PJB

# ICHD - ENVIRONMENTAL HEALTH DIVISION

Statesville Office (704) 878-5305 | Mooresville Office (704) 660-3625 | PERMIT # AP 243580

## SEPTIC: IMPROVEMENT PERMIT / AUTHORIZATION TO CONSTRUCT / OPERATION PERMIT / EXISTING SYSTEM

PIN # 4649 -- 10 -- 1235

APPLICANT/OWNER: Foundation Homes Residential, LLC | APPLICANT ADDRESS: 438 Williamson Suite C Mooresville NC 28117

SITE ADDRESS: 223 Hidden Meadows Mooresville NC | PHONE: 704-300-2251 | ALT. PHONE

SITE DIRECTIONS: (W) NC 150 → (R) Perth → (R) Hidden Meadows → lot on (L) | SAP CONTROLLED: ☐ YES ☒ NO

SUBDIVISION: Hidden Meadows | SECTION: — | LOT # 16 | LOT AREA: 0.829 ac | DESIGN FLOW: 480 gpd | L.T.A.R.: Q3 (I & R)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Septic Tank | 1000 | (gal) | STB | Infiltrator | Date | — | ☒ New System | ☐ Repair | ☐ Expansion | System Type: I II (III) IV V VI | |
| Pump Tank | 1000 | (gal) | PT | Infiltrator | Date | — | System Description: | 25% Reduction - PM | | | |
| Pump Make | Gould | Model | | PE31M | Serial # | | Repair System Description: | 25% Reduction - PM | | | |
| # Nitrification Fields | 1 | # Lines | 3 | | Linear Ft | 408' | Maintenance Agreement Required: | ☐ YES | ☒ NO | | |
| Trench Width | 36" | Trench Bottom Depth(Low side) | | 30" | Gravel Depth | N/A | | ☐ GRAVITY | ☒ PRESSURE | | |

| | | | |
|---|---|---|---|
| ☒ Residence | No. Bedrooms | 4 | Water Supply |
| ☐ Business | No. Persons | 8 | ☒ Private |
| ☐ Other | No. Employees | | ☐ Public |
| ☐ Slab | ☒ Crawl Space | | ☐ Community |
| ☐ Basement w/plumbing | | | ☐ Basement w/o plumbing |

Comments / Conditions: Install according to design plan by Soil & Forestry Services of the Carolinas, PA. Do not pave grade, park, drive, or bury utilities in drainfield. Divert all drainage away from drainfield. Maintain 15' off pool area - pool area must be marked at time of install.

INITIAL SITE SKETCH

See attached Site plan by Paul Penninger, LSS dated 3/31/21

AS BUILT SKETCH

FOR SEPTIC FINAL INSPECTION CALL: 704-664-3703 between 8am-9am the day the inspection is needed. Be sure to speak with an inspector to confirm your time.

As Built - See attached

4/30/2021: checked supply line connection.

*Permit can be suspended or revoked if any false information is supplied toward securing the permit / any unauthorized changes are made to the site / any unauthorized changes are made in the installation of the system.* **CONTACT A LOCATOR SERVICE PRIOR TO ANY EXCAVATION**

☐ **IMPROVEMENT PERMIT** *with plat valid without expiration.* ☒ **IMPROVEMENT PERMIT** *with site plan valid for 60 mos.* ☒ **AUTHORIZATION TO CONSTRUCT** *valid for period equal to IMPROVEMENT PERMIT--not to exceed 60 mo.*

Owner / Applicant Signature: Rebecca Gilbert | Date: 4/5/21 | Installed by: Specialty Septic - Jamie O'Daniel

IMPROVEMENT PERMIT by: D Wiebers | Date: 3/31/21 | OPERATION PERMIT by: James Boggs | Date: 6/30/21

AUTHORIZATION TO CONSTRUCT by: D. Wiebers | Date: 3/31/21 | Existing System Inspected by: | Date:

FOR SEPTIC FINAL INSPECTION: CALL 704-664-3703 between 8am-9am the day the inspection is needed.

| Item | Date | Initials |
|---|---|---|
| Drain Lines Checked | 4/29/21 | DW |
| Tanks Checked | 4/29/21 | DW |
| Pressure Manifold or Valve Box Checked | 4/29/21 | DW |
| Pressure Head Set | | |
| Electrical Checked | | |
| Floats Set | | |
| Alarm Checked | | |
| Maintenance Contract Needed? Y / (N) | | |
| Comments: | | |
| check joints of supply line from manifold to edge of drainlines | | |

| Repairs Only | |
|---|---|
| | State Code |
| Failing System Code | |
| Type of Distribution | G or P |
| Type of Failure/Malfunction | |
| Primary Cause of Failure/Malfunction | |
| | |
| Age of System? _____ | |
| Initial or Repair? _____ | |

Sheet 1 of 1
PROPERTY ID #: 4644016361
COUNTY: Iredell

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

APPROVED APR 16 2019
KW

OWNER: Hidden Meadows Ventures
ADDRESS: PO Box 4628 Mooresville NC 28117
PROPOSED FACILITY: 4BR Single Family PROPOSED DESIGN FLOW (.1949): 480gpd
LOCATION OF SITE: 223 Hidden Meadows Dr. Lot 116
APPLICATION DATE
DATE EVALUATED: 4/3/19
PROPERTY SIZE: 1.192ac
PROPERTY RECORDED: NO

WATER SUPPLY: ☑ Private ☐ Public ☑ Well ☐ Spring ☐ Other
EVALUATION METHOD: ☑ Auger Boring ☑ Pit ☐ Cut
TYPE OF WASTEWATER: ☑ Sewage ☐ Industrial Process ☐ Mixed

| PROFILE # | .1940 LANDSCAPE POSITION/ SLOPE % | HORIZON DEPTH (IN.) | SOIL MORPHOLOGY (.1941) | | OTHER PROFILE FACTORS | | | | PROFILE CLASS & LTAR |
|---|---|---|---|---|---|---|---|---|---|
| | | | .1941 STRUCTURE/ TEXTURE | .1941 CONSISTENCE/ MINERALOGY | .1942 SOIL WETNESS/ COLOR | .1943 SOIL DEPTH | .1956 SAPRO CLASS | .1944 RESTR HORIZ | |
| B 1 | L/6% | 0-3 | RBCL wfsbk | Fr SS SP | Few SAP Incl. | 48 | | | PS .3 |
| | | 3-35 | RC wmsbk | Fr SS SP | | | | | |
| | | 35-48 | RBCL wfsbk | Fr SS SP | | | | | |
| B 2 | L/6% | 0-4 | RBCL wfsbk | Fr SS SP | | 48 | | | PS .3 |
| | | 4-39 | RC wmsbk | Fr SS SP | | | | | |
| | | 39-48 | RBCL wfsbk | Fr SS SP | | | | | |
| B 3 | L/40% | 0-10 | BCL wfsbk | Fr SS SP | | 40 | | | PS .3 |
| | | 10-46 | RC wmsbk/AHK | F SS SP | | | | | |
| | | 46-48 | RBCL wmsbk | Fr SS SP | | | | | |
| B 4 | L | 0-10 | RBCL wmsbk | Fr SS SP | | 48 | | | PS .3 |
| | | 10-32 | RC wmsbk | F SS P | | | | | |
| | | 32-46 | RC wmsbk | Fr SS SP | | | | | |
| | | 46-48 | RBCL wfsbk | Fr SS SP | | | | | |

| DESCRIPTION | INITIAL SYSTEM | REPAIR SYSTEM |
|---|---|---|
| Available Space (.1945) | PS | PS |
| System Type(s) | Accepted | Accepted |
| Site LTAR | .3 | .3 |

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

COMMENTS:

Updated February 2014

Pit I 0-6 WSBK SCL
6-27 SBK C
60-60 WSBK CL

Pit R 0-19 SBK C
19-52 WSBK CL
52-54 LSAP

# PRESSURE MANIFOLD SYSTEM
# FOR WASTEWATER TREATMENT

| | |
|---|---|
| **Owner/Applicant:** | Hidden Meadows Ventures |
| **Address:** | 223 Hidden Meadows Dr.<br>Mooresville, NC 28117 |
| **Phone:** | 919.606.5852 |
| **County:** | Iredell |
| **Location:** | Hidden Meadows- Lot 16 |
| **Source of Wastewater Flow:** | 4 Bedroom Single Family Residence |
| **Estimated Daily Wastewater Production:** | 480 gpd |
| **System Flow:** | 24.32 |

## Design Specifications

| | |
|---|---|
| **Drainfield Size:** | 408 |
| **Loading Rate:** | 0.3 |
| **Depth of Gravel in Trench:** | NA (25% reduction ) |
| **Gravel Size:** | NA (25% reduction ) |
| **Trench Depth:** | 30 in. Repair Trench Depth 30 in. |
| **Trench Width:** | 36 in. |
| **Septic Tank Size:** | 1000 |
| **Pump Tank Size:** | 1000 |
| **Estimated Supply Line Length:** | 182 |
| **Supply Line Diameter:** | 2 in. SCH 40 PVC |
| **Supply Line Volume:** | 31.67 |
| **Dosing Volume:** | 186.50 |
| **Supply Manifold:** | 4 in. SCH 80 PVC |
| **Supply Manifold Length:** | 4 ft. (minimum) |
| **Supply Manifold Volume:** | N/A |
| **Recommended Float Controls:** | SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents |
| **Recommended Control Panel:** | SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel. |
| **Pressure Head:** | 2 ft. |
| **Friction Head:** | 2.31 |
| **Elevation Head:** | 9.40 |
| **Total Dynamic Head:** | 15.77 |
| **Threaded Union:** | In Tank |
| **Gate Valves:** | 1 in Tank<br>1 at Pressure Manifold |
| **Check Valves:** | In Tank |
| **Anti-Siphon Hole:** | NA |
| **Additional Comments:** | Soil suitability was performed by Soil & Forestry Services of the Carolinas, PA. |

APPROVED APR 1 3 2019
KW

## Hidden Meadows- Lot 16
## PRESSURE MANIFOLD DESIGN

| | | |
|---|---|---|
| **DESIGN FLOW:** | 480 | |
| **SOIL APPLICATION RATE:** | 0.3 | |
| **TOTAL AREA TRENCH BOTTOM:** | 1224 | |
| | | |
| **TOTAL LATERAL LENGTH:** | 408 | |
| **NUMBER OF FIELDS:** | 1 | |
| **LATERAL LENGTH REQUIRED PER FIELD:** | 400 | |
| | | |
| **SUPPLY LINE LENGTH:** | 182 | |
| **TOTAL DYNAMIC HEAD:** | 15.77 | |
| **MANIFOLD SIZE:** | 4 in.SCH 80 PVC | |
| | | |
| **DOSING VOLUME:** | 186.50 | |
| **PUMP TANK DRAW DOWN*:** | 8.9 | |
| **SEPTIC TANK SIZE:** | | 1000 |
| **PUMP TANK SIZE:** | | 1000 |

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

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# Layout Specifications - Hidden Meadows Lot 16

Project #: 18-0108

LAYOUT FOR 4 BEDROOM HOME

April 5, 2019

| LINE # | FLAG COLOR | BS | HI | FS | ELEVATION | FLAGGED LINE LENGTH | DESIGN LINE LENGTH |
|---|---|---|---|---|---|---|---|
| TBM (LR CNR) | | 1.90 | | | 100.00 | | |
| HOUSE (LR) | | | | 9.20 | 91.70 | | |
| PUMP TANK | | | | 10.30 | 90.60 | | |
| INSTR. 1 | | | 101.9 | | | | |
| 1 | RED | | | 2.60 | 98.30 | 71 | 71 |
| 2 | ORANGE | | | 3.50 | 97.40 | 90 | 90 |
| 3 | YELLOW | | | 4.70 | 96.20 | 106 | 106 |
| 4 | BLUE | | | 5.40 | 95.50 | 64 | 64 |
| 5 | PINK | | | 5.80 | 95.10 | 59 | 59 |
| 6 | ORANGE | | | 5.70 | 95.20 | 94 | 94 |
| ***7*** | ***BLUE*** | | | ***6.40*** | ***94.50*** | ***126*** | ***120*** |
| ***8*** | ***YELLOW*** | | | ***7.20*** | ***93.70*** | ***159*** | ***120*** |
| ***9*** | ***RED*** | | | ***7.80*** | ***93.10*** | ***206*** | ***168*** |
| | | | | | **Total** | 975 | 892 |

| | LINE LENGTH | LTAR GPD/FT2 | SYSTEM TYPE | SOIL LTAR GPD/FT2 | TRENCH SYSTEM | DISTRIBUTION |
|---|---|---|---|---|---|---|
| **** System*** | ***408*** | ***0.300*** | ***ACCEPT.*** | ***0.300*** | ***25% RED*** | ***PRESSURE MANIFOLD*** |
| Repair | 484 | 0.300 | ACCEPT. | 0.300 | 25% RED | PRESSURE MANIFOLD |

Notes: **All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

**Nitrification lines were located by GPS.

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# PRESSURE MANIFOLD TAPSHEET - Hidden Meadows Lot 16

## SYSTEM

| Line # | Color | Elevation | Length | Hole Size | Flow/Tap | Trench Area | Line LTAR |
|---|---|---|---|---|---|---|---|
| *7* | ***BLUE*** | ***94.50*** | 120 | SCH 40 1/2 | **7.11** | 360 | 0.15 |
| *8* | ***YELLOW*** | ***93.70*** | 120 | SCH 40 1/2 | **7.11** | 360 | 0.15 |
| *9* | ***RED*** | ***93.10*** | 168 | SCH 80 3/4 | **10.1** | 504 | 0.15 |

| | | | |
|---|---|---|---|
| **total** | **feet =** | **408** | **gal/min =** | **24.32** |
| | | **Des. Flow** | **480** |
| | | **Pump Run=** | **7.67** |
| | | **soil LTAR** | **0.3** |
| | | **LTAR +5%** | **0.315** |
| | | **LTAR with ACCEPTED** | **0.4** |
| | | **LTAR with ACCEPTED + 5%** | **0.42** |

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8

## CALCULATIONS

| | | |
|---|---|---|
| Location | Hidden Meadows Lot 16 | |
| Project Number | 18-0108 | |
| Lot No: | 16 | |
| No. of Bedrooms | 4 | |
| Design Flow | 480 | $^{gal}/_{day}$ |
| LTAR | 0.300 | $^{gpd/ft^2}$ |
| 25% RED.? (YES OR NO) | YES | |
| Supply Line Length | 182 | ft. |
| Supply Line Volume | 31.668 | gal. |
| Required Feet of Line | 400 | ft. |
| Amount of Line from Layout | 408 | ft. |
| Gallons per Minute | 24.32 | $^{gal}/_{min}$ |
| Required Septic Tank Capacity | 1000 | gal. |
| Minimum Standard Tank Size | 1000 | |
| Lateral Line Volume | 266.424 | gal. |
| Dosing Volume | 186.50 | gal. |

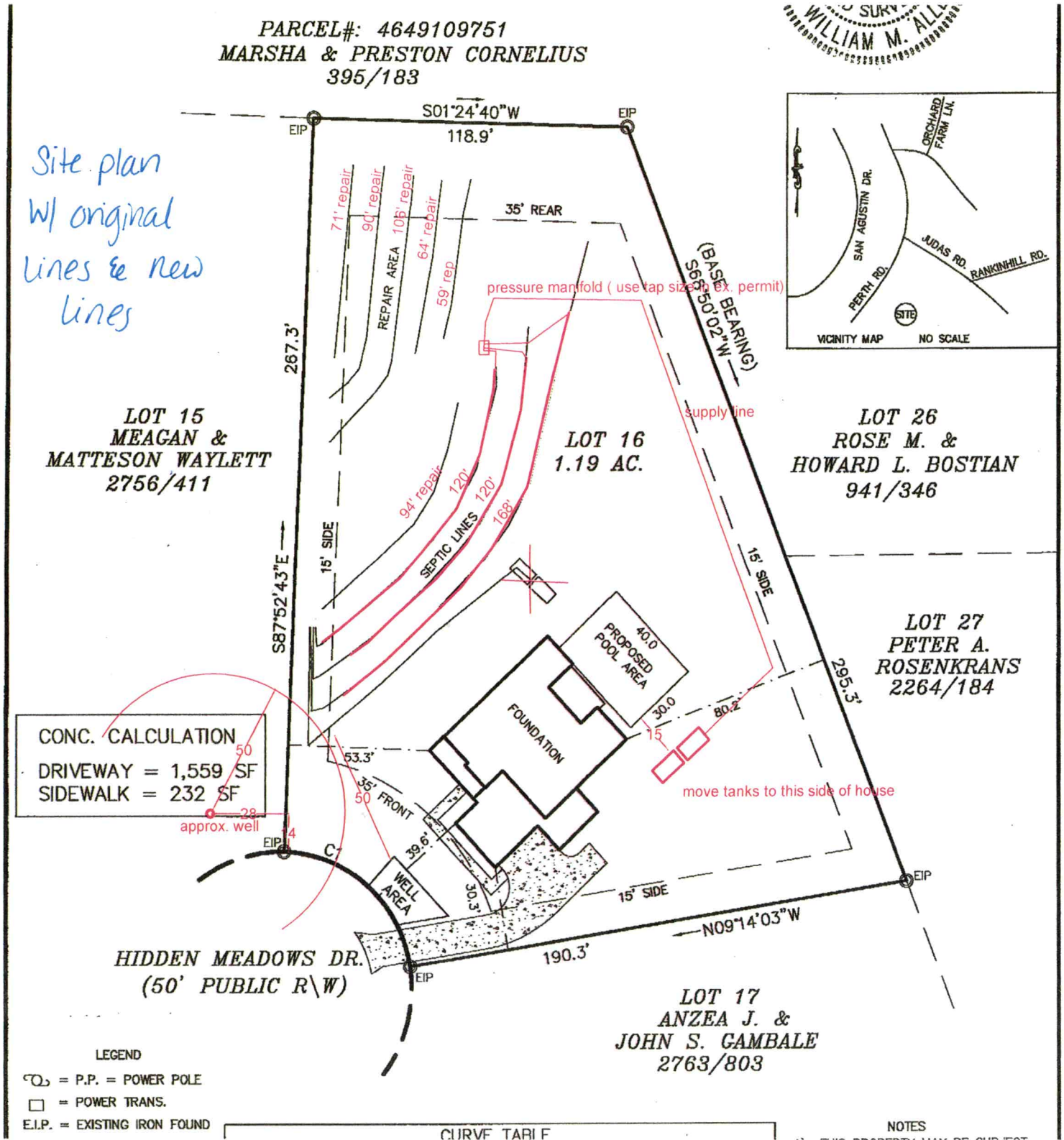
*Note: Dosing Volume based on 70% of lateral line volume*

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

| GPM | *f* |
|---|---|
| 20 | 0.84 |
| | -0.88 |
| 25 | 1.27 |
| | -1.28 |
| 30 | 1.78 |
| | -1.76 |
| 35 | 2.37 |
| | -2.25 |
| 40 | 3.03 |
| 43.07 | 3.48 |
| 45 | 3.77 |
| 48.14 | 4.28 |
| 50 | 4.58 |
| 57.11 | 5.89 |
| 60 | 6.42 |

| | | |
|---|---|---|
| Tank Draw Down | 8.9 | *Generic Draw Down of 21 gal.per in.* |
| Pump Run Time | 7.67 | minutes |
| Elevation Head | 9.4 | ft. |
| Pressure Head | 2 | ft. |
| Friction Factor | 1.27 | ft./100 ft. *(From the interpolater.)* |
| Friction Head | 2.31 | ft. |
| Total Dynamic Head (+15%) | 15.77 | ft. |

APPROVED APR 1 3 2019
KW


PARCEL#: 4649109751
MARSHA & PRESTON CORNELIUS
395/183
Site plan
W/ original
lines & new
lines
S01°24'40"W
118.9'
EIP
EIP
71' repair
90' repair
106' repair
64' repair
59' rep
REPAIR AREA
35' REAR
(BASE BEARING)
S65°50'02"W
pressure manifold ( use tap size on ex. permit)
supply line
267.3'
LOT 15
MEAGAN &
MATTESON WAYLETT
2756/411
LOT 16
1.19 AC.
LOT 26
ROSE M. &
HOWARD L. BOSTIAN
941/346
94' repair
120'
120'
168'
SEPTIC LINES
15' SIDE
15' SIDE
S87°52'43"E
40.0
PROPOSED
POOL AREA
FOUNDATION
295.3'
LOT 27
PETER A.
ROSENKRANS
2264/184
30.0
80.2'
15
CONC. CALCULATION
DRIVEWAY = 1,559 SF
SIDEWALK = 232 SF
50
53.3'
35' FRONT
50
move tanks to this side of house
28
approx. well
14
EIP
C
39.6'
WELL
AREA
30.3'
15' SIDE
EIP
N09°14'03"W
190.3'
HIDDEN MEADOWS DR.
(50' PUBLIC R\W)
EIP
LOT 17
ANZEA J. &
JOHN S. GAMBALE
2763/803
ORCHARD FARM LN.
SAN AGUSTIN DR.
JUDAS RD.
RANKINHILL RD.
PERTH RD.
SITE
VICINITY MAP
NO SCALE
LEGEND
P.P. = POWER POLE
= POWER TRANS.
E.I.P. = EXISTING IRON FOUND
CURVE TABLE
NOTES

Inspector

approved
3/31/21
DW

PARCEL#: 4649109751
MARSHA & PRESTON CORNELIUS
395/183

WILLIAM M. ALL...

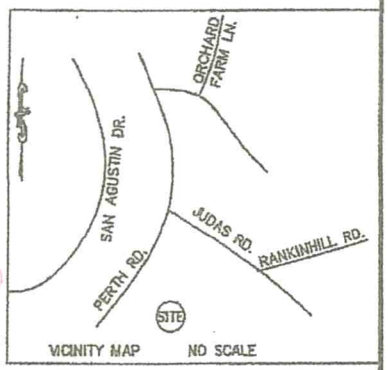
1" = 50'

As Built
NTS

223 Hidden
Meadows

4649-10-1235

4/29/21
DW




EIP
118.9'
EIP
35' REAR
7.1' repair
9.0' repair
10.5' repair
6.4' repair
5.9' rep.
REPAIR AREA
pressure manifold ( use lap size in ex. permit)
267.3'
LOT 15
MEAGAN &
MATTESON WAYLETT
2756/411
LOT 16
supply line
LOT 26
ROSE M. &
HOWARD L. BOSTIAN
941/346
94' repair
SEPTIC LINES
122'
122'
171
15' SIDE
15' SIDE
PROPOSED POOL AREA
40.0
FOUNDATION
30.0
295.3'
LOT 27
PETER A.
ROSENKRANS
2264/184
50
53.3'
35' FRONT
50
approx. well
EIP
C1
39.6'
WELL AREA
30.3'
move tanks to this side of house
EIP
15' SIDE
HIDDEN MEADOWS DR.
(50' PUBLIC R\W)
190.3'
EIP
LOT 17
ANZEA J. &
JOHN S. GAMBALE
2763/803

LEGEND
= P.P. = POWER POLE
= POWER TRANS.
E.I.P. = EXISTING IRON FOUND

NOTES

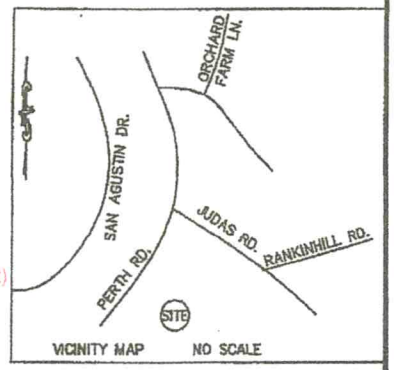
Inst Hrador

1" = 50'

approved
3/31/21
DW

PARCEL#: 4649109751
MARSHA & PRESTON CORNELIUS
395/183

WILLIAM M. ALL...




EIP
118.9'
EIP
71' repair
90' repair
105' repair
64' repair
59' rep.
35' REAR
REPAIR AREA
pressure manifold ( use tap size in ex. permit)
267.3'
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MEAGAN &
MATTESON WAYLETT
2756/411
LOT 16
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94' repair
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15' SIDE
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PETER A.
ROSENKRANS
2264/184
40.0
PROPOSED
POOL AREA
FOUNDATION
30.0
80.2'
15
295.3'
move tanks to this side of house
50
53.3'
35' FRONT
50
28
approx. well
4
EIP
C
39.6'
WELL
AREA
30.3'
15' SIDE
EIP
HIDDEN MEADOWS DR.
(50' PUBLIC R\W)
190.3'
EIP
LOT 17
ANZEA J. &
JOHN S. GAMBALE
2763/803

LEGEND
P.P. = POWER POLE
POWER TRANS.
E.I.P. = EXISTING IRON FOUND

NOTES

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

**Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 4 bedroom single family residence on Hidden Meadows Subdivision Lot 16, (PIN #:4649016361), Mooresville NC, 28117.**

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LICENSED SOIL SCIENTIST
Samuel A. Rollins
STATE OF NORTH CAROLINA

4/5/19

**April 5, 2019**
**Project No. 18-0108**
**Design By: Soil & Forestry Services of the Carolinas, PA**

# INFORMATION FOR THE INSTALLER:

- The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by DHHS, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- 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 is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- 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 pinflag locations should be checked by the installer prior to beginning trenches.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as an Accepted 25% reduction installation w/Pressure Manifold.
- Repair is specified as an Accepted 25% reduction installation w/Pressure Manifold.
- Rake trench walls, lime sidewalls, install trenches 36" wide and have no more than 1/4" fall in 10 feet.