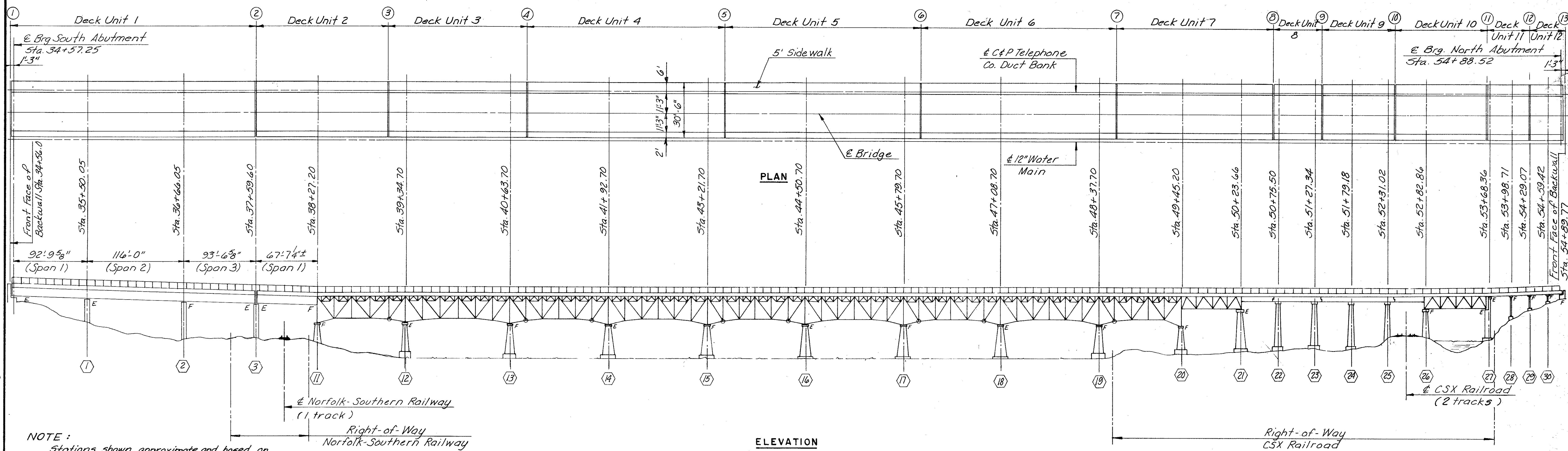


APPENDIX PC-2019

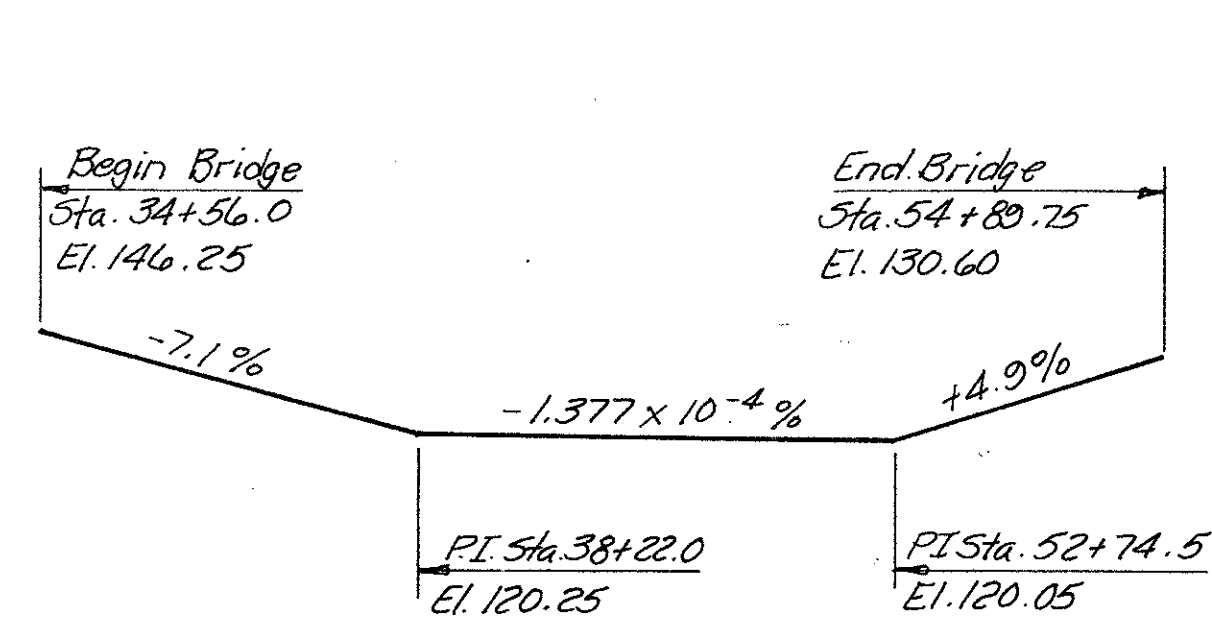
RECORD DRAWINGS

Boulevard Bridge

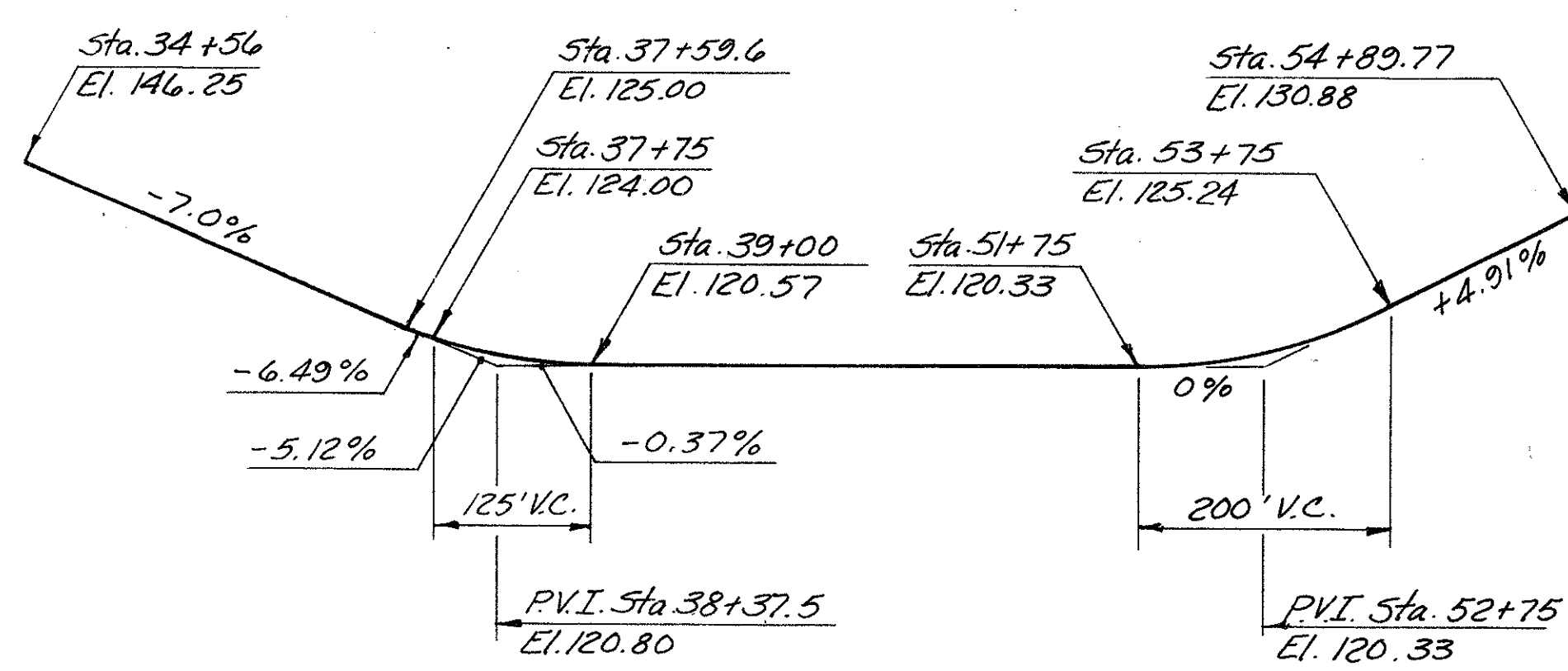
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
C-17B	Boulevard Bridge Rehab	35 (1)	



NOTE:
Stations shown approximate and based on surveyed deck joint station. The Contractor is to verify all pertinent dimensions and elevations prior to the fabrication of any structural steel.



APPROXIMATE EXISTING PROFILE GRADE
Profile grade shown is based on surveyed elevation along the E of the existing bridge. The contractor is to verify all elevations prior to construction.



PROPOSED PROFILE GRADE

NOTE:
LOAD RESTRICTIONS ARE CURRENTLY IN EFFECT ON THE EXISTING BRIDGE. CONSTRUCTION EQUIPMENT WEIGHING IN EXCESS OF 8 TONS SHOULD NOT BE PERMITTED ON THE BRIDGE.

- INDEX**
- 1 GENERAL PLAN, ELEVATION AND INDEX
 - 2 GENERAL NOTES AND QUANTITIES
 - 3 GRADING AND SLOPE PROTECTION AT SOUTH ABUTMENT
 - 4 NORTH ABUTMENT SLOPE PROTECTION DETAILS
 - 5 & 6 SOUTH ABUTMENT DETAILS
 - 7 NORTH ABUTMENT DETAILS
 - 8 PIER 1
 - 9 PIER 2
 - 10 PIER 3
 - 11-15 GIRDER DETAILS
 - 16 TYPICAL CROSS SECTION
 - 17 KEY PLAN, LIGHTING LAYOUT PLAN AND CONCRETE PLACEMENT PLAN
 - 18-25 DECK UNIT 1 THROUGH 12 REINFORCING PLANS
 - 26 SIDEWALK DETAILS (DELETED)
 - 27 EXPANSION JOINT DETAILS
 - 28 PREFORMED ELASTOMERIC JOINT SEALER DETAILS
 - 29 ELASTOMERIC EXPANSION DAM DETAILS
 - 30 SIDEWALK RAILING DETAILS
 - 31 TRAFFIC RAILING DETAIL
 - 32 TELEPHONE CONDUIT SYSTEM
 - 33 WATER MAIN INSTALLATION DETAILS
 - 34 BRIDGE LIGHTING SYSTEM
 - 35 APPROACH SLAB DETAILS
 - 36 SOUTH ABUTMENT DRAINAGE APRON REPAIR AND MODIFICATIONS
 - 37 & 38 BAR LIST

LEGEND:
① Joint Number
① Pier Number

BY	DATE				
MADE	H.H.	2-92			
CHECKED	T.E.M.	3-92			
IN CHARGE					

RECORD DRAWING

**RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM**

**BOULEVARD BRIDGE REHABILITATION
DECK REPLACEMENT
GENERAL PLAN, ELEVATIONS
AND INDEX**

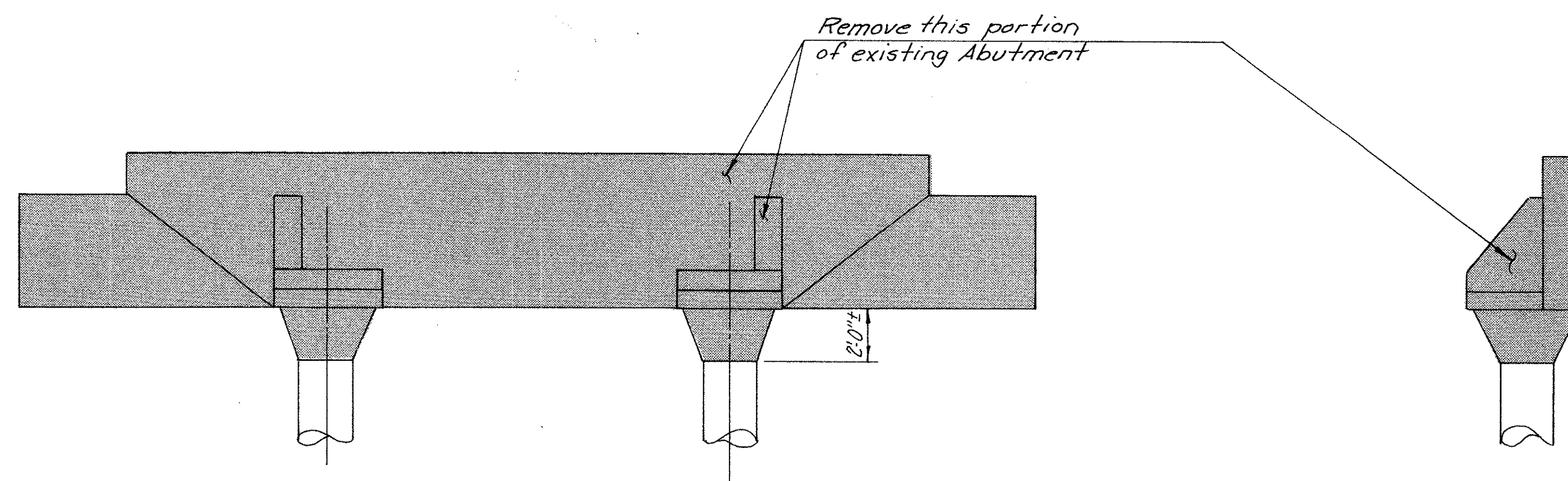
SCALE: No. Scale

CONTRACT NO. C-17B

SHEET NO. 1 OF 38

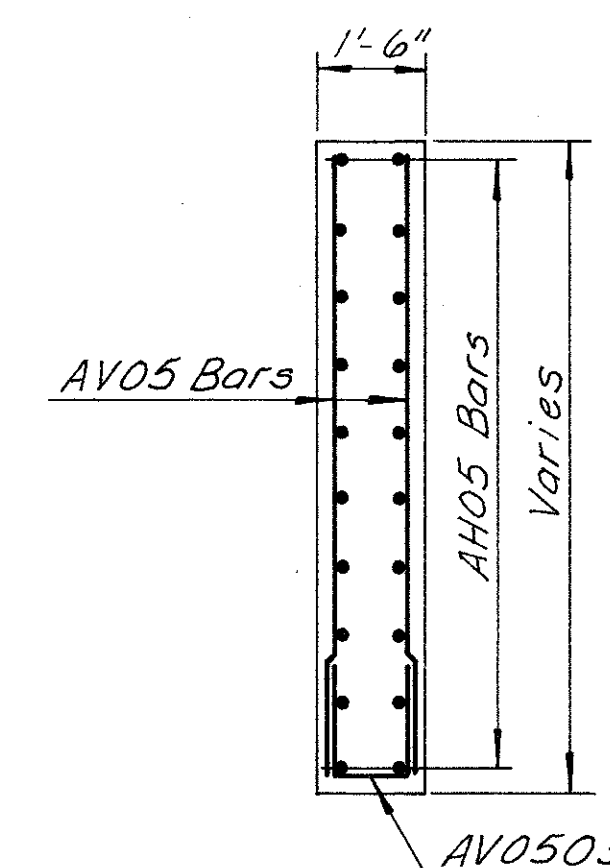
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
General Consultants

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
C-17B	Boulevard Bridge Rehab	35 (7)	

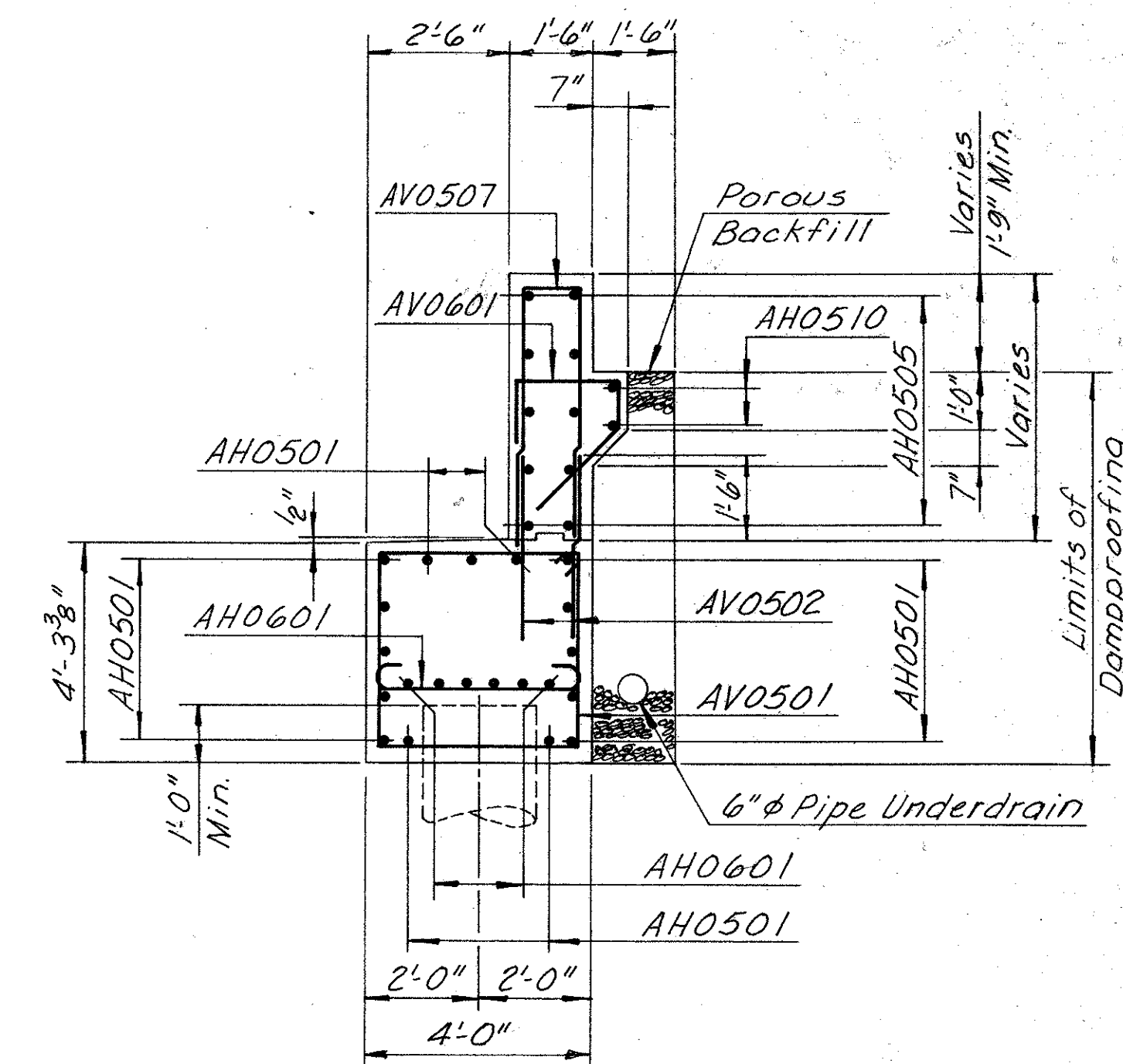


EXISTING NORTH ABUTMENT
Scale: 1/4" = 1'-0"

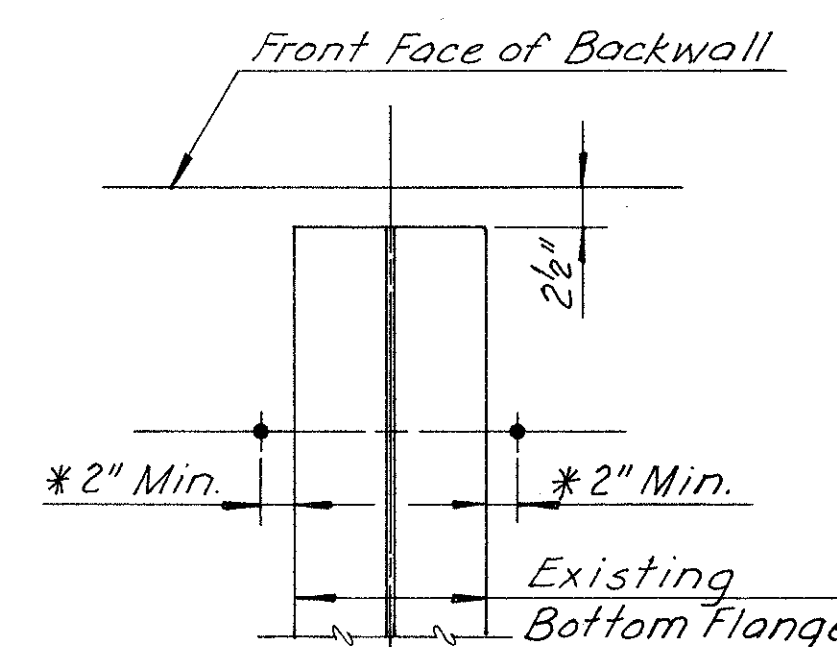
END VIEW
Scale: 1/4" = 1'-0"



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

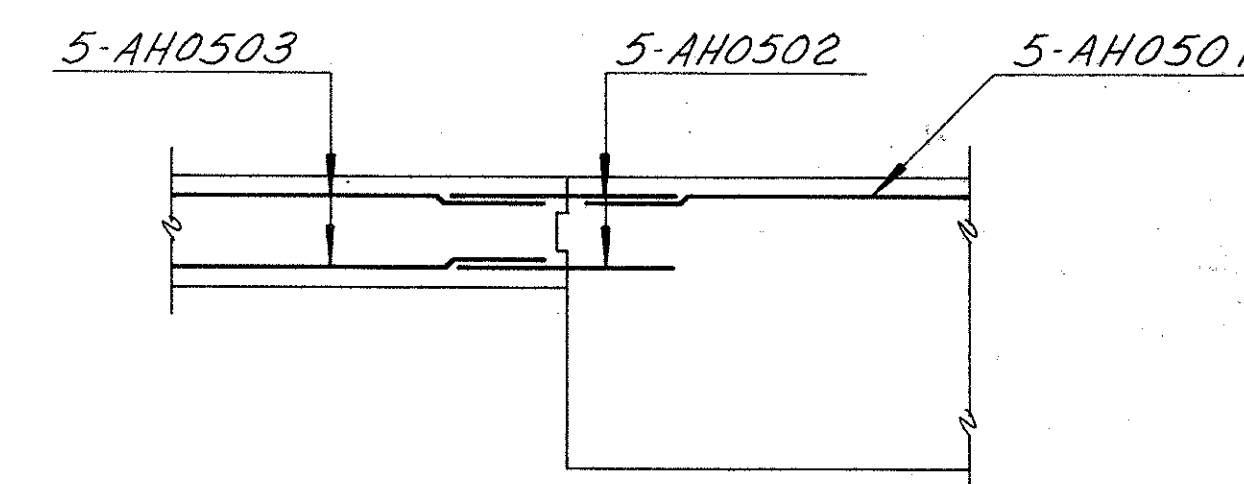


SECTION B-B
Scale: 3/8" = 1'-0"



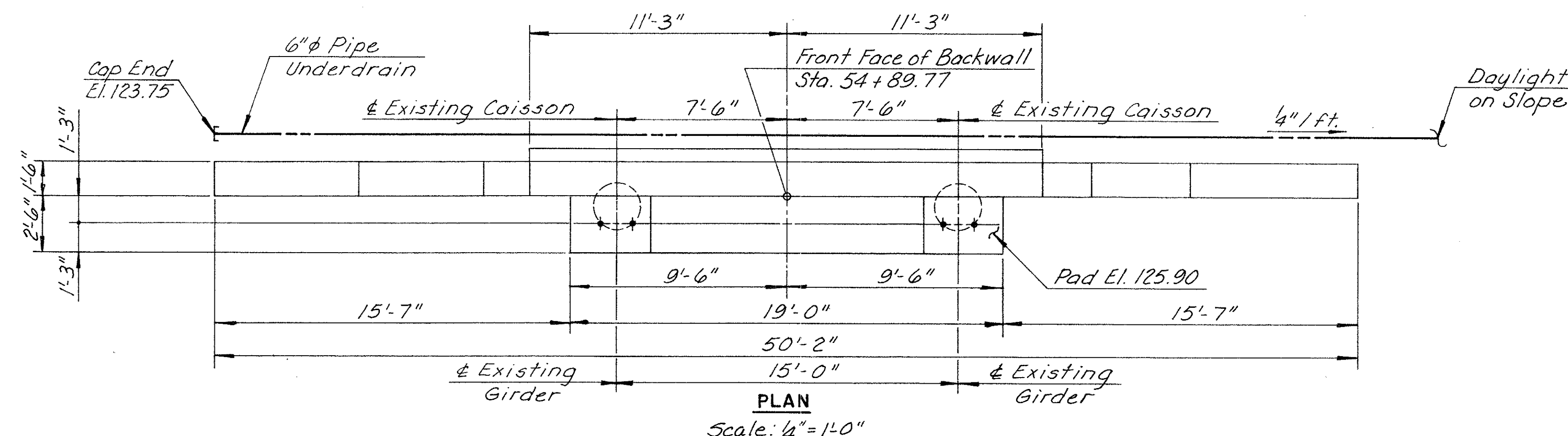
ANCHOR BOLT SETTING PLAN
Scale: 1" = 1'-0"

* Anchor bolts are to be set 8" either side of Existing Girders or 2" min. clearance to edge of bottom flange.

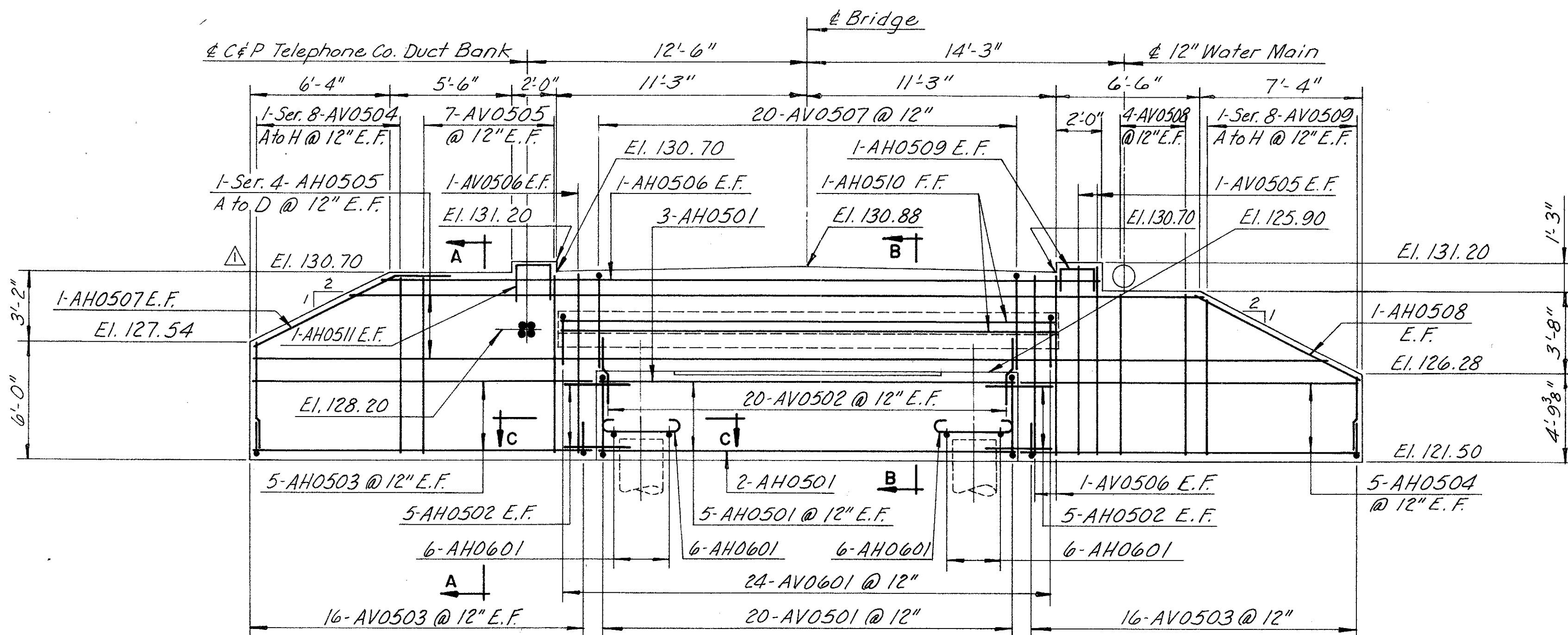


SECTION C-C
Scale: 3/8" = 1'-0"

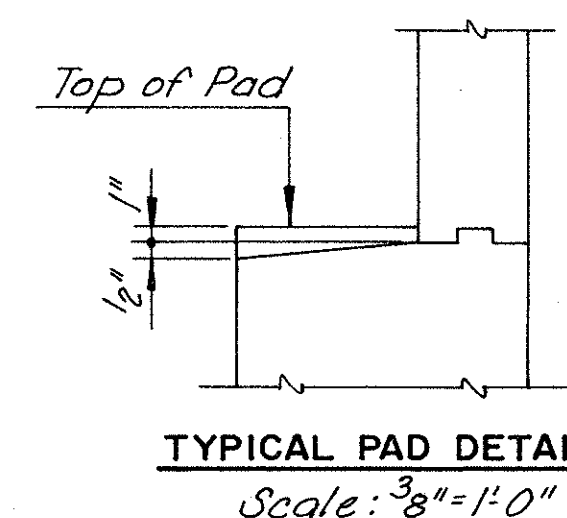
LEGEND:
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face



PLAN
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"



TYPICAL PAD DETAIL
Scale: 3/8" = 1'-0"

MADE	BY	DATE	NO.	REVISION	BY	DATE
TAL	2-92					
TEM	3-92					
IN CHARGE						

RECORD DRAWING

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

BOULEVARD BRIDGE REHABILITATION
DECK REPLACEMENT

NORTH ABUTMENT
PLAN AND ELEVATION

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
Alexandria, Virginia

SCALE: As Shown
CONTRACT NO.: C-17B
SHEET NO. 7 OF 38

4'-0"
2'-0"
2'-0"

6"
3'-0"
6"

9'-6"
2'-0"
7'-6"
9'-6"
7'-6"
2'-0"

⌀ Girder

⌀ Anchor Bolt

1'-2"
1'-2"

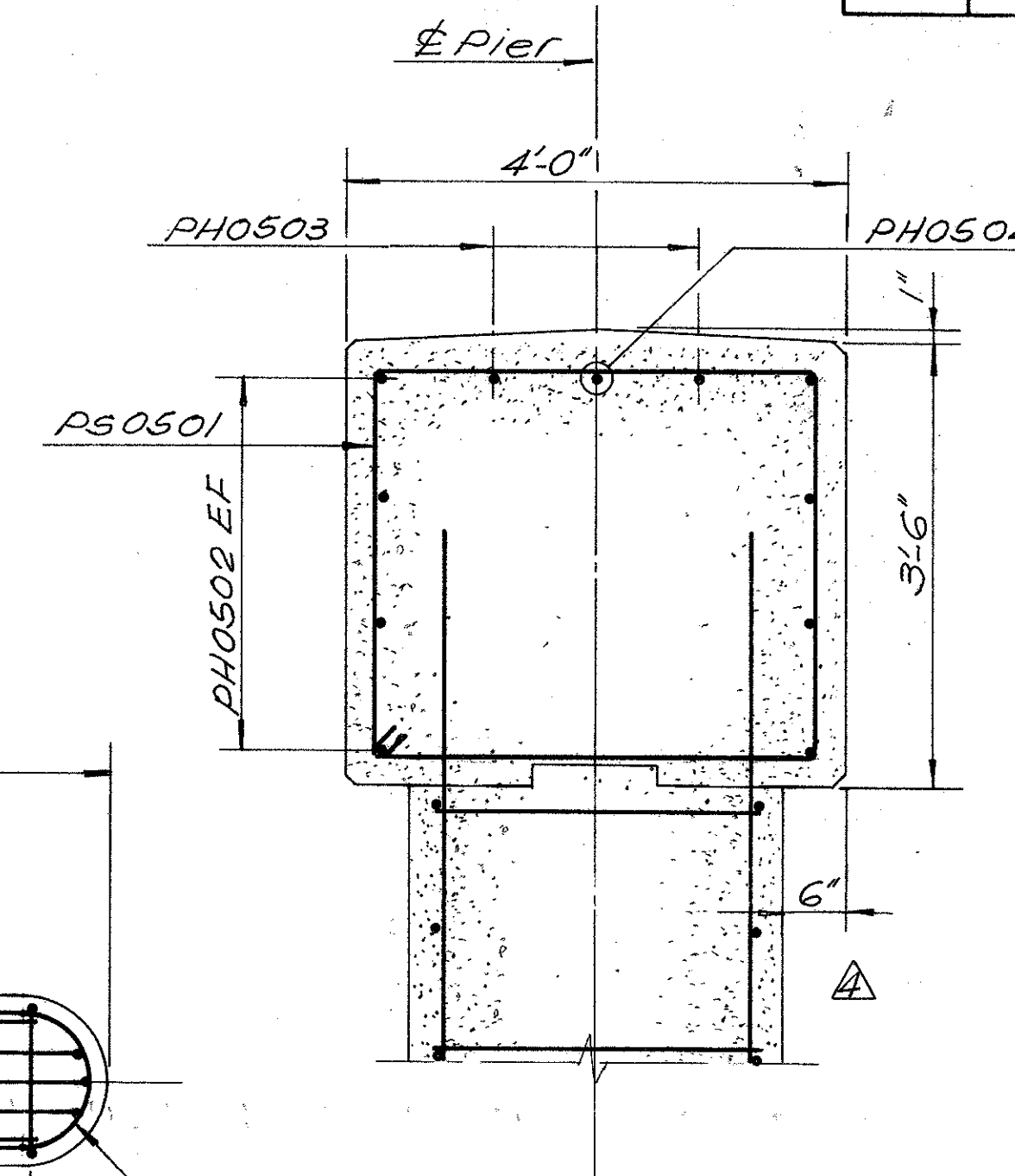
1'-10"
Typ.

⌀ Pier 1
Sta. 35+50.05

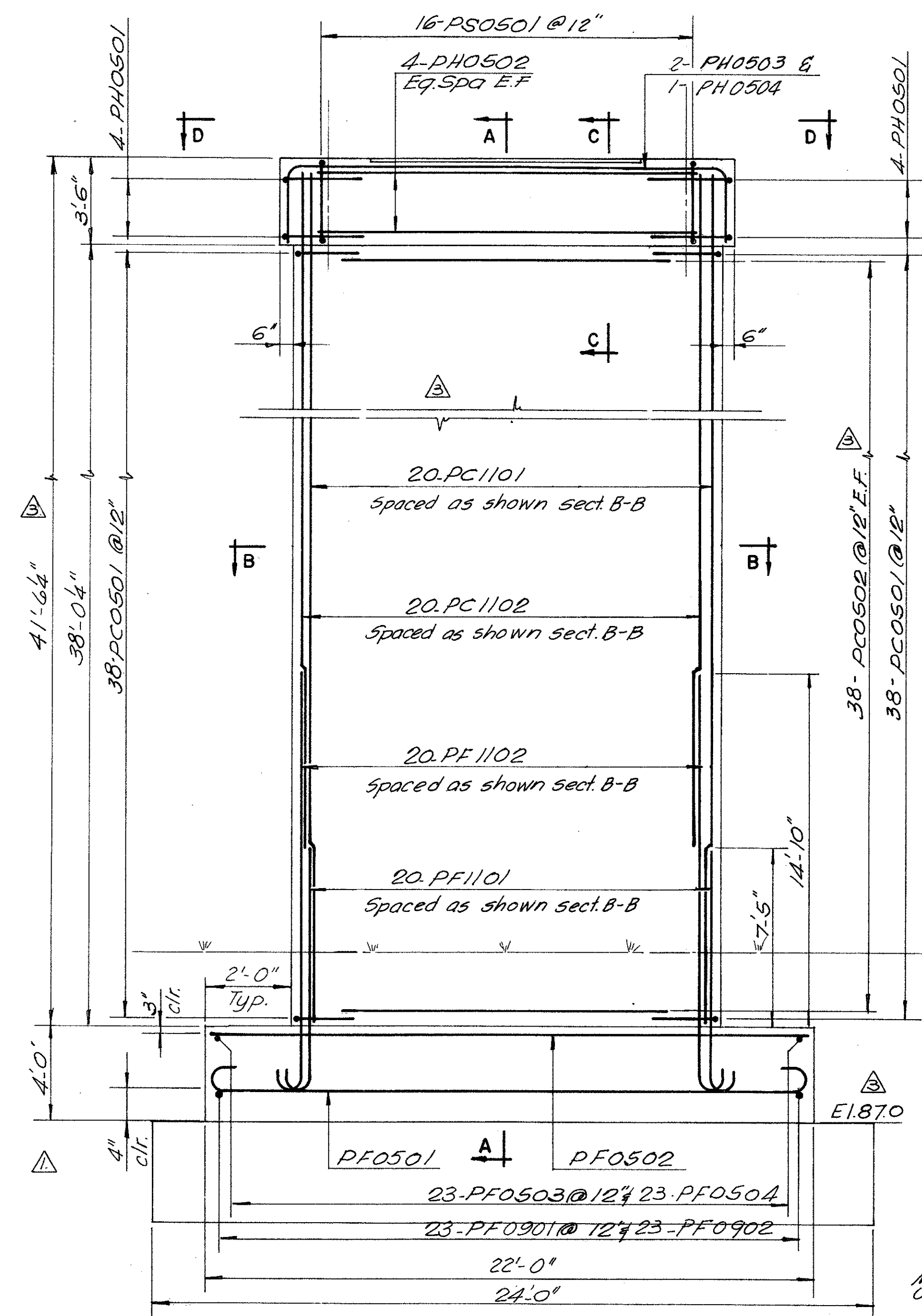
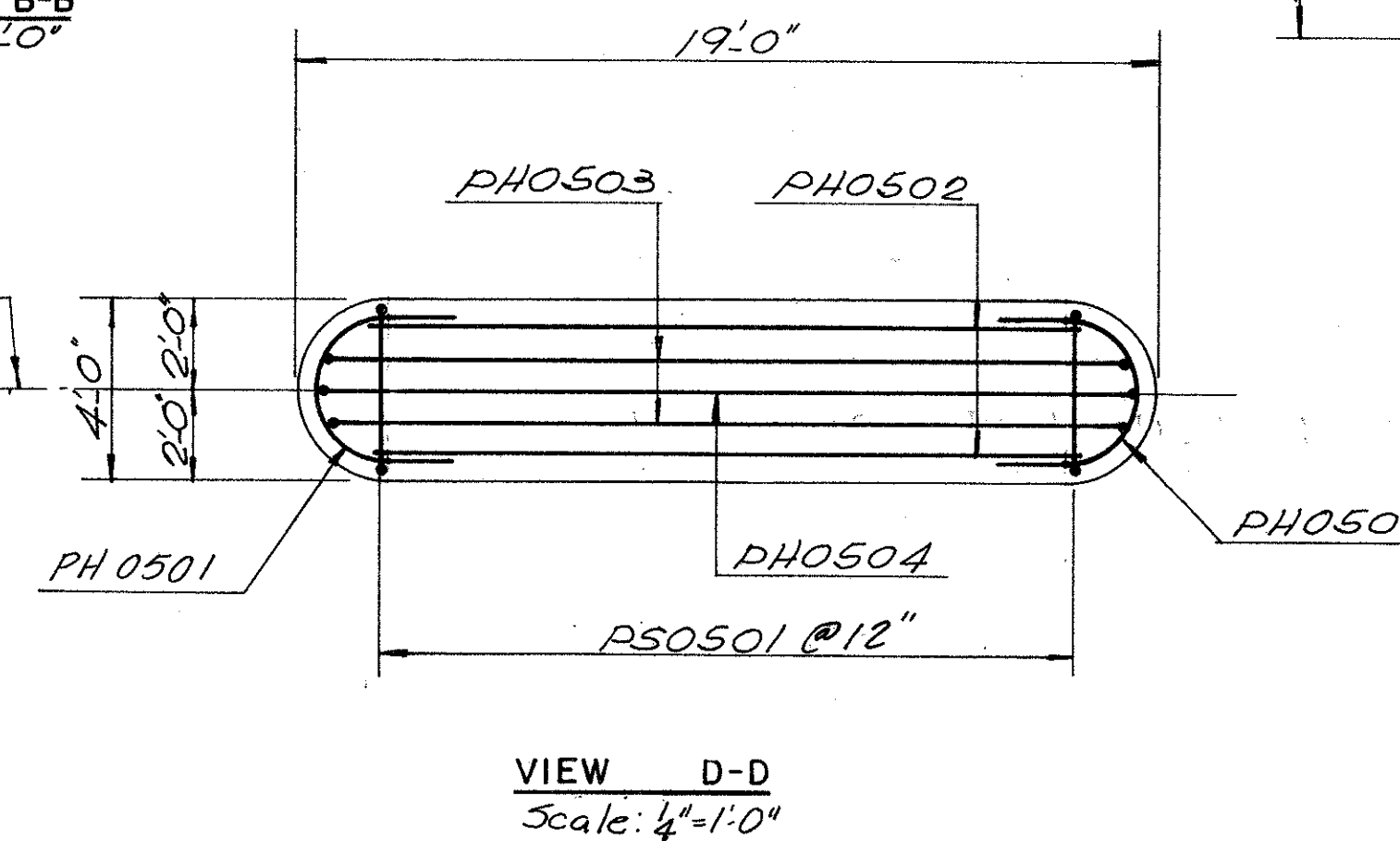
Pad El. 132.52

R=2'-0"

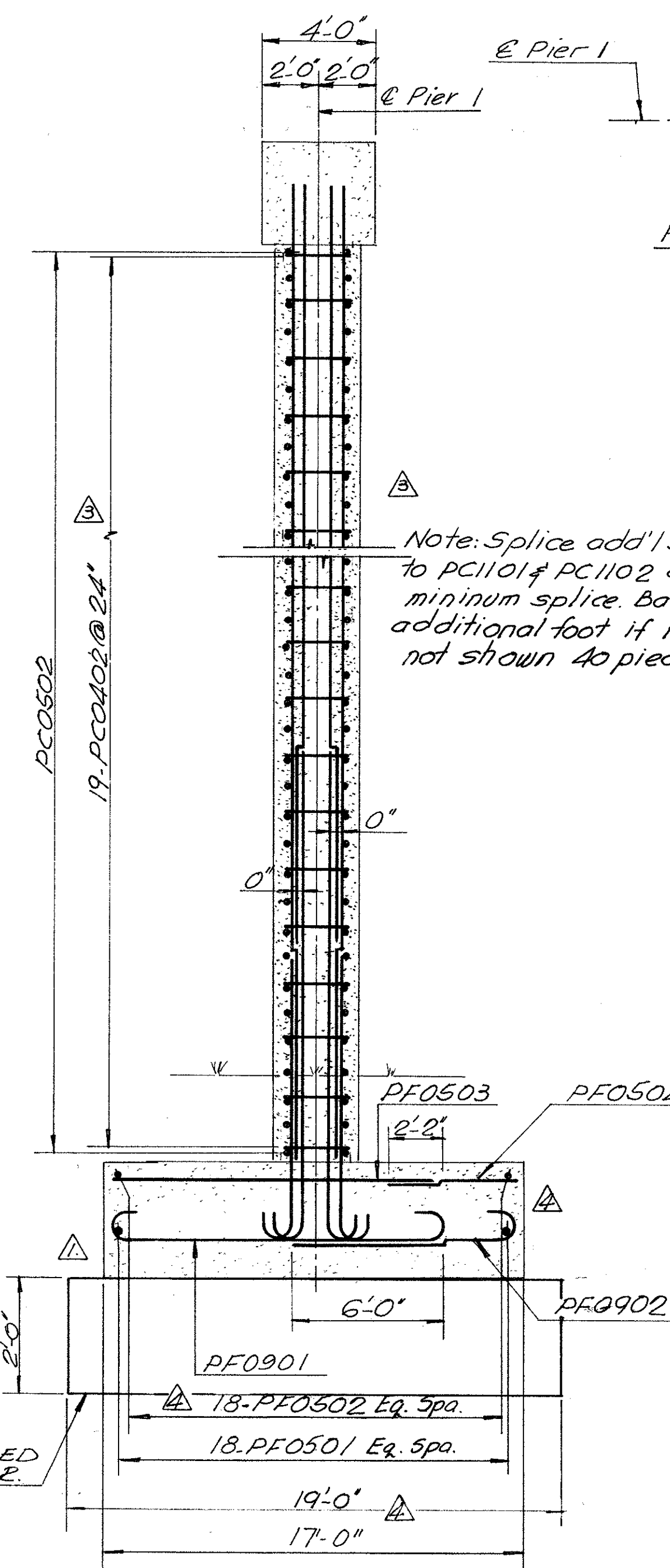
PLAN
Scale 1/4"=1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"



MUD SLAB ADDED
UNDER FOOTER



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

Note: Splice add'l straight reinforcing steel to PC1101 & PC1102 at top of stem maintain 7'-5" minimum splice. Bars have been sized to provide additional foot if necessary. Add'l vert. steel not shown 40 pieces total.

Note:  Contractor may elect to cut already fabricated PF0901 in field & splice straight bar to avoid ordering PF0902 as shown.

RECORD DRAWING

**RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM**

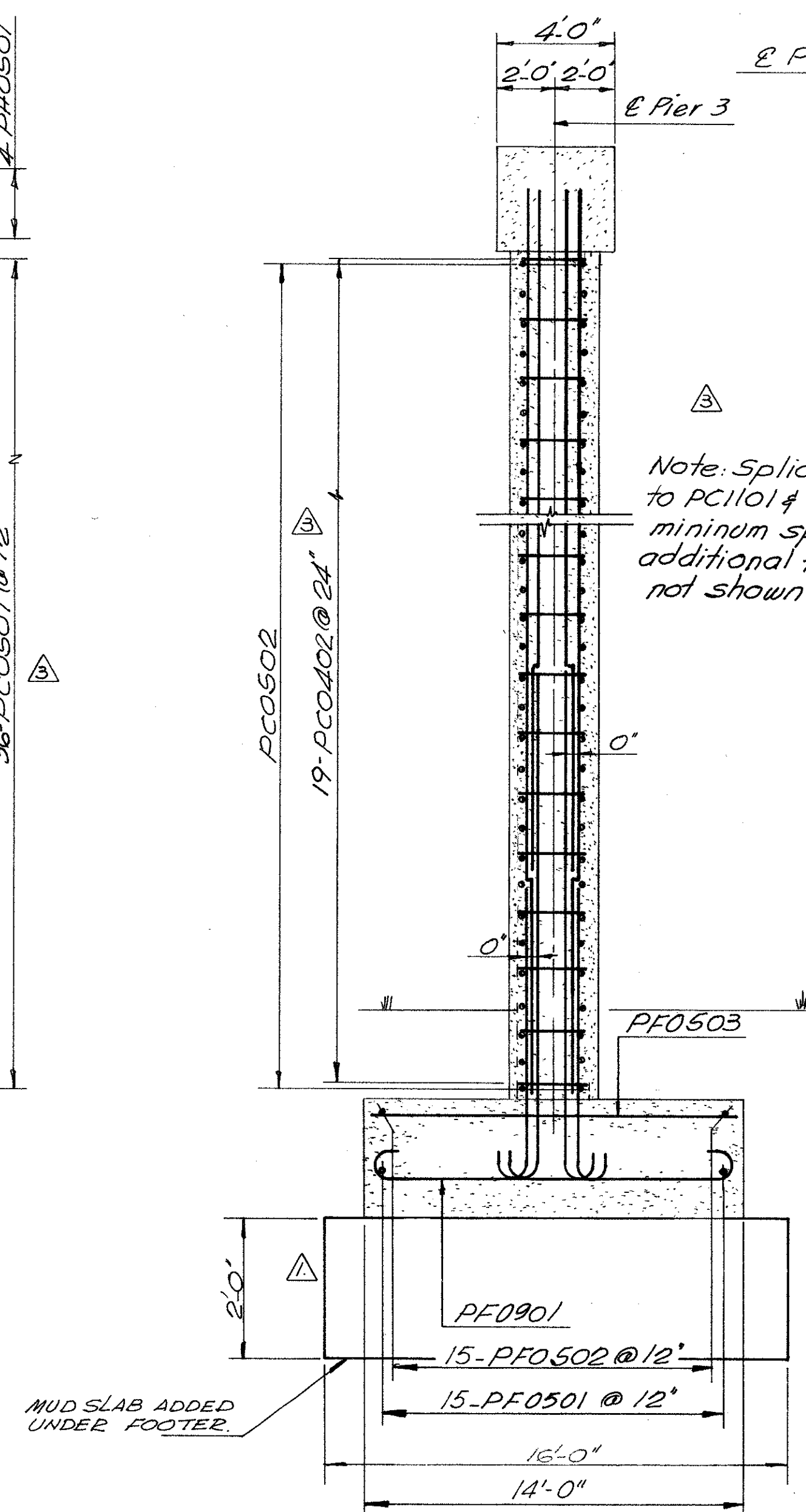
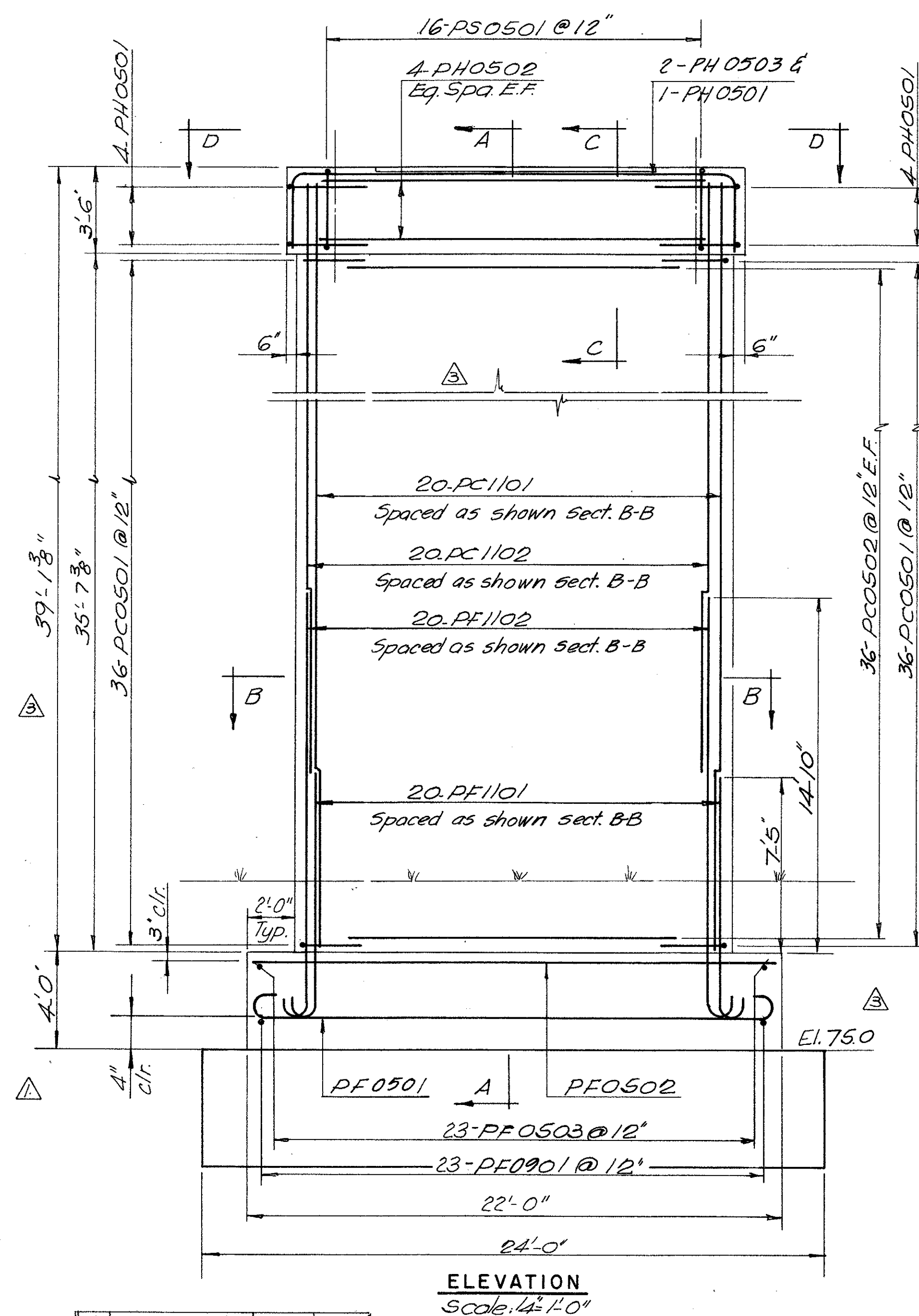
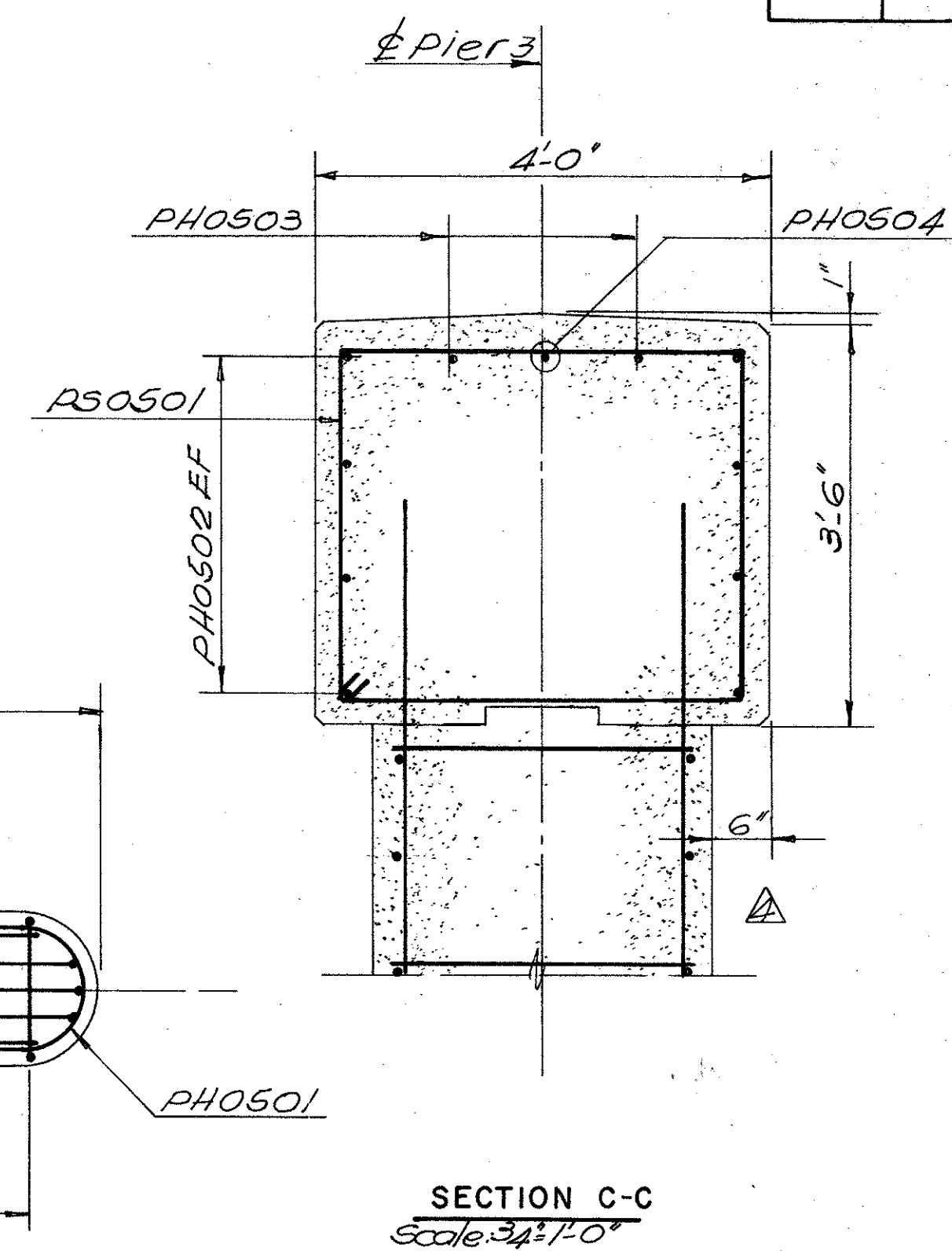
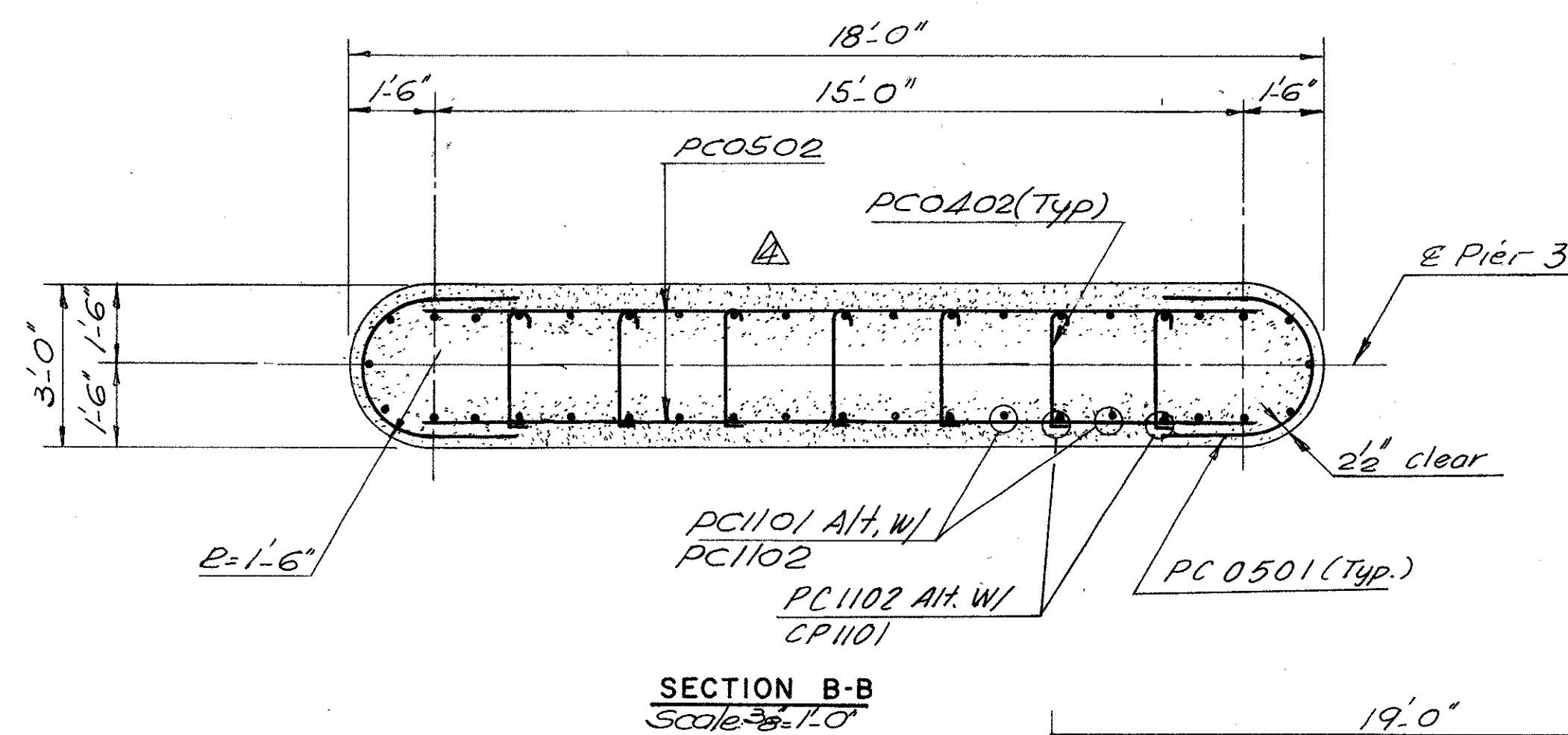
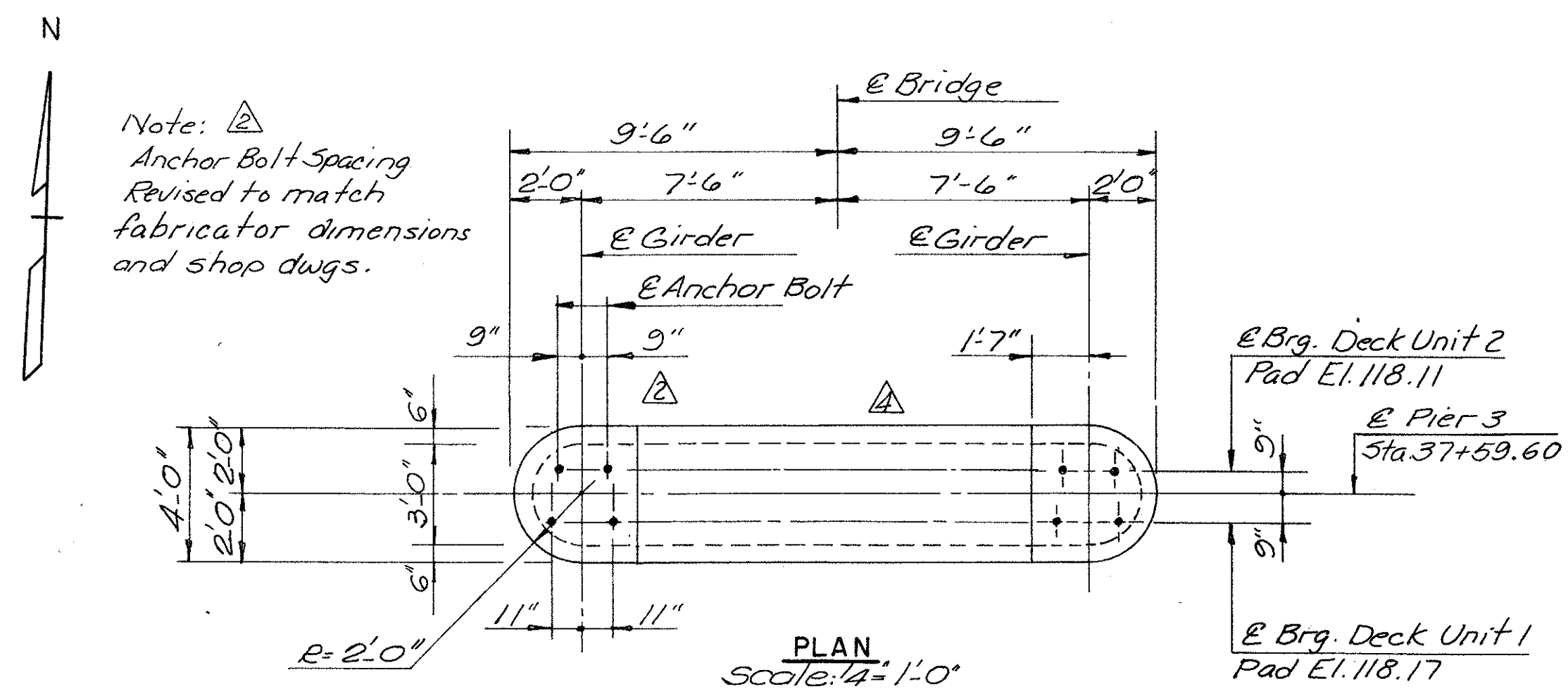
BOULEVARD BRIDGE REHABILITATION
DECK REPLACEMENT

PIER I DETAILS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
Alexandria, Virginia

SCALE: As Shown
CONTRACT NO: C-17B
SHEET NO. 8 OF 38

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
C-17B	Boulevard Bridge Rehab	35(10)	



			Widened Stem	\$ K.L	3-15-93
	BY	DATE	Lowered Hg. Widened stem	G.L.L	3-1-93
MADE	L.H	2-92	Rev. Anchor Bolts	TEM	1-11-93
CHECKED	TEM	2-92	Redesign footing	TEM	12-4-92
IN CHARGE			NO.	REVISION	BY DATE

RECORD DRAWING

**RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM**

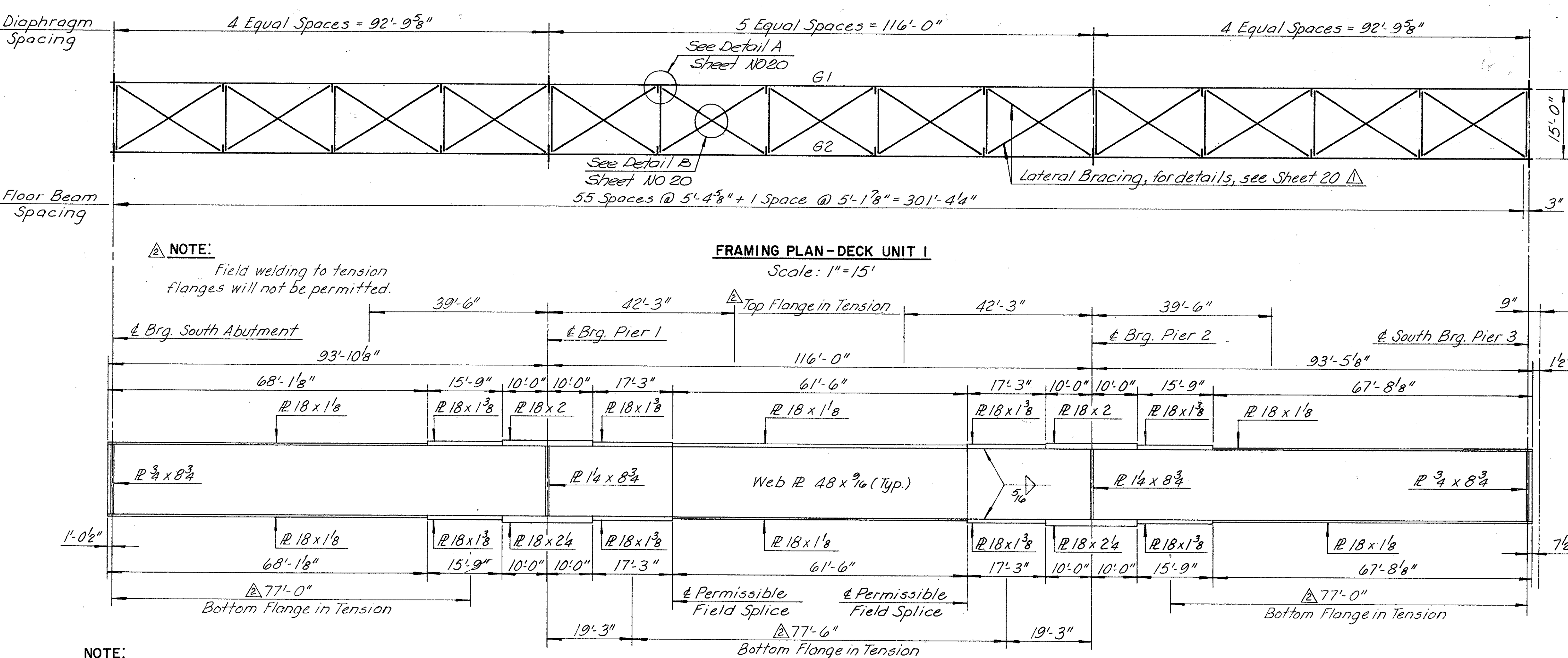
BOULEVARD BRIDGE REHABILITATION
DECK REPLACEMENT

PIER 3 DETAILS

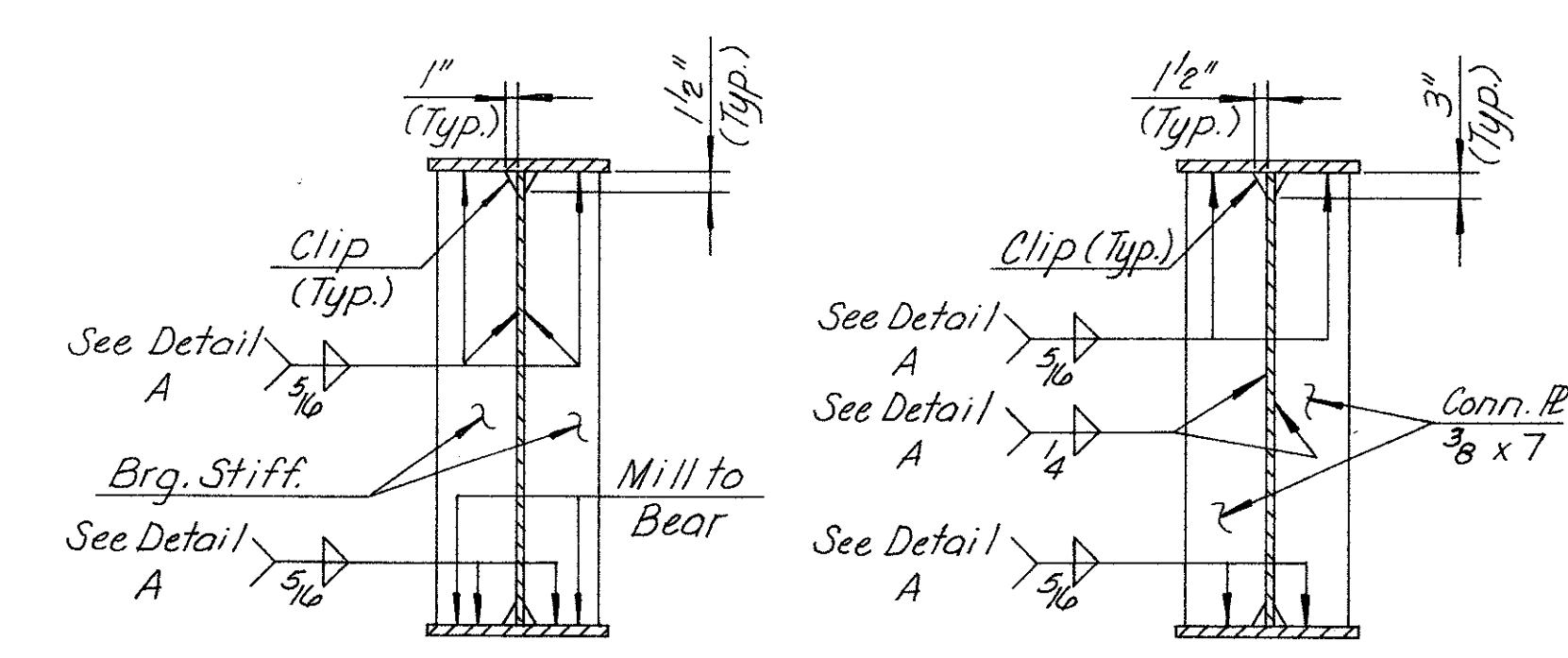
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
Alexandria, Virginia

SCALE: As Shown
CONTRACT NO.: C-17B
SHEET NO. 10 OF 38

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
C-17B	Boulevard Bridge Rehab	35 (11)	

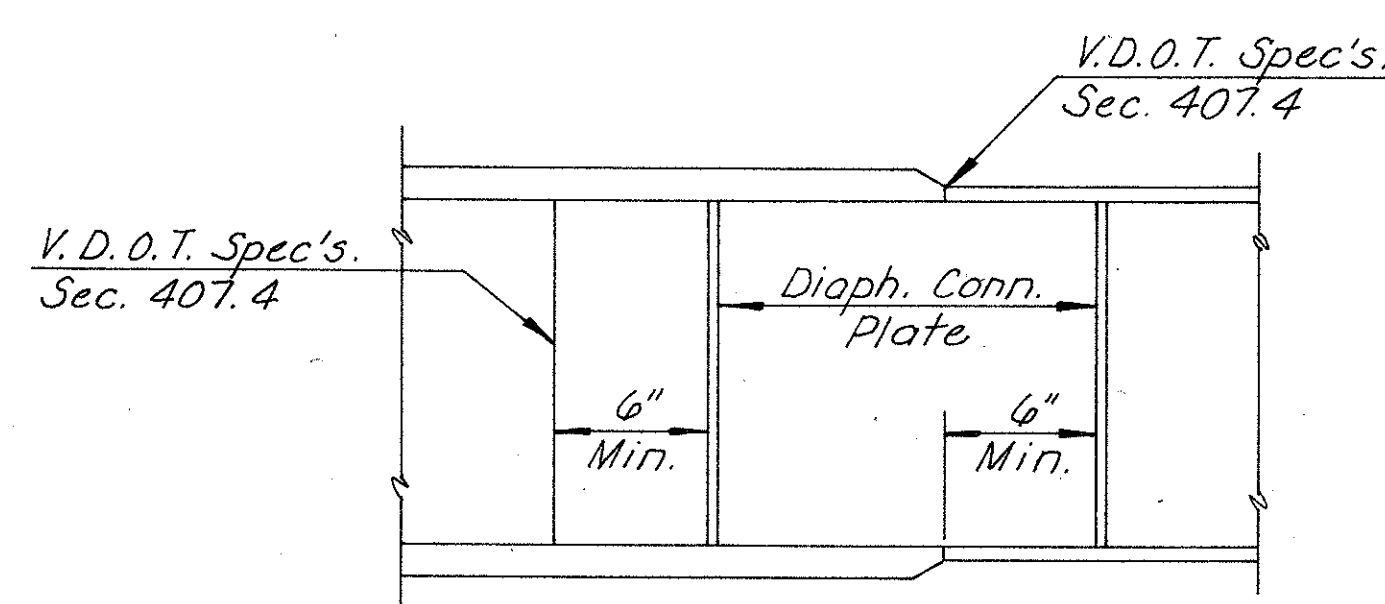


NOTE:
All diaphragms to be
Cross frame Type CF-1.

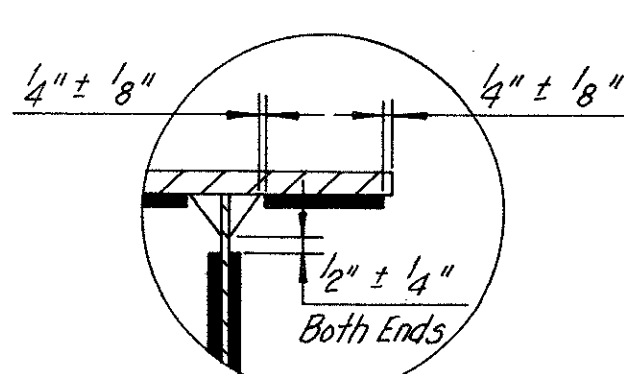


BEARING STIFFENER DETAIL
No Scale

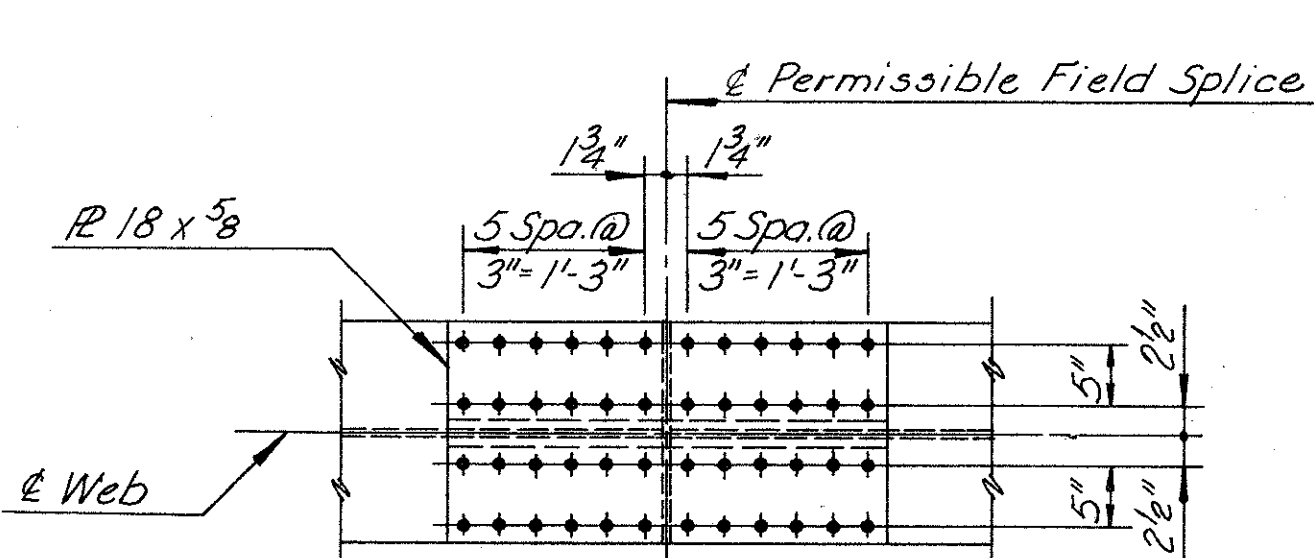
INTERMEDIATE DIAPHRAGM
CONNECTOR PLATE DETAIL
No Scale



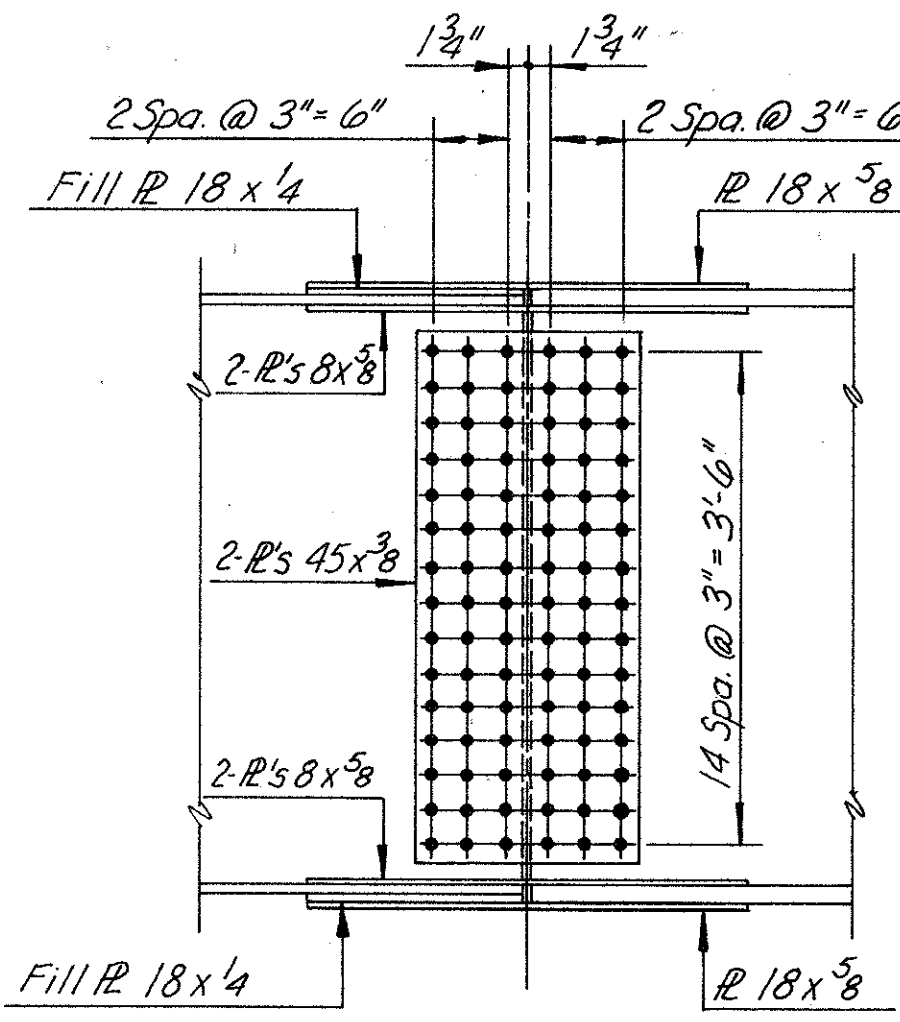
WELDED SPLICE DETAIL
No Scale



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

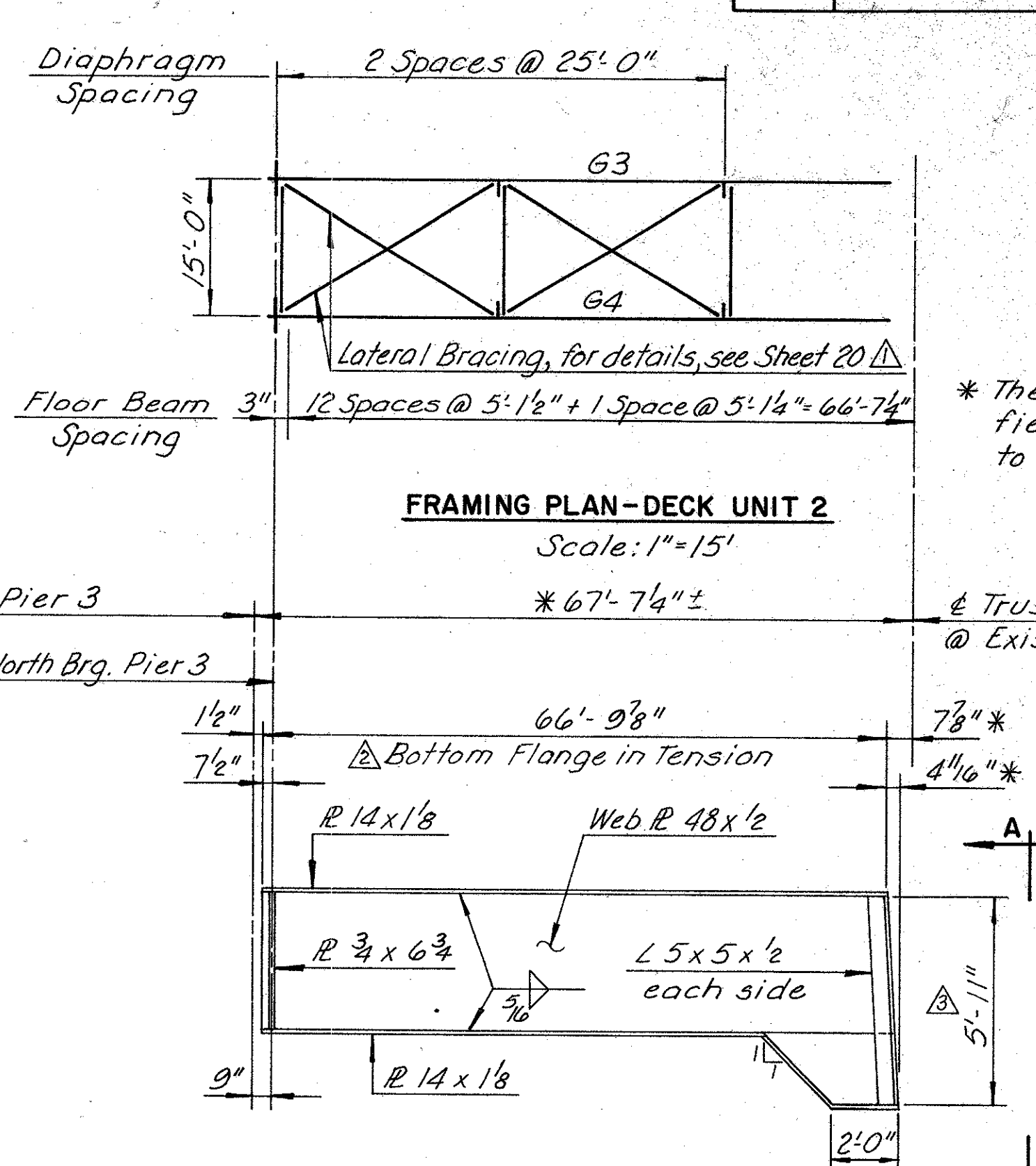


PLAN-TOP & BOTTOM FLANGE
Scale: 3/4"=1'-0"



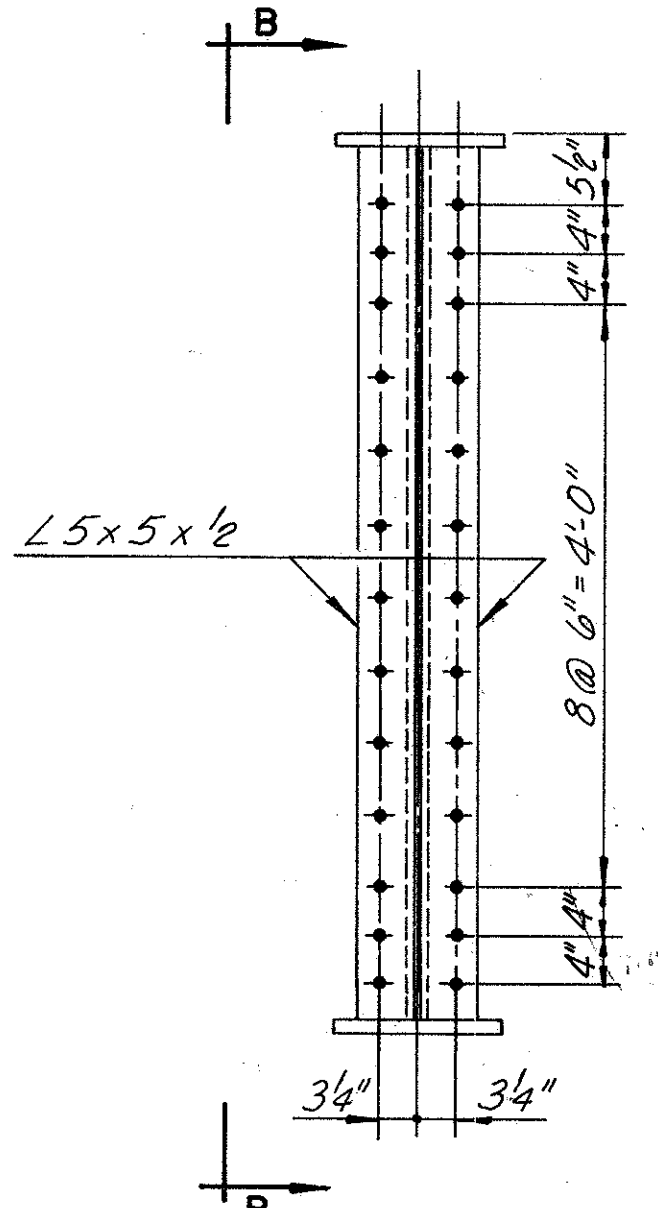
ELEVATION
Scale: 3/4"=1'-0"

TYPICAL FIELD SPLICE DETAILS

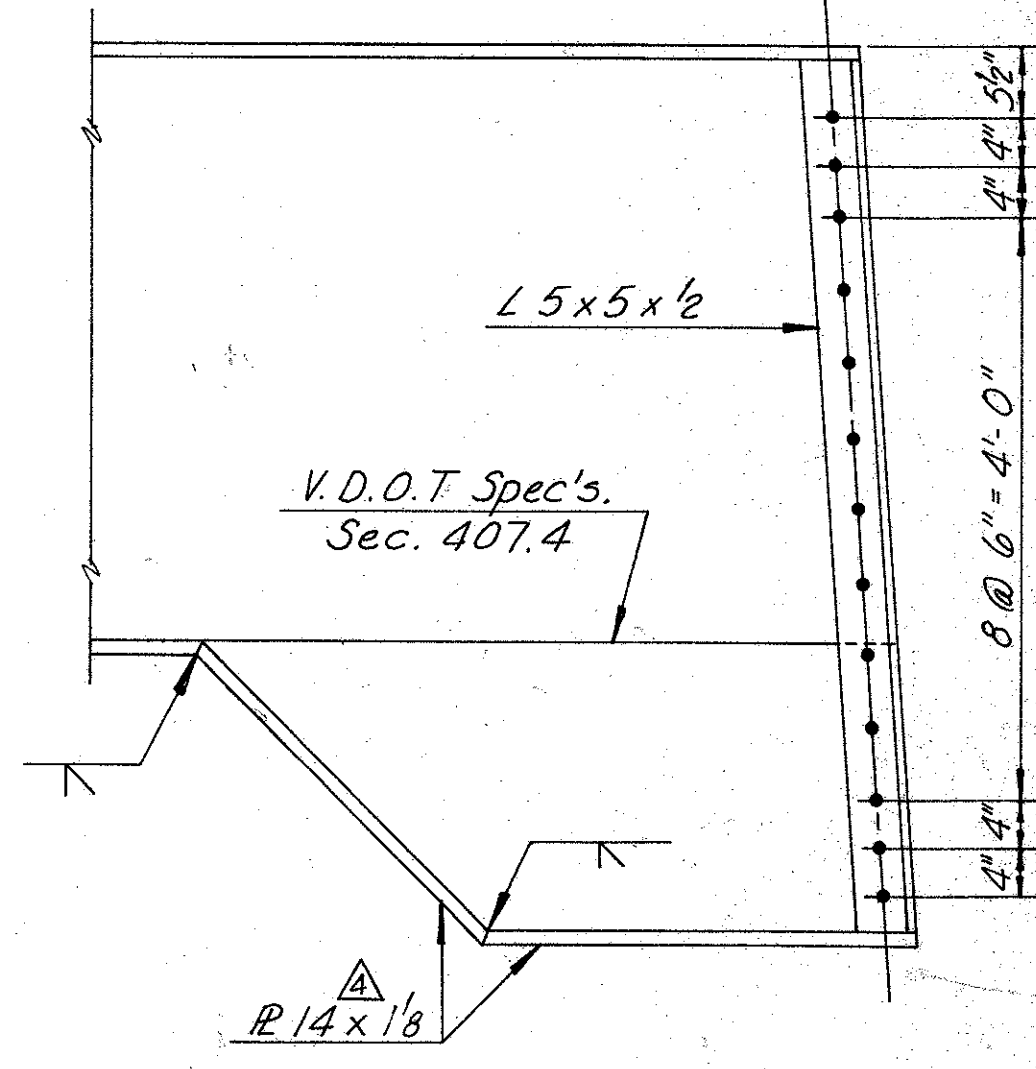


* The Contractor is to
field verify prior
to fabrication.

GIRDER ELEVATION-DECK UNIT 2
No Scale



VIEW A-A
Scale: 3/4"=1'-0"



VIEW B-B
Scale: 3/4"=1'-0"

NOTE:
Existing 1 3/16" rivet holes
in the existing tower legs are
to be reamed to 1 5/16" for 7/8" bolts.

RECORD DRAWING

NO.	REVISION	BY	DATE
1	Rev. Flange Thickness	TEM	9-29-92
2	Revised Dim.	TEM	9-29-92
3	Added Tension Fig. 402	TEM	9-92
4	Added Lateral Bracing	TEM	6-92

RICHMOND METROPOLITAN AUTHORITY RICHMOND EXPRESSWAY SYSTEM	
BOULEVARD BRIDGE REHABILITATION DECK REPLACEMENT GIRDER DETAILS	
HOWARD, NEEDLES, TAMMEN & BERGENDOFF consulting engineers Alexandria, Virginia	SCALE: As Shown CONTRACT NO.: C-17B SHEET NO. 11 OF 38

[illegible]

Technical drawing of a bridge pier cross-section. The pier is 18'-0" wide and 3'-0" high. It features a central section of 15'-0" width and rounded ends with a 1'-6" radius. The drawing shows internal reinforcement including vertical bars (PC1101), horizontal bars (PC0501), and a central core (PC0402 Typ). A note indicates a 2 1/2" clear distance from the reinforcement to the concrete surface. Other labels include PC0502, PC1102, and PC1101 Alt. W/.

Hand-drawn technical drawing of a square pier with a central circular hole. The drawing includes dimensions and labels:

- Pier 2**: Label at the top of the drawing.
- 4'-0"**: Dimension for the width of the pier.
- PH0503**: Dimension line on the left side.
- PH0504**: Dimension line on the right side.
- PH0502 EF**: Dimension line on the left side, indicating the effective height.
- RS0501**: Dimension line pointing to the central circular hole.
- 3/16"**: Dimension line at the bottom right, indicating a small offset or hole diameter.
- North Arrow**: Located in the top right corner, pointing towards the upper right.

[illegible]

4'-0"

2'-0" 2'-0"

E Pier 2

PH

PC0502

20-PC0402 @ 24"

0"

0"

PF0503

2'-8"

PF0504

7'-11"

PF1002

PF1001

21-PF0502 Eq. Sp.

21-PF0501 Eq. Sp.

22'-0"

20'-0"

Note: Splice odd' to PC1101 minimum splice 8' additional foot if not shown. 40 pie

Note:
Contractor may elect to cut
already fabricated PF1001
in field & splice straight
bar to avoid ordering
PF1002 as shown.

	BY	DATE	 Modified Fig. Lengthened Stem	GKL	3-11-92
MADE	LH	2-92	 Redesign Footing	TEM	12-14-92
CHECKED	TEM	2-92	 Anchor Bolt Sp.	TEM	9-29-92
IN CHARGE			NO.	REVISION	BY DATE

SCALE: As Shown
CONTRACT NO.: C-178
SHEET NO. 9 OF 38