OSWP-2024-46264

North Carolina Onsite Wastewater Contractor Inspector Certification Board
Authorized Onsite Wastewater Evaluator Permit Option for Non-Engineered Systems
Notice of Intent (NOI) to Construct

X New ___ Expansion ___ Repair ___ Relocation ___ Relocation of Repair Area

Owner or Legal Representative Information:
Name: Britt Loukos, Lumen Farm Brittany Loukos Lot # 3
Mailing address: 280 Rowan Road City: Cleveland State: NC Zip: 27013
Phone: 317-652-7733 Email: britt@lumendevelopmentco.com

Authorized Onsite Wastewater Evaluator Information:
Name: Gene Young, AOWE Certification #: 10005E
Mailing address: 7296 Styers Crossing Lane City: Clemmons State: NC Zip: 27012
Phone: 336-608-9206 Email: younggene1956@gmail.com

Site Location Information:
Site address: Same as Above
Tax parcel identification number or subdivision lot, block number of property: 4772704162
County: Iredell

System Information:
Wastewater System Type: Accepted 25% Reduction with 6 inches of #5 washed gravel installed on each side of the chambers
Daily Design Flow: 912
Saprolite System: ___Yes X No Subsurface Operator Required: X Yes ___No
Water Supply Type: X Private Well ___Public Water Supply ___Spring ___Other: ___

Facility Type:
___Residential ___# Bedrooms ___ Maximum # of Occupants
___Business Type of Business and Basis for Flow: ___
X Public Assembly Type of Public Assembly and Basis for Flow: 200 Seat Event Center- See attached engineer design for flow calculations

NC ONSITE WASTEWATER GENERATING NUMBER 10005E EVALUATOR

Required Attachments:
X Plat or Site Plan
X Evaluation of Soil and Site Features by Licensed Soil Scientist

Attest: On this the 16 day of January 2024 by signature below I hereby attest that the information required to be included with this NOI to Construct is accurate and complete to the best of my knowledge. Furthermore, I hereby attest that I have adhered to the laws and rules governing onsite wastewater systems in the state of North Carolina.
This NOI shall expire on 16 day of Jan, 2029
Signature of Authorized Onsite Wastewater ~~Evaluator~~: Gene Young, LSS ~~AOWE~~
Signature of Owner or Legal Representative: ___

Disclosure: The owner may apply for a building permit for the project upon submitting a complete NOI to Construct and the fee required (if any) to the local health department. An onsite wastewater system authorized by an authorized onsite wastewater evaluator shall be transferable to a new owner with the consent of the authorized onsite wastewater evaluator.

Local Health Department Receipt Acknowledgement:
Signature of Local Health Department Representative: D. Wieberg Date: 02/05/2024

Permit #: _____

CONSTRUCTION AUTHORIZATION FOR AOWE NOI

County: Iredell

PIN/Lot Identifier: 4 7727 04612

Issued To: Britt Loukos

Property Location: 280 Rowan Road

AOWE/PE Plans/Evaluations Provided: Yes ☑ No ☐ If yes, name and license number of AOWE/PE: Gene Young, AOWE, 10005E

Facility Type: Event Center

☑ New ☐ Expansion ☐ Repair ☐ System Relocation ☐ Change of Use

Basement? ☐ Yes ☑ No Basement Fixtures? ☐ Yes ☑ No

Type of Wastewater System* Accepted Chamber (Initial) ACCepted Chamber (Repair)

**Please include system classification for proposed wastewater system types in accordance with 15A NCAC 18A .1961 Table V(a)*

Design Daily Flow: 908 GPD Wastewater Strength: ☑ domestic ☐ high strength ☐ industrial process

Session Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies? ☐ Yes ☑ No
(if yes, please provide engineering documentation)

Installation Requirements/Conditions

Septic Tank Size: 3500 gallons Total Trench/Bed Length: 912 feet Trench/Bed Spacing: 9 feet on center

Trench/Bed Width: 36 inches LTAR: .25 gpd/ft²

Soil Cover: 20 inches Slope Corrected Maximum Trench/Bed Depth‡: 32 inches ‡ ***Measured on the downhill side of the trench***

Aggregate Depth: ____inches above pipe ____inches below pipe 6 to top of the louvers inches total

Pump Tank Size (if applicable): 8000 gallons Requires more than 1 pump? ☐ Yes ☑ No

Pump Requirements: 68 ft. TDH vs. 30 GPM Grease Trap Size (if applicable): _____ gallons

Distribution Method: ☐ Serial ☐ D-Box or Parallel ☑ Pressure Manifold(s) ☐ LPP ☐ Other:_____

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

Legal Agreements *(If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)*.

Multi-party Agreement Required [.1937(h)]: ☐ Yes ☑ No

Easement, Right-of-Way, or Encroachment Agreement Required [.1938(j)]: ☐ Yes ☑ No

Declaration of Restrictive Covenants: ☐ Yes ☑ No

Pre-Construction Conference Required: Yes ☐ No ☑

Conditions: See installer information Sheet

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

SUBSURFACE WASTEWATER DESIGN FLOW CALCULATIONS

AT

LUMEN FARM EVENT CENTER

IREDELL COUNTY, NORTH CAROLINA

PROJECT DESCRIPTION

THE LUMEN FARM EVENT CENTER WILL INCLUDE A 200 SEAT EVENT FACILITY WITH A CATERING KITCHEN, AND THREE (3) FUTURE SINGLE BEDROOM CABINS. THE EVENT WILL HOST THREE (3) EVENTS PER WEEK WITH THE FOLLOWING SCHDULE:

FRIDAY – 150 SEATS
SATURDAY – 200 SEATS
SUNDAY – 150 SATS

DESIGN FLOWS

EVENT CENTER – 10 GAL. PER SEAT
SINGLE BEDROOM CABINS – 150 GPD

FLOW EQUALIZATION CALCULATIONS

DAILY FLOW BALANCE

DAY	ATTENDANCE	DESIGN FLOW (GAL/PERSON)	DESIGN FLOW (GALS/DAY)
FRIDAY	150 GUEST	10	1,500
SATURDAY	200 GUEST	10	2,000
SUNDAY	150 GUEST	10	1,500
CABINS ▲	3 DAYS PER WEEK	450	1,350

TOTAL WEEKLY FLOW = 6,350 GALLONS

EQUALIZATION CYCLE IS ONE(1) WEEK (7–DAYS)
EQUALIZED DAILY FLOW: 6,350 GAL/7–DAYS

EQUALIZED DAILY FLOW: 908 GALLONS

▲ – REPRESENTS FUTURE CONSTRUCTION

REQUIRED SEPTIC TANK SIZE

SEPTIC TANK VOL. = 0.75(2,450) + 1,125 = 2,963 GALONS

USE 3,500 GALLON SHOEF PRECAST, INC SEPTIC TANK
MODEL# STB–2105 (NTR)

REQUIRED SEPTIC TANK SIZE

CATERING KITCHEN ONLY – NO GREASE REQUIRED

LUMEN FARM EVENT CENTER

FLOW BALANCE CHART

DAILY EVENT	DAY	FLOW IN (GAL)	FLOW OUT (GAL)	RESIDUAL (GAL)
EVENT W/ CABINS	FRIDAY	1,950	908	1,042
EVENT W/ CABINS	SATURDAY	2,450 *	908	2,584
EVENT W/ CABINS	SUNDAY	1,950	908	3,626 **
NO EVENTS	MONDAY	0	908	2,718
NO EVENTS	TUESDAY	0	908	1,810
NO EVENTS	WEDNESDAY	0	908	902
NO EVENTS	THURSDAY	0	908	0

* REPRESENTS REQUIRED EMERGENCY STORAGE (2,450 GALLONS)

** REPRESENTS EQUALIZATION VOLUME (3,626 GALLONS)

ESTIMATED DRAINFIELD SIZE

THE DRAIN FIELD IS SIZED FOR A DAILY WASTE FLOW OF 908 GPD

TRENCH LENGTH = 908 GPD/0.25 GPD/SF./3' = 1,211 SQ.FT. REQUIRED

TRENCH LENGTH UTILIZING 25% REDUCTION CHAMBERS

LINEAR FOOTAGE W/ = 908 FT. FT.
25% REDUCTION

DESIGN NOTE:
USE ONE (1) 912 LF. DRAIN FIELD W/ MANIFOLD DISTRIBUTION

MANIFOLD DESIGN

MANIFOLD LAYOUT				MANIFOLD HEAD – 2.0 FT.
LINE #	LENGTH (FT)	TAP SIZE/TYPE	TAP FLOW (GAL/MIN.)	FLOW / LINERAR FOOT (GPM/LF.)
L–1	152	1/2" SCH 80	5.48	0.0361
L–2	152	1/2" SCH 80	5.48	0.0361
L–3	152	1/2" SCH 80	5.48	0.0361
L–4	152	1/2" SCH 80	5.48	0.0361
L–5	152	1/2" SCH 80	5.48	0.0361
L–6	152	1/2" SCH 80	5.48	0.0361
TOTALS	912		32.9 GPM	

LUMEN FARM EVENT CENTER

FLOW EQUALIZATION TANK CALCULATIONS

ASSUME PUMP HEIGTH @ 18" & TANKAGE VOL @ 77.29 GAL/IN.
USE SHOEF PRECAST 8,000 GALLON PUMP TANK (PT-2145)
ACTUAL VOLUME - 8,347 GALLONS
EQUALIZIED FLOW VOLUME - 3,626 GALLONS
EMERGENCEY STORAGE VOLUME - 2450 GALLONS
DOSE FIELD THREE (3) TIMES PER DAY @ 303 GALLON PER DOSE

PUMP SUBMERGENCE VOLUME (18"):	1,391 GALLONS
DOSE VOLUME (±4"):	303 GALLONS
FLOW EQULATION VOLUME (±47"):	3,626 GALLONS
PRE-ALARM LEVEL (±6"):	464 GALLONS
EMERG. STORAGE VOL.(32"):	2450 GALLONS

TOTAL REQUIRED PUMP TANK VOLUME - 8,234 GALLONS

FLOW EQUALIZATION PUMP DESIGN

FORCE MAIN - 2" SCH 40 PVC
LENGTH OF FORCE MAIN - 1040 FT.
PUMP DESIGN FLOW - 33 GPM

DOSING PUMP TDH CALCULATIONS

STATIC HEAD = 812-778 = 34 FT.

EQUIVALENT PIPE FITTING FRICTION LOSS			
ITEM	FRICTION LOSS (FT)	QUANITY	FRICTION LOSS (FT)
2" CHECK VALVE	13	1	13
2" 90° ELBOW	9	7	63
2" 45° ELBOW	4	3	12
2" PVC SCH 40			650 FT.

TOTAL TOTAL LENGTH OF FORCE MAIN - 738 FT.

FRICTION LOSS FACTOR = 2.2 FT/ 100' @ ±33 gpm
VELOCITY = 3.0 FT./SEC.

FRICTION LOSS = 1040 FT. X 2.2 FT/100' = 23 FT

TOTAL DYNAMIC HEAD (TDH) = 34 FT + 2 FT + 32 FT

TOTAL DYNAMIC HEAD (TDH) = ±68 FT
FOR DOSING PUMP

USE ZOELLOR PUMP CO. 189 SERIES PUMP
1-PHASE, 230 VOLTS FOR PUMPING
±30 GPM @ ± 68 FT, TDH.
(OR APPROVED EQUAL)

LUMEN FARM EVENT CENTER

DISTRIBUTION PUMP DESIGN FROM CABIN #2 PUMP TANK TO CABIN #3 PUMP TANK

FORCE MAIN – 2" SCH 40 PVC
PUMP DESIGN FLOW – 18 GPM
MANIFOLD HEAD – 1–1/2" FT.
LENGTH OF FORCEMAIN = ±250 FT.

STATIC HEAD

STATIC HEAD = 15 FT.

FRICTION LOSS

FRICTION LOSS FACTOR = 1.99 FT/ 100' @ ±18.0 GPM
VELOCITY = 2.83 FT./SEC > 2.0 FPS

FRICTION LOSS = ±250 FT. X 1.99 FT/100' = ±5 FT

TOTAL DYNAMIC HEAD (TDH) = STATIC HEAD + FRICTION HEAD

TOTAL DYNAMIC HEAD (TDH) = 15 + 5 FT = 20 FT

TOTAL DYNAMIC HEAD (TDH) = ±3.3 FT
FOR BOSIN PUMP

USE ZELLER PUMP CO. MODEL:137 PUMP
1–PHASE, 115 VOLTS FOR PUMPING
±18 GPM @ ± ±20 FT, TDH.
(OR APPROVED EQUAL)

FUTURE

LUMEN FARM EVENT CENTER

DISTRIBUTION PUMP DESIGN FROM CABIN #3 PUMP TANK TO FLOW EQ. PUMP TANK

FORCE MAIN – 2" SCH 40 PVC
PUMP DESIGN FLOW – 21 GPM
MANIFOLD HEAD – 2" FT.
LENGTH OF FORCEMAIN = ±365 FT.

STATIC HEAD

STATIC HEAD = ±30 FT.

FRICTION LOSS

FRICTION LOSS FACTOR = 0.95 FT/ 100' @ ±21.0 GPM
VELOCITY = 2.15 FT/SEC. > 2.0 FPS

FRICTION LOSS = ±365 FT. X 0.95 FT/100' = ±4 FT

TOTAL DYNAMIC HEAD (TDH) = STATIC + FRICTION
HEAD HEAD

TOTAL DYNAMIC HEAD (TDH) = 30 + 4 FT = 34 FT

FUTURE

TOTAL DYNAMIC HEAD (TDH) = ±34 FT
FOR DOSING PUMP

USE ZOELLER PUMP CO. MODEL:153 PUMP
1–PHASE, 115 VOLTS FOR PUMPING
±21 GPM @ ± ±34 FT, TDH.
(OR APPROVED EQUAL)

The Authorized On-Site Wastewater Evaluator And Design Engineer shall assist the owner in the selection and approval of an experienced onsite wastewater system contractor who shall be under contractual obligation to the owner of the system and have sufficient errors and omissions, liability, or other insurance for the system constructed.

Responsibilities of the On-Site Wastewater System Contractor.

The on-site wastewater system contractor retained by the site owner shall do all of the following:

Be certified pursuant to Article 5 of Chapter 90A of the General Statutes.

Be responsible for all aspects of the construction and installation of the wastewater system and its components, including adherence to specifications and any special inspections that are prepared, signed, and sealed by the Authorized On-Site Wastewater Evaluator.

Submit a signed and dated statement of responsibility to the owner of the wastewater system, prior to commencement of work, which contains acknowledgement of the requirements of the onsite wastewater system specified by the Authorized On-Site Wastewater Evaluator.

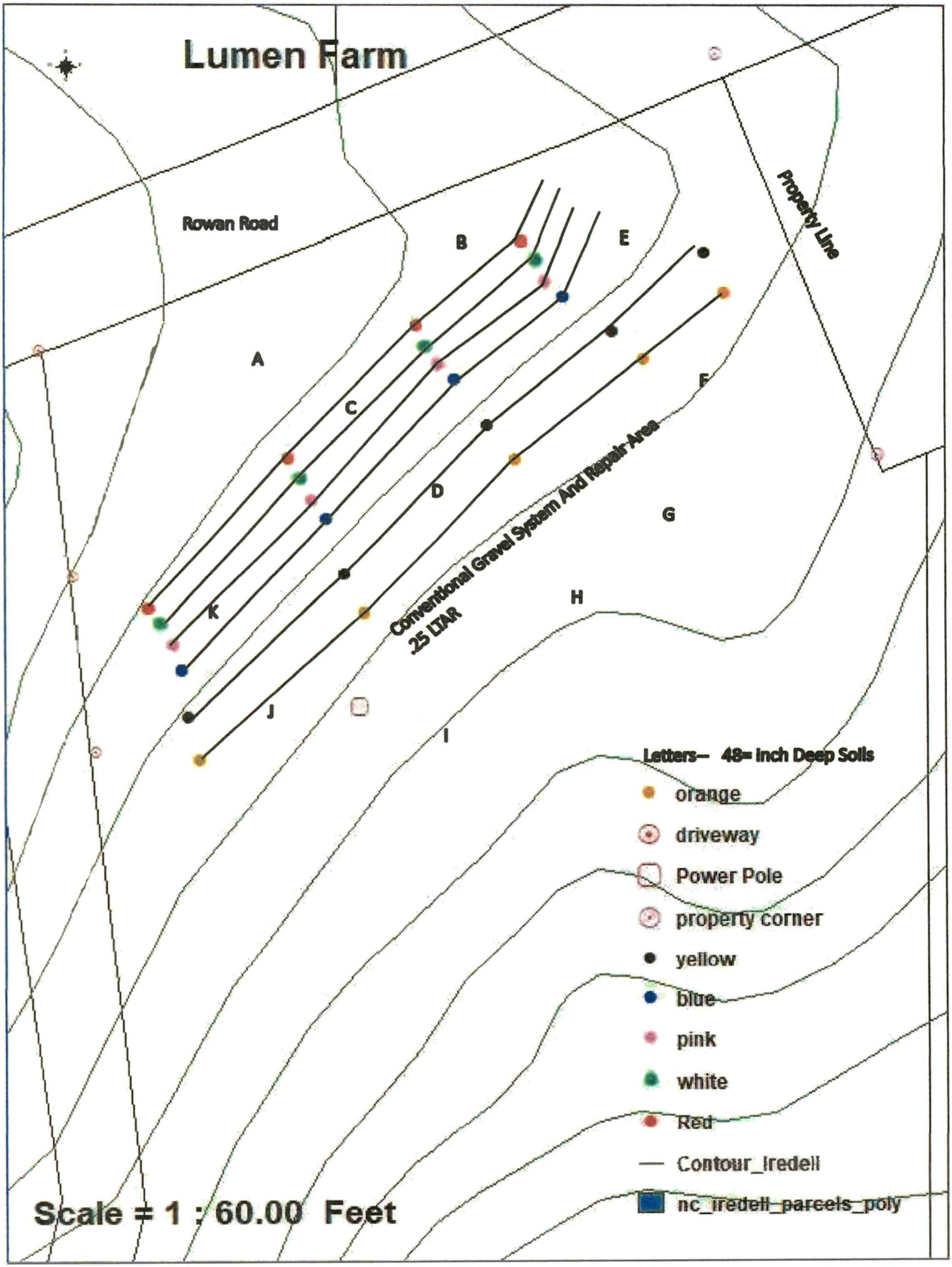
An Authorized On-Site Wastewater Evaluator shall make periodic visits to the site to observe the progress and quality of the construction.

An Authorized On-Site Wastewater Evaluator may employ independent inspectors to observe and direct the construction of the wastewater system. Authorized On-Site Wastewater Evaluators shall be liable for any errors or omissions made by independent inspectors they employ or contract with.

Post-Construction Conference. - The Authorized On-Site Wastewater Evaluator shall hold a post construction conference with the owner, the certified contractor, design engineer, and the certified system operator. The post-construction conference shall include start-up and any required verification of system components.

Recommended Onsite Wastewater Installer

Dakaota GRIT, GRIT & SONS LLC, Level IV installer, certification number 1356, 1356l NORTH WILKESBORO, NC, Phone number (336) 984-0499


Lumen Farm
Rowan Road
Property Line
A
B
C
D
E
F
G
H
I
J
K
Conventional Gravel System And Repair Area
.25 LTAR
Letters-- 48= Inch Deep Soils
orange
driveway
Power Pole
property corner
yellow
blue
pink
white
Red
Contour_Iredell
nc_iredell_parcels_poly
Scale = 1 : 60.00 Feet

COUNTY: IREDELL

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

OWNER: BRIT LOUKOS APPLICATION DATE

ADDRESS: 280 ROWAN RD CLEVELAND NC DATE EVALUATED: 3-14-23

PROPOSED FACILITY: EVENT CENTER PROPOSED DESIGN FLOW (.1949): 908 GPD PROPERTY SIZE: 29.71 AC

LOCATION OF SITE: ABOVE CONVENTIONAL FLOW EQ PROPERTY RECORDED:

WATER SUPPLY: . Private . Public (Well) . Spring . Other FLOW EQUALIZATION SYSTEM

EVALUATION METHOD: . Auger Boring (. Pit .) TYPE OF WASTEWATER: (Sewage) . Industrial Process . Mixed

Boring	A	B	C	D	E	F	G	H	I
Landscape Position (1940)	L	L	L	L	L	L	L	L	L
Slope%	5	5	5	5	5	5	8	10	10
H 1 Depth (1943)	0-10	0-8	0-12	0-14	0-9	0-10	0-15	0-15	0-12
H1 texture 1941	CL	CL	CL	CL	CL	CL	CL	CL	CL
H1 Structure (1941)	WSBK	WSBK	WSBK	WSBK	WSBK	WSBK	WSBK	WSBK	WSB.
H1 Consistance 1941	ARSP	ARSP	ARSP	ARSP	ARSP	FRSP	FRSP	FRSP	FRSP
H1 Mineralogy 1941	Se	Se	Se	Se	Se	Se	Se	Se	Se
H 2 Depth (1943)	10-50	8-51	12-55	14-52	9-56	10-51	15-52	15-55	12-5
H2 texture 1941	C	C	C	C	C	C	C	C	C
H2 Structure 1941	ABK	ABK	ABK	ABK	ABK	ABK	ABK	ABK	ABK
H2 Consistance 1941	FI-P	FI-P	FI-P	FI-P	FI-P	FI-P	AI-P	FI-P	FI-P
H2 Mineralogy 1941	Se	Se	Se	Se	Se	Se	Se	Se	Se
H 3 Depth (1943)									
H3 texture 1941									
H3 Structure 1941									
H3 Consistance 1941									
H3 Mineralogy 1941									
H 4 Depth (1943)									
H4 texture 1941									
H4 Structure 1941									
H4 Consistance 1941									
H4 Mineralogy 1941									
Soil Wettness									
Saprolite									
LTAR	.25	.25	.25	.25	.25	.25	.25	.25	.23

Description	Initial System	Repair	Other Factors 1946
System Type	CONVENTIONAL	CONVENTIONAL	Site Classification PS

LICENSED SOIL SCIENTIST GENE YOUNG 1080 STATE OF NORTH CAROLINA

Evaluated By Gene Young LSS

Installer Information

The following details must be considered along with all other considerations:

Preconstruction Conference required with the installer, contractor, AOWE, and Design Engineer before installation can begin.

Installation inspections by the AOWE and Design Engineer must be scheduled 5 weekdays in advance.

Onsite Wastewater System must be installed as designed by Hugh Creed Associates INC, Consulting Engineer

- All tanks shall be properly back filled and compacted to prevent slump in the future
- The installer is responsible for final grades and returning that grade to original, with the exception of added structural features.
- **The supply trench shall be compacted to eliminate any cavities left during initial fill placement continuous fall of 1/8 inches per foot required or sewage effluent pump will be required**
- Installation of the system shall be completed during dry conditions in order to protect the soil structure
- All fittings shall be pressure rated fitting
- All joints shall be cleaned with PVC pipe cleaner, and a heavy bodied glue applied to weld all joints
- Trenches shall be carefully excavated so the bottom has no more than ¼" fall in 10 feet, with no high or low areas within. **Do not over excavate trenches!** Any fine grading should be completed by hand with a rake and shovel, leaving no loose material.
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the rise.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral to prevent unwanted lateral water movement.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pin flag locations should be checked by the installer prior to beginning trenches to ensure accuracy
- If septic tank risers are used, they should be a minimum of 6" above finished grade or within 6" of final grade if buried.

The Authorized On-Site Wastewater Evaluator And Design Engineer shall assist the owner in the selection and approval of an experienced onsite wastewater system contractor who shall be under contractual obligation to the owner of the system and have sufficient errors and omissions, liability, or other insurance for the system constructed.

Onsite Wastewater Initial System is specified as a Pressure manifold Accepted 25% Reduction chamber System with #5 gravel to be installed 6 inches deep on each side of the chambers. The Replacement System is same type system.

Responsibilities of the On-Site Wastewater System Contractor.

The on-site wastewater system contractor retained by the site owner shall do all of the following:

Be certified pursuant to Article 5 of Chapter 90A of the General Statutes.

(1) Be responsible for all aspects of the construction and installation of the wastewater system and its components, including adherence to specifications and any special inspections that are prepared, signed, and sealed by the Authorized On-Site Wastewater Evaluator.

(2) Submit a signed and dated statement of responsibility to the owner of the wastewater system, prior to commencement of work, which contains acknowledgement of the requirements of the onsite wastewater system specified by the Authorized On-Site Wastewater Evaluator.

(3) An Authorized On-Site Wastewater Evaluator shall make periodic visits to the site to observe the progress and quality of the construction.

(4) An Authorized On-Site Wastewater Evaluator may employ independent inspectors to observe and direct the construction of the wastewater system. Authorized On-Site Wastewater Evaluators shall be liable for any errors or omissions made by independent inspectors they employ or contract with.

(5) Post-Construction Conference. - The Authorized On-Site Wastewater Evaluator shall hold a post construction conference with the owner, the certified contractor, design engineer, and the certified system operator. The post-construction conference shall include start-up and any required verification of system components.

Recommended Onsite Wastewater Installer

Dakaota GRIT, GRIT & SONS LLC, Level IV installer, certification number 1356, 1356I NORTH WILKESBORO, NC, Phone number (336) 984-0499

CALL ONE CALL BEFORE YOU DIG
STOP
800-632-4949
AVOID UTILITY DAMAGE

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER

IT SHALL BE THE RESPONSIBILITY OF THE WASTEWATER DISPOSAL SYSTEM INSTALLER TO VERIFY THE SITE SANITARY SEWER DISTRIBUTION ELEVATIONS TO ENSURE SUFFICIENT GRADE TO THE WASTEWATER DISPOSAL SYSTEM. THE INSTALLER SHALL ADJUST THE ELEVATIONS OF THE WASTEWATER DISPOSAL SYSTEM AS NECESSARY FOR PROPER OPERATION.

SANITARY SEWER, STORM SEWER, FORCEMAIN CROSSINGS AND SEPERATIONS

1) WHENEVER POSSIBLE, SEWER SHOULD BE LAID AT LEAST 10' HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. IF THIS SPACING IS NOT POSSIBLE, DUCTILE IRON PIPE IS REQUIRED.
2) WHEN SANITARY SEWER CROSSES STORM SEWER, ALLOW 1' OF VERTICAL SEPARATION BETWEEN PIPES. IF THIS CANNOT BE MET, DUCTILE IRON SANITARY SEWER, 10' EACH SIDE OF OF STORM SEWER WILL BE REQUIRED FOR STORM SEWERS 24" AND LARGER. WHERE CLEARANCE ABOVE SANITARY SEWER IS LESS THAN 1', CONCRETE PIERS ON EACH SIDE OF SANITARY SEWER TO SUPPORT STORM SEWER WILL BE REQUIRED IN ADDITION TO DUCTILE IRON PIPE.
3) WHENEVER IT IS NECESSARY FOR A WATER LINE TO CROSS ABOVE THE SEWER LINE AND A VERTICAL SEPARATION OF 18" CANNOT BE MAINTAINED, THEN THE SEWER LINE SHALL BE DUCTILE IRON PIPE 10' EACH SIDE OF THE WATER LINE. WHENEVER A SEWER LINE CROSSES ABOVE A WATER LINE, THE WATER AND SEWER LINE MUST BE DUCTILE IRON PIPE 10' EACH SIDE OF THE CROSSING.

STANDARD SPECIFICATIONS

THE CURRENT EDITION OR THE FOLLOWING REFERENCES SHALL APPLY TO ALL WORK AND METERIALS INCLUDED IN THIS PROJECT.

* NCDHHS, ON-SITE WASTEWATER WATER BRANCH, "THE LAWS AND RULES FOR SEWAGE TREATMENT AND DISPOSAL SYSTEMS", 15A NCAN 18A .1900
* INTERNATIONAL BUILDING CODE (IBC)
* NORTH CAROLINA BUILDING CODE
* IREDELL COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
* AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
* RULES AND REGULATIONS OF THE NC DEPARTMENT OF AGRICULTURE
* NORTH CAROLINA EROSION CONTROL STANDARDS

UTILITY LOCATION NOTE

PRIOR TO BEGINNING ANY WORK INVOLVED IN THE SEPTIC SYSTEM IMPROVEMENTS - THE OWNER SHALL CONTACT A UTILITY LOCATING COMPANY AND HAVE ALL UTILITIES LOCATED AND MARKED.

1) THE WASTEWATER SYSTEM INSTALLER IS RESPONSIBLE FOR COORINATION OF ALL TRADES AND SUBCONTRACTORS. THE INSTALLATION CONTRACTOR IS SHALL ALSO BE RESPONSIBLE FOR VERIFYING ALL EXISTING SITE CONDITIONS INCLUDING DIMENSIONS, ELEVATIONS, AND LOCATIONS OF ALL EXISTING AND PROPOSED CONDITIONS AND UTILITIES.
2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS. ALL AREAS DISTURBED DURING THE INSTALLATION OF THE WASTEWATER SYSTEM SHALL BE SEEDED AND MULCH WITHIN 48 HOURS OF COMPLETION.
3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL STATE AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO, NCDHHS-DPH, LOCAL COUNTY HEALTH DEPARTMENT, NCDOT, NC BUILDING CODE, AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM), RULES AND REGULATIONS OF THE NC DEPARTMENT OF AGRICULTURE, AND NC EROSION CONTROL STANDARDS.
4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGES HIS ORGANIZATION CAUSES TO THE OWNERS PROPERTY DURING THE PERFORMANCE OF THE INSTALLATION.
5) ALL STORAGE OF MATERIALS AND EQUIPMENT ON THE SITE SHALL BE APPROVED BY THE OWNER.
6) THE INSTALLATION OF THE WASTEWATER SYSTEM SHALL COMPLY WITH ALL RULES AND REGULATION SET FORTH BY NCDHHS ON-SITE WASTEWATER BRANCH AND THE LOCAL COUNTY HEALTH DEPARTMENT.

OPERATION AND MAINTENCE REQUIREMENTS

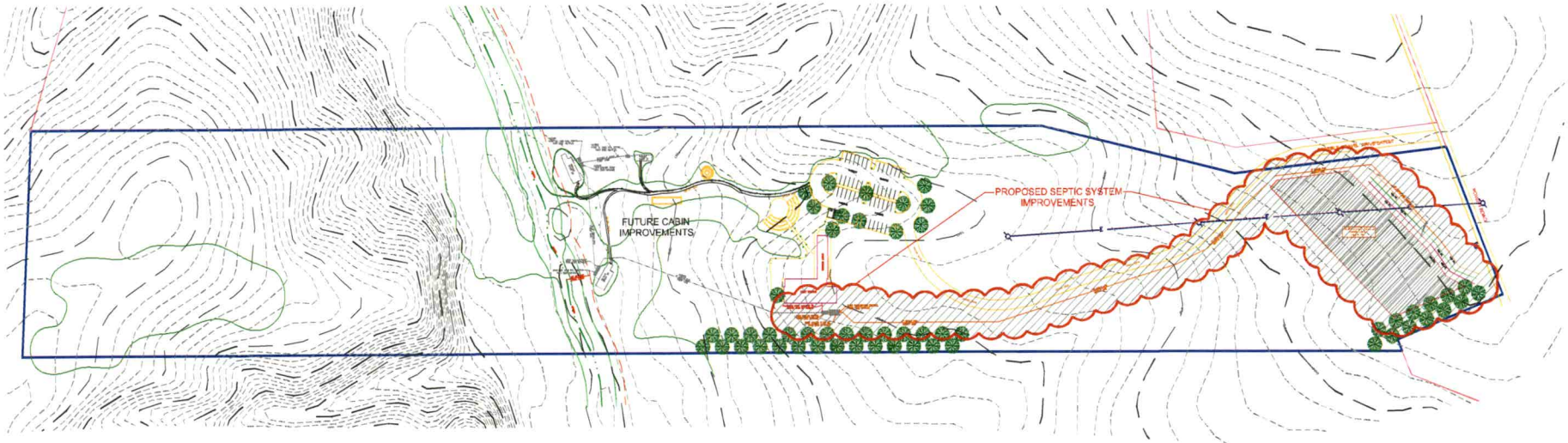
SYSTEM TYPE: FLOW EQUALIZATION (INNOVATIVE WASTE WATER SYSTEM NO: IWWS-2004-01
DAILY DESIGN FLOW: 908 GPD
WASTEWATER DISPOSAL SYSTEM
SYSTEM CLASSIFICATION - V

A) SYSTEM MANAGEMENT REQUIREMENT
THE LUMEN FARM EVENT VENUE IS REQUIRED TO EITHER EMPLOY AT ALL TIMES OR HAVE A CONTRACT WITH A MANAGEMENT ENTITY CERTIFIED TO OPERATE AND MAINTAIN THE THE FACILITIES WASTEWATER DISPOSAL SYSTEMS. ALL APPLICABLE PROVISIONS OF PARAGRAPH 15A NCAC 18A. 1981, MAINTENANCE OF SEWAGE SYSTEM, SHALL APPLY.

B) INSPECTIONS AND MAINTENANCE OF THE SYSTEM SHALL BE PERFORMED BY THE CERTIFIED SUBSURFACE OPERATOR AT THE FREQUENCY SPECIFIED BY NCDHHS ON-SITE WATER PROTECTION BRANCH INNOVATIVE WASTEWATER APPROVAL IWWS-2004-01 FOR FLOW EQUALIZATION.

MINIMUM INSPECTION / MAINTENANCE FREQUENCY - 2 PER YEAR
INSPECTION REPORT SUBMITTED TO THE LHD - ONCE PER YEAR

C) MAINTENANCE INSTRUCTIONS
MINIMUM MAINTENANCE DURING EACH INSPECTION SHALL INSLUDE VISUAL OBSERVATION OF THE DRAINFIELD, CHECKING AND CLEAMING FILTERS, MEASURING DELIVERY RATES, METER READING, PUMP RUN TIMES, CYCLE COUNTS, HIGH-LEVEL EVENTS, AND WATER METER READINGS WHERE APPLICABLE. AT LEAST ONCE PER YEAR, ORIFICE CONTROL DEVICES SHALL BE MEASURED AND RECORDED. NECESSARY ADJUSTMENTS TO TIMER SETTING SHALL BE APPROVED BY THE LOCAL HEALTH DEPARTMENT, AND ADJUSTMENT TIMES NOTED IN THE MONITORING LOG AND REPORTS.



WATER AND SEWER NOTE:

RELATION OF WATER MAINS TO SEWERS

(A) LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAIN SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION--IN WHICH CASE:
(1) THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR
(2) THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE OF A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER

(B) CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLES LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION--IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

(C) CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING

Wastewater Disposal System Installer Notes

1. All construction, materials, and workmanship shall meet or exceed all applicable codes and requirements, including NCDHHS/DPH (on-site wastewater section), local county health department, North Carolina Building Code, and any other applicable code or
2. The Contractor shall be responsible for obtaining all necessary permits. The cost of any permits shall be included in the original contract price.
3. The Contractor is responsible for scheduling all necessary inspections with the appropriate governmental agencies.
4. The Contractor shall be responsible for locating all existing utilities (above or below ground), and will be held responsible for their protection, and repair if damaged during
5. Prior to beginning work the Contractor is to provide the Owner and his Project Manager a schedule, which is to detail the wastewater disposal system installation.
6. All storage of materials and equipment to be used on the project shall be in areas approved by owner management. All storage areas shall be restored to near original condition as practical upon completion of the contractors' work on the project.

Public Convenience and Safety
The Contractor at all times shall conduct the work in such a manner as to ensure the least obstruction practicable. The convenience of the general public and of the residents along and adjacent to the work shall be provided for in an adequate and satisfactory manner.

Barricades, Danger, Warning and Detour Signs
The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient red lights, danger signals and signs, and take all necessary precautions for the protection of the work and safety of the public.
All trash, construction debris, etc. shall be removed from the site daily or stored safely in a container belonging to the Contractor. The Contractor shall not use containers belonging to the owner.

10 Prior to installing any system components, the contractor shall identify all existing utilities (above and below finish grade) and coorinate installations with the local health department.
11. After all construction is complete, the Contractor shall seed and mulch all disturbed

CONSTRUCTION SEQUENCE

1) FIVE (5) DAYS PRIOR TO BEGINNING WORK THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING TO DISCUSS THE SCOPE AND SCHEDULE OF THE PROJECT. THE FOLLOWING INDIVIDUALS ARE TO BE CONTACTED TO ATTEND:

OWNER - BRITT LOUKOS (317-652-7733)
GENERAL CONTRACTOR - MIKE MOORE (724-622-0064)
SOIL SCIENTIST - GENE YOUNG (338-808-9208)
HUGH CREED ASSOCIATES - DARIAN CREED (338-689-9190)

2) INSTALL EROSION CONTROL AS NECESSARY.
3) VERIFY ALL SITE GRADES AND ELEVATIONS FROM EXISTING STRUCTURES AND PROPOSED STRUCTURES TO INSURE PROPER DRAINAGE. MAKE ALL NECESSARY ADJUSTMENT AS REQUIRED FOR PROPER OPERATION.
4) CLEAR AND GRADE SITE AS NECESSARY.
5) LAYOUT THE PROPOSED DRAINFIELD LINES FOR THE INITIAL SYSTEM AND CALL THE GENE YOUNG, SOIL SCIENTIST, FOR AN INSPECTION AND APPROVAL.
6) INSTALL SUBSURFACE WASTEWATER TREATMENT AND DISPOSAL SYSTEM IMPROVEMENTS. CALL FOR ALL REQUIRED INSPECTIONS DURING INSTALLATION.
7) LANDSCAPE, SEED, AND MULCH ALL DISTURBED AREAS IN THE NEW SYSTEM AREA.
8) SCHEDULE FOR FINAL SYSTEM FINAL INSPECTION AND START-UP MEETING WITH PREVIOUS CONTACTS.
9) MAKE ALL SYSTEM CORRECTIONS IDENIFIED DURING THE FINAL INSPECTION.
10) LANDSCAPE, SEED AND MULCH ALL DISTURBED AREAS.
11) AFTER ALL SEEDED AREAS ARE ESTABLISHED (80% MIN. COVERAGE) REMOVE SILT FENCE, STONE, AND ANY OTHER DEBRIS. SMOOTH REMAINING DISTURBED AREAS TO BLEND W/ EXISTING GRADE AND SEED AND MULCH.

THE LUMEM FARM EVENT CENTER DEVELOPMENT WILL BE COMPLETED IN TWO (2) PHASES.PHASE #1 WILL INCLUDE THE CONSTRUCTION OF THE EVENT FACILITY. AT A FUTURE DATE PHASE #2 WILL BE COMPLETED, WHICH WILL INCLUDE THE CONSTRUCTION OF FOUR (4) ONE (1) BEDROOM CABINS. THESE PLANS INCLUDE THE DESIGN FOR BOTH PHASES. HOWEVER, THE INITIAL PRIVATE PERMIT WILL ONLY BE FOR PHASE #1. WHEN FUTURE PHASE #2 IS DEVELOPED, A NEW PRIVATE PERMIT WILL BE REQUIRED.

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER DARIAN CREED
11-30-2023

OVERALL SITE PLAN

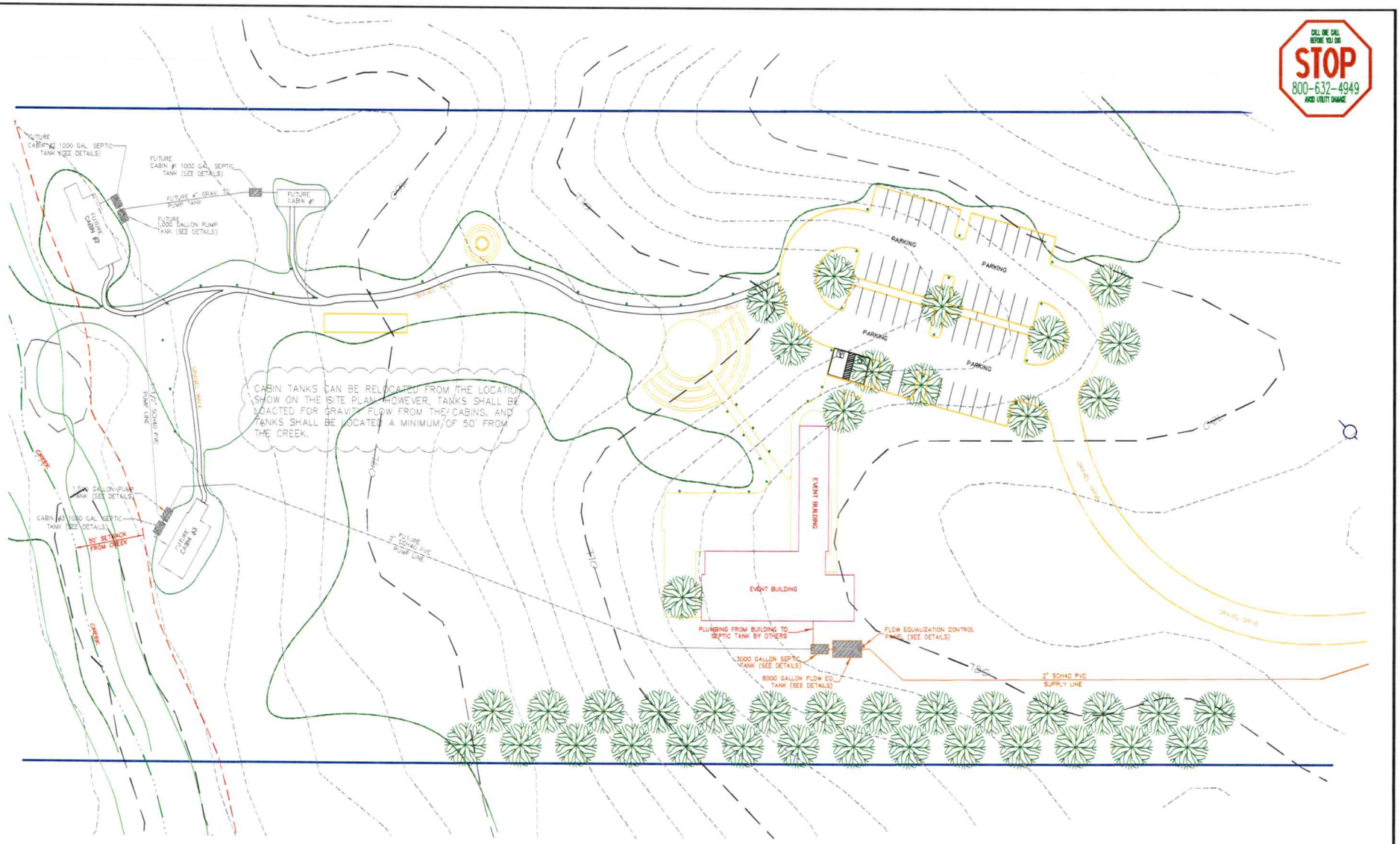
LUMEN FARM
280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

DATE: 11-30-23 | SCALE: 1"=100' | 0 50 100 200 | SHEET: 1 OF 8

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS

P.O. BOX 9623
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408

PHONE: (336) 275-9826
OR (336) 275-8084
FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM



THE LUMEM FARM EVENT CENTER DEVELOPMENT WILL BE COMPLETED IN TWO (2) STAGES. STAGE #1 WILL INCLUDE THE CONSTRUCTION OF THE EVENT FACILITY. AT A FUTURE DATE STAGE #2 WILL BE COMPLETED, WHICH WILL INCLUDE THE CONSTRUCTION OF FOUR (4) ONE (1) BEDROOM CABINS. THESE PLANS INCLUDE THE DESIGN FOR BOTH STAGES. HOWEVER, THE INITIAL PRIVATE PERMIT WILL ONLY BE FOR STAGE #1. WHEN FUTURE STAGE #2 IN DEVELOPED, A NEW PRIVATE PERMIT WILL BE REQUIRED.

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER MORRIS Z. CLAYTON

11-30-2023

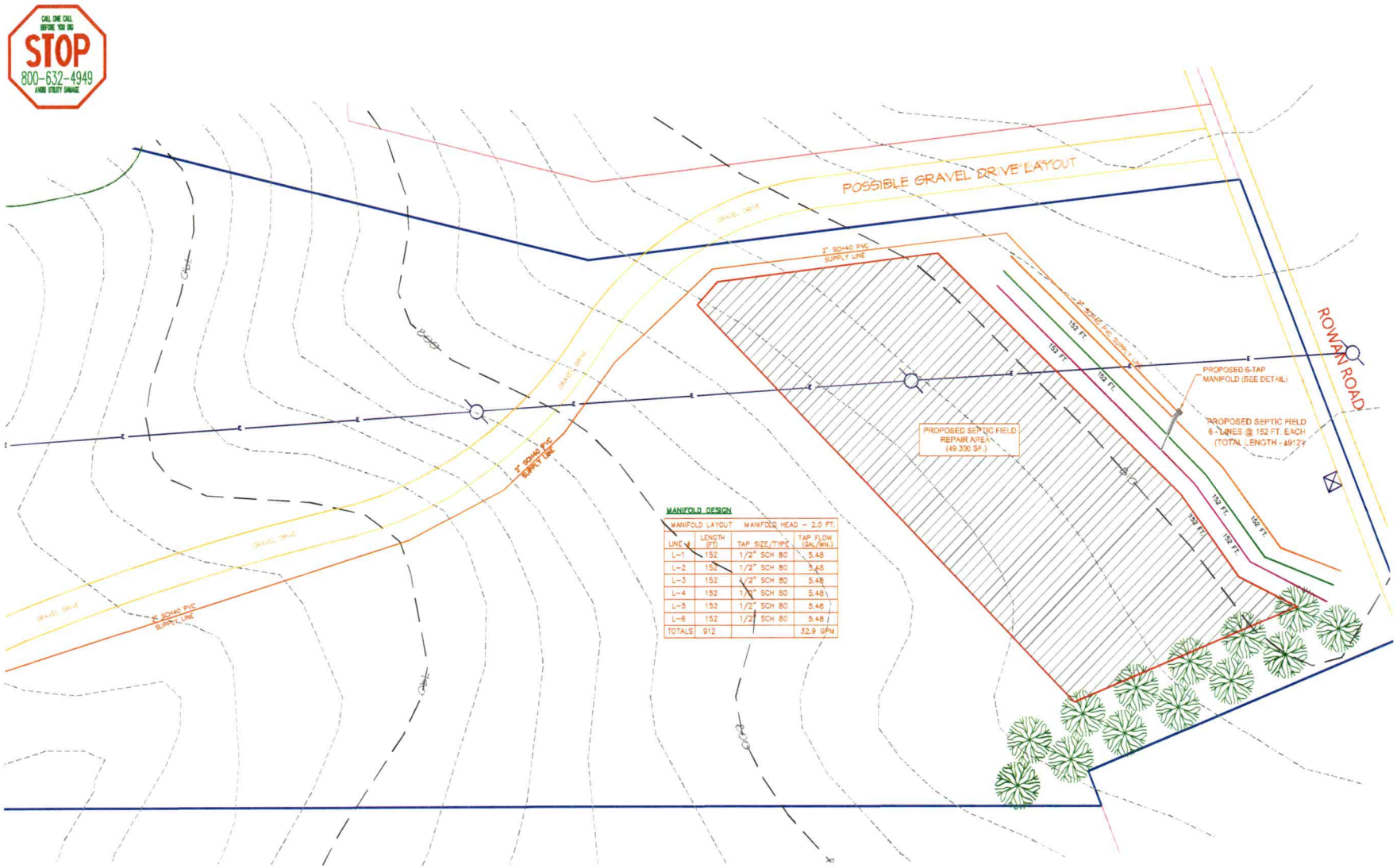
SITE PLAN #1

LUMEN FARM

280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

DATE: 11-30-23 | SCALE: 1"=30' | SHEET: 2 OF 8

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS
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FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM



MANIFOLD DESIGN

MANIFOLD LAYOUT		MANIFOLD HEAD = 2.0 FT.	
LINE #	LENGTH (FT)	TAP SIZE/TYPE	TAP FLOW (GAL/MIN.)
L-1	152	1/2" SCH 80	5.48
L-2	152	1/2" SCH 80	5.48
L-3	152	1/2" SCH 80	5.48
L-4	152	1/2" SCH 80	5.48
L-5	152	1/2" SCH 80	5.48
L-6	152	1/2" SCH 80	5.48
TOTALS	912		32.9 GPM

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORMAN Z. CLAYTON

11-30-2023

SITE PLAN #2

LUMEN FARM

280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

DATE: 11-30-23 | SCALE: 1"=30' | SHEET: 3 OF 8

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS

P.O. BOX 9623
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GREENSBORO, N.C. 27408

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OR (336) 275-8084
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STOP
800-632-4949
AND UTILITY MARKS

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER

PRIOR TO INSTALLING ANY TANKS, EFFLUENT FILTERS, GRAVITY DISTRIBUTION LINES, FORCE MAINS, OR ANY OTHER PART OF THE PROJECT SENSITIVE TO ELEVATION FOR PROPER OPERATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFING THE ELEVATIONS OF ALL EXISTING STRUCTURES TO ENSURE PROPER SYSTEM FUNCTION. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING SYSTEM COMPONENTS AS NECESSARY. ALL INSTALLATIONS SHALL BE APPROVED BY THE WILKES COUNTY ENVIROMENTAL HEALTH DEPARTMENT.

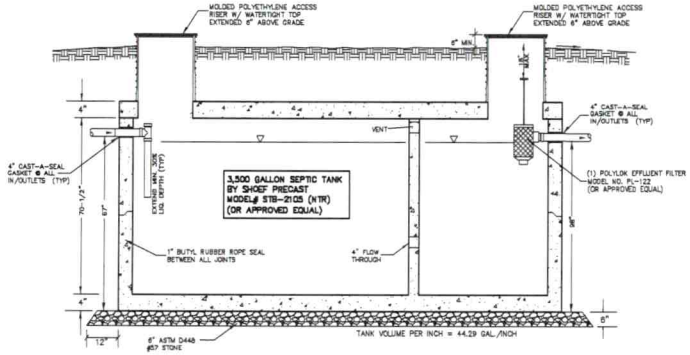
NOTE:
ACTUAL DEPTH OF TANKS UNKNOWN. CONTRACTOR SHALL VERIFY DEPTH OF TANKS PRIOR TO INSTALLATION. IF TANKS ARE 36" OR MORE BELOW FINISH GRADE TRAFFIC RATED TANKS ARE REQUIRED.

TANK INSTALLATION NOTE:
ALL TANKS SHALL BE WATER TESTED FOR TIGHTNESS AS FOLLOWS PRIOR TO BACKFILLING AROUND TANKS.

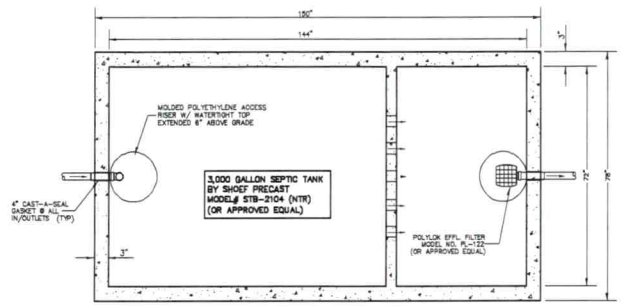
VACUUM TEST – PROVIDE A MINIMUM VACUUM OF 5 PSI AND HOLD THE VACUUM FOR A MINIMUM OF 2 MINUTES.

NOTE:
CONTRACTOR SHALL VERIFY ALL TANK DIMENSIONS AND ELEVATIONS PRIOR TO PRIOR TO INSTALLATION

PRIOR TO ORDERING GREASE TRAPS THE CONTRACTOR SHALL CONTACT THE TANK MANUFACTURE TO DISCUSS THE TANKS DESIGNS AND ENSURE THAT ALL OPENING ARE AS INDICATED ON THE DRAWING. THE CONTARCTOR SHALL SUPPLY CUT SHEETS TO THE PROJECT ENGINEER FOR ALL TANKS BEING INSTALLED W/ THE PROJECT.



EVENT CENTER
3,500 GALLON SEPTIC TANK – SECTION VIEW
NOT TO SCALE



EVENT CENTER
3,500 GALLON SEPTIC TANK – PLAN VIEW
NOT TO SCALE

EVENT CENTER SEPTIC TANK DETAILS
NOT TO SCALE

MATERIALS NOTE:
ANY MODIFICATION IN MATERIALS AS NOTED ON THESE PLANS SHALL BE APPROVED BY HUGH CREED ASSOCIATES, INC., P.A. PRIOR TO INSTALLATION. IF A PRODUCT IS INSTALLED WITHOUT PRIOR APPROVAL, AND DEEMED UNACCEPTABLE BY THE DESIGN ENGINEER, THE PRODUCT WILL BE REMOVED AND REPLACED WITH SPECIFIED PRODUCE AT THE INSTALLERS EXPENSE.

THE CONTRACTOR SHALL NOTE THAT THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ECT., THAT MAY BE REQUIRED FOR A COMPLETE WORKING SYSTEM.

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER ROBERT J. CLAYTON

11-30-2023

DETAIL SHEET #1

LUMEN FARM

280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

DATE: 11-30-23 | SCALE: NONE | SHEET: 4 OF 8

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS

P.O. BOX 9623
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408

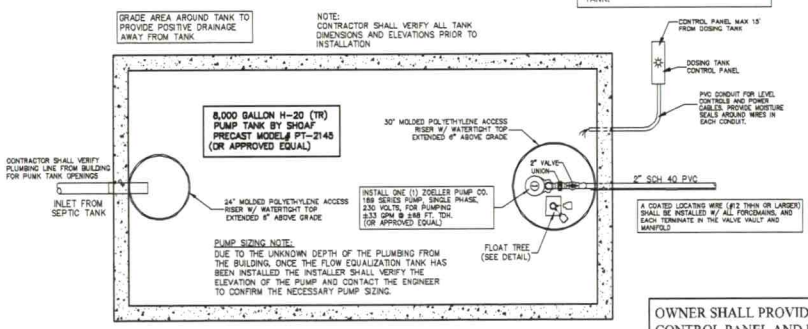
PHONE: (336) 275-9826
OR (336) 275-8084
FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM

DEPTH OF TANKS NOTE:
DUE TO THE UNKNOWN DEPTH OF THE PLUMBING FROM THE BUILDING, THE ACTUAL DEPTH OF TANKS IS UNKNOWN. THE CONTRACTOR/INSTALLER SHALL VERIFY THE DEPTH OF THE TANKS PRIOR TO INSTALLATION. ANY TANKS MORE THAN 36" BELOW FINISH GRADE SHALL BE TRAFFIC RATED.

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER
IT SHALL BE THE RESPONSIBILITY OF THE WASTEWATER DISPOSAL SYSTEM INSTALLER TO VERIFY THE SITE SANITARY SEWER DISTRIBUTION ELEVATIONS TO ENSURE SUFFICIENT GRADE TO THE WASTEWATER DISPOSAL SYSTEM. THE INSTALLER SHALL ADJUST THE ELEVATIONS OF THE WASTEWATER DISPOSAL SYSTEM AS NECESSARY FOR PROPER OPERATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTING POWER AVAILABLE PRIOR TO ORDERING PUMPS AND CONTROL PANEL.

NO ELECTRICAL SPLICES OR JUNCTION BOXES CAN BE MADE INSIDE THE PUMP TANK.



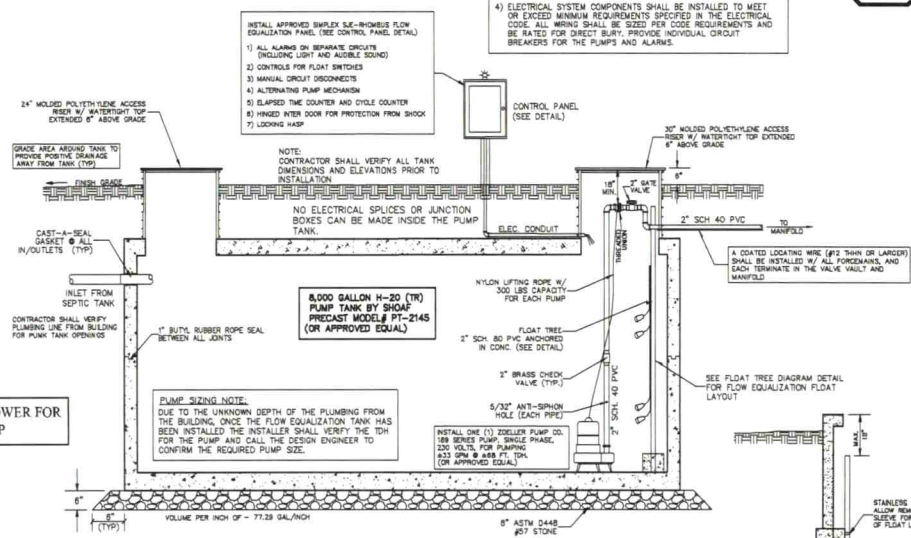
FLOW EQUALIZATION PUMP TANK – PLAN VIEW
NTS

OWNER SHALL PROVIDE POWER FOR CONTROL PANEL AND PUMP

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER
IT SHALL BE THE RESPONSIBILITY OF THE WASTEWATER DISPOSAL SYSTEM INSTALLER TO VERIFY THE SITE SANITARY SEWER DISTRIBUTION ELEVATIONS TO ENSURE SUFFICIENT GRADE TO THE WASTEWATER DISPOSAL SYSTEM. THE INSTALLER SHALL ADJUST THE ELEVATIONS OF THE WASTEWATER DISPOSAL SYSTEM AS NECESSARY FOR PROPER OPERATION.

NOTES
1) ALL PIPE CONNECTIONS AT STRUCTURES 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.
4) ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE SIZED PER CODE REQUIREMENTS AND BE RATED FOR DIRECT BURY. PROVIDE INDIVIDUAL CIRCUIT BREAKERS FOR THE PUMPS AND ALARMS.

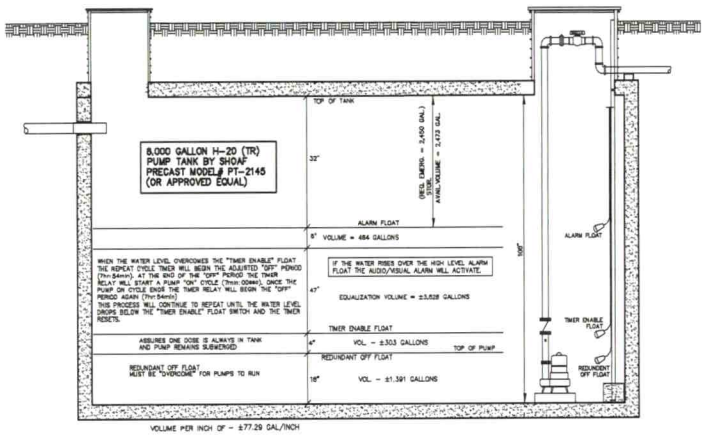
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AND VERIFY DEPTH



FLOW EQUALIZATION PUMP TANK – SECTION VIEW
NTS

MATERIALS NOTE:
ANY MODIFICATION IN MATERIALS AS NOTED ON THESE PLANS SHALL BE APPROVED BY HUGH CREED ASSOCIATES, INC., P.A. PRIOR TO INSTALLATION. IF A PRODUCT IS INSTALLED WITHOUT PRIOR APPROVAL AND DEEMED UNACCEPTABLE BY THE DESIGN ENGINEER, THE PRODUCT WILL BE REMOVED AND REPLACED WITH SPECIFIED PRODUCE AT THE INSTALLERS EXPENSE.

TANK INSTALLATION NOTE:
ALL TANKS SHALL BE WATER TESTED FOR TIGHTNESS AS FOLLOWS PRIOR TO BACKFILLING AROUND TANKS.
VACUUM TEST – PROVIDE A MINIMUM VACUUM OF 5 PSI AND HOLD THE VACUUM FOR A MINIMUM OF 2 MINUTES.



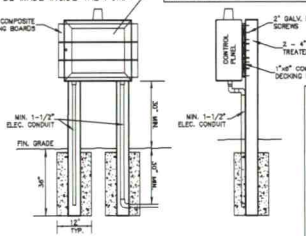
VOLUME PER INCH OF – ±77.29 GAL/INCH

FLOW EQUALIZATION PUMP TANK FLOAT DIAGRAM
NOT TO SCALE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTING POWER AVAILABLE PRIOR TO ORDERING PUMPS AND CONTROL PANEL.

NO ELECTRICAL SPLICES OR JUNCTION BOXES CAN BE MADE INSIDE THE PUMP TANK.

INSTALL NCDENR APPROVED SIMPLEX SJE-RHOMBUS #3 SERIES FLOW EQUALIZATION CONTROL PANEL (NO EXCEPTIONS)



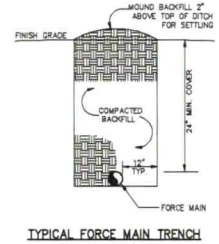
FRONT VIEW SIDE VIEW

INSTALL NCDENR APPROVED SIMPLEX SJE-RHOMBUS #3 SERIES FLOW EQUALIZATION CONTROL PANEL (NO EXCEPTIONS)
* HIGH WATER LEVEL ALARM EVENT COUNTER
* TIMER OVER-RIDE COUNTER
* PUMP EVENT COUNTER
* PUMP ELAPSED TIME METER
* MAGNETIC MOTOR CONTACTOR
* HOA SWITCH
* CONTROL CIRCUIT FUSE
* ALARM CIRCUIT FUSE
* FLOAT SWITCH TERMINAL BLOCK
* FOR EACH PUMP:
  – PROGRAMMABLE TIMER W/ VARIABLE CONTROLS FOR SETTING ON/OFF TIMES FROM 0S TO 30 HOURS, OR
  – A REPEAT CYCLE TIMER THAT AFFORD THE AMOUNT OF CONTROL NEEDED FOR PUMP RUN TIME AND OFF TIME.
* CIRCUIT BREAKER FOR EACH PUMP
* CIRCUIT BREAKER FOR THE ALARM/CONTROL CIRCUIT
* NEMA 4X ALARM STROBE BEACON
* NEMA 4X ALARM HORN (93 DEB. @ 3' MIN. W/AUTO RESET
* NEMA 4X EXTERIOR HORN TEST/ NORMAL/ SILENCE SWITCH
* GROUND LUG
* 2 LOCKABLE HASPS
* PUMP RUN LIGHT

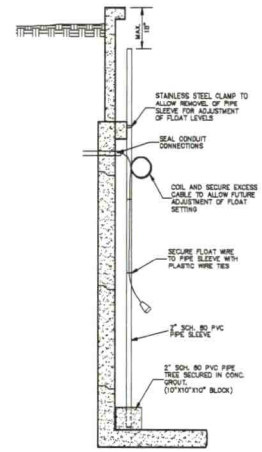
ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE SIZED PER CODE REQUIREMENTS AND BE RATED FOR DIRECT BURY. PROVIDE INDIVIDUAL CIRCUIT BREAKERS FOR THE PUMP AND ALARM.

FLOW EQUALIZATION CONTROL PANEL DETAIL
NOT TO SCALE

THE CONTRACTOR SHALL NOTE THAT THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ECT., THAT MAY BE REQUIRED FOR A COMPLETE WORKING SYSTEM.



TYPICAL FORCE MAIN TRENCH
N.T.S.



FLOAT TREE DETAIL
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORRIS Z. CLAYTON
11-30-2023

DETAIL SHEET #2

LUMEN FARM
280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

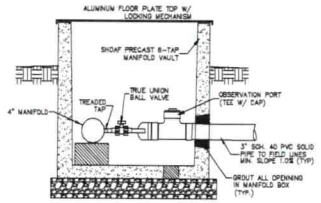
DATE: 11-30-23 | SCALE: NONE | SHEET: 5 OF 8

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS
P.O. BOX 9523
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408
PHONE: (336) 275-9825
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FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM

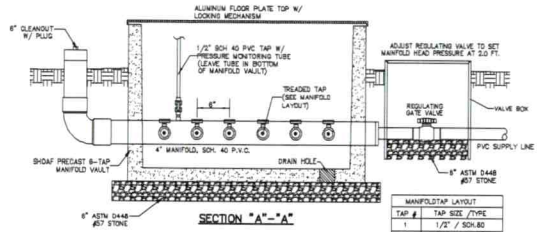
THE CONTRACTOR SHALL NOTE THAT THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ECT., THAT MAY BE REQUIRED FOR A COMPLETE WORKING SYSTEM.

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AND VISUT DAMAGE

MATERIALS NOTE:
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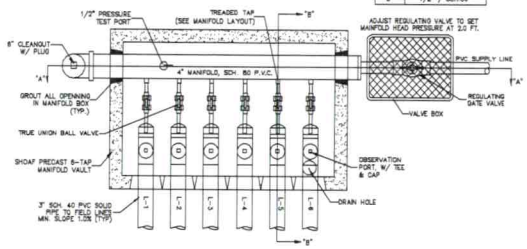


SECTION "B"-"B"



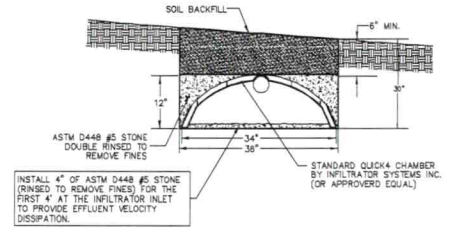
SECTION "A"-"A"

MANIFOLDTAP LAYOUT	
TAP #	TAP SIZE /TYPE
1	1/2" / SCH.80
2	1/2" / SCH.80
3	1/2" / SCH.80
4	1/2" / SCH.80
5	1/2" / SCH.80

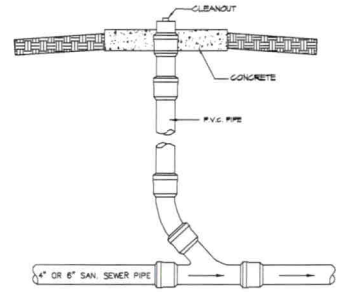


PLAN VIEW

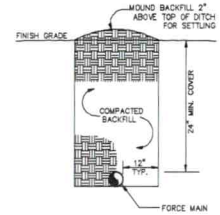
PRESSURE MANIFOLD DETAIL
NO SCALE



CHAMBER ABSORPTION TRENCH CROSS-SECTION
NOT TO SCALE



CLEAN-OUT DETAIL
N.T.S.



TYPICAL FORCE MAIN TRENCH
N.T.S.

LANDSCAPING, SEEDING AND MULCHING

IMMEDIATELY AFTER ALL CONSTRUCTION IS COMPLETE, ALL AREAS DISTURBED DURING THE WASTE WATER SYSTEM INSTALLATION SHALL BE LANDSCAPED, SEEDED AND MULCHED.

1) ALL AREAS TO BE SEEDED SHALL BE PROPERLY PREPARED. THE TOP 4" OF SOIL SHALL BE RIPPED AND TILLED INTO AN ACCEPTABLE SEEDBED BY USE OF APPROVED METHODS. REMOVE ALL STONES LARGER 1" IN ANY DIMENSION, STICKS, ROOTS, AND ANY OTHER EXTRANEOUS MATERIALS.
2) GRADE ALL SEEDED AREAS SUBJECT TO BE MOWED AND MAINTAINED AS LAWN AREAS TO A SMOOTH, EVEN SURFACE SUCH THAT NO ADDITIONAL SHALL BE NECESSARY IN ORDER FOR A LAWNMOWER TO PASS SMOOTHLY OVER THE SEEDED AREA.
3) LIME AND FERTILIZER SHALL BE DISTRIBUTED UNIFORMLY OVER THE PREPARED SURFACE AT THE SPECIFIED RATES.
4) WITH IN 24 HOURS AFTER THE COMPLETION OF SEEDING, ALL AREAS SHALL BE MULCHED. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR BY AN APPROVED MECHANICAL SPREADER.
5) UNLESS SPECIFIED BY THE ENGINEER, THE TYPE OF SEED, AND THE RATES OF SEED, FERTILIZER, LIME, AND MULCH SHALL BE AS LISTED BELOW.

DATE	TYPE	APPLICATION RATE
NOV. 1 - MARCH	TALL FESCUE	300 LBS./AC.
	ABRUZZI RYE	25 LBS./AC.
MARCH 1 - NOV.1	TALL FESCUE	300 LBS./AC.
ALL SEASONS	LIME	4000 LBS./AC.
ALL SEASONS	FERTILIZER (10-10-10)	1000 LBS./AC.
ALL SEASONS	MULCH (SMALL GRAIN STRAW)	2 TONS./AC.
ALL SEASONS	ANCHOR (ASPHALT EMULSION)	500 GAL./AC.

THE CONTRACTOR SHALL UPON COMPLETION MAINTAIN THE SEEDED AREAS IN A SATIS FACTORY CONDITION UNTIL A MINIMUM 80% COVERAGE IS ESTABLISHED.

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER

PRIOR TO INSTALLING ANY TANKS, EFFLUENT FILTERS, GRAVITY DISTRIBUTION LINES, FORCE MAINS, OR ANY OTHER PART OF THE PROJECT SENSITIVE TO ELEVATION FOR PROPER OPERATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFING THE ELEVATIONS OF ALL EXISTING STRUCTURES TO ENSURE PROPER SYSTEM FUNCTION. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING SYSTEM COMPONENTS AS NECESSARY. ALL INSTALLATIONS SHALL BE APPROVED BY THE WILKES COUNTY ENVIROMENTAL HEALTH DEPARTMENT.

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORMAN Z. CLAYTON

11-30-2023

DETAIL SHEET #4

LUMEN FARM

280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

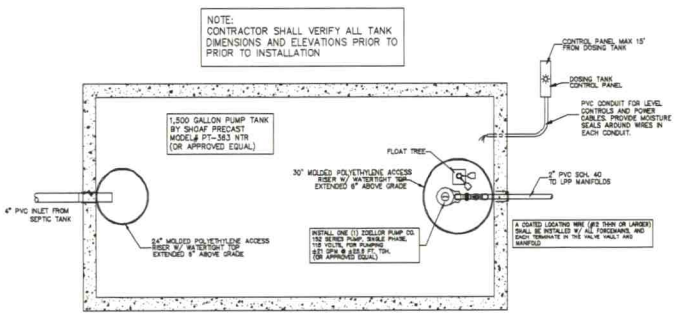
DATE: 11-30-23 | SCALE: NONE | SHEET: 5 OF 9

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS

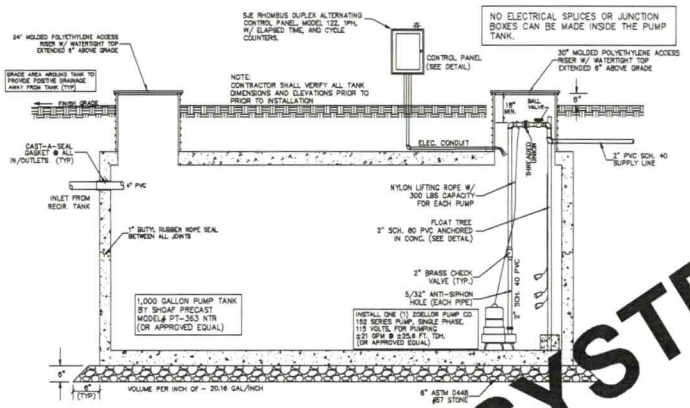
P.O. BOX 9623
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408

PHONE: (336) 275-9826
OR (336) 275-8084
FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM

CAD: DWG. 9

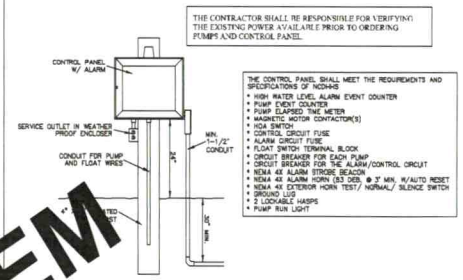


PUMP TANK – PLAN VIEW
NTS



PUMP TANK – SECTION VIEW
NTS

CABIN #3 DISTRIBUTION TANK DETAILS
NOT TO SCALE



CONTROL PANEL DETAIL
NOT TO SCALE

NOTE:
ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE SIZED PER CODE REQUIREMENTS AND BE RATED FOR DIRECT BURY. PROVIDE INDIVIDUAL CIRCUIT BREAKERS FOR THE PUMP AND ALARM.

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER

PRIOR TO INSTALLING ANY TANKS, EFFLUENT FILTERS, GRAVITY DISTRIBUTION LINES, FORCE MAINS, OR ANY OTHER PART OF THE PROJECT SENSITIVE TO ELEVATION FOR PROPER OPERATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFING THE ELEVATIONS OF ALL EXISTING STRUCTURES TO ENSURE PROPER SYSTEM FUNCTION. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING SYSTEM COMPONENTS AS NECESSARY. ALL INSTALLATIONS SHALL BE APPROVED BY THE WILKES COUNTY ENVIROMENTAL HEALTH DEPARTMENT.

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.
4) ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE SIZED PER CODE REQUIREMENTS AND BE RATED FOR DIRECT BURY. PROVIDE INDIVIDUAL CIRCUIT BREAKERS FOR THE PUMPS AND ALARMS.

TANK INSTALLATION NOTE:

ALL TANKS SHALL BE WATER TESTED FOR TIGHTNESS AS FOLLOWS PRIOR TO BACKFILLING AROUND TANKS.

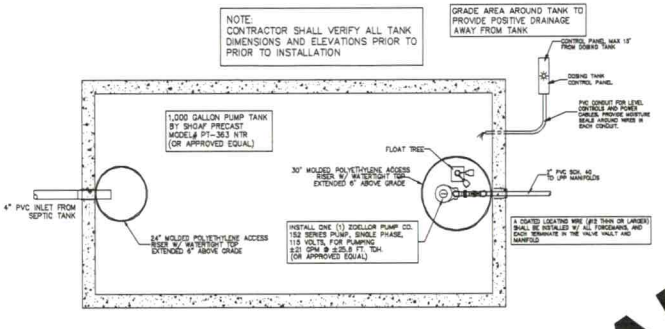
VACUUM TEST – PROVIDE A MINIMUM VACUUM OF 5 PSI AND HOLD THE VACUUM FOR A MINIMUM OF 2 MINUTES.

NOTE:
ACTUAL DEPTH OF TANKS UNKNOWN. CONTRACTOR SHALL VERIFY DEPTH OF TANKS PRIOR TO INSTALLATION. IF TANKS ARE 36" OR MORE BELOW FINISH GRADE TRAFFIC RATED TANKS ARE REQUIRED.

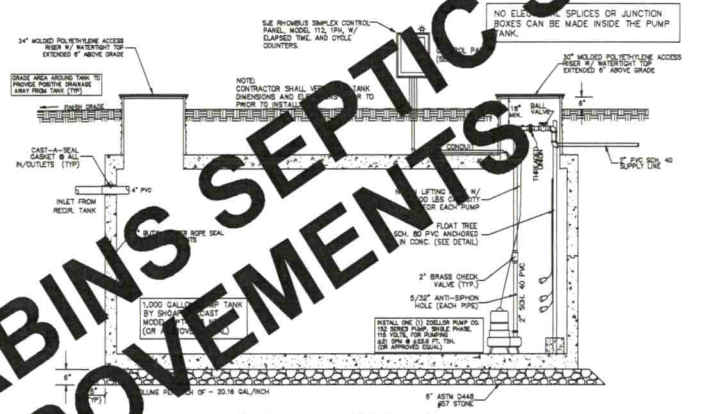
NOTE:
CONTRACTOR SHALL VERIFY ALL TANK DIMENSIONS AND ELEVATIONS PRIOR TO PRIOR TO INSTALLATION

MATERIALS NOTE:
ANY MODIFICATION IN MATERIALS AS NOTED ON THESE PLANS SHALL BE APPROVED BY HUGH CREED ASSOCIATES, INC., P.A. PRIOR TO INSTALLATION. IF A PRODUCT IS INSTALLED WITHOUT PRIOR APPROVAL, AND DEEMED UNACCEPTABLE BY THE DESIGN ENGINEER, THE PRODUCT WILL BE REMOVED AND REPLACED WITH SPECIFIED PRODUCE AT THE INSTALLERS EXPENSE.

THE LUMEN FARM EVENT CENTER DEVELOPMENT WILL BE COMPLETED IN TWO (2) STAGES. STAGE #1 WILL INCLUDE THE CONSTRUCTION OF THE EVENT FACILITY, AT A FUTURE DATE STAGE #2 WILL BE COMPLETED WHICH WILL INCLUDE THE CONSTRUCTION OF FOUR (4) ONE (1) BEDROOM CABINS. THESE PLANS INCLUDE THE DESIGN FOR BOTH STAGES, HOWEVER, THE INITIAL PRIVATE PERMIT WILL ONLY BE FOR STAGE #1, WHEN FUTURE STAGE #2 IS DEVELOPED, A NEW PRIVATE PERMIT WILL BE REQUIRED.

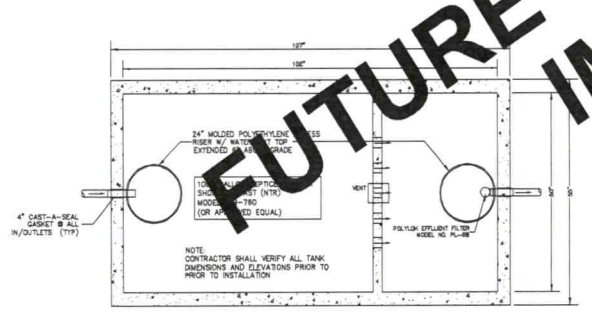


PUMP TANK – PLAN VIEW
NTS

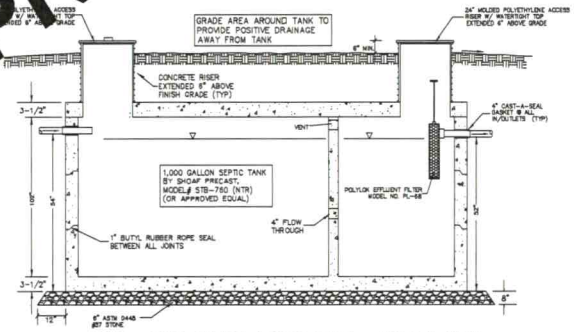


PUMP TANK – SECTION VIEW
NTS

CABIN #2. DISTRIBUTION TANK DETAILS
NOT TO SCALE



1,000 SEPTIC TANK – PLAN VIEW
NOT TO SCALE



1000 GALLON SEPTIC TANK – SECTION VIEW
NOT TO SCALE

THE CONTRACTOR SHALL NOTE THAT THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ECT., THAT MAY BE REQUIRED FOR A COMPLETE WORKING SYSTEM.

CABINS #1, #2, #3 1,000 SEPTIC TANK DETAILS
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER MORRIS Z. CLAYTON

11-30-2023

FUTURE CABINS SEPTIC SYSTEM IMPROVEMENTS

DETAIL SHEET #4

LUMEN FARM

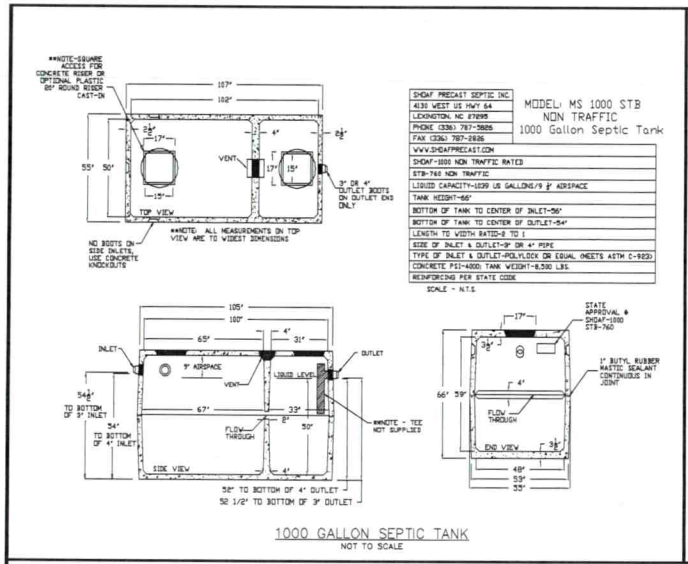
280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

DATE: 11-30-23 | SCALE: NONE | SHEET: 7 OF 8

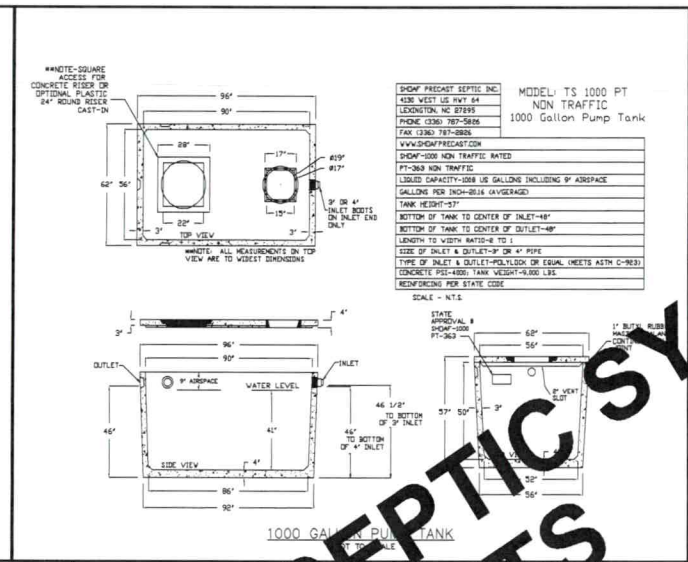
HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS

P.O. BOX 9623
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408

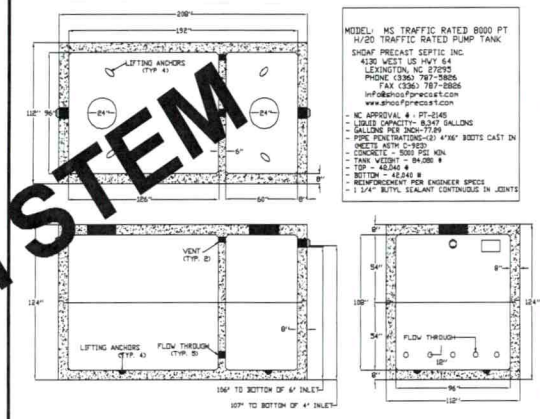
PHONE: (336) 275-9826
OR (336) 275-8084
FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM



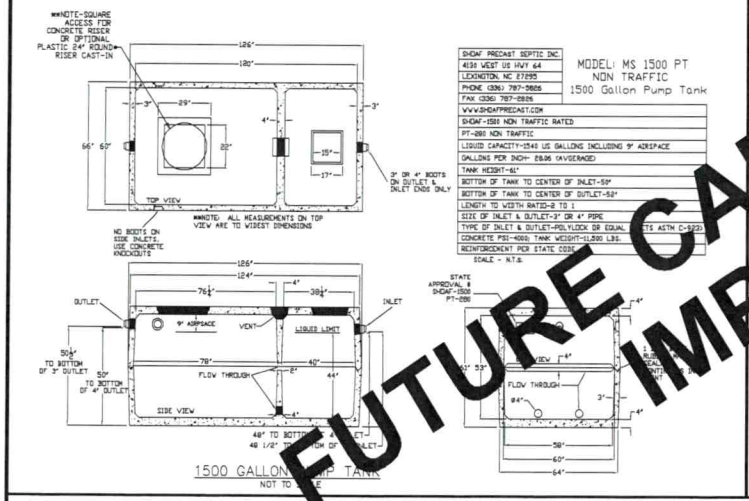
1000 GALLON SEPTIC TANK
NOT TO SCALE



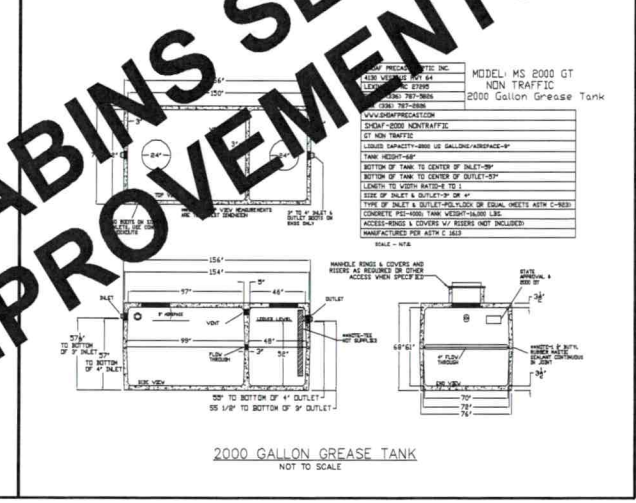
1000 GALLON PUMP TANK
NOT TO SCALE



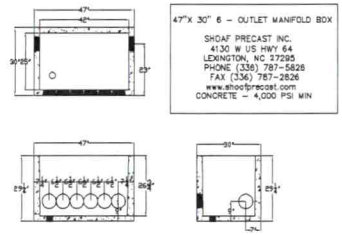
8000 GALLON FLOW EQUALIZATION PUMP TANK
NOT TO SCALE



1500 GALLON PUMP TANK
NOT TO SCALE



2000 GALLON GREASE TANK
NOT TO SCALE



47"X30" - 6 TAP MANIFOLD
NOT TO SCALE

FUTURE CABINS SEPTIC SYSTEM IMPROVEMENTS

MATERIALS NOTE:
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NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER MORRIS Z CLAYTON

11-30-2023

DETAIL SHEET #5

LUMEN FARM

280 ROWAN ROAD
CLEVELAND, 27013 NC
IREDELL COUNTY, NORTH CAROLINA

DATE: 11-30-23 | SCALE: NONE | SHEET: 8 OF 8

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS
P.O. BOX 9623
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408
PHONE: (336) 275-9826
OR (336) 275-8084
FIRM LICENSE #C-0551
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM

Markel Insurance Company

PROFESSIONAL LIABILITY INSURANCE DECLARATIONS

Claims Made and Reported Coverage: The coverage afforded by this policy is limited to liability for only those Claims that are first made against the Insured during the Policy Period or the Extended Reporting Period, if exercised, and reported to Markel Insurance Company during the Policy Period or the Extended Reporting Period, if exercised, or within 60 days after the expiration of the Policy Period or the Extended Reporting Period, if exercised.

Notice: This policy contains provisions that reduce the Limits of Liability stated in the policy by the costs of legal defense and permit legal defense costs to be applied against the deductible, unless the policy is amended by endorsement. Please read the policy carefully.

POLICY NUMBER: MEO1174-04 RENEWAL OF POLICY: MEO1174-03

NAMED INSURED: LAWRENCE EUGENE YOUNG

BUSINESS ADDRESS: 127 CREEK RIDGE DR
Lexington, NC 27295

POLICY PERIOD: From 04/05/2022 to 04/05/2023
12:01 A.M. Standard Time at address of Insured stated above.

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS OF THIS POLICY, THE COMPANY AGREES WITH THE NAMED INSURED TO PROVIDE THE INSURANCE AS STATED IN THIS POLICY.

1. **PROFESSIONAL SERVICES:** SOIL SCIENCE
2. **LIMITS OF LIABILITY**

Professional Liability Coverage	
A. Each Claim:	$2,000,000
B. Policy Aggregate:	$2,000,000
Additional Payments	
A. Contingent Bodily Injury And Property Damage	$0
B. Pollution	$10,000
C. Pre-Claim Assistance Expenses	$20,000
D. Sexual Abuse	$10,000
E. Third Party Discrimination	$25,000
Supplementary Payments	
A. Disciplinary Proceeding	$25,000 per Policy Period
B. Loss Of Earnings And Expense Reimbursement	$10,000
C. Public Relations Expenses	$5,000
D. Subpoena And Record Request Assistance	$5,000

Producer Number, Name and Mailing Address
98496
Wade Associates, LLC. - New Bern
PO Box 1209
Davidson, NC, 28036

3. **DEDUCTIBLE**

   A. Each Claim: $1,000

   B. Aggregate: $3,000

4. **RETROACTIVE DATE:** 04/05/2019

5. **PREMIUM RATE:** Flat **PREMIUM BASE:** $60,000

6. **PREMIUM FOR POLICY PERIOD**

   Minimum: $560

   Deposit: $575

   Adjusted Annual Premium: $575

7. **PREMIUM PERCENTAGE FOR EXTENDED REPORTING PERIOD:** 200%; 225%; 250%; 275%; 300% or 350%, of the total annual premium, respectively
   ADDITIONAL PERIOD: 12 months; 24 months; 36 months; 48 months; 60 months; 72 months

8. **FORMS AND ENDORSEMENTS ATTACHED AT POLICY INCEPTION:**

   See MDIL 1001 attached.

These declarations, together with the Coverage Form and any Endorsement(s), complete the above numbered policy.

Countersigned: 01/11/2022 (Date)	By: John K Clark Authorized Representative Signature

OSWP-2024-46264

Hugh Creed Associates, Inc. P.A.
Consulting Engineers & Land Surveyors
1306 W. WENDOVER AVENUE P.O. BOX 9623
GREENSBORO, N.C. 27408 GREENSBORO, N.C. 27429
TELE: (336) 275-9826 OR (336) 275-8084 FAX: (336) 275-3379
FIRM LICENSE #C-0551 E-MAIL: HCA@TRIADBIZ.RR.COM

October 7, 2024

Eugene Young, LSS
127 Creek Ridge Road
Lexington, NC 27295

Sub
Brittany Loukos
Lot #3

Re: Lumen Farm – 280 Rowan Rd., Cleveland, NC 27013
Engineer's Certification of Completion

Dear Mr. Young,

This letter is to certify, based on inspections by myself, or others under my supervision during construction and final start-up inspection which included representatives with the owner, and installer, the above referenced project was installed in accordance with the approved Engineering Plans and Specifications.

Sincerely,
Hugh Creed Associates, Inc., P.A.

Norris Z. Clayton, P.E., P.L.S.



10-07-2024

Young Soil CONSULTING PLLC
AOWE, NC Licensed Soil Scientist,

AUTHORIZATION TO OPERATE

County: Iredell PIN/Lot Identifier: 4772704162

Owner: Britt Loukos, Lumen Farm Applicant: _____

Property Address: 280 Rowan Road

Facility Description: Event Center

Number of bedrooms: _____ Number of Occupants: 200 Other: _____

Design Daily Flow: 908 GPD ☑ New System ☐ Expansion ☐ Repair ☐ Tank Replacement Only

If a repair, was best professional judgement used? ☐ Yes ☐ No *If yes, please attach BPJ-23.1 form to this Operation Permit.*

Type of Wastewater System* 25% reduction with gravel (Initial) 25% reduction with gravel (Repair)

**Please include system classification for proposed wastewater system types in accordance with Rule .1301 Table XXXII*

Wastewater Strength: ☑ Domestic ☐ High Strength ☐ Industrial Process Wastewater

Effluent Standard: ☑ DSE ☐ HSE ☐ NSF/ANSI 40 ☐ TS-I ☐ TS-II ☐ RCW

Type of Water Supply: ☑ Private well ☐ Public well ☐ Shared well ☐ Municipal Supply ☐ Spring ☐ Other: _____

Saprolite System: ☐ Yes ☑ No Pump Required: ☑ Yes ☐ No

Grease Trap Required: ☐ Yes ☑ No Additional Soil Cover Required: ☐ Yes ☑ No

Operator required: ☑ Yes ☐ No If yes, minimum inspection frequency required: 2 times/year

Installation Specifications:

Wastewater System Installed: Accepted 25% Reduction with 6 inches of #5 washed gravel installed on each side of the chambers

Wastewater System Classification Type*: Ve

**Please include system classification for proposed wastewater system types in accordance with Rule .1301 Table XXXII*

Septic Tank Size: 3500 gallons Septic Tank ID Number: STB-2105

Pump Tank Size (if applicable): 8347 gallons Pump Tank ID Number: PT-2145

Grease Trap Size (if applicable): _____ gallons Grease Tank ID Number: _____

Total Trench/Bed Length: 912--6-152' lines feet Trench/Bed Width: 36 inches

Soil Cover: 20 inches Additional Soil Cover Checked (if applicable): ☐ Yes ☑ No Date: _____

Trench/Bed Depth‡: 32 inches ‡ ***Measured on the downhill side of the trench***

Distribution Method: ☐ Serial ☐ D-Box or Parallel ☑ Pressure Manifold(s) ☐ LPP ☐ Other: _____

Artificial Drainage Installed: Yes ☐ No ☑ If yes, please specify details: _____

OP Conditions:

Certified Operator Required

The requirements of 15A NCAC 18E are incorporated by reference into this permit and shall be met. This Operation Permit is subject to compliance with the provisions of 15A NCAC 18E, or 15A NCAC 18A .1900, as applicable, and to the conditions of this permit.

AOWE Printed Name: Gene Young, AOWE, 10005E AOWE Signature: Gene Young, AOWE

Date: 10/8/24 Permit Expiration Date for Type V and VI Systems: _____

See attached site sketch

Revised January 2024

NCDHHS

Permit #: _____

CONSTRUCTION AUTHORIZATION FOR AOWE NOI

County: Iredell

PIN/Lot Identifier: 4772704162

Issued To: Britt Loukos

Property Location: 280 Rowan Road

AOWE/PE Plans/Evaluations Provided: Yes ☑ No ☐ If yes, name and license number of AOWE/PE: Gene Young, AOWE, 10005E

Facility Type: Event Center

☑ New ☐ Expansion ☐ Repair ☐ System Relocation ☐ Change of Use

Basement? ☐ Yes ☑ No Basement Fixtures? ☐ Yes ☑ No

Type of Wastewater System* Conventional Gravel 25% Reduction (Initial) Conventional Gravel 25% Reduction (Repair)

**Please include system classification for proposed wastewater system types in accordance with 15A NCAC 18A .1961 Table V(a)*

Design Daily Flow: 908 GPD Wastewater Strength: ☑ domestic ☐ high strength ☐ industrial process

Session Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies? ☐ Yes ☑ No
(if yes, please provide engineering documentation)

Installation Requirements/Conditions

Septic Tank Size: 3500 gallons Total Trench/Bed Length: 912 feet Trench/Bed Spacing: 9 feet on center

Trench/Bed Width: 36 inches LTAR: .25 gpd/ft²

Soil Cover: 20 inches Slope Corrected Maximum Trench/Bed Depth‡: 32 inches ‡ ***Measured on the downhill side of the trench***

Aggregate Depth: 6 inches above pipe 6 inches below pipe 12 inches total

Pump Tank Size (if applicable): 8000 gallons Requires more than 1 pump? ☐ Yes ☑ No

Pump Requirements: 68 ft. TDH vs. 30 GPM Grease Trap Size (if applicable): _____ gallons

Distribution Method: ☐ Serial ☐ D-Box or Parallel ☑ Pressure Manifold(s) ☐ LPP ☐ Other: _____

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

Legal Agreements *(If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)*

Multi-party Agreement Required [.1937(h)]: ☐ Yes ☑ No

Easement, Right-of-Way, or Encroachment Agreement Required [.1938(j)]: ☐ Yes ☑ No

Declaration of Restrictive Covenants: ☐ Yes ☑ No

Pre-Construction Conference Required: Yes ☐ No ☑

Conditions: See installer information Sheet

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

AOWE/PE Print Name: Gene Young, AOWE, 10005E Expiration Date: 12-5-28

AOWE/PE Signature: Gene Young AOWE Date: 12-5-23

See attached site sketch

Operation Permit Inspection Check List

INSTALLER: GRITT & SONS LLC
APPLICATION #: 10-8-24
~~DATE~~: _____
CERT # 1356

1. LOCATION AND SEPARATION DISTANCES

A.	**System installed in proper area**	✓
B.	~~House~~ **location in proper area** BUSINESS	✓
C.	System meets .1950 setback requirements	✓
D.	Distance from septic system to any wells	100 feet +
E.	Distance from septic tank to foundation	40 feet
F.	Distance from septic system to all property lines	10 feet +

2. SEPTIC TANK/PUMP TANK

		SEPTIC TANK	PUMP TANK
A.	Liquid capacity of septic tank	3500 gallons	834? gallons
B.	Tank serial number	STB-2105	PT-2145
C.	Date of manufacture	VACUME TESTED	VACUME
D.	Visually inspect the exterior walls and top of tank	✓	✓ TESTED
E.	Visually inspect the interior walls, baffle wall, lids, air vent, filter, etc.	✓	✓
F.	Risers present ***OR*** tank is within 6" of finished grade	✓	✓

3. SUPPLY LINE TO TRENCHES

A.	Supply line fall from septic tank to nitrification lines or distribution device ***at least*** 1/8" per foot (minimum)	✓
B.	Supply line is ***minimum*** 3" Sch. 40 PVC, PE, or ABS	✓
C.	Length of supply line to trench	30 feet MAX

4. NITRIFICATION FIELD

A.	Type of nitrification field	25% REDUCTION/GRAVEL
B.	Manufacturer and model #	INFILTRATOR Q4
C.	Nitrification trench ***does not exceed*** ¼" fall in 10 feet	✓
D.	Trench depth	32 inches
E.	Trench width	36 inches
F.	Aggregate depth	6 inches ON EACH SIDE
G.	Aggregate size (3,4,5,57, or 6 of ASTM D-448)	5
H.	Distance between trenches	6 feet +
I.	Length of nitrification lines 6 - 152'	912 feet TOTAL
J.	Step downs: (if applicable)	
1.	***Minimum*** of 2' undisturbed soil	NONE
2.	Proper rise over step down	___
3.	Solid pipe used	___
4.	Elevations of stepdowns	___
J.	Distribution Devices: (if applicable) PRESSURE MANIFOLD	
1.	Type of distribution device	___
2.	Device is watertight and of sound construction	✓
3.	Device is on level foundation of soil or concrete	✓
4.	Does the device perform as designed	✓

GRAVEL/TRENCH DEPTHS

A.		N.	
B.		O.	
C.		P.	
D.		Q.	
E.		R.	
F.		S.	
G.		T.	
H.			
I.			
J.			
K.			
L.			
M.			

GRADE SHOTS

1.		19.	
2.		20.	
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ALL GRADE SHOT TAKEN Level

SUBSURFACE WASTEWATER DESIGN FLOW CALCULATIONS

AT

LUMEN FARM EVENT CENTER

IREDELL COUNTY, NORTH CAROLINA

PROJECT DESCRIPTION

THE LUMEN FARM EVENT CENTER WILL INCLUDE A 200 SEAT EVENT FACILITY WITH A CATERING KITCHEN, AND THREE (3) FUTURE SINGLE BEDROOM CABINS. THE EVENT WILL HOST THREE (3) EVENTS PER WEEK WITH THE FOLLOWING SCHDULE:

FRIDAY – 150 SEATS
SATURDAY – 200 SEATS
SUNDAY – 150 SATS

DESIGN FLOWS

EVENT CENTER – 10 GAL. PER SEAT
SINGLE BEDROOM CABINS – 150 GPD

FLOW EQUALIZATION CALCULATIONS

DAILY FLOW BALANCE

DAY	ATTENDANCE	DESIGN FLOW (GAL/PERSON)	DESIGN FLOW (GALS/DAY)
FRIDAY	150 GUEST	10	1,500
SATURDAY	200 GUEST	10	2,000
SUNDAY	150 GUEST	10	1,500
CABINS ▲	3 DAYS PER WEEK	450	1,350

TOTAL WEEKLY FLOW = 6,350 GALLONS

EQUALIZATION CYCLE IS ONE(1) WEEK (7–DAYS)
EQUALIZED DAILY FLOW: 6,350 GAL/7–DAYS

EQUALIZED DAILY FLOW: 908 GALLONS

▲ – REPRESENTS FUTURE CONSTRUCTION

REQUIRED SEPTIC TANK SIZE

SEPTIC TANK VOL. = 0.75(2,450) + 1,125 = 2,963 GALONS

USE 3,500 GALLON SHOEF PRECAST, INC SEPTIC TANK
MODEL# STB–2105 (NTR)

REQUIRED SEPTIC TANK SIZE

CATERING KITCHEN ONLY – NO GREASE REQUIRED

LUMEN FARM EVENT CENTER

FLOW BALANCE CHART

DAILY EVENT	DAY	FLOW IN (GAL)	FLOW OUT (GAL)	RESIDUAL (GAL)
EVENT W/ CABINS	FRIDAY	1,950	908	1,042
EVENT W/ CABINS	SATURDAY	2,450 *	908	2,584
EVENT W/ CABINS	SUNDAY	1,950	908	3,626 **
NO EVENTS	MONDAY	0	908	2,718
NO EVENTS	TUESDAY	0	908	1,810
NO EVENTS	WEDNESDAY	0	908	902
NO EVENTS	THURSDAY	0	908	0

* REPRESENTS REQUIRED EMERGENCY STORAGE (2,450 GALLONS)

** REPRESENTS EQUALIZATION VOLUME (3,626 GALLONS)

ESTIMATED DRAINFIELD SIZE

THE DRAIN FIELD IS SIZED FOR A DAILY WASTE FLOW OF 908 GPD

TRENCH LENGTH = 908 GPD/0.25 GPD/SF./3' = 1,211 SQ.FT. REQUIRED

TRENCH LENGTH UTILIZING 25% REDUCTION CHAMBERS

LINEAR FOOTAGE W/ = 908 FT. FT.
25% REDUCTION

DESIGN NOTE:
USE ONE (1) 912 LF. DRAIN FIELD W/ MANIFOLD DISTRIBUTION

MANIFOLD DESIGN

MANIFOLD LAYOUT				MANIFOLD HEAD – 2.0 FT.
LINE #	LENGTH (FT)	TAP SIZE/TYPE	TAP FLOW (GAL/MIN.)	FLOW / LINERAR FOOT (GPM/LF.)
L-1	152	1/2" SCH 80	5.48	0.0361
L-2	152	1/2" SCH 80	5.48	0.0361
L-3	152	1/2" SCH 80	5.48	0.0361
L-4	152	1/2" SCH 80	5.48	0.0361
L-5	152	1/2" SCH 80	5.48	0.0361
L-6	152	1/2" SCH 80	5.48	0.0361
TOTALS	912		32.9 GPM	

LUMEN FARM EVENT CENTER

FLOW EQUALIZATION TANK CALCULATIONS

ASSUME PUMP HEIGTH @ 18" & TANKAGE VOL @ 77.29 GAL/IN.
USE SHOEF PRECAST 8,000 GALLON PUMP TANK (PT-2145)
ACTUAL VOLUME - 8,347 GALLONS

EQUALIZIED FLOW VOLUME - 3,626 GALLONS
EMERGENCEY STORAGE VOLUME - 2450 GALLONS
DOSE FIELD THREE (3) TIMES PER DAY @ 303 GALLON PER DOSE

PUMP SUBMERGENCE VOLUME (18"):	1,391 GALLONS
DOSE VOLUME (±4"):	303 GALLONS
FLOW EQULATION VOLUME (±47"):	3,626 GALLONS
PRE-ALARM LEVEL (±6"):	464 GALLONS
EMERG. STORAGE VOL.(32"):	2450 GALLONS

TOTAL REQUIRED PUMP TANK VOLUME - 8,234 GALLONS

FLOW EQUALIZATION PUMP DESIGN

FORCE MAIN - 2" SCH 40 PVC
LENGTH OF FORCE MAIN - 1040 FT.
PUMP DESIGN FLOW - 33 GPM

DOSING PUMP TDH CALCULATIONS

STATIC HEAD = 812-778 = 34 FT.

EQUIVALENT PIPE FITTING FRICTION LOSS

ITEM	FRICTION LOSS (FT)	QUANITY	FRICTION LOSS (FT)
2" CHECK VALVE	13	1	13
2" 90° ELBOW	9	7	63
2" 45° ELBOW	4	3	12
2" PVC SCH 40			650 FT.

TOTAL TOTAL LENGTH OF FORCE MAIN - 738 FT.

FRICTION LOSS FACTOR = 2.2 FT/ 100' @ ±33 gpm
VELOCITY = 3.0 FT./SEC.

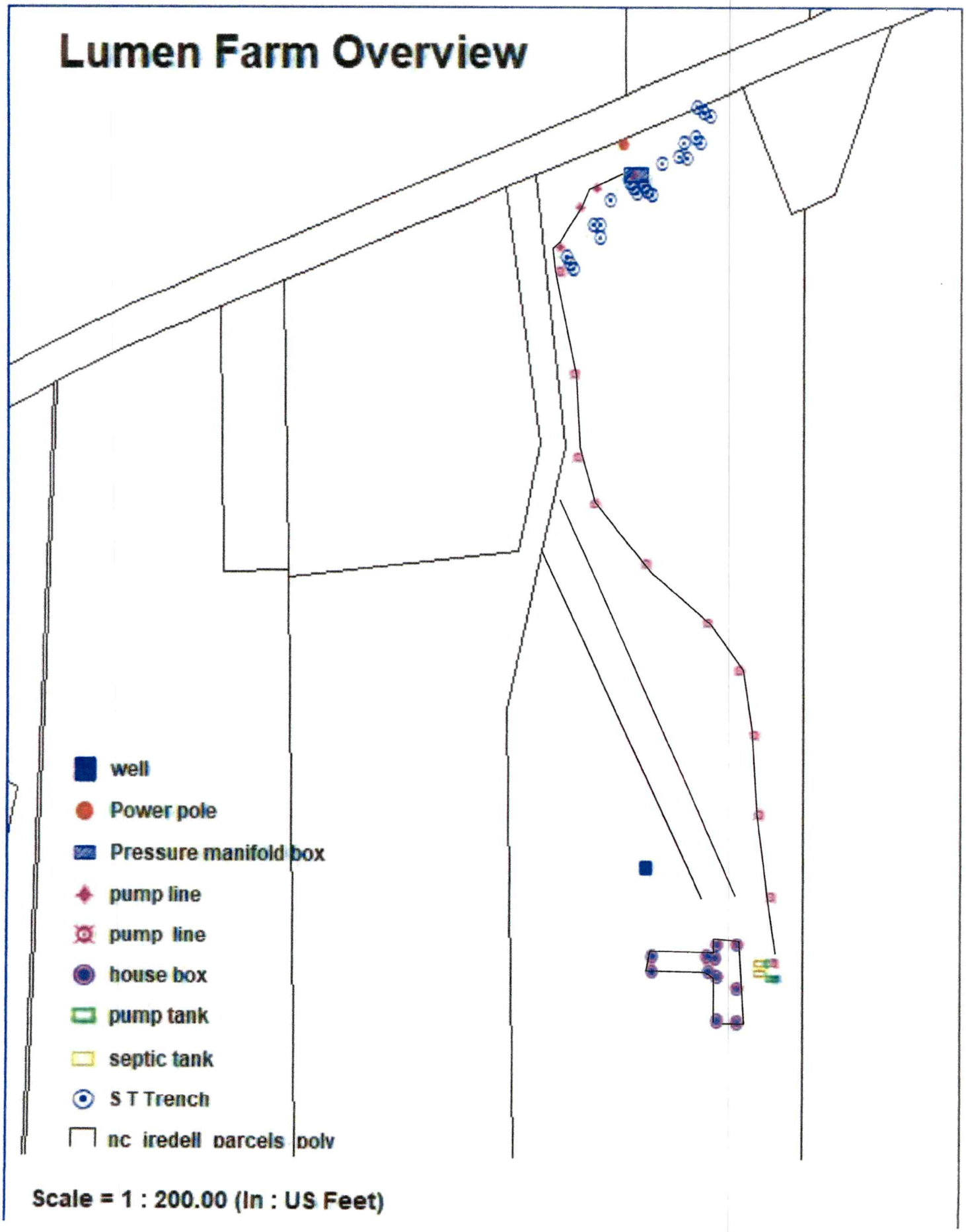
FRICTION LOSS = 1040 FT. X 2.2 FT/100' = 23 FT

TOTAL DYNAMIC HEAD (TDH) = 34 FT + 2 FT + 32 FT

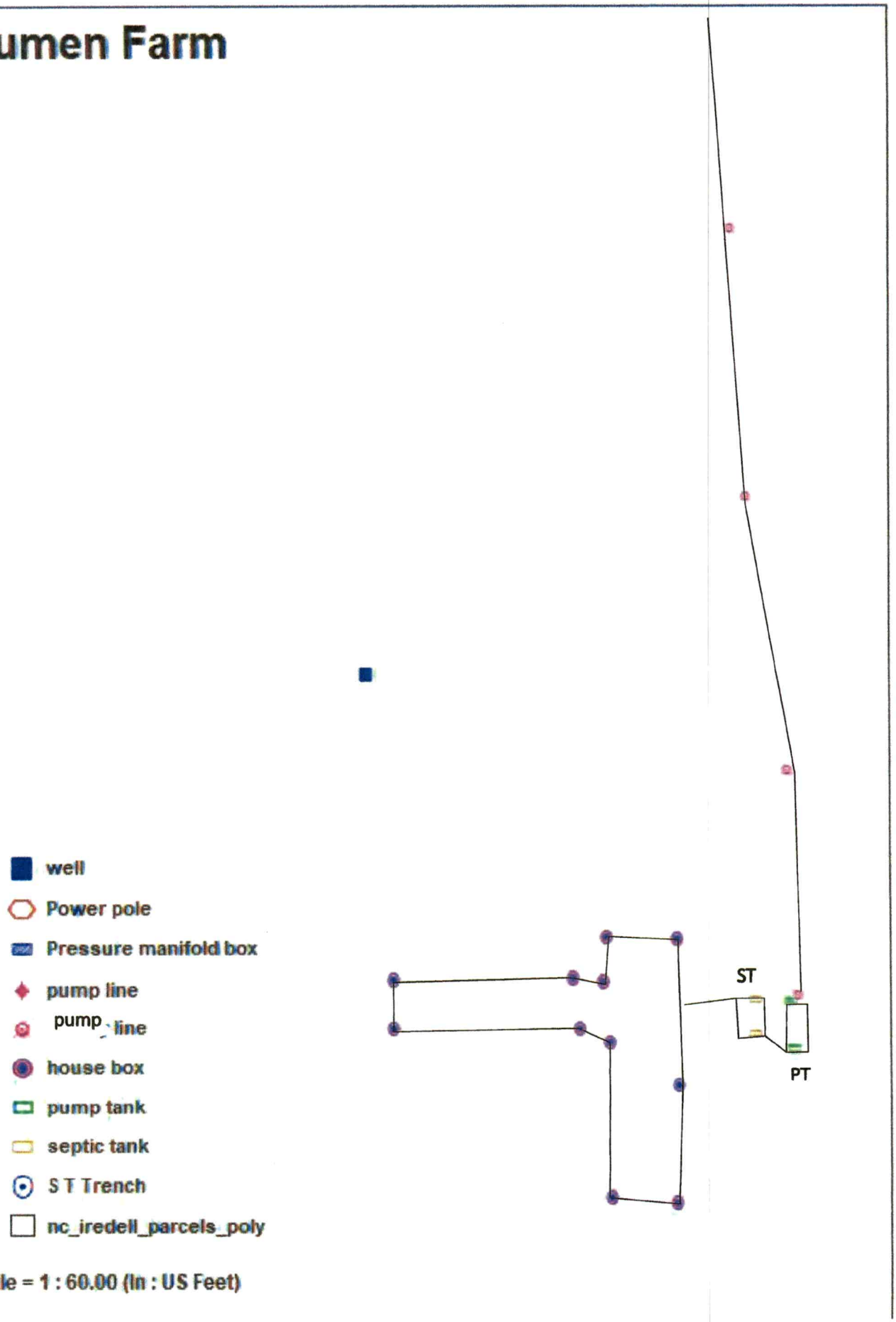
TOTAL DYNAMIC HEAD (TDH) = ±68 FT
FOR DOSING PUMP

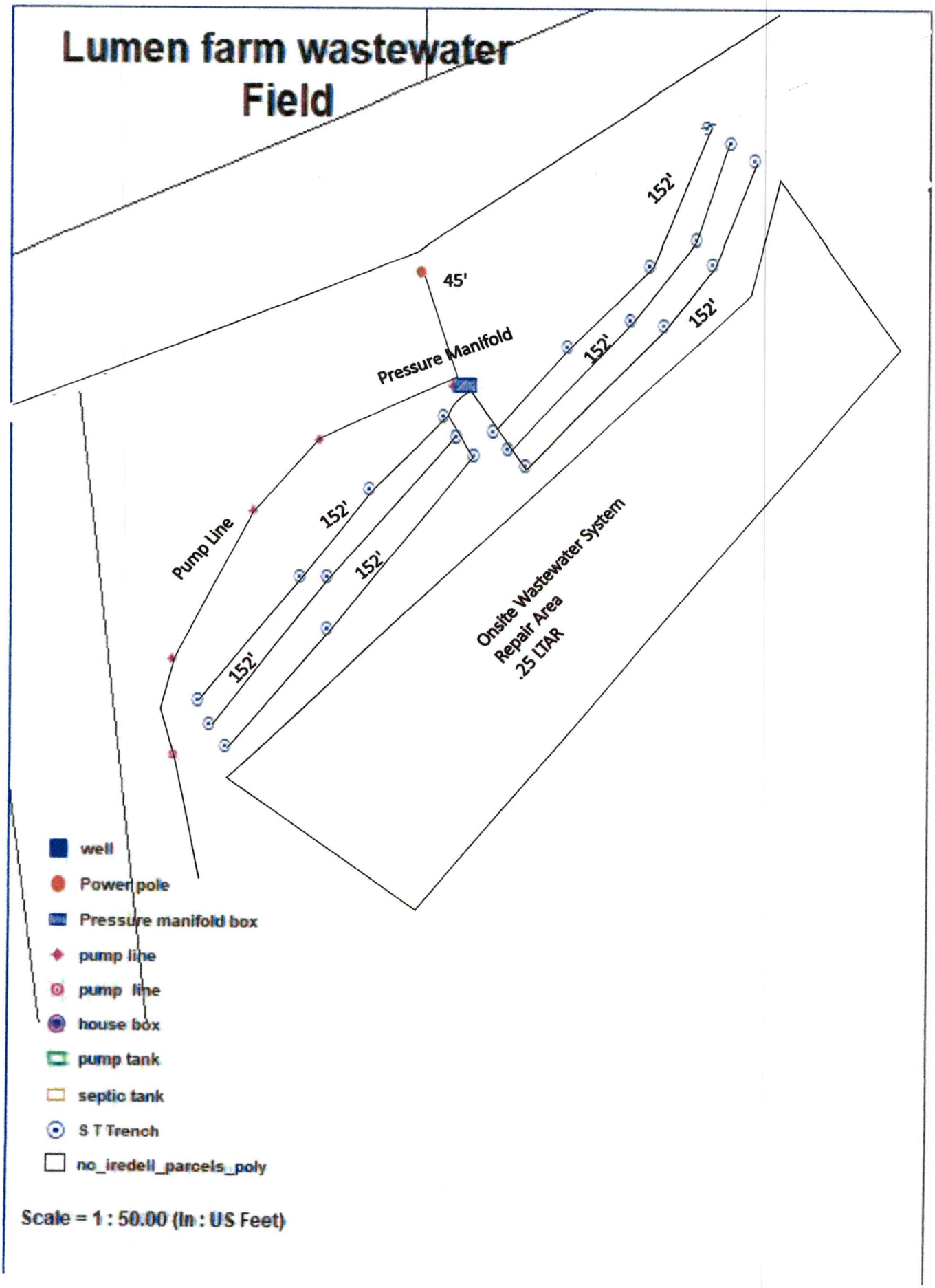
USE ZOELLOR PUMP CO. 189 SERIES PUMP
1-PHASE, 230 VOLTS FOR PUMPING
±30 GPM @ ± 68 FT, TDH.
(OR APPROVED EQUAL)

Lumen Farm Overview



Lumen Farm


ST
PT
well
Power pole
Pressure manifold box
pump line
pump line
house box
pump tank
septic tank
S T Trench
nc_iredell_parcels_poly
Scale = 1 : 60.00 (In : US Feet)


Lumen farm wastewater Field
45'
Pressure Manifold
Pump Line
152'
152'
152'
152'
152'
152'
Onsite Wastewater System
Repair Area
.25 LTAR
well
Power pole
Pressure manifold box
pump line
pump line
house box
pump tank
septic tank
S T Trench
nc_iredell_parcels_poly
Scale = 1 : 50.00 (In : US Feet)

Eco-Environmental Management, LLC

Certified Subsurface Septic System Operators

2409 Morning Glory Drive
Kernersville, NC 27284
TELE: (336) 669-9190
lindsaydcreed@gmail.com

October 7, 2024

CONTRACT

Lumen Farm Event Venue
280 Rowan Road
Cleveland, NC 27013

Re: Proposal for ORC Operations on the Subsurface Septic System.
Attn: Britt Loukos, Owner

Ms. Loukos,
We are pleased to offer our proposal for ORC Operations for the subsurface septic systems for the above referenced site. The septic system for this site has been classified as a type Ve, requiring semi-annual inspections.

Our services will generally include:

- Inspect and sludge judge all tanks.
- Check all effluent filters.
- Check condition of tank risers.
- Inspect control panel and floats for proper operation. (Pump off float, pump on float, alarm float, document ETM, cycle count, and high-level alarm.)
- Check pump tank sludge levels.
- Check dosing tank piping and pumps for proper operation.
- Inspect manifolds and pressure operation at each.
- Blow out manifolds annually.
- Walk fields for proper operation.
- Complete inspection report/submit to the local health department.
-

Our estimate to provide these services is $1,000 per year ($500 per inspection). All fees are due within (30) days of billing. The contract shall be renewed for successive one (1) year terms following the initial term unless terminated by either party upon sixty (60) days written notice.

Responsible Parties: Brittany Loukos Date: 10/7/24

Certified Operator: L. Darian Creed Date: 10/7/24
(L. Darian Creed)

Management Program

Know the location of your septic tank, pump tank, and drainfield location.

Keep a copy of the Onsite wastewater system permit in your business for reference.

Keep the drainfield system seeded with proper vegetation and maintained.

Have the septic tank (both tank compartments) pumped every 5 to 7 years and the effluent filter cleaned and reinstalled.

Divert all surface water and gutter drains away from the Onsite wastewater system components.

Do not install lawn sprinkler systems, decks, out buildings, or paving or concrete over the Onsite wastewater system area.

No parking of vehicles on the Onsite wastewater system area.

Certified Operator Required for system maintenance.

Owners Acceptance Letter

130A-336.2 (L) Authorization to Operate an Onsite Wastewater System

Date: 10/8/24

To Whom it may Concern:

As the owner of the property located at 280 Rowan Road Cleveland, NC

I understand that the Onsite Wastewater System was installed according to the GS 130A-336.2 onsite wastewater system AOWE permit. As such, I hereby acknowledge acceptance of the said system. As the owner of the wastewater system, I shall be responsible for assuring compliance with the laws, rules, and permit conditions regarding the system operation and maintenance.

Owner Signature: Britt Loukos

Print Name: Britt Loukos, Lumen Farm

Phone Number: 704-266-0529

Email address: hello@thelumenhouseevents.com.