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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 [redacted] Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 4 bedroom single family residence on Lot #1 Heron View Subdivision, Iredell County, North Carolina.

Contents:

	Page
Information for the Installer	1
Design Information	
Design Specifications	2-3
Layout Specifications	4
System Tapsheet	5
Pressure Manifold Diagram	6
Site Plan/System Plan	7
Calculations	8
Profile Descriptions	9

Revised 5/20/14
Project No. 01-1955
Design By: Rollans Soil and Environmental Services, PA

PRESSURE MANIFOLD SYSTEM FOR WASTEWATER TREATMENT

Owner:	George Moser
Address:	119 Barber Loop Mooresville, NC 28117
Phone:	704.634.9703
County:	Iredell
Location:	HERON VIEW LOT # 1
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	480 gpd
System Flow:	32.88

Design Specifications

Drainfield Size:	445
Loading Rate:	0.275
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	**26 in**
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	190
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	33.06
Dosing Volume:	203.41
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:	4.05
Elevation Head:	16.00
Total Dynamic Head:	25.35
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	

HERON VIEW LOT # 1
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.275
TOTAL AREA TRENCH BOTTOM:	1335
TOTAL LATERAL LENGTH:	445
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	436.3636364
SUPPLY LINE LENGTH:	190
TOTAL DYNAMIC HEAD:	25.35
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	203.41
PUMP TANK DRAW DOWN*:	9.7
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.*

HERON VIEW LOT # 1

Project #: 01-1955

LAYOUT FOR 4 BEDROOM HOME

May 20, 2014

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.6			100.00		
INSTR. 1			101.60				
HOUSE CNR				9.10	92.50		
P. TANK				13.60	88.00		
1	ORANGE			1.80	99.80	32	0
2	*PINK*			*2.60*	*99.00*	*70*	*70*
3	*BLUE*			*3.60*	*98.00*	*75*	*75*
4	*RED*			*4.10*	*97.50*	*75*	*75*
5	*YELLOW*			*5.30*	*96.30*	*75*	*75*
6	*ORANGE*			*6.30*	*95.30*	*75*	*75*
7	*PINK*			*7.20*	*94.40*	*75*	*75*
					Total	**482**	***445***

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	TRENCH BOTTOM	TRENCH SYSTEM	DISTRIBUTION
** System*	*445*	*0.275*	*ACCEPT.*	*26"*	*25% RED.*	PRESSURE MANIFOLD
Repair	5,800SF	0.100	*ALT*	10"	PPBPS	DRIP

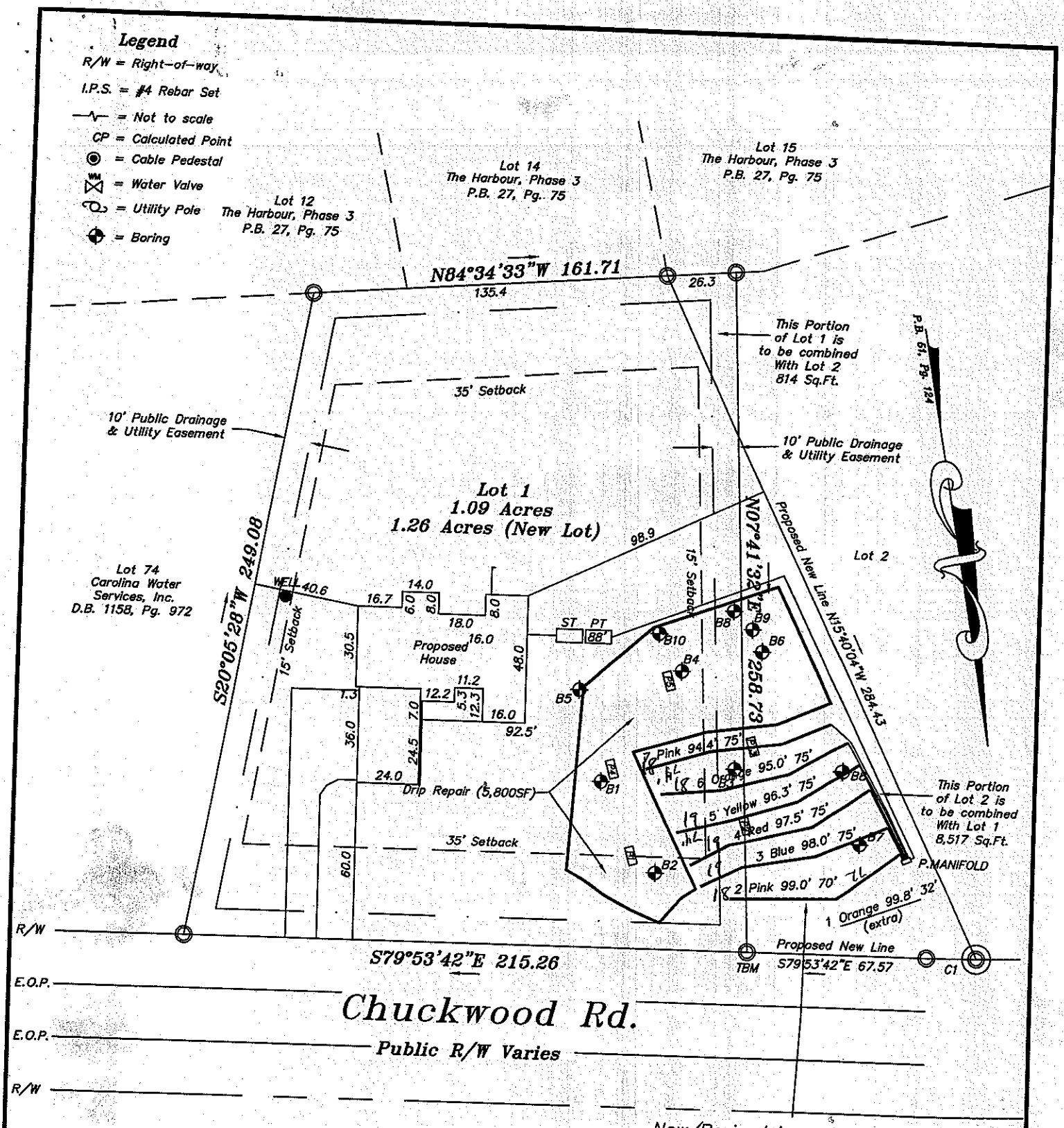
Notes:

** TBM located on top of ground at old flagged EIP
**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 LOT#1

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area	Line LTAR
2	***PINK***	99	***70***	SCH 80 1/2	**5.48**	210	0.16
3	***BLUE***	98	***75***	SCH 80 1/2	**5.48**	225	0.15
4	***RED***	97.5	***75***	SCH 80 1/2	**5.48**	225	0.15
5	***YELLOW***	96.3	***75***	SCH 80 1/2	**5.48**	225	0.15
6	***ORANGE***	95.3	***75***	SCH 80 1/2	**5.48**	225	0.15
7	***PINK***	94.4	***75***	SCH 80 1/2	**5.48**	225	0.15
	total	**feet =**	**445**	**gal/min =**	**32.88**		
			Des. Flow	**480**			
			Pump Run=	**6.19**			
			soil LTAR	**0.275**			
			LTAR +5%	**0.28875**			
			LTAR with ACCEPTED	**0.366666667**			
			LTAR with ACCEPTED + 5%	**0.385**			



CURVE TABLE				
CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	18.98	816.95	N80°33'38"W	18.98

New/Revised Layout has Red Ribbon tied to each colored pin flag.

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Notes:

1) This property may be subject to any Easements, Rights-of-way, and/or Restrictive Covenants.
2) Boundary information based on Plat Book: 51 at Page: 124 as recorded in the Iredell County Register of Deeds.
3) This survey is of an existing parcel or parcels of land.
4) No N.C.G.S. or U.S.G.S. Monuments could be located within 2000'.
5) Area by coordinate method.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50 ft

CALCULATIONS

Location HERON VIEW LOT # 1

Project Number 01-1955

Lot No: 1

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.275	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	190	ft.
Supply Line Volume	33.06	gal.
Required Feet of Line	436.3636	ft.
Amount of Line from Layout	445	ft.
Gallons per Minute	32.88	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	290.585	gal.
Dosing Volume	203.41	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	9.7	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	6.19	minutes
Elevation Head	16	ft.
Pressure Head	2	ft.
Friction Factor	2.13	ft./100 ft. *(From the interpolater.)*
Friction Head	4.05	ft.
Total Dynamic Head (+15%)	25.35	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
33	2.13
35	2.37
	-2.25
40	3.03
42.7	3.43
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42

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

Sheet 1 of 4
PROPERTY ID #4626412401
COUNTY: IREDELL

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: George Moser
ADDRESS: 271 Chuckwood Road, Mooresville NC 28117
PROPOSED FACILITY: 4BR
LOCATION OF SITE: HERON VIEW #1
PROPOSED DESIGN FLOW (.1949): 480
APPLICATION DATE 4/25/14
DATE EVALUATED: 4/1/14
PROPERTY SIZE: 21.26 ac
PROPERTY RECORDED:
WATER SUPPLY: ☒ Private ☐ Public ☒ Well ☐ Spring ☐ Other
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	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	L/10%	0-7	R C MASS	Fill	N/A	47	N/A		PS .25
		7-16	B CL WFSBK	Fr SS SP					
		16-35	BR C WFSBK	Fr SS P					
		35-54	RB C WFSBK	Fr SS P Com Fe depl					
2	L/10%	0-28	B2 C WMSBK	Fr S P	N/A	50+	N/A		S .3
		28-50	RB C WFSBK	Fi SS P					
3	L/8%	0-5	R C MASS	Fill	N/A	48	N/A		S .3
		5-12	B CL WMSBK	Fr SS P					
		12-42	RO C WFSBK/A	Fr SS SP					
		42-53	R CL WFSBK	Fr SS SP Few SAP					
4	L/11%	0-6	R C FILL		N/A	45	N/A		PS .25
		6-13	B C WMSBK	Fr SS SP					
		13-36	RB C WMSBK	Fr SS SP					
		36-51	YR C WMSBK	Fr SS SP Few Fe depl					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
vailable Space (.1945)	445	5800 SF
ystem Type(s)	Accepted	Subsurface Drip
te LTAR	.275	0.1

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: Rollins, Overby
OTHER(S) PRESENT:
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vMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: 462641240l
DATE OF EVALUATION: 4/1/14
COUNTY: IREDELL

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	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B 5	L/11%	0-5	BR C mmss	FIll	2 Chroma @ 33"	28+	N/A		PS .25
		5-20	B CL WFSBK	Fr SS SP					
		20-33	YB C WMSBK	Fr SS SP					
B 6	L/11%	0-25	BR C WMSBK	Fr SS SP	2 Chroma @ 31"	31+	N/A		PS .25
		25-31	RB C WMSBK	Fr SS SP					
B 7	L/6%	0-6	BR C WMSBK	Fr S SP	N/A	48	N/A		PS .3
		6-48	RB C MMSBK	F SS P					
B 8	L/11%	0-5	BR C MMSBK	Fr SS SP		42 QTZ ROCK (Floater)			PS .3
		5-42	RC MMSBK/RDR	Fr SS P few MIN INC					

MMENTS:

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SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: 462641240 1
DATE OF EVALUATION: 5/19/14
COUNTY: Rockingham

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
P1	CB2 4/10%	0-6	RB C Fill	Fi		43+	—	—	PS .275
		6-29	B C WMSBK/A	Fe SS SP					
		29-43	RB C WMSBK/A	" few dk/lt mn Fe depl					
P2	SS/CS 11%	0-5	DK C compacted			56+	—	—	PS .275-.3
		5-28	BR C WMSBK/A	Fe SS SP SEXP					
		28-56	RB C WMA/S	Few Fe SS SP SAP Inc	q/z Inc				
P3	CB3 4/8%	0-4	RB C compacted			53+	—	—	PS .3
		4-9	B C WMSBK	Fe SS SP					
		9-16	BR C WMSBK	"					
		16-43	RB C WMS/A	" few SAP					
		43-53	R CL WMS	" SAP Inc	Fe depl				
P4	4/10%	0-7	RB C Compacted			56+	—	—	PS .275
		7-30	RB C/CL WMS/A	Fe SS SP					
		30-48	RB C WMA/S	Fe SS P few Fe 45-49					
		48-56	RY C WMA/S	Fi SS P common Fe/MN					
	0-7 compacted 4/11	0-5	BR C Fill 0-5 Compacted	0-7		50+	—	—	PS .25
		5-25	BR C WMS/A	Fi/Fe SS SP	2 chroma 40-47				
		25-42	RB C WMS/A	Fe SS SP few/common Mn + Fe					
		42-50	YR C WMSBK	Fe SS SP common Fe depl + 2 chroma Fe conc.					

COMMENTS:

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SOIL/SITE EVALUATION

(Continuation Sheet)

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: 4626412401
DATE OF EVALUATION: 5/19/19
COUNTY: IREDELL

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	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B8	on blue line (BTM) L/	0-3	RC wmsbk	FSSSPSExP	2 chroma @ 34 (F-C) Fe depl 30+	36+	-	-	PS 0.25-.225
		3-19	BRC wmsbk	FrSSSPSExP					
		19-25	RD C wmsbk	FrSSSPSExP					
		25-36+	YR C "	FrSSSPSExP					
B9	L/	0-8	BRC wmsbk	FrSSSPSExP	Fe depl 21" chr. 2 @ 22"	25+	-	-	.1 DRIP
		8-16	RB C wmsbk	" " " "					
		16-25	RC wmsbk	" " " "					
B0	L/6%	0-6	RC wmsbk(comp)	F SSSPSPxP	f [Fe] depl 24" f Black conc. chr. 2 @ 33"	34+	-	-	.1 DRIP
		6-16	BC wfsbk	FrSSSPSExP					
		16-34	YB wfsbk	" " " "					

MENTS:

APPROVED MAY 28 2019

AZP