MICROFILMED
OCT 13 1987

DESIGN DESIGNATION

Current A.D.T. (1984) = 2500
Design Year A.D.T. (2004) = 5250
D.H.V. = 788
D. = 60%
T = 5%
V. = 50 M.P.H.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
COL-39-3.10
WASHINGTON TOWNSHIP
COLUMBIANA COUNTY

MICROFILMED
MAR 26 1992

OHIO	1/22
FHWA REGION 5	
FEDERAL PROJECT	

COL-39-3.10
COLUMBIANA COUNTY

BRF-39 (26)

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed)
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
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

INDEX OF SHEETS

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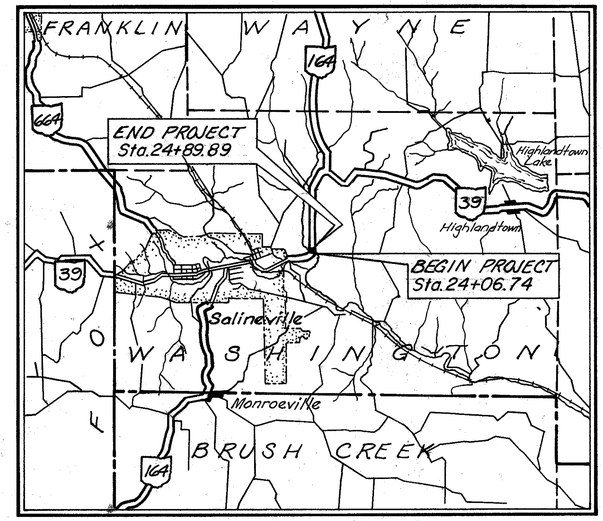
Plan and Profile	7
Cross Sections	8,9
Maintaining Traffic	10-12-12-A, 12-B
Structure Over 20' Span	13-21
Right of Way	22



LOCATION MAP

SCALE IN MILES
0 1 2 3 4

Portion to be improved
State & Federal Routes
Other Roads

1985 SPECIFICATIONS

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

I hereby approve these plans and declare that the making of this improvement will *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 the plans and estimates.*

Approved _____
Date 6/17/85 District Deputy Director of Transportation

Approved _____
Date 7-3-85 Engineer, Bureau of Bridges and Structural Design

Approved _____
Date 11-12-85 Chief Engineer, Planning and Design

Approved _____
Date 11-12-85 Director, Department of Transportation

LINE DATA

Begin Project Sta. 24+06.74
End Project Sta. 24+89.89
Length of Project = 83.15 Lin. Ft. or 0.016 Mi.

Begin Work Sta. 22+88.41
End Work Sta. 26+06.78
Length of Work = 318.37 Lin. Ft. or 0.060 Mi.

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call ··· 800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

SCALES

Plan 0' 50' 100'
Profile: Horizontal 0' 50' 100', Vertical 0' 10' 20'
Cross Section: Horizontal 0' 10' 20', Vertical 0' 10' 20'

SUPPLEMENTAL SPECIFICATIONS			
		961	9-9-83
836	3-12-75		
		847	10-17-83
853	6-26-78	947	10-17-83
861	9-9-83		
956	6-26-78		

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-2	1-11-85				
BP-5	1-11-85				
		AS-1-81	11-27-81		
		DBR-2-73	4-10-73		
GR-1	1-11-85				
GR-2B	2-5-82	PSBD-1-81	9-18-81		
GR-3	1-21-85	ICD-1-82	8-1-84		
GR-3A	2-5-82				
GR-4	2-5-82				
MC-5	6-12-75				
MC-9A	1-11-85				

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

Project: COL-39-3.10
Date of Letting _____ 19__, Contract No. _____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

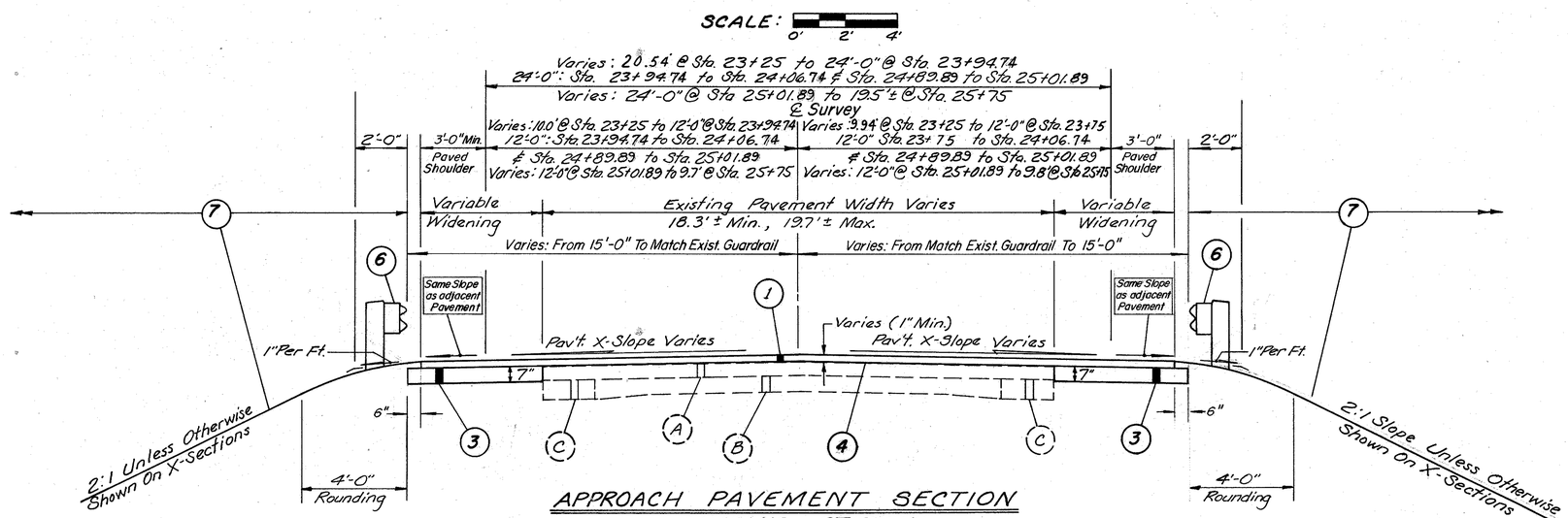
DIVISION ADMINISTRATOR DATE

LD0300 Rev. 1-1-81

FHWA REGION	STATE	PROJECT	
5	OHIO		

COL-39-3.10
COLUMBIANA COUNTY

TYPICAL SECTIONS



APPROACH PAVEMENT SECTION

LIMITING STATIONS

Sta. 23+25.00 Ah to Sta. 24+06.74 = 81.74 Lin. Ft.
Sta. 24+89.89 to Sta. 25+75.00 = 85.11 Lin. Ft.
Total = 166.85 Lin. Ft.

-LEGEND-

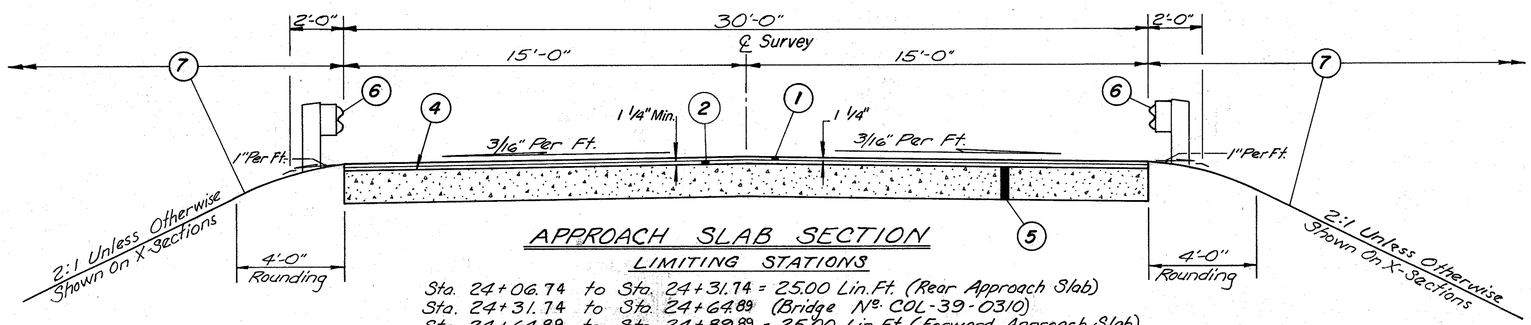
1 — Item 404 Asphalt Concrete, AC-20
2 — Item 403 Asphalt Concrete, AC-20
3 — Item 301 Bituminous Aggregate Base: AC-20; RT-11 or RT-12
4 — Item 407 Tack Coat and cover aggregate
5 — Item 611 Reinforced Concrete Approach Slab (T=15")
6 — Item 606 Guardrail, Type 5
7 — Item 659 Seeding and Mulching

~EXISTING LEGEND~

A — Existing Asphalt Concrete
B — Existing Concrete Base
C — Existing Waterbound Macadam Base

FINISHED PAVEMENT & APPROACH SLAB 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.)	COMMENTS	
SOUTH APPROACH	23+00	—	876.58/9.2'	876.68	876.50/9.9'	—	Meet Existing Pavement	Construct Butt Joint as per BP-5
	+25	—	876.90/9.94'	877.03	876.89/10.6'	—		
	+50	—	877.18/10.68'	877.35	877.17/11.3'	—		+50
	+75	—	877.46/11.42'	877.64	877.45/12.00'	—	End Pavement Taper Rt.	
	23+94.74	—	877.66/12.00'	877.85	877.66/12.00'	877.62	End Pavement Taper Lt.	Normal Crown
REAR APPR. SLAB	24+06.74	—	877.79/12.00'	877.98	—	877.75	Begin Rear Appr. Slab	
	24+31.74	878.00	—	878.23	On Bridge Deck		End Rear Appr. Slab	
Bridge No. COL 39-0310; Sta. 24+31.74 to Sta. 24+64.89 (See Bridge Plans)								
FORWARD APPR. SLAB	24+64.89	On Bridge Deck		878.56	—	878.33	Begin Forward Appr. Slab	
	24+89.89	878.58	—	878.81	878.62/12.00'	—	End Forward Appr. Slab	
NORTH APPROACH	25+01.89	878.70	878.74/12.00'	878.93	878.74/12.00'	—	Begin Pavement Taper	+01.89
	+25	—	879.02/11.27'	879.20	879.08/11.30'	—		
	+50	—	879.24/10.49'	879.48	879.37/10.55'	—		
	+75	—	879.45/9.7'	879.71	879.64/9.8'	—	Meet Existing Pavement	Const. Butt Joint As per BP-5



APPROACH SLAB SECTION

LIMITING STATIONS

Sta. 24+06.74 to Sta. 24+31.74 = 25.00 Lin. Ft. (Rear Approach Slab)
Sta. 24+31.74 to Sta. 24+64.89 (Bridge No. COL-39-0310)
Sta. 24+64.89 to Sta. 24+89.89 = 25.00 Lin. Ft. (Forward Approach Slab)
Total = 50.00 Lin. Ft.

FHWA REGION	STATE	PROJECT	
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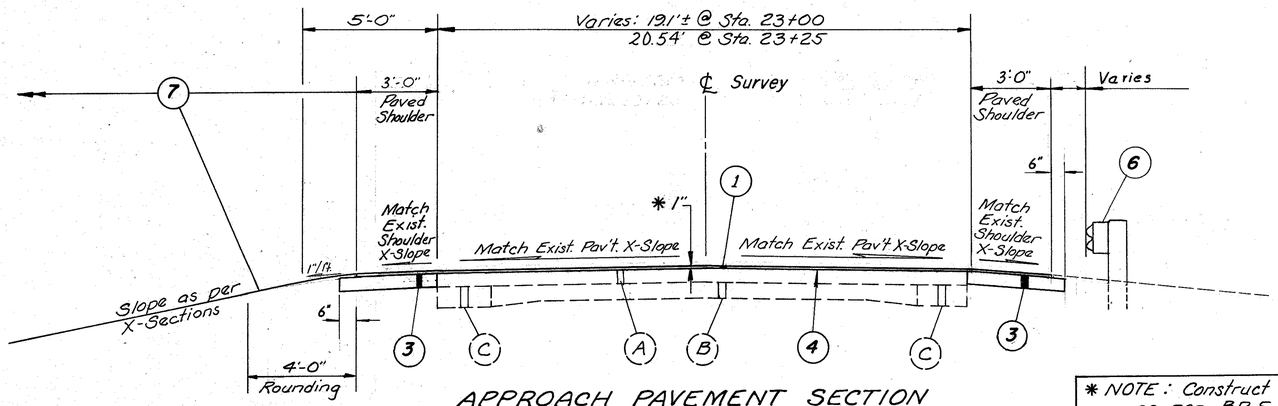
COL-39-3.10
COLUMBIANA COUNTY

TYPICAL SECTION

SCALE: 0' 2' 4'



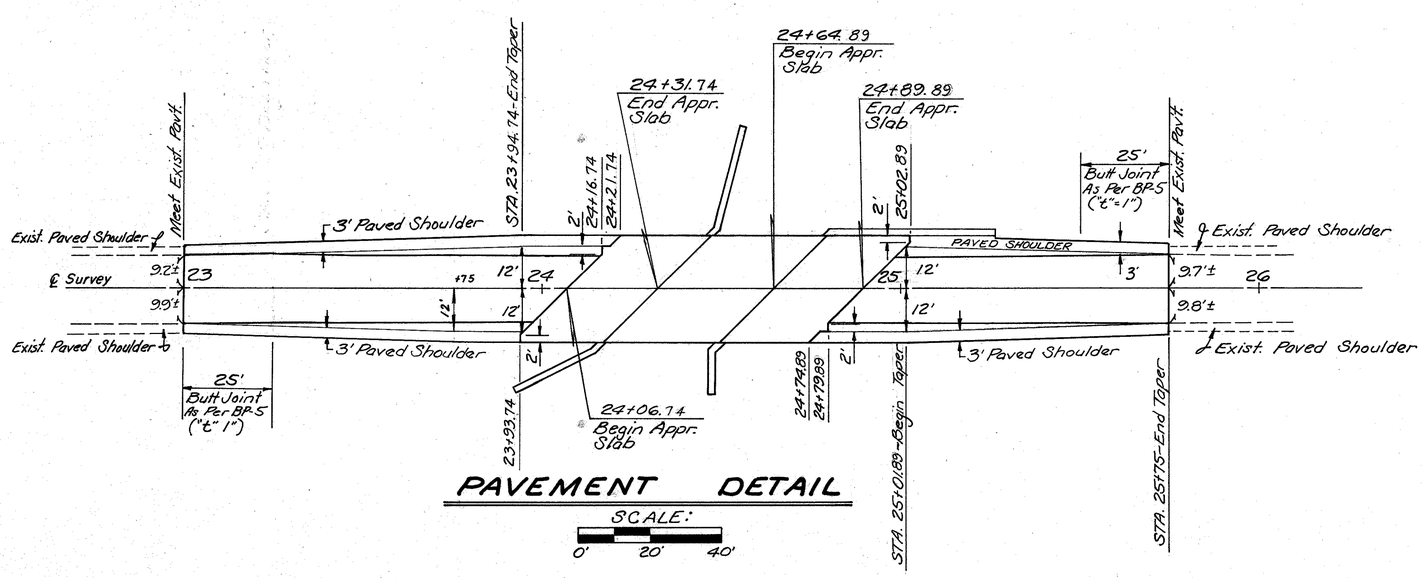
For LEGEND See Sheet Nº 2

APPROACH PAVEMENT SECTION

LIMITING STATIONS

Sta. 23+00 to Sta. 23+25 Bk=25.00 Lin. Ft.

* NOTE: Construct a butt Joint as per BP-5 from Sta. 23+00 to Sta. 23+25 with "t" = 1"



PAVEMENT DETAIL

SCALE: 0' 20' 40'

TYPICAL SECTION AND PAVEMENT DETAIL

GENERAL NOTES

FIELD OFFICE:
The Contractor shall provide a suitable field office having a minimum of 150 sq.ft. of floor space. Payment shall be at the lump sum price bid for Item 619, Field Office.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:
The rounded corners shown on the typical sections, apply to all cross sections even though otherwise shown on the 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 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 quantites 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 soil areas between the work limits as shown on the Cross Sections.

WATERING PERMANENT SEEDED AREAS:
The following estimated quantity is to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas, as per 659.09.

659 Water 1 M.Gal.

TEMPORARY STREAM CROSSING FORDS:
Where stream crossing fords are required for equipment crossings, the following shall apply to the contractors 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.

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.

CLEARING AND GRUBBING:
Although there are no trees and/or stumps specifically marked for removal within the limits of this project, a lump sum quantity has been included in the General Summary for Item 201, Clearing And Grubbing. All provisions as set forth in the specifications under this item shall be followed and all cost shall be included in the lump sum price bid for Item 201, Clearing And Grubbing.

MAINTAINING TRAFFIC:
The Contractor shall maintain traffic at all times in accordance with the requirements of Item 614 by reconstructing the bridge in 2 stages as shown on Sheets Nº 10. One way traffic shall be maintained by use of temporary signals as shown on Sheet Nº 12.
The existing paved shoulder is to be used for Maintaining Traffic during Phase I. Item 404 Bituminous Concrete for Maintaining Traffic has been provided for keeping the paved shoulder in repair.
All signs, drums, barricades, flaggers and lane closures shall be utilized in conformance with the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, current edition, latest revisions.
The following estimated quantities have been carried to the General Summary to be used as required for the purpose of Maintaining Traffic.

ITEM 404 Bituminous Concrete For Maintaining Traffic	5	C.Y.
ITEM Special Railing, Temporary	93.75	L.F.
ITEM 622 Temporary Precast Conc. Barrier, as per plan	200	L.F.

Payment for all the above except Items 404, 622 and Special shall be included in the price bid for Item 614 Maintaining Traffic.

ITEM SPECIAL RAILING, TEMPORARY and ITEM 622 TEMPORARY PRECAST CONCRETE BARRIER, as per plan:

Item Special Railing, Temporary and Item 622 Temporary Precast Concrete Barrier, as per plan have been provided for Maintaining Traffic and are shown on sheet no. 10. The quantities shown are for one phase of Maintaining Traffic only. The Contractor shall utilize the same posts, guardrail and temporary concrete barrier in both phases of the reconstruction. Movement of the rail and concrete barrier between phases shall be accomplished in one working day. Flagmen shall be utilized for protection of vehicular traffic until movement of the rail and concrete barrier is complete and traffic is maintained as per PHASE 2. All costs involved in removing and reinstalling the railing and concrete barrier will be included in the unit price bid for Item Special Railing, Temporary and Item 622 Temporary Precast Concrete Barrier, as per plan.

ITEM SPECIAL-RAILING, TEMPORARY:

Description. This item shall include the furnishing of all materials, labor, equipment and incidentals necessary to construct, erect, move, reinstall and subsequently remove the temporary railing including the grouting of holes drilled into concrete.
The Contractor may utilize used materials such as deep beam rail, posts, mounting plates, bolts, etc. provided they are in good servicable condition and with the approval of the Engineer.
Method of Measurement. The footage shall be the length of railing between the steel box connection on the concrete barrier ends. The connection between the temporary railing and temporary concrete barrier shall not be measured for payment, but is included for payment in the unit price bid for the measured footage.
Basis for Payment. Payment will be made at the contract price bid for Item Special, Lineal ft., Railing, Temporary.

CONSTRUCTION SEQUENCE:

PHASE I

Before starting any bridge construction which requires closing the existing pavement to traffic, all signs, signals, temporary railing and Temporary Concrete Barrier shown for Phase I shall be furnished and installed by the Contractor.

DURING PHASE I

(1) The portion of the existing structure for Phase I as shown on Sh. Nº 14, is to be removed.
(2) The portion of the construction for Phase I as shown on Sh. Nº 19, is to be performed.
(3) The portion of the approach slabs outside the area used for Maintaining Traffic are to be constructed.

Prior to placing the pavement widening and paved shoulder all earth work on the side used in Maintaining Traffic for Phase II shall be completed. All permanent guardrail and the temporary railing and concrete barrier shown for Phase II shall be furnished and erected by the Contractor prior to Maintaining Traffic as per Phase II.

DURING PHASE II

(1) The portion of the existing structure for Phase II is to be removed.

(2) The portion of the construction for Phase II as shown on Sh. Nº 19, is to be performed.
(3) The approach slabs are to be completed.

In addition all remaining earthwork is to be completed and all remaining permanent guardrail shall be furnished and erected by the Contractor prior to removing temporary railing, temporary concrete barrier, signs and signals.

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

Ohio Edison Company
76 South Main St.
Akron, Ohio 44308
Phone 216/384-5100

GUARDRAIL REMOVED FOR SALVAGE:
Guardrail designated to be removed for storage shall be removed and stored in accordance with 202.07 and will be picked up by State Forces.

614 WORK ZONE PAVEMENT MARKINGS

COL-39-3.10
COLUMBIANA COUNTY

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 MARKINGS 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	QUANTITY
614	*MILE*	*TEMPORARY CENTER LINES CLASS I, 947.03 TYPE C*	*0.06*
614	MILE	TEMPORARY CENTER LINES, CLASS II	0.08
614	*LIN.FT.*	*TEMPORARY STOP LINES, CLASS I, 947.03 TYPE C*	*24*

Permanent Pavement Markings Shall Be Installed By O.D.O.T. 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.
Item 614 Temporary Center Lines, Class II Is For Use As Directed By The Engineer.
The Road Shall Not Be Opened To Traffic Without Either The Permanent Or Temporary Pavement Markings In Place.

CALC. BY	CHK'D. BY
W.F.P. 9-11-84	S.H.G. 10-2-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

6/22

COL-39-3.10
COLUMBIANA COUNTY

CALCULATIONS

ITEM 203 SUBGRADE COMPACTION

UNDER APPROACH SLABS
2x25'x30'÷9=166.7 SQ. YDS.
TOTAL ITEM 203 SUBGRADE COMPACTION =167 SQ. YDS.

ITEM 301

Station To Station	Side	Length x Av. Width x Thickness ÷ 27	= Cu. Yds.
23+00.00 To 23+94.74	Lt.	94.74' x $\left(\frac{3.5'+6.5'}{2}\right)$ x 0.5833' ÷ 27	= 10.2
23+94.74 To 24+18.74	Lt.	24' x 6.5' x 0.5833' ÷ 27	= 3.4
23+00.00 To 23+94.74	Rt.	94.74' x $\left(\frac{3.5'+6.1'}{2}\right)$ x 0.5833' ÷ 27	= 9.8
24+77.39 To 25+01.89	Rt.	24.50' x 6.2' x 0.5833' ÷ 27	= 3.3
25+01.89 To 25+75.00	Rt.	73.11' x $\left(\frac{6.2'+3.5'}{2}\right)$ x 0.5833' ÷ 27	= 7.7
25+01.89 To 25+75.00	Lt.	73.11' x $\left(\frac{6.5'+3.5'}{2}\right)$ x 0.5833' ÷ 27	= 7.9
		TOTAL	= 42.3

TOTAL ITEM 301 BITUMINOUS AGGREGATE BASE = 42 Cu. Yds.

ITEM 403 ASPHALT CONCRETE

	Station To Station	Length x Width x Av. Thickness ÷ 27	= Cu. Yds.
ON APPROACH SLAB	24+06.74 To 24+31.74	25' x 30' x $\left(\frac{0.1042'+0.1667'}{2}\right)$ ÷ 27	= 3.8
	24+64.89 To 24+89.89	25' x 30' $\left(\frac{0.1667'+0.1042'}{2}\right)$ ÷ 27	= 3.8
		TOTAL	= 7.6

TOTAL ITEM 403 ASPHALT CONCRETE = 8 Cu. Yds.

ITEM 404 ASPHALT CONCRETE

	Station To Station	Length x Av. Width x Av. Thickness ÷ 27	= Cu. Yds.
	23+00.00 To 23+25.00	25' x $\left(\frac{25.1'+26.54'}{2}\right)$ x 0.0833' ÷ 27	= 2.0
	23+25.00 To 23+75.00	50' x $\left(\frac{26.54'+29.42'}{2}\right)$ x 0.14' ÷ 27	= 7.3
	23+75.00 To 23+94.74	19.74' x $\left(\frac{29.42'+30'}{2}\right)$ x 0.14' ÷ 27	= 3.0
	23+94.74 To 24+21.74	$\left(\frac{27'+0}{2}\right)$ x 27' x 0.14' ÷ 27	= 1.9
ON APPROACH SLAB	24+06.74 To 24+31.74	25' x 30' x 0.1042' ÷ 27	= 2.9
ON APPROACH SLAB	24+64.89 To 24+89.89	25' x 30' x 0.1042' ÷ 27	= 2.9
	24+89.89 To 25+75.00	85.11' x $\left(\frac{30'+25.5'}{2}\right)$ x 0.12' ÷ 27	= 10.5
		TOTAL	= 30.5

TOTAL ITEM 404 ASPHALT CONCRETE = 31 Cu. Yds.

ITEM 407

AREA

	Station To Station		Sq. Yds.
	23+00.00 To 23+25.00	25' x $\left(\frac{19.1'+19.7'}{2}\right)$ ÷ 9	= 53.89
	23+25.00 To 24+06.74	81.74' x $\left(\frac{19.7'+18.4'}{2}\right)$ ÷ 9	= 173.02
ON APPROACH SLAB	24+06.74 To 24+31.74	25' x 30' ÷ 9	= 83.33
ON APPROACH SLAB	24+64.89 To 24+89.89	25' x 30' ÷ 9	= 83.33
	24+89.89 To 25+75.00	85.11' x $\frac{18.3'+19.5'}{2}$ ÷ 9	= 178.73

TOTAL AREA FOR ITEM 407 = 572.30 Sq. Yds.

ITEM 407 TACK COAT
572.30 Sq. Yds. x 0.10 Gal./Sq. Yd. = 57.2 Gals.
TOTAL ITEM 407 TACK COAT = 57 GALS

ITEM 407 COVER AGGREGATE
572.30 Sq. Yds. x 7 Lbs./Sq. Yd. ÷ 2000 = 2.0 Tons
TOTAL ITEM 407 COVER AGGREGATE = 2 TONS

ITEM 659 COMMERCIAL FERTILIZER
454 Sq. Yd. x (20 Lbs./1000 Sq. Ft.) x 9 ÷ 2000 = 0.04 Ton
TOTAL ITEM 659 COMMERICAL FERTILIZER = 0.04 TON

ITEM 659 AGRICULTURAL LIMING
454 Sq. Yd. x (100 Lbs./1000 Sq. Ft.) x 9 ÷ 2000 = 0.20 Ton
TOTAL ITEM 659 AGRICULTURAL LIMING = 0.20 TON

EARTHWORK AND SEEDING				
STATION		EXCAVATION	EMBANKMENT	SEEDING
FROM	TO	Cu. Yds.	Cu. Yds.	Cu. Yds.
23+25	26+00	50	127	454

GENERAL SUMMARY

TOTALS FROM SHEET NUMBERS 4	5	6	7			ITEM	TOTAL	UNIT	DESCRIPTION
									ROADWAY
LUMP						201	LUMP		CLEARING AND GRUBBING
			89			202	89	SQ. YD.	PAVEMENT REMOVED
			537.5			202	537.5	LIN. FT.	GUARDRAIL REMOVED FOR STORAGE
		50				203	50	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
		127				203	127	CU. YD.	EMBANKMENT
		167				203	167	SQ. YD.	SUBGRADE COMPACTION
5						404	5	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
93.75						SPECIAL	93.75	LIN. FT.	RAILING, TEMPORARY
			425			606	425	LIN. FT.	GUARDRAIL, TYPE 5
			1			606	1	EACH	ANCHOR ASSEMBLY, STANDARD TYPE A
			4			606	4	EACH	BRIDGE TERMINAL ASSEMBLY, STANDARD TYPE B
200						622	200	LIN. FT.	TEMPORARY PRECAST CONCRETE BARRIER, AS PER PLAN
	0.06					614	0.06	MILE	TEMPORARY CENTER LINES, CLASS I, 947.03 TYPE C
	0.08					614	0.08	MILE	TEMPORARY CENTER LINES, CLASS II
	24					614	24	LIN. FT.	TEMPORARY STOP LINES, CLASS I, 947.03 TYPE C
									EROSION CONTROL
			60			601	60	LIN. FT.	PAVED GUTTER, STANDARD TYPE 1-2
		454				659	454	SQ. YD.	SEEDING AND MULCHING
1						659	1	M-GAL.	WATER
		0.04				659	0.04	TON	COMMERCIAL FERTILIZER
		0.20				659	0.20	TON	AGRICULTURAL LIMING
			44			601	44	CU. YD.	ROCK CHANNEL PROTECTION TYPE B, WITHOUT FILTER
			20			660	20	SQ. YD.	SODDING
									PAVEMENT
		42				301	42	CU. YD.	BITUMINOUS AGGREGATE BASE: AC-20; RT-11 or RT-12
		8				403	8	CU. YD.	ASPHALT CONCRETE, AC-20
		31				404	31	CU. YD.	ASPHALT CONCRETE, AC-20
		57				407	57	GAL.	TACK COAT
		2				407	2	TON	COVER AGGREGATE
			167			611	167	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")
									BRIDGE Nº COL-39-3.10, OVER LITTLE YELLOW CREEK FOR QUANTITIES SEE SHEET NO. 14
LUMP						614	LUMP		MAINTAINING TRAFFIC
LUMP						619	LUMP		FIELD OFFICE
						623	LUMP		CONSTRUCTION LAYOUT STAKES
						624	LUMP		MOBILIZATION

MICROFILMED
OCT 13 1987

QUANTITIES	
Calc. W.F.P.	Chkd. S.H.G.
Date: 9-11-84	Date: 10-2-84

F.H.W.A. REGION	STATE	PROJECT		
5	OHIO			

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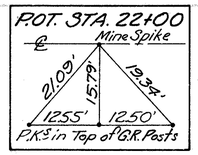
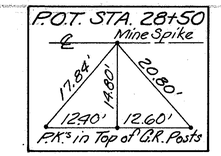
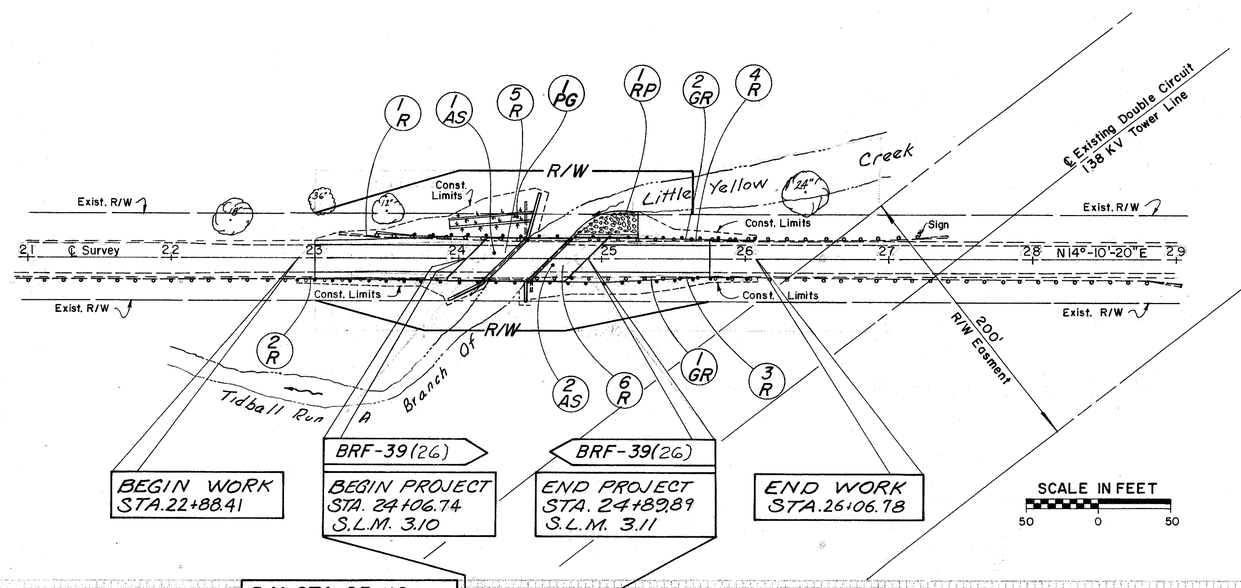
22

COL-39-3.10
COLUMBIANA COUNTY



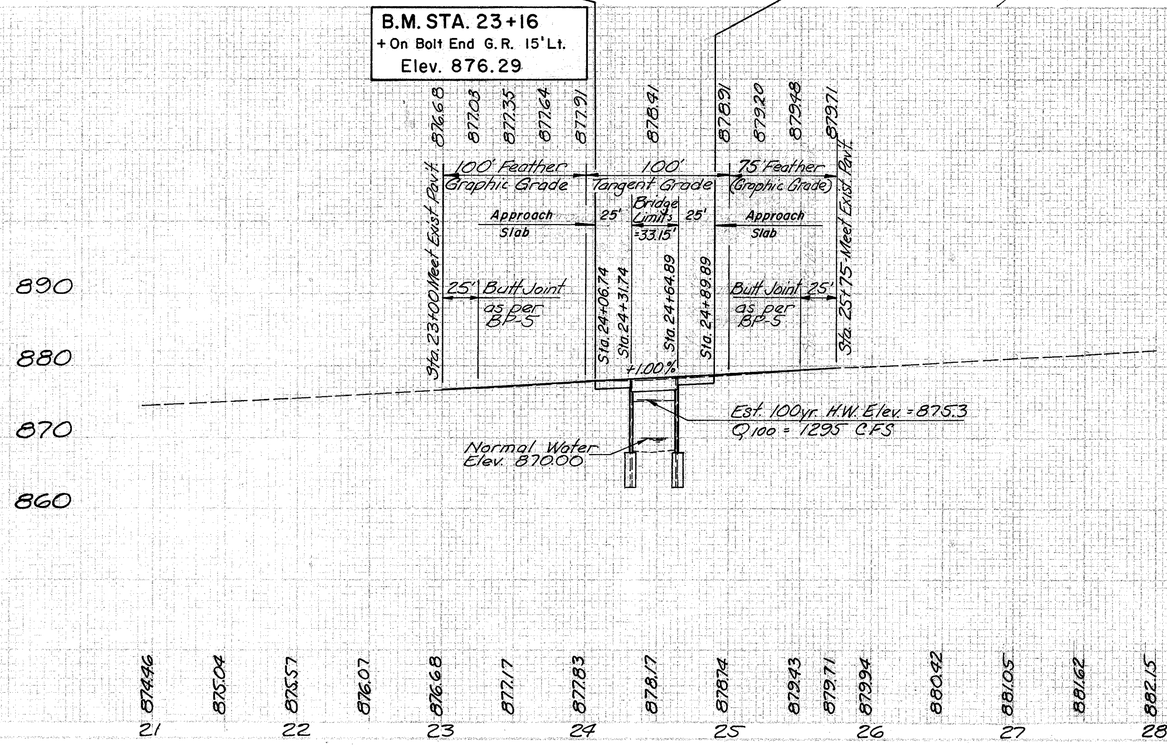




* 312.50 L.F. – 37.50 L.F. (Br. Railing) = 275 L.F. ≠ 237.50 L.F. – 87.50 L.F. (Br. Railing) = 150 L.F.

QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 Guardrail Removed For Storage (Lin. Ft.)	202 Pavement Removed (Sq. Yds.)	601 Rock Channel Protection Type B W/O Filter (Cu. Yds.)	601 Paved Gutter Std. Type I-2 (Lin. Ft.)	660 Sodding (Sq. Yds.)				606 Guardrail Type 5 (Lin. Ft.)	606 Bridge Term. Assembly Type B (Each)	606 Anchor Assembly Type A (Each)		611 Reinforced Concrete Approach Slab T=15" (Sq. Yds.)
1-R	23+18± to 24+43±	Lt.	125												
2-R	22+88.41 to 24+20±	Rt.	131.25												
3-R	24+50± to 26+00±	Rt.	150												
4-R	24+75.50 to 26+06.78	Lt.	131.25												
5-R	24+06.74 to 24+31.74 ±	℄		44.4											
6-R	24+64.89 ± to 24+89.89	℄		44.4											
1-RP	24+80.± to 25+26	Lt.			44										
1-GR	22+88.41 to 26+00.91	Rt.									*275	2			
2-GR	23+44.28 to 26+06.78	Lt.									≠150	2	1		
1-PG	23+93 to 24+53±	Lt.				60	20								
1-AS	24+06.74 to 24+31.74	℄													83.3
2-AS	24+64.89 to 24+89.89	℄													83.3
	TOTALS		537.5	88.8	44	60	20				425	4	1		166.6



CALCULATIONS

5 – R	ITEM 202	Pavement Removed = 16'x25'÷9	= 44.4	S.Y.
6 – R	ITEM 202	Pavement Removed = 16'x25'÷9	= 44.4	S.Y.
1 – AS	ITEM 611	Reinforced Concret Approach Slab=25'x30'÷9	= 83.3	S.Y.
2 – AS	ITEM 611	Reinforced Concret Approach Slab=25'x30'÷9	= 83.3	S.Y.
1 – PG	ITEM 660	Sodding = 2x1.5'x60'÷9	= 20	S.Y.
1 – RP	ITEM 601	Rock Channel Protection, Type B Without Filter = 600 S.F.x2'÷27	= 44	C.Y.

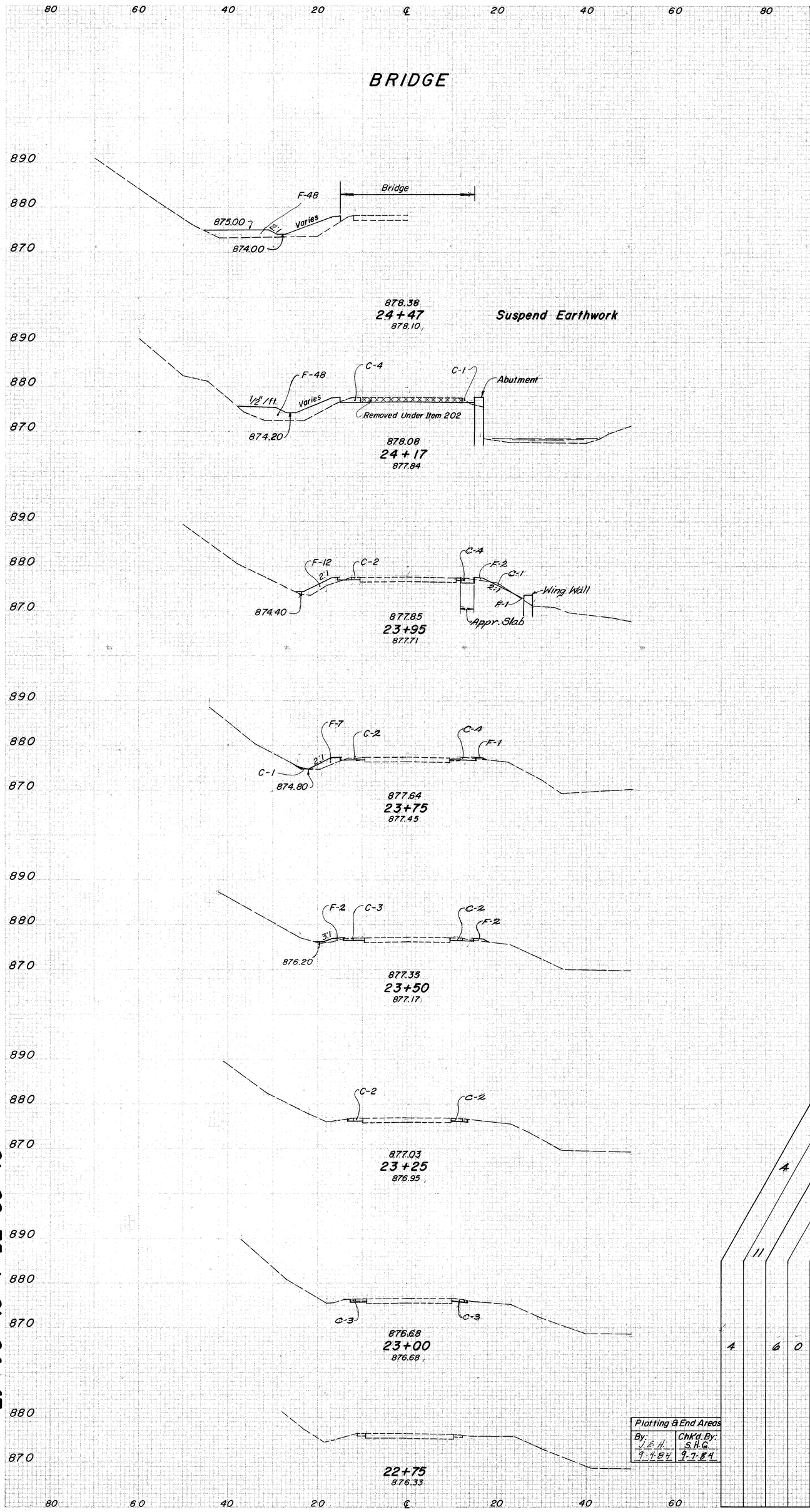
EXISTING STRUCTURE DATA

TYPE: Concrete Beam
SPAN: 32'
ROADWAY: 24'
ALIGNMENT: Tangent
SKEW ANGLE: 45° Left Forward
CONDITION: Poor
SUFF. RATING: 25.8 S.D.

PROPOSED STRUCTURE

TYPE: Prestressed non-composite Concrete Box Beam
SPAN: 31'-6" c/c Bearings
ROADWAY: 30'-0" f/f Guardrail
LOADING: HS-20-44 and Alternate Military Loading
SKEW ANGLE: 45° Left Forward
ALIGNMENT: Tangent
SUPERELEVATION: None
WEARING SURFACE: 2½" min. Asphalt Concrete
APPROACH SLABS: AS-1-81 (25' long)

PLAN AND PROFILE



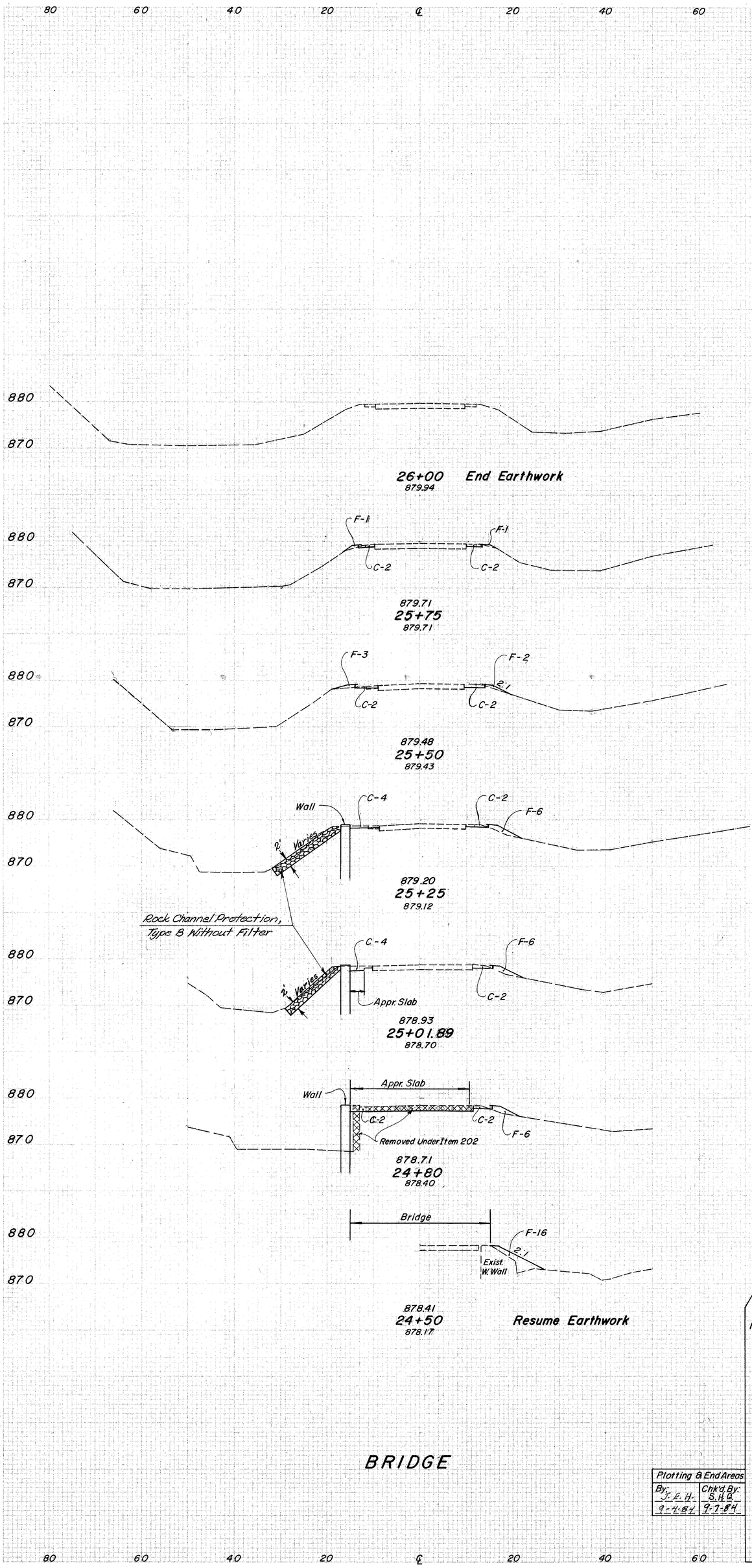
Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
32		0	48		
	97			3	53
26		5	48		
	62			5	26
25		7	15		
	47			5	9
19		7	8		
	40			6	6
12		5	4		
	22			4	2
4	4	0			
11	5	0			
4	6	0			

Plotting & End Areas

By:	Chk'd By:
J.E.H. 9-1-84	S.H.G. 9-7-84

COL-39-3.10
COLUMBIANA COUNTY

Sta. 22+75 to Sta. 24+47



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
4		0	0		
	17			2	1
8		4	2		
	33			4	3
16		4	5		
	36			5	5
10		6	6		
	26			5	5
10		6	6		
	23			4	5
9		4	6		
40		2	12		
15		0	16		

Sta. 24+50 to Sta. 26+00

BRIDGE

Plotting & End Areas	
By: J.F.H. 9-7-84	Chk'd By: S.H.Q. 9-7-84

COL-39-3.10
COLUMBIANA COUNTY

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CALC. BY	CHKD. BY
W.F.R.	S.H.G.
9-11-84	10-2-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

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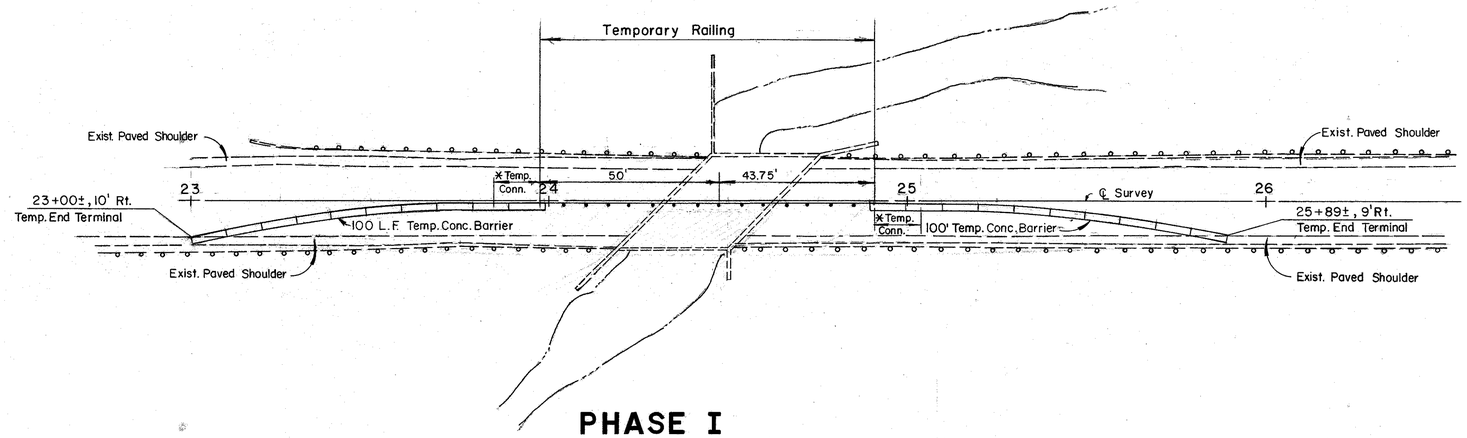
22

COL-39-3.10
COLUMBIANA COUNTY



PHASE I

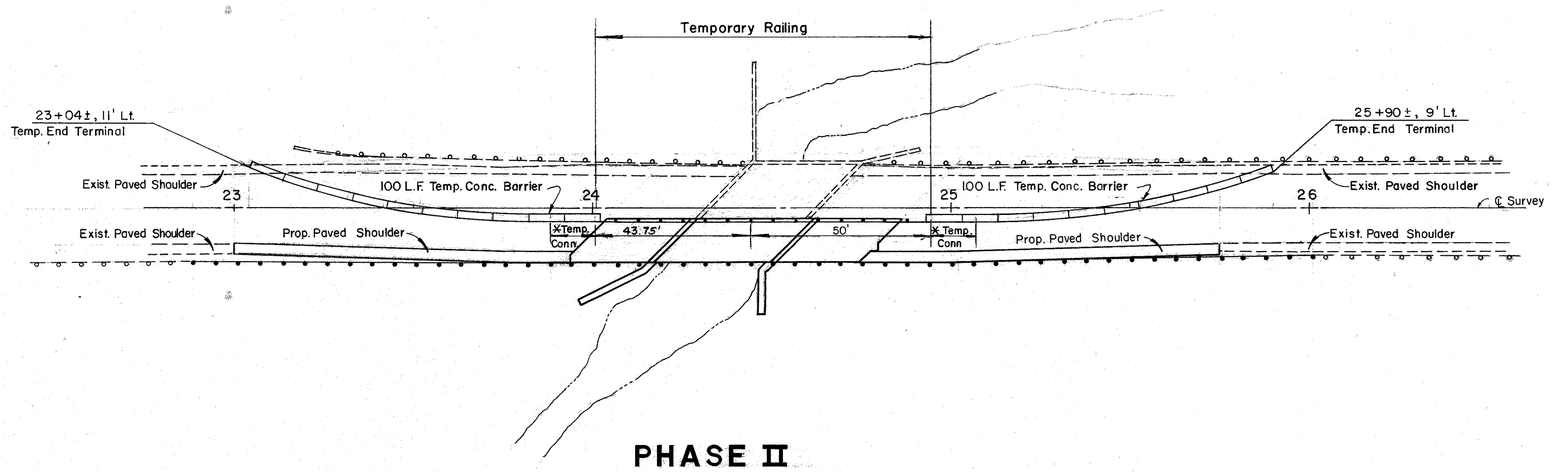
SCALE IN FEET
20 0 20

The following quantities have been carried to sh. no. 4 for Maintaining Traffic.

ITEM SPECIAL Railing, Temporary, as per plan	93.75	L.F.
ITEM 622 Temp. Precast Concrete Barrier, as per plan	200	L.F.
ITEM 404 Bituminous Concrete For Maintaining Traffic	5	C.Y.

For mounting details of Item Special Railing, Temporary, as per plan and Phase Construction details see Sh. № 14, 19 & 20

* For details showing the connection between the Temporary Railing and the Temporary Concrete Barrier see Sh. № 11.



PHASE II

SCALE IN FEET
20 0 20

MAINTAINING TRAFFIC PLAN

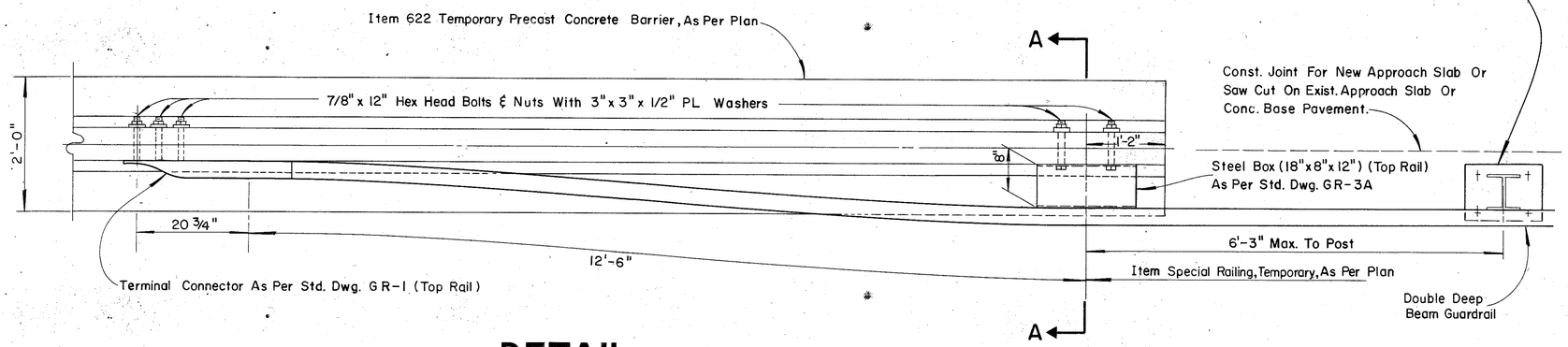
FHWA REGION	STATE	PROJECT	
5	OHIO		

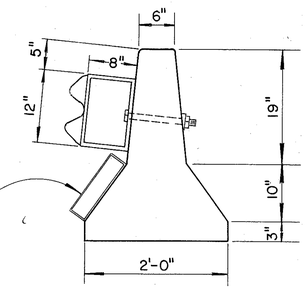
11/22

COL-39-3.10
COLUMBIANA COUNTY

Same Detail As Phase I Temporary Guardrail And Guardrail Posts On Sheet Nº 20, Except No Anchor Plate Is Needed And Self Drilling Anchors Substituted For The 7/8" Bolts.

All Holes Left In The Concrete After The Anchors Are Removed Shall Be Filled With Cement Grout.





SECTION A-A

DETAIL

Connector Between Temporary Railing and Temporary Concrete Barrier

Fasten Bottom Rail To Concrete Barrier With A Terminal Connector And Self Drilling Anchors As Shown On Std. Dwg. GR-1.

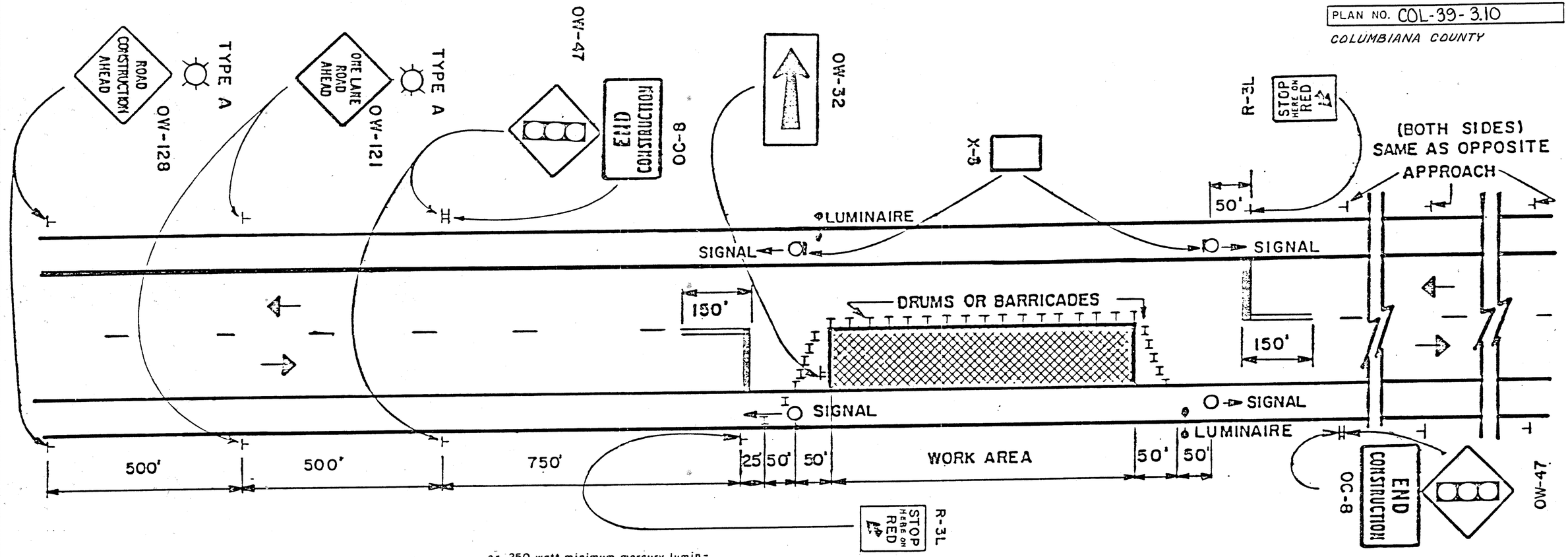
Cost Of All Material And Installation Of The Connector Between The Temporary Railing And Temporary Concrete Barrier Shall Be Included In The Unit Price Bid For Item Special Railing Temporary, As Per Plan.

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

12/22

PLAN NO. COL-39-3.10

COLUMBIANA COUNTY



GENERAL NOTES:

1. The maximum length of work area for one way traffic signal control is determined by the capacity required to handle the peak hour demand. Practical maximum length is 400 feet. Signal timing changes shall be approved by the Engineer.
2. Signals shall be installed and operated in accordance with the requirements of Part 6 of the Ohio Manual of Uniform Traffic Control Devices.
3. Drums or barricades shall be spaced at 50' to 60' center to center within the work area. Drums or barricades on the advance and return tapers shall be spaced at 10' center to center.
4. Adequate area illumination to clearly identify both ends of the work area at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to one signal for each direction of traffic. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearence shall be a minimum of 15 feet above the pavement. Lighting material shall comply with Specification 625.
5. Twenty-four (24) inch stop lines shall be installed and where no passing lines are not already in place they shall be added. Removable pavement markings may be used. Existing conflicting pavement markings and raised pavement marker reflectors between the work area and the stop line shall be removed. After completion of the work the stop lines and added no passing lines shall be removed in accordance with 621.134 and the raised pavement marker reflectors shall be replaced in kind.
6. The Type A flashing barricade warning lights shown on the "Road Construction Ahead" and the "One Lane Road Ahead" signs are required whenever a night lane closure is necessary.
7. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 3.
8. The horizontal or vertical alignment of the roadway may require adjustments in the location of the advance warning signs (the distances shown for advance warning sign spacings are minimums). The vertical alignment of the roadway may require adjustments in the height of the signal heads within the range specified in the Typical Pole Supported Signal Detail.
9. All traffic signals and equipment used in this traffic signal installation, such as a signal cable and signal heads, shall be in conformance with Specifications 632 and 732. However, the performance test provision noted in Specification 632.27, paragraph 6 and the working drawing requirements of 632.03 are waived. The controller, flashers, load switches, conflict monitor and other controller accessories shall comply with Supplemental Specifications 861 and 961, except that the requirements of 861.03 and 861.05 are waived, as well as the requirements of 961.01 for expansible three dial units and twelve circuits for pretimed controllers. Used equipment meeting current ODOT Specifications is acceptable.

   Conflict monitors shall be furnished at all locations unless an electromechanical pretimed controller with cam shaft is provided.
10. When the signal is changed to a flash condition either manually or automatically, red shall be flashed to both approaches.

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING
1 LANE OF A 2 LANE
HIGHWAY

(A)

DATE
12/82
3/84
4/85

DR. | CK.

7G-2

PLAN NO. COL-39-3.10	FED. RD. DIVISION	STATE	PROJECT	
COLUMBIANA COUNTY	5	OHIO		

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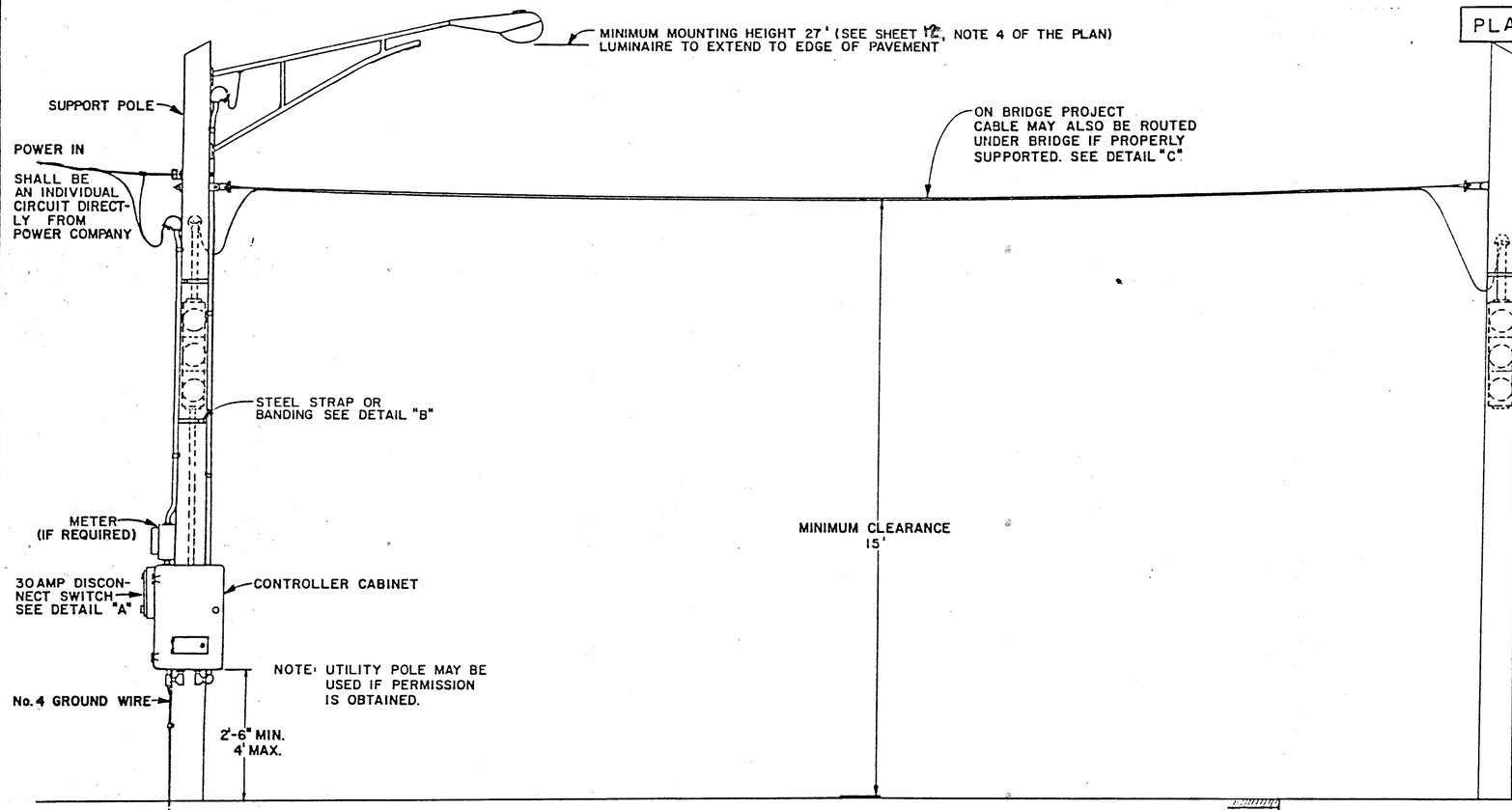
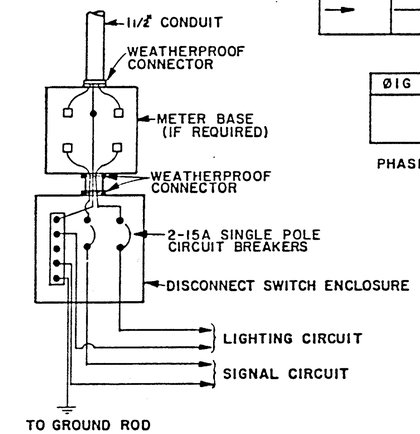
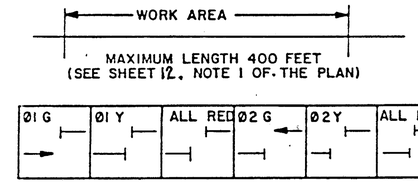


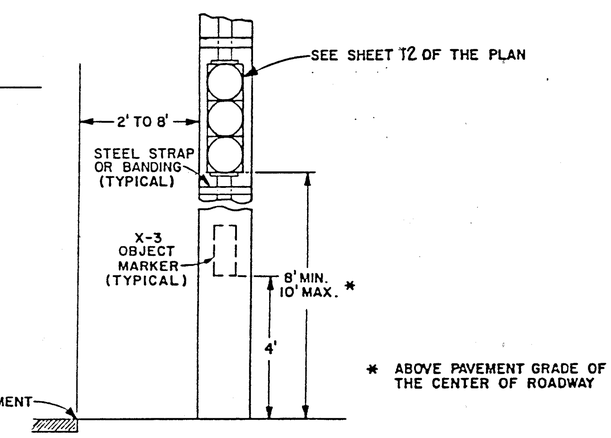


DETAIL "A"



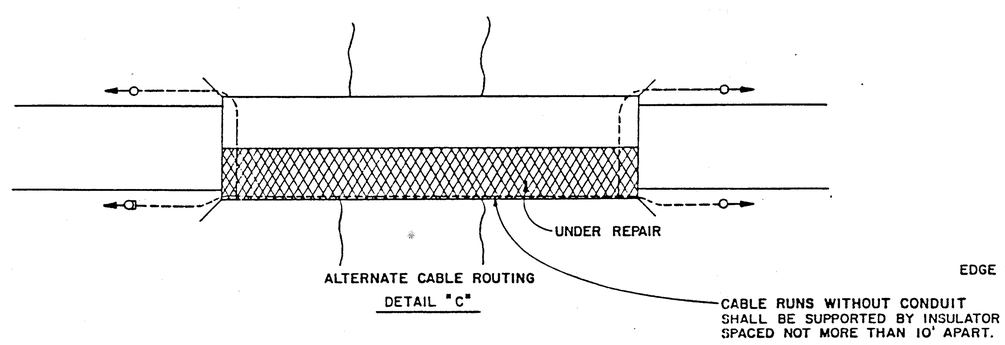
Ø1G	Ø1Y	ALL RED	Ø2G	Ø2Y	ALL RED

PHASING AND INITIAL TIMING SETTINGS

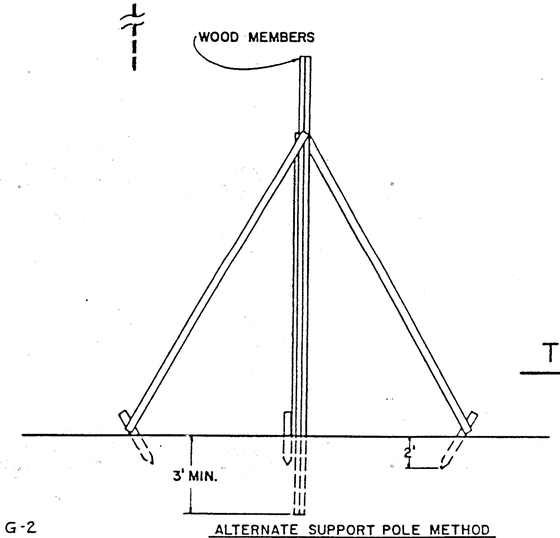


* ABOVE PAVEMENT GRADE OF THE CENTER OF ROADWAY

DETAIL "B"



DETAIL "C"



ALTERNATE SUPPORT POLE METHOD

TYPICAL SERVICE, LUMINAIRE, SIGNAL HEAD AND CONTROLLER CABINET INSTALLATION

OHIO DEPARTMENT OF TRANSPORTATION	
SIGNALIZED CLOSING I LANE OF A 2 LANE HIGHWAY (B)	DATE 4/85
DR.	CK.

7 G-2

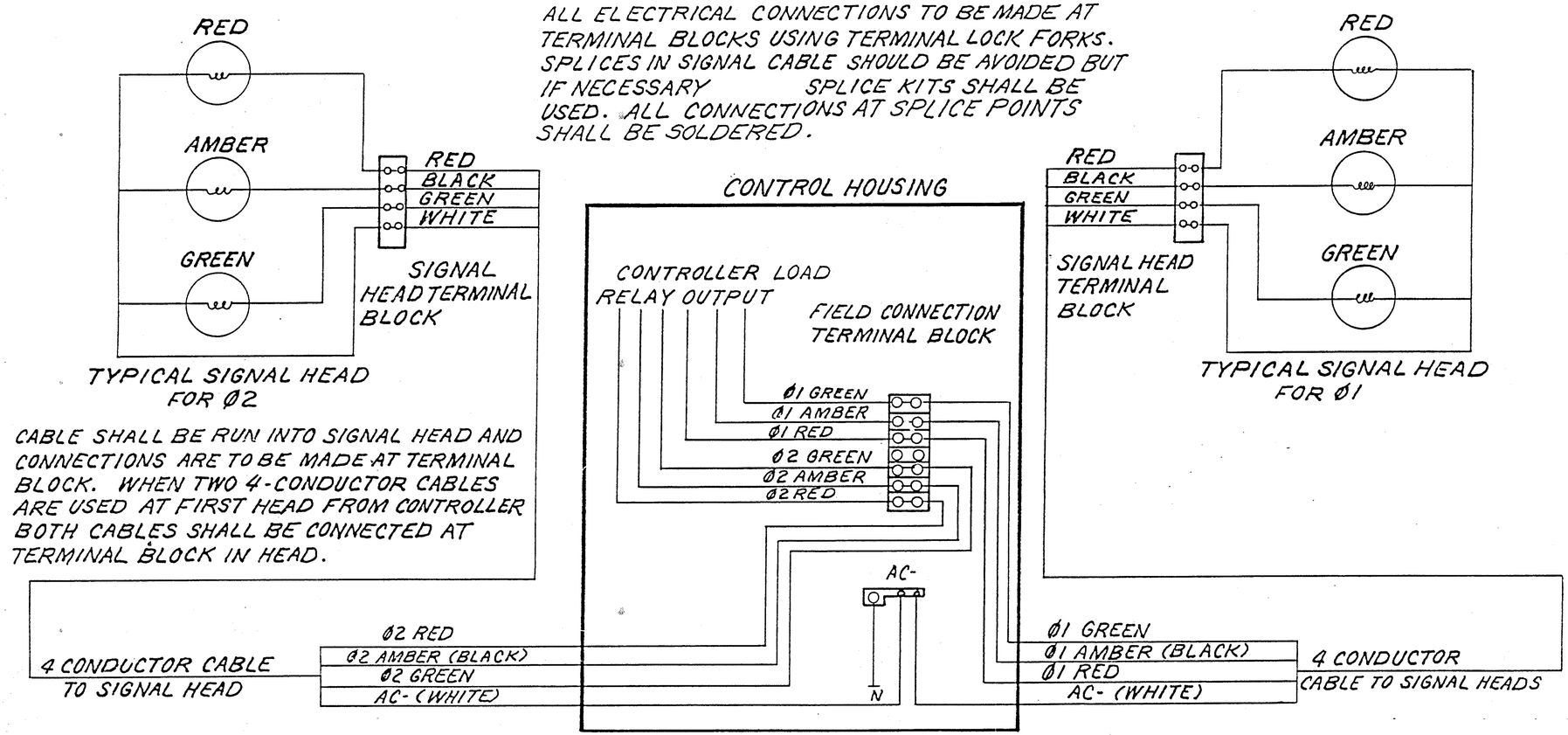
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

12B
22

PLAN NO. COL-39-3.10

COLUMBIANA COUNTY

CABLE SHALL BE 4-CONDUCTOR No. 14 COPPER SIGNAL CABLE, COLOR CODED AND STRANDED. ALL ELECTRICAL CONNECTIONS TO BE MADE AT TERMINAL BLOCKS USING TERMINAL LOCK FORKS. SPLICES IN SIGNAL CABLE SHOULD BE AVOIDED BUT IF NECESSARY SPLICE KITS SHALL BE USED. ALL CONNECTIONS AT SPLICE POINTS SHALL BE SOLDERED.



TYPICAL SIGNAL HEAD HOOK-UP

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING I LANE OF A 2 LANE HIGHWAY (C)

DATE 4/85

DR. CK.

7G-2

P.O.T. STA. 22+00
℄ M.S.
21.09' 15.79' 19.34'
12.55' 12.50'
P.K.'s In Top G.R. Posts

B.M. STA. 23+16
+ On Bolt End G.R.
15' Lt.
Elev. 876.29

P.O.T. STA. 28+50
℄ M.S.
17.84' 14.80' 20.80'
12.40' 12.60'
P.K.'s In Top G.R. Posts

FHWA REGION	STATE	PROJECT	
5	OHIO		

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22

COL-39-3.10
COLUMBIANA COUNTY

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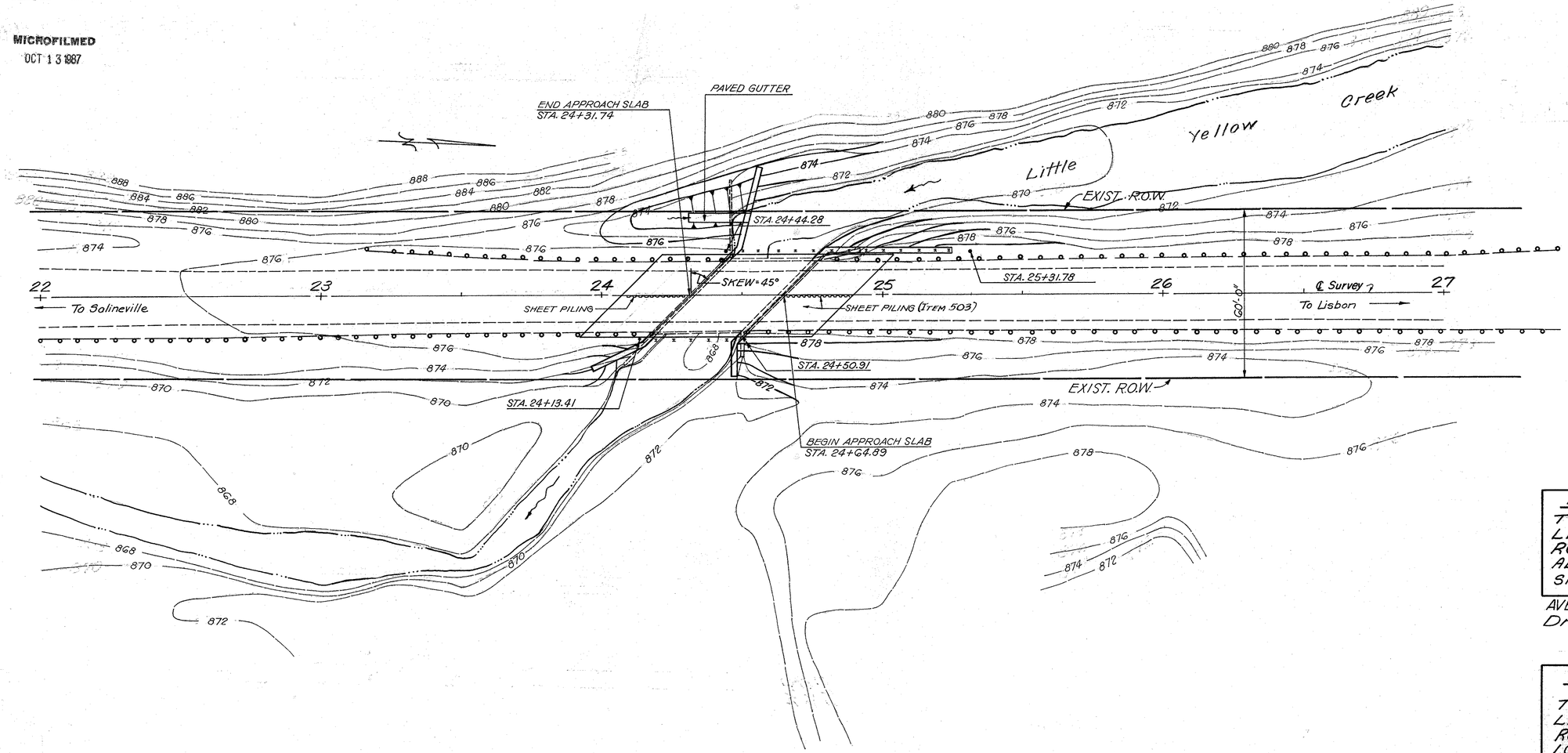
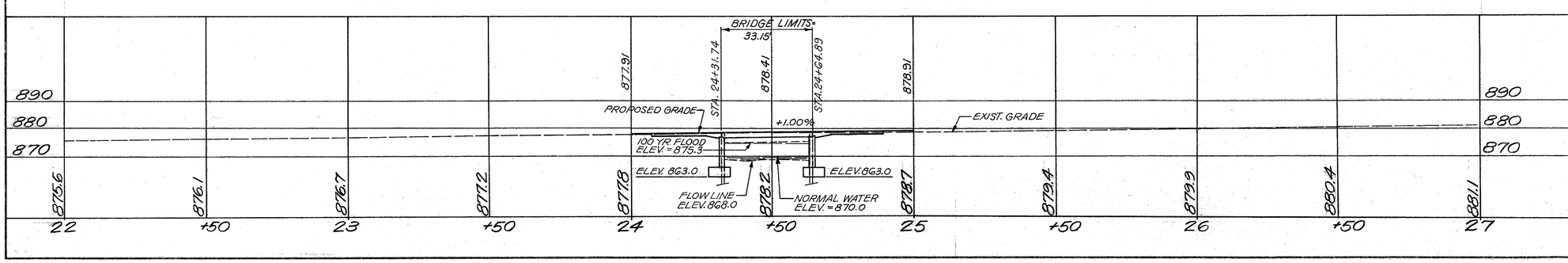
OCT 13 1987





EXISTING STRUCTURE

TYPE: Concrete Beam
LENGTH: 32'
ROADWAY: 24'
ALIGNMENT: Tangent
SKEW: 45' Lt. Fwd.

AVERAGE DAILY TRAFFIC: 2,500 (1983)
Drainage Area: 3.23 SQ. MI.
Q_{100} = 1295 C.F.S.
V_{100} = 16.82 F.P.S.

PROPOSED STRUCTURE

TYPE: PRESTRESSED NON-COMPOSITE BOX BEAM
LENGTH: 31'-6" C/C BEARINGS.
ROADWAY: 30'-0" F/F GUARDRAIL
LOADING: HS-20-44 AND ALT. MILITARY L'DING.
WEARING SURFACE: 2½" MIN. ASPH. CONC.
SKEW: 45° L.F.
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
APPROACH SLAB: AS-1-81 (25' LONG)
AVERAGE DAILY TRAFFIC: 5,250 (2003)

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS & PLANNERS
YOUNGSTOWN, OHIO

SITE PLAN
BRIDGE No COL-39-0310
OVER
LITTLE YELLOW CREEK

COLUMBIANA COUNTY-SR39 SCALE: 1"=20'

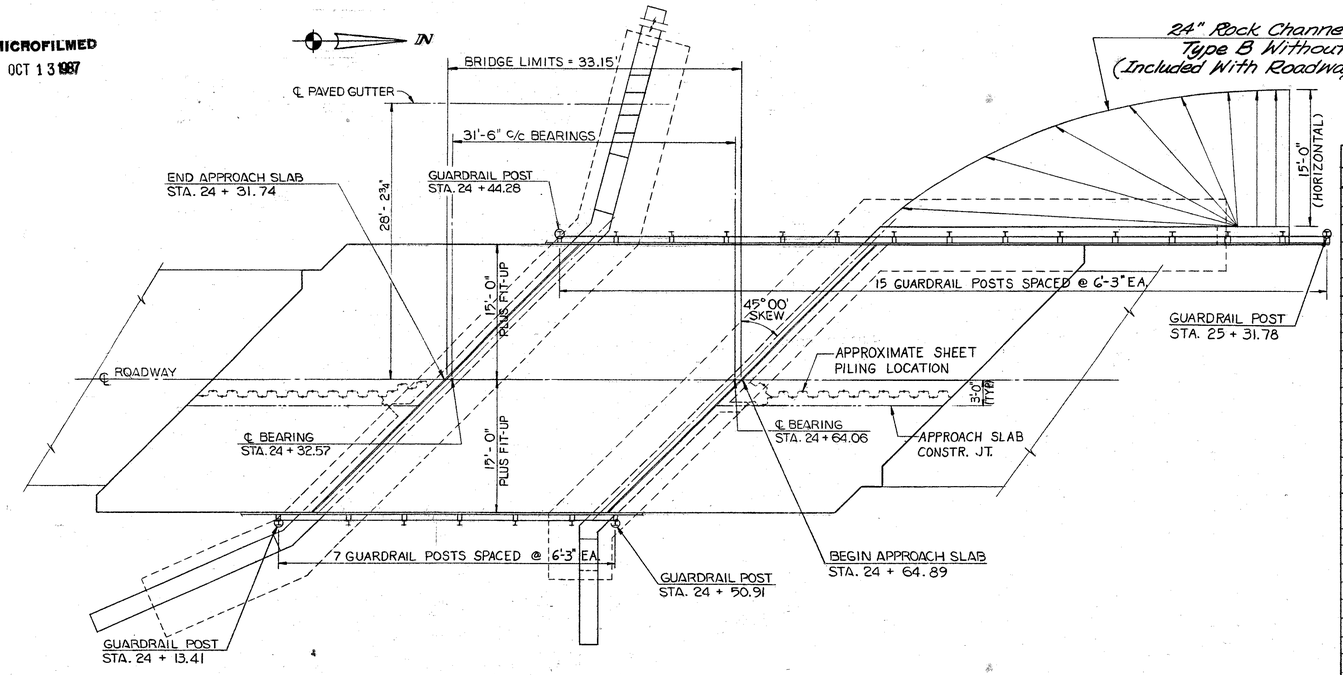
Present Topography		Proposed Work			
Surveyed	Drawn	Designed	Drawn	Checked	Reviewed
Dist. 11	Dist. 11	D.P.	A.M.	R.R.	T.F.M.-5/85

MICROFILMED
OCT 13 1987

FHWA REGION	STATE	PROJECT	
5	OHIO		

14/22

COLUMBIANA COUNTY
COL-39-3.10



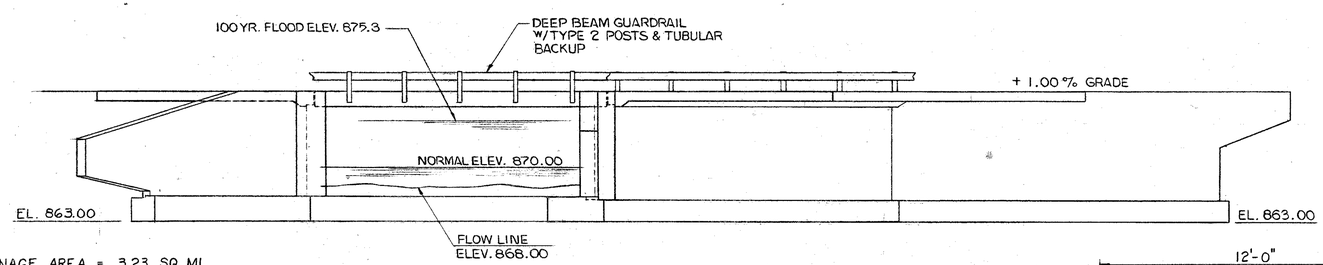
PLAN

ESTIMATE OF QUANTITIES						
ITEM	TOTAL	UNIT	DESCRIPTION	SUPERST.	ABUT.	GENERAL
202	LUMP	LS	STRUCTURES REMOVED			LS
403	5	CY	ASPHALT CONCRETE (AC-20)	5		
404	4	CY	ASPHALT CONCRETE (AC-20)	4		
503	493	CY	UNCLASSIFIED EXCAVATION		493	
503	125	CY	ROCK EXCAVATION		125	
503	LUMP	LS	COFFERDAMS, CRIBS AND SHEETING			LS
509	20,244	LB	REINFORCING STEEL, GRADE 60		20,244	
511	135	CY	CLASS C CONCRETE, FOOTINGS		135	
511	164	CY	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS		164	
515	10	EA	PRESTRESSED CONCRETE BRIDGE MEMBERS (B17-36)	10		
516	40	EA	½"×4×8 ELASTOMERIC BEARING PADS	40		
516	5	SF	⅛" PREFORMED BEARING PADS (SHIMS), 711.21	5		
516	163	SF	1" PREFORMED EXPANSION JOINT FILLER		163	
516	73	LF	6" PVC WATERSTOP, AS PER PLAN		73	
517	50	LF	RAILING (DEEP BEAM RAIL W/STEEL TUBULAR BACKUP, TYPE 2 POSTS & BOLTS), AS PER PLAN	50		
517	75	LF	RAILING (DEEP BEAM RAIL W/ STEEL TUBULAR BACKUP, TYPE 2 POSTS AND BOLTS)	75		
518	75	CY	POROUS BACKFILL		75	
512	130	SY	TYPE D WATERPROOFING	130		
516	87	LF	JOINT SEALER, 705.01 OR 705.02		87	
SPECIAL	51	SF	STEEL DRIP STRIP	51		
SPECIAL	5	SY	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)			
SPECIAL	14	SY	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)			

NOTE: RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP, TYPE 2 POSTS AND BOLTS), AS PER PLAN.
THIS ITEM SHALL CONSIST OF CONSTRUCTING RAILING ON THE WINGWALL IN ACCORDANCE WITH THE DETAIL ON SHEET Nº 20

EXISTING STRUCTURE

TYPE: CONCRETE BEAM
LENGTH: 32'-0"
ROADWAY: 24'-0"
ALIGNMENT: TANGENT
SKEW: 45° LT. FWD.
AVERAGE DAILY TRAFFIC: 2500 (1983)
S.F.N.: 1502646

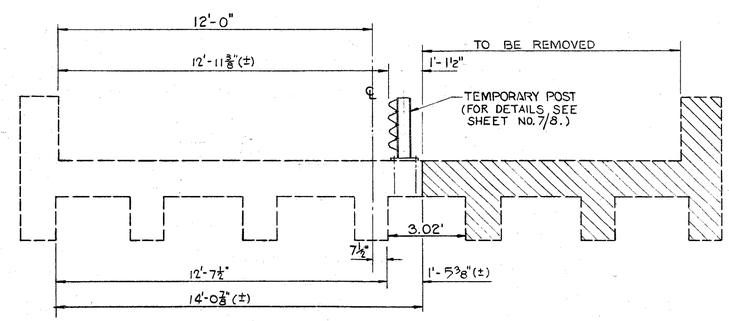


DRAINAGE AREA = 3.23 SQ. MI.
Q_{100} = 1295 CFS
V_{100} = 16.82 FPS

ELEVATION

PROPOSED STRUCTURE

TYPE: PRESTRESSED NON-COMPOSITE CONCRETE BOX BEAMS
LENGTH: 31'-6" C/C BEARINGS
ROADWAY: 30'-0" F/F GUARDRAIL
DESIGN LOADING: HS-20-44 AND ALTERNATE MILITARY
WEARING SURFACE: 2½" MIN. ASPHALT CONCRETE
SKEW: 45°00'00" LEFT FORWARD
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
APPROACH SLAB: AS-1-81 (25'-0" LONG)
AVERAGE DAILY TRAFFIC: 5250 (2003)



PHASE 1 CONSTRUCTION

(NOTE: REFER TO SHEET 2/8 FOR GENERAL NOTES AND PROPOSED WORK PROCEDURE.)

1/8

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

GENERAL PLAN, EST. OF QUANTITIES, & PHASE 1 CONSTRUCTION

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK

COLUMBIANA COUNTY OHIO

DESIGNED	DRAWN	CALC.	CHECKED	REVIEWED
DP	AM		RR	TFM
				8-84

MICROFILMED
OCT 13 1987

FHWA REGION	STATE	PROJECT	
5	OHIO		

15/22

COLUMBIANA COUNTY
COL-39-3.10

GENERAL NOTES

PROPOSED WORK

PHASE I

1) CONSTRUCT TEMPORARY DOUBLE DEEP BEAM GUARDRAIL AND POSTS ON A LINE RIGHT OF CENTERLINE.
2) TRANSFER TRAFFIC TO THE LEFT SIDE.
3) DRIVE SHEET PILES ON LINE INDICATED ON GENERAL PLAN TO BACK OF EXISTING CONCRETE ABUTMENT BACKWALLS.
4) REMOVE RIGHT PORTIONS OF EXISTING SUPERSTRUCTURE TO A LINE 2'-1" ± TO THE RIGHT OF THE CENTERLINE AND THE CONCRETE BACKWALLS AS REQUIRED. INSTALL COFFERDAMS AS REQUIRED.
5) EXCAVATE AND CONSTRUCT NEW ABUTMENTS ON THE RIGHT SIDE.
6) INSTALL SHEET PILING TO TIE THE FIRST GROUP OF SHEET PILES TO THE END OF THE "WEB" WALL ON THE RIGHT ABUTMENT PORTIONS. BACKFILL IN FRONT OF ABUTMENTS AND REMOVE COFFERDAMS.
7) INSTALL FOUR (4) BOX BEAMS ON THE RIGHT SIDE. COMPLETE BACKFILLING AND CONSTRUCT THE APPROACH SLAB FROM THE RIGHT SIDE TO A LINE 3'-0" RIGHT OF THE CENTERLINE. INSTALL TEMPORARY DOUBLE DEEP BEAM GUARDRAIL AND POSTS AND PAVEMENT.
8) TRANSFER TRAFFIC TO RIGHT SIDE.

PHASE II

9) REMOVE REMAINING STRUCTURE ON LEFT SIDE AND CONSTRUCT COFFERDAMS AS REQUIRED.
10) EXCAVATE ON THE LEFT SIDE AND CUT SHEET PILING AS REQUIRED TO CONSTRUCT LEFT ABUTMENT PORTIONS.
11) CONSTRUCT LEFT ABUTMENT PORTIONS, BACKFILL IN FRONT OF ABUTMENT WALLS, REMOVE COFFERDAMS AND INSTALL REMAINING SIX (6) BOX BEAMS.
12) CUT ALL REMAINING SHEET PILES TO A TOP ELEVATION AT LEAST 2'-0" BELOW THE FINAL ELEVATION OF THE BOTTOM OF THE APPROACH SLABS. AT THE CONTRACTORS' OPTION, THESE REMAINING SHEET PILES MAY BE PULLED.
13) BACKFILL AND COMPLETE APPROACH SLAB CONSTRUCTION ON LEFT SIDE. INSTALL RAILING AND PAVEMENT.
14) REMOVE TEMPORARY RAILING, COMPLETE ROADWAY WORK AND OPEN TO NORMAL TRAFFIC.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 SH. 1 AND 2 OF 3 DATED 11/27/81

DBR-2-73 DATED 4/10/73
PSBD-1-81 SH. 1, 2 AND 3 OF 4 DATED 9/18/81
ICD-1-82 SH. 2 OF 5 DATED 8/1/84

AND SUPPLEMENTAL SPECIFICATIONS:

836 DATED 3/12/75
853 DATED 6/26/78

956 DATED 6/26/78

FOUNDATION BEARING PRESSURE

THE ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 2.0 TONS PER SQUARE FOOT.

FOOTINGS

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE PLAN ELEVATION SHOWN OR TO AN ELEVATION THAT IS APPROXIMATELY THREE (3) INCHES LOWER THAN THE BOTTOM OF THE EXISTING ABUTMENT FOOTINGS, WHICHEVER IS LOWEST.

DRIP STRIP

PRIOR TO APPLYING DECK 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 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 OR STEEL END DAM ANGLE. 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 GAUGE 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.

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN LOADING

DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.

DESIGN DATA

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
CONCRETE FOR PRESTRESSED BEAMS -
UNIT STRESS 2200 P.S.I. COMPRESSION
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

TYPE D WATERPROOFING AND ASPHALT CONCRETE OVERLAY.

CONSTRUCTION AND MATERIAL SPECIFICATIONS: STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, DATED JANUARY 1, 1985.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY): AN EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE REAR ABUTMENT WINGWALL AS DETAILED ON SHEET 7/8. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIALS REQUIREMENTS, AND APPLICATION PROCEDURES.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES: A CONCRETE SEALER, EITHER SILANE OR AN EPOXY SEALER, SHALL BE APPLIED TO THE PRESTRESSED BOX BEAMS AS DETAILED ON SHEET 6/8. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIALS REQUIREMENTS, AND APPLICATION PROCEDURES.

2/8

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

GENERAL NOTES

BRIDGE No COL-39-0310
OVER
LITTLE YELLOW CREEK

COLUMBIANA COUNTY STATE OF OHIO

DESIGNED	DRAWN	CALC.	CHECKED	REVIEWED
D.P.	J.M.O.		R.R.	T.F.M.
				8-84

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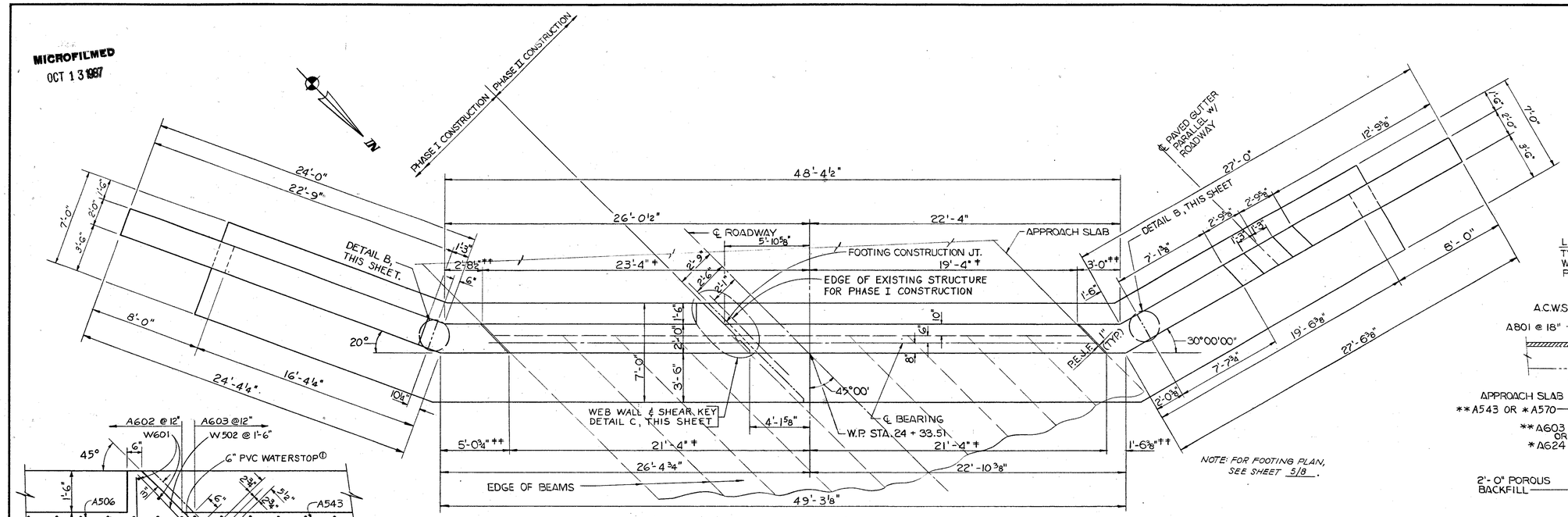
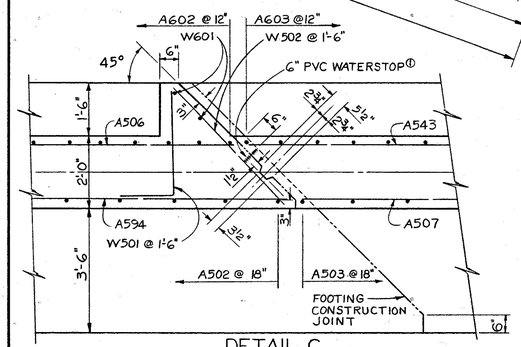
COLUMBIANA COUNTY
COL-39-3.10

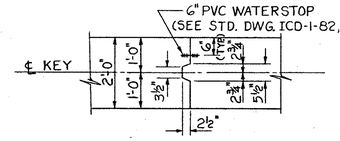


PLAN

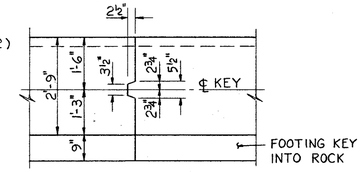


DETAIL C
(SHEAR KEY & WEB WALL)

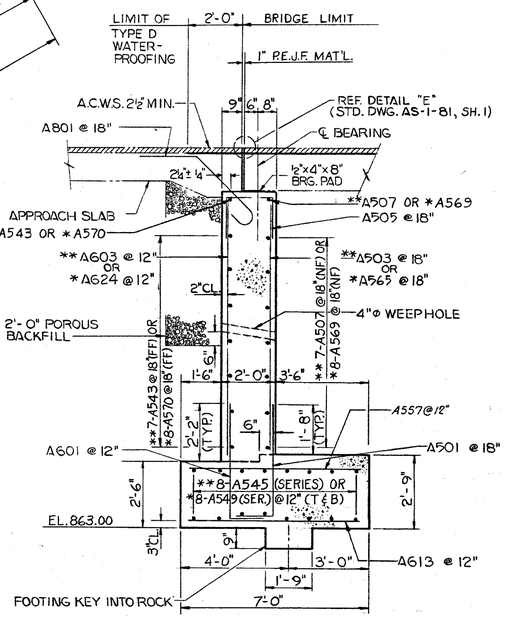
① (SEE STD. DWG. ICD-1-82 SHEET 2.)



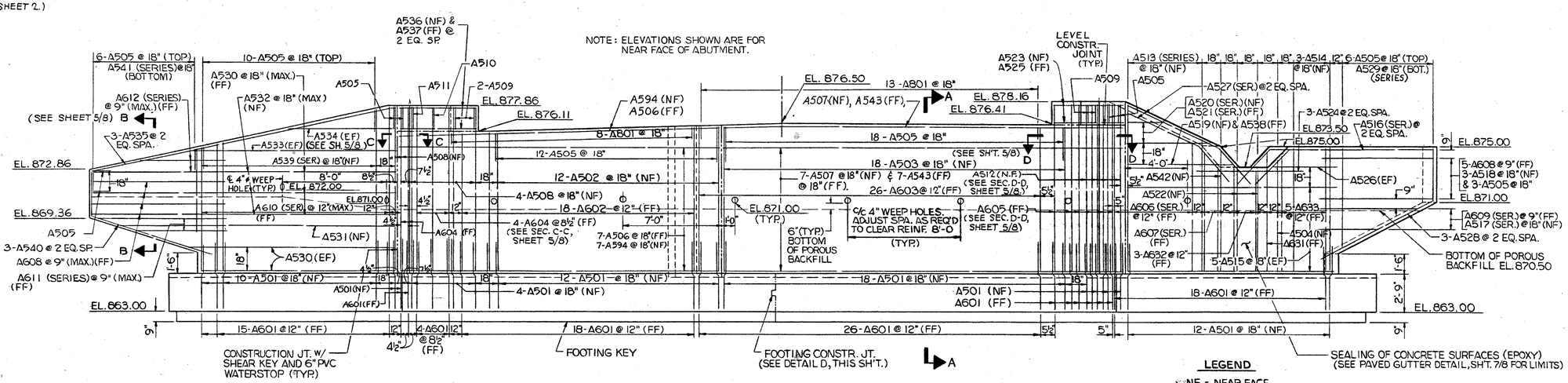
DETAIL B
(SHEAR KEY)



DETAIL D
(FOOTING CONSTRUCTION JT.)



SECTION A-A
* FORWARD ABUTMENT ONLY.
** REAR ABUTMENT ONLY.



ELEVATION

NOTE: A801 BARS SHALL BE PLACED PARALLEL TO ℄ ROADWAY.

LEGEND
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
† = PLUS FIT-UP
†† = LESS FIT-UP

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, 2 FT. THICK, SHALL EXTEND FROM 6" BELOW THE WEEPHOLES UP TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.

FOR ADDITIONAL NOTES, SEE SHEET 4/8.

3/8

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

REAR ABUTMENT DETAILS

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK

COLUMBIANA COUNTY OHIO

DESIGNED	DRAWN	CALC.	CHECKED	REVIEWED
DP	AM		RR	TFM
				8-84

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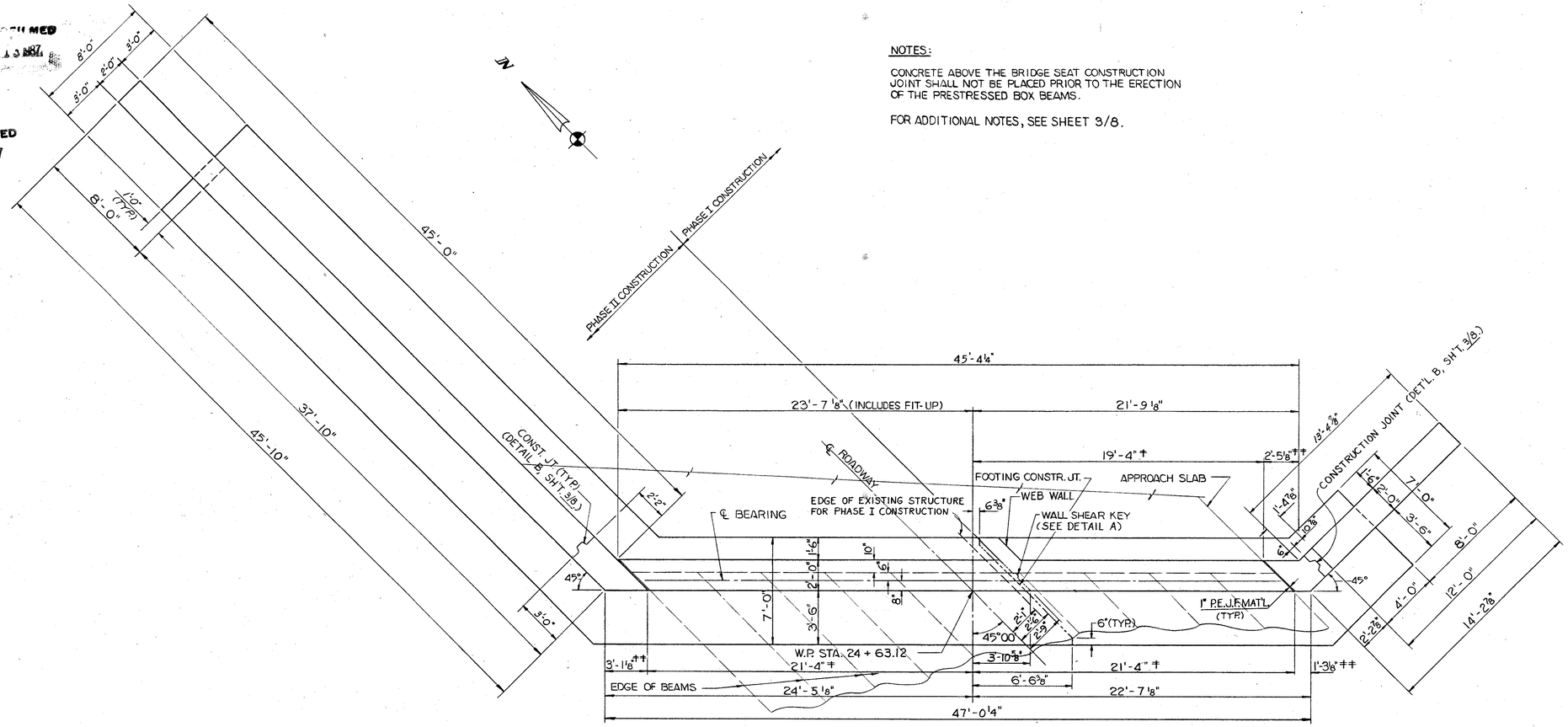
NOTES:

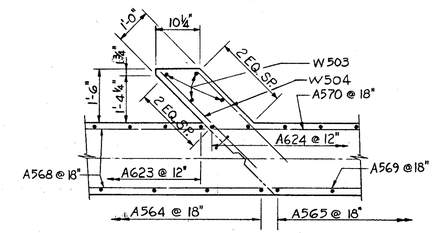
CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT SHALL NOT BE PLACED PRIOR TO THE ERECTION OF THE PRESTRESSED BOX BEAMS.

FOR ADDITIONAL NOTES, SEE SHEET 3/8.

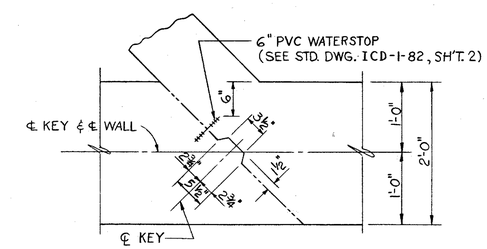


NOTE: FOR FOOTING PLAN AND DETAILS, SEE SHT. 5/8.

PLAN

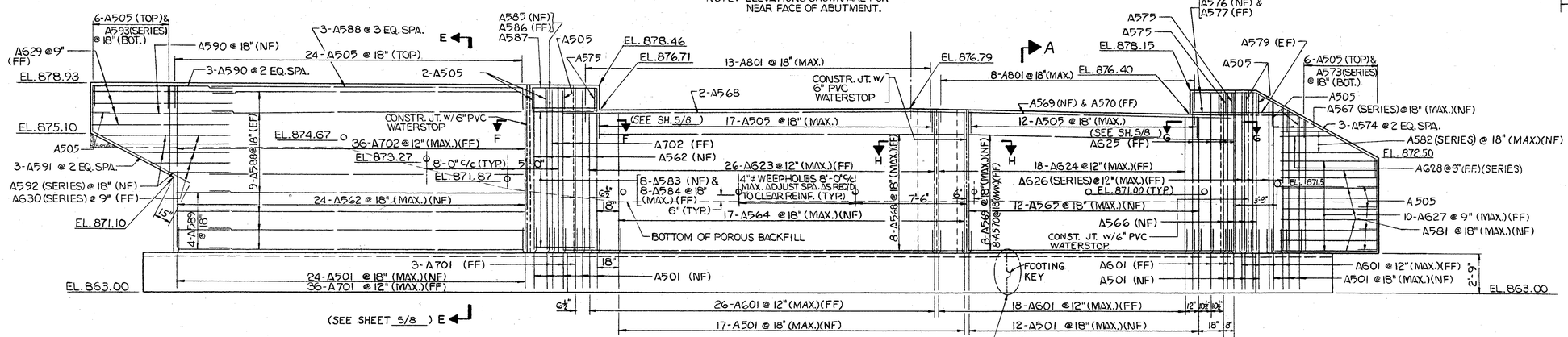


SECTION H-H



DETAIL A
(SHEAR KEY)

NOTE: ELEVATIONS SHOWN ARE FOR NEAR FACE OF ABUTMENT.



NOTE: A801 BARS SHALL BE PLACED PARALLEL TO ℄ ROADWAY.

ELEVATION

LEGEND
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
± = PLUS FIT-UP
±± = LESS FIT-UP

4/8

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

FORWARD ABUTMENT DETAILS

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK

COLUMBIANA COUNTY OHIO

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DP	AM		RR	TFM
				8-84

MICROFILMED
OCT 13 1987

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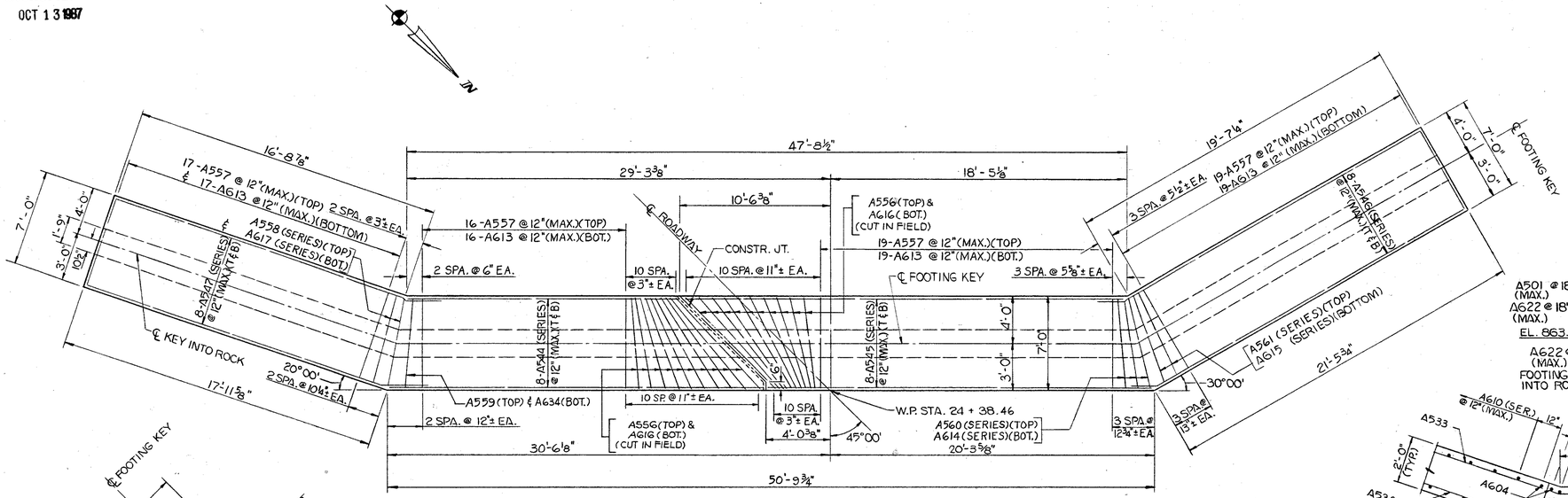
5	OHIO		

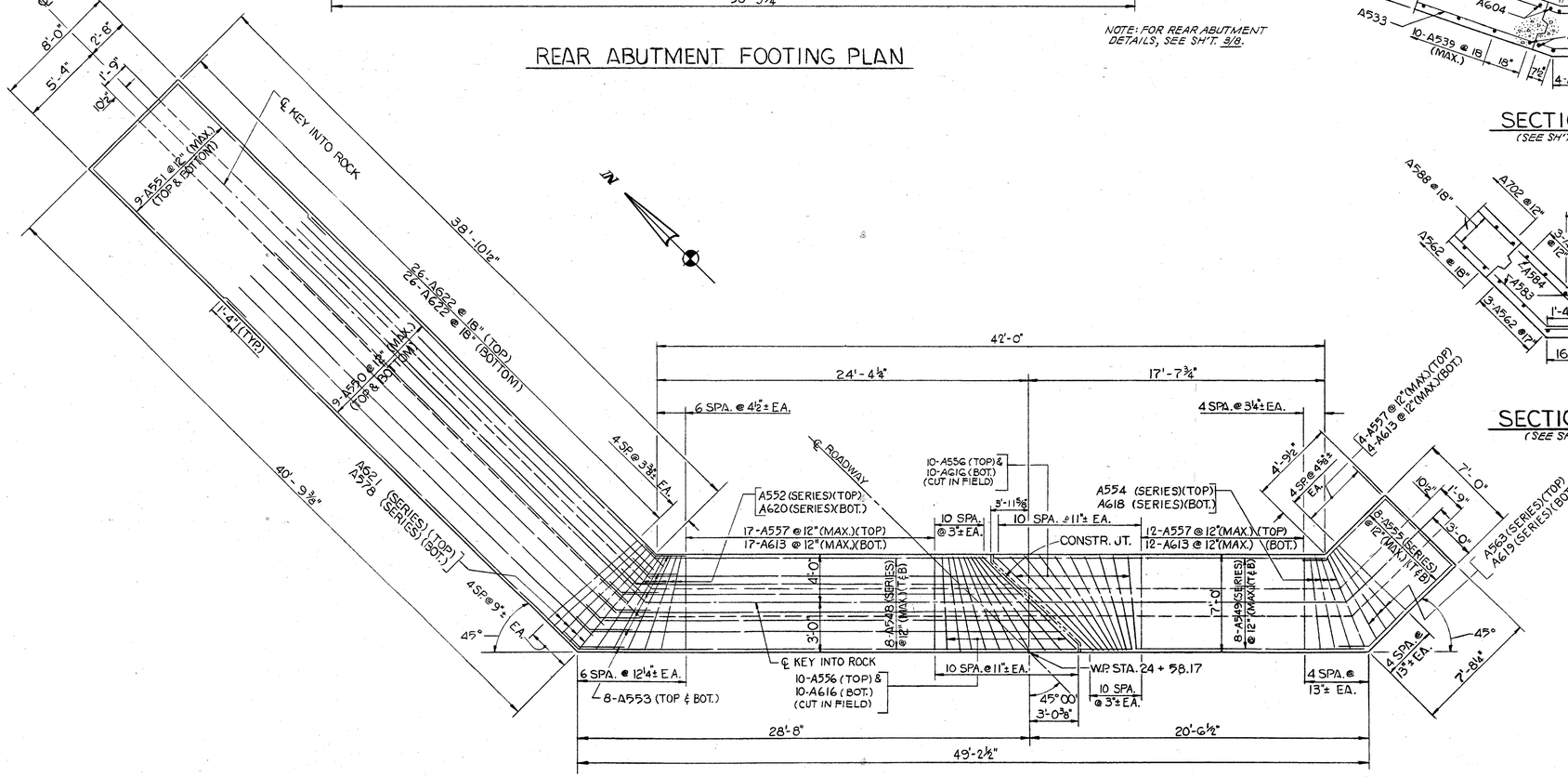
COLUMBIANA COUNTY
COL-39-3.10

18/22



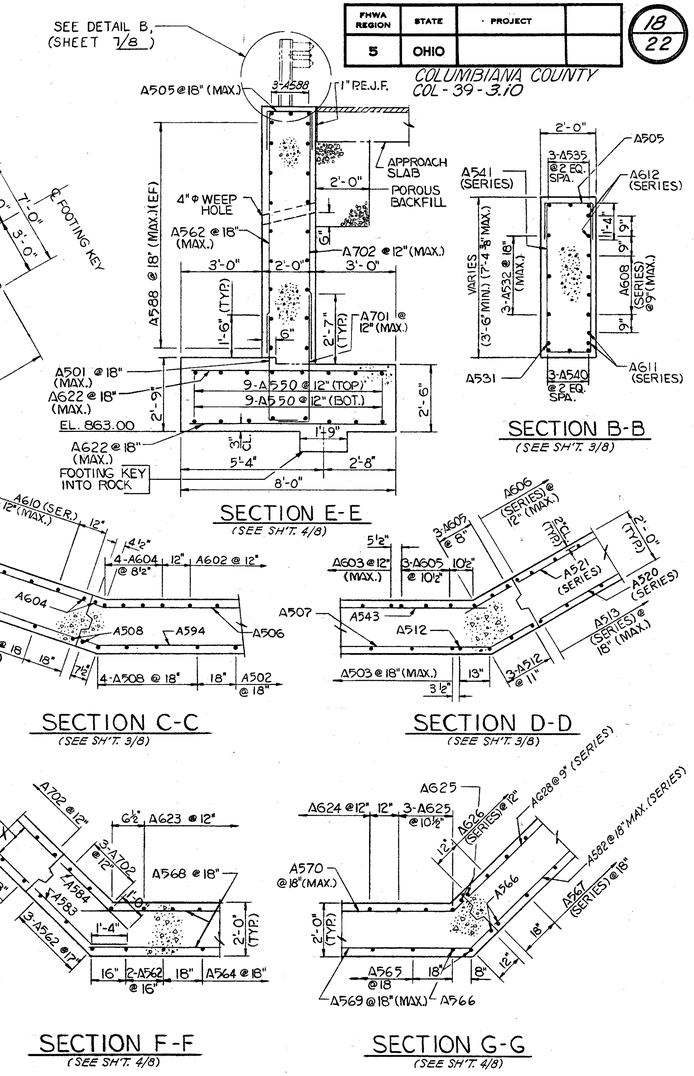
REAR ABUTMENT FOOTING PLAN

NOTE: FOR REAR ABUTMENT DETAILS, SEE SH'T. 3/8.



FORWARD ABUTMENT FOOTING PLAN

NOTE: FOR FORWARD ABUTMENT DETAILS, SEE SH'T. 4/8.



LEGEND
T = TOP
B = BOTTOM

5/8

MOSURE AND SYRAKIS CO., LTD.
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YOUNGSTOWN, OHIO

FOOTING PLANS & SECTIONS

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK

COLUMBIANA COUNTY OHIO

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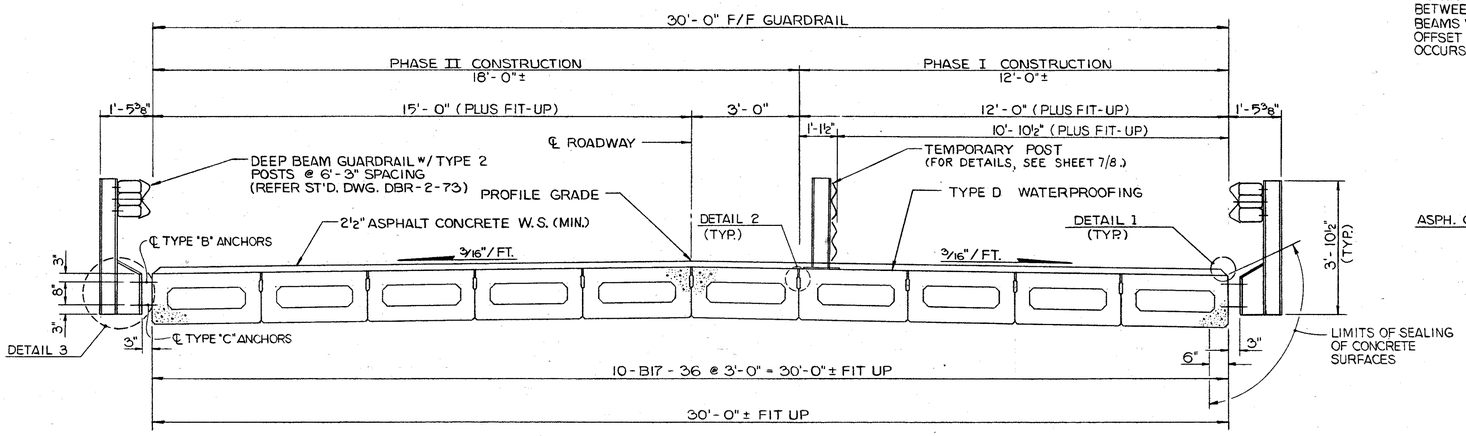
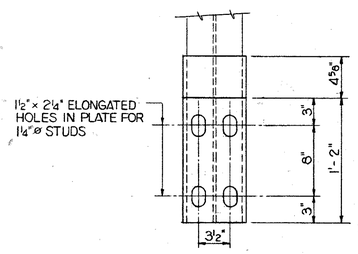
COLUMBIANA COUNTY
COL-39-3.10

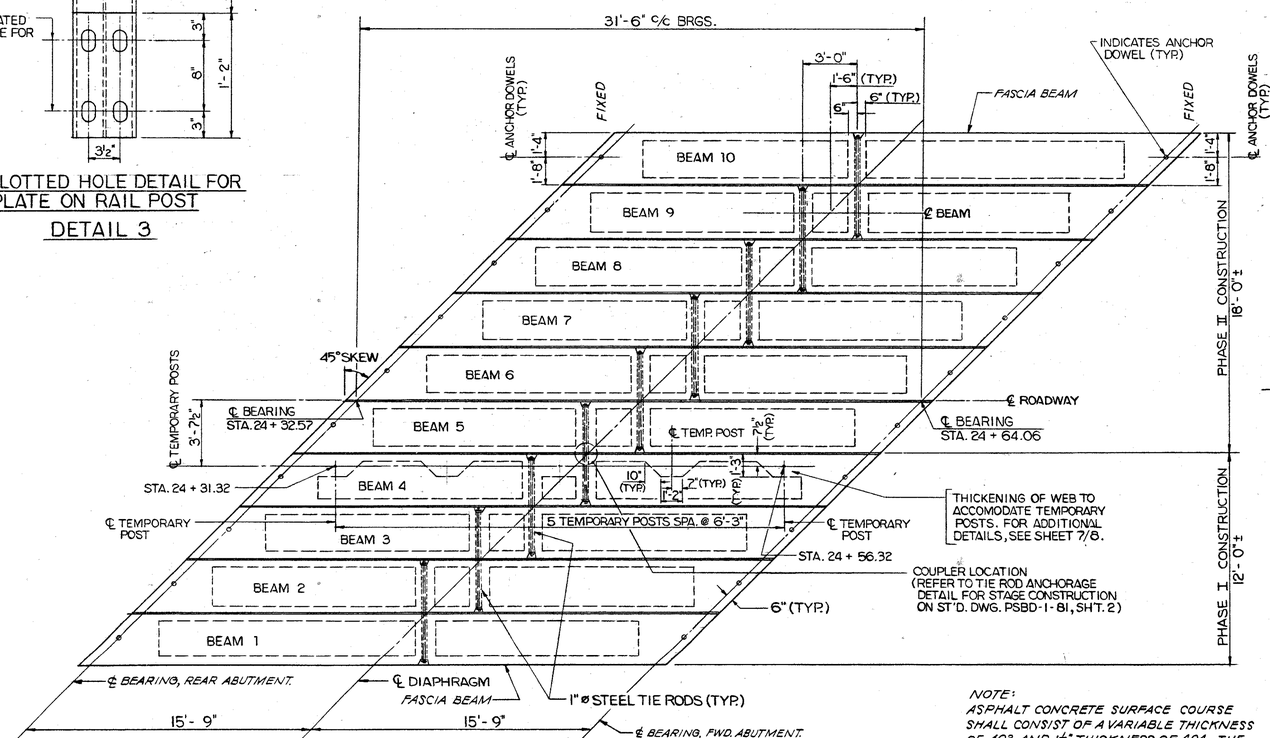


TRANSVERSE SECTION



SLOTTED HOLE DETAIL FOR PLATE ON RAIL POST

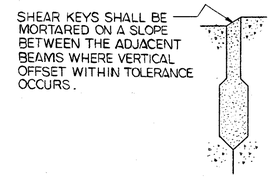
DETAIL 3



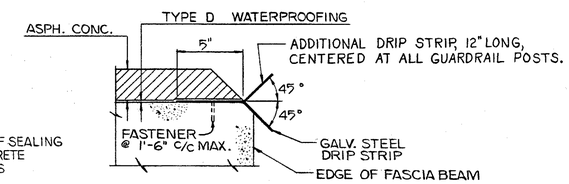
PLAN ~ PRESTRESSED BEAMS

FOR ADDITIONAL DETAILS, SEE STD. DWG. PSBD-1-81.

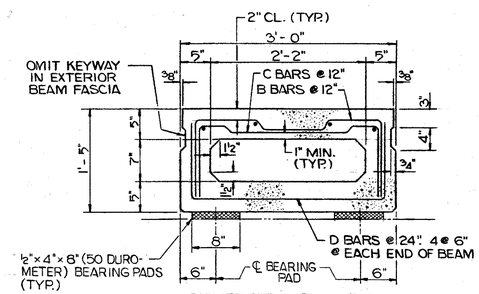
NOTE:
ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND 1¼" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1¼" UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1¼" BELOW FINAL PAVEMENT SURFACE ELEVATION.

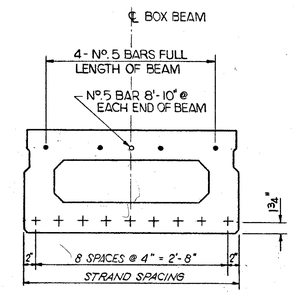


DETAIL 2

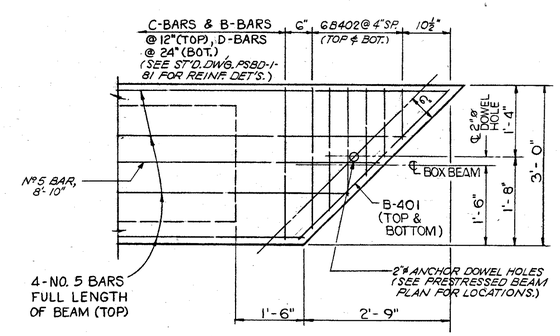


DETAIL 1
(DRIP STRIP)





B17-36 BEAM CROSS SECTIONS



B17-36 BEAM END REINFORCEMENT

NOTE:
CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 1".

CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 0".

NET FINAL CAMBER OF BEAMS IS 1". THIS IS 1" 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 1¼" AT CENTER OF SPANS TO 2¼" AT ENDS OF SPANS.

ERECT BEAM 4 FIRST DURING PHASE I CONSTRUCTION. ERECT BEAM 5 FIRST DURING PHASE II CONSTRUCTION.

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MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK

COLUMBIANA COUNTY OHIO

DESIGNED	DRAWN	CALC.	CHECKED	REVIEWED
DP	AM		RR	TFM
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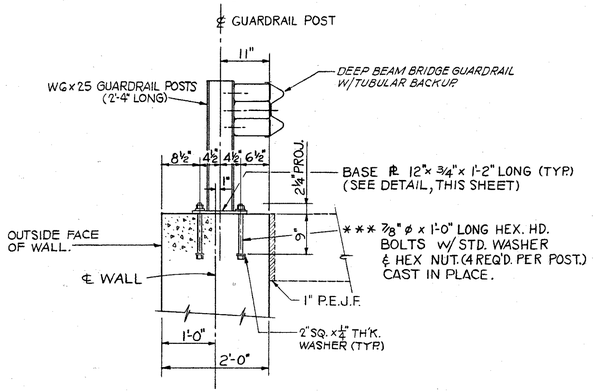
MICROFILMED
OCT 13 1987

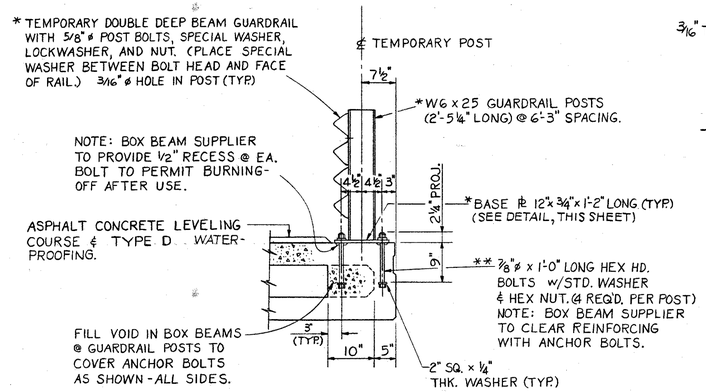
FHWA REGION	STATE	PROJECT	
5	OHIO		

20/22

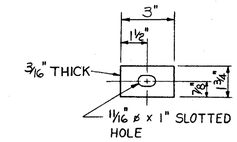
COLUMBIANA COUNTY
COL-39-3.10



DETAIL 'B'
(FOR LOCATION, SEE SHEET NO. 1/8 .)

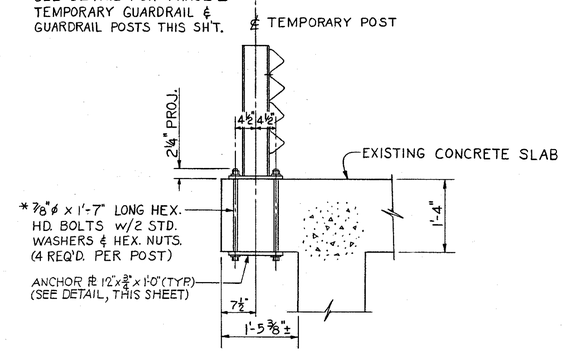


PHASE II TEMPORARY GUARDRAIL AND GUARDRAIL POSTS
(FOR LOCATION, SEE SHEET NO. 1/8 .)

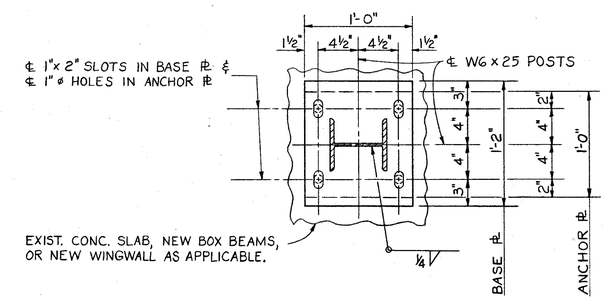


SPECIAL WASHER

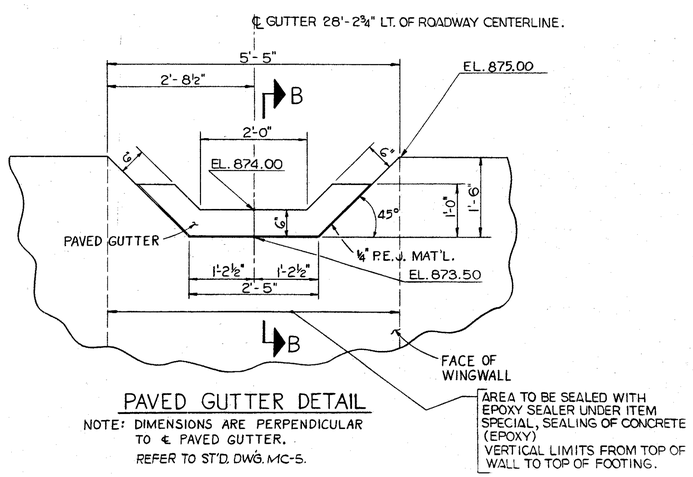
FOR DETAIL NOT NOTED, SEE DETAIL FOR PHASE II TEMPORARY GUARDRAIL & GUARDRAIL POSTS THIS SH'T.



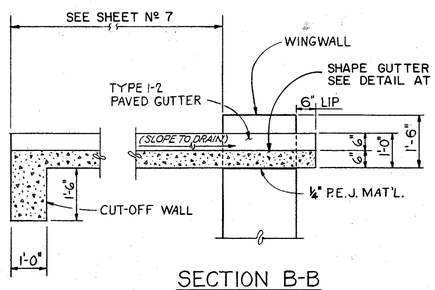
PHASE I TEMPORARY GUARDRAIL AND GUARDRAIL POSTS
(FOR LOCATION, SEE SHEET NO. 1/8 .)



BASE & ANCHOR PLATE DETAIL
(NOTE: ANCHOR PL IS APPLICABLE TO PHASE I TEMPORARY GUARDRAIL POSTS ONLY. ANCHOR PL'S AND BASE PL'S ARE ¾" THICK.)



PAVED GUTTER DETAIL
NOTE: DIMENSIONS ARE PERPENDICULAR TO ℄ PAVED GUTTER.
REFER TO ST'D. DWG. MC-5.



SECTION B-B

NOTE: PAVED GUTTER SHALL BE INCLUDED W/ ROADWAY ITEMS FOR PAYMENT.

* TO BE INCLUDED W/ITEM *SPECIAL RAILING TEMPORARY AS PER PLAN (ROADWAY ITEMS FOR PAYMENT)*
** TO BE INCLUDED W/ITEM 515, PRESTRESSED CONCRETE BRIDGE MEMBERS (B17-36) FOR PAYMENT.
*** TO BE INCLUDED W/ ITEM 511, CLASS "C" CONCRETE, ABUTMENTS ABOVE FOOTINGS FOR PAYMENT.

7 / 8

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

GUARDRAIL POSTS AND PAVED GUTTER DETAILS

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK
COLUMBIANA COUNTY OHIO

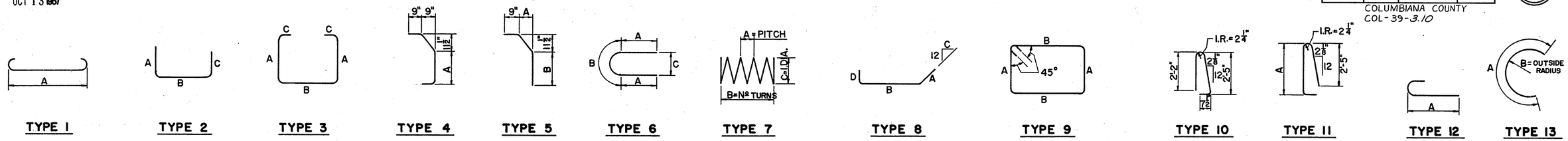
DESIGNED	DRAWN	CALC.	CHECKED	REVIEWED
DP	RM		RR	TFM
				8-84

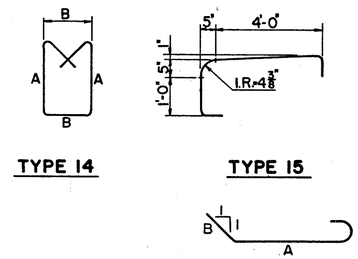
MICROFILMED
OCT 13 1987

FED. RD. DIVISION	STATE	PROJECT	

COLUMBIANA COUNTY
COL-39-3.10

21/22





REAR ABUTMENT

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A801	21	5'-0"	16	2'-7"	1'-6"				280
A601	89	5'-11"	2	4'-5"	1'-8"	0			791
A602	18	10'-5"	S						282
A603	26	10'-7"	S						413
A604	6	12'-0"	S						108
A605	6	12'-4"	S						111
A606	7	9'-6" / 12'-9"	S					0'-5½"	114
A607	2	8'-2" / 9'-2"	S					1'-0"	26
A608	9	10'-0"	S						135
A609	3	5'-3" / 8'-5"	S					1'-7"	31
A610	15	8'-8" / 12'-2"	S					0'-3"	235
A611	3	3'-7" / 9'-4"	S					2'-10½"	29
A612	2	6'-7" / 10'-0"	S					3'-5"	25
A613	71	6'-6"	S						693
A614	3	6'-6½" / 6'-8½"	S					0'-1"	30
A615	2	6'-6½" / 6'-7½"	S					0'-1"	20
A616	2@10EA.	9'-4"	S						280
A617	2	6'-6½" / 6'-7½"	S					0'-1"	20
A631	1	8'-9"	S						13
A632	3	7'-9"	S						35
A633	5	9'-3"	S						65
A634	1	6'-6½"	S						10
A504	1	7'-8"	S						8
A505	73	4'-3"	2	1'-5"	1'-8"	1'-5"			324
A506	8	20'-4"	8	0'-4"	20'-0"	2'-9"	0		170
A507	8	28'-7½"	8	1'-10"	26'-9½"	1'-9"	0		239
A508	6	11'-9"	S						74
A509	4	4'-11½"	2	1'-5"	2'-4½"	1'-5"			21
A510	1	4'-8"	2	1'-5"	2'-1"	1'-5"			5
A511	1	4'-4"	2	1'-5"	1'-9"	1'-5"			5
A512	4	12'-1"	S						51
A513	5	9'-6" / 12'-0"	S					0'-7½"	56
A514	3	9'-0"	S						28
A515	10	17'-2"	S						179
A516	3	15'-5" / 15'-11"	8	3'-6"	11'-11" / 12'-5"	1'-0"	0	0'-3"	49
A517	2	5'-3" / 8'-5"	S					3'-2"	14
A518	3	9'-4"	S						29
A519	1	8'-10"	S						9
A520	2	3'-6" / 7'-2"	S					3'-8"	11
A521	2	3'-2" / 6'-7"	S					3'-5"	10
A522	2	7'-6"	S						16
A523	2	2'-11½"	8	1'-10½"	1'-1"	1'-9"	0		6
A524	3	4'-0"	S						13
A525	2	3'-11"	8	1'-4"	2'-7"	1'-9"	0		8
A526	2	5'-9"	S						12
A527	3	11'-9" / 12'-3"	8	4'-6"	7'-3" / 7'-9"	2'-5"	0	0'-3"	38
A528	3	9'-8"	S						30
A529	6	8'-9" / 16'-2"	2	3'-8" / 7'-5"	1'-8"	3'-8" / 7'-5"		0'-9"	78
A530	7	15'-2"	S						111
A531	1	15'-8"	S						16
A532	3	23'-4"	S						73
A533	2	13'-2"	S						27
A534	2	6'-8"	S						14
A535	3	23'-7"	8	0'-7"	23'-0"	4'-6½"	0		74
A536	2	4'-9	8	0'-4"	4'-5"	2'-9"	0		10
A537	2	2'-8"	8	0'-4"	2'-4"	2'-9"	0		6
A538	1	8'-4"	S						9
A539	10	8'-9" / 11'-9"	S					0'-4"	107
A540	3	9'-5"	S						30

REAR ABUTMENT (CON'T.)

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A541	6	7'-9" / 15'-3"	2	3'-2" / 6'-11"	1'-8"	3'-2" / 6'-11"		0'-9"	72
A542	1	8'-11"	S						9
A543	8	29'-5"	8	1'-4"	28'-1"	1'-9"	0		245
A544	2@8EA.	18'-7" / 26'-2"	S					1'-1"	373
A545	2@8EA.	24'-0" / 28'-8"	S					0'-8"	385
A546	2@8EA.	20'-10" / 25'-10"	8	1'-6"	19'-4" / 21'-4½"	1'-8¾"	0	0'-3½"	365
A547	2@8EA.	18'-0" / 19'-2"	8	1'-6"	16'-6" / 17'-8"	2'-9"	0	0'-2"	310
A556	2@10EA	9'-4"	S						187
A557	71	6'-6"	S						481
A558	2	6'-6½" / 6'-7½"	S					0'-1"	14
A559	1	6'-6½"	S						7
A560	3	6'-6½" / 6'-8½"	S					0'-1"	21
A561	2	6'-6½" / 6'-7½"	S					0'-1"	14
A594	8	22'-3½"	8	0'-2½"	22'-1"	2'-9"	0		186
A501	62	5'-8½"	2	4'-2"	1'-8"	0			369
A502	12	10'-2"	S						127
A503	18	10'-4"	S						194
W601	2	10'-7"	S						32
W501	8	4'-4½"	2	3'-2"	1'-4"	0			37
W502	8	4'-7"	S						38
								TOTAL	9,172

FORWARD ABUTMENT

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A801	21	5'-0"	16	2'-7"	1'-6"				280
A701	39	6'-4"	2	4'-10"	1'-8"	0			505
A702	39	12'-10½"	S						1,026
A601	53	5'-11"	2	4'-5"	1'-8"	0			471
A613	33	6'-6"	S						322
A616	2@10EA	9'-4"	S						280
A618	4	6'-6½" / 7'-2"	S					0'-2½"	41
A619	3	6'-6½" / 6'-10½"	S					0'-2"	30
A620	5	6'-6½" / 7'-2½"	S					0'-2"	52
A621	4	7'-6" / 7'-9"	S					0'-1"	46
A622	52	7'-6"	S						586
A623	26	11'-0"	S						430
A624	18	10'-9"	S						291
A625	5	12'-4"	S						93
A626	4	10'-10" / 12'-4"	S					0'-6"	66
A627	10	12'-7"	S						189
A628	4	6'-5" / 11'-2"	S					1'-7"	53
A629	4	13'-10"	S						83
A630	5	8'-0" / 14'-0"	S					1'-6"	83
A501	65	5'-6½"	2	4'-0"	1'-8"	0			376
A505	78	4'-3"	2	1'-5"	1'-8"	1'-5"			346
A548	2@8EA	20'-2" / 31'-6"	S					1'-5"	485
A549	2@8EA	17'-3" / 21'-3"	S					0'-6"	361
A550	18	30'-0"	S						563
A551	18	11'-10½"	S						223
A552	5	6'-6½" / 7'-2½"	S					0'-2"	36
A553	16	3'-0"	8	1'-6"	1'-6"	1'-0"	0		50

FORWARD ABUTMENT (CON'T.)

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A554	4	6'-6½" / 7'-2"	S					0'-2½"	29
A555	2@8EA.	6'-1" / 9'-0"	8	4'-7" / 7'-6"	1'-6"	1'-0"	0	0'-5"	126
A556	2@10EA.	9'-4"	S						195
A557	33	6'-6"	S						224
A562	29	12'-7½"	S						382
A563	3	6'-6½" / 6'-10½"	S					0'-2"	21
A564	17	10'-9½"	S						191
A565	12	10'-6"	S						131
A566	4	12'-3"	S						51
A567	3	10'-6" / 11'-10"	S					0'-8"	35
A568	18	28'-1"	S						527
A569	9	19'-6"	8	1'-1½"	18'-4½"	1'-0"	0		183
A570	9	20'-0"	8	0'-4"	19'-8"	1'-0"	0		188
A573	6	14'-5" / 21'-6"	2	6'-6½" / 10'-0½"	1'-8"	6'-6½" / 10'-0½"		0'-8½"	112
A574	3	13'-8"	8	0'-8"	13'-0"	2'-1½"	0		43
A575	3	4'-9"	2	1'-4"	2'-4"	1'-4"			15
A576	2	1'-10½"	8	1'-1½"	0'-9"	1'-0"	0		4
A577	2	2'-3"	8	0'-4"	1'-11"	1'-0"	0		5
A578	4	7'-6" / 7'-9"	S					0'-1"	32
A579	2	3'-8"	S						8
A581	5	12'-7"	S						66
A582	3	4'-10" / 11'-2"	S					3'-2"	25
A583	8	4'-0"	8	1'-4"	2'-8"	1'-0"	0		33
A584	8	3'-0"	S						25
A585	2	5'-4"	8	2'-8"	2'-8"	1'-0"	0		11
A586	2	4'-8"	S						10
A587	1	3'-7"	S						4
A588	21	30'-0"	S						657
A589	4	13'-1"	2	5'-10"	1'-8"	5'-10"			55
A590	5	13'-10"	S						72
A591	3	10'-1"	S						31
A592	3	8'-0" / 14'-0"	S					3'-0"	34
A593	6	7'-5" / 15'-4"	2	3'-0" / 6'-11½"	1'-8"	3'-0" / 6'-11½"		0'-9½"	71
W503	4	11'-0"	S						46
W504	18	3'-6"	S						63
								TOTAL	11,072

BOX BEAMS (SUPERSTRUCTURE)

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
* B401	40	5'-11"	2	1'-2"	3'-9"	1'-2"			
* B402	2@5EA	2'-11" / 4'-7"	2	1'-2"	0'-9" / 2'-5"	1'-2"		0'-4"	

NOTES;

BAR SIZE; The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is a No.5 size bar and P1101 is a No.11 size bar.

SPIRAL REINFORCING BARS; The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall may have deformation and shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.80 lb. per lin. ft. of spacers, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.80 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

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

* INCLUDED WITH ITEM 515, PRESTRESSED CONCRETE BRIDGE MEMBERS (B17-36) FOR PAYMENT.

8/8

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

REINFORCING STEEL LIST

BRIDGE NO. COL-39-0310
OVER LITTLE YELLOW CREEK

COLUMBIANA COUNTY OHIO

DESIGNED	DRAWN	CALC.	CHECKED	APPROVED
DP	AM		RR	TFM 8-84

COLUMBIANA COUNTY
WASHINGTON TOWNSHIP
T-12-N R-3-W SEC.23

Calculated By	Checked By
JWH 11-7-84	GEG 12-10-84

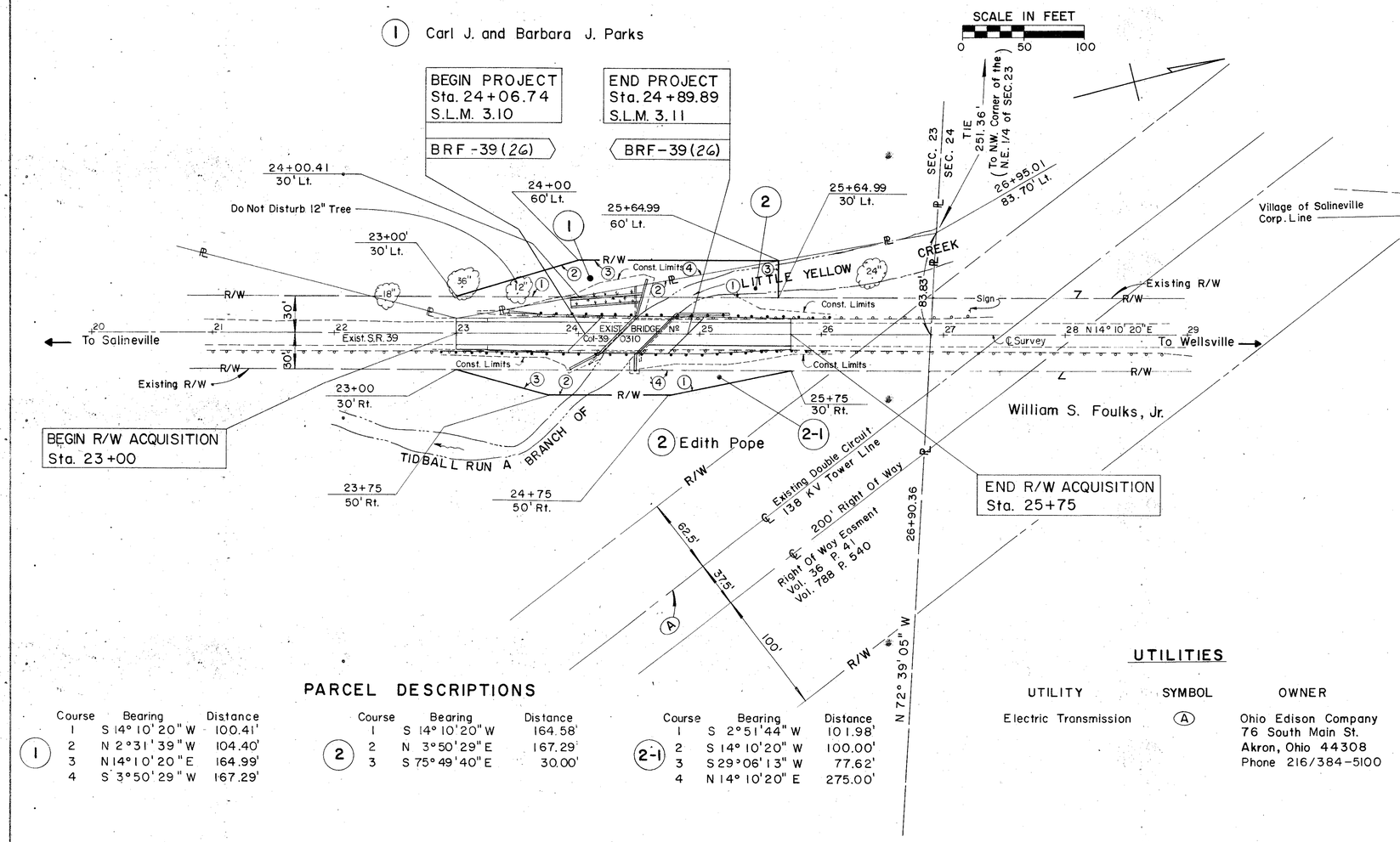
FHWA REGION	STATE	STATE PROJECT NUMBER	
5	OHIO	11599(0)	

22/22

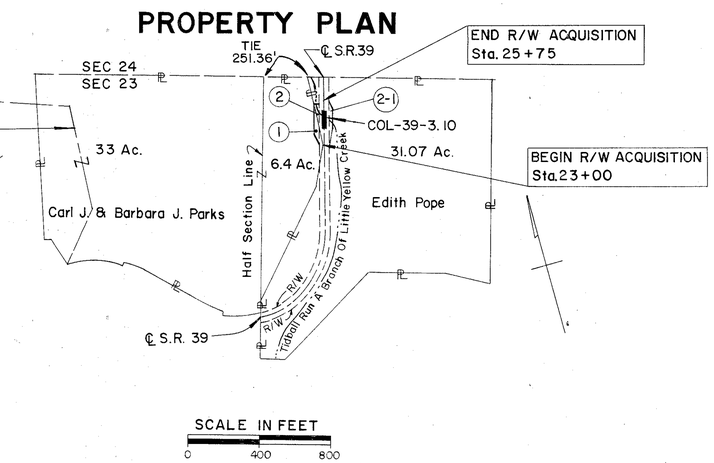
COL - 39 - 3.10
COLUMBIANA COUNTY

1/1

R/W PLAN



PROPERTY PLAN



SCALE IN FEET
0 400 800

PARCEL DESCRIPTIONS

(1)

Course	Bearing	Distance
1	S 14° 10' 20" W	100.41'
2	N 2° 31' 39" W	104.40'
3	N 14° 10' 20" E	164.99'
4	S 3° 50' 29" W	167.29'

(2)

Course	Bearing	Distance
1	S 14° 10' 20" W	164.58'
2	N 3° 50' 29" E	167.29'
3	S 75° 49' 40" E	30.00'

(2-1)

Course	Bearing	Distance
1	S 2° 51' 44" W	101.98'
2	S 14° 10' 20" W	100.00'
3	S 29° 06' 13" W	77.62'
4	N 14° 10' 20" E	275.00'

UTILITIES

UTILITY	SYMBOL	OWNER
Electric Transmission	(A)	Ohio Edison Company 76 South Main St. Akron, Ohio 44308 Phone 216/384-5100

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.
All Areas Shown Are In Acres Unless Otherwise Noted.

REVISION	BY	DATE
COMPLETED		12-14-84

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	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1	Carl J. Parks and Barbara J. Parks	1	1468	981	* 39.4	0.083	0.091	0	0.091	—	*39.226	—	State	* 4.350 Acres in Salineville Village		
2	Edith Pope	1	1310	75	31.07	1.978	0.057	0	0.057	—						
2-1							0.086	0	0.086	—						
	TOTAL				31.07	1.978	0.143	0	0.143	—	2.676	26.273				

COL-39-3.10 R/W PLAN AND SUMMARY

MICROFILMED
OCT 1 3 1987

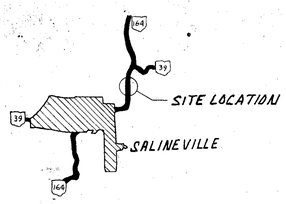
COL-39-3.10
COLUMBIANA COUNTY
1/3

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 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, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORATION 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 GEMERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.



0 1 2 3 4
SCALE 1" = 2 MILES

LEGEND

BORING LOCATION - PLAN

W INDICATES FREE WATER

x/y #

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

SOIL TYPES

GRAVEL AND/OR STONE FRAGMENTS WITH SAND A-1-b

GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT A-2-4

SANDY SILT A-4a

SHALE

SILTSTONE

BOULDERY ZONE

RANDOM FILL

INTRODUCTION:

THE PROJECT CONSISTS OF CONSTRUCTING A REPLACEMENT BRIDGE FOR STATE ROUTE 39 OVER LITTLE YELLOW CREEK.

GEOLOGY:

THE AREA IS CHARACTERIZED BY A THIN LAYER OF WISCONSIN OUTWASH DEPOSITS CONSISTING OF FINE TO COARSE SAND AND GRAVEL. UNDERLYING ROCK UNITS ARE GRAY WEATHERED SHALES AND SILTSTONES OF THE PENNSYLVANIAN CONEMAUGH FORMATION.

EXPLORATION:

TWO EXPLORATORY BORINGS, DESIGNATED S-1 AND S-2 WERE DRILLED TO DEPTHS OF 24.2 AND 25.0 FEET, RESPECTIVELY. STANDARD PENETRATION TESTS WERE PERFORMED AT 2.5 AND/OR 5 FOOT INTERVALS DEPENDING ON DEPTH. NINE SAMPLES WERE OBTAINED AND TESTED FOR DETERMINING THE NATURAL MOISTURE CONTENT. FOUR SAMPLES WERE SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS AND WERE TESTED FOR GRADATION AND ATTERBERG LIMITS.

INVESTIGATIONAL FINDINGS:

THE TEST DATA INDICATES THAT THE MAJORITY OF THE SOIL IS OF THE A-1-b AND A-2-4 CATEGORIES RESPECTIVELY. BEDROCK WAS ENCOUNTERED AT DEPTHS OF 13.5 FEET AND 10.5 FEET, RESPECTIVELY. THE BEDROCK IS GENERALLY DESCRIBED AS A WEATHERED SILTSTONE AND SHALE. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

PARTICLE SIZE DEFINITION

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

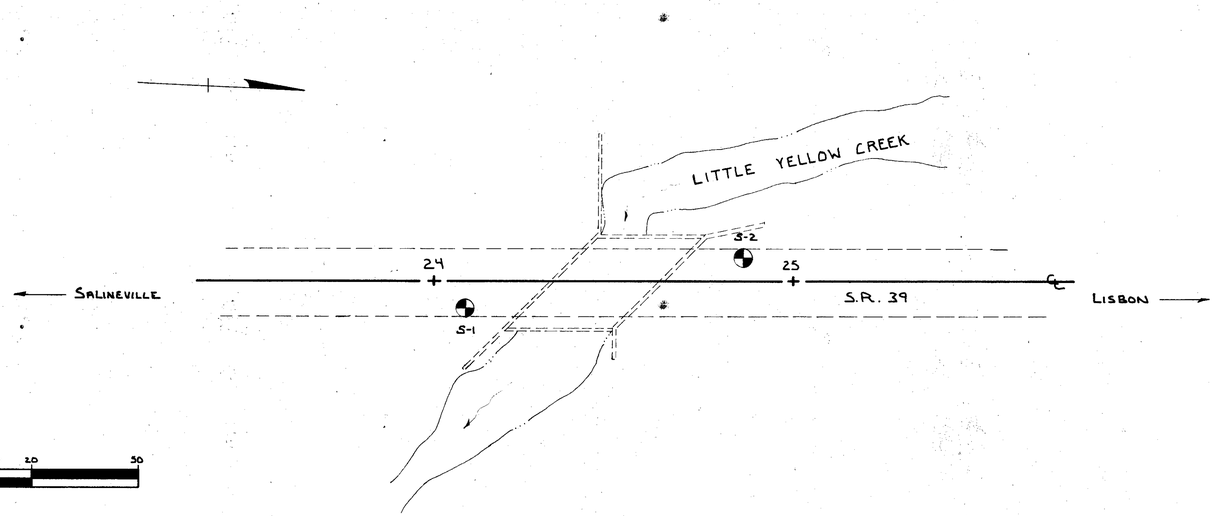
RESOURCE INTERNATIONAL INC.
281 ENTERPRISE DR.
COLUMBUS, OHIO 43081
(614) 885-1959

COLUMBIANA COUNTY
COL-39-0310
STRUCTURE FOUNDATION INVESTIGATION

DATE: 1-26-84	DRAWN BY: CRS	CHECKED BY:	

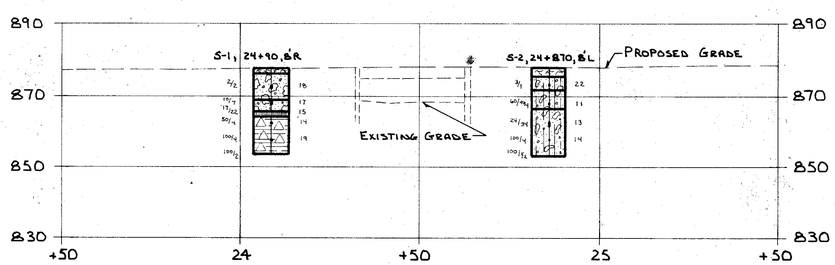
MICROFILMED
OCT 13 1987

COL-39-3.10
COLUMBIANA COUNTY
2/3



SCALE 0 10 20 30

HOR. & VERT. 0 10 20 30



RESOURCE INTERNATIONAL, INC.
281 ENTERPRISE DR.
DELAWARE OHIO 43081
614-885-1959

COLUMBIANA COUNTY
COL-39-0310
STRUCTURE FOUNDATION INVESTIGATION

DATE 1-26-84	DRAWN BY CEL	CHECK BY	

MICROFILMED
OCT 13 1987

COL-39-3.10
COLUMBIANA COUNTY

3/3

BORING LOG: S-1
STATION AND OFFSET: 24+90, 8' Rt.
SURFACE ELEVATION: 877.0 FEET
DATE STARTED: 11/30/83
DATE FINISHED: 12/2/83
SAMPLER TYPE: ALL 2S

ELEV	SAMP. NO.	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	MC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
					ASPHALT OVER CONCRETE 1.5'									
	S-1	1 2 2		5	BROWN FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, SOME CLAYEY SILT, TRACE BRICK FRAGMENTS. 9.0'	18								
	S-2	4 10 7		10	BROWN FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, LITTLE CLAYEY SILT. 12.0'	17			19	15	14	22	30	A-1-b
	S-3	7 17 22			GRAY CLAYEY SILT, SOME FINE TO COARSE GRAVEL, LITTLE TO SOME FINE TO COARSE SAND. 13.5'	15	29	7	34	9	11	30	16	A-4a
	S-4	50 50/4"		15	GRAY WEATHERED SILTSTONE.	14								
	S-5	100/4"		20		19								
	S-6	NR 100/2"			BOTTOM OF BORING - 24.2 FEET.									

NOTE: NR SIGNIFIES NO RECOVERY

BORING LOG: S-2
STATION AND OFFSET: 24+87, 8' Lt.
SURFACE ELEVATION: 870.0 feet
DATE STARTED: 12/7/83
DATE FINISHED: 12/7/83
SAMPLER TYPE: ALL 2S

ELEV.	SAMPLE NO.	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	MC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
					ASPHALT OVER BOULDERS OR CONCRETE FRAGMENTS. 2.5'									
	S-1	3 3 1		5	BROWN FINE TO COARSE SAND, SOME TO AND CLAYEY SILT, SOME FINE GRAVEL, TRE COBBLES. 6.0'	23			23	29	13	24	11	A-2-4
					BROWN FINE TO COARSE SAND, LITTLE CLAYEY SILT. 10.5'									
	S-2	6 60 40/4"		10	GRAY WEATHERED SHALE.	13								
	S-3	18 24 34		15		11			32	23	13	18	14	A-2-4
	S-4	100/4"		20		11								
					BOTTOM OF BORING 25.0 FEET									

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

COLUMBIANA COUNTY
COL-39-0310
STRUCTURE FOUNDATION INVESTIGATION

DATE: 1-25-84 | DRAWN BY: CRS | CHECKED BY: