PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: Ridgeline Development

Address: 17825 Statesville Rd. Suite 112
Cornelius, NC 28031
Phone: 704 362 5007
County: Iredell
Location: ANNISTON Lot #105

Source of Wastewater Flow: 8 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 960 gpd
System Flow: 40.48

Design Specifications

Drainfield Size: 876
Loading Rate: 0.275
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: 36 in.
Trench Width: 36 in.
Septic Tank Size: 2000 gal.
Pump Tank Size: 2000 gal.

Estimated Supply Line Length: 1400
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 243.60
Dosing Volume: 400.42
Supply Manifold: 4 in. SCH 80 PVC
Supply Manifold Length: 5.5 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: 42.42
Elevation Head: 42.80
Total Dynamic Head: 100.30

Threaded Union: In Tank
Gate Valves: 1 in Tank
1 at Pressure Manifold
Check Valves: In Tank
Anti-Siphon Hole: NA
Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services & Iredell County Health Dept.

ANNISTON Lot #105
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	960
SOIL APPLICATION RATE:	0.275
TOTAL AREA TRENCH BOTTOM:	2628
TOTAL LATERAL LENGTH:	876
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	872.7272727
SUPPLY LINE LENGTH:	1400
TOTAL DYNAMIC HEAD:	100.30
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	400.42
PUMP TANK DRAW DOWN*:	7.9
SEPTIC TANK SIZE:	2000 gal. 1623 gal. required min.
PUMP TANK SIZE:	2000 gal.

**Pump tank draw down based on a volume basis of 51 gallons per inch. Draw down may vary among pump tank manufacturers.*

ANNISTON LOT #105 PRIMARY

Project #: 01-1005

LAYOUT FOR 8 BEDROOM HOME

June 8, 2012

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		4.3			100.00		
INSTR. 1			104.30				
HOUSE CNR				40.30	64.00		
P. TANK				38.80	65.50		
1	*ORANGE*			*1.80*	*102.50*	*64*	*64*
2	*RED*			*2.80*	*101.50*	*85*	*64*
3	*PINK*			*3.80*	*100.50*	*108*	*88*
4	*BLUE*			*4.90*	*99.40*	*125*	*120*
5	*ORANGE*			*5.60*	*98.70*	*130*	*120*
6	*RED*			*7.30*	*97.00*	*130*	*120*
7	*PINK*			*9.20*	*95.10*	*115*	*116*
8	*BLUE*			*10.90*	*93.40*	*80*	*64*
9	*ORANGE*			*12.10*	*92.20*	*120*	*120*
					Total	**957**	**876**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*876*	0.275	*ACCEPT.*	0.275	*25% RED.*	**PRESSURE MANIFOLD**

Notes:

** TBM located on angle point of lot (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

ANNISTON LOT #105 REPAIR

Project #: 01-1005

LAYOUT FOR 8 BEDROOM HOME

June 8, 2012

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.4			100.00		
INSTR. 1			102.40				
HOUSE CNR				33.40	69.00		
P. TANK				31.90	70.50		
1	PINK			3.80	98.60	180	180
2	RED			4.70	97.70	206	206
3	ORANGE			5.50	96.90	225	225
4	BLUE			6.50	95.90	243	243
5	PINK			7.50	94.90	258	258
6	RED			8.40	94.00	263	263
7	ORANGE			9.50	92.90	187	187
					Total	**1562**	**1562**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
Repair	*1562*	*0.2-0.25*	*ACCEPT.*	*0.2-0.25*	*25% RED.*	**PRESSURE MANIFOLD**

1200
required 8 bdrms.
@ .2

Notes:

** TBM located on angle point of lot (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

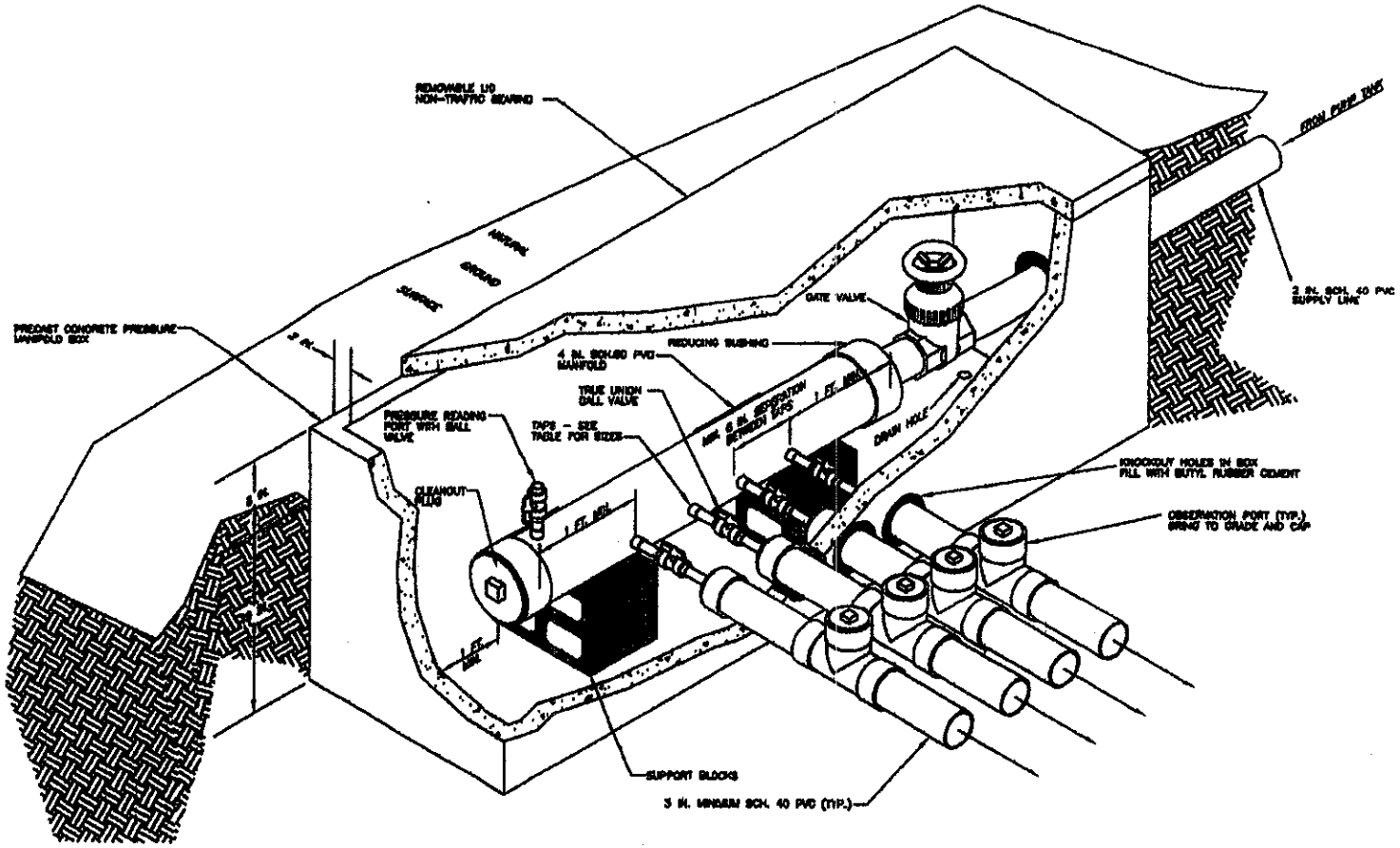
PRESSURE MANIFOLD TAPSHEET - ANNISTON LOT#105

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area	Flow/Foot
1	***ORANGE***	102.5	***64***	SCH 80 3/8	**2.99**	192	0.462131996
2	***RED***	101.6	***64***	SCH 80 3/8	**2.99**	192	0.462131996
3	***PINK***	100.5	***88***	SCH 40 3/8	**4.11**	264	0.461991487
4	***BLUE***	99.4	***120***	SCH 80 1/2	**5.48**	360	0.45172501
5	***ORANGE***	98.7	***120***	SCH 80 1/2	**5.48**	360	0.45172501
6	***RED***	97	***120***	SCH 80 1/2	**5.48**	360	0.45172501
7	***PINK***	95.1	***116***	SCH 80 1/2	**5.48**	348	0.467301734
8	***BLUE***	93.5	***64***	SCH 80 3/8	**2.99**	192	0.462131996
9	***ORANGE***	92.2	***120***	SCH 80 1/2	**5.48**	360	0.45172501

total	**feet =**	**876**	**gal/min =**	**40.48**
		Des. Flow	**960**	
		Pump Run=	**9.89**	
		soil LTAR	**0.275**	
		LTAR +5%	**0.28875**	
		LTAR with ACCEPTED	**0.366666667**	
		LTAR with ACCEPTED + 5%	**0.385**	

TYPICAL PRESSURE MANIFOLD DETAIL



CALCULATIONS

Location ANNISTON PH3 Section 2

Project Number 01-1005

Lot No: Lot 105 (Revised 106 +105)

No. of Bedrooms	8	
Design Flow	960	$^{gal}/_{day}$
LTAR	0.275	$^{gpd}/_{ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	1400	ft.
Supply Line Volume	243.6	gal.
Required Feet of Line	872.7273	ft.
Amount of Line from Layout	876	ft.
Gallons per Minute	40.48	$^{gal}/_{min}$
Required Septic Tank Capacity	1623.2	gal.
Minimum Standard Tank Size	2000 gal.	
Lateral Line Volume	572.028	gal.
Dosing Volume	400.42	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	7.9	*Draw Down of 51 gal.per in. base on Dellinger 2000g PT Dimensions*
Pump Run Time	9.89	minutes
Elevation Head	42.8	ft.
Pressure Head	2	ft.
Friction Factor	3.03	ft./100 ft. *(From the interpolater.)*
Friction Head	42.42	ft.
Total Dynamic Head (+15%)	100.30	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