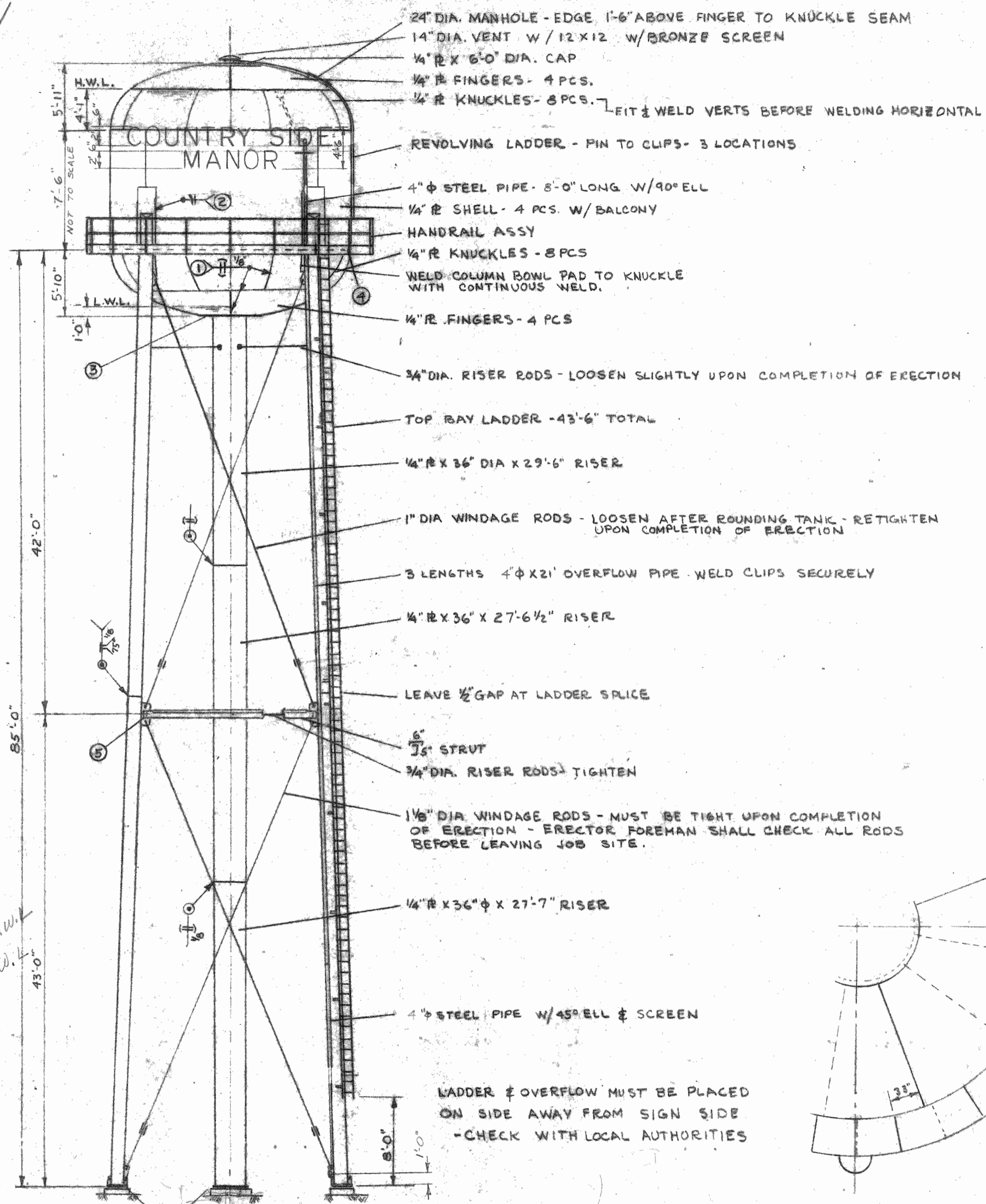


9-1



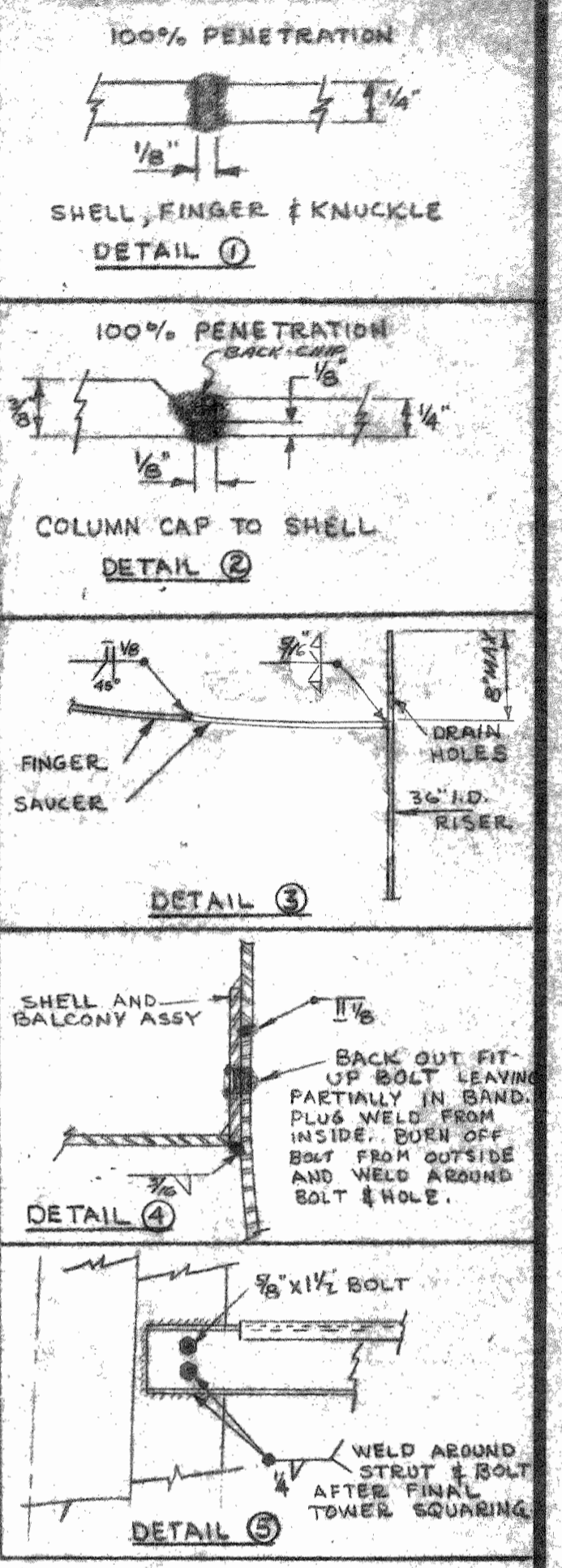
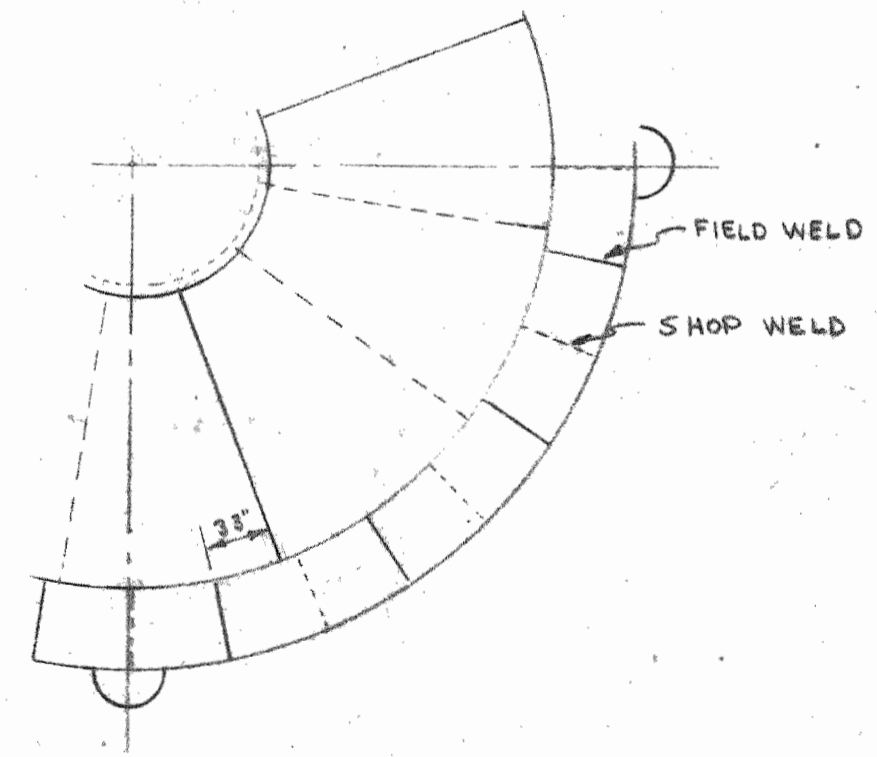
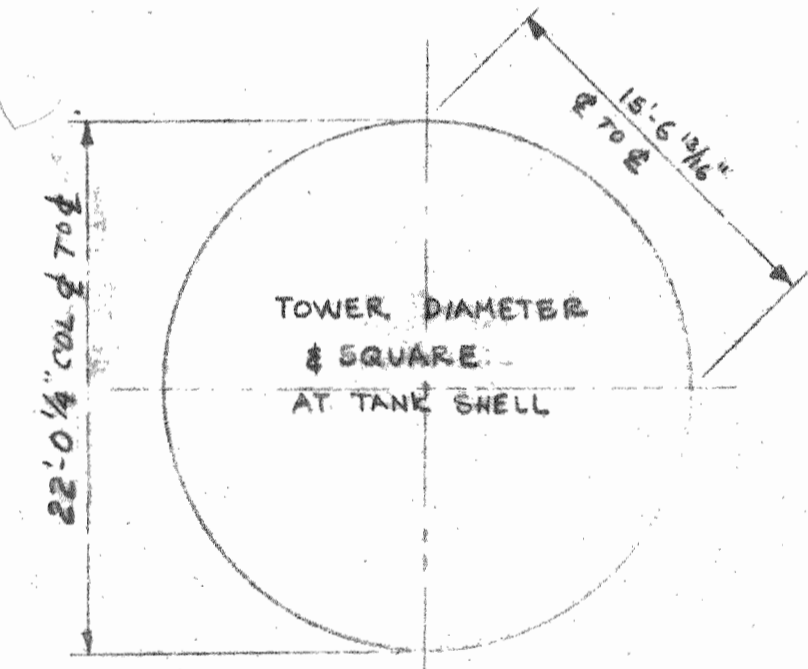
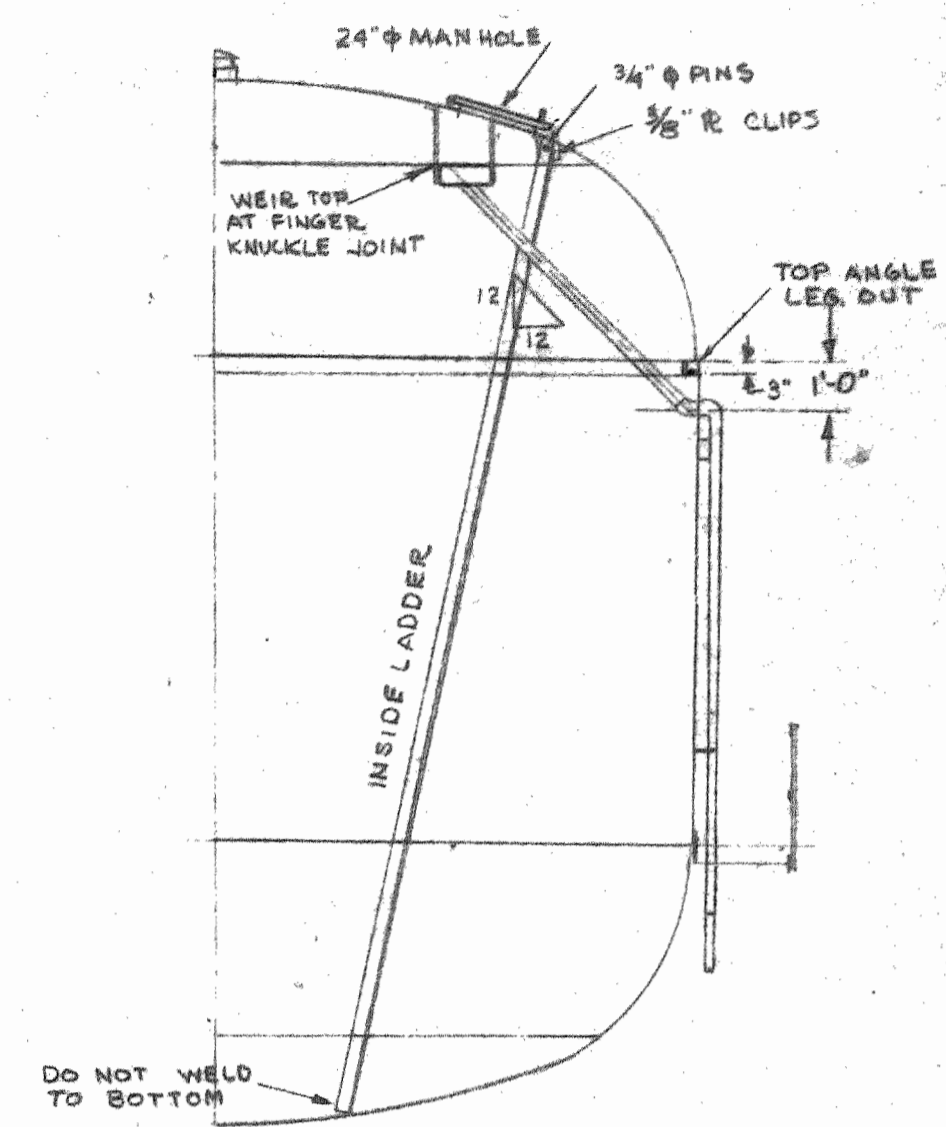
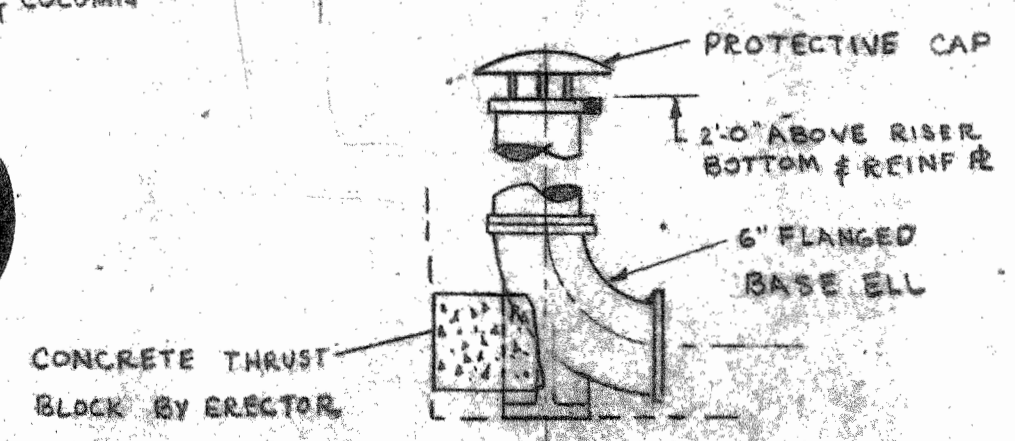
- 24" DIA. MANHOLE - EDGE 1'-6" ABOVE FINGER TO KNUCKLE SEAM
- 14" DIA. VENT W/ 12 X 12 W/ BRONZE SCREEN
- 1/4" R X 6'-0" DIA. CAP
- 1/4" R FINGERS - 4 PCS.
- 1/4" R KNUCKLES - 8 PCS.
- REVOLVING LADDER - PIN TO CLIPS - 3 LOCATIONS
- 4"  $\phi$  STEEL PIPE - 8'-0" LONG W/ 90° ELL
- 1/4" R SHELL - 4 PCS. W/ BALCONY
- HANDRAIL ASSY
- 1/4" R KNUCKLES - 8 PCS
- WELD COLUMN BOWL PAD TO KNUCKLE WITH CONTINUOUS WELD.
- 1/4" R FINGERS - 4 PCS
- 3/4" DIA. RISER RODS - LOOSEN SLIGHTLY UPON COMPLETION OF ERECTION
- TOP BAY LADDER - 43'-6" TOTAL
- 1/4" R X 36" DIA X 29'-6" RISER
- 1" DIA WINDAGE RODS - LOOSEN AFTER ROUNDING TANK - RETIGHTEN UPON COMPLETION OF ERECTION
- 3 LENGTHS 4"  $\phi$  X 21' OVERFLOW PIPE WELD CLIPS SECURELY
- 1/4" R X 36" X 27'-6 1/2" RISER
- LEAVE 1/2" GAP AT LADDER SPICE
- 6" 3/5" STRUT
- 3/4" DIA. RISER RODS TIGHTEN
- 1 1/2" DIA WINDAGE RODS - MUST BE TIGHT UPON COMPLETION OF ERECTION - ERECTOR FOREMAN SHALL CHECK ALL RODS BEFORE LEAVING JOB SITE.
- 1/4" R X 36"  $\phi$  X 27'-7" RISER
- 4"  $\phi$  STEEL PIPE W/ 45° ELL & SCREEN

LADDER & OVERFLOW MUST BE PLACED ON SIDE AWAY FROM SIGN SIDE - CHECK WITH LOCAL AUTHORITIES

2' 6" 5" TO H.W.L.  
80"  $\phi$  L.O.L.  
43'-0"

TANK ERECTION CREW SHALL GROUT BENEATH RISER & COLUMN BASE R's.

Plat D's 152  
sketched: 1/11/65  
**H9**



GOVERNING SPEC - AWWA

NO.	DATE	BY	REVISION
1	6/29/62	JTB	SEPIA WAS N-237

**UNIVERSAL TANK & IRON WORKS, INC.**  
INDIANAPOLIS, INDIANA

DISINFECTION BY WATER MAINS CTR.

**FIELD PAINTING**

by UNIVERSAL CONSTRUCTION COMPANY

- CLEAN ALL SEAMS & ABRADED AREAS
- PATCH COAT TT-P-86 TYPE III RED LEAD IN & OUT, ONE FINISH COAT RED LEAD INSIDE.
- PAINT OUTSIDE WITH 2 COATS OF TT-P-102a, TANK WHITE PAINT
- LETTER "COUNTRY SIDE MANOR" IN 2'-0" BLACK LETTERS. PAINTED ON TWO SIDES.

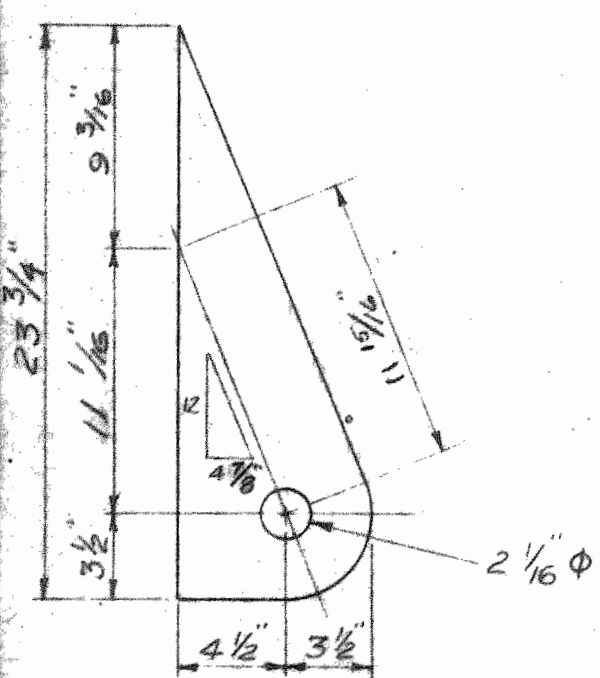
**ENGINEER APPROVAL**  
By *Dean E. Zimmelt*  
ILLINOIS STRUCTURAL ENG. # 2103

**ERECTION DRAWING.**  
40 M — 80' TO LWL

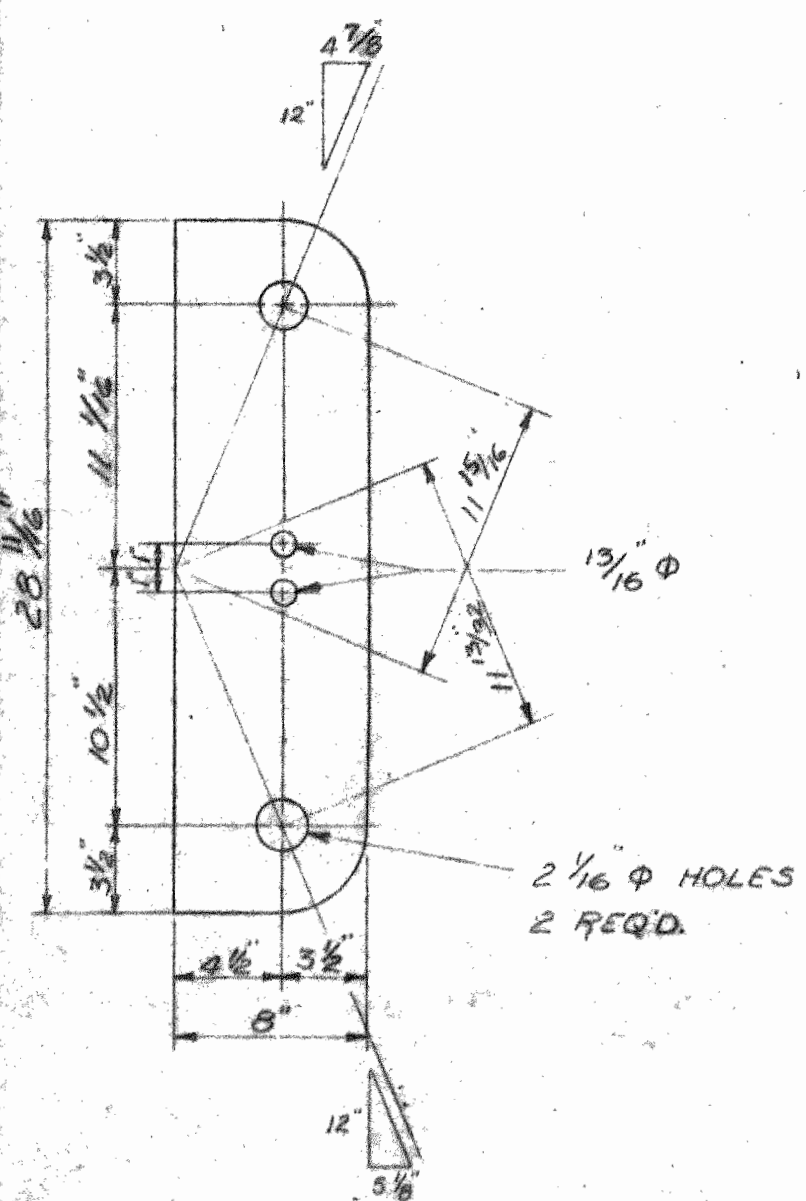
FOR: OAK GROVE UTILITIES  
LIBERTYVILLE, ILL

DATE: 1-31-62	SCALE: NONE
DRWN BY: CK	CHECKED: ECK
JOB NO: N-307	SHEET 1 OF 8

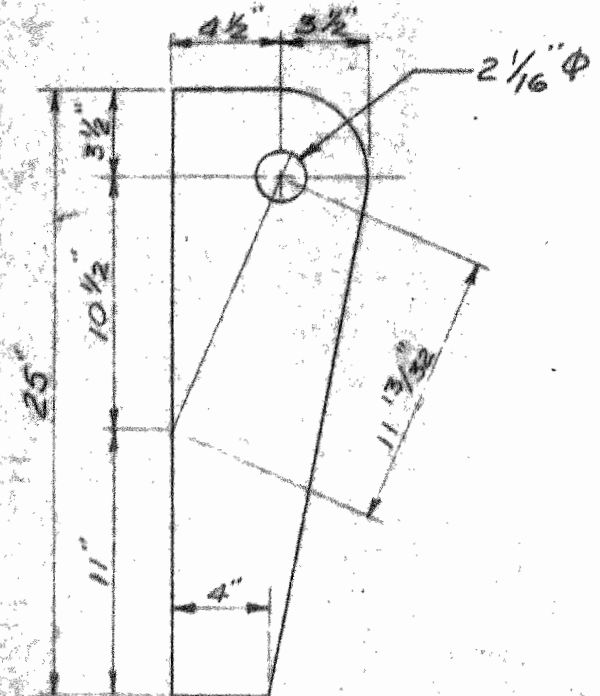
COUNTRY SIDE MANOR WATER TANK



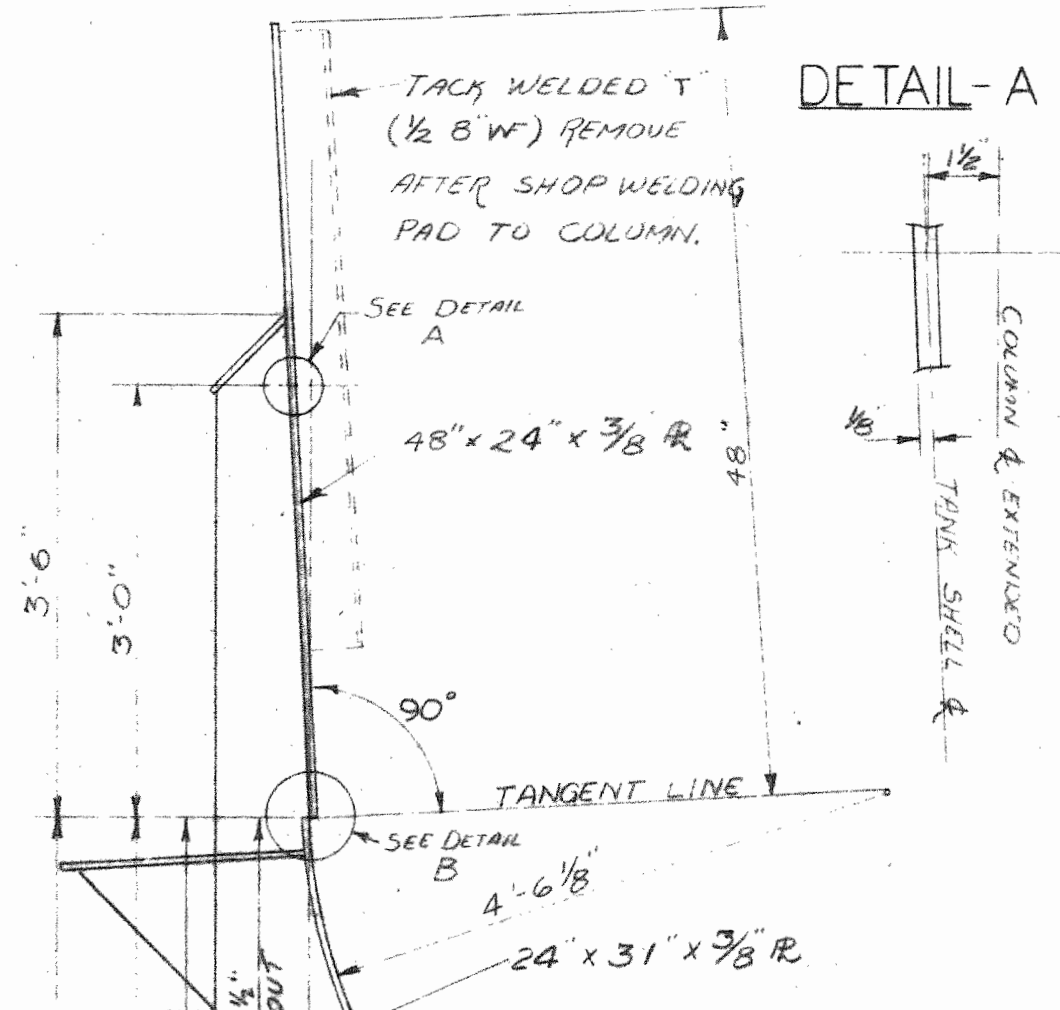
WING PLATE WR-3  
3/8" R 8 REQ'D.



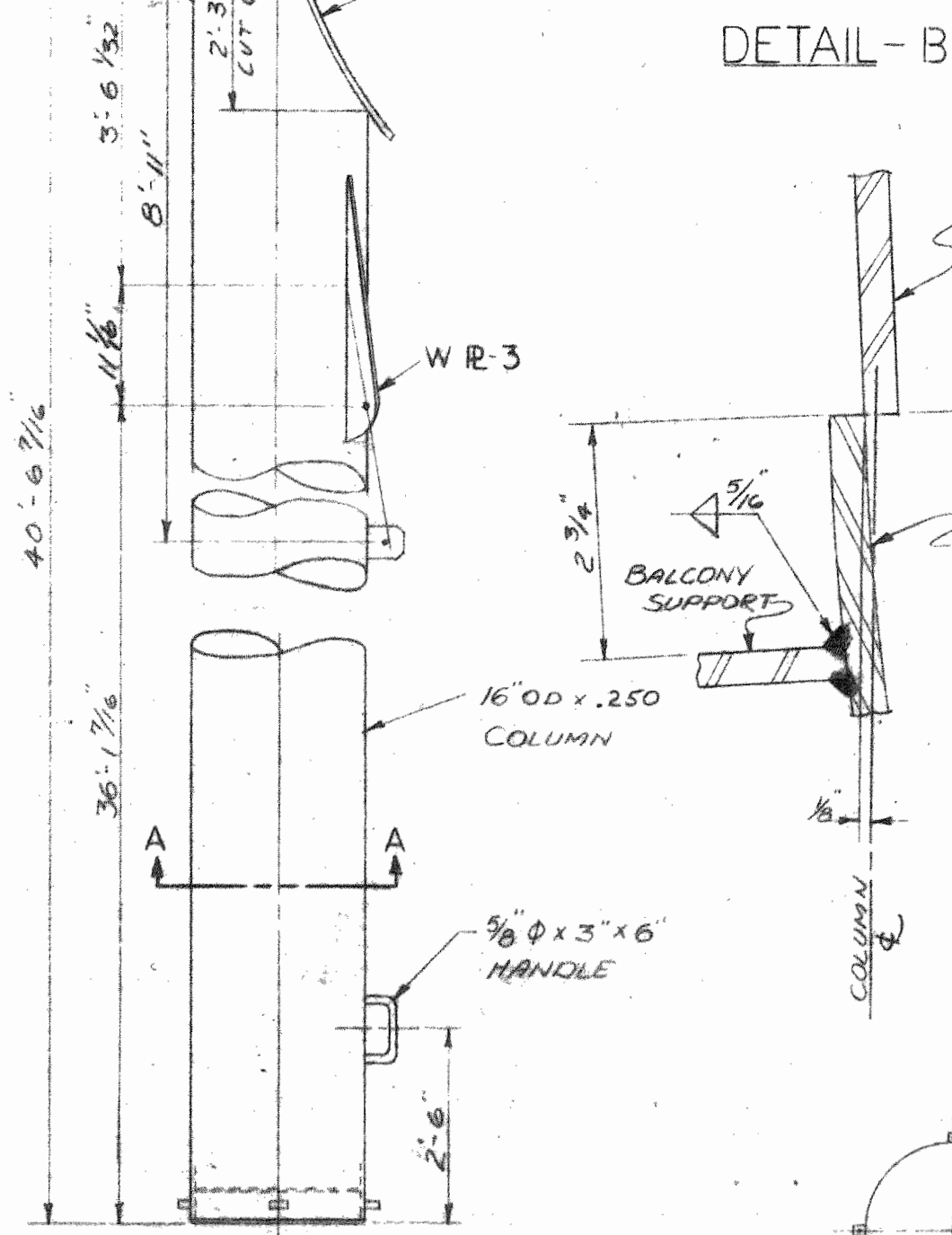
WING PLATE WR-2  
3/8" R 8 REQ'D.



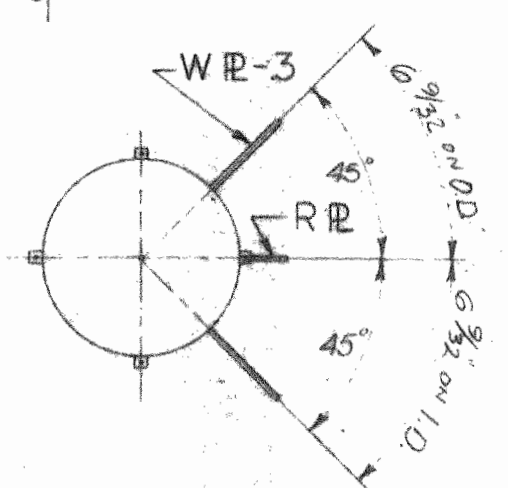
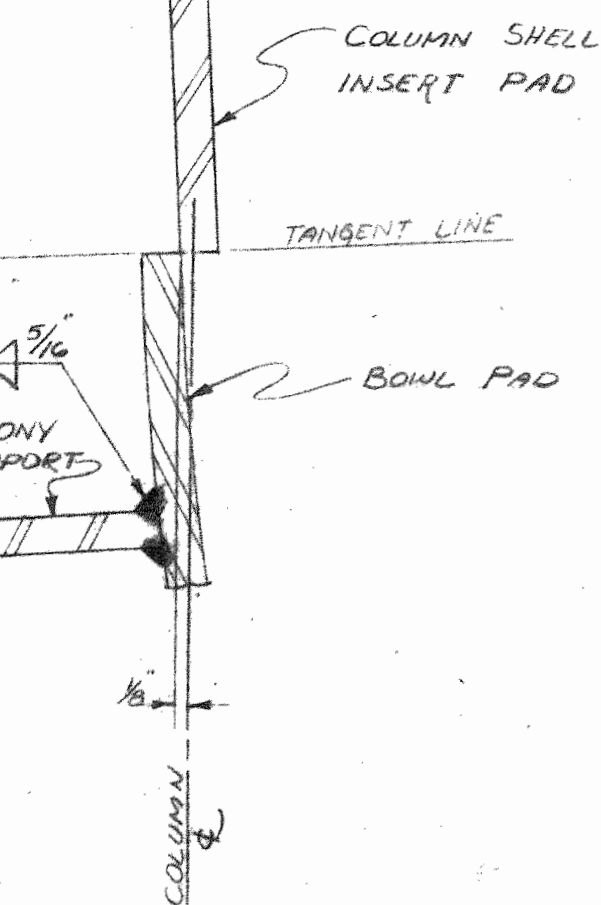
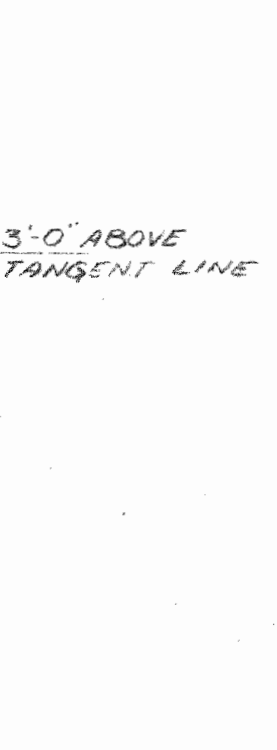
WING PLATE WR-1  
3/8" R 8 REQ'D.



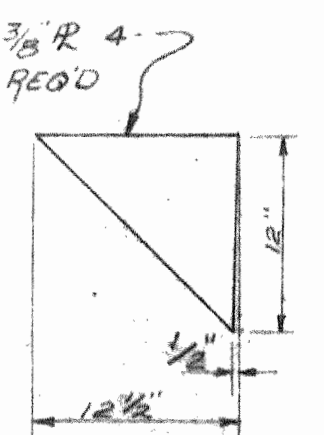
DETAIL-A



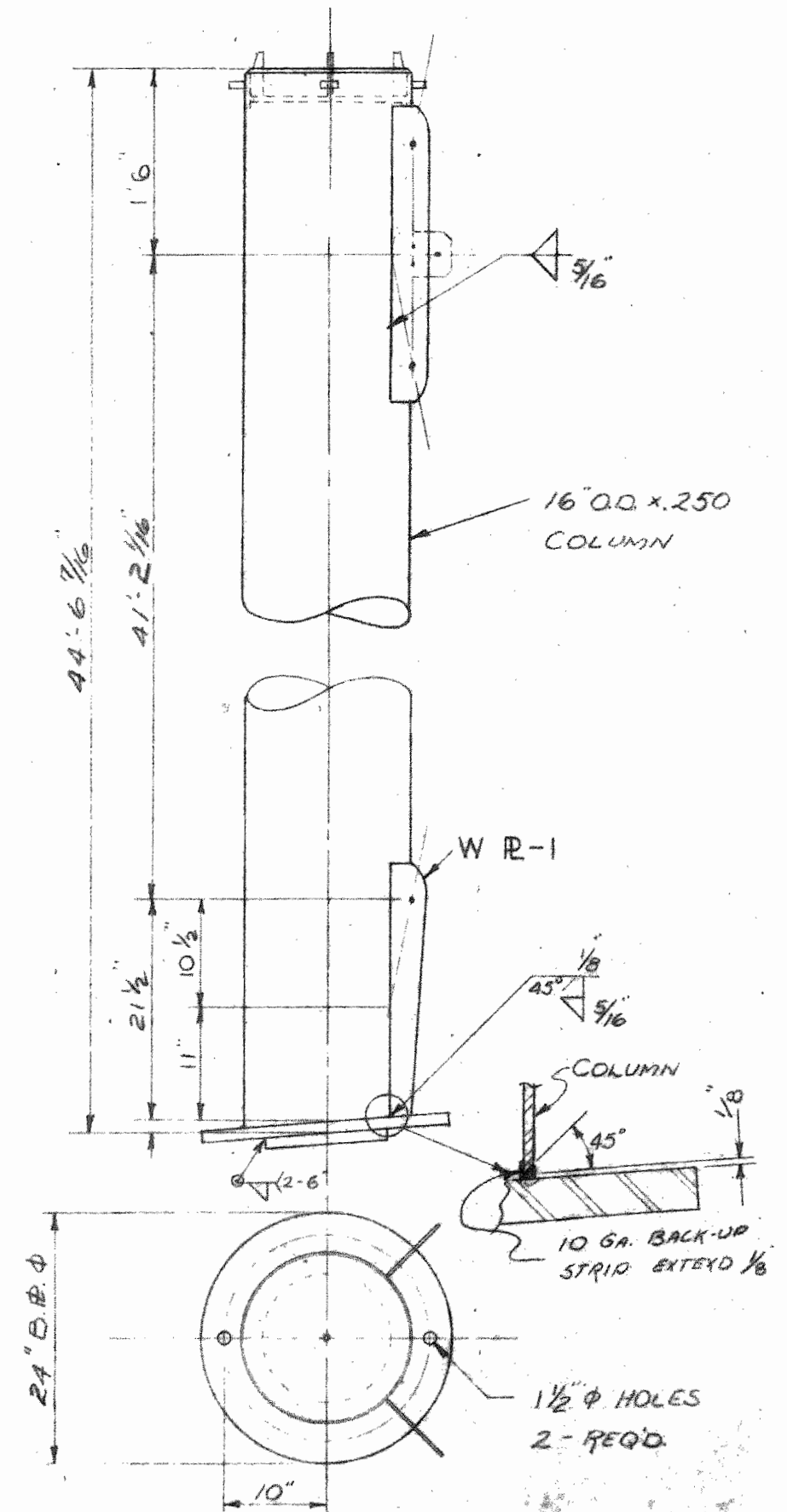
DETAIL-B



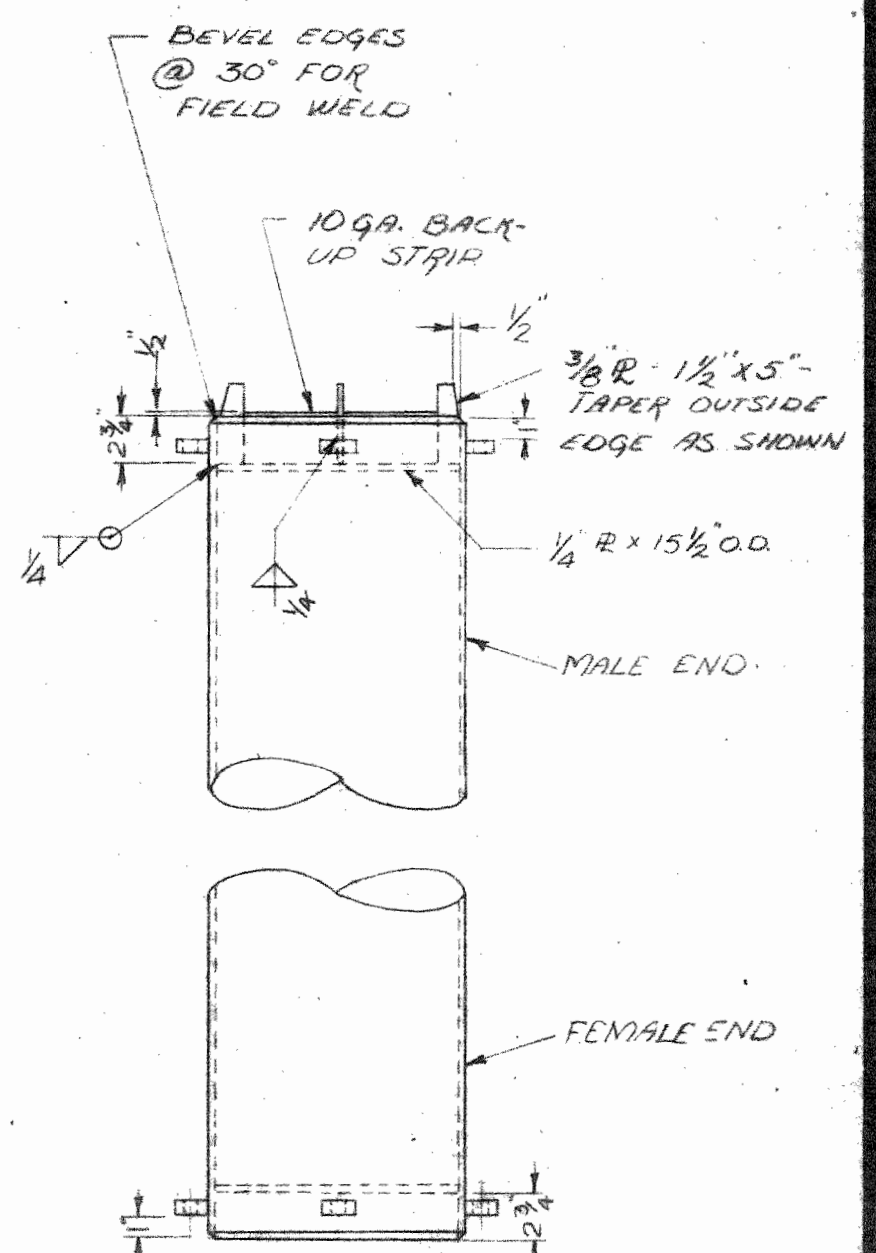
SECTION A-A



BALCONY SUPPT. DET.



BASE R DETAILS  
1" R - 4 REQ'D.



COLUMN FIT-UP DETAILS

NO.	DATE	BY	REVISION
1	6/29/62	J.T.B.	SEPIA WAS N-237

**UNIVERSAL TANK & IRON WORKS, INC.**  
INDIANAPOLIS, INDIANA

ENGINEER APPROVAL  
By Dean E. Zumwalt  
ILLINOIS STRUCTURAL ENG.  
#2103

COLUMN DETAILS  
40M ——— 80' TO LWL  
ELEVATED TANK D.E.

FOR: OAK GROVE UTILITIES  
LIBERTYVILLE, ILL

DATE: JAN. 26, 62 SCALE: VARIOUS

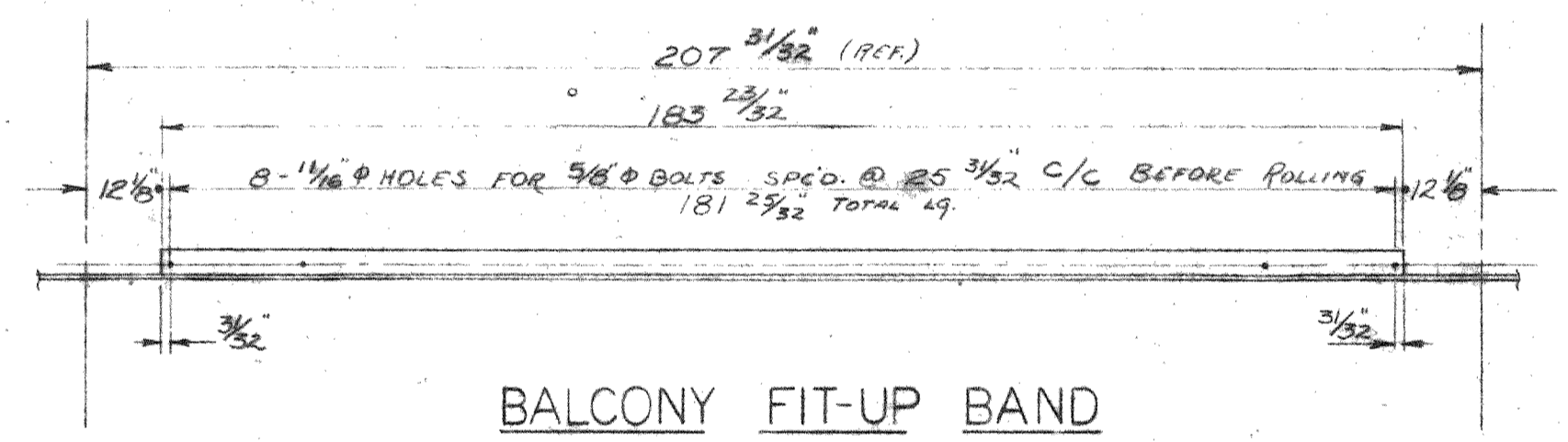
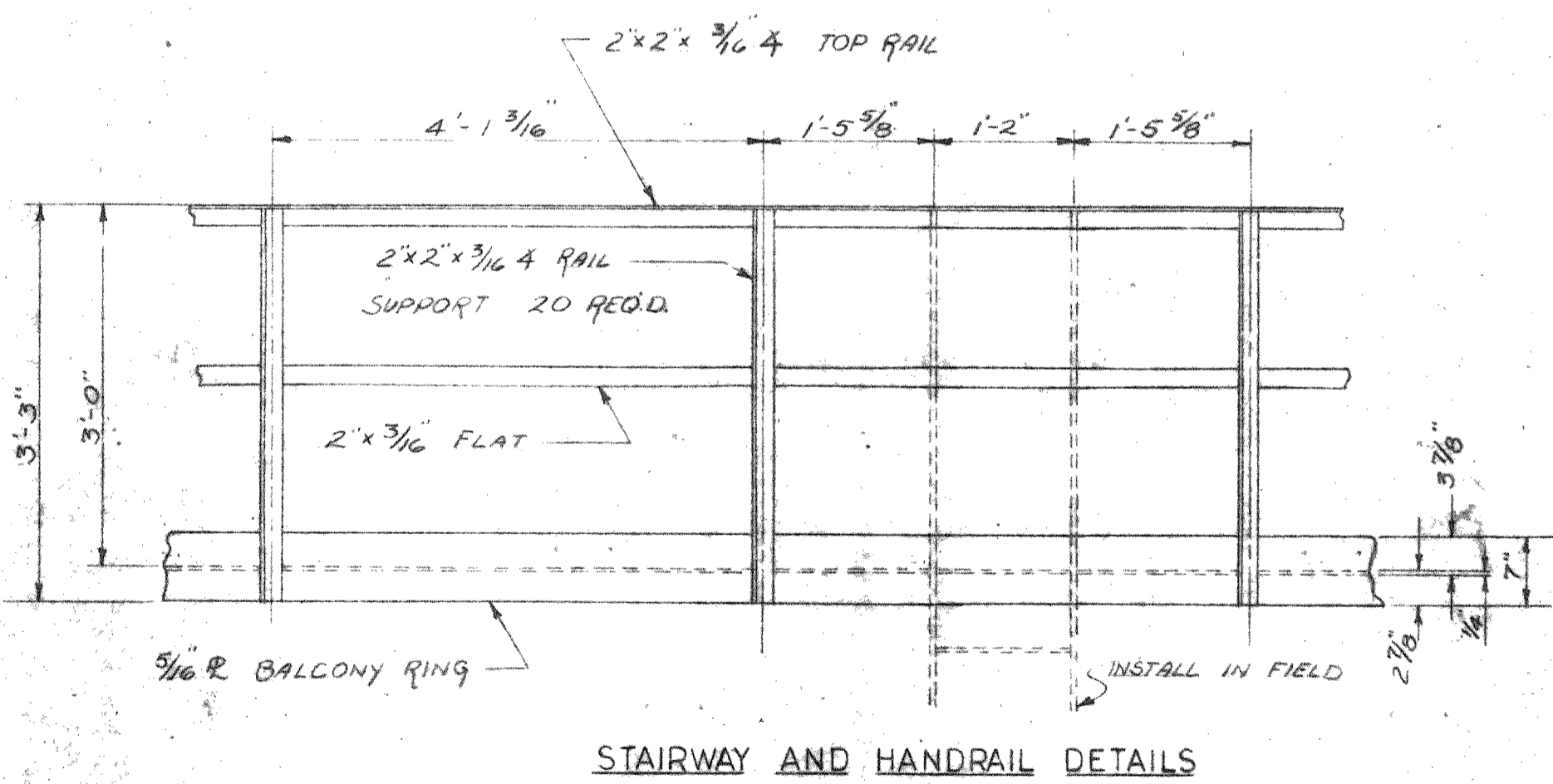
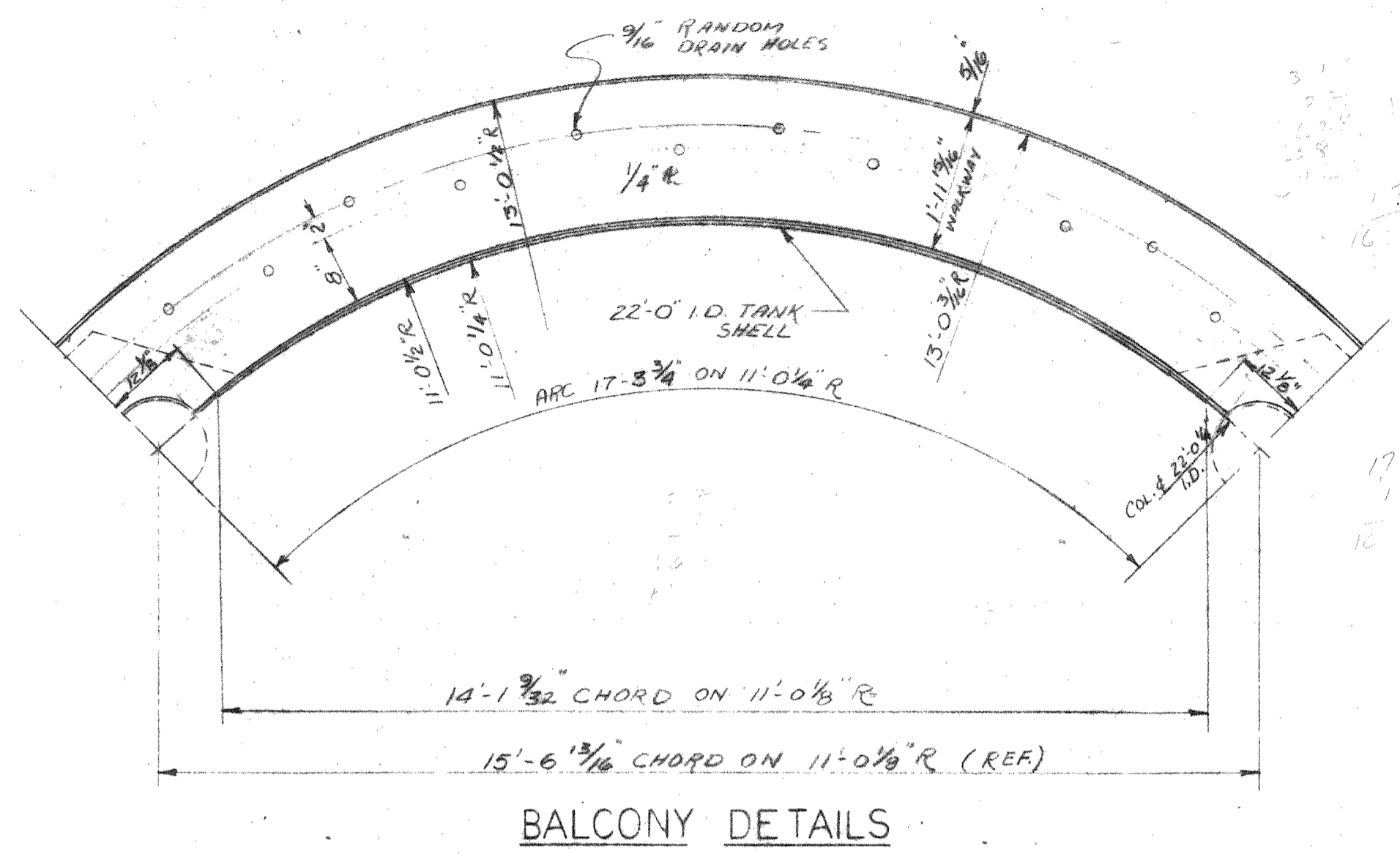
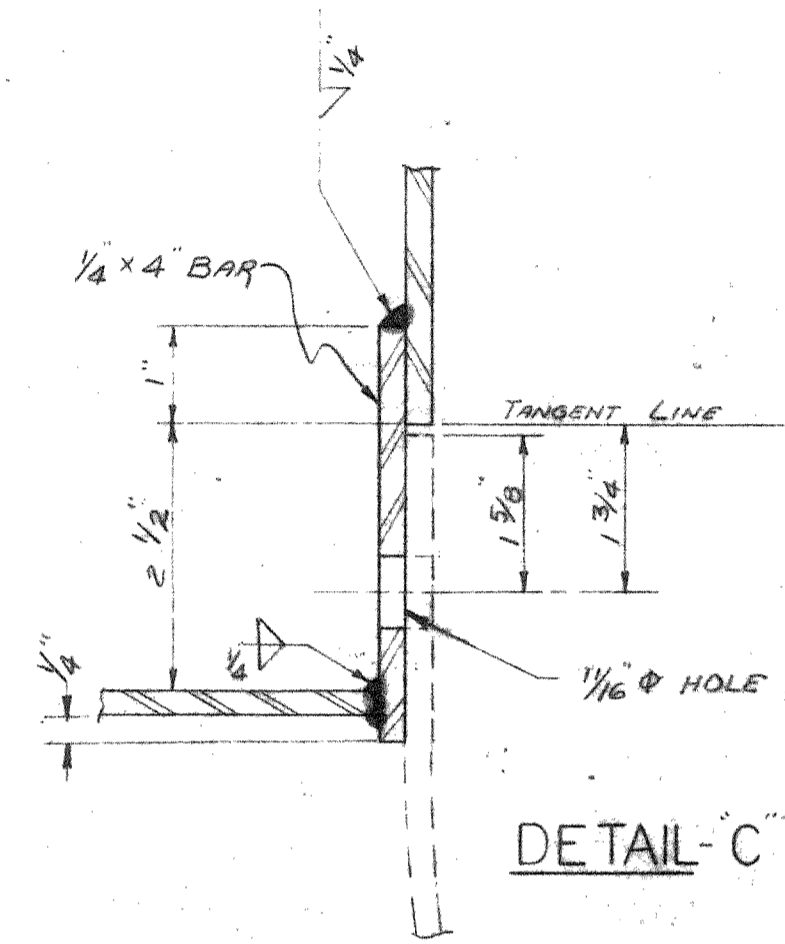
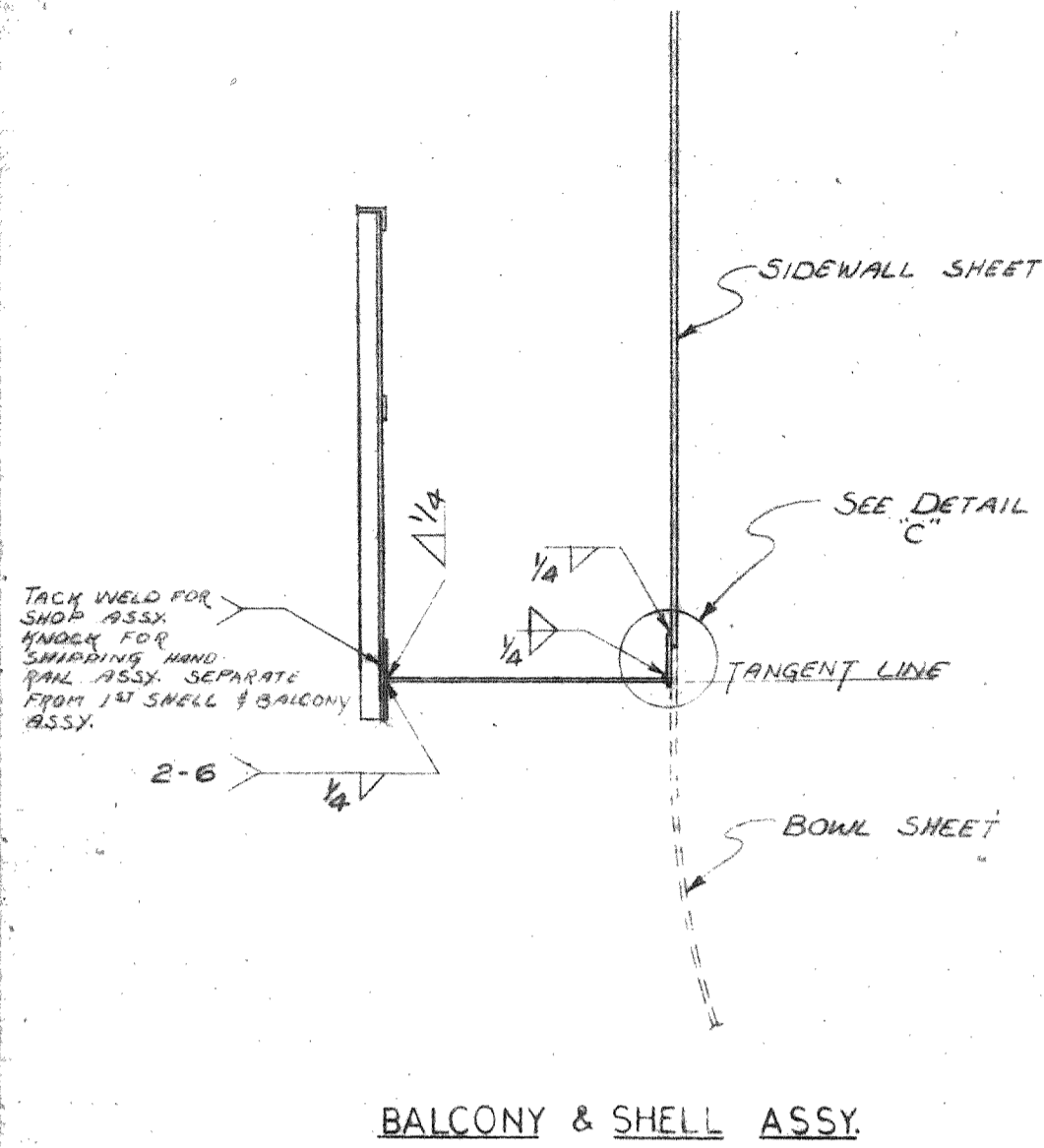
DRWN BY: J.T.B. CHECKED: ECK

JOB NO: N-307 SHEET 2 OF 8

SHOP PAINT TYPE II RED LEAD







1	6/29/62	JTB	SEPIA WAS N-237	EC
NO.	DATE	BY	REVISION	

**UNIVERSAL TANK & IRON WORKS, INC.**  
INDIANAPOLIS, INDIANA

ENGINEER APPROVAL  
By *Dean E. Zumwalt*  
ILLINOIS STRUCTURAL ENG.  
# 2103

BALCONY DETAILS  
40 M — 80' TO LWL

FOR: OAK GROVE UTILITIES  
LIBERTYVILLE, ILL

DATE: JAN. 31, 62      SCALE: VARIOUS  
DRWN BY: JTB.      CHECKED: EC  
JOB NO: N-307      SHEET 5 OF 8

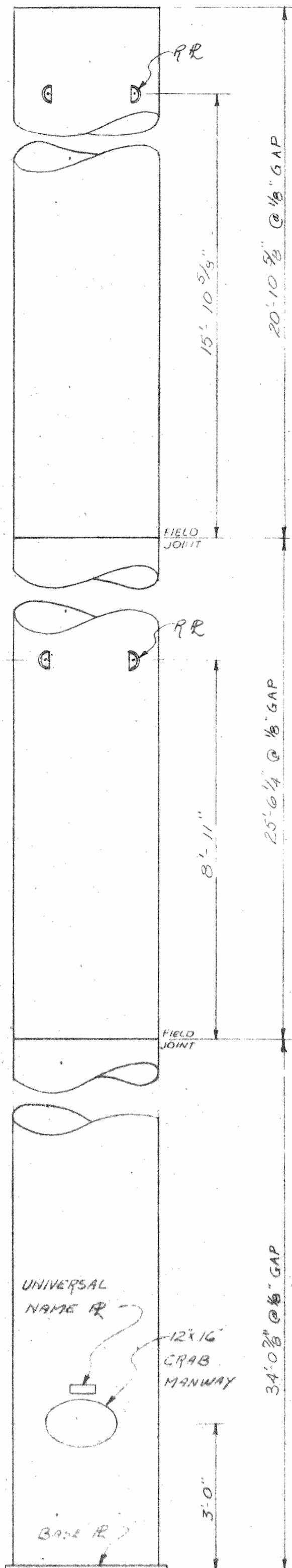
SHOP PRINT TYPE III RED LEAD



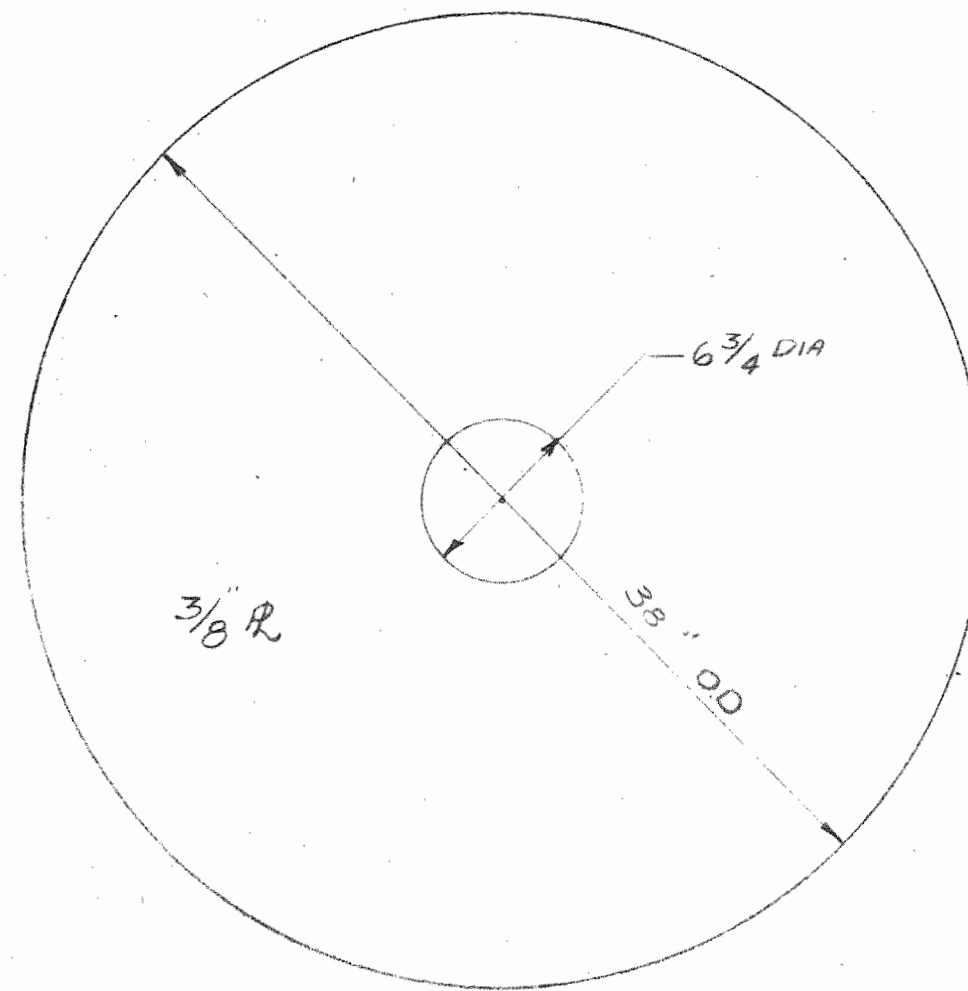
2 R's 1/4" x 90" x 113 3/4"  
 1 R 1/4" x 90 3/8" x 113 3/4"

3 R's 1/4" x 90" x 113 3/4"

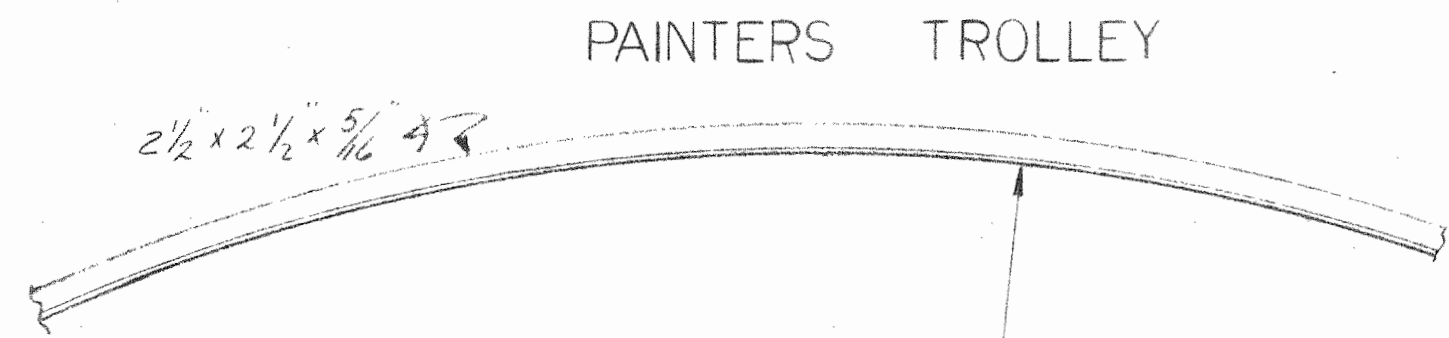
4 R's 1/4" x 90" x 113 3/4"



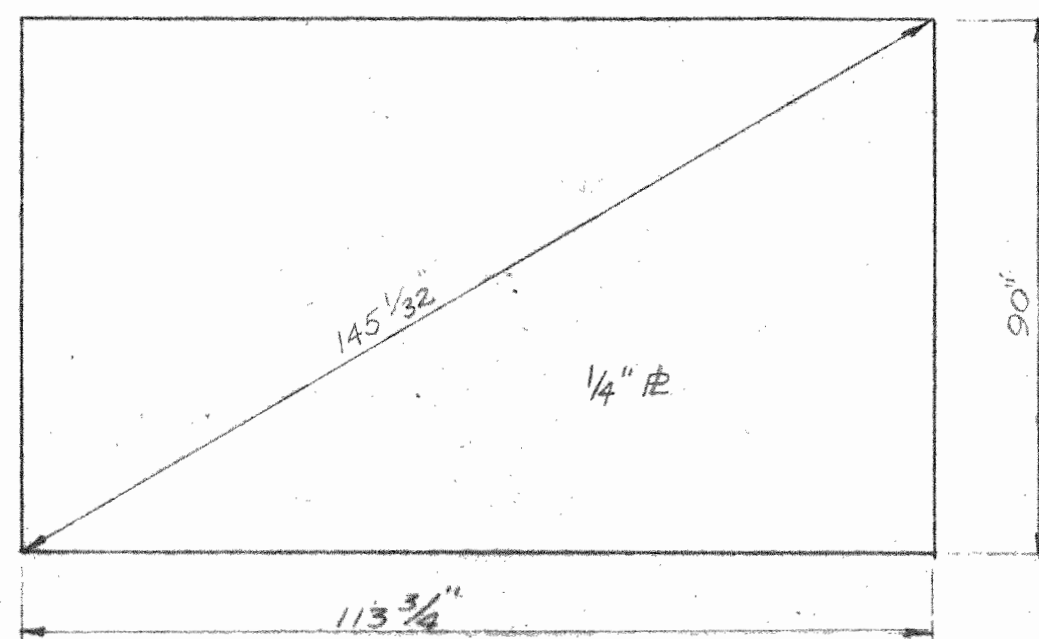
RISER DETAILS



BASE R DETAIL



4 LENGTHS REQ'D  
 TRIM FOR 22'-0"  
 O. D. CIRCLE



LAYOUT DETAILS

NO.	DATE	BY	REVISION
3	7/2/62	JTB	CHANGED RISER SHEETS FROM 60" TO 90" ECK
2	6/23/62	JTB	BEPIA WAS N-237 ECK
1	2-1662	ECK	TOP RISER WING R

SMOOTH PAINT TYPE III REQ'D LEAD

**UNIVERSAL TANK & IRON WORKS, INC.**  
 INDIANAPOLIS, INDIANA

ENGINEER APPROVAL  
 By *Dean E. Zismwalt*  
 ILLINOIS STRUCTURAL ENG.  
 # 2103

RISER PIPE DETAILS  
 40 M. — 80' TO LWL

FOR: CAK GROVE UTILITIES  
 LIBERTYVILLE, ILL

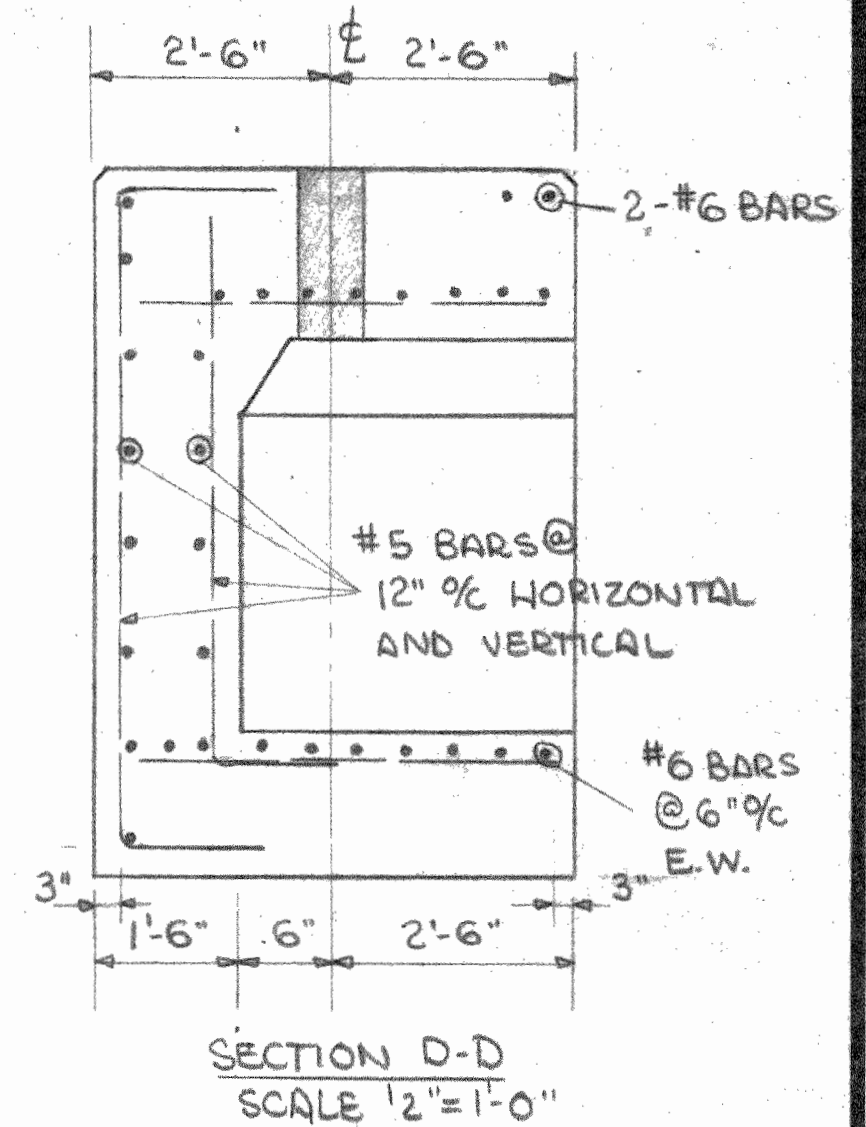
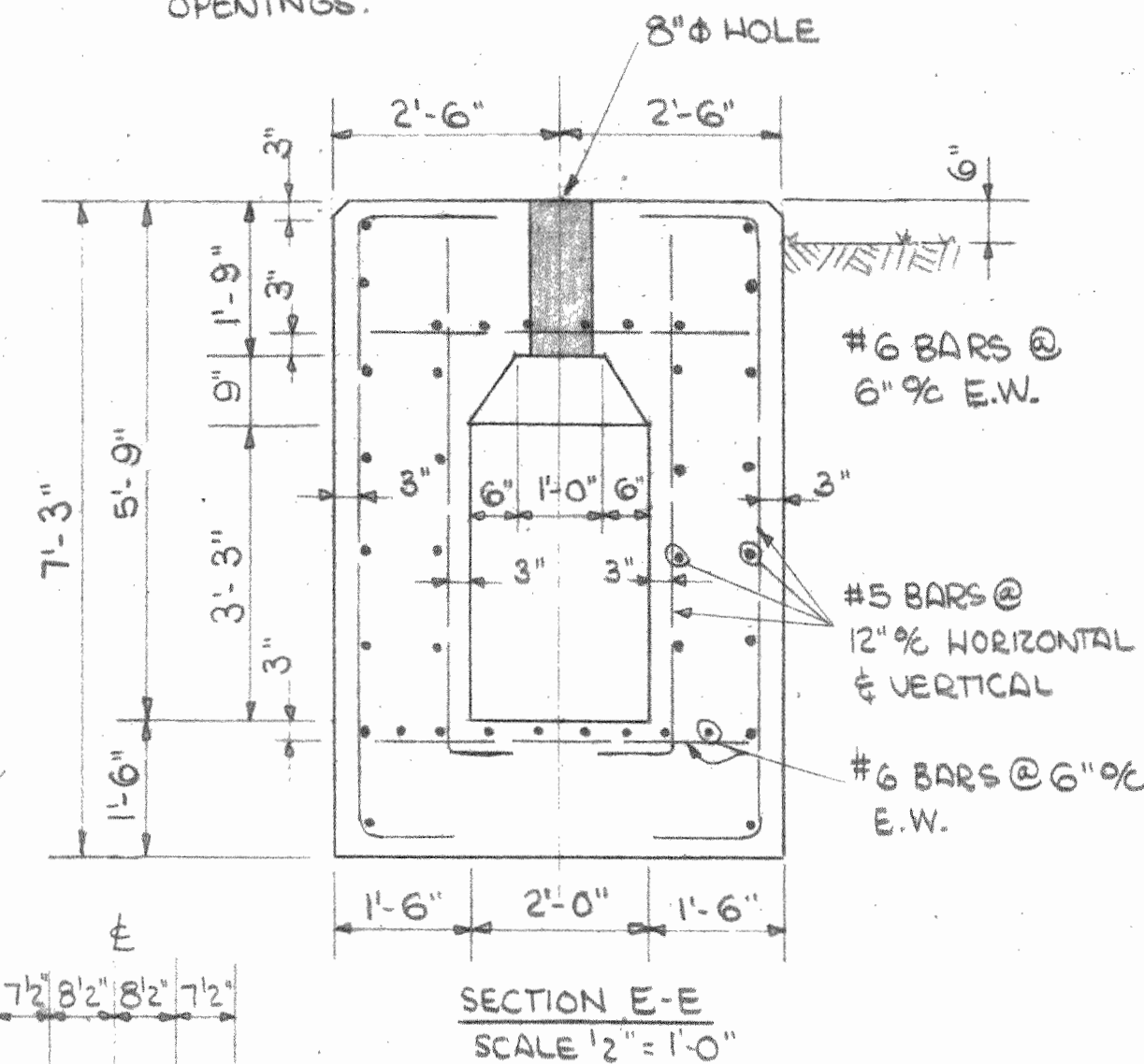
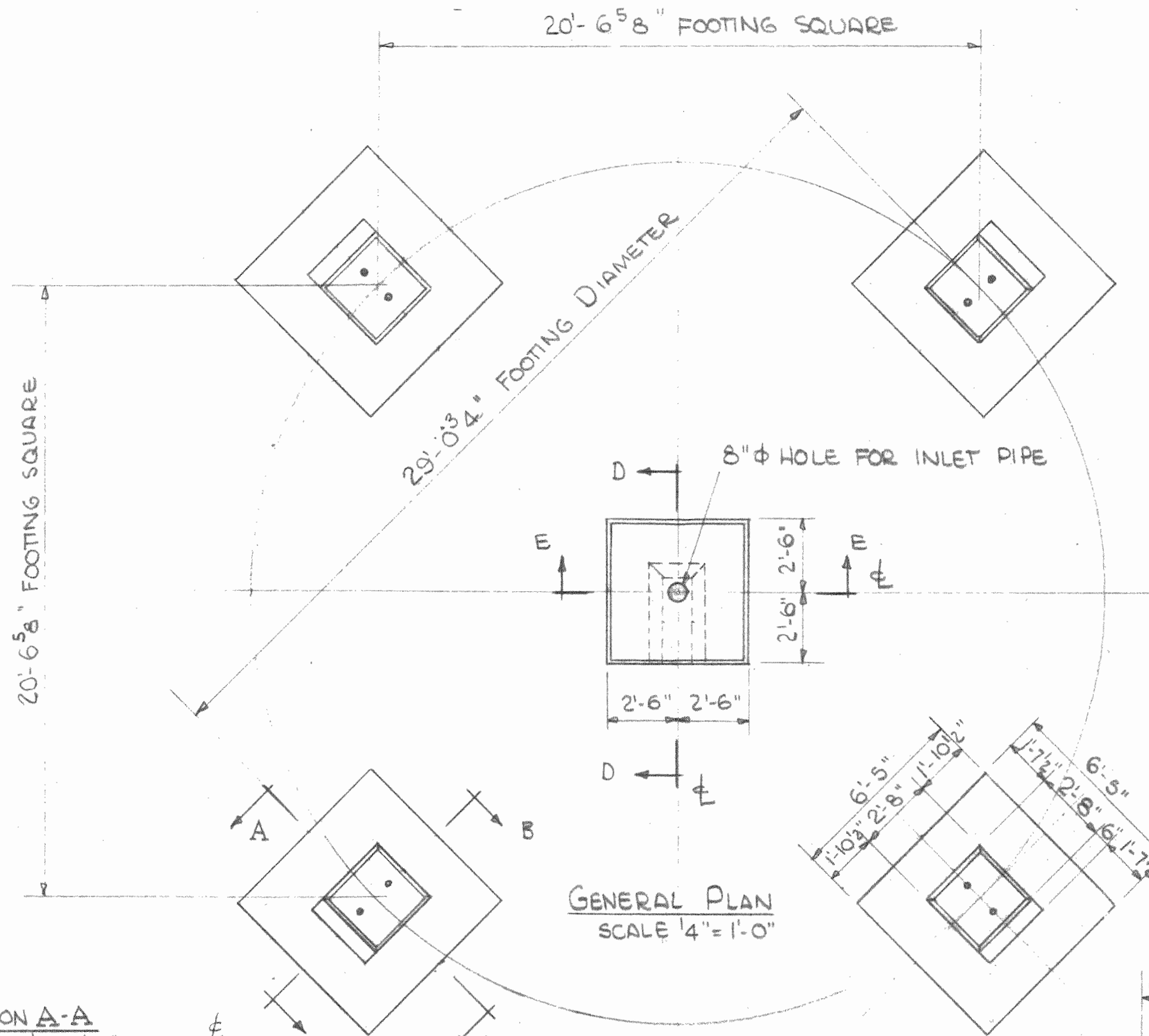
DATE: FEB 6 62 SCALE: VARIOUS

DRWN BY: JTB CHECKED: ECK

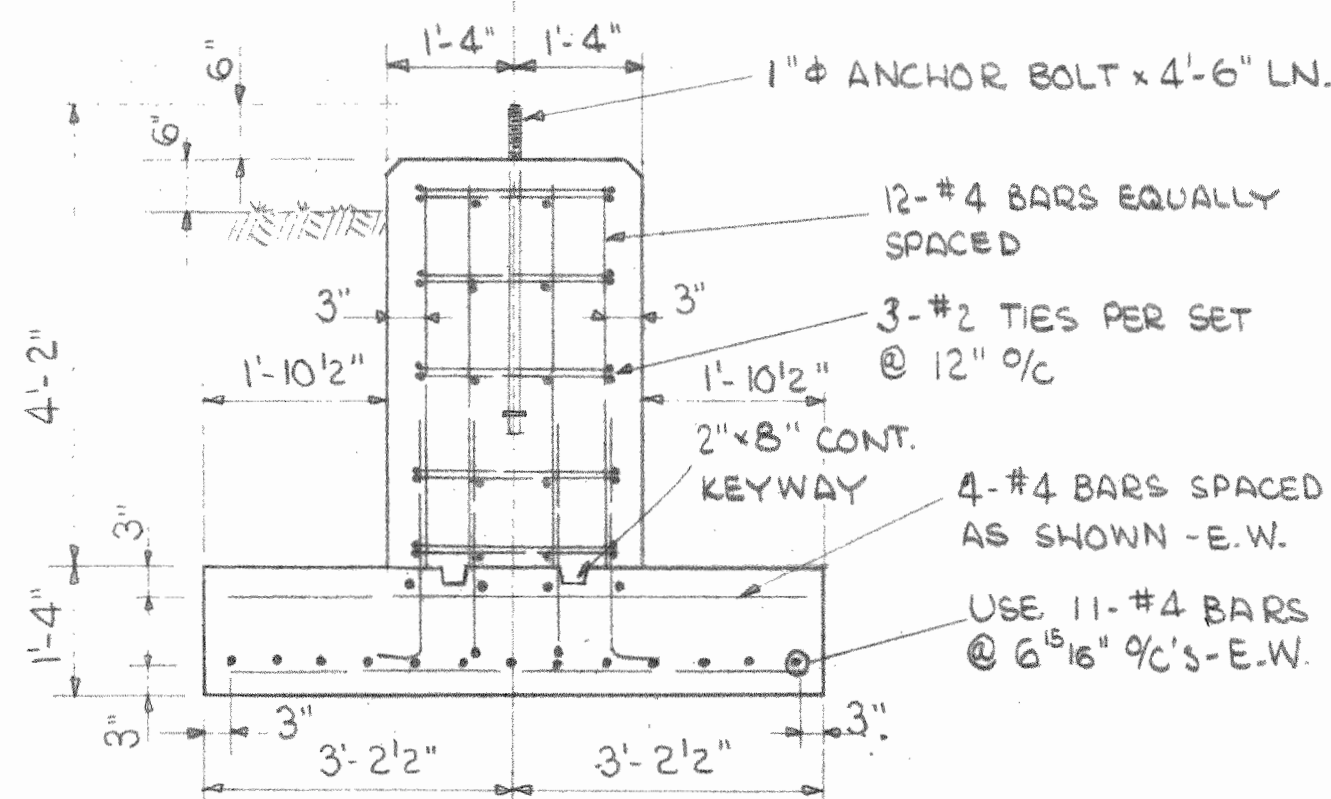
JOB NO: N-307 SHEET 7 OF 8

**GENERAL NOTES**

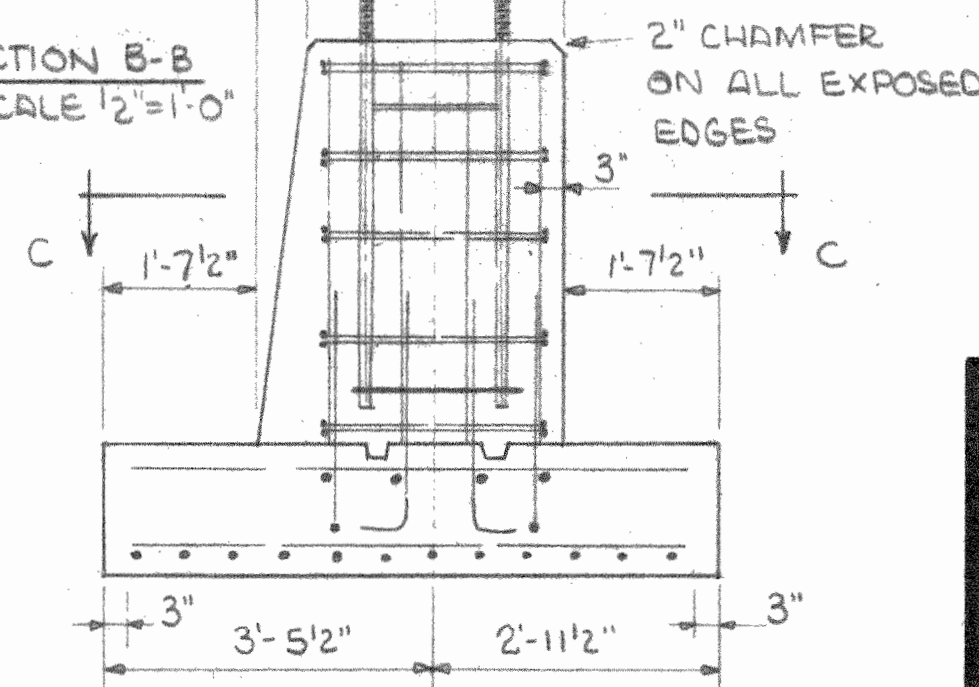
1. BOTTOMS OF CONCRETE FOUNDATIONS SHALL BE ON FIRM SOIL THAT WILL SAFELY SUSTAIN A LOADING OF 3,600 P.S.F.
2. BOTTOMS OF CONCRETE FOUNDATIONS ARE TO BE BELOW THE FROST LINE.
3. TOP PORTIONS OF PIERS SHALL BE FINISHED SMOOTH TO A POINT 6" BELOW GRADE.
4. THE 28 DAY COMPRESSIVE STRENGTH SHALL NOT BE LESS THAN 3,000 PSI. CONCRETE SHALL CONTAIN NOT LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD AND NOT MORE THAN 6 GALLONS OF WATER PER SACK OF CEMENT--INCLUDING WATER IN THE AGGREGATE.
5. RE-INFORCING BARS SHALL BE INTERMEDIATE OR HARD GRADE AND CONFORM TO THE LATEST A.S.T.M. SPECIFICATION A-15 OR A 305. BARS SHALL CLEAR ALL OPENINGS.



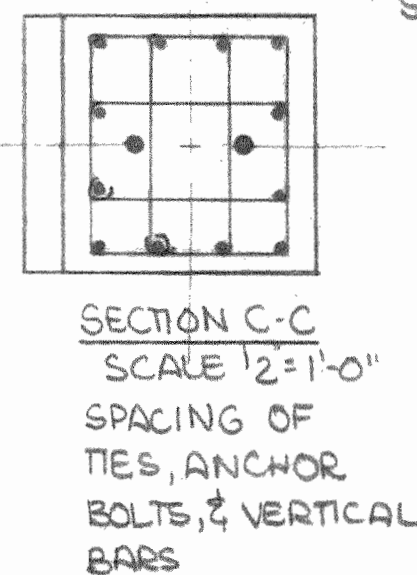
SECTION A-A  
SCALE 1/2"=1'-0"



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



SECTION C-C  
SCALE 1/2"=1'-0"



**NOTE:**  
UNIVERSAL'S GUARANTEE DOES NOT COVER THE SUPPORTING ABILITY OF THE SOIL. OWNER HAS SECURED ANOTHER ORGANIZATION TO "TEST" THE SOIL.

**CONCRETE AND STEEL DATA**

$f'_c = 3,000 \text{ PSI}$   $f_c = 1,350 \text{ PSI}$   
 $f_s = 20,000 \text{ PSI}$   $j_d = .78 d$   $k_d = .38 d$   
 $d = 13"$   $j_d = 11.4"$   $k_d = 4.87"$   
 NET SOIL PRESSURE = 3,600 P.S.F.  
 CHECK DIAGONAL TENSION @  $d_c$   
 $V = 3.6 \left( \frac{6.42 + 4.67}{2} \right) 0.79$   
 $= 15.8 \text{ K}$   
 $v = \frac{15,800}{54 \cdot 11.4} = 25.3 \text{ PSI (OK)}$   
 ALLOWABLE  $v = 75 \text{ PSI}$  FOR TWO WAY FOOTINGS (ACI CODE)

**CHECK CONCRETE @ a-a**

$V = 3.6 (6.42) 1.875$   
 $V = 43.4 \text{ K}$   
 $M = 43.4 \left( \frac{1.875}{2} \right) 12 = 487 \text{ K-in}$   
 TOTAL COMPRESSION =  $\frac{487}{11.4} = 42.7 \text{ K}$   
 $(OK) \text{ } \sigma \text{ ALLOWABLE} = 1350 \text{ PSI}$   
 STEEL REQ'D @ a-a  
 $A_s = \frac{42.7}{20} = 2.14 \text{ in}^2$  USE 11-#4 BARS  $A_s = 2.2 \text{ in}^2$   
 $\epsilon_o = 17.3 \text{ in}$   $M = \frac{43,400}{11.4 \cdot 17.3} = 220 \text{ PSI (OK)}$   
 M ALLOWABLE = 240 PSI

**LOADING TABLE**

	COLUMN FOUNDATION	CNTR. FOUNDATION
<b>DEAD LOADS</b>		
STEEL	10.0 K	0.9 K
WATER	80.75 K	54.2 K
CONCRETE	28.50 K	25.0 K
<b>TOTAL</b>	<b>119.25 K</b>	<b>80.10 K</b>
<b>LIVE LOADS</b>		
WIND REDUCED LOAD	36.75 K (ACTUAL)	27.55 (3/4 ACTUAL)
<b>TOTAL</b>	<b>146.80 K</b>	

NO.	DATE	BY	REVISION

**UNIVERSAL TANK & IRON WORKS, INC.**

INDIANAPOLIS, INDIANA

**ENGINEER APPROVAL**  
 By *Dean E. Zimmwalt*  
 ILLINOIS STRUCTURAL ENG. # 2103

**FOUNDATION DETAILS**  
 40,000 GALLONS 80'-0" TO LWL

FOR: **OAK GROVE UTILITIES**  
 LIBERTYVILLE, ILLINOIS

DATE: JUNE 1962 SCALE: AS SHOWN

DRWN BY: OPH CHECKED: *te*

JOB NO: 307-40 SHEET 8 OF 8