

MICROFILMED
SEP 10 1984

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
UNI-37-12.23
VILLAGE OF MAGNETIC SPRINGS

BRS-789(1)

BRS-789(1)
UNI-37-12.23

OHIO	1
FHWA REGION 5	19
FEDERAL PROJECT	

MICROFILMED
OCT 6 1988

UNION COUNTY

CONVENTIONAL SIGNS

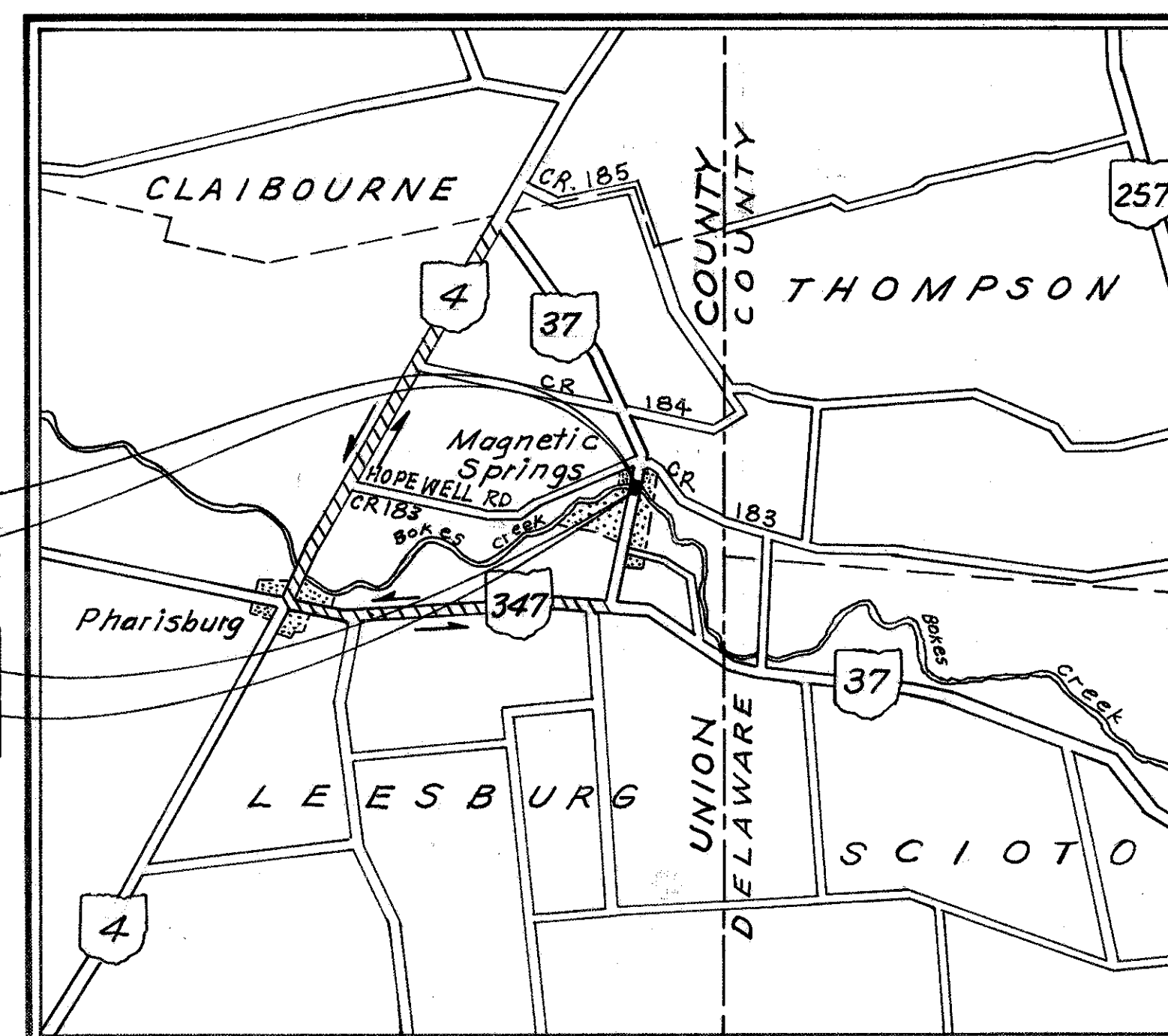
County Line	-----	Limited Access (only)	LA
Township Line	-----	Right of Way (only)	RW
Section Line	-----	Limited Access & Right of Way	LA & RW
Corporation Line	-----	Existing Right of Way	-----
Fence Line (existing)	-----	Property Line	----- (in existing fence)
Center Line	-----	Railroad	----- or -----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

INDEX OF SHEETS

Title Sheet	1
Typical Section & Designation	2
General Notes	3
General Summary	4
Erosion Control Detail and Calculations	5
Alignment Sheet	6
Cross Sections	7-8
Exaggerated Cross Sections	9
Transition Detail	10
Structure Over 20'	11-17
Right of Way Sheets	18-19

Begin Project
Sta. 645+96
S.L.M. 12.23

End Project
Sta. 648+50
S.L.M. 12.28



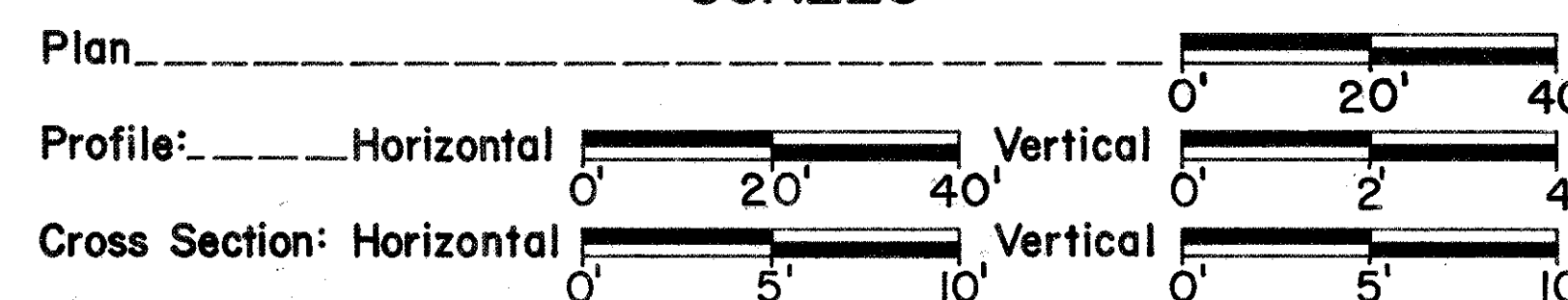
LOCATION MAP



LEGEND
[Symbol] Detour

Portion to be improved: [Symbol]
State & Federal Routes: [Symbol]
Other Roads: [Symbol]

SCALES



SUPPLEMENTAL SPECIFICATIONS	
1001	1-3-77

LINE DATA

Begin Project	Sta. 645+96	
End Project	Sta. 648+50	
	254	Lin. Ft. or 0.048 Mile
Begin Work	Sta. 645+00	
End Work	Sta. 648+75	
	375	Lin. Ft. or 0.071 Mile

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
BP-5	7-16-81	CB-3A	5-1-79
BP-7	12-6-76		
GR-1	2-5-82		
GR-2B	2-5-82	AS-1-72	6-30-72
GR-3	2-5-82	DBR-2-73	4-10-73
GR-4	2-5-82	PSBD-1-71	9-1-71
MC-1	6-13-69		
MC-3	6-1-73		
MC-4	7-26-76		
MC-11	8-1-78		

Plan Prepared By:
District 6
Location & Design

SEAL

1981 SPECIFICATIONS

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

I hereby approve these plans and declare that the making of this improvement will require the closing to traffic of the highway and that detours will be provided as indicated on the plans.

Approved: Albert Leistner
Date 8/13/81 District Deputy Director of Transportation

Approved: Robert B. Pfeiffer
Date 3-8-82 Engineer, Bureau of Bridges and Structural Design

Approved: Howard E. Nolan
Date 3-8-82 Chief Engineer, Planning and Design

Approved: David L. Weir
Date 3-8-82 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____

DIVISION ADMINISTRATOR

DATE

Project: UNI-37-12.23
Date of Letting: _____ 19____, Contract No. _____

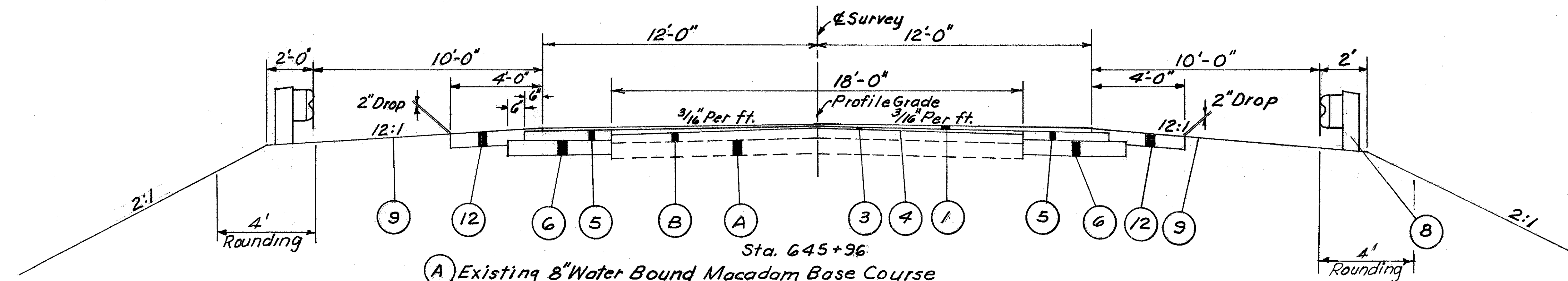
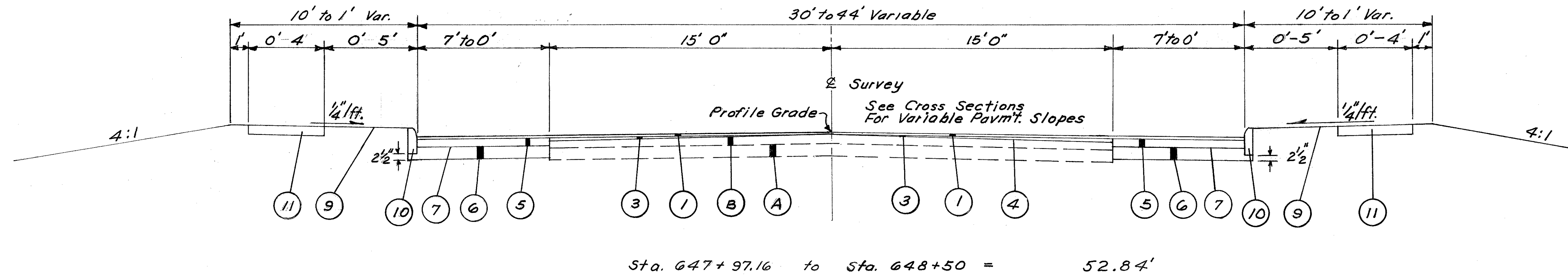
Design Designation
 Current ADT 1981 = 1587V.P.D.
 Design Year (2001) = 2778V.P.D.
 D.H.V. (15% of Design Year ADT) = 417V.P.H.
 D. (Directional Distribution) = 60% ~ 40%
 T. (Percent B+C Trucks) = 6%
 V. (Design Speed) = 45 M.P.H.

FHWA REGION	STATE	PROJECT
5	OHIO	

UNI-37-12.23

TYPICAL SECTION

TYPE 404



- (A) Existing 8" Water Bound Macadam Base Course
- (B) Existing 5" Bituminous Surface Course
- (1) Item 404 1 1/2" Asphalt Concrete Ac-20
- (3) Item 404 0" Min. Asphalt Concrete Ac-20
- (4) Item 407 Tack Coat
Applied at the Rate of 0.10 Gal./Sq. Yd. Using Cover Aggregate 703.06
- (5) Item 301 5" Bituminous Aggregate Base; , Ac-20, or Rt-11 or Rt-12
- (6) Item 310 8" Subbase, Type 1
- (7) Item 408 Bituminous Prime Coat
- (8) Item 606 Guard Rail, Type 5
- (9) Item 659 Seeding & Mulching (See General Notes)
- (10) Item 609 Std. Conc. Curb, Type 6
- (11) Item 608 4" Conc. Sidewalk
- (12) Item 304 8" Aggregate Base

GENERAL NOTES

UNI-37-1223

FED RD DIVISION	STATE	PROJECT	
5	OHIO		

3
19

TRAFFIC NOTE

THE CONTRACTOR SHALL, BEFORE WORK BEGINS ON THIS PROJECT, SUBMIT IN WRITING TO THE DIRECTOR FOR APPROVAL, A SCHEDULE OF OPERATIONS.

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON THE PROJECT BY USING THE EXISTING PAVEMENT OR THE PROPOSED PAVEMENT EXCEPT WHEN DETOUR IS IN USE.

THE DETOUR SHOWN ON SHEET NO. 1 SHALL NOT BE PLACED INTO EFFECT PRIOR TO JULY 15, 1982 UNLESS OTHERWISE APPROVED BY THE DIRECTOR.

THE LIMITS AND DURATION OF USE OF THE DETOUR SHALL BE HELD TO AN ABSOLUTE MINIMUM AND SHALL NOT EXCEED 3 MONTHS IN DURATION. IN ALL CASES THE DETOUR SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER, AFTER CONFERRING WITH THE DESIGN & PLANNING ENGINEER.

DETOUR LIMITATION

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT A PERIOD NOT TO EXCEED (A COMBINED TOTAL OF) 90 CONSECUTIVE CALENDAR DAYS, THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 1.

ALTERNATE METHODS

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.

MOBILIZATION, AS PER PLAN

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ. FT. OF FLOOR SPACE WHICH SHALL BE IN ACCORDANCE WITH 619.01 AND 619.02. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 624 MOBILIZATION, AS PER PLAN.

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 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.

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. ESTIMATED QUANTITIES OF MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

REMOVAL OF EXISTING PIPE

THE REMOVAL OF ALL EXISTING PIPE DRAINS WHICH WOULD NORMALLY BE REMOVED IN VARIOUS EXCAVATION ITEMS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED

IN THE PLANS.

REMOVAL OF TREES AND STUMPS

ALL TREES AND 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, EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

SIZES	NO. TREES	NO. STUMPS
18"	16	
30"	3	

THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE 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.

MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD DRAWING MC-1. FOR LOCATIONS, SEE SHEET NO. 18.

LOCATIONS OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL AS SHOWN IN THESE PLANS ARE SUBJECT TO ADJUSTMENT TO ASSURE THE PLANNED INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES 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.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR EROSION CONTROL MEASURES:

207	TEMPORARY SEEDING AND MULCHING	223 SQ. YD.
207	WATER	1 M GAL.
207	TEMPORARY SLOPE DRAINS	40 LIN. FT.
207	TEMPORARY BENCHES, DITCHES, DAMS AND SEDIMENT BASINS	40 CU. YD.
659	COMMERCIAL FERTILIZER	.02 TON
659	REPAIR SEEDING AND MULCHING	56 SQ. YD.

EROSION CONTROL

ITEMS 601 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OR TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THIS ITEM WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

UTILITIES

OHIO EDISON COMPANY
23 NORTH FRANKLIN STREET
RICHWOOD, OHIO 43344

UNITED TELEPHONE COMPANY
127 NORTH MAIN STREET
BELLEFONTAINE, OHIO 43311

COLUMBIA GAS COMPANY
843 EAST 5TH. STREET
MARYSVILLE, OHIO 43040

SEEDING FORMULA

THE SEEDING FORMULA FOR URBAN MIX SHALL BE USED THROUGHOUT THE PROJECT AS SPECIFIED IN 659.09

DUST CONTROL

A QUANTITY OF CALCIUM CHLORIDE AND WATER ARE PROVIDED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER

ITEM 616 WATER	50 M GAL.
ITEM 616 CALCIUM CHLORIDE	1 TON

ITEM SPECIAL-EQUIPMENT ACCESS DRIVE

ALL EARTHWORK, PAVEMENT AND EROSION CONTROL ITEMS, AS DETAILED ON SHEET 11, SHALL BE PAID FOR AS A LUMP SUM PRICE BID FOR ITEM SPECIAL-EQUIPMENT ACCESS DRIVE.

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 UNTREATED FLOW FROM ANY PLUMBING FIXTURES INCLUDING FLOOR DRAINS AND SINK DRAINS, OR DRAINS FROM LIVESTOCK LOTS OR BARN.

EXISTING PIPE CARRYING FLOW WHICH COMES WITHIN THE CATEGORY OUTLINED ABOVE, SHALL BE PLUGGED WITH CLASS C CONCRETE IN THE RIGHT-OF-WAY LINE. PAYMENT FOR SAID PLUGGINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION (OR THE PERTINENT 202 ITEM).

HOUSE CONNECTIONS

EXISTING ROOF DRAINS, FOOTER DRAINS OR YARD DRAINS DISTURBED BY THE PROPOSED WORK SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTING TO A STORM SEWER, MANHOLE, CATCH BASIN, THROUGH THE BACKSLOPE OF ROADWAY DITCHES, OR THROUGH THE CURB.

THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 603	100'-4" CONDUIT TYPE E,	711.29	
ITEM 603	100'-4" CONDUIT TYPE E,	706.01	OR 706.08
ITEM 603	100'-6" CONDUIT TYPE F		

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

GENERAL SUMMARY

CALC. BY: W.R.H. 7/20/81
 CHK. BY: R.T.S. 7/22/81

OHIO FHWA REGION 5	4 19
--------------------------	---------

UNI-37-12.23

ITEM	SHEET NUMBER								ITEM	QUANT.	UNIT	DESCRIPTION			
	18	11	10	9	6	5	3								
												ROADWAY			
									Lump	201	Lump	Clearing and Grubbing			
										944	Sq. Ft.	Walk Removed			
										248	Lin. Ft.	Guardrail Removed			
										236	Lin. Ft.	Curb Removed			
										2	Each	Inlet Removed			
										166	Cu. Yd.	Excavation not including Embankment Construction			
										643	Cu. Yd.	Embankment			
										245	Sq. Yd.	Subgrade Compaction			
										4	Each	Monument Assembly			
										247.68	Lin. Ft.	Guardrail - Type 3			
										4	Each	Anchor Assembly, Standard type A			
										4	Each	Bridge Terminal Assembly, Standard type B			
										608	Sq. Ft.	4" Concrete Walk			
										1	Ton	Calcium Chloride			
										50	M. Gal.	Water			
									Lump	Spec. Lump		Equipment Access Drive			
												PAVEMENT			
							7	3		301	10	Cu. Yd.	Bituminous Aggregate Base: AC-20, RT-11 or RT-12		
										304	17	Cu. Yd.	Aggregate Base		
							3	15		310	18	Cu. Yd.	Subbase, Type 1		
										408	6	Gals.	Bituminous Prime Coat:		
							9	27		404	36	Cu. Yd.	Asphalt Concrete, AC-20		
							20	38		407	58	Gal.	Tack Coat,		
							.7	1.3		407	2	Tons	Cover Aggregate		
										609	162	Lin. Ft.	Curb Standard, Type 6		
										245	245	Sq. Yd.	Reinforced Concrete Approach Slabs (T-15)		
													DRAINAGE		
										40	40	Lin. Ft.	12" Conduit, Type F		
										126	126	Lin. Ft.	12" Conduit, Type B		
										100	100	Lin. Ft.	4" Conduit, Type E, 7/11.29		
										2	2	Each	Catch Basin Standard No. 3-A		
										100	100	Lin. Ft.	4" Conduit, Type E, 706.01 or 706.08		
										100	100	Lin. Ft.	6" Conduit, Type F		
													EROSION CONTROL		
										1	207	1	M. Gal.	Water	
										223	207	223	Sq. Yd.	Temporary Seeding and Mulching	
										125	207	125	Each	Straw or Hay Bales	
										40	207	40	Lin. Ft.	Temporary Slope Drains	
										40	207	40	Cu. Yd.	Temporary Benches, Dikes, Dams and Sediment Basins	
										92	2	601	94	Cu. Yd.	Rock Channel Protection, Type C Without Bedding,
											56	659	56	Sq. Yd.	Repair Seeding and Mulching
										0.10	0.02	659	0.12	Ton	Commercial Fertilizer
										1113	659	1113	Sq. Yd.	Seeding and Mulching	
										Lump	624	Lump		Mobilization, As Per Plan	
										Lump	614	Lump		Maintaining Traffic	
											623	Lump		Construction Layout Stakes	
														STRUCTURE OVER 20' SPAN	
														Structure No. UNI-37-12.24 (For Estimated Quantities, see Sheet No. 13)	

UNI-37-12.23

CALC: W.R.H. 5-5-81
CHK: R.T.S. 7-21-81

CALCULATIONS

Item 659 Seeding and Mulching

From Line Sheet No. 6

Total Area 1136 Sq.Yds. - Less R.C.P. 23 Sq.Yds. = 1113 Sq.Yds.

Item 659 Commercial Fertilizer

Total Area From Line Sheet No. 6 = 1113 Sq.Yds.

1113 x 9 = 10017 Sq.Ft.

20 lbs./1000 Sq. Ft. $10017 \div 1000 = 10.017 \times 20 \text{ Lbs.} = 200.34 \text{ lbs} \div 2000 = 0.10 \text{ Tons}$

Item 304 Aggregate Base

Length Sta. 645+00 to Sta. 645+96 = 96'

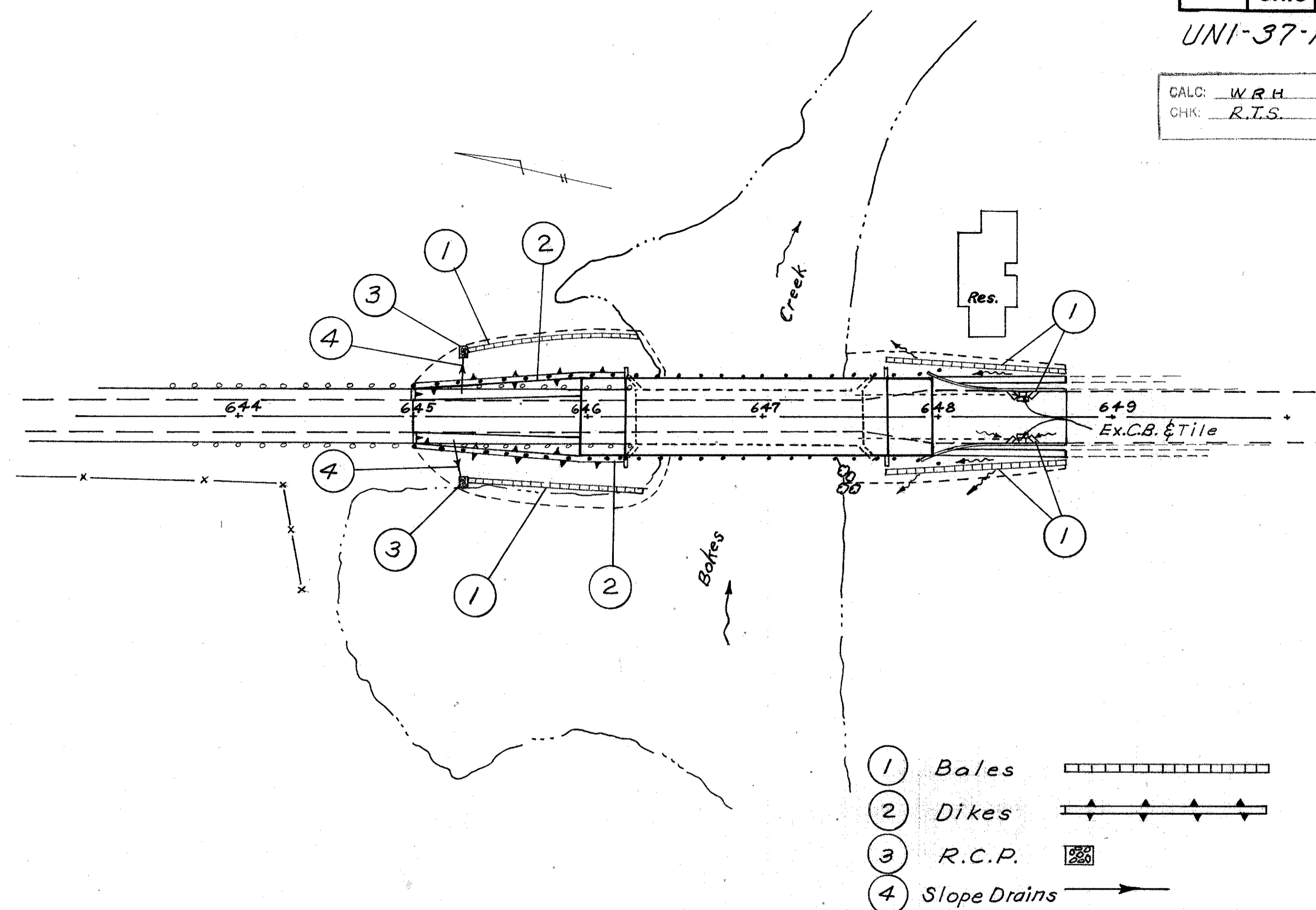
$96' \times 2 \text{ (2 Sides)} \times 2.33 \text{ Sq.Ft. (Berm Area)} \div 27 = 17 \text{ Cu.Yds.}$

Item 408 Bituminous Prime Coat

Fillet Areas Rt. & Lt. From Sta. 647+97.16 To Sta. 648+25.29 = 128 Sq.Ft.

$128 \text{ Sq.Ft.} \div 9 \times 0.4 \text{ Gall/Sq.Yd.} = 6 \text{ Gals.}$

Quantities Carried to General Summary



The Schematic Detail is Intended to Show Examples of Applications of Erosion Control Methods as shown on Std. Dwg. MC-11 and as Per Item 207 Specifications.

All Dimensions and Locations of Temporary Soil Erosion and Water Pollution Control Devices shall be Subject to Adjustments as Required or as Directed by the Engineer. The Contractor May, With Approval of the Engineer, Modify the Following Details and/or Materials Providing the Intent of These Notes and Details are Accomplished.

When the Temporary Soil Erosion And Water Pollution Control Devices are No Longer Required for the Intended Purpose in the Opinion of the Engineer, They May Be Removed.

As an Erodible Earth Material is Exposed, Straw or Hay Erosion Checks shall be Placed Between The Exposed Surface and the Ditch, Forming A Continuous Filter.

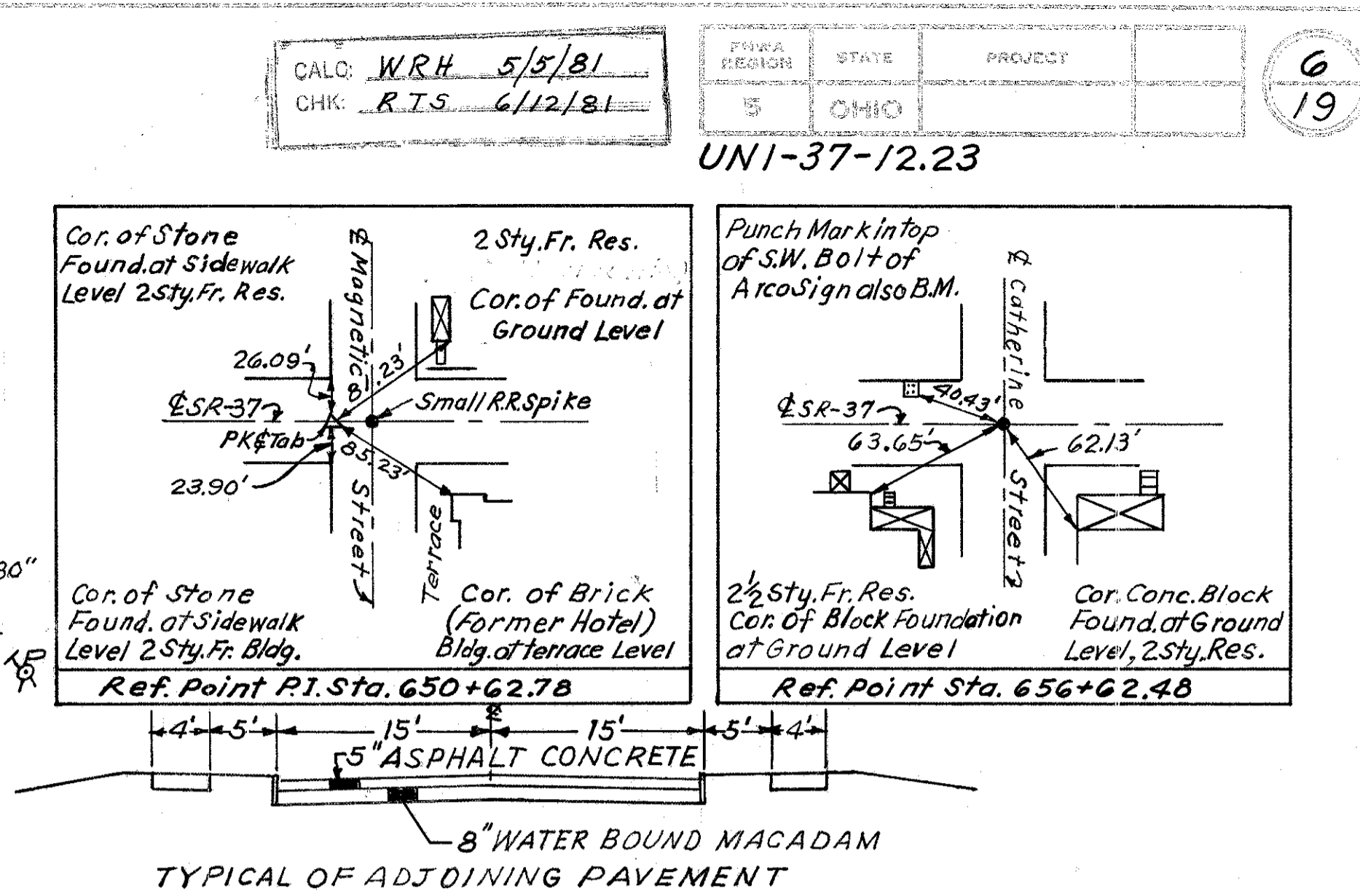
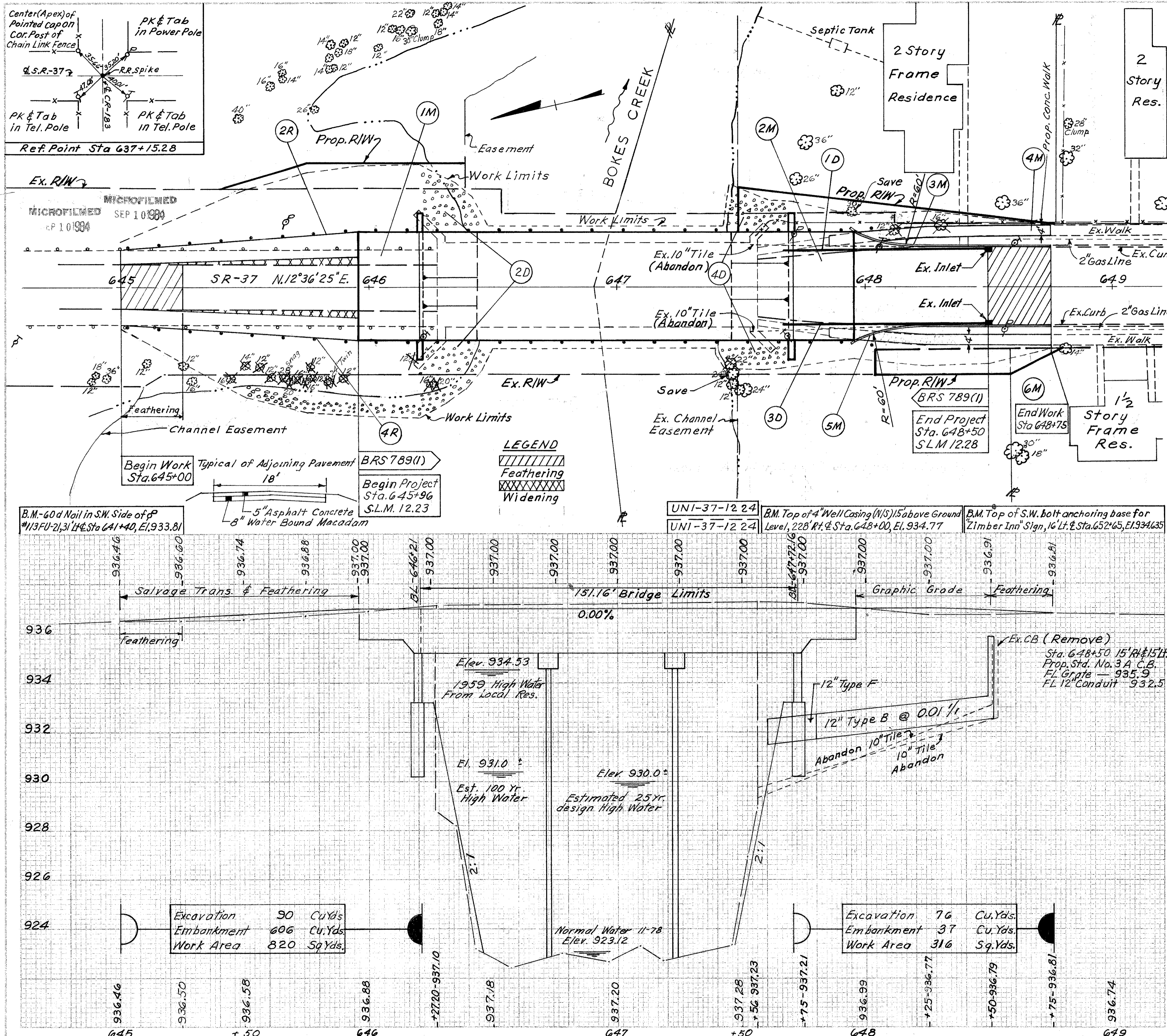
Erosion & Sedimentation Control Measures Provided For in This Plan are to be Controlled by the Use of the O.D.O.T. Construction and Material Specification Manual Special Attention is to be Paid to Sections 107.01 and 107.02 of The O.D.O.T. Construction and Material Specification Which Clearly Define the Responsibility of the Contractor to Keep Fully Informed of all Federal, State, and Local Laws, Ordinances and Regulations.

The following Estimated Quantities are to be Used as Directed By The Engineer for Erosion and Siltation Control Measures.

Item 207 Straw or Hay Bales 125 Each

Item 601 R.C.P. Without Bedding 2 C.Y.

Quantities Carried to General Summary



DRAINAGE "D" and MISCELLANEOUS "M"														
REF. No.	STATION	SIDE	603	604	203	202	611	601	609/202	608				
			Conduit 12" TYPE B F	Catch Basin Type 3-A	Sub-grade Compaction	Removed Walk Curbs	Reinf. conc. Approach Slab 15" Thick	R.C.P. Without Bedding Type C	Curbs Type G	Inlet Removed	Conc. Walk 4" Thick			
FROM TO			L.F.	L.F.	Each	Sa.Yds.	S.F.	L.F.	Sa.Yds.	Cu.Yds.				
1D	647+67	648+50	Lt.	63	20	1				1				
2D	645+50	648+50	Lt.					70						
3D	647+67	648+50	Rt.	63	20	1				1				
4D	647+40	647+70	Rt.					22						
1M	645+96	646+21	±				122.2		122.2					
2M	647+72.16	647+97.16	±				122.2		122.2					
3M	647+97.16	648+75	Lt.					118		81				
4M	647+97.16	648+75	Lt.				472			300				
5M	647+97.16	648+75	Rt.					118		81				
6M	647+97.16	648+75	Rt.				472			300				
Totals				126	40	2	245	944	236	245	92	162	2	600

GUARDRAIL "R"						
REF. No.	STATION	SIDE	606	606	606	
			GUARD RAIL Type 5	BRIDGE REMOVAL ASSEMBLY TYPE B	ANCHOR ASS. TYPE A	
FROM TO			Lin.Ft.	Each	Each	
2R	645+00	648+13	Lt.	123.84	2	2
4R	645+25	648+13	Rt.	123.84	2	2
Totals				247.68	4	4

EXISTING BRIDGE DATA	PROPOSED BRIDGE DATA
TYPE: STEEL BEAM (Not Continuous)	TYPE: PRESTRESSED CONCRETE BOX BEAMS WITH CAPPED PILE SUBSTRUCTURES
SPAN: 3-39' SPANS	SPANS: 13 @ 49'-0" (49'-3" - 50'-6" - 49'-3")
WIDTH: 24' CURB TO CURB	49'-9" SUBSTRUCTURES
WIDTH: 32'-4" OUT TO OUT	ROADWAY: 44'± GUARDRAIL
STRENGTH: H-15	LOADING: HS20-44± ALTERNATE MILITARY LOADING
CONDITION: POOR	SKEW: 0°
SKEW: TANGENT 0°	WEARING SURFACE: 2 1/2" ASPHALT CONCRETE
HEIGHT: 17'	APPROACH SLABS: AS-172 (25' LONG) 15" THICK
APPROACH SLAB: NONE	ALIGNMENT: TANGENT
BUILT: 1932	

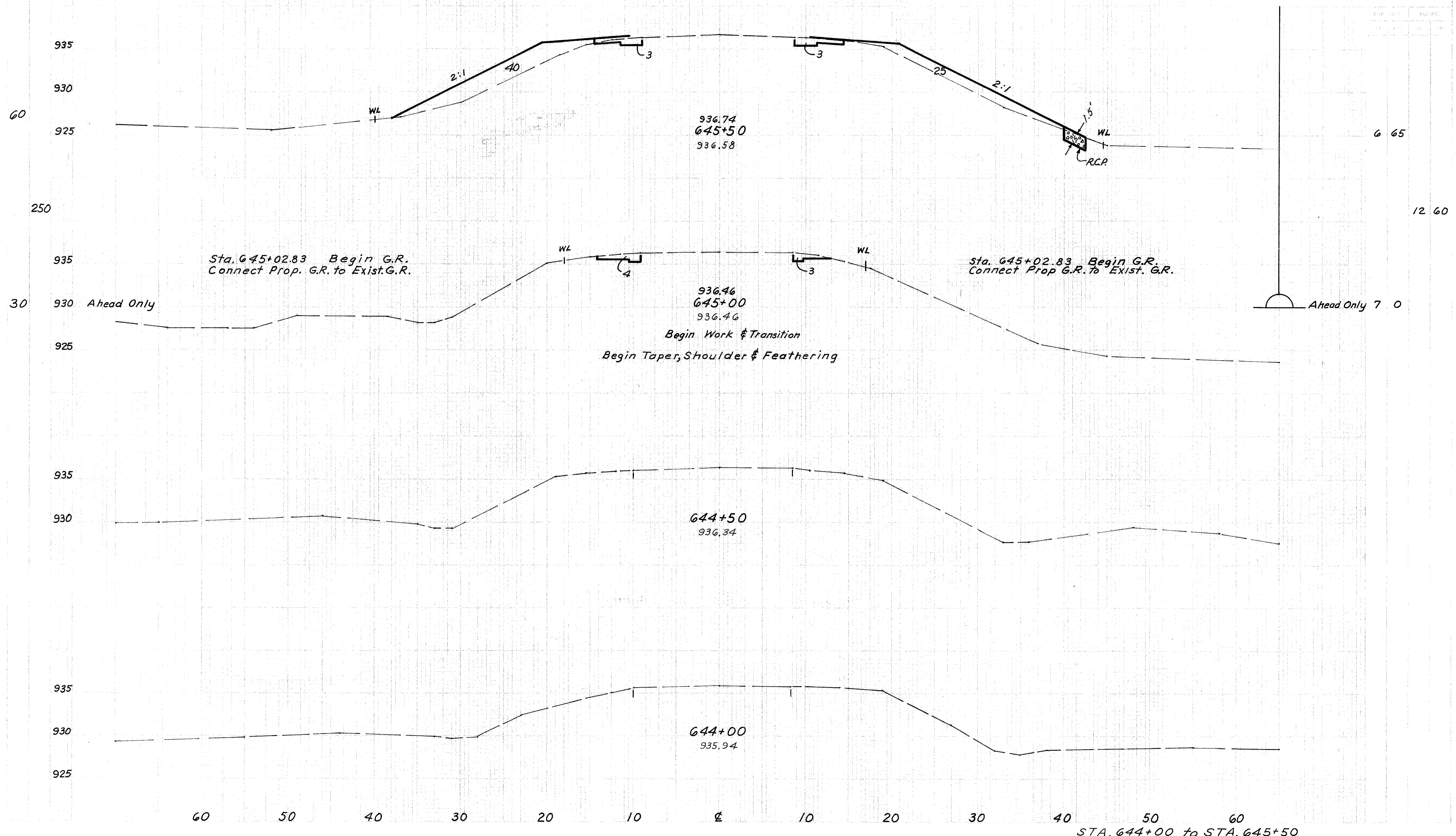
ALIGN. Sta. 645+00 to Sta. 649+00

70 60 50 40 30 20 10 0 10 20 30 40 50

CALC: WRH 5/5/81
CHK: R.T.S. 7/2/81

UNI-37-12.23

7
19

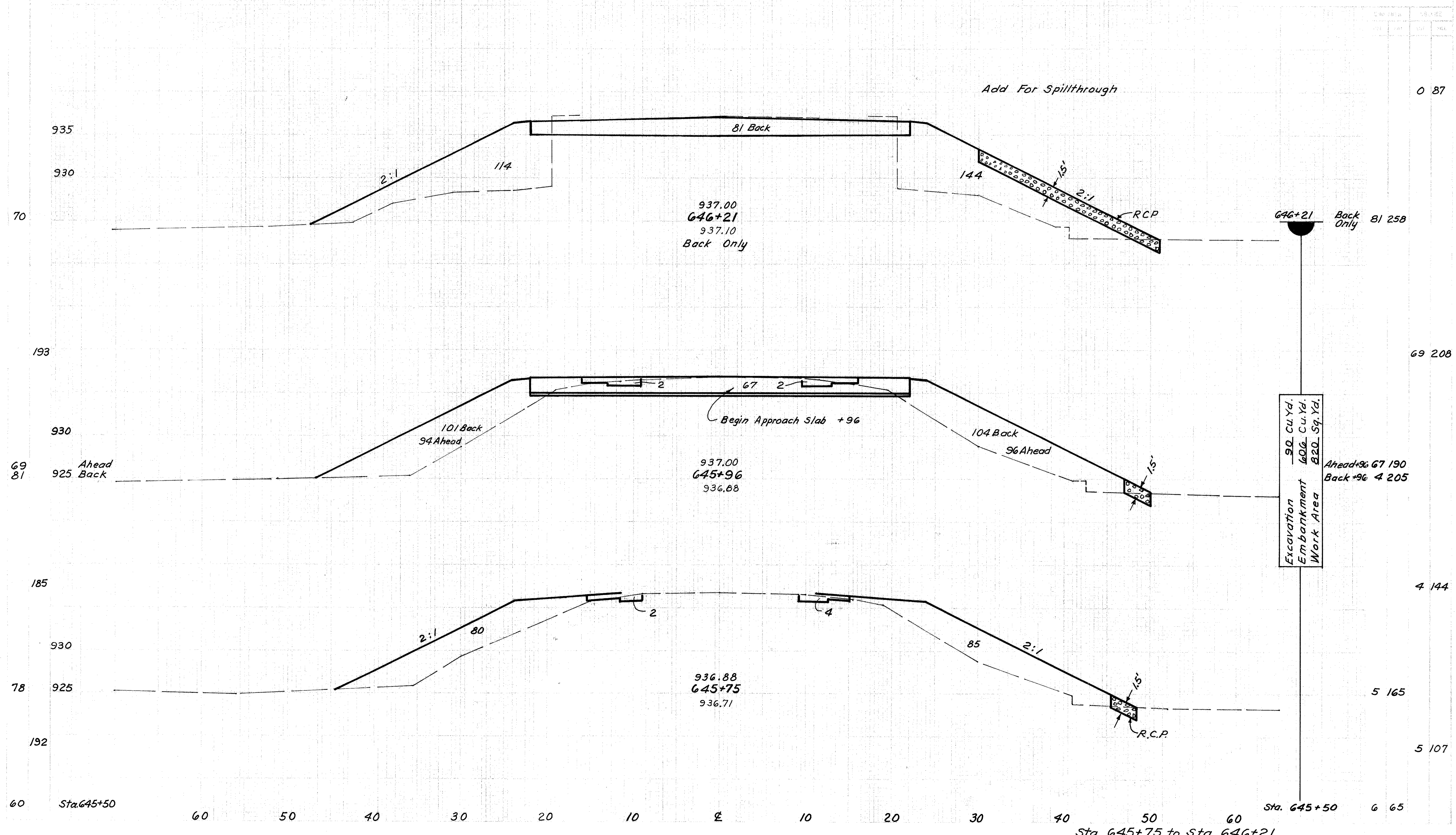


70 60 50 40 30 20 10 0 10 20 30 40 50

CALC: WRH 5/5/81
CHK: R.T.S. 7/21/81

UNI-37-12.23

8
19



Excavation	90 Cu. Yd.
Embankment	606 Cu. Yd.
Work Area	820 Sq. Yd.

Back Only 81 258

Ahead+96 67 190
Back+96 4 205

6 65

Sta. 645+75 to Sta. 646+21

0 87

69 208

4 144

5 165

5 107

70

193

69
81

185

78

192

60 Sta. 645+50

60

50

40

30

20

10

0

10

20

30

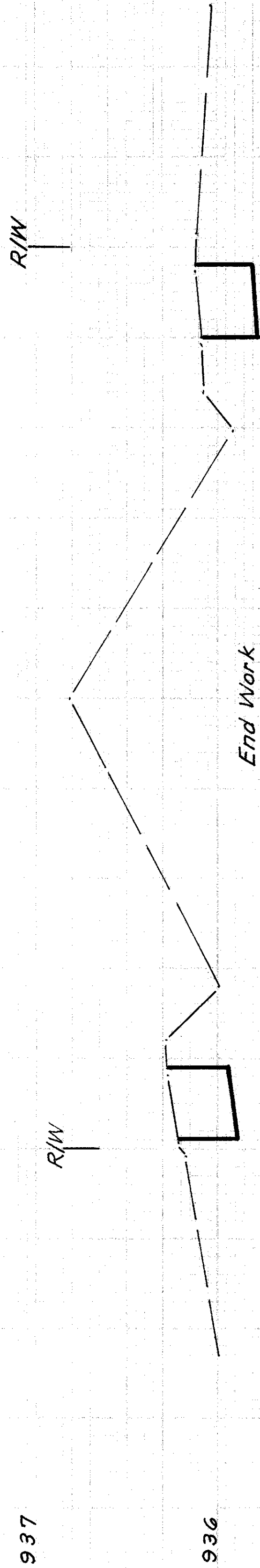
40

50

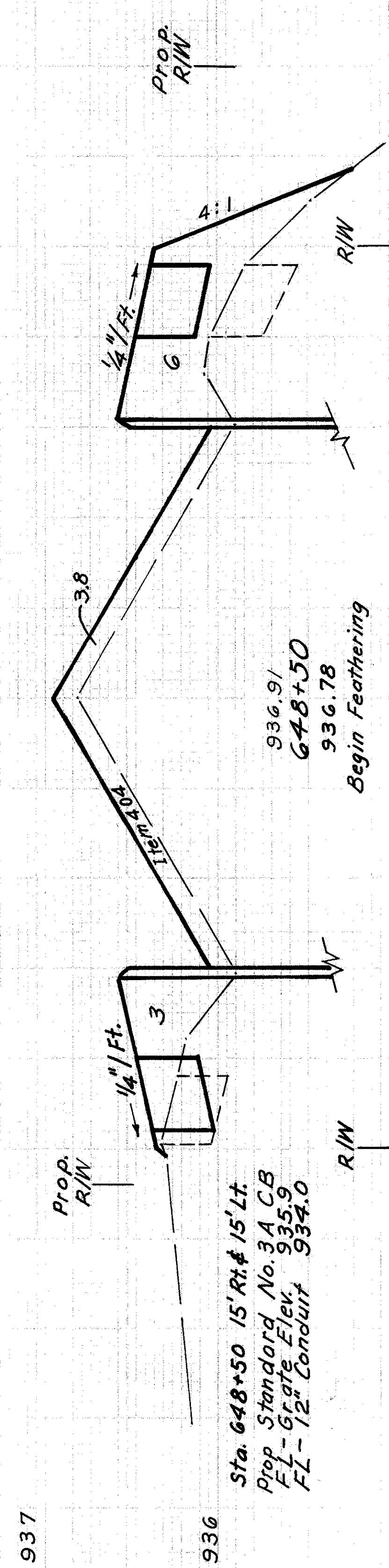
60

Sta. 645+50

6 65

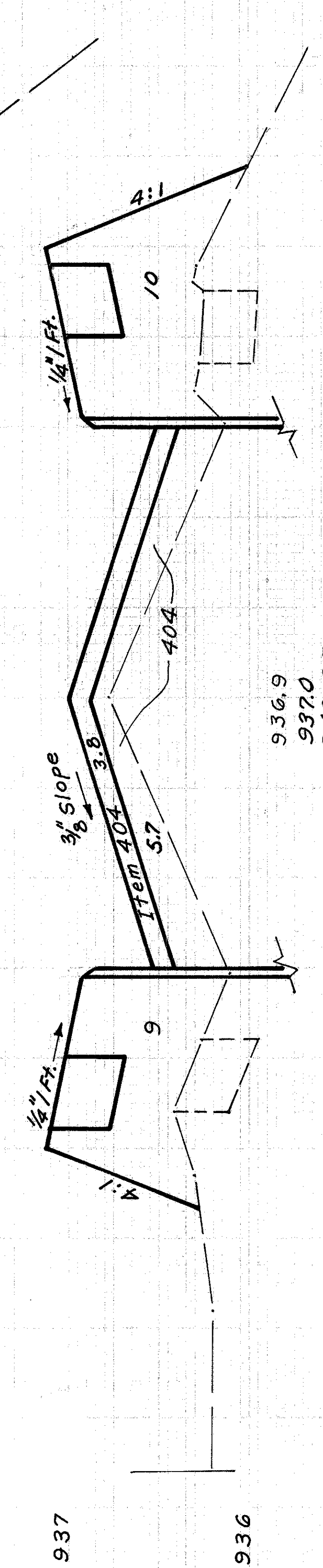


End Work
End Feathering
648+75
936.81
From Sta. 648+50 to Sta. 648+75
Taper Curb to Existing
Warp Walk to Existing

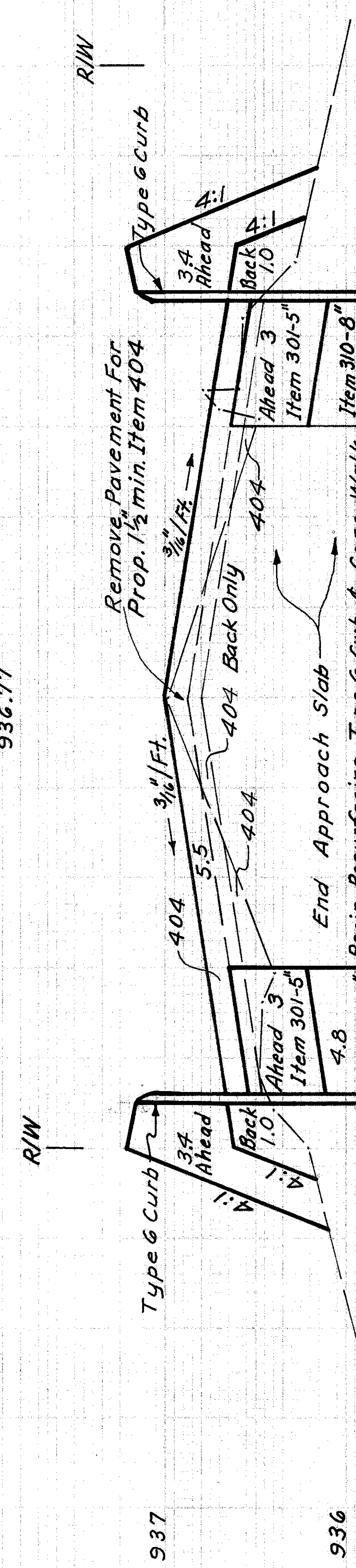


Sta. 648+50 15' R.R. # 15' Lt.
Prop. Standard No. 3A CB
FL - Gate Elev. 935.9
FL - 12" Conduit 934.0

936.91
648+50
936.78
Begin Feathering



936.9
937.0
648+25
936.77



Remove Pavement For
Prop. 1/2 min. Item 404

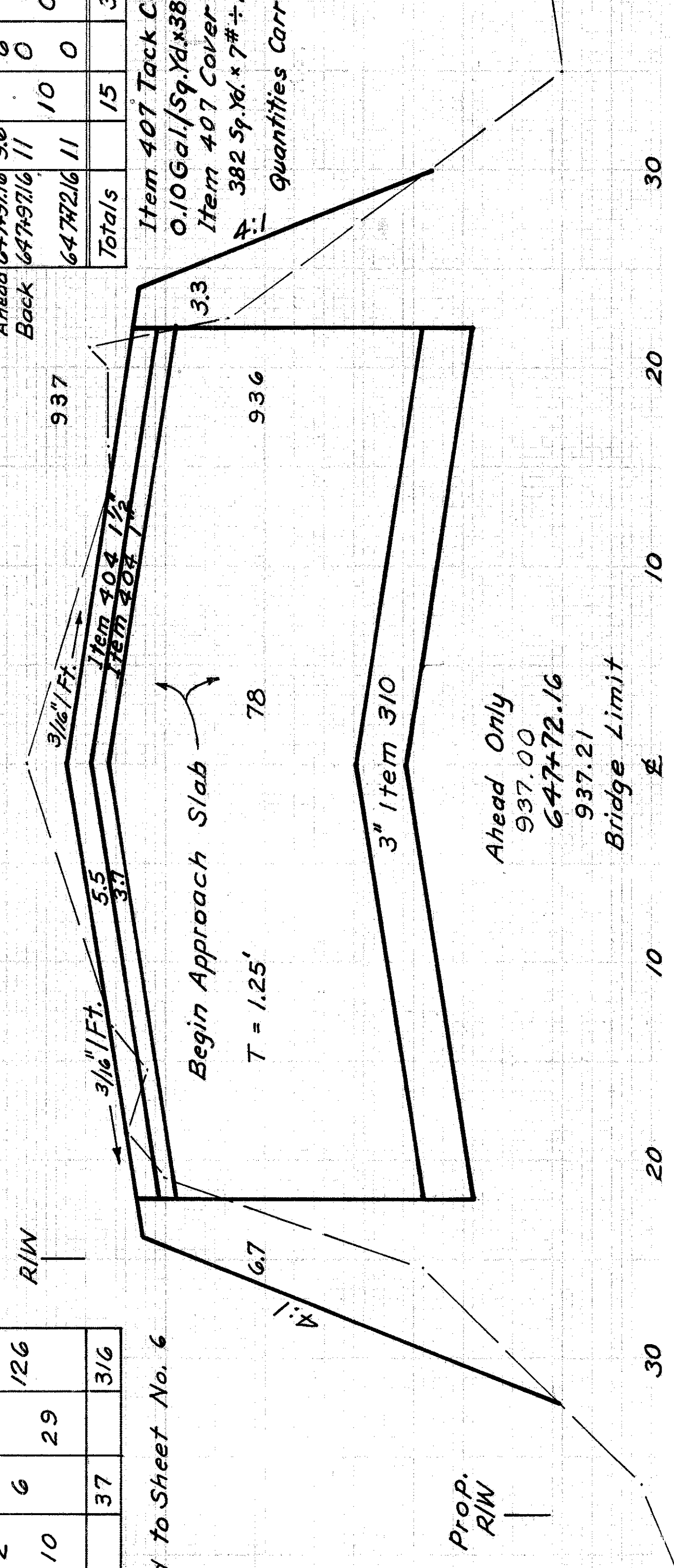
End Approach Slab
Begin Resurfacing, Type 6 Curb & Conc. Walk
Cut 15' Ahead
Cut 69' Back

STA.	EARTHWORK		SEEDING	
	Excav. Area Yd.	Embank. Cu. Yd.	End Cu. Area Yd.	Width Sq. Yd.
648+75	0	0	0	12
648+50	0	0	9	18
648+25	0	0	19	28
Ahead 647+97.16 Back 647+97.16	15 69	8 2	88 2	26 29
647+72.16	78	10	68	29
Totals	76	37	37	316

STA.	PAVEMENT		PAVEMENT	
	End Cu. Area Yd.	End Cu. Area Yd.	End Cu. Area Yd.	End Cu. Area Yd.
648+75	0	0	0	0
648+50	0	0	3.8	4
648+25	0	0	3.8	5
Ahead 647+97.16 Back 647+97.16	9.6 11	6 0	5.5 5.5	1.3 3.7
647+72.16	11	10	5.5	5
Totals	15	3	16	11

Quantities Carried to Sheet No. 6

Item 407 Tack Coat
0.10 Gal/Sq. Yd. x 382 Sq. Yd. = 38 Gal.
Item 407 Cover Aggregate
382 Sq. Yd. x 7# + 2000 = 1.3 Tons.
Quantities Carried to Gen. Summary



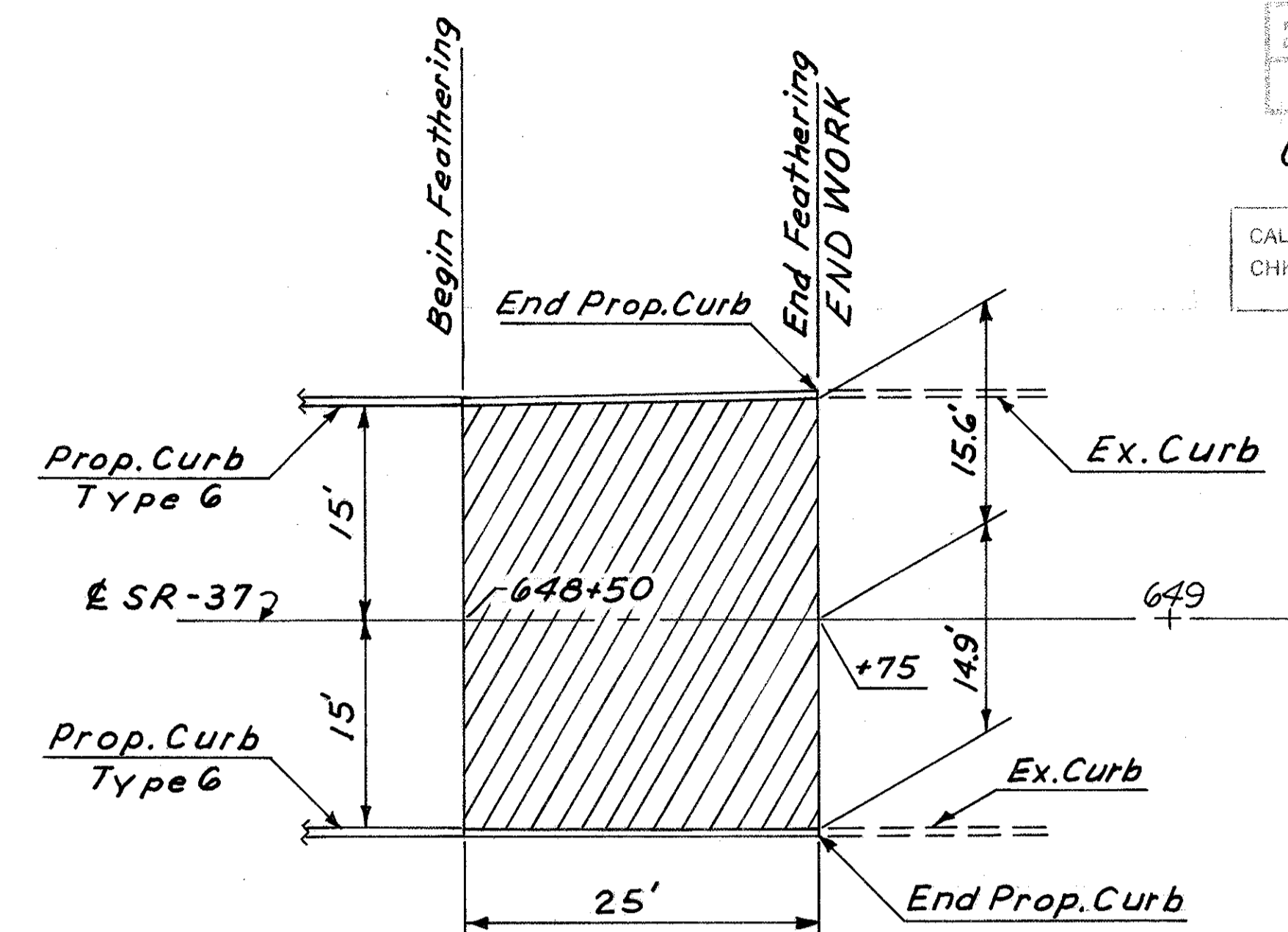
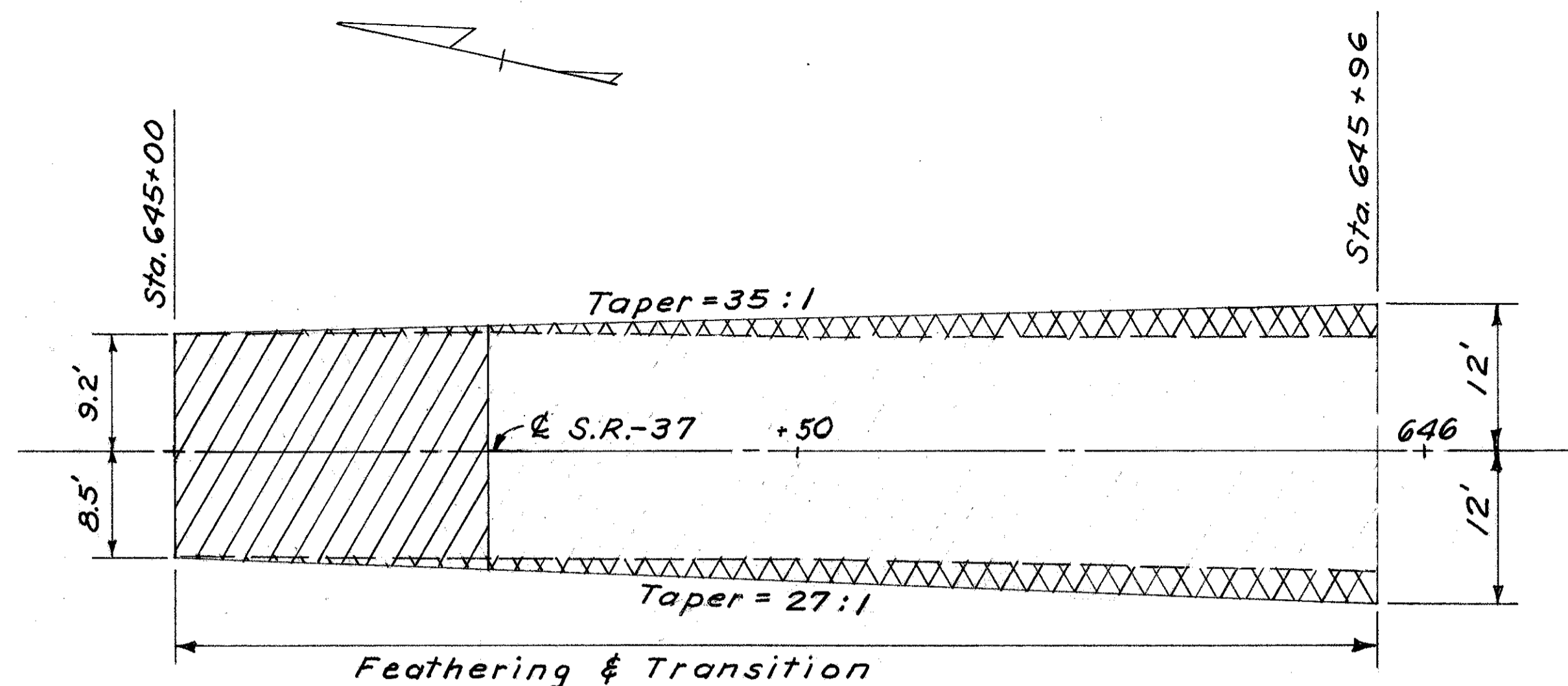
Ahead Only
937.00
647+72.16
937.21
Bridge Limit

UNI-37-12.23
CALC: W.R.H. 5/5/81
CHK: R.T.S. 7/2/81

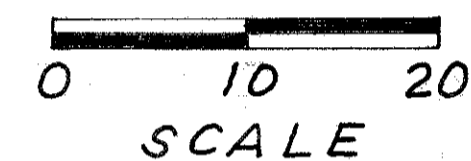
Cross Sections Sta. 647+72.16 to Sta. 648+75

UNI-37-12.23

CALC: WRH 5/10/81
CHK: R.T.S. 7/22/81

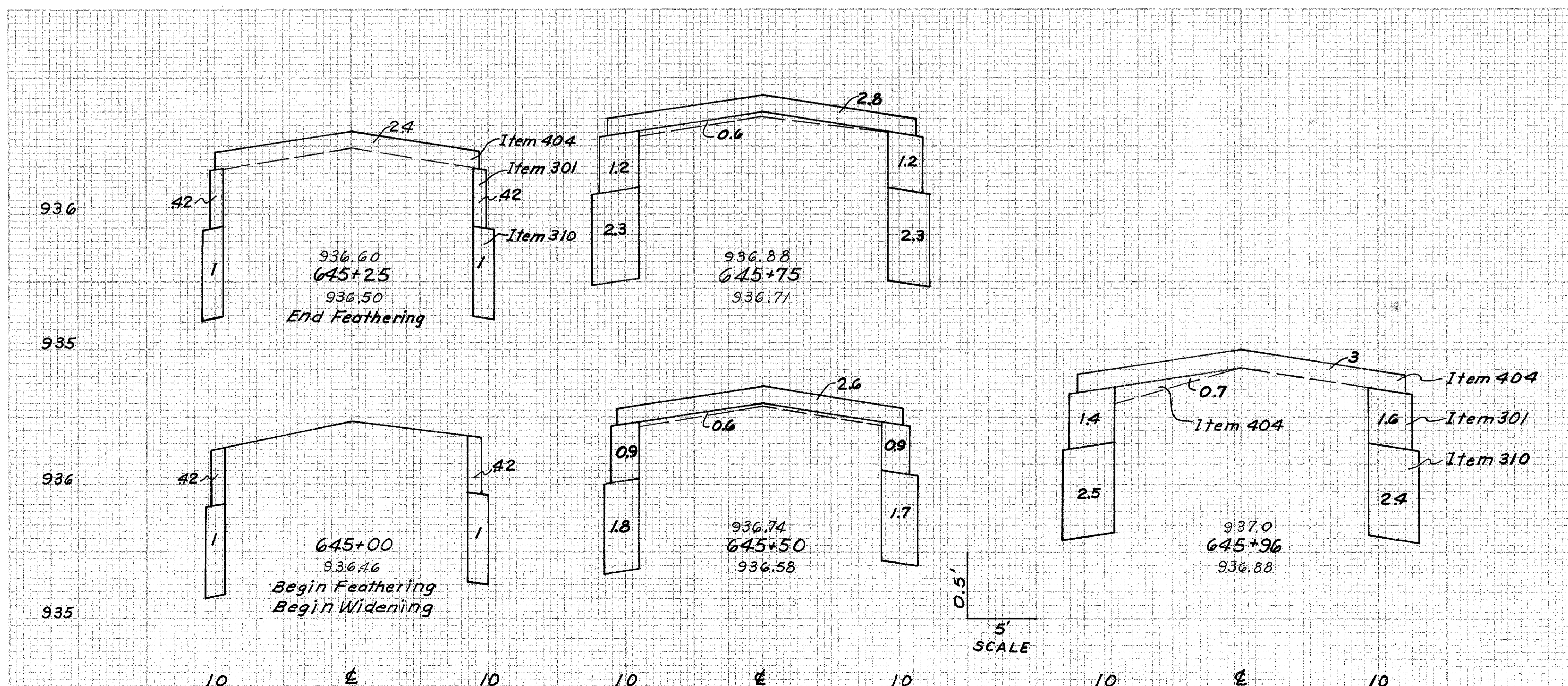


Exaggerated Cross Sections, Profile and Quantities Carried on Sheet No. 9



LEGEND

- Feathering
- Widening



Station	404 1 1/2"		404 0 Min.		301 5"		310 8"		407	
	E.Area	Vol.	E.Area	Vol.	E.Area	Vol.	E.Area	Vol.	E.Area	Vol.
	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	W	S.Y.
645+00	0	0	0	0	.84	.8	2	1.8		17.7
645+25	2.4	1.1	0	0	.84	.8	2	1.8		50.0
645+50	2.6	2.3	0.6	.28	1.77	1.2	3.5	3.7		50.14
645+75	2.8	2.5	0.6	.06	2.42	1.9	4.5	3.7		50.14
645+96	3	2.7	0.7	.06	2.62	2.3	4.4	4.4		43.17
Totals	8.6	8.6	40	40	6.2	6.2	2.5	2.5		193.45

Item 407 Tack Coat
 0.10 Gal./sq.yd. x 193.45 = 20.0 Gal.
 Item 407 Cover Aggregate
 193.45 Sq.Yd. x 7# ÷ 2000 = 0.67 Tons

Quantities Carried to General Summary

EXISTING BRIDGE DECK & STRUCTURE REMOVAL

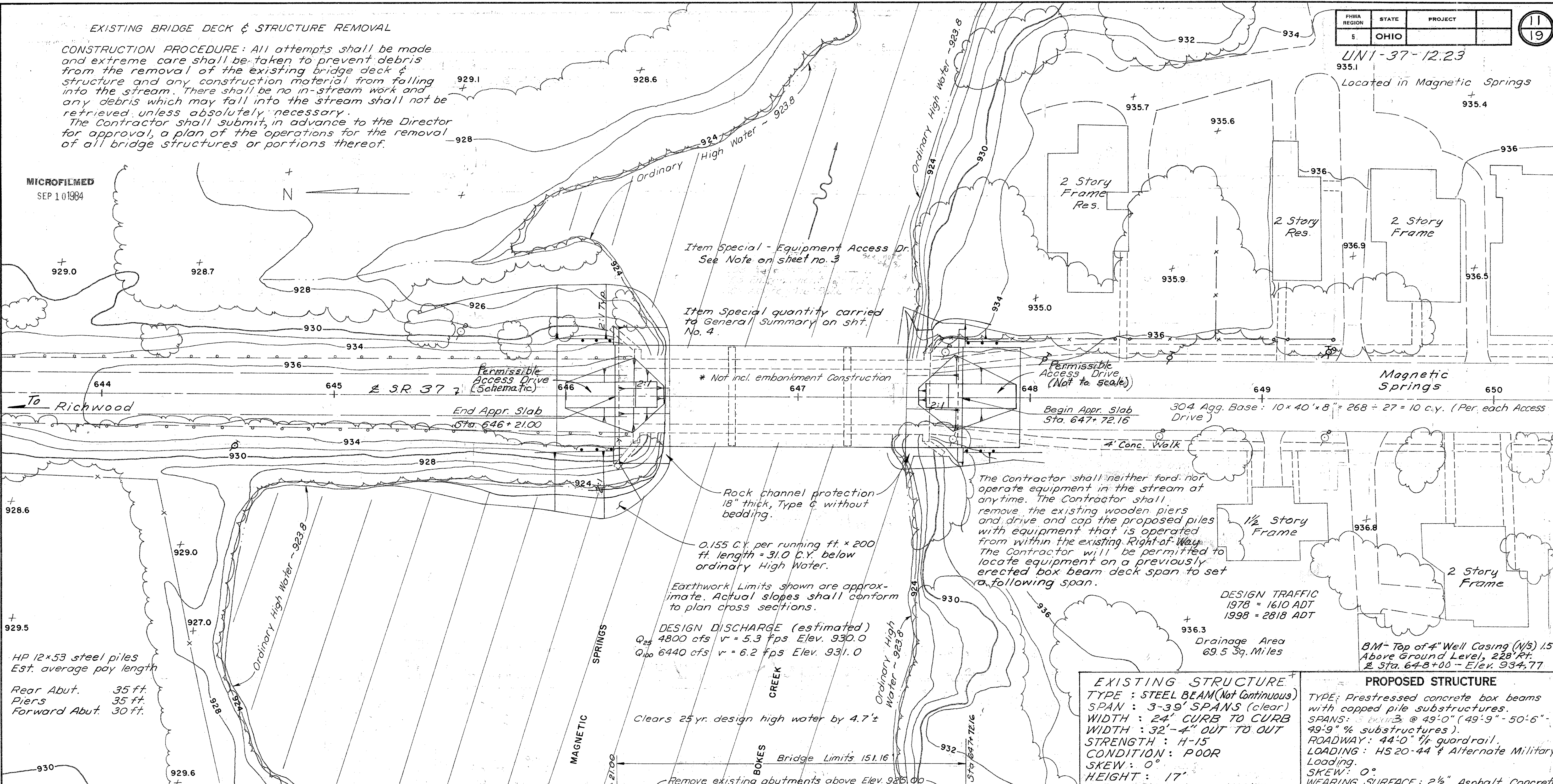
CONSTRUCTION PROCEDURE: All attempts shall be made and extreme care shall be taken to prevent debris from the removal of the existing bridge deck & structure and any construction material from falling into the stream. There shall be no in-stream work and any debris which may fall into the stream shall not be retrieved unless absolutely necessary. The Contractor shall submit, in advance to the Director for approval, a plan of the operations for the removal of all bridge structures or portions thereof.

FHWA REGION	STATE	PROJECT
5	OHIO	

11
19

UNI-37-12.23
935.1
Located in Magnetic Springs

MICROFILMED
SEP 1 01984



Item Special - Equipment Access Dr. See Note on sheet no. 3

Item Special quantity carried to General Summary on sht. No. 4

Permissible Access Drive (Not to scale)

Begin Appr. Slab Sta. 647+72.16

304 Agg. Base: 10' x 40' x 8" = 268 ÷ 27 = 10 c.y. (Per. each Access Drive)

Rock channel protection 18" thick, Type C without bedding.

0.155 C.Y. per running ft. x 200 ft. length = 31.0 C.Y. below ordinary High Water.

Earthwork Limits shown are approximate. Actual slopes shall conform to plan cross sections.

DESIGN DISCHARGE (estimated)
Q₂₅ 4800 cfs v = 5.3 fps Elev. 930.0
Q₁₀₀ 6440 cfs v = 6.2 fps Elev. 931.0

The Contractor shall neither ford nor operate equipment in the stream at anytime. The Contractor shall remove the existing wooden piers and drive and cap the proposed piles with equipment that is operated from within the existing Right-of-Way. The Contractor will be permitted to locate equipment on a previously erected box beam deck span to set a following span.

DESIGN TRAFFIC
1978 = 1610 ADT
1998 = 2818 ADT

Drainage Area
69.5 Sq. Miles

BM - Top of 4" Well Casing (N/S) 15' Above Ground Level, 228' Rt. Sta. 648+00 - Elev. 934.77

HP 12x53 steel piles
Est. average pay length
Rear Abut. 35 ft.
Piers 35 ft.
Forward Abut. 30 ft.

EXISTING STRUCTURE
TYPE: STEEL BEAM (Not Continuous)
SPAN: 3-39' SPANS (clear)
WIDTH: 24' CURB TO CURB
WIDTH: 32'-4" OUT TO OUT
STRENGTH: H-15
CONDITION: POOR
SKEW: 0°
HEIGHT: 17'
APPROACH SLAB: NONE
BUILT: 1932

PROPOSED STRUCTURE
TYPE: Prestressed concrete box beams with capped pile substructures.
SPANS: 3 spans @ 49'-0" (49'-9" - 50'-6" - 49'-9" substructures).
ROADWAY: 44'-0" 1/2 guard rail.
LOADING: HS 20-44 & Alternate Military Loading.
SKEW: 0°
WEARING SURFACE: 2 1/2" Asphalt Concrete.
APPROACH SLABS: AS-1-72 (25' long).
ALIGNMENT: Tangent.

940	936.46	Transition & Feathering +0.72%	Salvage	1959 HW 934.53 From Local Res.	0.00%	1959 HW 933.37 ODOT Records	940				
930	936.46	Footing Elev. 928.4		Ord. H.W. 923.8		Ord. H.W. 923.8	930				
920	936.46	Top of slope El. 933.2'		Estimated 100 yr. Elev. 931.2		Estimated 25 yr. design High Water Elev. 930.2	920				
935.97	936.34	8" 304 Agg. Base		Normal Water 11-78, 923.12							
644	+50	645	+50	646	+50	647	+50	648	+50	649	+50

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. UNI-37-1224
OVER BOKES CREEK

STA. 646 + 21.00
647 + 72.16

PRESENT TOPOGRAPHY		PROPOSED WORK			REVIEWED
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	
		FRK	FRK	LLE	N.J.B.

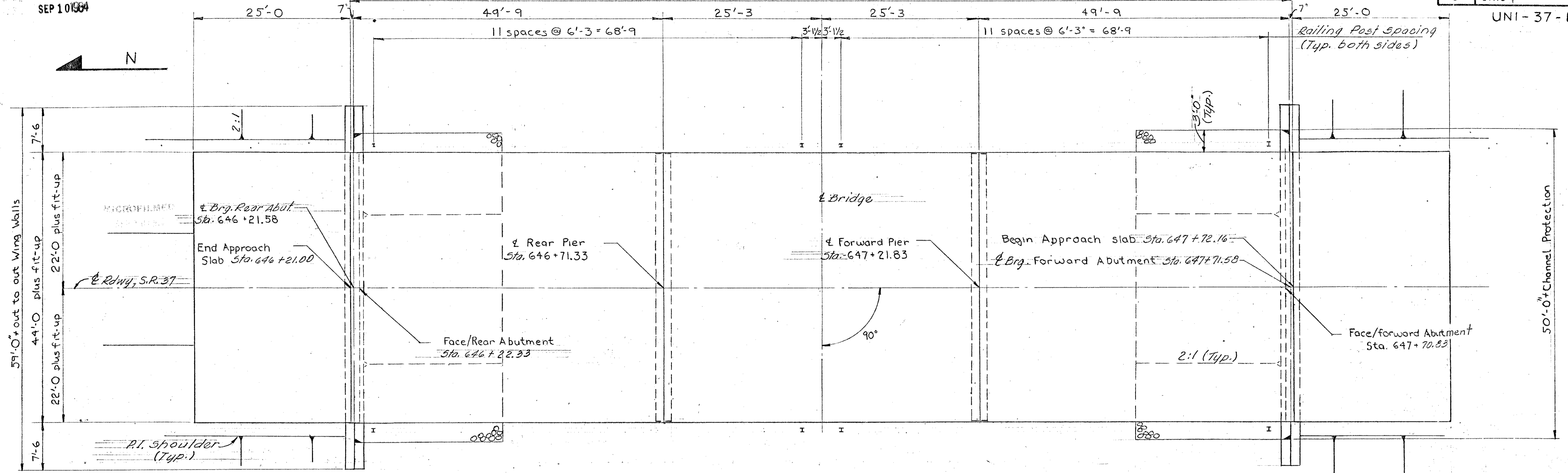
MICROFILMED
SEP 10 1964

FHWA REGION	STATE	PROJECT
5	OHIO	

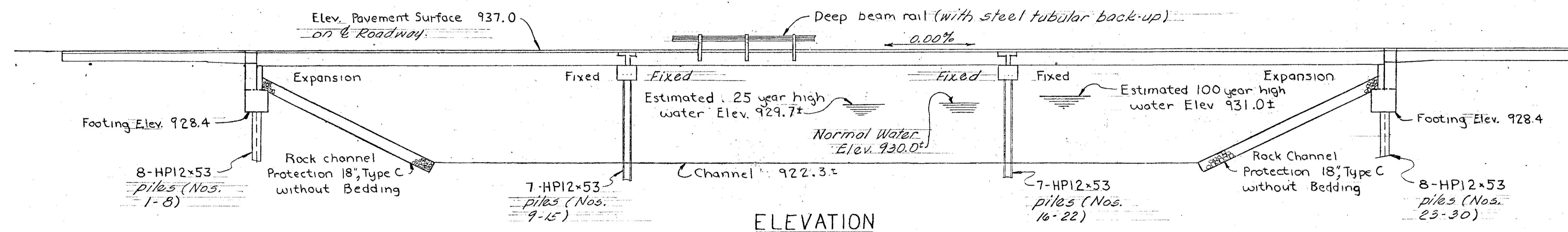
12
19

UNI-37-12.23

Bridge Limits = 151.16



GENERAL PLAN



ELEVATION

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						2/7
GENERAL PLAN & ELEVATION						
BRIDGE NO. UNI-37-1224 OVER BOKES CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LMW	LMW		WTF	WJJ	9-10-81	

MICROFILMED
SEP 1 1984

REINFORCING STEEL LIST

FHWA REGION	STATE	PROJECT
5	OHIO	

13
19

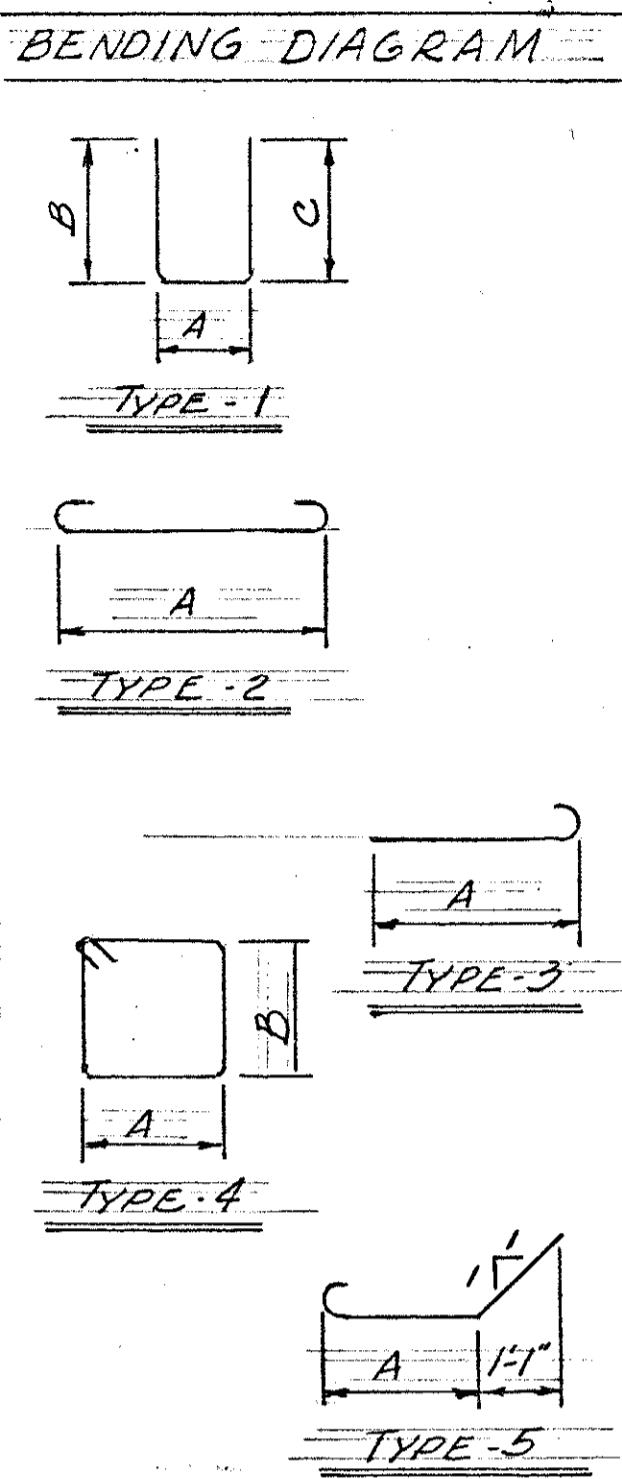
UNI-37-1223

ABUTMENTS								PIERS									
Mark	No.	Length	Weight	Type	A	B	C	D	Mark	No.	Length	Weight	Type	A	B	C	D
A401	32	8'-11"	191	4	1'-9"	2'-6 1/2"			P401	28	8'-11"	167	4	1'-9"	2'-6 1/2"		
A501	8	30'-0"	250	5t.					P501	136	7'-3"	1028	1	2'-8"	2'-6"	2'-6"	
A502	16	16'-2"	270	5t.					P502	8	22'-10"	191	5t.				
A503	32	8'-11"	298	5t.					P503	242	3'-4"	841	2	2'-2"			
A504	24	23'-1"	578	5t.													
A505	8	5'-0"	42	5t.					P601	20	2'-3"	68	5t.				
A506	8	5'-6"	46	3	2'-8"	2'-11"	0'-6"		P801	16	23'-2"	990	5t.				
A507	8	4'-6"	38	5t.													
A508	8	3'-0"	25	5t.													
A509	8	5'-3"	44	5t.					P1001	16	24'-10"	1710	5t.				
A510	8	6'-0"	50	5t.													
A511	24	6'-3"	156	5t.													
A512	156	6'-1"	990	1	2'-8"	1'-10"	1'-10"										
A601	60	12'-1"	1089	1	1'-11"	5'-3"	5'-3"										
A602	10	2'-10"	43	5t.													
AB01	8	30'-0"	641	5t.													
AB02	16	16'-10"	719	5t.													
D801	60	7'-3"	1161	5	4'-11"												
A1001	16	25'-1"	1727	5t.													

BRIDGE MEMBERS

B501	**	*	5t.
B502	**	*	3 **
B503	5'-2"	*	1 3'-7" 0'-11" 0'-11"
B504	6'-2"	*	1 3'-7" 1'-5" 1'-5"
B505	8'-4"	*	5t.
B506	8'-11"	*	3 8'-4"

REINFORCING STEEL SAMPLES:
Refer to CMS sections 106.03, 709, 709.01 through 709.05 & 709.08. Sufficient additional reinf. steel of like kind shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 504.08.



* Payment included with Item 515 Prestressed Conc. Bridge Members.
** To be determined by fabricator.

ESTIMATED QUANTITIES							
Item	Total	Unit	Description	Abuts.	Piers	Supers.	Gen'l.
202	Lump	Sum	Structure removed				Lump
403	37	Cu.Yd.	Asphalt concrete, AC-20			37	
404	26	Cu.Yd.	Asphalt concrete, AC-20			26	
503	83	Cu.Yd.	Unclassified excavation	83			
505	Lump	Sum	Test pile				Lump
506	Lump	Sum	Pile test load				Lump
507	1010	Lin.Ft.	Steel piles, HP12x53	520	490		
509	13,353	Lbs.	Reinforcing steel, Grade 60	8358	4995		
510	30	Each	Dowel holes	10	20		
511	8	Cu.Yd.	Class 5 concrete, superstructure			8	
511	71	Cu.Yd.	Class c concrete, abutments.	71			
511	32	Cu.Yd.	Class c concrete, piers		32		
512	765	Sq.Yd.	Type D Waterproofing			765	
515	33	Each	Prestressed concrete bridge members (4'-0" x 50'-0") (see Proposal Note, For Epoxy Coated Reinforcing Steel)			33	
516	132	Each	1 1/2 x 1 1/2" Elastomeric bearing pads, 50 durometer			132	
516	286	Sq.Ft.	1" Preformed expansion joint filler	190	96		
516	95	Lin.Ft.	Joint sealer 705.01 or 705.02	95			
517	302.32	Lin.Ft.	Railing (deep beam rail with steel tubular back-up, Type 2 posts and bolts)			302.32	
518	24	Cu.Yd.	Porous backfill	24			
601	138	Cu.Yd.	Rock channel protection 18" thick, Type C without bedding				138
Spec.	232	Sq.Ft.	Steel drip strip			232	

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

- AS-1-72 DATED 6-30-72
- DBR-2-73 DATED 4-10-73
- PSBD-1-71 DATED 9-1-71

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979 AND 1980 INTERIM SPECIFICATIONS, AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I. FOR SUBSTRUCTURE
REINFORCING STEEL - ASTM A615, A616, OR A617 - MINIMUM YIELD 60,000 PSI
CONCRETE FOR PRESTRESSED CONCRETE BEAMS - UNIT STRESS 2200 PSI COMPRESSION 444 PSI TENSION
PRESTRESSING STRAND ASTM A416
 $f'_s = 270,000$ PSI
INITIAL STRESS = 0.70 f'_s

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED

EMBANKMENT CONSTRUCTION: WHEN THE ACCESS DRIVES ARE NO LONGER NEEDED, THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND THE PILES SHALL BE DRIVEN:

FILES SHALL BE DRIVEN TO BEDROCK. THE BEARING CAPACITY SHALL BE CONSIDERED OBTAINED BY REFUSAL ON HARD BEDROCK OR BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH. THE DESIGN LOAD IS 40 TONS PER PILE FOR THE ABUTMENT AND 62 TONS PER PILE FOR THE PIER PILES.

APPROACH SLABS: PAVEMENT JACKING HOLES AS SHOWN ON STANDARD DRAWING AS-1-72 SHALL NOT BE PROVIDED AND THE COVER OF THE TOP REINFORCING STEEL SHALL BE INCREASED FROM 2" TO 3".

POROUS BACKFILL SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE SURFACE OF THE EMBANKMENT SLOPES.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

3 | 7

GENERAL NOTES, ESTIMATED QUANTITIES & REINFORCING STEEL LIST
BRIDGE NO. UNI-37-1224
OVER BOKES CREEK

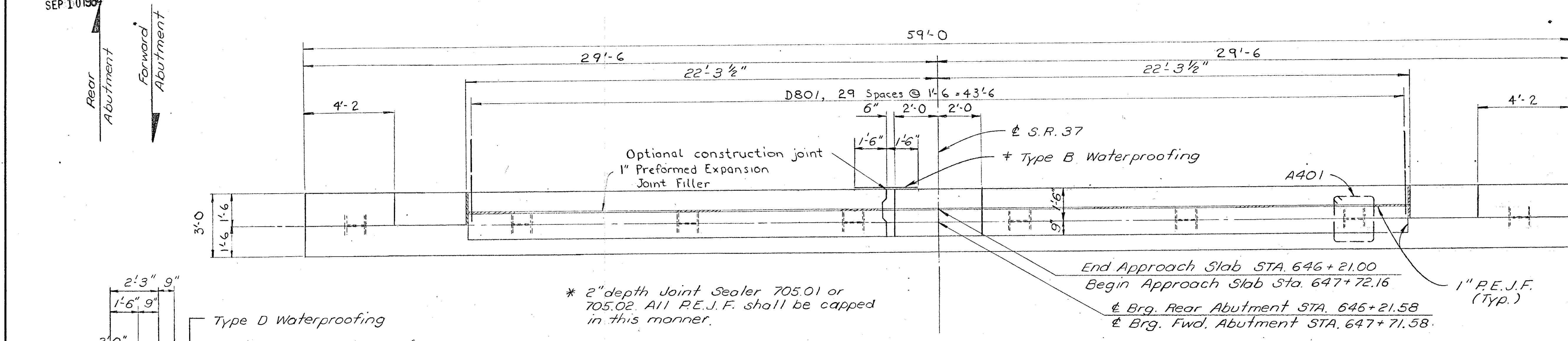
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LMW	BAR		WTF			

MICROFILMED
SEP 10 1984

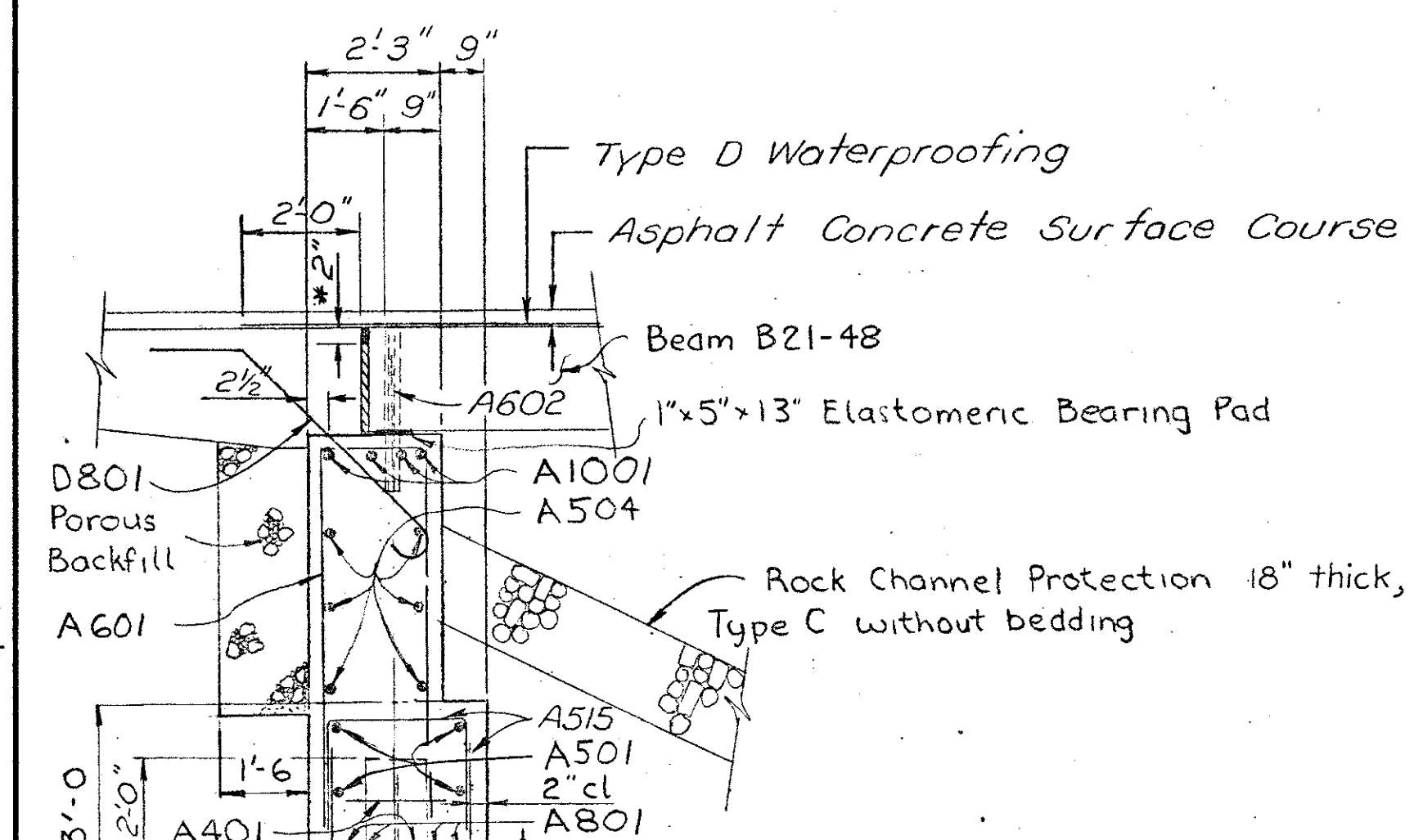
FHWA REGION	STATE	PROJECT
5	OHIO	

14
19

UNI-37-12.23



ABUTMENT PLAN



* 2" depth Joint Sealer 705.01 or 705.02. All P.E.J.F. shall be capped in this manner.

Note: Fill holes in beam and abutment with 705.02 joint sealer. Include joint seal with Item 515 for payment.

† If the construction joint is made, Type B Waterproofing will be required and shall be included with abutment concrete for payment.

NOTES

Wingwalls above the bridge seat construction joint shall not be placed until the prestressed beams have been erected

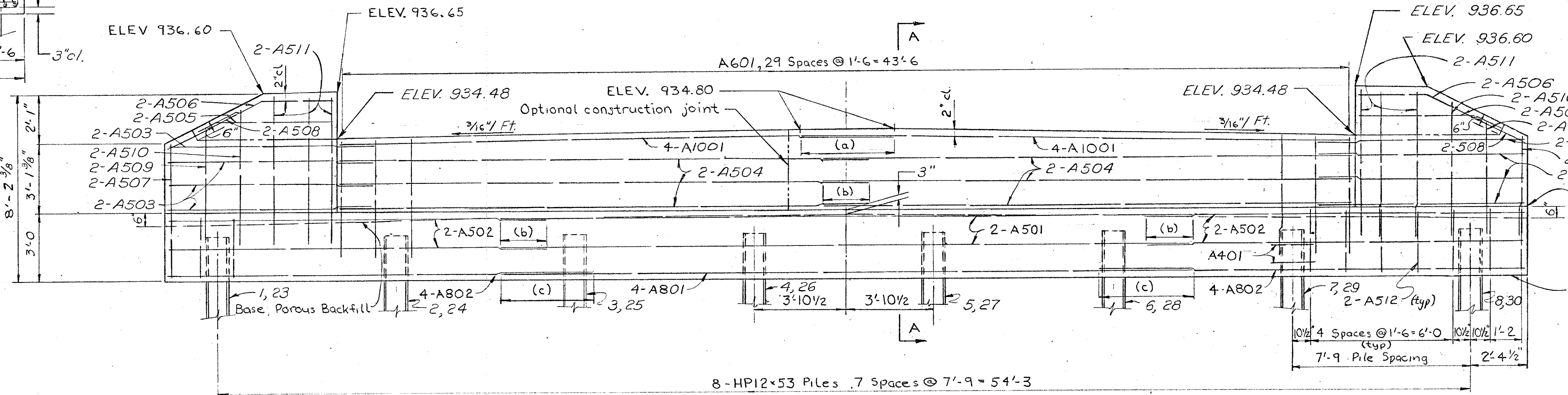
Porous backfill shall extend upward to the plane of the subgrade, and laterally to the surface of the embankment slopes

Care shall be taken to place reinforcing steel in the vicinity of the bridge seat so as not to interfere with drilling of anchor dowel holes

PILE NUMBERING:

1-8 Piles in Rear Abutment
23-30 Piles in Forward Abutment

Letter	Length
(a)	5'-10"
(b)	1'-10"
(c)	2'-6"



ELEVATION

LEGEND
N.S. - Near Side
F.S. - Far Side

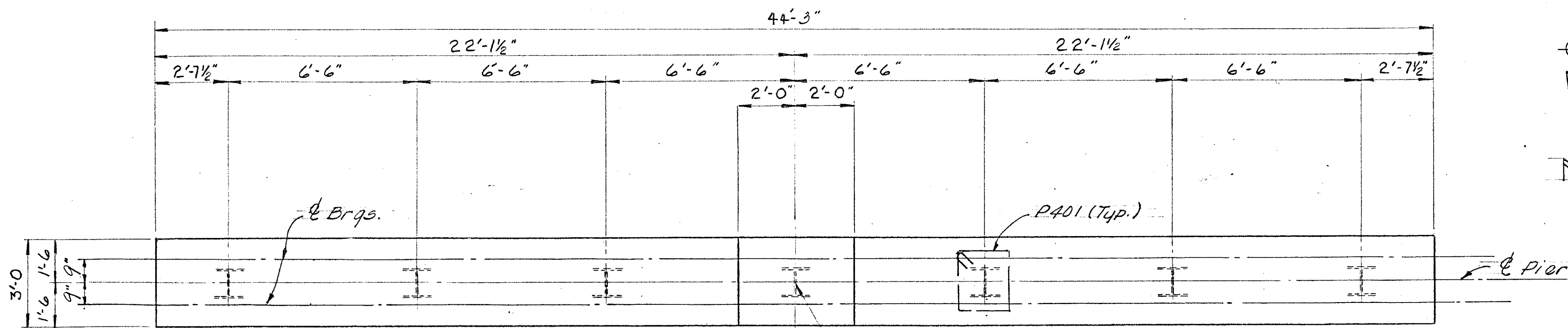
STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN		4 / 7
REAR AND FORWARD ABUTMENT DETAILS		
BRIDGE NO. UNI-37-1224 OVER BOKES CREEK		
DESIGNED	DRAWN	TRACED
LMW	LMW	---
CHECKED	REVIEWED	DATE
WTF	WJU	9-10-81
REVISED		

SEP 1 01984

FHWA REGION	STATE	PROJECT
5	OHIO	

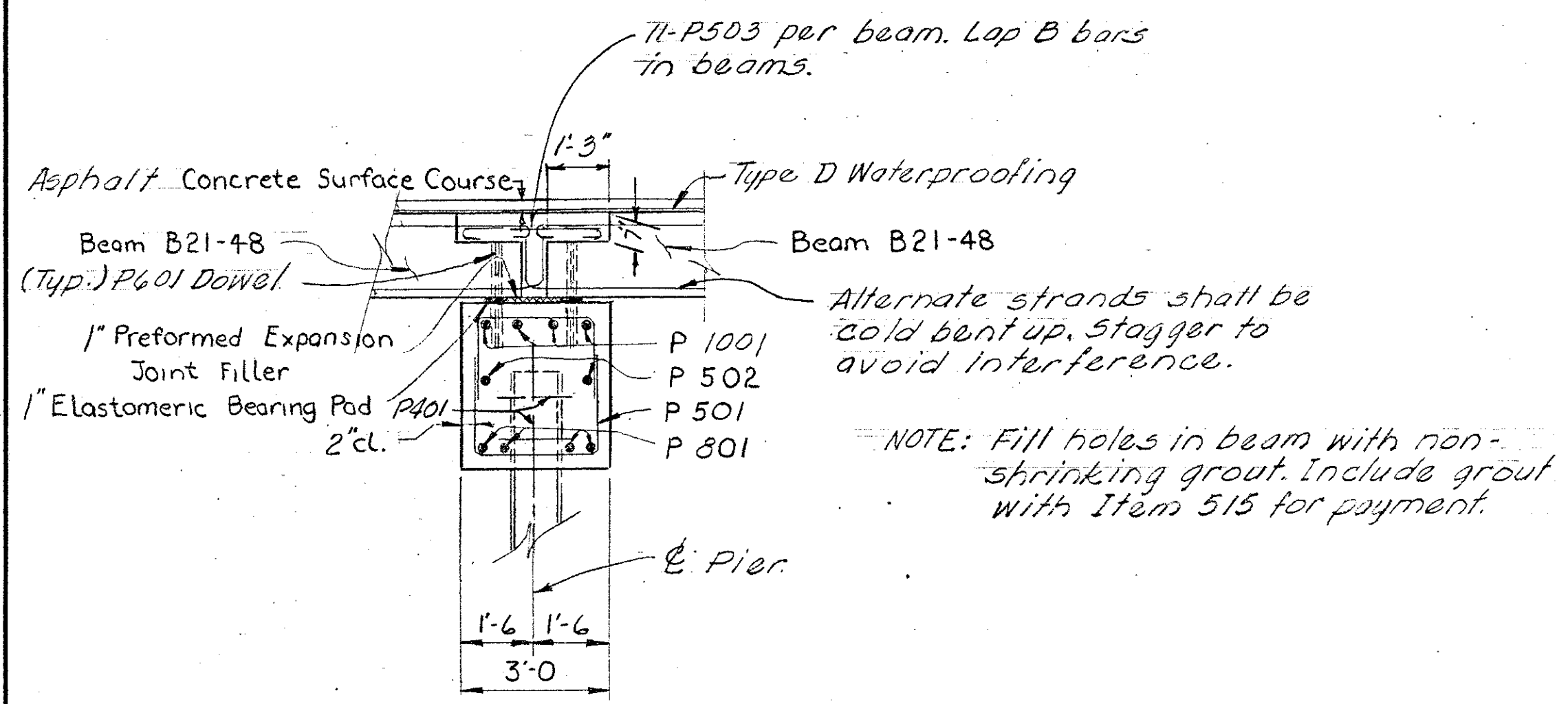
15
19

UNI-37-12.23

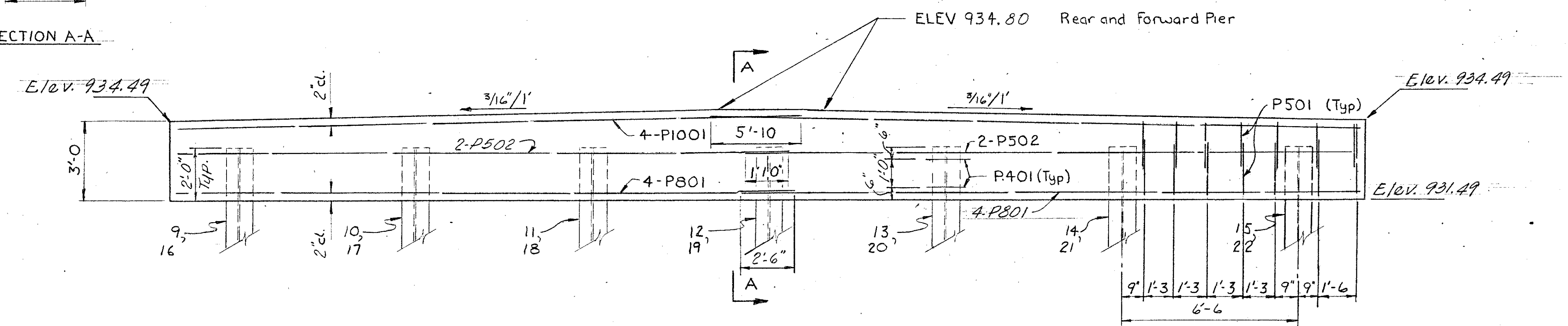


PIER PLAN

STA. 646+71.33 \pm Rear Pier
STA. 646+21.83 \pm Forward Pier



SECTION A-A



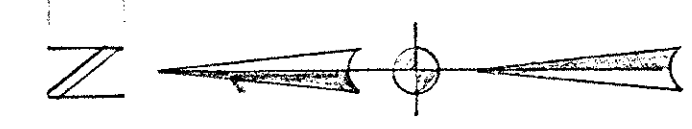
ELEVATION

NOTES
Care shall be taken to place reinforcing in the vicinity of the bridge seat so as not to interfere with drilling of anchor dowel holes.

PILE NUMBERING:
9-15 Piles in Rear Pier
16-22 Piles in

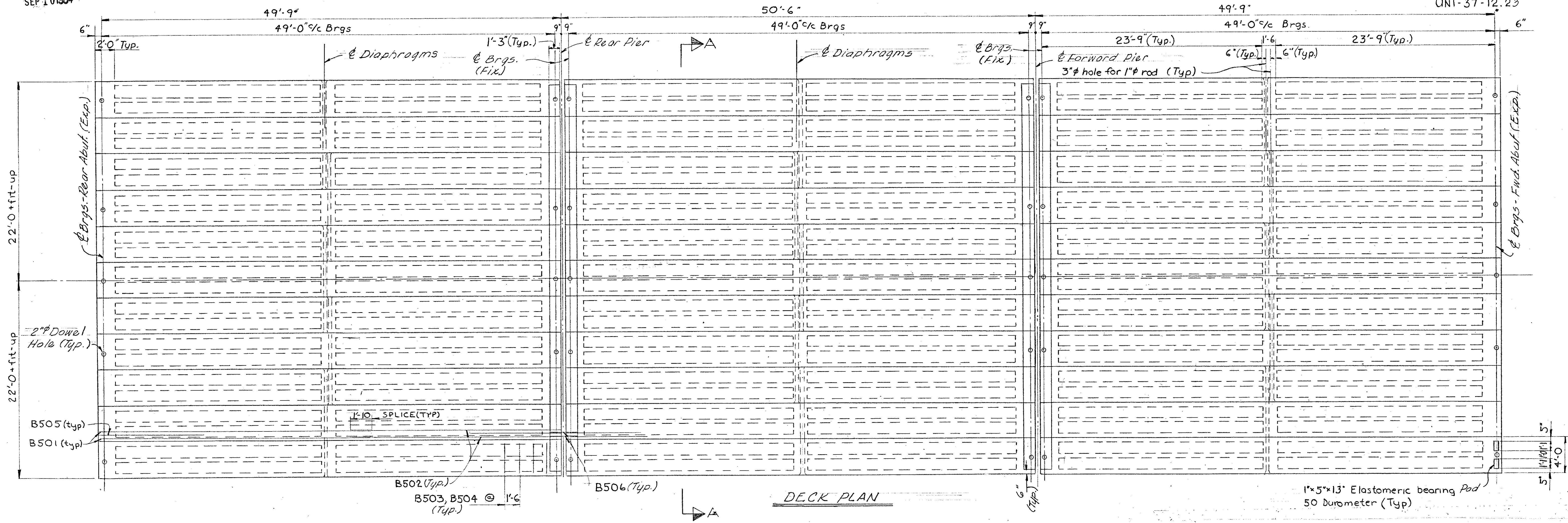
STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						5/7
REAR & FORWARD PIER DETAILS						
BRIDGE NO. UNI-37-12 24 OVER BOKES CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LMW	LMW		WTF	WJW	9-10-81	

REVISED
SEP 10 1984



FIWA REGION	STATE	PROJECT
5	OHIO	

16
19



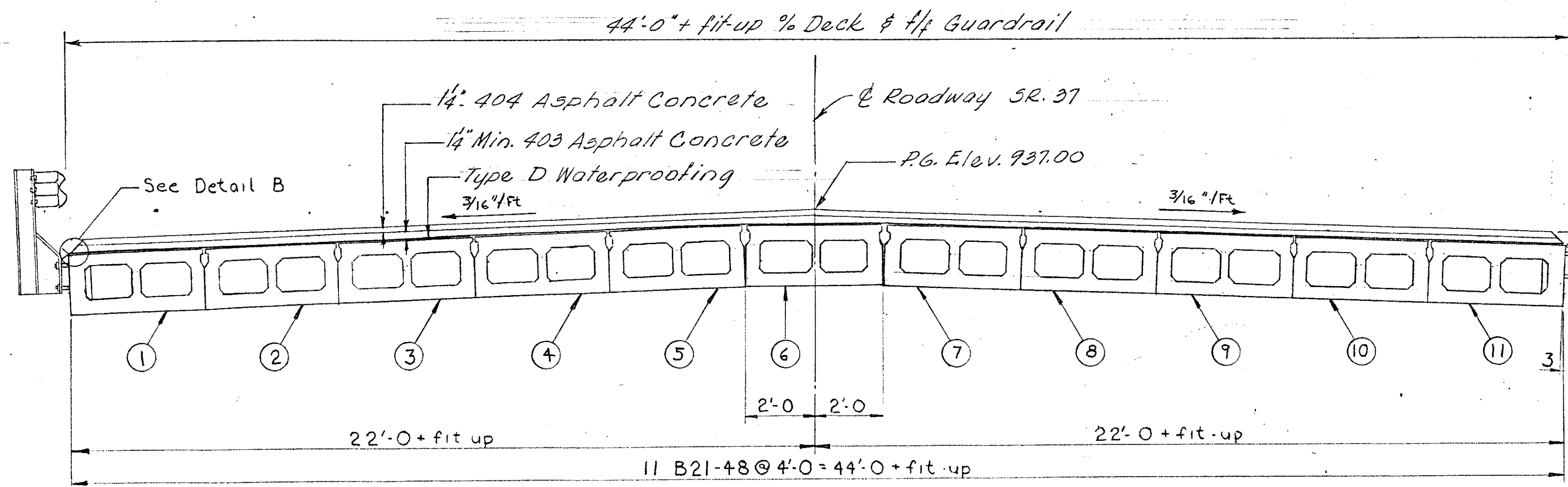
DECK PLAN

NOTES

DRIP STRIP: PRIOR TO APPLYING DECK MEMBRANE WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE DECK EDGES AS SHOWN IN DETAIL B. STRIPS SHALL BE FASTENED AT 1'-6" MAXIMUM WITH 1-1/4 X 5/32 X 1/4 FLAT HEAD DRIVE PINS AND WASHERS (LENGTH X SHANK DIA. X HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO APPROVAL BY THE ENGINEER. STRIPS SHALL BE PLACED FULL LENGTH OF DECK, ENDING AT FACE OF ABUTMENT WINGWALL. WHERE SPLICES ARE REQUIRED, A 3" (MIN.) LAP, WITH FASTENER THROUGH LAP, SHALL BE USED. DRIP STRIPS SHALL BE 8" X 0.105" (#12 GA.) GALVANIZED, IN ACCORDANCE WITH ASTM A568 AND SECTION 711.02 ODOT CONST. & MAT. SPEC., OR 8" X #20 GA. ASTM A167, TYPE 304, MILL FINISH STAINLESS STEEL. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL, SQ. FT. STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE ITEM.

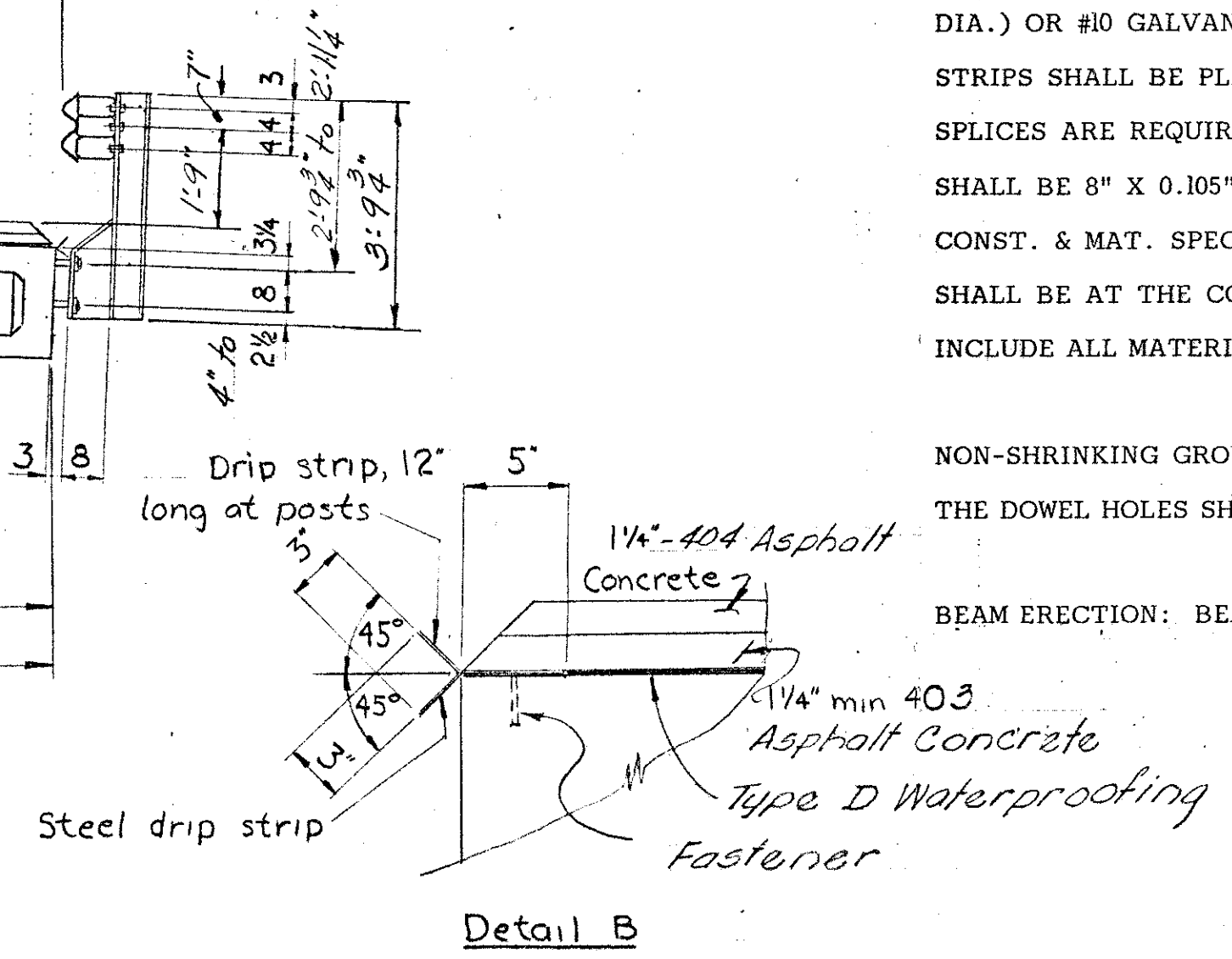
NON-SHRINKING GROUT USED TO FILL THE KEYWAYS, THE TIE ROD RECESSES IN THE FASCIA BEAMS AND THE DOWEL HOLES SHALL BE INCLUDED WITH ITEM 515 FOR PAYMENT.

BEAM ERECTION: BEAM #6 SHALL BE ERECTED FIRST, THEN WORK OUTWARD.



SECTION A-A

For additional railing details, see Std. Dwg. DBR-2-73.



Detail B

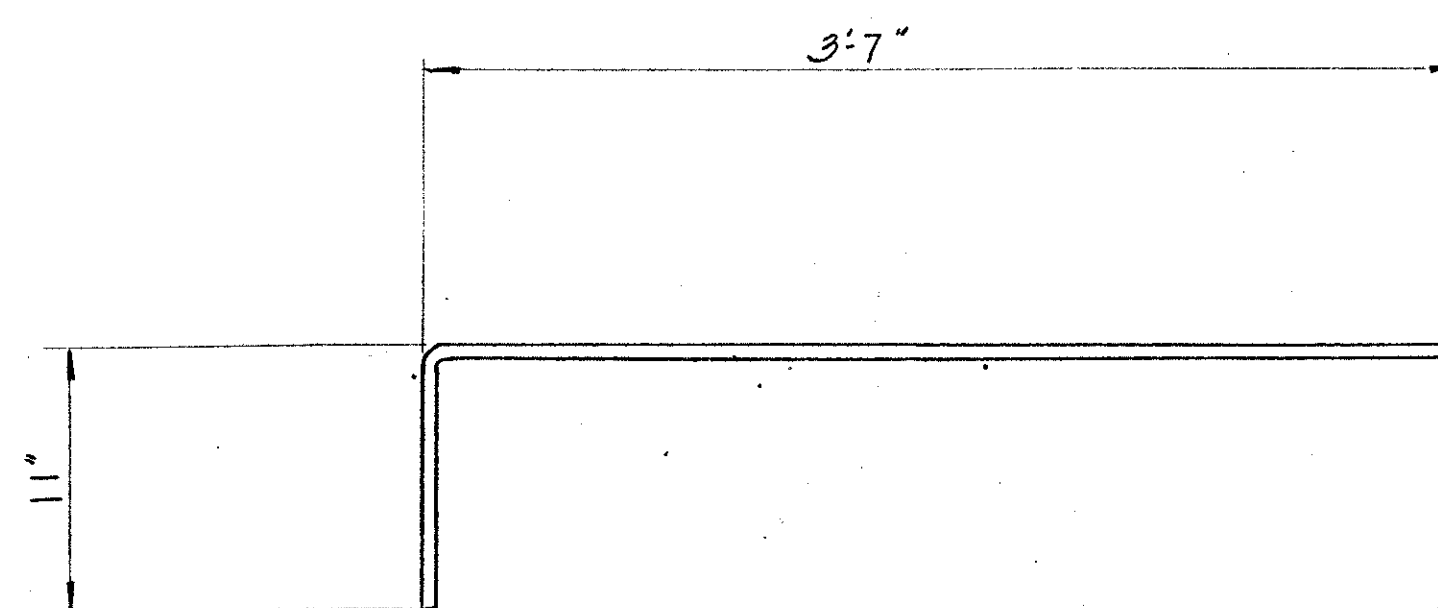
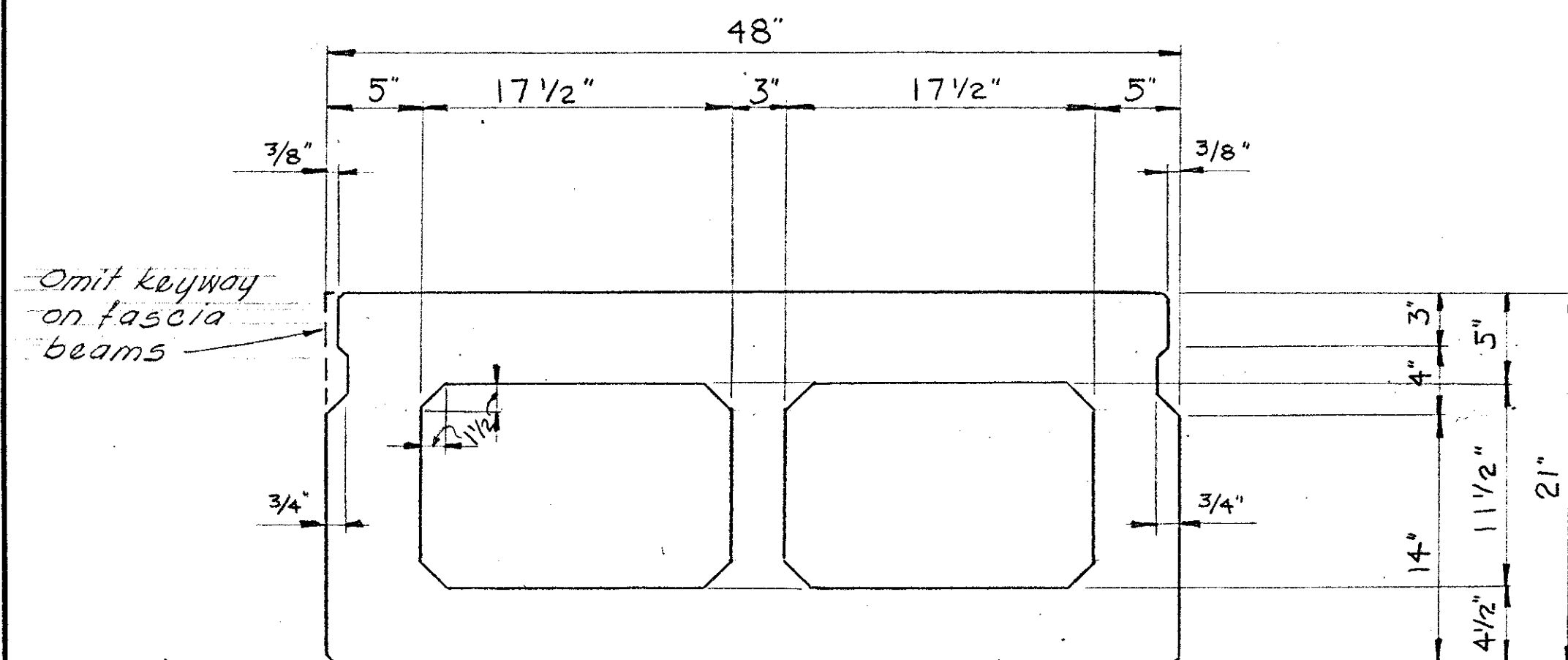
STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						6/7
SUPERSTRUCTURE * DETAILS						
BRIDGE NO. UNI-37-1224 OVER BOKES CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LMW	LMW		WTF	WJU	9-10-81	

MITROPTIENED
SEP 10 1981

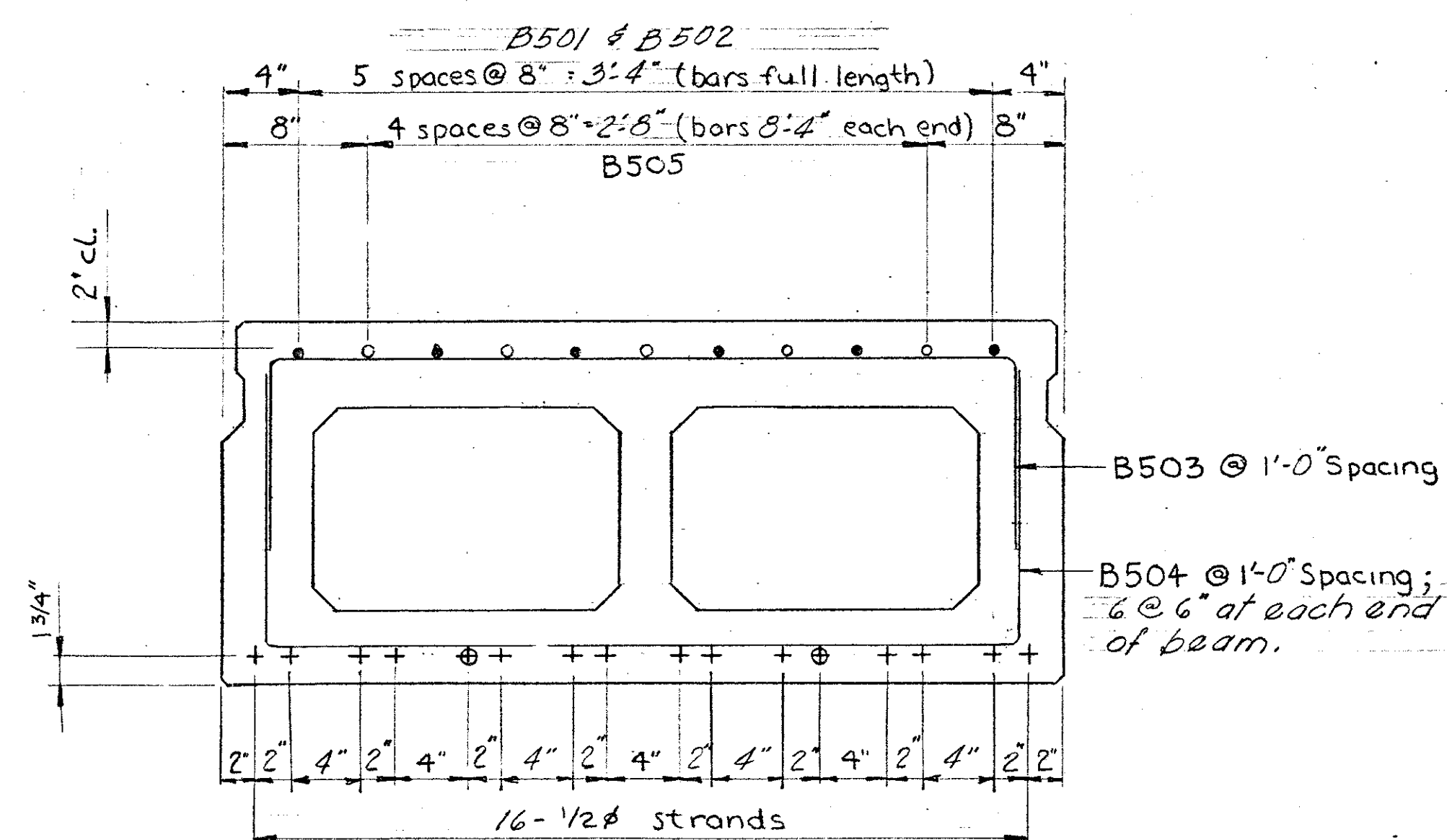
FHWA REGION	STATE	PROJECT	
5	OHIO		

UNI-37-12.23

17
19



B503

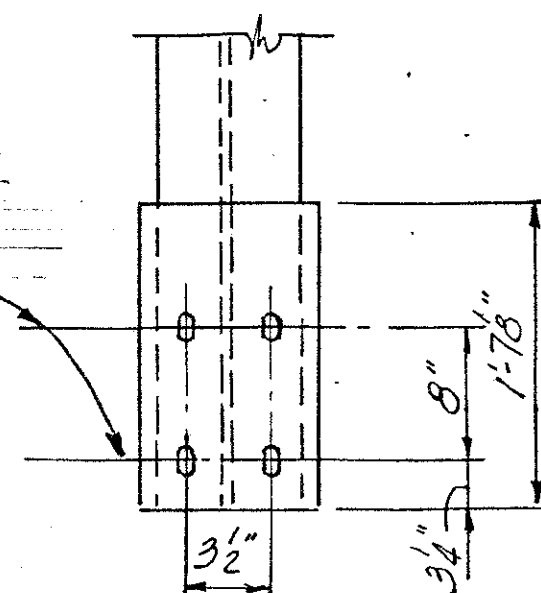


B503 @ 1'-0" Spacing
B504 @ 1'-0" Spacing;
6 @ 6" at each end of beam.

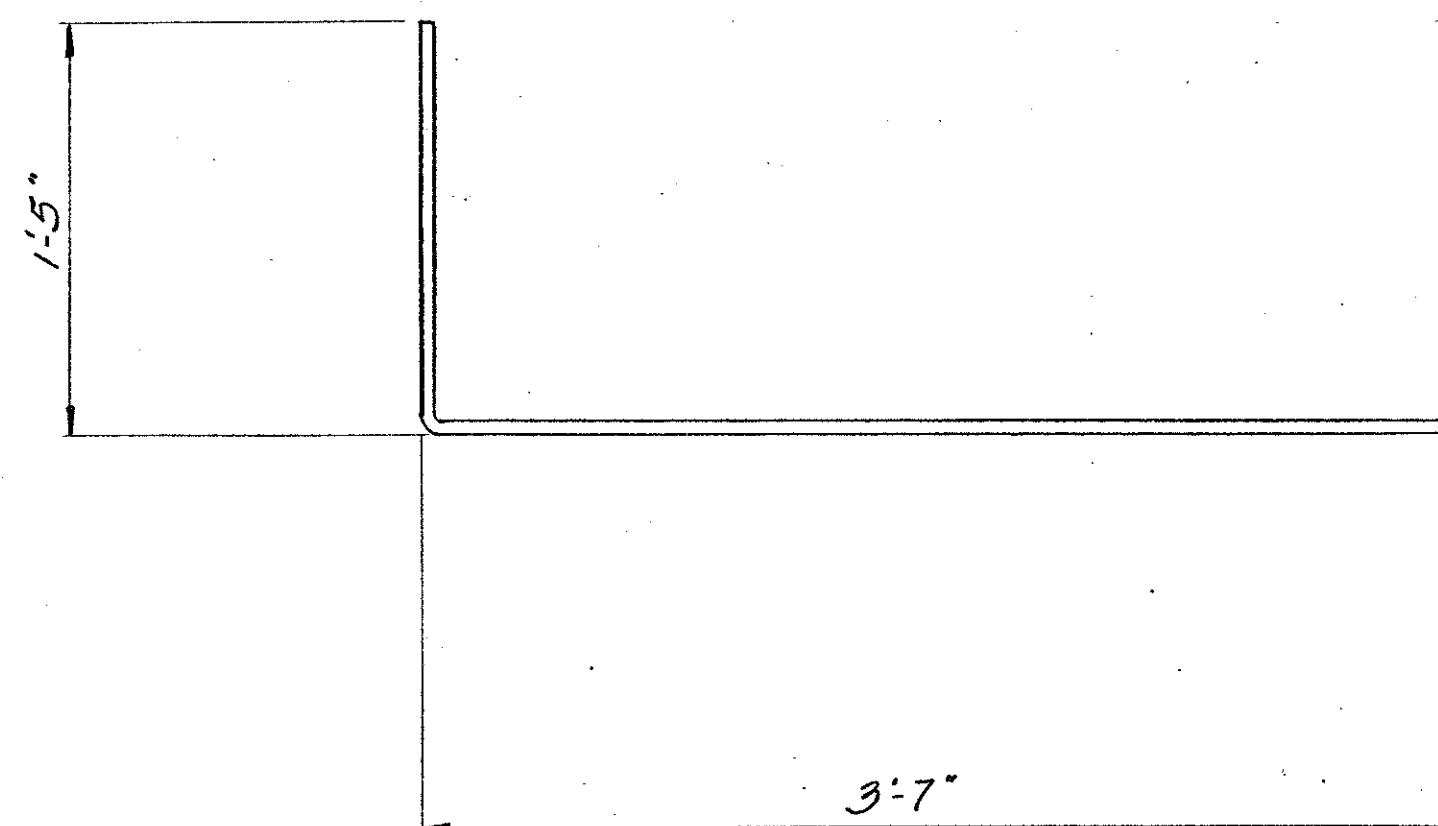
B21-48

⊕ Debond 1'-6" from each end of beam.

⊕ 12" x 24" elongated holes in plate for 1/4" studs



SLOTTED HOLE DETAIL FOR PLATE ON RAIL POST



B504

NOTES

PRESTRESSING STRANDS ARE ASTM A416 1/2 IN. 7 - WIRE UNCOATED, STRESS-RELIEVED STRANDS WITH AN ULTIMATE STRENGTH OF 270 KSI AND AN INITIAL TENSION OF 28,900 LBS. PER STRAND.

REFER TO STD. DRWG. PSBD-1-71 FOR THE FOLLOWING:

- BEAM LIFTING INSERTS
- ANCHOR DOWELS
- WALL THICKENING AT GUARD RAIL ANCHORS
- TYPICAL PLANS OF DIAPHRAGMS & TRANSVERSE TIE RODS
- BEAM DIMENSIONAL TOLERANCES
- DETAILS AND REINFORCEMENT OF BEAM ENDS
- END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE

CALCULATED DEFLECTION DUE TO SURFACE COURSE AND RAILING - NEGLIGIBLE

CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, 1 1/2"

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND A 1 1/4" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1 1/4" UNIFORM THICKNESS, AND THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE 1 1/4" BELOW FINAL PAVEMENT ELEVATION. (MAXIMUM SECOND COURSE THICKNESS, AT END OF SPANS, EQUALS 1 1/2".)

P/S BEAM FINAL CAMBER IS 1 1/2". THIS IS 2 1/8" IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 1 1/4" (1 3/8" AT CENTER OF BEAM 6) AT CENTER OF SPANS TO 2 3/4" (3 1/8" AT CENTER OF BEAM 6) AT ENDS OF SPANS.

EPOXY COATING OF MILD STEEL:

ALL MILD REINFORCING STEEL IN THE OUTSIDE BEAMS (1 AND 11) AND ALL MILD REINFORCING STEEL EXCEPT B504 BARS IN THE REMAINING BEAMS (2 THRU 10) SHALL BE EPOXY COATED. SEE NOTE IN PROPOSAL.

NON-SHRINKING GROUT USED TO FILL THE BEAM SHEAR KEYS, TIE ROD RECESSES IN THE FASCIA BEAMS, AND THE DOWEL HOLES SHALL BE INCLUDED WITH ITEM 515 FOR PAYMENT.

NON-SHRINKING MORTAR: IN LIEU OF THE REQUIREMENTS FOR NON-SHRINKING MORTAR AND GROUT GIVEN ON STANDARD DRAWING PSBD-1-71, NON-SHRINKING MORTAR SHALL BE MADE WITH MATERIALS AND PROPORTIONS AS FOLLOWS:

- 2680 LBS. SAND, 703.02, @ 6% MOISTURE
- 9 BAGS CEMENT, 701.05
- 40 GALLONS WATER, 499.02
- 9 LBS. EXPANDING GROUTING AID ADMIXTURE, INTERPLAST - N BY SIKA CHEMICAL CORPORATION, OR APPROVED EQUAL.

THE CEMENT, SAND AND WATER SHALL BE MIXED FIRST, AFTER WHICH THE ADMIXTURE SHALL BE ADDED. BATCH SIZE SHALL BE LIMITED SO PLACEMENT CAN BE COMPLETED WITHIN 30 MINUTES. WATER SHALL NOT BE ADDED TO INCREASE FLOWABILITY WHICH HAS BEEN DECREASED BY DELAYED USE OF MORTAR.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

7/7

SUPERSTRUCTURE DETAILS
BRIDGE NO. UNI-37-1224
OVER BOKES CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LMW	LMW		WTF	WJU	9-10-81	

CENTERLINE SURVEY PLAT

& PROPERTY MAP

UNI 37 SECTION 12.23

UNION COUNTY LEESBURG TOWNSHIP

VMS NO'S 3696,6199

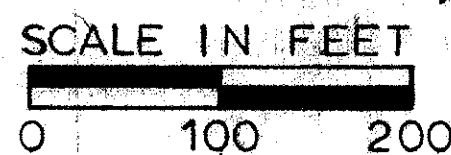
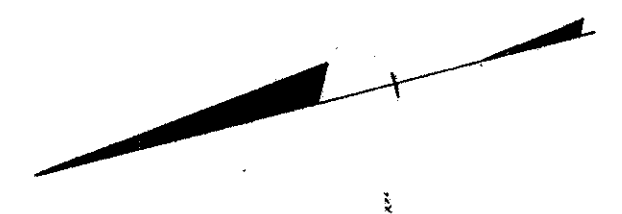
FHWA REGION	STATE	PROJECT
5	OHIO	

18
19

UNI-37-12.23

BRS-789(1)

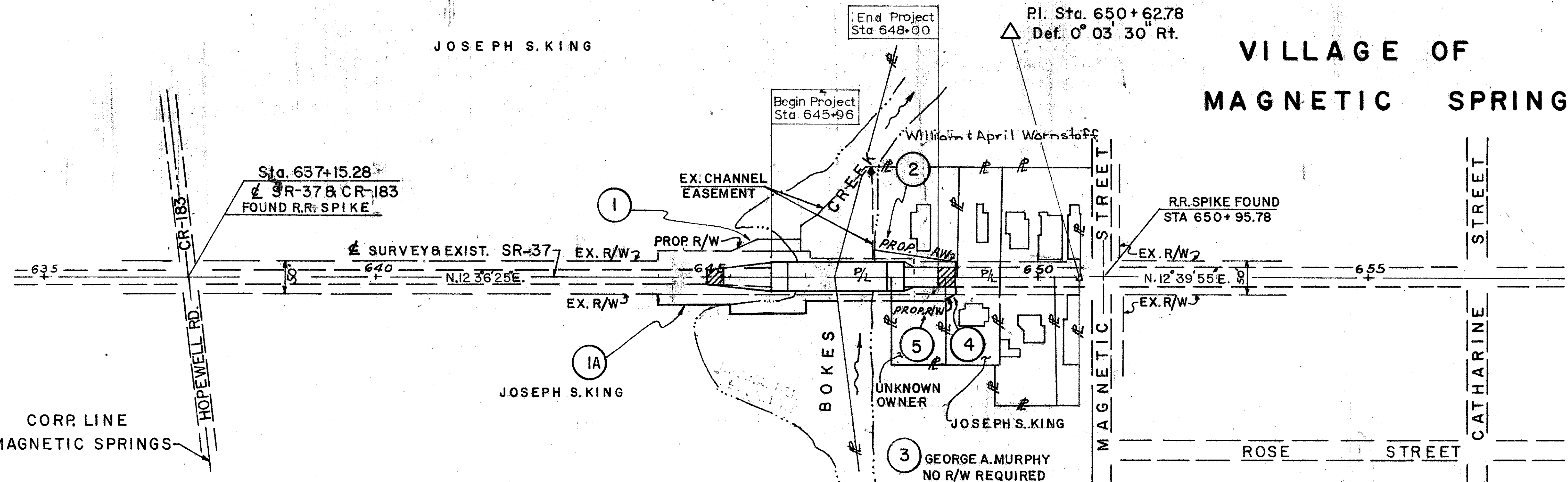
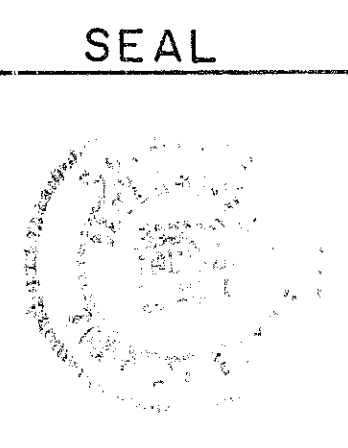
1
2



VILLAGE OF MAGNETIC SPRINGS

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE BY THE OHIO DEPARTMENT OF TRANSPORTATION IN 1978

SIGNED Oliver T. Waugh
DATE 7-20-81 REGISTERED SURVEYOR NO. 5538



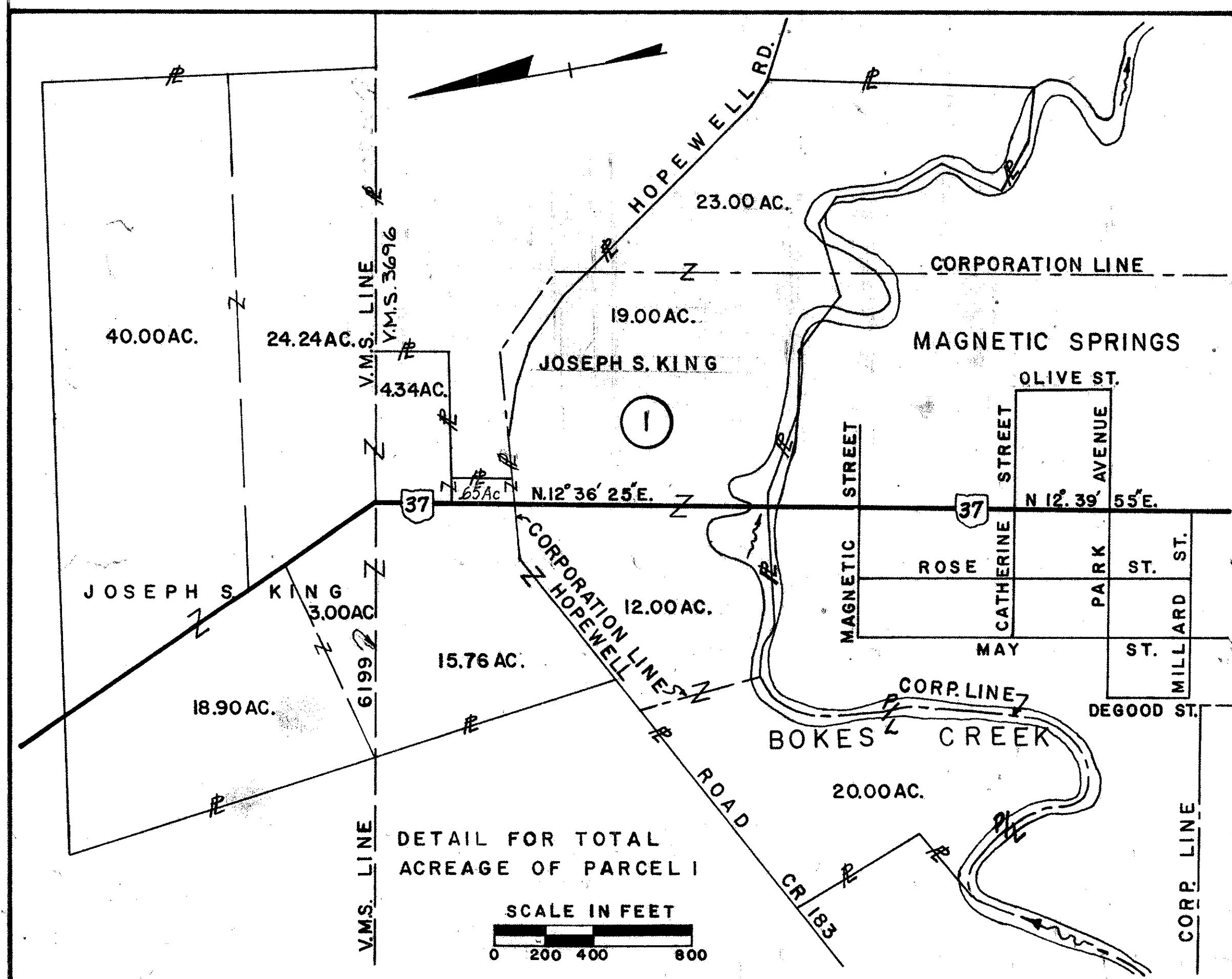
RECORDED IN PLAT BOOK 4 PAGE 85
UNION COUNTY RECORDERS OFFICE

UTILITIES

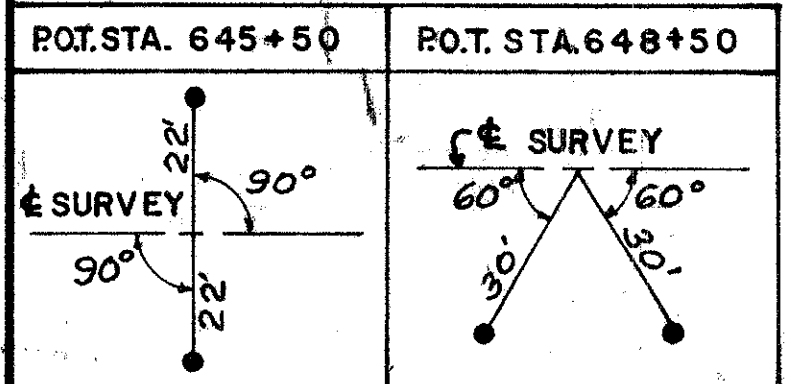
OHIO EDISON COMPANY
23 NORTH FRANKLIN STREET
RICHWOOD, OHIO 43344

UNITED TELEPHONE COMPANY
127 NORTH MAIN STREET
BELLEFONTAINE, OHIO 43311

COLUMBIA GAS COMPANY
843 EAST 5th STREET
MARYSVILLE, OHIO 43040



● = CENTERLINE REFERENCE MONUMENT
TO BE SET DURING CONSTRUCTION



DATE	DESCRIPTION OF REVISION
3-30-82	Added parcel 1A. Revised parcel 5
11-16-81	Name changed parcel 2

UNI-37-12.23
BRS-789(1)

Deed Book 285, Page 58
Gross Deed Area = 3,412 Sq. Ft. or 0.79 Ac.
Total P.R.O. = 8,202 Sq. Ft.
Net Deed Area = 26,210 Sq. Ft.
Net Residue Left = 25,522 Sq. Ft.

2
Gross = 688 Sq. Ft.
P.R.O. = -0- Sq. Ft.
Net = 688 Sq. Ft.

1
Joseph S. King
Gross = 814 Sq. Ft.
P.R.O. = -0- Sq. Ft.
Net = 814 Sq. Ft. or 0.019 Ac.

1A
Joseph S. King
Deed Book 181, Page 347 - 110,310 Ac.
Deed Book 184, Page 273 - 70,580 Ac.
Gross Deed Area = 180,890 Ac.
Total P.R.O. = 7,800± Ac.
Net Deed Area = 173,090± Ac.
Net Residue Right = 65,234± Ac.
Net Residue Left = 107,711± Ac.

Parcel No. 1 additional R/W out of D.B. 184, Page 273 Tract No. 1
Parcel No. 1A additional R/W out of D.B. 181 Page 347 Parcel No. 1

1A
Gross = 0.126 Ac.
P.R.O. = -0- Ac.
NET = 0.126 Ac.

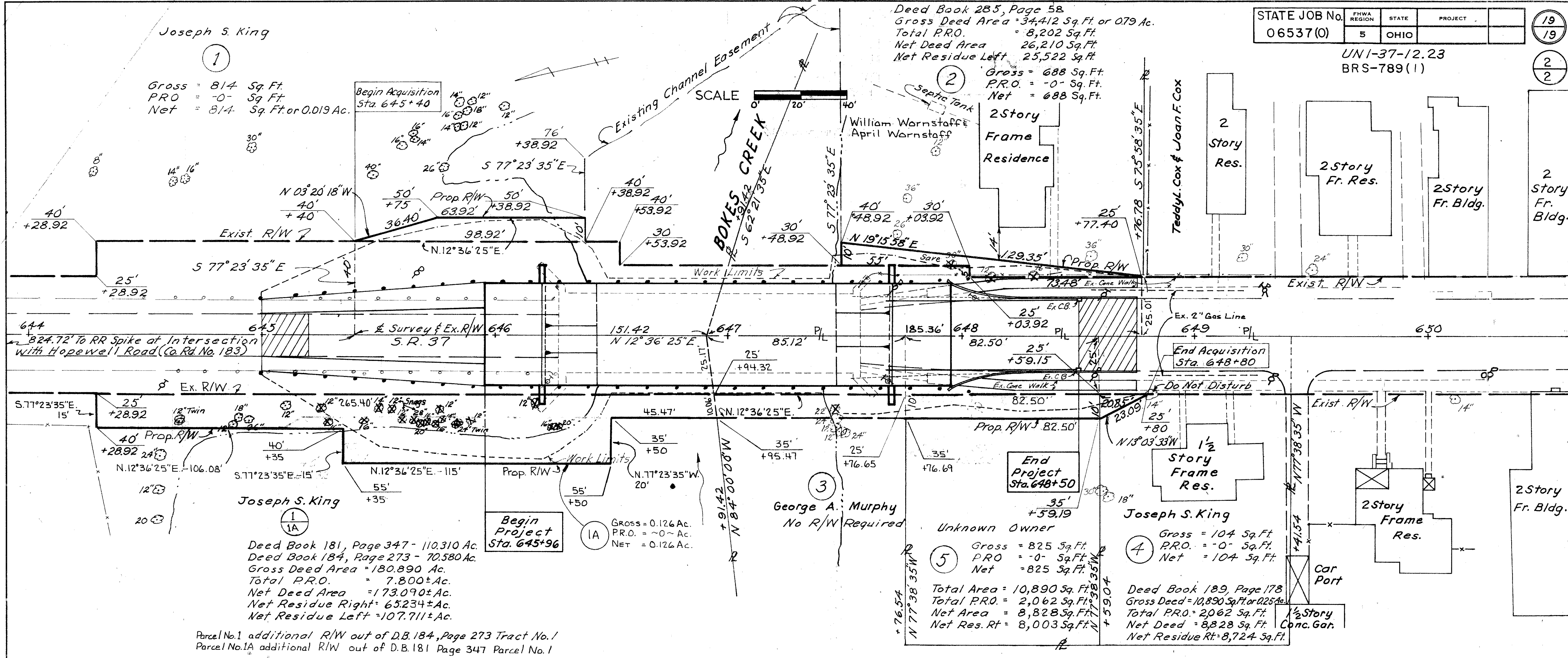
3
George A. Murphy
No R/W Required

5
Unknown Owner
Gross = 825 Sq. Ft.
P.R.O. = -0- Sq. Ft.
Net = 825 Sq. Ft.

Total Area = 10,890 Sq. Ft.
Total P.R.O. = 2,062 Sq. Ft.
Net Area = 8,828 Sq. Ft.
Net Res. Rt = 8,003 Sq. Ft.

4
Joseph S. King
Gross = 104 Sq. Ft.
P.R.O. = -0- Sq. Ft.
Net = 104 Sq. Ft.

Deed Book 189, Page 178
Gross Deed = 10,890 Sq. Ft. or 0.25 Ac.
Total P.R.O. = 2,062 Sq. Ft.
Net Deed = 8,828 Sq. Ft.
Net Residue Rt = 8,724 Sq. Ft.



Union County - Village of Magnetic Springs
Leesburg Township - V.M.S. 3696 & 6199

DATE	REVISION
3-30-82	Added parcel 1A, revised take parcel 5
11-16-81	Name change parcel 2

MICROFILMED
SEP 10 1984

UNION COUNTY
UNI-37-12.23

1
3
1
3

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE RELATIVELY FLAT GLACIATED PORTION OF THE MISSISSIPPI VALLEY PLAIN REGION, ON THE BROAD FLOODPLAIN OF AND OVER BOKES CREEK, IN AN AREA WHERE DEEP GLACIAL-DEIVED MATERIAL AND ALLUVIAL DEPOSITS OVERLIE DOLOMITIC LIMESTONE BEDROCK, OF THE MONROE FORMATION.








EXPLORATION








THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON OCTOBER 23, 1979.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS








THE BORINGS DISCLOSED THAT INTERVALS OF LOOSE TO EXTREMELY DENSE STRATIFIED SILTS, SAND AND GRAVEL MODIFIED WITH CLAY AND INCREASING (ERRATICALLY) IN DENSITY WITH INCREASE IN DEPTH OVERLIE SLOPING BEDROCK SURFACE ENCOUNTERED AT 35 TO 41-FOOT DEPTH, ELEVATION 901 TO 892 FEET. THE BORINGS WERE TERMINATED AT 45-FOOT DEPTH, ELEVATION 892 FEET, AFTER PENETRATING 3 TO 10 FEET BELOW BEDROCK SURFACE.

FREE WATER WAS OBSERVED AND MEASURED IN BORING B-8 AT 11-FOOT DEPTH, ELEVATION 925 FEET AND IN BORING B-1 AT 12-FOOT DEPTH, ELEVATION 924 FEET.










-  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
-  TR Top of Rock

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

SYMBOLS OF ROCK TYPES

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

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.
-  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 1.315-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 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.

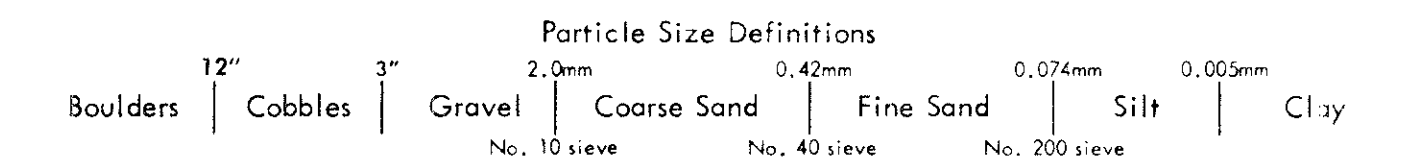
Drive Sample Borings - Drive-Press Sample Borings

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 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.



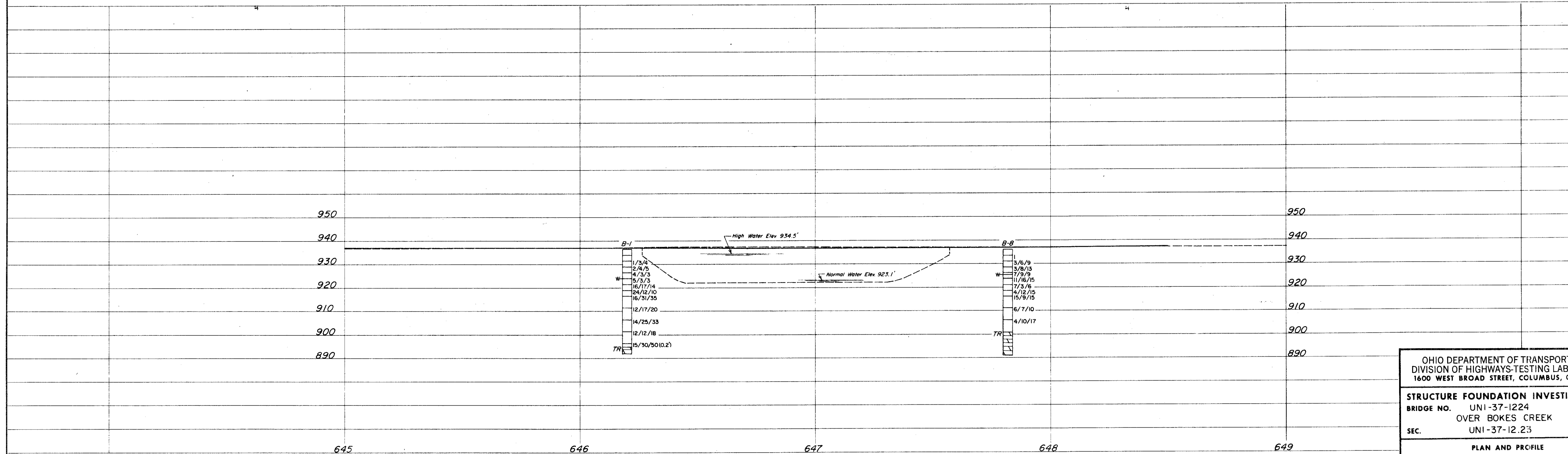
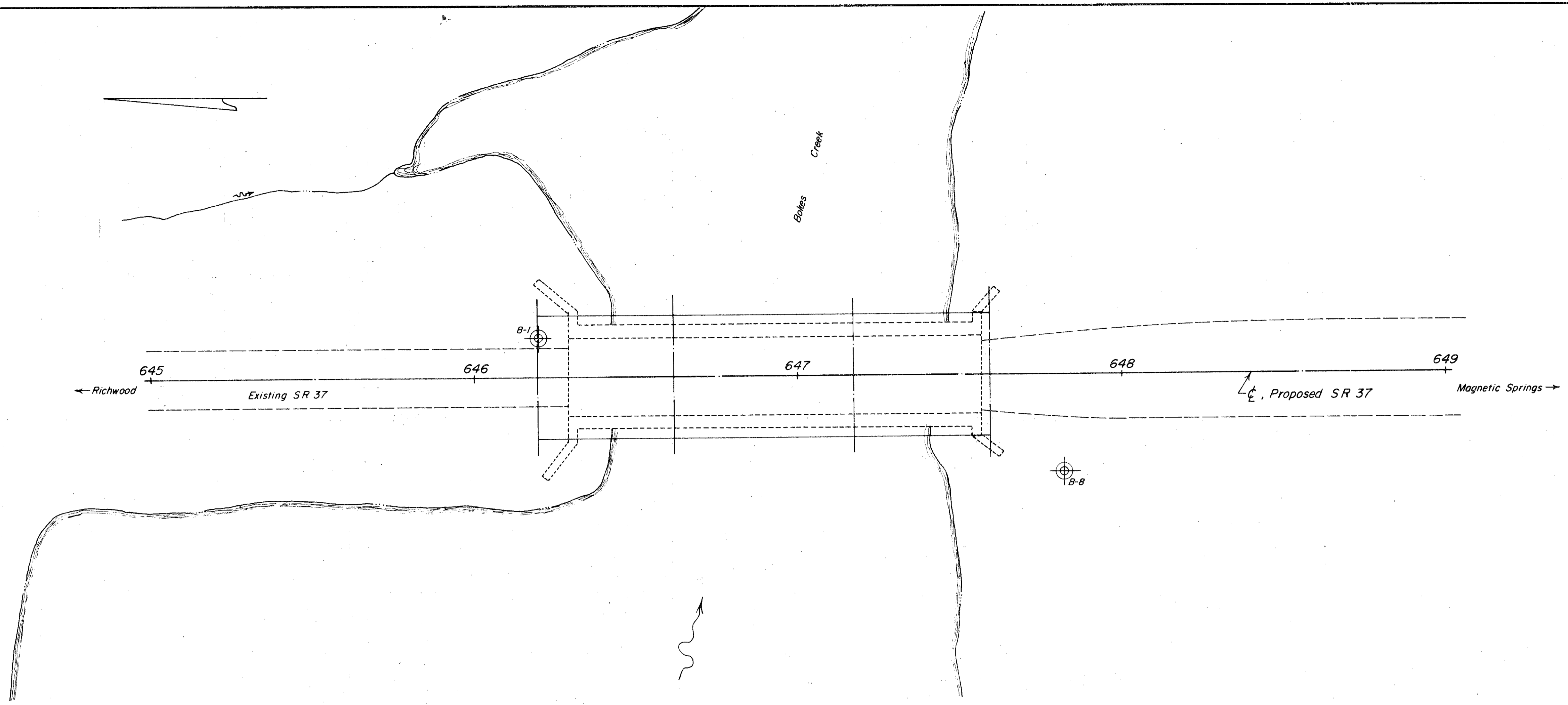
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-37-1224
OVER BOKES CREEK
SEC. UNI-37-12.23

CHECKED BY L. N. L.	REVIEWED BY R. D. R.	DATE 11/8/79
------------------------	-------------------------	-----------------

MICROFILMED
SEP 1 01984



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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. UNI-37-1224
OVER BOKES CREEK
SEC. UNI-37-12.23

PLAN AND PROFILE

DRAWN BY L. N. L.	CHECKED BY L. N. L.	REVIEWED BY R. D. R.	DATE 11/8/79
----------------------	------------------------	-------------------------	-----------------

SCALE: 1" = 20'

MICROFILMED
SEP 10 1984

3
3
3

LOG OF BORING

Date Started 10/23/79 HOLLOW STEM AUGER Dia _____ Water Elev _____
 Date Completed 10/23/79 Sampler Type _____ Dia _____
 Boring No. B-1 Casing Length _____ Dia _____ Station & Offset 646+20 - 12' LT. (REAR ABUTMENT) Surface Elev 936.5'

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.						
936.5	0																			
934.0	2				BROWN SANDY CLAY	11	6	9	14	27	44	28	11	19						A-6a
931.5	4				BROWN SANDY CLAY	12	4	4	13	31	48	31	13	21						A-6a
929.0	6	1/3/4			BROWN SANDY CLAY	13	4	4	9	34	49	34	13	21						A-6a
926.5	8	2/4/5			BROWN AND GRAY SILTY SANDY GRAVEL	14	35	11	14	20	20	33	10	32						A-4a
924.0	10	4/3/3			BROWN AND GRAY GRAVELLY SANDY SILT	15	17	10	29	23	21	25	6	26						A-4a
921.5	12	5/3/3			BROWN AND GRAY SILTY SANDY GRAVEL	16	53	15	9	11	12	22	5	26						A-1-b
919.0	14	16/17/14			BROWN AND GRAY SILTY SANDY GRAVEL	17	56	22	8	8	6	19	3	13						A-1-b
916.5	16	24/12/10			BROWN SILTY SAND	18	0	5	64	19	12	NP	NP	16						A-3a
911.5	18	16/31/35			BROWN AND GRAY SILTY SAND	19	4	8	42	34	12	NP	NP	17						A-4a
906.5	20	12/17/20			BROWN AND GRAY SANDY GRAVELLY SILT	20	29	6	19	30	16	NP	NP	12						A-4a
901.5	22	14/25/33			BROWN AND GRAY SILTY SAND	21	9	13	48	18	12	NP	NP	18						A-3a
896.5	24	12/12/18			BROWN CLAY AND LIMESTONE FRAGMENTS	22	38	5	6	20	31	28	12	19						A-6a
895.3	26	15/30/50			DOLOMITIC LIMESTONE, GRAY, HARD, VERY BADLY BROKEN AND SEVERLY JOINTED. CORE LOSS 45%.															
892.0	28	(U-2)	1.8	1.5	DOLOMITIC LIMESTONE, GRAY, HARD, VERY BADLY BROKEN AND SEVERLY JOINTED. CORE LOSS 45%.															

^ BOTTOM OF BORING

LOG OF BORING

Date Started 10/23/79 HOLLOW STEM AUGER Dia _____ Water Elev 925.2
 Date Completed 10/23/79 Sampler Type _____ Dia _____
 Boring No. B-8 Casing Length _____ Dia _____ Station & Offset 647+82 - 30' RT. (FORWARD ABUTMENT) Surface Elev 936.1'

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.							
936.1	0																				
933.6	2				BROWN GRAVELLY SANDY CLAY	1	28	21	9	17	25	38	12	21							A-6a
931.1	4	1 (1.5')			BROWN SILTY SANDY GRAVEL	2	48	37	5	5	5	NP	NP	6							A-1-b
928.6	6	3/6/9			BROWN SILTY SANDY GRAVEL	3	49	36	5	5	5	NP	NP	6							A-1-b
926.1	8	3/8/13			BROWN SILTY SANDY GRAVEL	4	43	35	10	7	5	NP	NP	13							A-1-b
923.6	10	7/9/9			BROWN SAND AND GRAVEL	5	-	-	-	-	-	-	-	-							VISUAL
921.1	12	11/16/15			BROWN AND GRAY SANDY GRAVELLY SILT	6	25	13	13	24	25	24	7	17							A-4a
918.6	14	7/3/6			BROWN SILTY SAND	7	7	5	62	15	11	NP	NP	20							A-3a
916.1	16	4/12/15			BROWN SILTY GRAVELLY SAND	8	17	9	51	12	11	NP	NP	17							A-3a
911.1	18	15/9/15			BROWN SANDY GRAVELLY SILT	9	26	9	18	28	19	17	4	13							A-4a
906.1	20	6/7/10			BROWN CLAYEY SILT	10	0	1	1	51	47	24	8	19							A-4b
901.0	22	4/10/17			TOP OF ROCK																
891.1	24		4.5	0.4	DOLOMITIC LIMESTONE, GRAY, HARD, BADLY BROKEN AND SEVERLY JOINTED. CORE LOSS 12%.																
	26		4.2	0.8																	

^ BOTTOM OF BORING

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

STRUCTURE FOUNDATION INVESTIGATION
 BRIDGE NO. UNI-37-1224
 OVER BOKES CREEK
 SEC. UNI-37-12.23

BORING DATA

TYPED BY S.M.G.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 11/8/79
--------------------	----------------------	-----------------------	-----------------