

Harnett County Department of Public Health Improvement Permit

A building permit cannot be issued with only an Improvement Permit

PROPERTY LOCATION: 7450 NC 210 N LOT # _____

ISSUED TO: JOHN ROBERTS/DILLARD ENTERPRISE SUBDIVISION _____

NEW REPAIR EXPANSION RELOCATION Site Improvements required prior to Construction Authorization Issuance:

Type of Structure: EXT. COMMERCIAL BUSINESS

Proposed Wastewater System Type: PUMP TO 25% REDUCTION

Projected Daily Flow: 150 GPD 150 GPD - 6 EMPLOYEES MAX

Number of bedrooms: NA Number of Occupants: NA 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 NA feet

Permit valid for: Five years No expiration

Permit conditions: _____

Authorized State Agent: [Signature] Date: 09/20/2021 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/DILLARD ENTERPRISE PROPERTY LOCATION: 7450 NC 210 N LOT # _____

Facility Type: EXT. COMM. BUSINESS New Expansion Repair RELOCATION

Basement? Yes No Basement Fixtures? Yes No

Type of Wastewater System** 25% REDUCTION SYSTEM (Initial) Wastewater Flow: 150 GPD

(See note below, if applicable)

TS-1 SUBSURFACE DUP (Repair)

Installation Requirements/Conditions

Septic Tank Size <u>1000</u> gallons	Number of trenches <u>2</u>	Trench Spacing: <u>9</u> Feet on Center
Pump Tank Size <u>1000</u> gallons	Exact length of each trench <u>50</u> feet	Soil Cover: <u>6</u> inches (MIN)
[IF REQUIRED]	Trenches shall be installed on contour at a	(Maximum soil cover shall not exceed
	Maximum Trench Depth of: <u>16</u> inches	36" above the trench bottom)
	(Trench bottoms shall be level to +/-1/4"	
	in all directions)	

Pump Requirements: _____ ft. TDH vs. _____ GPM NA inches below pipe

Aggregate Depth: NA inches above pipe

Conditions: PUMP TO MEDIUM D-BOX EQUAL DISTRIBUTION REQUIRED NA inches total

**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: [Signature] Date: 09/20/2021
ANDREW CORBIN Construction Authorization Expiration Date: 09/20/2021

Application # FH2108-008

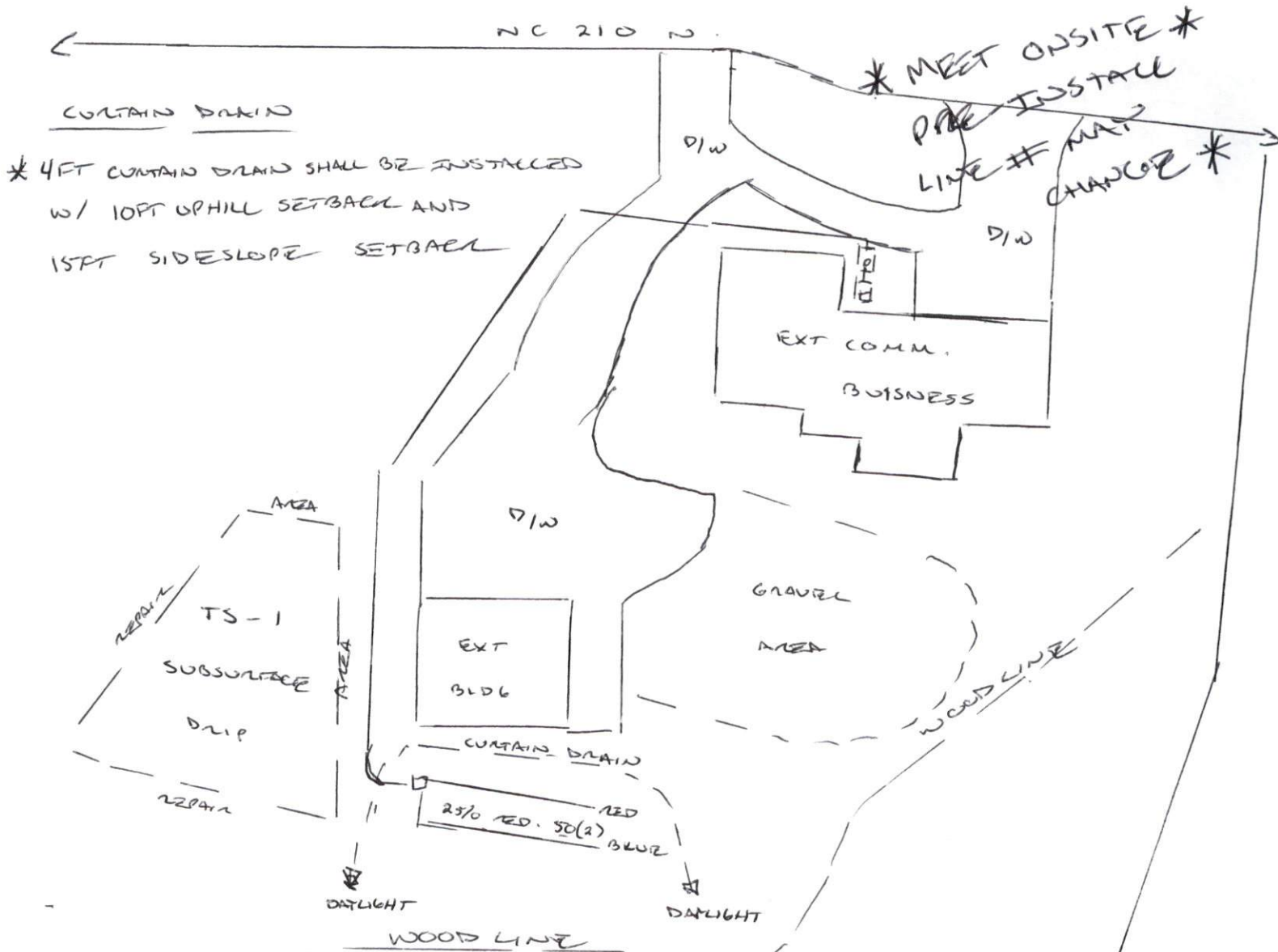
Harnett County Department of Public Health Site Sketch

Property Location: 7450 NC 210 N.

Issued To: JOHN LOGZATS/DILLARD Subdivision _____ Lot # _____

Authorized State Agent: ENTERPRISE INC Date: 09/20/2021

- * DOT RELOCATION: PROPOSAL SUBMITTED BY GROUND TATH SOIL CONSULTING, PLLC
- * EXT. TANKS SHALL BE EXPOSED AND INSPECTED TO MEET STANDARDS
- * ORIGINAL SOIL REPORT MODIFIED TO 25% REDUCTION SYSTEM
- * TWO(2) SOFT LINED OR THREE(3) 34FT LINES



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

NCDOT Parcel 112
PIN: 0673-14-4234.000
7450 NC 210 N
Angier, NC
Ground Truth Job # 21-147

Prepared For:

Dwight Dillard
3250 Campbell Road
Raleigh, NC 27606

Prepared By:



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

August 17, 2021


John C. Roberts



INTRODUCTION & SITE DESCRIPTION

A Soil & Site Evaluation was performed for the tract located at 7450 NC 210 N, Angier, NC (PIN: 0673-14-4234.000). 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 construction of a commercial facility with 6 employees and a daily wastewater flow of 150 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 drainfield. A relocation permit is requested to relocate the septic drainfield.

The field survey was conducted in June through August 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 Provisionally Suitable Group III soils are available within the project area for installation of a Low-Pressure Pipe (LPP) System initial system for the facility. Sufficient area of Provisionally Suitable soils also exists to support a pretreated subsurface drip system.

LOCATION

The lot is located at 7450 NC 210 N, Angier, NC.

PLANS AND SPECIFICATIONS

A. Septic Tank

1. A septic tank may be needed. If so, the septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 900 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. 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 320 feet long from the septic tank to the upper septic drainline.
4. Supply line must be installed under driveways must be installed greater than 30 inches under or sleeved in ductile iron, or equivalent.

C. Distribution Method

1. Drainlines will be fed via LPP distribution.

D. 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.
2. The specified system is a LPP system. Drainlines shall be installed no deeper than 12 inches.
3. The drainfield consists of two (4) LPP lateral trenches to be constructed 18-inches wide by 38 feet in length. Total drainline length is 152 feet.
5. The maximum trench depth for this system shall be 12 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.
8. Laterals will consist of 1 ¼ inch Sch 40 PVC installed in 4 inch perforated pipe sleeve with rows of holes. Holes shall be between ½ and ¾ inch diameter located approximately 120 degrees apart in downward position.
9. Orifice holes of 5/32 inch are to be drilled in 1 ¼ inch lateral lines as listed in the appended LPP Summary sheet. The first and last hole is to be turned downward with remaining holes facing upward.

E. 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.

F. 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

G. 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

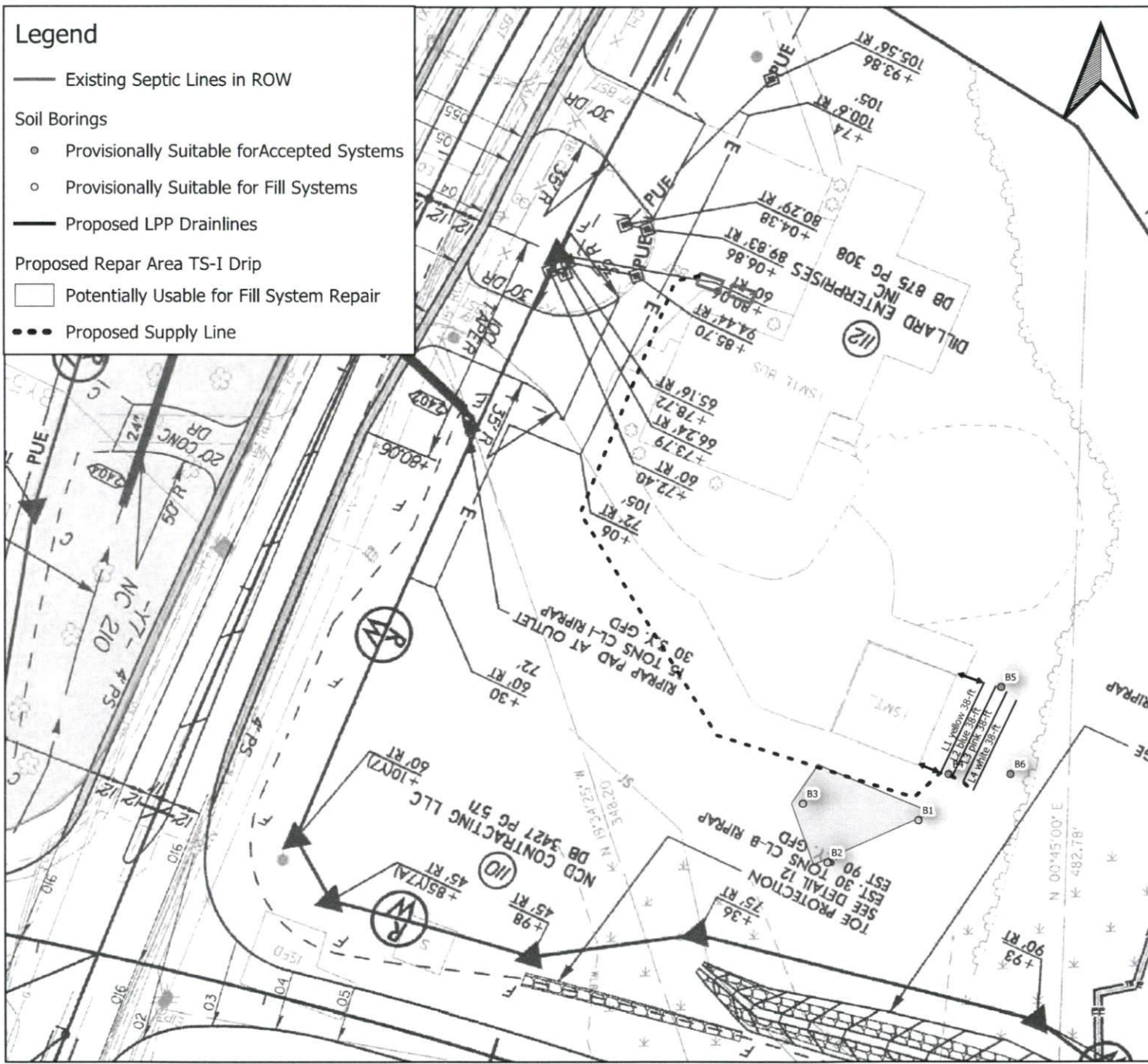
Daily Design Flow:	150 GPD – 6 employees (25 gallon per employee)
Septic Tank Size:	900 Gallons (minimum, if needed)
Effluent Loading Rate:	0.2 GPD per sq. ft.
Drainfield Type:	LPP
Distribution Method:	Distribution Box
Number of Drainlines:	(4) 1.5' Wide x 38' Long
Total Trench Length:	152 Linear Feet
Maximum Trench Depth:	12 inches
Final Cover Requirement:	6 Inches

Repair Specifics

Effluent Loading Rate:	0.4 GPD per sq. ft.
Drainfield Type:	TS-I Subsurface Drip
Distribution Method:	Drip disposal
Total Repair Area:	375 sq. ft.
Total Trench Length:	188'
Maximum Trench Depth:	6 Inches
Final Cover Requirement:	6 Inches

Legend

- Existing Septic Lines in ROW
- Soil Borings
 - Provisionally Suitable for Accepted Systems
 - Provisionally Suitable for Fill Systems
- Proposed LPP Drainlines
- Proposed Repair Area TS-I Drip
 - Potentially Usable for Fill System Repair
- Proposed Supply Line



Ground Truth Soil Consulting, PLLC

R5705A
Parcel:
112

Soil and Site Evaluation

Harnett County

Scale:
0 30 60 ft

Figure

1

Date:
August
2021

GT Job
No.
21-147



Low Pressure Pipe Summary Sheet for 7450 NC 210 HWY

Name: Dwight Dilliard

P.I.N.#: 0673-14-4234.000

D#:

Address: 7450 NC 210 N

Subdivision:

Lot#:

Number of Employees: 6 Daily Flow: 150 L.T.A.R: 0.2 gal/d/sqft

Septic Tank: 900 gals Pump Tank: 900 gals

Square Footage: 750 sqft Total Lateral Length: 150 ft

Number of Laterals: 4 Width of Trenches: 18 in

Depth of Trenches: 12 in Depth of Stone: 12 in

Lateral Pipe Size: 1 1/4 in # Of Subfields: 1

of Gatevalves: 2 # of Checkvalves: 1 (Up Hill Includes ST)

Manifold Diameter: 3 in sch40pvc Manifold Length: 12 ft

Supply Line Diameter: 2 in Sch40pvc Length: 317 ft

Design Head: 3.00 ft Elevation Head: -0.46 ft

Friction Head: 2.54 ft (Supply line length + 70' for fittings in pump tank)

TDH: 5.08 ft (Design head+Elevation Head+Friction Head)

Pump to Deliver: 16.06 gal/min at 5.08 ft of head

Pipe Volumes: 12 ft manifold x 38.4 gal/100ft= 4.608 gals

317 ft supply line x 17.4 gal/100ft= 55.158 gals

150 total lateral lengthx 7.8 gal/100ft= 11.7 gals

Lateral Dosing Volume: 11.7 gal x 7 (5 to 10x)= 81.9 gals

Draining Volume: 59.766 gals + Lateral Dosing Vol. = 141.666 gals Dosing Volume

Drawdown: 141.666 gals divided by 20 gals/in = 7.0833 inches

Pump Run Time: 8.822548 minutes

7450 NC 210

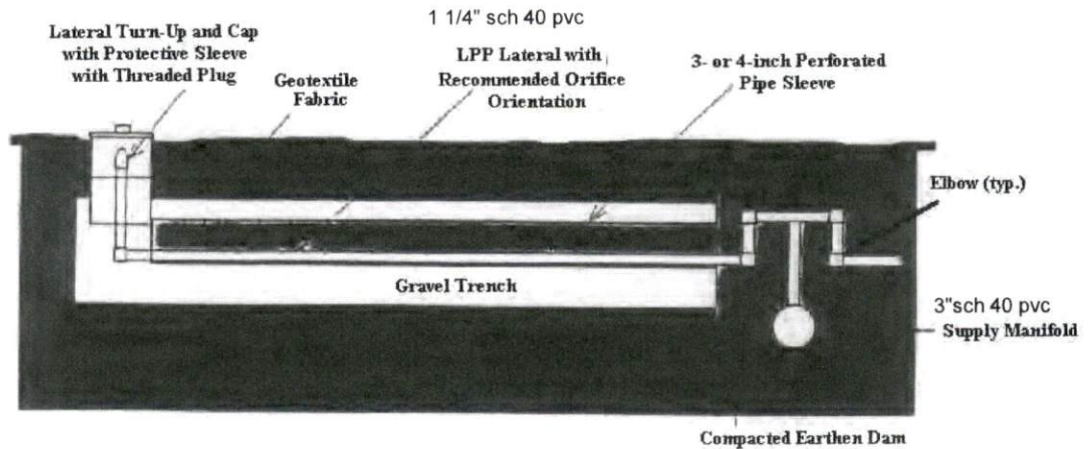
LPP DESIGN

Bench Mark is = 100.00 set at **PumpTank elev** 104.75 **Pump** 99.75 **Manifold Elevation** 99.29
subfield 1

line	color	rod read	elev.	elev. dif.	head	length	hole size	flow/hole	spacing	# holes	1st/last	flow/lat	inst. flow rate
1			98.29	0.00	3.00	38	5/32	0.4986	4.00	9	3.00	4.49	0.1181
2			97.66	-0.63	3.00	38	5/32	0.4986	4.57	8	3.00	3.99	0.1050
3			97.29	-1.00	4.00	38	5/32	0.5757	5.33	7	3.00	4.03	0.1060
4			97.06	-1.23	4.23	38	5/32	0.5920	6.40	6	3.00	3.55	0.0935
					total feet =	152						gal/min =	16.06
					Total Feet =	152						Total gal/min =	16.06

Typical LPP Trench and Manifold Details

Figure 1: Manifold, Lateral, and Trench



** Hole orientation should be upward except for a hole 1/3 and 2/3 the distance from the manifold which should face down for drainage of pipe between pump cycles.

Figure 2: Cross Section of Trench

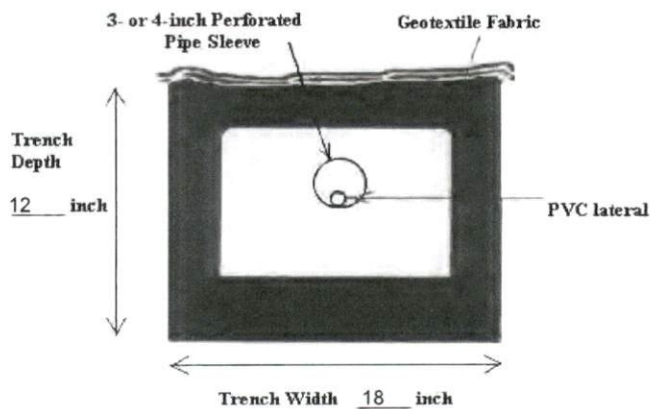
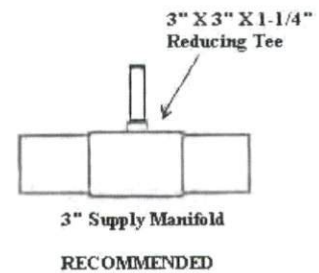
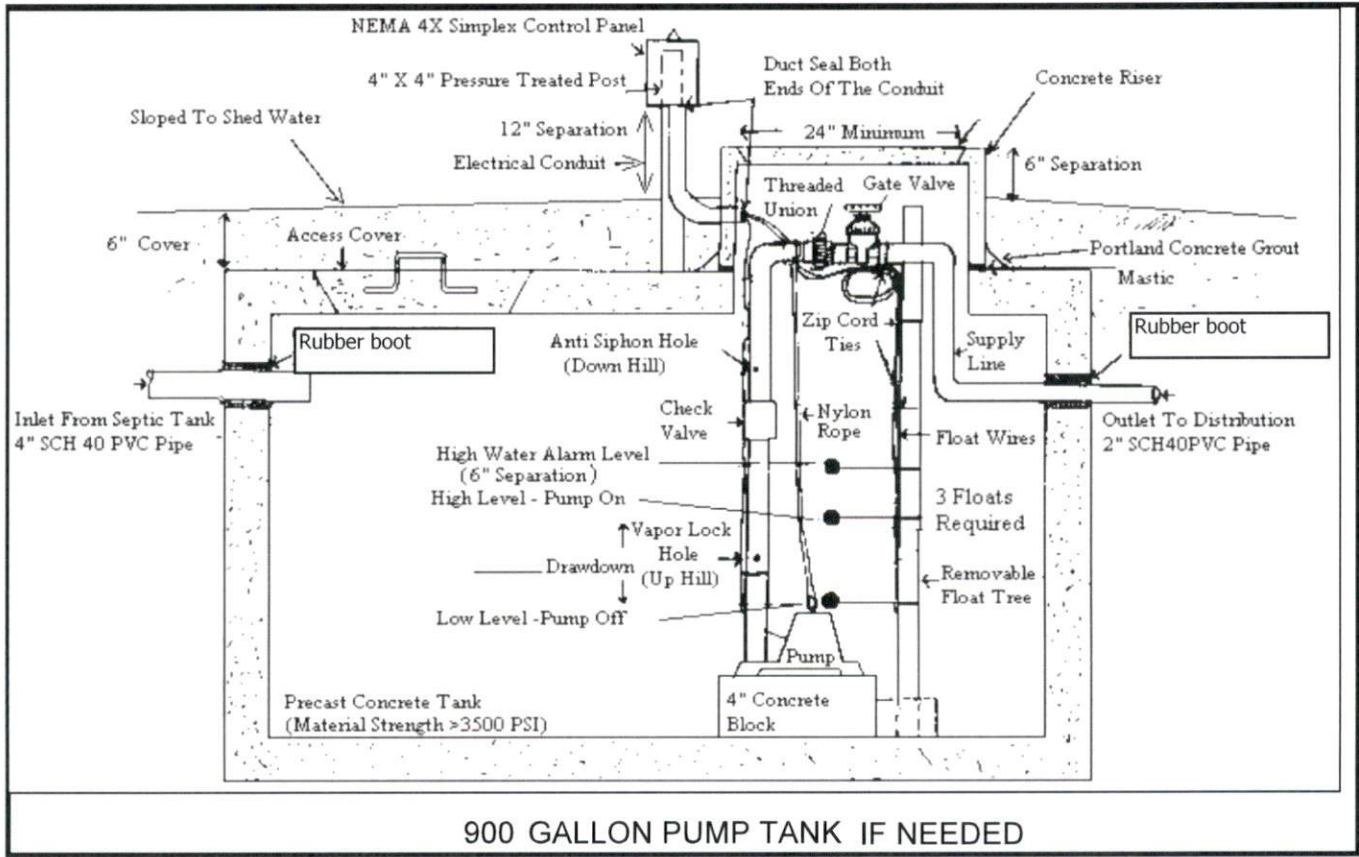
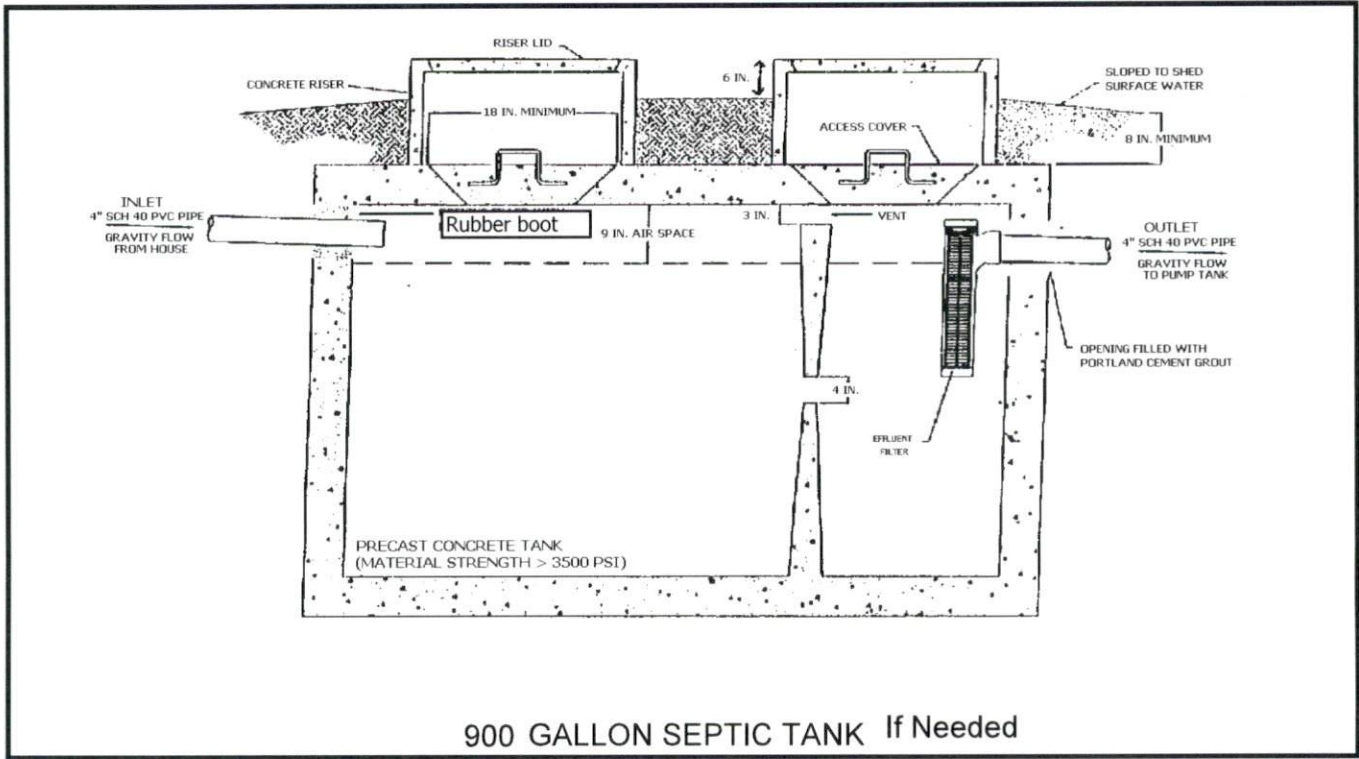


Figure 3: Manifold Side Profile





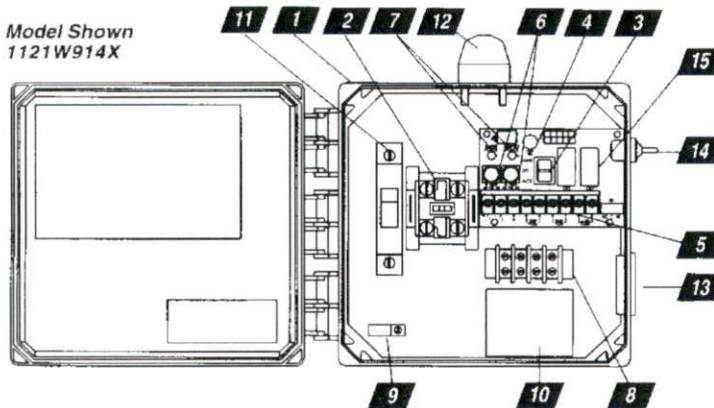
MODEL 112 Control Panel

Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single-phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.



Model Shown
1121W914X



1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).
* Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching hot electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Pump Input Power and Pump Connection Terminal Block**
9. **Ground Lug**
10. **Terminal Block Installation Label**
- ★ 11. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection. **required (2X)**

STANDARD ALARM PACKAGE (other options available)

12. **Red Alarm Beacon** provides 360° visual check of alarm condition.
Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating).
Note: NEMA 1 style utilizes an internally mounted buzzer (83 to 85 decibel) in lieu of horn.
14. **Exterior Horn Test/Normal/Silence Switch** allows alarm horn to be silenced and testing of horn and light to ensure proper operation of alarm system.
15. **Horn Silence Relay** automatically resets alarm after alarm condition has been resolved (mounted on circuit board).

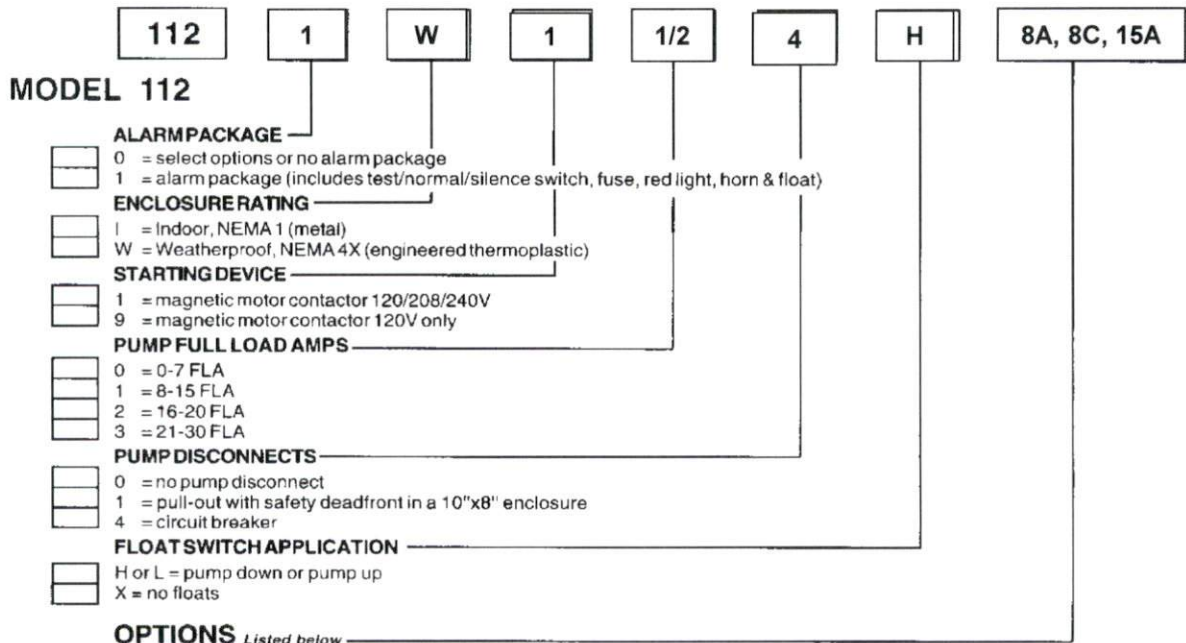
FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year limited warranty



SJE-Rhombus
SJ ELECTRO SYSTEMS, INC.

PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE • 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

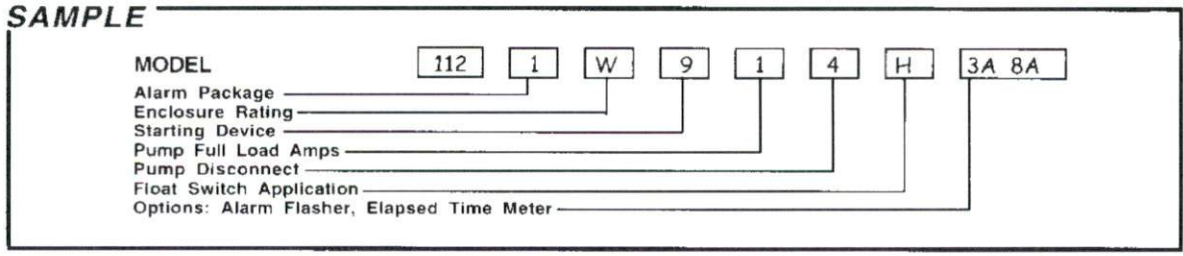


★ Options selected may increase enclosure size and change component layout.

If additional features are required, call the factory for a quote on either a Pro-Line or Engineered Custom control panel system.

CODE	DESCRIPTION	CODE	DESCRIPTION
<input type="checkbox"/> 1A	Red beacon only / no audio <i>must select 1E if floats included</i>	<input type="checkbox"/> 11C	NEMA 1 alarm panel <i>must select option 6A</i>
<input type="checkbox"/> 1C	Horn only / no visual <i>must select 1E if floats included</i>	<input type="checkbox"/> 11D	NEMA 4X alarm panel <i>must select option 6A</i>
<input type="checkbox"/> 1E	Alarm float	<input type="checkbox"/> 15A	Control / alarm circuit breaker <i>Does not include the circuit board as in standard.</i>
<input type="checkbox"/> 3A	Alarm flasher	<input type="checkbox"/> 16A	10' cord in lieu of 20'
<input type="checkbox"/> ★ 4A	Low level cutout <i>select option 4D if floats included</i>	<input type="checkbox"/> 16B	15' cord in lieu of 20'
<input type="checkbox"/> ★ 4B	Red low-level indicator & alarm <i>must select 4A also</i>	<input type="checkbox"/> 16C	30' cord in lieu of 20'
<input type="checkbox"/> 4D	Low-level float	<input type="checkbox"/> 16D	40' cord in lieu of 20'
<input type="checkbox"/> 6A	Auxiliary alarm contact, form C type	<input type="checkbox"/> 17A	SJE SignalMaster® / mounting strap ●
<input type="checkbox"/> ★ 8A	Elapsed time meter	<input type="checkbox"/> 17B	SJE SignalMaster® / externally weighted ●
<input type="checkbox"/> ★ 8C	Event (cycle) counter	<input type="checkbox"/> 17C	Sensor Float® / internally weighted ▲
<input type="checkbox"/> 10E	Lockable latch - NEMA 4X	<input type="checkbox"/> 17D	Sensor Float® / externally weighted ▲
<input type="checkbox"/> 10E	Lockable latch - NEMA 1	<input type="checkbox"/> 17E	Sensor Float® Mini / pipe clamp ▲
<input type="checkbox"/> ★ 10F	Lightning arrester	<input type="checkbox"/> 17F	Sensor Float® Mini / externally weighted ▲
<input type="checkbox"/> ★ 10K	Anti-condensation heater	<input type="checkbox"/> 19X	Door mounted pump run indicator
		<input type="checkbox"/> 21A	Pumpmaster® in lieu of on/off switches ●
		<input type="checkbox"/> 21B	PumpMaster® Plus in lieu of on/off switches ●
		<input type="checkbox"/> 21C	Super Single® in lieu of on/off switches ▲
		<input type="checkbox"/> 21D	Double Float™ in lieu of on/off switches ▲

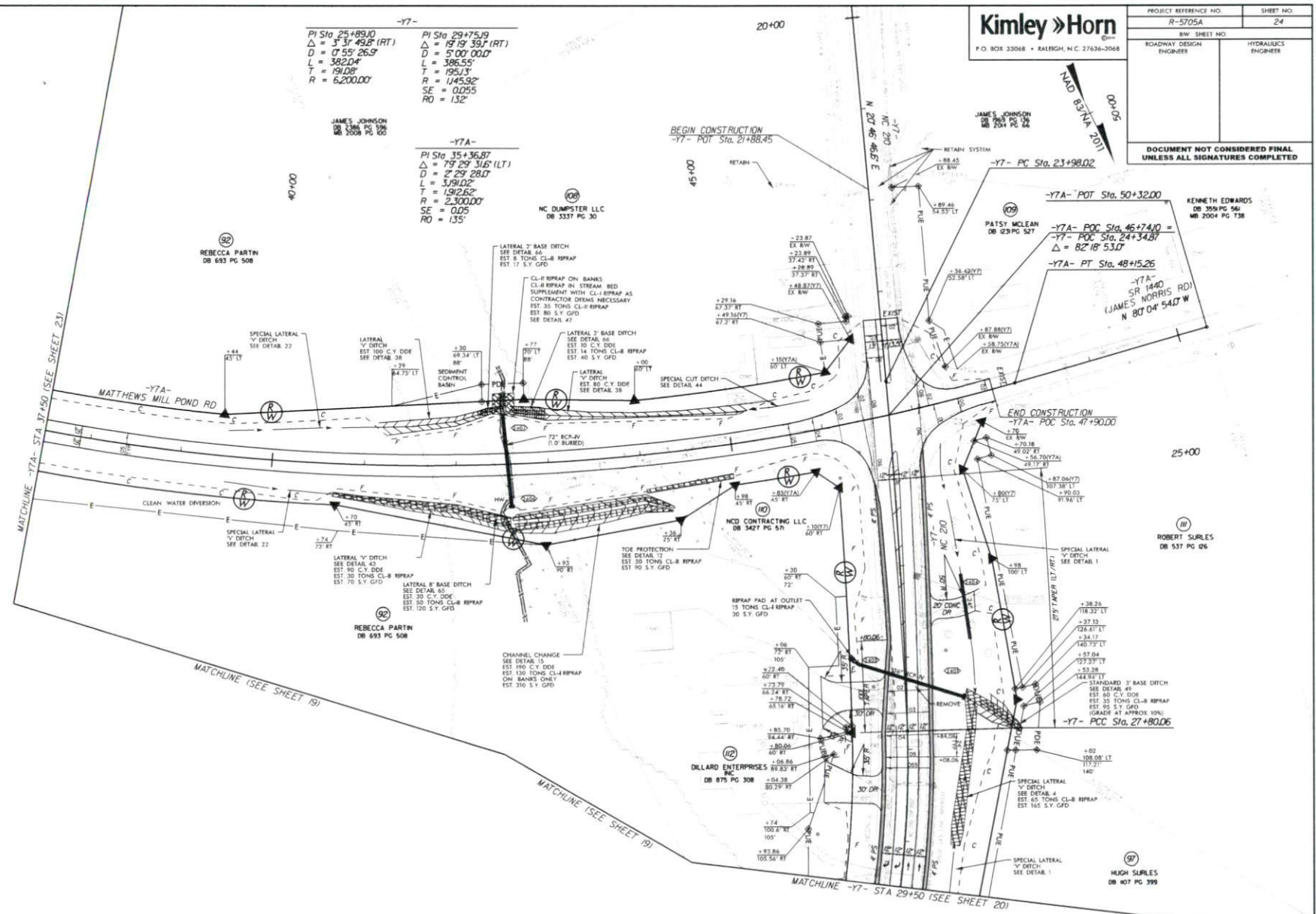
● Mechanically-activated ▲ Mercury-activated



3/14/20

3/5/2021

REVISIONS



-Y7-

PI Sta 25+89.00
 $\Delta = 3' 31" 49.8" (RT)$
 $D = 17' 55" 26.9"$
 $L = 382.04'$
 $T = 191.08'$
 $R = 6,200.00'$

PI Sta 29+75.19
 $\Delta = 19' 19" 39.7" (RT)$
 $D = 5' 00" 00.0"$
 $L = 386.55'$
 $T = 195.13'$
 $R = 1,145.92'$
 $SE = 0.055$
 $RD = 132'$

-Y7A-

PI Sta 35+36.87
 $\Delta = 79' 29" 31.6" (LT)$
 $D = 2' 29" 28.0"$
 $L = 3,191.02'$
 $T = 1,912.62'$
 $R = 2,300.00'$
 $SE = 0.05$
 $RD = 135'$

Kimley Horn <small>F.O. BOX 33068 • RALEIGH, N.C. 27636-3068</small>		PROJECT REFERENCE NO.	SHEET NO.
		R-5705A	24
ROADWAY DESIGN ENGINEERS		BW SHEET NO.	HYDRAULICS ENGINEERS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SEE SHEET 2B-6 FOR INTERSECTION DETAIL 23
 SEE SHEETS 2D-1 TO 2D-4 FOR DRAINAGE DETAILS
 SEE SHEET 35 FOR -Y7- PROFILE
 SEE SHEET 37 FOR -Y7A- PROFILE