

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-147679-2025****APPLICATION DATE:** 05/20/2025**BLDG. PERMIT#:** RBPR-147610-2025**PIN:** 1607195653**RECORDED:** Yes**TOWNSHIP:** 15 - Panther Branch**JURISDICTION:** Wake County**ZONING:** R-30**APPLICANT:** Chris Porter2624 Timber Dr. Suite 115 Suite 115
Garner, NC 27529**BUSINESS PHONE:** (919) 390-9117**HOME PHONE:** (919) 390-9117**MOBILE PHONE:** (919) 390-9117**HD USE:** 101A CONVENTIONAL ONE-FAMILY HOUSE**EXISTING USE:****SITE ADDRESS:** 5856 CARRIAGE GATE DR**SUBDIVISION:** Carriage Farm**LOT:** 12**ACRES:** 0.69**DIRECTIONS:** From Pagan Rd - turn onto Carriage Gate Drive, Lot 12 will be on the right about 3/4 the way down the street.

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:** Caroline Suggs**DATE:** 06/05/2025**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:** No**DRAINFIELD SQ. FT:** 1,260**AGGREGATE DEPTH:** 12**MAX. TRENCH DEPTH:** 34 INCHES**DISTRIBUTION DEVICE:** PM - Pressure Manifold**TRENCH #:** 6**TRENCH LENGTH:** 70 FEET**TRENCH WIDTH:** 36 INCHES**TOTAL TRENCH LENGTH:** 420 FEET**CENTER SPACING:** 9 FEET**MINIMUM SOIL COVER:** 6 INCHES

PRETREATMENT:
SUBFIELDS #:
PUMP TDH: 14.65 FEET

APPROVAL #:
PUMP DESIGN FLOW: 26.13
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 4 bedroom residence, having 480 gals per day
- Future Repair is a IIIB type system using PPBPS horizontal (50% reduction taken) with a max trench depth of 30" and a 0.30 LTAR
- Maximum trench depth is 34" but based off soil profiles, trenches should be below 25" to prevent installation of trenches at soil transition point
- Usable depth to limiting condition in Initial Area- 46"
- Usable depth to limiting condition in Repair Area- 44"
- Any deviation from accepted design must be approved by Wake County OSWP prior to system installation.
- Site serviced by community well water.
- No cutting, grading, alterations, or utilities in septic area.
- Maintain all required setbacks.
- All property lines must be fully marked at time of install or reinspection required.
- Please contact Caroline Suggs at 919-796-9637 with any questions prior to or during installation.

Issued By:

Caroline Suggs, PEHS

Date: 06/05/2025

PRELIMINARY

THIS IS A PRELIMINARY DRAWING AND IS NOT TO BE USED AS A SURVEY OR TO TRANSFER ANY PROPERTY SHOWN HEREON.

Required Setbacks

Front	30
Side	10
Rear	30
Corner	

WRP-147679-2025
CA SITE PLAN
PART A
SEE PARTS B-E FOR
DESIGN DETAILS



Site Plan Reviewed
Wake County Inspections & Permits

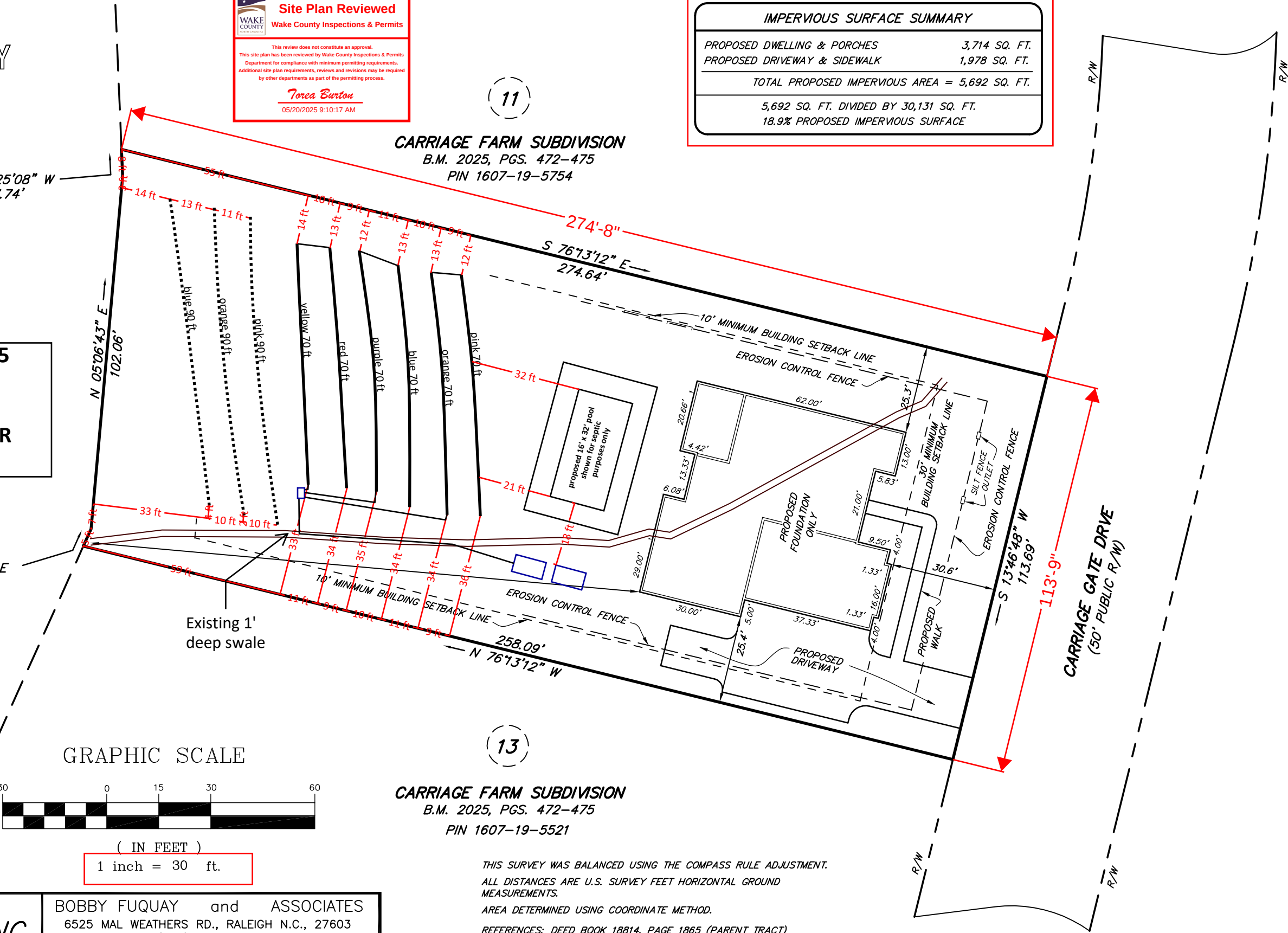
This review does not constitute an approval. This site plan has been reviewed by Wake County Inspections & Permits Department for compliance with minimum permitting requirements. Additional site plan requirements, reviews and revisions may be required by other departments as part of the permitting process.

Torcia Burton
05/20/2025 9:10:17 AM

IMPERVIOUS SURFACE SUMMARY	
PROPOSED DWELLING & PORCHES	3,714 SQ. FT.
PROPOSED DRIVEWAY & SIDEWALK	1,978 SQ. FT.
TOTAL PROPOSED IMPERVIOUS AREA = 5,692 SQ. FT.	
5,692 SQ. FT. DIVIDED BY 30,131 SQ. FT.	
18.9% PROPOSED IMPERVIOUS SURFACE	

CARRIAGE FARM SUBDIVISION
B.M. 2025, PGS. 472-475
PIN 1607-19-5754

CARRIAGE FARM SUBDIVISION
B.M. 2025, PGS. 472-475
PIN 1607-19-5521

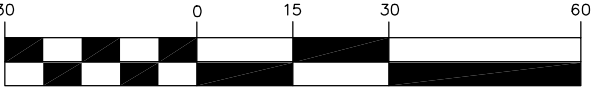


LEGEND:

- SURVEYED LINE
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- UNSURVEYED LINE
- BUFFER LINE

- EIP = EXISTING IRON PIPE FOUND
- SIP = NEW IRON PIPE SET
- REBF = REBAR FOUND
- R/W = RIGHT OF WAY
- IRON SET UNLESS OTHERWISE NOTED
- IRON FOUND UNLESS OTHERWISE NOTED
- OVER-HEAD UTILITY LINE
- TL = TOTAL LENGTH OF LINE

GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft.

THIS SURVEY WAS BALANCED USING THE COMPASS RULE ADJUSTMENT.
ALL DISTANCES ARE U.S. SURVEY FEET HORIZONTAL GROUND MEASUREMENTS.
AREA DETERMINED USING COORDINATE METHOD.
REFERENCES: DEED BOOK 18814, PAGE 1865 (PARENT TRACT)
BOOK OF MAPS 2025, PAGES 472 THRU 475
PROPERTY IS ZONED: R-30 (WAKE COUNTY)
PROPERTY ADDRESS: 5856 CARRIAGE GATE DRIVE
RALEIGH, N.C. 27603
MAXIMUM IMPERVIOUS SURFACE AREA = 7,000 SQ.FT.

SITE PLAN FOR
PORTER BUILT HOMES, INC.

BOBBY FUQUAY and ASSOCIATES
6525 MAL WEATHERS RD., RALEIGH N.C., 27603
(919) 880-3309

TOWNSHIP: PANTHER BRANCH	COUNTY: WAKE	DATE OF SURVEY N/A	
STATE : NORTH CAROLINA	PIN 1607-19-5653	DATE OF MAP 05-15-2025	DRAWING
SCALE: 1" = 30'	ZONE: R-30	CHECK AND CLOSURE BY: BOF	202519

**WAKE COUNTY ONSITE WATER PROTECTION
RESIDENTIAL PRESSURE MANI-TEE DESIGN**

Permit # **WRP-147679-2025** Address: **5856 Carriage Gate Dr**

of BDR: **4** Daily Flow: **480** gal/day Product: **Accepted**

L.T.A.R.: **0.3** gal/day/sq.ft Aggregate Depth: **12**

Septic Tank: **1200** gals Pump Tank: **1200** gals Sq. Foot: **1260**

Number of Taps: **3** Length of Trenches: **140** ft(See Tap Chart for Details)

Depth of Trenches: **30** in Manifold Length: **36** in

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

Supply Line: length: **45** ft Diameter: **2** in sch 40pvc

(Friction + Fitting) Loss: **1.86** ft Elevation Head: **10.79** ft
(supply line length + 70' for fittings in pump tank)

Design Head: **3** ft Total Head: **14.65** ft

Pump to Deliver: **26.13** gals/min at **14.65** ft head Dosing Volume: **191** gals

Drawdown: **191** gals divided by **20** gals/in = **9.6** 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 **79** is = 100.0 set at **pump tank** Design Head: **2**

Pump tank elev. **7.79** 171.21 Pump elev. **166.21** Manifold elev. **177.00**

line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR	# of Panels (PPBPS)	Spacing of Panels (in)
1	Y & R	3.00	176.00	140	1/2in SCH 40	8.71	160.00	420	0.3810		
2	Pu & B	3.75	175.25	140	1/2in SCH 40	8.71	160.00	420	0.3810		
3	O & Pi	4.50	174.50	140	1/2in SCH 40	8.71	160.00	420	0.3810		
Total feet =				420	gal/min =	26.13	LTAR = 0.3000				
Feet Required =				400	Velocity =	2.50	(ltar + 5%) 0.3150				
Total # of Panels (PPBPS)				Des. Flow	480	(ltar w/25% red) 0.4000					
% of Dose Vol.		70	Pump Run=	18.37	(ltar + 5%) 0.4200						
Dose Volume		191	Tank Gal/IN	20							
Dose Pump Time		7.31	Elev. Head	10.79							
Drawdown in Inches		9.56									
Supply Line Length		45									
Comments: Maximum trench depth is 34" but based off soil profiles, trenches should be below 25" to prevent installation of trenches at soil transition point											

Hydraulic Profile

Mani-tee Elevation	177.00	45
Pump tank elev.	171.21	0
Pump elev.	166.21	0

Line 1

Line 2

Line 3

Line 4

PART C

Taps

1/2in SCH 40

1/2in SCH 40

1/2in SCH 40

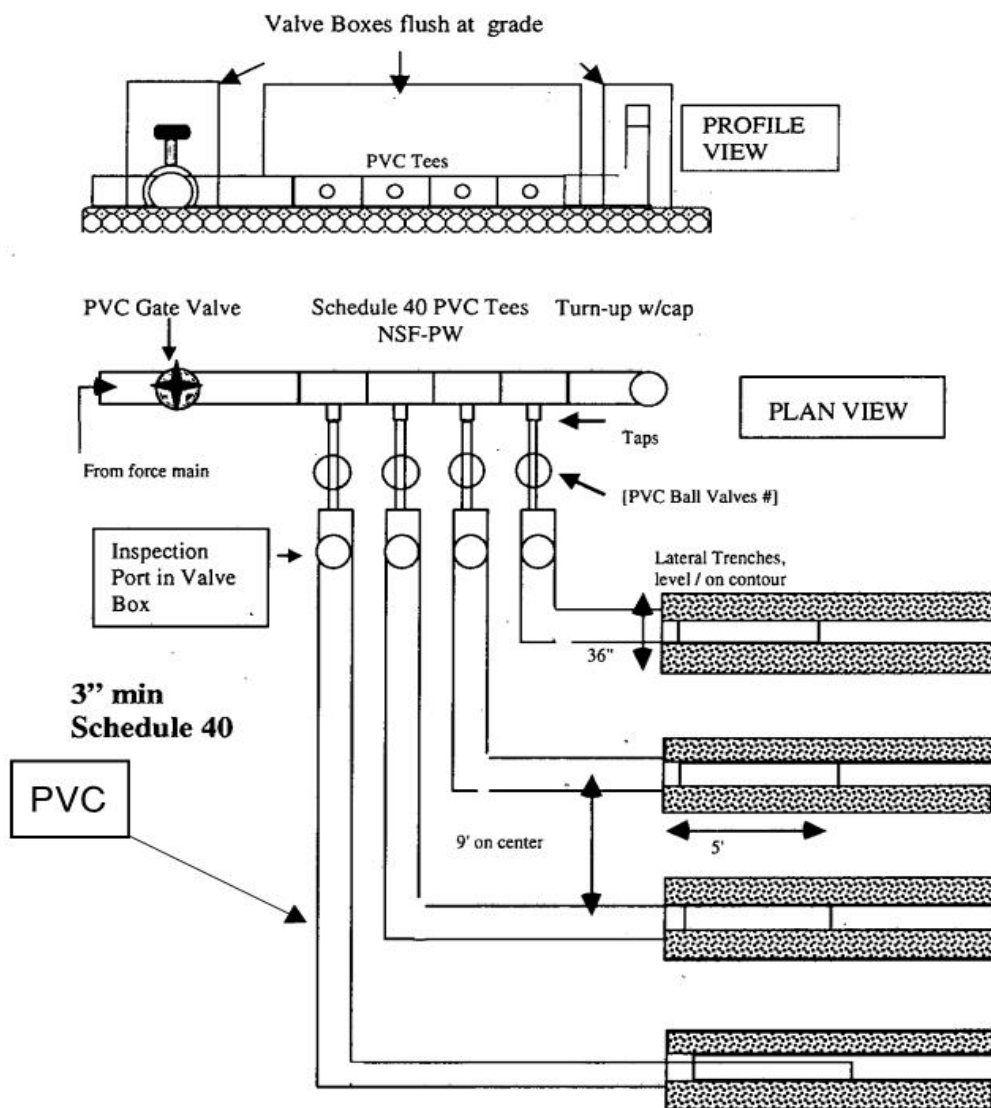
Flow

8.71

8.71

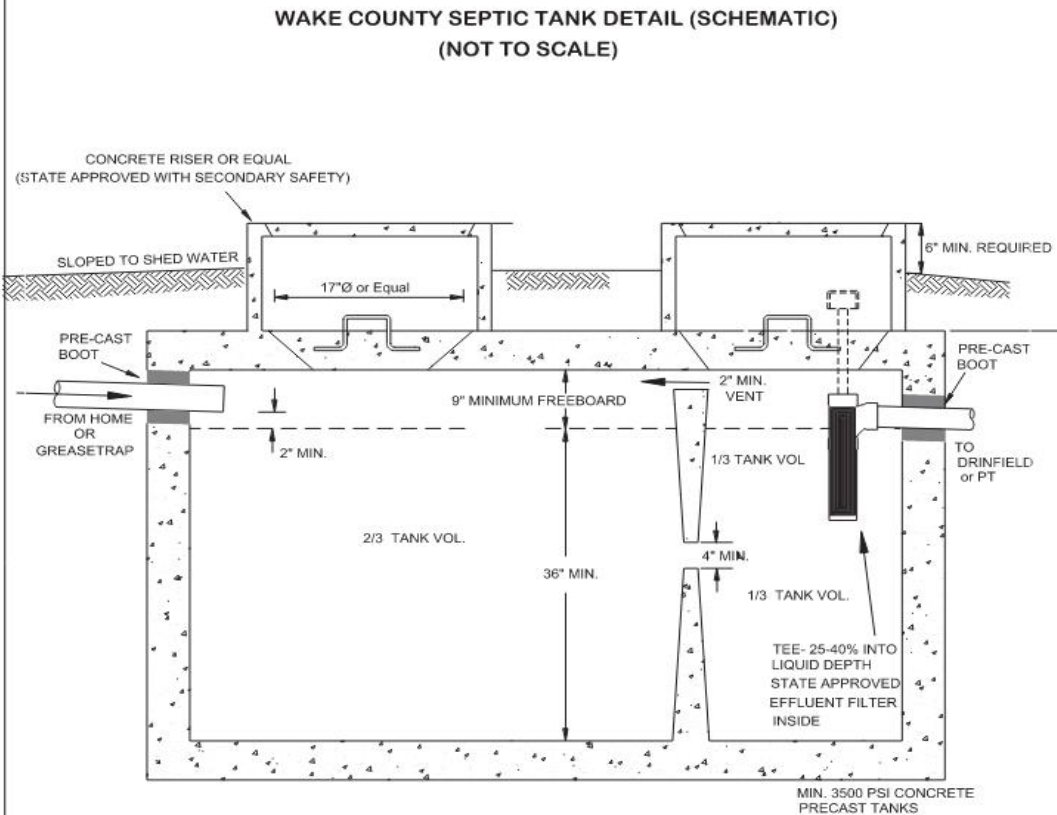
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Wake County Mani-Tee Design



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

PART D



1200 Gallon (Min.)

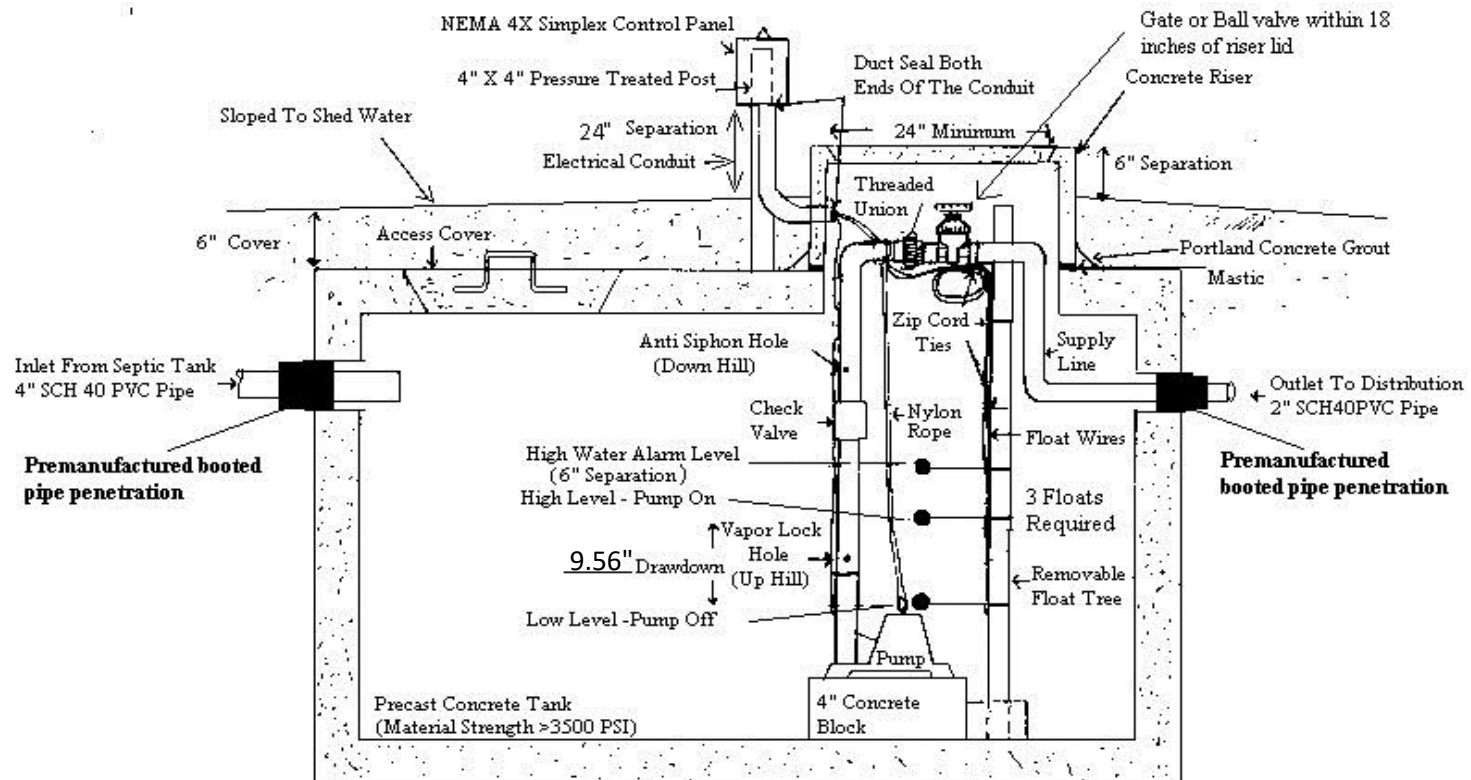
STATE APPROVED SEPTIC TANK WITH A STB NUMBER
(TRAFFIC RATED TANK REQUIRED FOR > 3' BURIAL)



SEPTIC TANK DETAIL
N/A
Onsite Water Protection

Date		File Name
Designed	ICD 10/23/2018	Pressure Manifold Detail
Revision	0 N/A	Drawing No.
Approved	ICD 10/23/2018	1/1
No Scale		Sheet 1 of 1

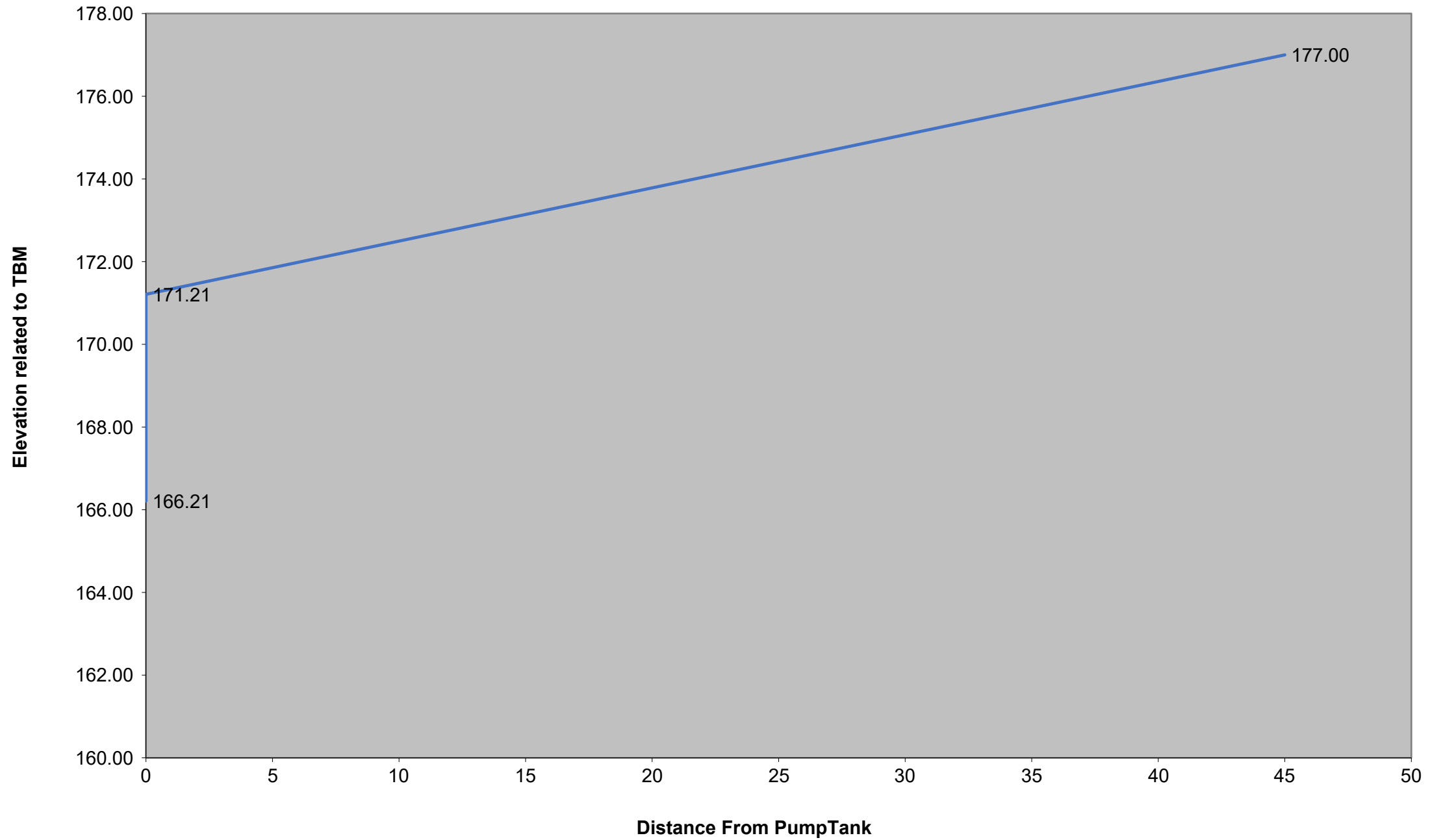
Wake County Onsite Water Protection



1200

GALLON PUMP TANK

Hydraulic Profile



PUMP CURVE AND SPECIFICATIONS

Pump and Control Panel Specification Required:

Pump:

Pump to be UL or equal listed

TDH and Pumping rate calcs & curve

Dose volume

3 floats system in a float tree or bracket of non-corrosive material

Highwater alarm within 6" from "on" float

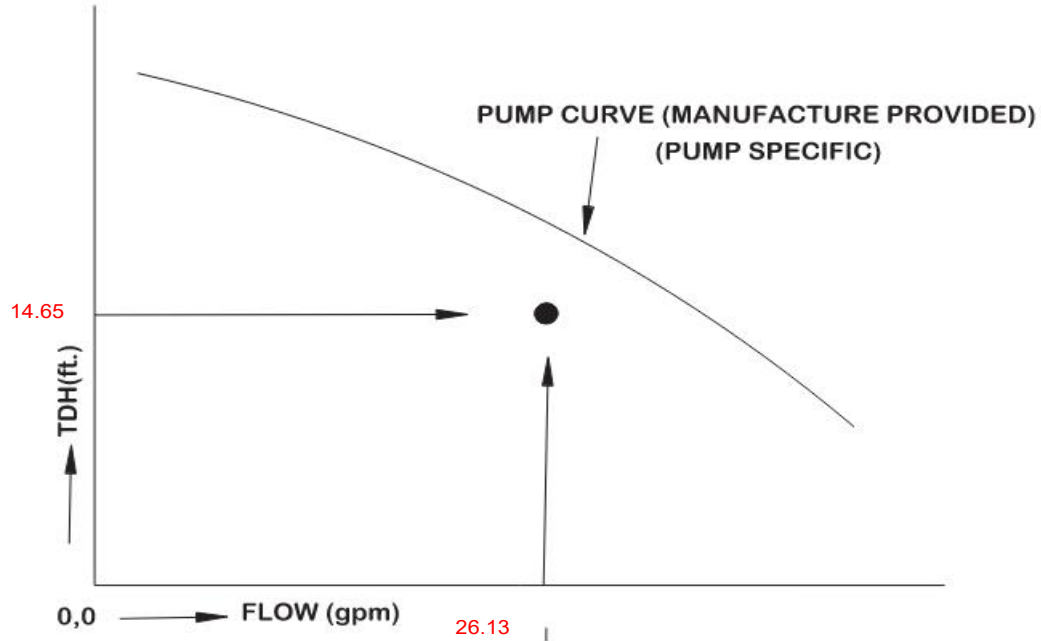
Off float at min. 12" from bottom of tank or to submerge pump

(Manufacture may certify/specify pumps suitability taller than 12" if unsubmerged)

Supply Line Profile when variation in ground profile of more than 5'

Effluent Pump should handle min. 1/2 "solids"

Gate valve, true union disconnect and connection inside tank reachable within 18" from riser top



Control Panel Specifications:

Installed within 2 ft. and

min. 18" above final grade to bottom of panel box

HOA switch provided

NEMA 4X box

Cycle counter & elapsed time meter

Alarm (audible/visible)

Separate circuits for alarm and pumps

High voltage protection

Pump Pull Rope/chain (non-corrosive)

All duct sealed, no splices or junction boxes inside tanks

3/16th inch hole between Check valve (in vertical pipe) and pump



PUMP CURVE AND SPECS.
N/A
Onsite Water Protection

Designed	ICD	Date	10/23/2018	File Name	Pressure Manifold Detail
Revision	0		N/A	Drawing No.	1/1
Approved	ICD		10/23/2018		Sheet 1 of 1
No Scale					

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.

WAKE COUNTY ONSITE WATER PROTECTION
RESIDENTIAL PRESSURE MANI-TEE REPAIR DESIGN

Permit # WRP-147679-2025 Address: 5856 Carriage Gate Dr

of BDR: 4 Daily Flow 480 gal/day Product PPBPS-Horizontal

L.T.A.R.: 0.3 gal/day/sq.ft Aggregate Depth: 14

Septic Tank: 1200 gals Pump Tank: 1200 gals Sq. Foot 810

Number of Taps: 3 Length of Trenches: 90 ft(See Tap Chart for Details)

Depth of Trenches: 30 in Manifold Length: 36 in

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

Supply Line: length: 100 ft Diameter: 2 in sch 40pvc

(Friction + Fitting) Loss: 2.75 ft Elevation Head: 12.66 ft
(supply line length + 70' for fittings in pump tank)

Design Head: 3 ft Total Head: 18.41 ft

Pump to Deliver: 26.13 gals/min at 18.41 ft head Dosing Volume: 227 gals

Drawdown: 227 gals divided by 20 gals/in = 11.3 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.

TAP CHART

Bench Mark 79 is = 100.00 set at pump tank Design Head: 3

Pump tank elev. 7.79 171.21 Pump elev 166.21 Manifold elev. 178.87

line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR	# of Panels (PPBPS)	Spacing of Panels (in)
1	blue	1.13	177.87	90	1/2in SCH 40	8.71	160.00	270	0.5926	21	4.2
2	orange	2.33	176.67	90	1/2in SCH 40	8.71	160.00	270	0.5926	21	4.2
3	pink	2.63	176.37	90	1/2in SCH 40	8.71	160.00	270	0.5926	21	4.2
			179.00				#####	0	#####	0	0
		total	feet =	270	gal/min =	26.13		LTAR =	0.3000		
			Feet Required =	266.6667	Velocity =	2.50		(ltar + 5%)	0.3150		
Total # of Panels (PPBPS)		63		Des. Flow	480			(ltar w/50% red)	0.6000		
% of Dose Vol.		0		Pump Run=	18.37			(ltar + 5%)	0.6300		
Dose Volume		227		Tank Gal/IN	20						
Dose Pump Time		8.68		Elev. Head	12.66						
Drawdown in Inches		11.34									
Supply Line Length		100									

Comments:

Hydraulic Profile

Mani-tee Elevation 178.87 100

Pump tank elev. 171.21 0

Pump elev. 166.21 0