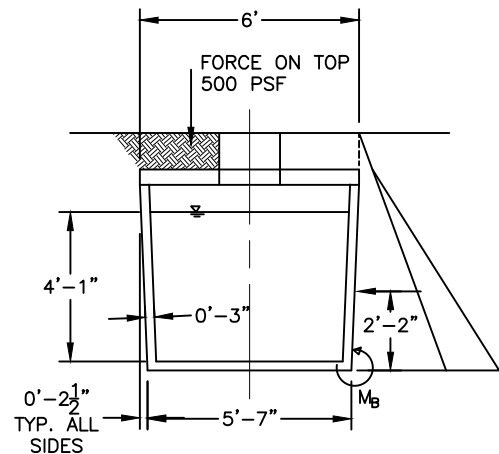
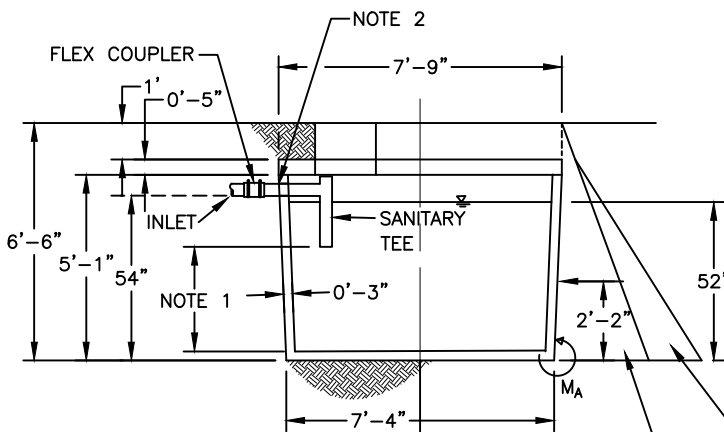
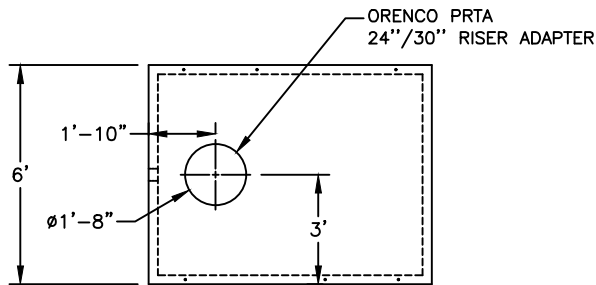
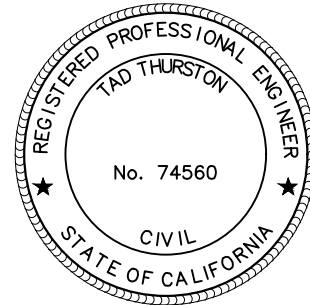


POPE ENGINEERING

CIVIL ENGINEERING - LAND SURVEYING

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

1000 GAL. PUMPED TANK SKETCH



EMPTY WEIGHT OF TANK = 8,040 LB
FULL WEIGHT OF TANK = 17,772 LB

↑ BUOYANCY FORCE = 15,958 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

1932.9 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) = 1363.0 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 = 208.1 LB-FT/FT

SIDE WALL = $1/2 * (4.083 \text{ FT})^2 * 62.4 \text{ PCF} * 7.16 \text{ FT} = 3724.1 \text{ LB}$
MOMENT = 237.6 LB-FT/FT

TANK AIR SPACE = 29.7 CF

WORKING LIQUID VOLUME = 1000 GAL. = 133.7 CF