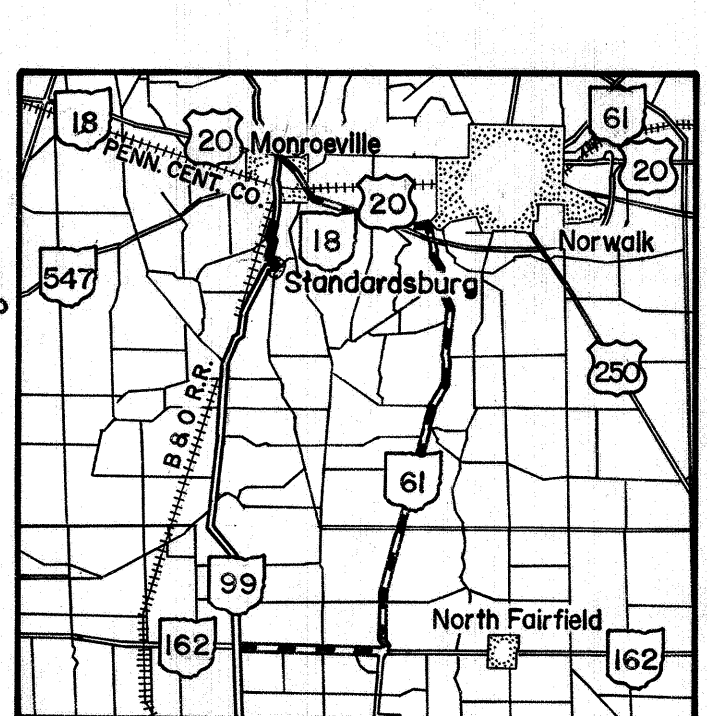


MICROFILMED  
APR 16 1979  
REPRODUCTION

RE MICROFILMED  
1 DEC 6 1984

DESIGN DESIGNATION  
Current A.D.T. (1970) 2292  
Design Year A.D.T. (1990) 3440  
D.H.V. 447  
D (Directional Distribution) 50% - 50%  
T. (Percent B & C Trucks) 9%  
V. (Design Speed) 60 m.p.h.



DETOUR MAP  
SCALE IN MILES

DETOUR MAP LEGEND

- DETOUR
- PORTION TO BE IMPROVED
- STATE ROADS
- OTHER ROADS
- RAILROADS

CONVENTIONAL SIGNS

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

INDEX OF SHEETS

- Title Sheet 1
- Schematic Plan 2
- Typical Sections 3
- General Notes 4
- Calculations & Superelevation Tables 5
- General Summary 6-7
- Plan & Profile 8-16
- Cross - Sections 17-48-48A & B
- Intersection Details 49, 49A & B - 52
- Drainage Details 53
- Channel Details 54-55
- Structures 20' Span & Under 56-62
- Structures Over 20' Span 63-69
- Right of Way 70-81

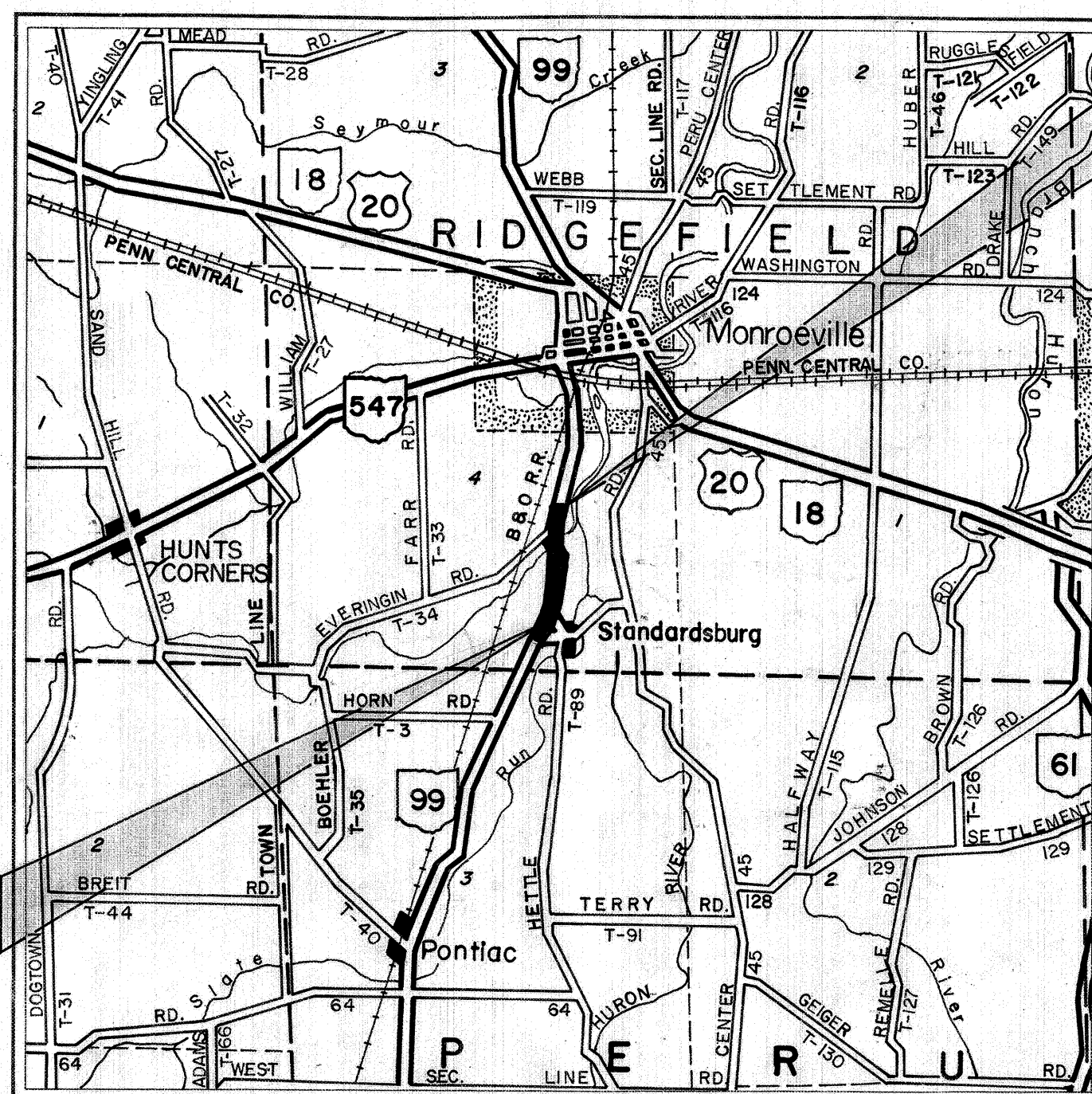
LINE DATA

Begin Project - Sta. 665+00.00  
End Project - Sta. 728+25.00  
Net Length of Project 6,325.00 Lin. Ft. or 1.197 Mi.  
Add for Approaches  
Begin Work (Sta. 663+90 to Sta. 665+00) 110.00 Lin. Ft.  
End Work (Sta. 728+25 to Sta. 729+46.5) 121.50 Lin. Ft.  
Everingin Rd. Sta. 0+12.17 to Sta. 3+35.00 322.83 Lin. Ft.  
T.R. 89 & T.R. 90 Sta. 0+12 to Sta. 7+30 718.00 Lin. Ft.  
Net Length of Work 7,597.33 Lin. Ft or 1.438 Mi.

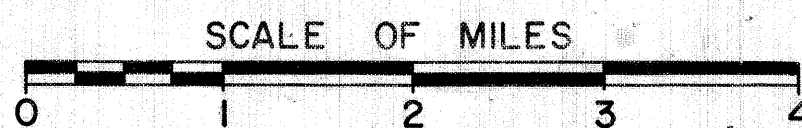
STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

# HUR-99-12.59

RIDGEFIELD TOWNSHIP  
HURON COUNTY



LOCATION MAP  
SCALE OF MILES



- Portion to be improved
- State Roads
- Other Roads

SCALES

- Plan
- Profile: Horizontal
- Profile: Vertical

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
BP-2	12-1-68	MC-4	6-13-69
BP-5	1-1-71	BP-3	1-1-71
BP-6	6-1-65	L-1	6-1-65
CB-2-2-A&B	6-1-65	MC-3	6-20-69
CB-5	9-1-69	MC-7	10-1-68
FACI-1	4-20-71	MH-1	10-1-68
FACI-2	4-20-71	AS-1-67	6-12-69
		SD-1-69(sh.4)	6-12-69
GR-2B	1-1-71	GR-4	1-1-71
GR-5	1-1-71	GR-3	1-1-71
GR-6	1-1-71		
HW-4	1-1-70		
MC-1	6-13-69		

SUPPLEMENTAL SPECIFICATIONS	
1001	1-1-69
808	1-1-71
836	1-1-71
941	11-25-70

1971 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Highways, including changes and supplemental specifications listed 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 not require the closing to traffic of the highway, except as noted on Sheet 4, and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: *A. Z. Reader*  
Date: 1-20-71 Division Deputy Director

Approved: *C. H. Allwater*  
Date: 10-26-71 Engineer of Bridges

Approved: *E. J. Schaefer*  
Date: 11-2-71 Engineer of Location & Design

Approved: *H. C. Krauser*  
Date: 11-2-71 Deputy Director of Design & Construction

Approved: *R. A. Vesting*  
Date: 11-11-71 Deputy Director of Right of Way

Approved: *William Bumbley*  
Date: 11-11-71 Deputy Director of Planning & Programming

Approved: *William P. McKenna*  
Date: 11-11-71 First Assistant Director

Approved: *Phillip Donnelly*  
Date: 11/11/71 Director of Highways

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPROVED: \_\_\_\_\_  
DIVISION ENGINEER DATE

Project: HURON COUNTY HUR-99-12.59  
Date of Letting 19 Contract No. \_\_\_\_\_  
LD 0300  
12-29-67

SEAL

MICROFILMED  
DEC 6 1984

NAIL & SHINNER  
IN 10" MAPLE  
NAIL & SHINNER  
IN 10" TREE  
PROP. S.R. 99  
STA. 694 + 32.65  
I.P. WITH CAP &  
PUNCH HOLE  
NAIL &  
SHINNER IN  
3" HICKORY  
P.O.T. ~ STA. 694 + 32.65

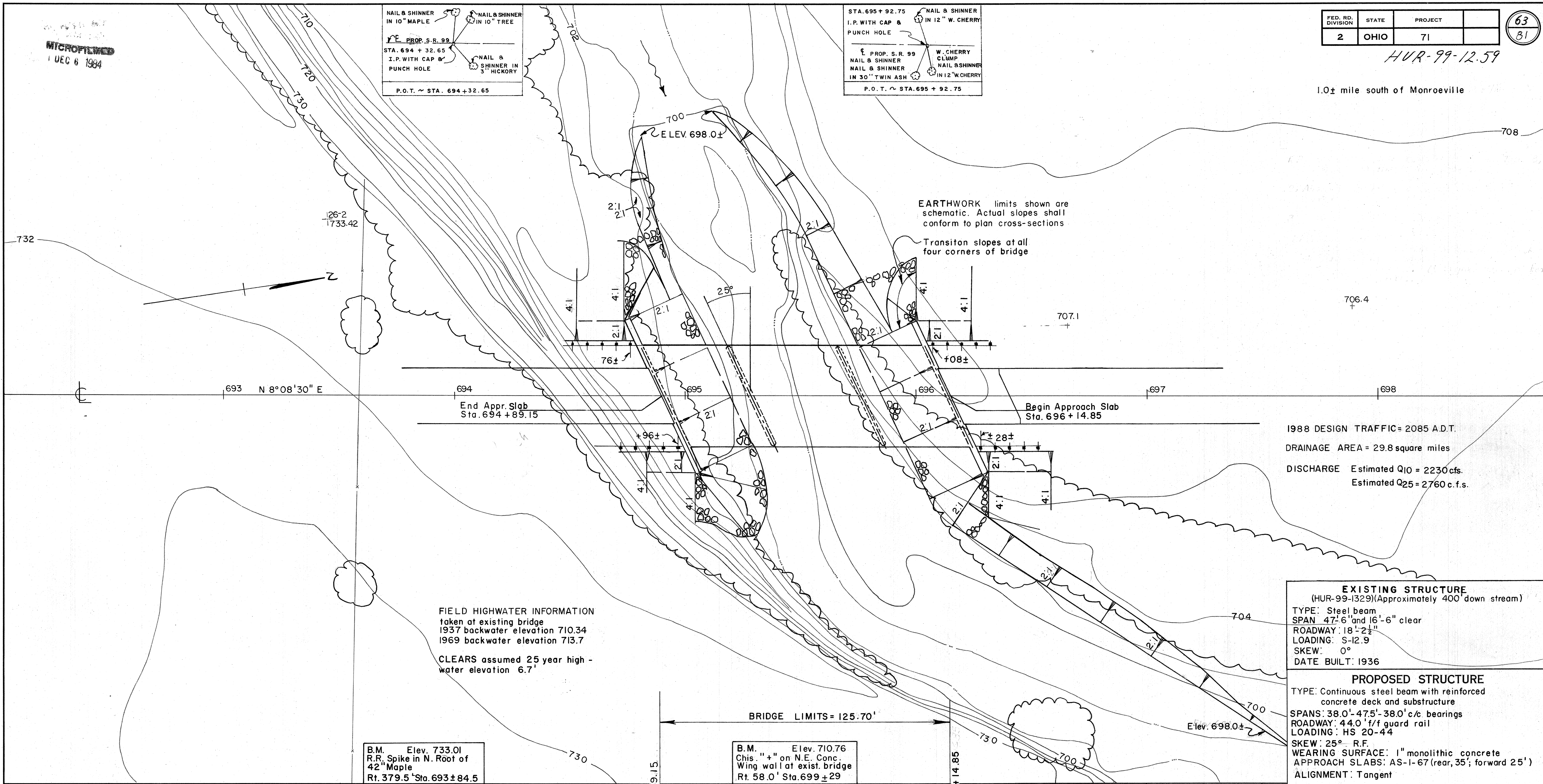
STA. 695 + 92.75  
I.P. WITH CAP &  
PUNCH HOLE  
NAIL & SHINNER  
IN 12" W. CHERRY  
PROP. S.R. 99  
NAIL & SHINNER  
IN 30" TWIN ASH  
W. CHERRY  
CLUMP  
NAIL & SHINNER  
IN 12" W. CHERRY  
P.O.T. ~ STA. 695 + 92.75

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	71	

63  
81

HUR-99-12.59

1.0± mile south of Monroeville



EARTHWORK limits shown are schematic. Actual slopes shall conform to plan cross-sections

Transition slopes at all four corners of bridge

FIELD HIGHWATER INFORMATION  
taken at existing bridge  
1937 backwater elevation 710.34  
1969 backwater elevation 713.7  
CLEARS assumed 25 year high -  
water elevation 6.7'

1988 DESIGN TRAFFIC = 2085 A.D.T.  
DRAINAGE AREA = 29.8 square miles  
DISCHARGE Estimated Q<sub>10</sub> = 2230 cfs.  
Estimated Q<sub>25</sub> = 2760 c.f.s.

**EXISTING STRUCTURE**  
(HUR-99-1329)(Approximately 400' down stream)  
TYPE: Steel beam  
SPAN 47'-6" and 16'-6" clear  
ROADWAY: 18'-2 1/2"  
LOADING: S-12.9  
SKEW: 0°  
DATE BUILT: 1936

**PROPOSED STRUCTURE**  
TYPE: Continuous steel beam with reinforced concrete deck and substructure  
SPANS: 38.0'-47.5'-38.0' c/c bearings  
ROADWAY: 44.0' f/f guard rail  
LOADING: HS 20-44  
SKEW: 25° R.F.  
WEARING SURFACE: 1" monolithic concrete  
APPROACH SLABS: AS-1-67 (rear, 35'; forward 25')  
ALIGNMENT: Tangent

B.M. Elev. 733.01  
R.R. Spike in N. Root of  
42" Maple  
Rt. 379.5 Sta. 693 ± 84.5

B.M. Elev. 710.76  
Chis. " + " on N.E. Conc.  
Wing wall at exist. bridge  
Rt. 58.0' Sta. 699 ± 29

740	718.55		717.65	717.22	716.84	716.50	716.21	715.96	715.76	715.60	Sta. 694 + 89.15	715.49	715.42	715.40	715.42	715.49	Sta. 696 + 14.85	715.60	715.76	715.96	716.21	716.50	716.84	740
730																								730
720																								720
710																								710
700																								700
690																								690
	731.12		731.13 P.V.C. 693+00		732.0		732.15		732.0															

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

**SITE PLAN**

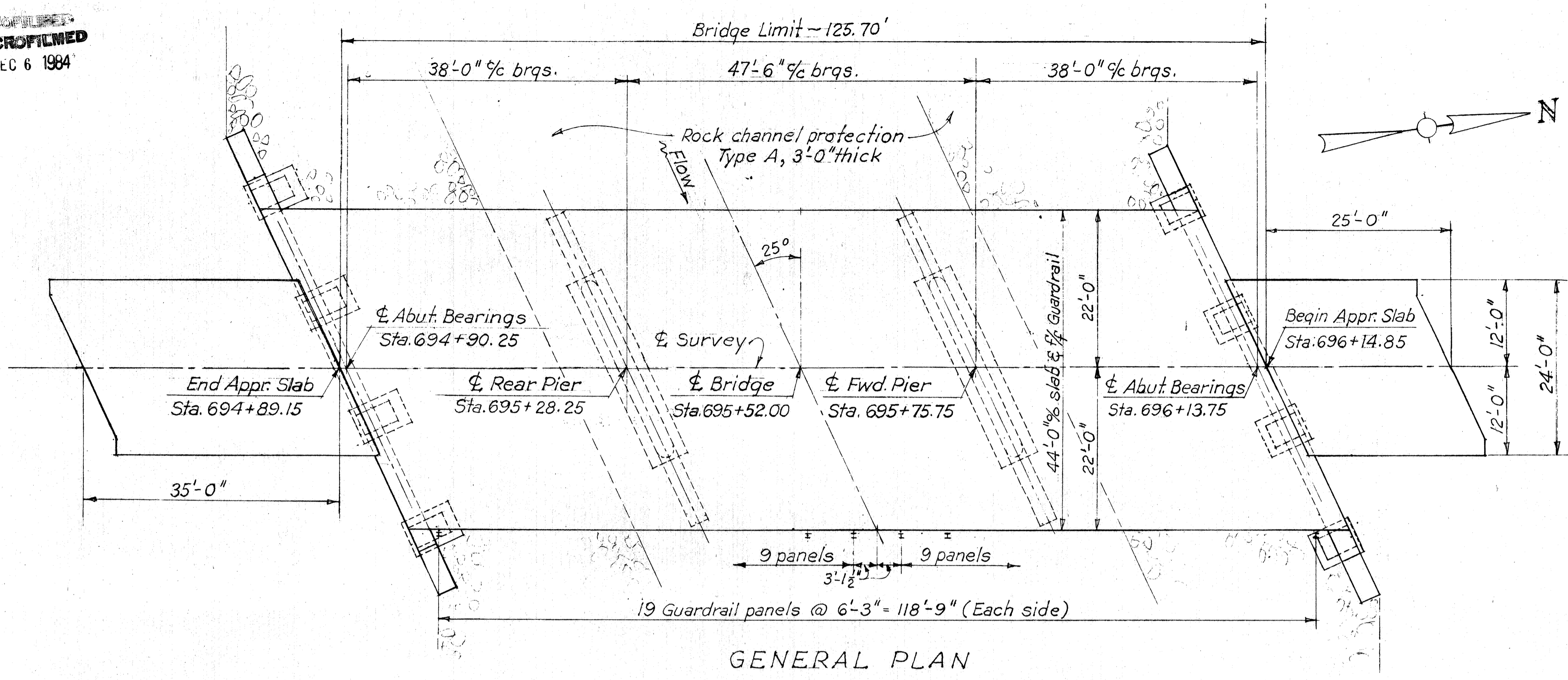
BRIDGE No. HUR-99-1317  
OVER FRINK RUN  
HURON CO S.R. 99  
STA. 694 + 89.15  
696 + 14.85

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL SURVEY	AERIAL SURVEY	D.H.S.	D.H.S.	B.D.H.	P.E. &

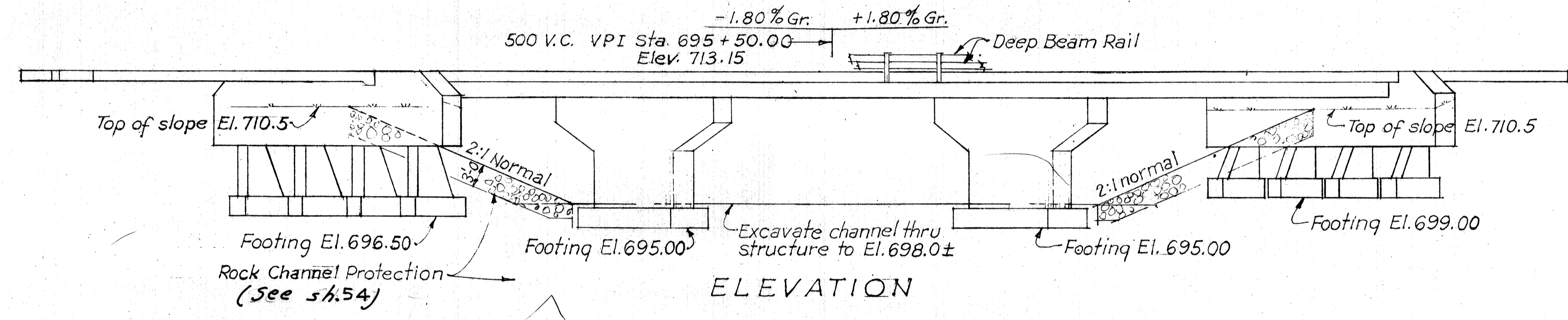
MICROFILMED  
JEC 6 1984

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

HUR-99-12.59



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES							
Item	Total	Unit	Description	Super.	Abuts.	Piers	General As-Built
503	Lump	Sum	Cofferdams, Crips and Sheeting				Lump
503	229	Cu. Yds.	Unclassified excavation		219	10	
503	39	Cu. Yds.	Rock excavation		3	36	
509	69,511	Lbs.	Reinforcing steel	47,091	8,411	14,009	
* 511	177	Cu. Yds.	Class C concrete, superstructure	177			
511	112	Cu. Yds.	Class C concrete, abutments above footings		112		
511	89	Cu. Yds.	Class C concrete piers above footings			89	
511	60	Cu. Yds.	Class C concrete, abutments & pier footings		24	36	
512	37	Sq. Yds.	Type B waterproofing 36" wide			37	
513	94,400	Lbs.	Structural steel	94,400			
514	94,400	Lbs.	Field painting of structural steel	94,400			
516	84	Sq. Ft.	1" Preformed expansion joint filler			84	
517	25,140	Lin. Ft.	Railing (two deep beam rails with steel posts & bolts)	25,140			
518	68	Cu. Yds.	Porous Backfill		68		
808	177	Units	Chemical admixture for concrete, Type A, Bor D	177			
Special	100	Lin. Ft.	6" Polyvinylchloride water stop		100		
202	Lump	Sum	Structure removed.				Lump

\* Nine (9) cu. yds. non-participating for Federal Funds.

GENERAL NOTES

Reference shall be made to Standard Drawings SD-1-69 Sheet 4 dated 6-12-69, and to Supplemental Specifications 808 and 836 dated 1-1-71.

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1969, including the Ohio "Supplement" to these specifications.

DESIGN DATA:

- Design Loading - HS 20-44
- Concrete Class C - unit stress 1200 p.s.i. for superstructure  
- unit stress 1333 p.s.i. for substructure
- Structural Steel - ASTM-A36 - unit stress 20,000 p.s.i.
- Reinforcing Steel - ASTM A615, A616 or A617 - unit stress 20,000 p.s.i.  
If bars in accordance with ASTM A616 are provided, they shall be subject to bend tests as per AASHTO Designation M42-70.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. (See sh. 12)

ABUTMENT EXCAVATION QUANTITY, in addition to 503.11, includes the excavation for the cross-beams.

REAR EMBANKMENT CONSTRUCTION: Procedures in constructing the rear abutment and the rear approach embankment.

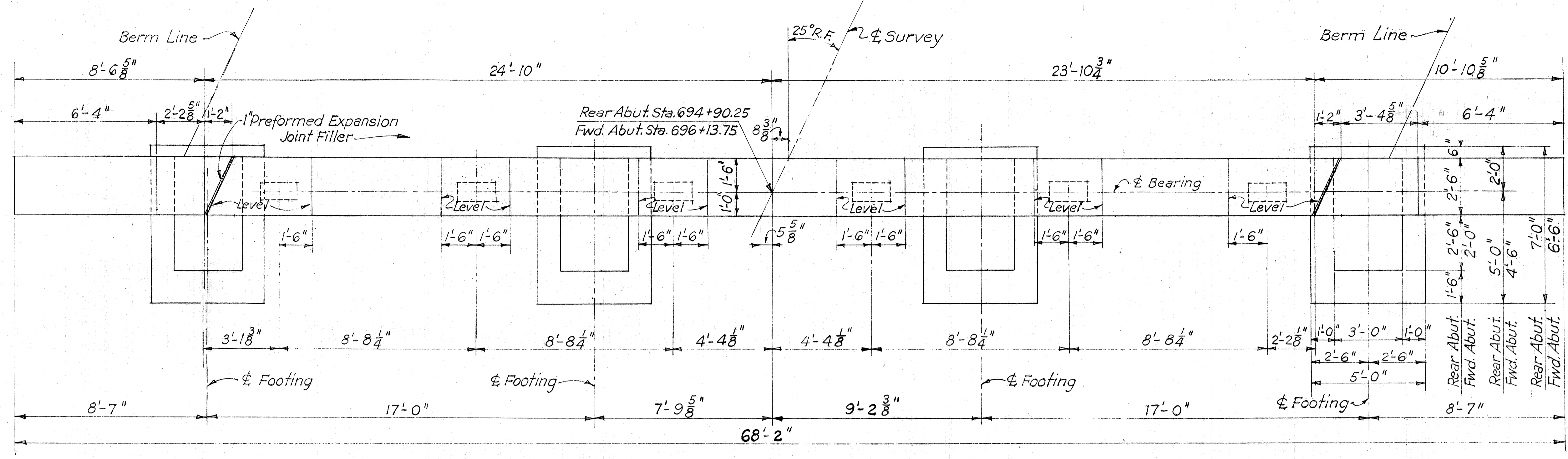
- The soft or loose existing overburden above the bedrock, approximately 3 to 4 feet thick, shall be removed below the embankment area.
- The embankment should be built to at least Elev. 707.5± before the abutment pedestals and footings are constructed.
- The approach embankment should then be completed to subgrade elevations before the abutment crossbeam and backwall are constructed.

FORWARD EMBANKMENT CONSTRUCTION: After the pedestals have been built the embankment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutment. Excavation shall then be made for the abutment cross beam.

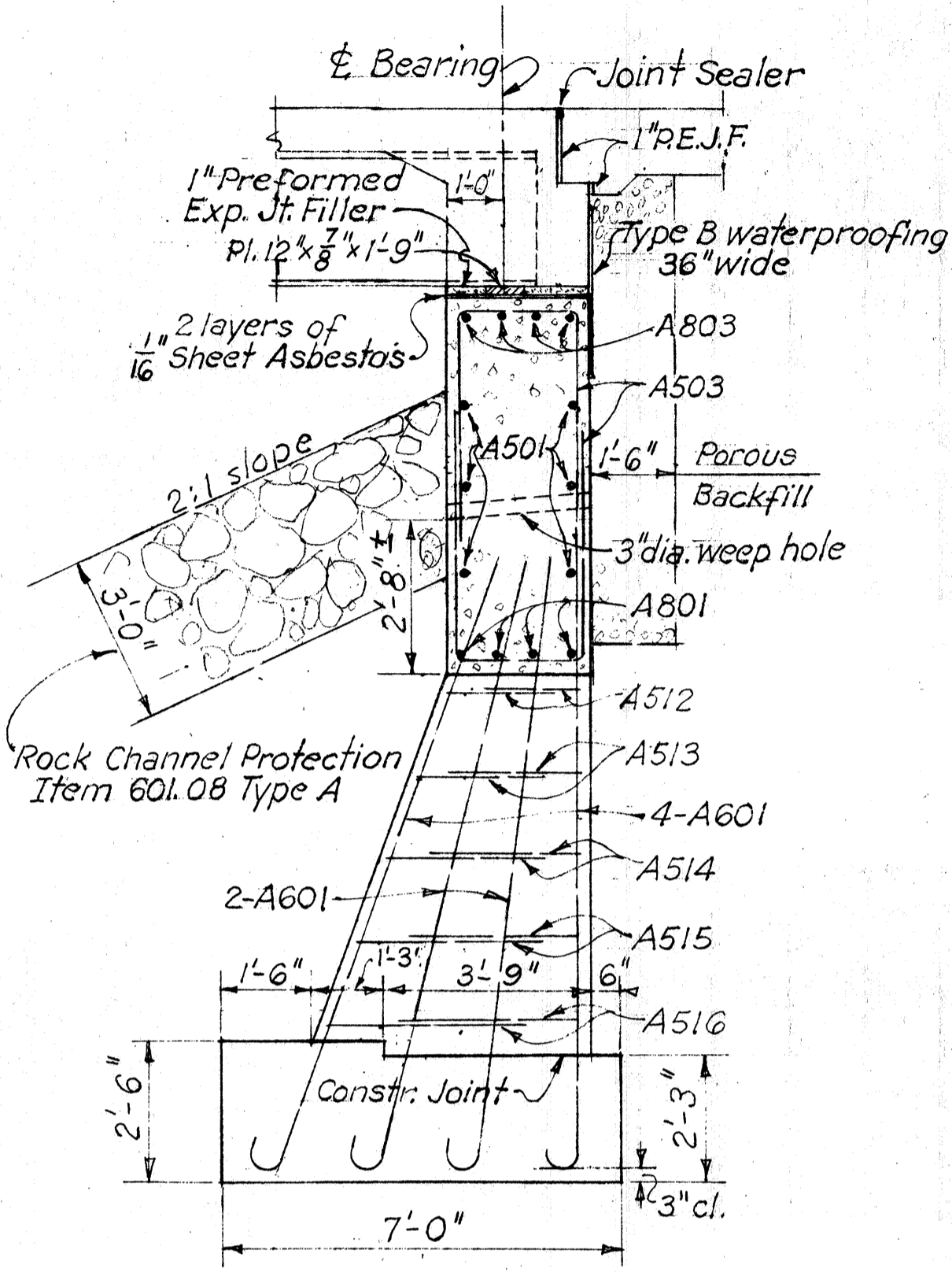
FOUNDATION BEARING PRESSURE: Abutment and pier footings are designed for a maximum bearing pressure of 5 tons per sq. ft.

FOOTINGS shall extend a minimum of 3 inches into bedrock or to the elevation shown, whichever is lower.

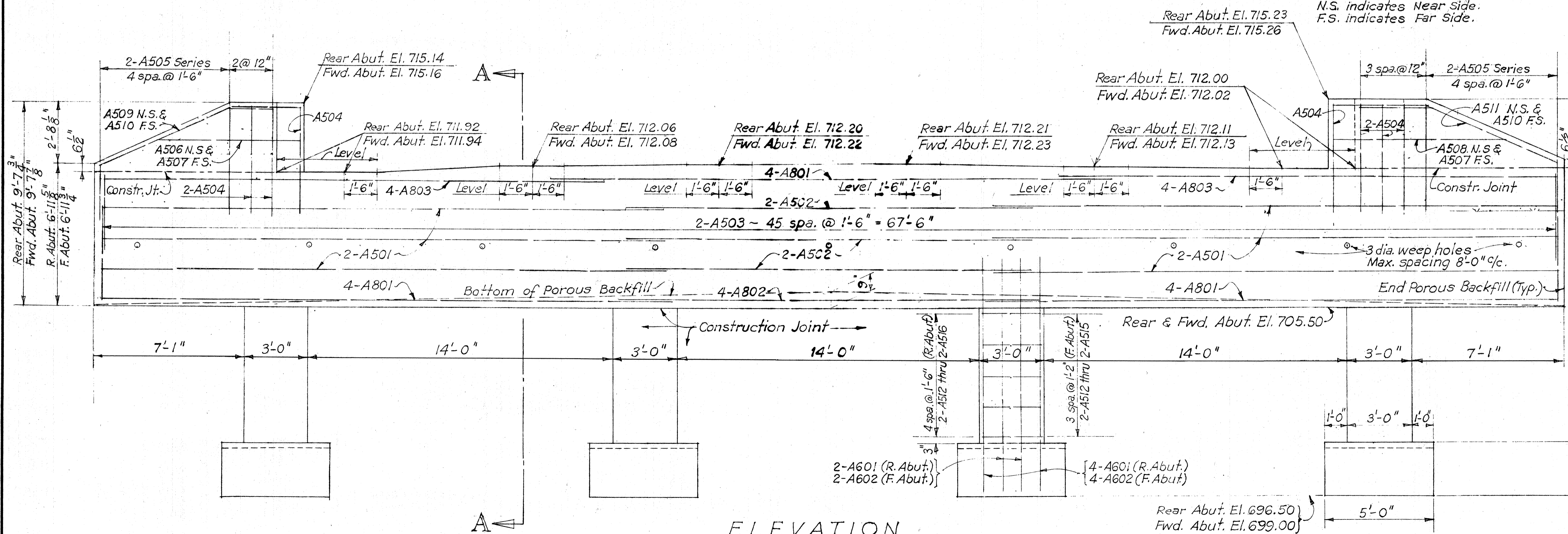
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					2 / 7
GENERAL PLAN, ELEVATION NOTES & QUANTITIES BRIDGE NO. HUR-99-1317 OVER FRINK RUN					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
J.V.G.	J.V.G.	GFJ	FFE	BFG	10-13-70



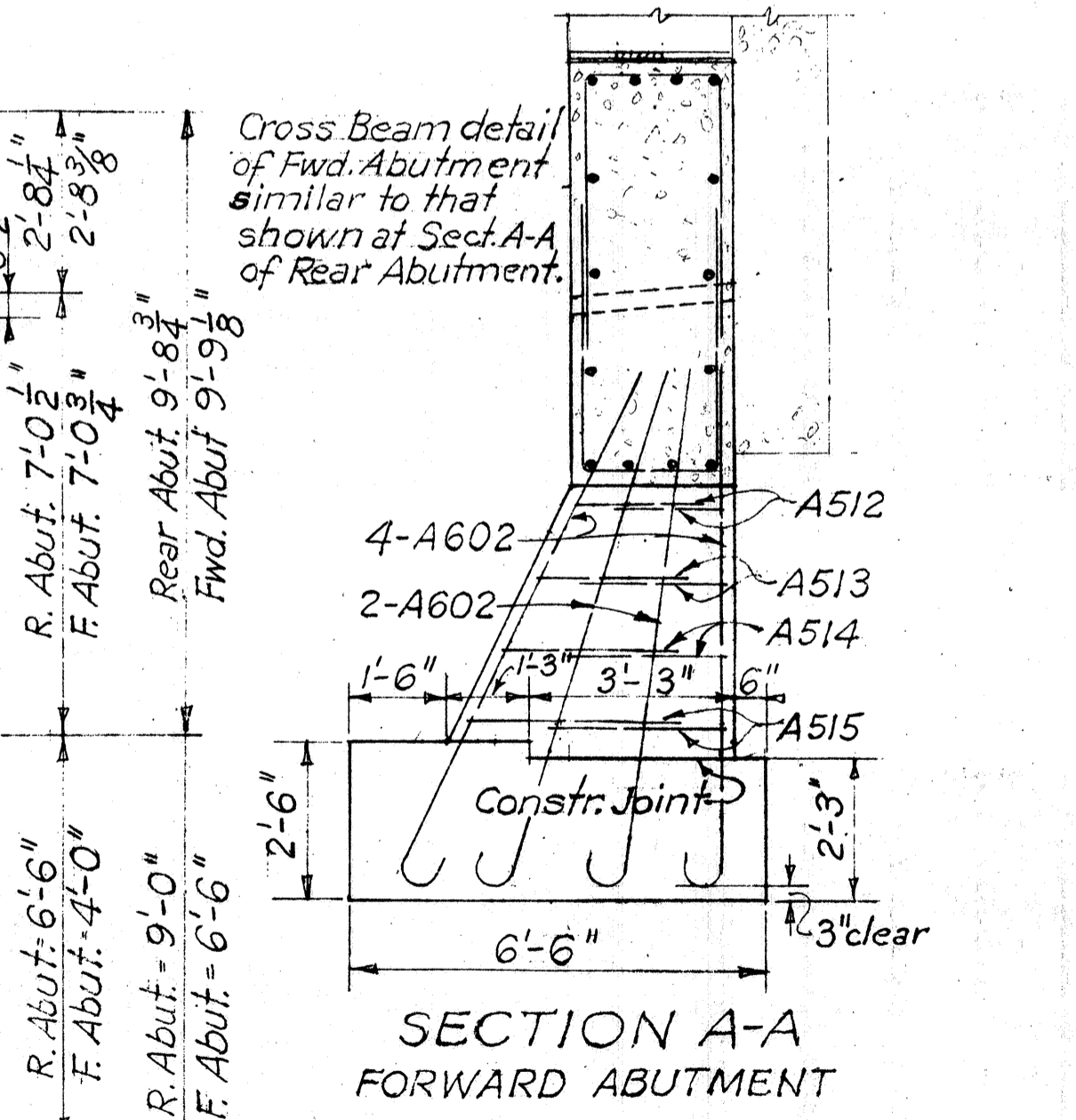
ABUTMENT PLAN



SECTION A-A  
REAR ABUTMENT



ELEVATION



SECTION A-A  
FORWARD ABUTMENT

POROUS BACKFILL shall extend upward to the subgrade within the roadway area extended laterally to the embankment side slopes.  
N.S. indicates Near Side.  
F.S. indicates Far Side.

Cross Beam detail of Fwd. Abutment similar to that shown at Sect. A-A of Rear Abutment.

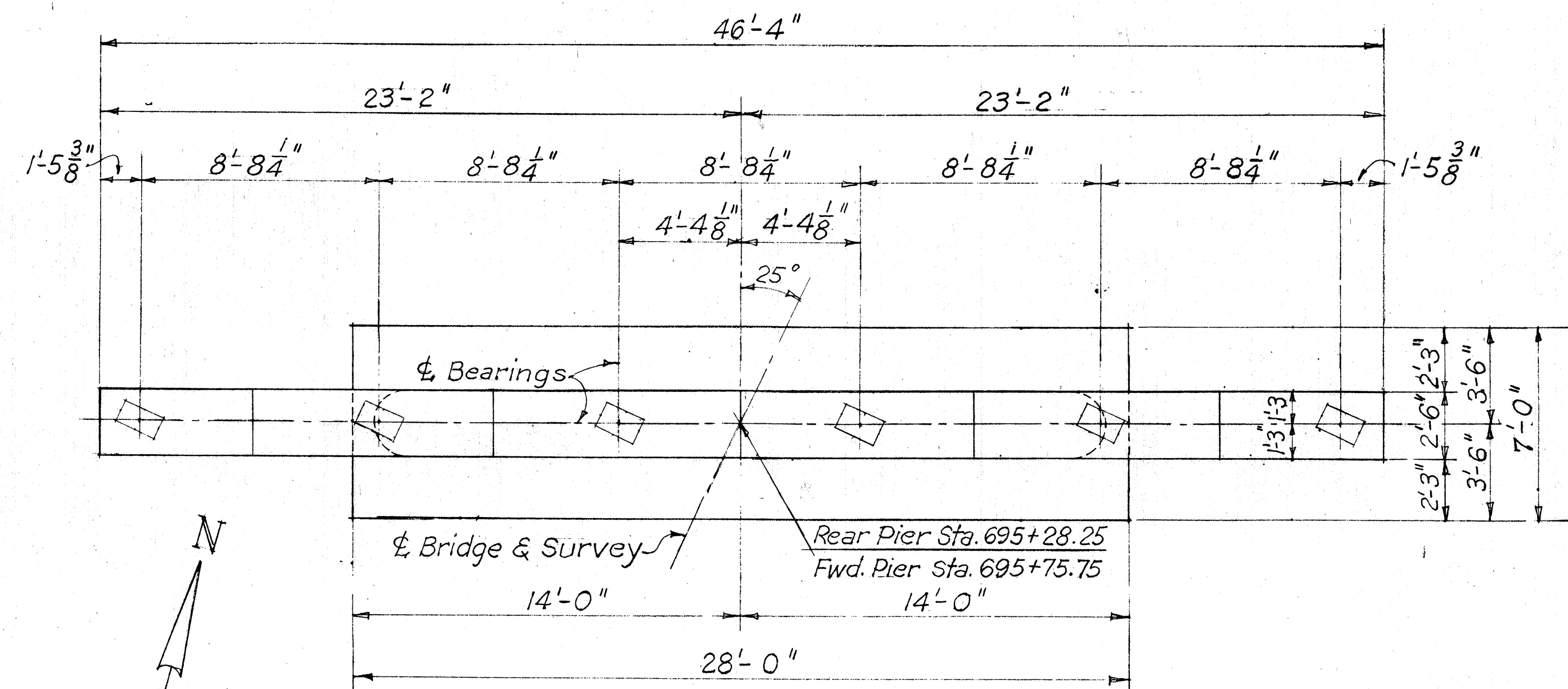
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
3/7					
ABUTMENT DETAILS BRIDGE NO. HUR-99-1317 OVER FRINK RUN					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
J.V.G.	J.V.G.		FFE	BFG	10-13-70

MICROFILMED  
DEC 6 1984

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

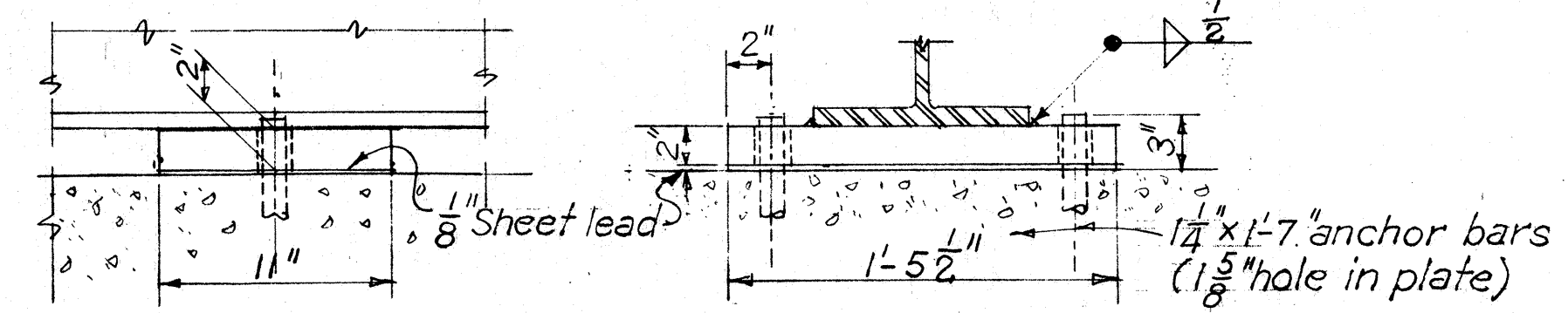
66  
81

HUR-99-12.59

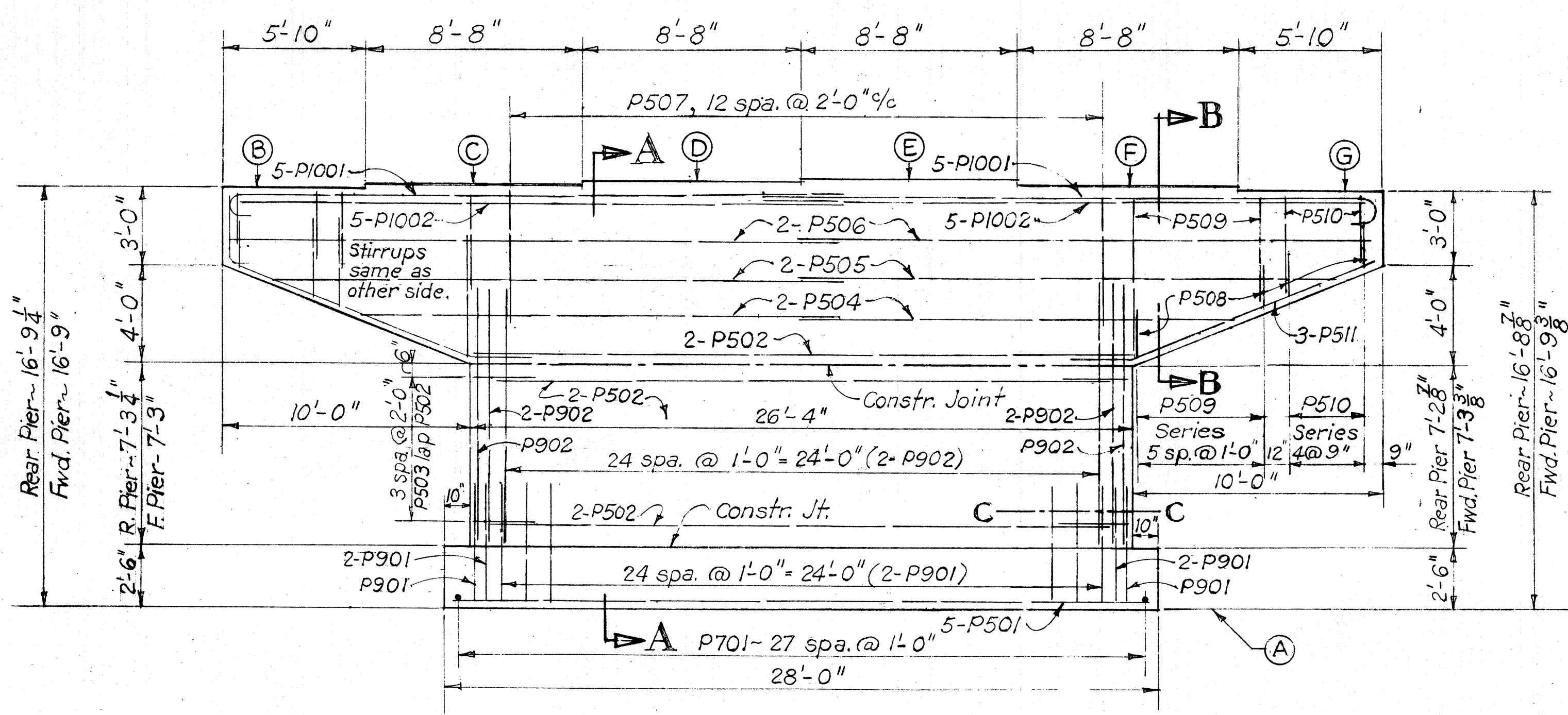


PIER PLAN

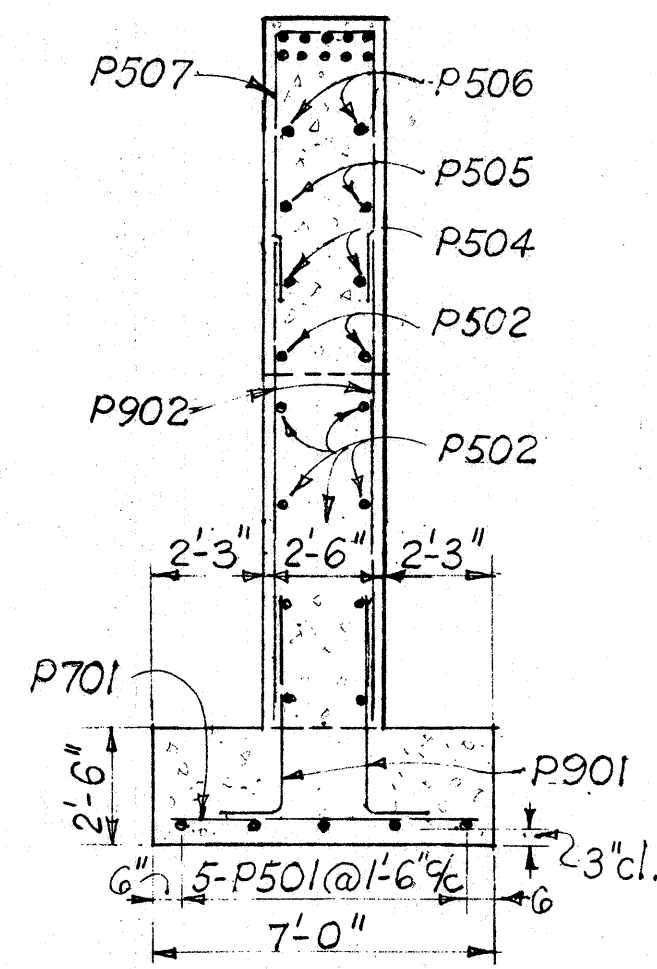
NOTE:  
Special care shall be taken in placing reinforcing steel in piers so as not to interfere with bearing plate anchor bolts.



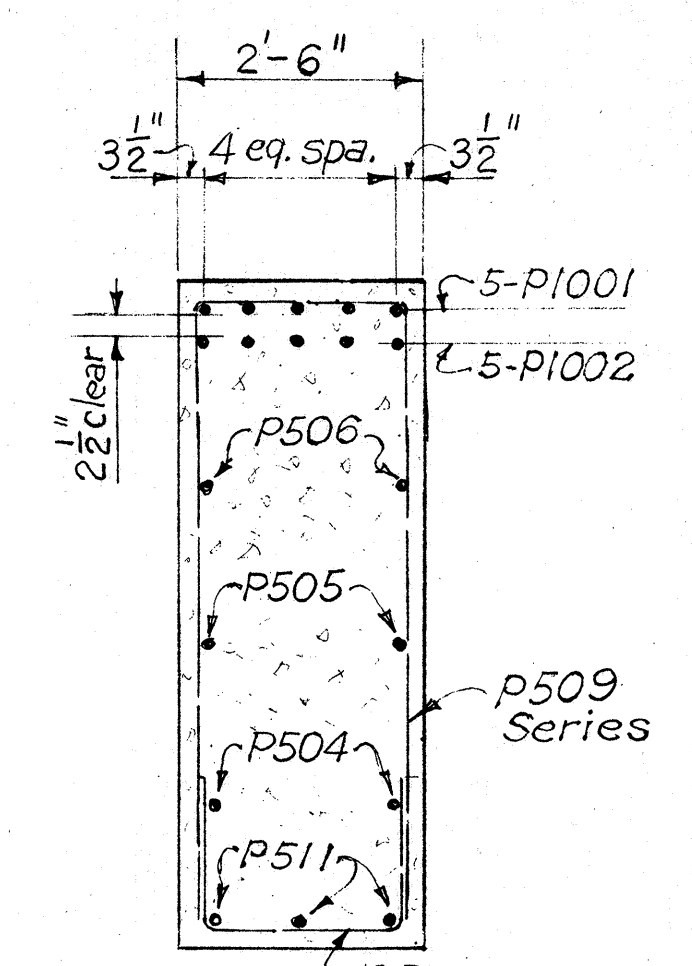
FIXED BEARING DETAILS  
(Both Piers)



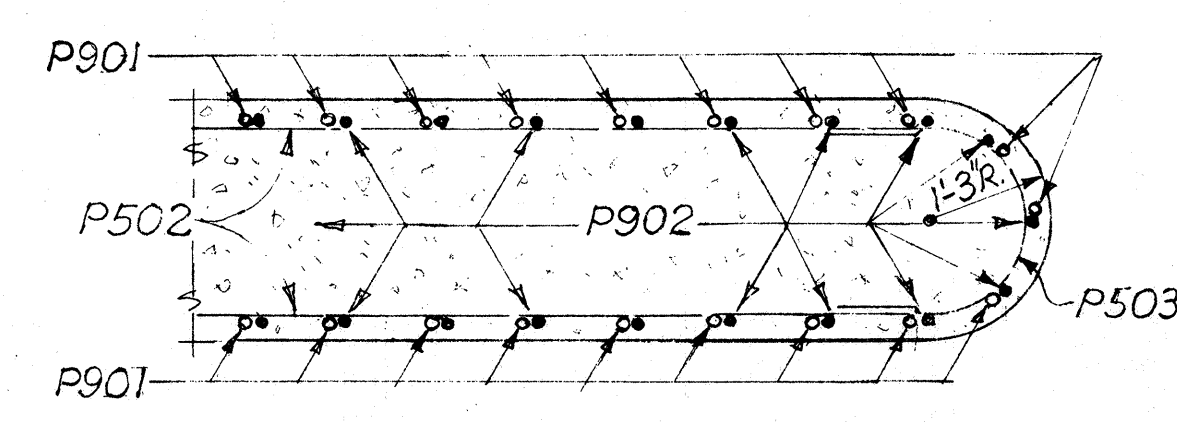
ELEVATION



SECTION A-A



SECTION B-B

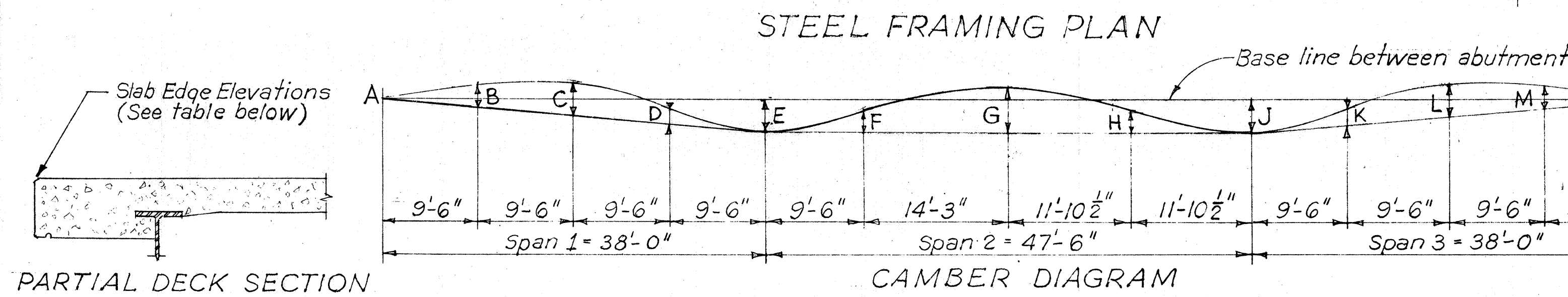
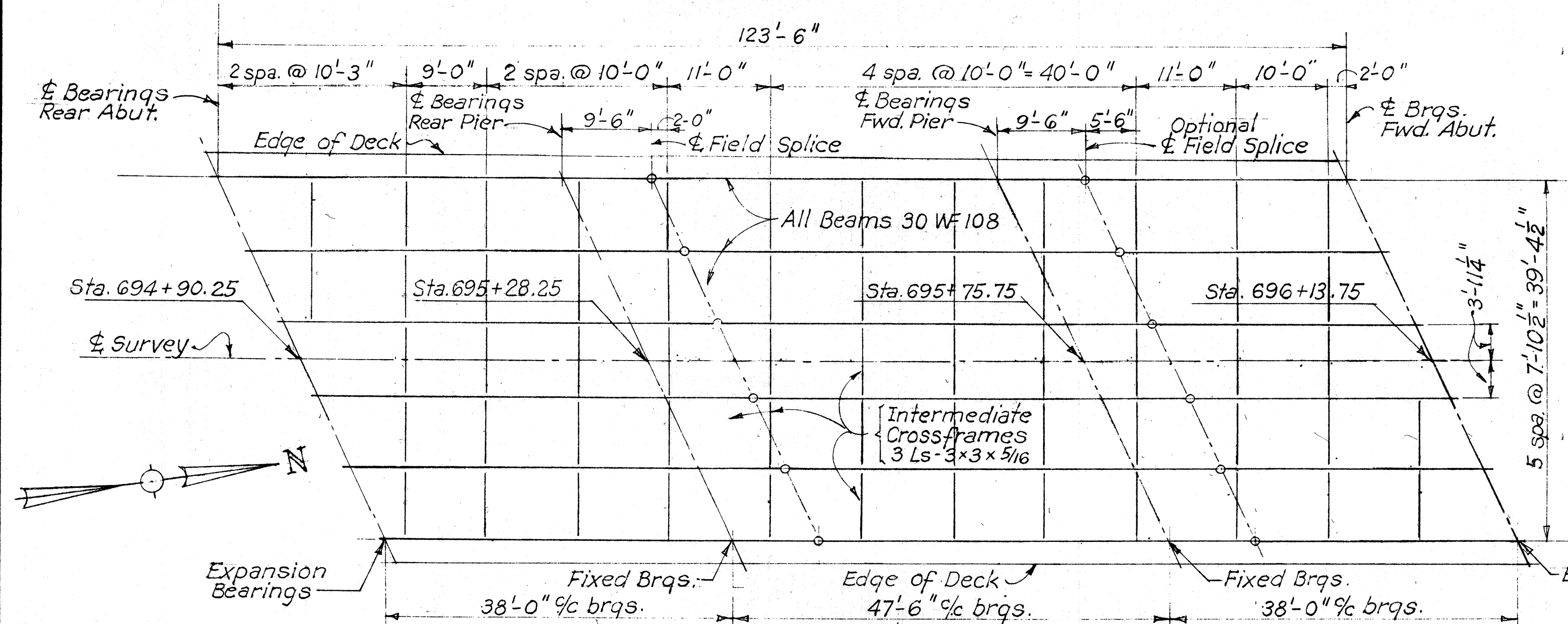
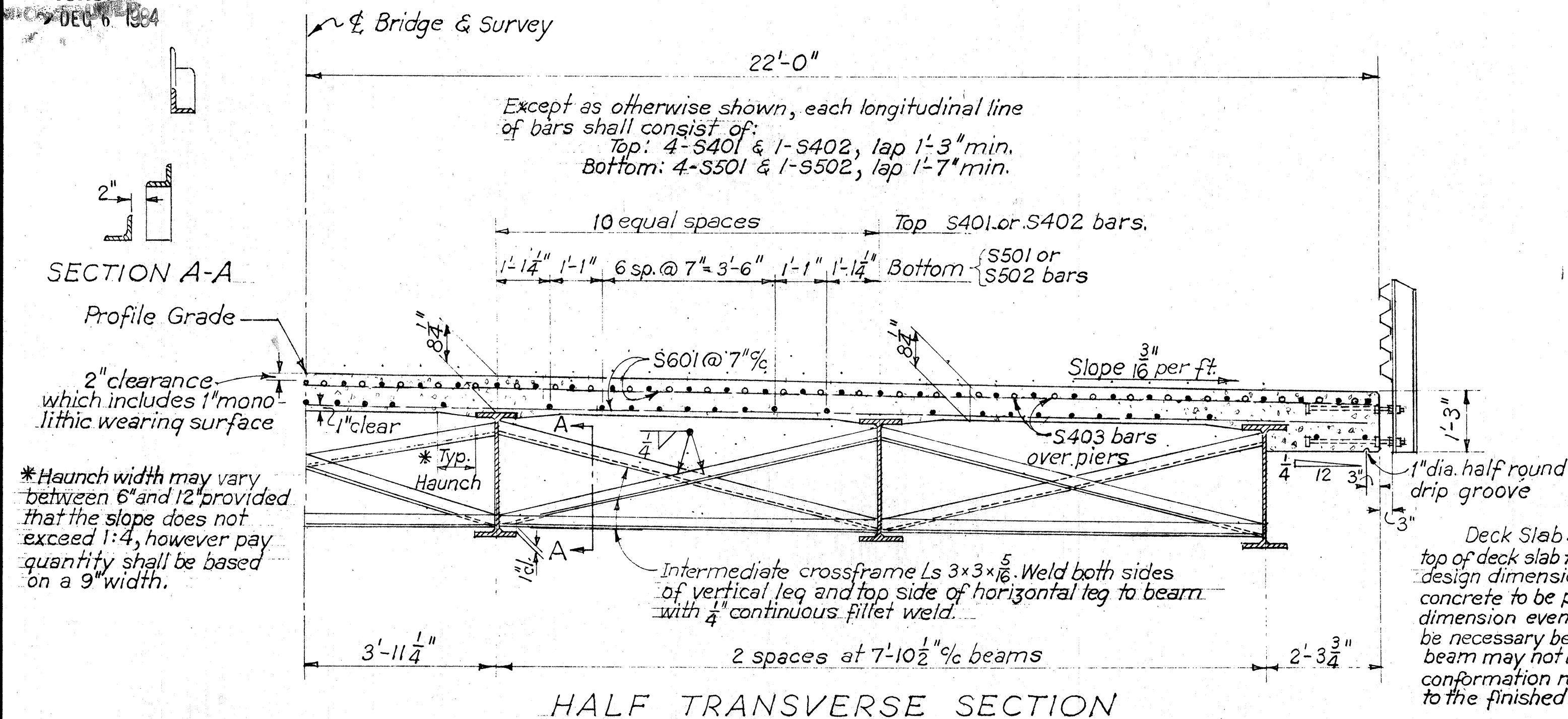


SECTION C-C

ELEVATIONS							
Location	A	B	C	D	E	F	G
Rear Pier	695.00	711.77	711.89	712.00	712.00	711.87	711.74
Forward Pier	695.00	711.75	711.88	712.01	712.01	711.90	711.78

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES							4/7
PIER DETAILS BRIDGE NO. HUR-99-1317 OVER FRINK RUN							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
J.V.G.	J.V.G.		FFE	BFG	10-13-70		

MICROFILMED  
DEC 6 1964

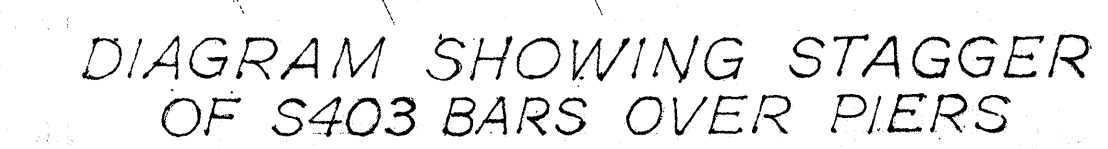
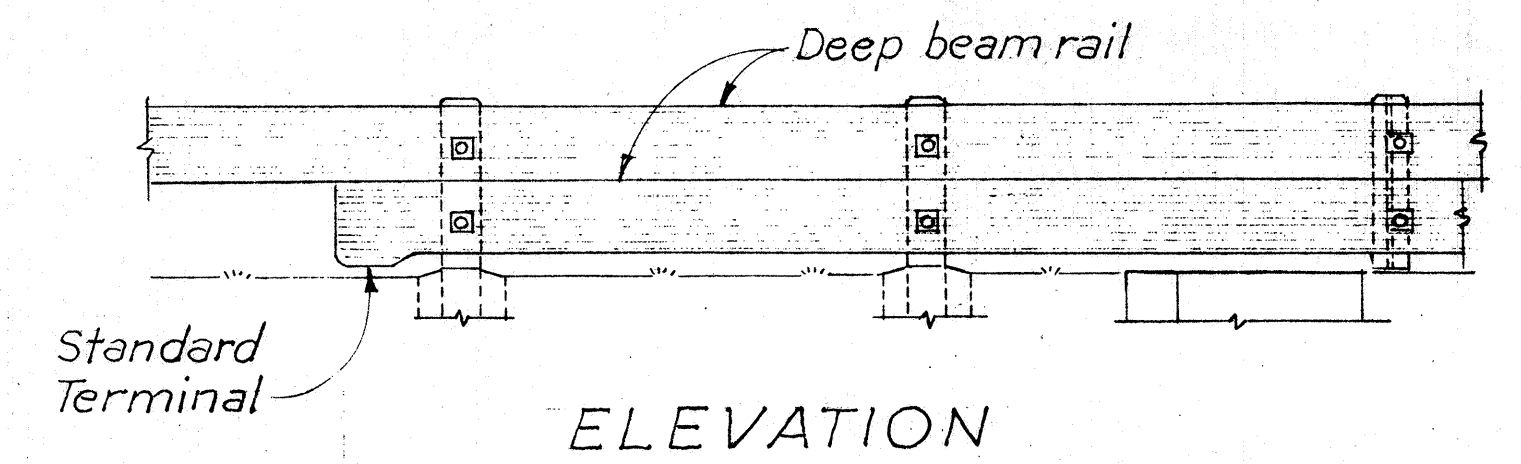
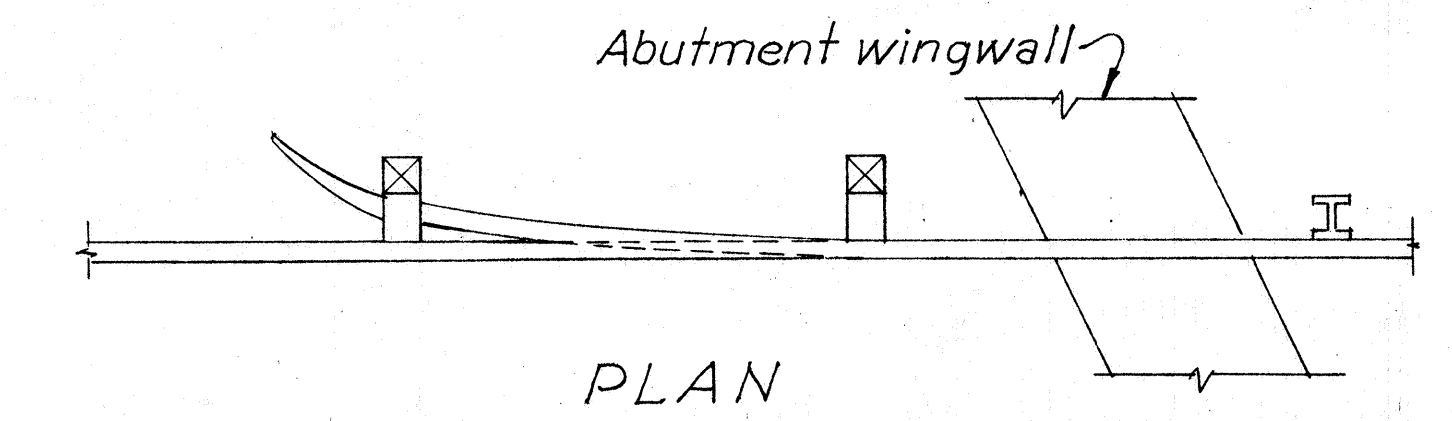
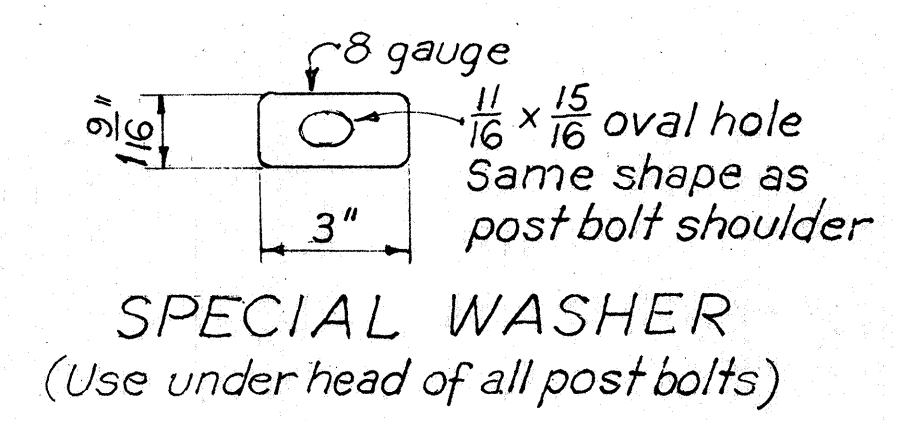
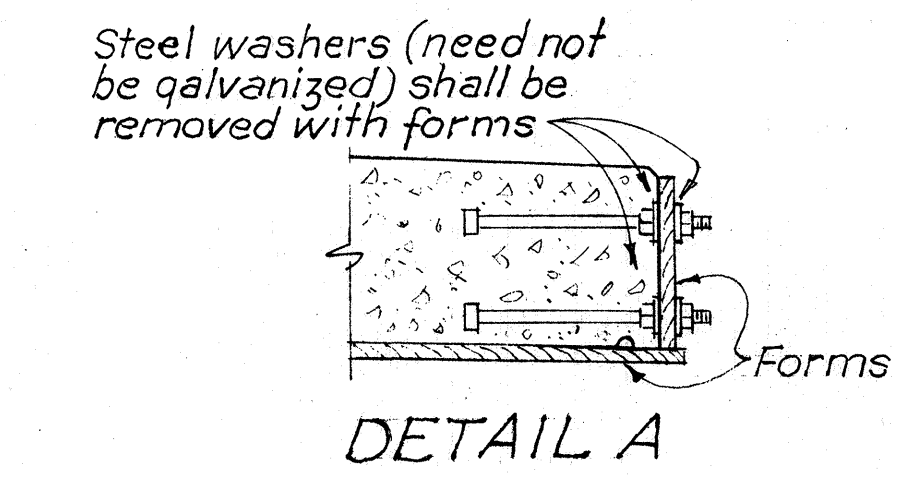
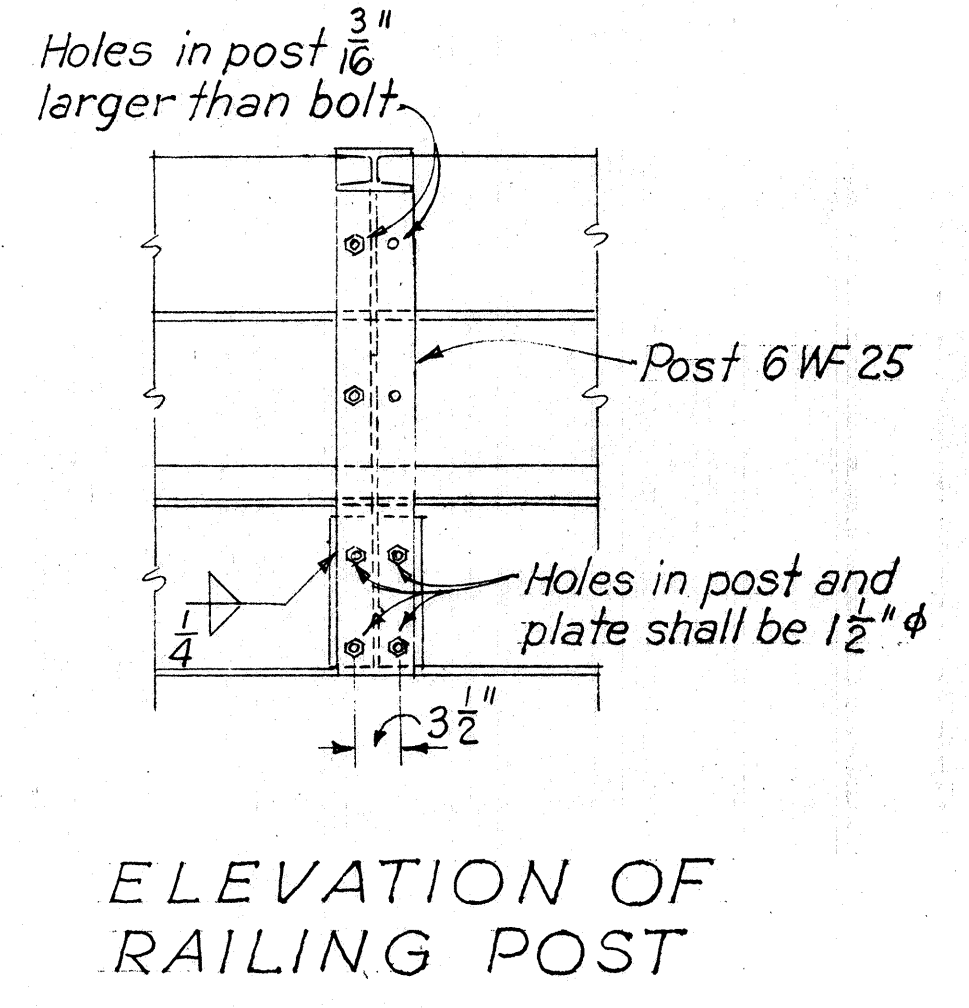
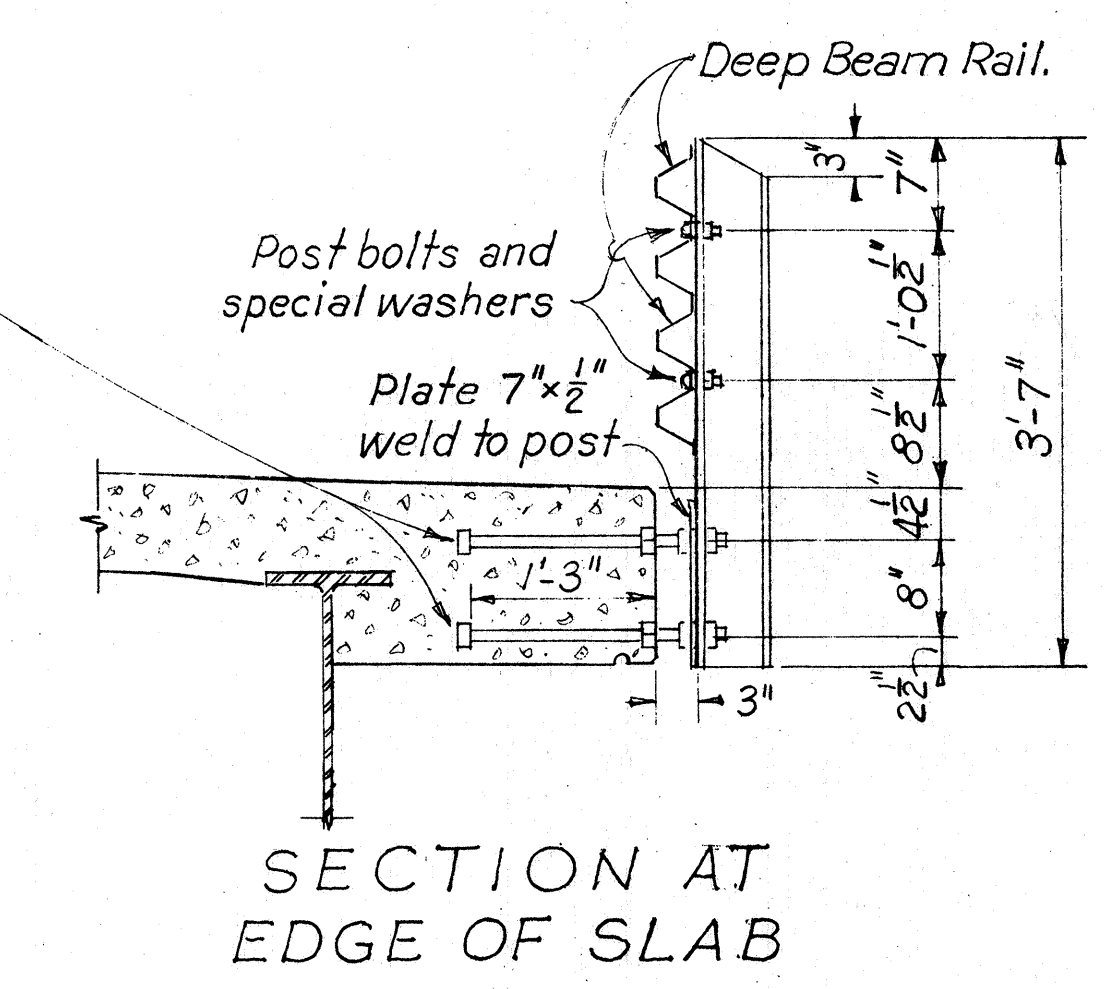


DEFLECTION AND CAMBER ELEVATIONS

Location	Brgs.	Span 1				Brgs.	Span 2				Brgs.	Span 3				Brgs.
	A	B	C	D	E	F	G	H	J	K	L	M	N			
Deflection due to weight of steel	0	-	-	-	0	-	-	-	0	-	-	-	0			
Deflection due to remaining dead load	0	+ 1/8"	+ 1/8"	+ 1/8"	0	+ 1/8"	+ 3/16"	+ 3/16"	0	+ 1/8"	+ 1/8"	+ 1/8"	0			
Adjustment required for vertical curve	0	- 1/16"	- 1/16"	- 1/16"	0	- 1/8"	- 1/4"	- 1/8"	0	- 1/8"	- 1/16"	- 1/8"	0			
Required Camber	0	0	- 1/16"	0	0	0	- 1/16"	0	0	0	- 1/16"	0	0			
* Left Edge Elevation	715.23	715.20	715.16	715.12	715.09	715.08	715.08	715.07	715.07	715.08	715.11	715.14	715.16			
* Right Edge Elevation	715.15	715.13	715.10	715.08	715.06	715.06	715.08	715.09	715.10	715.14	715.18	715.22	715.25			

\* Slab Edge Elevations are the elevations prior to placing deck concrete.

1/4" x 20" galvanized machine bolts. Thread 8" length and provide three galvanized hexagonal nuts per bolt. Fasten bolts rigidly to form before placing concrete. (See Detail A) Galvanizing of bolts shall be as provided in Sec. 711.02. Bolt material according to ASTM A325.



DEEP BEAM RAILING  
(Showing Termination of Lower Rail)  
That portion of the lower guard rail which projects beyond the roadway limits shall be included with the bridge railing for payment.

5/7

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
DIVISION OF DESIGN AND CONSTRUCTION  
BUREAU OF BRIDGES

**SUPERSTRUCTURE  
RAILING DETAILS**  
BRIDGE NO. HUR-99-1317  
OVER FRINK RUN

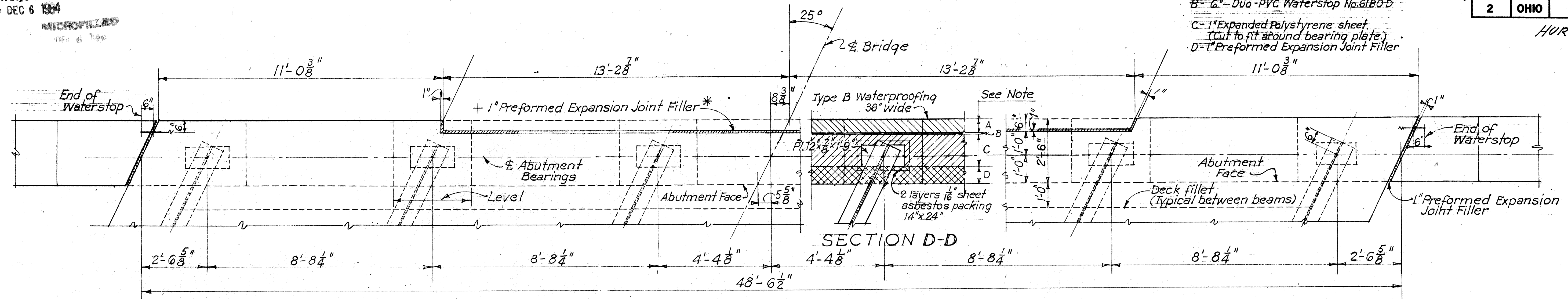
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.		FFE	BFG	10-13-70	

MICROFILMED  
DEC 6 1964  
MICROFILMED

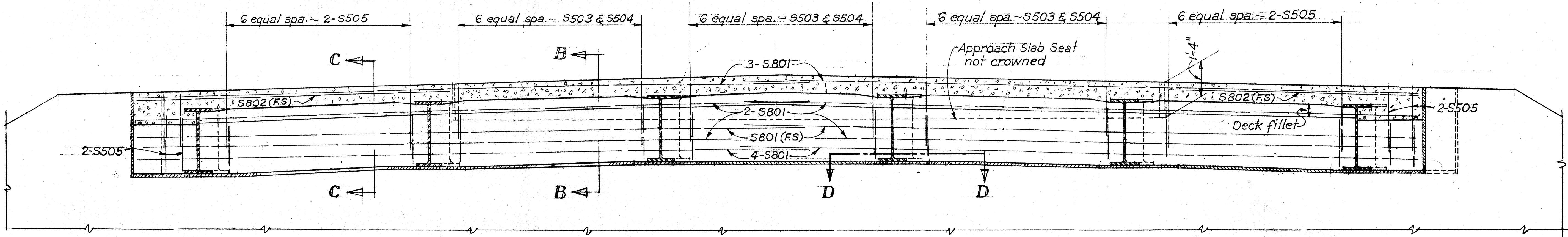
A- 1" Expanded Polystyrene Sheet.  
(Cut out to fit 6" PVC waterstop. See Detail A)  
B- 6" Duo-PVC Waterstop No. 6180-D  
C- 1" Expanded Polystyrene sheet.  
(Cut to fit around bearing plate.)  
D- 1" Preformed Expansion Joint Filler

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

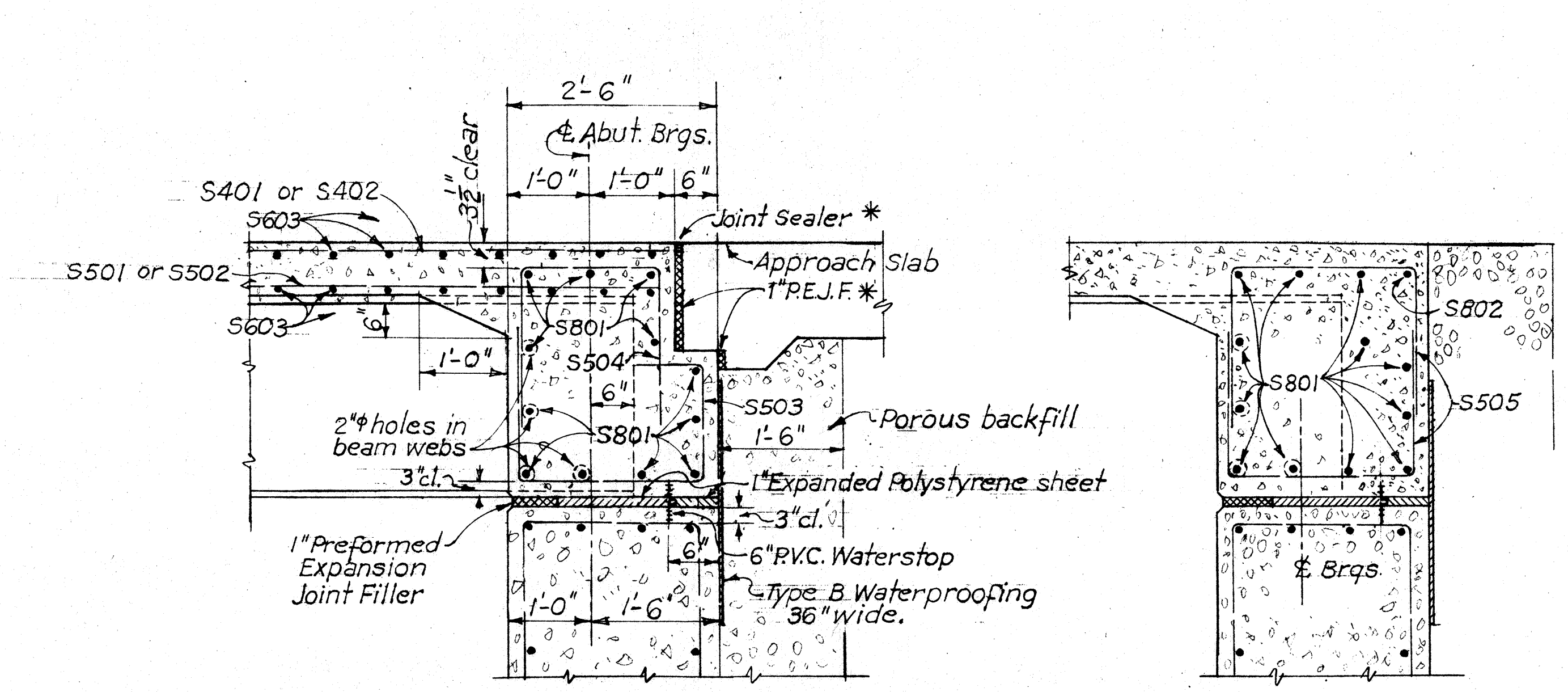
HUR-99-12.59



PARTIAL PLAN OF SUPERSTRUCTURE AT ABUTMENT

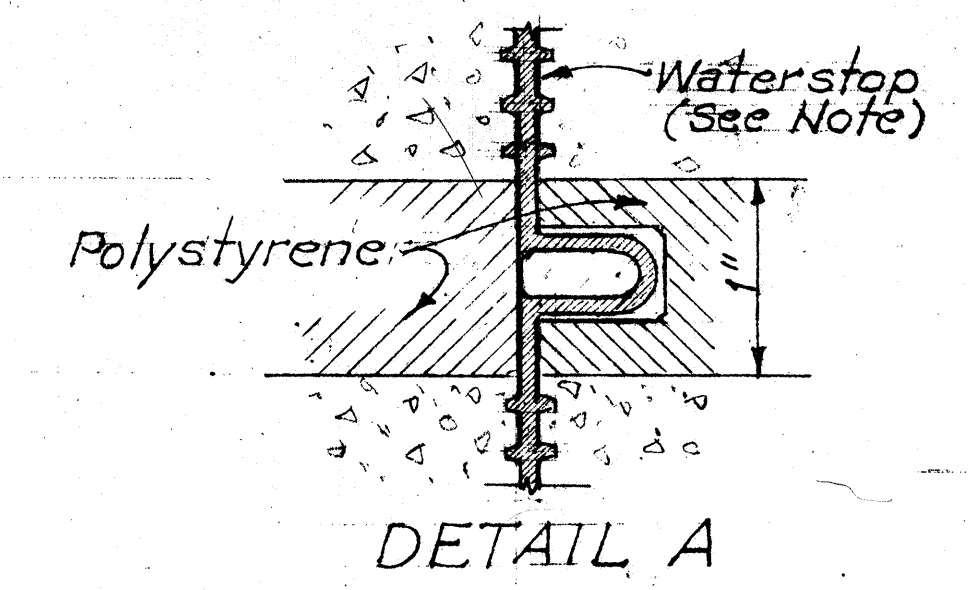


SECTION SHOWING SUPERSTRUCTURE AT ABUTMENT

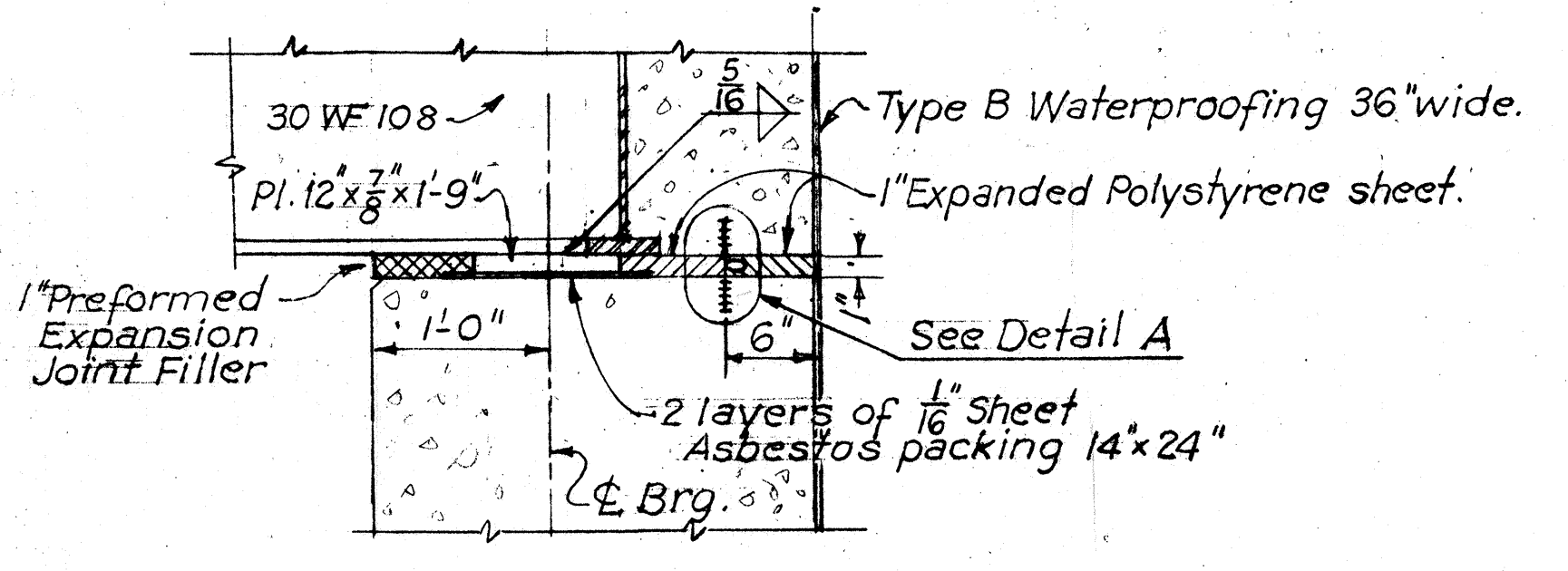


SECTION B-B

SECTION C-C



DETAIL A



BEARING DETAIL

NOTE:  
Waterstop shall be Seal Tight Duo-PVC Type No. 6180-D as manufactured by W.R. Meadows, Inc., Elgin, Illinois or approved equal.  
Polystyrene sheets are to be included with superstructure concrete for payment.

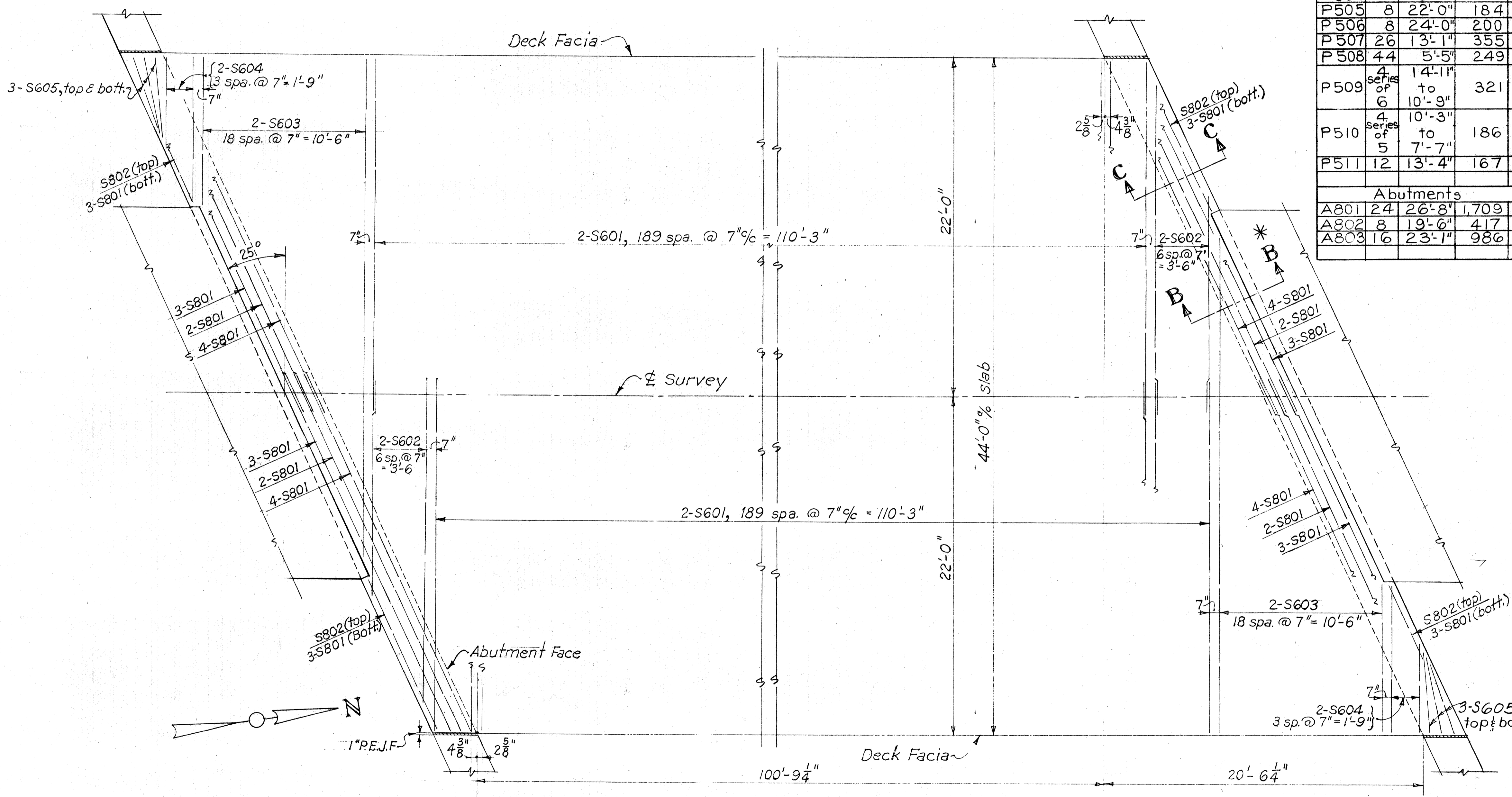
Sheet asbestos packing included with superstructure concrete for payment.  
Type B waterproofing shall extend 18" beyond the ends of the horizontal joint and upward behind the vertical joints between superstructure and wings to the top of the wings.

\* Included with approach slab for payment.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						6/7
SUPERSTRUCTURE DETAILS BRIDGE NO. HUR-99-1317 OVER FRINK RUN						
DESIGNED J.V.G.	DRAWN J.V.G.	TRACED	CHECKED FFE	REVIEWED BFG	DATE 10-13-70	REVISED

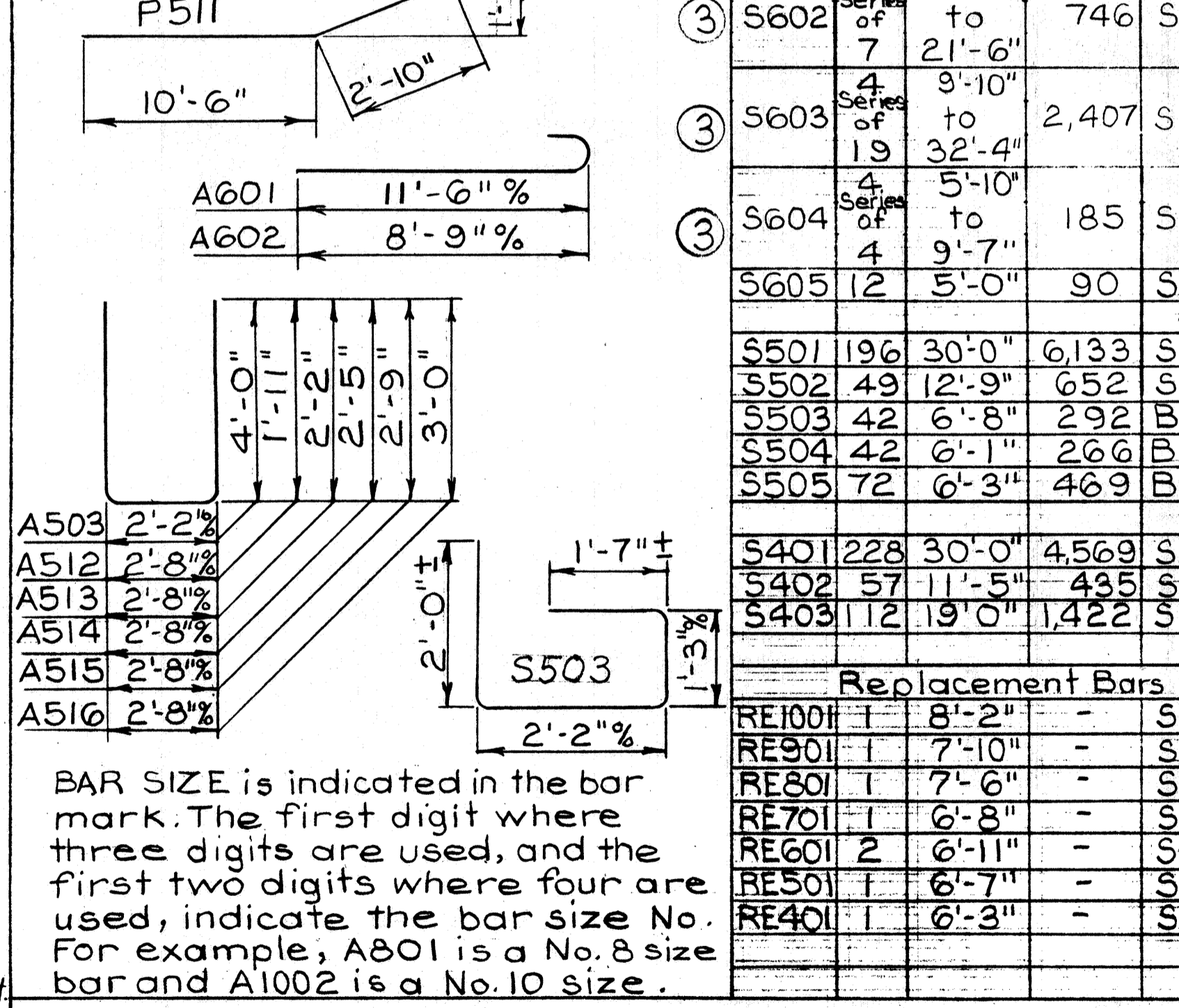
REINFORCING STEEL LIST

Mark No.	Length	Weight	Shd	Bending Diagram	Mark No.	Length	Weight	Shd	
Piers				Abutment Cont.					
P1001	20	26'-0"	2,238	B	A601	48	12'-2"	877	B
P1002	20	24'-7"	2,116	S	A602	48	9'-5"	679	B
P901	112	6'-1"	2,317	B	A501	24	26'-3"	657	S
P902	112	10'-2"	3,871	S	A502	12	18'-8"	234	S
P701	56	6'-8"	763	S	A503	184	9'-11"	1,903	B
P501	10	27'-8"	289	S	A504	24	5'-0"	125	S
P502	20	23'-10"	497	S	A505	5	5'-0"	153	S
P503	16	6'-2"	103	B	A506	2	5'-6"	11	S
P504	8	18'-4"	153	S	A507	4	6'-4"	26	S
P505	8	22'-0"	184	S	A508	2	7'-4"	15	S
P506	8	24'-0"	200	S	A509	2	8'-5"	18	B
P507	26	13'-1"	355	B	A510	4	9'-5"	39	B
P508	44	5'-5"	249	B	A511	2	10'-5"	22	B
P509	4	14'-11"	321	B	A512	16	6'-9"	104	B
P510	4	10'-9"	186	B	A513	16	6'-9"	113	B
P511	12	13'-4"	167	B	A514	16	7'-3"	121	B
Abutments				Superstructure					
A801	24	26'-8"	1,709	S	S801	48	25'-4"	3,247	S
A802	8	19'-6"	417	S	S802	4	10'-7"	113	S
A803	16	23'-1"	986	S	S601	760	22'-10"	26,065	S
				S602 4 series of 7 to 14'-0" 746 S S603 4 series of 19 to 3'-10" 2,407 S S604 4 series of 4 to 5'-10" 185 S S605 12 5'-0" 90 S S501 196 30'-0" 6,133 S S502 49 12'-9" 652 S S503 42 6'-8" 292 B S504 42 6'-1" 266 B S505 72 6'-3" 469 B S401 228 30'-0" 4,569 S S402 57 11'-5" 435 S S403 12 19'-0" 1,422 S					



TRANSVERSE REINFORCING PLAN

\* For Sections B-B, C-C and additional details see Sheet 6/7



- ① = Vary ea. by 10" increment
- ② = Vary ea. by 8" increment
- ③ = Vary ea. by 1'-3" increment

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
DIVISION OF DESIGN AND CONSTRUCTION  
BUREAU OF BRIDGES

7/7

REINFORCING PLAN  
REINFORCING STEEL LIST  
BRIDGE NO. HUR-99-1317  
OVER FRINK RUN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.	G.F.J.	F.F.E.	B.F.G.	10-13-70	