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

__x__ New ____ Expansion ____Repair ____ Relocation ____Relocation of Repair Area

Owner or Legal Representative Information:
Name: BVA Builders Inc.
Mailing address: 1300 Benson Rd. Ste 110 City: Garner State: NC Zip: 27529
Phone: 919-779-1890 Email: vford@vfgreality.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: 0 Rainbow Dr. , Dunn
Tax parcel identification number or subdivision lot, block number of property: PIN:1506-18-7356
Lots 15&16 Hannah Heights Subdivision County: Harnett

System Information:
Wastewater System Type: IIIbg (Pump to Accepted Status 25% reduction)
Daily Design Flow: 360 gpd
Saprolite System: _____Yes x____No Subsurface Operator Required: _____ Yes x____No
Water Supply Type: ____Private Well x___Public Water Supply ____ Spring _____Other: _____

Facility Type:
x___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 22 day of November, 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 22 day of November, 2029.

Signature of Authorized Onsite Wastewater Evaluator: Hal Owen

Signature of Owner or Legal Representative: _____

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: TOW

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 09/16/2024

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 INSURANCE SERVICE CTR -LILLING LILLINGTON BRANCH OFFICE PO Box 1565 LILLINGTON, NC 27546 DANIEL L. BABB 910-893-5707	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
INSURED HAL OWEN & ASSOCIATES, INC. PO BOX 400 LILLINGTON, NC 27546	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : STARSTONE NATIONAL 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	01/27/2024	01/27/2025	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

BVA BUILDERS
1300 BENSON RD STE 110
GARNER, NC 27529

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

Taylor Wallace

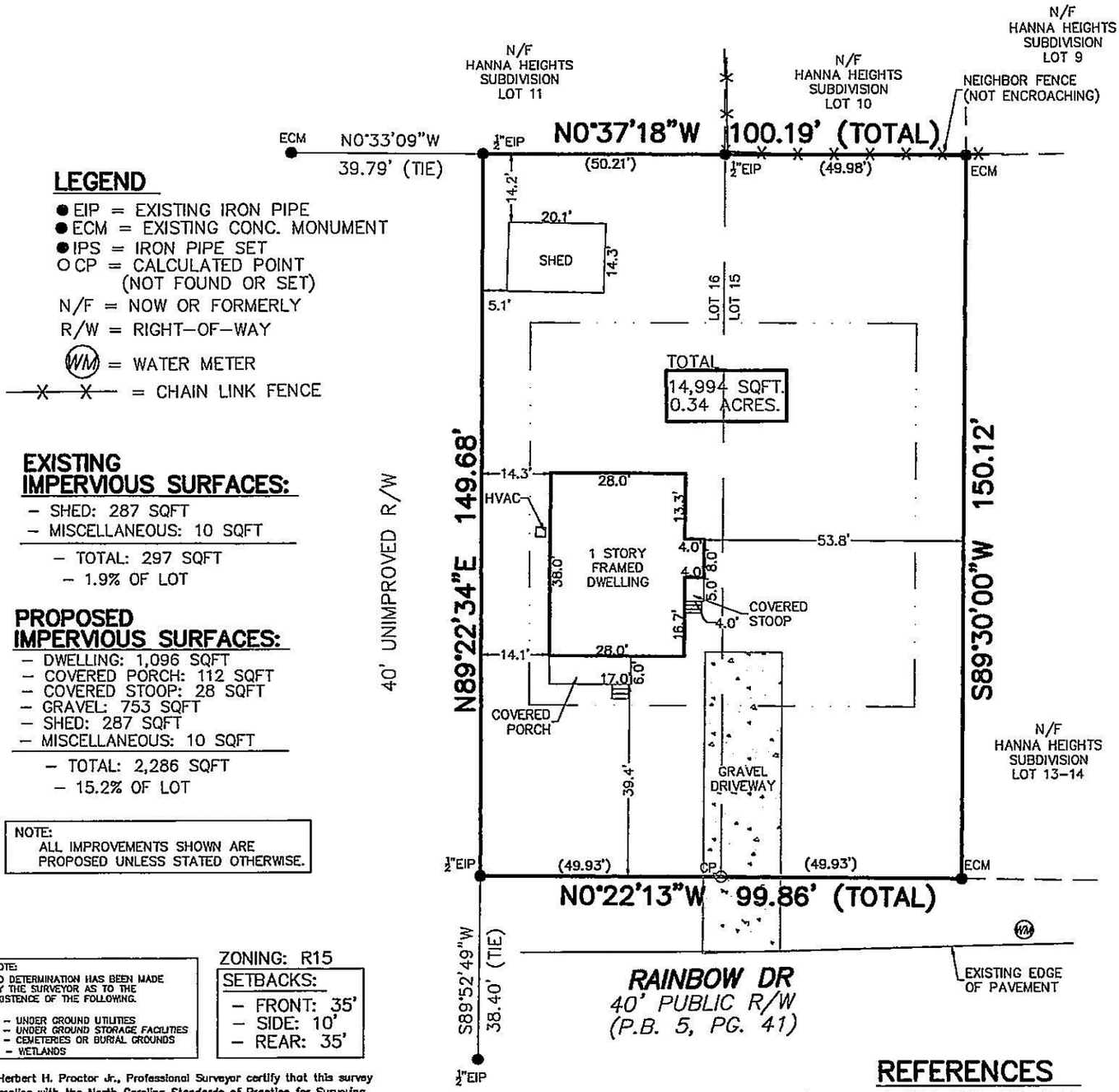
AS-BUILT/PLOT PLAN SURVEY FOR: WAYLON WARREN

HANNA HEIGHTS SUBDIVISION, LOTS 15-16
DEED BOOK 690, PAGE 676
PIN: 1506-18-7356
DUKE TOWNSHIP
HARNETT COUNTY, NORTH CAROLINA
ADDRESS: 0 RAINBOW DR.

NOTES
1. AREA BY COORDINATE CALCULATION.
2. PROPERTY IS SUBJECT TO ALL EASEMENTS AND RIGHT-OF-WAYS OF RECORD PRIOR TO THE DATE OF THIS SURVEY.
3. NO GRID MONUMENTS FOUND WITHIN 2000' OF PROPERTY.
4. SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE SEARCH. PROPERTY IS SUBJECT TO ALL FACTS DISCLOSED BY A FULL AND ACCURATE TITLE REPORT.

(P.B. 5, PG. 41)

THIS PROPERTY IS NOT LOCATED IN A F.E.M.A. 100 YEAR FLOOD HAZARD AREA. REFERENCE: F.E.M.A. COMMUNITY PANEL NO. 3720150600J
EFFECTIVE DATE: 10/3/2006



LEGEND

- ● EIP = EXISTING IRON PIPE
- ● ECM = EXISTING CONC. MONUMENT
- ● IPS = IRON PIPE SET
- O CP = CALCULATED POINT (NOT FOUND OR SET)
- N/F = NOW OR FORMERLY
- R/W = RIGHT-OF-WAY
- WM = WATER METER
- -X-X- = CHAIN LINK FENCE

EXISTING IMPERVIOUS SURFACES:

- SHED: 287 SQFT
- MISCELLANEOUS: 10 SQFT
- TOTAL: 297 SQFT
- 1.9% OF LOT

PROPOSED IMPERVIOUS SURFACES:

- DWELLING: 1,096 SQFT
- COVERED PORCH: 112 SQFT
- COVERED STOOP: 28 SQFT
- GRAVEL: 753 SQFT
- SHED: 287 SQFT
- MISCELLANEOUS: 10 SQFT
- TOTAL: 2,286 SQFT
- 15.2% OF LOT

NOTE:
ALL IMPROVEMENTS SHOWN ARE PROPOSED UNLESS STATED OTHERWISE.

NOTE:
NO DETERMINATION HAS BEEN MADE BY THE SURVEYOR AS TO THE EXISTENCE OF THE FOLLOWING.
- UNDER GROUND UTILITIES
- UNDER GROUND STORAGE FACILITIES
- CEMETERIES OR BURIAL GROUNDS
- WETLANDS

ZONING: R15
SETBACKS:
- FRONT: 35'
- SIDE: 10'
- REAR: 35'

I, Herbert H. Proctor Jr., Professional Surveyor certify that this survey complies with the North Carolina Standards of Practice for Surveying Section 1600; that this is a class A survey, meeting the criteria of precision greater than 1:10,000, that conventional field procedure with D.B. 690, Page 676 was utilized; that all units are U.S. Survey Feet unless otherwise stated; that all distances are horizontal ground distances unless otherwise stated. Any easements, gaps, overlaps or encroachments are shown on this survey; that areas were computed by coordinate method. This survey is not to be recorded without written permission from the surveyor. This map remains the property of the surveyor and is to be used only for the conveyance of this lot by the person (s) shown on this map.

Witness my original signature, registration number and seal this 15th day of August 2024 A.D.
Surveyor: Herbert H. Proctor Jr. License # L-3621

NORTH CAROLINA PROFESSIONAL SEAL L-3621 LAND SURVEYOR HERBERT H. PROCTOR JR.

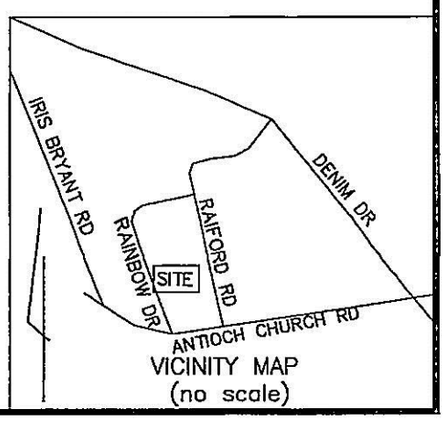
REFERENCES

1. D.B. 690, PG. 676
2. ALL DEEDS AND MAPS WITH ADJOINERS
3. HARNETT COUNTY GIS.
4. P.B. 5, PG. 41

STEWART-PROCTOR
ENGINEERING and SURVEYING
319 CHAPANOKE ROAD, SUITE 106
RALEIGH, NC 27603 (LICENSE # P-0148)
TEL. 919 779-1855 FAX 919 779-1661

DATE 8/15/24 | DRAWING
SCALE 1"=30' | RAINBOW DR

GRAPHIC SCALE
30 0 15 30
(IN FEET)
1 inch = 30 ft.



VICINITY MAP
(no scale)

AOWE EVALUATION

HAL OWEN ASSOCIATES
www.halowensoil.com

 # HOA-AOWE-2409-06

Issue date 11/22/2024
Expiration 11/22/2029

APPLICANT INFORMATION

Name	BVA Builders Inc.		
Mailing Address	1300 Benson Road, Ste. 110, Garner, NC 27529		
E-mail Address	vford@vfgrealty.com	Telephone Number	919-779-1890

PROPERTY IDENTIFIERS

County	Harnett	PIN	1506-18-7356
Size (Acre)	.34 ac	County PID	06150601 0050
Site Address	0 Rainbow Drive, Dunn, NC 28334		
S/D Name and Lot#	Hannah Heights Lot 15&16		

PROJECT INFORMATION

Wastewater System	New		.0403 Eng Low Flow	No
Wastewater Strength	Domestic		Effluent Standard	DSE
Facility Type	Residential		Water Supply	Public Water
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

CONSULTANT INFORMATION

Company Name	Hal Owen & Associates, Inc.		
Mailing Address	PO Box 400, Lillington, NC 27546		
E-mail Address	hal@halowensoil.com	Telephone Number	910-893-8743
Licensed Soil Scientist	Britt Wilson, LSS#1351	AOWE	Hal Owen, #10036E

A soil and site evaluation has been conducted for the referenced property for the purpose of permitting a subsurface wastewater system. This evaluation was prepared based on information provided by the applicant to include the basis for design flow, proposed structure location(s), and property boundaries. Any false, inaccurate, or incomplete information provided by the applicant, owner, or legal representatives may result in denial or revocation of applications, approvals, or permits.

This AOWE Evaluation is being submitted pursuant to and meets the requirements of G.S.130A-336.2. This evaluation includes a 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). The 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.

Britt Wilson

Hal Owen

LICENSED SOIL SCIENTIST JOSEPH BRITT WILSON 1351 STATE OF NORTH CAROLINA

NC ONSITE WASTEWATER Certification Number 10036E EVALUATOR

LICENSED SOIL SCIENTIST HAL OWEN 1102 STATE OF NORTH CAROLINA

AOWE EVALUATION

HAL OWEN ASSOCIATES
www.halowensoil.com

WASTEWATER 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

System Type	IIIbg –Pump to Other non-conventional systems			
Pump Required	Yes	10 ft TDH at	21	GPM
Trenches:	Quick4 standard chamber (25% reduction)			
Design LTAR	0.35	gal/day/ft^2	Saprolite System	No
Total Trench/ Bed Length	258	feet	Fill System	No
Trench Spacing	9	ft on center		
Usable soil depth to LC	>48"	inches		
Maximum Trench Depth	24	inches, measured on downhill side of trench		
Minimum Soil Cover	6	inches		
Artificial Drainage Required	No			

Repair System

System Type:	IIIbg –Pump to Other non-conventional systems			
Pump Required	Yes			
Trenches:	PPBPS, horizontal			
Design LTAR	0.35	gal/day/ft^2	Saprolite System	No
Total Trench/ Bed Length	172	feet	Fill System	No
Trench Spacing	9	ft on center		
Usable soil depth to LC	>48"	inches		
Maximum Trench Depth of	24	inches, measured on downhill side of trench		
Minimum Soil Cover	6	inches		

Potential Drainlines flagged at site on 9-ft centers.
Drainlines 1-4 are off countour
Drainlines 5 and 6 are on countour

Line #	Color	Relative Elevation East	Relative Elevation West	Drainline Length(ft)	Field (ft)	
1	R	100.77	100.28	86	95	Initial
2	W	100.64	100.2	86	95	Initial
3	Y	100.55	100.15	86	95	Initial
4	B	100.58	100.11	90	95	Repair
		On Countour				Repair
5	R	100.71		41	53	Repair
6	Y	100.51		41	52	Repair
Septic Tank:		100.21				
Pump Tank:		100.21				
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

AOWE EVALUATION

HAL OWEN ASSOCIATES
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PERMIT 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 System Design Specificaitons.
See attached SYSTEM LAYOUT for wastewater system design and location.

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 than specified in the septic regulations.

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

The dispersal 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 REQUIREMENTS

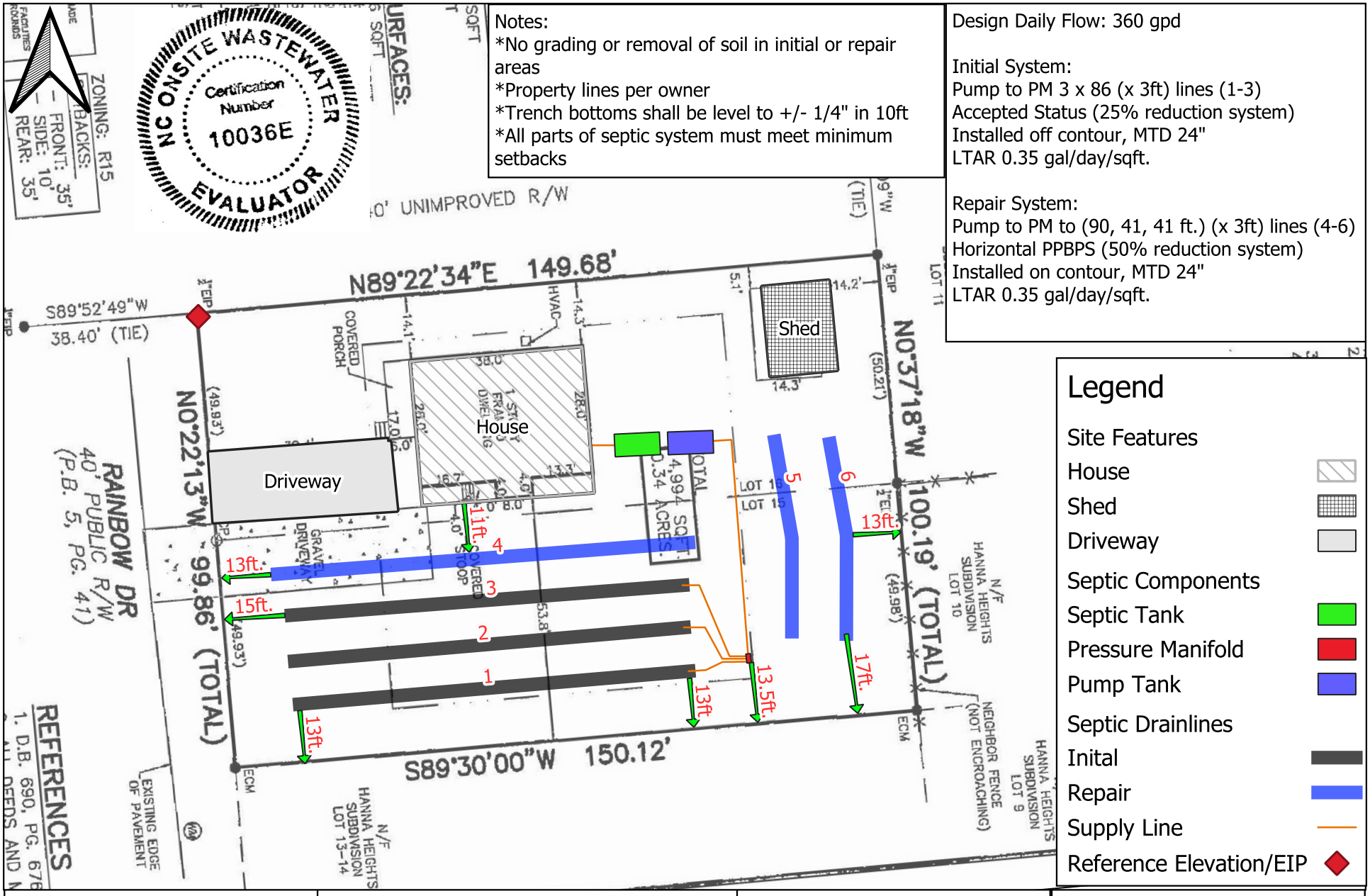
A pre-construction conference with the septic contractor is required prior to installation.
Call Hal Owen & Associates at least five days in advance to schedule 910-893-8743

The inlet and outlet of all tanks shall be equipped with an approved pipe penetration boot.

The pump tank may be eliminated if gravity distribution can be demonstrated.

Drainlines shall be installed no more than 6" off contour

Driveway shall be moved to the north approxamently 15ft. to avoid septic area


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
Design Daily Flow: 360 gpd
Initial System:
Pump to PM 3 x 86 (x 3ft) lines (1-3)
Accepted Status (25% reduction system)
Installed off contour, MTD 24"
LTAR 0.35 gal/day/sqft.
Repair System:
Pump to PM to (90, 41, 41 ft.) (x 3ft) lines (4-6)
Horizontal PPBPS (50% reduction system)
Installed on contour, MTD 24"
LTAR 0.35 gal/day/sqft.
ON SITE WASTEWATER EVALUATOR
Certification Number 10036E
ZONING: R15
SETBACKS:
FRONT: 35'
SIDE: 10'
REAR: 35'
N89°22'34"E 149.68'
S89°52'49"W
38.40' (TIE)
N0°22'13"W 99.86' (TOTAL)
N0°37'18"W 100.19' (TOTAL)
S89°30'00"W 150.12'
House
Shed
Driveway
COVERED PORCH
HVAC
GRAVEL DRIVEWAY
COVERED STOOP
4,994 SQ. FT. 0.34 ACRES
RAINBOW DR
40' PUBLIC R/W
(P.B. 5, PG. 41)
REFERENCES
1. D.B. 690, PG. 676
EXISTING EDGE OF PAVEMENT
N/F HANNA HEIGHTS SUBDIVISION LOT 13-14
N/F HANNA HEIGHTS SUBDIVISION LOT 10
N/F HANNA HEIGHTS SUBDIVISION LOT 9
NEIGHBOR FENCE (NOT ENCROACHING)
LOT 11
LOT 15
1
2
3
4
5
6
11ft.
13ft.
15ft.
13.5ft.
17ft.
Legend
Site Features
House
Shed
Driveway
Septic Components
Septic Tank
Pressure Manifold
Pump Tank
Septic Drainlines
Inital
Repair
Supply Line
Reference Elevation/EIP
0
30
60 ft
For reference only. Not a survey.
Hal Owen & Associates Inc.
PO Box 400, Lillington, NC 27546
www.halowensoil.com
919-893-8743
0 Rainbow Drive
Harnett County
24 Septiember 2024
Septic Map
BVA Builders

AOWE EVALUATION

HAL OWEN ASSOCIATES
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INITIAL WASTEWATER SYSTEM

Pressure Manifold Design Criteria

DESIGN DAILY FLOW 360 gallons/day **SOIL LTAR:** 0.35 gpd/ft^2

TANKS (min) Septic Tank: 1000 gallons Pump Tank: 1000 gallons

SUPPLY LINE Length: 52 ft Diameter: 2 " SCH 40 PVC

Minimum flow (gpm) to maintain 2fps scour velocity: 20.9 gpm

TRENCHES Drainline Type: Quick4 standard chamber (25% reduction)

Maximum Trench Depth of 24 inches, measured on low side of trench

Trench width: 3 feet Effective Trench Width: 4 ft

Absorption Area: 771 ft^2 Minimum Linear Length: 257 ft

MANIFOLD Length (ft): 3 Diameter: 4" sch 80 pvc Elevation: 101.77

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/ft^2)
1	R	100.77	86	1/2"sch 40	7.11	1.395	0.465
2	W	100.64	86	1/2"sch 40	7.11	1.395	0.465
3	Y	100.55	86	1/2"sch 40	7.11	1.395	0.465
	Total Drainline:		258	Total Flow:	21.33		

Target LTAR:* 0.47

LTAR + 5%: 0.490

PUMP CALCULATIONS

Dose Volume: 126.36 gallons, with Pipe Volume at 75 % *65.3gal/100ft pipe

Dose Pump Run Time (min): 5.92 Daily Pump Run Time (min): 16.88

Drawdown (in.): 126 gallons ÷ 20.25 gal/ inch = 6.24 inches

Pump Tank Elevation (ft): 100.21 Pump Elevation (ft): 95.21

Friction Head: 1.15 *Hazen Williams Formula (use supply line length+70' for fittings in pump tank)

Elevation Head: 6.6

Design Head: 2.0 Total Dynamic Head (TDH): 9.71 ft

Pump to Deliver: **9.7** ft TDH @ **21.3** gpm

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: *pump height (in) =* 14

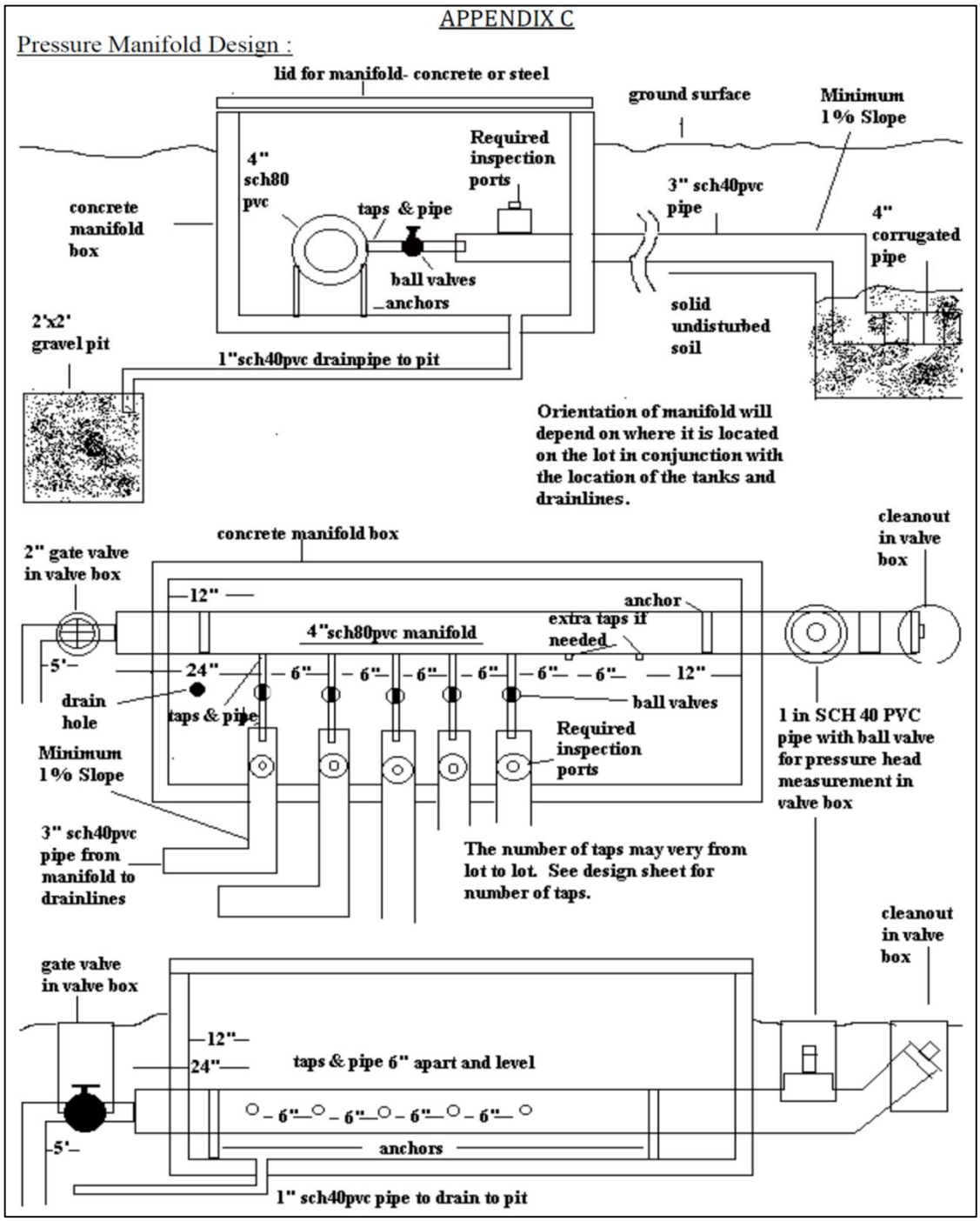
Possible Control Panel:

INITIAL WASTEWATER SYSTEM

Pressure Manifold Diagram

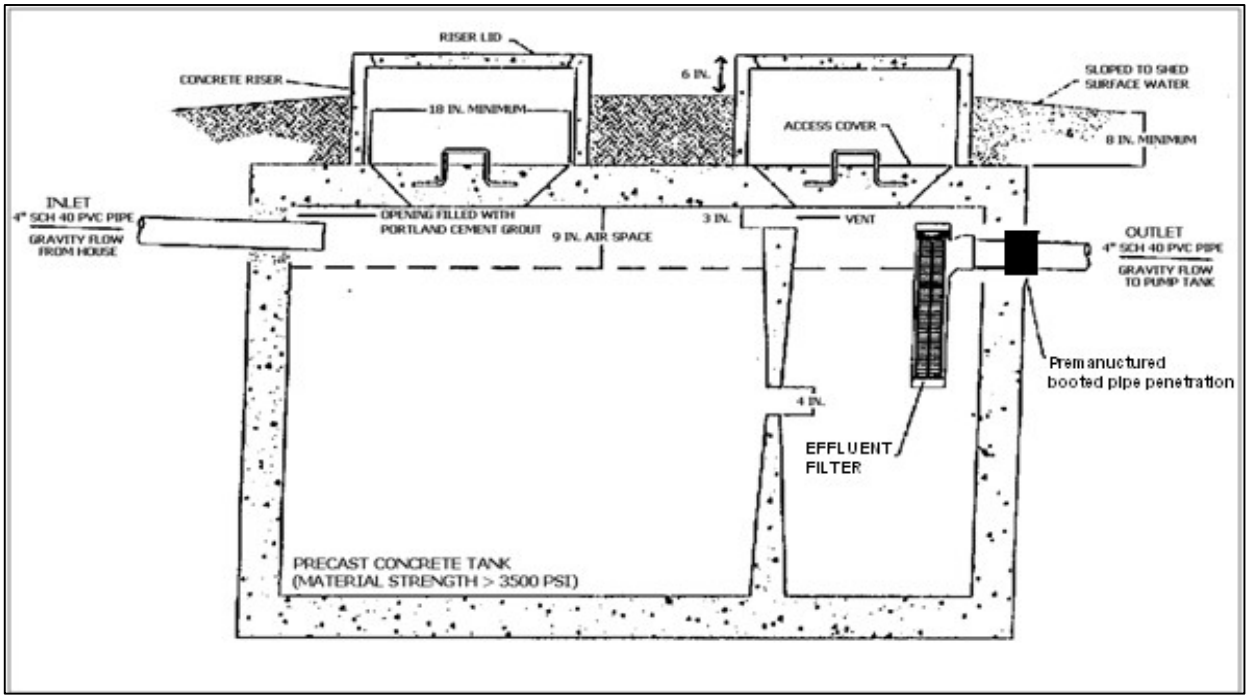
Tap #	1	2	3
	Manifold 4"SCH 80 PVC		
tap size	1/2"sch 40	1/2"sch 40	1/2"sch 40
flow (gpm)	7.11	7.11	7.11
length (ft)	86	86	86

Typical

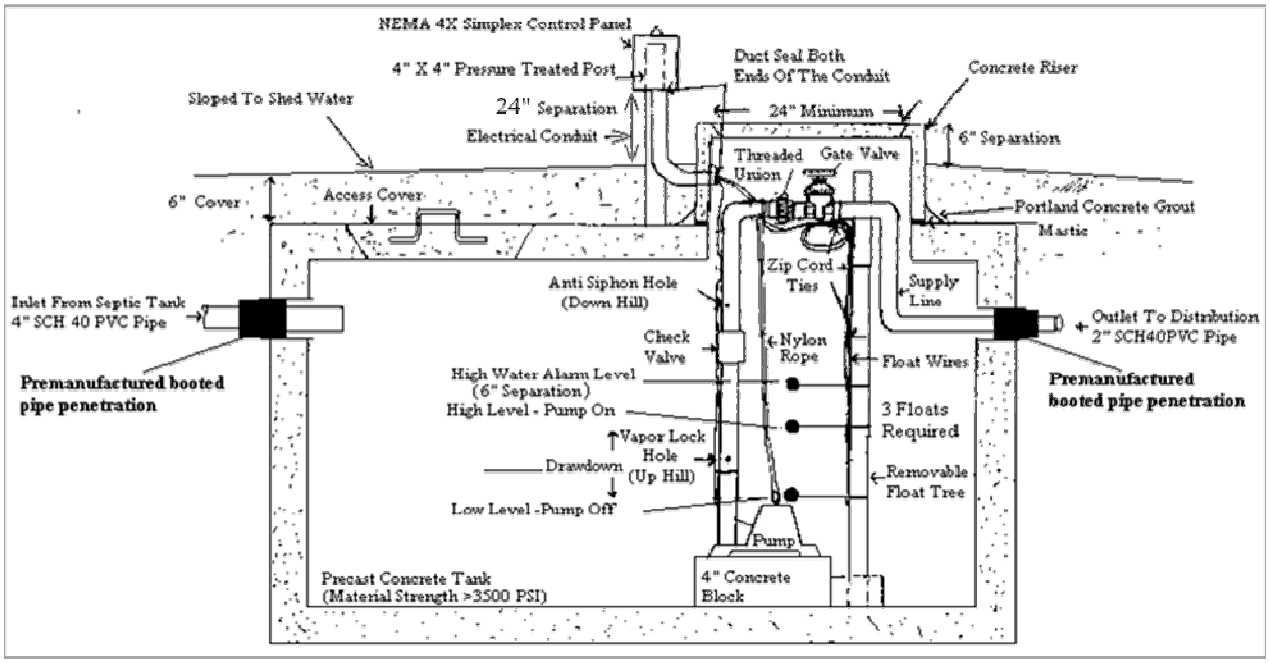


INITIAL WASTEWATER SYSTEM

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



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



AOWE EVALUATION

HAL OWEN ASSOCIATES
www.halowensoil.com

INITIAL WASTEWATER SYSTEM

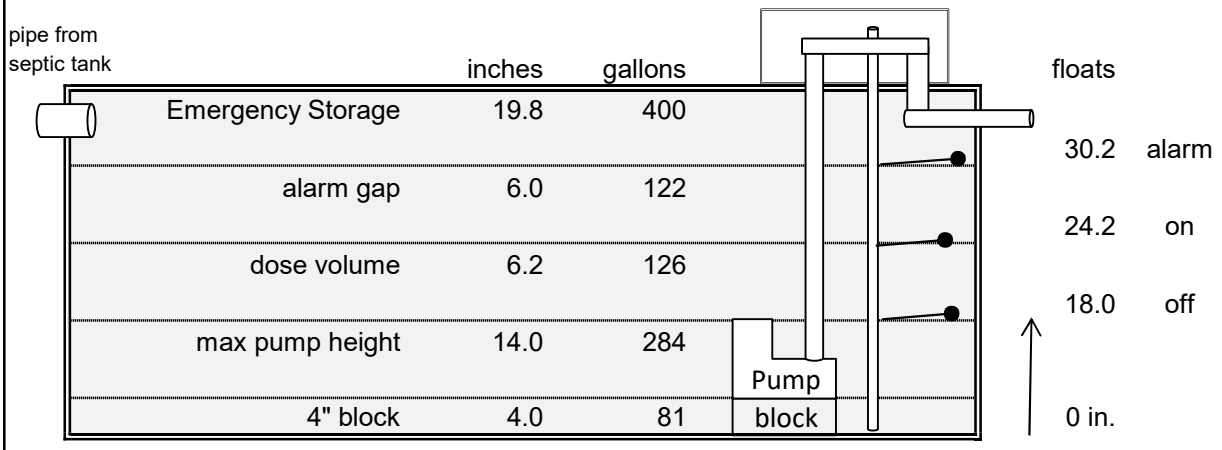
Pump Tank Calculations:

Possible pump tank: Brantley 1000_PT-237 *Possible Pump:*

tank GPI (gal/in): 20.25 calculated height: 14 in

tank volume (gal): 1000 per manufacturer

tank height (in): 50.0 *per manufacturer* minimum emergency storage: 360 gal

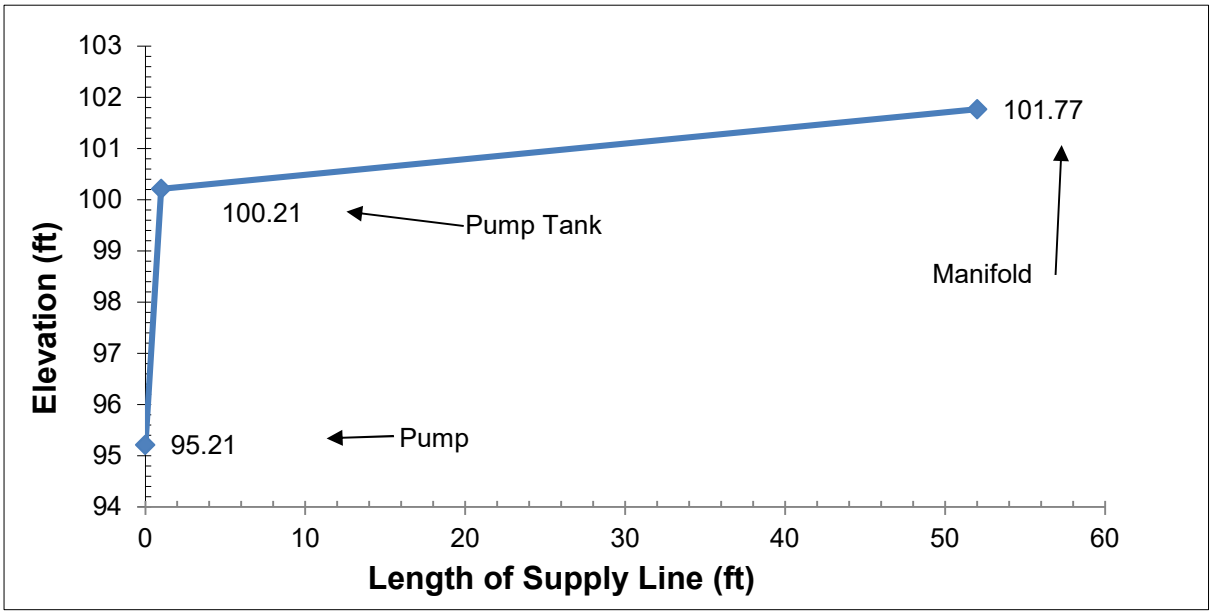


Drawing N.T.S.

Supply Line Profile:

	Distance	Elevation
Pump	0	95.21
pump tank	1	100.21
Pressure manifold	52	101.77

5)



AOWE EVALUATION

HAL OWEN ASSOCIATES
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REPAIR WASTEWATER SYSTEM

DESIGN DAILY FLOW 360 gallons/day **SOIL LTAR:** 0.35 gpd/ft²

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

SUPPLY LINE Length (ft): 172 Diameter: 2 " sch 40 pvc

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

TRENCHES Drainline Type: PPBPS, horizontal

Maximum Trench Depth of 24 inches, measured on low side of trench

Trench width: 3 feet Effective Trench Width: 6 ft

Absorption Area: 514 ft² Minimum Linear Length: 171 ft

÷ 4.33 ft per panel : 40 panels

PRESSURE MANIFOLD

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

Length (ft): 3 Diameter: 4" sch 80 pvc Elevation: 101.58

TAP CHART

Tap #	Line #	Color	Elevation (ft)	Drainline Length(ft)	Number of Panels	Tap Size/ Schedule	Flow/tap (gpm)	LTAR (gpd/ft²)
1	4	B	100.58	90	20	3/4"sch 40	12.50	0.710
2	5	R	100.71	41	10	1/2"sch 80	5.48	0.684
3	6	Y	100.51	41	10	1/2"sch 80	5.48	0.684
			Totals:	172	40	Total Flow:	23.46	

Target LTAR*: 0.70

LTAR + 5%: 0.735

Pump Calculations:

Number of Panels: 40

Dose Volume: 144 gallons # of panels * 3.6 gallons/ panel

Dose Pump Run Time: 6.14 minutes Dose volume/total flow

Daily Pump Run Time: 15.35 minutes Daily Flow/total flow

Drawdown (in.): 144 gallons ÷ 20.25 gal/ inch = 7.11 inches

Pump Tank Elevation (ft): 100.21 Pump Elevation (ft): 95.21

Friction Head: 2.73 *Hazen Williams Formula (use supply line length+70' for fittings in pump tank)

Elevation Head: 6.37 Design Head: 2.0 Total Head: 11.10 feet

Pump to Deliver: **23.46** gpm @ **11.10** ft head

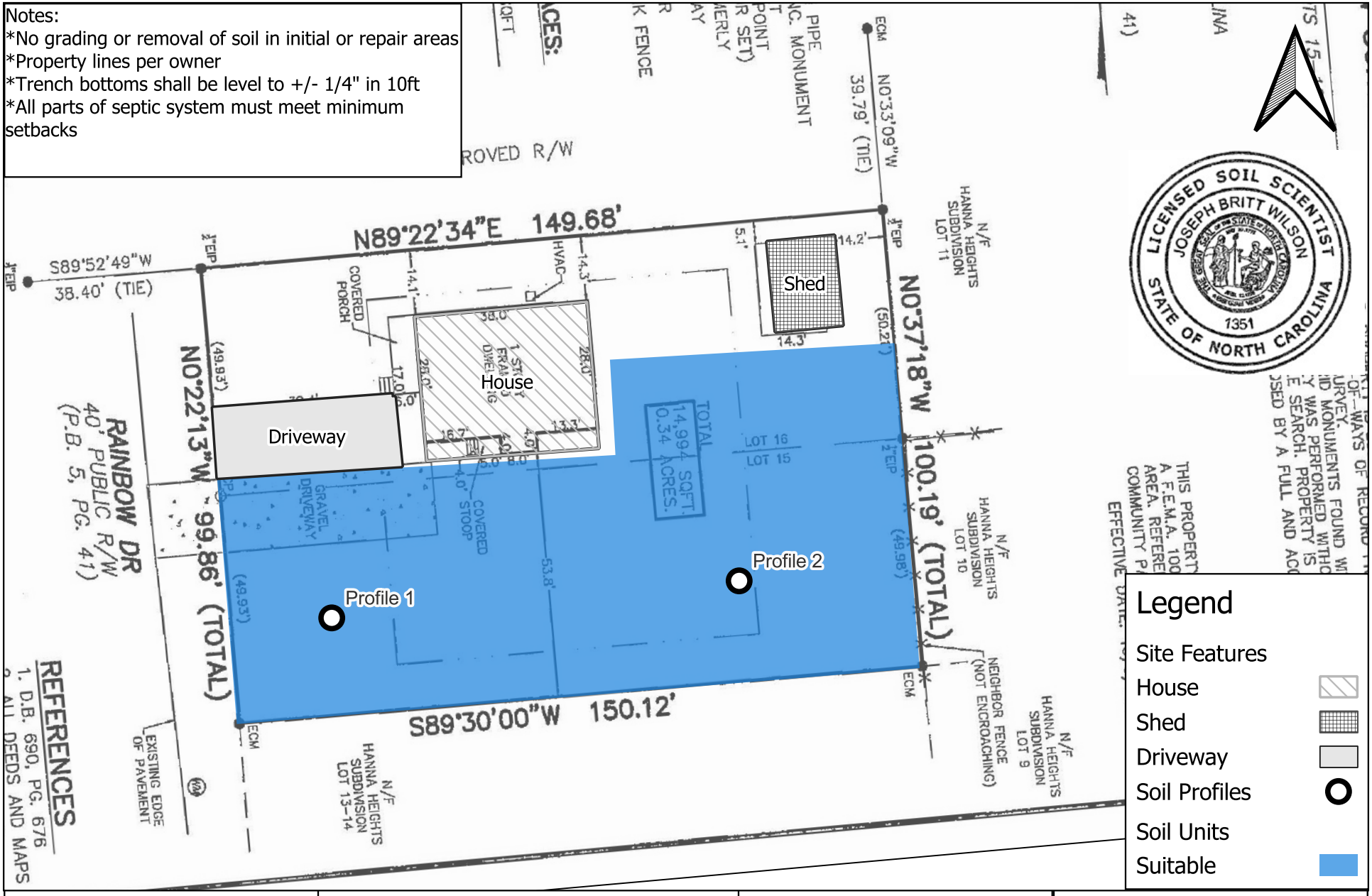
NEMA 4X Simplex Control Panel with elapsed time meter, event counter, audible and visible alarm (w/ silence button), hand-off-automatic (HOA) switch, pump run light, and pump on separate circuits is required. Control panel bottom shall be mounted a minimum of 24 in. above finished grade within 50 ft 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: *pump height (in) =* 14

Possible Control Panel:


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
N89°22'34"E 149.68'
S89°52'49"W
38.40' (TIE)
N0°37'18"W 100.19' (TOTAL)
N0°22'13"W 99.86' (TOTAL)
S89°30'00"W 150.12'
39.79' (TIE)
N0°33'09"W
House
Shed
Driveway
TOTAL 14,994 SQFT 0.34 ACRES
Profile 1
Profile 2
RAINBOW DR
40' PUBLIC R/W
(P.B. 5, PG. 41)
REFERENCES
1. D.B. 690, PG. 676
ALL DEEDS AND MAPS
LICENSED SOIL SCIENTIST
JOSEPH BRITT WILSON
1351
STATE OF NORTH CAROLINA
Legend
Site Features
House
Shed
Driveway
Soil Profiles
Soil Units
Suitable
0
30
60 ft
Hal Owen & Associates Inc.
PO Box 400, Lillington, NC 27546
www.halowensoil.com
919-893-8743
For reference only. Not a survey.
Rainbow Drive
Harnett County
4 October 2024
Soil Map for Septic Suitability
BVA Builders

AOWE EVALUATION

HAL OWEN ASSOCIATES
www.halowensoil.com

Soil/Site Evaluation Form for On-Site Wastewater System

OWNER NAME: BVA Builders Inc.

PROPOSED FACILITY: Residential DESIGN DAILY FLOW: 360 WATER SUPPLY Public Water

LOCATION OF SITE: 0 Rainbow Drive, Dunn, NC 28334 PIN: 1506-18-7356

WASTEWATER TYPE: Domestic COUNTY: Harnett

EVALUATION METHOD: AUGER BORING [x] PIT [ ] CUT [ ]

EVALUATED BY: Britt Wilson, LSS#1351 DATE EVALUATED: 9/11/2024

	INITIAL SYSTEM	REPAIR SYSTEM
AVAILABLE SPACE	721 ft^2 trench bottom	514 ft^2 trench bottom
SYSTEM TYPE	Quick4 standard chamber (25% reduction)	PPBPS, horizontal
SITE LTAR	0.35 gpd/ft^2	0.35 gpd/ft^2
MAX TRENCH DEPTH	24 inches (measured on downhill side)	24 inches (measured on downhill side)

SITE CLASSIFICATION Suitable OTHER FACTORS

COMMENTS:

PROFILE 1

HORIZON DEPTH	COLOR	CONSISTENCE	TEXTURE	STRUCTURE	MINERALOGY	OTHER PROFILE FACTORS	
0-4	10YR 4/3	FR	SL	GR	SEXP	LANDSCAPE POSITION	T
4-48+	7.5YR 5/6	FI	SCL	SBK	SEXP	SOIL WETNESS DEPTH	>48"
						SOIL WETNESS COLOR	N/A
						SOIL DEPTH	>48"
						SAPROLITE CLASS	N/A
						RESTRICTIVE HORIZON	N/A
						SLOPE %	1
PROFILE CLASSIFICATION			**Suitable**	LTAR gpd/ft^2	**0.35**	SLOPE CORRECTION (IN)	0.4
COMMENT							

PROFILE 2

HORIZON DEPTH	COLOR	CONSISTENCE	TEXTURE	STRUCTURE	MINERALOGY	OTHER PROFILE FACTORS	
0-5	10YR 4/2	FR	SL	GR	SEXP	LANDSCAPE POSITION	T
5-28	10YR 5/3	FI	SCL	SCL	SEXP	SOIL WETNESS DEPTH	>48"
28-48+	10YR 5/6	FI	SCL	SCL	SEXP	SOIL WETNESS COLOR	N/A
						SOIL DEPTH	>48"
						SAPROLITE CLASS	N/A
						RESTRICTIVE HORIZON	N/A
						SLOPE %	1
PROFILE CLASSIFICATION			**Suitable**	LTAR gpd/ft^2	**0.4**	SLOPE CORRECTION (IN)	0.4
COMMENT							

AOWE EVALUATION

HAL OWEN ASSOCIATES
www.halowensoil.com

Soil/Site Evaluation Form for On-Site Wastewater System

LEGEND OF ABBREVIATIONS

LANDSCAPE POSITION	TEXTURE GROUP	TEXTURE CLASS	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
TS - Toe Slope		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	SEXP - Slightly Expansive	MP - Moderately Plastic
	EXP - Expansive	VP - Very Plastic

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

All soil characteristics were described in accordance with the USDA Field Book for Describing and Sampling Soils. The soils were evaluated under moist soil conditions. This evaluation included observations of topography and landscape position, soil morphology (texture, structure, clay mineralogy, organics), soil wetness, soil depth, and restrictive horizons.

AOWE EVALUATION

HAL OWEN ASSOCIATES
www.halowensoil.com

TERMS AND CONDITIONS

This AOWE Evaluation is intended to file a Notice of Intent to construct a wastewater system with the Local Health Department and shall expire in five years. 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 – Prior to commencing or assisting in the construction, siting, relocation, or repair of a wastewater system, a complete Notice of Intent (NOI) to Construct a wastewater system using an AOWE must be submitted to the Local Health Department (LHD). The owner may apply for a building permit for the project upon submitting a complete NOI and the required fee.

Plan Alterations – If there are any changes in the site plan that can impact the wastewater system, such as moving the house or driveway, site alterations, or if the applicant chooses to change the design daily flow prior to wastewater system construction, a new NOI shall be submitted to the LHD. The applicant shall request in writing that the PE or AOWE invalidate the prior NOI with a signed and sealed letter sent to the applicant and LHD.

Site Alterations – The applicant shall be responsible for preventing modifications or alterations of the site for the wastewater system and the system repair area before, during, and after any construction activities for the facility, unless approved by the AOWE.

On-Site Wastewater System Contractor – The AOWE shall assist the owner in the selection of a certified 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 of the wastewater system.

Authorization to Operate (ATO) – Upon determining that the wastewater system has been properly installed and is capable of being operated in accordance with the conditions of the permit, the AOWE shall provide the owner with a report that includes inspection reports, a written operation and management program, any special reports, and an Authorization to Operate. The owner shall sign confirming acceptance and receipt of the report, and then provide a copy 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 Wastewater Treatment and Dispersal Systems 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.