

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

PLAN NO BR-2-78

JACKSON COUNTY	OHIO
JAC-788-0.49	FHWA REGION 5
STATE	FEDERAL PROJECT

JAC-788-0.49
LICK TOWNSHIP
JACKSON COUNTY

MICROFILMED
SEP 9 1987

PLAN NO. BR-2-78

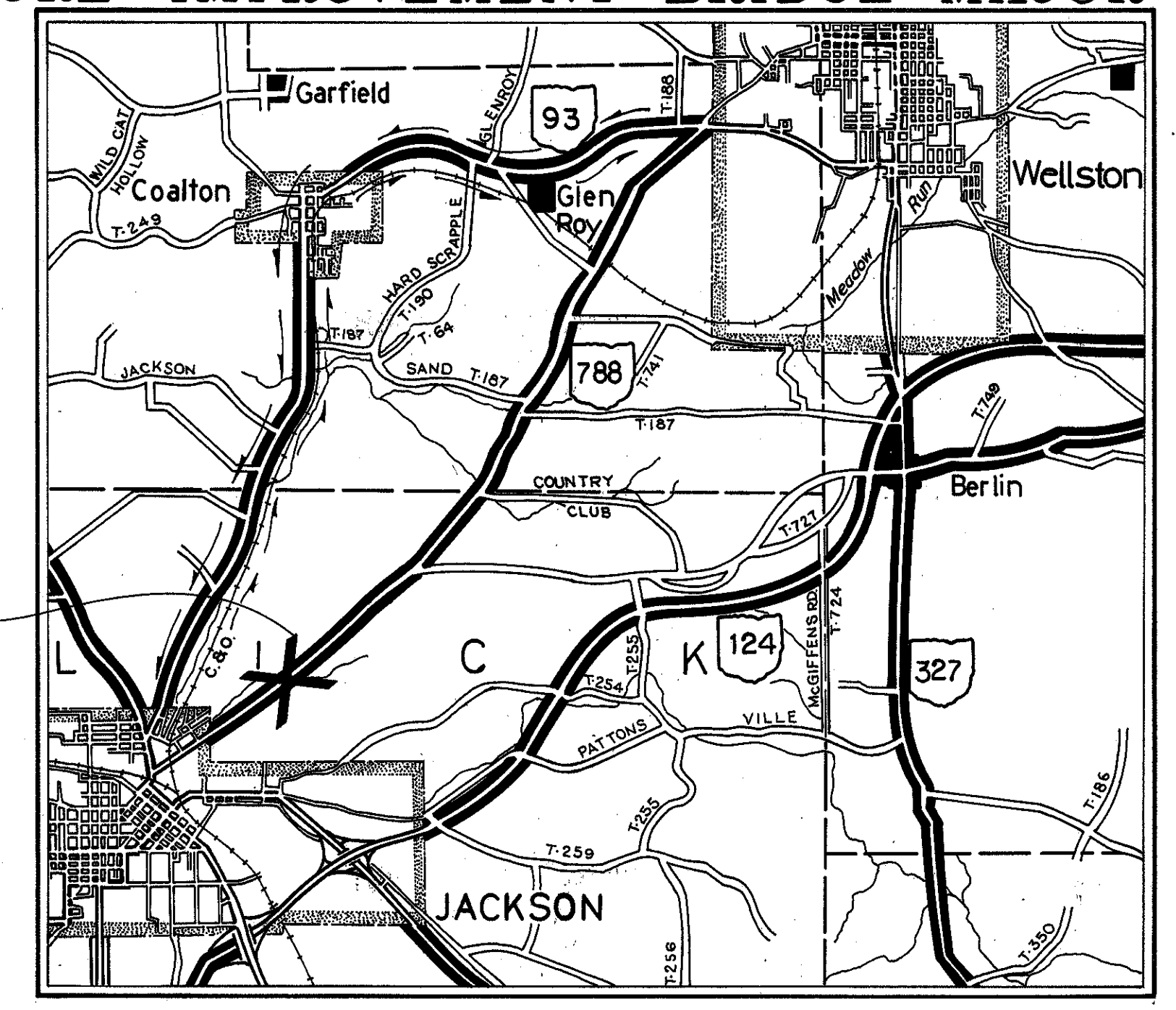
STRUCTURE IMPROVEMENT-BRIDGE MAJOR REPAIR

CONVENTIONAL SIGNS

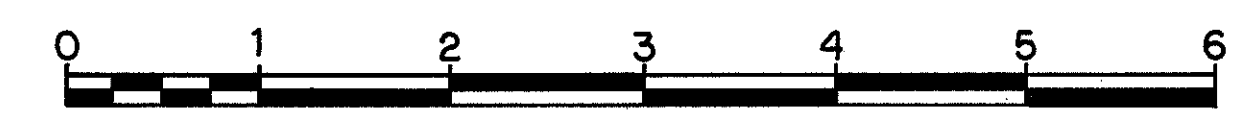
County Line	-----	Limited Access (only)	-----	LA
Township Line	-----	Right of Way (only)	=====	RW
Section Line	-----	Limited Access & Right of Way	-----	LA & RW
Corporation Line	----- or -----	Existing Right of Way	=====	
Fence Line (existing)	-x-x-	Property Line	-----	(in existing fence) -x-x-
Center Line	-----	Railroad	=====	
Trees	⊙	Guardrail (existing)	—•••••	(proposed) —•••••
Stumps	⊙			
(to be removed)	⊙			
Utility Poles: Telephone	⊕			
Power	⊕			
Light	⊕			

INDEX OF SHEETS

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LOCATION AND DETOUR MAP



Portion to be improved	-----
State Roads	-----
Other Roads	-----

LINE DATA

Net Length of Work = 142.33 Lin. Ft. or 0.027 Miles.

SCALES

Plan	-----	0' 10' 0'
Profile: Horizontal	-----	0' 10' 0'
Vertical	-----	0' 2' 0'
Cross Section: Horizontal	-----	0' 10' 0'
Vertical	-----	0' 2' 0'

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-5	6-1-72		
DBR-2-73	4-10-73		
GR-2B	11-9-71		
GR-2C	7-3-75		
GR-4	11-9-71		
MC-3	6-1-73		
PSBD-1-71	9-1-71		

SUPPLEMENTAL SPECIFICATIONS

1977 SPECIFICATIONS

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

The right of way for this improvement will be provided by the State of Ohio.

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.

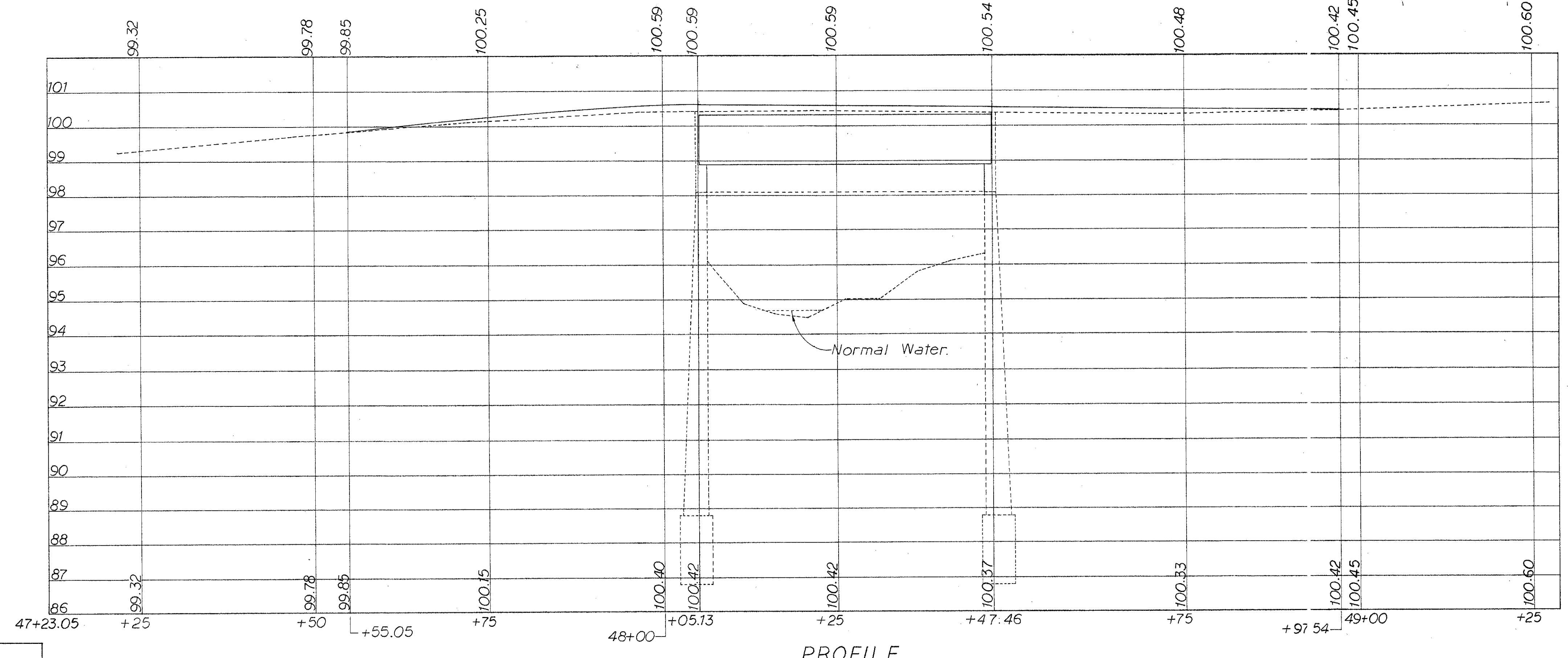
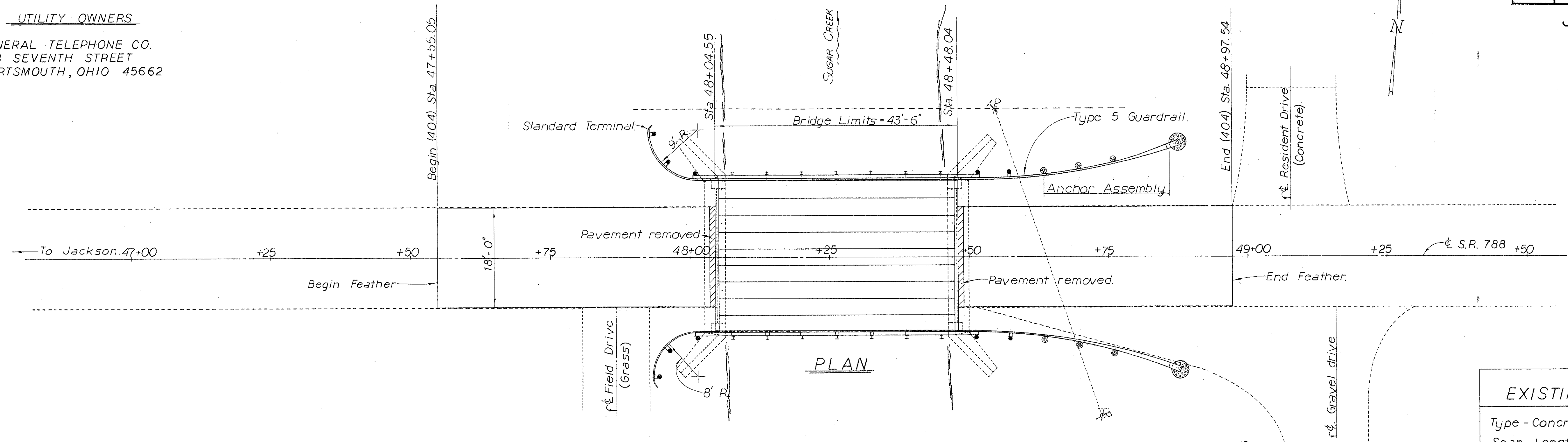
Approved: Herald E. Blann
Date: 2-28-78 District Deputy Director of Transportation.

Approved: Robert B. Pfeiffer
Date: 3-7-78 Engineer, Bureau of Bridges and Structural Design.

Approved: Henry C. Nelson
Date: 3-15-78 Chief Engineer, Planning and Design or Chief Engineer, Operations.

Approved: David S. Wein
Date: 3-15-78 Director, Department of Transportation.

UTILITY OWNERS
 GENERAL TELEPHONE CO.
 824 SEVENTH STREET
 PORTSMOUTH, OHIO 45662



EXISTING STRUCTURE

Type - Concrete Girder.
 Span Length - 39'-10" f/f Abutments.
 Width - 24'-0" f/f Railing.
 Loading - H 6.1.
 Skew - 0°
 Wearing Surface - 8 1/4" Asphalt Conc.
 Approach Slabs - None
 Alignment - Tangent.

PROPOSED STRUCTURE

Type - Prestressed Conc. Box Beams.
 Span Length - 39'-10" f/f Abutments
 Width 27'-0" f/f Railing
 Loading - HS 20-44 & Alt. Military.
 Skew - 0°
 Wearing Surface - 2 1/2" Asphalt Conc.
 Approach Slabs - None
 Alignment - Tangent.

BENCH MARK
 P.K. Nail In
 General telephone pole.
 Sta. 48+74.0 28' Rt.
 Elev. 100.00

PLAN AND PROFILE
 BRIDGE NO. JAC-788-0091

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.B.	J.R.B.	J.R.B.	D.A.B.	Jim Bonhart	2-27-78	

FHWA REGION	STATE	PROJECT	
5	OHIO		

3
6

JAC-788-0.49

GENERAL NOTES

REFERENCE shall be made to Standard Drawings BP-5 dated 6-1-72, DBR-2-73 dated 4-10-73, GR-2B dated 11-9-71, GR-2C dated 7-3-75, GR-4 dated 11-9-71, MC-3 dated 6-1-73 and PSBD-1-71 dated 9-1-71.

DESIGN SPECIFICATIONS: This structure conforms to Standard Specifications for Highway Bridges adopted by the American Association of State Highway Officials 1973 the 1974 AASHTO interim specifications, and the Ohio Supplement to these specifications.

DESIGN DATA:

Design Loading - HS 20-44 and the Alternate Military Loading.
Concrete Class C - Unit stress 1,333 p.s.i. for substructure

Concrete for Prestressed Concrete Beams - Unit stress 2,200 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 .
Reinforcing steel ASTM A615, A616 or A617 - Unit stress 20,000 p.s.i.

PRESTRESSED BEAMS:

1. Design Loading:

Live load HS 20-44 with Alternate Military Loading.
Superimposed dead load 175 Lbs. per Lin. Ft.

2. Concrete stresses:

Min. concrete strength at 28 days $f'_c = 5,500$ p.s.i.
Min. concrete strength at time of initial prestress $f'_{ci} = 4,000$ p.s.i.

3. Prestressing strands, 1/2" Dia. 270* seven wire, uncoated.

Stress-relieved strand $A_s = 0.154$ in.
Initial Tension = 28,900 Lbs. per strand.

4. Applicable PSBD-1-71 Details.

Section showing wall thickening at guard rail anchors.
Beam lifting inserts.
Anchor dowels (Fixed). (Expansion)(Dowel clear of Brg. Pad).
Details of transverse tie rods.
Diaphragms and transverse tie rods.
Normal crown treatment, joint offset from ϕ .
Beam dimensional tolerances.
36" Wide non-composite beams, B17-36.

5. Beam shop drawings shall show complete details of reinforcing steel.

NEOPRENE SHIMS: Care shall be taken when erecting beams to assure proper seating on bearing pads. Neoprene shims shall be furnished with the beams to assure proper seating.

ASPHALT CONCRETE SURFACE COURSE shall consist of a variable thickness of 403 and a 1" thickness of 404. The 403 shall be placed in two operations. The first course shall be of 1 1/2" uniform thickness. The second course shall be feathered to place the surface parallel to and 1" below final pavement surface elevation.

CLOSURE OF ROAD The road shall not be closed until the curing period of the prestressed beams is within seven (7) days of completion. The road shall be opened to traffic within 15 working days from the time of closure.

FIELD OFFICE The contractor shall provide a 150 Sq. Ft. minimum field office as in item 619 and shall provide and maintain sanitary provisions as per item 107.06 which is to be included in lump sum bid for item 619.

ITEM 519 PATCHING CONCRETE STRUCTURES: shall be performed on the face of abutments and wings.

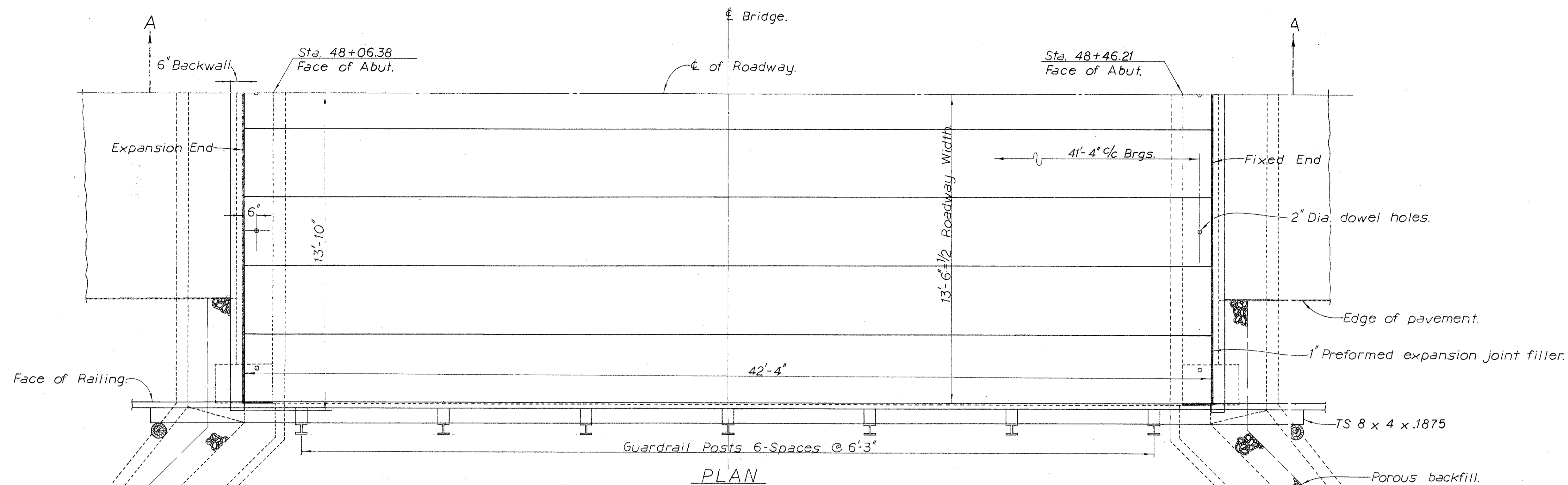
REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. Suitable waste masonry may be placed as bank protection as directed by the Engineer. The remainder shall be removed from the site and paid for under 202.

UTILITY LINES: The contractor is required to work around existing utility lines.

WORK PROCEDURE

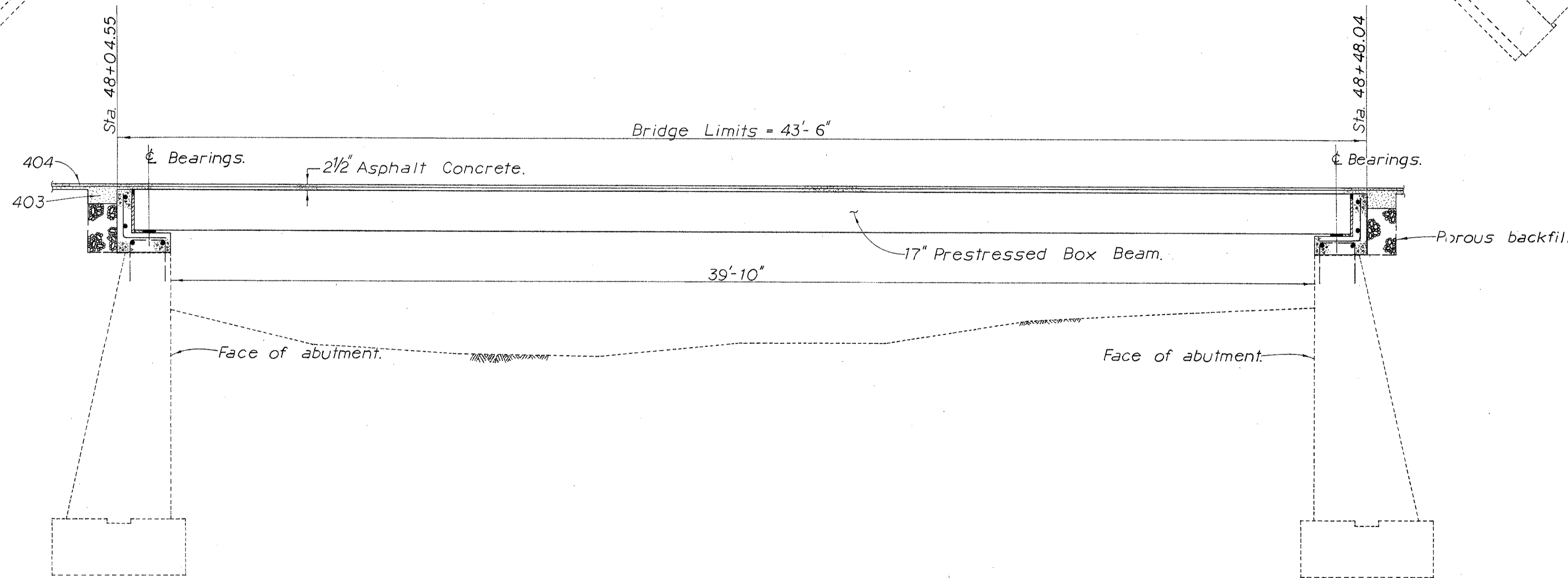
1. Erect wing barricade as per MC-3 at begin and end work.
2. Close the road to traffic.
3. Remove and dispose of existing superstructure as per item 202.
4. Construct new bridge seats, as per plan, to accommodate prestressed concrete beams. Erect prestressed concrete beams.
5. Construct new backwalls with porous backfill, as per plan.
6. Resurface project.
7. Install bridge railing and approach guard rail.
8. Remove traffic devices and open to traffic.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 3 BRIDGES							3/6
GENERAL NOTES AND WORK PROCEDURE							
BRIDGE NO. JAC-788-0091							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
N.R.H.	N.R.H.	N.R.H.	DAB	J. B. B.	2-27-78		



PLAN

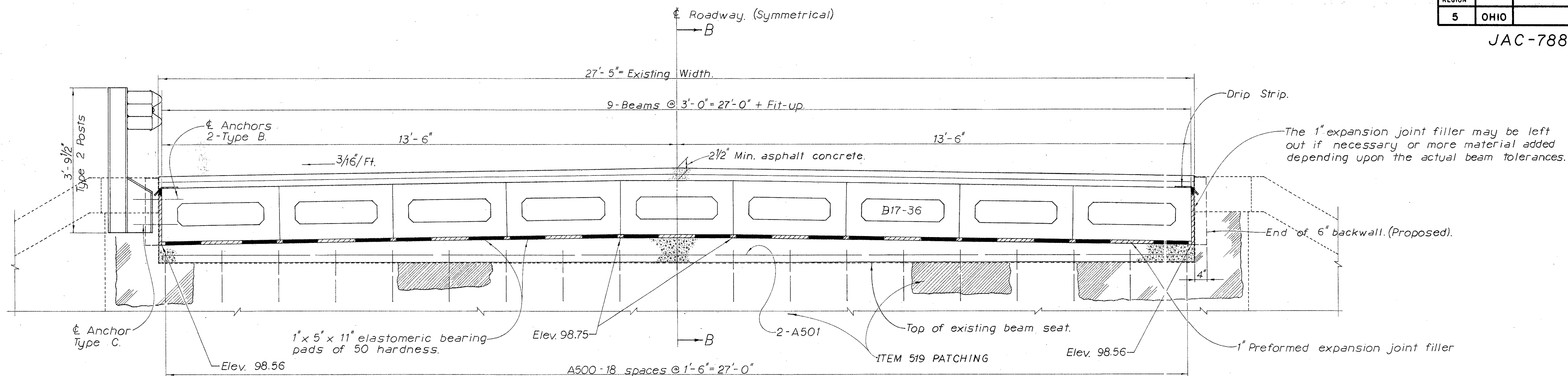
Note:
Porous backfill shall extend laterally to the surface of the embankment slopes.



SECTION A-A

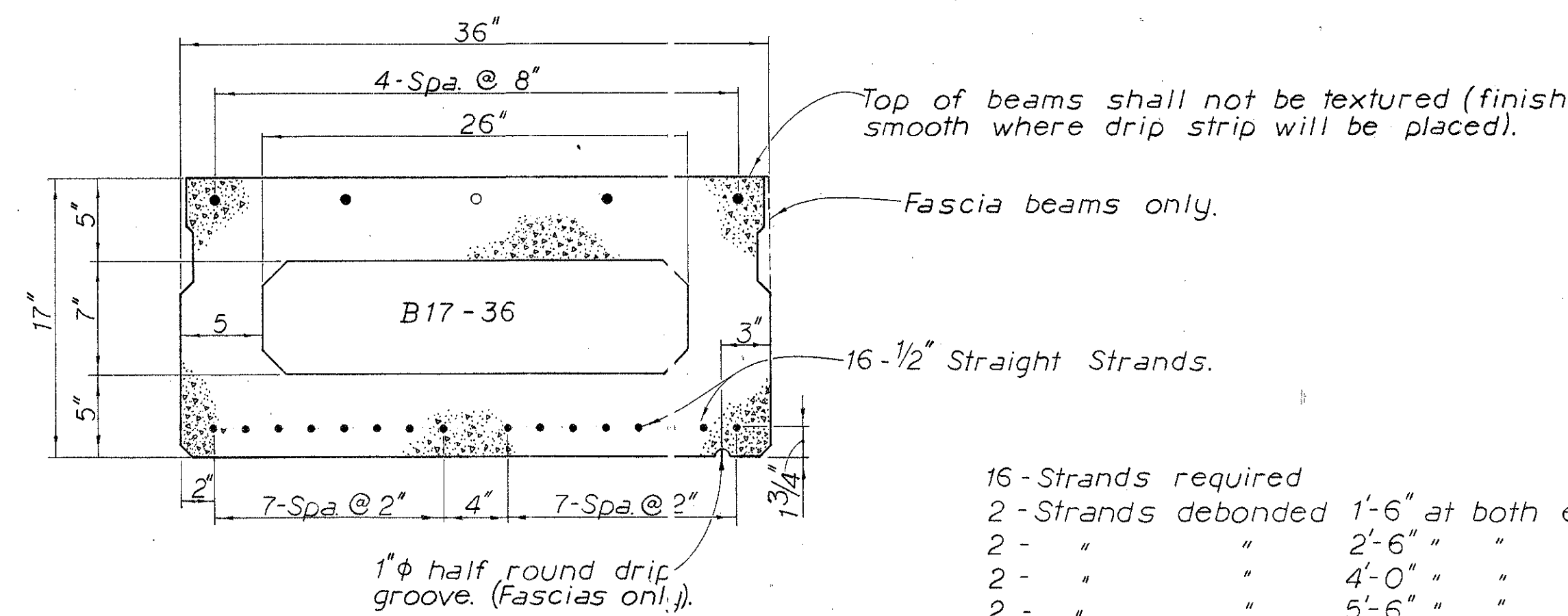
ABUTMENT AND BEAM
DETAILS
BRIDGE NO. JAC-788-0091

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.H.A.	W.H.A.	W.H.A.	D.A.S.	J. Bond	2-27-78	



TYPICAL TRANSVERSE SECTION

Note: \bullet #5 Bars full length.
 \circ #5 Bars 9'-6" long each end.



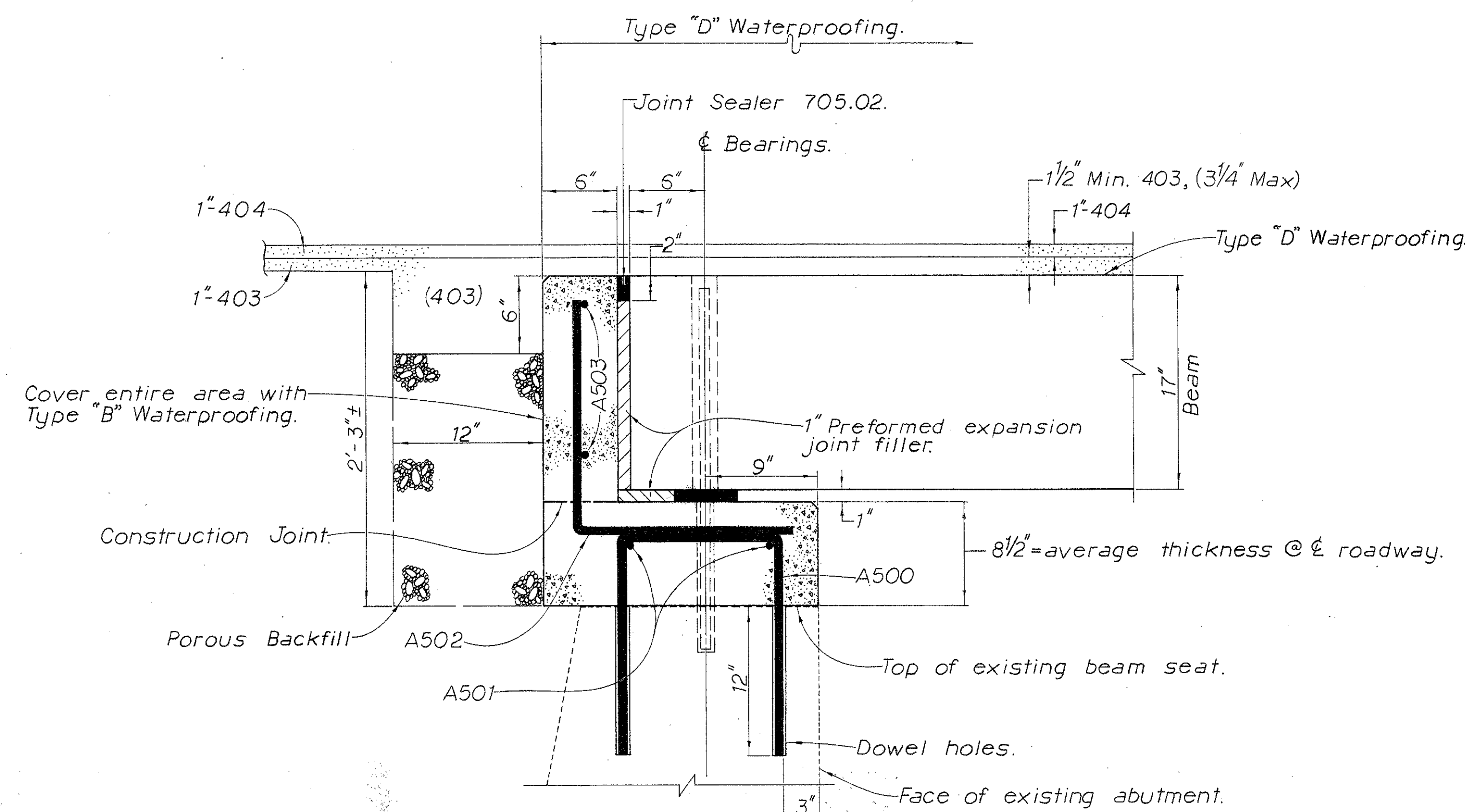
16-Strands required
 2-Strands debonded 1'-6" at both ends.
 2- " " 2'-6" " " "
 2- " " 4'-0" " " "
 2- " " 5'-6" " " "

Prestressing strands are 1/2" uncoated seven wire stress-relieved strand with an initial tension of 28,900 pounds per strand, Sec. 515.

Calculated camber at time of paving, including allowance for camber growth due to creep is 1.82" = 17/8" +

Calculated deflection due to weight of surface course and railing is 0.131"

Net final camber of beams is 1.69". This is 1 3/4" in excess of the amount required to place the top of the beam parallel to profile grade. This excess amount shall be compensated for by thickening the 403 leveling course from 1 1/2" at center of span to 3/4" at ends of spans.



SECTION B-B

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 9 BRIDGES						5/6
SUPERSTRUCTURE DETAILS						
BRIDGE NO. JAC-788-0091						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.K.H.	N.K.H.	N.K.H.	D.A.B.	J.P.	2-27-78	

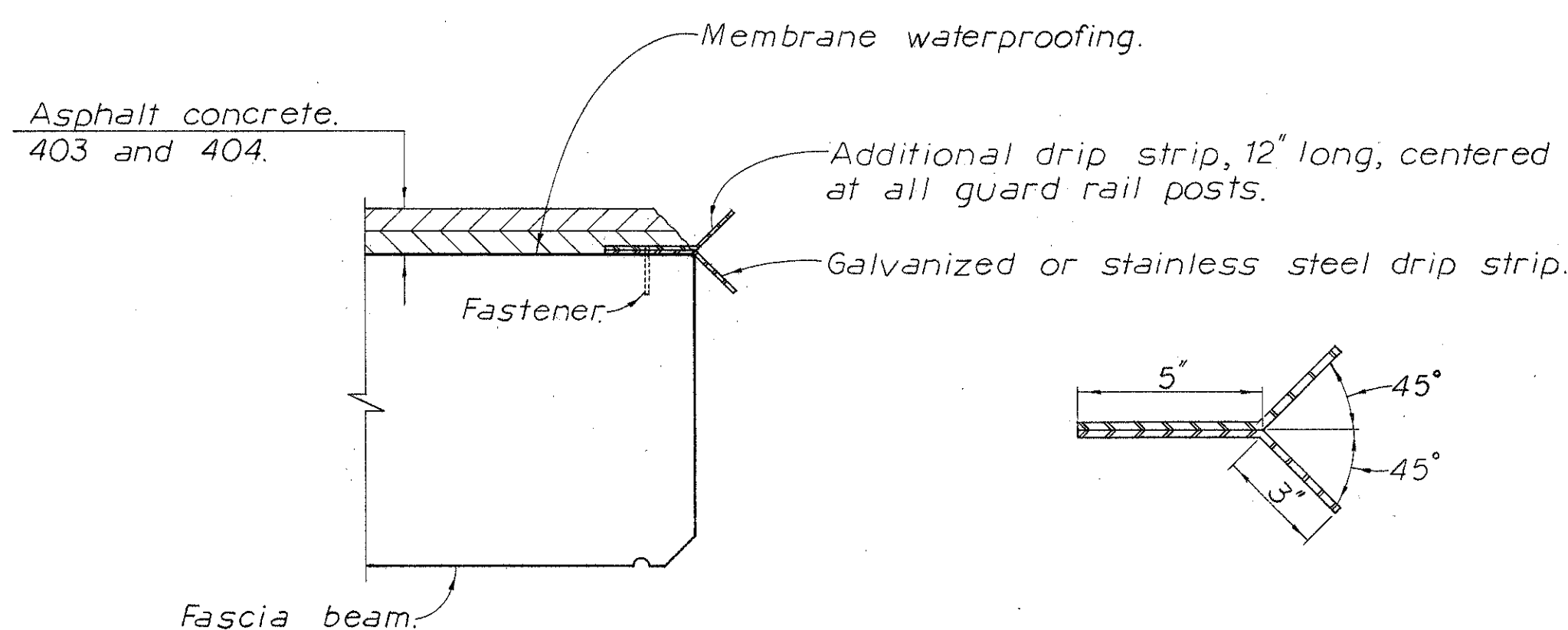
MICROFILMED
SERIALS UNIT

STEEL LIST				
MARK	NO.	LENGTH	WEIGHT	SHP.
A500	38	3'-10"	152	B
A501	4	27'-0"	113	S
A502	38	3'-0"	119	B
A503	4	27'-9"	116	S

BENDING DIAGRAMS	

Note:
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 structure by the additional steel spliced in accordance with 509.08.

GENERAL SUMMARY			
ITEM	TOTAL	UNIT	DESCRIPTION
202	Lump Sum		Portions of structure removed.
202	4	Sq.Yds	Pavement removed.
403	12	Cu.Yds	Asphalt concrete AC-20.
404	8	Cu.Yds	Asphalt concrete AC-20.
407	20	Gal.	Tack coat, MS-2, RS-1, RC-250, SS-1 or SS-1H.
503	6	Cu.Yds	Unclassified excavation.
509	500	Lbs.	Reinforcing steel.
510	86	Ea.	Dowel holes.
511	4	Cu.Yds	Class C concrete, abutments. (See Proposal Note)
512	14	Sq.Yds	Type B waterproofing.
512	131	Sq.Yds	Type D waterproofing.
515	9	Ea.	Prestressed concrete bridge members, 42'-4" long.
516	95	Sq.Ft.	1" Preformed expansion joint filler.
516	14	Sq.Ft.	1" Elastomeric bearing pads, 5"x1."
516	60	Lin.Ft.	Joint sealer, 705.02.
517	86.66	Lin.Ft.	Railing (deep beam with steel posts and bolts).
518	6	Cu.Yds	Porous backfill.
519	159	Sq.Ft.	Patching concrete structures.
606	63.34	Lin.Ft.	Guardrail, type 5, as per plan.
606	2	Ea.	Anchor assembly, as per plan.
614	Lump Sum		Maintaining traffic.
619	Lump Sum		Field office.
Special	53	Sq.Ft.	Steel drip strip.
407	1	Ton	Cover aggregate.
623	Lump Sum		Construction layout stakes.



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 3'-0" maximum with power driven pins 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 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"x0.105" and shall meet the requirements of ASTM A568. Galvanizing shall be in accordance with 711.02. Stainless steel shall be 18 gauge, 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 item.

† ASTM-A167

DESIGNED		DRAWN		TRACED		CHECKED		REVIEWED		DATE		REVISED	
J.H.H.		J.H.H.		J.H.H.		D.A.D.		J.H.H.		2-27-78			

JAC-788-0.49