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Comp. By BE Date 9/24/09 | Project Tacoma Tract | Sheet No 1 of 2

Chkd. By ..... Date ..... | Subject Water Supply Available Pressures | Job No 070010

FROM HYDRANT FLOW TEST AT FOX RUN

PRESSURE = 80 PSI

FLOW RATE = 650 gpm

HYD. ELEV @ Ground = 368.5 @ nozzle +2.5' = 371

LOT WITH HIGHEST FIRST FLOOR EL IS LOT 5

FF = 365 , Second Floor Fixture = 365 + 16 = 381

HEAD LOSSES TO LOT 5

H_E = Elevation = Hyd EL − EL at 2nd Floor

H_E = 381 − 371 = 10 ft.

FRICTION LOSSES

Length of Pipe from hyd to Lot 5 = 1150 lf

Equivalent Pipe Lengths for fittings

5 - T's @ 15' each = 5 * 15 =		75'
4 - 45° bends @ 10' ea = 4 * 10 =		40'
2 - 90° bends @ 20' ea = 2 * 20 =		40'
4 - Gate valves @ 220' ea = 4 * 220 =		880'
		1035
Say		2000 lf

Total Pipe Length = 1150 + 2000 = 3150 lf

For 8" DIP at 650 gpm head loss / lf =

12 ft per 1000'

Head loss = 12' * 3.150 = 37.5 ft

Head Loss thru master meter = 20 psi

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Comp. By BF Date 9/24/09 | Project Tacoma Tract | Sheet No 2 of 2

Chkd. By ..... Date ..... | Subject Water Supply Quail Pressure | Job No .....

VELOCITY HEADLOSS

For Flow = 650 gpm & 8" ϕ

$H_v = v^2/2g$

$V = Q/A = \left[650 \frac{gal}{min} * \frac{1cf}{7.48 gal} * \frac{1 min}{60 sec}\right] \div \left(\pi\left(\frac{4}{12}\right)^2\right)$

$V = 4.15$ cfs

$H_v = \frac{4.15^2}{2(32.2)} = 0.27'$ (negligable)

Total Head Loss in Ft = 10' + 38 = 48

In psi = $\frac{(48')(62.4)}{144} = 20.8$ psi

Add in meter loss of 20 for total

TOTAL HEAD Loss = 21 + 20 = 41 psi

Pressure at 2nd story fixture on Lot 5

P = 80 psi - 41 psi = 39 psi > 25 psi min. req'd

Ramp
Saw Mill River Rd
Woodside Ave
State Hwy 9A
Carleton Ave
Stonington Hts
Stonington Dr
Patricia Ln
Driveway
Pine Hill
Carleton Ave
Fox Run Rd
Woodsfords Bnd
Briars Cors
Unnamed Street
Ingham Rd
Taconic State Pkwy
Chappaqua Rd
Washburn Rd
Canterbury Dr
60 psi (residual)
115 psi (residual)
120 psi (Flow)
75 psi (flow)