SUPERVISOR/ADMINISTRATIVE PROFESSIONAL CHECKLIST

☑ NEW SEPTIC ☐ REPAIR ☐ USE EXISTING ☐ MODIFIED PLOT PLAN ☐ ALTERATION

File Number: 10904B

Assigned Inspector: Heather

☐ IP $250.00: _____ Initial/Date

☑ IP Commercial $450.00: 7/12/23 Initial/Date

☐ CA & OP $400.00: _____ Initial/Date

☐ Alteration Fees $300: _____ Initial/Date

☐ Modified Plot Plan Fees $100.00: _____ Initial/Date

☐ Use Existing Fees $100.00: _____ Initial/Date

☐ Use Existing Approved ☐ Use Existing Denied

☑ Send IP permit for signature: 9/8/23 ☑ Signature received: 9/11/23

☑ Floor plans reviewed

☐ Generate CA ☐ Approve as Noted in Winchester

☐ This site is served by septic and well. Verify each is complete before final hold is released

☐ This septic system requires a certified operation contract before final hold is released

☐ Certified operator contract is on file: _____

☐ Septic file complete: _____

☐ Release final hold in Winchester: _____

Comments:

App. #: 13989

PERMIT APPLICATION FOR A COMMERCIAL / INDUSTRIAL SITE
IMPROVEMENT PERMIT FOR ONSITE WASTEWATER SYSTEM,
NEW WELL INSTALLATION, OR REPAIR OF EXISTING WELL

Well Fee: Date:

Septic Fee: 450.00

MECKLENBURG COUNTY HEALTH DEPARTMENT
GROUNDWATER & WASTEWATER SERVICES

Date: 7/12/2023

FILE # 10904B

SEPTIC / TYPE APPLICATION: ○ N/A ◉ NEW SYSTEM ○ ALTERATION ○ REPAIR ○ MODIFIED PLOT PLAN

WELL / TYPE APPLICATION: ◉ N/A ○ NEW WELL ○ MAJOR REPAIR ○ ABANDONMENT

JOB LOCATION INFORMATION:

TAX / PARCEL #: 01704401 ☐ PO

STREET ADDRESS: 10923 STATESVILLE RD

CITY: Huntersville

STATE: NC ZIP: 28078

LOT #: 0

TOWNSHIP: HUNTERSVILLE

General Comments:

BUILDING INFORMATION:

DESCRIBE TYPE OF BUSINESS

☑ COMMERCIAL ☐ INDUSTRIAL

SQUARE FOOTAGE OF FACILITY: 113000

NUMBER OF EMPLOYEES PER SHIFT: 100

NUMBER OF SHIFTS: 0

TYPE OF WASTEWATER:

☑ SEWAGE ☐ INDUSTRIAL PROCESS WASTEWATER

HOW WILL WATER BE USED IN THE FACILITY?:

☐ TOILETS/URINALS ☐ HANDSINK/S

☐ SHOWERS ☐ FLOOR DRAINS

☐ OTHER

IF PLANNING TO EXPAND / ALTER THE EXISTING SYSTEM, INFORMATION DOCUMENTING THE INCREASED WASTEWAER FLOW AND/OR A JUSTIFICATION FOR A SYSTEM ALTERATION WILL BE REQUIRED.

WATER SUPPLY:

☑ MUNICIPAL ☐ PRIVATE WELL ☐ PUBLIC WELL ☐ SHARED WELL ☐ OTHER

PROPOSED USE OF WELL:

◉ N/A ○ IRRIGATION ○ POTABLE (Drinking Water) ○ OTHER

PLEASE INDICATE AND RANK DESIRED SEPTIC SYSTEM TYPE(S) IN ORDER OF PREFERENCE *(1-MOST 5-LEAST DESIRED)*:

☐ N/A ☑ ANY TYPE ☐ CONVENTIONAL ☐ ACCEPTED ☐ INNOVATIVE ☐ ALTERNATIVE ☐ OTHER

RANK: 0 0 0 0 0

ARE ANY OF THE FOLLOWING LOCATED ON THE PROPERTY? IF SO, PLEASE SHOW LOCATION ON SITE PLAN/PLAT.

BURIED CABLES, LANDFILLS, STUMPHOLES	○ Yes ◉ No	GRADING/SOIL REMOVAL PERFORMED	○ Yes ◉ No
EXISTING WASTEWATER SYSTEMS	○ Yes ◉ No	JURISDICTIONAL WETLANDS	○ Yes ◉ No
WELLS, SPRINGS, OR WATER LINES	○ Yes ◉ No	APPROVAL REQ'RD BY OTHER AGENCY	○ Yes ◉ No
EASEMENTS OR RIGHT-OF-WAYS	○ Yes ◉ No	WASTEWATER OTHER THAN DOM. SEWAGE	○ Yes ◉ No
CHEMICAL/PETROLEUM STORAGE TANKS	○ Yes ◉ No	KNOWN UNDERGROUND CONTAMINATION	○ Yes ◉ No
WASTE STORAGE	○ Yes ◉ No	GROUNDWATER USE RESTRICTIONS/VARIANCES	○ Yes ◉ No

PROPERTY OWNER:				LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:			
NAME:	23XII REAL ESTATE HOLDINGS LLC			NAME:			
ADDRESS:	2626 GLENWOOD AVE - SUITE 550			ADDRESS:			
CITY:	RALEIGH			CITY:			
STATE:	NORTH CAROLINA	ZIP:	27608	STATE:		ZIP:	
HOME PHONE:		WORK:		HOME PHONE:		WORK:	
MOBILE:	803-493-1425	FAX:		MOBILE:		FAX:	
EMAIL:	SCOTT@MICHAELATHANAS.COM			EMAIL:			

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? UNKNOWN

WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? N/A

PRINT Update Go to Front Counter Duplicate

Mecklenburg County Groundwater & Wastewater Services
3205 Freedom Dr., Suite 8000 Charlotte, NC 28208
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DHHS
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a COMMERCIAL
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: 30013989 GWS File #: 10904B Tax Parcel #: 017-044-01

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire in Five (5) Years **Expiration Date (If Applicable):** 9/6/2028

Intallation Type: Commercail/Industrial - New System Business Type: Commercial

Facility Size (ft^2): 113000 # Employees/Shift: 100 # Shifts: 0

Wastewater Type: Sewage Water Supply: Municipal

II. Initial System Type: Pump to Approved **System Classification:** IIIb

Initial System Specifications:

Design Flow (gpd):	2500	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	3000	Pump Tank Size (gal):	2500
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	7500	Total Trench Length (ft):	2500
Maximum Trench Depth (in):	36	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

III. Repair System Type: Drip Irrigation **System Classification:** IVa

Repair System Specifications:

Design Flow (gpd):	2500	LTAR (gpd/ft^2):	0.1	Septic Tank Size (gal):	3000	Pump Tank Size (gal):	2500
Trench Width (ft):	2	Trench Spacing (ft):	8	Absorption Area (ft^2):	25000	Total Trench Length (ft):	12500
Maximum Trench Depth (in):	12	Depth of Media (in):	2	Distribution Device:	Headworks (Drip Irr.		

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the STATE OF NORTH CAROLINA, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until a Pre-Construction meeting has been completed by the Department.
- The septic system installer shall be a licensed septic contractor with the North Carolina Wastewater Contractor Inspector Certification Board.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

Authorized Agent: Heather Ray Owner/Legal Agent: _____
Print Name

Signature: _____ Signature: _____

Date Issued: 9/6/2023

Mecklenburg County Groundwater & Wastewater Services
3205 Freedom Dr., Suite 8000 Charlotte, NC 28208
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DHHS
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a COMMERCIAL
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30013989** GWS File #: **10904B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 5 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- Upon completion of the project the system designer shall provide Groundwater & Wastewater Services with a letter certifying that the system was installed in accordance with the approved design.

The undersigned, an authorized agent of the STATE OF NORTH CAROLINA, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment and Disposal Systems* and is subject to the following provisions:

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- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

Authorized Agent: Heather Ray

Signature: _____

Date Issued: 9/6/2023

Owner/Legal Agent: _____
Print Name

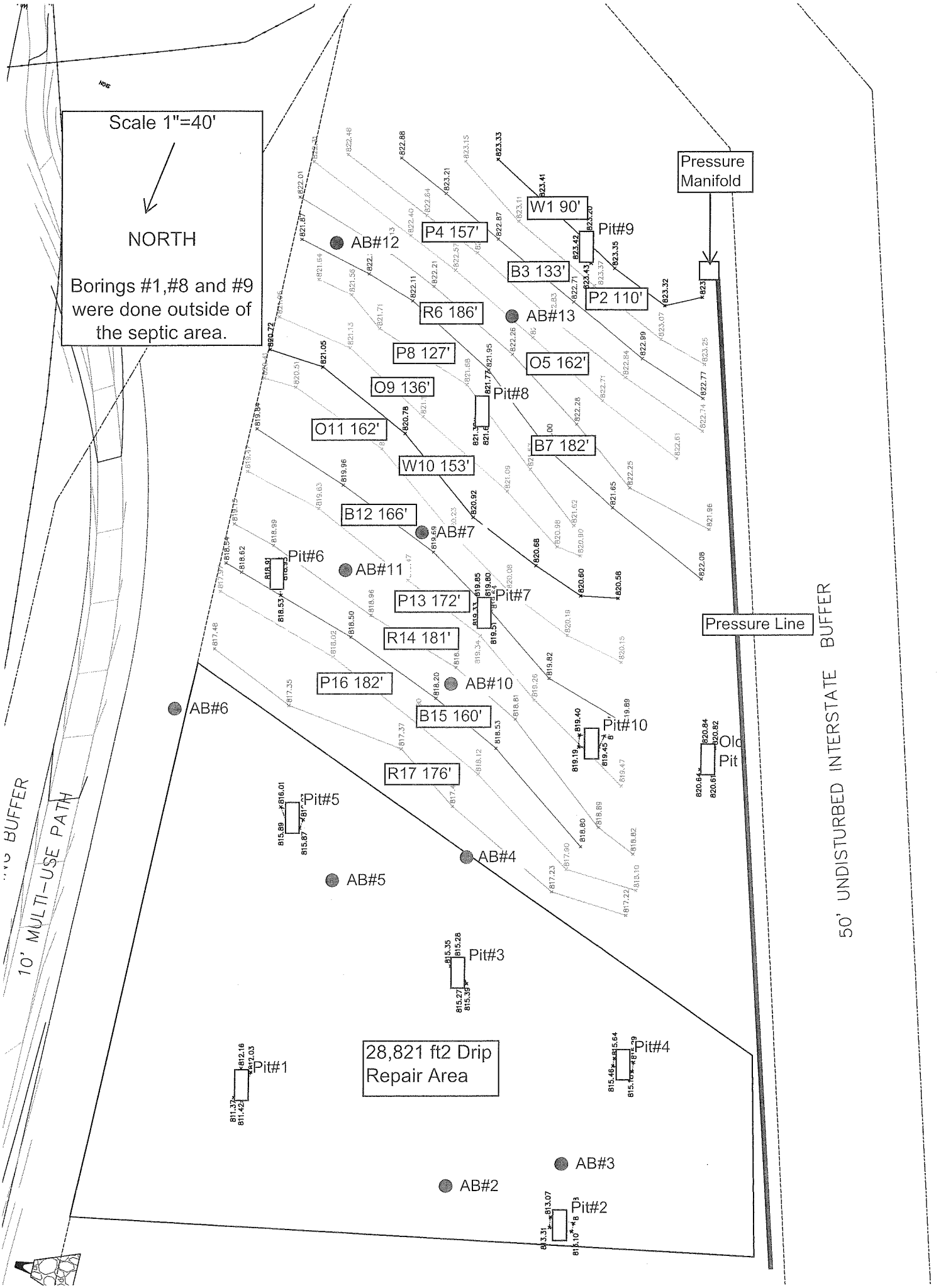
Signature: _____



MICHAEL ATHANAS & ASSOCIATES
LICENSED SOIL SCIENTIST
556 Walden Trail
Weddington, NC 28173
(704) 576-3887

Reference: Data Sheet for 10923 Statesville Road;
PID# 01704401;
Mecklenburg County, NC

Building Footprints: See Site Plan
Building Setback: See Site Plan
Water Source: Public Water
Proposed Gallons Per Day: 2500gpd; 100 employees at 25 gallons/employee
Proposed LTAR: 0.25 gpd/ft2
Suggested Initial System Type: 25% Reduction
Repair System LTAR: 0.1 gpd/ft2
Repair System Type: Pretreated Drip
Total Linear Footage: 2500
Trench Bottom Square Footage: 7500 sq.ft
Distribution: Pressure Manifold
Flow per Tap: TBD
Tap Size and Material: TBD
System Flow: TBD
Dosing Volume: TBD
Pump Run Time: TBD
Elevation Head: TBD
Friction Head: TBD
Pressure Head: TBD
Total Dynamic Head: TBD
Supply Line Length: TBD
Proposed Trench Bottom Depth: 36"
Septic/ Pump tank size: TBD


Scale 1"=40'
NORTH
Borings #1,#8 and #9 were done outside of the septic area.
Pressure Manifold
Pressure Line
W1 90'
P4 157'
B3 133'
P2 110'
R6 186'
P8 127'
O5 162'
O9 136'
O11 162'
B7 182'
W10 153'
B12 166'
P13 172'
R14 181'
P16 182'
B15 160'
R17 176'
AB#12
AB#13
AB#7
AB#11
AB#10
AB#6
AB#4
AB#5
AB#3
AB#2
Pit#1
Pit#2
Pit#3
Pit#4
Pit#5
Pit#6
Pit#7
Pit#8
Pit#9
Pit#10
Old Pit
28,821 ft2 Drip Repair Area
10' MULTI-USE PATH
50' UNDISTURBED INTERSTATE BUFFER

Comments: The purpose of the evaluation is to permit this site for a 100 employee commercial site. The system is not designed for any type of food service. **Only domestic wastewater should be discarded into the septic system.**

- The system and pump requirements will be designed by a licensed engineer.
- **The septic area should be fenced off and all vehicular traffic should be kept off of the initial system area as well as the repair area. Failure to do so will result in the permit being revoked.**
- No cuts of 2' or greater within 25' down slope of the system and 15' on the side slope.

Line	Design Length	Actual Length	Elevation
White 1	TBD	90'	See Site Plan
Pink 2	TBD	110'	See Site Plan
Blue 3	TBD	133'	See Site Plan
Pink 4	TBD	157'	See Site Plan
Orange 5	TBD	162'	See Site Plan
Red 6	TBD	186'	See Site Plan
Blue 7	TBD	182'	See Site Plan
Pink 8	TBD	127'	See Site Plan
Orange 9	TBD	136'	See Site Plan
White 10	TBD	153'	See Site Plan
Orange 11	TBD	162'	See Site Plan
Blue 12	TBD	166'	See Site Plan
Pink 13	TBD	172'	See Site Plan
Red 14	TBD	181'	See Site Plan
Blue 15	TBD	160'	See Site Plan
Pink 16	TBD	182'	See Site Plan
Red 17	TBD	176'	See Site Plan

Initial System: 2500' 25% Reduction; 2635' Available
Repair System: 28,821 ft2 Pretreated Drip

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

PROPERTY ID #: 10923 Statesville Rd; PID# 01704401
COUNTY: Mecklenburg

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: 2311 Real Estate Holdings APPLICATION DATE: _____
ADDRESS: 2626 Glenwood Ave Suite 550 Raleigh, NC 27608 DATE EVALUATED: 6/2023
PROPOSED FACILITY: 100 Employee Commercial Building PROPOSED DESIGN FLOW (.1949): 2500 GPD PROPERTY SIZE: 14.78Acr
LOCATION OF SITE: 10923 Statesville Road Huntersville, NC PROPERTY RECORDED: Unknown
WATER SUPPLY: ☐ Private ☒ Public ☐ Well ☐ Spring ☐ Other _____
EVALUATION METHOD: ☒ Auger Boring ☒ Pit ☐ Cut TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
AB 2	L 3-4%	0"-12"	YBr SCL WSBK	SS SP FR SEXP	YBrs 12"-30" Chroma 2 at 30"	30"			0.25-0.225 0.1+ Drip **Repair**
		12"-30"	YR C WSBK	SS SP FR SEXP					
AB 3	L 3-4%	0"-11"	YBr SCL WSBK	SS SP FR SEXP	Ybrs 11"-22" Common 3s and 4s at 22".	22"			0.1+ Drip **Repair**
		11"-22"	YR C WSBK	SS SP FR SEXP					
AB 4	L 3-4%	0"-8"	YBr SCL WSBK	SS SP FR SEXP	Ybrs 25"-30" Lithochromic colors included.	48"	Few saprolite inclusions 30"-48".		0.25 0.1+ Drip **Repair**
		8"-30"	R C SBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
AB 5	L 3-4%	0"-10"	YBr SL WSBK	SS SP FR SEXP	Ybrs 10"-25" Lithochromic colors included.	40"+	Few saprolite inclusions 25"-40"+.		0.25 0.1+ Drip **Repair**
		10"-25"	R C SBK	SS SP FR SEXP					
		25"-40"+	R CL WSBK	SS SP FR SEXP					
AB 6	L 3-4%	0"-5"	YBr SL WSBK	SS SP FR SEXP		40"+	Few saprolite inclusions 28"-40"+.		0.3 0.1+ Drip **Repair**
		5"-28"	R C SBK	SS SP FR SEXP					
		28"-40"+	R CL WSBK	SS SP FR SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	7500 FT2	28,821 ft2
System Type(s)	25% Reduction	Pretreated Drip
Site LTAR	0.25	0.1

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____
EVALUATED BY: Michael Athanas and Associates
OTHER(S) PRESENT: _____

Comments: Boring #1 was done outside of the septic area.

LEGEND

use the following standard abbreviations

LANDSCAPE POSITION	GROUP	SOIL TEXTURE	CONVENTIONAL .1955 LTAR*	LPP .1957 LTAR*	MINERALOGY/ CONSISTENCE	STRUCTURE
CC (Concave Slope)	I	S (Sand)	1.2 - 0.8	0.6 - 0.4	NEXP (Non-expansive)	G (Single Grain)
CV (Convex Slope)		LS (Loamy Sand)			SEXP (Slightly Expansive)	M (Massive)
D (Drainage Way)					EXP (Expansive)	CR (Crumb)
DS (Debris Slump)	II	SL (Sandy Loam)	0.8 - 0.6	0.4 - 0.3		GR (Granular)
FP (Flood Plain)		L (Loam)				SBK (Subangular Blocky)
FS (Foot Slope)						ABK (Angular Blocky)
H (Head Slope)	III	Si (Silt)	0.6 - 0.3	0.3 - 0.15		PL (Platy)
L (Linear Slope)		SiCL (Silty Clay Loam)				PR (Prismatic)
N (Nose Slope)		CL (Clay Loam)				
R (Ridge)		SCL (Sandy Clay Loam)			**MOIST**	**WET**
S (Shoulder Slope)		SiL (Silt Loam)				
T (Terrace)					VFR (Very Friable)	NS (Non-sticky)
	IV	SC (Sandy Clay)	0.4 - 0.1	0.2 - 0.05	FR (Friable)	SS (Slightly Sticky)
		SiC (Silty Clay)			FI (Firm)	S (Sticky)
		C (Clay)			VFI (Very Firm v. Very Sticky)	VS (Very Sticky)
		O (Organic)	None	None	EFI (Extremely Firm)	NP (Non-plastic)
						SP (Slightly Plastic)
						P (Plastic)
						VP (Very Plastic)

*Adjust LTAR due to depth, consistence, structure, soil wetness, landscape, position, wastewater flow and quality.

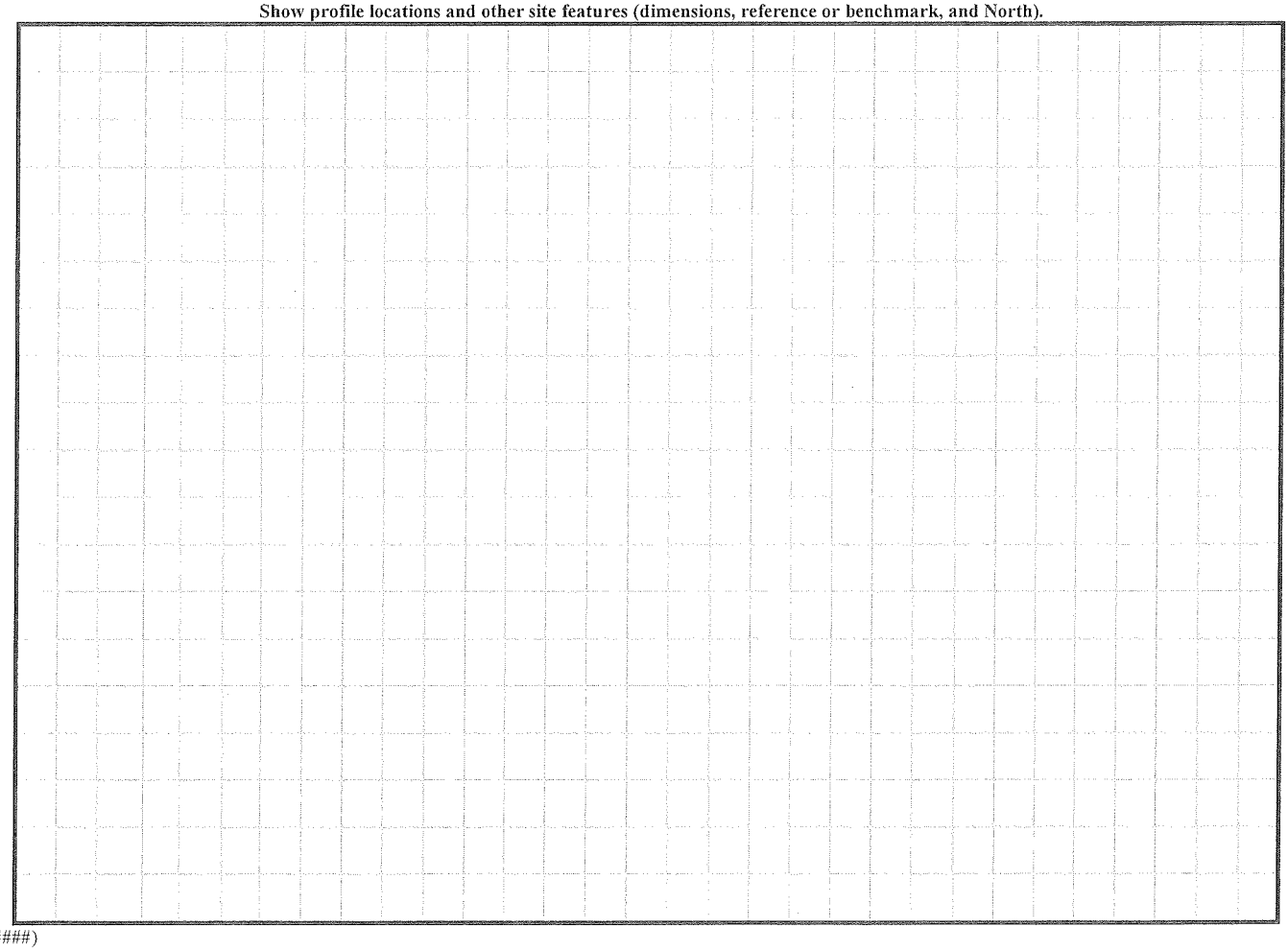
NOTES

HORIZON DEPTH	In inches below natural soil surface
DEPTH OF FILL	In inches from land surface
RESTRICTIVE HORIZON	Thickness and depth from land surface
SAPROLITE	S(suitable) or U(unsuitable)
SOIL WETNESS	Inches from land surface to free water or inches from land surface to soil colors with chroma 2 or less - record Munsell color chip designation
CLASSIFICATION	S (Suitable), PS (Provisionally Suitable), or U (Unsuitable)

Evaluation of saprolite shall be by pits.

Long-term Acceptance Rate (LTAR): gal/day/ft^2

Show profile locations and other site features (dimensions, reference or benchmark, and North).



DENR (######)

Review (######)

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM cont.

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
AB 7	L 3-4%	0"-6"	YBr SL WSBK	SS SP FR SEXP		48"	Few to common saprolite inclusions 27"-48"		0.3
		6"-27"	R C SBK	SS SP FR SEXP					
		27"-48"	R CL WSBK	SS SP FR SEXP					
AB 10	L 3-4%	0"-9"	YBr SCL WSBK	SS SP FR SEXP		48"	Few to common saprolite inclusions 30"-48"		0.3
		9"-30"	R C WSBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
AB 11	L 3-4%	0"-6"	YBr SCL WSBK	SS SP FR SEXP		48"	Few saprolite inclusions 29"-48".		0.3
		6"-29"	R C SBK	SS SP FR SEXP					
		29"-48"	R SCL WSBK	SS SP FR SEXP					
AB 12	L 3-4%	0"-8"	YBr SCL WSBK	SS SP FR SEXP	Few Ybrs 25"-33"	48"	Few saprolite inclusions 33"-48".		0.25
		8"-33"	R C SBK	SS SP FR SEXP					
		33"-48"	R CL WSBK	SS SP FR SEXP					
AB 13	L 3-4%	0"-3"	YBr SCL WSBK	SS SP FR SEXP			Few saprolite inclusions 30"-48".		0.3
		3"-30"	R C SBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
Pit 1	L 3-4%	0"-12"	YBr CL WSBK	SS SP FR SEXP	YBrs 26"-30" Chroma 2 at 30"				0.25 0.1+ Drip **Repair**
		12"-26"	YBr C WSBK	SS SP FR SEXP					
		26"-30"	R SC WSBK	SS SP FR SEXP					

Comments: Borings #8 and #9 were done outside of the septic area.

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM cont.

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
Pit 2	L 3-4%	0"-8"	YBr CL WSBK	SS SP FR SEXP	YBrs 8"-30"	48"	Few to common saprolite inclusions 30"-48"		0.2-0.225 0.1+ Drip **Repair**
		8"-20"	YBr C ABK	SS SP FR SEXP					
		20"-30"	YBr CL WSBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
Pit 3	L 3-4%	0"-12"	YBr CL WSBK	SS SP FR SEXP	YBrs 21"-31" Chroma 2 at 31"	31"			0.2-0.225 0.1+ Drip **Repair**
		12"-21"	YR C WSBK	SS SP FR SEXP					
		21"-31"	YR C ABK	SS SP FR SEXP					
Pit 4	L 3-4%	0"-15"	YBr CL WSBK	SS SP FR SEXP	YBrs 15"-34" Chroma 2 at 34"	34"			0.25-0.225 0.1+ Drip **Repair**
		15"-34"	YR C ABK	SS SP FR SEXP					
Pit 5	L 3-4%	0"-6"	YBr CL WSBK	SS SP FR SEXP	Ybrs 6"-38"	56"	Few saprolite inclusions 38-56".		0.25 0.1+ Drip **Repair**
		6"-38"	R C SBK	SS SP FR SEXP					
		38"-56"	R C/CL WSBK	SS SP FR SEXP					
Pit 6	L 3-4%	0"-7"	YBr CL WSBK	SS SP FR SEXP			Few saprolite inclusions 28"-54".		0.3
		7"-28"	R C SBK	SS SP FR SEXP					
		28"-54"	R CL WSBK	SS SP FR SEXP					
Pit 7	L 3-4%	0"-12"	YBr CL WSBK	SS SP FR SEXP			Few saprolite inclusions 37"-55".		0.3
		12"-37"	R C SBK	SS SP FR SEXP					
		37"-55"	R CL WSBK	SS SP FR SEXP					

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

PROPERTY ID #: 10923 Statesville Rd; PID# 01704401
COUNTY: Mecklenburg

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM cont.

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
Pit 8	L 3-4%	0"-7"	YBr CL WSBK	SS SP FR SEXP		55"	Few to common saprolite inclusions 32"-55"		0.3
		7"-32"	R C SBK	SS SP FR SEXP					
		32"-55"	R CL WSBK	SS SP FR SEXP					
Pit 9	L 3-4%	0"-5"	YBr CL WSBK	SS SP FR SEXP		57"	Few to common saprolite inclusions 36"-57"		0.3
		5"-36"	R C SBK	SS SP FR SEXP					
		36"-57"	R CL WSBK	SS SP FR SEXP					
Pit 10	L 3-4%	0"-8"	YBr CL WSBK	SS SP FR SEXP		52"	Few to common saprolite inclusions 42"-52"		0.3
		8"-42"	R C SBK	SS SP FR SEXP					
		42"-52"	R CL WSBK	SS SP FR SEXP					

SPECIFICATIONS, CALCULATIONS, SOILS REPORT & MANUFACTURER'S CUT SHEETS FOR THE CONSTRUCTION OF A NEW SANITARY SEWAGE TREATMENT & DISPOSAL SYSTEM TO SERVE

23XI RACE SHOP

10923 STATESVILLE ROAD HUNTERSVILLE, MECKLENBURG COUNTY, NC

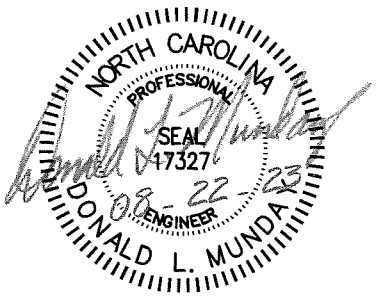
August 14, 2023

PREPARED FOR:

Choate Construction Company
2907 Providence Road, Suite 400
Charlotte, NC 28211
Phone: (980) 213-4464

PREPARED BY:

Piedmont Design Associates, P.A.
Suite 101 Westfield Center
125 East Plaza Drive
Mooresville, NC 28115
Phone: (704) 664-7888
Fax: (704) 664-1778
NCBELS No.: C-1007



I. INTRODUCTION AND DESIGN CONSIDERATIONS:

Choate Construction Company is constructing a new manufacturing facility (23XI Race Shop) (no floor drains to septic system) that includes a maximum of 100 employees per day with a flow of 15 gallons per day per employee utilizing low flow fixtures. This area is located off Statesville Road and Alexandriana Road in Huntersville, Mecklenburg County. It is recommended that the system be based on a design flow of 1,500 gallons per day waste flow from the facility. Waste to the system shall be 100% domestic. No condensate drains to waste stream.

Soils have been evaluated for onsite subsurface effluent disposal by Michael Athanas, LSS, Scott Kennedy and Jacob Pressley, LSS with Mecklenburg County Groundwater & Wastewater Services. The recommended loading rate to the proposed drain field area was determined to be 0.25 gallons per square foot per day. Area is available for 100% repair in case of future system failure utilizing subsurface drip with a 0.10 G/D/SF prescribed loading rate.

The Engineer is recommending that a treatment system consisting of a properly sized, two compartment septic tank with effluent filter be installed prior to pump tank with alternating duplex pumps pressure dosing the drain field by pressure manifold. Within the new pump tank, two new alternating duplex pumps will be installed with floats and associated piping as shown on the plans. After the pump tank, H-Valves, force main and pressure manifold shall be installed for equal distribution to the laterals.

A new duplex electrical control panel shall be installed as necessary to control the new pumps via floats in the pump tank. Control panel shall be installed as close as possible (within 10 feet) to the new pump tank. Cycle counters and hour meters shall be included in the control panel digital controller to provide continuous recording of dosing volumes. In addition, if a high-water alarm condition occurs at the tank, a visual and audible alarm will be signaled at the site.

The installer shall be knowledgeable of the type of system installed and shall have prior instruction of the component manufacturers and the approval of the Design Engineer.

II. RECOMMENDATIONS:

It is the recommendation that the system be designed with the following specifications:

The components of the system shall be as listed herein.

COMPONENTS OF SYSTEM

Existing Collection System

(1) New 2,500 gallon precast, baffled septic tank with 1/16-inch effluent filter.
(1) New 2,500-gallon precast pump tank.
(2) New 2 HP electric effluent rated pumps with floats, duplex pump control panel & associated appurtenances.
(1) New 3-inch PVC force main.
(1) New pressure manifold.
(1) New Nitrification Field.

****Adequate area is still available for repair and is to remain undisturbed.**

Any modification to the existing collection system shall be installed according to the NC Plumbing Code, local plumbing, and ASTM D2321 latest revision and NCDHHS On Site Water Protection Section.

Before any site construction, the area of the nitrification fields and repair areas shall be barricaded with orange barricade fence and signage to prevent any access by vehicles, grading equipment and there shall be no earth disturbance of this area other than the septic Licensed Septic Contractor.

The Engineer is requiring that the Owner monitor weekly water usage to each building and record to establish a historic use record.

III. LOCATION

From Interstate 77, take Gilead Road. Head east to Highway 21 South. Turn right to Statesville Road. Cross over Hambright Road. Site will be on right side of road before Alexandriana Road between Statesville Road and Interstate 77.

IV. REFERENCE MATERIAL

(1) PROCEDURE FOR REVIEW AND APPROVAL AND DESIGN GUIDELINES FOR FORCE SUBSURFACE SEWAGE SYSTEM - PRESSURE MANIFOLD DESIGN. By: Steven Berkowitz, P.E., March 13, 1985.

(2) LAWS AND RULES FOR GROUND ABSORPTION SEWAGE DISPOSAL SYSTEMS. SECTION .1900 OF THE N.C. Administrative Code: Title 10 Health Services; Environmental Health; Subchapter 10a; Sanitation. Published by N.C. Dept. of Human Resources; Amended effective January 10, 1997.

(3) EPA 625/1-80-012 Design Manual - On-site Wastewater Treatment and Disposal System; October,1980; Chapter 7.

(4) NC DEM Administrative Code : 15A NCAC 2H.0200, 15A NCAC T15A Section .1900

V. OWNERSHIP RESPONSIBILITY FOR THE SYSTEM

It must be kept in mind that this system is designed to accept a moderate amount of wastewater at domestic waste strength (which is called the EFFLUENT), in a minimal water absorbing soil.

Conservation measures must be undertaken by all members of the operation to minimize the volume and strength of wastewater entering the disposal system, including, but not limited to, the following:

- **Pump septic tank regularly** to ensure optimum performance of your system. Failure to pump the tank can cause clogging of the drain field and subsequent failure of the system. Failing systems contribute to runoff of sewage which contaminates surface water. Clean effluent filter yearly.

- **Properly use system:** Disposal of toxic substances in the system can contribute to NPS pollution other than nutrients and pathogens that will degrade ground and surface water quality. Do not throw or dispose of your system chemical wastes such as engine oil, gasoline, pesticides, paints, solvents, and photographic chemicals. Contact your local landfill or toxic waste recycling site to dispose of these chemicals.

- **Do not use additives in septic tank:** Additives are sold that claim to help the septic tank decompose solids to prevent clogging. Additives do not prevent system failure and rather, can be harmful to bacteria in the septic tank and in the drain field.

- **Protect drain field:** It is important to ensure long life of the drain field. If the system fails, sewage will surface in the drain field and can runoff to nearby streams contributing to NPS pollution and posing a health hazard. Keep large trees and shrubs away from the field to prevent any root clogging or crushing the drain field pipes. Do not drive or pave over the drain field. The weight of vehicles can crush the pipes of the drain field,

- **Protect your septic tank:** Keep as many solids out of your septic tank as possible. This ensures optimum performance of the tank and maximizes pumping time. The following items can contribute to a faster solids build-up in your tank:
    - Use of a garbage disposal
    - coffee grounds
    - grease and cooking oils
    - sanitary napkins, tampons, or disposable diapers
    - cigarettes
    - facial tissues or other solid or paper wastes
    - mud and grit from cleaning automobile or machine parts.
- **Reduce the amount of water you dispose of in system:** By reducing the water usage, less water flows into the drain field. Thus, the drain field has more time to recover between effluent loads. Save water by turning off the water while doing something that does not require a constant flow of water. Use low flow fixtures in sinks and toilets. Repair leaky faucets.

VI. GENERAL REQUIREMENTS

The Licensed Septic Contractor shall furnish, install, test, and place into service and warrant all new components of sewage treatment and disposal system. The major system new components include new grease tank with filter, septic tank with effluent filter, new pump tank, pumps, electrical components (including wiring to panel(s)), force mains, pressure manifolds and new nitrification laterals. Accessories shall be supplied by a single operating entity and shall be equal to that as specified.

Three sets of submittal documents and shop drawings for all mechanical equipment and major materials including piping, tanks, and all other accessories shall be furnished to the Engineer for approval. No equipment shall be installed prior to approval by the Engineer and issuance of permit by Local Health Department.

VII. PRECAST STRUCTURES

GENERAL

This section shall apply to the new tanks as shown in the Contract Drawings.

APPROVALS

The tank design shall have been approved by the Onsite Water Protection Section of NCDHHS and shall have the approval number imprinted on the delivered tank. The tank shall be State Approved and equal to that manufactured by Shoaf Precast Company, Inc. Openings or inserts shall be cast in during manufacture. Concrete shall have a minimum compressive strength of 4,000 PSI @ 28 days. Shop drawings shall be submitted to the Engineer for approval prior to tank construction.

SEPTIC TANK

The new baffled septic tank shall be a minimum of 2,500-gallon capacity. The tank shall be reinforced, precast concrete tank as shown in approved drawing. Provide access for entry into the tank directly over the outlet using watertight risers and lids and extend 6-inch above final grade. Provide access for entry into the tank directly over the inlet and outlet pipe locations. All pipe penetrations through precast concrete tanks shall be in accordance with ASTM C-923 using PRESS-SEAL CAST-A-SEAL 402 rubber boots and grouted or approved equal. All piping within tanks shall be PVC or stainless steel. In yard areas, the lids shall be bolt down type. Riser shall be made watertight at the tank. Riser over access ports of tanks shall be a minimum of 24 inches in diameter. On the outlet side of septic tank, Licensed Septic Contractor shall install a new properly sized effluent filter with handle equal to Polylok model PL-525.

PUMP TANK

The new pump tank shall be a minimum of 2,500-gallon capacity. The tank shall be reinforced, precast concrete tank as shown in approved drawing. Provide access for entry into the tank directly over the outlet using watertight risers and lids and extend 6-inch above final grade. Provide access for entry into the tank directly over the inlet and outlet pipe locations. All pipe penetrations through precast concrete tanks shall be in accordance with ASTM C-923 using PRESS-SEAL CAST-A-SEAL 402 rubber boots and grouted or approved equal. All piping within tanks shall be PVC or stainless steel. In yard areas, the lids shall be bolt down type. Riser shall be made watertight at the tank. Riser over outlet end of tanks shall be a minimum of 24 inches in diameter. Over the pumps, a minimum of 30-inch square opening shall be provided for pump and float switch access. Access cover shall be equal to Halliday S1R series cast into tank riser. Access shall have locking capabilities.

ACCESS HATCHES

The S1R (single leaf) series access frames and covers as manufactured by Halliday Products, Inc. of Orlando, Florida shall have a 1/4-inch (7mm) thick one-piece, mill finish, extruded aluminum frame, incorporating a continuous concrete anchor. Door panels shall be 1/4-inch (7mm) aluminum diamond plate, reinforced to withstand a live load of 300 lbs. psf (1464 kg. psm) uniform live load with maximum allowable deflection o 1/150 of the span. Doors shall open to 90 degrees and automatically lock with T-316 stainless steel hold open arms with aluminum release handles. Doors shall close flush with the frame. Hinges and all fastening hardware shall be T-316 stainless steel. Unit shall lock with a non-corrosive locking bar and have a non-corrosive handle. Unit shall carry a lifetime guarantee against defects in material and/or workmanship. Access over pumps in pump tank & H Valves shall be equal to Halliday Model S1R3030.

H-VALVE VAULT

The new H-valves and vault shall be located after the outlet end of the new pump tank. The vault shall be installed on a minimum of 6-inches of #57 washed stone to allow for proper drainage and leveling. Vault top shall be 6-inches minimum above finished grade to prevent surface water from entering tank. A 2-inch drain hole shall be installed in the bottom of the vault to allow for any condensation or leaks to exit the vault and drain. Lid shall have a locking mechanism to prevent unauthorized access.

VIII. ELECTRICAL AND CONTROLS

EFFLUENT PUMPS

The two new submerged effluent pumps shall be Goulds 3885 Series model WE2012H 2.0 HP, 230-volt, single phase capable of pumping 87.68 G/M at 53.78' TDH. Pumps shall be rated for sewage or effluent. Pumps shall be of equal size, make and model. Pumps shall be capable of passing a one-half inch solid. Wiring from pumps and floats to control panel shall be continuous and contain no splices.

PUMP CONTROL PANEL:

The pumps shall be powered by a duplex control panel, mounted 36-inch or more from bottom of box to finished grade, with standard features including:

NEMA 4X lockable fiberglass enclosure.
Use with mechanical float switches. Listed per UL 508 in the US and Canada.
Motor-Start Contactor
120V, 16 FLA, 1 hp (0.75 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA).
240V, 16 FLA, 3 hp (2.24 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA).
Controls Circuit Breaker
10A, OFF/ON switch. Single pole 120V. DIN rail mounting with thermal magnetic tripping characteristics.
Pump Circuit Breakers
20A, OFF/ON switch. Single-pole 120V or double-pole 240V. DIN rail mounting with thermal magnetic tripping characteristics.
Toggle Switches
20A, 1hp (0.75 kW). Single-pole, double-throw HOA switch,
Audible Alarm
95 dB at 24 in. (610 mm), warble-tone sound.
Visual Alarm
7/8-in. (22-mm) diameter red lens, "Push-to-silence." UL Type 4X rated, 1 W LED light, 120 V.
Duplex Alternator
120V. Cross-wired style for independent lag pump function. Selector switch for locking one pump into lead position. Audible Alarm Silence Relay 120V. Automatic reset. DIN rail mount.
Intrinsically Safe Control Relays
Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure).
Redundant Off Relay
120V. Provides a secondary off. Sounds alarm on low level condition. DIN rail mount.
Elapsed Time Meter
120V, 7-digit, non-resettable. Limit of 99,999 hours; accurate to 0.01 hours.
Event Counter
120V, 6-digit, non-resettable.
Surge Arrestor
Status light on unit; protects incoming power supply from electrical surges.
Pump Run Light
7/8-in. (22-mm) diameter green lens. UL Type 4X rated, 1 W LED light, 120 V.
Power Light
7/8-in. (22-mm) diameter green lens. UL Type 4X rated, 1 W LED light, 120 V.
Utility receptacle with GFI breaker
Color-coded wiring with numbered terminal blocks
All components (switches, lights, etc.) labeled.

Control panel shall be equal to Orenco DAX2IRROCSETMCTSAPRLPL. It is the responsibility of the Licensed Septic Contractor to ensure that the panel is modified to include these items.

FLOAT SWITCHES

All new float switches shall be mechanically activated switches, with cable of adequate length to terminate in the pump control panel. No splicing of wire allowed between switches and control box. Use properly rated mechanical switches on power circuits. Conduit between the pump tank and the control panel shall be sealed off to prevent sewer gas from entering the control panel. The pump tank shall have 3 float switches, a low-level "pump off" switch, a "pump enabling-inch float" and a "high water alarm" float. Fasten float switch to a stainless-steel float bracket mounted inside riser within 12-inches of access hatch. The lower-level control or "pump-off" must be

positioned above the pumps, so that the pumps always remain submerged. The upper-level control "pump-enabling" is positioned to pump a specified volume of effluent or assures that a full dose is available for demand-controlled dosing. The "high water alarm" control float is mounted a minimum of 12-inch above the pump enable float. (Note: Care must be taken to ensure floats do not become fouled by other components in the tank such as the electric power cord or the lifting rope.)

The three control float switches shall be located within the tank, located in the outlet end, and govern the following functions:

REDUNDANT OFF/ALARM FLOAT: The low-level alarm float will act as a redundant pump shut off and will activate an audio/visual alarm signal when the float switch is in the extended position (open circuit).

PUMP ENABLE FLOAT: In the extended position this float switch shall create an open circuit and prevent operation of the pumps. When the circuit is closed the float switch shall allow activation of the pumps shall alternate between cycles, transferring wastewater to the corresponding drain fields.

HIGH LEVEL ALARM FLOAT: The High-Level Alarm float switch shall activate the audio/visual alarm when the circuit is closed.

The pumps will alternate between dosing cycles. However, if one pump fails the remaining pump will take over the failed pump's cycle and an audio/visual alarm will be activated.

Controls and power wiring for the entire wastewater disposal system shall follow all local, state, and federal regulations, codes, and ordinances, and shall be confined on the site to the area of the pumps, control floats, and control panel. The wiring shall be run in gas and watertight conduits from the pump tank to the control panel as shown on the plan. After the installation of the wiring, each conduit shall be sealed to prevent septic fumes from reaching the control panel. The seal and cables shall be removable for replacement. Licensed Septic Contractor shall be responsible for coordinating with a Licensed Electrical Contractor for tying into electrical service panel as detailed on plan sheet U-3. The costs of obtaining all power and control wiring for this system shall be at the cost of the Licensed Septic Contractor included in his/her contract price.

Pump power wires and control wires shall run in 2-inch PVC conduits from the access openings at the dosing tanks to the location of the pump control panel mounted nearby. Bury conduit to a minimum depth of 30-inches below grade.

IX. PIPING AND VALVES

PIPING

Pipe shall be manufactured from PVC compound with a cell class of 12454 per ASTM D 1784 and conform with National Sanitation Foundation (NSF) standards 14 and 61. Pipe shall be iron pipe size (IPS) conforming to ASTM D 1785. Fittings shall conform to ASTM D 2466. All pipe and fittings to be produced by a single manufacturer and to be installed in accordance with manufacturer's recommendations and local code requirements. Buried pipe shall be installed in accordance with ASTM F 1668. Solvent cements shall conform to ASTM D 2564. Primer shall conform to ASTM F 656. The piping shall be equal to those manufactured by Charlotte Pipe and Foundry Company and is intended for pressure applications where the temperature will not exceed 140°F.

TRUE UNION BALL VALVES

All thermoplastic ball valves shall be True Union type constructed from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM or Viton®. All valves shall have Safe-T-Shear® stem and double stop Polypropylene handle. All valve union nuts shall have Buttress threads. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. All valves shall be certified by NSF International for use in potable water service. All 1/2-inch - 2-inch valves shall be pressure rated at 235 psi and all 2-1/2-inch - 6-inch and all flanged valves shall be pressure rated at 150 psi for water at 73°F, as manufactured by Spears® Manufacturing Company or Engineer approved equal.

GATE VALVES

All thermoplastic Gate Valves shall be constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447. All O-rings shall be Buna-N, EPDM or Viton®. All valves shall have non-rising stem and Polypropylene handwheel. All valve gate wedges shall have Strain-Equalizing threads. PVC valves shall have

Polypropylene wedge and CPVC valves shall have CPVC wedge. All valve components shall be replaceable. All 1/2-inch through 2-inch valves shall be pressure rated at 200 psi, all 2-1/2-inch through 3-inch valves shall be pressure rated at 150 psi, and all 3-inch valves shall be pressure rated at 235 psi for water at 73°F, as manufactured by Spears® Manufacturing Company or Engineer approved equal.

SWING CHECK VALVES
All thermoplastic check valves shall be Utility Swing Check type constructed form PVC Type I, ASTM D 1784 Cell Classification 12454. All valves shall be maintenance free seal unit construction with EPDM seat and weighted disc. All valves shall have external flow arrow direction designation. All valves shall be certified by NSF International for use in potable water service. All valves shall be pressure rated to 150 psi for water @73°F in full flow (open) position and to 75 psi @ 73°F back pressure (closed), as manufactured by Spears® Manufacturing Company or Engineer approved equal.

PRESSURE FORCE MAIN:
Within the tank shall be 3-inch diameter SCH 40 PVC. Pressure force main from the tank to H-valves to the manifold shall be 3-inch diameter SCH 40 PVC as called for on the plans. These pipes shall be buried with 30-inch minimum cover with tracer wire and identification tape. A 3-inch diameter valve shall be installed at the end of each of the pipes before the manifold to allow for final pressure head adjustment.

PRESSURE MANIFOLD:
Pressure manifold shall be 6-inch diameter Schedule 80 PVC, ASTM D-1785, constructed as detailed on the plan. The manifold shall be located above the nitrification field and placed in a precast manifold protective box. The manifold shall have a clean-out, a 1/2" pressure head monitoring port with valve and be securely anchored to the pressure manifold box. Pressure manifold taps shall be securely anchored to the pressure manifold box. Pressure manifold taps and the manifold shall be constructed as detailed on the plan.

PRESSURE MANIFOLD BOX:
Shall be precast concrete equal to Shoaf Precast Company with lockable aluminum lid, sized to allow servicing of the manifold. The box shall be sized and constructed to accommodate the pressure manifold cleanout, lateral supply lines, the flow adjustment valves and inspection ports in each lateral. The precast box shall have a drain hole (2-inch diameter) in the bottom over a bed of washed stone to allow the box to drain. The lockable lid shall have a checked aluminum plate with or be reinforced concrete with removable access hatch over the test port as called for on the plan. It is recommended to install high visibility bollards at each manifold corner to protect from damage.

GRAVITY DISTRIBUTION LINE:
The gravity flow distribution pipe from the distribution manifold to the chambers shall be solid-core 3" SCH 40 PVC pipe. These lines shall be secured by the pressure manifold box, have a slope of not less than 1/4" per ft. to each of the laterals.

NITRIFICATION FIELD:
Lay out the nitrification field network area with stakes and flagging. As soon as the absorption area and repair areas are designated, they should be identified, barricaded, and isolated from construction traffic. This barrier should be maintained until the system is accepted by the Owner. Refer to site plan for the size of absorption area. Maintain 25 feet from any property lines, 200 feet from any public water supply well, 100 feet from top of stream bank and 15 feet from top of cut slopes greater than 2 feet or more. Each nitrification lateral may be either conventional or a gravel-less chamber, however, no reduction shall be given for using a chamber type system.

NITRIFICATION TRENCH: Shall be constructed as level as possible, but in no case shall the fall in a single trench bottom exceed 1/4" in 10' as determined by an Engineer's level. The nitrification trench shall not exceed a width of 3 feet with an 18-inch trench bottom depth recommended by Rowan County Health Department. Septic Contractor shall verify trench depth on the Authorization to Construct. An earthen dam shall separate the nitrification trench from the gravity supply pipe. Remove loose soil from bottom of trench. No rock shall be used in nitrification trenches. The soil cover over the nitrification fields shall be to a depth as shown on the plans. The finished grade over the nitrification fields shall be landscaped to prevent the ponding of surface water; and runoff of surface water shall be diverted away from the nitrification fields. Install splash plates as detailed on plans on the inlet side of each lateral.

Carefully backfill supply pipe trenches to finish grade with clean (debris free) earth (no stone).

New nitrification laterals and manifolds shall be field staked by a Licensed Land Surveyor. Licensed Septic Contractor to consult with the Soil Scientist of Record and Local Health Department to determine/verify the trench width, depth, and material to be used in installation.

XI. SYSTEM INSTALLATION

Utility Crossings & Locations

The Licensed Septic Contractor is responsible for locating all services before beginning work on the site. The plans are approximate and may not show all utilities.

- Water Line Vertical Separation: Clear separation distance when a water line crosses over a sewer must be at least 18-inches at the closest point. When conditions prevent an 18-inch clear separation from being maintained, or whenever it is necessary for the water line to cross under the sewer, both the water line and sewer shall be constructed of ferrous materials with mechanical joints equivalent to water main standards for a distance of at least 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing.

- Storm Drain Separation: Horizontal separation between sewer lines and storm drains shall be at least five feet. Vertical separation between sewer lines and storm drains at crossings shall be at least one foot at the closest point unless the sewer is of cast iron pipe or encased in concrete for at least five feet on either side of the crossing.

TANK INSTALLATION

- Have Surveyor locate tank corners from site engineering plans.
- Excavate to 8-inch below tank base. De-water excavation if required.
- Add 6-inch to 8-inch of clean #57 washed stone.
- Check to ensure stone base is level and elevation is correct.
- Carefully lower bottom section of tank into position with proper rigging and lifting techniques.
- Add butyl seal as directed by tank manufacturer around tank seams.
- Install next or upper section until tank installation is complete.
- If tank is installed in groundwater, contact Design Engineer.
- If tanks are not installed in groundwater backfill excavation with clean material and to within 12-inch of the inlet pipe. Check level of tanks.
  NOTE: Use care while backfilling to prevent tank movement and/or damage to tanks.
- Seal inside tank to ensure tank is watertight.
- Seal all pipe penetrations and fill with water to 12 inches over riser attachment on tank and perform watertight test or vacuum test.
- Once testing has been approved by the Design Engineer, install all piping, pumps, etc within tanks as called for on the plans.
- Install wiring with watertight conduit from control panel location to tank with no splicing of wires.
- Back fill around tanks with clean material to final grade.

ELECTRICAL INSTALLATION

Install the control system and wire per NC Building Code and NEC by a licensed electrical contractor. Licensed Septic Contractor shall verify available electrical power and before ordering components. Provide and connect to properly sized and number breakers in the main panel board.

FINAL LANDSCAPING

After the system is installed, the following should be checked to ensure that the system will not be overloaded with excess rainwater and run-off.

(a) The treatment area and nitrification areas are capable of shedding rainwater and are free of low areas. Replenish gravel in tank area as needed.
(b) Curtain drains, grassy swales or ditches for diverting ground and surface water are installed.

Any problems should be corrected before approving the system.

XII. TESTING AND STARTUP

Requirements for Leakage Testing Precast Tanks

All precast tanks shall be tested for water tightness by an approved method such as 24-hour water tightness test with maximum allowable leakage not to exceed 1/2-inch rise or fall in water level per 24 hours. Test shall be run with risers/and inlet/outlet pipes in place. The testing shall begin after the water level in the tanks has stabilized.

Any leaks shall be corrected and the tanks re-tested. Installer shall ensure that the tank remains level and true to grade after placement and filling with water. The new tanks shall be installed in the location and to the elevations shown on the plans. The tanks may be vacuum tested as an alternate holding 5 in/Hg for a minimum of 2 minutes.

Once testing of the tanks has been completed, the tanks shall be backfilled in lifts with well compacted, debris free earth to a level which directs surface water away from the tanks. All tank lids shall be lockable or constructed to prevent easy removal. Tank access in traffic area shall be 24-inch cast iron manhole frame and lid. If using cast iron manhole lids in non-traffic areas, covers shall be bolt down type.

The Licensed Septic Contractor shall be required to provide as many tests and/or certifications as the Engineer may deem necessary.

Requirements for Leakage Testing-Pressure Force Main

All force mains shall be pressure tested prior to issuance of permit by Health Department and Certification by the Engineer. It is required that the Licensed Septic Contractor test the force main prior to having the Engineer to the site for verification. Required testing of pipelines and valves shall be done under the direct supervision of the Project Engineer. Field-testing shall not negate the requirements for material certifications as contained in the material specification section of this contract. Unless otherwise directed by the Engineer, all testing and disinfection will be completed prior to connection to any line.

Hydrostatic & Leakage Tests

On completion of the line or sections of the lines, connections and appearances, the line shall be filled and hydrostatically tested. The water for testing purposes can be taken from the nearest available water main under the supervision of the Engineer's Inspector or the Licensed Septic Contractor may install a well on site and ensure that all setbacks are observed in doing so and leakage will be measured by the Inspector. All leaks and any defective material shall be repaired or replaced to the satisfaction of the Engineer and the tests repeated until the requirements of this specification are met. Any special equipment, pumps, etc., required to make the test shall be furnished and operated by the Licensed Septic Contractor as directed by the Inspector.

The Licensed Septic Contractor shall use great care to be sure that all air is expelled from each section under test. If service connection or other openings are not available for the purposes of expelling air, the Licensed Septic Contractor shall provide air release of enough size (as determined by the Engineer).

Specific procedures for testing main are as follows:

- The test pressure will be 100 PSI at the low point of the section under test.

- Allowable leakage will be determined by Table 6, AWWA C-605-13 or by the formula:

  1 = 0.000106(S)(D) where S in the length of pipe under test and D is the pipe diameter.

- Pressure and leakage tests will be run concurrently and for duration of two hours except as modified below.
- The Licensed Septic Contractor will pressurize the line and verify that it is within allowable leakage before the official test is started.
- The Inspector will begin the test and remain at the job for the first hour, making sure that the test pressure is maintained within 5 PSI. The Licensed Septic Contractor is to maintain the pressure within 5 PSI for the duration of the test period. At the end of the first hour, with the line pumped to full test pressure, he will read the meter and record the first hour leakage. If the first hour leakage is within allowable, he will return at the end of the second hour and read the meter again. If the total leakage for the two hour period does not exceed four times the first hour leakage, the test will be terminated. If the total leakage exceeds four times the first hour leakage, but is still within allowable, the test will be held an additional hour.
- If leakage exceeds allowable for the two-hour test, the test will be terminated and re-scheduled after the Licensed Septic Contractor has verified that actual leakage is within the allowable leakage, but no earlier than the next working day.
- If the first hour leakage does not exceed 15% of the allowable, or if the allowable leakage rate does not exceed 0.4/gal/hr, the test may be terminated at the end of two hours provided the second hour leakage does not exceed the first hour leakage. If the second hour leakage exceeds the first hour leakage, the test will be held for an additional period as described in Paragraph (e) above.
- The maximum length of pipe testing in one test shall be 5,000 feet or as close to 5,000 feet as possible depending on valve spacing.
- During the last stages of the test and without any reduction in pressure progressing from the end opposite

the test pump, each mainline valve will be closed, and pressure released to determine if the valve is holding pressure (minimum 10 minutes per valve closing).

The Licensed Septic Contractor shall be required to provide as many tests and/or certifications as the Engineer may deem necessary for materials, such as concrete, piping, valves, steel reinforcement, all fasteners and anchorage systems, etc. Testing for materials shall be made by a separate independent test laboratory employed by the Licensed Septic Contractor and approved by the Engineer.

The Licensed Septic Contractor shall coordinate and schedule site visits, installation, and startup assistance from the equipment manufacturers.

XIII. OPERATING CHECKS AND ADJUSTMENTS

The new system consists of: Collection system (by others), (1) 2,500-gallon septic tank with effluent filter, (1) 2,500-gallon pump tank with appurtenances, electrical components, (1) H-Valve Vault, (1) PVC force main, and (1) pressure manifolds serving (16) nitrification laterals.

It is the Clients responsibility to ensure that the Licensed Septic Contractor checks the entire system and takes the system through a complete test cycle prior to Engineer making certification startup visit. This includes:

- Ensuring that all risers and lids are above grade, bolt down and readily accessible.
- Floats are set at the proper elevations as required.
- Pumps are operable and deliver the required flow and head.
- Control Panel is in operation and operates as called for herein.
- Area around treatment and disposal area are at finished grade, raked fine, seeded and mulched.
- Drain field and other disturbed areas are raked fine with seed and mulched as called for herein.
- Tanks are filled to inverts with water and ready for testing. Ensure there is enough water in pump tank for testing and setting operating heads in both pressure manifolds.
- Licensed Septic Contractor is to dummy test entire system prior to final startup meeting with Engineer, Owner and Local Health Department.

After permanent power has been connected and all components of the system have been installed, the Licensed Septic Contractor shall schedule a time for the checking of the system for proper operation. The check shall be performed in the presence of the Design Engineer, Licensed Septic Contractor, and Owner. Any discrepancies shall be corrected until the system operates as designed.

SEPTIC TANK

Check water level, pipes, filter, and other appurtenances. Verify that the filter handle is easily accessible and within 12-inch of access lid. Verify that the lids are 6-inch above finished grade.

PUMP TANK

Check water level, pipes, pumps, floats, and other appurtenances. Verify that the pumps and all appurtenances are operating, installed, and seated properly and the rail systems or stainless-steel lifting chains are easily accessible and within 12-inch if access lid. Verify that the lids are 6-inch above finished grade.

DOSING PUMP CONTROL

Ensure the pump tank is free of all trash and debris. Effluent shall be always above the "Redundant Off" float. Effluent fills basin to level that will activate the "Pump Enabling" float. Pump can now operate. When a pump is called for service, and the level in the pump tank permits, the pump will be allowed to dose for prescribed volume and turn off when float falls back into the off position.

If the "high water alarm" float switch is activated, the controller shall activate audible and flashing alarm systems. Once energized, the flashing and audible alarm unit must be shut-off manually. After installation, each field shall be independently pressurized, and the function and operating pressure checked to verify compliance with the specifications and calculations.

PRESSURE MANIFOLD PRESSURE HEAD ADJUSTMENT

With the pump running and all air out of the supply line and manifold, a temporary ½-inch diameter by 2 ft long transparent plastic pipe or test tube shall be connected to the test port on each one the pressure manifolds and the effluent allowed to rise in the test tube. The valve at the head of the manifold should be adjusted to cause the effluent to stabilize at 2 feet above the pressure manifold (as called for on the plans/calculations). The pressure head is then correctly set. Turn off the pump, remove the test tube and plug the test port. All valves leading from the manifold to the nitrification lines shall be left in the open position. These valves will be used only if it is determined that certain nitrification lines should be shut off from the system later.

XIV. OPERATING MAINTENANCE

This work shall be performed only by operators knowledgeable of the system. Operation, maintenance, and Inspection Procedures shall include but not be limited to the following:

- Enter into a contract with a Licensed Subsurface Operator required in accordance with .1961.
- Minimum system inspection/maintenance frequency shall be a minimum of every 6 months, however more frequent inspection is recommended. (Type IVb)
- Septic system shall be pumped every 5 years or when solids accumulate to 1/3 the volume of the tank.
- The system should be observed by one, three, six months after initial installation, and every six months thereafter. An inspection report should be completed and filed each time the system is checked. Minimum Reporting to Local Health Department is every year.
- The pumps, control panel, valves, etc. shall be checked to verify that the pump run times are correct to ensure the correct dosing volumes. Adjustment shall be made as required.
- The pressure manifolds shall be pressure backwashed with clean water during system maintenance.
- Pressure head at the manifolds should be checked and adjusted one month after installation and annually thereafter.
- All piping, fittings and valve boxes shall be checked annually for damage and/or proper operation and corrections made immediately.
- The property should be inspected to ensure all surface water is deflected away from the fields and tank. Any ponding of surface water should be corrected.
- Grasses shall be mowed and maintained, and any erosion shall be corrected promptly.
- The nitrification field areas shall be checked for leakages, blowouts or malfunction, indications of damp or mushy areas compared to surrounding area or evidence of noticeable odor of sewage. Repairs shall be made immediately.
- The pumping control panel and wiring should be checked to insure tight, clean connections with no corrosion and proper operation.
- Pump switches shall be checked for free operation and proper level set.
- Check all tanks for evidence of damage or leakage. Check the quality of effluent including grease & sludge accumulation.
- Follow all manufacturers' recommendations for maintenance in provided manuals.

The current system owner (**23XI and subsequent owners**) shall establish an operation and maintenance program and procedure based on experience obtained from similar installations.

The current system owner (**23XI and subsequent owners**) shall be responsible to comply with all above operating and maintenance procedures in addition to any so specified on the operation permit issued by the Local Health Department or may be necessary in the future for the operation of the system to meet all public health laws, rules and regulation regarding the wastewater system.

Failure to comply with these operating and maintenance procedures will necessitate immediate legal action by the Local Health Department to suspend or revoke the operation permit.

RESIDUALS MANAGEMENT

Residuals from the wastewater treatment system will be pumped and disposed of on an as needed basis. This will be determined by the number of residuals generated at the plant by the ORC. Residuals will be picked up and disposed of by a licensed pumper and disposed of at a licensed facility. It will be the requirement of the owner and/or operator to contract with this licensed entity.

If any residuals are generated in this system, the majority will be in the primary septic tank. Each tank is required to have an access port directly above each chamber within the tank. These access points shall always be readily accessible to the operator. The ORC shall use a "Sludge Judge" periodically to determine whether the tank(s) need to be serviced.

If needed, the ORC shall contact the contracted pumper to pick up and dispose of the residuals properly. The ORC shall make record of this for future reference in his/her Operation & Maintenance scheduling.

XV. AS BUILTS

The Licensed Septic Contractor shall provide the Engineer with a set of as-built plans showing the exact horizontal and vertical location of valve boxes and other system appurtenances. The plans shall also indicate any crossings of force mains, color of force mains and any deviations in installation of the force mains and plans. Exact locations of valves and cleanouts are required as well to be provided by the Licensed Septic Contractor for As-Built records. Upon completion of the As-Built plans, the Licensed Septic Contractor shall provide this information to the Engineer so that the plans can be revised and distributed to the Local Health Department, Owner, and ORC.

A set of as-built plans and specifications shall be prepared by a Professional Surveyor licensed to practice in the State of North Carolina.

- The Surveyor shall be hired by the Licensed Septic Contractor to perform the work.
- The Licensed Septic Contractor shall provide the As-Built plans to the Engineer.
- The Licensed Septic Contractor shall forward to the Engineer two bound sets of all manufacturer's component data along with the As Built data
- The Engineer shall provide the signed and sealed As-Built plans to the Local Health Department and Owner which will show actual vertical and horizontal location and design of all system components and contain a complete list of all mechanical equipment installed whenever any deviations were made from the approved plans and specifications.
- Information shall be provided to Engineer prior to system startup so data can accompany Certification to Owner and Local Health Department.

XVI. OPERATING PERMIT

An Operation Permit will be issued by the Local Health Department after all conditions of the permit have been met and the Design Engineer certifies in writing that the system has been installed in accordance with the approved plans and specifications.

The operation permit shall include description of facilities served and sewage system components, as-built plans, and specifications, monitoring and performance requirements, and other operating conditions deemed appropriate.

XVII. WARRANTY

The wastewater system Licensed Septic Contractor shall agree to provide a minimum of one-year regular service to the Owner for maintenance and upkeep of this system at no additional cost to the Owner, and such one-year period shall begin from the date of final inspection and acceptance of the system construction by the Owner, the Engineer, and representatives of the Division of Environmental Health. Any concerns of the owners' personnel shall be addressed promptly.

After the above one-year period has expired, the Licensed Septic Contractor shall offer a continuation of maintenance and upkeep service at a reasonable charge as may be negotiated between the installation Licensed Septic Contractor and the Owner. Such service shall include checking the entire system at least monthly, offering quick response servicing in case of a malfunction of the system (maximum of 24 hours after warning is given by the Owner's Warning Panel) and performing such servicing of components and replacing of worn or defective equipment as may be necessary to keep the system operating in good condition.

If the installation Licensed Septic Contractor will not be willing to agree to the above described one-year maintenance period, then any other period must be acceptable to the Owner, the Engineer, and to the Representative of the Division of Environmental Health.

DESIGN SPECIFICATIONS
23XI Race Shop Septic System
Huntersville, Mecklenburg County, NC

Daily Design Flow	1,500 Gallons per Day
Assigned Loading Rate	0.25 Gallons/Day/Sq. Ft.
PRIMARY TREATMENT	
Septic Tank Size	(1) 2,500-Gallon w/ baffle wall & access risers (6-in above grade)
Effluent Filter	(1) Polylok Model PL 525 or Engineer Approved Equal
PUMPING SYSTEM	
Pump Tank	(1) 2,500 Gallon Pump Tank w/ Access Risers & Aluminum Hatch over Pumps equal to Halliday S1R 3030
Force main:	+/-1,175 LF 3-inch SCH 40 PVC
CONVENTIONAL NITRIFICATION FIELDS	
New Laterals	16 Total Laterals @ 93.75 LF Ea. with 36" trench bottom
Effluent Loading Rate:	0.25 GPD/SF
Pressure Manifolds:	6-inch SCH 80 PVC w/ 16-½-inch Dia. SCH 80 Taps
Manifold Placement:	Above field
Flow Rate Thru System:	87.68 G/M
CONVENTIONAL NITRIFICATION FIELDS	
Elevation Head:	33.5 Ft. (Worst Case)
Operation Head:	2 Ft. (Worst Case)
Friction Head:	26.78 Ft. (Worst Case)
Total Head:	53.78 Ft. (Worst Case)
Pump Requirements:	87.68 GPM @ 53.78 Ft. head; 230 V, 2.0 HP, Single Phase Pumps
Control Panel:	Duplex Control Panel in NEMA 4X Enclosure
Dosing Volume:	500 Gallons 3 Times Daily
Depth of water Pumped/Dose:	11.14 Inches per Dose (Contractor to verify)
Pump Run Time:	5.70 Minutes per Dose
Check Valve:	(2) 3-inch Diameter Swing Type (one per pump discharge pipe)
Siphon Break Hole:	(2) 5/32-inch Diameter (one per pump discharge pipe)

SEEDING SPECIFICATIONS

SLOPES 3:1 or FLATTER

1. Apply agricultural lime at the rate of 90 Lb/1000 SF.
2. Apply 10-10-10 commercial fertilizers at the rate of 20 Lb/1000 SF.
3. Seed in accordance with the following schedule and application rate:

DATE	TYPE	PLANTING RATE
Aug 15 - Nov 1	Tall Fescue	200 Lb/Ac or 7 Lb/1000 SF
Nov 1 - Mar 1*	Tall Fescue and	200 Lb/Ac or 7 Lb/1000 SF
	Abruzzi Rye	25 Lb/Ac or 2 Lb/1000 SF
Mar 1 - Apr 15	Tall Fescue	200 Lb /Ac or 7 Lb/1000 SF
Apr 15 - Jul 30	Hulled Common or Bermuda	30 Lb /Ac or 1 Lb/1000 SF
Jul 15 - Aug 15	Tall Fescue and	200 Lb /Ac or 7 Lb/1000 SF
	Brown Millet or	35 Lb /Ac or f Lb/1000 SF
	Sorghum-Sudan Hybrids	30 Lb. /Ac or: Lb./1000 SF

4. Mulch with straw applied at the rate of 75-100 Lb/1000 SF.

* Heavily mulched during January - March period.

SLOPES GREATER THAN 3:1 TO 2:1

1. Apply agricultural lime at the rate of 90 Lb/1000 SF.
2. Apply 10-10-10 commercial fertilizers at the rate of 20 Lb/1000 SF.
3. Seed in accordance with the following schedule and application rate.

DATE	TYPE	PLANTING RATE
Mar 1 - Jun 1	Sericea Lespediza (scarified) &	50 Lb /Ac or 11 Lb/1000 SF
Mar - Apr	Add Tall Fescue or	150 Lb /Ac or 32 Lb/1000 SF
Mar - Jun	Add Weeping Lovegrass	5 Lb /Ac or c Lb/1000 SF
Jun - Sep 1**	Tall Fescue and	60 Lb /Ac or 12 Lb/1000 SF
	Brown Top Millet	35 Lb /Ac or f Lb/1000 SF
	Sorghum Sudan Hybrids	30 Lb /Ac or: Lb/1000 SF
Sep - Mar 1	Sericea Lespediza (Unhulled-unscarified)	70 Lb /Ac or 1: Lb/1000 SF
	Tall Fescue	150 Lb/Ac or 32 Lb/1000 SF
	Millet or Sudan	20 Lb/Ac or 2 Lb/1000 SF

** Temporary - Reseed September 1 at recommended rates.

4. Mulch with 3-inch straw applied at the rate of 50-90 Lb/1000 SF and anchor with asphalt emulsion tack coat applied at the rate of 3-5 gal/1000 SF or 200-300 Gal/Ac.

PIEDMONT DESIGN
ENGINEERING/SURVEYING/PLANNING
Associates, P.A.

125 Eas
Mooresville, Nor
Telephone (704) 664-7
NCBEL

Date

Job No: 2022-08-17
23XI Race Shop Septic System
Huntersville, Mecklenburg County, North Carolina

Septic System Sizing

System Sizing Based on Employee Count

No. of Employees	100.00	Employees / Shift
Flow per Employee	15.00	G/D/Employee
Daily Design Flow	1,500.00	G/D
Proposed LTAR:	0.25	G/D/SF
Nitrification Field Size Required:	6,000.00	Sq Ft Drainline
Nitrification Field Size Required:	2,000.00	LF Drainline
25% Reduction System:	1,500.00	LF Chamber

Septic Tank Volume

D.D.F.:	1,500.00	G/D
Use Sizing Formula:	V = 1.17Q + 500	
	2,255.00	Gallons

Use 2,500 Gallon Septic Tank
Use 2,500 Gallon Pump Tank

Septic Tank Sizing Calculations	
600 G/D to 1,500 G/D	
V = 1.17Q + 500	V = Tank Volume
1,500 G/D to 4,500 G/D	Q = Design Flow
V = 0.75Q + 1,125	
4,500 G/D and up	
V = Q	

Drain Field Size *Drainfield Based on 25% Reduction System*

LF Drainfield Installed:	1,500.00	LF
Gallons/100 LF of 4" Corregated Pipe	65.30	Gallons
100% Volume of Drainfield	979.50	Gallons
80% Volume of Laterals	783.60	Gallons
40% Volume of Laterals	391.80	Gallons
Therefore, Dose	500.00	Gallons per Dose
	51.05%	Volume of Laterals per Dose

Force Main:	3	Inch Dia. SCH 40 PVC
Pressure Manifold:	6	Inch Dia. SCH 80 w/8-1/2" SCH 80 orifice

Pressure Manifold 1: 6" Dia. Sch 80 w/ 16-1/2" Dia Sch 80 Orfice

Determine Flow:	87.68	G/M	*# of Taps x 5.48 G/M per Tap*
Force Main Size:	3.00	Inch	*SCH 40 PVC*
Length of FM:	1,175.00	Ft.	*Site Plan*
Elev:	25.00	Ft.	*HI from pump to Manifold*
Oper:	2.00	Ft.	*Set by OSWW*
Friction:	26.78	Ft.	*Friction Loss times length of FM*
TDH:	53.78	Ft.	*Elev. HD + Oper. Head + Friction Head*
Pump Req'd:	87.68	G/M @	53.78 TDH

Use Goulds 3885 Series Model WE2012H Effluent Pump
2 HP - 230V - 1PH

Dosing Volume:	500.00	Gallons
Pump Run Time:	5.70	Min.
Gallons/Inch (In 3,500 Gal. Tank):	44.88	Inches (Field Verify)
Effluent Draw Down:	11.14	Inches (Field Verify)
Check Valve:	Yes	

Tank Anti-Floatation Calculations

Tank Dimensions & Antifloatation: 2,500 Gallon Septic Tank Dimensions

Outer Length	12.50	Ft.	STB-2103	
Inner Length	12.00	Ft.		
Outer Width	6.50	Ft.		
Inner Width	6.00	Ft.		
Outer Height	6.42	Ft.		
Inner Height		Ft.		
Wt. of Water Displaced	32,532.50	Lbs.		*Outer Length x Outer Width x Outer Length x 62.*
Wt of Tank	6,093.75	Lbs.	*Top & Bottom*	*Outer Length x Outer Width x 150 Lb/CF x 2 (Top*
	-	Lbs.	*Ends*	*Inner Width x Inner Height x 150 Lb/CF x 2 (Ends*
	8,020.83	Lbs.	*Sides*	*Outer Height x Outer Length x 150 Lb/CF x 2 (Sid*
	(150.00)	Lb	*Baffle*	*Inner Width x (Inner Height-3 Inches) x 150 Lb/C*
	13,964.58	Lbs.	*Total Tank Wt.*	*Sum Above four*
Wt. of Overburden	19,500.00	Lbs.	@ 24" of Cover	*Outer Length x Outer Width x 120 Lb/CF (Saturat*
Total	**33,464.58**	Lbs.		*Sum of Total Tank Wt. & Soil Overburden*

Water	**32,532.50**	<	**33,464.58**	Tank

Tank Dimensions & Antifloatation: 4,500 Gallon Pump Tank Dimensions

Outer Length	12.50	Ft.	PT-129	
Inner Length	12.00	Ft.		
Outer Width	6.50	Ft.		
Inner Width	6.00	Ft.		
Outer Height	6.42	Ft.		
Inner Height	5.75	Ft.		
Wt. of Water Displaced	32,532.50	Lbs.		*Outer Length x Outer Width x Outer Length x 62.4*
Wt of Tank	6,093.75	Lbs.	*Top & Bottom*	*Outer Length x Outer Width x 150 Lb/CF x 2 (Top*
	3,450.00	Lbs.	*Ends*	*Inner Width x Inner Height x 150 Lb/CF x 2 (Ends)*
	8,020.83	Lbs.	*Sides*	*Outer Height x Outer Length x 150 Lb/CF x 2 (Side*
	1,575.00	Lb	*Baffle*	*Inner Width x (Inner Height-3 Inches) x 150 Lb/CF*
	19,139.58	Lbs.	*Total Tank Wt.*	*Sum Above three*
Wt. of Overburden	14,625.00	Lbs.	@ 18" of Cover	*Outer Length x Outer Width x 120 Lb/CF (Saturat*
Total	**33,764.58**	Lbs.		*Sum of Total Tank Wt. & Soil Overburden*

Water	**32,532.50**	<	**33,764.58**	Tank



MICHAEL ATHANAS & ASSOCIATES
LICENSED SOIL SCIENTIST
556 Walden Trail
Weddington, NC 28173
(704) 576-3887

Reference: Data Sheet for 10923 Statesville Road;
PID# 01704401;
Mecklenburg County, NC

Building Footprints: See Site Plan
Building Setback: See Site Plan
Water Source: Public Water
Proposed Gallons Per Day: 2500gpd; 100 employees at 25 gallons/employee
Proposed LTAR: 0.25 gpd/ft2
Suggested Initial System Type: 25% Reduction
Repair System LTAR: 0.1 gpd/ft2
Repair System Type: Pretreated Drip
Total Linear Footage: 2500
Trench Bottom Square Footage: 7500 sq.ft
Distribution: Pressure Manifold
Flow per Tap: TBD
Tap Size and Material: TBD
System Flow: TBD
Dosing Volume: TBD
Pump Run Time: TBD
Elevation Head: TBD
Friction Head: TBD
Pressure Head: TBD
Total Dynamic Head: TBD
Supply Line Length: TBD
Proposed Trench Bottom Depth: 36"
Septic/ Pump tank size: TBD

Comments: The purpose of the evaluation is to permit this site for a 100 employee commercial site. The system is not designed for any type of food service. **Only domestic wastewater should be discarded into the septic system.**

- The system and pump requirements will be designed by a licensed engineer.
- **The septic area should be fenced off and all vehicular traffic should be kept off of the initial system area as well as the repair area. Failure to do so will result in the permit being revoked.**
- No cuts of 2' or greater within 25' down slope of the system and 15' on the side slope.

Line	Design Length	Actual Length	Elevation
White 1	TBD	90'	See Site Plan
Pink 2	TBD	110'	See Site Plan
Blue 3	TBD	133'	See Site Plan
Pink 4	TBD	157'	See Site Plan
Orange 5	TBD	162'	See Site Plan
Red 6	TBD	186'	See Site Plan
Blue 7	TBD	182'	See Site Plan
Pink 8	TBD	127'	See Site Plan
Orange 9	TBD	136'	See Site Plan
White 10	TBD	153'	See Site Plan
Orange 11	TBD	162'	See Site Plan
Blue 12	TBD	166'	See Site Plan
Pink 13	TBD	172'	See Site Plan
Red 14	TBD	181'	See Site Plan
Blue 15	TBD	160'	See Site Plan
Pink 16	TBD	182'	See Site Plan
Red 17	TBD	176'	See Site Plan

Initial System: 2500' 25% Reduction; 2635' Available
Repair System: 28,821 ft2 Pretreated Drip

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

PROPERTY ID #: 10923 Statesville Rd; PID# 01704401
COUNTY: Mecklenburg

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: 2311 Real Estate Holdings APPLICATION DATE: _____
ADDRESS: 2626 Glenwood Ave Suite 550 Raleigh, NC 27608 DATE EVALUATED: 6/2023
PROPOSED FACILITY: 100 Employee Commercial Building PROPOSED DESIGN FLOW (.1949): 2500 GPD PROPERTY SIZE: 14.78Acres
LOCATION OF SITE: 10923 Statesville Road Huntersville, NC PROPERTY RECORDED: Unknown
WATER SUPPLY: ☐ Private ☒ Public ☐ Well ☐ Spring ☐ Other _____
EVALUATION METHOD: ☒ Auger Boring ☒ Pit ☐ Cut TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
AB 2	L 3-4%	0"-12"	YBr SCL WSBK	SS SP FR SEXP	YBrs 12"-30" Chroma 2 at 30"	30"			0.25-0.225 0.1+ Drip **Repair**
		12"-30"	YR C WSBK	SS SP FR SEXP					
AB 3	L 3-4%	0"-11"	YBr SCL WSBK	SS SP FR SEXP	Ybrs 11"-22" Common 3s and 4s at 22".	22"			0.1+ Drip **Repair**
		11"-22"	YR C WSBK	SS SP FR SEXP					
AB 4	L 3-4%	0"-8"	YBr SCL WSBK	SS SP FR SEXP	Ybrs 25"-30" Lithochromic colors included.	48"	Few saprolite inclusions 30"-48".		0.25 0.1+ Drip **Repair**
		8"-30"	R C SBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
AB 5	L 3-4%	0"-10"	YBr SL WSBK	SS SP FR SEXP	Ybrs 10"-25" Lithochromic colors included.	40"+	Few saprolite inclusions 25"-40"+.		0.25 0.1+ Drip **Repair**
		10"-25"	R C SBK	SS SP FR SEXP					
		25"-40"+	R CL WSBK	SS SP FR SEXP					
AB 6	L 3-4%	0"-5"	YBr SL WSBK	SS SP FR SEXP		40"+	Few saprolite inclusions 28"-40"+.		0.3 0.1+ Drip **Repair**
		5"-28"	R C SBK	SS SP FR SEXP					
		28"-40"+	R CL WSBK	SS SP FR SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	7500 FT2	28,821 ft2
System Type(s)	25% Reduction	Pretreated Drip
Site LTAR	0.25	0.1

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____

EVALUATED BY: Michael Athanas and Associates
OTHER(S) PRESENT: _____

Comments: **Boring #1 was done outside of the septic area.**

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM cont.

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
AB 7	L 3-4%	0"-6"	YBr SL WSBK	SS SP FR SEXP		48"	Few to common saprolite inclusions 27"-48"		0.3
		6"-27"	R C SBK	SS SP FR SEXP					
		27"-48"	R CL WSBK	SS SP FR SEXP					
AB 10	L 3-4%	0"-9"	YBr SCL WSBK	SS SP FR SEXP		48"	Few to common saprolite inclusions 30"-48"		0.3
		9"-30"	R C WSBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
AB 11	L 3-4%	0"-6"	YBr SCL WSBK	SS SP FR SEXP		48"	Few saprolite inclusions 29"-48".		0.3
		6"-29"	R C SBK	SS SP FR SEXP					
		29"-48"	R SCL WSBK	SS SP FR SEXP					
AB 12	L 3-4%	0"-8"	YBr SCL WSBK	SS SP FR SEXP	Few Ybrs 25"-33"	48"	Few saprolite inclusions 33"-48".		0.25
		8"-33"	R C SBK	SS SP FR SEXP					
		33"-48"	R CL WSBK	SS SP FR SEXP					
AB 13	L 3-4%	0"-3"	YBr SCL WSBK	SS SP FR SEXP			Few saprolite inclusions 30"-48".		0.3
		3"-30"	R C SBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
Pit 1	L 3-4%	0"-12"	YBr CL WSBK	SS SP FR SEXP	YBrs 26"-30" Chroma 2 at 30"				0.25 0.1+ Drip **Repair**
		12"-26"	YBr C WSBK	SS SP FR SEXP					
		26"-30"	R SC WSBK	SS SP FR SEXP					

Comments: **Borings #8 and #9 were done outside of the septic area.**

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

PROPERTY ID #: 10923 Statesville Rd; PID# 01704401
COUNTY: Mecklenburg

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM cont.

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
Pit 2	L 3-4%	0"-8"	YBr CL WSBK	SS SP FR SEXP	YBrs 8"-30"	48"	Few to common saprolite inclusions 30"-48"		0.2-0.225 0.1+ Drip **Repair**
		8"-20"	YBr C ABK	SS SP FR SEXP					
		20"-30"	YBr CL WSBK	SS SP FR SEXP					
		30"-48"	R CL WSBK	SS SP FR SEXP					
Pit 3	L 3-4%	0"-12"	YBr CL WSBK	SS SP FR SEXP	YBrs 21"-31" Chroma 2 at 31"	31"			0.2-0.225 0.1+ Drip **Repair**
		12"-21"	YR C WSBK	SS SP FR SEXP					
		21"-31"	YR C ABK	SS SP FR SEXP					
Pit 4	L 3-4%	0"-15"	YBr CL WSBK	SS SP FR SEXP	YBrs 15"-34" Chroma 2 at 34"	34"			0.25-0.225 0.1+ Drip **Repair**
		15"-34"	YR C ABK	SS SP FR SEXP					
Pit 5	L 3-4%	0"-6"	YBr CL WSBK	SS SP FR SEXP	Ybrs 6"-38"	56"	Few saprolite inclusions 38-56".		0.25 0.1+ Drip **Repair**
		6"-38"	R C SBK	SS SP FR SEXP					
		38"-56"	R C/CL WSBK	SS SP FR SEXP					
Pit 6	L 3-4%	0"-7"	YBr CL WSBK	SS SP FR SEXP			Few saprolite inclusions 28"-54".		0.3
		7"-28"	R C SBK	SS SP FR SEXP					
		28"-54"	R CL WSBK	SS SP FR SEXP					
Pit 7	L 3-4%	0"-12"	YBr CL WSBK	SS SP FR SEXP			Few saprolite inclusions 37"-55".		0.3
		12"-37"	R C SBK	SS SP FR SEXP					
		37"-55"	R CL WSBK	SS SP FR SEXP					

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

PROPERTY ID #: 10923 Statesville Rd; PID# 01704401
COUNTY: Mecklenburg

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM cont.

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS / COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
Pit 8	L 3-4%	0"-7"	YBr CL WSBK	SS SP FR SEXP		55"	Few to common saprolite inclusions 32"-55"		0.3
		7"-32"	R C SBK	SS SP FR SEXP					
		32"-55"	R CL WSBK	SS SP FR SEXP					
Pit 9	L 3-4%	0"-5"	YBr CL WSBK	SS SP FR SEXP		57"	Few to common saprolite inclusions 36"-57"		0.3
		5"-36"	R C SBK	SS SP FR SEXP					
		36"-57"	R CL WSBK	SS SP FR SEXP					
Pit 10	L 3-4%	0"-8"	YBr CL WSBK	SS SP FR SEXP		52"	Few to common saprolite inclusions 42"-52"		0.3
		8"-42"	R C SBK	SS SP FR SEXP					
		42"-52"	R CL WSBK	SS SP FR SEXP					

LEGEND

use the following standard abbreviations

LANDSCAPE POSITION	GROUP	SOIL TEXTURE	CONVENTIONAL .1955 LTAR*	LPP .1957 LTAR*	MINERALOGY/ CONSISTENCE	STRUCTURE
CC (Concave Slope)	I	S (Sand)	1.2 - 0.8	0.6 - 0.4	NEXP (Non-expansive)	G (Single Grain)
CV (Convex Slope)		LS (Loamy Sand)			SEXP (Slightly Expansive)	M (Massive)
D (Drainage Way)					EXP (Expansive)	CR (Crumb)
DS (Debris Slump)	II	SL (Sandy Loam)	0.8 - 0.6	0.4 - 0.3		GR (Granular)
FP (Flood Plain)		L (Loam)				SBK (Subangular Blocky)
FS (Foot Slope)						ABK (Angular Blocky)
H (Head Slope)	III	Si (Silt)	0.6 - 0.3	0.3 - 0.15		PL (Platy)
L (Linear Slope)		SiCL (Silty Clay Loam)				PR (Prismatic)
N (Nose Slope)		CL (Clay Loam)				
R (Ridge)		SCL (Sandy Clay Loam)			**MOIST**	**WET**
S (Shoulder Slope)		SiL (Silt Loam)				
T (Terrace)					VFR (Very Friable)	NS (Non-sticky)
	IV	SC (Sandy Clay)	0.4 - 0.1	0.2 - 0.05	FR (Friable)	SS (Slightly Sticky)
		SiC (Silty Clay)			FI (Firm)	S (Sticky)
		C (Clay)			VFI (Very Firm v. Very Sticky)	VS (Very Sticky)
		O (Organic)	None	None	EFI (Extremely Firm)	NP (Non-plastic)
						SP (Slightly Plastic)
						P (Plastic)
						VP (Very Plastic)

*Adjust LTAR due to depth, consistence, structure, soil wetness, landscape, position, wastewater flow and quality.

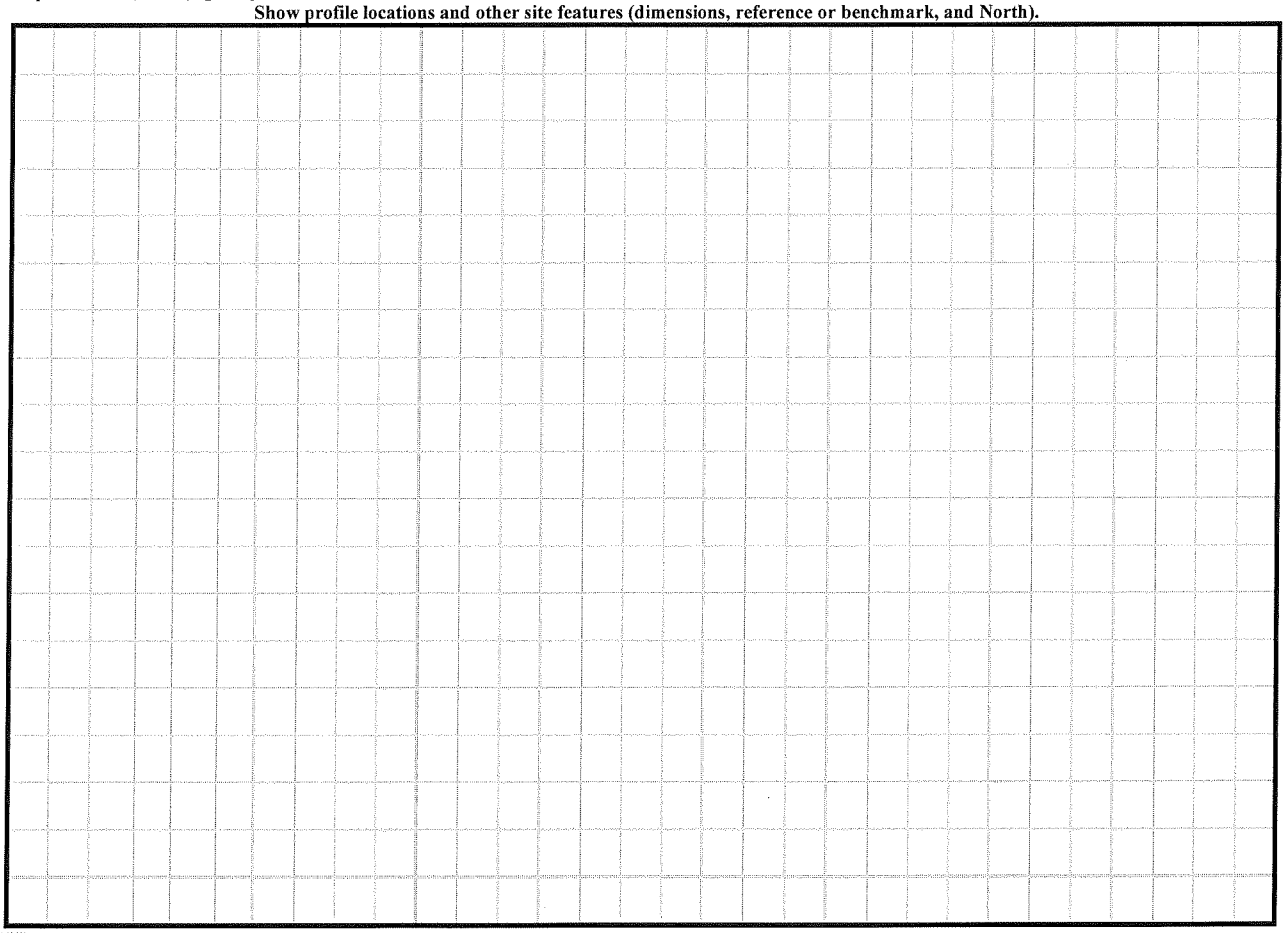
NOTES

HORIZON DEPTH	In inches below natural soil surface
DEPTH OF FILL	In inches from land surface
RESTRICTIVE HORIZON	Thickness and depth from land surface
SAPROLITE	S(suitable) or U(unsuitable)
SOIL WETNESS	Inches from land surface to free water or inches from land surface to soil colors with chroma 2 or less - record Munsell color chip designation
CLASSIFICATION	S (Suitable), PS (Provisionally Suitable), or U (Unsuitable)

Evaluation of saprolite shall be by pits.

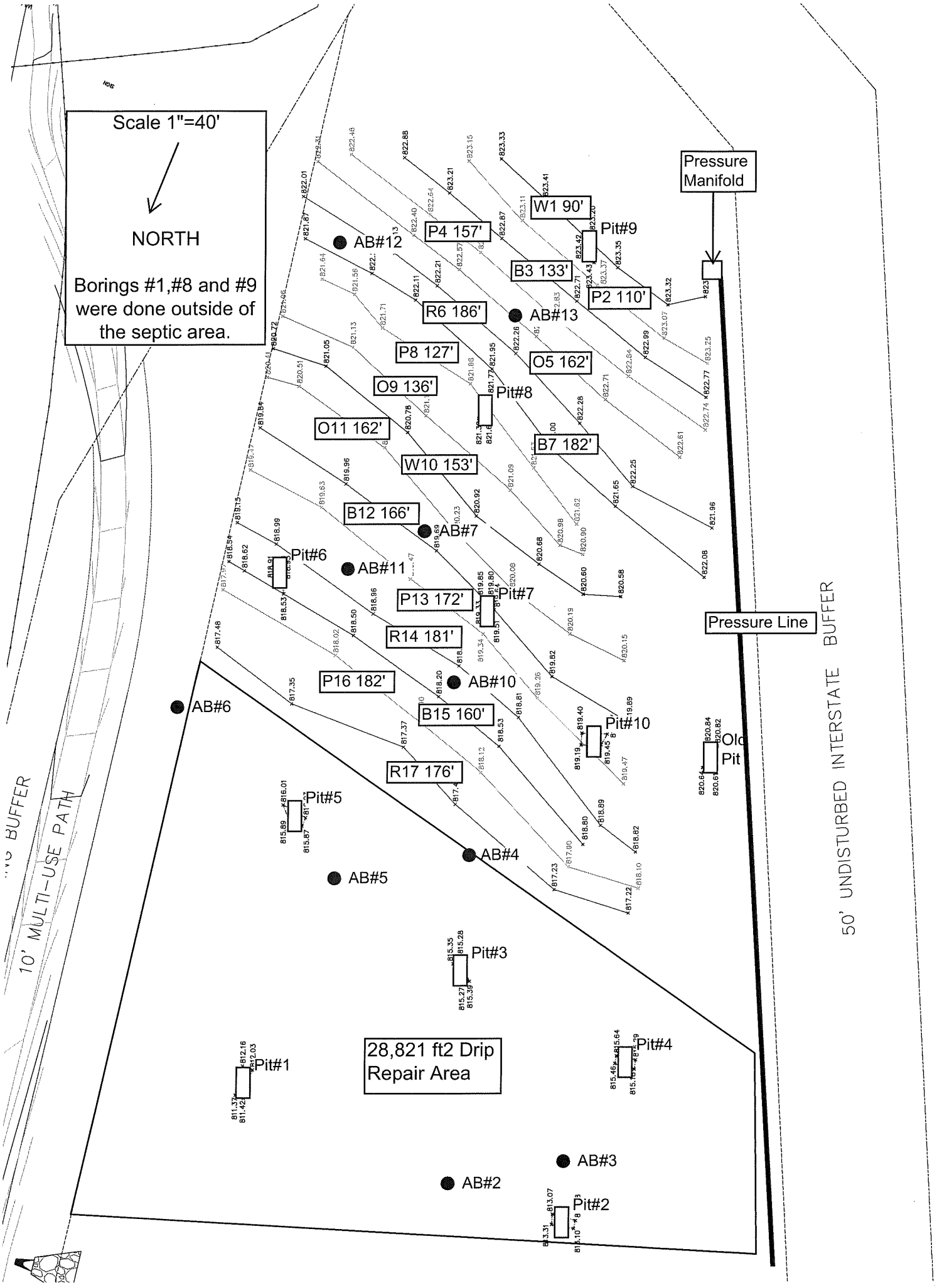
Long-term Acceptance Rate (LTAR): gal/day/ft^2

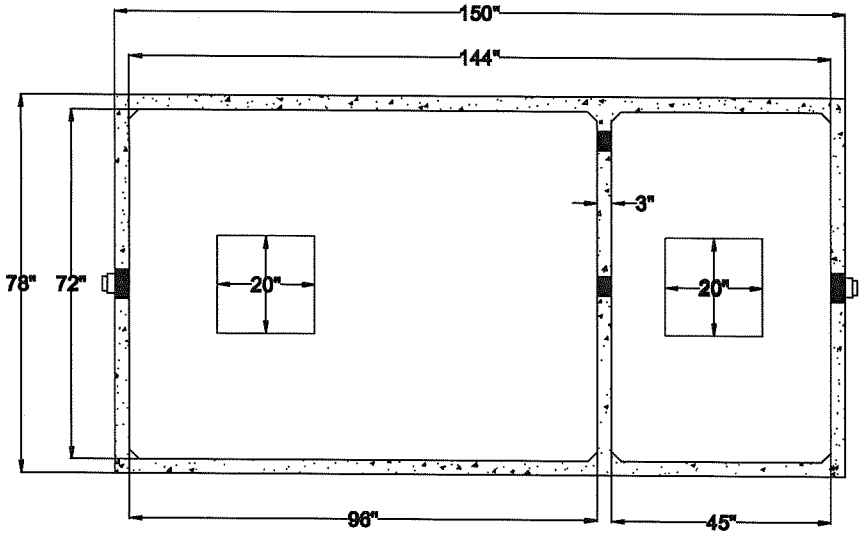
Show profile locations and other site features (dimensions, reference or benchmark, and North).



DENR (######)

Review (#####)

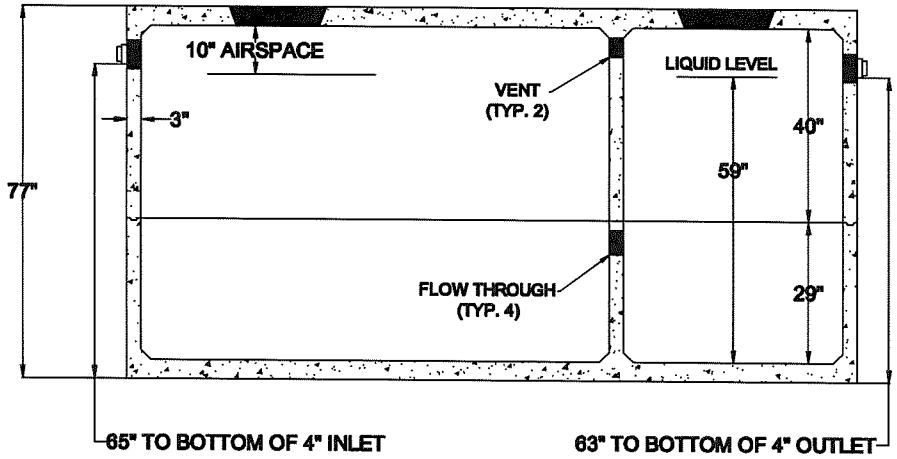

Scale 1"=40'
NORTH
Borings #1,#8 and #9 were done outside of the septic area.
Pressure Manifold
W1 90'
P4 157'
B3 133'
P2 110'
R6 186'
P8 127'
O5 162'
O9 136'
O11 162'
B7 182'
W10 153'
B12 166'
P13 172'
R14 181'
P16 182'
B15 160'
R17 176'
AB#12
AB#13
AB#7
AB#11
AB#10
AB#6
AB#4
AB#5
AB#3
AB#2
Pit#1
Pit#2
Pit#3
Pit#4
Pit#5
Pit#6
Pit#7
Pit#8
Pit#9
Pit#10
Old Pit
Pressure Line
28,821 ft2 Drip Repair Area
10' MULTI-USE PATH
50' UNDISTURBED INTERSTATE BUFFER

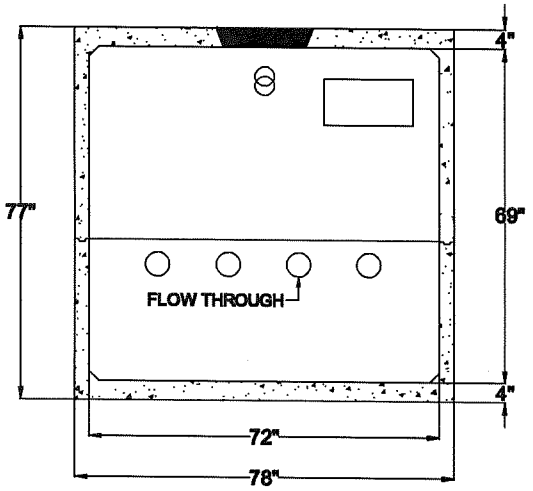


MODEL: MS NON-TRAFFIC 2500 STB
NON TRAFFIC MID SEAM SEPTIC TANK

SHOAF PRECAST SEPTIC INC.
4130 WEST US HWY 64
LEXINGTON, NC 27295
PHONE (336) 787-5826
FAX (336) 787-2826
info@shoafprecast.com
www.shoafprecast.com

- NC APPROVAL # - STB 2103
- LIQUID CAPACITY- 2,593 GALLONS
- GALLONS PER INCH-43.95
- PIPE PENETRATIONS - (MEETS ASTM C-923)
- CONCRETE - 5000 PSI MIN
- TANK WEIGHT - 17,320 #
- TOP - 9,320 #
- BOTTOM - 8,000 #
- REINFORCEMENT PER ENGINEER SPECS
- 1 1/4" BUYTL SEALANT CONTINUOUS IN JOINTS

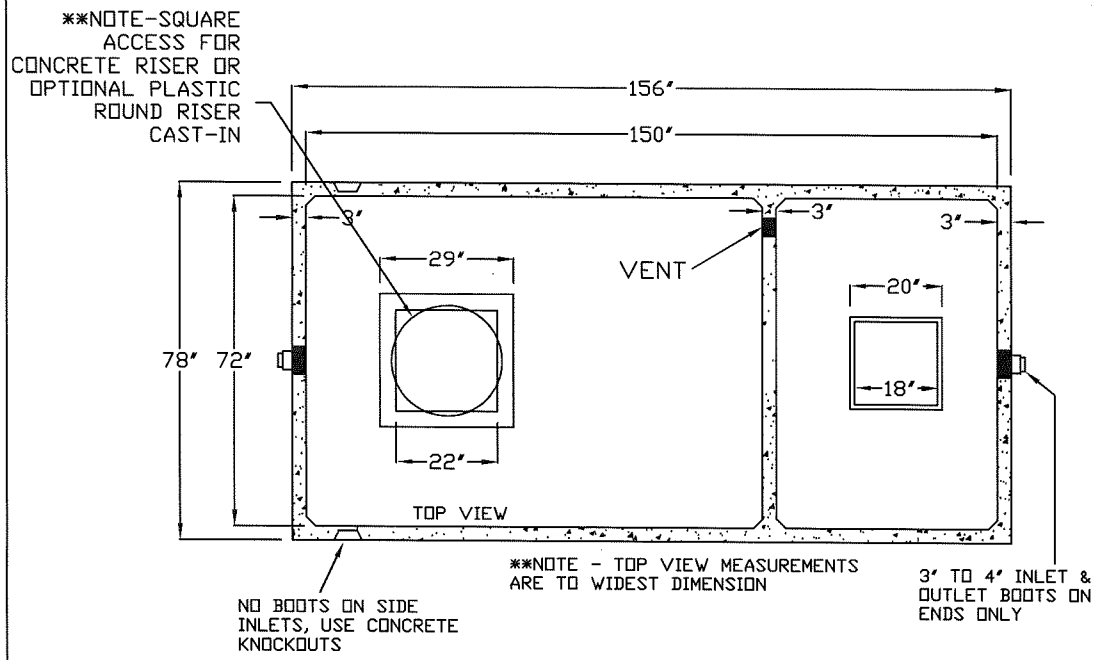




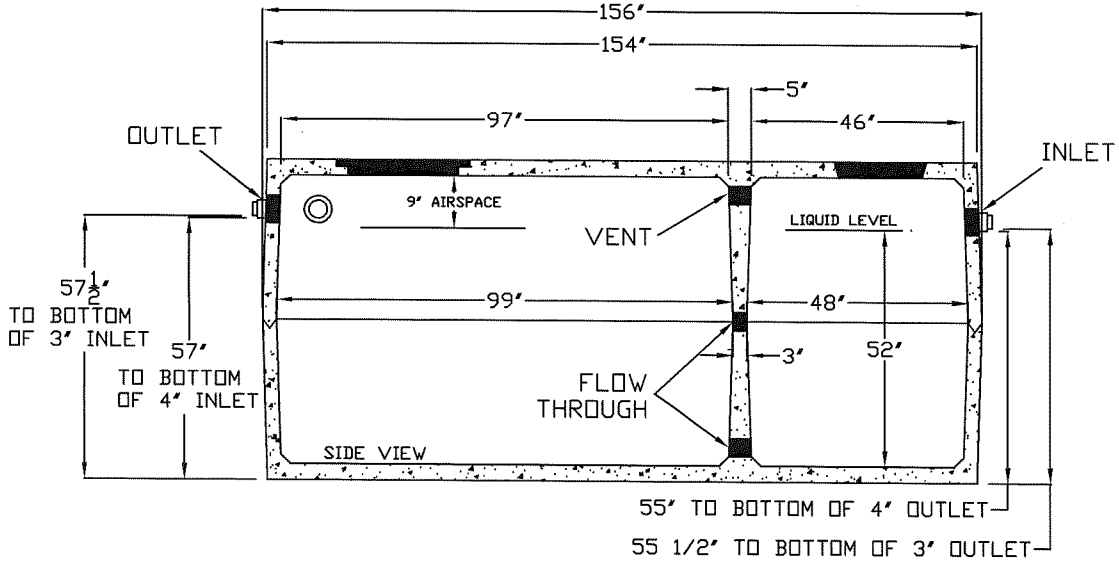
SHOAF PRECAST SEPTIC INC.
4130 WEST US HWY 64
LEXINGTON, NC 27295
PHONE (336) 787-5826
FAX (336) 787-2826

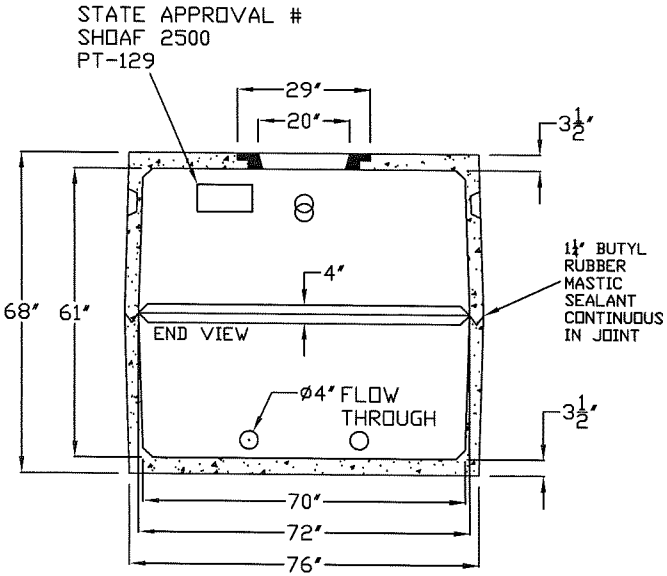
MODEL: MS 2500 PT
NON TRAFFIC
2500 Gallon Pump Tank

WWW.SHOAFPRECAST.COM
SHOAF-2500 NONTRAFFIC
PT-129 NONTRAFFIC
LIQUID CAPACITY-2500 US GALLONS INCLUDING 9" AIRSPACE
GALLONS PER INCH-44.57 (AVERAGE)
TANK HEIGHT-68"
BOTTOM OF TANK TO CENTER OF INLET-57"
BOTTOM OF TANK TO CENTER OF OUTLET-59"
LENGTH TO WIDTH RATIO-2 TO 1
SIZE OF INLET & OUTLET-3" OR 4"
TYPE OF INLET AND OUTLET-POLYLOCK OR EQUAL (MEETS ASTM C-923)
CONCRETE PSI-4000; TANK WEIGHT-16,000 LBS.
REINFORCING PER STATE CODE



SCALE-N.T.S.





POLYLOK™ Inc.
Innovations in Precast, Drainage & Wastewater Products
Zabel® A Division of Polylok Inc.

PL-525 Effluent Filter

PL-525 Filter

The PL-525 Filter is rated for 10,000 GPD (gallons per day) making it one of the largest filters in its class. It has 525 linear feet of 1/16" filtration slots. Like the Polylok PL-122, the Polylok PL-525 has an automatic shut-off ball installed with every filter. When the filter is removed for cleaning, the ball will float up and temporarily shut off the system so the effluent won't leave the tank.

Features:

- Rated for 10,000 GPD (gallons per day).
- 525 linear feet of 1/16" filtration.
- Accepts 4" and 6" SCHD 40 pipe.
- Built in gas deflector.
- Automatic shut-off ball when filter is removed.
- Alarm accessibility.
- Accepts PVC extension handle.

PL-525 Installation:

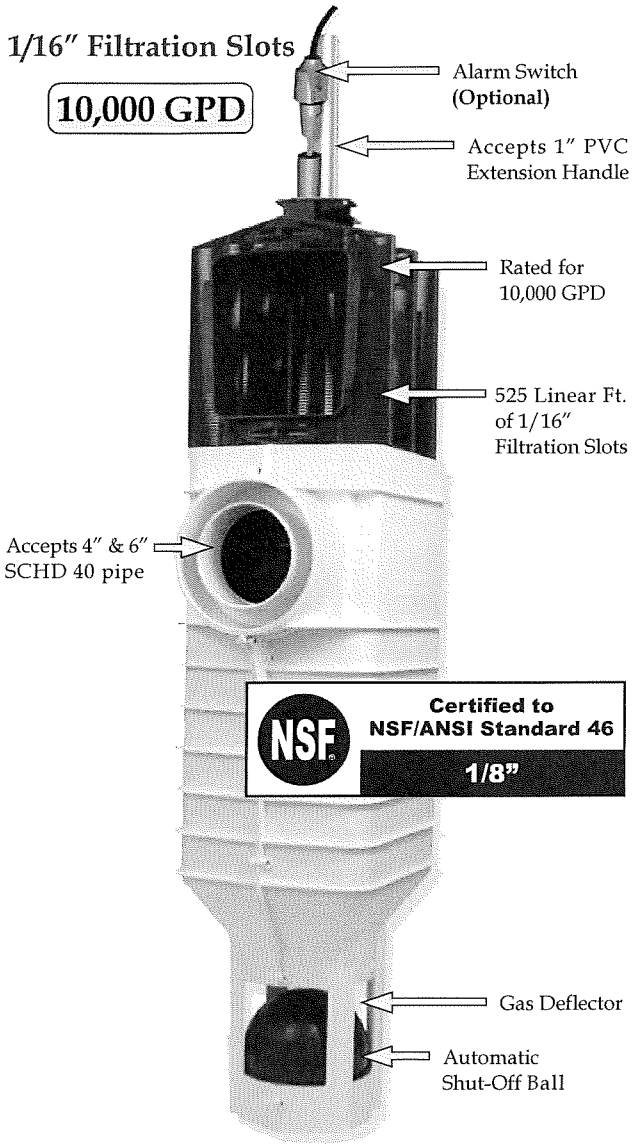
Ideal for residential and commercial waste flows up to 10,000 gallons per day (GPD).

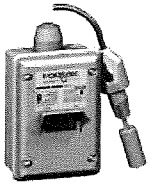
1. Locate the outlet of the septic tank.
2. Remove the tank cover and pump tank if necessary.
3. Glue the filter housing to the 4" or 6" outlet pipe. If the filter is not centered under the access opening use a Polylok Extend & Lok or piece of pipe to center filter.
4. Insert the PL-525 filter into its housing.
5. Replace and secure the septic tank cover.

PL-525 Maintenance:

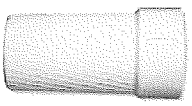
The PL-525 Effluent Filters will operate efficiently for several years under normal conditions before requiring cleaning. It is recommended that the filter be cleaned every time the tank is pumped, or at least every three years. If the installed filter contains an optional alarm, the owner will be notified by an alarm when the filter needs servicing. Servicing should be done by a certified septic tank pumper or installer.

1. Locate the outlet of the septic tank.
2. Remove tank cover and pump tank if necessary.
3. Do not use plumbing when filter is removed.
4. Pull PL-525 cartridge out of the housing.
5. Hose off filter over the septic tank. Make sure all solids fall back into septic tank.
6. Insert the filter cartridge back into the housing making sure the filter is properly aligned and completely inserted.
7. Replace and secure septic tank cover.





Outdoor SmartFilter® Alarm
Polylok, Zabel & Best filters accept the SmartFilter® switch and alarm.

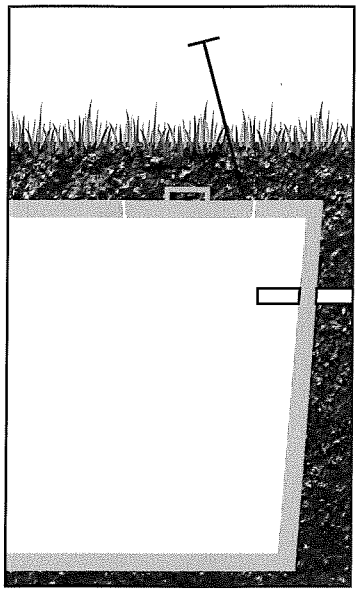


Extend & Lok™
Easily installs into existing tanks.

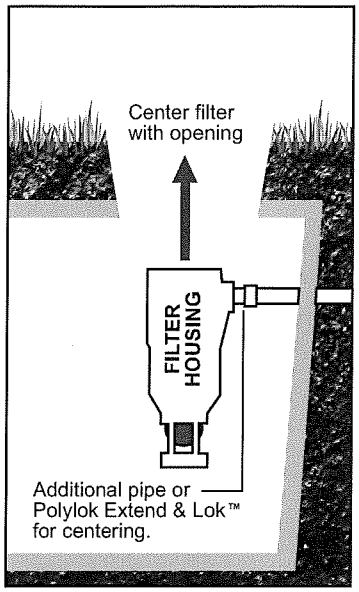
POLYLOK™ Inc.
Innovations in Precast, Drainage & Wastewater Products
Zabel® A Division of Polylok Inc.

INSTALLATION INSTRUCTIONS
PL-525/PL-625 FILTER

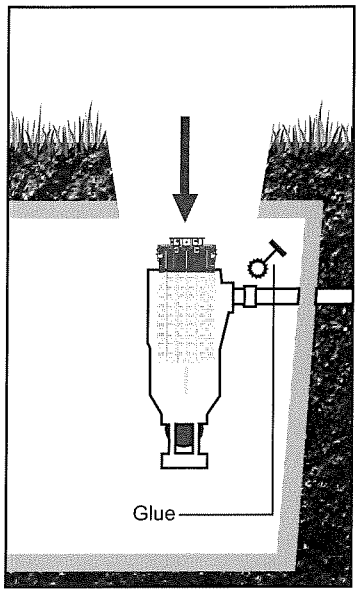
INSTALLATION INSTRUCTIONS



Step 1:
(A) Locate the outlet of the septic tank.
(B) Remove tank cover and pump tank if necessary.

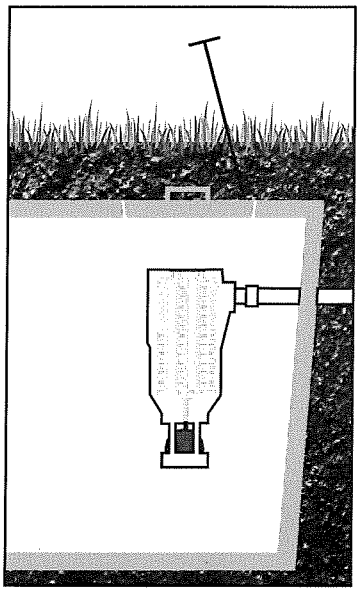


Step 2:
(A) Before installation, place the filter housing on to the outlet pipe.
(B) Make sure that the housing is positioned so the filter can be removed from the tank for maintenance and service.



Step 3:
(A) Glue the filter housing on the outlet pipe.
(B) Insert the filter cartridge in the housing, making sure the filter cartridge is properly aligned and completely inserted in the housing.

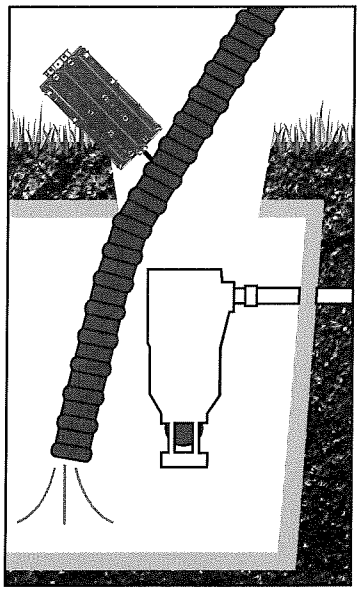
MAINTENANCE INSTRUCTIONS



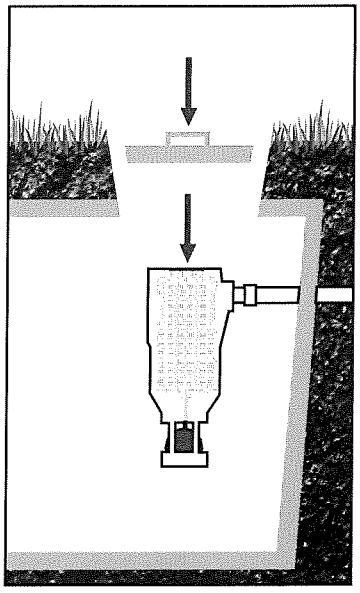
Step 1:
Locate the outlet of the septic tank.

DO NOT USE PLUMBING WHEN FILTER IS REMOVED

USE RUBBER GLOVES WHEN CLEANING FILTER



Step 2:
(A) Remove tank cover and pump if necessary.
(B) Pull the filter out of the housing.
(C) Hose off the filter over the septic tank. Make sure all solids fall back into the septic tank.

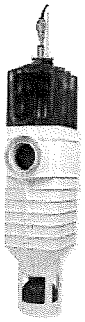


Step 3:
(A) Insert the filter cartridge back into the the housing making sure the filter is properly alighed and completely inserted.
(B) Replace septic tank cover

POLYLOK™ Inc.
Innovations in Precast, Drainage & Wastewater Products
Zabel® A Division of Polylok Inc.

INSTALLATION INSTRUCTIONS
PL-525/PL-625 FILTER

PL-525/PL-625 FEATURES & BENEFITS


PL-525

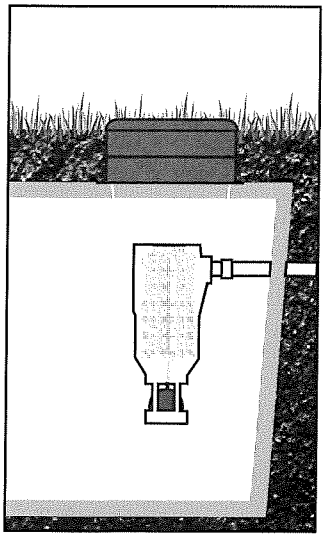

PL-625

The PL-525/625 Effluent Filter should operate efficiently for several years under normal conditions before requiring cleaning. It is recommended that the filter be cleaned every time the tank is pumped or at least every three years. If the installed filter contains an optional alarm, the owner will be notified by an alarm when the filter needs servicing. Servicing should be done by a certified septic tank pumper or installer.

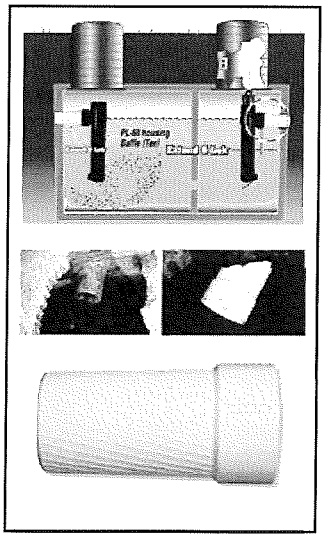
Features & Benefits:

- Rated for 10,000 GPD
- PL-525 = 525 Linear Feet of 1/18" Filtration
  PL-625 = 625 Linear Feet of 1/32" Filtration
- Accepts 4" and 6" SCHD. 40 pipe
- Built in Gas Deflector
- Automatic Shut-Off Ball when Filter is Removed
- Alarm Accessibility
- Accepts PVC Extension Handle

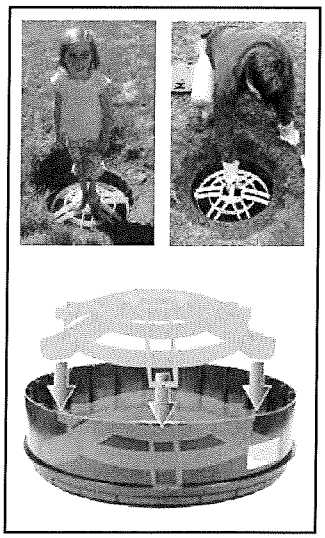
RECOMMENDED PRODUCTS



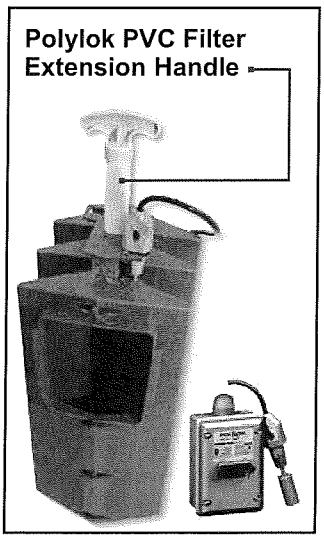
Risers & Riser Covers
Polylok risers bring your septic tank cover to grade. This allows locating and servicing your filter easier and time saving by eliminating digging to find tank entrance.



Extend & Lok™
Polylok Extend & Lok™ is a simple, easy to use solution that can extend the inlet or outlet pipe and make filter and/or baffle installation a snap.
Fits 3" and 4" pipe.



Riser Safety Screens
Polylok safety screens prevent tragic accidents from happening by children and pets falling into open septic tank entrances.



Filter Alarm Panel and SmartFilter™ Control Switch
Polylok filter alarm panels and switchs provid a visual and audible notification of impending filter and tank servicing.

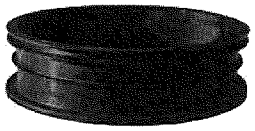
For a full list of Polylok products please visit our web site at: **www.polylok.com**

EZset by INFILTRATOR

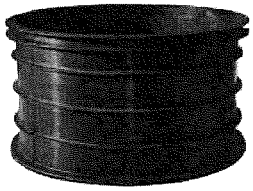
EZset by Infiltrator risers and lids are made from glass reinforced polypropylene, providing superior strength and durability. They come in green or black and in 20", 24", and 30" diameters making them ideal for use with any concrete or plastic tank. The slip resistant lids are fastened using stainless steel screws and can be further secured by installing locking rings.

20" Riser System

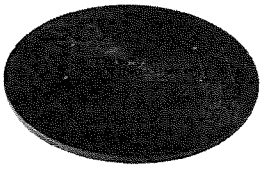
- 20" x 6" Risers (Green or Black)
- 20" x 12" Risers (Green or Black)
- 20" Lids (Green or Black)



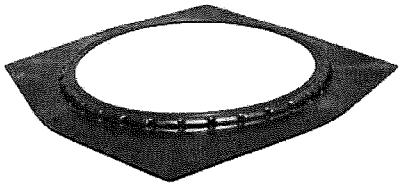
20" x 6" Riser



20" x 12" Riser



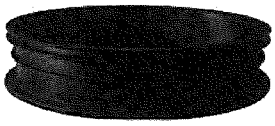
20" Lid



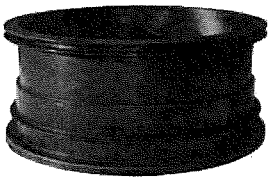
Adapter Flange

24" Riser System

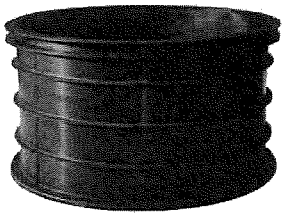
- 24" x 6" Risers (Green or Black)
- 24" x 12" Risers (Green or Black)
- 24" x 18" Risers (Green or Black)
- 24" Lids (Green or Black)



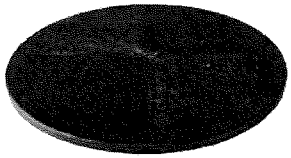
24" x 6" Riser



24" x 12" Riser



24" x 18" Riser



24" Lid

30" Riser System

- 30" x 12" Risers (Green or Black)
- 30" Lids (Green or Black)



30" x 12" Riser



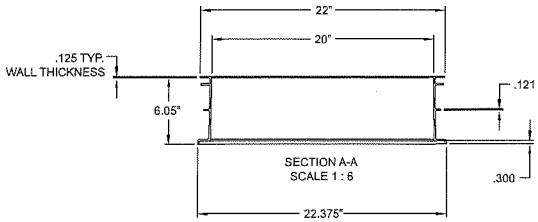
30" Lid

- Adhesive Sealant
- 20" Locking Rings
- 20" Safety Pans
- 24" Locking Rings
- 24" Safety Pans
- 24" Adapter Rings
- 30" Locking Rings

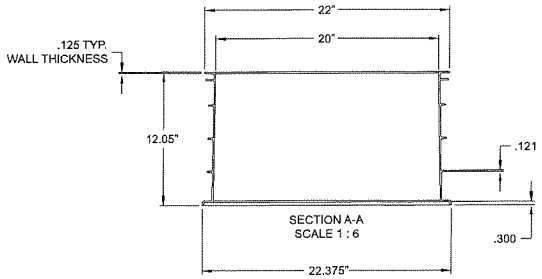
Contact Infiltrator Systems' Technical Services Department for assistance at 1-800-221-4436

EZset by INFILTRATOR

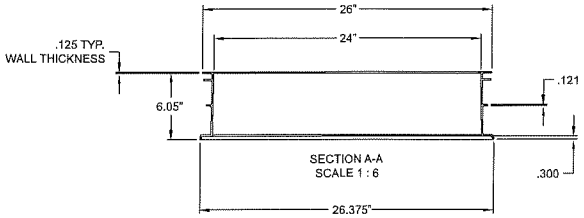
Riser Specifications



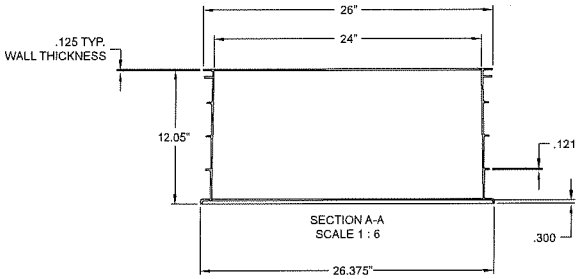
20" x 6" Riser Cutaway



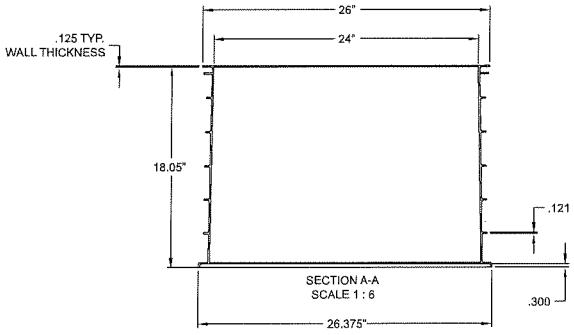
20" x 12" Riser Cutaway



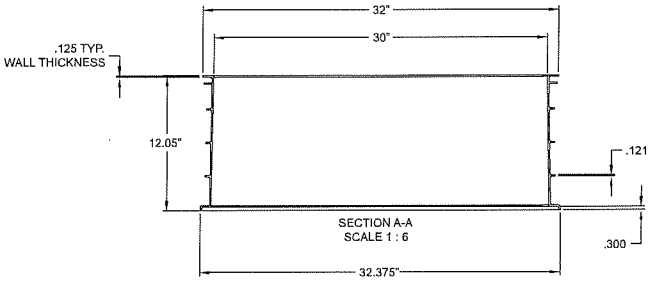
24" x 6" Riser Cutaway



24" x 12" Riser Cutaway



24" x 18" Riser Cutaway



30" x 12" Riser Cutaway

INFILTRATOR SYSTEMS, INC. ("Infiltrator")
EZset by Infiltrator LIMITED WARRANTY
ONE (1) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an EZset by Infiltrator riser and lid system and other accessories. An EZset system manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for one (1) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the EZset system.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(F) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

CONDITIONS AND EXCLUSIONS
There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the EZset system in accordance with instructions or applicable regulatory requirements or guidance, altering the EZset system contrary to the installation instructions and disposing of chemicals or other materials contrary to normal EZset system usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of an EZset system should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of an EZset system.

INFILTRATOR® systems inc.

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorsystems.com

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Systems Inc. Infiltrator is a registered trademark in France. Infiltrator Systems Inc. is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Systems Inc. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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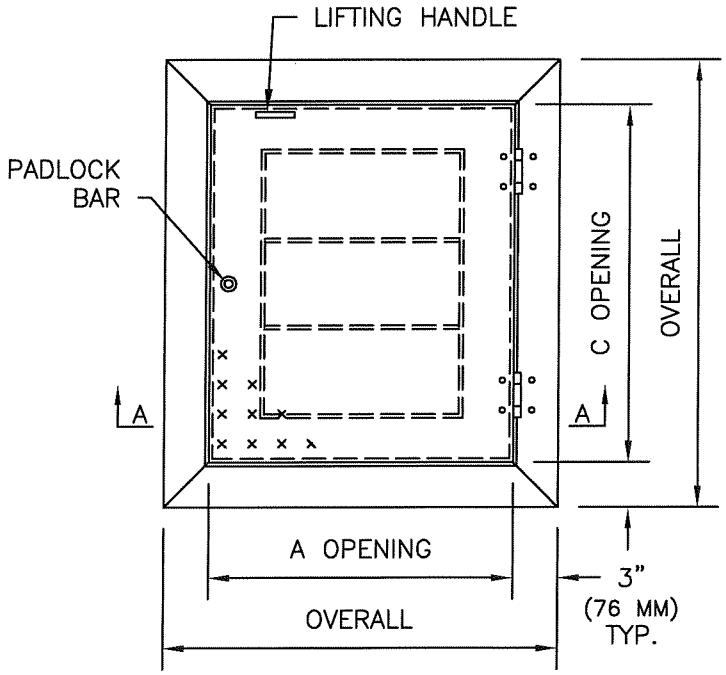
SERIES S1R ACCESS DOOR

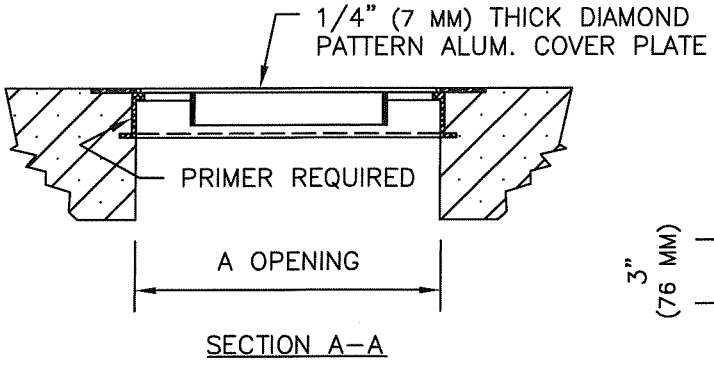
HALLIDAY PRODUCTS
www.HallidayProducts.com
Phone 800-298-1027
Fax 407-298-4534
Sales@HallidayProducts.com

STANDARD FEATURES:

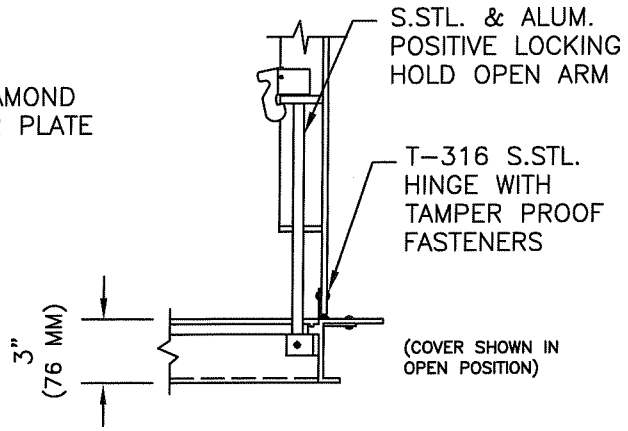
- AUTO-LOCK T-316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T-316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- NON-CORROSIVE PADLOCK BAR
- SINGLE LEAF CONSTRUCTION
- 300 LBS. PER SQ. FT. LOAD RATING (1464 KG. PER SQ. METER LOAD RATING)
- EXTRUDED ALUMINUM FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

STANDARD SIZES				
QTY.	MODEL NO.	A DIM. INCHES (MM)	C DIM. INCHES (MM)	UNIT WT. LBS. (KG.)
	S1R2424	24 (610)	24 (610)	37 (17)
	S1R2430	24 (610)	30 (762)	42 (19)
	S1R2436	24 (610)	36 (914)	48 (22)
	S1R2442	24 (610)	42 (1067)	55 (25)
	S1R2448	24 (610)	48 (1219)	61 (28)
	S1R3030	30 (762)	30 (762)	49 (22)
	S1R3036	30 (762)	36 (914)	57 (26)
	S1R3042	30 (762)	42 (1067)	64 (29)
	S1R3048	30 (762)	48 (1219)	71 (32)
	S1R3054	30 (762)	54 (1372)	79 (36)
	S1R3060	30 (762)	60 (1524)	87 (39)
	S1R3636	36 (914)	36 (914)	65 (25)
	S1R3642	36 (914)	42 (1067)	79 (36)
	S1R3648	36 (914)	48 (1219)	85 (39)
	S1R3654	36 (914)	54 (1372)	91 (41)
	S1R3660	36 (914)	60 (1524)	100 (45)
	S1R3666	36 (914)	66 (1676)	109 (49)
	S1R3672	36 (914)	72 (1829)	116 (53)
	S1R4242	42 (1067)	42 (1067)	93 (42)





SECTION A-A



DETAIL

TECHNICAL BROCHURE
B3885



FEATURES

Impeller: Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Cast iron volute type for maximum efficiency. 2" NPT discharge.

Mechanical Seal: Silicon Carbide vs. Silicon Carbide sealing faces. Stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

WE Series

Model 3885

SUBMERSIBLE EFFLUENT PUMPS

GOULDS
WATER TECHNOLOGY
a xylem brand

APPLICATIONS

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump

- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on ⅓ - 1½ HP models.
- Class F insulation on 2 HP models.

Single phase (60 Hz):

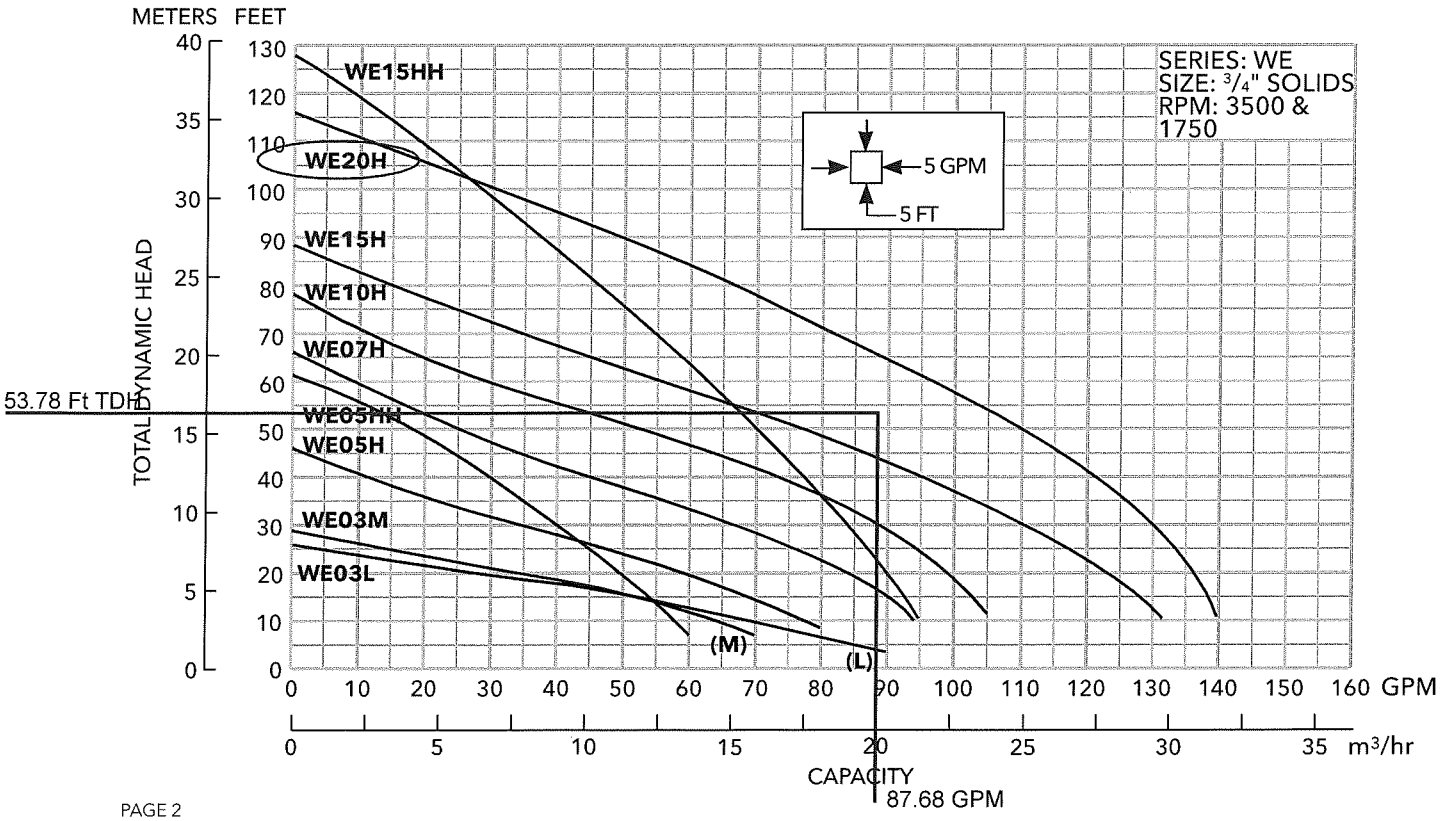
- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ⅓ - 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association File #LR38549



MODELS

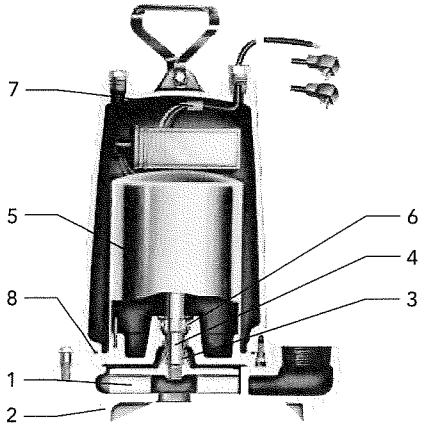
Order Number	HP	Phase	Volts	RPM	Impeller Diameter (in.)	Maximum Amps	Locked Rotor Amps	KVA Code	Full Load Efficiency %	Resistance		Power Cable Size	Weight (lbs.)
										Start	Line-Line		
WE0311L	0.33	1	115	1750	5.38	10.7	30.0	M	54	11.9	1.7	16/3	56
WE0318L			208			6.8	19.5	K	51	9.1	4.2		
WE0312L			230			4.9	14.1	L	53	14.5	8.0		
WE0311M			115			10.7	30.0	M	54	11.9	1.7		
WE0318M			208			6.8	19.5	K	51	9.1	4.2		
WE0312M			230			4.9	14.1	L	53	14.5	8.0		
WE0511H	0.5	1	115	3450	3.56	14.5	46.0	M	54	7.5	1.0	14/3	60
WE0518H			208			8.1	31.0	K	68	9.7	2.4	16/3	60
WE0512H			230			7.3	34.5	M	53	9.6	4.0		
WE0538H		3	200			4.9	22.6	R	68	NA	3.8	14/4	60
WE0532H			230			3.3	18.8	R	70	NA	5.8		
WE0534H			460			1.7	9.4	R	70	NA	23.2		
WE0537H			575			1.4	7.5	R	62	NA	35.3		
WE0511HH		1	115		3.88	14.5	46.0	M	54	7.5	1.0	14/3	60
WE0518HH			208			8.1	31.0	K	68	9.7	2.4	16/3	60
WE0512HH			230			7.3	34.5	M	53	9.6	4.0		
WE0538HH		3	200			4.9	22.6	R	68	NA	3.8	14/4	60
WE0532HH			230			3.6	18.8	R	70	NA	5.8		
WE0534HH			460			1.8	9.4	R	70	NA	23.2		
WE0537HH			575			1.5	7.5	R	62	NA	35.3		
WE0718H	0.75	1	208		4.06	11.0	31.0	K	68	9.7	2.4	14/3	70
WE0712H			230			10.0	27.5	J	65	12.2	2.7		
WE0738H		3	200			6.2	20.6	L	64	NA	5.7	14/4	70
WE0732H			230			5.4	15.7	K	68	NA	8.6		
WE0734H			460			2.7	7.9	K	68	NA	34.2		
WE0737H			575			2.2	9.9	L	78	NA	26.5		
WE1018H	1	1	208		4.44	14.0	59.0	K	68	9.3	1.1	14/3	70
WE1012H			230			12.5	36.2	J	69	10.3	2.1		
WE1038H		3	200			8.1	37.6	M	77	NA	2.7	14/4	70
WE1032H			230			7.0	24.1	L	79	NA	4.1		
WE1034H			460			3.5	12.1	L	79	NA	16.2		
WE1037H			575			2.8	9.9	L	78	NA	26.5		
WE1518H	1.5	1	208		4.56	17.5	59.0	K	68	9.3	1.1	14/3	80
WE1512H			230			15.7	50.0	H	68	11.3	1.6		
WE1538H		3	200			10.6	40.6	K	79	NA	1.9	14/4	80
WE1532H			230			9.2	31.7	K	78	NA	2.9		
WE1534H			460			4.6	15.9	K	78	NA	11.4		
WE1537H			575			3.7	13.1	K	75	NA	16.9		
WE1518HH		1	208		5.50	17.5	59.0	K	68	9.3	1.1	14/3	80
WE1512HH			230			15.7	50.0	H	68	11.3	1.6		
WE1538HH		3	200			10.6	40.6	K	79	NA	1.9	14/4	80
WE1532HH			230			9.2	31.7	K	78	NA	2.9		
WE1534HH			460			4.6	15.9	K	78	NA	11.4		
WE1537HH			575			3.7	13.1	K	75	NA	16.8		
WE2012H	2	1	230		5.38	18.0	49.6	F	78	3.2	1.2	14/3	83
WE2038H		3	200			12.0	42.4	K	78	NA	1.7	14/4	83
WE2032H			230			11.6	42.4	K	78	NA	1.7		
WE2034H			460			5.8	21.2	K	78	NA	6.6		
WE2037H			575			4.7	16.3	L	78	NA	10.5		

PERFORMANCE RATINGS (gallons per minute)

Order No.		WE-03L	WE-03M	WE-05H	WE-07H	WE-10H	WE-15H	WE-05HH	WE-15HH	WE-20H
Total Head Feet of Water	HP	⅓	⅓	½	¾	1	1½	½	1½	2
	RPM	1750	1750	3500	3500	3500	3500	3500	3500	3500
	5	86	–	–	–	–	–	–	–	–
	10	70	63	78	94	–	–	58	95	–
	15	52	52	70	90	103	128	53	93	138
	20	27	35	60	83	98	123	49	90	136
	25	5	15	48	76	94	117	45	87	133
	30	–	–	35	67	88	110	40	83	130
	35	–	–	22	57	82	103	35	80	126
	40	–	–	–	45	74	95	30	77	121
	45	–	–	–	35	64	86	25	74	116
	50	–	–	–	25	53	77	–	70	110
	55	–	–	–	–	40	67	–	66	103
	60	–	–	–	–	30	56	–	63	96
	65	–	–	–	–	20	45	–	58	89
	70	–	–	–	–	–	35	–	55	81
	75	–	–	–	–	–	25	–	51	74
	80	–	–	–	–	–	–	–	47	66
	90	–	–	–	–	–	–	–	37	49
	100	–	–	–	–	–	–	–	28	30

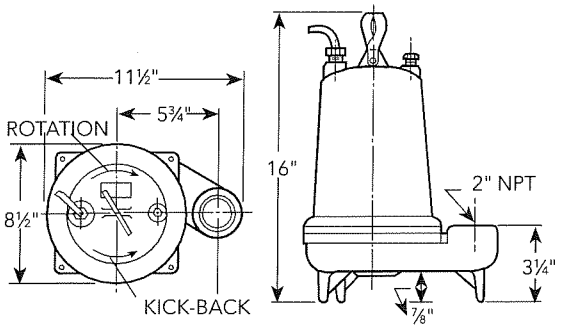
COMPONENTS

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing O-Ring



DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



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Let's Solve Water

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Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.xyleminc.com/brands/gouldswatertechnology

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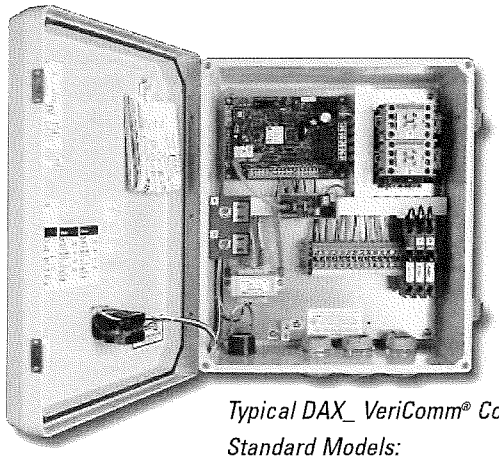
VeriComm® DAX_RO Control Panels

Technical Data Sheet

For On-Demand Applications

Applications

VeriComm DAX1RO and DAX2RO remote telemetry control panels are used with on-demand duplex alternating pumping operations. Coupled with the VeriComm Web-based Monitoring System, these affordable control panels give water/wastewater system operators and maintenance organizations the ability to monitor and control each individual system's performance remotely, with real-time efficiency, while remaining invisible to the homeowner.



Typical DAX_ VeriComm® Control Panel

Standard Models:
VCOM-DAX1RO, VCOM-DAX2RO

To Specify...

To specify this panel for your installation, require the following:

Basic Control Logic: Two Operating Modes

- A "Normal Mode" that manages day-to-day functions.
- A "Test Mode" that suspends data collection and alarm reporting during installation and service.

Data Collection and Utilization

- Data logs of system conditions and events, such as pump run times, pump cycles, and alarm conditions.

Troubleshooting and Diagnostic Logic

- Troubleshooting capabilities that can report suspected failed components, which then trigger Alarms.

Advanced Control Logic

- Advanced control logic that activates during float malfunctions to diagnose the situation and keep the system operating normally until servicing.

Communication and Alarm Management

- Remote telemetry capabilities coupled with a Web-based monitoring application (see VeriComm Monitoring System, ATD-WEB-VCOM-1) for communication and alarm management. Updating of point values and receipt of queued changes during each communication session with host. Communication sessions that occur monthly, at a minimum, and more frequently during alarm conditions.
- Multiple methods of communication, as follows:

Call-In to VeriComm® Host

- Automatic notification to host of "Alarms," which signal fault conditions that need to be addressed immediately (e.g., pump failure).
- Automatic notification to host of "Alerts," which signal less critical fault conditions and which trigger the panel's troubleshooting logic and alternative operating mode (e.g., stuck float switch).
- Automatic notification to host of "Updates," which include alarm updates or all-clear notifications following Alarms/Alerts, as well as normally scheduled monthly panel reports.
- Manual, forced communication from panel to host to effect an updating of point values and receipt of queued changes.

Real-Time Direct Connection to Panel

- Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to detailed logged data and the ability to change point values from a laptop.
- Manual, forced communication by local operator/homeowner at the site to initiate an auto-answer mode, allowing a remote operator real-time access to detailed logged data and the ability to change point values.

During real-time, manual connections, software with open architecture (and password security) is used; no proprietary software is required. VT100 protocol allows access and control from any computer modem (Mac or PC) with a simple communication program (e.g., Windows® HyperTerminal); multilevel password protection in panel ensures that only qualified personnel can access the panel's data.

Additional Features

- Status light indicators on the board, including . . .
  - Flashing green LED for normal operation
  - Yellow LEDs for status of digital inputs
  - Red LEDs for status of digital outputs and modem activity
- UL-recognized and FCC-approved

For more information, try our online demo at www.vericomm.net (no password required).

Orenco Systems®
Incorporated

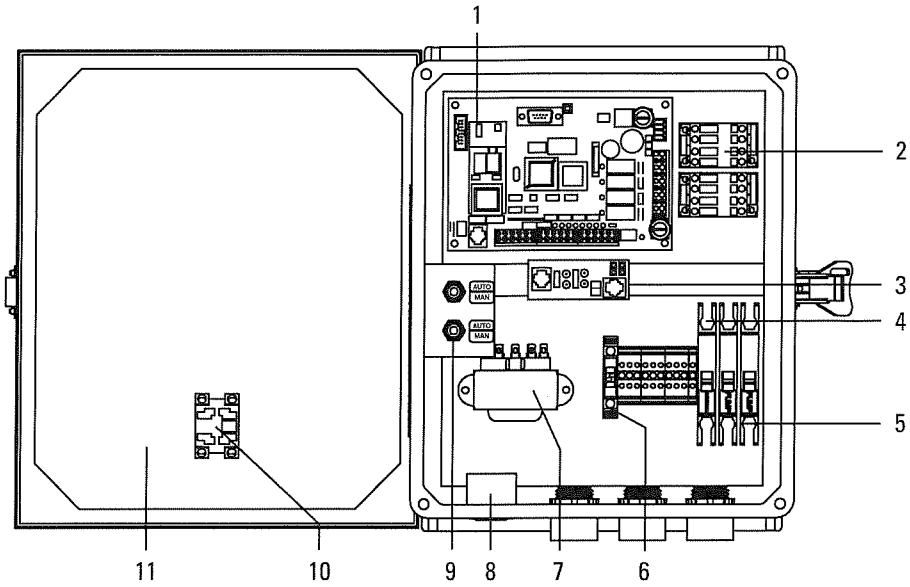
Changing the Way the World Does Wastewater®

www.orenco.com

VeriComm® DAX_RO Control Panels

Technical Data Sheet

1. VeriComm® Remote Telemetry Board
2. Motor-Start Contactors
3. Phone Line Surge Arrestor/DSL Filter
4. Control Circuit Breaker
5. Pump Circuit Breakers
6. Fuse
7. Transformer
8. Audio Alarm
9. Toggle Switches
10. Visual Alarm
11. Panel Enclosure



Standard Components

Feature	Specifications
1. Motor-Start Contactors	120 VAC: 16 FLA, 1 hp, 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA).
	240 VAC: 16 FLA, 3 hp, 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA).
2. VeriComm® Remote Telemetry Unit*	ATRTU-100: 36/18 VAC (center tap transformer), 8 digital inputs, 4 analog inputs, 4 digital outputs, 0 analog outputs, on-board modem (2400 baud), LED input and output indicators, 1-year battery backup of data and program settings.
3. Phone Line Surge Arrestor/DSL Filter	Surge protection for phone line. DSL filter for lines that also carry DSL service. Connection to panel via RJ11 jack or terminal block.
4. Control Circuit Breaker	10 A, OFF/ON switch. Single-pole 120 VAC, double-pole 240 VAC. DIN rail mounting with thermal magnetic tripping characteristics.
5. Pump Circuit Breakers	20 A, OFF/ON switches. Single-pole 120 VAC, double-pole 240 VAC. DIN rail mounting with thermal magnetic tripping characteristics.
6. Fuse	250 VAC, 1 A.
7. Transformer	120 VAC Primary, 36 VCT @ 0.85 A Secondary.
8. Audio Alarm	95 dB at 24 in. (610 mm), warble-tone sound.
9. Toggle Switches	Single-pole switches, automatic On, with spring-loaded, momentary, manual On. 20 A, 1 hp.
10. Visual Alarm	7/8 in. (22 mm) diameter red lens, "Push-to-silence." NEMA 4, LED, 120 VAC.
11. Panel Enclosure	Measures 15.50 in. high x 13.30 in. wide x 6.70 in. deep (394 mm x 338 mm x 170 mm). NEMA 4X rated. Constructed of UV-resistant fiberglass; hinges and latch are stainless steel. Conduit couplings provided.
VCOM-DAX1 RO	120 VAC, 3/4 hp, 16 A, single-phase, 60 Hz.
VCOM-DAX2 RO	240 VAC, 2 hp, 16 A, single-phase, 60 Hz.

Optional Components

Feature	Specifications	Product Code Adder
Pump Run Lights	7/8 in. (22 mm) diameter green lens. NEMA 4, LED, 120 VAC.	PRL
Heater	Anticondensation heater. Self-adjusting: radiates additional Wattage as temperature drops.	HT

** See VeriComm® Remote Telemetry Unit (ATD-CP-VCOM-1) and VeriComm® Monitoring System (ATD-WEB-VCOM-1) for details.*

INFILTRATOR®
systems inc.

Quick4
CHAMBER SYSTEMS

The **Quick4® Standard** Chamber

Quick4® Series



The Quick4® Standard Chamber fits in a 36" wide trench and is ideal for curved or straight systems. It features the patent-pending Contour Swivel Connection™ which permits turns up to 15°, right or left. The MultiPort™ endcap allows multiple piping options and eliminates pipe fittings. The chamber's four-foot length provides optimal installation flexibility.

Chamber Benefits:

- Advanced contouring connections swivel up to 15°, right or left
- Latching mechanism allows for quick installation
- Four-foot chambers are easy to handle and install
- The Quick4 Standard Chamber supports wheel loads of 16,000 lbs/axle with only 12" of cover
- Certified by the International Association of Plumbing and Mechanical Officials (IAPMO)

MultiPort Endcap Benefits:

- Tear-out seals on inlet ports provide a tight fit to the pipe
- Eight molded-in inlets/outlets allow for maximum piping flexibility
- Eliminates pipe fittings
- Fits on either end of the Quick4 Standard Chamber

APPROVED in _____

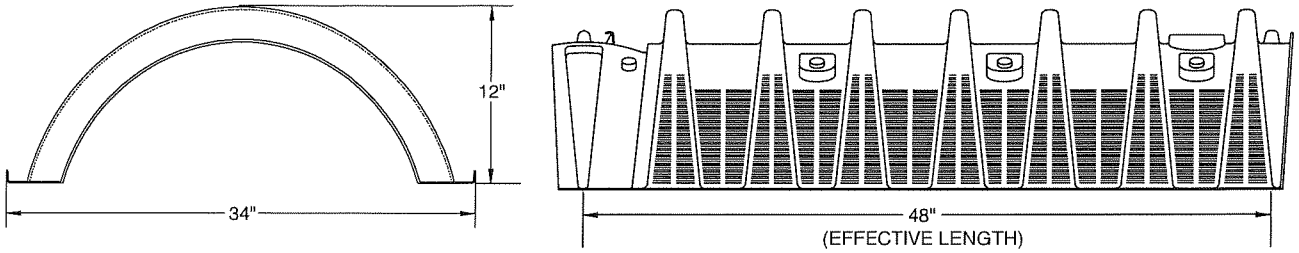
Quick4® Series

Because installations are faster with Quick4 chambers, you save on heavy equipment operation and labor.

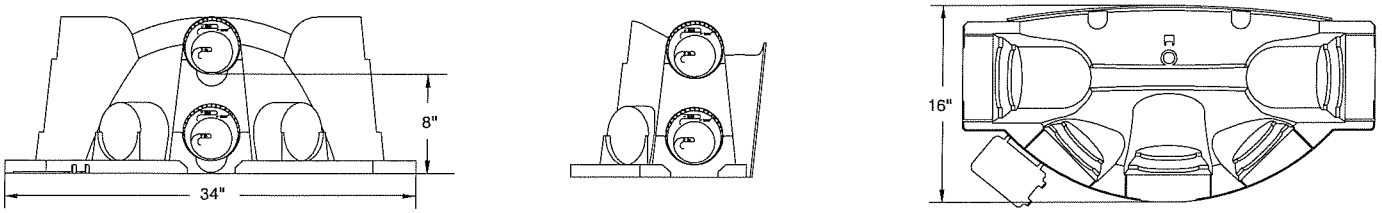
Quick4® Series

Quick4 CHAMBER SYSTEMS

Quick4 Standard Chamber

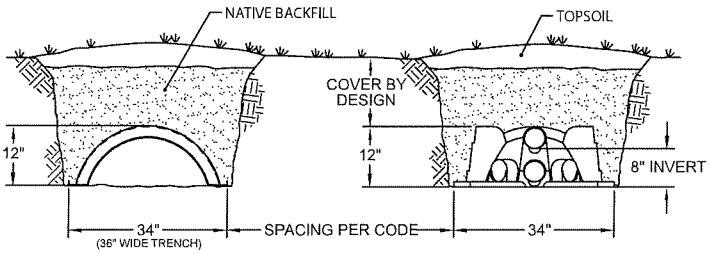


MultiPort EndCap



FRONT VIEW SIDE VIEW TOP VIEW

Typical Trench View



Quick4® Standard Chamber Specifications	
Size	34"W x 53"L x 12"H (864 mm x 1346 mm x 305 mm)
Effective Length	48" (1219 mm)
Louver Height	8" (203 mm)
Storage Capacity	43 gal (163 L)
Invert Height	8" (203 mm)

INFILTRATOR SYSTEMS, INC. STANDARD LIMITED WARRANTY

(a) The structural integrity of each chamber, endcap and other accessory manufactured by Infiltrator ("Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required by applicable law, the warranty period will begin upon the date that installation of the septic system commences. To exercise its warranty rights, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for Units determined by Infiltrator to be covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

(c) This Limited Warranty shall be void if any part of the chamber system is manufactured by anyone other than Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change or extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's Corporate Headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

INFILTRATOR® systems inc.

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorsystems.com

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending.
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Contact Infiltrator Systems' Technical Services Department for assistance at 1-800-221-4436

PIEDMONT DESIGN ASSOCIATES, P.A.
125 East Plaza Drive | Suite #101
Mooresville, NC 28115
Phone: 704-664-7888 | Fax: 704-664-1778
Email: dmunday@pdapa.com

Engineering
Surveying
Planning

November 28, 2023

Mecklenburg County Health Department
Groundwater & Wastewater Services
3205 Freedom Drive, Suite 8000
Charlotte, NC 28208
Attn: Heather Ray, REHS

RE: 23XI Race Shop Subsurface Effluent Disposal System
10923 Statesville Road, Huntersville, Mecklenburg County, North Carolina

Dear Mrs. Ray:

ENGINEERS CERTIFICATION

I, **Donald L. Munday**, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe periodically the construction of the referenced project, Subsurface Effluent Treatment and Disposal System; 10923 Statesville Road, located in Huntersville, Mecklenburg County, NC, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

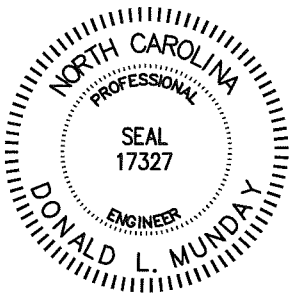
Sincerely,

PIEDMONT DESIGN ASSOCIATES, P.A.

Donald L. Munday

Digitally signed by Donald L. Munday
DN: C=US, E=dmunday@pdapa.com, O="Piedmont Design Associates, PA", CN=Donald L. Munday
Date: 2023.11.29 08:43:58-05'00'

Donald L. Munday, P.E.
N.C. Registration No. 17327



11/29/2023

Cc: Mr. PJ Petrillo, Choate Construction
Mr. Steve Autry, ORC & Installer

Mecklenburg County Groundwater & Wastewater Services
3205 Freedom Dr. Suite 8000, Charlotte, NC 28208
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DHHS
Division of Environmental Health
On-Site Wastewater Section

OPERATION PERMIT for an
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 10904B Permit #: 30013989 Tax Parcel #: 01704401

Property Owner: 23XII Real Estate Holding

Job Location Address: 10923 Statesville Rd

City: Huntersville State: NC Zip Code: 28078

Operation Permit Issuance Date: 11/28/2023 Contractor Name: Steve Autry

Permitted Design Flow: 1500 GPD Liquid Capacity of Dosing Tank: 2500 gallons

Liquid Capacity of Septic Tank: 2500 gallons Tank Manufacture Shoaf Effluent Pump Model: 2HP x 2 Goulds

Drainfield Installation ☐ N/A

Trench Depth: 30 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 1504 feet

# of Lines: 16 @ 94 feet

Depth of Media: 12 inches (Type) CHM 36

Depth of Cover: 18 inches

Distribution Device: Pressure Manifold

Inspection Dates

Tank(s) Inspected: 11/28/23

Excavation Inspected: 11/28/23

Pump & Controls Inspected: 12/5/23

SKETCH OF SYSTEM INSTALLATION
(As-Built Drawing)

Installed as designed in Flow Reduction Plans

See attached site plans

Bed Installation *(For Repair Installations ONLY.)* ☑ N/A

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Depth of Cover: _____ inches

Distribution Device: _____

Water Supply Source

☑ Municipal ☐ Private Well ☐ Community Well

☐ Other _____

System Installation Setbacks

Distance from Building Foundation: 450+ feet

Distance from Property Line: 15 feet

Distance from Water Supply Source: 10+ feet

The undersigned has inspected the Septic Tank System described above, and certifies it has been ☑ installed ☐ altered ☐ repaired ☐ as detailed in the plot above ☐ in accordance with the permit issued and meets the provisions of 15A NCAC 18A. 1900, "Laws and Rules for Sewage Treatment and Disposal Systems" in effect on the date of issuance of the permit. The issuance of this Operation Permit does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 15A NCAC 18A. 1900 in addition to those listed below under "Comments." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

Notice: Disturbance of the designated repair area may result in the Suspension or Revocation of this permit.

Comments: System Classification & Type: IVB/CHM36/P/FlowReduction/Na/NA

DENR Authorized Agent: Heather Ray Signature: Heather Ray

Mecklenburg County Groundwater & Wastewater Services
3205 Freedom Dr. Suite 8000, Charlotte, NC 28208
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DHHS
Division of Environmental Health
On-Site Wastewater Section

OPERATION PERMIT for an
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 10904B Permit #: 30013989 Tax Parcel #: 01704401

Property Owner: 23XII Real Estate Holding

Job Location Address: 10923 Statesville Rd

City: Huntersville State: NC Zip Code: 28078

OPERATION PERMIT CONDITIONS:

I. Performance: System shall perform in accordance with 15A NCAC 18A .1961.

II. Monitoring: System shall be monitored as required by 15A NCAC 18A .1961.

III. Maintenance: Ground absorption sewage treatment and disposal systems shall be checked, and the contents of the septic tank removed, periodically from all compartments, to ensure proper operation of the system. The contents shall be pumped whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.

IV. Operation: System shall be operated in accordance with 15A NCAC 18A .1961.

System Classification: IVB

*Operation Permits for Type V and VI systems expire five (5) years from the date of issuance (in accordance with Table V(a)). The system owner must contact GWS six (6) months prior to expiration for permit renewal.

Subsurface system operator required: Yes ☑ No ☐

☐ This type of system requires the system owner to maintain a contract with a certified operator to perform system inspection, maintenance, and reporting as required in 15A NCAC 18A .1961. and Table V(a). The system owner is responsible for all fees associated with these services.

☐ System does not require inspection by GWS on a routine frequency.

☐ System requires inspection by GWS once every five (5) years. The system owner is responsible for all fees associated with the inspection.

☑ System requires inspection by GWS once every three (3) years. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every twelve (12) months. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every six (6) months. The system owner is responsible for all fees associated with the inspection.

V. Other:

DENR Authorized Agent: Heather Ray Date: 11/28/23

Signature: Heather Ray

REFER TO SHEET U-2 FOR SYSTEM DETAILS & ELEVATIONS

NEW LATERALS
16 LATERALS AT 93.75 LF EACH

NORTH REFERENCE

SHEET C-400

STATESVILLE RD
150' NCDOT-MAINTAINED
R/W

AIRSPEED DRIVE

GRAVELLESS CHAMBERS, TRENCH BOTTOM
DEPTH: 36-INCHES, 9.0' CTS. MIN.
16 LATERALS AT 93.75 LF EA.

25% REDUCTION CHAMBER SYSTEM
FLAGGED LATERALS
BY MICHAEL ATHANAS, LSS &
SCOTT KENNEDY

PROPOSED 2-INCH ELECTRICAL CONDUIT
FROM MAIN PANEL TO CONTROL PANEL.

DUE TO DEPTH OF EXISTING MANHOLE, CONTRACTOR TO EXTEND
NEW LATERAL FROM BUILDING TO SEPTIC TANK. SEE PLANS BY OTHERS
FOR EXACT HORIZONTAL & VERTICAL LOCATION.

RACE SHOP
113,293 SF @
2-STORY

PROPOSED DUPLEX PUMP
CONTROL PANEL IN NEMA 4X ENCLOSURE.

PROPOSED 2,500 GALLON
SEPTIC TANK WITH EFFLUENT FILTER.

PROPOSED 2,500 GALLON
PUMP TANK WITH DUPLEX PUMPS.

PROPOSED H-VALVE CONNECTIONS
IN PRECAST VAULT. SEE DETAIL
ON PLAN SHEET U-2.

INTERSTATE
77
(FEDERALLY MAINTAINED)

AUGER BORINGS & BACKHOE PITS
BY MICHAEL ATHANAS, LSS & SCOTT
KENNEDY.

CHAMBER REPAIR LINES.

PROPOSED PRESSURE MANIFOLD
IN PRECAST VAULT. SEE DETAIL
ON PLAN SHEET U-2.
TOP ELEV.: 824.50

±1,175 LF OF 3-IN SCH 40 PVC EFFLUENT FORCE
MAINS FROM PUMP TANK TO PRESSURE
MANIFOLD. INSTALL 30-IN BGS WITH
TRACER WIRE. SEE TRENCH DETAIL ON
PLAN SHEET U-2.

ALEXANDRIANA ROAD

50' UNDISTURBED INTERSTATE BUFFER

811
Know what's below.
Call before you dig.

GRAPHIC SCALE
0 30 60 120

VICINITY MAP
NOT TO SCALE

PREPARED FOR:
CHOATE CONSTRUCTION COMPANY
2907 PROVIDENCE ROAD, SUITE 400
CHARLOTTE, NC 28211
980-213-4464

PIEDMONT Associates
Suite 101 Westfield
Mooresville, NC 28115
Phone (704) 662-4125
NCBELS

SEPTIC SYSTEM SITE PLAN
23XI RACE SHOP
10923 STATESVILLE ROAD
HUNTERSVILLE, MECKLENBURG COUNTY, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17027 DONALD L. MCBEE

REVISIONS	BY

Date: 8/14/23
Scale: 1" = 60 FT
1' CONTOURS
Drawn: DMD
Checked: DLM