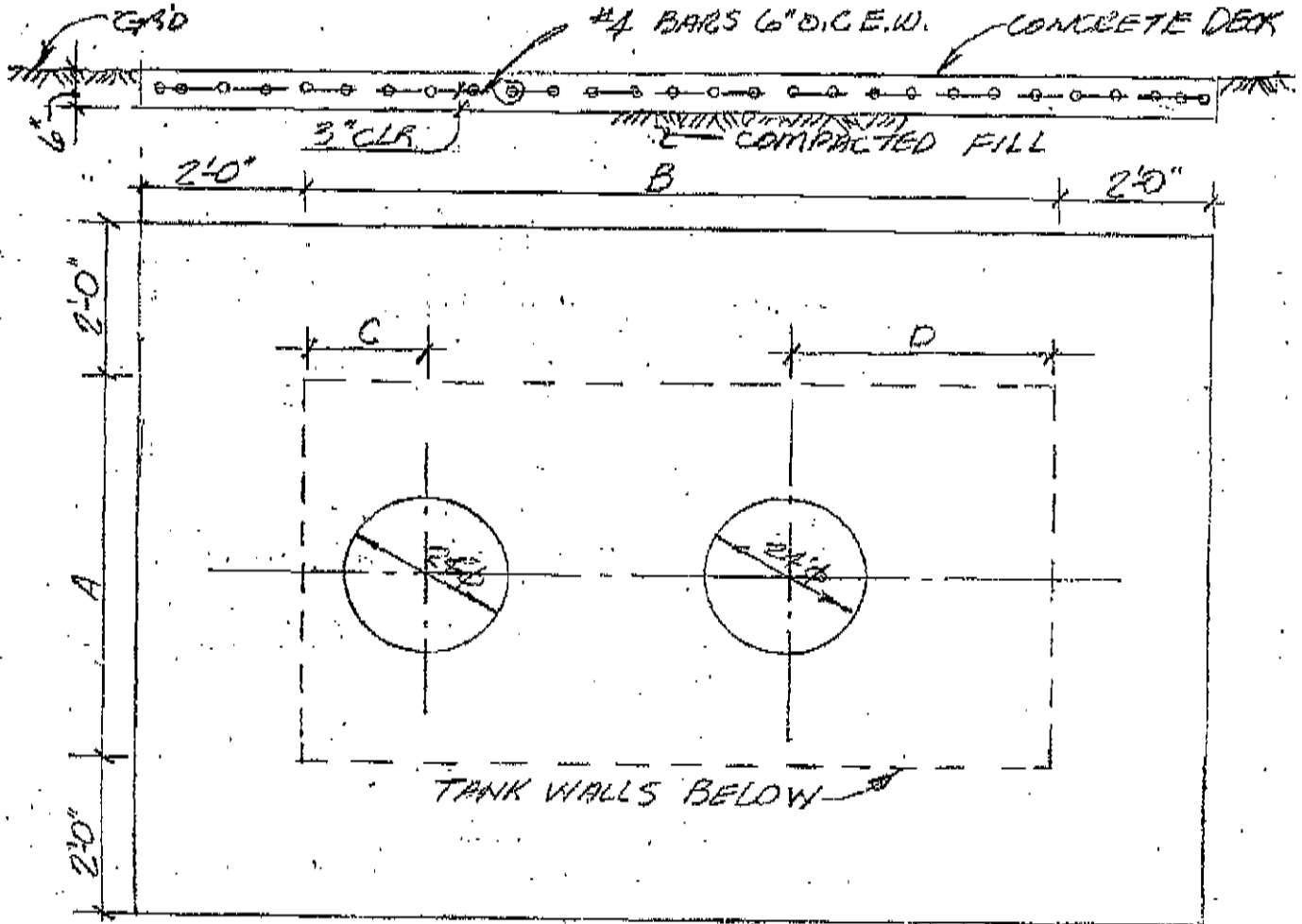


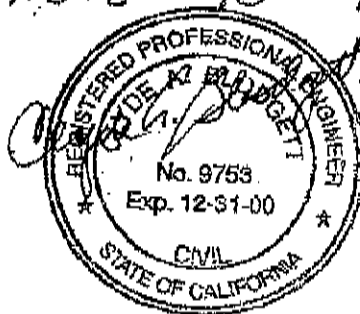
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 Sebastopol, CA 95472  
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GREASE TRAP CONCRETE  
 SURFACE 6" SLAB

2  
 970504



| TANK    | A       | B        | C   | D       |
|---------|---------|----------|-----|---------|
| GT-810  | 47 3/4" | 102 1/2" | 18" | 36 1/2" |
| GT-1200 | 60 1/2" | 109 1/2" | 18" | 39 1/2" |
| GT-1500 | 73 3/4" | 115 1/2" | 18" | 41"     |



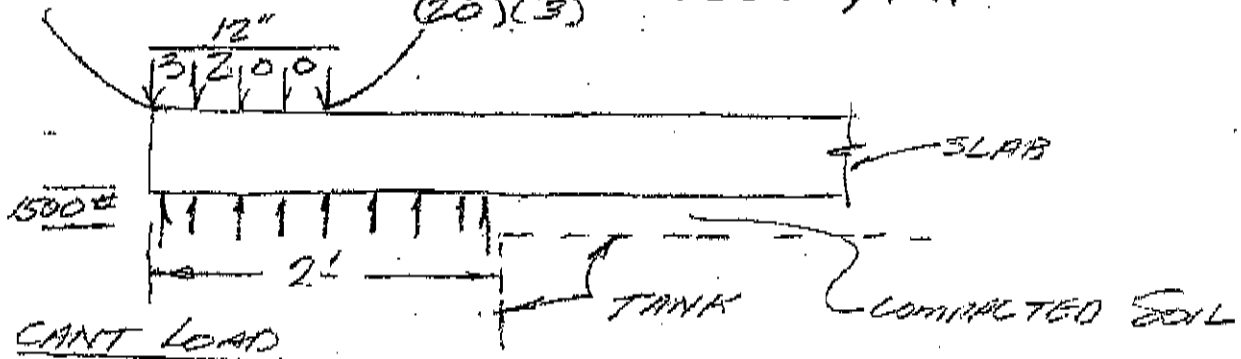
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CONCRETE SLAB  
 OVER GREASE TRAPS

970504

GREASE TRAPS: 810 GAL. 49" x 104" SLAB 8' x 12.7'  
 1200 " 62" x 111 " 9.2' x 13.3'  
 1500 " 75" x 117 " 10.3' x 13.8'

H-20 LOAD 32000# REAR AXLE  
 16000# PER WHEEL ON 20' x 36' AREA  
 $\frac{(16000)(12)}{(20)(3)} = 3200\#/\text{FT.}$



$V = 3200\#/\text{FT.} - 3000$   
 $M = (32)(1.5) - (1.5)(2)(1) = 1.8\text{KI}$

CONC.

$f_c = 3000\text{ psi}$   
 $f_y = 40\text{ ksi}$

TRY 6" SLAB w/ #4 BARS @ 6" O.C.  
 BARS 3" CLEAR SOIL  $\therefore d = 3\frac{1}{4}"$

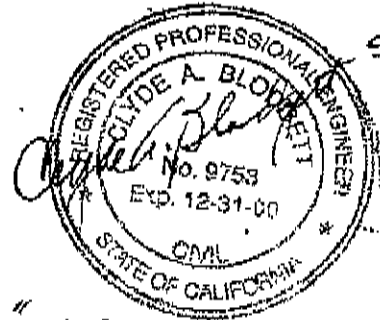
$\rho = \frac{2}{(6)(3.25)} = 0.103$

$\omega = (0.103)\left(\frac{40}{3}\right) = 0.1368$

$M_u = (3)(3.25)^2(0.1368)[1 - (0.59)(0.1368)] = 3.93$

$M_A = \frac{3.93}{1.89} = 2.11\text{KI}$

USE 6" SLAB w/ #4 @ 6" O.C.  
 OVER COMPACTED FILL



5/12/97

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## SELVAGE TANKS

5  
 960301

$$H = 4.8'$$

$$L_{MAX} = 5.96'$$

$$DIST = \frac{1}{1 + \left(\frac{5.96}{4.8}\right)^2} = .34 \text{ LONG } \& \text{ .66 SHORT}$$

$$M = (345)(.66) = 228 \text{'}^{\#}$$

TRY 3 @ 12" O.C. E.W.

$$d = 1.5'$$

$$\rho = \frac{11}{(12)(1.5)} = .0061$$

$$w = (.0061) \left(\frac{40}{3.5}\right) = .0698$$

$$M_u = 1.5^2 (3.5)(.0698) [1 - (.59)(.0698)] = .527 \text{'}^{\#}$$

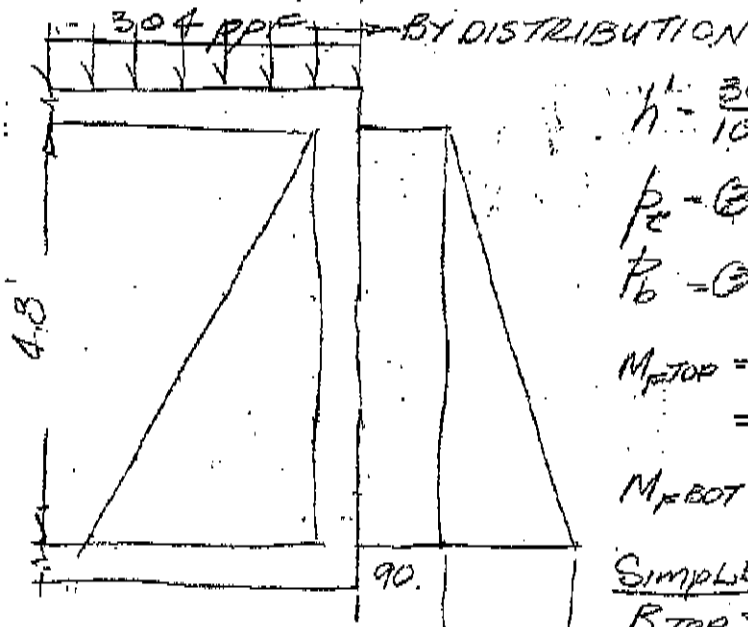
$$M/A = \frac{.527}{1.85} = 285 \text{'}^{\#} > 228 \text{'}^{\#}$$

USE 3 @ 12" O.C. E.W.

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## SELVAGE TANKS

2  
 960301



$$h = \frac{304}{100} = 3$$

$$P_t = (30)(3) = 90 \text{ \# TOP}$$

$$P_b = (30)(7.8) = 234 \text{ \# BOT}$$

$$M_{F \text{ TOP}} = \frac{(90)(4.8)^2}{12} + \frac{(140)(4.8)^2}{30}$$

$$= 173 + 110 = 283 \text{ \#}$$

$$M_{F \text{ BOT}} = 173 + (110)\left(\frac{15}{10}\right) = 331 \text{ \#}$$

SIMPLE-MI

$$R_{\text{TOP}} = (2.4)(90) + (14.4)\left(2.4\right)\left(\frac{1}{3}\right) = 331 \text{ \#}$$

$$331 = 90\gamma + 15\gamma^2 ; \quad \gamma = 2.57$$

$$M_s = (331)(2.67) - (90)\frac{2.57^2}{2} - \frac{(14.4)(2.57)^3}{6} = 512 \text{ \#}$$

$$M_t = 512 - 283 - \frac{55}{4.8}(2.57) = 200 \text{ \#}$$

LIQUID

$$p = \frac{62.4}{2}(4.8)^2 = 719 \text{ \#}$$

$$M_{\text{TOP}} = (719)\left(\frac{4.8}{15}\right) = 230 \text{ \#}$$

$$M_{\text{BOT}} = (719)\left(\frac{4.8}{10}\right) = 345 \text{ \#}$$

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SELVAGE TANKS

1  
 760301  
 3/25/96

STRUCTURAL DESIGN

$$f_c = 3500 \text{ psi}$$

$$f_y = 40 \text{ ksi}$$

TANK LID

SURCHARGE LOAD 500 psf

$$\frac{500}{63} = 7.94 \text{ psf}$$

$$7.94 + 500 = 507.94 \text{ psf}$$

TWO WAY SLAB LID 6.1 x 6.4

LOAD DISTRIBUTION LONG SPAN:  $s = 1$  &  $L = \frac{6.4}{6.1} = 1.05$ 

$$P_L = \frac{P}{1 + (1.05)^2} = .46P \quad \& \quad P_s = .54P = (.54)(507.94) = 274.29 \text{ psf}$$

$$M_{10} = \frac{wL^2}{12}$$

$$M_n = \frac{wL^2}{11} = \frac{(304)(6.1)^2}{11} = 1.03 \text{ k}$$

TRY #3 @ 6" O.C. @ 1 1/2" CLR

$$d = 5 - 1.5 - .56 = 2.9$$

$$\rho = \frac{.11}{(6)(2.9)} = .0063$$

$$w = (.0063) \left( \frac{40}{3.5} \right) = .0722$$

$$M_u = (3.5)(2.9)^2 (.0722) [1 - (.54)(.0722)] = 2.036 \text{ k}$$

$$\frac{M_u}{\phi} = \frac{1}{(563)(.9)} [ (1.4)(63) + (1.7)(500) ] = 1.85$$

$$M_n = \frac{2.036}{1.85} = 1.10 > 1.03 \text{ k}$$

USE #3 BARS @ 6" O.C. E.W.  
 PLACE 1 1/2" CLR BOT & 1 1/2" CLR.  
 TOP @ LAPS

