S&EC

Soil & Environmental Consultants, PA

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Attached is a proposed design for a Pressure Manifold Septic System for a 3 bedroom single family residence on lot 31 Wheatfield in Iredell County, North Carolina.

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February 4, 2008
S & EC Project No. 5-1862
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PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: Corinthian Builders

Address:

Phone:
County: Iredell
Location: Wheatfield Lot 31
Source of Wastewater Flow: 3 bedroom home
Estimated Daily Wastewater Production: 360 gpd
System Flow: 26.81

Design Specifications

Drainfield Size:	330
Design Loading Rate:	0.270
Depth of Gravel in Trench:	NA
Gravel Size:	N/A
Trench Depth:	24
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	67
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	11.65
Dosing Volume:	150.84
Supply Manifold:	*4* in. SCH 80 PVC
Supply Manifold Length:	3.5Ft.
Supply Manifold Volume:	2.08
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:	0.97
Estimated elevation Head:	6.20
Total Dynamic Head:	10.55
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	no
Recommended Pump:	Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering ~10 ft.of Head at ~27 gpm Total Flow

Wheatfield
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	360
SOIL APPLICATION RATE:	0.3 gpd/ft.^{2}
TOTAL AREA TRENCH BOTTOM:	990
TOTAL LATERAL LENGTH:	330
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	300
SUPPLY LINE LENGTH:	67
TOTAL DYNAMIC HEAD:	10.55
MANIFOLD SIZE:	*4* in.SCH 80 PVC
DOSING VOLUME:	150.84
PUMP TANK DRAW DOWN*:	7.2
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000
RECOMMENDED PUMP:	Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering ~10 ft.of Head at ~27 gpm Total Flow

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

Wheatfield Lot 31

Project No. 5-1862

LAYOUT FOR 3 BEDROOM HOME

Elevations changed see site plan / Layout

February-08

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		10.0			100.00		
INSTR. 1			110.00				
			System				
1	Red			5.40	104.60	60	60
2	Orange			5.10	104.90	90	90
3	Yellow			4.70	105.30	90	90
4	Blue			4.40	105.60	90	90
					Total	**330**	**330**
			Repair				
5	Pink			4.20	105.80	60	60
6	Yellow			4.40	105.60	65	65
7	Red			4.60	105.40	90	90
8	Orange			4.80	105.20	90	90
					Total	**305**	**305**

	LINE LENGTH	Design LTAR	SYSTEM TYPE	Innovative Type	DISTRIBUTION	Trench Depth	Soil LTAR
SYSTEM	330	0.27	Innovative	25%	Pressure Manifold	24	0.3
REPAIR	305	0.295	Innovative	25%	Pressure Manifold	24	0.3

Notes:

**TBM is assumed to be 100'; Front right CNR stake

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

**BS, HI, and FS indicate rod readings

**Design LTAR based on line length

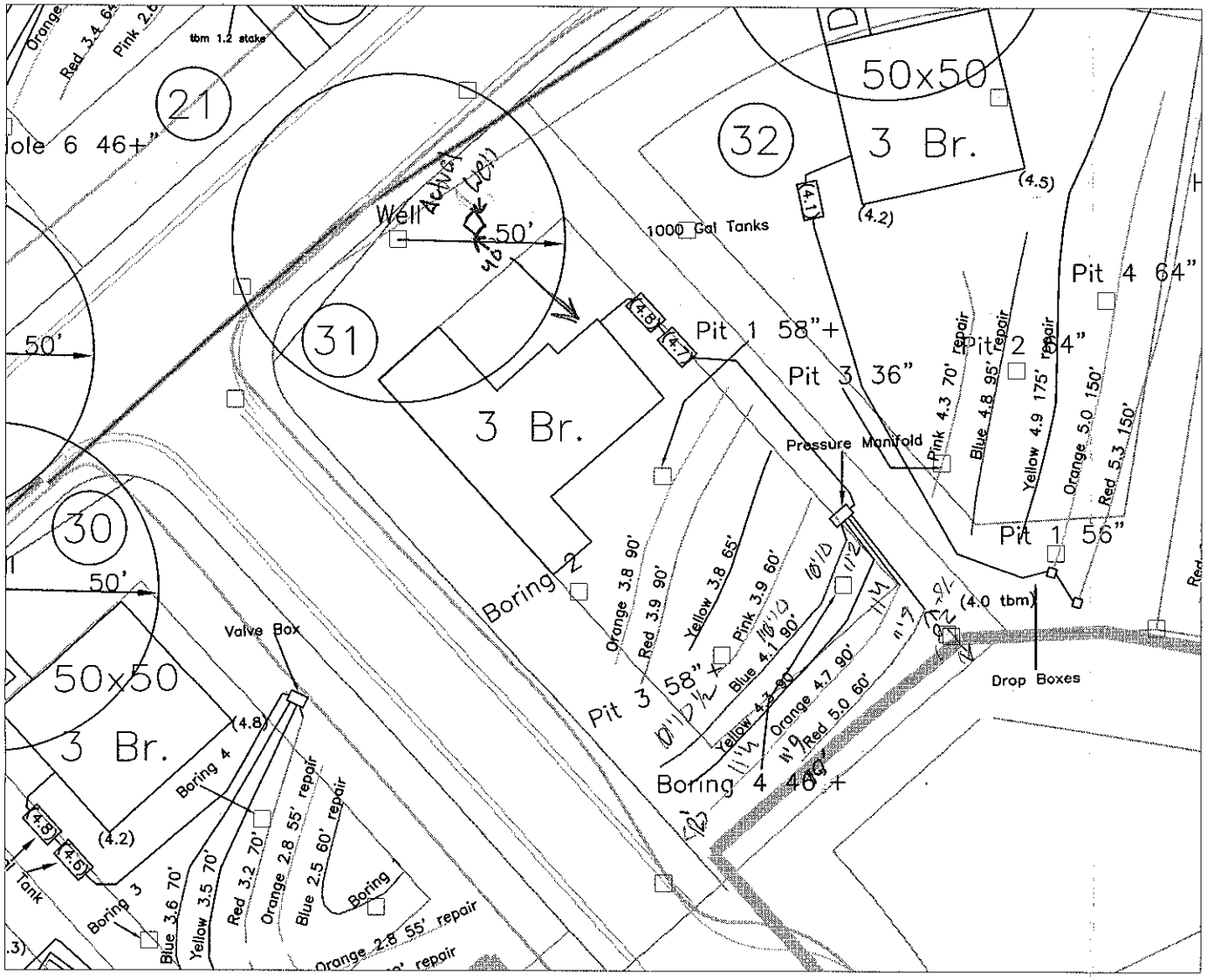
Wheatfield Lot 31

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	gpd	Trench Area	Line LTAR
1	Red	103.6	**60**	SCH 80 1/2	**5.48**	73.58	180	**0.41**
2	Orange	103.9	**90**	SCH 40 1/2	**7.11**	95.47	270	**0.35**
3	Yellow	104.3	**90**	SCH 40 1/2	**7.11**	95.47	270	**0.35**
4	Blue	104.6	**90**	SCH 40 1/2	**7.11**	95.47	270	**0.35**
	total	**feet =**	**330**	**gal/min =**	**26.81**			
			Des. Flow	**360**				
			Pump Run=	**13.43**				
			soil LTAR	**0.3**				
			Innovative LTAR	**0.40**				
			Innovative +5%	**0.42**				

Wheatfield Lot 31
REPAIR

Line #	Color	Elev	Length	Hole Size	Flow/Tap	gpd	Trench Area	Flow/Foot
5	Pink	104.8	**60**	SCH 40 1/2	**7.11**	74.36	180	**0.41**
6	Yellow	104.6	**65**	SCH 40 1/2	**7.11**	74.36	195	**0.38**
7	Red	104.4	**90**	SCH 80 3/4	**10.1**	105.64	270	**0.39**
8	Orange	104.2	**90**	SCH 80 3/4	**10.1**	105.64	270	**0.39**
	total	**feet =**	**305**	**gal/min =**	**34.42**			
			Des. Flow	**360**				
			Pump Run=	**10.46**				
			LTAR	**0.3**				
			EZLAY	**0.40**				
			Innovative + 5%	**0.42**				



**SUITABLE FOR PRELIMINARY PLANNING PURPOSES ONLY. ALL LOTS WILL REQUIRE APPROVAL BY THE COUNTY HEALTH DEPARTMENT ON A LOT BY LOT BASIS. THIS MAP SHOULD BY USED AS A GENERAL GUIDE, SOME ADJUSTMENTS WILL BE NECESSARY IN THE FIELD DUE TO SOIL VARIABILITY AND TOPOGRAPHIC IRREGULARITIES.
THIS MAP ONLY REFLECTS EXISTING SOIL SUITABILITY FOR ON-SITE SEPTIC TANK SYSTEMS. SOME OTHER CONSIDERATIONS THAT AFFECT SITE SUITABILITY THAT SHOULD BE CONSIDERED IN DEVELOPMENT DESIGN ARE:

1) 10' SETBACK FROM PROPERTY LINE
2) 100' SETBACK FROM ANY WELL
3) 50' SETBACK FROM STREAMS, PONDS OR LAKES.

See accompanying S&EC report.

NOT A SURVEY

GRAPHIC SCALE
1" = 50'

50 0 50 100

PROJECT NO.	#5-1882
PROJECT MGR.	BF
DRAWN BY	BF
FIELD WORK	BF
SCALE	1" =50
FILE	Y:\jobs\1882

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Wheatfield
Corinthian Builders
- Wheatfield lot 31 -
REBELL COUNTY, NORTH CAROLINA
Jan 2008

SHEET TITLE: PRELIMINARY SITE PLAN SKETCH MAP

SHEET OF