



THREE RIVERS HEALTH DISTRICT
P.O. BOX 415
SALUDA, VIRGINIA 23149

OSE Construction Permit

Well and Sewage Contractors: Please notify Health Department and OSE or PE 48 hours prior to installation to arrange for inspection

April 25, 2024

Dale Durrance
445 Kennon Rd.
Mineral, VA 23117

RE: **Tax Map:** 9C(1)36
HDID: 166-24-088
System Capacity: Residential; 3 Bedrooms, 450 gallons per day

Dear Dale Durrance:

This letter and the attached drawings, specifications, and calculations (16 pages) dated April 16, 2024, constitute your permit to connect to a sewage disposal system and well if applicable on the property referenced above. Your application for a permit was submitted pursuant to §32.1-163.5 of the Code of Virginia, which requires the Health Department to accept private soil evaluations and designs from an Onsite Soil Evaluator (OSE) or a Professional Engineer working in consultation with an OSE for residential development. VDH is not required to perform a field check to verify the private evaluations of OSEs or PEs and such a field check may not have been conducted for the issuance of this permit.

The soil absorption area ("site"), sewage system design, and the well location and construction if applicable were certified by Alwyn W. Davis, Jr., Private OSE as substantially complying with the Board of Health's regulations (and local ordinances if the locality has authorized the local health department to accept private evaluations for compliance with local ordinances). This permit is issued in reliance upon that certification. VDH hereby recognizes that the soil and site conditions acknowledged by this permit are suitable for the installation of an onsite sewage system. This construction permit is null and void if any substantial physical change in the soil or site conditions occurs where a sewage disposal system is to be located.

If modifications or revisions are necessary between now and when you construct your dwelling, please contact the OSE/PE who performed the evaluation and design on which this permit is based. Should revisions be necessary during construction, your contractor should consult with the OSE/PE that submitted the site evaluation or site evaluation and design. The OSE/PE is authorized to make minor adjustments in the location or design of the system at the time of construction provided adequate documentation is provided to the Three Rivers Health District.

The OSE/PE that submitted the certified design for this permit is required to conduct a final inspection of this sewage system when it is installed and to submit an inspection report and completion statement. As the owner, you are responsible for giving reasonable notice to the OSE/PE of the need for a final inspection. If the designer is unable to perform the required inspection, you may provide an inspection report and completion statement executed by another OSE/PE. The Three Rivers Health District is not required to inspect the installation but may perform an inspection at its sole discretion. No part of this installation shall be covered until it has been inspected by the OSE/PE as noted herein. The

sewage system may not be placed into operation until you have obtained an Operation Permit from the Three Rivers Health District.

This Construction Permit is null and void if conditions are changed from those shown on your application or if conditions are changed from those shown on the Site and Soil Evaluation Report and the attached construction drawings, specifications, and calculations. VDH may revoke or modify any permit if, at a later date, it finds that the site and soil conditions and/or design do not substantially comply with the Sewage Handling and Disposal Regulations, 12 VAC 5-610-20 et seq., or if the system would threaten public health or the environment.

This permit approval has been issued in accordance with applicable regulations based on the information and materials provided at the time of application. There may be other local, state, or federal laws or regulations that apply to the proposed construction of this onsite sewage system. The owner is responsible at all times for complying with all applicable local, state, and federal laws and regulations. This construction permit is transferrable until expired or deemed null and void. A permit transfer form may be found on the VDH website at <http://www.vdh.virginia.gov/environmental-health/gmp-2015-01-forms/>.

If you have any questions, please contact me at (804)-580-3731.

This permit expires: October 25, 2025

Sincerely,



Hank Becker,
Environmental Health Specialist, Sr.
Three Rivers Health District

CC: Alwyn W. Davis, Jr., Private OSE

WHAT YOU WILL NEED TO GET YOUR SEPTIC SYSTEM OPERATION PERMIT

- Your system must have a satisfactory inspection at the time of installation. This will be done by either a representative of the local Health Department, a private OSE, or a PE, depending on the designer of your permitted system. If your system is designed/inspected by an OSE or PE, they must submit a copy of the inspection results, complete with an as-built diagram, to the Health Department.
- Please ensure that your contractor turns in a Completion Statement to the local Health Department after installation.
- If your permit is for an alternative system, you must sign, have notarized, and record the attached Notice of Recordation in your locality's land records. Please bring proof of this recordation to the local Health Department
- If you have a conditional permit then you must sign, have notarized, and record the permit in your locality's land records. Please bring proof of this recordation to the Health Department.

IF YOUR PERMIT IS FOR BOTH A SEPTIC SYSTEM AND WELL YOU WILL ALSO NEED

- Your well must have satisfactory inspection results after installation. Please give the Health Department several days notice to schedule this inspection before your Operation Permit will be requested.
- The Health Department must receive a copy of your water sample test result being negative/satisfactory for coliform bacteria. You are responsible for performing this test and ensuring the results are received at the Health Department
- Please ensure that your Well Driller submits a Uniform Water Well Completion Statement or GW-2 to the Health Department, including documentation of a proper well abandonment if required by permit

Allow 5 business days after the last piece of documentation is received for the Operation Permit to be issued. To avoid delays, clearly label each piece of documentation with the property Tax Map/GPIN number and HDID number shown above and on your construction permit. Please note that due to the individual circumstances of your permit there may be additional required items not covered by this checklist.

If you have any questions about any of the items on this list, please do not hesitate to contact the Three Rivers Health District at (804)-580-3731.

OSE/PE Report For:

Construction Permit Repair Permit Voluntary Upgrade Permit Certification Letter Subdivision Approval

Property Location:
 911 Address: Coan Harbour Drive City: Lottsburg
 Lot 36 Section 1 Subdivision Coan Harbour Estates
 GPIN or Tax Map # 9C(1)36 Health Dept ID # 144-29-0088
 Latitude 37°58'43.7"N Longitude 76°30'02.5"W

Applicant or Client Mailing Address:
 Name Dale Durrance
 Address 445 Kennon Road
 City Mineral State: VA Zip Code 23117

Prepared by:
 OSE Name Davis Onsite Soil Evaluations L.L.C. License # 1940001136 Phone (804) 366-1137
 Address P.O. Box 3133 E-mail awdavis272@gmail.com
 City Tappahannock State: VA Zip Code 22560
 PE Name _____ License # _____
 Address _____
 City _____ State: _____ Zip Code _____

Date of Report _____ Date of Revision #1 _____
 OSE/PE Job # _____ Date of Revision #2 _____

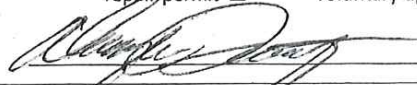
Contents/Index of this report (e.g., Site Evaluation Summary, Soil Profile Descriptions, Site Sketch, Abbreviated Design, etc.)

<u>Application</u>	<u>200' Sanitary Survey</u>
<u>Construction/System/Well Specifications</u>	<u>Abbreviated Design Reports</u>
<u>Soil Summary Report</u>	<u>Construction Drawings</u>
<u>Soil Profile Descriptions</u>	<u>Well Addendum</u>
<u>Soil Boring Locations</u>	

Certification Statement
 I hereby certify that the evaluations and/or designs contained herein were conducted in accordance with the applicable provisions of the Sewage Handling and Disposal Regulations (12 VAC5-610), the Private Well Regulations (12 VAC5-630), the Regulations for Alternative Onsite Sewage Systems (12VAC5-613) and all other applicable laws, regulations and policies implemented by the Virginia Department of Health. I further certify that I currently possess any professional license required by the laws and regulations of the Commonwealth that have been duly issued by the applicable agency charged with licensure to perform the work contained herein. The potential for both conventional and alternative onsite sewage systems has been discussed with the owner/applicant.

The work attached to this cover page has been conducted under an exemption to the practice of engineering, specifically the exemption in Code of Virginia Section 54.1-402.A.11

I recommend that a (select one): construction permit certification letter subdivision approval be (select one) Issued
 repair permit voluntary upgrade Denied

OSE/PE Signature  #1940001136 Date: 04-16-2024

Commonwealth of Virginia

Application for: Sewage System Water Supply

VDH Use Only
 Health Department ID# 166-24-0088
 Due Date _____

Owner	<u>Dale Durrance</u>	Phone	<u>(863) 697-6878</u>
Mailing Address	<u>445 Kennon Road</u>	Phone	<u>(828) 269-7113</u>
	<u>Mineral, VA 23117</u>	Email	<u>Dale.a.durrance@gmail.com</u>
Agent	<u>Davis Onsite Soil Evaluations L.L.C.</u>	Phone	<u>(804) 366-1137</u>
Mailing Address	<u>P.O. Box 3133</u>	Phone	_____
	<u>Tappahannock, VA 22560</u>	Fax	_____
Site Address	<u>Coan Harbour Drive</u>	Email	<u>awdavis272@gmail.com</u>
	<u>Lottsburg, VA 22511</u>		
Directions to Property	<u>R/360; R/614; L/Coan Harbour Drive; on Right after "1192"</u>		
Subdivision	<u>Coan Harbour Estates</u>	Section	<u>1</u> Block _____ Lot <u>36</u>
Tax Map	<u>9C(1)36</u>	Other Property ID	_____ Acreage <u>0.98 acres</u>

Sewage System

Type of Approval: Applicants for new construction are advised to apply for a certification letter to determine if land is suitable for a sewage system and to apply for a construction permit (valid for 18 months) **only when ready to build.**

Certification Letter
 Construction Permit
 Voluntary Upgrade
 Repair Permit
 Minor Modification

Proposed Use:

Single Family Home (Number of Bedrooms 3) Multi-Family Dwelling (Total Number of Bedrooms)

Other (describe) _____

Basement? Yes No Walk-out Basement? Yes No Fixtures in Basement Yes No

Conditional permit desired? Yes No If yes, which conditions do you want?

Reduced water flow
 Limited Occupancy
 Intermittent or seasonal use
 Temporary use not to exceed 1 year

Do you wish to apply for a betterment loan eligibility letter? Yes No *There is a \$50 fee for determination of eligibility.

Water Supply

Will the water supply be Public or Private? Is the water supply Existing or Proposed?

If proposed, is this a replacement well? Yes No If yes, will the old well be abandoned? Yes No

Will any buildings within 50' of the proposed well be termite treated? Yes No

Well Type (e.g. domestic use, agricultural, irrigation, etc.) Domestic

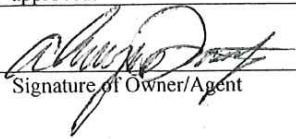
All Applicants

Is this property intended to serve as your (owners) principal place of residence? Yes No

All applications must be accompanied by private sector evaluations and designs, unless a petition for VDH services is approved.

Is a Petition for Service form attached? Yes No

In order for VDH to process your application for a sewage system you must attached a plat of the property and a site sketch. For water supplies, a plat of the property is recommended and a site sketch is required. The site sketch should show your property lines, actual and/or proposed buildings and the desired location of your well and/or sewage system. When the site evaluation is conducted the property lines, building location and the proposed well and sewage sites must be clearly marked and the property sufficiently visible to see the topography. I give permission to the Virginia Department of Health to enter onto the property described during normal business hours for the purpose of processing this application and to perform quality assurance checks of evaluations and designs certified by a private sector Onsite Soil Evaluator or Professional Engineer as necessary until the sewage disposal system and/or private water supply has been constructed and approved.



 Signature of Owner/Agent

04-16-2024

 Date

Well Specifications

VDH Use Only
 HDIN: 166-29-0088

Applicant Information	
Name: <u>Dale Durrance</u>	Address: <u>445 Kennon Road</u>
Phone: <u>(863) 697-6878</u>	<u>Mineral, VA 23117</u>
Location Information	
Tax Map/GPN #: <u>9C(1)36</u>	Property Address: <u>Coan Harbour Drive</u>
Subdivision: <u>Coan Harbour Estates</u>	Section: <u>1</u> Block: _____ Lot: <u>36</u>
Directions: <u>R/360; R/614; L/Coan Harbour Drive; on Right after "1192"</u>	
General Information	
Well Purpose (select all that apply):	<input checked="" type="checkbox"/> Domestic Drinking Water <input type="checkbox"/> Agricultural <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial/Commercial <input type="checkbox"/> Geothermal
Well Class: <u>IIIB</u>	Minimum Casing Depth: <u>50</u> ft.
Estimated Water Usage: <u>450gpd</u>	Minimum Grout Depth: <u>50</u> ft.
Horizontal Setbacks	
Distance from Building Sewer: <u>50+</u> ft.	Distance from Pretreatment Unit(s): <u>50+</u> ft.
Distance from Conveyance System: <u>50+</u> ft.	Distance from Absorption Area: <u>50+</u> ft.
Distance from Property Line: <u>35+</u> ft.	Distance from foundations: <u>50+</u> ft.
Distance from other source(s) of contamination: <u>50+</u> ft.	
List other source(s): _____	
Note: _____	

**Addendum to AOSE/PE Certification Statement
For Private Well Construction Permit**

Instructions: Please check on box in 1-3 below. Statement templates for items #2 and #3 are on the following pages.

The proposed well site shown herein,

- 1. Is located a minimum of 50 feet from all property lines.

- 2. Is located within 50 feet of the adjacent property line(s) but I have determined that the adjacent property is not used for an agricultural operation.
 - i. Written affirmation from the adjacent property owner(s) that their property is not used for an agricultural operation.
 - ii. Other confirmation that land use is not an agricultural operation, please describe:
Property is located within a residential subdivision.

- 3. Is located within 50 feet of an adjacent property line where the property is used for an agricultural operation. For confirmations, I have attached the appropriate documentation pursuant to § 32.1-176.5:2 of the *Code of Virginia*. (check one below)
 - i. Written permission from the adjacent property owner(s) for the well construction.
 - ii. I certify that no other site on the property complies with the Board's Regulations for the construction of a private well.

System Specifications

VDH Use Only
 HDIN: 166-24-0088

Application Information	
Name: <u>Dale Durrance</u>	Address: <u>445 Kennon Road</u>
Phone: <u>(863) 697-6878</u>	<u>Mineral, VA 23117</u>
Location Information	
Tax Map/GPN #: <u>9C(1)36</u>	Property Address: <u>Coan Harbour Drive</u>
Subdivision: <u>Coan Harbour Estates</u>	Section: <u>1</u> Block: _____ Lot: <u>36</u>
Directions: <u>R/360; R/614; L/Coan Harbour Drive; on Right after "1192"</u>	
General Information	
Property Type (e.g. residential): <u>Residential</u>	Number of Bedrooms: <u>3</u>
Daily Flow: <u>450</u> gpd	Conditions: _____
Notes: _____	
Sewer Line	
Diameter: <u>4</u> in. Material: <u>Schedule 40 PVC</u> (or equivalent) Notes: _____	
Pretreatment Unit(s)	
Treatment Level: <u>Septic Tank Effluent</u>	Septic Tank Capacity: <u>900</u> gallons
Number of Septic Tanks: <u>1</u>	Size of Septic Tank(s): <u>1000</u> gallons
Per the Sewage Handling and Disposal Regulations, check which option(s) chosen:	
<input type="checkbox"/> Septic tank with inspection port <input checked="" type="checkbox"/> Septic tank with effluent filter <input type="checkbox"/> Reduced maintenance septic tank	
Secondary treatment device(s), if applicable: _____	
Notes: <u>Install Zabel effluent filter with access riser on outlet side of tank</u>	
Conveyance Line	Distribution Method and Header Lines
Conveyance Method: <u>Pump to Gravity</u>	Distribution Method: <u>Gravity Distribution</u>
If pumping, include pump specifications sheet.	No. of Boxes: <u>1</u> No. of outlets: <u>6-8</u>
Material: <u>SCH 40 PVC</u> Diameter: <u>2"</u>	Surge or splitter box required: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Notes: <u>See attached specifications</u>	Header Line Material: <u>4" 3000 lb crush strength</u>
Percolation Lines/Absorption Area	
Dispersal Method (e.g. laterals, pad, mound): <u>Laterals</u>	
If using pressure dispersal (e.g. drip), include pressure dispersal specifications sheet.	
No. of laterals/pads: <u>5</u>	Length of lateral(s)/pad(s): <u>75</u> ft. Width of lateral(s)/pad(s): <u>36</u> in.
Center to center spacing: <u>9</u> ft.	Installation depth: <u>18</u> in. Aggregate depth: <u>13</u> in.
Size/Type of Aggregate: <u>Clean #57 Stone</u>	Lateral/pad slope: <u>2-4</u> in. per <u>100</u> ft.
Reserve Area Provided: <u>0</u> %	Notes: <u>Pre-Bay Act Lot, No Reserve Required</u>
Please Note: CONTRACTOR TO CONTACT Alwyn W. Davis Jr. AT 804-366-1137 TO SCHEDULE AN INSPECTION. NO PART OF THIS SYSTEM IS TO BE COVERED UNTIL INSPECTED AND APPROVED. CALL IN ADVANCE TO INSURE THAT I WILL BE AVAILABLE. CONTRACTOR IS RESPONSIBLE FOR INSPECTION FEE.	

CONSTRUCTION NOTES

Install (1) 1000 gallon septic tank a minimum of 10' from house foundation. Contractor is responsible for ensuring that all tanks are properly sealed and watertight.

Install Zabel effluent filter in outlet side of septic tank.

Install access riser on outlet side of septic tank.

Install (1) 1000 gallon pump tank a minimum of 10' from house foundation.

Contractor is responsible for ensuring that all tanks are properly sealed and watertight.

Install Liberty FL-30 Series pump with American Time Dose Panel

Time dose 75 gallons every four hours (6 doses/day).

All PVC from dwelling to Distribution Box to be Sch. 40 PVC Primed & Glued.

Use 3000 lb Crush Strength PVC for Header Lines.

Install 5 lines 75' long and 3' wide, at 18" depth on contour, 9' center-to-center spacing. Corners have been set with laser level and flagged in field. 5'+ from all property lines which have been recently surveyed.

Install Class IIIB Well, Cased 50'+, Grout 50'+, 50'+ from all potential sources of contamination, i.e. termite treated foundation.

Water line to be a minimum of 10' from all parts of septic system.

KEEP ALL PARTS OF SYSTEM 10'+ FROM UNDERGROUND UTILITIES.

Install System In Dry Conditions Only!

See Additional Construction Notes Attached

COMPLY WITH ALL LOCAL, STATE AND OSHA REGULATIONS.

Contact Alwyn W. Davis Jr. at (804) 366-1137 prior to installation to schedule a construction inspection.

No part of this system is to be covered prior to inspection. Recommend calling in advance to insure that I will be available.

INSPECTION FEE SCHEDULE AS FOLLOWS: To be paid by contractor at time of inspection

48 Hours Notice, \$300.00 Per Inspection

Davis Onsite Soil Evaluations, L.L.C.**Important Septic System Construction Notes**
To be Read Carefully by Applicants and Installers

- Installations shall be in accordance with the most current Virginia Department of Health Sewage Handling and Disposal Regulations.
- No buried utility lines shall be closer than 10' to any component of this system.
- Do not install this sewage disposal system or clear the proposed area during periods of wet weather or when soil conditions are wet. Installers are encouraged to review **State Health Regulation 12 VAC 5-610-700 Site Preparation and Alteration** to determine suitability of soil before installing this system.
- All hydrophilic trees (Weeping Willow, Maple, Gum, Sycamore, Cottonwood, Locust, etc) within 10' of this sewage disposal system should be removed. Grind all tree stumps when proposed system is installed at a depth of less than 24 inches.
- Land clearing resulting in a significant change of the original grade or soil continuity will void this permit.
- Drainfield trenches should be placed on contour; pads should be level.
- Roof drains, basement sump discharges (non-sewage), floor drains, footing drains, etc. are not permitted to be connected to this sewage disposal system.
- Divert all roof drainage and all other surface water runoff away from the primary and reserve drainfield areas.
- CAP AND CROWN: The minimum cover or fill over aggregate is 12 inches. Soil cover must be crowned in a way that promotes surface water drainage away from the drainfield area and prevents ponding of water on or around the drainfield area.
- Immediate seeding and straw application is required over and around the drainfield area to prevent erosion.
- Keep structures, equipment, vehicles, lawn irrigation systems, etc. off of the primary and reserve drainfield areas.
- This sewage disposal system and/or water supply system is to be constructed as specified on this permit, drawing, and specifications. Alwyn W. Davis, Jr., AOSE #194000136, must be notified prior to any necessary changes to the design of this system (804) 366-1137.
- Alwyn W. Davis, Jr., AOSE #194000136, must be notified at least 2 business days prior to final inspection. Voicemail messages must be confirmed in order to establish an inspection appointment. Please call (804) 366-1137 to arrange an inspection appointment.
- All conventional drainfield designs which require a pump to convey effluent to a distribution box and drainfield will require a pump drawdown inspection. Contractors please make arrangements to have the complete system ready for inspection.
- Completion and Inspection Statements will not be released until payment is received for the system inspection and/or design.
- Please contact Alwyn W. Davis, Jr., AOSE #1940001136, when using any type of substitute system for AOSE approval. Size reductions for trenches are not recommended.
- The performance of any alternative system used in any permit design is not guaranteed by Davis Onsite Soil Evaluations, L.L.C. Only alternative treatment systems approved by the Virginia Department of Health can be used for onsite septic system designs. Davis Onsite Soil Evaluations L.L.C. assumes their performance based on this approval.
- It is the property owner's responsibility to ensure that the proposed well, primary drainfield, and reserve drainfield area is designed and installed on the applicants property and does not interfere with utilities and easements.


Site and Soil Evaluation Report

VDH Use Only
HDIN: _____

General Information

Date: March 27, 2024 Northumberland County Health Department
 Owner: Dale Durrance Phone: (863) 697-6878
 Owner Address: 445 Kennon Road, Mineral, VA 23117
 Property Address: Coan Harbour Drive, Lottsburg, VA 22511
 Tax Map/GPIN #: 9C(1)36
 Subdivision: Coan Harbour Estates Section: 1 Block: _____ Lot: 36

Soil Information Summary

1. Position in landscape satisfactory: Yes No Describe landscape position: Broad Flat
 2. Slope: 0-1 %
 3. Depth to rock/impervious strata: Max. _____ in. Min. _____ in. Not observed
 4. Free Water Present: Yes No Range in inches: _____
 5. Depth to seasonal water table (gray mottling or gray color): 36 inches Not observed
 6. Soil percolation rate estimated: Yes No Estimated rate: 45 min/in at 18 inches depth
 Texture Group: I Iib III IV
 7. Percolation test performed: Yes No If yes, provide additional data on percolation test results.
 Name and title of evaluator: Alwyn W. Davis Jr., AOSE #1940001136
 Signature: 

Site Approved: Absorption trenches (describe dispersal area, e.g. absorption trenches) dispersing
Septic Tank Effluent (proposed level of treatment at time of evaluation) to be placed at 18 (inches) depth
 at site designated on permit. Site provides a total of 1125 square feet of absorption area for primary and
 reserve (if applicable).

Site disapproved: Reasons for rejection (check all that apply)

1. Position in landscape subject to flooding or periodic saturation.
2. Insufficient depth of suitable soil over hard rock.
3. Insufficient depth of suitable soil to seasonal water table.
4. Rates of absorption too slow.
5. Insufficient area of acceptable soil for required absorption area, and/or reserve area.
6. Proposed system too close to well.
7. Other (specify) _____

Date of Evaluation: Mar. 27, 2024 Profile Description
SOIL EVALUATION REPORT

Property ID: Northumberland TM#: 9C(1)36

Where the local health department conducts the soil evaluation the location of profile holes may be shown on the schematic drawing on the construction permit or the sketch submitted with the application. If soil evaluations are conducted by a private Onsite Soil Evaluator or Professional Engineer, location of profile holes and sketch of the area investigated including all structural features (i.e. sewage disposal systems, wells, etc.) within 200 feet of the site and reserve site shall be shown on the reverse side of this page or prepared on a separate page and attached to this form.

See application sketch See Construction Permit See sketch on reverse side or page attached to this form.

Hole #	Horizon	Depth (inches)	Description of color, texture, etc.	Texture Group
1	A	00-10	10YR 4/4 Dark Yellow Brown; VFSL	IIa
	E	10-16	10YR 5/6 Yellow Brown; FSCL	IIa
	B	16-48	7.5YR 5/6 Strong Brown; HSCL, 45mpi, with few 10YR 7/2, 7/3, 6/4 mottles at 38"+	IIb
	BC	48-76	10YR 6/4 Light Yellow Brown; FSCL, w/ few 10YR 7/3, 7/4 mottles	IIa
	C	76-90	10YR 7/4 Very Pale Brown; LS, clean, 5-10mpi, moist to wet at 88"	I
2	A	00-10	10YR 4/4 Dark Yellow Brown; VFSL	IIa
	E	10-16	10YR 5/6 Yellow Brown; FSCL	IIa
	B	16-48	7.5YR 5/6 Strong Brown; HSCL, 45mpi, with few 10YR 7/3, 6/4 mottles at 34", with 7/1, and 7/2 mottles at 36"	IIb
	BC	48-62	10YR 6/4 Light Yellow Brown; FSCL, w/ few 10YR 7/3, 7/4 mottles	IIa
3	A	00-10	10YR 4/4 Dark Yellow Brown; VFSL	IIa
	E	10-16	10YR 5/6 Yellow Brown; FSCL	IIa
	B	16-48	7.5YR 5/6 Strong Brown; HSCL, 45mpi, with few 10YR 7/2, 7/3, 6/4 mottles at 36"+	IIb
	BC	48-76	10YR 6/4 Light Yellow Brown; FSCL, w/ few 10YR 7/3, 7/4 mottles	IIa
	C	76-90	10YR 7/4 Very Pale Brown; LS, clean, 5-10mpi, moist to wet at 88"	I
			Note: VDH HDID 166-01-306 indicates chroma 2 or less, but 3 borings performed on 3.27.24 did not see this until 36"	
REMARKS: 3 bdrm, 45mpi, 1032sf required. Primary 5 x 75' = 1125sf design. Pre-Bay Act Lot, No Reserve required.				

ABBREVIATED DESIGN FORM
(PRIMARY)

For use with gravity, pump to gravity, enhanced flow, and low pressure distribution (LPD) sewage system designs and when applying for a construction permit, certification letter or subdivision approval.

Tax Map: 9C(1)36County: Northumberland

Design Basis	
Estimated percolation rate: <u>45 mpi</u>	Number of Bedrooms: <u>3</u>
Proposed Distribution Method (select one):	
Gravity, Pump to Gravity, or Enhanced Flow: <u>Pump to Gravity</u>	LPD or drip dispersal: <u>N/A</u>
Square feet of trench bottom required per bedroom (from Table 5.4 of SHDR) based on the distribution method selected above:	
Square feet per bedroom: <u>344</u>	Total square feet required: <u>1032</u>

Area Calculations:	
Number of trenches: <u>5</u>	Length of trenches: <u>75'</u>
Width of trenches: <u>3'</u>	Center to center spacing: <u>9'</u>
Reserve required? <u>No</u>	Percent reserve area required: <u>0</u>
Total width of required absorption area: <u>39'</u>	Total square feet proposed: <u>1125</u>
<p>The required width is calculated by multiplying the number of trenches minus 1 by the center to center spacing and adding 1 trench width plus any required reserve area. If the topography is not uniform across the length of the site, the trenches will need to flare apart on one end to maintain contour. When this occurs, it is necessary to use a center-to-center spacing that accounts for the flair or the installer will not be able to fit the system within the approved area. It is perfectly acceptable to have more area available, especially up and down the slope, than is required.</p>	
Length of available area: <u>75'</u>	Total width of available area: <u>39'</u>

PUMP SYSTEM DESIGN CRITERIA, SPECIFICATIONS, AND CALCULATIONS

A.	Number of bedrooms		<u>3</u>
B.	Gallons per bedroom		<u>150</u>
C.	Design flow in gallons per day (A x B)		<u>450</u>
D.	Minimum pump capacity in gallons per minute		<u>21 gpm</u>
E.	Maximum pump capacity in gallons per minute using 2" force main		<u>84 gpm</u>
F.	Relative elevation of force main at surge basin/distribution box		<u>-</u>
G.	Relative elevation of pump off float switch		<u>-</u>
H.	Static head in feet (F-G)		<u>6</u>
I.	Equivalent length of 2" pipe in feet for this system (all materials are 2")		
	1. Length of 2" force main		<u>30</u>
	2. <u>4</u> 90 degree bends at <u>9</u> feet per bend =		<u>36</u>
	3. <u>2</u> 45 degree bends at <u>4</u> feet per bend =		<u>8</u>
	4. <u>1</u> check valve		<u>17</u>
	5. <u>1</u> gate valve		<u>2</u>
		Total (1+2+3+4+5) =	<u>93</u>
J.	Friction loss in feet per 100' of pipe (2" pipe, C = 140,	<u>36</u> GPM)	<u>2.49</u>
K.	Number of 100' pipe increments (I/100)		<u>0.93</u>
L.	Friction head for this system (J x K)		<u>2.32</u>
M.	Total Dynamic Head (H + L)		<u>8.32</u>
N.	Pump chamber volume in gallons		<u>1000 gallons</u>
O.	Gallons per inch in pump chamber		<u>20 gal/in</u>
	(inside length = <u>96"</u> , inside width = <u>48"</u>)		
P.	Number of soil absorption trenches		<u>5</u>
Q.	Length of absorption trenches		<u>75</u>
R.	Total linear feet of percolation piping (P x Q)		<u>375</u>
S.	Volume pumped per pump cycle in gallons (R x 0.653 x 60%)	(time dosed)	<u>75 gallons</u>
T.	Volume pumped per pump cycle in inches (S/O)		<u>3.75 inches</u>
U.	Minimum emergency storage in gallons (C/4)		<u>112.5 gallons</u>
V.	Minimum emergency storage in inches (U/O)		<u>5.63 inches</u>
W.	Maximum pump run time in minutes (S/D)		<u>2 min, 5 sec</u>
X.	Minimum pump run time in minutes (S/E)		<u>54 sec</u>

Pump Selection:

Pump must provide a minimum of 36 GPM at a Total Dynamic Head of 8.32 feet.

Pump: Liberty Model #: FL-30 Series Horsepower: 1/3 HP

Control Panel: American Time Dose Panel

Additional Information: Time dosed system – 450 gpd/6 cycles = 75 gallons per dose

Approximate Run Time of pump at calculated system head**: 75 gallons/46gpm = 1 min, 37 sec

Approximate Off Time of pump**: 3 hours, 58 min

**Times will be adjusted in field accordingly after Pump Delivery Rate field measured with Drawdown Test.

SDS/WELL CONSTRUCTION DRAWING
 200' SANITARY SURVEY
 SOIL BORING LOCATIONS
 MARCH 27, 2024

DALE DURRANCE
 NORTHUMBERLAND TM#: 9C(1)36
 COAN HARBOUR ESTATES, SECT. 1, LOT 36
 COAN HARBOUR DRIVE

*1000 GALLON SEPTIC TANK WITH EFFLUENT FILTER AND ACCESS RISER

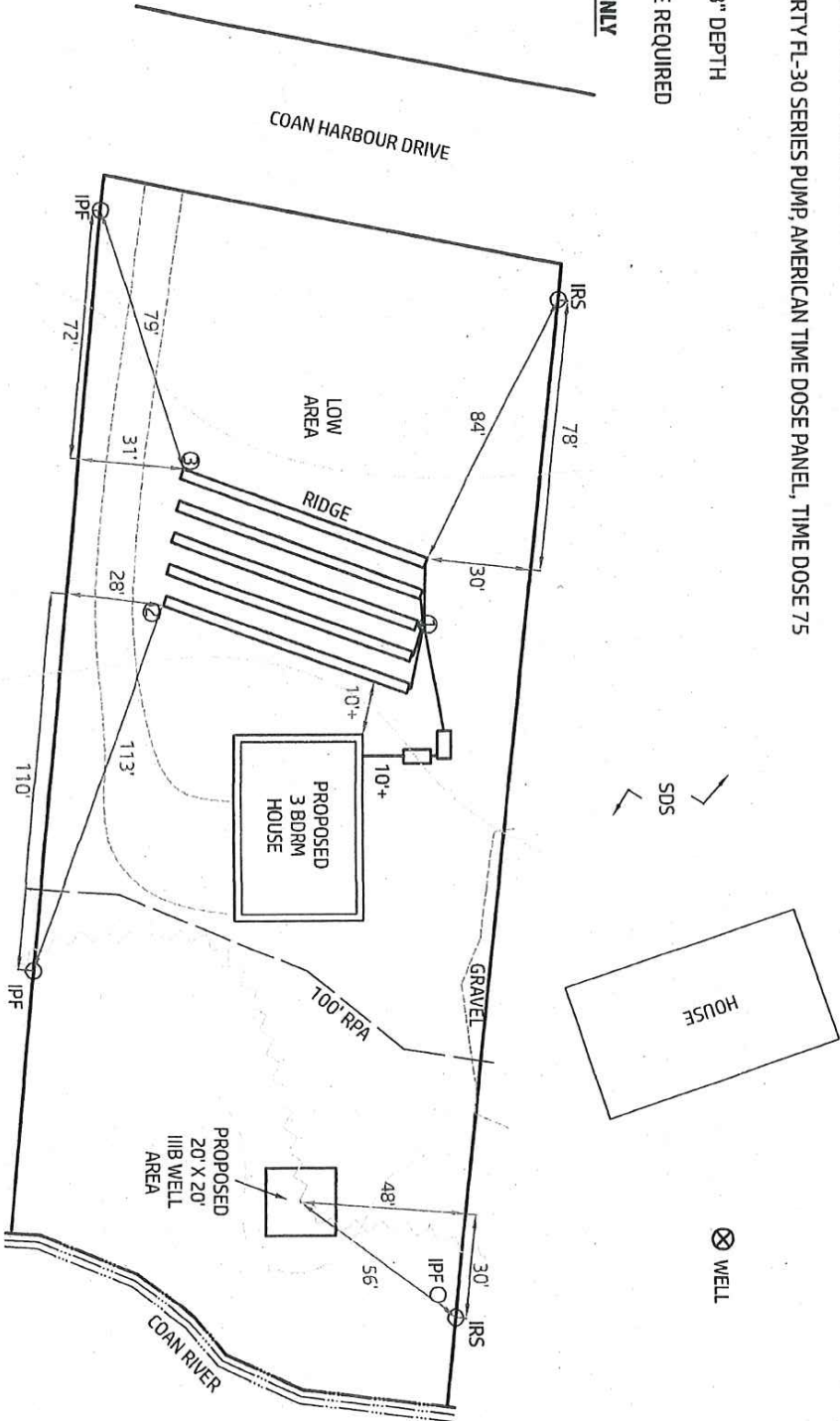
*1000 GALLON PUMP TANK, LIBERTY FL-30 SERIES PUMP, AMERICAN TIME DOSE PANEL, TIME DOSE 75 GALLONS EVERY FOUR HOURS

*5 X 7.5' LINES, 3' WIDE, 9' C-C, 18" DEPTH

*PRE-BAY ACT LOT - NO RESERVE REQUIRED

*INSTALL IN DRY CONDITIONS ONLY

9/19

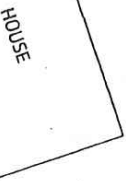


NO OTHER KNOWN SDS/WELLS WITHIN 200' OF PROPOSED SDS/WELL.

Always W. Davis Jr.
 AOSE #1940001136

(Signature)

SDS



⊗ WELL

1" = 50'

Boundary Survey Showing Proposed Improvements
for
Tax Map qc ((1)) Parcel 36
in
"Coan Harbour Estates"
Lotsburg Magisterial District
Northumberland County, Virginia

Property Information
T.M. qc-((1))-36
0.981 Acres
Zoned A-1
Vickie S. Jenkins
D.B. 478 Pg. 394
P.B. 6 Pg. 13

T.M. qc-((1))-35
Oliver R. Becker &
Judith M. Becker
D.B. 510 Pg. 465
P.B. 6 Pg. 13

T.M. qc-((1))-37
DR Benjamin LLC
D.B. 626 Pg. 423
P.B. 6 Pg. 13

I certify that this boundary survey is
correct to the best of my knowledge and
belief, subject to easements, servitudes,
and covenants of record.



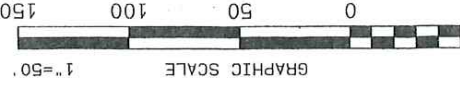
DATE: 04/03/2024 P.M. 024010895.00 SHEET 1 OF 1

ARM Resource
Engineers and Scientists
An ARM Group Company

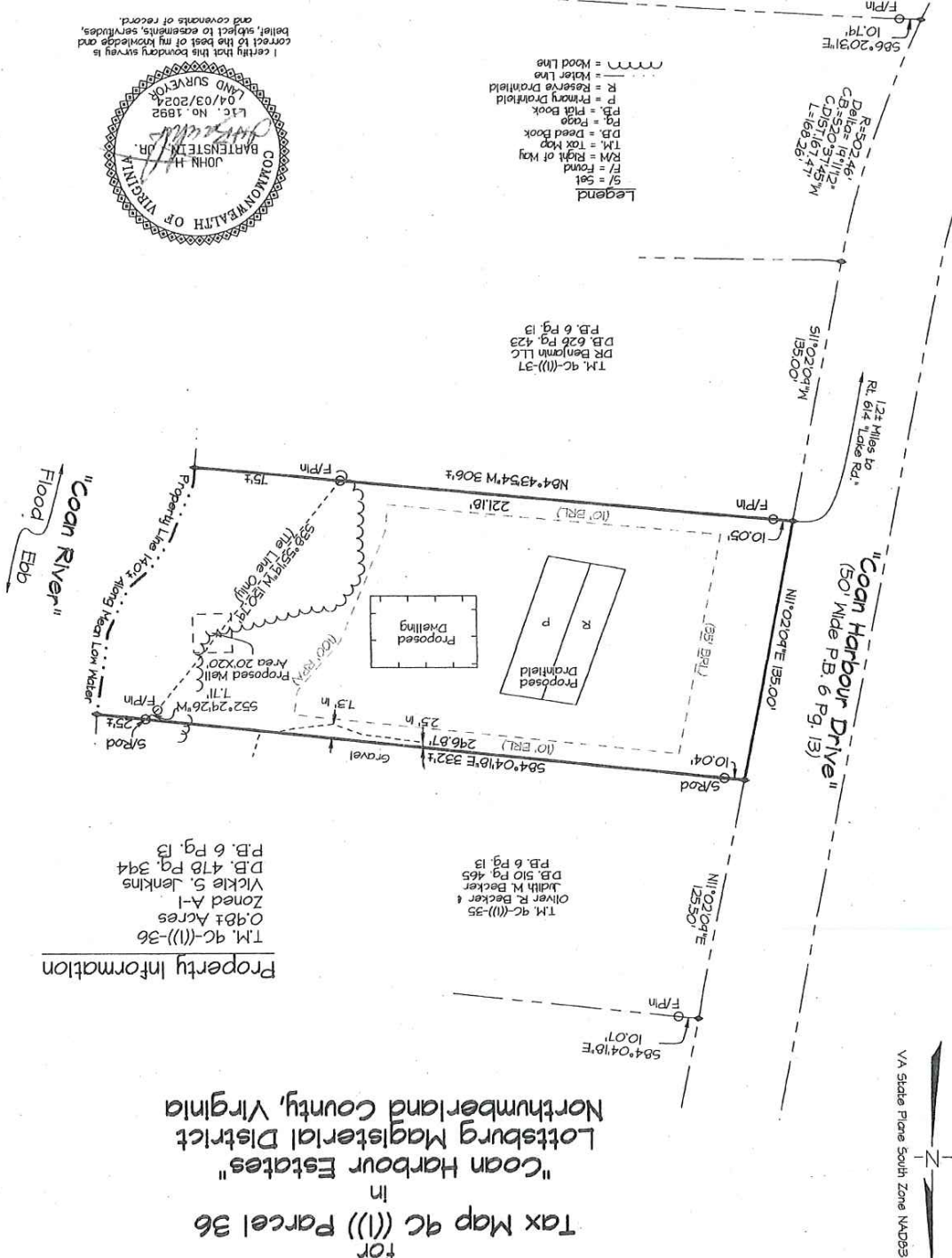
P.O. Box 6160 • 4560 Kings Charter Drive • Ashland, VA 23005
(804) 550-4200 • FAX (804) 550-4254

9/15/21

- Notes
1. All Lines Reproduced by Deed Description, Adjoining Plots, and Found Physical Evidence as Near as Possible.
 2. This Survey was Performed without the Benefit of a Plat.
 3. This Plat Represents a current Field Survey.



- Legend
- S/L = Set
 - F/ = Found
 - R/M = Right of Way
 - D.B. = Deed Book
 - Pg. = Page
 - P.B. = Plat Book
 - R = Reserve Droptield
 - P = Primary Droptield
 - M = Water Line
 - W = Wood Line



PUMP SYSTEM PLANS AND SPECIFICATIONS

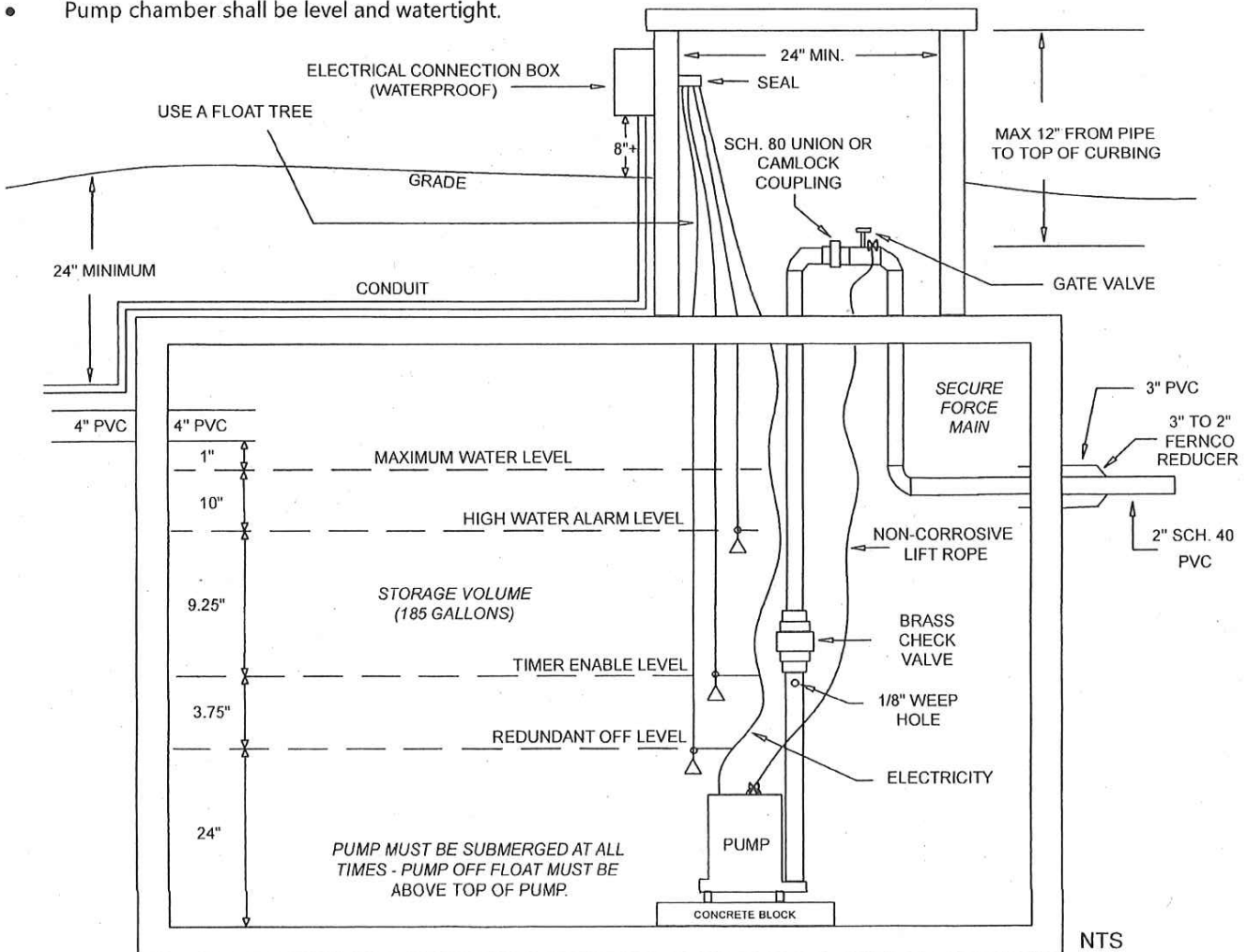
14/16

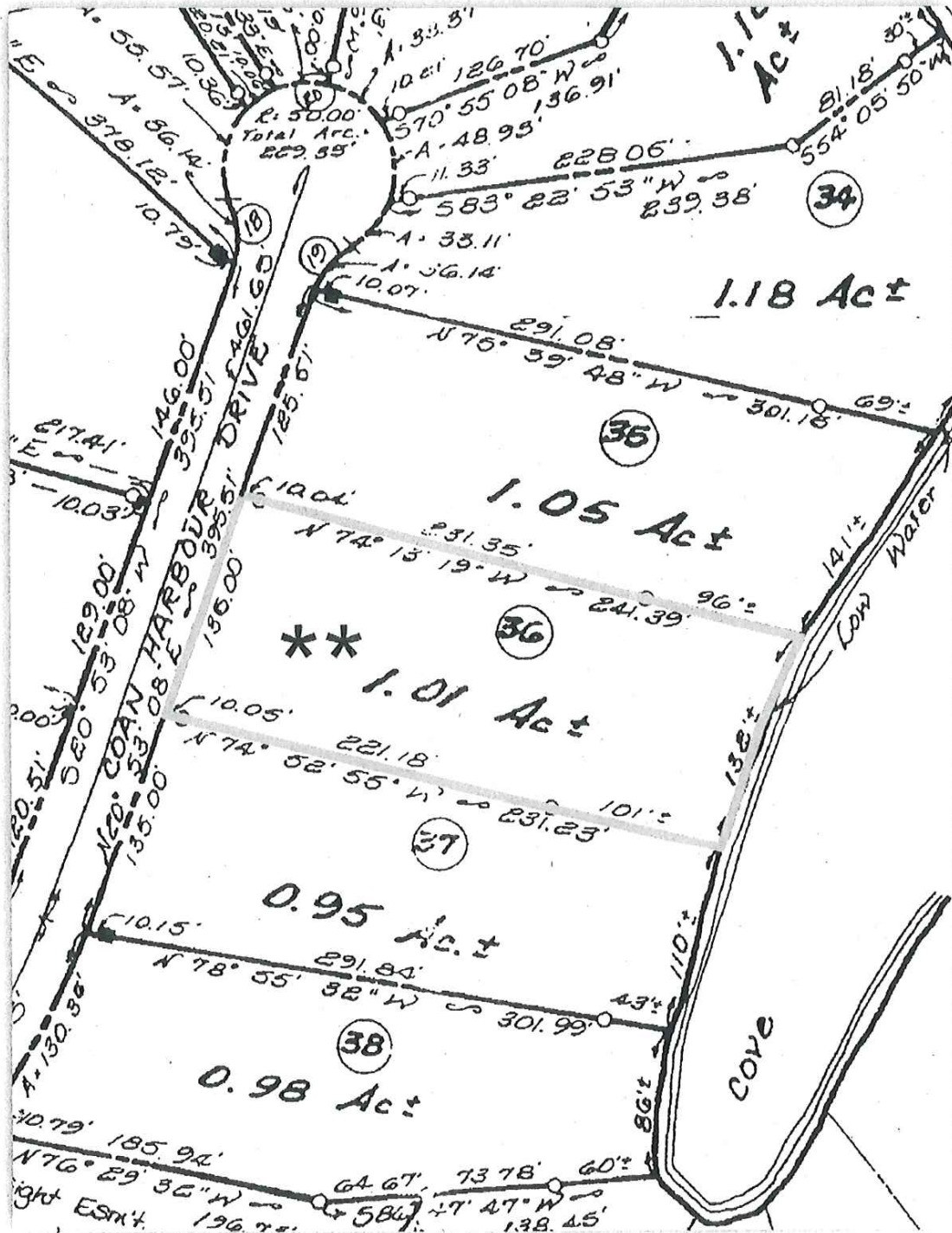
Pump Chamber Size in Gallons:	1000 gallons
Drawdown in Gallons (Each Pump Cycle):	75 gallons
Drawdown in Inches (Each Pump Cycle):	3.75 inches
¼ Day Storage Volume in Gallons:	112.5 gallons
¼ Day Storage Volume in Inches:	5.63 inches

Force Main shall be 2" Diameter SCH 40 PVC pressure pipe with pressure fittings.
 Pump must provide 36 Gallons per minute minimum and 84 gallons per minute maximum at system head.

Maximum Pump Cycle Time (Drawdown in Gallons 36 GPM = 2 mins. 5 secs.
 Minimum Pump Cycle Time (Drawdown in Gallons 84 GPM = 0 mins. 54 secs.

- Pump shall be of the open face centrifugal type designed to pump sewage.
- The pump station must be provided with controls for automatically starting and stopping the pump based on water level.
- The electrical motor control center and master disconnect switch shall be placed in a secure location above grade and remote from the pump station.
- Each motor control center shall be provided with a manual override switch.
- A high water alarm with remote sensing and electrical circuitry separate from the motor control center circuitry shall be provided.
- The alarm shall be audiovisual and shall alarm in an area where it may be easily monitored.
- All electrical connections shall be hardwired.
- Do not use compression fittings.
- Force main shall be deep enough to prevent freezing.
- Pump chamber shall be level and watertight.







Pump Specification

FL30-Series
1/3 HP Submersible Effluent Pumps

