Pressure Manifold
Septic System Design

for

Bells Crossing S/D Lot 33
Mooresville, North Carolina

APPROVED JAN 12 2015
Richard Farris

Designed by:

Matt Burdette
Bateman Civil Survey Company
Holly Springs, North Carolina
(704) 658-8616

Engineer:

Brian J. Kraynak
Bateman Civil Survey Company
Holly Springs, North Carolina
BCSC Project #: 120342

NORTH CAROLINA PROFESSIONAL SEAL 030082 ENGINEER BRIAN J. KRAYNAK

1-2-2015

December 2014
Revised January 2015

Bells Crossing S/D Lot 33
Contact Information

Client: Meritage Homes
Attn: Robert Price
Street Address: 11605 North Community House Road
Suite 103
Charlotte, NC 28277
Phone: (704) 944-8903
Fax: (704) 944-8910

Designer: Bateman Civil Survey Company, PC
Attn: Matt Burdette
Street Address: 200 North Main Street
Holly Springs, NC 27540
Phone: 919-577-1080
Fax: 919-577-1081

Engineer: Bateman Civil Survey Company, PC
Attn: Brian J. Kraynak
Street Address: 200 North Main Street
Holly Springs, NC 27540
Phone: 919-577-1080
Fax: 919-577-1081

Bells Crossing S/D Lot 33

Layout/Design Specifications

Facility Type:	Single Family Home	
# of Bedrooms:	4	
Daily Flow:	480	**gal/day**
L.T.A.R.:	0.35	**gal/day/sq.ft**
Trench Depth:	20	**in**
Trench Width:	36	**in**
Stone Depth:	Low Profile	**Chamber**
Manifold Length:	48	**in**
Manifold Diameter:	4	**in sch 80pvc**
Supply Line Length:	498	**ft**
Supply Line Diameter:	2	**in sch 40pvc**
Supply Line Volume:	86.65	**gallons**
Friction Loss + Fitting Loss:	33.30	**ft (+ 25% for fittings)**
Design Head:	2	**ft**
Elevation Head:	28.40	**ft**
Total Head:	63.70	**ft**
Dose Volume:	274.70	**gals**
% of Pipe Vol.	.90	
Drawdown:	13.63	**in @ 20.16 gal/in**
Pump Run Time:	5.07	**minutes**
Control Panel:	SJE Rhombus Model112 control panel (or approved equivalent)	
Pump:	Zoeller 188 Flow-Mate (or approved equivalent)	
Septic Tank Effluent Filter:	Zoeller 170-0144 residential effluent filter (or approved equivalent)	
Septic Tank:	1000	**gallon (Shoaf)**
Pump Tank:	1000	**gallon (Shoaf)**

APPROVED JAN 12 2015

Bells Crossing S/D Lot 33

APPROVED JAN 12 2015

SYSTEM TAP CHART

	Bench Mark:	0	= 100.00	**Manifold elev:**	69.50				
	Pump tank elevation:	80.00		**Pump elev:**	74.60				
line	**color**	**rod read**	**elevation**	**length**	**hole size**	**flow/tap**	**gal/day**	**trench area**	**LINE LTAR**
1 & 2	Orange, Yellow	31.50	68.50	90	3/4in SCH 80	10.1	89.43	270	0.331
3	Orange	35.10	64.90	90	3/4in SCH 80	10.1	89.43	270	0.331
4	Pink	36.80	63.20	60	1/2in SCH 40	7.11	62.96	180	0.350
5	Yellow	38.40	61.60	90	3/4in SCH 80	10.1	89.43	270	0.331
6 & 7	Blue, Pink	40.20	59.80	139	1in SCH 80	16.8	148.75	417	0.357 ✓ OK
	P-TANK	20.00	80.00						
		total	**feet =**	**469**	**gal/min =**	**54.21**		**LTAR =**	**0.350**
				Des. Flow	480			**(ltar + 5%)**	0.37
				24 Hour Pump Run Time=	8.85				

Comments: Use Step-downs on lines 1-2 and 6-7

MODEL 112 Control Panel

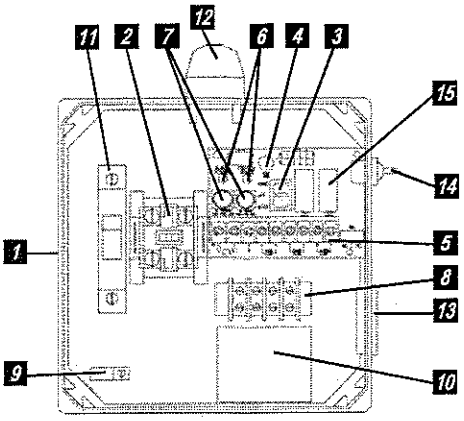
Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.

PANEL COMPONENTS

1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).

   * Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Pump Input Power and Pump Connection Terminal Block**
9. **Ground Lug**
10. **Terminal Block Installation Label**
11. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.



Model Shown 1121W914X

STANDARD ALARM PACKAGE

12. **Red Alarm Beacon** provides 360° visual check of alarm condition. **Note:** NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating). **Note:** NEMA 1 style utilizes an internally mounted buzzer in lieu of horn.
14. **Exterior Alarm Test/Normal/Silence Switch** allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition has been cleared.
15. **Horn Silence Relay** (mounted on circuit board).

NOTE: other options available.

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year limited warranty

c UL us LISTED

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.

SJE Rhombus® CONTROLS

PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE • 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

112	1	W	9	1	4	H	3A, 8A, 8C

MODEL 112

ALARM PACKAGE
- [ ] 0 = select options or no alarm package
- [X] 1 = alarm package (includes test/normal/silence switch, fuse, red light, horn & float)

ENCLOSURE RATING
- [ ] I = Indoor, NEMA 1 (metal)
- [X] W = Weatherproof, NEMA 4X (engineered thermoplastic)

STARTING DEVICE
- [ ] 1 = magnetic motor contactor 120/208/240V
- [X] 9 = magnetic motor contactor 120V only

PUMP FULL LOAD AMPS
- [ ] 0 = 0-7 FLA
- [X] 1 = 7-15 FLA
- [ ] 2 = 15-20 FLA
- [ ] 3 = 20-30 FLA

PUMP DISCONNECTS
- [ ] 0 = no pump disconnect
- [ ] 1 = pull-out with safety deadfront in a 10"x8" enclosure
- [X] 4 = circuit breaker 120V (select STARTING DEVICE option 9 above)
  120/208/240V (select STARTING DEVICE option 1 above)

FLOAT SWITCH APPLICATION
- [X] H or L = pump down or pump up
- [ ] X = no floats

WITH alarm package
WITHOUT alarm package

OPTIONS *Listed below*

★ ENCLOSURE UPSIZE - If you selected 3 or more of the ★ options, or one ★★ option, **a one-time enclosure upsize fee would apply.**

If additional features are required, call the factory for a quote on either a SJE-Rhombus Pro-Line or Engineered Custom control panel.

	CODE	DESCRIPTION
[ ]	1A	Red beacon only / no audio *(must select 1E if floats included)*
[ ]	1C	Horn only / no visual *(must select 1E if floats included)*
[ ]	1E	Alarm float
[X]	3A	Alarm flasher
[ ]	★ 3B	Manual alarm reset
[ ]	★ 4A	Low level cutout *(select option 4D if floats included)*
[ ]	★ 4B	Red low-level indicator & alarm *(must select 4A also)*
[ ]	4D	Low-level float
[ ]	★ 5A	Thermal cutout/heat sensor auto reset (for pumps w/thermal switch leads)
[ ]	★★5E	Seal failure circuit & red indicator (2 wire)
[ ]	6A	Auxiliary alarm contact, form C type
[X]	★ 8A	Elapsed time meter
[X]	★ 8C	Event (cycle) counter
[ ]	★★9_A	Pump overload specify amperage after number 9 followed by letter "A". Example: 912A = 12 amp pump.
	★★[ ]	0-25 FLA
	★★[ ]	25-30 FLA
[ ]	10E	Lockable latch - NEMA 4X
[ ]	10E	Lockable latch - NEMA 1
[ ]	★10F	Lightning arrester
[ ]	★10K	Anti-condensation heater

	CODE	DESCRIPTION
[ ]	11C	NEMA 1 alarm panel *must select option 6A*
[ ]	11D	NEMA 4X alarm panel *must select option 6A*
[ ]	★★14B	Main disconnect (rotary style, mounted through door) non-fused
★★[ ]		0-20 FLA (total of both pumps)
★★[ ]		20-30 FLA (total of both pumps)
[ ]	15A	Control / alarm circuit breaker *Does not include the circuit board as in standard.*
[ ]	16A	10' cord in lieu of 20' *(per float)*
[ ]	16B	15' cord in lieu of 20' *(per float)*
[ ]	16C	30' cord in lieu of 20' *(per float)*
[ ]	16D	40' cord in lieu of 20' *(per float)*
[ ]	17A	SJE SignalMaster® / mounting strap ● *(per float)*
[ ]	17B	SJE SignalMaster® / externally weighted ● *(per float)*
[ ]	17C	Sensor Float® / internally weighted ▲ *(per float)*
[ ]	17D	Sensor Float® / externally weighted ▲ *(per float)*
[ ]	17E	Sensor Float® Mini / pipe clamp ▲ *(per float)*
[ ]	17F	Sensor Float® Mini / externally weighted ▲ *(per float)*
[ ]	19T	TOA (Test/Off/Automatic) switch and pump run light through door mounted
[ ]	19U	HOA (Hand/Off/Automatic) switch and pump run light through door mounted
[ ]	19X	Door mounted pump run indicator
[ ]	21A	SJE PumpMaster® in lieu of on/off switches ●
[ ]	21B	SJE PumpMaster® Plus in lieu of on/off switches ●
[ ]	21C	Super Single® in lieu of on/off switches ▲
[ ]	21D	Double Float® in lieu of on/off switches ▲

● Mechanically-activated ▲ Mercury-activated

SAMPLE

MODEL	112	1	W	9	1	4	H	3A 8A

Alarm Package
Enclosure Rating
Starting Device
Pump Full Load Amps
Pump Disconnect
Float Switch Application
Options: Flasher, Elapsed Time Meter

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DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY I.D.#: _____
PROPERTY RECORDED: _____
COUNTY: _____

APPLICANT: Meritage Homes
DATE OF EVALUATION: 12/19/14
auger holes

Belles Crossing Lot 33 offsite

PROFILE #	.1940 LANDSCP POS. (%)	HORIZON DEPTH (IN.)	.1941 STRUCTURE/TEXTURE	.1941 MINERALOGY/ CONSISTENCE	.1942 WETNESS COND.	.1944 RESTRICT HORIZONS	.1948 CLASS OF HORIZ	1943/ 1956 SAPRLT CLASS.	HORIZON LTAR
1 P/B/W	side 10%	0-4	L gr	fr SE					
		4-12	SCL SB	fr SE				26-48" PS (SL)	.35
		12-26	C+SAP SB	fr SE					24 MTD
		26-48"	SAP (SL) m	fr acid					
2 B/W	10%	0-18	SL gr	fr SE					
		18-24	L gr	fr SE					.35
		24-30	SCL/CL wBK	fr SE					
		42-48"	CL+SAP wBK	fr SE	5YR 5/6 (5YR 6/4, 6/6)				
3 P/B	10%	0-12	SL gr	fr SE					
		12-18	SCL SB	fr					
		18-30	SCL+SAP wBK	fr	2.5YR 5/6				15" MTD
		30-36+	CL+SAP wAB	fr SE	5YR 6/4 (2.5YR 4/6,	5YR 7/2 @ 30"	(5YR 7/1) @	32-36	SW/30"
4 pit 3	10%	0-12	SL gr	fr SE					
		12-24	L SB	fr SE					
		24-36	CL SB	fr SE					
		36-48	CL+SAP wBK	fr SE					
					48" 5YR 6/2				
5	10%	0-18	SL gr	fr SE					
		18-24	L gr SB	fr SE					
		24-30	CL SB	fr SE	2.5YR 4/8 - 5/8 (5YR 7/4)				
		30-36+	CL+SAP AB	fr SE	5YR 6/6 (5YR 7/1, 2.5Y 4/8 @ 32")		SW @ 32"		
		36"	SAP m	fr-fi acid					

COMMENTS: Richard Farris auger holes

12/31/14 pits w/ Matt Bundette and Steve Breece

FT Pit 3

0-10 fSL fr SB-gr SE
10-18 fL SSSP SB SE
18-28 scl/cl SSSP SB SE
28-33 CL SSSP AB SE
33-48+ CL SSSP PL→AB SE
SW @ 30+/34+ (5YR 7/1) (2.5YR 5/6) 5YR 6/6 matrix

FJ Pit 4 20%

0-10 FSL fr gr
10-24 FSCL fr SB
24-32 CL fr AB
32 45 SR (L) fr M
SW @ 32

Pit A3 @ auger hole 3
10% 0-7 FSL fr gr SE
7-13 fL fr SB SE 5YR 8/1
13-25 SCL SB fi 5YR 8/1
125-48 CL +SAP AB SFi SE 5YR 7/1

Pit 2 0-7 fSL fr gr-SB
7-12 fiL fr SB
12-24 SCL fr SB SE
24-48 CL+SAP fi AB SE
24/27/28 5YR 8/1, 7/1 >2%
<2% @ 17"

Sheet: 1
Property ID:
Lot #: 33 Easement (Lot 35)
File #:
AppID:

CCSC SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Meritage Homes
Address: 11605 N. Community House RD, Charlotte NC 28277
Applicant:
Date Evaluated: 10-2-2013
Proposed Facility: 4 Bedroom
Design Flow (.1949)
Property Size:
Location of Site: Lot 35 Bells Crossing
Property Recorded:

Water Supply: [X] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
3	A	0-3	GR SL	VFR NS NP	10YR 3/2				
	E	3-10	GR SL	VFR NS NP	10YR 5/6				
	BT	10-39	SBK SCL	FI SS SP	5YR 5/8 5% 7.5YR 7/8				PS 0.35
	BC	39-49	WF SBK SCL	FI SS SP	7.5YR 5/6 20% 5YR 4/6 15% 7.5YR 6/3				PS 0.35
4	A	0-4	GR SL	VFR NS NP	10YR 3/2				
	E	4-14	GR SL	VFR NS NP	10YR 5/6				
	Bt	14-34	SBK SCL	FI SS SP	5YR 5/8 10% 10YR 6/6				PS 0.35
	BC	34-43	M SCL	FI SS SP	7.5YR 4/8 20% 10YR 6/6 15% 7.5YR 3/4				PS 0.35

Description	Initial System	Repair System
Available Space (.1945)	yes	yes
System Type(s)	Accepted	DRIP
Site LTAR	0.35	0.1

Other Factors (.1946):
Soil Evaluation By: J HALL
Others Present:
Site Classification (.1948):
Site Evaluation By:
Others Present:

LICENSED SOIL SCIENTIST JASON M. HALL 1248 STATE OF NORTH CAROLINA

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Sheet 1 of 2
PROPERTY ID #: 463995546 2
COUNTY: Iredell

applic 181580

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Meritage Homes
ADDRESS: 11605 North Community Rd Suite 250 Charlotte NC 28277
PROPOSED FACILITY: 4BR SFD
PROPOSED DESIGN FLOW (.1949): 480
LOCATION OF SITE: Bella Crossing Sect 2 lot 33/33A
WATER SUPPLY: ☐ Private ☐ Public ☑ Well ☐ Spring ☐ Other
EVALUATION METHOD: ☐ Auger Boring ☑ Pit ☐ Cut
TYPE OF WASTEWATER: ☐ Sewage ☐ Industrial Process ☐ Mixed

APPLICATION DATE 11/3/14
DATE EVALUATED: 12/10, 12/15
PROPERTY SIZE: 1/3 ac
PROPERTY RECORDED: 2015

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	pit Auger hole 3 10% finger R	0-7	FSL gr	fr SE	@13 (5YR 8/1) (5YR 7/1) @25				
		7-13	f L SB	fr SE					
		13-25	SCL SB	fi SE					
		25-48	CL+SAP AB	vfi SE					
2	pit 2 10% finger R	0-7	FSL gr-SB	fr SE	SWC <2% @ 17" >2% @ 24" (5YR 8/1, 7/1)				.35
		7-12	FL SB	Fr SE					
		12-24	SCL SB	fr SE					
		24-48	CL+SAP AB	fi SE					
		24/27/28							
3	FT Pit 3 cleaned out 10% finger R	0-10	FSL gr-SB	fr SE	5YR 6/6 matrix (5YR 7/1) (2, 5YR 5/6) SWC 30"/34"				.35
		10-18	FL SB	SS SP SE					
		18-28	SCL/CL SB	SS SP SE					
		28-33	CL AB	SSSP SE					
		33-48	CL PL→AB	SSSP SE					
4	FT pit 4 cleaned out 20% finger R	0-10	FSL gr	fr SE	(5YR 7/1) 32" SWC	32"	u		.35
		10-24	FSCL SB	fr SE					
		24-32	CL AB	fr SE					
		32-45	SAP m	fr acid					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	initial only	on back of lot 33
System Type(s)	0% reduction 20" low profile	drip .1
Site LTAR	.35	.1

OTHER FACTORS (.1946): .5
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: R Jarvis
OTHER(S) PRESENT: Steve Price Matt Burdette

COMMENTS: pit #s match those on fastrack pit locations

DENR/DEH

ON-SITE WASTEWATER SECTION

Sheet 1 of 1
PROPERTY ID #: 4639955462
COUNTY: Iredell

Back of lot 33

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Meritage Homes — APPLICATION DATE 2-25-14
ADDRESS: 11605 N. Community Rd Suite 250 Charlotte NC — DATE EVALUATED: 3-24-14
PROPOSED FACILITY: 5 Bedroom — PROPOSED DESIGN FLOW (.1949): 600 gpd — PROPERTY SIZE: 0.99 ac
LOCATION OF SITE: Bells Crossing Lot 33 — PROPERTY RECORDED: yes
WATER SUPPLY: ☐ Private ☐ Public ☐ Well ☐ Spring ☒ Other Community
EVALUATION METHOD: ☐ Auger Boring ☒ Pit ☐ Cut — TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	OTHER PROFILE FACTORS .1943 SOIL DEPTH	OTHER PROFILE FACTORS .1956 SAPRO CLASS	OTHER PROFILE FACTORS .1944 RESTR HORIZ	PROFILE CLASS & LTAR
New Pit	LS 15%	0-5	B SCL GR	FR SS SP SE SP					UN
		5-28	R C MSFABK	FR SP SE SP	Com 40, few Chrz				
		28-40	R GRAVFSOL	FR SS SP SE SP	few/com 40	40"			
			water below 40"						

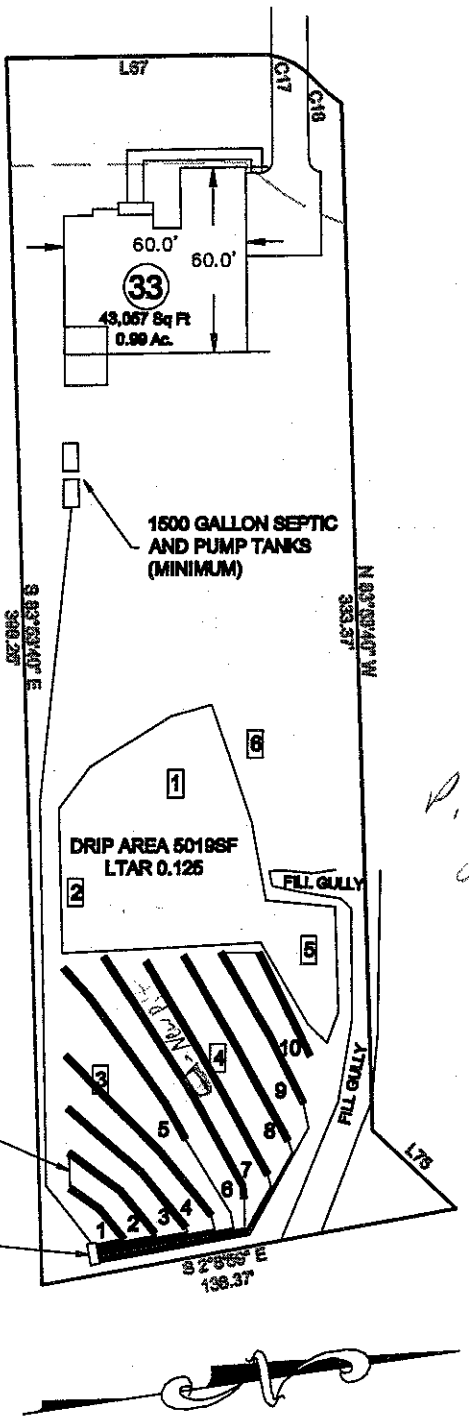
DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)		
Site LTAR		

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____
EVALUATED BY: Allen Puett, Allan McKenny
OTHER(S) PRESENT: Matt Burdett, Jason Hall

COMMENTS: _____

LINE SCHEDULE

LINE NUMBER	COLOR	FIELD ELEVATION	LENGTH (FT)
1	ORANGE	0.4	21
2	YELLOW	1.3	35
3	BLUE	2.2	48
4	RED	3.7	65
5	PINK	5.1	64
6	YELLOW	6.4	90
7	RED	8.2	79
8	~~RED~~ Blue	9.2	69
9	~~BLUE~~ Pink	10.2	53
10	~~PINK~~ Yellow	10.7	37
	TANKS	19.8	



LOT 33 BELLS CROSSING SUBDIVISION

5-BEDROOM ACCEPTED STATUS PRESSURE MANIFOLD SYSTEM
LINES 1-9 TOTAL 561 LINEAR FEET (SEE TAP CHART FOR DESIGN LENGTHS)
EZFLOW OR CHAMBER
LTAR 0.3
25% REDUCTION
18" TRENCH DEPTH MAX

5-BEDROOM DRIP IRRIGATION REPAIR
AREA 5019 SF
LTAR 0.125
6" TRENCH DEPTH MAX

NOTE: LINES MAY BE LONGER IN THE FIELD. TRIM TO DESIGNED LENGTH.

FOR GENERAL USE NOT A SURVEY
PRELIMINARY NOT FOR CONSTRUCTION

SOIL PROFILES AND ANALYSIS PROVIDED BY CENTRAL CAROLINA SOIL CONSULTING PLLC

PRIMARY SYSTEM ——————

REPAIR SYSTEM — — — —

REPAIR LINES (NOT USED) - - - - - - -

PIT OR AUGER BORING [1]

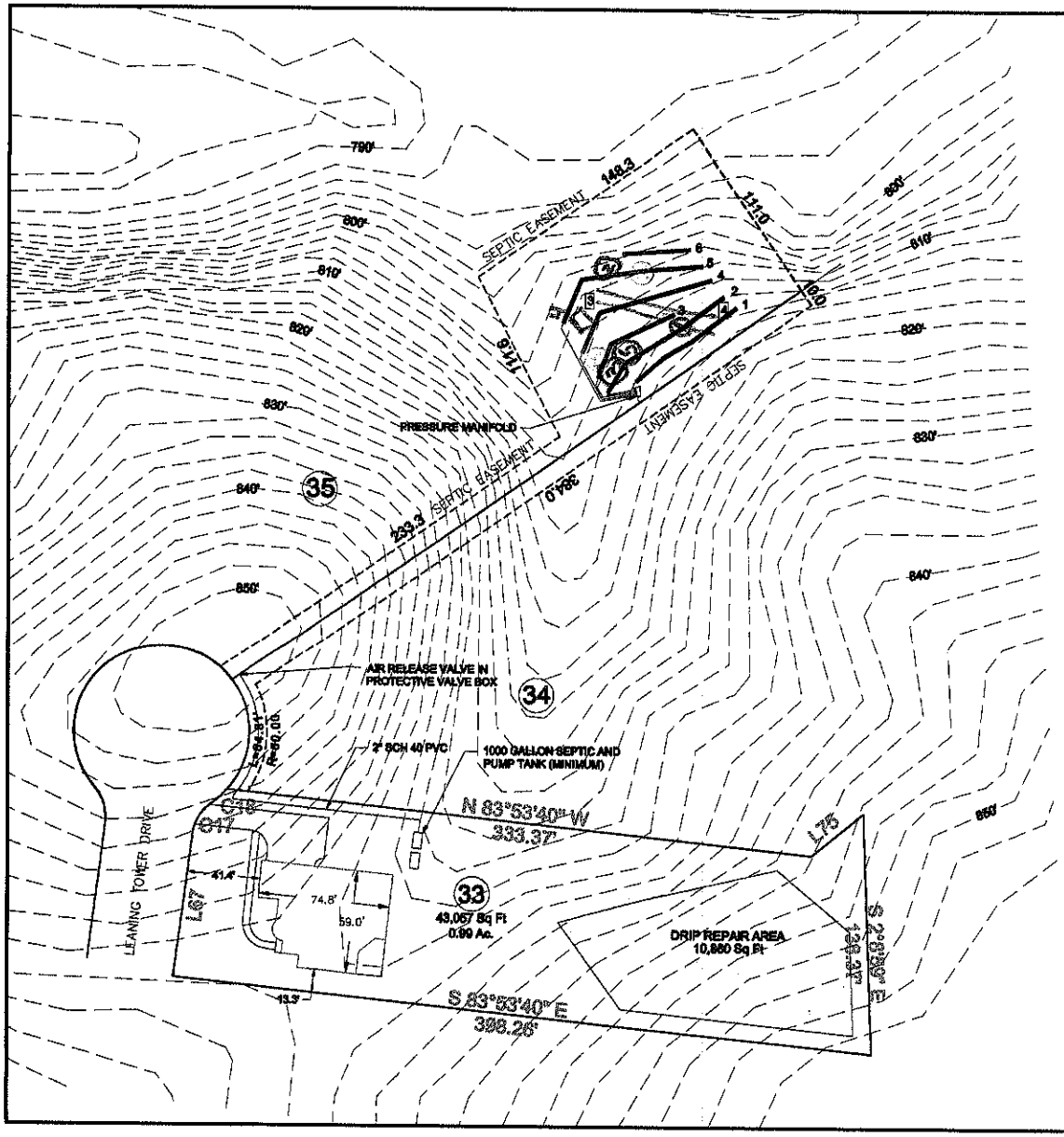
SCALE:
1" = 60 ft.

P, 7, 4
Un Sq, Kabir

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www.batemancivilsurvey.com info@batemancivilsurvey.com
NCBELS Firm No. C-2378

MeritageHomes

LOT 33
BELLS CROSSING SUBDIVISION
MOORESVILLE, NC
IREDELL COUNTY
REVISED 3/12/14
DATE: 02/06/14 DRAWN BY TMB CHECKED BY: TMB



SCALE:
1" = 60 ft.

Bateman Civil Survey Company
Engineers • Surveyors • Planners
200 N. Main Street, Holly Springs, NC 27540 Ph: 919.577.1080 Fax: 919.577.1081
www.batemancivilsurvey.com Info@batemancivilsurvey.com
NCBELS Firm No. C-2378

LINE SCHEDULE

LINE NUMBER	COLOR	FIELD ELEVATION	LENGTH (FT)	DESIGN LENGTH
1	YELLOW	33.0	71	60
2	ORANGE	35.1	92	90
3	PINK	36.8	89	60
4	YELLOW	38.4	90	90
5	BLUE	40.2	102	90
6	PINK	41.4	37	NOT USED
	TANKS	20.0		

LOT 33 BELLS CROSSING SUBDIVISION

4-BEDROOM ACCEPTED STATUS PRESSURE MANIFOLD SYSTEM
LINES 1-5 TOTAL 390 LINEAR FEET
EZFLOW OR CHAMBER
LTAR 0.35
25% REDUCTION
24" TRENCH DEPTH MAX

4-BEDROOM DRIP IRRIGATION REPAIR
LTAR 0.1
6" TRENCH DEPTH MAX

FOR GENERAL USE NOT A SURVEY
PRELIMINARY NOT FOR CONSTRUCTION

SOIL PROFILES AND ANALYSIS PROVIDED BY
CENTRAL CAROLINA SOIL CONSULTING PLLC

PRIMARY SYSTEM
REPAIR SYSTEM
REPAIR LINES (NOT USED)
PIT OR AUGER BORING

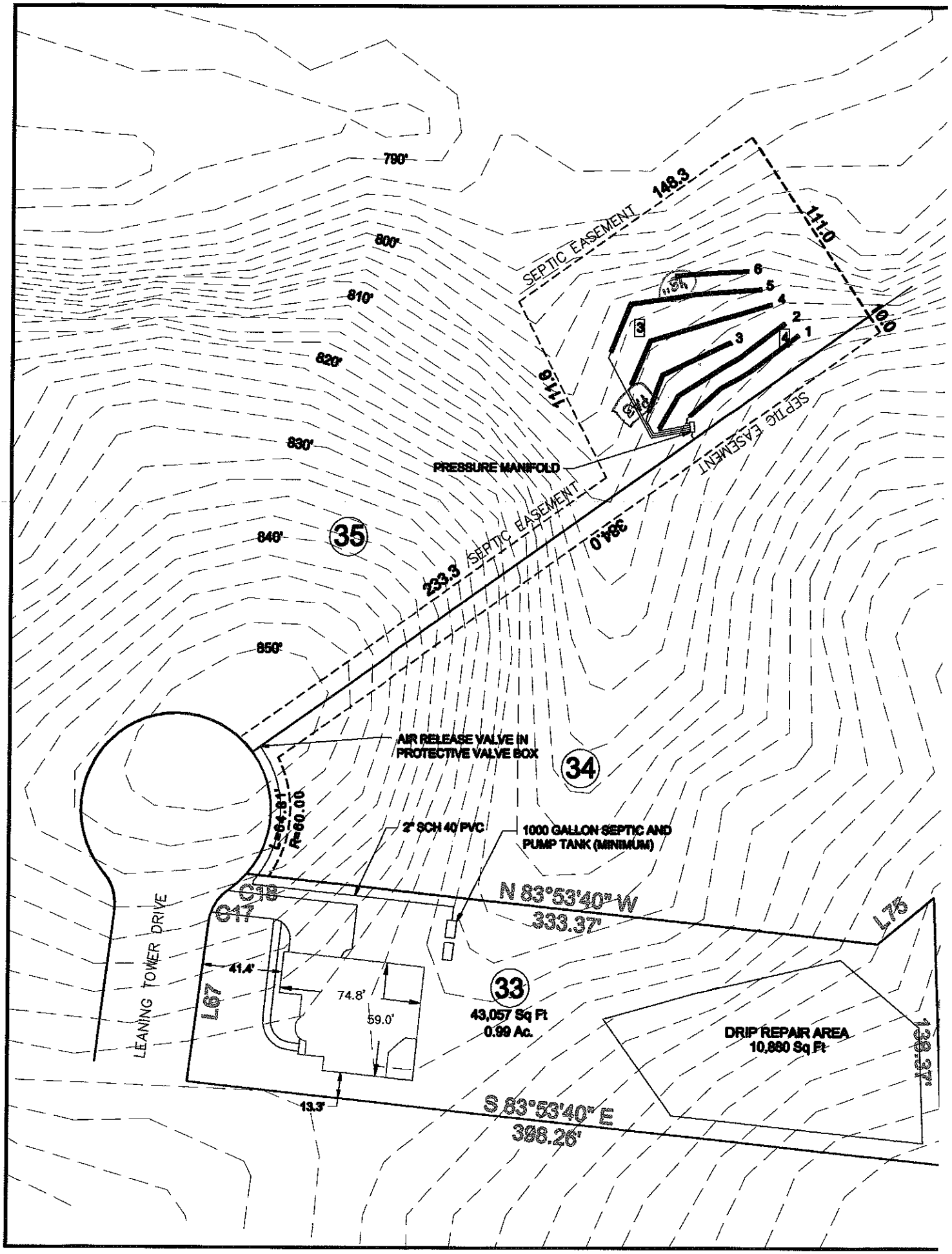
SEPTIC SYSTEM LAYOUT - LOT 33

FOR

Meritage Homes

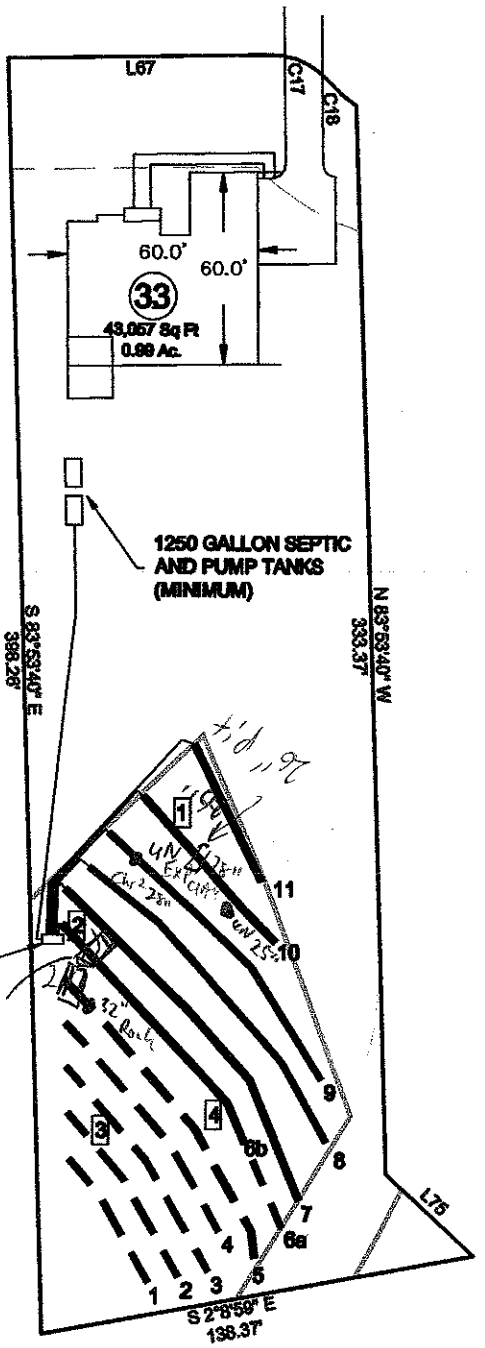
BELLS CROSSING PHASE TWO LOT 33
MOORESVILLE, IREDELL COUNTY

DATE: 12/05/14 DRAWN BY: TMB CHECKED BY: TMB


790'
800'
810'
820'
830'
840'
850'
SEPTIC EASEMENT
148.3
111.0
10.0
10.0
117.9
SEPTIC EASEMENT
SEPTIC EASEMENT
PRESSURE MANIFOLD
384.0
233.3
35
34
33
AIR RELEASE VALVE IN PROTECTIVE VALVE BOX
2" SCH 40 PVC
1000 GALLON SEPTIC AND PUMP TANK (MINIMUM)
L=64.81'
R=60.00'
C17
C18
LEANING TOWER DRIVE
L67
41.4'
74.8'
59.0'
13.3'
43,057 Sq Ft
0.99 Ac.
N 83°53'40" W
333.37'
L75
DRIP REPAIR AREA
10,980 Sq Ft
138.2'
S 83°53'40" E
388.26'

LINE SCHEDULE

LINE NUMBER	COLOR	FIELD ELEVATION	LENGTH (FT)	
1	YELLOW	0.3	42	42
2	BLUE	1.2	50	
3	RED	2.7	66	
4	PINK	4.1	65	
5	YELLOW	5.4	92	90'
6a	RED	7.2	20	
6b	RED	7.2	90	
7	BLUE	8.2	113	117
8	PINK	9.7	113	
9	YELLOW	11.1	105	
10	BLUE	13.8	55	
11	RED	15.8	50	
	TANKS	18.8		



LOT 33 BELLS CROSSING SUBDIVISION

5-BEDROOM ACCEPTED STATUS PRESSURE MANIFOLD SYSTEM
LINES 3-7 TOTAL 526 LINEAR FEET
EZFLOW OR CHAMBER
LTAR 0.3
25% REDUCTION
18" TRENCH DEPTH MAX

5-BEDROOM LPP FED PANEL BLOCK REPAIR
LINES 6B-11 TOTAL 334 LINEAR FEET
LTAR 0.3
50% REDUCTION
36" TRENCH DEPTH MAX

NOTE: LINES MAY BE LONGER IN THE FIELD. TRIM TO DESIGNED LENGTH.

FOR GENERAL USE NOT A SURVEY
PRELIMINARY NOT FOR CONSTRUCTION

SOIL PROFILES AND ANALYSIS PROVIDED BY
CENTRAL CAROLINA SOIL CONSULTING PLLC

PRIMARY SYSTEM

REPAIR SYSTEM

REPAIR LINES
(NOT USED)

PIT OR AUGER BORING [1]

SCALE:
1" = 60 ft.

Bateman Civil Survey Company
Engineers • Surveyors • Planners
300 N. Main Street, Holly Springs, NC 27540 Ph: 919.577.1080 Fax: 919.577.1081
www.batemancivilsurvey.com info@batemancivilsurvey.com
NCBELS Firm No. C-3378

MeritageHomes

LOT 33

BELLS CROSSING SUBDIVISION
MOORESVILLE, NC
IREDELL COUNTY
DATE: 02/06/14 DRAWN BY TMB CHECKED BY: TMB

Sheet: 1 of 2
Property ID:
Lot #: 33
File #:
AppID:

CCSC SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Meritage Homes
Address: 11605 North Community House Rd, Charlotte NC 28277
Proposed Facility: Single Family Design Flow (.1949) 600 gal/day
Location of Site: Bells Crossing Lot 33

Applicant: Same
Date Evaluated: 10-2-2013
Property Size: 0.99 ac
Property Recorded:

Water Supply: [X] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 Structure/ Texture	.1941 Consistence Mineralogy	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	R A	0-3	GR SL	VFR NS NP	10YR 4/3				
	E	3-8	GR SL	VFR NS NP	10YR 5/6				
	BT1	8-14	SBK SL	FR SS SP	10YR 6/8				
	BT2	14-24	SBK SCL	FR SS SP	7.5YR 5/8				
	BT3	24-28	SBK SCL	FI SS SP	7.5YR 5/8 20% 5YR 6/8				PS 0.35
	BC	28-33	WKSBK SCL	FR SS SP	10YR 6/8 15% 5YR 5/8				PS 0.35
	C	33-38	SG SL	FR NS NP	10% 7.5YR 8/3		PS		PS 0.35
	C2	38-44	SG SL	FR NS NP	10YR 5/8 7.5YR 8/3				
2					10YR 5/8 7.5YR 8/3 7.5YR 5/1				
	A	0-3	GR SL	VFR NS NP	10YR 4/3				
	BT1	3-16	SBK SCL	FR SS SP	7.5YR 5/8				PS 0.35
	BT2	16-28	SBK SCL	FR SS SP	7.5YR 5/8 10% 10YR 6/6				PS 0.35
	C	28-44	M SIL	FR NS NP	7.5YR 3/4 20% 5Y 4/4 30% 7.5YR 3/1				UN

Description	Initial System	Repair System
Available Space (.1945)	Yes	Yes
System Type(s)	Accepted	Panel Block
Site LTAR	0.3	0.3

Other Factors (.1946):
Soil Evaluation By: J. Hall
Others Present: M. Burdette
Site Classification (.1948):
Site Evaluation By: Same
Others Present:

LICENSED SOIL SCIENTIST JASON M. HALL 1248 STATE OF NORTH CAROLINA

Sheet: 2 of 2
Property ID:
Lot #: 33
File #:
AppID:

CCSC SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

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Design Flow (.1949) 600 gal/DAY
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3'	R 5%A	0-3	Gr SL	VFR, NS NP	10YR 4/3				
	B+1	3-8	Gr SL	VFR, NS NP	7.5 YR 4/8				
	B+2	8-29	SBK clay	FI SS SP	2.5 YR 4/8	PS			PS .3
	B+3	29+	SBK clay	FI SS SP	2.5 YR 4/8 10YR 6/8	S			S .3
4	R A	0-3	GR SL	VFR NS NP	10YR 4/3				
	B+1	3-22	SBK Clay	FI SS SP	7.5 YR 4/4 8				PS 0.3
	B+2	22-48	SBK Clay	FI SS SP	7.5 YR 4/8 15% 10YR 6/8				PS 0.3

Description	Initial System	Repair System
Available Space (.1945)	Yes	Yes
System Type(s)	Accepted	Panel Block
Site LTAR	0.3	0.3

Other Factors (.1946):
Soil Evaluation By: J. Hall
Others Present: M Bra
Site Classification (.1948):
Site Evaluation By: Same
Others Present:

LICENSED SOIL SCIENTIST
JASON M. HA
1248
STATE OF NORTH CAROLINA