

DESIGN DESIGNATION
(PART I)
CURRENT A.D.T. 3,900
(PART II)
CURRENT A.D.T. 870

MICROFILMED
FEB 5 1988

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

JAC/PIK-93/335-01.50/05.81
JACKSON AND PIKE COUNTY

STRUCTURE IMPROVEMENT - BRIDGE MAJOR REPAIR

JAC/PIK-93/335-01.50/05.81 JACKSON AND PIKE COUNTYS	OHIO FHWA REGION 5	1 10
F-38(21)+RS-1002(6)		FEDERAL PROJECT

MICROFILMED
JAN 15 1988

PLAN NO. BR-19-81

CONVENTIONAL SIGNS

County Line _____
Township Line _____
Section Line _____
Corporation Line _____ or _____
Fence Line (existing) -x-x- (proposed) -x-x-
Center Line _____
Trees (to be removed) (to be removed)
Utility Poles: Telephone ϕ , Power ϕ , Light ϕ .

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) -x-x-
Railroad _____ or _____
Guardrail (existing) -o-o-o- (proposed) -o-o-o-

INDEX OF SHEETS

Title Sheet _____ 1.
General Notes _____ 2.
Site Plan _____ 3.-4.
General Plan & Elevation _____ 5.-6.
Superstructure Details _____ 7.
General Summary & Calculations _____ 8.-9.
Traffic Control _____ 10.

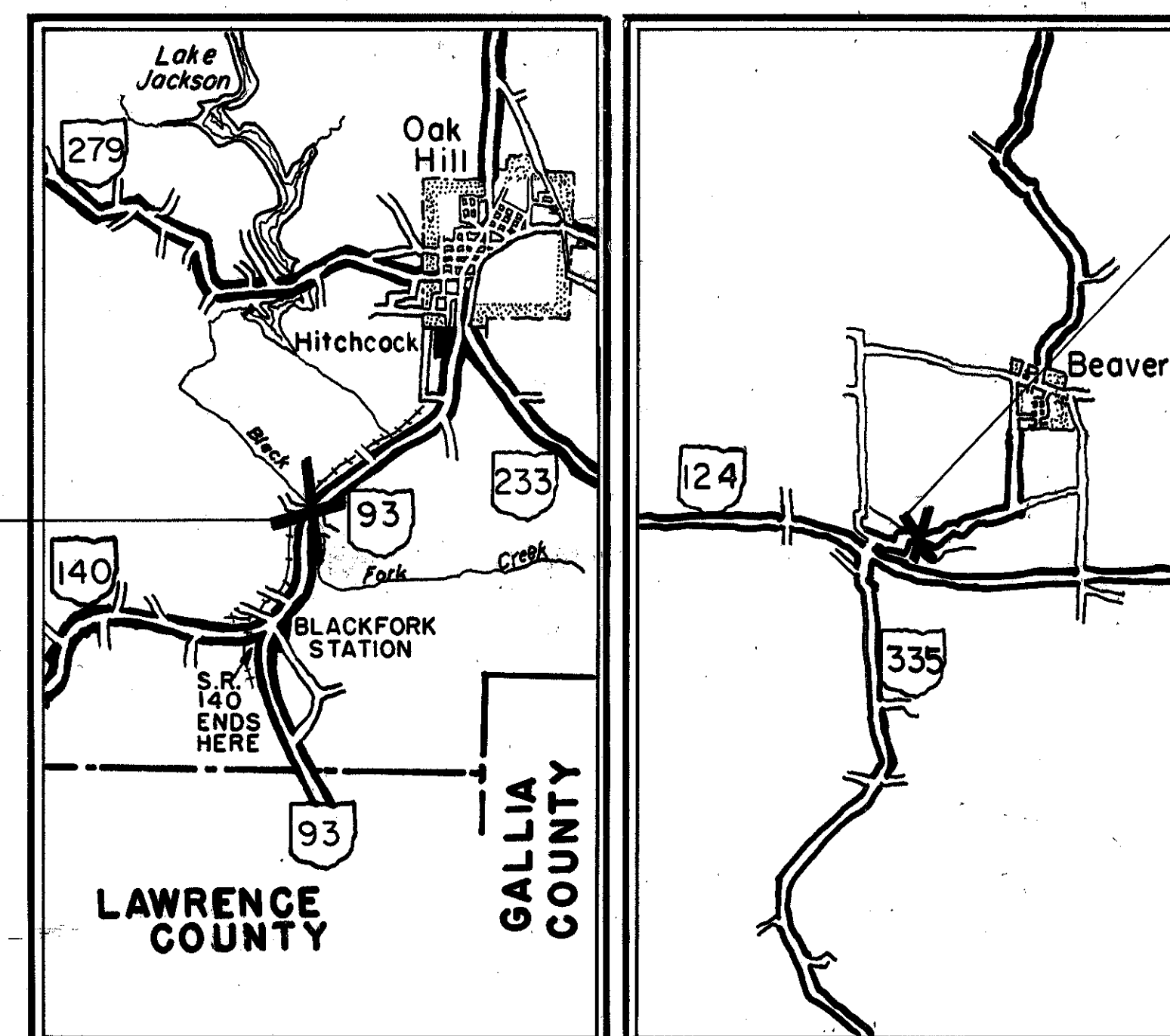
LINE DATA

JAC- 93-0150 (PART I)
Begin Project Sta. 78+19.88
End Project Sta. 79+32.12
Net Length of Project = 112.24 Lin. Ft. or 0.021 Miles
Begin Work Sta. 76+53.37
End Work Sta. 80+90.89
Net Length of Work = 437.5 Lin. Ft. or 0.082 Miles

PIK- 335-0581 (PART II)
Begin Project Sta. 306+25.22
End Project Sta. 307+04.78
Net Length of Project = 79.56 Lin. Ft. or 0.015 Miles
Begin Work Sta. 303+10.54
End Work Sta. 308+60.54
Net Length of Work = 550.0 Lin. Ft. or 0.104 Miles

Plan Prepared By:

SEAL



JACKSON CO. LOCATION MAPS PIKE CO.

SCALE IN MILES
0 1 2 3 4

Portion to be improved _____
State & Federal Routes _____
Other Roads _____

SCALES

Plan _____
Profile: _____ Horizontal _____, Vertical _____
Cross Section: Horizontal _____, Vertical _____

SUPPLEMENTAL SPECIFICATIONS	
845	6-27-77
953	8-21-80
1001	1-3-77

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
BP-5	4-16-79		
DBR-2-73	4-10-73		
GR-2B	12-6-76		
GR-3	12-6-76		
GR-4	12-6-76		
MC-3	6-1-73		

1979 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 set forth on the plans and estimates.

Approved William W. Branshaw
Date 2-9-81 District Deputy Director of Transportation

FFE
Approved Robert B. Pfeiffer
Date 2-23-81 Engineer, Bureau of Bridges and Structures

Approved Ernest E. Hann
Date 3-6-81 Chief Engineer, Operations

Approved David L. Wein
Date 3-6-81 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR

DATE

Project: JAC/PIK-93/335-0150/0581
Date of Letting 19, Contract No. _____

GENERAL NOTES

FHWA REGION	STATE	PROJECT
5	OHIO	

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JAC/PIK - 93/335-0150/05.81

BR-19-81

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

EXISTING STRUCTURE VERIFICATION: Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but they shall be considered tentative and approximate. The Contractor is referred to CMS Sections 102.05, 105.02.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

FIELD OFFICE: The Contractor shall provide a suitable field office having a minimum of 150 Sq. Ft; however only one (1) will be required for both PARTS.

BRIDGE TERMINAL ASSEMBLY, TYPE B, AS PER PLAN: Assembly shall be as per GR-3 except all posts encased in concrete shall be W6 x 15.5 Lb. galvanized steel posts. Payment shall be included in item 606, Bridge Terminal Assembly.

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

ITEM 407, TACK COAT: A tack coat shall be applied at the rate and on the areas determined by a pre-construction conference on the project, prior to the start of the work. In no case shall the rate of application exceed 0.10 Gal. per Sq. Yd.

ITEM 614, MAINTAINING TRAFFIC: Maintenance of traffic on this project shall be governed by the Construction and Materials Specifications and the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, current edition, latest revision except as modified by the plans. Before any two (2) lane pavement, including bridge, is opened to traffic, it will be marked with temporary lane lines which shall consist of yellow traffic zone paint reflectorized with glass beads or reflective yellow tape approximately 4 inches wide and 12 inches long at 40 foot center to center or by permanent pavement markings. Payment for temporary lane lines and removal, shall be included in the lump sum price bid for Item 614, Maintaining Traffic.
Payment for providing, erecting, maintaining and removing all traffic control signs and devices shall be included in the lump sum price bid for Item 614, Maintaining Traffic.

ITEM 615, TEMPORARY PAVEMENT, CLASS B: Temporary pavement shall be placed at both approaches to structure as shown on sheet No. 5 and 6, prior to setting up temporary traffic lane No. 1.

GUARDRAIL REMOVED: (PART I) = 1,050 Lin. Ft. — FIELD MEASURED.
(PART II) = 388 Lin. Ft.

REFERENCE shall be made to Standard Drawings

DBR-2-73 dated 4-10-73
and to Supplemental Specifications
845 dated 6-27-77
953 dated 8-21-80

SUGGESTED WORK PLAN

1. Set up traffic control to reduce traffic to one (1) lane traffic (See sheet No. 10).
2. Place temporary pavement.
3. Perform Item 519, patching. (Part I).
4. Scarify deck and remove all loose and disintegrated concrete.
5. Install drip strip.
6. Place latex concrete overlay.
7. Place 404 on approaches.
8. Install guardrail.
9. Revise traffic control to close the other lane and repeat above steps.

ITEM 845 - Longitudinal joints in the Concrete Overlay are permitted, but only to the extent necessary to accommodate the width of the finishing machine, to allow maintenance of vehicular traffic or to facilitate changes in the roadway crown. Except as approved by the Director, joints shall not be used adjacent to curb or roadway edges.

STATE OF OHIO							2/10
DEPARTMENT OF TRANSPORTATION							
DISTRICT 9 BRIDGES							
GENERAL NOTES							
BRIDGE NO. JAC-93-0150 & PIK-335-0581							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
NLS	NLS	NLS	ER	MPB	2-6-81		

UTILITY OWNERS

General Telephone of Ohio
16 W. Washington St.
Athens, Ohio 45701

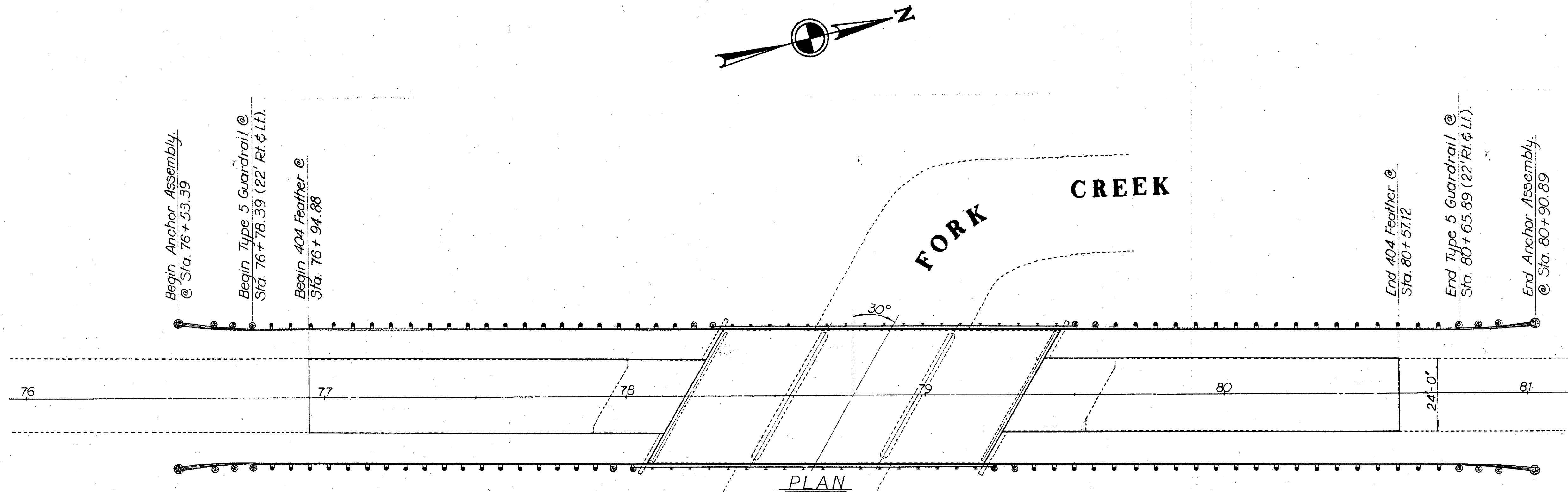
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FHWA REGION	STATE	PROJECT
5	OHIO	

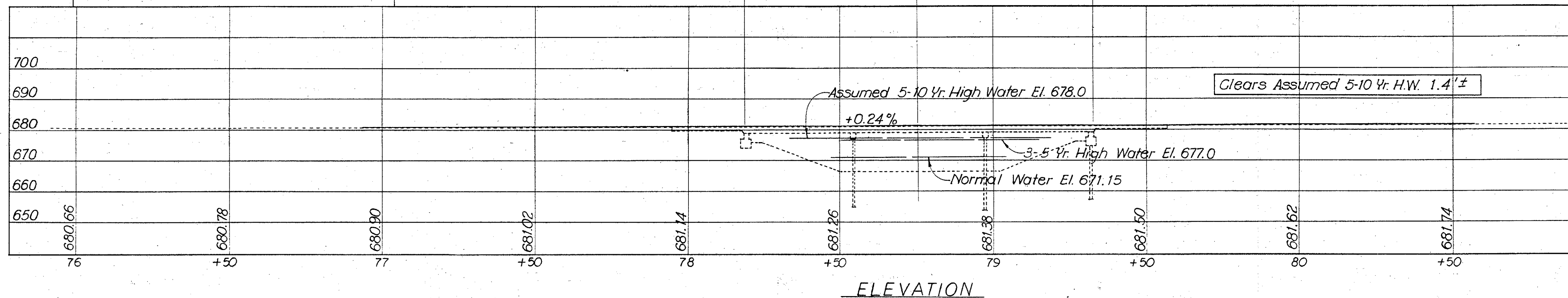
3/10

JAC-93-0150
PART I

BR-19-81



B.M. Chiseled Sq. (Painted) North End of N.E. Wingwall of Bridge. Elev. 678.03



EXISTING STRUCTURE

TYPE: Continuous Reinforced Concrete Slab with Capped Pile Substructure.
SPANS: 34'-42.5'-34' c/c Brgs.
ROADWAY: 44'-0" f/r Guardrails.
LOAD FREQUENCY: CF 130.
WEARING SURFACE: 3/4" Monolithic Concrete.
SKEW: 30° L.F.
APPROACH SLABS: AS-1-54 (25' long).
ALIGNMENT: Tangent.

DRAINAGE AREA = 24.0 Sq. Mi.

PROPOSED STRUCTURE

TYPE: Continuous Reinforced Concrete Slab with Capped Pile Substructure.
SPANS: 34'-42.5'-34' c/c Brgs.
ROADWAY: 42'-8" f/r Guardrails.
WEARING SURFACE: 1 1/4" Latex Modified Concrete Overlay.
SKEW: 30° L.F.
ALIGNMENT: Tangent.

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION
DISTRICT 9 BRIDGES

3/10

SITE PLAN

BRIDGE NO. JAC-93-0150

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NLSH	NLSH	NLSH	ER	MPB	2-6-81	

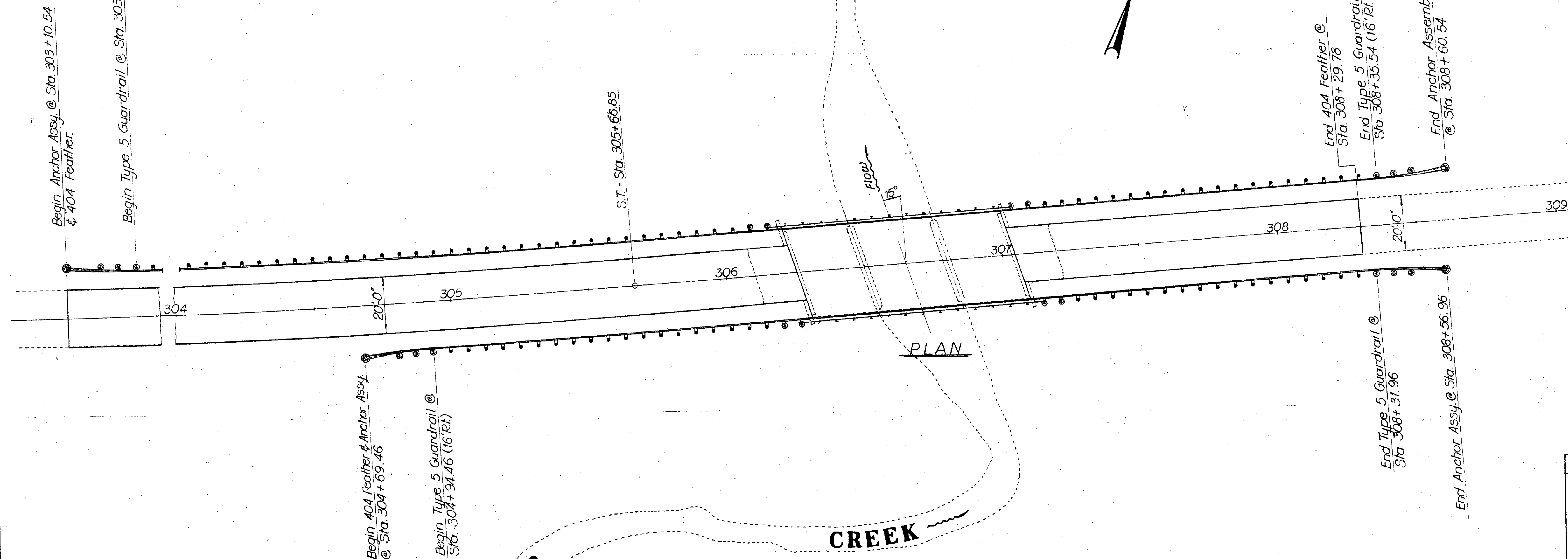
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FHWA REGION	STATE	PROJECT
5	OHIO	

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PIK-335-0581
PART II

BR-19-81

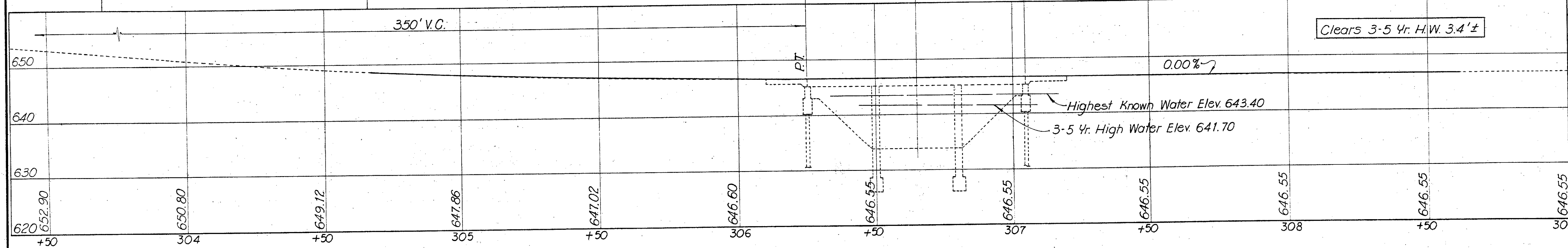


BEAVER

CREEK

PLAN

B.M. $\square$ Cut on N.E. corner of Abut. 43' Rt.
@ Sta. 306+90 Elev. 643.85



PROFILE

EXISTING STRUCTURE

TYPE: Continuous Reinforced Concrete
Slab on Reinforced Concrete Substructure.
SPANS: 24'-30'-24' c/c Brgs.
ROADWAY: 32'-0" f/f Guardrails.
LOAD FREQUENCY: CF-30.
WEARING SURFACE: 1/2" Monolithic Concrete.
SKEW: 15° R.F.
APPROACH SLABS: AS-1-54 (15' long).
ALIGNMENT: Tangent.

DRAINAGE AREA = 10.2 Sq. Mi.

PROPOSED STRUCTURE

TYPE: Continuous Reinforced Concrete
Slab on Reinforced Concrete Substructure.
SPANS: 24'-30'-24' c/c Brgs.
ROADWAY: 30'-8" f/f Guardrails.
WEARING SURFACE: 1 1/4" Latex Modified
Concrete Overlay.
SKEW: 15° L.F.
ALIGNMENT: Tangent.

Clears 3-5 Yr. H.W. 3.4' ±

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION
DISTRICT 9 BRIDGES

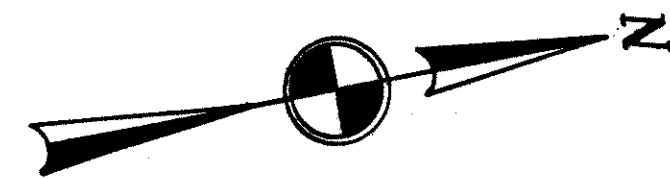
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SITE PLAN

BRIDGE NO. PIK-335-0581

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NLH	NLH	NLH	ER	MPB	2-6-81	

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FEB 5 1986

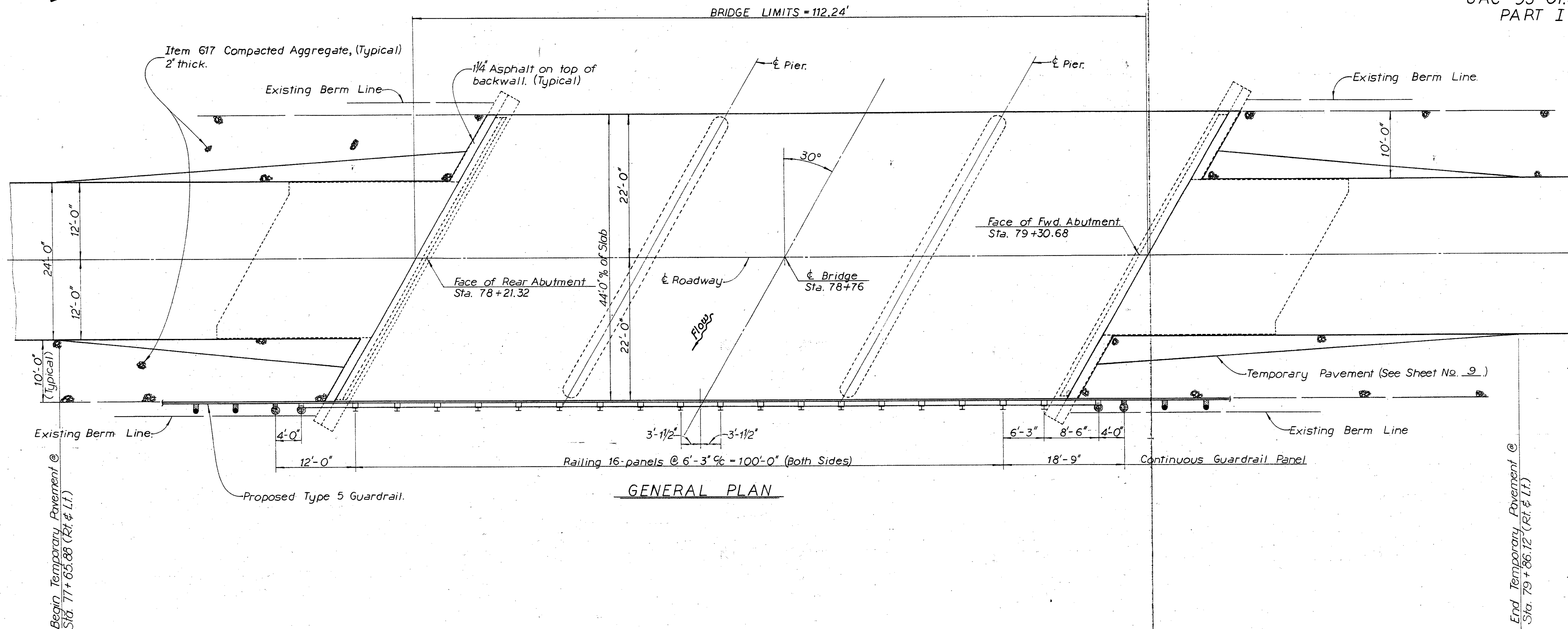


FHWA REGION	STATE	PROJECT
5	OHIO	

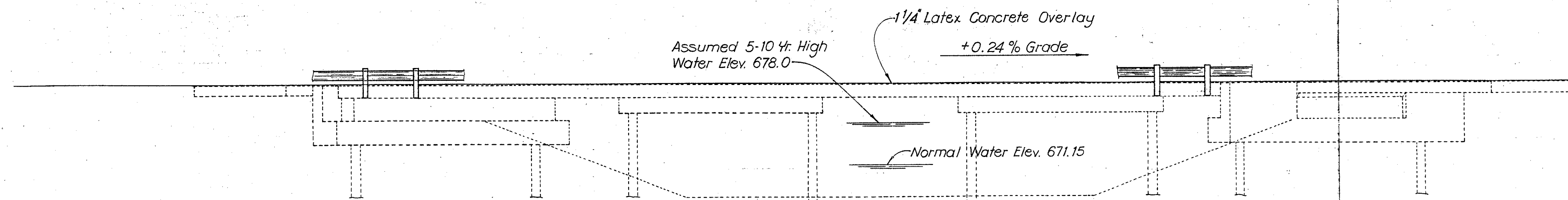
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JAC-93-0150
PART I

BR-19-81



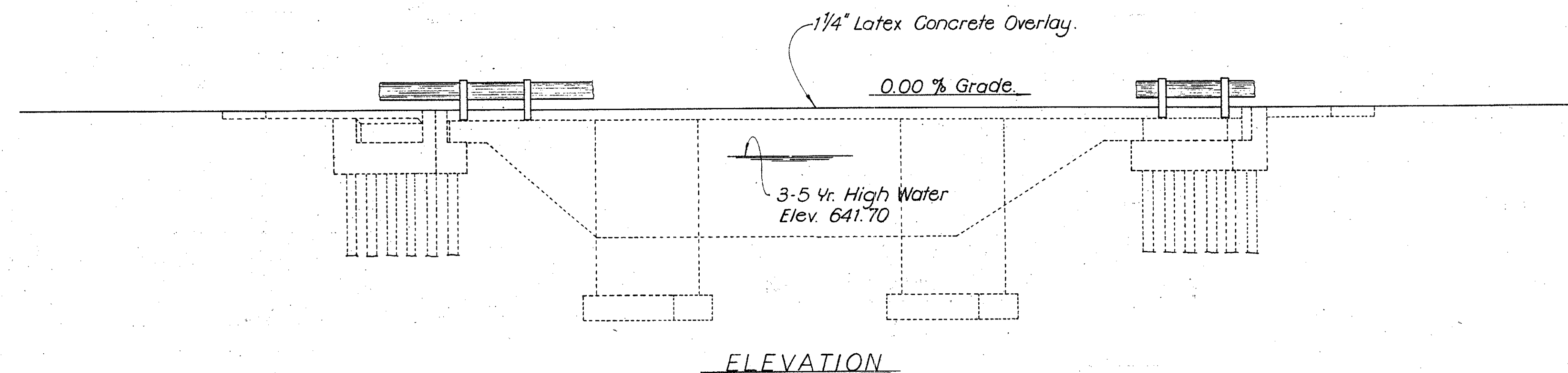
GENERAL PLAN



ELEVATION

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 2 BRIDGES							
GENERAL PLAN & ELEVATION							
BRIDGE NO. JAC-93-0150							
DESIGNED NLH	DRAWN NLH	TRACED NLH	CHECKED ER	REVIEWED MPB	DATE 2-6-81	REVISED	

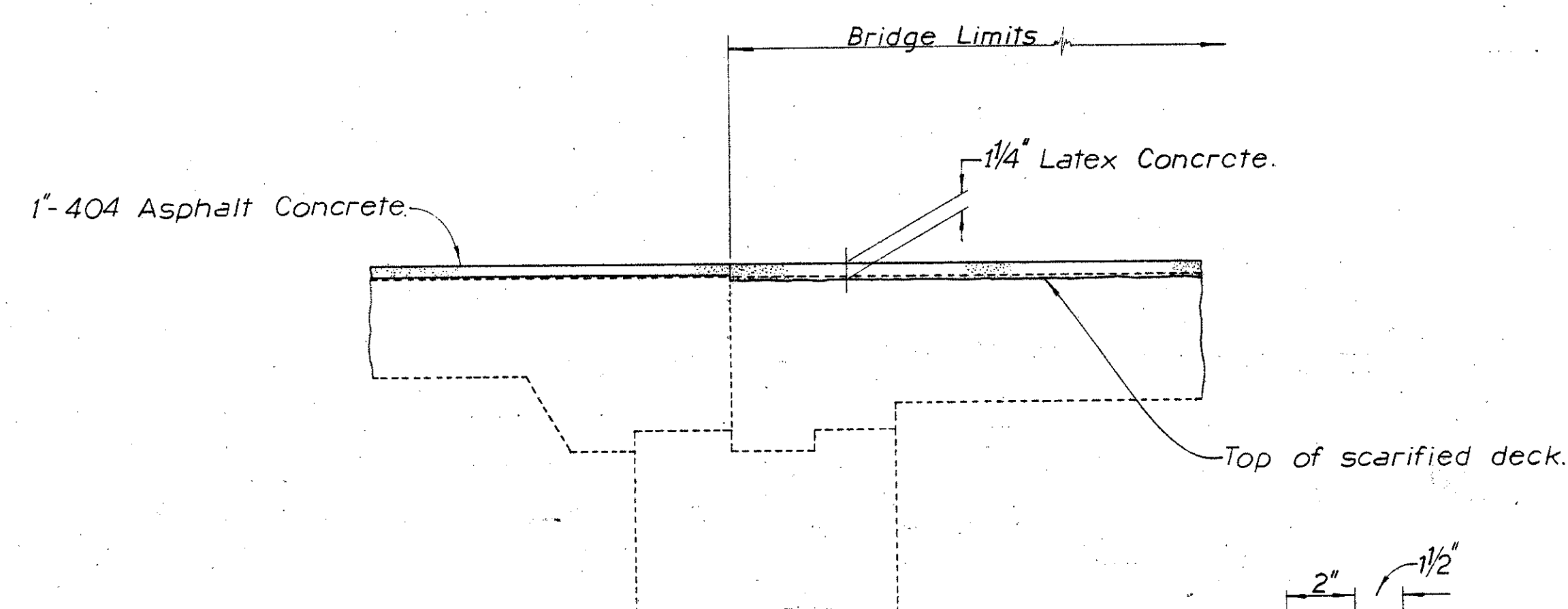
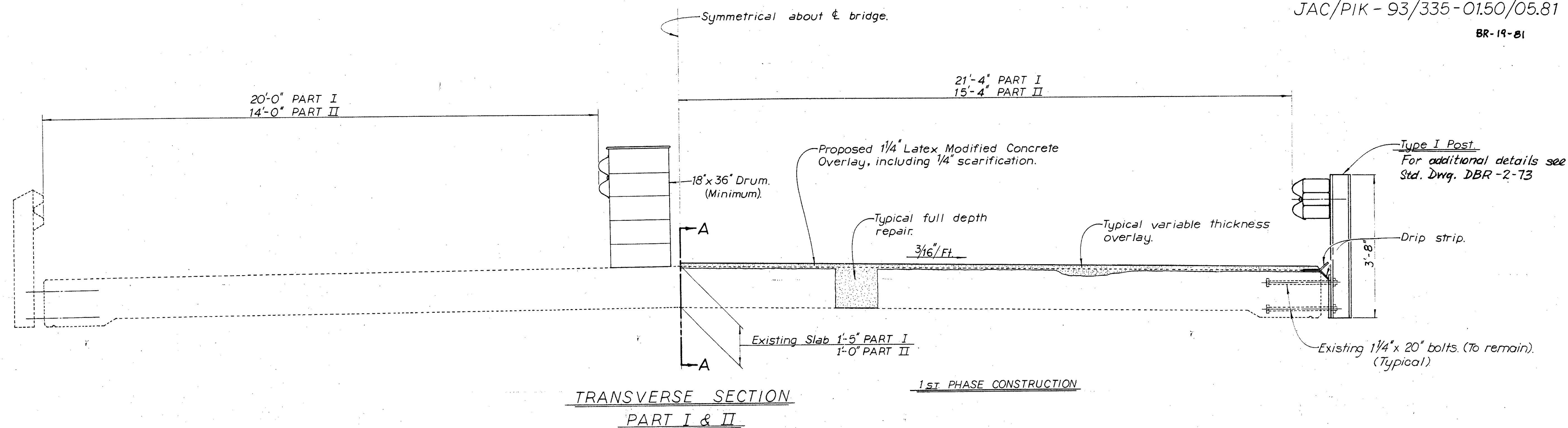
FWHA REGION	STATE	PROJECT	
5	OHIO		



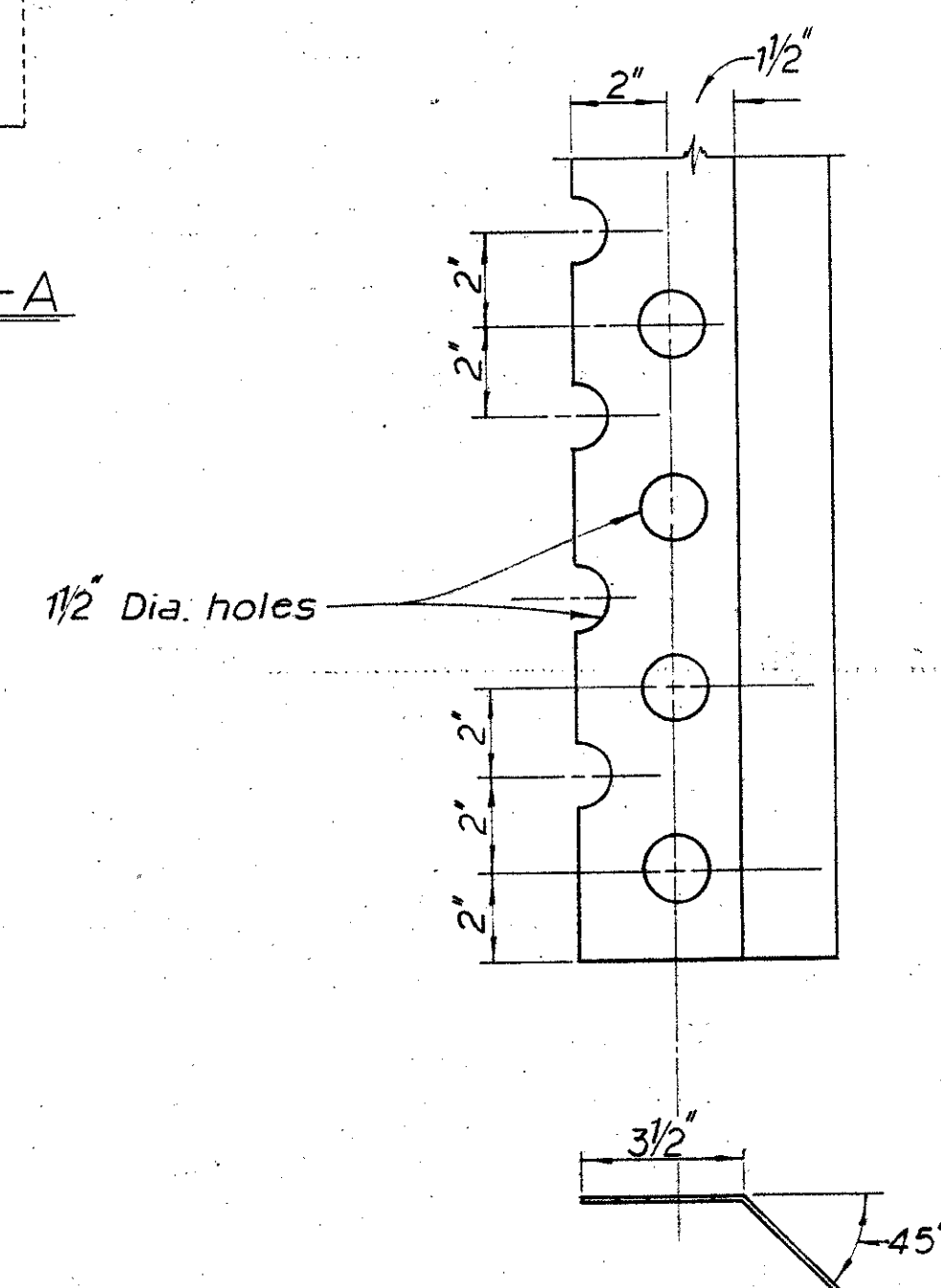
STATE OF OHIO		6/10	
DEPARTMENT OF TRANSPORTATION DISTRICT # BRIDGES			
GENERAL PLAN & ELEVATION			
BRIDGE NO. PIK-335-0581			
DESIGNED	DRAWN	TRACED	CHECKED
N.L.H.	N.L.H.	N.L.H.	ER
REVIEWED		DATE	REVISED
M.P.B. 2-6-61			

JAC/PIK - 93/335 - 01.50/05.81

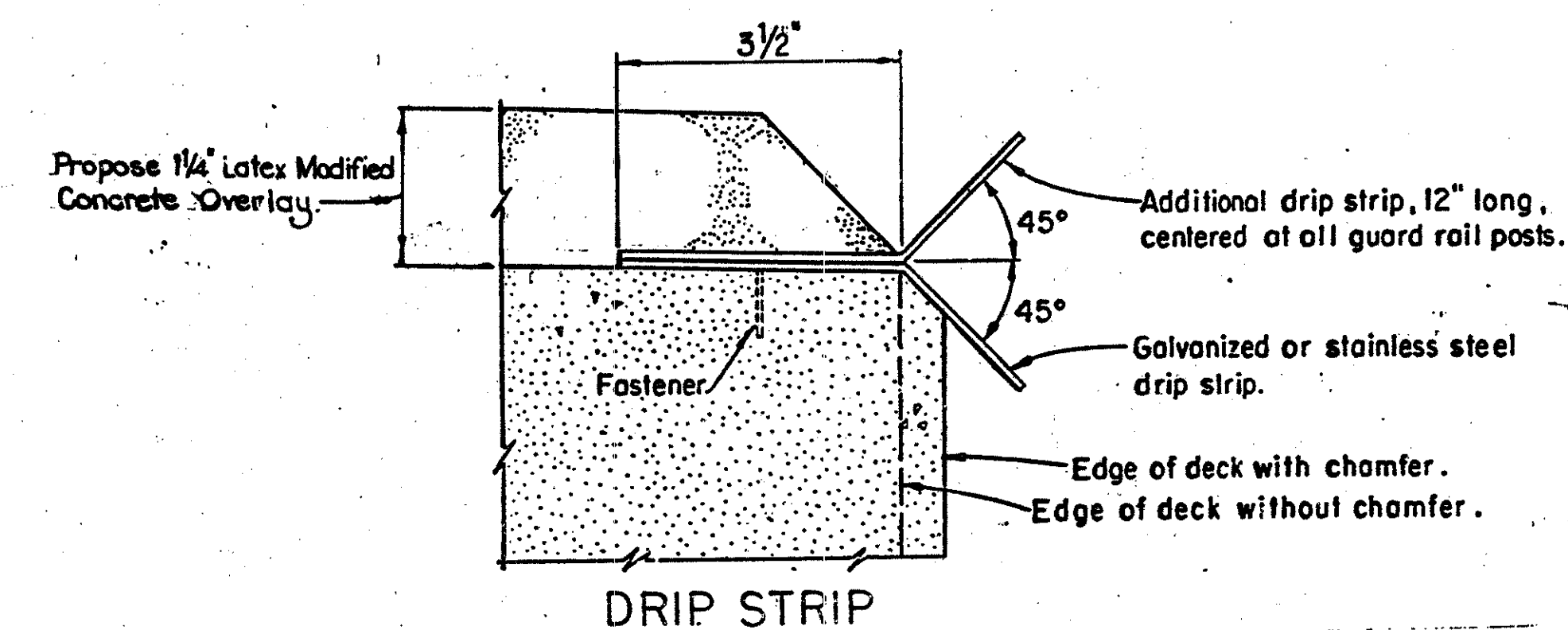
BR-19-81



SECTION A-A



DRIP STRIP DETAIL



DRIP STRIP: Prior to applying deck membrane waterproofing, a bent drip strip shall be installed along the edges of the deck as shown. The strips shall be fastened at 1'-6" 9c maximum with $1\frac{1}{4} \times \frac{5}{8} \times \frac{1}{4}$ " 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 $\frac{5}{16} \times 0.105$ " 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.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 BRIDGES						7/10
SUPERSTRUCTURE DETAILS BRIDGE NO. JAC-93-0150 & PIK-335-0581						
DESIGNED <i>N.L.H.</i>	DRAWN <i>N.L.H.</i>	TRACED <i>N.L.H.</i>	CHECKED <i>ER</i>	REVIEWED <i>M.P.B. 2-6-81</i>	DATE	REVISED

CALCULATIONS

FHWA REGION	STATE	PROJECT	
5	OHIO		

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JAC/PIK-93/335-01.50/05.81

BR-19-81

ITEM

404 Asphalt Concrete (On Approaches)

JAC-93-0150 (PART I)

Rear Approach

Sta. 76+94.88 to Sta. 78+19.88 = 125.0 Lin. Ft. (0" to 1" thick) = 0.041' Average.

Forward Approach

Sta. 79+32.12 to Sta. 80+57.12 = 125.0 Lin. Ft. (0" to 1" thick) = 0.041' Average.

250' x 24' x 0.041'/27 = 9.11 Cu. Yds.

Additional 404 @ top of backwalls =

12.0' x 1.5' x 0.833'/27 x (4-corners) = 2.22 Cu. Yds.

Total = 11.33 = 12 Cu. Yds.

PIK-335-0581 (PART II)

Rear Approach

Sta. 303+10.22 to Sta. 306+25.22 = 315.0 Lin. Ft. (0" to 1" thick) = 0.041' Average.

Forward Approach

Sta. 307+04.78 to Sta. 308+29.78 = 125.0 Lin. Ft. (0" to 1" thick) = 0.041' Average.

440' x 20' x 0.041'/27 = 13.36 Cu. Yds.

Additional 404 @ top of backwalls =

6.0' x 1.5' x 0.833'/27 x (4-corners) = 1.11 Cu. Yds.

Total = 14.47 = 15 Cu. Yds.

407 Tack Coat

(PART I)

Rear Approach = 125.0' x 24'/9 = 333.33 Sq. Yds.

Fwd. Approach = 125.0' x 24'/9 = 333.33 Sq. Yds.

666.66 Sq. Yds.

Additional tack @ top of backwalls =

12.0' x 1.5'/9 x (4-corners) = 8 Sq. Yds.

Total = 674.66 Sq. Yds. x 0.10 Gal./Sq. Yd. = 68 Gals.

(PART II)

Rear Approach = 315.0' x 20'/9 = 700.00 Sq. Yds.

Fwd. Approach = 125.0' x 20'/9 = 277.77 Sq. Yds.

977.77 Sq. Yds.

Additional tack @ top of backwalls =

6.0' x 1.5'/9 x (4-corners) = 4 Sq. Yds.

Total = 981.77 Sq. Yds. x 0.10 Gal./Sq. Yd. = 98 Gals.

407 Cover Aggregate

(PART I)

674.66 Sq. Yds. x 7#/Sq. Yd./2000 = 2.36 = 3 Tons.

(PART II)

981.77 Sq. Yds. x 7#/Sq. Yd./2000 = 3.43 = 4 Tons.

Code Type: X020

X020

		F-38()	RS-1002()	GENERAL SUMMARY	
ITEM	UNIT	PART I 0150	PART II 0581	TOTAL	DESCRIPTION
202	Lin. Ft.	1,050	388	1,438	Guardrail removed.
404	Cu. Yds.	12	15	27	Asphalt concrete, AC-20. (1" thick).
407	Gals.	68	98	166	Tack coat: MS-2, RS-1, SS-1 or SS-1H.
407	Tons.	3	4	7	Cover aggregate.
517	Lin. Ft.	224.48	159.12	383.60	Railing (deep beam with tubular back-up, Type I posts).
606	Each	4	4	8	Anchor assembly, Type A.
606	Each	4	4	8	Bridge terminal assembly, Type B, as per plan.
606	Lin. Ft.	550.52	678.38	1,228.90	Guardrail, Type 5.
614	Lump	Lump	Lump	Lump	Maintaining traffic.
615	Sq. Yds.	54	54	108	Temporary pavement, Type B.
617	Sq. Yds.	723	519	1,242	Shoulder preparation.
617	Cu. Yds.	41	29	70	Compacted aggregate.
619	Lump	Lump	Lump	Lump	Field office.
624	Lump	Lump	Lump	Lump	Mobilization.
845	Sq. Yds.	549	283	832	Latex modified concrete overlay (1/4" thick).
845	Cu. Yds.	11	20	31	Latex modified concrete overlay (Variable thickness).
845	Cu. Yds.	13	5	18	Full depth repair.
519	Sq. Ft.	25	-	25	Patching concrete structures, as per plan.
Special	Sq. Ft.	141	100	241	Steel drip strip.

STATE OF OHIO						8/10
DEPARTMENT OF TRANSPORTATION						
DISTRICT 9 BRIDGES						
GENERAL SUMMARY AND CALCULATIONS						
BRIDGE NO. JAC-93-0150 & PIK-335-0581						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NLH	NLH	NLH	ER	MPB	2-6-81	

ITEM

517 Railing (deep beam with tubular back-up).

(PART I) = $112.24' \times (2) = 224.48$ Lin. Ft.
(PART II) = $79.56' \times (2) = 159.12$ Lin. Ft.

519 Patching Concrete Structures.

25 Sq. Ft. (To be used as directed by the Engineer) PART I only.

606 Guardrail, Type 5.

(PART I)

(Right Side) = Sta. 76+78.39 to Sta. 80+65.89 = 387.50'
387.50' - (112.24' Bridge Limit) = 275.26 Lin. Ft.

(Left Side) = Same As Above. = 275.26 Lin. Ft.

Total = 550.52 Lin. Ft.

(PART II)

(Right Side) = Sta. 304+94.46 to Sta. 308+31.96 = 337.50'
337.50' - (79.56' Bridge Limit) = 257.94 Lin. Ft.

(Left Side) = Sta. 303+35.54 to Sta. 308+35.54 = 500.0'
500.0' - (79.56' Bridge Limit) = 420.44 Lin. Ft.

Total = 678.38 Lin. Ft.

615 Temporary Pavement, Type B.

(PART I)

$47.0' \times 4.5' \text{ wide} / 9 = 23.50$ Sq. Yds.
 $61.0' \times 4.5' \text{ wide} / 9 = 30.50$ Sq. Yds.
54.00 Sq. Yds.

(PART II)

(Same As Above) = 54.0 Sq. Yds.

617 Shoulder Preparation

(PART I)

$325.26' \times 10.0' / 9 = 361.40$ Sq. Yds. $\times (2) = 722.8 = 723$ Sq. Yds.

(PART II)

(Right Side) = $307.94' \times 6.0' / 9 = 205.29$ Sq. Yds.
(Left Side) = $470.44' \times 6.0' / 9 = 313.62$ Sq. Yds.
518.91 Sq. Yds. = 519 Sq. Yds.

Total = 1,242 Sq. Yds.

617 Compacted Aggregate.

(PART I).

2" thick $\times 650.52' \times 10.0' / 27 = 40.23 = 41$ Cu. Yds.

(PART II)

(Rt. Side) = 2" thick $\times 307.94' \times 6.0' / 27 = 11.42$ Cu. Yds.
(Lt. Side) = 2" thick $\times 407.44' \times 6.0' / 27 = 17.45$ Cu. Yds.
28.87 = 29 Cu. Yds.

Total = 70 Cu. Yds.

JAC-93-0150 (PART I)

845 1 1/4" Latex Modified Concrete Overlay

$112.24' \times 44.0' / 9 = 548.72 = 549$ Sq. Yds.

845 Overlay (Variable Thickness)

Concrete Cover = $1\frac{3}{4}"$
Top Bar = $\frac{3}{4}"$
Bottom Bar = $\frac{3}{4}"$
 $\frac{3}{4}" = \text{Depth of Patch.}$

121 Sq. Yds. Deteriorated.
 $121 \times 3.25/36 = 10.92 = 11$ Cu. Yds.

845 Full Depth Repair.

Assume 5% of Area = 549 Sq. Yds. $\times 0.05 = 27.45$ Sq. Yds.
 $27.45 \times 17/36 = 12.96 = 13$ Cu. Yds.

PIK-335-0581 (PART II).

845 1 1/4" Latex Modified Concrete Overlay

$79.56' \times 32.0' / 9 = 282.88 = 283$ Sq. Yds.

845 Overlay (Variable Thickness)

Concrete Cover = $1\frac{3}{4}"$
Top Bar = $\frac{3}{4}"$
Bottom Bar = $\frac{3}{4}"$
 $\frac{3}{4}" = \text{Depth of Patch.}$

218 Sq. Yds. Deteriorated.
 $218 \times 3.25/36 = 19.68 = 20$ Cu. Yds.

845 Full Depth Repair

Assume 5% of Area = 283 Sq. Yds. $\times 0.05 = 14.15$ Sq. Yds.
 $14.15 \times 12/36 = 4.71 = 5$ Cu. Yds.

Special Drip Strip (PART I)

$112.24' \times (2\text{-sides}) = 224.48$ Lin. Ft.
 $224.48' \times 0.54' = 121.22$ Sq. Ft.

At each post = $1.0' \times 0.54' \times 36 \text{ posts} = 19.44$ Sq. Ft.

Total = 140.66 = 141 Sq. Ft.

Special Drip Strip (PART II)

$79.56' \times (2\text{-sides}) = 159.12$ Lin. Ft.
 $159.12' \times 0.54' = 85.92$ Sq. Ft.

At each post = $1.0' \times 0.54' \times 26 \text{ posts} = 14.04$ Sq. Ft.

Total = 99.96 = 100 Sq. Ft.

STATE OF OHIO						
DEPARTMENT OF TRANSPORTATION						
DISTRICT 9 BRIDGES						
CALCULATIONS						
BRIDGE NO. JAC-93-0150 & PIK-335-0581						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NLS	NLS	NLS	ER	MPB	2-6-81	

