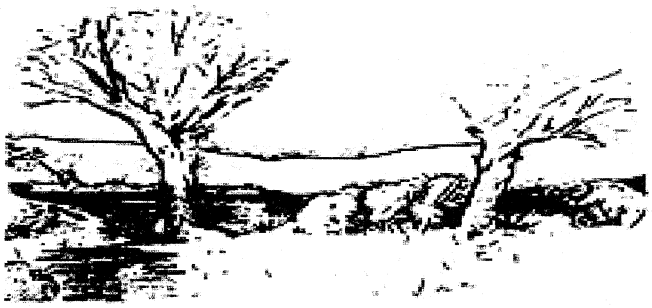
BSN



MICHAEL ATHANAS & ASSOCIATES
NORTH CAROLINA LISCENSED SOIL SCIENTEST
1999 CANDLEWICK DRIVE
FORT MILL, SOUTH CAROLINA 29715

Michael Athanas, NCLSS
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Cell: 704-746-6497

Attached is an onsite wastewater septic design for a 4 bedroom residential home on lot 21 WATERS EDGE Subdivision in Iredell County, NC.

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Information for the Installer---------- 1

Design Information

Applicant and design specifications---------- 2

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Site Plan/System Plan---------- 4

June 14, 2011

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 NC DENR, 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.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- 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 a modified 25% reduction installation.
- Repair is specified as a PPBPS with low pressure distribution installation.
- Rake trench walls, lime sidewalls, install trenches 36" wide and have no more than 1/4" fall in 10 feet.

LOT 21 WATERS EDGE
APPLICANT AND DESIGN SPECIFICATIONS

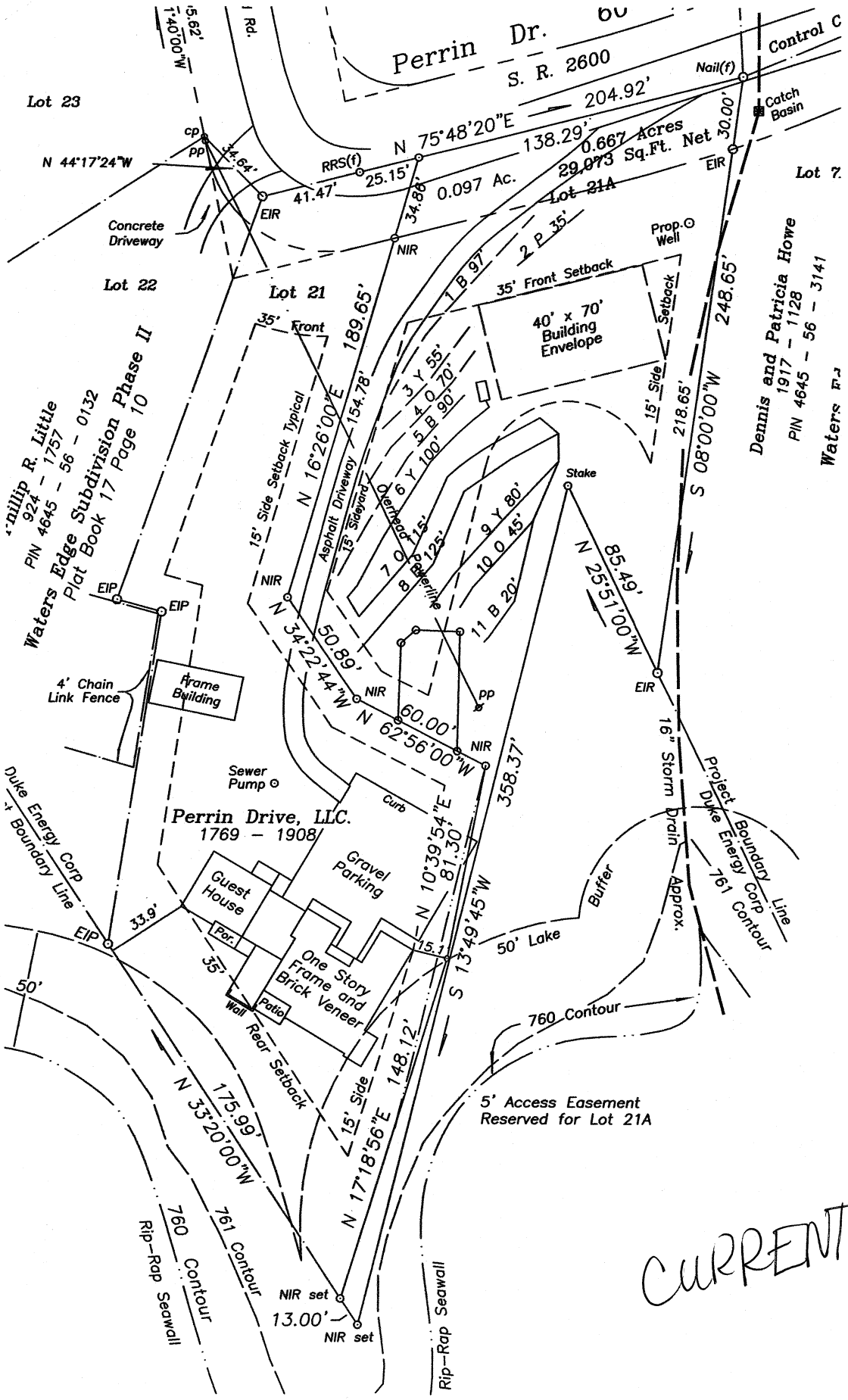
Applicant:	PERRIN DRIVE LLC
Phone:	704-746-6497
Address:	167 PERRIN DRIVE MOORESVILLE, 28117
County:	Iredell
Location:	LOT 21 WATERS EDGE
Application for:	4 Bedroom Single Family Residence
Gallons per day:	480
Linear feet:	485
Loading Rate (gpd/ft.2):	0.25
Trench Depth:	36"
Trench Width:	36"
Septic Tank Size:	1000
Pump Tank Size:	N/A
Estimated Supply line Length/ft:	5
Supply Line Diameter:	3"
Dosing volume:	ON DEMAND
Lateral line volume:	N/A
Supply Manifold:	N/A
Manifold Length:	N/A
Manifold Volume:	N/A
Pressure Head:	N/A
Friction Head:	N/A
Elevation Head:	N/A
Friction factor:	N/A
TDH:	N/A
Pump Run:	N/A
Threaded Union:	N/A
Gate Valves:	N/A
Check Valves:	N/A
Anti-Siphon Hole:	N/A
Design flow:	**N/A**
Trench Bottom FT/SQ:	**1455**
Number of fields	**1**
Supply line length	**15'**
Draw down:	**N/A**
Comments:	Soil suitability was performed by MICHAEL ATHANAS & ASSOCIATES

*Pump tank draw down based on 21 gallons per inch. Draw down may vary depending on tank manufacturers.

LOT 21 PERRIN DRIVE

SYSTEM TYPE	**25% REDUCTION**
SYSTEM LTAR	**0.25 GPD/FTSQ**
SYSTEM LINE LENGTH	**485**
REPAIR TYPE	*LP PPBPS*
REPAIR LTAR	*0.25 GPD/FTSQ*
REPAIR LINE LENGTH	*347*

LINE #	FLAG COLOR	SHOT ELEVATION	LINE LENGTH
1	BLUE	N/A	97
2	PINK	N/A	35
3	YELLOW	N/A	55
4	ORANGE	N/A	70
5	BLUE	N/A	90
6	***YELLOW***	***N/A***	***100***
7	***ORANGE***	***N/A***	***115***
8	***BLUE***	***N/A***	***125***
9	***YELLOW***	***N/A***	***80***
10	***ORANGE***	***N/A***	***45***
11	***BLUE***	***N/A***	***20***
		Total	**832**
TBM		*N/A*	
HOUSE CORNER		*N/A*	
TANK		*N/A*	


Perrin Dr.
S. R. 2600
Nail(f)
Control C
Catch Basin
Lot 23
Lot 22
Lot 21
Lot 7
N 75°48'20"E
204.92'
138.29'
0.667 Acres
29,073 Sq.Ft. Net
0.097 Ac.
Lot 21A
30.00'
N 44°17'24"W
cp
pp
34.64'
RRS(f)
25.15'
41.47'
34.88'
EIR
NIR
Concrete Driveway
Prop. Well
35' Front Setback
40' x 70' Building Envelope
15' Side Setback
248.65'
S 08°00'00"W
Dennis and Patricia Howe
1917 - 1128
PIN 4645 - 56 - 3141
Waters Ed
Waters Edge Subdivision Phase II
Plat Book 17 Page 10
Phillip R. Little
924 - 1757
PIN 4645 - 56 - 0132
35' Front
189.65'
N 16°26'00"E
154.78'
15' Side Setback Typical
Asphalt Driveway
15' Sideyard
Overhead Powerline
3 Y 55'
4 O 70'
5 B 90'
6 Y 100'
7 O 115'
8 B 125'
9 Y 80'
10 O 45'
11 B 20'
1 B 97'
2 P 35'
Stake
85.49'
N 25°51'00"W
EIP
4' Chain Link Fence
Frame Building
N 34°22'44"W
50.89'
60.00'
N 62°56'00"W
358.37'
Sewer Pump
Curb
Perrin Drive, LLC.
1769 - 1908
Gravel Parking
Guest House
Por.
One Story Frame and Brick Veneer
Patio
Wall
Rear Setback
15' Side
N 10°39'54"E
81.30'
S 13°49'45"W
148.12'
N 17°18'56"E
Duke Energy Corp Boundary Line
33.9'
50'
35'
15.1'
50' Lake Buffer
16" Storm Drain
Approx. Project Duke Energy Corp Boundary Line
761 Contour
760 Contour
5' Access Easement Reserved for Lot 21A
N 33°20'00"W
175.99'
761 Contour
760 Contour
Rip-Rap Seawall
NIR set
13.00'
NIR set
Rip-Rap Seawall

CURRENT