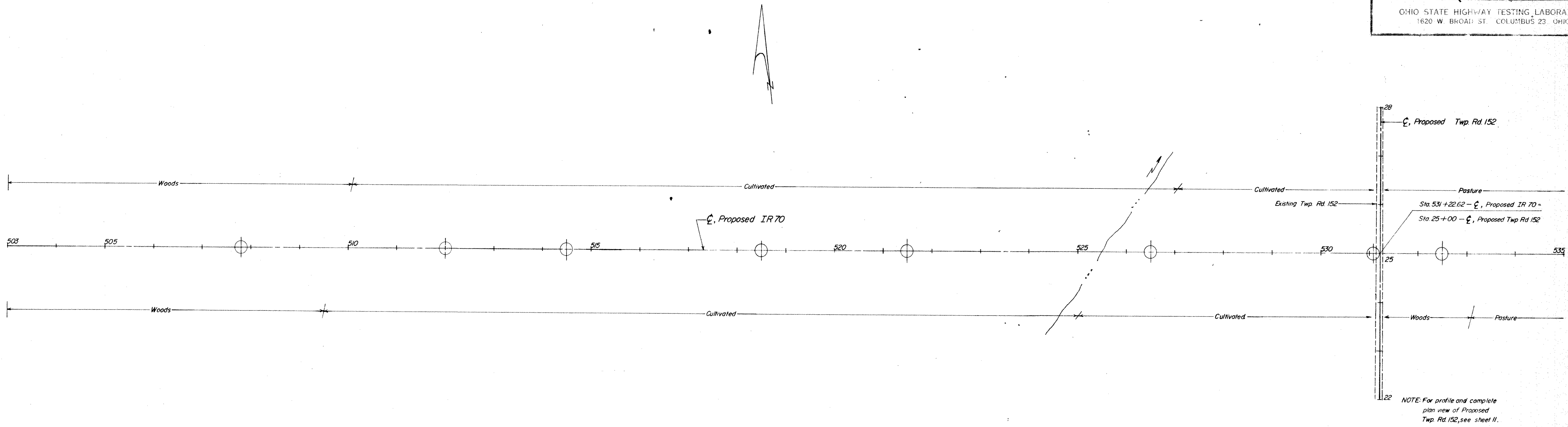
LICKING COUNTY
LIC-IR70-(5.12-8.67)

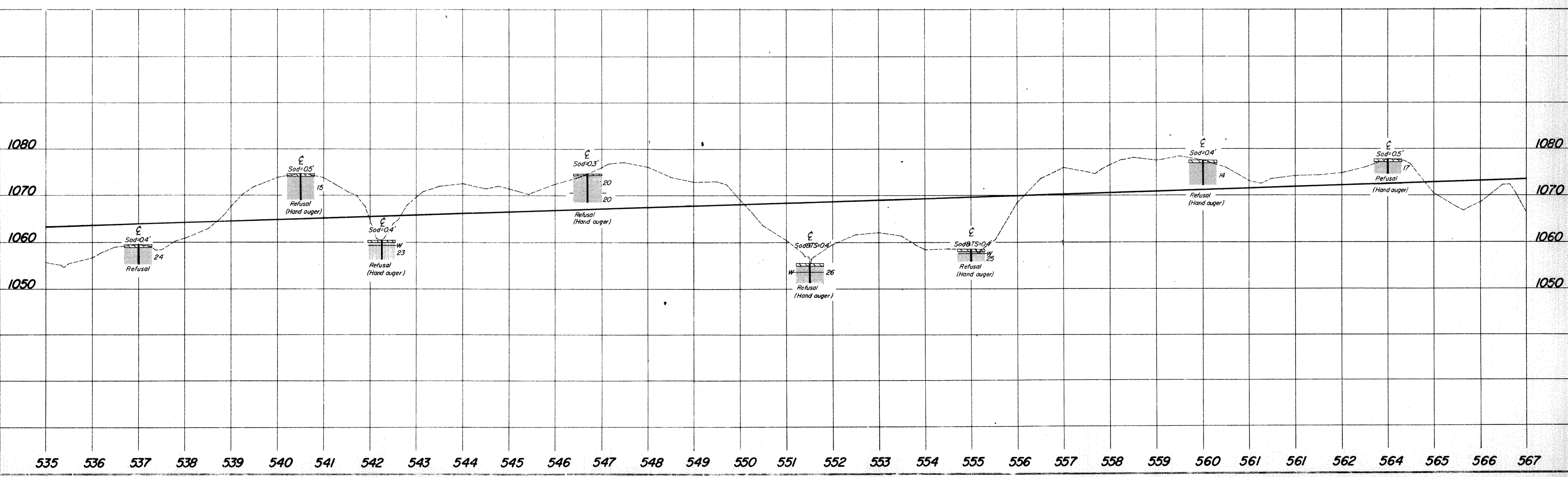
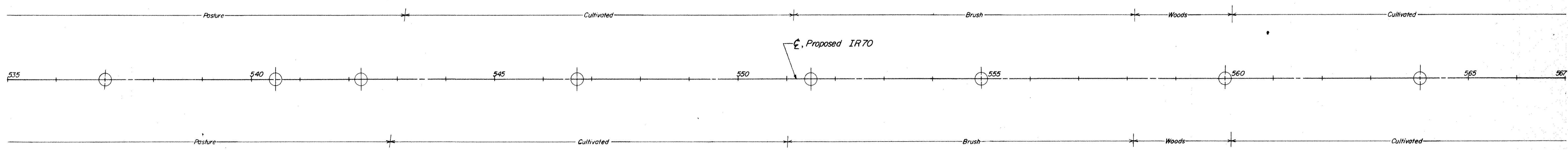
STATE HIGHWAY TESTING LABORATORY
110 W. BROAD ST., COLUMBUS, OHIO

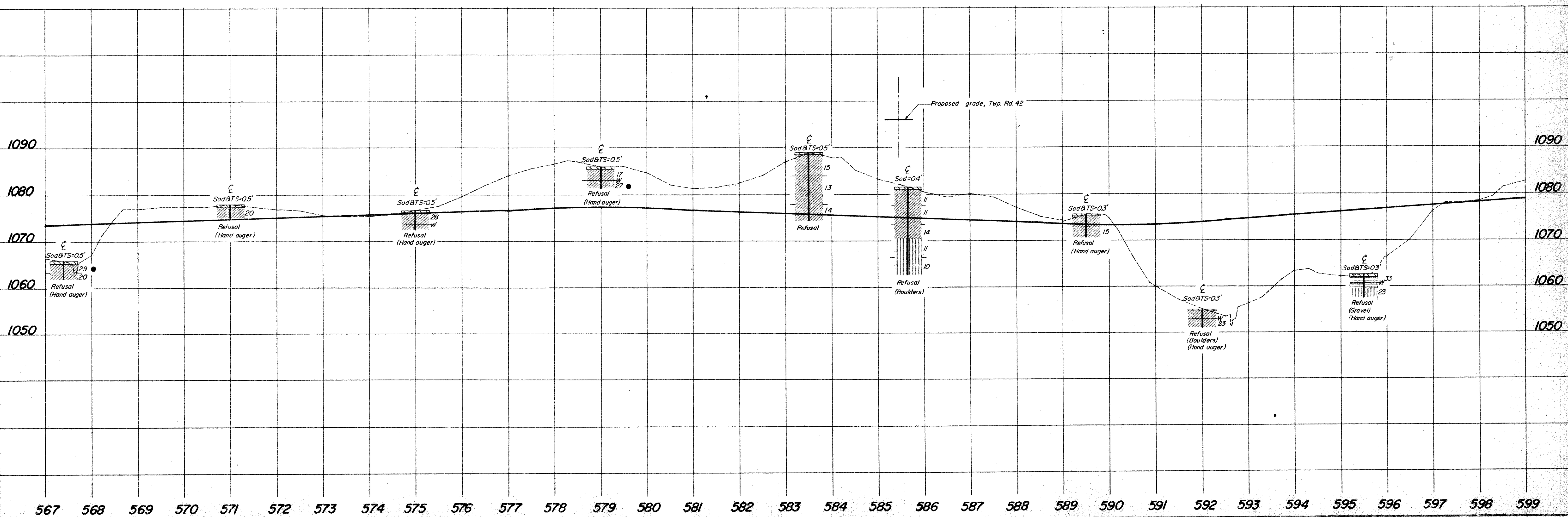
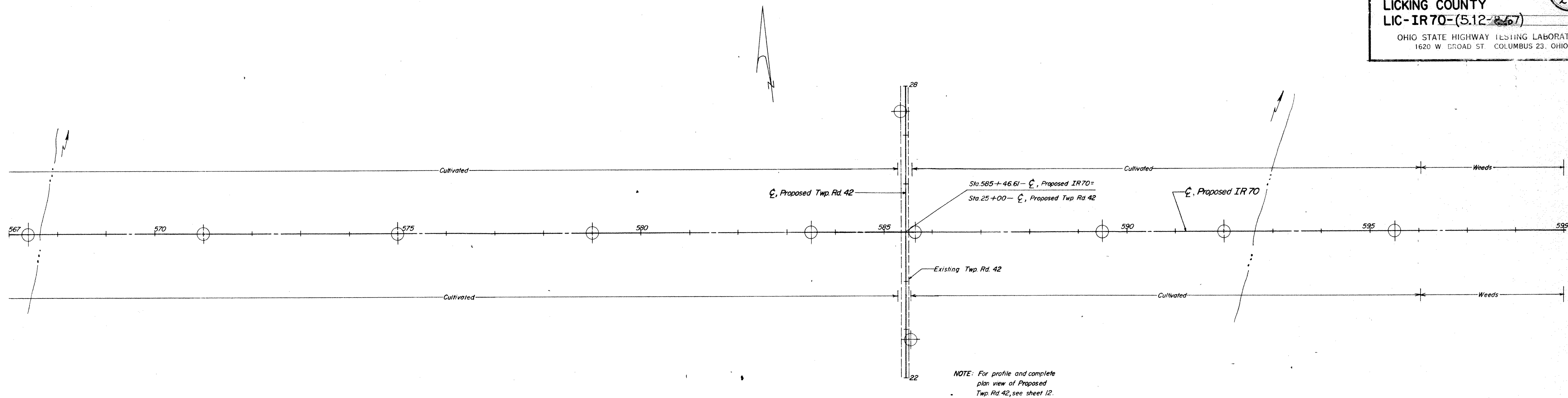
SUMMARY OF SOIL TEST DATA

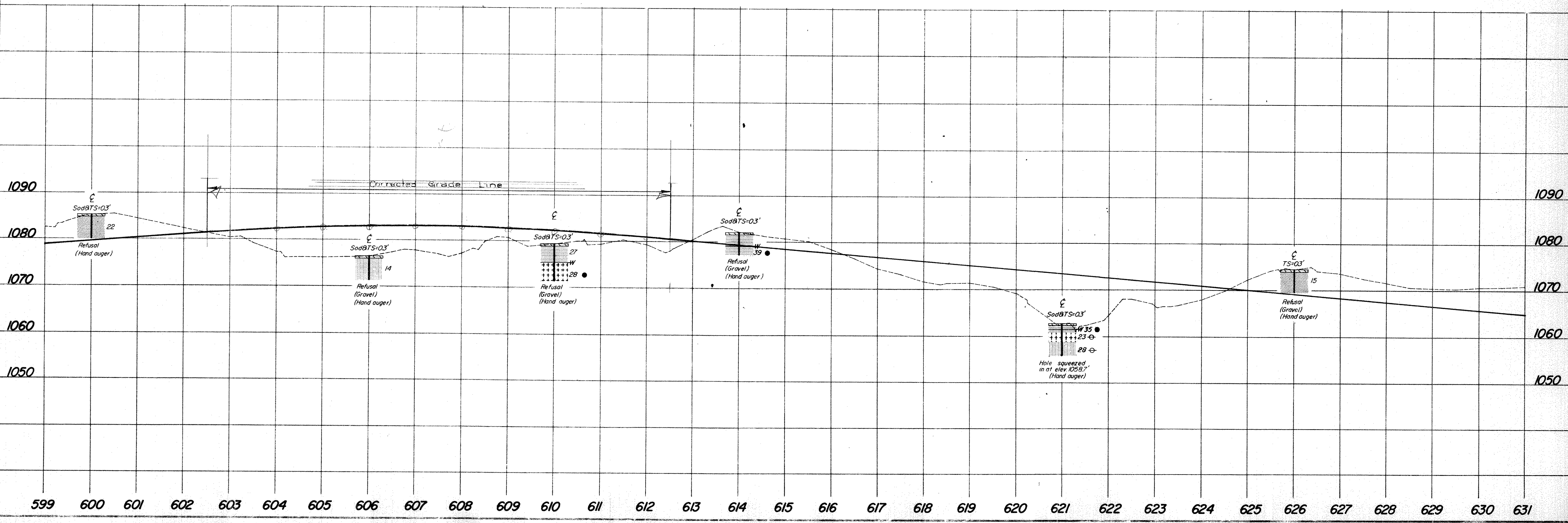
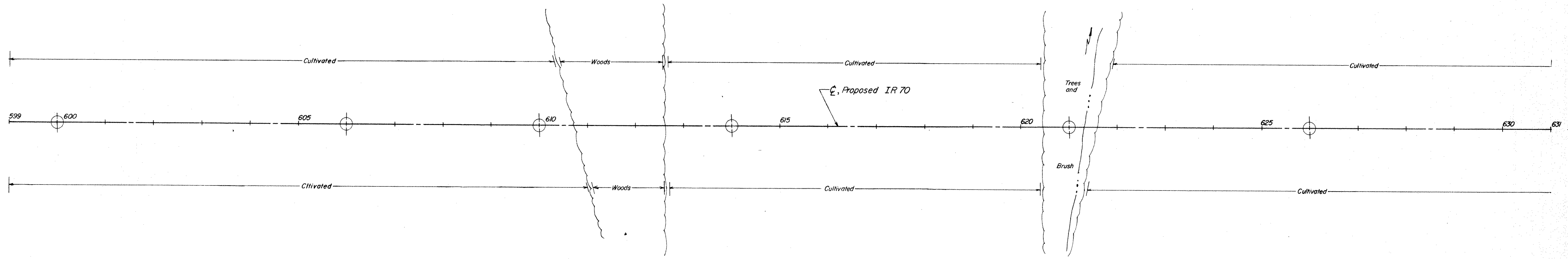
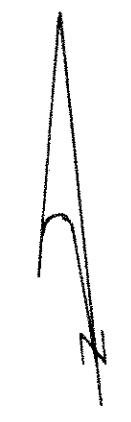
NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
*Denotes sample taken at or near grade.

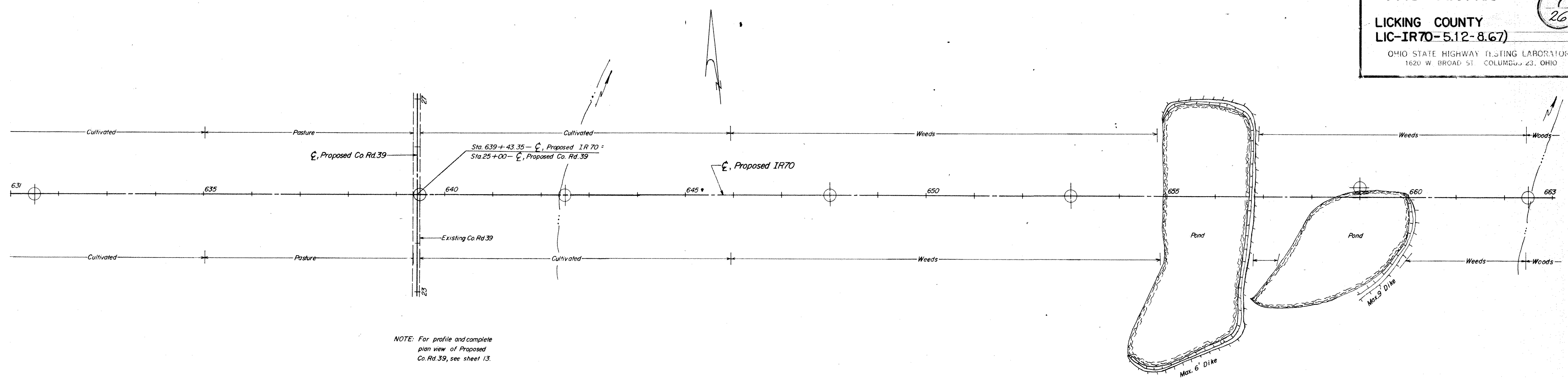
STATION & OFFSET	DEPTH FROM-TO	% Agg.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	STATION & OFFSET	DEPTH FROM-TO	% Agg.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	STATION & OFFSET	DEPTH FROM-TO	% Agg.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.																						
		IR 70																						SR 158 INTERCHANGE																														
507+80	CL 0.4-6.0	0	1	5	58	36	32	12	31	A-Ea*	595+50	CL 0.3-3.0	0	3	12	41	38	37	16	33	A-Eb	600+00	CL 0.3-5.0	18	5	8	42	27	34	15	22	A-Ea	17+00	10' Rt 0.5-7.0	32	2	11	28	25	29	11	17	A-Ea*	717+80	3L 0.3-5.0	12	5	6	50	27	34	15	24	A-Ea
512+00	CL 0.6-5.5	5	2	11	40	42	40	20	40	A-Eb*	606+00	CL 0.3-5.0	14	5	7	42	32	26	11	14	A-Ea	21+00	10' Lt 0.0-5.0	14	4	12	29	31	31	12	27	A-Ea	717+80	3L 5.0-10.0	9	10	14	40	27	24	8	14	A-Ea											
514+50	CL 0.5-4.0	16	3	7	34	40	41	20	21	A-7-E*	610+00	CL 0.3-4.0	0	0	3	53	44	37	16	27	A-Eb	29+50	15' Lt 0.4-3.0	0	2	6	52	40	36	10	29	A-Eb	716+00	3L 10.0-15.0	15	9	14	35	28	24	7	16	A-Ea											
518+50	CL 0.5-4.0	0	0	2	52	46	54	33	30	A-7-E*	614+00	CL 0.3-5.0	10	5	9	37	39	35	17	39	A-Eb*	33+50	15' Lt 7.0-11.0	9	11	16	32	31	23	6	13	A-Ea	719+30	3L 15.0-20.0	15	12	13	35	25	24	7	14	A-Ea											
521+50	CL 4.0-8.0	0	0	1	63	30	30	10	30	A-4b	621+00	CL 0.3-2.0	15	7	15	31	32	37	17	35	A-Eb	37+50	12' Rt 7.0-11.0	11	10	11	39	20	22	6	14	A-Ea	721+56	40' Lt 4.0-7.5	12	8	12	36	32	21	12	16	A-Ea											
526+50	CL 0.3-3.0	33	3	10	26	28	33	13	24	A-Ea	626+00	CL 2.0-4.0	0	0	29	52	20	NP	NP	22	A-Eb	631+50	CL 0.3-6.0	7	6	11	39	37	33	12	19	A-Ea*	722+81	3L 7.5-12.0	9	8	12	33	38	27	11	12	A-Ea											
531+08	CL 0.4-4.5	0	2	5	42	50	44	21	33	A-7-E	639+50	CL 0.3-5.0	20	6	13	27	34	28	11	13	A-Ea*	642+50	CL 0.3-3.0	7	8	13	37	30	30	7	25	A-Ea	724+81	3L 12.0-14.0	22	8	2	46	21	21	5	12	Visual											
532+50	CL 4.5-10.0	9	7	11	45	37	28	11	15	A-Ea	648+00	CL 5.0-10.0	10	9	10	35	36	28	11	14	A-Ea	653+00	CL 0.3-5.0	12	5	9	31	43	27	18	22	A-Eb*	521+57	CL 0.3-3.0	26	7	15	27	25	38	16	22	A-Eb*											
537+00	CL 0.4-4.0	11	4	10	34	38	32	14	24	A-Ea	659+00	20' Lt 10.0-13.0	13	8	13	31	23	25	9	23	A-Ea	662+50	CL 0.3-3.0	31	12	18	23	16	NP	NP	32	A-Ea	526+57	CL 3.0-5.0	11	12	14	37	26	26	9	13	A-Ea*											
540+50	CL 0.5-5.5	9	4	7	40	40	31	12	15	A-Ea	666+00	CL 0.3-4.0	20	6	5	39	30	32	13	25	A-Ea	665+00	CL 0.3-5.0	0	4	16	41	29	20	11	17	A-Ea*	530+07	CL 5.0-9.0	8	7	12	37	36	30	12	18	A-Ea*											
542+25	CL 0.4-4.0	19	8	14	32	27	24	6	23	A-Ea	674+00	CL 0.3-5.0	0	3	12	41	44	35	15	21	A-Ea*	679+50	CL 4.0-9.0	9	8	15	38	30	23	6	15	A-Ea*	530+07	CL 9.0-16.0	15	13	5	42	25	24	11	12	A-Ea											
546+70	CL 0.3-4.0	11	3	15	37	34	32	13	20	A-Ea	685+00	CL 0.3-6.0	0	2	2	55	38	30	13	21	A-Ea	685+00	CL 0.3-6.0	9	5	14	36	36	36	16	11	A-Eb*	530+07	CL 16.0-18.0	61	12	10	12	5	NP	NP	9	A-1-b											
551+50	CL 0.4-4.0	32	12	14	21	21	34	13	26	A-Ea	690+00	CL 0.3-4.0	12	5	20	32	31	25	8	18	A-Ea*	695+00	CL 0.3-3.0	35	7	9	30	19	32	9	23	A-Ea	719+23	CL 0.3-3.0	43	6	9	20	22	41	20	26	A-7-E											
555+00	CL 0.4-2.5	30	8	13	25	24	33	12	25	A-Ea	698+00	CL 0.3-4.0	12	4	17	33	36	37	19	22	A-Eb*	706+00	CL 0.3-4.0	21	5	11	35	28	37	15	18	A-Ea*	723+23	CL 0.3-5.0	12	5	10	35	38	36	16	16	A-6b											
560+00	CL 0.4-5.5	0	8	13	29	50	25	11	14	A-Ea	709+00	CL 0.3-4.0	6	4	8	45	37	36	13	34	A-Eb*	709+00	CL 0.3-4.0	6	4	8	45	37	36	13	34	A-Eb*	530+07	CL 18.0-20.0	26	9	13	31	21	26	9	13	A-Ea											
564+00	CL 0.5-3.0	0	4	14	38	44	31	11	17	A-Ea	679+50	CL 4.0-9.0	9	8	15	38	30	23	6	15	A-Ea*	685+00	CL 0.3-6.0	9	5	14	36	36	36	16	11	A-Eb*	530+07	CL 8.0-12.0	11	9	1	53	26	22	6	12	A-Eb											
567+40	CL 0.5-2.5	0	2	12	49	37	32	11	29	A-Ea	685+00	CL 0.3-6.0	9	5	14	36	36	36	16	11	A-Eb*	690+00	CL 0.3-4.0	12	5	20	32	31	25	8	18	A-Ea*	530+07	CL 8.0-12.0	11	9	1	53	26	22	6	12	A-Eb											
571+00	CL 0.5-3.0	11	4	9	32	44	37	15	20	A-Ea	695+00	CL 0.3-3.0	35	7	9	30	19	32	9	23	A-Ea	698+00	CL 0.3-4.0	12	4	17	33	36	37	19	22	A-Eb*	530+07	CL 12.0-17.0	14	8	13	37	27	24	8	12	A-Ea											
575+00	CL 0.5-4.0	3	4	13	35	40	33	15	23	A-Ea*	706+00	CL 0.3-4.0	21	5	11	35	28	37	15	18	A-Ea*	709+00	CL 0.3-4.0	6	4	8	45	37	36	13	34	A-Eb*	530+07	CL 28+50	10' Ft 0.3-7.0	12	8	14	34	32	29	12	24	A-Ea										
579+00	CL 0.5-3.0	9	6	10	40	35	30	11	17	A-Ea	712+50	CL 0.3-4.0	28	8	13	37	24	32	12	28	A-Ea*	712+50	CL 0.3-4.0	28	8	13	37	24	32	12	28	A-Ea*	530+07	CL 33+00	10' Rt 0.3-3.0	8	4	12	35	41	36	15	20	A-Ea*										
583+50	CL 3.0-4.5	31	6	11	26	27	11	27	A-Ea	685+00	CL 0.3-6.0	9	5	14	36	36	36	16	11	A-Eb*	690+00	CL 0.3-4.0	12	5	20	32	31	25	8	18	A-Ea*	530+07	CL 3.0-9.0	8	7	12	37	36	30	12	18	A-Ea												
585+50	CL 5.0-11.0	11	7	13	33	36	27	11	10	A-Ea	695+00	CL 0.3-3.0	35	7	9	30	19	32	9	23	A-Ea	698+00	CL 0.3-4.0	12	4	17	33	36	37	19	22	A-Eb*	530+07	CL 11.0-15.0	17	6	14	36	27	25	11	14	A-Ea*											
589+50	CL 0.3-5.0	7	7	14	41	31	26	11	15	A-Ea*	706+00	CL 0.3-4.0	21	5	11	35	28	37	15	18	A-Ea*	709+00	CL 0.3-4.0	6	4	8	45	37	36	13	34	A-Eb*	530+07	CL 15.0-19.0	29	10	3	38	19	24	9	11	A-Ea											
592+00	CL 0.3-4.0	19	7	16	32	26	34	15	23	A-Ea	712+50	CL 0.3-4.0	28	8	13	37	24	32	12	28	A-Ea*	712+50	CL 0.3-4.0	28	8	13	37	24	32	12	28	A-Ea*	530+07	CL 20.0-24.0	17	6	14	36	27	25	11	14	A-Ea*											



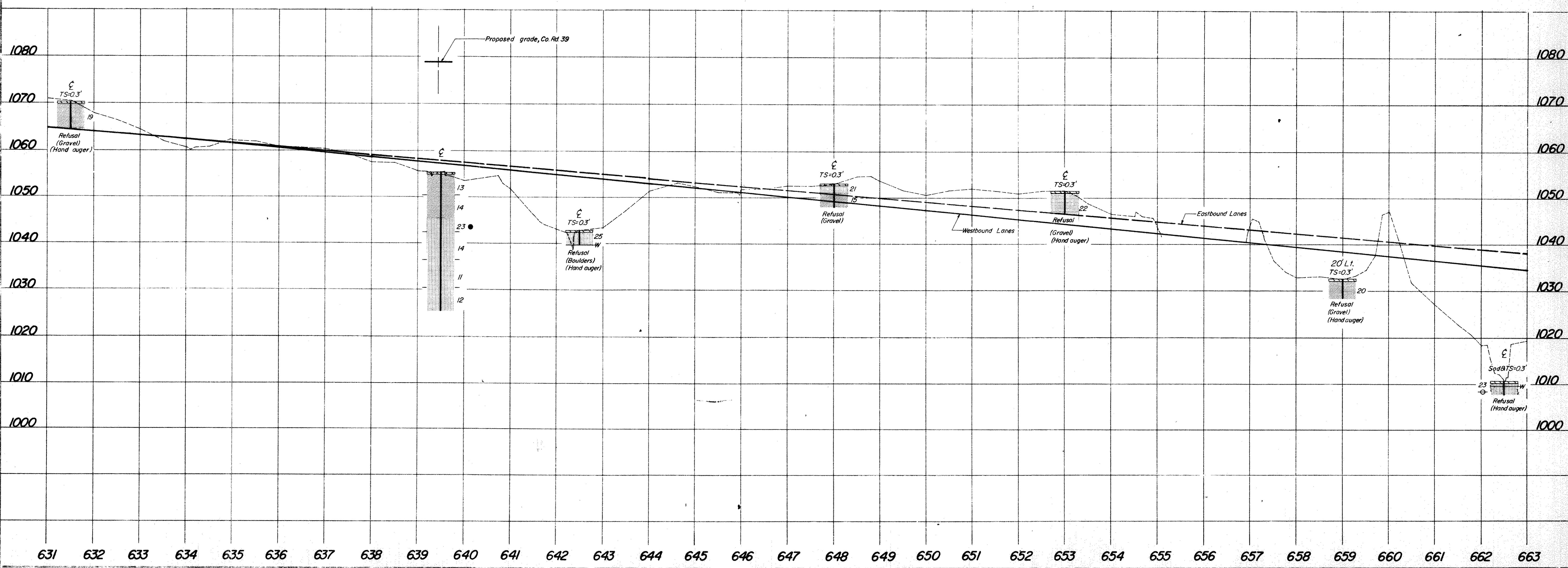


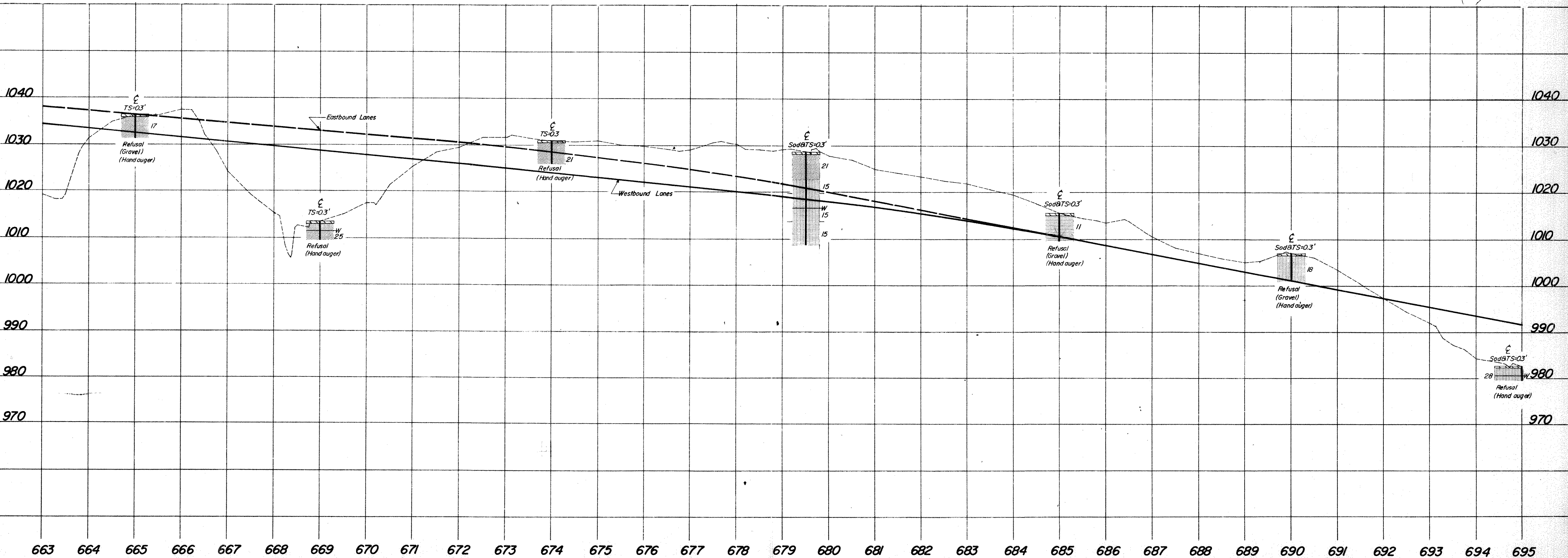
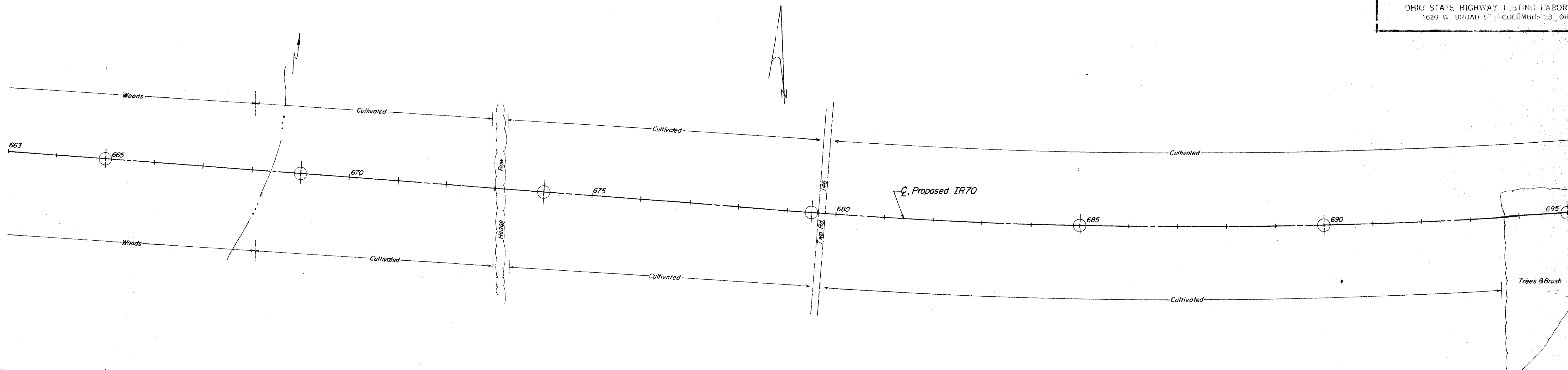


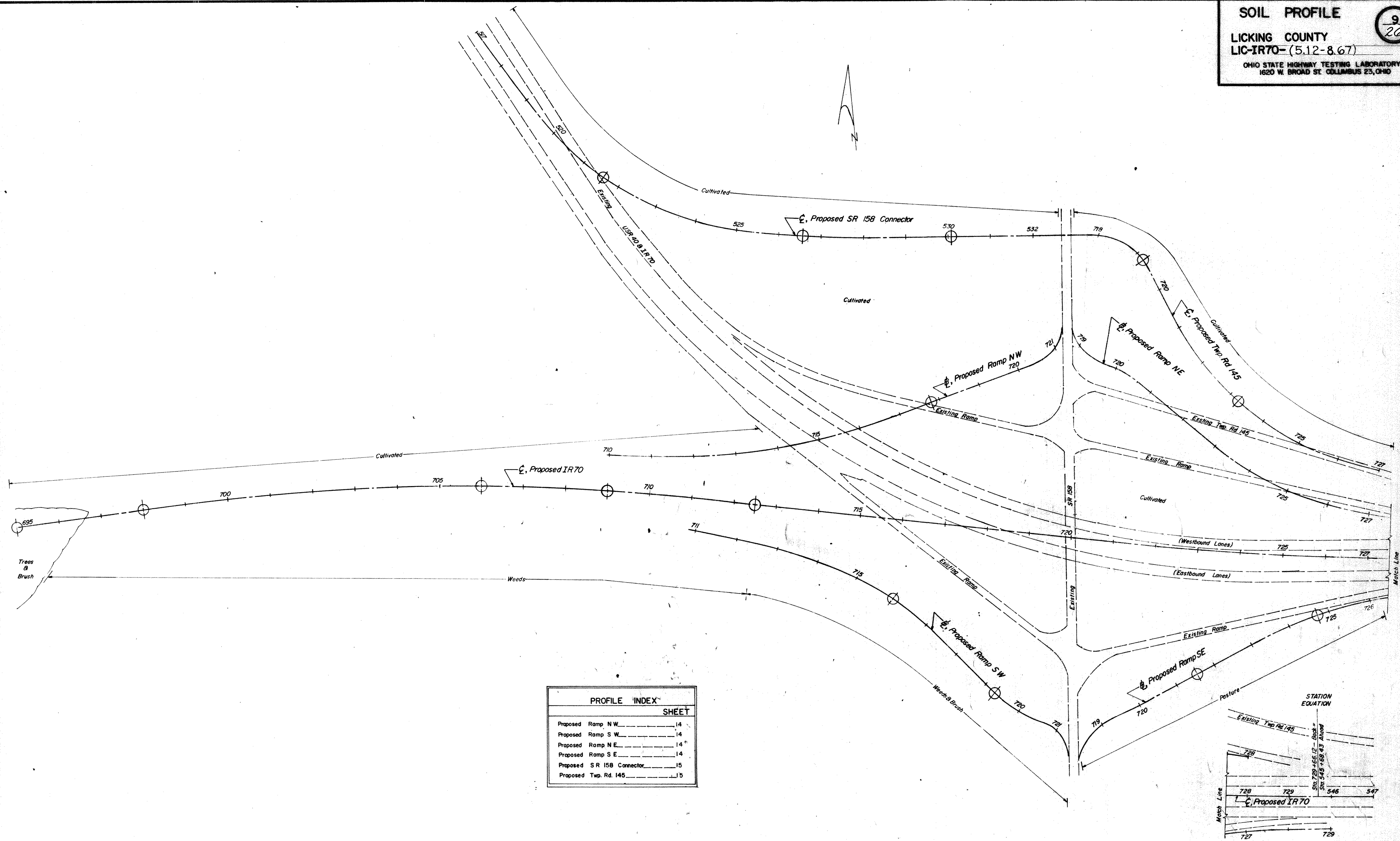
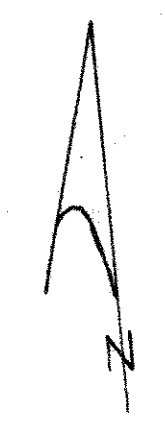




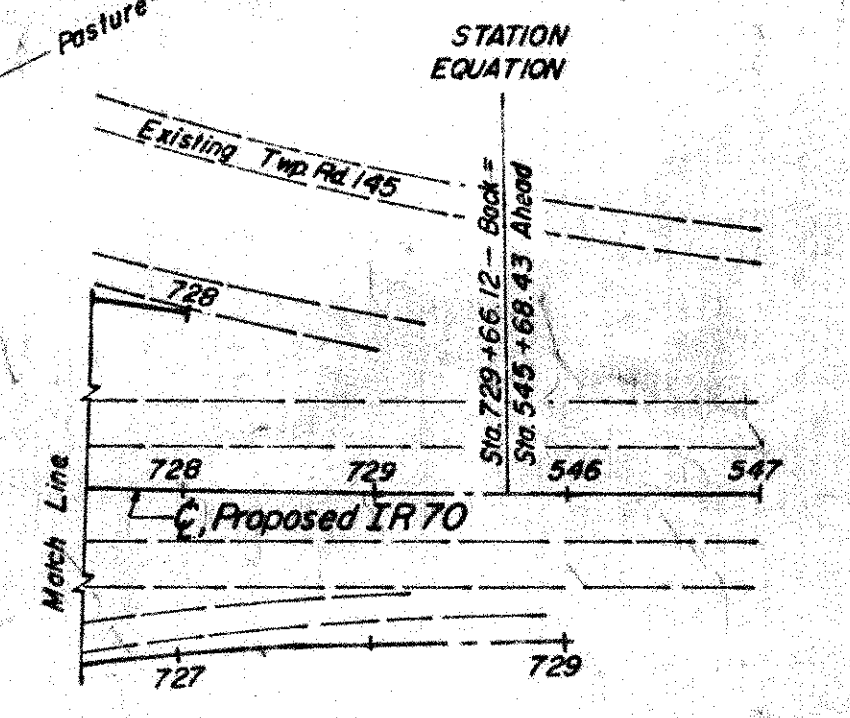
NOTE: For profile and complete plan view of Proposed Co. Rd. 39, see sheet 13.

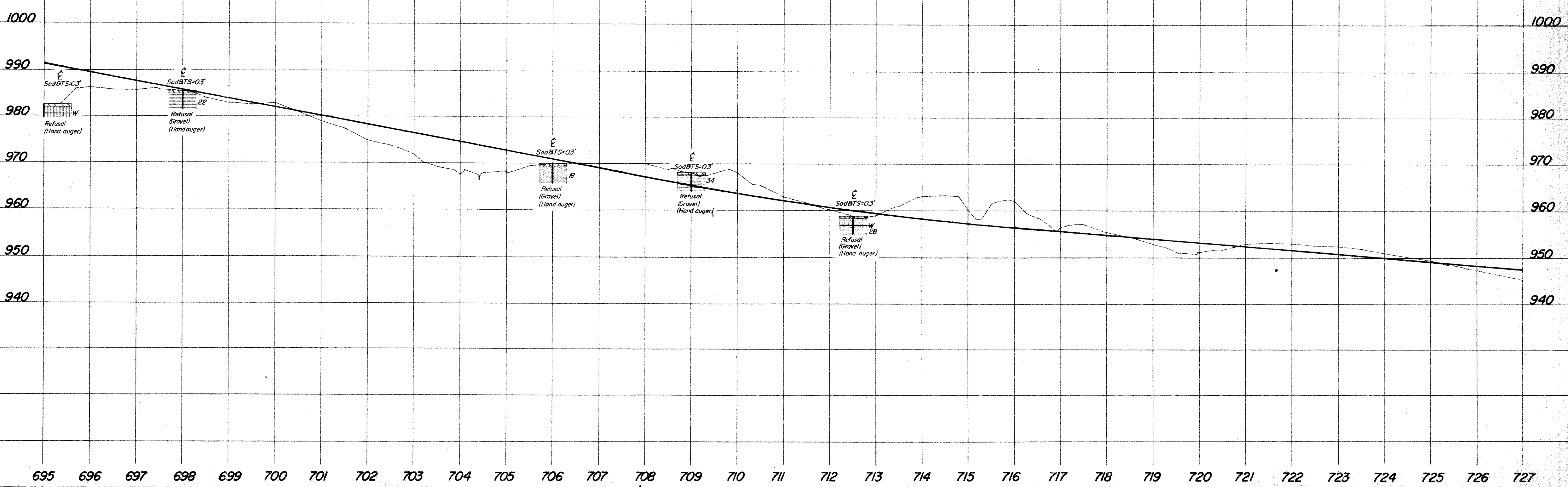
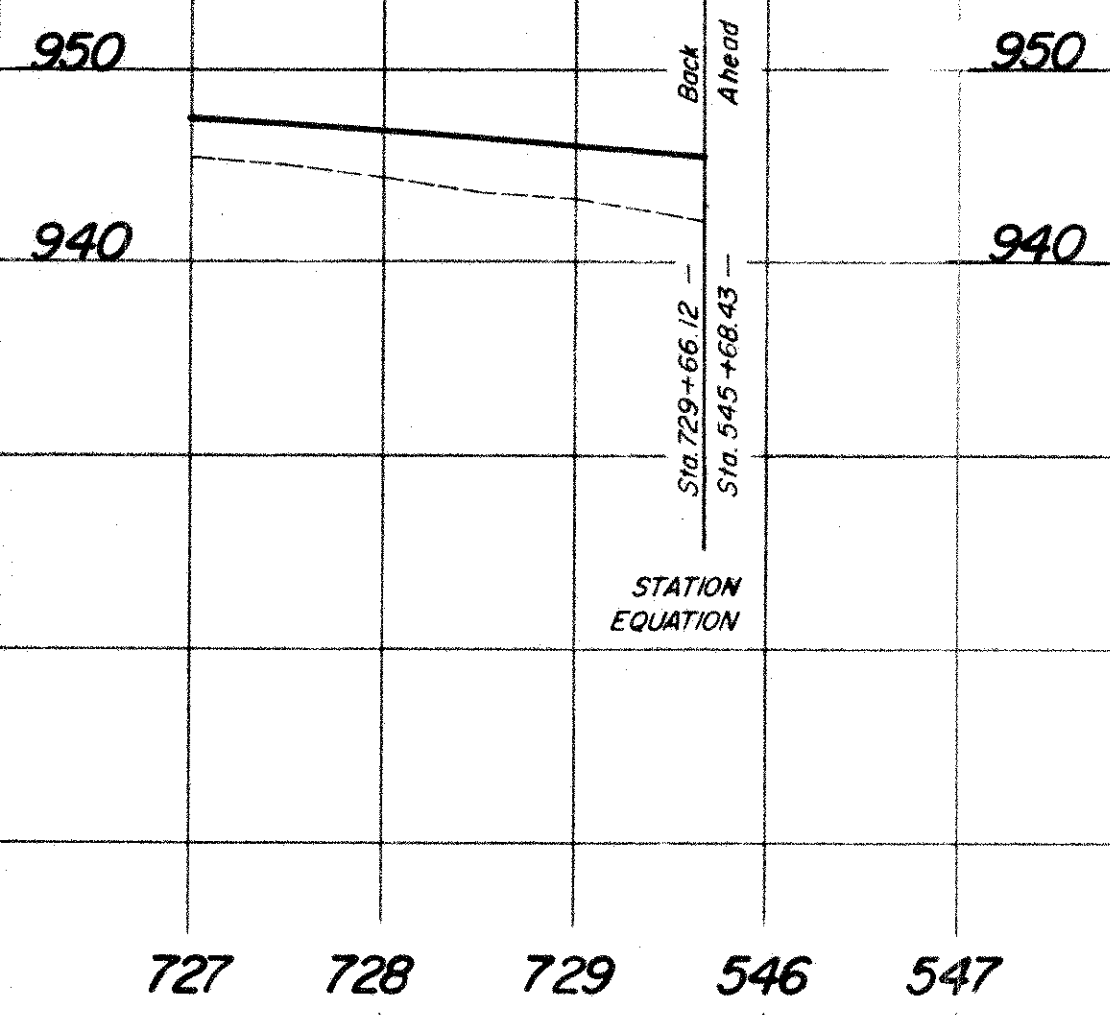


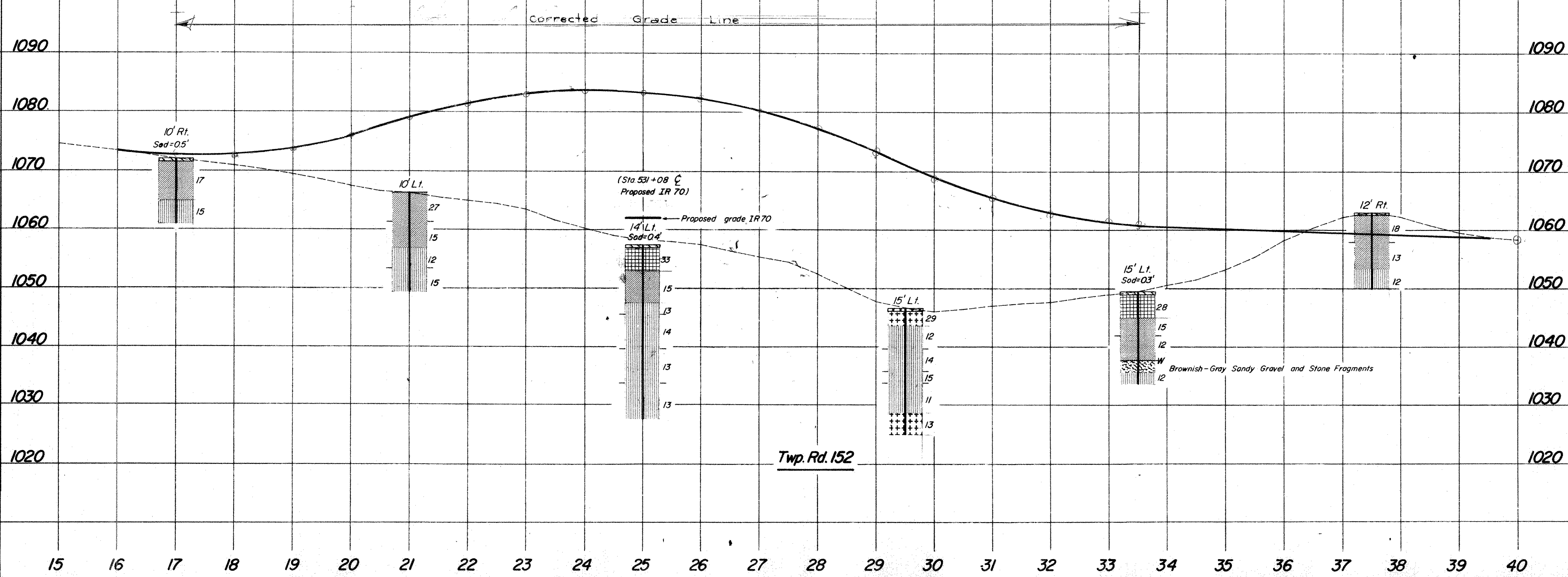
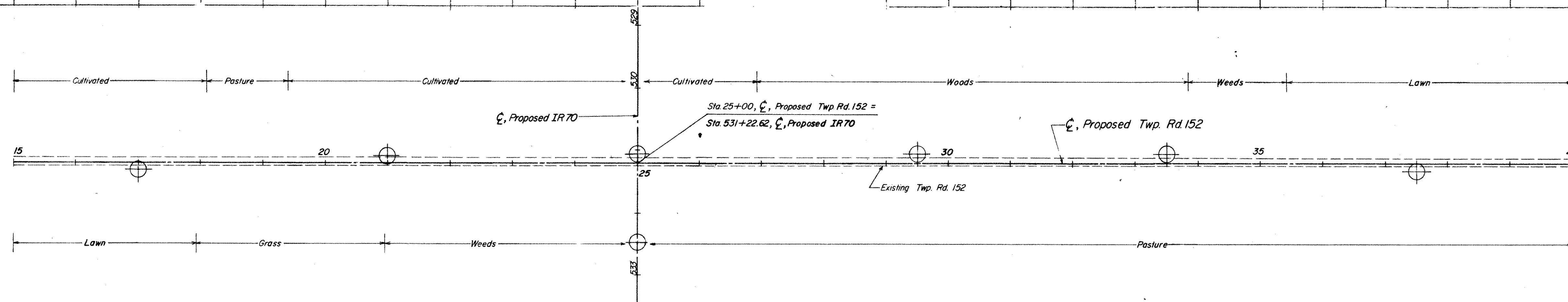


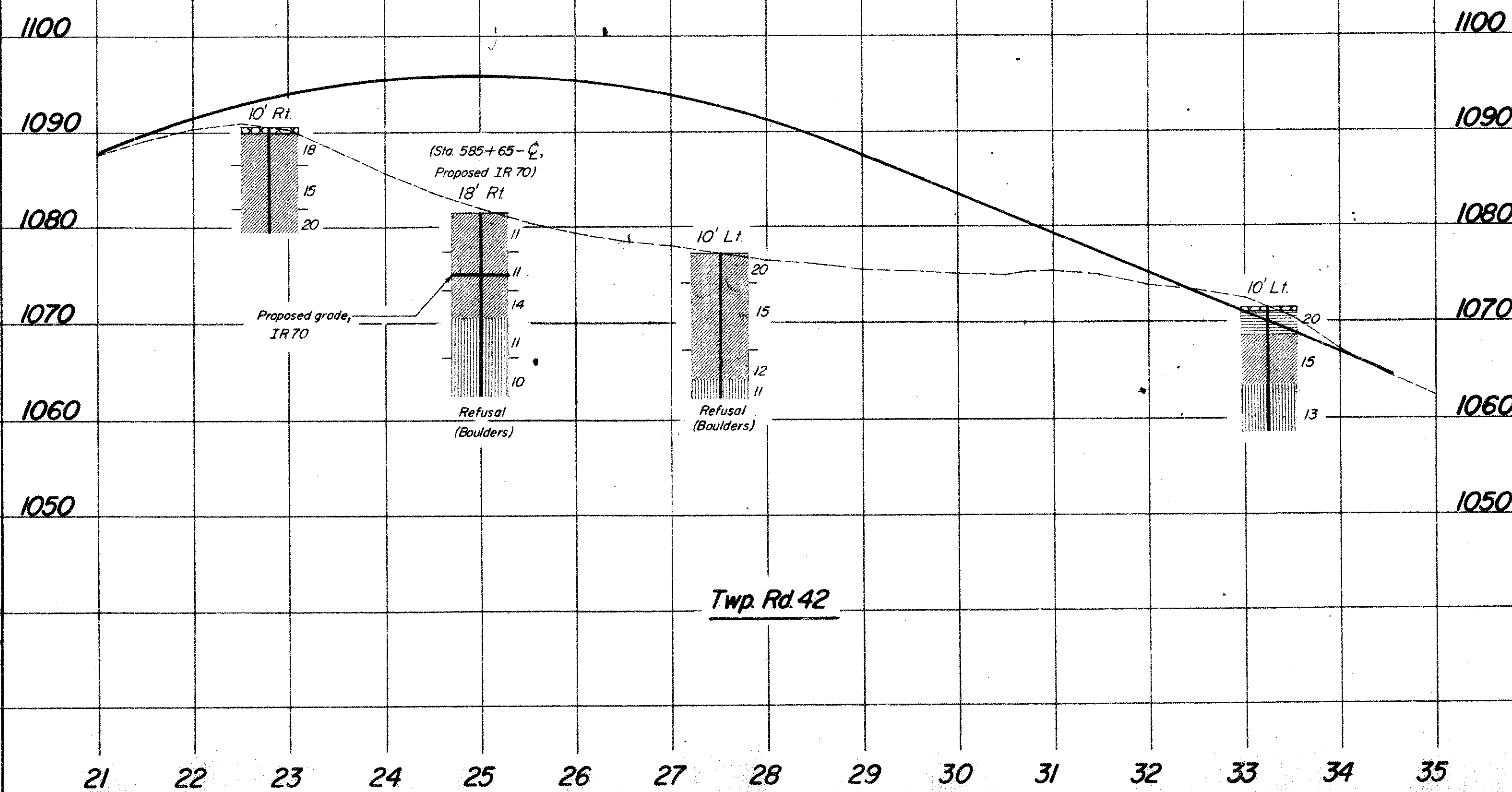
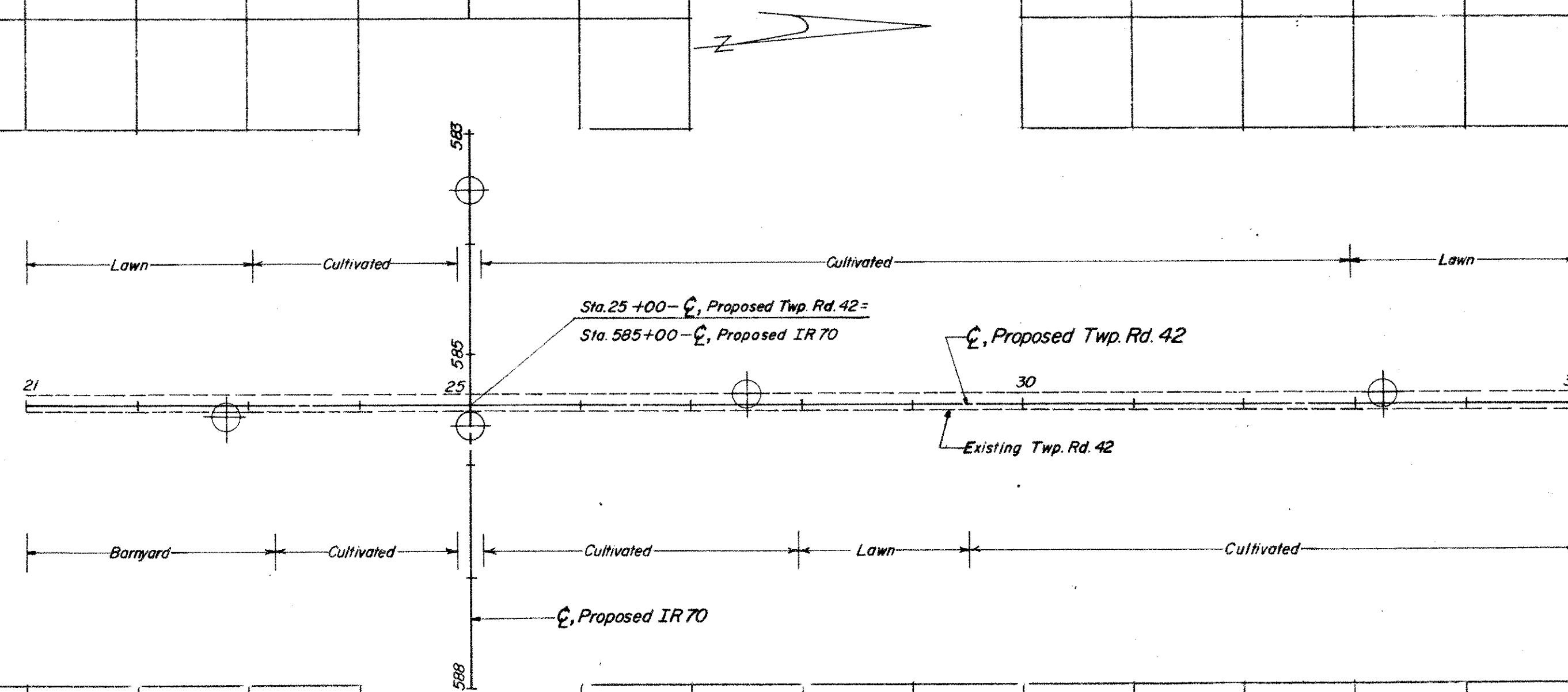


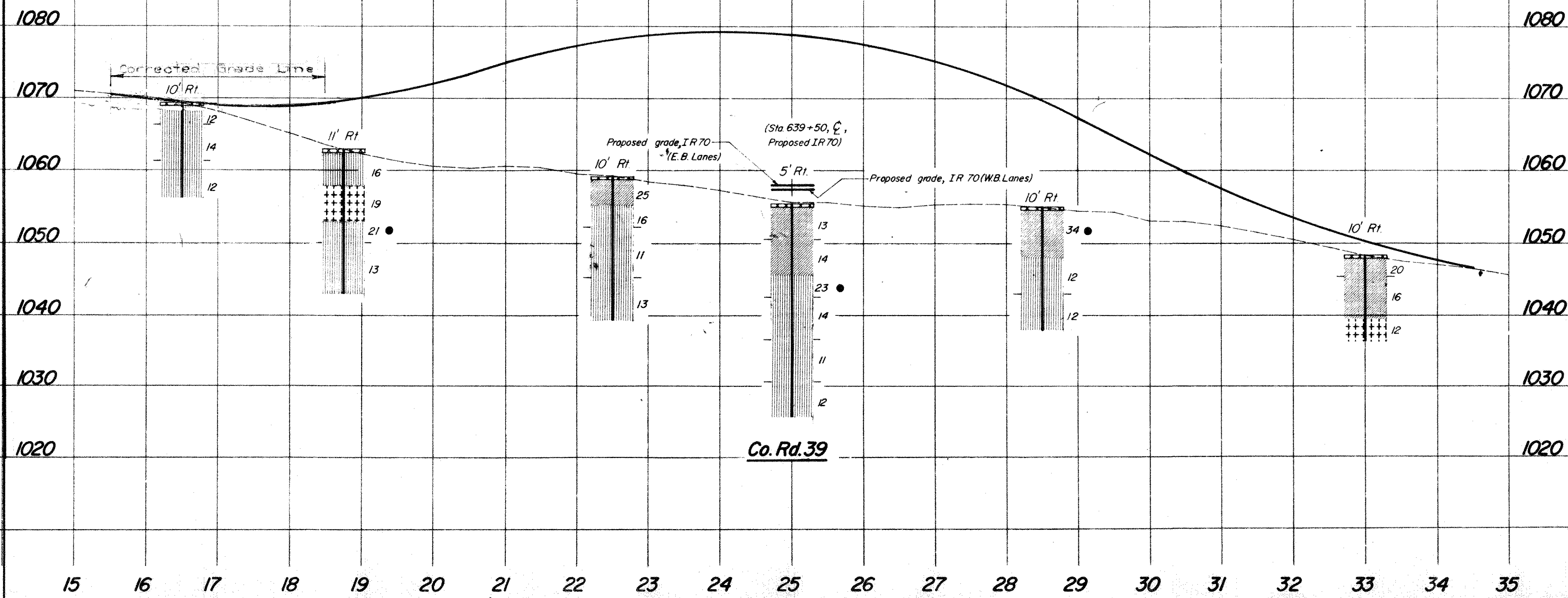
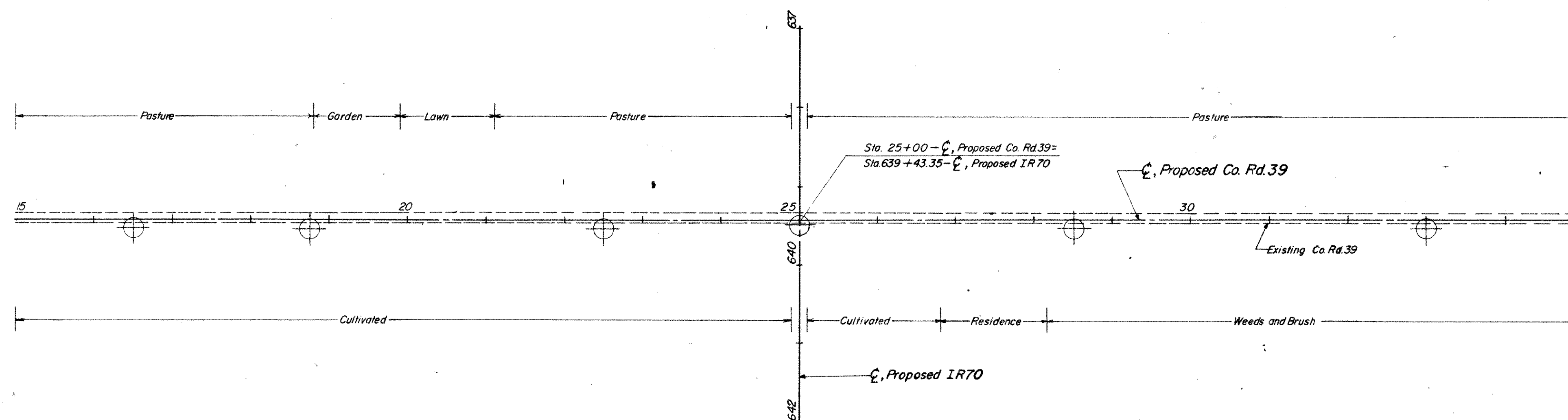
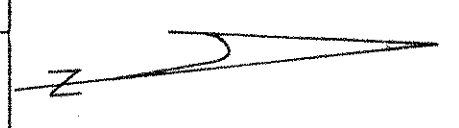
PROFILE INDEX		SHEET
Proposed Ramp N W	14	
Proposed Ramp S W	14	
Proposed Ramp N E	14	
Proposed Ramp S E	14	
Proposed SR 158 Connector	15	
Proposed Twp. Rd. 145	15	

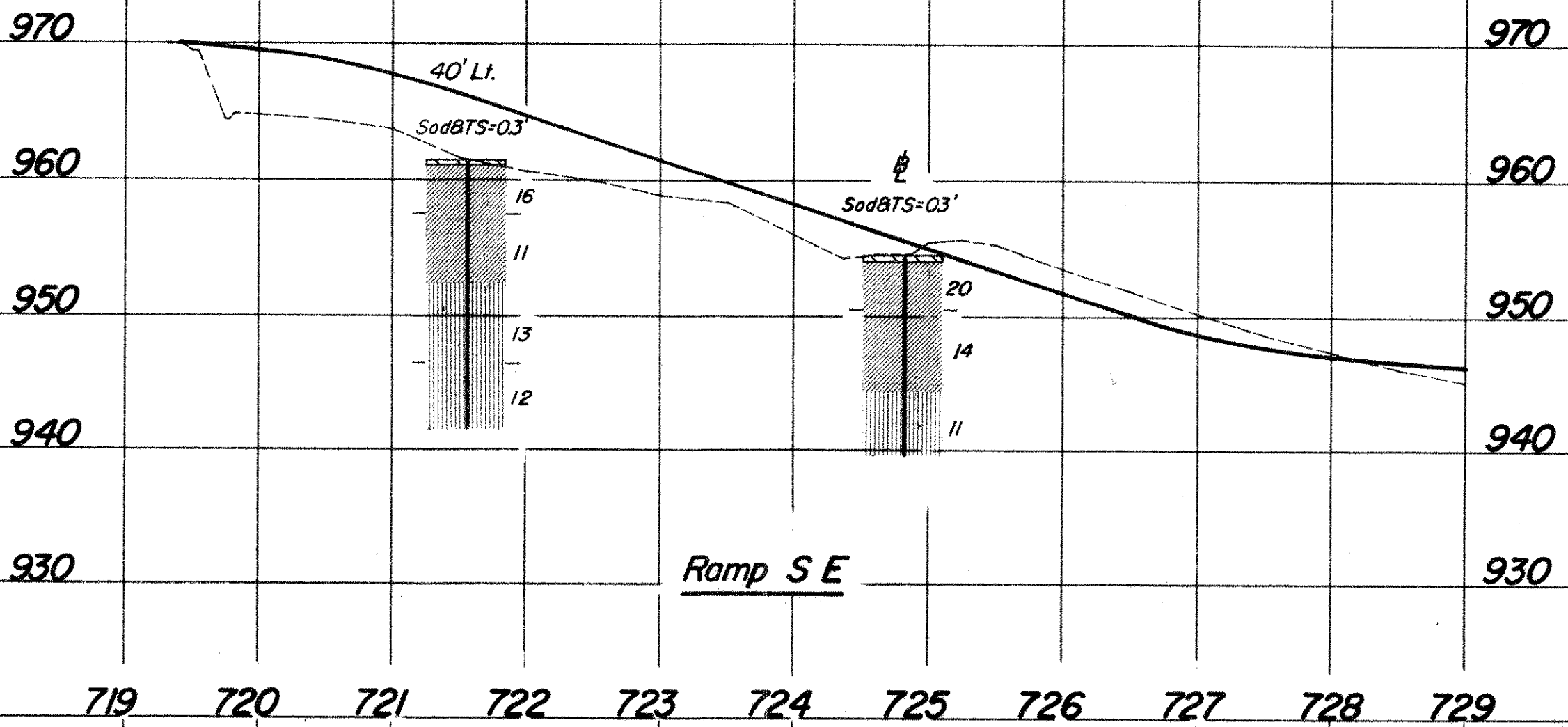
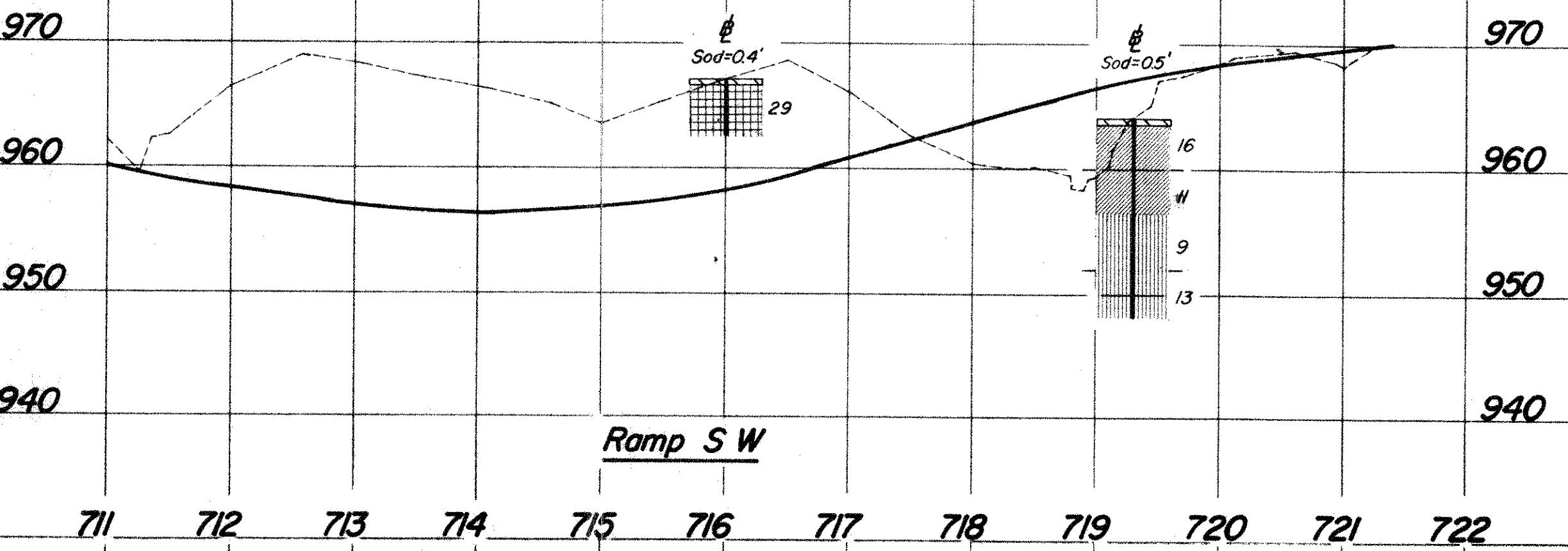
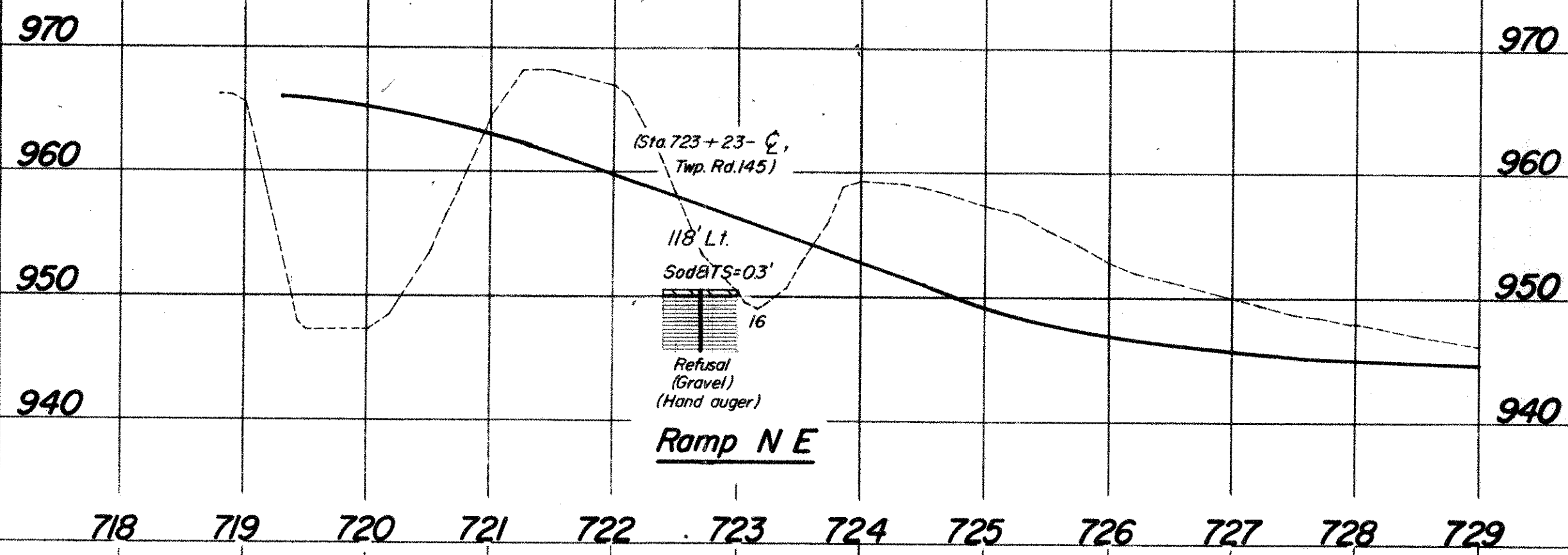
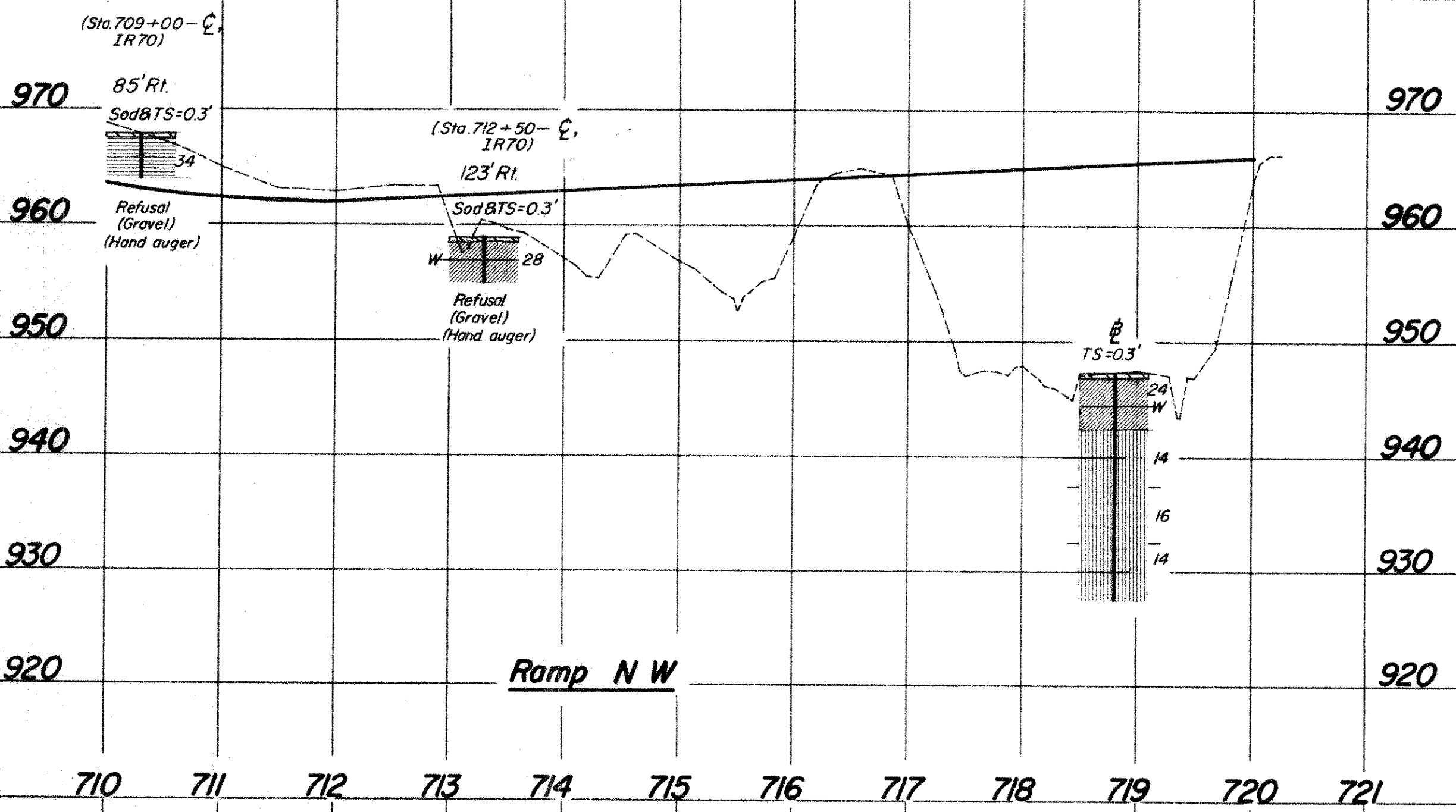




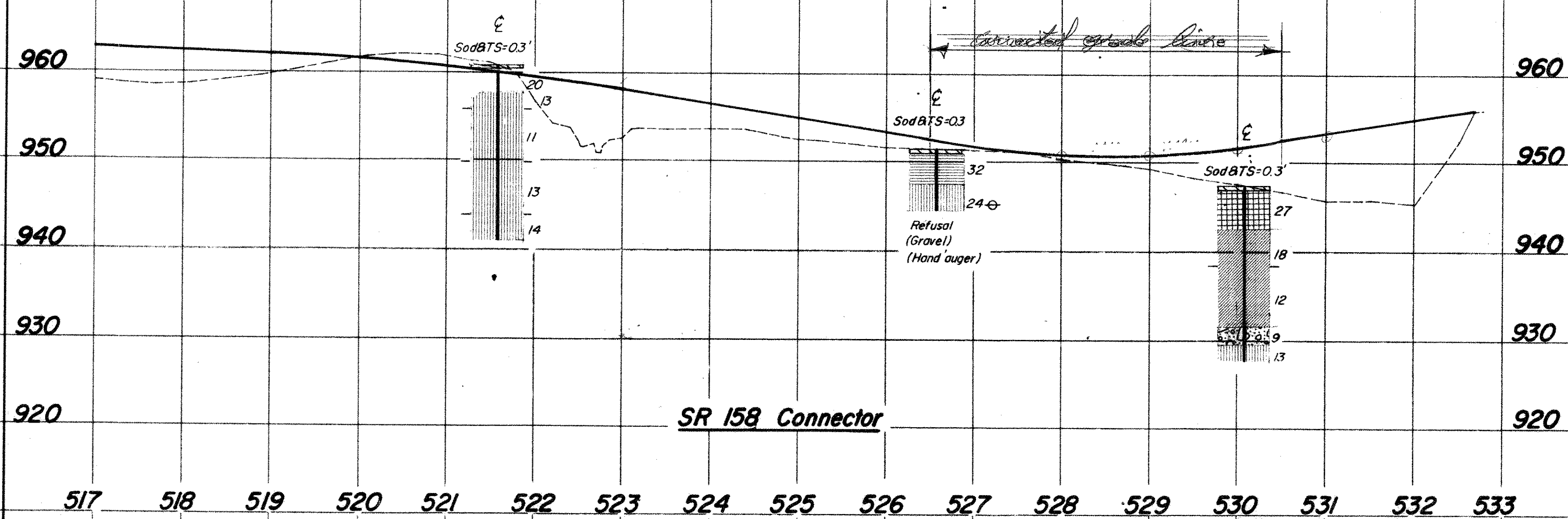
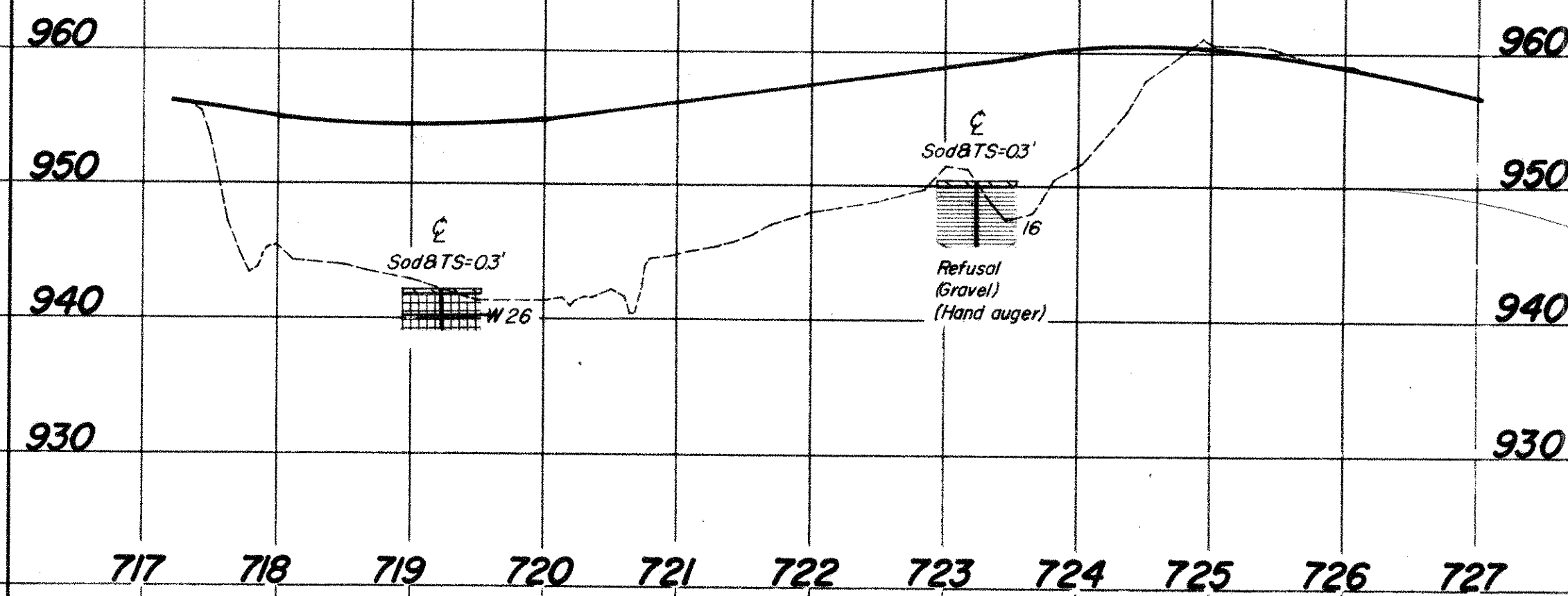








Twp. Rd. 145



GEOLOGY OF THE SITE

The structure site is located on a gently rolling glaciated portion of the Mississippi Valley Plain, in an area where moderately deep glacial-derived soils overlie bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of two drive sample borings and five drive rod penetration tests, made between May 27 and June 1, and June 10 and 12, 1964.

INVESTIGATIONAL FINDINGS

Borings encountered dense and very dense gravels, sands, silts and boulders to 41 and 61-foot depths. The borings were terminated at 41 and 61-foot depths, elevations 1020 and 998 feet, after penetrating in excess of 30 feet of material requiring in excess of 30 blows per foot in the standard penetration test.

Rod soundings met gradual increase in penetration resistance with increase in depth and terminated upon encounter with near-refusal and refusal to penetration at 42 and 48-foot depths, elevations 1016 and 1010 feet in very dense gravelly sands and silts, as revealed by the borings.

No free water was observed in any of the rod sounding holes.

No test penetrated to bedrock surface.

LEGEND

- Auger Boring Location - Plan View
- Press and/or Drive Sample and/or Core Boring Location - Plan View
- Drive Rod Penetration Resistance Sounding Location - Plan View
- Electrical Resistivity Probe Location - Plan View
- Footing Capped Pile
- Footing on Pile
- Electrical Resistivity Probe - Profile
- TR Top of Rock
- Interval of Relatively High Moisture
- TD Total Depth

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- Figures Beside the Boring Log in Profile Indicate the Number of Blows For Standard Penetration Test.
X = Number of Blows for First 6 Inches.
Y = Number of Blows for Second 6 Inches.
- Drive Rod Penetration Resistance Sounding Log - Profile.
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z Indicates Final Measurement of Penetration, in Inches.
- W Indicates Free Water Elevation.
- V Indicates Static Water Elevation.

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

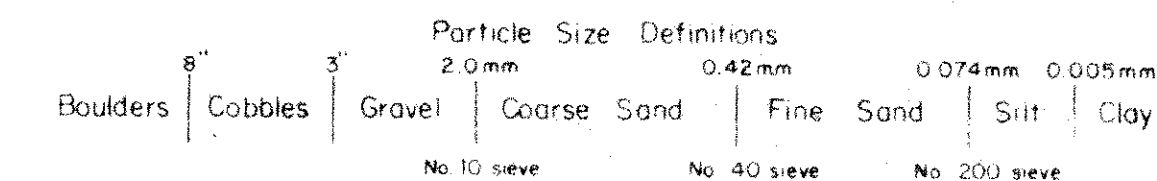
Drive Sample Borings - Drive - Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and/or 5-foot depth intervals, driven by means of a 140-pound drop-hammer, with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive - press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

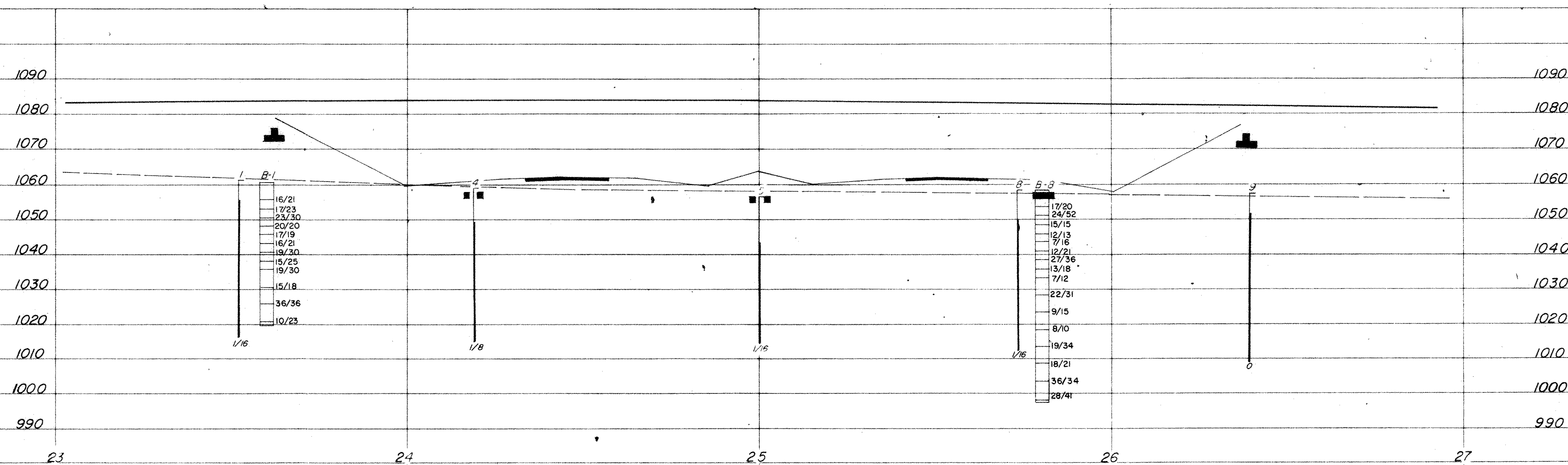
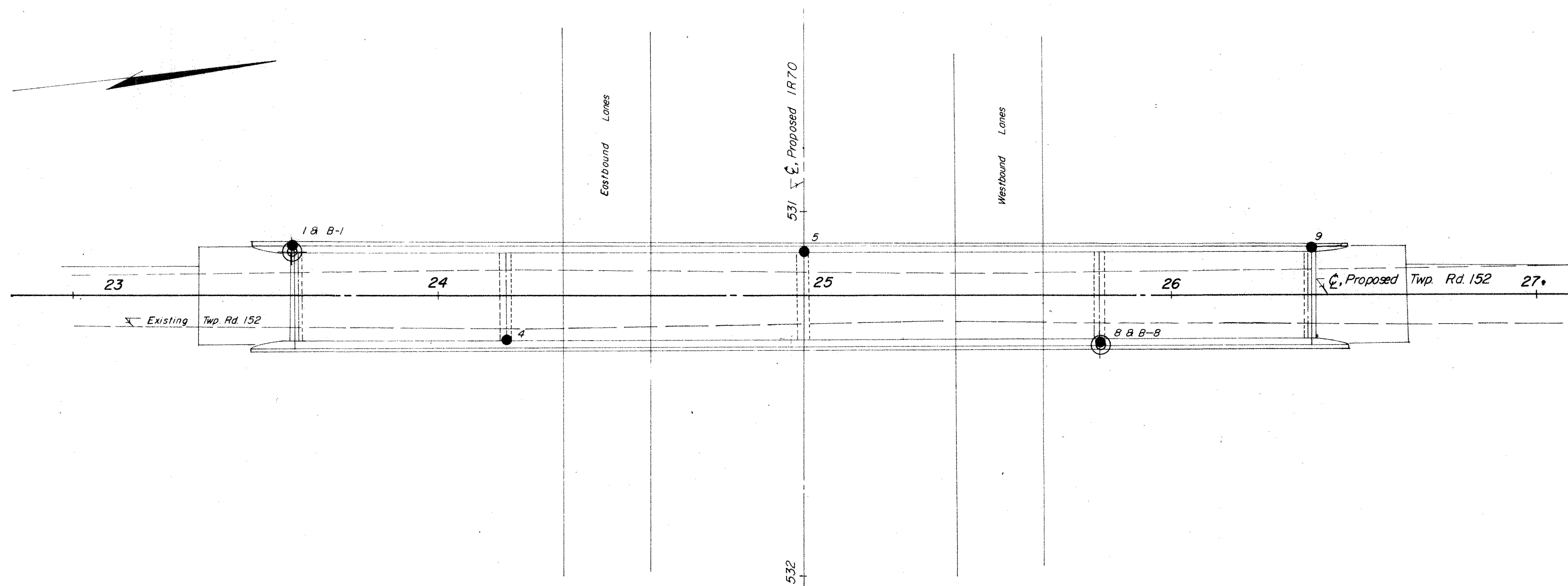


NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO STATE HIGHWAY
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LIC-IR70-0565
IR 70 UNDER TWP. RD. 152
SEC. LIC-IR70-

CHECKED BY: R. D. R. REVIEWED BY: G. P. H. DATE: 7/8/64



OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO.	LIC-IR 70-0565		
	IR 70 UNDER TWP. RD. 152		
SEC.	LIC-IR 70		
PLAN AND PROFILE			
DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.F.	R.D.R.	G.P.H.	7/8/64

SCALE: 1"=20'

LIC-IR 70-(5.12-867)

LOG OF BORING

Date Started 5-27-64 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 5-28-64 Casing Length 25' Dia. 3 1/2" Surface Elev. 1060.9'
 Boring No. B-1 Station & Offset 23+60, 12' Lt (REAR ABUTMENT)

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics										SHTL Class.			
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.						
1060.9	0																			
	2																			
	4																			
1055.9	6	16/21			Brown and Gray Sandy Gravelly Silt	1	23	6	12	32	27	27	9	16						
1053.4	8	17/23			Brown and Gray Sandy Silt	2	16	9	10	41	24	27	9	16						
1050.9	10	23/30			Brown Sandy Silt with some Stone Fragments	3	V	I	S	U	A	L		14						
1048.4	12	20/20			Gray Sandy Silt with little Gravel	4	V	I	S	U	A	L	22	6	13					
1045.9	14	17/19			Gray Sandy Gravelly Silt	5	31	8	14	28	19	22	7	17						
1043.4	16	16/21			Gray Silty Gravelly Sand	6	29	16	17	29	9	19	5	11						
1040.9	18	19/30			Gray Sandy Gravelly Silt	7	30	11	13	30	16	19	3	13						
1038.4	20	15/25			Gray Sandy Gravelly Silt	8	30	8	15	29	18	20	5	12						
1035.9	22	19/30			Gray Sandy Gravelly Silt	9	26	9	14	30	21	22	7	13						
	24																			
	26																			
1030.9	28	15/18			Gray Gravelly Silt	10	27	9	2	38	24	24	7	13						
	30																			
	32																			
	34																			
1025.9	36	36/36			Gray Silty Sandy Gravel	11	45	7	10	21	17	21	6	14						
	38																			
1020.9	40																			
1019.9	40	10/23			Gray Sandy Gravelly Silt	12	26	11	13	29	21	21	5	13						

BOTTOM OF BORING

LOG OF BORING

Date Started 5-28-64 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 5-28-64 Casing Length 49' Dia. 3 1/2" Surface Elev. 1058.6'
 Boring No. B-5 Station & Offset 23+61, 13' Rt (FORWARD PIER)

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics										SHTL Class.			
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.						
1058.6	0																			
	2																			
	4																			
1053.6	6	17/20			Brown Gravelly Sandy Clay	1	22	11	16	25	26	30	12	31						
1051.1	8	24/32			No Sample Recovered - Boulder															
1048.6	10	15/15			Brown Sandy Silt	2	0	47	34	-19		MP	MP	22						
1046.1	12	12/13			Gray Silty Gravelly Sand	3	24	21	11	24	20	22	6	16						
1043.6	14	7/16			Brown Gravelly Sandy Silt	4	24	11	14	27	24	22	6	14						
1041.1	16	12/21			Gray Sandy Gravelly Silt	5	30	10	13	25	22	24	8	12						
1038.6	18	27/36			Gray Sandy Gravelly Silt	6	32	8	11	29	20	22	6	14						
1036.1	20	13/18			Gray Sandy Gravelly Silt (Driller's Description)	7	V	I	S	U	A	L		19						
1033.6	22	7/12			Gray Silty Sandy Gravel	8	50	18	7	15	10	MP	MP	11						
	24																			
	26																			
1028.6	28	22/31																		
	30																			
	32																			
	34																			
1023.6	36	9/15			Gray Gravelly Sandy Silt	9	22	10	13	30	25	23	8	13						
	38																			
1018.6	40	8/10			Gray Gravelly Sandy Silt	10	26	18	14	29	13	MP	MP	11						
	42																			
	44																			
1013.6	46	19/34			Gray Sandy Gravelly Silt	11	39	8	9	24	20	23	6	13						
	48																			
1008.6	50	18/21			Gray Silty Sandy Gravel	12	31	14	16	21	18	18	3	11						
	52																			
	54																			
1003.6	56	36/34			Gray Sandy Gravelly Silt	13	31	6	18	31	14	MP	MP	12						
	58																			
998.6	60	28/41			Gray Silty Gravelly Sand	14	17	20	30	17	16	MP	MP	10						

BOTTOM OF BORING

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LIC-IR 70-0565
IR 70 UNDER TWP. RD. 152
SEC. LIC-IR 70

BORING DATA

TYPED BY: JAG CHECKED BY: RDR REVIEWED BY: G.P.H. DATE: 7/8/64

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____

Test Location No. _____
Station & Offset 23+00.13 LI
BEAR BRIDGE
Surface Elev. 0611 Water Elev. _____

Test Location No. _____
Station & Offset 23+00.30
BEAR BRIDGE
Surface Elev. 0612 Water Elev. _____

Test Location No. _____
Station & Offset 24+00.30
BEAR BRIDGE
Surface Elev. 0518 Water Elev. _____

Test Location No. 8
Station & Offset 24+18.13 LI
BEAR BRIDGE
Surface Elev. 0586 Water Elev. _____

Test Location No. 9
Station & Offset 24+39.30 LI
BEAR BRIDGE
Surface Elev. 0577 Water Elev. _____

19
26
4
4

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

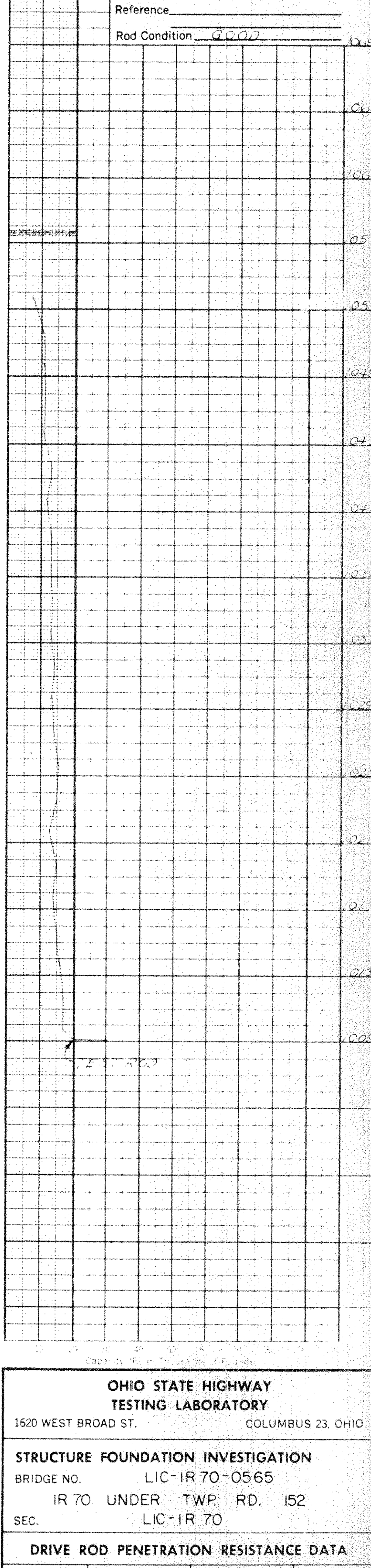
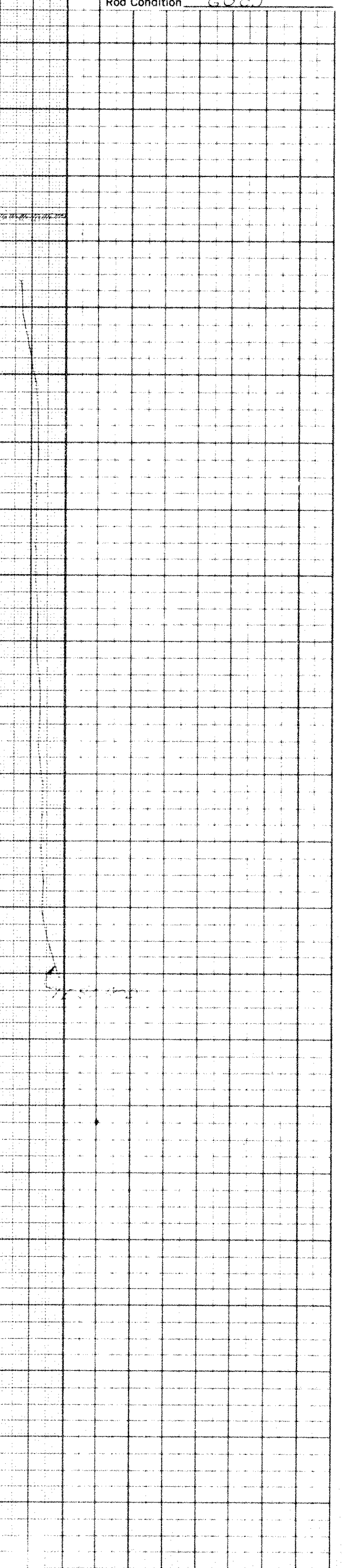
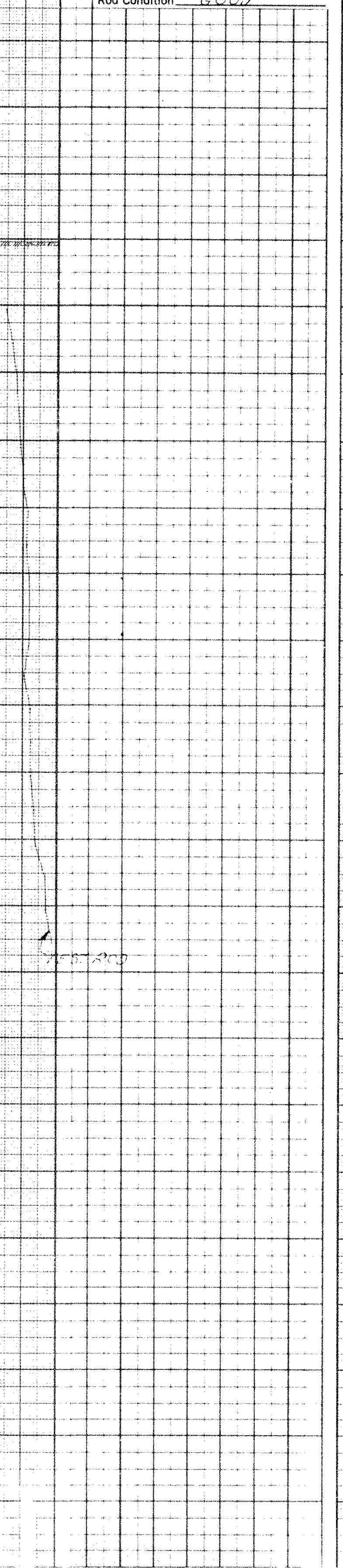
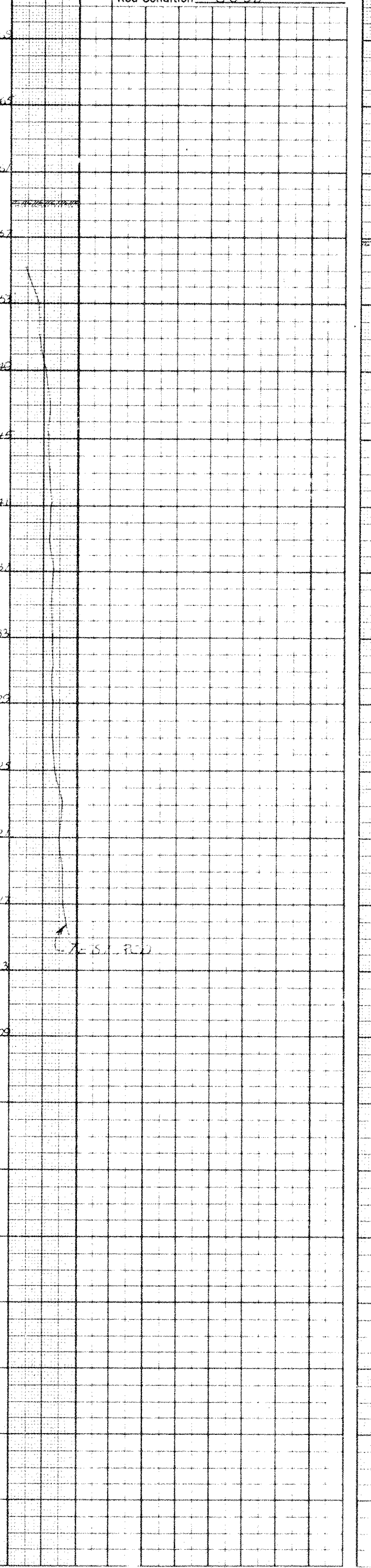
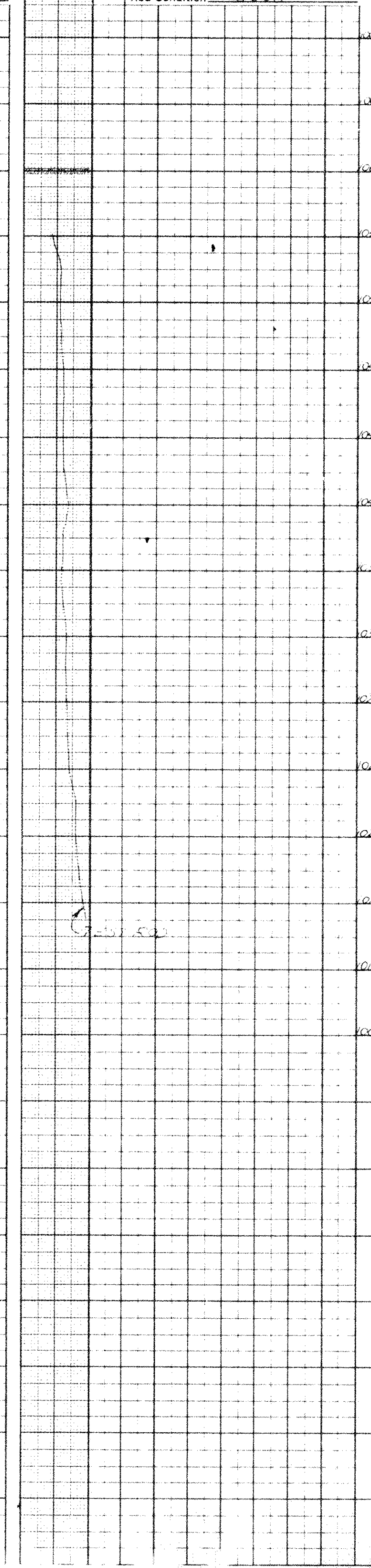
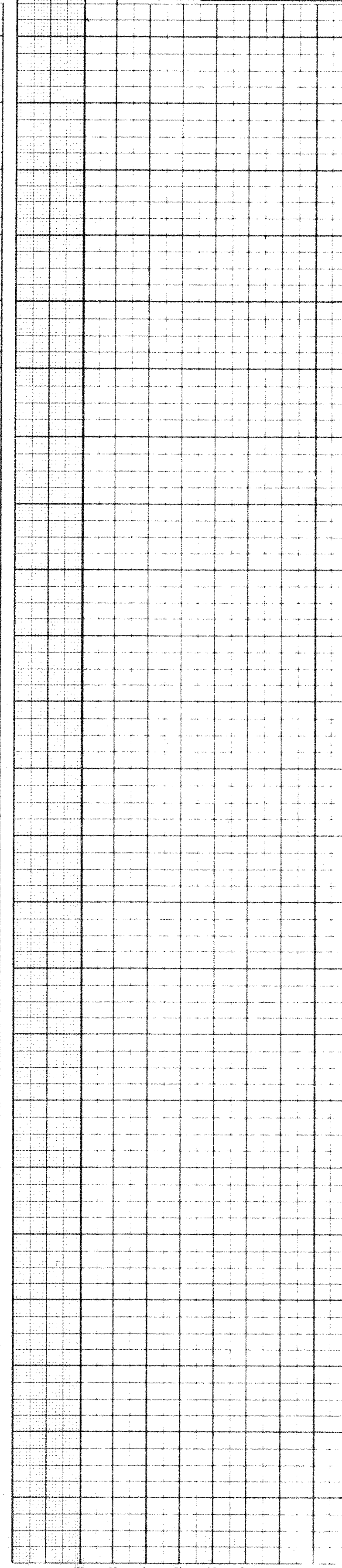
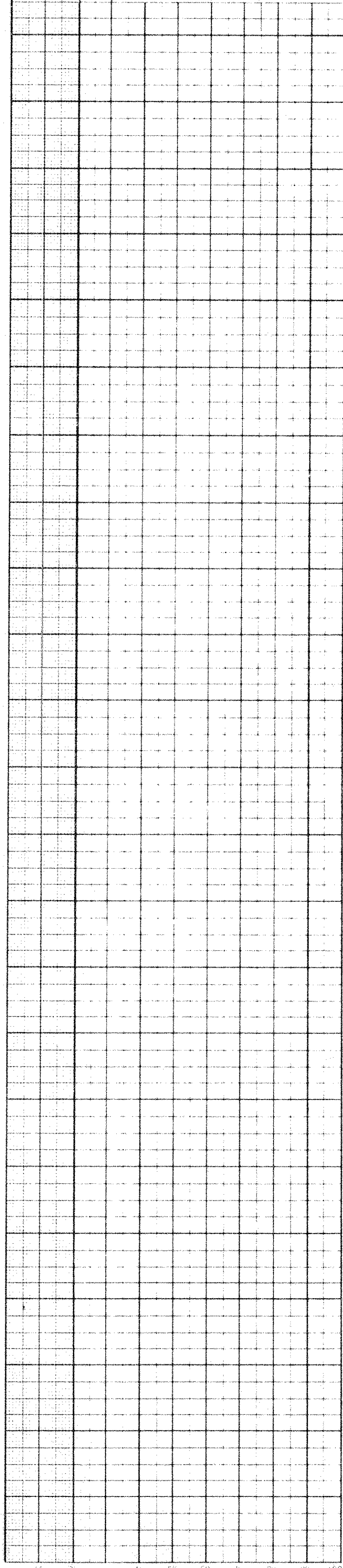
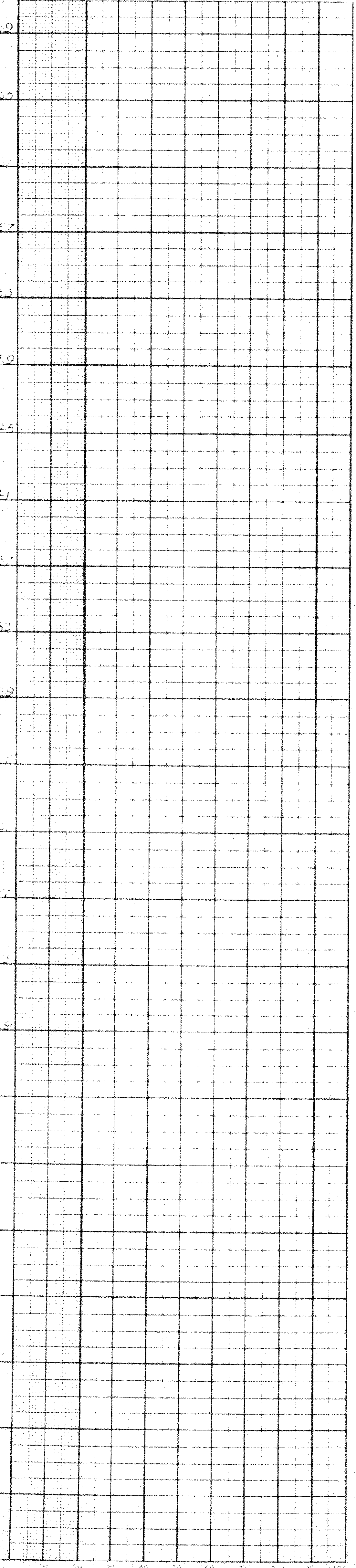
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD



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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LIC-IR 70-0565
IR 70 UNDER TWP. RD. 152
SEC. LIC-IR 70

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY R.C.	CHECKED BY R.D.R.	REVIEWED BY G.P.H.	DATE 7/8/64
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GEOLOGY OF THE SITE

The structure site is located on a gently rolling glaciated portion of the Mississippi Valley Plains, in an area where moderately deep glacial-derived soils overlie bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of two drive sample borings and five drive rod penetration tests, made between May 25 and 27, and June 12 and 16, 1964.

INVESTIGATIONAL FINDINGS












Borings encountered dense and very dense gravels, sands, and silts to 46 and 51-foot depths, elevations 1035 and 1033 feet, where the borings were terminated after penetrating in excess of 30 feet of material requiring in excess of 30 blows per foot in the standard penetration test.

Rod soundings met gradual increase in penetration resistance with increase in depth and terminated upon encounter with refusal or near refusal to penetration at 24 to 42-foot depths, elevations 1063 to 1033 feet considered to be in very dense gravelly silts, as revealed by the borings.












No free water was observed in any of the rod sounding holes.


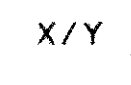



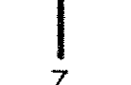
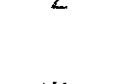

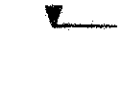
No test penetrated to bedrock surface.

LEGEND

-  Auger Boring Location - Plan View.
-  Press and/or Drive Sample and/or Core Boring Location - Plan View.
-  Drive Rod Penetration Resistance Sounding Location - Plan View.
-  Electrical Resistivity Probe Location - Plan View.
-  Footing  Capped Pile
-  Footing on Pile
-  Electrical Resistivity Probe - Profile
-  TR Top of Rock
-  Interval of Relatively High Moisture
-  TD Total Depth

SYMBOLS OF ROCK TYPES

-  Coal
-  Weathered Indurated Clay
-  Indurated Clay
-  Weathered Shale
-  Shale
-  Weathered Sandstone
-  Sandstone
-  Leached Dolomite
-  Dolomite
-  Leached Limestone
-  Limestone

-  Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
-  X/Y
Figures Beside the Boring Log in Profile Indicate the Number of Blows For Standard Penetration Test.
X = Number of Blows for First 6 Inches.
Y = Number of Blows for Second 6 Inches.
-  Drive Rod Penetration Resistance Sounding Log - Profile.
-  Casing
-  Resistance " R " $<$ 10,000 lbs.
-  Resistance " R " $>$ 10,000 lbs.
-  Z Indicates Final Measurement of Penetration, in Inches.
-  W Indicates Free Water Elevation.
-  Indicates Static Water Elevation.

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1 3/8-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with post performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

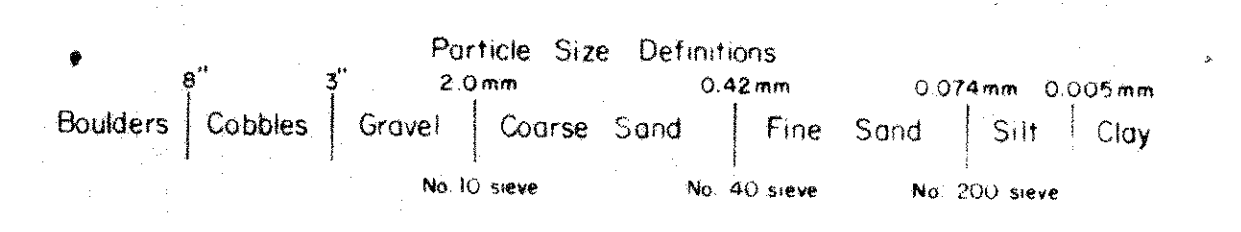
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and/or 5-foot depth intervals, driven by means of a 140-pound drop-hammer, with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

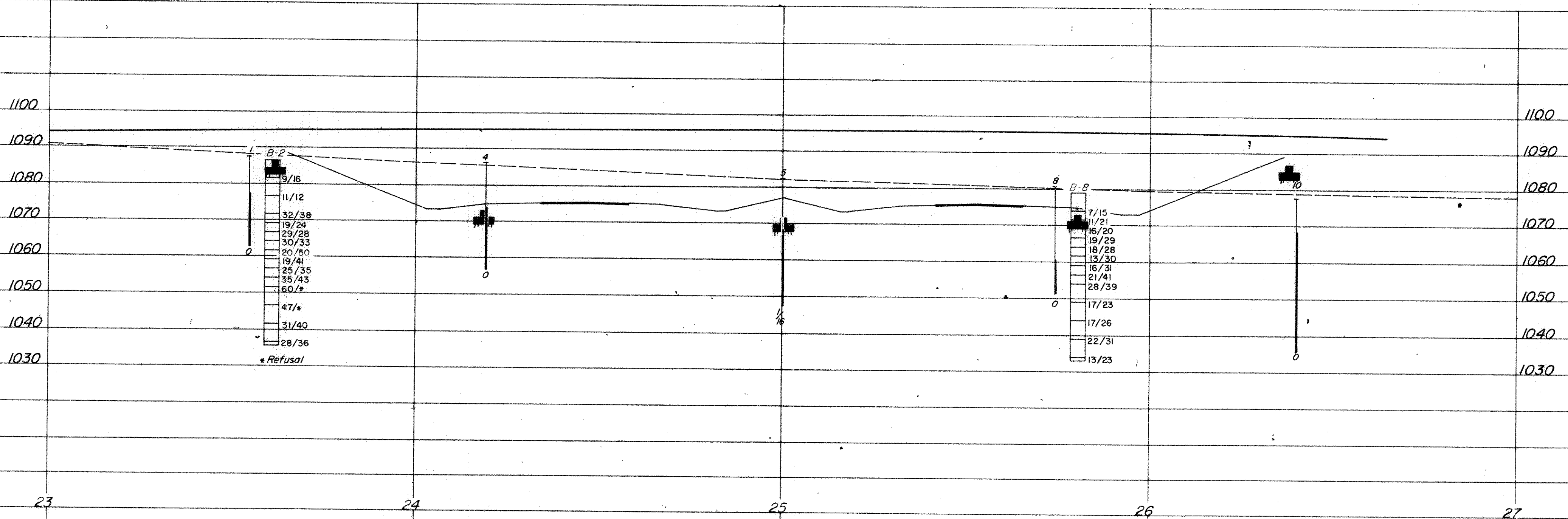
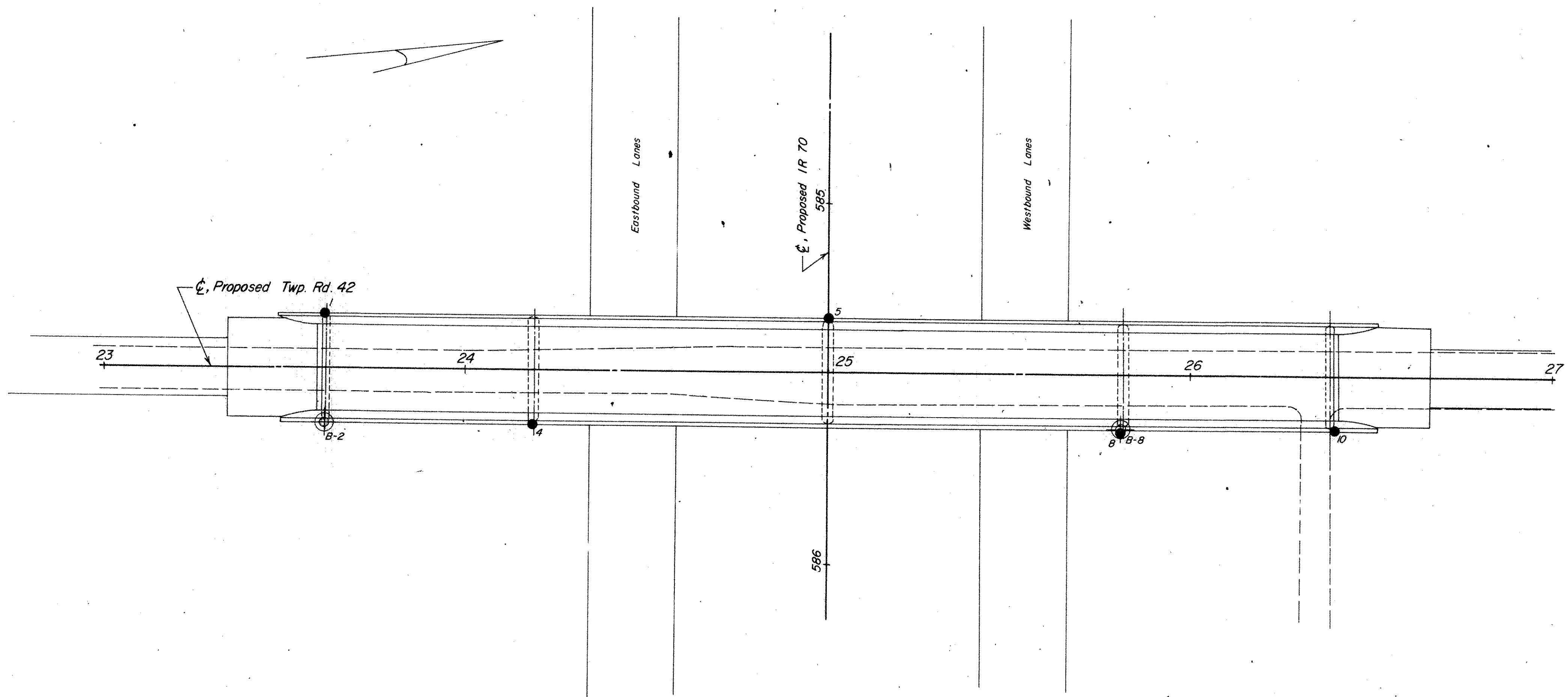


NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design criteria for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO STATE HIGHWAY
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LIC-IR 70-0668
IR 70 UNDER TWP. RD. 42
SEC. LIC-IR 70

CHECKED BY R. H. P.	REVIEWED BY R. D. R.	DATE 7/14/64
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OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. LIC-IR70-0668 IR 70 UNDER TWP. RD. 42 SEC. LIC-IR 70			
PLAN AND PROFILE			
DRAWN BY L.N.L.	CHECKED BY R.H.P.	REVIEWED BY R.D.R.	DATE 7/14/64

SCALE 1" = 20'

LOG OF BORING

Date Started 5-25-64 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 5-27-64 Casing Length 20' Dia. 3 1/2" Surface Elev. 1066.4'
 Boring No. B-2 Station & Offset 23+61.15' Rt (NEAR APPROX)

Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.	
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.
1086.4	0													
1081.4	5	9/16		Brown and Gray Sandy Gravelly Silt	1	25	9	12	29	25	25	7	16	
1076.4	11	11/12		Brown and Gray Gravelly Sandy Silt	2	16	8	11	35	30	28	8	22	
1071.4	16	32/38		Brownish-Gray Sandy Gravelly Silt	3	31	20	8	26	15	23	6	12	
1068.9	18	19/24		Brown Silty Sandy Gravel	4	43	19	15	11	12	22	5	14	
1066.4	20	29/28		Gray Sandy Gravelly Silt	5	33	11	12	25	19	23	8	10	
1063.9	24	30/33		Gray Sandy Gravelly Silt	6	53	8	10	27	22	22	7	10	
1061.4	26	20/50		Gray Sandy Gravelly Silt	7	28	6	14	31	21	21	6	10	
1058.9	28	19/41		Gray Sandy Gravelly Silt	8	28	16	12	25	19	21	6	13	
1056.4	30	25/35		Gray Gravelly Silt	9	25	9	4	37	25	22	6	15	
1053.9	32	35/43		Gray Sandy Silt and Stone Fragments	10	V	I	S	U	A	L	23	7	12
1051.4	36	60/*		Gray Silty Sandy Gravel	11	34	19	14	19	14	MP	MP	9	
1046.4	40	47/*		Gray Sandy Silt with some Stone Fragments	12	V	I	S	U	A	L	22	6	12
1041.4	46	31/40		Gray Sand and Stone Fragments	13	V	I	S	U	A	L		11	
1036.4	50	28/36		Gray Sandy Silt and Stone Fragments	14	V	I	S	U	A	L	20	4	8

BOTTOM OF BORING

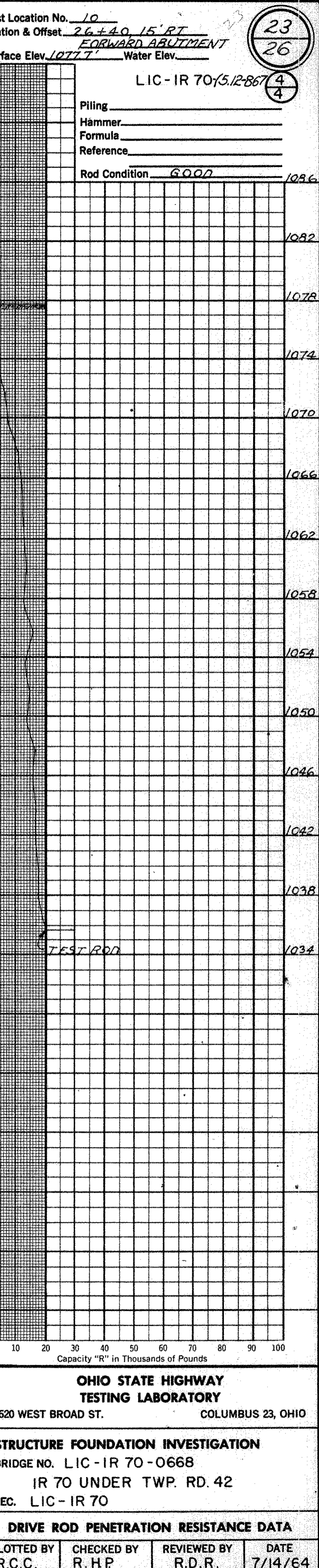
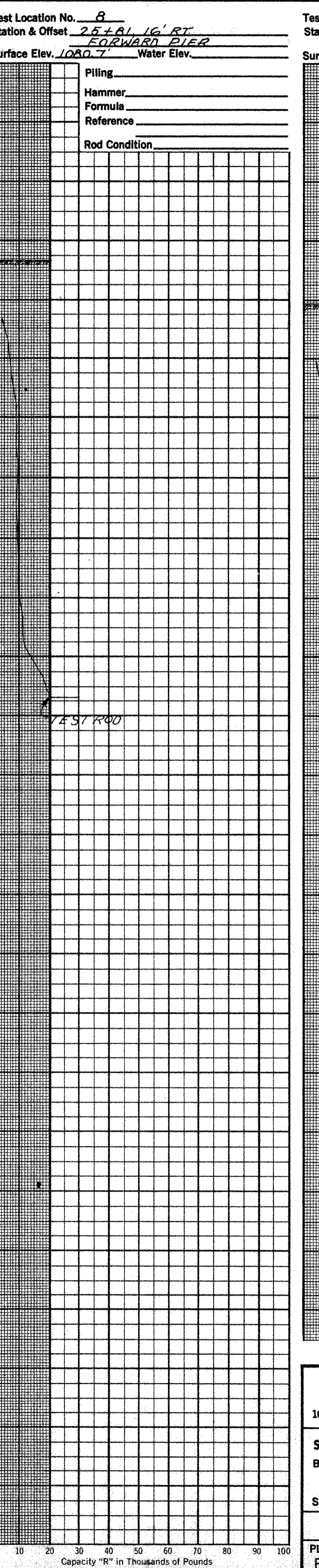
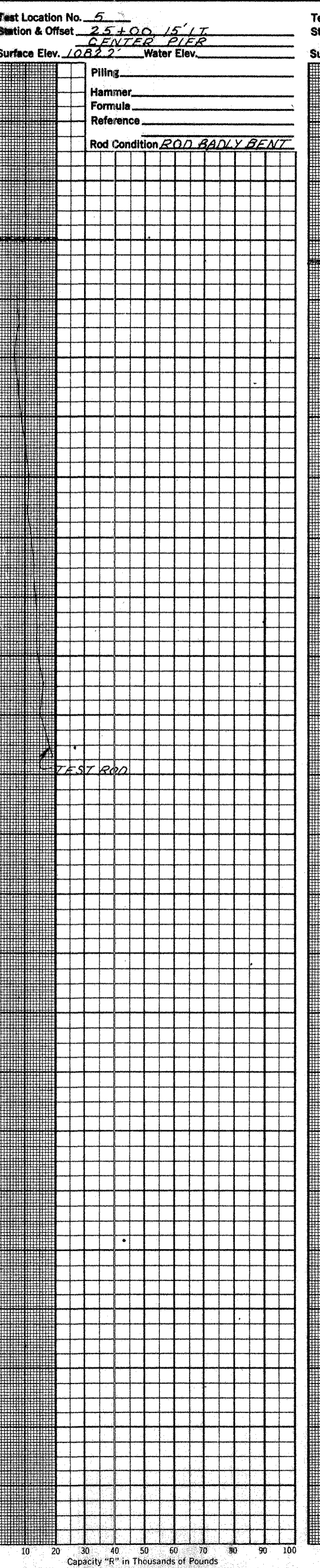
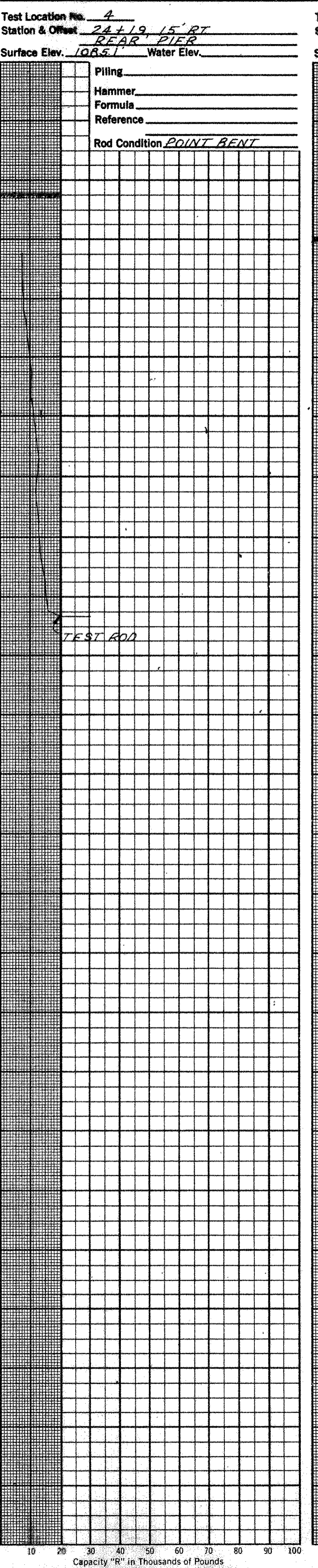
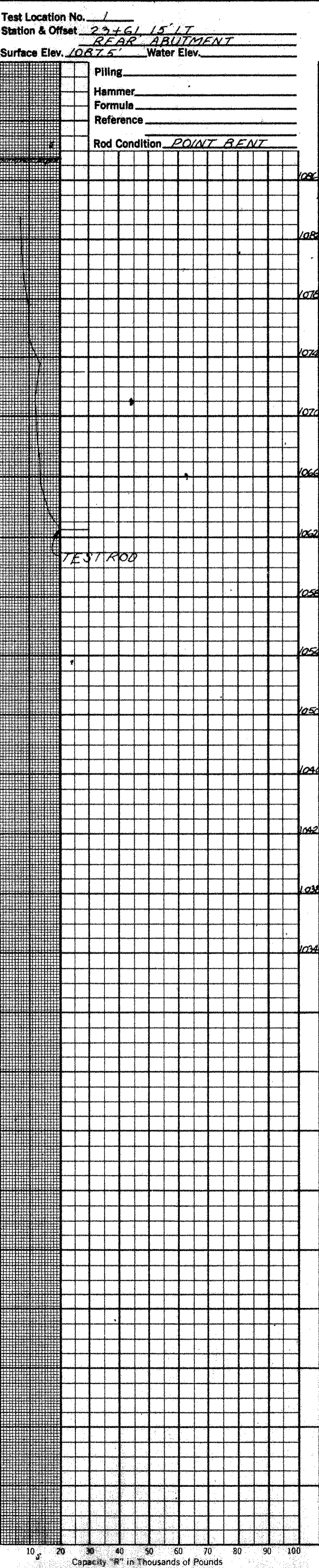
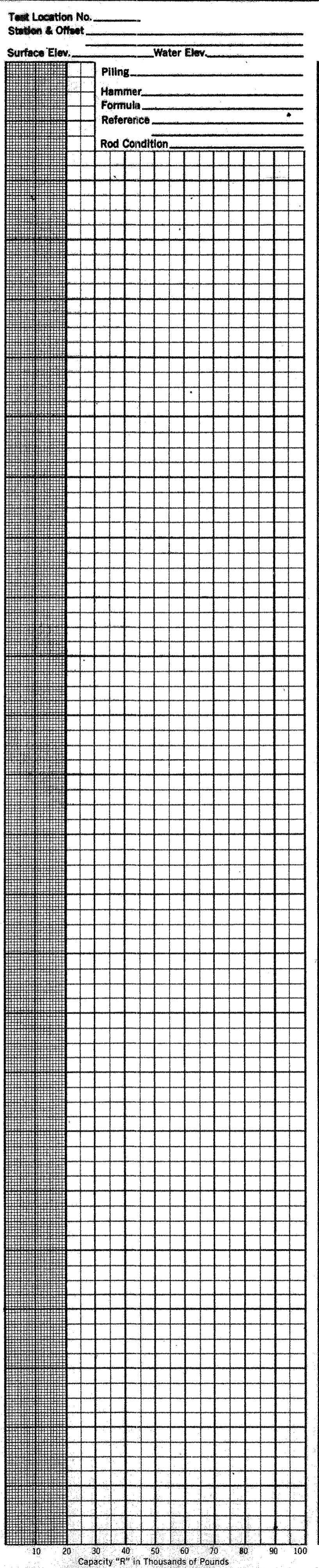
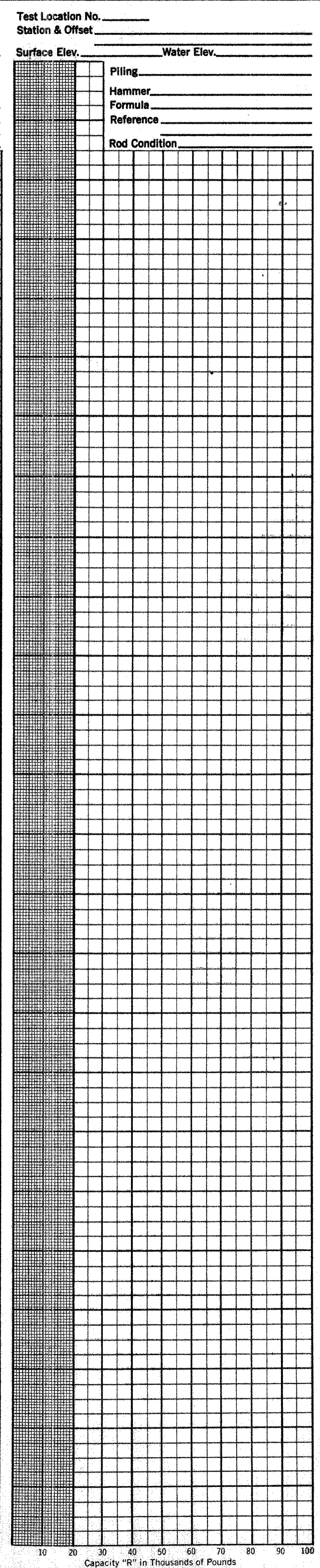
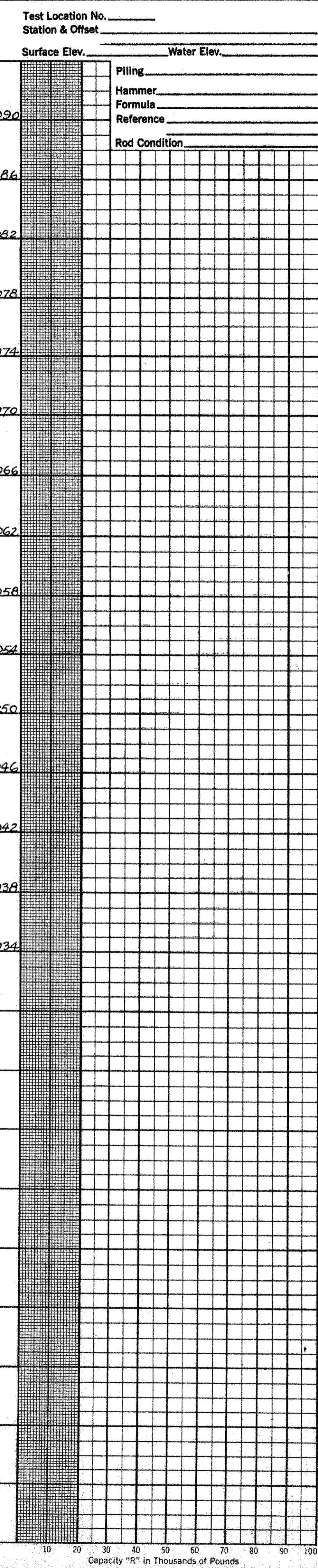
LOG OF BORING

Date Started 5-25-64 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 5-27-64 Casing Length 30' Dia. 3 1/2" Surface Elev. 1079.0'
 Boring No. B-8 Station & Offset 25+81.15' Rt (FORWARD PILE)

Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.	
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI		W.C.
1079.0	0													
1074.0	5	7/15		Mottled Brown and Gray Silty Clay	1	0	3	11	35	51	34	16	20	
1071.5	8	11/21		Brownish-Gray Clayey Silt	2	0	5	12	35	48	29	10	16	
1069.0	10	16/20		Brown Sandy Silt	3	0	10	17	38	35	27	9	15	
1066.5	12	19/29		Gray Gravelly Sandy Silt	4	21	11	12	35	21	21	6	11	
1064.0	16	18/28		Gray Gravelly Sandy Silt	5	24	9	15	32	20	20	5	12	
1061.5	18	13/30		Gray Gravelly Sandy Silt	6	21	9	19	33	18	19	3	12	
1059.0	20	16/31		Gray Gravelly Sandy Silt	7	16	9	13	36	26	23	6	11	
1056.5	22	21/41		Gray Sandy Gravelly Silt	8	22	9	12	35	22	23	8	12	
1054.0	26	28/39		Gray Silty Gravelly Sand	9	28	15	20	27	10	MP	MP	11	
1049.0	30	17/23		Gray Sandy Gravelly Silt	10	21	9	9	34	27	22	7	11	
1044.0	36	17/26		Gray Gravelly Sandy Silt	11	20	10	14	32	24	22	7	13	
1039.0	40	22/31		Gray Sandy Gravelly Silt	12	27	9	13	29	22	22	7	12	
1034.0	44													
1033.0	46	13/23		Gray Gravelly Silt	13	29	9	5	38	19	23	7	13	

BOTTOM OF BORING

OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST. COLUMBUS 23, OHIO	
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. LIC-IR 70-0608	SEC. LIC-IR 70
BORING DATA	
TYPED BY J.A.G.	CHECKED BY R.H.P.
REVIEWED BY R.D.R.	DATE 7/14/64



23
26

LIC-IR 70(5.12-86) 4

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

STRUCTURE FOUNDATION INVESTIGATION
 BRIDGE NO. LIC-IR 70-0668
 IR 70 UNDER TWP. RD. 42
 SEC. LIC-IR 70

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY R.C.C. CHECKED BY R.H.P. REVIEWED BY R.D.R. DATE 7/14/64

LEGEND

- Auger Boring Location - Plan View
- Press and/or Drive Sample and/or Core Boring Location - Plan View
- Drive Rod Penetration Resistance Sounding Location - Plan View
- Electrical Resistivity Probe Location - Plan View
- Footings and Capped Piles
- Footings on Piles
- Electrical Resistivity Probe - Profile
- Top of Rock
- Interval of Relatively High Moisture
- Total Depth

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Lutomite
- Leached Limestone
- Limestone

- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- Figures Beside the Boring Log in Profile Indicate the Number of Blows For Standard Penetration Test.
X = Number of Blows for First 6 Inches.
Y = Number of Blows for Second 6 Inches.
- Drive Rod Penetration Resistance Sounding Log - Profile.
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Indicates Final Measurement of Penetration, in Inches.
- Indicates Free Water Elevation.
- Indicates Static Water Elevation.

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive - Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and/or 5-foot depth intervals, driven by means of a 140-pound drop-hammer, with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drilling rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	8"	Cobbles	3"	Gravel	2.0mm	Coarse Sand	0.42mm	Fine Sand	0.075mm	Silt	0.0075mm	Clay	0.0025mm
No. 10 sieve No. 40 sieve No. 200 sieve													

GEOLOGY OF THE SITE

The structure site is located on a gently rolling glaciated portion of the Mississippi Valley Plain, in an area where moderately deep glacial-derived soils overlie bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of two drive sample borings and five drive rod penetration tests, made between May 20 and 22, and June 11 and 16, 1964.

INVESTIGATIONAL FINDINGS

Borings encountered dense and very dense gravels, sands, and silts to 41 and 46-foot depths, elevations 1014 and 1011 feet, where the borings were terminated after penetrating in excess of 30 feet of material requiring in excess of 30 blows per foot in the standard penetration test.

Rod soundings met gradual increase in penetration resistance with increase in depth and terminated upon encounter with near-refusal to penetration at 41 to 66-foot depths, elevations 1014 to 990 feet, considered to be in very dense gravelly sands and silts, as revealed by the borings.

Free water was observed in rod sounding holes numbers 1, 4, 5, and 9 between elevations 1041 and 1049 feet.

No test penetrated to bedrock surface.

LOG OF BORING

Date Started 5-21-64 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 5-22-64 Casing Length 25' Dia. 3 1/2" Surface Elev. 1056.7'
 Boring No. B-2 Station & Offset 23+61, 13' Rt (REAR ABUTMENT)

Elev.	Depth (ft.)	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics										SHTL Class.	
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PL	W	C			
1056.7	0																	
1051.7	6	6/10			Brown and Gray Sandy Gravelly Silt	1	29	6	11	28	26	26	8	17				
1049.2	8	15/23			Brown Sandy Gravelly Silt	2	33	7	10	28	22	26	8	15				
1046.7	10	11/11			Brown Sandy Gravelly Silt	3	V	I	8	U	A	L	26	10	22			
1044.2	12	13/20			Gray Sandy Gravelly Silt	4	37	10	10	26	17	23	7	14				
1041.7	15	15/17			Gray Sandy Silt	5	14	12	14	31	29	24	8	13				
1039.2	18	16/29			Gray Sandy Gravelly Silt	6	23	9	13	31	24	21	4	15				
1036.7	20	15/29			Gray Gravelly Silt	7	40	8	4	29	19	21	6	13				
1034.2	22	13/27			Gray Silty Sandy Gravel	8	44	19	7	16	14	24	8	13				
1031.7	25	15/23			Gray Sand (Wash Sample)	9	V	I	8	U	A	L						
1026.7	30	13/19			Gray Silt	10	26	9	12	27	26	21	5	11				
1021.7	36	12/19			Gray Silty Gravel	11	61	9	5	15	10	18	3	11				
1016.7	40	17/25			Gray Silty Sandy Gravel	12	44	12	14	17	13	19	4	13				
1011.7	46	17/20			Gray Sandy Gravelly Silt	13	27	9	16	31	17	NP	NP	15				

1010.7 BOTTOM OF BORING

LOG OF BORING

Date Started 5-20-64 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 5-21-64 Casing Length 30' Dia. 3 1/2" Surface Elev. 1054.6'
 Boring No. B-7 Station & Offset 25+82, 13' Lt (FORWARD PIER)

Elev.	Depth (ft.)	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics										SHTL Class.	
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PL	W	C			
1054.6	0																	
1049.6	6	13/17			Brown and Gray Silty Sandy Gravel	1	44	9	12	23	12	26	9	16				
1047.1	8	11/23			Brown Sandy Gravelly Silt	2	22	8	13	30	27	25	8	16				
1044.6	10	15/19			Gray Sandy Silt	3	13	4	15	40	28	23	7	16				
1042.1	12	13/18			Gray Sandy Gravelly Silt	4	31	7	10	29	23	21	3	13				
1039.6	15	53/*			Gray Limestone Boulders	5	V	I	S	U	A	L						
1037.1	18	16/26			Gray Sandy Gravelly Silt	6	37	6	9	28	20	23	6	13				
1034.6	20	19/25			Gray Sandy Gravelly Silt	7	V	I	S	U	A	L	24	8	14			
1032.1	22	38/*			Gray Sandy Gravelly Silt	8	V	I	S	U	A	L	24	7	12			
1029.6	25	15/19			Brown and Gray Sandy Gravelly Silt	9	29	10	12	28	21	22	6	11				
1024.6	30	20/20			Brown and Gray Silty Sandy Gravel	10	45	22	9	15	9	NP	NP	13				
1019.6	36	24/31			Gray Silty Sandy Gravel	11	50	14	7	15	14	PL	16	15				
1014.6	40	42/*			Gravel		V	I	S	U	A	L						
1014.1					REFUSAL													

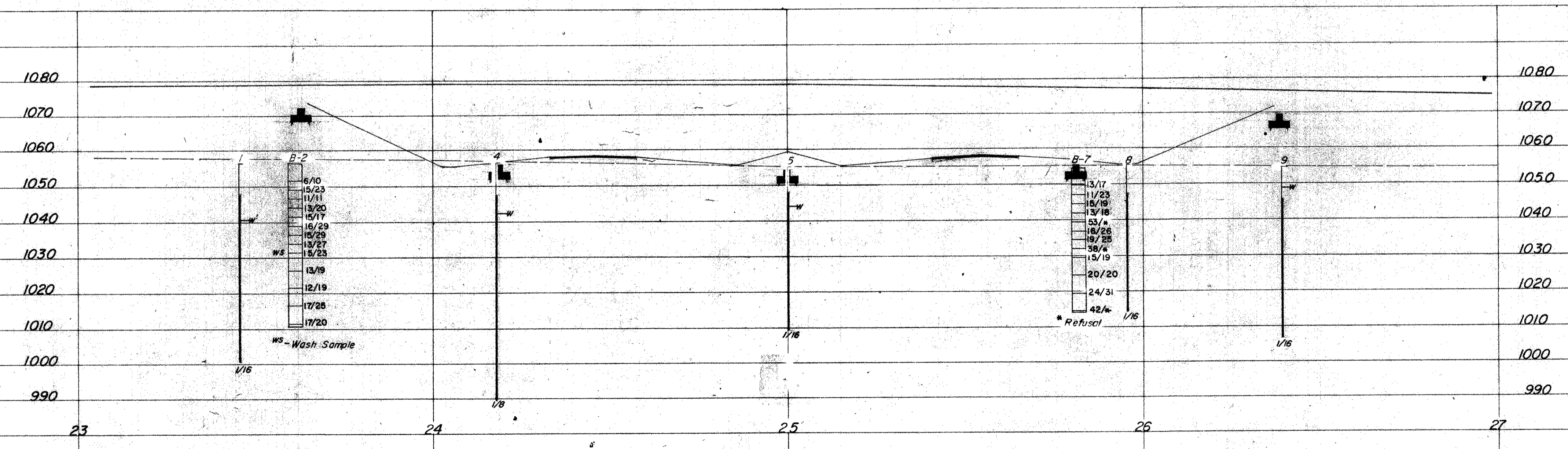
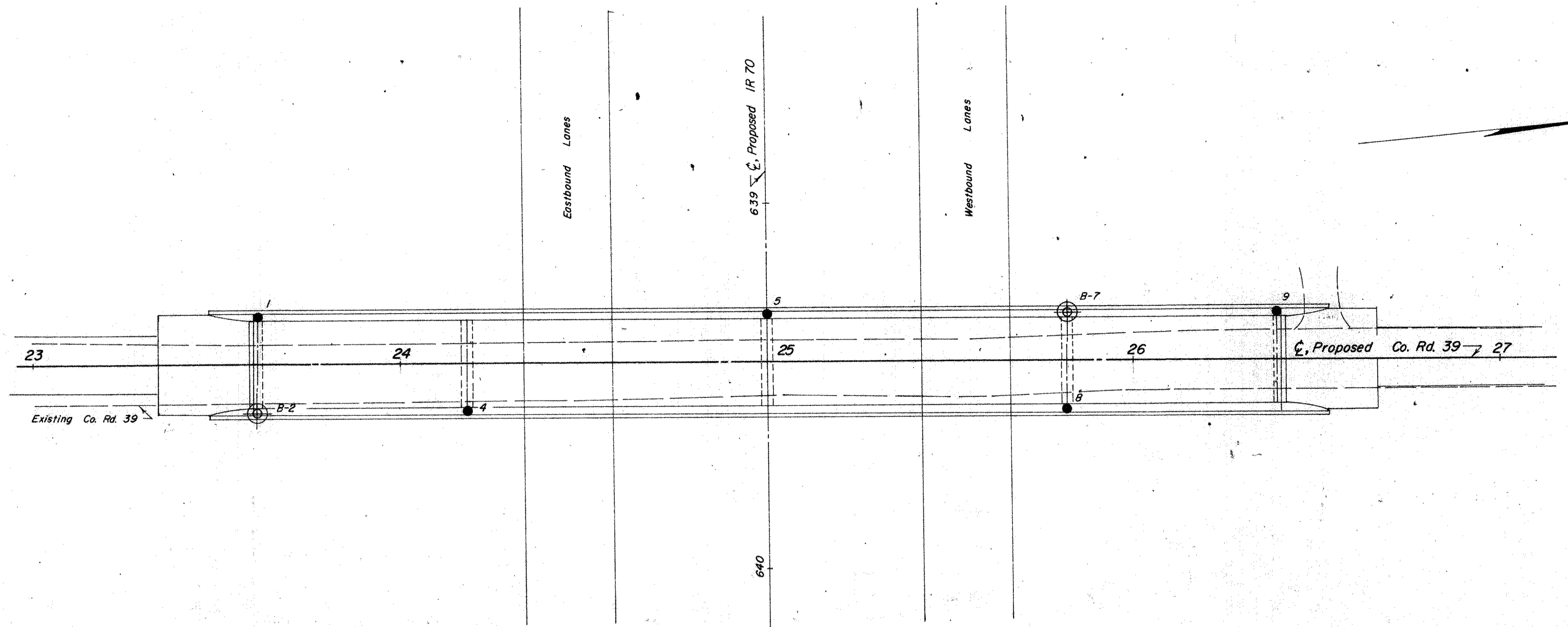
1014.1 BOTTOM OF BORING

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design criteria for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO STATE HIGHWAY TESTING LABORATORY
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STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LIC-IR 70-0771
IR 70 UNDER CO. RD. 39
SEC. LIC-IR 70

CHECKED BY R.D.R. REVIEWED BY G.P.H. DATE 7/14/64



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PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.F.	R.D.R.	G.P.H.	7/14/64

SCALE: 1"=20'

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____

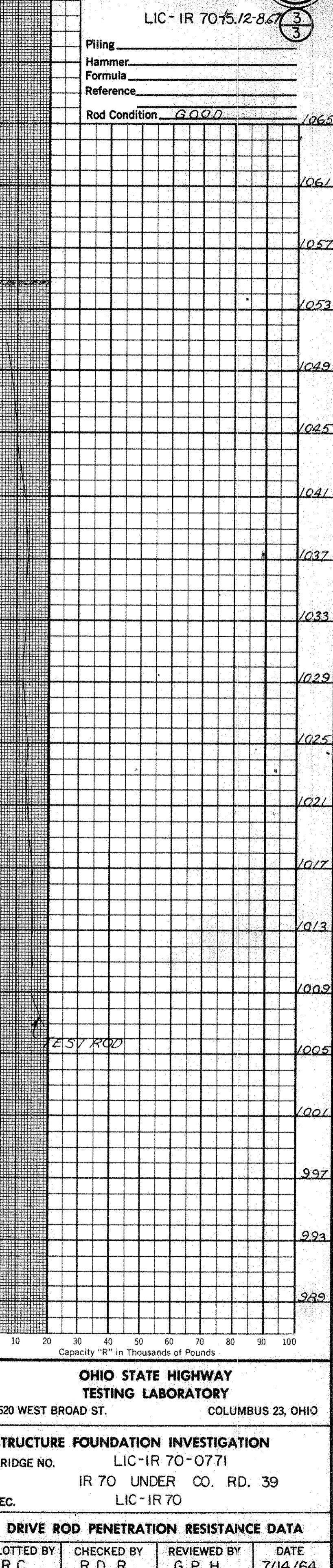
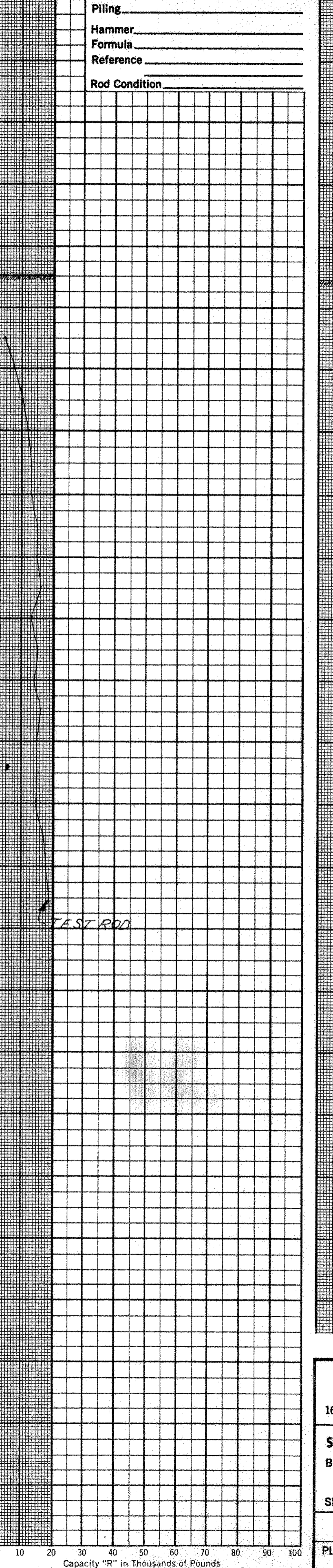
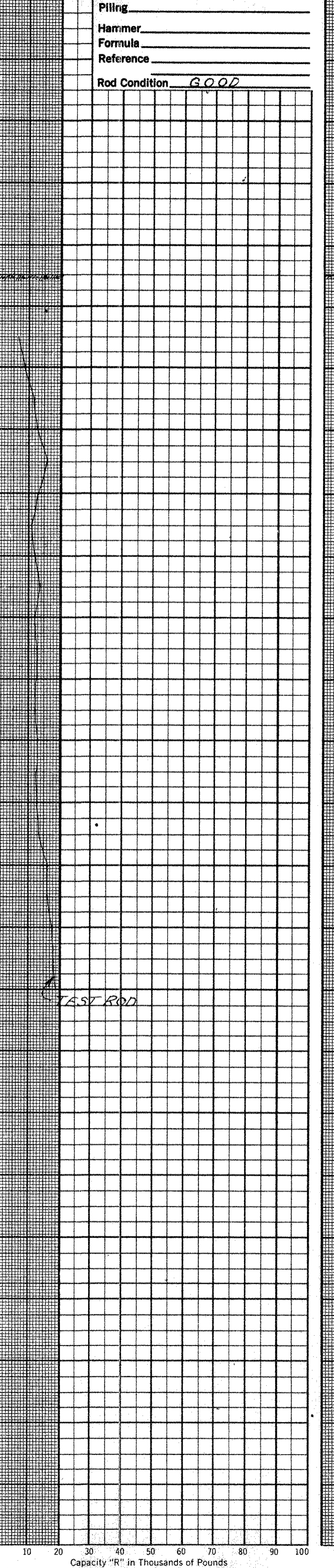
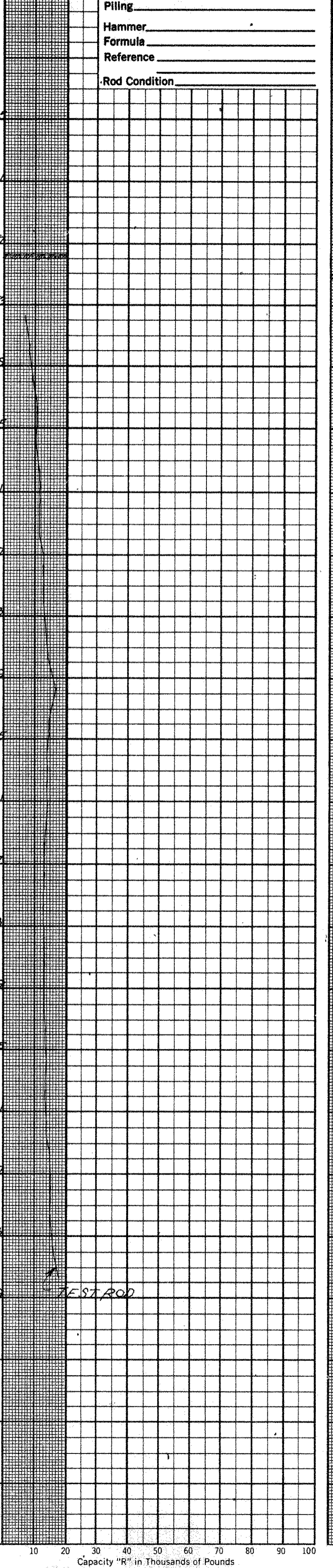
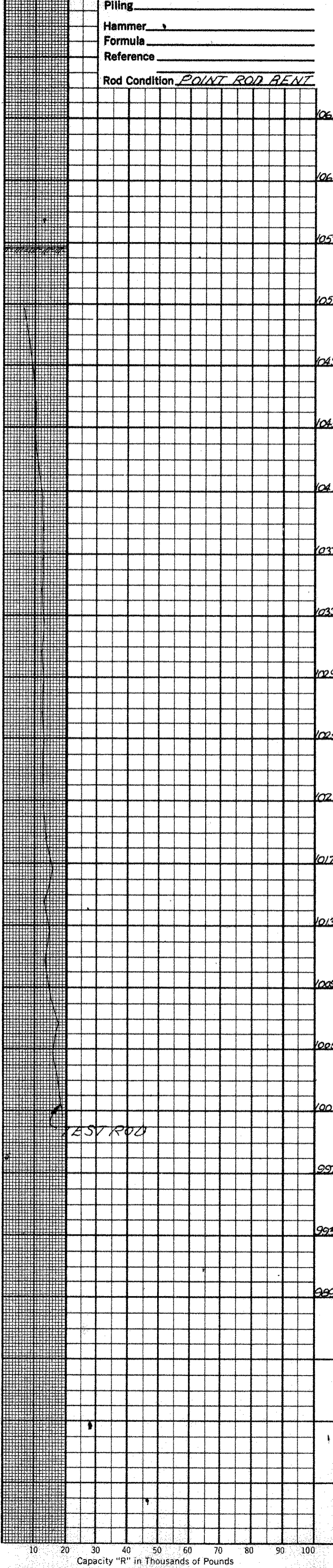
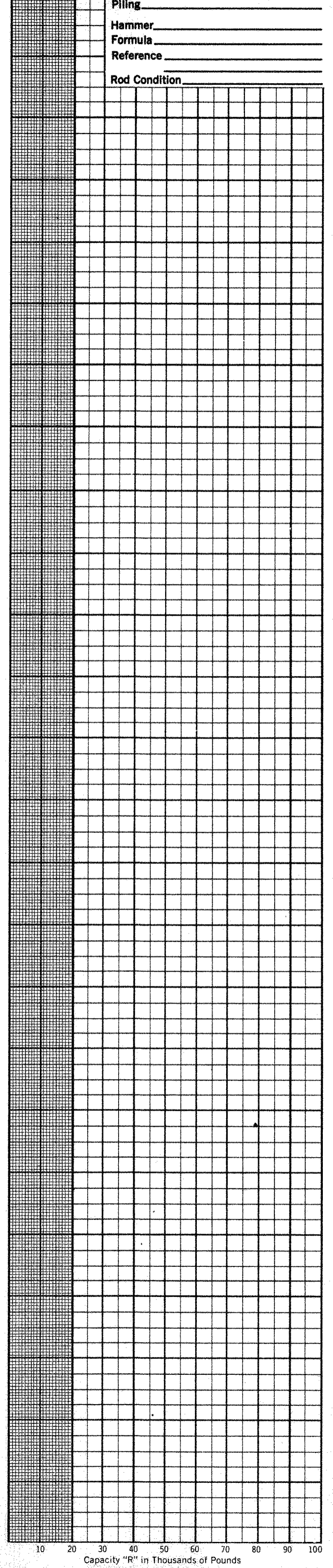
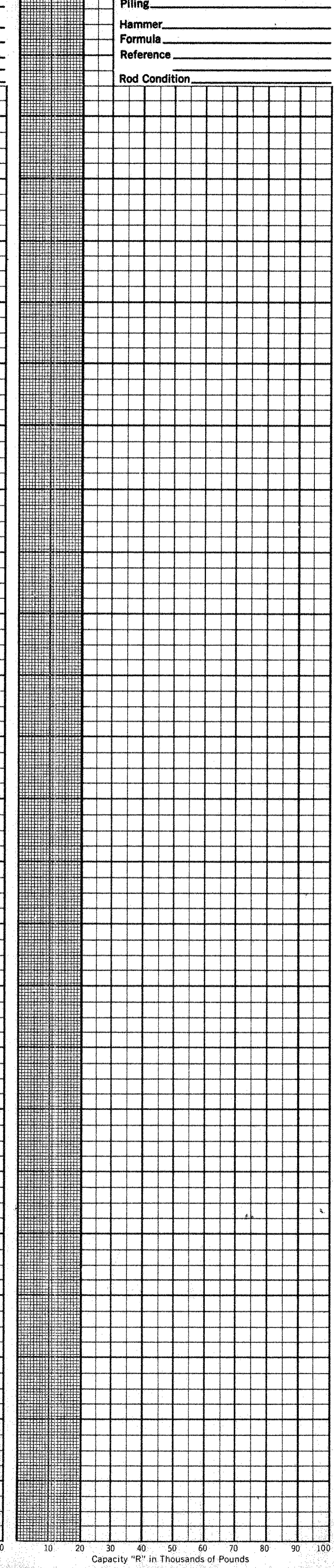
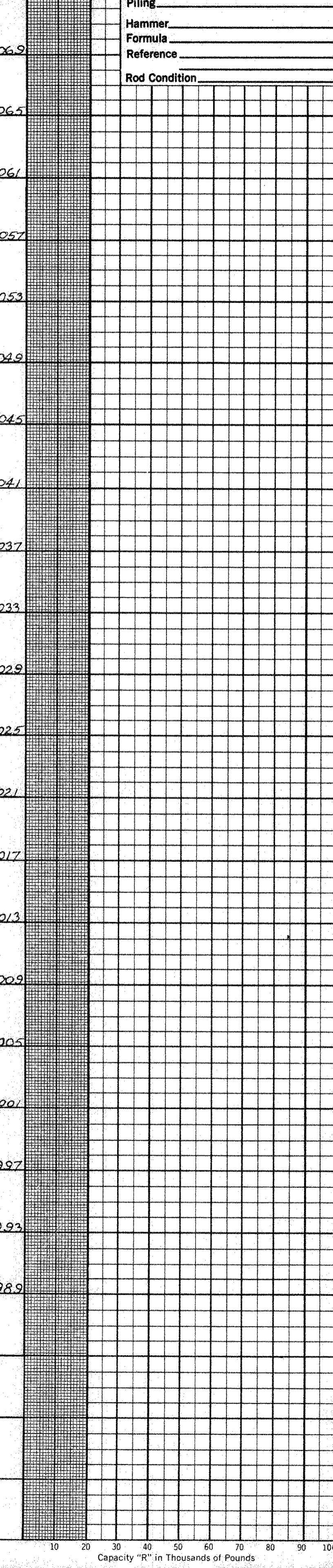
Test Location No. 1
Station & Offset 23+61 13' LT
REAR ABUTMENT
Surface Elev. 1056.7' Water Elev. 1040.7'

Test Location No. 4
Station & Offset 24+18 13' RT
REAR PIER
Surface Elev. 1056.3' Water Elev. 1042.3'

Test Location No. 5
Station & Offset 25+00 13' LT
CENTER PIER
Surface Elev. 1055.0' Water Elev. 1044.0'

Test Location No. 8
Station & Offset 25+82 13' RT
FORWARD PIER
Surface Elev. 1055.1' Water Elev. _____

Test Location No. 9
Station & Offset 26+30 13' LT
FORWARD ABUTMENT
Surface Elev. 1054.8' Water Elev. 1048.8'



26
26
3

LIC-IR 70-15,12-867
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

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

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SEC. IR 70 UNDER CO. RD. 39
LIC-IR 70

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY R. C.	CHECKED BY R. D. R.	REVIEWED BY G. P. H.	DATE 7/14/64
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