

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER PERMIT

NO PERMIT(S) FOR CONSTRUCTION, LOCATION OR RELOCATION ACTIVITY SHALL BE ISSUED UNTIL AN
AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION AUTHORIZATION HAS BEEN ISSUED

***PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/OR IF SITE IS ALTERED OR
INTENDED USE CHANGED***

CONSTRUCTION AUTHORIZATION PERMIT**PERMIT # WRP-061634-2021****APPLICATION DATE:** 06/14/2021**BLDG. PERMIT#:** RBPR-062985-2021**PIN:** 1821443726**RECORDED:** Yes**TOWNSHIP:** 14 - New Light**JURISDICTION:** Wake County**ZONING:** R-80W**APPLICANT:** Jason Johnson6624 Old Wake Forest RD
Raleigh, NC 27616**BUSINESS PHONE:** (919) 229-5742**HOME PHONE:****MOBILE PHONE:****HD USE:** 101A CONVENTIONAL ONE-FAMILY HOUSE**EXISTING USE:****SITE ADDRESS:** 2312 BALLYWATER LEA WAY**SUBDIVISION:** THE MANORS AT WATERSTONE RE **LOT:** 27**ACRES:** 1.09**DIRECTIONS:** hwy 98 to camp kanata to ballywater lea

Contractors shall install system on contour. See attached SITE PLAN for wastewater system design and well location. No underground utilities, water lines or sprinklers systems may be located in the original system, or permit areas. A septic tank filter with two risers for access is required. The wastewater system shall not be covered or placed into use until inspected by the Wake County Department of Environmental Services and Operations Permit issued. An Accepted Status System may be used in place of conventional system, if it can be placed in the permitted/authorized trench footprint (except reduction in line length and/or number as allowed for in approval) and the installation in accordance with the accepted system approval, without unauthorized product alteration. If permit required use of an Accepted Status System, substitution with another accepted status system may be made, as long as no changes are necessary in the location of each nitrifications line (including any increase in line length), trench depth or effluent distribution method. If changes are necessary, prior approval by this office is required before system installation. Maximum depth of line is calculated using the downhill side of the trench and includes slope correction.

CONSTRUCTION AUTHORIZATION PERMIT VALID FOR: Five Years**CONSTRUCTION AUTHORIZATION PERMIT: CA STATUS:** Issued**BY:** John Kase**DATE:** 08/13/2021**CA VALID FOR:** Five Years**DESIGN FLOW:** 480 GALLONS**BASEMENT:** No**BASEMENT FIXTURES:** No**SEPTIC TANK:** 1200 GALLONS**SEPTIC TANK FILTER:** Yes**DOSING PUMP TANK:** 1200 GALLONS**DOSING PUMP TANK FILTER:****GREASE TRAP:****GREASE TRAP FILTER:****RECIRCULATION PUMP TANK:****RECIRCULATION PUMP TANK FILTER:****PROPOSED SYSTEM:** 0.25 - 25% Reduction (Innovative or Accepted)**EXISTING SYSTEM:****DRAINFIELD SQ. FT:** 1,305**AGGREGATE DEPTH:** 12**MAX. TRENCH DEPTH:** 18 INCHES**DISTRIBUTION DEVICE:** PM - Pressure Manifold**TRENCH #:** 3**TRENCH LENGTH:** 145 FEET**TRENCH WIDTH:** 36 INCHES**TOTAL TRENCH LENGTH:** 435 FEET**CENTER SPACING:** 9 FEET**MINIMUM SOIL COVER:** 6 INCHES**PRETREATMENT:****APPROVAL #:**

SUBFIELDS #:
PUMP TDH: 22.45

PUMP DESIGN FLOW: 26.13 Dose Volume: 187 gallons
ZONE VALVE: No

ASDMS REQUIRED:
P.E. SIGN OFF/ASBUILT REQUIRED:

LINE OF CREDIT REQUIRED:
TRIPARTY AGREEMENT REQUIRED:

OPERATOR REQUIRED:

SPECIFIC CONSTRUCTION AUTHORIZATION REQUIREMENTS:

- System designed for 4 bedroom home, 480 gals per day.
- Future Repair is a IIIb type system. With a Max Trench depth of 17" and 0.275 LTAR.
- Site serviced by community water.
- No cutting, grading, alterations, or utilities in septic area.
- Maintain all required setbacks.

Issued By:



Date: 08/13/2021

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

3 TAP PRESSURE MANI-TEE DESIGN

Name: jason johnson **P.I.N. #:** 1821443726 **Permit #:** wrp-061634

Address: 2312 ballywater lea **Subdiv:** a **Lot#:** 27

of BDR: 4 **Daily Flow:** 480 gal/day **L.T.A.R.:** 0.28 gal/day/sq.ft

Septic Tank: 1200 gals **Pump Tank:** 1200 gals **Sq. Foot:** 1305 **Aggregate Depth:** 12

Number of Taps: 3 **Length of Trenches:** 435 ft(See Tap Chart for Details)

Depth of Trenches: 18 in **Manifold Length:** 36 in

Manifold Diameter: 2in sch 40pvc Mani-Tee **Tap Configuration:** 6 in spacing 1 side(s) of manifold

Supply Line: length: 200 ft **Diameter:** 2 in sch 40pvc

Friction Loss + Fitting Loss: 4.37 ft(supply line length + 70' for fittings in pump tank)

Design Head: 3 ft **Elevation Head:** 15.08 ft

Total Head: 22.45 ft **Pump to Deliver:** 26.13 gals/min at 22.45 ft head

Dosing Volume: 187 gals,

Drawdown: 187 gals divided by 20 gals/in = 9.3 inches

Simplex Control Panel required; elapsed time meter and cycle counter required; Floats to be determined by type of pump tank used. A septic tank filter is required, see permit details for specifics.

TAP CHART

Bench Mark		is = 100.00	set at				Design Head:	3	
Pump tank elev.		15	85.00	Pump elev.	80.00		Manifold elev.	95.08	
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
1	red	5.9	94.08	145	1/2in SCH 40	8.71	160.00	435	0.368
2	pink		100.00	145	1/2in SCH 40	8.71	160.00	435	0.368
3	blue		100.00	145	1/2in SCH 40	8.71	160.00	435	0.368
		total	feet =	435	gal/min =	26.13		LTAR =	0.28
% of Dose Vol.		66		Des. Flow	480			(ltar + 5%)	0.29
Dose Volume		187		Pump Run=	18.37			(ltar W/ INOV)	0.37
Dose Pump Time		7.14		Tank Gal/IN	20			(ltar + 5%)	0.39
Drawdown in Inches		9.3		Elev. Head	15.08				
Supply Line Length		200							
Comments:									

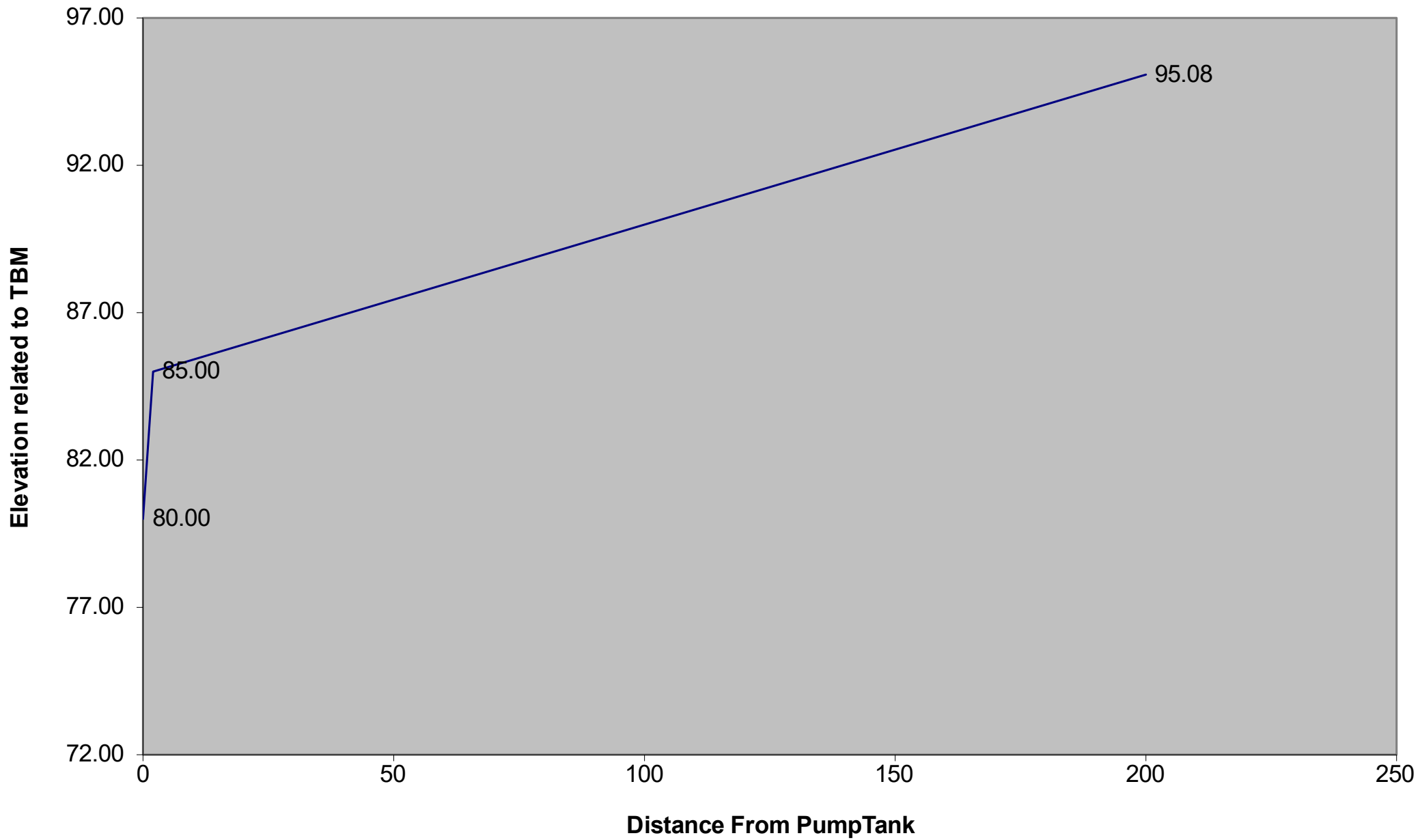
Hydraulic Profile

Manifold Elevation	95.08	200
Pump tank elev.	85.00	2
Pump elev.	80.00	0

REPAIR SYSTEM

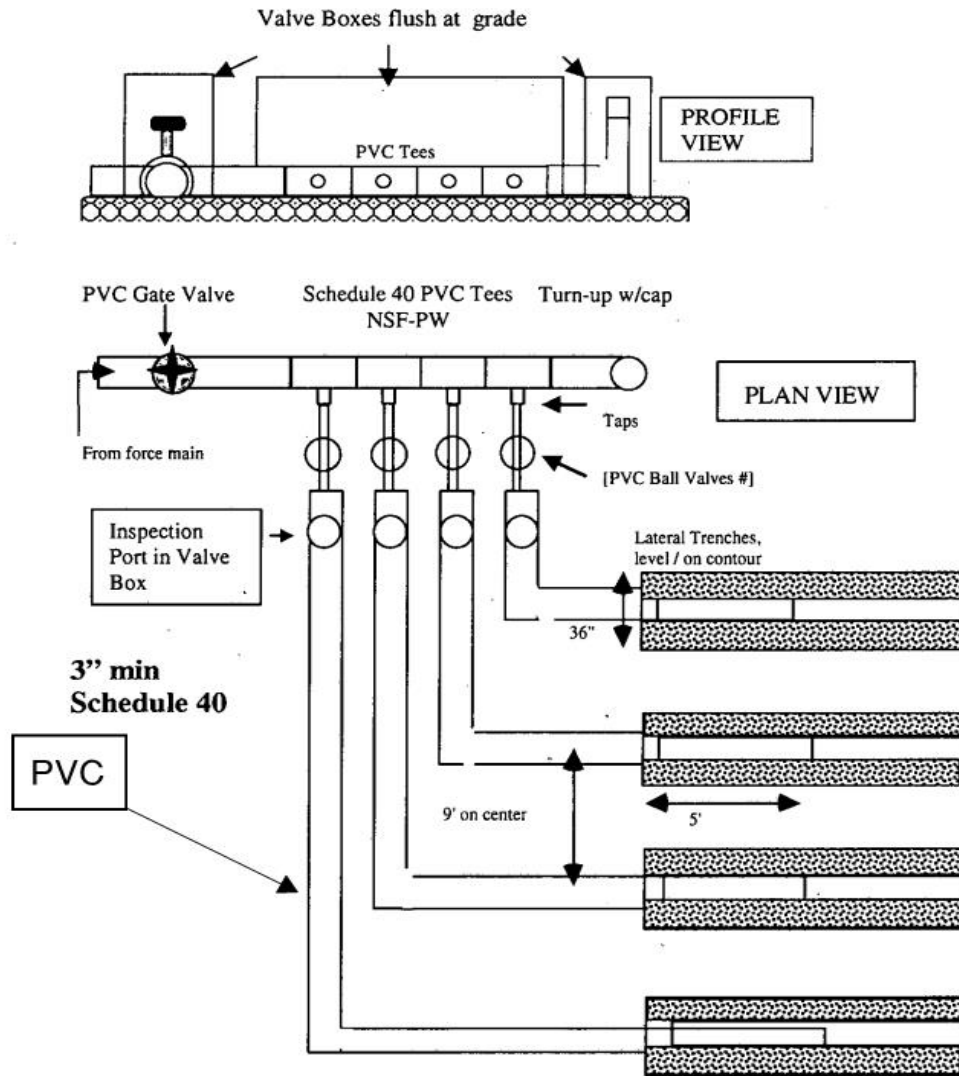
Benchmark	0	is = 100.00	set at	0			Design Head:	2	
Pump tank elev.		15	85.00	Pump elev.	80.00		Manifold elev.	101.00	
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
	red		100.00	55	1/2in SCH 80	5.48	56.89	165	0.3448
	pink		100.00	65	1/2in SCH 80	5.48	56.89	195	0.2917
	blue		100.00	75	1/2in SCH 40	7.11	73.81	225	0.3280
	red		100.00	95	3/4in SCH 80	10.1	104.84	285	0.3679
	pink		100.00	75	1/2in SCH 40	7.11	73.81	225	0.3280
	blue		100.00	65	1/2in SCH 80	5.48	56.89	195	0.2917
	red		100.00	55	1/2in SCH 80	5.48	56.89	165	0.3448
			100.00			0	0.00	0	#DIV/0!
			100.00			0	0.00	0	#DIV/0!
			100.00			0	0.00	0	#DIV/0!
		total	feet =	485	gal/min =	46.24		LTAR =	0.2750
% of Dose Vol.		66		Des. Flow	480			(ltar + 5%)	0.2888
Dose Volume		208		Pump Run=	10.38			(ltar w/ 25% red)	0.3667
Dose Pump Time		4.50		Tank Gal/IN	20			(ltar + 5%)	0.3850
Drawdown in Inches		10.40		Elev. Head	21.00			Target LTAR	0.3850
Supply Line Length		200							

Hydraulic Profile



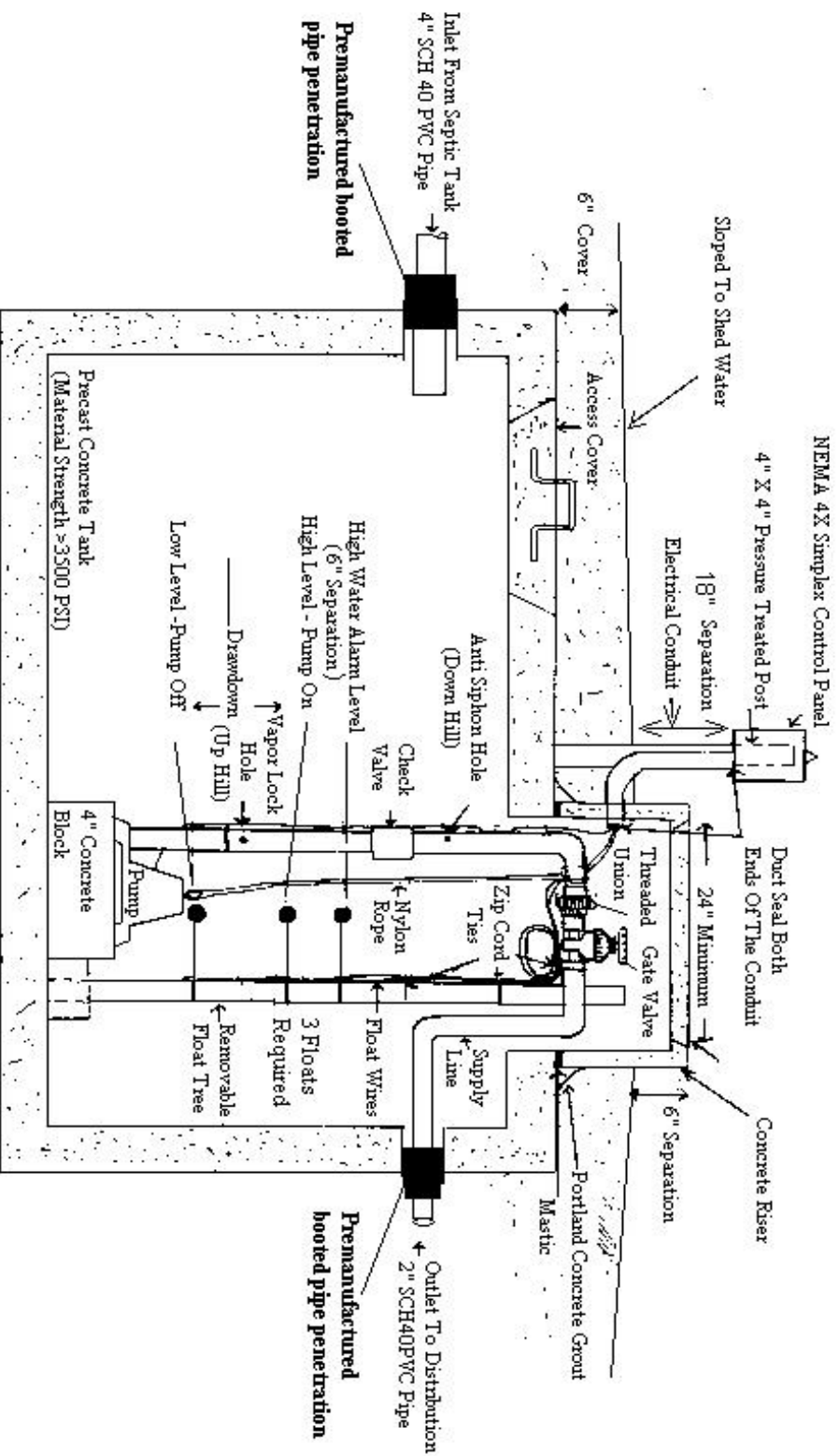
	Line 1	Line 2	Line 3
Taps	1/2in SCH 40	1/2in SCH 40	1/2in SCH 40
Flow	8.71	8.71	8.71

Wake County Mani-Tee Design



*** Manifold sizing may need to be altered after installer layout. The installer must layout the system prior to the pre-construction conference ***

Wake County Department Of Environmental Services



1200 Gals Pump Tank

Minimum Panel Requirements

The following items will be considered the minimum for all pump systems:

1. It must be a NEMA 4X Box.
2. It must use a HOA (Hand, Off, Auto) switch to control the pump. No more use of piggyback plugs!
3. It must have a motor contactor to prevent high voltage electricity in the water at all times.
4. It must have an audible and visual alarm.
5. **All Pressure Manifold and LPP Systems must have an elapsed time meter and cycle counter installed in the panel.**
6. It must have 2 separate power supplies, wired from the fuse panel at the house.
7. All panels must have 2 circuit breakers installed in the panel to allow for disconnecting of power, so that the pump or switches maybe serviced.
8. Panels and pumps are to be wired at the time of our inspection. Power must be supplied by use of generators or from the house temporary meter, if the builder applied for it and has had all required inspections and the temporary meter has been set. **We will no longer inspect any system that has been hot wired from the temporary power pole or jumped through the house wiring without a meter being set.**

Pressure Manifolds

1. A float tree or hanging floats must be used.
2. A Simplex Control Panel with a Hand - Off - Auto switch and alarm in a NEMA - 4X box is required. See the plans or CA comments for further details on the panel.
3. 2 separate power supplies are needed. Try to look and make sure they have not used a 120V only panel with a 240V pump.
4. The taps and pipes for the taps must be of the same material! If it is a sch80 tap (usually gray plastic) then the tap, pipe and valve (the valve can be sch40pvc if there is an adequate amount of sch80 pipe used) must be constructed of sch80pvc. The same goes for sch40 taps, you cannot use sch80 pieces with the sch40.
5. The taps must go directly to the 3" pipe; no elbows can be used in the tap connections.
6. All of the tap must be the same size or larger. 3/4" pipe cannot have a 1/2" valve, but a 1/2" pipe could have a 3/4" valve, if at there is at least 6" total 1/2" pipe used.
7. Should the wrong size or material be used in the tap itself, the flow to the line can be corrected by using an adequate amount of the proper pipe material and size. The amount of pipe needed to control the flow is dependent on the size pipe/tap. If 1/2" pipe is needed, then at least 6" of total pipe is needed. A 3/4" size requires at least 9" of pipe to be used. A 1" size needs 12" of total pipe length to control the flow.