FHWA REGION	STATE	PROJECT	
5	OHIO		

1/19

F-BRF-56(6)

TUS-800-1.92
TUSCARAWAS COUNTY

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
TUS-800-1.92
RUSH TOWNSHIP
TUSCARAWAS COUNTY

DESIGN DESIGNATION	
Current A.D.T. (1980)	= 1,340
Design Year A.D.T (2000)	= 3,140
D.H.V.	= 466
D	= 67%
T	= 4%
V	= 35 M.P.H.

CONVENTIONAL SIGNS

County Line
Township Line
Center Line
Railroad
Pole Line — Power — Telephone
Trees and Stumps — Exist. — To be removed
Drain Pipe — Old — New
Property Line
Existing Right of Way Line
Proposed Right of Way Line
Guard Rail — Existing — New
Fence Line

INDEX OF SHEETS

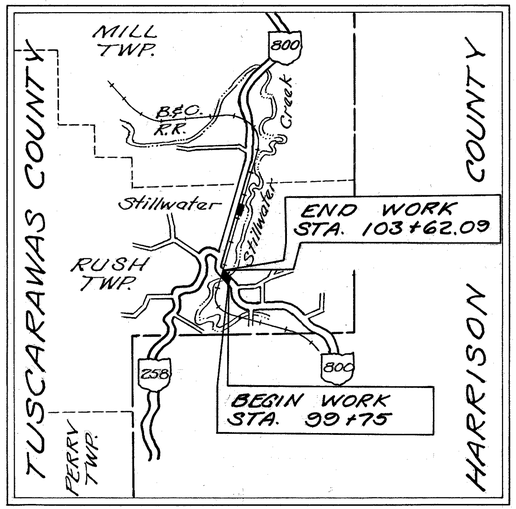
LINE DATA

Begin Project		Sta. 100+89.66
Suspend F-56(6) Begin BRF-56(6)		Sta. 101+04.66
End BRF-56(6) Resume F-56(6)		Sta. 102+73.89
End Project F-56(6)		Sta. 103+62.09
Length of Project F-56(6)	103.20 L.F.	or 0.020 Mi.
Length of Project BRF-56(6)	169.23 L.F.	or 0.032 Mi.
Total length of Project	272.43 L.F.	or 0.052 Mi.
Begin Work F-56(6)		Sta. 99+26.96
Suspend F-56(6) Begin BRF-56(6)		Sta. 101+04.66
End BRF-56(6) Resume F-56(6		Sta. 102+73.89
End Work F-56(6)		Sta. 103+62.09
Length of Work F-56(6)	265.90 L.F.	or 0.050 Mi.
Length of Work BRF-56(6)	169.23 L.F.	or 0.032 Mi.
Total length of Work	435.13 L.F.	or 0.082 Mi.

UNDERGROUND UTILITIES
48 HOURS
BEFORE YOU DIG
CALL ···· 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON MEMBERS
MUST BE CALLED DIRECTLY

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

FILE NO.	TUS-800-1.92
	DATE OF LETTING _____ 198___
	CONTRACT NO. _____



LOCATION MAP

0 1 2 3 4
Scale in Miles

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHERS

SCALES

PLAN
PROFILE-HORIZONTAL
PROFILE-VERTICAL
CROSS SECTIONS

0' 25' 50'
0' 25' 50'
0' 5' 10'
0' 5' 10'

1981 SPECIFICATIONS

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

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

Approved Robert M. Hart
Date 5-14-82 District Deputy Director of Transportation

Approved Robert B. Pfeifer
Date 6-8-82 Engineer, Bureau of Bridges and Structural Design

Approved Byrd Furley Jr.
Date 8-2-82 Chief Engineer, Planning and Design

Approved David L. Weir
Date 8-2-82 Director, Department of Transportation.

STANDARD DRAWINGS

BP-5	7/16/81	AS-1-81	11/27/81		
BP-6	6/1/65				
		DBR-2-73	4/10/73		
GR-1	2/5/82	PSBD-1-81	9/18/81		
GR-2B	2/5/82				
GR-3	2/5/82				
GR-4	2/5/82				
LA-1	6/1/79				
MC-3	6/1/73				

SUPPLEMENTAL SPECIFICATIONS

1001	1/3/77

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR _____ DATE _____

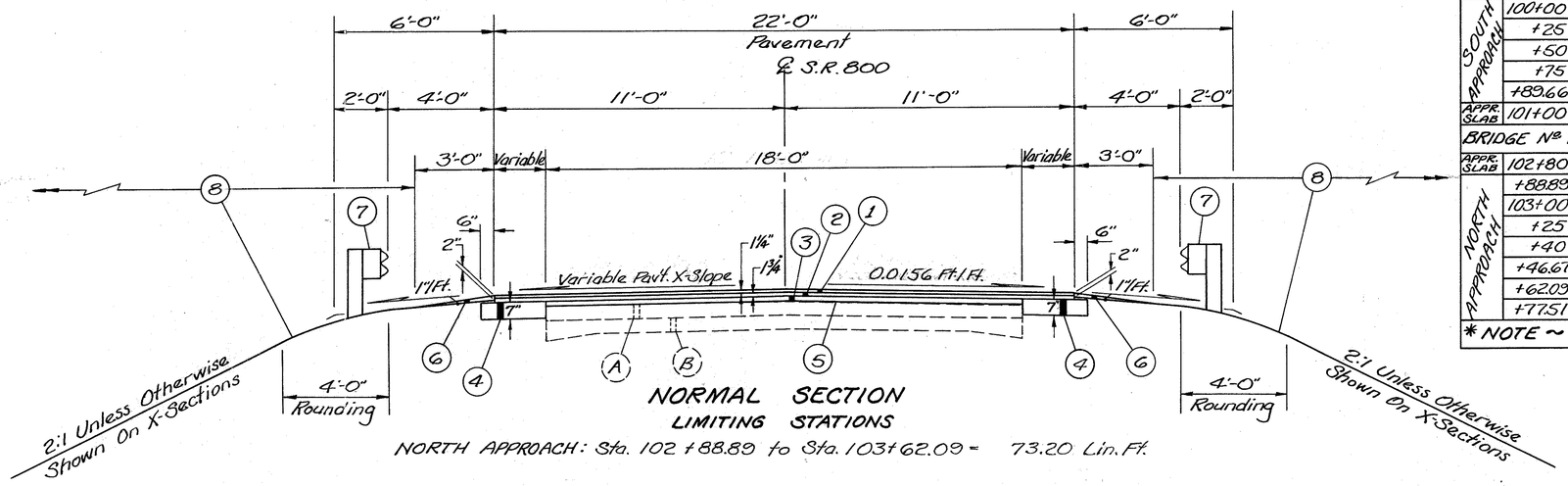
FHWA REGION	STATE	PROJECT		2 / 19
5	OHIO			

TUS-800-1.92
TUSCARAWAS COUNTY

TYPICAL SECTIONS

TYPE 404

SCALE: 0' 1' 2' 4'



LIMITING STATIONS

NORTH APPROACH: Sta. 102+88.89 to Sta. 103+62.09 = 73.20 Lin. Ft.

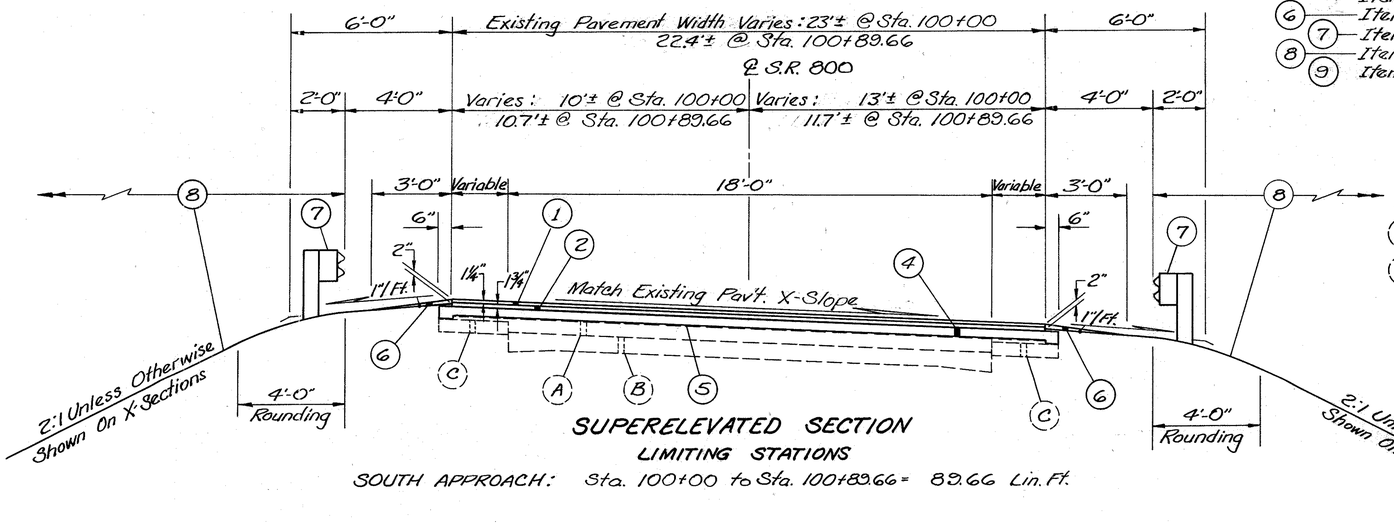
FINISHED PAVEMENT ELEVATIONS

ROADWAY	STATION	LEFT EDGE OF: Approach Slab (15' Lt.)	LEFT EDGE OF: Pavement (Elev./Offset)	℄ ELEV.	RIGHT EDGE OF: Pavement (Elev./Offset)	RIGHT EDGE OF: Approach Slab (15' Rt.)
SOUTH APPROACH	100+00		*862.57/10'	*862.23	*861.58/13'	
	+25		863.32/10.2'	863.10	862.62/12.6'	
	+50		864.10/10.4'	864.03	863.78/12.3'	
	+75		864.73/10.6'	864.78	864.63/11.9'	
	+89.66		864.88/10.7'	865.05		864.82
APPR. SLAB	101+00	864.89		865.12		864.89
BRIDGE No. TUS 800-0192: STA. 101+04.66 TO STA. 102+73.89						
APPR. SLAB	102+80	864.89		865.12		864.89
NORTH APPROACH	+88.89	864.89		865.12	864.95/11.00'	
	103+00		864.95/11.00'	865.12	864.95/11.00'	
	+25		865.12/11.00'	865.12	864.95/11.00'	
	+40		865.15/11.00'	865.12	864.95/11.00'	
	+46.67		*865.19/11.00'	865.12	864.95/11.00'	
	+62.09		EXISTING R.R. X-ING			
	+77.51		EXIST. PAVT. EDGE	EXISTING R.R. X-ING		

*NOTE ~ Meet existing pavement elevation

~ LEGEND ~

1	Item	404	1¼" Asphalt Concrete, AC-20
2	Item	402	Asphalt Concrete, AC-20 (Thickness as shown)
3	Item	403	0" Minimum Asphalt Concrete, AC-20
4	Item	301	Bituminous Aggregate Base: AC-20; RT-11 or RT-12
5	Item	407	Tack Coat applied at the rate of 0.1 gal. per Sq. Yd.
	Item	407	Cover Aggregate, 703.06
6	Item	617	Compacted Aggregate
7	Item	606	Guardrail, Type 5
8	Item	659	Seeding and Mulching
9	Item	611	Reinforced Concrete Approach Slab (T=12"). For details not shown see Std. Dwg. AS-1-81.



LIMITING STATIONS

SOUTH APPROACH: Sta. 100+00 to Sta. 100+89.66 = 89.66 Lin. Ft.

~ EXISTING LEGEND ~

A	Existing Asphalt Concrete
B	Existing Concrete Base
C	Existing Bituminous Aggregate Base

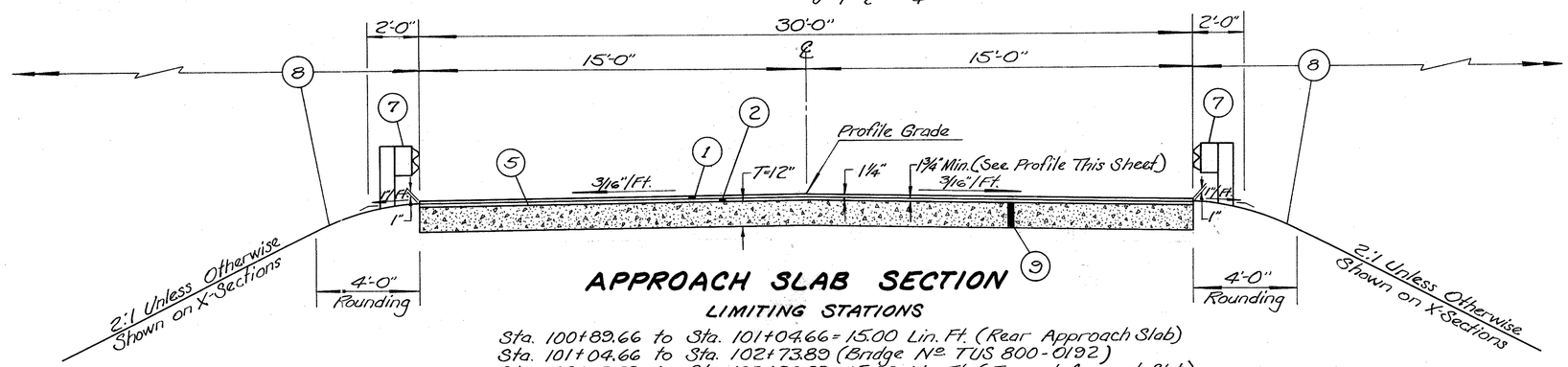
TYPICAL SECTION

FHWA REGION	STATE	PROJECT	
5	OHIO		

3/19

TUS-800-1.92
TUSCARAWAS COUNTY

SCALE: 0' 1' 2' 4'



APPROACH SLAB SECTION

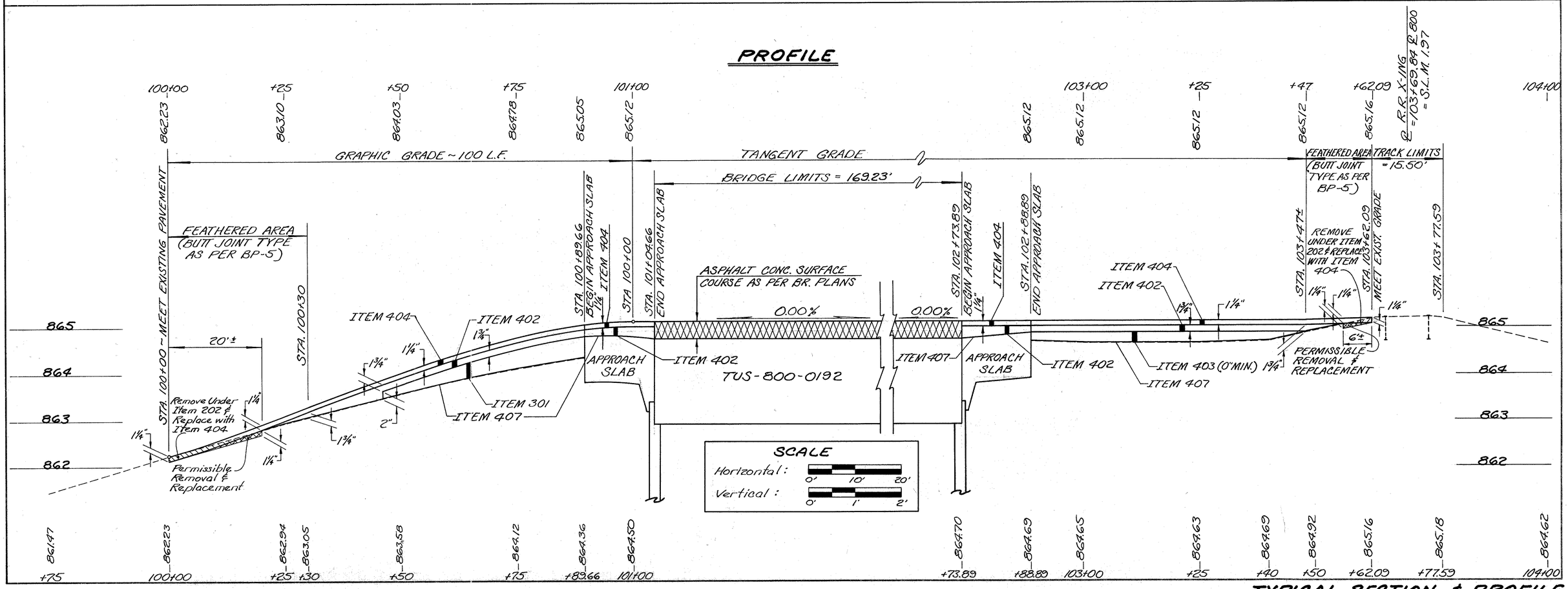
LIMITING STATIONS

Sta. 100+89.66 to Sta. 101+04.66 = 15.00 Lin. Ft. (Rear Approach Slab)
Sta. 101+04.66 to Sta. 102+73.89 (Bridge No. TUS 800-0192)
Sta. 102+73.89 to Sta. 102+88.89 = 15.00 Lin. Ft. (Forward Approach Slab)

TOTAL = 30.00 Lin. Ft.

For Legend See Sheet No. 2

PROFILE



TYPICAL SECTION & PROFILE

GENERAL NOTES

QUANTITIES	
Calc. By: W.S.R.	Chkd By: E.E.H.
Date: 4/28/82	Date: 5/6/82

FHWA REGION	STATE	PROJECT	
5	OHIO		

4/19

TUS-800-1.92
TUSCARAWAS COUNTY

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.

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

LOCATIONS OF GUARDRAIL: The locations of guardrail runs as shown in these plans are subject to adjustment to assure that the planned installations will afford maximum protection for traffic.

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

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. At least 48 hours before digging, the Contractor should call the Ohio Utilities Protection Service, Toll-free, 800-362-2764. Non member utilities must be called directly.

UTILITIES: The Contractor shall notify, at least 7 working days before breaking ground, all public service corporations having wires, poles, conduit, manholes 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, otherwise noted on these plans.

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

Ohio Power Co.
301 Cleveland Ave. S.W.
Canton, Ohio 44701

Ohio Bell Telephone Co.
150 East Gay St.
Columbus, Ohio 43215

REMOVAL OF TREES OR 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 and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

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

Sizes	No. Trees	No. Stumps	Total
18"	15	0	15
30"	1	0	1
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 the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201, Clearing and Grubbing.

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

MAINTAINING TRAFFIC: The Contractor shall maintain traffic at all times in accordance with the requirements of Item 614. Two way traffic shall be maintained at all times by use of the existing pavement or Item 615 Temporary Road using class B pavement and Item 502 Temporary Structure.

Traffic shall be maintained in accordance with Plate C-24 of the "Ohio Manual of Uniform Traffic Control Devices For Streets And Highways", Current Edition, Latest Revision.

One way traffic as required by the work shall be held to an absolute minimum and shall be subject to the approval of the Engineer at all times.

Payment for all of the above except Items 502 and 615 shall be included in the price bid for Item 614 Maintaining Traffic.

WATERING SEEDED AREAS: The following estimated quantities are to be used as directed by the Engineer to promote growth and to care for the seeded areas, as per 659.09:

659 Water 5 M. Gal.

STREAM CROSSING: The temporary runaround, and any other in-stream work, shall be installed using 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 323.4-3 Specific Categories of Discharges - Nationally Permitted, paragraph (3) Minor Road Crossing Fills - of the Federal Register - Corps of Engineers Final Regulations published July 19, 1977.

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.

CROWN AT RAILROAD CROSSING: The crown shall be worked out of the proposed pavement as shown in the table of finished pavement elevations on sheet 2 to meet the rail elevation.

RAILROAD CROSSING: The proposed asphalt concrete resurfacing courses shall be feathered as shown in the profile on sheet 3 to meet the railroad grades.

CHANNEL EMBANKMENTS: Portions of the existing channel outside the roadbed, shall be filled and sloped to drain, as called for on the plans. The Contractor shall use either suitable or unsuitable materials, to the extent available, for channel embankments.

Areas where channel embankments are to be placed shall be cleared of weeds and brush.

The requirements for moisture, density control, benching, and suitable materials shall be waived.

The depth of layers in which the embankments are placed and their compaction shall, in lieu of the requirements of Item 203, conform with acceptable construction practices as determined by the Engineer.

No provisions of the specifications shall be waived for embankments which support any portion of the new roadbed or structural members.

Payment for all the above shall be included in the unit price bid for Item 203 Embankment.

QUANTITIES
Calc. By W.S.R. | Chkd. By E.E.H.
Date: 5/5/82 | Date 5/11/82

FHWA	STATE	PROJECT	
5	OHIO		

5 / 19

TUS-800-1.92
TUSCARAWAS COUNTY

ITEM	EST. QUANT.	UNIT	DESCRIPTION
614	0.09	MILES	TEMPORARY CENTER LINES, CLASS I (FOR TEMPORARY RUNAROUND) (PAINT OR TAPE)
614	0.08	MILES	TEMPORARY CENTER LINES CLASS II TAPE (FOR PERMANENT PAVEMENT WITHIN WORK LIMITS)
614	0.18	MILES	TEMPORARY EDGE LINES, CLASS I (FOR TEMPORARY RUNAROUND) (PAINT OR TAPE)

614 TEMPORARY PAVEMENT MARKINGS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND WHEN NECESSARY, REMOVE TEMPORARY 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 DURING THE REQUIRED SERVICE PERIOD TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISIBILITY AT NO ADDITIONAL COST TO THE STATE.

MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE OF PAINT OR PAVEMENT MARKING TAPE.

A. PAINT

PAINT SHALL COMPLY WITH 708.14 AND SHALL BE APPLIED IN ACCORDANCE WITH 621 EXCEPT AS MODIFIED HEREIN.

B. PAVEMENT MARKING TAPE

FLEXIBLE RETROREFLECTIVE PREFORMED PRESSURE SENSITIVE TAPE SHALL HAVE STRAIGHT EDGES AND BE FREE OF CRACKS. THE TAPE SHALL CONSIST OF PIGMENT AND FILLERS WITH SUFFICIENT BINDER AND PLASTICIZER TO RETAIN GLASS BEADS HAVING A REFRACTIVE INDEX MEETING THE MINIMUM REFLECTIVE INTENSITY STANDARD STATED IN THE MANUFACTURERS INFORMATION. THE TAPE SHALL BE FLEXOLITE "WET REFLECTIVE", 3M "SCOTCHLANE", OR AN APPROVED EQUAL.

THE GLASS BEADS SHALL BE DISTRIBUTED UNIFORMLY THROUGHOUT THE TAPE WITH SUFFICIENT SURFACE BEADS TO PROVIDE OPTIMUM RETROREFLECTORIZATION AT ALL TIMES.

PAVEMENT MARKING TAPE SHALL COMPLY WITH THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL HAVE A PRECOATED ADHESIVE LAYER FOR PAVEMENT APPLICATION WITHOUT THE USE OF HEAT, SOLVENTS OR ADDITIONAL ADHESIVES. THE ADHESIVE SHALL BE SUFFICIENT TO RETAIN COMPLETE MARKINGS ON THE PAVEMENT SURFACE THROUGHOUT THE USEFUL LIFE OF THE MARKINGS.

IN ADDITION TO THE FOREGOING, ALL TEMPERATURE APPLICATION REQUIREMENTS AND OTHER APPLICABLE MANUFACTURERS MATERIAL AND APPLICATION INSTRUCTIONS SHALL BE FOLLOWED.

LAYOUT

THE TEMPORARY MARKINGS SHALL BE ACCURATELY LAID OUT IN CONFORMANCE WITH 614.05 AND SHALL BE LOCATED IN A TRUE LINE ON THE CENTER LINE, LANE LINE, EDGE LINE, OR CHANNELIZING LINE WHERE PERMANENT MARKINGS WOULD LIE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

PLACEMENT

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH *THE OHIO MANUAL, CURRENT ED., LATEST REV.* AND THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS ARE NO LONGER NEEDED, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 202.07 AND NECESSARY PAVEMENT REPAIRS INSTALLED BEFORE THE FLOW OF TRAFFIC IS CHANGED TO THE NEXT PHASE OR RETURNED TO ITS NORMAL CONDITION.

WHERE PAVEMENT MARKINGS ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL FURNISH AND PLACE THE PERMANENT MARKINGS WITHING 30 CALENDAR DAYS FOLLOWING COMPLETION OF ALL SURFACE COURSES IN A SINGLE ROADWAY OR PRIOR TO THE END OF THE CONSTRUCTION SEASON, WHICHEVER COMES FIRST. PERMANENT MARKINGS SHALL NOT BE PLACED OVER ANY CLASS I, TAPE MARKINGS.

A. CLASS I MARKINGS

CLASS I MARKINGS SHALL BE AS DEFINED IN 621, EXCEPT AS FOLLOWS:
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.

GORE MARKINGS SHALL CONSIST OF TWO CHANNELIZING LINES PLACED AT THE THEORETICAL OR TEMPORARY GORE OF RAMPS AND DIVERGING OR CONVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 15 GALLONS PER MILE FOR SOLID 4-INCH LINES, 24 GALLONS PER MILE FOR SOLID 6-INCH LINES, 48 GALLONS PER MILE FOR SOLID 12-INCH LINES, AND 4 GALLONS PER MILE FOR 4-INCH DASHED LINES.

B. CLASS II MARKINGS

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

CHANNELIZING LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 20-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 30-FOOT BY 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 15 GALLONS PER MILE FOR GORE MARKINGS, 8.0 GALLONS PER MILE FOR CHANNELIZING LINE, AND 6.0 GALLONS PER MILE FOR LANE LINE AND CENTER LINE.

CONFLICTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 623.04. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. DASHED 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.

614 TEMPORARY PAVEMENT MARKINGS

GENERAL NOTES

CALCULATIONS

Item 404 ~ 1¼" Asphalt Concrete, AC-20:

South Approach: Sta. 100+00 to Sta. 100+89.66 = 89.66 L.F. × $\left(\frac{23'+22.4'}{2}\right) \times \frac{1.25}{12} \times \frac{1}{27}$ = 7.85 C.Y.
Rear Approach Slab: Sta. 100+89.66 to Sta. 101+04.66 = 15.00 L.F. × 30' × $\frac{1.25}{12} \times \frac{1}{27}$ = 1.74 C.Y.
Forward Approach Slab: Sta. 102+73.89 to Sta. 102+88.89 = 15.00 L.F. × 30' × $\frac{1.25}{12} \times \frac{1}{27}$ = 1.74 C.Y.
North Approach: Sta. 102+88.89 to Sta. 103+62.09 = 73.20 L.F. × 22' × $\frac{1.25}{12} \times \frac{1}{27}$ = 6.21 C.Y.
TOTAL = 17.54 C.Y., USE 18 C.Y.

Item 402 ~ Asphalt Concrete, AC-20 (Thickness as shown):

South Approach: Sta. 100+20± to Sta. 100+46± = 26 L.F. 22.8' × $\frac{3.75"}{2} \times \frac{1}{12} \times \frac{1}{27}$ = 3.43 C.Y.
Sta. 100+46± to Sta. 100+89.66 = 43.66 L.F. × $\left(\frac{22.7'+22.4'}{2}\right) \times \frac{1.75}{12} \times \frac{1}{27}$ = 5.32 C.Y.
Rear Approach Slab: Sta. 100+89.66 to Sta. 101+04.66 = 15.00 L.F. × 30' × ½ $\left(\frac{1.75}{12}+0.37\right) \times \frac{1}{27}$ = 4.30 C.Y.
Forward Approach Slab: Sta. 102+73.89 to Sta. 102+88.89 = 15.00 L.F. × 30' × ½ $\left(\frac{1.75}{12}+0.37\right) \times \frac{1}{27}$ = 4.30 C.Y.
North Approach: Sta. 102+88.89 to Sta. 103+47± = 58.11 L.F. × 22' × $\frac{1.75}{12} \times \frac{1}{27}$ 6.91 C.Y.
Sta. 103+47± to Sta. 103+56± = 9 L.F. × 22' × ½ $\left(\frac{1.75}{12}\right) \times \frac{1}{27}$ = 0.53 C.Y.
TOTAL = 24.79 C.Y., USE 25 C.Y.

Item 403 ~ 0" Min. Asphalt Concrete, AC-20:

North Approach: Sta. 102+88.89 to Sta. 103+47± = 58.11 L.F. × 18' × $\left(\frac{0.18+0.22'+0.24'+0.18+0.00}{5}\right) \times \frac{1}{27}$ = 6.35 C.Y.
TOTAL = 6.35 C.Y., USE 7 C.Y.

Item 301 ~ Bituminous Aggregate Base: AC-20; RT-11 or RT-12:

South Approach: Sta. 100+46± to Sta. 100+89.66 = 43.66 L.F. × $\left(\frac{23.1'+23.4'}{2}\right) \times \left(\frac{0.17+0.20'+0.41'+0.44'}{4}\right) \times \frac{1}{27}$ = 11.61 C.Y.
North Approach (Combined Total width of widening for both sides = 4'+2(0.5') = 5')
Sta. 102+88.89 to Sta. 103+62.09 = 73.20 L.F. × 5' × 7/12 × 1/27 = 7.91 C.Y.
TOTAL 19.52 C.Y., USE 20 C.Y.

Item 407 ~ Tack Coat & Item 407 ~ Cover Aggregate:

South Approach: Sta. 100+00 to Sta. 100+89.66 = 89.66 L.F. × $\left(\frac{24'+23.4'}{2}\right) \times \frac{1}{9}$ = 236.1
Rear Approach Slab: Sta. 100+89.66 to Sta. 101+04.66 = 15.00 L.F. × 30' × 1/9 = 50.0
Forward Approach Slab: Sta. 102+73.89 to Sta. 102+88.89 = 15.00 L.F. × 30' × 1/9 = 50.0
North Approach: Sta. 102+88.89 to Sta. 103+62.09 = 73.20 L.F. × 18' × 1/9 = 146.4
} Total = 482.5 S.Y.

∴ Item 407-Tack Coat = 482.5 S.Y. × 0.10 gal./S.Y. = 48.3 S.Y., USE 48 S.Y. & Item 407 Cover Aggregate = 482.5 S.Y. × 7 Lbs/S.Y. × $\frac{1 \text{ Ton}}{2000 \text{ Lbs.}}$ = 1.69 Tons, USE 2 Tons

Item 617 ~ Compacted Aggregate:

South Approach: Sta. 100+00 to Sta. 100+89.66 = 2 × 89.66 × 3' × ½ $\left(2" \times \frac{1'}{12"}\right) \times \frac{1}{27}$ = 1.66 C.Y.
North Approach: Sta. 102+88.89 to Sta. 103+62.09 = 2 × 73.20 × 3' × ½ $\left(2" \times \frac{1'}{12"}\right) \times \frac{1}{27}$ = 1.36 C.Y.
TOTAL = 3.02 C.Y. USE 3 C.Y.

Item 601 ~ Rock Channel Protection, Type C, 18" Thick, without Bedding:

Channel ℄: Lt. Side; Sta. 0+99 to Sta. 1+32 = 33 L.F. × 15.65' × 1.5' × 1/27 = 28.7 C.Y.
Sta. 1+32 to Sta. 1+75 = 43 L.F. × 36.00' × 1.5' × 1/27 = 86.0 C.Y.
Sta. 1+75 to Sta. 2+94 = 119 L.F. × 15.65' × 1.5' × 1/27 = 103.5 C.Y.
Rt. Side; Sta. 0+77 to Sta. 1+85 = 108 L.F. × 13.42' × 1.5 × 1/27 = 80.5 C.Y.
S.R. 800 ℄: Lt. Side; Sta. 100+80 to Sta. 101+30 = 50 L.F. × 15.65' × 1.5 × 1/27 = 43.5 C.Y.
Rt. Side; Sta. 100+80 to Sta. 101+22 = 42 L.F. × 13.42' × 1.5 × 1/27 = 31.3 C.Y.
TOTAL = 373.5 C.Y., USE 374 C.Y.

Item 611 ~ Reinforced Concrete Approach Slab (T=12"):

Rear Approach Slab: Sta. 100+89.66 to Sta. 101+04.66 = 15.00 L.F. × 30' × 1/9 = 50.0 S.Y.
Forward Approach Slab: Sta. 102+73.89 to Sta. 102+88.89 = 15.00 L.F. × 30' × 1/9 = 50.0 S.Y.
TOTAL = 100.0 S.Y., USE 100 S.Y.

Item 202 ~ Wearing Course Removed:

South Approach: Sta. 100+00 to Sta. 100+20 = 20 L.F. × 23' × 1/9 = 51.1 S.Y.
North Approach: Sta. 103+56.09 to Sta. 103+62.09 = 6 L.F. × 18' × 1/9 = 12.0 S.Y.
TOTAL = 63.1 S.Y., USE 63 S.Y.

Item 203 ~ Subgrade Compaction:

Under Approach Slabs: 2 × 50.00 S.Y. = 100 S.Y.

Item 615 ~ Temporary Pavement, Class B:

Length of Temporary Road: 370 L.F.
Deduct Temporary Structure: -100 L.F.
Length of Temporary Pavement = 270 L.F.
∴ Area = 270' × 20' × 1/9 = 600 S.Y.

Item 659 ~ Commercial Fertilizer:

2,543 S.Y. × (20 Lbs./1000 S.F.) × 9 ÷ 2000 = 0.23 Ton

Item 659 ~ Agricultural Liming:

2,543 S.Y. × 100 Lbs./1000 S.F.) × 9 ÷ 2000 = 1.14 Tons

EARTHWORK & SEEDING

LOCATION	Station From	Station To	EXCAVATION Cu. Yds.	EMBANKMENT Cu. Yds.	SEEDING Sq. Yds.
S.R. 800	99+50	103+62.09	20	363	1,355
Channel	0+75	2+77	960	772	1,188
Totals			980	1,135	2,543

GENERAL SUMMARY

TOTALS FROM SHEET NUMBERS 4	5	6	7		ITEM	TOTAL	UNIT	DESCRIPTION F-BRF 56 (6)
								~ ROADWAY ~
Lump					201	Lump		Clearing And Grubbing
		63			202	63	Sq.Yds.	Wearing Course Removed
			218		202	218	Lin.Ft.	Guardrail Removed
		980	4		203	984	Cu.Yds.	Excavation Not Including Embankment Construction
		1,135			203	1,135	Cu.Yds.	Embankment
		100			203	100	Sq.Yds.	Subgrade Compaction
			211.54		606	211.54	Lin.Ft.	Guardrail, Type 5
			4		606	4	Each	Bridge Terminal Assembly, Standard Type B
			4		606	4	Each	Anchor Assembly, Standard Type A
Lump					615	Lump		Temporary Roads
		600			615	600	Sq.Yds.	Temporary Pavement, Class B
								~ EROSION CONTROL ~
		374			601	374	Cu.Yds.	Rock Channel Protection, Type C, Without Bedding
		2,543			659	2,543	Sq.Yds.	Seeding and Mulching
5					659	5	M-Gals.	Water
		0.23			659	0.23	Ton	Commercial Fertilizer
		1.14			659	1.14	Tons.	Agricultural Liming
								~ PAVEMENT ~
		20			301	20	Cu.Yds.	Bituminous Aggregate Base: AC-20; RT-11 or RT-12.
			4		304	4	Cu.Yds.	Aggregate Base
		25			402	25	Cu.Yds.	Asphalt Concrete, AC-20
		7			403	7	Cu.Yds.	Asphalt Concrete, AC-20
		18			404	18	Cu.Yds.	Asphalt Concrete, AC-20
		48			407	48	Gals.	Tack Coat
		2			407	2	Tons	Cover Aggregate
		100			611	100	Sq.Yds.	Reinforced Concrete Approach Slab (T=12")
		3			617	3	Cu.Yds.	Compacted Aggregate
	0.09				614	0.09	Miles	Temporary Center Lines, Class I, Paint or Tape
	0.08				614	0.08	Miles	Temporary Center Lines, Class II, Tape
	0.18				614	0.18	Miles	Temporary Edge Lines, Class I, Paint or Tape
Lump					614	Lump		Maintaining Traffic
					623	Lump		Construction Layout Stakes
Lump					624	Lump		Mobilization, as per Plan
								~ STRUCTURE OVER 20' SPAN ~
								Bridge No. TUS 800-0192 Over Stillwater Creek (For Quantities, See Sheet No. 12)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

TUS - 800 - 1.92
TUSCARAWAS COUNTY

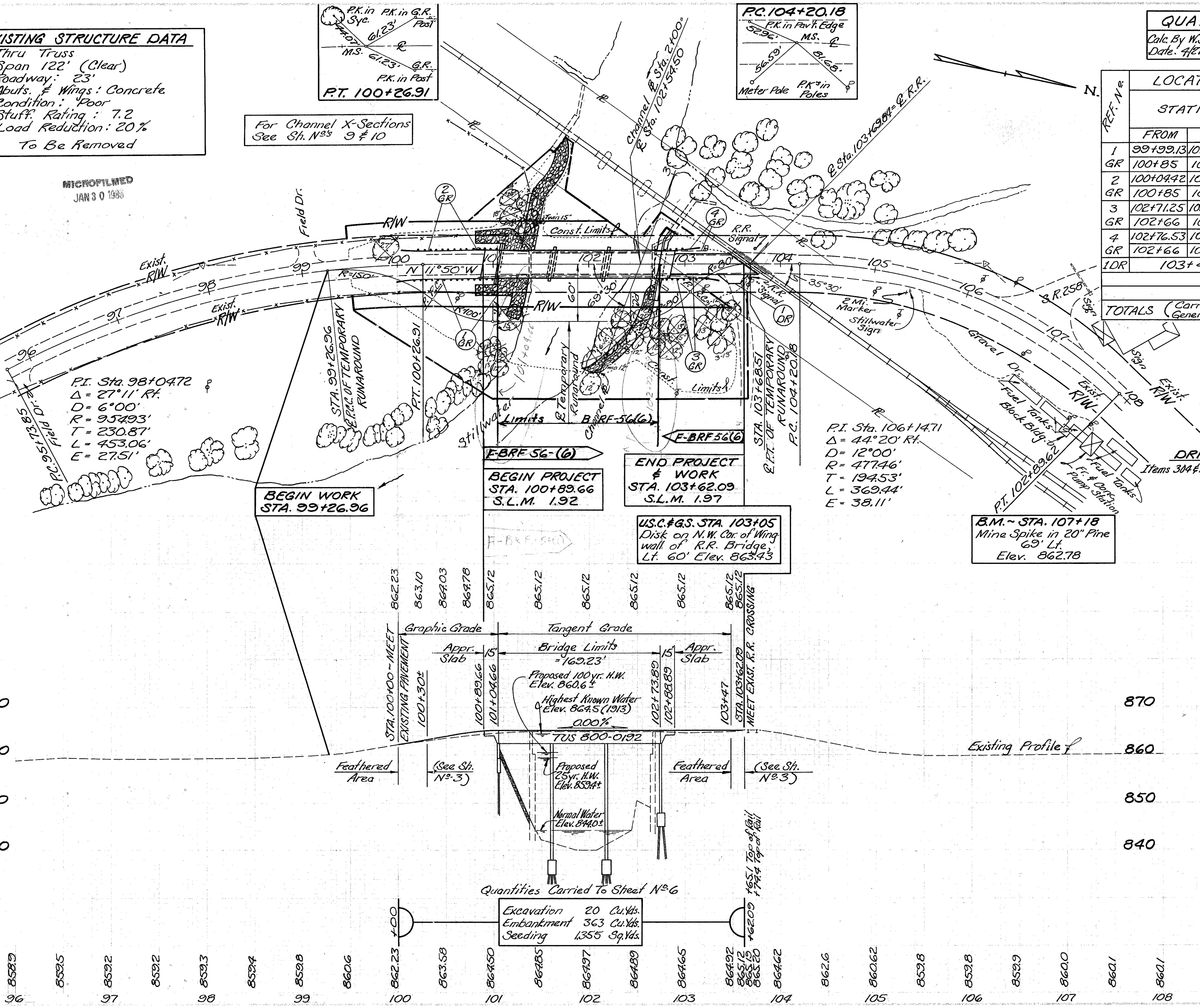
EXISTING STRUCTURE DATA

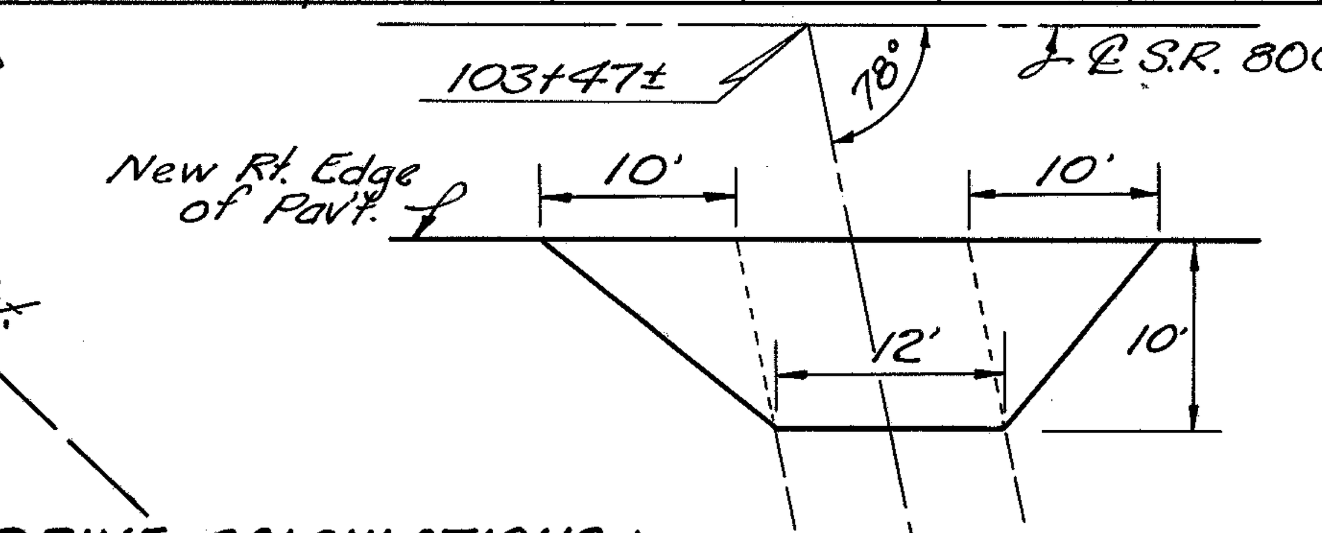
Thru Truss
Span 122' (Clear)
Roadway: 23'
Abuts. & Wings: Concrete
Condition: Poor
Stuff. Rating: 7.2
Load Reduction: 20%
To Be Removed

QUANTITIES

Calc. By W.S.R. Date. 4/27/82	Chked. By E.E.H. Date 4/29/82

REF. No.	LOCATION			ITEM 606			ITEM 202	ITEM 304	ITEM 203
	STATION			GUARD-RAIL TYPE 5	BRIDGE TERMINAL ASSEMBLY TYPE B	ANCHOR ASSEMBLY TYPE A	GUARD RAIL REMOVED	AGGREG-ATE BASE	EXCAVATION NOT INCL. EMB. CONST.
	FROM	TO		LIN. FT.	EACH	EACH	LIN. FT.	CU. YDS.	CU. YDS.
1	99+99.13	101+02.02	Rt.	77.89	1	1			
GR	100+85	101+38					53		
2	100+04.42	101+07.30	Lt.	77.88	1	1			
GR	100+85	101+38					53		
3	102+71.25	103+26.63	Rt.	40.38	1	1			
GR	102+66	103+22					56		
4	102+76.53	103+16.92	Lt.	15.39	1	1			
GR	102+66	103+24					56		
1DR	103+47±		Rt.					4	4
TOTALS (Carried To General Summary)				211.54	4	4	218	4	4


P.K. in Syc.
P.K. in G.R. Post
61.23'
M.S.
P.K. in Post
P.T. 100+26.91
P.C. 104+20.18
P.K. in Pav't. Edge
Meter Pole
P.K.'s in Poles
For Channel X-Sections See Sh. No's 9 & 10
Channel ℄ Sta. 2+00= ℄ Sta. 102+54.50
℄ Sta. 103+69.84 = ℄ R.R.
N.
R/W
Exist. R/W
Field Dr.
N 11°50' W
Const. Limits
R.R. Signal
2 Mi. Marker
Stillwater Sign
Gravel Dr.
S.R. 258
Sign
Fuel Tanks
Block Bldg.
Fr. & Conc. Pump Station
STA. 99+26.96 ℄ P.C. OF TEMPORARY RUNAROUND
P.T. 100+26.91
STA. 103+68.51 ℄ P.T. OF TEMPORARY RUNAROUND
P.C. 104+20.18
Temporary Runaround
Stillwater
Limits
B.R.F-56(6)
E-BRF 56-(6)
P.I. Sta. 98+04.72
Δ = 27°11' Rt.
D = 6°00'
R = 954.93'
T = 230.87'
L = 453.06'
E = 27.51'
P.C. 95+73.85
P.I. Sta. 106+14.71
Δ = 44°20' Rt.
D = 12°00'
R = 477.46'
T = 194.53'
L = 369.44'
E = 38.11'
P.T. 102+89.62
BEGIN WORK STA. 99+26.96
BEGIN PROJECT STA. 100+89.66 S.L.M. 1.92
END PROJECT & WORK STA. 103+62.09 S.L.M. 1.97
U.S.C.&G.S. STA. 103+05 Disk on N.W. Cor. of Wing-wall of R.R. Bridge, Lt. 60' Elev. 863.43
B.M.~ STA. 107+18 Mine Spike in 20" Pine 69' Lt. Elev. 862.78
Graphic Grade
Tangent Grade
Appr. Slab
Bridge Limits =169.23'
STA. 100+00 - MEET EXISTING PAVEMENT
STA. 103+62.09 MEET EXIST. R.R. CROSSING
Proposed 100 yr. H.W. Elev. 860.6±
Highest Known Water Elev. 864.5 (1913)
0.00%
TUS 800-0192
Proposed 25 yr. H.W. Elev. 859.4±
Normal Water Elev. 844.0±
Feathered Area
(See Sh. No. 3)
Existing Profile ℄
+651 Top of Rail
+74.4 Top of Rail
870
860
850
840
Quantities Carried To Sheet No. 6
Excavation 20 Cu. Yds.
Embankment 363 Cu. Yds.
Seeding 1,355 Sq. Yds.
96
97
98
99
100
101
102
103
104
105
106
107
108



DRIVE CALCULATIONS:
Items 304 & 203: Vol. = $\frac{32+12}{2}$ × 10 × 1/6 × 9/36 = 4 Cu. Yds.

DRIVE DETAIL ~ (1 DR)

PROPOSED STRUCTURE

TYPE: 3-Span prestressed concrete box beam with reinforced concrete substructures.
SPANS: 3 at 55'-0" c/c brgs. (55.76'-56.52'-55.76' c/c substructures)
ROADWAY: 30'-0" f/f guardrails
LOADING: HS20-44 and the alternate military loading
SKEW: 10° L.F.
WEARING SURFACE: 2½" asphalt concrete
APPROACH SLABS: AS-1-81 (15' Long)
ALIGNMENT: Tangent

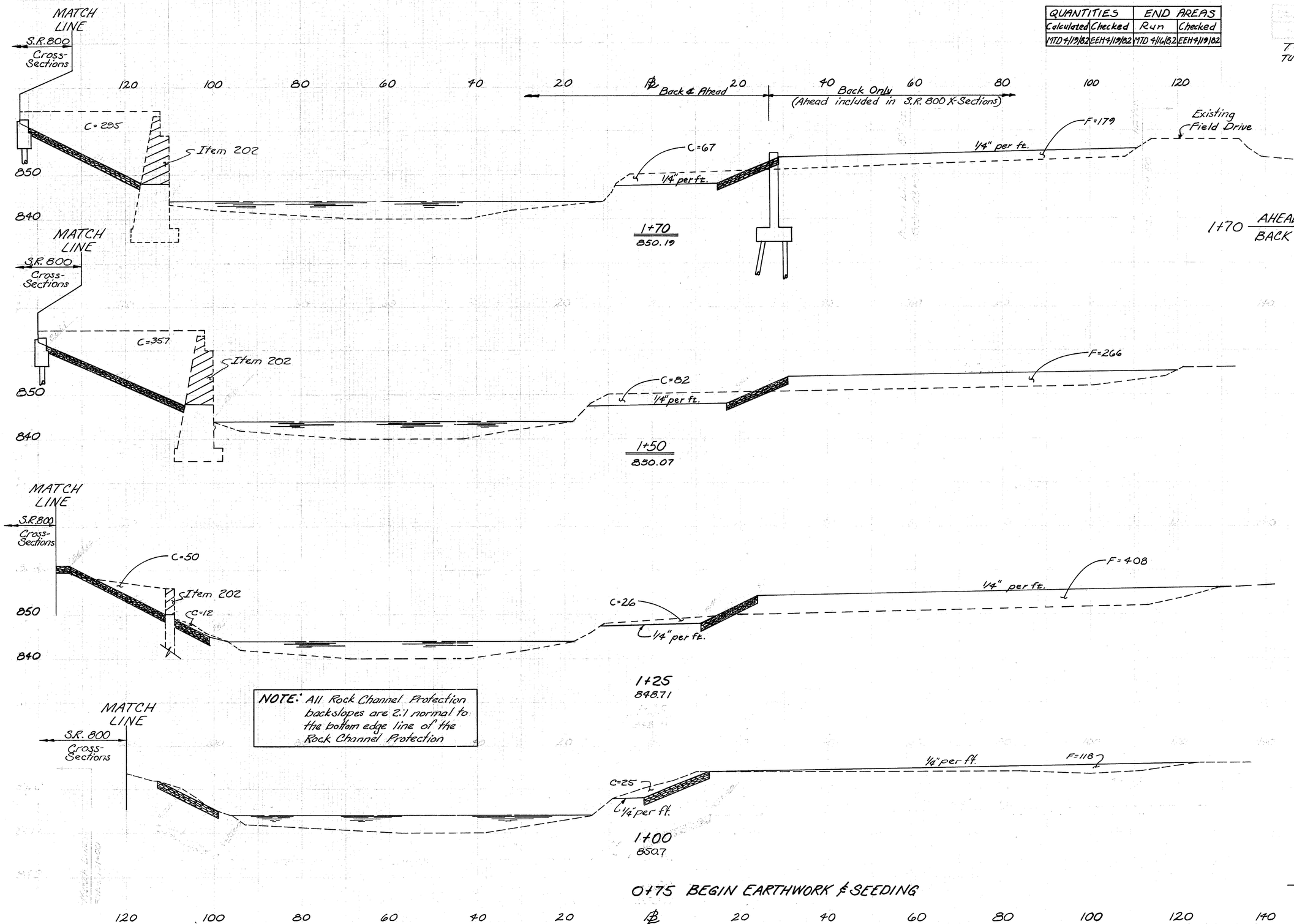
STA. 96+00 TO STA 108+00

TUS-800-1.92
TUSCARAWAS COUNTY

CROSS-SECTIONS STA. 99+00 TO STA. 104+00

QUANTITIES		END AREAS	
Calculated	Checked	Run	Checked
YTD 4/19/82	EEH 4/19/82	YTD 4/16/82	EEH 4/19/82

TUS-800-1.92
TUSCARAWAS COUNTY



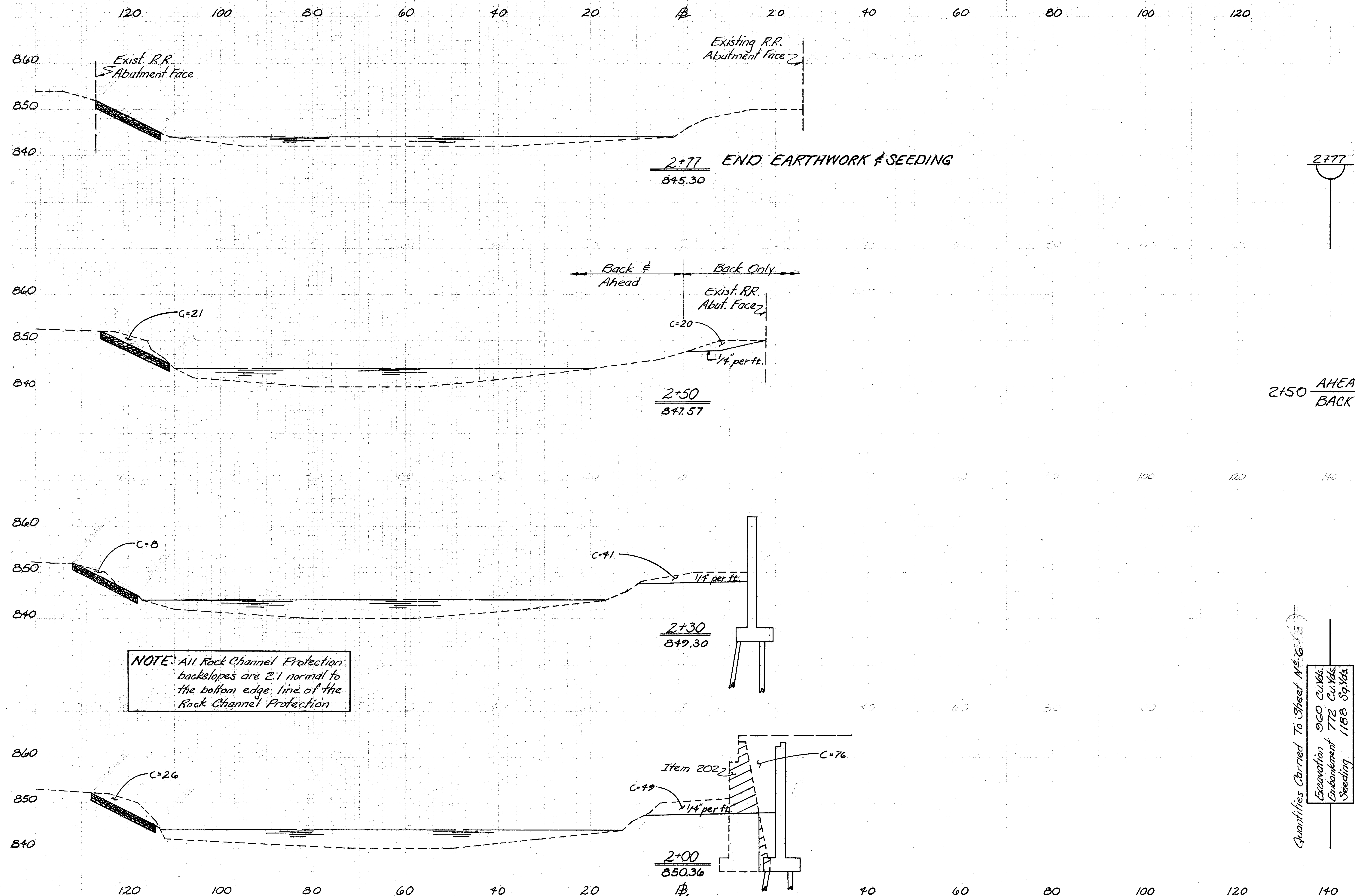
NOTE: All Rock Channel Protection backslopes are 2:1 normal to the bottom edge line of the Rock Channel Protection

		Seeding		End Area		Cu. Yds.	
		Width	S.Y.	Cut	Fill	Exc.	Emb.
	860		33			239	0
	850						
1+70	840	10		355	0		
AHEAD							
BACK		91		362	179		
	860		211			296	165
	850						
	840	99		439	266		
	860		315			244	312
	850						
	840	128		88	408		
			361			54	242
		132		29	115		
			183			13	53
0+75		0		0	0		

CHANNEL CROSS-SECTIONS

QUANTITIES		END AREAS	
Calculated	Checked	Run	Checked
MTD 4/19/82	EEH 4/19/82	MTD 4/19/82	EEH 4/19/82

TUS-800-1.92
TUSCARAWAS COUNTY



NOTE: All Rock Channel Protection backslopes are 2:1 normal to the bottom edge line of the Rock Channel Protection

Quantities Carried To Sheet No. 6

Excavation	960 Cu.Yds.
Embankment	772 Cu.Yds.
Seeding	1188 Sq.Yds.

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
10		0	0		
	30	11	0		
10		21	0		
10		41	0		
	22		33	0	
10		49	0		
	33		69	0	
10		75	0		

CHANNEL CROSS-SECTIONS

TUS-800-1.92
TUSCARAWAS COUNTY

EXISTING STRUCTURE DATA
Thru Truss
Span: 122' (Clear)
Roadway: 23'
Abuts. & Wings: Concrete
Condition: Poor
Suff. Rating: 7.2
Load Reduction: 20 %
To Be Removed

Design Designation
Current ADT (1980) = 1,340
Design Year ADT (2000) = 3,104
DHV = 466
D = 67%
T = 4%
V = 35 M.P.H.

Nail 12" Locust — Nail-G.R. Post — 44.07' — 61.23' — M.S. — 61.23' — Nail-G.R. Post — P.T. 100+26.91

P.K. Nail Edge Pav't. — 52.96' — M.S. — 56.59' — 81.88' — P.K. Nails — Water Pole — 197.01 — P.C. 104+20.18

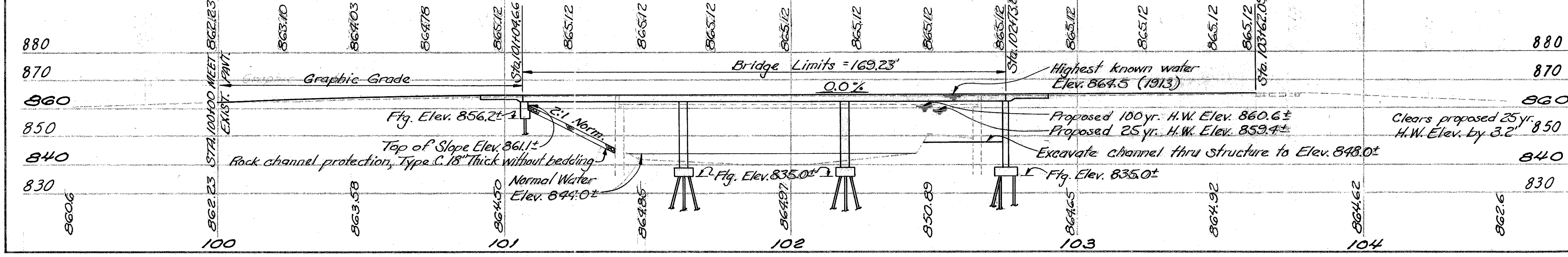
B.M. STA. 103+05
U.S.C.&G.S. N.W. Cor. R.R. Bridge
60' Lt.
Elevation 863.43

Regulated Flow
Clendening Lake 70 Sq. Mi.
Piedmont Lake 84 Sq. Mi.

Drainage Area = 348 Sq. Mi.
Modified Discharges and Elevations as per Corps of Engineers letter dated April 30, 1980
Q_{10} = 4300 cfs Elev. 858.2 v = 2.6 fps
Q_{25} = 4800 cfs Elev. 859.4 v = 2.7
Q_{50} = 5200 cfs Elev. 860.1 v = 2.9
Q_{100} = 5630 cfs Elev. 860.6 v = 3.0

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

PROPOSED STRUCTURE
TYPE: 3-span prestressed concrete box beam with reinforced concrete substructures
SPANS: 3 at 55'-0" c/c brgs (55.76'-56.52'-55.76' c/c substructures)
ROADWAY: 30'-0" F/F guardrails
LOADING: HS20-44 and the alternate military loading
SKEW: 10° L.F.
WEARING SURFACE: 2½" asphalt concrete
APPROACH SLABS: AS-1-81 (15' long)
ALIGNMENT: Tangent



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. TUS-800-0192
OVER
STILLWATER CREEK
TUSCARAWAS COUNTY S.R. 800
STA. 101+04.66
STA. 102+73.89
SCALE: 1" = 20'

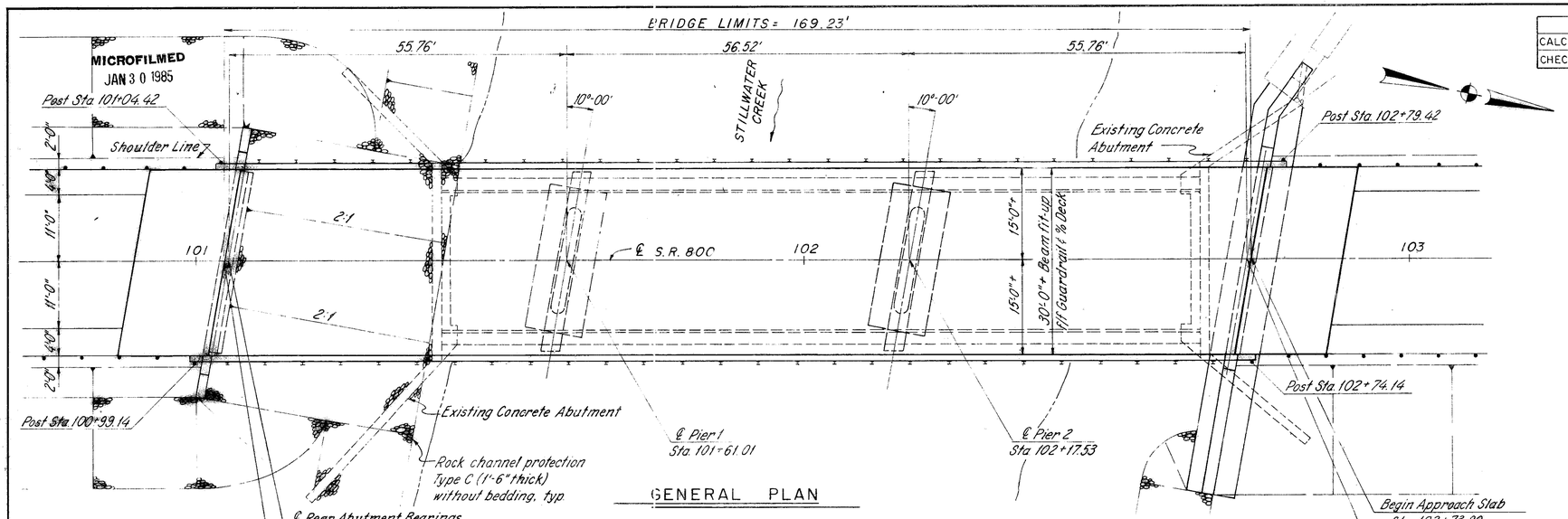
EXIST. TOPO		PROPOSED WORK			
SURVEY	DRAWN	DESIGN	DRAWN	CHECK	REVIEW
Dist. Off.	Dist. Off.	U.L.H.	U.L.H.	R.C.T.	N.J.B.

QUANTITIES		
CALCULATED	JLS	182
CHECKED	TWH	182

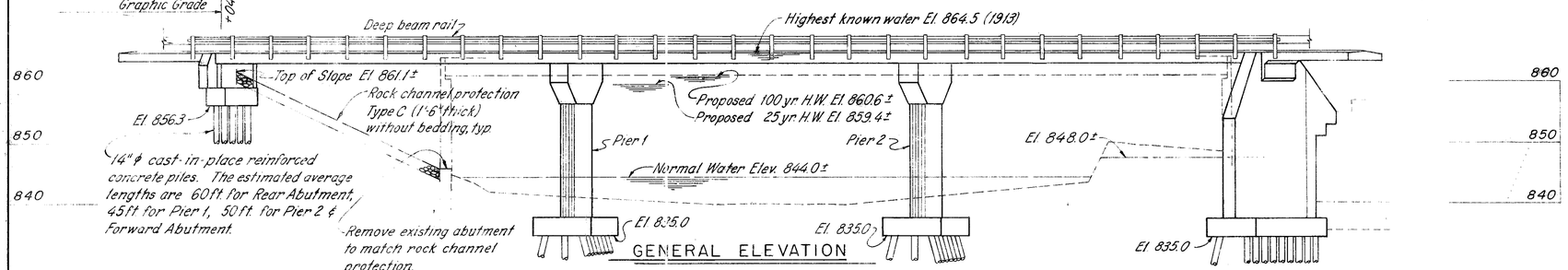
FHWA REGION	STATE	PROJECT	
5	OHIO		

12
19

TUS-800-1.92
TUSCARAWAS COUNTY



GENERAL PLAN



GENERAL ELEVATION

BRF-56(6) ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS	PIERS	GENERAL
202	Lump	Sum	Structure removed				Lump
403	36	Cu. Yd.	Asphalt concrete (AC-20)	36			
404	20	Cu. Yd.	Asphalt concrete (AC-20)	20			
502	Lump	Sum	Temporary Structure				Lump
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump
503	963	Cu. Yd.	Unclassified excavation		785	178	
505	Lump	Sum	Test Pile				Lump
507	3310	Lin. Ft.	14" ϕ cast-in-place reinforced concrete piles		1600	1710	
509	29,595	Lbs.	Reinforcing steel, Grade 60		16,069	13,526	
510	36	Each	Dowel holes		12	24	
511	6	Cu Yd	Class S concrete, superstructure	6			
511	136	Cu Yd	Class C concrete, abutments above footings		136		
511	98	Cu. Yd	Class C concrete, piers above footings			98	
511	121	Cu Yd.	Class C concrete, Footings		70	51	
512	9	Sq Yd	Type B Waterproofing		9		
512	535	Sq. Yd.	Type D Waterproofing	585			
515	30	Each	Prestressed concrete bridge members, B21-36	30			
516	60	Each	1/8" x 5" x 12" Preformed bearing pads, used as shims		20	40	
516	120	Each	1" x 5" x 12" Elastomeric bearing pads (50 Durometer)		40	80	
516	161	Sq. Ft.	1" Preformed expansion joint filler		111	50	
516	68	Lin. Ft.	Joint sealer, 705.02		68		
516	64	Sq Ft.	2" Preformed expansion joint filler		64		
517	338.46	Lin. Ft.	Railing (deep beam with steel tubular backup, steel posts and bolts)	338.46			
518	65	Cu. Yd.	Porous backfill		65		
523	3	Hours	Dynamic Pile Test				3
Special	260	Sq Ft.	Steel Drip Strip	260			

DRAINAGE AREA = 348.0 Sq. Mi.
Est. Q_{25} = 4800 c.f.s., Elev. 859.4, V_{25} = 2.7 f.p.s.
Est. Q_{100} = 5630 c.f.s., Elev. 860.6, V_{100} = 3.0 f.p.s.

EXISTING STRUCTURE

TYPE: Thru Truss
SPAN: 122' (Clear)
ROADWAY: 23'
ABUTMENT & WINGWALLS: Concrete
CONDITION: Poor
SUFFICIENCY RATING: 7.2
LOAD REDUCTION: 20%

— TO BE REMOVED —

PROPOSED STRUCTURE

TYPE: 3 - span prestressed concrete box beam with reinforced concrete substructures.
SPANS: 3 at 55'-0" c/c bearings (55.76'-56.52'-55.76' c/c substructures)
ROADWAY: 30'-0" f/f guardrails
LOADING: HS20-44 & the alternate military loading
SKEW: 10° L.F.
WEARING SURFACE: 2½" Asphalt Concrete
APPROACH SLABS: AS-1-81 (15' long)
ALIGNMENT: Tangent

DESIGN TRAFFIC

Current ADT (1980)	= 1,340
Design Year ADT (2000)	= 3,104
DHV	= 466
D	= 67%
T	= 4%

GENERAL NOTES

REFERENCE shall be made to Standard Drawings
DBR-2-73 (dated 4-10-73)
PSBD-1-81, sheets 1 thru 4 of 4 (dated 9-18-81)
AS-1-81, sheets 1 thru 3 of 3 (dated 11-27-81)

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

DESIGN DATA: Design Loading - HS20-44 and the Alternate Military Loading
Concrete Class S - f'c = 4500 p.s.i. for superstructure
Concrete Class C - f'c = 4000 p.s.i. for substructure
Reinforcing Steel - ASTM A615, A616 or A617 - Fy = 60,000 p.s.i.
Splices indicated are for Grade 60 steel
Concrete for prestressed concrete beams - f'c = 5500 p.s.i. at 28 days (min.)
Prestressing strand ASTM A416 - f's = 270,000 p.s.i.
Initial stress 0.70 f's
Deck Protection Method Type D waterproofing and asphalt concrete overlay

BEAM FABRICATION: Beams shall be fabricated as to include provision for lifting into place. Unit price bid for prestressed concrete beams shall include transverse tie bars, anchor dowels, and dowel holes in beams as per plan and bolts, studs and nuts for guard rail. Shear key surfaces shall be roughened by application of an approved retarder to the forms prior to casting beams or by sandblasting after removal of forms. Diaphragms shall be located as shown on plans.

CONTRACTOR shall not ford the stream or operate equipment in the stream at any time, except as necessary to construct the pier walls, footings, and piling. Disturbance of the stream bed shall be kept to a minimum.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

PILES shall be driven to a minimum bearing capacity of 55 tons per pile for the rear abutment, 60 tons per pile for the piers, and 60 tons per pile for the forward abutment.

REMOVAL OF EXISTING STRUCTURE: The existing structure shall be removed in accordance with Item 202 Specifications. The existing rear abutment and wingwalls shall be removed to the elevation at which the proposed rock channel protection slopes intersect the existing concrete. The existing forward abutment and wingwalls shall be removed to elevation 848.0± except as necessary for new construction. No existing concrete shall be removed to be replaced by rock channel protection.

PRECAST PILES: 14" precast, prestressed concrete piles may be substituted for the 14" cast-in-place reinforced concrete piles. The method of measurement and basis of payment shall be the same as for cast-in-place reinforced concrete piles, as per Item 507.

1 / 6

RICHLAND ENGINEERING LIMITED
MANSFIELD, OHIO

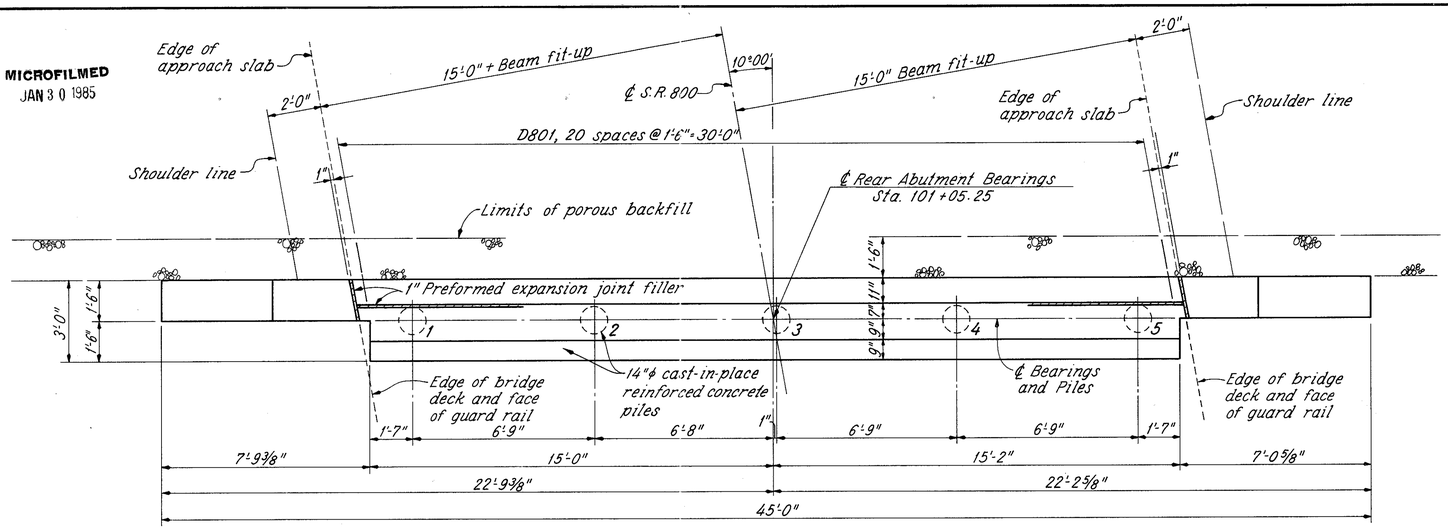
GENERAL PLAN, GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK
TUSCARAWAS COUNTY S.R. 800

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDN	JPS	BKU	RDN	DAP	5/5/82	

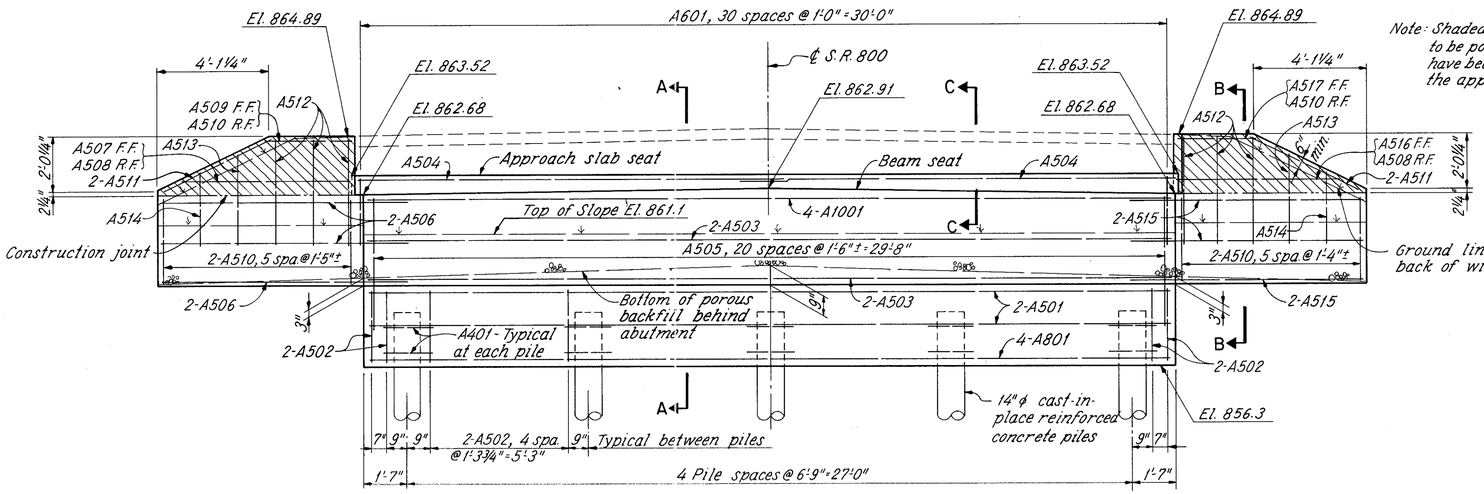
FHWA REGION	STATE	PROJECT	
5	OHIO		

13/19

TUS-800-1.92
TUSCARAWAS COUNTY

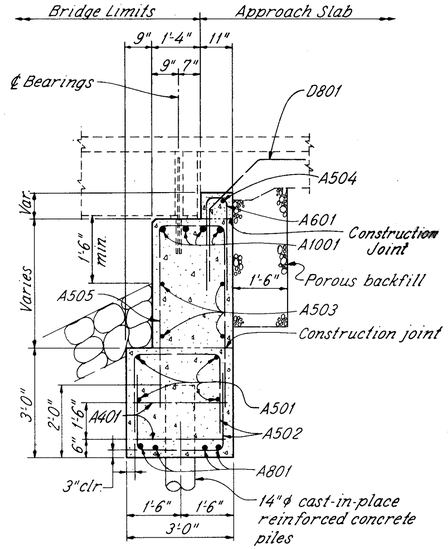


PLAN

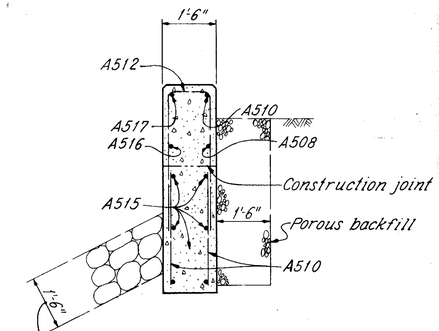


ELEVATION

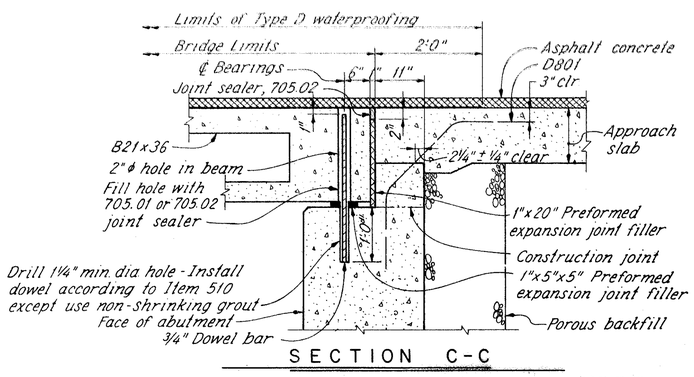
Note: Shaded areas indicate concrete to be poured after the beams have been set and prior to placing the approach slab.



SECTION A-A



SECTION B-B



SECTION C-C

NOTES

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.

POROUS BACKFILL shall extend upward to the plane of the subgrade and laterally to the surfaces of the embankment slopes.

REINFORCING SPLICE LENGTHS shall be 1'-8" for #5 bars and 2'-0" for #6 bars.

NOTATION: F.F.-Front Face; R.F.-Rear Face;

2/6

RICHLAND ENGINEERING LIMITED
MANSFIELD, OHIO

REAR ABUTMENT

BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK

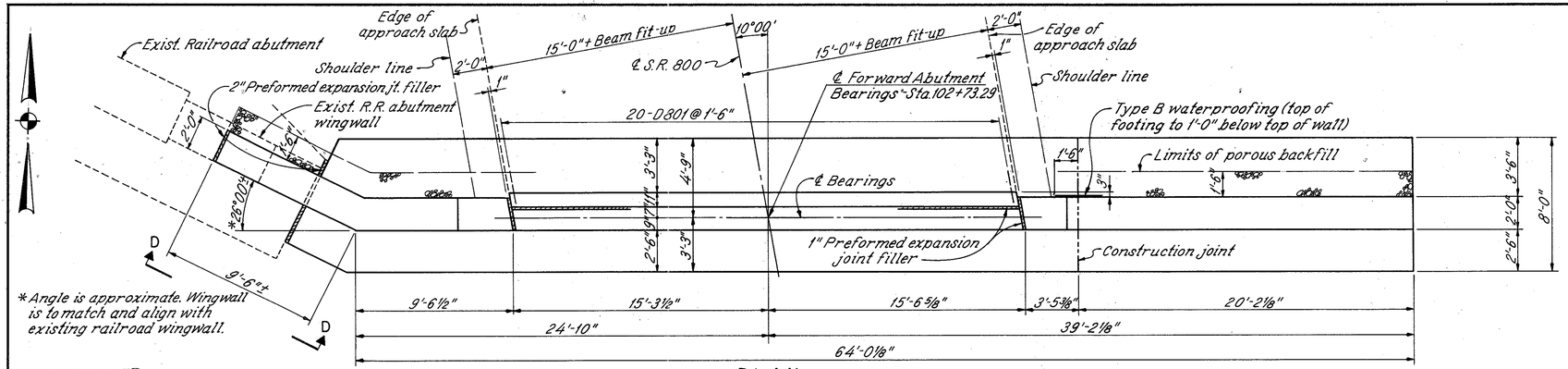
TUSCARAWAS COUNTY S.R. 800

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDN	JPS	JPS	RHU	DAP	5/5/82	

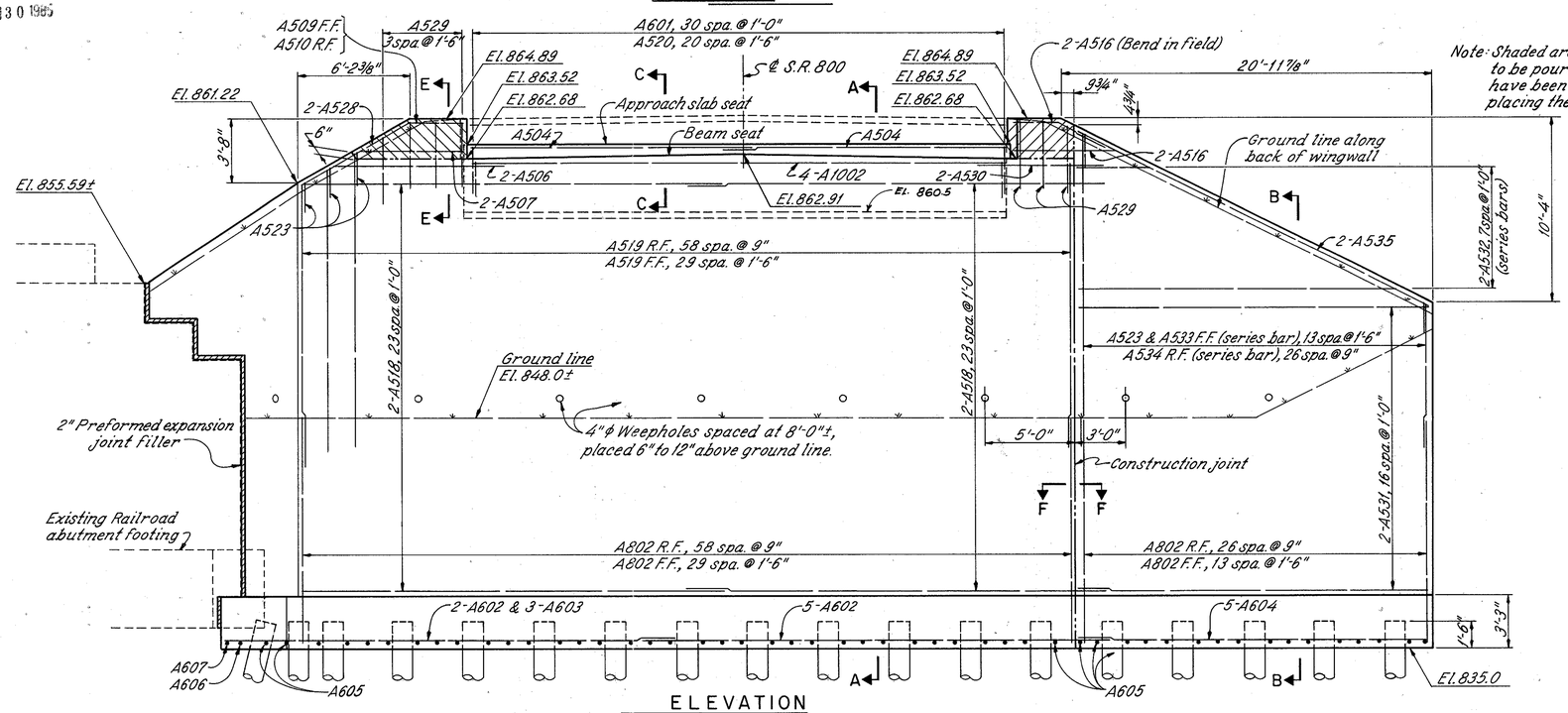
FHWA REGION	STATE	PROJECT	
5	OHIO		

14/19

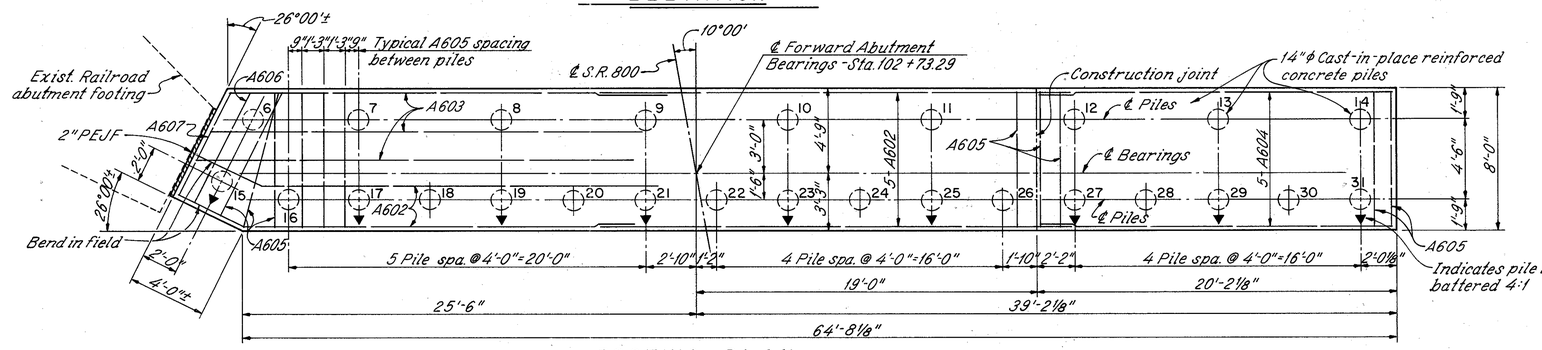
TUS-800-1.92
TUSCARAWAS COUNTY



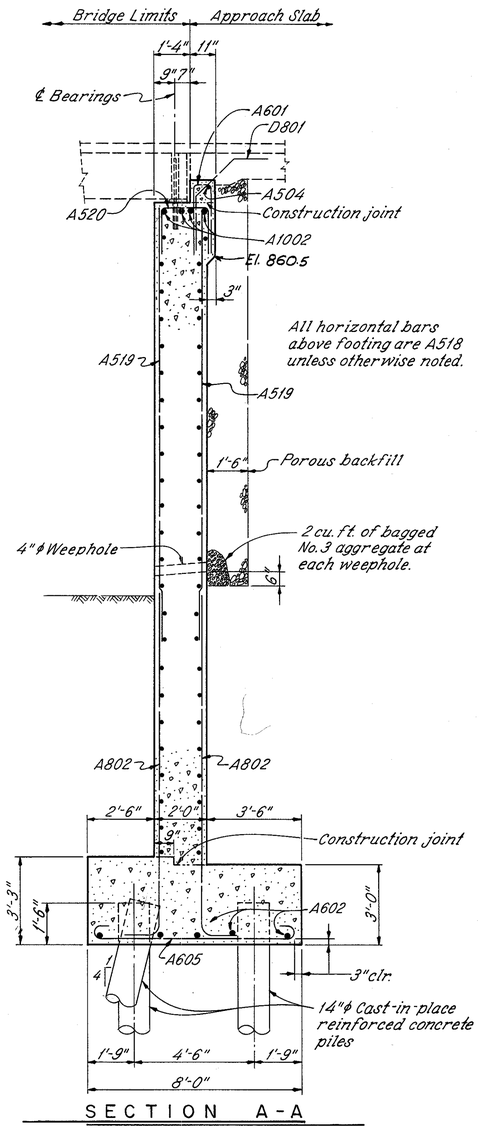
PLAN



ELEVATION



FOOTING PLAN



SECTION A-A

NOTES

SECTIONS B-B, D-D, E-E AND F-F: See Sheet 4/6

SECTION C-C: See Sheet 2/6

POROUS BACKFILL shall extend upward and laterally as shown.

3/6

RICHLAND ENGINEERING LIMITED
MANSFIELD, OHIO

FORWARD ABUTMENT

BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK
TUSCARAWAS COUNTY S.R. 800

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDN	JPS	RHU	RDN	DAP	5/16/82	

h050341

FHWA REGION	STATE	PROJECT	
5	OHIO		

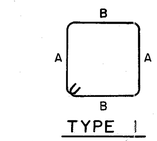
15/19

TUS-800-1.92
TUSCARAWAS COUNTY

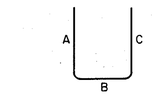
ABUTMENT REINFORCING STEEL

MARK	REAR	FWD.	NO.	LENGTH	TYPE	A	B	C	WEIGHT
A401	10		10	8'-8"	1	2'-4¾"	1'-9"		58
A501	4		4	29'-8"	Str.				124
A502	48		48	6'-7"	2	2'-2"	2'-6"	2'-2"	330
A503	4		4	29'-10"	Str.				124
A504	2	2	4	16'-2"	Str.				67
A505	21		21	11'-6"	2	4'-11"	1'-11"	4'-11"	252
A506	6	2	8	9'-4"	Str.				78
A507	1	4	5	6'-3"	Str.				33
A508	2	4	6	5'-11"	Str.				37
A509	1	1	2	3'-3"	Str.				7
A510	26	29	55	2'-11"	Str.				167
A511	4		4	4'-6"	Str.				19
A512	6		6	8'-7"	2	3'-10"	1'-2"	3'-10"	54
A513	2		2	7'-11"	2	3'-6"	1'-2"	3'-6"	17
A514	2		2	6'-5"	2	2'-9"	1'-2"	2'-9"	13
A515	6		6	8'-9"	Str.				55
A516	1	6	7	5'-7"	Str.				41
A517	1	2	3	2'-7"	Str.				8
A518		96	96	23'-6"	Str.				2353
A519		89	89	16'-3"	Str.				1508
A520		21	21	5'-0"	2	1'-8"	1'-11"	1'-8"	110
A521		1 Ser. of 3	1 Ser. of 3	13'-2" to 14'-6" ①	Str.	① Varies by 8" increments			43
A522		1 Ser. of 4	1 Ser. of 4	13'-0" to 14'-0" ②	Str.	② Varies by 4" increments			56
A523		24	24	4'-9"	2	1'-8"	1'-8"	1'-8"	119
A524		2	2	10'-8"	Str.				22
A525		24	24	4'-0"	3	2'-0"	2'-0"	5¾"	100
A526		4	4	9'-0"	Str.				38
A527		2 Ser. of 4	2 Ser. of 4	3'-4" to 7'-10" ③	Str.	③ Varies by 1'-6" increments			47
A528		2	2	6'-11"	Str.				14
A529		7	7	3'-1"	2	3'-10"	1'-8"	3'-10"	66
A530		2	2	7'-4"	Str.				15
A531		34	34	20'-0"	Str.				709
A532		2 Ser. of 8	2 Ser. of 8	4'-0" to 18'-0" ④	Str.	④ Varies by 2'-0" increments			184
A533		1 Ser. of 14	1 Ser. of 14	8'-3" to 18'-0" ⑤	Str.	⑤ Varies by 9" increments			192
A534		1 Ser. of 27	1 Ser. of 27	8'-3" to 18'-0" ⑥	Str.	⑥ Varies by 4½" increments			370
A535		2	2	22'-6"	Str.				47
A601	31	31	62	5'-5"	2	2'-7"	7"	2'-7"	504
A602		7	7	26'-4"	Str.				277
A603		3	3	24'-6"	Str.				110
A604		5	5	19'-11"	Str.				150
A605		50	50	8'-10"	5	7'-6"			663
A606		1	1	8'-4"	5	7'-0"			13
A607		1	1	7'-10"	5	6'-6"			12
A801	4		4	29'-8"	Str.				317
A802		137	137	13'-11"	2	12'-9"	1'-4½"	0	5091
A1001	4		4	29'-10"	Str.				513
A1002		4	4	30'-0"	Str.				516
D801	21	21	42	5'-11"	4	1'-7½"	2'-0½"		664
						TOTAL WEIGHT			16,069

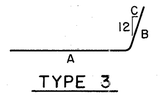
BENDING DIAGRAMS



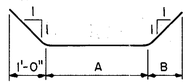
TYPE 1



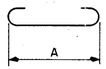
TYPE 2



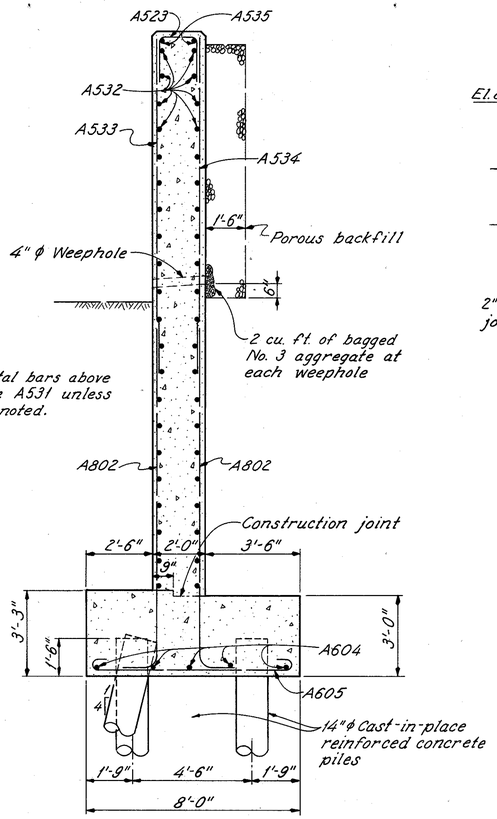
TYPE 3



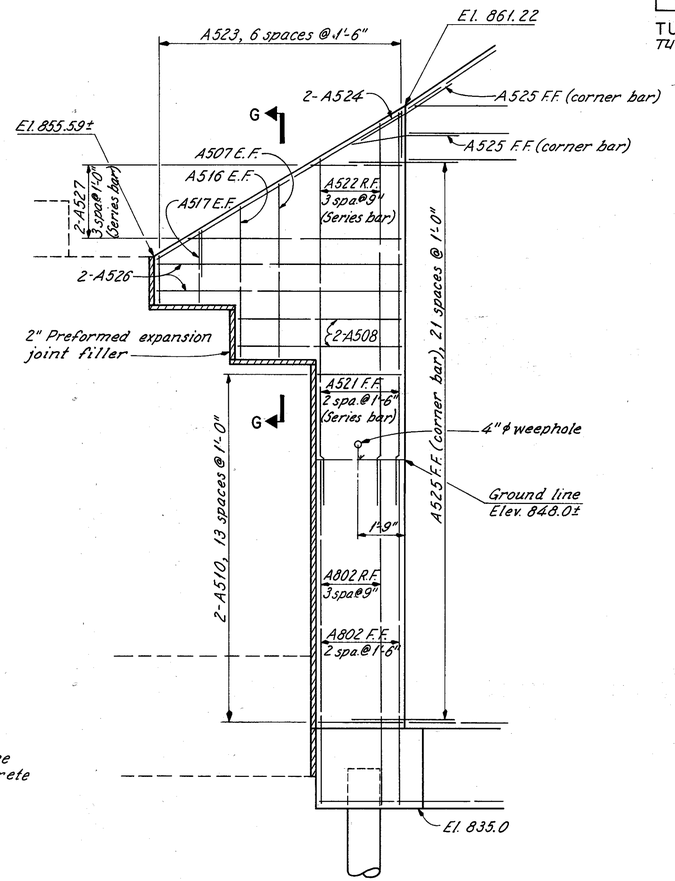
TYPE 4



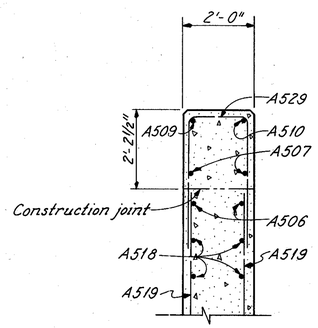
TYPE 5



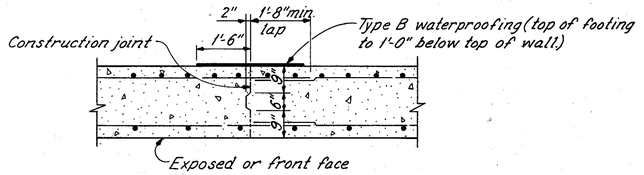
SECTION B-B



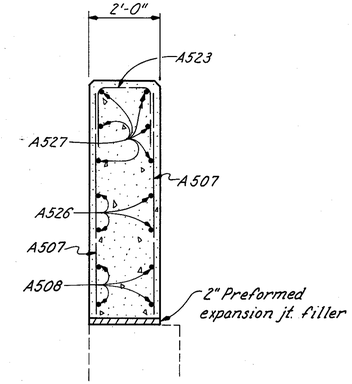
VIEW D-D



SECTION E-E



SECTION F-F



SECTION G-G

4/6

RICHLAND ENGINEERING LIMITED
MANSFIELD, OHIO

FORWARD ABUTMENT DETAILS AND REINFORCING STEEL

BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK

TUSCARAWAS COUNTY S.R. 800

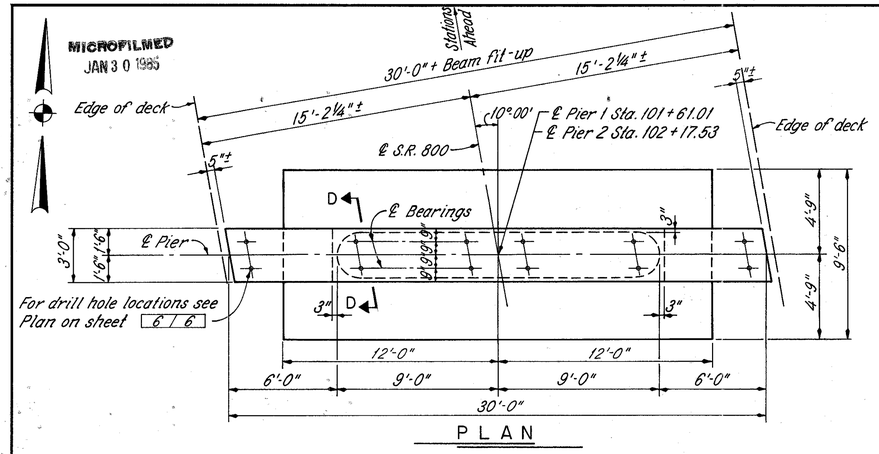
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDN	JPS	JLS	RHU	DAP	5/6/82	

N50341

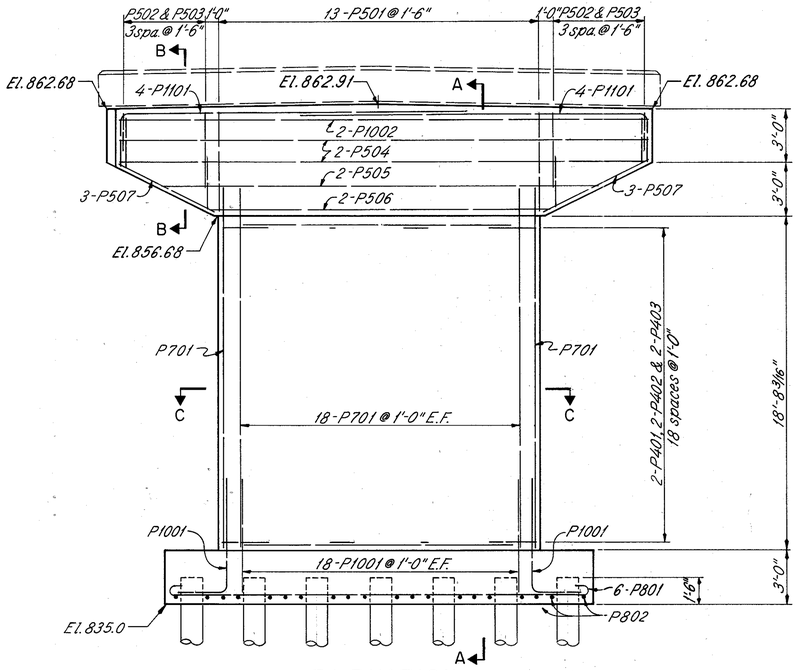
FHWA REGION	STATE	PROJECT	
5	OHIO		

16/19

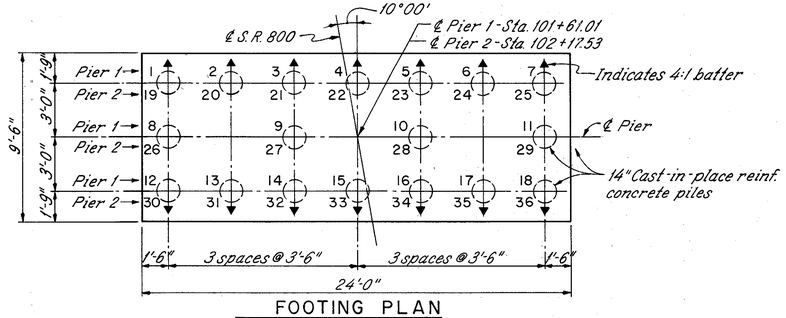
TUS-800-1.92
TUSCARAWAS COUNTY



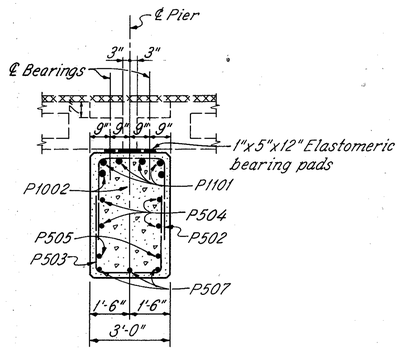
PLAN



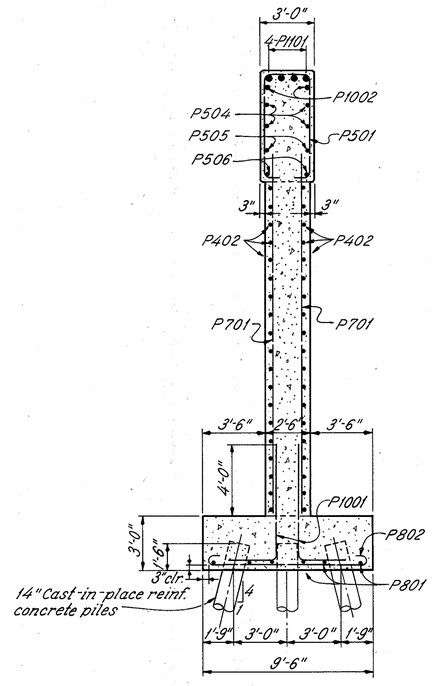
ELEVATION



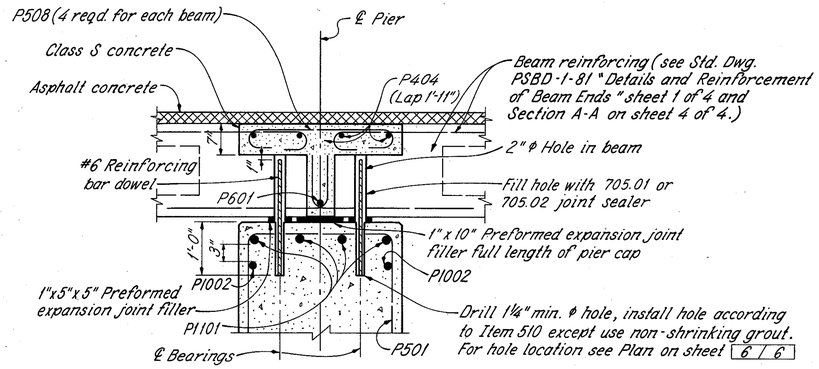
FOOTING PLAN



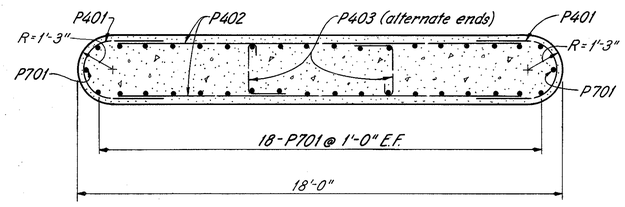
SECTION B-B



SECTION A-A



SECTION D-D



SECTION C-C

REINFORCING STEEL									
MARK	PIER 1	PIER 2	NO.	LENGTH	TYPE	A	B	C	WEIGHT
P401	38	38	76	6'-7"	5	1'-7"	3'-5"	2'-2"	334
P402	38	38	76	15'-0"	Str.				762
P403	38	38	76	3'-11"	1	2'-2"	1'-4½"		199
P404	8	8	16	16'-2"	Str.				173
P501	13	13	26	15'-5"	4	5'-9"	2'-8"	10½"	418
P502	2 Ser. of 4	2 Ser. of 4	4 Ser. of 4	6'-5" to 10'-11"	3	2'-0" to 4'-3"①	2'-8"	2'-0" to 4'-3"①	145
P503	8	8	16	7'-9"	3	2'-8"	2'-8"	2'-8"	129
P504	4	4	8	29'-8"	Str.				248
P505	2	2	4	24'-2"	Str.				101
P506	2	2	4	18'-8"	Str.				78
P507	6	6	12	6'-0"	Str.				75
P508	40	40	80	3'-10"	2	2'-8"			320
P601	2	2	4	16'-3"	Str.				98
P701	38	38	76	20'-2"	Str.				3133
P801	6	6	12	25'-4"	2	23'-6"			812
P802	20	20	40	10'-10"	2	3'-0"			1157
P1001	38	38	76	9'-1"	3	6'-9"	2'-7½"	0	2370
P1002	2	2	4	29'-8"	Str.				511
P1101	8	8	16	21'-11"	3	19'-7"	2'-8"	0	1863
								TOTAL WEIGHT	13,526

① Varies by 9" increments

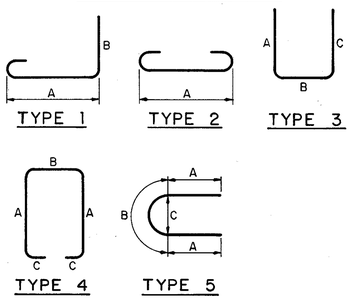
NOTES

REINFORCING SPLICE LENGTHS shall be 1'-4" for #4 bars, 1'-8" for #5 bars and 9'-5" for #11 bars.

NOTATION: E.F. - Each Face

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, splice in accordance with 509.08.

BENDING DIAGRAMS



5/6

RICHLAND ENGINEERING LIMITED
MANSFIELD, OHIO

PIERS

BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK

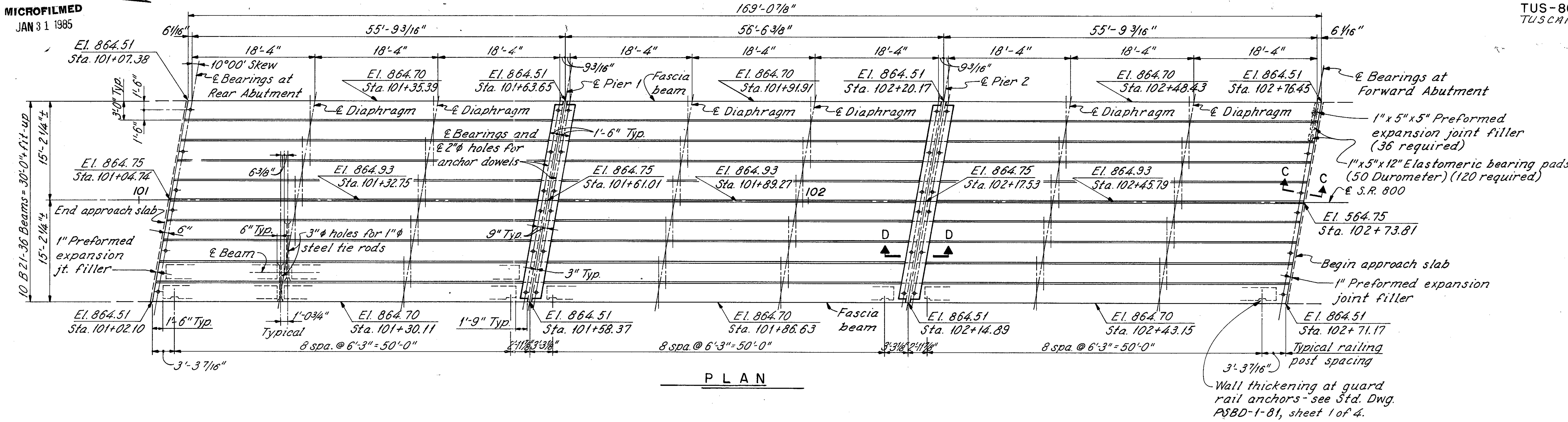
TUSCARAWAS COUNTY S.R. 800

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDN	TWH	WH	RHU	DAP	5/5/82	

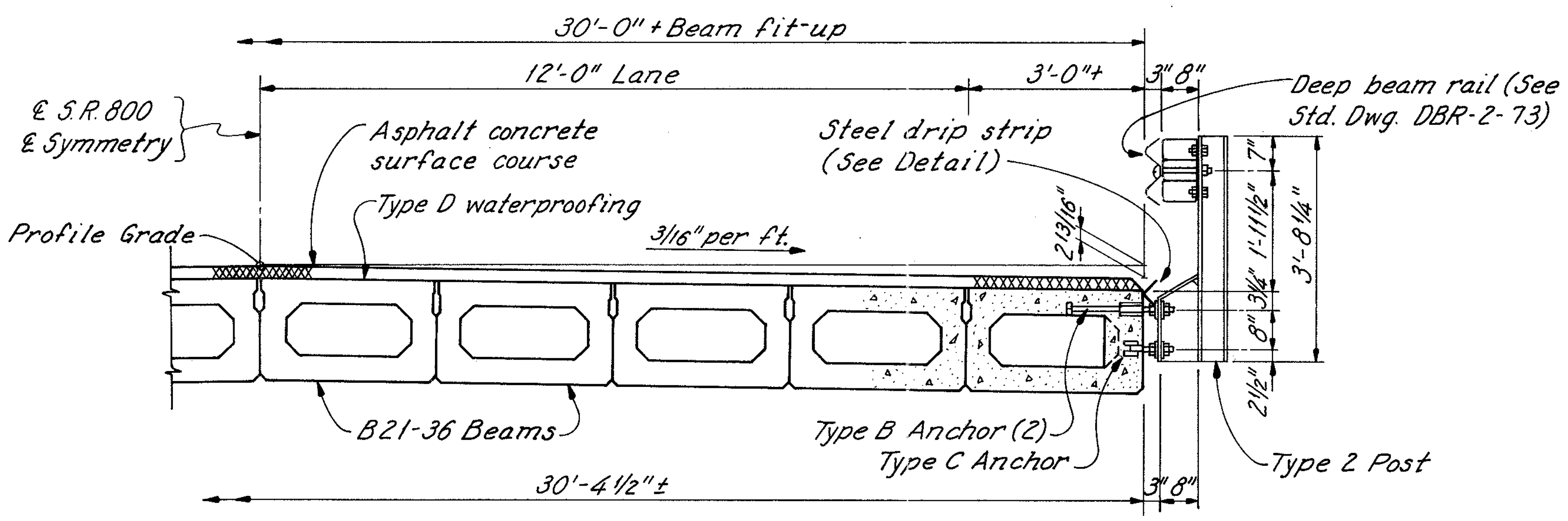
FHWA REGION	STATE	PROJECT	
5	OHIO		

TUS-800-1.92
TUSCARAWAS COUNTY

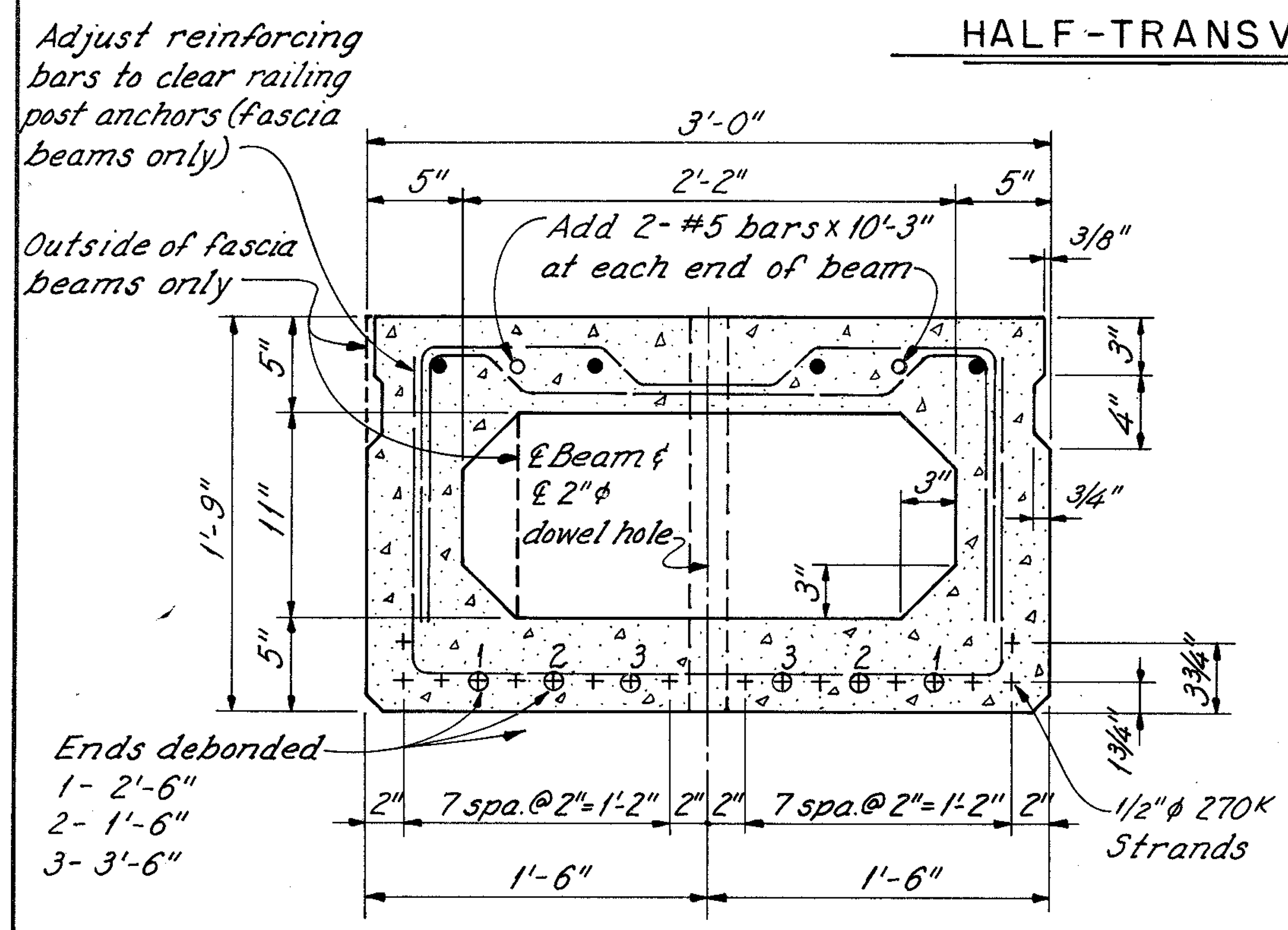
Note: Elevations shown on the Plan are at the top of beam prior to placing asphalt surface course.



PLAN



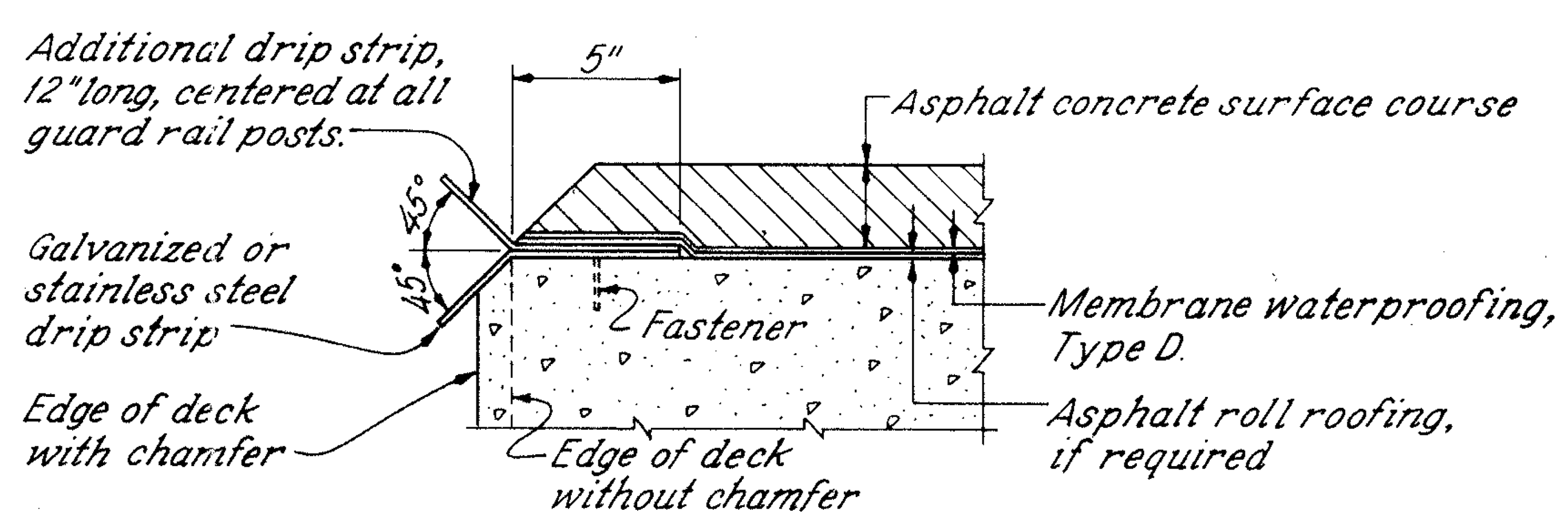
HALF-TRANSVERSE SECTION



Note: See Std. Dwg. PSBD-1-81, sheets 1 and 3 of 4, for reinforcing bars.

TYPICAL BOX BEAM B21-36

DRIP STRIP: Prior to applying deck membrane 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 drive pin and washer. (Length x Shank Dia. x Head Dia.) or #10 galvanized screws and expansion anchors, subject to the approval of the Engineer. The strips shall be placed the full length of the deck, ending at the face of the abutment wingwall. 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 711.02. Stainless steel shall be 20 guage 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.



DRIP STRIP

NOTES

ASPHALT CONCRETE SURFACE COURSE shall consist of a variable thickness of 403 and 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. The second course shall be feathered to place the surface parallel to and 1 1/4" below final pavement surface elevation.

ADDITIONAL DETAILS: See Standard Drawing PSBD-1-81, sheets 1, 2, and 4 of 4 for Beam Lifting Inserts, End Details of Transverse Tie Rod Anchorage, Normal Crown Treatment at ℄ Roadway, Beam Dimensional Tolerances, and Beam Connection Over Piers.

ADDITIONAL NOTES: See Standard Drawing PSBD-1-81, sheet 1 of 4 for notes on Transverse Tie Rods, Galvanizing, Notches, Anchor Dowels, Non-shrinking Mortar and Grout, and Mortaring of Shear Keys.

BEARING PAD SHIMS: Two 1/8" preformed bearing pads per beam shall be provided for use as shims where needed for proper seating of the prestressed beams. Any unused pads shall become the property of the State.

CONCRETE STRESSES: Minimum concrete strength at 28 days $f'c$ = 5500 p.s.i. Minimum concrete strength at time of initial prestress $f'ci$ = 4000 p.s.i.

PRESTRESSING STRANDS, 1/2" dia. 270^K seven-wire, uncoated, stress-relieved strand. A_s = .154 sq. in. Initial Tension = 28,900 lbs. per strand. Tension at release = 26,600 lbs. per strand (Assumed). Final Tension = 21,700 lbs. per strand after all losses. (Assumed)

CALCULATED CAMBER at time of paving, including allowance for camber growth due to creep, is 2 1/4". Calculated deflection due to weight of surface course and railing is 1/4". Net final camber of beams is 2". This is 2" 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" at center of spans to 3 1/4" at ends of spans.

SECTION C-C: See Sheet 2/6

SECTION D-D: See Sheet 5/6

RAILING: See Standard Drawing DBR-2-73.

6/6

RICHLAND ENGINEERING LIMITED
MANSFIELD, OHIO

SUPERSTRUCTURE

BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK

TUSCARAWAS COUNTY S.R. 800

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDN	JLS	JLS	RHU	DAP	5/6/82	

TUSCARAWAS COUNTY, OHIO
RUSH TOWNSHIP, SECTION 25, T-13-N, R-7-W

STATE JOB #	FHWA REGION	STATE	FEDERAL PROJECT NUMBER	
1134-6 (0)	5	OHIO	BRF-56(-6)	

18/19

TUS-800-1.92
TUSCARAWAS COUNTY

RIGHT OF WAY PLAN 1/2

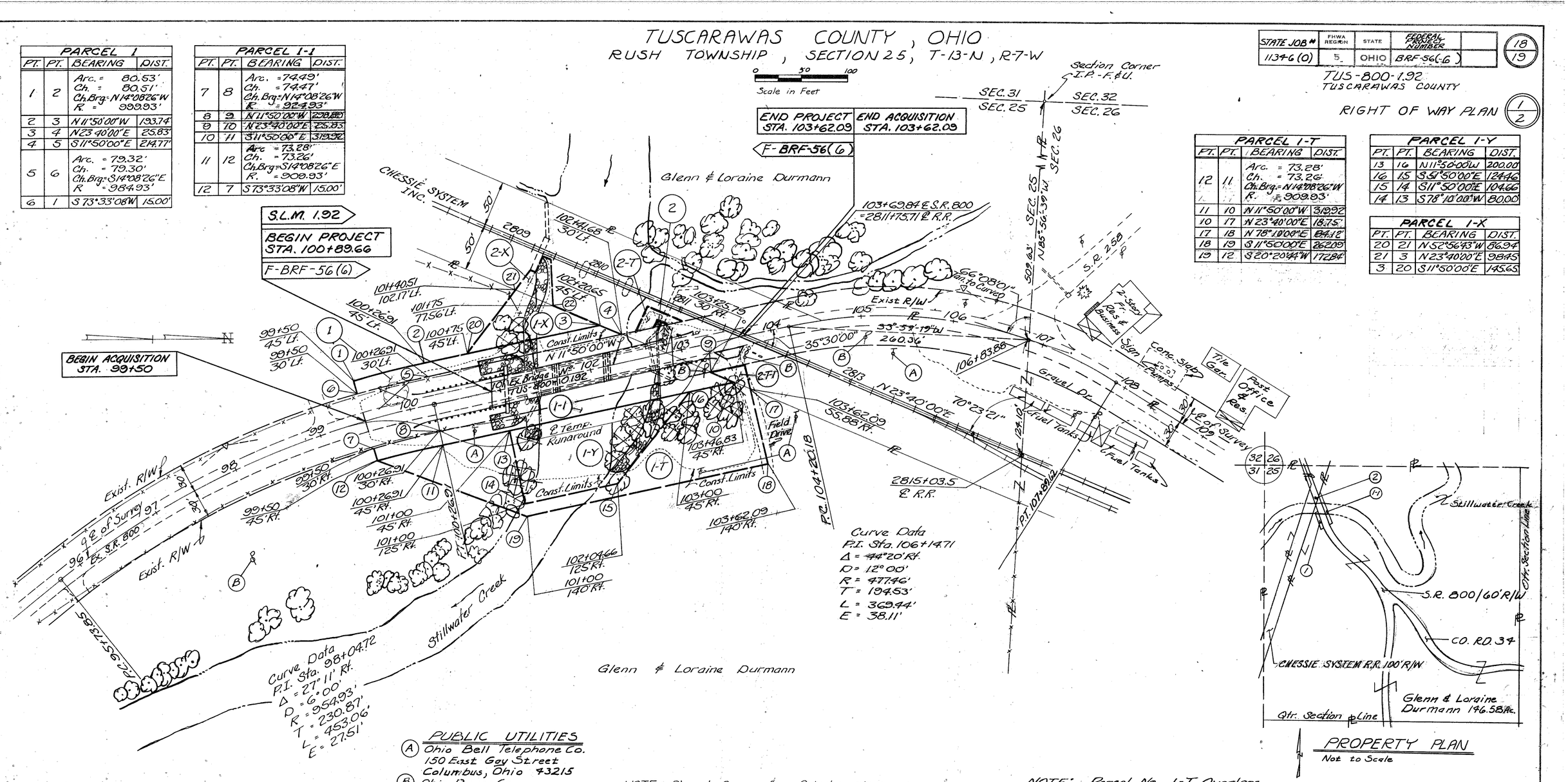
PARCEL 1			
PT.	PT.	BEARING	DIST.
1	2	Arc. = 80.53' Ch. = 80.51' Ch.Brg=N14°08'26"W R. = 999.93'	
2	3	N11°50'00"W	193.74'
3	4	N23°40'00"E	25.83'
4	5	S11°50'00"E	214.77'
5	6	Arc. = 79.32' Ch. = 79.30' Ch.Brg=S14°08'26"E R = 984.93'	
6	1	S73°33'08"W	15.00'

PARCEL 1-1			
PT.	PT.	BEARING	DIST.
7	8	Arc. = 74.49' Ch. = 74.47' Ch.Brg=N14°08'26"W R. = 924.93'	
8	9	N11°50'00"W	299.89'
9	10	N23°40'00"E	25.83'
10	11	S11°50'06"E	319.92'
11	12	Arc = 73.28' Ch. = 73.26' Ch.Brg=S14°08'26"E R. = 909.93'	
12	7	S73°33'08"W	15.00'

PARCEL 1-T			
PT.	PT.	BEARING	DIST.
12	11	Arc. = 73.28' Ch. = 73.26' Ch.Brg=N14°08'26"W R. = 909.93'	
11	10	N11°50'00"W	319.92'
10	17	N23°40'00"E	18.75'
17	18	N78°10'00"E	84.18'
18	19	S11°50'00"E	262.09'
19	12	S20°20'44"W	172.84'

PARCEL 1-Y			
PT.	PT.	BEARING	DIST.
13	16	N11°50'00"W	200.00'
16	15	S35°50'00"E	124.46'
15	14	S11°50'00"E	104.66'
14	13	S78°10'00"W	80.00'

PARCEL 1-X			
PT.	PT.	BEARING	DIST.
20	21	N52°56'43"W	86.94'
21	3	N23°40'00"E	98.45'
3	20	S11°50'00"E	145.65'



PUBLIC UTILITIES

(A) Ohio Bell Telephone Co.
150 East Gay Street
Columbus, Ohio 43215

(B) Ohio Power Co.
301 Cleveland Ave. S.W.
Canton, Ohio 44701

NOTE: Record Area after Outsales minus Total P.R.O. minus Net Take equals Net Residue.

NOTE: Parcel No. 1-T Overlaps 12,186 Sq. Ft. of Parcel No. 1-Y.

SUMMARY OF ADDITIONAL RIGHT OF WAY

TOTAL NO. OWNERS - 2 NO. TOTAL TAKES - 0 TOTAL OWNERS WITH STRUCTURES INVOLVED - 0

PARCEL	OWNER	OWNERS RECORD BOOK	OWNERS RECORD PAGE	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	NET RESIDUE LEFT	NET RESIDUE RIGHT	STRUCTURE	SHEET NO.	REMARKS	TYPE FUND	DATE	COMPLETION DATE 5-14-82
1	Glenn & Loraine Durmann	552	553	146.58Ac.	6.40 Ac.	0.098Ac.	0	0.098Ac.	5.248 Ac.	87.469 Ac.	———	1		State		
1-1						0.132 Ac.	0	0.132 Ac.				1				
1-X						0.096 Ac.	0	0.096 Ac.				1				
1-Y						0.280 Ac.	0	0.280 Ac.				1				
1-T						0.733 Ac.	0	0.733 Ac.				1	Construct Temp. Runaround			
2	Chessie System Inc.	71	17	5.667 Ac.	0.098 Ac.	0.0004 Ac.	0	0.0004 Ac.	4.8816 Ac.	0.707 Ac.	———	1&2				
2-X						0.026 Ac.	0	0.026 Ac.				1&2				
2-T						0.014 Ac.	0	0.014 Ac.				1&2	To Do Necessary Grading			
2-T-1						0.011 Ac.	0	0.011 Ac.				1&2	To Construct Drive & Do Grading			

RIGHT OF WAY PLAN

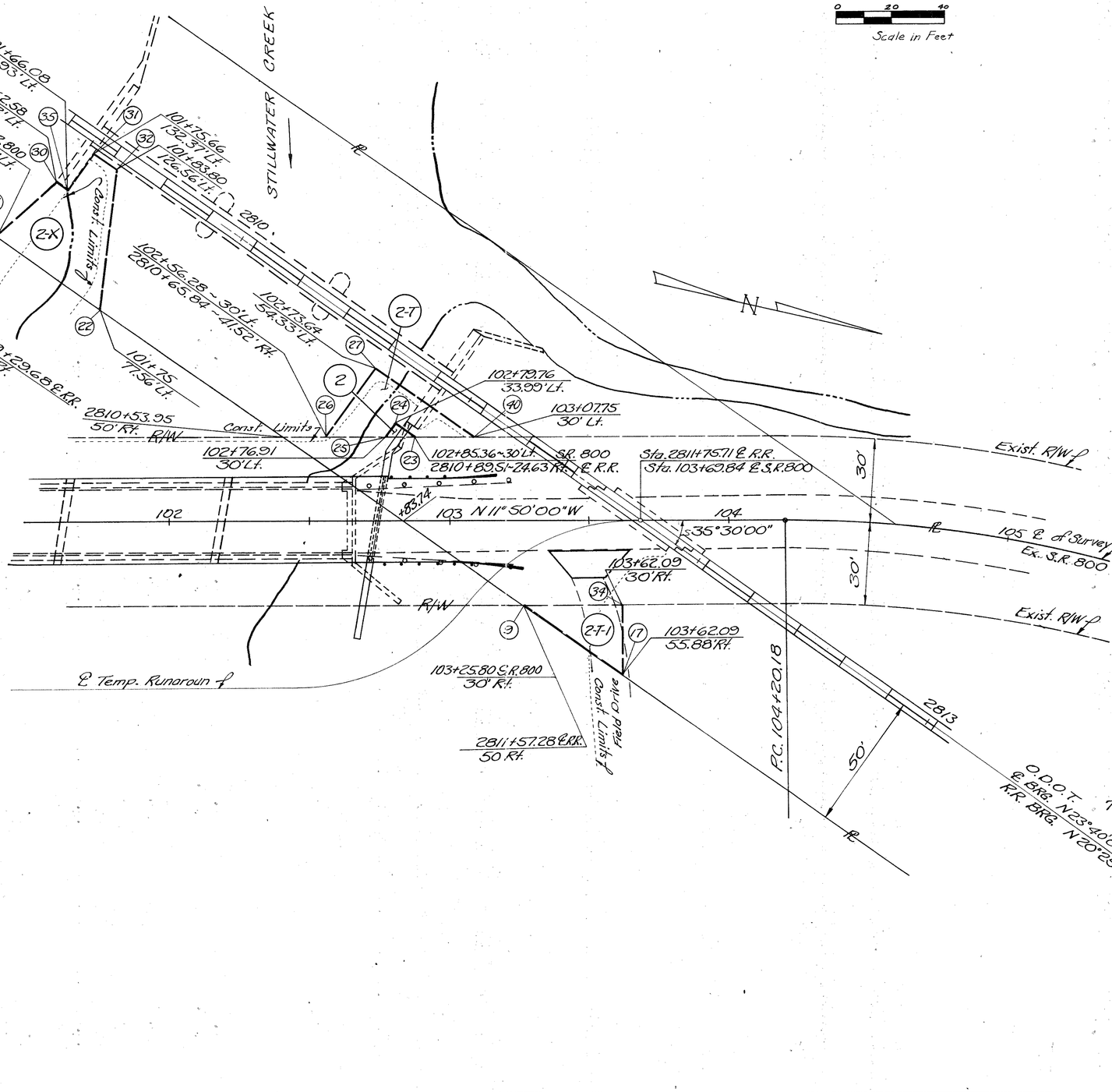
TUSCARAWAS COUNTY, OHIO
RUSH TOWNSHIP, SECTION 25, T-13-N, R-7-W
PROPERTY PLAT - CHESSIE SYSTEM INC. R.R.

State Job #	FHWA REGION	STATE	FEDERAL PROJECT NUMBER		19/19
11346(0)	5	OHIO	BRF-56(6)		

TUS-800-1.92
TUSCARAWAS COUNTY

RIGHT OF WAY PLAN 2/2

0 20 40
Scale in Feet



PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA
2	Highway	17 S.F.
2-X	Channel	1148 S.F.
2-T	Temporary	609 S.F.
2-T-1	Temporary	470 S.F.

NOTE: R.R. Valuation Survey Map Used Was "Right of Way and Track Map V. 22.4-9 Date 6-30-1918".

PARCEL 2			
PT.	PT.	BEARING	DIST.
23	25	S 11° 50' 00" E	8.45'
25	24	N 66° 20' 00" W	4.91'
24	23	N 23° 40' 00" E	6.88'

PARCEL 2-T-1			
PT.	PT.	BEARING	DIST.
9	34	N 11° 50' 00" W	36.29'
34	17	N 78° 10' 00" E	25.88'
17	9	S 23° 40' 00" W	44.58'

PARCEL 2-X			
PT.	PT.	BEARING	DIST.
21	30	N 52° 56' 43" W	29.30'
30	35	N 23° 40' 00" E	4.30'
35	31	N 66° 20' 00" W	16.50'
31	32	N 23° 40' 00" E	10.00'
32	22	N 88° 20' 59" E	49.78'
22	21	S 23° 40' 00" W	42.37'

PARCEL 2-T			
PT.	PT.	BEARING	DIST.
26	27	N 66° 20' 00" W	29.89'
27	40	N 23° 40' 00" E	41.90'
40	23	S 11° 50' 00" E	22.39'
23	24	S 23° 40' 00" W	6.88'
24	25	S 66° 20' 00" E	4.91'
25	26	S 11° 50' 00" E	20.64'

DATE	COMPLETION DATE 5-14-82

RIGHT OF WAY CHESSIE SYSTEM INC. R.R.

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED PORTION OF THE ALLEGHENY PLATEAU REGION, ON THE BROAD FLOODPLAIN OF AND OVER STILLWATER CREEK, IN AN AREA WHERE EXTREMELY DEEP VALLEY AND ALLUVIAL DEPOSITS OVERLIE BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED BETWEEN AUGUST 24 AND 27, 1981.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS ENCOUNTERED INTERVALS OF EXTREMELY LOOSE TO EXTREMELY DENSE STRATIFIED SILTS AND SAND MODIFIED WITH CLAY AND GRAVEL THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH. BORING B-1 (IN THE VICINITY OF THE REAR ABUTMENT) WAS TERMINATED AT 66.5-FOOT DEPTH, ELEVATION 786.5 FEET, AFTER PENETRATING IN EXCESS OF 31.0 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-4 (IN THE VICINITY OF THE FORWARD ABUTMENT) WAS TERMINATED AT 71.5-FOOT DEPTH, ELEVATION 779.5 FEET, AFTER PENETRATING IN EXCESS OF 16.0 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN EITHER OF THE TEST BORINGS PERFORMED.

FREE WATER WAS OBSERVED AND MEASURED IN BORING B-1 AT 4.5-FOOT DEPTH, ELEVATION 848.5 FEET AND IN BORING B-4 AT 8.6-FOOT DEPTH, ELEVATION 842.4 FEET.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y/Z — 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.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constityte driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
	12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm

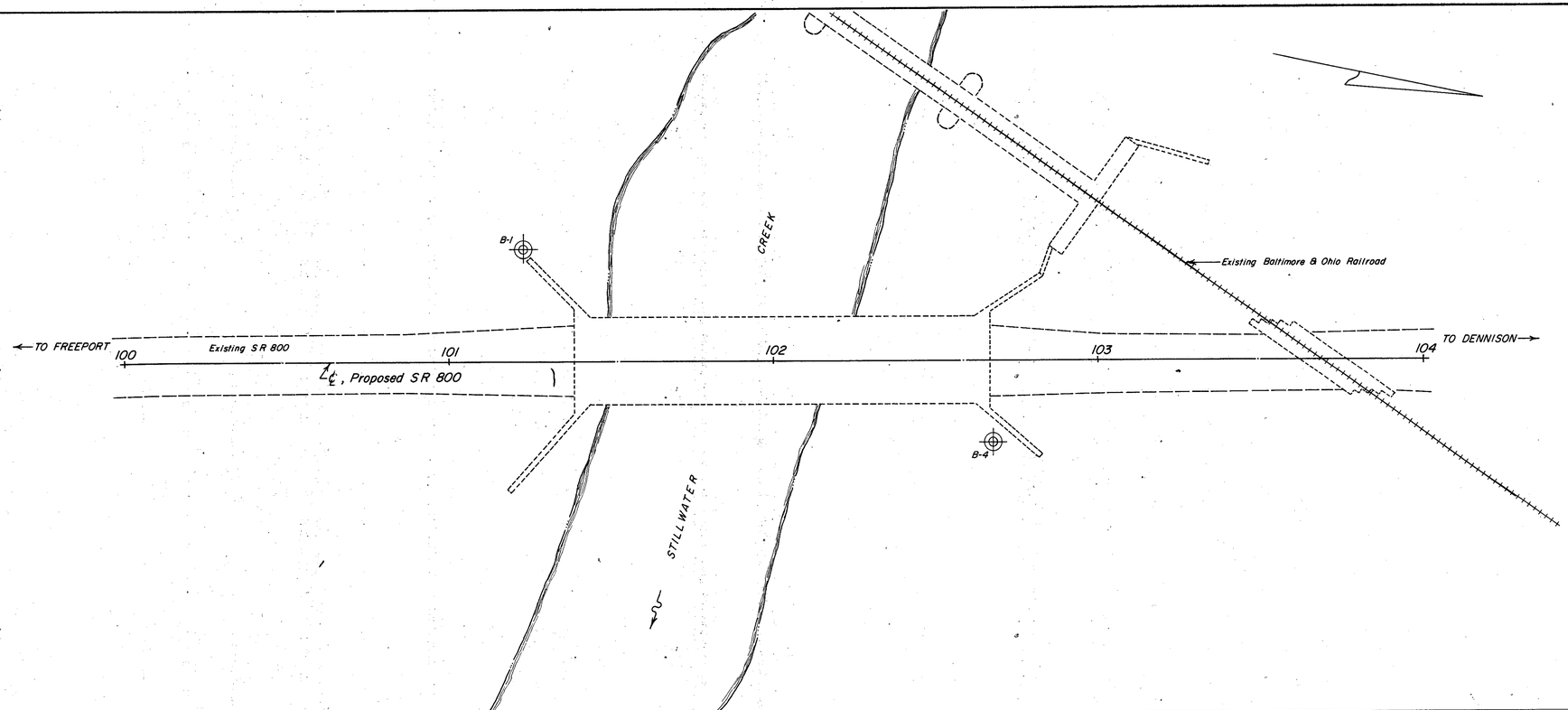
NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN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

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK
SEC. TUS-800-1.80

CHECKED BY	REVIEWED BY	DATE
L. N. L.	R. D. R.	10/13/81

TUS-800-1.80 (2/3)



SCALE: 1" = 20'

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

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK
SEC. TUS-800-1.80

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE

LOG OF BORING

Date Started 8/24/81 Sampler Type SS Dia 1 3/8" Water Elev 848.5'
Date Completed 8/25/81 Casing: Length ____ Dia. ____
Boring No. B-1 Station & Offset 101+23 - 35' LT. (REAR ABUTMENT) Surface Elev 853.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
853.0	0														
850.5	2														
848.0	4	1/3/1			BROWN SANDY SILT	1	0	1	47	26	26	NP	NP	16	A-4a
845.5	6	1(1.5')			BROWN SANDY SILT	2	0	0	56	24	20	NP	NP	33	A-4a
843.0	8	1(1.5')			BROWN-GRAY SANDY SILT	3	0	0	54	23	23	NP	NP	29	A-4a
840.5	10	1(1.5')			BROWN-GRAY SANDY SILT	4	0	0	50	25	25	NP	NP	29	A-4a
838.0	12	1/1 (1.5')			BROWN-GRAY SILTY SAND	5	0	0	60	20	20	NP	NP	32	A-4a
835.5	14	1/1/2			BROWN-GRAY CLAYEY SILT	6	0	0	5	49	46	29	10	26	A-4a
833.0	16	-			NO SAMPLE RECOVERED (SILT HEAVED IN FLIGHTS)	-	-	-	-	-	-	-	-	-	VISUAL
	18	2/4/7			BROWN-GRAY SILT	7	0	0	17	60	23	23	1	27	A-4b
828.0	20														
	22	3/7/11			BROWN-GRAY SANDY SILT	8	0	0	22	55	23	NP	NP	27	A-4b
823.0	24														
	26	4/10/13			BROWN-GRAY SANDY SILT	9	0	1	36	24	39	23	6	27	A-4a
818.0	28														
	30	10/19/21			BROWN-GRAY SANDY SILT	10	0	1	48	20	31	NP	NP	27	A-4a
813.0	32														
	34	6/12/20			BROWN-GRAY SILTY SAND	11	0	1	70	15	14	NP	NP	25	A-3a
808.0	36														
	38	7/12/19			BROWN-GRAY SILTY SAND	12	0	2	75	8	15	NP	NP	24	A-3a
803.0	40														
	42	12/17/26			BROWN-GRAY SILTY SAND	13	0	2	74	11	13	NP	NP	23	A-3a
798.0	44														
	46	17/32/36			BROWN-GRAY SILTY SAND	14	0	6	76	6	12	NP	NP	22	A-3a
793.0	48														
	50	31/36/43			BROWN SILTY SAND	15	0	12	72	6	10	NP	NP	21	A-3a
788.0	52														
786.5	54	10/17/31			GRAY-BROWN SILTY SAND	16	0	4	84	4	8	NP	NP	22	A-3a

BOTTOM OF BORING

LOG OF BORING

Date Started 8-25-81 Sampler Type SS Dia 1 3/8" Water Elev 842.4'
Date Completed 8-27-81 Casing: Length ____ Dia. ____
Boring No. B-4 Station & Offset 102+68 - 25' RT. (FORWARD ABUTMENT) Surface Elev 851.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
851.0	0														
	2														
846.0	4														
	6	1/3/6			BROWN SANDY SILT, GRAVEL AND CINDERS(FILL MATERIAL)	17	31	12	14	24	19	29	6	16	VISUAL
843.5	8	1/1/2			BROWN SAND, SILT AND STONE FRAGMENTS(FILL MATERIAL)	18	43	3	8	23	23	36	13	19	VISUAL
841.0	10	2/4/6			BROWN SILTY CLAY	19	0	0	5	35	60	47	19	33	A-7-6
838.5	12	3/3/3			BROWN CLAY	20	0	0	5	30	65	52	25	33	A-7-6
836.0	14	2/2/3			BROWN-GRAY SILT AND CLAY	21	0	0	19	53	28	29	11	28	A-6a
	16														
831.0	18	3/4/4			BROWN-GRAY SANDY SILT	22	0	3	44	30	23	NP	NP	29	A-4a
	20														
826.0	22	3/3/3			GRAY-BROWN SILT	23	0	7	0	62	31	26	6	28	A-4b
	24														
821.0	26	3/4/9			GRAY-BROWN SANDY SILT	24	0	0	31	49	20	NP	NP	29	A-4a
	28														
816.0	30	12/16/18			BROWN-GRAY SANDY SILT	25	0	0	29	27	34	21	6	30	A-4a
	32														
811.0	34	9/11/14			BROWN-GRAY SANDY SILT	26	0	0	29	33	38	22	6	28	A-4a
	36														
806.0	38	8/7/16			BROWN SILTY SAND	27	0	0	72	15	13	NP	NP	23	A-3a
	40														
801.0	42	5/12/16			BROWN SANDY SILT	28	0	1	41	25	33	NP	NP	28	A-4a
	44														
796.0	46	14/20/24			BROWN-GRAY SILTY SAND	29	0	1	65	17	17	NP	NP	23	A-3a
	48														
791.0	50	19/28/33			GRAY-BROWN SILTY SAND (SAND HEAVING IN FLIGHTS)	30	0	3	72	10	15	NP	NP	20	A-3a
	52														
786.0	54	17/21/27			BROWN-GRAY SILTY SAND	31	0	4	70	13	13	NP	NP	17	A-3a
	56														
781.0	58														
779.5	60	18/19/29			BROWN-GRAY SILTY SAND	32	2	7	70	9	12	NP	NP	19	A-3a

BOTTOM OF BORING

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. TUS-800-0192
OVER STILLWATER CREEK
SEC. TUS-800-1.80

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S. M. G.	L. N. L.	R. D. R.	10/13/81