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22 September 2008

Dear Colleague:

Lehigh University is presently working under a research contract from the Pennsylvania Department of Transportation to identify and develop inspection methods and techniques to detect and quantify non-visible corrosion of prestressing strands in adjacent box beam bridges.

The research is motivated by recent catastrophic failures of prestressed precast box beam bridges that have occurred in a number of states in the north east region of the United States.

Our research seeks to identify nondestructive inspection methods, techniques and equipment to detect and evaluate corrosion that is otherwise undetectable by visible inspection methods. As part of our work, we seek participation by industry practitioners and academic researchers in our work. In particular, we have obtained sections of actual corroded bridge girders for laboratory testing. We are seeking to engage outside experts such as you that may have nondestructive evaluation technologies appropriate for this problem.

I am writing now to invite you to participate in our study. Attached please find a document, prepared by one of my colleagues, that describes the girder sections we have obtained for testing.

I will contact you by telephone to discuss this project further. Or, if you prefer, you may contact me at contact points given above. Thank you for the consideration you give to this request for help. I look forward to hearing from you and hope to have the chance to work with you on this project.

Kind regards.

A handwritten signature in blue ink, appearing to read "Stephen Pessiki".

Stephen Pessiki

Non-Destructive Evaluation

Inspection Methods & Techniques to Determine Non Visible Corrosion of Prestressing Strands in Concrete Bridge Components

Decommissioned beams from three adjacent non-composite prestressed precast concrete bridges have been procured. The beams are staged at Lehigh University ATLSS Research Center in Bethlehem, PA. A total of seven beams are included in the study. A general overview of the bridge beams and the visible damage is summarized in Table 1. PennDOT issued bridge drawings and manufacturer drawings are included as an attachment. The quality of the drawings is in some cases limited.

Bridge	Beam	Span	Section Length	Cross Section	Condition Description
Clearfield	3	1	15ft	42x36 Box	Longitudinal cracking with rust staining.
Clearfield	3	2	15ft	42x36 Box	Large longitudinal crack with spalling visible.
Lakeview	7	1	15ft	48x27 Box	Heavily damaged section with spalls and cracks. The section was full of water.
Lakeview	16	2	12ft	48x42 Box	No cracking or corrosion visible on section however other areas of beam have significant corrosion.
Lakeview	19	3	12ft	48x42 Box	Longitudinal crack with heavier corrosion. Hairline and larger distributed cracks
Main St	2	3	15ft	48x42 Box	Heavy corrosion on bottom flange without longitudinal cracking. Large corrosion patches.
Main St	3	3	15ft	48x42 Box	Longitudinal crack with heavy splitting.

1.1. Clearfield Creek Bridge, Cambria County, PA

Type: Three Span Adjacent Non-Composite PS Concrete Box Beam Bridge

Feature Carried: Carries Bear Valley Road (state route 1021)

Feature Intersected: Clearfield Creek (One span over creek and two spans over flood plane)

Bridge ID: 11102101801351

Year Built: 1956

Beam Manufacturer: New Enterprise Stone and Lime Company

Samples: Two beams were obtained (Span 1 Beam 3, Span 2 Beam 4) as illustrated in Figure 1.

Non-Destructive Evaluation

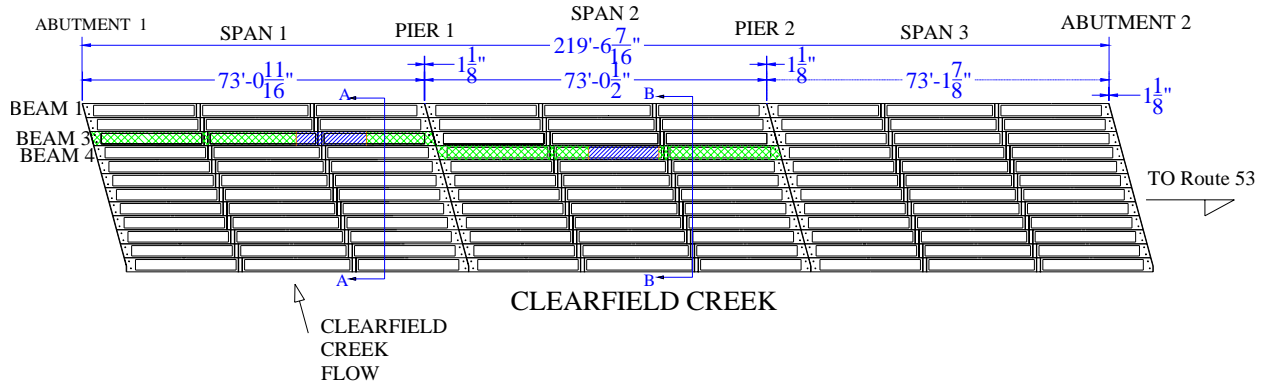


Figure 1: Clearfield Creek Bridge Plan View Layout

1.2. Lakeview Drive Bridge, Washington County, PA

Type: Four Span Adjacent Non-Composite PS Concrete Box Beam Bridge

Feature Carried: Lakeview Drive (state route 1014) in South Strabane Township

Feature Intersected: Interstate 70 (two Spans over traffic and two approaches)

Year Built: 1960

Beam Manufacturer: Spancrete Dickerson Structural Concrete Corporation

Samples: Three beams were obtained (Span 1 Beam 7, Span 2 Beam 16, Span 3 Beam 19) as illustrated in Figure 2.

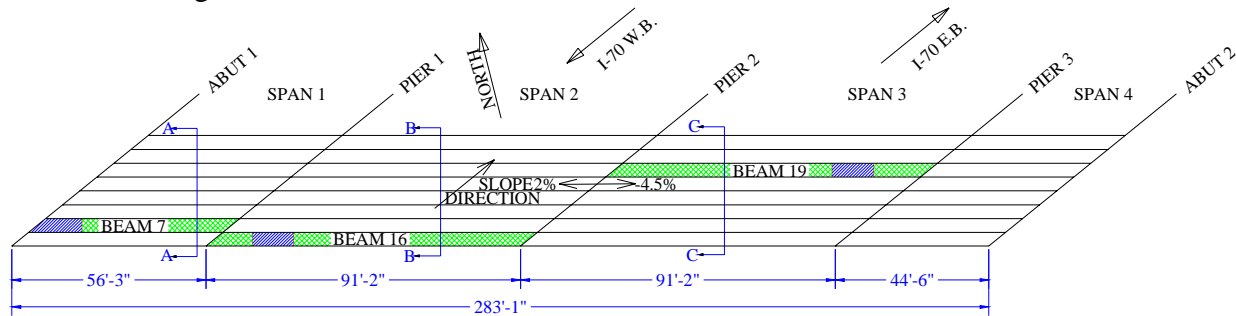


Figure 2: Lakeview Drive Bridge Plan View Layout

1.3. Main Street Bridge Washington County, PA

Type: Four Span Adjacent Non-Composite PS Concrete Box Beam Bridge

Feature Carried: Carries Main street, state route 4049 (local route 798)

Feature Intersected: Interstate 70 (two spans over traffic and two approaches)

Bridge ID: 62404900301265

Year Built: 1961

Beam Manufacturer: Spancrete Dickerson Structural Concrete Corporation

Samples: Two beams were obtained (Span 3 Beam 2, Span 3 Beam 3) as illustrated in Figure 3.

Non-Destructive Evaluation

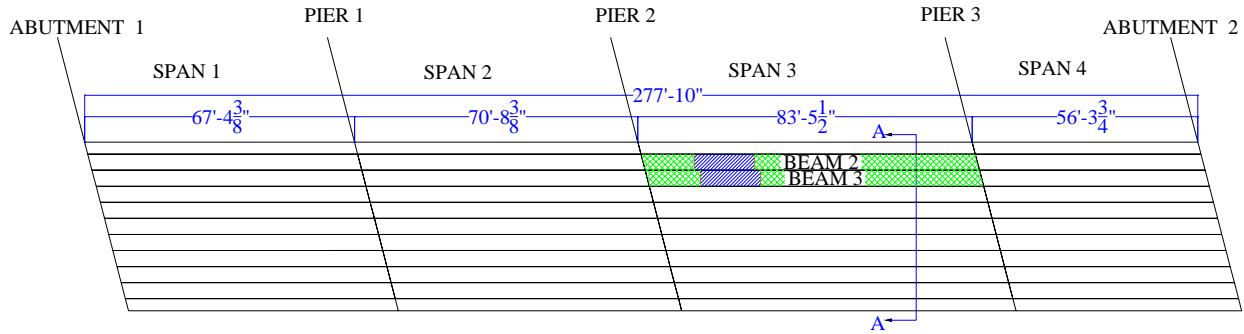


Figure 3: Main Street Bridge Plan View Layout

2. Staging

The beams are staged outdoors adjacent to the ATLSS research facility on Lehigh University Mountain Top campus. They are elevated 4 ft. off the ground and are supported at their ends with 10 in. of bearing on each side. The bottoms of the beams are accessible for inspection and evaluation. The cut ends of the beams will be sealed to prevent visual or physical access the strands. The beams will be allowed to go through any and all NDT methods. However, there will be no destructive testing without pre-approval by Lehigh University staff. The layout of the beams is illustrated in Figure 4 and Figure 5.

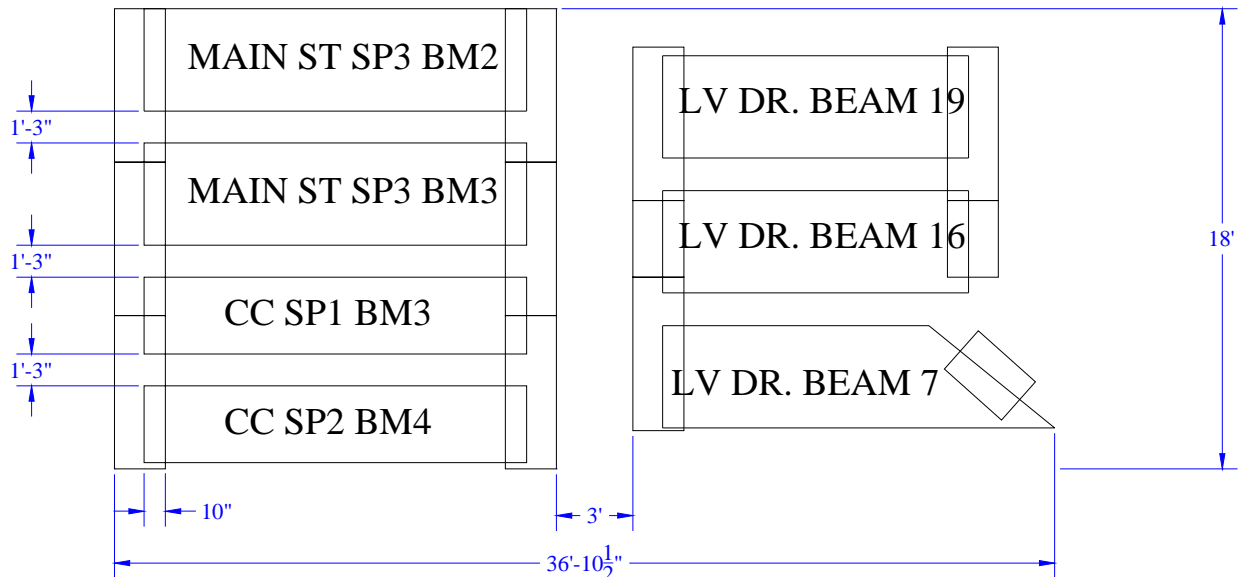
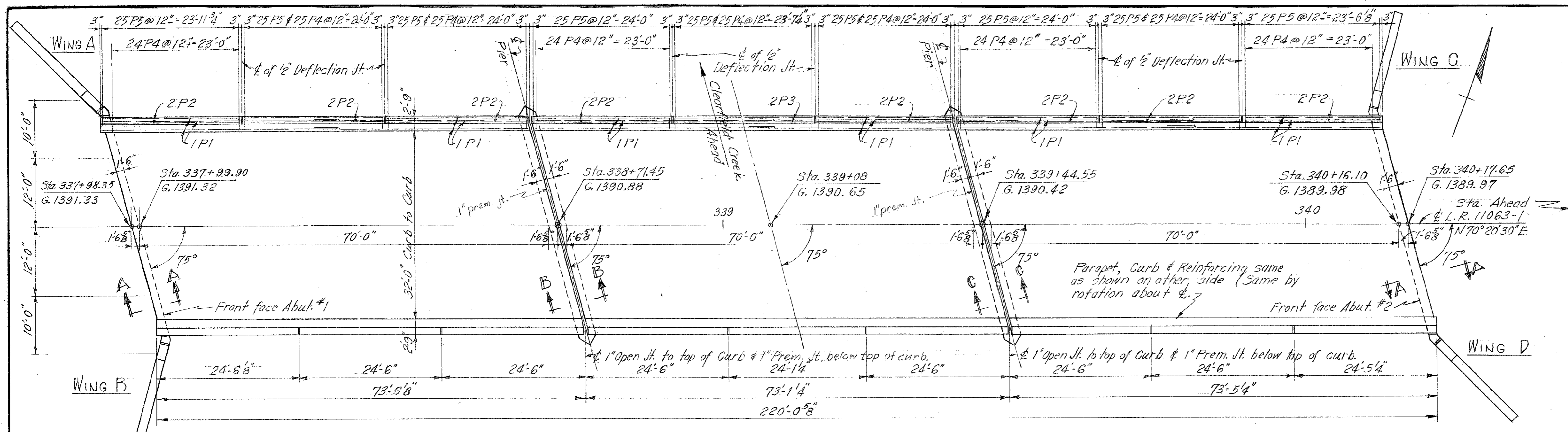


Figure 4: Schematic of beam layout

Non-Destructive Evaluation



Figure 5: Beam layout at ATSSS Center

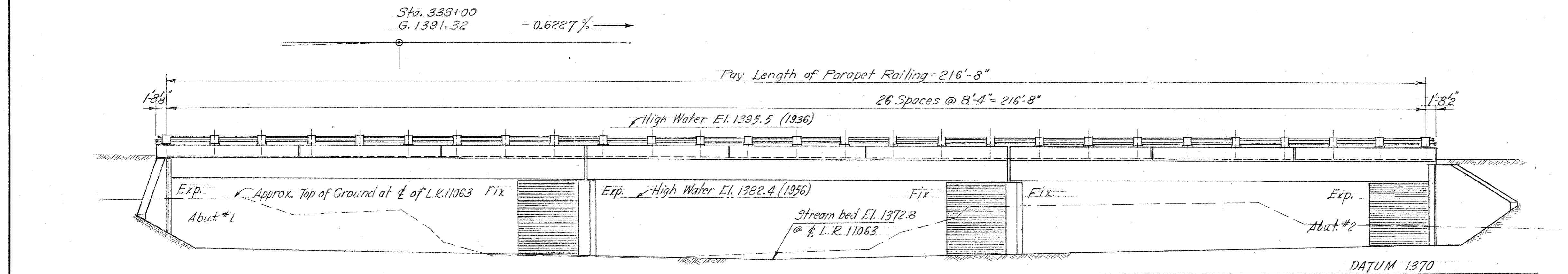


PLAN
Scale: 3/32" = 1'-0"

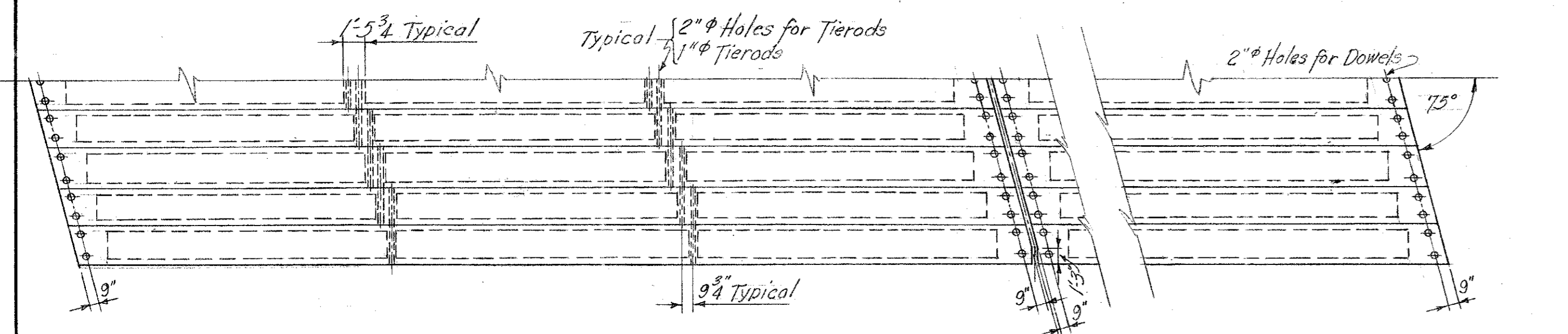
SUPERSTRUCTURE BAR SCHEDULE				
MARK	No.	SIZE	LENGTH	BENDING
P1	36	4	37'-0"	Straight
P2	64	4	24'-0"	Straight
P3	8	4	23'-7"	Straight
P4	442	4	5'-6"	
P5	450	4	5'-8"	
D1	144	6	2'-0"	Dowels Straight

SUMMARY OF QUANTITIES						
Item	Unit	Abut.#1	Abut.#2	Pier #1	Pier #2	Superstructure Total
Class III Excavation	c.y.	410	437	131	131	1109
Class A Concrete	c.y.	—	—	—	—	60
Class B Concrete	c.y.	221	218	125	125	689
Reinforcement Bars	lbs.	11,023	10,398	3,522	3,522	34,275
Prestress. Conc. Br. Deck	sq.ft.	—	—	—	—	7996
Parapet Railing	L.F.	—	—	—	—	434
Guard Fence Connections	each	—	—	—	—	4
Bit Surface Course - ID-2	sq.yd.	—	—	—	—	780
Stone Backfill for Structures	c.y.	9	9	—	—	18
Fabricated Structural Steel	lbs.	—	—	295	295	590

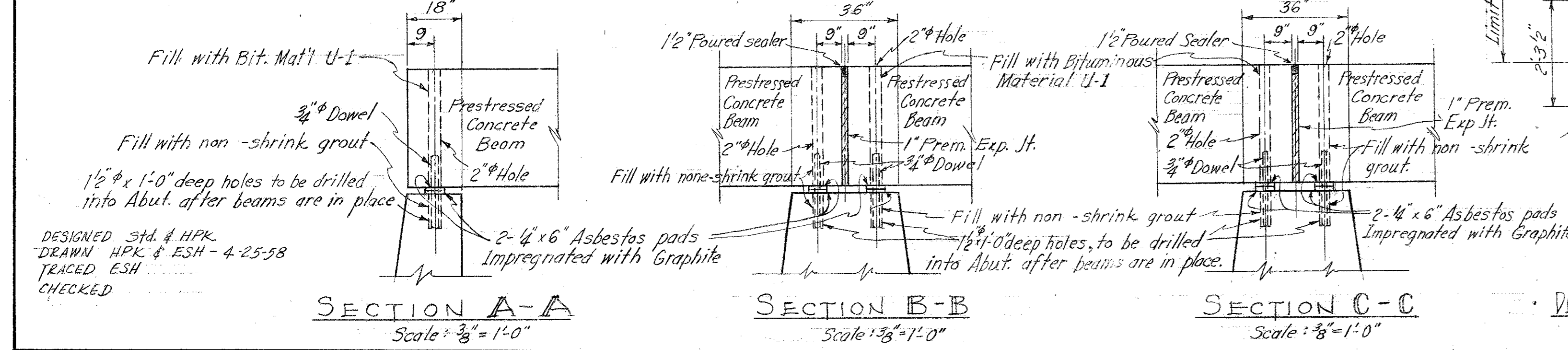
- GENERAL NOTES:**
- All materials and workmanship shall be in accordance with P.D.H. forms 408-54, 409-49 & Sect. 6.24 Supplement for prestressed concrete bridge superstructure.
 - Design Specs: Division III of 1953 "Standard Specs. for Highway Bridges" of the A.A.S.H.O.
 - Live Load: H-20-S-16-44.
 - Steel Reinforcement Bars designed for $f_s = 18,000$ p.s.i. and detailed as per A.C.I. Code. Bars to be lapped min. 40 Dia. except as noted.
 - Class "A" concrete shall be used in roadway curbs and parapets. All other concrete shall be Class "B" unless otherwise noted.
 - Base of footings may be ordered by the Engineer to be at any elevation, or of any dimensions to provide proper foundation.
 - Two-coat painted waterproofing shall be applied to rear faces of walls as directed by the Engineer.
 - Provide 1/2" cover on reinforcement bars unless otherwise noted.
 - For Parapet railing & guard fence connections see P.H.D. Dwg. S-1614B & S-3361
 - Exposed conc. edges to be chamfered 1/2" unless specified by the Engineer.
- PRESTRESSED NOTES**
- Min. Tensile Strength of steel shall be 250,000 p.s.i.
 - Min. 28-day cylinder strength shall be 5,000 p.s.i.
 - Initial force at each strand shall be 14,000 lbs.
 - Min. strength of conc. at release of prestress shall be 4000 p.s.i.



ELEVATION
Scale: 3/32" = 1'-0"



PART PLAN SHOWING DIAPHRAGM TIERODS
Scale: 1/8" = 1'-0"

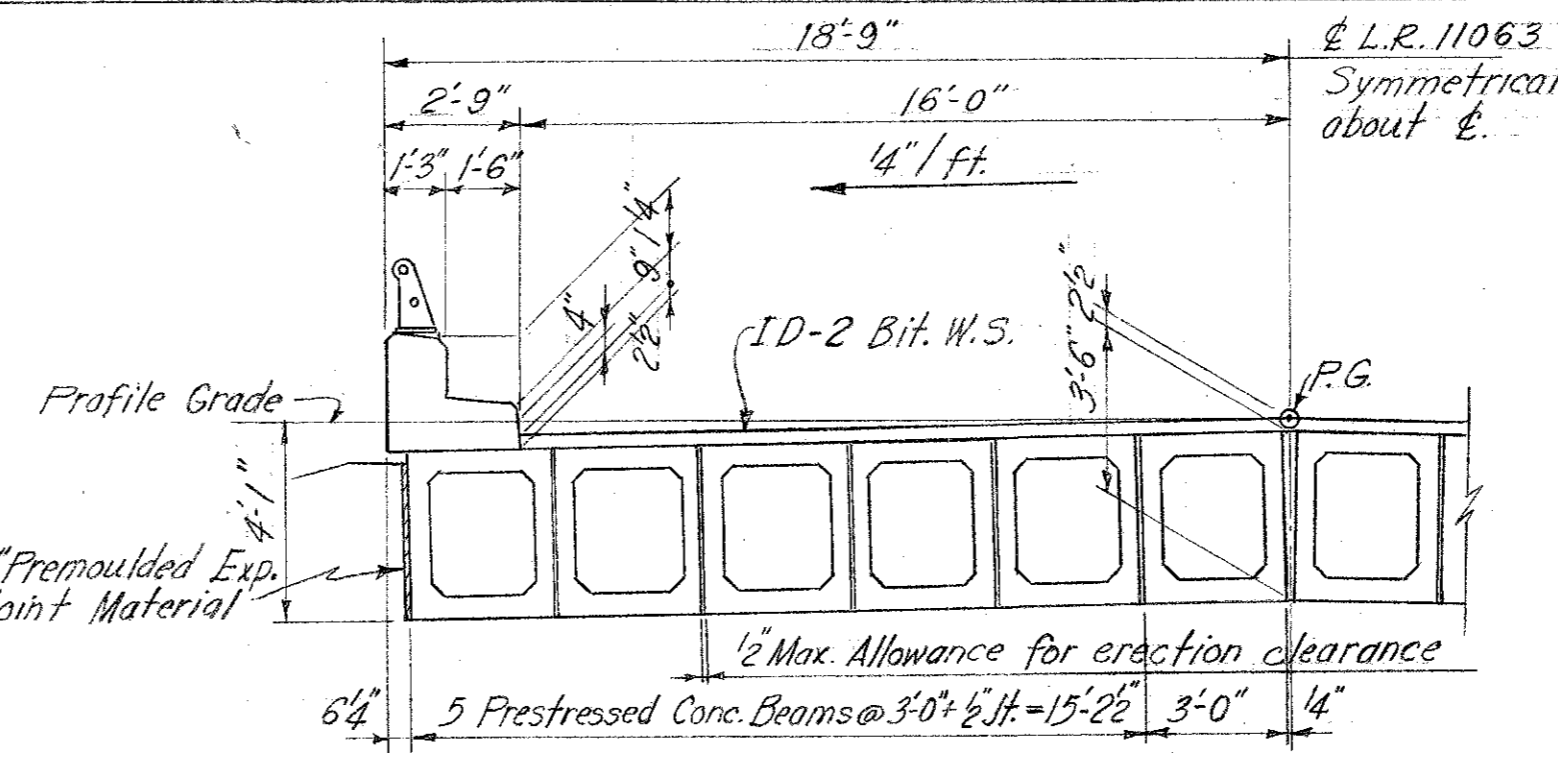


SECTION A-A
Scale: 3/8" = 1'-0"

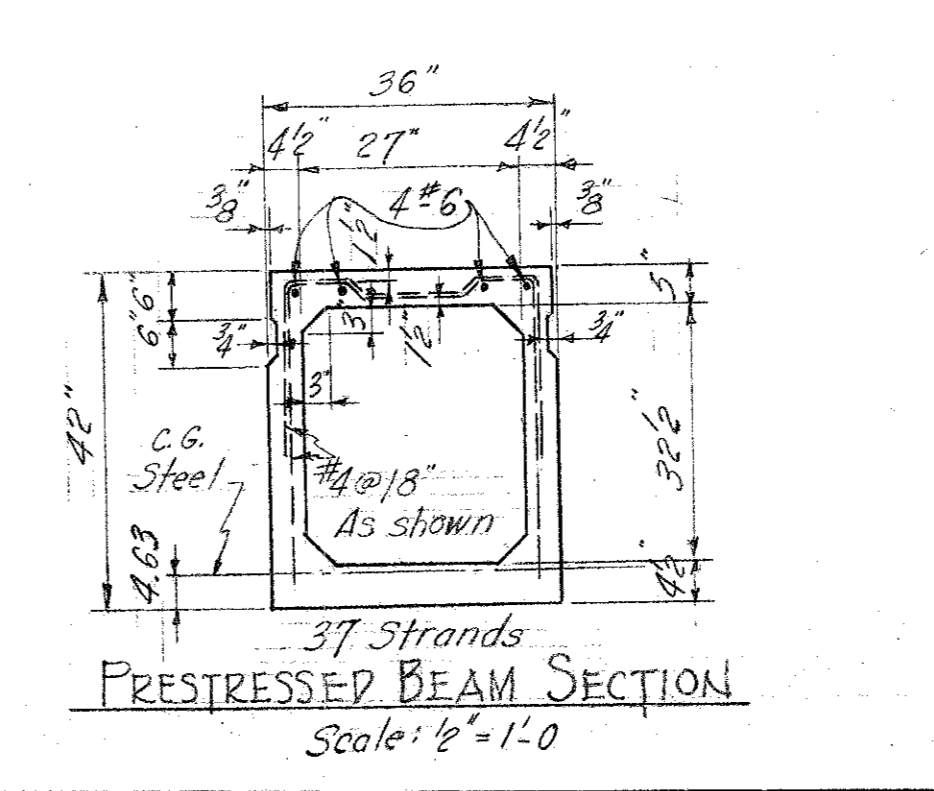
SECTION B-B
Scale: 1/8" = 1'-0"

SECTION C-C
Scale: 3/8" = 1'-0"

DETAIL OF CURB BEAMS
Scale: 1/2" = 1'-0"



TYPICAL SECTION
Scale: 1/4" = 1'-0"



PRESTRESSED BEAM SECTION
Scale: 1/2" = 1'-0"

APPROVED APR 28 1958
BRIDGE ENGINEER *[Signature]*

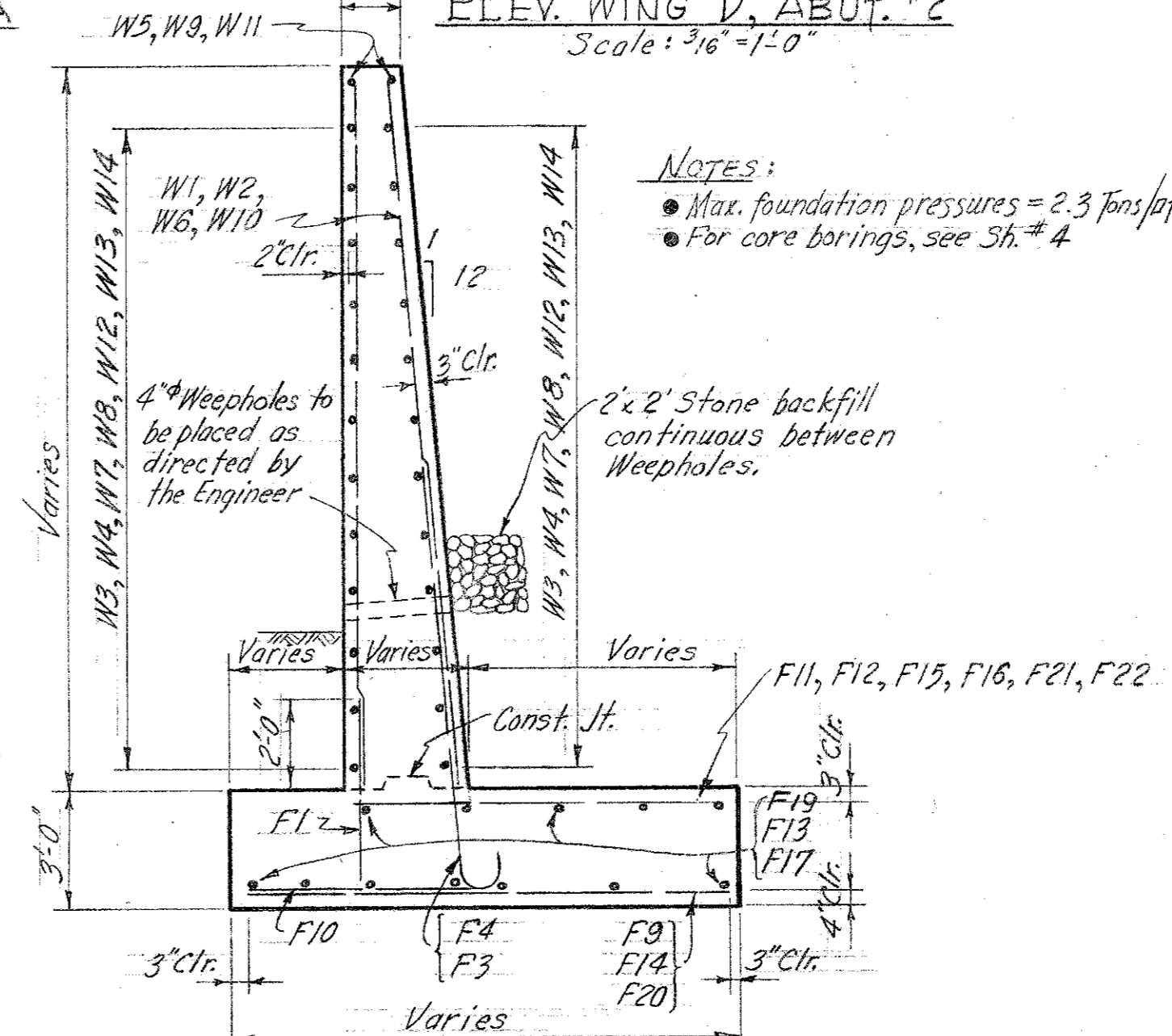
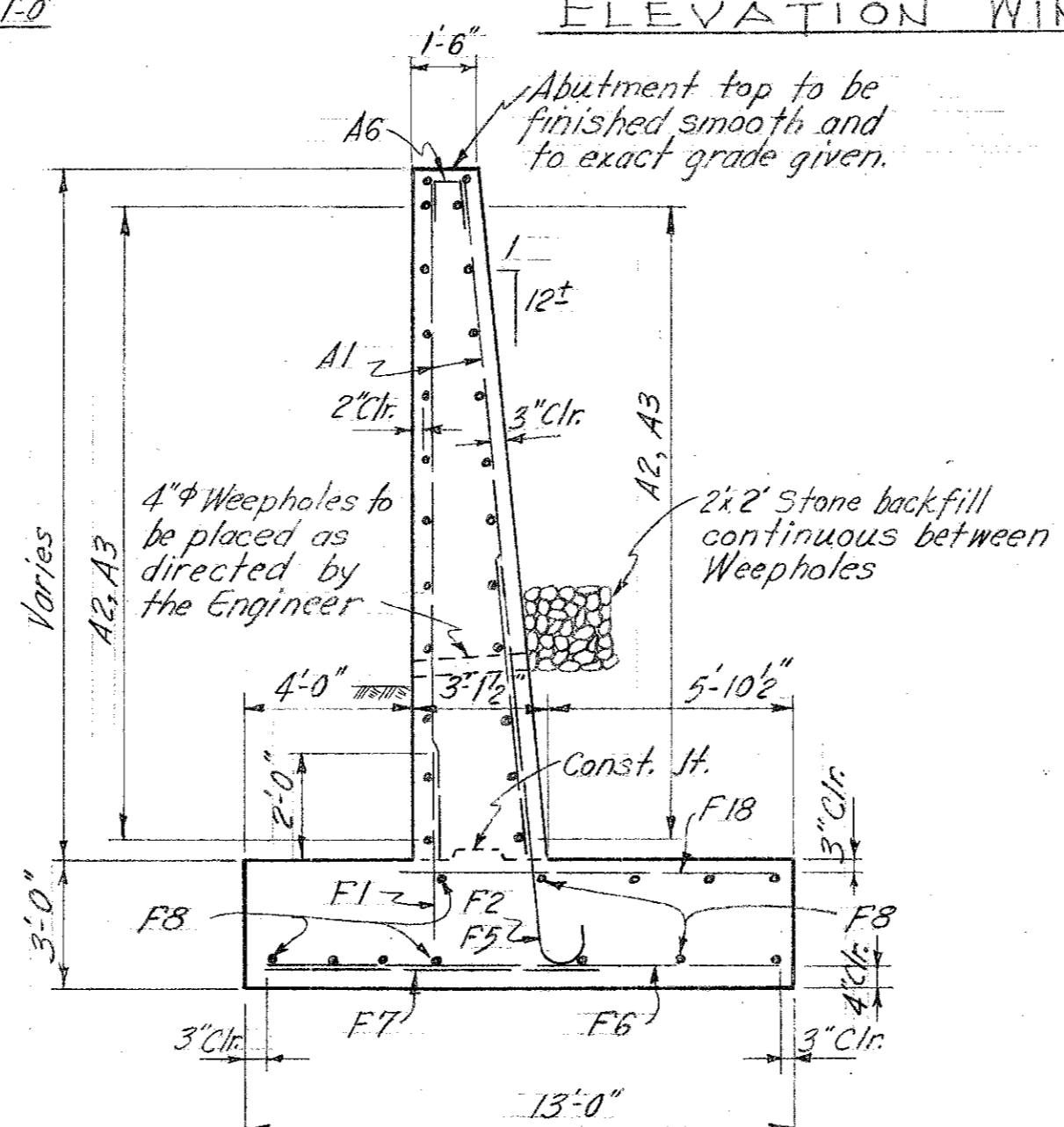
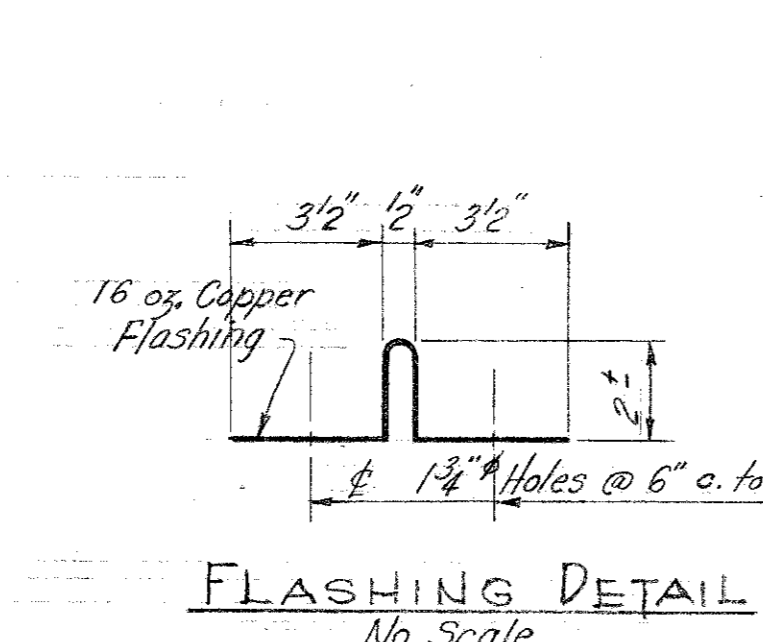
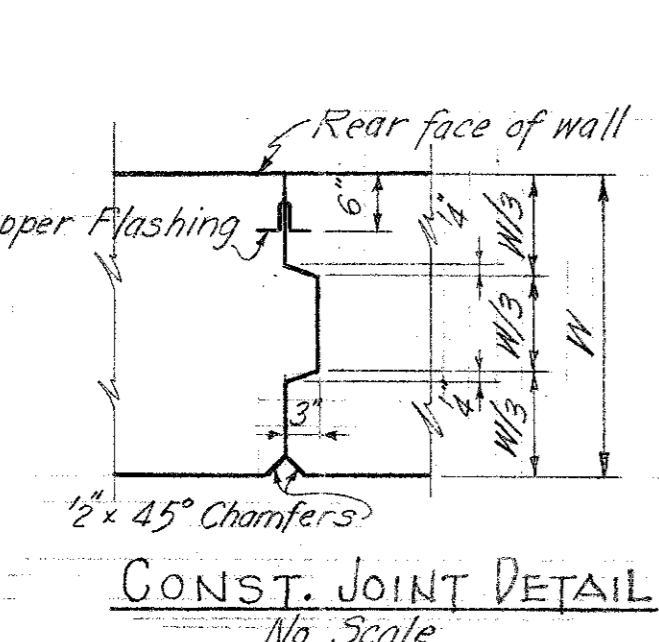
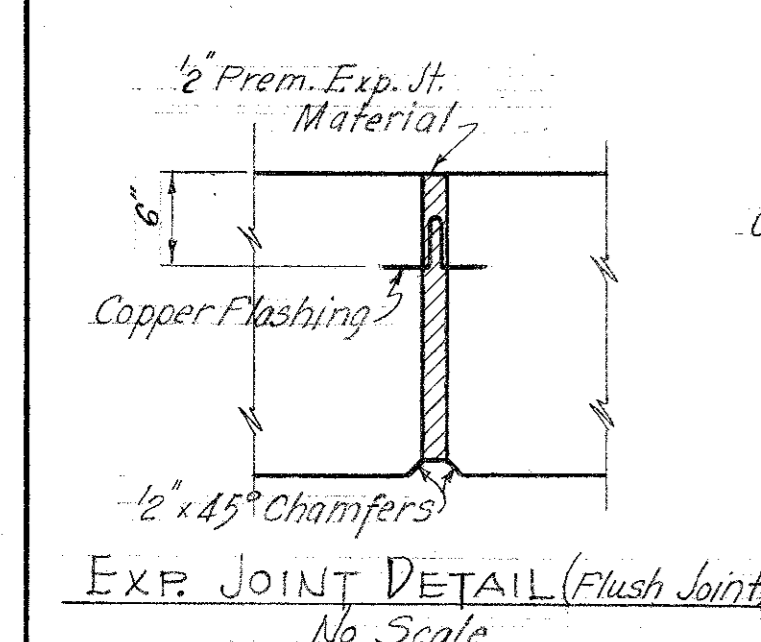
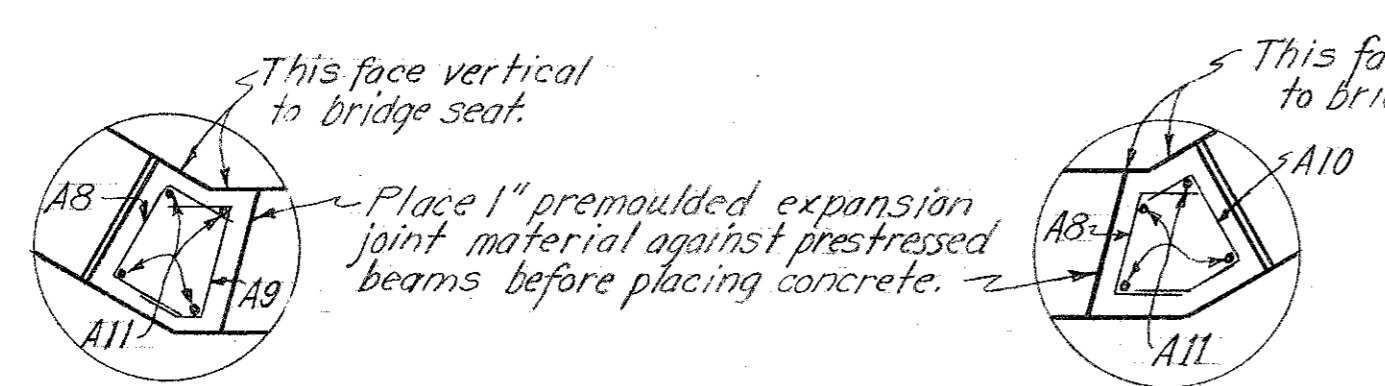
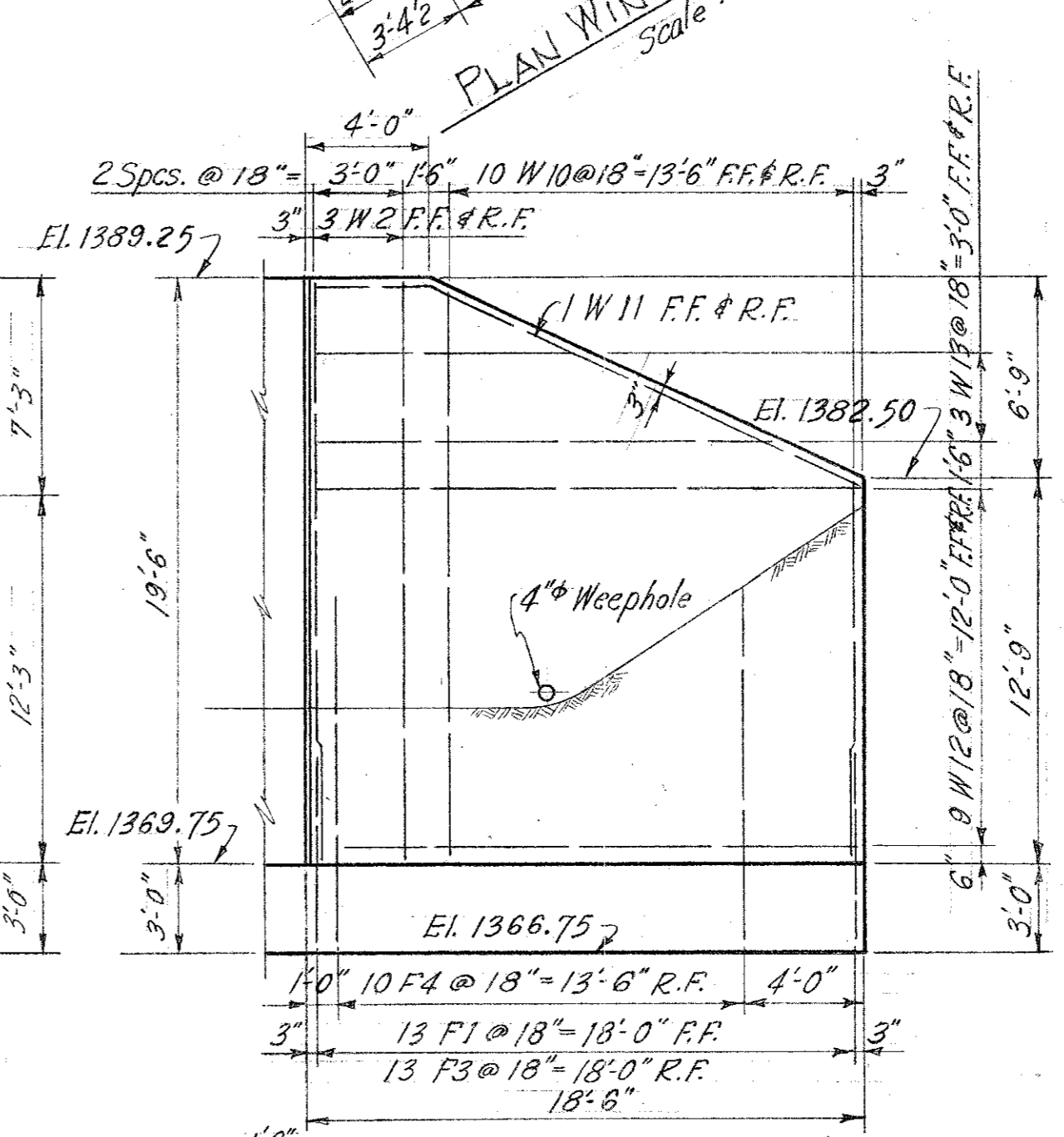
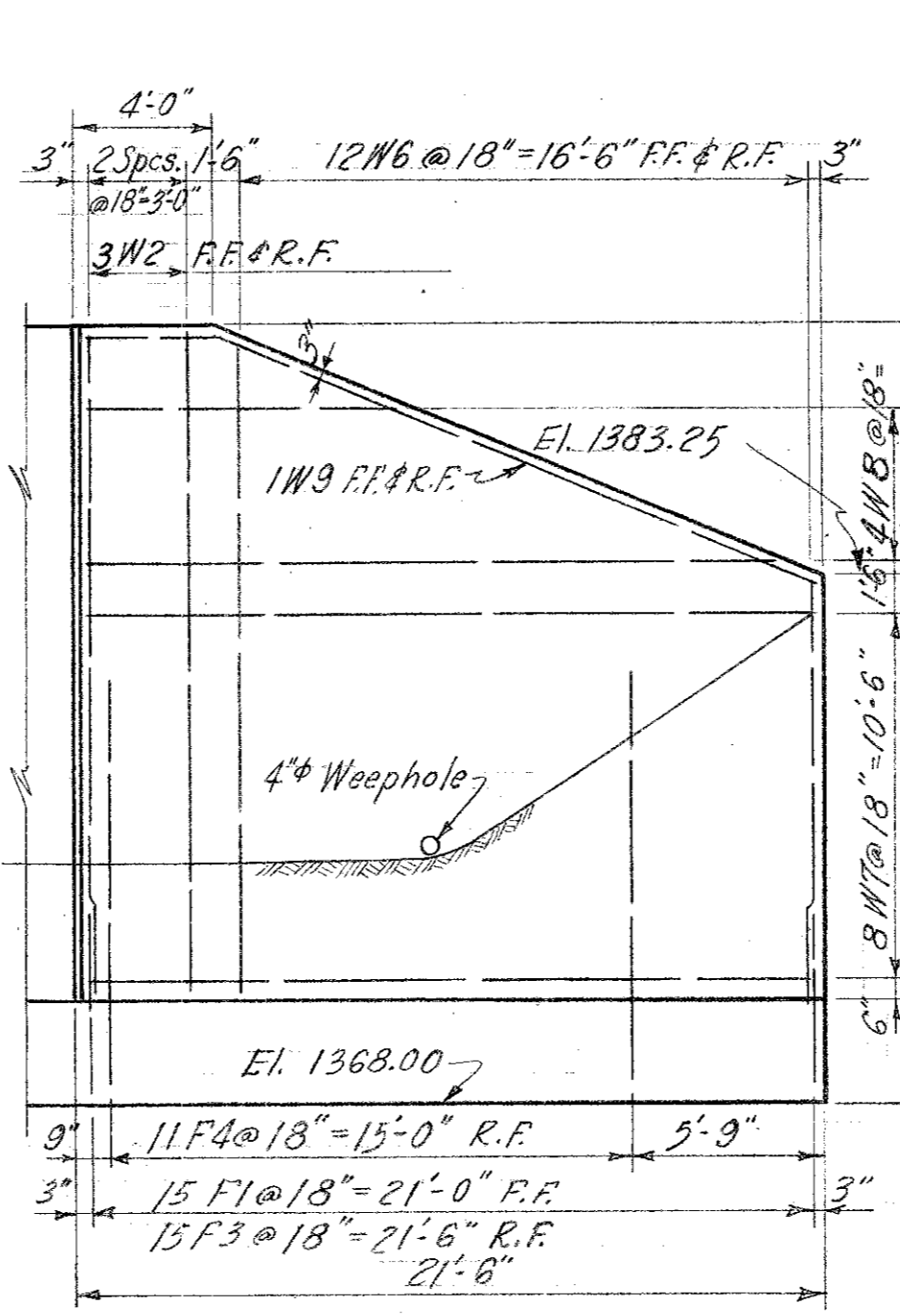
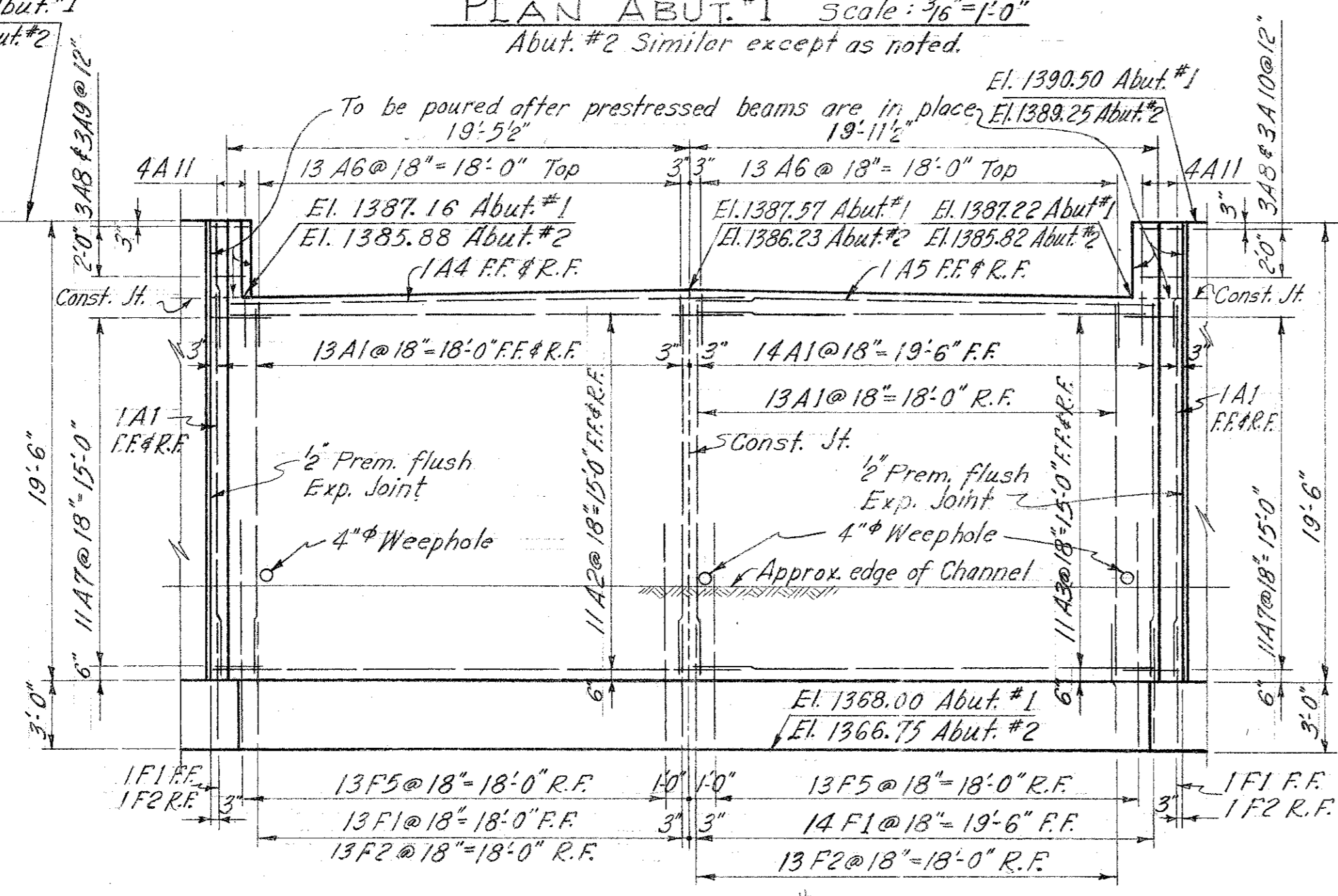
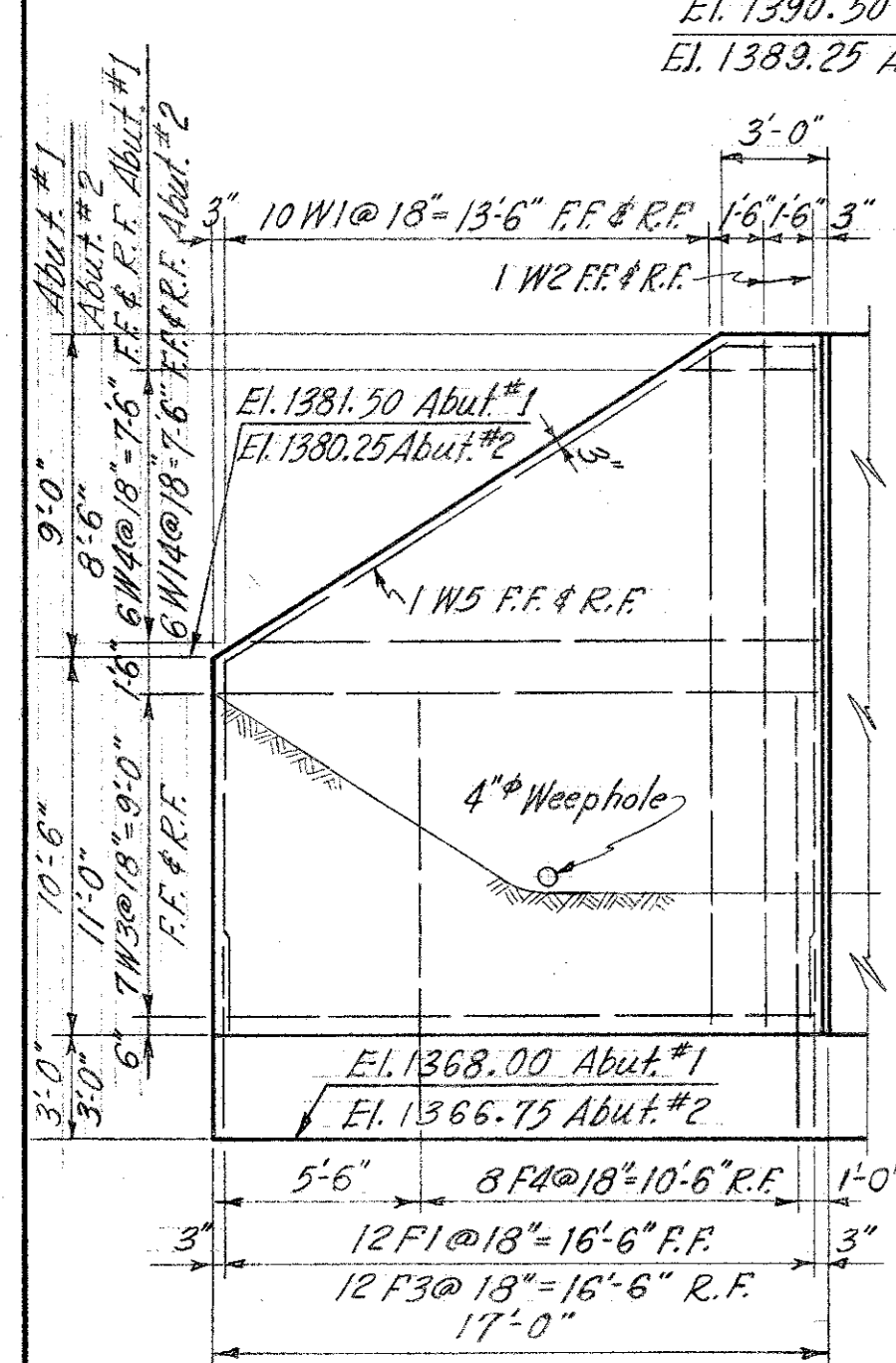
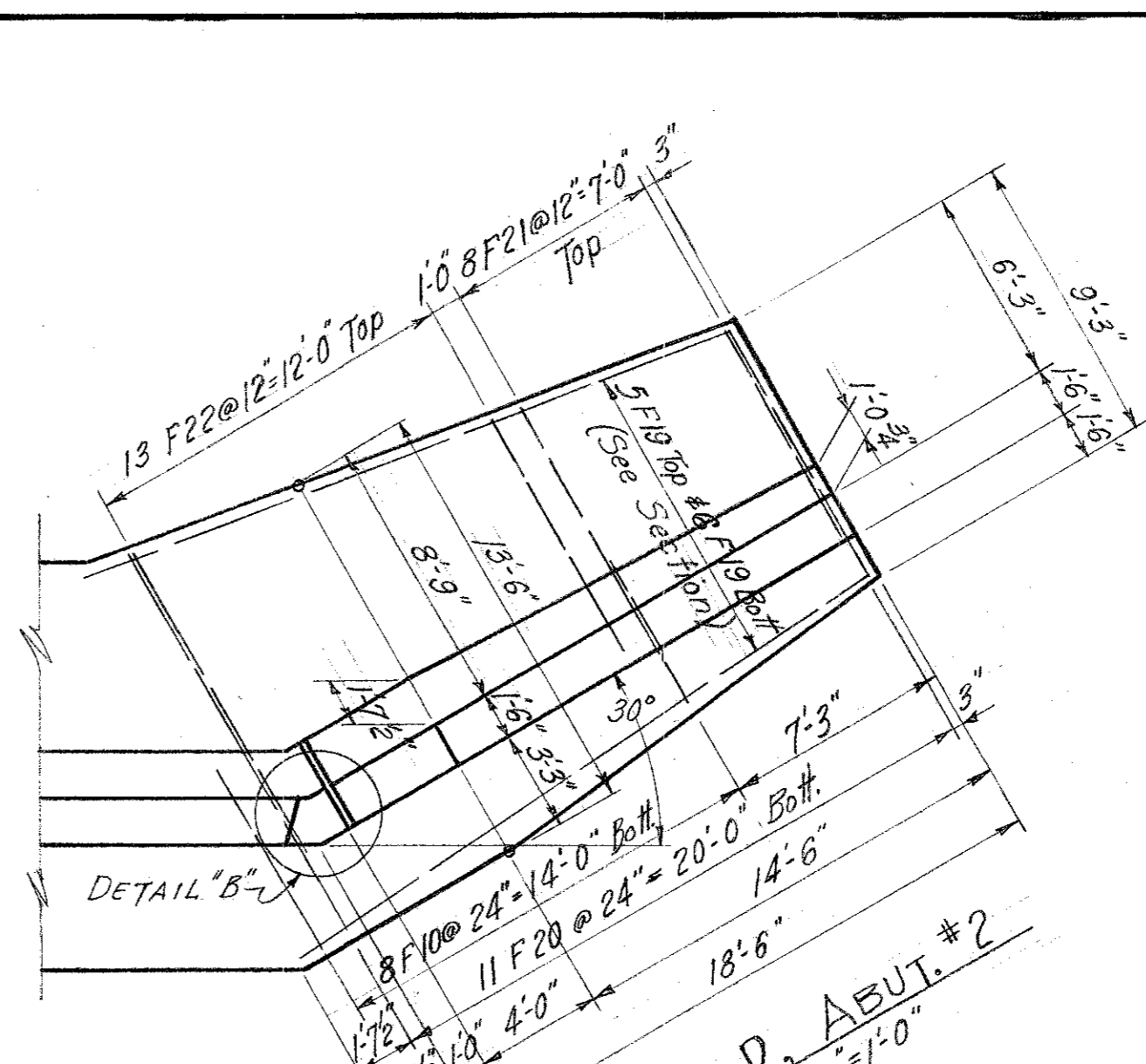
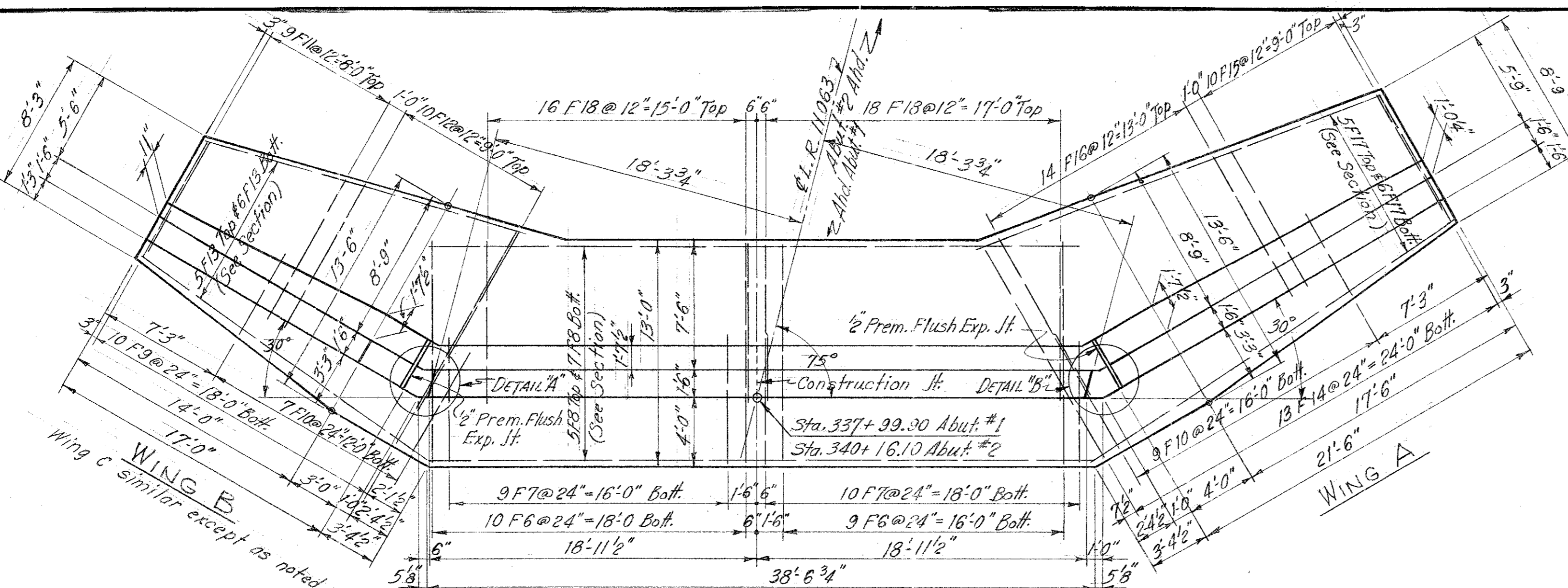
Commonwealth of Pennsylvania
Department of Highways
BRIDGE UNIT

CAMBRIA COUNTY
L.R. 11063-1 STATION 339+08
3 SPAN (70'-0", 70'-0", 70'-0") PRESTRESSED CONC. BRIDGE
SKEW 75° RH. Abd.

GENERAL PLAN

SCALE: AS NOTED
SHEET No. 1 OF 4 - S-1614-B, S-3361

S-3346



ABUTMENT BAR SCHEDULE					
MARK	NUMBER	SIZE	LENGTH	BENDING	
F1	56	54	4'-0"	Straight	
F2	28	28	9	8'-3"	
F3	27	25	9	7'-9"	
F4	18	18	7	13'-0"	
F5	26	26	6	10'-3"	
F6	19	19	8	12'-6"	Straight
F7	19	19	8	7'-3"	Straight
F8	12	12	5	39'-0"	Straight
F9	10	5	7'-6" to 14'-3"	Vary 1 each by 9" - Straight	
F10	16	15	7	6'-0"	Straight
F11	9	9	7'-3" to 8'-11"	Vary 1 each by 2 1/2" - Straight	
F12	10	10	9'-12" to 11'-0"	Vary 1 each by 2 1/2" - Straight	
F13	11	11	5	20'-3"	Straight
F14	13	5	8'-3" to 14'-3"	Vary 1 each by 6" - Straight	
F15	10	7	7'-6" to 8'-7 1/2"	Vary 1 each by 1 1/2" - Straight	
F16	14	9	3'-10 1/2" to 11'-6"	Vary 1 each by 1 1/2" - Straight	
F17	11	5	24'-6"	Straight	
F18	34	34	7	9'-0"	Straight
F19	11	5	21'-6"	Straight	
F20	11	5	8'-7" to 14'-0"	Vary 1 each by 6 1/2" - Straight	
F21	8	7	7'-9" to 8'-11"	Vary 1 each by 2" - Straight	
F22	13	9	9'-9" to 11'-9"	Vary 1 each by 2" - Straight	
W1	20	20	5	10'-3" to 13'-3"	Vary 2 each by 12" - Straight
W2	10	4	5	13'-3"	Straight
W3	14	14	5	16'-6"	Straight
W4	12	5	3'-6" to 15'-7"	Vary 2 each by 2 1/2" - Straight	
W5	2	2	7	19'-0"	
W6	24	5	12'-3" to 18'-8"	Vary 2 each by 7'-0" - Straight	
W7	16	5	21'-0"	Straight	
W8	8	5	8'-6" to 19'-6"	Vary 2 each by 3'-8" - Straight	
W9	2	7	22'-3"		
W10	10	5	12'-6" to 19'-3"	Vary 2 each by 9" - Straight	
W11	2	7	19'-6"		
W12	18	5	18'-0"	Straight	
W13	6	5	8'-6" to 15'-0"	Vary 2 each by 3'-3" - Straight	
W14	12	5	3'-6" to 16'-0"	Vary 2 each by 2'-6" - Straight	
A1	57	57	5	16'-0"	Straight
A2	22	22	5	21'-3"	Straight
A3	22	22	5	19'-0"	Straight
A4	2	2	7	22'-0"	Straight
A5	2	2	7	19'-0"	Straight
A6	26	26	4	4'-0"	
A7	22	22	4	4'-0"	
A8	6	6	4	3'-2"	
A9	3	3	4	3'-2"	
A10	3	3	4	3'-7"	
A11	8	8	5	5'-3"	Straight

Commonwealth of Pennsylvania
 Department of Highways
 BRIDGE UNIT
 CAMBRIA COUNTY

L.R. 11063-1 STATION 339+08
 3-SPAN (70+70+70) PRESTRESSED CONCRETE BRIDGE
 SKEW 75° R.H. Abd.

ABUTMENTS #1 & #2

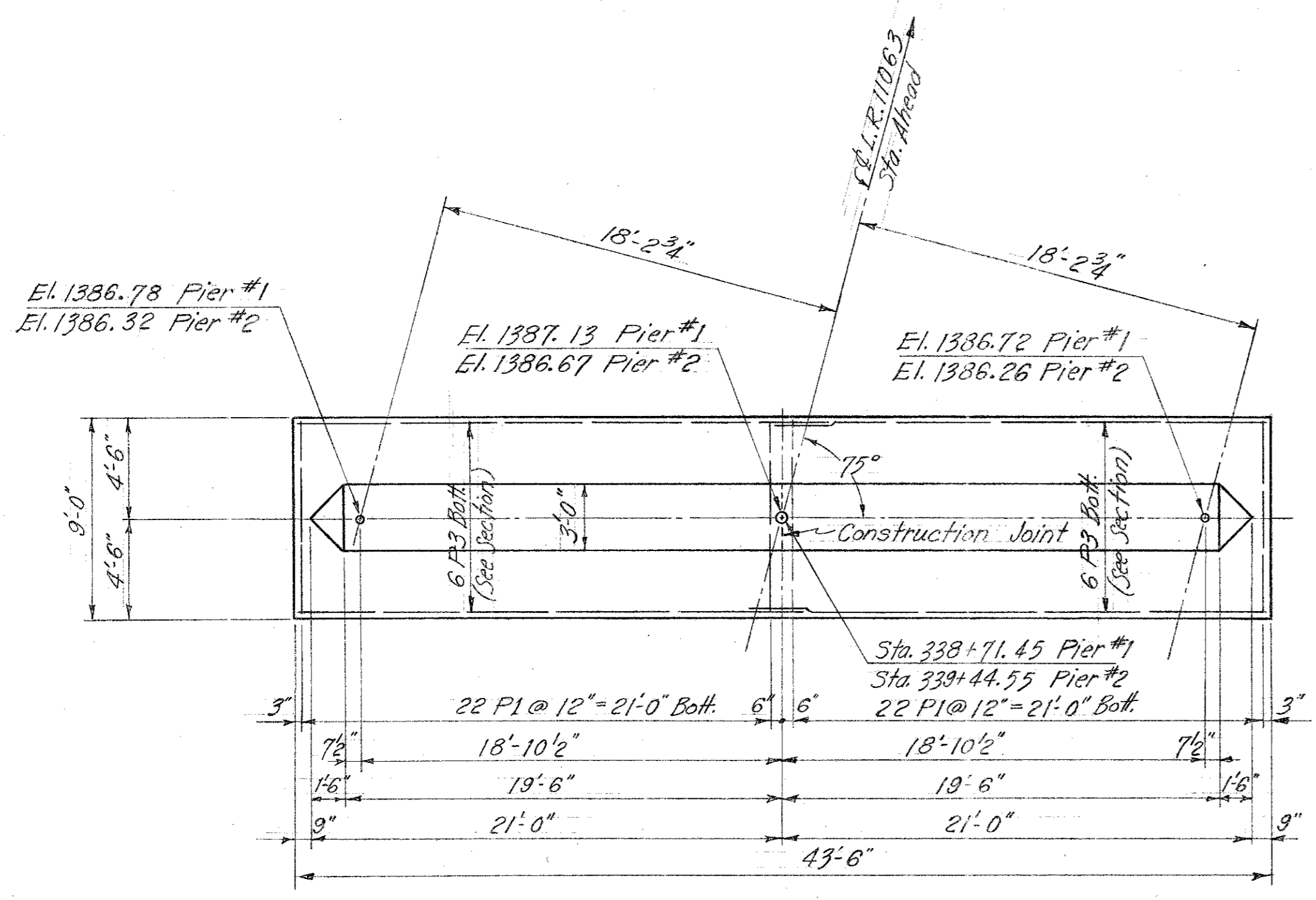
DESIGNED (HPK)
 DRAWN (HPK)
 CHECKED (GSM) 5-8-59

NOTE: Keys of Const. Joints shall be carried up to a line one foot below top of wall. From that line butt joints shall be extended to top of wall. Reinf. shall extend thru joint.

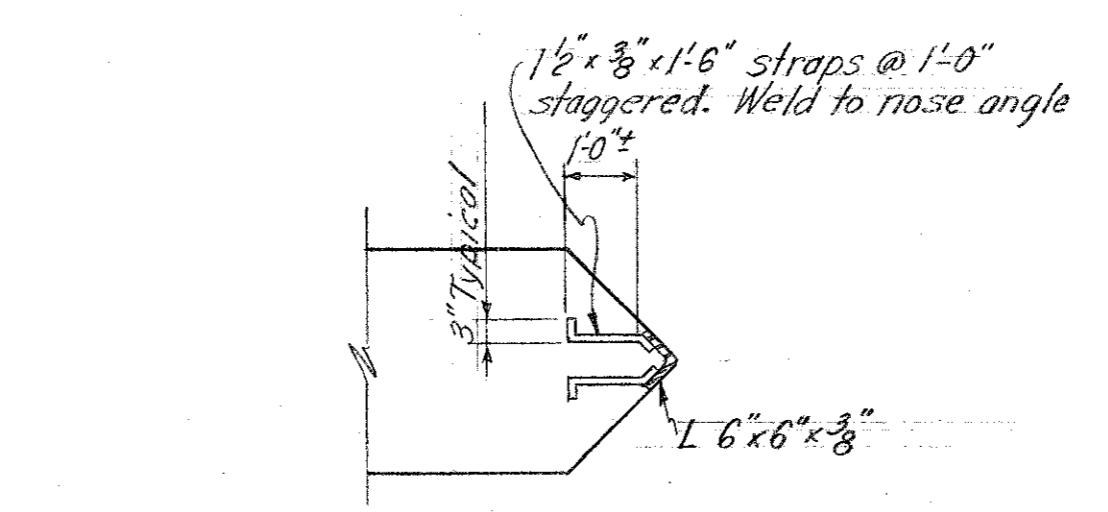
APPROVED APR 28 1959
 BRIDGE ENGINEER

SCALE: AS NOTED
 SHEET 2 OF 4

S-3346

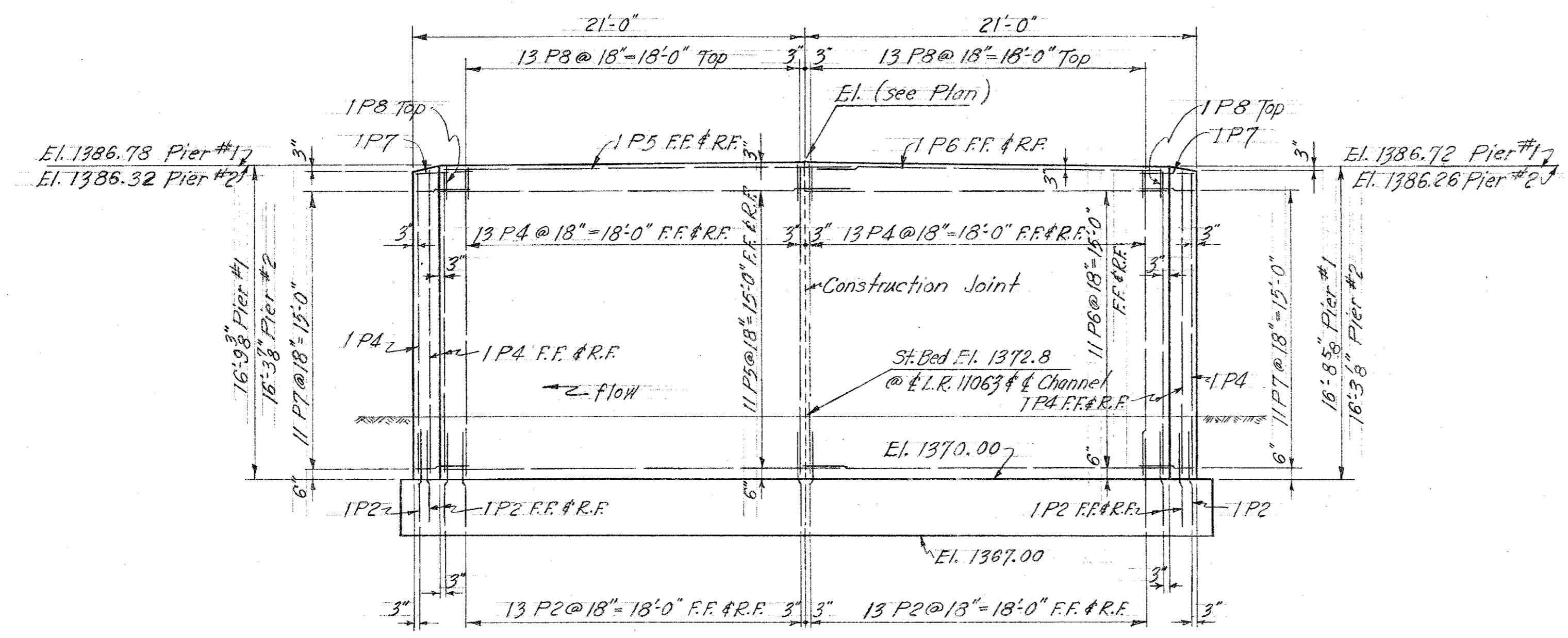


PLAN PIER #1
Pier #2 Similar except as noted.
Scale: 3/16" = 1'-0"

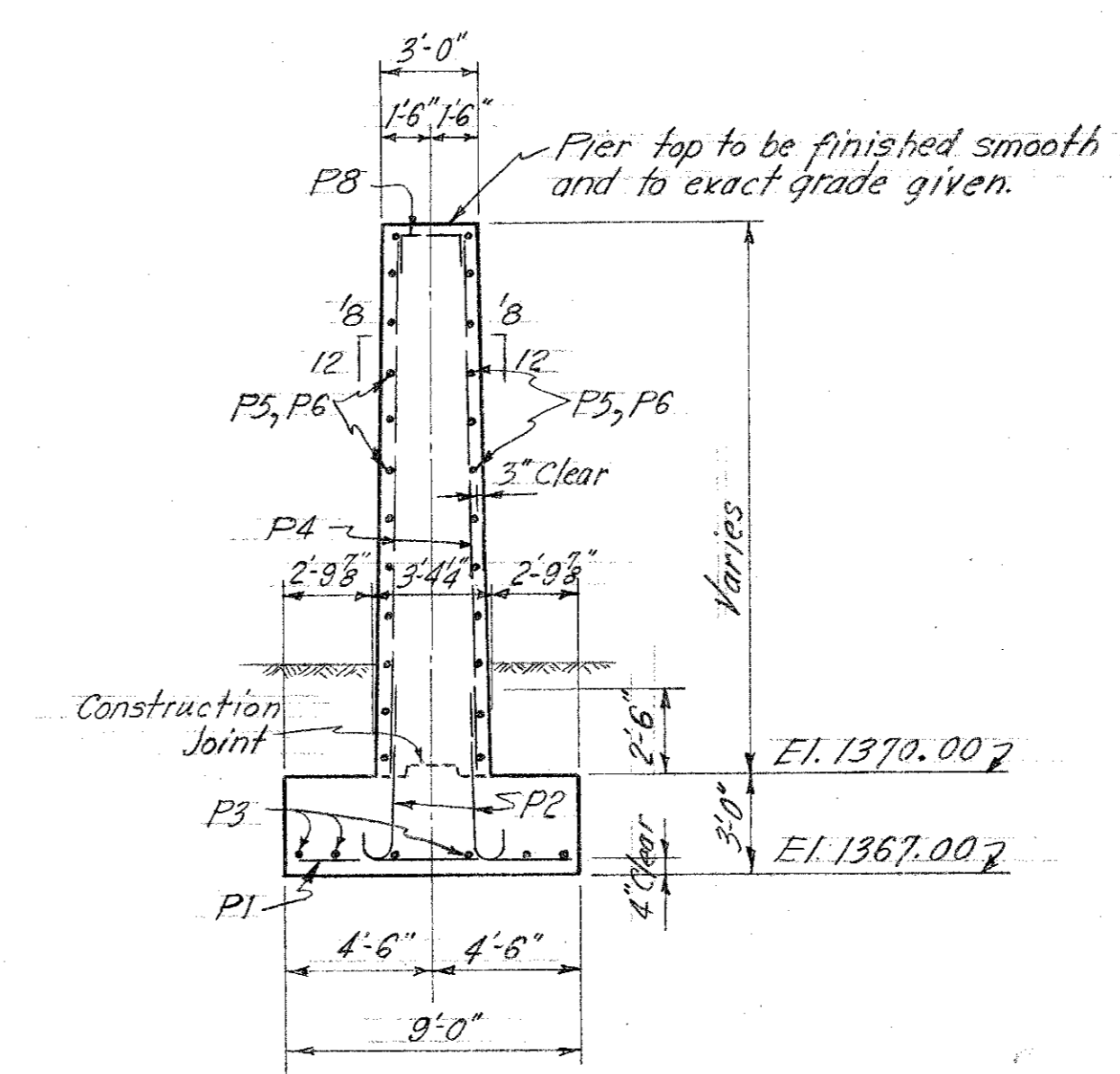


PIER NOSE DETAIL
NOTE: Place angle on upstream end of Piers only.
Scale: 3/8" = 1'-0"

PIER BAR SCHEDULE					
MARK	No		SIZE	LENGTH	BENDING
	PIER #1	PIER #2			
P1	44	44	6	8'-6"	Straight
P2	62	62	5	5'-9"	
P3	12	12	5	22'-6"	Straight
P4	62	62	5	15'-10"	Straight
P5	24	24	5	21'-6"	Straight
P6	24	24	5	13'-0"	Straight
P7	24	24	4	7'-6"	
P8	28	28	4	6'-6"	



ELEVATION PIER #1
Pier #2 Similar except as noted.
Scale: 3/16" = 1'-0"



TYPICAL SECTION
Scale: 3/16" = 1'-0"

NOTES:
For Core Borings see Sheet #5
For Construction Joint Detail see Sheet #2
Max. Foundation Pressure 2.1 tons / sq ft

APPROVED APR 28 1958
BRIDGE ENGINEER *St. H. Jensen*

Commonwealth of Pennsylvania
Department of Highways
BRIDGE UNIT
CAMBRIA COUNTY

L.R. 11063-1 STATION 339+08
3 SPAN (70'-0" + 70'-0" + 70'-0") PRESTRESSED CONJ. BRIDGE
SKEW 75° R.H. Abd.

PIERS #1 & #2

SCALE: AS NOTED
SHEET 3 OF 4

DESIGNED SAS
DRAWN HPK
TRACED ESH (4-30-58)
CHECKED

S-3346

HOLE NO. 1 1382.1 TOP OF GROUND...

HOLE NO. 3 1382.2 TOP OF GROUND...

HOLE NO. 5 1383.1 TOP OF GROUND...

HOLE NO. 6 - WATER BORING 1372.5 TOP OF GROUND...

HOLE NO. 8 - WATER BORING 1376.4 TOP OF GROUND...

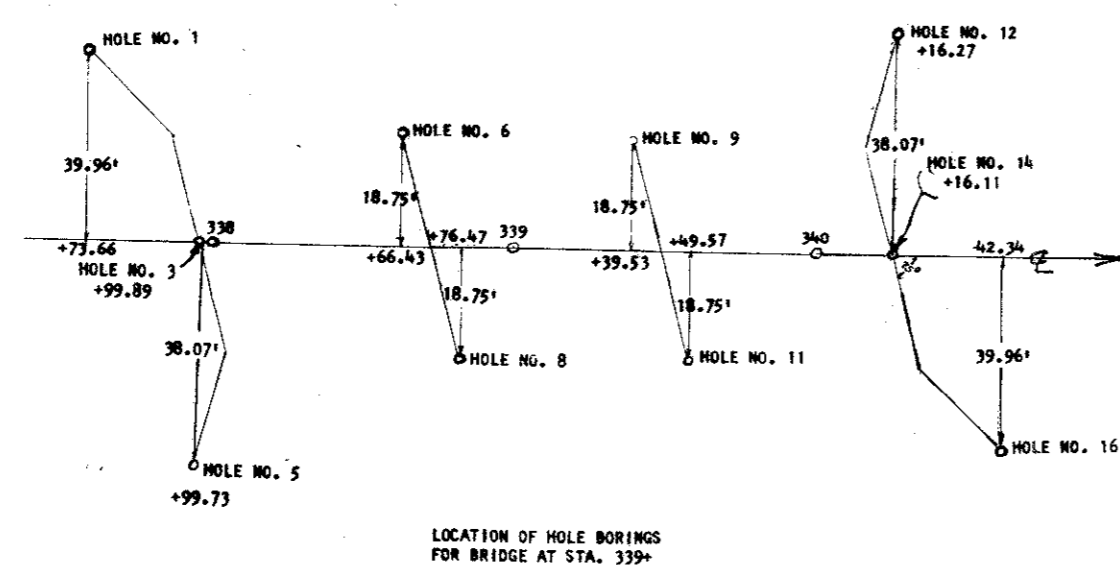
HOLE NO. 9 1379.9 TOP OF GROUND...

HOLE NO. 11 1382.1 TOP OF GROUND...

HOLE NO. 12 1379.5 TOP OF GROUND...

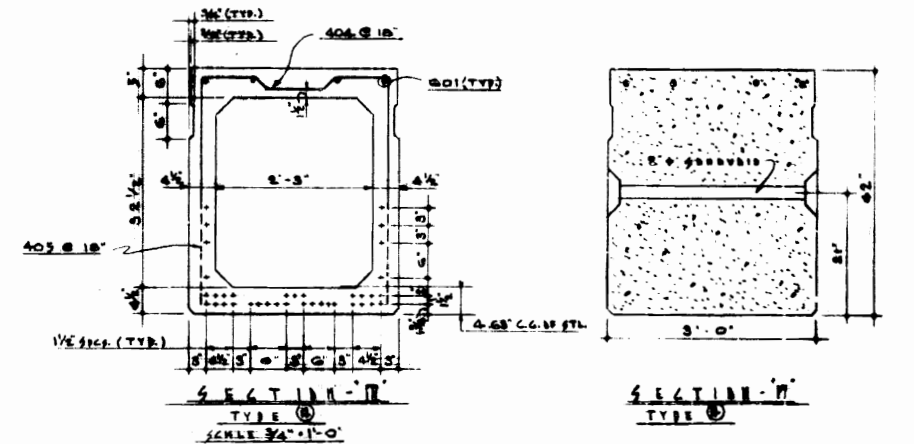
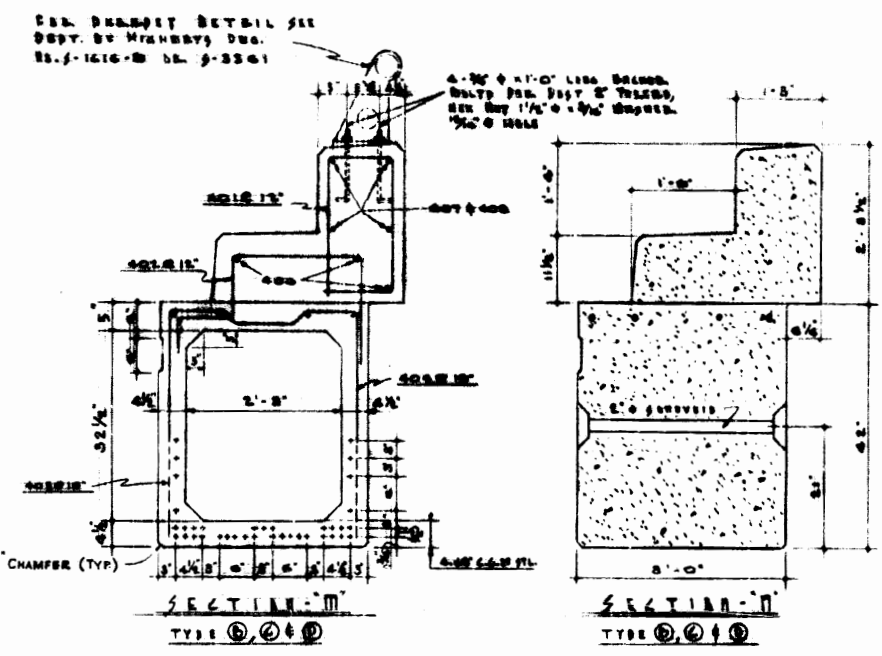
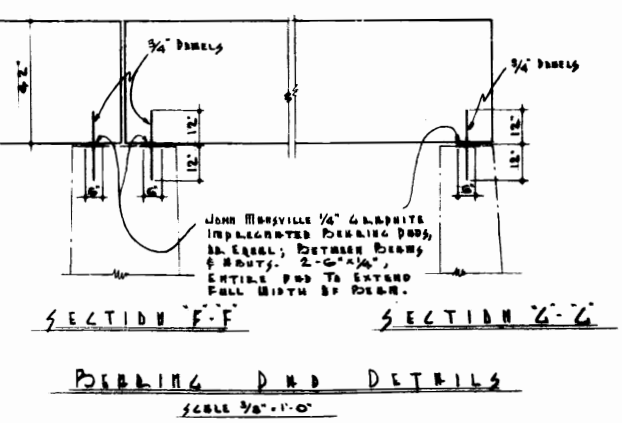
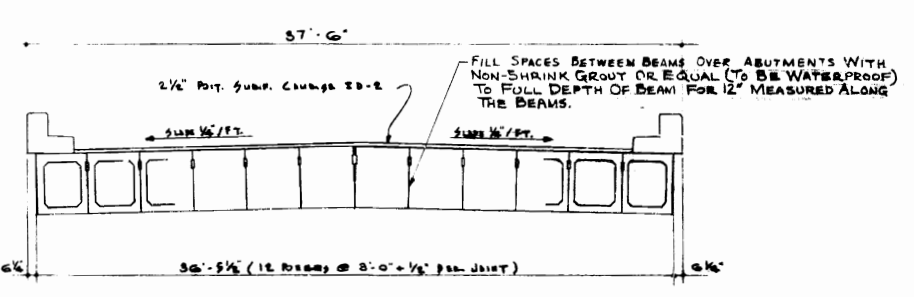
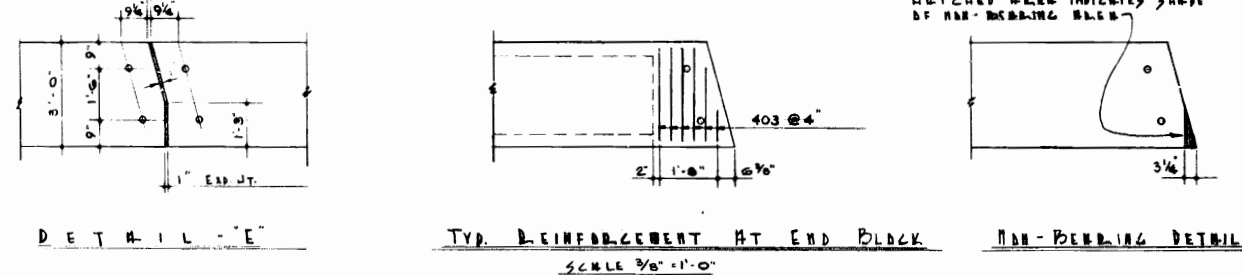
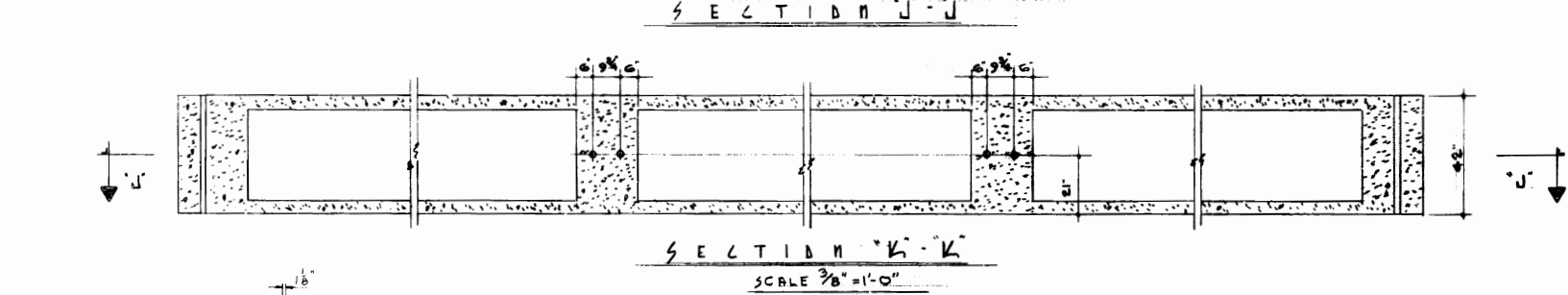
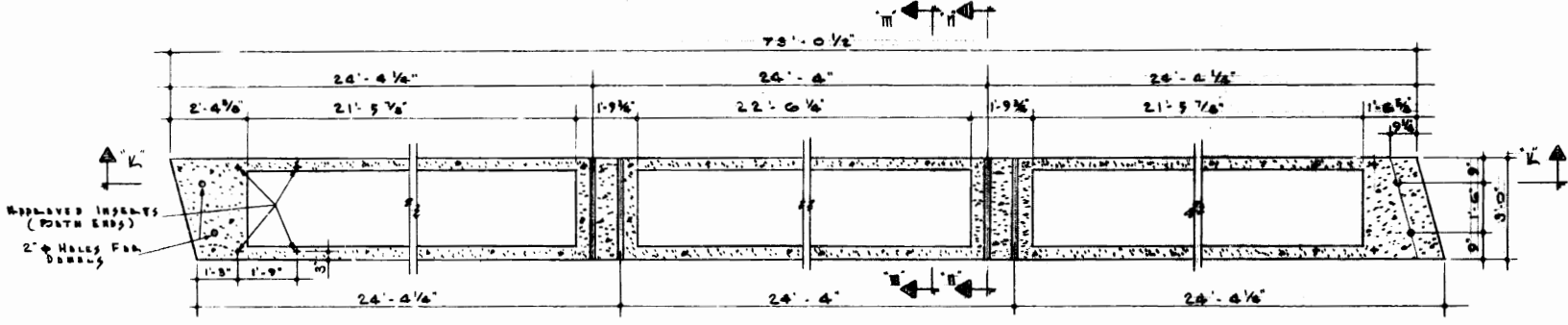
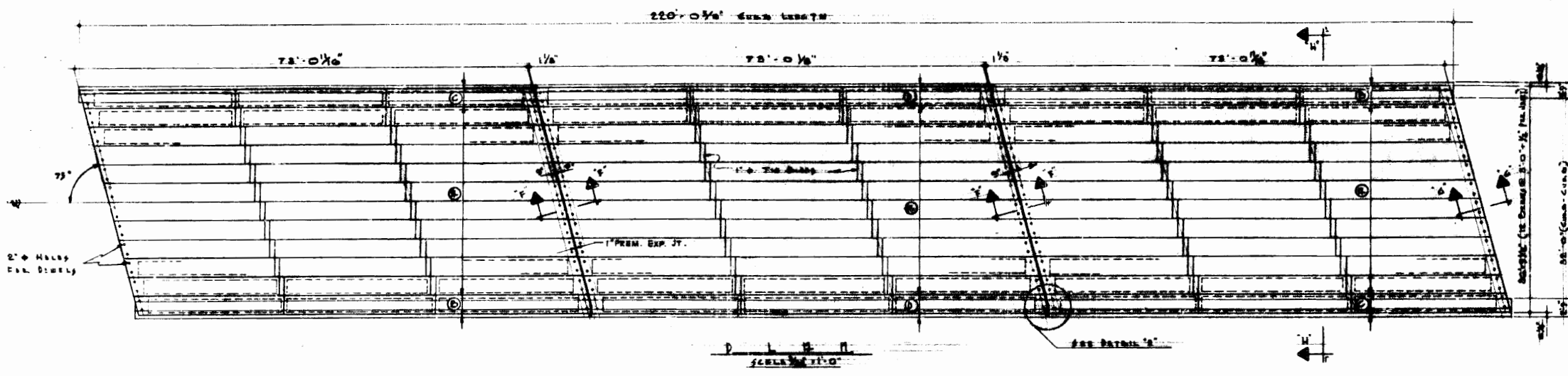
HOLE NO. 14 1378.3 TOP OF GROUND...

HOLE NO. 16 1378.5 TOP OF GROUND...



GENERAL NOTES: GWL - WATER LEVEL, FIRST LEFT COLUMN - ELEVATIONS IN FEET, SECOND LEFT COLUMN - BLOW PER FOOT ON 4" CASING...

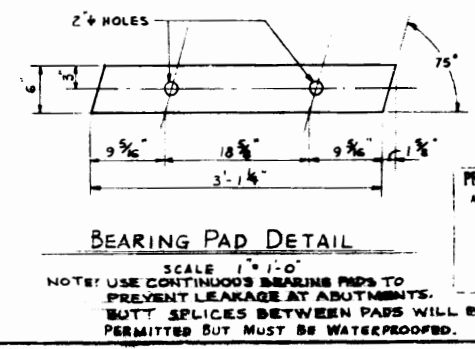
TEST BORINGS PENNA. DEPT. OF HIGHWAYS DISTRICT-9 L.R. 11063, SEC. 1 CAMBRIA COUNTY BRIDGE AT STA. 339+ EQUIPMENT & SUPPLIES, INC. PILE DRIVING & DRILLING CONTRACTORS SHEET 4 OF 4 SCALE 1" = 10' JUNE 2, 1958



BEAM NO.	401	402	403	404	405	406	407	408	409
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4
NO. BARS	432	450	432	1092	1050	30	66	8	166
LENGTH	5'-8"	7'-0"	6'-10"	6'-0"	9'-4"	37'-0"	26'-0"	23'-7"	23'-7"
DIAGRAM						STRAIGHT BAR			

16. All Materials & Workmanship Shall be in accordance with R.B.M. Form 408-54 and Section G.24 Supplement for Prestressed Concrete Bridge Superstructure Dated 1-10-58.

- GENERAL NOTES**
1. DESIGN LOAD: H-20 - 160 - 44
 2. DESIGN SPAN: 70'-0"
 3. PRESTRESSED UPRYS 1/2" DIA HIGH TENSILE STEEL STRANDS REQUIRED: 37 STRANDS - AS 2.96 IN.²
 4. CONCRETE STRENGTH: 4000 PSI 28 DAYS
 5. INITIAL PRESTRESSING: 175,000 PSI
 6. BEAMS IN BRIDGE SHALL BE 1/2" DIA CONCRETE PIPES
 7. TENSILE BY EITHER FIBER - C
 8. MINIMUM CONCRETE STRENGTH: 2000 PSI
 9. MINIMUM TENSILE: < 150 PSI & TENSILE LOSS < 300 PSI ULTIMATE LOSS
 10. ALL CABLES TO HAVE 1/2" MIN. COVER.
 11. BETWEEN THE PRESTRESSING BEAMS SHALL BE 1/2" DIA HOLES 12" DEEP FROM THE BEAMS IN THE SPAN AND 12" DEEP FROM THE BEAMS IN THE ABUTMENTS UNDER THE SPAN. IN THE BEAMS, THE HOLES SHALL BE 1/2" DIA. THE HOLES SHALL BE PLACED IN THE HOLES, AND THE HOLES FILLED WITH GROUT.
 12. TEST ELEVATIONS & SLOPE TO BE VERIFIED IN FIELD DURING CASTING PERIOD.
 13. BEAMS TO BE BRIDGED IN FIELD.
 14. CONCRETE STRENGTH AT DELIVERY OF PRESTRESSING: 4000 PSI.
 15. MINIMUM ULTIMATE TENSILE STRENGTH OF STRANDS: 250,000 PSI.

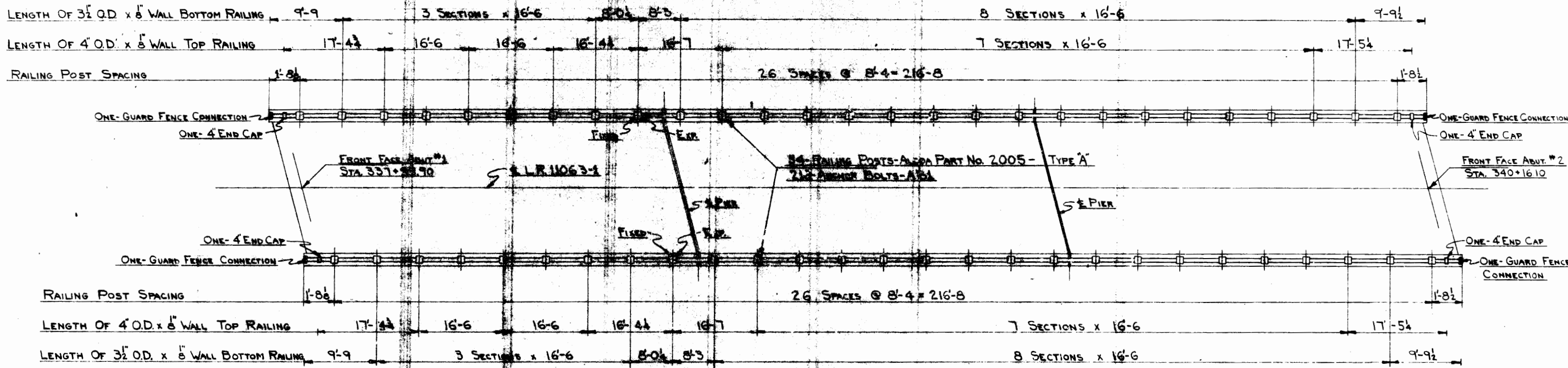


NEW ENTERPRISE STONE & LIME CO., INC.
PRESTRESSED CONCRETE DIVISION

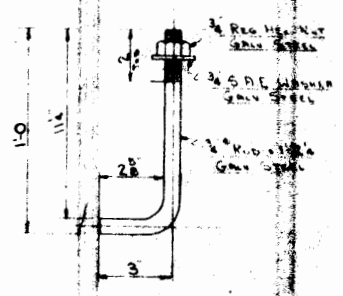
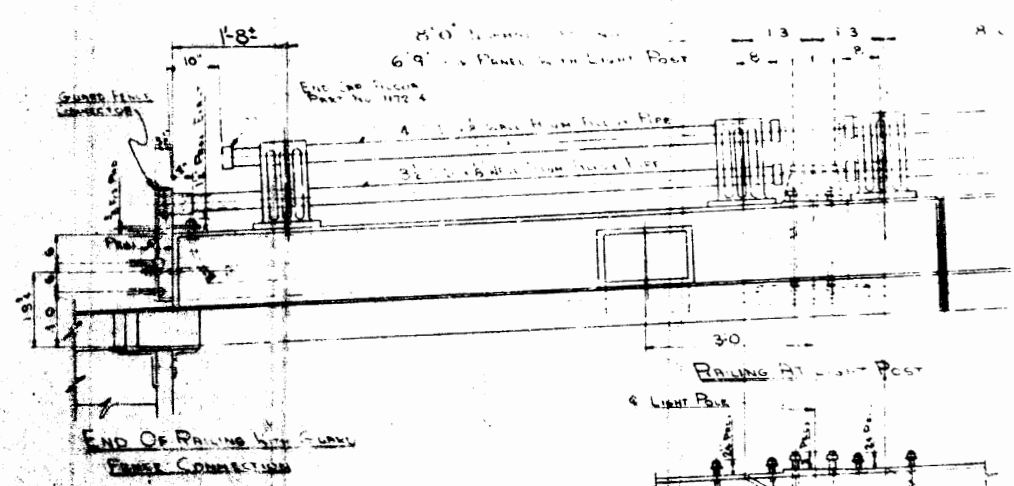
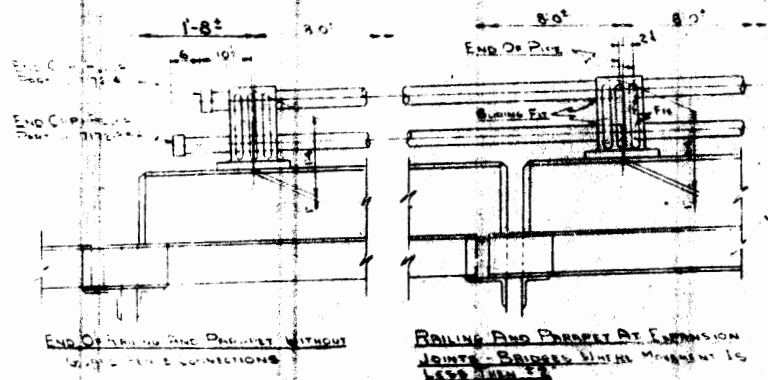
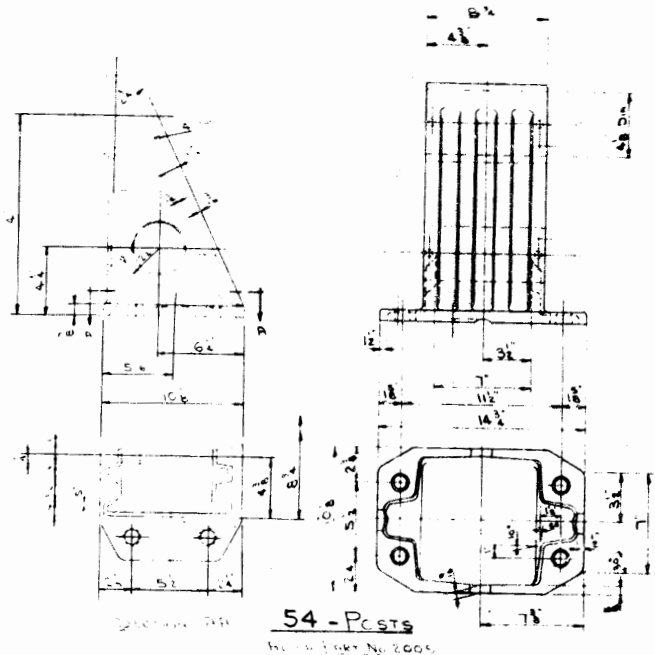
CLERK OF WORKS: JAMES M. ...
CONCRETE ENGINEER: ...

LISTE 11063 SECT. 1 ...
PRESTRESSED BRIDGE BEAMS
BYEL CLEARFIELD CREEK
STA. 339+08 3 SIGN 70'-0" TO 70'-0"

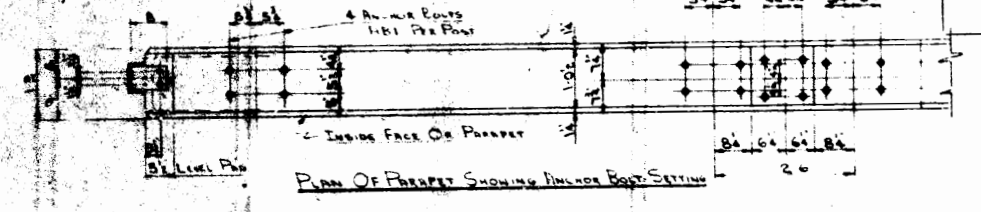
DATE: 5-8-71 DRAWN: ... SCALE: AS SHOWN
NOTE: 10/6/78 GREENBERG, R.A.K. SHEET 1871
REFERENCE: D.C. 5-3346 P-359



L.R. 11063-1 STA. 339+08



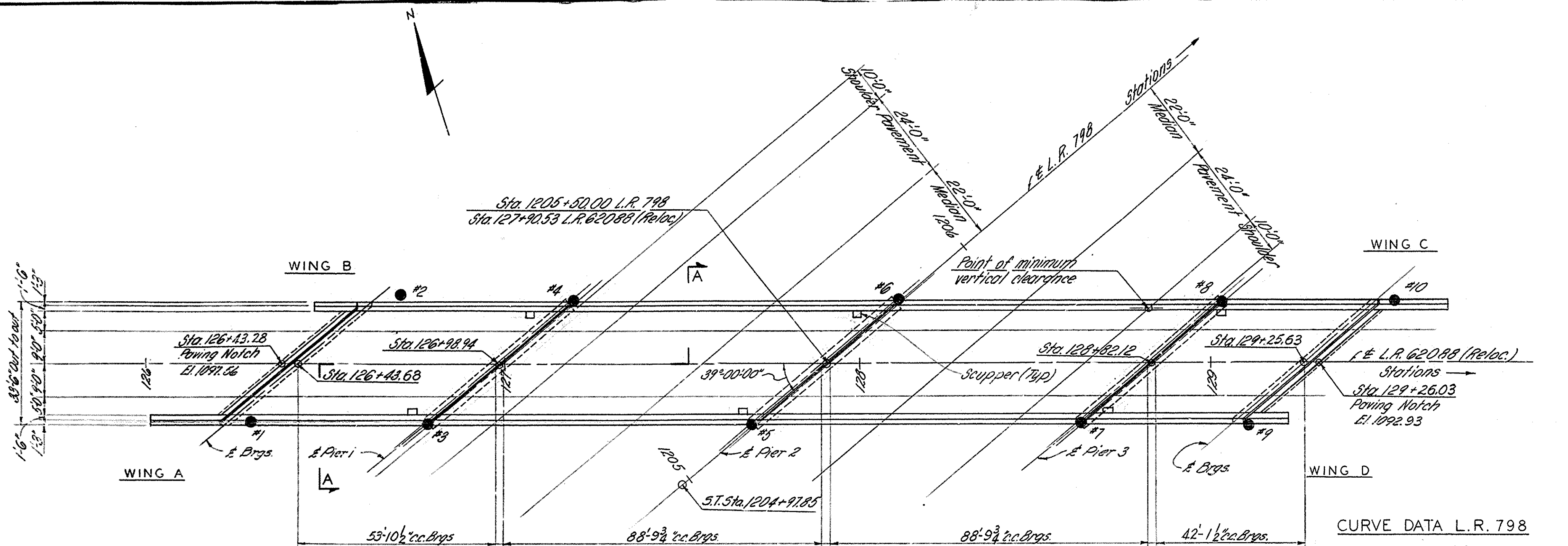
4-4 END CAPS-ALCON PART NO. 7173-4
4-GUARD FENCE CONNECTIONS



LENGTH OF RAILING THIS SHEET 434 LIN. FT.
GENERAL NOTES

1. GENERALLY TUBES SHALL BE TWO (2) PANELS LONG. JOINTS IN UPPER AND LOWER RAILS SHALL BE STAGGERED. JOINTS TO BE AT CENTERLINE OF POSTS WITH 2" CLEARANCE, EXCEPT AT EXPANSION JOINTS.
2. 1/2" HEADLESS SET SCREWS SHALL BE PROVIDED AT EACH POST FOR TOP AND BOTTOM RAILS TO PREVENT RATTLING.
3. ALL PARAPETS & RAILINGS ARE PARALLEL TO HORIZONTAL AND VERTICAL ALIGNMENT OF ADJACENT CURB.
4. ALL RAILING POSTS SHALL BE NORMAL TO GRADE. ALL RAILING POSTS AND LIGHT POLE BASES SHALL BE LEVEL.
5. FOR SPACING OF RAILING POSTS, REFER TO DETAIL DRAWINGS OF STRUCTURE INVOLVED OR RAILING ERECTION DIAGRAMS.
6. FOR LARGE SCALE DETAIL OF RAILING POST -- SEE SHEET 2, DWG. S-1614-B.
7. BASES SHALL BE CROUTED AFTER ERECTION AND ALIGNMENT TO SEAL OPENINGS BETWEEN BASE AND CONCRETE.
8. ANCHOR BOLTS FOR RAILING POSTS SHALL BE SET NORMAL TO GRADE.
9. GUARD FENCE CONNECTION ANCHOR BOLTS AND RAILING POST ANCHOR BOLTS SHALL BE GALVANIZED STEEL A.S.T.M. SPEC. A153.
10. RAILING TUBES, POSTS, SET SCREWS, AND GUARD FENCE CONNECTION SHALL BE ALUMINUM ALLOY.
11. RAILING TO CONSIST OF ALUMINUM ALLOY (6061-T6) HIGHWAY RAILING ROUND TUBE AND SHALL CONFORM TO A.S.T.M. SPEC. B235-50T, ALLOY 501A, CONDITION T6.
12. POSTS SHALL BE PENNA. HIGHWAY DEPT. S-1614-B, ALUMINUM ALLOY PERMANENT MOLD CASTINGS (356-T6) AND SHALL CONFORM TO A.S.T.M. SPEC. B108-50T, ALLOY 5070A, CONDITION T6.
13. GALV. STEEL WASHERS TO BE "TYP. GALV. A.S.T.M. SPEC. A153.
14. ALUMINUM ALLOY PLATE SH (061-T6) SHALL CONFORM TO A.S.T.M. SPEC. B209-51T, ALLOY C 1A, CONDITION T5.
15. CAULKING COMPOUND SHALL BE EITHER "ALUMILASTIC" AS MANUFACTURED BY PARR PAINT & COLOR CO. OF CLEVELAND, OHIO OR "PERMAGUM" AS MANUFACTURED BY THE PRESTITE ENGINEERING CO. OF ST. LOUIS, MISSOURI, OR APPROVED EQUAL.

PENNA. DEPT. OF HWYS. APPROVED AS TO DESIGN OCT 25 1958 ENGINEER OF BRIDGE	APPROVED:
	L. B. FOSTER CO. <small>ATLANTA - CHICAGO - HOUSTON - LOS ANGELES - NEW YORK - PITTSBURGH</small>
FOR NEW ENTERPRISE STONE & LIME CO. PENNSYLVANIA DEPT. OF HIGHWAYS PROJECT: L.R. 11063-1) CAMBRIA COUNTY ALUM. PARAPET RAILING. GEN. NOTES & DETAILS FOR L.R. 11063-1 STA. 339+08	
MADE P.L. DATE: 10-25-58 JOB NO: AL16358 ORDER NO: P21589 CHECK: JS DATE: 10-25-58 DRAWING: LB-2 CUSTOMER'S NO: P-331 (LAST)	REVISIONS



NOTES:

- 1 - Live Load: H 20-5/16-4.4
- 2 - Design: A.A.S.H.O. Standard Specifications for Highway Bridges (1953)
Earth pressure: 120 lbs./cu.ft. vertical; 35 lbs./cu.ft. fluid pressure horizontal
- 3 - Specifications: - Penna. Department of Highways Forms 408 (1954) and 409 (1949).
- 4 - All superstructure concrete shall be Class A. All abutment concrete shall be Class E except wingwall parapets which shall be Class A. All concrete in piers shall be Class A except footings which shall be Class B.
- 4a. Embankment shall be thoroughly compacted up to bottom elevation of Abutment before driving piles.
- 5 - All exposed concrete edges shall have a 1" x 1" chamfer unless noted.
- 6 - Reinforcement bars are designed for $f_s = 18,000$ psi & are detailed in accordance with A.C.I. recommendations.
- 7 - All reinforcement bars carrying design or temperature stresses shall be lapped at least 40 diameters where splicing is required.
- 8 - The bases of the structure may be ordered by the Engineer to be at any elevation or of any dimensions necessary to provide a proper foundation.
- 9 - Place two-coat painted waterproofing on top of footing heels and on rear face of abutment walls and wingwalls up to a line 1'-0" below top of finished grade.
- 10 - Fabricated structural steel shall be A.S.T.M. designation A7, current.
- 11 - Provide 2" Cover on reinforcement bars unless otherwise noted.
- 12 - H.P. - denotes Work Point.
- 13 - For parapet railing and guard fence connections see P.D.H. Std. Drawg S-1614-B and S-3361.
- 14 - Prestressed, Precast beams shall be designed in accordance with Pennsylvania Department of Highways Specifications Form 408 (1954) Supplement Section 6.24 (1953). Ultimate strength of strand equals 200,000 p.s.i.; initial prestress in strands equals 115,000 p.s.i.
- 15 - All piles shall be steel beam piles 10 BP 42.
- 16 - Piles shall be driven to refusal or to practical refusal as directed by the Engineer but, in no case, to a bearing value less than 72 tons for Test Piles and 60 tons for 10 BP 42.
- 17 - All dowels in Pier Cap shall be set in preformed holes. Drilling of holes for dowels in Pier Cap will not be permitted.
- 18 - All Parapet, Parapet Railing will be considered a part of the Bridge Superstructure.

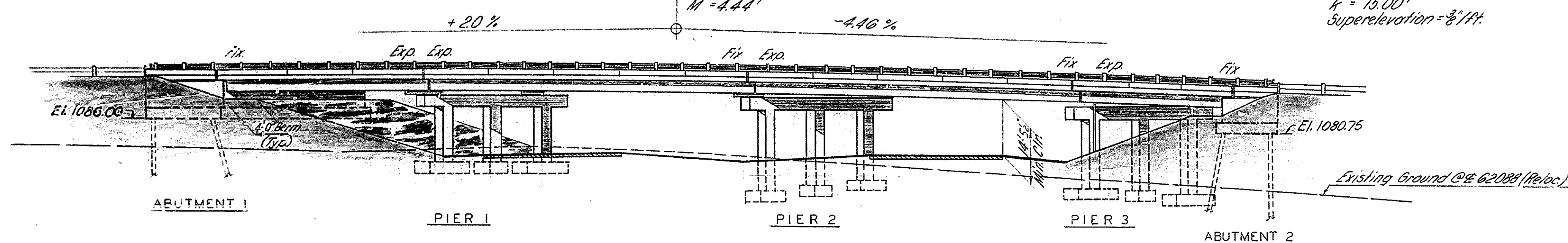
CURVE DATA L.R. 798

P.I. Sta. 1187+94.00
 $\Delta = 86^\circ 14' 16''$ Lt.
 $D = 2^\circ 00'$
 $R_c = 2864.93$
 $L_s = 150.00'$
 $B_s = 1^\circ 30'$
 $T_s = 2758.04'$
 $E_s = 1060.42'$
 $L_c = 4161.89'$
 $P = 0.33'$
 $k = 75.00'$
 Superelevation = $\frac{3}{11}$

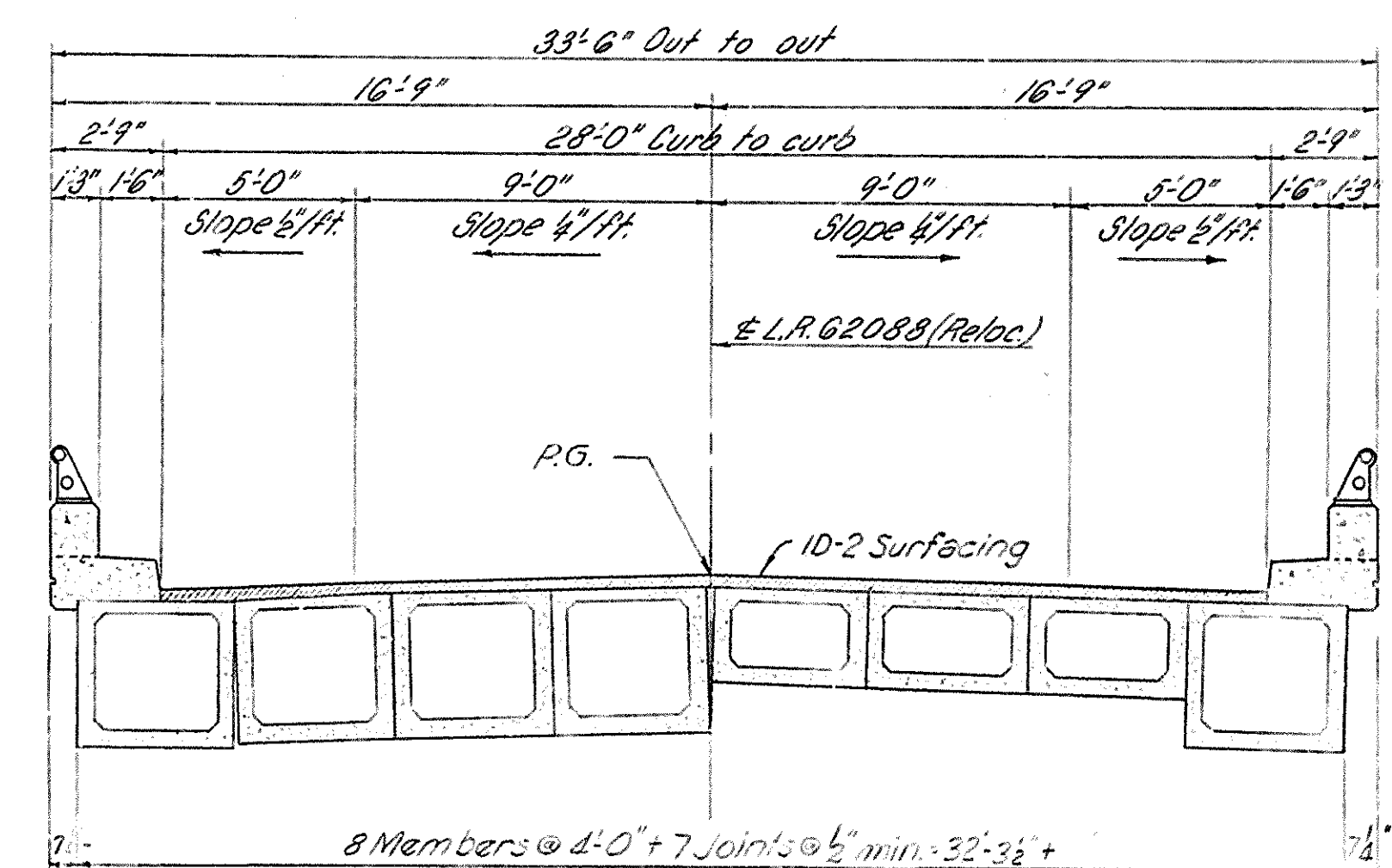
● - Indicates core boring location

PLAN
Scale 1" = 20'

P.K.I. Sta. 127+50.00
 El. 1101.36
 V.C. = 550'
 M = 4.44'



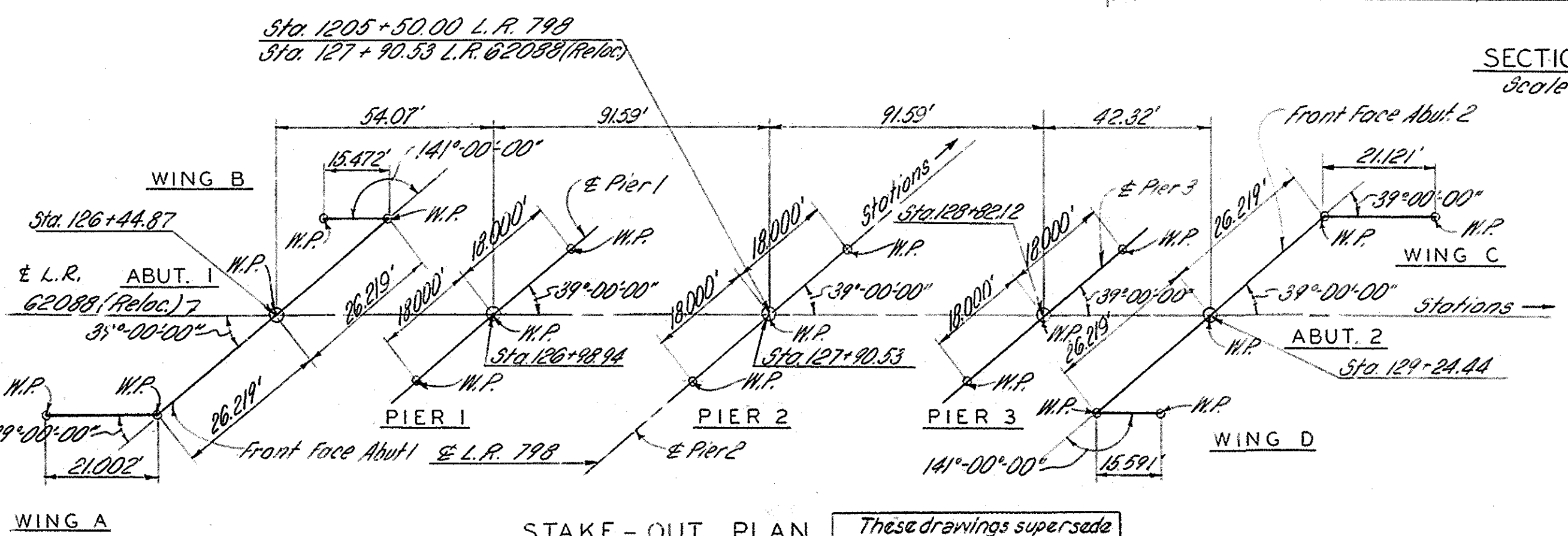
ELEVATION
Scale 1" = 20'



SECTION A-A
Scale 1/4" = 1'-0"

Item	QUANTITIES		Sq. Ft. Prestressed Precast Conc. Box Beam	Cu. Yds. Class B Concrete	Lbs. Reinforcement Bars	Lbs. Fabricated Structural Steel	Lin. Ft. Parapet Railing	Steel Beam Piles 10 BP 42		Each Guard Fence Connections	Sq. Yds. Bituminous Surface 10-2
	Cu. Yds. Class 3 Excavation	Cu. Yds. Class A Concrete						Test Piles	Lin. Ft.		
Abutment 1	—	4	—	104	5,530	—	27	1 @ 20'	300	2	—
Pier 1	98	46	—	25	13,840	—	—	—	—	—	—
Pier 2	89	49	—	18	17,440	—	—	—	—	—	—
Pier 3	74	53	—	25	15,310	—	—	—	—	—	—
Abutment 2	—	4	—	108	5,590	—	27	1 @ 32'	470	2	—
Superstructure	—	114	9,143	—	8,770	6,450	570	—	—	—	878
Totals	261	270	9,143	280	66,480	* 6,450	424	Lump Sum	770	4	878

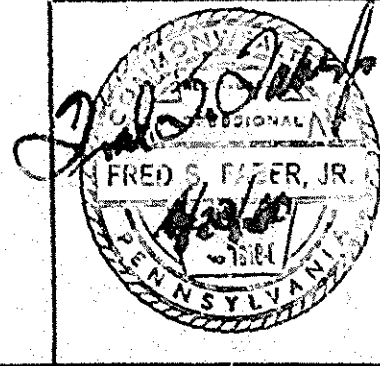
* Includes: 3720 Lbs. Malleable iron or Cast Steel
 2340 Lbs. Wrought iron



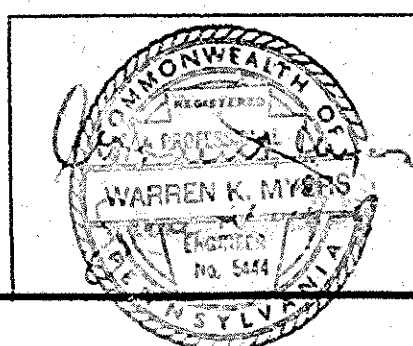
STAKE-OUT PLAN
Not to Scale

These drawings supersede S-3661 Approved June 16, 1959

DESIGNED F.S.F.
 DRAWN M.N.W.
 TRACED H.W.W.
 CHECKED E.R.L.



PRESTRESS ALTERNATE REVISIONS BY
MACOMBER & FABER
 CONSULTING ENGINEERS
 HARRISBURG, PENNA.

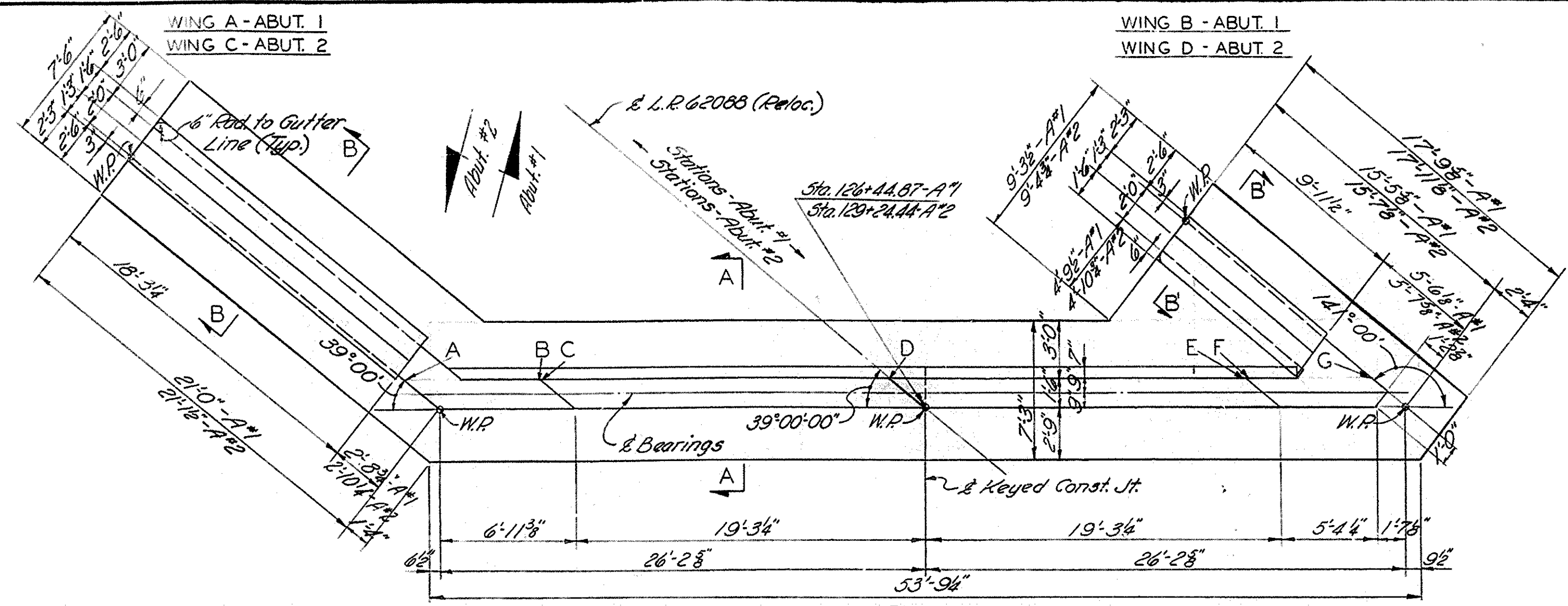


PREPARED BY
GROF & MYERS
 CONSULTING ENGINEERS
 HARRISBURG, PENNA.

APPROVED **JUN 13 1960**
 H. Jensen
 BRIDGE ENGINEER

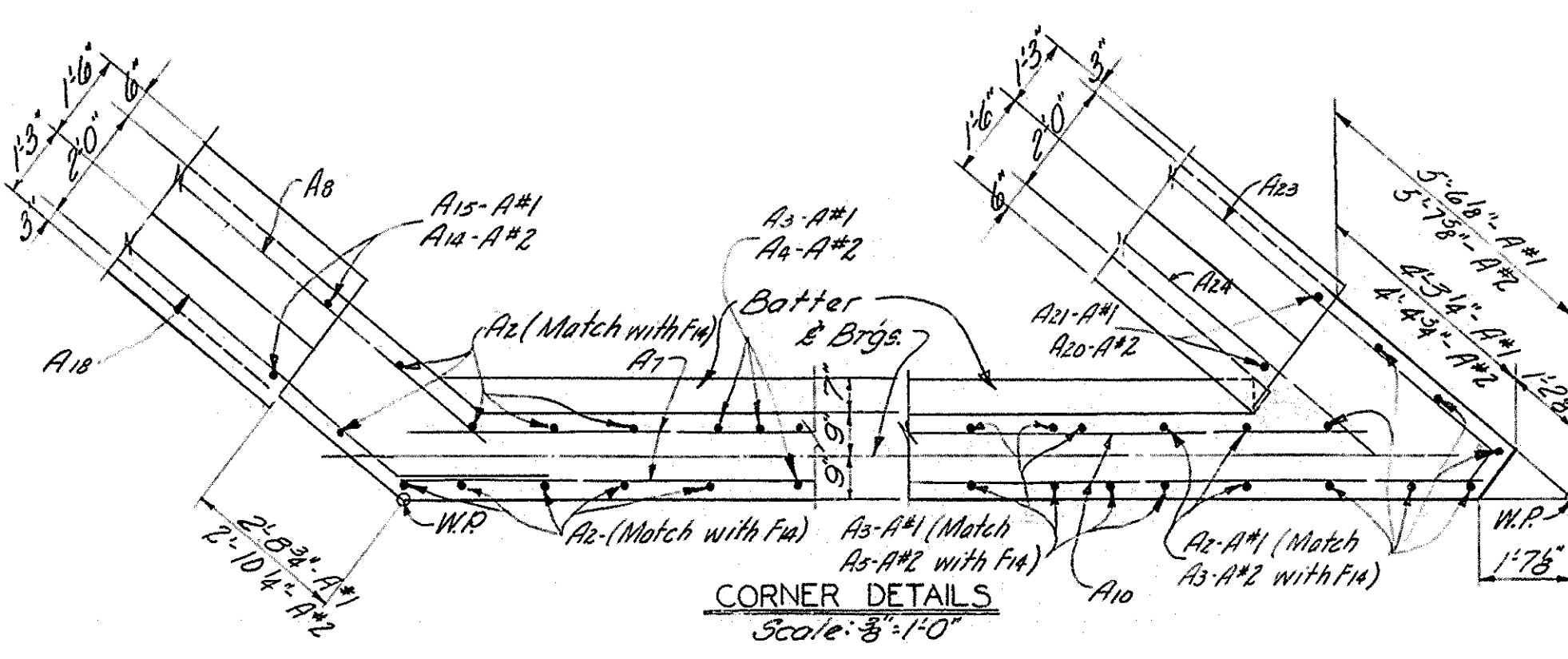
Commonwealth of Pennsylvania
 Department of Highways
 BRIDGE UNIT

WASHINGTON COUNTY
 L.R. 798 SECTION I
 L.R. 798 UNDER L.R. 62088 (RELOC)
 GENERAL PLAN
 STA. 1205+5000
 SCALE: AS NOTED
 SHEET 1 OF 8 + S-1614 B S-3361 S-3661 A

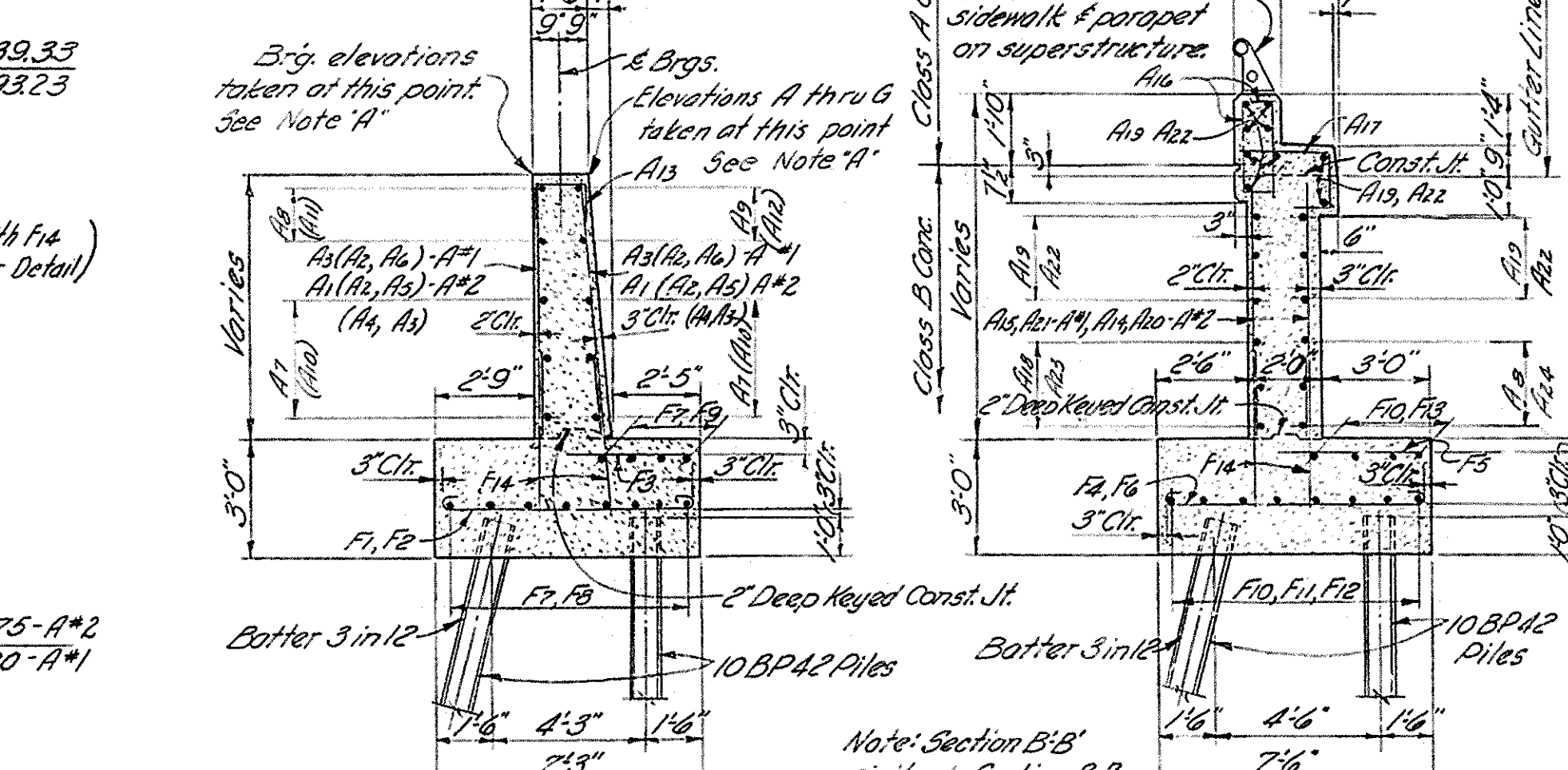
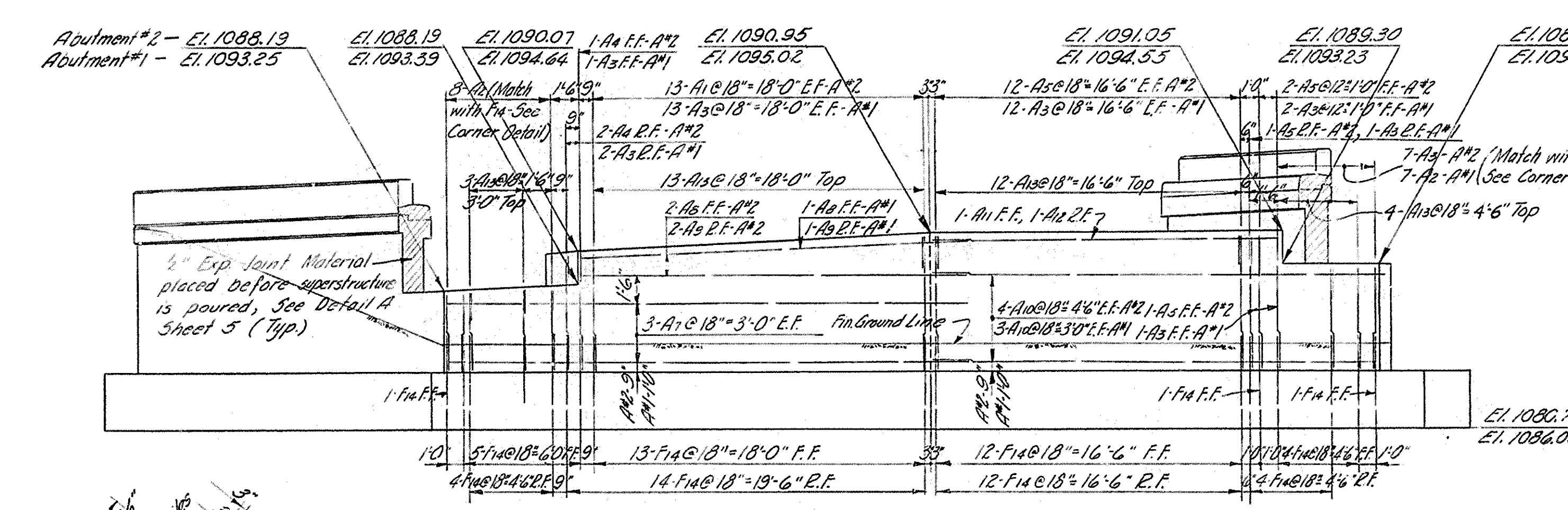


ELEVATION	A	B	C	D	E	F	G
ABUTMENT 1	1093.26	1093.40	1094.65	1095.03	1094.56	1093.24	1093.24
ABUTMENT 2	1088.12	1088.12	1090.00	1090.87	1090.99	1089.24	1089.28

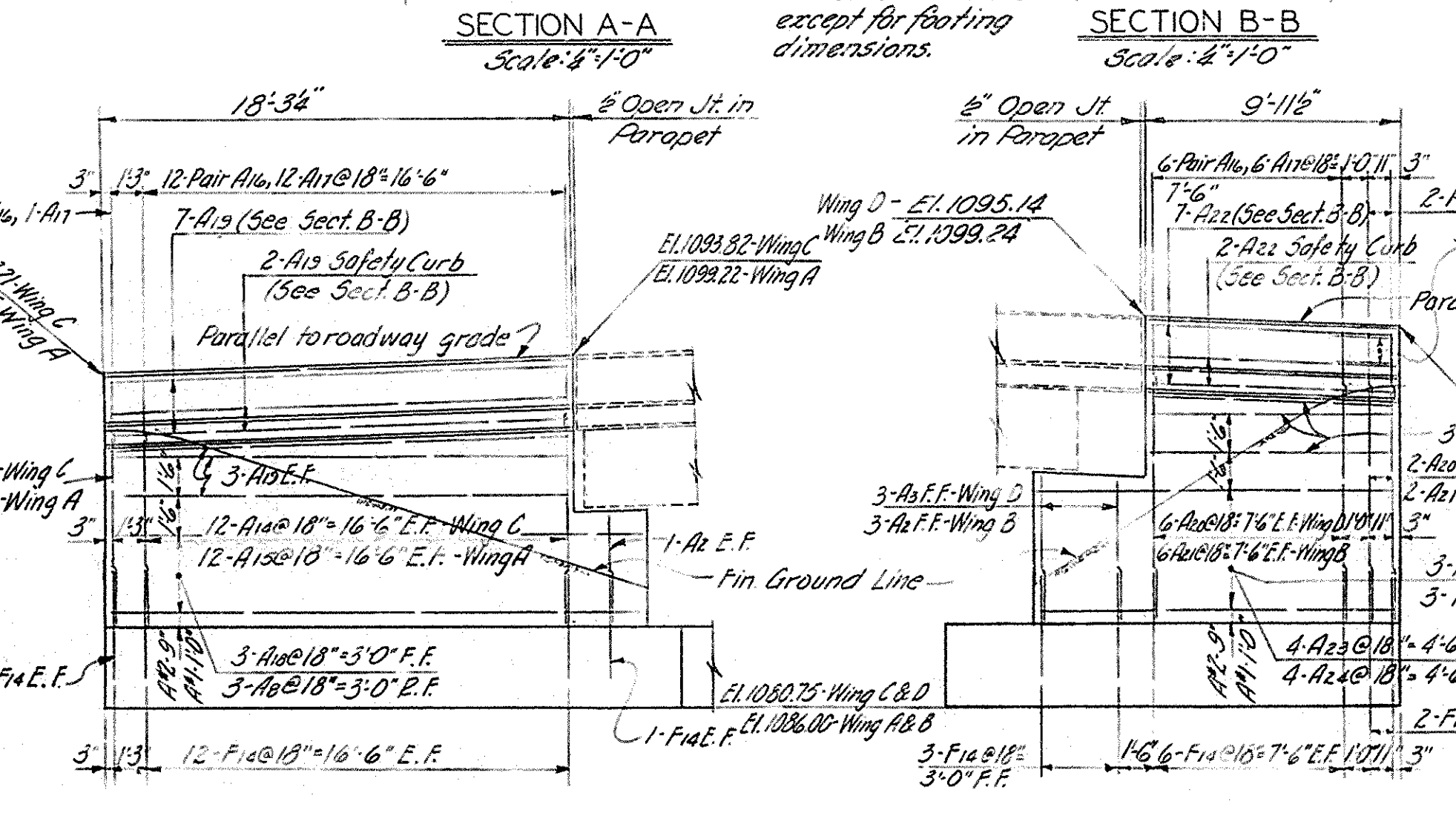
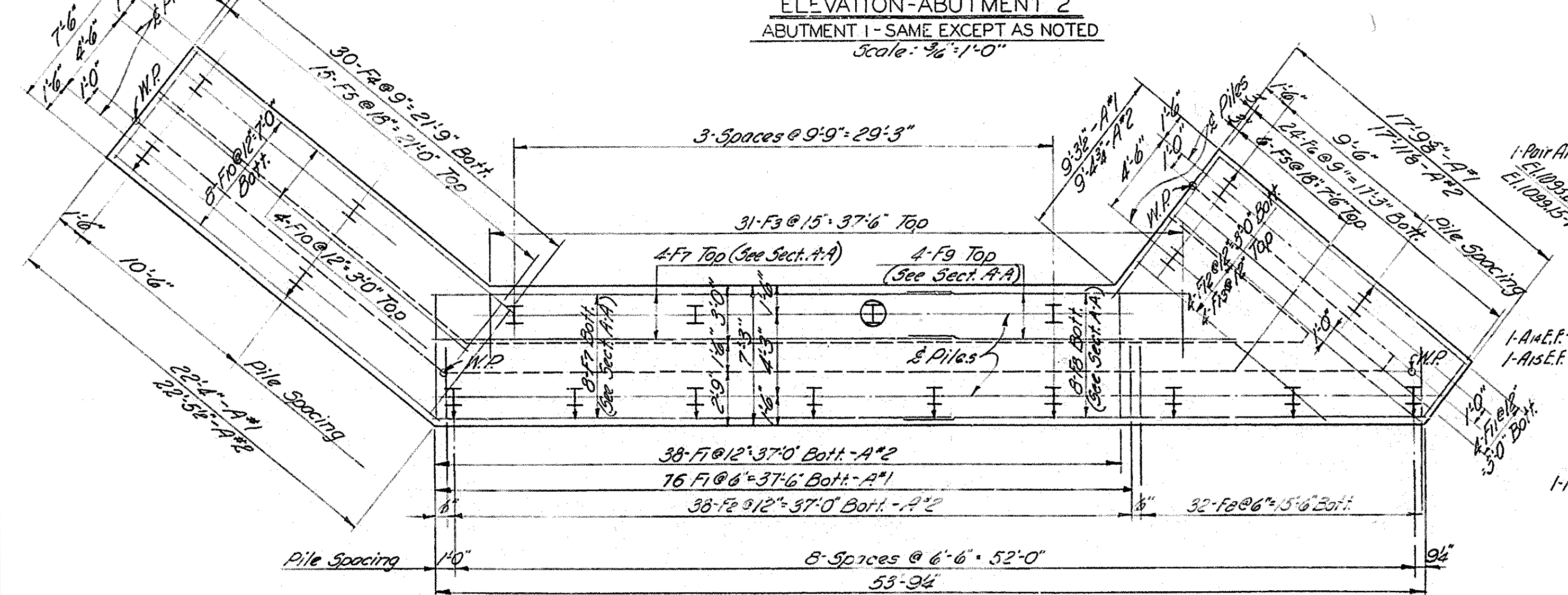
Note A - See note B sheet 5 for possible adjustment of bearing elevations due to beam camber.



BAR SCHEDULE										
NK	NUMBER		SIZE	LENGTH	TYPE	A	B	C	D	REMARKS
	A#1	A#2								
F1	76	38	5	8'-0"	1	7"	6'-10"	7"		
F2	38	70	5	4'-6"	1	7"	3'-11"			
F3	31	31	5	3'-6"	5tr					
F4	30	30	6	3'-3"	1	8"	6'-11"	3"		
F5	21	21	5	4'-0"	5tr					
F6	24	24	6	4'-9" to 10'-6"	1	8"	4'-7" to 9'-10"			vary 2 ea. by 3"
F7	12	12	5	28'-0"	5tr					
F8	8	8	5	15'-9" to 28'-0"	5tr					vary 2 ea. by 1'-9"
F9	4	4	5	18'-0"	5tr					
F10	12	12	5	22'-3"	5tr					
F11	4	4	5	17'-3"	5tr					
F12	4	4	5	13'-0" to 16'-9"	5tr					vary 2 ea. by 1'-5"
F13	4	4	5	8'-6"	5tr					
F14	118	118	5	4'-6"	5tr					
A1	-	26	5	6'-0" to 7'-0"	5tr					vary 2 ea. by 1"
A2	20	10	5	4'-0"	5tr					
A3	54	10	5	5'-4"	5tr					
A4	-	3	5	6'-0"	5tr					
A5	-	27	5	7'-0"	5tr					
A6	10	10	5	5'-0"	2-A 2'-0"	11	2'-0"	0		
A7	6	6	5	28'-0"	5tr					
A8	4	5	5	21'-3"	5tr					
A9	1	2	5	23'-0"	5tr					
A10	6	8	5	24'-3"	5tr					
A11	1	1	5	19'-0"	5tr					
A12	1	1	5	17'-3"	5tr					
A13	32	32	5	5'-3"	2-A 2'-1"	14"	2'-1"	0		
A14	-	26	5	7'-2"	5tr					
A15	26	-	5	8'-0"	5tr					
A16	42	42	5	3'-3"	2-A 11"	2'-4"	0	0		
A17	21	21	5	4'-7"	2-A 5'-4"	1'-3"	1'-0"	0		
A18	3	3	5	23'-0"	2-A 2'-3"	20'-9"	0	10		
A19	15	15	5	17'-9"	5tr					
A20	-	16	5	8'-9"	5tr					
A21	16	-	5	8'-0"	5tr					
A22	15	15	5	9'-6"	5tr					
A23	3	4	5	14'-6"	2-A 9"	13'-9"	0	0		
A24	3	4	5	12'-3"	5tr					



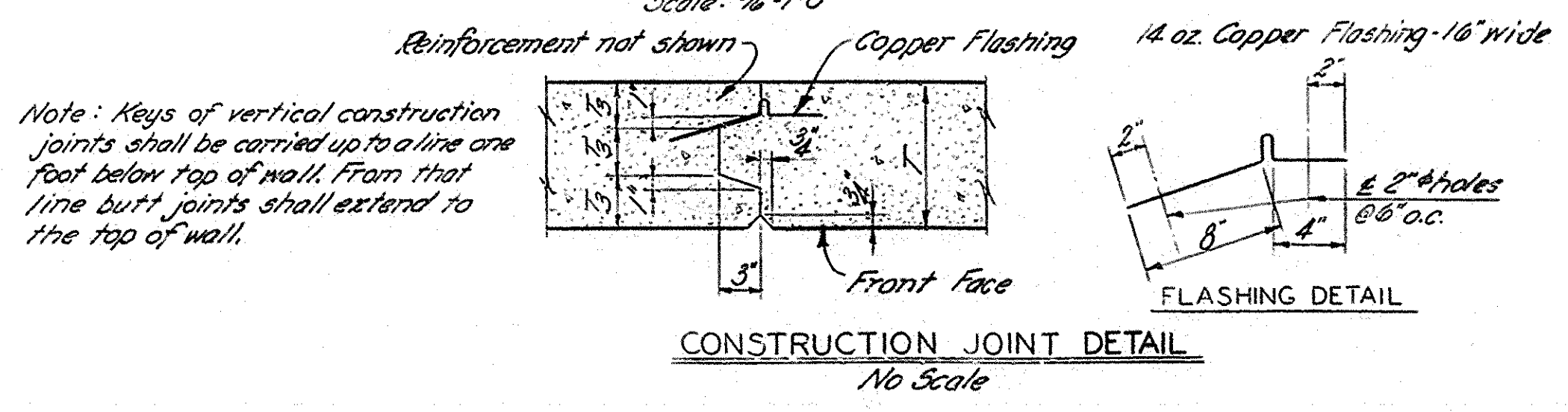
BAR TYPES										
A			C							
B			D							
TYPE I			TYPE 2-A							



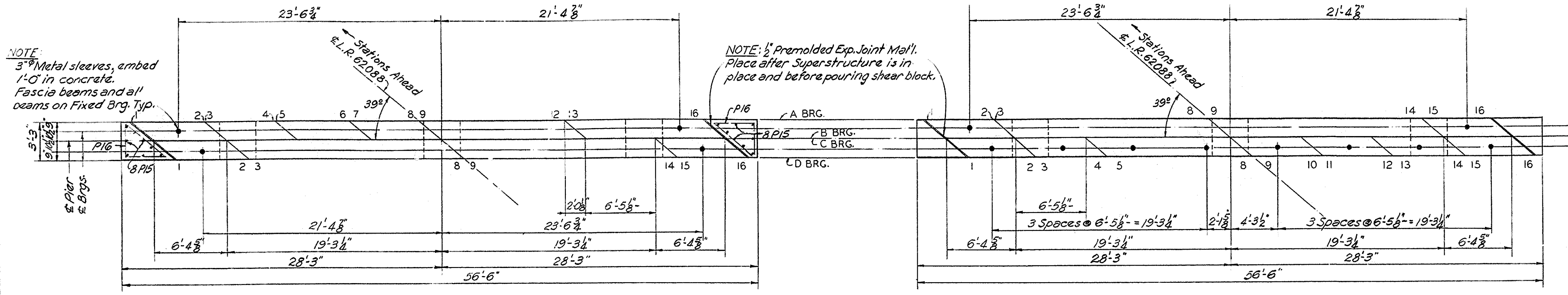
Approved: **JUN 13 1969**
S.H. Jensen
 Bridge Engineer

Commonwealth of Pennsylvania
 Department of Highways
 BRIDGE UNIT

WASHINGTON COUNTY
 LR 798 SECTION I
 LR 798 UNDER LR 62088 (RELOC)
 ABUTMENTS
 STA 1205 + 5000



- NOTES**
1. For General Notes & Stake-Out Plan see Sheet 1.
 2. Maximum design pile load = 32 1/2 Tons per pile.
 3. Maximum design foundation pressure = 1 1/4 Tons per sq. ft.
 4. For railing post spacing see sheet 5.
 5. Legend: E.F. denotes Each Face W.P. denotes Work Point
 R.F. denotes Rear Face A#1 denotes Abutment 1
 F.F. denotes Front face A#2 denotes Abutment 2
 ⚡ indicates battered pile and direction of 3 in 12 batter
 ⊕ indicates Test Pile
 7. Fill to be compacted to bottom of footing before driving of piles.



BAR SCHEDULE											
MK	NUMBER	PIER 1	PIER 3	SIZE	LENGTH	TYPE	A	B	C	D	REMARKS
F1	18	18	10	14'-0"	Str.						
F2	42	42	5	5'-6"	Str.						
F3	60	60	10	7'-0"	Str.						
P1	60		10	18'-0"	Str.						
P2		20	10	23'-9"	Str.						
P3		40	10	23'-0"	Str.						
P4	48	63	4	11'-6"	7	2'-9"	2'-9"	3			
P5	6	6	10	39'-3"	Str.						
P6	8	8	5	10'-6"	Str.						
P7	4	4	5	29'-2"	Str.						
P8	4	4	10	40'-0"	1	1'-5"	38'-7"				
P9	4	4	10	23'-3"	1	1'-5"	21'-10"				
P10	6	6	11	24'-1"	1	1'-7"	22'-6"				
P11	6	6	11	40'-0"	1	1'-7"	38'-5"				
P12	2	2	5	38'-2"	Str.						
P13	27	27	5	7'-3"	2	3'-0"	1'-3"	3'-0"	0		
P14	116	116	5	7'-9"	2	2'-5"	2'-11"	2'-5"	0		
P15	16	16	6	2'-0"	Str.						
P16	2	2	4	10'-9"	2	4'-3"	3'-9"	2'-9"	15		

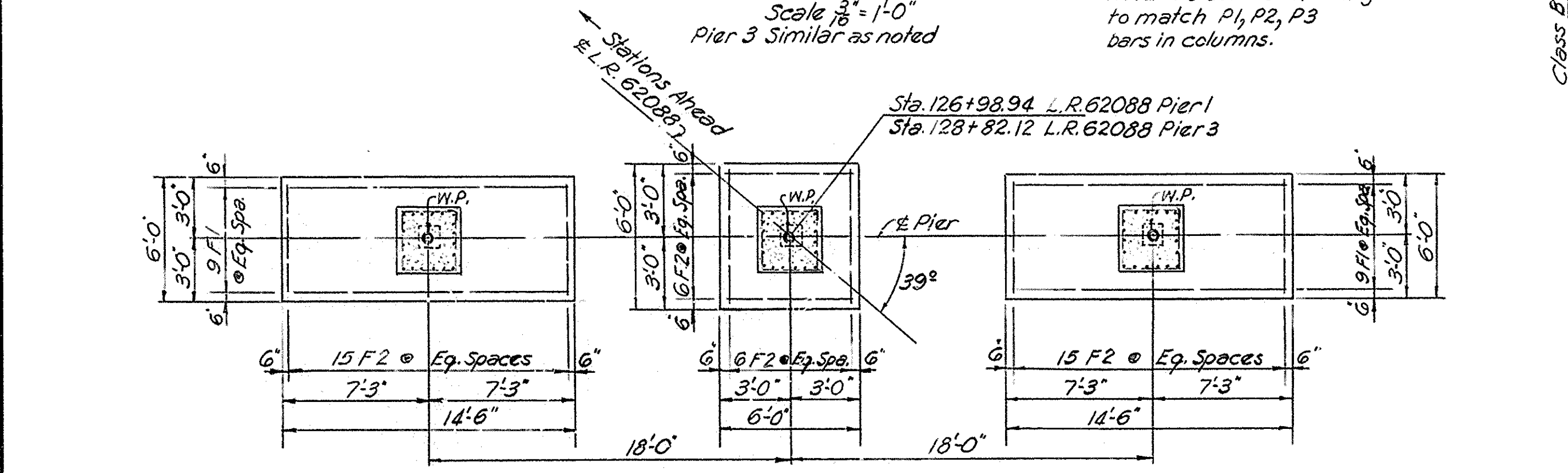
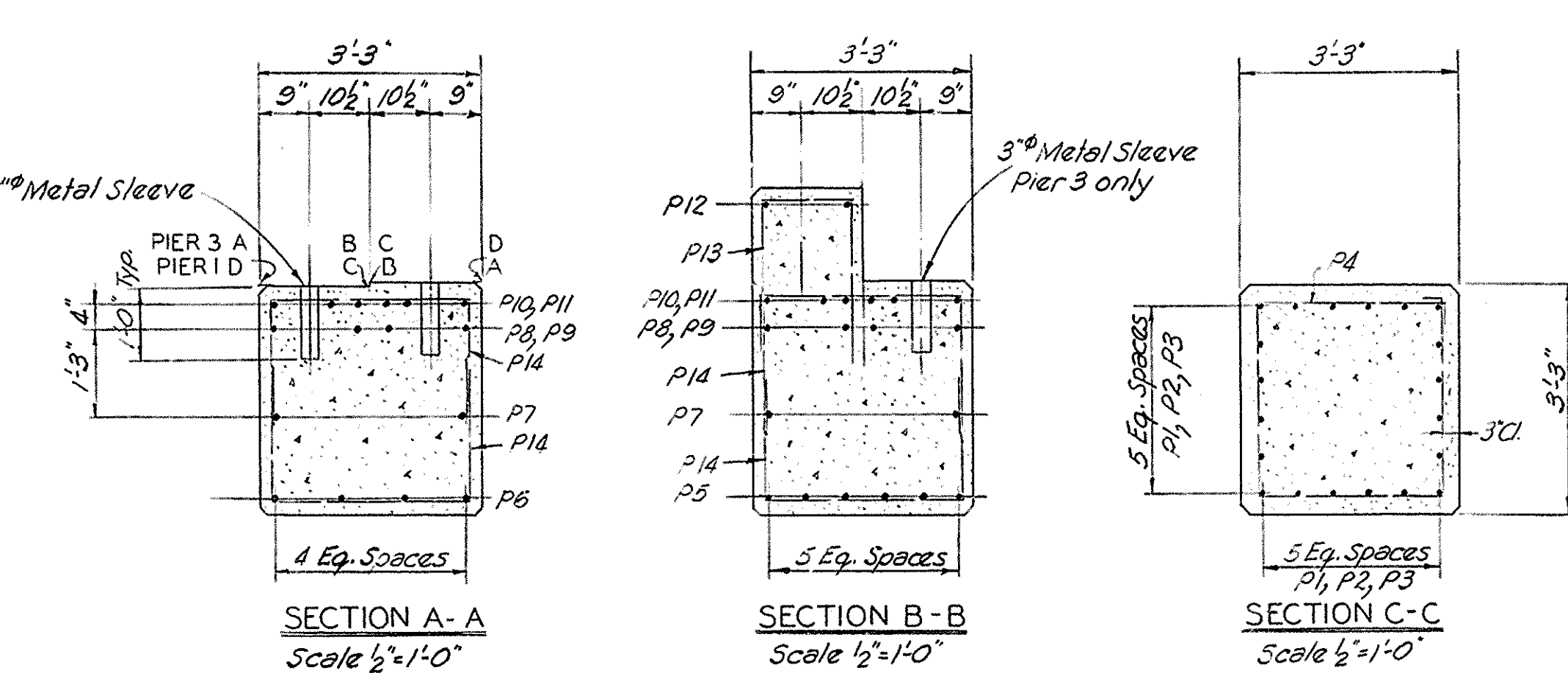
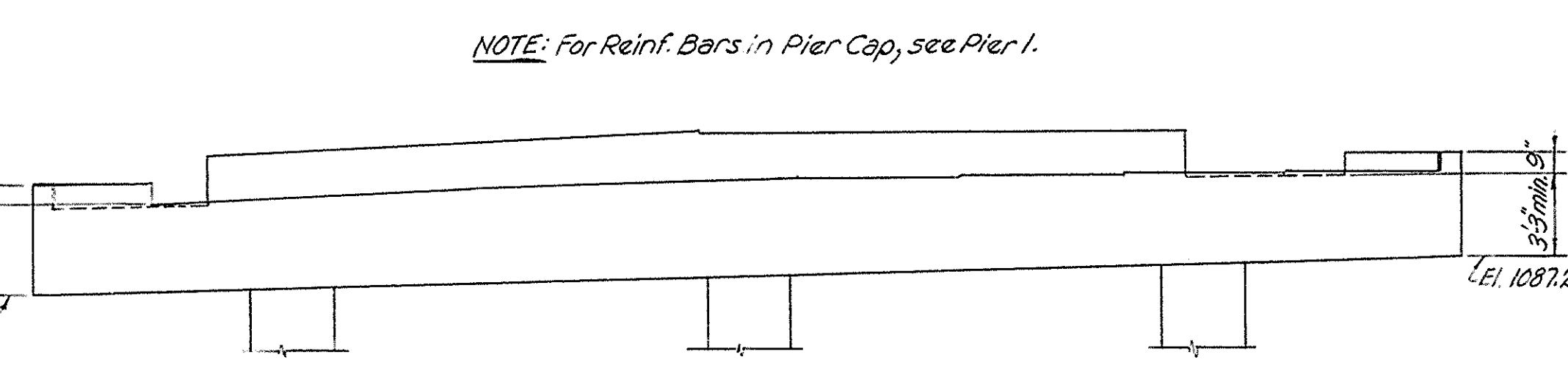
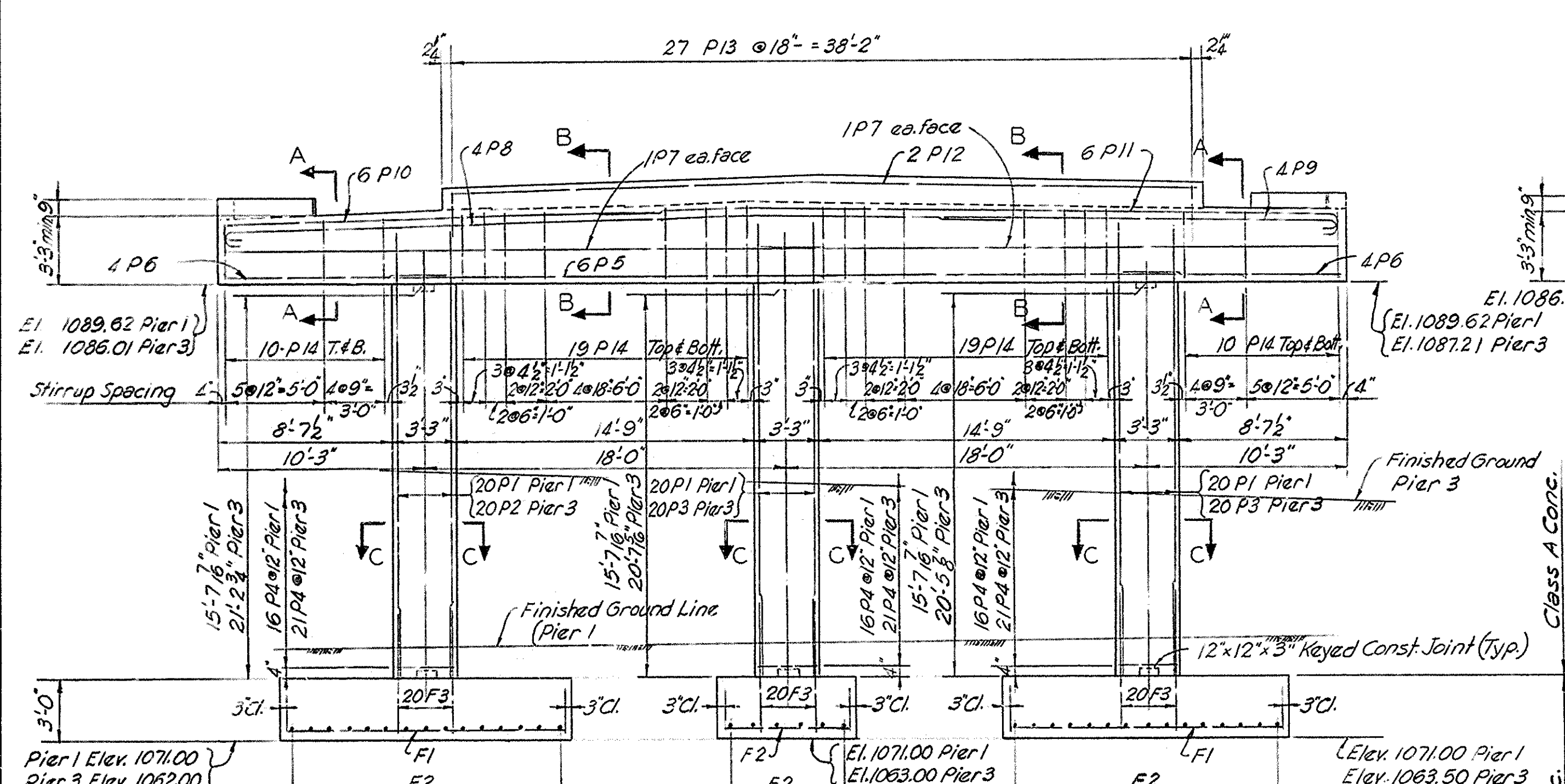


TABLE OF BEARING ELEVATIONS																	
BRG.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
PIER 1	A	1093.01	1093.01	1093.06	1093.31	1093.26	1093.43	1093.38	1093.55	—	—	1093.41	1093.44	—	—	1093.17	
	B	1093.04	1093.04	1093.09	1093.34	1093.29	1093.46	1093.41	1093.58	1093.58	—	1093.47	1093.47	—	—	1093.20	
	C	1093.06	1093.06	1094.38	—	—	—	—	1094.85	1094.85	—	—	—	—	1094.17	1093.22	1093.09
	D	1093.07	1093.07	1094.39	—	—	—	—	1094.86	1094.86	—	—	—	—	1094.48	1093.23	1093.10
PIER 3	A	1089.41	1089.41	1091.29	—	—	—	—	1092.12	1092.06	—	—	1092.17	1090.42	1090.45	—	
	B	1089.48	1089.48	1091.36	—	—	—	—	1092.23	1092.13	—	—	1092.24	1090.49	1090.52	—	
	C	1089.56	1089.56	1089.70	1090.00	1090.00	—	—	1090.48	1090.48	1090.49	1090.51	1090.51	1090.56	1090.48	1090.54	1090.46
	D	1089.62	1089.62	1089.76	1090.06	1090.06	—	—	1090.52	1090.52	1090.51	1090.51	1090.57	1090.58	1090.62	1090.54	1090.60

- NOTES
- For additional notes, see sheet 1.
 - Maximum design foundation pressure = 9 1/2 Tons/Sq. Ft.
 - Legend: E.F. denotes Each Face, W.P. denotes Work Point.
 - For superstructure drain pipe connections to piers, see sheet 7.
 - 3" Metal Sleeves to be included in the price for Class A Conc.
 - See note B sheet 5 for possible adjustment of bearing elevations due to beam camber.

Approved: *[Signature]*
 JUN 13 1964
 Bridge Engineer

Commonwealth of Pennsylvania
 Department of Highways
 BRIDGE UNIT

WASHINGTON COUNTY
 L.R. 798 SECTION 1

LR 798 UNDER L.R. 62088 (RELOC.)
 PIERS 1 & 3
 STA. 1205 + 50.00

SCALE: AS NOTED
 SHEET... 3 OF 8... S-3661A

REINF. BAR SCHEDULE

MK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	D	REMARKS
F1	16	8	8'-6"	5H					
F2	32	5	5'-6"	5H					
F3	72	10	7'-0"	5H					
P1	24	10	22'-3"	5H					
P2	24	10	23'-6"	5H					
P3	24	10	25'-0"	5H					
P4	64	4	11'-6"	7	29'	2'-9"	3"		
P5	60	5	7'-3"	2	2'-5"	2'-11"	2'-5"	0	
P6	96	5	7'-0"	2	2'-5"	2'-2"	2'-5"	0	
P7	8	5	10'-9"	5H					
P8	12	11	23'-0"	1	1'-7"	2'-5"	0		
P9	12	11	21'-3"	1	1'-7"	39'-3"	0		
P10	4	5	29'-5"	5H					
P11	6	11	39'-3"	5H					
P12	2	6	11'-3"	2	4'-6"	3'-0"	2'-11"	15	
P13	14	6	2'-3"	5H					

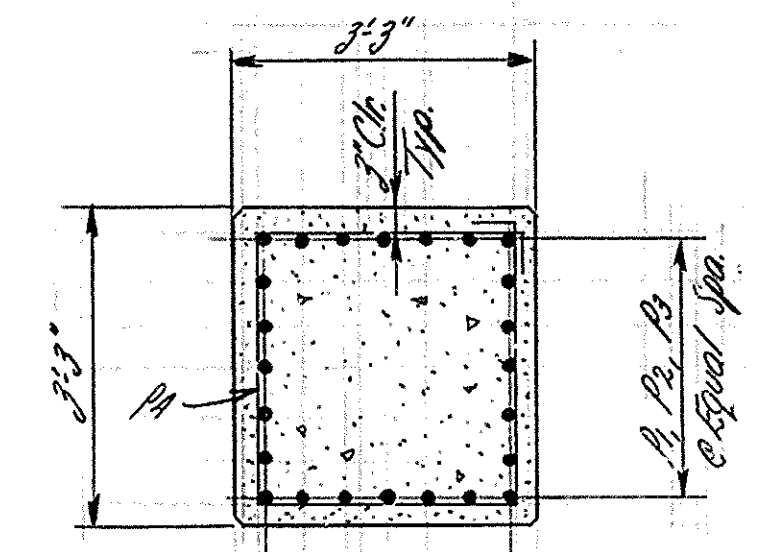
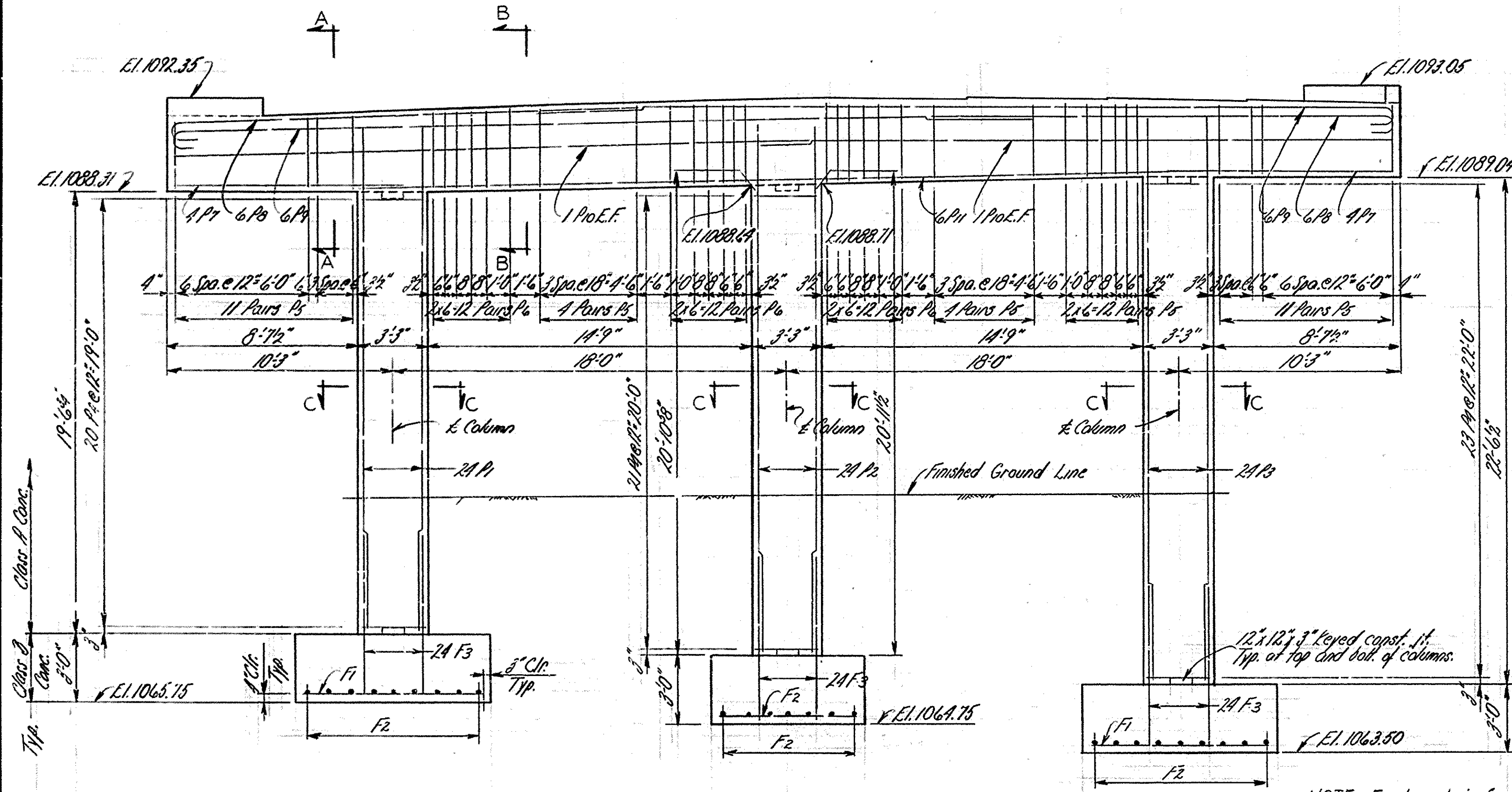
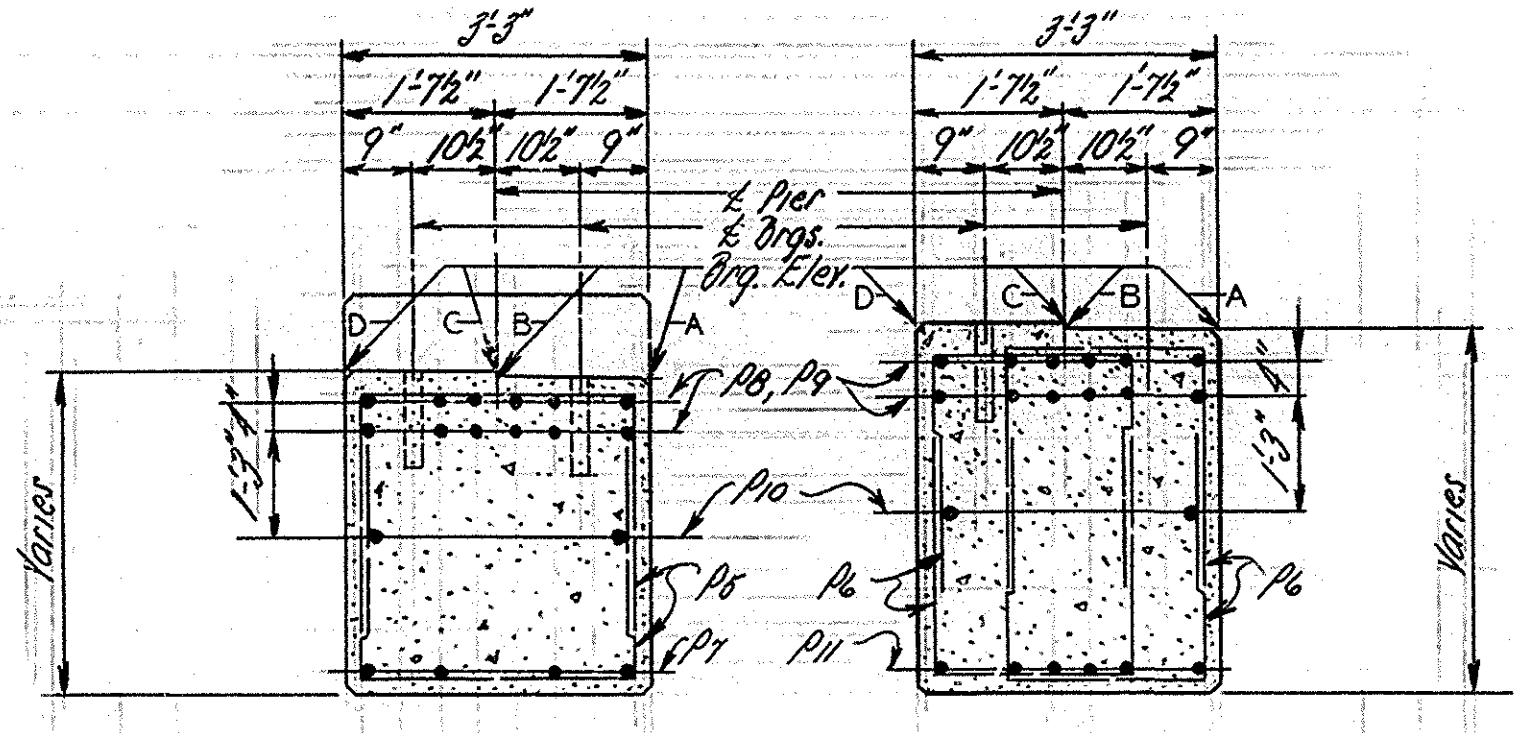
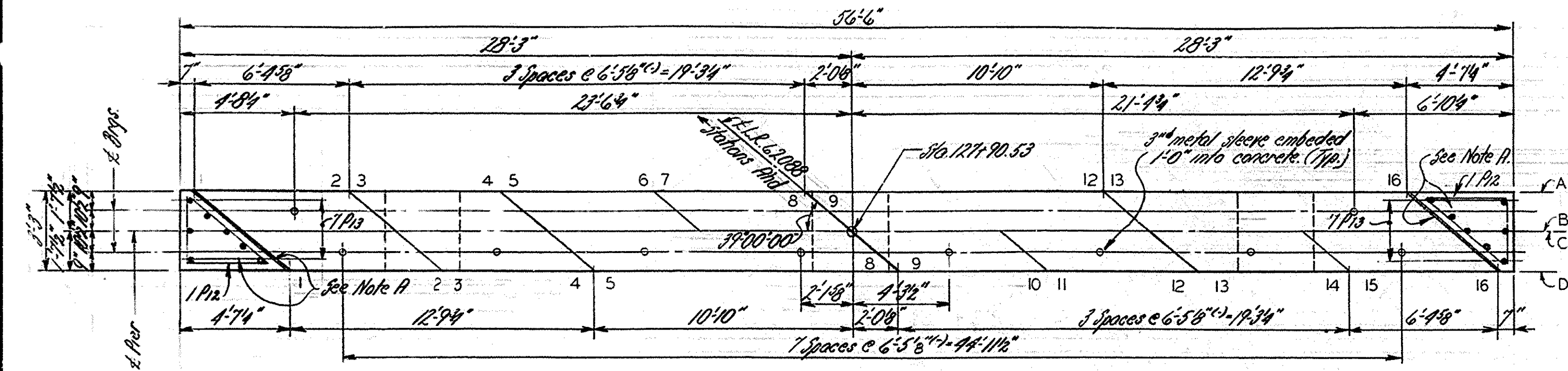


TABLE OF BEARING ELEVATIONS

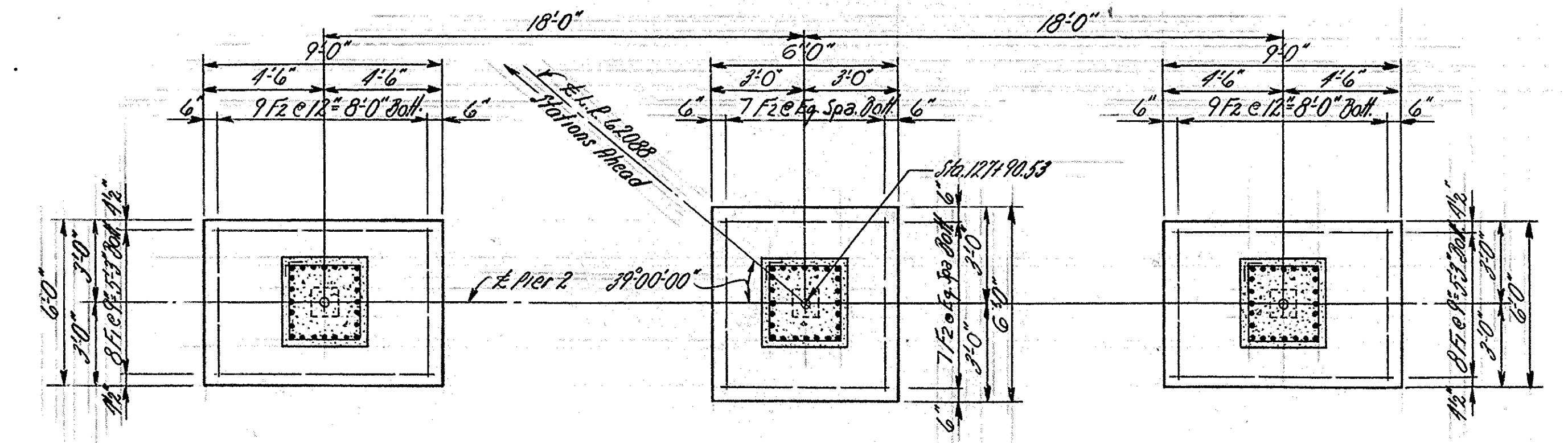
BRG.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PIER 2	1091.75	1091.75	1091.80	1092.11	1092.05	1092.23	1092.23	1092.45	1092.45	—	—	1092.45	1092.45	—	—	1092.23
	1091.79	1091.79	1091.86	1092.17	1092.11	1092.34	1092.29	1092.51	1092.51	—	—	1092.51	1092.51	—	—	1092.34
	1091.80	1091.80	1091.91	1092.17	1092.17	—	—	1092.51	1092.51	1092.46	1092.51	1092.46	1092.51	1092.51	1092.44	1092.30
	1091.83	1091.83	1091.94	1092.20	1092.20	—	—	1092.54	1092.54	1092.49	1092.54	1092.49	1092.54	1092.40	1092.47	1092.33

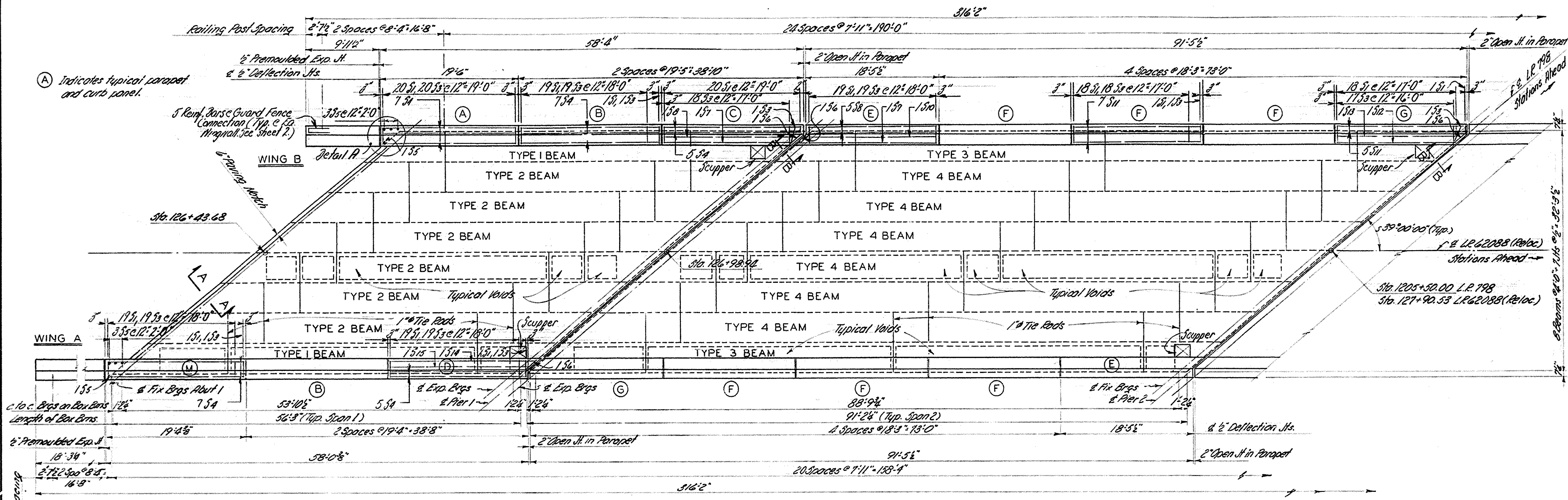
Approved: JUN 13 1960
S.H. Jensen
Bridge Engineer

Commonwealth of Pennsylvania
Department of Highways
BRIDGE UNIT
WASHINGTON COUNTY

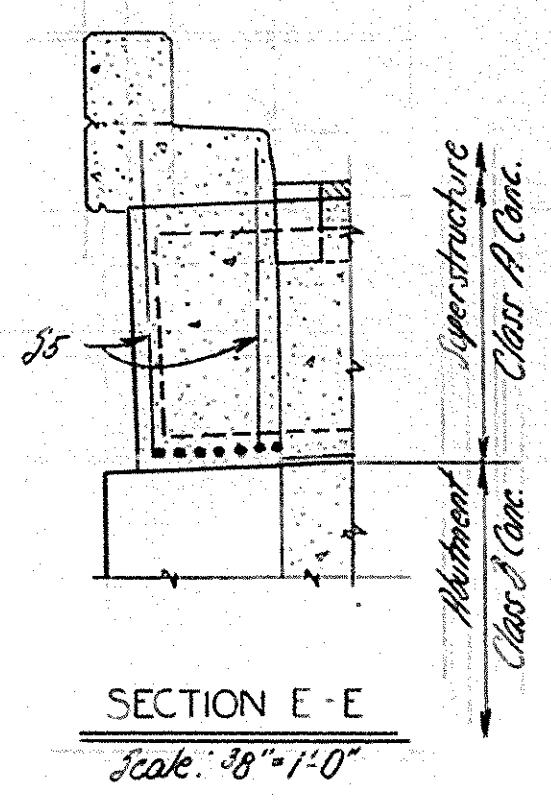
L.R.798 SECTION I
L.R. 798 UNDER L.R.62088 (RELOC.)
PIER 2
STA. 1205+50.00

- NOTES
- For additional notes, see sheet 1.
 - Maximum design foundation pressure = 12 tons per sq. ft.
 - Legend: E.F. denotes Each Face.
 - For superstructure drain pipe connections to prep, see sheet 7.
 - 3" metal steers to be included in the price paid for Class A Conc.
 - See note 8 sheet 5 for possible adjustment of bearing elevations due to beam camber.

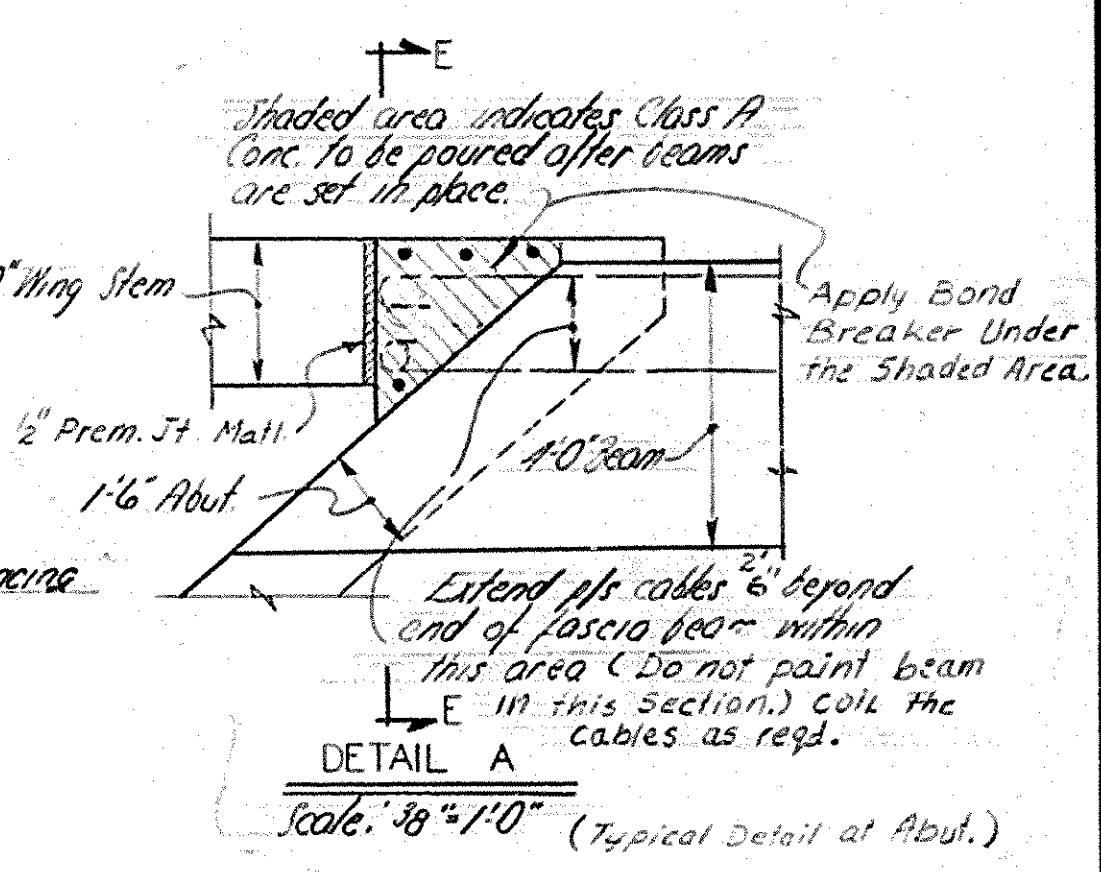




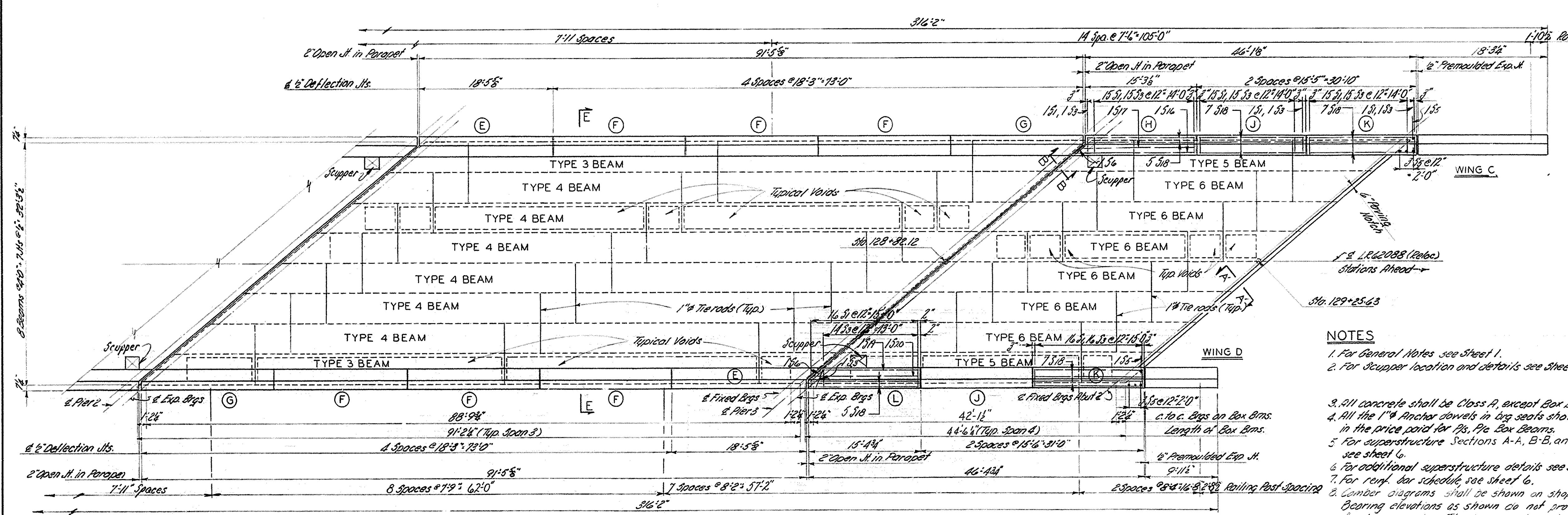
PLAN - SPANS 1 & 2
Scale: 3/8" = 1'-0"



SECTION E-E
Scale: 3/8" = 1'-0"




DETAIL A
Scale: 3/8" = 1'-0" (Typical Detail at Abut.)




PLAN - SPANS 3 & 4
Scale: 3/8" = 1'-0"

NOTES

1. For General Notes see Sheet 1.
2. For Scupper location and details see Sheet 7.
3. All concrete shall be Class A, except Box Beams.
4. All the 1" #4 Anchor dowels in box seats shall be included in the price paid for P.C. Box Beams.
5. For superstructure Sections A-A, B-B, and E-E see sheet 6.
6. For additional superstructure details see sheet 6.
7. For reinf. bar schedule see sheet 6.
8. Camber diagrams shall be shown on shop drawings. Bearing elevations as shown do not provide for beam camber. The beam camber shall be checked by the contractor. If the beam camber exceeds the vertical curve ordinate for its span, the bearing elevations or slab thickness shall be adjusted accordingly of no additional cost to P.D.H.

Approved: 
R.H. Jensen
Bridge Engineer

Commonwealth of Pennsylvania

Department of Highways
BRIDGE UNIT

WASHINGTON COUNTY
L.R. 798
SECTION 1
L.R. 798 UNDER L.R. 62088 (RELOC)

SLAB PLAN
STA. 1205+50.00

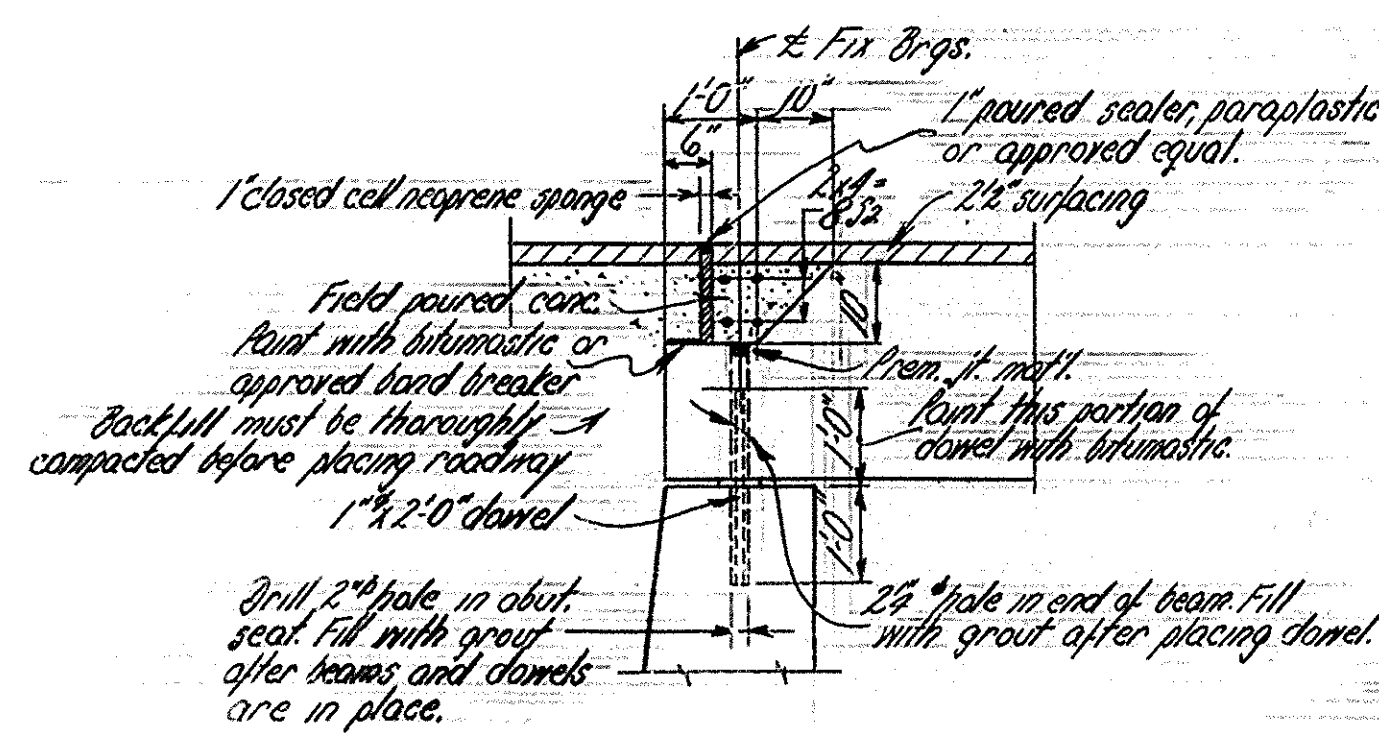
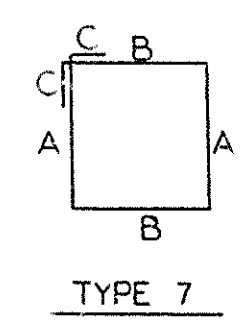
NO	REVISION	BY	CH'KD	DATE

SCALE: AS NOTED
SHEET 5 OF 8

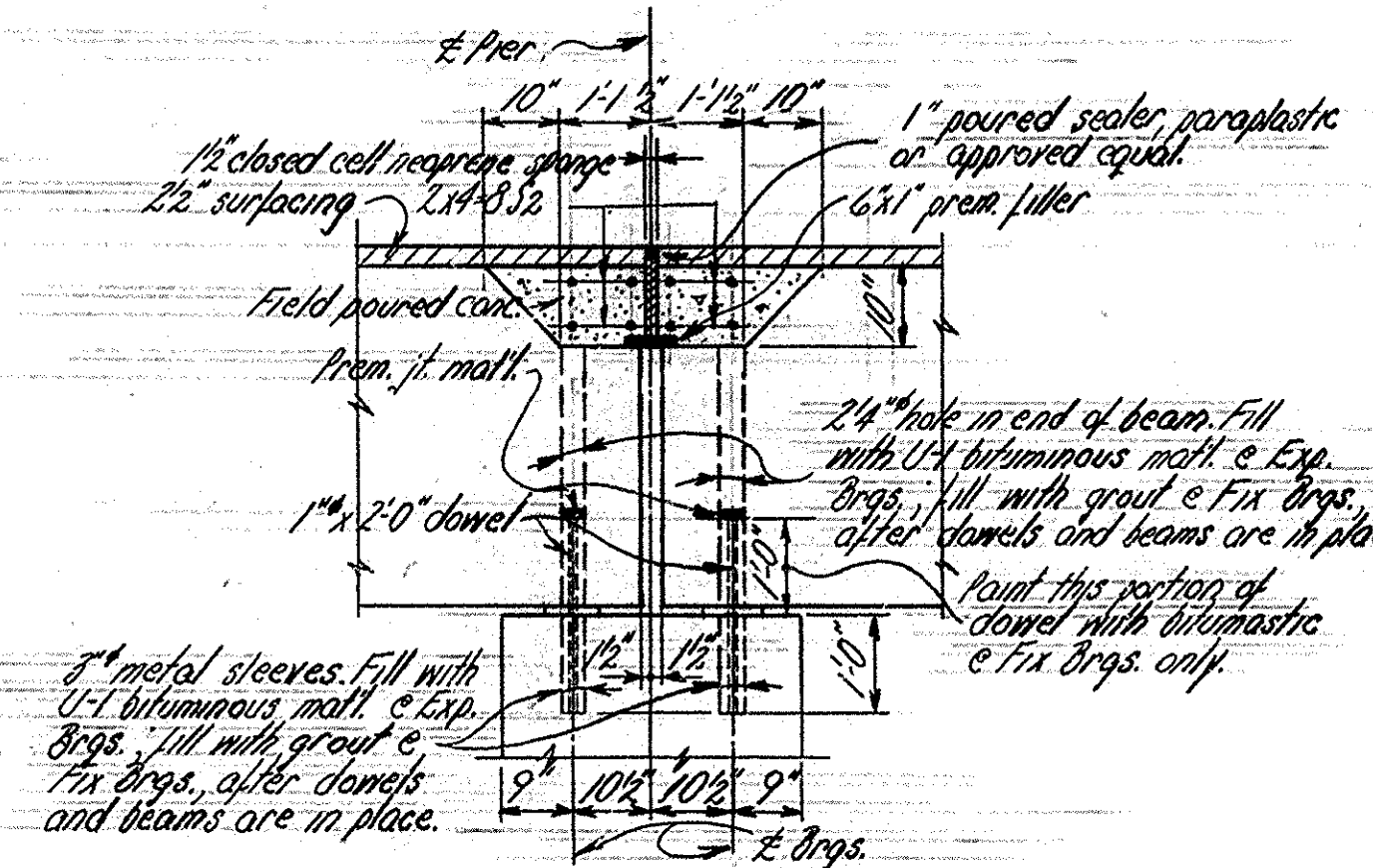
S-3661-A

REIN BAR SCHEDULE

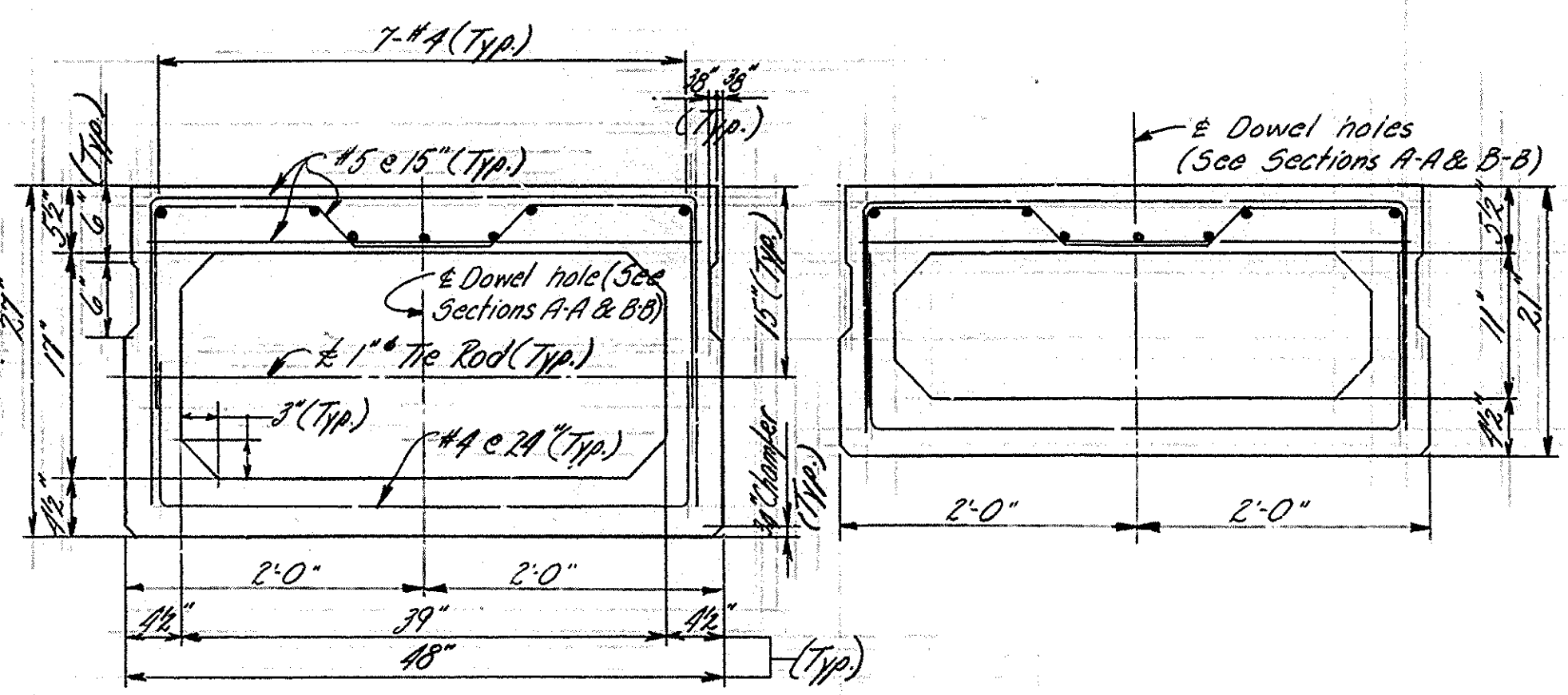
MK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	D	REMARKS
S1	5/8	4	6'-3"	1	1/2	11"	3"		
S2	6/8	6	27'-3"	ST					
S3	5/8	4	2'-6"	ST					
S4	28	4	19'-0"	ST					
S5	1/2	4	3'-9"	ST					
S6	12	4	2'-0"	ST					
S7	1	4	17'-3"	ST					
S8	21	4	18'-0"	ST					
S9	4	4	19'-6"	ST					
S10	4	4	18'-0"	ST					
S11	104	4	17'-9"	ST					
S12	4	4	16'-0"	ST					
S13	4	4	16'-9"	ST					
S14	1	4	20'-6"	ST					
S15	1	4	19'-9"	ST					
S16	1	4	16'-6"	ST					
S17	1	4	15'-9"	ST					
S18	28	4	15'-0"	ST					
S19	1	4	15'-3"	ST					
S20	1	4	14'-0"	ST					



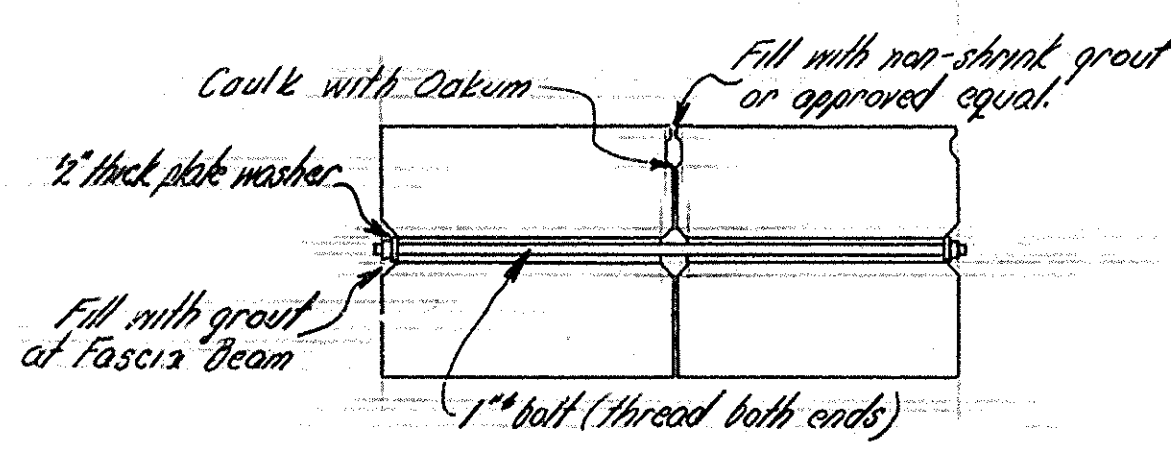
SECTION A-A
SECTION A-A' SIMILAR
Scale: 1/2" = 1'-0"



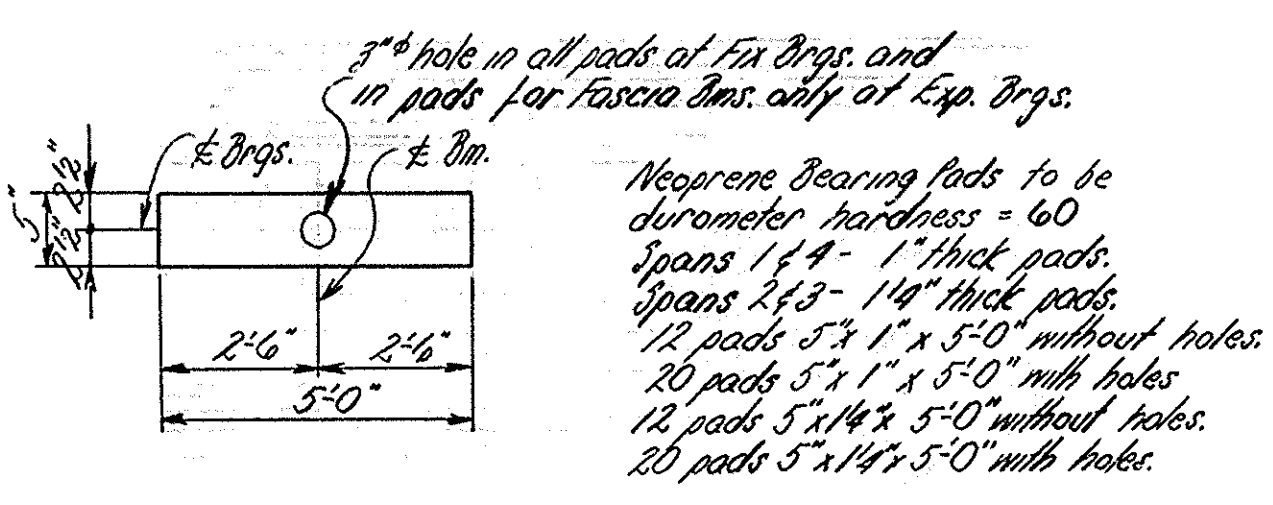
SECTION B-B
Scale: 1/2" = 1'-0"



TYPICAL SECTIONS - PRESTRESSED MEMBERS
Scale: 1" = 1'-0"



INTERBEAM CONNECTION
Not to Scale

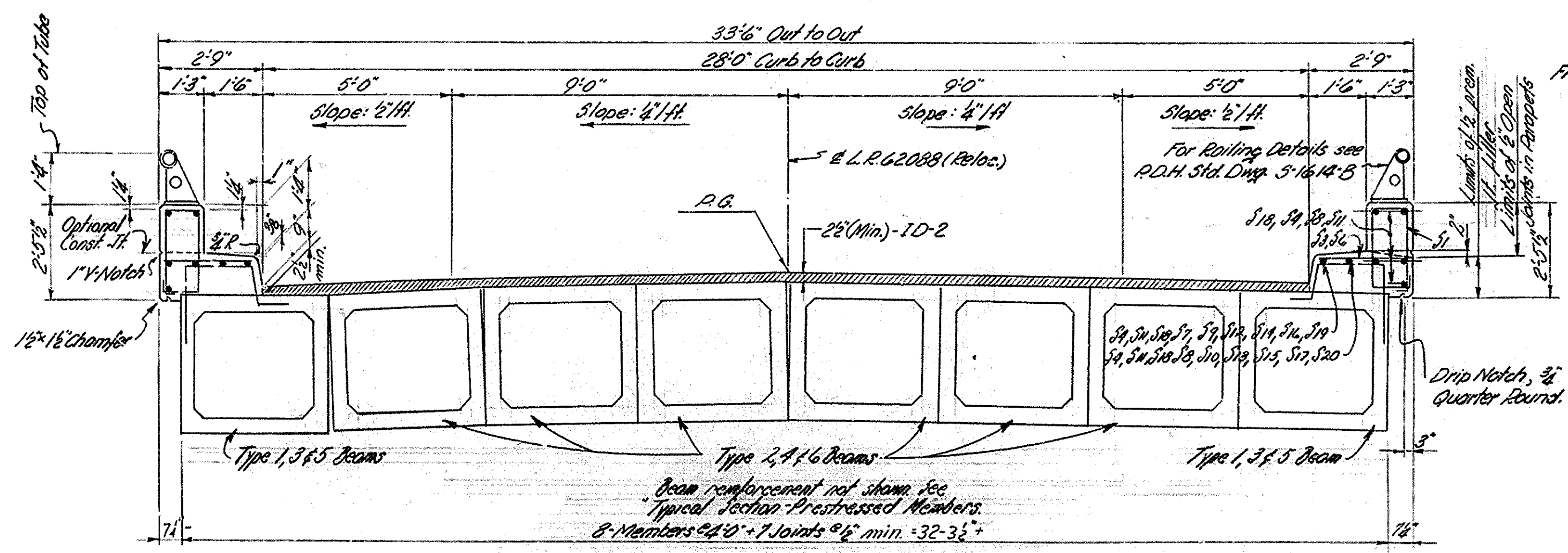


BEARING PADS
Not to Scale

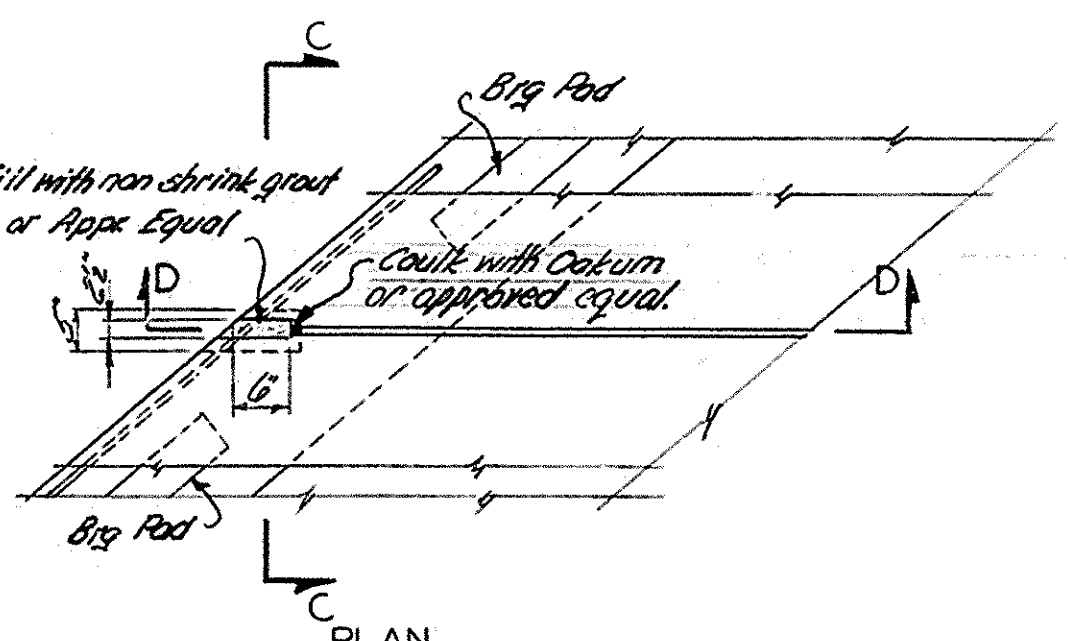
Note: For extension of P's cables on Types 1 and 5 beams see Detail A, Sheet 5.

Number and size of strands, location of c.g. and concrete stress at release of prestress to be shown on shop detail drawings.
TYPICAL SECTIONS - PRESTRESSED MEMBERS
Scale: 1" = 1'-0"

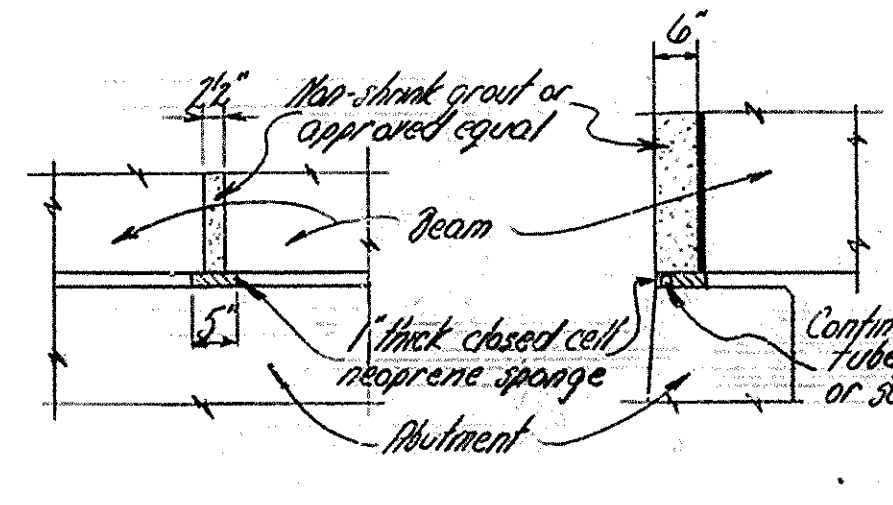
FOR NOTES SEE SHEETS 1 & 5.



SECTION E-E
Scale: 1/8" = 1'-0"



PLAN



SECTION C-C

SECTION D-D

WATERPROOFING DETAIL
Scale: 1/2" = 1'-0"

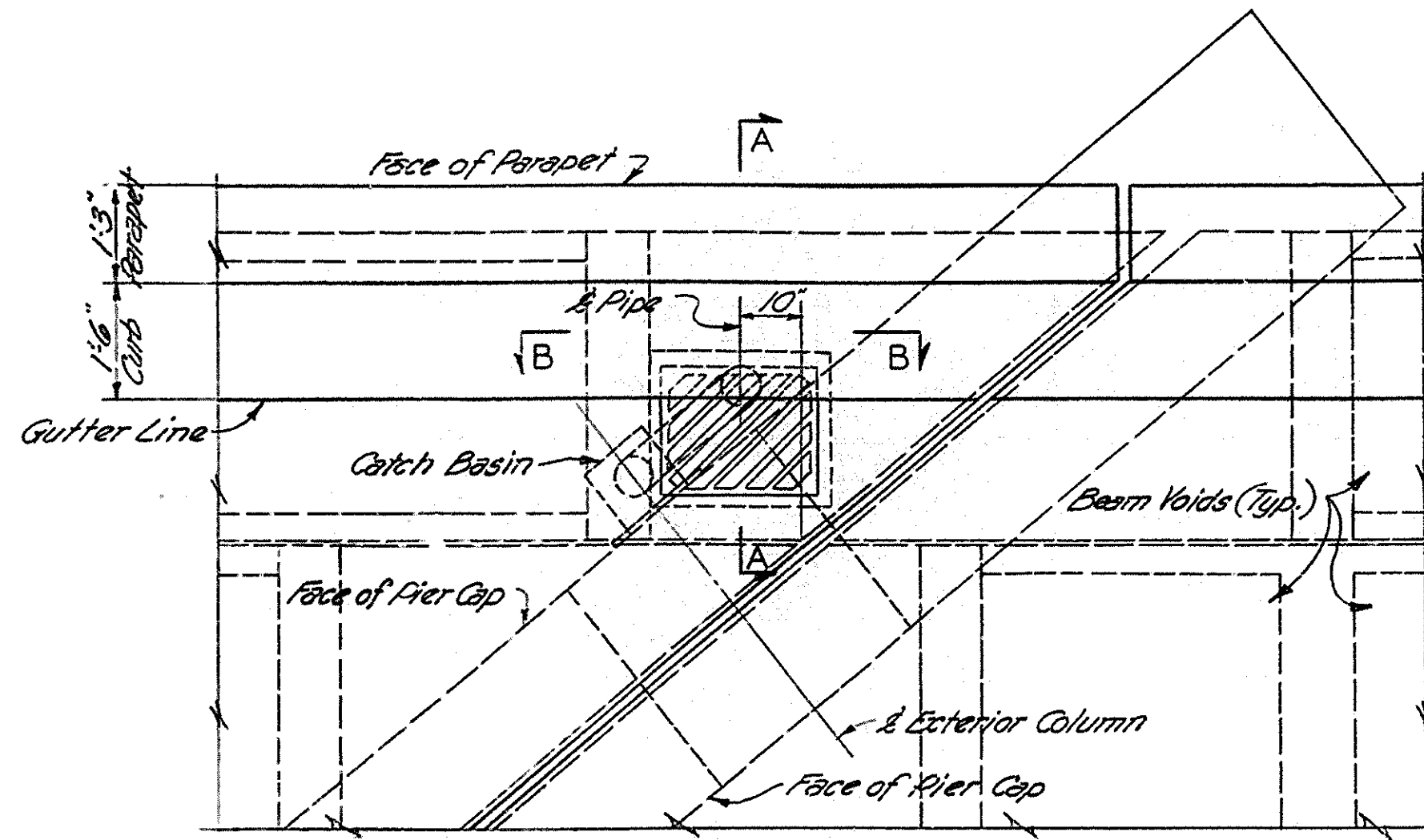
Approved: JUN 13 1960
R.H. Jensen
Bridge Engineer

Commonwealth of Pennsylvania
Department of Highways
BRIDGE UNIT

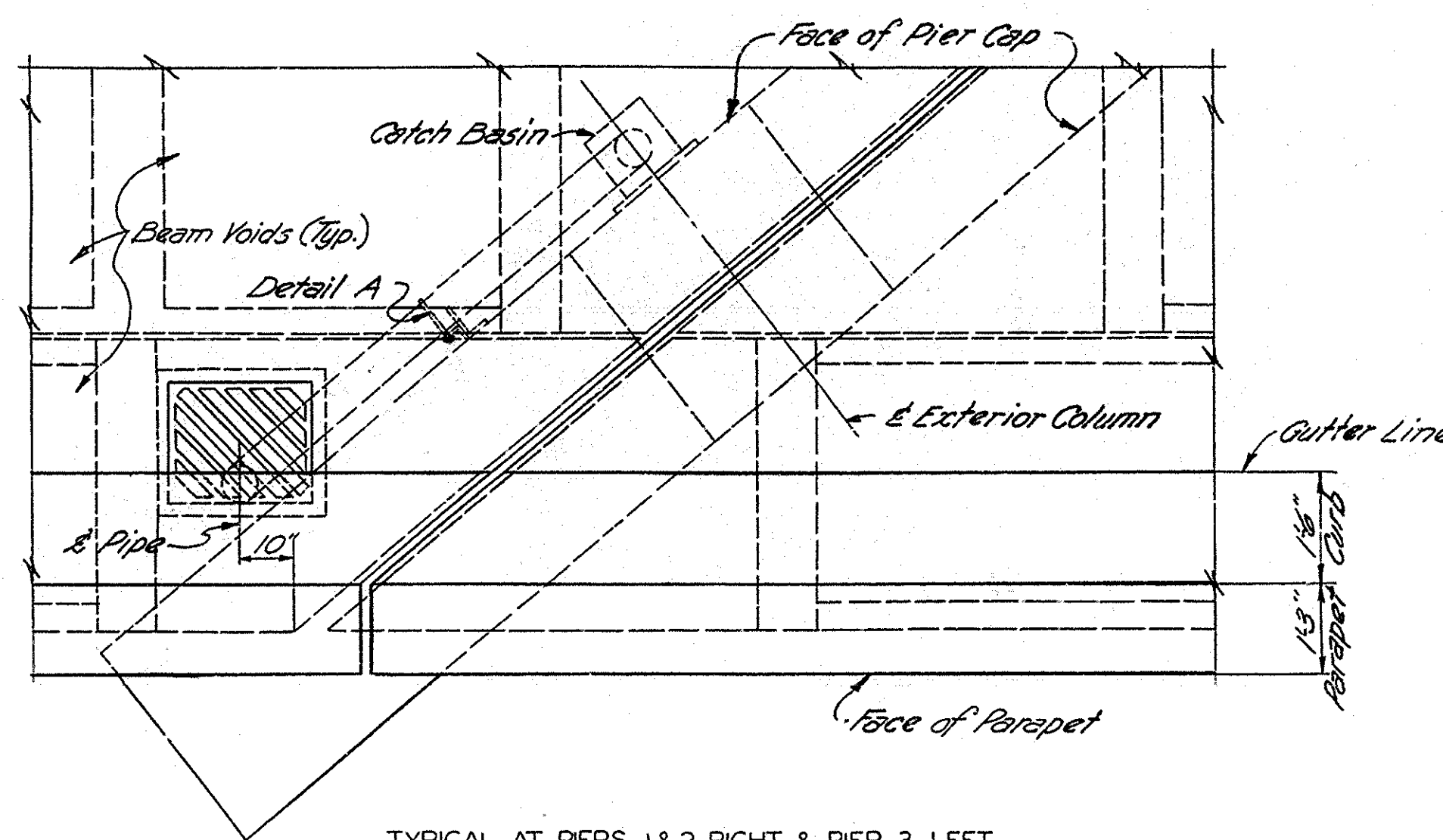
WASHINGTON COUNTY
L.R.798 SECTION I
L.R.798 UNDER L.R.62088(RELOC)
SUPERSTRUCTURE DETAILS
STA. 1205 +5000

SCALE: AS NOTED
SHEET 6 OF 8

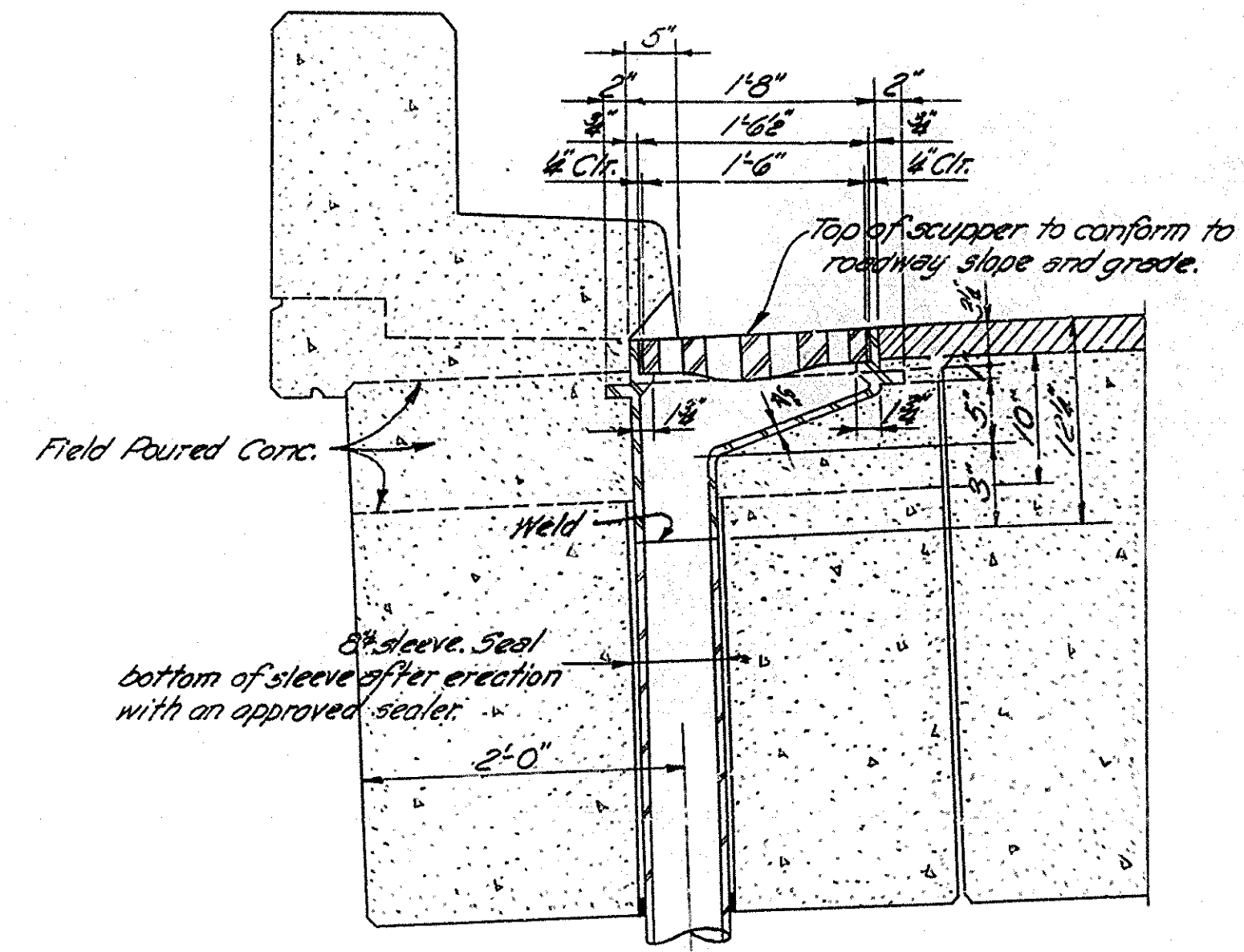
S-3661-A



TYPICAL AT PIERS 1 & 2 LEFT & PIER 3 RIGHT

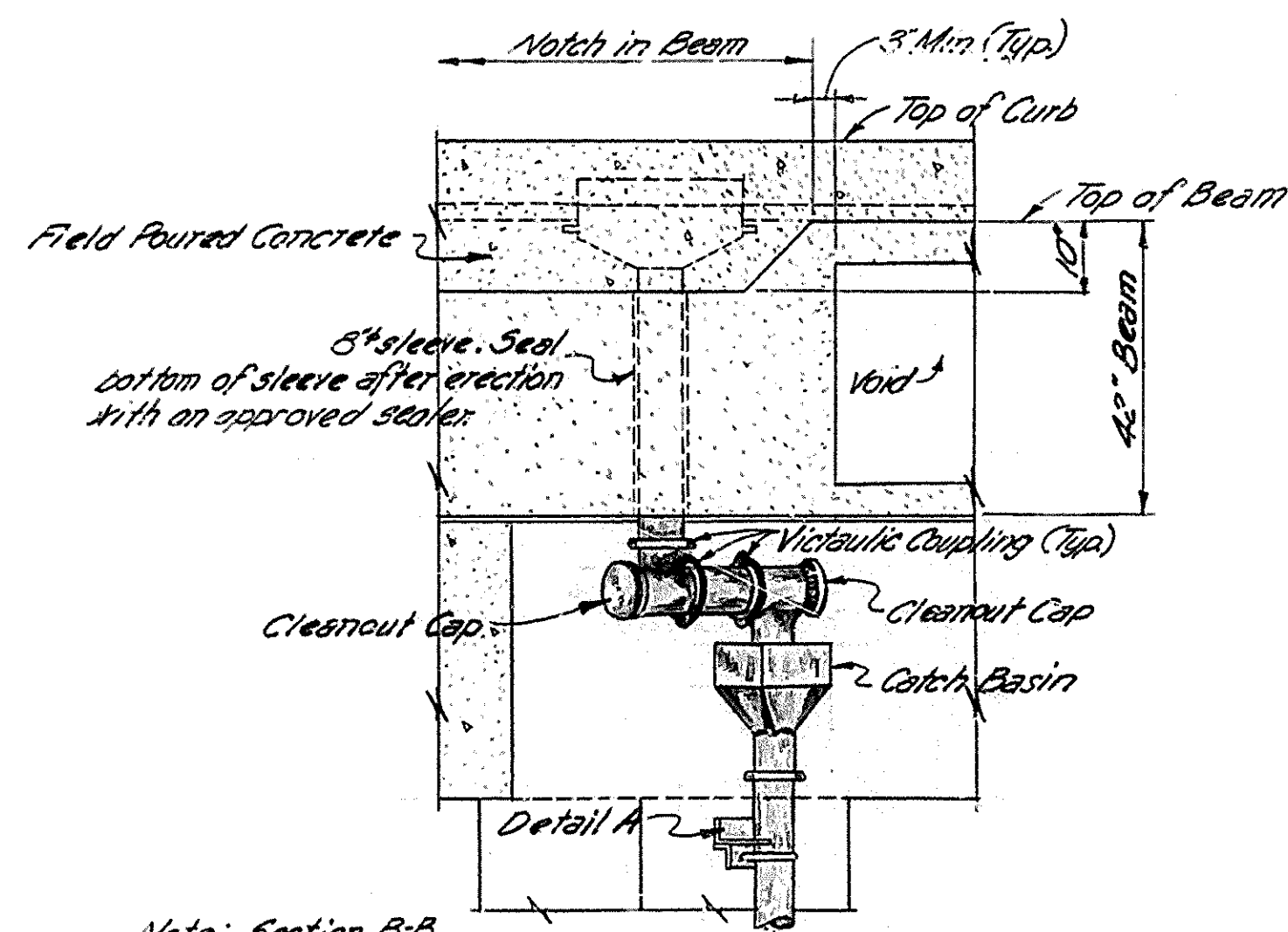


TYPICAL AT PIERS 1 & 2 RIGHT & PIER 3 LEFT



SECTION A-A
Scale: 1"=1'-0"

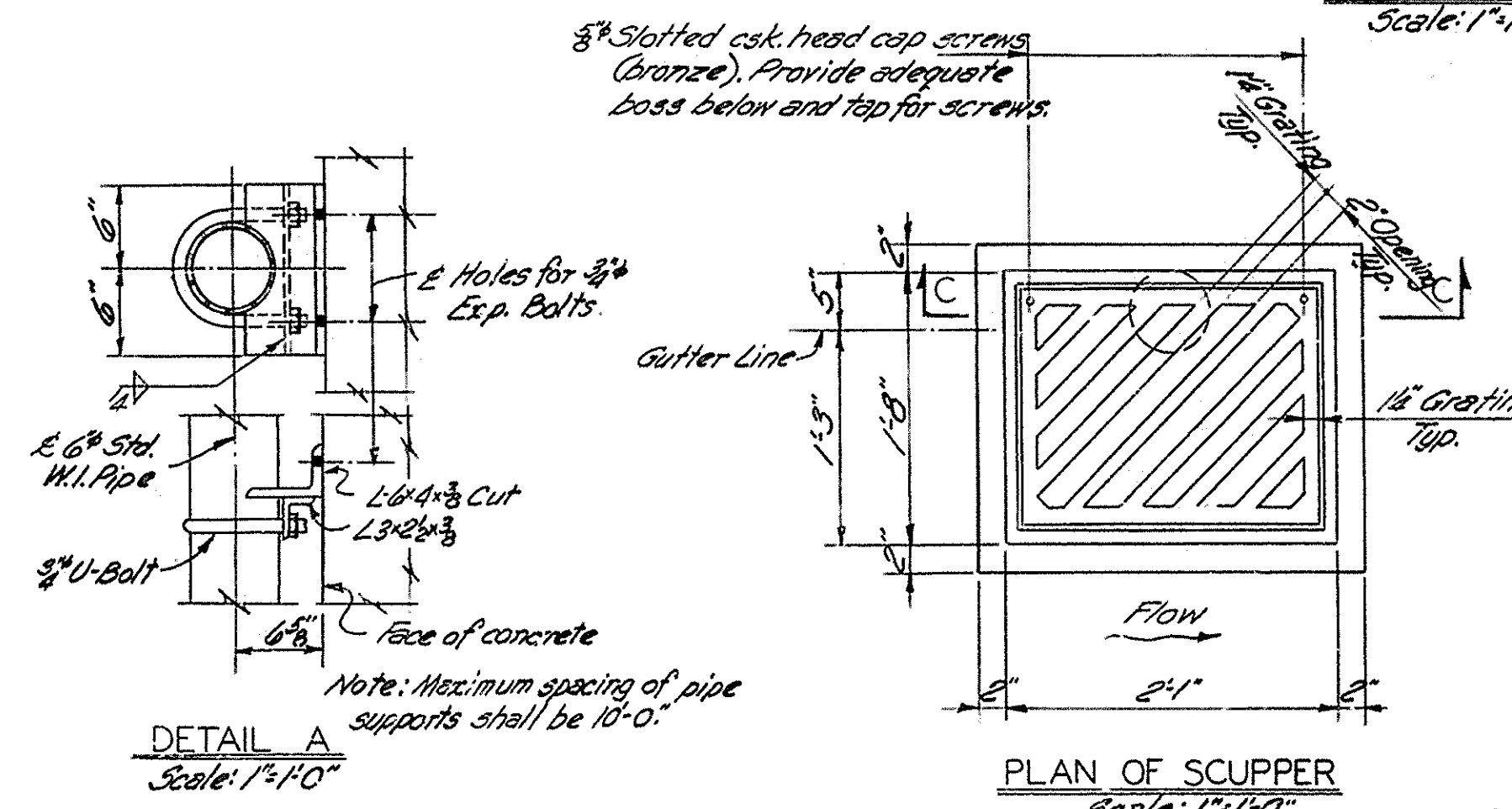
SCUPPER PLAN AT PIERS
Scale: 1/2"=1'-0"



SECTION B-B
Scale: 3/8"=1'-0"

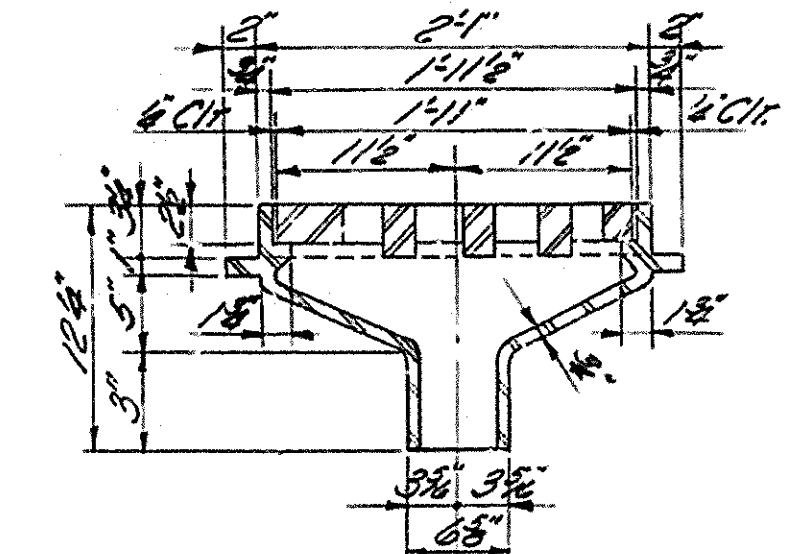
Note: Section B-B is similar at all scuppers.

To Splash Blocks (See Details below).



DETAIL A
Scale: 1"=1'-0"

PLAN OF SCUPPER
Scale: 1"=1'-0"

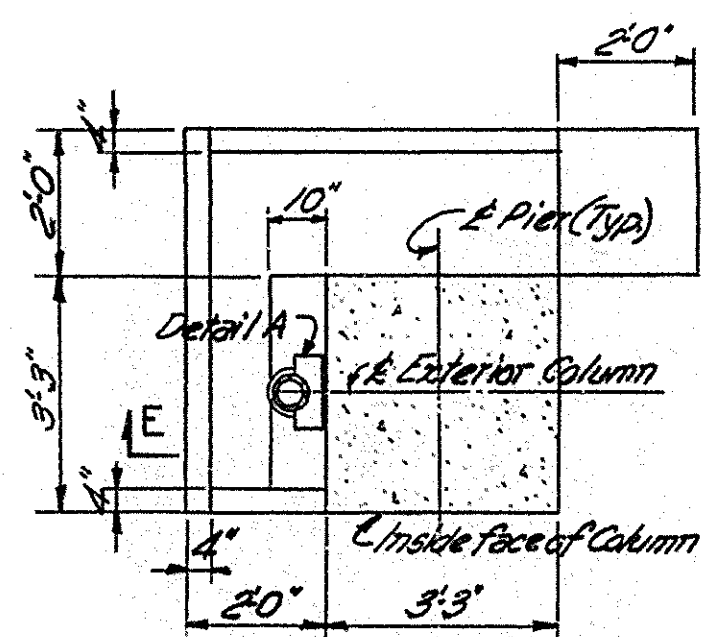


SECTION C-C
Scale: 1"=1'-0"

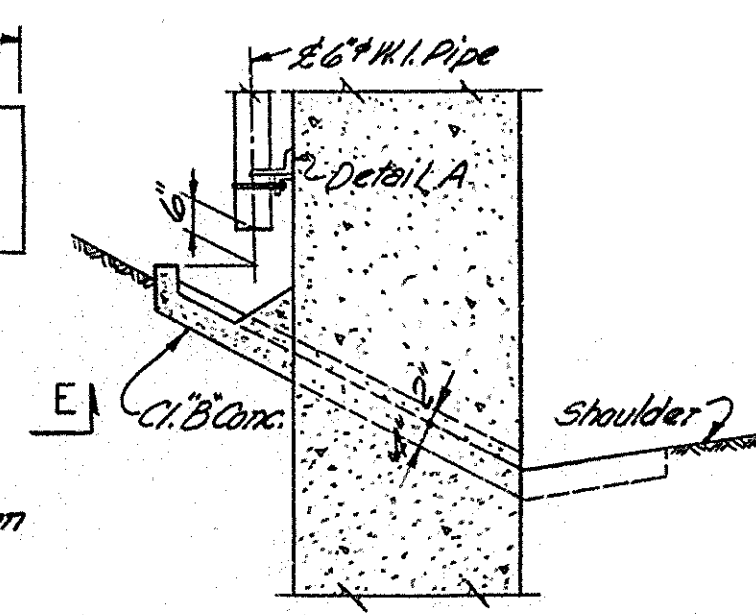
NOTES

1. All pipe is to be Std. 6" wrought iron.
2. Scuppers and catch basin material to be malleable iron or cast steel.
3. All couplings to be Victaulic or approved equal.
4. Weight of scuppers, catch basin, pipe and pipe supports is included in Fabricated Structural Steel Item.
5. For additional notes, see sheet 1.

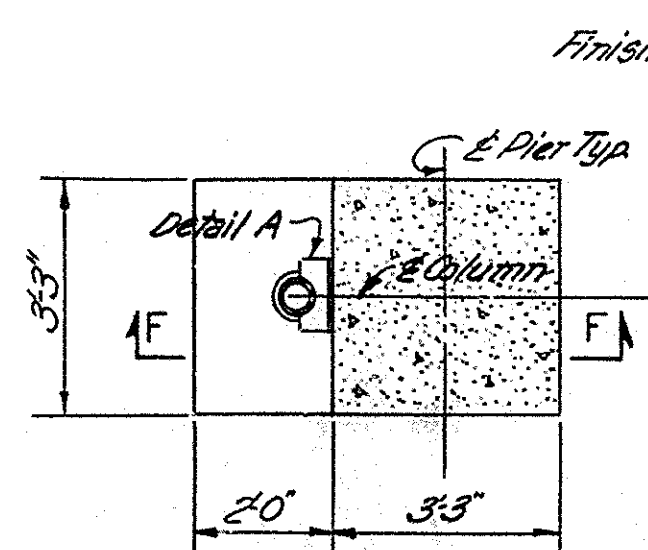
Approved: **JUN 13 1960**
L.H. Jensen
Bridge Engineer



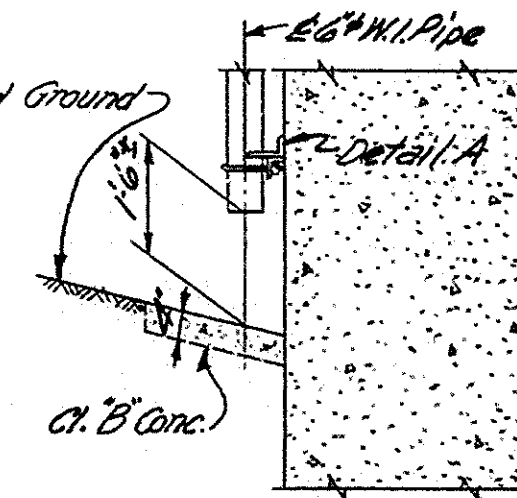
SPLASH BLOCK PLAN
PIERS 1 & 3 - LT & RT
Scale: 3/8"=1'-0"



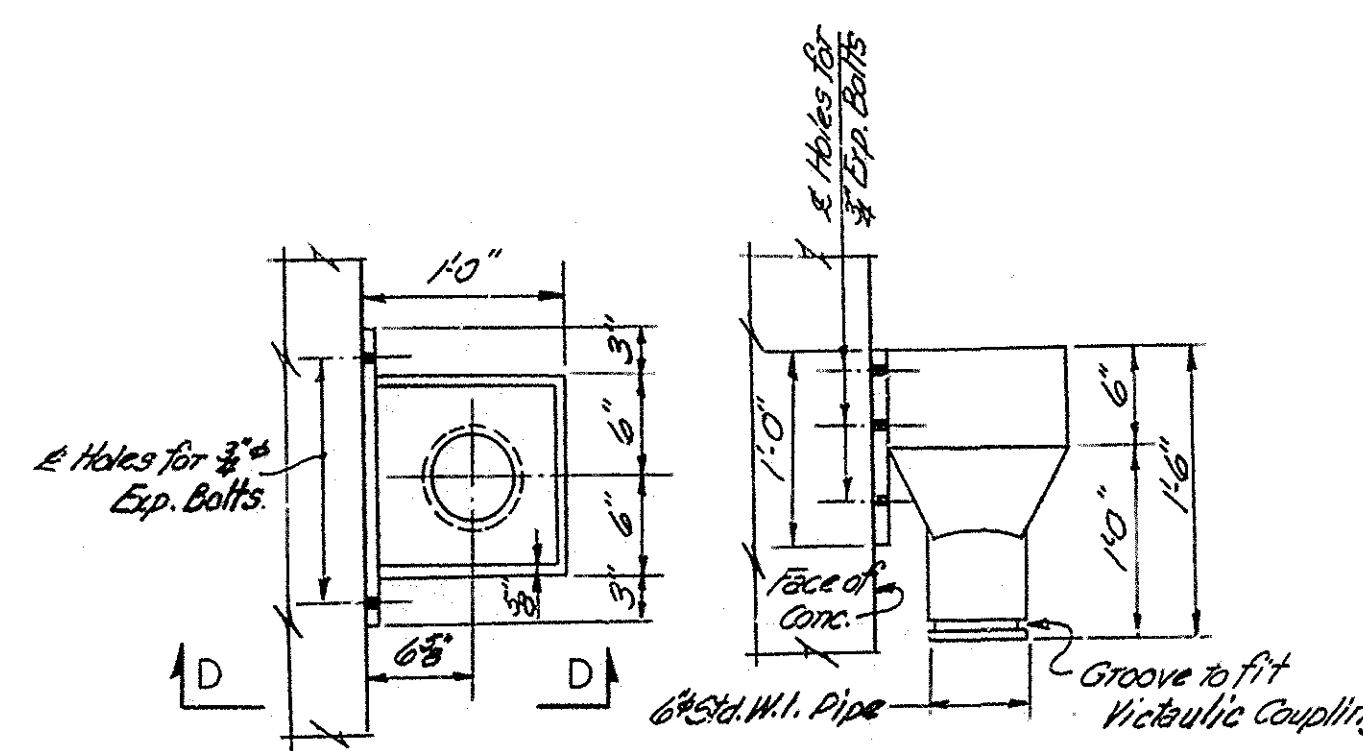
SECTION E-E
Scale: 3/8"=1'-0"



SPLASH BLOCK PLAN
PIER 2 LT & RT
Scale: 3/8"=1'-0"



SECTION F-F
Scale: 3/8"=1'-0"



CATCH BASIN
Scale: 1"=1'-0"

VIEW D-D
Scale: 1"=1'-0"

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Department of Highways
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WASHINGTON COUNTY
L.R. 798 SECTION 1
L.R. 798 UNDER L.R. 62088 (RELOC)
DRAINAGE DETAILS
STA. 1205+50.00

SCALE: AS NOTED
SHEET 7 OF 8

S-3661A

1070

1076.1 ELEV.		1	2
1076.3	TOPSOIL & VEGETATION	2	4
1076.1	DARK BROWN SILTY CLAY WITH SHALE FRAGMENTS BROWN	5	7
1072.1	*	6	15
1072.1	GRAY BROWN WEATHERED SHALE AND CLAY	12	69
1068.5	BROWN & GRAY BROKEN SHALE WITH CLAY SEAMS BROKEN	100%	CR
1066.3	GRAY SHALE WITH LIMESTONE	100%	CR

SAMPLE 1 SOFT
SAMPLES 2-4 FIRM
* BROWN AND GRAY SILTY CLAY WITH BROWN SHALE FRAGMENTS

1070

1079.8 ELEV.		1	2
1079.1	TOPSOIL AND VEG.	2	6
1077.8	BROWN SILTY CLAY WITH GRAY STREAKS	14	14
1076.8	*	7	18
1076.3	DARK BROWN WEATHERED SANDSTONE WITH MICA	25	75
1074.8	DARK BROWN AND GRAY SANDSTONE WITH MICA	50%	CR
1073.9	**	9	26
1072.9	***	9	31
1071.4	****	25	32
1070.9	W. L.	18	
1068.9	LARGE BROWN CLAYEY SHALE BROKEN	90%	CR
1066.9	BROWN CLAY SEAMS AND GRAY BROKEN SHALE	50%	CR
1064.9	GRAY SHALE WITH LIMESTONE BROKEN	100%	CR

SAMPLE 1 SOFT
SAMPLE 2 FIRM
* BROWN AND GRAY SILTY CLAY WITH BROWN SHALE FRAGMENTS

1070

1077.9 ELEV.		1	2
1077.1	TOPSOIL & VEGETATION	2	7
1076.9	BROWN SILTY CLAY WITH SANDSTONE FRAGMENTS	6	19
1074.9	**	9	26
1072.9	***	9	31
1071.4	****	25	32
1070.9	W. L.	18	
1068.9	LARGE BROWN CLAYEY SHALE BROKEN	90%	CR
1066.9	BROWN CLAY SEAMS AND GRAY BROKEN SHALE	50%	CR
1064.9	GRAY SHALE WITH LIMESTONE BROKEN	100%	CR

SAMPLE 1 SOFT
SAMPLES 2-4 FIRM
* BROWN SILTY CLAY WITH SHALE FRAGMENTS
** BLACK AND BROWN SHALE WITH COAL AND SILT
*** BROWN AND GRAY SILTY CLAY WITH BROWN SHALE FRAGMENTS
**** SANDY SILT WITH MICA AND BROWN SHALE FRAGMENTS

1070

1079.4 ELEV.		1	2
1078.8	TOPSOIL & VEGETATION	3	7
1077.4	BROWN SILTY CLAY	15	15
1076.4	DARK BROWN SANDSTONE WITH MICA	17	52
1074.4	BLACK & GRAY SILTY CLAY	5	42
1074.4	*	5	31
1074.4	LARGE BROWN CLAY & SHALE WITH MICA	19	31
1072.4	**	19	40
1071.4	W. L.	18	
1069.4	BROWN BROKEN SHALE	31	67
1069.4	*	50%	CR
1065.4	BROWN AND GRAY SHALE WITH LIMESTONE STREAKS	88%	CR
1065.4	**	86%	CR
1064.4	GRAY SHALE WITH LIME AND SANDSTONE STRAKS	86%	CR

1070

1074.0 ELEV.		1	2
1073.5	TOPSOIL & VEGETATION	3	6
1072.0	BROWN SILTY CLAY	14	14
1072.0	BROWN AND GRAY CLAY AND SHALE	7	19
1069.0	W. L.	28	
1068.0	BROWN SHALE & CLAY WITH MICA	12	31
1068.0	BROWN & GRAY SILTY CLAY WITH SHALE FRAGMENTS	36	40
1062.0	**	10	75
1063.7	**	30	
1059.0	GRAY SANDSTONE WITH BROWN STREAKS	94%	CR
1059.0	***	90%	CR

SAMPLES 1-5 MOIST
SAMPLE 6 WET
SAMPLE 7 MOIST
1013'-15' BROKEN
* BROWN AND GRAY SILTY CLAY WITH SHALE FRAGMENTS
** BROWN AND GRAY CLAY WITH MICA AND SANDSTONE FRAGMENTS
*** SANDY SILT WITH MICA AND BROWN SHALE FRAGMENTS
0'-1.5' MOIST

1070

1074.0 ELEV.		1	2
1073.4	TOPSOIL	1	6
1071.0	BROWN SILTY CLAY	14	14
1070.0	BROWN YELLOW CLAY WITH SHALE FRAGMENTS	7	20
1069.0	W. L.	25	
1067.0	BROWN GRAY CLAY AND SHALE	3	31
1067.0	BROWN GRAY CLAY AND SHALE	30	75
1063.5	BROKEN BROWN SHALE WITH CLAY SEAMS	71%	CR
1062.5	BROKEN GRAY SHALE	100%	CR
1059.0	BROKEN & GRAY SANDSTONE WITH CLAY SEAMS BROKEN	100%	CR
1054.0	GRAY SHALE	100%	CR

SAMPLES 1-2 MOIST
SAMPLE 3 WET
SAMPLE 4 MOIST

1070

1067.7 ELEV.		1	2
1067.2	TOPSOIL	2	9
1065.7	BROWN SILTY CLAY WITH SHALE FRAGMENTS	13	13
1064.7	**	10	15
1064.2	W. L.	13	26
1063.7	BROWN SILTY CLAY & SANDSTONE	13	26
1062.7	BROWN SANDSTONE WEATHERED	21	85
1057.7	GRAY AND BROWN BROKEN SHALE WITH SANDSTONE STREAKS	80%	CR
1052.7	GRAY AND BROWN BROKEN SHALE	100%	CR
1048.7	GRAY SANDSTONE	90%	CR

SAMPLES 1-4 MOIST
* BROWN AND YELLOW SILTY CLAY WITH SHALE FRAGMENTS

1070

1065.5 ELEV.		1	2
1069.0	TOPSOIL	1	10
1066.5	BROWN SILTY CLAY WITH SHALE FRAGMENTS	25	25
1065.5	*	9	51
1064.5	**	21	105
1059.5	BROWN AND GRAY BROKEN SHALE WITH SANDSTONE STREAKS	80%	CR
1059.5	***	25%	CR
1051.0	BROWN & GRAY SHALE BROKEN	92%	CR
1049.5	BLACK & BROWN & GRAY CLAY & SHALE VERY SOFT	100%	CR

SAMPLES 1-3 MOIST
* BROWN AND GRAY SILTY CLAY WITH SHALE FRAGMENTS
** BROWN AND GRAY SILTY CLAY AND SHALE WITH SANDSTONE FRAGMENTS

1070

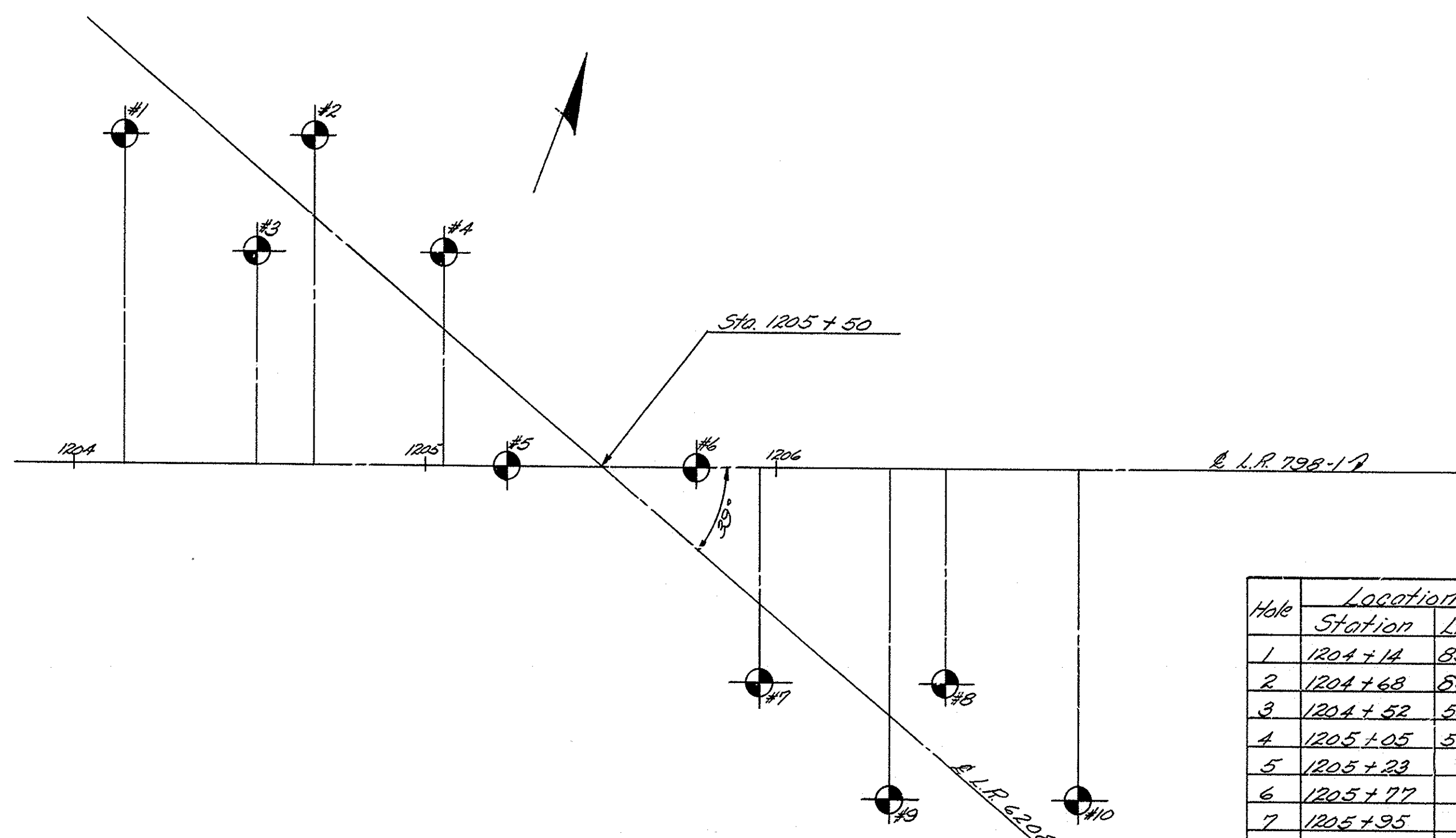
1068.0 ELEV.		1	2
1068.0	TOPSOIL	1	4
1063.0	W. L.	9	
1063.0	BROWN SILTY CLAY	2	9
1060.0	BLUE GRAY & BROWN CLAY WITH SHALE FRAGMENTS	10	10
1059.0	*	3	11
1059.0	**	5	19
1053.0	GRAY & BROWN SHALE AND CLAY	20	22
1053.0	***	23	22
1051.0	BROWN & GRAY BROKEN SHALE	25%	CR
1049.5	**	100%	CR
1048.0	GRAY SHALE W/ LIMESTONE BROKEN	100%	CR

SAMPLES 1-4 MOIST
* BLUE GRAY CLAY WITH SANDSTONE FRAGMENTS
** GRAY AND BLACK AND BROWN CLAYEY SHALE VERY SOFT

1070

1067.5 ELEV.		1	2
1066.5	TOPSOIL	2	8
1065.5	W. L.	7	
1063.5	BROWN & YELLOW SILTY CLAY	10	10
1061.5	BROWN AND GRAY SILTY CLAY	8	26
1060.5	BROWN CLAY & SHALE	21	75
1055.5	BROWN & GRAY BROKEN SHALE	90%	CR
1052.5	BROWN & GRAY BROKEN SHALE	75%	CR

SAMPLES 1-4 MOIST



Hole	Location	Stn.	PTH.
1	1204+14	59'	
2	1204+68	59'	
3	1204+52	58'	
4	1205+05	58'	
5	1205+23		
6	1205+77		
7	1205+95	58'	
8	1206+48	58'	
9	1206+32	59'	
10	1206+86	59'	

LEGEND

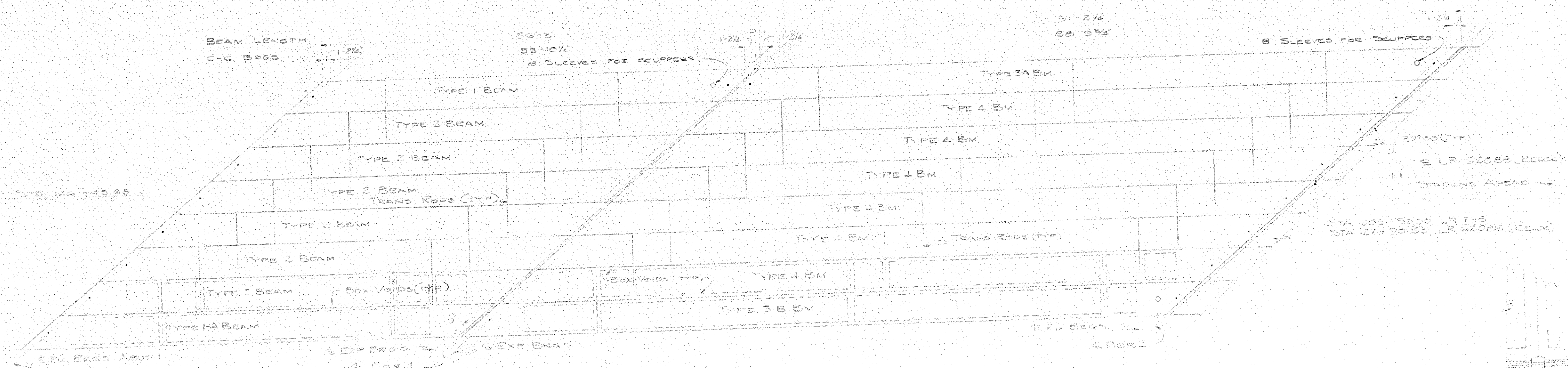
- DISTANCE HAMMER DROP 24 INCH
- DRIVE HAMMER 300 LBS.
- SAMPLER HAMMER 300 LBS.
- CASING SIZE 4 INCH
- SAMPLER SIZE 2 INCH
- SIZE OF CORE BIT 1/2 INCH
- COLUMN 1 DENOTES SAMPLE BLOWS AND PERCENTAGE OF CORE RECOVERY
- COLUMN 2 DENOTES CASING BLOWS
- VERTICAL SCALE 1" = 4'0"
- W. L. WATER LEVEL
- CR CORE RECOVERY
- CLASSIFICATION OF SOIL HAS BEEN MADE BY THE DRILLER AND HAS NOT BEEN CHECKED BY A SOILS ENGINEER. CLASSIFICATION OF ROCK HAS BEEN MADE BY THE DRILLER AND HAS NOT BEEN CHECKED BY A GEOLOGIST.

STRUCTURE SITE NO. 23A

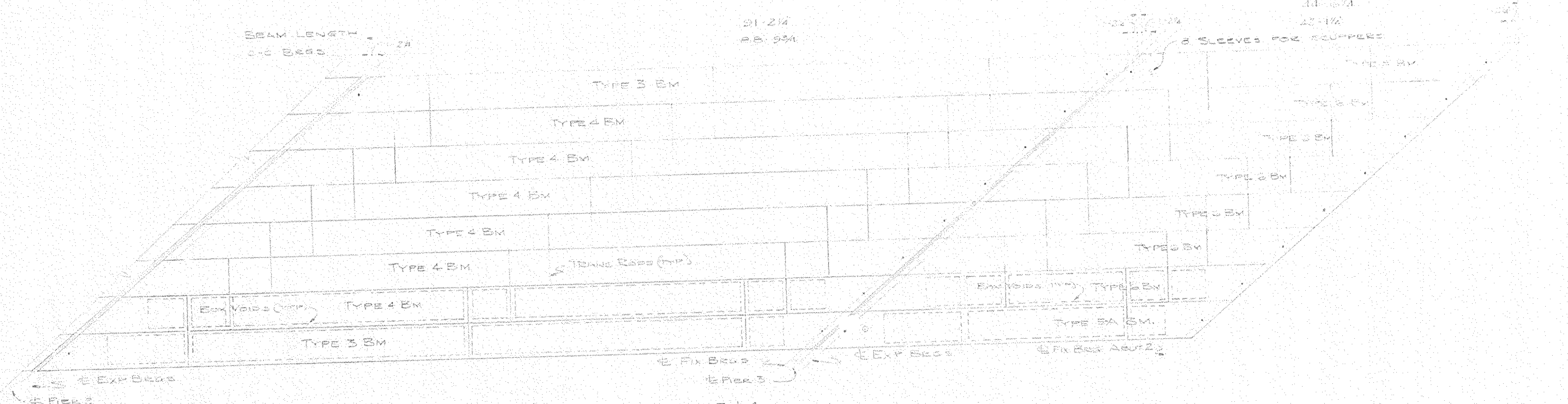
TEST BORINGS
FOR
GROF & MYERS
HARRISBURG, PA.
OF
L.R. 798-1 WASHINGTON CO., PA.
MADE BY
SPRAGUE & HENWOOD, INC.
SCRANTON, PA.

APPROVED BY *[Signature]*
DRAWN BY *[Signature]* CHECKED BY *[Signature]* DATE 5-19-58

S-3661-A
STA 1205 + 50
SHEET 8 OF 8



BEAM LAYOUT - SPANS 1 & 2
1/8" = 1'-0"



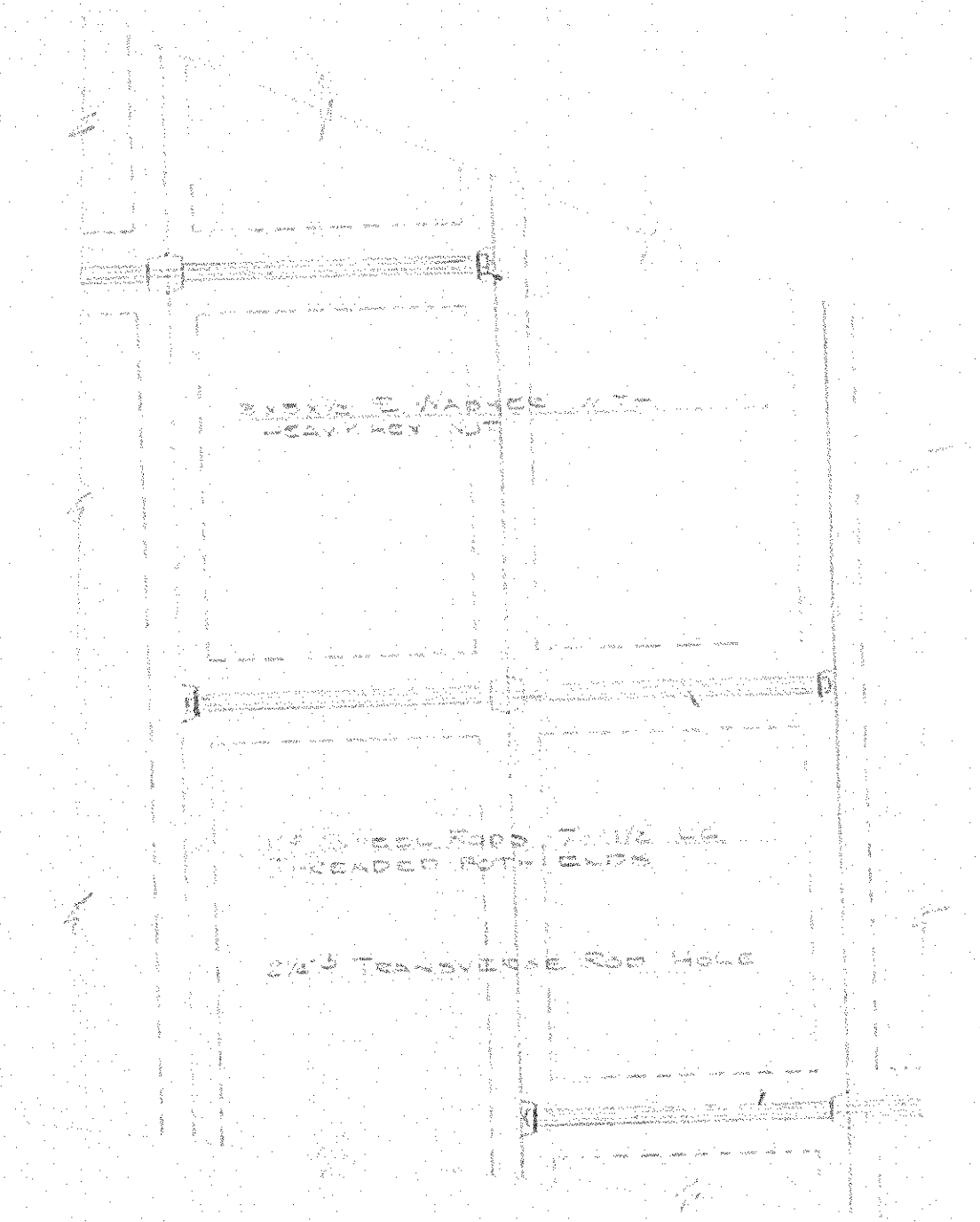
BEAM LAYOUT - SPANS 3 & 4
1/8" = 1'-0"

NEEDLINE BEARING PADS
TO BE ONE BEARING PAD
TO BE ONE BEARING PAD
TO BE ONE BEARING PAD

HOLES SHALL BE ALL PADS
AT DIAPHRAGMS AND IN
PADS IN FASCIA BAYS ONLY
AT EXPANSION JOINTS

SPANS 1 & 2
SPAN 1 12' 6" THICK PADS
SPAN 2 12' 6" THICK PADS
12 PADS 12' 6" x 12' 6" WITH HOLES
12 PADS 12' 6" x 12' 6" WITH HOLES
12 PADS 12' 6" x 12' 6" WITH HOLES
12 PADS 12' 6" x 12' 6" WITH HOLES

BEARING PADS

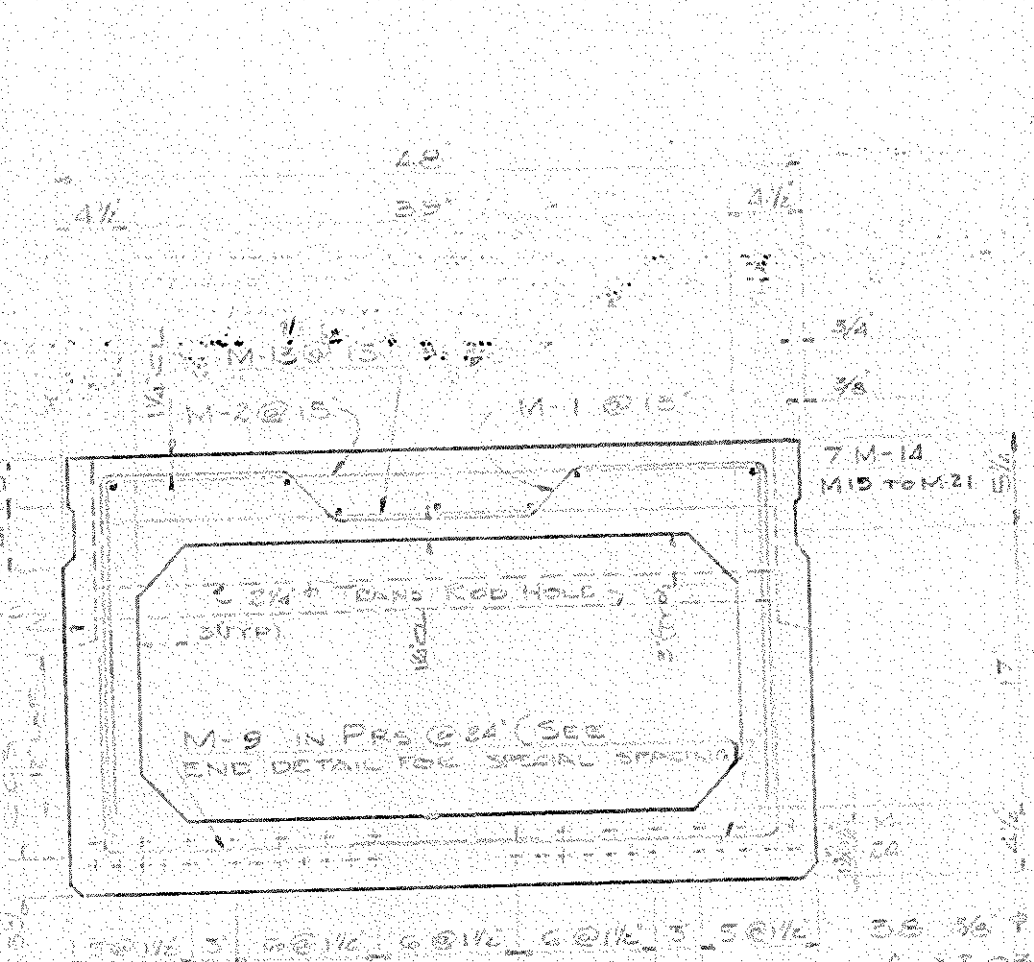


DETAIL SHOWING TRANSVERSE ROD
CONNECTIONS AT DIAPHRAGM
1/2" = 1'-0"

PRESTRESS NOTES:

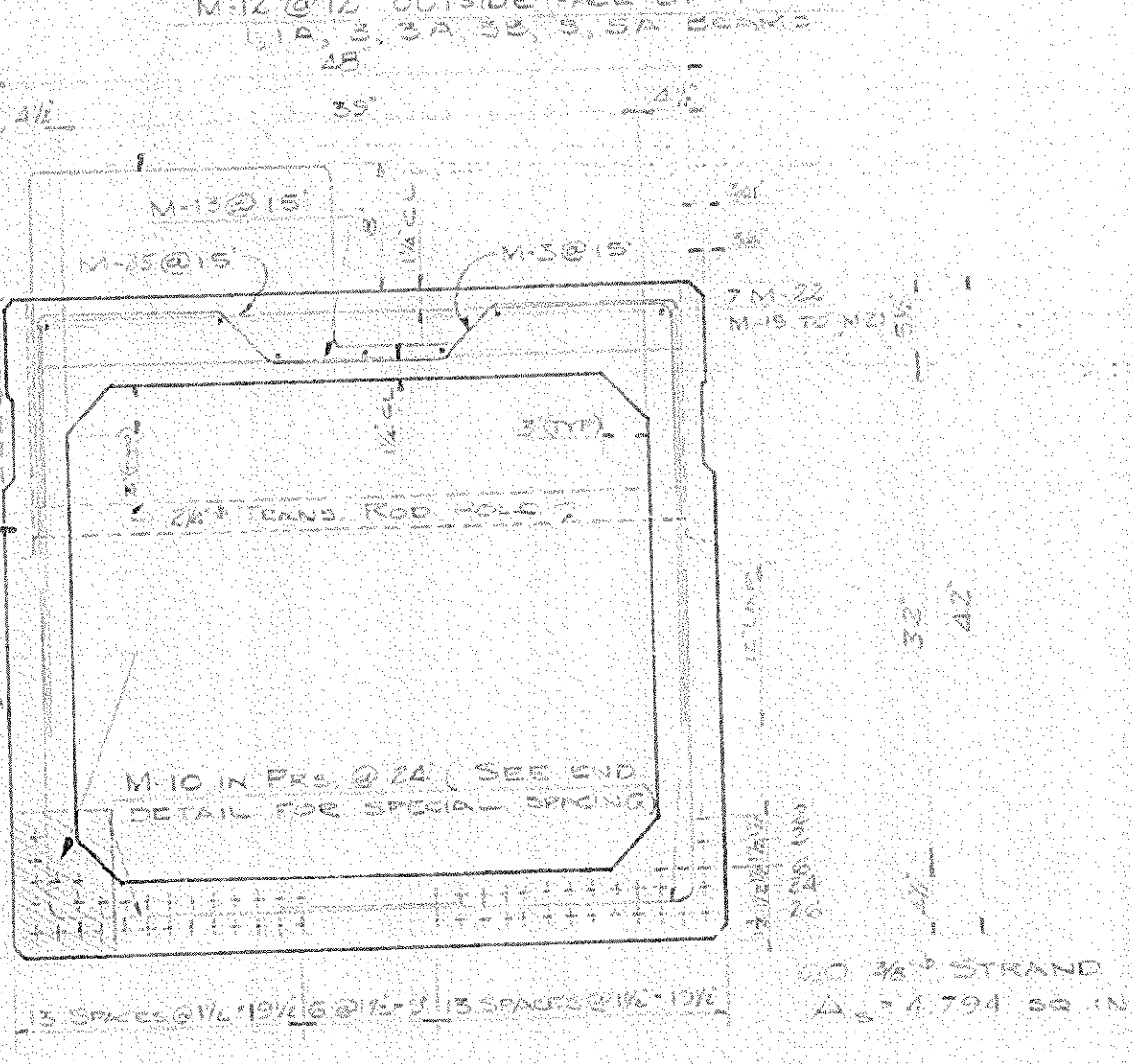
- MINIMUM BEAM STRENGTH @ 28 DAYS: 50,000 PSI
- MINIMUM CONCRETE STRENGTH @ 28 DAYS: 5000 PSI
- TYPE 1 & 3A BEAMS: 5000 PSI
- TYPE 2 & 4 BEAMS: 5000 PSI
- MINIMUM CONCRETE STRENGTH AT RELEASE: 4000 PSI
- TYPE 1 & 3A BEAMS: 4000 PSI
- TYPE 2 & 4 BEAMS: 4000 PSI
- INITIAL PRESTRESS ON EACH 7/16" STRAND SHALL BE 14,000 LBS.

FEDERAL DEPT. OF HWYS.
APPROVED AS TO DESIGN
AUG 13 1960
SUPERVISOR



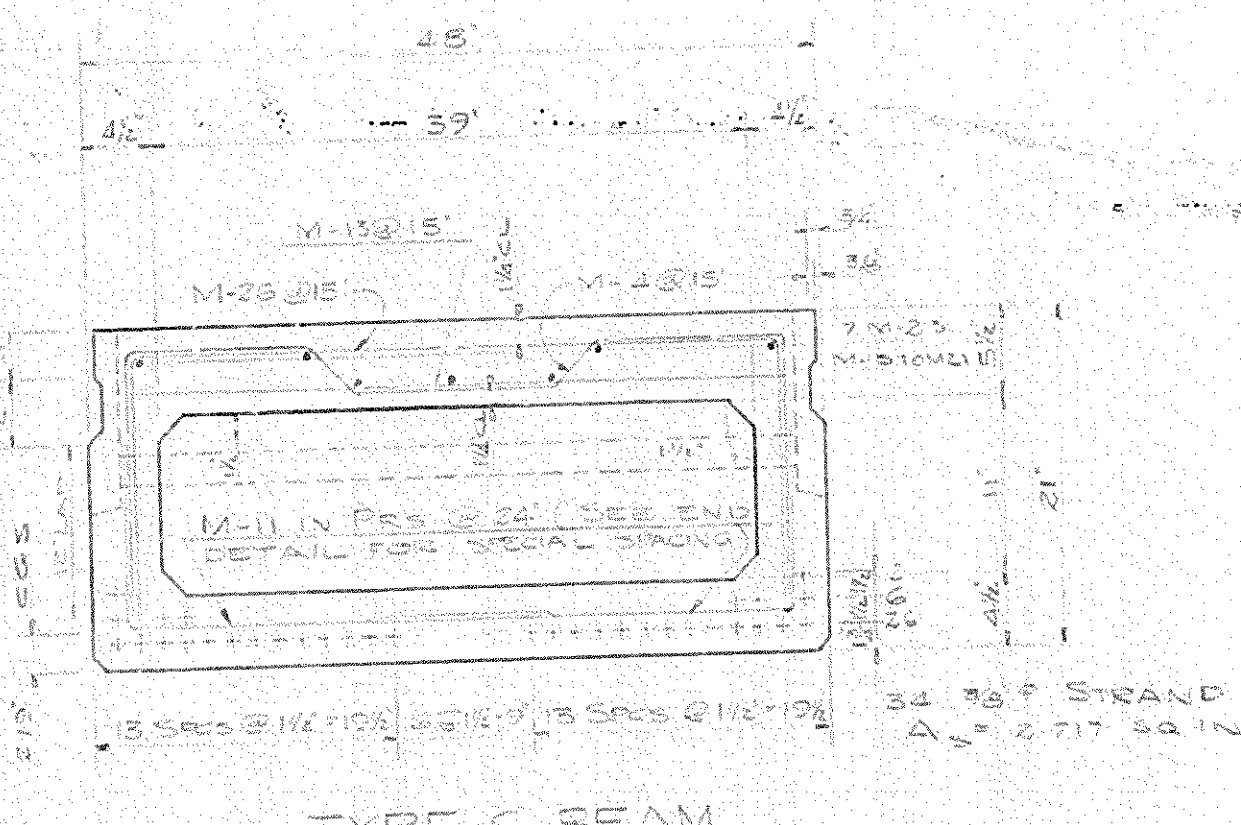
TYPE 2 BEAM

NOTE:
EVEN STRAND OFF FLUSH
EXCEPT WHERE INDICATED AND
PAINT WITH TWO COATS OF
BITUMASTIC PAINT.



TYPE 1, 3, 3A, 3B, 4, 5, 5A BEAMS

TYPICAL BEAM SECTIONS
1" = 1'-0"



TYPE 6 BEAM

INCREASED THE EXTENDED LENGTH OF STRANDS.	M-11 REL. 8-15-60
NO REVISION	BY C.K.R. D.A.T.

DICKERSON STRUCTURAL CONCRETE CORPORATION

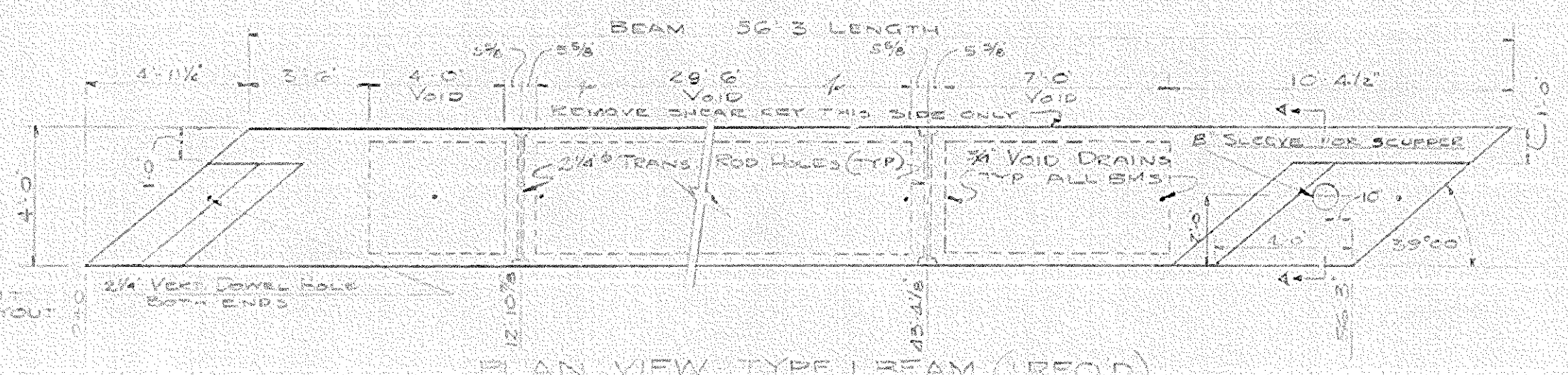
SPANCRETE

JOB: WASHINGTON GO. LR 7984
BRIDGE @ STA. 1205+80.00

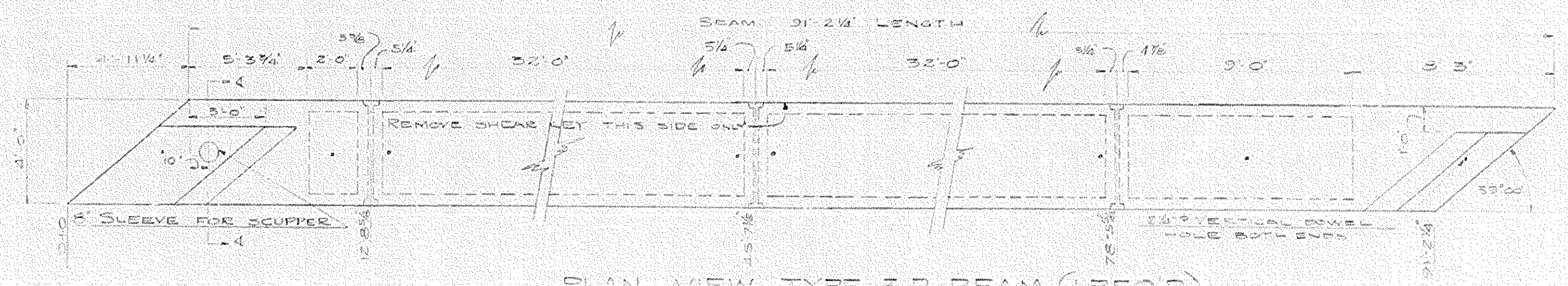
FOR: VARSOLINO CONST. CO.
PA. DEPT. OF HIGHWAYS

DATE: 8-31-60 ENGR: C.G.B. APPROVED:

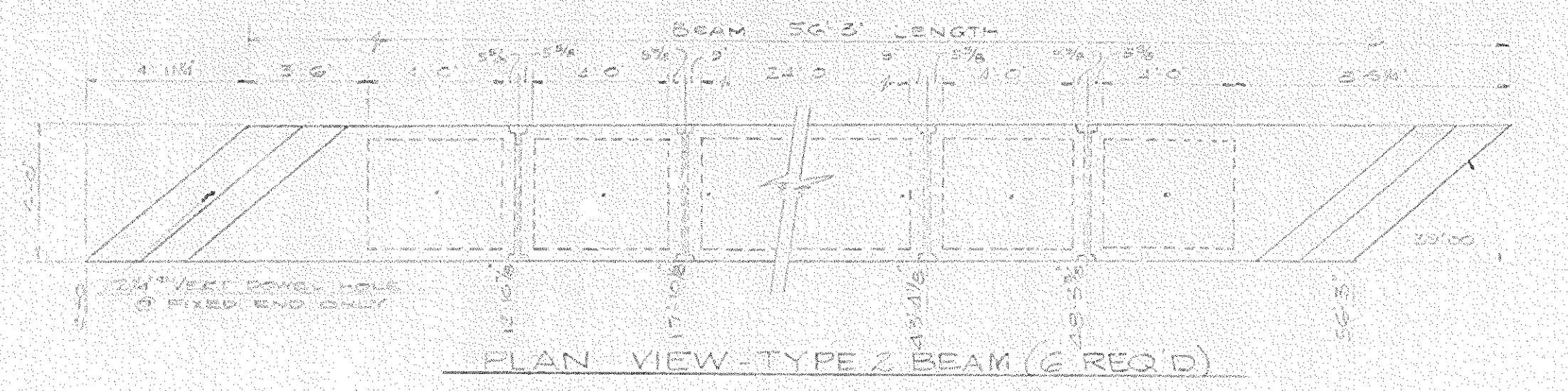
SHEET 1/5
JOB NO. 6014



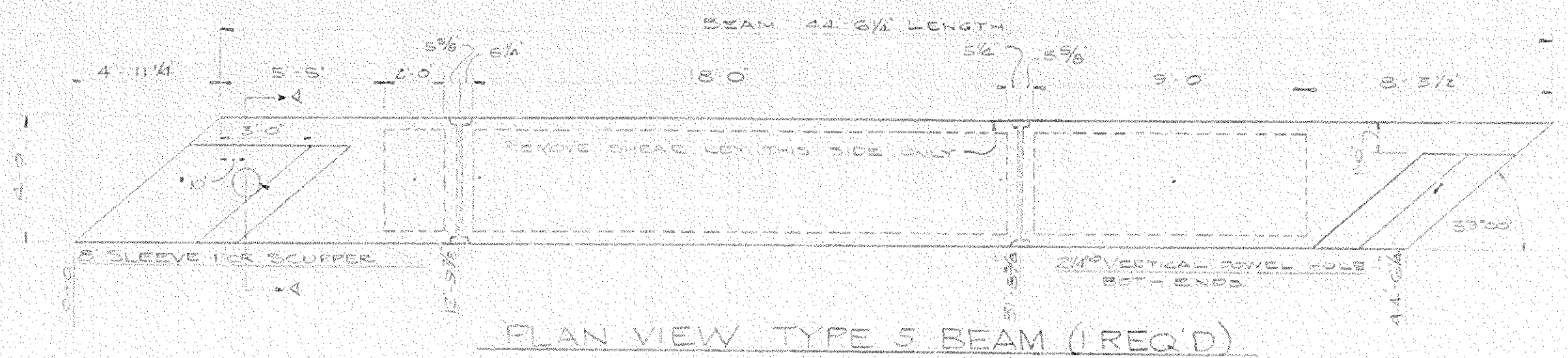
PLAN VIEW TYPE 1 BEAM (1 REQ'D)



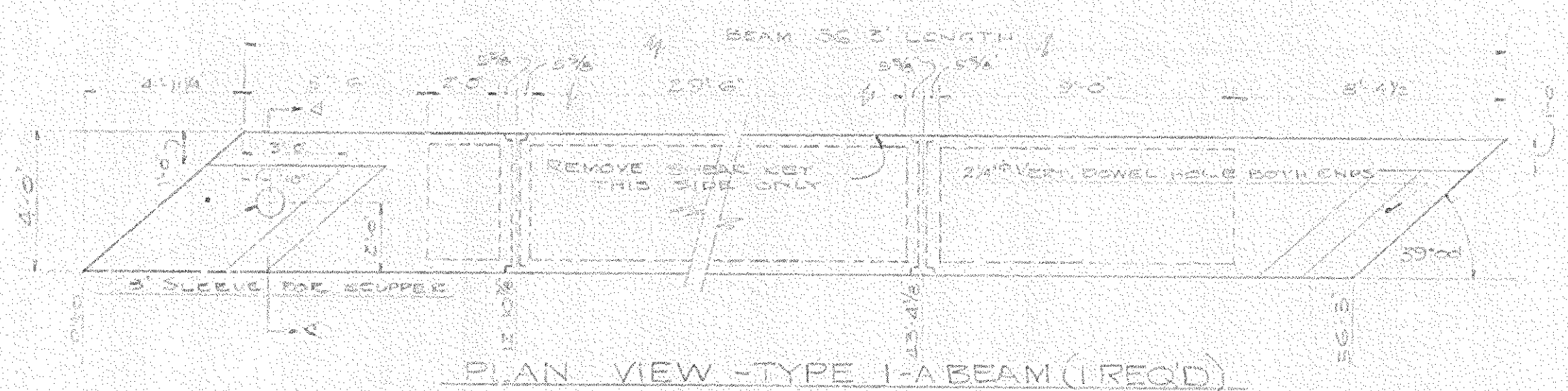
PLAN VIEW TYPE 3-B BEAM (1 REQ'D)



PLAN VIEW - TYPE 2 BEAM (6 REQ'D)



PLAN VIEW TYPE 5 BEAM (1 REQ'D)



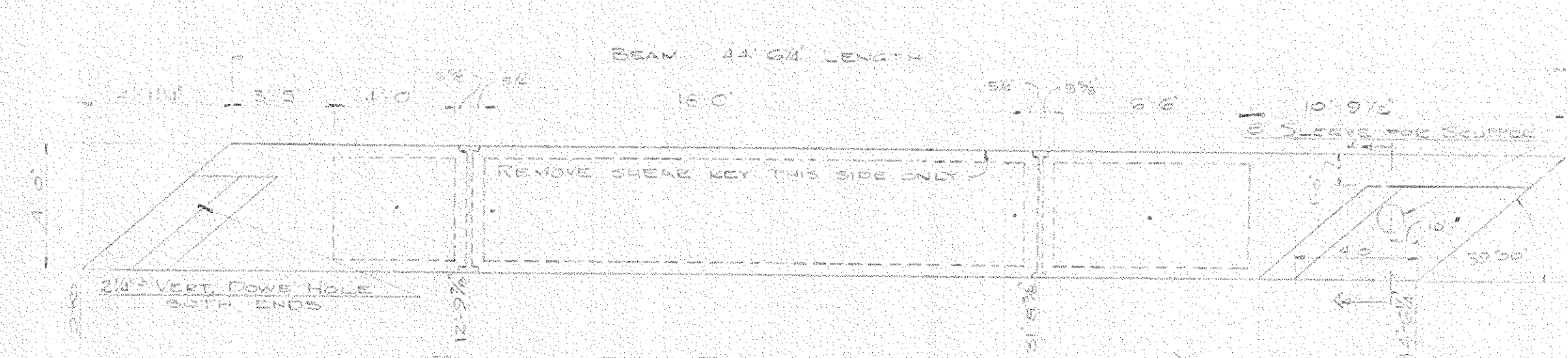
PLAN VIEW - TYPE 1-A BEAM (1 REQ'D)



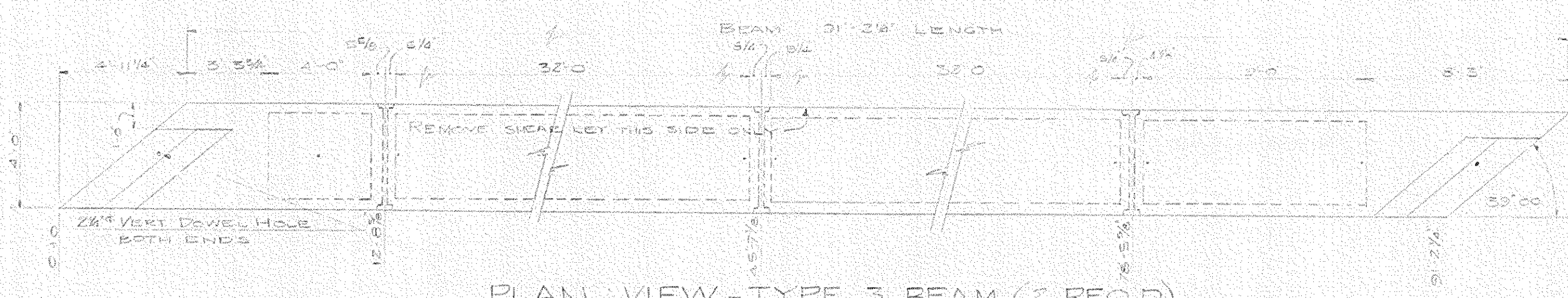
PLAN VIEW - TYPE 6 BEAM (6 REQ'D)



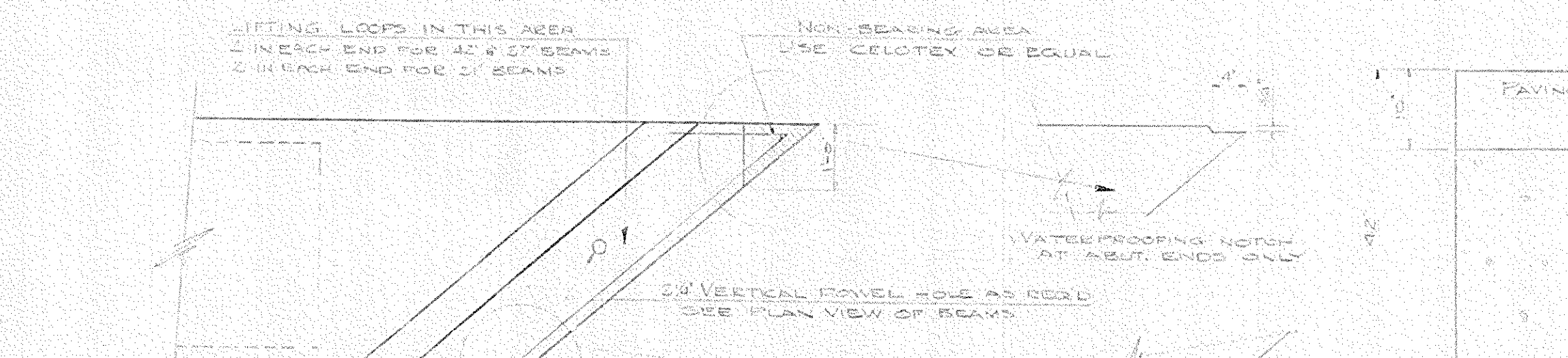
PLAN VIEW - TYPE 4 BEAM (12 REQ'D)



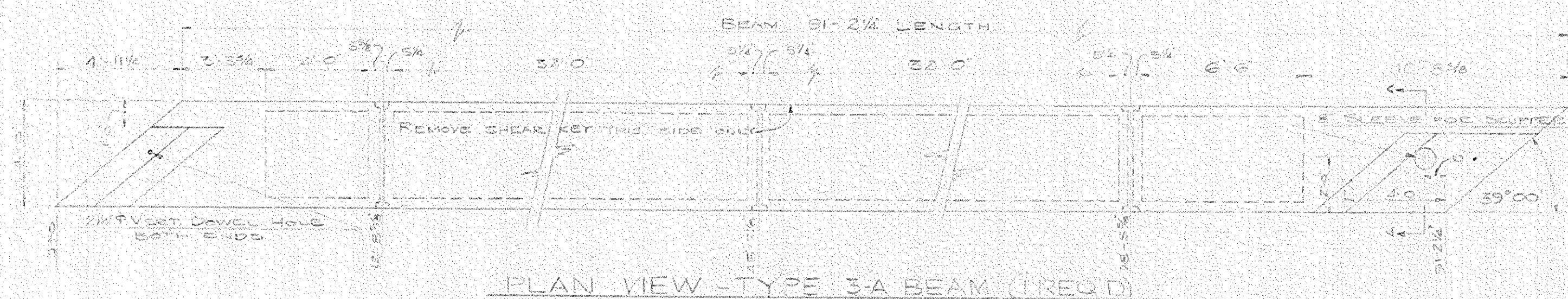
PLAN VIEW - TYPE 5A BEAM (1 REQ'D)



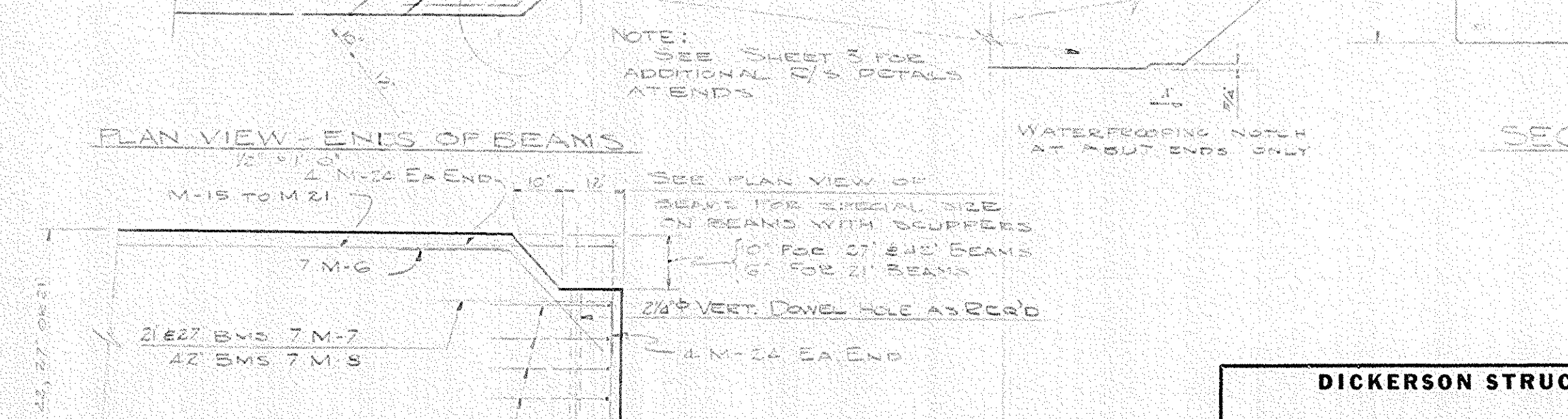
PLAN VIEW - TYPE 3 BEAM (2 REQ'D)



PLAN VIEW - ENDS OF BEAMS



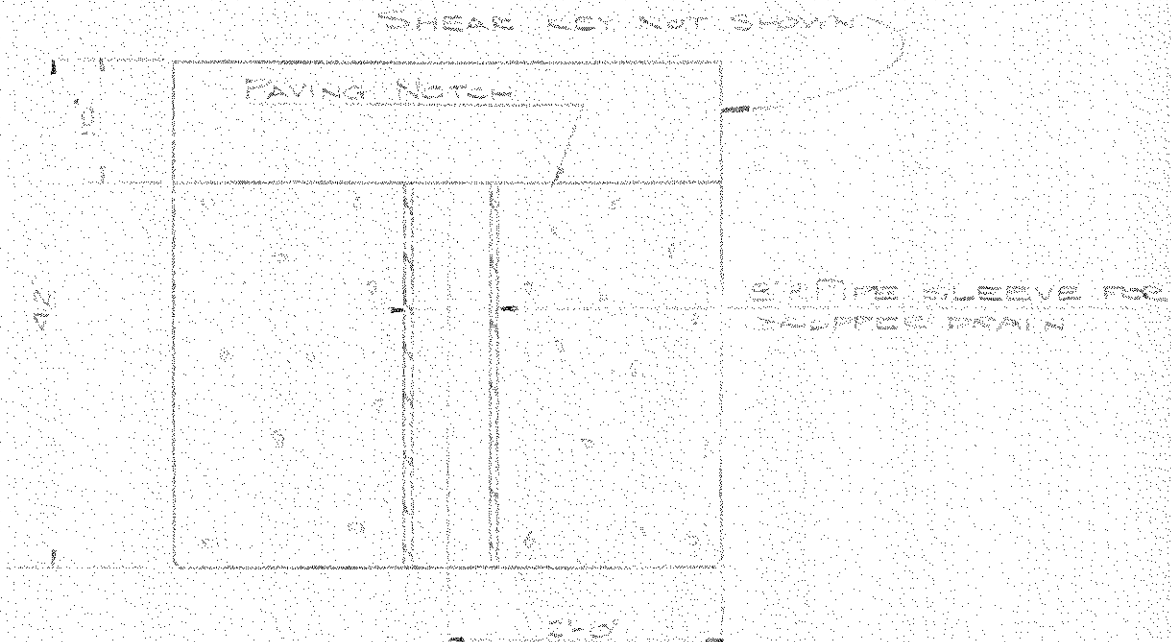
PLAN VIEW - TYPE 3-A BEAM (1 REQ'D)



ELEVATION - PARALLEL TO SKEW

A ESTIMATED LAMBERTS BE CHECKED BY CONTRACTOR IN FIELD
 B DEFLECTION FOR 100 POUNDS PER SQUARE YD WEARING SURFACE

SPANS	1	2 & 3	4
A	0.29	1.33	0.85
B	0.21	0.92	0.16



SECTION A-A

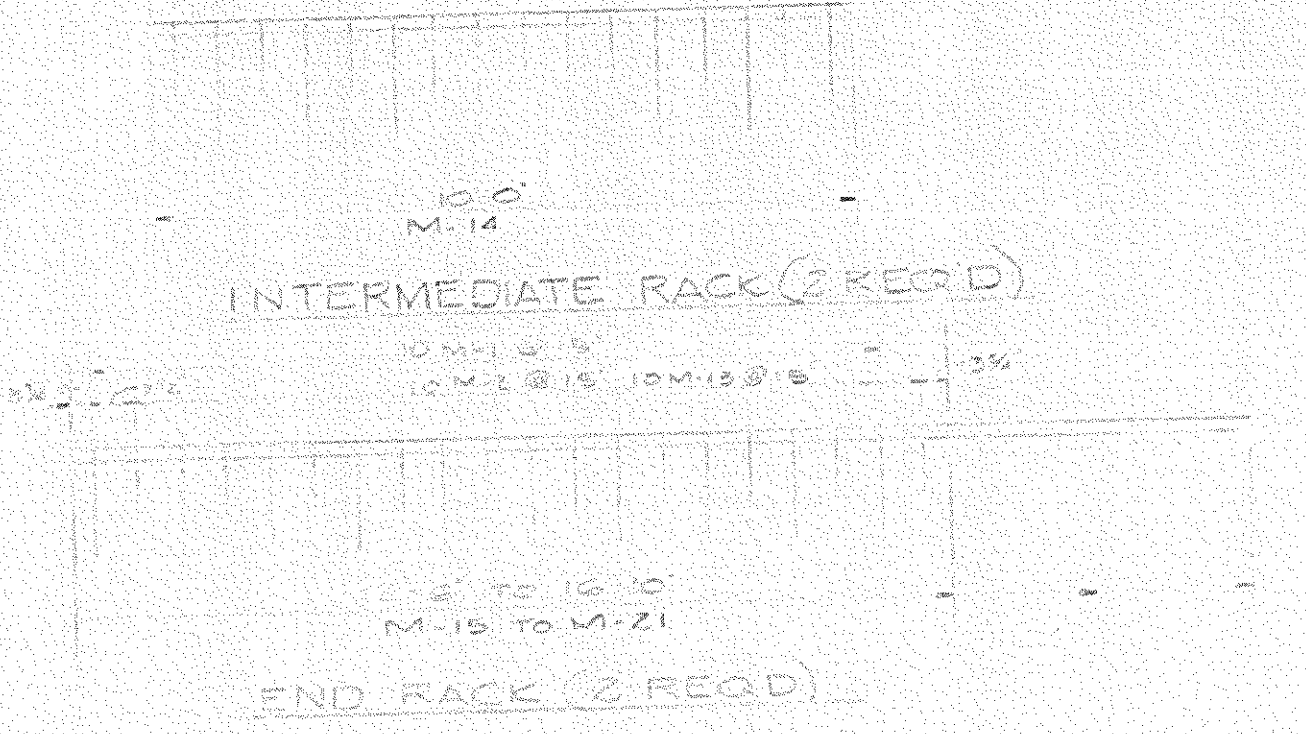
APPROVED BY: [Signature]
 AUG 10 1960
 ENGINEER OF RECORD

DICKERSON STRUCTURAL CONCRETE CORPORATION

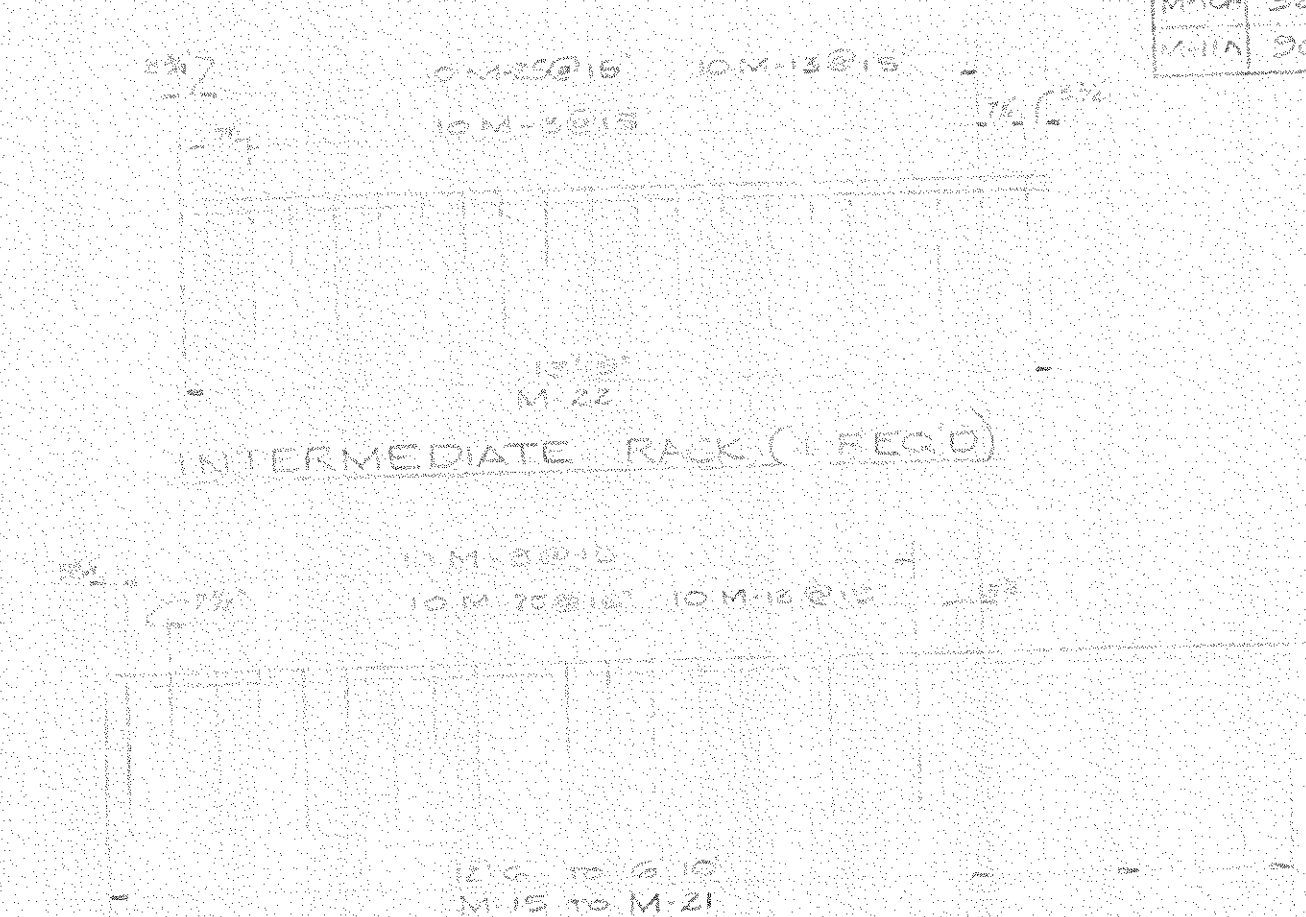
SPANCRETE

JOB: WASHINGTON CO. LR 798-1 BRIDGE @ STA 1205+50.00
 FOR: MARSHALL CONST. CO PA. DEPT. OF HIGHWAYS
 DATE: [] ENGR.: [] APPROVED: [] SHEET: 3/5 OF JOB NO. []

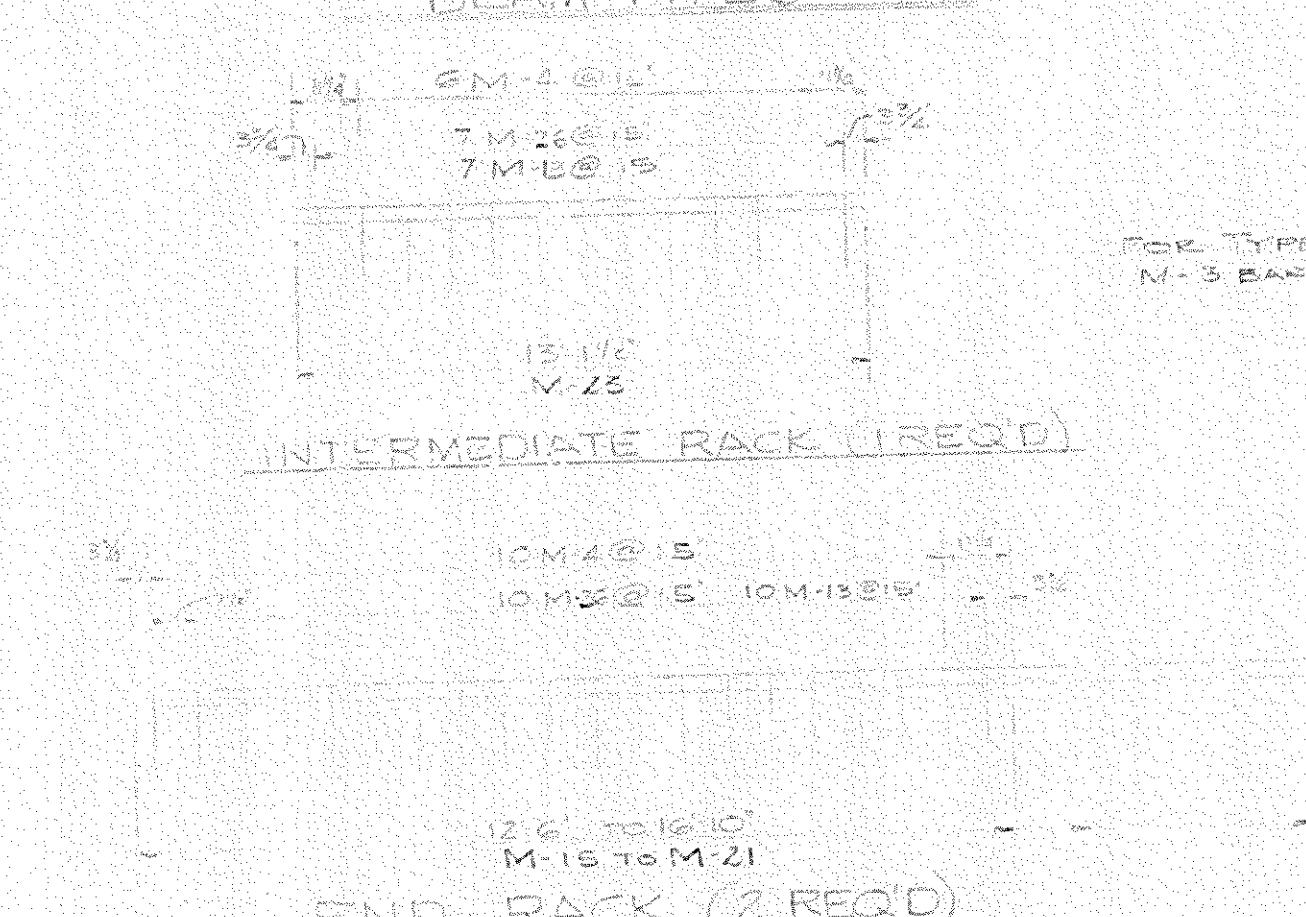
FOR TYPE 1#1A BMS SUBSTITUTE
M-3 BARS FOR M-1 BARS &
M-25 BARS FOR M-2 BARS



REINFORCING RACK LAYOUT
BEAM TYPES 1 & 2



REINFORCING RACK LAYOUT
BEAM TYPES 3 & 4



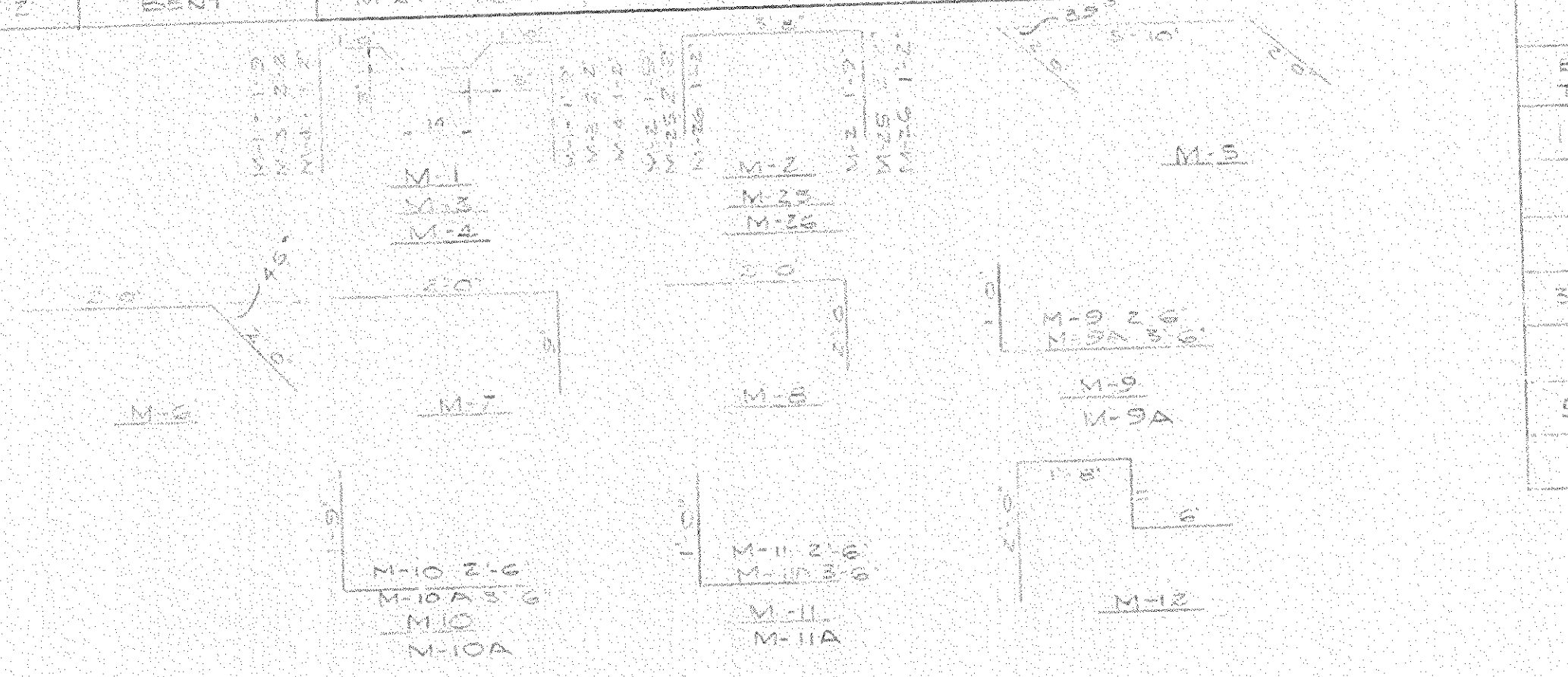
REINFORCING RACK LAYOUT
BEAM TYPES 5 & 6

BAR LIST				
MARK	NUMBER	SIZE	LENGTH	DESCRIPTION
M-1	216	5	7.4	BENT
M-2	216	5	7.2	"
M-3	1086	5	8.2	"
M-4	180	5	6.2	"
M-5	224	6	9.0	"
M-6	128	6	4.0	"
M-7	224	6	2.9	"
M-8	224	6	4.0	"
M-9	300	4	3.0	"
M-10	1876	4	2.3	"
M-11	234	4	3.2	"
M-12	520	4	5.1	BENT
M-13	1664	5	3.9	STRAIGHT
M-14	112	4	10.0	"
M-15	24	4	12.6	"
M-16	64	4	3.7	"
M-17	64	4	15.1	"
M-18	64	4	12.8	"
M-19	24	4	18.5	"
M-20	64	4	15.9	"
M-21	63	4	16.10	"
M-22	448	4	13.9	"
M-23	56	4	8.112	"
M-24	1252	4	2.0	STRAIGHT (5#)

M-25	1064	5	8.2	BENT
M-26	182	5	6.0	"
M-2A	360	4	4.0	"
M-10A	3200	4	5.5	"
M-11A	360	4	4.2	BENT

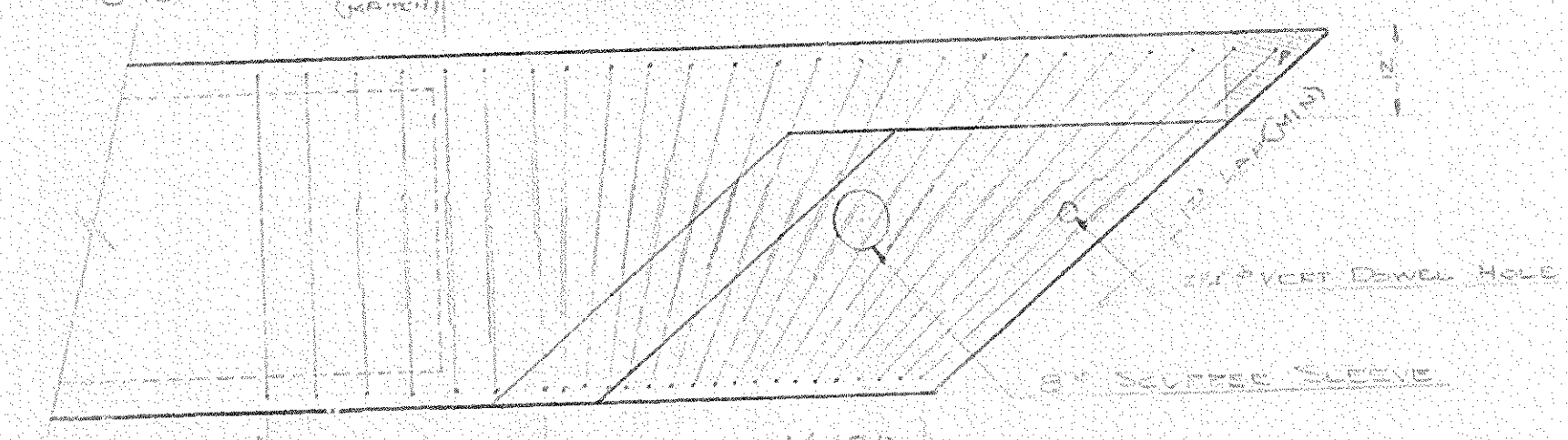
LIST OF MATERIALS		
NUMBER	UNITS	DESCRIPTION
116,200	LF	3/8" PRESTRESSING STRAND
24	Pcs	59X17 Box Voids 4' 0" LG
3	Pcs	39X17 " " 24' 0" LG
68	Pcs	59X32 " " 4' 0" LG
3	Pcs	39X32 " " 2' 0" LG
1	Pcs	39X32 " " 7' 0" LG
5	Pcs	39X32 " " 9' 0" LG
2	Pcs	39X32 " " 29' 0" LG
2	Pcs	39X32 " " 8' 0" LG
2	Pcs	39X32 " " 6' 6" LG
24	Pcs	39X32 " " 27' 0" LG
8	Pcs	39X32 " " 32' 0" LG
24	Pcs	39X11 " " 4' 0" LG
6	Pcs	39X11 Box Voids 3' 0" LG
712	LF	2 1/2" TYPE 'A' SOLVOID
70	Pcs	1 1/2" TRANSVERSE RODS 7' 11/16" LG
40	Pcs	3X3X1/2" FL WASHERS
140	Pcs	1" HEAVY HEX NUTS
190	Pcs	1/2" FASCIA FORMING INSERTS
36	SQ FT	1/2" THICK GLOTTCH DE BRAL

BEAM CONCRETE QUANTITIES AND WEIGHTS		
BEAM TYPE	CONCRETE PER BEAM (CU YDS)	SLIPPING WEIGHT (TONS)
#1A	16.1	33.8
2	11.9	24.9
3	22.6	47.4
3A & 3B	23.4	49.0
4	23.9	50.0
5 & 5A	12.4	25.9
6	8.2	17.2



NOTE:
CUT STEEL TO FIT IN BEAMS
WITH LARGE PAVING NOTCHES

FOR TYPE 5A & 5A BMS SUBSTITUTE
M-3 BARS FOR M-4 BARS



REINFORCING DETAILS ON
BEAM ENDS WITH SCUPPERS

M-26 & M-15 @ 15'
M-9 & M-13 @ 15'
M-16 & M-18 @ 15'



REINFORCING DETAILS ON
BEAM ENDS WITHOUT SCUPPERS

PENNA. DEPT. OF HIGHWAYS
APPROVED AS TO DESIGN
AUG 10 1960

DICKERSON STRUCTURAL CONCRETE CORPORATION

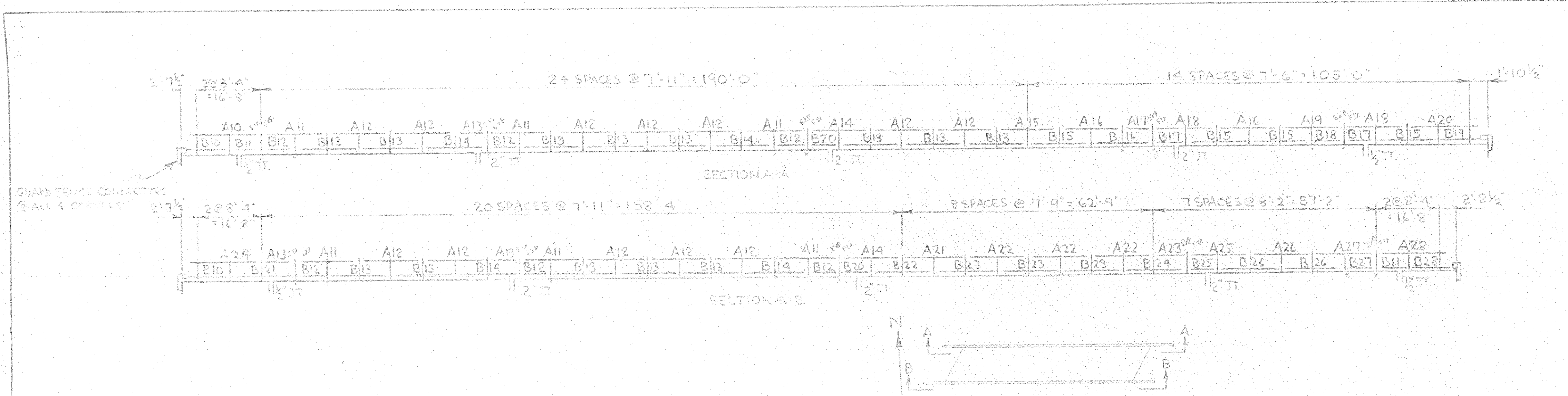
SPANCRETE

JOB: WASHINGTON CO. LR 798-1
BRIDGE @ STA 1205+53.00

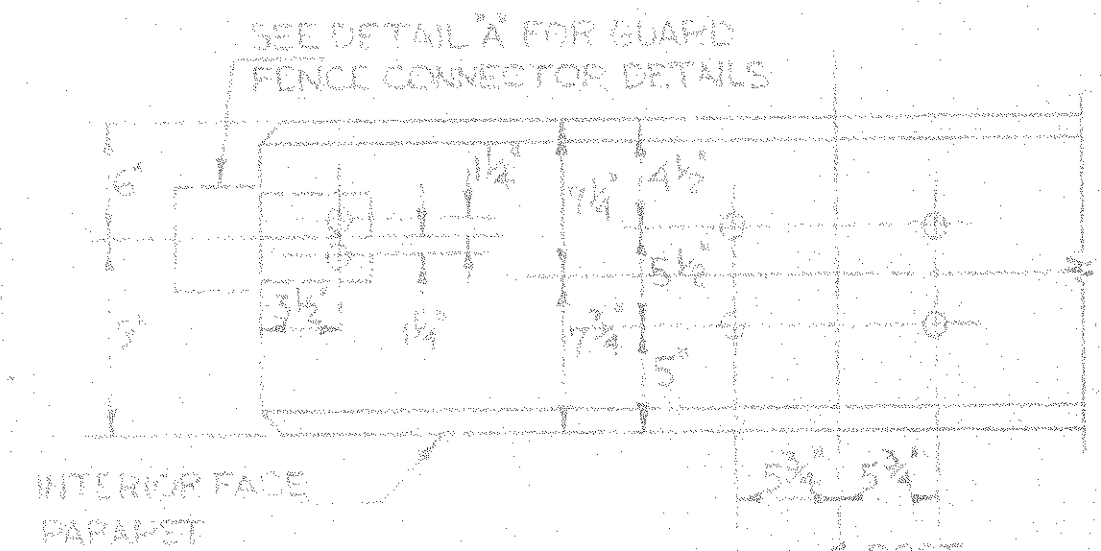
FOR: MARSHING CONST. CO.
PA. DEPT. OF HIGHWAYS

DATE: 7-5-60 ENGR: C.G.E. APPROVED:

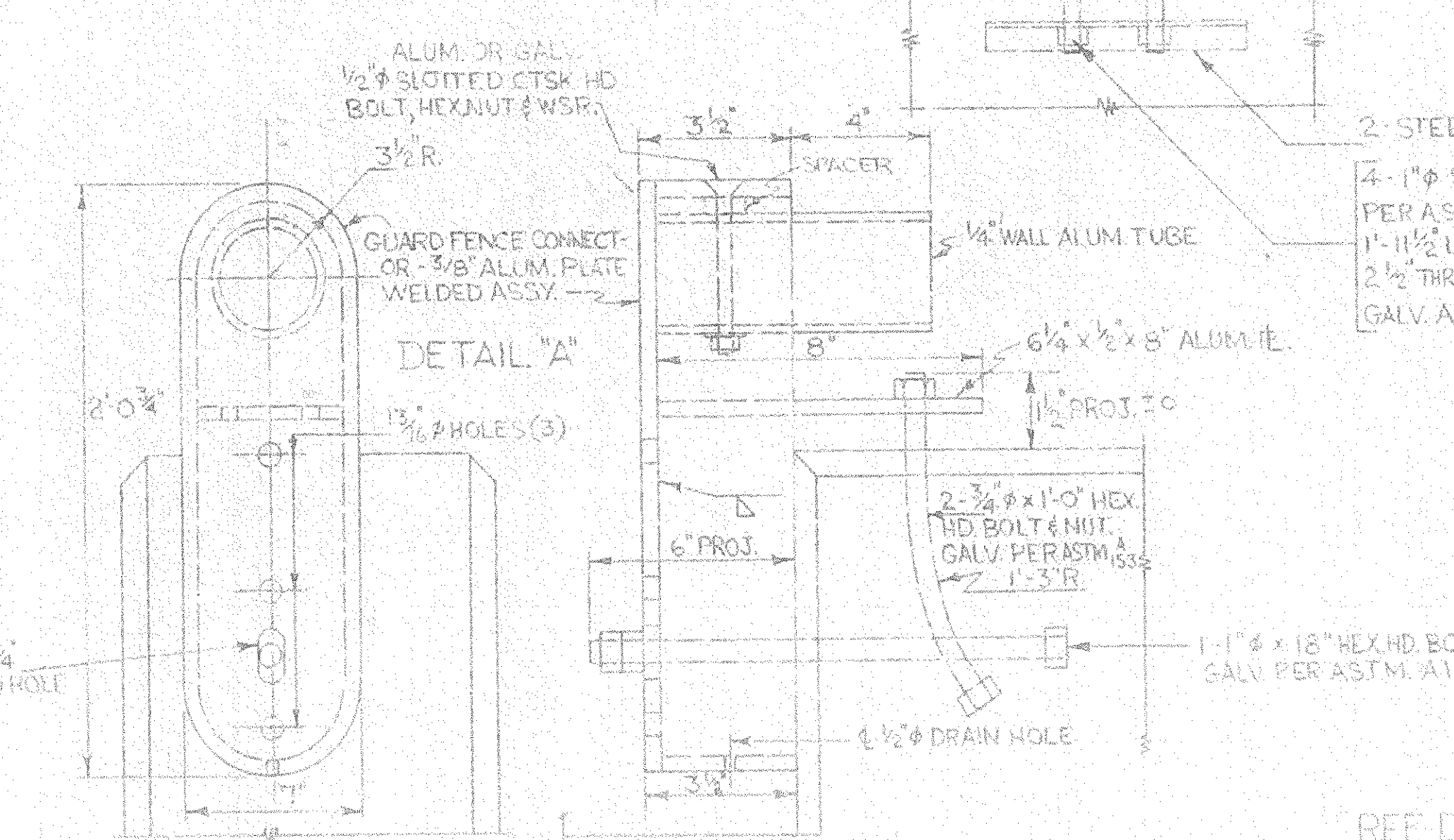
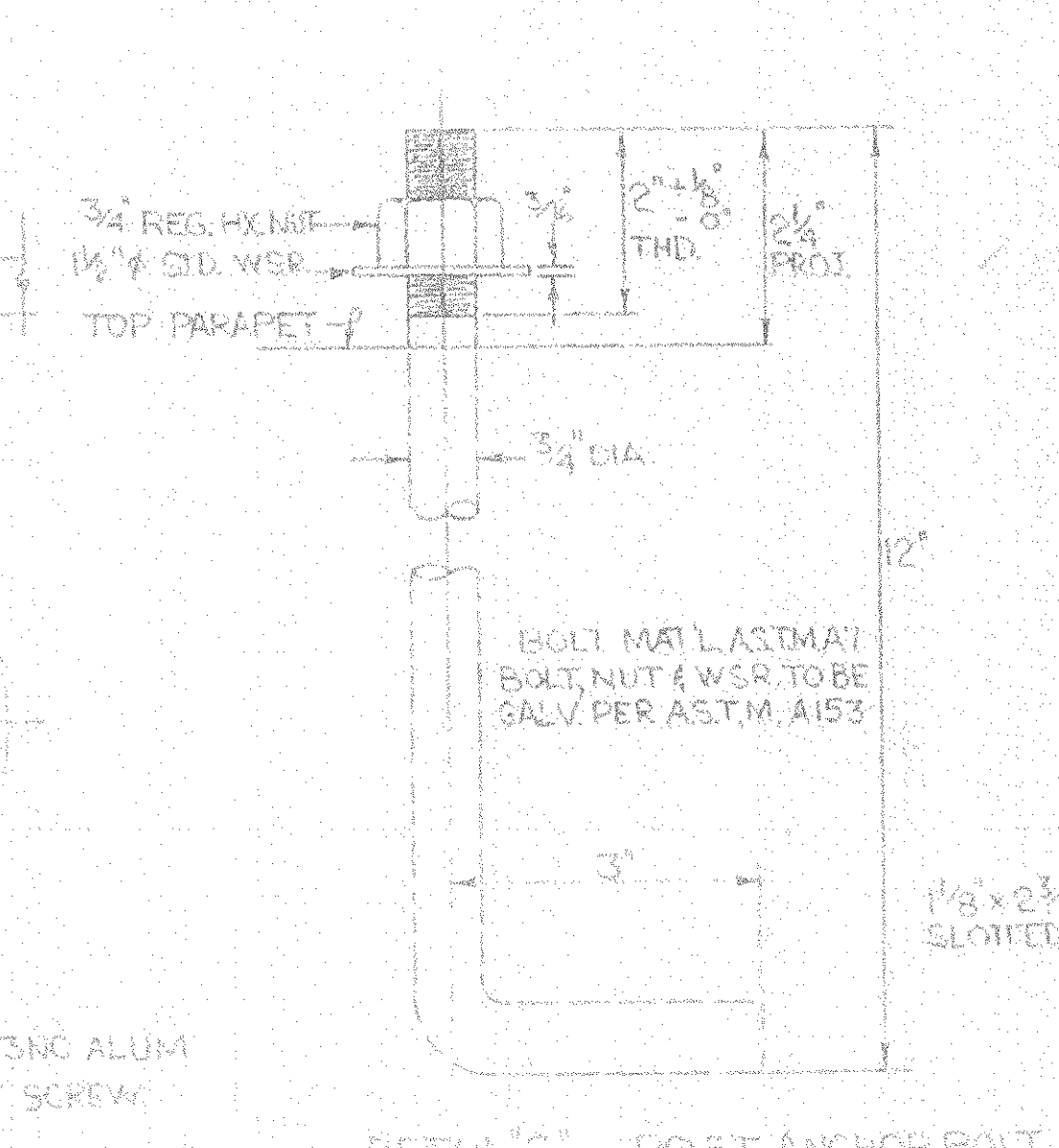
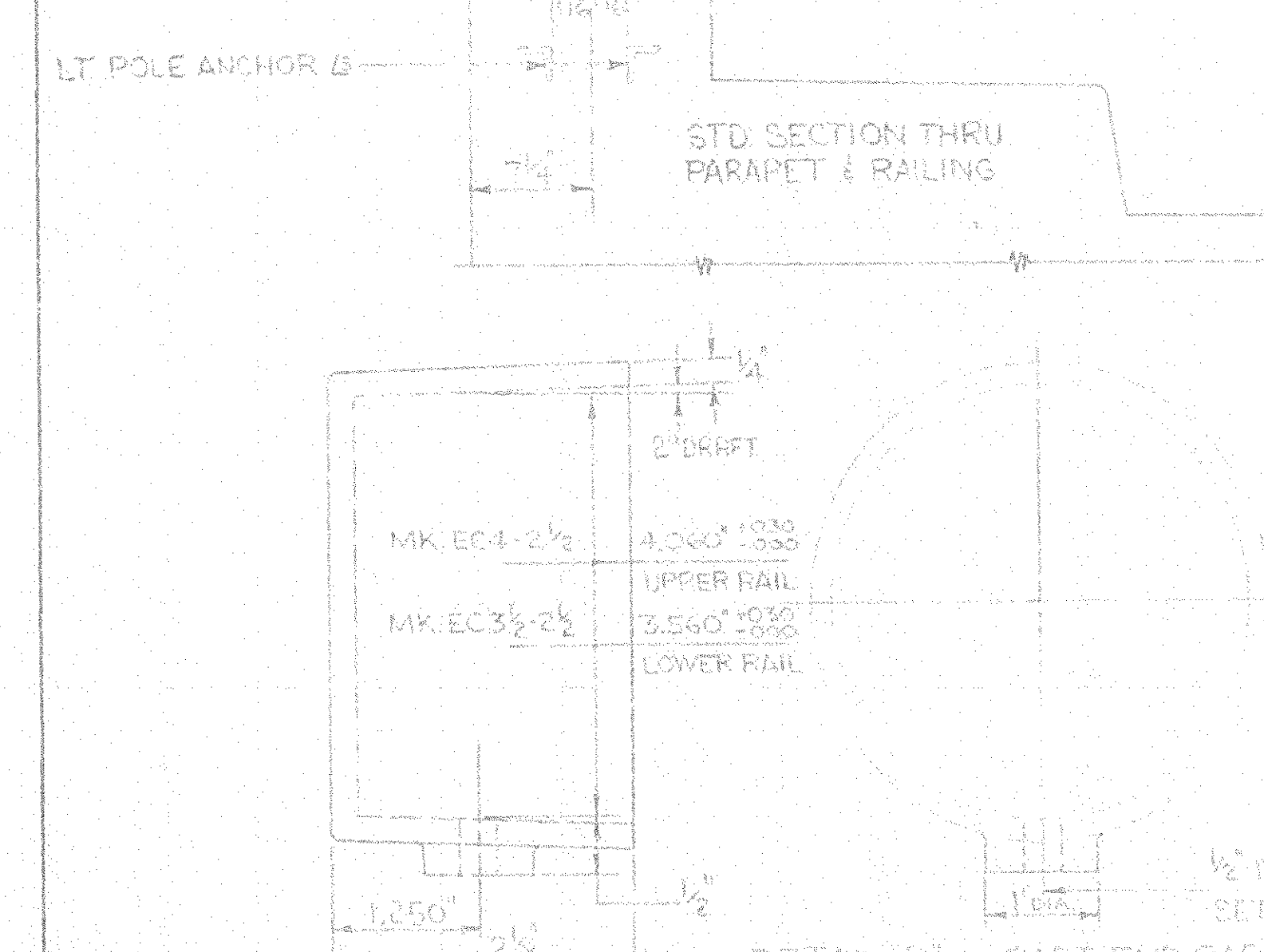
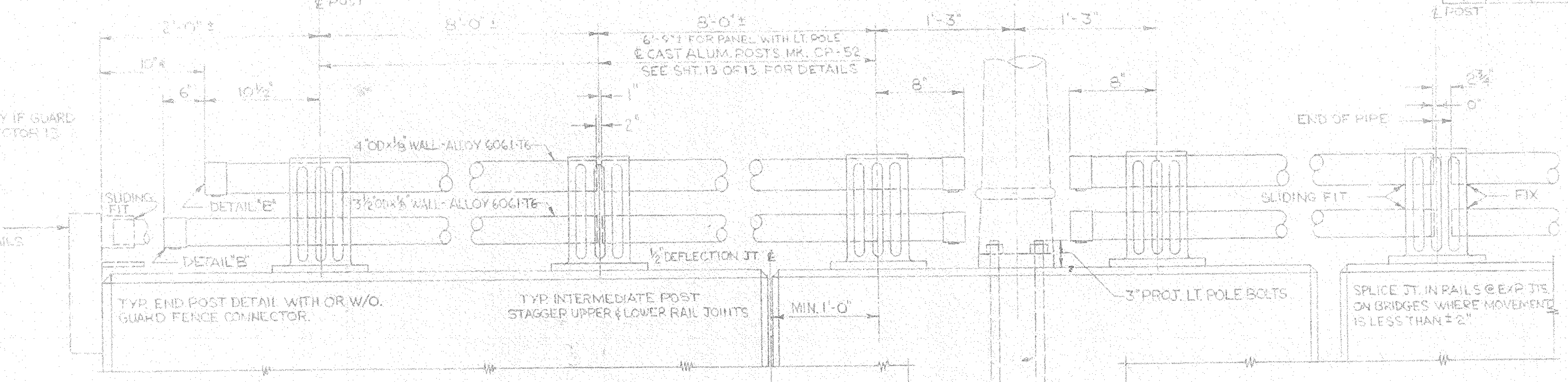
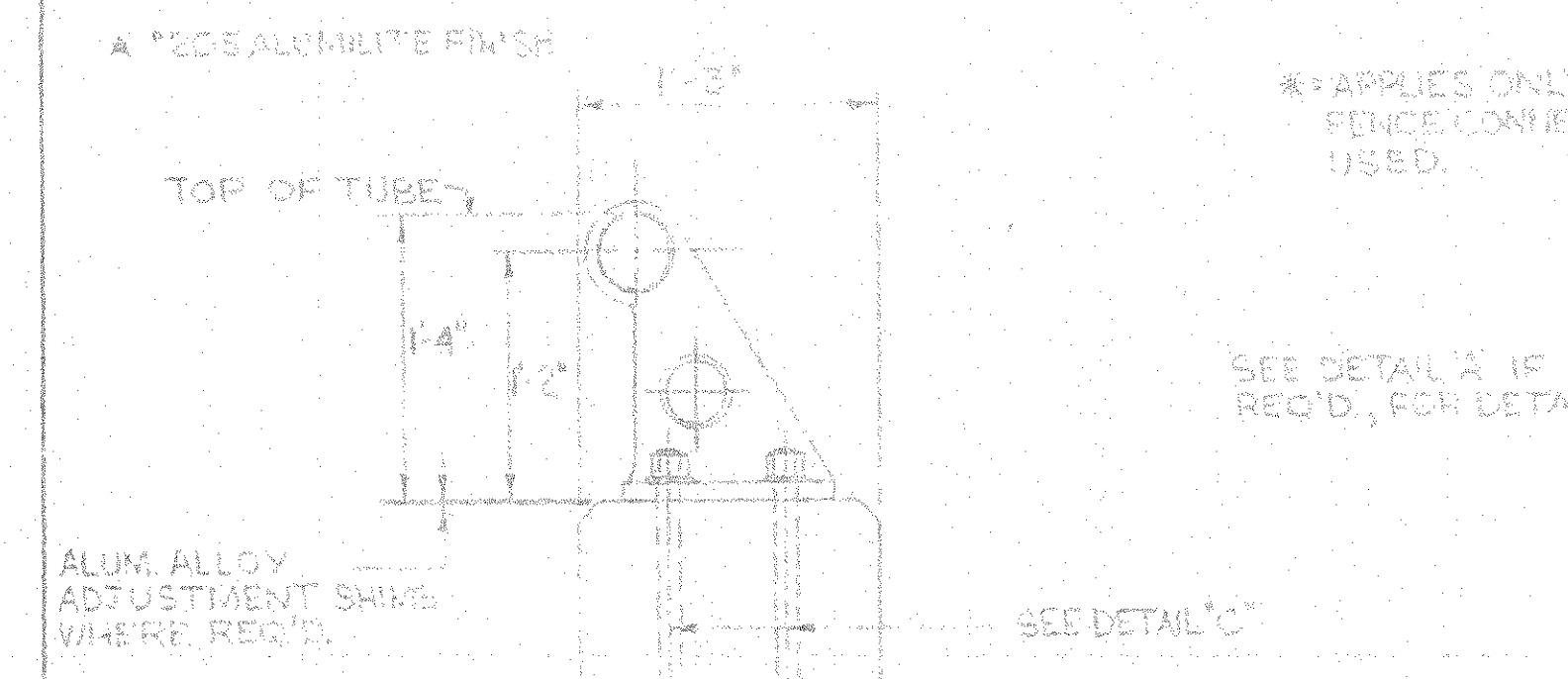
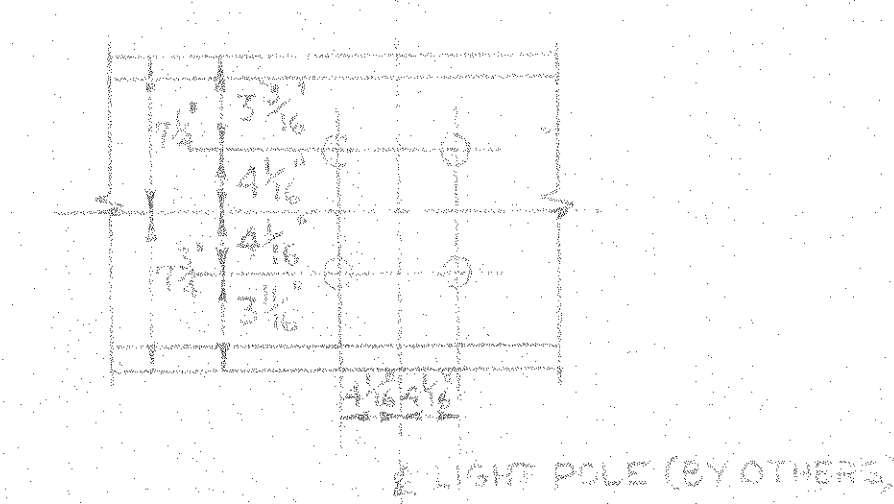
SHEET 3/5
JOB NO. 6014



GEN. NOTES & SPECS.
 CAST POSTS TO BE PER ASTM SPEC. B108, ALLOY 6061-T6, CONDITION T3.
 TUBING DD B275, DD 9211A, DD T6
 SHIMS DD B229, DD 990A, DD T3
 SET SCREWS DD B241, DD D142A, DD T4x
 ANCHOR BOLTS, NUTS, WASHERS TO BE HOT DIP GALV. PER ASTM SPEC. A153.
 BOLT MAT'L TO BE PER ASTM SPEC. A7 (FORM 409 - 1/2", 3/4", 1" & 1 1/2")
 POSTS TO BE SET NORMAL TO GRADE - POST ANCHOR BOLTS TO BE SET PERPENDICULAR TO TOP OF PARAPET.
 LT. POLE ANCHOR BOLTS TO BE SET TRILY VERTICAL.
 TOLERANCES TO BE IN ACCORD WITH MANUFACTURER'S AND INDUSTRY STANDARDS.
 SURFACES OF ALUM. WHICH COME IN CONTACT WITH CONCRETE OR STEEL SHALL BE GIVEN A COAT OF "ALUMILASTIC" OR EQUAL (NOT BY NAME).
 UPPER & LOWER RAIL JOINTS SHALL BE STAGGERED.



PLAN VIEW PARAPET



BILL OF MATERIAL CONTINUED				BILL OF MATERIAL			
QTY	DESCR. PUGH	MARK	LENGTH	QTY	DESCRIPTION	MARK	LENGTH
1	3 1/2" OD x 1/8" TUBE	B19	9'-1 1/2"	81	CAST POST	CP-52	
2	DO	B26	7'-7 3/4"	4	TOP RAIL CAP	EC-2 1/2	
1		B21	15'-11 1/4"	1/2	BOT RAIL CAP	EC-3 1/2	
1		B22	15'-6"	324	POST ANCHOR	BY POST FIT	
3		B23	15'-4"	4	GLARK FILL CON	BY POST FIT	
1		B24	15'-10"				
1		B25	7'-10 1/2"				
2		B26	16'-2"				
1		B27	8'-1"				
1		B28	10'-9 1/2"				
1	4" OD x 1/8" TUBE	A10	18'-2 3/4"				
6	DO	A11	15'-9"				
12		A12	15'-8"				
3		A13	7'-7 1/4"				
2		A14	15'-6 1/4"				
1		A15	15'-3"				
2		A16	15'-10"				
1		A17	7'-5"				
2		A18	14'-8 1/2"				
1		A19	14'-11"				
1		A20	15'-11 1/2"				
1		A21	13'-4"				
3		A22	15'-4"				
1		A23	8'-1"				
1		A24	18'-4 1/2"				
1		A25	16'-0 1/2"				
1		A26	15'-2"				
1		A27	16'-2"				
1		A28	18'-2 1/2"				
2	3 1/2" OD x 1/8" TUBE	B10	10'-8 1/4"				
2	DO	B11	8'-0 1/4"				
6		B12	7'-10"				
13		B13	15'-5"				
4		B14	15'-0 1/2"				
4		B15	14'-10"				
1		B16	14'-11"				
2		B17	7'-1 1/2"				
1		B18	7'-5"				

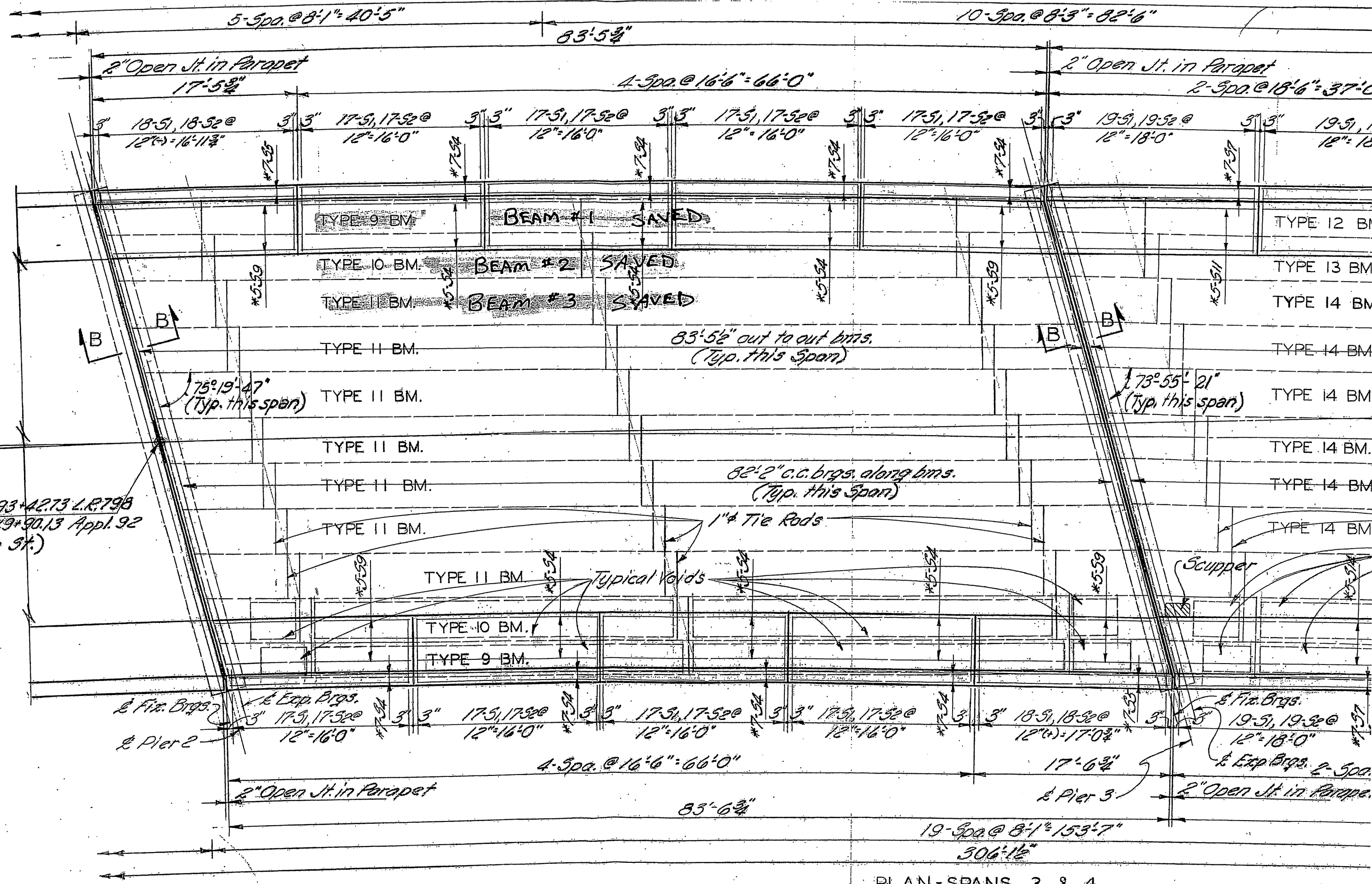
PENNA. DEPT. OF HIGHW.
 APPROVED AS TO DESIGN
 JUL 12 1960
 (SIGNATURE)

NO.	DATE	BY	REVISIONS
4			
3			
2			
1			

ALUMINUM HANDRAIL DETAILS FOR PENNA. DEPT. HWYS. LR. 198 SECT. 1 COUNTY WASHINGTON STA. 105+50.00 LR. 798 UNDER LR. 62083 (REC'D) CONTRACTOR: W.P. DICKERSON & SON, INC. MICHAEL FLYNN MANUFACTURING COMPANY PHILADELPHIA 24, PENNSYLVANIA

ISSUE NO. 10 OF 13

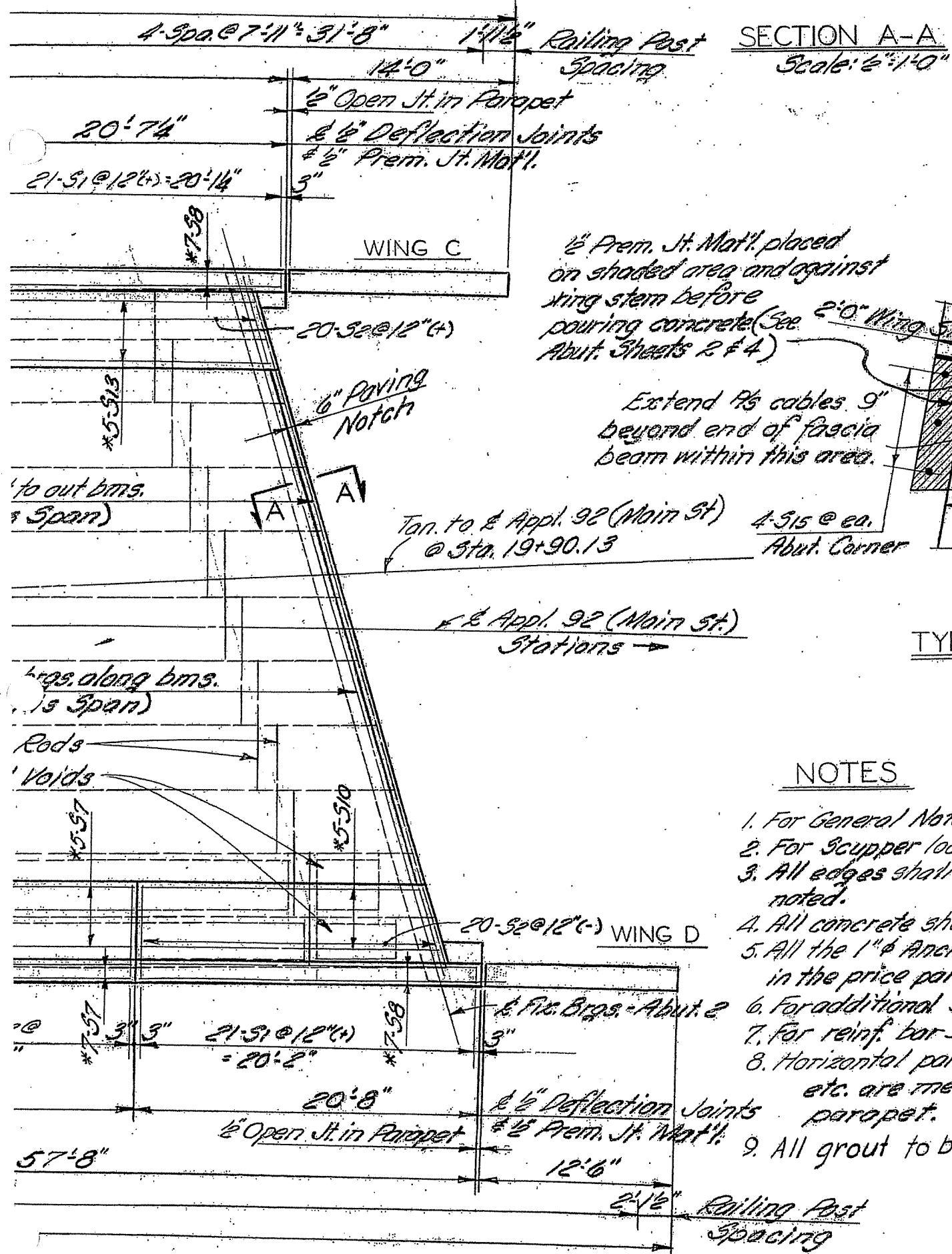
S-3661A
 REF. DWG. S-1614-B



P.O.C. Sta. 993+42.73 L.R. 798
 P.O.C. Sta. 19+90.13 Appl. 92
 (Main St.)

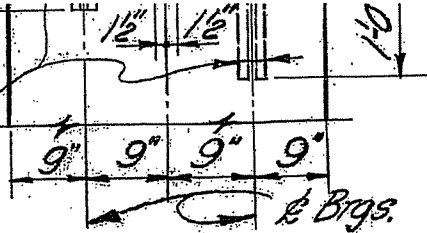
E.P. & R.W.H. JLS

PLAN-SPANS 3 & 4
 Scale: 6"=1'-0"



SECTION A-A
Scale: 1/2" = 1'-0"

3" metal sleeves. Fill with U-1 bituminous mat'l. @ Exp. Brgs.; fill with grout @ Fix Brgs, after dowels and beams are in place.

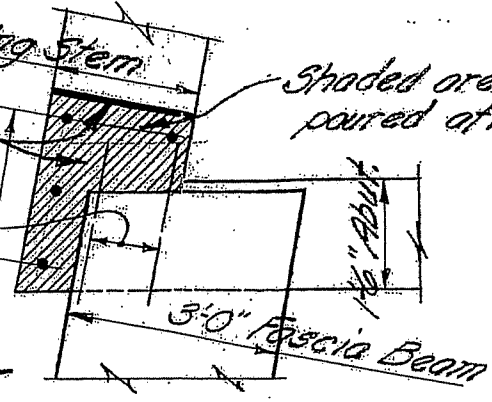


@ Fix. Brgs. only.

Note: Dowels, dowel holes and sleeves occur in all beams at Fix Brgs and in fascia beams only at Exp Brgs.

1/2" Prem. Jt. Mat'l. placed on shaded area and against wing stem before pouring concrete. (See 2'-0" Wing Stem Abut. Sheets 2 & 4)

Extend P/S cables 9" beyond end of fascia beam within this area.



Approved: JAN 24 1961
R.H. Jensen
Bridge Engineer

NOTES

1. For General Notes see Sheet 1.
2. For Scupper location and details see sheet 7.
3. All edges shall have a 1x1" chamfer unless otherwise noted.
4. All concrete shall be Class A, except Box Beams.
5. All the 1" dia Anchor dowels in brg seats shall be included in the price paid for P/S, P/S Box Beams.
6. For additional superstructure details see sheet 6.
7. For reinf. bar schedule, see sheet 6.
8. Horizontal parapet dimensions, railing post spacing, etc. are measured along inside face of parapet.
9. All grout to be non-shrink grout.

Commonwealth of Pennsylvania
Department of Highways
BRIDGE UNIT

WASHINGTON COUNTY

L.R. 798

SECTION I-A

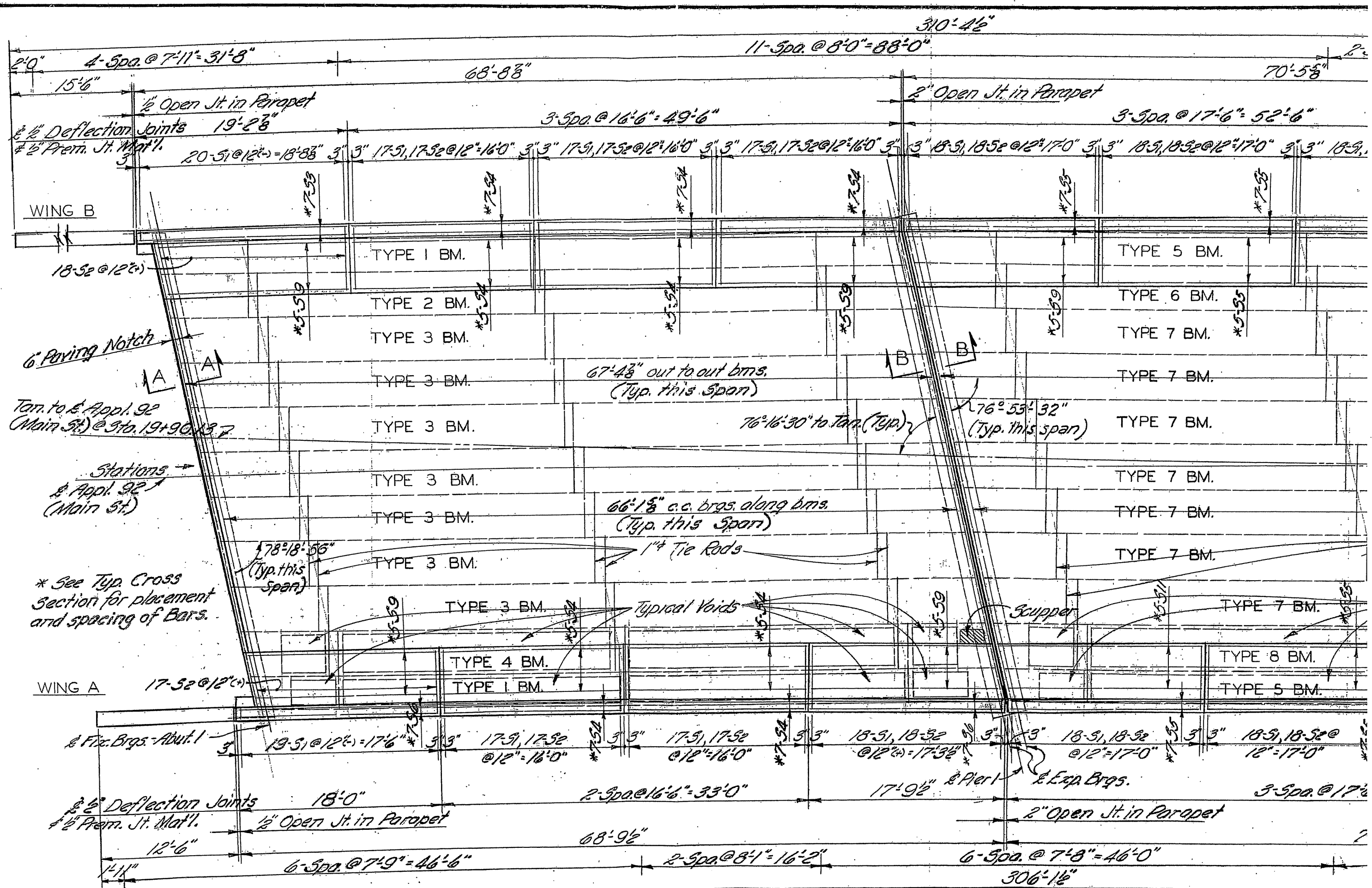
L.R. 798 UNDER APPL. 92 (MAIN ST.)

SLAB PLAN

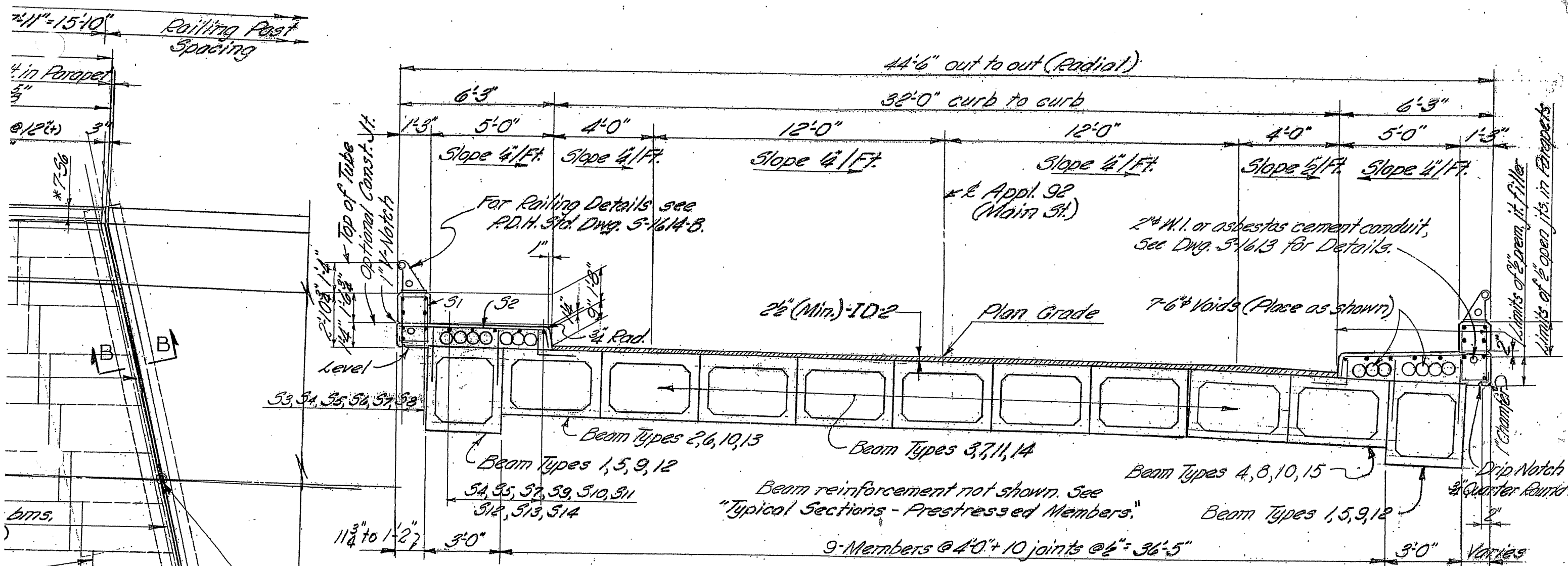
STA. 993 + 42.73

SCALE: AS NOTED
SHEET 5 OF 9

S-3530-A

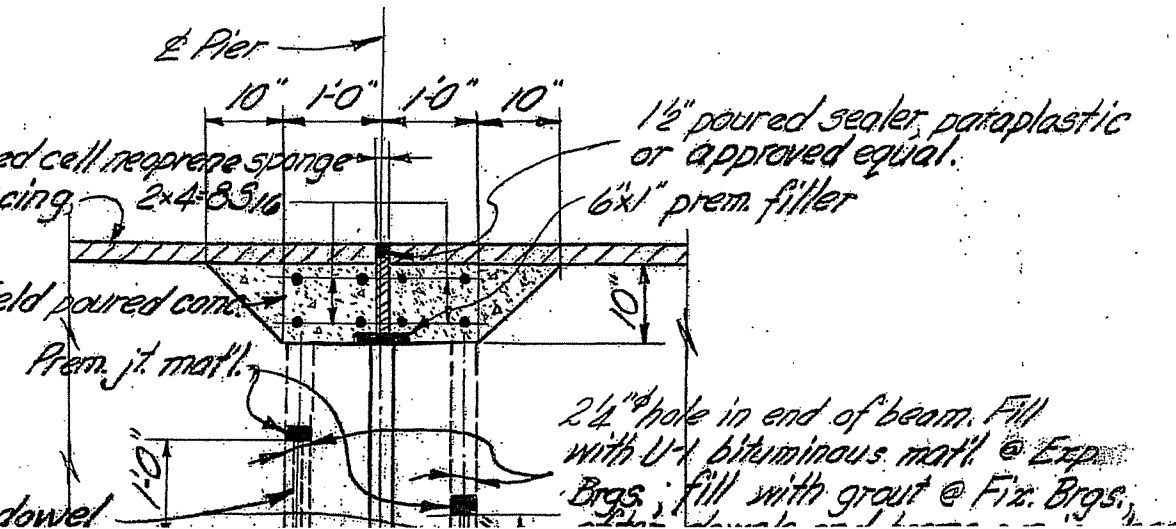
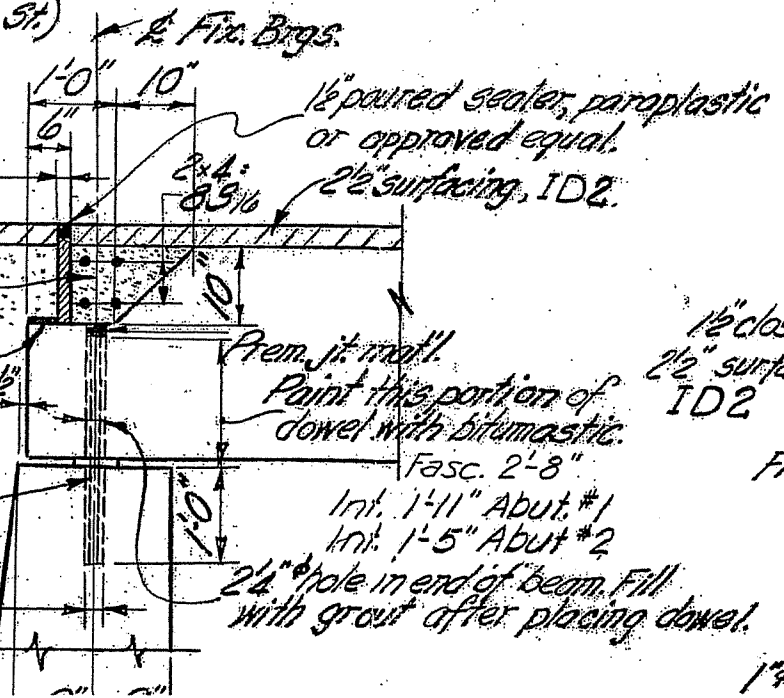
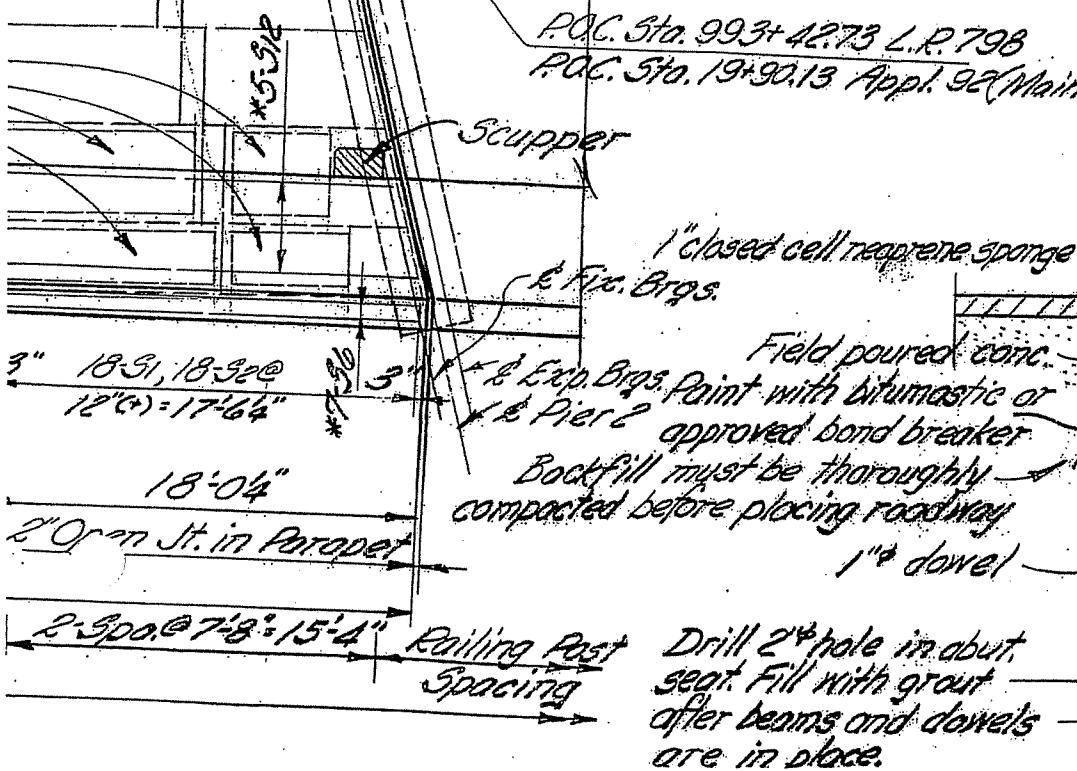


PLAN-SPANS 1 & 2
Scale: 1/4" = 1'-0"



TYP. CROSS SECTION
Scale: 4"=1'-0"

Note: Dimensions, details and reinforcement shown in either parapet or sidewalk typical for both parapets and sidewalks.

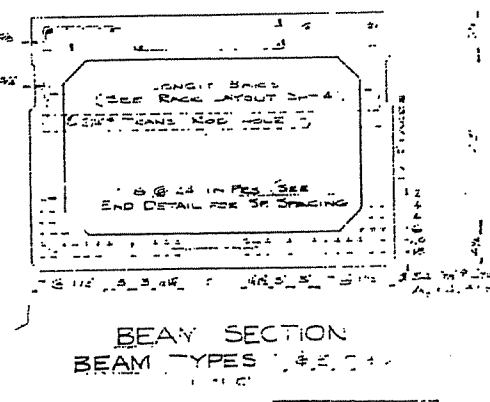
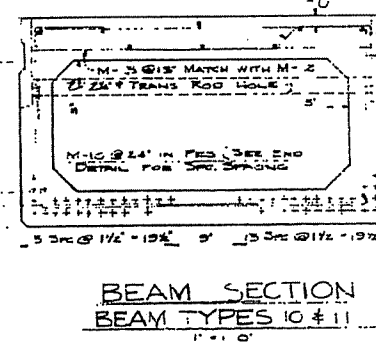
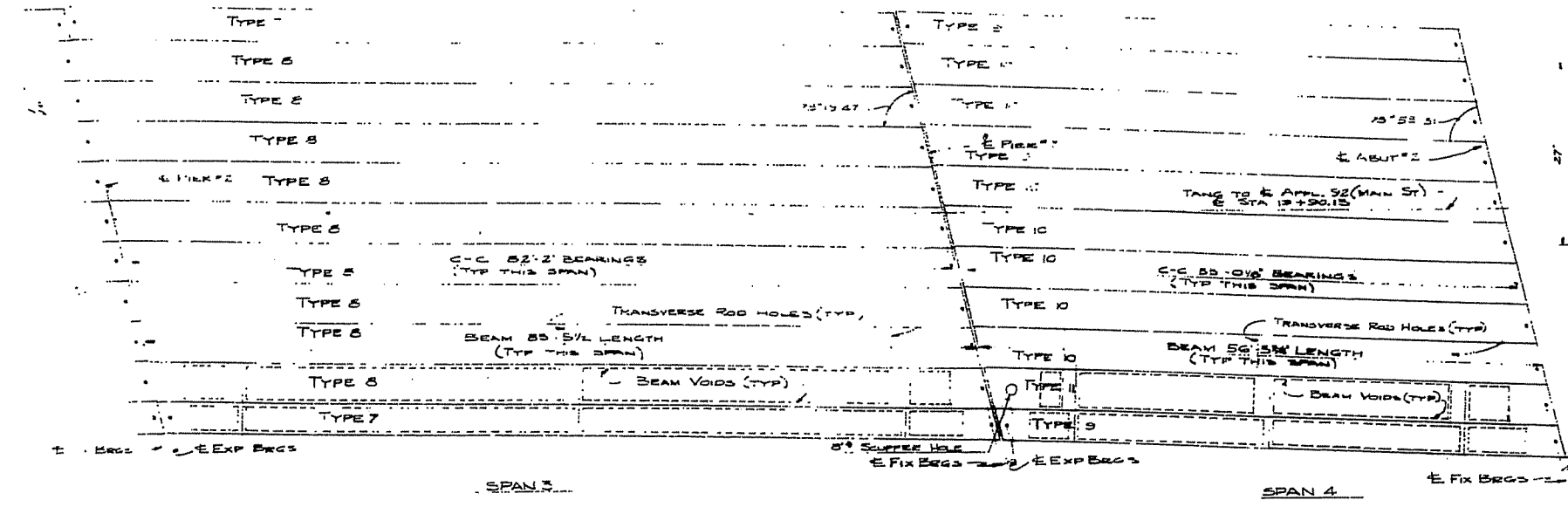
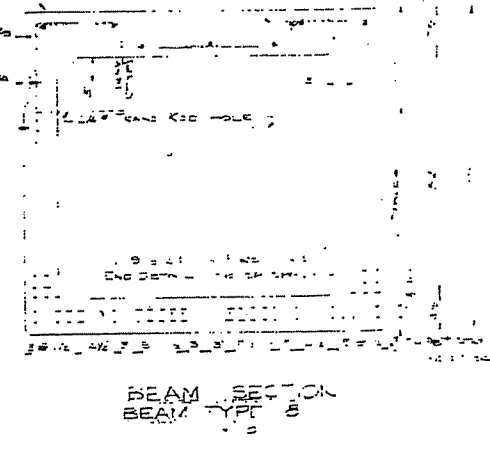
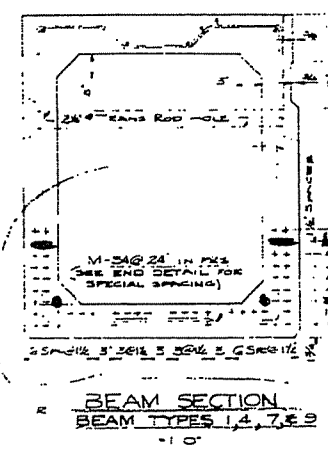
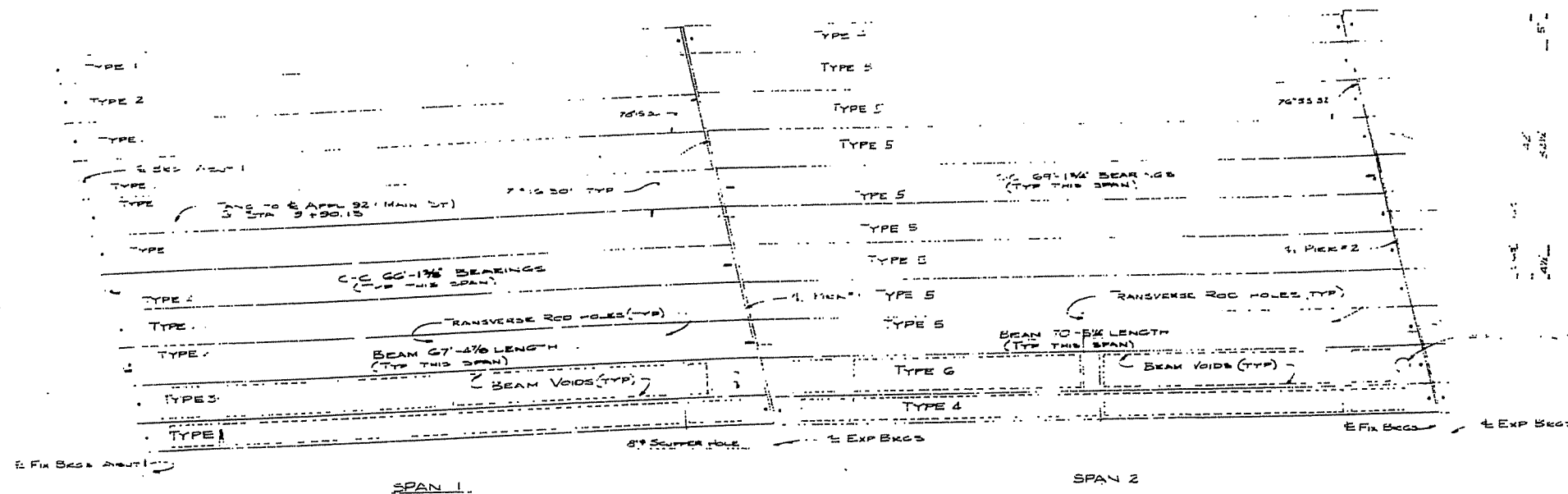


P.O.C. Sta. 99+42.73 L.R. 798
P.O.C. Sta. 19+90.13 Appl. 92 (Main St.)

Field poured conc.
1" closed cell neoprene sponge
1" Exp. Brgs. Paint with bitumastic or approved bond breaker
Backfill must be thoroughly compacted before placing roadway
1" dowel

Prem. jt. matl.
Paint this portion of dowel with bitumastic.
Fasc. 2-8"
Int. 1-11" Abut. #1
Int. 1-5" Abut. #2

2 1/2" hole in end of beam. Fill with U-1 bituminous matl. @ Exp. Brgs. fill with grout @ Fix. Brgs.



PRESTRESS NOTES

MINIMUM STRAND STRENGTH SHALL BE 250000 PSI

MINIMUM CONCRETE STRENGTH @ 28 DAYS:

BEAM TYPES 1, 4, 7, 4, 9 → 5440 PSI

BEAM TYPES 2, 3, 5, 6, 8 → 5440 PSI

BEAM TYPES 9 → 5440 PSI

BEAM TYPES 10 & 11 → 5600 PSI

MINIMUM CONCRETE STRENGTH @ RELEASE OF PRESTRESS:

BEAM TYPES 1, 4, 7, 4, 9 → 4540 PSI

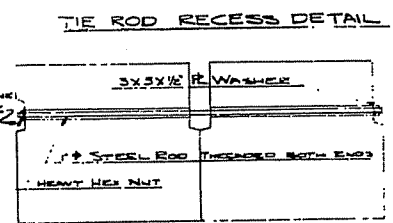
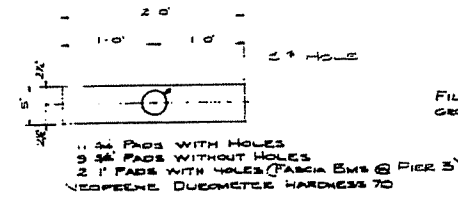
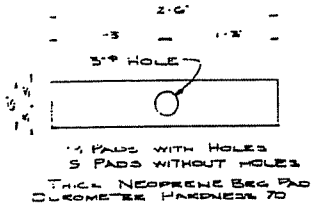
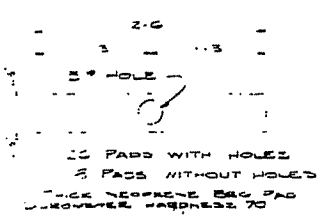
BEAM TYPES 2, 3, 5, 6, 8 → 4540 PSI

BEAM TYPES 9 → 4175 PSI

BEAM TYPES 10 & 11 → 4650 PSI

INITIAL PRESTRESS FORCE ON EACH 3/8\"/>

ALL MATERIALS & WORKMANSHIP SHALL BE IN ACCORDANCE WITH PDH FORM 408/54 & SECT 3-24 JAN 10, 1958



No.	Description	By	Chk'd	Date
1	Revised strand pattern on beam types	FCR	NE	1-24-61
				14, 7, 19

BMS ID: 62 4049 0030 1265

DICKERSON STRUCTURAL CONCRETE CORPORATION

SPANCRETE

JOB: WASHINGTON COUNTY
LR 758 UNDER APPL 92 (MAIN ST.)
STA. 993+42.72

FOR: VARSOLINO CONST CO.
PA. DEPT. OF HIGHWAYS

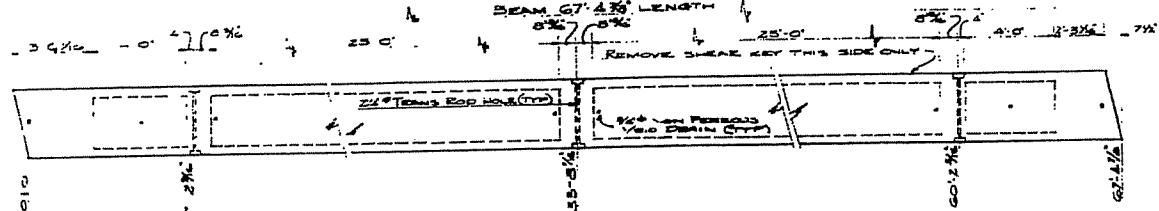
DATE	MADE BY	CHECKED BY	REMARKS
2-27-61	CGS		PEEL APPL 2-20-61

DWG. NO.	REF. DWG. NO.	JOB NO.
F-3530	S-3530-A	6017

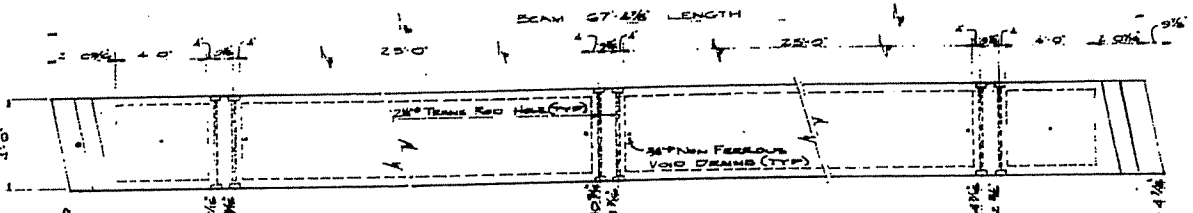
DRAWN BY	DATE	SHEET
C.G.B.	1-9-61	1

CHECKED BY	DATE	OF
C.G.B.	1-9-61	1

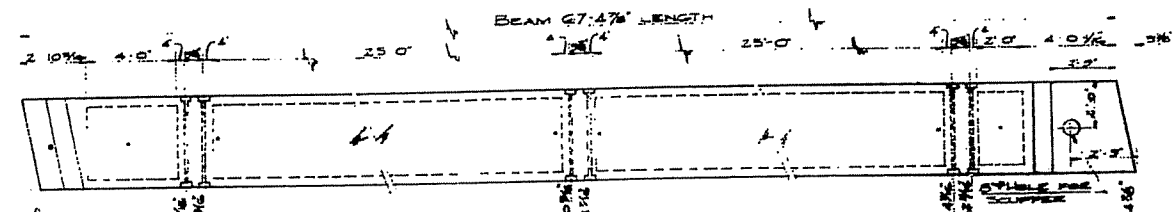
BMS ID: 62 4049 0030 1265



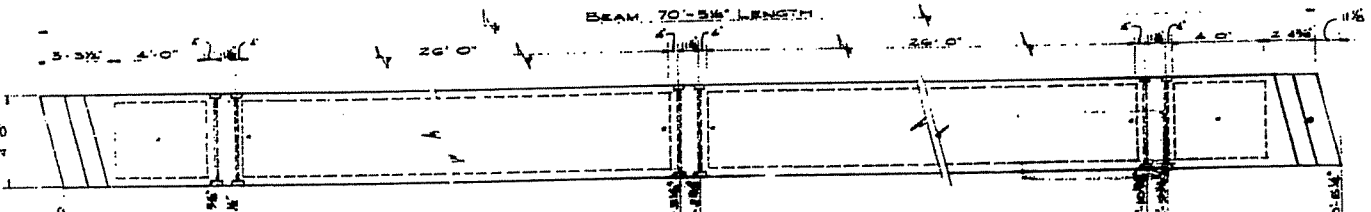
PLAN VIEW-BEAM TYPE 1
1/4" = 1'-0"



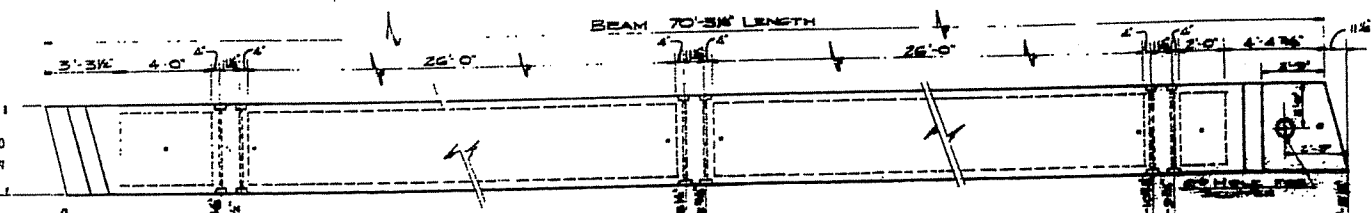
PLAN VIEW-BEAM TYPE 2
1/4" = 1'-0"



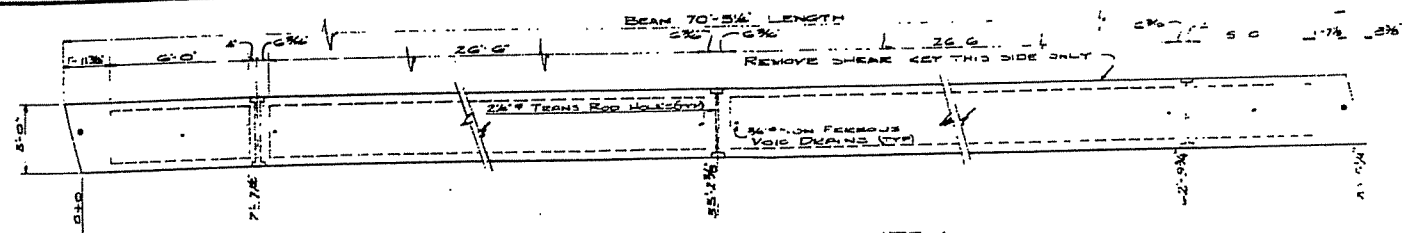
PLAN VIEW-BEAM TYPE 3
1/4" = 1'-0"



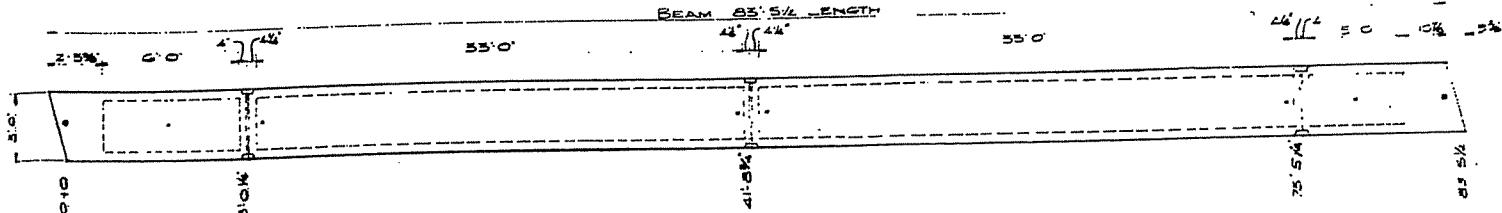
PLAN VIEW-BEAM TYPE 5
1/4" = 1'-0"



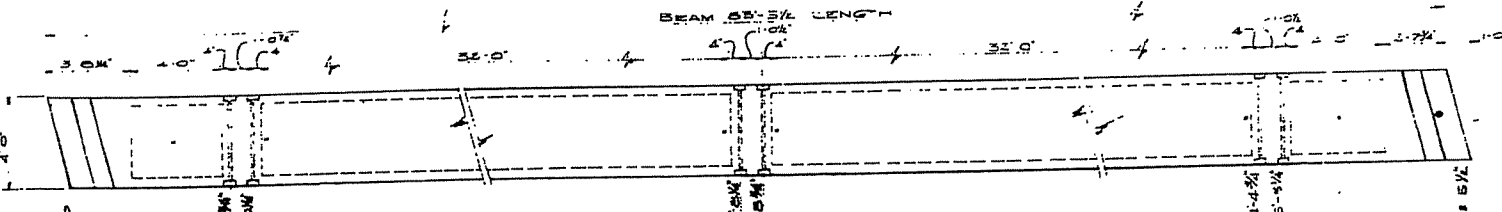
PLAN VIEW-BEAM TYPE 6
1/4" = 1'-0"



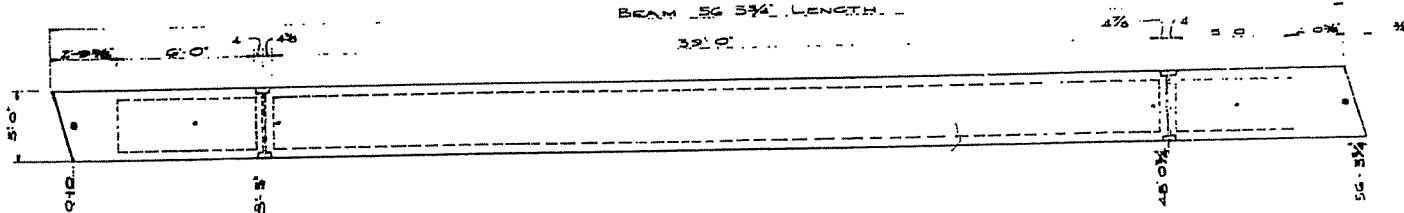
PLAN VIEW-BEAM TYPE 4
1/4" = 1'-0"



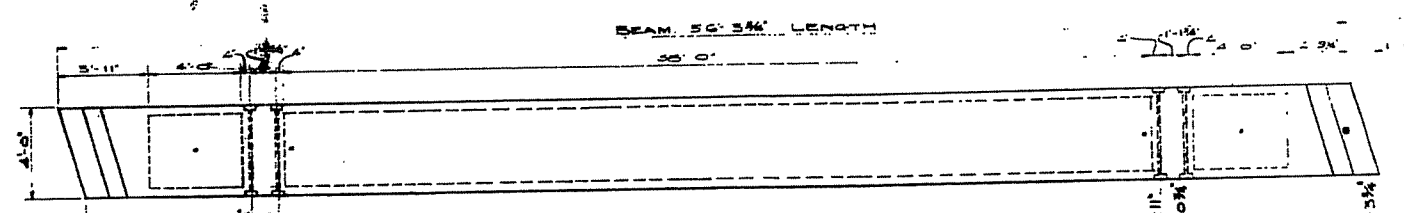
PLAN VIEW-BEAM TYPE 7
1/4" = 1'-0"



PLAN VIEW-BEAM TYPE 8
1/4" = 1'-0"



PLAN VIEW-BEAM TYPE 9
1/4" = 1'-0"



PLAN VIEW-BEAM TYPE 10
1/4" = 1'-0"

NOTE: THIS PLAN VIEW OF BEAM TYPE 10 SEE SHEET 8

FLORIDA DEPT. OF HWYS.
APPROVED AS TO DESIGN
MAR 8 1961

DICKERSON STRUCTURAL CONCRETE CORPORATION

SPANCRETE

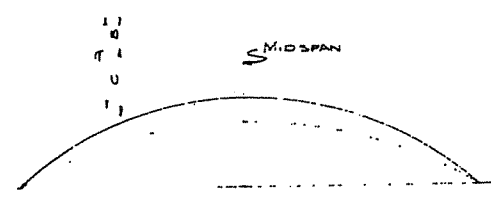
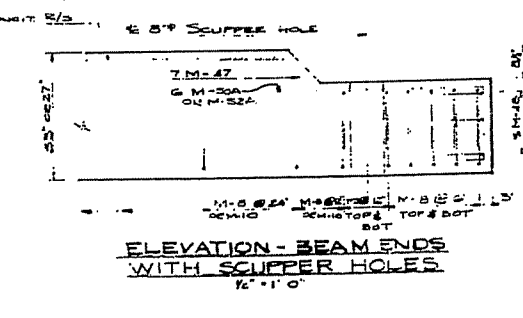
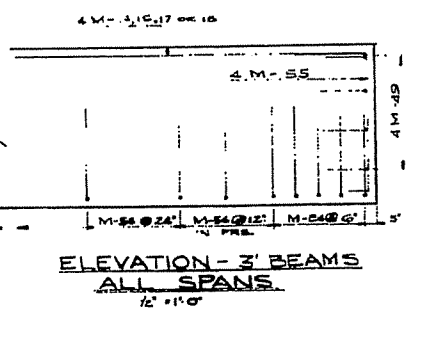
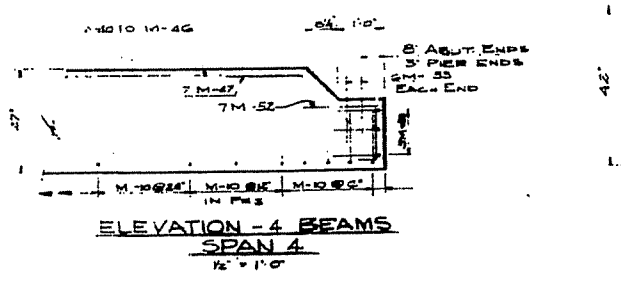
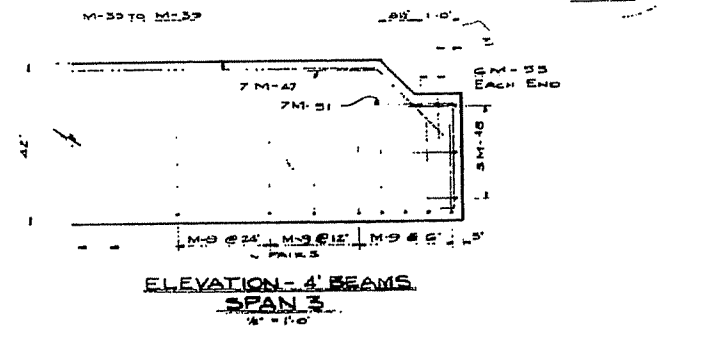
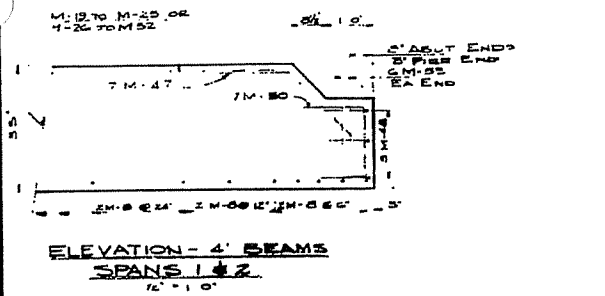
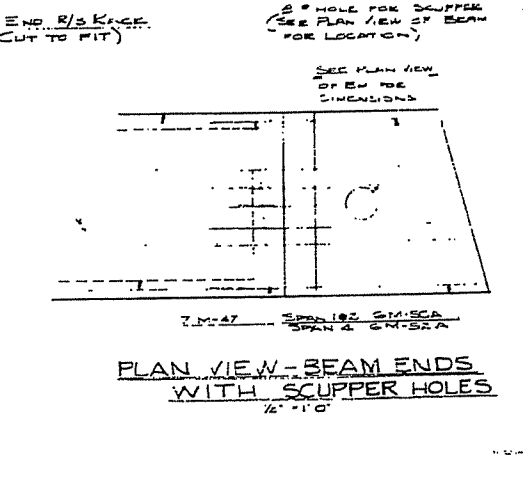
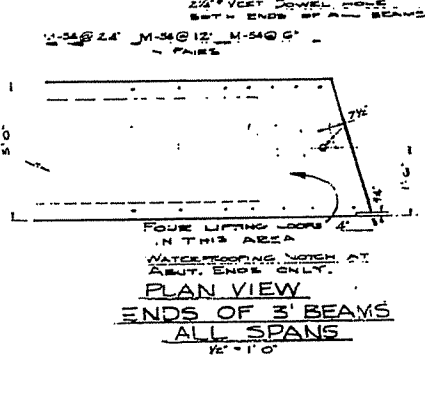
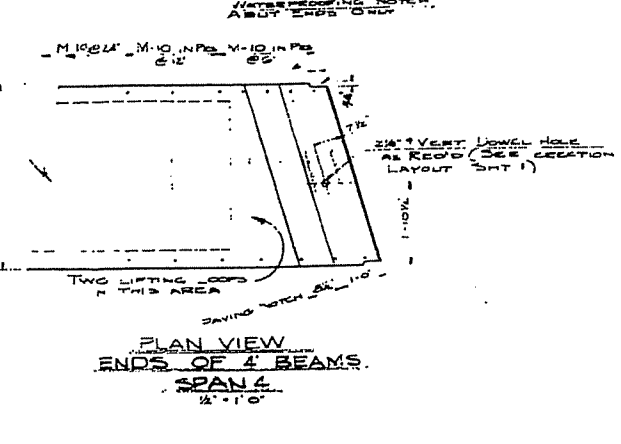
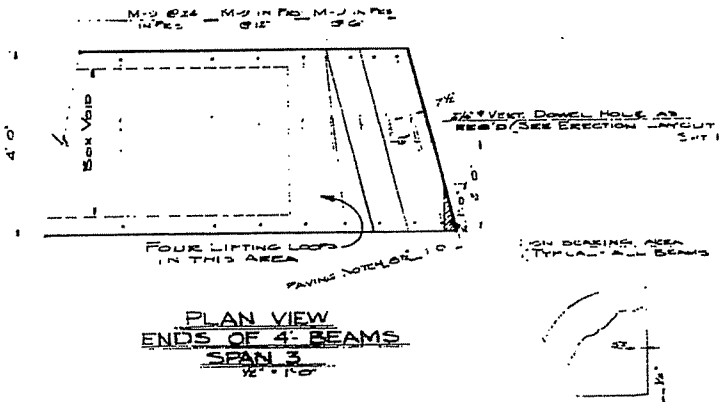
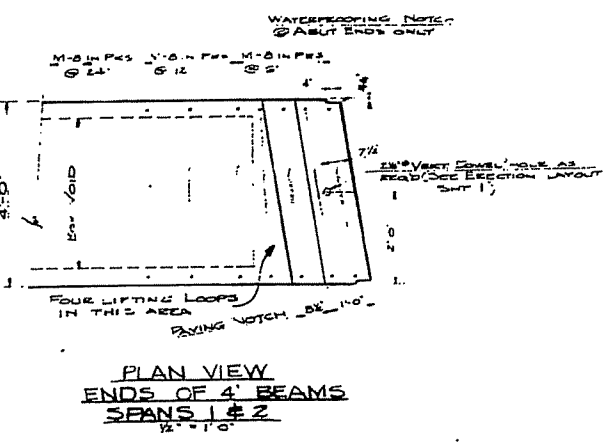
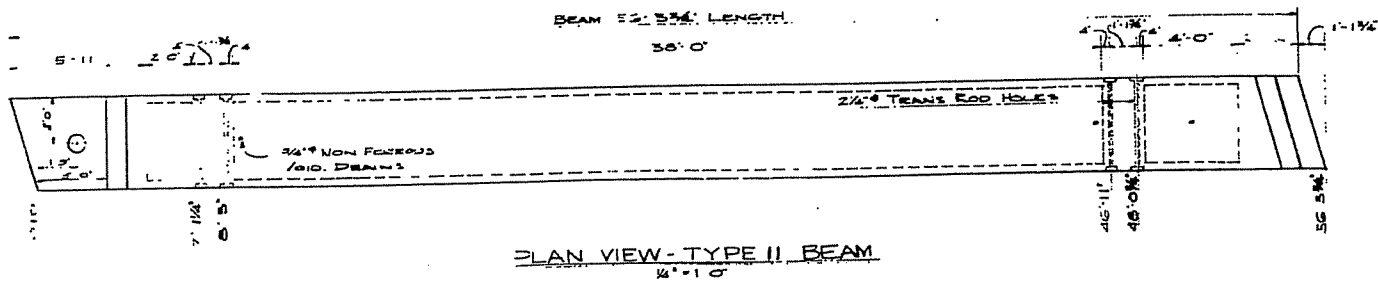
FOR: WASHINGTON COUNTY, IA
LR 738 UNDER APPL 92 (MAIN ST)
STA. 995 + 42.75

FOR: MARSOLINO CONST. CO.
PA. DEPT. OF HIGHWAYS

DATE	MADE BY	CHECKED BY	REMARKS
2-27-61	CCB	CCB	PREL APPE. 2-20-61
DATE	CHECKED BY	DATE	
1-11-61	C.G.B.	2-2-61	

DRG. NO. P. 3530 REP. DRG. NO. S-3530A JOB NO. 6017

SHEET 2/4



SPAN	A	B	C
1 & 2	1.41'	0.47'	1.06'
3	1.15'	0.47'	0.62'
4	1.37'	0.31'	1.06'

A: CAMBER DUE TO TRUCKS (TO BE CHECKED BY CONTRACTOR IN FIELD)
 B: DEFLECTION DUE TO CURB, PAVEMENT, SIDEWALK & WEARING SURFACE
 C: NET CAMBER
 PRESTRESS CAMBER & DEAD LOAD DEFLECTION DATA SHOWN IS THEORETICAL & MAY VARY WITH CONCRETE STRENGTH, VARIABLE PRESTRESSING CONDITIONS & PRESTRESS LOSSES

BEAM TYPE	CONCRETE (CU. YDS)	WEIGHT (TONS)	NUMBER OF BEAMS ROAD
1	15.8	276	2
2	14.15	302	8
3	14.60	31.1	1
4	12.92	276	2
5	14.89	318	8
6	15.34	327	1
7	15.11	322	2
8	20.19	43.1	9
9	10.63	227	2
10	11.00	23.5	8
11	11.33	24.2	1

PENNA. DEPT. OF HWYS.
 APPROVED AS TO DESIGN
 MAR 8 1961
 DESIGNER: W. BIRNED

DICKERSON STRUCTURAL CONCRETE CORPORATION

SPANCRETE

JOB: WASHINGTON COUNTY PA LR 798 UNDER APPL92 (MAIN ST STA 993+42.73)

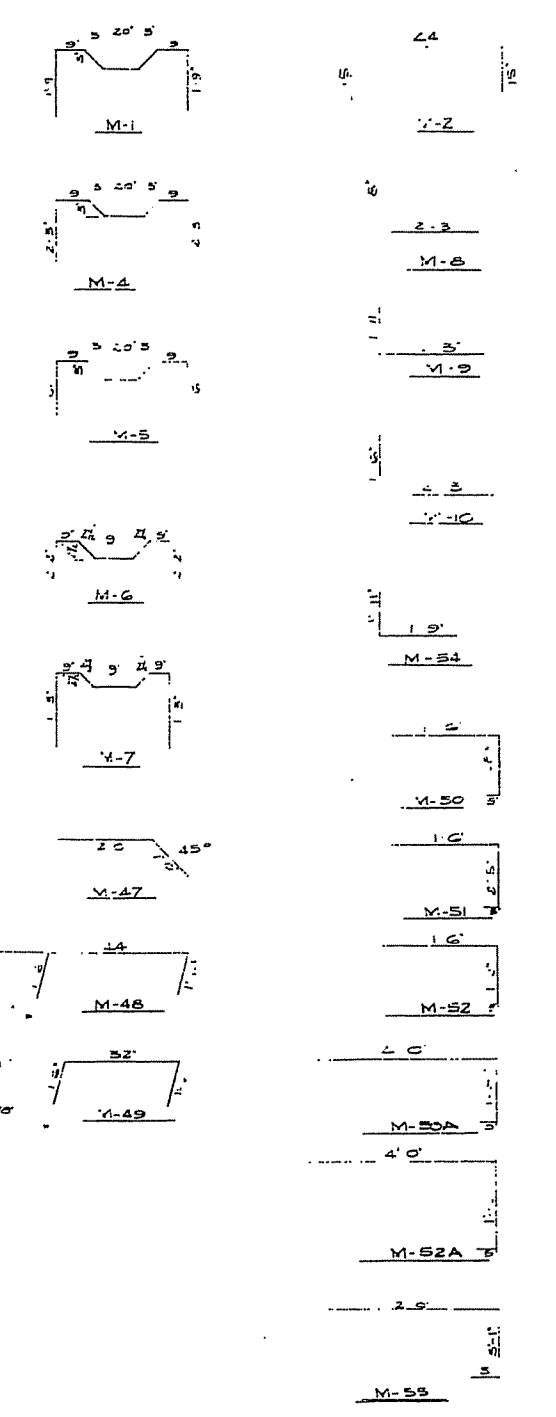
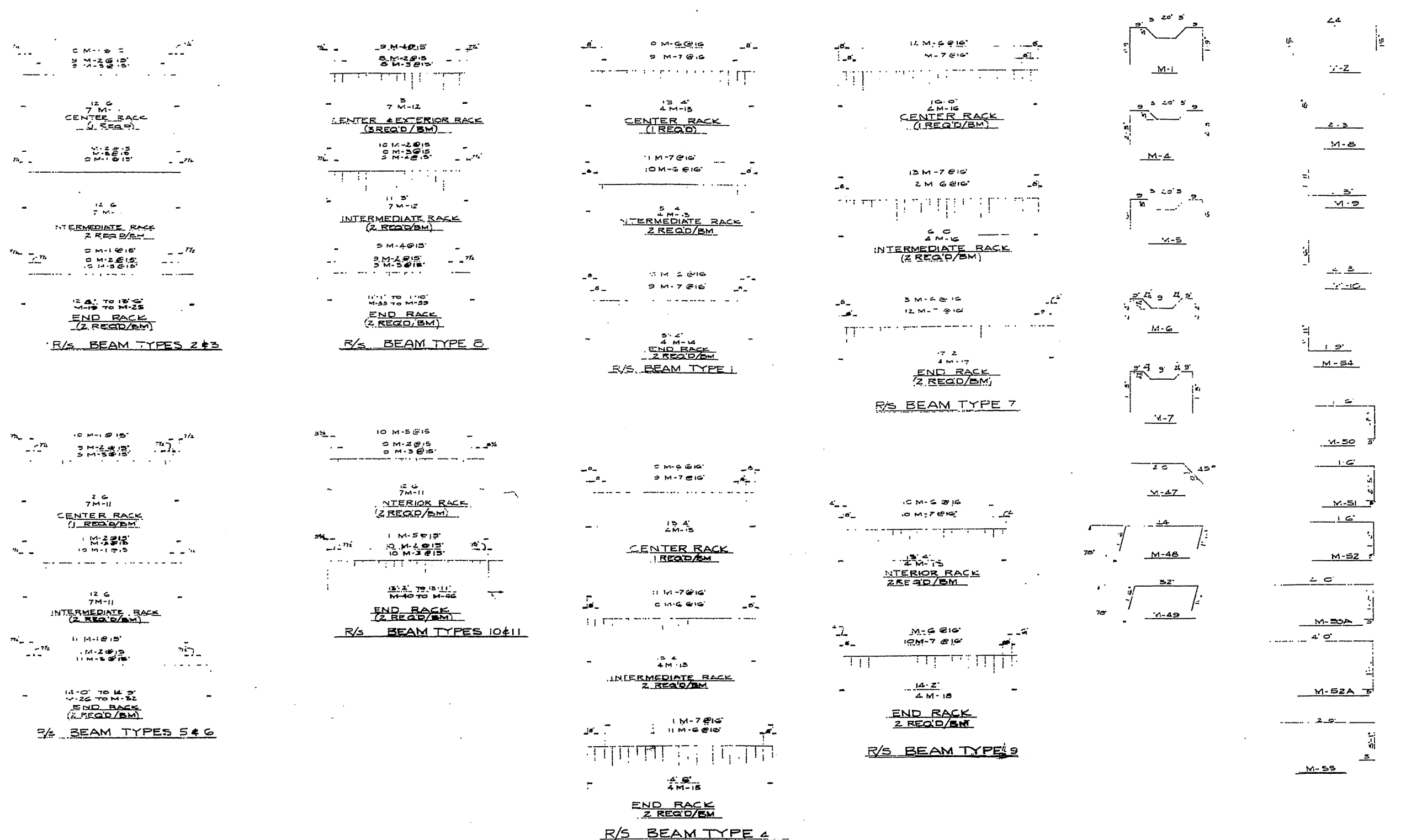
FOR: MARSOLINO CONST. CO. PA. DEPT. OF HIGHWAYS

DATE	MADE BY	CHECKED BY	REMARKS
2-27-61	C.G.B.	C.R.B.	FIELD APPROVAL 2-30-61

DWG. NO.	REP. DWG. NO.	JOB NO.
P-3530	3-3530A	6017

DRAWN BY	DATE	SHEET
C.G.B.	1-12-61	3

CHECKED BY	DATE	SHEET
C.G.B.	2-2-61	4



BAR LIST				
MARK	REQD	SIZE	LENGTH	DESCRIPTION
M-1	318	5	7.5'	BENT
M-2	1654	5	5.2'	BENT
M-3	1854	5	5.3'	BENT
M-4	567	5	6.5'	BENT
M-5	570	5	6.11'	BENT
M-6	412	4	7.2'	BENT
M-7	406	4	5.5'	BENT
M-8	296	4	3.1'	BENT
M-9	900	4	4.2'	BENT
M-10	280	4	3.9'	BENT
M-11	504	4	2.6'	STRAIGHT
M-12	315	4	3.1'	BENT
M-13	64	4	13.4'	BENT
M-14	6	4	3.2'	BENT
M-15	16	4	4.6'	BENT
M-16	24	4	6.0'	BENT
M-17	16	4	7.2'	BENT
M-18	16	4	14.2'	BENT
M-19	18	4	12.6'	BENT
M-20	18	4	2.10'	BENT
M-21	18	4	13.0'	BENT
M-22	18	4	3.1'	BENT
M-23	18	4	3.5'	BENT
M-24	18	4	3.4'	BENT
M-25	18	4	3.6'	BENT
M-26	18	4	14.0'	BENT
M-27	18	4	4.2'	BENT
M-28	18	4	3.5'	BENT
M-29	18	4	4.3'	BENT
M-30	18	4	14.7'	BENT
M-31	18	4	14.5'	BENT
M-32	18	4	14.9'	BENT
M-33	18	4	11.1'	BENT
M-34	18	4	11.2'	BENT
M-35	18	4	11.4'	BENT
M-36	18	4	11.6'	BENT
M-37	18	4	11.8'	BENT
M-38	18	4	11.9'	BENT
M-39	18	4	11.10'	BENT
M-40	18	4	11.2'	BENT
M-41	18	4	11.3'	BENT
M-42	18	4	11.4'	BENT
M-43	18	4	11.5'	BENT
M-44	18	4	11.6'	BENT
M-45	18	4	11.7'	BENT
M-46	18	4	11.8'	BENT
M-47	216	5	5.11'	STRAIGHT
M-48	216	5	5.11'	BENT
M-49	216	5	5.11'	BENT
M-50	230	5	2.7'	BENT
M-51	176	5	2.7'	BENT
M-52	119	5	2.7'	BENT
M-53A	14	5	2.7'	BENT
M-53B	7	5	2.7'	BENT
M-54	230	4	3.0'	STRAIGHT
M-55	292	4	3.5'	BENT
M-56	64	5	5.6'	BENT

BMS ID: 62 4049 0030 1265

PENNA. DEPT. OF HWYS.
APPROVED AS TO DESIGN
MAR 6 1961
ENGINEER OF BRIDGES

DICKERSON STRUCTURAL CONCRETE CORPORATION

SPANCRETE

JOB: WASHINGTON COUNTY 1A
LR 796 UNDER APPL 92 (MAIN ST)
STA 993 + 42.73

FOR: MARSLING CONST. CO.
PA DEPT OF HIGHWAYS

DATE	MADE BY	CHECKED BY	REMARKS
2-27-61	C.G.B.	C.G.B.	FEEL APPL 92-01

DWG. NO.	REV. DWG. NO.	JOB NO.
P-3530	S-5530A	6017

DRAWN BY	DATE	SHEET
C.G.B.	1-16-61	4

CHECKED BY	DATE	OF
C.G.B.	2-2-61	4