

1027

DESIGN DESIGNATION
 Current ADT (1985) 2680
 Design Year ADT (2005) 3220
 DHV 330
 D 50 %
 T 20 %
 V 70 MPH

MICROFILMED,
NOV 24 1986

2680
3220
330
50 %
20 %
70 MPH

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

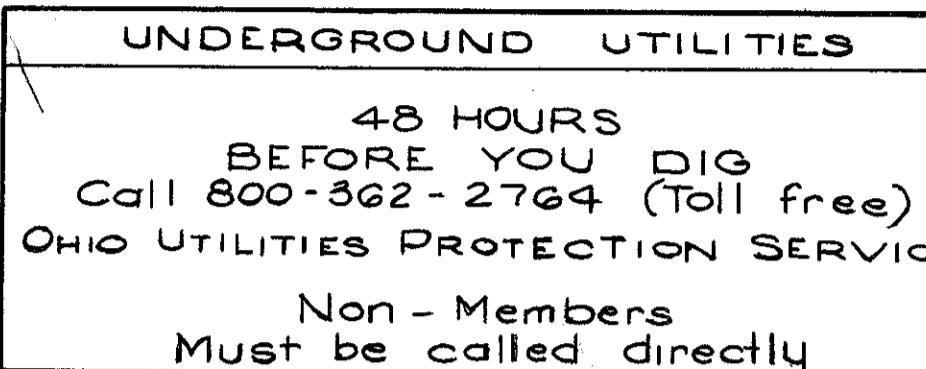
FUL-20A-251

GERMAN TOWNSHIP
FULTON COUNTY

OHIO	I
FHWA REGION 5	19
FEDERAL PROJECT	

BRF - 79(27)
FUL - 20A - 2.51

BRF - 79(27)



CONVENTIONAL SIGNS

County Line _____ LA
 Township Line _____ RW
 Section Line _____ LA & RW
 Corporation Line or
 Fence Line (existing) (proposed)
 Center Line 352 353
 Railroad _____ or
 Trees , Stumps , (to be removed)
 Utility Poles: Telephone , Power , Light

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Begin Work
Sta. I31+64.00

 Begin Project
Sta I32+50.00

 End Project
Sta. I36+50.00

 End Work
Sta. I37+51.00

LINE DATA

PROJECT

Begin Project Sta. I32 + 50.00
 End Project Sta. I36 + 50.00
 Net Length of Project = 400.00 Lin.Ft. or 0.076 Miles

WORK

Begin Work Sta. I31 + 64.00
 End Work Sta. I37 + 51.00
 Net Length of Work = 587.00 Lin.Ft. or 0.111 Miles

Plan Prepared By:

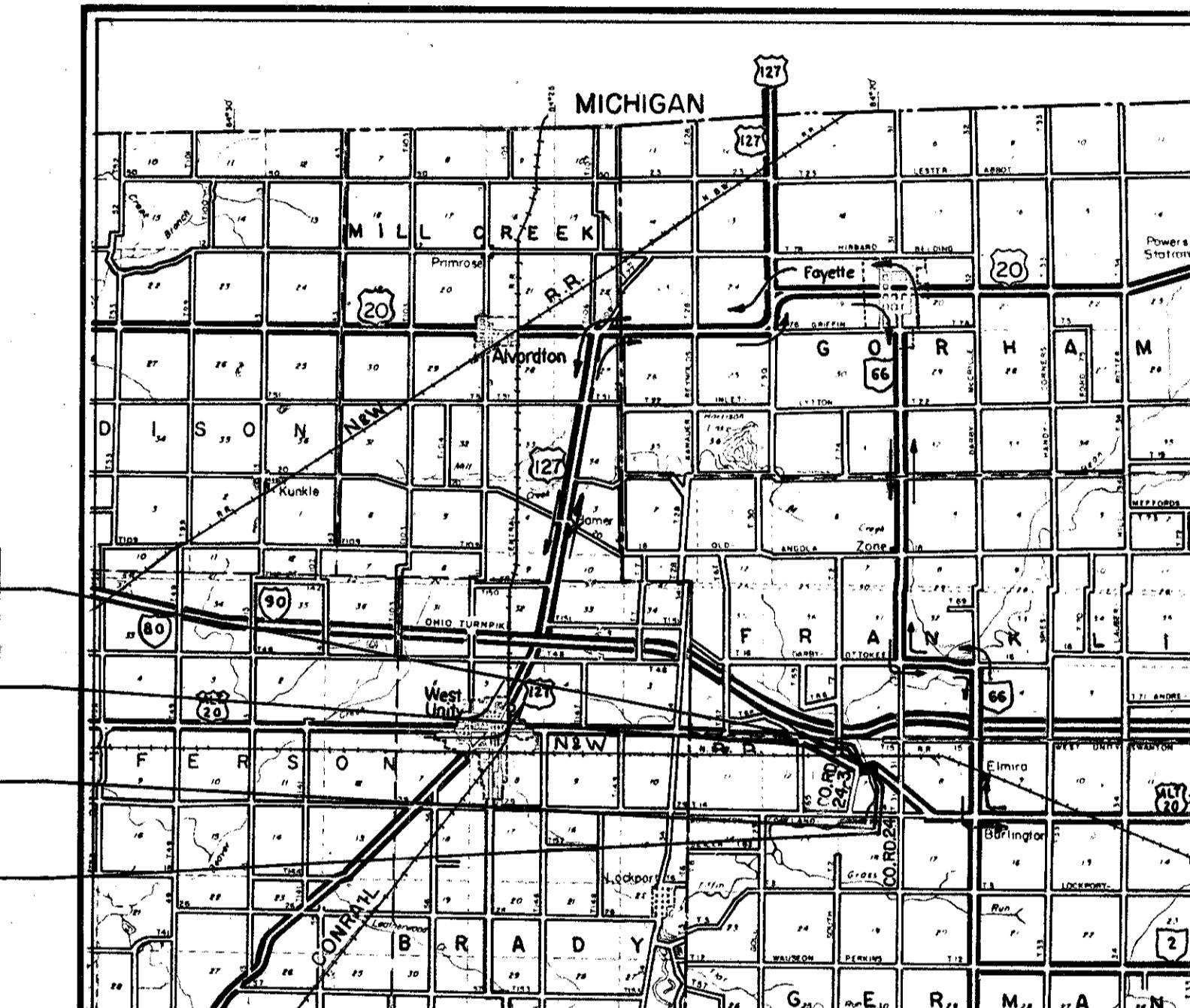
Structure: Charles L. Barber & Associates, Inc.
 Roadway: District 2 - ODOT

Project: FUL-20A-2.51

Date of Letting 19 Contract No.

LDO300 Rev. II-1-78

SEAL



LOCATION MAP

SCALE IN MILES



Portion to be improved

State & Federal Routes

Other Roads

Detour

Plan

Profile:

Cross Section:

Horizontal

Vertical

Horizontal

Vertical

SCALES

0 10 20 30 40

0 5 10

0 5 10

0 5 10

SUPPLEMENTAL SPECIFICATIONS

847	10-17-83
947	10-17-83
824	10-8-82
836	3-12-75

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS	
SD-I-69	6-12-69
DBR-2-73	4-10-73
AS-I-81	11-27-81
ICD-I-82	8-1-84
BP-5	1-11-85
GR-1	1-11-85
GR-2B	2-5-82
GR-3	1-2-85
LA-1	6-1-79

Approved *R. S. Gains*
 Date 1-4-85 District Deputy Director of Transportation

Approved *Walter J. Gestring*
 Date 1-12-85 Engineer, Bureau of Bridges and Structural Design

Approved *Wayne H. Kumble*
 Date 5-14-85 Chief Engineer, Planning and Design

Approved *Warren T. Smith*
 Date 5-14-85 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

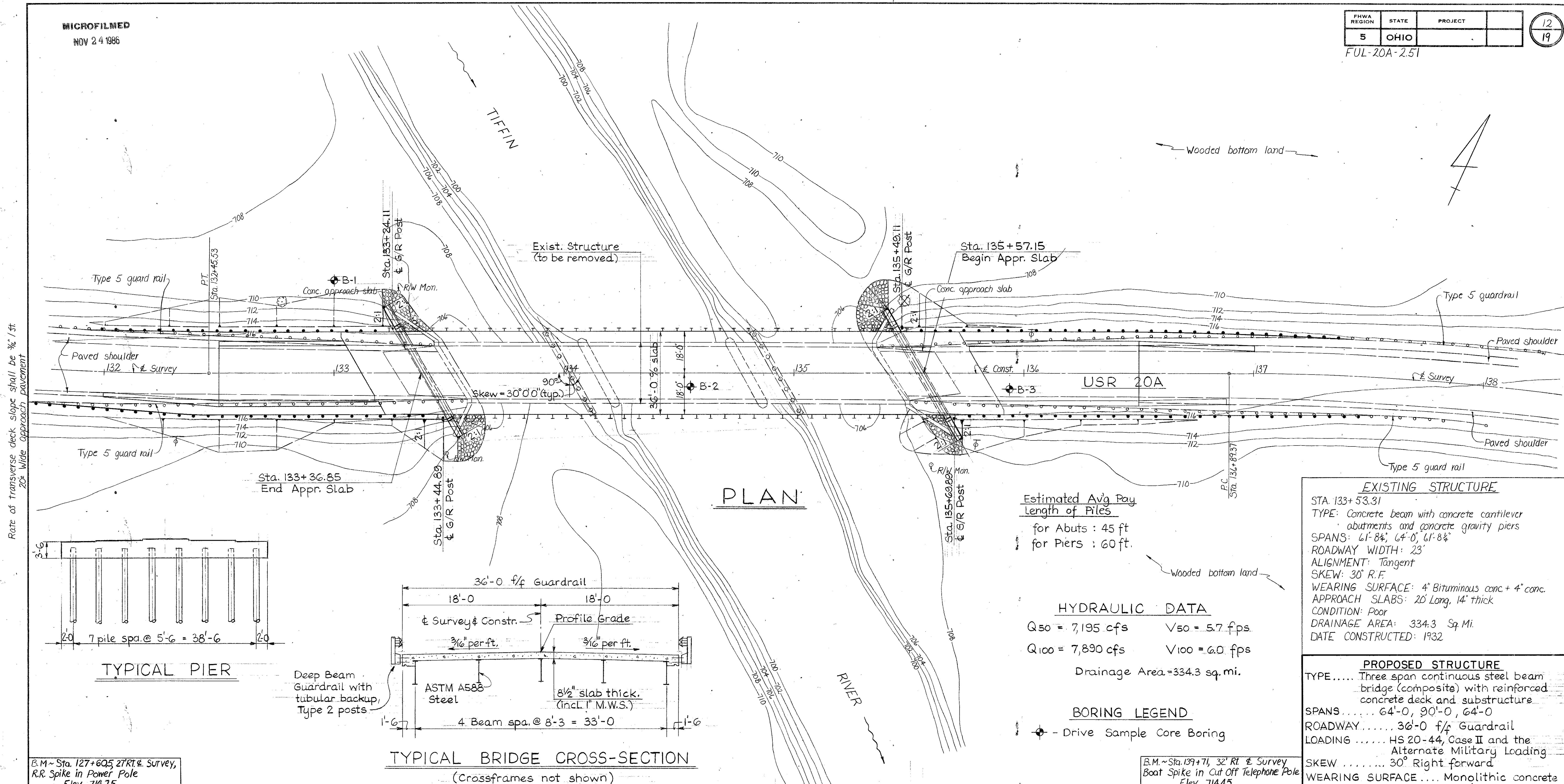
APPROVED:

DIVISION ADMINISTRATOR

DATE

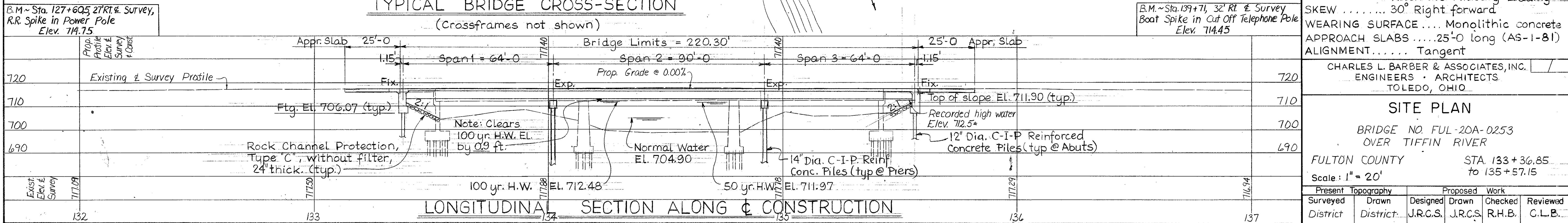
DL-20A-251

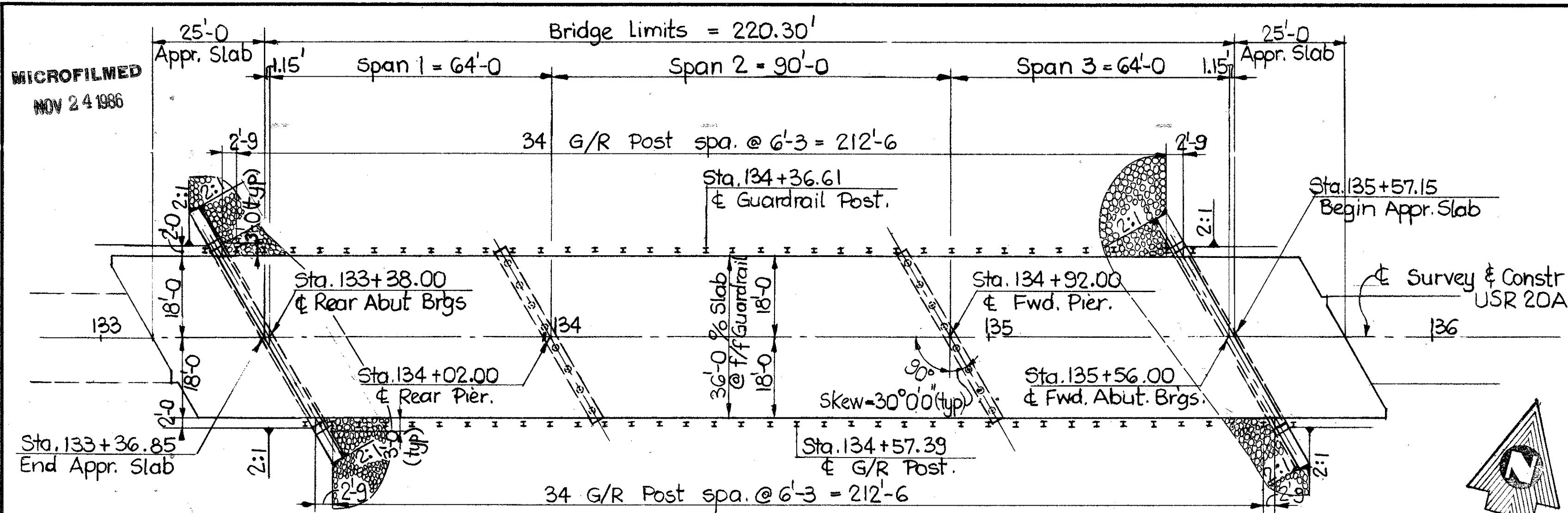
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TYPICAL BRIDGE CROSS-SECTION

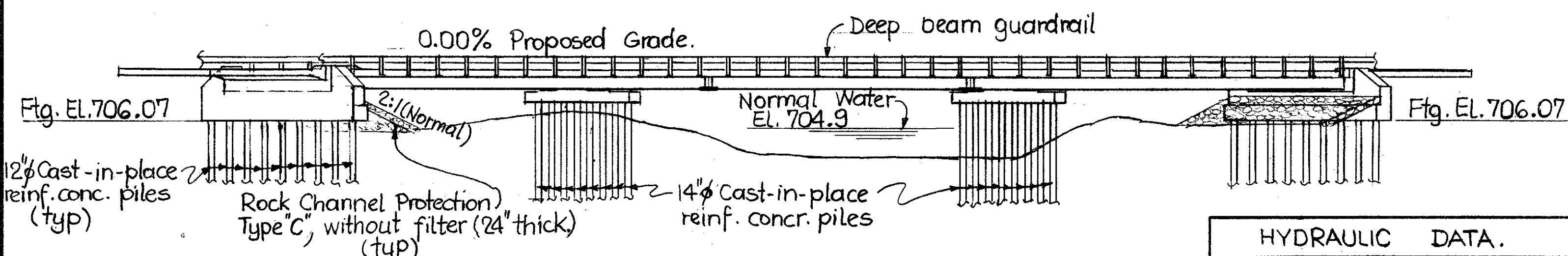
(crossframes not shown)





GENERAL PLAN

Approach Slab as per
Std. Dwg. AS-1-81



ELEVATION.

DESIGN TRAFFIC	
2002 ADT	= 3,700
2002 ADTT	= 666

HYDRAULIC DATA.		
100 year High Water EL = 712.48		
Q ₁₀₀ = 7,890 cfs	V ₁₀₀ = 6.0 fpm.	
Drainage Area = 334.3 sq.mi.		

STRUCTURE FILE No. 2600420

ESTIMATED QUANTITIES.

ITEM	TOTAL	UNIT.	DESCRIPTION	SUPER	ABUT'S	PIERS	GEN'L	AS BUILT.
202	Lump		Structure removed.				Lump	
503	72	Cu.yd.	Unclassified excavation.		72			
505	Lump		Pile driving equipment mobilization.				Lump	
507	810	Lin.Ft	12" cast-in-place reinforced concrete piles, as per plan.		810			
507	960	Lin.Ft	14" cast-in-place reinforced concrete piles, as per plan.			960		
509	38,313	lb.	Reinforcing steel, grade 60.	26,630	8,459	3,224		
511	257	Cu.yd	Class "S" concrete, Superstructure.	257				
511	102	Cu.yd	Class "C" concrete, Abutments.		102			
511	33	Cu.yd	Class "C" concrete, Pier caps.			33		
513	206,100	lb	Structural steel (AISC category I) ASTM A588.	206,100				
513	2,640	Each	Welded stud shear connectors		2,640			
516	10	Each	Laminated elastomeric bearings (5/8" x 12" x 19" elastomeric pads with 2 5/8" x 13" x 20" steel load plate)			10		
516	96	Sq.Ft	1" Preformed expansion joint filler.	96				
516	84	Sq.Ft	1/2" Preformed expansion joint filler.		84			
516	106	Lin.Ft.	PVC Waterstop, as per plan.		106			
517	450.00	Lin.Ft.	Railing (Deep beam with steel tubular backup & Type 2 steel posts & bolts)	450.00				
518	49	Cu.yd	Porous backfill		49			
518	131	Lin.Ft.	6" perforated, helical corrugated steel pipe, 707.01.		131			
518	72	Lin.Ft.	6" non-perforated, helical corrugated steel pipe, incl. specials. 707.01		72			
523	3	Hour	Dynamic load test.				3	
824	31,625	Lb.	Epoxy coated reinforcing steel, grade 60	31,625				
SPECIAL	138	Sq.yd	Sealing of concrete surfaces (see Proposal Note)	138				

GENERAL NOTES.

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

13
19

FULTON COUNTY, OHIO
FUL-20A-2.51.

- REFERENCE SHALL BE MADE TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS STANDARD DRAWINGS:
SD - 1 - 69 DATED 6/12/69
DBR - 2 - 73 DATED 4/10/73
AS - 1 - 81 DATED 11/27/81
ICD - 1 - 82 DATED 8/1/84
AND TO SUPPLEMENTAL SPECIFICATIONS:
824 DATED 10/08/82
836 DATED 3/12/75
- 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 AND 1982 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.
- DESIGN DATA:
DESIGN LOADING - HS 20-44 CASE II AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S - UNIT STRESS 1500 P.S.I. FOR SUPER-STRUCTURE
CONCRETE CLASS C - UNIT STRESS 1333 P.S.I. FOR SUBSTRUCTURE
REINFORCING STEEL - ASTM A615, A616 OR A617, GRADE 60 - UNIT STRESS 24,000 P.S.I.
STRUCTURAL STEEL - ASTM A588 - UNIT STRESS 27,000 P.S.I.
DECK PROTECTION METHOD - EPOXY COATED REINFORCING STEEL, TOP MAT ONLY
WEARING SURFACE - MONOLITHIC CONCRETE. FOR DESIGN PURPOSES, IT IS ASSUMED TO BE 1" THICK
- REMOVAL OF EXISTING STRUCTURE:
WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED.
- EMBANKMENT CONSTRUCTION:
THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND PILES DRIVEN.
- STRUCTURE UNCLASSIFIED EXCAVATION:
ALL EXCAVATION REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED ABUTMENTS WITHIN THE LIMITS OF THE EXISTING MAIN ABUTMENT WALLS AND WINGWALLS SHALL BE CONSIDERED INCIDENTAL TO EXISTING STRUCTURE REMOVAL AND WILL NOT BE INCLUDED IN ITEM 503, "UNCLASSIFIED EXCAVATION".
FOR THIS PURPOSE, APPROXIMATELY 18 FEET OF EXCAVATION LENGTH REQUIRED FOR EACH PROPOSED ABUTMENT IS CONSIDERED INCIDENTAL TO EXISTING STRUCTURE REMOVAL AND SHOULD NOT BE INCLUDED IN ITEM 503, "UNCLASSIFIED EXCAVATION".
- THE DESIGN LOAD FOR THE ABUTMENT PILES IS 31 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 52 TONS PER PILE.
- 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.
THE CONTRACTOR SHOULD CHOOSE A PILE WALL THICKNESS THAT WILL NOT BECOME DAMAGED DURING THE INSTALLATION OF THE PILES. THE MINIMUM ACCEPTABLE WALL THICKNESS FOR THE PIER PILES IS 0.200 INCHES.

CHARLES L BARBER & ASSOCIATES INC.
ENGINEERS • ARCHITECTS
TOLEDO, OHIO

1 / 5

GENERAL PLAN, ELEVATION,
NOTES & ESTIMATED QUANTITIES

BRIDGE NO. FUL-20A-0253
USR 20A OVER TIFFIN RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.CS	E.W.K.			R.H.B	CLB	

MICROFILMED

NOV 24 1981

§ Survey & Constr
USR 20A

18'-0 (Normal)  Back Sta - Rear Abut.
Ahead Sta - Fwd. Abut.

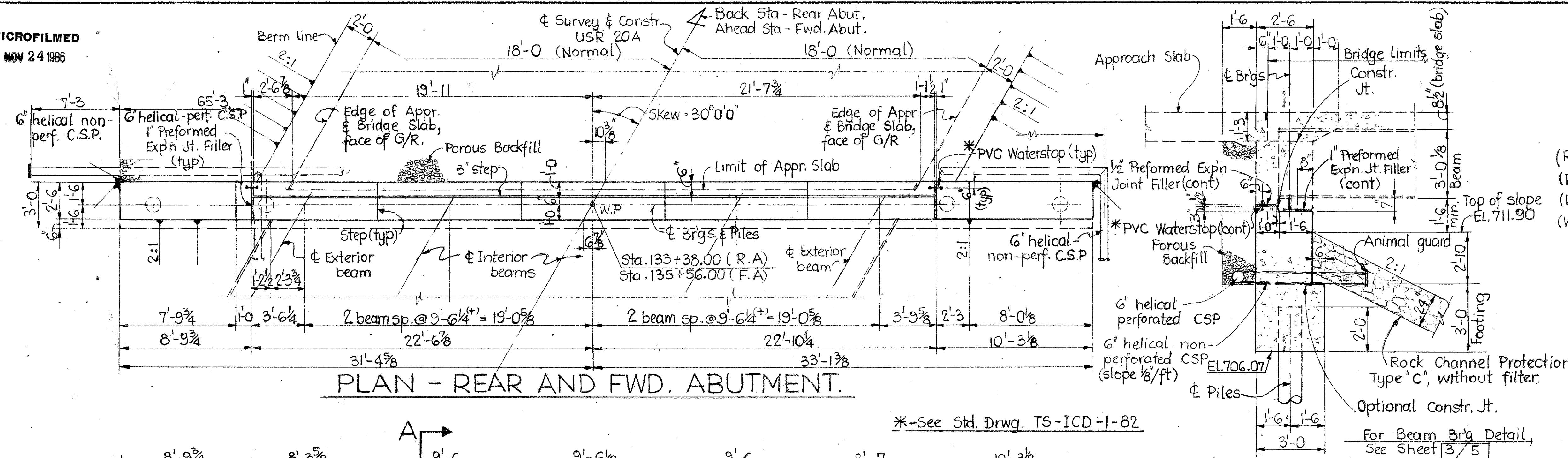
18'-0 (Norm)

H. W. A. REGION	STATE	PROJECT	
5	OHIO		

14
19

FULTON COUNTY, OHIO
FUL-20A-2.51

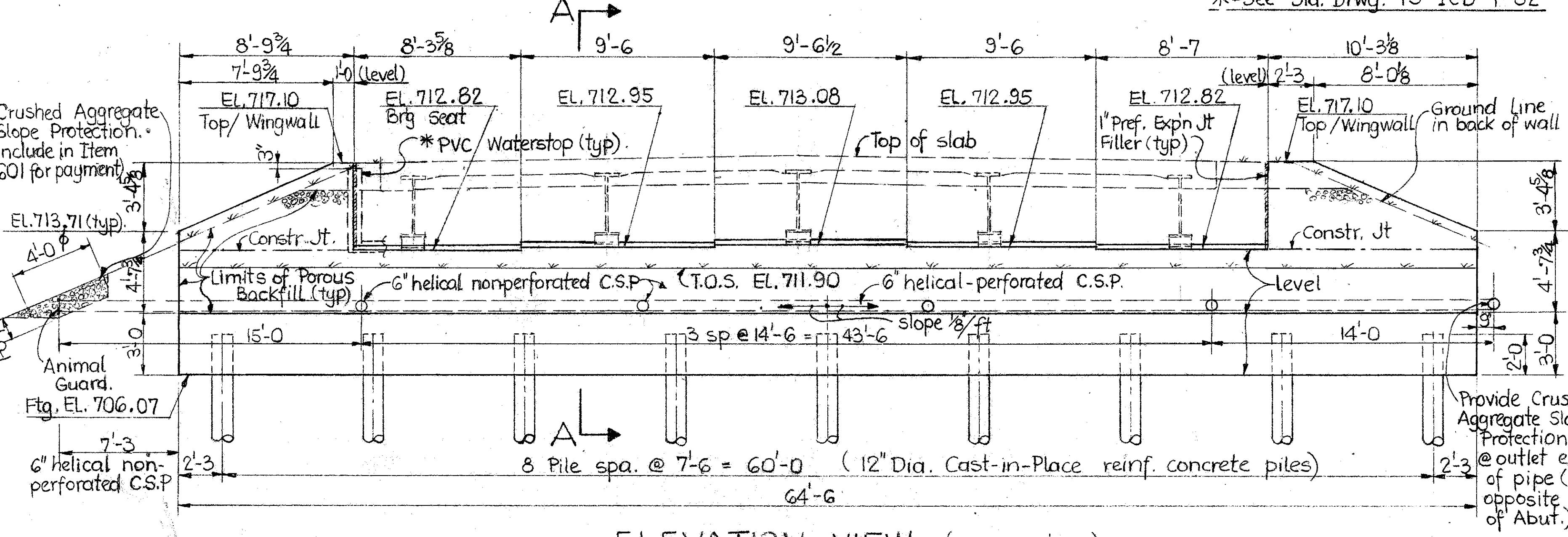
- (R.A) - Denotes Rear Abutment.
- (F.A) - Denotes Forward Abutment.
- (E.S) - Denotes Each Side.
- (W.P) - Denotes Working Point.



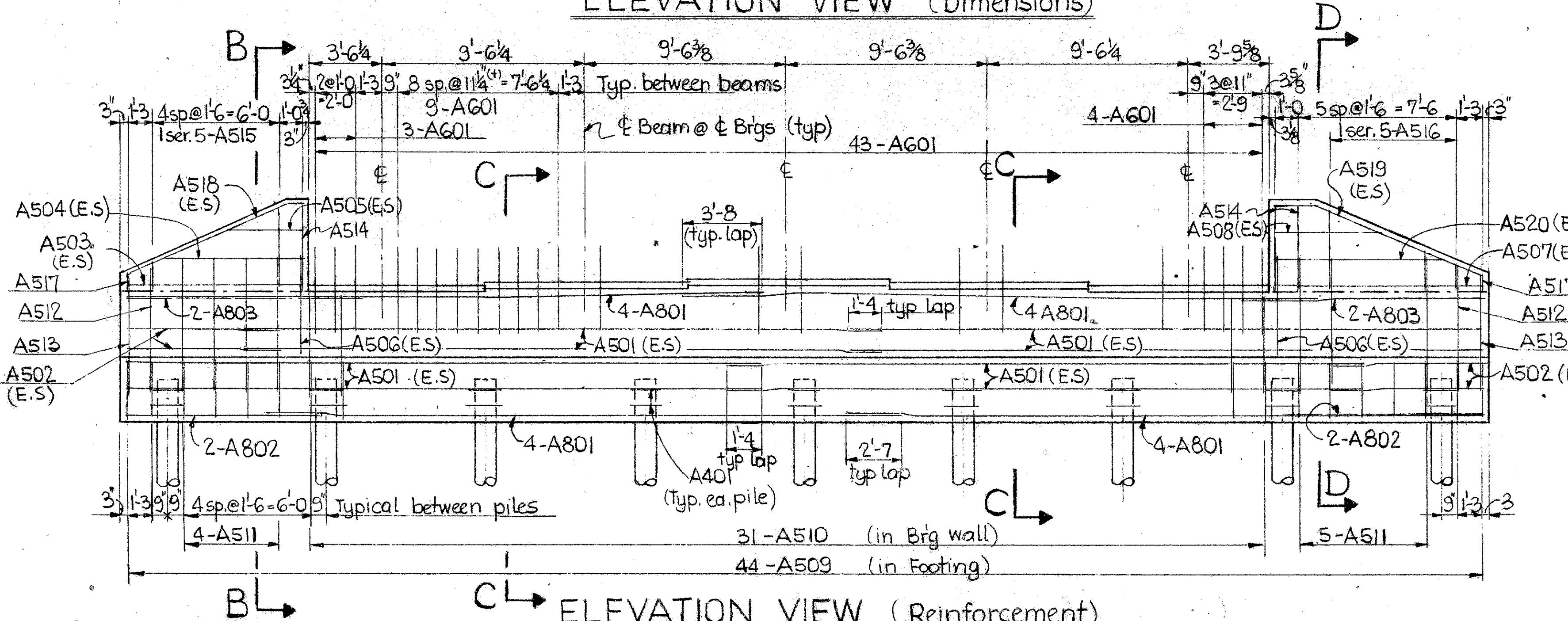
PLAN - REAR AND FWD. ABUTMENT

*-See Std. Drwg. TS-ICD-1-8

SECTION A-A.

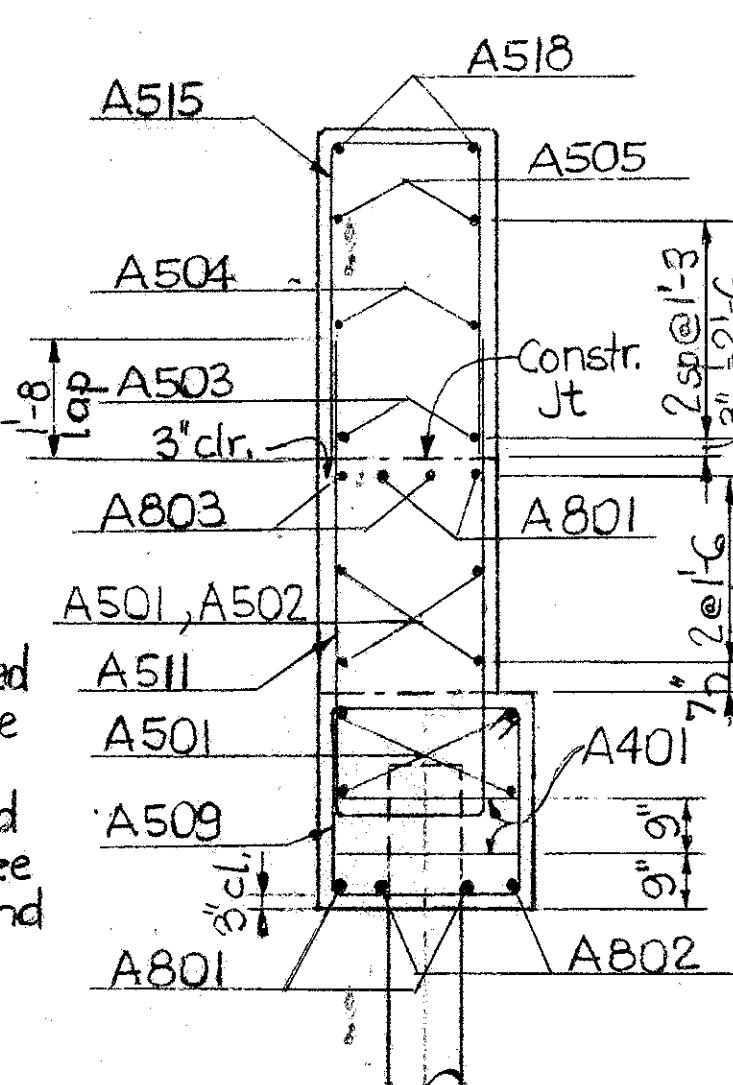


ELEVATION VIEW (Dimension)

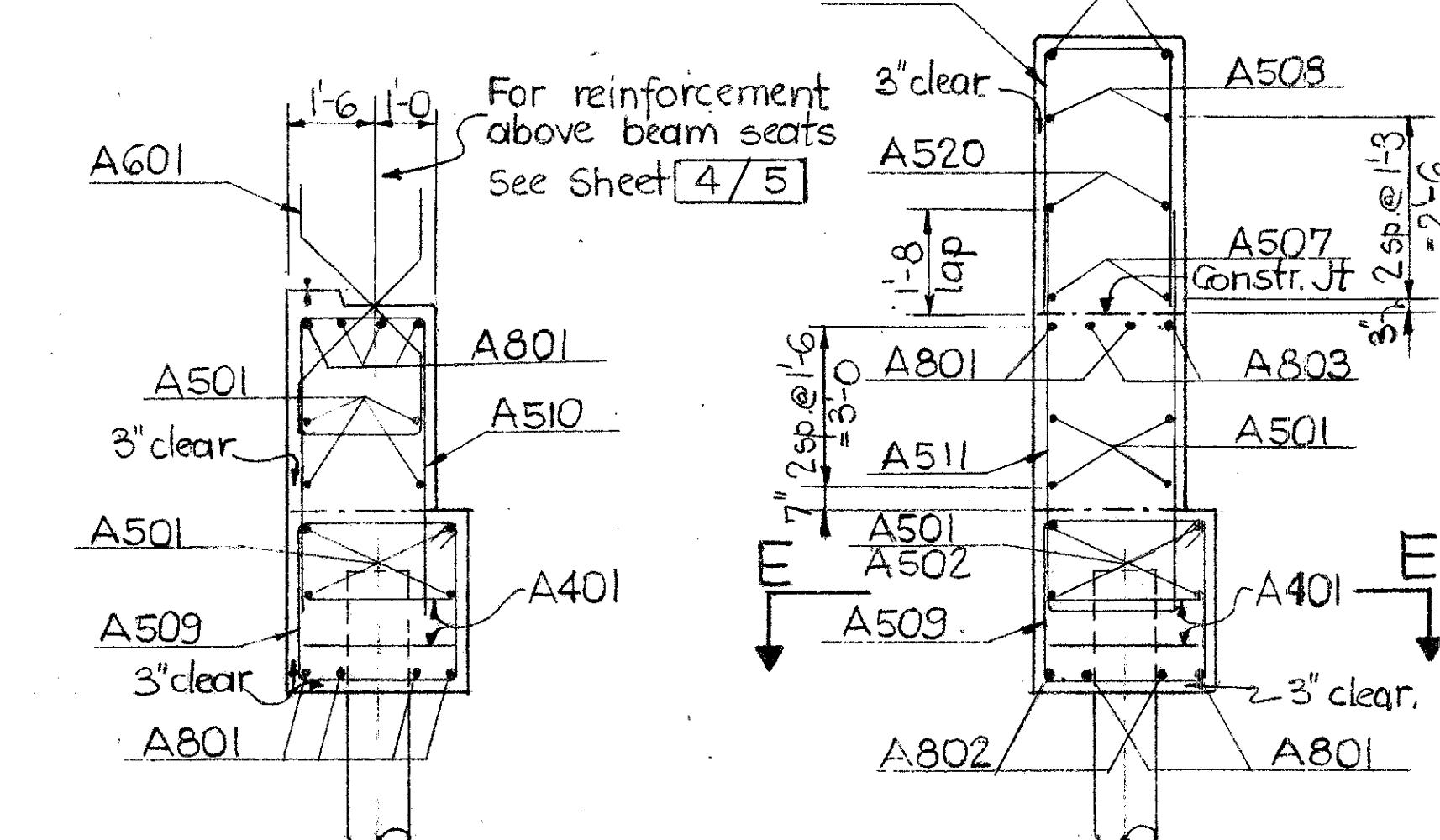


SECTION B-B

POROUS BACKFILL shall extend upward to the plane of the subgrade and laterally to the surface of the embankment slopes and the ends of the wingwalls



SECTION E-E.



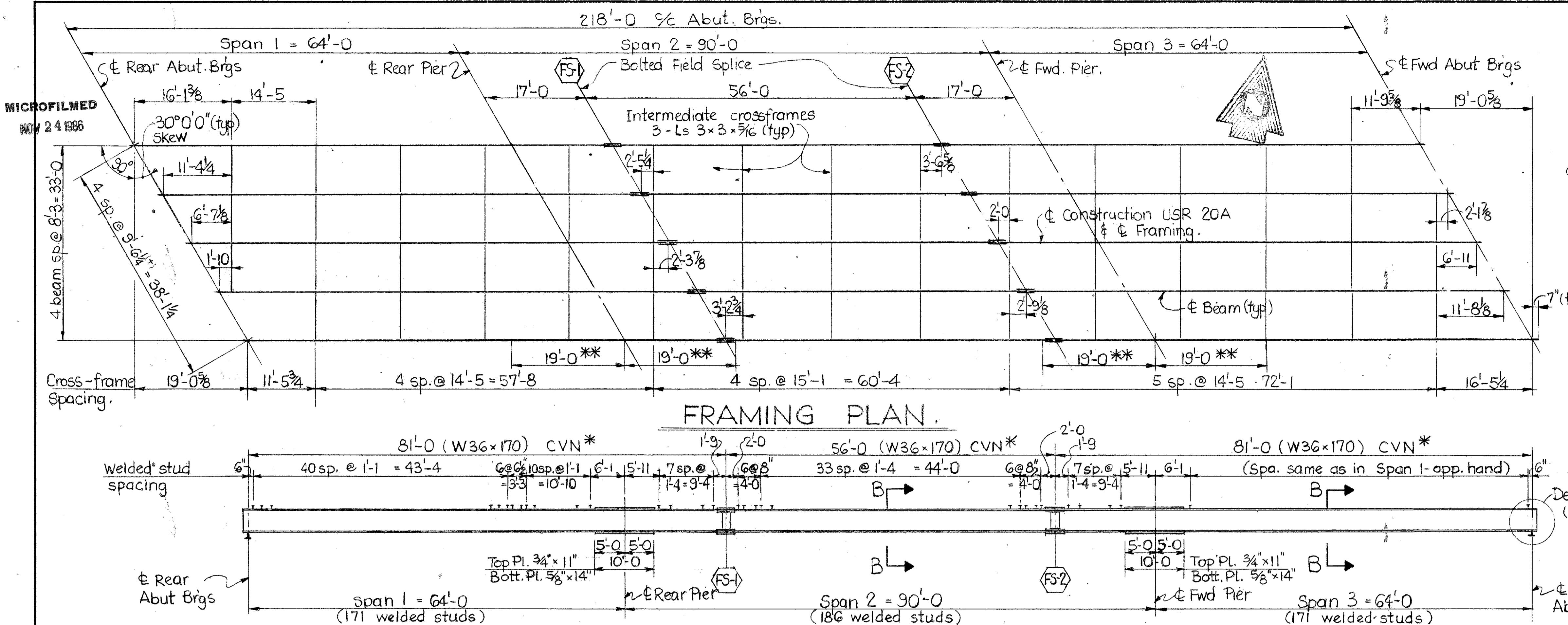
SECTION D-D

**CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS • ARCHITECTS
TOLEDO, OHIO**

ABUTMENTS

BRIDGE NO. FUL-20A-0253
USR 20A OVER TIFFIN RIVER

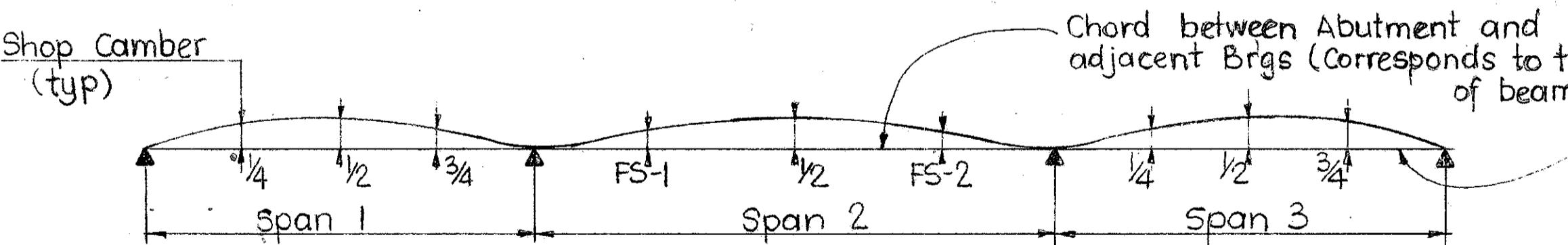
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.C.S	E.W.K.		R.H.B	C.L.B		



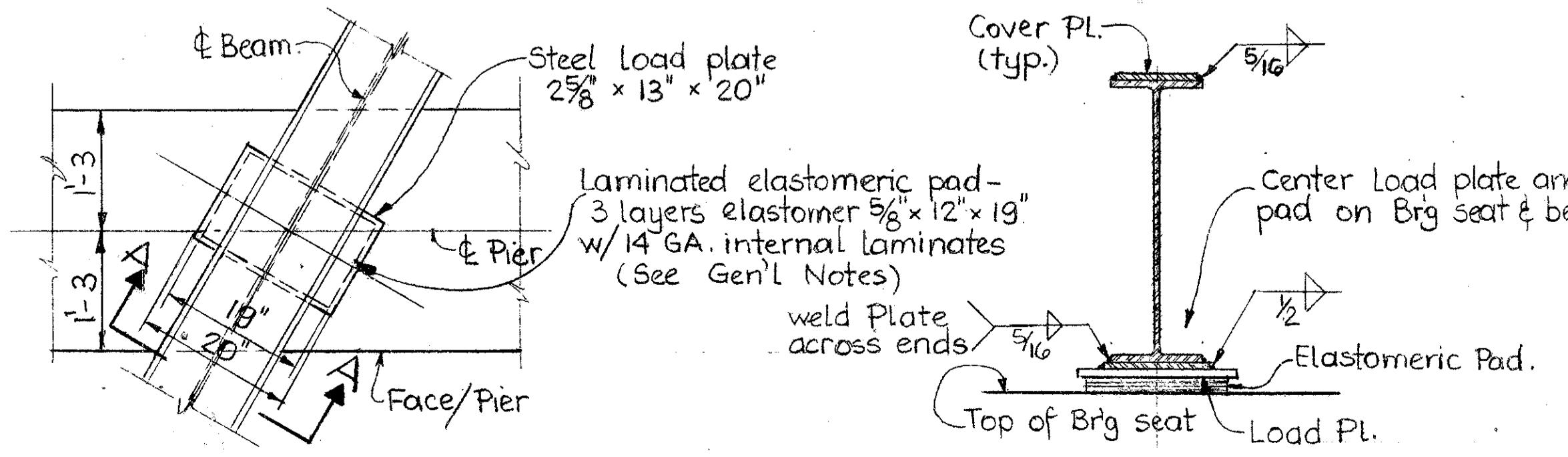
TYPICAL BEAM ELEVATION.

DEFLECTION AND CAMBER SCHEDULE (ALL BEAMS)

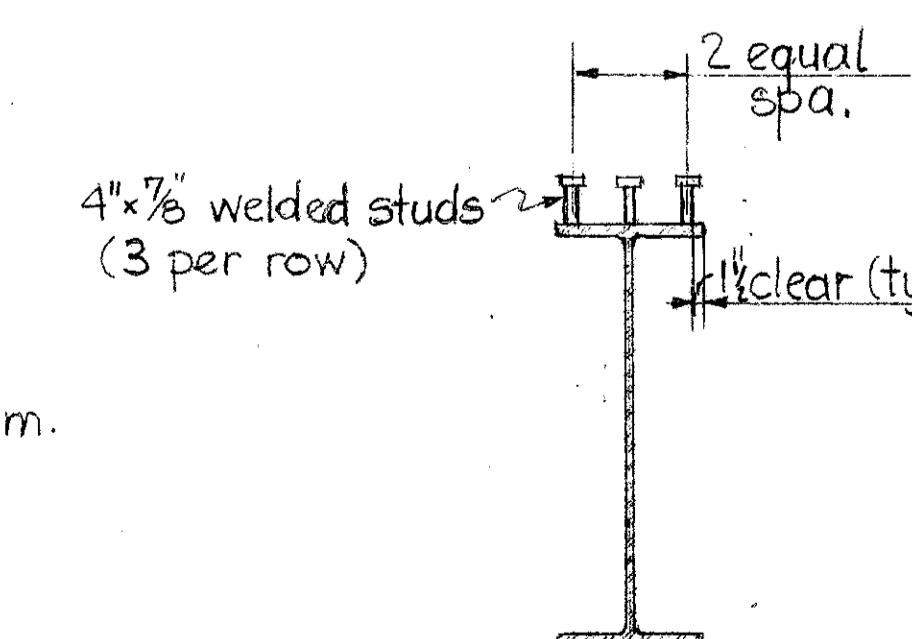
POINT	SPAN 1			SPAN 2			SPAN 3		
	1/4	1/2	3/4	FS-1	1/2	FS-2	1/4	1/2	3/4
Deflection due to weight of steel.	1/16	1/16	0	3/32	3/16	3/32	0	1/16	1/16
Deflection due to remaining dead load	1/4	1/4	1/16	3/8	7/8	3/8	1/16	1/4	1/8
Required Shop Camber. (inches)	5/16	5/16	1/16	1/2	1 1/16	1/2	1/16	5/16	5/16



CAMBER AND OFFSET DIAGRAM



PLAN-BEARING DETAIL AT PIERS



SECTION B-B

SECTION A-A

* - Beams shall meet specified minimum notch toughness requirements as specified in 711.01 of CMS.

**-Welded attachment of supports for concrete deck finishing machine shall not be made in this area of top flange of fascia beams. Fillet welds to top flanges in adjacent areas shall not be closer than 1" from flange edge, not be more than 2" long and not be smaller than AASHTO minimum size.

CROSSFRAME DETAIL

DETAIL "a"

**CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS • ARCHITECTS
TOLEDO, OHIO**

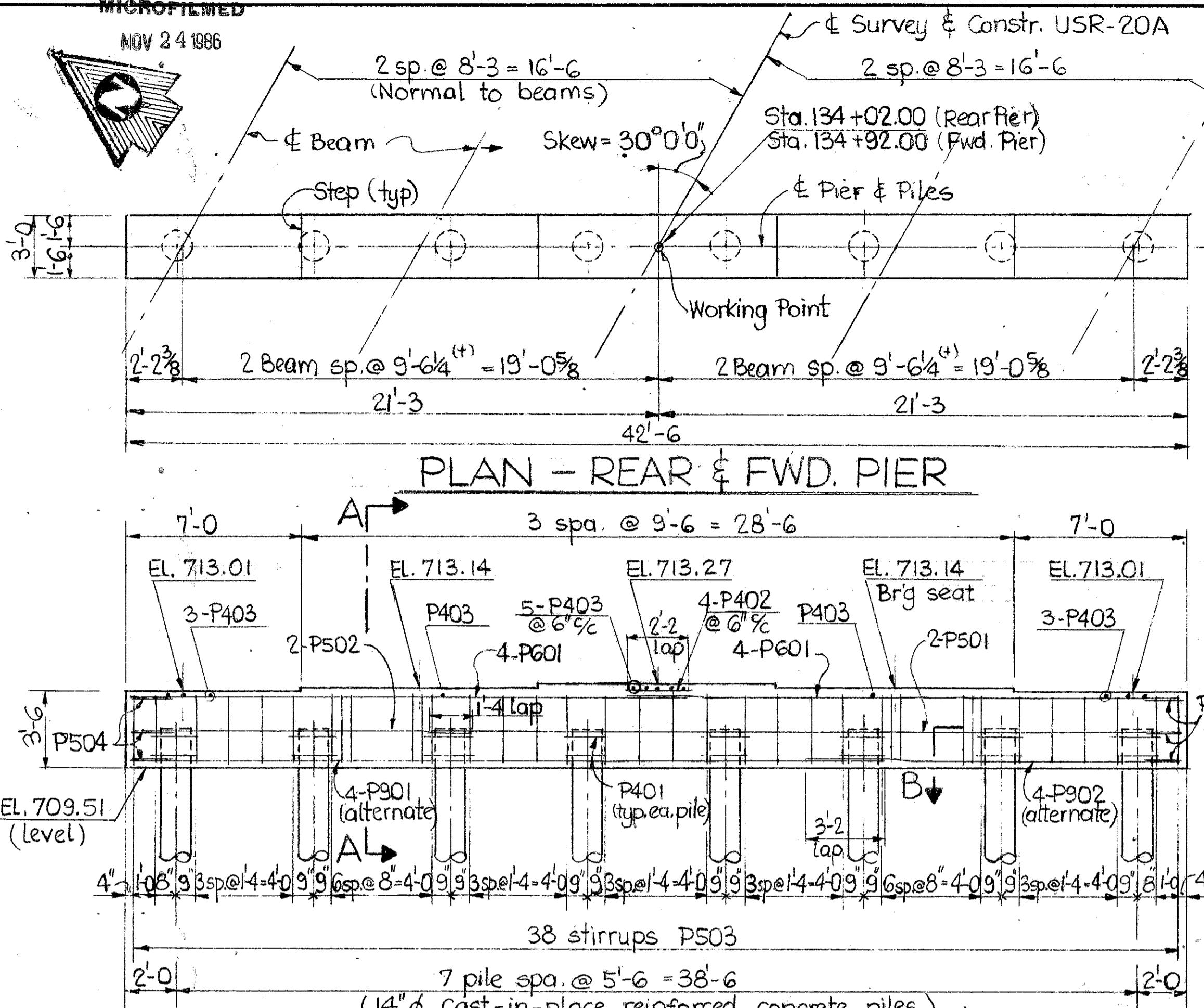
**SUPERSTRUCTURE.
(FRAMING PLAN)**

BRIDGE NO. **FUL-20A-0253**

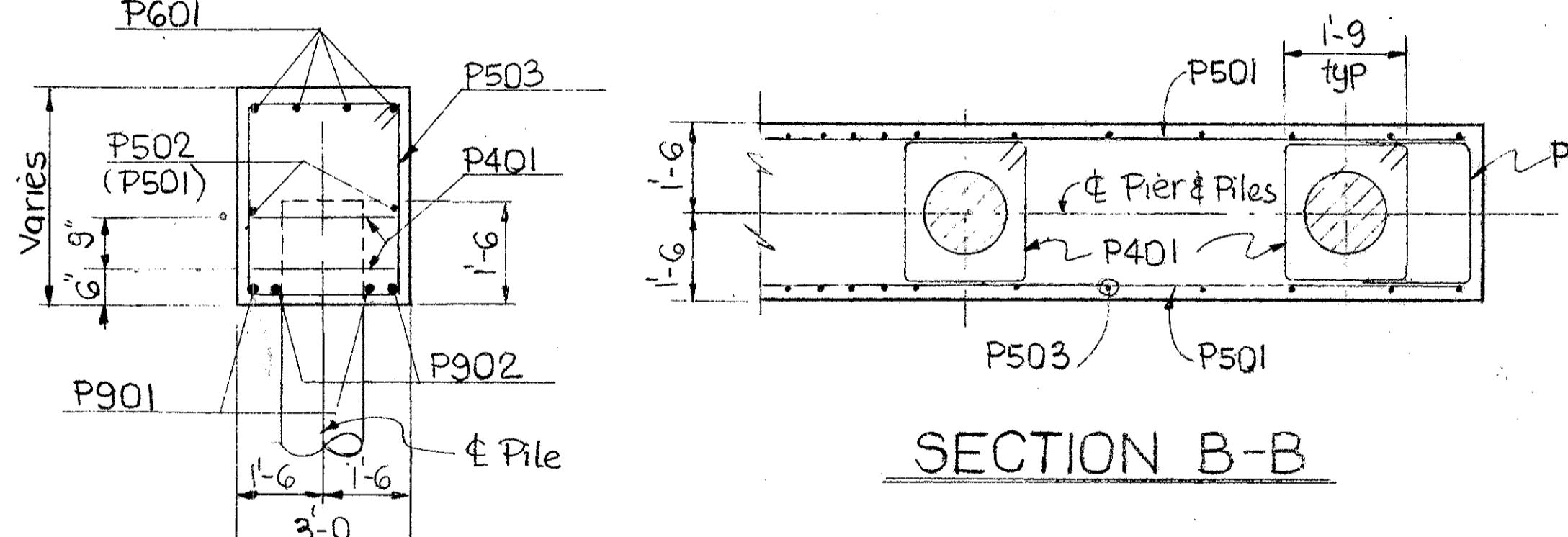
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.C.S.	E.W.K		R.H.B	C.L.B		

MICROFILM

NOV 24 1986



ELEVATION VIEW



SECTION A-A

Note: Bearing seat elevations have been adjusted upward $\frac{3}{8}$ " to compensate for vertical deformation of the bearing.

REINFORCEMENT SCHEDULE.

Bar marks for reinforcing bars which are to be epoxy coated include a letter prefix "E".

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 structure by the additional steel, spliced in accordance with 509.08.

**CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS • ARCHITECTS
TOLEDO, OHIO**

PIERS AND REINFORCEMENT SCHEDULE

BRIDGE NO. FUL-20A-0253
USB 224 OVER TIEFEN RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.C.S	E.W.K		R.H.B	C.L.B		