

DESIGN DESIGNATION
Current A.D.T. (1983) = 220
Design Year (2004) = 360
D.H.V. = 36
D = 60%
T = 6%
V = 35 m.p.h.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
LAW-217-13.75
ROME TOWNSHIP
LAWRENCE COUNTY

LAW-217-13.75
BRZ-4403(I)

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

1
35

BRZ-4403(I)

MICROFILMED
FEB 6 1992

CONVENTIONAL SIGNS

County Line _____
Township Line _____
Section Line _____
Corporation Line _____ or _____
Fence Line (existing) -x-x- (proposed) -x-x-
Center Line _____ 352 _____ 353 _____
Trees (to be removed) (to be removed)
Utility Poles: Telephone ϕ , Power ϕ , Light ϕ .
Limited Access (only) _____ LA _____
Right of Way (only) _____ RW _____
Limited Access & Right of Way _____ LA & RW _____
Existing Right of Way _____
Property Line _____ (in existing fence) -x-x-
Railroad _____ or _____
Guardrail (existing) -a-a-a- (proposed) -a-a-a-

INDEX OF SHEETS

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LINE DATA

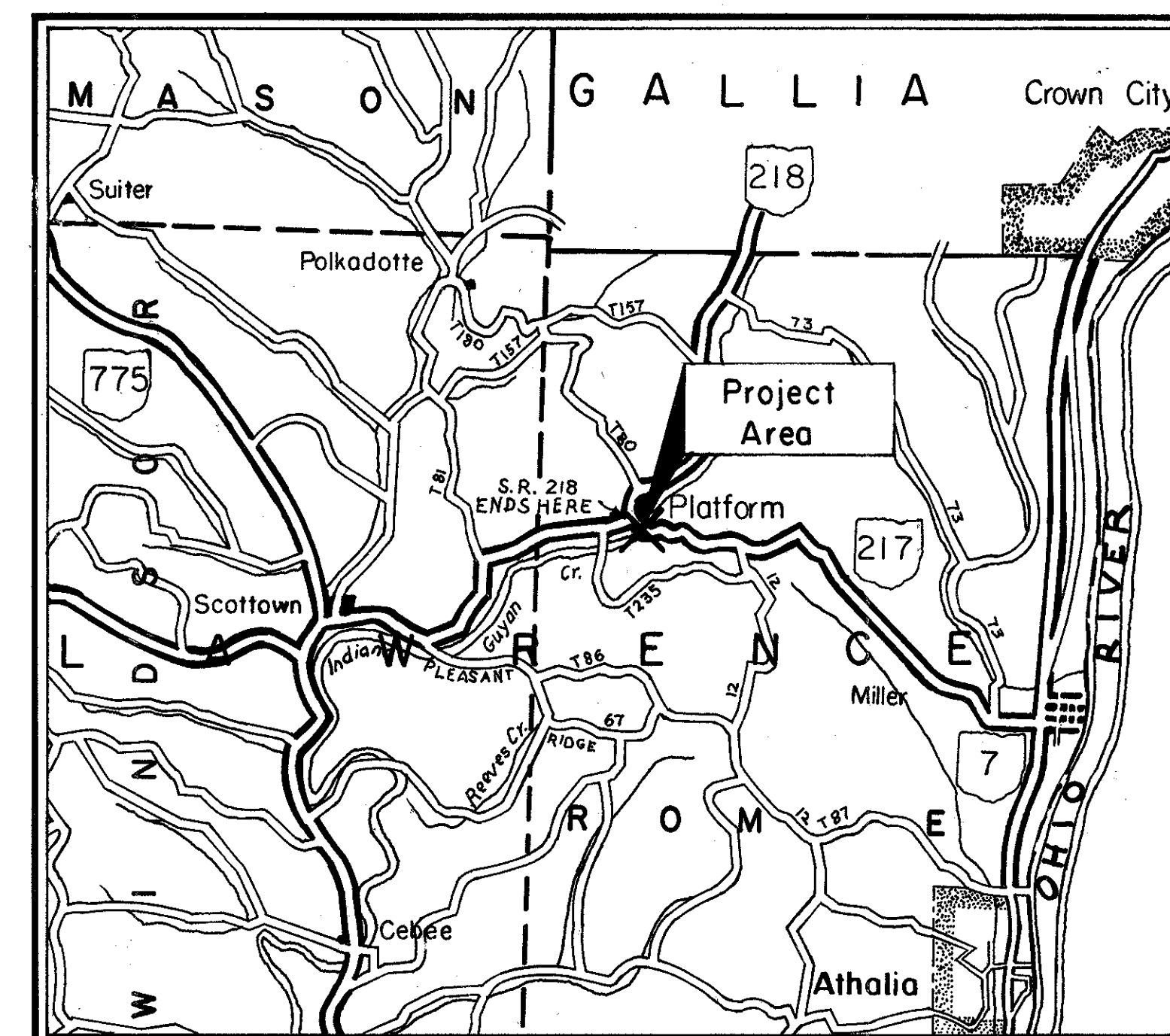
Begin Project Sta. 726+25
End Project Sta. 733+00
Length of Project 675 Lin. Ft.
or .128 Miles
Add for Work
Sta. 725+25 to Sta. 726+25 100.00 Lin. Ft.
Sta. 733+00 to Sta. 734+56 156.00 Lin. Ft.
Length of Work 931.00 Lin. Ft.
or .176 Miles

UNDERGROUND UTILITIES
48 HOURS
BEFORE YOU DIG
Call 800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

Portion to be improved _____
State & Federal Routes _____
Other Roads _____

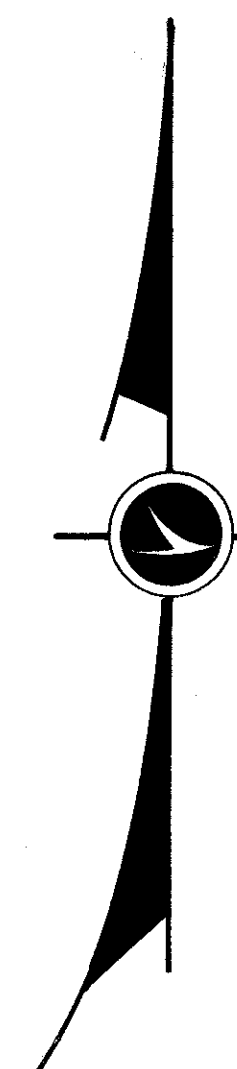
SCALES

Plan _____
Profile: _____ Horizontal _____, Vertical _____
Cross Section: Horizontal _____, Vertical _____



LOCATION MAP

SCALE IN MILES
0 1 2 3 4



SUPPLEMENTAL SPECIFICATIONS	
803	5-27-83
824	10-8-82
836	3-12-75
847	10-17-83
947	10-17-83
939	6-28-82

Approved Walter J. Jennings, P.E.
Date 8-10-84 Engineer, Bureau of Bridges and
Structural Design

Approved Wayne H. Kauble
Date 1-21-85 Chief Engineer, Planning and Design

Approved Wayne J. Smith
Date 1-21-85 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR

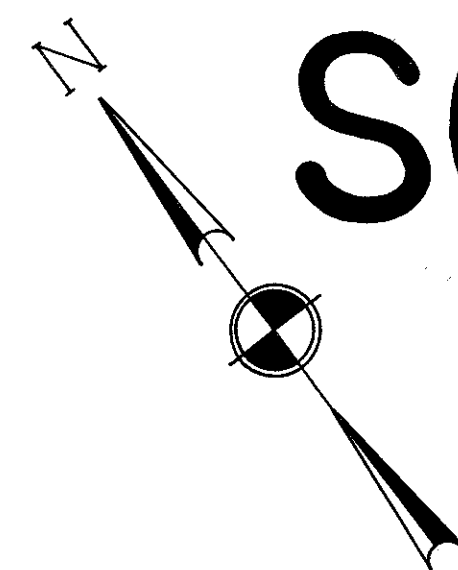
DATE

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
	HW-4A	4-1-80	AS-1-81	11-27-81	
BP-5	7-16-81	HW-4B	4-1-80	DBR-2-73	4-10-73
BP-6	6-1-65			CPP-2-73	4-10-73
CB-5	11-10-83	MC-1	6-13-69		
GR-1	2-5-82	MC-10	5-1-76		
GR-2B	2-5-82	MC-11	8-1-78		
GR-2C	2-5-82	MC-4	7-26-76		
GR-3	2-5-82				
GR-4	2-5-82				
GR-4A	1-30-84				

Plan Prepared By:
DISTRICT NO.9
OHIO DEPARTMENT OF
TRANSPORTATION

SEAL

Project: LAW-217-13.75
Date of Letting 19, Contract No. _____

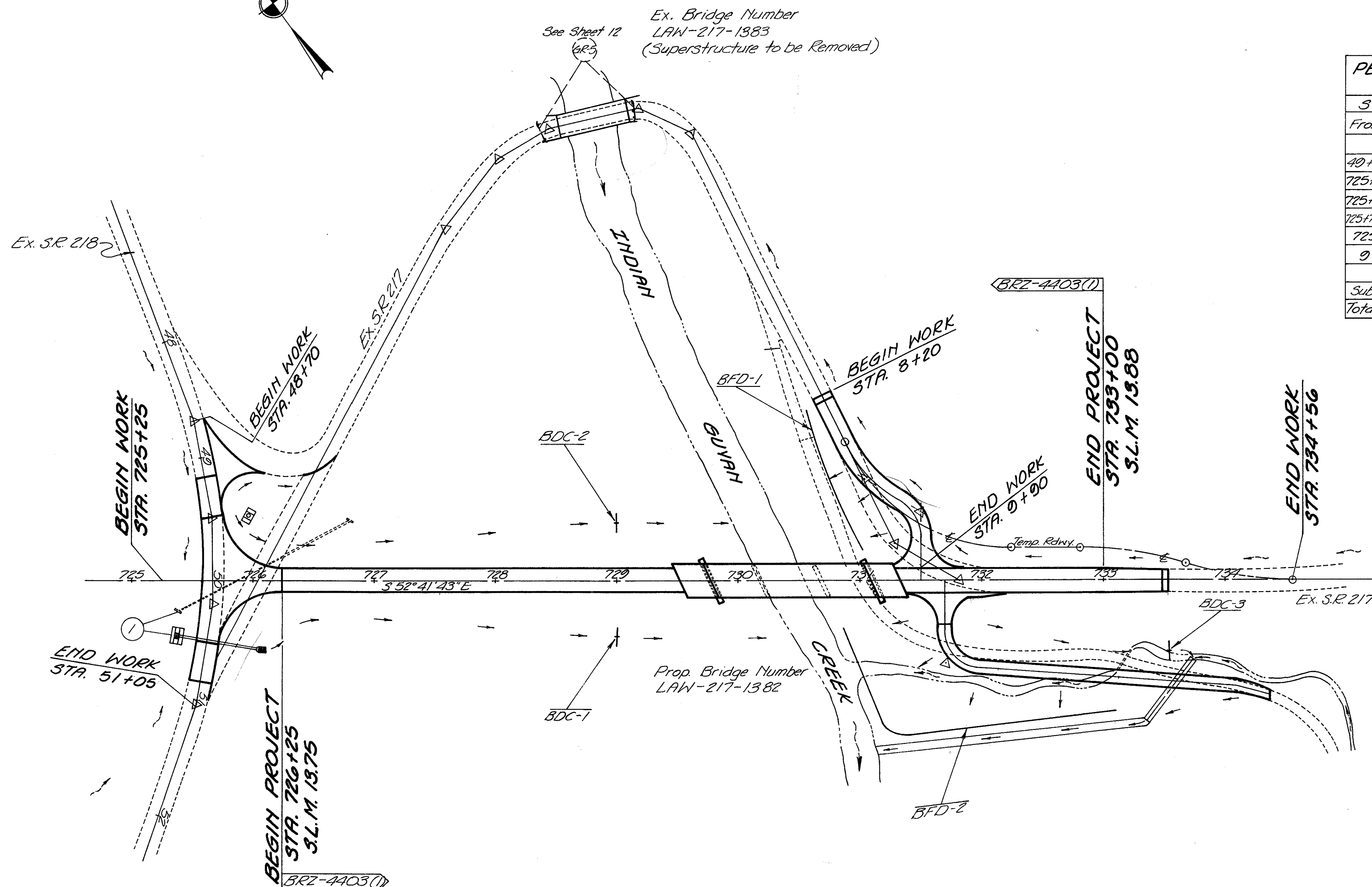


SCHEMATIC PLAN

LAWRENCE COUNTY
LAW-217-13.75

PERMANENT PAVEMENT MARKING SUB-SUMMARY					
Station	Centerlines	Edgelines	Stop lines		
From	To	Single Broken	Double Solid	White LT. & RT.	L.F.
		L.F.	L.F.	L.F.	L.F.
49+15	50+84	169			
725+80	728+80		300		
725+80	734+00	820			
725+76.3	733+55			1550	
725+80	Lt.				30
9+87	Rt.				15
Sub-Totals		989	300	1550	45
Totals		.19 Mi.	.06 Mi.	.29 Mi.	45 L.F.
		.25 Mi.			

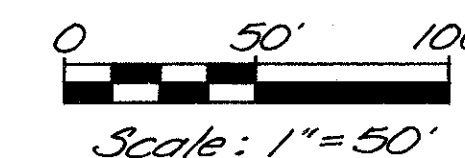
Totals carried to Sheet No. 11



PROPOSED STRUCTURES				
Ref. No.	Station	Side	Drainage Area	Size
①	50+50	Lt.	35 Acres	15'x18" Type A

TEMP EROSION AND SEDIMENT CONTROL					
Ref.	Station	Side	D.A.	Bale Ditch Check	Bale Filter Dike
			Ac	No. Bales	No. Bales
BDC-1	729+00	Rt.		5	
BDC-2	729+00	Lt.		5	
BDC-3 Dr.	52+40	Lt.		5	
BFD-1 Conn.	8+25				
	to 9+75	Rt.			80
BFD-2 Dr.	50+30				
	to 52+00	Rt.			36
SubTotals				*15	*116

*Carried to Sheet No. 5



SCHEMATIC PLAN

TYPICAL SECTION

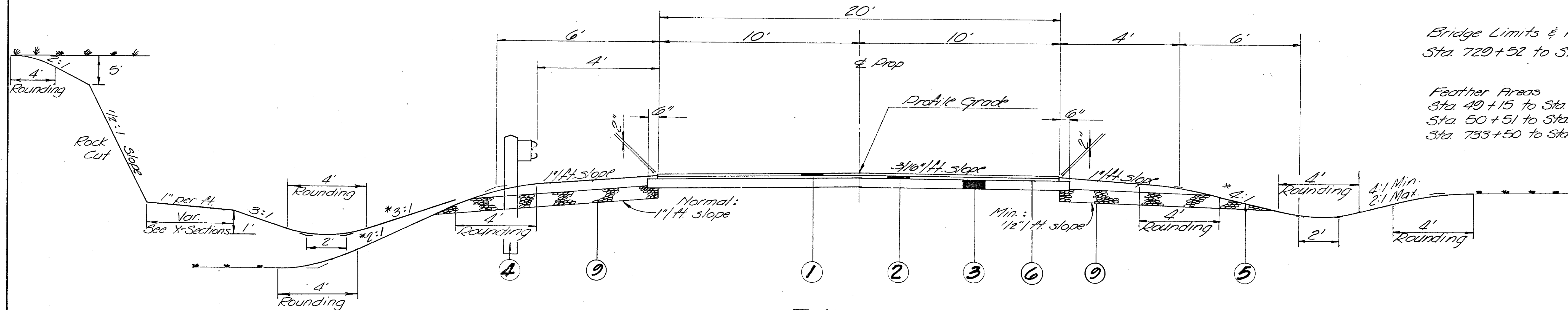
TYPE 404 ON 304

LAWRENCE COUNTY
LAW-217-13.75

Pavement Transition
Sta. 733+00 to Sta. 733+50

Bridge Limits & Approach Slabs
Sta. 729+52 to Sta. 731+34.76

Feather Areas
Sta. 49+15 to Sta. 49+48 S.R. 218
Sta. 50+51 to Sta. 50+84 S.R. 218
Sta. 733+50 to Sta. 733+55

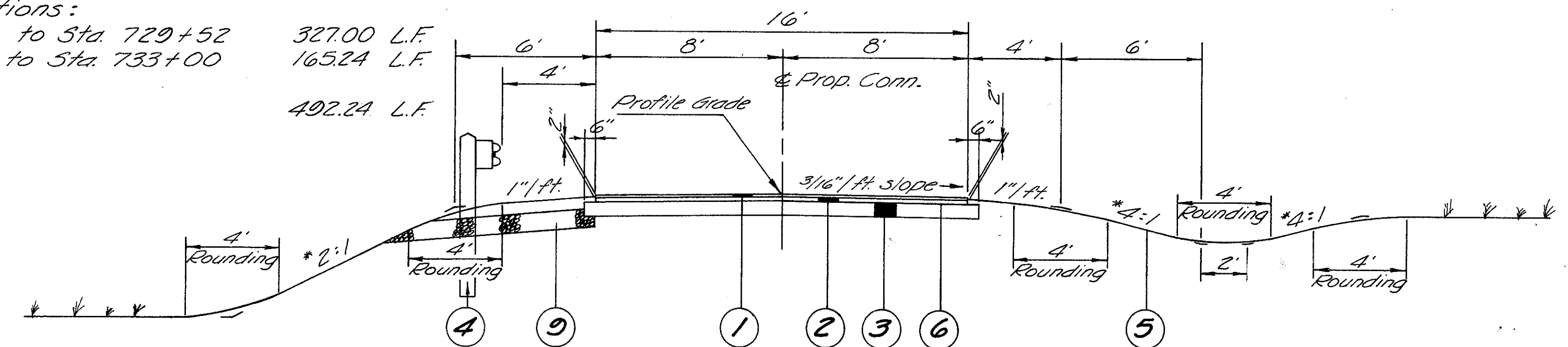


TYPICAL SECTION 'A'

The above typical section applies between the following stations:

Sta. 726+25 to Sta. 729+52 327.00 L.F.
Sta. 731+34.76 to Sta. 733+00 165.24 L.F.

Total 492.24 L.F.



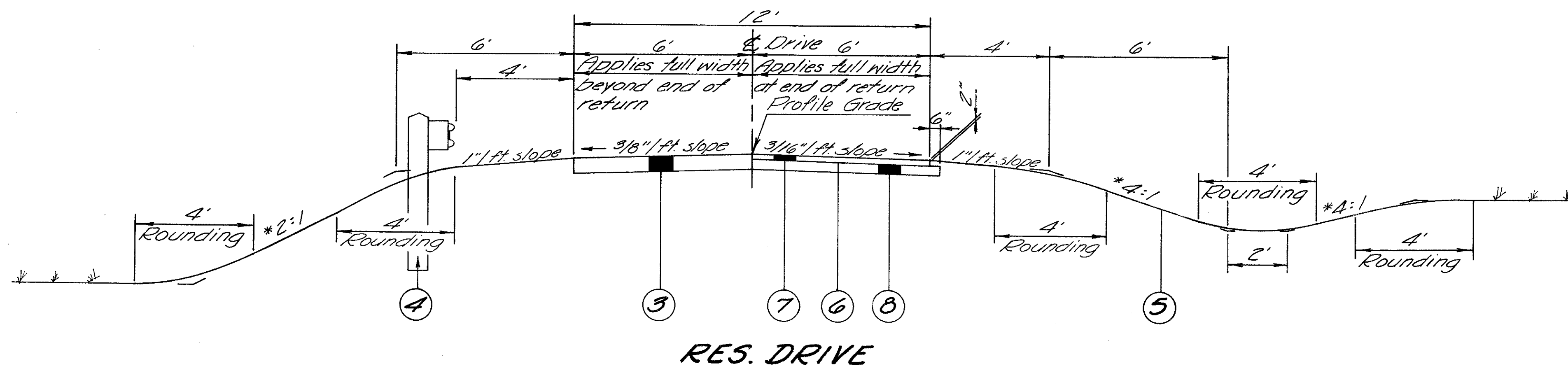
CONN. TO 217

The above typical section applies between the following stations:
Sta. 8+25 to Sta. 9+64 = 139 L.F.

LEGEND

- ① 404 1 1/4" Asphalt Concrete, AC-20
- ② 402 1 1/2" Asphalt Concrete, AC-20
- ③ 304 8" Aggregate Base
- ④ 606 Guard Rail, Type 5
- ⑤ 650 Seeding and Mulching (See General Note)
- ⑥ 408 Prime Coat
- ⑦ 404 2" Asphalt Concrete (2-1" Courses), For Driveways
- ⑧ 304 6" Aggregate Base
- ⑨ 605 Aggregate Drains (See General Note)

* Note: or as shown on cross sections



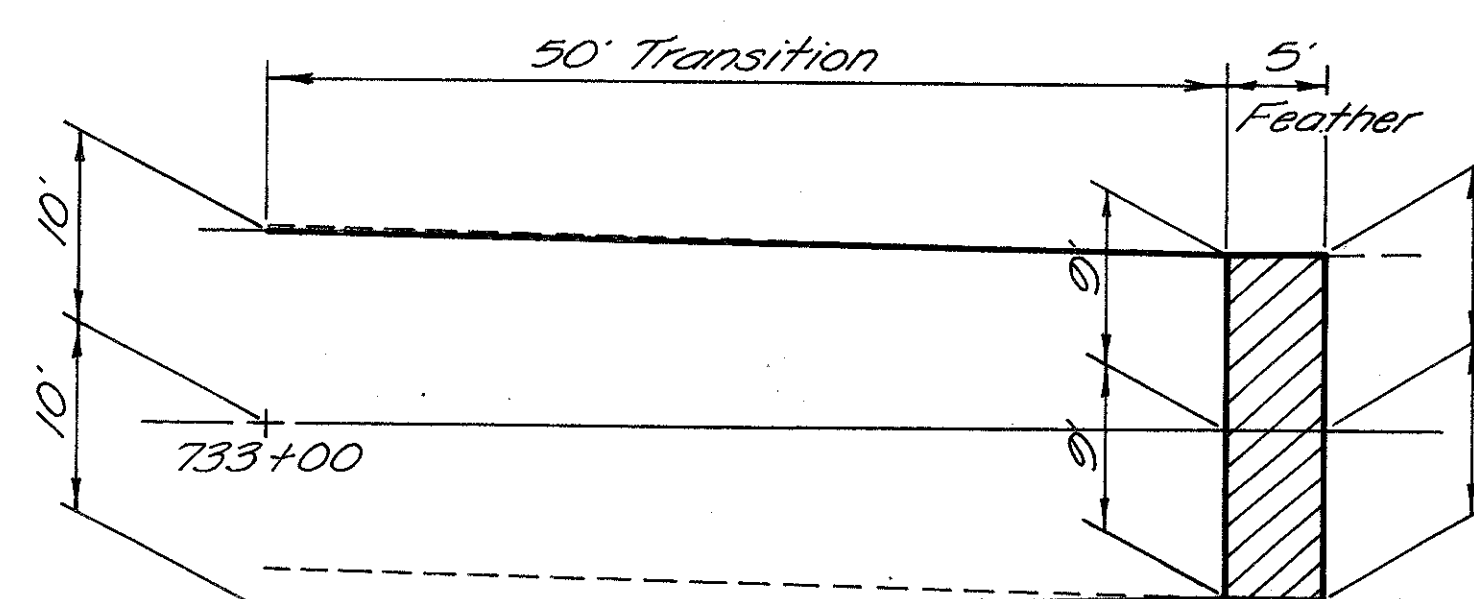
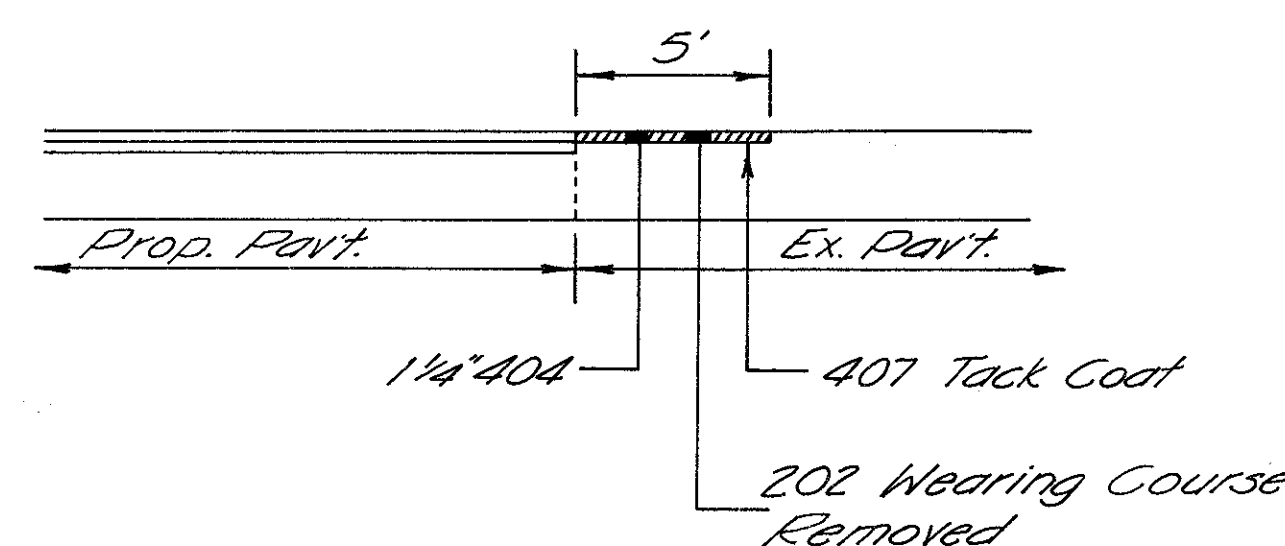
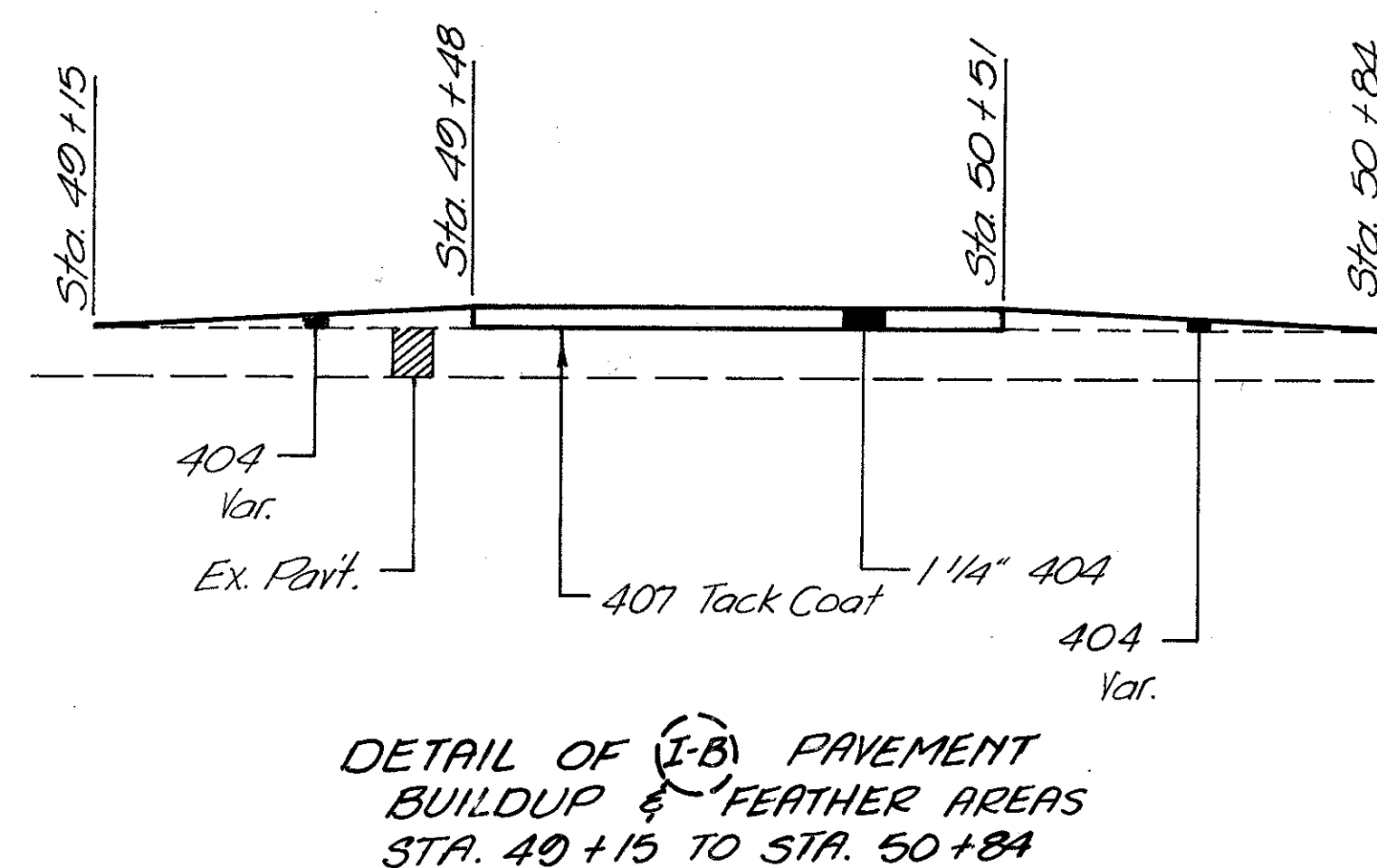
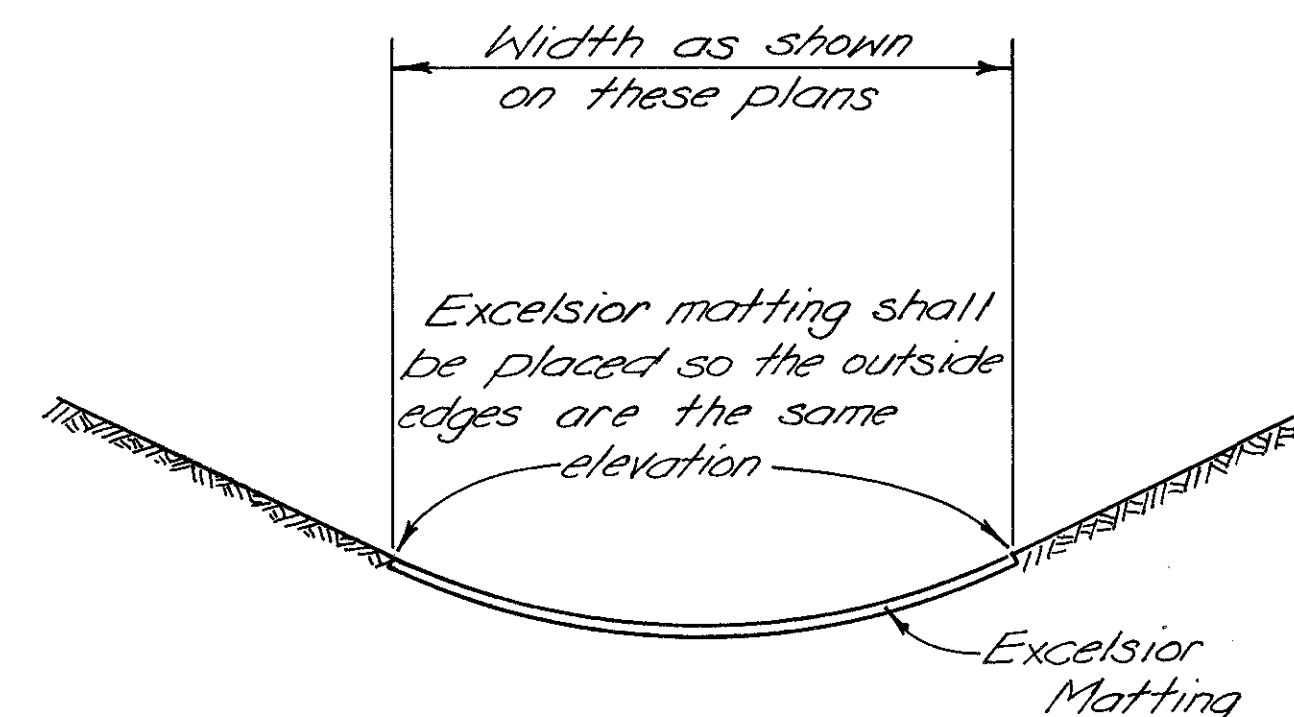
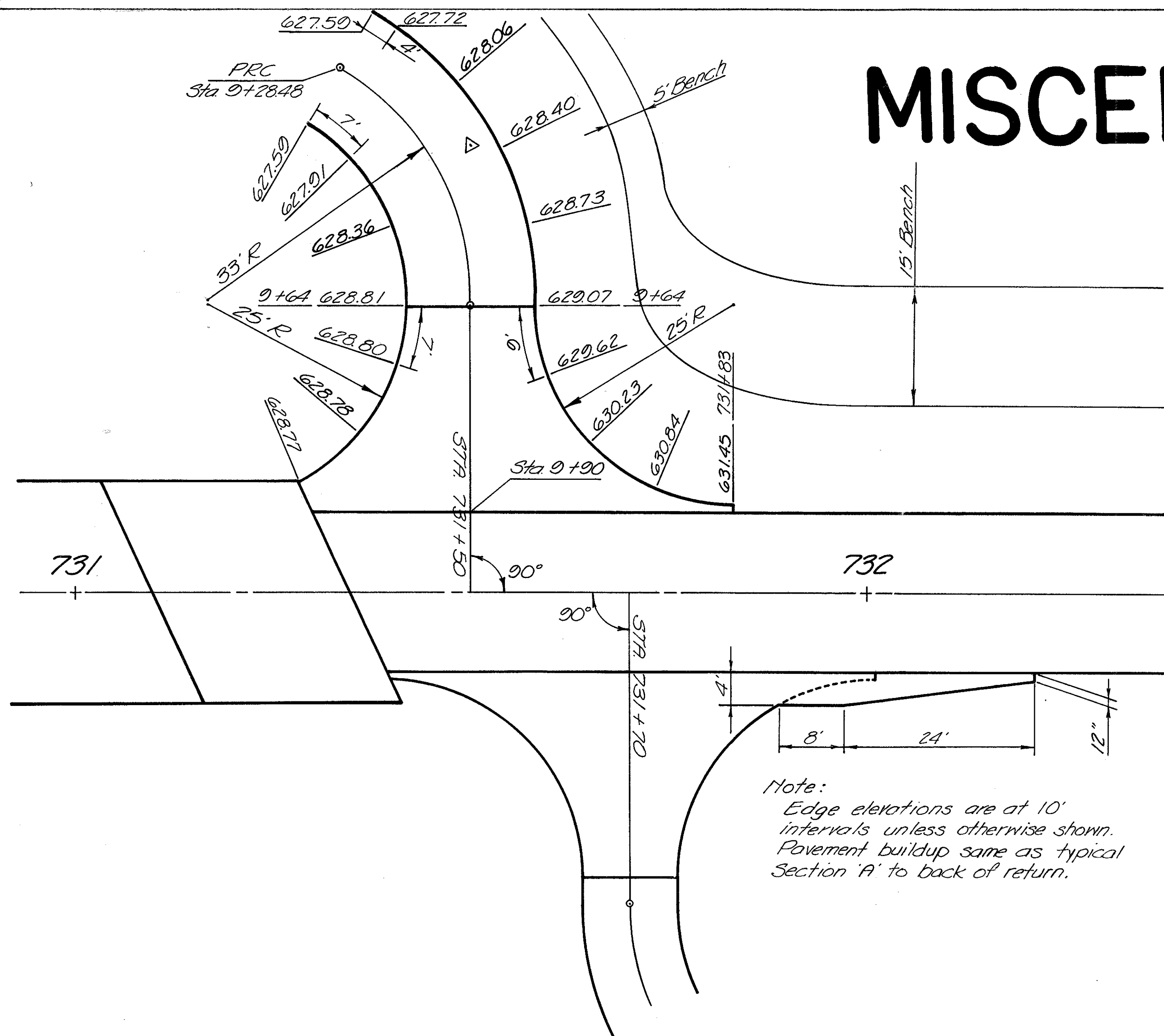
MISCELLANEOUS DETAILS

CALC. BY C.E.R.
DATE 3-82
CHKD. BY E.W.W.
DATE 5-84

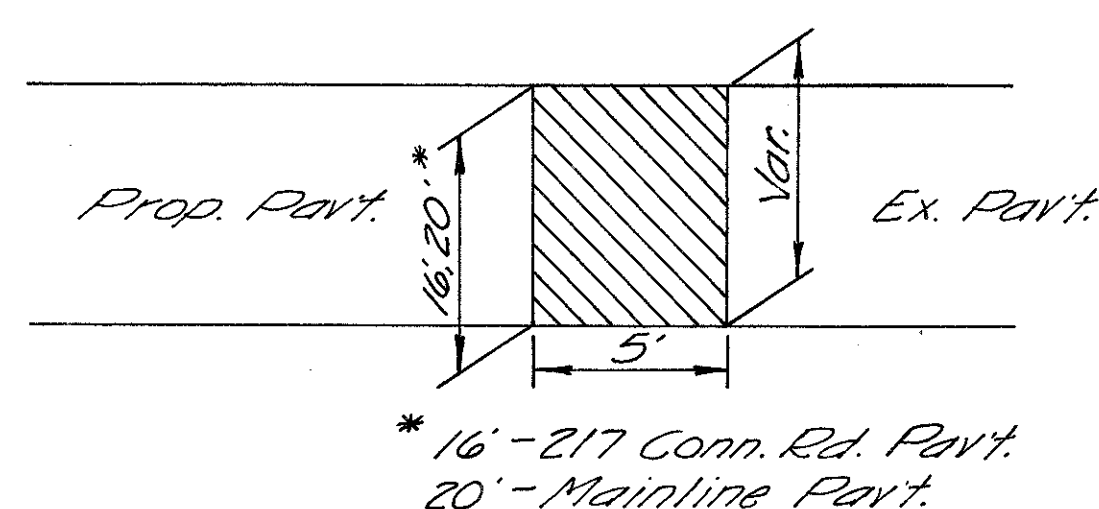
OHIO
FHWA
REGION 5

4
35

LAWRENCE COUNTY
LAW-217-13.75

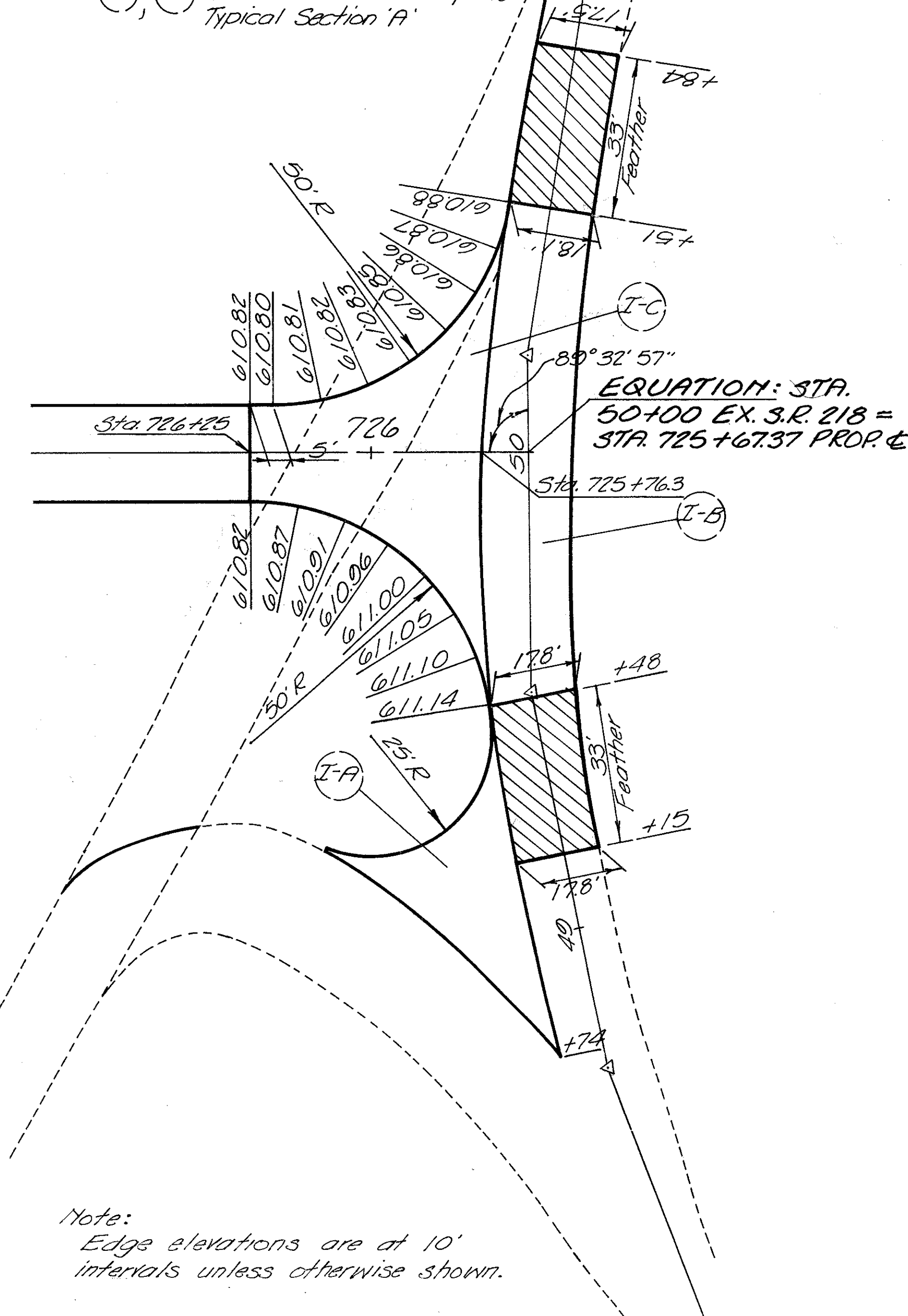


For Calculations See Sheet No. 9



For Calculations of Intersections A, B & C See Sheet No. 9

(I-A), (I-C) Same Pavement buildup as Typical Section 'A'



NOTES

FIELD OFFICE

The Contractor shall provide a suitable field office having a minimum of 300 Sq. Ft. of floor space. Payment shall be at the lump sum price bid for Item 619 Field Office.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on the typical sections, apply to all cross sections even though otherwise shown on these plans.

UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans are as obtained from the owners of the utility as required by Section 153.02 ORC.

CONTINGENCY QUANTITIES

The Contractor shall not order materials or perform work for plan items set up to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of this project.

MONUMENTS

Monuments shall be constructed in accordance with details shown on Standard Construction Drawing MC-1. For locations, see Sheet 17-33.

LOCATION OF GUARDRAIL

The locations of guardrail runs, as shown in these plans, are subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

SEEDING

Quantities for seeding are calculated for the soil areas between ten (10) feet outside the work limits, as shown on the cross sections, or to the right-of-way line, if such line is less than ten (10) feet from the work limits.

UTILITY OWNERSHIP

The following utilities and owners are located within the work limits of this project:

Ⓔ Electric: Buckeye Rural Electric Cooperative, Inc.
143 Third Avenue
Gallipolis, Ohio 45631
Telephone: 614-446-1532

Ⓕ Telephone: General Telephone Company of Ohio
824 Seventh Street
Portsmouth, Ohio 45662
Telephone: 614-354-8821

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantities are to be used as directed by the Engineer, for temporary erosion and sediment control measures:

207 Temporary Seeding and Mulching	2115	Sq. Yd.
207 Straw or Hay Bales (From Sht. No 2)	131	Each
207 Temporary Slope Drains	50	Lin. Ft.

050 Mowing	24	M. Sq. Ft.
050 Commercial Fertilizer	.10	Ton
050 Repair Seeding and Mulching	520	Sq. Yd.
050 Water	5	M. Gal.

WATER FOR DUST CONTROL

Materials for dust control to be used as directed by the Engineer, are provided as follows:

010 Water	50 M. Gals.
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TEMPORARY STREAM CROSSING FORDS

Where stream fords are required for equipment crossings, the following shall apply to the Contractor's operations:

The crossing shall consist of clean non-toxic granular or rock material, properly maintained to prevent erosion with provisions for conveyance of anticipated high flows.

Furthermore, it shall follow Part 330.5 Specific Categories of Discharges - Nationally Permitted, paragraph (a)(14) Minor Road Crossing Fills of the Federal Register - Corps of Engineers Interim Final Regulations published July 22, 1982.

ANCHOR ASSEMBLY, STANDARD TYPE T

When curved guardrail is used at a side road or drive, Standard Drawing GR-4A shall be modified by positioning the Type T anchor assembly in the last panel of guardrail which is parallel to the mainline. The flared end section shall be placed at the end of the guardrail on drives and omitted on side roads.

Payment for all the above shall be included in the unit price bid for Item 606, Anchor Assembly, Standard Type T.

UTILITIES NOTIFICATION

At least two working days prior to commencing construction operations in an area which may involve underground utility facilities, the Contractor shall notify the Project Engineer, the registered utility protection service and the owners of each underground utility facility shown in the plans.

The owner of the underground utility facility shall within forty-eight hours, excluding Saturdays, Sundays and Legal Holidays, after notice is received, stake, mark or otherwise designate the location of the underground utility facilities in the construction area in such a manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay approximately two days ahead of the planned construction.

REMOVAL OF TREES OR STUMPS

All trees or stumps specifically marked for removal 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	Nº TREES	Nº STUMPS	TOTAL
18"	15		15
30"	3		3
48"			
60"			

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.

WATERING PERMANENT SEEDER AREAS

The following estimated quantities are to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas, as per 050.00.

050 Water	12 M. Gal.
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ITEM SPECIAL, DRILLED WATER WELL ABANDONED

The existing concrete and brick structure and head structure shall be removed and disposed of. The casing shall be cut off at least one foot below the proposed finished grade outside proposed pavement areas or at least one foot below the proposed subgrade elevation inside proposed pavement areas. The well shall be filled from bottom to top with clean puddled clay or concrete.

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

ITEM 605 AGGREGATE DRAINS

Aggregate drains shall be placed at fifty (50) foot intervals on each side of normal crowned sections and at twenty-five (25) foot intervals on the low side only of super-elevated sections, except where Item 605 Pipe Underdrains have been provided.

Aggregate drains adjacent to reinforced Portland cement concrete pavement shall be placed at each transverse joint on the outside edge of normal sections and on the low side of super-elevated sections.

An aggregate drain shall be placed at the low point of each sag vertical curve.

407 TACK COAT

The Tack Coat and Cover Aggregate Operation shall be determined as per Spec. 407.05. Plan quantities indicate average application rates of 0.1 gallons per square yard of Tack Coat and 7 pounds per square yard of Cover Aggregate for estimating purposes only.

MAINTENANCE OF TRAFFIC

CALC. BY CER
DATE 5/78
CHKD. BY ENW
DATE 5/88

OHIO
FHWA
REGION 5

6
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LAWRENCE COUNTY
LAW-217-13.75

MAINTENANCE OF TRAFFIC

All traffic control signs, devices, pavement markings, and operations used to maintain traffic during construction shall be subject to the direction and control of the Engineer in respect to their conditions, locations, and times of application. Visible signs, devices, and pavement markings shall, at all times, reflect the conditions actually existing. Inappropriate signs or devices shall be removed or covered; inappropriate pavement markings shall be removed.

Through traffic shall be maintained at all times except that closures, controlled by flaggers (in accordance with Fig. C-18 of the Ohio Manual) and resulting in minimal delay to the Public, may be made as necessary to the progress of the work. Existing and proposed pavements and temporary roadways surfaced with 410 Traffic compacted surface shall be used to provide this maintenance of traffic. Existing and proposed pavements shall be utilized to the maximum, and temporary roadways to the minimum; extents practicable for maintenance of traffic. In any case, the use of the temporary roadway shown on the left from station 731± to station 734± shall be limited to one period not exceeding 90 calendar days.

On this project the stabilized aggregate temporary pavement shall be 18 feet wide and the roadway width shall be not less than 22 feet out-to-out of shoulders and 21 feet face-to-face of rail where guardrail is used. The alignment and pavement typical section shall be as detailed on the plan-profile, cross section, and temporary traffic maintenance detail sheets.

Temporary guardrail is required in the location shown on Sheet No. 7. This guardrail and its required anchor assemblies shall conform, respectively, to 606 guardrail, Type B and 606 anchor assembly, Type A of the CMS and the Standard Construction Drawings. Additional temporary guardrail may be required, and shall be furnished, in accordance with 615.04. Upon removal of any temporary guardrail, any post-holes not to be removed by excavation shall be backfilled and compacted in a manner, and with materials, satisfactory to the Engineer. All temporary guardrail and the backfilling specified above shall be included for payment in the lump sum price bid for 614 maintaining traffic.

A suggested sequence of construction operations, intended to facilitate the temporary maintenance and control of traffic, is outlined below. Details associated with this proposed method of maintaining traffic are shown on Sheet 7. The temporary traffic control measures shown in the details represent minimum requirements, which may be additional to the general requirements of the Ohio Manual. However, nothing shown in the details shall be interpreted as reducing the requirements of the Ohio Manual. 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.

Temporary Centerlines, Class II, shall be in place when the proposed pavements are opened to traffic, and upon acceptance of the work, throughout the roadway work area. Temporary pavement markings shall be furnished and placed and all conflicting markings shall be removed in accordance with the notes on Sheet 8. 947.03 Type C tape shall be used for all temporary pavement markings that will have to be removed from pavements which will not be removed or covered by other pavements.

The Contractor's responsibility for the maintenance of existing pavements under 614 shall be limited to those areas of existing pavements within the proposed roadway work limits and shall not include the work limits required only for temporary signing and/or pavement marking.

Except for the quantities separately enumerated below, payment for all labor, materials, and incidentals necessary to accomplish the temporary maintenance and control of traffic shall be made under the lump sum price bid for 614, Maintaining traffic. Estimated quantities in addition to 614, Maintaining traffic are as follows:

410 Traffic compacted surface, Type A or B	350 CY
614 Temporary centerlines, Class I, 947.03 Type C	.06 Mi.
614 Temporary centerlines, Class II	.23 Mi.
615 Temporary roads	Lump
616 Calcium chloride	7 Ton
616 Water	7 M-Gal.
614 Temporary Stop Lines, Class I	30 L.F.

Suggested Sequence of Construction Operations

Phase I:

Provide signing and guardrail, as shown on the Phase I details shown on Sheet 7, and maintain traffic on the existing pavements while constructing the proposed bridge and the roadway embankment back of the bridge to the maximum extents practicable. Use temporary earthwork and 410 materials as necessary to maintain local access to the property in the right-forward quadrant of the proposed bridge. Use flaggers to control traffic while making the rock excavation on the left, ahead of the bridge.

Phase II:

Provide signing and a temporary road in accordance with the Phase II details on Sheet 7 and the cross sections. Maintain two-lane traffic on the temporary road and the existing pavements while constructing the remainder of the proposed bridge and the proposed pavement. Use flaggers to control traffic, as necessary, during paving operations at the S.R.s 217/218 intersection.

Phase III:

Provide temporary pavement markings as noted above and maintain two-way traffic on the completed proposed pavement while completing the balance of the work. Access to the property in the left-forward quadrant of the proposed bridge shall be provided over the existing bridge and pavement, and the roadway left of Station 731±50 temporarily closed, in order to construct the proposed connection at this time.

ITEM 601 ROCK CHANNEL PROTECTION WITH FILTER

Where this item is called for on the plans, the quantities shown are based on the dimensions of the rock only and do not include the volume of a 6" stone filter bed. The cost of the filter (either fabric or stone) shall be included in the unit price bid for Item 601 Rock Channel Protection with Filter.

Where the fabric filter option is used the fabric shall meet the requirements of Supplemental Specification 939 Type B.

The surface to receive the fabric shall be prepared to a relatively smooth surface free of obstruction and debris. The fabric shall be placed with the long dimension parallel to the direction of flow and shall be laid loosely but without wrinkles and creases. Where joints are necessary strips shall be placed to provide a 12" minimum overlap with the upstream strip overlapping the downstream strip. Securing pins with washers shall be placed at 2' minimum intervals along joints and at (2', 3' or 5')** intervals elsewhere to prevent slippage of the fabric. The securing pins shall be 3/16" diameter of steel pointed at one end and fabricated with a head to retain a steel washer having an outside diameter not less than 1 1/2". Pin lengths shall be greater than or equal to 18".

** 2' for flow direction slopes steeper than 3:1, 3' for slopes 3:1 to 4:1, and 5' for slopes less steep than 4:1.

EROSION CONTROL

Items 601 and 66B are provided in the plans for erosion control. Rock of a stable nature will not be removed in order to place any of these items and turf of a stable nature will not be removed in order to place 66B. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

CONDUIT END TREATMENT

Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the outlet and inlet ends. This shall include headwalls, concrete riprap, rock channel protection, sodding, etc.

CALC. BY _____		OHIO	
DATE _____		FHWA	
CHKD. BY _____		REGION 5	
DATE _____			

**LAWRENCE COUNTY
LAW-217-13.75**

NOTES:

1. These signs to remain in the locations shown throughout construction.
2. These signs to be used, as applicable, with the flagmen ahead signs.
3. These signs to be used as applicable, all phases.
4. Type 5 Guardrail provided for phase I.
5. Provided for phases II & III. If suitable, existing sign(s) may be used/relocated.
6. To be used while temporary road is in use.

MAINTENANCE OF TRAFFIC

614 WORK ZONE PAVEMENT MARKINGS

CALC. BY _____ DATE _____		OHIO FHWA REGION 5	8 35
CHKD. BY _____ DATE _____			

LAWRENCE COUNTY
LAW-217-13.75

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND WHEN NECESSARY, REMOVE WORK ZONE RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISUAL EFFECTIVENESS AND NIGHT VISIBILITY AT NO ADDITIONAL COST TO THE STATE.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMUTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL BE REPEATED EVERY 1 TO 2 MILES AND AT OTHER LOCATIONS AS NECESSARY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY. THE COST FOR FURNISHING AND ERECTING AND SUBSEQUENTLY REMOVING THESE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC, UNLESS SPECIFICALLY ITEMIZED.

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR C PREFORMED MATERIAL.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT THE INCREASE OF 25 PERCENT IN THE APPLICATION RATE FOR NEW BITUMINOUS PAVEMENT AND PARAGRAPH 621.14 SHALL NOT APPLY.

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE FULL DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING ADDITIONS OR EXCEPTIONS:

- 1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
- 2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
- 3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
- 4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

CLASS II MARKINGS

CLASS II MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 1.6 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 16 GALLONS PER MILE FOR GORE MARKINGS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

INTERIM MARKINGS

WITHIN 21 CALENDAR DAYS AFTER OPENING ANY LENGTH OF PAVEMENT TO TRAFFIC, THE 621 OR 847 PAVEMENT MARKINGS CALLED FOR IN THE PLANS OR EQUIVALENT 614 CLASS I, PAINT MARKINGS SHALL BE APPLIED. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I PAINT MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE PROVISIONS OF 108.07 WILL BE INVOKED, EXCEPT THAT BETWEEN NOVEMBER 15 AND APRIL 15 WEATHER CONDITIONS SHALL NOT BE AN ACCEPTABLE REASON FOR EXTENSION.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED, IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

BASIS OF PAYMENT

PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF THE MARKINGS.

ITEM	UNIT	DESCRIPTION
614	MILES	TEMPORARY LANE LINES, CLASS _____, ____*
614	MILES	TEMPORARY CENTER LINES, CLASS _____, ____*
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, ____*
614	MILES	TEMPORARY EDGE LINES, CLASS I, ____*
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, ____*
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, ____*
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, ____*
614	EACH	TEMPORARY LANE ARROWS, CLASS I, ____*
614	EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, ____*
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, ____*
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, ____*
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, ____*

*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C

See Sheet 6 for quantities.

GENERAL QUANTITY CALCULATIONS

CALC.
BY LLB
DATE 3-84
CHKD.
BY LL
DATE 5-84

OHIO
FHWA
REGION 5

9
35

LAW-217-13.75

Sheet No.	Ref. No.	Item	Thick- ness	CALCULATIONS	Sheet No.	Ref. No.	Item	Thick- ness	CALCULATIONS	Sheet No.	Ref. No.	Item	Thick- ness	CALCULATIONS
4				<u>Feather Area</u> Sta. 49+15 to 49+48 S.R. 218 404 5/8" 33' x 17.8' Ave. x 1/9 = 65.27 Sq. Yd. 407 33' x 17.8' Ave. x 1/9 = 65.27 Sq. Yd. 407 33' x 17.8' Ave. x 1/9 = 65.27 Sq. Yd.	10				<u>Connection Rd. to Ex. S.R. 217</u> Left Sta. 731+50 Conn. Sta. 8+20 to 9+90 <u>Feather Area</u> Sta. 8+20 to 8+25 404 1 1/4" 5' x 16.25' Ave. x 1/9 = 9.03 Sq. Yd. 407 " = 9.03 Sq. Yd. 407 " = 9.03 Sq. Yd. 202 " = 9.03 Sq. Yd. Sta. 8+25 to 9+64 = 139 Lin. Ft. 404 1 1/4" 139' x 16' x 1/9 = 247.11 Sq. Yd. 402 1 1/2" " = 247.11 Sq. Yd. 408 " = 247.11 Sq. Yd. 304 8" 134.5' x .5' x 1/9 = 7.47 Sq. Yd. 141.5' x .5' x 1/9 = 7.86 Sq. Yd. (7.47 + 7.86) + 247.11 Total 304 = 262.44 Sq. Yd. <u>Conn. Rd. Return</u> (By Planimeter) Sta. 9+64 to 9+90 404 1 1/4" 710 x 1/9 = 78.89 Sq. Yd. 402 1 1/2" " = 78.89 Sq. Yd. 408 " = 78.89 Sq. Yd. 304 8" 27' x .5' x 1/9 = 1.50 Sq. Yd. 39' x .5' x 1/9 = 2.17 Sq. Yd. (1.50 + 2.17) + 78.89 Total 304 = 82.56 Sq. Yd.					
4				<u>Feather Area</u> Sta. 50+51 to 50+84 S.R. 218 404 5/8" 33' x 17.8' Ave. x 1/9 = 65.27 Sq. Yd. 407 33' x 17.8' Ave. x 1/9 = 65.27 Sq. Yd. 407 33' x 17.8' Ave. x 1/9 = 65.27 Sq. Yd.										
4	(I-A)			<u>Intersection "A"</u> (By Planimeter) Sta. 48+74 to 49+48 Lt. S.R. 218 404 1 1/4" 852 x 1/9 = 94.67 Sq. Yd. 402 1 1/2" " = 94.67 Sq. Yd. 408 " = 94.67 Sq. Yd. 304 8" 55' x .5' x 1/9 = 3.06 Sq. Yd. 3.06 S.Y. + 94.67 S.Y. Total 304 = 97.73 Sq. Yd.										
4	(I-B)			<u>Intersection "B"</u> (By Planimeter) Sta. 49+48 to 50+51 S.R. 218 404 1 1/4" 1860 x 1/9 = 206.67 Sq. Yd. 407 " = 206.67 Sq. Yd. 407 " = 206.67 Sq. Yd.										
4	(I-C)			<u>Intersection "C"</u> (By Planimeter) Sta. 725+76.3 to 726+25 Prop. E 404 1 1/4" 1816 x 1/9 = 201.78 Sq. Yd. 402 1 1/2" " = 201.78 Sq. Yd. 408 " = 201.78 Sq. Yd. 304 8" 75' x .5' x 1/9 = 4.17 Sq. Yd. 70' x .5' x 1/9 = 3.89 Sq. Yd. (4.17 + 3.89) + 201.78 Total 304 = 209.84 Sq. Yd.										
4				<u>Transition and Feather Area</u> Sta. 733+00 to 733+55 408 50' x 19' Ave. x 1/9 = 105.56 Sq. Yd. 404 1 1/4" 50' x 19' Ave. x 1/9 = 105.56 Sq. Yd. 402 1 1/2" " = 105.56 Sq. Yd. 304 8" 50' x 20' Ave. x 1/9 = 111.11 Sq. Yd. 404 1 1/4" 5' x 18' Ave. x 1/9 = 10.00 Sq. Yd. 407 " = 10.00 Sq. Yd. 407 " = 10.00 Sq. Yd. 202 " = 10.00 Sq. Yd.	12	(D-1)	668		<u>Excelsior Matting</u> Conn. Rd. Sta. 8+25 to M.L. Sta. 733+50 325' x 7.8' x 1/9 = 282.00 Sq. Yd.* 12 (D-2) 668 <u>Excelsior Matting</u> Res. Dr. Sta. 51+50 to Sta. 52+60 110' x 7.8' x 1/9 = 95.00 Sq. Yd.* 12 (D-3) 668 <u>Excelsior Matting</u> M.L. Sta. 731+14 to Res. Dr. Sta. 52+06 210' x 15.5' x 1/9 = 362.00 Sq. Yd.* 12 (D-4) 601 3' <u>Type A R.C.P. w/Filter</u> Res. Dr. Sta. 52+13 to Sta. 52+33 20' x 12' x 3' x 1/27 = 26.67 Cu. Yd. (27)* 12 (D-5) 601 2'6" <u>Type B R.C.P. w/o Filter</u> M.L. Sta. 729+83 to Sta. 730+21 397 (By Planimeter) x 4 x 1.12 x 2'6" x 1/27 = 164.68 Cu. Yd. (165)* 12 (D-6) 601 2'6" <u>Type B R.C.P. w/o Filter</u> M.L. Sta. 730+50 to Sta. 731+03 586 (By Planimeter) x 4 x 1.12 x 2'6" x 1/27 = 243.08 Cu. Yd. (244)*					
12	(D-1)			<u>Res. Drive</u> Right Sta. 731+70 Drive Sta. 50+10 to 53+25 <u>Return and Mailbox Turnout</u> (By Planimeter) Sta. 50+10 to 50+36 404 2" 696 x 1/9 = 77.33 Sq. Yd. 408 " = 77.33 Sq. Yd. 304 6" 38.5' x .5' x 1/9 = 2.14 Sq. Yd. 59' x .5' x 1/9 = 3.28 Sq. Yd. (2.14 + 3.28) + 77.33 Total 304 = 82.75 Sq. Yd. Sta. 50+36 to 53+00 = 264.00 Lin. Ft. 304 8" 264' x 12' x 1/9 = 352.00 Sq. Yd.					<u>COMMERCIAL FERTILIZER</u> 10,573 + 811 x 9 ÷ 1000 x 20 ÷ 2000 = 1.02 Tons* <u>AGRICULTURAL LIMING</u> 10,573 + 811 x 9 ÷ 1000 x 100 ÷ 2000 = 5.12 Tons*					
19				<u>Drive Transition Area</u> Sta. 53+00 to 53+25 304 8" 25' x 10' Ave. x 1/9 = 27.78 Sq. Yd.										

Carried to Sheet No. 12
Carried to General Summary Sheet No. 11
All others carried to Part 4 Calc. Sheet No. 10

* Carried to Sheet No. 12
* Carried to General Summary Sheet No. 11
All others carried to Part 4 Calc. Sheet No. 10

GENERAL QUANTITY CALCULATIONS

CALC. BY <u>CEB</u> DATE <u>4-26-87</u>	OHIO	
CHKD. BY <u>JE</u> DATE <u>5-87</u>	FHWA REGION 5	

Quantities carried to General Summary Sheet No. 11

PAVEMENT CALCULATIONS

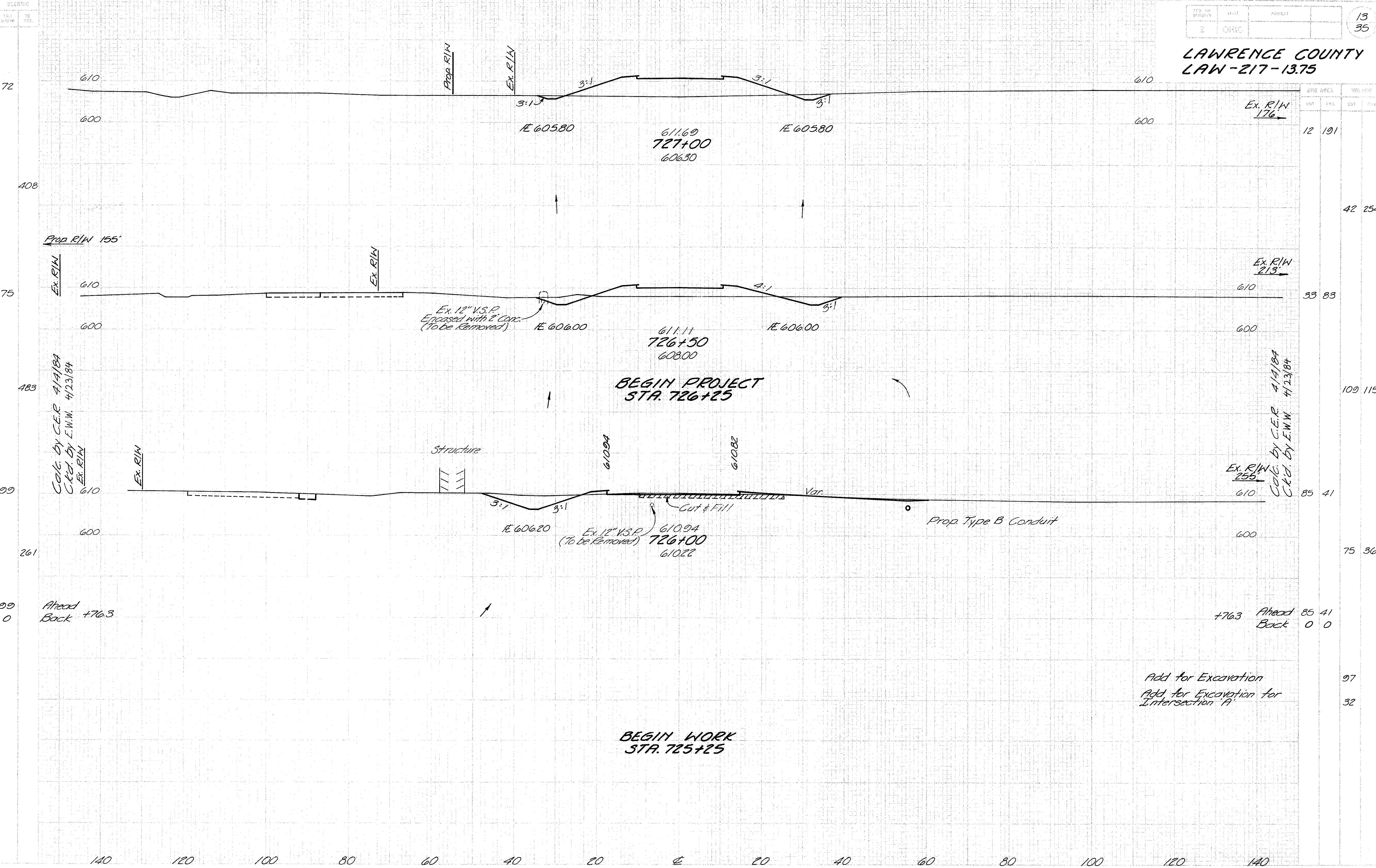
GENERAL SUMMARY

LAW-217-13.75

ITEM	SHEET NUMBER																ITEM	QUANT.	UNIT	DESCRIPTION
	2	5	6				9	10	12				19		23		33			
																				ROADWAY
202 Lump																		202 Lump		Structures Removed
201																		201 Lump		Clearing and Grubbing
202															160			202 160	Lin.Ft.	Pipe Removed, 24" and Under
202									20									202 20'	Lin.Ft.	Pipe Removed, Over 24"
202								226										202 226	Sq.Yd.	Wearing Course Removed
615																		615 Lump		Temporary Roads
203									2991				2587		13			203 5591	Cu.Yd.	Excavation Not Including Embankment Construction
203									7789				6076		4			203 13869	Cu.Yd.	Embankment
203								1978										203 1978	Sq.Yd.	Subgrade Compaction
410			350															410 350	Cu.Yd.	Traffic Compacted Surface, Type A or B
604																	4	604 4	Each	Reference Monument, Standard
606									40948								4	606 409.48	Lin.Ft.	Guardrail, Type 5
606									4									606 4	Each	Anchor Assembly, Standard Type A
606									3									606 3	Each	Anchor Assembly, Standard Type T
606									4									606 4	Each	Bridge Terminal Assembly, Standard Type B
606									187.5									606 187.5	Lin.Ft.	Guardrail, Type 4
Special									1									Special 1	Each	Drilled Water Well Abandoned
616		50	7															616 57	M.Gal.	Water
616			7															616 7	Ton	Calcium Chloride
																				DRAINAGE
602															.33			602 .33	Cu.Yd.	Concrete Masonry
603															68			603 68	Lin.Ft.	Conduit, Type B: 15" 706.02; or 18" 707.05
603									64									603 64	Lin.Ft.	Conduit, Type D: 60" 706.02; or 66" 707.07
604															1			604 1	Each	Catch Basin, Standard No. 5
605								282										605 282	Lin.Ft.	Aggregate Drains
																				EROSION CONTROL
207		131																207 131	Each	Straw or Hay Bales
207		2115																207 2115	Sq.Yd.	Temporary Seeding and Mulching
207		50																207 50	Lin.Ft.	Temporary Slope Drains
601															2			601 2	Cu.Yd.	Rock Channel Protection, Type C with filter
659		24																659 24	M.Sq.Ft.	Mowing
659		17																659 17	M.Gal.	Water
659									6884				3583		106			659 10573	Sq.Yd.	Seeding and Mulching
659		529																659 529	Sq.Yd.	Repair Seeding and Mulching
659		.10					1.02											659 1.12	Ton	Commercial Fertilizer
659							5.12											659 5.12	Ton	Agricultural Liming
668									739						72			668 811	Sq.Yd.	Seeding and Excelsior Matting
601									27									601 27	Cu.Yd.	Rock Channel Protection, Type A with filter
601									409									601 409	Cu.Yd.	Rock Channel Protection, Type B w/o filter
																				PAVEMENT
304								524										304 524	Cu.Yd.	Aggregate Base
310								27										310 27	Cu.Yd.	Subbase, Type I, Grading A
402								76										402 76	Cu.Yd.	Asphalt Concrete, AC-20
404								75										404 75	Cu.Yd.	Asphalt Concrete, AC-20
404								5										404 5	Cu.Yd.	Asphalt Concrete, AC-20 (Driveways)
407								36										407 36	Gal.	Tack Coat
407								2										407 2	Ton	Cover Aggregate
408								760										408 760	Gal.	Bituminous Prime Coat
611								156										611 156	Sq.Yd.	Reinforced Concrete Approach Slabs, T=15"
																				TRAFFIC CONTROL
614			.23															614 .23	Mi.	Temporary Centerlines, Class II
614			.06															614 .06	Mi.	Temporary Centerlines, Class I, 947.03 Type C
614			30															614 30	Lin.Ft.	Temporary Stop Lines, Class I
621	.25																	621 .25	Mi.	Centerlines
621	.29																	621 .29	Mi.	Edge Lines
621	45																	621 45	Lin.Ft.	Stop Lines
																				STRUCTURES 20' SPAN & OVER For Quantities, See Sheet 26
619																		619 Lump		Field Office
614																		614 Lump		Maintaining Traffic
623																		623 Lump		Construction Layout Stakes
624																		624 Lump		Mobilization

**LAWRENCE COUNTY
LAW-217-13.75**

CUT AREA		FILL AREA	
STATION	FEET	STATION	FEET
12	191		



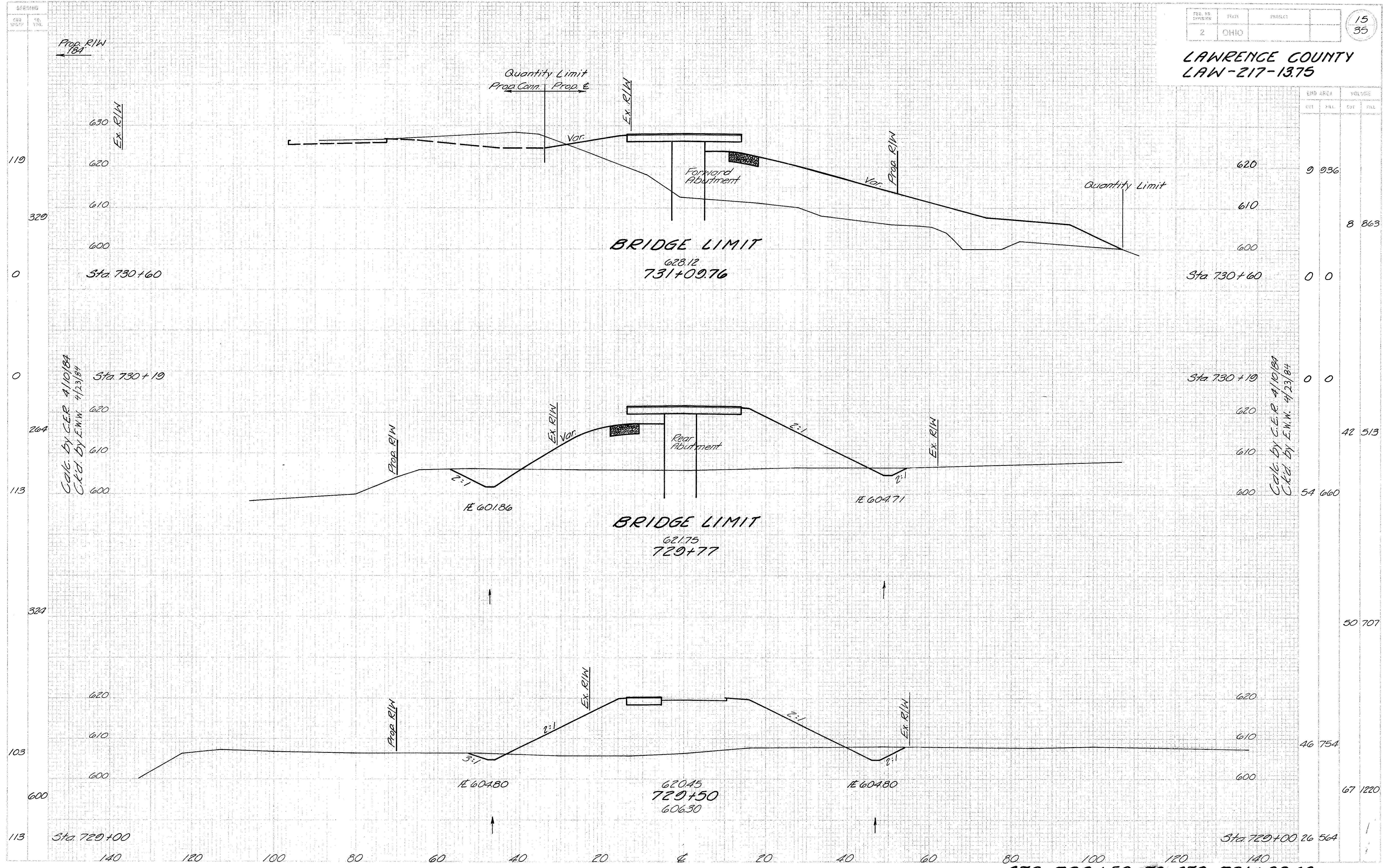
**BEGIN WORK
STA. 725+25**

Add for Excavation
Add for Excavation for
Intersection A

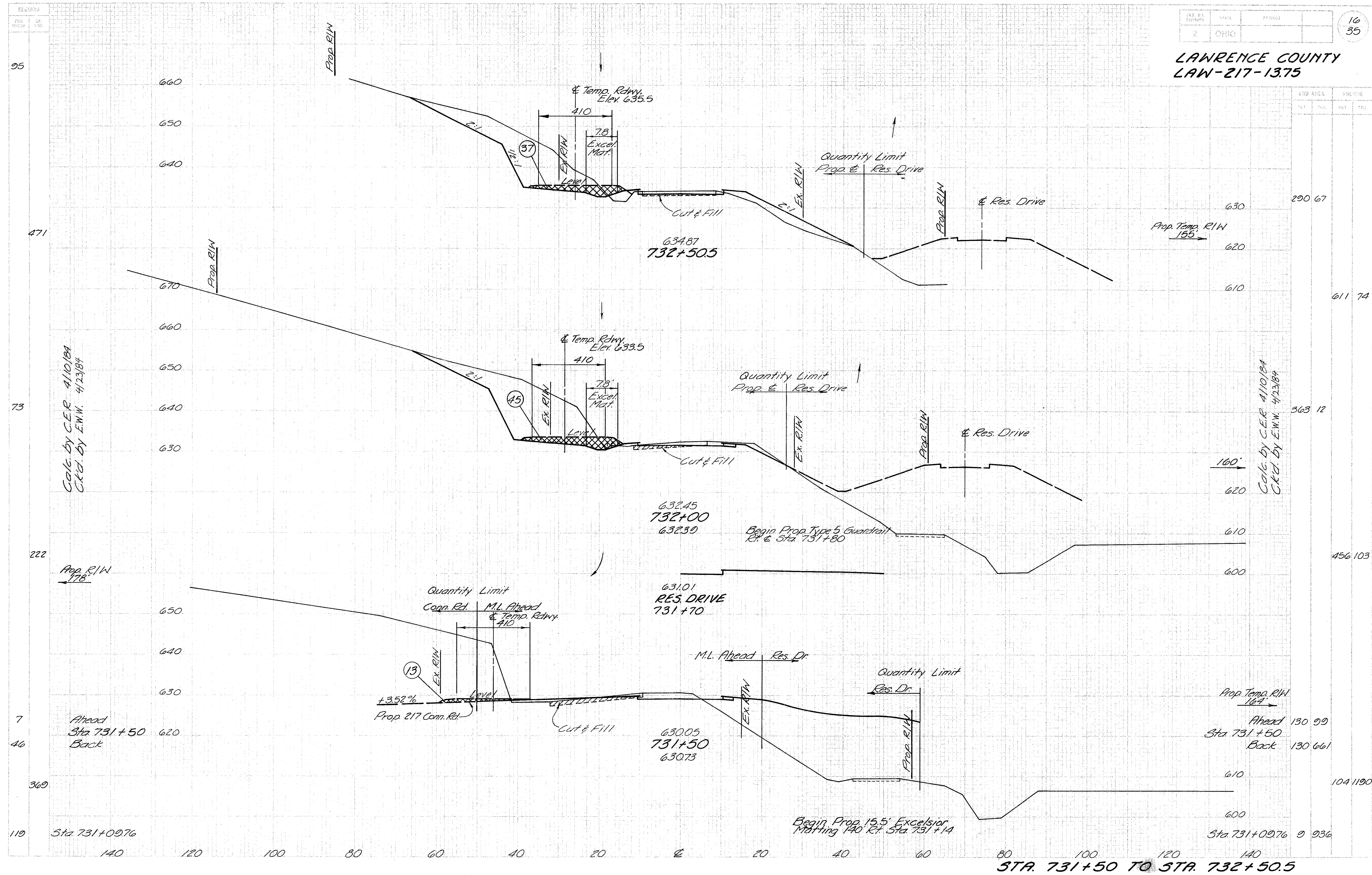
STA. 726+00 TO STA. 727+00

STA. 727+50 TO STA. 729+00

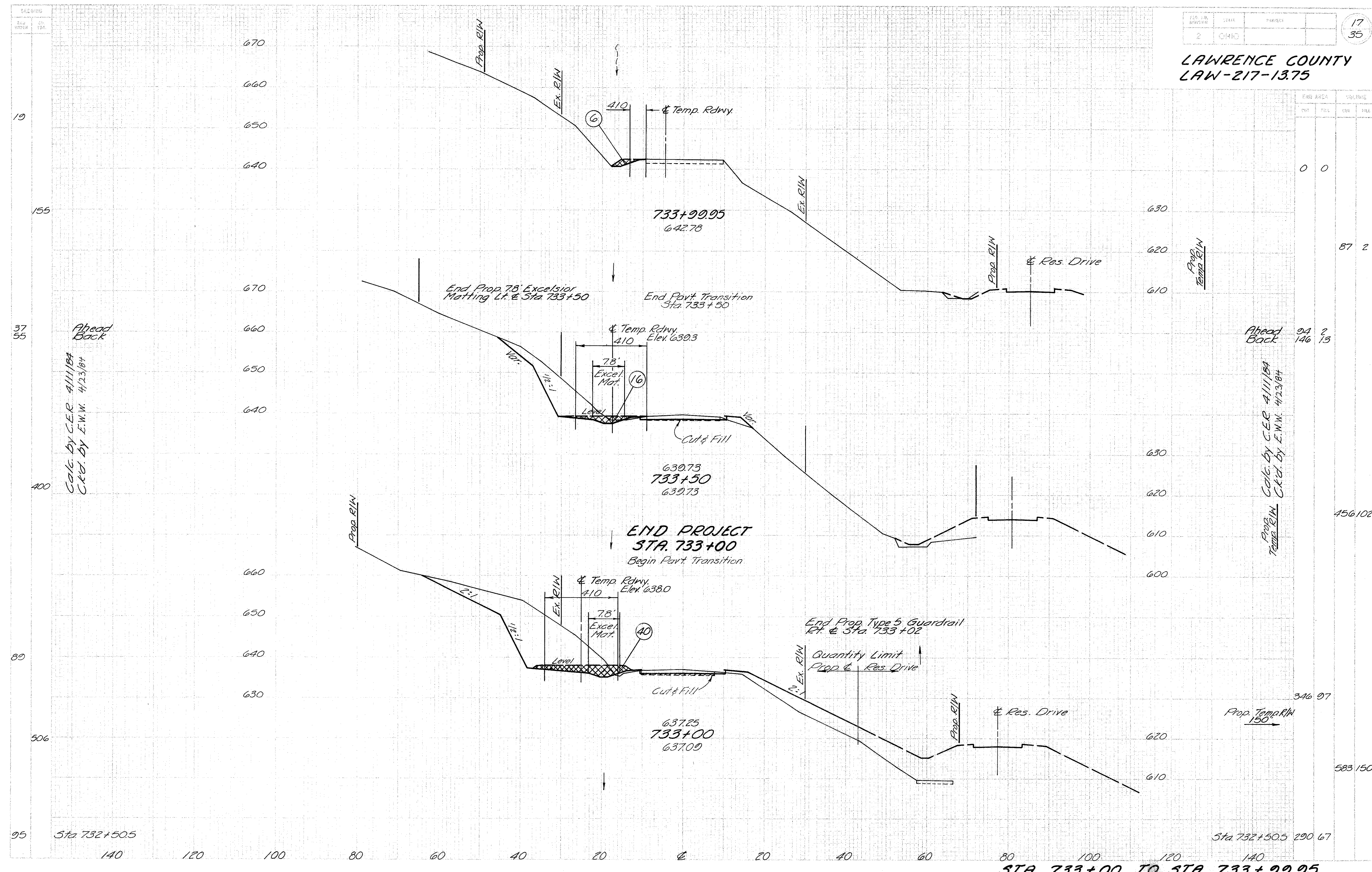
LAWRENCE COUNTY LAW-217-13.75



LAWRENCE COUNTY
LAW-217-13.75



LAWRENCE COUNTY
LAW-217-13.75



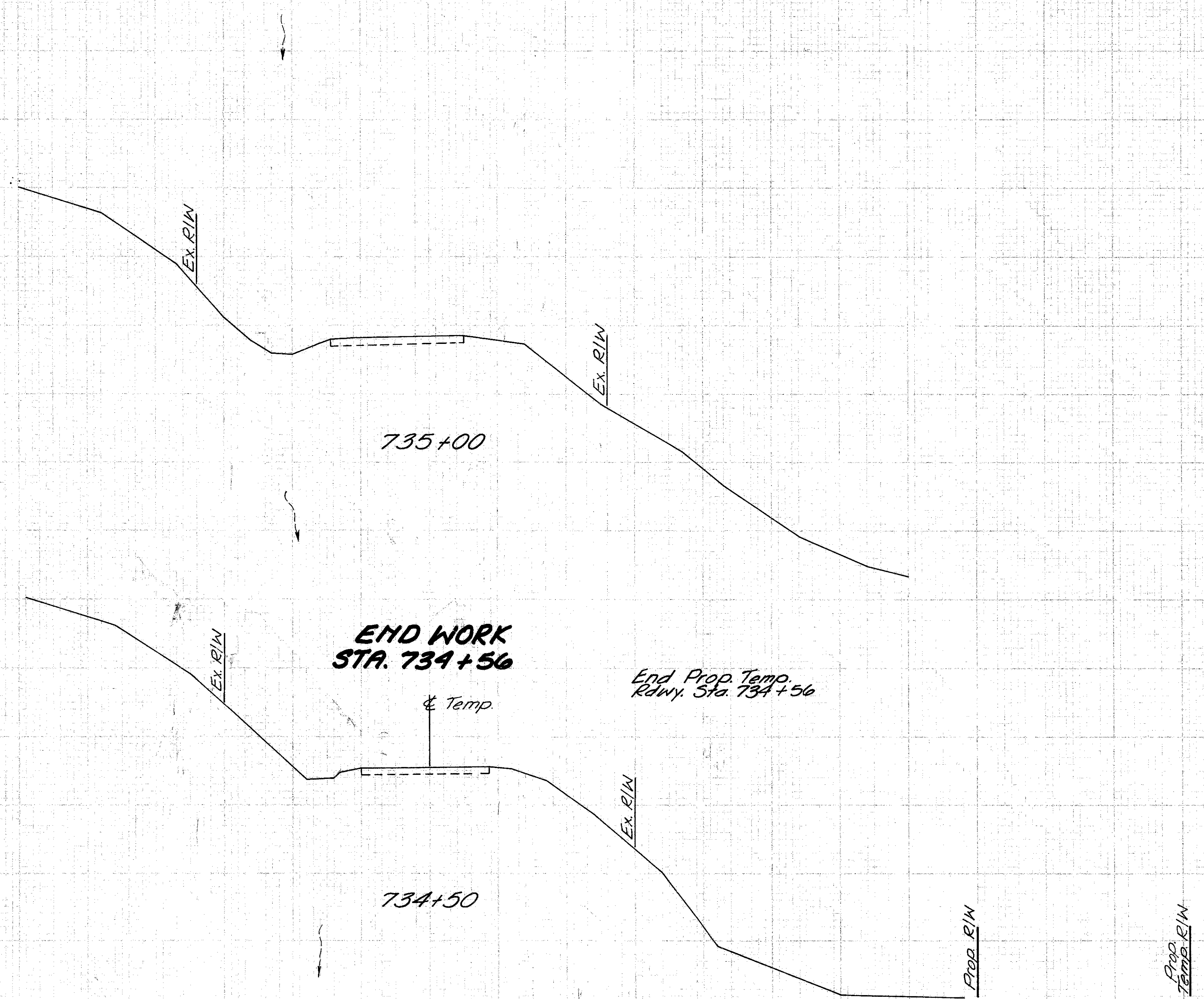
END AREA		CUTTING	
CUT	FILL	CUT	FILL

0	0		
87	2		
94	2		
146	13		
456	102		
346	97		
583	150		

STA. 733+00 TO STA. 733+99.95

LAWRENCE COUNTY
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140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
STA. 734+50 TO STA. 735+00



SEEDING
END SQ.
WIDTH YDS.

99

307

122

351

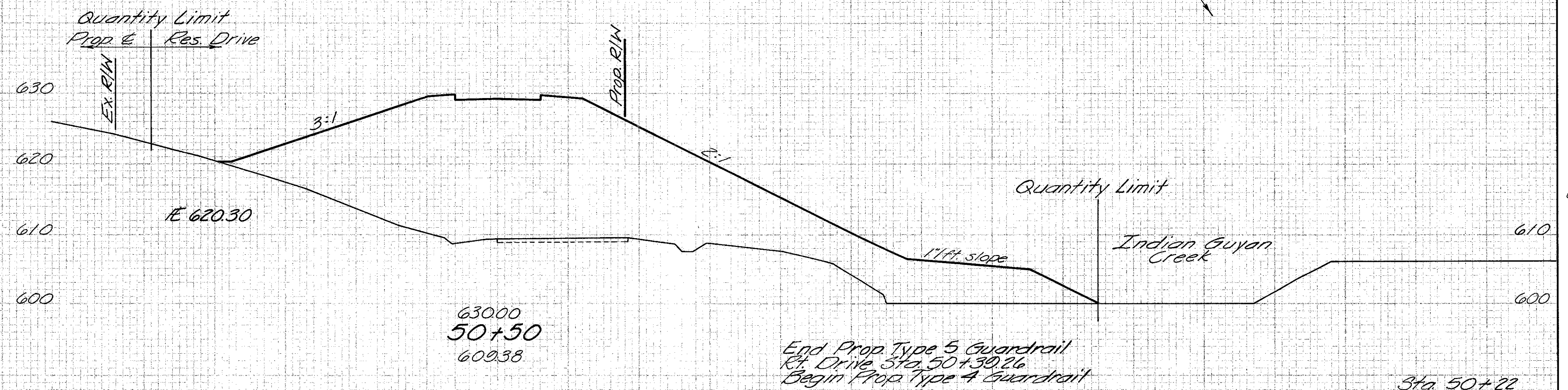
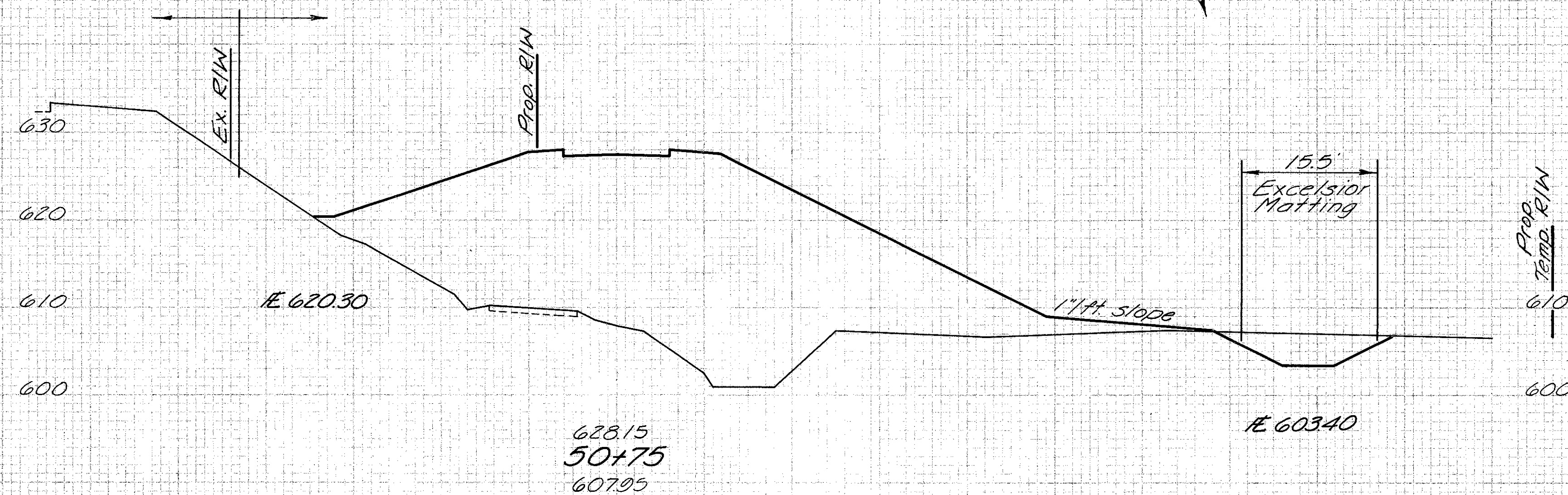
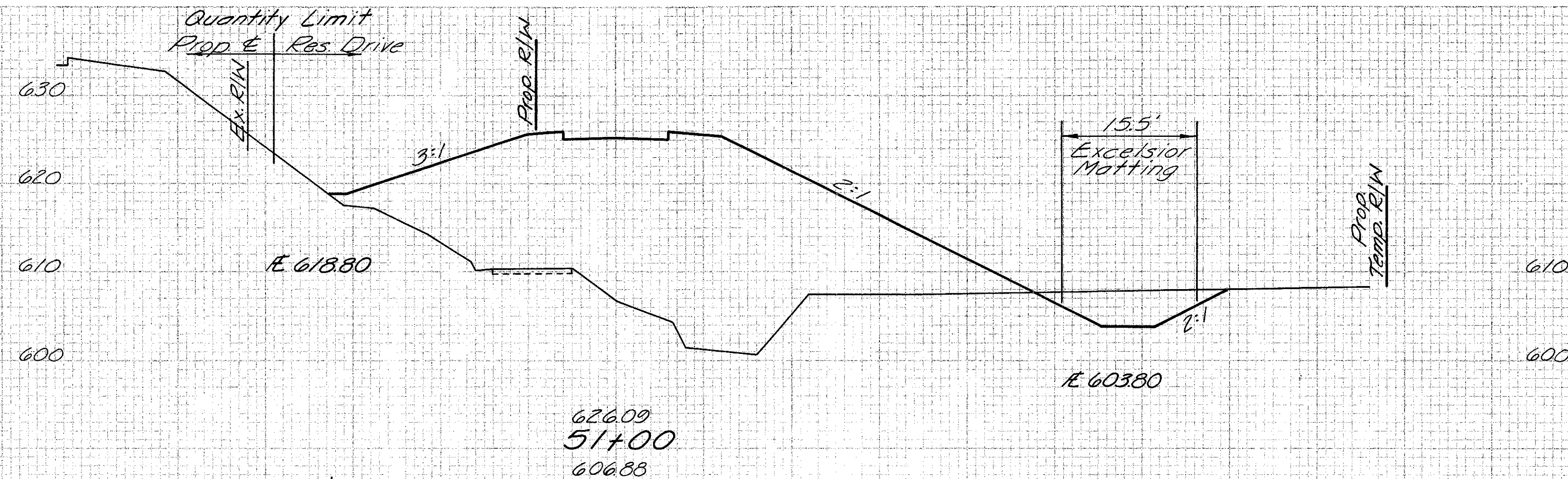
131

204

0

Sta 50+22

Calc. by C.E.R. 3/12/84
Ckd. by E.A.W. 3/23/84



BEGIN RES. DRIVE WORK
STA. 50+10

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LAWRENCE COUNTY
LAW-217-1375

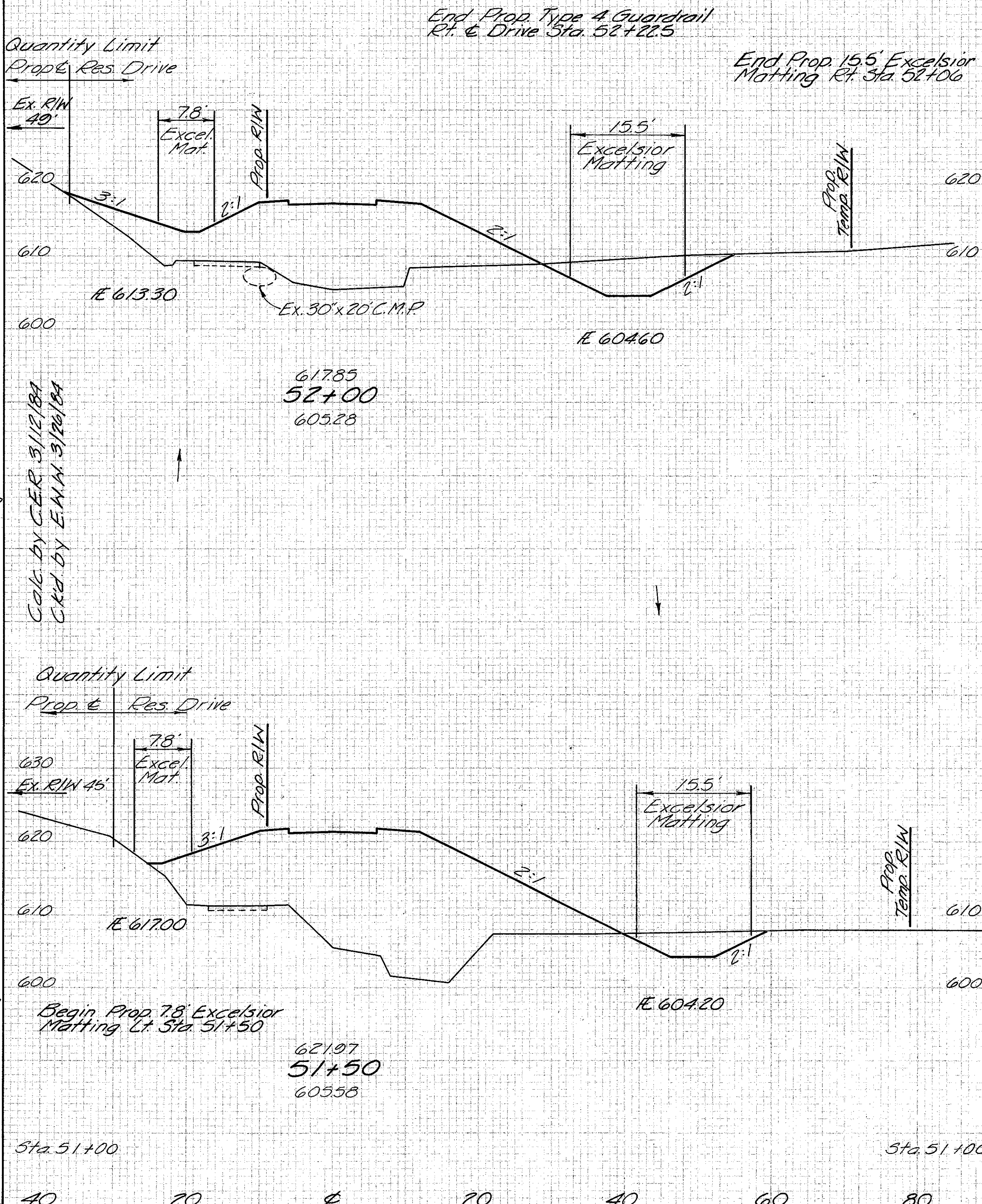
21
35

END AREA		VOLUME	
CUT	FILL	CUT	FILL
56	978		
		48	1010
48	1203		
		22	1181
0	1347		
		0	608
0	0		

X-SECTIONS RES. DRIVE STA. 50+50 TO STA. 51+00

SEEDING
END WIDTH SQ. YDS.

71	386
68	464
90	

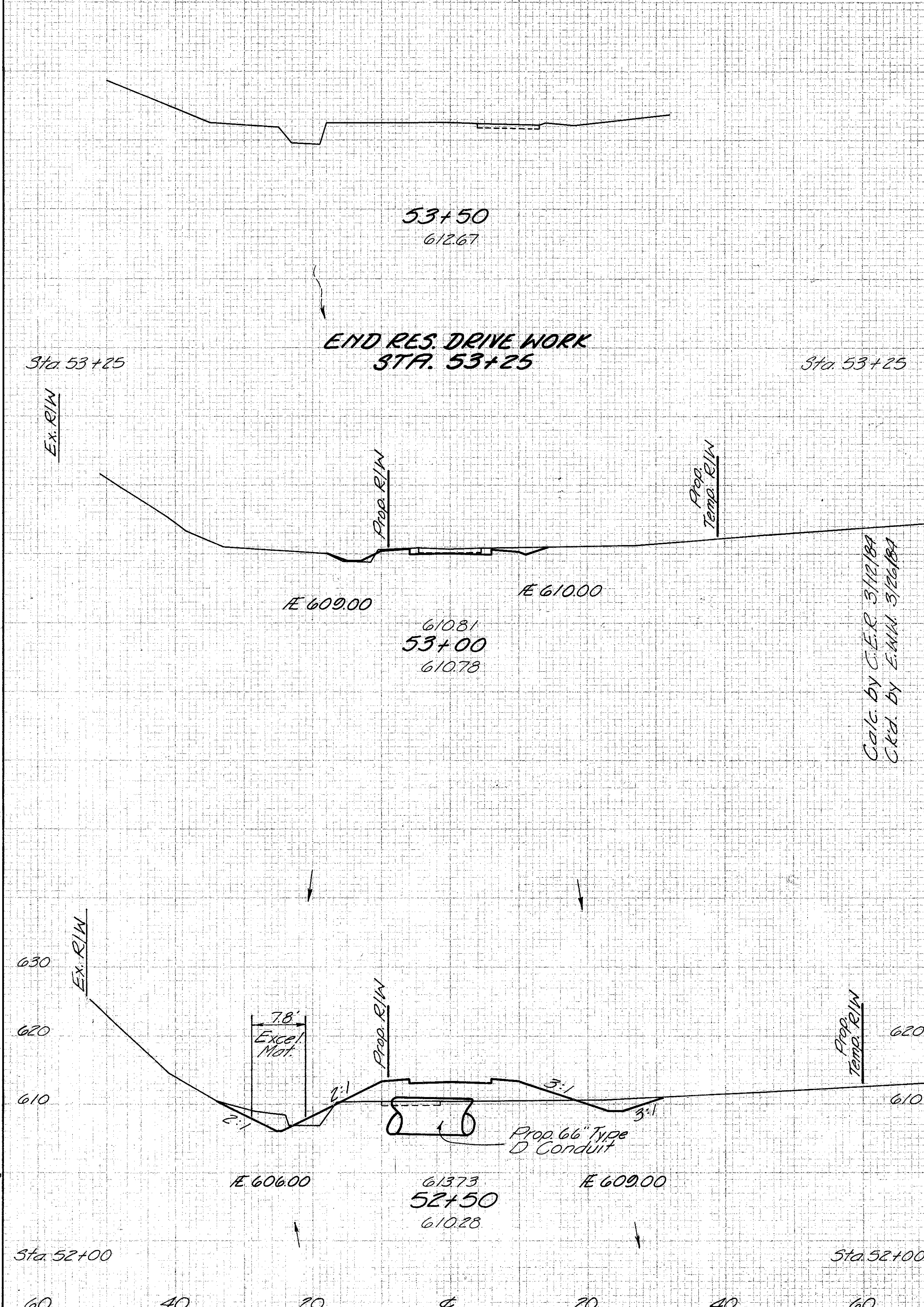


END AREA VOLUME
CUT FILL CUT FILL

84	425	119	1020
44	677	93	1332
56	978		

SEEDING
END WIDTH SQ. YDS.

0	57	41	303	68	386	71
---	----	----	-----	----	-----	----



END AREA VOLUME
CUT FILL CUT FILL

0	0	7	1	16	2	40	79	27	83	103	470	84	425
---	---	---	---	----	---	----	----	----	----	-----	-----	----	-----

LAWRENCE COUNTY
LAW-217-1375

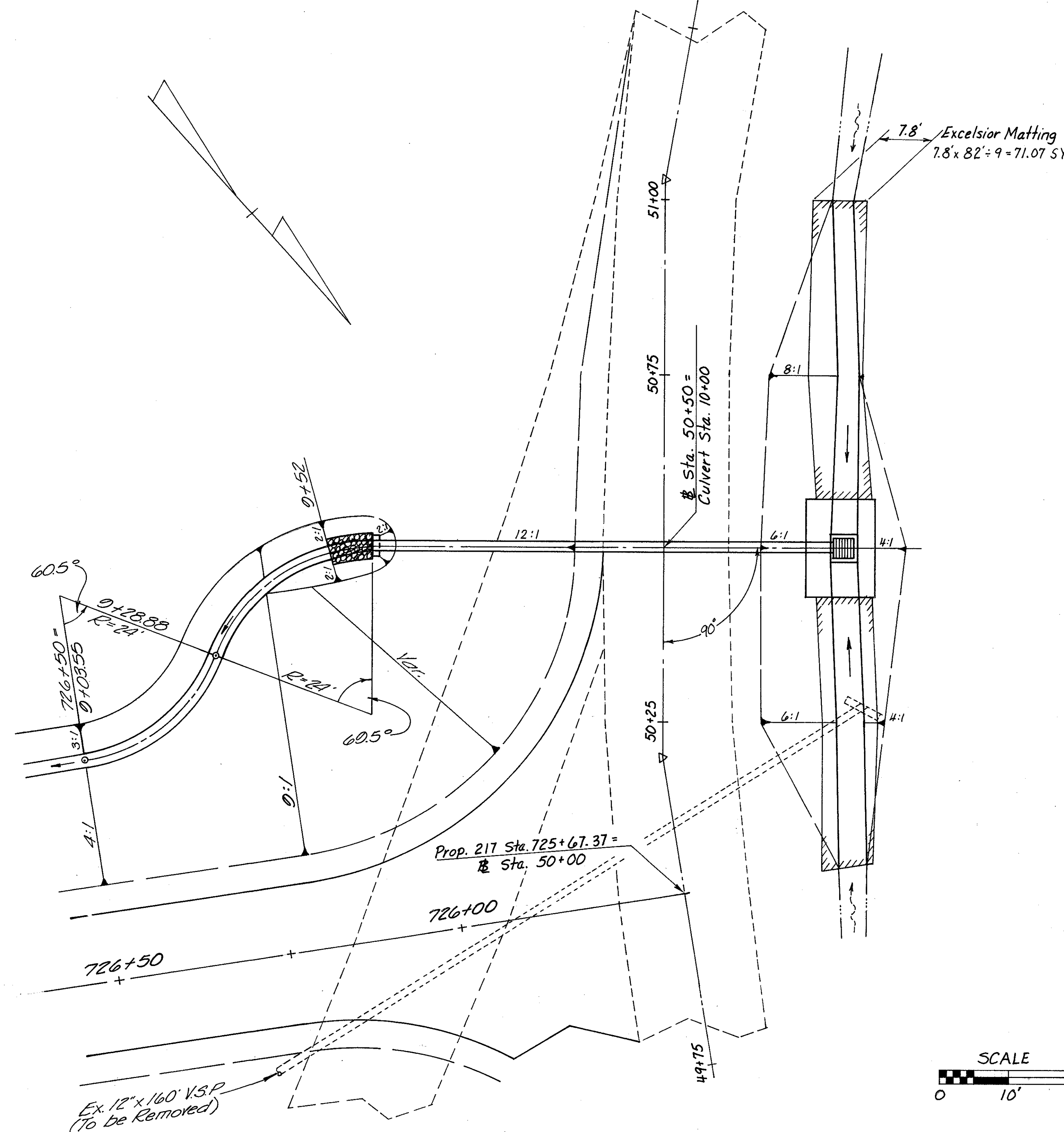
X-SECTIONS RES. DRIVE STA. 51+50 TO STA. 53+50

CALC. BY DAN
DATE 12-7-83
CHKD. BY
DATE 1/18/84

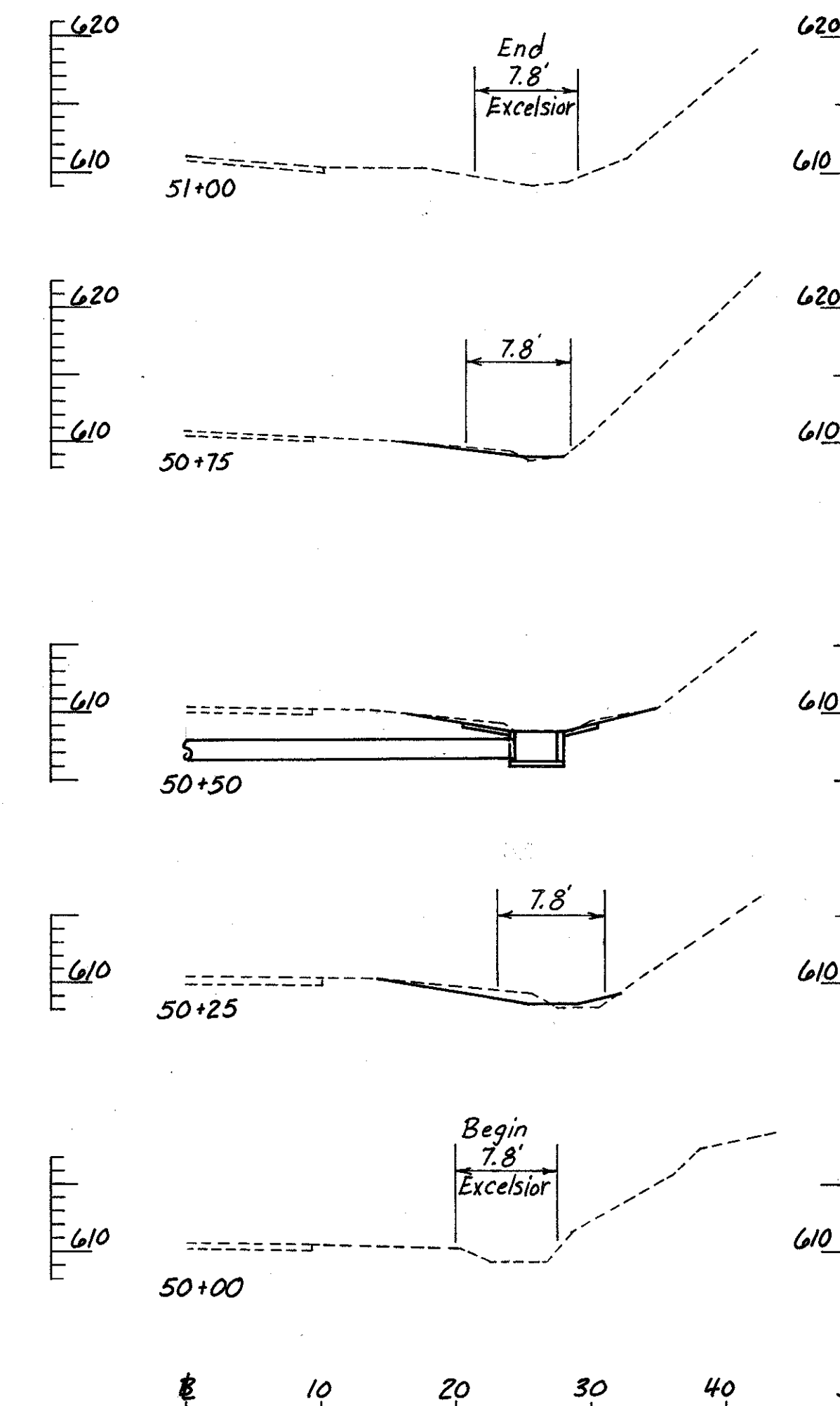
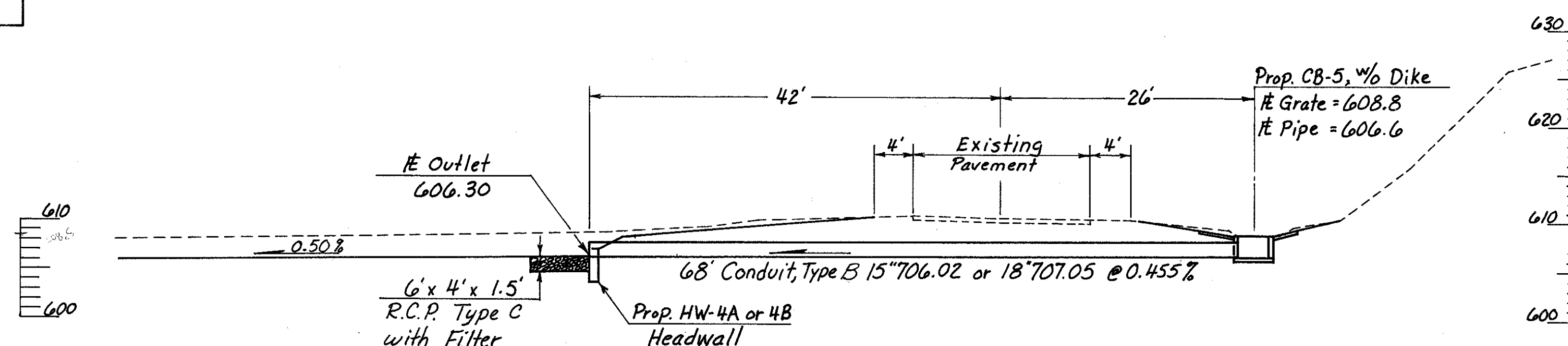
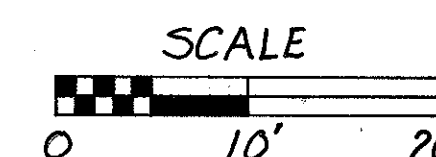
OHIO
FHWA REGION 5

23
35

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Drainage Area = 3.5 Ac.
 $Q_{10} = 8 \text{ cfs}$
 $Q_{100} = 12 \text{ cfs}$



SEED	W _D	AREA	EARTHWORK		CUT	FILL	CUT	FILL
			AREA	VOLUME				
0			0	0				
10							1	1
7			2	1				
36							4	1
19			5	0				
43							5	1
12			6	2				
17							3	1
0			0	0				
106							13	4

ESTIMATED QUANTITIES

202	Pipe Removed, 24" and Under	160	Lin. Ft.
203	Excavation, Not Including Embankment Construction	13	Cu. Yd.
203	Embankment	4	Cu. Yd.
602	Concrete Masonry	0.33	Cu. Yd.
601	Rock Channel Protection, Type C with Filter	2	Cu. Yd.
603	Conduit, Type B 15" 706.02 or 18" 707.05	68	Lin. Ft.
659	Seeding and Mulching	106	Sq. Yd.
668	Seeding and Excelsior Matting	72	Sq. Yd.
604	Catch Basin, Standard No. 5	1	Each

* All Quantities carried to General Summary Sheet No. 11.

CONDUIT TYPE B STA 50+50 EX. SR 217

3
1

MICROFILMED
NOV 17 1987

2: Rock Channel Protection, Type "B", 2'6" depth, Shall be placed to the Limits shown.

Estimated Average Pay lengths are:

Forward Abutment 25 Lin. Ft.

Rear Abutment 60 Lin. Ft.

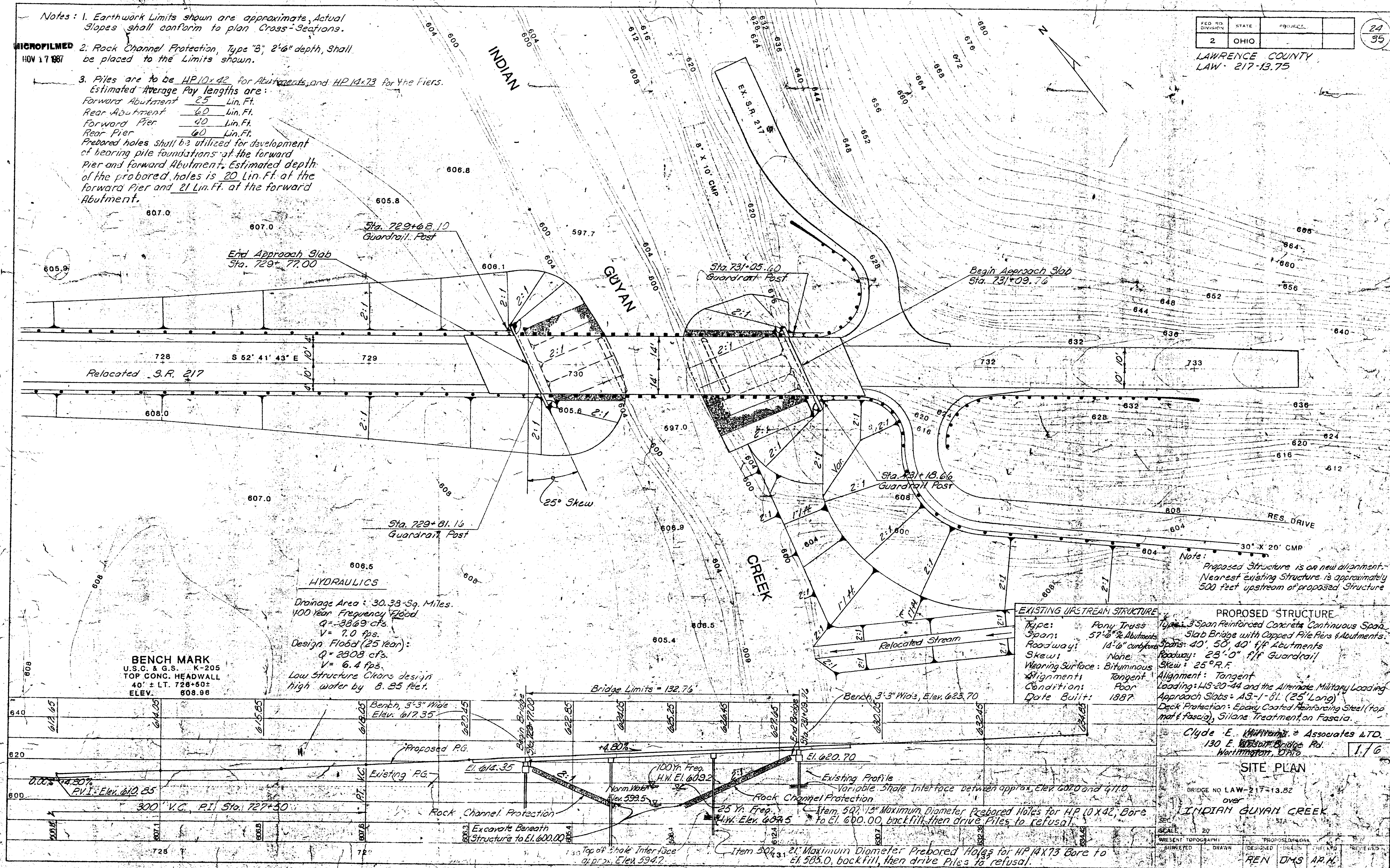
Forward Pier. 40 Lin. Ft.

Rear Pier 60 Lin.Ft.

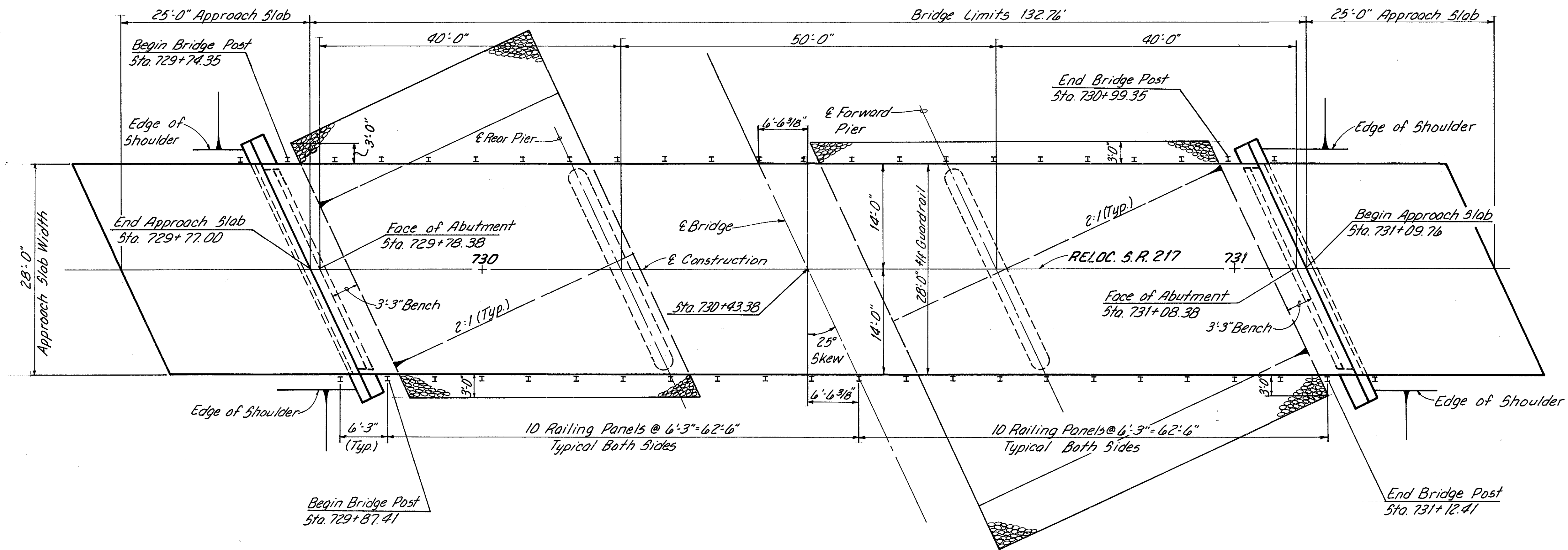
Prebored holes shall be utilized for development of bearing pile foundations at the forward pier and forward Abutment. Estimated depth of the prebored holes is 20 Lin. Ft. of the forward Pier and 21 Lin. Ft. at the forward Abutment.

FED. RO. DIVISION	STATE	PROJECT	
2	OHIO		

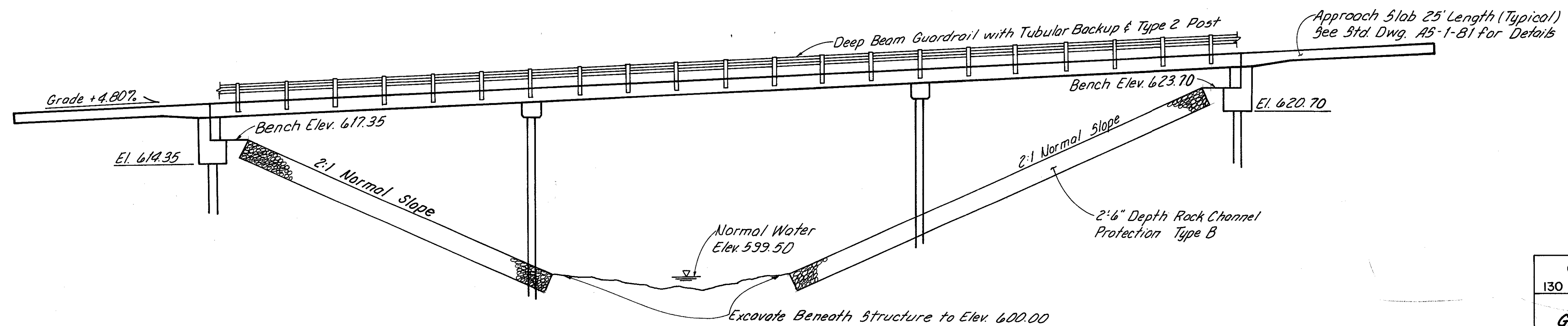
LAWRENCE COUNTY
LAW - 217-13.75

$$\left(\frac{2}{3} \right)$$


LAWRENCE COUNTY
LAW-217-13.75



PLAN



ELEVATION

CLYDE E. WILLIAMS & ASSOC., LTD. 2/6
130 E. WILSON BRIDGE RD. WORTHINGTON, OHIO

GENERAL PLAN & ELEVATION
BRIDGE NO. LAW-217-1382
over
INDIAN GUYAN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED—DATE	REVISED
<i>REN.</i>	<i>D.F.C.</i>	<i>O.K.T.</i>	<i>A.A.H.</i>		

GENERAL NOTES

REFERENCE shall be made to Standard Drawings DBR-2-73 dated 4-10-73, CPP-2-73 dated 4-10-73, and AS-1-81 dated 11-27-81, and Supplemental Specification 824 dated 10-8-82, and 836 dated 3-12-75.

DESIGN SPECIFICATIONS This structure conforms to the "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1977, including the 1978, 1979, 1980, 1981, and 1982 Interim Specifications and the Ohio "Supplement" to these Specifications.

DESIGN DATA

Design Loading: HS 20-44 and the Alternate Military Loading

Concrete Class S: Unit Stress 1500 p.s.i. (Superstructure)

Concrete Class C: Unit Stress 1333 p.s.i. (Substructure)

Reinforcing Steel: ASTM A615, A616, or A617, unit stress 20,000 p.s.i.

Deck Protection Method: Epoxy coated reinforcing steel, top mat only.

MONOLITHIC WEARING SURFACE is assumed for design purposes to be one inch (1") thick.

SEALING OF CONCRETE SURFACES: Surface Sealant shall be applied to the deck fascia on each side of the bridge slab including 6 inches of the underside of the slab.

Specified concrete surfaces shall be sealed using either a silane or an epoxy sealer. See the proposal for surfaces preparation requirements, application rates, material requirements and application procedures.

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient Additional Reinforcing Steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

EMBANKMENT CONSTRUCTION AND PILE DRIVING CONSTRAINTS

Prior to driving piles at the forward pier and forward abutment, the spill through slope embankment at the forward abutment shall be constructed to the level of the subgrade for a minimum distance of 35 feet back of the forward abutment.

Prior to driving piles at the rear pier and rear abutment, the spill through slope embankment at the rear abutment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the rear abutment and the completed embankment must experience a 30 day waiting period prior to excavating for the rear abutment and installing the piles at the rear abutment and at the rear pier.

PILE HAMMER The pile hammer used to install the steel "H" bearing piles shall have a State's Energy Rating of between 14,000 and 22,000 foot-pounds. Refer to ODOT's "Manual of Procedures for Structures" to obtain the State's Energy Rating."

PILES All piles at the forward pier and forward abutment shall be placed in prebored holes. The prebored holes shall extend downward to elevation 585.0± at the forward pier and to elevation 600.0± at the forward abutment. After the piles have been placed in prebored holes and backfill has been placed in accordance with 507, the piles shall be driven to refusal. Refusal shall be considered as attained by penetrating soft bedrock with a minimum resistance of 20 blows per inch, or refusal shall be considered as attained after the pile has contacted hard bedrock and the pile has received at least 20 blows. The design load is 32 tons per pile for the abutment piles and 52 tons per pile for the pier piles.

CAMBER of 5/8" inch at the center of end spans and 3/4 inch at the center of the middle span shall be provided to allow for the dead load deflection in the slab. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of falsework members.

ESTIMATED QUANTITIES

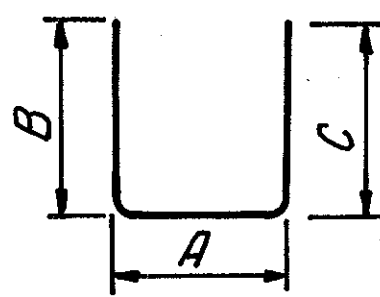
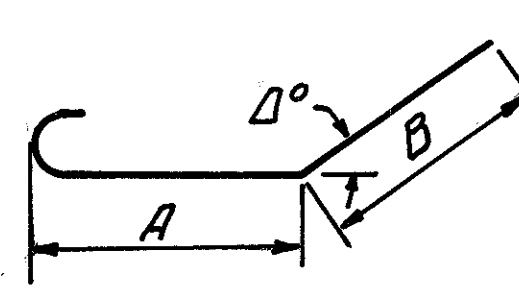
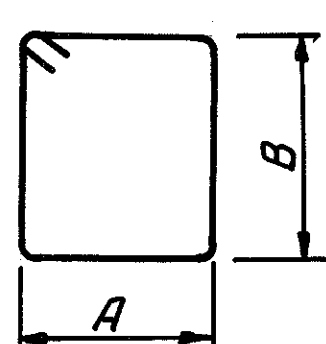
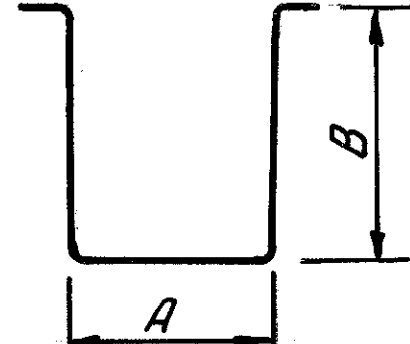
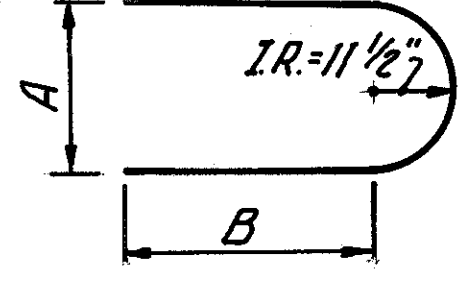
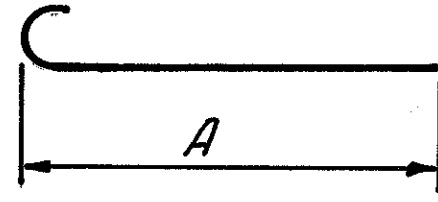
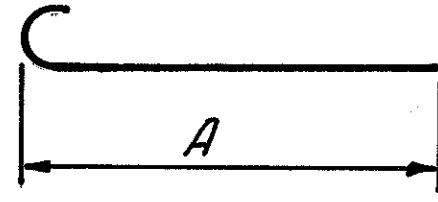
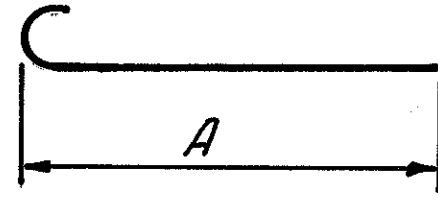
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL
503	82	Cu.Yds.	Unclassified Excavation	82			
505	Lump	Lump	Pile Driving Equipment Mobilization				Lump
507	360	Lin.Ft.	Steel Piles, HP 10X42, Rear Abutment, as per plan	360			
507	360	Lin.Ft.	Steel Piles, HP 10X42, Rear Pier, as per plan		360		
507	240	Lin.Ft.	Steel Piles, HP 10X42, Forward Pier, as per plan		240		
507	150	Lin.Ft.	Steel Piles, HP 10X42, Forward Abutment as per plan	150			
507	266	Lin.Ft.	Prebored Holes, as per plan	126	140		
509	4,272	Lbs.	Reinforcing Steel	4,918	1,500	31,854	
824	22,802	Lbs.	Epoxy Coated Reinforcing Steel		1,044	21,758	
511	253	Cu.Yds.	Class S Concrete, Superstructure			253	
511	12	Cu.Yds.	Class C Concrete, Pier Caps		12		
511	44	Cu.Yds.	Class C Concrete, Abutments	44			
517	265.52	Lin.Ft.	Railing (Deep Beam Rail with Steel Tubular Backup, Type 2 steel posts and steel connections)			265.52	
518	14	Cu.Yds.	Porous Backfill	14			
Special	68	Sq.Yds.	Sealing of Concrete Surfaces (See Proposal Note)			68	

FHWA REGION	STATE	PROJECT
5	OHIO	

26
35

LAWRENCE COUNTY
LAW-217-1375

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHAPE	A	B	C	Δ°	BENDING DIAGRAM		
~ ABUTMENTS ~											
A 1001	16	17'-7"	1,211	S							
A 801	16	21'-2"	904	S							
D 801	36	5'-5"	521	2	3'-4"	1'-6 1/2"		45°			
A 501	116	6'-10"	827	1	2'-11"	2'-1"	2'-1"				
A 502	16	20'-8"	345	S							
A 503	16	16'-1"	268	S							
A 504	40	7'-11"	330	1	1'-8"	3'-3"	3'-3"				
A 505	18	11'-0"	207	1	0'-11"	5'-2"	5'-2"				
A 506	8	6'-6"	54	S							
A 507	8	3'-7"	30	S							
A 508	8	4'-9"	40	S							
A 509	2	5'-3"	11	S							
A 510	2	3'-0"	6	S							
A 511	4	4'-2"	17	S							
A 401	24	9'-2"	147	3	1'-9"	2'-7 3/4"					
~ PIERS ~											
EP1001	8	30'-4"	1044	S							
P 901	8	26'-8"	725	S							
P 501	4	26'-8"	111	S							
P 502	40	9'-8"	403	4	2'-2"	3'-3"					
P 503	4	9'-6"	40	4	2'-0"	3'-3"					
P 504	4	4'-3"	18	1	3'-3"	0'-7 1/2"	0'-7 1/2"				
P 505	8	6'-4"	53	5	2'-0 1/4"	1'-7"					
P 401	28	8'-0"	150	3	2'-0 1/4"	1'-9"					
~ SUPERSTRUCTURE ~											
ES 1101	64	32'-2"	10,938	S							
ES 1102	26	19'-4"	2,671	S							
ES 1103	28	15'-4"	2,281	S							
S 1001	96	46'-11"	19,381	S							
S 1002	24	31'-11"	3296	6	30'-6"						
S 1003	26	29'-9"	3328	6	28'-4"						
S 1004	12	29'-0"	1,497	S							
S 1005	13	24'-9"	1,384	S							
S 601	131	30'-4"	5,968	S							
ES 501	64	28'-11"	1,930	S							
ES 502	32	21'-8"	723	S							
ES 401	134	30'-4"	2,715	S							
ES 402	246	3'-0 1/2"	500	1	1'-3 1/2"	1'-0"	1'-0"				

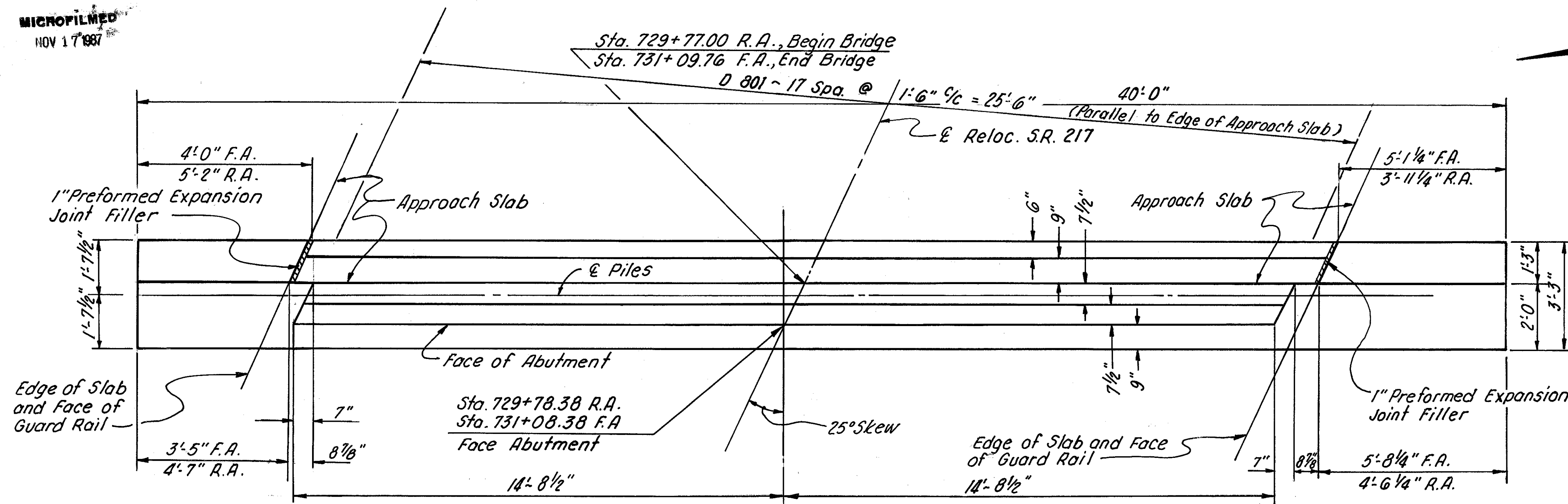
NOTE: All Reinforcing Steel Marked with the prefix "E" shall be Epoxy Coated.

NOTE: All Reinforcing Steel Marked with the prefix "E" shall be Epoxy Coated.

CLYDE E. WILLIAMS & ASSOC., LTD. 3/6
130 E. WILSON BRIDGE RD. WORTHINGTON, OHIO

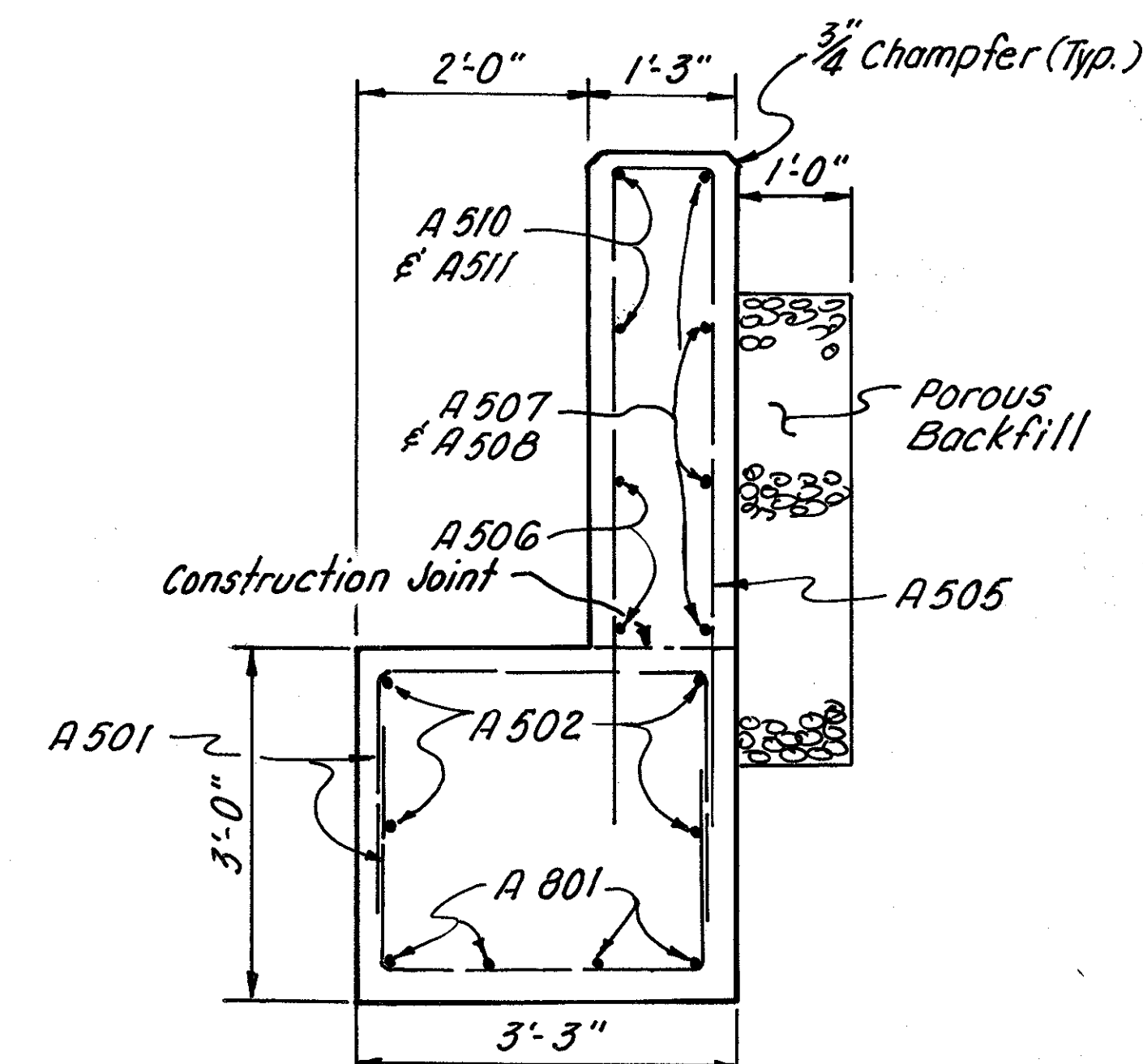
GENERAL NOTES, ESTIMATED QUANTITIES
AND REINFORCING STEEL LIST
BRIDGE NO. LAW-217-1382
OVER
INDIAN GUYAN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED - DATE	REVISED
R.E.N.	R.E.N.	J.D.	A.A.H.		

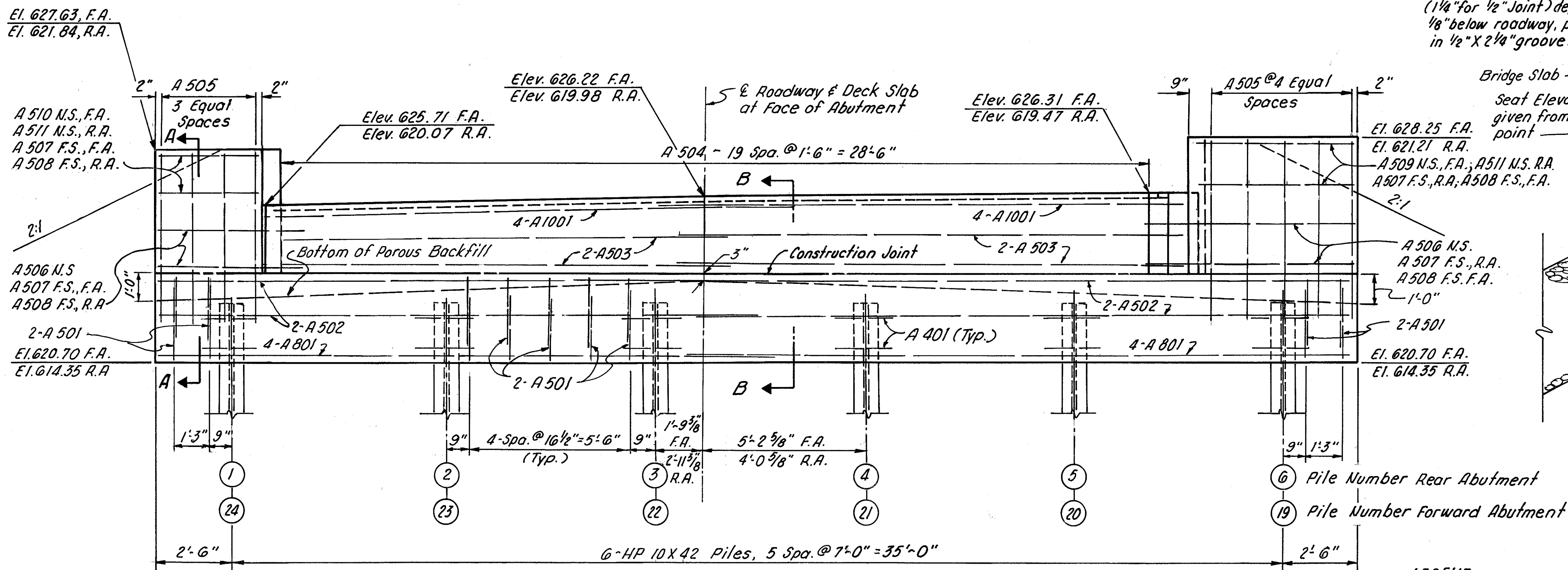


PLAN

Forward Abutment Shown



SECTION A-A



ELEVATION

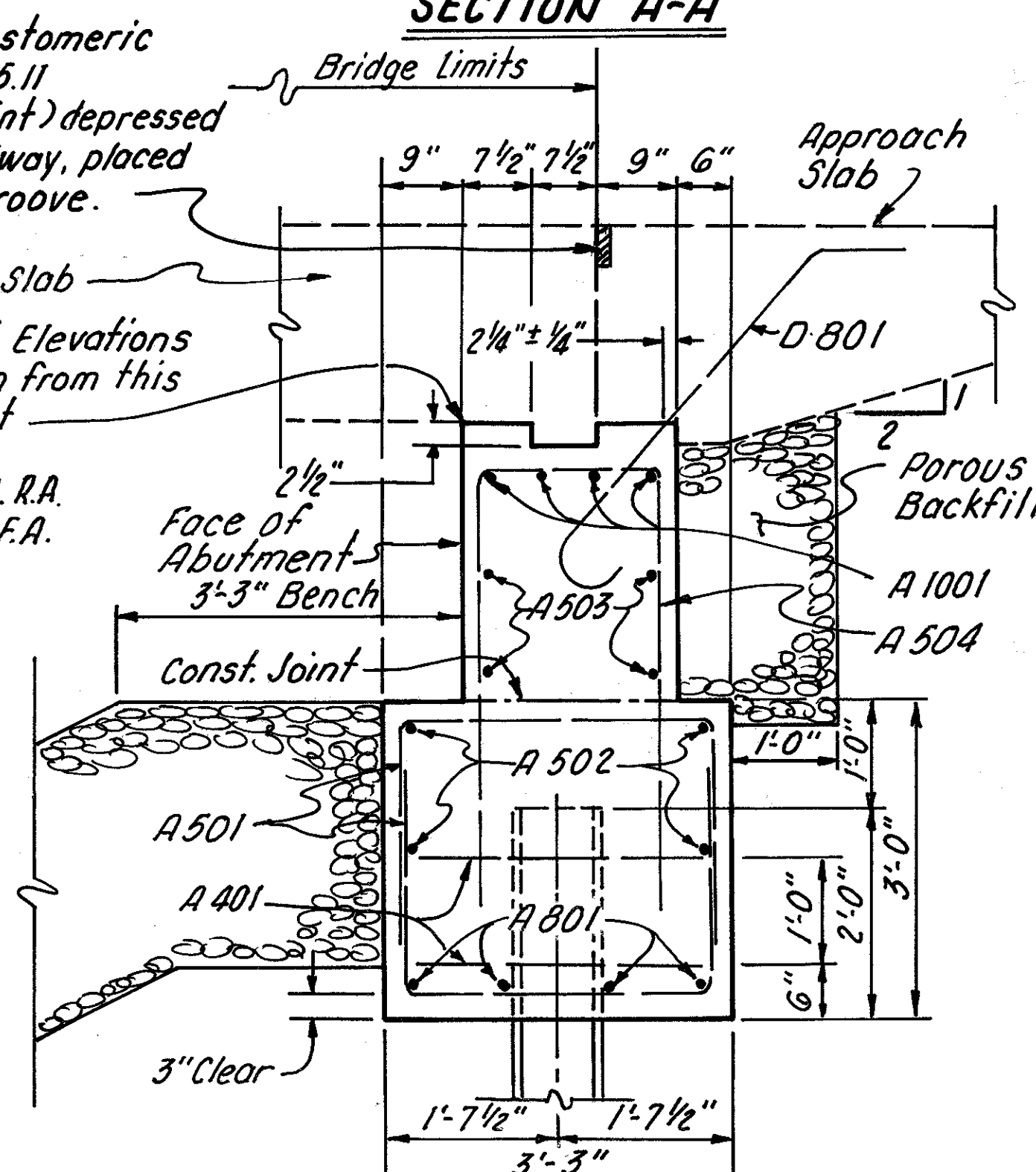
NOTE: Porous Backfill shall extend upward to the plane of the subgrade and laterally to the surface of the embankment slopes.

MIN. LAP DIMENSIONS

10 Bar = 4'-7"
8 Bar = 2'-8"
5 Bar = 1'-7"

LEGEND

N.S. = Near Side
F.S. = Far Side
R.A. = Rear Abutment
F.A. = Forward Abutment



SECTION B-B

CLYDE E. WILLIAMS & ASSOC., LTD. 4/6
130 E. WILSON BRIDGE RD. WORTHINGTON, OHIO

ABUTMENT DETAILS
BRIDGE NO. LAW-217-13.82
OVER
INDIAN GUYAN CREEK

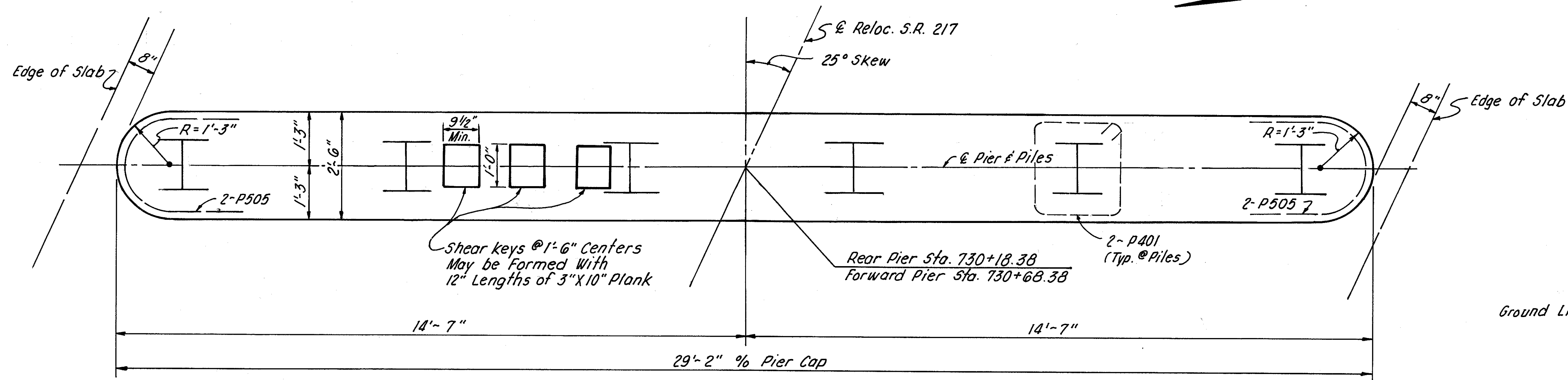
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED - DATE	REVISED
R.E.M.	D.F.C.	J.D.	A.A.H.		

MICROFILMED
NOV 17 1987

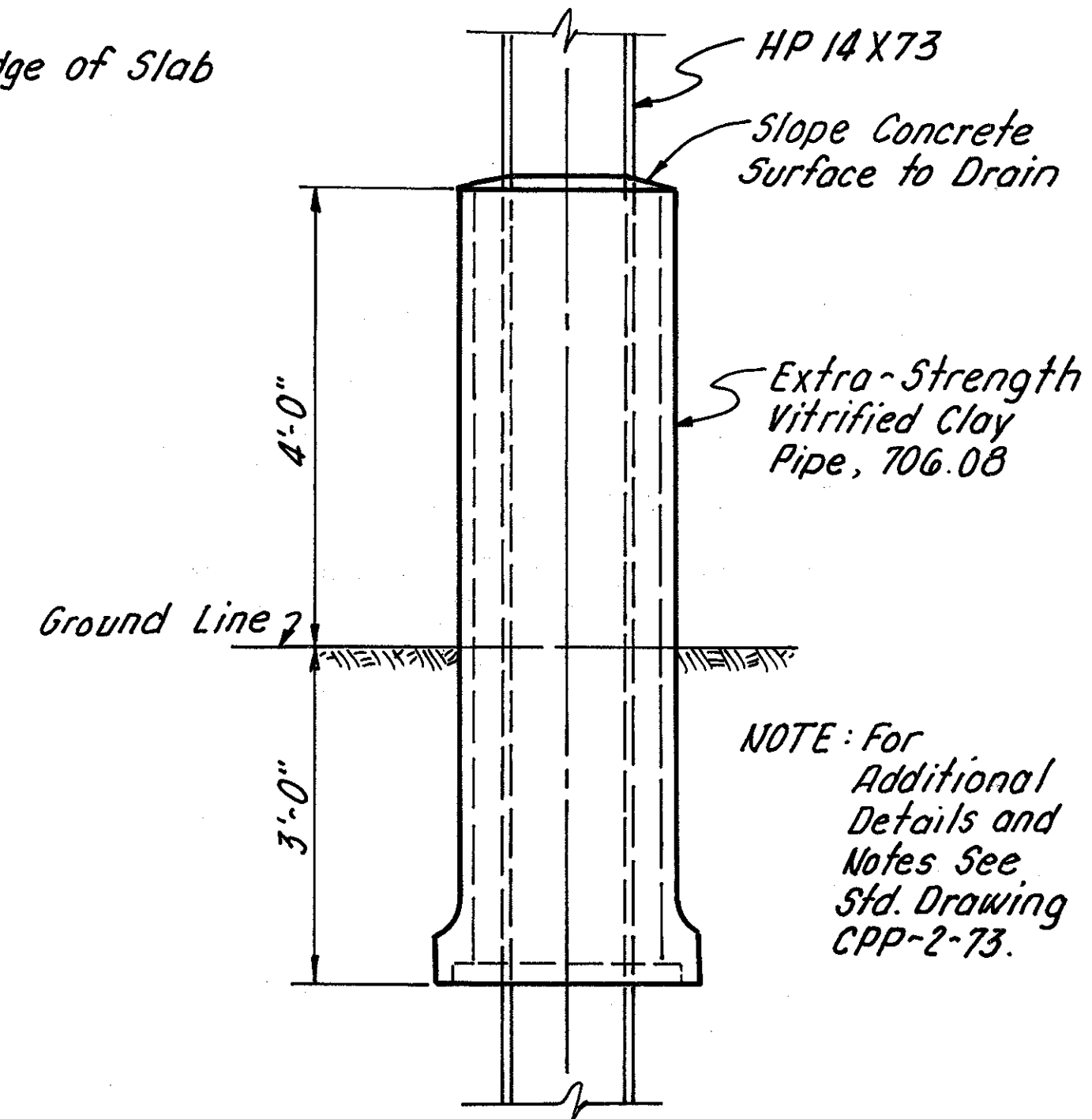
FHWA REGION	STATE	PROJECT	
5	OHIO		

LAWRENCE COUNTY
LAW-217-13.75

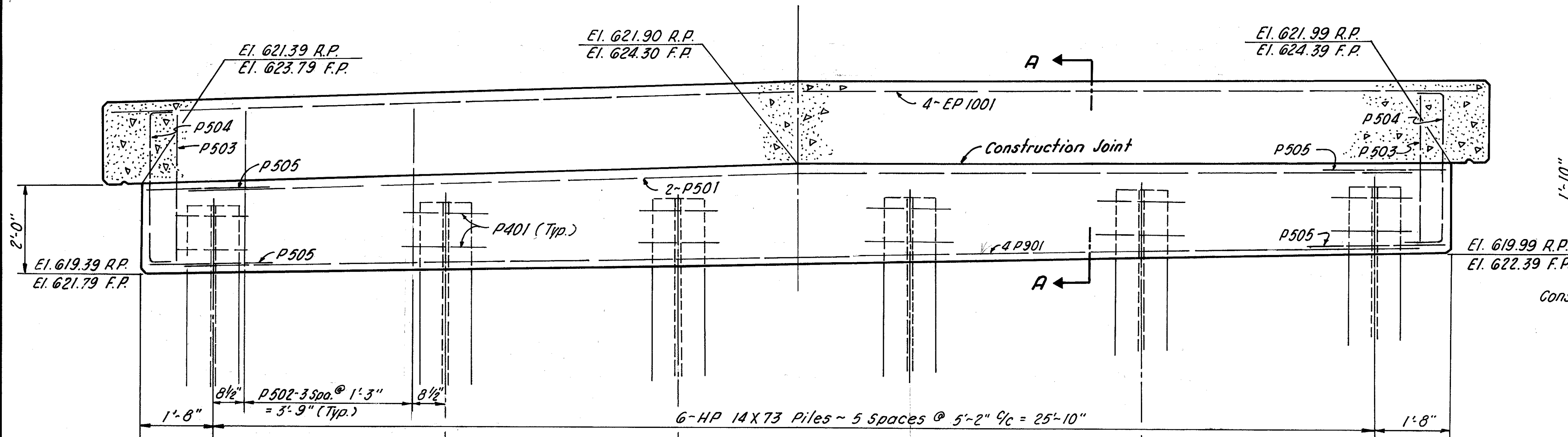
28
35



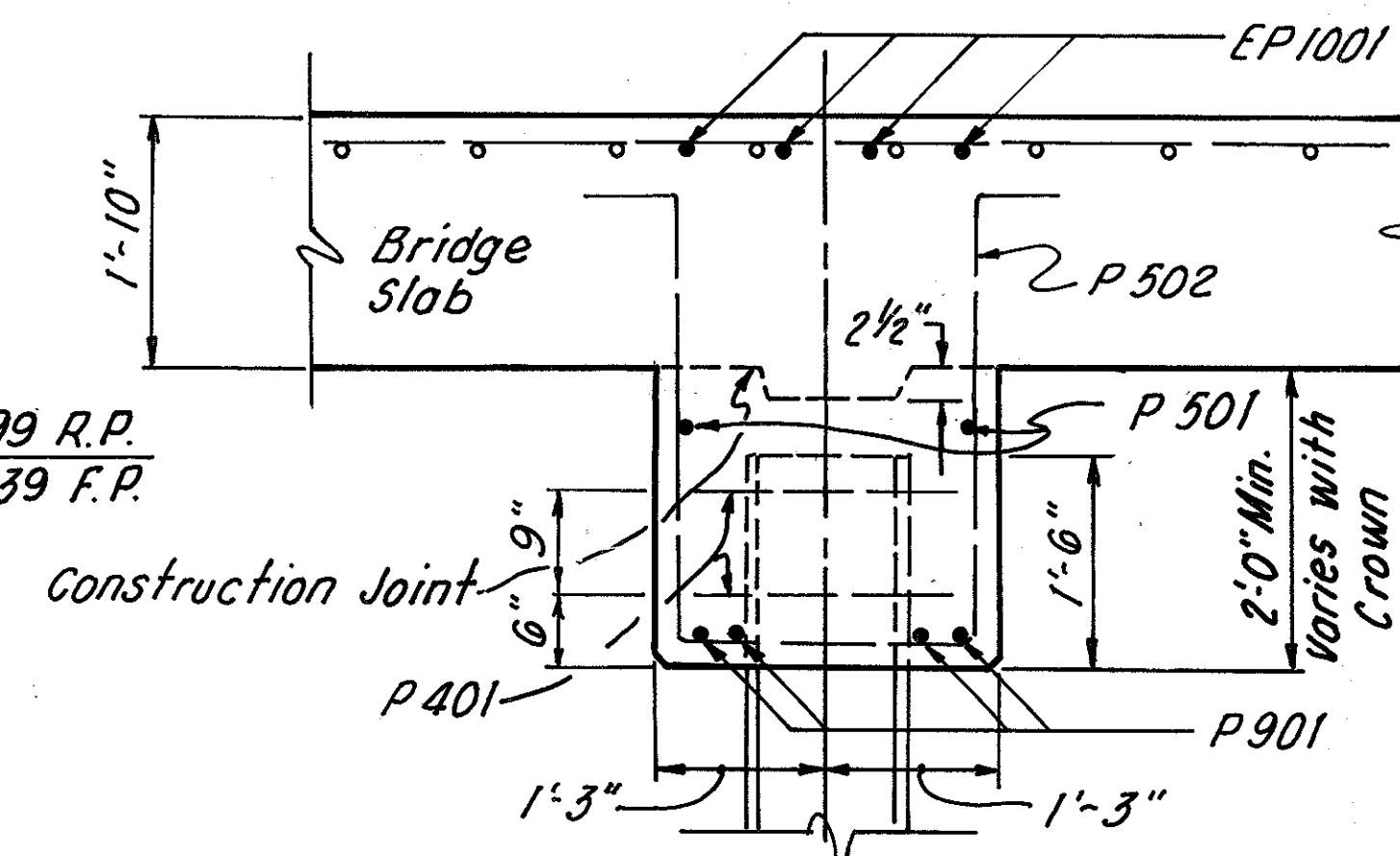
PLAN



PIER PILE ENCASEMENT



ELEVATION



SECTION A-A

- | | | | | | | |
|------|------|------|------|------|------|--------------------------|
| (12) | (11) | (10) | (9) | (8) | (7) | Pile Number Rear Pier |
| (18) | (17) | (16) | (15) | (14) | (13) | Pile Number Forward Pier |

CLYDE E. WILLIAMS & ASSOC., LTD. 5/6
130 E. WILSON BRIDGE RD. WORTHINGTON, OHIO

PIER DETAILS
BRIDGE NO. LAW-217-13.82
OVER
INDIAN GUYAN CREEK

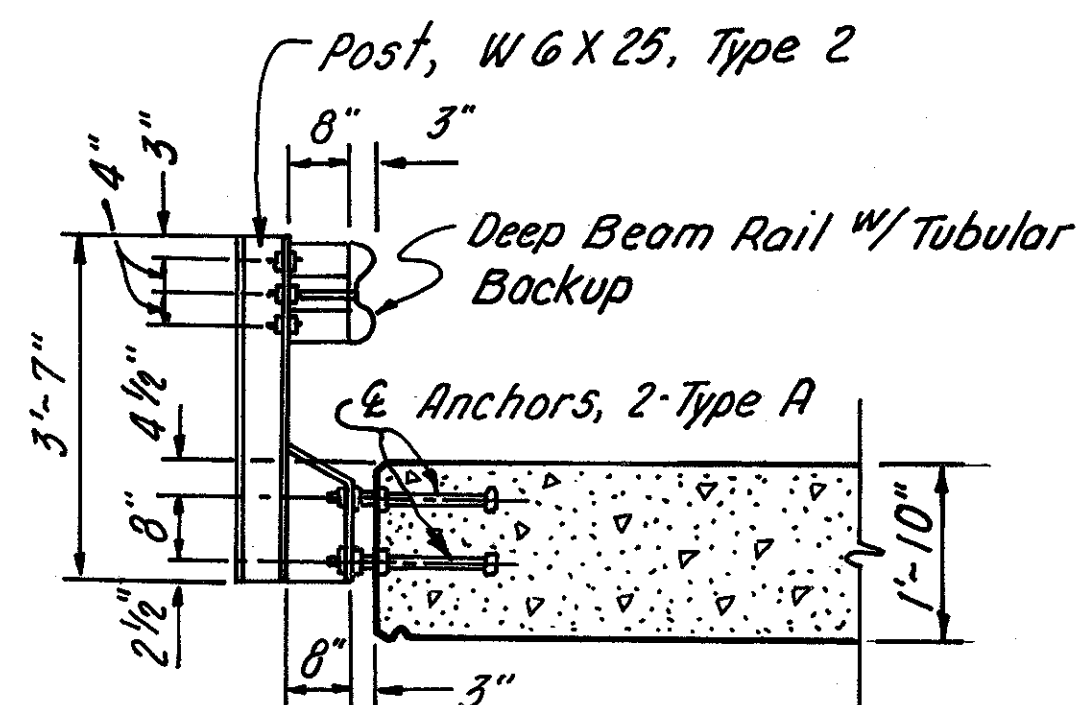
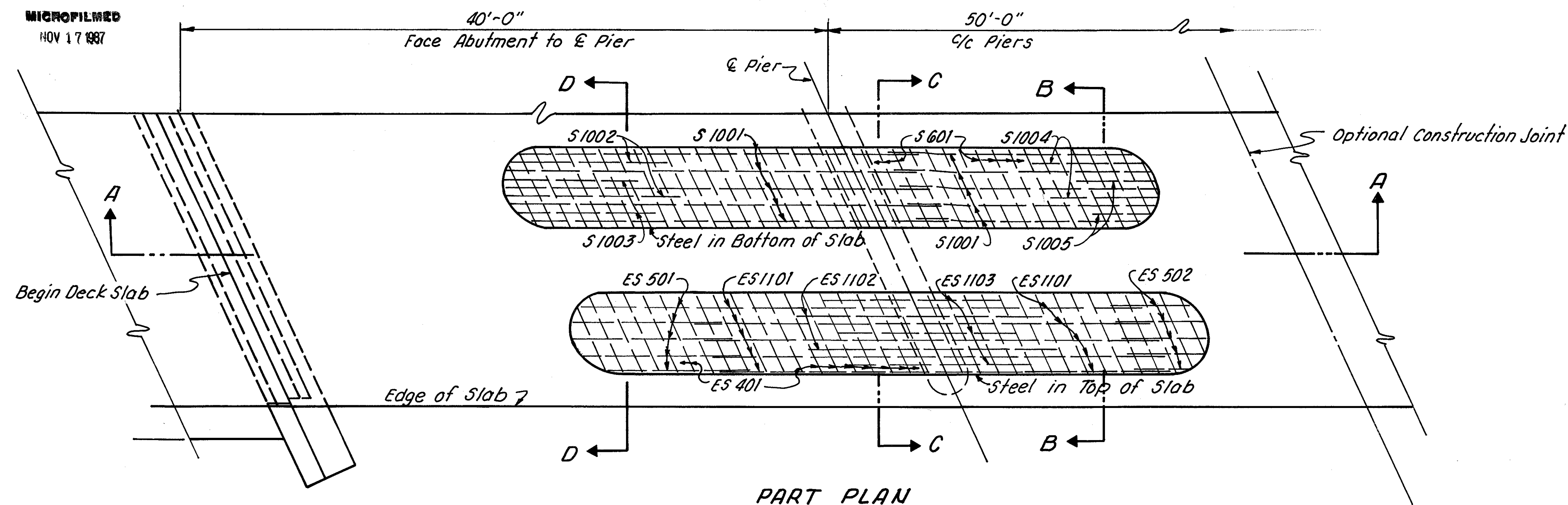
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED - DATE	REVISED
R.E.N.	Q.F.C.	J.D.	A.A.H.		

MICROFILMED
NOV 17 1987

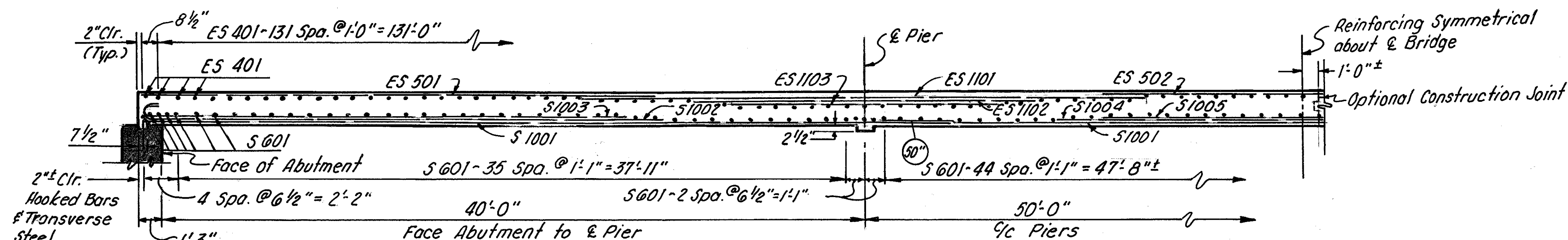
FHWA REGION	STATE	PROJECT
5	OHIO	

29
35

LAWRENCE COUNTY
LAW-217-13.75



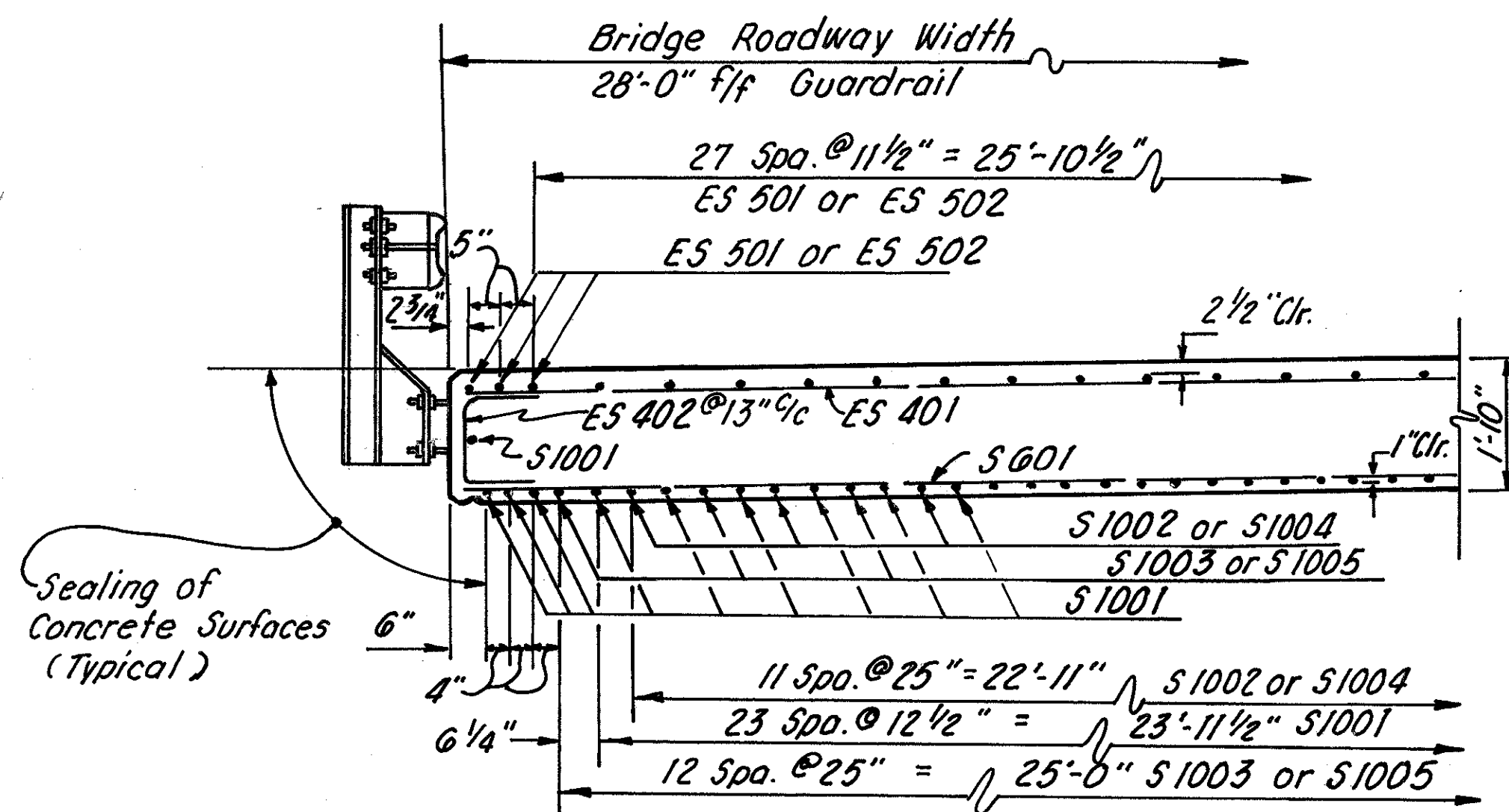
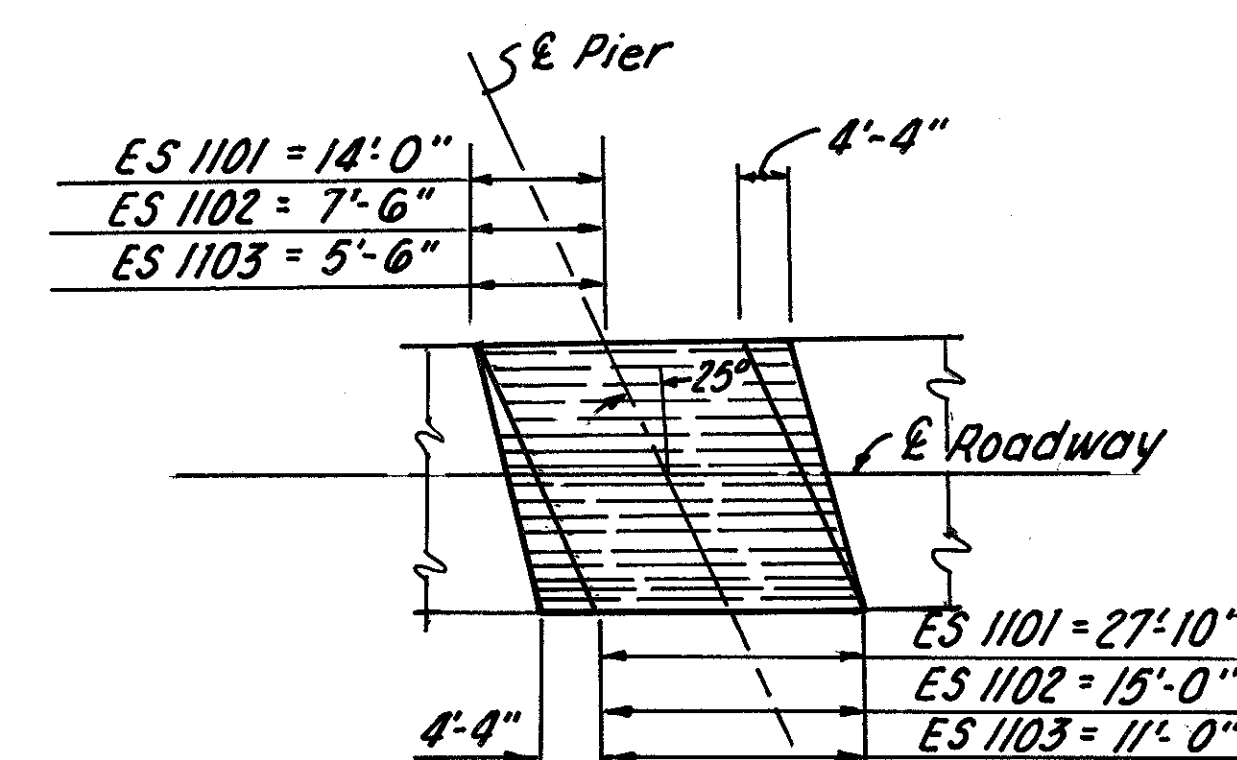
NOTE: For Additional Guardrail Details Refer to O.D.O.T. Standard Drawings GR-1 and DBR-2-73. Use Bridge Terminal Assembly Type B, Standard Drawing GR-3.



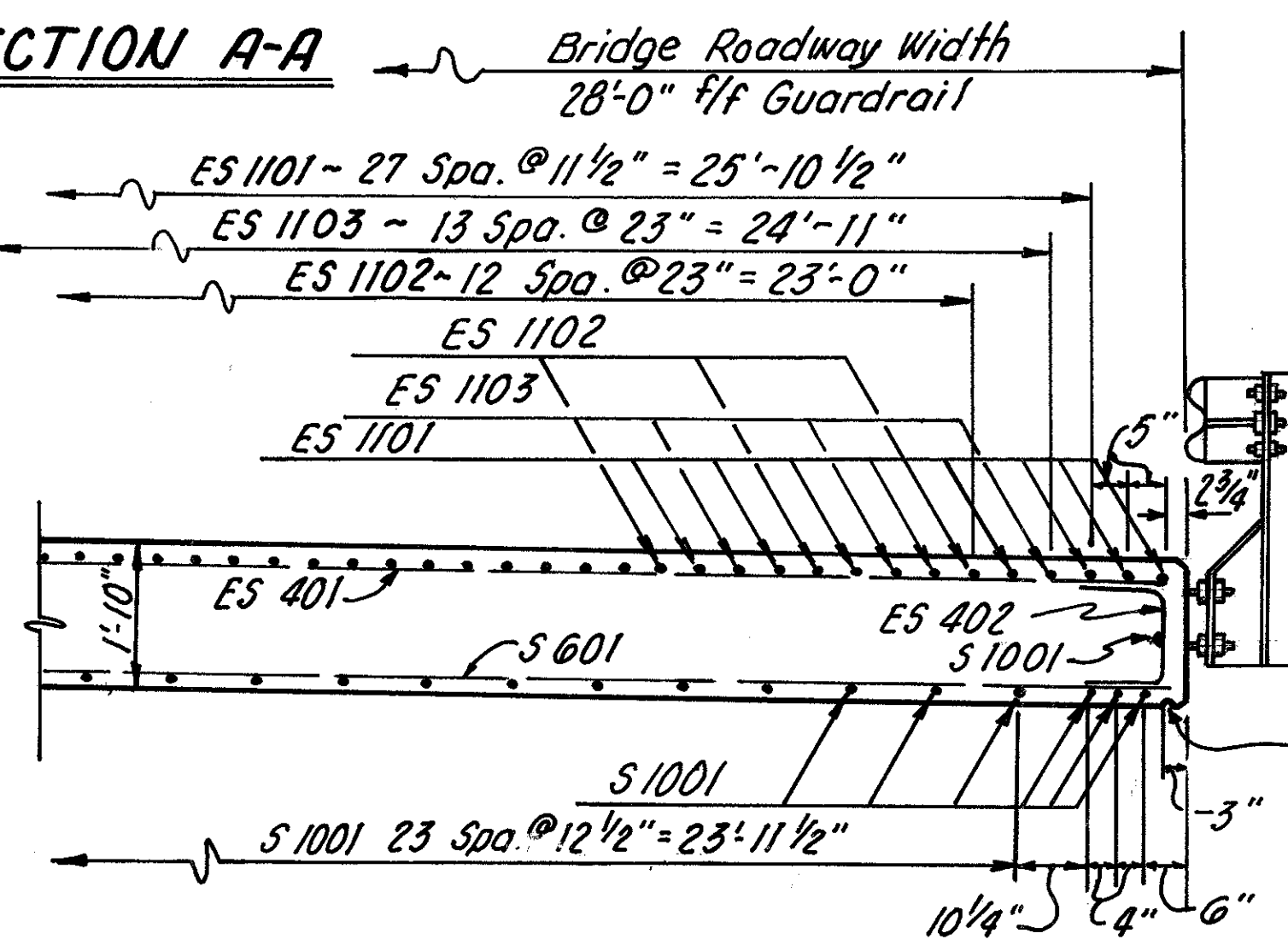
SECTION A-A

Bridge Roadway Width
28'-0" f/f Guardrail

~ LEGEND ~
(50") ~ Indicates Min. Reinforcing Steel Lap.



SECTION B-B AND D-D



SECTION C-C

CLYDE E. WILLIAMS & ASSOC., LTD. 6/6
130 E. WILSON BRIDGE RD. WORTHINGTON, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. LAW-217-13.82
OVER
INDIAN GUYAN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED - DATE	REVISED
R.E.N.	D.F.C.	J.D.	A.A.H.		

SEEDING
END 50
WIDTH 105

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

30
35

LAWRENCE COUNTY
LAW-217-13.75

END AREA		VOLUME	
CUT	FILL	CUT	FILL

Note: Earthwork quantities
carried on Roadway Cross-
Sections.

99+75
606.05

99+50
606.12

99+00
606.75

98+50
606.56

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

CHANNEL X-SECTIONS STA. 98+50 TO STA. 99+75

SEEDING
END SQ.
WIDTH YDS.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

31
35

LAWRENCE COUNTY
LAW-217-13.75

Note: Earthwork quantities
carried on Roadway Cross-
Sections.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

Forward Abutment

101+00
606.21

100+50
606.07

Forward Abutment

Forward Pier

Rear Pier

100+25
605.89

Rear Abutment

Rear Pier

100+00
605.82

140

120

100

80

60

40

20

0

20

40

60

80

100

CHANNEL X-SECTIONS STA. 100+00 TO STA. 101+00

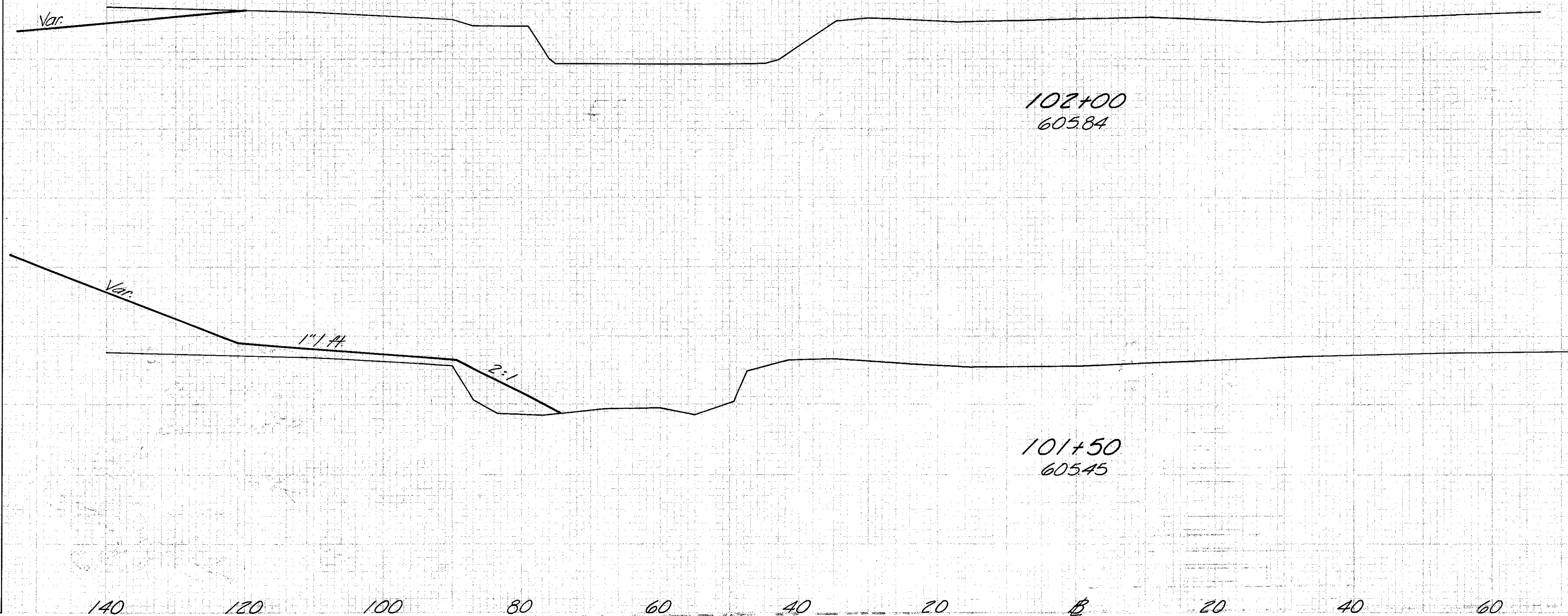
SEEDING
END 50
WIDTH 105

32
35

LAWRENCE COUNTY
LAW-217-13.75

CUT FILL CUT FILL

Note: Earthwork quantities
carried on Roadway Cross-
Sections.



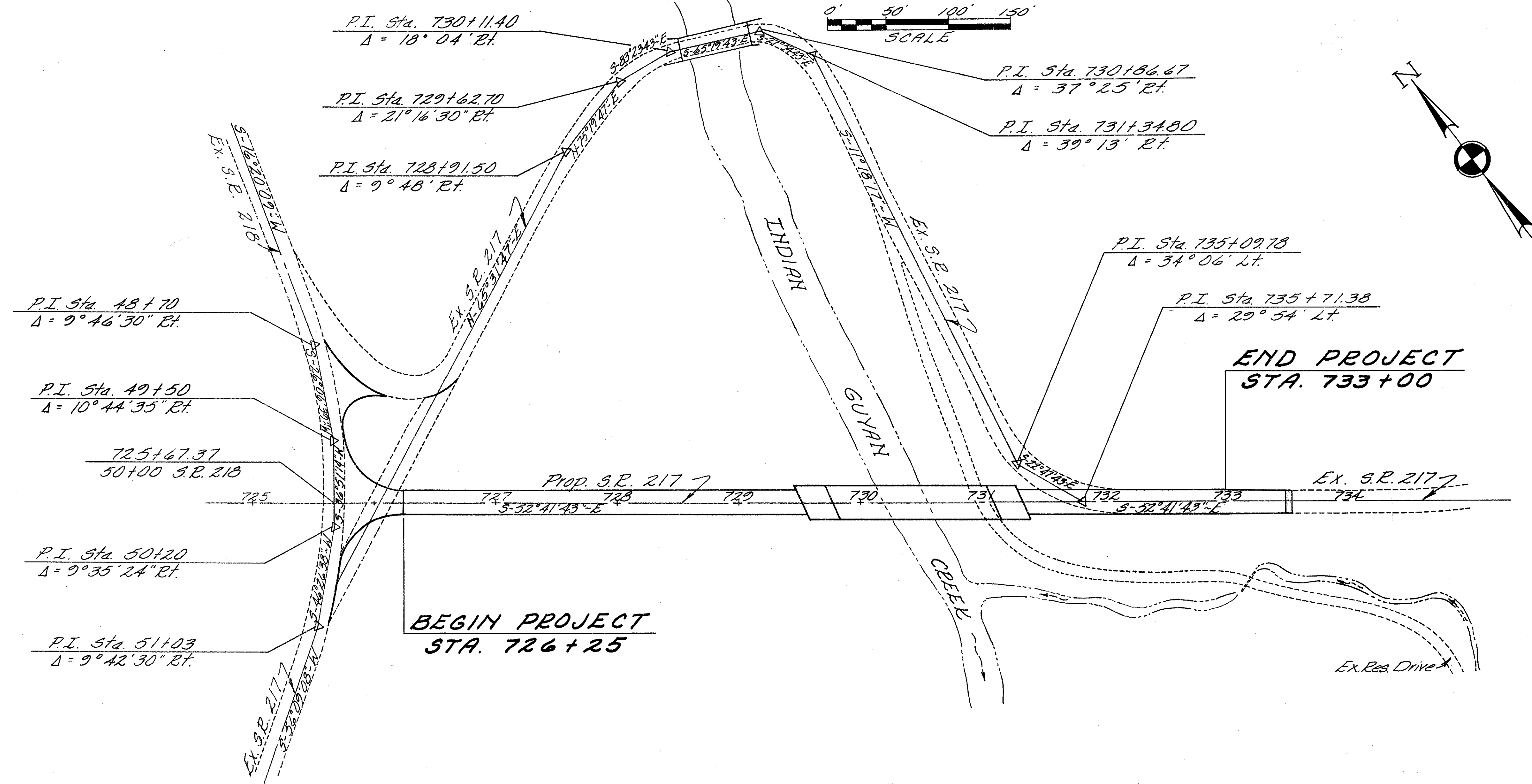
CHANNEL X-SECTIONS STA. 101+50 TO STA. 102+00

LOCATION PLAN

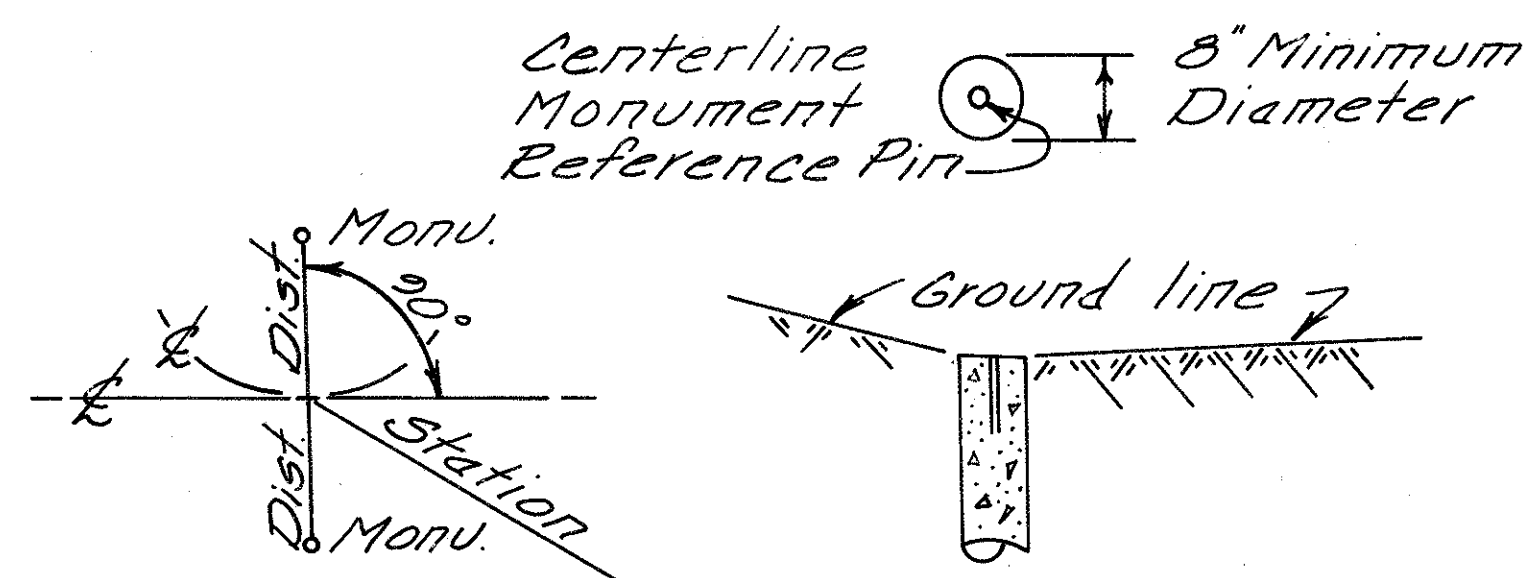
STATE OF OHIO DEPARTMENT OF TRANSPORTATION
LAW - 217 - 13.75
SECTION 35, T. 2, R. 15
LOTS 1306, 1307 & 1308 O.C.P.
ROME TOWNSHIP
LAWRENCE COUNTY

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

1/3



DETAIL FOR SETTING MONUMENTS



REFERENCE MONUMENTS TO BE SET AFTER CONSTRUCTION

Station	Dist. from Lt.	Dist. from Rt.	Station	Dist. from Lt.	Dist. from Rt.
728+00	15'	15'			
733+00	15'	17'			

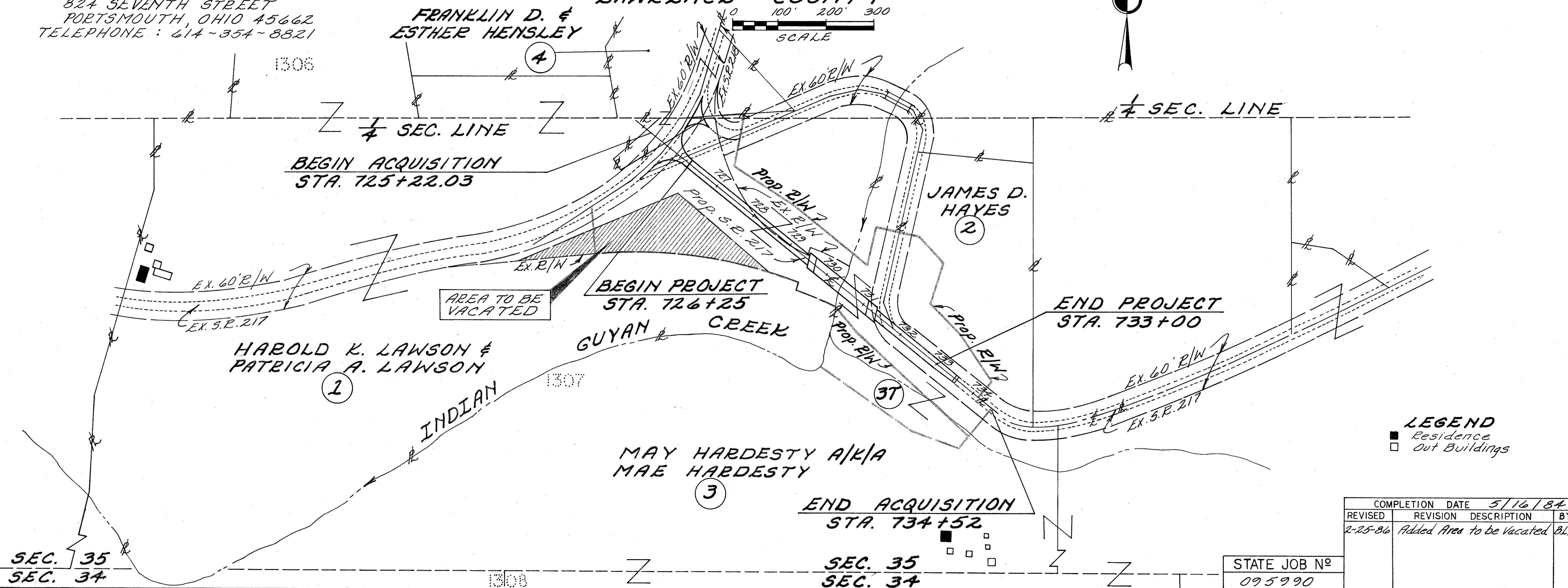
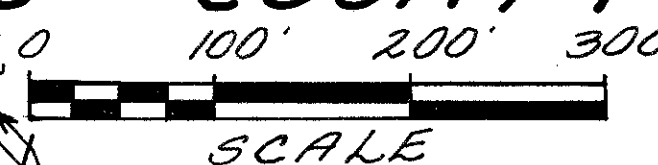
Recorded in the Lawrence County Record of Plats; Book 3 Page 46
Date 6/5/84

I hereby certify that this plat is a true delineation of a survey made by the Ohio Department of Transportation
Date 5/25/84
Robert D. Brown P.S. 5629

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

BUCKEYE RURAL ELECTRIC COOPERATIVE, INC.
143 THIRD AVENUE
GALLIPOLIS, OHIO 45631
TELEPHONE : 614-446-1532
GENERAL TELEPHONE COMPANY of OHIO
824 SEVENTH STREET
PORTSMOUTH, OHIO 45662
TELEPHONE : 614-354-8821

STATE of OHIO DEPARTMENT of TRANSPORTATION
LAW - 217 - 13.75
SECTION 35, T. 2, R. 15
LOTS 1306, 1307 & 1308 O.C.P.
ROME TOWNSHIP
LAWRENCE COUNTY



LEGEND
 ■ Residence
 □ Out Buildings

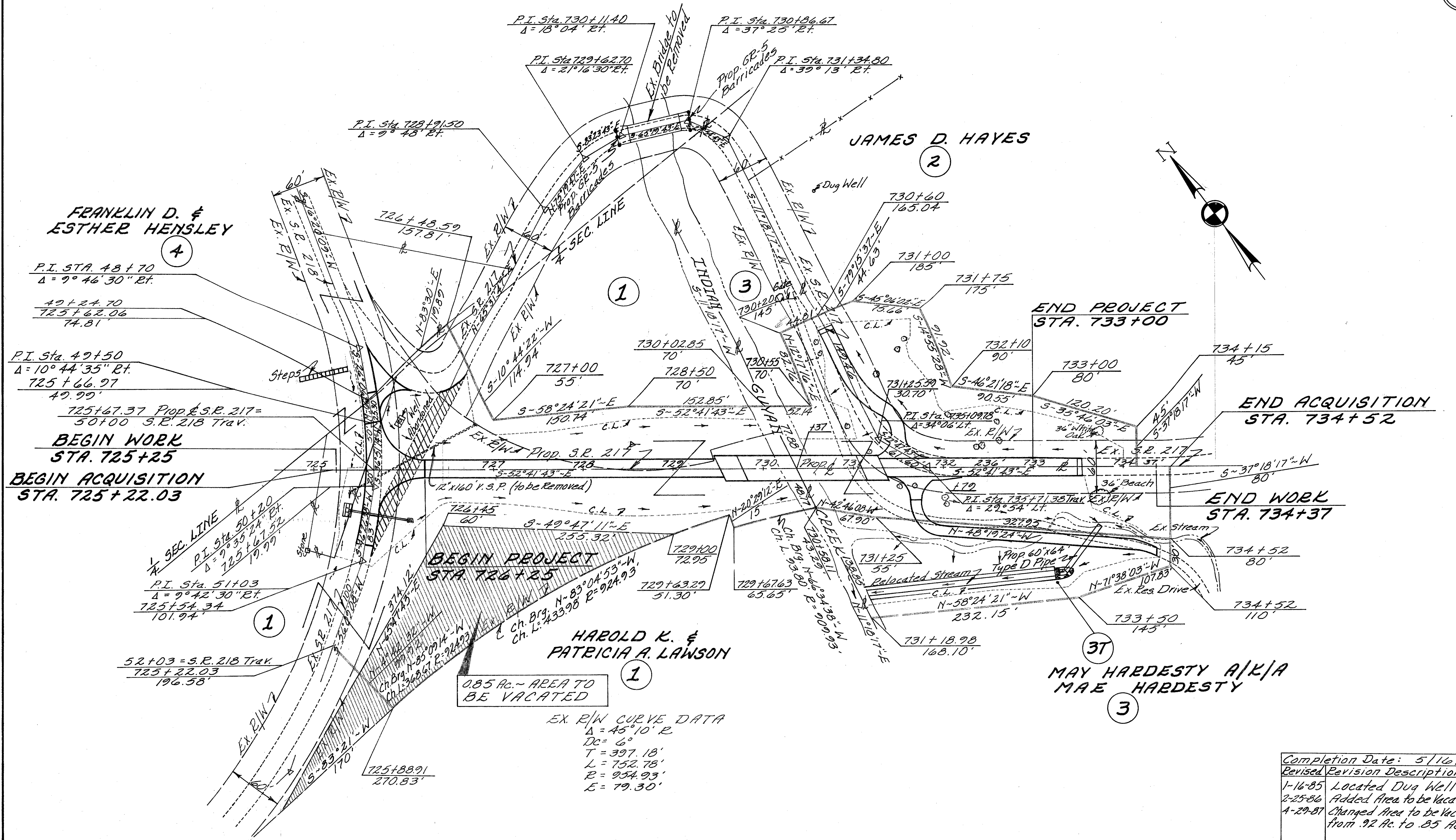
COMPLETION DATE 5/16/84			
REVISED	REVISION	DESCRIPTION	BY
2-25-86		Added Area to be Vacated	B.L.H.

TOTAL N° STRUCTURE PARCELS 0[illegible]

SECTION 35, T. 2, R. 15
 LOTS 1306, 1307 & 1308 O.C.P.
 ROME TOWNSHIP

FED. RD. Division	STATE	PROJECT
5	OHIO	

R/W PLAN
 LAW-217-13.75
 LAWRENCE COUNTY



EX. R/W CURVE DATA
 Δ = 45°10' E
 Dc = 6'
 T = 397.18'
 L = 752.78'
 R = 954.93'
 E = 79.30'

Completion Date: 5/16/84		
Revised	Revision Description	By
1-16-85	Located Dug Well	B.L.H.
2-25-86	Added Area to be Vacated	B.L.H.
4-29-87	Changed Area to be Vacated from .92 Ac. to .85 Ac.	B.L.H.

STA - 725+00 TO STA - 735+00

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED PORTION OF THE ALLEGHENY PLATEAU REGION, ON A NARROW FLOODPLAIN OF AND OVER INDIAN GUYAN CREEK, IN AN AREA WHERE RELATIVELY SHALLOW TO DEEP VALLEY AND ALLUVIAL DEPOSITS OVERLIE SHALE AND SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF FOUR DRIVE SAMPLE BORINGS AND ONE DRIVE SAMPLE-CORE BORING MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON APRIL 5 AND 6, AND SEPTEMBER 7, 1983 AND FIVE EARTH AUGER BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED EARTH AUGER MOUNTED ON A TRUCK, PERFORMED ON APRIL 20, 1983.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS DISCLOSED THAT INTERVALS OF EXTREMELY LOOSE TO EXTREMELY DENSE UNSTRATIFIED BASIC SILTS, CLAYS AND SAND MODIFIED WITH PEAT, GRAVEL AND VARYING AMOUNTS OF EACH OTHER THAT VERY GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH OVERLIE SLOPING BEDROCK SURFACE ENCOUNTERED AS SHOWN IN THE FOLLOWING TABLE:

BORING NO.	ELEMENT	APPROX. TOP OF ROCK ELEV.
B-1	REAR ABUTMENT	560.5'
A-1	REAR PIER	-
A-2	REAR PIER	-
A-3	FORWARD PIER	594.7'
A-4	FORWARD PIER	596.2'
A-5	FORWARD PIER	594.7'
B-5	FORWARD PIER	598.7'
B-6	FORWARD ABUTMENT	611.5'
B-7	FORWARD ABUTMENT	609.9'
B-8	FORWARD ABUTMENT	606.8'

BORING B-1 WAS TERMINATED AT 50.0-FOOT DEPTH, ELEVATION 555.5 FEET, AFTER PENETRATING 5.0 FEET BELOW BEDROCK SURFACE. BORING B-5 WAS TERMINATED AT 21.0-FOOT DEPTH, ELEVATION 584.2 FEET, AFTER PENETRATING 14.5 FEET BELOW BEDROCK SURFACE. BORING B-6 WAS TERMINATED AT 5.4-FOOT DEPTH, ELEVATION 608.6 FEET, AFTER PENETRATING 2.9 FEET BELOW BEDROCK SURFACE. BORING B-7 WAS TERMINATED AT 8.4-FOOT DEPTH, ELEVATION 604.0 FEET, AFTER PENETRATING 5.9 FEET BELOW BEDROCK SURFACE. BORING B-8 WAS TERMINATED AT 8.1-FOOT DEPTH, ELEVATION 603.7 FEET, AFTER PENETRATING 3.1 FEET BELOW BEDROCK SURFACE.

BORING A-3, A-4 AND A-5 WERE TERMINATED UPON ENCOUNTER WITH BEDROCK SURFACE (SEE TABLE FOR ELEVATIONS). BORINGS A-1 AND A-2 DID NOT ENCOUNTER BEDROCK SURFACE AND WERE TERMINATED AT 30.0-FOOT DEPTH, ELEVATIONS 576.5 AND 576.3 FEET, RESPECTIVELY.

FREE WATER WAS OBSERVED AND MEASURED IN BORING B-1 AT 10.0-FOOT DEPTH, ELEVATION 595.5 FEET, IN BORING A-3 AT 6.0-FOOT DEPTH, ELEVATION 600.2 FEET, IN BORING A-4 AT 4.0-FOOT DEPTH, ELEVATION 601.2 FEET AND IN BORING A-5 AT 6.0-FOOT DEPTH, ELEVATION 599.2 FEET. NO FREE WATER OBSERVATIONS WERE MADE IN BORINGS A-1, A-2, B-5, B-6, B-7 AND B-8, DURING OR AT THE CONCLUSION OF DRILLING OPERATIONS.

- 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.
- Capped Pile
- Footing
- Footing on Pile
- Top of Rock

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Fire Clay

LEGEND

- 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.
Z = Number of Blows for Third 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.

SYMBOLS OF ROCK TYPES

- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

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.

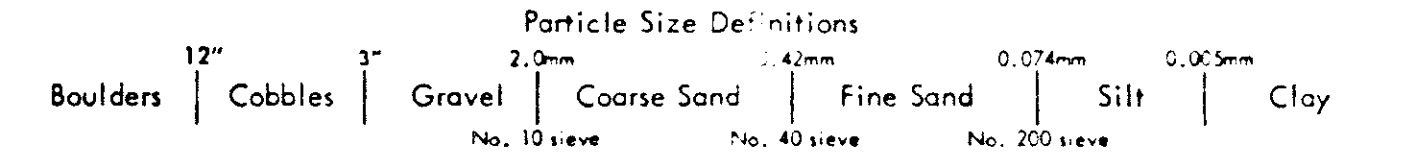
Drive Sample Borings - Drive-Press Sample Borings

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 18 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 three 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, if performed, 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.



LOG OF BORING

Date Started 9-7-83 Date Completed 9-7-83 Boring No. B-6
 Sampler Type SS Dia. 1 3/8" Casing Length Station & Offset 731+00 15' LT.
 Water Elev. DRY Surface Elev. 614.0'

Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Description	Sample No.	Physical Characteristics	SHTL Class.
614.0	0			GRAVEL AND BROKEN LIMESTONE			
613.8	2			BROWN SAND AND GRAVEL			
611.5	4	22/41/60		BROWN WEATHERED CLAY SHALE			
610.0	6	55(0.4')		BROWN BROKEN CLAY SHALE			
609.0							
608.6				BOTTOM OF BORING			

LOG OF BORING

Date Started 9-7-83 Date Completed 9-7-83 Boring No. B-7
 Sampler Type SS Dia. 1 3/8" Casing Length Station & Offset 731+00 CL
 Water Elev. DRY Surface Elev. 612.4'

Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Description	Sample No.	Physical Characteristics	SHTL Class.
612.4	0			GRAVEL AND BROKEN LIMESTONE			
612.2	2			BROWN SAND AND GRAVEL			
609.9	4	19/53/50		BROWN WEATHERED CLAY SHALE			
608.8	6	28/18/32		BROWN WEATHERED CLAY SHALE AND CLAY SEAMS			
607.4							
605.9	8	11/60*		BROWN BROKEN CLAY SHALE			
604.9							
604.0				BOTTOM OF BORING			

LOG OF BORING

Date Started 9-7-83 Date Completed 9-7-83 Boring No. B-8
 Sampler Type SS Dia. 1 3/8" Casing Length Station & Offset 731+15 15' RT.
 Water Elev. DRY Surface Elev. 611.8'

Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Description	Sample No.	Physical Characteristics	SHTL Class.
611.8	0			GRAVEL AND BROKEN LIMESTONE			
611.6	2			BROWN SANDY SILTY CLAY WITH SHALE FRAGMENTS			
609.3	4	10/25/70		BROWN WEATHERED CLAY SHALE			
606.8	6	19/75		BROWN WEATHERED CLAY SHALE			
602.8	8	50/50*		BROWN BROKEN CLAY SHALE			
604.8							
603.7				BOTTOM OF BORING			

NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

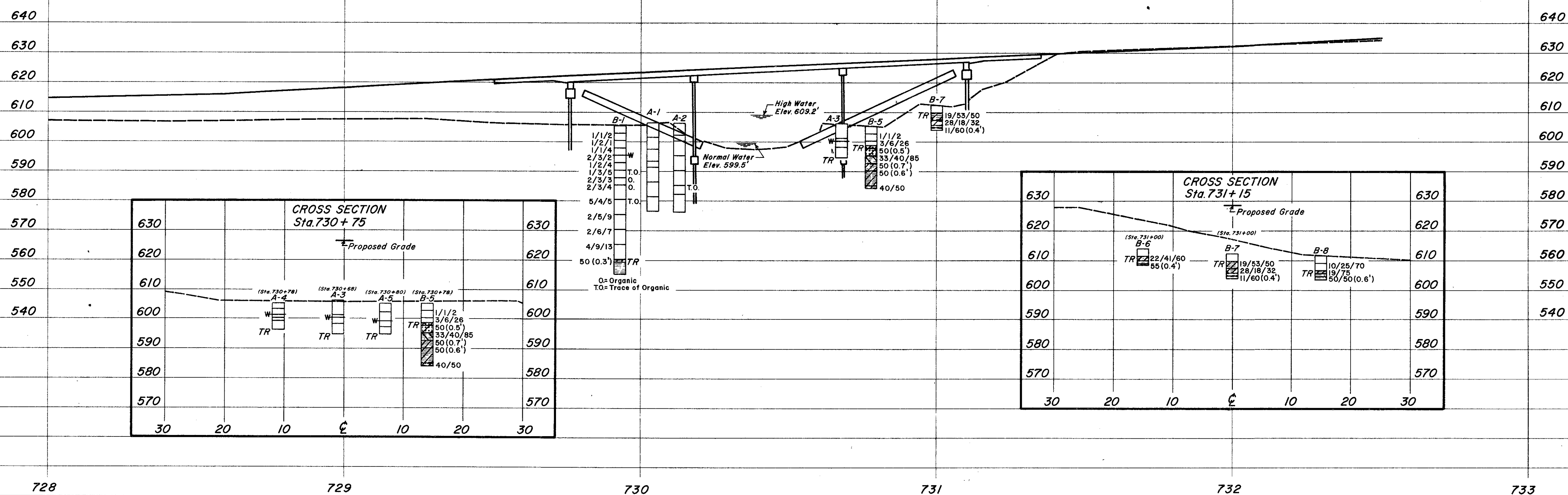
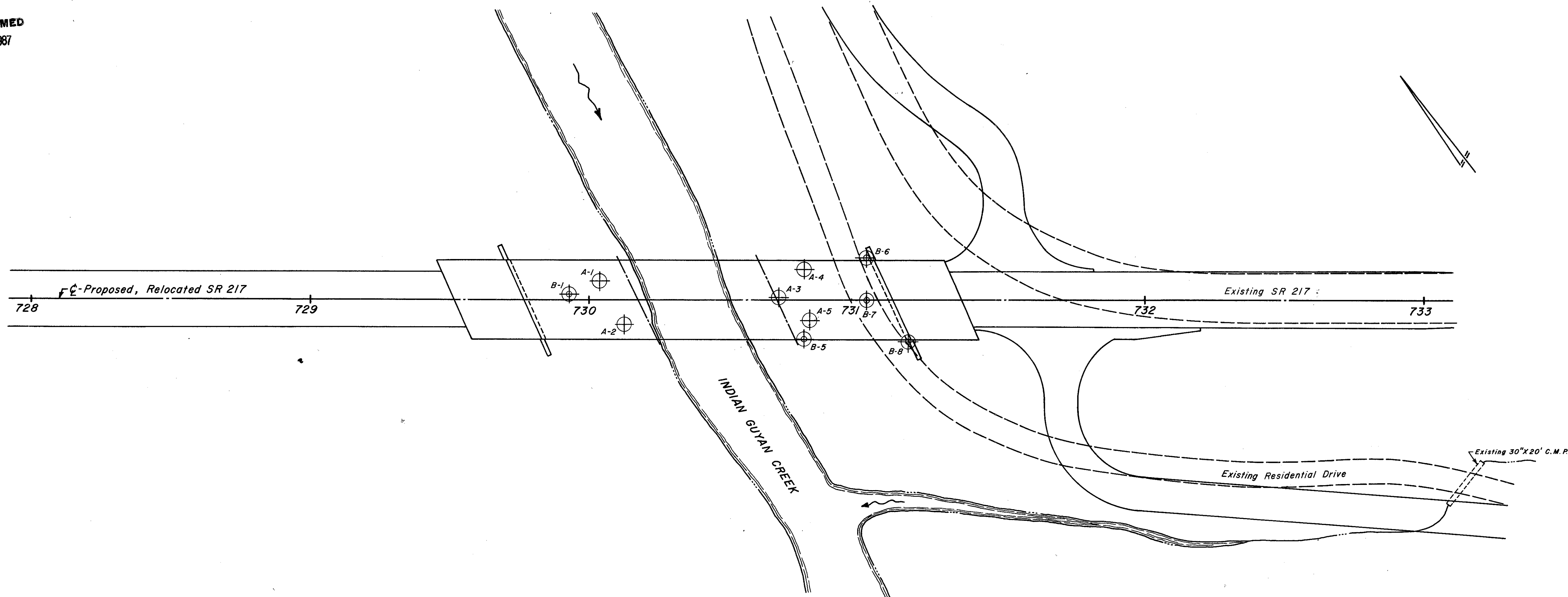
Revised 9/16/83

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 DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LAW-217-1382
OVER INDIAN GUYAN CREEK
SEC. LAW-217-13.75

CHECKED BY L. N. L. REVIEWED BY R. D. R. DATE 6/23/83



Revised 9/16/83

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
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OVER INDIAN GUYAN CREEK
SEC. LAW-217-13.75

PLAN AND PROFILE

DRAWN BY A. F.	CHECKED BY L. N. L.	REVIEWED BY R. D. R.	DATE
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SCALE: 1" = 20'

MICROFILMED
NOV 17 1987

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4-20-83 Sampler Type EARTH AUGER Water Elev. Immediate 600.2'
Date Completed 4-20-83 After Hours

Boring No. A-1 Station & Offset 15+00 7' LT. Surface Elev. 606.5'

Elev.	Depth	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
606.5	0	SOD											
606.2	2												
601.5	4	BROWN SANDY SILT, LOAMY	19	32735	0	1	26	50	23	26	6	25	A-4b
	6												
597.5	8	BROWN SANDY SILT	20	32736	0	1	40	34	25	NP	NP	27	A-4a
	10												
593.5	12	GRAY WITH BROWN SILTY SAND	21	32737	4	27	48	9	12	NP	NP	24	A-3a
591.5	14	BLACK DECAYED WOOD	22	32738									
	16												
586.5	18	BLACK WITH BROWN SILT, PEATY	23	32739	0	2	10	50	38	NP	NP	29	A-4b
	20												
581.5	22	GRAY WITH BROWN CLAYEY SILT, PEATY	24	32740	0	5	12	49	34	30	7	38	A-4a
	24												
	26												
	28	GRAY SILTY SAND	25	32741	0	24	40	16	20	31	9	15	A-4a
576.5	30												

BOTTOM OF BORING

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4-20-83 Sampler Type EARTH AUGER Water Elev. Immediate 606.3'
Date Completed 4-20-83 After Hours

Boring No. A-2 Station & Offset 15+09 9' RT. Surface Elev. 606.3'

Elev.	Depth	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
606.3	0	SOD											
606.0	2												
602.3	4	BROWN SANDY SILT	12	32728	0	1	31	41	27	27	6	25	A-4a
600.3	6	BROWN SANDY SILT	13	32729	0	0	38	39	23	NP	NP	29	A-4a
	8												
595.3	10	BROWN WITH GRAY SILTY GRAVELLY SAND	14	32730	36	30	20	7	7	NP	NP	25	A-1-b
	12												
590.3	14	GRAY WITH BROWN SILT AND CLAY, PEATY	15	32731	0	1	3	52	44	33	11	46	A-6a
	16												
585.3	18	GRAY WITH BROWN SANDY SILT, PEATY	16	32732	2	11	19	42	26	32	10	30	A-4a
	20												
582.3	22	GRAY WITH BROWN SANDY SILT, TRACE OF ORGANIC	17	32733	0	11	23	38	28	33	9	26	A-4a
	24												
	26												
	28	GRAY SANDY SILT	18	32734	10	4	18	30	38	27	9	15	A-4a
576.3	30												

BOTTOM OF BORING

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4-20-83 Sampler Type EARTH AUGER Water Elev. Immediate 600.2'
Date Completed 4-20-83 After Hours

Boring No. A-3 Station & Offset 15+65 1' LT. Surface Elev. 606.2'

Elev.	Depth	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
606.2	0	SOD											
605.9	2												
601.2	4	BROWN SANDY SILT	5	32721	0	2	52	27	19	NP	NP	21	A-4a
	6												
598.2	8	BROWN SILTY SAND	6	32722	0	8	64	15	13	NP	NP	23	A-3a
	10												
594.7	12	BROWN SILT AND CLAY	7	32723	0	6	15	33	46	34	11	12	A-6a

BOTTOM OF BORING - REFUSAL - TOP OF ROCK

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 4-20-83 Sampler Type EARTH AUGER Water Elev. Immediate 601.2'
Date Completed 4-20-83 After Hours

Boring No. A-4 Station & Offset 15+74 11' LT. Surface Elev. 605.2'

Elev.	Depth	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
605.2	0	SOD											
604.7	2	BROWN SILT	1	32717	0	1	12	51	36	28	5	29	A-4b
600.2	4	BROWN SANDY SILT	2	32718	0	2	25	48	25	29	2	34	A-4a
599.2	6	BROWN WITH GRAY SANDY SILT	3	32719	5	7	42	27	19	NP	NP	29	A-4a
	8												
596.2	10	BROWN WITH GRAY SANDY SILT	4	32720	10	5	7	29	49	31	8	10	A-4a

BOTTOM OF BORING - REFUSAL - TOP OF ROCK

LOG OF BORING

Date Started 4-6-83 Sampler Type SS Dia 1 3/8" Water Elev. 595.5'

Date Completed 4-6-83 Casing: Length Dia. Station & Offset 14+89 2' LT. (REAR ABUTMENT) Surface Elev. 605.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
605.5	0														
603.0	2														
600.5	4	1 1/2			BROWN SANDY SILT	8	0	0	25	45	30	26	5	28	A-4a
	6														
598.0	8	1 1/2			BROWN SANDY SILT	9	0	1	32	40	27	26	4	26	A-4a
	10														
595.5	12	2 3/2			GRAY SANDY CLAY	11	7	21	29	20	23	33	11	40	A-6a
593.0	14	1 1/2			BROWN AND GRAY SILTY SAND	12	0	14	26	31	29	28	8	39	A-4a
590.5	16	1 1/3			GRAY WITH BROWN SILT AND CLAY, TRACE OF ORGANIC	13	0	1	6	46	47	50	14	18	A-7-5
588.0	18	2 3/3			GRAY WITH BROWN ORGANIC SILT AND CLAY	14	0	0	4	44	52	49	14	42	A-7-5
585.5	20	2 3/4			BROWN AND GRAY ORGANIC SILT AND CLAY	15	0	0	4	48	48	47	13	51	A-7-5
	22														
580.5	24														
	26	5 4/5			BROWN AND GRAY SILT AND CLAY, TRACE OF ORGANIC	16	0	0	4	50	46	47	12	49	A-7-5
	28														
575.5	30	2 5/9			BROWN SILTY GRAVELLY SAND	17	0	17	38	23	22	18	3	16	A-4a
	32														
570.5	34	2 6/7			BROWN SANDY SILT	18	12	19	32	20	17	18	3	15	A-4a
	36														
	38														
565.5	40														
	42	4 9/13			REDDISH-BROWN GRAVELLY CLAY	19	22	3	6	20	49	35	14	22	A-6a
	44														
560.5	46	50(0.3')			TOP OF ROCK										
560.2	48				GRAY WEATHERED CLAY SHALE	20									VISUAL
	50		4.3	0.4	CLAY SHALE, DARK-GRAY AND GRAY, FIRM, CARBONACEOUS-IN-PART, FISSILE, BROKEN. CORE LOSS 9%.										

BOTTOM OF BORING

LOG OF BORING

Date Started 4-5-83 Sampler Type SS Dia 1 3/8" Water Elev. 605.2'

Date Completed 4-5-83 Casing: Length Dia. Station & Offset 15+74 14' RT. (FORWARD ABUTMENT) Surface Elev. 605.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
605.2	0														
604.9	2				SOD AND TOPSOIL										
602.7	4	1 1/2			BROWN SANDY SILT	1	0	1	34	38	27	24	5	33	A-4a
600.2	6														
598.7	8	3 6/26			BROWN AND GRAY SILTY GRAVELLY SAND	2	30	14	32	12	12	NP	NP	18	A-2-4
597.7	10	50(0.5')			BROWN WEATHERED SANDSTONE	3	10	9	12	28	41	38	14	11	VISUAL
	12				TOP OF ROCK										
595.2	14	33/40/85			GRAY FIRE CLAY	4	9	6	7	31	47	38	15	12	VISUAL
592.7	16	50(0.7')			REDDISH-BROWN AND BROWN WEATHERED CLAY SHALE	5	29	9	13	27	22	30	11	7	VISUAL
590.2	18	50(0.6')			GRAY WEATHERED CLAY SHALE	6	26	0	1	32	41	33	11	9	VISUAL
	20														
585.2	22	40/50			GRAY WEATHERED CLAY SHALE	7	12	4	6	40	38	34	13	9	VISUAL
584.2	24														

BOTTOM OF BORING

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 4-20-83 Sampler Type EARTH AUGER Water Elev. Immediate 599.2'
Date Completed 4-20-83 After Hours

Boring No. A-5 Station & Offset 15+76 7' RT. Surface Elev. 605.2'

Elev.	Depth	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
605.2	0	SOD											
604.9	2	BROWN SILTY SAND	8	32724	0	3	59	23	15	NP	NP	18	A-4a
602.2	4	BROWN SANDY SILT	9	32725	0	1	21	49	29	26	7	33	A-4a
599.2	6												
597.2	8	BROWN SILTY SAND	10	32726	0	18	55	14	13	NP	NP	25	A-3a
	10												
594.7	12	BROWN AND GRAY SILT AND CLAY	11	32727	0	3	5	43	49	35	13	14	A-6a

BOTTOM OF BORING - REFUSAL - TOP OF ROCK

Revised 9/16/83

OHIO DEPARTMENT OF TRANSPORTATION
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1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. LAW-217-1382
OVER INDIAN GUYAN CREEK
SEC. LAW-217-13.75

BORING DATA
TYPED BY S. M. G. CHECKED BY L. N. L. REVIEWED BY R. D. R. DATE 6/23/83

01-1
21-21-118-111