



Valley Dealer

Benchmark Bldgs. & Irrig.
165 S Kenansville Bypass
Kenansville, NC 28349
UNITED STATES

Customer

Carter and Sons
668 Rivenbark Town Rd
Wallace, NC 28466-6160
USA

Dealer No.

88815458

Field Name

Parent Order No. 11187177
Sprinkler Order No. 11187181

Plant **McCook Manufacturing**

Dealer PO **33450**
Order Date **01/27/2016**
Load Date **02/19/2016**
Method Of Shipment **W/SYS (11188692)**

3 Span Valley Standard Pivot 7000
Machine Flow 500 (GPM)
Pivot Pressure 50 (PSI)

Parent Order No 11187177

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Valley Standard Pivot 7000 Machine Summary

Span and Overhang

Model	Qty	Length (ft)	Pipe O.D. (in)	Coupler Spacing (in)	D. U. Qty Profile Tire
7000	3	180.0	6	108	20 Standard 14.9 x 24 High Float
7000	1	73.0	6	110	11

Messages

Caution:

None

Dealer:

None

Sprinkler -- Available Outlets

Sprinkler Configuration

Valley U-Pipe 6(in) Galvanized 3/4 M NPT x 3/4 F NPT

Black Hose Drop Variable Length 60(in) Ground Clr

Valley Slip Weight 26(in) 2(lb) Poly

Nelson TR3000 D4 - Green 3/4 M NPT

295.50 (ft) Total Drop Hose Length

Range (ft)

Outlets

4,18,1

24,38,1

44,58,1

64,66,1

69,71,1



Field Area

26.3 (Ac) Total
20.4 (Ac) Pivot 270°
6.0 (Ac) EG on 80°
613.5 (ft) Machine Length
103.6 (ft) End Gun Radius

Flow

500 (GPM)
17.97 (GPM per Acre)
0.95 (in per day) App Rate
0.103 (in) App Depth @ 100%
133.9 (GPM) End Gun

Pressure

50 (PSI) Pivot Pressure
45 (PSI) = End Pressure
0.0 (ft) Highest Elevation
0.0 (ft) Lowest Elevation

LRDU Drive Train

68 RPM Center Drive @ 60 Hz freq.
14.9 x 24 High Float Tire
52:1 Wheel GB Ratio, LRDU Dist 540.6 (ft)
2.6 Hrs/270° @ 100% 16.50 (Ft per Min)

Sprinkler -- Available Outlets

Sprinkler Configuration

Valley U-Pipe 6(in) Galvanized 3/4 M NPT x 3/4 F NPT

Valley Drop 84(in) Galvanized 3/4 M NPT x 3/4 M NPT

Nelson PC - D3000 Part Circle Spray 3/4 M NPT

Range (ft)

Outlets

20,22,1

40,42,1

60,62,1



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Valley Standard Pivot 7000 Machine Summary

Pressure Loss

Pipe Length (ft)	Pipe I.D. (in)	Finish	C-Factor	Loss (PSI)
586.1	5.79	Galvanized	150	3.9
27.4	3.79	Galvanized	150	0.6
Total =				4.5

End Gun(s) & Booster Pump Information



Primary End Gun
Nelson SR100 End Gun
0.85 Nozzle
Booster Pump

Span Flow

Span Number	Irrigated Length (ft)	Area (Ac)	Rqd (GPM)	Act (GPM)	Rqd (GPM per Acre)	Act (GPM per Acre)	% Deviation
1	156.7	1.7	30.3	35.4	17.43	20.42	17.1
2	180.1	5.3	91.9	92.0	17.43	17.44	0.1
3	179.8	8.8	152.8	152.9	17.43	17.44	0.1
O/H	72.9	4.6	80.5	80.0	17.69	17.57	-0.6
EG	103.6	6.0	134.1	133.9	17.97	17.95	-0.1
Totals		26.4		494.2			
Drain Sprinkler			10.7	10.6			
Total Machine Flow				504.8			

Advanced Options

Drain Sprinkler = Senninger Directional
Last Sprinkler Coverage = 1 ft
Sprinkler Coverage Length = 614.5 ft
Use Last Coupler= YES
Minimum Mainline Pressure = 6 PSI

Shipping Options

Ship Drop Hardware
Ship Endgun Nozzle
Ship Endgun & Hardware
Do not ship Endgun Valve / Nozzle Valve Hardware
Do not ship Boosterpump Hardware

Parent Order No 11187177
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Dealer Benchmark Bldgs. & Irrig.
Customer Carter and Sons
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Valley Standard Pivot 7000 Assembly Instructions Report

Bill of Material was not changed from its original list
Sprinkler Package created by bbi.

Dealer Benchmark Bldgs. & Irrig.
Customer Carter and Sons
Field Name



Sprinkler Order No 11187181

Parent Order No 11187177

Valley Standard Pivot 7000 Percent Timer Data

Setup Information - Valley Computer Control Panel Water Application Constants: Minimum Application = 0.103 (in) Hours Per Revolution = 2.6

Based on IN

IN Per 270 degrees	Pivot % Timer	Hours Per 270 degrees
0.103	100.0	2.6
0.20	51.6	5.0
0.30	34.4	7.6
0.40	25.8	10.1
0.50	20.7	12.6
0.60	17.2	15.1
0.70	14.8	17.6
0.80	12.9	20.2
0.90	11.5	22.6
1.00	10.3	25.2
1.25	8.3	31.3
1.50	6.9	37.7
1.75	5.9	44.1
2.00	5.2	50.0

Based on % Timer

Pivot % Timer	IN Per 270 degrees	Hours Per 270 degrees
100.0	0.103	2.6
90.0	0.11	2.9
80.0	0.13	3.3
70.0	0.15	3.7
60.0	0.17	4.3
50.0	0.21	5.2
45.0	0.23	5.8
40.0	0.26	6.5
35.0	0.30	7.4
30.0	0.34	8.7
25.0	0.41	10.4
20.0	0.52	13.0
17.5	0.59	14.9
15.0	0.69	17.3
12.5	0.83	20.8
10.0	1.03	26.0
7.5	1.38	34.7
5.0	2.07	52.0

Field Area

26.3 (Ac) Total
20.4 (Ac) Pivot 270°
6.0 (Ac) EG on 80%
613.5 (ft) Machine Length
103.6 (ft) End Gun Radius

Flow

500 (GPM)
17.97 (GPM per Acre)
0.95 (in per day) App Rate
0.103 (in) App Depth @ 100%
133.9 (GPM) End Gun

Pressure

50 (PSI) Pivot Pressure
45 (PSI) = End Pressure
0.0 (ft) Highest Elevation
0.0 (ft) Lowest Elevation

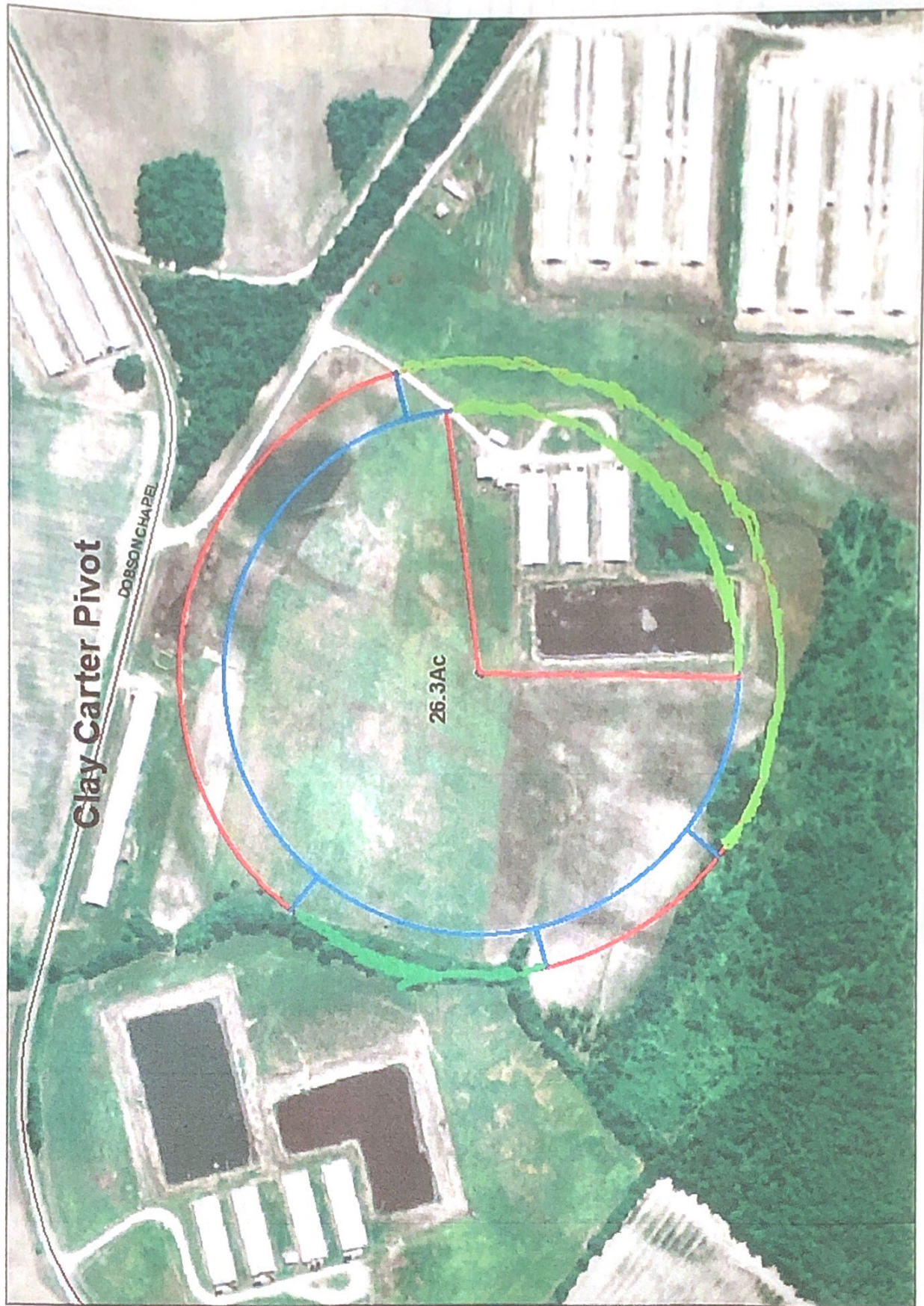
L.RDU Drive Train

68 RPM Center Drive @ 60 Hz freq.
14.9 x 24 High Float Tire
52:1 Wheel GB Ratio, L.RDU Dist 540.6 (ft)
2.6 Hrs/270 @ 100% (16.50) (Ft per Min)

Disclaimer

The information presented in the attached Percent Timer Report is based on variables which cannot be totally controlled by Valmont (including, but not limited to; pivot pressure, inside pipeline surface, end gun throw, end gun acc setting, tire slippage, tire pressure, field slopes, soil variations, sprinkler package installation, well capacity, center drive motor voltage, center drive motor frequency, climatic conditions and other elements and circumstances beyond Valmont's reasonable control). Valmont recommends monitoring the machine for at least one pass through field to obtain an accurate rotation time.

Percent Timer - 02/15/2016



Clay Carter Pivot

DOBSON CHAPEL

26.3Ac

1 inch = 300 feet

Landowner/Operator Name: Clay Carter - Carter & Sons Hog Farm; Fac. No.: 31-160
Address:

County: Duplin

Date: 9/12/2012

Telephone: (910) 289-1564

Table 1 - Field Specifications

[illegible]

Make, Model and Type of Equipment: Ag Rain 27A (2.7"x820") & Ag Rain 25A (2.5"x800") w/Nelson SR100

[illegible]

IRRIGATION SYSTEM DESIGNER

Name: Micah Kevin Weston, CID
Company: Murphy-Brown, LLC
Address: 2822 Hwy 24 West, P.O. Box 856 Warsaw, NC 28398
Phone: (910) 293-3434



Required Documentation

The following details of design and materials must accompany all irrigation designs:

1. A scale drawing of the proposed irrigation system which includes hydrant locations, pipelines, thrust block locations and buffer areas where applicable.
2. Assumptions and computations for determining total dynamic head and horsepower requirements.
3. Computations used to determine all mainline and lateral pipe sizes.
4. Sources and/or calculations used for determining application rates.
5. Computations used to determine the size of thrust blocks and illustrations of all thrust block configurations required in the system.
6. Manufacturer's specifications for the irrigation pump, traveler and sprinkler(s).
7. Manufacturer's specifications for the irrigation pipe and/or USDA-NRCS standard for IRRIGATION WATER CONVEYANCE.
8. The information required by this form are the minimum requirements. It is the responsibility of the designer to consider all relevant factors at a particular site and address them as appropriate.
9. Irrigation pipes should not be installed in lagoon or storage pond embankments without the approval of the designer.

NOTE: A buffer strip of 25' or wider must be maintained between the limits of the irrigation system and all perennial streams and surface waters per NC Statutes.

Narrative of Irrigation System Operation

This design is for a "wetted acreage" determination for an existing facility. The acres were calculated based on the equipment specified and the charts created by NCSU for calculating Area Allowances for Hard Hose Traveler Systems.

Refer to owner's manual and irrigation dealer for information on maintenance, winterization, and operation of system.

CALCULATIONS**Sprinkler Specifications**

Sprinkler Type: Nelson SR100
 Nozzle Size: 0.86 inches
 Sprinkler Pressure: 50 psi
 Flowrate(GPM): 115 gpm
 Wetted Diameter: 240 feet

Lane Spacings

Desired Spacing (%): 70 %
 Design Spacing(feet): 168 *PVC irrigation pipe normally comes in 20' pieces,
 so round to the nearest multiple of 20.
 Actual Spacing (feet): 160 feet
 Actual Spacing (%): 67 %

Application Rate

Application Rate = $(96.3 \times \text{Flowrate}) / (3.1415 \times (.9 \times \text{radius})^2)$

Design App. Rate = 0.30 in/hr

300 degree arc = 0.36 in/hr

220 degree arc = 0.49 in/hr

180 degree arc = 0.60 in/hr

330 degree arc = 0.33 in/hr

Traveller Speed

Travel speed = $1.605 \times \text{Flowrate} / \text{Desired application amount} \times \text{Lane Spacing}$

Desired app. (in.) = 0.5 inches

300 degree arc = 2.77 ft/min

220 degree arc = 3.69 ft/min

180 degree arc = 4.61 ft/min

360 degree arc = 2.31 ft/min

330 degree arc = 2.51 ft/min

Mainline Velocity

Velocity = $.408 \times \text{Flowrate} / \text{pipe diameter squared}$ feet/sec.**

**For buried pipelines, velocity should be below 5 feet per second

Pipe size: inches

Velocity= #DIV/0! ft/sec.

CALCULATIONS**Sprinkler Specifications**

Sprinkler Type: Nelson SR100
 Nozzle Size: 0.86 inches
 Sprinkler Pressure: 50 psi
 Flowrate(GPM): 115 gpm
 Wetted Diameter: 240 feet

Lane Spacings

Desired Spacing (%): 70 %
 Design Spacing(feet): 168 *PVC irrigation pipe normally comes in 20' pieces,
 so round to the nearest multiple of 20.
 Actual Spacing (feet): 180 feet
 Actual Spacing (%): 75 %

Application Rate

Application Rate = $(96.3 \times \text{Flowrate}) / (3.1415 \times (.9 \times \text{radius})^2)$

Design App. Rate = 0.30 in/hr

300 degree arc = 0.36 in/hr

220 degree arc = 0.49 in/hr

180 degree arc = 0.60 in/hr

330 degree arc = 0.33 in/hr

Traveller Speed

Travel speed = $1.605 \times \text{Flowrate} / \text{Desired application amount} \times \text{Lane Spacing}$

Desired app. (in.) = 0.5 inches

300 degree arc = 2.46 ft/min

220 degree arc = 3.28 ft/min

180 degree arc = 4.10 ft/min

360 degree arc = 2.05 ft/min

330 degree arc = 2.24 ft/min

Mainline Velocity

Velocity = $.408 \times \text{Flowrate} / \text{pipe diameter squared}$ feet/sec.**

**For buried pipelines, velocity should be below 5 feet per second

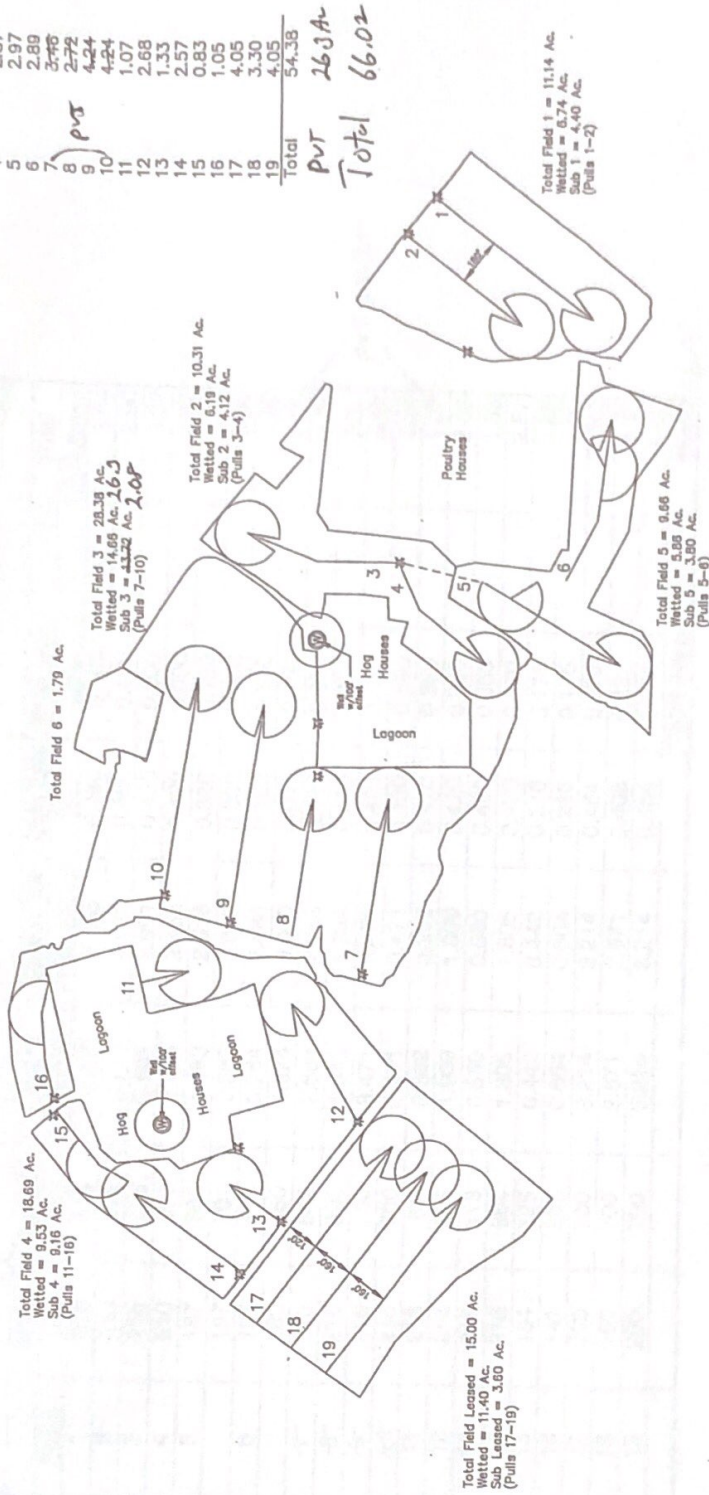
Pipe size: inches

Velocity= #DIV/0! ft/sec.

Carter and Sons Hog Farm

Clay Carter
 POC No.: 31-160
 Scale: 1"=400'

Pull #	Acres
1	3.84
2	2.90
3	3.32
4	2.87
5	2.97
6	2.89
7	3.46
8	2.72
9	4.24
10	4.24
11	1.07
12	2.68
13	1.33
14	2.57
15	0.83
16	1.05
17	4.05
18	3.30
19	4.05
Total	54.38
Pvt	26.3A
Total	66.02



Specifications:
 Ag Rain: 27A (2.7"x820' hose)
 Ag Rain: 25A (2.5"x800' hose)
 Nelson SR100 w/0.86" nozzle
 @ 50 PSI; 240' WD; 115 GPM



Carter & Sons Hog Farm, Fac. No.: 31-160									
Acreage Calculations 9/12/2012									
Pull #	Width (ft.)	Length (ft.)	Acres (midsection)	Total Acres (midsection)	Start End (ac.)	Stop End (ac.)	Total Pull Acres		
1	210	613	2.955	2.955	0.480	0.400	3.84		
2	210	418	2.015	2.015	0.480	0.400	2.90		
3	216	585	2.901	2.901	0.420	0.000	3.32		
4	210	509	2.454	2.454	0.420	0.000	2.87		
5	187	385	1.653	2.516	0.320	0.130	2.97		
6	187	201	0.863	0.000	0.000	0.000	0.00		
	162	178	0.764	2.438	0.320	0.130	2.89		
7	216	450	1.674	0.000	0.000	0.000	0.00		
8	216	542	2.688	2.688	0.420	0.350	3.46		
9	216	393	1.949	1.949	0.420	0.350	2.72		
10	216	700	3.471	3.471	0.420	0.350	4.24		
11	216	700	3.471	3.471	0.420	0.350	4.24		
12	216	61	0.302	0.302	0.420	0.350	1.07		
13	216	385	1.909	1.909	0.420	0.350	2.68		
14	216	113	0.560	0.560	0.420	0.350	1.33		
15	154	364	1.805	1.805	0.420	0.350	2.57		
16	141	125	0.442	0.442	0.210	0.175	0.83		
17	200	205	0.664	0.664	0.210	0.175	1.05		
18	160	700	3.214	3.214	0.464	0.374	4.05		
19	200	700	2.571	2.571	0.408	0.322	3.30		
			3.214	3.214	0.464	0.374	4.05		
Total Acres							54.88		
							66.02		

PVT 26.3A