August 25, 2009

Kenneth Bealer Homes
1454 Brawley School Road
Mooresville, North Carolina 28117

Attention: Mr. Len Bealer

Reference: Septic System Proposal for an Improvement Permit for Lot 9 Tuskarora Point Subdivision
Iredell County, North Carolina
S&ME, Inc. Project No. 1588-05-066 – Ph Lot 9 Tusk.

Dear Mr. Bealer:

S&ME, Inc (S&ME) has provided technical assistance in regard to the soil evaluation and system layout for the proposed septic system for the above referenced property in Iredell County, North Carolina. The evaluation was performed in general accordance with S&ME Proposal No. 1588-05-P144 and Letter of Authorization No. 1-09 dated May 4, 2009. Work was done in accordance with the "Laws and Rules for Sewage Treatment and Disposal Systems (15A NCAC 18A .1900)".

BACKGROUND

The referenced property is a 0.708 acre residential building lot located off of Tuskarora Point Lane in Iredell County, North Carolina. The purpose of the evaluation was to obtain a 4 bedroom septic Improvement Permit for a proposed house location from the Iredell County Health Department (ICHD).

S&ME has performed preliminary site visits on Lot 9 since February 2008 in conjunction with the proposed septic easement on the back of the lot for Lot 274 Sunstede, across the street. S&ME has described hand auger borings and performed a preliminary system layout for this Fast Track Proposal.

SUMMARY OF SOIL EVALUATIONS

S&ME performed four hand auger borings to a depth of approximately 48 inches on the lot. No saprolite horizon was encountered within 48 inches of the ground's surface, so a 50 foot setback from the well should be sufficient for this lot. Based on the soil observed, a Long Term Acceptance Rate (LTAR) of 0.3 gallons per day per square foot (gpd/ft^2) is proposed for the septic system. This should be verified by ICHD.

SUMMARY OF SYSTEM RECOMMENDATIONS

Based on our hand auger boring evaluation and our system layout on the lot, we are proposing a 4 bedroom T&J panel system with 270 feet of line for the primary system. Low Pressure Pipe distribution will be required for the system. The proposed system will be considered a Type IV system and will require a contract with a Certified Operator.

A T&J panel system at the same loading rate is proposed for the required 100% repair on the lot. The attached site plan shows the proposed house, drive, proposed well, and system locations. Any changes to the attached site plan should be approved by the ICHD. A well permit issued by the ICHD will be required to drill a well on Lot 9.

The attached information is not an Improvement Permit or Authorization to Construct, and is only to assist the owner and the ICHD with the site evaluation. The ICHD must approve each lot and only the ICHD can issue these permits. The ICHD should verify all soils and system specifications, and required setbacks before permitting and/or septic system installation. Soil evaluations and system layouts are done based on interpretations of the rules governing wastewater treatment and disposal systems and are not guarantees for site approval or future septic system performance.

CLOSURE

Thanks for the opportunity to provide technical assistance associated with septic permitting. Please call if you have any questions concerning this report.

Sincerely,

S&ME, Inc.

Paul Penninger, L.S.S.
Senior Soil Scientist

Rob Willcox, L.S.S.
Natural Resources Department Manager

Attachments:

1. ICHD Improvement Permit Application
2. Health Department Requirements and Zoning Permit
3. Site Plan and System Specifications
4. S&ME soil notes

cc: Iredell County Health Department
File

Lot 9 Tuskarora Pt. System Specifications

Number of Bedrooms	4
Basement or Crawl	**Crawlspace**
Design Flow (gpd)	480
LTAR (gpd/ft2)	0.3
Primary System Type	**LP PPBPS**
No. Lines	4 (See Table)
Total Linear Feet	280
Trench Width	2' min.
Trench Spacing	8' min.
Pump Required	Yes
Distribution Device	Gate Valve Box w/ LPP Distribution
Maintenance Agreement Required	Yes
Length and Diameter of Supply Pipe	approx. 25' of 2" SCH 40 PVC
Size of laterals	1 1/4" SCH 40 PVC
Flow Rate through the system	32 gpm
Elevation head	Approx. 11' Pumping Downhill
Pressure head	3.0'
Friction head	approx 1'
20% Contingency	3'
Total Head	18'
Pump Requirements	32 gpm @ 18' of head To be verified by installer.
Maximum Dosing Volume	230 gallons
Volume of water pumped per dose	Calculated to specific tank by measure or dealer engineering specifications (1 cubic ft. of water equals 7.48 gal.)
Pump Run per dose	approx. 7.2 min.
Check Valve	no
Siphon Break hole	yes
Repair System	**LP PPBPS**
Total Linear Feet	280
Repair LTAR	0.3

***Before placement of cap block, one panel on each line near the center of the field should be observed filling to make certain that it does not overflow top chamber into air chambers of panel. If overflow occurs, reduce floats by 25 gallons and reset until no overflow is observed.**

Table 1: Summary of Primary and Repair Nitrification Line Specifications

Line No.	Use	Line Color	System Type	Line Length (Ft.)	Rod Reading Elev. (Ft.)	Panels	Holes	Hole Spacing	Hole Size (In.)
1	**System**	**pink**	**LPPPBPS**	70	3.4	16	16	1 per panel	5/32"
2	**System**	**blue**	**LPPPBPS**	70		16	16	1 per panel	5/32"
3	**System**	**orange**	**LPPPBPS**	70		16	16	1 per panel	5/32"
4	**System**	**white**	**LPPPBPS**	70		16	16	1 per panel	5/32"
5	Repair	pink	LPPPBPS	70					
6	Repair	blue	LPPPBPS	70					
7	Repair	white	LPPPBPS	70					
8	Repair	orange	LPPPBPS	70	9.3				
						Total: 64	Total: 64 (1 in each panel turned up)		
				Total System: 280'					
				Total Repair: 280'					

Tank	orange	1000 gal (2 compartment)	2.6
Pump Tank	orange	1000 gal.	2.6
House	red		2.0 (RR)

Note: There is an off-site easement on the back of lot 9 for CL&T lot 274 Sunstede.

System is to be installed according to any other ICHD or DEH requirements or policies.

gm

Project #:
Property ID #:
County:

SOIL/SITE EVALUATION

Sheet:
Date Evaluated: 7-23-09 Aug 09

Owner or Client: KBH Lot 4 Tusk Pl.
Proposed Facility: Design Flow:
Location of Site: Property Size:
Soil Described By: REO, PM Others Present:
Antecedent Moisture: Weather:
Site LTAR: Inf. Rep.
Site Classification:

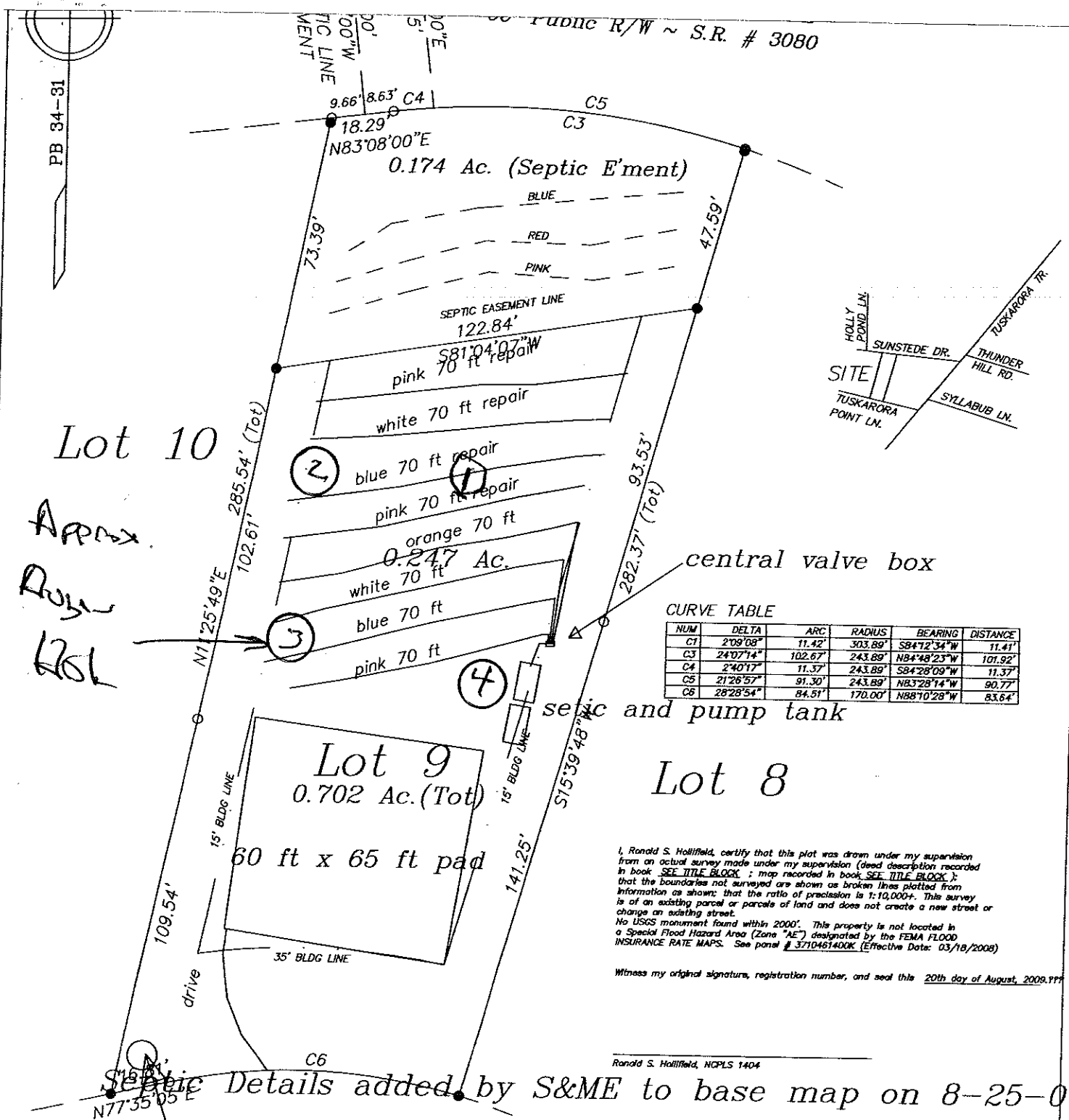
Water Supply [ ] Public [ ] Community [X] On-Site Well [ ] Spring [ ] Other
Evaluation Method: [X] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	Lscp. Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY: Structure	Texture	Consistence	PROFILE FACTORS: Inclusions	Matrix Color	(WETNESS) Mottles	Profile Notes (Restr Horiz, Soil Depth, Coarse Frag, etc...)	Profile Class & LTAR
1	L 11-12%	0-4	4 gr	S-l	fr SS/SP		10YR 5/4			A 13+
		4-34	4 cr-m SBK	C	fr SS/PL		10YR 5/6			
		34-48	W SBK	C	fr SS/PL	f SK		NA	NEXP	
2	L 13%	0-8	W SBK	S-l	fr SS/SP		10YR 5/4			A 3+
		8-46	M SBK	C	fr SS/SP			NA		
3	L 9%	0-4	W SBK	S-l	fr SS/SP		10YR 5/4			A 3
		4-32	MS SBK	L C	fr SS/SP		10YR 5/6			
		32-46	MS SBK	L (C-L)	fr SS/SP	f SK	10YR 5/1	NA	NEXP	
4	L 9%	0-5	W SBK	SL	fr SS/SP		10YR 5/4			A 3
		5-46	M SBK/GR	C	fr SS/SP		10YR 5/1	NA	NEXP	

Approved by W Sparks RS. 8/26/09

X NOTE AVAILABLE SPACE - 5
REPAIR SPACE 5 — SEE REPAIR LAYESON IP

COMMENTS:



CURVE TABLE

NUM	DELTA	ARC	RADIUS	BEARING	DISTANCE
C1	2°09'08"	11.42'	303.89'	S84°12'34"W	11.41'
C3	24°07'14"	102.67'	243.89'	N84°48'23"W	101.92'
C4	2°40'17"	11.37'	243.89'	S84°28'09"W	11.37'
C5	21°26'57"	91.30'	243.89'	N83°28'14"W	90.77'
C6	28°28'54"	84.51'	170.00'	N88°10'28"W	83.64'

I, Ronald S. Hollifield, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description recorded in book SEE TITLE BLOCK ; map recorded in book SEE TITLE BLOCK); that the boundaries not surveyed are shown as broken lines plotted from information as shown; that the ratio of precision is 1:10,000+. This survey is of an existing parcel or parcels of land and does not create a new street or change an existing street.
No USGS monument found within 2000'. This property is not located in a Special Flood Hazard Area (Zone "AE") designated by the FEMA FLOOD INSURANCE RATE MAPS. See panel # 3710461400K (Effective Date: 03/18/2008)

Witness my original signature, registration number, and seal this 20th day of August, 2009.

Ronald S. Hollifield, NCPLS 1404

Proposed Site Plan and Off-Site Septic Easement

136 Tuskarora Point Ln.
Lot 9 of TUSKARORA POINT

Davidson Township Iredell County, NC

Tax PIN 4614-84-0614 ~ D. B. 1872-2500 ~ P. B. 45-109

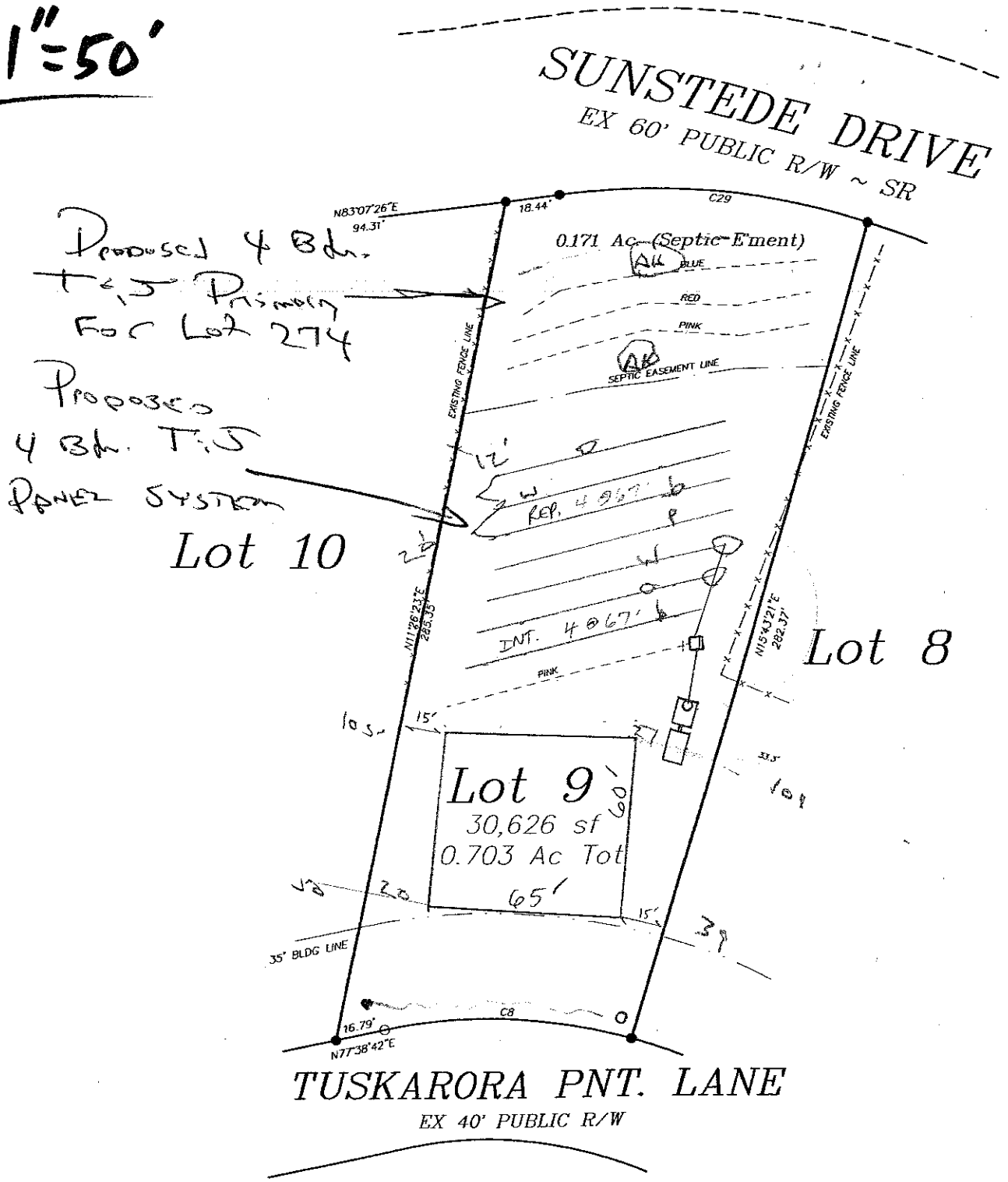
Prepared for Michael M. Kiser

NOTE: IRON STAKES AND MONUMENTS AS SHOWN (●), ALL OTHERS CALCULATED POINTS (○).

R. S. Hollifield land surveying / subdivision planning p. o. box 1038 Troutman, NC 28166-1036
phone (704) 871-1175 ~ fax (704) 871-2777 ~ email: holiron@bellsouth.net

file: 09\clt61274

1"=50'


SUNSTEDE DRIVE
EX 60' PUBLIC R/W ~ SR
Proposed 4 Bdr. T&J Primary For Lot 274
Proposed 4 Bdr. T&J Power System
Lot 10
Lot 8
Lot 9
30,626 sf
0.703 Ac Tot
0.171 Ac. (Septic E'ment)
AK
BLUE
RED
PINK
SEPTIC EASEMENT LINE
EXISTING FENCE LINE
REP. 4 967' b
INT. 4 867' b
N83°07'26"E
94.31'
18.44'
C29
N11°26'23"E
285.35'
N15°43'21"E
282.37'
15'
20'
35' BLDG LINE
C8
16.79'
N77°38'42"E
TUSKARORA PNT. LANE
EX 40' PUBLIC R/W

1"=50'