North Carolina Onsite Wastewater Contractor Inspector Certification Board
Authorized Onsite Wastewater Evaluator Permit Option for Non-Engineered Systems
Notice of Intent (NOI) to Construct

✓ New ____ Expansion ____ Repair ____ Relocation ____ Relocation of Repair Area

Owner or Legal Representative Information:
Name: Mattamy Homes, LLC
Mailing address: 11000 Regency Parkway, Suite 110 City: Cary State: NC Zip: 27518
Phone: 919-625-9546 Email: drew.brody@mattamycorp.com

Authorized Onsite Wastewater Evaluator Information:
Name: Hal Owen Certification #: 10036E
Mailing address: PO Box 400 City: Lillington State: NC Zip: 27546
Phone: 910-893-8743 Email: hal@halowensoil.com

Site Location Information:
Site address: 246 Denali Dr., Angier, NC
Tax parcel identification number or subdivision lot, block number of property:
Lot 29 Ph 1 Riverfall SD PIN 0682-18-9921.000 County: Harnett

System Information:
Wastewater System Type: IIIbg (Pump to Accepted Status 25% reduction)
Daily Design Flow: 360 gpd
Saprolite System: ____Yes ✓ No Subsurface Operator Required: ____ Yes ✓ No
Water Supply Type: ____Private Well ✓ Public Water Supply ____ Spring ____Other: ____

Facility Type:
✓ Residential 3 # Bedrooms 6 Maximum # of Occupants
____Business Type of Business and Basis for Flow: ____
____Public Assembly Type of Public Assembly and Basis for Flow: ____

Required Attachments:
✓ Plat or Site Plan
✓ Evaluation of Soil and Site Features by Licensed Soil Scientist

Attest: On this the 12 day of January 2024 by signature below I hereby attest that the information required to be included with this NOI to Construct is accurate and complete to the best of my knowledge. Furthermore, I hereby attest that I have adhered to the laws and rules governing onsite wastewater systems in the state of North Carolina.
This NOI shall expire on 12 day of January, 2025.

Signature of Authorized Onsite Wastewater Evaluator: Hal Owen

Signature of Owner or Legal Representative: Drew Brody

Disclosure: The owner may apply for a building permit for the project upon submitting a complete NOI to Construct and the fee required (if any) to the local health department. An onsite wastewater system authorized by an authorized onsite wastewater evaluator shall be transferable to a new owner with the consent of the authorized onsite wastewater evaluator.

Local Health Department Receipt Acknowledgement:
Signature of Local Health Department Representative: ____ Date: ____

HALOWE1 OP ID: SGW

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 12/05/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER 910-893-5707 INSURANCE SERVICE CTR -LILLING LILLINGTON BRANCH OFFICE PO Box 1565 LILLINGTON, NC 27546 DANIEL L. BABB	CONTACT NAME: SHARON WOODY PHONE (A/C, No, Ext): 910-893-5707 FAX (A/C, No): 910-893-2077 E-MAIL ADDRESS: SWOODY@ISCFAY.COM
	INSURER(S) AFFORDING COVERAGE — NAIC #
	INSURER A : STARSTONE NATIONAL
INSURED HAL OWEN & ASSOCIATES, INC. PO BOX 400 LILLINGTON, NC 27546	INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	CLAIMS-MADE OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	PROFESSIONAL LIAB.			42ESP00143901	01/27/2023	01/27/2024	PER OCC.	1,000,000
							AGGREGATE	2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

MATTAMY HOMES, LLC
11000 REGENCY PRKWY, STE. 110
CARY, NC 27518

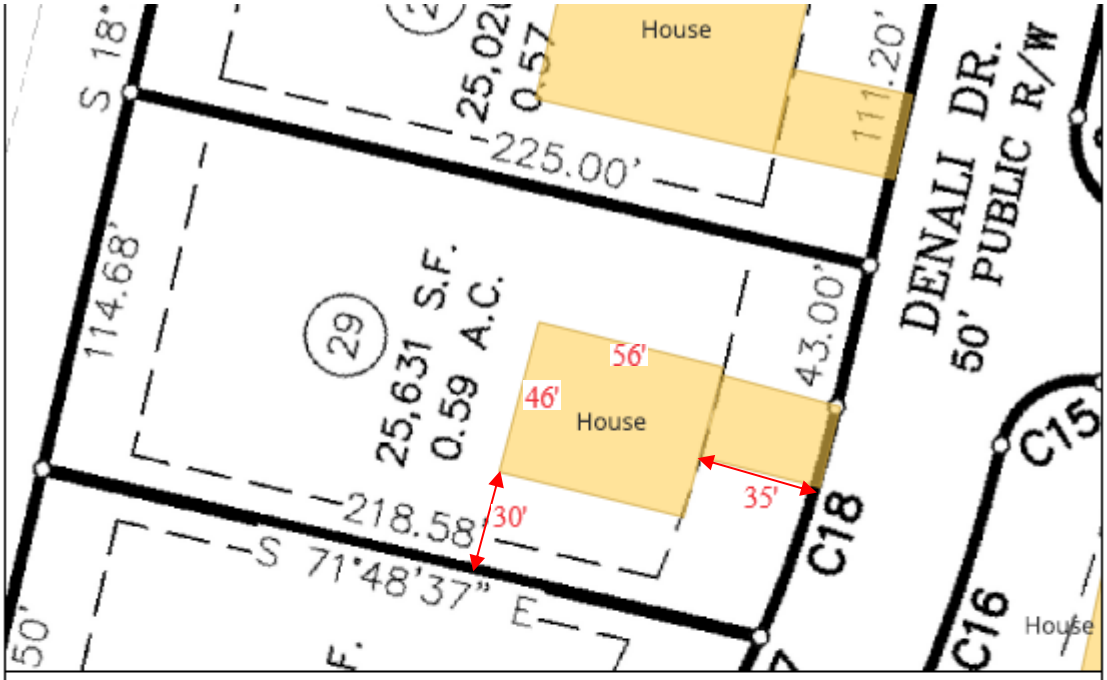
CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Sharon H. Woody

Site Plan Lot 29



0 50 100 ft

Map for reference only.
Not a survey.

Hal Owen & Associates Inc.
PO Box 400, Lillington NC 27546
www.halowensoil.com
919-893-8743

Lot 29
Riverfall Subdivision
Phase 1

SITE MAP

HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS
P.O. Box 400, Lillington NC 27546-0400
Phone (910) 893-8743 / Fax (910) 893-3594
www.halowensoil.com

12 January 2024

Mattamy Homes, LLC
11000 Regency Parkway, Suite 110
Cary, NC 27518

Reference: AOWE Evaluation
246 Denali Drive, Angier, Harnett County, North Carolina
Lot 29 Ph 1 Riverfall Subdivision
PIN - 0682-18-9921.000

Dear Mattamy Homes LLC,

A soil and site evaluation has been conducted for the above referenced property for the purpose of permitting a subsurface sewage waste disposal system. **This LSS Evaluation is being submitted pursuant to and meets the requirements of G.S.130A-336.2.** This evaluation of soil conditions and site features is provided in accordance with G.S. 130A-335(e), the Rules for "Wastewater Treatment and Dispersal Systems-15A NCAC 18E", and local septic regulations (if any). This report represents my professional opinion as a Licensed Soil Scientist and Authorized Onsite Wastewater Evaluator.

This report shall be used to file a Notice of Intent to Construction a wastewater system with the Local Health Department within one year of the date of this evaluation. Failure to file an NOI before then shall result in the AOWE Evaluation to become void.

Sincerely,

Hal Owen
Senior Licensed Soil Scientist
Authorized Onsite Wastewater Evaluator

CONTENTS

SPECIAL TERMS AND CONDITIONS

This evaluation includes a signed and sealed soil and site evaluation, specifications, plans, and reports for the site layout and construction of a proposed onsite wastewater system by an Authorized On-Site Wastewater Evaluator (AOWE) in accordance with G.S. § 130A-336.2. This evaluation was prepared based on information provided by the owner of the proposed system; to include the basis for design flow, proposed structure location(s), and property boundaries. Any false, inaccurate, or incomplete information provided by the owner may result in denial or revocation of applications, approvals, or permits.

This evaluation is not a permit to develop. The owner and subcontractors will need to abide by all state and local rules and regulations pertaining to planning, zoning, and land use development.

Notice of Intent to Construct – The proposed wastewater system is not "permitted" until the owner files an application with the Local Health Department (LHD) and provides a complete Notice of Intent (NOI) to Construct a wastewater system using an AOWE. The owner may apply for a building permit for the project upon submitting a complete NOI and the required fee.

On-Site Wastewater System Contractor – The AOWE shall assist the owner in the selection of an on-site wastewater system contractor who shall be under contractual obligation to the owner and have sufficient errors and omissions, liability, or other insurance for the system constructed.

Inspections, Construction Observations, and Reports – The AOWE shall make periodic visits to the site to observe the progress and quality of the construction. Upon determining that the system is properly installed and capable of being operated in accordance with the conditions of the permit, the AOWE will issue an Authorization to Operate (ATO) and include an inspection report and a written operation and management program. The owner shall provide a complete ATO package and fee to the LHD, who will issue the certificate of occupancy for the facility.

Operation and Management – The owner shall be responsible for continued adherence to the operations and management program established by the AOWE. This permit shall in no way be taken as a guarantee or implied warranty that the septic system will function satisfactorily for any given period of time.

Change in System Ownership. – An authorized wastewater system shall be transferrable to a new owner with the consent of the AOWE. The new owner and the AOWE shall enter a contract for the wastewater system.

Revocation – The AOWE permit is subject to revocation if the site plan, plat, or the intended use changes. This permit is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit.

Repair of Malfunctioning Systems. – The owner may apply for an Improvement Permit and a Construction Authorization from the LHD or obtain a NOI from an AOWE to repair a malfunctioning wastewater system.

PROPOSED USE

A new single-family residence will be built at the site. The home will not have a basement. The proposed single-family residence will contain three bedrooms and have a design wastewater flow of 360 gallons per day. The maximum occupancy of the home is 6 people.

WATER SUPPLY

Public water supplies will be utilized.

EXISTING SITE CONDITIONS

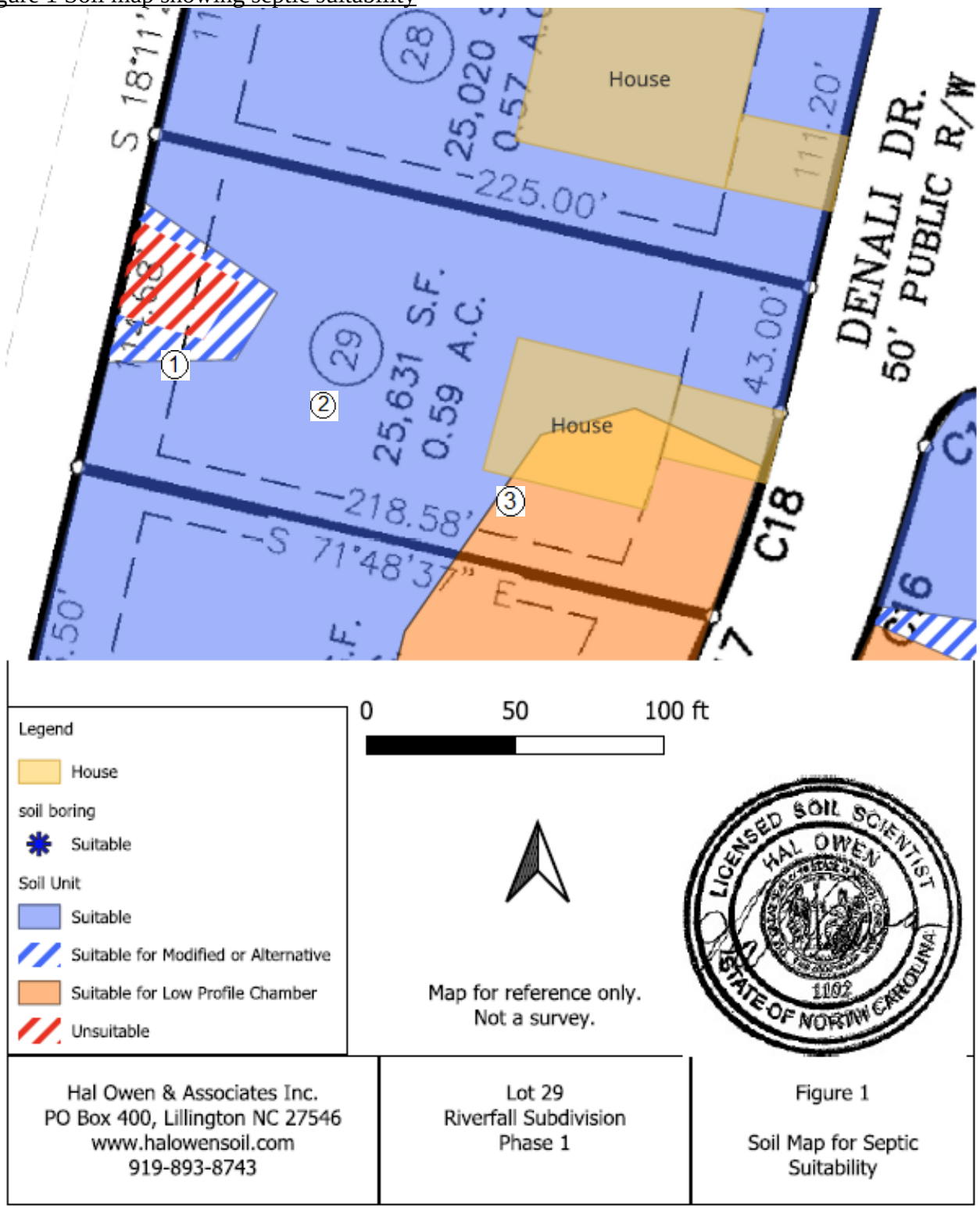
At the time of the investigation, the site had been cleared, lot corners were staked, and the building footprint was not marked. No existing wells, streams, or wetlands were observed within 50 feet of the proposed septic system and repair area.

SOIL AND SITE INVESTIGATION

The soils were evaluated under moist soil conditions through the advancing of auger borings. This evaluation included observations of topography and landscape position, soil morphology (texture, structure, clay mineralogy, organics), soil wetness, soil depth, and restrictive horizons. Descriptions of the soil borings located within the investigated portions of the site are provided in the attached Soil/Site Evaluation form.

Soils in the proposed system area were observed to rate as suitable for subsurface sewage waste disposal systems. (Figure 1). The subsoils were observed to be firm clays and extended to greater than 48 inches below ground surface. Evidence of a soil wetness condition was observed at 32 inches below surface or deeper. These soils appear adequate to support long-term acceptance rates of 0.275 gal/day/ft^2 for conventional drainlines.

Figure 1 Soil map showing septic suitability



Soil/Site Evaluation Form for On-Site Wastewater System

OWNER NAME:	Mattamy Homes, LLC	OWNER ADDRESS:	11000 Regency Parkway, Suite 110
PROPOSED FACILITY	Residential	PROPOSED DESIGN FLOW: 360	PROPERTY SIZE: 0.59
LOCATION OF SITE:	246 Denali Dr., Angier, NC 27501	PIN:	0682-18-9921.000
WASTEWATER TYPE:	Domestic	COUNTY:	Harnett
WATER SUPPLY:	Public Water	WATER SUPPLY SETBACK:	10
EVALUATION METHOD:	AUGER BORING [X]	PIT [ ]	CUT [ ]
EVALUATED BY:	Hal Owen, LSS 1102 and Steven Boor	DATE EVALUATED:	10/31/2023

	INITIAL SYSTEM	REPAIR SYSTEM
AVAILABLE SPACE	982 ft^2 trench bottom	655 ft^2 trench bottom
SYSTEM TYPE	Accepted (25% reduction) System	PPBPS, vertical
SITE LTAR	0.275 gpd/ft^2	0.275 gpd/ft^2
MAX TRENCH DEPTH	18 inches (measured on downhill side)	18 inches (measured on downhill side)

SITE CLASSIFICATION: Suitable OTHER FACTORS:

COMMENTS:

PROFILE 1

HORIZON DEPTH	COLOR	CONSISTENCE	TEXTURE	STRUCTURE	MINERALOGY	OTHER PROFILE FACTORS	
0-8	10YR 5/3	VFR	SL	GR	SEXP	LANDSCAPE POSITION	L
8-30	10YR 6/8	FR	SCL	SBK	SEXP	SOIL WETNESS DEPTH	32"
30-48	10YR 6/8	FI	C	SBK	SEXP	SOIL WETNESS COLOR	
						SOIL DEPTH	48"
						SAPROLITE CLASS	NA
						RESTRICTIVE HORIZON	NA
						SLOPE %	4
PROFILE CLASSIFICATION			Suitable	LTAR gpd/ft^2	0.275	SLOPE CORRECTION (IN)	1.4
COMMENT							

PROFILE 2

HORIZON DEPTH	COLOR	CONSISTENCE	TEXTURE	STRUCTURE	MINERALOGY	OTHER PROFILE FACTORS	
0-11	10YR 6/3	VFR	SL	GR	SEXP	LANDSCAPE POSITION	L
11-27	10YR 6/8	FI	SCL	SBK	SEXP	SOIL WETNESS DEPTH	33"
27-33	10YR 6/8	FI	C	SBK	SEXP	SOIL WETNESS COLOR	10YR 6/2
33-40	10YR 6/8	FI	C	SBK	SEXP	SOIL DEPTH	48"
40-48	10YR 7/2	FI	C	SBK	SEXP	SAPROLITE CLASS	NA
						RESTRICTIVE HORIZON	NA
						SLOPE %	4
PROFILE CLASSIFICATION			Suitable	LTAR gpd/ft^2	0.3	SLOPE CORRECTION (IN)	1.4
COMMENT							

LEGEND OF ABBREVIATIONS FOR SITE EVALUATION FORM

LANDSCAPE POSITION	**TEXTURE GROUP**	**TEXTURE CLASS**	**.1955 LTAR (gal/day/sqft)**
CC - Concave Slope	I	S - Sand	1.2-0.8
CV - Convex Slope		LS - Loamy Sand	
DS - Debris Slump			
D - Depression	II	SL - Sandy Loam	0.8 – 0.6
DW - Drainage Way		L - Loam	
FP - Flood Plain			
FS - Foot Slope	III	SCL - Sandy Clay Loam	0.6 – 0.3
H - Head Slope		CL - Clay Loam	
L - Linear Slope		SiL - Silt Loam	
N - Nose Slope		Si - Silt	
R - Ridge		SiCL - Silt Clay Loam	
S - Shoulder Slope			
T - Terrace	IV	SC - Sandy Clay	0.4 – 0.1
		C - Clay	
		SiC - Silty Clay	
		O - Organic	none

STRUCTURE	**MOIST CONSISTENCE**	**WET CONSISTENCE**
G - Single Grain	VFR - Very Friable	NS - Non Stick
M - Massive	FR - Friable	SS - Slightly Sticky
CR - Crumb	FI - Firm	MS - Moderately Stick
GR - Granular	VFI - Very Firm	VS - Very Sticky
SBK - Subangular Blocky	EFI - Extremely Firm	
ABK - Angular Blocky		NP - Non Plastic
PL - Platy	**MINERALOGY**	SP - Slightly Plastic
PR - Prismatic		MP - Moderately Plastic
	SEXP - Slightly Expansive	VP - Very Plastic
	EXP - Expansive	

MOTTLES		
f – few	1 - fine	F - Faint
c – common	2 - medium	D - Distinct
m – many	3 - coarse	P - Prominent

Give Horizon Depth in inches below natural soil surface and Fill Depth in inches above land surface.
Depth to Soil Wetness: inches below land surface to free water or to soil colors with chroma 2 or less.
Classification: S – Suitable U – Unsuitable

SEPTIC SYSTEM DESIGN

See section *Wastewater Treatment System Plans* and Figure 2 for a diagram of the septic system layout and design specifications.

A 1000 gallon (at minimum) septic tank and an approved septic effluent filter is required. A pump tank (1000 gallon at minimum) is required to lift effluent to the nitrification field. The pump tank may be eliminated if gravity distribution can be demonstrated.

The initial septic system is proposed as a pump driven system to 330 linear feet of Accepted Status drainlines utilizing a 25% reduction in total drainline length (Figure 2). A long-term application rate (LTAR) of 0.275 gal/day/ft^2 was used to design the nitrification field. A pressure manifold will be used to deliver effluent in parallel distribution to three unequal length drainlines. The drainlines shall be installed on contour with maximum trench bottom depths at 18 inches below surface (as measured on low side).

The repair septic system is proposed as a pump driven system to 220 linear feet of Vertical Permeable Panel Block system (Figure 2). A long-term application rate (LTAR) of 0.275 gal/day/ft^2 was used to design the nitrification field. A pressure manifold will be used to deliver effluent in parallel distribution to three unequal length drainlines. The drainlines shall be installed on contour with maximum trench bottom depths at 18 inches below surface (as measured on low side).

SEPTIC AREA PREPARATION

It is important that you do not disturb the septic areas during site construction. A staked line or protective fence should be placed around the system areas prior to construction to eliminate any potential damage to the soil or the layout of the system. Septic areas should not be used for staging construction materials or subjected to vehicular traffic. Do not cut, grade, fill, install utilities, or otherwise alter the designated septic areas.

Care should be taken when clearing vegetation from the septic area. Work should only occur when the soil is at the appropriate moisture content to limit the impact to the soil structure in the soil treatment area. Do not scrape the ground inside the drainfield. **Any clearing or preparation of the septic areas shall be done without removal, disturbance, or compaction of the soil.**

PERMIT CONDITIONS

Standard Conditions

The requirements of 15A NCAC 18E are incorporated by reference into this permit and shall be met.

System shall be installed in accordance with the attached *Wastewater Treatment System Plans*.

Any changes to the site plan or intended use must be approved by Hal Owen & Associates. Permit modification and resubmittal to the LHD may be necessary to ensure regulatory compliance.

Conformance to all regulatory setbacks shall be maintained. Local regulations (such as well or riparian buffer ordinances) may require more stringent setbacks.

Minimum soil cover of six inches shall be established over nitrification field. Soil cover above the original grade shall be placed at a uniform depth over the entire nitrification and shall extend laterally five feet beyond the nitrification trench. Site shall be graded to shed water away from field and a vegetative cover established to prevent erosion.

The nitrification field and repair area shall not be subject to vehicular traffic. Vehicular traffic can damage soils, pipes, and valve boxes. Do not use septic areas for parking.

Do not allow underground utilities, water lines, or sprinkler systems to be installed in the septic areas. Damage to the septic areas could result in the septic permit being revoked.

The wastewater system shall not be covered until inspected by Hal Owen & Associates and shall not be placed into use until an Authorization to Operate is issued.

Specific Conditions:

- To ensure a watertight joint, the inlet and outlet of all tanks shall be equipped with an approved pipe penetration boot.
- The septic and pump tanks must be watertight. The installer shall either provide documentation that the tank has been leak tested by the manufacturer or be prepared to run leak testing (hydrostatic or vacuum testing in the ready- to-use-state) at the site.
- No foundation drain.

WASTEWATER TREATMENT SYSTEM PLANS

for Lot 29 Ph 1 Riverfall SD

PROJECT INFORMATION

Wastewater System	New		.0403 Eng Low Flow	No
Wastewater Strength	Domestic			
Effluent Standard	DSE			
Water Supply	Public Water			
Facility Type	Residential			
Design Wastewater Flow	360	gpd	gal/unit	120
Basis for Flow	3	bedrooms	max occupancy	6
Basement	No		Fixtures in basement?	No
Crawl Space	No		Slab Foundation	Yes

PROPERTY INFORMATION

County	Harnett
Site Address	246 Denali Dr., Angier, NC 27501
S/D Name and Lot#	Lot 29 Ph 1 Riverfall SD
PIN	0682-18-9921.000
County PID	040682 0131 31
Size (Acre)	0.59

APPLICANT INFORMATION

Name	Mattamy Homes, LLC
Mailing Address	11000 Regency Parkway, Suite 110
	Cary, NC 27518
Telephone Number	919-625-9546
E-mail Address	Drew.Brody@mattamycorp.com

CONSULTANT INFORMATION

Company Name	Hal Owen & Associates, Inc.
Mailing Address	PO Box 400, Lillington, NC 27546
Telephone Number	910-893-8743 Fax: 910-893-3594
E-mail Address	hal@halowensoil.com
Licensed Soil Scientist	Hal Owen, LSS #1102 and AOWE# 10036E
System Designer	Krissina Newcomb

Septic System Design Specifications

Proposed Design Daily Flow	360	gpd	Drainfield Meeets Requirements:	
Septic Tank Size (minimum)	1000	gallons	.0508 Available Space	Yes
Pump Tank Size (minimum)	1000	gallons, if required	.0601 Setbacks	Yes

Initial System *See Detailed Design Parameters

System Type	IIIbg –Pump to Other non-conventional systems				
Pump Required	Yes	12.1	ft TDH at	35.1	GPM
Trenches:	Accepted (25% reduction) System				
Design LTAR	0.275	gal/day/ft^2	Saprolite System	No	
Total Trench/ Bed Length	330	feet	Fill System	No	
Trench Spacing	9	ft on center			
Usable soil depth to LC	32	inches	Soil Cover	6	inches
Maximum Trench Depth	18	inches, measured on downhill side of trench			
Artificial Drainage Required	No				

Repair System

System Type:	IIIbg –Pump to Other non-conventional systems			
Trenches:	PPBPS, vertical			
Design LTAR	0.275	gal/day/ft^2	Saprolite System	No
Total Trench/ Bed Length	220	feet	Fill System	No
Trench Spacing	8	ft on center		
Usable soil depth to LC	32	inches		
Maximum Trench Depth of	18	inches, measured on downhill side of trench		
Pump Required	Yes			

Potential Drainlines flagged at site on 9-ft centers.

Line #	Color	Relative Elevation (ft)	Drainline Length(ft)	Field Length(ft)
1	B	106.30	69	70
2	R	106.11	100	109
3	W	105.96	115	122
4	Y	105.64	115	115
5	B	105.37	104	114
6	R	105.00	30	35
7	W	104.45	17	19
Septic Tank:		105.00		
Pump Tank:		105.37		
Reference Elev:		**100.00**		

Notes:

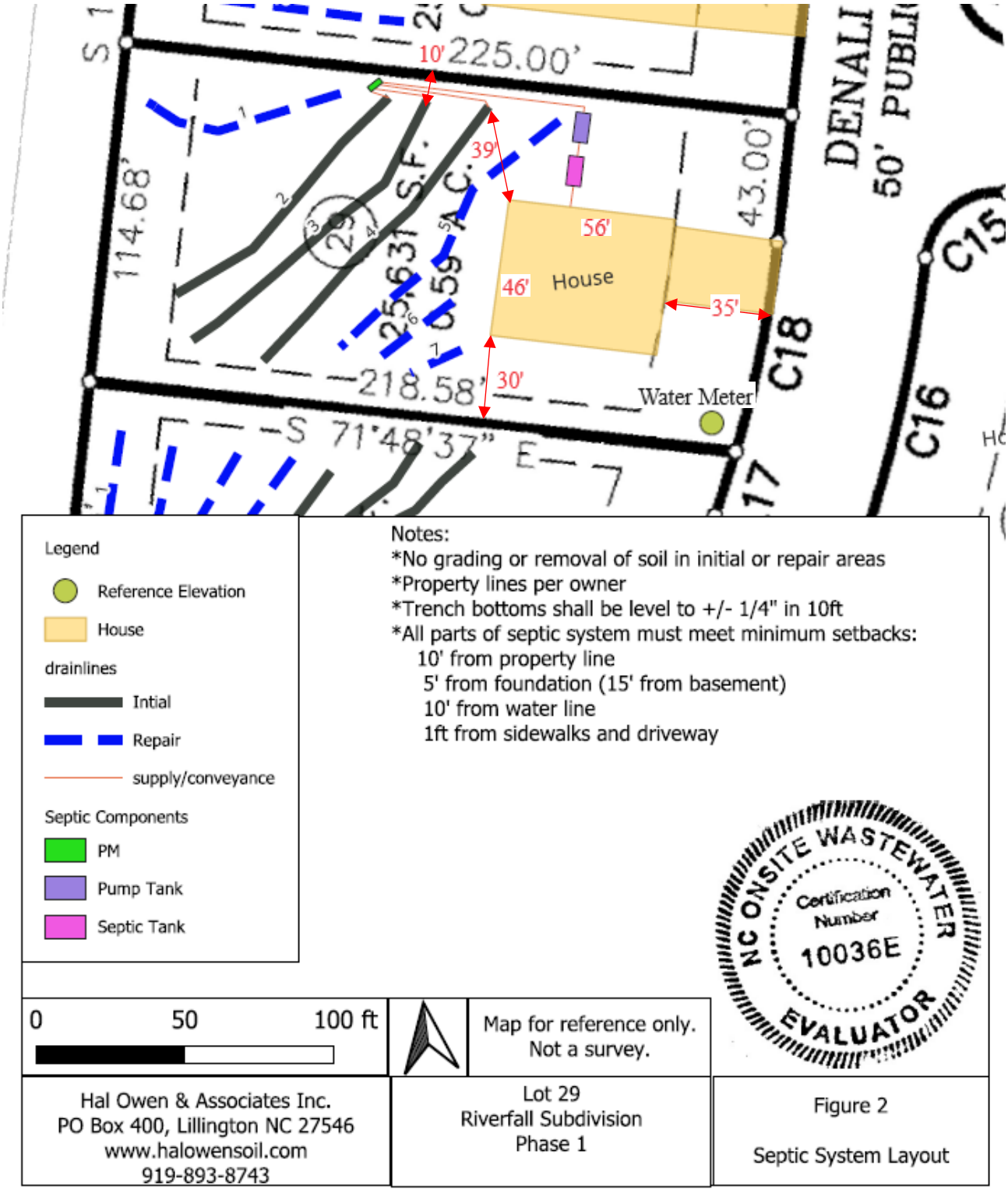
*No grading or removal of soil in initial or repair areas

*Property lines per owner

*Trench bottoms shall be level to +/- 1/4" in 10ft

*All parts of septic system must meet minimum setbacks

Figure 2 Septic System Layout



Initial System Specifications

Pressure Manifold Design Criteria

DESIGN DAILY FLOW 360 gallons/day **SOIL LTAR:** 0.28 gpd/ft²
TANKS (min) Septic Tank: 1000 gallons Pump Tank: 1000 gallons

SUPPLY LINE Length: 70 ft Diameter: 2 " SCH 40 PVC
Minimum flow (gpm) to maintain 2fps scour velocity: 20.9 gpm
Supply Pipe Volume 12 gallons

TRENCHES Drainline Type: Accepted (25% reduction) System
Maximum Trench Depth of 18 inches, measured on low side of trench
Trench width: 3 feet Effective Trench Width: 4 ft
Absorption Area: 982 ft² Minimum Linear Length: 327 ft

MANIFOLD Length (ft): 3 Diameter: 4" sch 80 pvc Elevation: 107.11
Taps 3 Tap Configuration: 6in. spacing, 1 side of manifold

TAP CHART

Line	Color	Relative Elevation	Length(ft)	Tap Size/ Schedule	flow/tap gpm	gpd/ft	LTAR (gpd/ft²)
2	R	106.11	100	3/4"sch 80	10.10	1.036	0.345
3	W	105.96	115	3/4"sch 40	12.50	1.115	0.372
4	Y	105.64	115	3/4"sch 40	12.50	1.115	0.372
	Total Drainline:		330	Total Flow:	35.10		

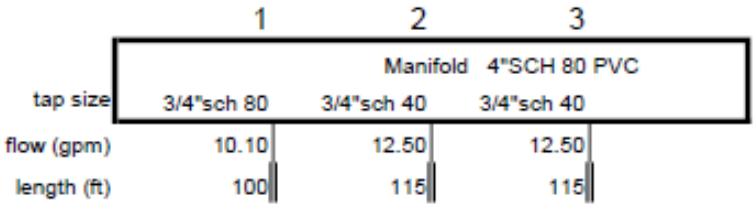
Target LTAR:* 0.37
LTAR + 5%: 0.385

PUMP CALCULATIONS
Dose Volume: 161.62 gallons, with Pipe Volume at 75 % *65.3gal/100ft pipe
Dose Pump Run Time (min): 4.60 Daily Pump Run Time (min): 10.26
Drawdown (in.): 162 gallons ÷ 20.25 gal/ inch = 7.98 inches
Pump Tank Elevation (ft): 105.37 Pump Elevation (ft): 100.37
Friction Head: 3.33 *Hazen Williams Formula (use supply line length+70' for fittings in pump tank)
Elevation Head: 6.7 Design Head: 2.0 Total Head: 12.07 ft
Pump to Deliver: **35.1** gpm @ **12.1** ft head

NEMA 4X Simplex Control Panel with elapsed time meter, event counter, audible and visible alarm (w/ silence button), hand-off-automatic (HOA) switch, pump run light, and pump on separate circuits is requirec Control panel bottom shall be mounted a minimum of 24 in. above finished grade within 50 ft of pump tank. A septic tank filter is required. Floats to be determined by type of pump tank used.

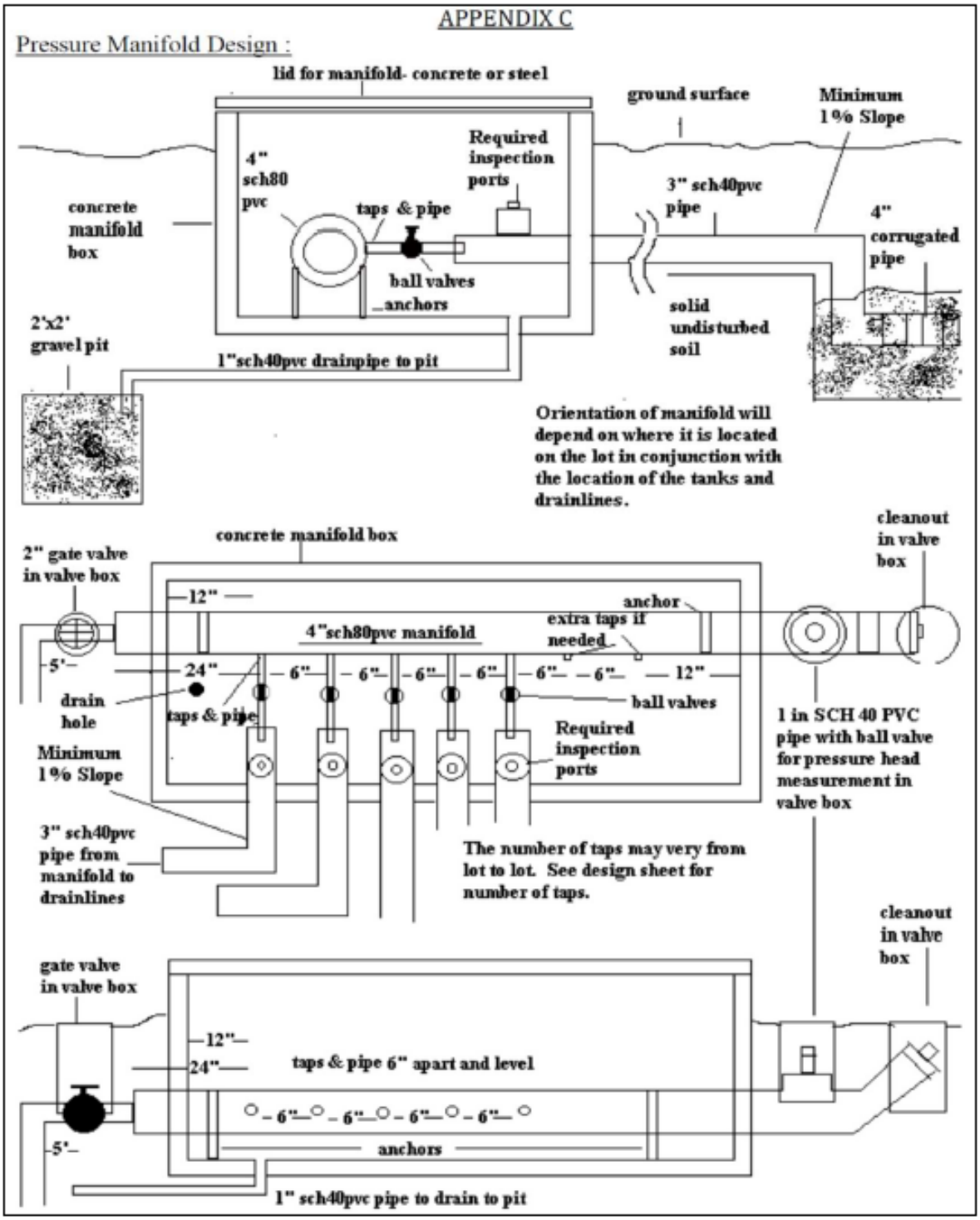
Possible Septic Tank: Brantley 1000 STB-499 *Possible Septic Filter:*
Possible Pump Tank: Brantley 1000_PT-237 *Vol(gal):* 1000 *GPI:* 20.25
Possible Pump: Ashland EPF30 (3/10HP) *pump height (in) =* 13.6
Possible Control Panel:

Pressure Manifold Diagram

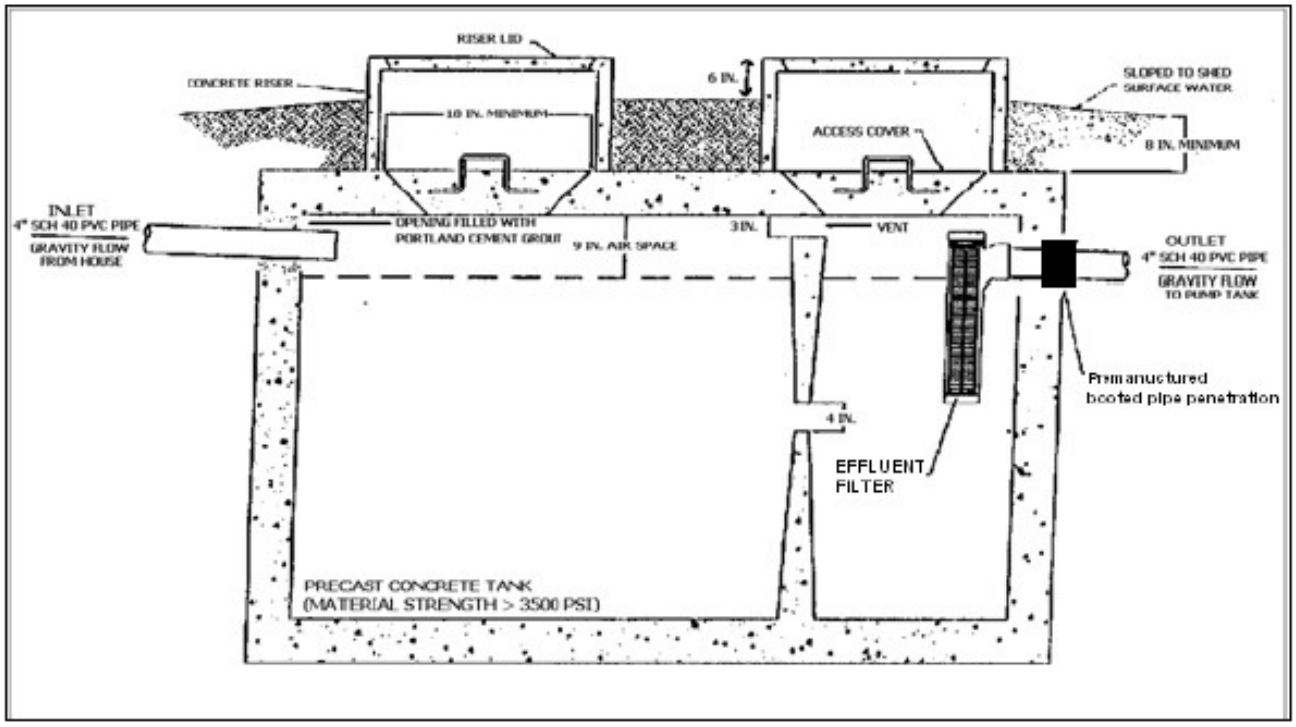


APPENDIX C

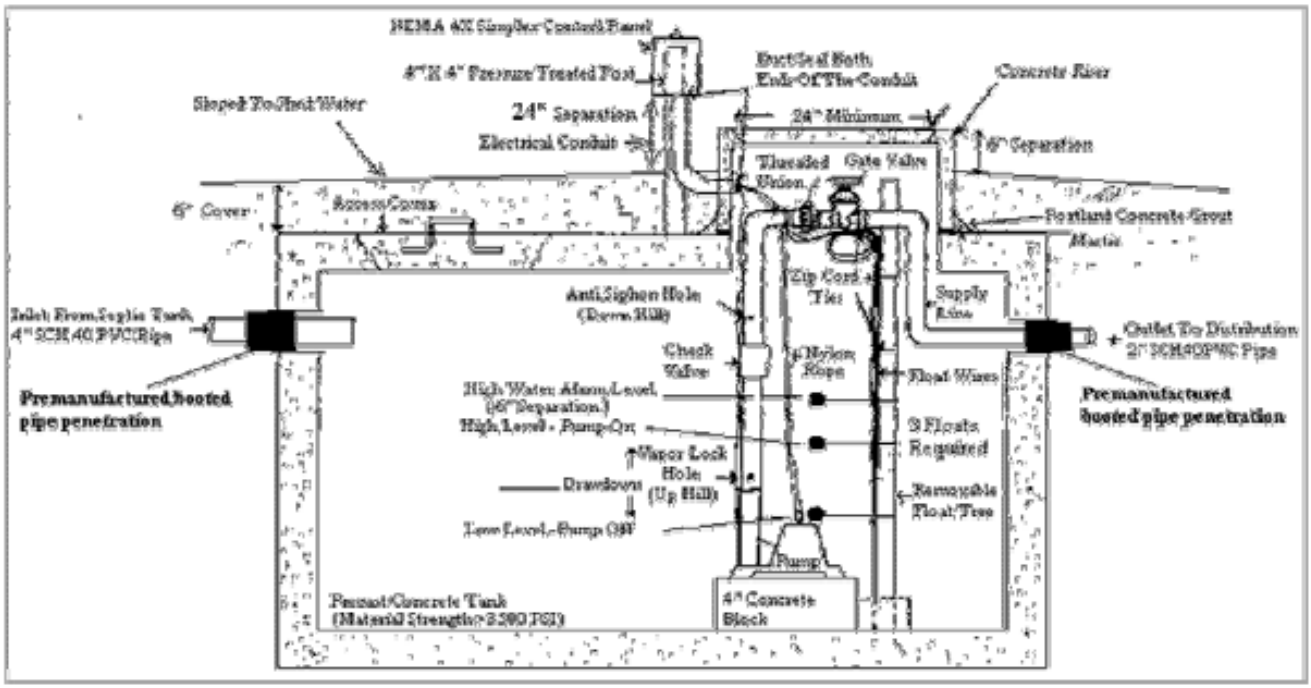
Pressure Manifold Design :



Typical Septic Tank **1000 GALLON SEPTIC TANK, minimum**



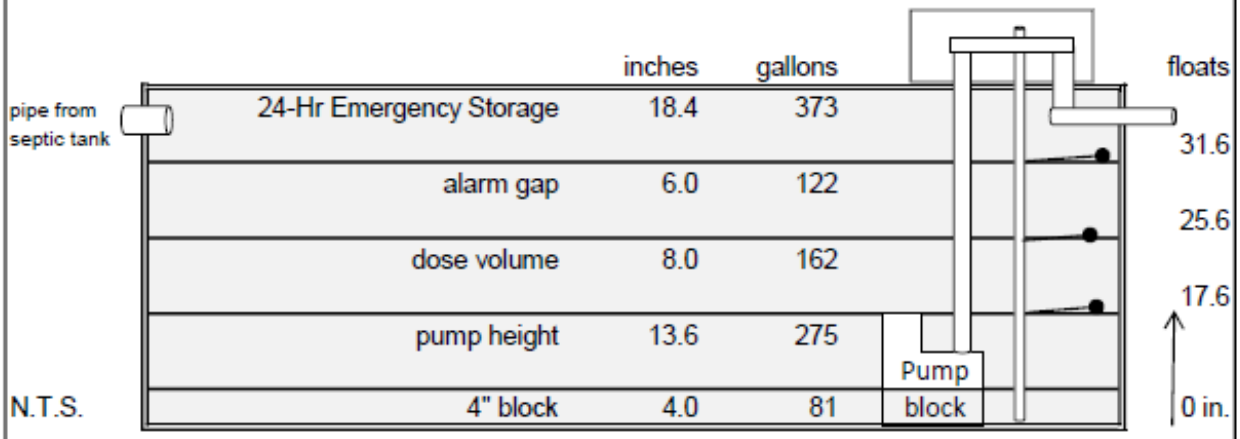
Typical Pump Tank **1000 GALLON PUMP TANK, minimum**



Pump Tank Calculations:

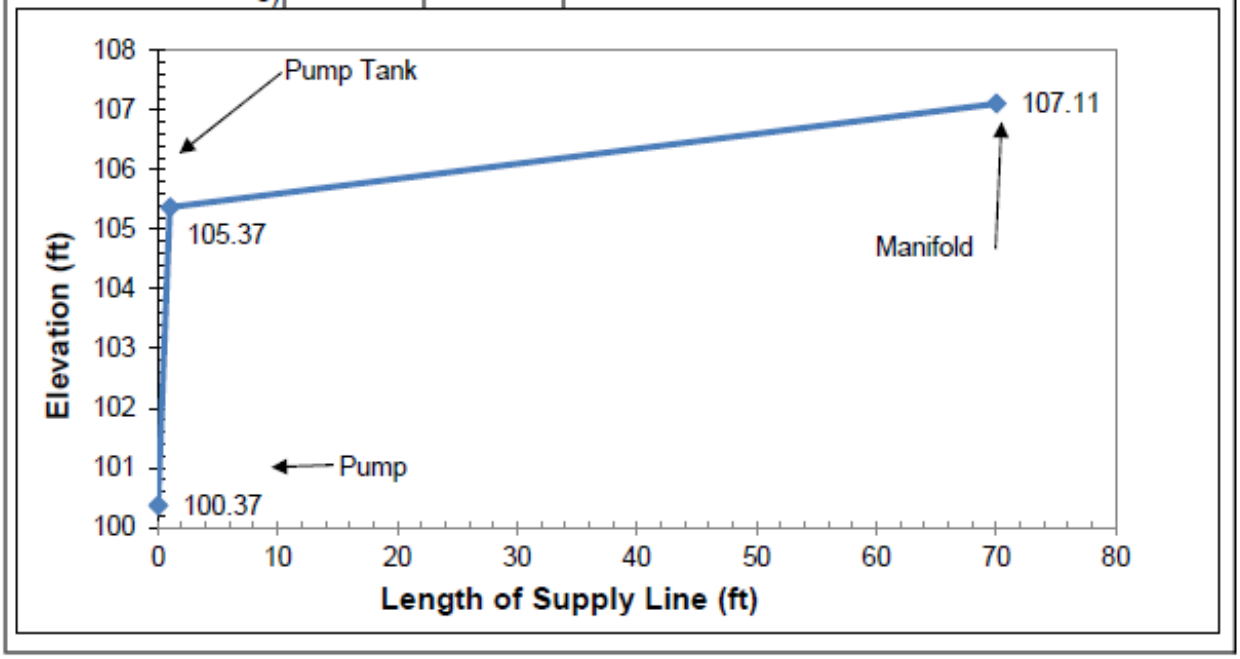
Possible pump tank: Brantley 1000_PT-237
tank GPI (gal/in): 20.25 calculated
tank volume (gal): 1000 per manufacturer
tank height (in): 50.0 *per manufacturer*

Possible Pump: Ashland EPF30 (0.3HP)
height: 13.6 in
minimum emergency storage: 360 gal



Supply Line Profile:

	Distance	Elevation
Pump	0	100.37
pump tank	1	105.37
Pressure manifold	70	107.11
4)		
5)		



Repair System Specifications

DESIGN DAILY FLOW 360 gallons/day **SOIL LTAR:** 0.28 gpd/ft²

TANKS (minimum) Septic Tank 1000 gallons Pump Tank 1000 gallons

SUPPLY LINE Length (ft): 85 Diameter: 2 " sch 40 pvc

Min total flow (gpm) to maintain 2 fps scour velocity = 20.89

Supply Pipe Volume 14.8 gallons

TRENCHES Drainline Type: PPBPS, vertical

Maximum Trench Depth of 18 inches, measured on low side of trench

Trench width: 2 feet Effective Trench Width: 6 ft

Absorption Area: 436 ft² Minimum Linear Length: 218 ft

÷ 4.33 ft per panel : 50 panels

PRESSURE MANIFOLD

Taps 3 Tap Configuration: 6in. spacing, 1 side of manifold

Length (ft): 3 Diameter: 4" sch 80 pvc Elevation: 107.3

TAP CHART

Tap #	Line #	Color	Elevation (ft)	Drainline Length(ft)	Number of Panels	Tap Size/ Schedule	Flow/tap (gpm)	LTAR (gpd/ft²)
1	1	B	106.30	69	16	1/2"sch 40	7.11	0.736
2	5	B	105.37	104	24	3/4"sch 40	12.50	0.863
3	6	R	105.00	30	7	1/2"sch 80	5.48	0.825
	7	W	104.45	17 (47)	4			
			Totals:	221	51	Total Flow:	25.09	

Target LTAR*: 0.83

LTAR + 5%: 0.866

Pump Calculations:

Number of Panels: 51

Dose Volume: 183.6 gallons # of panels * 3.6 gallons/ panel

Dose Pump Run Time: 7.32 minutes Dose volume/total flow

Daily Pump Run Time: 14.35 minutes Daily Flow/total flow

Drawdown (in.): 184 gallons ÷ 20.25 gal/ inch = 9.07 inches

Pump Tank Elevation (ft): 105.37 Pump Elevation (ft): 100.37

Friction Head: 1.98 *Hazen Williams Formula (use supply line length+70' for fittings in pump tank)

Elevation Head: 6.93 Design Head: 2.0 Total Head: 10.91 feet

Pump to Deliver: **25.09** gpm @ **10.91** ft head

NEMA 4X Simplex Control Panel with elapsed time meter, event counter, audible and visible alarm (w/ silence button), hand-off-automatic (HOA) switch, pump run light, and pump on separate circuits is required. Control panel bottom shall be mounted a minimum of 24 in. above finished grade within 50 ft of pump tank. A septic tank filter is required. Floats to be determined by type of pump tank used.

Possible Septic Tank: Brantley 1000 STB-499 *Septic Filter:*

Possible Pump Tank: Brantley 1000_PT-237 *Vol(gal):* 1000 *GPI:* 20.25

Possible Pump: Ashland EPF30 (3/10HP) *pump height (in) =* 13.6

Possible Control Panel: