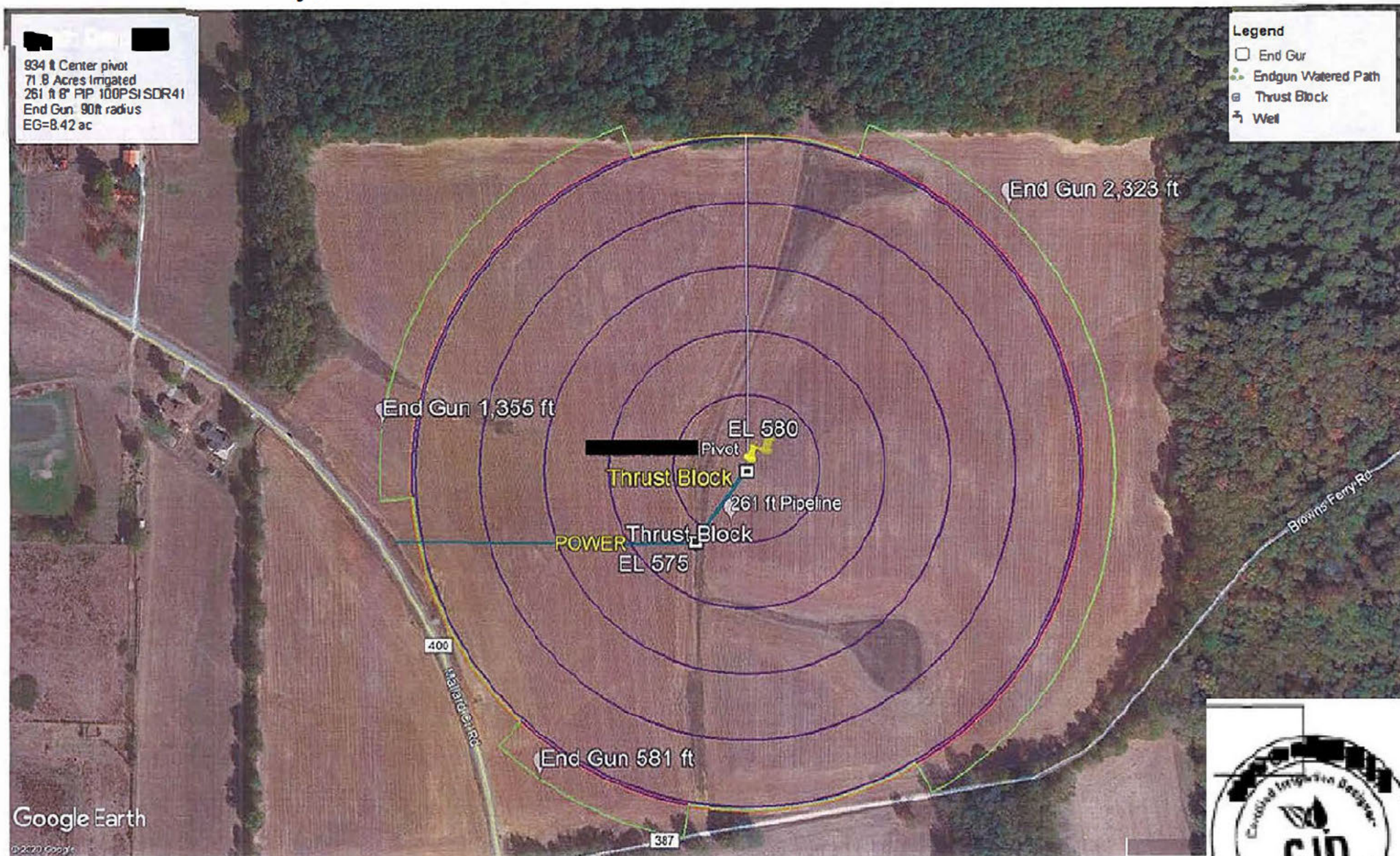


Healthy Living Farms Center Pivot Project

Lawrence County, Alabama



Healthy Living Farms Center Pivot Lawrence County, Alabama



PIVOT @ 34.683434°, -87.153362°

WELL @ 34.682943°, 87.154350°



Healthy Living Farms Center Pivot Lawrence County, Alabama

Center Pivot--825 ft.
Irrigation Pipeline--210 ft.
76.2 Irrigated Acres
63.2 acres under pivot
13 acres via end gun





Example Ag Consulting and Irrigation

1500 Sprinkler Road, Deluge, GA 33333

1-888-888-8888 sprinklers@exagconsults.net

Customer: Healthy Living Farms

District: LAWRENCE CO SOIL & WATER CONSERVATION DISTRICT

State & County: AL; LAWRENCE COUNTY

The Healthy Living Farm project consists of a single well and a single pivot. The pivot is a full circle pivot that waters approximately 76 acres. The electric line shaft turbine pump will furnish 500 gpm to the pivot through the 8" underground pipeline. The well pump will be powered from public power on the adjacent road. There is no other irrigation being supplied from the source and the main crop will be corn in rotation with soybeans.

"To the best of my professional knowledge, judgment, and belief, these plans meet applicable NRCS standards."





UNITED STATES

Customer



USA

Dealer No.

00004222

Field Name

Parent Order No. 11377600
Sprinkler Order No. 11377601
 Manufacturing

Dealer PO
Order Date 03/26/2020
Load Date 04/14/2020
Method Of Shipment W/SYS (11377600)

5 Span  Standard Pivot 7000
Machine Flow 500 (GPM)
Pivot Pressure 35 (PSI)

Dealer [redacted]
Customer [redacted]
Field Name [redacted]
Standard Pivot 7000 Machine Summary

Span and Overhang								Field Area		Flow	
Model	Qty	Length (ft)	Pipe O.D. (in)	Coupler Spacing (in)	D. U. Qty	Profile	Tire	70.4 (Ac) Total		500 (GPM)	
7000	3	180.0	6 5/8	108	20	Standard	14.9 x 24 High Float N	61.7 (Ac)Pivot 360°		6.67 (GPM per Acre)	
7000	1	186.7	6 5/8	30	74	Standard	14.9 x 24 High Float N	8.7 (Ac) EG on 65.83%		0.35 (in per day) App Rate	
7000	1	160.0	6 5/8	108	18	Standard	14.9 x 24 High Float N	924.9 (ft)Machine Length		0.087 (in) App Depth @ 100%	
7000	1	36.0	6 5/8	110	6			94.7 (ft)End Gun Radius		86.5 (GPM) End Gun	

Messages	Pressure	LRDU Drive Train
<u>Caution:</u> None <u>Dealer:</u> None	35 (PSI) Pivot Pressure Calculated Pressure 30 (ft) Highest Elevation 10 (ft) Lowest Elevation	68 RPM Center Drive @60 Hz freq. 14.9 x 24 High Float ND Tire 52:1Wheel GB Ratio, LRDU Dist 888.7 (ft) 5.9 Hrs/360° @ 100% 15.76 (Ft per Min)

Sprinkler -- Computer Spacing

Sprinkler Configuration		Range(ft)
[redacted] U-Pipe 6(in) Galvanized 3/4 M NPT x 3/4 M Hose		All
Blue Premium Hose Drop Variable Length 96(in) Ground Clr		
[redacted] Regulator Blue Acme 15(PSI) 3/4 F NPT		
[redacted] D3000 Integrated Weight 1.00		
[redacted] R3000 D8 - Orange 3/4 F Acme ASSY		
471.33 (ft)	Total Drop Hose Length	



Standard Pivot 7000 Machine Summary

Pressure Loss

Pipe Length (ft)	Pipe I.D. (in)	Pipe Finish	C-Factor	Loss (PSI)
906.8	6.42	Galvanized	150	3.0
18.1	3.79	Galvanized	150	0.3
Total =				3.3

End Gun(s) & Booster Pump Information

Primary End Gun

[REDACTED] SR100 End Gun
 0.65 Nozzle
 [REDACTED] 2 HP 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	179.9	2.4	15.7	16.9	6.56	7.09	8.0
2	180.1	7.1	46.4	46.3	6.56	6.55	-0.2
3	180.1	11.7	77.1	77.4	6.56	6.59	0.4
4	186.8	17.1	112.3	112.0	6.56	6.54	-0.3
5	159.8	18.6	122.3	122.2	6.56	6.56	-0.1
O/H	36.2	4.7	32.0	32.1	6.75	6.77	0.4
EG	94.7	8.7	88.4	86.5	6.66	6.52	-2.1
Totals		70.3		493.4			
Drain Sprinkler			8.1	7.7			
Total Machine Flow				501.1			

Advanced Options

Drain Sprinkler = Senninger Directional
 Last Sprinkler Coverage = 1 ft
 Sprinkler Coverage Length 925.9 ft
 Use Last Coupler= YES
 Minimum Mainline Pressure 6 PSI



Standard Pivot 7000 Machine Sprinkler Chart

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
1	6.5			Gauge						35.0			
2	15.5			Plug									
3	24.5			Plug									
Sprinkler : [Redacted] Rotator Assembly													
4	33.5	1		14	Lime	R3000	D8 - Orange	80	Blue Acme 15L	33.2	16.6	0.9	1.4
5	42.5			Plug									
6	51.5	2	18.0	14	Lime	R3000	D8 - Orange	89	Blue Acme 15L	32.1	16.6	0.9	1.4
7	60.5			Plug									
8	69.5	3	18.0	14	Lime	R3000	D8 - Orange	95	Blue Acme 15L	31.2	16.4	1.2	1.4
9	78.5			Plug									
10	87.5	4	18.0	15	Lime/Lavender	R3000	D8 - Orange	98	Blue Acme 15L	30.4	16.3	1.5	1.6
11	96.4			Plug									
12	105.4	5	17.9	16	Lavender	R3000	D8 - Orange	97	Blue Acme 15L	29.6	16.2	1.8	1.8
13	114.4			Plug									
14	123.4	6	18.0	17	Lavender/Gray	R3000	D8 - Orange	93	Blue Acme 15L	29.0	16.1	2.1	2.0
15	132.4			Plug									
16	141.3	7	17.9	19	Gray/Turquoise	R3000	D8 - Orange	86	Blue Acme 15L	28.6	16.0	2.4	2.5
17	150.3			Plug									
18	159.3	8	18.0	20	Turquoise	R3000	D8 - Orange	76	Blue Acme 15L	28.2	15.9	2.7	2.8
19	168.3			Plug									
20	177.3	9	18.0	21	Turq/Yellow	R3000	D8 - Orange	63	Blue Acme 15L	27.9	15.8	3.0	3.0
	182.0	Tower Number : 1 Span Length(ft) : 179.9											
21	186.6			Plug									
22	195.6	10	18.3	22	Yellow	R3000	D8 - Orange	70	Blue Acme 15L	26.9	15.7	3.4	3.3
23	204.6			Plug									
24	213.6	11	18.0	23	Yellow/Red	R3000	D8 - Orange	82	Blue Acme 15L	25.8	15.6	3.6	3.6
25	222.6			Plug									
26	231.6	12	18.0	24	Red	R3000	D8 - Orange	91	Blue Acme 15L	24.7	15.5	3.9	3.9
27	240.6			Plug									
28	249.6	13	18.0	25	Red/White	R3000	D8 - Orange	97	Blue Acme 15L	23.8	15.5	4.3	4.2

[REDACTED] Pivot 7000 Machine Sprinkler Chart

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
29	258.6			Plug									
30	267.6	14	18.0	26	White	R3000	D8 - Orange	99	Blue Acme 15L	23.0	15.4	4.5	4.6
31	276.5			Plug									
32	285.5	15	17.9	27	White/Blue	R3000	D8 - Orange	98	Blue Acme 15L	22.3	15.4	4.9	4.9
33	294.5			Plug									
34	303.5	16	18.0	28	Blue	R3000	D8 - Orange	94	Blue Acme 15L	21.7	15.3	5.2	5.4
35	312.5			Plug									
36	321.4	17	17.9	28	Blue	R3000	D8 - Orange	87	Blue Acme 15L	21.3	15.3	5.5	5.3
37	330.4			Plug									
38	339.4	18	18.0	29	Blue/Dark Brown	R3000	D8 - Orange	77	Blue Acme 15L	20.9	15.2	5.8	5.7
39	348.4			Plug									
40	357.4	19	18.0	30	Dark Brown	R3000	D8 - Orange	63	Blue Acme 15L	20.7	15.2	6.1	6.1
	362.1		Tower Number : 2 Span Length(ft) : 180.1										
41	366.7			Plug									
42	375.7	20	18.3	31	Dk Brown/Orange	R3000	D8 - Orange	70	Blue Acme 15L	20.2	15.2	6.5	6.4
43	384.7			Plug									
44	393.7	21	18.0	32	Orange	R3000	D8 - Orange	82	Blue Acme 15L	19.7	15.1	6.7	6.9
45	402.7			Plug									
46	411.7	22	18.0	32	Orange	R3000	D8 - Orange	91	Blue Acme 15L	19.3	15.1	7.0	6.9
47	420.7			Plug									
48	429.7	23	18.0	33	Orange/Dk Green	R3000	D8 - Orange	97	Blue Acme 15L	19.1	15.1	7.3	7.4
49	438.7			Plug									
50	447.7	24	18.0	33	Orange/Dk Green	R3000	D8 - Orange	99	Blue Acme 15L	18.9	15.1	7.6	7.4
51	456.6			Plug									
52	465.6	25	17.9	34	Dark Green	R3000	D8 - Orange	98	Blue Acme 15L	18.9	15.0	7.9	7.8
53	474.6			Plug									
54	483.6	26	18.0	35	Dk Green/Purple	R3000	D8 - Orange	94	Blue Acme 15L	19.0	15.0	8.2	8.2
55	492.6			Plug									
56	501.5	27	17.9	36	Purple	R3000	D8 - Orange	87	Blue Acme 15L	19.2	14.9	8.5	8.6
57	510.5			Plug									
58	519.5	28	18.0	37	Purple/Black	R3000	D8 - Orange	77	Blue Acme 15L	19.5	14.9	8.9	9.2
59	528.5			Plug									
60	537.5	29	18.0	38	Black	R3000	D8 - Orange	63	Blue Acme 15L	19.9	14.8	9.7	9.7

[REDACTED] Standard Pivot 7000 Machine Sprinkler Chart

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
542.2		Tower Number : 3		Span Length(ft) : 180.1									
61	542.3			Plug									
62	545.1			Plug									
63	547.6			Plug									
64	550.1			Plug									
65	552.6			Plug									
66	555.1			Plug									
67	557.6	30	20.1	39	Black/Dk Turq	R3000	D8 - Orange	71	Blue Acme 15L	19.6	14.7	10.6	10.2
68	560.1			Plug									
69	562.6			Plug									
70	565.1			Plug									
71	567.6			Plug									
72	570.1			Plug									
73	572.6			Plug									
74	575.1			Plug									
75	577.6	31	20.0	36	Purple	R3000	D8 - Orange	84	Blue Acme 15L	19.1	15.0	8.4	8.6
76	580.1			Plug									
77	582.6			Plug									
78	585.1			Plug									
79	588.3	32	10.8	29	Blue/Dark Brown	R3000	D8 - Orange	89	Blue Acme 15L	18.9	15.2	5.8	5.7
80	590.8			Plug									
81	593.3			Plug									
82	595.8			Plug									
83	598.3	33	10.0	29	Blue/Dark Brown	R3000	D8 - Orange	93	Blue Acme 15L	18.7	15.2	5.7	5.7
84	600.8			Plug									
85	603.3			Plug									
86	605.8			Plug									
87	608.3	34	10.0	29	Blue/Dark Brown	R3000	D8 - Orange	96	Blue Acme 15L	18.6	15.2	5.7	5.7
88	610.8			Plug									
89	613.4			Plug									
90	615.7			Plug									
91	618.2	35	9.9	29	Blue/Dark Brown	R3000	D8 - Orange	98	Blue Acme 15L	18.5	15.2	5.8	5.7
92	620.7			Plug									

Standard Pivot 7000 Machine Sprinkler Chart

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
93	623.2			Plug									
94	625.7			Plug									
95	628.2	36	10.0	30	Dark Brown	R3000	D8 - Orange	99	Blue Acme 15L	18.4	15.2	5.9	6.1
96	630.7			Plug									
97	633.2			Plug									
98	635.7			Plug									
99	638.2	37	10.0	30	Dark Brown	R3000	D8 - Orange	99	Blue Acme 15L	18.4	15.2	6.0	6.1
100	640.7			Plug									
101	643.2			Plug									
102	645.7			Plug									
103	648.2	38	10.0	31	Dk Brown/Orange	R3000	D8 - Orange	98	Blue Acme 15L	18.4	15.1	6.4	6.4
104	650.7			Plug									
105	653.2			Plug									
106	655.7			Plug									
107	659.0	39	10.8	31	Dk Brown/Orange	R3000	D8 - Orange	97	Blue Acme 15L	18.5	15.1	6.5	6.4
108	661.5			Plug									
109	664.0			Plug									
110	666.5			Plug									
111	669.0	40	10.0	30	Dark Brown	R3000	D8 - Orange	94	Blue Acme 15L	18.5	15.2	6.3	6.1
112	671.5			Plug									
113	674.0			Plug									
114	676.5			Plug									
115	679.0	41	10.0	31	Dk Brown/Orange	R3000	D8 - Orange	90	Blue Acme 15L	18.7	15.1	6.5	6.4
116	681.5			Plug									
117	684.1			Plug									
118	686.6			Plug									
119	689.1	42	10.1	31	Dk Brown/Orange	R3000	D8 - Orange	86	Blue Acme 15L	18.8	15.1	6.5	6.4
120	691.6			Plug									
121	694.1			Plug									
122	696.6			Plug									
123	699.1	43	10.0	32	Orange	R3000	D8 - Orange	81	Blue Acme 15L	19.0	15.1	6.6	6.9
124	701.6			Plug									
125	704.1			Plug									

Standard Pivot 7000 Machine Sprinkler Chart

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
126	706.6			Plug									
127	709.1	44	10.0	31	Dk Brown/Orange	R3000	D8 - Orange	74	Blue Acme 15L	19.2	15.1	6.7	6.4
128	711.6			Plug									
129	714.1			Plug									
130	716.6			Plug									
131	719.1	45	10.0	30	Dark Brown	R3000	D8 - Orange	67	Blue Acme 15L	19.4	15.2	6.0	6.1
132	721.6			Plug									
133	724.1			Plug									
134	726.6	46	7.5	27	White/Blue	R3000	D8 - Orange	61	Blue Acme 15L	19.6	15.3	5.0	4.9
	728.9		Tower Number : 4		Span Length(ft) : 186.8								
135	733.6	47	7.0	29	Blue/Dark Brown	R3000	D8 - Orange	62	Blue Acme 15L	19.6	15.2	5.6	5.7
136	742.6	48	9.0	31	Dk Brown/Orange	R3000	D8 - Orange	68	Blue Acme 15L	19.4	15.2	6.3	6.4
137	751.6	49	9.0	31	Dk Brown/Orange	R3000	D8 - Orange	73	Blue Acme 15L	19.2	15.1	6.4	6.4
138	760.6	50	9.0	31	Dk Brown/Orange	R3000	D8 - Orange	78	Blue Acme 15L	19.0	15.1	6.5	6.4
139	769.6	51	9.0	31	Dk Brown/Orange	R3000	D8 - Orange	81	Blue Acme 15L	18.9	15.1	6.4	6.4
140	778.1	52	8.5	30	Dark Brown	R3000	D8 - Orange	84	Blue Acme 15L	18.8	15.2	6.2	6.1
141	786.5	53	8.4	30	Dark Brown	R3000	D8 - Orange	86	Blue Acme 15L	18.7	15.2	6.3	6.1
142	794.9	54	8.4	31	Dk Brown/Orange	R3000	D8 - Orange	87	Blue Acme 15L	18.6	15.1	6.4	6.4
143	803.4	55	8.5	31	Dk Brown/Orange	R3000	D8 - Orange	88	Blue Acme 15L	18.6	15.1	6.7	6.4
144	812.4	56	9.0	32	Orange	R3000	D8 - Orange	88	Blue Acme 15L	18.6	15.1	6.9	6.9
145	821.4	57	9.0	32	Orange	R3000	D8 - Orange	87	Blue Acme 15L	18.6	15.1	7.0	6.9
146	830.4	58	9.0	33	Orange/Dk Green	R3000	D8 - Orange	86	Blue Acme 15L	18.6	15.1	7.1	7.4
147	839.4	59	9.0	32	Orange	R3000	D8 - Orange	84	Blue Acme 15L	18.7	15.1	7.1	6.9
148	848.3	60	8.9	33	Orange/Dk Green	R3000	D8 - Orange	81	Blue Acme 15L	18.8	15.1	7.2	7.4
149	857.3	61	9.0	33	Orange/Dk Green	R3000	D8 - Orange	77	Blue Acme 15L	18.9	15.1	7.3	7.4
150	866.3	62	9.0	33	Orange/Dk Green	R3000	D8 - Orange	73	Blue Acme 15L	19.1	15.1	7.4	7.4
151	875.3	63	9.0	33	Orange/Dk Green	R3000	D8 - Orange	68	Blue Acme 15L	19.3	15.0	7.5	7.4
152	884.3	64	9.0	33	Orange/Dk Green	R3000	D8 - Orange	62	Blue Acme 15L	19.5	15.0	7.4	7.4
153	888.1			B.P.									
	888.7		Tower Number : 5		Span Length(ft) : 159.8								
154	893.1	65	8.8	34	Dark Green	R3000	D8 - Orange	61	Blue Acme 15L	19.5	15.0	7.6	7.8
155	902.3	66	9.2	34	Dark Green	R3000	D8 - Orange	66	Blue Acme 15L	19.3	15.0	7.7	7.8
156	905.8			Plug									

[Redacted] Standard Pivot 7000 Machine Sprinkler Chart

Cpl No	Dist From Pivot (ft)	Spk No	Dist Last Spk (ft)	Nozzle Size	Color	Spk Model	Wear Pad	Drop Length (in)	Regulator	Line (PSI)	Spk (PSI)	Rqd (GPM)	Act (GPM)
157	911.2	67	8.9	34	Dark Green	R3000	D8 - Orange	70	Blue Acme 15L	19.2	15.0	7.8	7.8
158	920.4	68	9.2	36	Purple	R3000	D8 - Orange	74	Blue Acme 15L	19.0	14.9	8.8	8.6
Sprinkler : [Redacted] Spray													
159	923.9	69		16	Orange	Directional				18.8	18.8	8.1	7.7
	924.9			Overhang	Span Length(ft) : 36.2								
Sprinkler : [Redacted] Endgun													
160	924.9	70		0.65		SR100				18.8	50.3	88.4	86.5

Primary Endgun Arc Settings: Forward Angle: 45 Reverse Angle: 80 501.2



Dealer [REDACTED]
Customer [REDACTED]
Field Name [REDACTED]

Sprinkler Order No 11377601

Parent Order No 11377600

Valley Standard Pivot 7000 Percent Timer Data

Setup Information - [REDACTED] Computer Control Panel Water Application Constants: Minimum Application = 0.087 (in)

Hours Per Revolution = 5.9

Based on IN

IN Per 360 degrees	Pivot % Timer	Hours Per 360 degrees
0.087	100.0	5.9
0.10	86.9	6.8
0.20	43.5	13.6
0.30	29.0	20.3
0.40	21.7	27.2
0.50	17.4	33.9
0.60	14.5	40.7
0.70	12.4	47.6
0.80	10.9	54.1
0.90	9.7	60.8
1.00	8.7	67.8
1.25	7.0	84.3
1.50	5.8	101.7
1.75	5.0	118.0

Based on % Timer

Pivot % Timer	IN Per 360 degrees	Hours Per 360 degrees
100.0	0.087	5.9
90.0	0.10	6.6
80.0	0.11	7.4
70.0	0.12	8.4
60.0	0.14	9.8
50.0	0.17	11.8
45.0	0.19	13.1
40.0	0.22	14.8
35.0	0.25	16.9
30.0	0.29	19.7
25.0	0.35	23.6
20.0	0.43	29.5
17.5	0.50	33.7
15.0	0.58	39.3
12.5	0.70	47.2
10.0	0.87	59.0
7.5	1.16	78.7
5.0	1.74	118.0

Field Area

70.4 (Ac) Total
61.7 (Ac) Pivot 360°
8.7 (Ac) EG on 65.83%
924.9 (ft) Machine Length
94.7 (ft) End Gun Radius

Flow

500 (GPM)
6.67 (GPM per Acre)
0.35 (in per day) App Rate
0.087 (in) App Depth @ 100%
86.5 (GPM) End Gun

Pressure

35 (PSI) Pivot Pressure
Calculated Pressure
30 (ft) Highest Elevation
10 (ft) Lowest Elevation

LRDU Drive Train

68 RPM Center Drive @ 60 Hz freq.
14.9 x 24 High Float ND Tire
52:1 Wheel GB Ratio, LRDU Dist 888.7 (ft)
5.9 Hrs/360 @ 100% (15.76) (Ft per Min)

IRRIGATION SYSTEM SPRINKLER CENTER PIVOT DESIGN DATA SHEET

Cooperator: _____ Job No.: 1 Date: 1/10/20
 Location: _____
 Conservation District: Lawrence Field Office: Moulton Field No.: 1
 Identification No.: _____

1. **Design area:** 76 acres

Description of soils: Nolichucky Fine Sandy Loam

Soil Series:		Soil Series:		Soil Series:	
Soil Depth (in)	Average AWC (in/in)	Soil Depth (in)	Average AWC (in/in)	Soil Depth (in)	Average AWC (in/in)
60	.15				

Design Soil Series: Nolichucky Fine Sandy Loam

2. **Crops:**

Crop	Acres	Planting Date	Maturity Date
Corn	76	April-May	August
Total Acres			

3. **Water Supply:**

Source of Supply: Well
 Reservoir: Storage _____ ac-ft Available for Irrigation _____ ac-ft

Well: Static water level: 22 ft
 Measured capacity, Q_m : 500 gpm @ 6 ft drawdown
 Design Pumping Lift: 28 ft

Stream: Measured flow (season of peak use): _____ gpm

Quality of water (evidence of suitability; area of known water quality or water analysis attached):

Area of known water quality

Distance of water supply source to field: _____ ft

4. **Type of power unit and pump to be used:**

Electric line shaft turbine pump



Cooperator: [REDACTED] Job No.: 1 Date: 1/10/20
 5. **Map of Design area.** Scale 1" = ft Sketch map or attach photo.

Map should show:

- | | | |
|--------------------------|--|----------------|
| a. Source of water | d. System layout | g. North arrow |
| b. Elevation differences | e. Plan of Operations | |
| c. Row direction | f. Field Obstructions (canals, trees, fences, buildings, etc.) | |

Material-Mains							
Nominal Pipe Size (in)	PIP or IPS	SDR No.	Material (PVC 1120, etc.)	Pressure Rating (psi)	Inside Diam. (in)	Total Length (ft)	Min. Depth of Cover (in)
8	PIP	41	1120 PVC	100	7.74	400	30



Cooperator:

Job No.: 1

Date: 1/10/20

Irrigation Number

6. Crop Information	1	2	3	4
Kind of Crop	Corn			
Acreage to be irrigated (acres) ^{1/}	76			
Rooting depth (in.)	48			
Peak use rate (in./day)	0.33			
7. Soil Information				
Weighted AWC for rooting depth (in./in.)	0.150			
Basic intake rate (in./hr.)	1.5			
8. Design Procedure				
AWC within root zone (in.)	7.200			
Depletion allowed prior to irrigation (%)	50%			
Net water applied per irrigation (in.)	3.60			
Water application efficiency (%)	90%			
Gross water applied per irrigation (in.) ^{1/}	4.00			
Irrigation interval (days)	10.9			
Irrigation period (days per irrigation) ^{1/}	11.6			
Hours operating per day	24			
Q_R ^{1/} = Quantity of water required (gpm)	495			
Q_A ^{2/} = Quantity of water actual (gpm)	500			

^{1/} $Q_R = \frac{453 \times \text{acres} \times \text{in. gross application}}{\text{hours opr. Per day} \times \text{days per irrigation}} = \text{gpm}$

^{2/} Q_A must be $\geq Q_R$

9. **Pivot Specifications:** (Provided by the manufacturer)

- Pivot Length 935 Pivot Pressure 33 psi
- Spray or Sprinkler X (Mark one)
- Gross application per revolution 0.50 in.
- Nozzle gpm along last 100ft. Span 15.1 gpm @ 20 psi on spacing of 9 ft
- Nozzle wetted diameter 60 feet Outside Circumference 5875 ft

10. **Checking maximum application rate:**

- Time (hrs) per revolution to apply gross application = 34.6 (Provided by the manufacturer)
- Velocity (V) to end line = $\frac{\text{Outside Circumference, ft}}{\text{hrs per revolution}} = \frac{5875}{34.6} = 170 \text{ ft/hrs}$
- Time of application, hrs = $\frac{\text{wetted diameter, ft}}{V, \text{ ft/hr}} = \frac{60}{170} = 0.35 \text{ hr}$
- Average application rate, in/hr = $\frac{\text{gross app., in}}{\text{time of app, hrs}} = \frac{0.50}{0.35} = 1.41 \text{ in/hr}$
- Max. application rate = $1.5 \times \text{application rate in/hr} = 1.5 \times 1.41 = 2.1 \text{ in/hr}$



Cooperator: XXXXXXXXXX

Job No.: 1

Date: 1/10/20

11. Determining Total Dynamic Head:

Kind of Pipe	Design Capacity (gpm)	IPS:	PIP:	X	Mark with "X"	Total Head Loss (H _L)	
		Pipe Sizing					
		Pipe Size (in)	Length (ft)		Friction Head Loss (ft/100ft)	(ft)	(psi)
PVC	500	8	400		0.4	1.6	0.7
Pressure at Pivot						76.2	33.0
Misc. & fitting losses						11.6	5.0
Elevation difference ^{3/}						53.0	22.9
Pump discharge pressure						142.4	61.6
Pumping lift						28.0	12.1
Total Dynamic Head, TDH						170.4	73.8

^{3/} Difference in elevation of the centerline of the pump discharge and the elevation of the highest sprinkler (plus or minus).

12. Pump Requirements: 500 gpm @ 73.8 psi or 170.4 ft of head

Mark one with "X"

☐ TDH
☒ Pump Discharge Pressure

13. Remarks

Designed By: _____ Date: _____
 Checked By: _____ Date: _____
 Approved By: _____ Date: _____



Parent Order No 11377600

Dealer [REDACTED]

Sprinkler Order No 11377601

Customer [REDACTED]

Currency US (\$)

Field Name

[REDACTED] Standard Pivot 7000 Bill Of Materials

Qty	Part Number	Description
1	0211059	NPL MS 3/4 X 12 GV SCH 40
68	0231104	REG PR [REDACTED] LO FLO 15 PSI BLUE/RED INTEGRA
1	0232442	GAE MS 0-60 PSI PRESSURE GAUGE
1	0241005	FIT ER 3/4 X 90 GV
1	0241012	FIT ES 3/4 X 90 GV
1	0244038	FIT PB 1 X 3/4 GV REDUCER
68	0271077	HSE IT 3/4" MNPT X 3/4" HOSE BARB
68	0271080	HSE CL 1 1/16" HOSE CLAMP-CRIMP
68	0271084	HSE CL 1 1/4 S.S. HOSE DROP CLAMP
3	0430614	NZ LIME 3TN 14/128
1	0430615	NZ LIME/LAVENDER 3TN 15/ 128
1	0430616	NZ LAVENDER 3TN 16/128
1	0430617	NZ LAVENDER/GRAY 3TN 17/ 128
1	0430619	NZ GRAY/TURQUOISE 3TN 19 /128
1	0430620	NZ TURQUOISE 3TN 20/128
1	0430621	NZ TURQUOISE/YEL 3TN 21/ 128
1	0430622	NZ YELLOW 3TN 22/128
1	0430623	NZ YELLOW/RED 3TN 23/128
1	0430624	NZ RED 3TN 24/128
1	0430625	NZ RED/WHITE 3TN 25/128
1	0430626	NZ WHITE 3TN 26/128
2	0430627	NZ WHITE/BLUE 3TN 27/128
2	0430628	NZ BLUE 3TN 28/128
6	0430629	NZ BLUE/DARK BROWN 3TN 2 9/128
7	0430630	NZ DARK BROWN 3TN 30/128
12	0430631	NZ DARK BROWN/ORANGE 3TN 31/128
6	0430632	NZ ORANGE 3TN 32/128
8	0430633	NZ ORANGE/DARK GREEN 3TN 33/128
4	0430634	NZ DARK GREEN 3TN 34/128
1	0430635	NZ DARK GREEN/PURPLE 3TN 35/128
3	0430636	NZ PURPLE 3TN 36/128
1	0430637	NZ PURPLE/BLACK 3TN 37/1 28
1	0430638	NZ BLACK 3TN 38/128
1	0430639	NZ BLACK/DARK TURQUOISE 3TN 39/128
68	0430737	SPK MS [REDACTED] 1LB SPRINKLER WEIGHT
68	0430791	[REDACTED] ROTATOR ASSEMBLY ORANGE PLATE

Parent Order No 11377600

Dealer [REDACTED]

Sprinkler Order No 11377601

Customer [REDACTED]

Currency US (\$)

Field Name

[REDACTED] Standard Pivot 7000 Bill Of Materials

Part		
Qty	Number	Description
1	0496160	ORANGE SPRAY NZ #16 ORF .250
1	0500703	SPK NZ TAPERED SR100 NELSON 0.65T
1	0505060	SPK CP NELSON SR100 END GUN MOD W/2"BASE
68	0995972	U-PIPE W/BARBED END
2	09S0049	PREMIUM BLUE PIVOT IRR HOSE 3/4" (250')
1	PRDCTED	COOP & PRODUCT PROMOTION

Total Net Weight (lbs): 297.82

CONCRETE THRUST BLOCK DESIGN

v. 3-2013

CLIENT:

COUNTY:

DATE:

DSN BY:

CHK BY:

DATE:

COMMENTS:

Thrust Blocks for Pipe Angles

$$A_T = \frac{2Pa \sin(\frac{\theta}{2})}{q_{all}}$$

Where:

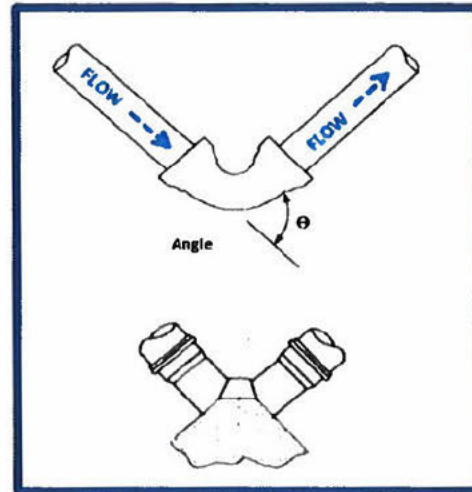
A_T = Area of thrust block required (ft²)

P = Working pressure (lb/in²)

a = cross section area of the pipe (in²)

θ = angle of pipe bend (degrees)

q_{all} = Allowable bearing pressure of the soil (lb/ft²)



INPUTS

Working Pressure (lb/in ²)	87	L (in)	23.7
Inside Pipe Diameter (inches)	7.74	W (in)	24.0
Deflection angle of pipe bend (degrees)	45		
Allowable Soil Bearing Pressure {from soil test or from Table I below} (lb/ft ²)			825

Area of Thrust Block Required 3.8 sq ft

Min. Volume of Concrete** 0.29 cu yd

**Cast in place concrete requires minimum thickness of 8" around pipe.

Table 52-6 (of NEH Part 636.5207) - Allowable Soil Bearing Pressure

Natural soil material	Depth of cover to center of thrust block			
	2 ft	3 ft	4 ft	5 ft
	lb/ft ²			
Sound Bedrock	8,000	10,000	10,000	
Dense sand and gravel mixture (assumed $\theta=40^\circ$)	1,200	1,800	2,400	
Dense fine to coarse sand (assumed $\theta=35^\circ$)	800	1,200	1,650	
Silt and clay mixture (assumed $\theta=25^\circ$)	500	700	950	



CONCRETE THRUST BLOCK DESIGN

v. 3-2013

CLIENT:

COUNTY:

DATE:

DSN BY:

CHK BY:

DATE:

COMMENTS: .

Thrust Blocks for Pipe Angles

$$A_T = \frac{2Pa \sin(\frac{\theta}{2})}{q_{all}}$$

Where:

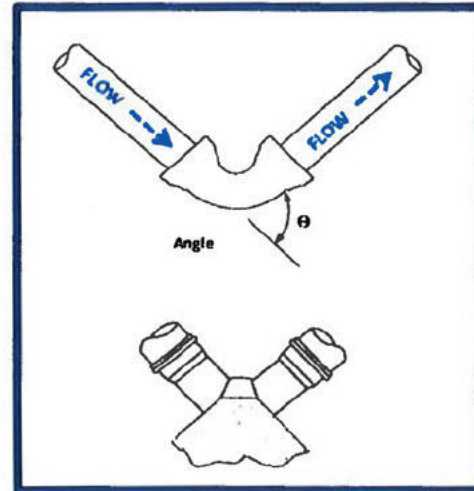
A_T = Area of thrust block required (ft²)

P = Working pressure (lb/in²)

a = cross section area of the pipe (in²)

θ = angle of pipe bend (degrees)

q_{all} = Allowable bearing pressure of the soil (lb/ft²)



INPUTS

Working Pressure (lb/in ²)	87	L (in)	21.8
Inside Pipe Diameter (inches)	5.82	W (in)	15.0
Deflection angle of pipe bend (degrees)	45		
Allowable Soil Bearing Pressure {from soil test or from Table 1 below} (lb/ft ²)			825

Area of Thrust Block Required 2.1 sq ft

Min. Volume of Concrete** 0.15 cu yd

**Cast in place concrete requires minimum thickness of 8" around pipe.

Table 52-6 (of NEH Part 636.5207) - Allowable Soil Bearing Pressure

Natural soil material	Depth of cover to center of thrust block			
	2 ft	3 ft	4 ft	5 ft
	lb/ft ²			
Sound Bedrock	8,000	10,000	10,000	
Dense sand and gravel mixture (assumed θ=40°)	1,200	1,800	2,400	
Dense fine to coarse sand (assumed θ=35°)	800	1,200	1,650	
Silt and clay mixture (assumed θ=25°)	500	700	950	



3500 RPM PUMP CURVES

