Supervisor/Administrative Professional Checklist

New Septic ☑ New Well ☐ Use Existing ☐ Alteration ☐ Modified Plot Plan ☐

New Septic Fees Paid:

IP ($250.00) 2/25/16 LE Initials/Date

CA ($200.00) 1/4/18 LE Initials/Date

OP ($200.00) 1/4/18 LE Initials/Date

(CA and OP fees need to be paid before a building permit can be issued)

New Well Fee Paid: $550.00 _____ Initials/Date

Use Existing Fee Paid: $100.00 _____ Initials/Date

Alteration Fee Paid: $300.00 (Total) $200 (If use existing was paid)_____ Initials/Date

Modified Plot Plan Fee Paid: $100.00 _____ Initials/Date

Floor plans need to be submitted and reviewed before CA can be issued. ☑ Reviewed ☑ SAM 1-4-2018

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

Septic file completed. ☐ _____ Well file completed. ☐ _____

Send permit for signature. ☑ Signature received. ☑ LE

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

Certified operator contract is on file. ☐ _____

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	02/25/16	**Amount:**	250.00
Receipt #:	98681	**Tendered:**	250.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	ELLISLW		

Account Information

Account #: B58730
Contractor: TRUE HOMES LLC
Attn:
Address: 2649 BRECKONRIDGE CENTRE DR
Address:
City/State/Zip: MONROE, NC 28111

Item	Description	Permit#	Quantity	Unit Price	Total Price
0701	Improvment Permit App-Residen 8401 ASPEN COURT		1	250.00	250.00

----------Outstanding Balances----------

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
26,040.97					

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

Permit #: **30008046** GWS File #: **9398B** Tax Parcel #: **139-282-10**

- 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. The Construction Authorization is **NOT** transferable. 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):** 4/26/2021

Type of Installation: Residential - New System Lot Number: 34

Structure Type: HOUSE Size (ft^2): 4000 # Bedrooms: 4 # Occupants: 6

Building Foundation: Basement With Plumbing Water Supply: Municipal

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

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	.25	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	1000
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1440	Total Trench Length (ft):	480
Maximum Trench Depth (in):	14	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

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

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	.1	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	12	Trench Spacing (ft):	2	Absorption Area (ft^2):	4800	Total Trench Length (ft):	400
Maximum Trench Depth (in):	6	Depth of Media (in):	N/A	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: April Bumgarner Owner/Legal Agent: _____
Print Name

Signature: April Bumgarner, REHS Signature: _____

Date Issued: 4/26/2016

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

Permit #: **30008046** GWS File #: **9398B**

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.
- Additional soil cover, as specified on the plot plan, required over the drain field must be inspected and approved prior to issuance of an Operation Permit.
- This type of repair system requires the property owner to obtain a contract with a Certified Operator to perform routine inspections and maintenance on the system.
- This type of repair system requires periodic inspections by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- 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.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- Foundation drains shall be constructed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 15 feet from any foundation drain.

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: April Bumgarner

Signature: April Bumgarner REHS

Date Issued: 4/26/2016

Owner/Legal Agent: _____
Print Name

Signature: _____

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	01/04/18	**Amount:**	200.00
Receipt #:	108626	**Tendered:**	200.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	ELLISLW		

Account Information

Account #: B58730
Contractor: TRUE HOMES LLC
Attn:
Address: 2649 BRECKONRIDGE CENTRE DR
Address:
City/State/Zip: MONROE, NC 28111

Item	Description	Permit#	Quantity	Unit Price	Total Price
0734	Septic Construction Authorizat 8401 ASPEN COURT		1	200.00	200.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
4,933.46	11,531.23				

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	01/04/18	**Amount:**	200.00
Receipt #:	108625	**Tendered:**	200.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	ELLISLW		

Account Information

Account #: B58730
Contractor: TRUE HOMES LLC
Attn:
Address: 2649 BRECKONRIDGE CENTRE DR
Address:
City/State/Zip: MONROE, NC 28111

Item	Description	Permit#	Quantity	Unit Price	Total Price
0703	Septic Operational Permit 8401 ASPEN COURT		1	200.00	200.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
4,733.46	11,531.23				

Groundwater & Wastewater Services: Septic Project File & D

GWS File #:	9398B
WASPS App #:	8046
Primary ES assigned to project:	April Bumgarner
Secondary ES assigned to project:	
Project Type:	New System
Site Evaluation Information: .1939(a)(1) - Topography and Landscape Position Recorded?	Yes
Site Evaluation Information: .1940(a-g) - Slope % Recorded?	Yes
Site Evaluation Information: .1939(a)(2) - Texture Class Recorded?	Yes
Site Evaluation Information: .1939(a)(2) - Structure Type Recorded?	Yes
Site Evaluation Information: .1939 (a)(2) - Consistence Recorded?	Yes
Site Evaluation Information: .1939(a)(2) - Mineralogy Recorded?	Yes
Site Evaluation Information: .1939(a)(3) - Soil Wetness Condition Recorded?	Yes
Site Evaluation Information: .1939(a)(4) - Soil Depth to Rock or Parent Material Recorded when Encountered?	Yes
Site Evaluation Information: .1939(a)(5) - Depth to Restrictive Horizons Recorded when Encountered?	N/A
Site Evaluation Information: .1939(a)(6) - Sufficient Available Space Recorded?	Yes
Site Evaluation Information: .1937(m) - Are the Profile Locations Shown?	Yes
Site Evaluation Information: .1939(a) - Are the S/PS Profiles in system & in repair area?	Yes
Site Evaluation Information: .1939(d), .1955, .1956, .1957 - LTAR	Yes
Improvement Permit/Construction Authorization: .1937(g), 130A-336(a) - Proposed System Type stated - Initial	Yes
Improvement Permit/Construction Authorization: .1945(b) - Proposed System Type stated - Repair	Yes
Improvement Permit/Construction Authorization: 130A-336(a)(3) - System location identifiable by setbacks - Initial	Yes
Improvement Permit/Construction Authorization: .1937(g), .1945(b) - System components shown - Initial	Yes
Information Permit/Construction Authorization: .1945(b) - Repair area shown	Yes
Improvement Permit/Construction Authorization: .1937(f)(g) - Does System design match facility, flow & WW characteristics?	Yes
Improvement Permit/Construction Authorization: .1937(f)(g) - Is System design consistent with soil/site conditions?	Yes
Improvement Permit/Construction Authorization: .1937(f)(g) - Is the System located in the approved area?	Yes
Improvement Permit/Construction Authorization: 130A-336(a) - Number of Bedrooms, employees, seats, etc. indicated?	Yes
Improvement Permit/Construction Authorization: .1937 (g) - Trench depth correct?	Yes
Improvement Permit/Construction Authorization: .1937(g) - Trench width correct?	Yes
Improvement Permit/Construction Authorization: .19379(g) - Trench length correct?	Yes
Improvement Permit/Construction Authorization: 130A-336(a)(1) - Proposed/existing well shown?	N/A

Improvement Permit/Construction Authorization: 130A-336(a)(1) - Property line lengths shown?	Yes
Improvement Permit/Construction Authorization: 130A-336(a) - Facility/appurtenance setbacks shown from fixed points?	Yes
Corrections/modifications needed?	No
Comments:	
IA issued date:	
OP Issued date:	7-3-18 AP
Review performed by:	Jeremy Michael
Date performed:	4/28/2016

Created at 4/28/2016 9:43 AM by Michael, Jeremy
Last modified at 4/28/2016 9:43 AM by Michael, Jeremy

Close

9398B
8046 23 FEB '16 PM12:15

MECKLENBURG COUNTY
HEALTH DEPARTMENT

APPLICATION FOR A RESIDENTIAL SITE IMPROVEMENT PERMIT/ CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER SYSTEM, NEW WELL INSTALLATION, OR REPAIR OF EXISTING WELL

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

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

3. JOB LOCATION INFORMATION:

TAX PARCEL NUMBER: 13928210
STREET ADDRESS: 8401 Aspen Court
CITY: Mint Hill
STATE: NC ZIP: 28227
SUBDIVISION NAME: Oakbridge at Waterleaf
LOT #: 34 LOT SIZE (acres): 0.70
TOWNSHIP:
◉ MECKLENBURG ○ CORNELIUS ○ HUNTERSVILLE
○ DAVIDSON ○ CHARLOTTE ○ PINEVILLE
○ MATTHEWS ○ MINT HILL

4. BUILDING INFORMATION:

BUILDING TYPE:
○ SINGLE MOBILE HOME ○ MODULAR HOME
○ DOUBLE WIDE ○ MULTIPLE FAMILY
◉ HOUSE ○ OTHER _____
HEATED SQUARE FOOTAGE: 4,000
NUMBER OF BEDROOMS: 4
NUMBER OF OCCUPANTS: 6
FOUNDATION TYPE:
○ CONCRETE SLAB ◉ BASEMENT WITH PLUMBING
○ CRAWL SPACE ○ BASEMENT WITH NO PLUMBING

5. IF PLANNING TO EXPAND OR ALTER THE EXISTING SEPTIC SYSTEM PLEASE COMPLETE THE FOLLOWING SECTION: ☑ N/A

NUMBER OF BEDROOMS TO BE ADDED: _____ NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE: _____

6. WATER SUPPLY: ◉ MUNICIPAL ○ PRIVATE WELL ○ PUBLIC WELL ○ SHARED WELL ○ OTHER _____

7. PROPOSED USE OF WELL: ◉ N/A ○ IRRIGATION ○ POTABLE (DRINKING WATER) ○ OTHER _____

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

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

8A. RANK: 4 1 2 3 ____

9. DO ANY OF THE FOLLOWING APPLY TO THE PROPERTY IN QUESTION? IF "YES" PLEASE ATTACH SUPPORTING DOCUMENTATION.

BURIED CABLES, LANDFILLS, STUMPHOLES	○ YES ◉ NO	GRADING/SOIL REMOVAL PERFORMED	○ YES ◉ NO
EXISTING WASTEWATER (SEPTIC) SYSTEMS	○ YES ◉ NO	JURISDICTIONAL WETLANDS	○ YES ◉ NO
WELLS, SPRINGS, OR WATER LINES	○ YES ◉ NO	APPROVAL REQUIRED BY ANY OTHER PUBLIC AGENCY	○ YES ◉ NO
EASEMENTS OR RIGHT-OF-WAYS	○ YES ◉ NO	WASTEWATER OTHER THAN DOMESTIC SEWAGE	○ YES ◉ NO
CHEMICAL/PETROLEUM STORAGE TANKS	○ YES ◉ NO	KNOWN UNDERGROUND CONTAMINATION	○ YES ◉ NO
WASTE STORAGE	○ YES ◉ NO	GROUNDWATER USE RESTRICTIONS/VARIANCES	○ YES ◉ NO

10. WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? _____ ☑ UNKNOWN

11. WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? _____ ☑ N/A

12. PROPERTY OWNER:

NAME: True Homes
ADDRESS: 2649 Brekonridge Center Drive
CITY: Monroe
STATE: NC ZIP: 28079
WORK PHONE: (704) 238-1229
MOBILE PHONE: _____
FAX: _____
E-MAIL: cbryant@truehomesusa.com

13. OWNER'S LEGAL REPRESENTATIVE, IF APPLICABLE:

NAME: Septic Environmental Solutions, Inc. Kenneth Owens
ADDRESS: 3019 Spring Fancy Lane
CITY: Indian Trail
STATE: NC ZIP: 28079
WORK PHONE: (704) 502-5588
MOBILE PHONE: (704) 502-5588
FAX: (704) 684-1469
E-MAIL: septicenvsol@yahoo.com

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 12/15/10

14. SEPTIC SYSTEM PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Improvement Permit and Authorization to Construct shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for either sixty (60) months or is non-expiring depending upon the documentation submitted: complete site plan = 60 months, complete plat = non-expiring.

KLO (Initial here for septic system applications)

15. WELL PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Well Permit shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for a period of twelve (12) months from the date of issuance.

_____ (Initial here for well applications)

16. APPLICATION SIGNATURE SECTION:

ONLY COMPLETE APPLICATIONS WILL BE PROCESSED. A proper signature is required in order to process your application. Please review the application carefully and sign in the space provided below. A PROPOSED PLOT PLAN is required to be submitted with each application.

Septic Environmental Solutions, Inc. Kenny Owens — 2/22/16

Property Owner's or Owner's Legal Representative Signature — Date

---

OFFICE USE ONLY

O SURVEY PLAT TO SCALE SUBMITTED O SCALED SITE PLAN SUBMITTED O UN-SCALED SITE PLAN SUBMITTED

SEPTIC APPLICATION FEE RECEIVED: $ _____ DATE FEE RECEIVED: _____

WELL APPLICATION FEE RECEIVED: $ _____ DATE FEE RECEIVED: _____

APPLICATION PROCESSED BY: _____

GWS FILE NUMBER ASSIGNED: _____

APPLICATION ID NUMBER ASSIGNED: _____

COMMENTS:

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 12/15/10

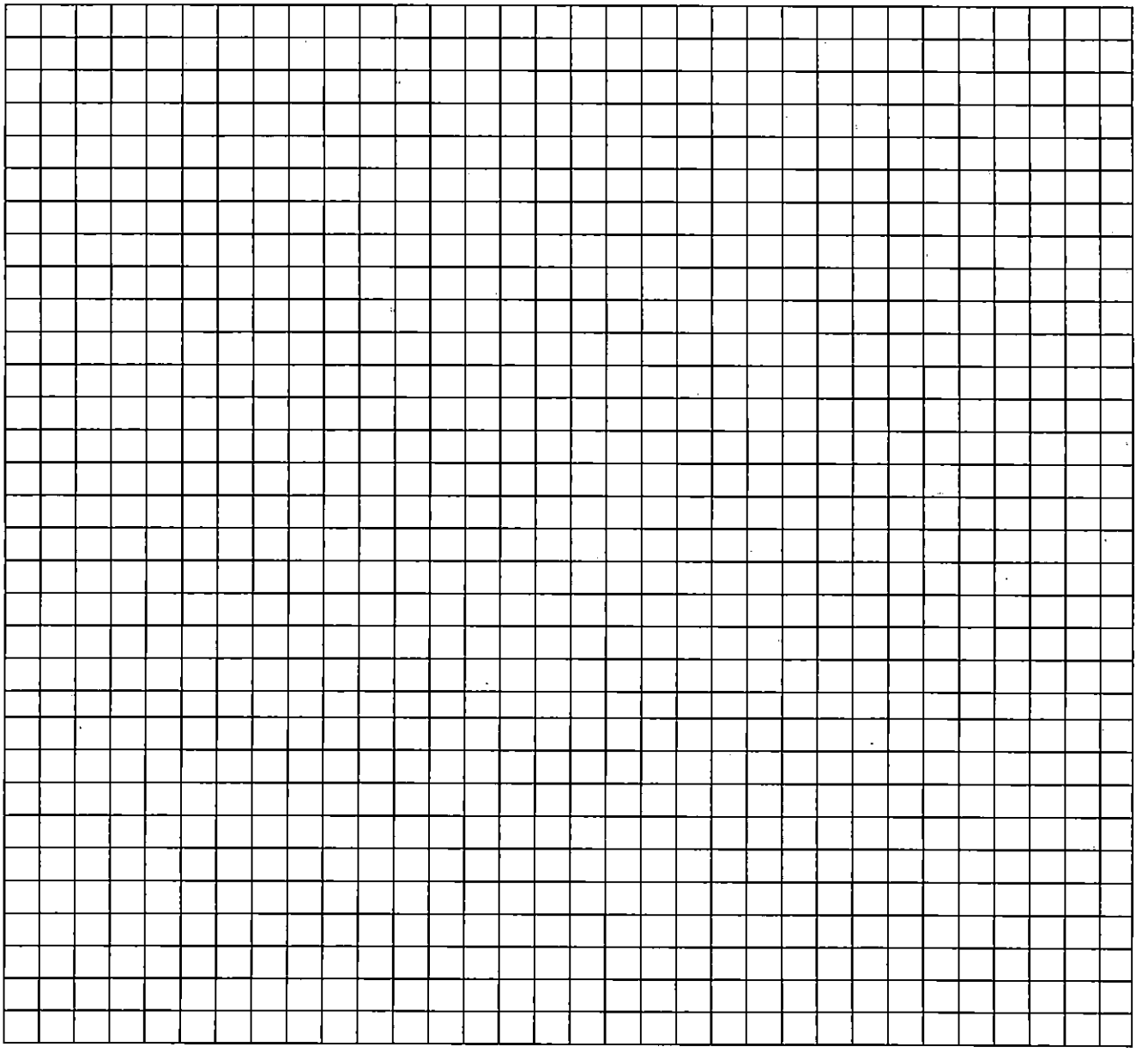
File #: _____

PROPOSED PLOT PLAN

A drawing showing the locations of the following items is required: existing and proposed property lines with dimensions, easements or right-of-ways, proposed building pad(s) or existing building footprint(s), all appurtenances (garage, driveway, deck, pool, etc.), location of existing or proposed well(s), location of existing or proposed sewer lines and sewage disposal systems, surface water bodies, and any aboveground or underground storage tanks. Provide names for all roads that adjoin the property.

Street Address: 8401 Aspen Court Tax Parcel #: 13928210

Subdivision Name: Oakbridge at Waterleaf Lot #: 34



Septic Environmental Solutions, Inc. Kenny Owens 2/22/16

Property Owner's or Owner's Legal Representative Signature Date

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 12/15/10

Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 1 of 2
Property ID: 139-282-10
Lot #: 34
File #: 9398B
AppID: 8046

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Property Owner: True Homes
Address: 2649 Brekonridge Center Dr, Monroe, NC 28079
Proposed Facility: 4 Bedroom House
Design Flow (.1949): 480 GPD
Location: 8401 Aspen Ct, Mint Hill, NC 28227
Water Supply: [ ] Public [ ] Individual [ ] Well [ ] Spring [X] Municipal
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

Applicant: Septic Environmental Solutions, Inc.
Date Evaluated: 3/8/16
Property Size: 0.7 ac
Property Recorded: Unknown

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	General Comments	Profile Class & LTAR	Maximum Trench Bottom Depth for 3' Wide Conventional Trench
Pit #1	FS 4%	0 - 10	gr CL	SS SP FR SEXP	2 chroma @ 43"	22	NA	NA		PS IV Drip @ 0.1	NA
		10 - 22	sbk C	S P FR SEXP							
		22 - 32	mass CL	S P FR SEXP							
		32 - 50	sbk CL	S P FR SEXP							
Pit #2	FS 3%	0 - 7	gr CL	SS SP FR SEXP	2 chroma at 38"	24	US	NA		PS IV Drip @ 0.1	NA
		7 - 24	sbk C	S P FR SEXP							
		24 - 44	mass CL	S P FR SEXP							
Pit #3	LS 12%	0 - 4	gr L	SS SP FR SEXP	>48"	30	NA	NA		PS IV 0.25	Need Cover 14"
		4 - 30	sbk C	S P FR SEXP							
		30 - 48	Rock w/ Soil Inclusions								
Pit #4	LS 12%	0 - 3	gr L	SS SP FR SEXP	>54"	54	NA	NA	rock and saprolite inclusions 30 - 54"	PS IV 0.25	36"
		3 - 44	abk C	S P FR SEXP							
		44 - 54	abk CL	S P FR SEXP							
Pit #5	LS 12%	0 - 6	gr L	SS SP FR SEXP	>52"	47	NA	NA	rock and saprolite inclusions 22 - 47"	PS IV 0.25	31"
		6 - 33	sbk/abk C	S P FR SEXP							
		33 - 47	abk CL	S P FR SEXP							
		47 - 52	Rock w/ Saprolite Inclusions								
Pit #6	LS 12%	0 - 3	gr L	SS SP FR SEXP	2 chroma at 39"	53	NA	NA	rock and saprolite inclusions 31 - 53"	PS IV 0.25	23"
		3 - 31	sbk/abk C	S P FR SEXP							
		31 - 53	abk SCL	S P FR SEXP							

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	IIIb	Va
Site LTAR (gpd/sq ft)	0.25	Drip 0.1

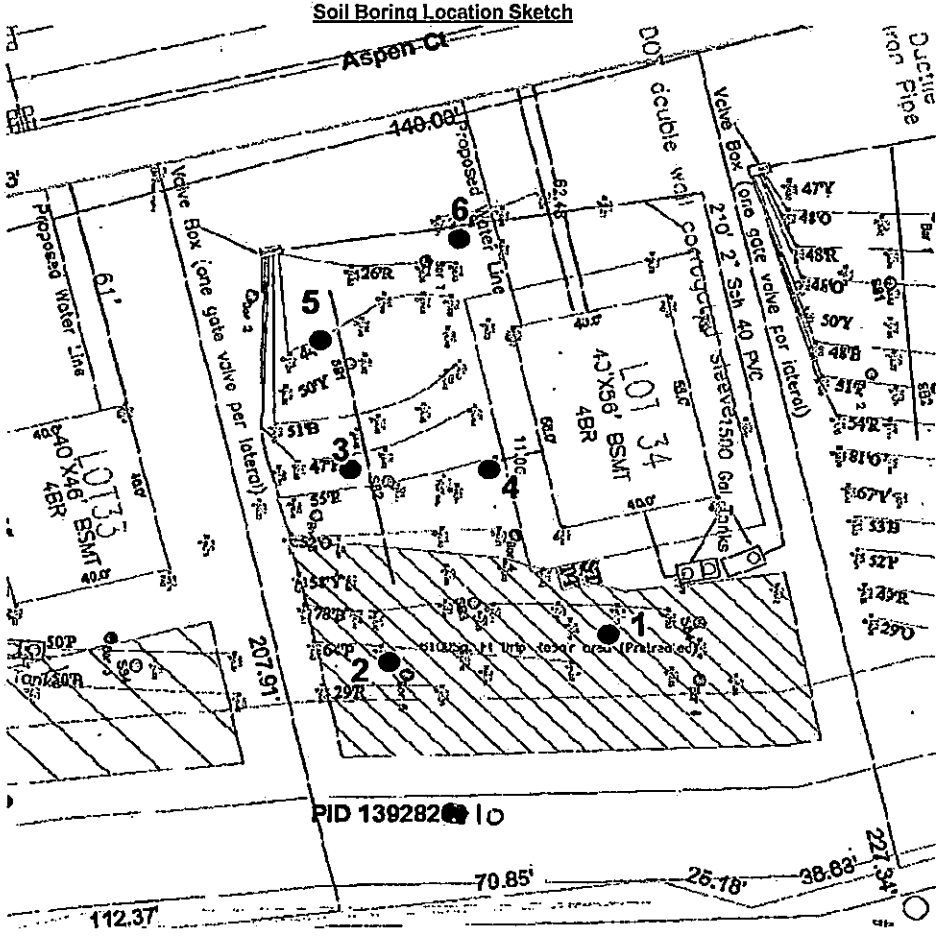
Other Factors (.1946): NA
Soil Evaluation By: Jacob Presley, REHS, LSS
Others Present:
Site Classification (.1948): PS
Site Evaluation By: April Bumgarner, REHS
Others Present: Kenny Owens

COMMENTS:

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	sg-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		mass-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
		SiCL-Silty Clay		
CV-Convex Slope		Loam		pr-Prismatic
T-Terrace				Sap-Saprolite
FP-Flood Plain		CL-Clay Loam		**Structure Prefixes**
D-Drainage Way		SCL-Sandy Clay Loam		w-weak
				m-moderate
				s-strong f-fine
				m-medium
		Silt		c-coarse
	IV	SC-Sandy Clay	0.4 - 0.1	
		SiC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	SS-Slightly Sticky	SEXP-Slightly Expansive
FR-Friable	S-Sticky	EXP-Expansive
FI-Firm	VS-Very Sticky	
VFI-Very Firm	NP-Non-Plastic	**Classification**
EFI-Extremely Firm	SP-Slightly Plastic	US-Unsuitable
	P-Plastic	PS-Provisionally Suitable
	VP-Very Plastic	S-Suitable
		NA-Not Applicable

Soil Boring Location Sketch



Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

Permit #: 30008046 GWS File #: 9398B Tax Parcel #: 139-282-10

- 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. The Construction Authorization is NOT transferable. 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):** 4/26/2021

Type of Installation: Residential - New System Lot Number: 34

Structure Type: HOUSE Size (ft^2): 4000 # Bedrooms: 4 # Occupants: 6

Building Foundation: Basement With Plumbing Water Supply: Municipal

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

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	.25	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	1000
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1440	Total Trench Length (ft):	480
Maximum Trench Depth (in):	14	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

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

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	.1	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	12	Trench Spacing (ft):	2	Absorption Area (ft^2):	4800	Total Trench Length (ft):	400
Maximum Trench Depth (in):	6	Depth of Media (in):	N/A	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: April Bumgarner Owner/Legal Agent: Cherita Bryant

Signature: April Bumgarner, REHS Print Name Signature: Cherita Bryant

Date Issued: 4/26/2016

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

Permit #: 30008046 GWS File #: 9398B

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.
- Additional soil cover, as specified on the plot plan, required over the drain field must be inspected and approved prior to issuance of an Operation Permit.
- This type of repair system requires the property owner to obtain a contract with a Certified Operator to perform routine inspections and maintenance on the system.
- This type of repair system requires periodic inspections by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- 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.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- Foundation drains shall be constructed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 15 feet from any foundation drain.

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: April Bumgarner

Signature: April Bumgarner, REHS

Date Issued: 4/26/2016

Owner/Legal Agent: Cherita Bryant

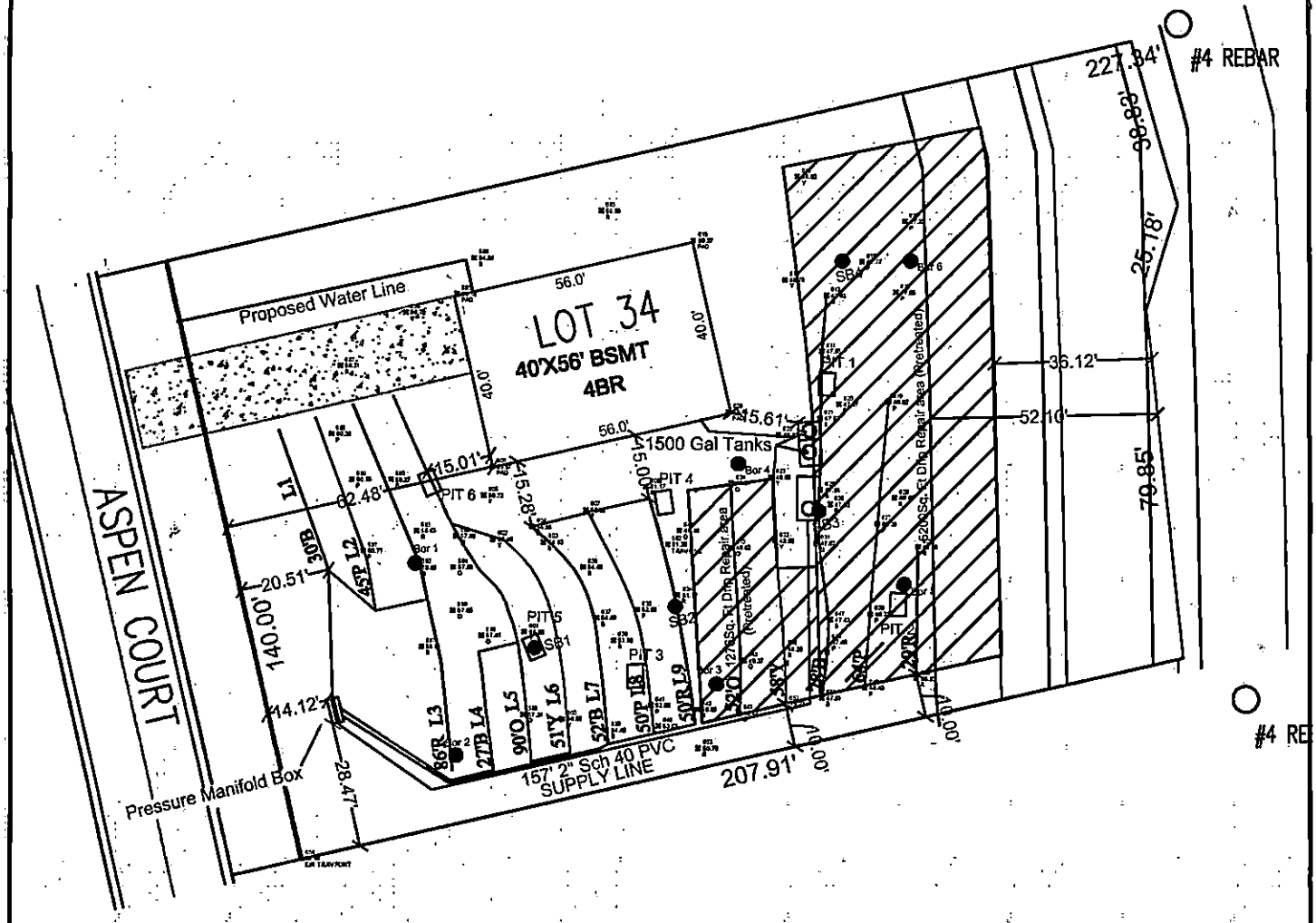
Print Name

Signature: Cherita Bryant

OAKBRIDGE AT WATERLEAF

Providence
PROVIDENCE LAND GROUP, PLLC
LAND SURVEYING • PLANNING • PROJECT MANAGEMENT
3716 PROVIDENCE ROAD SOUTH WAXHAW NC 28173
704.400.0117 • N.C. FIRM # P-0910 • S.C. FIRM # 4356

Providence Land Group, PLLC has field located the Septic Flags as shown on this plan.



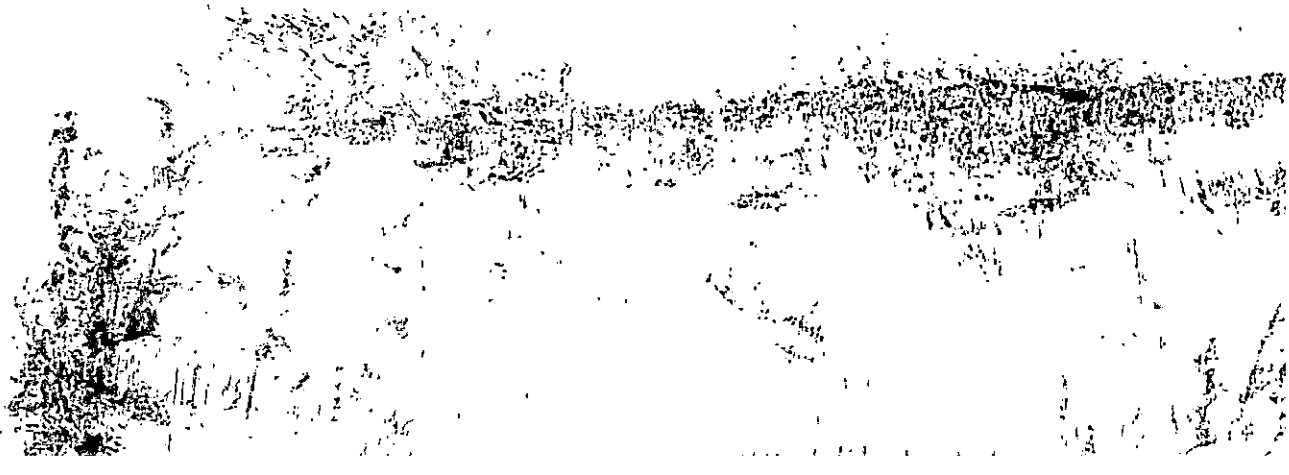
Parcel ID 13928210.00
8401 Aspen Court
Mint Hill, NC 28227

NOTE:
ENGINEERING ASPECT OF THE DESIGN WAS COMPLETED UNDER THE DIRECTION OF MR. G. CARTER MOORE III, PE.

SCALE
40 0 20 40
1 inch = 40 ft.

TANK INFORMATION:
1500 GALLON SEPTIC TANK, 1500 GALLON PUMP TANK
INSTALL TANKS TO AVOID SWALES OR LOW LYING AREAS!

SEPTIC ENVIRONMENTAL SOLUTIONS, INC. 3019 SPRING FANCY LANE, INDIAN TRAIL, NORTH CAROLINA, 704-502-5533	
PROJECT NAME: True Homes Oakbridge At Waterleaf Lot 34	DATE: 4/1/16
	DATE:
	DATE:
COUNTY: MECKLENBURG COUNTY, NC	DRAINFIELD LAYOUT MAP
SCALE: 1" = 40'	SHEET: 1 OF 4



FEE: 200.00
DATE: 1/5/2018

CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

MECKLENBURG COUNTY
GROUNDWATER & WASTEWATER SERVICES

FILE NUMBER: 9398B

PERMIT NUMBER: 30008046

PARCEL NUMBER: 13928210

JOB LOCATION INFORMATION

ADDRESS: 8401 ASPEN CT

CITY: CHARLOTTE **STATE:** NC **ZIP:** 28227

ISSUED TO: TRUE HOMES

CONSTRUCTION AUTHORIZATION ISSUANCE DATE: 1/4/2018

CONSTRUCTION AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NUMBER 30008046, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

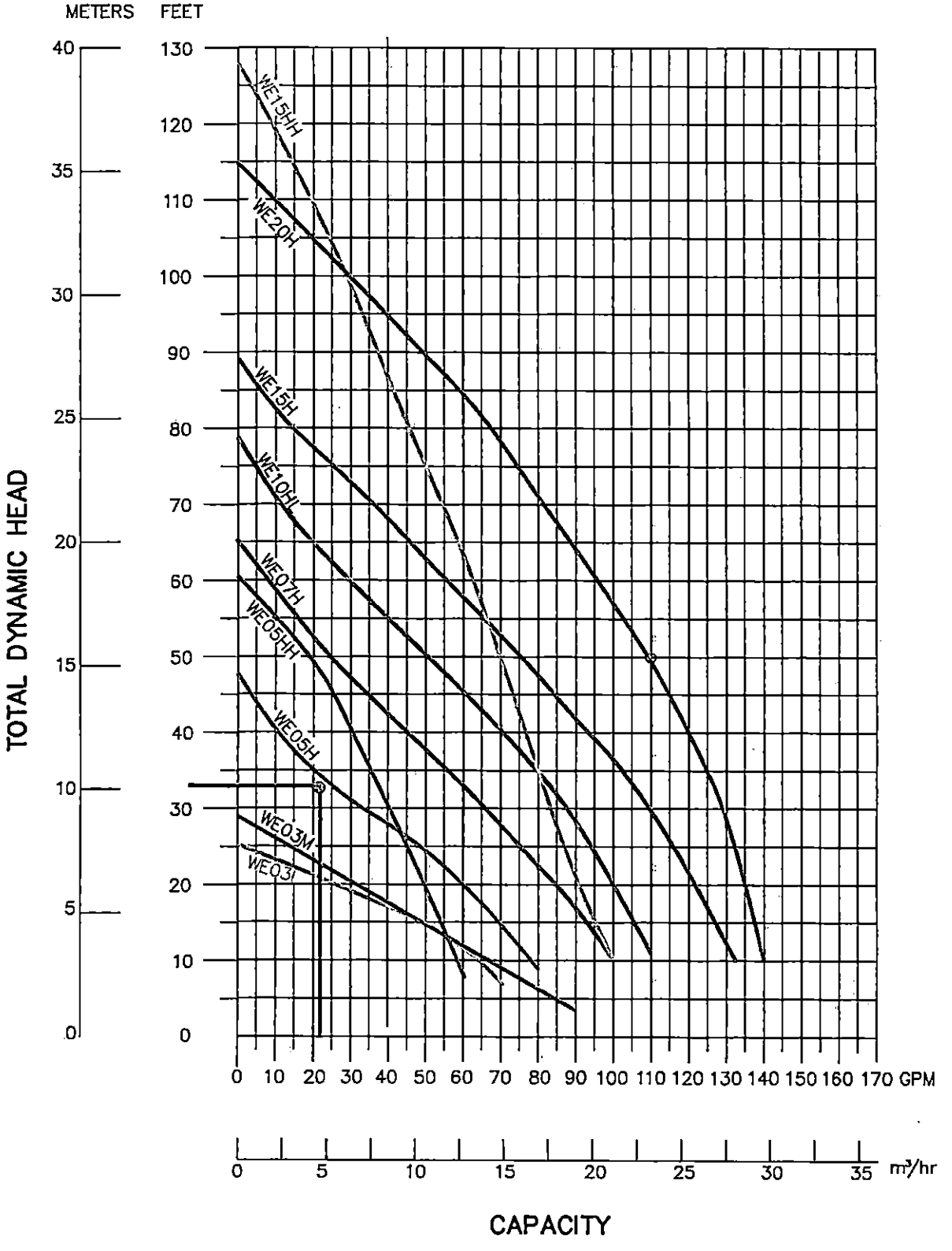
2. A PRE-CONSTRUCTION MEETING MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A LICENSED SEPTIC TANK CONTRACTOR WITH THE NORTH CAROLINA ONSITE WASTEWATER CONTRACTOR INSPECTOR CERTIFICATION BOARD.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS CONSTRUCTION AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. THIS CONSTRUCTION AUTHORIZATION AS PROVIDED IN G.S. 130A-335(f) AND G.S. 130A-336(b) SHALL BE VALID FOR A PERIOD EQUAL TO THE VALIDITY OF THE IMPROVEMENT PERMIT, AND MAY BE ISSUED AT THE SAME TIME THE IMPROVEMENT PERMIT IS ISSUED.

Authorized Agent Signature April Burrgame

PUMP CURVE
LOT 34



GOULDS PUMP PERFORANCE CURVES

Submersible Effluent Pump WE Series

SEPTIC ENVIRONMENTAL SOLUTIONS

Design Specifications Proposal Lot 34 (Parcel# 13928210)
Oakridge at Waterleaf, Mecklenburg North Carolina

Daily Design Flow:	480 gpd
Number of Bedrooms	4 bedroom
Basement or Crawlspace	Basement
Parcel ID and Address	13928210, 8401 Aspen Court, Mint Hill
Septic Tank STB-338	1,500 gal, Dellinger Precast Tank with effluent filter Poly Lock PL68
Pump Tank PT-141	1,500 gal, Dellinger Precast Tank
Primary System Loading Rate (LTAR)	0.25 gpd/ft^{2,} LTAR including Soils Evaluations were determined by Mecklenburg County Environmental Health and by Septic Environmental Solutions, Inc.
Primary System	Pump a pressure manifold at grade Accepted Infiltrator Chamber 25% reduction septic system, all lines to be a minimum of 9-ft on center with 3-ft wide trench widths. Trench depth shall be maximum 14-inches. Additional 18-inches of approved soil cover is required. See scale map for total length.
Number and Length of Lines	9 See attached drawing.
Total foot of Primary System	requires 480-ft
Distribution Device	Pressure manifold
Tap Number	3
Tap Size	½-inch SCH 40 PVC
Tap Material	SCH 40 PVC
Barrel Size	4-inch
Barrel Material	SCH 80 PVC
Maintenance Agreement Required	No
Dosing Volume	216 gal
Depth of dose draw down	7.44-inch
Supply Line	157-ft, 2-inch SCH 40 PVC

3019 Spring Fancy Lane• Indian Trail, North Carolina 28079
Mobile (704) 502.5588 • Fax (704) 684.1469

SEPTIC ENVIRONMENTAL SOLUTIONS

Pressure Manifold

Number of Tap to feed lines	No. of Lines	Line Length (ft)	Tap Size/Type	GPM Linear Ft	% GPM Linear Ft
1	(L1)+(L2)+(L3)	161	7.11 ½ sch 40	0.0441	94
2	(L4)+(L5)+(L6)	168	7.11 ½ sch 40	0.0423	91
3	(L7)+(L8)+(L9)	152	7.11 ½ sch 40	0.0468	1.00
	Total		21.33 GPM		

Flow rate through the septic system	21.33 gpm, use 22 gpm
Elevation head + pump height	Approximately 21-ft
Pressure head	2-ft
Friction head	3.84-ft
20% Contingency	5.37-ft
Total Head	32.21-ft, use 33-ft
Pump Type	22 gpm@33-ft of head; Use Goulds WE05H Pump with 120 volts or equivalent with compatible electrical.
Pump Run Time	8.82 minutes
Check Valve	Yes
Siphon Break Hole	Yes
Repair System Loading Rate	0.10 gpd/ft^2
Repair System	Pretreated drip, See attached drawing
Total Area square Foot	4800+ sq-ft, See attached drawing
Total foot of Line	Requires 2400-ft, See attached drawing

3019 Spring Fancy Lane• Indian Trail, North Carolina 28079
Mobile (704) 502.5588 • Fax (704) 684.1469

GWS Septic System Design Review

GWS File #:_____	Approved	Disapproved
Design Review:	☑	☐
Field Review: ABB	☒	☐

*Pr[illegible] not considered "APPROVED" until both sections above are [illegible] and indicate an APPROVED status.

SEPTIC ENVIRONMENTAL SOLUTIONS

PROPOSAL FOR AN OFFSITE RESIDENTIAL SUBSURFACE WASTEWATER TREATMENT AND DISPERSION SEPTIC SYSTEM

for

Oakbride Subdivision
Lot 34 (Parcel # 13928210)
Mecklenburg County, North Carolina

True Homes
2649 Brekonridge Centre Drive
Monroe, North Carolina 28110
704-234-1229

by

Septic Environmental Solutions, Inc.
3019 Spring Fancy Lane
Indian Trail, North Carolina 28079

Engineering aspect of the design was
completed under the direction of Mr. G. Carter Moore III, PE.

April 2, 2016

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PROPERTY INFORMATIOIN:

Resident Address: Oakbride Subdivision
8401 Aspen Court
Charlotte, North Carolina 28227
0.70 Acre, Lot 34
Parcel Identification # 13928210
Phone # 704-238-1229

DESIGNER/LICENSED SOIL SCIENTIEST INFORMATION

Designer Contact Information: Mr. G. Carter Moore III, PE #16835
3031 Spring Fancy Lane
Indian Trail, North Carolina 28079
Phone # 704-221-6930

Consultant Contact Information: Septic Environmental Solutions, Inc.
Mr. Kenneth L. Owens, NC LLS # 1134
3019 Spring Fancy Lane
Indian Trail, North Carolina 28079
Phone # 704-502-5588
Fax # 704-684-1469

BACKGROUND:

- The property was evaluated by the Department in Mecklenburg County Environmental Health in general accordance with the application.
- Septic Environmental Solutions Inc., Mr. Kenneth Owens, L.S.S. #1134, evaluated the property and submitted documentation to support at grade on site tax parcel 13928210 Acceptable 25% Chamber Reduction septic system for the initial drainfield area and a Pretreated Drip septic system located on site for the repair drainfield area.

  This system design is submitted to accompany the professional engineer and soil scientist's documentation, with the intent of securing an Improvement and Construction Authorization Septic System permit for the subject property.

KEY DESIGN PARAMETERS:

- **Design flow:** Proposed 480 gallons/day for a 4-bedroom septic system.
- **Specified secondary treatment system:** None
- **Long-term acceptance rate (LTAR):** LTAR of 0.250 Gallons per day per square foot (gpd/sf) for the initial septic drainfield and 0.100 gpd/sf for the repair septic drainfield as recommended by the Environmental Health Specialist of Mecklenburg County Environmental Department.
- **Drainfield:** The initial septic drainfield consists of at grade 480 linear feet located on-site and the repair septic drainfield consists of 2400 linear feet of located on-site.
- **Initial specified system:** Acceptable 25% Chamber Reduction

AUTHORIZING DOCUMENTS:

These specifications have been prepared in general accordance with the requirements of the following documents. Though all aspects of the design may not be specified to extreme detail, permitting and construction of the system must satisfy the authorizing documents:

- *Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, August 2007.*
- *Accepted Wastewater System Approval Number AWWS 2005-01-R4, February20, 2015.*
- *Design, Installation and Maintenance of the T & J Panel Wastewater Treatment System; Sixth Edition, published by T & J Panel.*
- *State and Local Code.*
- *All installers must provide certification for installation of any septic tank systems.*

SYSTEM OVERVIEW

- **Residence to septic tank:** Influent (raw sewage) will be conveyed by a 4-inch diameter, Schedule 40 PVC pipe. Cleanout access located immediately outside the residence. Plumbing installed in accordance with applicable Building Code.
- **Septic tank:** 1,500-gallon Dellinger Precast (STB-338). Both risers (Ezset or approved equal risers), with bases cast into concrete shall be completed 6-inches above finished grade. Outlet pipe shall be constructed of 4-inch diameter Schedule 40 PVC. Inlet into and outlet from septic tank shall be constructed of 4-inch diameter, Schedule 40 PVC piping and sloped in accordance with applicable Local Building Code to at least 1/8-inch fall per linear foot run.
- At the discretion of Septic Environmental, Inc., the septic system shall be tightness tested with water in accordance with the above referenced rules and regulations. Tanks shall be installed a minimum of 10-foot horizontal distance from the house foundation, and below the foundation level. In the event a sub-grade structure is present or planned for the site, the tanks must be located a minimum of 15 feet any from the basement wall.
- All piping in system shall be SCH 40 PVC. Unless otherwise specified.
- **Effluent filter:** PolyLock PL-68 or approved equal.
- **Pump tank:** 1,500-gallon Dellinger Precast (PT-141). Ezset or approved equal risers, with bases cast into concrete and completed at least 6-inches above finished grade.
- **Initial Drainfield Area:** The on-site initial septic drainfield consists of 480 linear feet of at grade Acceptable 25% Chamber Reduction septic system. Based on the topographc data, the initial drainfield lines shall be installed with maximum burial depths of approximately 14 -inches below the existing ground surface. If applicable in the design, addition 18 -inch soil cover is required over the drainfield area.
- **Pump Tank Control Panel:** SJE-Rhombus Model 112
- **Pump Model:** Golds WE05H, 120 volts.

NOTE: Prior to construction and all post installation inspection must be scheduled 5 days in advance, with the soil scientist, if applicable Professional Engineer (designer), construction contractor, owner (at the owner's option), any applicable inspectors/regulators.

PLANS AND DESIGN CRITERIA (SEPTIC AND PUMP TANKS)

The conveyance of the influent (raw sewage) for Lot 34 will gravity flow by a 4-inch Schedule 40 PVC pipe with access cleanouts from the existing residences to a minimum 1,500-gallon top-seam concrete precast septic tank located on the individual lot. The septic tank must be equipped with a PolyLock PL-68 or approved equal. Dellinger Precast of Denver, North Carolina, supplied the attached drawings of the septic and dosing pump tanks.

If applicable, sewer cleanout pipes will be installed at each bend into the sewer pipe of 45 degrees or greater, and will be spaced at 50 feet maximum along the sewer pipe and/or per plumbing code.

The effluent will flow gravity flow into a minimum 1,500-gallon top seam concrete precast pump tank located on the individual lot and then conveyed by pumping with a 2-inch Schedule 40 supply line to the initial drainfield area. Note: The top of each tank shall not be greater than 36-inches below grade. In the event greater than 36-inches of soil cover is required, a reinforced tank (traffic rated) shall be used. All tanks must meet the approval by North Carolina Department Environmental Quality (DEQ) and soil back-filled around the tanks to minimize settlement. Any settlement observed within one-year shall be rectified by the System Installation Contractor. It is the responsibility of the septic tank installation contractor to thoroughly inspect each septic and pump tank prior to accepting delivery. All pipe penetrations into the tank shall be rubber boot (i.e. C-293 Boot with a stainless steel strap).

If deemed necessary by the designer, water-tightness testing of septic and pump tanks shall be demonstrated by a 24-hour leakage test conducted at the installation site. A water level change of ½-inch or more, within a 24-inch riser, over 24-hours, or visual observation of leakage shall be cause for failure of the water-tightness test. Initial water level shall be to 2-inch above the riser/adapter seam.

All access risers and tank lids, shall be installed a minimum of 6-inches above finished grade to prevent surface/stormwater from entering the tanks. The surface grade around the aforementioned components should be compacted and sloped to provide positive drainage away from the tank. Watertight access risers and locking lids, (such as Orenco, EZ-Set or approved equal), shall be installed on all tank access ports for safety and the prevention of water entry. All Risers on the septic and pump tank shall be 24-inch diameter or greater. The aforementioned Septic Design Components including but not limited to: the septic tank, effluent filter, pump tank (dose tank), must comply with applicable State and Local Codes.

PUMP TANK AND SUPPLY LINE SPECIFICATION

Provide pumps, piping and controls as indicated on the approved drawings. The pumps, piping, and controls shall be installed as required by NCDEQ On-site Wastewater Section, Mecklenburg County Health Department, and any other applicable local and state codes.

1. Pumps shall be Goulds Pump Co submersible effluent pumps, or approved equalivaent installed per the approved plans. All submersible pumps shall be equipped with a rope or corrosion-resistant chain attached to each pump enabling pump removal from the ground surface without requiring emptying or entering the tank.
2. The pump discharge piping in the pump tank shall be constructed of 2-inch diameter, Schedule 40 PVC. All fittings used must be pressure type fittings and solvent welded using the appropriate PVC cement for each application. All fittings and valves shall be of compatible corrosive-resistant material. All PVC pipe and fittings shall be PVC Schedule 40 type 1 rated for pressure applications. All glued joints shall be cleaned and primed with PVC primer prior to being glued. Saw cutting PVC pipe shall be followed by cleaning all shavings and/or sawed edges. During system construction, all PVC piping in the work area any open ends shall be covered with duct tape to prevent debris from entering the pipe. Care must be taken to keep all construction debris from entering pipes.
3. Prior to gluing joints, the Installation Septic Contractor shall inspect the PVC piping and remove any observed construction debris.
4. All pump discharge piping shall include a threaded PVC Union and PVC Check Valve for easy removal of the pumps for maintenance or replacement with a PVC check valve. Both shall consist of Schedule 40 PVC pressure type and solvent weld. The discharge piping Union shall be located within 18-inches of the top of the riser on all pump tanks.
5. <u>Force mains (if applicable)</u>
    A. Force mains and supply lines shall be installed with the size and materials as indicated on the approved plans (Attached) and be cleaned with PVC pipe cleaner and welded utilizing the appropriate PVC cement for each application. All supply lines shall be laid to the line and grade as indicated on approved plans. The supply line from the pump tank shall be 2-inch PVC Schedule 40 (approximate length of supply line is 224 feet) and shall be placed in a 4-inch diameter Schedule 40 PVC sleeve and have a minimum of 30-inches of *compacted* fill over the top of the 4-inch pipe where it crosses any paved portion of any street. If grades are not provided then the minimum burial depth shall be 36-inches. Supply lines shall include cleanouts at the end of each line and at least every 300 ft. Air release valves must be provided at any high spots along the force main. A coated locating wire, #12 THHH or larger, shall be installed along the entire length of all force mains. The wire shall begin at the pump and terminate at the end of the force main.

6. Water and Sewer Line Separations
    1. Whenever possible sewer should be constructed at least 10 feet horizontally from any existing or proposed water main. If this spacing is not possible, ductile iron pipe is required.
    2. Whenever it is necessary for a water main to cross above the sewer line and a vertical separation of 18-inches cannot be maintained, then the sewer line shall be ductile iron pipe extending a minimum of 10 feet each side of the water line. Whenever a sewer line crosses above a water main, the sewer must be ductile iron pipe extending a minimum of 10 feet each side of the water line.
    3. When sanitary sewer crosses storm sewer of storm drains, allow 1 foot of vertical separation between pipes. If this is not feasible, ductile iron sanitary sewer pipe extending a minimum of 10 feet each side of storm sewer will be required. For storm sewers 24-inches in diameter and larger, where clearance above sanitary sewer is less than 1 foot, concrete piers on each side of sanitary sewer to support storm sewer will be required, in addition to ductile iron pipe.
    4. The minimum setback between any storm drain underneath any paved road or street to any portion of the drainfield shall be 25 feet.
    5. If applicable, valves shall be cast iron as per AWWA C500 for a working pressure of 150 psi, or equal.
7. The Installation Contractor shall locate all underground utilities, and is responsible for repairing all damages his organization causes to any part of the property.
8. Force mains greater than 1,000-feet shall be tested in the manner set forth in Section 13 of AWWA Standard C-600. The Installation Contractor will furnish his own gauges and perform the test at no additional cost to the Owner. Before final acceptance, the force main shall be filled with water, care being taken to expel all air. A pressure test of 150 pounds per square inch (psi) shall be applied to the line at the test pump and shall be maintained at that pressure for a minimum period of two consecutive hours. All defective material found will be replaced by the Installation Contractor. All leaking joints shall be made tight. The pipe

installation will not be accepted unless and until leakage, evaluated on the pressure test of 150 psi for 2 hours, does not exceed 10.0 gallons per day per mile of pipe per inch of nominal diameter.

PUMP TANK CONTROL PANEL SPECIFICATION

1. Pump Control Panels shall be NCDEQ and Mecklenburg County approved. Control panels shall be demand dosing SJE-Rhombus Model 112 as specified in the attached plans. Control panels shall include a Nema 4X enclose, cycle counter, elapsed time meter, audio/visual alarm, locking clasp, pump on/off switch and a high water alarm switch. The pump and controls shall be provided with manual circuit disconnects with a watertight, corrosion resistant, Nema 4x rated control panel. The panel and control equipment shall include lighting protection, and protected from unauthorized access but remain accessible at all times to the system operator. The control panel must be securely mounted outside, adjacent to the pump tank riser, at a minimum of 12-inches above finished grade. There shall be two electrical circuits for the pump tank controls, one for the pump and one for the alarm controls. All electrical work shall meet or exceed all applicable State and Local Codes. If applicable, the Installation Septic Contractor shall provide to the Project Engineer cut-sheets of all control panels for approvals.
2. The level controls (float switches) shall be installed as indicated on the approved plans (Attached). Level controls (floats) shall be by SJE Rhombus Controls (or approved equal), mercury-activated, narrow-angle float switch designed to activate pump controls and alarms. Float switch tie downs must be made of a corrosion resistance material (per NCDEQ, all metal in the tanks shall be stainless steel). All floats shall be mounted on a separate "float tree" rather than the pump supply line (see pump tank detail).
3. All electrical power cables and level controls shall be installed in waterproof conduits. All pipe openings shall have moisture seals around all wires in each conduit, including walls, floors, roofs, and all cuts or patched areas, which are subject to moisture penetration. This also applies to the joints around each risers.

DRIANFIED AREA PREPARATION

The location of the proposed drainfields areas and the proposed septic and pump tanks have been marked on-site by colored metal wire flags. Prior to any installation, the County has to approve the proposed drainfield areas and it is the responsibility of the Installation Septic Contractor to-verify drainfield area elevations per the design plan. Note: Once approved by the Environmental Health

Specialist, it is highly recommended that the entire drainfield areas be isolated as much as possible from *any* construction traffic. Under no circumstance shall any construction take place within the drainfield areas if the soil is wet. If any doubt, the Installation Septic Contractor shall contact the Environmental Health Specialist requesting permission to proceed with any installation. All vegetation is to be cleared with minimal site disturbance. At not time should equipment be parked, or materials be stored within the boundary of the drainfield areas.

Site disturbance shall be minimized by limiting activity to any septic drainfield aeas. Any drainfield grading shall be performed using lightweight machinery to provide positive surface drainage. The Installation Septic Contractor shall minimize site disturbance and secure an aggressive turf cover for erosion control and stability. If large trees must be removed from the site, these trees shall be removed by hand or by lightweight machinery. Trees shall be cut flush with ground surface. No grinding or stump removal shall be conducted. After the drainfield lines have been installed, the drainfield areas shall be secured from erosion by establishing an aggressive turf cover. No activity or storage of any equipment or machines shall be performed or placed on any part of the drainfield areas. Site protection is critical. No cutting or filling within 20 feet of the drainfield areas other than what's deemed necessary for the proper installation of the septic and pump tanks septic drainfield lines.

INITIAL DRAINFIELD AREA INSTALLATION

The supply line from the pump tank conveys the effluent to the pressure manifold box which has control valves (gate valves) for each lateral distribution line. From the pressure manifold box the effluent flows into drainfield lines and into the trenches. Each drainfield trench shall be constructed with the centerlines located 9 feet apart. Each trench shall be advanced to a maximum 14 depth of inches. Trenches shall be constructed 3 feet wide and shall be carefully excavated so the bottom elevation does not fluctuate more than 2-inches from the highest to the lowest points of elevation within the trench. If the bottom elevations need any adjustments following excavation, this may be conducted by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial excavation. All fine grading within the trenches will be done by hand using small tools such as shovels and rakes. No loose material shall be left in any trenches.

Note: Gravel shall be placed under the bottom of the valve box to ensure that any water accumulation inside the valve box will be properly drained through the gravel. Each lateral should be contained within one manifold box as specified on the design plans. The pump tank supply line conveys the effluent to the supply manifold which conveys the effluent into the lateral distribution

lines and into the proposed drainfield trenches. It is the responsibility of the Installation Septic Contractor to install the Acceptable 25% Chamber Reduction septic system per the *manufactures specifications*.

- Do not remove large trees or stumps.
- Where large trees or stumps obstruct drainfield lines, route lines around the trees and stumps. If the drain lines are routed around a tree, the impacted drain line shall be constructed on solid piping in the impacted area.
- All landscaping, filling and site drainage completed before and after the installation must be done in a manner to ensure the integrity of the soil absorption system. Runoff stormwater shall be directed away from the drainfield.
- All drainfield construction shall take place during dry weather. No activity other than prior authorization by the Licensed Soil Scientist and Designer shall be allowed in the drainfield areas while the soil is wet.
- Within 3 days (no wet condition) after completion of the *complete* septic system installation and final inspection and approval by the Licensed Soil Scientist and Designer shall the drainfield areas be planted with grass and covered with light mulch and straw in order to prevent erosion.
- In a drought season, a tolerant grass mix should be planted and maintained. Erosion control measures such as seed, straw, mulch and netting or other suitable means should be employed to prevent erosion until grass is established.

TESTING AND START UP PROCEDURES

The Installation Septic Contractor shall provide one day volume of clean water for startup. The septic shall only be checked once all components of the septic system have been properly installed. With the electrical power turned off, the water level in the tank shall be raised high enough to activate the high water alarm float switch. When the high float switch activates, the main electrical power shall be turned on. The alarm, alarm light and pump should activate at this time. All fittings and piping shall be pressure tested under alarm conditions. Once completed, the drainfield areas shall be graded to shed surface water with additional clean soil as necessary. Following final grading, fescue or other turf cover shall be planted on the drainfield. In cold weather climates, installer shall follow all "cold weather installation" techniques. Refer to local standards.

OPERATION AND MAINTENANCE

The level of maintenance will vary with the complexity of the system and water use habits of the users. Fats, oils, bath oils, greases, paint, solids, water softener backwash solution, water from hot tubs and other constituents that can clog and foul collection and disposal equipment should not be disposed of in the septic drains. Bathroom fixtures cannot be allowed to leak as this could result in excessive flows and potentially lead to hydraulic overloading and subsequent failure of the drainfield areas.

The drainfields and any areas directly up gradient cannot be watered by lawn irrigation systems or other means as the soils may become hydraulically overloaded. The drainfield areas should be maintained to prevent over growth of vegetation. Any damp areas, leakages or malfunctions should be addressed immediately. Divert gutter downspouts and surface water runoff away from the septic tanks, pump tanks and from all areas of the drainfields. Septic tanks and if applicable any other treatment tanks should be pumped whenever the sludge and scum occupy one third of the capacity of the first chamber of the septic tank.

LANDSCAPING

- The drainfield shall be shaped to shed rainwater and be free from low spots. The entire areas of the drainfield should be planted with grass as soon as possible to prevent erosion. The soil should be properly placed, limed (if necessary) and fertilized prior to planting. After applying grass seed, the drainfield area should be heavily mulched with straw or other suitable material.

UTILITY CONFLICTS

- The builder and property owner must take special care in planning for water, power, gas, telephone and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed initial drainfield area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage. If there are any questions regarding preferred routes, contact the local or state agency as soon as possible. Lawn irrigation must not be installed in the septic drainfield areas.

SUGGESTIONS TO THE HOMEOWNER

- No garbage disposals.
- If you are planning to use a garbage disposal, you should plan to have your septic and pump tank cleaned out annually.
- Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never by put into a septic tank.
- Used motor oil or any oily liquids should not be disposed of in a septic tank.
- Be aware of the amount of water that you are using in your business. Water saving fixtures and devices can be installed on sinks, toilets and showers to reduce the volume of wastewater that you are sending to your drain field.
- Run dishwashers and washing machines only when you have a full load.
- Use liquid detergents. Powdered detergents have binding agents in them that can precipitate in the wastewater disposal system.
- Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drain field.
- Divert gutter downspouts and surface water runoff away from the septic and pump tanks.
- Do not use chemical additives in your system. Several studies indicate that they do not increase the biological activity that naturally occurs in the septic system and, in some cases have been found to be detrimental to the biological activity of a system.
- Finally, taking good care of your septic system will help to assure that you experience years of trouble free service at a relatively low cost. On-site wastewater treatment and disposal is still the most environmentally friendly method of treating residential/commercial waste and you should keep your system in use for as long as it is properly functioning!

LIMITATIONS

These specifications have been prepared for the excusive use of the contracted client and their designated agents for this specific project. The findings discussed herein are relevant to the subject property and should not be relied upon to represent conditions on other properties.

These findings reflect anticipated variations in subsurface conditions intermediate of sample locations and in areas of the project site not evaluated. Should future activities indicate that subsurface conditions differ substantially from anticipated variation, it may be necessary to re-evaluate the current recommendations and conclusions.

These services have been provided in accordance with generally accepted local and state codes and design practices and are subject to and limited by the terms and conditions of Septic Environmental Solution, Inc. agreement for the aforementioned practices. No other warranty, expressed or implied, is made. The contents of this report should not be construed to indicate a recommendation to purchase, sell, or develop the subject property.

The evaluation performed, data developed, and findings presented are based on knowledge and interpretation of the current laws and rules governing all septic systems. Septic Environmental Solutions, Inc. does not assume responsibility for assuring compliance with the laws, rules, and permit conditions regarding system location, installation, operation, maintenance, monitoring, reporting, and repair. That responsibility remains with the entity owning or controlling the wastewater system and the local government regulating these types of septic systems.

This report does not constitute or imply approval or denial any septic system. The permitting of the septic system is the responsibility of agents authorized by the State of North Carolina as described in Rule .1938. If this report is provided to a third party, it must be copied or transmitted in its entirety, including all text, attachments, and enclosures.

Respectfully,

Septic Environmental Solutions, Inc.
Kenneth L. Owens
Licensed Soil Scientist #1134

ATTACHMENT A
(SOIL PROFILE DESCRIPTIONS)

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

Sheet 1 of 1
PROPERTY ID #: 132216
COUNTY: Mecklenburg

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
(Complete all fields in full)

OWNER: True Homes
ADDRESS: 2649 Rocky Ridge Custer Dr. Monroe NC
PROPOSED FACILITY: 4 BR SFR
LOCATION OF SITE: Lot 34

APPLICATION DATE: 4-1-16
DATE EVALUATED: 1-19-16
PROPERTY SIZE: Lot 34
PROPERTY RECORDED:

PROPOSED DESIGN FLOW (.1949): ~~360~~ 280GPD

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) .1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	LB LL	0-9	GR/WK/LOAM	FR/SS/NP/NEP	2.5YR 4/4	36 Rest	NA	36"	0.30
		9-20	SBK/WK/Mod clay	FI/SS/SP/NEP	2.5YR 4/4				
		20-36	SBK/WK/Mod Cl clay	FI/SS/SP/NEP	2.5YR 4/6				
		Rest Termination							
2	LB LL	0-7	GR/WK/LOAM	FR/SS/NP/NEP	5YR 4/6	10YR 4/6 48"	C 48"	48"	~~0.25~~ 0.225
		7-36	SBK/WK/Mod clay	FI/SS/SP/NEP	2.5YR 4/6				
		36-48	SBK/WK/Mod Clay	FI/SS/SP/NEP	10YR 5/6 SiCl				
		48	SAP		48" K.O	48"	SiCl LOAM NA		
3	LB LL	0-23	SBK/WK/Mod Cl clay	FR/FI/SS/SP/NEP	2.5YR 4/4	Restrictive	NA	48"	~~0.25~~ 0.25
		23-48	SBK/WK/SiCl LOAM	FR/SS/NP/NEP	2.5YR 3/4				
					48"				
4	LB LL	0-20	SBK/WK/Mod clay	FI/SS/SP/NEP	2.5YR 4/4	32	NA	32"	~~0.25~~ 0.225
		20-32	SBK/WK/SiCl LOAM	FR/SS/NP/NEP	5YR 4/3				

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	395	1745
System Type(s)	LP Pond	LPP-Pond ARP
Site LTAR	~~0.225~~	0.1325

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948):
EVALUATED BY:
OTHER(S) PRESENT:

COMMENTS:

Updated February 2014

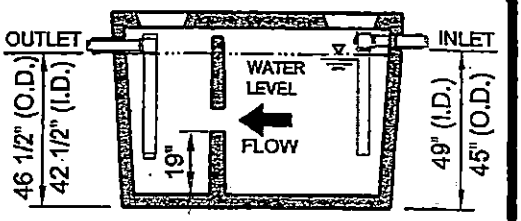
ATTACHMENT B
(SITE PLAN LAYOUTS)

ATTACHMENT C
(DELLINGER TANK SCHEMATICS DRAWINGS)

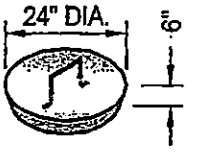
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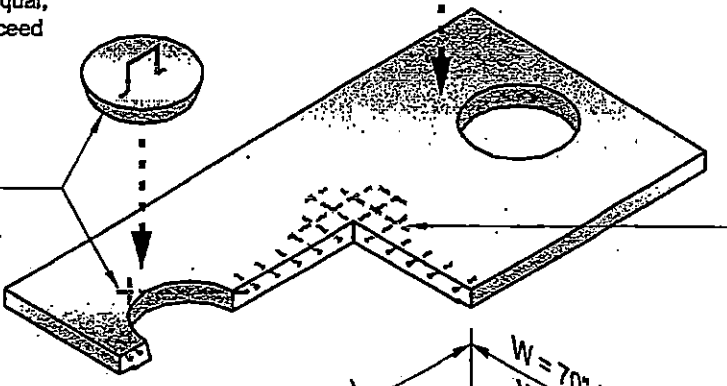
GENERAL NOTES:

1. Design specifications conform to latest ASTM C1227 specifications "Precast Concrete Water and Wastewater Structures"
2. Concrete compressive strength 4,000 psi minimum.
3. Steel reinforcing design to conform to the requirements of ASTM C890 specifications for "Structural Design Loading for Water and Wastewater Structures" and shall utilize grade 60 re-bars conforming to the requirements of ASTM A615 or WWF conforming to the requirements of ASTM A185 or both. Place Additional reinforcing at all openings.
4. Optional EZ set lid cast in place. Supplied by Dellinger Precast. To be field adjusted using approved methods by contractor.
5. Pipe penetration locations as per job requirements. Pipe inlet and outlet locations to have PSX Direct Drive boots or equal. Pipe Inlet locaions (typical 3 sides) to be knock out pannels. Effluent Filter supplied by Dellinger. Inlet Tee & Pipe supplied by contractor.
6. Joints to be sealed with ConSeal CS102. butyl rubber joint sealant or equal. Sealant meets or exceeds the requirements of latest federal specification SS-S-0021(210-A), AASHTO M-198B, and ASTM C-990-91.
7. Lift Insert / Lift Eye Pin by M.A Industries or equal, Cast-in by Dellinger Precast. Lifts meet or exceed OSHA requirements.
8. Method of manufacture is Wet Cast.
9. Sections are monolithic. Weights:
   Top Slab 3,134 ± lbs.
   Base Section 9,751 ± lbs.
10. I.D. = Inside dimension
    O.D. = Outside dimension
    L = Length
    W = Width
    H = Height

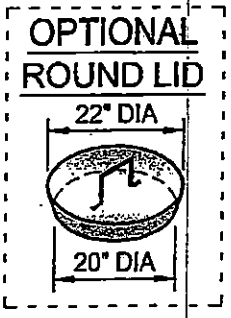


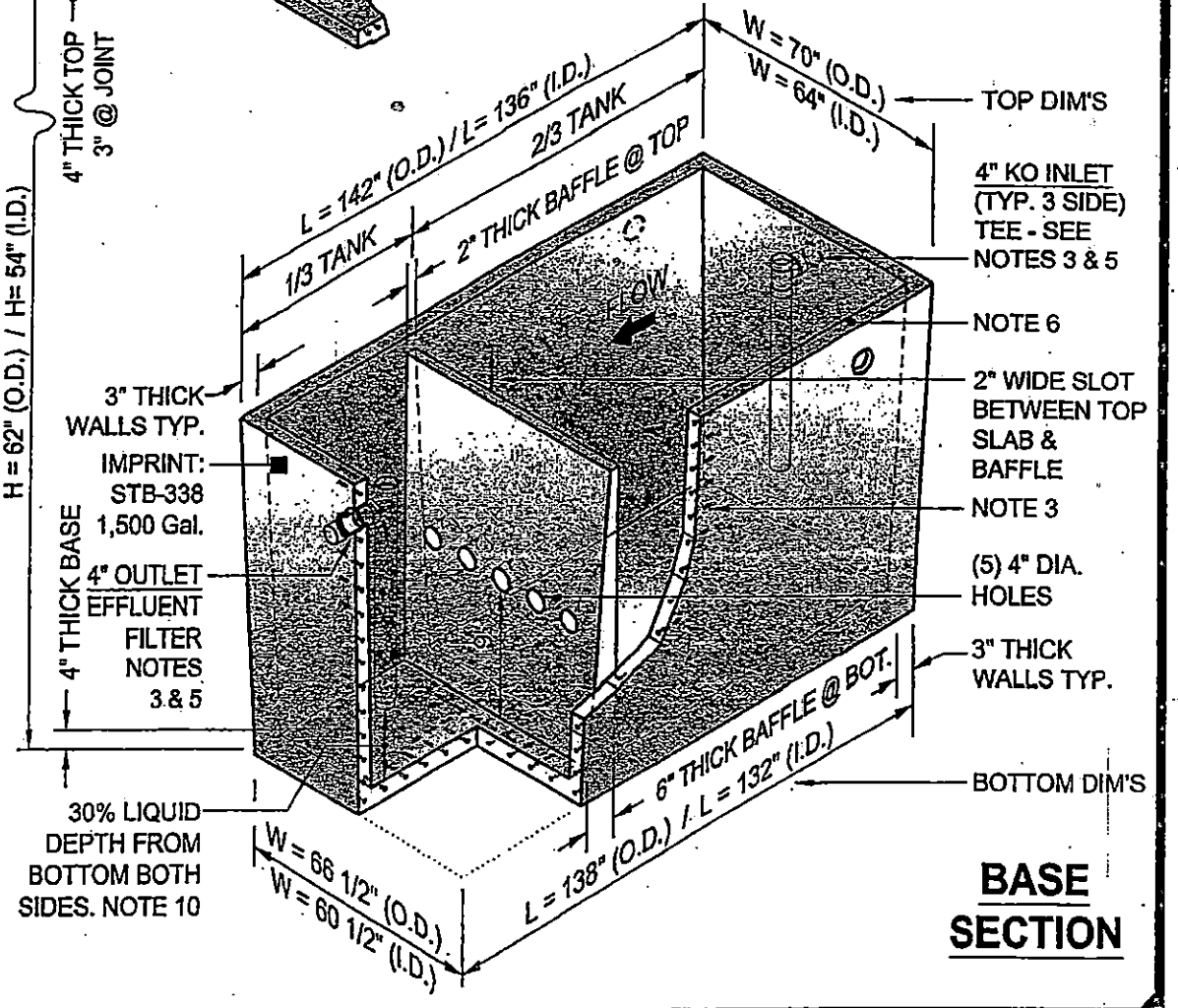
ELEVATION





TOP SLAB





BASE SECTION

DELLINGER PRECAST
4531 North Hwy 16 • Denver, N.C. 28037 • Phone: 800-948-1666 • 704-483-2868 • Fax: 704-483-2363

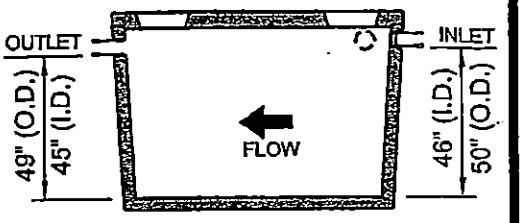
1,500 Gallon (Top Slab) SEPTIC TANK

Scale: Not To Scale
Revision Date: February 2008
Detail # ST-1,500-TS

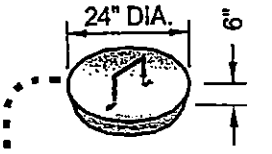
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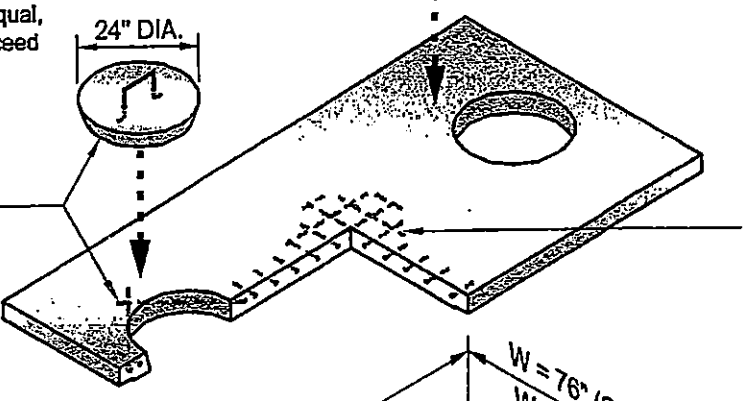
GENERAL NOTES:

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2. Concrete compressive strength 4,000 psi minimum.
3. Steel reinforcing design to conform to the requirements of ASTM C890 specifications for "Structural Design Loading for Water and Wastewater Structures" and shall utilize grade 60 re-bars conforming to the requirements of ASTM A615 or WWF conforming to the requirements of ASTM A185 or both. Place Additional reinforcing at all openings.
4. Optional EZ set lid cast in place. Supplied by Dellinger Precast. To be field adjusted using approved methods by contractor.
5. Pipe penetration locations as per job requirements. Pipe inlet and outlet locations to have PSX Direct Drive boots or equal. Pipe Inlet locaions (typical 3 sides) to be knock out pannels. Pipe supplied & installed by contractor.
6. Joints to be sealed with ConSeal CS102. butyl rubber joint sealant or equal. Sealant meets or exceeds the requirements of latest federal specification SS-S-0021(210-A), AASHTO M-198B, and ASTM C-990-91.
7. Lift Insert / Lift Eye Pin by M.A Industries or equal, Cast-in by Dellinger Precast. Lifts meet or exceed OSHA requirements.
8. Method of manufacture is Wet Cast.
9. Sections are monolithic. Weights:
   Top Slab 2,636 ± lbs.
   Base Section 7,453 ± lbs.
10. I.D. = Inside dimension
    O.D. = Outside dimension
    L = Length
    W = Width
    H = Height

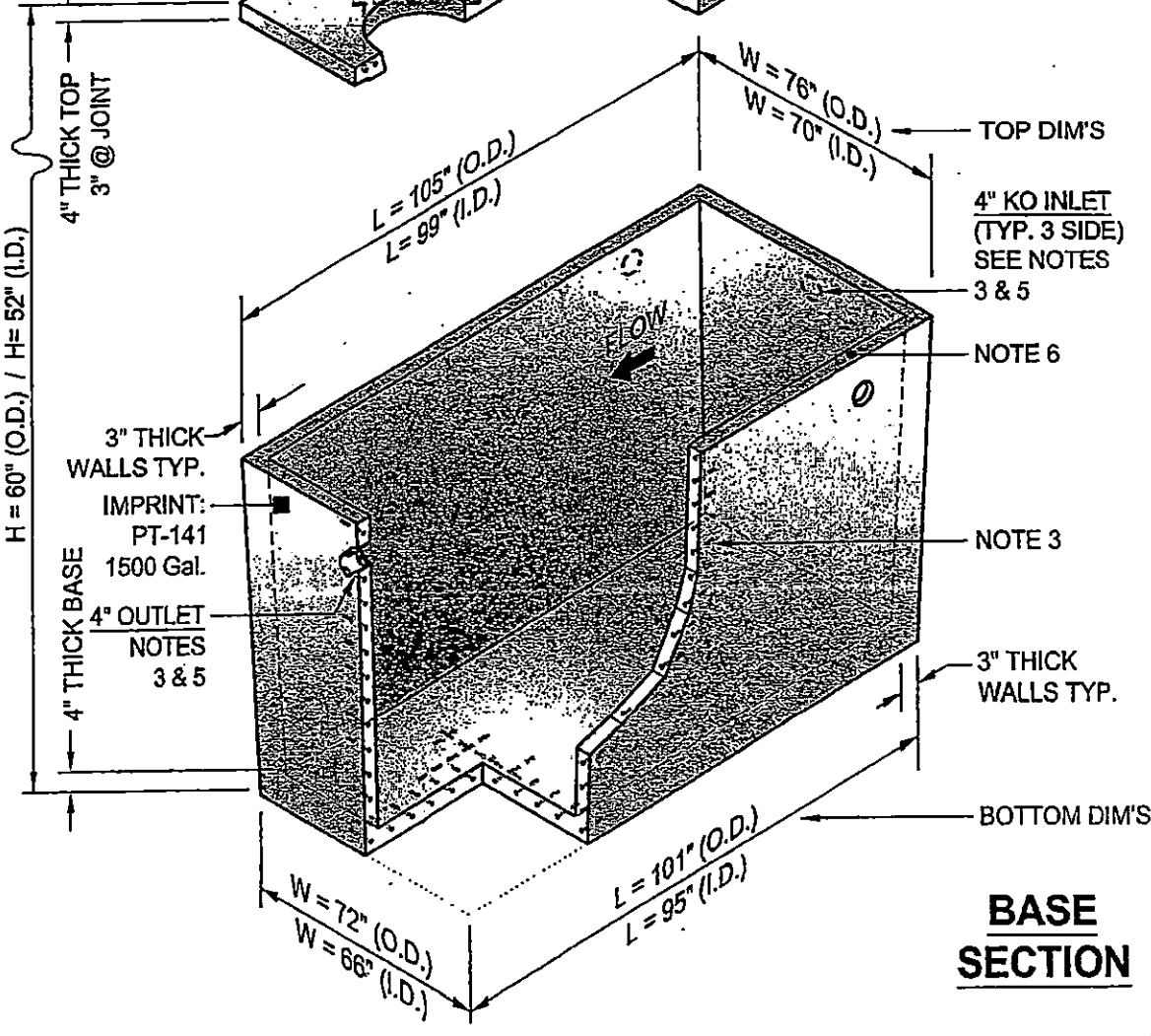


ELEVATION



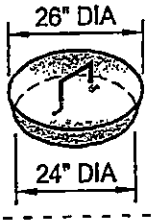


TOP SLAB



BASE SECTION

OPTIONAL ROUND LID



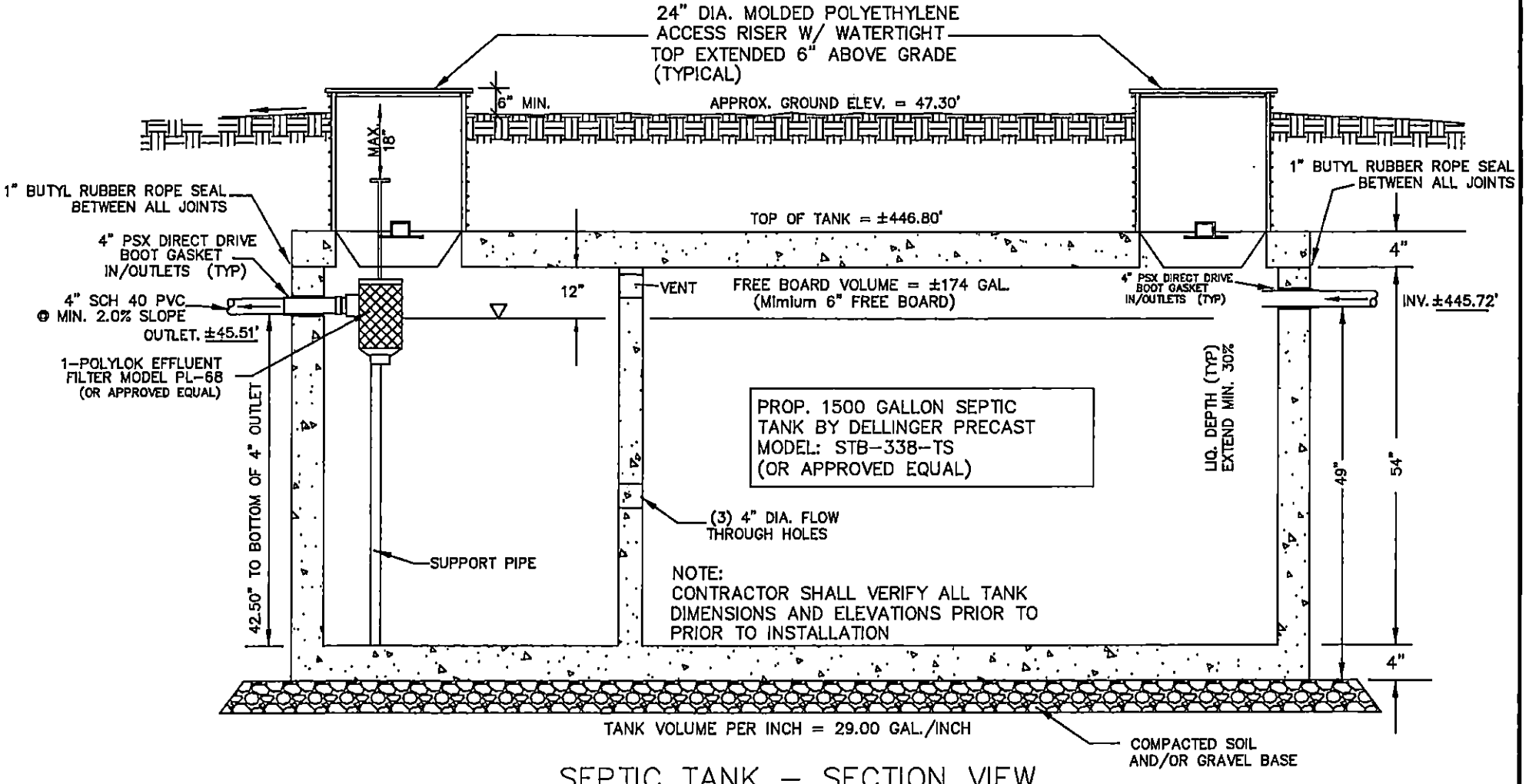
1,500 Gallon (Top Slab) PUMP TANK

Scale: Not To Scale
Revision Date: February 2008
Detail # PT-1,500-TS

DELLINGER PRECAST
4531 North Hwy 16 ▪ Denver, N.C. 28037 ▪ Phone: 800-948-1666 ▪ 704-483-2868 ▪ Fax: 704-483-2363

ATTACHMENT D
(SEPTIC AND PUMP TANK PROFILES)

LOT 34 SEPTIC TANK DETAILS



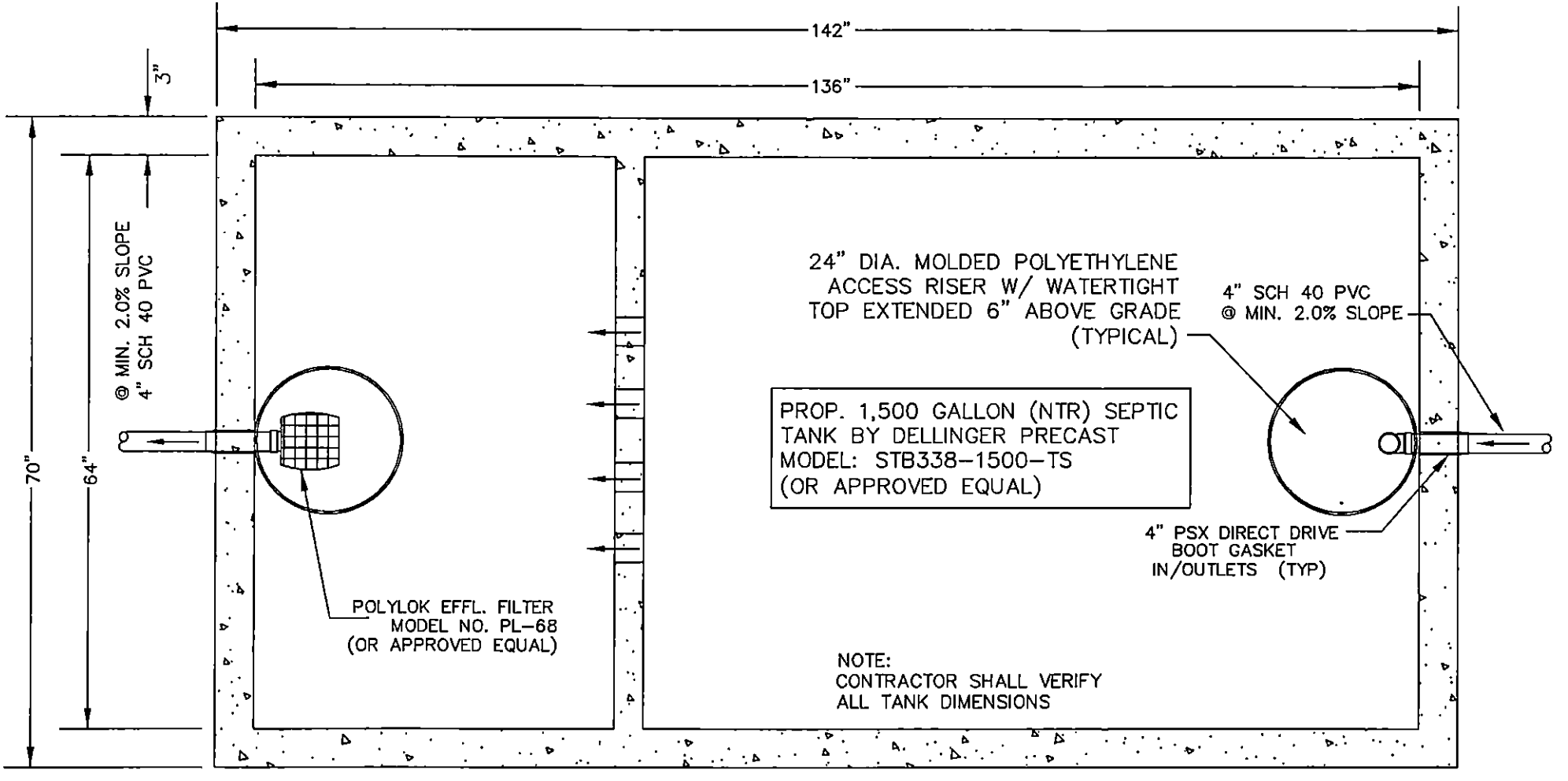
SEPTIC TANK – SECTION VIEW

NOT TO SCALE

NOTE:
ENGINEERING ASPECT OF THE DESIGN WAS COMPLETED UNDER THE DIRECTION OF MR. G. CARTER MOORE III, PE.

SEPTIC ENVIRONMENTAL SOLUTIONS, INC. 3019 SPRING FANCY LANE, INDIAN TRAIL, NORTH CAROLINA, 704-502-5586		
PROJECT NAME: True Homes Oakbridge Lot 34	KLO	DATE: 1/30/16
	CHECKED:	DATE:
	APPROVED:	DATE:
COUNTY : MECKLENBURG COUNTY, NC	TITLE : SEPTIC TANK SECTION VIEW PROFILE	
	SCALE: Not to Scale	SHEET: 2 OF 4

LOT 34 SEPTIC TANK DETAILS



SEPTIC TANK – PLAN VIEW

NOT TO SCALE

NOTE:
ENGINEERING ASPECT OF THE DESIGN WAS COMPLETED UNDER THE DIRECTION OF MR. G. CARTER MOORE III, PE.

SEPTIC ENVIRONMENTAL SOLUTIONS, INC.
3019 SPRING FANCY LANE, INDIAN TRAIL, NORTH CAROLINA, 704-502-5588

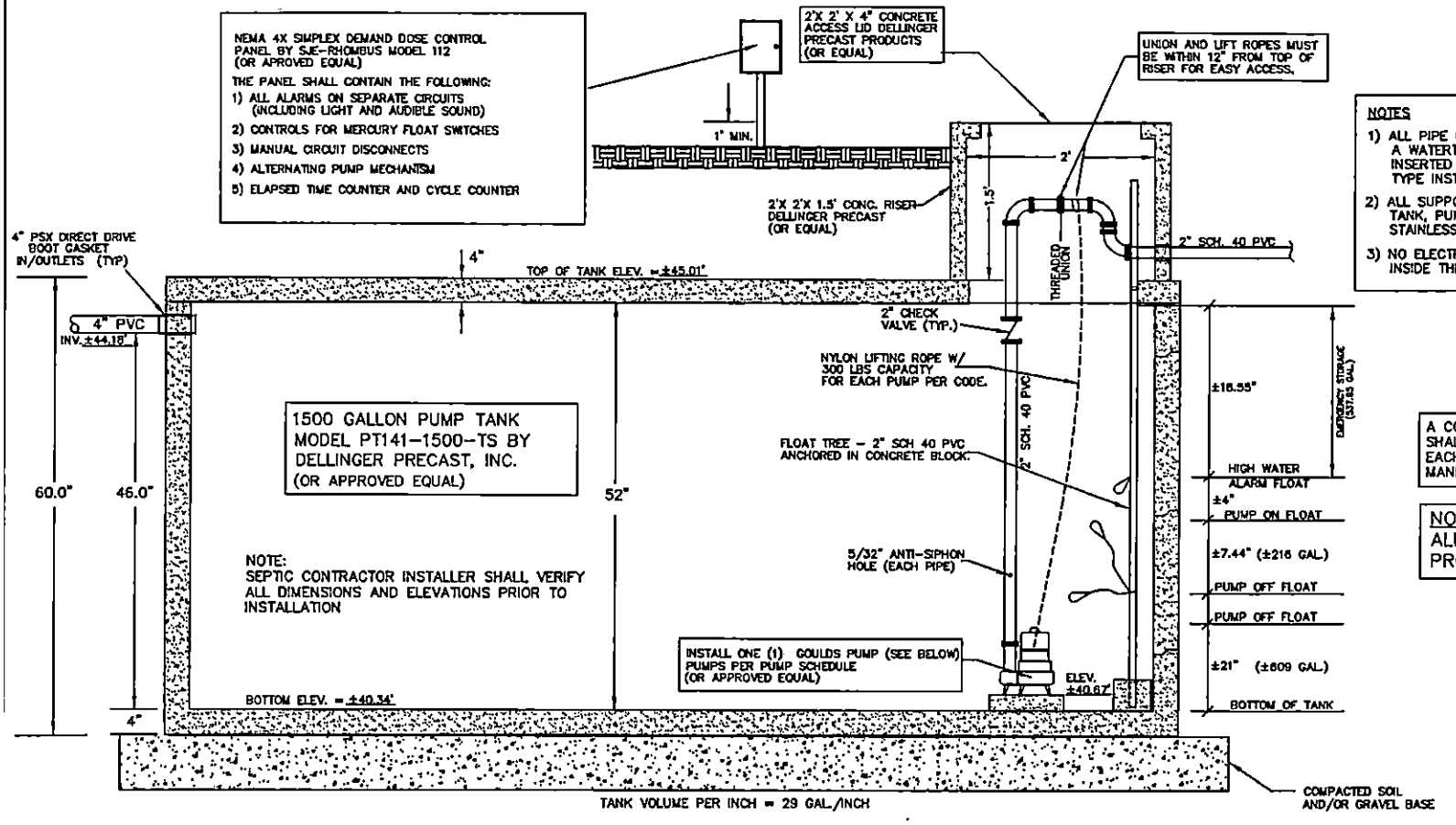
PROJECT NAME: True Homes Oakbridge Lot 34	KLO	DATE: 1/30/16
	CHECKED:	DATE:
	APPROVED:	DATE:
COUNTY : MECKLENBURG COUNTY, NC	TITLE : SEPTIC TANK PLAN VIEW PROFILE	
	SCALE: Not to Scale	SHEET: 3 OF 4

LOT 34 PUMP TANK DETAILS

NEMA 4X SIMPLEX DEMAND DOSE CONTROL PANEL BY SJE-RHOMBUS MODEL 112 (OR APROVED EQUAL)

THE PANEL SHALL CONTAIN THE FOLLOWING:

1) ALL ALARMS ON SEPARATE CIRCUITS (INCLUDING LIGHT AND AUDIBLE SOUND)
2) CONTROLS FOR MERCURY FLOAT SWITCHES
3) MANUAL CIRCUIT DISCONNECTS
4) ALTERNATING PUMP MECHANISM
5) ELAPSED TIME COUNTER AND CYCLE COUNTER



NOTES

1) ALL PIPE CONNECTIONS AT STRUCTUES SHALL BE MADE USING A WATERTIGHT RUBBER SEAL. SEALS MAY BE EXPANSION TYPE INSERTED IN SMOOTH CAST OR CORED OPENING OR SLEEVE TYPE INSTALLED ON PIPE AND GROUTED IN PLACE.
2) ALL SUPPORT BOLTS, WASHERS, BRACKETS USED IN THE SEPTIC TANK, PUMP TANK, OR GREASE INTRECEPTORS SHALL BE STAINLESS STEEL.
3) NO ELECTRICAL SPLICES OR JUNCTION BOXES CAN BE MADE INSIDE THE PUMP TANK.

A COATED LOCATING WIRE (#12 THHN OR LARGER) SHALL BE INSTALLED W/ ALL FORCEMAINS, AND EACH TERMINATE IN THE VALVE VAULT AND MANIFOLD

NOTE:
ALL RISER DIMENSIONS INCLUDED IN THIS PROJECT REPRESENT INSIDE DIMISIONS.

DISTRIBUTION PUMP TANK
SECTION "A" - "A"
NOT TO SCALE

IT IS THE RESPONSIBILITY OF THE SEPTIC CONTRACT INSTALLER TO CHECK ELEVATIONS AND VERIFY PROPER SEPTIC AND PUMP TANKS LOCATIONS FOR BOTH AREAS IN REFERENCE THE SEPTIC PLUMBING FROM THE HOUSE.

TANK INFORMATION:
1500 GALLON SEPTIC TANK, 1500 GALLON PUMP TANK
INSTALL TANKS TO AVOID SWALES OR LOW LYING AREAS!

PUMP SCHEDULE - USE GOULDS PUMPS (OR APPROVED)			
PUMP	MODEL NO.	ELECTRICAL REQ.	TDH (FT)
PUMP #1	GOLDS WE05H 120 VOLTS	PER SITE AVALIABILITY	33
** PRIOR TO INSTALLING PUMPS AND CONTROLS CONNTACT PROJECT PROJECT MANGER FOR ELECTRICAL SUPPLY AVAILABLE.			

NOTE:
ENGINEERING ASPECT OF THE DESIGN WAS COMPLETED UNDER THE DIRECTION OF MR. G. CARTER MOORE III, PE.

SEPTIC ENVIRONMENTAL SOLUTIONS, INC.
3019 SPRING FANCY LANE, INDIAN TRAIL, NORTH CAROLINA, 704-502-5588

PROJECT NAME: True Homes Oakbridge LOT 34	DRAFTER: KLO	DATE: 1/30/16
	CHECKED:	DATE:
	APPROVED:	DATE:
COUNTY : MECKLENBURG COUNTY, NORTH CAROLINA	TITLE : PUMP TANK PROFILE	
	SCALE: AS INDICATED	SHEET: 4 OF 4

ATTACHMENT E
(GOULDS PUMPS SPECIFICATIONS)

GOULDS PUMPS

Submersible Effluent Pump

MODEL 3885

WE Series

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.



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.

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.

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.
- ½ and ½ HP models have NEMA three prong grounding plugs.
- ¾ 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.

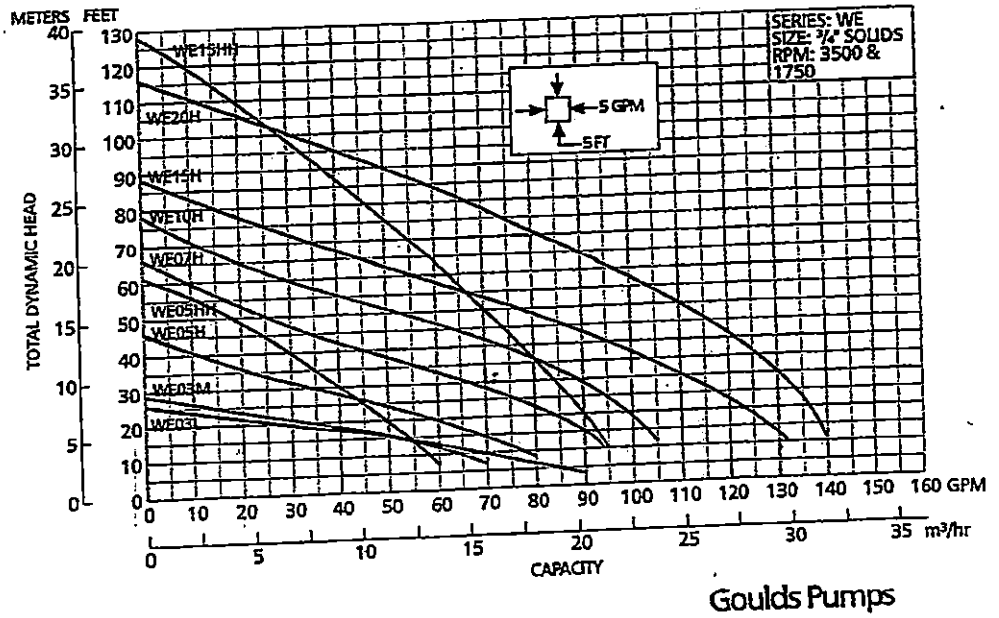
■ **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.

■ **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

Goulds Pumps is ISO 9001 Registered.



Goulds Pumps

ITT Industries

© 2003 Goulds Pumps
Effective July, 2003
B3885

GOULDS PUMPS

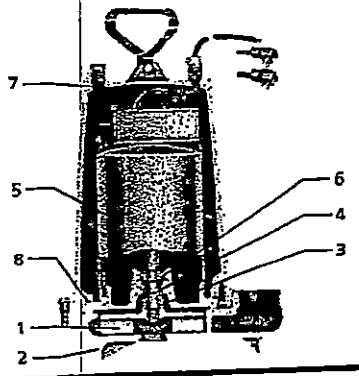
Submersible Effluent Pump

MODEL 3885

WE Series

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



MODELS

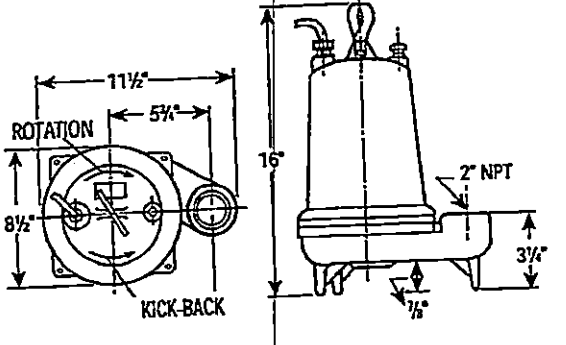
Order No.	HP	Volts	Phase	Max. Amp.	RPM	Solids	Wt. (lbs.)
WE0311L	⅓	115	1	10.7	1750	¾"	56
WE0318L		208		6.8			
WE0312L		230		4.9			
WE0311M		115		10.7			
WE0318M		208		6.8			
WE0312M		230		4.9			
WE0511H	½	115	1	14.5	3500		60
WE0518H		208		8.1			
WE0512H		230		7.3			
WE0538H		200	3	4.9			
WE0532H		230		3.3			
WE0534H		460		1.7			
WE0537H		575		1.4			
WE0511HH		115	1	14.5			
WE0518HH		208		8.1			
WE0512HH		230		7.3			
WE0538HH		200	3	4.9			
WE0532HH		230		3.6			
WE0534HH		460		1.8			
WE0537HH		575		1.5			
WE0718H	¾	208	1	11.0			70
WE0712H		230		10.0			
WE0738H		200	3	6.2			
WE0732H		230		5.4			
WE0734H		460		2.7			
WE0737H		575		2.2			
WE1018H	1	208	1	14.0			
WE1012H		230		12.5			
WE1038H		200	3	8.1			
WE1032H		230		7.0			
WE1034H		460		3.5			
WE1037H		575		2.8			
WE1518H	1½	208	1	17.5			80
WE1512H		230		15.7			
WE1538H		200	3	10.6			
WE1532H		230		9.2			
WE1534H		460		4.6			
WE1537H		575		3.7			
WE1518HH		208	1	17.5			
WE1512HH		230		15.7			
WE1538HH		200	3	10.6			
WE1532HH		230		9.2			
WE1534HH		460		4.6			
WE1537HH		575		3.7			
WE2012H	2	230	1	18.0			83
WE2038H		200	3	12.0			
WE2032H		230		11.6			
WE2034H		460		5.8			
WE2037H		575		4.7			

PERFORMANCE RATINGS (gallons per minute)

Total Head Feet of Water	Order No.	WE03L	WE03M	WE05H	WE07H	WE10H	WE15H	WE05HH	WE15HH	WE20H
	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	–	–	–	58	–	–
	15	52	50	70	90	–	–	53	–	–
	20	27	35	60	83	98	123	49	90	136
	25	–	–	48	76	94	117	45	87	133
	30	–	–	35	67	88	110	40	83	130
	35	–	–	20	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

DIMENSIONS

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



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SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Goulds Pumps

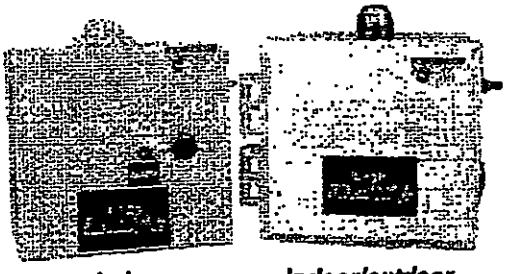
ITT Industries

ATTACHMENT F
(PUMP TANK CONTROL PANEL)

MODEL 112 Control Panel

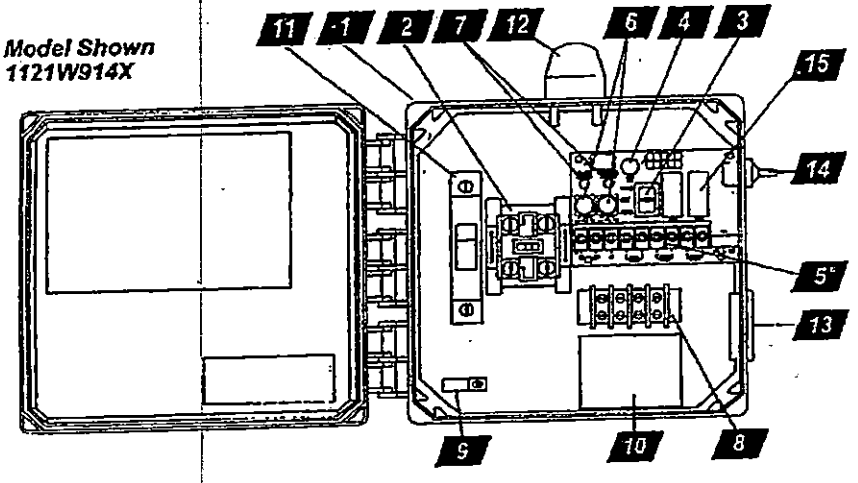
Single phase, simplex motor contactor control.

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.



Indoor *Indoor/outdoor*

Model Shown
1121W914X



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

STANDARD ALARM PACKAGE (other options available)

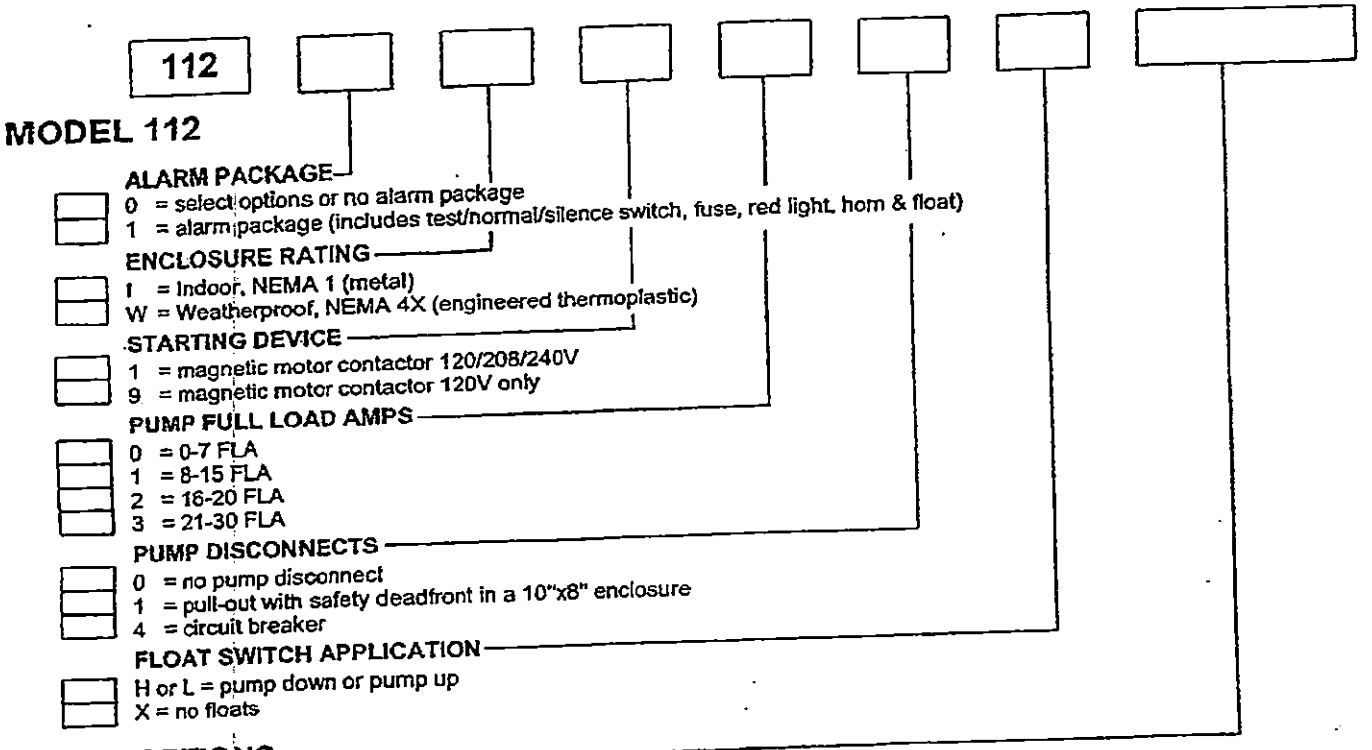
12. **Red Alarm Beacon** provides 360° visual check of alarm condition. **Note:** NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating). **Note:** NEMA 1 style utilizes an internally mounted buzzer (83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

FEATURES

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

c UL us
LISTED

SJE Rhombus CONTROLS
SJ ELECTRO SYSTEMS, INC.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE :.11-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com



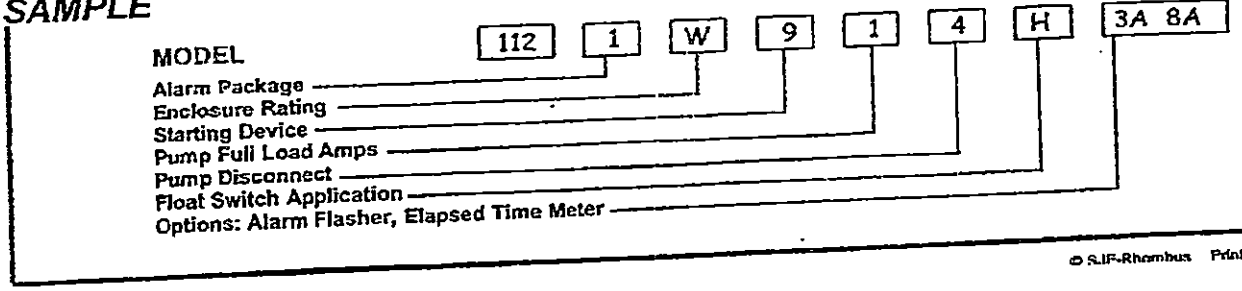
If additional features are required, call the factory for a quote on either a Pro-Line or Engineered Custom control panel system.

	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
☐ ★	4A	Low level cutout *select option 4D if floats included*
☐ ★	4B	Red low-level indicator & alarm *must select 4A also*
☐	4D	Low-level float
☐	6A	Auxiliary alarm contact, form C type
☐ ★	8A	Elapsed time meter
☐ ★	8C	Event (cycle) counter
☐	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*
☐	15A	Control / alarm circuit breaker *Does not include the circuit board as in standard.*
☐	16A	10' cord in lieu of 20'
☐	16B	15' cord in lieu of 20'
☐	16C	30' cord in lieu of 20'
☐	16D	40' cord in lieu of 20'
☐	17A	SJE SignalMaster® / mounting strap ●
☐	17B	SJE SignalMaster® / externally weighted ●
☐	17C	Sensor Float® / internally weighted ▲
☐	17D	Sensor Float® / externally weighted ▲
☐	17E	Sensor Float® Mini / pipe clamp ▲
☐	17F	Sensor Float® Mini / externally weighted ▲
☐	19X	Door mounted pump run indicator
☐	21A	Pumpmaster® in lieu of on/off switches ●
☐	21B	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 ▲

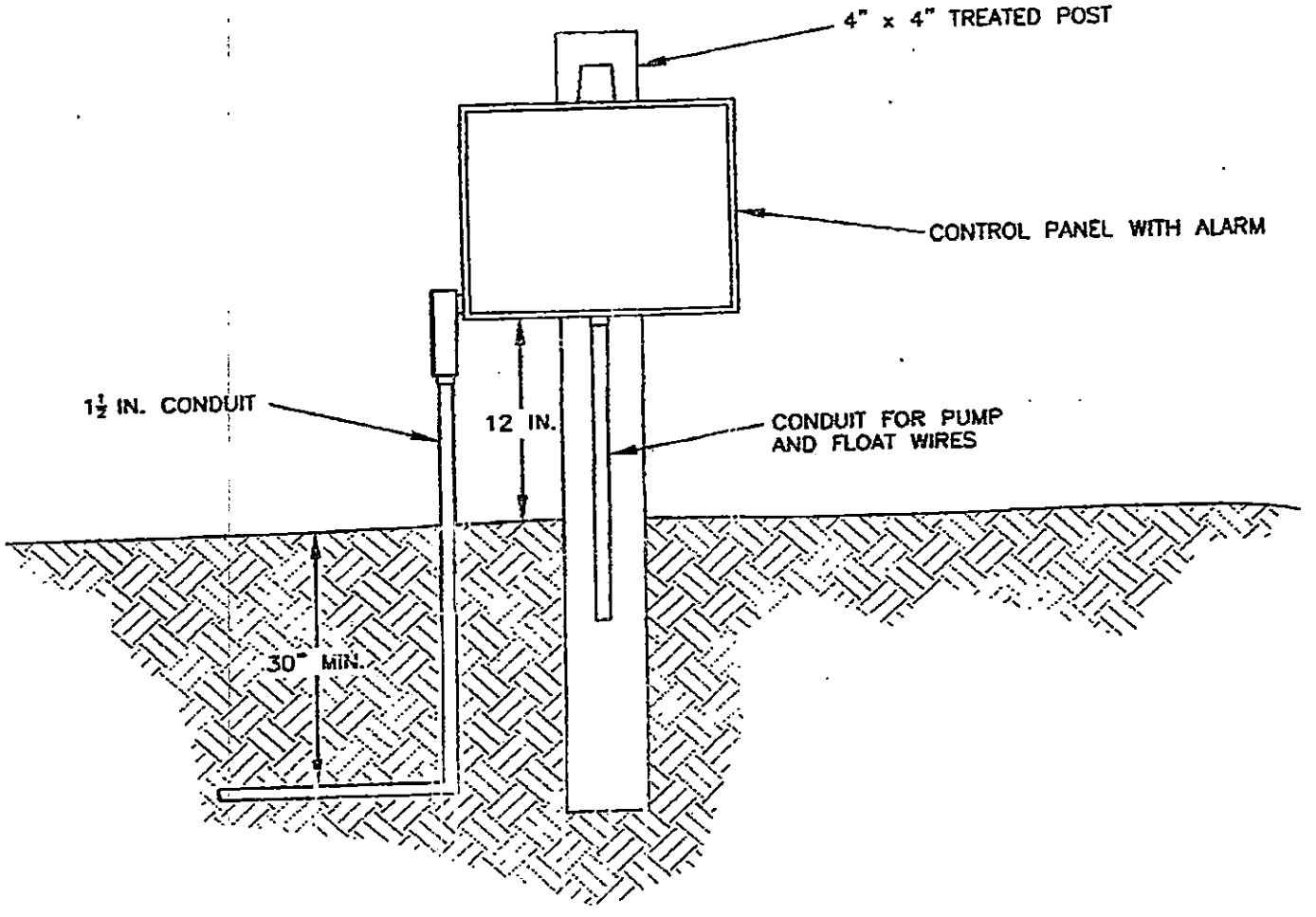
● Mechanically-activated ▲ Mercury-activated

SAMPLE



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ELECTRIC BOX



NOTES: ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE #12 MINIMUM, AND RATED FOR DIRECT BURY. PROVIDE GROUNDING AS REQUIRED, AND PROVIDE 30" MINIMUM BURY ON CABLES. PROVIDE ONE 20 AMP, DOUBLE POLE, 230 VOLT CIRCUIT BREAKER (FOR PUMP), AND ONE 20 AMP, SINGLE POLE, 115 VOLT CIRCUIT BREAKER (FOR ALARM) IN MAIN PANEL.

SENSOR FLOAT® control switch

Mercury-activated, narrow-angle float switch designed to activate pump control panels and alarms.



This narrow-angle sensing device is used to accurately monitor liquid levels in sewage and non-potable water applications. The Sensor Float® control switch is not sensitive to rotation and is suitable for use with intrinsically safe circuits. [illegible] safe applications.

Normally Open Model (high level)
The control switch turns on (closes) when the float ups slightly above horizontal signaling a high level, and turns off (opens) when the float tips slightly below horizontal.

Normally Closed Model (low level)
The control switch turns on (closes) when the float drops slightly below horizontal signaling a low level, and turns off (opens) when the float tips slightly above horizontal.

FEATURES [illegible] SENSOR FLOAT® CONTROL

- Suitable for use with intrinsically safe circuits
- Not sensitive to rotation.
- Control differential of .5 inches (1 cm) above or below horizontal.
- UL Listed for use in non-potable water and sewage.
- CSA Certified.
- Three-year limited warranty.

LR54245 LISTED

[illegible]

OPTIONS

This switch is available:

- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 6, or 10 meters.
- with three mounting options that allow for flexibility in installation:

  Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.

  Internally Weighted: for applications where the switch can be suspended from above.

  Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL,CSA) SJOW, water-resistant (CPE) jacket

FLOAT: 3.38 inch diameter x 4.55 inch long (8.58 cm x 11.56 cm), high-impact, corrosion resistant, PVC housing for use in sewage and non-potable water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 psi

MERCURY TILT SWITCH: single pole, single throw, mercury-to-mercury contacts, hermetically sealed in a steel capsule and epoxy sealed in the float housing

ELECTRICAL: 5 amp, 120/230 VAC, 50/60 Hz

CONTROLS
SJE Rhombus
SJ ELECTRO SYSTEMS, INC.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE (1-888-342-5753) 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

Sensor Float® control switch installation instructions

WARNING **ELECTRICAL SHOCK HAZARD**
Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

WARNING **EXPLOSION OR FIRE HAZARD**
Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering junction box, conduit bodies, fittings, float housing or cable.

MOUNTING FLOAT SWITCH VERTICALLY

1. Place the cord into the clamp as shown in Figure B.
2. Locate the clamp at desired activation level and secure the clamp to the discharge pipe as shown in Figures A and B. Note: Do not install cord under hose clamp.
3. Tighten hose clamp screw(s) securely to prevent leakage. Do not overtighten as this will result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the metal hose clamp band during operation.
4. Bring cable leads back to control device and wire according to Figure C.
5. Check installation. Allow system to cycle to insure proper operation.

Note: All hose clamps supplied are made of 18-8 stainless steel material. See your SJE-Rhombus supplier for replacements.

Figure A

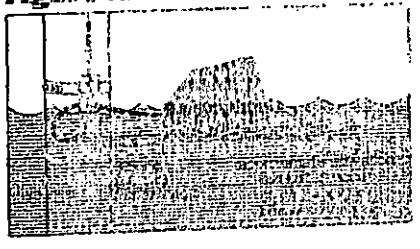
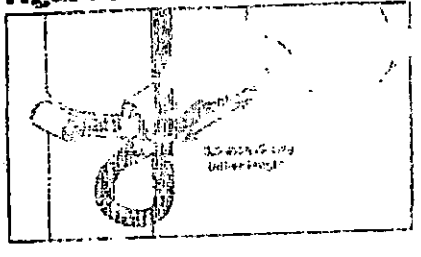


Figure B



INSTALLING FLOAT SWITCH VERTICALLY

1. Determine desired activation level.
2. Suspend switch (and pump) below desired activation level as shown in Figure D. Switch must be vertical, but may be gently swung to simulate tipping action.
3. Wire cable leads directly to control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Figure C

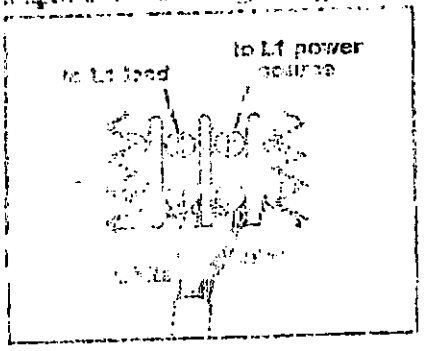
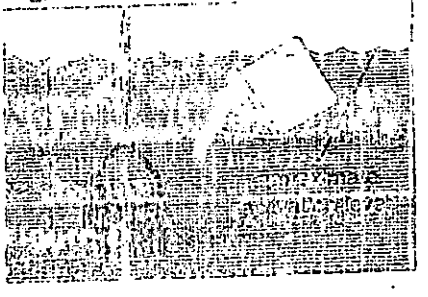


Figure D



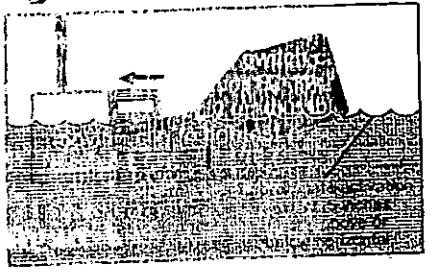
CABLE WEIGHT ATTACHED

1. Determine desired activation level.
2. Suspend switch and cable weight at desired activation level as shown in Figure E.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Cable weight is attached to switch cable at the factory. To adjust:

1. Release clip.
2. Adjust cable weight to desired position.
3. Lay switch cable in weight channel.
4. Align clip with weight channel and slide towards switch cable as shown in Figure E.
5. Snap clip snugly up to cable, moving clip to tightest possible position.

Figure E



SJE, INC.
Minnesota 56082 USA
Fax: 218-847-4617
SJE-Rhombus
Made in USA 03/00

Instl. Instr. [illegible]
Cat. Page PN [illegible]

ATTACHMENT G
(PUMP CURVE)

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

Septic System Pre-Construction Meeting Checklist

File # 9398B App # 8046 Tax Parcel # 139-282-10

Property Owner: True Homes

Job Location Address: 8401 Aspen Ct

City: Mint Hill State: NC Zip Code: 28227

1. **Does System design match facility, flow & wastewater characteristics?**

   ☑ YES ☐ NO

   Comments: _____

2. **Is there sufficient available space for the septic systems initial and repair areas?**

   ☑ YES ☐ NO

   Comments: _____

3. **Can the septic system be installed per the permit conditions and drawing on file?**

   ☑ YES ☐ NO

   Comments: _____

*** If "NO" is checked for any of the above the existing permit may need to be revoked.**

Permission is hereby given to ☑ install ☐ alter ☐ repair an on-site wastewater treatment & and disposal system, with subsurface soil absorption and effluent discharge meeting all of the construction requirements of 15A NCAC 18A .1900 which are in effect on the date of granting this approval. System shall not be installed while soils are in wet condition.

April Bumgarner
Authorized Agent

5-30-18
Date

Others Present

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
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 #: 93986 Permit #: 8046 Tax Parcel #: 139-282-10

Property Owner: True Homes

Job Location Address: 8401 Aspen Ct

City: Mint Hill State: NC Zip Code: 28227

Operation Permit Issuance Date: 6-21-18 Contractor Name: Sid Gaskin

Permitted Design Flow: 480 GPD Liquid Capacity of Dosing Tank: 1500 gallons

Liquid Capacity of Septic Tank: 1500 gallons Manufacture: Infiltrator Effluent Pump Model: Zoeller 140 1HP

Drainfield Installation ☐ N/A

Trench Depth: 14" inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 481 feet

# of Lines: 9 @ various feet

Depth of Media: 12" inches (Type) IQ4

Depth of Cover: _____ inches

Distribution Device: Pressure Manifold

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: 8' feet

Distance from Property Line: 10' feet

Distance from Water Supply Source: 10' feet

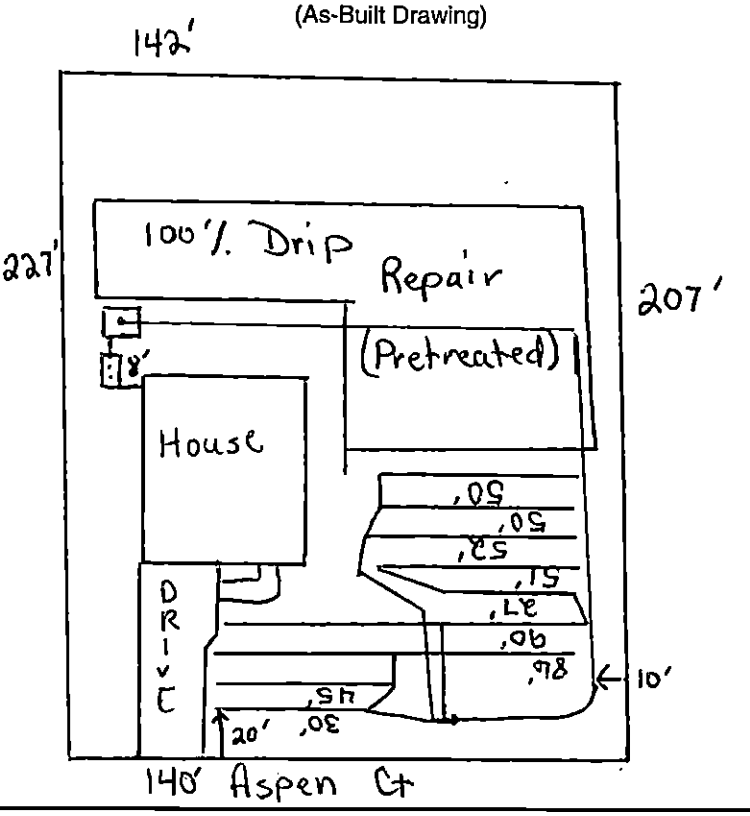
Inspection Dates

Tank(s) Inspected: 6-1-18

Excavation Inspected: 6-1-18 | 6-19-18

Pump & Controls Inspected: 6-21-18

SKETCH OF SYSTEM INSTALLATION
(As-Built Drawing)



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: III b | IQ4 | P | NA | NA

DHHS Authorized Agent: April Bumgarner Signature: April Bumgarner

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

File #: 9398B Permit #: 8046 Tax Parcel #: 139-282-10

Property Owner: True Homes

Job Location Address: 8401 Aspen CT

City: Mint Hill State: NC Zip Code: 28227

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: IIIB

*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: April Bumgarner Date: 7-3-18

Signature: April Bumgarner