



Onslow County Health Department  
 612 College Street  
 Jacksonville, North Carolina 28540  
 Phone: (910) 938-5851 Fax: (910) 989-2341

**OPERATIONS PERMIT**  
 (GS 130A-337)

Permit No: **EOP2013-02380**

**Category: Operations Permit New**

**Owner:** NORTHERN INVESTORS GROUP LLC

**Address** 404 KINROFF DR HUBERT, NC 28539

**Parcel:** 1307B-107 **SR #:**

**Subdivision:** HIGHLANDS AT QUEENS CREEK

**Lot:** 55 **Section:** **Phase:** 2

**Block:** **Part:** **System:**

**Unit:** **Division:** **Tract:**

**Location:**

**FINAL PLOT / REMARKS**

**System Type: III**

**System Classification:** b. Septic system with single effluent pump or siphon

**Manufacturer:** Infiltrator Quick 4 Standard

**Model #:** IQ4

**System Info:** 4 - 40' x 3' CHAMBER (25%) LINES WITH PUMP AND MANIFOLD. 25% REDUCTION REPAIR.

*Note: Type V and VI systems expire in 5 years. (In accordance with Table Va of .1961). Owner must contact the Onslow County Health Department 6 months prior to expiration for permit renewal. Onslow County Health Department is required to inspect the following system types: IIIb, every 5 years; IV, every 3 years; V, once per year and VI, every six months.*

**Facility/Daily design flow:** 4 BEDROOM/ <480 GPD

**Water Supply:** Public

Installed By: ZACHARY PARKER

Business Name: FLAT RATE SEPTIC INSTALL AND REPAIR

Signed By: Chris Harper

Date:

02/21/2014

*This system has been installed in compliance with applicable NC General Statutes, Rules for Sewage Treatment and Disposal, and all conditions of the I.P. and C.A. This system shall perform in accordance with I5A NCAC 18A Rule .1961. Ground absorption sewage treatment and disposal systems shall be checked, and the contents of the septic tank periodically removed from all compartments. The contents shall be pumped, by approved means, whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.*

**THE ISSUANCE OF THIS O.P. DOES NOT CONSTITUTE AN ONSLOW COUNTY WARRANTY OR GUARANTEE OF THE FUNCTIONALITY OF THE WASTEWATER SYSTEM.**



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**CONSTRUCTION AUTHORIZATION**  
 (GS 130A-336)

Permit No: **ECA2012-00674**

Category: New

**(Required for Building Permit)**

THIS AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION SHALL BE VALID FOR A PERIOD EQUAL TO THE PERIOD OF VALIDITY OF THE IMPROVEMENT PERMIT. NOT TO EXCEED 5 YEARS.

**Owner:** NORTHERN INVESTORS GROUP LLC

**Address:** 404 Kinroff Dr.  
~~501 ABERDINESHIRE CT~~ HUBERT, NC 28539

SR #:

**Subdivision:** HIGHLANDS AT QUEENS CREEK      **Lot:** 55      **Section:**      **Phase:** 2

**Block:**      **Part:**      **System:**      **Unit:**      **Division:**      **Tract:**

**Location:**

**System Type/Description:** III Conventional

**System Classification:** b. Septic system with single effluent pump or siphon

**Facility/Daily design flow:** 4 BEDROOM/ <480 GPD

**System Info:** 4 - 50' x 3' CONVENTIONAL LINES WITH PUMP AND MANIFOLD. 25% REDUCTION REPAIR.

**LTAR:** .8 gpd/sq. ft.

**Water Supply:** Public

**Septic Tank Size:** >1,000 gallons

**Grease Trap Size:** gallons

**Pump Tank Size:** >750 gallons

**Nitrification Area:** 600 sq. ft.

**Nitrification Area:** 200 lin. ft.

**No of Lines:** 4

**Line Length:** 50'

**Line Width:** 3'

**Trench Bottom Depth:** 12" - 18"

(SEE ATTACHED PAGES 1 - 6 of 6 FOR ADDITIONAL PERMIT CONDITIONS)

Signed By: Andrew Lake

*Andrew M. Lake, P.E.H.S.*

Date:

07/31/2012

*This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes. This Construction Authorization shall not be transferred when there is a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit. 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.*

**THE ISSUANCE OF THIS C.A. DOES NOT CONSTITUTE AN ONSLOW COUNTY WARRANTY OR GUARANTEE OF THE FUNCTIONALITY OF THE WASTEWATER SYSTEM**

**ONslow COUNTY HEALTH DEPT.**

**OPERATIONS PERMIT (GS 130A-337)**

Permit No.: 21631  
Systems Type: II

Owner: HIGHLANDS AT QUEENS CREEK  
Address: Lot 55  
Location:  
Sr#: ~

FINAL PLOT / REMARKS  
System type \_\_\_\_\_  
Manufacturer \_\_\_\_\_  
Model# \_\_\_\_\_  
4 BR / ≤ 480 GPD

THIS DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE.  
Installed By: \_\_\_\_\_  
Signed By: \_\_\_\_\_  
Date: \_\_\_\_\_

**ONslow COUNTY HEALTH DEPT.**

**CONSTRUCTION AUTHORIZATION (GS 130A-336)**

Permit No.: 21631  
Fee: II

THIS AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION SHALL BE VALID FOR A PERIOD EQUAL TO THE PERIOD OF VALIDITY OF THE IMPROVEMENT PERMIT. NOT TO EXCEED 5 YEARS.

Owner: HIGHLANDS AT QUEENS CREEK  
Address: Lot 55  
Location:

System Type/Description: CONVENTIONAL LTAR: .8 gpd/sq. ft.  
Septic Tank Size: ≥ 1000 gallons  
Nitrification Area: 600 sq. ft. 200 lin. ft.  
No. of lines: 4 Line length 50x3'  
Trench bottom depth: 18"  
(SEE ATTACHED PAGES 1 - 1 of 1 FOR ADDITIONAL PERMIT CONDITIONS)  
Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**ONslow COUNTY HEALTH DEPT.**

**IMPROVEMENT PERMIT (GS 130A-336)**

Permit No.: 21631  
Fee: II

Valid for 5 years from date of issuance.  
 Valid without expiration.

Owner: HIGHLANDS AT QUEENS CREEK  
Address: Lot 55  
Location:

System Type/Description: CONVENTIONAL LTAR: .8 gpd/sq. ft.  
Facility/Daily design flow: 4 BR / ≤ 480 GPD  
Water supply: On-site well \_\_\_\_\_ Comm. well \_\_\_\_\_ Public  Other \_\_\_\_\_  
(SEE ATTACHED PAGES 1 - 1 of 1 FOR ADDITIONAL PERMIT CONDITIONS)  
Signed: C.D. [Signature] Date: 12-16-07

**NOTE:** Permit is subject to revocation if site plans or intended use change.

Buff Ledger: ORIGINAL Blue: BUILDING INSPECTION Pink: CLIENT

Owner: NORTHERN INVESTORS GROUP LLC  
 Address: 404 KINROFF DR  
 Location: LOT 55 HIGHLANDS @ QUEENS CREEK

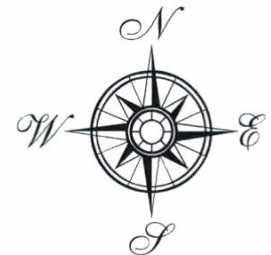
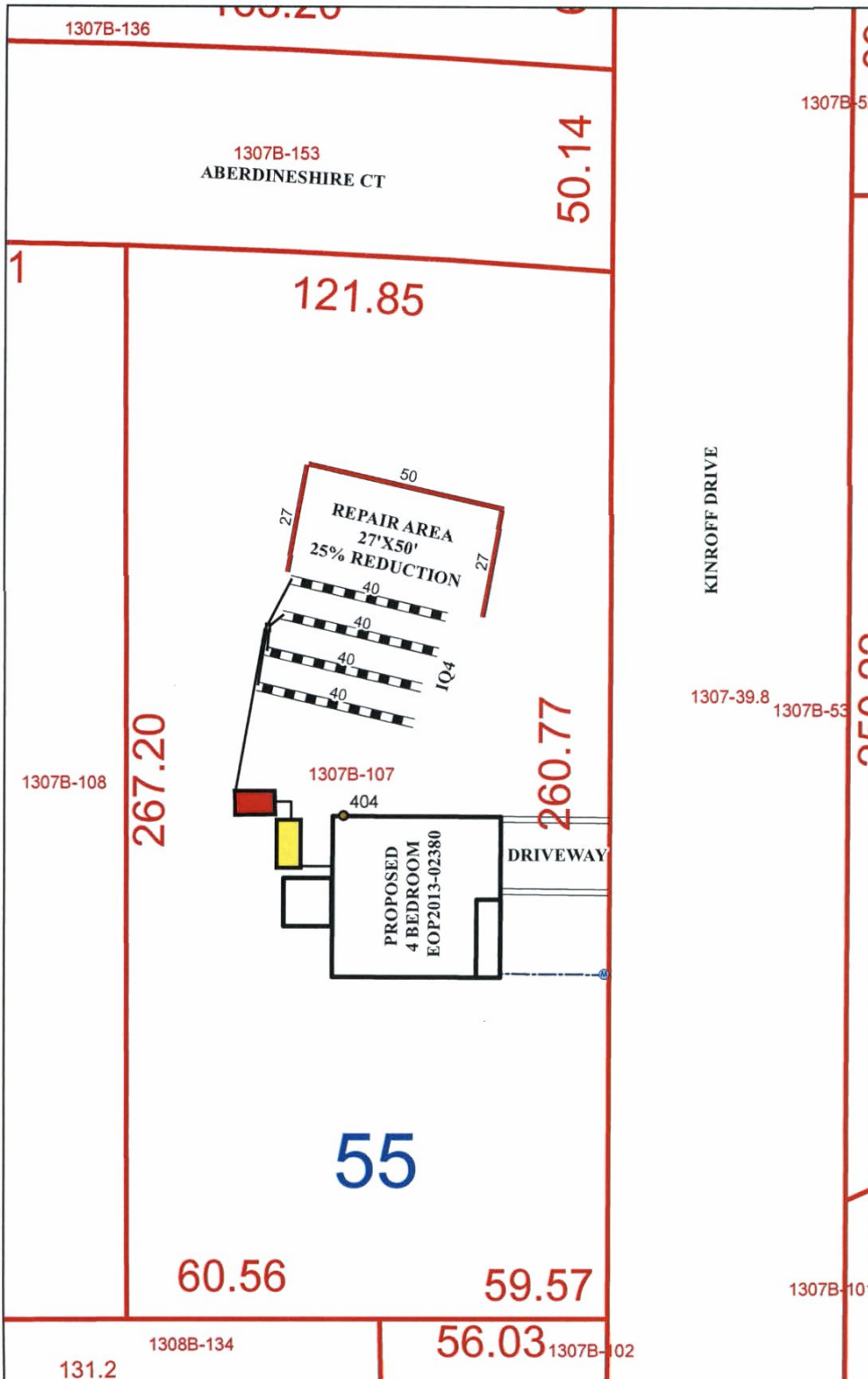
**"AS BUILT"**  
**2/21/14**  
**PLOT PLAN**

Addendum to permit # EOP2013-02380  
 Page 1A of 6

1 inch = 40 feet

**Additional Permit Conditions:**

1. Do not park or drive on any part of system or repair area.
2. Nitrification trench aggregate shall be covered with straw, untreated paper or other approved materials prior to final cover/backfilling.
3. Do not install system under wet conditions.
4. Adhere to minimum set back requirements as stated in Rule .1950 and .1951 of NC Laws and Rules for Sewage Treatment and Disposal System (Article 11, G.S. Chapter 130A) unless otherwise indicated on this permit.
5. Rock used in soil absorption systems shall be clean, washed gravel or crushed stone and graded or sized in accordance with size numbers 3, 4, 5, 57, or 6 of ASTM D-448 (standard sizes of coarse aggregate) which is hereby adopted by reference in accordance with G.S. 150 B-14 (c). Documentation of aggregate size shall be available upon request.
6. All pump tanks shall be tested for water tightness. Septic tanks may be subject to a water tightness test.
7. The septic tank is designed to receive sewage or wastewater under gravity flow. However, if a system subject to the N.C. Plumbing Code is used to pump raw sewage to the septic tank, the sewage shall be reduced to gravity/non-turbulent flow by approved means at the inlet of the septic tank.
8. An accepted wastewater system may also be installed in accordance with the accepted wastewater system approval. (Maximum LTAR of 1.0 gpd/ft<sup>2</sup>)
9. Run lines parallel to contour. System components represent approximate contours only. The contractor must flag the system prior to beginning the installation to insure that proper grade is maintained.
10. A recorded plat or deed and corresponding map shall be submitted to the Environmental Health Section of the Onslow County Health Department PRIOR to the issuance of the Construction Authorization.
11. An APPROVED stormwater plan shall be submitted to the Environmental Health Section of the Onslow County Health Department PRIOR to issuance of a Construction Authorization.
12. FOR DWELLING UNIT WASTEWATER SYSTEMS ONLY - This wastewater system is designed only for the number of bedrooms shown as bedrooms or sleeping rooms on the building/floor plan approved by Onslow County Code Enforcement. No other room or space may be relabeled as a bedroom, used as a bedroom, or converted into a bedroom without prior approval from Onslow County Environmental Health.



**SYSTEM DESIGN**

# BEDROOMS/ GPD:	4 BEDROOM / 480 GPD
SYSTEM TYPE:	11lb PUMP TO IQ4 CHAMBER
% REDUCTION:	25%
LTAR:	8
SQ. FT.	480
LINEAR FEET	160
# OF LINES:	4
LENGTH EACH LINE:	40'
TRENCH BOTTOM:	12"-18"
TRENCH WIDTH:	3 FEET
FEET ON CENTER(LINES)	9 FEET
REPAIR AREA:	8 LTAR, 3@50', 25% reduction

**\*\*WARNING: THIS IS NOT A SURVEY!\*\***

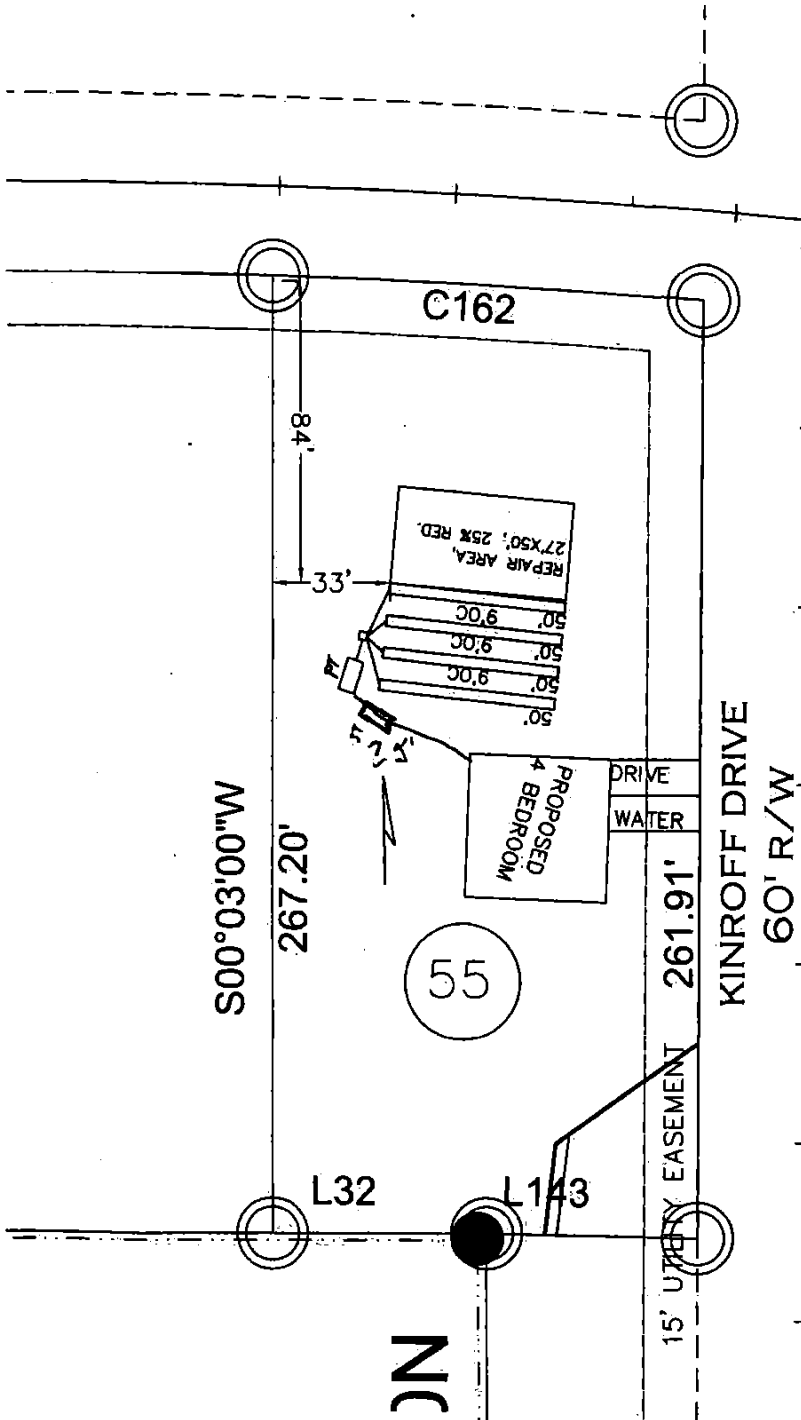
This map is prepared for the inventory of real property found within this jurisdiction, and is compiled from recorded deeds, plats, and other public records and data. Users of this map are hereby notified that the aforementioned public primary information sources should be consulted for verification of the information contained on this map. The County and mapping company assume no legal responsibility for the information contained on this map.

### PLOT PLAN

Owner: HIGHLANDS @ QUEENS CREEK.  
 Address: LOT 55  
 Location: OFF QUEENS HAVEN RD

#### Additional Permit Conditions

1. Do not park or drive on any part of system or repair area.
2. Nitrification trench aggregate shall be covered with straw, untreated paper or other approved materials prior to final cover/backfilling.
3. Do not install system under wet conditions.
4. Adhere to minimum setback requirements as stated in Rule .1950 and .1951 of NC Laws and Rules for Sewage Treatment and Disposal (Article 11, G.S. Chapter 130A) unless otherwise indicated on this permit.
5. Rock used in soil absorption systems shall be clean, washed gravel or crushed stone and graded or sized in accordance with size numbers 3,4,5,57, or 6 of ASTM D-448 (standard sizes of coarse aggregate) which is hereby adopted by reference in accordance with G.S. > 150 B-14(c). Documentation of aggregate size shall be available upon request.
6. All pump tanks shall be tested for water tightness. Septic tanks may be subject to a water tightness test.
7. The septic tank is designed to receive sewage or wastewater under gravity flow. However, if a system subject to the N.C. Plumbing Code is used to pump raw sewage to the septic tank, the sewage shall be reduced to gravity/nonturbulent flow by approved means at the inlet end of the septic tank.
8. An accepted wastewater system may also be installed in accordance with the accepted wastewater system approval (maximum LTAR of 1.0 gpd/ft<sup>2</sup>).
9. A deeded and recorded map shall be submitted to the Environmental Health Section of the Onslow County Health Department **PRIOR TO** the issuance of the Construction Authorization.



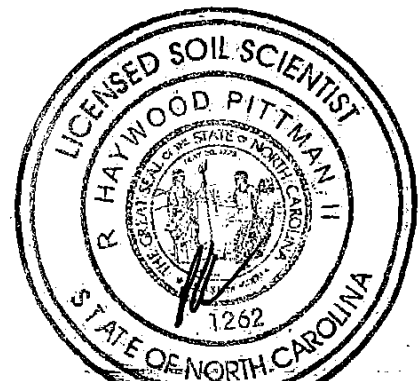
#### INITIAL

4 BEDROOM  
 LTAR .8  
 4-50' CONVENTIONAL  
 12-18" TB  
 >6" SOIL COVER REQUIRED OVER SYSTEM AND 5' BEYOND SYSTEM

#### REPAIR AREA

4 BEDROOM  
 LTAR .8  
 3-50' 25% REDUCTION  
 12" TB  
 >6" SOIL COVER REQUIRED OVER SYSTEM AND 5' BEYOND SYSTEM

APPROX SCALE 1"=50'



## Precast Concrete Water Tightness Testing Procedures

### I. Leak Testing Procedures:

1. The tank shall be set and leveled. The tank hole may be back-filled to a point below the mid-seam of a two piece tank or to the mid-point of a one piece tank. If site conditions do not allow the tank hole to be left open or if you choose not to leave the tank hole open, then tank shall be leak tested on site prior to placement in tank hole.
2. The manhole riser(s) (if applicable), shall be attached to the tank according to state approved plans.
3. The tank shall be filled with water 2" above the seam where the manhole riser is connected to the tank top or to a point level with the top of the tank in both manholes if riser(s) are not required. It is strongly recommended to perform the leak test prior to removing any tank block out (placing any pipes into/out of the tank). If tank block outs have been removed and pipe has been installed it will be necessary to block or plug the inlet and outlet pipe to prevent flow from these pipes. It may also be necessary to place mastic around the bevel of the inlet manhole and weight the lid down to prevent leakage.
4. After filling and allowing for the concrete to absorb water (about 24 hours), add any additional water needed to get water level back to the starting level.
5. Contact the Onslow County Health Department to conduct the test. The test will take minimum of 24 hours and will not be conducted Friday or the day prior to a Holiday. Tank passes water tightness test if the difference between the starting water level and ending water level is equal to or less than one-half inch or one-percent of the liquid capacity of the tank.
6. Only after the completion of a satisfactory leak test will the tank be approved for use.

### II. Vacuum Testing Procedures:

1. The tank shall be set and leveled. The tank hole may be back-filled to a point below the mid-seam of a two piece tank or to the mid-point of a one piece tank. If site conditions do not allow the tank hole to be left open or if you choose not to leave the tank hole open, the tank shall be leak tested on site prior to placement in the tank hole.
2. The manhole riser(s) (if applicable), shall be attached to the tank according to state approved plans.
3. The pump tank shall be vacuum tested as per one of the following:

<u>Inches of Mercury</u>	<u>Duration</u>
3"	1 Hr.
5"	10 Min.
10"	1 Min.

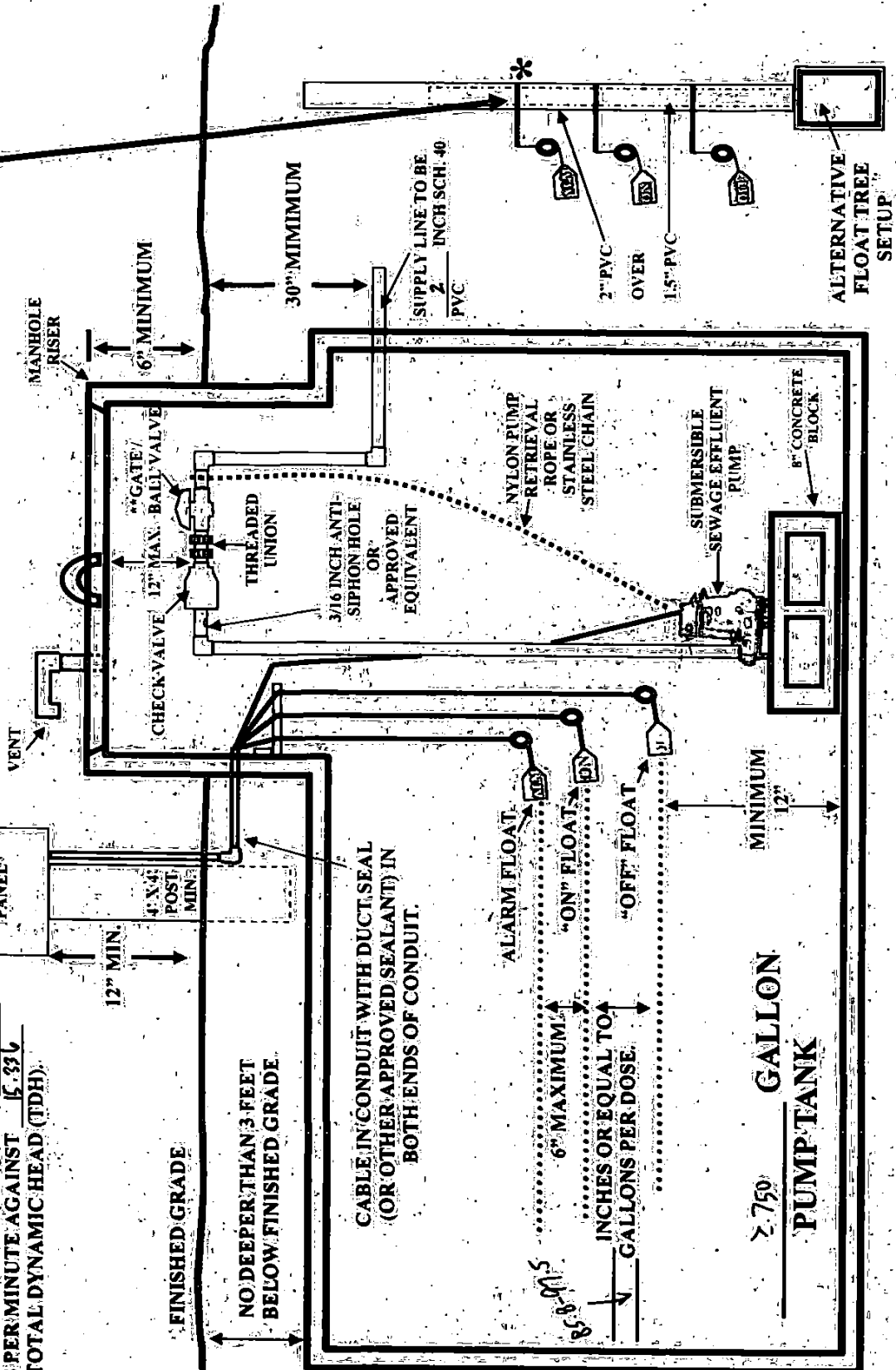
(≤ 10% pressure drop shall constitute an acceptable test).

4. Onslow County Health Department representative shall be present during vacuum testing procedure.
5. Only after the completion of a satisfactory vacuum test will the tank be approved for use.

# PUMP SYSTEM DETAIL SHEET

\* Stainless Steel Clamps shall be used to support the wiring when using a float tree. Plastic wire ties are not approved.

**PUMP RATING:**  
 PUMP MUST BE RATED TO DELIVER 28.4  
 GALLONS PER MINUTE AGAINST 15.336  
 FEET OF TOTAL DYNAMIC HEAD (TDH).

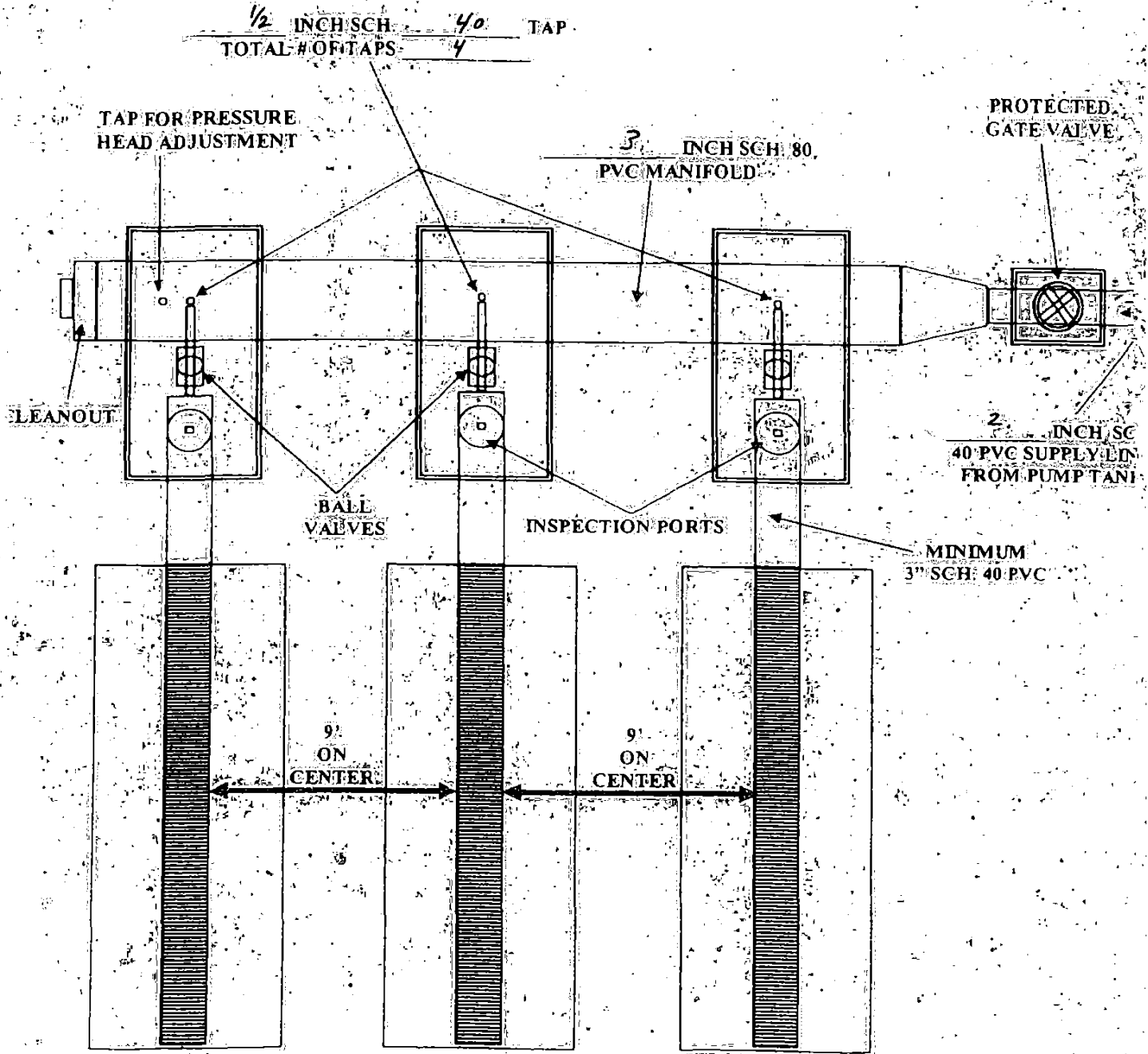


\* GATE VALVE IS REQUIRED IF VALVE IS USED FOR PRESSURE ADJUSTMENT.

≥ 750 GALLON PUMP TANK

ALTERNATIVE FLOAT TREE SETUP

### MANIFOLD FOR LEVEL SITES



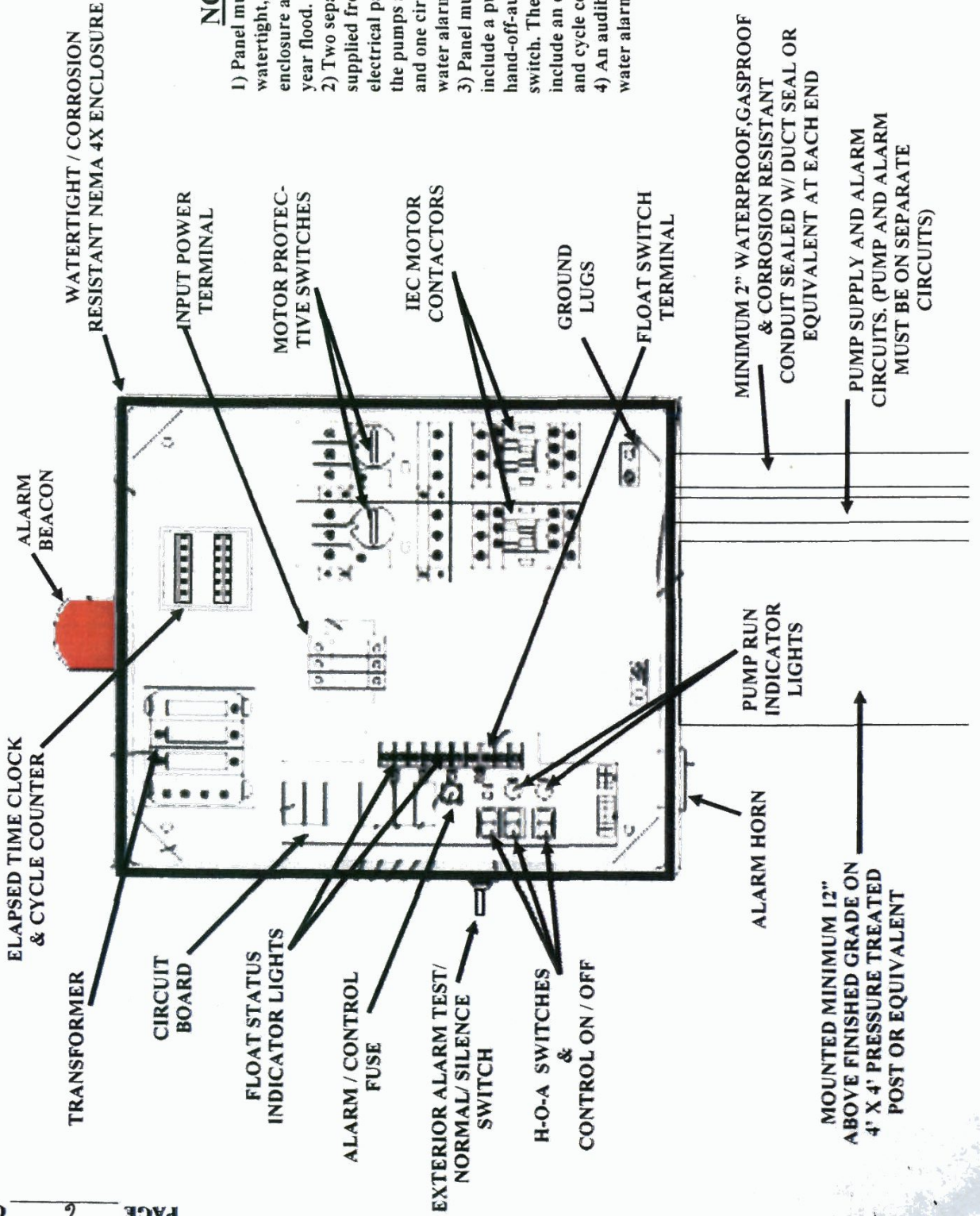
-PRESSURE HEAD TO BE SET AT 2 FEET.  
-MANIFOLD SHALL BE INSTALLED LEVEL.  
-CLEANOUT PLUG MAY BE ADAPTED TO ACCOMMODATE  
A STAND PIPE FOR PRESSURE HEAD ADJUSTMENT.

**Additional Specifications**

1. There shall be no splices in any electrical cable within the pump chamber.
2. Pump and alarm must be on two separate live electrical circuits which operate independently of each other.
3. If the pump manufacturer specifies that the "pump off" level be below the top of the pump, the follow the manufacturer's specifications and adjust the floats accordingly.
4. Contact the Onslow County Electrical inspector for release of Temporary Full Service and be sure service is available prior to contacting the Onslow County Health Department for an inspection.
5. Check valves shall be mounted horizontally and such that a siphon breaker hole can be drilled on the pump side of the valve.
6. Only those tanks specifically approved by the State of North Carolina and appropriately stamped shall be used for pump tanks. Modified septic tanks shall not be approved.
7. This permit is valid only for that shown on the attached plot plan, these specifications, and related paraphernalia approved by the Onslow County Health Department.
8. A complete and approved installation is required for this permit to continue to be valid beyond five years elapsed time from the date of issuance.
9. This permit is valid subject to all conditions so noted on this permit, the operations permit, the approved plans and specifications, and any written correspondence that may specify a condition or requirement.
10. This permit is valid only for as long as it meets all requirements of G.S. Chapter 130A Article 11 and related portions of NC Administrative Code.
11. No driving or parking shall be allowed over any portions of the system or repair area unless specifically approved elsewhere in this permit.
12. System operation, maintenance, and repairs shall be the responsibility of the land owner as named on this permit.
13. This permit shall not be transferred, nor shall any changes of use occur, without prior approval by the Onslow County Health Department.
14. The pump curve for the effluent pump installed shall be available during system inspection.
15. Paperwork confirming that the electrical enclosure used is NEMA 4X rated shall be available during system inspection. (Paperwork is not necessary if NEMA 4X rated is clearly marked on the enclosure.)

# CONTROL PANEL DETAIL

(NOT A WIRING DIAGRAM! CONSULT AN ELECTRICIAN)



## NOTES:

- 1) Panel must be in a NEMA 4X, watertight, corrosion resistant enclosure and located above 100-year flood.
- 2) Two separate circuits must be supplied from the main house electrical panel--one circuit for the pumps and pump controls and one circuit for the high-water alarm.
- 3) Panel must be U.L. listed and include a pump run light and hand-off-automatic (H-O-A) switch. The panel should also include an elapsed time clock and cycle counter.
- 4) An audible and visible high-water alarm shall be provided.

MOUNTED MINIMUM 12" ABOVE FINISHED GRADE ON 4' X 4' PRESSURE TREATED POST OR EQUIVALENT

MINIMUM 2" WATERPROOF, GASPROOF & CORROSION RESISTANT CONDUIT SEALED W/ DUCT SEAL OR EQUIVALENT AT EACH END

PUMP SUPPLY AND ALARM CIRCUITS. (PUMP AND ALARM MUST BE ON SEPARATE CIRCUITS)