202200003 Daylily Preschool

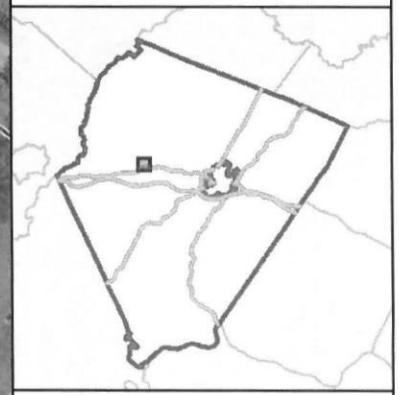


Legend
(Note: Some items on map may not appear in legend)

Parcel Info
- ☐ Parcels

Page 1 of special use permit application SP202200003 Daylily Preschool's Resubmittal

Title: Concept Plan
Date: 7/18/2022



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July 12, 2022

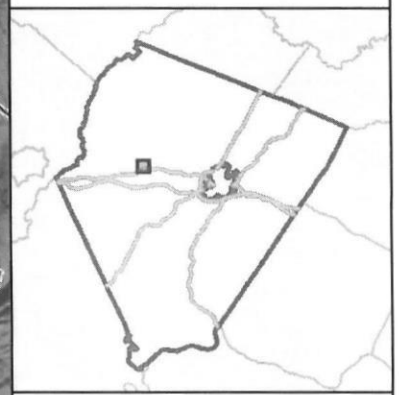
SP202200003 Daylily Preschool



Legend
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Parcel Info

☐ Parcels

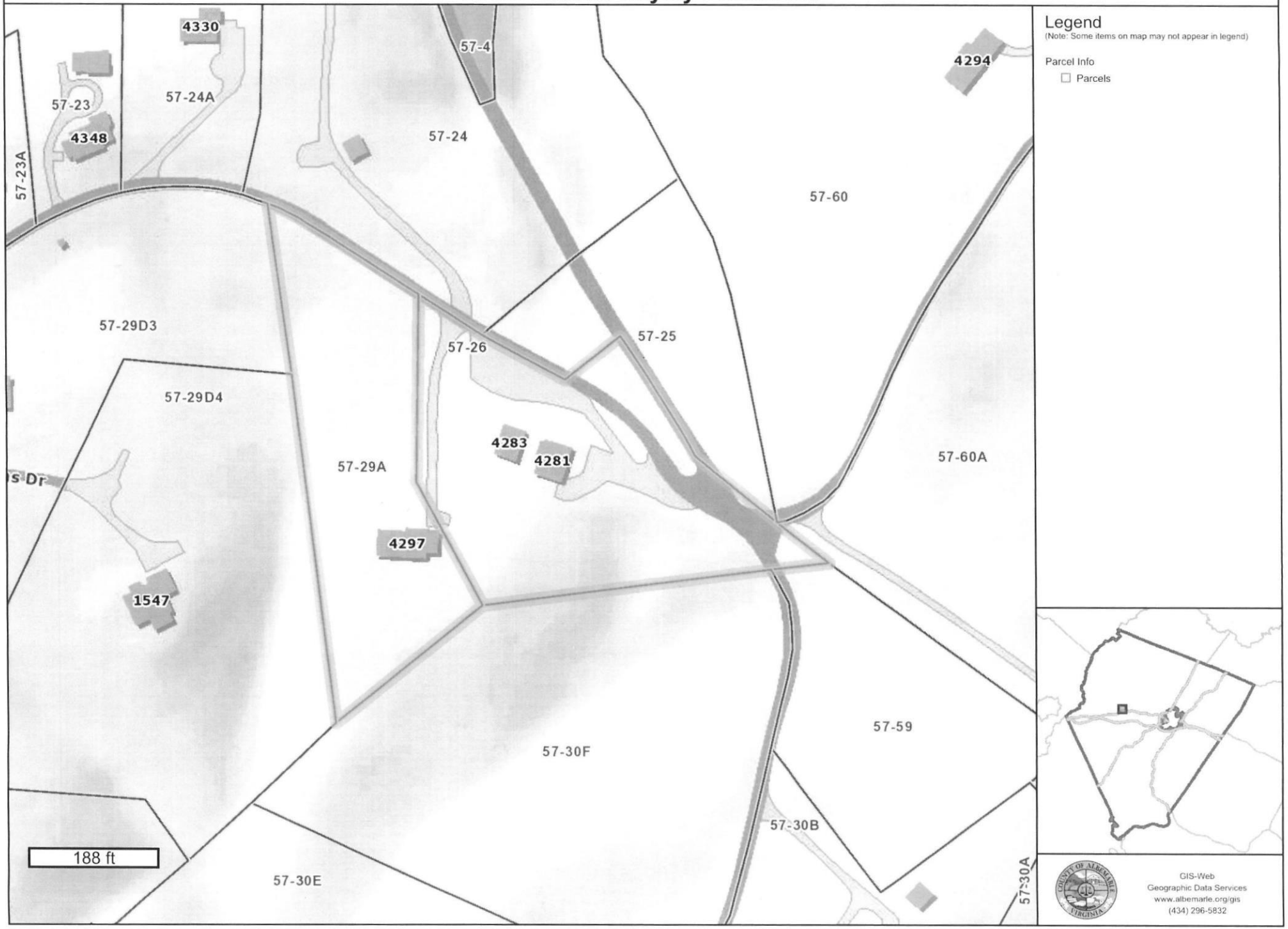


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May 12, 2022

SP202200003 Daylily Preschool



Legend

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Parcel Info

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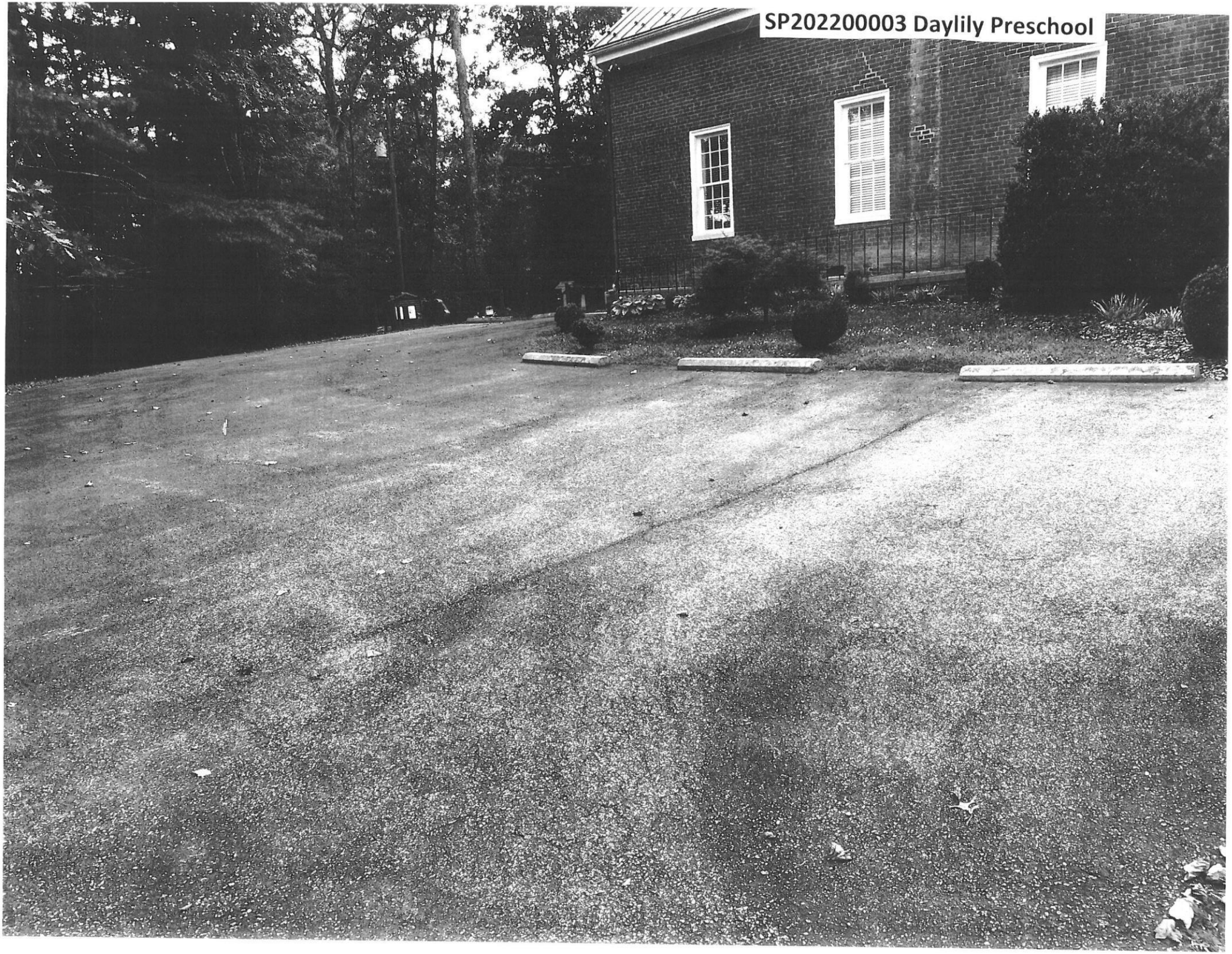
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SP202200003 Daylily Preschool

Parent parking lot will be in the front of Mountain Plain Baptist Church. It contains eleven parking spaces for parents to park. Parents will escort their children to the preschool at 8:30 am. Parents will pick up their children at 12:30pm, 3:30pm, and 5:30pm from the preschool and walk them back to the front parking lot. Teachers will park on the side parking area of the church.


SP202200003 Daylily Preschool


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6/15/2022

Capacity Assessment
Onsite Wastewater System



Mountain Plain Baptist Church
Moving Preschool from Church to Rectory

Physical Address: 4297 Old Three Notched Road Charlottesville, VA 22901

ATTN: VDH – Albemarle County

Assessment conducted by Old Dominion Engineering (ODE)

Facility Usage

The church is located on TM 57-26 (2.34 acres) and the rectory is located on the adjacent parcel TM 57-29A (1.69 acres). The existing preschool has been conducted in the church. They are moving the preschool to the rectory building. Minor improvements to the rectory building were done, however no building permit was required.

The existing septic system for the rectory is quite old (installed in 1966). The septic system consists of a 1000 gallon septic tank and 800 square feet of drainfield (4 trenches, 2' wide, 100' long, approximately 24" deep). The septic system was for a 3 bedroom house.

The rectory water supply is from the church well (no records on file).

The new usage of the facility is for a preschool (Daylily Preschool). The preschool usage projections are:

- 30 - 50 kids
    - Starting at 30 kids and would like to grow to 50 kids
- 3 - 4 staff

This capacity assessment was done to determine if the rectory onsite wastewater and treatment system can handle the new usage of a preschool.

Current Onsite Wastewater System Condition

1. Drainfield - No surfacing was found in the dispersal area during the inspection on 6/8/22.
2. Septic Tank - Inspection of visual components were satisfactory.
3. The cleanout is 4" SCH 40 PVC. It appears as if the sewer pipe has been replaced with modern materials.

Old Dominion Engineering – 366 South Linden Avenue - Waynesboro, VA 22980 - olddomeng@ntelos.net

Estimated Water Usage and Wastewater Strength

The wastewater characterization is based upon the following information.

The peak septic usage is calculated at full capacity:

- Preschool Children - 50
- Preschool Staff - 4

Water Usage and Wastewater Strength Unit Rates and Basis - Daylily Preschool

Usage	Water Usage Rates (gpd/unit)	Water Usage Estimate Basis	BOD/TSS Strength (mg/l)	BOD/TSS Strength Basis
Preschool Children	6	Water usage monitoring of similar facilities (with safety factor)* USEPA Onsite Wastewater Treatment Systems Manual Table 3-5 School without cafeteria, gym, or showers - (range 5-17 gpd/student)	300	Per 12VAC 5-610-670 BOD #/Day converted to concentration - School without showers and with or without cafeteria
Preschool Staff	10	Per USEPA Onsite Wastewater Treatment Systems Manual Table 3-4 Office Employee 7-16 gpd/employee	240	Per 12VAC 5-610-670 BOD #/Day converted to concentration - Office Building Employee

* Water study from Hunters Way Preschool and Regents School both of which are located in Albemarle County. Hunters Way Preschool used an average of 3.4 gpd/person and Regents School used an average of 4.7 gpd. Both studies were 3 months. The demographics of Hunter Way Preschool was 36 children and teachers; age groups 7 months-3 years and 4-6 years, 5 days per week, 11 hours per day. The demographics of Regents School was 93 Students and teachers; K-9th grade, typical school year August to June. Factor of Safety exceeds 1.8/1.3. 6 gpd/person is consistent with USEPA Onsite Wastewater Treatment Systems Manual Table 3-5 Day Schools, without cafeteria, gym, or showers 5-17 gpd/person.

Peak Water Usage and Wastewater Strength Estimate - Daylily Preschool

Water Usage Activity	Number of Units	Unit Water Usage (gpd/unit)	Total Water Usage (gallons)	Estimated BOD (mg/l)	Biological Load (lbs. BOD)
Preschool Children	50	6	300	300	0.7
Preschool Staff	4	10	40	240	0.1
Total			340	292	0.8

The wastewater effluent strength will not exceed residential strength for BOD or TSS. The wastewater strength is estimated at 292 mg/l BOD/TSS. Water usage is estimated at 340 gpd.

Old Dominion Engineering – 366 South Linden Avenue - Waynesboro, VA 22980 - olddomeng@ntelos.net

Current Onsite Wastewater System Capacity

1000 gallon septic tank capacity @ 2 day detention time

$$Q = \frac{V}{\theta} = \frac{1000gal}{2days} = 500gpd$$

Estimated peak flow of 340 gpd < 500 gpd - OK

Drainfield Capacity per Day at Septic Tank Effluent

Drainfield Capacity of Original VDH permit is 450 gpd
Design HLR = .56 GPD/SQFT
Originally Sized for a 3 BDR Home
Corresponds to a current perc rate of 30-35 mpi

Proposed Hydraulic Loading = 340 gpd
Proposed HLR = .425 GPD/SQFT
Corresponds to a current perc rate of 45-50 mpi

Adequate area is available on the property for a repair drainfield

Conclusions

The existing septic system is adequate for the new usage of a preschool.
The well permitting will be required to be upgraded from a private well to a non-transient non-community well. The owners have contacted VDH-ODW and begun the process of converting the water system permit.

Recommendations

The drainfield is quite old. Due to the age of the drainfield ODE makes the following recommendations:

- It would be prudent for the Church to financially plan for an eventual drainfield replacement. The preschool and church should monitor the performance of the drainfield (i.e. observe any soggy spots developing during mowing would be adequate).
- Monitor the water usage at the rectory on a monthly basis and determine the daily water usage for preschool usage days (total water used during the month divided by the total number of days the preschool was open). Verify that the daily water usage is less than the estimated amount (340 gpd).
- Avoid growing the preschool too large. The more kids at the school, the more water used and delivered to the septic system. The less water put in the septic system, the longer the drainfield will last.

Old Dominion Engineering – 366 South Linden Avenue - Waynesboro, VA 22980 - olddomeng@ntelos.net

Daylilly Preschool: Found NTNC Waterworks

From: Valencia, Taylor (taylor.valencia@vdh.virginia.gov)

To: lfclaman@yahoo.com

Date: Tuesday, July 12, 2022 at 01:37 PM EDT

Good Afternoon Elizabeth,

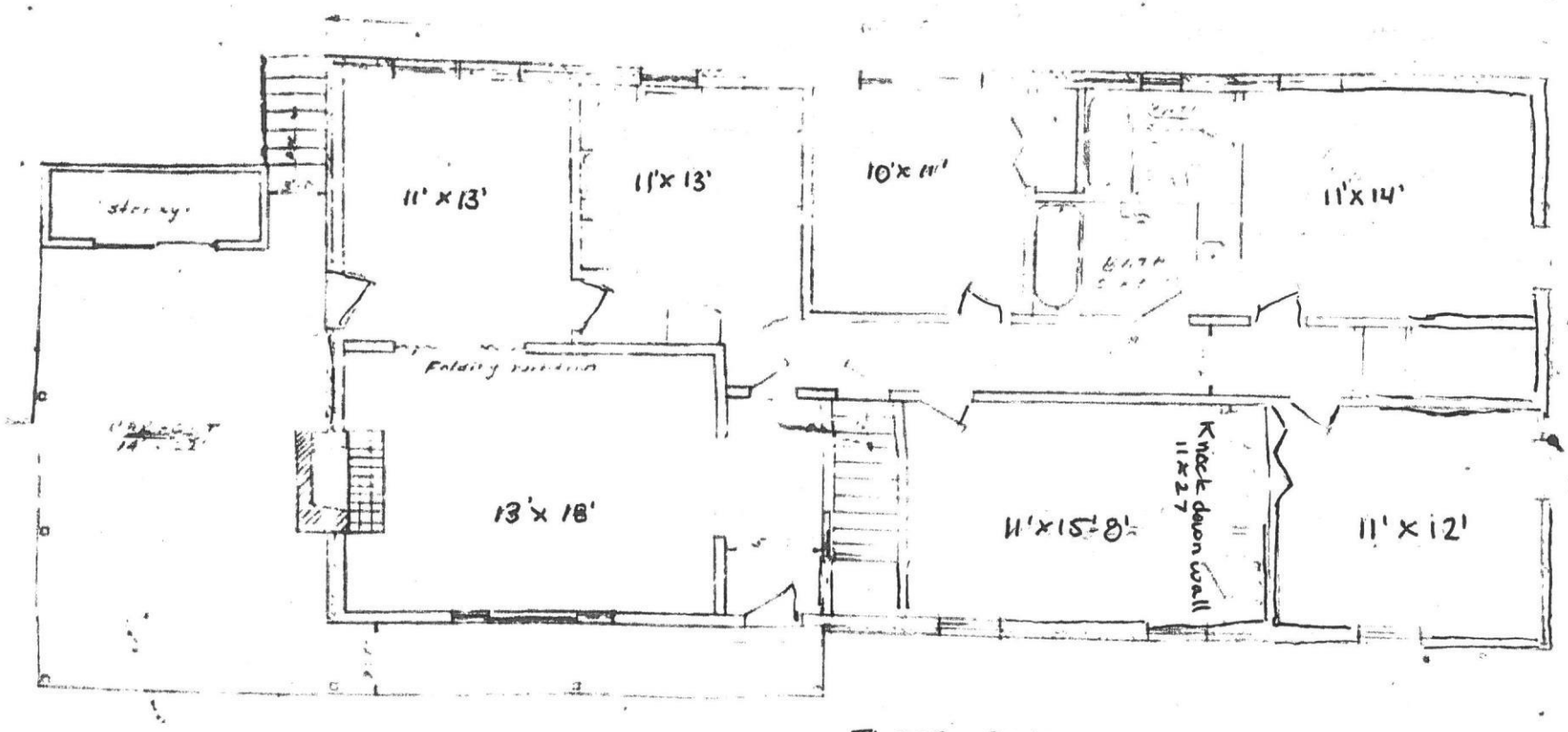
Our office is moving forward with "grandfathering" the Daylilly Preschool facility as a nontransient noncommunity (NTNC) waterworks system to be regulated by our office. A public waterworks system identification number has been created for your waterworks system (PWSID 2003525). Over the next few weeks, I'll help you through the permitting process and all required submittals to our office in order for us to issue you a formal standard waterworks operation permit.

The closer we get to issuing you a standard waterworks operation permit, we will contact you to schedule a formal inspection (also called a sanitary survey) of the system. Our in-person meeting on July 8th served as an "initial visit" but not a formal inspection. Your facility should be permitted by the end of this year. However, we will require sampling requirements to commence once the facility is serving 25 or more people. Sometimes, the paperwork side of things can take longer than expected but the sampling requirements begin as soon as the system is classified as a public system that is serving 25 or more people for 60 or more days out of the year.

Please let me know if you have any questions!

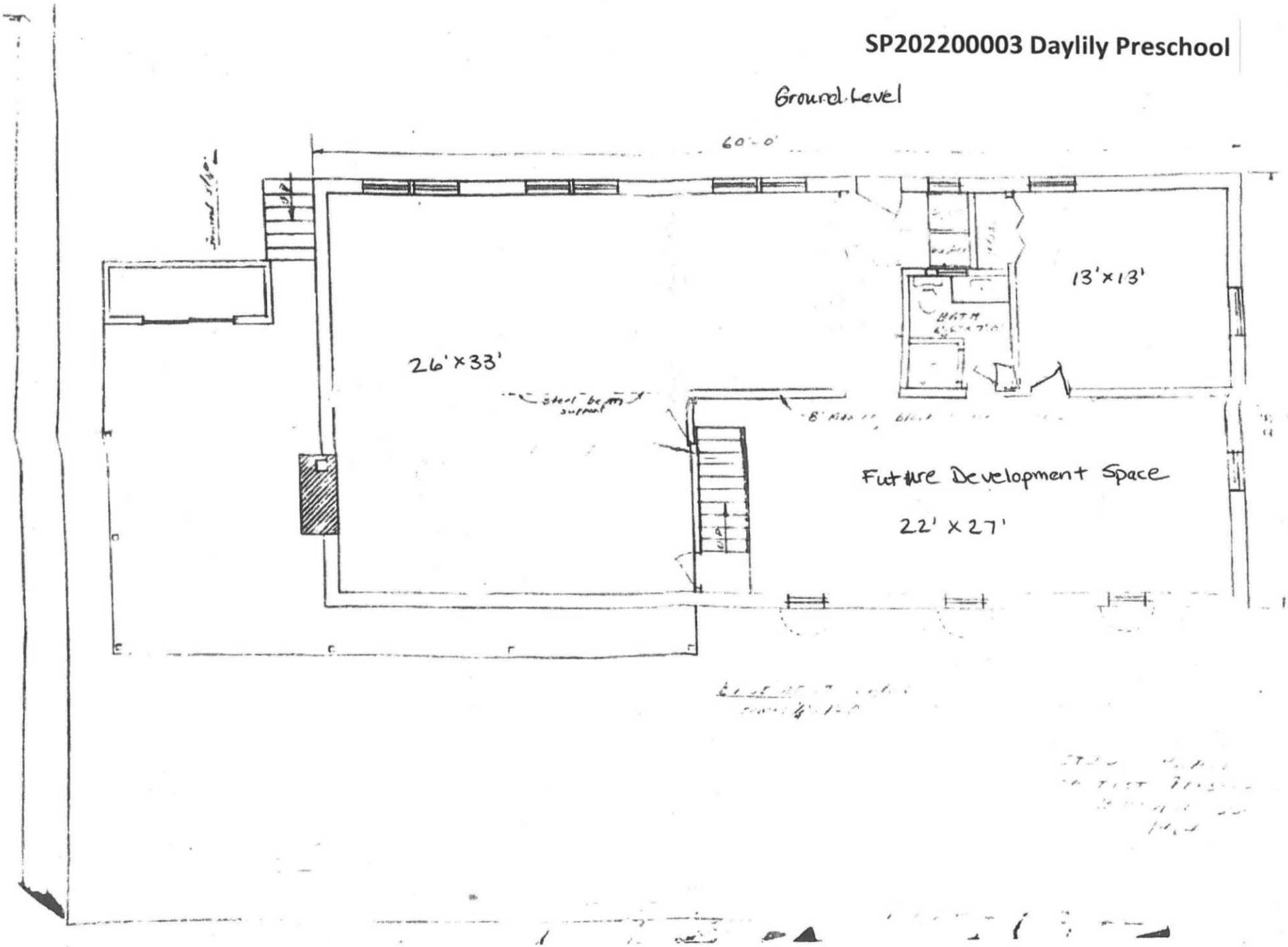
Taylor L. Valencia
District Engineer
Virginia Department of Health
Office of Drinking Water - Lexington, VA
Phone: (540) 463-0421

SP202200003 Daylily Preschool

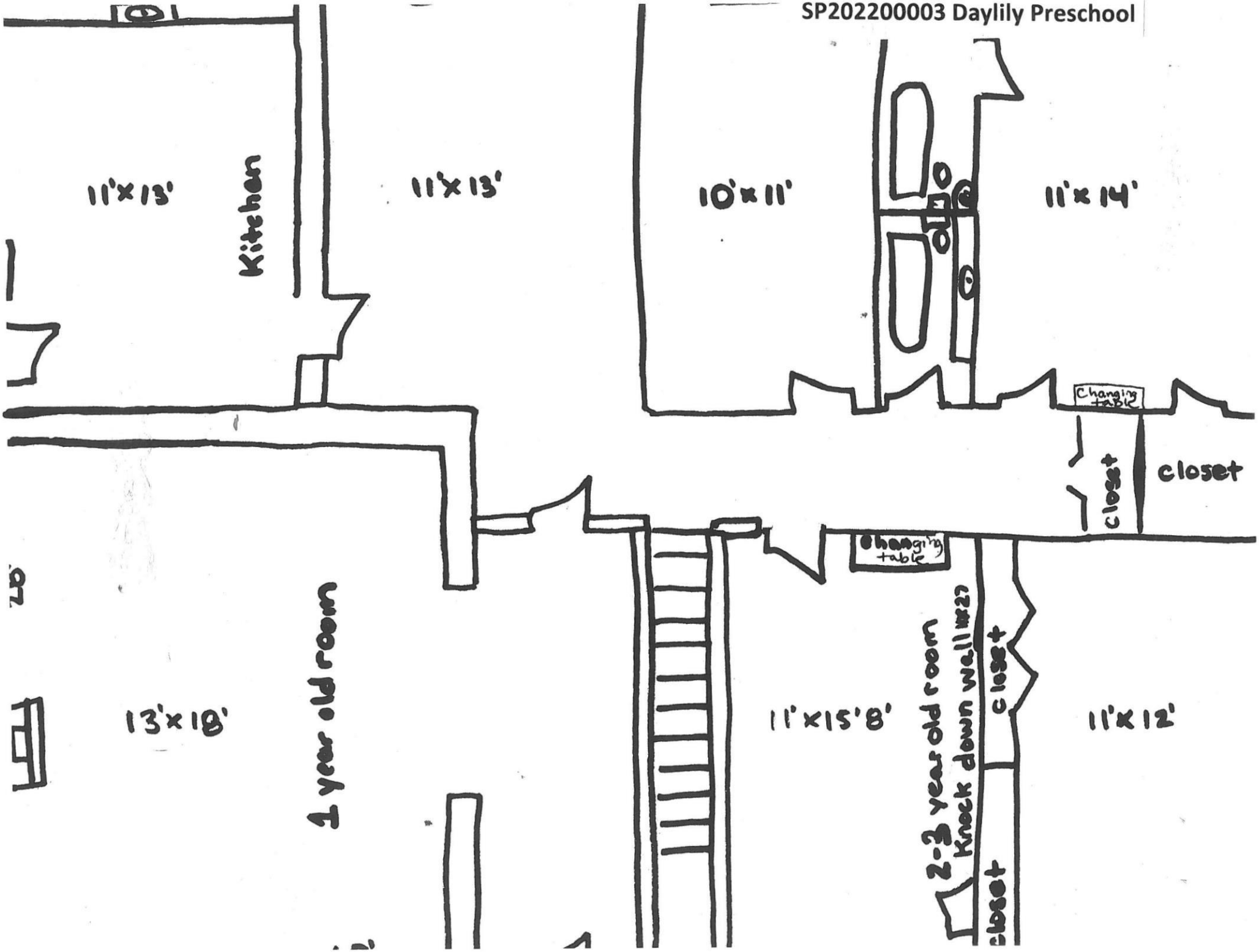


FLOOR PLAN

SP202200003 Daylily Preschool



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