App# EH2109-0015

Harnett County Department of Public Health

Improvement Permit

A building permit cannot be issued with only an Improvement Permit

PROPERTY LOCATION: 5005 NC 55 W Angier, NC 27501

ISSUED TO: John Roberts / James Garner SUBDIVISION _____ LOT # _____

NEW ☐ REPAIR ☐ EXPANSION ☐ relocation ☒ Site Improvements required prior to Construction Authorization Issuance:

Type of Structure: Ext. 3-Bedroom 35'x51' SFD

Proposed Wastewater System Type: Conv. / 25% Reduction

Projected Daily Flow: 360 GPD

Number of bedrooms: 3 Number of Occupants: 6 max

Basement ☐ Yes ☒ No

Pump Required: ☒ Yes ☐ No ☐ May be required based on final location and elevations of facilities

Type of Water Supply: ☐ Community ☒ Public ☒ Well Distance from well 50+ feet

Permit valid for: ☒ Five years ☐ No expiration

Permit conditions: _____

Authorized State Agent:: A. Curlin, REHS Date: 10/07/2021 SEE ATTACHED SITE SKETCH

The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This site is subject to revocation if the site plan, plat, or the intended use changes. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to conditions of this permit..

Construction Authorization

(Required for Building Permit)

The construction and installation requirements of Rules .1950, .1952, .1954, .1955, .1956, .1957, 1958, and .1959 are incorporated by references into this permit and shall be met. Systems shall be installed in accordance with the attached system layout.

ISSUED TO: John Roberts / James Garner PROPERTY LOCATION: 5005 NC 55 W Angier, NC 27501

SUBDIVISION _____ LOT # _____

Facility Type: Ext. 3-Bedroom 35'x51' S ☐ New ☐ Expansion ☐ Repair ☒ relocation

Basement? ☐ Yes ☒ No Basement Fixtures? ☐ Yes ☐ No

Type of Wastewater System** Conventional / 25% Reduction Sys. (Initial) Wastewater Flow: 360 GPD

(See note below, if applicable ☐)

Conventional / 25% Reduction (Repair)

Installation Requirements/Conditions

Septic Tank Size ~~Ext. 1000~~ 1250 gallons [new]

Pump Tank Size 1000 gallons [new]

Number of trenches 3

Exact length of each trench 50 feet

Trenches shall be installed on contour at a

Maximum Trench Depth of: 20 inches

(Trench bottoms shall be level to +/-1/4" in all directions)

Trench Spacing: 9 Feet on Center

Soil Cover: 8 inches

(Maximum soil cover shall not exceed 36" above the trench bottom)

Pump Requirements: _____ ft. TDH vs. _____ GPM

NA inches below pipe

Aggregate Depth: NA inches above pipe

NA inches total

Conditions: Proposal by Ground Truth Soil Consulting, PLLC

WATER LINES (INCLUDING IRRIGATION) MUST BE 10FT. FROM ANY PART OF SEPTIC SYSTEM OR REPAIR AREA.
NO UTILITIES ALLOWED IN INITIAL OR REPAIR DRAIN FIELD AREA.

**If applicable: *I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.*

Owner/Legal Representative Signature: _____ Date: _____

This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes. The Construction Authorization shall not be transferred when there is a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit. SEE ATTACHED SITE SKETCH

Authorized State Agent: A. Curlin, REHS Date: 10/07/2021

ANDREW CURLIN Construction Authorization Expiration Date: 10/07/2026

Application # EH2109-0015

Harnett County Department of Public Health
Site Sketch

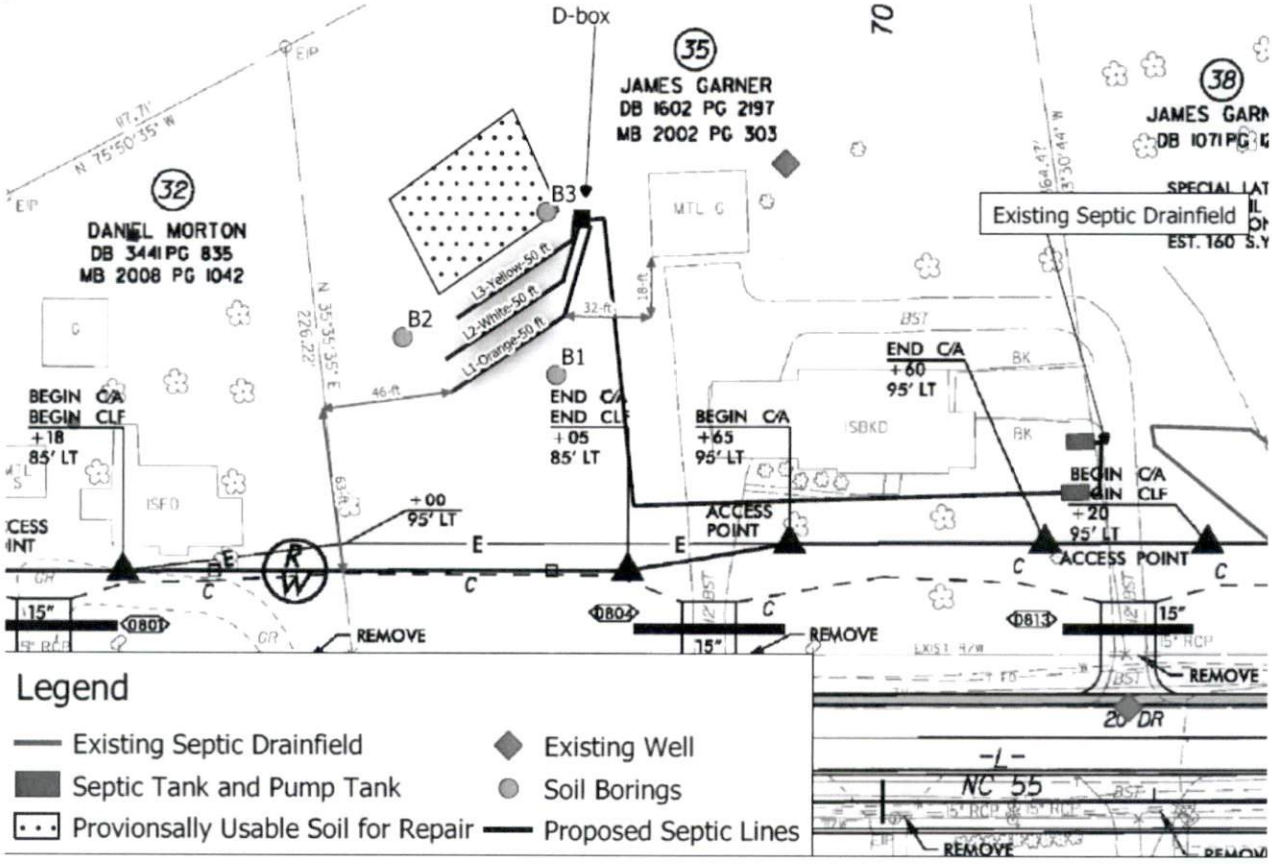
Property Location: 5005 NC 55 W Angier, NC 27501

Issued To: John Roberts / James Garner Subdivision _____ Lot # _____

Authorized State Agent: _____ Date: 10/07/2021

ANDREW CORBIN

* EXT TANK SHALL BE PUMPED, CRUSHED, AND BACKFILLED ONSITE
* PIPE UNDER DRIVEWAY SHALL BE DUCTILE IRON OR DOT EQUIVALENT CASING
* PUMP TO MEDIUM D-BOX REGULAR DISTRIBUTION REQUIRED



* RELOCATION FOR DOT ROW *

This drawing is for illustrative purposes only. System installation must meet all pertinent laws, rules, and regulations.

Residential Subsurface Wastewater Treatment and Disposal System Proposal

Property:
5005 NC 55 W
Angier, NC
PIN: 0682-57-3759.000
Harnett County, NC
Ground Truth Job # 21-148

Prepared For:

The Right of Way Group, LLC
225 Green Street, Suite 910
Fayetteville, NC 28301

Prepared By:

Ground Truth Soil Consulting, PLLC
1302 Roberts Road
Newport, NC 28570
(252) 725-1320

September 23, 2021

John C. Roberts

LICENSED SOIL SCIENTIST
JOHN C. ROBERTS
1292
STATE OF NORTH CAROLINA

INTRODUCTION & SITE DESCRIPTION

A Soil & Site Evaluation was performed for NCDOT Parcel 035 located at 5005 NC 55 W, Angier, NC (PIN: 0682-57-3759.000). Ground Truth Soil Consulting, PLLC (Ground Truth) was retained to prepare a proposal for an on-site wastewater treatment and disposal system that would allow for the relocation of a subsurface septic system for an existing 3-bedroom home (360 GPD). The lot was evaluated in accordance with North Carolina statutes for waste disposal ("Laws and Rules for Sewage Treatment and Disposal Systems", amended December 6, 2018").

The NCDOT project R5705A is proposed to impact the existing septic drainfield. A relocation permit is requested to relocate the septic drainfield.

The field survey was conducted in August and September 2021 by John C. Roberts, LSS. Soil borings were advanced via a hand auger and evaluated under moist conditions using procedures listed in the *Field book for Describing and Sampling Soils, Version 3.0.* Soil color was determined using a Munsell Soil Color Chart. Observations of the landscape as well as soil properties (depth, texture, structure, soil wetness, restrictive horizons, etc.) were recorded. It was determined sufficient amount of Suitable Group I soils are available within the project area for installation of a Pump to a gravel system for a 3-bedroom home. Suitable soils also exists to support a Pump to gravel repair septic system.

LOCATION

The lot is located at 5005 NC 55 W ANGIER, NC 27501.

PLANS AND SPECIFICATIONS

A. Septic Tank

1. The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1,000 gallons in capacity (at minimum).
2. The septic tank shall be fitted with an approved effluent filter.
3. It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tanks have had time to properly cure and are free of cracks or other structural deficiencies.

B. Pump Tank

1. The pump tank shall be State approved, of one-piece construction, watertight, structurally sound and 1,000 gallons in capacity (at minimum). Again, it is the responsibility of the septic tank contractor to thoroughly inspect each pump tank prior to accepting delivery.
2. All pipe penetrations into the tank shall be booted (i.e., C-293 boot with a stainless-steel strap).
3. The pump tank shall have access risers that extend, at a minimum, 6 inches above finished grade and must have less than 36 inches of fill over its top once finished grade has been established (a reinforced concrete tank will be required if finished soil cover is 36 inches or greater in depth).
4. Floats, pump and control circuits, and the control panel shall meet the requirementsof Rule .1952(c). Panel and control equipment shall include lightning protection, be protected from

unauthorized access, and always remain accessible to the systemoperator.
5. The pump and alarm controls shall be provided with manual circuit disconnects within a watertight, corrosion resistant, Nema 4x rated control panel. The control panel must be securely mounted outside, adjacent to the pump tank riser and at a minimum of 18 inches above finished grade. Pump and float control wiring shouldbe long enough to reach from the tank to the control panel without splicing, routed through wire conduit, and sealed at the openings within the pump tank as well as the control panel enclosure. It is paramount that the conduit is properly sealed to prevent the escape of flammable gases from the pump tank. Furthermore, there must be two electrical circuits for the pump tank controls: one for the pump and one for the alarm controls.
6. Float switch tie downs must be made of a corrosion resistant material (per OWPS,all metal in the tanks shall be stainless steel). Floats should be mounted on a separate "float tree" rather than the pump supply line (see pump tank detail).
7. The pump removal system will be via a pump tether made of nylon rope or its equivalent. The tether material should be resistant to mildew and rot.

C. Pipes and Fittings

1. All discharge piping, connectors and supply lines should be made of SCH 40 PVC.
2. All joints must be properly "welded" utilizing the appropriate PVC cement for each application.
3. The supply line will be approximately 270 feet long from the septic tank to the d-box.

D. Distribution Method

1. Drainlines will be fed via pump to d-box.
2. The supply line conveys effluent from the pump to the d-box.
3. The supply line will be sleeved in ductile iron or equivalent when installed underneath driveway for a distance of 10-ft either side of driveway.

E. Drainfield Installation-Initial

1. The drainfield has been previously laid out on-site utilizing metal stemmed flags. The property owner/builder should mark this area and isolate it as much as possible from construction traffic.
2. Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition.
3. The specified system is a pump system. Gravel drainlines or equivalent will be utilized. Drainlines shall be installed no deeper than 20 inches.
4. The drainfield consists of three (3) lateral trenches to be constructed 3-foot wide by 50 feet in length. Total drainline length is 150 feet.
5. The maximum trench depth for this system shall be 20 inches.
6. The laterals are to be installed keeping the individual trench bottoms level from beginning to end.
7. The trenches should be left open for the final inspection by the HCEH.

F. Final Landscaping

1. Final cover over the drainfield shall be at least 6 inches deep. If additional cover is needed, Group II (sandy loam) or Group III (sandy clay loam) soil shall be utilized.
2. The drainfield shall be shaped to shed rainwater and be free from low spots.

3. The drainfield area should be planted with grass as soon as possible to prevent erosion. The soil should be limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

G. Utility Conflicts

1. The builder and property owner must take special care in planning for water, power, gas, telephone and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed repair area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation. If there are any questions regarding preferred routes, contact the HCEH as soon as possible.
2. Lawn irrigation should not be placed over the drainfield area.

MAINTENANCE

H. In General

1. The owner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
2. The septic tank should be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner has the septic and pump tanks cleaned out annually.
3. When it becomes necessary to clean the effluent filter, the filter should be removed and the accumulated debris washed back into the septic tank – not onto the lawn.
4. Any damp areas, leakages or malfunctions in the drainfield area should be addressed immediately.
5. Divert gutter downspouts and surface water runoff away from the septic tanks and septic drainfield.

DESIGN SPECIFICS

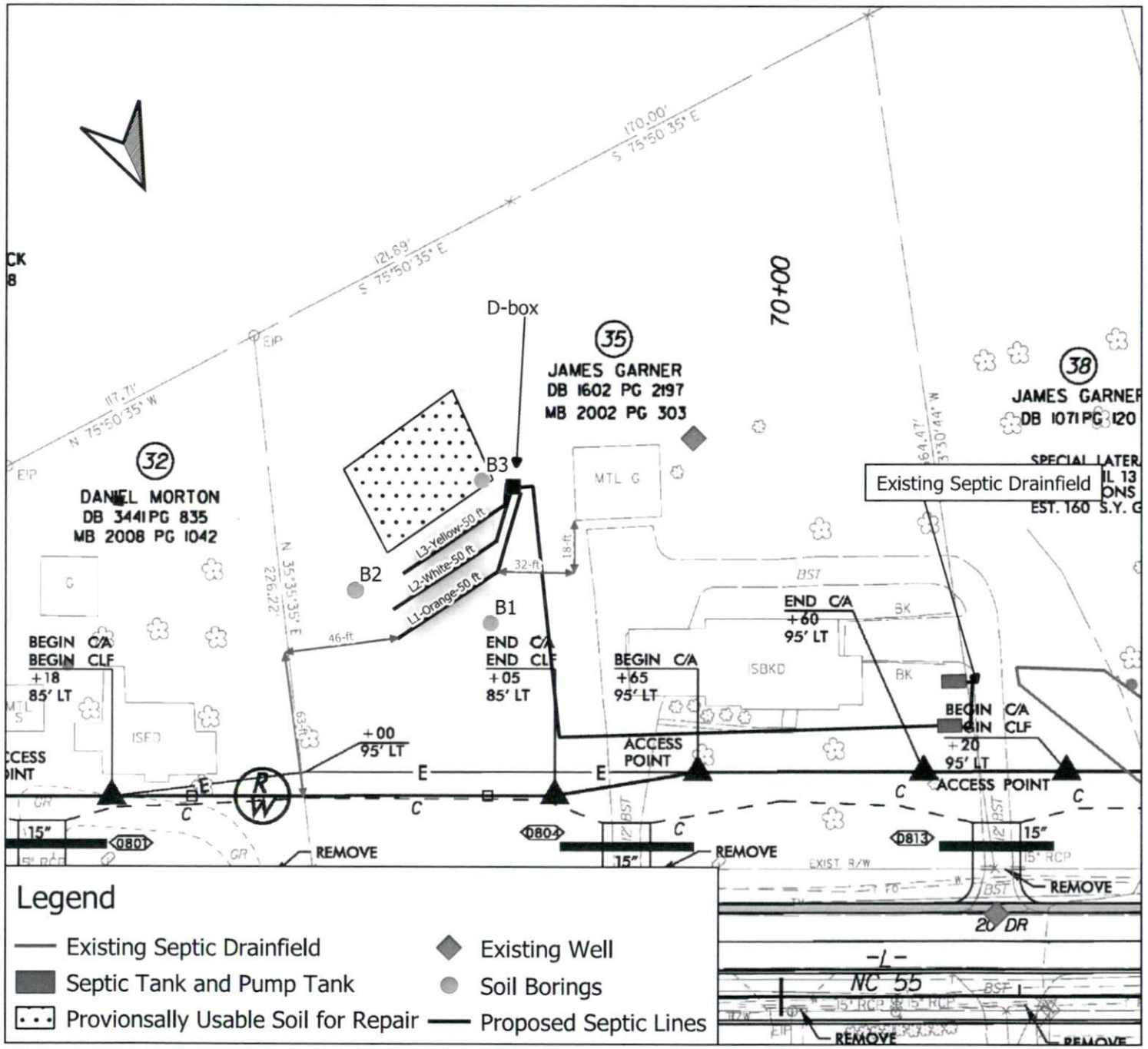
Initial System

Daily Design Flow:	360 GPD – 3-bedroom house
Septic Tank Size:	1,000 Gallons (minimum)
Pump Tank Size:	1,000 Gallons (minimum)
Effluent Loading Rate:	0.8 GPD per sq. ft.
Drainfield Type:	Gravel or Equivalent
Distribution Method:	Pump to d-box
Number of Drainlines:	(3) 3' Wide x 50' Long
Total Trench Length:	150 Linear Feet
Maximum Trench Depth:	20 inches
Final Cover Requirement:	6 Inches

Repair Specifics

Effluent Loading Rate:	0.8 GPD per sq. ft.
Drainfield Type:	Gravel or Equivalent
Distribution Method:	Pump to d-box
Total Trench Length:	150 Linear Feet
Maximum Trench Depth:	20 Inches
Final Cover Requirement:	6 Inches

Component	Relative Elevation
L1-Orange-50 ft	107.42
L2-White-50 ft	107.54
L3-Yellow-50 ft	107.65
Tank	100.00



Ground Truth Soil Consulting, PLLC

5005 NC 55 W
Angier, NC
PIN:
0682-57-3759.000

Soil and Site Evaluation

Harnett County

Scale:
1"= 60'

Figure 1

Date: September 2021

GT Job No. 21-148

LICENSED SOIL SCIENTIST
JOHN C. ROBERTS
1292
STATE OF NORTH CAROLINA

Parcel 035

Pump System Design Criteria

Mailing Address: 5005 HWY 55 Angier, NC 27501

D# : PIN: S/D: Lot#:

Site Address: 5005 HWY 55 Angier, NC 27501

Bedrooms: 3 Daily Flow: 360 gallons

Septic Tank: 1000 gallons Pump Tank: 1000 gallons

LTAR: 0.8 gpd/sqft Effective (trench) LTAR 0.8 gpd/sqft

Amt. of Drainline: 450 sqft or 150 linear ft

TRENCHES Length (ft): 150 Depth (in): 20 Stone Depth (in): 12

SUPPLY LINE Length (ft): 270 Diameter: 2" sch 40 pvc

CALCULATIONS:

minimum is Dose PRT 5 minutes if pumpir

Dose Volume (gal): 73 with Pipe Vol @ 75 Total Flow: 23 gpm

Dose Pump Run Time (min): 3.19 Daily Pump Run Time (min): 15.65

Drawdown: 73 gallons divided by 21 gal/ inch = 3.50 inches

Pump Tank Elevation(ft): 100 Pump Elevation (ft): 95

Friction Head (ft): 3.70 (supply line length + 70' for fittngs in pump tank)

Elevation Head (ft): 12.65

Total Head (ft): 16.35

Pump to Deliver: 23 gpm @ 16.35 ft head

Simplex Control Panel (SJE Rhombus 112 or equal) with elapsed time meter, cycle counter, alarm, and pump on separate circuits is required. Floats to be determined by type of pump tank used. A septic filter (Polylok PL-122 or equal) is required.

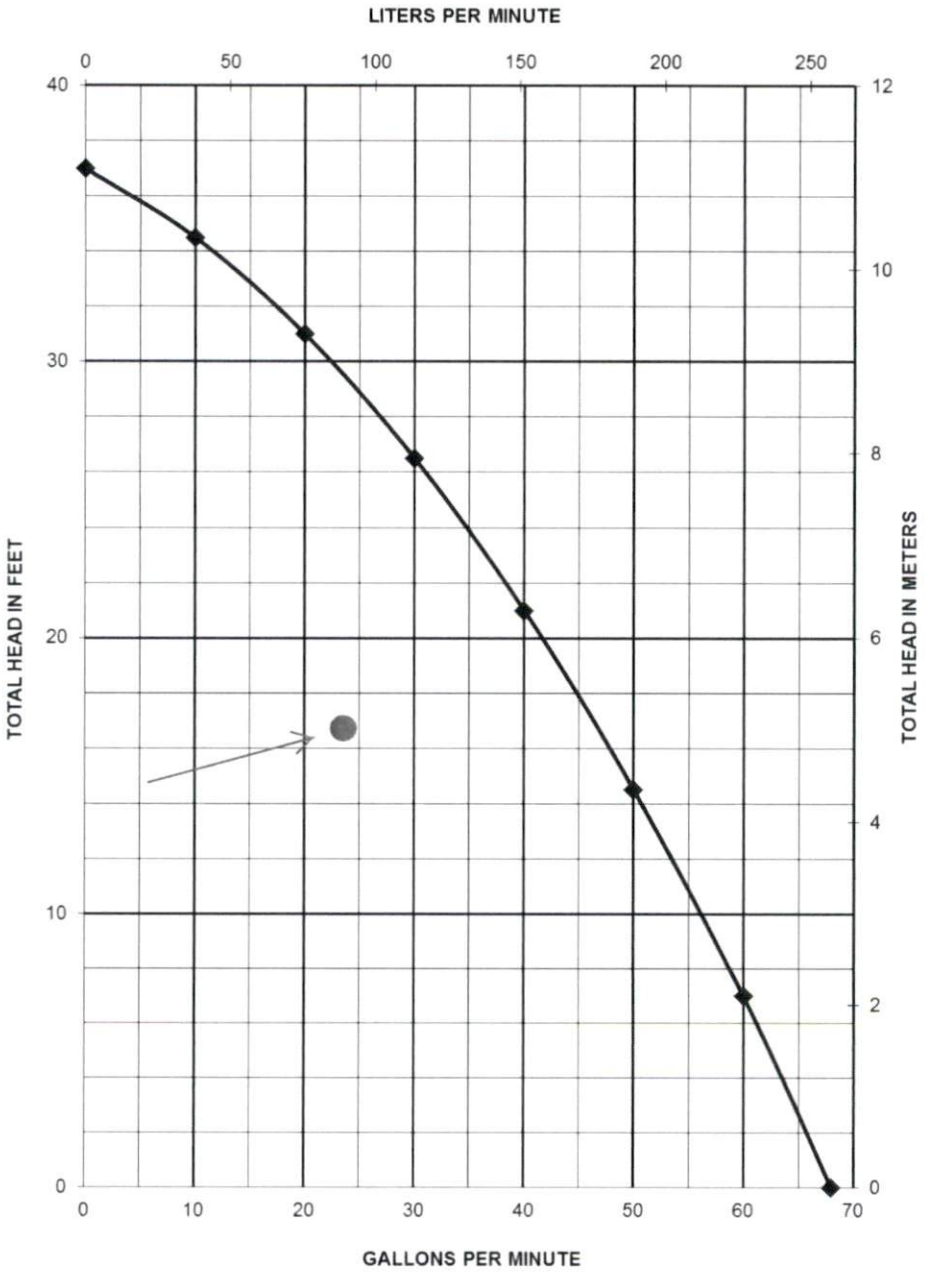
Possible Pumps Include:

Liberty Pumps 280 Series 1/2HP or equivalent

Liberty Pumps®

Pump Specifications

280 Series 1/2 hp Submersible Effluent Pump



Liberty Pumps®