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 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 Hybrid Installation (Gravity PPBPS and an Existing 3BR Bed)
- Repair is specified as a PPBPS installation with Low Pressure Distribution
- Backfill 4 - 6" of material (Excavation material) over panels, lime sidewalls install trenches 24" wide to be level but have no more than 1/4" fall in 10 feet.
- **Distribution Devices must be bedded on level pads.**
- **Utilize existing septic tank for existing system plumbing.**

GRAVITY PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Joe & Christy Halbedel

Address: 731 Big Indian Loop
Mooresville, NC 28117

Phone: 704.962.5210
County: Iredell
Location: 731 Big Indian Loop

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: NA

Approved
6/27/16

Design Specifications

Drainfield Size: 68
Loading Rate: 0.3
Depth of Gravel in Trench: NA
Gravel Size: NA
Trench Depth: 28 in.
Trench Width: 24 in.
Septic Tank Size: 1000
Pump Tank Size: NA

Estimated Supply Line Length: 4
Supply Line Diameter: 3 in. SCH 40 PVC
Supply Line Volume: 1.52
Dosing Volume: N/A
Supply Manifold: N/A
Supply Manifold Length: N/A
Supply Manifold Volume: N/A

Recommended Float Controls: N/A

Recommended Control Panel: N/A

Pressure Head: N/A
Friction Head: N/A
Elevation Head: N/A
Total Dynamic Head: N/A

Threaded Union: N/A
Gate Valves: N/A

Check Valves: N/A
Anti-Siphon Hole: N/A
Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services

731 Big Indian Loop
GRAVITY PPBPS

DESIGN FLOW (Upgrade Only):	120
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	136
TOTAL LATERAL LENGTH:	68
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	68.00
SUPPLY LINE LENGTH:	4
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	N/A
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	N/A

Approved
6/27/16
MD

Approved 6/27/16 MP

731 Big Indian Loop

Project #:01-3049

LAYOUT FOR 4 BEDROOM HOME

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	6/24/2016 DESIGN LINE LENGTH
TBM							
INSTR. 1							
HOUSE CNR							
P. TANK							
1	ORANGE					47	47
2	RED					58	58
3	YELLOW					73	73
4A	***BLUE***					*34*	*34*
4B	BLUE					20	20
5	***ORANGE***					*34*	*34*
BED	***RED***	***EXISTING BED; (84' X 7.5' WIDE) 3BR***				***84' X 7.5'***	***84' X 7.5'***
					Total	266	266

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
Existing Bed	84' x 7.5'		Conv. Bed		Bed	GRAVITY
** System* (upgrade only)	*68*	*0.3*	MOD.	*0.300*	PPBPS	*GRAVITY*
Repair	198	0.3	MOD.	0.300	PPBPS	LOW PRESSURE

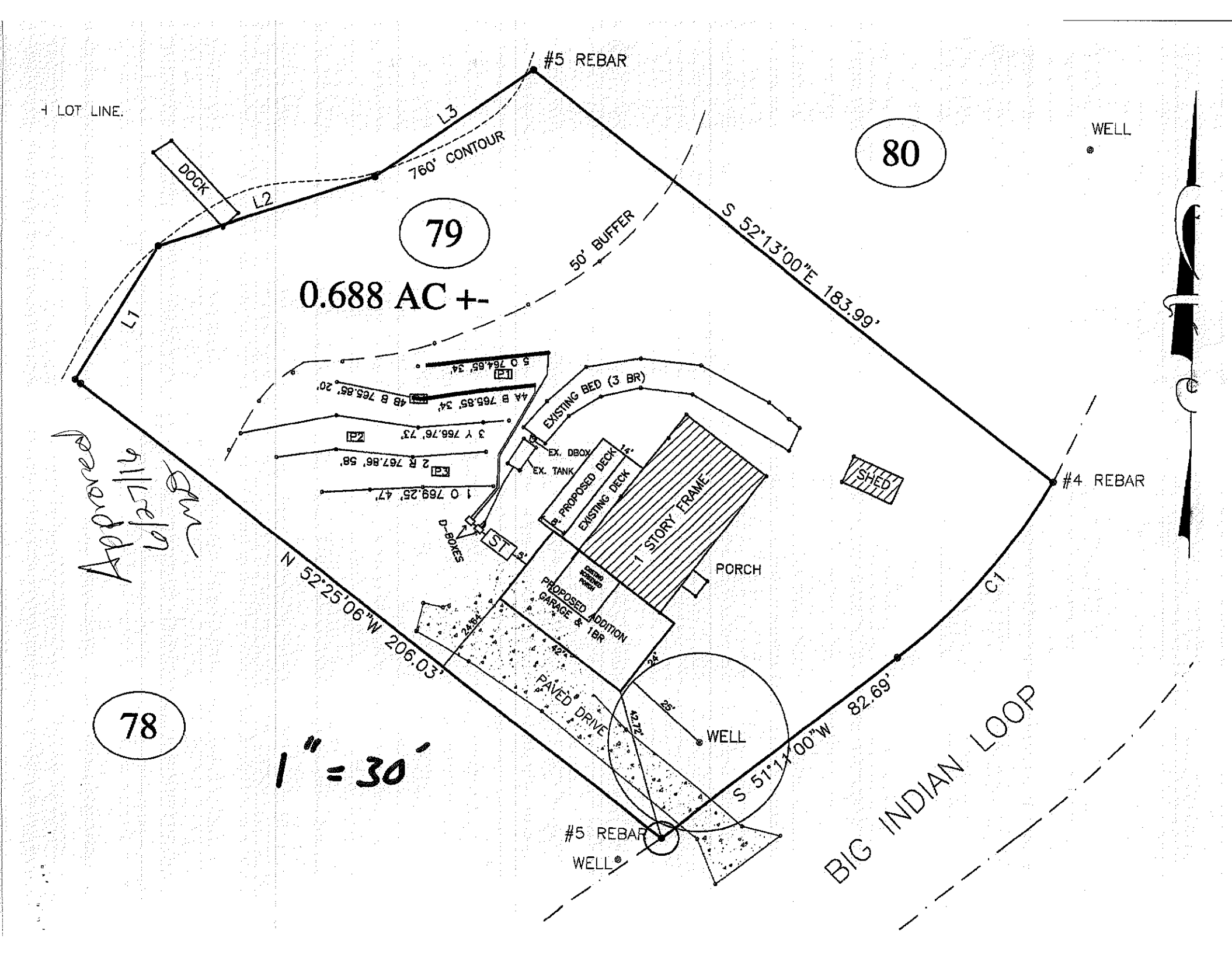
Notes:

****Lot recorded prior to January 1, 1983. See attached Plat dated 1975.**

****Septic Permit Attached - Existing Bed permit illustrates 3 bedrooms.**

****All septic lines, existing tank & existing bed located via licensed surveyor.**

**All measures in feet


#5 REBAR
H LOT LINE.
L3
760' CONTOUR
DOCK
L2
L1
80
79
0.688 AC +-
50' BUFFER
S 52°13'00"E 183.99'
WELL
EXISTING BED (3 BR)
EX. DBOX
EX. TANK
PROPOSED DECK
EXISTING DECK
1 STORY FRAME
SHED
#4 REBAR
PORCH
D-BOXES
ST
PROPOSED GARAGE & ADDITION 1BR
N 52°25'06"W 206.03'
C1
78
PAVED DRIVE
WELL
S 51°11'00"W 82.69'
#5 REBAR
WELL
BIG INDIAN LOOP
Approved
1" = 30'

CALCULATIONS

Approved
6/27/16
MD

Location 731 Big Indian Loop

Project Number 01-3049

Lot No: 79 (CL&T)

Total No. of Bedrooms	4
Design Flow for Upgrade (1 BR)	120 $^{gal}/_{day}$
LTAR	0.3 $^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES
Supply Line Length	4 ft.
Supply Line Volume	1.52 gal.
Required Feet of Line (Upgrade)	68 ft.
Amount of Line from Layout	68 ft.
Gallons per Minute	NA $^{gal}/_{min}$
Required Septic Tank Capacity	1000 gal.
Minimum Standard Tank Size	1000
Panel Volume	N/A gal.
# of Panels	N/A
Dosing Volume	N/A gal.
Tank Draw Down	N/A
Pump Run Time	N/A minutes
Elevation Head	N/A ft.
Pressure Head	N/A ft.
Friction Factor	N/A ft./100 ft. *(From the interpolater.)*
Friction Head	N/A ft.
Total Dynamic Head (+15%)	N/A ft.

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

CALCULATIONS

Location 731 Big Indian Loop

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Minimum Standard Tank Size	1000	
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# of Panels	N/A	
Dosing Volume	N/A	gal.
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Pump Run Time	N/A	minutes
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Pressure Head	N/A	ft.
Friction Factor	N/A	ft./100 ft. *(From the interpolater.)*
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