ROLLANS *Soil & Environmental Services, PA.*

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NC Certified Septic Installer
NC Certified Subsurface Operator
NC Certified Septic Inspector

Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 4 bedroom single family residence on Lot #2 Heron View Subdivision, Iredell County, North Carolina.

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June 19, 2014
Project No. 01-1994
Design By: Rollans Soil and Environmental Services, PA

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: Keith Caminiti

Address: 111 Walnut Cove Dr, Twh D
Mooresville, NC 28117

Phone: 828 241 4150
County: Iredell
Location: HERON VIEW Lot # 2

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: 21.33

Design Specifications

Drainfield Size: 408
Loading Rate: 0.3
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: 24 in.
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 185
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 32.19
Dosing Volume: 186.50
Supply Manifold: 4 in. SCH 80 PVC
Supply Manifold Length: 4 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.

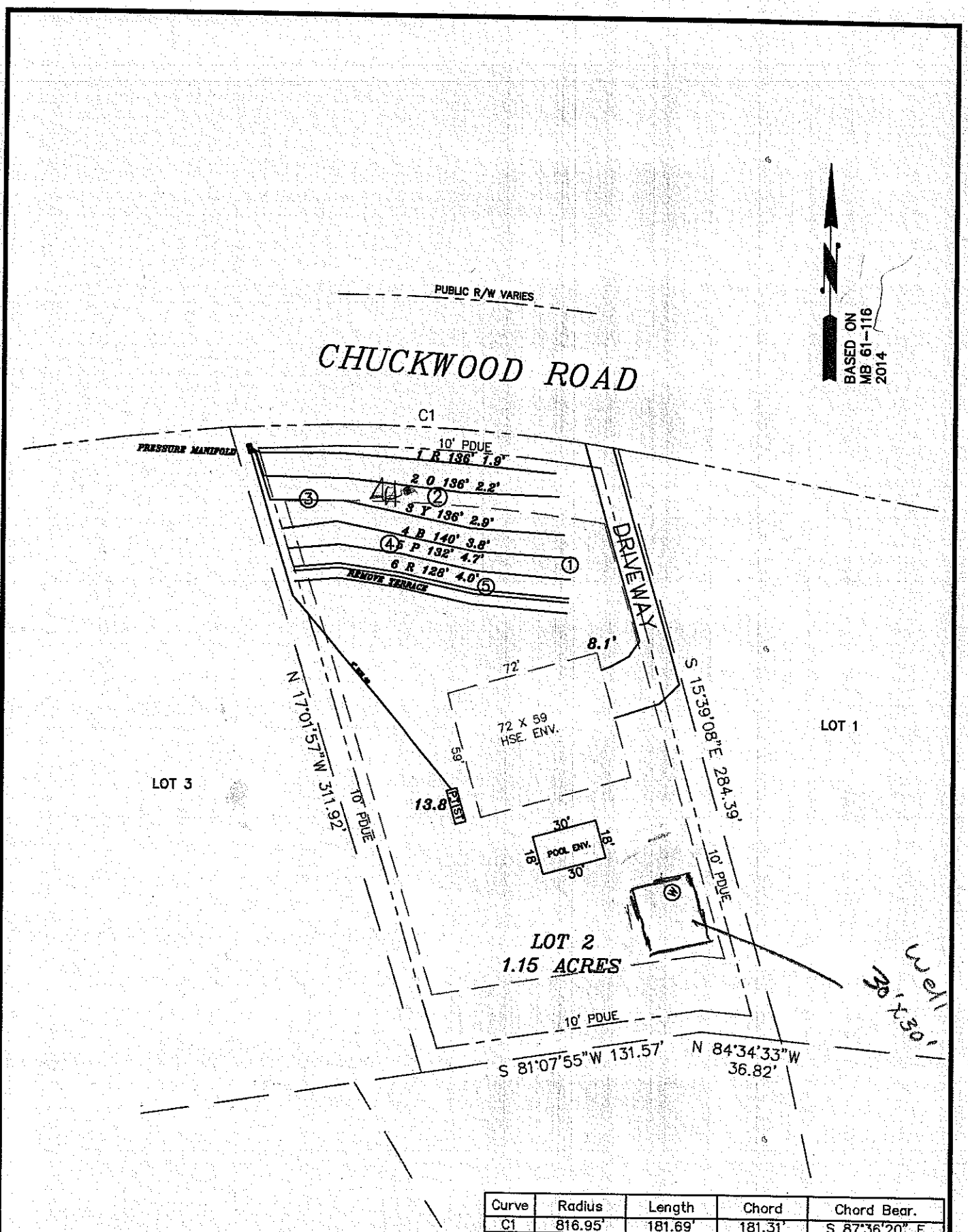
Pressure Head: 2 ft.
Friction Head: 1.63
Elevation Head: 9.60
Total Dynamic Head: 15.21

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.

HERON VIEW Lot # 2
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	480	
SOIL APPLICATION RATE:	0.3	
TOTAL AREA TRENCH BOTTOM:	1224	
TOTAL LATERAL LENGTH:	408	
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	400	
SUPPLY LINE LENGTH:	185	
TOTAL DYNAMIC HEAD:	15.21	
MANIFOLD SIZE:	4 in.SCH 80 PVC	
DOSING VOLUME:	186.50	
PUMP TANK DRAW DOWN*:	8.9	
SEPTIC TANK SIZE:		1000
PUMP TANK SIZE:		1000

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



Curve	Radius	Length	Chord	Chord Bear.
C1	816.95'	181.69'	181.31'	S 87°36'20" E

PLOT PLAN

PROPERTY OF GEORGE B. MOSER
& wf. ALITA T. MOSER
CHUCKWOOD ROAD

NOTES:

1. THIS PROPERTY IS NOT LOCATED IN A DESIGNATED FLOOD ZONE.
2. AREA DETERMINED BY COORDINATE COMPUTATION.
3. CP DENOTES COMPUTED POINT, NO MONUMENT FOUND OR SET.
4. UNDERGROUND UTILITIES NOT LOCATED AS OF THIS DATE.

HERON VIEW LOT # 2

Project #: 01-1994

LAYOUT FOR 4 BEDROOM HOME

June 19, 2014

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.5			100.00		
INSTR. 1			101.50				
HOUSE CNR				8.10	93.40		
P. TANK				13.80	87.70		
1	***RED***			***1.80***	***99.70***	***150***	***136***
2	***ORANGE***			***2.20***	***99.30***	***146***	***136***
3	***YELLOW***			***2.90***	***98.60***	***142***	***136***
4	BLUE			3.80	97.70	139	140
5	PINK			4.70	96.80	133	132
6	RED			6.10	95.40	130	128
					Total	**840**	**808**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***408***	***0.300***	***ACCEPT.***	***0.300***	***25% RED.***	**PRESSURE MANIFOLD**
Repair	400	0.300	*ACCEPT.*	0.300	***25% RED.***	PRESSURE MANIFOLD

Notes:

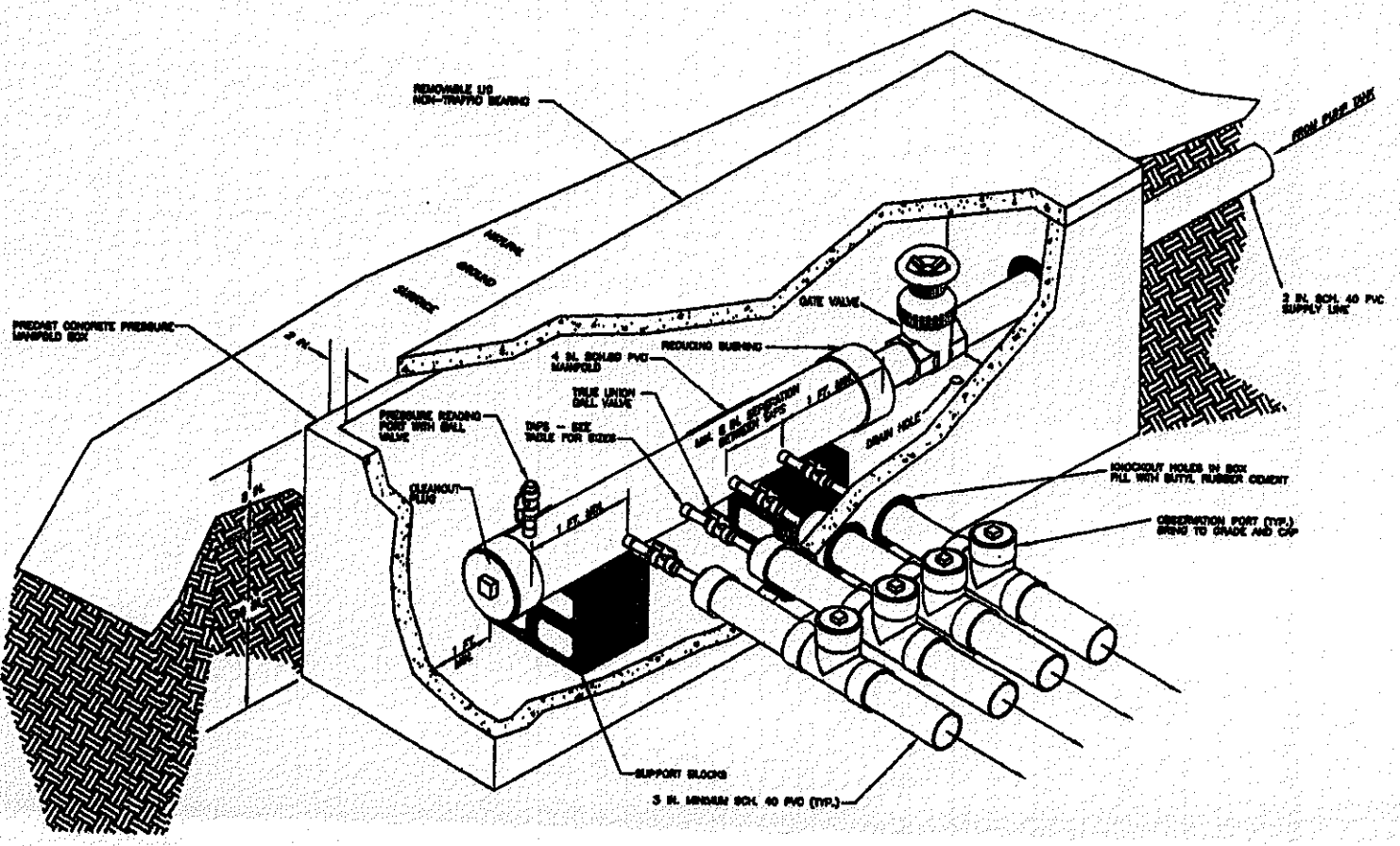
** TBM located on top of EIP left hand side of lot at Chuckwood Road
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

PRESSURE MANIFOLD TAPSHEET - HERON VIEW #2

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area	Line LTAR
1	*RED*	99.7	*136*	SCH 40 1/2	**7.11**	408	0.15
2	*ORANGE*	99.3	*136*	SCH 40 1/2	**7.11**	408	0.15
3	*YELLOW*	98.6	*136*	SCH 40 1/2	**7.11**	408	0.15
	total	**feet =**	**408**	**gal/min =**	**21.33**		
			Des. Flow	**480**			
			Pump Run=	**8.74**			
			soil LTAR	**0.3**			
			LTAR +5%	**0.315**			
			LTAR with ACCEPTED	**0.4**			
			LTAR with ACCEPTED + 5%	**0.42**			

TYPICAL PRESSURE MANIFOLD DETAIL



CALCULATIONS

Location HERON VIEW LOT 2

Project Number 01-1994

Lot No: 2

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.30	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	185	ft.
Supply Line Volume	32.19	gal.
Required Feet of Line	400	ft.
Amount of Line from Layout	408	ft.
Gallons per Minute	21.33	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	266.424	gal.
Dosing Volume	186.50	gal.

Note: Dosing Volume based on70% of lateral line volume

70 ✓10

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

Tank Draw Down	8.9	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	8.74	minutes
Elevation Head	9.6	ft.
Pressure Head	2	ft.
Friction Factor	0.88	ft./100 ft. *(From the interpolater.)*
Friction Head	1.63	ft.
Total Dynamic Head (+15%)	15.21	ft.

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

Sheet 1 of 2
PROPERTY ID #: 46264 10400
COUNTY: IREDELL

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: KEITH CAMINITI
ADDRESS: 111 WALNUT COVE DR TWNH D MOORESVILLE 28117
PROPOSED FACILITY: 4BR RESIDENCE PROPOSED DESIGN FLOW (.1949): 480
LOCATION OF SITE: LOT 2 HERON VIEW – 285 CHUCKWOOD RD 28117
WATER SUPPLY: ☒ Private ☐ Public ☒ Well ☐ Spring ☐ Other
EVALUATION METHOD: ☒ Auger Boring ☐ Pit ☐ Cut

APPLICATION DATE 6/30/14
DATE EVALUATED: 6/25/14
PROPERTY SIZE: 1.15 AC
PROPERTY RECORDED: YES
TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

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
B1	L/9%	0-48	RC mmSBK	Fr SS SP	–	48+	–	–	S .3
B2	L/5%	0-42	RC mmSBK (few SAP)	Fr SS SP	–	48+	–	–	S .3
		42-48	RCL WFSBK (few SAP)	Fr SS SP					
B3	L/8%	0-45	RC mmSBK	Fr SS SP	–	48+	–	–	S .3
		45-48	RCL WFSBK (few SAP)	Fr SS SP					
B4	L/14	0-43	RC mmSBK	Fr SS SP	–	48+	–	–	S .3
		43-49	RCL MFSBK (few SAP)	Fr SS SP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	408 LF	400 LF
System Type(s)	ACCEPT (25%)	ACCEPT (25%)
Site LTAR	.3	.3

OTHER FACTORS (.1946): S
SITE CLASSIFICATION (.1948): S
EVALUATED BY: ROLLANS / OVERBY
OTHER(S) PRESENT:

COMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: 4626410400
DATE OF EVALUATION: 6/25/14
COUNTY: IREDELL

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
B5	L/8%	0-49	R C mmsBk	Fr SS SP	—	48+	—	—	S, 3

COMMENTS:

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

Sheet ___ of ___
PROPERTY ID #: 4626410400
COUNTY: Iredell

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Cobble Creek Custom Homes
ADDRESS: 285 Chuckwood
PROPOSED FACILITY: House
LOCATION OF SITE: Heron View Lot #2
APPLICATION DATE
DATE EVALUATED: 7/2/14
PROPOSED DESIGN FLOW (.1949): 480gpd
PROPERTY SIZE:
PROPERTY RECORDED:
WATER SUPPLY: [X] Private [ ] Public [ ] Well [ ] Spring [ ] Other
EVALUATION METHOD: [X] Auger Boring [ ] 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	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	L 6 90	0-3"	Brw SCL						PS .3
		3-48"	R C/C	m-w SBK FR, SS, SP, SE					
			few Y/Brw	Indus @		48"	46"		
2									
3									
4									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	III 25% Red.	II 25% Red.
Site LTAR	.3	.3

OTHER FACTORS (.1946): None
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: M. Dotson
OTHER(S) PRESENT:

COMMENTS: