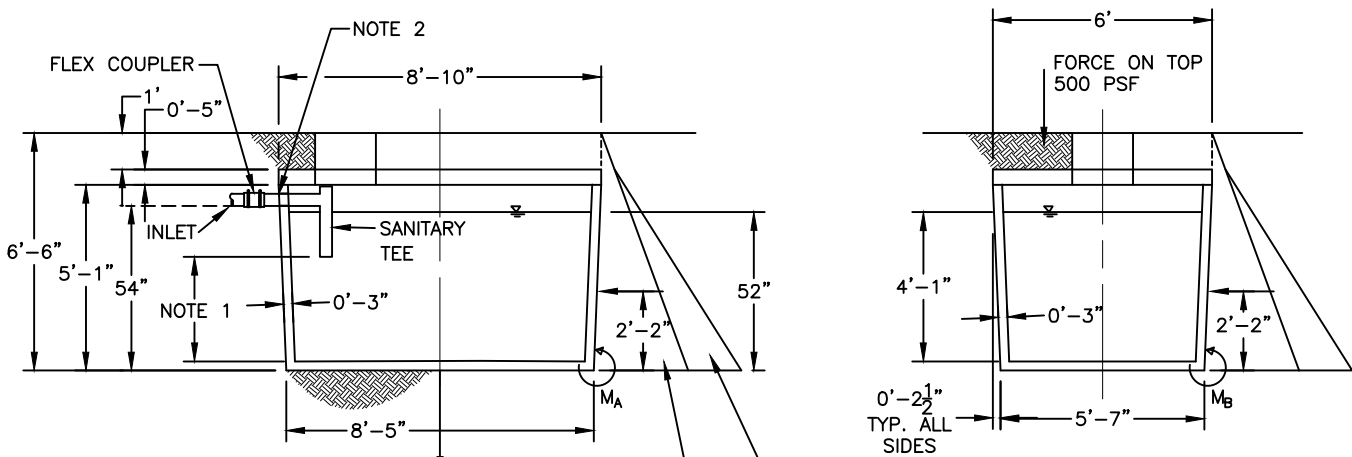
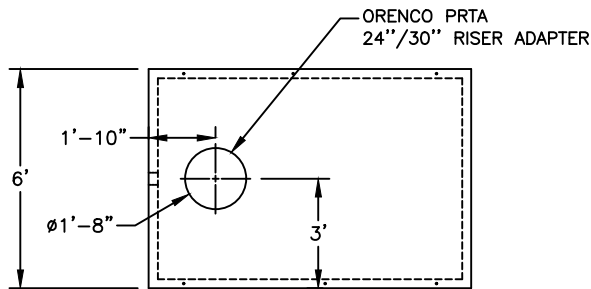
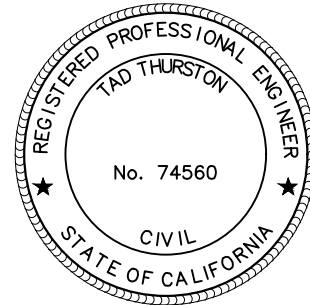


POPE ENGINEERING

CIVIL ENGINEERING - LAND SURVEYING

R.C.E. 65228 - P.L.S. 8903

1200 GAL. PUMPED TANK SKETCH



EMPTY WEIGHT OF TANK = 11,682.4 LB
 FULL WEIGHT OF TANK = 22,008.9 LB

↑ BUOYANCY FORCE = 14,903.1 LB
 (ASSUMES WATER TABLE AT TOP OF TANK)

GROUND WATER FORCE
 $1/2 * H^2 * DENSITY WATER$
 $= 1/2 * 5.5^2 * 62.4 \text{ LB/CF} = 943.8$
 LB/FT OF WALL WIDTH (NOTE THIS IS INCLUDED IN THE SOIL DENSITY BECAUSE SATURATED SOIL WAS USED)

SOIL FORCE
 $1/2 * H^2 * DENSITY OF SOIL$
 $= 1/2 * 6.5^2 * 150 \text{ LB/CF} = 3168.8 \text{ LB/FT OF WALL WIDTH}$

NOTES

1. BOTTOM OF INLET TEE TO BE 24.5" TO 36.75" FROM TANK BOTTOM
2. PRESS-SEAL 4" CAST-A-SEAL COUPLER. ALL SEALS BETWEEN PIPE AND TANK MUST MEET ASTM C1644

MOMENT FORCE ON TOP

1924.7 LB-FT/FT AS DETERMINED BY AUTODESK ROBOT STRUCTURAL ANALYSIS PROGRAM

OUTER FORCE ON WALL FROM SOIL LOAD IS:

M_A (END WALL) = 879.8 LB-FT/FT AS DETERMINED BY AUTODESK ROBOT STRUCTURAL ANALYSIS PROGRAM

M_B (SIDE WALL) = 1741.2 LB-FT/FT AS DETERMINED BY AUTODESK ROBOT STRUCTURAL ANALYSIS PROGRAM

INNER FORCE ON WALL FROM SEWAGE LOAD IS:

END WALLS = $1/2 * (4.083 \text{ FT})^2 * 62.4 \text{ PCF} * 5.28 \text{ FT} = 2746.3 \text{ LB}$
 MOMENT = 274.8 LB-FT/FT

SIDE WALL = $1/2 * (4.083 \text{ FT})^2 * 62.4 \text{ PCF} * 8.135 \text{ FT} = 4231.3 \text{ LB}$
 MOMENT = 449.8 LB-FT/FT

TANK AIR SPACE = 34.3 CF

WORKING LIQUID VOLUME = 1200 GAL. = 160.4 CF