

MICROFILMED
NOV 21 1986

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

TUS-250-(23.72)(24.21)

UNION TOWNSHIP
TUSCARAWAS COUNTY

MICROFILMED
MAR 25 1992

TUS-250-(23.72)(24.21)	OHIO FHWA REGION 5	1 30
BRM-5K11(1)	FEDERAL PROJECT	
BRZ-7903(1)		

DESIGN DESIGNATION

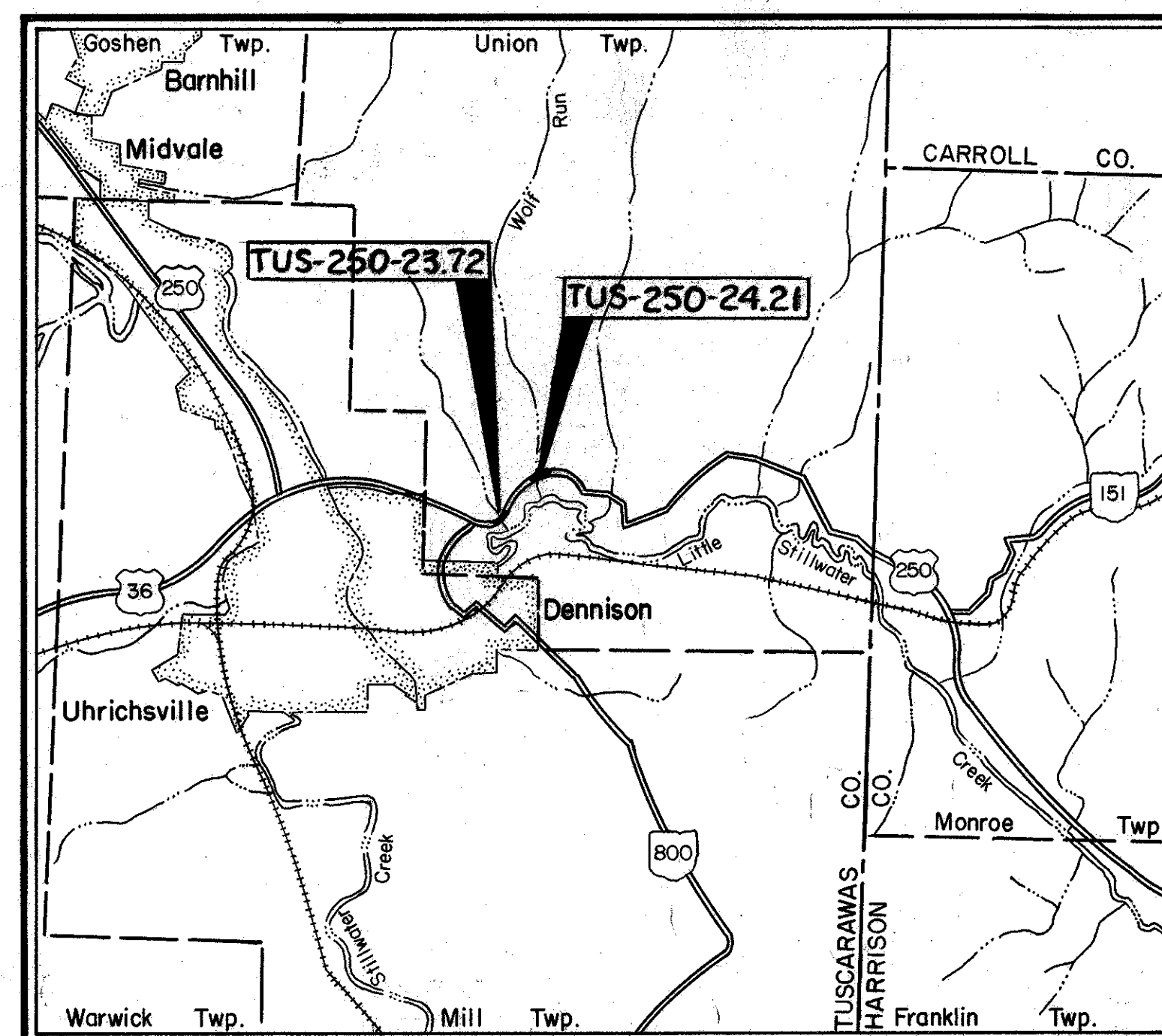
Current ADT 1983 = 5620
Design Year ADT 2003 = 16352
DHV = 2453
D = 60 %
T = 8 %
V = 50 M.P.H.

CONVENTIONAL SIGNS

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

INDEX OF SHEETS

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Bridge No. TUS-250-24.21 ----- 20-28
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LOCATION MAP

SCALE IN MILES
0 1 2 3 4

LINE DATA

Begin Project Sta. 1251+66.42
End Project Sta. 1252+37.58
Length of Project 71.16 Lin. Ft.
or 0.013 Mi.
Begin Work Sta. 1249+50
Suspend Work Sta. 1254+00
Resume Work
End Work
Length of Work 450 Lin. Ft.
or 0.085 Mi.

TUS-250-24.21
BRM-5K11(1)
BRZ-7903(1)
Sta. 1278+24.42
Sta. 1278+95.59
71.17 Lin. Ft.
or 0.013 Mi.
Total Length of Project = 142.33 Lin. Ft.
or 0.027 Mi.
Sta. 1276+00
Sta. 1281+00
500 Lin. Ft.
or 0.095 Mi.

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 -----

SUPPLEMENTAL SPECIFICATIONS	
947	10-17-83
847	10-17-83

Approved _____
Date 4/9/85 District Deputy Director of Transportation

HHD Approved _____
Date 4-30-85 Engineer, Bureau of Bridges and Structural Design

Approved _____
Date 7-28-85 Chief Engineer, Planning and Design

Approved _____
Date 7-28-85 Director, Department of Transportation

Project: TUS-250-(23.72)(24.21)
Date of Letting 19____, Contract No. _____
LD0300 Rev. 1-1-81

Plan Prepared By:
District No. 11
Ohio Department of Transportation

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
BP-5	1-11-85	MC-4	7-26-76
BP-6	6-1-65		
CB-2-2-B	5-1-79		
GR-1	1-11-85		
GR-2B	2-5-82	AS-1-81	11-27-81
GR-3	1-21-85		
GR-4	2-5-82		
GR-4B	2-5-82	DBR-2-73	4-10-73
HW-4A	4-1-80		
HW-4B	4-1-80	PSBD-1-81	9-18-81

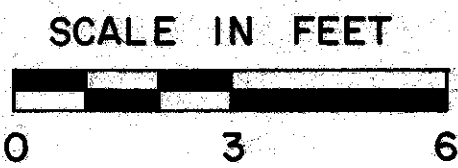
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

TYPICAL SECTIONS

TYPE 404

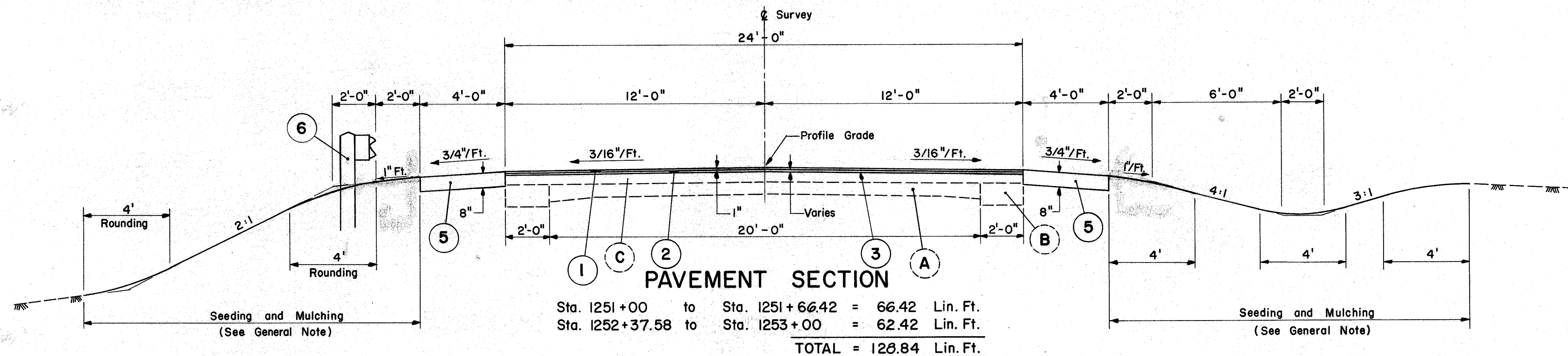
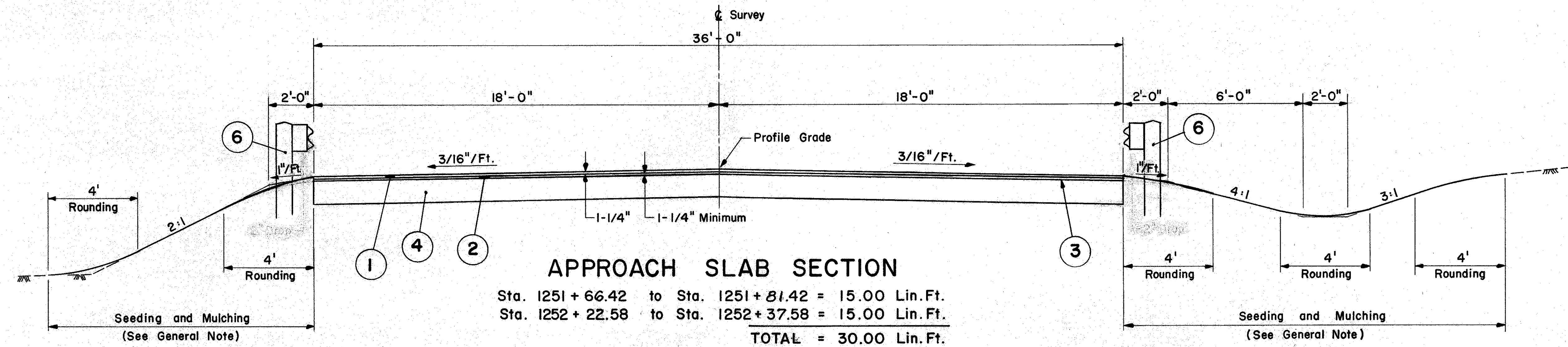


Calculated By	Checked By
JWH	DWL
3-19-84	3-23-84

FHWA REGION	STATE	PROJECT
5	OHIO	

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TUS-250-(23.72)(24.21)

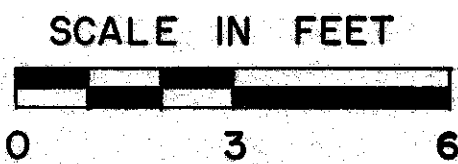


LEGEND

- ① Item 404 Asphalt Concrete, AC-20
- ② Item 403 Asphalt Concrete, AC-20
- ③ Item 407 Tack Coat and Cover Aggregate (See General Note)
- ④ Item 611 Reinforced Concrete Approach Slabs (T=12")
- ⑤ Item 304 Aggregate Base
- ⑥ Item 606 Guardrail, Type 5
- A Existing Portland Cement Concrete Base
- B Existing Bituminous Aggregate Base
- C Existing Bituminous Pavement

TYPICAL SECTIONS

TYPE 404

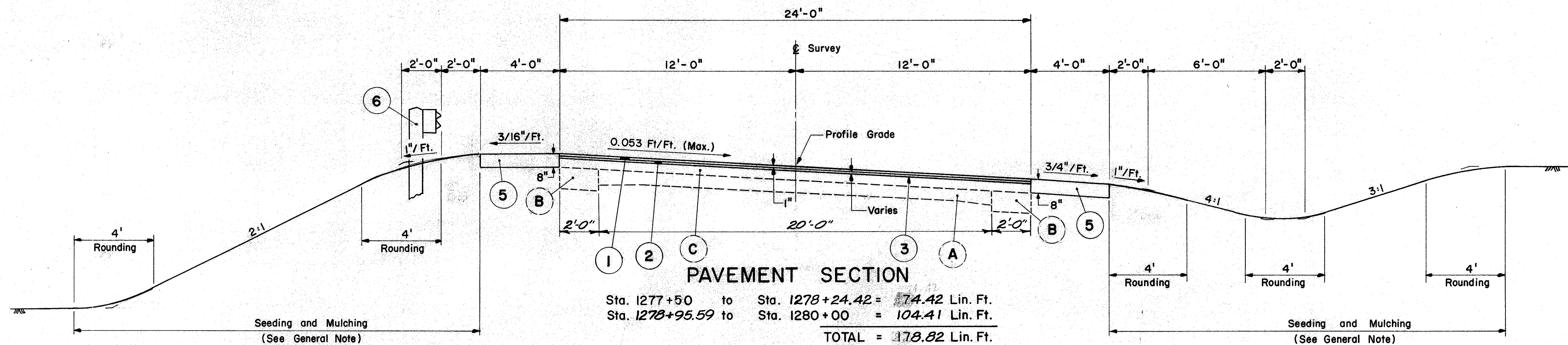
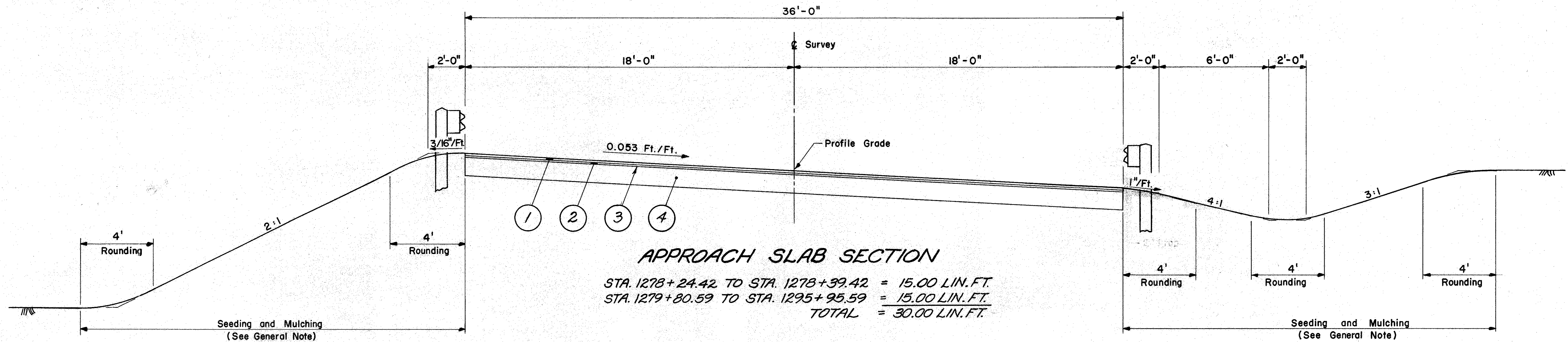


Calculated By	Checked By
JWH	W.H.W.
3-23-84	12/19/84

FHWA REGION	STATE	PROJECT
5	OHIO	

3
30

TUS-250 - (23.72)(24.21)



LEGEND

- ① Item 404 Asphalt Concrete, AC-20
- ② Item 403 Asphalt Concrete, AC-20
- ③ Item 407 Tack Coat and Cover Aggregate (See General Note)
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- ⑤ Item 304 Aggregate Base
- ⑥ Item 606 Guardrail, Type 5
- A Existing Portland Cement Concrete Base
- B Existing Bituminous Aggregate Base
- C Existing Bituminous Pavement

GENERAL NOTES

Calculated By: JWH 5-31-84
Checked By: DWI 6-1-84

FWHA REGION: 5 STATE: OHIO PROJECT: TUS-250-(23.72)(24.21)

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FIELD OFFICE : The Contractor shall provide a suitable field office having a minimum of 300 sq. ft. of floor space. Payment for the above shall be included in 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.

ELEVATION DATUM : All elevations refer to U.S.G.S.

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.

CONTINGENCY QUANTITIES : The Contractor shall not order materials or perform work listed in the General Summary for items designated by plan note 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.

SEEDING : Quantities for seeding are calculated for the soil areas between the work limits, as shown on the cross sections.

WATERING PERMANENT SEEDED 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 659.09.

	BRM-5K11(1)	BRZ-7903(1)
659 Water	2 M. Gal.	2 M. Gal.

TEMPORARY STREAM CROSSING FORDS : Where stream crossing 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 Final Regulations published July 22, 1982.

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 0.10 gallons per square yard of Tack Coat and 7 pounds per square yard of Cover Aggregate for estimating purposes only.

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 153.64 O.R.C.

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.

UTILITY OWNERSHIP : The Contractor shall notify, at least two working days before breaking ground, all public service corporations having wires, poles, conduit or other structures, which may be affected by the operation. He shall conduct his operations in such a manner to avoid damages to any and all utilities. Any and all work required for public or private utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

Following is a list of the owners of utilities known to be within the area of this project :

Ohio Bell Telephone Co. 150 E. Gay St. Columbus, Ohio 43215 Phone 614/223-8262	Ohio Power Co. 301 Cleveland Ave. S.W. P.O. Box 400 Canton, Ohio 44701 Phone 216/438-7040
East Ohio Gas Co. 332 Second St. N.W. Canton, Ohio 44702 Phone 216/438-6130	Twin City Water Dept. 314 Grant St. Dennison, Ohio 44621 Phone 614/922-1460

REMOVAL OF TREES OR STUMPS : All trees or stumps within the construction limits of the project shall be removed under the lump sum price bid for Item 201, Clearing And Grubbing.

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

SIZES	Nº TREES	Nº STUMPS	TOTAL
18"	5	0	5
30"	0	0	0
48"	0	0	0
60"	0	0	0

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

ITEM 614 MAINTAINING TRAFFIC : The Contractor shall maintain traffic at all times in accordance with the requirements of Spec. 614. Two-way traffic shall be maintained at all times by use of the existing pavement, the completed pavement, Item 502 Temporary Structure, and Item 615 Temporary Roads and Pavements. The limits and duration of use of temporary roadways shall be held to an absolute minimum, and in all cases shall be subject to the approval of the Engineer.

Separate payment shall be made for Items 502 and 615 noted above. All other work required for traffic maintenance, (except temporary striping) shall be included with payment for Item 614 Maintaining Traffic.

The following estimated quantities have been included in the General Summary to be used as directed by the Engineer for the maintenance of traffic

	BRM-5K11(1)	BRZ-7903(1)
Item 410 - Traffic Compacted Surface Type A Or B	10 Cu.Yds.	10 Cu.Yds.
Item 616 - Calcium Chloride	1 Ton	1 Ton
Item 616 - Water	5 M-Gals.	5 M-Gals.

614 WORK ZONE PAVEMENT MARKINGS

CALC. BY <u>JWH</u> DATE <u>6-1-84</u> CHKD. BY <u>DWZ</u> DATE <u>6-1-84</u>	TLS - 250 - (23.72)(2421)	OHIO FHWA REGION 5	5 30
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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. *Where pavement marking are not liable to be tracked, either conventional or fast drying paint may be used for 621.02.*
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	BRM Br 23.72	BRZ Br 24.21
614	MILES	TEMPORARY <u>EDGE LINES</u> , CLASS <u>I</u> , * (WHITE)	0.17	0.19
614	MILES	TEMPORARY CENTER LINES, CLASS <u>I</u> , * (SOLID, DOUBLE)	0.09	0.10
614	MILES	Temporary Center Lines, Class II, *	0.09	0.10

*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C

Permanent pavement markings shall be installed by ODOT. The District Traffic Engineer shall be notified at least 5 working days prior to opening the road to allow for scheduling of the pavement marking installation.

A quantity of 0.19 miles of Temporary Center Lines, Class II is carried to the General Summary to be used as directed by the Engineer.

The road shall not be opened to traffic without either the permanent or temporary pavement markings in place.

GENERAL NOTES
May 1, 1985

CALCULATIONS

Quantities Carried to Sheet 7

TUS-250-23.72

ITEM 403 ASPHALT CONCRETE

Sta. 1251+00 To Sta. 1253+00
200 Lin. Ft. - 71.16 Lin. Ft. (Bridge & Appr. Slabs) = 128.84 Lin. Ft.
128.84' x 24' x 1" ÷ 12 ÷ 27 = 9.5 Cu. Yds.
(Appr. Slabs) 30' x 36' x 1.25" ÷ 12 ÷ 27 = 4.2 Cu. Yds.
TOTAL ITEM 403 ASPHALT CONCRETE = 14 CU. YDS.

ITEM 404 ASPHALT CONCRETE

128.84' x 24' x 1" (Avg.) ÷ 12 ÷ 27 = 9.5 Cu. Yds.
(Appr. Slabs) 30' x 36' x 1.25" ÷ 12 ÷ 27 = 4.2 Cu. Yds.
TOTAL ITEM 404 ASPHALT CONCRETE = 14 CU. YDS.

ITEM 407 TACK COAT

128.84' x 24' ÷ 9 x 0.1 Gal./Sq. Yd. = 34.4 Gals.
(Appr. Slabs) 30' x 36' ÷ 9 x 0.1 Gal./Sq. Yd. = 12.0 Gals.
TOTAL ITEM 407 TACK COAT = 47 GALS.

ITEM 407 COVER AGGREGATE

128.84' x 24' ÷ 9 x 7 Lbs./Sq. Yd. ÷ 2000 = 1.2 Tons
(Appr. Slabs) 30' x 36' ÷ 9 x 7 Lbs./Sq. Yd. ÷ 2000 = 0.4 Ton
TOTAL ITEM 407 COVER AGGREGATE = 2 TONS

ITEM 304 AGGREGATE BASE

128.84' x 8' x 8" ÷ 12 ÷ 27 = 25.4 Cu. Yds.
(Deduct Drive) 29' x 4' x 8" ÷ 12 ÷ 27 = -2.9 Cu. Yds.
TOTAL ITEM 304 AGGREGATE BASE = 23 CU. YDS.

ITEM 615 TEMPORARY PAVEMENT, CLASS B

345' x 20' ÷ 9 = 767 Sq. Yds.
TOTAL ITEM 615 TEMPORARY PAVEMENT, CLASS B = 767 SQ. YDS.

ITEM 659 COMMERCIAL FERTILIZER

1674 Sq. Yds. x (20 Lbs./1000 Sq. Ft.) x 9 ÷ 2000 = 0.15 Ton
TOTAL ITEM 659 COMMERCIAL FERTILIZER = 0.15 TON

ITEM 659 AGRICULTURAL LIMING

1674 Sq. Yds. x (100 Lbs./1000 Sq. Ft.) x 9 ÷ 2000 = 0.75 Ton
TOTAL ITEM 659 AGRICULTURAL LIMING = 0.75 TON

EARTHWORK AND SEEDING				
STATION FROM TO		EXCAVATION CU. YDS.	EMBANKMENT CU. YDS.	SEEDING SQ. YDS.
1249+50 1254+00		56	76	1674

TUS-250-24.21

ITEM 403 ASPHALT CONCRETE

Sta. 1277+50 To Sta. 1280+00
250 Lin. Ft. - 71.17 Lin. Ft. (Bridge & Appr. Slabs) = 178.83 Lin. Ft.
178.83' x 24' x 1" (Avg.) ÷ 12 ÷ 27 = 13.3 Cu. Yds.
(Appr. Slabs) 30' x 36' x 1.25" ÷ 12 ÷ 27 = 4.2 Cu. Yds.
TOTAL ITEM 403 ASPHALT CONCRETE = 18 CU. YDS.

ITEM 404 ASPHALT CONCRETE

178.83' x 24' x 1" ÷ 12 ÷ 27 = 13.3 Cu. Yds.
(Appr. Slabs) 30' x 36' x 1.25" ÷ 12 ÷ 27 = 4.2 Cu. Yds.
TOTAL ITEM 404 ASPHALT CONCRETE = 18 CU. YDS.

ITEM 407 TACK COAT

178.83' x 24' ÷ 9 x 0.1 Gal./Sq. Yd. = 47.7 Gals.
(Appr. Slabs) 30' x 36' ÷ 9 x 0.1 Gal./Sq. Yd. = 12.0 Gals.
TOTAL ITEM 407 TACK COAT = 60 GALS.

ITEM 407 COVER AGGREGATE

178.83' x 24' ÷ 9 x 7 Lbs./Sq. Yd. ÷ 2000 = 1.67 Tons
(Appr. Slabs) 30' x 36' ÷ 9 x 7 Lbs./Sq. Yd. ÷ 2000 = 0.42 Ton
TOTAL ITEM 407 COVER AGGREGATE = 2 TONS

ITEM 304 AGGREGATE BASE

178.83' x 8' x 8" ÷ 12 ÷ 27 = 35.3 Cu. Yds.
TOTAL ITEM 304 AGGREGATE BASE = 36 CU. YDS.

ITEM 615 TEMPORARY PAVEMENT, CLASS B

390' x 20' ÷ 9 = 867 Sq. Yds.
TOTAL ITEM 615 TEMPORARY PAVEMENT, CLASS B = 867 SQ. YDS.

ITEM 659 COMMERCIAL FERTILIZER

2673 Sq. Yds. x 20 Lbs./1000 Sq. Ft. x 9 ÷ 2000 = 0.24 Ton
TOTAL ITEM 659 COMMERCIAL FERTILIZER = 0.24 TON

ITEM 659 AGRICULTURAL LIMING

2673 Sq. Yds. x 100 Lbs./1000 Sq. Ft. x 9 ÷ 2000 = 1.20 Tons
TOTAL ITEM 659 AGRICULTURAL LIMING = 1.20 TONS

EARTHWORK AND SEEDING				
STATION FROM TO		EXCAVATION CU. YDS.	EMBANKMENT CU. YDS.	SEEDING SQ. YDS.
1276+00 1281+00		34	52	2673

GENERAL SUMMARY

TUS-250-23.72

TUS-250-24.21

CALC. BY <u>JWH</u> DATE <u>9-4-8</u>	CHKD. BY <u>W.W.V.</u> DATE <u>12/19/8</u>
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TUS -250-(23.72)(24.21)

OHIO

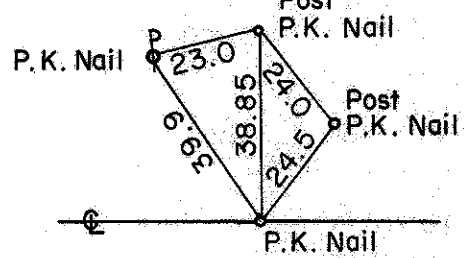
FHWA REGION 5

7

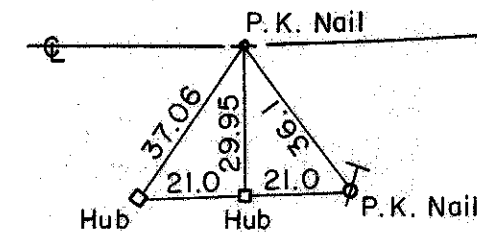
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P.T. STA. 1249+50

MICROFILMED
NOV 21 1986BEGIN WORK
STA. 1249+50SUSPEND WORK
STA. 1254+00

P.C. STA. 1254+00

BEGIN PROJECT
STA. 1251+66.42
S.L.M. 23.72END PROJECT
STA. 1252+37.58
S.L.M. 23.73

BRM-5KII(1)

BRM-5KII(1)

Calculated By	Checked By
JWH	DWT
6-4-84	6-11-84

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

8
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TUS-250-(23.72)(24.21)

EXISTING STRUCTURE

TYPE : Concrete Slab
SPAN : 22'-0" Clear
ROADWAY : 29'-0" F/F Curb (With Reinforced Concrete Railing)
ABUTMENTS : Concrete (Gravity)
SURFACE COURSE : 4" Concrete & 2-3/4" Bituminous Macadam
APPROACH SLABS : 14'-0" Long (Concrete)
SKEW : 0°
ALIGNMENT : Tangent
CONDITION : Poor

PROPOSED STRUCTURE

TYPE : Single Span Prestressed Concrete Box Beams
With Reinforced Concrete Substructure Units
SPAN : 40'-0" Measured Along C Survey
ROADWAY : 36'-0" F/F Guardrail
SKEW : 0° With Reference Line
SURFACE COURSE : 2-1/2" Asphalt Concrete
LOADING : HS 20-44 With Alternate Military Loading
APPROACH SLABS : AS-1-81, 15'-0" Long
ALIGNMENT : Tangent

* Construction Limits

NOTE A: The proposed basin shall be constructed to intercept the existing 6" V.S.P. which flows into the box left of Sta. 1252+21. The proposed basin shall be located outside of the limits of the proposed temporary road and within the existing right-of-way.

B.M. ELEV. 867.65

M. Spk. in ϕ
29' Rt. Sta. 1248+56

B.M. ELEV. 861.94

Cut on N.W. Corner of W.Wall
17' Lt. Sta. 1251+92

GUARD RAIL

Station To Station	Side	ITEM 202		ITEM 606		
		Guardrail Removed Lin. Ft.	Guardrail Type 5 Lin. Ft.	Bridge Term. Assy Std. Type B Each	Anchor Assy Std. Type A Each	Anchor Assy Std. Type B Each
1250+70.75 to 1253+20.75	Rt.	75	150	2	2	
1250+95.75 to 1252+70.75	Lt.	100	87.5	2	1	1
TOTAL		175	237.5	4	3	1

CONDUIT

Station To Station	Side	ITEM 602	ITEM 603	ITEM 604
		Concrete Masonry Cu. Yd.	Conduit, 12" Type C Lin. Ft.	Catch Basin Std. 2-2-B Each
1252+38 to 1253+50	Lt.	0.2	112	1
TOTAL		0.2	112	1

APPROACH SLABS

Station To Station	Calculations	ITEM 203	ITEM 611
		Subgrade Compaction Sq. Yd.	Reinf. Conc. Approach Slabs T=12 Sq. Yd.
1251+66.42 to 1251+81.42	15' x 36' ÷ 9 = 60 Sq. Yd.	60	60
1252+22.58 to 1252+37.58		60	60
TOTAL		120	120

ROCK CHANNEL PROTECTION

Station To Station	Calculations	ITEM 601
		Rock Channel Protection Type C W/O Filter Cu. Yd.
1251+81 to 1251+91	10' x 56' x 2' ÷ 27	42
1252+16 to 1252+24	8' x 54' x 2' ÷ 27	32
TOTAL		74

PAVEMENT REMOVAL

Station To Station	Calculations	ITEM 202	
		Pavement Removed 9" 7'-9" Sq. Yd.	Approach Slab Removed T=9-1/2" Sq. Yd.
1251+66.42 to 1251+79	12.6' x 20' ÷ 9 = 28 Sq. Yd.	28	
1251+79 to 1251+93	14' x 27.6 (Avg.) ÷ 9 = 43 Sq. Yd.		43
1252+15 to 1252+29	do		43
1252+29 to 1252+37.58	8.6' x 20' ÷ 9 = 19 Sq. Yd.	19	
TOTAL		47	86

DRIVEWAY

Station To Station	Side	Calculations	ITEM 203	ITEM 304	ITEM 404
			Excavation Not Including Embankment Construction Cu. Yd.	Aggregate Base Cu. Yd.	Asphalt Concrete AC-20 For Driveways Cu. Yd.
1252 + 95	Lt.	20' x 32' (Avg.) x 2" ÷ 12 = 3.95	16	12	4
		20' x 32' (Avg.) x 6" ÷ 12 = 11.85			
TOTAL			16	12	4

Excavation 56 Cu. Yd.
Embankment 76 Cu. Yd.
Seeding 1674 Sq. Yd.

P.C.C. STA. 1276+50

P.C.C. STA. 1280+50

Calculated By: JWH
 Checked By: DWL
5-18-84 5-28-84

FED. RD. DIST. STATE PROJECT
2 OHIO
9
30

TUS-250-(23.72)(24.21)

BEGIN PROJECT
 STA. 1278+24.42
 S.L.M. 24.21

END PROJECT
 STA. 1278+95.59
 S.L.M. 24.22

BRZ-7903 (1)

BRZ-7903 (1)

RESUME WORK
 STA. 1276+00

END WORK
 STA. 1281+00

MICROFILMED
 NOV 21 1986

EXISTING STRUCTURE

TYPE: Concrete Slab
 SPAN: 22'-0" Clear
 ROADWAY: 29.5' F/F Curb
 ABUTMENTS: Concrete (Gravity)
 SURFACE COURSE: 4" Concrete & 2" Bituminous Macadam
 APPROACH SLABS: 10'-0" Long (Concrete)
 SKEW: 0°
 ALIGNMENT: 4°-52' Rt. Curve (Superelevated)
 CONDITION: Poor

PROPOSED STRUCTURE

TYPE: Single Span Prestressed Concrete Box Beams
 With Reinforced Concrete Substructure Units
 SPAN: 40'-0" Measured Along Reference Line
 ROADWAY: 36'-0" F/F Guardrail
 SKEW: 0° With Reference Line
 SURFACE COURSE: 2-1/2" Asphalt Concrete
 LOADING: HS 20-44 With Alternate Military Loading
 APPROACH SLABS: AS-1-81, 15'-0" Long
 ALIGNMENT: Curve 4°-52' Rt. (Structure Built Tangent)
 SUPERELEVATION: 0.05333'/Ft.

CURVE DATA

P.I. = Sta. 1278+51.95
 Δ = 19° 28'
 D = 4° 52'
 T = 201.95'
 L = 400.00'
 R = 1177.31'
 E = 17.19'

Rock Channel Protection, Type C
 2'-0" thick without filter

B.M. ELEV. 857.28
 M. Spk. in ϕ
 32' Lt. Sta. 1278+04

B.M. ELEV. 871.80
 M. Spk. in ϕ
 30' Lt. Sta. 1282+86

* Approach Slab Elevations
 18' Rt. ϕ 18' Lt.

ESTIMATED QUANTITIES

GUARD RAIL

Station To Station	Side	ITEM 202	ITEM 606			
		Guardrail Removed Lin. Ft.	Guardrail Type 5 Lin. Ft.	Bridge Term. Assy Std. Type B Each	Anchor Assy Std. Type A Each	Anchor Assy Std. Type B Each
1277+33.06 to 1279+86.94	Rt.	14	150	2	2	
1277+36.89 to 1279+33.86	Lt.	125	137.5	2		1
TOTAL		139	287.5	4	2	1

APPROACH SLABS

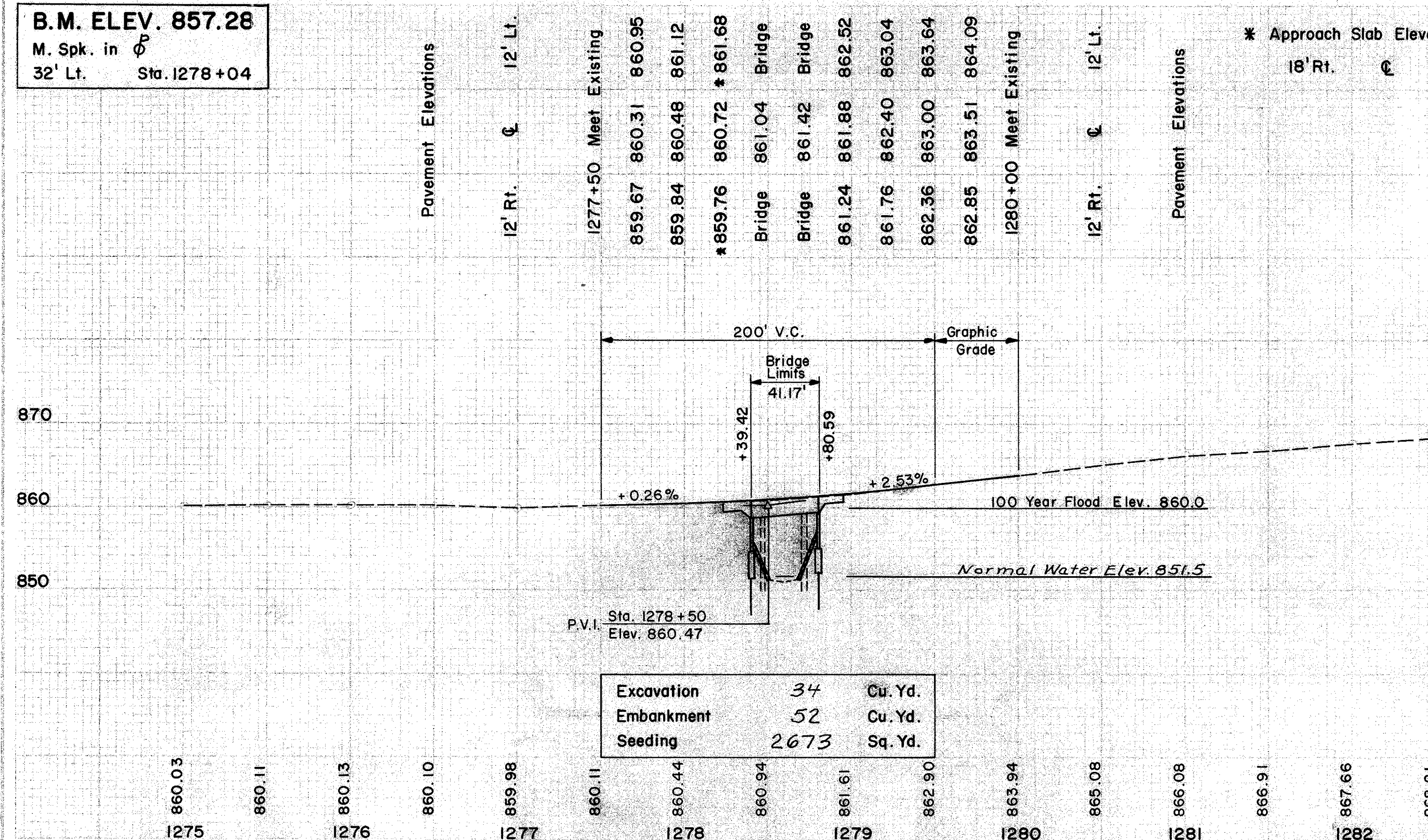
Station To Station	Calculations	ITEM 203	ITEM 611
		Excavation Not Incl. Emb. Const. Cu. Yd.	Reinf. Conc. Approach Slabs, T = 12" Sq. Yd.
1278+24.42 to 1278+39.42	15' x 36' ÷ 9 = 60 S.Y.	20	60
1278+80.59 to 1278+95.59	15' x 36' x 1' ÷ 27 = 20 C.Y.	20	60
TOTAL		40	120

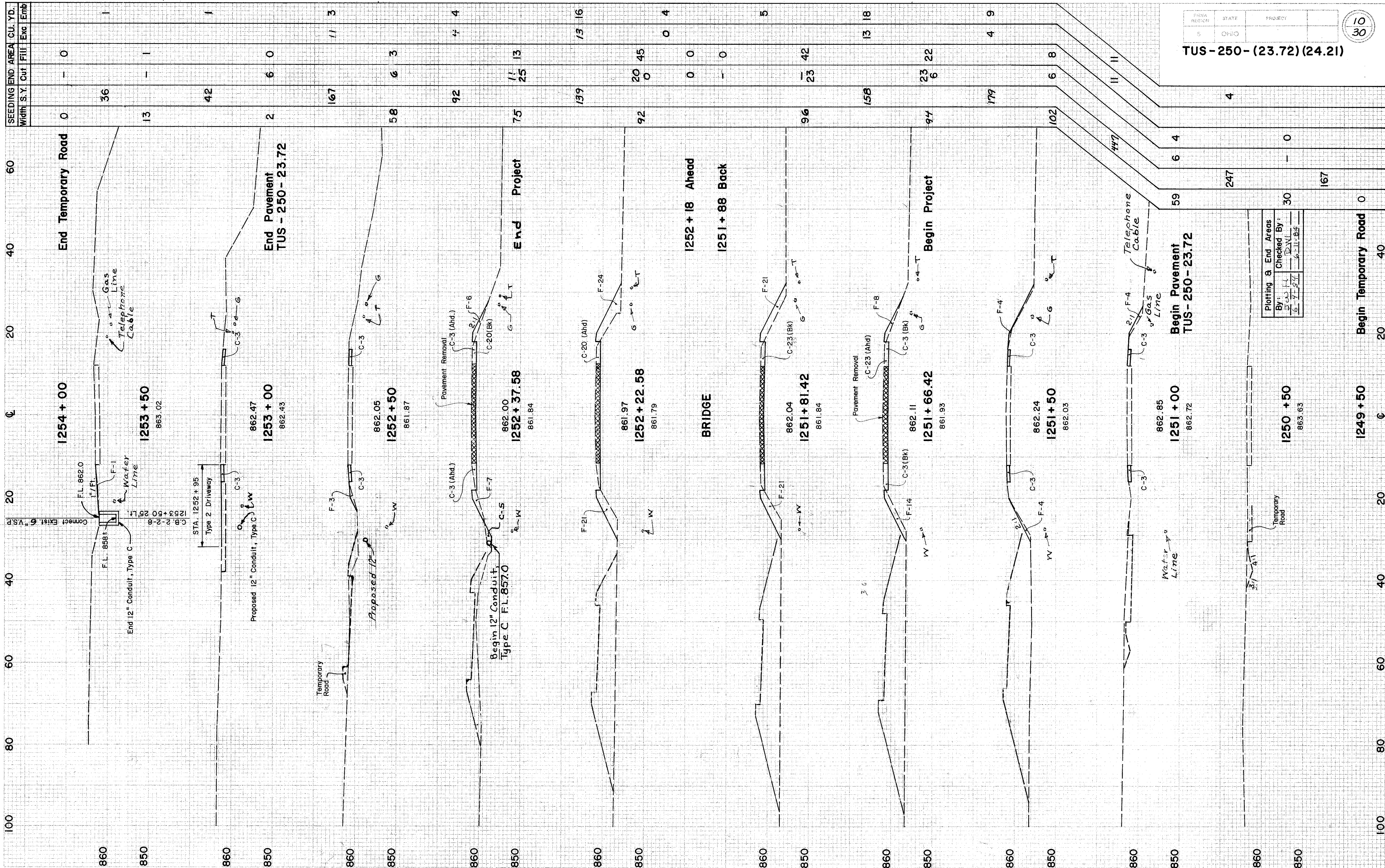
PAVEMENT REMOVAL

Station To Station	Calculations	ITEM 202	Approach Slab Removed T = 7-1/2"
		Pavement Removed 9" - 7" - 9" Sq. Yd.	Sq. Yd.
1278+24.42 to 1278+36.31	12' x 20' ÷ 9 = 26.7 Sq. Yd.	27	
1278+36.31 to 1278+46.41	10' x 28' ÷ 9 = 31.1 Sq. Yd.		31.1
1278+71.61 to 1278+86.61	10' x 28' ÷ 9 = 31.1 Sq. Yd.		31.1
1278+86.61 to 1278+95.59	9' x 20' ÷ 9 = 20 Sq. Yd.	20	
TOTAL		47	63

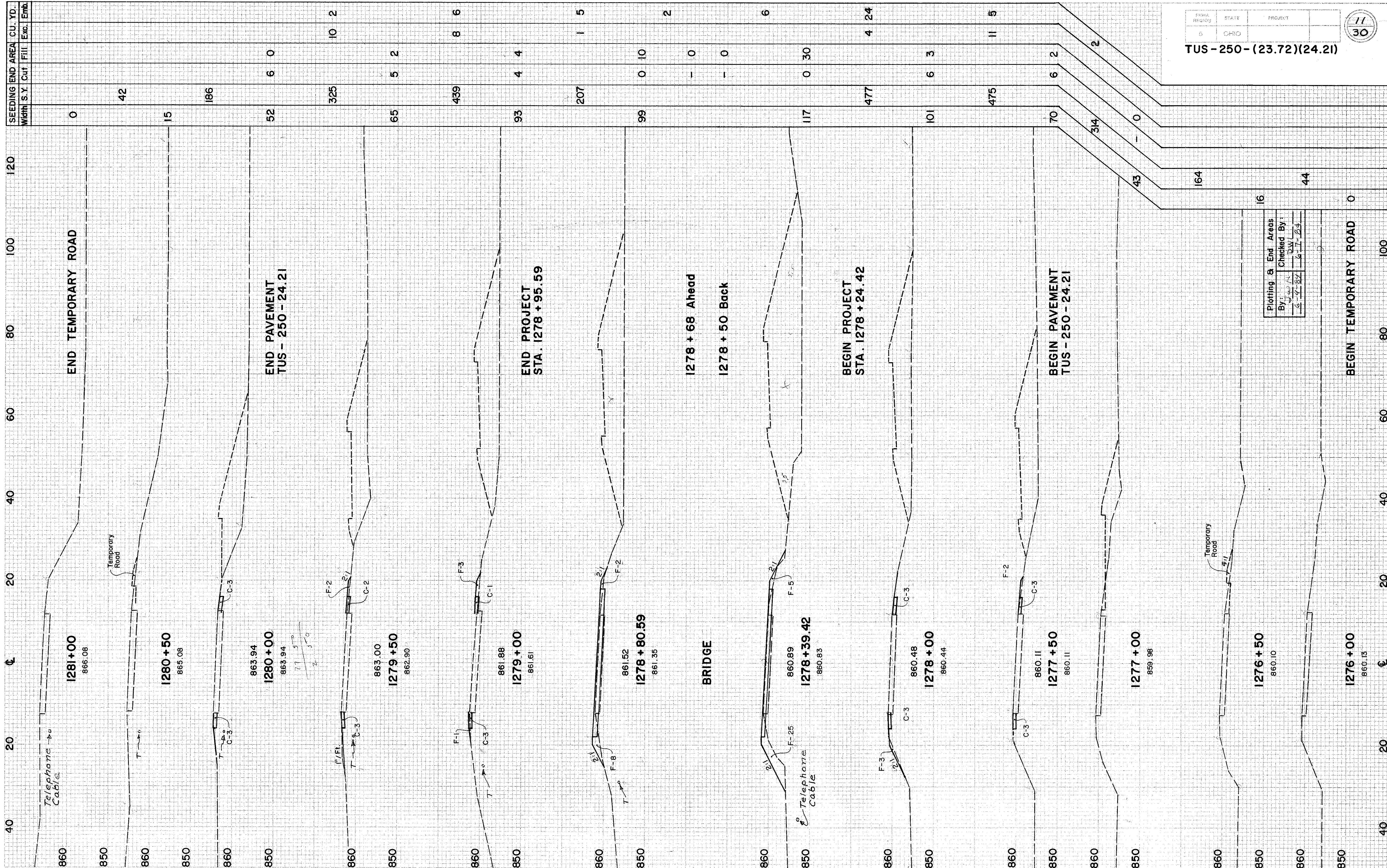
ROCK CHANNEL PROTECTION

Station to Station	Calculations	ITEM 601 Rock Chan. Prot. Type C W/O Filter CU. YD.
1278+39 to 1278+50	59' x 11' x 2' ÷ 27	48
1278+67 to 1278+81	57' x 14' x 2' ÷ 27	59
TOTAL		107





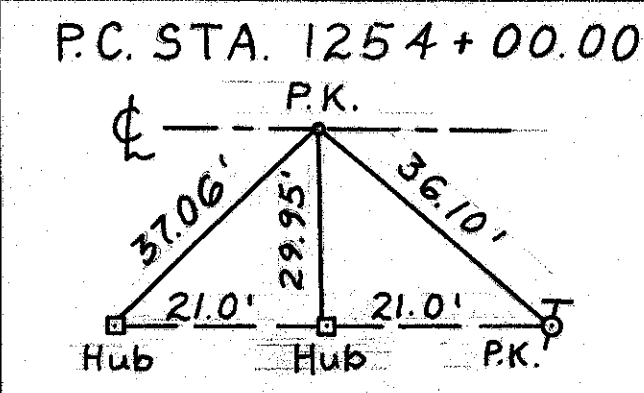
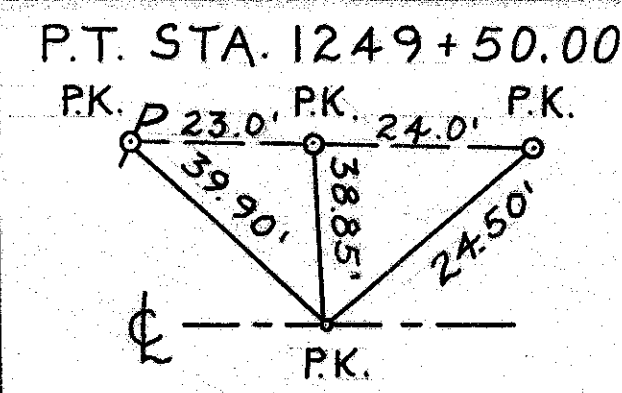
Plotting & End Areas	
By: J. L. D. W.	Checked By: J. L. D. W.
6-7-57	6-11-57



Plotting & End Areas
By: J. W. A. D. W. L.
Checked By: G. W. S. L. G. W. S. L.

MICROFILMED
NOV 21 1986

B.M. STA. 1251+92
Cut N.W. Cor. W.W.
17.0' Lt.
Elev. 861.94'



TUS-250-23.72

OHIO
FHWA 5
REGION

12
30

0.38 MILES NORTHEAST OF DENNISON

CURVE DATA
TEMPORARY ROAD

P.I. = STA. 1252+00 ~ 80' LT.
Δ = 49°-52'-26"
D = 28°-38'-52"
T = 92.99'
L = 174.09'
E = 20.56'
R = 200'

Temporary Run-Around

END APPROACH SLAB
STA. 1251+81.42

BEGIN APPROACH SLAB
STA. 1252+22.58

Church

DESIGN DESIGNATION

1983 ADT 5620
2003 ADT 16352

EARTHWORK LIMITS SHOWN ARE APPROXIMATE.
ACTUAL SLOPES SHALL CONFORM TO PLAN
CROSS-SECTIONS.

STREAM DATA

DRAINAGE AREA: 0.53 SQ. MILES
Q100 = 595 CFS
V100 = 6.5 FT./SEC
STRUCTURE CLEARS 100 YR. FLOOD
ELEVATION BY 1.7'±

EXISTING STRUCTURE DATA

SNF 7900759 (TO BE REMOVED) DATE BUILT 1930
TYPE: CONCRETE SLAB
SPAN: 22'-0" CLEAR
ROADWAY: 29'-0" F/F CURB (WITH REINFORCED CONCRETE RAILING)
ABUTMENTS: CONCRETE (GRAVITY)
SURFACE COURSE: 4" CONCRETE & 2 3/4" BITUMINOUS MACADAM
APPROACH SLABS: 14'-0" LONG (CONCRETE)
SKEW: 0°
ALIGNMENT: TANGENT
CONDITION: POOR

PROPOSED STRUCTURE

TYPE: SINGLE SPAN PRESTRESSED CONCRETE BOX BEAMS WITH REINFORCED CONCRETE SUBSTRUCTURE UNITS
SPAN: 40'-0" MEASURED ALONG SURVEY
ROADWAY: 36'-0" FACE TO FACE OF GUARDRAIL.
SKEW: 0° WITH REFERENCE LINE
SURFACE COURSE: 2 1/2" ASPHALT CONCRETE
LOADING: HS20-44 WITH ALTERNATE MILITARY LOADING.
APPROACH SLABS: AS-1-81, 15'-0" LONG.
ALIGNMENT: TANGENT

NOTE: ALL PILES TO BE 12" CAST-IN-PLACE REINFORCED CONCRETE.
ESTIMATED AVERAGE PILE LENGTH:
50'-0" REAR ABUTMENT
45'-0" FORWARD ABUTMENT

Bridge Limits
41.16'

Sta. 1251+81.42

Sta. 1252+22.58

Normal Water Elev. 854.8 ±

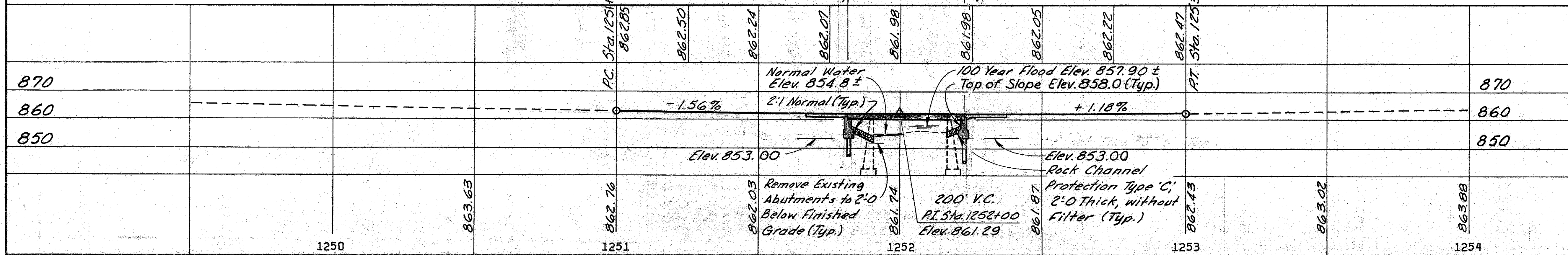
100 Year Flood Elev. 857.90 ±
Top of Slope Elev. 858.0 (Typ.)

Elev. 853.00

Elev. 853.00
Rock Channel Protection Type 'C', 2'-0" Thick, without Filter (Typ.)

Remove Existing Abutments to 2'-0" Below Finished Grade (Typ.)

200' V.C.
P.I. Sta. 1252+00
Elev. 861.29

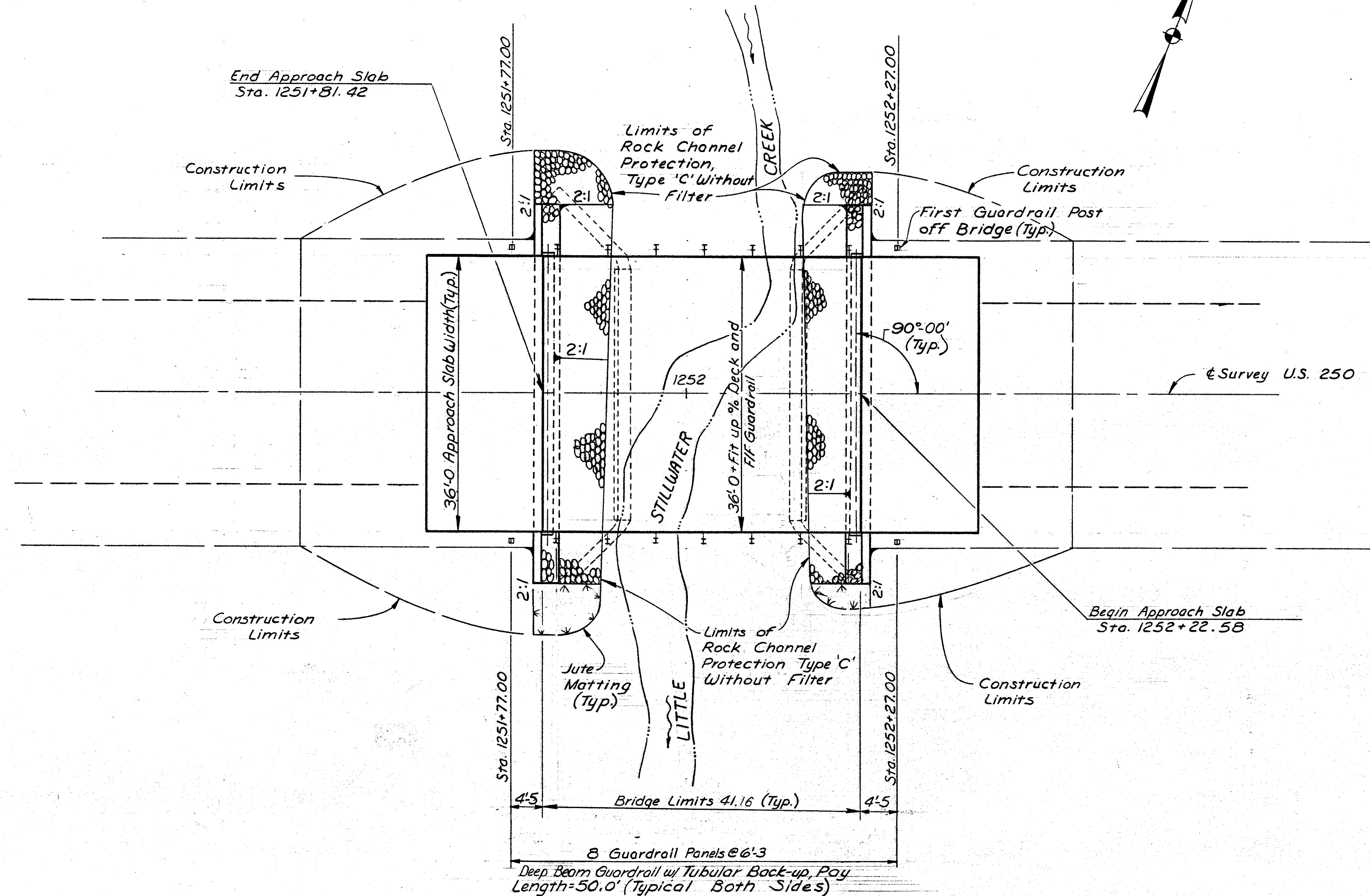


SHEET 1 / 8

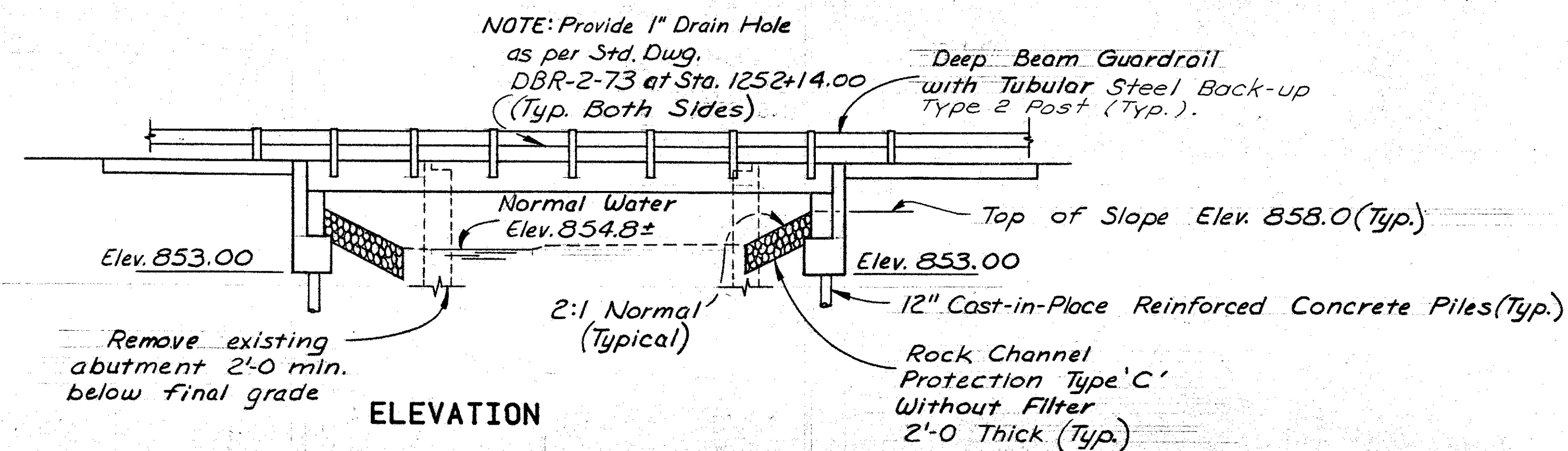
W.E. QUICKSALL AND ASSOCIATES, INC.
NEW PHILADELPHIA, OHIO

SNF 7900759
SITE PLAN
BRIDGE NO. TUS-250-2372
U.S. 250 OVER BRANCH OF LITTLE STILLWATER CREEK

TUSCARAWAS COUNTY		STA. 1251+81.42	STA. 1252+22.58
EXIST. TOPO	PROPOSED WORK		
SURVEY	DRAWN	CHECKED	REVIEWED
O.D.O.T.	O.D.O.T.	C.F.D.	C.F.D.
		JMS	wda 3/64



PLAN



ELEVATION

Sheet 2/8

W.E. QUICKSALL AND ASSOCIATES, INC.
NEW PHILADELPHIA, OHIO

GENERAL PLAN AND ELEVATION
BRIDGE NO. TUS-250-2372
U.S. 250 OVER BRANCH OF LITTLE STILLWATER CREEK

TUSCARAWAS COUNTY		STA. 1251+81.42		STA. 1252+22.58	
DESIGNED	DDB	DRAWN	DD.B.	CHECKED	FDH
DATE	7/84	REVIEWED	JMG	DATE	7/84

DESIGN NOTES

ESTIMATED QUANTITIES								
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GEN'L	
202	LUMP	SUM	PORTIONS OF STRUCTURES REMOVED				LUMP	
403	9	CU.YD.	ASPHALT CONCRETE(AC-20)			9		
404	6	CU.YD.	ASPHALT CONCRETE(AC-20)			6		
503	LUMP	SUM	COFFERDAMS CRIBS AND SHEETING				LUMP	
503	LUMP	SUM	UNCLASSIFIED EXCAVATION	LUMP				
502	LUMP	SUM	TEMPORARY STRUCTURE				LUMP	
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	665	LIN.FT.	12"CAST-IN-PLACE REINFORCED CONCRETE PILES,	665				
			AS PER PLAN					
509	6191	LBS.	REINFORCING STEEL, GRADE 60	6191				
511	33	CU.YD.	CLASS 'C' CONCRETE, ABUTMENTS ABOVE FOOTINGS	33				
511	35	CU.YD.	CLASS 'C' CONCRETE, FOOTINGS	35				
512	182	SQ.YD.	TYPE 'D' WATERPROOFING			182		
515	9	EACH	PRESTRESSED CONCRETE BOX BEAMS(B21-48)			9		
516	36	EACH	1/2"x5"x12" ELASTOMERIC BEARING PADS (50 DUROMETER)	36				
516	6	SQ.FT.	1/8" PREFORMED BEARING PADS 711.21			6		
516	134	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER	134				
517	100.0	LIN.FT.	RAILING(DEEP BEAM RAIL WITH TUBULAR BACK-UP INCLUDING TYPE 2 STEEL POST, BOLTS AND ACCESSORIES)			100.0		
SPECIAL	65	SQ.FT.	STEEL DRIP STRIP			65		
518	18	CU.YD.	POROUS BACKFILL	18				
SPECIAL	21	SQ.YD.	SEALING OF CONCRETE SURFACES(SEE PROPOSAL NOTE)			21		

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING 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. (SUB-STRUCTURE)

REINFORCING STEEL: ASTM A615, A616, A617-GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

CONCRETE FOR PRESTRESSED BEAMS: UNIT STRESS 2,200 P.S.I.-
COMPRESSION
UNIT STRESS 444 P.S.I.-
TENSION

PRESTRESSING STRAND: ASTM A416
F_s = 270,000 P.S.I.
INITIAL STRESS = 0.70 F_s

DECK PROTECTION METHOD:

2-1/2" MIN. ASPHALT CONCRETE (AC-20), TYPE 'D' WATERPROOFING.

SHOP DRAWINGS

THE FABRICATOR'S SHOP DRAWINGS SHALL INCLUDE COMPLETE DETAILS OF THE REINFORCING IN THE BOX BEAMS.

REFERENCE SHALL BE MADE TO:

STANDARD DRAWINGS

AS-1-81 DATED 11-27-81
DBR-2-73 DATED 4-10-73
PSBD-1-81 DATED 9-18-81

REINFORCING STEEL SPLICES:

ALL REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH ITEM 509.08. UNLESS SHOWN OTHERWISE, ALL SPLICES SHALL BE MADE BY OVERLAPPING THE ENDS OF THE BARS NOT LESS THAN SHOWN IN THE FOLLOWING TABLE.

BAR SIZE	LAP LENGTH
#5	1'8"
#8	3'3"

SPECIAL CARE AND APPROPRIATE MEASURES SHALL BE TAKEN TO PREVENT REMOVAL DEBRIS FROM FALLING INTO THE CREEK.

REMOVAL OF THE EXISTING STRUCTURE:

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED TO THE LIMITS SPECIFIED.

PORTIONS OF STRUCTURES TO BE REMOVED: THE FOLLOWING PORTIONS OF THE EXISTING STRUCTURE SHALL BE REMOVED IN SEQUENCE, TO THE LIMITS SHOWN ON THE PLAN:

1. COMPLETE SUPERSTRUCTURE, INCLUDING ASPHALT AND CONCRETE WEARING SURFACE, REINFORCED CONCRETE DECK, CURBS AND RAILING.
2. EXISTING ABUTMENTS(TO THE LIMITS SHOWN ON THE PLAN).

PILES:

12 INCH PRECAST PRESTRESSED CONCRETE PILES MAY BE SUBSTITUTED FOR THE 12 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES SHOWN ON THESE PLANS. DRAWINGS SHOWING DETAILS OF AND SPECIFICATIONS FOR PRESTRESSED CONCRETE PILES ARE AVAILABLE FROM THE DIRECTOR (BUREAU OF BRIDGES). IF THE PRESTRESSED PILE ALTERNATE IS CHOSEN, THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE THE SAME AS FOR CAST-IN-PLACE REINFORCED CONCRETE PILES PER 507.

THE DESIGN LOAD FOR ABUTMENT PILES IS 40 TONS PER PILE.

PILE HAMMER:

THE PILE HAMMER USED TO INSTALL THE CAST-IN-PLACE REINFORCED CONCRETE PILES SHALL HAVE A "STATES ENERGY RATING" OF NOT LESS THAN 12,000 FOOT-POUNDS. THE REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO O.D.O.T.'S "MANUAL OF PROCEDURES FOR STRUCTURES", TO OBTAIN THE "STATES ENERGY RATING".

SEALING OF CONCRETE SURFACES:

AN(EPOXY)SEALER SHALL BE APPLIED TO THE EXPOSED SURFACE OF THE FASCIA BEAMS (AS PER PROPOSAL NOTE). REFER TO TYPICAL DRIP STRIP DETAIL FOR LIMITS OF SEALANT ON SHEET 8/8.

Sheet 3/8

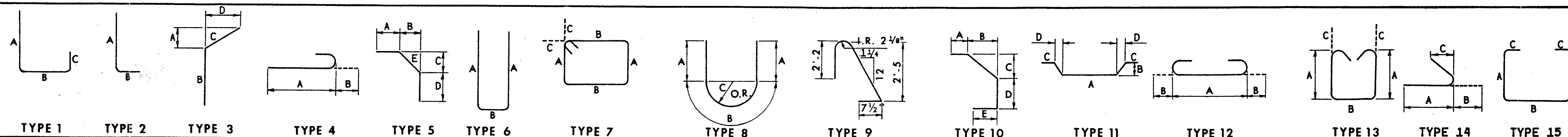
W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

DESIGN NOTES
AND ESTIMATED QUANTITIES
BRIDGE NO. TUS-250-2372
U.S. 250 OVER BRANCH OF LITTLE STILLWATER CREEK

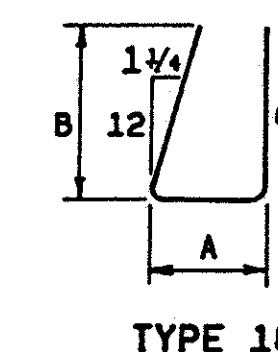
TUSCARAWAS COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
D.D.B.	D.D.B.		FDH	JMG	7/84

STA. 1251+81.42

STA. 1252+22.58



REAR AND FORWARD ABUTMENTS

[illegible][illegible]

NOTES

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.

ALL DIMENSIONS ARE OUT-TO-OUT

STR. IN THE "TYPE" COLUMN INDICATES STRAIGHT BARS.

Sheet

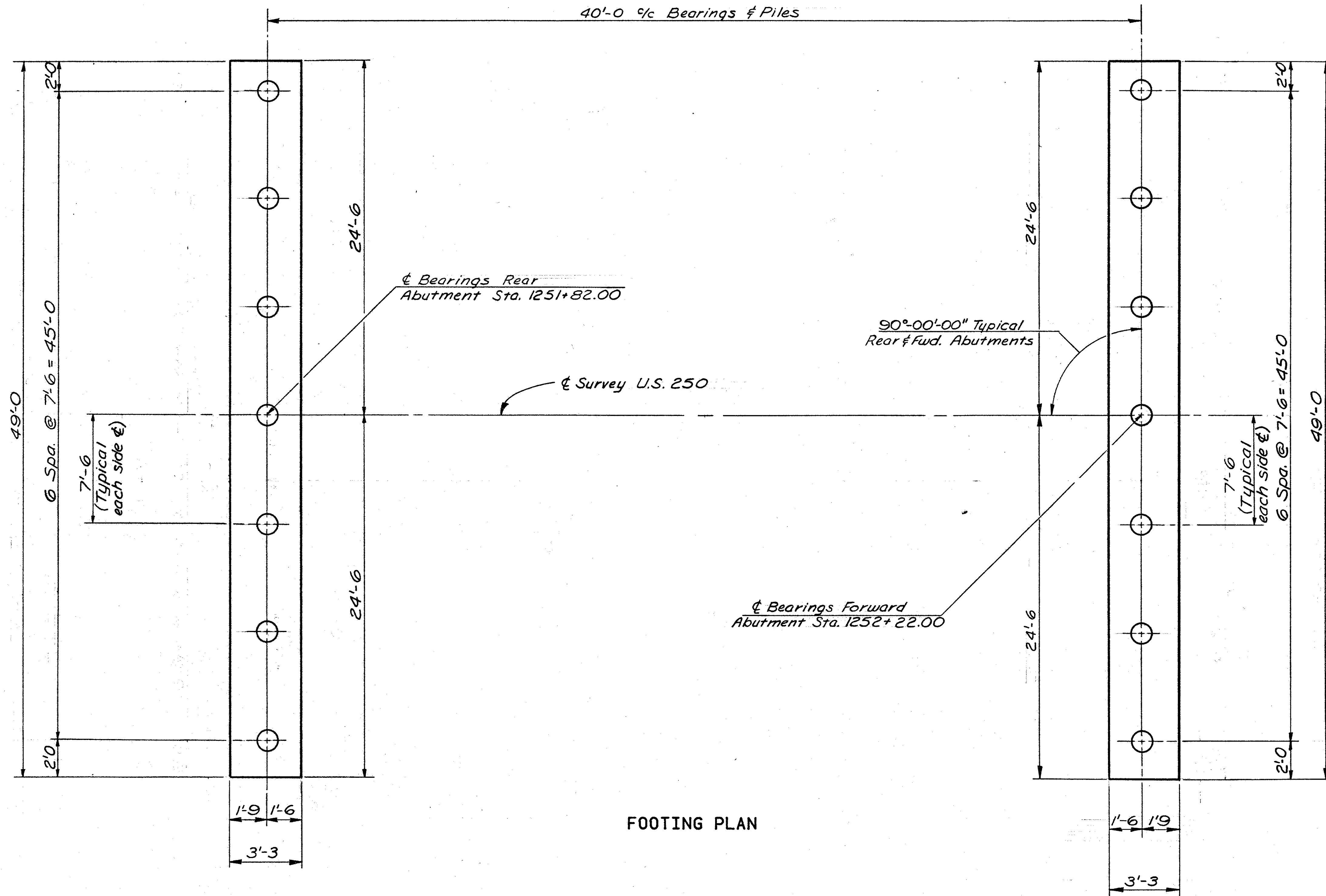
4	8
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W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

REINFORCING BAR SCHEDULE

BRIDGE NO. TUS-250-2372
U.S. 250 OVER BRANCH OF LITTLE STILLWATER CREEK

TUSCARAWAS COUNTY		STA. 1251+81.42		STA. 1252+22.58	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
D.D.B.	D.D.D.		FDH	JMG	7/84



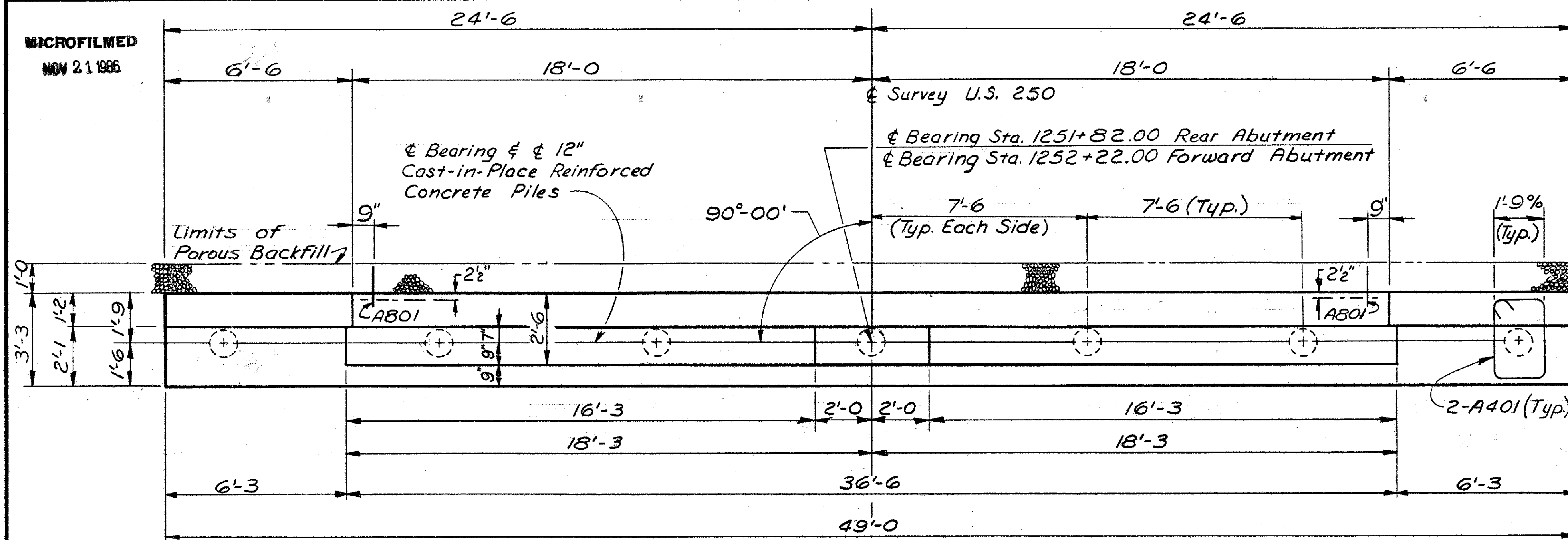
FOOTING PLAN

NOTE: All Piles are 12" Cast-in-Place Reinforced Concrete.

Sheet 5/8

W.E. QUICKSALL AND ASSOCIATES, INC. NEW PHILADELPHIA, OHIO						
FOOTING PLAN						
BRIDGE NO. TUS-250-2372						
U.S. 250 OVER BRANCH OF LITTLE STILLWATER CREEK						
TUSCARAWAS COUNTY						
STA. 1251+81.42 STA. 1252+22.58						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
O.D.B.	D.D.B.		FDH	JMG	7/84	

MICROFILMED
NOV 21 1986



BRIDGE SEAT REINFORCING:
Reinforcing Steel in the vicinity of the Bridge Seat shall be accurately placed to avoid interference with the drilling of Anchor Bar holes.

For detail & location of Anchor Dowels, Bearings & 1" Preformed Expansion Joint Filler, see plan sheet 7/8 and details sheet 8/8

Rock Channel Protection, Type 'C' without Filter

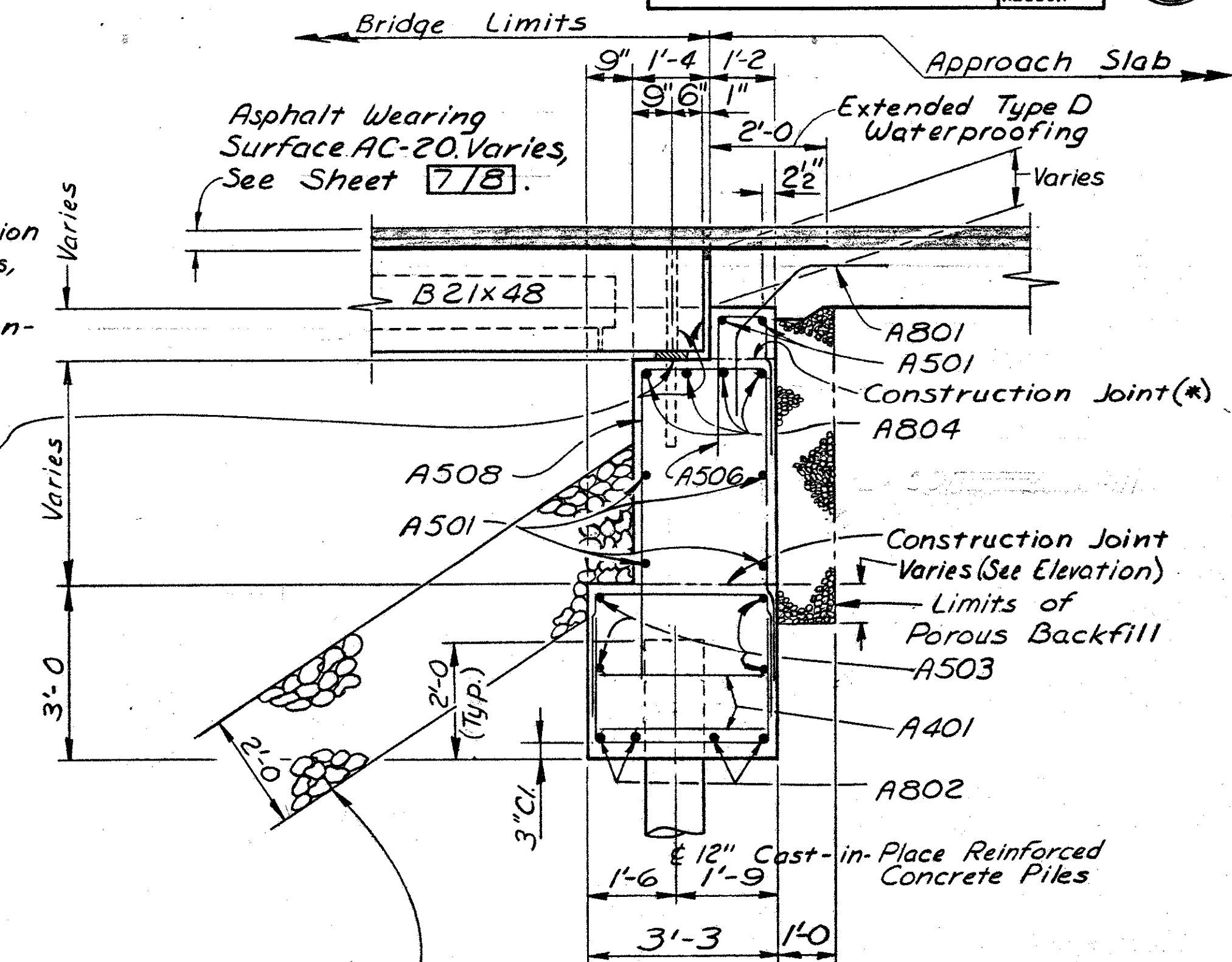
(*) Construction Joint (Typ.)
Elev. 859.58 (R.A.)
Elev. 859.52 (F.A.)

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

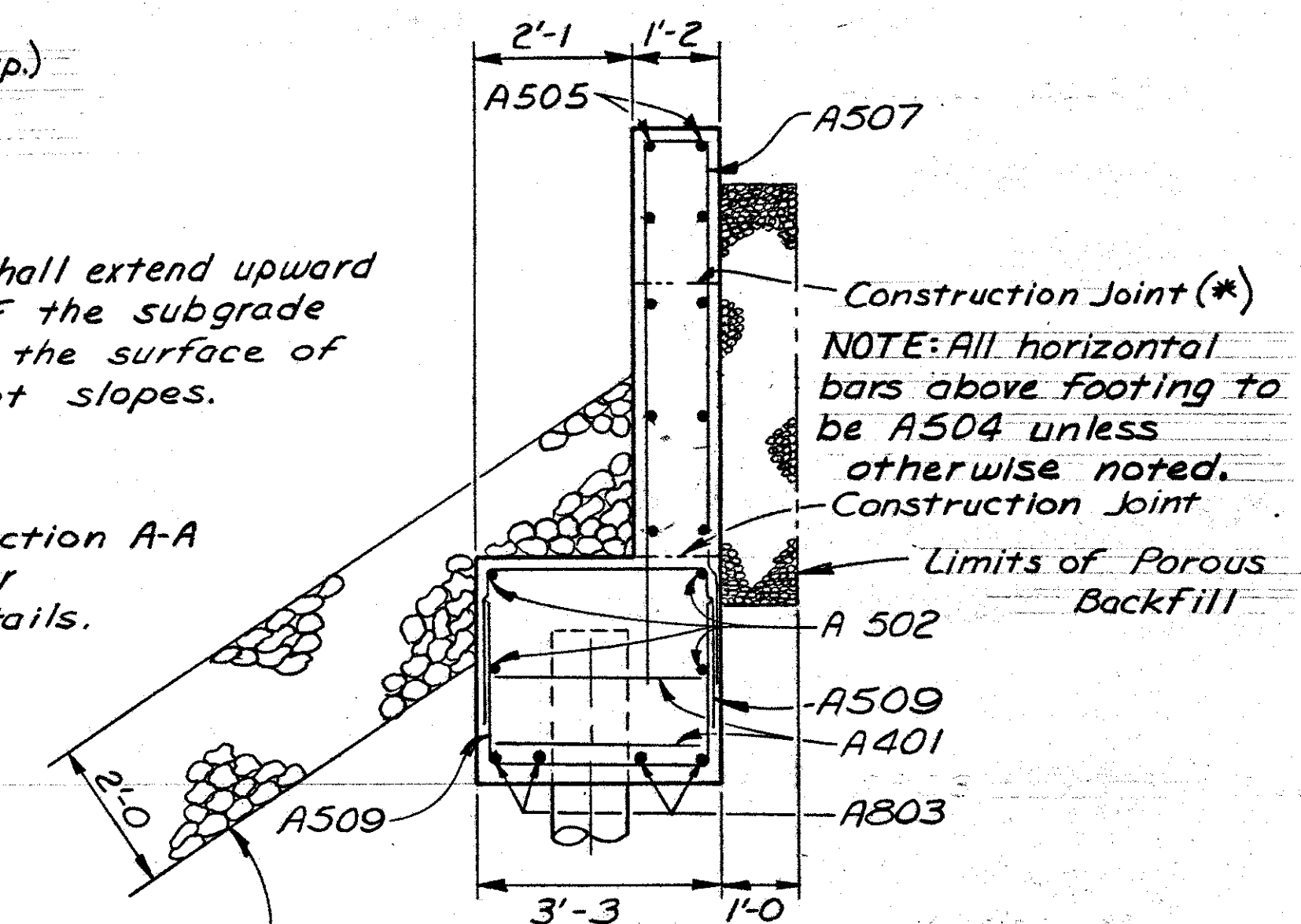
Note: See Section A-A this sheet for additional details.

Rock Channel Protection Type C, without Filter

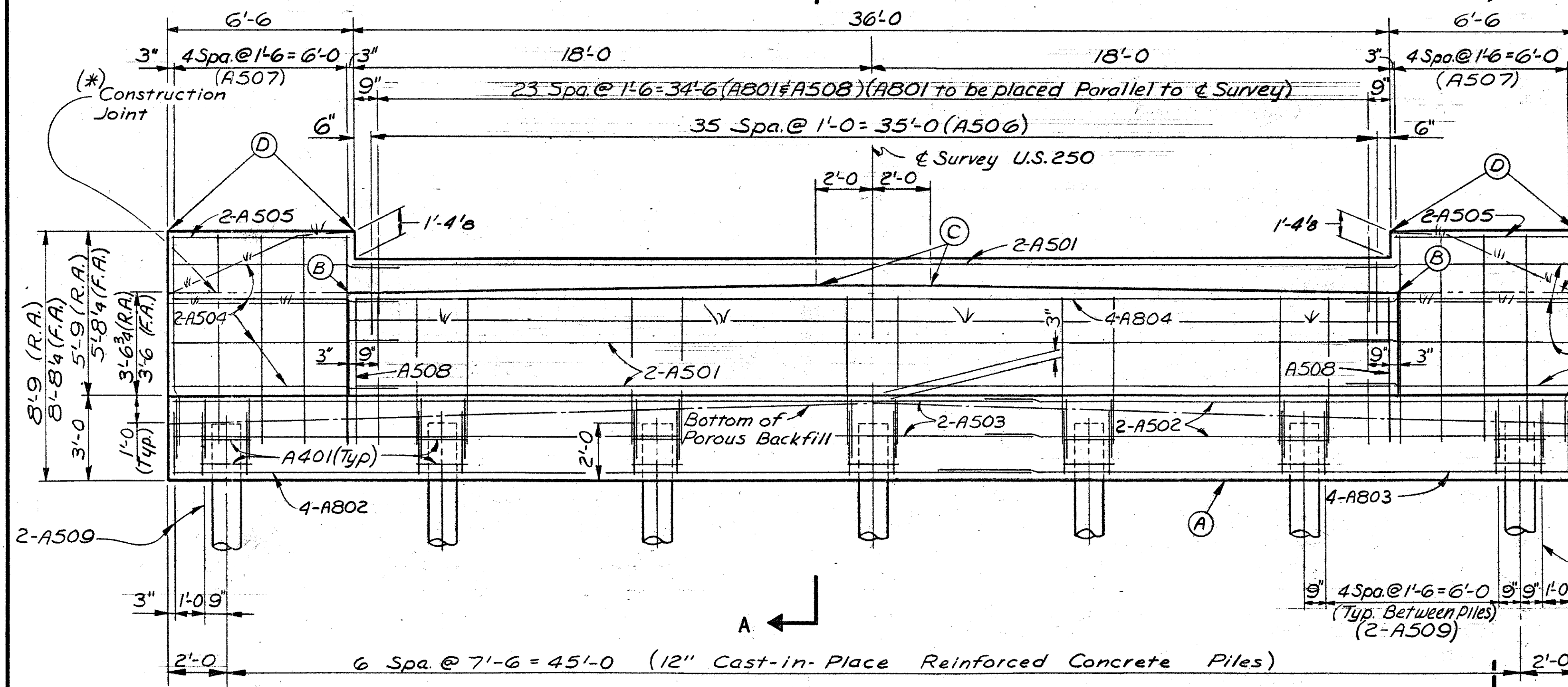
Note:
R.A. Denotes Rear Abutment
F.A. Denotes Forward Abutment



SECTION A-A



SECTION B-B



ELEVATION

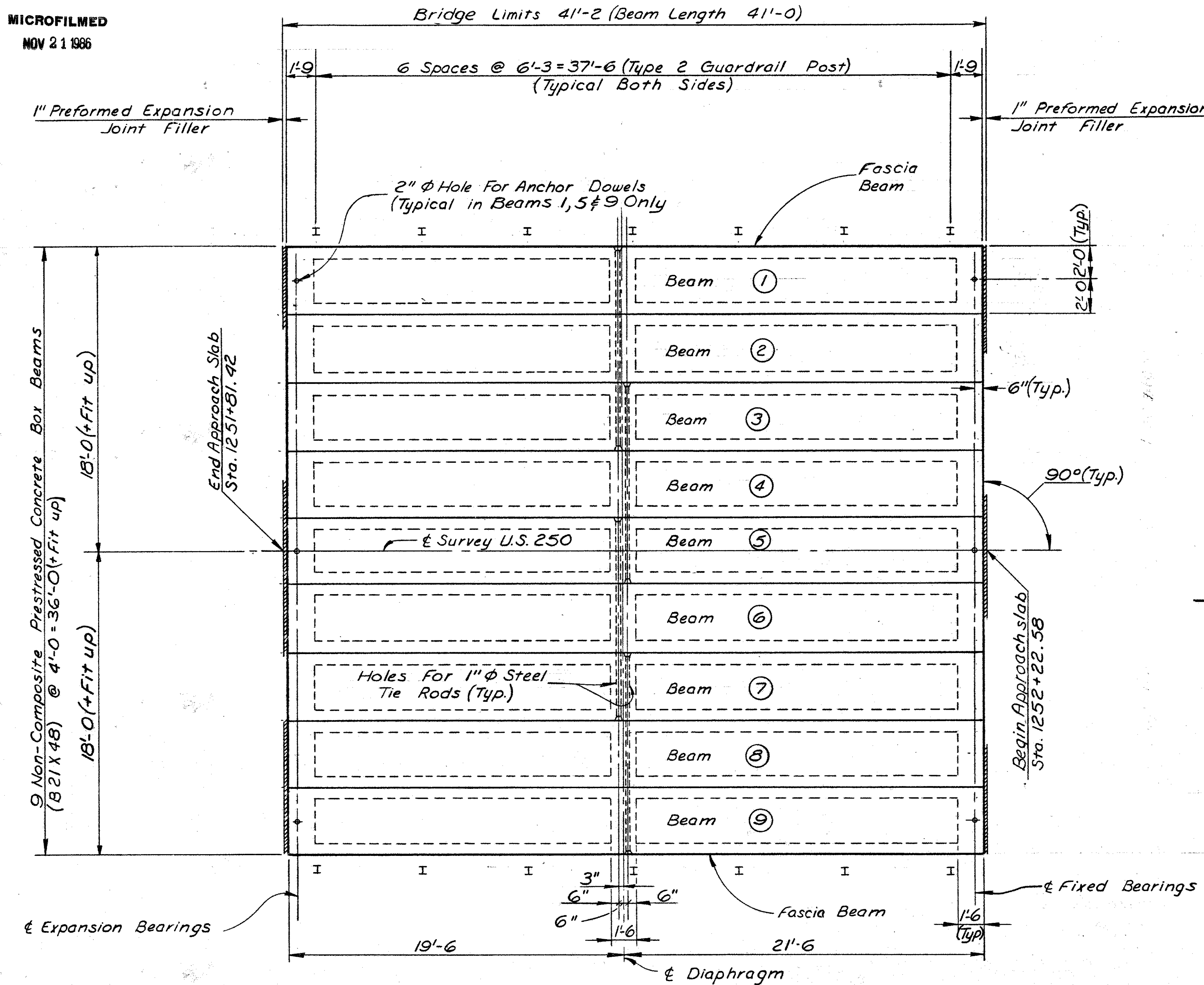
ELEVATIONS				
LOCATION	A	B	C	D
FORWARD ABUTMENT	853.00	859.55	859.83	861.69
REAR ABUTMENT	853.00	859.61	859.89	861.75

(*) Note: Concrete above the beam seat shall be poured after the prestressed concrete box beams are set in place.

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NEW PHILADELPHIA, OHIO

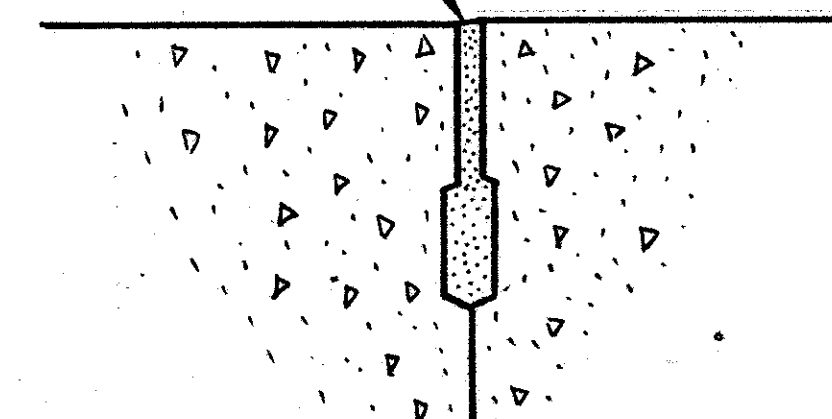
REAR AND FORWARD
ABUTMENT DETAILS
BRIDGE NO. TUS-250-23.72
U.S.250 OVER BRANCH OF LITTLE STILLWATER CREEK

TUSCARAWAS COUNTY
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISION
D.D.B. D.D.B. FDH JMC 7/84

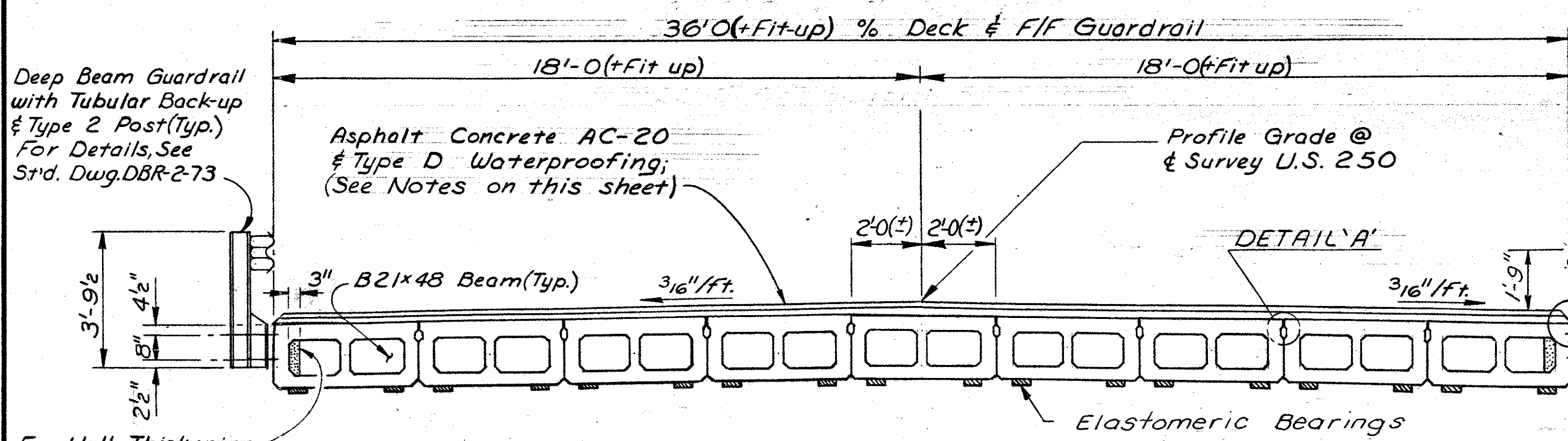


DECK PLAN

Shear Keys shall be mortared to a finished plane between the top edges of the adjacent beams where vertical offset (within Tolerance) occurs.



DETAIL 'A'



TRANSVERSE SECTION

See Drip Strip Detail, on Sheet 8/8

For Type 2 Guardrail Post Anchorage Plate Detail see sheet 8/8

NOTE: Omit Keyway on outside of Fascia Beams.

For Typical Box Beam Detail, See Sheet 8/8

For Typical Section Through Abutment, See Section A-A on Sheet 6/8

SUPERSTRUCTURE NOTES

CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 15/16 INCHES.

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND GUARDRAIL IS 1/16 INCHES.

CAMBER OF -3/8 INCH AT CENTER OF SPANS IS REQUIRED FOR SAG VERTICAL CURVE.

NET FINAL CAMBER OF BEAMS IS 1 1/4 INCH. THIS IS 15/8 INCHES 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 INCHES AT CENTER OF SPANS TO 2 7/8 INCHES AT THE ABUTMENTS.

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND A 1 1/4 INCH THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1 1/4 INCHES UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1 1/4 INCHES BELOW FINAL PAVEMENT SURFACE ELEVATION.

REFER TO STANDARD DRAWING PSBD-1-81 FOR THE FOLLOWING:

DETAILS	NOTES
BEAM LIFTING INSERTS	TRANSVERSE TIE RODS
DETAILS AND REINFORCEMENT OF BEAM ENDS	GALVANIZING
ANCHOR DOWELS	ANCHOR DOWELS
END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE	NON-SHRINKING MORTAR AND GROUT
TYPICAL PLANS OF DIAPHRAGMS AND TRANSVERSE TIE RODS	MORTARING OF SHEAR KEYS
NORMAL CROWN TREATMENT AT CENTERLINE ROADWAY	
BEAM DIMENSIONAL TOLERANCES	
TYPICAL BEAM B21X48	

SUPERSTRUCTURE DETAILS						
BRIDGE NO. TUS-250-2372						
U.S. 250 OVER BRANCH OF LITTLE STILLWATER CREEK						
TUSCARAWAS COUNTY						
STA. 1251+81.42 STA. 1252+22.58						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.D.B.	D.D.B.		FDH	JMG	7/84	

TYPICAL BEARING DETAIL AT ABUTMENTS

TYPE 2 GUARDRAIL POST
ANCHORAGE PLATE DETAIL
(FOR VERTICAL ADJUSTMENT)

TYPICAL
DRIP STRIP DETAIL

DRIP STRIP

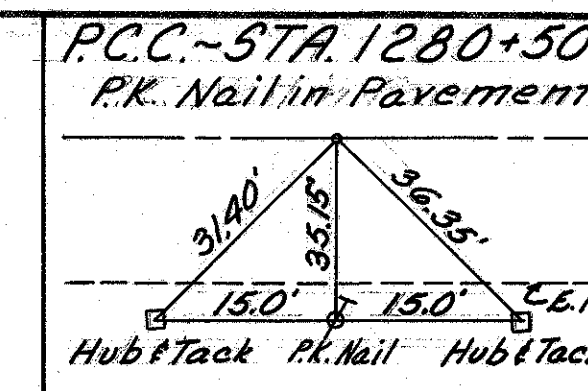
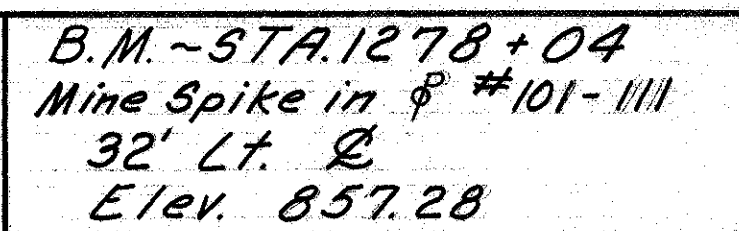
~~DRIP STRIP~~
PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6 C/C MAXIMUM WITH 1/4" X 5/32" X 1/4" FLAT HEAD PINS AND WASHERS. (LENGTH X SHANK DIA. X HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE APPROACH SLAB.

WHERE SPLICES ARE REQUIRED A 3"(MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" X 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH ITEM 711.02. STAINLESS STEEL SHALL BE 20 GAGE ASTM A167, TYPE 304, MILL FINISH. 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 THE ITEM.

TYPICAL BEAM DETAIL
(B 21-48)

NOTE:
No Strands to be Debonded.

Provide 6"x6" Preformed Expansion Joint Filler same thickness as Elastomeric Bearings. Filler shall be included with Box Beams for payment. Drill 2" Hole in Filler for anchor dowels.



CURVE DATA
TEMPORARY ROAD

P.I. = STA. 1278+50 - 80'0 RT.
Δ = 35°-09'-18"
D = 22°-55'-06"
T = 79.20'
L = 153.39'
E = 12.24'
R = 250.0'

END APPROACH SLAB
STA. 1278+39.42

TUS-250-24.21

OHIO	20 30
FHWA REGION 5	

0.87 MILE NORTHEAST
OF DENNISON

DESIGN DESIGNATION

1983 ADT	4,950
2003 ADT	15,120

EARTHWORK LIMITS SHOWN ARE APPROXIMATE.
ACTUAL SLOPES SHALL CONFORM TO PLAN
CROSS-SECTIONS.

STREAM DATA

DRAINAGE AREA: 3.83 SQ. MI.
Q100 = 1521 CFS V100 = 9.0 FT/SEC.
STRUCTURE DOES NOT CLEAR 100 YR.FLOOD
ELEVATION BY 2.2'($\pm$)

EXISTING STRUCTURE DATA

SFN 7900783 (TO BE REMOVED) DATE BUILT 1930

TYPE: CONCRETE SLAB
SPAN: 22'-0 CLEAR
ROADWAY: 29.5' F/F OF GUARDRAIL
ABUTMENTS: CONCRETE (GRAVITY)
SKEW: NONE
ALIGNMENT: 4°-52'RT. CURVE (SUPERELEVATED)
SURFACE COURSE: 4" CONCRETE & 2"
BITUMINOUS MACADAM
APPROACH SLABS: 10'-0 LONG (CONC.)
CONDITION: POOR

PROPOSED STRUCTURE

```

TYPE:--SINGLE SPAN PRESTRESSED CONCRETE
      BOX BEAMS WITH REINFORCED
      CONCRETE SUBSTRUCTURE UNITS.
SPAN: 40.00' MEASURED ALONG REFERENCE
      LINE
ROADWAY: 36'-0" F/F OF GUARDRAIL
SKEW: 0° WITH REFERENCE LINE
SURFACE COURSE: 2 1/2" ASPHALT CONCRETE
LOADING: HS20-44 AND THE ALTERNATE
          MILITARY LOADING
APPROACH SLABS: AS-1-81, 15' LONG
ALIGNMENT: CURVE 4°-52' RT. (STRUCTURE
          BUILT TANGENT)
SUPERELEVATION: 0.05333'/'

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SHEET 1 / 9

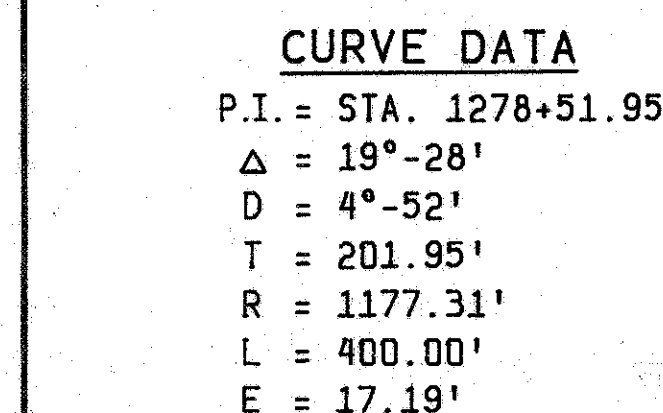
W.E. QUICKSALL AND ASSOCIATES INC.
NEW PHILADELPHIA, OHIO

SFN 7900783 SITE PLAN

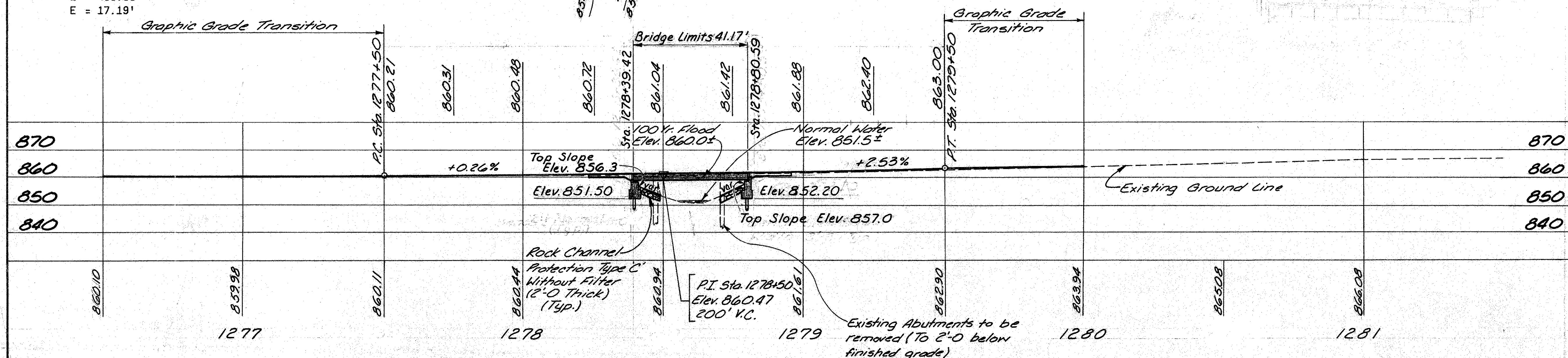
BRIDGE NO. TUS-250-2421
U.S. 250 OVER WOLF RUN

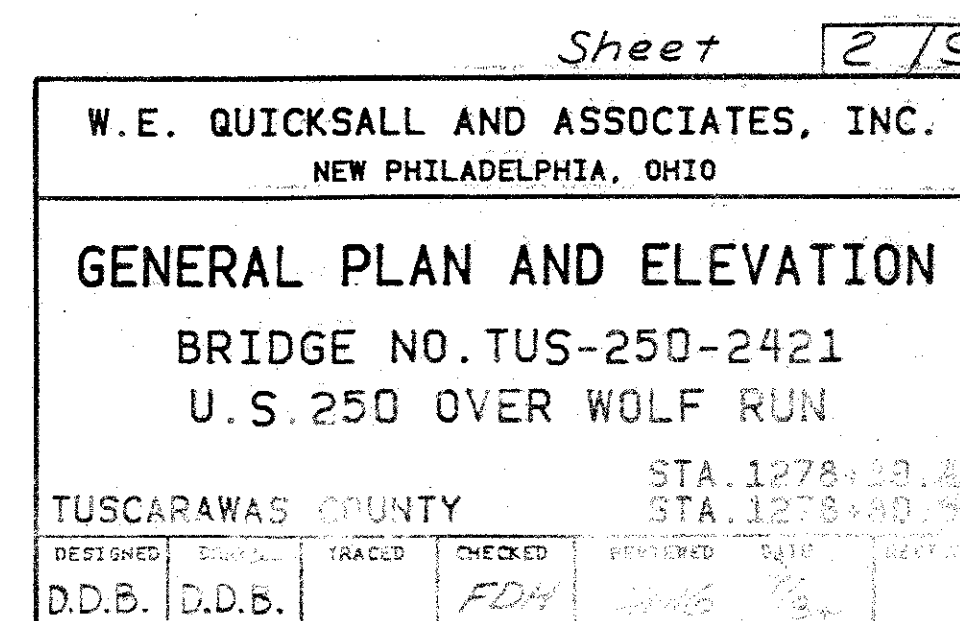
TUSCARAWAS COUNTY STA. 1278+39.42
STA. 1278+80.59

EXIST. TOPO		PROPOSED WORK			
SURVEY	DRAWN	DESIGN	DRAWN	CHECKED	REVIEWED
O.D.O.T.	O.D.O.T.	FDH	FDH	JMG	Wda 4/84



NOTE: ALL PILES TO BE 12" CAST-IN-PLACE
REINFORCED CONCRETE
ESTIMATED AVERAGE PAY LENGTH:
REAR ABUTMENT: 55 FEET
FORWARD ABUTMENT: 55 FEET





DESIGN NOTES

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING 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. (SUB-STRUCTURE)
REINFORCING STEEL: ASTM A615, A616, A617-GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
CONCRETE FOR PRESTRESSED BEAMS: UNIT STRESS 2,200 P.S.I.-COMPRESSION
UNIT STRESS 444 P.S.I.-TENSION
PRESTRESSING STRAND: ASTM A416
F_p = 270,000 P.S.I.
INITIAL STRESS = 0.70 F_p

DECK PROTECTION METHOD:
2-1/2" MIN. ASPHALT CONCRETE (AC-20) AND TYPE 'D' WATER-PROOFING.

SHOP DRAWINGS
THE FABRICATOR'S SHOP DRAWINGS SHALL INCLUDE COMPLETE DETAILS OF THE REINFORCING IN THE BOX BEAMS.

REFERENCE SHALL BE MADE TO:
STANDARD DRAWINGS
AS-1-81 DATED 11-27-81
DBR-2-73 DATED 4-10-73
PSBD-1-81 DATED 9-18-81
REINFORCING STEEL SPLICES:
ALL REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH ITEM 509.08. UNLESS SHOWN OTHERWISE, ALL SPLICES SHALL BE MADE BY OVERLAPPING THE ENDS OF THE BARS NOT LESS THAN SHOWN IN THE FOLLOWING TABLE.

BAR SIZE	LAP LENGTH
#5	1'8
#8	3'3

SPECIAL CARE AND APPROPRIATE MEASURES SHALL BE TAKEN TO PREVENT REMOVAL DEBRIS FROM FALLING INTO THE CREEK.

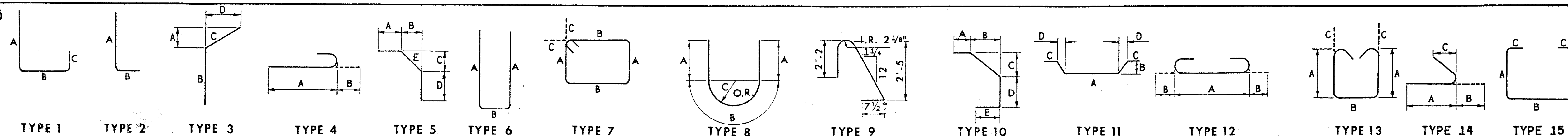
REMOVAL OF THE EXISTING STRUCTURE:
WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED TO THE LIMITS SPECIFIED.

PORTIONS OF STRUCTURES TO BE REMOVED: THE FOLLOWING PORTIONS OF THE EXISTING STRUCTURE SHALL BE REMOVED IN SEQUENCE, TO THE LIMITS SHOWN ON THE PLAN:
1. COMPLETE SUPERSTRUCTURE, INCLUDING ASPHALT AND CONCRETE WEARING SURFACE, REINFORCED CONCRETE DECK, CURBS AND GUARDRAIL
2. EXISTING ABUTMENTS(TO THE LIMITS SHOWN ON THE PLAN).

PILES:
12 INCH PRECAST PRESTRESSED CONCRETE PILES MAY BE SUBSTITUTED FOR THE 12 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES SHOWN ON THESE PLANS.DRAWINGS SHOWING DETAILS OF AND SPECIFICATIONS FOR PRESTRESSED CONCRETE PILES ARE AVAILABLE FROM THE DIRECTOR (BUREAU OF BRIDGES).IF THE PRESTRESSED PILE ALTERNATE IS CHOSEN, THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE THE SAME AS FOR CAST-IN-PLACE REINFORCED CONCRETE PILES PER 507.

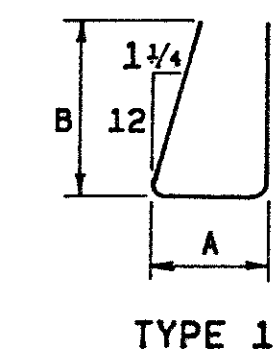
THE DESIGN LOAD FOR ABUTMENT PILES IS 40 TONS PER PILE.

ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GEN'L		
202	LUMP	SUM	PORTIONS OF STRUCTURES REMOVED				LUMP		
403	10	CU.YD.	ASPHALT CONCRETE (AC-20)			10			
404	6	CU.YD.	ASPHALT CONCRETE (AC-20)			6			
503	LUMP	SUM	COFFERDAMS,CRIBS AND SHEETING				LUMP		
503	LUMP	SUM	UNCLASSIFIED EXCAVATION	LUMP					
502	LUMP	SUM	TEMPORARY STRUCTURE				LUMP		
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP		
507	770	LIN.FT.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES	770					
509	6962	LBS.	REINFORCING STEEL, GRADE 60	6962					
511	41	CU.YD.	CLASS 'C' CONCRETE, ABUTMENTS ABOVE FOOTINGS	41					
511	38	CU.YD.	CLASS 'C' CONCRETE, FOOTINGS	38					
512	182	SQ.YD.	TYPE 'D' WATERPROOFING			182			
515	9	EACH	PRESTRESSED CONCRETE BOX BEAMS (B21-48)			9			
516	36	EACH	1/2"X5"X12" ELASTOMERIC BEARING PADS (50 DUROMETER)	36					
516	6	SQ.FT.	1/8" PREFORMED BEARING PADS, 711.12			6			
516	134	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER	134					
517	100.00	LIN.FT.	RAILING(DEEP BEAM RAIL WITH TUBULAR BACK-UP INCLUDING TYPE 2 STEEL POST, BOLTS AND ACCESSORIES			100.00			
SPECIAL	65	SQ.FT.	STEEL DRIP STRIP			65			
518	22	CU.YD.	POROUS BACKFILL	22					
SPECIAL	21	SQ.YD.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)			21			



REAR ABUTMENT										
MARK	TYPE	A	B	C	D	E	NUMBER			WEIGHT
A801	5	1'-5"	1'-1 3/4"	1'-1 3/4"	1'-5"	1'-7 1/2"				272
A802	STR.									320
A803	STR.									266
A804	STR.									386
A501	STR.									302
A502	STR.									97
A503	STR.									125
A504	STR.									20
A505	STR.									12
A506	STR.									62
A507	STR.									119
A508	6	2'-4"	10"							197
A509	6	8'-10"	10"							152
A510	6	5'-3"	2'-2"							91
A511	6	5'-9"	2'-2"							84
A512	6	6'-3"	2'-2"							90
A513	6	6'-8"	2'-2"							111
A514	6	2'-2"	2'-11"							584
A515	6	6'-11"	10"							15
A516	STR.									28
A517	6	6'-11"	1'-5"							63
A401	7	1'-9"	2'-9 1/2"	4 1/2"						90

FORWARD ABUTMENT										
MARK	TYPE	A	B	C	D	E	NUMBER			WEIGHT
B801	5	1'-5"	1'-1 3/4"	1'-1 3/4"	1'-5"	1'-7 1/2"				272
B802	STR.									320
B803	STR.									266
B804	STR.									386
B501	STR.									302
B502	STR.									97
B503	STR.									125
B504	STR.									20
B505	STR.									12
B506	STR.									62
B507	STR.									119
B508	6	2'-4"	10"							197
B509	6	6'-10"	10"							15
B510	6	6'-7"	2'-2"							110
B511	6	6'-1"	2'-2"							88
B512	6	5'-7"	2'-2"							82
B513	6	5'-1"	2'-2"							88
B514	6	2'-2"	2'-11"							584
B515	6	8'-9"	10"							151
B516	STR.									28
B517	6	6'-10"	1'-5"							62
B401	7	1'-9"	2'-9 1/2"	4 1/2"						90



NOTES

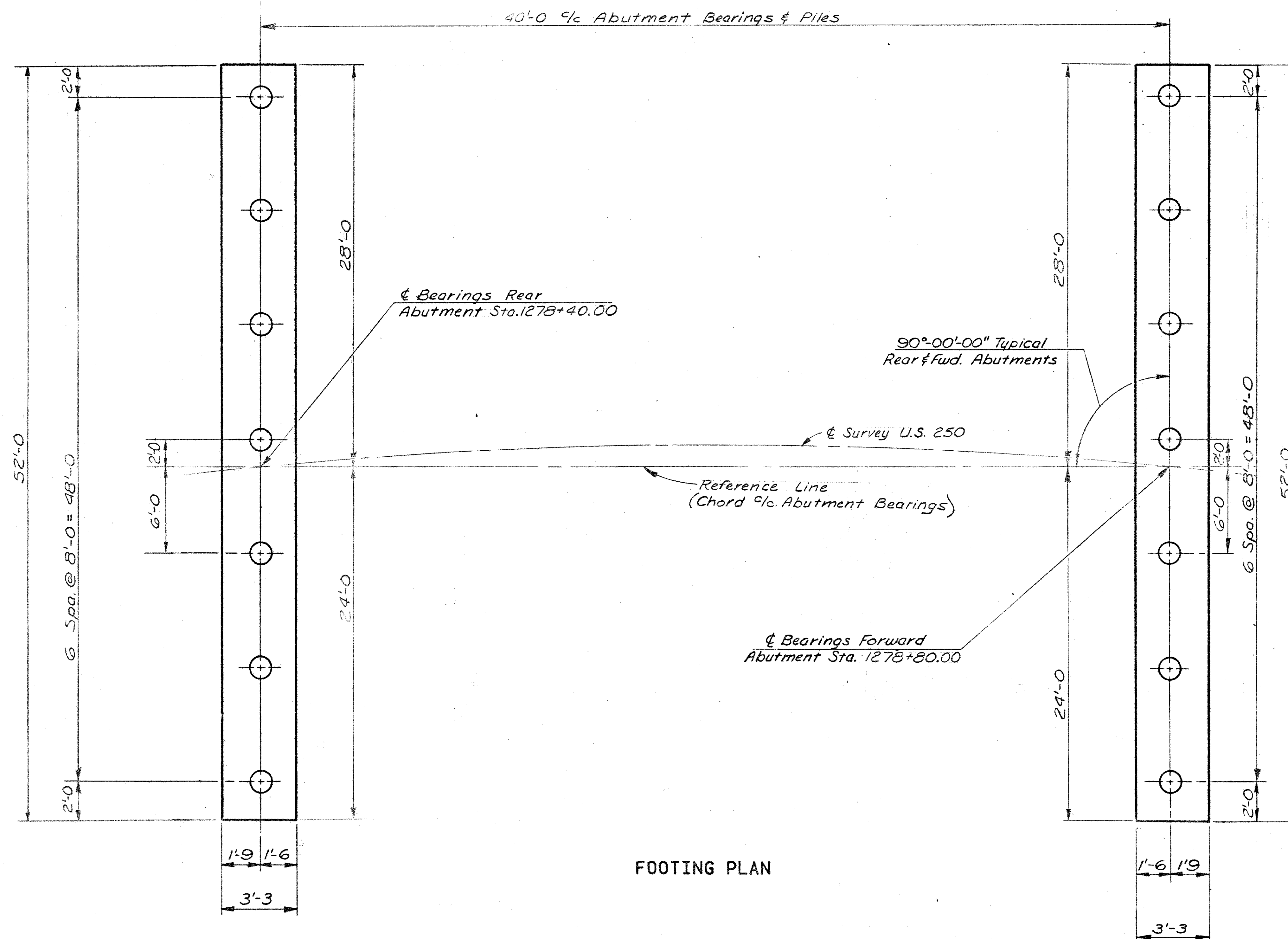
REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

ALL DIMENSIONS ARE OUT-TO-OUT.

STR. IN THE "TYPE" COLUMN INDICATES STRAIGHT BARS.

Sheet 4 / 9

W. E. QUICKSALL AND ASSOCIATES, INC. CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO					
REINFORCING BAR SCHEDULE					
BRIDGE NO. TUS-250-2421 U. S. 250 OVER WOLF RUN					
TUSCARAWAS COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
D.D.B.	D.D.B.		FDH	JMS	7/22



FOOTING PLAN

NOTE: All Piles are 12" Cast-in-Place Reinforced Concrete.

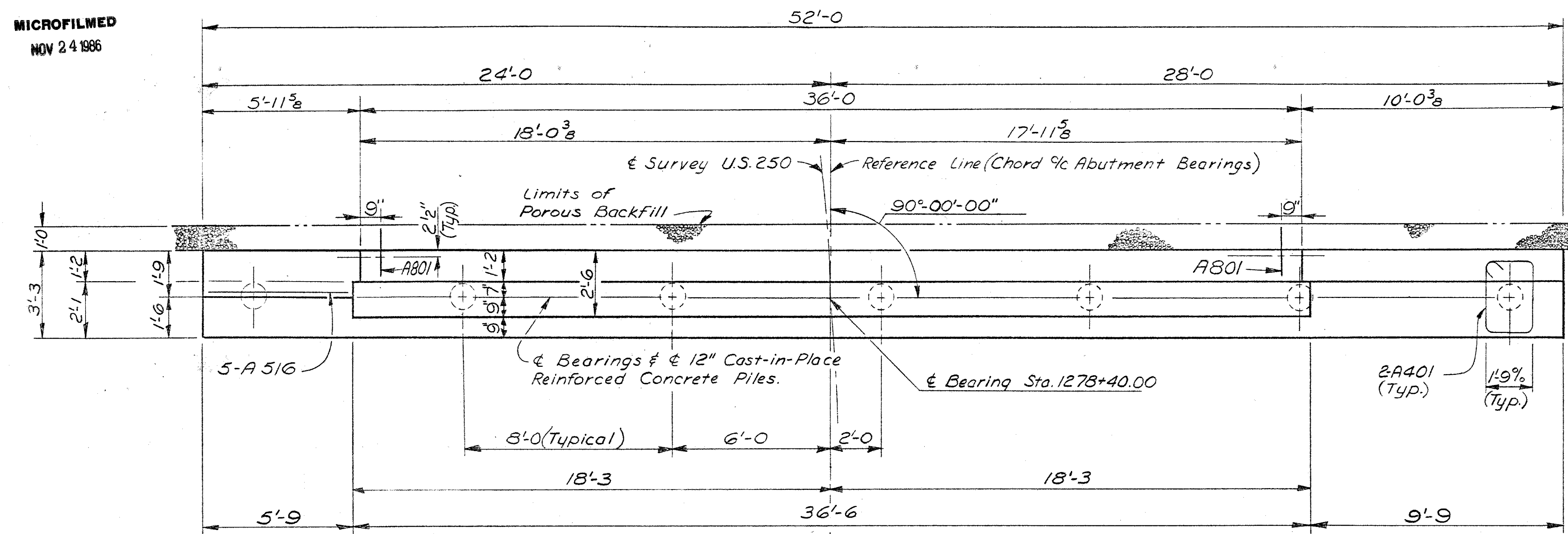
W.E. QUICKSALL AND ASSOCIATES, INC.
NEW PHILADELPHIA, OHIO

FOOTING PLAN

BRIDGE NO. 250-24.21
0.500' x 0.500' x 0.500'

TUSCARAWA
DESIGNED
D.D.B.

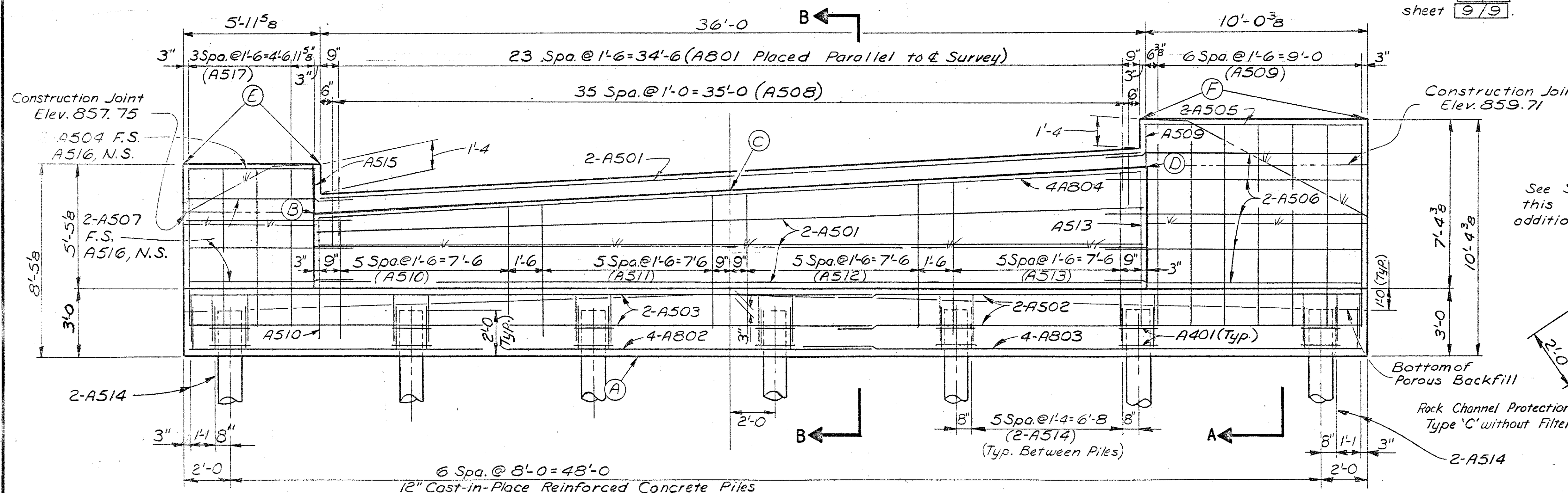
DRAWN
D.D.B.



BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor bar holes.

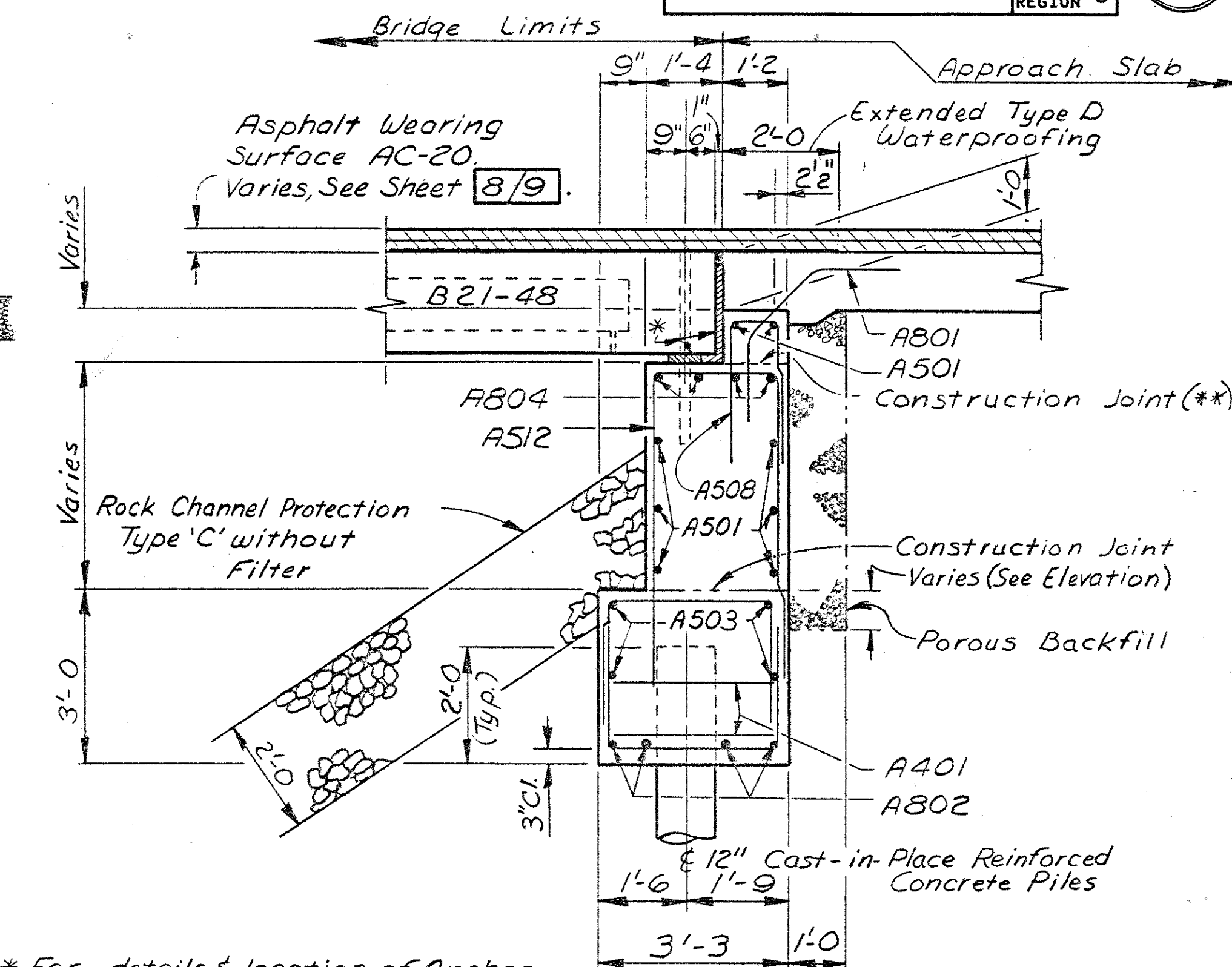
PLAN

Survey U.S. 250



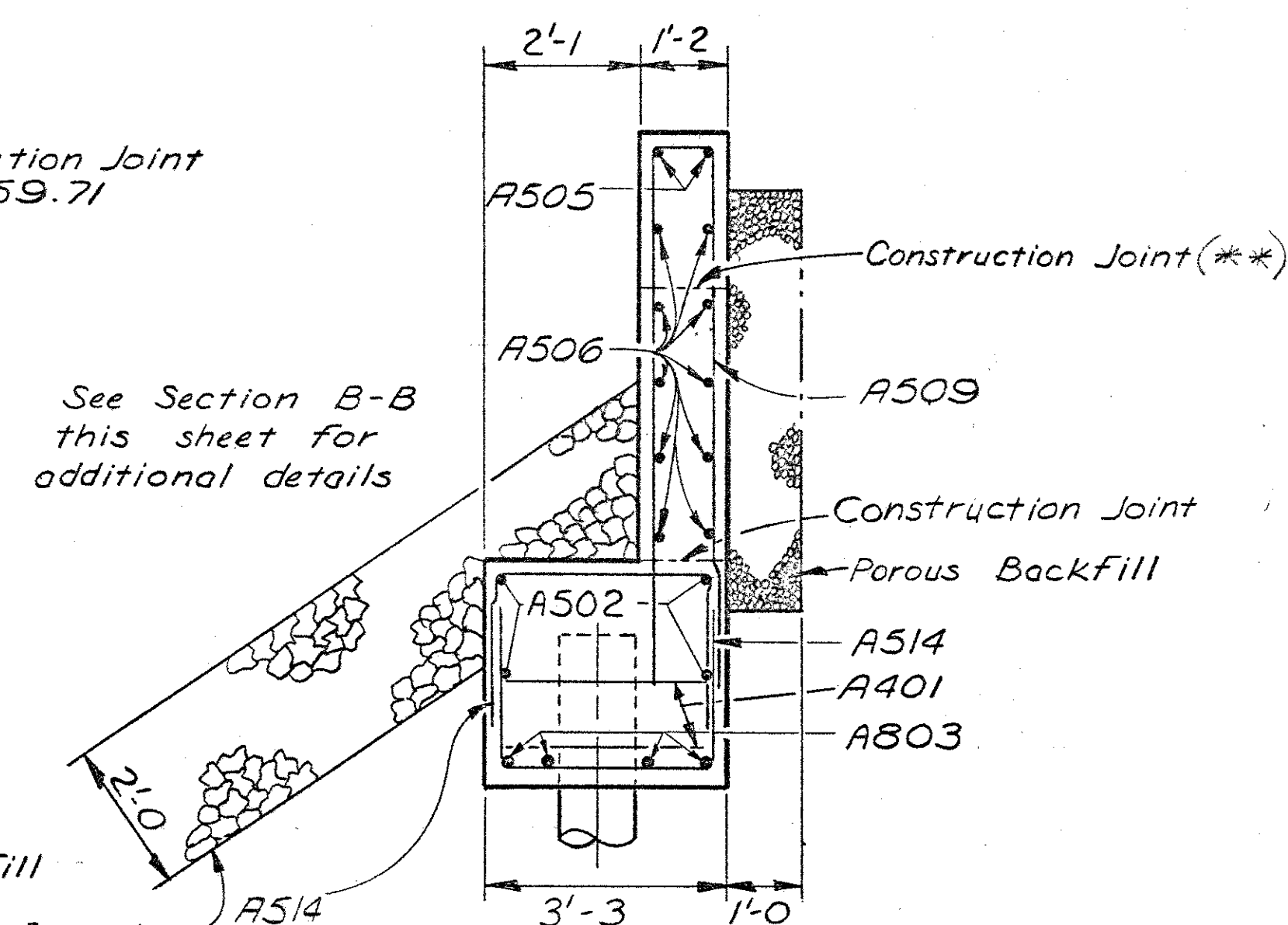
ELEVATION

(**) NOTE:
Concrete above the beam
seat shall be poured after
the prestressed beams
are set in place.



SECTION B-B

* For details & location of Anchor Dowels, Bearings & Preformed Expansion Joint filler, see plan sheet 8/9 and details sheet 9/9.



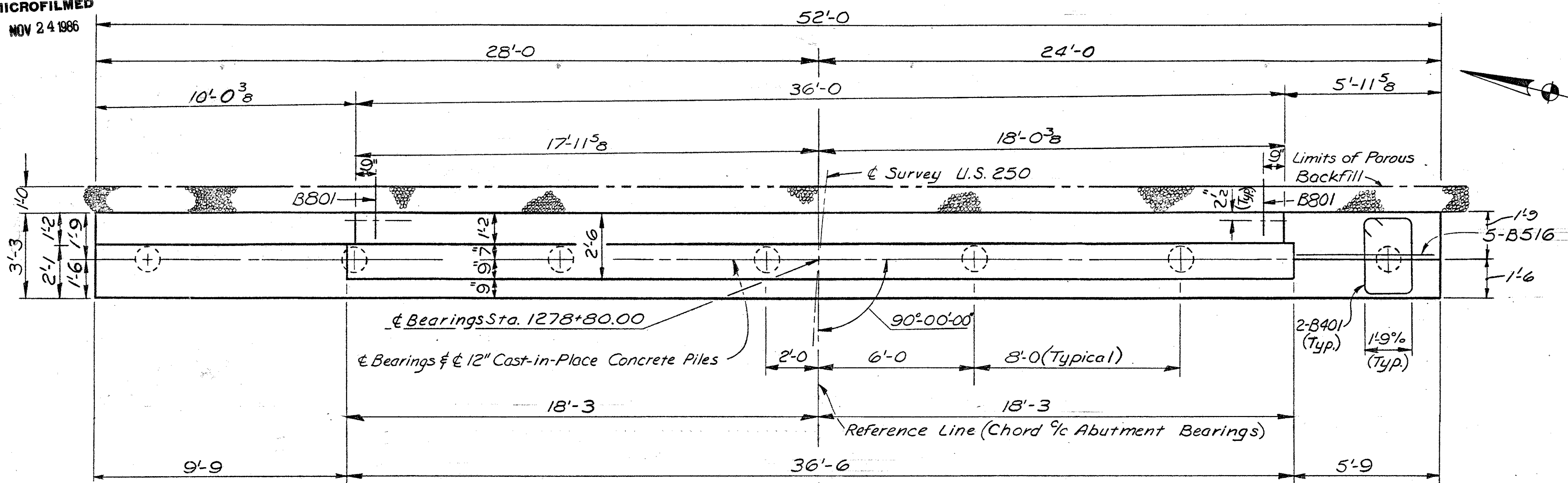
SECTION A-A

See Section B-B
this sheet for
additional details

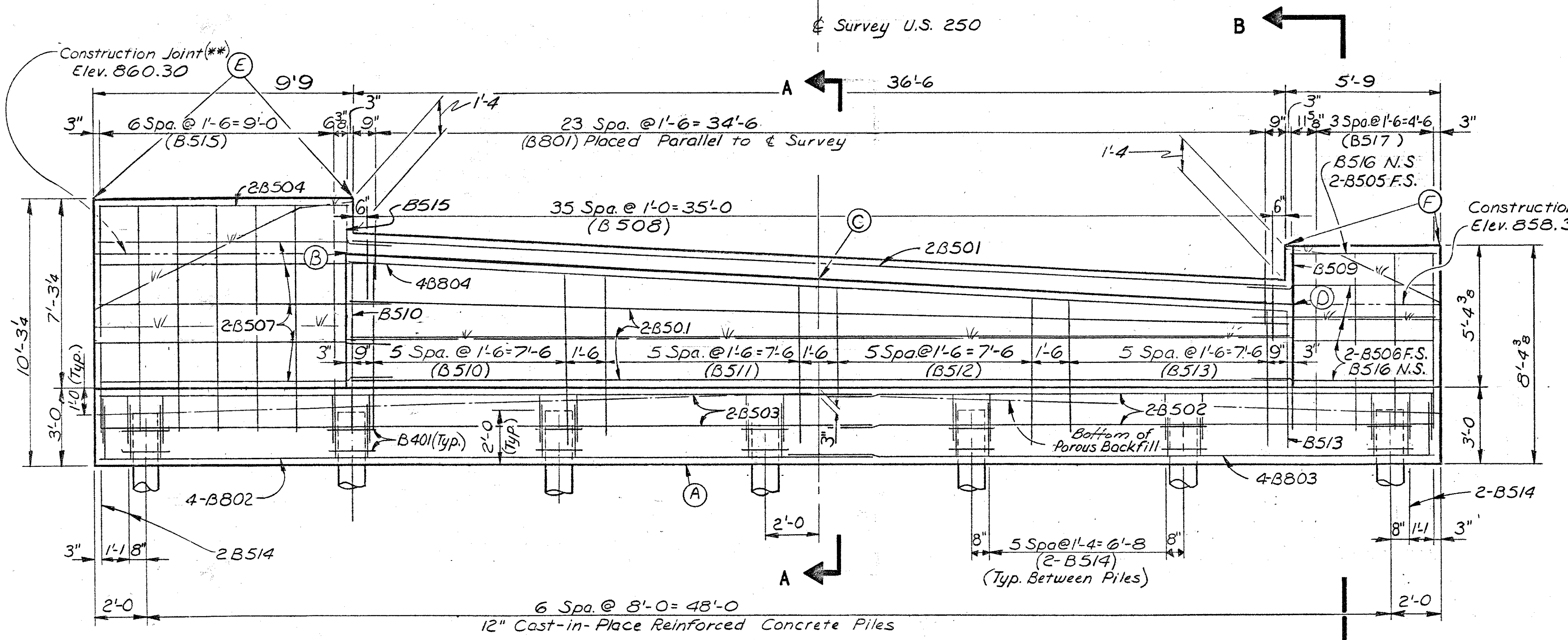
POROUS BACKFILL: Shall extend upward to the plane of the subgrade and laterally to the surface of the embankment slopes.

ELEVATIONS							
LOCATION	A	B	C	D	E	F	
REAR ABUTMENT	851.50	857.82	858.83	859.78	859.93	861.86	

MICROFILMED
NOV 24 1986



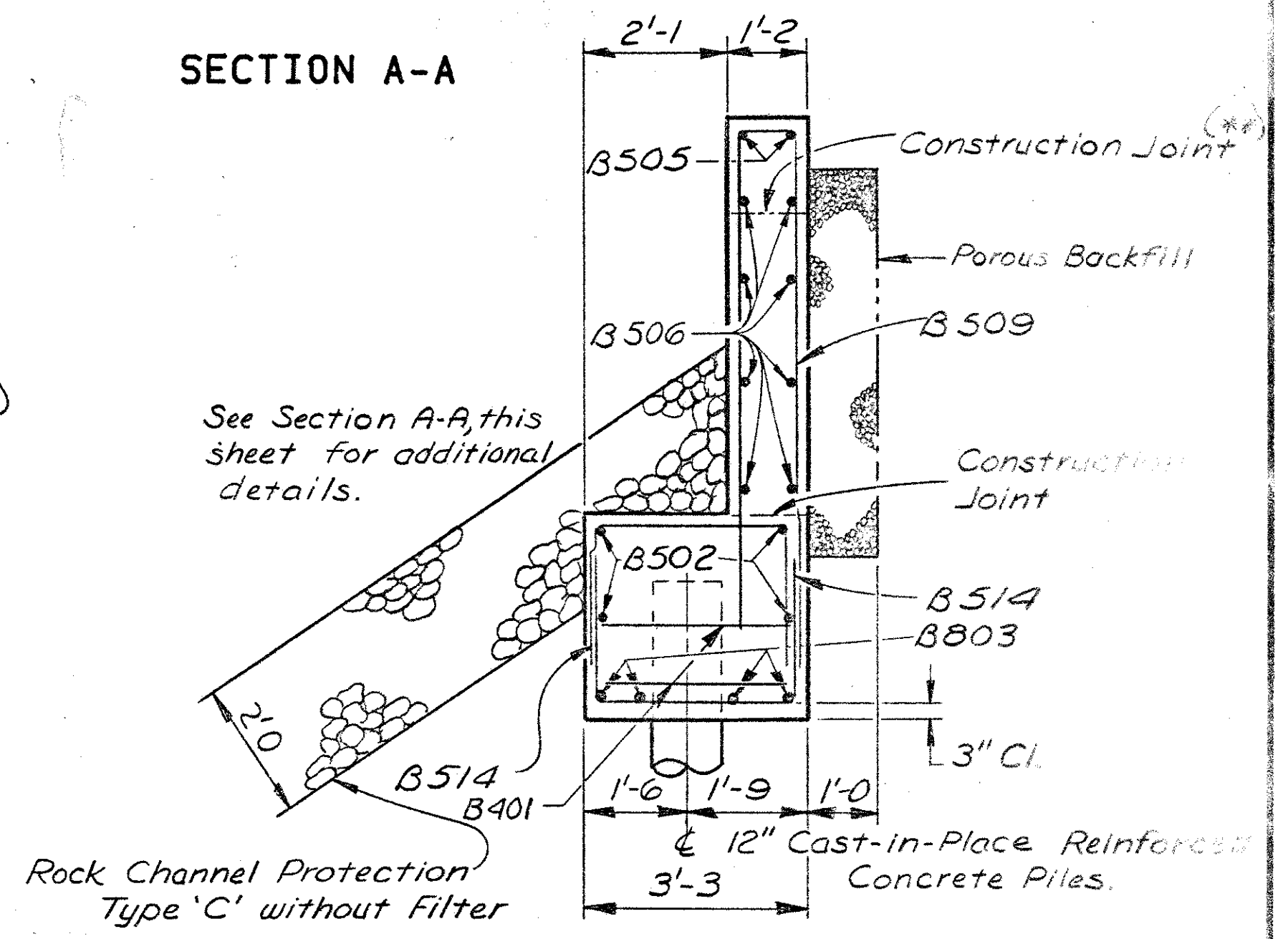
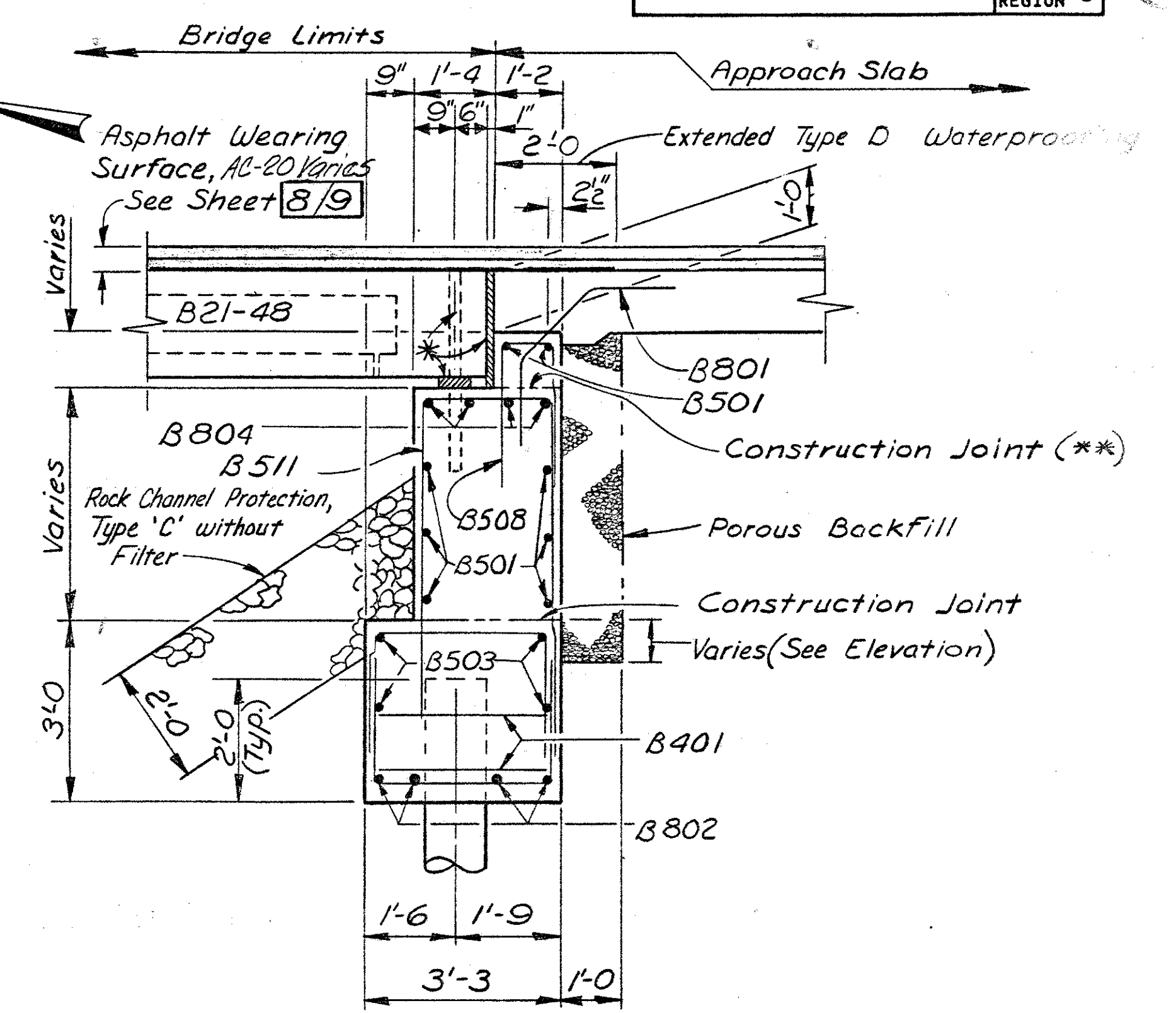
* For detail & location of Anchor Dowels, Bearings & 1" Preformed Expansion Joint Filler, see plan sheet 8/9 and details sheet 9/9.



ELEVATIONS						
LOCATION	A	B	C	D	E	F
FORWARD ABUTMENT	852.20	860.37	859.40	858.43	862.47	860.56

(**) NOTE:
Concrete above the beam seat shall be poured after the prestressed beams are set in place.

For Porous Backfill Note, see sheet 6/9
For Bridge Seat Reinforcing Note, see sheet 6/9



W.E. QUICKSALL AND ASSOCIATES, INC.
NEW PHILADELPHIA, OHIO

FORWARD ABUTMENT DETAILS
BRIDGE NO. TUS-250-24.21
U.S. 250 OVER WOLF CREEK

TUSCARAWAS COUNTY
DESIGNED: D.D.B. DRAWN: D.D.B. TRACED: FDH CHECKED: JML6 7/84

STA. 12+80
STA. 12+84

SUPERSTRUCTURE NOTES

CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS $\frac{15}{16}$ INCHES.

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND GUARDRAIL IS $\frac{1}{16}$ INCHES.

CAMBER OF $-\frac{1}{4}$ INCH AT CENTER OF SPANS IS REQUIRED FOR CREST VERTICAL CURVE.

NET FINAL CAMBER OF BEAMS IS $\frac{11}{4}$ INCH. THIS IS $\frac{11}{2}$ INCHES 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 $\frac{11}{4}$ INCHES AT CENTER OF SPANS TO $\frac{23}{4}$ INCHES AT THE ABUTMENTS.

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND A $\frac{11}{4}$ INCH THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF $\frac{11}{4}$ INCHES UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND $\frac{11}{4}$ INCHES BELOW FINAL PAVEMENT SURFACE ELEVATION.

REFER TO STANDARD DRAWING PSBD-1-81 FOR THE FOLLOWING:

DETAILS	NOTES
BEAM LIFTING INSERTS	TRANSVERSE TIE RODS
DETAILS AND REINFORCEMENT OF BEAM ENDS	GALVANIZING
ANCHOR DOWELS	ANCHOR DOWELS
END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE	NON-SHRINKING MORTAR AND GROUT
TYPICAL PLANS OF DIAPHRAGMS AND TRANSVERSE TIE RODS	MORTARING OF SHEAR KEYS

BEAM DIMENSIONAL TOLERANCES

TYPICAL BEAM B21X48

DETAIL 'A'

For Typical Box Beam Detail,
See Sheet **9/9**

For Typical Section Through Abutment,
See Section A-A on Sheet **7/9**

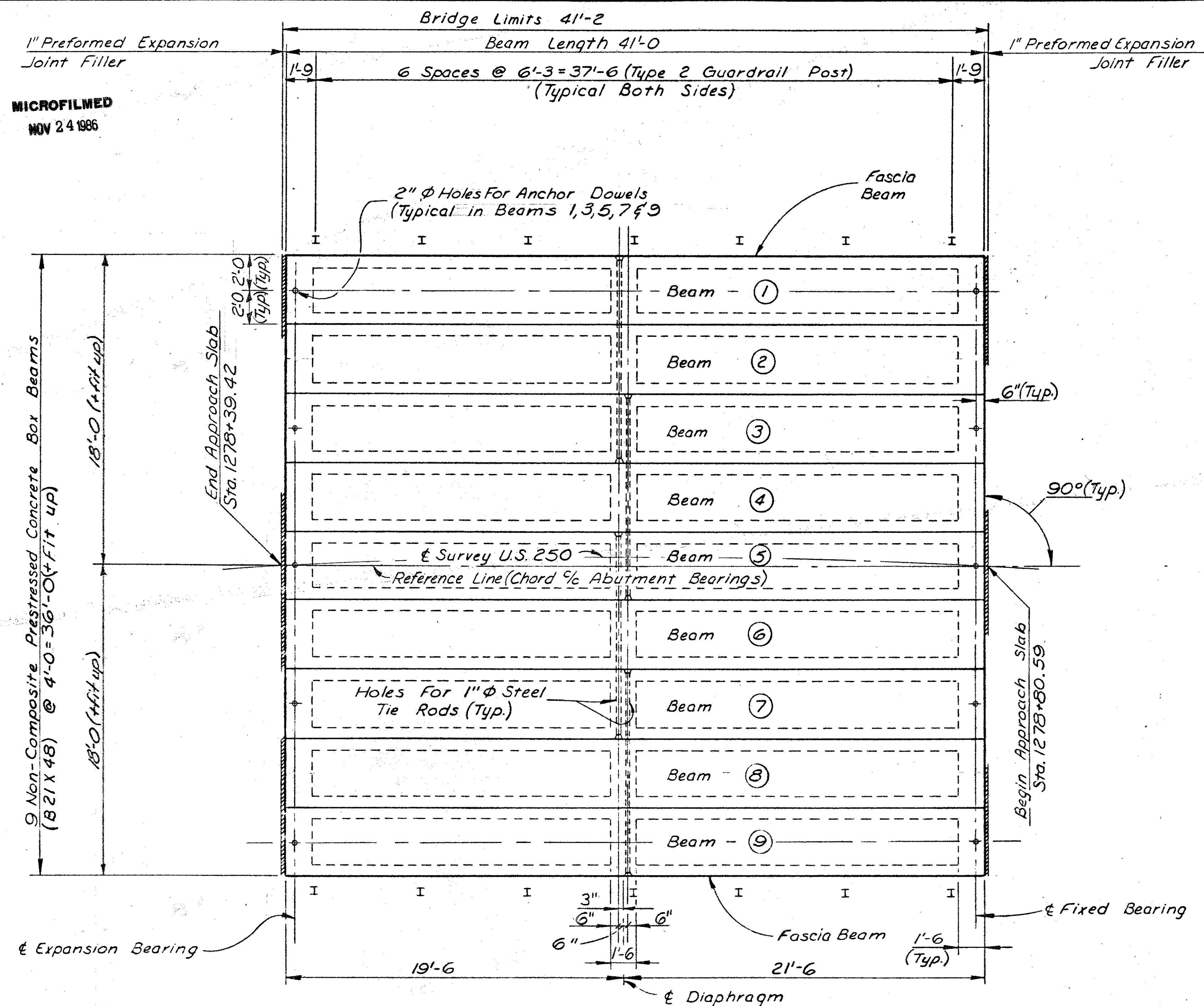
Sheet **8/9**

W.E. QUICKSALL AND ASSOCIATES, INC.
NEW PHILADELPHIA, OHIO

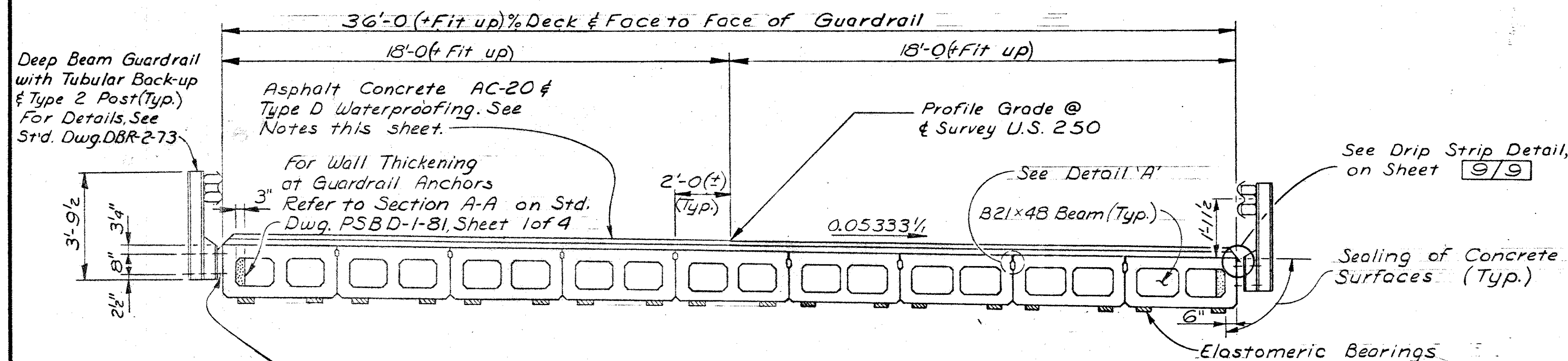
SUPERSTRUCTURE DETAILS

BRIDGE NO. TUS-250-2421
U.S. 250 OVER WOLF RUN

TUSCARAWAS COUNTY		STA. 1278+39.42		STA. 1278+80.59	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
D.D.B.	D.D.B.		FDH	JMG	7/84

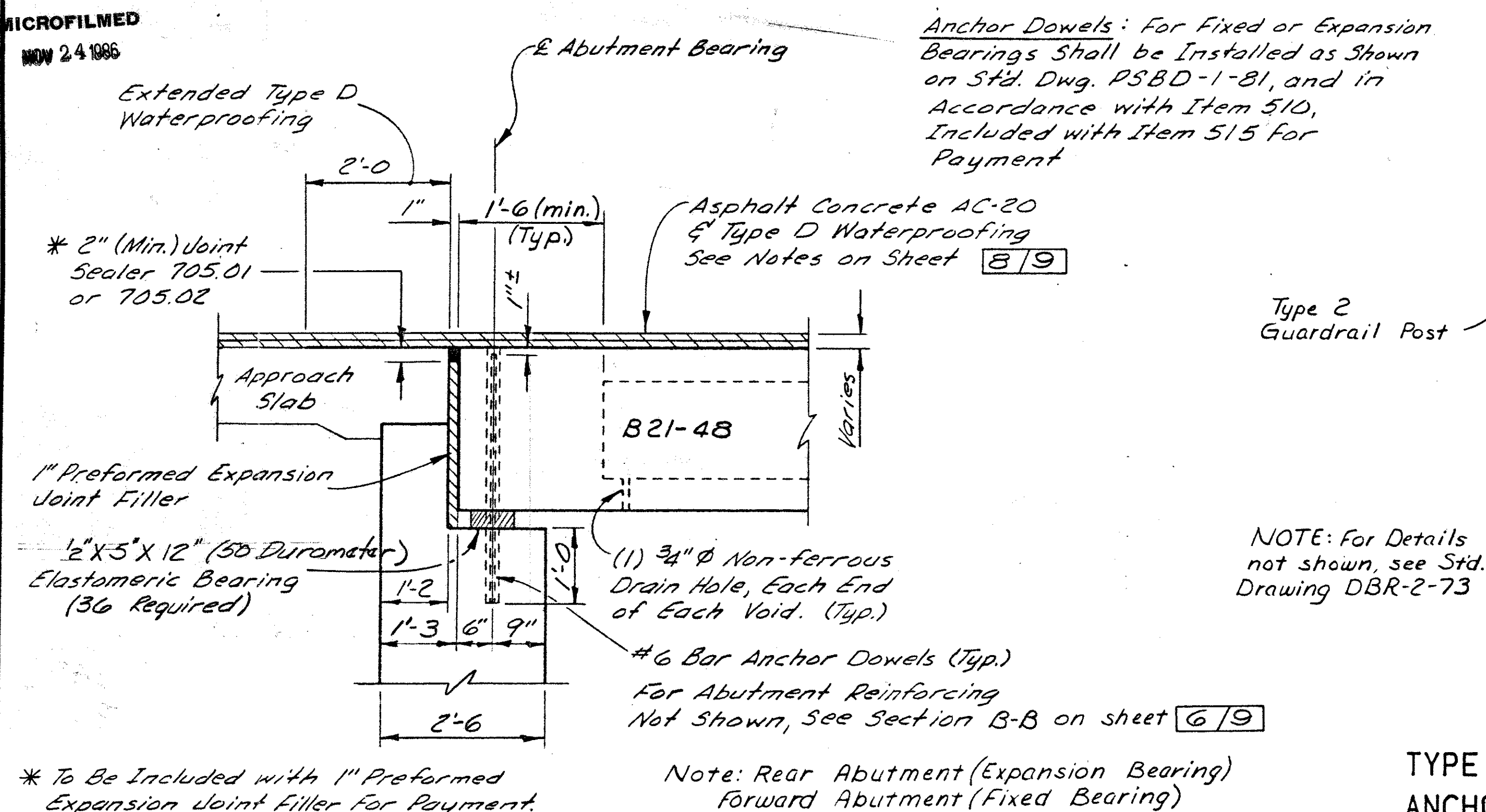


DECK PLAN

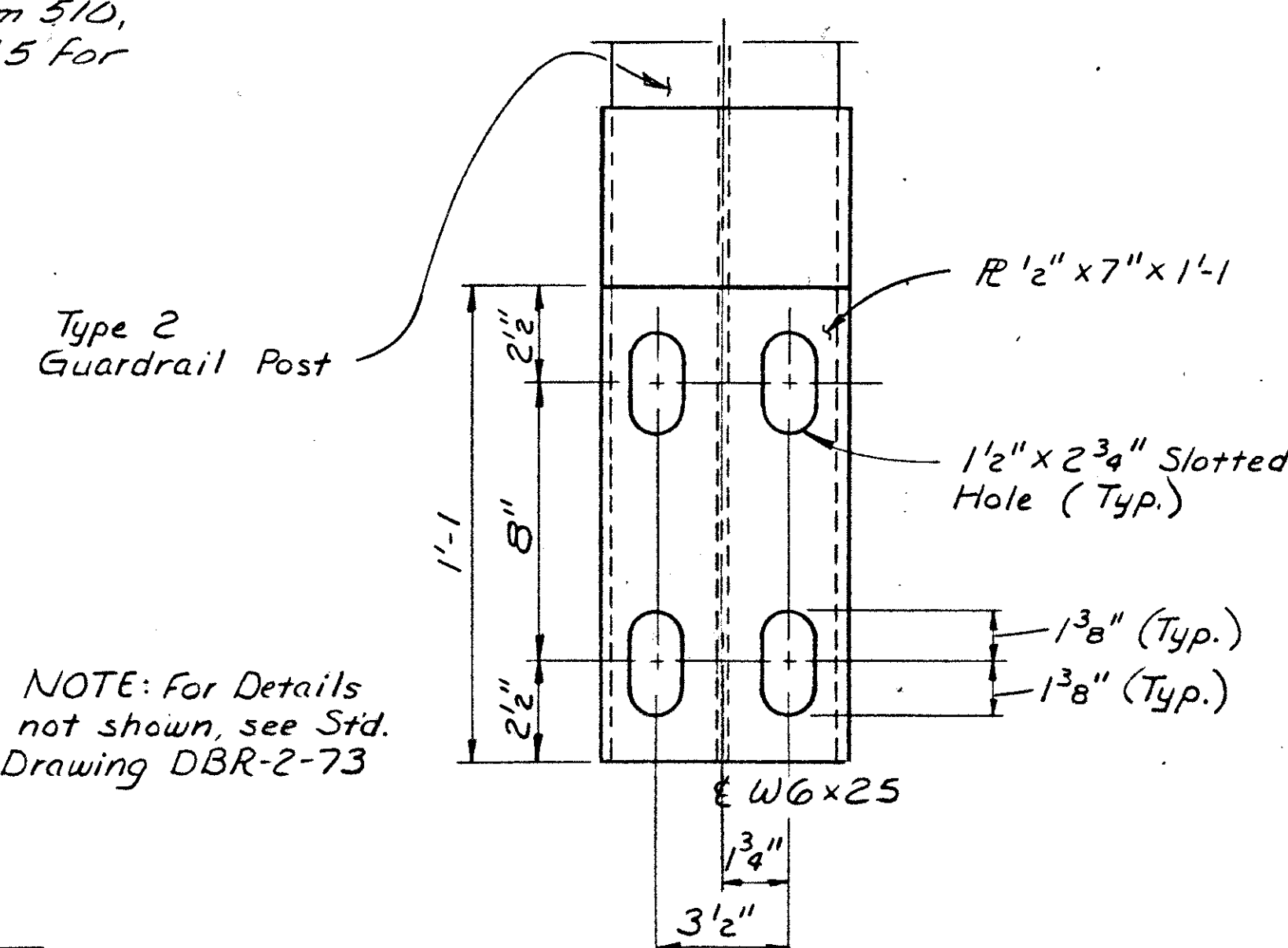


TRANSVERSE SECTION

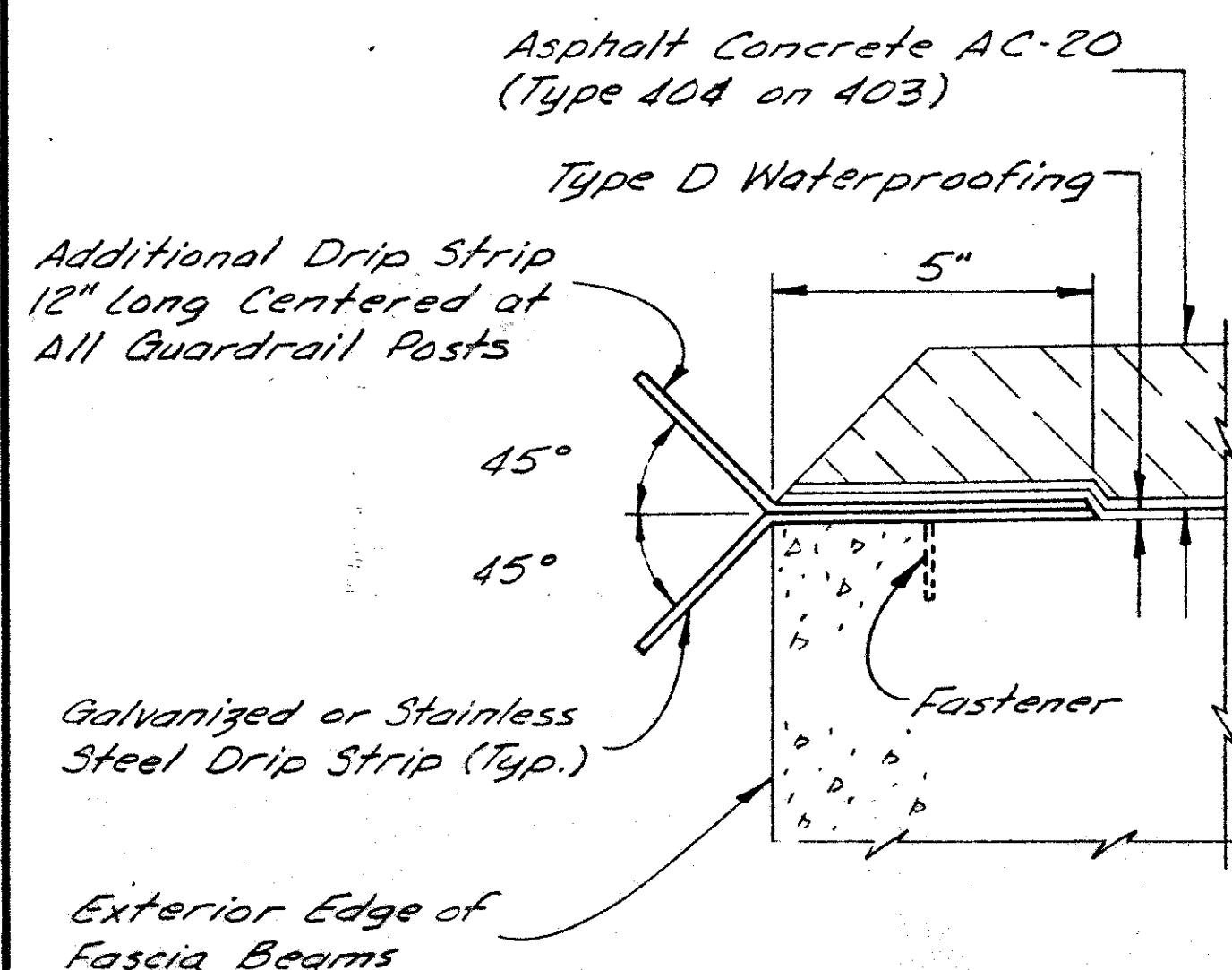
For Type 2 Guardrail Post Anchorage Plate Detail See Sheet **9/9**



TYPICAL BEARING DETAIL
AT ABUTMENTS



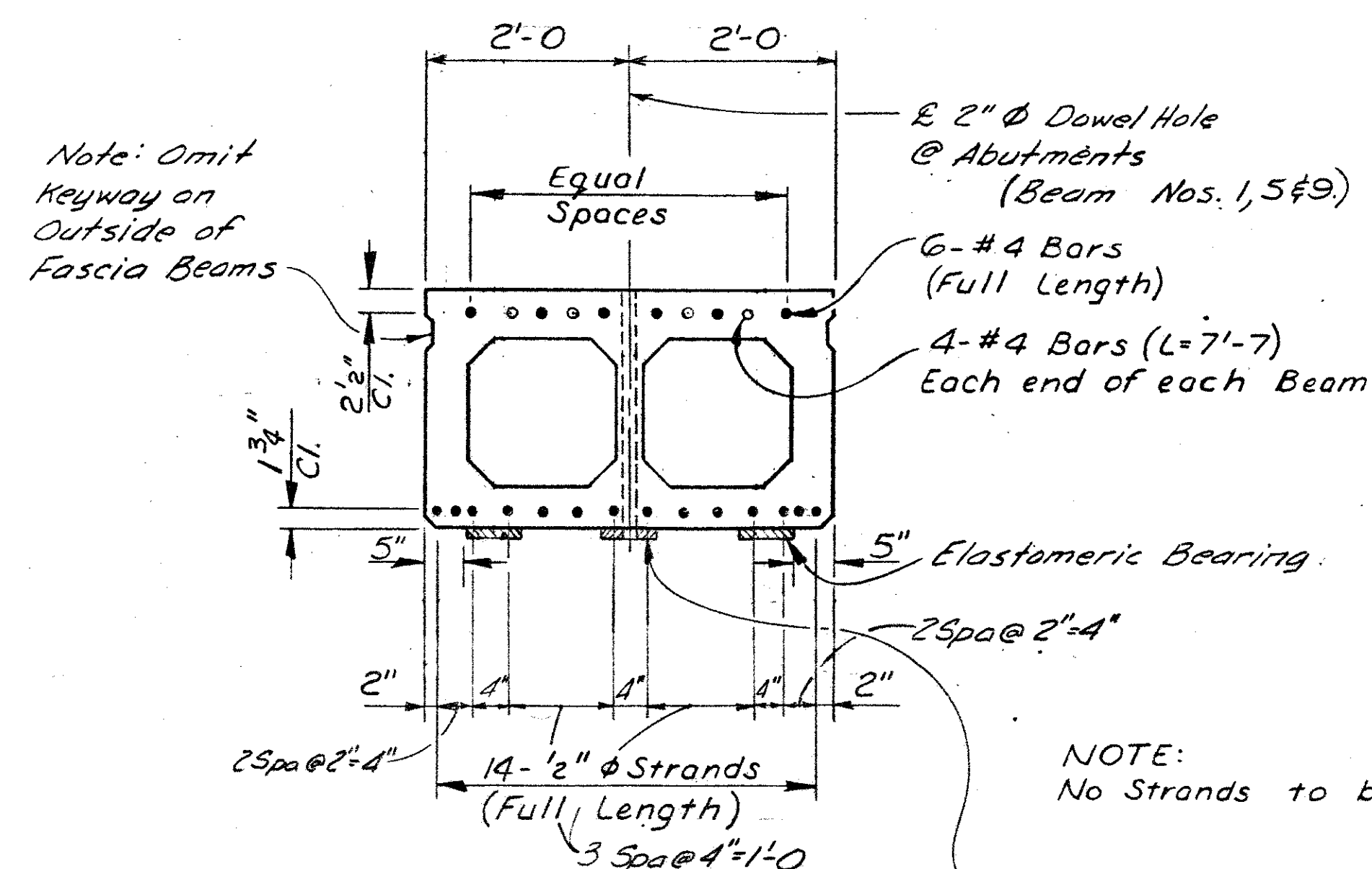
TYPE 2 GUARDRAIL POST
ANCHORAGE PLATE DETAIL
(FOR VERTICAL ADJUSTMENT)



TYPICAL
DRIP STRIP DETAIL

DRIP STRIP
PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6 C/C MAXIMUM WITH 1 1/4" x 5/32" x 1/4" FLAT HEAD PINS AND WASHERS. (LENGTH X SHANK DIA. X HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE APPROACH SLAB.

WHERE SPLICES ARE REQUIRED A 3" (MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" x 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH ITEM 711.02. STAINLESS STEEL SHALL BE 20 GAGE ASTM A167, TYPE 304, MILL FINISH. 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 THE ITEM.



TYPICAL BEAM DETAIL
(B 21-48)

W.E. QUICKSALL AND ASSOCIATES, INC.
NEW PHILADELPHIA, OHIO

MISCELLANEOUS DETAILS

BRIDGE NO. TUS-250-2421
U.S. 250 OVER WOLF RUN

TUSCARAWAS COUNTY
STA. 1278+39.42
STA. 1278+80.59
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED
D.D.B. D.D.B. FDH JMG 7/84

TUSCARAWAS COUNTY
UNION TOWNSHIP
T14N R7W SEC.31

Calculated By
JWH
4-5-84

Checked By
RBL
7-31-85

FWHA
REGION
5

STATE
OHIO

STATE
PROJECT
NUMBER
11612(0)

29
30

TUS-250-(23.72)(24.21)

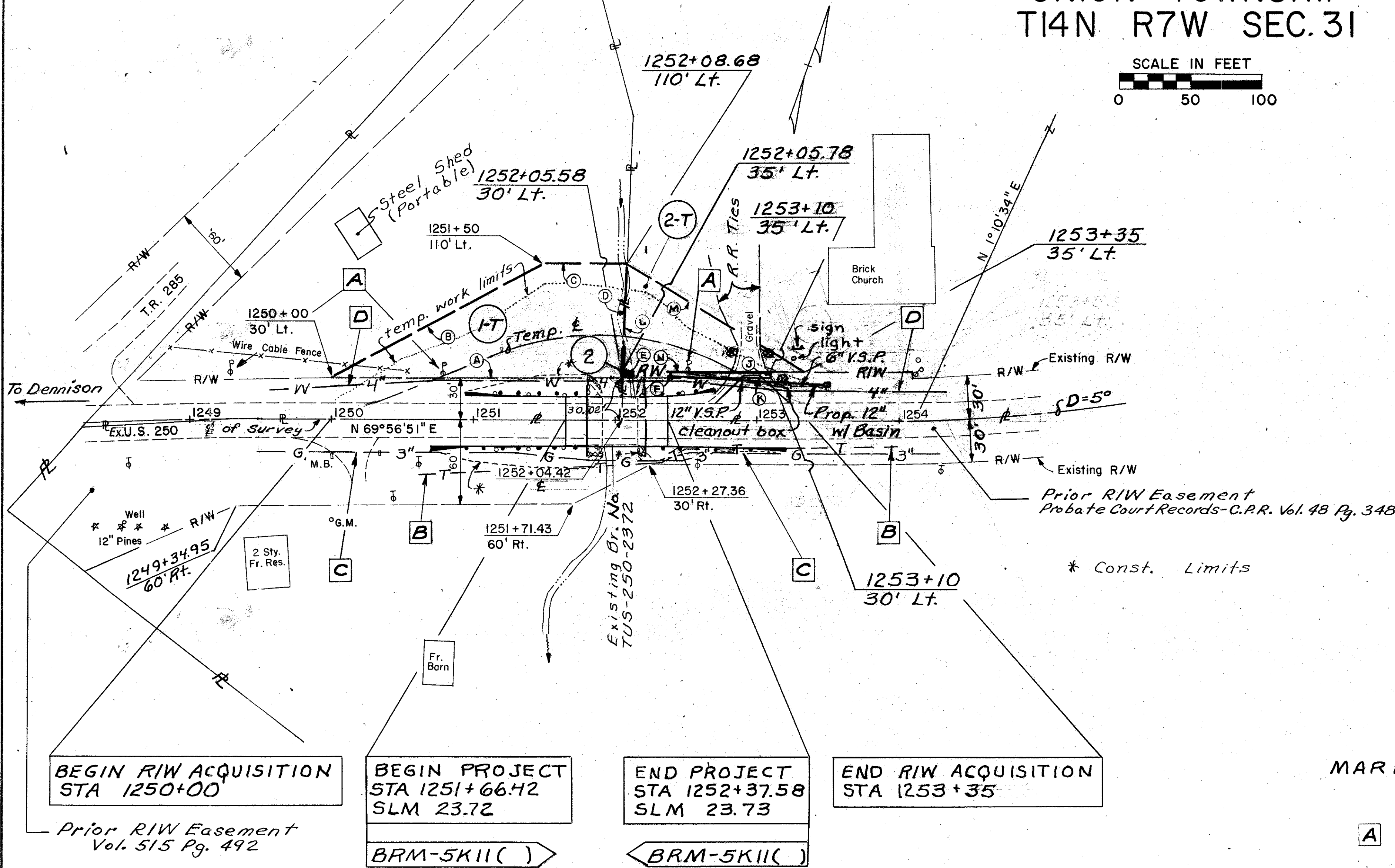
R/W PLAN

TUS-250-23.72

State Project No. 11612(0)

1
2

SCALE IN FEET
0 50 100



SCALE IN FEET
0 200 400

PROPERTY PLAN

MARK UTILITY OWNERS

A Ohio Power Co.
301 Cleveland Ave. SW
P.O. Box 400
Canton, Ohio 44701
Phone 216/438-7040

B The Ohio Bell Telephone Co.
53055 High Ridge Road
Bridgeport, Ohio 43912
Phone 614/695-6138

C East Ohio Gas Co.
4725 Southway St. S.W.
Canton, Ohio 44706
Phone 216/478-3140

D Twin City Water Dept.
314 Grant St.
Dennison, Ohio 44621
Phone 614/922-1460

PARCEL 1-T

Line	Bearing	Distance
A	S 69° 56' 51" W	205.58'
B	N 41° 52' 30" E	170.00'
C	N 69° 56' 51" E	58.68'
D	S 17° 50' 15" E	80.06'

PARCEL 2

Line	Bearing	Distance
E	N 17° 50' 15" W	5.00'
F	N 69° 56' 51" E	104.22'
G	S 20° 03' 09" E	5.00'
H	S 69° 56' 51" W	104.42'

PARCEL 2-T

Line	Bearing	Distance
I	N 17° 50' 15" W	75.06'
J	S 79° 21' 14" E	146.91'
K	S 69° 56' 51" W	129.22'

TOTAL NUMBER OF:
2 OWNERSHIPS
0 TOTAL TAKES
0 OWNERSHIPS WITH STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

NOTE:
Record Area After Outsales Minus
Total P.R.O. Minus Net Take Equals
Net Residue.

Rev. Par. 2 & 2-T and Rev. Topo. JWH 2-19-85
REVISION BY DATE
COMPLETED 2-6-85

PARCEL	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1-T	Tony R. Besozzi and Pauline M. Besozzi	I	458	881	1.72	0.444	0.243	0	0.243		1.276		State	To Construct, Maintain and Remove Temporary Road		
2	International Church of the Foursquare Gospel	I	467	552	2.77	0.279	0.012	0	0.012		2.479					
2-T	do	I	do	do			0.111	0	0.111					To Construct, Maintain and Remove Temporary Road		
	do		504	627	1.159	0.083	-	-	-		1.076			Tract Not Involved		
	do		504	627	0.620	0.069	-	-	-		0.551			Tract Not Involved		

TUSCARAWAS COUNTY
UNION TOWNSHIP
T14N R7W SEC. 32

Calculated By
J.W.H.
6-1-84

Checked By
J.S.B.
7-31-85

FHWA REGION 5	STATE OHIO	STATE PROJECT NUMBER 11614 (0)
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30
30

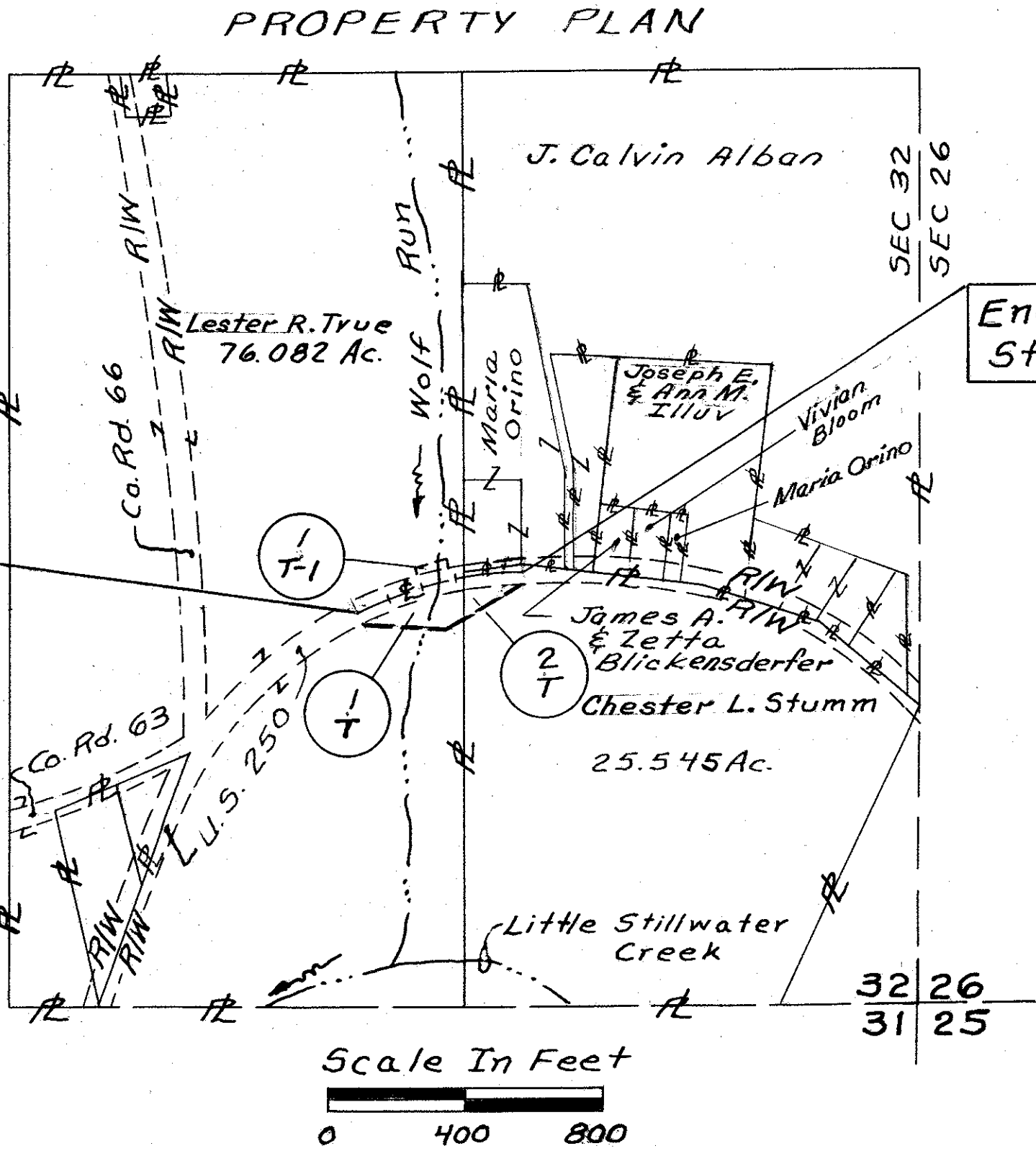
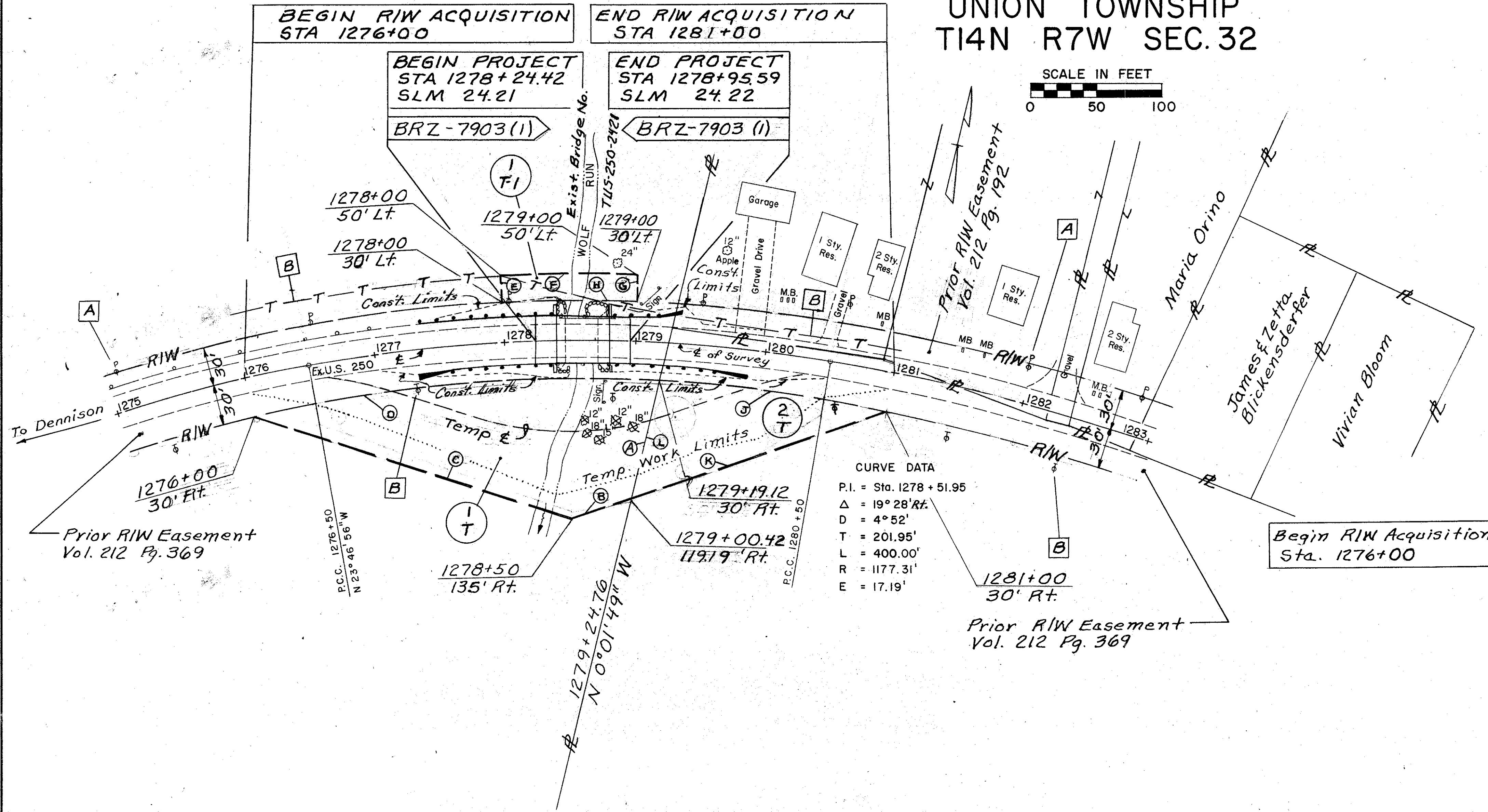
TUS-250-(23.72)(24.21)

R/W PLAN

TUS-250-24.21

State Project No. 11614(0)

2
2



PARCEL 1-T

Line	Bearing	Distance
A	S 0° 01' 49" E	90.89'
B	S 57° 48' 33" W	47.67'
C	N 85° 54' 25" W	254.45'
D	N 71° 32' 59" E R=1147.31'	310.03' (chord) 310.99' (arc)

PARCEL 1-T-1

Line	Bearing	Distance
E	N 16° 28' 56" W	20.00'
F	N 75° 57' 04" E R=1227.31'	104.22' (chord) 104.25' (arc)
G	S 11° 36' 56" E	20.00'
H	S 75° 57' 04" W R=1207.31'	102.52' (chord) 102.55' (arc)

PARCEL 2-T

Line	Bearing	Distance
J	N 83° 42' 59" E R=1147.31'	176.10' (chord) 176.27' (arc)
K	S 57° 48' 33" W	206.78'
L	N 0° 01' 49" W	90.89'

UTILITY OWNERS

A Ohio Power Co. 301 Cleveland Ave. SW P.O. Box 400 Canton, Ohio 44701 Phone 216/438-7040	B The Ohio Bell Telephone Co. 53055 High Ridge Road Bridgeport, Ohio 43912 Phone 614/695-6138
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TOTAL NUMBER OF:
2 OWNERSHIPS
0 TOTAL TAKES
0 OWNERSHIPS WITH STRUCTURES INVOLVED
1 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

NOTE:
Record Area After Outsales Minus
Total P.R.O. Minus Net Take Equals
Net Residue. All Areas in Acres
Unless Otherwise Noted.

Revised Ownership on Par 2-T	Dist. 11	4-10-85
REVISION	BY	DATE
COMPLETED		2-6-85

PARCEL	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1-T	Lester R. True	2	407	558	76.082	4.536	0.439	0	0.439	P	52.382	19.164	State	To construct, maintain & remove Temporary Road.		
1-T-1		2					0.047	0	0.047					To do necessary grading & provide working room.		
	TOTAL						0.486	0	0.486							
2-T	Chester L. Stumm	2	382,399	641,264	25.545	1.182	0.192	0	0.192			24.363		To construct, maintain & remove Temporary Road.		

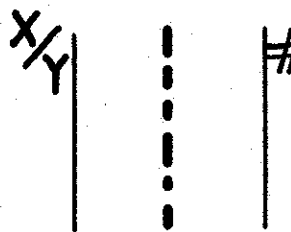
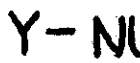
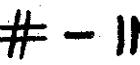
GENERAL INFORMATION

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8-INCH 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 THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

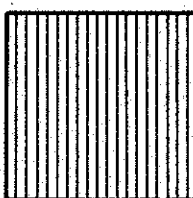
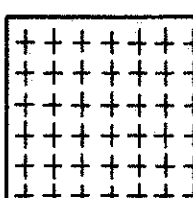
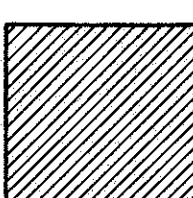
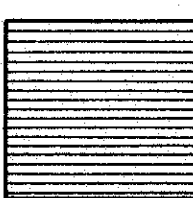
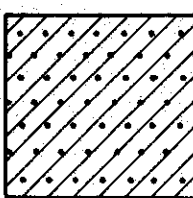
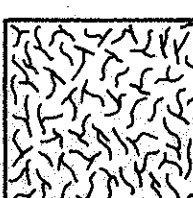
THE BORING LOG SHEETS SHOW A GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH OF THE SAMPLE, ELEVATION REFERENCE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, DEPTH OF PRESS SAMPLES, FIELD SAMPLE NUMBER AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. 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 CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION, TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

LEGEND

-  BORING LOCATION - PLAN
-  INDICATES FREE WATER
-  BORING LOCATION - PROFILE - DRAWN TO VERTICAL SCALE ONLY
-  INDICATES NUMBER OF BLOWS FOR STANDARD PENETRATION TEST
-  X - NUMBER OF BLOWS FOR SECOND 6 INCHES
-  Y - NUMBER OF BLOWS FOR THIRD 6 INCHES
-  # - INDICATES WATER CONTENT IN PERCENT
-  INDICATES WATER CONTENT $\geq$ LL-3
-  INDICATES NON-PLASTIC SOIL WITH WATER CONTENT > 25

SOIL TYPES

-  SANDY SILT (A-4a)
-  SILT (A-4b)
-  SILT AND CLAY (A-6a)
-  SILTY CLAY (A-6b)
-  WEATHERED SANDSTONE
-  VARIOUS OTHER MATERIALS

INTRODUCTION:

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE TO REPLACE THE EXISTING STRUCTURE ON STATE ROUTE 250 OVER A BRANCH OF THE LITTLE STILLWATER.

GEOLOGY:

THE AREA IS UNGLACIATED ALTHOUGH THE SURFACE DEPOSITS MAY BE ATTRIBUTABLE STREAM TRANSPORT OF GLACIAL DEBRIS LOCATED NORTH OF TUSCARAWAS COUNTY. THE SOILS ENCOUNTERED WERE PREDOMINANTLY SILTS, CLAYEY SILTS, AND SILTY CLAYS WITH SOME FINE SAND. THE UNDERLYING SANDSTONE IS A PORTION OF THE LOWER PENNSYLVANIAN KITTANNING MEMBER OF THE ALLEGHENY GROUP.

EXPLORATION:

THE EXPLORATION CONSISTS OF 2 EXPLORATORY BORINGS, DESIGNATED D-1 AND D-2 DRILLED TO DEPTHS OF 80.1 FEET AND 90.1 FEET, RESPECTIVELY. FORTY-TWO SAMPLES WERE OBTAINED, VISUALLY CLASSIFIED AND TESTED TO DETERMINE THE NATURAL MOISTURE CONTENT. FOURTEEN SAMPLES WERE DETERMINED TO BE REPRESENTATIVE OF THE SITE SOILS AND TESTED FOR ATTERBERG LIMITS AND GRADATIONS.

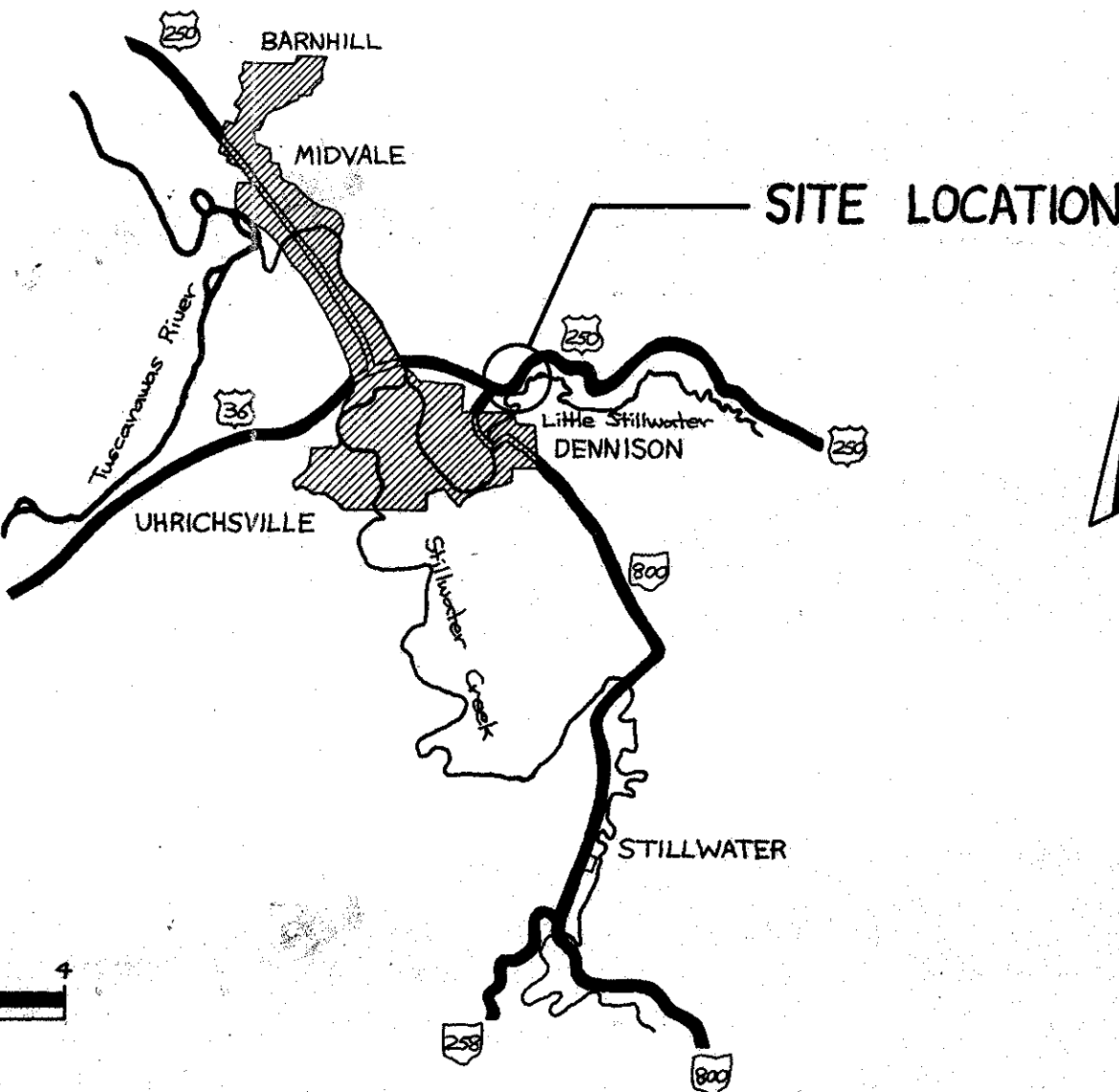
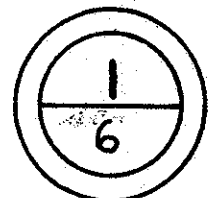
INVESTIGATIONAL FINDINGS:

THE MAJORITY OF THE SOIL IS COHESIVE OF THE A-4a TO A-6b CATEGORY. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

PARTICLE SIZE DEFINITION

8" 3" 2mm .42mm .074mm .005mm
BOULDER | COBBLES | GRAVEL | COARSE SAND | FINE SAND | SILT | CLAY
NO. 10 NO. 40 NO. 200



0 1 2 3 4
SCALE: 1" = 2 MILES

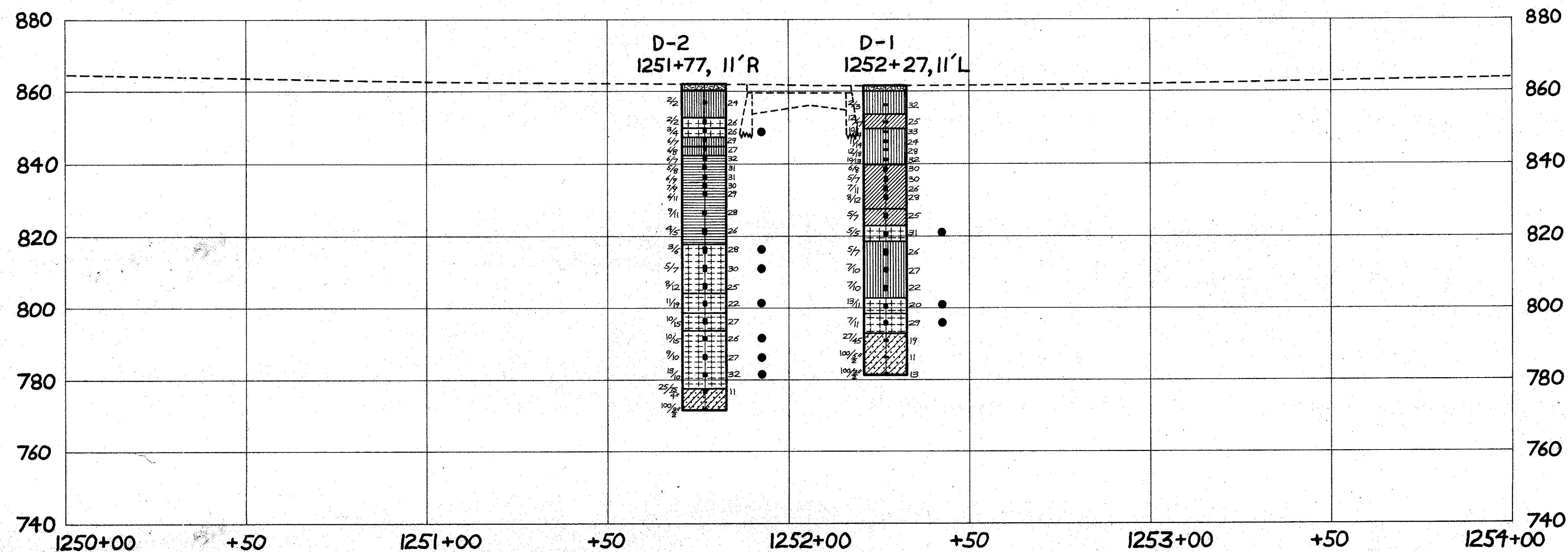
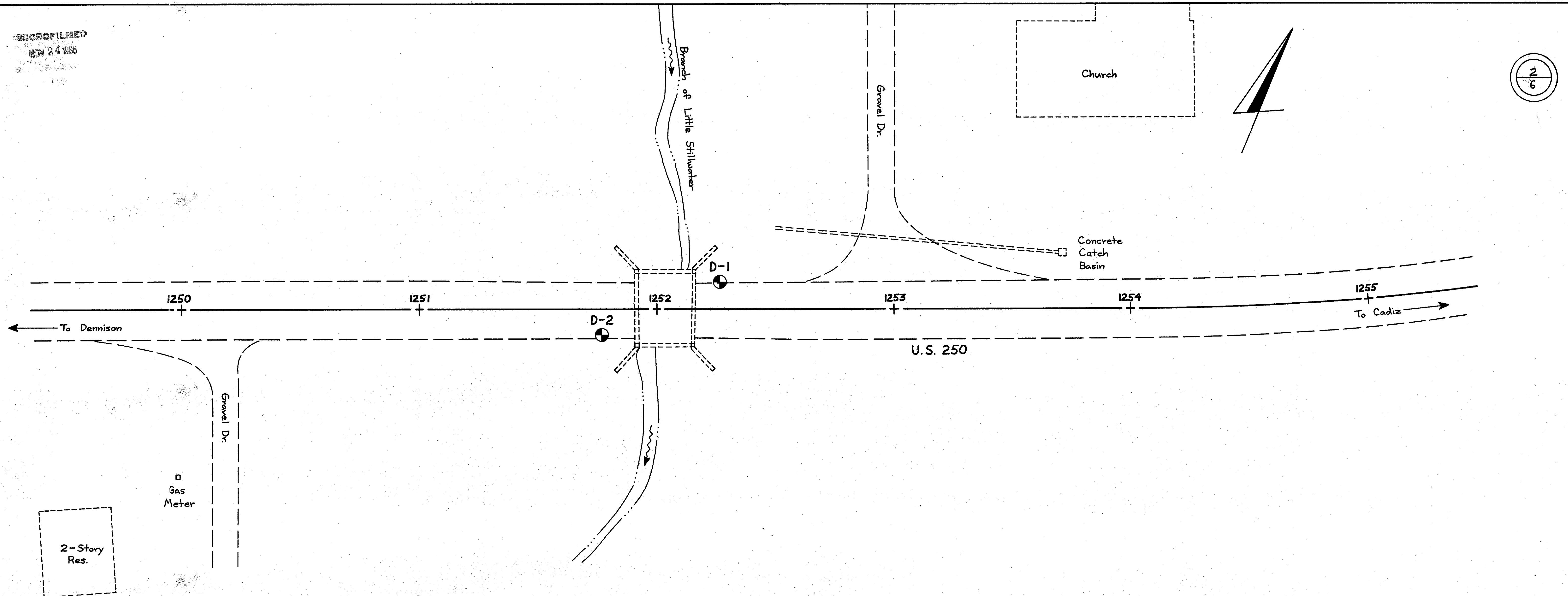


RESOURCE INTERNATIONAL INC.
281 ENTERPRISE DR.
COLUMBUS, OHIO 43081
(614) 885-1959

TUSCARAWAS COUNTY
TUS-250-2372
STRUCTURE FOUNDATION INVESTIGATION

DATE: 3-8-84 DRAWN BY: CHECKED BY:

MICROFILMED
NOV 24 1986



BORING LOG: D-1 DATE STARTED: 2/23/84
STATION AND OFFSET: 1252+27, 11' Lt. DATE FINISHED: 2/24/84
NOV 24 1986 SURFACE ELEVATION: 862.0 FEET SAMPLER TYPE: ALL 2S

ELEV.	SAMP. NO.	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT L	PHYSICAL CHARACTERISTICS					ODOT CLASS
								LL	PI	A _g	A _s	A _u	
854.0					ASPHALT (0.5') OVER CONCRETE. 1.5								
	S-1	2 2 3		5	GRAY CLAYEY SILT, LITTLE FINE SAND. MEDIUM STIFF. MOIST. 8.0	32							
850.0	S-2	8 12 17		10	BROWN AND GRAY CLAY, AND SILT, TRACE FINE TO COARSE SAND, TRACE FINE GRAVEL. VERY STIFF. MOIST. 12.0	25 35	11	1	1	2	42	54	A-6a
	S-3	6 10 14				33							
	S-4	6 11 14		15	BROWN SILTY CLAY, TRACE FINE SAND. VERY STIFF. DAMP TO MOIST.	24 34	10	0	0	1	35	64	A-4a
840.0	S-5	6 12 18				28							
	S-6	6 10 13		20		32							
	S-7	5 6 8			GRAY SILTY CLAY. STIFF TO VERY STIFF. MOIST. 22.0	30							
828.0	S-8	4 5 7		25		30 38	13	0	0	2	31	69	A-6a
	S-9	5 7 11				26							
	S-10	7 8 12		30		28 39	12	V	I	S	U	A	L
823.5													
	S-11	4 5 7		35	GRAY SILTY CLAY, TRACE FINE SAND. STIFF. MOIST. 34.0	25							
819.0	S-12	4 5 5		40	GRAY CLAYEY SILT, TRACE FINE SAND. STIFF. MOIST TO WET. 38.5	31 31	8	0	0	2	51	47	A-4b
	S-13	4 5 7		45	GRAY-GREEN CLAYEY SILT, SOME FINE TO COARSE SAND. STIFF TO VERY STIFF. MOIST. 43.0	26							
803.5	S-14	5 7 10		50		27							
	S-15	6 7 10		55		22 27	7	0	1	20	42	37	A-4a
	S-16	8 13 11		60	GRAY CLAYEY SILT, SOME FINE TO COARSE SAND. VERY STIFF. WET. 58.5	20 19	1	V	I	S	U	A	L
799.0	S-17	5 7 11		65	GRAY SILT, TRACE FINE SAND. MEDIUM DENSE. MOIST. 63.0	29							
	S-18	60 27 45		70	GRAY WEATHERED SANDSTONE. 68.5	19							
781.9	S-19	100 2 1/2"		75		11							
	S-20	100 1 1/2"		80	BOTTOM OF BORING - 80.1 FEET.	13							

BORING LOG: D-2 DATE STARTED: 2/21/84
STATION AND OFFSET: 1251+77, 11' Rt. DATE FINISHED: 2/23/84
SURFACE ELEVATION: 862.0 FEET SAMPLER TYPE: ALL 2S

ELEV.	SAMP. NO.	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT L	PHYSICAL CHARACTERISTICS					ODOT CLASS
								LL	PI	A _g	A _s	A _u	
853.0					ASPHALT AND CONCRETE. 1.5								
	S-1	2 2 2		5	BROWN CLAYEY SILT, LITTLE FINE SAND. SOFT TO MEDIUM STIFF. MOIST. 9.0	24							
850.0	S-2	2 2 2		10	GRAY CLAYEY SILT, LITTLE FINE SAND. SOFT TO MEDIUM STIFF. MOIST. 12.0	26							
	S-3	3 3 4				26 27	4	0	0	12	66	22	A-4b
	S-4	4 6 7		15	GRAY SILT, AND CLAY, LITTLE FINE SAND. MEDIUM DENSE. MOIST. 14.5	29							
845.0	S-5	4 6 8											
	S-6	4 6 7		20	GRAY SILTY CLAY, LITTLE FINE SAND. STIFF. MOIST. 17.0	27 38	12	0	0	1	26	73	A-6a
	S-7	5 5 8		25	GRAY CLAY, LITTLE SILT. STIFF TO VERY STIFF. MOIST. 19.5	31							
818.0	S-8	5 6 9		30		31 47	19	0	0	0	18	82	A-6b
	S-9	6 7 9				30							
	S-10	6 6 11		35	SAME AS ABOVE WITH SILT SEAMS. 44.0	28 32	7	V	I	S	U	A	L
804.5	S-11	7 9 11		40		26							
	S-12	4 4 5		45	GRAY SILT, AND CLAY, TRACE FINE SAND. STIFF TO MEDIUM DENSE. MOIST. 57.5	28							
	S-13	4 3 6		50		30 31	6	0	0	1	52	47	A-4b
799.0	S-14	5 5 7		55	GRAY CLAYEY SILT, SOME FINE SAND. HARD. MOIST. 63.0	22 25	5	0	1	22	50	27	A-4b
	S-15	6 8 12		60	GRAY CLAYEY SILT, LITTLE FINE SAND. VERY STIFF. MOIST. 68.0	27							
	S-16	9 11 19		65		26							
794.0	S-17	6 10 15		70	GRAY SILT, SOME CLAY, SOME FINE SAND. MEDIUM DENSE. MOIST TO WET. 84.0	11							
	S-18	8 10 15											
	S-19	6 9 10		75		27 26	4	0	0	18	63	19	A-4b
778.0	S-20	7 13 10		80		32							
	S-21	41 25 75 4"		85	GRAY WEATHERED SANDSTONE.								
	S-22	100 1 1/2"		90	BOTTOM OF BORING - 90.1 FEET.								



RESOURCE INTERNATIONAL INC.
281 ENTERPRISE DR.
COLUMBUS, OHIO
(614) 885-1957

TUSCARAWAS COUNTY

TUS-250-2372

STRUCTURE FOUNDATION INVESTIGATION

DATE: 3-8-84 DRAWN BY: BJT CHECKED BY:

GENERAL INFORMATION

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8-INCH 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 THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

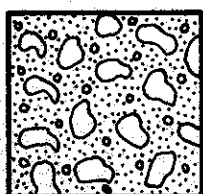
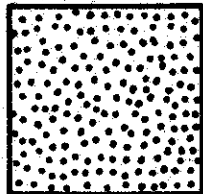
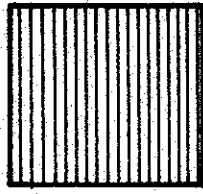
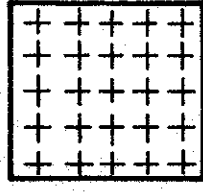
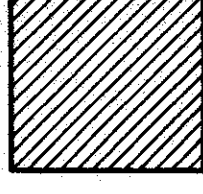
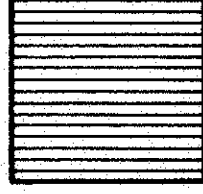
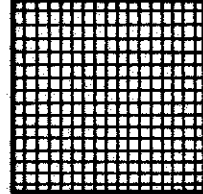
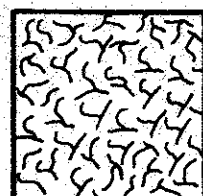
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LEGEND

-  BORING LOCATION - PLAN
-  W INDICATES FREE WATER
-  BORING LOCATION - PROFILE - DRAWN TO VERTICAL SCALE ONLY
-  X_Y INDICATES NUMBER OF BLOWS FOR STANDARD PENETRATION TEST
-  X - NUMBER OF BLOWS FOR SECOND 6 INCHES
-  Y - NUMBER OF BLOWS FOR THIRD 6 INCHES
-  # - INDICATES WATER CONTENT IN PERCENT
-  • INDICATES WATER CONTENT ≥ LL-3
-  ⊖ INDICATES NON-PLASTIC SOIL WITH WATER CONTENT > 25

SOIL TYPES

-  GRAVEL and/or STONE FRAGMENTS with SAND (A-1-b)
-  COARSE and FINE SAND (A-3a)
-  SANDY SILT (A-4a)
-  SILT (A-4b)
-  SILT and CLAY (A-6a)
-  SILTY CLAY (A-6b)
-  CLAY (A-7-6)
-  VARIOUS OTHER MATERIALS

INTRODUCTION:

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE TO REPLACE THE EXISTING STRUCTURE ON STATE ROUTE 250 OVER A BRANCH OF THE LITTLE STILLWATER.

GEOLOGY:

THE AREA IS UNGLACIATED ALTHOUGH THE SURFACE DEPOSITS MAY BE STREAM TRANSPORTED GLACIAL DEBRIS FROM NORTH OF TUSCARAWAS COUNTY. THE SOILS ENCOUNTERED WERE PREDOMINANTLY SILTS, CLAYEY SILTS, AND SILTY CLAYS WITH SOME FINE SAND. THE UNDERLYING SANDSTONE IS A PORTION OF THE LOWER PENNSYLVANIAN KITTANNING MEMBER OF THE ALLEGHENY GROUP.

EXPLORATION:

THE EXPLORATION CONSISTS OF 2 EXPLORATORY BORINGS, DESIGNATED U-1 AND U-2 DRILLED TO DEPTHS OF 91.5 FEET AND 91.5 FEET, RESPECTIVELY. FORTY-FOUR SAMPLES WERE OBTAINED, VISUALLY CLASSIFIED, AND TESTED TO DETERMINE THE NATURAL MOISTURE CONTENT. SIXTEEN SAMPLES WERE DETERMINED TO BE REPRESENTATIVE OF THE SITE SOILS AND TESTED FOR ATTERBERG LIMITS AND GRADATIONS.

INVESTIGATIONAL FINDINGS:

THE MAJORITY OF THE SOIL IS COHESIVE OF THE A-4a TO A-7-6 CATEGORY. ZONES OF GRANULAR SOILS OF THE A-1-b TO A-3a CATEGORY WERE ALSO PRESENT. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

PARTICLE SIZE DEFINITION

8"	3"	2mm	.42mm	.074mm	.005mm	
BOULDER	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
		NO. 10	NO. 40	NO. 200		

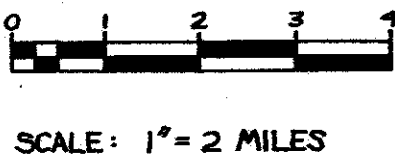
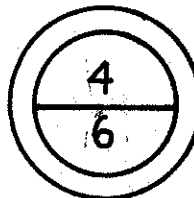


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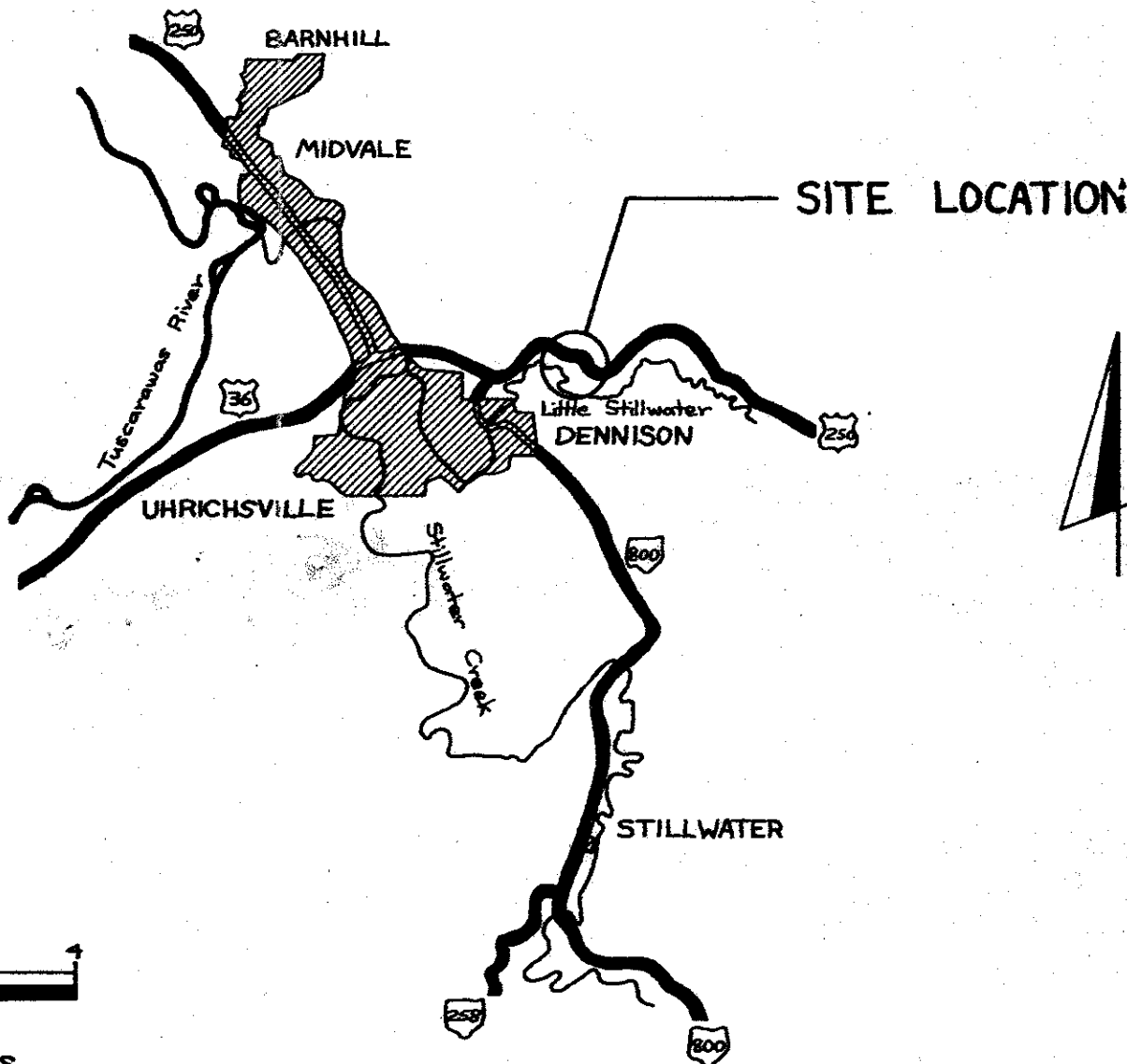
TUSCARAWAS COUNTY
TUS-250-2421

STRUCTURE FOUNDATION INVESTIGATION

DATE: 4-3-84 DRAWN BY: B.J.H. CHECKED BY:

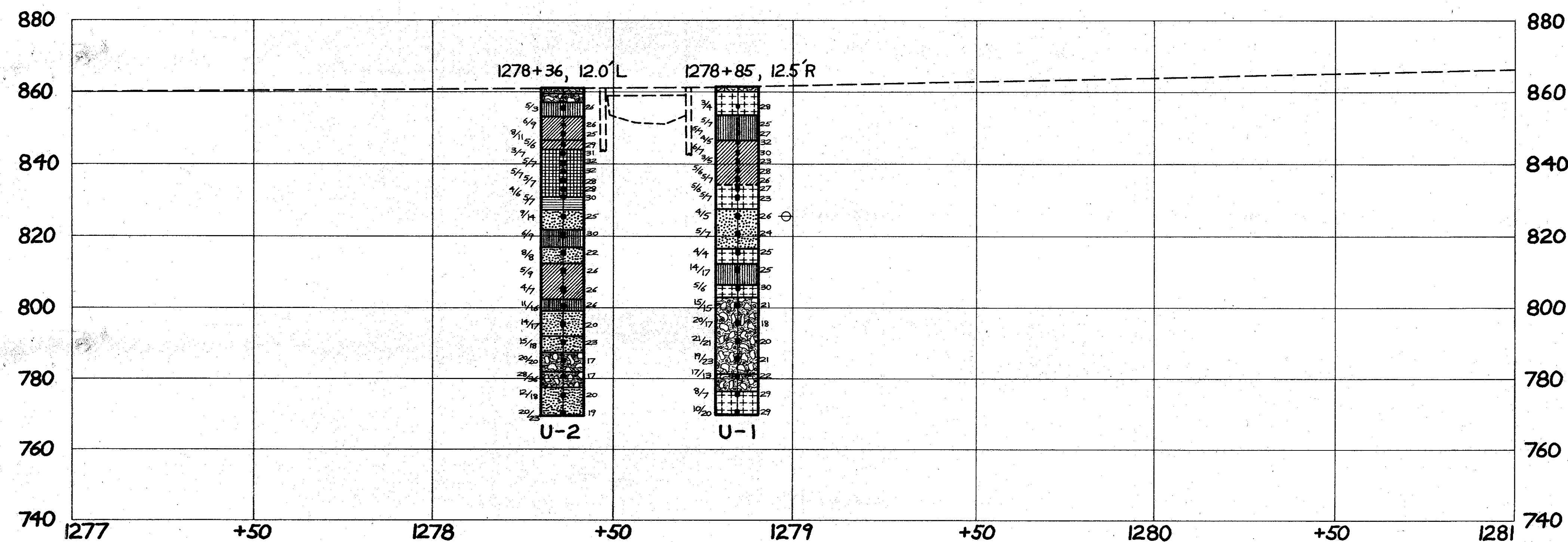
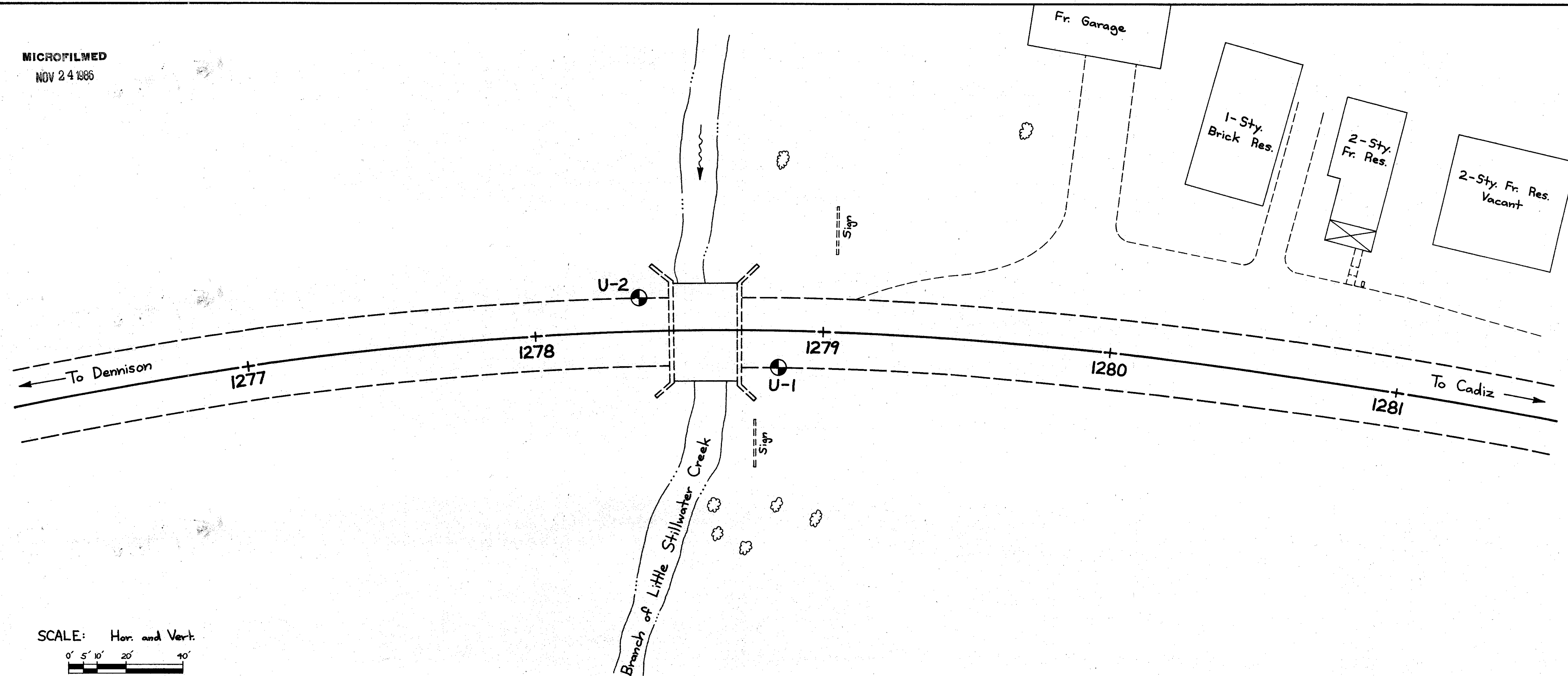


SCALE: 1" = 2 MILES



MICROFILMED
NOV 24 1985

5
6



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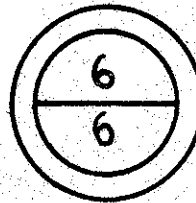
DATE: 4-3-84 DRAWN BY: B.J.H. CHECKED BY:

MICROFILMED BORING LOG: U-1
NOV 24 1986 STATION AND OFFSET: 1278+85, 12.5' R
SURFACE ELEVATION: 861.5'

DATE STARTED: 3/19/84
DATE FINISHED: 3/20/84
SAMPLER TYPE: ALL 2S

BORING LOG: U-2
STATION AND OFFSET: 1278+36, 12.0' L.
SURFACE ELEVATION: 861.5 FEET

DATE STARTED: 3/20/84
DATE FINISHED: 3/26/84
SAMPLER TYPE: ALL 2S



ELEV.	SAMP. NO.	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	PHYSICAL CHARACTERISTICS										ODOT CLASS
						WC	LL	PI	AGG	CS	FS	SI	CL			
860.0					Brown fine to coarse sand & gravel. Fill, (0.5'), over concrete. 1.5'											
	S-1	2 3 4		5	Brown silt & clay, trace to little fine to coarse sand, trace fine gravel. Loose. Moist - Wet. 8.0	28	28	6	1	1	9	52	37			A-4b
853.5				10	Brown & gray clay & silt. Stiff. Moist. 25											
	S-2	2 5 7														
	S-3	4 5 7				27	35	9	0	0	0	42	58			A-4a
846.5				15	Gray clay & silt. Stiff. Damp. 32											
	S-4	3 4 5														
	S-5	4 6 7				30										
	S-6	3 3 5		20		23	36	12	0	0	0	36	64			A-6a
	S-7	4 5 6				28										
	S-8	4 5 7		25		26										
	S-9	4 5 6			Gray silt & clay, trace fine sand. Medium dense. Moist. 27											
	S-10	4 5 7		30		23	27	7	0	0	6	57	37			A-4b
827.5					34.0											
	S-11	4 4 5		35	Gray fine to coarse sand, some clayey silt, trace fine gravel. Loose - medium dense. Wet. 26											
	S-12	5 5 7		40		24			5	3	61	19	12			A-3a
816.5				45	Gray clayey silt, some fine to coarse sand. Loose. Wet. 45.0	25										
812.5					49.0											
	S-14	6 14 17		50	Gray clayey silt, some fine to coarse sand, trace fine gravel. Hard. Moist. 25				1	1	33	48	17			A-4a
806.5				55	55.0	30	25	2	1	0	18	63	18			A-4b
803.0					58.5											
	S-16	14 15 15		60	Gray fine to coarse sand & fine gravel, little clayey silt. Dense. Wet. 21											
	S-17	19 20 17		65		18										
	S-18	19 21 21		70		20			38	16	35	-1	-1			A-1-b
	S-19	19 19 23		75		21										
781.5				80	80.0											
	S-20	19 17 13			Gray fine to coarse sand, some fine gravel, little clayey silt, Medium Dense - Dense. Wet. 22				34	18	32	-1	-1			A-1-b
776.5				85	85.0											
	S-21	5 8 7			Gray silt, some fine sand, little clay. Medium Dense - Dense. Wet. 29											
770.0				90		29	20	1	0	0	31	50	19			A-4b

Bottom of Boring at 91.5 feet

ELEV.	SAMP. NO.	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT	LL	PI	PHYSICAL CHARACTERISTICS					ODOT CLASS		
										AGG	CS	FS	Si	CL			
860.0					Asphalt & Base. 1.5												
856.0					Brown fine to coarse sand & fine to coarse gravel. 4.0												
	S-1	5	5	3	5	Brown & gray clay & silt, trace to little fine sand. Medium stiff - stiff. Moist. 8.0	26										
852.0																	
	S-2	4	6	9	10	Gray & brown silty clay, little fine to coarse sand. Stiff to very stiff. Damp-Moist. 26	26										
845.5																	
	S-3	6	8	11		14.5	25	37	12								A-6a
843.0																	
	S-4	5	5	6	15	Gray & brown silt & clay. Stiff. Moist. 17.0	29										
	S-5	3	3	7		Gray silty clay, trace fine sand. Stiff. Moist. 31	31										
	S-6	4	5	7	20		32										
	S-7	3	5	7			32	41	13	0	0	1	32	67			A-7-6
	S-8	4	5	7	25		28										
	S-9	5	4	6			28										
831.5						30.0	30										
	S-10	4	5	7	30	Gray silty clay. Stiff. Moist. 33.5	30										
828.0																	
	S-11	5	9	14	35	Gray fine to coarse sand, some clayey silt, trace fine gravel. Medium dense. Wet. 39.0	25			1	1	69	21	8			A-3a
822.5																	
	S-12	5	6	9	40	Gray clayey silt, some fine to coarse sand. Stiff - very stiff. Moist. 44.0	30										
817.5																	
	S-13	6	8	8	45	Gray fine to coarse sand, some clayey silt, trace fine gravel, Medium dense. Wet. 48.5	22			4	4	67	-2	5-			A-3a
813.0																	
	S-14	4	5	9	50	Gray clay & silt, trace fine sand. Stiff. Moist. 58.5	26										
	S-15	4	4	7	55		26										
803.0																	
	S-16	11	11	16	60	Gray fine to coarse sand, some silt, trace fine gravel. Very stiff. Moist. 62.0	26										
799.5																	
	S-17	16	14	17	65	Gray fine to coarse sand, some fine gravel, little clayey silt. Dense. Wet. 69.0	20			21	13	51	-1	5-			A-3a
792.5																	
	S-18	13	15	18	70	Gray fine to coarse sand, little fine gravel, trace silt. Dense. Wet. 73.5	23										
788.0																	
	S-19	20	20	20	75	Gray fine to coarse sand, some fine gravel, little silt. Dense. Wet. 79.0	17										
782.5																	
	S-20	23	28	36	80	Gray fine to coarse sand, little fine gravel, trace silt. Very dense. Wet. 83.5	17										
778.0																	
	S-21	11	12	18	85	Gray fine to coarse sand, little clayey silt, trace fine gravel. Medium Dense - dense. Wet. 90	20			9	7	65	-1	9-			A-3a
770.0																	
	S-22	14	20	23	90		19										

Bottom of Boring @ 91.5 feet



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DATE: 4-3-84

DRAWN BY:

CHECKED BY: