

**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-044846-2020****APPLICATION DATE:** 09/03/2020**BLDG. PERMIT#:** RBPR-044850-2020**PIN:** 0771959511**RECORDED:** Yes**TOWNSHIP:** 18 - Swift Creek**JURISDICTION:** Wake County**ZONING:** R-40W

**APPLICANT:** Amward Homes of NC Inc  
133 TRIANGLE TRADE DR  
CARY, NC 27513-3184

**BUSINESS PHONE:** (919) 319-6162**HOME PHONE:****MOBILE PHONE:** (919) 669-3005**HD USE:** 101A CONVENTIONAL ONE-FAMILY HOUSE**EXISTING USE:****SITE ADDRESS:** 2309 SANCTUARY DR**SUBDIVISION:** SANCTUARY @ YATES MILL PH 1 **LOT:** 20**ACRES:** 1.92**DIRECTIONS:** Turn on Theys Rd. Rt on Milner Rd. Left on Sactuary Dr

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:** Bobby Weaver**DATE:** 09/21/2020**CA VALID FOR:** Five Years**DESIGN FLOW:** 600 GALLONS**BASEMENT:** Yes**BASEMENT FIXTURES:** Yes**SEPTIC TANK:** 1500 GALLONS**SEPTIC TANK FILTER:** Yes**DOSING PUMP TANK:** 1500 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:** 1,620**AGGREGATE DEPTH:** 12**MAX. TRENCH DEPTH:** 21 INCHES**DISTRIBUTION DEVICE:** PM - Pressure Manifold**TRENCH #:** 4**TRENCH LENGTH:** 135 FEET**TRENCH WIDTH:** 36 INCHES**TOTAL TRENCH LENGTH:** 540 FEET**CENTER SPACING:** 9 FEET**MINIMUM SOIL COVER:** 6 INCHES**PRETREATMENT:****APPROVAL #:**

**SUBFIELDS #:**  
**PUMP TDH:** 9.72 FEET

**PUMP DESIGN FLOW:** 28.44  
**ZONE VALVE:** No

**ASDMS REQUIRED:** No  
**P.E. SIGN OFF/ASBUILT REQUIRED:** No

**LINE OF CREDIT REQUIRED:** No

**OPERATOR REQUIRED:** No

**TRIPARTY AGREEMENT REQUIRED:** No

**SPECIFIC CONSTRUCTION AUTHORIZATION REQUIREMENTS:**

- System Designed for a 5 bedroom home, with 600 gals per day.
- Future Repair is a type IIIB system with a trench depth of 30" and a .3 LTAR.
- Initial & Repair systems utilize saporlite.
- Site serviced by a community well.
- No cutting, grading, alterations, or utilities in septic area.
- Maintain all setbacks.

-SEWER LINES MAY CROSS A STREAM IF AT LEAST 3 FEET OF STABLE COVER CAN BE MAINTAINED, OR THE SEWER LINE IS OF DUCTILE IRON PIPE OR ENCASED IN CONCRETE OR DUCTILE IRON PIPE FOR AT LEAST TEN FEET ON EITHER SIDE OF THE CROSSING AND PROTECTED AGAINST THE NORMAL RANGE OF HIGH AND LOW WATER CONDITIONS, INCLUDING THE 100-YEAR FLOOD/WAVE ACTION. AERIAL CROSSINGS SHALL BE BY DUCTILE IRON PIPE WITH MECHANICAL JOINTS OR STEEL PIPE. PIPE SHALL BE ANCHORED FOR AT LEAST TEN FEET ON EITHER SIDE OF CROSSING.

**Issued By:**



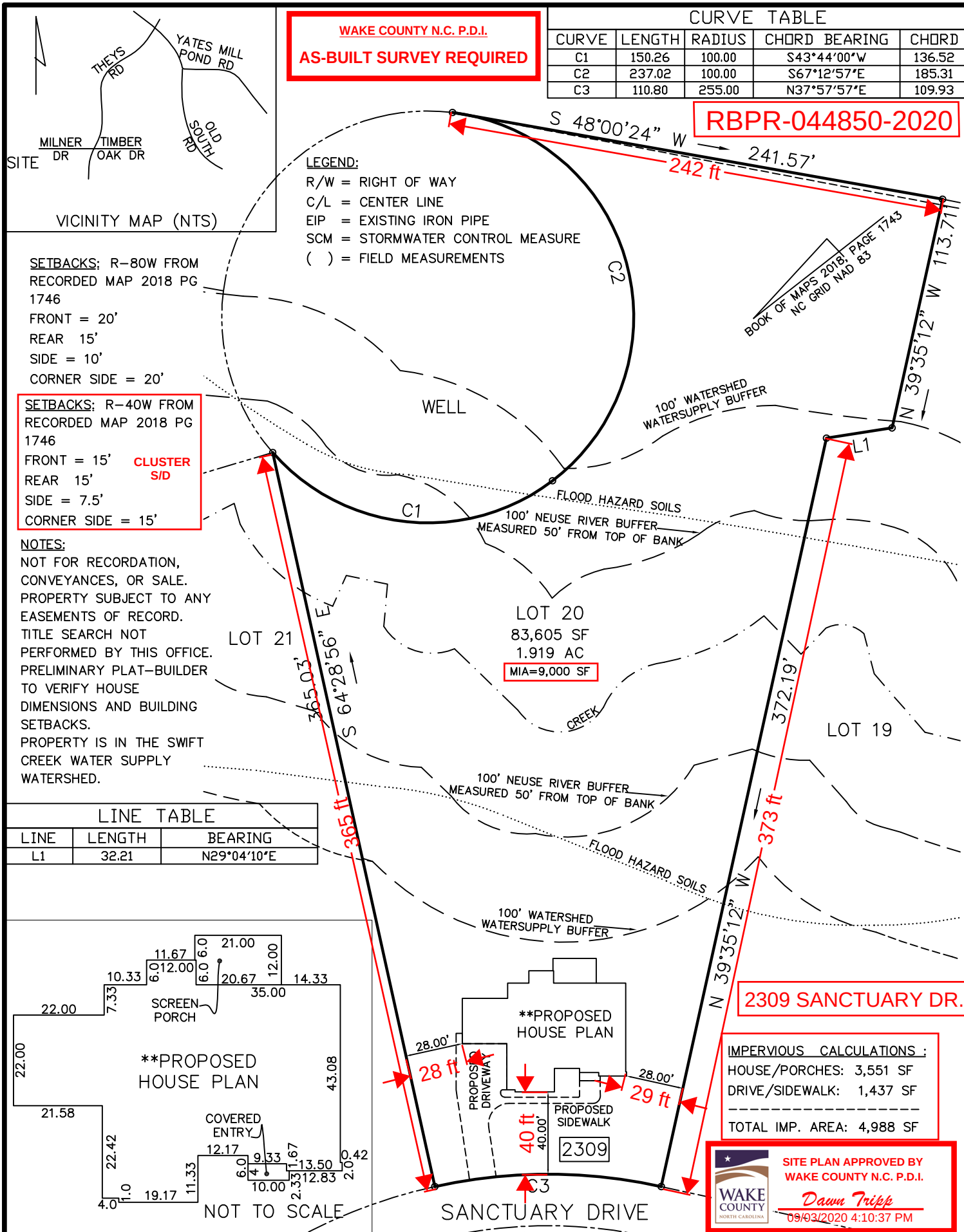
**Date:** 09/21/2020

## CA PART A

| CURVE TABLE |        |        |               |        |
|-------------|--------|--------|---------------|--------|
| CURVE       | LENGTH | RADIUS | CHORD BEARING | CHORD  |
| C1          | 150.26 | 100.00 | S43°44'00"W   | 136.52 |
| C2          | 237.02 | 100.00 | S67°12'57"E   | 185.31 |
| C3          | 110.80 | 255.00 | N37°57'57"E   | 109.93 |

WAKE COUNTY N.C. P.D.I.  
**AS-BUILT SURVEY REQUIRED**

RBPR-044850-2020



~~THIS PROPERTY IS NOT LOCATED IN AN AREA DESIGNATED AS HAVING SPECIAL FLOOD HAZARDS ACCORDING TO FLOOD INSURANCE RATE MAP #3720073300 J. EFFECTIVE DATE: MAY 2, 2006.~~

LOT 20 BLOCK \_\_\_\_\_ SECTION \_\_\_\_\_  
SUBDIVISION SANCTUARY @ YATES MILL - PHASE 1

RECORDED IN BOOK OF MAPS 2018      PAGE 1743-46      WAKE COUNTY REGISTRY

PI OT PI AN

SAW/MW/EB  
2019313

~~SONYA A. WARD, HEREBY CERTIFY  
THAT THIS MAP IS CORRECT, THAT  
THE BUILDINGS LIE WHOLLY ON THE  
LOT, AND THAT THERE ARE NO  
ENCROACHMENTS OF OTHER BUILDINGS  
ON THE SAID LOT, EXCEPT AS SHOWN  
ON SURVEY~~

SURVEY FOR:

AMWARD HOMES, INC

SWIFT CREEK TOWNSHIP

WAKE COUNTY

NC

SCALE: 1"=60'

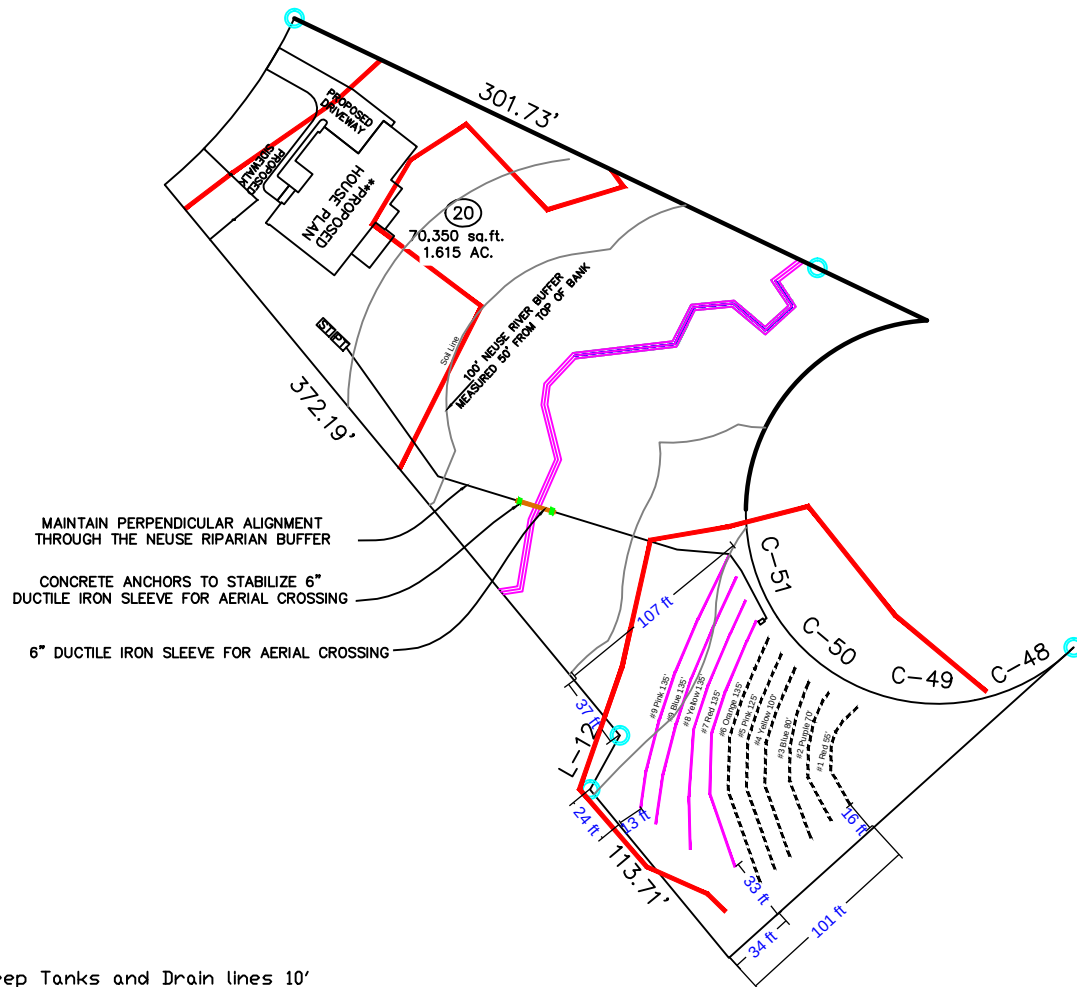
DATE: 07/15/2020

BOOK #:

WARD SURVEYING SERVICES, PLLC  
LAND SURVEYING & PLANNING  
APEX, N.C. (919) 367-7858

## CA PART B

Sanctuary S/D Lot 20  
5-Bedroom Layout



- \*Keep Tanks and Drain lines 10' from property lines.
- \*Not a Survey
- \*Not a guarantee of a septic permit.
- \*Keep supply lines >5' from property lines.
- \*Some lines are flagged longer in the field than lengths indicated above.
- \*No cutting within septic area.

System: Pump to Mani-Tee  
Lines: 7-10, (540')  
Accepted Status System  
0.3 Soil LTAR

Repair: Pressure Manifold  
Lines: 1-6, (565')  
Accepted Status System  
0.3 Soil LTAR

System: 

Repair: 

GRAPHIC SCALE  
1" = 100'



Central Carolina Soil Consulting, PLLC  
1900 South Main Street, Suite 110  
Wake Forest, North Carolina 27587  
Phone (919)569-6704 Fax (919)569-6703

## 5-Bedroom Septic Layout

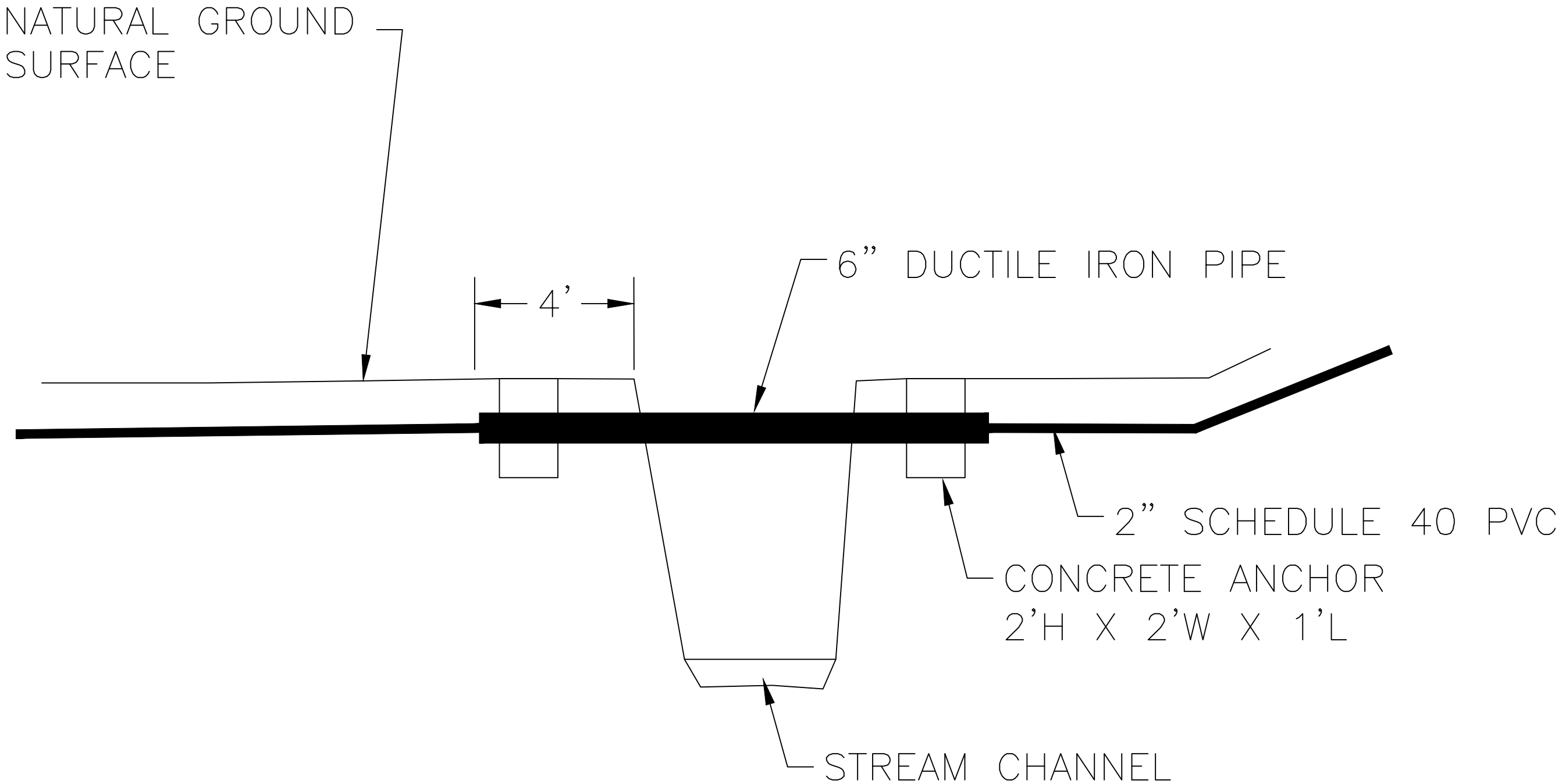
Job# : 1849

Drawn By : AH

Date : 09/10/2020

Revision:

# STREAM CROSSING DETAIL



\*Not to Scale\*

CA PART C  
**WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES**  
**4 TAP PRESSURE MANI-TEE DESIGN**

Name: Amward Homes of NC Inc P.I.N. #: 0771-95-9511 Permit #: 044846-2020

Address: 2309 Sanctuary Dr Subdiv: Sanctuary @ Yates Mill Lot#: 20

# of BDR: 5 Daily Flow: 600 gal/day L.T.A.R.: 0.30 gal/day/sq.ft

Septic Tank: 1500 gals Pump Tank: 1500 gals Sq. Foot: 1620 Aggregate Depth: AS

Number of Taps: 4 Length of Trenches: 540 ft(See Tap Chart for Details)

Depth of Trenches: 24 in Manifold Length: 42 in

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

Supply Line: length: 21 ft Diameter: 2 in sch 40pvc

Friction Loss + Fitting Loss: 1.72 ft(supply line length + 70' for fittings in pump tank)

Design Head: 2 ft Elevation Head: 6 ft

Total Head: 9.72 ft Pump to Deliver: 28.44 gals/min at 9.72 ft head

Dosing Volume: 263 gals,

Drawdown: 263 gals divided by 30 gals/in = 8.8 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.

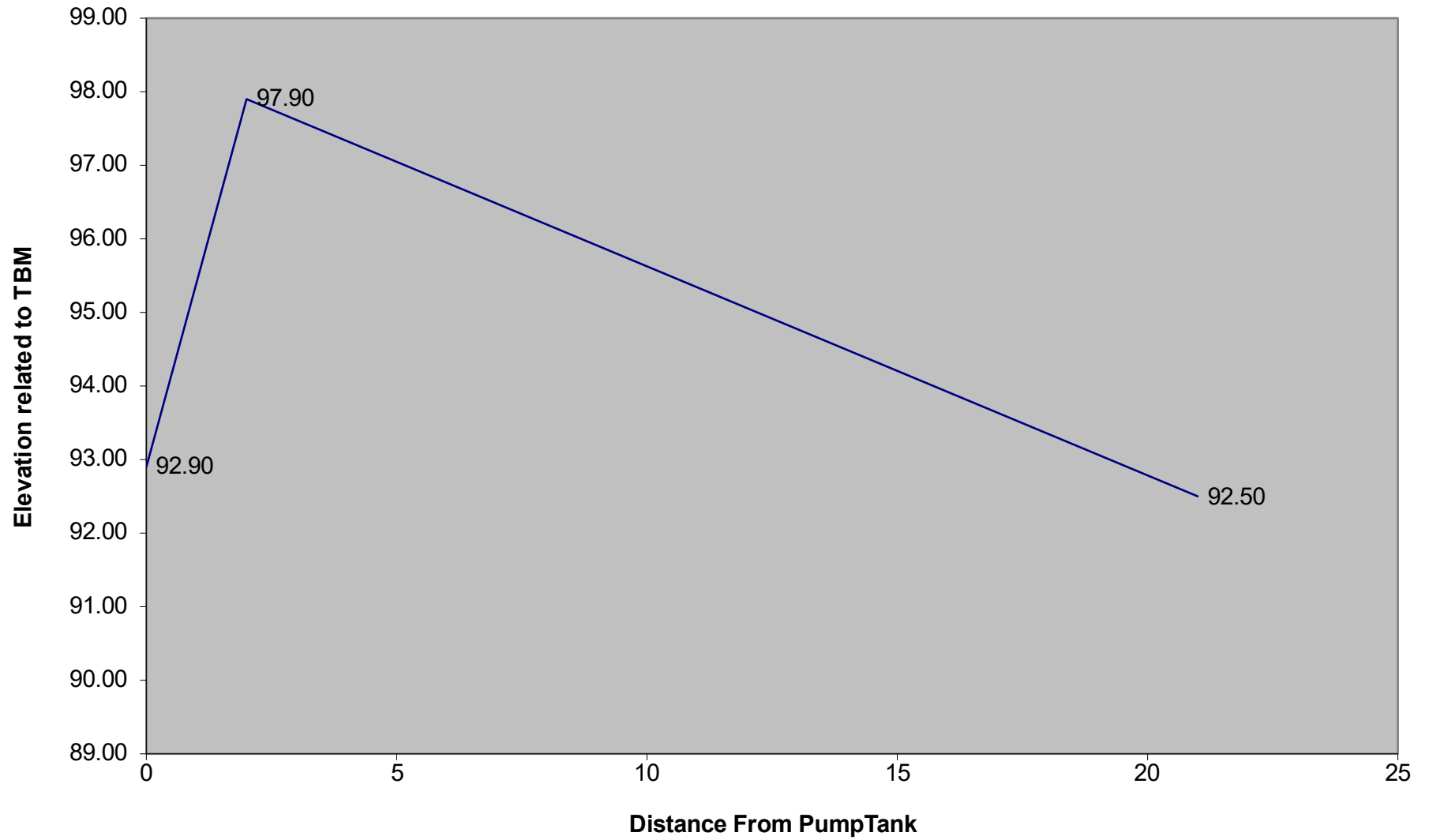
### TAP CHART

|                    |                   |             |           |                   |              |          |                |                |           |
|--------------------|-------------------|-------------|-----------|-------------------|--------------|----------|----------------|----------------|-----------|
| Bench Mark         | <u>          </u> | is = 100.00 | set at    | <u>          </u> |              |          | Design Head:   | <u>2</u>       |           |
| Pump tank elev.    | <u>2.1</u>        |             | 97.90     | Pump elev.        | 92.90        |          | Manifold elev. | 92.50          |           |
| line               | color             | rod read    | Elevation | length            | hole size    | flow/tap | gal/day        | trench area    | LINE LTAR |
| 1                  | Pink              | 8.5         | 91.50     | 135               | 1/2in SCH 40 | 7.11     | 150.00         | 405            | 0.370     |
| 2                  | Blue              | 9.4         | 90.60     | 135               | 1/2in SCH 40 | 7.11     | 150.00         | 405            | 0.370     |
| 3                  | Red               | 11.1        | 88.88     | 135               | 1/2in SCH 40 | 7.11     | 150.00         | 405            | 0.370     |
| 4                  | Yellow            | 12.3        | 87.75     | 135               | 1/2in SCH 40 | 7.11     | 150.00         | 405            | 0.370     |
|                    |                   | total       | feet =    | 540               | gal/min =    | 28.44    |                | LTAR =         | 0.30      |
| % of Dose Vol.     | <u>75</u>         |             |           | Des. Flow         | 600          |          |                | (ltar + 5%)    | 0.32      |
| Dose Volume        | 263               |             |           | Pump Run=         | 21.10        |          |                | (ltar W/ INOV) | 0.40      |
| Dose Pump Time     | 9.26              |             |           | Tank Gal/IN       | 30           |          |                | (ltar + 5%)    | 0.42      |
| Drawdown in Inches | 8.8               |             |           | Elev. Head        | 6            |          |                |                |           |
| Supply Line Length | 21                |             |           |                   |              |          |                |                |           |
| Comments:          | <u>          </u> |             |           |                   |              |          |                |                |           |
|                    | <u>          </u> |             |           |                   |              |          |                |                |           |
|                    | <u>          </u> |             |           |                   |              |          |                |                |           |

### Hydraulic Profile

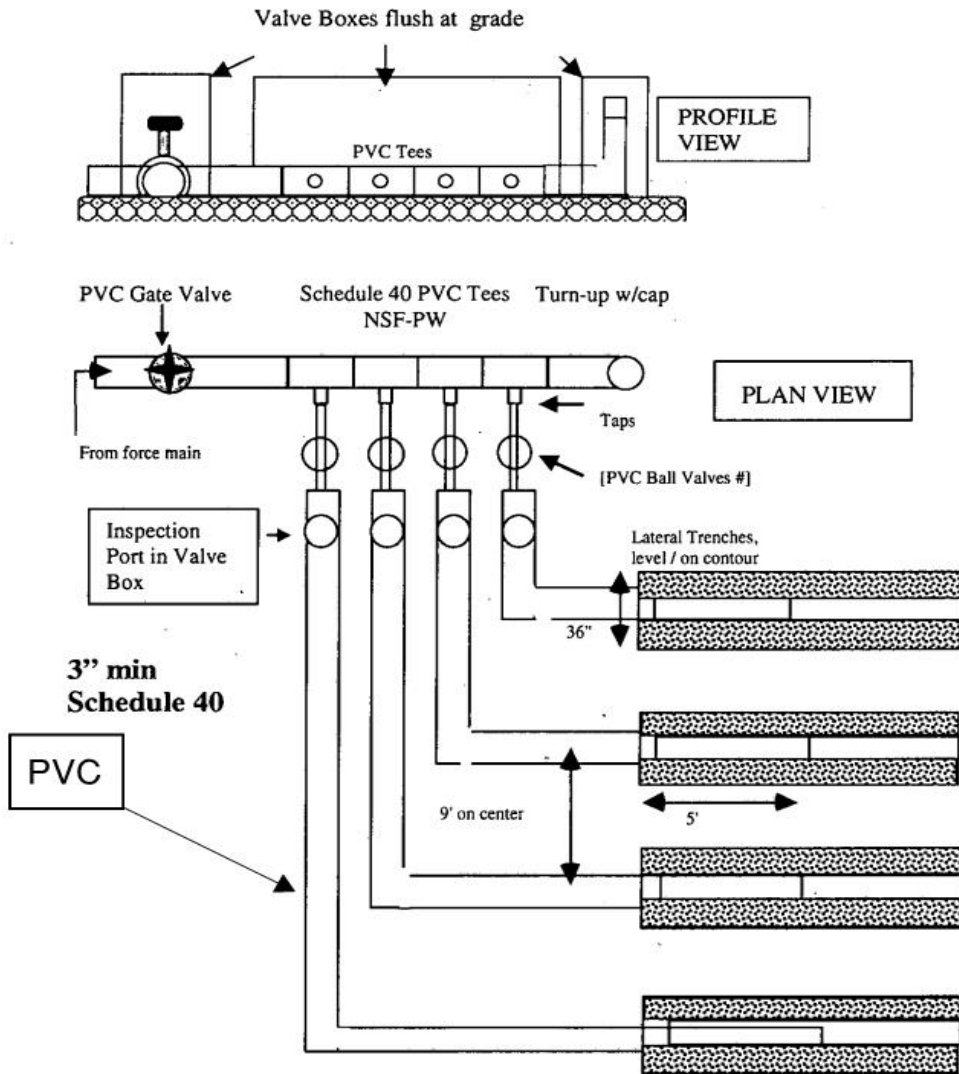
|                    |       |    |
|--------------------|-------|----|
| Manifold Elevation | 92.50 | 21 |
| Pump tank elev.    | 97.90 | 2  |
| Pump elev.         | 92.90 | 0  |

## Hydraulic Profile



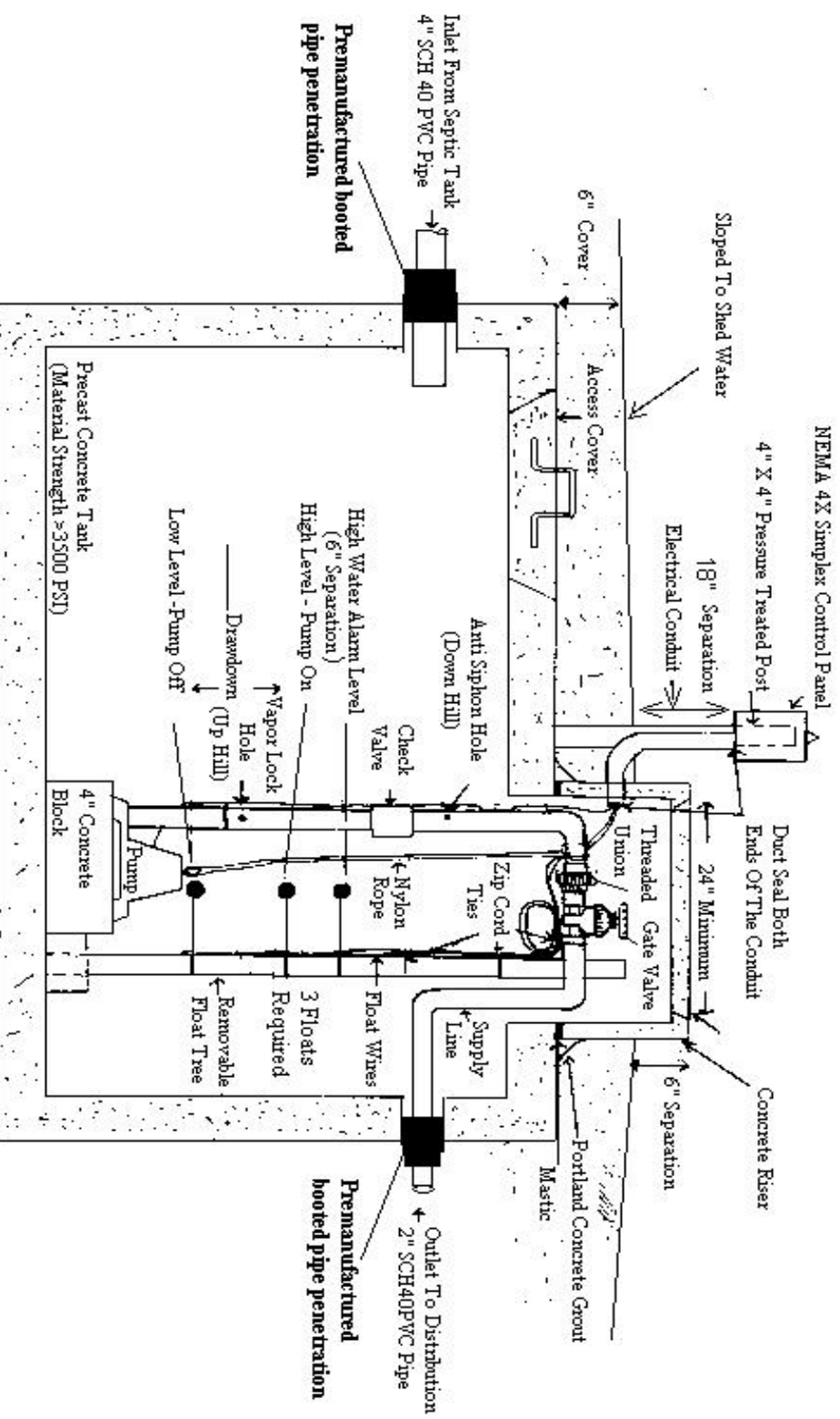
|             | Line 1       | Line 2       | Line 3       | Line 4       |
|-------------|--------------|--------------|--------------|--------------|
| <b>Taps</b> | 1/2in SCH 40 | 1/2in SCH 40 | 1/2in SCH 40 | 1/2in SCH 40 |
| <b>Flow</b> | 7.11         | 7.11         | 7.11         | 7.11         |

### 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



\_\_\_\_\_ GALLON PUMP TANK

**1500 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.

|              |   |
|--------------|---|
|              | 0 |
| 1/2in SCH 80 | 0 |
| 1/2in SCH 40 | 0 |
| 3/4in SCH 80 | 0 |
| 3/4in SCH 40 | 0 |
| 1in SCH 80   | 0 |
| 1in SCH 40   | 0 |
|              | 0 |
|              | 0 |
|              | 0 |
|              | 0 |