

Environmental Services - Water Quality  
Onsite Wastewater Scan Data Entry Form

PERMIT #: **D 0 5 6 5 7 3**

PIN #: **0 6 8 6 0 9 2 0 2 6**

OP DATE: **0 7 / 1 9 / 2 0 1 7**

SYSTEM USE:

- ☒ House  
☐ Mobile Home  
☐ Business  
☐ Other

SEWAGE TYPE:

- ☒ Domestic  
☐ Industrial

PUMP/SIPHON?:

- ☒ Yes  
☐ No

PRESSURE MANIFOLD:

- ☒ Yes  
☐ No

SYSTEM TYPE:

- ☐ I  
☐ II  
☒ III  
☐ IV  
☐ V  
☐ VI  
☐ Other

SUB TYPE:

- ☐ A  
☒ B  
☐ C  
☐ D  
☐ E  
☐ F  
☐ G

NBR BEDROOMS:

- ☐ 1  
☐ 2  
☐ 3  
☒ 4  
☐ 5  
☐ 6  
☐ Other

MAINT. SCHEDULE:

- ☐ Yes  
☒ No

CERT. OPERATOR

- ☐ Yes  
☒ No

GT ST PT SIZE

- |                                     |                                     |                                     |                  |
|-------------------------------------|-------------------------------------|-------------------------------------|------------------|
| <input type="checkbox"/>            | <input type="checkbox"/>            |                                     | 750              |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 900              |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 1,000            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 1,200            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 1,500            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 1,800            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 2,100            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 2,500            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 3,000            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 4,000            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 5,000            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 8,000            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | 10,000           |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Other 1250 ST    |
| <input checked="" type="checkbox"/> |                                     | <input type="checkbox"/>            | None/NA GT or PT |

DRAINFIELD SIZE(SQ. FT.)

**0 0 9 0 0**

DRAIN TYPE:

- ☐ Stone  
☒ EZ Flow  
☐ Infiltrator  
☐ Biodiffuser  
☐ Cultec  
☐ Drip  
☐ Hancor  
☐ Large Dia. Pipe  
☐ Multi-Pipe  
☐ Other

MAX DEPTH (IN.):

- ☐ 12 in. or less  
☐ 18 in. or less  
☒ 24 in. or less  
☐ 26 in. or less  
☐ 28 in. or less  
☐ 30 in. or less  
☐ 32 in. or less  
☐ 36 in. or less  
☐ Other

STONE DEPTH (IN.):

- ☐ 8 in. or less  
☒ 12 in. or less  
☐ 18 in. or less  
☐ 24 in. or less  
☐ Other

TRENCHES:

- ☒ Individual  
☐ Bed

TRENCH WIDTH (IN.):

- ☐ 12 in. or less  
☐ 18 in.  
☐ 24 in.  
☒ 36 in.  
☐ 6 ft. or less  
☐ 9 ft. or less  
☐ Other

TAH

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WELL AND SEWAGE SITE LOCATION PERMIT

NO PERMIT(S) FOR CONSTRUCTION, LOCATION OR RELOCATION ACTIVITY SHALL BE ISSUED  
UNTIL AN AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION HAS BEEN ISSUED

\*PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/ OR IF SITE IS ALTERED OR INTENDED USE CHANGED\*

PERMIT#: D056573 STATUS: A APP. DATE: 01/18/2017 BLDG. PERMIT#: \_\_\_\_\_  
PIN: 0686 09 2026 000 TAX MAP: 0000 0000 RECORDED: Y ORIG. PERMIT#: \_\_\_\_\_  
TOWNSHIP: 12 MIDDLE CREEK JURISDICTION: FUQ ZONING: R20 SW DEVICE: N S#:  
APPLICANT: CAPITOL CITY HOMES (919) 872-0048  
5711 SIX FORKS ROAD STE 200 RALEIGH, NC 27614  
USE: HD USE: 101A CONVENTIONAL ONE-FAMILY HOUSE EXIST USE:  
LTAR: 0.40 0.40 BEDROOMS: 4 BASEMENT: N #EMPLOYEES: 0  
SITE: ADDRESS: 200 MISTY MOONLIGHT RD  
SUBDIVISION: JUDD RESERVE LOT: 6 ACRES: 1.14 EASEMENT: N LOC: SYS:  
DIRECTION: US 401 S, L ON DWIGHT ROWLAND RD, R ON KENNEBEC RD

Well System: WATER: PUBLIC - TYPE:

WELL LOG INFORMATION: DEPTH: \_\_\_\_\_ CASING DEPTH: \_\_\_\_\_ YIELD: \_\_\_\_\_ STATIC LEVEL: \_\_\_\_\_  
WELL CONTRACTOR: \_\_\_\_\_ REG # \_\_\_\_\_ PUMP CONTRACTOR: \_\_\_\_\_ REG # \_\_\_\_\_  
Construction Compliance GROUT APPROVED ☐ DATE \_\_\_\_\_ EHS \_\_\_\_\_  
WELLHEAD APPROVED ☐ DATE \_\_\_\_\_ EHS \_\_\_\_\_  
SYSTEM FINALIZED ☐ DATE \_\_\_\_\_ EHS \_\_\_\_\_

COMMENTS: PUBLIC WATER

Operation Permit

DESIGN FLOW: 27.40 gal./min. ACTUAL FLOW: 28.83 DOSE VOLUME: 146 gal. INNOVATIVE LETTER: \_\_\_\_\_  
INSTALLED BY: Brantley's INSTALLATION APPROVED BY: C. Noveral  
PROPRIETARY SYSTEM: 22 FLOW TYPE SYSTEM: III B  
COMMENTS: Y  
OPERATIONS PERMIT ISSUED? Y OP DATE: 7/19/17 BY: C. Noveral

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

As Built Information:

Date: 7-17-18 Benchmark: \_\_\_\_\_ Rod reading: \_\_\_\_\_ Distance to Structure: \_\_\_\_\_  
ST: 1250 gals ID#: D&B STB 393 D.O.M.: 4-3-17 Elev.: \_\_\_\_\_ Distance to Well: \_\_\_\_\_  
PT: 1200 gals ID#: D&B PT 463 D.O.M.: 5-3-17 Elev.: \_\_\_\_\_ Distance to P/L: \_\_\_\_\_  
GT: \_\_\_\_\_ gals ID#: \_\_\_\_\_ D.O.M.: \_\_\_\_\_ Elev.: \_\_\_\_\_ Pretreatment: \_\_\_\_\_  
D-box/FD/PM elev.: 3'3 1/4" Supply Line: ~640 ft. Pump/Ctrl Panel: \_\_\_\_\_ Filter: Symtech  
Line 1: 6'8 1/2" Date: \_\_\_\_\_ Line 6: \_\_\_\_\_ Date: \_\_\_\_\_  
Line 2: 7'0 1/2" Date: \_\_\_\_\_ Line 7: \_\_\_\_\_ Date: \_\_\_\_\_  
Line 3: 7'4 1/2" Date: \_\_\_\_\_ Line 8: \_\_\_\_\_ Date: \_\_\_\_\_  
Line 4: 7'7 3/4" Date: \_\_\_\_\_ Line 9: \_\_\_\_\_ Date: \_\_\_\_\_  
Line 5: 8'3" Date: \_\_\_\_\_ Line 10: \_\_\_\_\_ Date: \_\_\_\_\_  
ETM1: 63h CC1: 33 cc ETM2: \_\_\_\_\_ CC2: \_\_\_\_\_ OR: \_\_\_\_\_ AC: \_\_\_\_\_ WM: \_\_\_\_\_  
Notes: \_\_\_\_\_

7-17-17 Tanks & Supply ditch / pipe approved.

7-18-17 DLS & PF Approved

Pump. Dosed 28.83 gpm.

\* Pressure Test performed by closing gate valve @ PM Box & ran pump 6+ minutes ..... started 59 1/4" to H2O level in tank after 6 min + did not drop This method confirmed as OK w/ department for this situation.

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HD USE: 101A CONVENTIONAL ONE-FAMILY HOUSE EXIST USE: DESIGN FEE REQ?: Y PAID?: Y  
LTAR: 0.40 0.40 BEDROOMS: 4 BASEMENT: N #EMPLOYEES: 0 FOUNDATION DRAIN: Y  
SITE: ADDRESS: 200 MISTY MOONLIGHT RD  
SUBDIVISION: JUDD RESERVE LOT: 6 ACRES: 1.14 EASEMENT: N LOC: SYS:  
DIRECTION: US 401 S, L ON DWIGHT ROWLAND RD, R ON KENNEBEC RD

**IMPROVEMENT PERMIT**

[ ] As per GS 130A-335 (f), Improvement Permit is based on a Site Plan and is void Sixty (60) months from date of issuance.

[X] As per GS 130A-335 (f), Improvement Permit is based on a Plat and is valid without expiration.

Permit is subject to revocation if the site plan or plat, whichever is applicable, or the intended use changes.

TANK SIZE: 1200 gal. PUMP Tank: 1200 gal. GREASE TRAP: gal. SQ FT: 900 ACCEPTED STATUS MAX DEPTH LINE: 24 in.  
WASTEWATER: INDIVIDUAL SEWAGE: DOMESTIC TYPE SYSTEM: III B PUMP: Y P/M: Y  
DAILY FLOW: 480 gal/day WATER: PUBLIC PRETREATMENT: NA

COMMENTS: INITIAL AND REPAIR MTD IS 24" WITH 0.4LTAR. INITIAL AND REPAIR SYSTEMS DESIGNED BY MATT  
BURDETTE WITH CCSC AS PUMP TO PRESSURE MANIFOLD. INSTALL ON CONTOUR AND MAINTAIN ALL SETBACKS. ACCEPTED  
STATUS MEDIA, 25% REDUCTION ALREADY TAKEN.

IP ISSUED? Y DATE: 03/09/2017 BY: (KLM) *Kristi Marko* PHONE#: (919)-

**AUTHORIZATION FOR WASTEWATER/WATER SYSTEM CONSTRUCTION**  
**VALIDITY CONCURRENT WITH THE IMPROVEMENT PERMIT**  
**AUTHORIZATION CONDITIONS:**

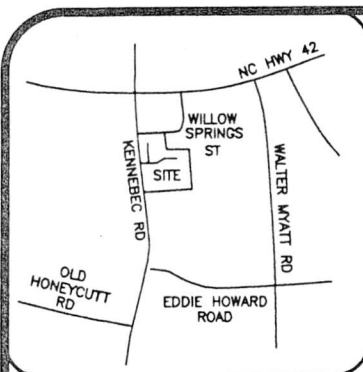
Contractors shall install system on contours, see attached site plan for wastewater system design and well location. No underground utilities, water lines or sprinkler systems may be located in the original system or repair areas. A septic tank filter with a riser for access is required. The wastewater system shall not be covered or placed into use until inspected by the Wake County Department of Environmental Services and an Operation Permit issued. An Accepted Status System may be used in place of conventional system, if it can be placed in the permitted/authorized trench footprint (except reduction in line length and/or number as allowed for in approval) and the installation is in accordance with the accepted system approval, without unauthorized product alteration. If permit required use of an Accepted Status System, substitution with another accepted status system may be made, as long as no changes are necessary in the location of each nitrification line (including any increase in line length), trench depth or effluent distribution method. If changes are necessary, prior approval by this office is required before system installation.

OTHER CONDITIONS: REFER & ADHERE TO ATTACHED APPROVED PLANS, SPECIFICATIONS & ALL REGULATORY SETBACKS. IF  
SYSTEM FLAGGING IS MISSING, BUILDER MUST HAVE DESIGNER REFLAG SYSTEM BEFORE CONTRACTOR STARTS THE  
INSTALLATION. SYSTEM & REPAIR AREAS MUST BE PROTECTED FROM GRADING & TRAFFIC BY "FENCING". A SIMPLEX CONTROL  
PANEL WITH 2 BREAKERS FOR THE SEPARATE POWER SUPPLIES, ELAPSED TIME METER & CYCLE COUNTER ARE REQUIRED. SEE  
THE CA SITE PLAN ALONG WITH THE APPROVED PLANS FOR FURTHER DETAILS. \*\*REMOVE ALL TREES WHICH INTERFERE WITH  
DRAIN LINE INSTALLATION!!\*\* ABSOLUTELY NO UNDER GROUND UTILITIES OF ANY TYPE MAY BE LOCATED IN EITHER THE SYSTEM  
OR REPAIR AREAS!

TANK SIZE: 1200 gal. PUMP TANK: 1200 gal. GREASE TRAP: gal. SQ FT: 900 ACCEPTED STATUS MAX DEPTH LINE: 24 in.  
MAINT: N OPER: N L/O: P TRENCH#: 5 LENGTH: 300 ft. WIDTH: 36 in. DESIGNER:  
# SUBFIELDS: 1 DESIGN HEAD PRESSURE: 2 DESIGN FLOW: 27.40 gal/min DOSE VOLUME: 146 gal. PRETREATMENT: NA

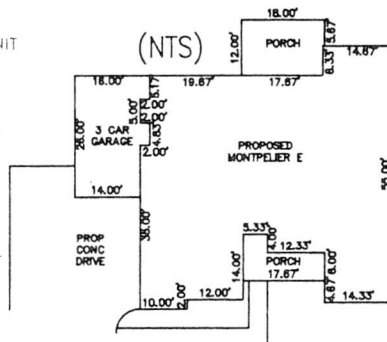
CA ISSUED? Y DATE: 03/13/2017 BY: (JFP) *Joe Perkins* PHONE#: (919)-856-7342

AS BUILT



# LEGEND

AC=AIR CONDITIONING UNIT  
 BOC=BACK OF CURB  
 DW=CONC DRIVEWAY  
 EB=ELECTRIC BOX  
 EOP=EDGE OF PAVEMENT  
 P=PATIO  
 PO=PORCH  
 SCO=CLEANOUT  
 SW=SIDEWALK  
 TP=TELEPHONE PEDESTAL  
 WM=WATER METER  
 ○ IRON PIPE FOUND  
 ⊙ IRON PIPE SET  
 ⊙ NAIL SET



THIS SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

SHAWN T. RUMBERGER, PLS L-4909 DATE

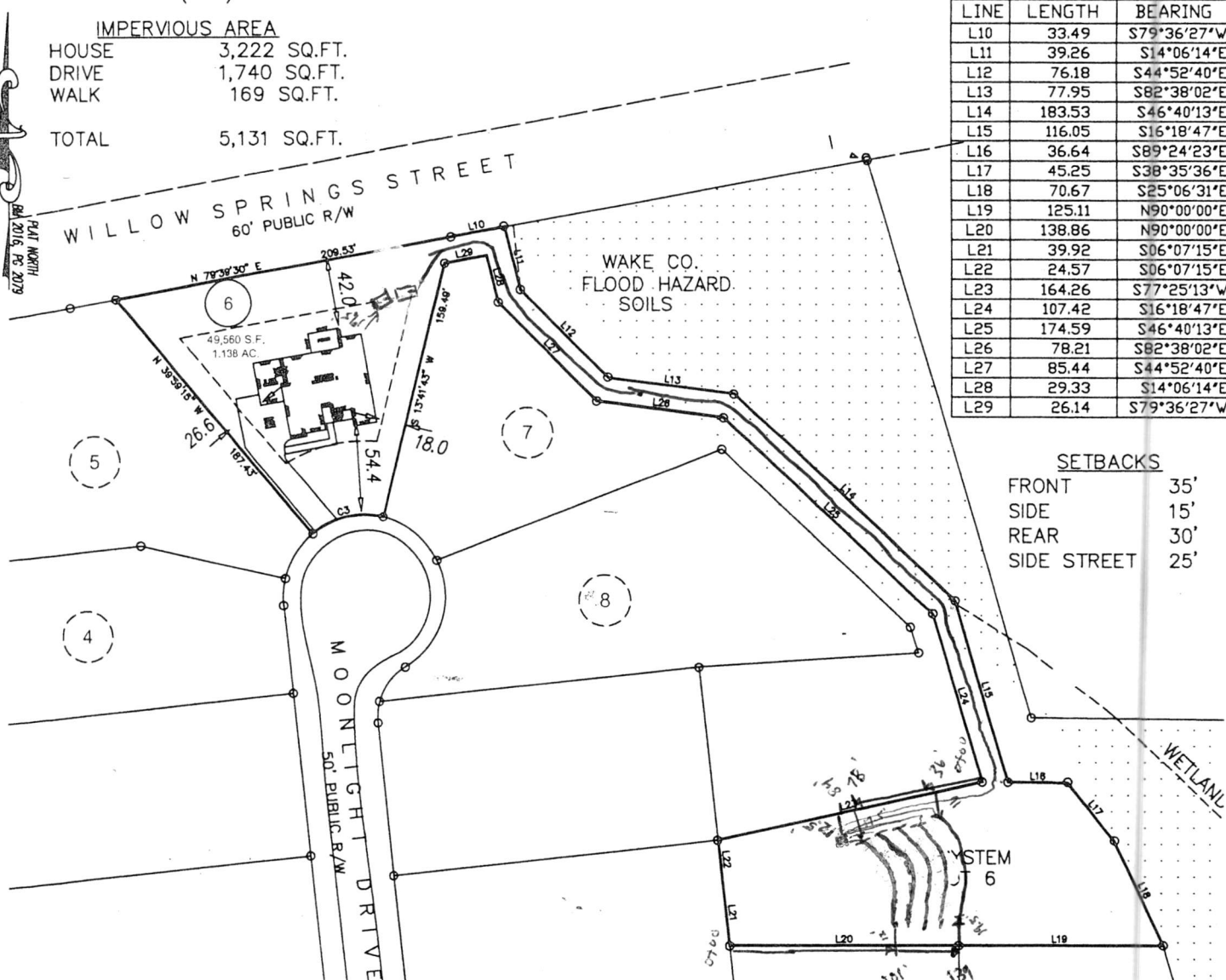
THIS MAP IS ONLY INTENDED FOR THE PARTIES AND PURPOSES SHOWN. THIS MAP IS NOT FOR RECORDATION. NO TITLE REPORT PROVIDED.

PORTIONS OF THIS SUBDIVISION ARE LOCATED IN A FLOOD HAZARD AREA PER F.E.M.A. MAP #3720068600J  
 EFF. DATE: 5/2/2006 ZONE X & AE

## VICINITY MAP (NTS)

IMPERVIOUS AREA  
 HOUSE 3,222 SQ.FT.  
 DRIVE 1,740 SQ.FT.  
 WALK 169 SQ.FT.  
 TOTAL 5,131 SQ.FT.

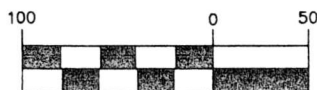
| LINE TABLE |        |             |
|------------|--------|-------------|
| LINE       | LENGTH | BEARING     |
| L10        | 33.49  | S79°36'27"W |
| L11        | 39.26  | S14°06'14"E |
| L12        | 76.18  | S44°52'40"E |
| L13        | 77.95  | S82°38'02"E |
| L14        | 183.53 | S46°40'13"E |
| L15        | 116.05 | S16°18'47"E |
| L16        | 36.64  | S89°24'23"E |
| L17        | 45.25  | S38°35'36"E |
| L18        | 70.67  | S25°06'31"E |
| L19        | 125.11 | N90°00'00"E |
| L20        | 138.86 | N90°00'00"E |
| L21        | 39.92  | S06°07'15"E |
| L22        | 24.57  | S06°07'15"E |
| L23        | 164.26 | S77°25'13"W |
| L24        | 107.42 | S16°18'47"E |
| L25        | 174.59 | S46°40'13"E |
| L26        | 78.21  | S82°38'02"E |
| L27        | 85.44  | S44°52'40"E |
| L28        | 29.33  | S14°06'14"E |
| L29        | 26.14  | S79°36'27"W |



## SETBACKS

FRONT 35'  
 SIDE 15'  
 REAR 30'  
 SIDE STREET 25'

## GRAPHIC SCALE

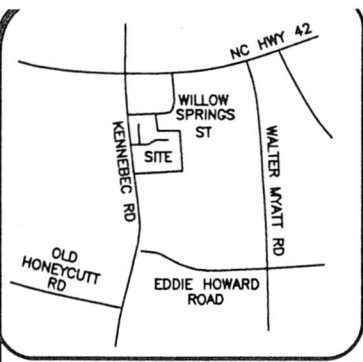


1 inch = 100 ft.

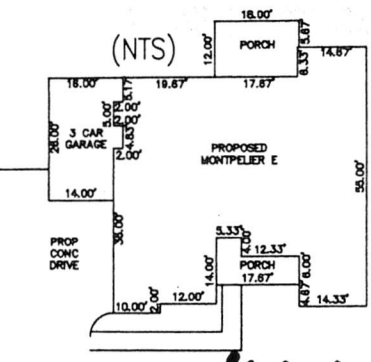
PRELIMINARY  
 PLOT PLAN

## CURVE TABLE

| CURVE | LENGTH | RADIUS | BEARING     | CHORD |
|-------|--------|--------|-------------|-------|
| C3    | 46.92  | 49.99  | S76°49'32"W | 45.22 |



- LEGEND**
- AC=AIR CONDITIONING UNIT
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VICINITY MAP (NTS)

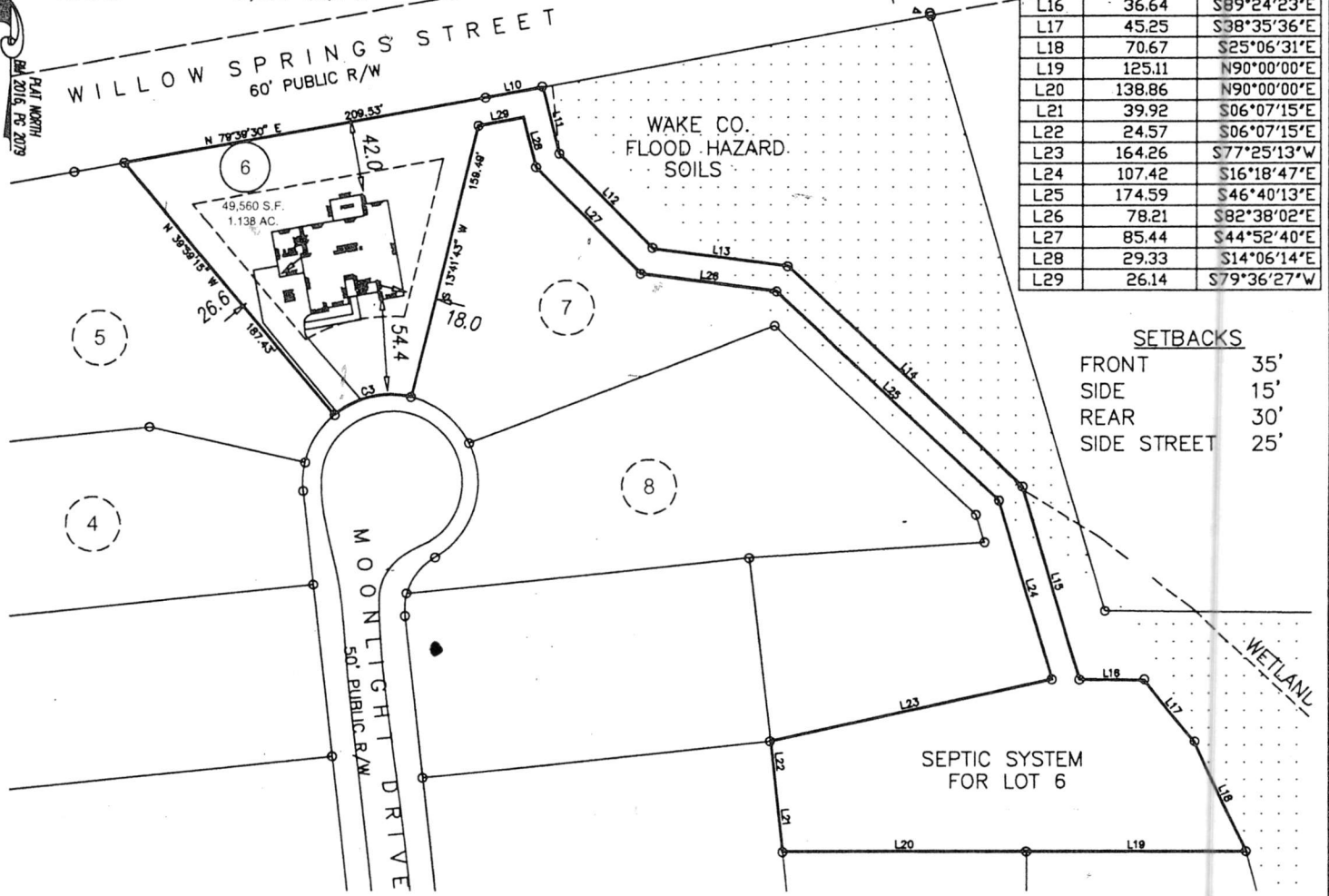
**IMPERVIOUS AREA**

|              |                     |
|--------------|---------------------|
| HOUSE        | 3,222 SQ.FT.        |
| DRIVE        | 1,740 SQ.FT.        |
| WALK         | 169 SQ.FT.          |
| <b>TOTAL</b> | <b>5,131 SQ.FT.</b> |

**CA: Part "A"**

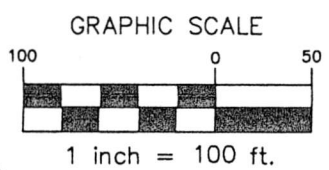
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**SETBACKS**

|             |     |
|-------------|-----|
| FRONT       | 35' |
| SIDE        | 15' |
| REAR        | 30' |
| SIDE STREET | 25' |



**D56573**

PRELIMINARY  
PLOT PLAN

**CURVE TABLE**

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|             |                                     |                                                                                                                                                     |                                                                                                                                                 |
|-------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ECLS</b> | <b>PROJECT:</b> 16-002 JUDD RESERVE | FOR<br><b>CAPITOL CITY HOMES</b><br>200 MOONLIGHT DRIVE<br>LOT 6 JUDD RESERVE SUBDIVISION<br>MIDDLE CREEK TWP., WAKE CO., NC<br>B.M. 2016, PG. 2079 | <br><b>ECLS GLOBAL</b><br>U.S. VETERAN-OWNED<br>19 N MCKINLEY ST<br>COATS, NC 27521<br>910.897.3257 ECLSINC.COM<br>910.897.2329 (FAX) CO#C-4175 |
|             | <b>DRAWN BY:</b> APS                |                                                                                                                                                     |                                                                                                                                                 |
|             | <b>SCALE:</b> 1"=100'               |                                                                                                                                                     |                                                                                                                                                 |
|             | <b>DATE:</b> 12-30-16               |                                                                                                                                                     |                                                                                                                                                 |

I certify that the location of planned or existing structure(s) are accurately shown. I understand failure to locate structures in accordance with this plot plan may

CA: Part B

Pressure Manifold  
Septic System Design

for

Judd Reserve Lot 6  
Fuquay-Varina, North Carolina

Designed by:

Matt Burdette  
Central Carolina Soil Consulting, PLLC  
Wake Forest, North Carolina

Reviewed by:

Timmons Group  
Keith Roberts PE  
5410 Trinity Road  
Raleigh, North Carolina



03/06/2017

APPROVED  
APPROVED AS NOTED  
DISAPPROVED

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the designer and/or contractor from responsibility for any errors therein or for furnishing the materials, and equipment of proper dimension, size, quantity, quality and all performance characteristics to meet the requirements and intent of the contract documents.

WAKE COUNTY DEPARTMENT OF  
ENVIRONMENTAL SERVICES

Date 3-13-17 By Yell Perkins

Judd Reserve Lot 6  
Layout/Design Specifications

|                               |                                                                          |
|-------------------------------|--------------------------------------------------------------------------|
| Facility Type:                | Single Family Home                                                       |
| # of Bedrooms:                | 4                                                                        |
| Daily Flow:                   | 480 gal/day                                                              |
| L.T.A.R.:                     | 0.40 gal/day/sq.ft                                                       |
| Trench Depth:                 | 24 in                                                                    |
| Trench Width:                 | 36 in                                                                    |
| Stone Depth:                  | EZ-FLOW in                                                               |
| Manifold Length:              | 48 in                                                                    |
| Manifold Diameter:            | 4 in sch 80pvc                                                           |
| Supply Line Length:           | 643 ft                                                                   |
| Supply Line Diameter:         | 2 in sch 40pvc                                                           |
| Total Supply Line Volume:     | 114.58 gallons                                                           |
| Friction Loss + Fitting Loss: | 12.14 ft includes 25% for fittings                                       |
| Design Head:                  | 2 ft                                                                     |
| Elevation Head:               | 5.40 ft                                                                  |
| Total Head:                   | 19.54 ft                                                                 |
| Dose Volume:                  | 146.43 gals                                                              |
| % of Pipe Vol.                | .75                                                                      |
| Drawdown:                     | 7.5 in @ 19.65 gal/in                                                    |
| Pump Run Time:                | 5.3 Mins                                                                 |
| Control Panel:                | SJE Rhombus Model112 control panel<br>(or approved equivalent)           |
| Pump:                         | Zoeller 140 Flow-Mate (or approved equivalent)                           |
| Septic Tank Effluent Filter:  | Zoeller 170-0144 residential effluent filter<br>(or approved equivalent) |
| Septic Tank:                  | 1250 gallon                                                              |
| Pump Tank:                    | 1200 gallon                                                              |

# Judd Reserve Lot 6 SYSTEM TAP CHART

Bench Mark: 0 = 100.00  
Pump tank elevation: 369.00

Manifold elev: 366.50  
Pump elev: 363.60

| line | color  | rod read | elevation | length | hole size    | flow/tap | gal/day | trench area | LINE LTAR |
|------|--------|----------|-----------|--------|--------------|----------|---------|-------------|-----------|
| 7    | Orange | 5.00     | 365.50    | 60     | 1/2in SCH 80 | 5.48     | 96.00   | 180         | 0.5333    |
| 8    | Red    | 5.30     | 365.20    | 60     | 1/2in SCH 80 | 5.48     | 96.00   | 180         | 0.5333    |
| 9    | Blue   | 5.60     | 364.90    | 60     | 1/2in SCH 80 | 5.48     | 96.00   | 180         | 0.5333    |
| 10   | Pink   | 6.10     | 364.40    | 60     | 1/2in SCH 80 | 5.48     | 96.00   | 180         | 0.5333    |
| 11   | Yellow | 6.50     | 364.00    | 60     | 1/2in SCH 80 | 5.48     | 96.00   | 180         | 0.5333    |

P-TANK 1.50 369.00

total feet = 300 gal/min = 27.4 LTAR = 0.40

Des. Flow 480 (ltar + 5%) 0.42  
Pump Run= 17.52 (ltar W/ INOV) 0.53  
(ltar + 5%) 0.56

Comments:

# Judd Reserve Lot 6 REPAIR TAP CHART

Bench Mark: 0 = 100.00  
Pump tank elevation: 369.00

Manifold elev: 368.40  
Pump elev: 363.60

| line | color  | rod read | elevation | length | hole size    | flow/tap | gal/day | trench area | LINE LTAR |
|------|--------|----------|-----------|--------|--------------|----------|---------|-------------|-----------|
| 1    | Orange | 3.10     | 367.40    | 50     | 1/2in SCH 80 | 5.48     | 80.00   | 150         | 0.5333    |
| 2    | Red    | 3.50     | 367.00    | 50     | 1/2in SCH 80 | 5.48     | 80.00   | 150         | 0.5333    |
| 3    | Blue   | 3.70     | 366.80    | 50     | 1/2in SCH 80 | 5.48     | 80.00   | 150         | 0.5333    |
| 4    | Pink   | 4.00     | 366.50    | 50     | 1/2in SCH 80 | 5.48     | 80.00   | 150         | 0.5333    |
| 5    | Yellow | 4.30     | 366.20    | 50     | 1/2in SCH 80 | 5.48     | 80.00   | 150         | 0.5333    |
| 6    | Purple | 4.70     | 365.80    | 50     | 1/2in SCH 80 | 5.48     | 80.00   | 150         | 0.5333    |

P-TANK 1.50 369.00

total feet = 300 gal/min = 32.88 LTAR = 0.40

Des. Flow 480 (ltar + 5%) 0.42  
Pump Run= 14.60 (ltar W/ INOV) 0.53  
(ltar + 5%) 0.56

Comments:

**Buoyancy Calculations**  
**1250 Gallon Brantley (Septic Tank)**

Average Outside Dim: 10.4' x 5.4' x 5.0'

Average Inside Dim: 9.9' x 4.9' x 4.3'

$$\begin{aligned}\text{Volume of Concrete: } & (10.4')(5.4')(5.0') - (9.9')(4.9')(4.3') \\ & = 280.8 \text{ ft}^3 - 208.6 \text{ ft}^3 \\ & = 72.2 \text{ ft}^3\end{aligned}$$

$$\text{Weight of Tank: } (72.2 \text{ ft}^3)(150 \text{ lb/ft}^3) = 10,830 \text{ lb}$$

$$\begin{aligned}\text{Buoyant Force: } & (280.8 \text{ ft}^3)(62.4 \text{ lb/ft}^3) = 17,521.2 \text{ lb} \\ & = 17,521.2 \text{ lb} - 10,830 \text{ lb} \\ & = 6,691.2 \text{ lb}\end{aligned}$$

Tank will float without overburden

Overburden required for non-float

$$[(10.4')(5.4')(X) - (6.28 \text{ ft}^2)](100 \text{ lb/ft}^3) = 6,691.9 \text{ lb}$$

$$X = (5,452.1 \text{ lb}) / [(10.4')(5.4') - (6.28 \text{ ft}^2)](100 \text{ lb/ft}^3)$$

$$X = 1.1 \text{ ft of overburden required}$$

1.3 ft with a 10% safety factor

note: two 24" riser reduces the overburden area by 6.28 ft<sup>2</sup>

## Buoyancy Calculations

### 1200 Gallon Brantley (Pump Tank)

Average Outside Dim: 8.9' x 4.3' x 5.8'

Average Inside Dim: 8.4' x 3.8' x 5.2'

$$\begin{aligned}\text{Volume of Concrete: } & (8.9')(4.3')(5.8') - (8.4')(3.8')(5.2') \\ & = 222.0 \text{ ft}^3 - 166.0 \text{ ft}^3 \\ & = 56 \text{ ft}^3\end{aligned}$$

$$\text{Weight of Tank: } (56.0 \text{ ft}^3)(150 \text{ lb/ft}^3) = 8,400 \text{ lb}$$

$$\begin{aligned}\text{Buoyant Force: } & (222.0 \text{ ft}^3)(62.4 \text{ lb/ft}^3) = 13,852.8 \text{ lb} \\ & = 13,852.8 \text{ lb} - 8,400 \text{ lb} \\ & = 5,452.1 \text{ lb}\end{aligned}$$

Tank will float without overburden

Overburden required for non-float

$$\begin{aligned}[(8.9')(4.3')(X) - (3.14 \text{ ft}^2)](100 \text{ lb/ft}^3) &= 5,452.1 \text{ lb} \\ X &= (5,452.1 \text{ lb}) / [(8.9')(4.3') - (3.14 \text{ ft}^2)](100 \text{ lb/ft}^3) \\ X &= 1.6 \text{ ft of overburden required} \\ &= 1.9 \text{ ft with a 10\% safety factor}\end{aligned}$$

note: one 24" riser reduces the overburden area by 3.14 ft<sup>2</sup>

## Supply Main Hydrostatic Pressure Testing Procedures

This testing procedure is for two 2" SCH 40 PVC supply main located at lot 6 Judd Reserve Subdivision. The procedures listed below are based on guidance documents from Wake County Environmental Health regulations and ASTM D 2774 Section 11, as well as AWWA C600-93 Section 4 and are specific for this site only.

- 1.) Allow welded joints and fittings to cure and make sure the pipe is adequately anchored to prevent movement if necessary.
- 2.) Testing should not begin until authorized by the engineer or other authority.
- 3.) Conduct pressure testing with water. Pipeline should be slowly filled with water from the lowest point possible and taking care to prevent surge and air entrapment. All entrapped air should be released. If required, the system should include appropriate air release and air/vacuum relief valves.
- 4.) Testing should be conducted in temperatures not less than 40 degrees or higher than 90 degrees unless the manufacturer is consulted about recommendation and safeguards when testing outside of this temperature range.
- 5.) The line should be pressurized to 150% of the system's design operating pressure, but not less than 15 psi, nor in excess of the pressure rating for the pipe or appurtenances nor the maximum allowable test pressure of any non-isolated component. Measure the pressure at the lowest elevation possible. (100 psi per Wake County)
- 6.) The duration of the pressurization should be a minimum of 1 hour, but not to exceed 3 hours.
- 7.) The test pressure shall not vary by more than  $\pm 5$ psi.

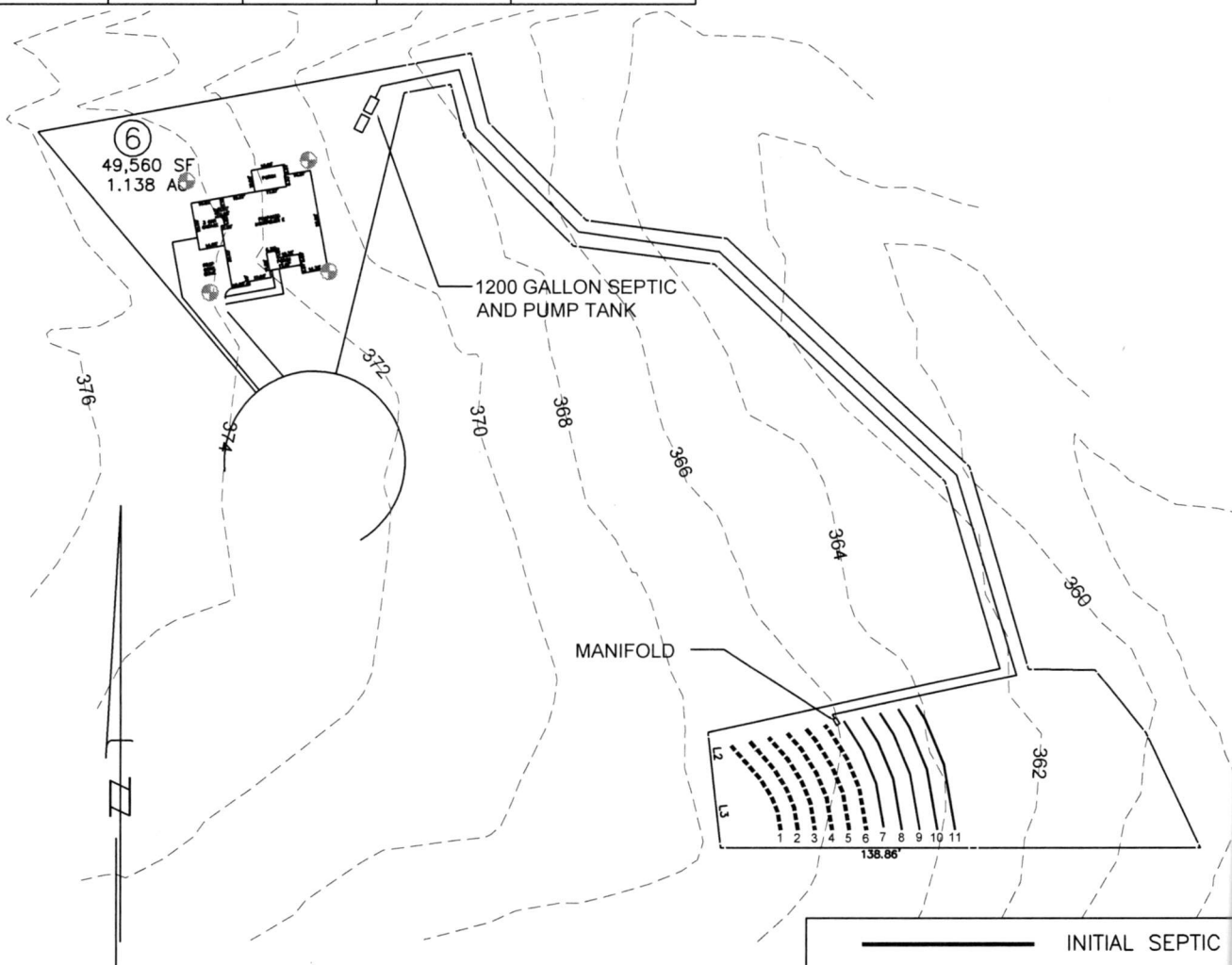
| LINE SCHEDULE SYSTEM |        |                 |        |               |
|----------------------|--------|-----------------|--------|---------------|
| LINE NUMBER          | COLOR  | FIELD ELEVATION | LENGTH | DESIGN LENGTH |
| 1                    | ORANGE | 3.1             | 53     | 50            |
| 2                    | RED    | 3.5             | 54     | 50            |
| 3                    | BLUE   | 3.7             | 54     | 50            |
| 4                    | PINK   | 4.0             | 55     | 50            |
| 5                    | YELLOW | 4.3             | 56     | 50            |
| 6                    | PURPLE | 4.7             | 58     | 50            |
| 7                    | ORANGE | 5.0             | 61     | 60            |
| 8                    | RED    | 5.3             | 63     | 60            |
| 9                    | BLUE   | 5.6             | 65     | 60            |
| 10                   | PINK   | 6.1             | 67     | 60            |
| 11                   | YELLOW | 6.5             | 69     | 60            |

LOT 6 JUDD RESERVE

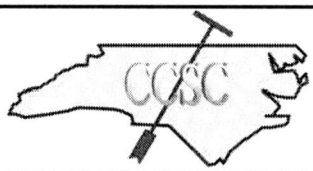
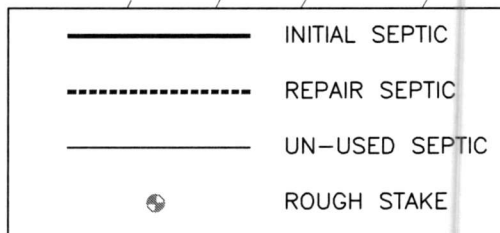
4-BEDROOM PRESSURE MANIFOLD SYSTEM  
LINES 7-11  
EZFLOW  
LTAR 0.4

4-BEDROOM PRESSURE MANIFOLD REPAIR  
LINES 1-6  
EZFLOW  
LTAR 0.4

FOR GENERAL USE NOT A SURVEY  
PRELIMINARY NOT FOR CONSTRUCTION



0 50 100  
SCALE:  
1" = 100 ft.



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SEPTIC SITE PLAN  
CAPITAL CITY HOMES  
Lot 6 Judd Reserve  
WAKE County, North Carolina

|                      |
|----------------------|
| Job# : 2085          |
| Drawn By : AH        |
| Date : 01/18/2017    |
| Revision: 00/00/2017 |