

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER PERMIT

NO PERMIT(S) FOR CONSTRUCTION, LOCATION OR RELOCATION ACTIVITY SHALL BE ISSUED UNTIL AN
AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION AUTHORIZATION HAS BEEN ISSUED
***PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/OR IF SITE IS ALTERED OR
INTENDED USE CHANGED***

OPERATIONS PERMIT

PERMIT # WRP-084970-2022 **APPLICATION DATE:** 07/13/2022 **BLDG. PERMIT#:** RBPR-084968-2022
PIN: 0697677065 **RECORDED:** Yes
TOWNSHIP: 15 - Panther Branch **JURISDICTION:** Wake County **ZONING:** R-30
APPLICANT: Sword Development
Sean York
950 Clifton Ave **BUSINESS PHONE:** (910) 880-3836
HOME PHONE:
MOBILE PHONE: (910) 880-3836
HD USE: 101A CONVENTIONAL ONE-FAMILY HOUSE **EXISTING USE:**
SITE ADDRESS: 6521 CAMELLIA CREEK DR
SUBDIVISION: MORNINGTON ESTATES PH 4A **LOT:** 73 **ACRES:** 0.72
DIRECTIONS: Lot 73 mornington estates

Systems defined as either type III-b, III-g with a pump, IV, V or VI, in accordance with the North Carolina administrative code 15A NCAC 18a .1961, table V as adopted by reference in the "Regulations Governing Wastewater Treatment Dispersal Systems in Wake County", requires Wake County Environmental Services to conduct periodic inspections of the system type pursuant to 15A NCAC 18a. 1961 (j). Fees for these inspections will be charged as per the approved Fee Schedule. In addition, all systems are to be operated and maintained as specified in 15A NCAC 18A .1961. This permit is based in part on information provided by the homeowner and/or his/her representative in the application submitted for this permit. The Environmental Health Specialist is not responsible for false or misleading information contained in the application. The environmental health specialist is also not responsible for concealed conditions on the property or for statements in this report that may have resulted from false or misleading statements provided to him/her in the application. Neither Wake County nor the Environmental Health Specialist warrants that the septic tank system will continue to function satisfactorily in the future or that the water supply will remain potable.

OPERATION PERMIT VALID FOR: No Expiration

INSTALLED BY: OTHER

PROPRIETARY SYSTEM: EZ1203HG - EZFlow EZ 1203H Geo **PRETREATMENT SYSTEM:**

SYSTEM TYPE INSTALLED: III B

OPERATION PERMIT: **STATUS:** Issued

ISSUED BY: Kristi Marks

ISSUED DATE: 02/02/2024

SEPTIC TANK: Mitchell Concrete - STB-381 -
1250 gallons

DATE OF MANUFACTURE: 07/12/2023 **FILTER:** Polylok - PL-68

GREASE TRAP:

DATE OF MANUFACTURE: **FILTER:**

DOSING PUMP TANK: Mitchell - PT-364 - 1230
gal - 24.5 gal/in

DATE OF MANUFACTURE: 07/18/2023 **FILTER:**

CC1: 10

ETM1: 26

CC2:

ETM2:

RECIRCULATION TANK:

DATE OF MANUFACTURE:

CC1:

ETM1:

CC2:

ETM2:

SEPTIC TANK ELEVATION: 3.50

GREASE TRAP ELEVATION:

DOSING PUMP TANK ELEVATION: 3.70

RECIRCULATION TANK ELEVATION:

DISTRIBUTION DEVICE ELEVATION: 2

INSTALLED TRENCH DEPTH	INSTALLED AGGREGATE DEPTH	INSTALLED TRENCH LENGTH	INSTALLED TRENCH BOTTOM ELEVATION
14	12	50	4.91
15	12	55	5.31
14	12	60	5.52
13	12	65	5.45
13	12	70	5.58
14	12	75	6.062

ACTUAL PRESSURE HEAD: 2

ACTUAL FLOW RATE: 32

ACTUAL DOSE VOLUME: 172

SPECIFIC OPERATION REQUIREMENTS:

-4 bedroom, 360 gal/day utilizing flow reduction

-community well

-septic tank and pump tank inspected on different days than drainlines/PF

-ASDSMS: Book: 019528 Page: 01387

--Initial and Repair systems are at-grade/shallow placement, which requires imported soil cover at time of installation.

This imported soil must cover the entirety of the system area and extend beyond the system area 5 feet on all sides. A minimum of 6" of soil cover is required after settling, additional soil cover beyond 6" may be required to account for settling. Imported soil cover must be approved by WCES prior to placement. System area must be seeded and strawed for stabilization.

-Permit issued according to G.S. 130A-335(A2)/SL 2022-11 & consultant was on site during inspections

ISSUED BY:

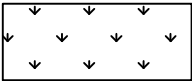
Kristina Marks

DATE: 02/02/2024

PRELIMINARY PLOT PLAN:
SWORD DEVELOPMENT

LOT 73, MORNINGTON SUBDIVISION, PH. 4A
B.M. 2021, PGS. 278-281
ADDRESS: 6521 CAMELLIA CREEK DRIVE

RBPR-084968-2022



HATCHED AREA DENOTES ALLUVIAL SOIL

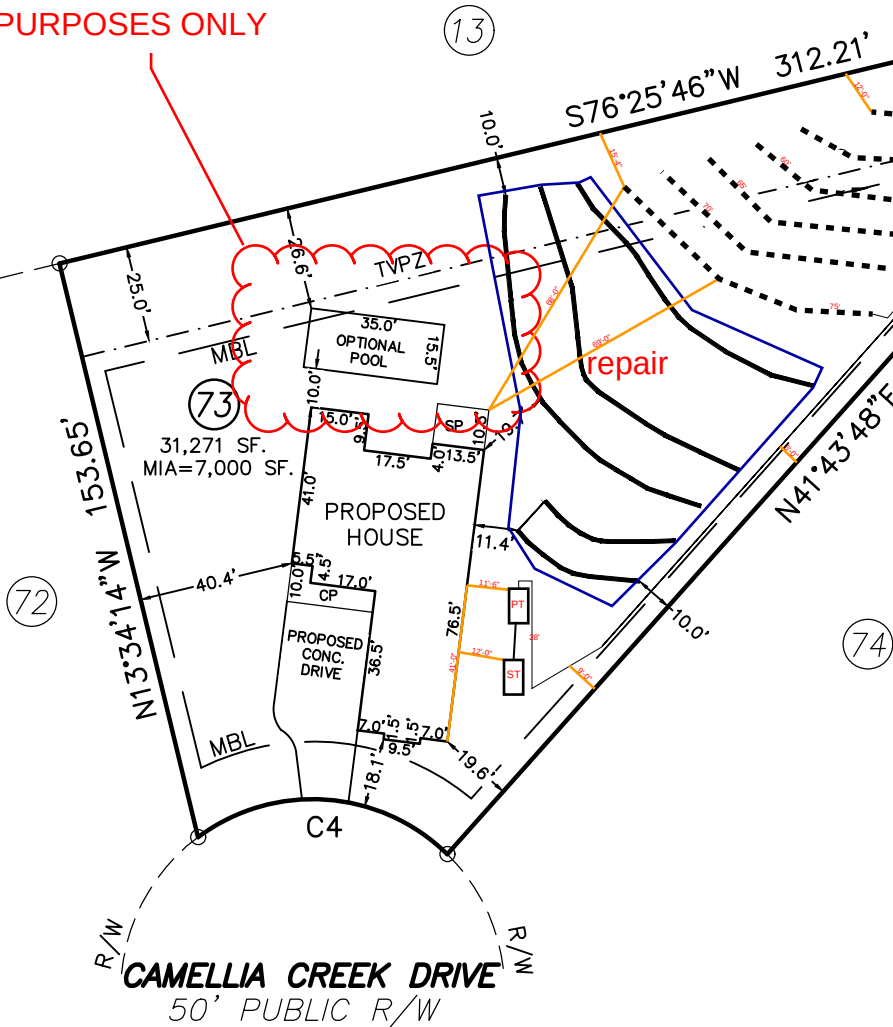
NOTE:
BEFORE ACQUIRING A BUILDING PERMIT FOR LOTS MARKED WITH AN *, THE BUILDER MAY NEED TO OBTAIN A FLOOD HAZARD AREA USE PERMIT FROM WAKE COUNTY ENVIRONMENTAL SERVICES. THE BUILDER'S ENGINEER, ARCHITECT AND/OR SURVEYOR (AS APPROPRIATE) MUST CERTIFY THAT ALL FLOOD HAZARD REQUIREMENTS ARE MET. THERE SHALL BE NO FILLING OR THE ERECTION OF PERMANENT STRUCTURES IN THE AREAS OF WAKE COUNTY FLOOD HAZARD SOILS OR FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) 100 YEAR FLOOD ZONES UNTIL A FLOOD STUDY IS APPROVED BY WAKE COUNTY AND/OR F.E.M.A.

CURVE TABLE				
CURVE #	LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C4	70.85	50.00	N86° 04' 34"W	65.07

PROPOSED IMPERVIOUS SURFACE AREAS	
FOUNDATION/ S. PORCH	2,990 s.f
CONCRETE DRIVEWAY	992 s.f
TOTAL IMPERVIOUS	3,982 s.f.
TOTAL IMPERVIOUS ALLOWED=	7,000 s.f.

N/F
MORNINGTON ESTATES SUBDIVISION
PHASE 2
B.M. 2019, PG. 2203

POOL FOR SEPTIC
PURPOSES ONLY



REFERENCES

- 1. B.M. 2012, PG. 1304
- 2. B.M. 2021, PGS. 278-281
- 3. ALL DEEDS AND MAPS WITH ADJOINERS.
- 4. WAKE COUNTY GIS.
- 5. B.M. 2014, PG. 1215
- 6. B.M. 2015, PG. 1232

LEGEND

- = IRON PIPE SET
- R/W = RIGHT-OF-WAY
- N/F = NOW OR FORMERLY
- CP = COVERED PORCH
- SP = SCREEN PORCH
- MBL = MINIMUM BUILDING SETBACK LINE
- TPVZ = TREE AND VEGETATION PROTECTION ZONE

System =	---
Repair =	---
STPT =	1000 gallon septic and pump tanks

NOTE:
SYSTEM AND REPAIR AREAS PROVIDED BY
CENTRAL CAROLINA SOIL CONSULTING

**MINIMUM BUILDING SETBACKS
WAKE COUNTY R-30**

- FRONT = 15' (SEE NOTE)
- SIDE = 5' (SEE NOTE)
- REAR = 15' (SEE NOTE)
- CORNER = 15' (SEE NOTE)

NOTE: NO DWELLING SHALL BE LOCATED WITHIN 30' OF THE PERIMETER OF THIS SUBDIVISION REGARDLESS OF THE SETBACKS LISTED ABOVE.

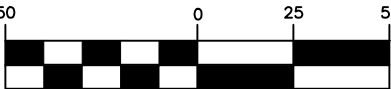
PRELIMINARY PLOT,
NOT FOR RECORDATION,
SALES, OR CONVEYANCES.

STEWART-PROCTOR
ENGINEERING and SURVEYING
319 CHAPANOKE ROAD, SUITE 106
RALEIGH, NC 27603 (LICENSE # P-0148)
TEL. 919 779-1855 FAX 919 779-1661

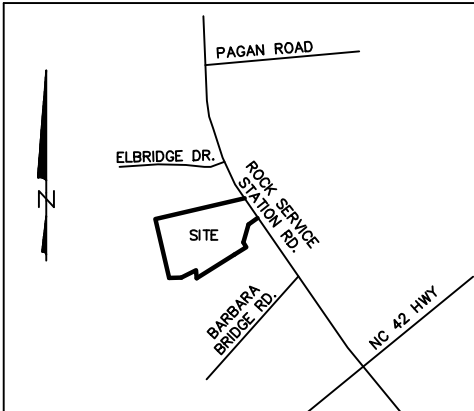
DATE 05/02/2023 DRAWING

SCALE 1"=50' LOT 73 PP SEPTIC

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.



VICINITY MAP NTS

ALTERNATIVE SEWAGE DISPOSAL SYSTEM MAINTENANCE SCHEDULE

To Be Recorded In The Register Of Deed's Office In Wake County

Owner/Grantor10030 Rock Services Station

Deedbook and Page016339-00921

PIN No.0697677065

Date Installed11/11/2023

Subdivision NameMorningstar estates

Lot No.

System Designed byCCSC

InstallerAbsolute SPIC

AN ALTERNATIVE OR NON-TRADITIONAL SEWAGE DISPOSAL SYSTEM USING AN ENGINEER DESIGNED FLOW RATE MODIFICATION PURSUANT TO SESSION LAW 2014-120 SECTION 53 HAS BEEN INSTALLED ON THIS PROPERTY. The design specifications and locations for alternative sewage disposal systems are specified or authorized in Regulations Governing Wastewater Treatment and Dispersal in Wake County effective November 21, 1988, amended effective May 23, 2002, amended June 25, 2020. As A Condition Of Issuance Of This Improvements/Operation Permit, The Property Owner Hereby Grants The Wake County Department Of Environmental Services A Right Of Access To The System During Regular Working Hours For Purposes Of Monitoring Compliance With State And Local Regulations, Recorded Maintenance Agreements And Certified Operator Compliance. This permit requires the use of **pressure manifold distribution to a mode of subsurface wastewater dispersal**. Experience and study have shown that pressure manifold systems require routine maintenance in order to function satisfactorily. In as much as each system must be individually designed and sited, special maintenance requirements may apply to a specific installation; however, the following maintenance schedule is applicable to all pressure manifold systems. For additional information, technical assistance or if a malfunction of the system occurs, contact the Wake County Department of Environmental Services, Telephone: 919-856-7400.

System Component	Frequency	Maintenance
1. Septic Tank	6-12 months 1-3 years	Check riser condition (must be accessible from ground surface), excess in/exfiltration, entry of water at riser, and solids accumulation. Pump septage.
2. Pump/Dosing Tank	6-12 months	Check riser conditions (must be accessible from ground surface), excess in/exfiltration, entry of water at riser, and solids accumulation. Pump sludge accumulation as required and when septic tank is pumped. Check pump(s), controls, floats, electrical connections, and alarm for proper operation. Wash (hose) sludge accumulation from pump housing.
3. Supply lines	6-12 months	Check for settling, pipe exposure and leakage. Includes Manifold(s).
4. Drain Field(s)	1-4 weeks 6-12 months	Maintain vegetative cover (mow grass and remove weeds and brush). Check for settling, erosion and surfacing of effluent. Check site drainage, eliminate low or settled areas and divert surface or shallow groundwater movement around fields.
5. Pressure Manifold	6-12 months	Check and reset pressure head, flush sludge from pressure manifold (any discharge sludge and effluent is to be treated with a chlorine solution).
6. Sampling	12 Months	Influent and Effluent sampling may be required once per year to ensure adherence to domestic strength wastewater standards.
7. General	At all times	Prohibit vehicular or equipment traffic on ground absorption field. Prohibit tillage (gardening) or other soil disturbance over ground absorption field. Practice water conservation to reduce waste water load on system. Do no permit entry or grease and non-domestic waste to system. Use of a garbage disposal is <u>prohibited</u> . Addition of chemical or biological additives has <u>not</u> been demonstrated to be necessary to maintain proper system function. Prevention of root intervention on lateral lines and trenches may be necessary on certain sites. Surface and groundwater diversion structures must be maintained. <u>Adherence to permitted flow rate.</u>

This system is permitted under S.L. 2014-120 for engineer flow reduction utilizing low flow fixtures and technologies, all of which must remain in use for the life of the applicable system. Neither the State nor any local government shall be liable for any damages by a system approved or permitted pursuant to this section.

Signature of Property Owner

Date11/30/24

NORTH CAROLINA

Wake

County. I, a Notary Public of the County and State aforesaid, certify that

Donald Denman, Anita Getter

Owner, Personally appeared before me this day and acknowledged the execution of the

foregoing instrument. Witness my hand and official stamp or seal, this 30 day of Jan 2024

My commission expires

Notary Public

WWDS 02/17

ANITA K GETTER

My Commission Expires

NOTARY PUBLIC

3-9-2028

WAKE COUNTY, NC

This Section for Local Health Department Use OnlyInitial submittal received: 4/20/2023 by KLH
Date InitialsPermit Number: WRP-084970-2022

G.S. 130A-335(a6) states the following: 'If a local health department fails to act on an application for a construction authorization submitted pursuant to subsection (a5) of the section within 10 business days of receipt of a complete application, the local health department shall issue the construction authorization.'

In accordance with G.S. 130A-335(a5) the construction authorization application is:

☐ Incomplete (If box is checked, information in this section is required.)

The following items are missing: _____

Copies of this were sent to the AOWE/PE and the Owner on _____
Date

State Authorized Agent: _____ Date: _____

☐ Denied (See attached report.)Copies of this were sent to the AOWE/PE and the Owner on _____
Date

State Authorized Agent: _____ Date: _____

**Department of Environmental Services****Approved by:** Kristina Hiles

Date: 5/17/2023

☒ Complete

This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) using the signed and sealed plans or evaluations attached here. Applicant is responsible for adhering to all State and Local rules, regulations and laws.

State Authorized Agent: _____ Date of Issuance: 5/17/2023

This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) using the signed and sealed plans or evaluations attached here. This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes, or if information submitted in the application was falsified, inaccurate or misleading. The Construction Authorization shall not be affected by a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit. The location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner. Final landscaping shall be constructed to divert water and establish vegetative cover.

The Department, the Department's authorized agents, and the local health departments shall be discharged and released from any liabilities, duties, and responsibilities imposed by statute or in common law from any claim arising out of or attributed to plans, evaluations, preconstruction conference findings, submittals, or actions from a person licensed pursuant to Chapter 89C of the General Statutes as a licensed engineer or a person certified pursuant to Article 5 of Chapter 90A of the General Statutes as an Authorized On-Site Wastewater Evaluator in GS 130A-335(a2), (a5), and (a7). The Department, the Department's authorized agents, and the local health departments shall be responsible and bear liability for their actions and evaluations and other obligations under State law or rule, including the issuance of the operations permit pursuant to GS 130A-337.

Construction Authorization Expiration Date: 5/16/2028



Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110

Wake Forest, NC 27587

919-569-6704

Acknowledgment of Subsurface wastewater evaluation and septic design by Central Carolina Soil Consulting, PLLC. for Mornington, Lot 73 (PIN# 0697677065), for issuance of an IP and CA.

For Improvement Permit (IP) issuance:

“The LSS/LG evaluation(s) attached to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3).”

For Construction Authorization (CA) issuance:

“The plans or evaluations attached to this application are to be used to issue a Construction Authorization in accordance with G.S. 130A-335(a2), (a5) and (a6).”

The LSS evaluation attached to this application was used to produce and design a subsurface wastewater septic system for permitting to obtain an IP and CA in accordance G.S. 130A-335(a2), (a3), (a5) and (a6).

Owner: Donald Denihan

Owner's representative: 

Date: 4/20/23

CONSTRUCTION AUTHORIZATION FOR G.S. 130A-335(a2)/SL2022-11

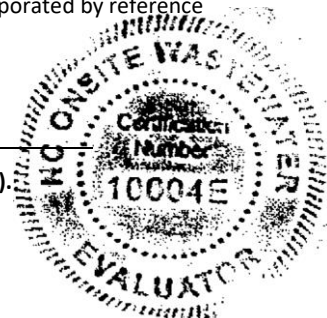
PIN/Lot Identifier: Pin: 0697677065Issued To: Sword DevelopmentProperty Location: 6521 Camellia Creek Drive, Raleigh, NC 27603: Mornington Subdivision, Lot 73AOWE/PE Plans/Evaluations Provided: Yes ☒ No ☐ If yes, name and license number of AOWE/PE: 10004Facility Type: 4-Bedroom, Single Family☒ New ☐ Expansion ☐ Repair System Relocation ☐Basement? ☐ Yes ☒ No Basement Fixtures? ☐ Yes ☐ NoType of Wastewater System** Pressure Manifold, IIIB (Initial) Pressure Manifold, IIIB (Repair)Design Daily Flow: 360 GPD Wastewater Strength: ☒ domestic ☐ high strength ☐ industrial processSession Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies? ☒ Yes ☐ No**Installation Requirements/Conditions**Septic Tank Size: 1200 gallons Total Trench/Bed Length: 375 feet Trench/Bed Spacing: 9 feet on centerDrainfield square footage: 1,125 Trench/Bed Width: 36 inches LTAR 0.275 gpd/ft²Soil Cover: 8 inches of additional cover Slope Adjusted Maximum Trench/Bed Depth: 13 inchesAggregate Depth: inches above pipe inches below pipe inches totalPump Tank Size (if applicable): 1200 gallons Requires more than 1 pump? ☐ Yes ☒ NoPump Requirements: 20.15 ft. TDH vs. 36.14 GPM Grease Trap Size (if applicable): gallonsDistribution Method: ☐ Serial ☐ D-Box or Parallel ☒ Pressure Manifold(s) ☐ LPP ☐ Other: Artificial Drainage Required: Yes ☐ No ☒ If yes, please specify details: **Legal Agreements** (If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)Multi-party Agreement Required [.1937(h)]: Yes ☐ No ☒Easement, Right-of-Way, or Encroachment Agreement Required [.1938(j)]: ☐ Yes ☒ NoDeclaration of Restrictive Covenants: ☐ Yes ☒ No****If applicable:***I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.*Owner/Legal Representative Print Name: Donald DenihanOwner/Legal Representative Signature: *P. Denihan* Date: 4/28/2023Pre-Construction Conference Required: Yes ☐ No ☒Conditions:

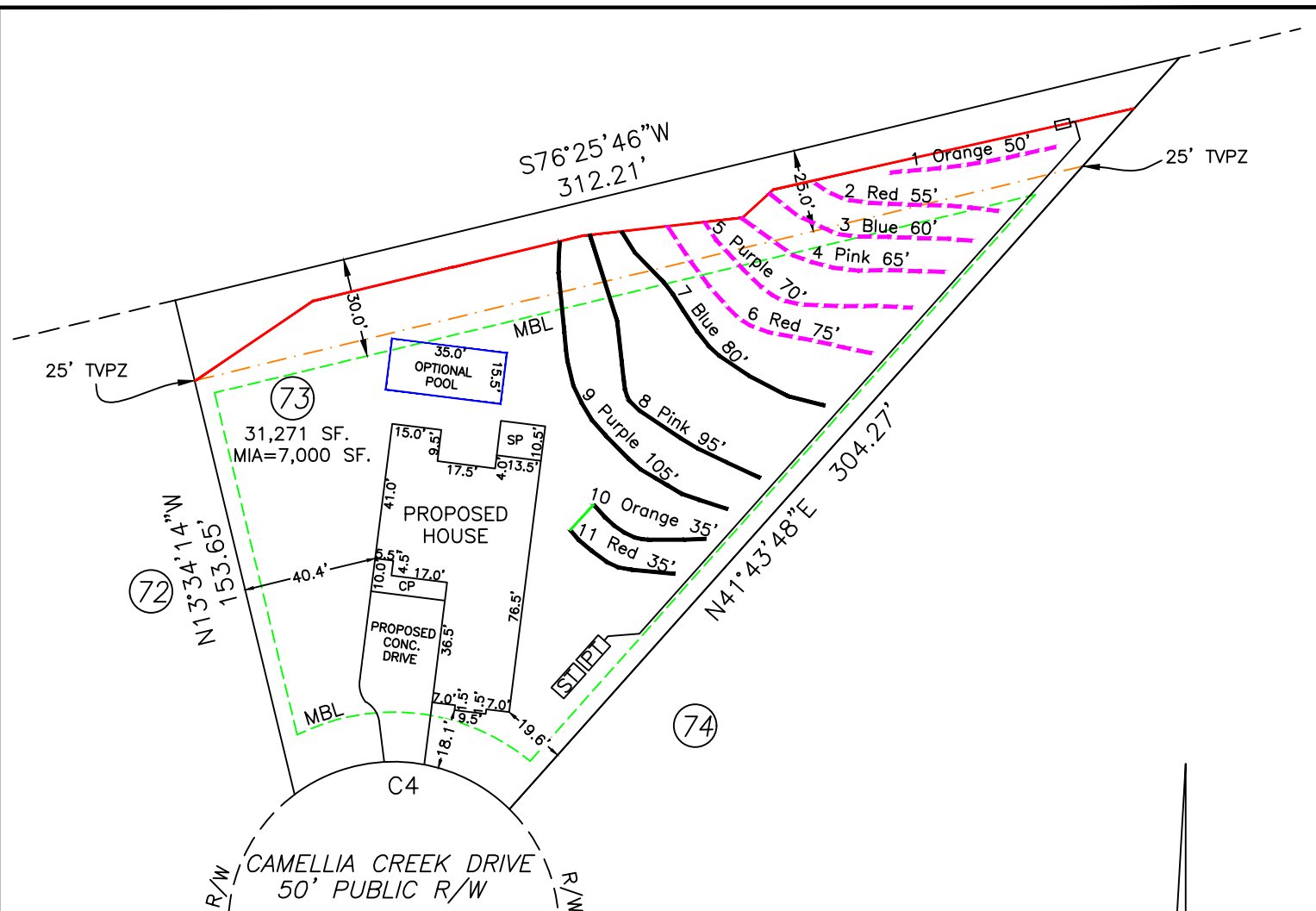
The construction and installation requirements of Rules .1950, .1952, .1954, .1955, .1956, .1957, .1958, and .1959 are incorporated by reference into this permit and shall be met. Systems shall be installed in accordance with the attached system layout.

AOWE/PE Print Name: Jason HallAOWE/PE Signature: *Jason Hall* Date: 04/27/2023

This AOWE/PE submittal is pursuant to and meets the requirements of G.S. 130A-335(a2) and (a5).

See attached site sketch





System	=	-----
Repair	=	—————
ST/PT	=	1200 gallon septic and pump tanks

- *Keep tanks and drain lines 10' from property lines.
- *Not a survey.
- *Not a guarantee of a septic permit.
- *Keep supply lines >5' from property lines.
- *Some lines are flagged longer in the field than lengths indicate.
- *No grading septic area.
- *No adding soil within septic area
- *No rutting-up septic area
- *No cuts of >2' within 15' of septic areas

GRAPHIC SCALE

1" = 50'



System: Pressure Manifold
Lines: 1–6, (375')
Accepted Status System
0.275 Soil LTAR
13" Trench Bottom with 8" of cover

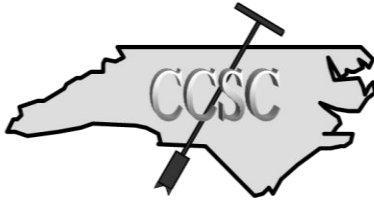
Repair: Pressure Manifold
Lines: 7–11, (350')
Accepted Status System
0.275 Soil LTAR
12" Trench Bottom with 8" of cover



Central Carolina Soil Consulting, PLLC
1900 South Main Street, Suite 110
Wake Forest, North Carolina 27587
Phone (919)569-6704 Fax (919)569-6703

4-Bedroom Septic Layout
360 gal/day per engineered flow-reduction
Lot 73, Mornington Subdivision
Wake County, North Carolina

Job#: 1355
Drawn By: JR
Date: 04/27/2023
Revision:



Central Carolina Soil Consulting, PLLC

1900 South Main Street
Suite 110
Wake Forest, NC 27587
919-569-6704

April 27, 2023

Wake Co. Department of Environmental Services
Attention: Geoffrey Pearson
PO Box 550
Raleigh, NC 27602

RE: Proposed use of on-site sewage disposal systems in the 25' Tree and Vegetative Protection Zones on lot 73 in Mornington Estates SD.

Dear Mr. Pearson:

This letter is reference to Wake County's Unified Development Code (16-10-J (1)) to substantiate that the location of the proposed primary wastewater drain field and/or components on lot Mornington Estates lot 73 Subdivision in the 25' Tree and Vegetative Protection Zone(s) is required. Due to the provisionally suitable soil areas, size of proposed houses (4-Bedroom), pool location and topography, the location of the wastewater systems are required in the Tree Protection zones to meet the minimum available space required for subsurface septic systems.

Please give me a call if you have any other questions regarding the septic system locations on this lot.

Sincerely,

Jason Hall
NC Licensed Soil Scientist # 1248

Encl: Site Plans



Pressure Manifold
Septic System Design

for

Mornington S/D, Lot 73
Wake County, North Carolina

Designed by:

James Rice
Central Carolina Soil Consulting, PLLC
Wake Forest, North Carolina

04/27/2023

Mornington S/D, Lot 73
Contact Information

Client: Sword Development
Attn: Donald Denihan
Street Address:

Phone: 516-426-8719
Fax:

Designer: Central Carolina Soil Consulting, PLLC
Attn: Jason Hall
Designed By: James Rice
Street Address: 1900 South Main Street, Suite 110
Wake Forest, NC 27587
Office Phone: 919-569-6704
Cell Phone: 910-740-3226
Fax: 919-569-5703
Email: jrice@centralcarolinasoil.com

Mornington S/D, Lot 73
Layout/Design Specifications

Facility Type:	Single Family Home
# of Bedrooms:	4
Daily Flow:	360 gal/day per flow-reduction
L.T.A.R.:	0.275 gal/day/sq.ft
Trench Depth:	13 in with 8" of cover
Trench Width:	36 in
Stone Depth:	EZ-FLOW in
Manifold Length:	54 in
Manifold Diameter:	4 in sch 80pvc
Supply Line Length:	220 ft
Supply Line Diameter:	2 in sch 40pvc
Supply Line Volume:	38.28 gallons
Friction Loss + Fitting Loss:	8.55 ft(supply line length + 70' for fittings in pump tank)
Design Head:	2 ft
Elevation Head:	9.60 ft
Total Head:	20.15 ft
Dose Volume:	182.81 gals
% of Pipe Vol.	0.75
Drawdown:	9.14 in @ 20.0 gal/in
Pump Run Time:	5.06 Mins
Control Panel:	SJE Rhombus Model112 control panel (or approved equivalent)
Pump:	Zoeller M140 Flow-Mate (or approved equivalent)
Septic Tank Effluent Filter:	Zoeller 170-0078 residential effluent filter (or approved equivalent)
Septic Tank:	Brantley 1,200 Gallon ST
Pump Tank:	Brantley 1,200 Gallon PT

Morningside Estates, Lot 73 Initial TAP CHART

Bench Mark		is = 100.00		Location of BM		Elevation Head			9.60
Pump tank elev.		5.0	95.00	Pump elev.	89.60	Manifold elev.			99.20
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
1	Orange	1.80	98.20	50	1/2in SCH 80	5.48	54.59	150	0.3639
2	Red	2.00	98.00	55	1/2in SCH 80	5.48	54.59	165	0.3308
3	Blue	2.30	97.70	60	1/2in SCH 80	5.48	54.59	180	0.3033
4	Pink	2.40	97.60	65	1/2in SCH 80	5.48	54.59	195	0.2799
5	Purple	2.60	97.40	70	1/2in SCH 40	7.11	70.82	210	0.3373
6	Red	2.80	97.20	75	1/2in SCH 40	7.11	70.82	225	0.3148
		total	feet =	375	gal/min =	36.14	<u>LTAR =</u>		0.2750
							<u>LTAR + %5</u>		0.2888
% of Dose Vol.	75		<u>Des. Flow</u>	360			(ltar W/ INOV)		0.3667
Dose Volume	182.81		Pump Run=	9.96			(ltar W/ INOV + 5%)		0.3850
Dose Pump Time	5.06		Tank Gal/IN	20					
Drawdown in Inches	9.14								

Morningside Estates, Lot 73 Repair TAP CHART

Bench Mark		is = 100.00 Location of BM		Elevation Head				8.30	
Pump tank elev.		5.0	95.00	Pump elev.	89.60	Manifold elev.			97.90
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
7	Blue	3.10	96.90	80	1/2in SCH 40	7.11	74.36	240	0.3098
8	Pink	3.60	96.40	95	3/4in SCH 80	10.1	105.64	285	0.3707
9	Purple	3.90	96.10	105	3/4in SCH 80	10.1	105.64	315	0.3354
10 & 11	Oran/Red	4.10	95.90	70	1/2in SCH 40	7.11	74.36	210	0.3541
		total	feet =	350	gal/min =	34.42	LTAR =		0.2750
							LTAR + %5		0.2888
% of Dose Vol.		75	Des. Flow		360	(ltar W/ INOV)		0.3667	
Dose Volume		170.63	Pump Run=		10.46	(ltar W/ INOV + 5%		0.3850	
Dose Pump Time		4.96	Tank Gal/IN		20				
Drawdown in Inches		8.53							

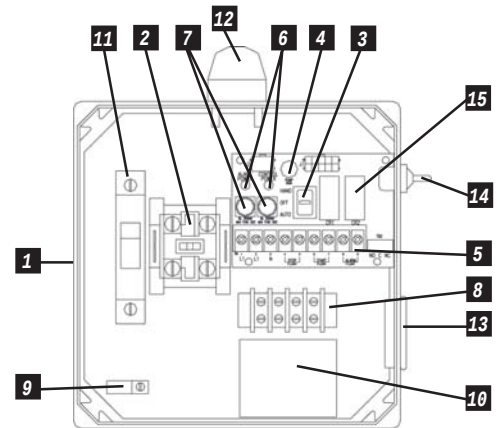
MODEL 112 Control Panel

Single phase, simplex motor contactor control.

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

PANEL COMPONENTS

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



Model Shown 1121W914X

STANDARD ALARM PACKAGE

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

NOTE: other options available.

FEATURES

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



SJE
Rhombus
CONTROLS

PO Box 1708, Detroit Lakes, MN 56502

1-888-DIAL-SJE • 1-218-847-1317

1-218-847-4617 Fax

email: sje@sjerhombus.com

www.sjerhombus.com

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.

112**1****W****1****2****4****H****3A, 8A, 8C, 15A****MODEL 112****ALARMPACKAGE**

0 = select options or no alarm package

1 = alarm package (includes test/normal/silence switch, fuse, red light, horn & float)

ENCLOSURE RATING

I = Indoor, NEMA 1 (metal)

W = Weatherproof, NEMA 4X (engineered thermoplastic)

STARTING DEVICE

1 = magnetic motor contactor 120/208/240V

9 = magnetic motor contactor 120V only

PUMP FULL LOAD AMPS

0 = 0-7 FLA

1 = 7-15 FLA

2 = 15-20 FLA

3 = 20-30 FLA

PUMP DISCONNECTS

0 = no pump disconnect

1 = pull-out with safety deadfront in a 10"x8" enclosure

4 = circuit breaker 120V (select STARTING DEVICE option 9 above)

120/208/240V (select STARTING DEVICE option 1 above)

FLOAT SWITCH APPLICATION

H or L = pump down or pump up

X = no floats

WITH alarm package

WITHOUT alarm package

OPTIONS *Listed below*

ENCLOSURE UPSIZE - If you selected 3 or more of the ★ options, or one ★★ option, a one-time enclosure upsize fee would apply.

If additional features are required, call the factory for a quote on either a SJE-Rhombus Pro-Line or Engineered Custom control panel.**CODE DESCRIPTION**

- ☐ 1A Red beacon only / no audio
(must select 1E if floats included)
- ☐ 1C Horn only / no visual
(must select 1E if floats included)
- ☐ 1E Alarm float
- ☒ 3A Alarm flasher
- ☐ ★ 3B Manual alarm reset
- ☐ ★ 4A Low level cutout
(select option 4D if floats included)
- ☐ ★ 4B Red low-level indicator & alarm
(must select 4A also)
- ☐ 4D Low-level float
- ☐ ★ 5A Thermal cutout/heat sensor auto
reset (for pumps w/thermal switch leads)
- ☐ ★★ 5E Seal failure circuit & red indicator (2 wire)
- ☐ 6A Auxiliary alarm contact, form C type
- ☒ ★ 8A Elapsed time meter
- ☒ ★ 8C Event (cycle) counter
- ☐ ★★ 9_A Pump overload
specify amperage after number 9 followed by letter "A".
Example: 912A = 12 amp pump.
- ★★ ☐ 0-25 FLA
- ★★ ☐ 25-30 FLA
- ☐ 10E Lockable latch - NEMA 4X
- ☐ 10E Lockable latch - NEMA 1
- ☐ ★ 10F Lightning arrester
- ☐ ★ 10K Anti-condensation heater

CODE DESCRIPTION

- ☐ 11C NEMA 1 alarm panel *must select option 6A*
- ☐ 11D NEMA 4X alarm panel *must select option 6A*
- ☐ ★★ 14B Main disconnect (rotary style, mounted through door)
non-fused
- ★★ ☐ 0-20 FLA (total of both pumps)
- ★★ ☐ 20-30 FLA (total of both pumps)
- ☒ 15A Control / alarm circuit breaker
Does not include the circuit board as in standard.
- ☐ 16A 10' cord in lieu of 20' (per float)
- ☐ 16B 15' cord in lieu of 20' (per float)
- ☐ 16C 30' cord in lieu of 20' (per float)
- ☐ 16D 40' cord in lieu of 20' (per float)
- ☐ 17A SJE SignalMaster® / mounting strap ● (per float)
- ☐ 17B SJE SignalMaster® / externally weighted ● (per float)
- ☐ 17C Sensor Float® / internally weighted ▲ (per float)
- ☐ 17D Sensor Float® / externally weighted ▲ (per float)
- ☐ 17E Sensor Float® Mini / pipe clamp ▲ (per float)
- ☐ 17F Sensor Float® Mini / externally weighted ▲ (per float)
- ☐ 19T TOA (Test/Off/Automatic) switch and pump run light through
door mounted
- ☐ 19U HOA (Hand/Off/Automatic) switch and pump run light through
door mounted
- ☐ 19X Door mounted pump run indicator
- ☐ 21A SJE PumpMaster® in lieu of on/off switches ●
- ☐ 21B SJE PumpMaster® Plus in lieu of on/off switches ●
- ☐ 21C Super Single® in lieu of on/off switches ▲
- ☐ 21D Double Float® in lieu of on/off switches ▲
- Mechanically-activated ▲ Mercury-activated

SAMPLE**MODEL****112****1****W****9****1****4****H****3A 8A**

Alarm Package

Enclosure Rating

Starting Device

Pump Full Load Amps

Pump Disconnect

Float Switch Application

Options: Flasher, Elapsed Time Meter

TECHNICAL DATA SHEET FLOW-MATE SERIES

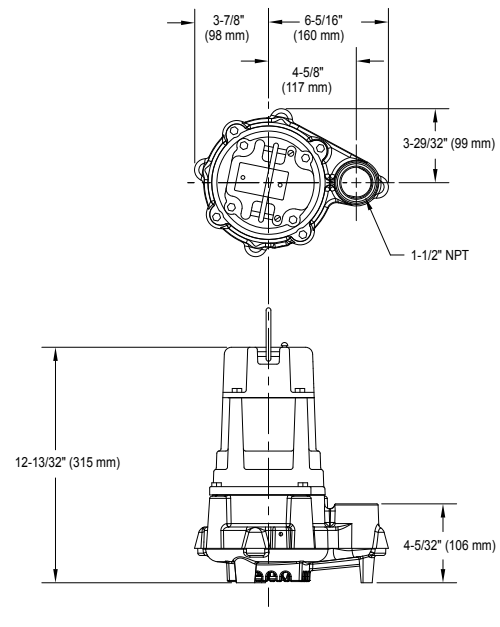
Models 140/4140, 145/4145 Effluent / Dewatering Pumps

PRODUCT SPECIFICATIONS

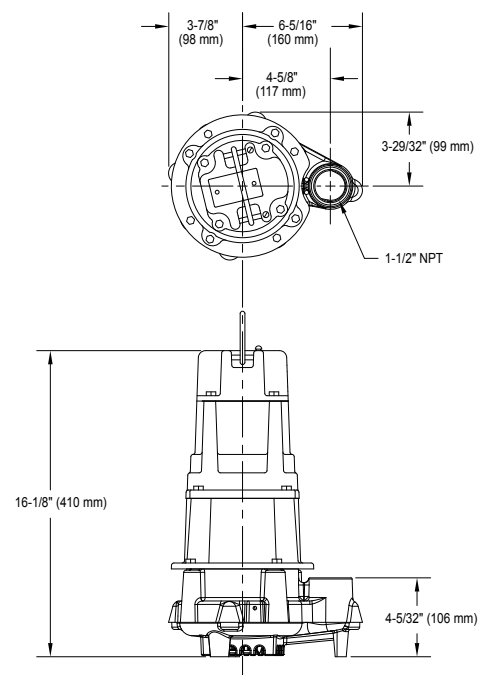
MOTOR	Horse Power	3/4 - 1
	Voltage	115 or 230
	Phase	1 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Permanent split capacitor
	Insulation	Class B
	Amps	6.0 - 13.0
PUMP	Operation	Automatic or nonautomatic
	Discharge Size	1-1/2" NPT
	Solids Handling	1/2" (12 mm), 3/4" (19 mm) spherical solids
	Cord Length	20' (6 m)
	Cord Type	UL listed, neoprene cord
	Max. Head	50' (15.2 m) or 74' (22.6 m)
	Max. Flow Rate	86 GPM (326 LPM) or 61 GPM (232 LPM)
	Max. Operating Temp.	130 °F (54 °C)
	Cooling	Oil filled
	Motor Protection	Auto reset thermal overload
MATERIALS	Cap	Cast iron
	Motor Housing	Cast iron
	Pump Housing	Cast iron
	Base	Cast iron
	Upper Bearing	Sleeve bearing
	Lower Bearing	Ball bearing
	Mechanical Seals	Carbon and ceramic
	Impeller Type	Single vane (145) or non-clogging vortex (140)
	Impeller	Engineered thermoplastic
	Hardware	Stainless steel
	Motor Shaft	JIS S45C steel
	Gasket	Neoprene

NOTE: See model comparison chart for specific details.

SINGLE SEAL



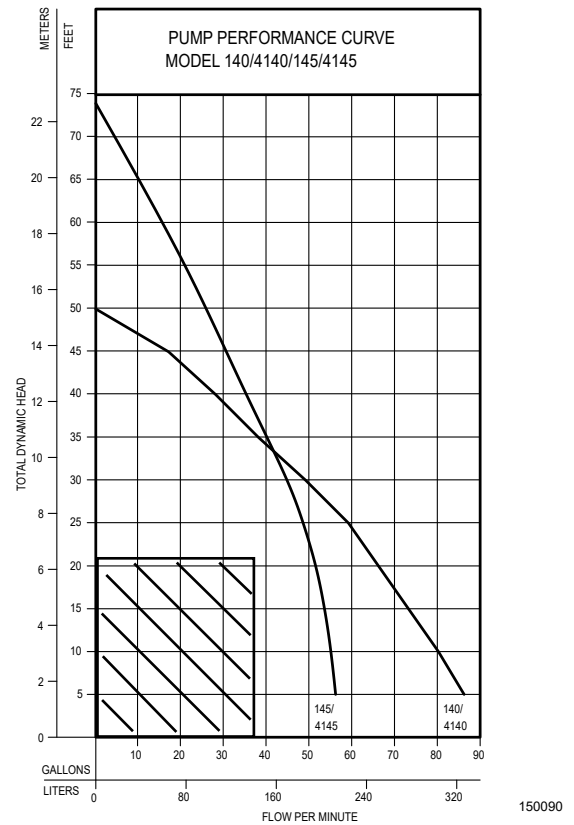
DOUBLE SEAL



SK1524

TOTAL DYNAMIC HEAD FLOW PER MINUTE

MODEL		140/4140		145/4145	
Feet	Meters	Gal.	Liters	Gal.	Liters
5	1.5	86	326	56	212
10	3.0	80	303	55	208
15	4.6	73	276	53	200
20	6.1	66	250	51	193
25	7.6	59	223	48	182
30	9.1	49	185	45	170
40	12.2	28	106	35	132
50	15.2	--	--	26	98
60	18.3	--	--	16	61



Model	MODEL COMPARISON										
	Seal	Mode	Volts	Ph	Amps	HP	Hz	Lbs	Kg	Simplex	Duplex
N140	Single	Non	115	1	12.0	1	60	46	21	1 or 2	3
E140	Single	Non	230	1	6.0	1	60	46	21	1 or 2	3
BN140	Single	Auto	115	1	12.0	1	60	47	21	*	---
BE140	Single	Auto	230	1	6.0	1	60	47	21	*	---
E145	Single	Non	230	1	6.0	3/4	60	46	21	1 or 2	3
N145	Single	Non	115	1	13.0	3/4	60	46	21	1 or 2	3
BN145	Single	Auto	115	1	13.0	3/4	60	48	22	*	---
N4140	Double	Non	115	1	12.0	1	60	65	29	*	---
E4140	Double	Non	230	1	6.0	1	60	65	29	1 or 2	3
BN4140	Double	Auto	115	1	12.0	1	60	66	30	*	---
BE4140	Double	Auto	230	1	6.0	1	60	66	30	*	---
N4145	Double	Non	115	1	13.0	3/4	60	64	29	1 or 2	3
BN4145	Double	Auto	115	1	13.0	3/4	60	64	29	*	---

* Single piggyback switch included.

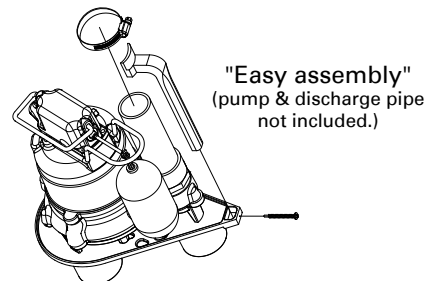
BN and BE models include a 20' (6 m) piggyback variable level pump switch. Additional cord lengths are available in 15' (5 m), 25' (8 m), 35' (11 m) and 50' (15 m). 50' (15 m) cord length is for 230 V only.

SELECTION GUIDE

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
- See FM1228 for correct model of simplex control panel.
- See FM0712 for correct model of duplex control panel.

OPTIONAL PUMP STAND P/N 10-2421

- Reduces potential clogging by debris
 - Replaces rocks or bricks under the pump
 - Made of durable, noncorrosive ABS
 - Raises pump 2" (5 cm) off bottom of basin
 - Provides the ability to raise intake by adding sections of 1-1/2" or 2" (DN40 or DN50) PVC piping
 - Attaches securely to pump
 - Accommodates sump, dewatering and effluent applications
- NOTE: Make sure float is free from obstruction.



All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

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502-778-2731 | 800-928-7867 | 3649 Cane Run Road | Louisville, KY 40211-1961 | zoellerpump.com

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Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

Register your
Zoeller Pump Company Product
on our website:
<http://reg.zoellerpumps.com/>



SECTION: C2.10.130

CL0040

0421

Supersedes

0318

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
TEL: (502) 778-2731 • 1 (800) 928-PUMP • FAX: (502) 774-3624

Visit our website:
zoellerpumps.com

WW1 Effluent Filter, P/N 170-0078

OWNER'S MANUAL

Application: Single family homes.

Filter Area: 132 Linear Feet of 1/16" filtration.

Flow Rate: 1,500 GPD. Two or more filters may be connected with a manifold for higher flow applications.

Material: All materials are non corrodible in the septic tank environment. Sleeve is PVC, primary filter is polypropylene, and filter connection element is neoprene.

Easy To Install Or Retrofit: The WW1 Filter fits inside any 4" sanitary tee. To install, slide the cartridge into the sleeve and rotate clockwise to lock. Insert the assembled cartridge and sleeve into the sanitary tee at the tank's outlet. Ensure the white vertical locking tab is pointing toward the outlet of the septic tank before installation. Firmly press the filter down into the sanitary tee until the vertical locking tab snaps into place, then rotate clockwise until the bypass screen no longer rotates. When installed correctly, the cartridge should be capable of rotating within the sleeve to the locked and unlocked position. If the cartridge hangs or will not rotate to the unlocked position, check to make sure the sleeve is installed with the vertical locking tab extending freely into the septic tank's outlet pipe. For an optional high water alarm assembly, order the high water alarm bracket (5090-0014), an alarm box (10-3067) and a float switch (sold separately).

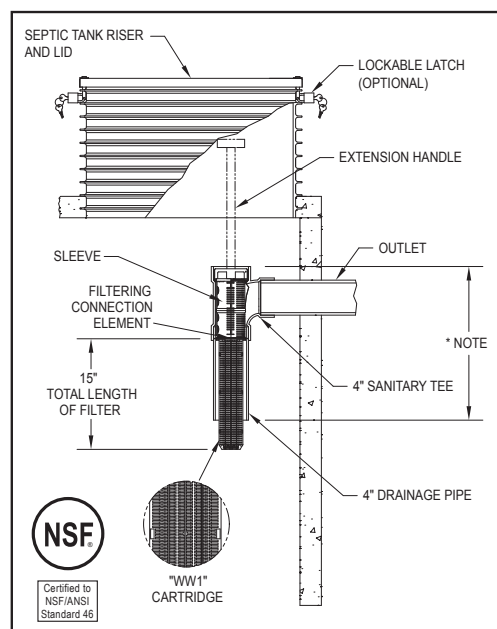
Adding An Extension Handle: A 1/2" PVC pipe can be attached to the top of the filter with a stainless steel screw. Cut off to appropriate length below the lid.

Easy To Maintain: The cartridge can be removed for maintenance by rotating the handle counterclockwise and then pulling the unit up out of the sleeve. The sleeve should remain in the sanitary tee while cleaning the cartridge. To clean, hold cartridge over septic tank opening and rinse with tap water until clean, washing filtered solids back into the septic tank. In addition, spray off any solids that have accumulated on the inside of the sleeve. The WW1 Filter should be cleaned each time the septic tank is pumped or when the need is indicated by a high water level in the tank or slow flows from the house. The secondary filter sleeve should be cleaned whenever the tank is pumped. For installations that exceed the design flow rate of the filter or in applications where the septic tank is undersized, more frequent cleanings may be required. It is recommended that the filter be inspected and serviced as part of a regular septic tank maintenance routine.

Troubleshooting, repair, and replacement: Follow the installation and maintenance instructions above. For replacement components, call 1-800-928-7867.

Lifetime Warranty: Every Zoeller Pump Company filter is guaranteed to be free from defects in materials and workmanship for the lifetime of the homeowner/purchaser. Free repair or replacement, excluding labor, will be made on return of the filter prepaid to the factory. This warranty is limited to product proven to be free from abuse or improper installation.

ALL ZOELLER PUMP COMPANY PRODUCTS MUST BE INSTALLED IN ACCORDANCE WITH PLUMBING AND HEALTH DEPARTMENT CODES.



NOTE: State and local plumbing codes may require a specific liquid penetration. For example, 25% - 45% into the liquid depth or 9" off the tank bottom.

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

WW1 Effluent Filter

Protects Drainfield Components By Screening
Effluent In Residential Applications With Flows Up
To 1,500 Gpd (5.7 M³/Day)



Help prolong the life of an onsite system in residential applications. The deep pleated filter design offers highly effective screening and solids retention.

Features

- Rated for flows up to 1,500 gpd (5.7 m³/day)
- 132 linear feet of 1/16" filtration
- Fits 4" sanitary tees or DWV Tees
- Easy to install and maintain
- Integral bypass protection screen
- High water alarm bracket available
- Lifetime warranty

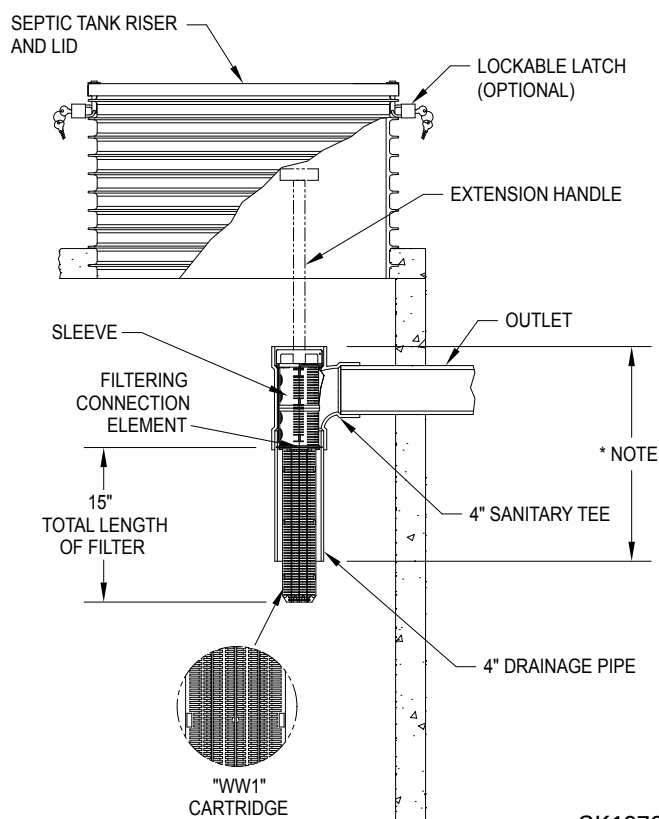
Alarm bracket sold separately
Float switch sold separately



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3.20.052
CL0038
0121
Supersedes
0119

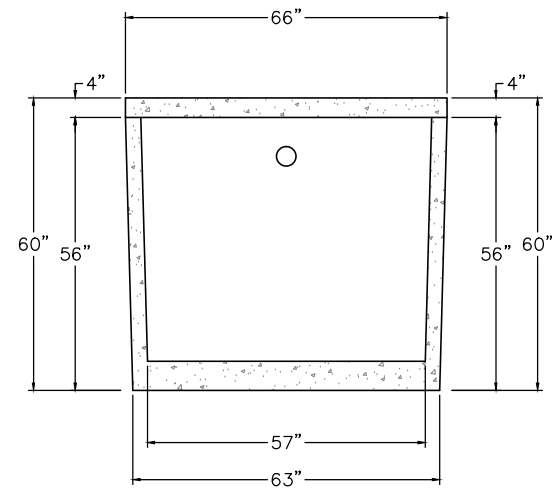
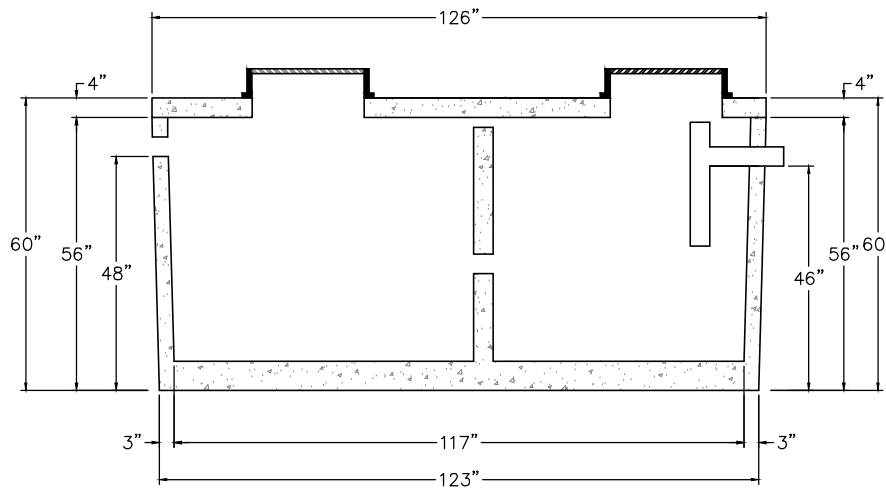


Zoeller Pump Company septic tank effluent filters are designed to protect all downstream components from solids. Every filter comes standard with bypass protection which keeps the filter working, even during cleaning!

SK1972

WW1 Effluent Filter (1,500 GPD)	
Part Number	Description
170-0078	WW1 Effluent Filter
170-0079	WW1 Effluent Filter (10 pk)
170-0144	WW1 Effluent Filter with 4" sanitary tee
170-0145	WW1 Effluent Filter with 4" sanitary tee (10 pk)
5090-0014	Alarm bracket assembly
10-3067	C-Pak Alarm, touch pad without float
013216	Replacement filter cartridge (without bypass screen)
013218	Rubber alignment gasket
Container Assembly	
Part Number	Description
31-1473	12" Riser extension with hardware and gasket
31-1476	6" Riser extension with hardware and gasket
170-0078	WW1 Effluent Filter
170-0144	WW1 Effluent Filter with 4" sanitary tee
5090-0001	Container assembly with 12" riser and lid





1,250 ST 323
NTS

NON TRAFFIC BEARING

DAVID BRANTLEY & SONS
37 Pine Ridge Rd.
Zebulon, NC 27597
Office 252-478-3721
Fax 919-573-0443
1nsta11er@gmail.com

PREPARED FOR : David Brantley & Sons
37 Pine Ridge Rd.
Zebulon, NC 27597

DATE : April 11, 2014

CONTACT:
CORY BRANTLEY

REVISION NO.
Original Submitted

Revision 1

Revision 2

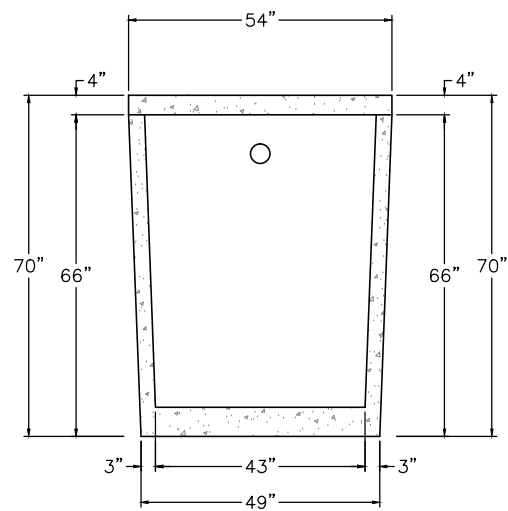
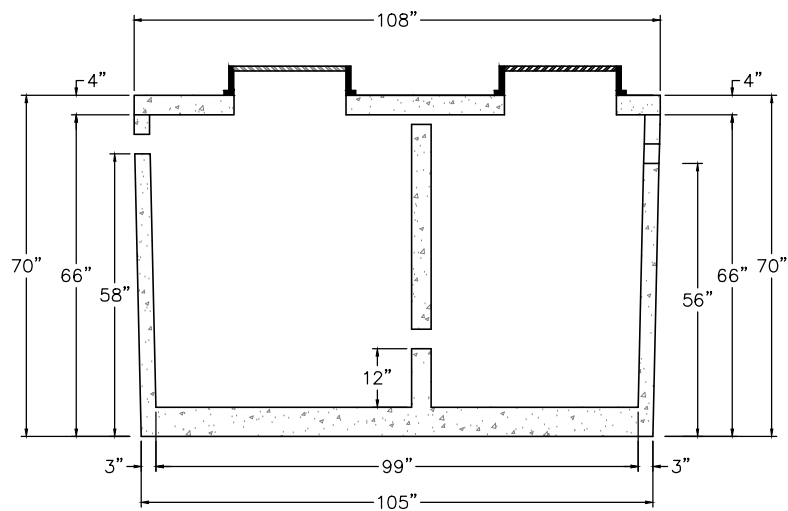
Revision 3

Master Set

DATE
April 11, 2014

BRANTLEY TASK MODEL
1,250 ST 323

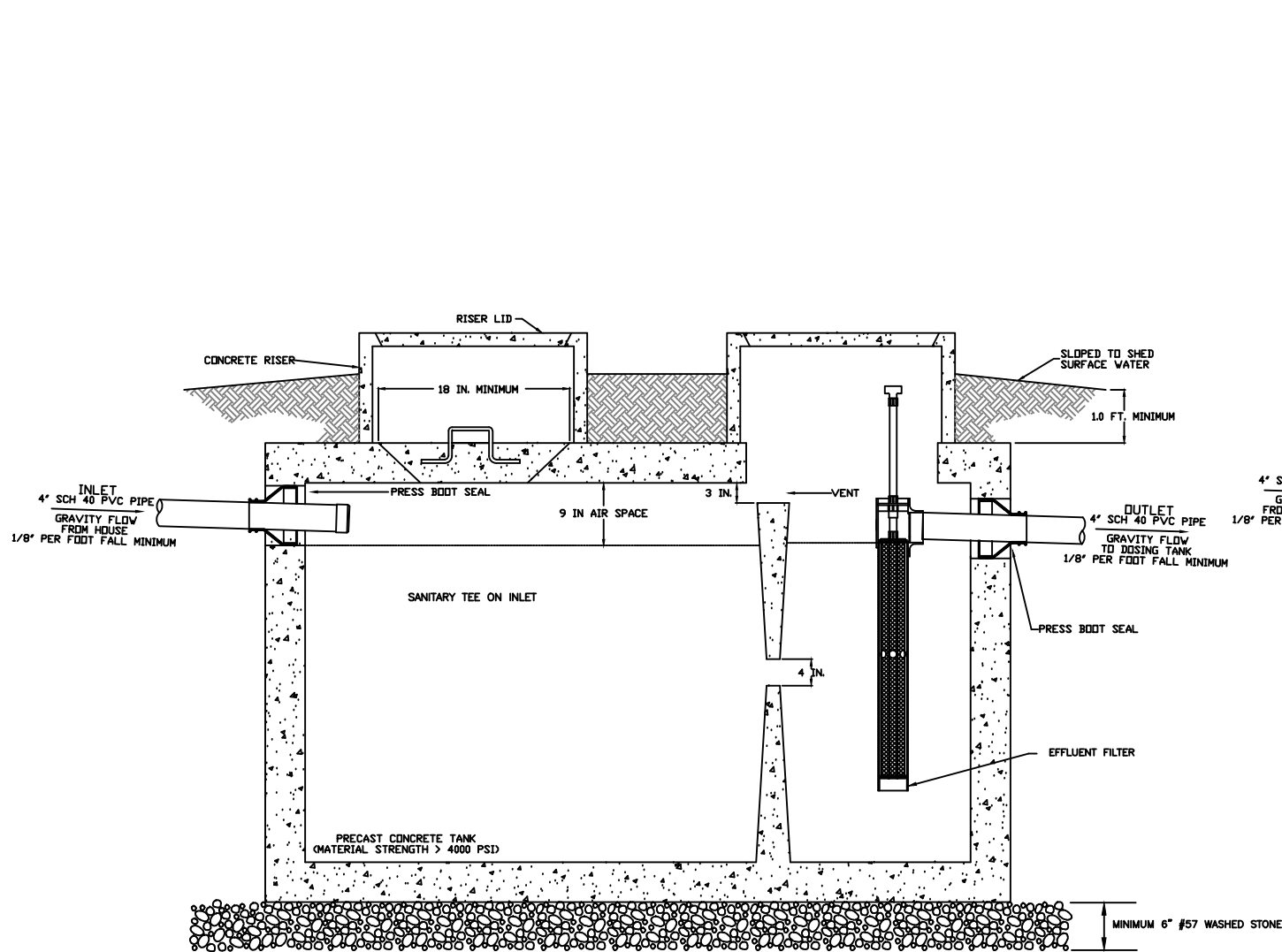
SHEET NUMBER
1 of 1



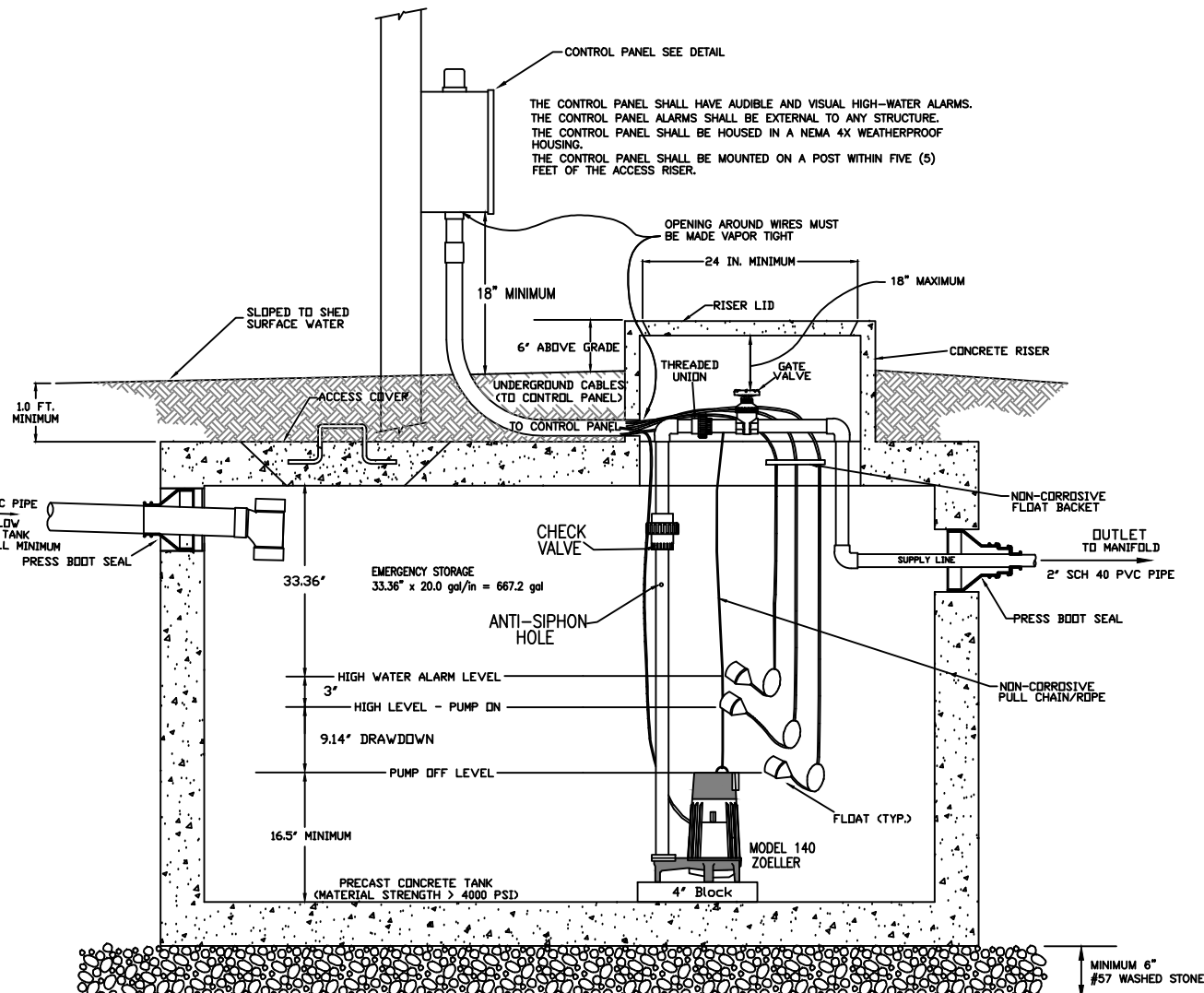
1,200 PT 463
NTS

NON TRAFFIC BEARING

BRANTLEY TASK MODEL 1,200 PT 463		DATE April 11, 2014
SHEET NUMBER 1 of 1		REVISION NO. Original Submitted Revision 1 Revision 2 Revision 3 Master Set
PREPARED FOR : David Brantley & Sons 37 Pine Ridge Rd. Zebulon, NC 27597		DATE : April 11, 2014 CONTACT: CORY BRANTLEY
DAVID BRANTLEY & SONS 37 Pine Ridge Rd. Zebulon, NC 27597 Office 252-478-3721 Fax 919-573-0443 1n1staller@gmail.com		



1200 GAL SEPTIC TANK SCHEMATIC
NOT TO SCALE



1200 GAL PUMP TANK SCHEMATIC
NOT TO SCALE

- NOTES**
1. ALL TANKS SHALL BE LEAK TESTED SUCH THAT EXFILTRATION OCCURS AT A RATE WHICH DOES NOT EXCEED TEN GALLONS PER TWENTY-FOUR HOURS PER 1,000 GALLONS OF TANK CAPACITY
 2. ALL TANKS SHALL REST ON A BED OF #57 WASHED GRAVEL. THE MINIMUM THICKNESS OF THE GRAVEL BED IS 6 INCHES.
 3. ALL TANKS MUST BE APPROVED FOR USE BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL HEALTH (DEH).
 4. INVERTS SHOWN ARE APPROXIMATE. THE INSTALLER SHALL FIELD CONFIRM PRIOR TO CONSTRUCTION.
 5. ALL HARDWARE INSTALLED INSIDE OF TANKS SHALL BE OF STAINLESS STEEL.
 6. TANK DIMENSIONS VARY BY MANUFACTURER.
 7. DRAWDOWN WILL VARY WITH TANK DIMENSIONS.
 8. NO ELECTRICAL SPLICES SHALL BE MADE INSIDE THE PUMP TANK.

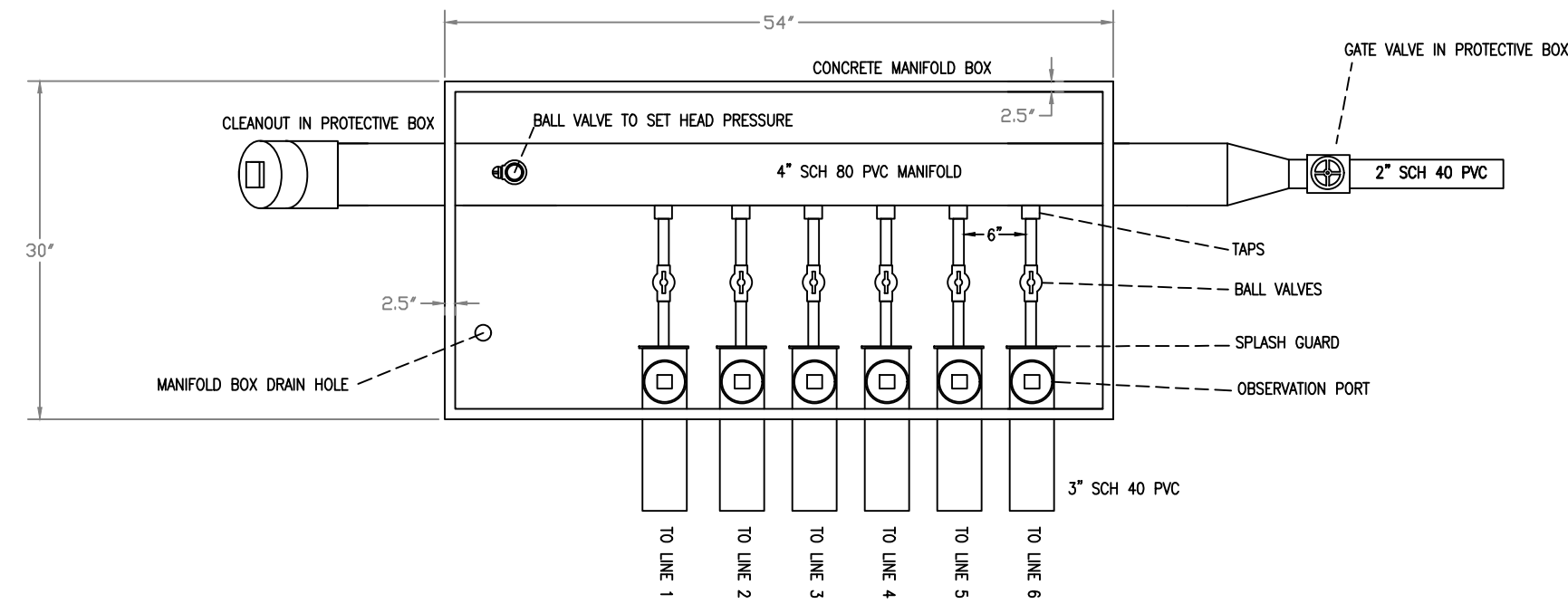


Central Carolina Soil Consulting, PLLC
1900 South Main Street, Suite 110
Wake Forest, North Carolina 27587
Phone (919)569-6704 Fax (919)569-6703

Septic and Pump Tank Details
Mornington S/D, Lot 73
Wake County, North Carolina

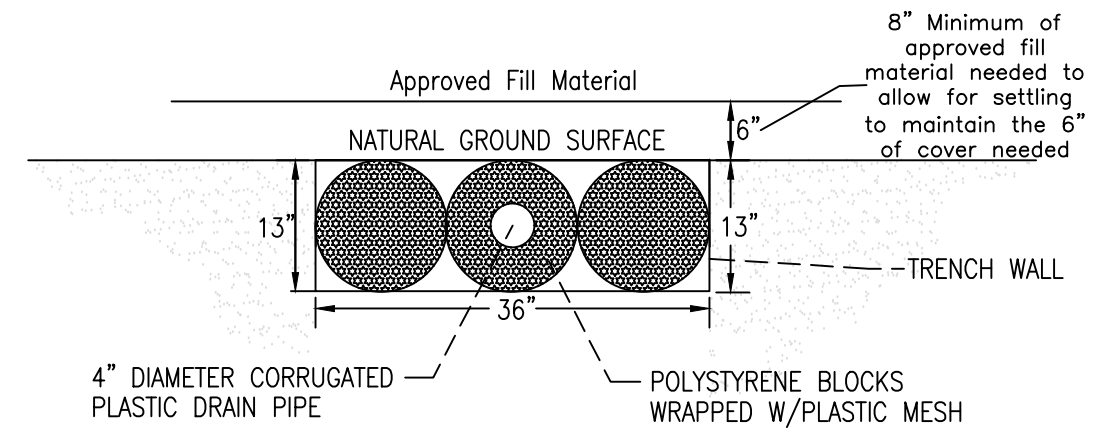
Job# : 1355
Drawn By : JR
Date : 04/27/2023
Revision : 00/00/0000

PRESSURE MANIFOLD DETAILS
TOP VIEW

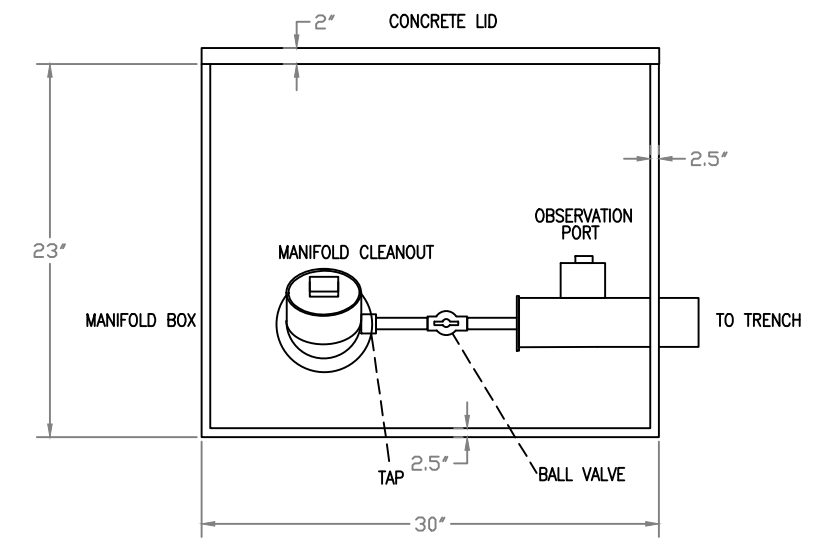


At-Grade System
EZ-FLOW DETAILS

Example only: Installed trench bottom should match design.



PRESSURE MANIFOLD DETAILS
END VIEW



TAP SCHEDULE	
LINE #	TAP
1	1/2" SCH 80
2	1/2" SCH 80
3	1/2" SCH 80
4	1/2" SCH 80
5	1/2" SCH 40
6	1/2" SCH 40

- NOTE :
- EZ-FLOW INSTALLATION SHALL MEET THE REQUIREMENTS INCLUDED IN ITS INNOVATIVE APPROVAL
 - TRENCH BOTTOM SHALL BE AT LEAST 12" FROM ANY RESTRICTIVE SOIL LAYER
 - END CAP SHALL BE PROVIDED AT END OF ALL CORRUGATED PLASTIC PIPE LINES AND TRENCH BOTTOMS SHALL BE LEVEL
 - THIS IS A GENERIC TRENCH PROFILE FOR AN AT-GRADE TRENCH DEPTH.

This Section for Local Health Department Use OnlyInitial submittal received: 4/20/2023 by KLH
Date InitialsPermit Number: WRP-084970-2022

G.S. 130A-335(a4) states the following: 'If a local health department fails to act on an application for an improvement permit submitted pursuant to subsection (a3) of the section within 10 business days of receipt of a complete application, the local health department shall issue the improvement permit.'

In accordance with G.S. 130A-335(a3) the improvement permit application is:

☐ Incomplete (If box is checked, information in this section is required.)

The following items are missing:

Copies of this were sent to the LSS and the Owner on _____
Date

State Authorized Agent: _____ Date: _____

☐ Denied (See attached report.)Copies of this were sent to the LSS and the Owner on _____
Date

State Authorized Agent: _____ Date: _____



Department of Environmental Services

Approved by: Kristina HilesDate: 5/17/2023☒ Complete

This Improvement Permit is issued pursuant to G.S. 130A-335 (a2), (a3), and (a4) using the signed and sealed LSS/LG evaluation(s) attached here. Applicant is responsible for adhering to all State and Local rules, regulations and laws.

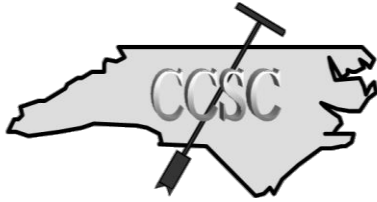
State Authorized Agent: _____ Date of Issuance: 5/17/2023

This Improvement Permit is issued pursuant to G.S. 130A-335 (a2), (a3), and (a4) using the signed and sealed LSS/LG evaluation(s) attached here. The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This site is subject to revocation if the site plan, plat, or the intended use changes, or if information submitted in the application was falsified, inaccurate or misleading. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to conditions of this permit. The location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner.

The Department, the Department's authorized agents, and the local health departments shall be discharged and released from any liabilities, duties, and responsibilities imposed by statute or in common law from any claim arising out of or attributed to evaluations, submittals, or actions from a licensed soil scientist or licensed geologist pursuant to GS 130A-335(a2).

Improvement Permit Expiration Date: 5/16/2028

See attached site sketch



Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110

Wake Forest, NC 27587

919-569-6704

Acknowledgment of Subsurface wastewater evaluation and septic design by Central Carolina Soil Consulting, PLLC. for Mornington, Lot 73 (PIN# 0697677065), for issuance of an IP and CA.

For Improvement Permit (IP) issuance:

“The LSS/LG evaluation(s) attached to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3).”

For Construction Authorization (CA) issuance:

“The plans or evaluations attached to this application are to be used to issue a Construction Authorization in accordance with G.S. 130A-335(a2), (a5) and (a6).”

The LSS evaluation attached to this application was used to produce and design a subsurface wastewater septic system for permitting to obtain an IP and CA in accordance G.S. 130A-335(a2), (a3), (a5) and (a6).

Owner: Donald Denihan

Owner's representative: 

Date: 4/20/23

County: Wake

IMPROVEMENT PERMIT FOR G.S. 130A-335(a2)/SL2022-11

PIN/Lot Identifier: Pin: 0697677065

Issued To: Sword Development

Property Location: 6521 Camellia Creek Drive, Raleigh, NC 27603

Subdivision: Mornington Subdivision Lot #: 73 Block: Section: Phase 4A

LSS Report Provided: Yes ☒ No ☐

If yes, name and license number of LSS: Jason Hall, NC LSS #1248

New ☒ Repair ☐ Expansion ☐ System Relocation ☐

Proposed Structure: 4-Bedroom, Single Family (per Engineered Flow-Reduction)

Proposed Wastewater System Type: Pressure Manifold, IIIB (Initial) Pressure Manifold, IIIB (Repair)

Fill System: ☐ Yes ☒ No If yes, specify: ☐ New ☐ Existing (when adding more than 6 inches of fill to system area please provide a fill plan)

Proposed Design Daily Flow: 360 GPD Proposed LTAR (Initial): 0.275 Proposed LTAR (Repair): 0.275

Design Wastewater Strength: ☒ domestic ☐ high strength ☐ industrial process

Number of bedrooms: 4 Number of Occupants: <8 Other:

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

Artificial Drainage Required: ☐ Yes ☒ No If yes, please specify details:

Type of Water Supply: ☐ Private well ☒ Public well ☐ Municipal Supply ☐ Spring ☐ Other:

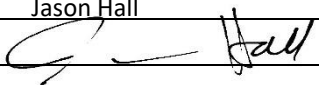
Drainfield location meets requirements of Rule .1945: Yes ☒ No ☐

Drainfield location meets requirements of Rule .1950: Yes ☒ No ☐

Permit valid for: ☒ Five years [site plan submitted pursuant to GS 130A-334(13a)] ☐ No expiration [plat submitted pursuant to GS 130A-334(7a)]

Permit conditions:

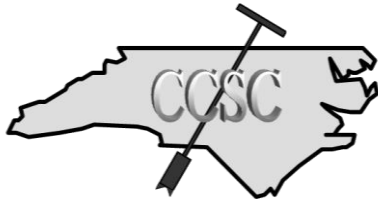
Licensed Soil Scientist Print Name: Jason Hall

Licensed Soil Scientist Signature:  Date: 04/27/2023

The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2).

See attached site sketch





Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110

Wake Forest, NC 27587

919-569-6704

April 27, 2023

Job #1355, lot 73

Sword Development
Attention: Donald Denihan
950 Clifton Avenue
Clifton, NJ 07013

RE: Preliminary soil/site evaluation for single family wastewater approval at Mornington Subdivision, lot 73 (4-bedroom) in Wake County pursuant to and meets the requirements of G.S. 130A-335(a2)."

Dear Mr. Denihan:

Central Carolina Soil Consulting, PLLC conducted a preliminary soil evaluation on the aforementioned lot to determine the areas of provisionally suitable soils that are suitable for subsurface wastewater disposal systems (conventional, Accepted & Innovative). **"The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2)."** The soil/site evaluation was performed using a hand auger in July 2022, under moist soil conditions, based on the criteria found in the State Subsurface Rules, 15ANCAC 18A .1900 "Laws and Rules for Sewage Treatment and Disposal Systems". From this evaluation, CCSC laid out and located the septic layout and gps'd for site plan drawing purposes. Please note that the lot lines must be clearly marked by your surveyor prior to system installation by your installer to verify all setbacks before digging.

The lot is proposed to have a 4-bedroom system, per Engineered Flow-Reduction, for the house. A septic system field layout was completed based on the house location and property lines surveyed in the field.

The proposed Initial system for the house is a Pressure Manifold distribution using lines 1-6 totaling 375 feet of accepted product (EZ-Flow or Chambers). The repair field is a Pressure Manifold distribution using lines 7-11 totaling 350 feet of accepted product (EZ-Flow or Chambers). The septic and pump tanks for the house should be minimum 1200 gallons each with both tanks having risers.

Based on the findings during the field evaluation, the area on the attached map has at least 27 inches (initial) and 26 inches (repair) of provisionally suitable soils for a modified conventional septic system. The assigned LTAR for the site is 0.275 gal/day/ft² with a maximum depth of 13 inches with 8" of cover for the initial system installation of the drain lines due to slope correction. The assigned LTAR for the site is 0.275 gal/day/ft² with a maximum depth of 12 inches with 8" of cover for the repair system installation of the drain lines due to slope correction. The 8" of cover material should extend a minimum of 5' past the septic field before tapering begins.

Septic Installation:

The septic systems for the lot should be installed during dry soil conditions (no rain events within 72 hours). The septic systems should be installed on contour while maintaining all required setbacks.

Minimum Setbacks:

- **Septic and Pump Tanks (see septic design)**
 - 10' minimum from property lines
 - 5' minimum from house
- **Septic Lines (see septic design)**
 - 10' minimum from property lines
 - 5' minimum from house
- **Manifold's and D-Box's (see septic design)**
 - 10' from property lines
- **Supply Lines (see septic design)**
 - 5' minimum from property lines

Grading:

No grading should be completed within the initial and repair septic areas that change the natural grade of the area. There should be no cutting or filling within the septic areas as well. When grading the lot, no cuts of 2' or greater should be within 15' of the septic areas. If a cut is required near the septic area, keep the cut around 6-8 inches in depth.

HOUSE:

- Initial System: Pressure Manifold, lines 1-6 totaling 375' (see layout)
- Repair System: Pressure Manifold, lines 7-11 totaling 350' (see layout)
- 360 gal/day flow rate per Engineered Flow-Reduction (4-bedroom)
- 1200 gallon septic and pump tanks with risers
- 13" maximum trench depth with 8" of cover
- 0.275 LTAR
- No grading/filling septic areas
- No cuts >2' within 15' of septic areas
- Keep tanks and drain lines 10' from property lines
- Keep supply line >5' property lines
- Install in dry soil conditions (No rain events within 72 hours)
- Maintain natural contours when clearing the lot

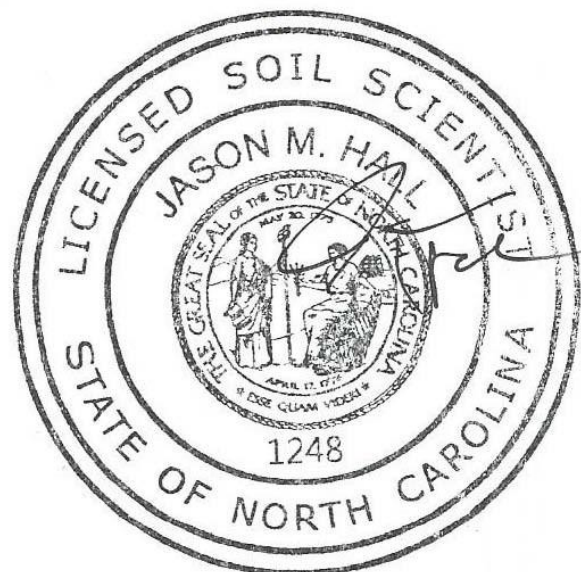
This letter discusses the location of provisionally suitable soils for subsurface wastewater disposal systems and does not guarantee the future function of any wastewater system on sites. Central Carolina Soil Consulting, PLLC is a professional consulting firm specializing in soil delineations and design for on-site wastewater disposal systems.

If you have any questions regarding the findings on the attached map or in this report, please feel free to contact me at any time. Thank you allowing Central Carolina Soil Consulting to perform this site evaluation for you.

Sincerely,



Jason Hall
NC Licensed Soil Scientist #1248



Encl: Soil Map & septic layout

Sheet:
Property ID:
Lot #: 73
File #:
ApplD:

**CCSC SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM**

Owner: Sword Development

Address:

Proposed Facility: Design Flow (.1949) 360 gal/day

Location of Site: Mornington lot 73

Water Supply: ☒ Public ☐ Individual ☐ Well ☐ Spring ☐ Other

Evaluation Method: ☒ Auger Boring ☐ Pit ☐ Cut

Type of Wastewater: ☒ Sewage ☐ Industrial Process ☐ Mixed

Applicant:

Date Evaluated: 7/1/2022

Property Size: 31, 271

Property Recorded:

P R O F I L E #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941		b PROFILE FACTORS				Profile Class & LTAR
			.1941 Structure/ Texture	.1941 Consistence Mineralogy	.1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	
1	R, 2%	Ap, 0-12	Gr, SL	VFR, NS, NP	7.5 YR 6/2, 15%	PS UN			PS .275
		Bt ,13-26	SBK, Clay	FI, SS, SP, SEXP					
		Bt2, 26-32+	SBK, Clay	FI, SS, SP, SEXP					
2	R, 3%	Ap, 0-13	Gr, SL	VFR, NS, NP	7.5 YR 6/2, 15%	PS UN			PS .275
		Bt, 13-31	SBK, CL	FI, SS, SP, SEXP					
		BC, 31+	Wk SBK, CL	FI, SS, SP, SEXP					
3	R, 3%	Ap, 0-9	Gr, SL	VFR, NS, NP	7.5 YR 6/2, 10%	PS UN			PS .325
		Bt, 9-37	SBK, SCL	FR, SS, SP, SEXP					
		Bt2, 37+	SBK, SCL	FI, SS, SP, SEXP					
4	R, 2%,	Ap, 0-8	Gr, SL	VFR, NS, NP	10 YR 6/2, 10%	PS UN			PS .325
		Bt, 8-32	SBK, SCL	FR, SS, SP, SEXP					
		Bt2, 32+	SBK, SC	FI, SS, SP, SEXP					

Description	Initial System	Repair System
Available Space (.1945)	Yes	Yes
System Type(s)	Accepted	Accepted
Site LTAR	.275	.275

Other Factors (.1946):

Soil Evaluation By: Jason Hall

Others Present:

Site Classification (.1948): PS

Site Evaluation By: Jason Hall

Others Present:

COMMENTS:

Sheet:
FILE #:

<u>Landscape Position</u>	<u>Group</u>	<u>Texture</u>	<u>.1955 LTAR</u>	<u>Structure</u>
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Foot Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay		PR-Prismatic
T-Terrace		Loam		
FP-Flood Plain	IV	CL-Clay Loam	0.4 - 0.1	
		SCL-Sandy Clay		
		Loam		
		SC-Sandy Clay		
		SIC-Silty Clay		
		C-Clay		

Consistence

Moist

VFR-Very Friable
FR-Friable
FI-Firm
VFI-Very Firm
EFI-Extremely Firm

Consistence

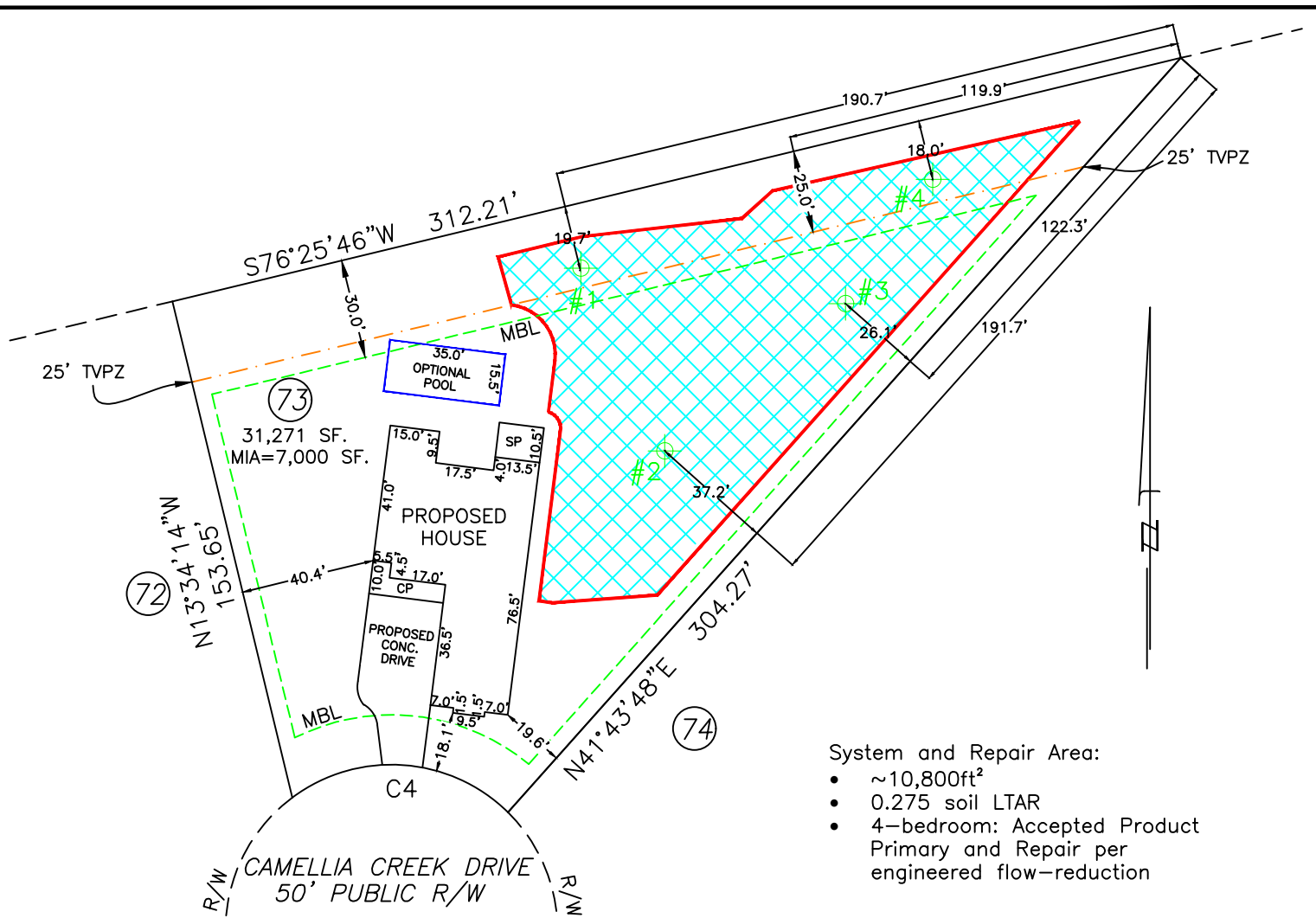
Wet

NS-Non-Sticky
SS-Slightly Sticky
S-Sticky
VS-Very Sticky
NP-Non-Plastic
SP-Slightly Plastic
P-Plastic
VP-Very Plastic

Mineralogy

SEXP-Slightly Expansive
EXP-Expansive

Sketch of Soil Evaluation Locations



System and Repair Area:

- ~10,800ft²
- 0.275 soil LTAR
- 4-bedroom: Accepted Product
- Primary and Repair per engineered flow-reduction

⊕ #1 = profile description locations

- *Keep tanks and drain lines 10' from property lines.
- *Not a survey.
- *Not a guarantee of a septic permit.
- *Keep supply lines >5' from property lines.
- *Some lines are flagged longer in the field than lengths indicate.
- *No grading septic area.
- *No adding soil within septic area
- *No rutting-up septic area
- *No cuts of >2' within 15' of septic areas

GRAPHIC SCALE

1" = 50'



Central Carolina Soil Consulting, PLLC
1900 South Main Street, Suite 110
Wake Forest, North Carolina 27587
Phone (919)569-6704 Fax (919)569-6703

Soils Map
Lot 73, Morningson Subdivision
Wake County, North Carolina

Job#: 1355
Drawn By: JR
Date: 04/20/2023
Revision: