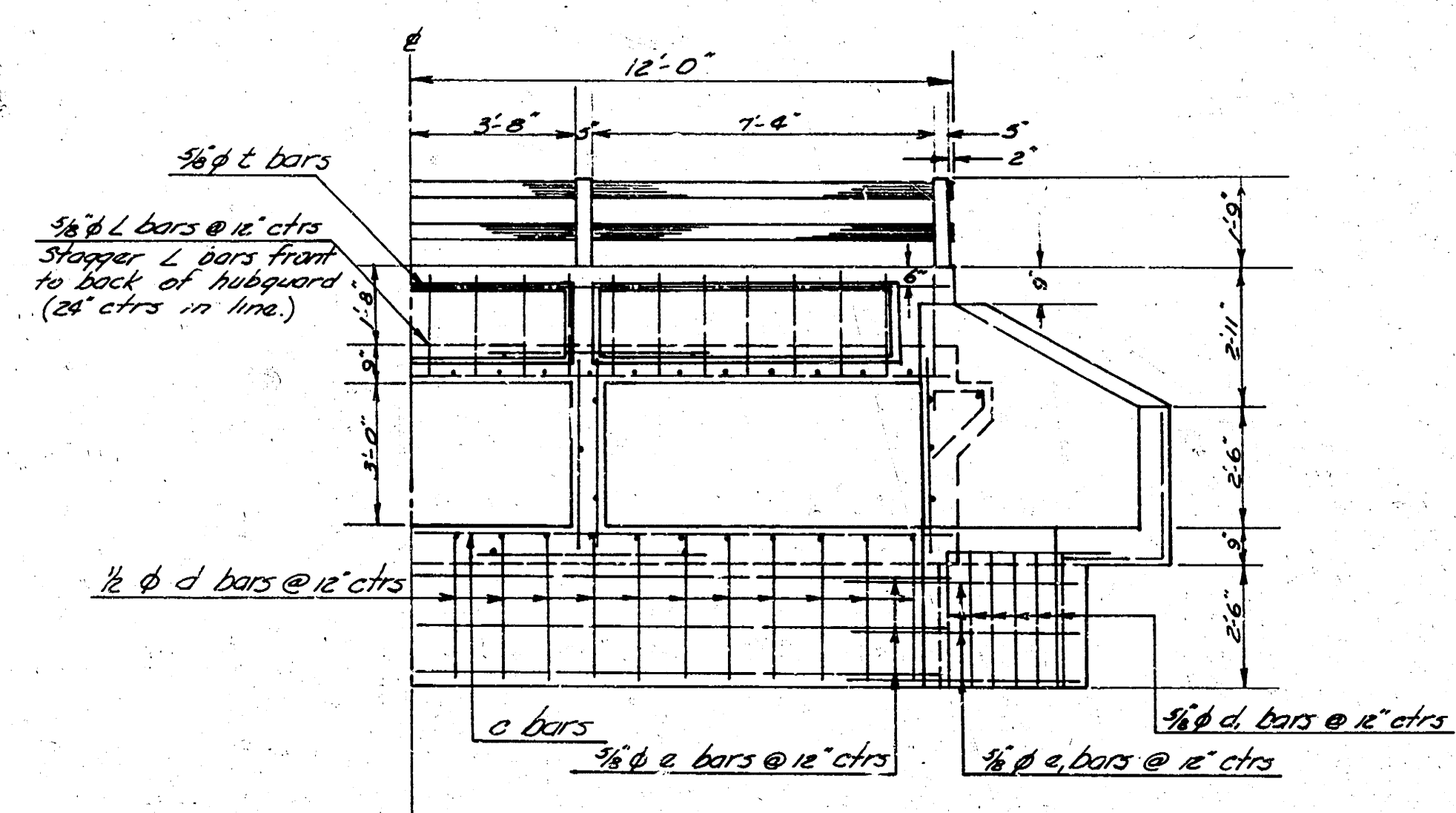
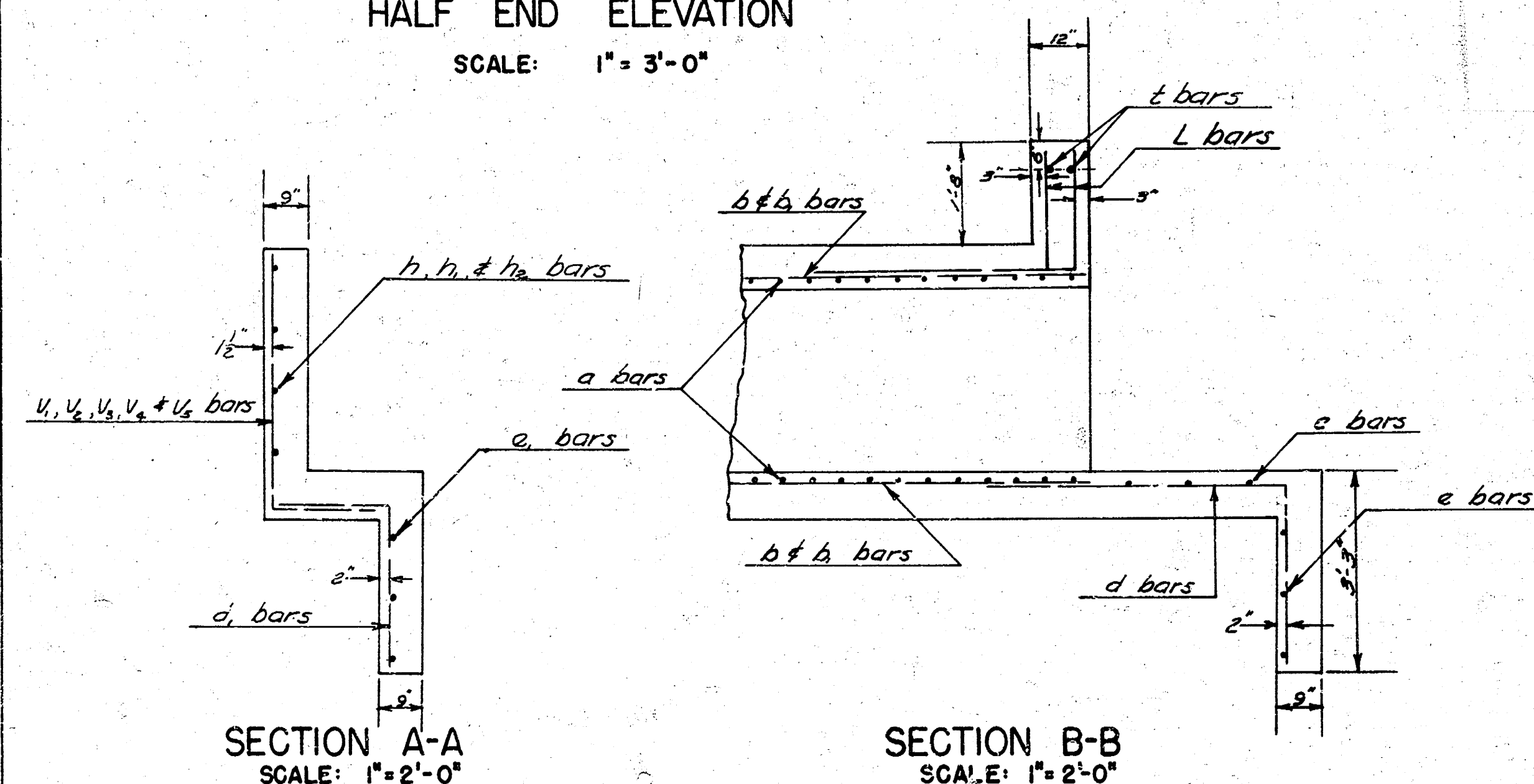


CULVERT DETAILS MERIDIAN & 33RD ST. SO.

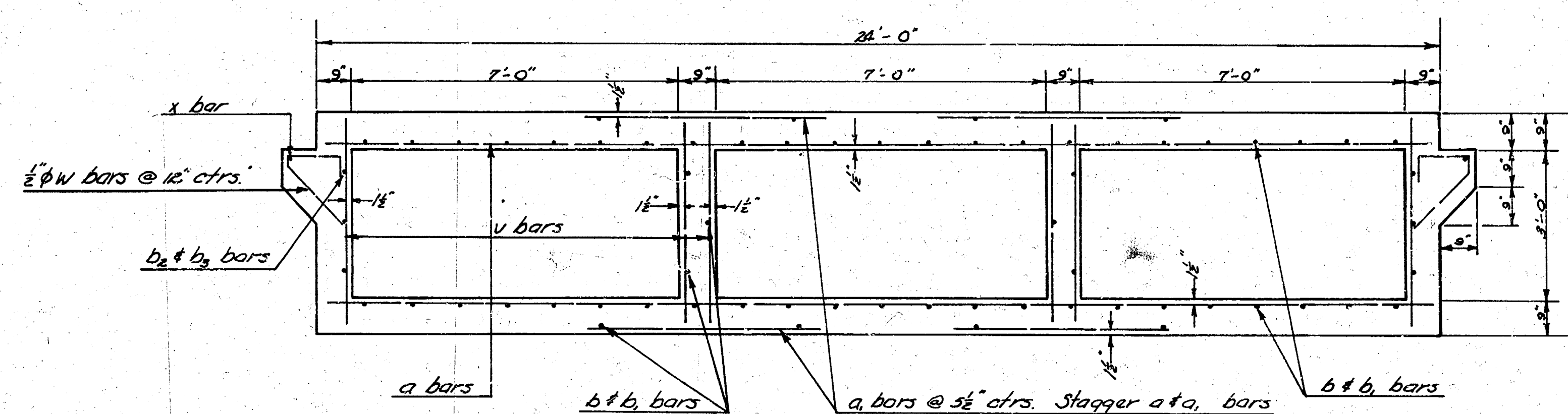


HALF END ELEVATION
SCALE: 1" = 3'-0"

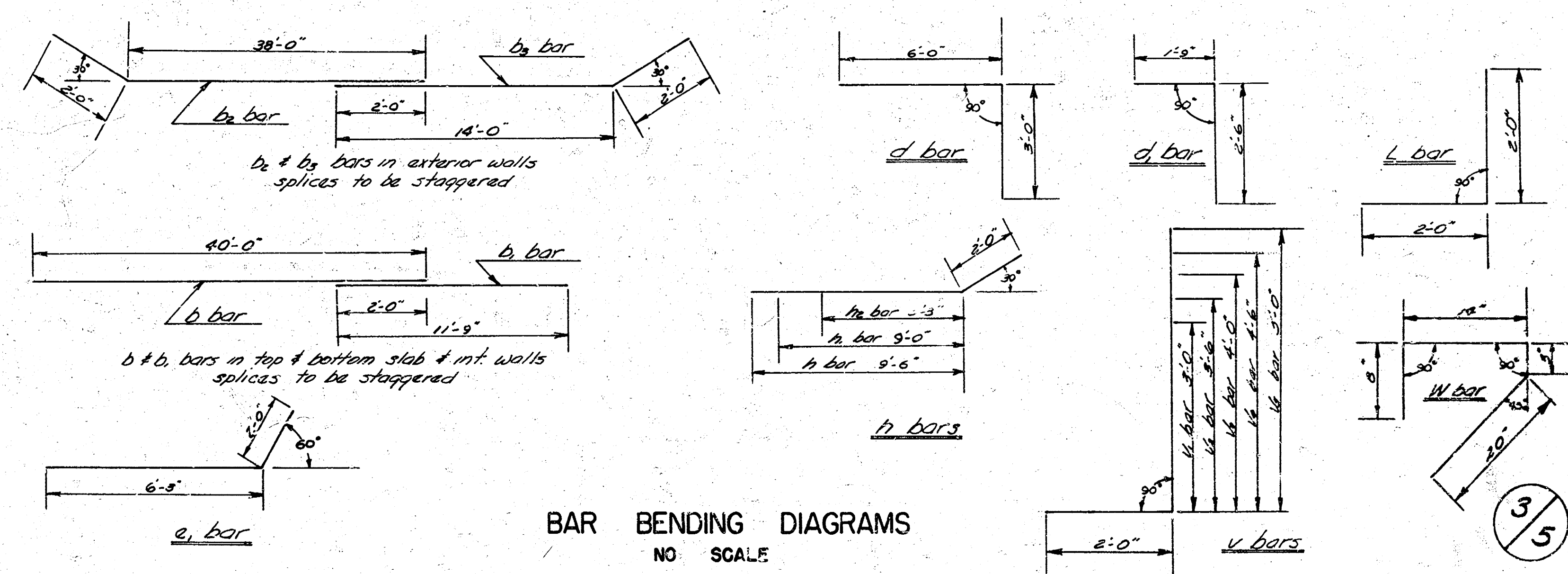


SECTION A-A
SCALE: 1" = 2'-0"

SECTION B-B
SCALE: 1" = 2'-0"

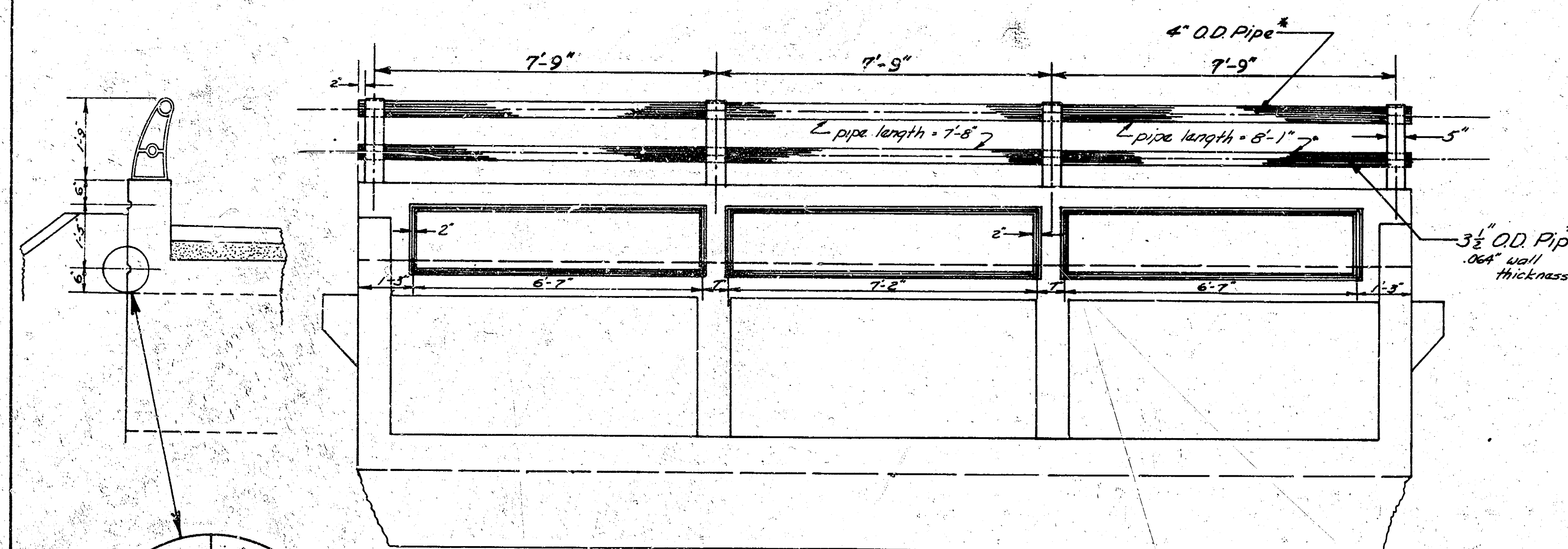


CROSS SECTION OF BOX
SCALE: 1" = 2'-0"

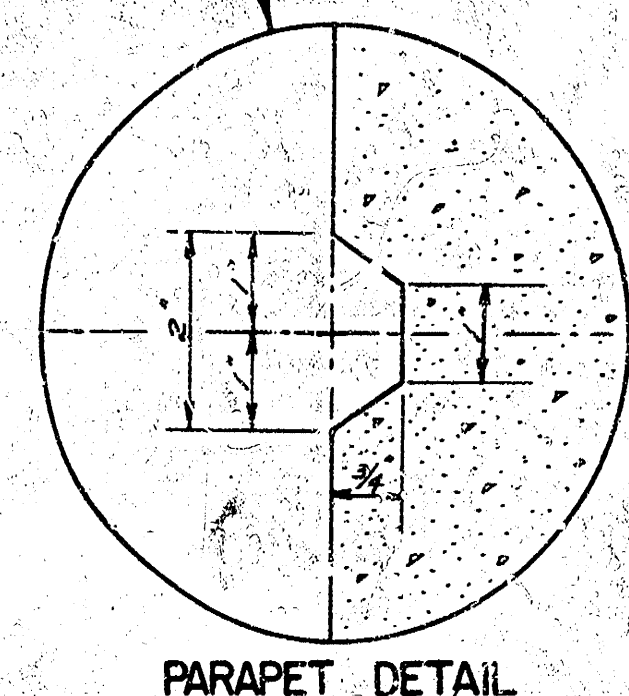


BAR BENDING DIAGRAMS
NO SCALE

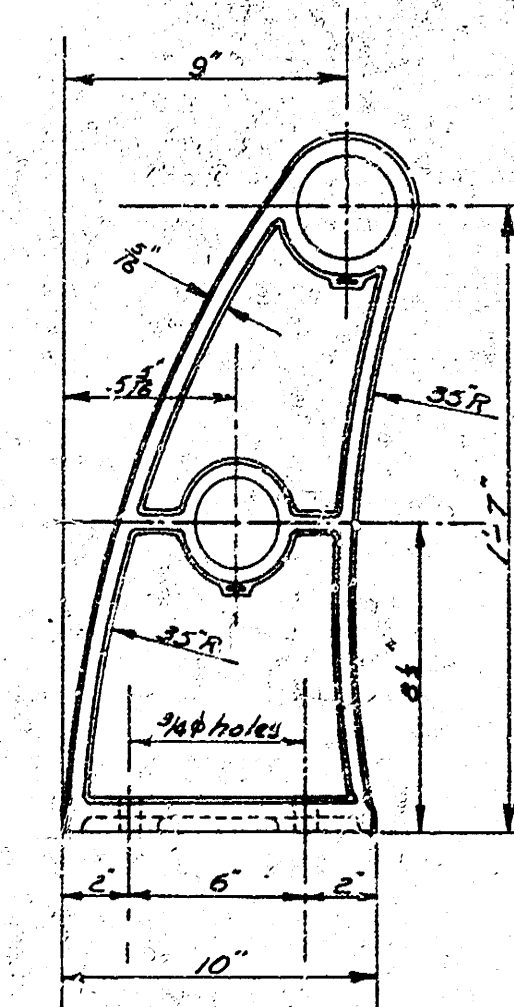
* Pipes may be one piece 24'-0" long or cut into lengths as shown.



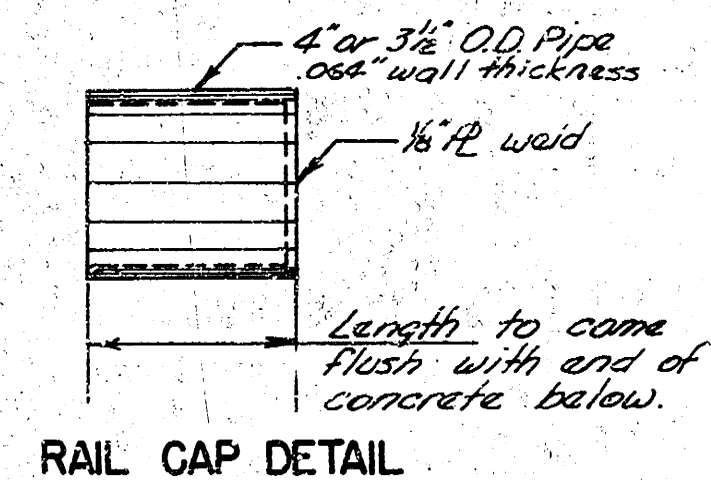
HANDRAIL & PARAPET FACE DETAIL
SCALE: 1" = 2'-0"



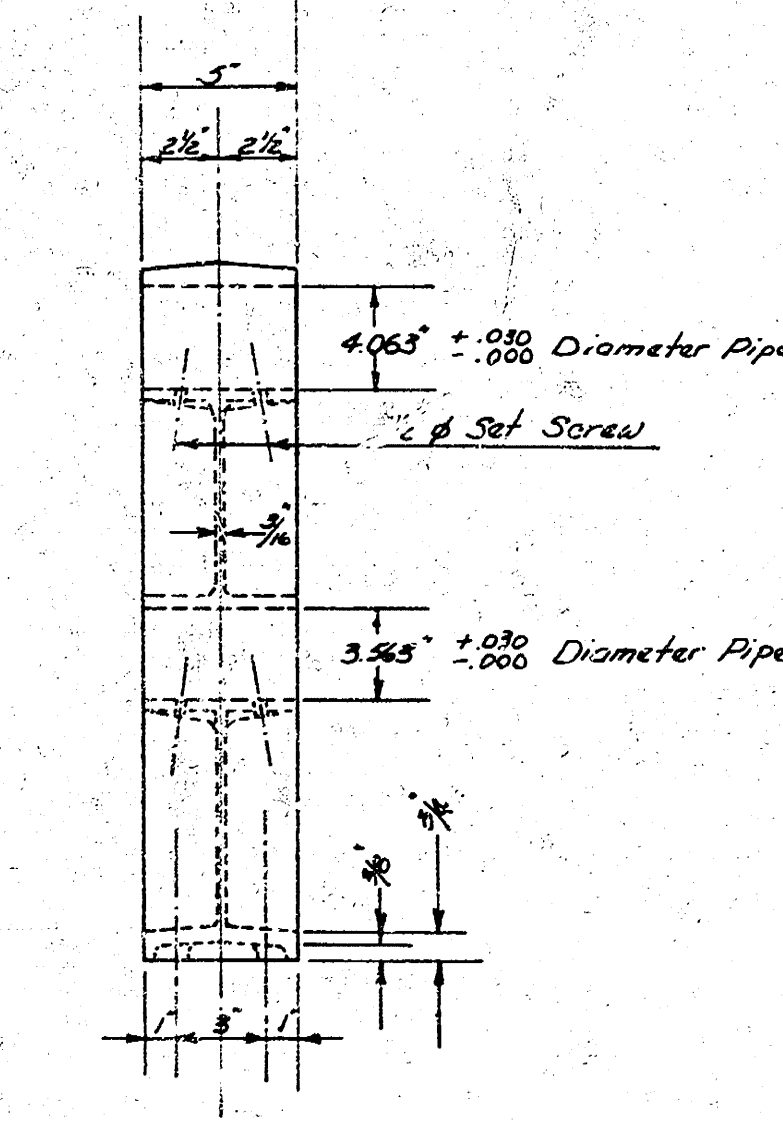
PARAPET DETAIL



HANDRAIL POST DETAIL
SCALE: 1" = 0'-0"



RAIL CAP DETAIL

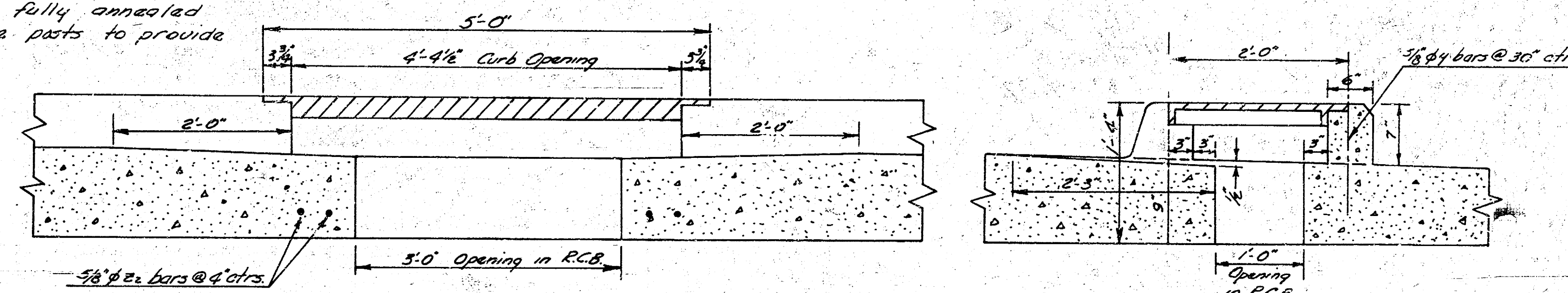


Handrail Erection Notes:
Unit price bid for Metal Handrail shall include installation of handrail anchor bolts & complete fabrication & erection of posts & railing as shown.
All handrail anchor bolts & nuts shall be either galvanized or cadmium plated steel. All other parts of rail shall be aluminum: tubing Alloy 615-T6, mill finish; cast posts, Alloy 214, sand-blast finish. All aluminum shall have a protective coating prior to erection as shown in specifications.
Aluminum surfaces in contact with concrete shall be painted with a heavy coat of Bituminous paint, Inertol brand or equal.
The top surface of the parapet wall shall be given a troweled finish, with special care given to provide smooth contact surfaces under handrail posts.
Posts shall be carefully set to true line and grade; if necessary, shims of fully annealed aluminum shall be used under the posts to provide proper setting of the posts.

Bar	SIZE	No	LENGTH	SHAPE
a	3/8"	218	23'-7"	
a ₁	3/8"	436	5'-0"	
b	1/2"	60	40'-0"	
b ₁	1/2"	60	11'-9"	
b ₂	1/2"	6	10'-0"	
c	1/2"	6	16'-0"	
c ₁	1/2"	6	24'-0"	
d	1/2"	46	9'-0"	
d ₁	1/2"	24	4'-5"	
e	3/8"	6	23'-0"	
e ₁	3/8"	12	8'-3"	
f	3/8"	8	11'-6"	
f ₁	3/8"	4	11'-0"	
f ₂	3/8"	4	7'-3"	
g	3/8"	48	4'-0"	
h	1/2"	4	8'-4"	
i	3/8"	4	23'-6"	
j	1/2"	200	4'-2"	
k	3/8"	8	5'-0"	
k ₁	3/8"	8	3'-6"	
k ₂	3/8"	8	6'-0"	
k ₃	3/8"	8	6'-6"	
k ₄	3/8"	4	7'-0"	
l	1/2"	64	3'-9"	
m	3/8"	2	3'-6"	
n	3/8"	20	1'-0"	
o	3/8"	12	4'-4"	
o ₁	3/8"	12	2'-4"	
o ₂	3/8"	24	5'-0"	

ITEM	QUANTITY	UNITS
Class A-AF Concrete	112.7	cu yd
Reinforcing Steel	12,395	lbs
Aluminum Handrail	48.0	lin ft
General Excavation	41.0	cu yd
Hand Excavation	5	cu yd
Compacted Backfill	45	cu yd
Integral Curb	72.0	lin ft
Catch Basin Lid 2'x5'	6	each
4" Sidewalk	334.5	sq ft

General Notes:
Compacted backfill to be carried to original ground elevation, but in no case to be higher than top of culvert. Backfill to be sand stabilized & mechanically tamped.
Excavation is to be extended 2' beyond sides of the box & back of wingwalls.
Bevel all exposed edges with 3/4" moulding unless otherwise noted.
4" Sidewalk to cover entire area between int curb & hubguard. Bid price of walk to include sand fill between top of box & bottom of walk. Cost of expansion joint between walk & int curb to be included in walk bid.



SECTIONS THRU CATCH BASINS
SCALE: 1" = 1'-0"