MICROFILMED
OCT 26 1987

T-2-R

DESIGN DESIGNATION

Current A.D.T. (1985) =	885 V.P.D.
Design Year A.D.T. (2005) =	1239 V.P.D.
D.H.V. =	186 V.P.H.
D. =	60%-40%
T. =	5%
V. =	55 M.P.H.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
PIC-316-4.31
VILLAGE OF DARBYVILLE
MUHLENBERG TOWNSHIP
PICKAWAY COUNTY

MICROFILMED
JAN 2 1992

PIC-316-4.31	OHIO	1
BRS 816(2)	FHWA REGION 5	23
	FEDERAL PROJECT	

CONVENTIONAL SIGNS

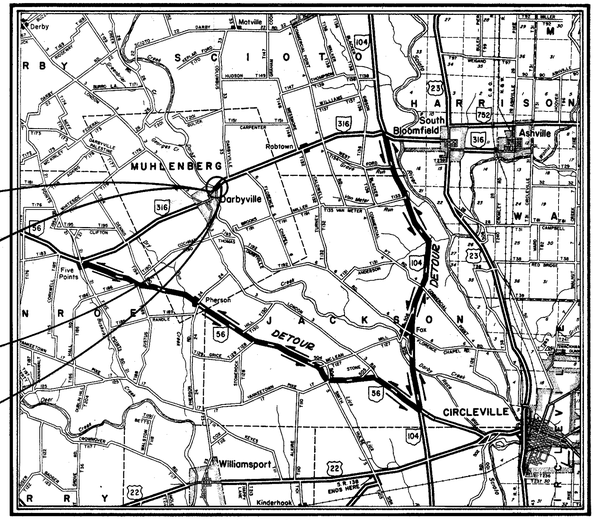
County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) — x — x — (proposed) — x — x —
Center Line 352 353
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light

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

Begin Project
Sta. 227+09
S.L.M.= 4.31

End Project
Sta. 231+05.50
S.L.M= 4.39



LOCATION MAP

SCALE IN MILES
0 2 4 6 8

1983 SPECIFICATIONS

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

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

Approved Edwin L. Tilda
Date 8-13-84 District Deputy Director of Transportation

LINE DATA

Begin Project Sta. 227+09.00
End Project Sta. 231+05.50
Net Length of Project = 396.50 lin. ft. or 0.075 mile

Begin Work Sta. 226+38.00
End Work Sta. 231+62.00
Net Length of Work = 524.00 lin.ft. or 0.099 mile

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

Portion to be improved
State & Federal Routes
Other Roads
Detour

SCALES

Plan 0 20 40
Profile: Horizontal 0 20 40, Vertical 0 6 12
Cross Section: Horizontal 0 5 10, Vertical 0 5 10

SUPPLEMENTAL SPECIFICATIONS		
824	10-08-82	
836	3-12-75	
847	10-17-83	
849	10-19-81	
947	10-17-83	
803	5-27-83	

Approved Walter J. Hostings JDR
Date 9-4-84 Engineer, Bureau of Bridges and Structural Design

11/19/84 JDR
Approved Wayne H. Kauble
Date 1-18-85 Chief Engineer, Planning & Design

Approved Warren I. Smith
Date 1-18-85 Director, Department of Transportation

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS				
AS-1-81 11-27-81				
DBR-2-73 4-10-73				
FB-1-82 5-10-82				
GR-1 2-5-82				
GR-2B 2-5-82				
GR-3 2-5-82				
GR-4A 1-30-84				
LA2 6-1-79				
RB-1-55 2-02-59				

Plan Prepared By:
Location & Design
District No. 6
Ohio Department
of Transportation

SEAL

Project: PIC-316-4.31
Date of Letting _____ 19__, Contract No. _____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

LD0300 Rev. 1-1-81

GENERAL NOTES

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE.

WIDENING EXISTING BERMS

PORTIONS OF THE EXISTING BERM ON THIS PROJECT SHALL BE BUILT UP AND GRADED TO THE WIDTH AND SLOPES INDICATED ON THE TYPICAL SECTIONS. THE EXISTING BERM SHALL BE PREPARED AS REQUIRED IN SPEC. 201.04. ALL EMBANKMENT SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH SPEC. 203.09 EXCEPT THAT THE REQUIREMENTS FOR MOISTURE, DENSITY CONTROL, AND BENCHING ARE HEREBY WAIVED FOR WIDENED BERMS WHICH DO NOT SUPPORT ANY PORTION OF NEW PAVEMENT OR SHOULDER. ALL OF THE ABOVE PROVISIONS SHALL BE CONSIDERED INCIDENTAL TO THE NORMAL EARTHWORK ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.

LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE, IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK LIMITS.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITIES NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

THE OWNER OF THE UNDERGROUND UTILITY SHALL, WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, AFTER NOTICE IS RECEIVED, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

SOUTH CENTRAL POWER CO.
P. O. BOX 250
LANCASTER, OHIO — 43130
PHONE — 614 — 653-4422

GENERAL TELEPHONE COMPANY
1300 COLUMBUS SANDUSKY ROAD
MARION, OHIO - 43302
PHONE - 614 — 383 — 0411

MAINTAINING TRAFFIC

THE TRAFFIC SHALL BE DETOURED AS SHOWN ON SH'T NO. 1

DETOUR NOTIFICATION

DISTRICT TRAFFIC ENGINEER SHALL BE NOTIFIED ONE WEEK IN ADVANCE OF INITIATION OF ANY WORK REQUIRING TRAFFIC TO BE DETOURED.

U.S.G.S. GAGE STATION

THE CONTRACTOR SHALL NOTIFY U.S.G.S., (15) FIFTEEN DAYS PRIOR TO TO THE REMOVING OF THE EXISTING STRUCTURE, TO REMOVE THE EXISTING GAGE STA. BUILDING, EQUIPMENT AND GAGE FROM THE EXISTING PIER.

CALCULATIONS

CALC.: W.P.H. 7-25-84
CHK.: T.M.L. 8-9-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

2/23

Item 611 Reinforced Concrete Approach Slab
Sta 226+84 To Sta 227+09 = 25'
Sta 231+03.5 To Sta 231+30.5 = 25'
50' × 28' ÷ 9 = 155.55 Sq.Yd.
Total 611 = 156 Sq.Yd.

Item 203 Subgrade Compaction
Same Sta as Above
50' × 28W ÷ 9 S.F. = 155.55
Total 203 = 156 Sq.Yds.

Item 617 Shoulder Compacted Aggregate
Stationing as Above - 4' Wide Each Side
25' × 8'W × 2 × 0.167 Ave. Th. ÷ 27 = 2.5 Cu.Yd.
Total 617 = 3 Cu.Yds.

Item 304 Aggregate Base
Stationing as Above, Under Approach Slab
50' × 28'W × 0.25 Avg. T ÷ 27 = 12.96
Total 304 = 13 Cu.Yds.

Item 404 Asphalt Concrete, AC-20 (Feathering)
Sta 226+59 To Sta 226+84 = 25'
Sta 231+30.5 To Sta 231+55.5 = 25'
25' × 2 = 50' × 20'W × 0.0833 (Avg.T) ÷ 27 = 3.1 Cu.Yd.
Total 404 3 Cu. Yd.

Item 407 Tack Coat
Stationing As 404 Above
25' × 20' × 2 ÷ 9 = 55.55 Sq.Yds. × 0.10 Gal/Sq.Yd. = 5.55 Gal
Total 407 6 Gal.

Item 659 Seeding & Mulching
Seeding Area From Sheet 4 & 5 = 1142 S.Y.
Total 659 = 1142 Sq.Yd.

Item 659 Commercial Fertilizer
Seeding & Mulching Area = 1142 Sq.Yds.
1142 × 9 SF = 10278 S.F.
10278 ÷ 1000 × 20 lbs. = 206 lbs ÷ 2000 = 0.103
Total 659 C.F. 0.1 Ton.

TREE REMOVAL AND REFORESTATION
ALL TREES 4" DBH or GREATER WHICH ARE REMOVED, WILL BE REPLACED WITH INDIGENOUS NURSERY STOCK TREES OF AT LEAST 1" DBH, FURNISHED AND PLANTED BY THE CONTRACTOR IN ACCORDANCE WITH ODOT STANDARD DRAWING LA-2 PLANTING AND BRACING. THE ENGINEER SHALL KEEP AN ACCURATE RECORD OF THE NUMBER OF 4" DBH OR LARGER TREES REMOVED SO THAT A COMPARABLE NUMBER OF 1" DBH TREES CAN BE PLANTED. THE REFORESTATION WORK SHALL PREFORMED AFTER FINAL GRADING. THE PLANTING LAYOUT SHALL BE AT RANDOM LOCATIONS AS DIRECTED BY THE ENGINEER.
THE MATERIAL EQUIPMENT AND LABOR NEEDED FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR 201 CLEARING AND GRUBBING AS PER PLAN.
SEE SHEET 23 of 23 FOR PLANTING LOCATIONS.

PIC-316-4.31

GENERAL SUMMARY

SHEET NUMBER 2	3	4	5	ITEM	TOTAL QUANT.	UNIT	DESCRIPTION
							ROADWAY
				201		Lump	Clearing & Grubbing as per plan
		25	1373	203	1398	Cu.Yds.	Excavation Not Including Embankment Construction
		8	1257	203	1265	Cu.Yds.	Embankment
156				203	156	Sq.Yds.	Subgrade Compaction
		112.82	66	606	178.82	Lin.Ft.	Guard Rail, Type 5
		2	2	606	4	Each	Anchor Assembly, Standard type T
		2	2	606	4	Each	Bridge Terminal Assembly, Standard type B
	0.09			614	0.09	Mile	Temporary Center Lines Class II
							PAVEMENT
13				304	13	Cu.Yds.	Aggregate Base
3				404	3	Cu.Yds.	Asphalt Concrete, AC-20
6				407	12	Gal.	Tack Coat
156				611	156	Sq.Yds.	Reinforced Concrete Approach Slabs (T=15")
1				407	1	Cr.Ton	Cover Aggregate
3				617	3	Cu.Yd.	Compacted Aggregate
							EROSION CONTROL
		242	237	601	479	Cu.Yds.	Rock Channel Protection, Type C, Without Filter
		346	796	659	1142	Sq.Yds.	Seeding & Mulching
0.10				659	0.1	Tons	Commercial Fertilizer
				614		Lump	Maintaining Traffic
				619		Lump	Field Office
				623		Lump	Construction Layout Stakes
				624		Lump	Mobilization
							For Bridge Quantities See Sheet No. 15

CALC. BY		OHIO	3
DATE		FHWA REGION 5	23
CHKD. BY			
DATE			

PIC-316-4.31

614 WORK ZONE PAVEMENT MARKINGS

GENERAL

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

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

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

TEMPORARY PAVEMENT MARKING MATERIALS

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

PAINT

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

TYPE B AND TYPE C PREFORMED MATERIAL

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

PLACEMENT

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

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

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

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

CLASS II MARKINGS

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

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

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

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

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

CONFLICTING EXISTING MARKINGS

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

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

INTERIM MARKINGS

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

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

METHOD OF MEASUREMENT

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

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

BASIS OF PAYMENT

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

ITEM	UNIT	DESCRIPTION	
~~614~~	~~MILES~~	~~TEMPORARY LANE LINES, CLASS~~ ____,	*
614 *0.09*	MILES	TEMPORARY CENTER LINES, CLASS *II*,	*
~~614~~	~~LIN. FT.~~	~~TEMPORARY CHANNELIZING LINES, CLASS I,~~	*
~~614~~	~~MILES~~	~~TEMPORARY EDGE LINES, CLASS I,~~	*
~~614~~	~~LIN. FT.~~	~~TEMPORARY GORE MARKINGS, CLASS II,~~	*
~~614~~	~~LIN. FT.~~	~~TEMPORARY STOP LINES, CLASS I,~~	*
~~614~~	~~LIN. FT.~~	~~TEMPORARY CROSSWALK LINES, CLASS I,~~	*
~~614~~	~~EACH~~	~~TEMPORARY LANE ARROWS, CLASS I,~~	*
~~614~~	~~EACH~~	~~TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I,~~	*
~~614~~	~~EACH~~	~~TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I,~~	*
~~614~~	~~LIN. FT.~~	~~TEMPORARY TRANSVERSE LINES, CLASS I,~~	*
~~614~~	~~LIN. FT.~~	~~TEMPORARY DOTTED LINES, CLASS I,~~	*

*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C

Quantity Carried to General Summary, See Sh't. No. 2

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.

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

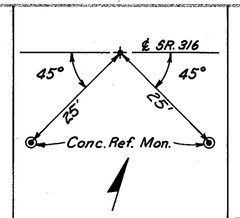
A quantity of 0.09 miles of temporary center lines, Class II, is to be used as "Directed by the Engineer".

CALC. W R H 8-8-84
CHK. T.M.L. 8-9-84

July 25, 1984

TEMPORARY PAVEMENT MARKING NOTES

MICROFILMED
OCT 26 1987

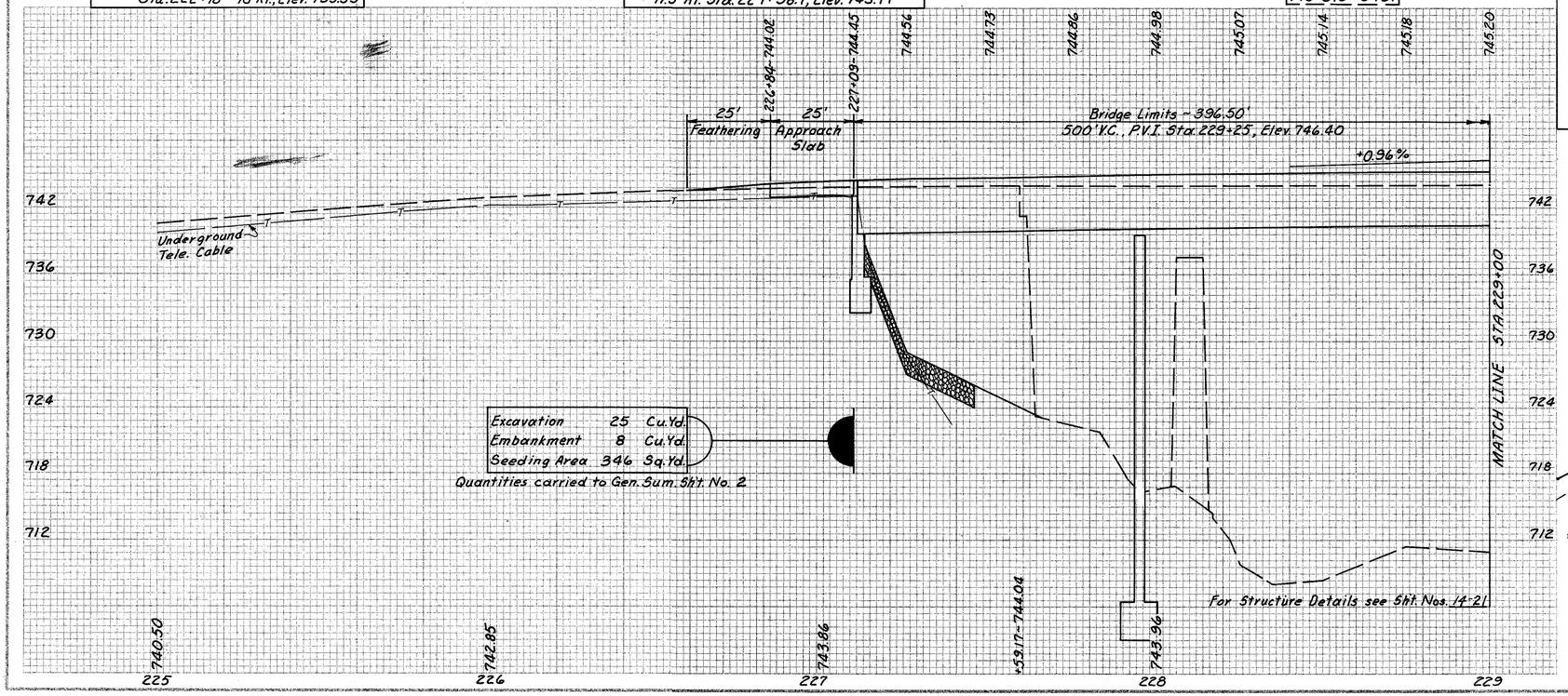


REFERENCE POINT
P.O.T. STA. 222+00

B.M. Top of Concrete Reference Monument for Sta. 222+00 Sta. 222+18 ~ 18' Rt., Elev. 733.55

B.M. Painted "D" on top of W. Abut. at N.E. corner of Metal Building for Stream Gage Station. Str. # PIC 316 0431 11.3' Rt. Sta. 227+58.7, Elev. 743.77

PIC-316-0431



Excavation	25	Cu.Yd.
Embankment	8	Cu.Yd.
Seeding Area	346	Sq.Yd.

Quantities carried to Gen. Sum. Sht. No. 2

LEGEND

404 Feathering

617 Compacted Aggregate

FED. RD. DIVISION	STATE	PROJECT		4 / 23
2	OHIO			

PIC-316-4.31

CALC. T.M.L. 7-18-84
CHK. W.R.H. 7-26-84

ESTIMATED QUANTITIES

REF. NO.	STATION FROM	STATION TO	SIDE	606 Guardrail Type 5 Lin.Ft.	606 Bridge Terminal Assembly, Type B Each	606 Anchor Assembly, Type T Each		601 Rock Channel Protection, Type C, w/o filter Cu.Yd.			
1-GR	226+40.09	227+09	Lt	56.41	1	1					
2-GR	226+40.09	227+09	Rt.	56.41	1	1					
1-D	227+11.25	227+44.25	L&R					242			
TOTALS				112.82	2	2		242			

Quantities carried to Gen. Sum. Sht. No. 2
Note: For Quantities not shown, See Sht. No. 2

EXISTING BRIDGE DATA	Span #1	Span #2
Type	Steel Beam	High Truss
Span	49'-6"	292'-0"
Roadway	18'-0"	
Loading	CF-30	
Skew	0°	
Wearing Surface	Asphaltic Concrete	
Approach Slabs	None	
Alignment	Tangent	
Date Built	1913	

PROPOSED BRIDGE DATA

Type: 4-Span composite continuous steel (A588) beams with reinforced concrete deck and substructure

Span: 84'-112'-112'-84' ℄ Bearings

Roadway: 28'-0" ℄ ft Guardrail

Loading: HS 20-44 & Alternate Military Loading (Case II)

Skew: None

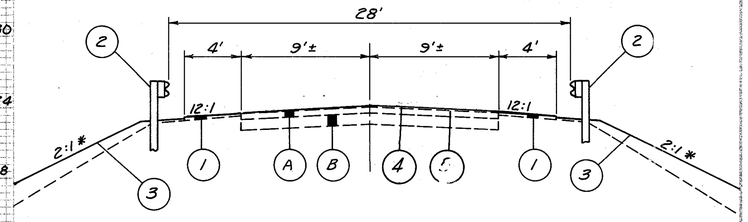
Wearing Surface: Monolithic Concrete

Approach Slab: A9-1-81 (25' Long)

Alignment: Tangent

Superelevation: None

TYPICAL SECTION
TYPE 404



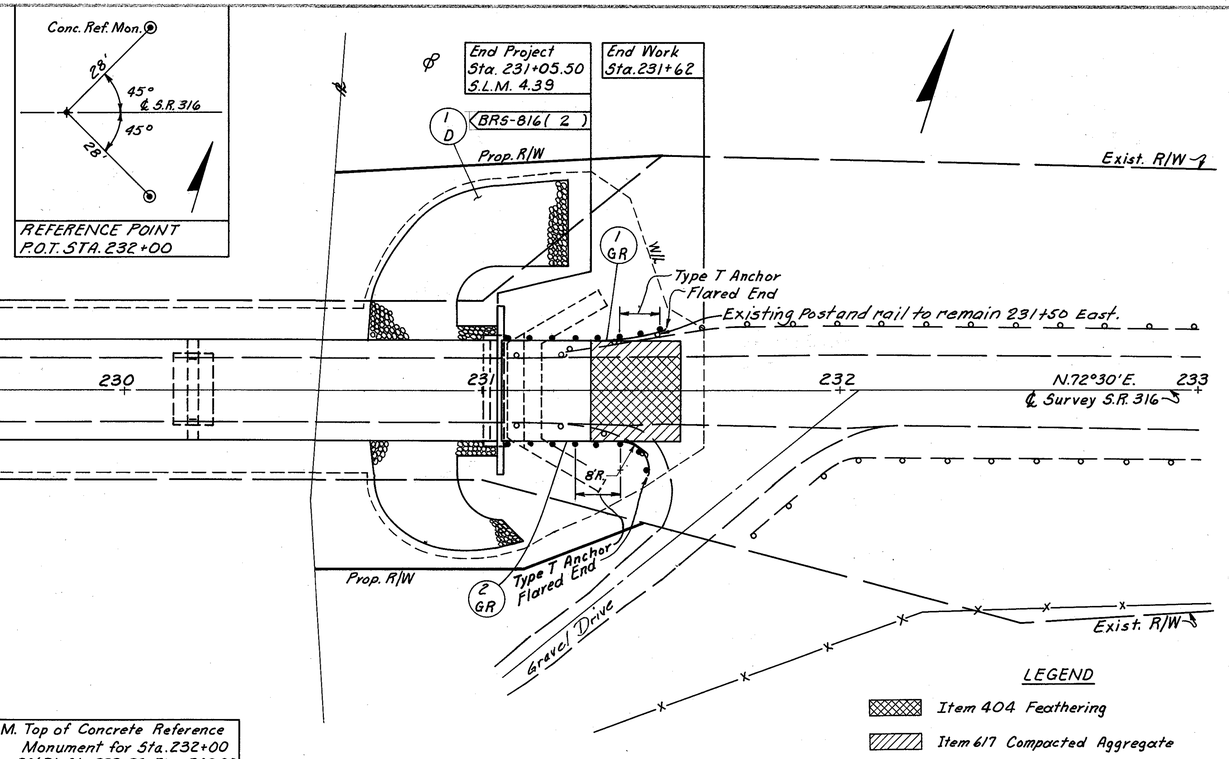
*Unless Otherwise Shown on Cross Sections

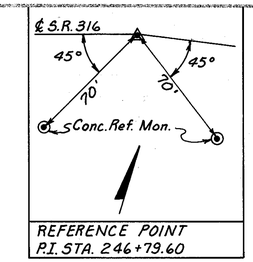
(A) Open Graded Road Mix
(B) Traffic Bound Base
(1) 617 Compacted Aggregate
(2) 606 Guardrail, Type 5
(3) 659 Seeding & Mulching
(4) 404 Asphalt Concrete, AC-20 (1" Avg.)
(5) 407 Tack Coat & Cover Aggregate

TWO WORKING DAYS BEFORE YOU DIG Call... 800-362-2764 TOLL FREE OHIO UTILITIES PROTECTION SERVICE NON-MEMBERS MUST BE CALLED DIRECTLY

PLAN & PROFILE & TYPICAL SECTION

MICROFILMED
OCT 26 1987





B.M. Top of Concrete Reference Monument for Sta. 232+00 20' Rt. Sta. 232+20, Elev. 742.80

LEGEND

Item 404 Feathering

Item 617 Compacted Aggregate

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

5/23

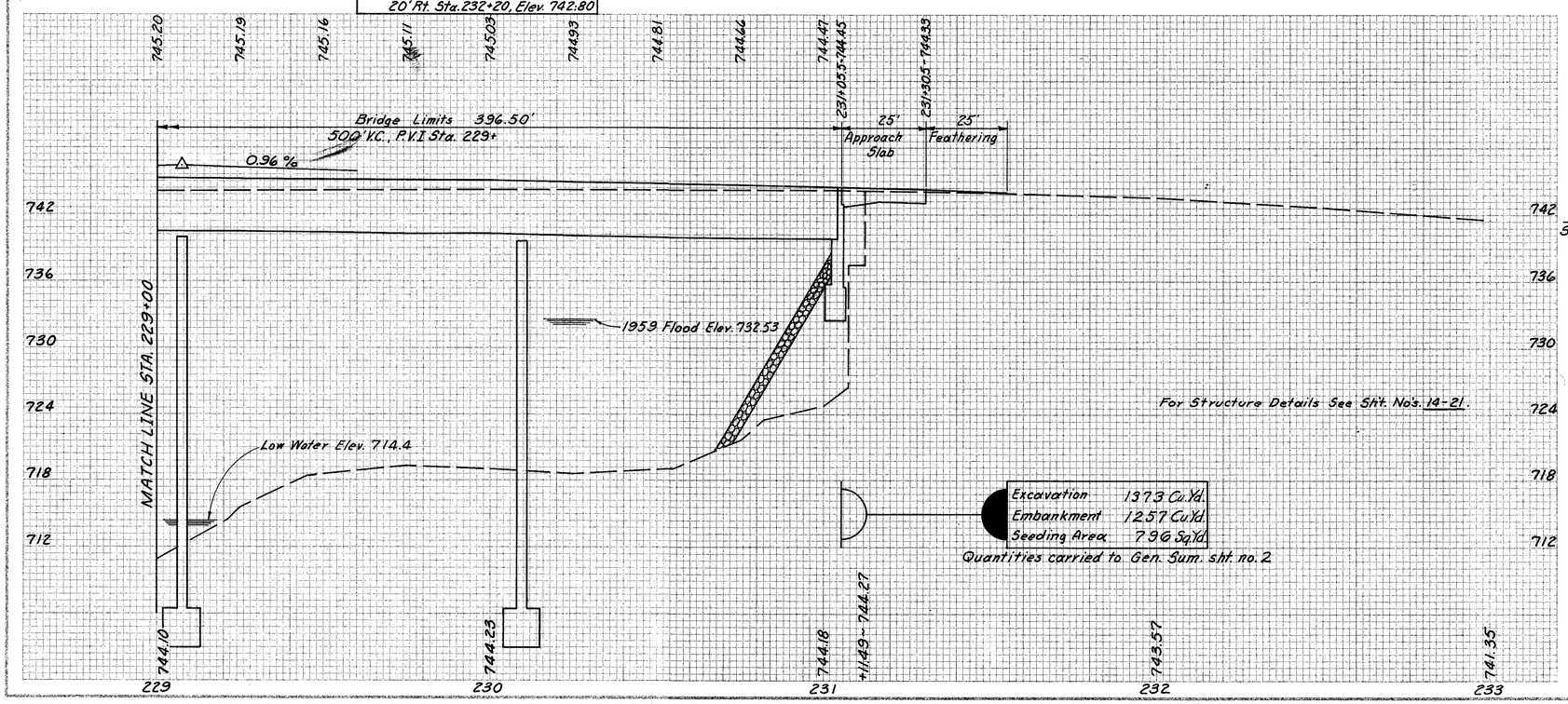
PIC-316-4.31

CALC. T.M.L. 8-19-84
CHK. W.R.H. 8-26-84

ESTIMATED QUANTITIES

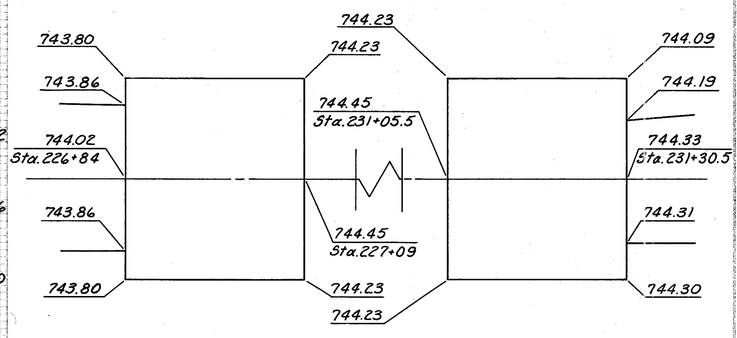
REF. NO.	STATION FROM	STATION TO	SIDE	606 Guardrail, Type 5 Lin.ft.	606 Bridge Terminal Assembly, Type B Each	606 Anchor Assembly, Type T Each		601 Rock Channel Protection, Type C, without Filter Cu.Yd.			
1-GR	231+05.5	231+51.35	Lt.	33.00	1	1					
2-GR	231+05.5	231+46.75	Rt.	33.00	1	1					
1-D	230+67.	231+03.25	L&R					237			
TOTALS				66.00	2	2		237			

Quantities carried to Gen. Sum. Sht. NO. 2
For Quantities not shown see sht. No. 2



Excavation	1373 Cu.Yd.
Embankment	1257 Cu.Yd.
Seeding Area	7.96 Sq.Yd.

Quantities carried to Gen. Sum. sht. no. 2



APPROACH SLAB DETAIL

TWO WORKING DAYS
BEFORE YOU DIG
Call... 800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

PLAN & PROFILE

CROSS SECTIONS Sta. 226+25 to Sta. 227+09

FHWA REGION	STATE	PROJECT
5	OHIO	

7
23

PIC-316-4.31

CALC. T.M.L. 7-18-84
CHK. W.R.H. 7-26-84

CROSS SECTIONS Sta. 231+05.5 to Sta. 231+20

FEDERAL REGION	STATE	PROJECT	
5	OHIO		

8
23

PIC-316-4.31

CALC. T.M.L. 7-18-84
CHK. W.R.H. 7-26-84

SEEDING

ENG. WIDTH	SQ. YDS.
19	42
57	71
77	78
57	

End Guardrail ~Lt.
Sta. 231+51.35

231+50
744.02

231+40
744.09

End Guardrail ~Rt.
Sta. 231+46.75

Back Only 26

Back & Ahead 20

744.33
END APPROACH SLAB
231+30.50
744.16

End 24" R.C.P.~Lt.
Sta. 231+24

Back & Ahead 138

Sta. 231+20

W/L
Ex. R/W
Prop. R/W
℄ Gravel Dr.
℄ Gravel Drive
2:1

	Excavation	Embankment	Seeding Area
23 Cu. Yd.	503 Cu. Yd.	308 Sq. Yd.	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		0	6
0	34		
		0	34
Ahead 0	158		
Back 26	158		
		10	103
Sta. 231+20	25	371	

TWO WORKING DAYS
BEFORE YOU DIG
Call 1-800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

CROSS SECTIONS Sta. 231+30.50 to Sta. 231+50

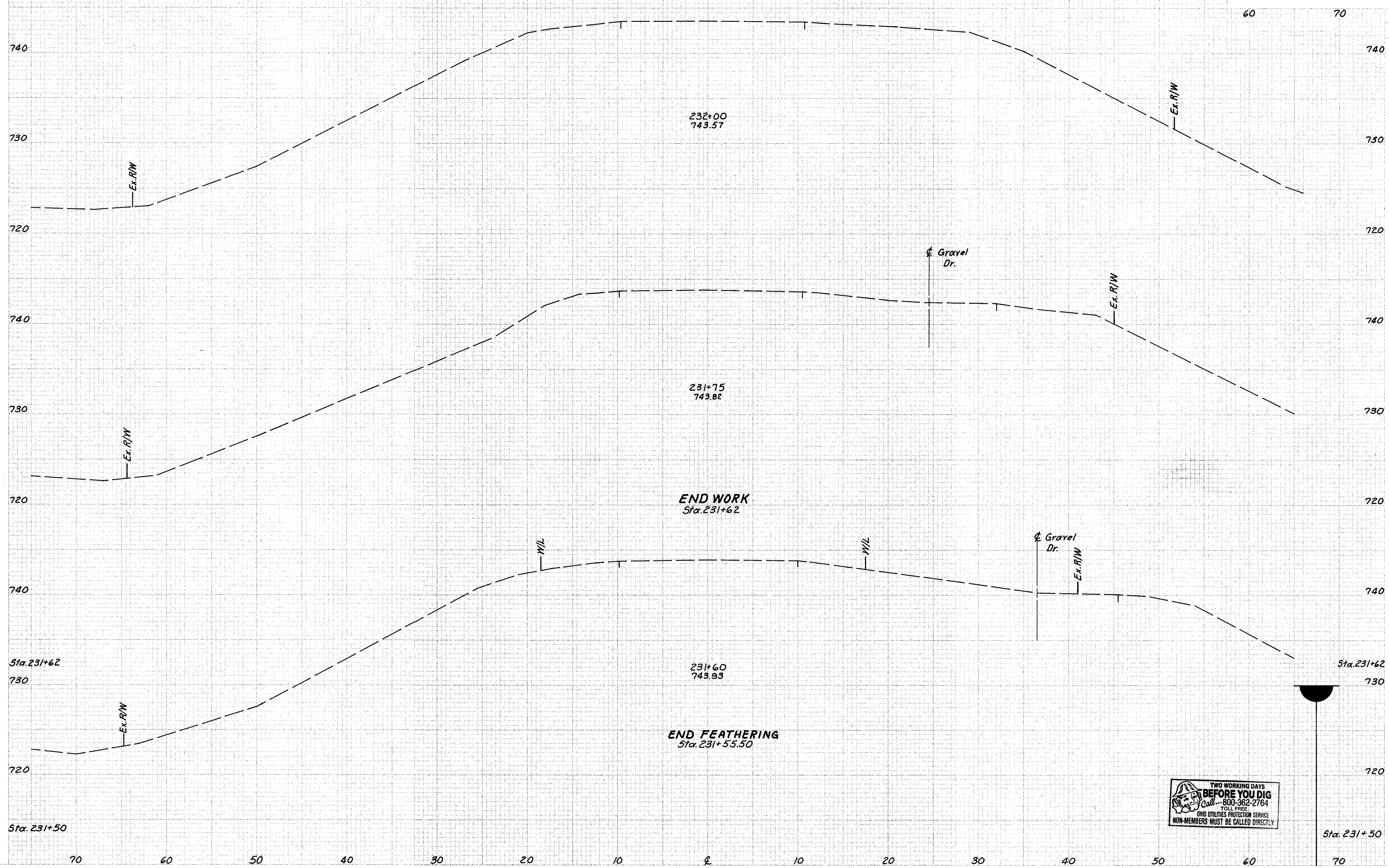
FHWA REGION 5 | STATE OHIO | PROJECT

9
23

PIC-316-4.31

CALC. T.M.L. 7-18-84
CHK. W.R.H. 7-26-84

SEEDING
END WIDTH | SQ. YDS.



0 Sta.231+62
2
15
19
19 Sta.231+50

END AREA CUT FILL | VOLUME CUT FILL
Sta.231+62 0 0
0 0
Sta.231+50 0 0

TWO WORKING DAYS BEFORE YOU DIG
Call...800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

CROSS SECTIONS Sta.231+60 to Sta.232+00

SEEDING	
SEED WIDTH	SEED LBS.
31	
73	
32	
37	
0	

FEDERAL REGION	STATE	PROJECT	
5	OHIO		

10
23

PIC-316-4.31

CALC. T.M.L. 7-5-84
CHK. P.A.J. 7-16-84

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

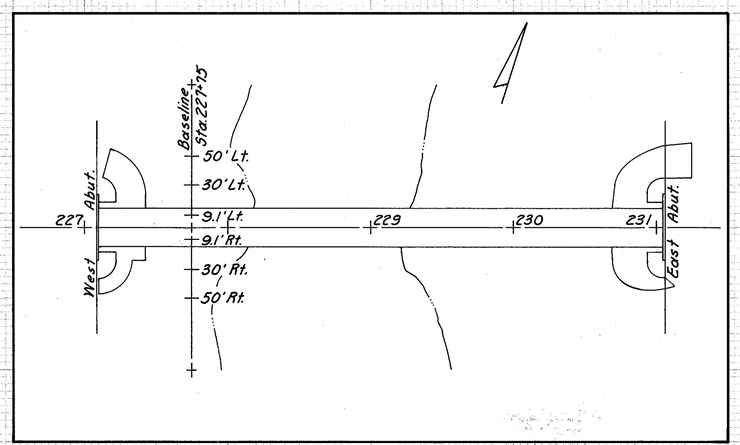
740
730
720
740
730
720
740
730
720
740
730
720

2:1
706
Var.
9.1'-Rt.
2:1
152
Var.
R/W & W/L
30'-Rt.
R/W
50'-Rt.

Begin Work 52' Rt.

SEED AREA		VOLUME	
SQ. YDS.	ACRES	CU. YDS.	ACRES
706	1		
		332	1
152	0		
		62	0
0	0		

TWO WORKING DAYS
BEFORE YOU DIG
Call... 800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY



CHANNEL CROSS SECTIONS at WEST ABUT. ~ RIGHT

FHWA REGION	STATE	PROJECT	
5	OHIO		

11/23

PIC-316-4.31

CALC. T.M.L. 7-5-84
CHK. P.A.J. 7-16-84

CHANNEL CROSS SECTIONS at West ABUT. ~ LEFT

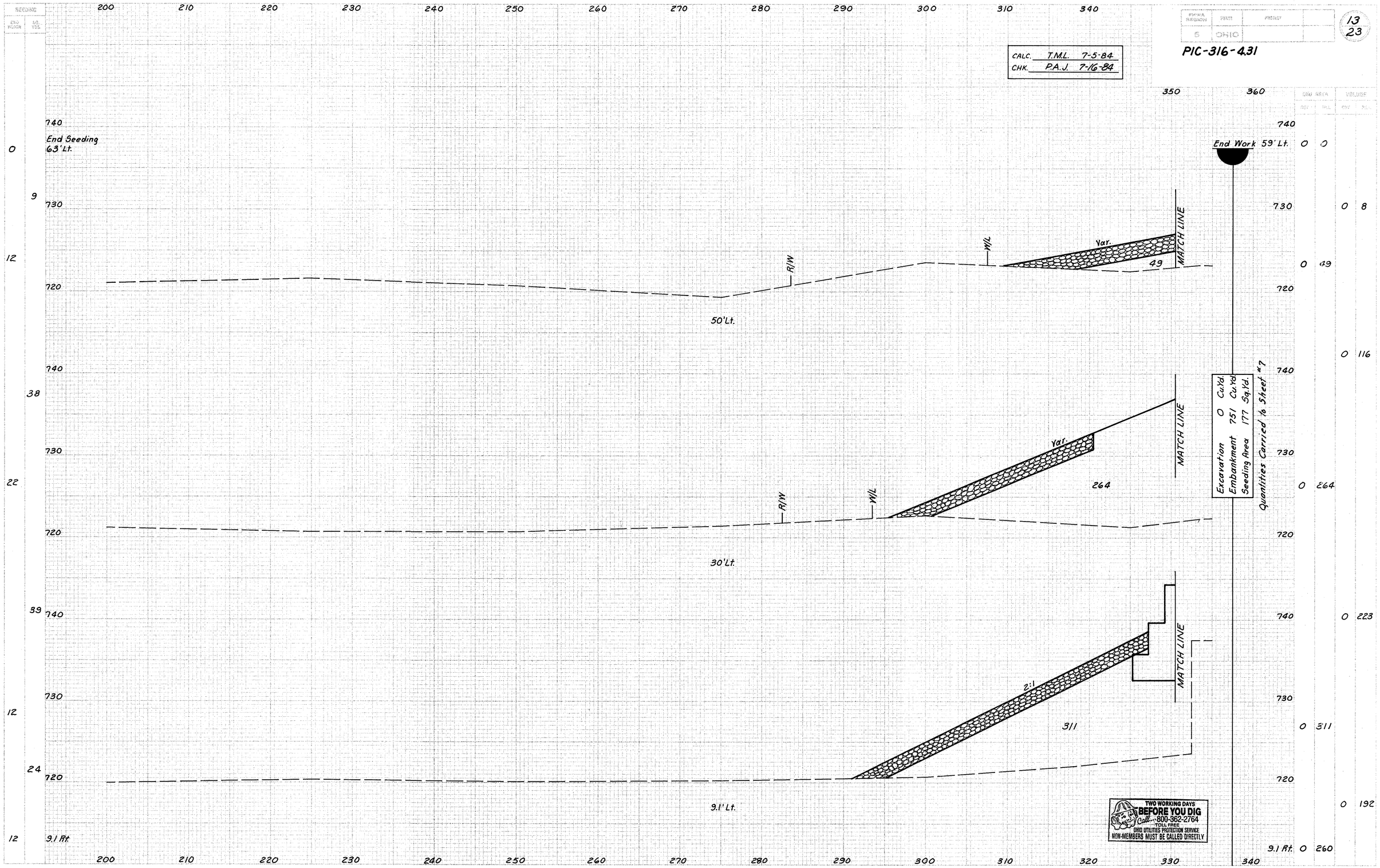
CHANNEL CROSS SECTIONS at EAST ABUT. ~ RIGHT

FEDERAL REGION	STATE	PROJECT	
5	OHIO		

13
23

PIC-316-4.31

CALC. T.M.L. 7-5-84
CHK. P.A.J. 7-16-84



TWO WORKING DAYS
BEFORE YOU DIG
Call 800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

CHANNEL CROSS SECTIONS at EAST ABUT. - LEFT

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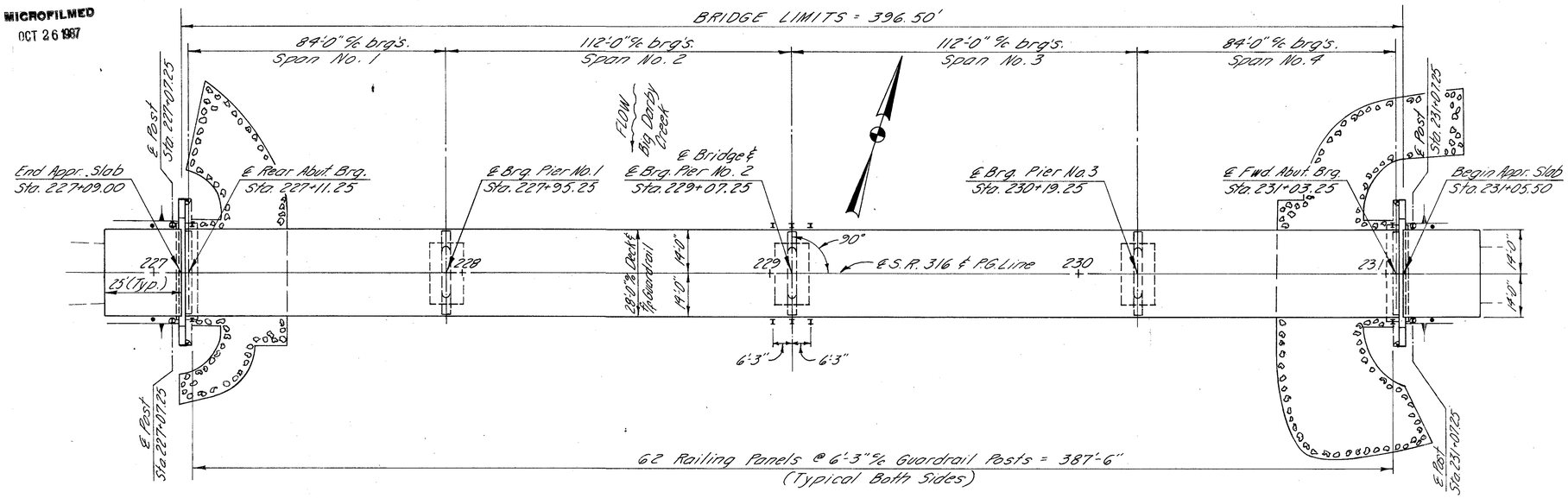
OCT 26 1987

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

14
23

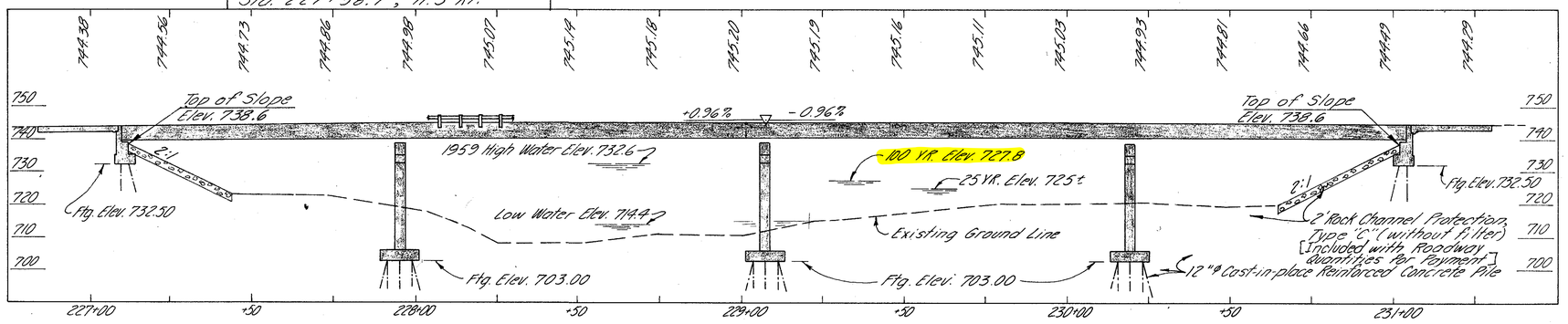
PIC-316-4.31



GENERAL PLAN

BENCH MARK, Elev. 743.77
Painted "□" on top of W. Abut. at N.E. Corner of Stream Gage Station Bldg.
Sta. 227+58.7, 11.3' Rt.

500' V.C.
P.V.I. Sta. 229+07.25, Elev. 746.90



ELEVATION

TRAFFIC: 2003 ADT = 1,470
ADTT = 70

DRAINAGE AREA = 534 sq.mi.

Hydraulic Study by C.O. Bridge Bureau.

Q_{25} = 23,700 cfs, V_{25} = 7.7 f/sec., Elev. 725±

Q_{100} = 34,240 cfs, V_{100} = 9.65 f/sec., Elev. 727.8

Clears 25 yr. H.W. by 15.56'

ESTIMATED AVERAGE PAY LENGTH FOR THE 12"ø Cast-in-place Reinforced Concrete Piles:
Rear Abutment = 35'
Piers = 20'
Forward Abutment = 90'

EMBANKMENT CONSTRUCTION: The approach embankment at the forward abutment (including the spill-thru slope) shall be constructed to the level of the subgrade for a minimum distance of 40 feet back of the abutment. Excavation may then be made for the abutment and piles driven.

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

GENERAL NOTES

REFERENCE shall be made to Standard Drawings:

RB-1-55	Revised	2-02-59
FB-1-82	Dated	5-10-82
AS-1-81 Sheets 1 and 2	Dated	11-27-81
DBR-2-73	Dated	4-10-73

and to Supplemental Specifications:

824	Dated	10-08-82
~~1027~~	~~Dated~~	~~3-04-80~~
836	Dated	3-12-75
849	Dated	11-19-81

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1977, including the 1978, 1979, 1980, 1981, 1982 and 1983 Interim Specifications and the Ohio "Supplement" to these specifications.

DESIGN DATA

Design Loading - HS20-44 Case II and the Alternate Military Loading

Concrete Class S - compressive strength 4500 p.s.i.(Superstructure)

Concrete Class C - compressive strength 4000 p.s.i.(Substructures)

Reinforcing Steel- ASTM A615, A616, A617 - Grade 60 minimum yield strength 60,000 p.s.i.

Structural Steel ASTM A588 - yield strength 50,000 p.s.i.

Deck Protection Method:

Epoxy coated reinforcing steel, top mat only.

Monolithic wearing surface is assumed, for design purposes, to be 1" thick.

REMOVAL OF EXISTING STRUCTURE: The existing bridge shall be removed in accordance with Item 202.03 of the Construction and Materials Specification. Suitable waste masonry may be placed as bank protection as directed by the Engineer.

PILE HAMMER: The pile hammer used to install the cast-in-place reinforced concrete piles shall have a State's Energy Rating of not less than 18,000 foot-pounds. This requirement does not relieve the Contractor from 108.05 which states that the Contractor is to provide sufficient equipment for prosecuting the required work. Refer to "ODOT's Manual of Procedures for Structures" to obtain the State's Energy Rating.

High driving stresses may be developed in the piles during the installation of the required service piles. The minimum wall thickness for the piles is 0.209 inches. The actual pile gage chosen is the responsibility of the Contractor.

PILE DESIGN LOADS: The design load for the abutment piles is 36 tons per pile and the design load for the pier piles is 50 tons per pile.

12 INCH PRECAST PRESTRESSED CONCRETE PILES may be substituted for the 12 inch cast-in-place reinforced concrete piles shown on these plans. Drawings showing details of and specifications for prestressed concrete piles are available from the Director (Bureau of Bridges). If the prestressed pile alternate is chosen, the method of measurement and basis of payment shall be the same as for cast-in-place reinforced concrete piles per 507.

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STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

GENERAL PLAN, ELEVATION & GENERAL NOTES

BRIDGE No. PIC-316-0431
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 2:7+09.00
2:1+05.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BGH 1-30-84		R.D.Y.	G.T.	TRO	2/15/84	

E.O. 1283

HILLS CO. 10-7155-250-1-83

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OCT 26 1987

St. IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

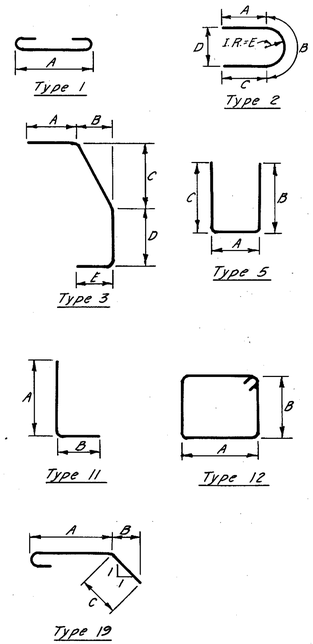
REINFORCING STEEL LIST

CALC BY ____ DATE ____
CHKD. BY ____ DATE ____

PIC-316-4.31

OHIO | FHWA REGION 5

BENDING DIAGRAM



ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	Abutment Rear	Abutment Fwd.	DIMENSION A	B	C	D	E
D801	38	4'-11"	499	19	19	19	2'-7"	1'-0"	1'-5"		
A801	8	32'-9"	691	1	4	4	30'-6"				
A802	6	30'-6"	489	St.	3	3					
A601	40	14'-9"	861	5	20	20	5'-4"	6'-8"	2'-7"		
A602	56	11'-0"	925	5	28	28	1'-5"	4'-11"	4'-11"		
A603	56	4'-7"	386	5	28	28	1'-5"	1'-9"	1'-9"		
A604	56	6'-3"	526	5	28	28	11"	2'-10"	2'-10"		
A605	4	12'-4"	74	5	2	2	5'-4"	4'-9"	2'-7"		
A501	44	8'-5"	386	5	22	22	5'-4"	1'-8"	1'-8"		
A502	40	7'-2"	299	11	20	20	6'-8"	7½"			
A503	40	8'-4"	348	5	20	20	3'-5"	2'-7"	2'-7"		
A504	18	26'-8"	501	St.	9	9					
A505	8	24'-7"	205	St.	4	4					
A506	8	24'-5"	204	St.	4	4					
A507	8	21'-3"	177	St.	4	4					
A508	2	33'-2"	69	St.	1	1					
A509	8	9'-10"	82	3	4	4	3'-2"	6'-0"	3'-0"	0	0
A510	8	17'-8"	147	5	4	4	1'-5"	8'-3"	8'-3"		
A511	4 Series of 5	11'-8" to 17'-9"	302	5	2 Series of 5	2 Series of 5	1'-5"	5'-3" to * 8'-1"	5'-3" to * 8'-1"	* Varies by 8½" Increments	
A512	24	12'-5"	311	St.	12	12					

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	Pier No. 1	2	3	DIMENSION A	B	C	D	E
P1001	72	13'-4"	4,131	1	24	24	24	10'-6"				
P901	21	32'-9"	2,338	5	7	7	7	27'-4"	3'-0"	3'-0"		
P801	108	9'-2"	2,643	11	36	36	36	8'-0"	1'-4"			
P802	108	21'-3"	6,128	St.	36	36	36					
P803	108	15'-11"	4,590	St.	36	36	36					
P701	36	21'-2"	1,558	1	12	12	12	19'-6"				
P702	6	27'-0"	331	St.	2	2	2					
P501	110	13'-0"	1,491	St.	36	38	36					
P502	110	8'-8"	994	2	36	38	36	2'-5"	3'-10"	2'-5"	2'-6"	1'-2⅜"
P503	6	17'-0"	106	St.	2	2	2					
P504	6	22'-0"	138	St.	2	2	2					
P505	12	27'-0"	338	St.	4	4	4					
P506	18	10'-5"	196	3	6	6	6	2'-5"	2'-6"	5'-2"	2'-5"	0
P507	36	17'-2"	645	12	12	12	12	2'-8"	5'-8"			
P508	12	15'-10"	198	12	4	4	4	2'-0"	5'-8"			
P509	12	15'-8"	196	12	4	4	4	2'-0"	5'-7"			
P510	12	19'-8"	184	12	4	4	4	2'-0"	5'-1"			
P511	12	13'-10"	173	12	4	4	4	2'-0"	4'-8"			
P512	12	12'-10"	161	12	4	4	4	2'-0"	4'-2"			
P513	12	12'-2"	152	12	4	4	4	2'-0"	3'-10"			
P514	12	11'-2"	140	12	4	4	4	2'-0"	3'-4"			

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	DIMENSION A	B	C	D	E
S501	651	27'-8"	18,785	St.					
S502	364	30'-0"	11,390	St.					
S503	28	24'-10"	725	St.					
EPOXY COATED REINFORCING									
ES601	651	27'-8"	27,053	St.					
ES401	546	30'-0"	10,942	St.					
ES402	42	27'-0"	758	St.					
ES403	123	35'-0"	2,876	St.					
ES404	123	11'-10"	972	St.					
ES405	650	3'-8"	1,592	5	9"	1'-5"	1'-8"		

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Abuts.	Piers	Superst.	General
202	Lump		Structures removed				Lump
503	Lump		Cofferdams, cribs and sheeting				Lump
503	600	Cu. Yds.	Unclassified excavation	155	445		
505	Lump		Pile driving equipment mobilization				Lump
507	1,500	Lin. Ft.	12" Cast-in-place reinforced concrete piles, as per plan	600	900		
509	65,213	Lbs.	Reinforcing steel, Grade 60	7,482	26,831	30,900	
511	321	Cu. Yds.	Class S concrete, superstructure (See proposal note)			321	
511	83	Cu. Yds.	Class C concrete, pier footings		83		
511	194	Cu. Yds.	Class C concrete, piers above footings		194		
511	110	Cu. Yds.	Class C concrete, abutments	110			
513	362,400	Lbs.	Structural steel (AISC Category I)(ASTM A588)(See proposal note)			362,400	
513	3,120	Each	Welded stud shear connectors (See proposal note)			3,120	
516	55.67	Lin. Ft.	Structural expansion joints including elastomeric strip seals, as per plan				55.67
517	793.00	Lin. Ft.	Railing (deep beam rail with steel tubular back-up and steel posts and bolts)				793.00
518	45	Cu. Yds.	Porous backfill	45			
518	62	Lin. Ft.	6" perforated, helical corrugated steel pipe, 707.01	62			
518	64	Lin. Ft.	6" non-perforated helical corrugated steel pipe, including specials, 707.01	64			
824	44,193	Lbs.	Epoxy coated reinforcing steel, Grade 60			44,193	
Special	291	Sq. Yds.	Sealing of concrete surfaces (See Proposal Note)			291	
Special	3,150	Sq. Ft.	Protection of concrete surfaces (See Proposal Note)		3,150		

Quantities Calculated By D.G.T. 1/31/84
Quantities Checked By G.T. 2/6/84

BAR MARKS for reinforcing steel which are epoxy coated include a letter prefix "E". Payment for these bars shall be under Item 824 - Epoxy coated reinforcing steel, Grade 60.

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.

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

REINFORCING STEEL LIST & ESTIMATED QUANTITIES
BRIDGE No. PIC-316-0431
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA 227+09.00
231+05.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.T. 1-31-84	R.D.Y.	R.D.Y.	G.T.	T.R.O.	2/15/84	

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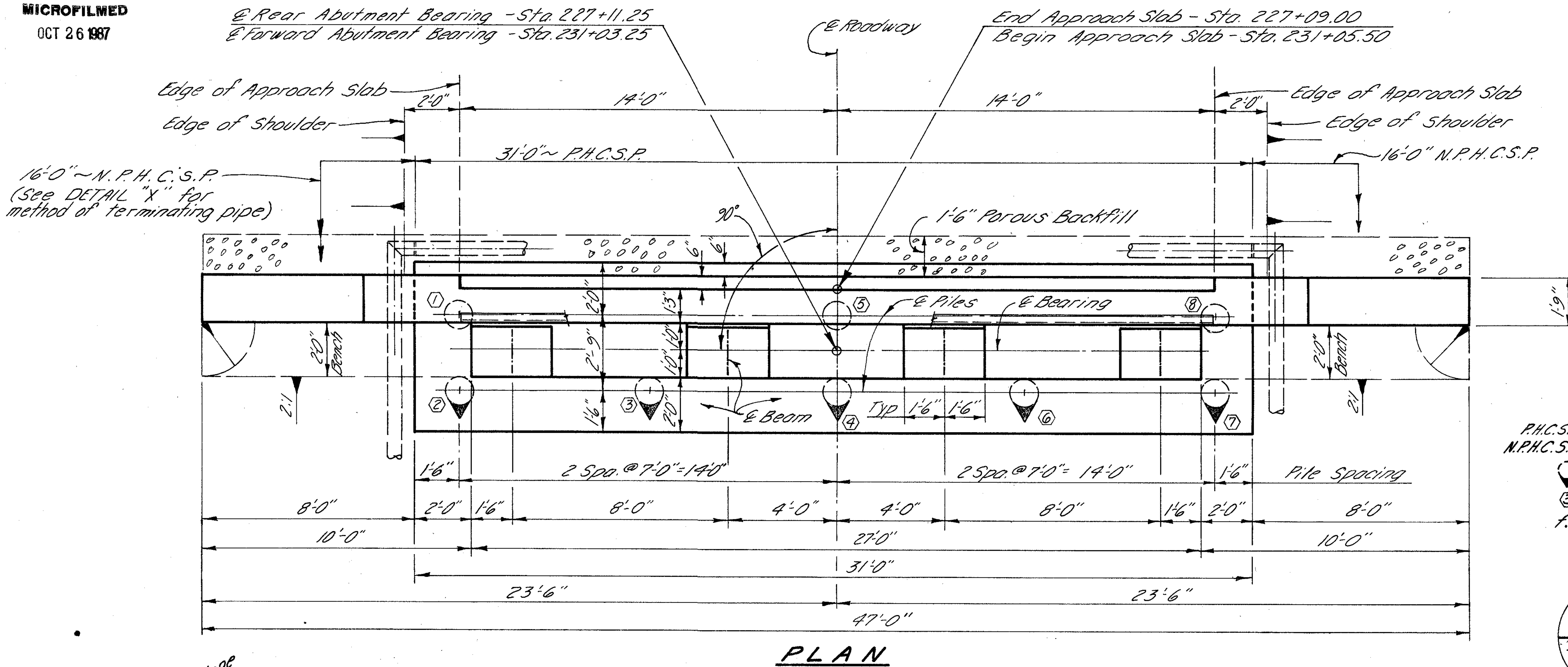
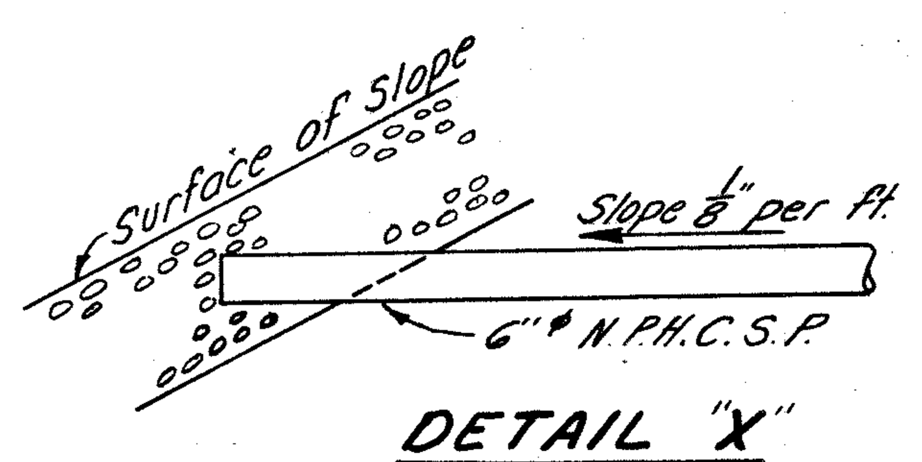
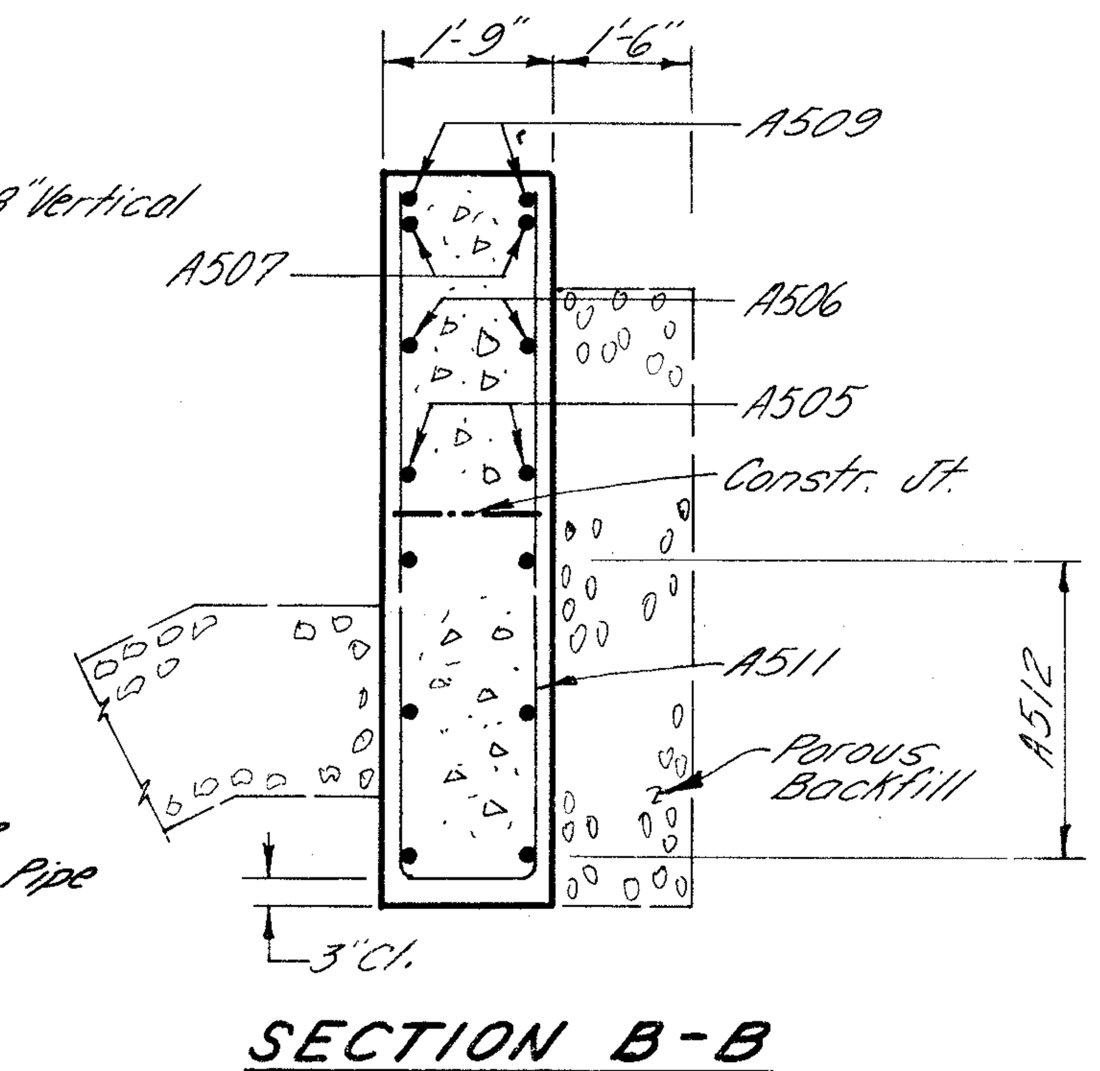
OCT 26 1987

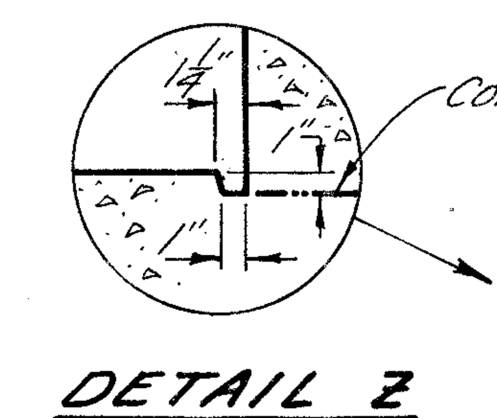


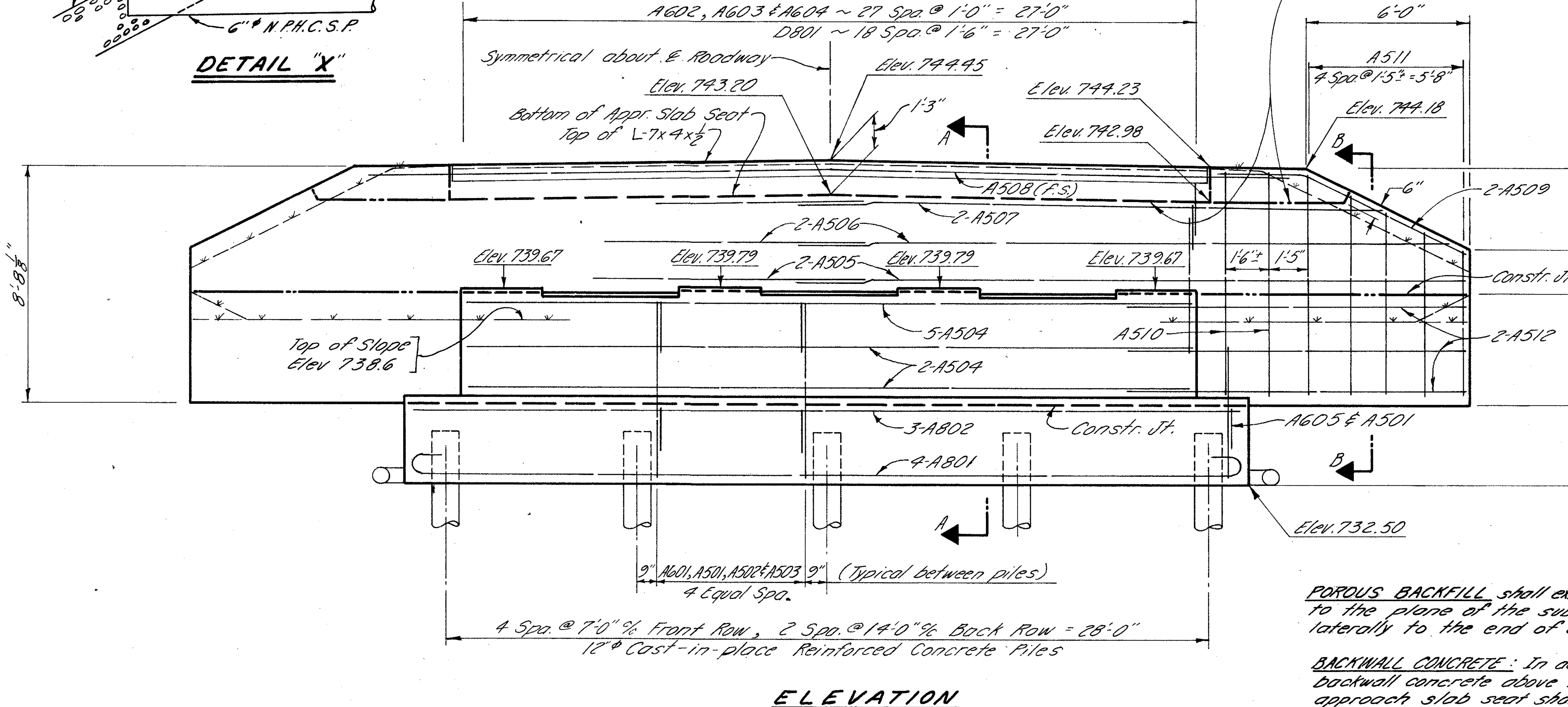


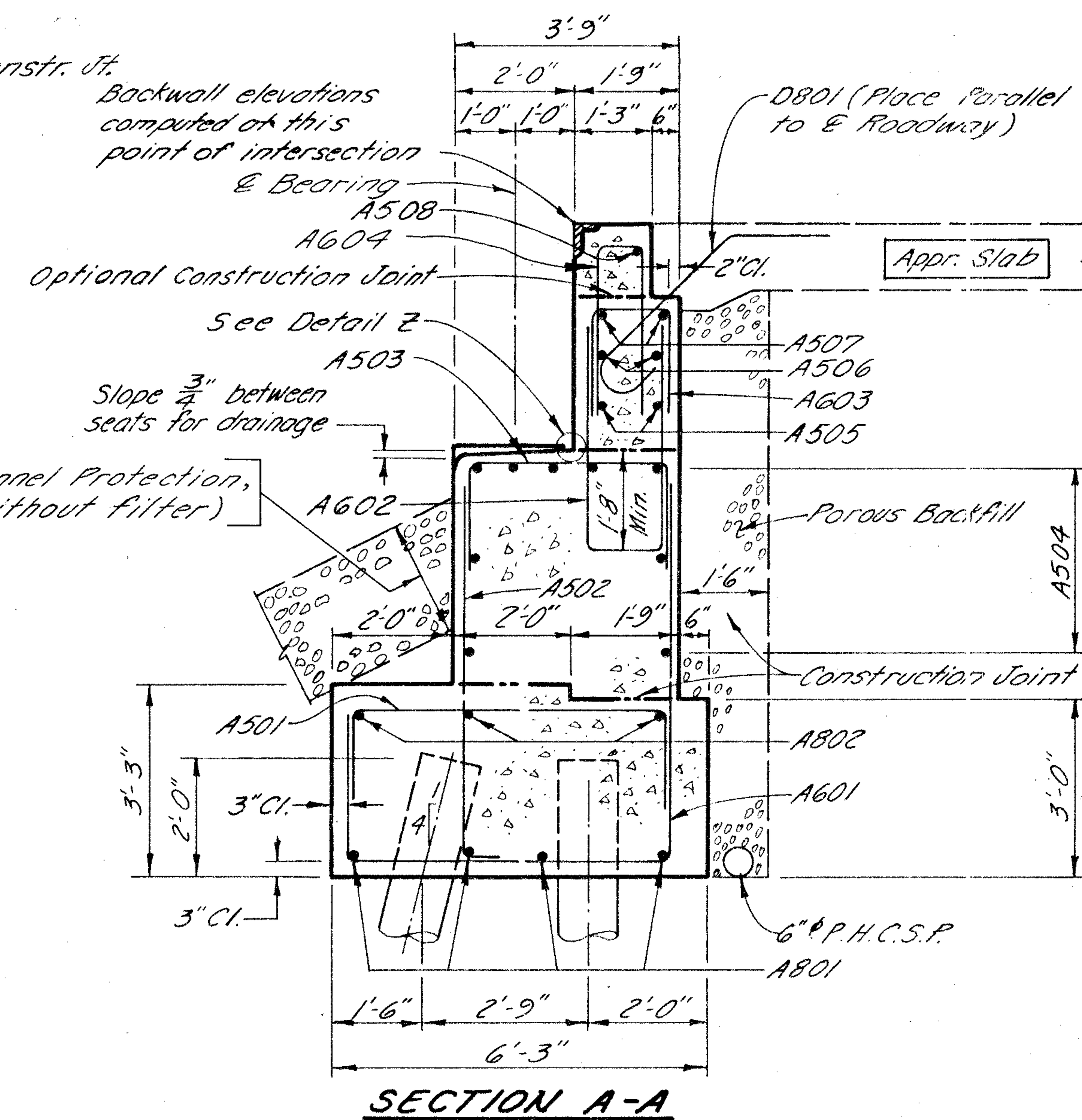
Minimum Lap Splice Length
No. 5 bar = 2'-5" Horizontal, 1'-8" Vertical
No. 6 bar = 2'-0"

LEGEND
P.H.C.S.P. = Perforated Helical Corrugated Steel Pipe
N.P.H.C.S.P. = Non-Perforated Helical Corrugated Steel Pipe
= Indicates battered piles
③ = Indicates pile number
f.s. = far side









POROUS BACKFILL shall extend upward to the plane of the subgrade and laterally to the end of abutment wings.

BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete above the optional construction joint at the approach slab seat shall not be placed until after the deck concrete in the span adjacent to the abutment has been placed.

3/8

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

ABUTMENT DETAILS
BRIDGE No. PIC-316-0431
OVER
BIG DARBY CREEK
PICKAWAY CO. STA. 227+09.00 231+05.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.H.		R.D.Y.	G.T.	TRO	2/15/84	

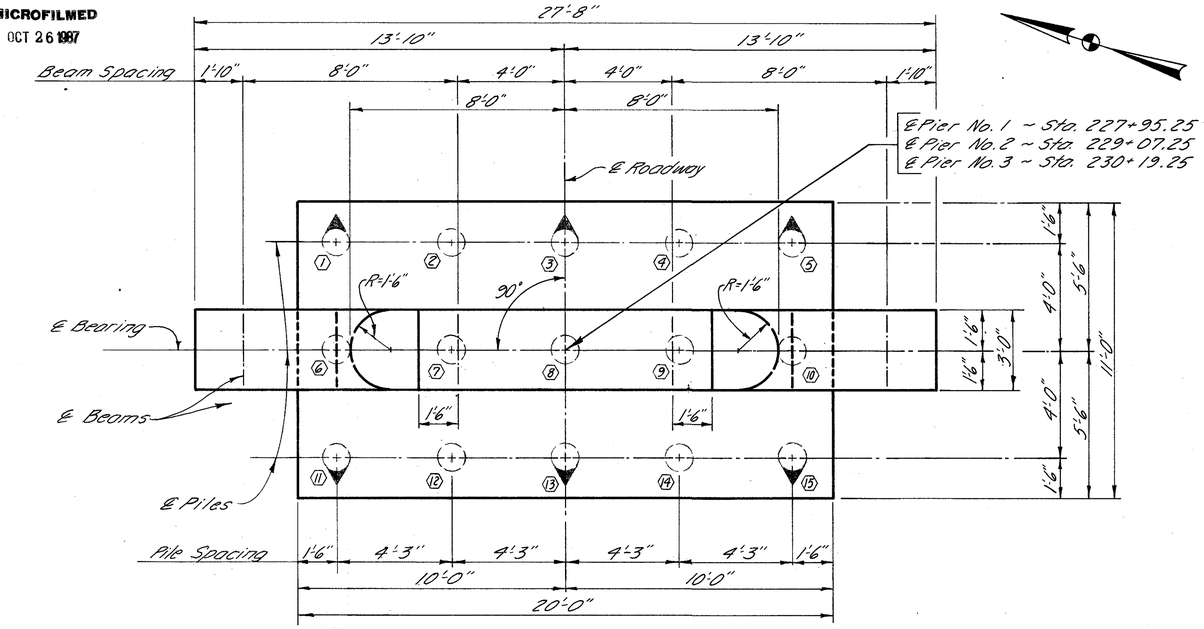
HILLS CO. 10-7155-250-1-83

MICROFILMED
OCT 26 1987

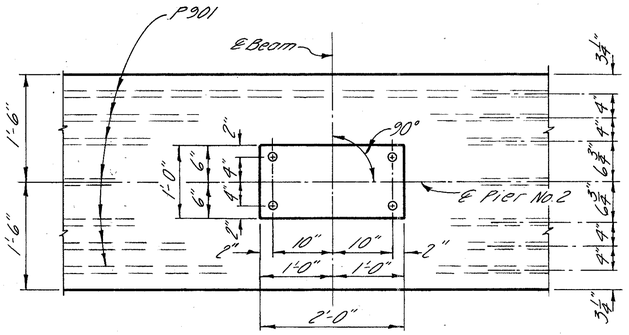
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

17
23

PIC-316-4.31



PLAN



ANCHOR ROD LAYOUT
(F-250 Bearings)

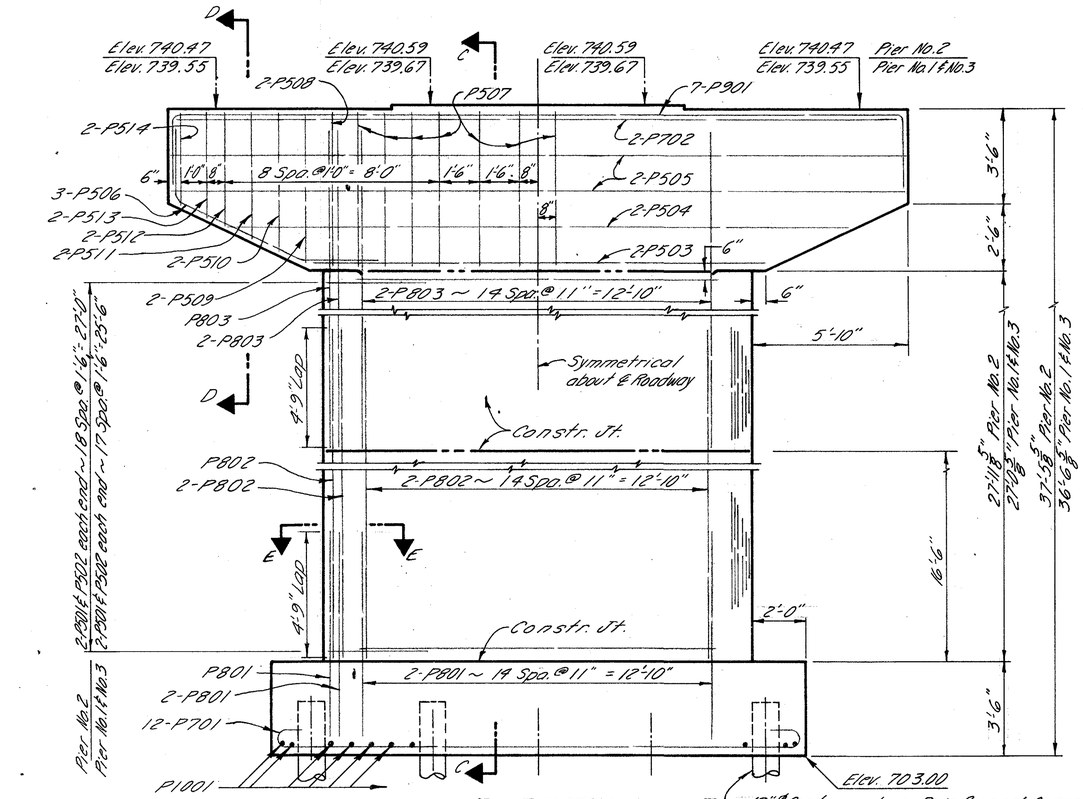
BEARING ANCHORS
At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast in place.

BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors.

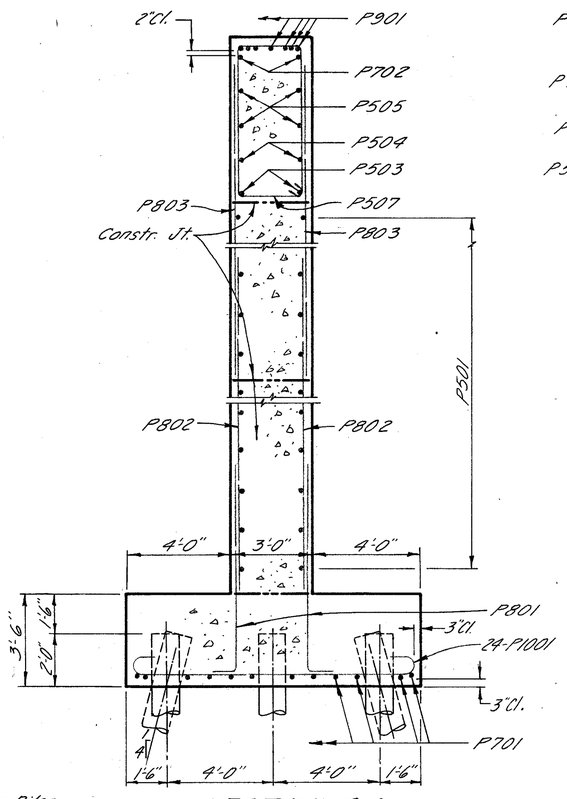
LEGEND
- Indicates vertical pile
- Indicates bottered pile
- ③ - Indicates pile number

NOTE: Place bars P508 thru P514 with hook end down.

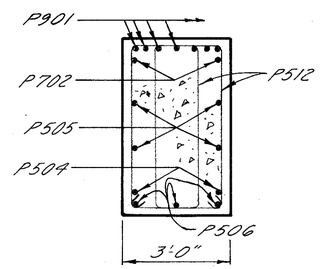
Minimum Lap Splice Length
No. 5 bar = 2'-5"



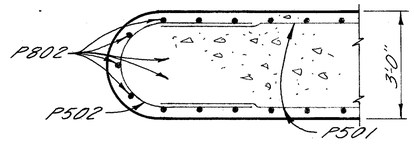
ELEVATION



SECTION C-C



SECTION D-D



SECTION E-E

4/8

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

PIER DETAILS
BRIDGE No. PIC-316-0431
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 227+09.00
- 231+05.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.L.S.		R.D.Y.	G.T.	T.R.O	2/15/84	

HILLS CO. 10-7155-250-1-83

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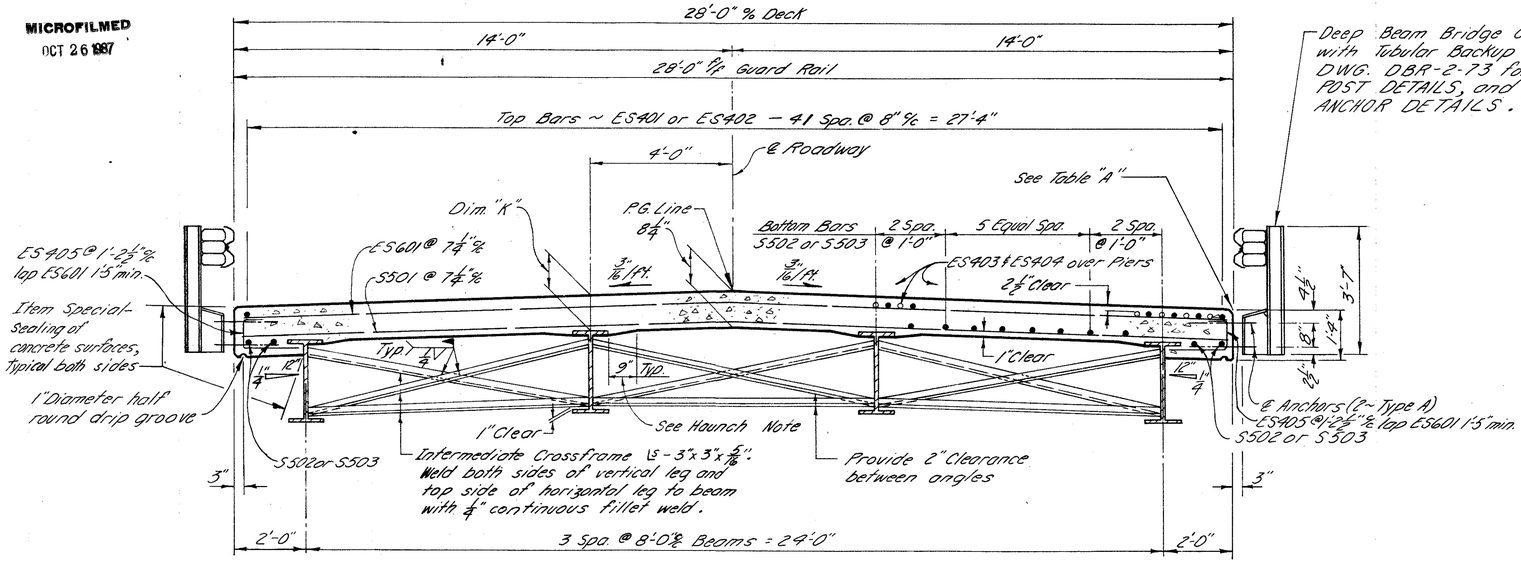
OCT 26 1987

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

PIC-316-4.31



TRANSVERSE SECTION

Deep Beam Bridge Guard Rail with Tubular Backup See STD. DWG. DBR-2-73 for Type 2 POST DETAILS, and Type A ANCHOR DETAILS.

Minimum Lap Splice Lengths
No. 4 bars = 1'-10"
No. 5 bars = 1'-8"

TABLE "A"	
DECK CONSTRUCTION CONTROL ELEVATIONS	
Edge of Deck Sta.	Screed Elevation *
227+11.25	744.24
227+22.25	744.36
227+32.25	744.46
227+42.75	744.54
227+53.25	744.60
227+70.75	744.66
227+83.00	744.70
227+95.25	744.74
228+06.45	744.80
228+19.25	744.88
228+34.45	744.97
228+51.25	745.03
228+68.05	745.04
228+80.75	745.02
228+96.05	744.99
229+07.25	744.98
229+18.45	744.99
229+33.75	745.02
229+46.45	745.04
229+63.25	745.03
229+80.05	744.97
229+95.25	744.88
230+08.05	744.80
230+19.25	744.74
230+31.50	744.70
230+43.75	744.66
230+61.25	744.60
230+71.75	744.54
230+82.25	744.46
230+92.25	744.36
231+03.25	744.24

* The elevations shown at edge of deck are those which are required before the concrete deck is placed. Proper allowance has been made for the dead load deflections caused by the weight of the concrete.

NOTES

SEE STD. DRWG. RB-1-85 for Expansion Bearings R-100 and R-250, and STD. DRWG. FB-1-82 for Fixed Bearing F250.

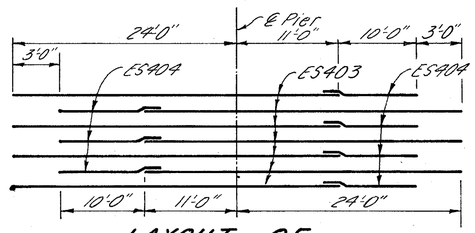
WHERE a shape or plate is designated (CVN) the material shall meet specified minimum notch toughness requirements as specified in 711.01 of C.M.S.

BEARINGS: In lieu of A588 steel, A-36 steel, galvanized, may be furnished for bearings, except for upper plate element of bearings. This A-36 steel shall be included with the A588 steel quantity for payment.

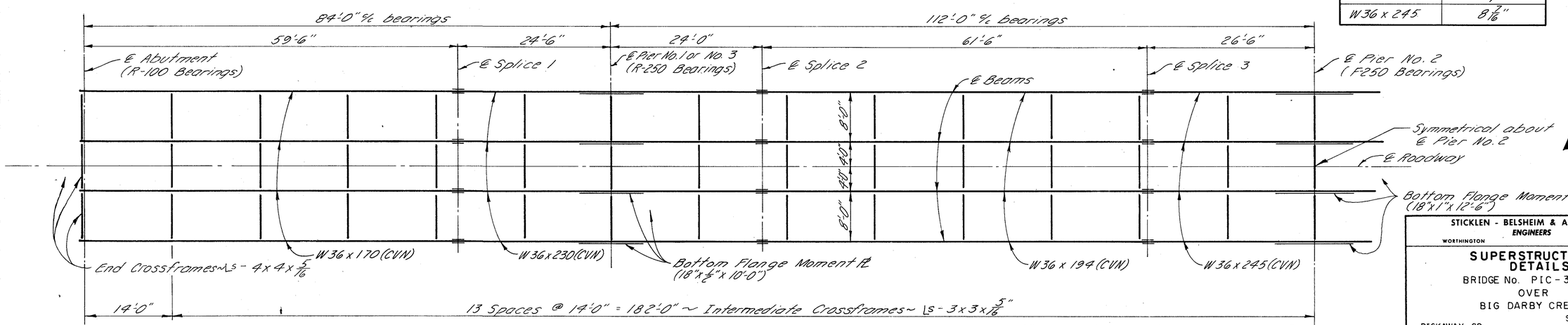
A HAUNCH WIDTH of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" (provided that the slope shall be not more than 1:4 for a haunch less than 9" width.)

DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

DECK SLAB DEPTH AT ℄ BEAMS	
Beam	Dimension "A"
W 36 x 170	8 7/16"
W 36 x 230	8 9/16"
W 36 x 194	8 7/16"
W 36 x 245	8 7/16"



LAYOUT OF STAGGER BARS OVER PIERS



HALF STEEL FRAMING PLAN

NOTE: For BOTTOM FLANGE MOMENT PLATE DETAILS and BEAM SPLICE DETAILS See Sheet 7/8.

5/8

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. PIC-316-0431
OVER
BIG DARBY CREEK
STA. 227+09.00
231+05.50
PICKAWAY CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
		R.D.Y.	G.T.	TRO	2/15/84	

HILLS CO. 10-7155-250-183

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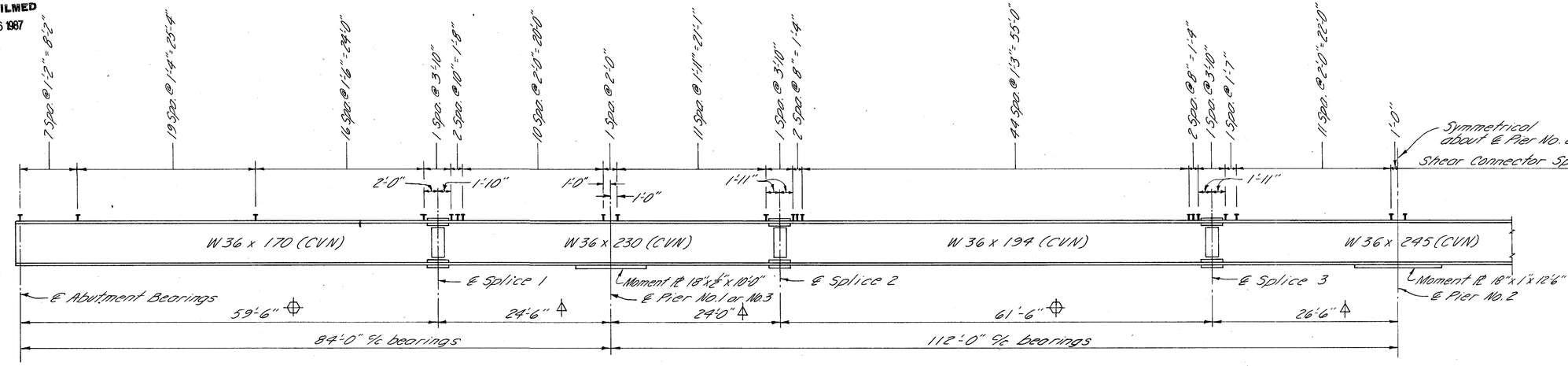
OCT 26 1987

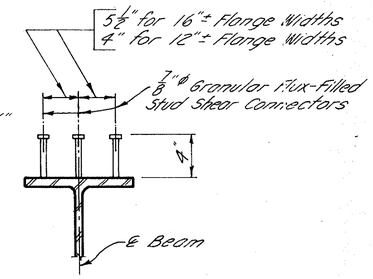
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

19/23

PIC-316-4.31



HALF BEAM ELEVATION



DETAIL AT SHEAR CONNECTOR

NOTES:

WELDED ATTACHMENT of supports for concrete deck finishing machine may be made to areas of the fascia stringer flanges designated "Compression". Attachments shall not be made to areas designated "Tension". Fillet welds to compression flanges shall be not closer than 1" from edge of flange, be not more than 2" long, and be not smaller than the minimum size required by AASHTO.

A588 STEEL is to be left unpainted. See CMS 513.221 for cleaning requirements.

WHERE a shape or plate is designated (CVN) the material shall meet specified minimum notch toughness requirements as specified in 711.01 of CMS.

⏄ - Indicates the top flange is in Tension.

⊕ - Indicates the top flange is in Compression.

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SUPERSTRUCTURE DETAILS

BRIDGE No. PIC-316-0431
OVER
BIG DARBY CREEK

PICKAWAY CO. STA. 227+09.00 231+05.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DXDH	R.D.Y.	R.D.Y.	G.T.	TRO	2/15/84	

HILLS CO. 10-7155-250-183

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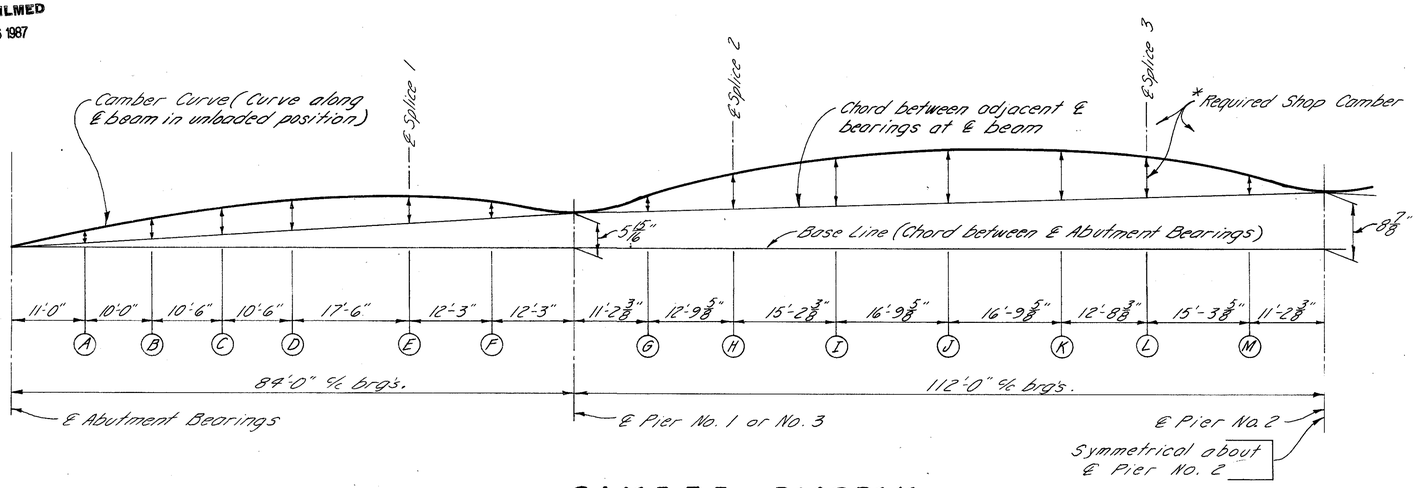
OCT 26 1987

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

20/23

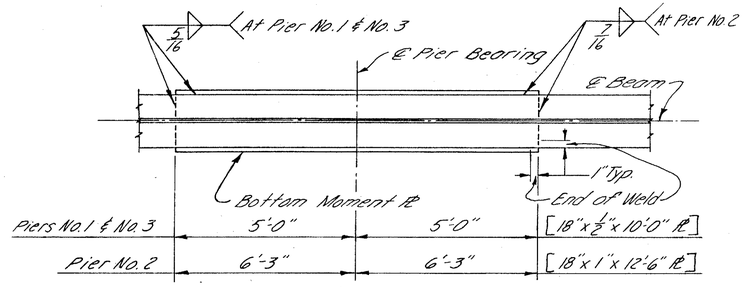
PIC - 316 - 4.31



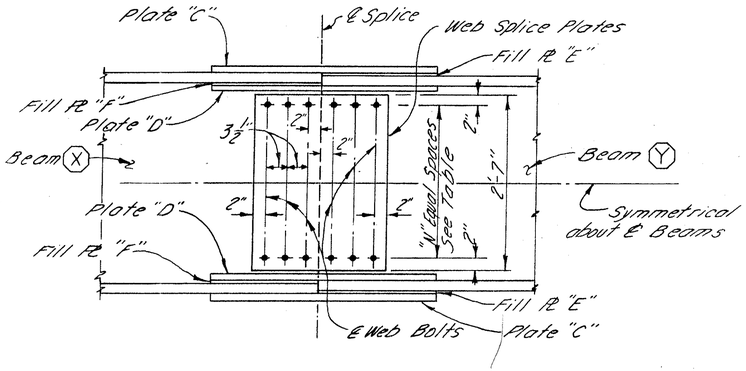
CAMBER DIAGRAM

CAMBER TABLE (Dimensions in inches)

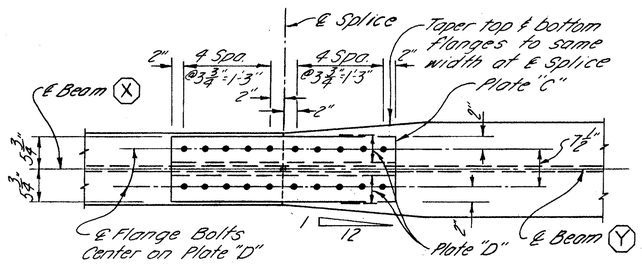
LOCATION	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ		Ⓖ	Ⓗ	Ⓘ	Ⓙ	Ⓚ	Ⓛ	Ⓜ
Deflection due to weight of Steel	1/8	3/16	3/16	3/16	1/8	—		1/16	1/8	1/4	5/16	1/4	1/8	—
Deflection due to weight of Concrete Slab	1/2	13/16	15/16	15/16	1/2	1/8		3/16	5/8	1 1/8	1 3/8	1 1/16	5/8	1/8
Adjustment required for Vertical Curve	3/16	5/16	3/8	7/16	3/8	3/16		1/4	1/2	11/16	3/4	11/16	1/2	1/4
*REQUIRED SHOP CAMBER	13/16	1 5/16	1 1/2	1 9/16	1	5/16		1/2	1/4	2 1/16	2 7/16	2	1/4	3/8



BOTTOM FLANGE MOMENT PLATE DETAILS



BEAM SPLICE DETAIL



PLAN OF FLANGE SPLICE

FILL PLATES - See Construction and Material Specifications ~ 513.09

FASTENERS: 1" diameter High Strength Steel Bolts, Nuts and Washers, ASTM A325.

NOTE: Place bolt heads on exposed side of fascia beams and on the bottom surface of the lower flange splice.

NOTE: All Splice Materials are CVN.

BEAM SPLICE DATA

SPLICE NUMBER	BEAM (X)	BEAM (Y)	FLANGE SPLICE: FILL PLATES: PLATE "E" 2-Required	FLANGE SPLICE: FILL PLATES: PLATE "F" 4-Required	FLANGE SPLICE: FLANGE PLATES: PLATE "C" 2-Required	FLANGE SPLICE: FLANGE PLATES: PLATE "D" 4-Required	FLANGE SPLICE: FLANGE BOLTS: Number of Flange Bolts	WEB SPLICE: WEB PLATES 2-Required	WEB SPLICE: FILL PLATE	WEB SPLICE: "N" Spaces	WEB SPLICE: Number of Web Bolts
1	W 36 x 170	W 36 x 230	11 1/2" x 3/8" x 1'-7"	4 1/2" x 1/4" x 1'-7"	11 1/2" x 5/8" x 3'-2"	4 1/2" x 5/8" x 3'-2"	40	22" x 1/2" x 2'-7"	None	6	42
2	W 36 x 194	W 36 x 230	11 1/2" x 5/16" x 1'-7"	4 1/2" x 5/16" x 1'-7"	11 1/2" x 5/8" x 3'-2"	4 1/2" x 5/8" x 3'-2"	40	22" x 1/2" x 2'-7"	None	6	42
3	W 36 x 194	W 36 x 245	11 1/2" x 3/16" x 1'-7"	4 1/2" x 5/16" x 1'-7"	11 1/2" x 5/8" x 3'-2"	4 1/2" x 5/8" x 3'-2"	40	22" x 1/2" x 2'-7"	None	6	42

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ENGINEERS
WORTHINGTON OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. PIC - 316-0431
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 227+09.00
231+05.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
[illegible]	R.D.Y.	R.D.Y.	G.T.	TRO	2/5/84	

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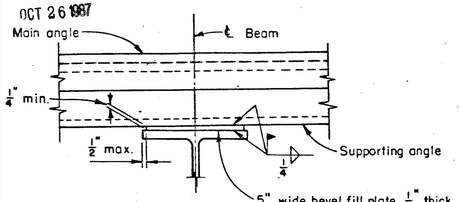
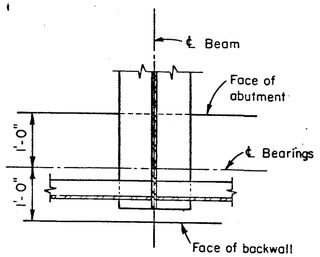
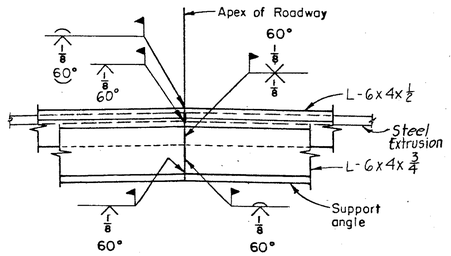
OCT 26 1987



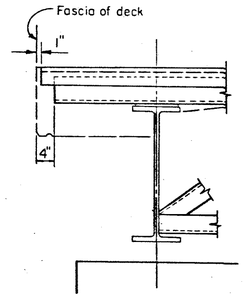
DETAIL "D"



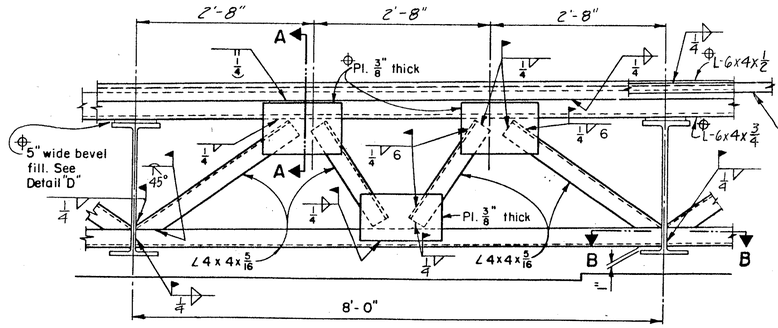
SECTION B-B



WELDED BUTT JOINT IN SUPERSTRUCTURE EXPANSION JOINT



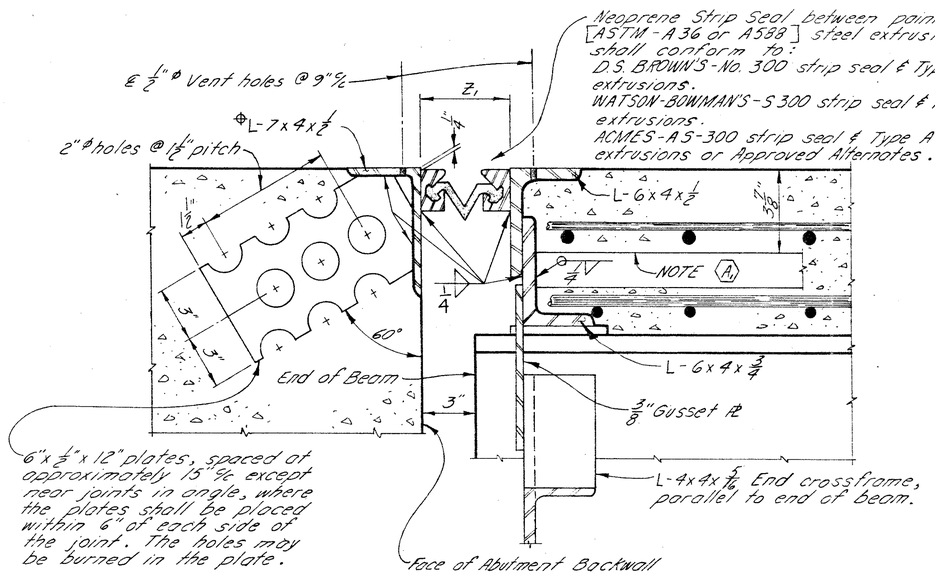
EXPANSION JOINT AT FASCIA BEAM



END CROSSFRAME

NOTE:
Items marked thus ⊕ are included with Item 516 - "Structural expansion joints including elastomeric strip seals".

⊕ Strip Seal Steel Extrusion

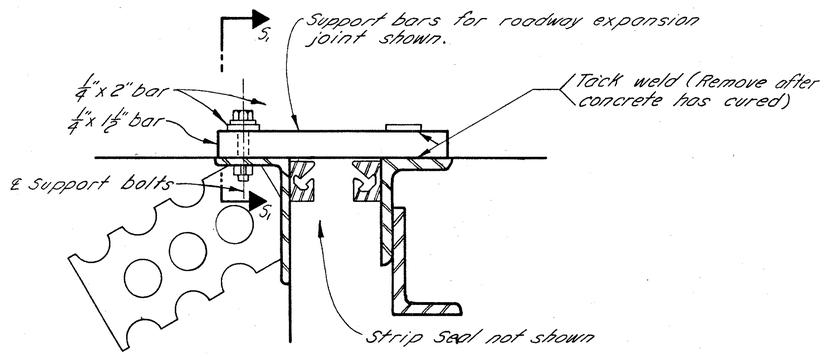


SECTION A-A

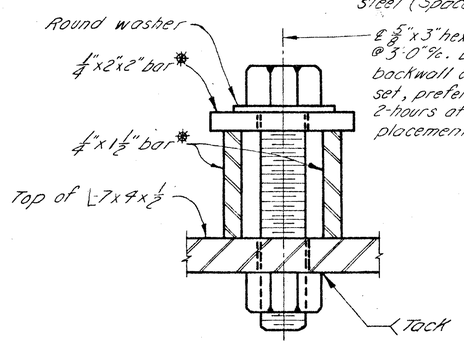
NOTE (A): Anchor bars 2"x½"x 1'-6" placed parallel with longitudinal reinforcing steel (Spaced @ 12"℄).

For an anticipated peak ambient temperature (F°)

$Z_1 = 4\frac{15}{16}$" @ 30°	$Z_1 = 4\frac{13}{16}$" @ 40°
$Z_1 = 4\frac{7}{8}$" @ 50°	$Z_1 = 4\frac{1}{2}$" @ 60°
$Z_1 = 4\frac{3}{8}$" @ 70°	$Z_1 = 4\frac{1}{16}$" @ 80°
$Z_1 = 4\frac{1}{16}$" @ 90°	



TEMPORARY SUPPORT DETAIL OF EXPANSION JOINT



SECTION S1-S1

* Alternate parts may be used subject to the Directors approval

TABLE "P"		
PROPERTY	REQUIREMENTS	ASTM METHOD
Tensile strength, min. p.s.i.	2000	D412
Elongation at break, min. per cent	250	D412
Hardness, Type A durometer	60±7	D2240 (modified)
Oven aging, 70 hr. @ 212°F		
Tensile strength, loss, max.	20 percent	D 573
Elongation, loss, max.	20 percent	
Hardness, Type A durometer (points change)	0 to +10	
Ozone resistance		
20 percent strain, 300 pphm, in air at 104° F (wiped with toluene to remove surface contamination)	No Cracks	D1149

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

21/23

PIC-316-4.31

GENERAL NOTES

CONSTRUCTION PROCEDURE

1. Abutment backwall concrete shall not be placed until after superstructure concrete in the span adjacent to the abutment has been placed.
2. Place backwall concrete during stable or rising ambient temperatures and conclude placement at or immediately before the day's peak ambient temperature.
3. Not more than 4-hours prior to the day's peak ambient temperature, set abutment expansion joint width to dimension Z_1.
4. Loosen temporary support bolts after initial set of concrete, preferably not later than 2-hours after conclusion of concrete backwall placement.

INSTALLATION NOTES:

The preformed strip seal shall be an extruded polymerized neoprene material meeting the requirements of ASTM D2628. Due to the configurations of the Strip Seal, the recovery tests are not applicable. Physical Properties shall meet the requirements specified in Table "P".

The neoprene seal shall be continuous for the full length of the joint. Lubricant-adhesive shall be used when installing the preformed strip seals and shall be a compound consisting of the same base polymer as the seals (unless otherwise approved by the Director) blended with suitable volatile solvents. It shall have suitable consistency at the temperature at which the seals are installed and shall be compatible with the seals and the steel extrusions.

Every surface to receive the strip seal shall be cleaned of all dirt, water, oil, rust or any other foreign debris that would prove detrimental to the effectiveness of the sealing system, prior to the application of the lubricant-adhesive to both joint interfaces.

MATERIALS: Structural steel for the Strip Seal expansion-contraction joint shall conform to ASTM A588 or A36, with System B field paint on exposed steel surfaces. Field paint shall consist of two prime coats and one finish coat.

MEASUREMENT for pay purposes shall be based on the linear foot of sealed joint system, measured horizontally along the joint centerlines and between the outer limits of the fabricated joint, furnished and placed, including all labor, materials and equipment necessary to complete the joint in place including the joint armor, 1/2" steel plates, anchoring devices, temporary supports and end cross frame gusset plates. Payment shall be made per linear feet for Item 516 "Structural Expansion Joints Including Elastomeric Strip Seals".

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ENGINEERS
WORTHINGTON OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. PIC-316-0431
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DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.H.		R.D.Y.	G.T.	T.R.O.	2/15/84	

HILLS CO. 10-7155-250-183

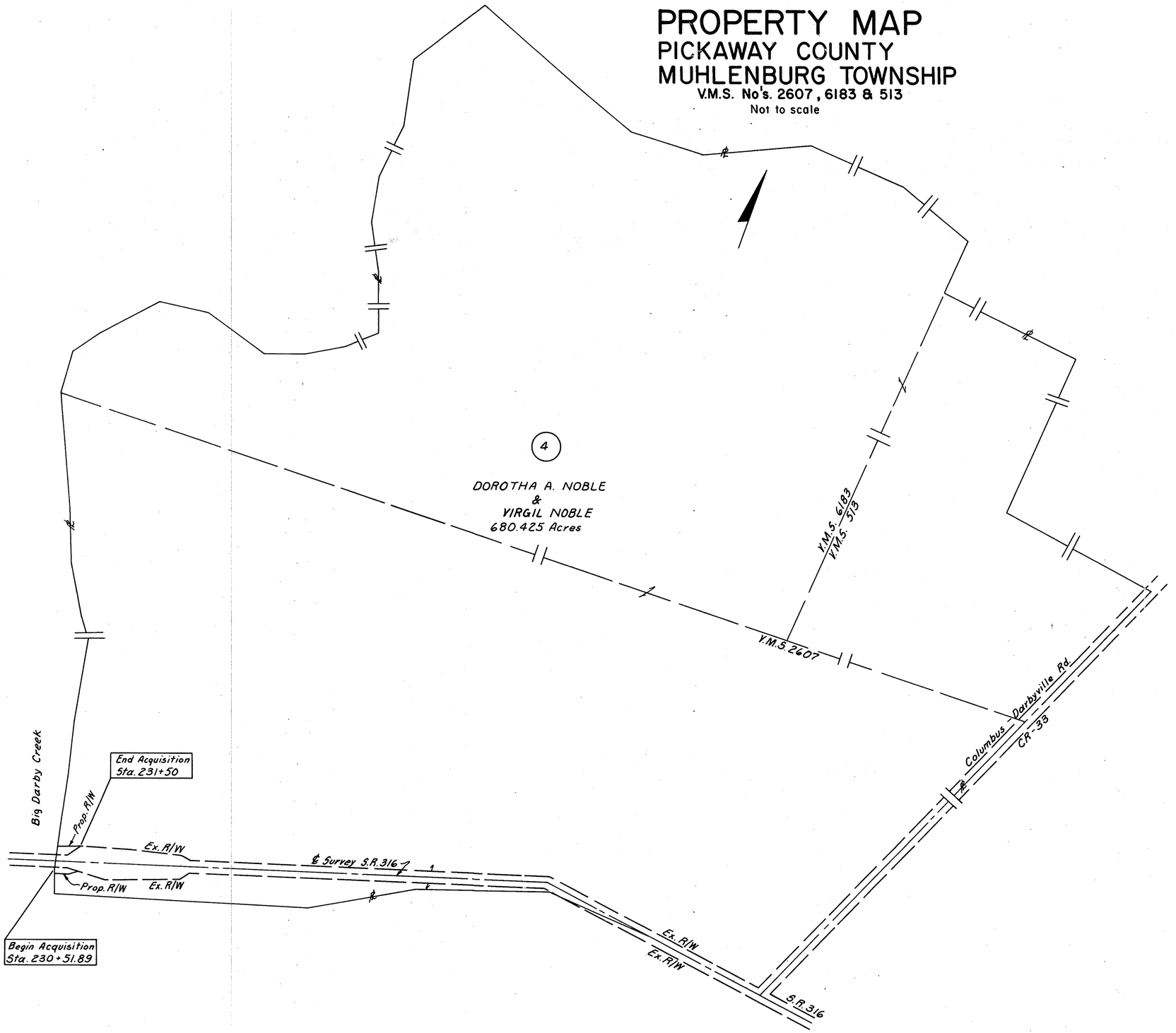
FHWA REGION	STATE	PROJECT	
5	OHIO	BRS 816( )	

22/23

1/2

PIC-316-4.31

PROPERTY MAP
PICKAWAY COUNTY
MUHLENBURG TOWNSHIP
V.M.S. No's. 2607, 6183 & 513
Not to scale



General Telephone Company
1300 Columbus Sandusky Rd.
Marion, Ohio 43302
Phone 614-383-0411

South Central Power Company
Post Office Box 250
Lancaster, Ohio 43130
Phone 614-653-4422

Date	Revision

Sheet Completed 9-5-84

PROPERTY MAP

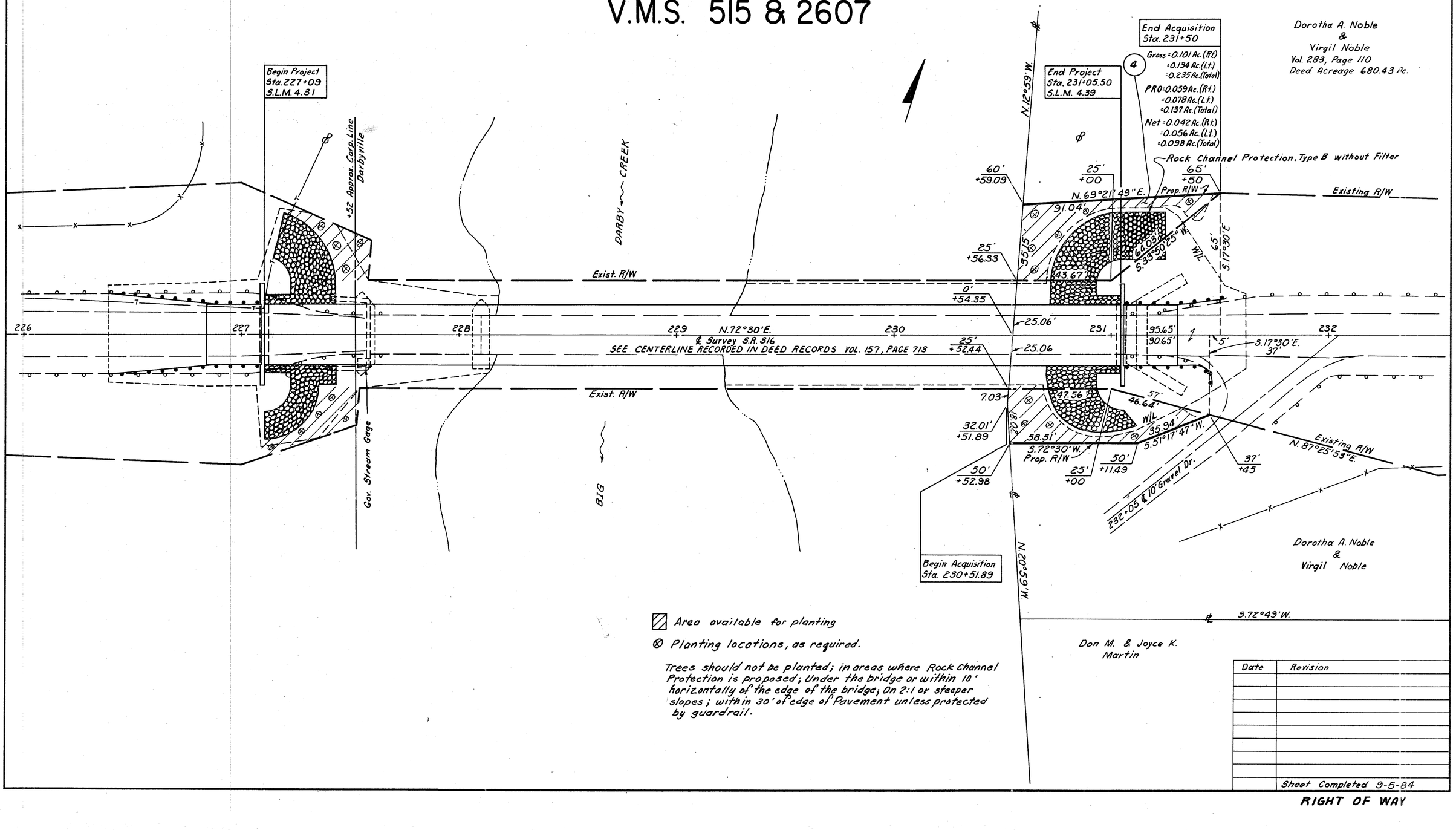
CENTERLINE SURVEY PLAT
PICKAWAY 316 SECTION 4.31
VILLAGE OF DARBYVILLE
PICKAWAY COUNTY, MUHLENBERG TOWNSHIP
V.M.S. 515 & 2607

STATE JOB NO.	FHWA REGION	STATE	PROJECT	
06956(0)	5	OHIO	BRS-816( )	

23/23

2/2

PIC-316-4.31



Date	Revision
	Sheet Completed 9-5-84

RIGHT OF WAY

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OCT 26 1987

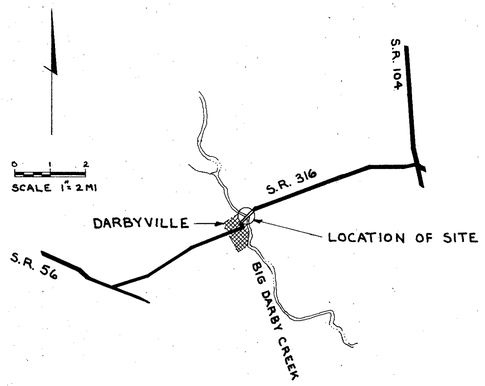
GENERAL INFORMATION

DRIVE SAMPLE 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.

THIN WALLED TUBE SAMPLING (SHELBY TUBES) WAS PERFORMED IN AN ATTEMPT TO RECOVER RELATIVELY UNDISTURBED SOIL SAMPLES FOR EXAMINATION AND TESTING. THE SHELBY TUBE 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 OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLER CAN NOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION, TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.



LEGEND

BORING LOCATION·PLAN

ω 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

GRAVEL AND/OR STONE FRAGMENTS WITH SAND

COARSE AND FINE SAND

GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY

SANDY SILT

SILT

VARIOUS OTHER MATERIALS

● INDICATES MOISTURE CONTENT ≥ LL-3

INTRODUCTION:

THE PROJECT IS LOCATED ON STATE ROUTE 316 IN PICKAWAY COUNTY JUST EAST OF DARBYVILLE, OHIO. THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE OVER BIG DARBY CREEK TO REPLACE THE EXISTING STRUCTURE.

GEOLOGY:

THE SITE SOILS ARE PRIMARILY GLACIAL DEPOSITS OF WISCONSIN AGE OFTEN INCLUDING ALLUVIUM DEPOSITS, INCLUDING SOME ORGANIC DEBRIS, DEPOSITED IN LOW AREAS FOLLOWING RETREAT OF THE GLACIER. THE SOILS ARE MAINLY OUTWASH DEPOSITS CONSISTING OF WELL TO POORLY SORTED, HORIZONTALLY LAYERED, COMMONLY CROSS BEDED SAND AND GRAVEL. UNDER THE OUTWASH TERRACE LIES AN OLDER WISCONSIN GROUND MORAINE (TILL) COMPOSED OF AN UNSORTED, UNSTRATIFIED MIXTURE OF CLAY, SILT, SAND AND GRAVEL. THE GLACIAL DEPOSITS ARE EVIDENT IN ALL OF THE BORINGS.

EXPLORATION:

THE EXPLORATION CONSISTED OF THREE ROTARY BORINGS. SAMPLING AND STANDARD PENETRATION TESTS WERE OBTAINED AT 2.5 AND 5 FOOT INVERVALS, DEPENDING ON DEPTH OF BORING. FORTY-FIVE SAMPLES WERE OBTAINED AND ALL WERE TESTED FOR DETERMINING NATURAL MOISTURE CONTENT. TWENTY-ONE SAMPLES WERE SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS AND WERE TESTED FOR GRADATION AND/OR ATTERBERG LIMITS.

INVESTIGATIONAL FINDINGS:

THE TEST DATA INDICATES THAT THE SITE SOILS ARE VARIABLE IN DENSITY AND GRADATION. THE MAJORITY OF THE SOIL TYPES ARE SAND AND SILT OF THE A-4A CATEGORY AND COARSE AND FINE SAND AND GRAVEL OF THE A-1-A TO A-3 CATEGORY, ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM.

PARTICLE SIZE DEFINITION

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

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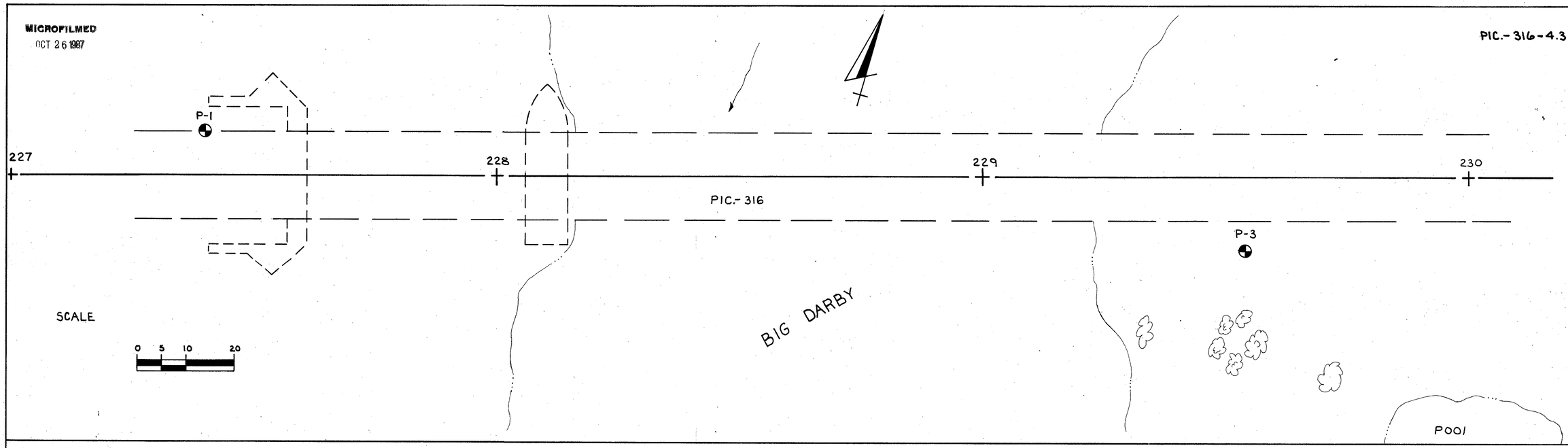
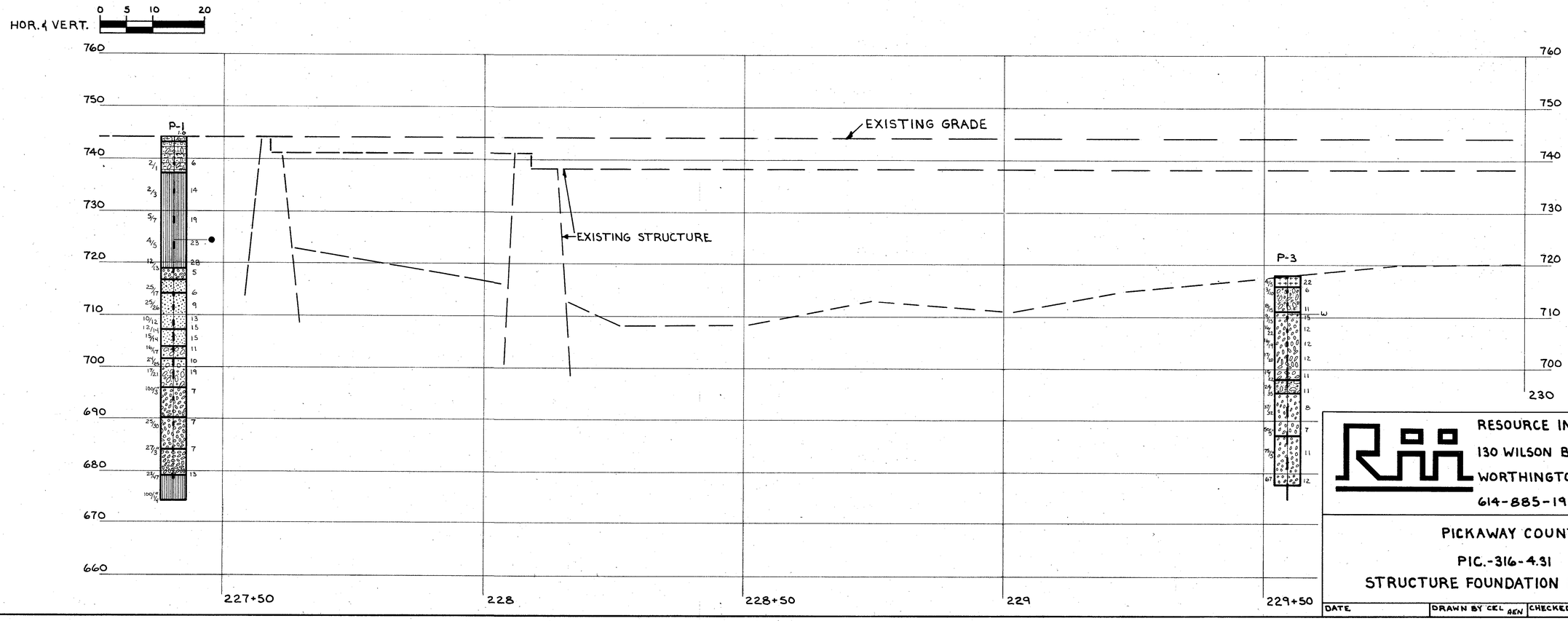
2/5





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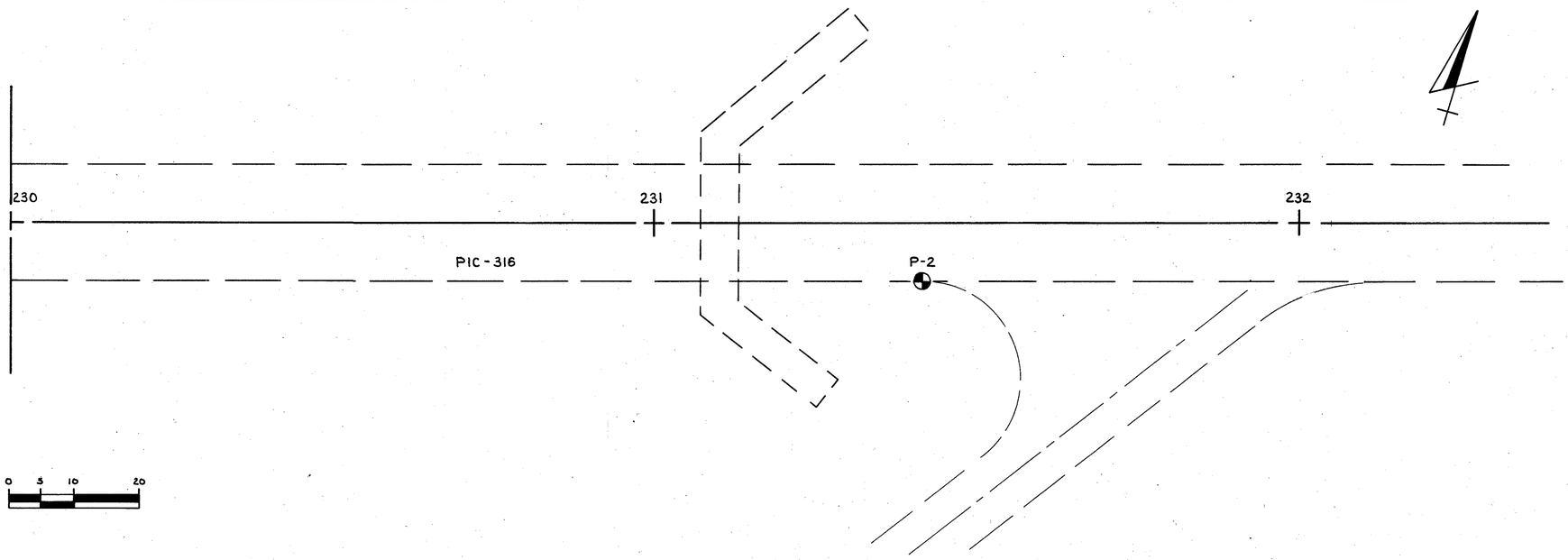
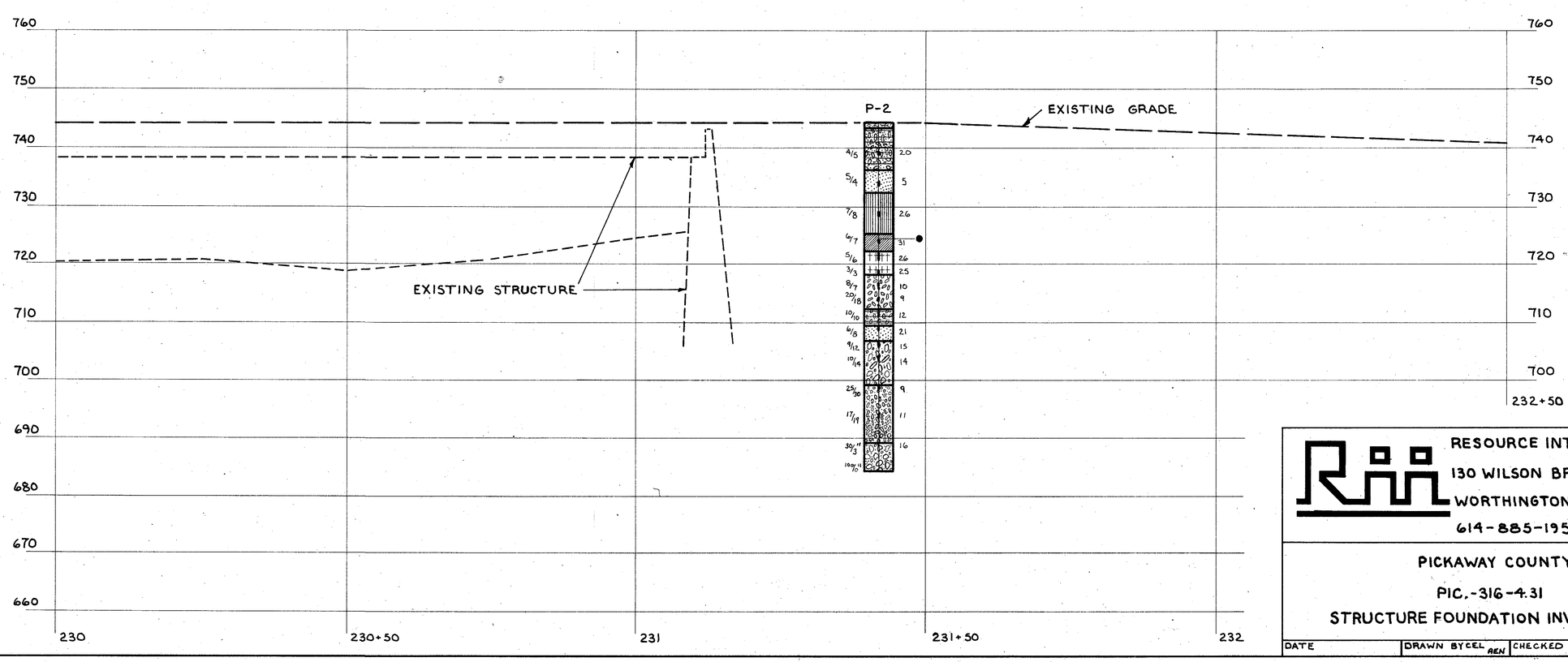
PIC.-316-4.31 (3/5)



SCALE

0 5 10 20

HOR. & VERT. 0 5 10 20



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BORING LOG

BORING NO: P-1
STATION & OFFSET: 227+40, 9'L
DATE STARTED: 7-29-83
DATE FINISHED: 8-1-83

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	SAMPLER TYPE	DEPTH	SOIL DESCRIPTION	WATER CONTENT	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS %AGG	%CS	%FS	%SI	%CL	ODOT CLASS
			ALL 2S		ASPHALT BASE 1.0									
	S-1	1 2 1		5	BROWN FINE TO COARSE SAND, SOME CLAYEY SILT, LITTLE FINE TO COARSE GRAVEL. VERY LOOSE. DAMP. 7.0	6								
	S-2	3 2 3		10	BROWN FINE SAND AND SILT, TRACE TO LITTLE CLAY, TRACE COARSE SAND SOME ORGANIC MATERIAL. LOOSE TO MEDIUM DENSE. MOIST.	14								
	S-3	5 5 7		15		19			0	5	46	-4	8-	A-4 a
	S-4	3 4 5		20		23	20	18	0	1	51	38	10	A-4a
	S-5	7 12 13		25	25.5	28								
	S-6	23 25 17			LIGHT BROWN FINE GRAVEL AND FINE TO COARSE SAND, TRACE SILT MEDIUM DENSE. DAMP. 27.5	5								
	S-7	45 25 26		30	LIGHT BROWN FINE TO COARSE SAND AND FINE GRAVEL, LITTLE SILT MEDIUM DENSE TO DENSE DAMP. 30.0	6								
	S-8	10 10 12			LIGHT BROWN FINE TO COARSE SAND AND FINE GRAVEL, LITTLE SILT MEDIUM DENSE. DAMP.	9								
	S-9	10 10 12		35		13			35	32	18	-15-		A-3a
	S-10	12 15 14			37.0	15								
	S-11	14 16 17			BROWN FINE TO COARSE SAND, TRACE SILT MEDIUM DENSE. MOIST. 40.0	15								
	S-12	23 24 25		40	BROWN FINE TO COARSE SAND AND FINE GRAVEL, LITTLE SILT DENSE. MOIST. 42.5	11			41	29	17	-13-		A-1-b
	S-13	15 17 21			BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, TRACE TO LITTLE SILT DENSE. MOIST.	10			42	30	18	-10-		A-1-b
	S-14	100/3"		45	48.0	19								
	S-15	25 25 30			GRAY FINE GRAVEL VERY. DENSE. MOIST TO WET. 54.0	7			100	0	0	0	0	A-1-a
	S-16	73 27/3"		50	GRAY FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, TRACE SILT VERY. DENSE. MOIST TO WET. 60.0	7			59	24	8	-9-		A-1-a
	S-17	25 23 47		55	GRAY FINE TO COARSE GRAVEL, TRACE FINE TO COARSE SAND VERY. DENSE. MOIST TO WET. 65.0	7			96	2	2	0	0	A-1-a
		100/1/4"		60	GRAY CLAY SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL HARD. DAMP. 70.0	13	19	15	14	16	15	40	15	A-4a
				65	BOTTOM OF BORING									
				70										

BORING LOG

BORING NO: P-2
STATION & OFFSET: 231+42, 9'R
DATE STARTED: 8-1-83
DATE FINISHED: 8-2-83

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	SAMPLER TYPE	DEPTH	SOIL DESCRIPTION	WATER CONTENT	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS %AGG	%CS	%FS	%SI	%CL	ODOT CLASS
			ALL 2S		ASPHALT BASE 1.0									
					BROWN FINE TO COARSE, SOME CLAYEY SILT, LITTLE FINE GRAVEL LOOSE. DAMP.									
	S-1	3 4 5		5	8.0	20								
					BROWN FINE TO COARSE, LITTLE FINE TO COARSE GRAVEL, TRACE SILT									
	S-2	6 5 4		10	LOOSE. DAMP. 12.0	5								
					BROWN CLAYEY SILT, SAND TO AND FINE TO COARSE SAND STIFF. VERY									
	S-3	6 7 8		15	STIFF. DAMP TO MOIST. 19.0	26	32	26	0	4	31	49	16	A-4a
	S-4	5 6 7		20	BROWN SILT AND FINE TO COARSE SAND, LITTLE CLAY MEDIUM. DENSE, MOIST. 22.0	31	34	21	0	9	28	50	13	A-6a
	S-5	4 5 6			BROWN CLAYEY SILT, SOME FINE TO COARSE STIFF. MOIST. 26.0	26	30	24	0	9	15	51	25	A-4b
	S-6	2 3 3		25		25								
	S-7	7 8 7			BROWN FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, TRACE SILT LOOSE. DAMP. 30.0	10			69	14	8	-9-		A-1-a
	S-8	8 20 18		30	BROWN FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, TRACE SILT LOOSE. DAMP. 32.0	9								
	S-9	12 10 10			TRACE FINE TO COARSE SAND, SOME FINE TO COARSE GRAVEL, LITTLE CLAY SILT MEDIUM DENSE. MOIST. 35.0	12								A-2-6
	S-10	8 6 8		35	BROWN FINE SAND, LITTLE COARSE SAND, LITTLE SILT, TRACE FINE GRAVEL MEDIUM DENSE. WET. 37.5	21			2	18	64	-17-		A-3a
	S-11	8 9 12			BROWN FINE TO COARSE SAND, FINE GRAVEL, LITTLE SILT. MEDIUM DENSE. MOIST.	15								
	S-12	10 10 14		40	45.0	14			21	37	28	-14-		A-1-b
	S-13	13 25 30		45	TRACE FINE TO COARSE GRAVEL, SAND FINE TO COARSE SAND, LITTLE SILT DENSE. MOIST. TO WET. 55.0	9			53	20	10	-17-		A-1-b
	S-14	16 17 19		50		11								
	S-15	17 70 30/2"		55	BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL LITTLE SILT VERY. DENSE. MOIST. 60.0	16								A-1-b
		100/0"		60	BOTTOM OF BORING									

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BORING LOG

BORING NO: P-3
STATION & OFFSET: 229+54, 25'R

DATE STARTED: 10-17-83
DATE FINISHED: 10-17-83

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	SAMPLER TYPE	DEPTH	SOIL DESCRIPTION	WATER CONTENT	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS %AGG	%CS	%FS	%SI	%CL	ODOT CLASS
	S-1	2 4 5	ALL 2S		DARK BROWN CLAYEY SILT, LITTLE FINE TO COARSE SAND, TRACE LITTLE GRAVEL STIFF TO DAMP. 2.0	22	31	27	4	12	4	58	22	A-4b
	S-2	4 3 10			BROWN FINE TO COARSE SAND, SAND SILT, COBBLES AND BOULDERS MEDIUM DENSE. DAMP. 7.0	6								
	S-3	14 8 15		5		11								
	S-4	27 9 15			BROWN FINE TO COARSE GRAVEL, AND FINE TO COARSE SAND, LITTLE SILT, FEW COBBLES. MEDIUM DENSE TO DENSE. WET.	15			54	24	10	-12-		A-1-a
	S-5	12 16 22		10		12			45	29	13	-13-		A-1-a
	S-6	6 16 19				12								
	S-7	7 17 20		15		12			39	31	12	-18-		A-1-b
	S-8	20 14 22				11								
	S-9	20 24 35		20	20.0	11			40	28	18	-14-		A-1-b
					BROWN FINE TO COARSE GRAVEL, AND FINE TO COARSE SAND, LITTLE SILT VERY. DENSE. WET 22.5									
	S-10	20 37 32		25	GRAY FINE TO COARSE GRAVEL, SAND TO AND FINE TO COARSE SAND, LITTLE SILT, FEW COBBLES VERY. DENSE. WET.	8			54	25	10	-11-		A-1-a
					31.0									
	S-11	39 50/5"		30	GRAY FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, LITTLE SILT, FEW COBBLES AND BOULDERS. VERY. DENSE. WET.	7								
	S-12	75/5"		35		11								
					40.5	12			66	18	6	-10-		A-1-a
	S-13	67		40	BOTTOM OF BORING									

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