

WATER WORKS IRRIGATION INC.

SEPTEMBER 29, 2025

WISH-119629

CUSTOMER : HAUGEN

LINDSAY 8500 - 90
7 TOWER - 1278.53 FT
SYSTEM 675 GPM @ 20 PSI

P.O. NO. : 4050
FIELD : 1

SENNINGER UP3 SUPER SPRAYS
SENNINGER 10 PSI REGULATORS
NELSON R65i #80 GREEN
ELEVATION 0 FT UP, 0 FT DOWN

6217 CRAMER RD
ALAMOSA, COLORADO 81101
(719)587-2000

WARRANTY

WATER APPLICATION UNIFORMITY OBTAINED WITH THIS SYSTEM CAN BE ADVERSELY AFFECTED BY MANY VARIABLES INCLUDING THE IMPROPER MAKEUP OR INSTALLATION OF THE SPRINKLER OR SPRAY NOZZLE PACKAGE, OBSTRUCTED NOZZLES, MAINTAINING INCORRECT PIVOT PRESSURE, UNFAVORABLE CLIMATIC CONDITIONS, TIGHT AND/OR SLOPING SOILS, IMPROPER END GUN ARC SETTINGS, ERRATIC AND IMPROPER OPERATING SPEED OF THE SYSTEM, POOR QUALITY OF WATER WITH ABRASIVES, CORROSIVES, AND/OR SOLIDS WHICH CAN CAUSE PLUGGING AND JAMMING, AS WELL AS INHERENT VARIABLES IN THE MANY COMPONENTS COMPRISING THE SYSTEM. THEREFORE WESTERN IRRIGATION SUPPLY HOUSE, INC., MAKES NO WARRANTY AS TO THE UNIFORMITY OF COVERAGE OBTAINED FROM THIS WATER APPLICATION PRINTOUT OTHER THAN ITS MATHEMATICAL ACCURACY.

IT IS THE RESPONSIBILITY OF THE END USER TO DETERMINE IF ANY INCOMPATIBILITY EXISTS BETWEEN THE WATER DISTRIBUTION DEVICES AND THE CROP, THE SOIL, AND THE PHYSICAL STRUCTURE OF THE MECHANICAL MOVE SYSTEM. WESTERN IRRIGATION SUPPLY HOUSE, INC., THEREFORE, DISCLAIMS ANY LIABILITY FOR DAMAGES DUE TO FAILURE OF THE SYSTEM TO PERFORM AS CONTEMPLATED.

FIGURES PRESENTED ON THIS COMPUTER PRINTOUT ARE BASED ON THE FOLLOWING:

1. DATA FURNISHED TO WESTERN IRRIGATION SUPPLY HOUSE, INC., ON PIPE LENGTH, DIAMETER, SURFACE FINISH, OUTLET SPACINGS, WATER FLOW, PIVOT PRESSURE AND ALL OTHER APPLICABLE INFORMATION.
2. THERE IS 100% WATER APPLICATION EFFICIENCY (ZERO WIND VELOCITY AND NO EVAPORATION).
3. PIVOT PRESSURE IS MEASURED ON THE MAIN HORIZONTAL DISTRIBUTION PIPE JUST AFTER THE LAST ELBOW.
4. MAIN PIPE PRESSURE IS CALCULATED AS IF THE PIVOT IS ALWAYS ON LEVEL GROUND.
5. SPRINKLER OR SPRAY NOZZLE BASE PRESSURE MAY BE LESS THAN MAIN LINE PIPE PRESSURE DUE TO THE USE OF PRESSURE REGULATORS. WHERE DROP PIPES ARE USED THE STATIC HEAD IS ADDED TO AND FRICTION LOSS IS SUBTRACTED FROM THE MAIN LINE PIPE PRESSURE TO DETERMINE INLET PSI. REGULATORS ARE CONSIDERED MOUNTED AT THE SAME HEIGHT AS THE SPRINKLING DEVICE UNLESS NOTED.

<u>DEALER</u>			<u>IRRIGATOR</u>				
WATER WORKS IRRIGATION INC.			HAUGEN				
6217 CRAMER RD							
ALAMOSA, COLORADO 81101			4050				
TOTAL TARGET GPM	675.00	FRICTION FACTOR USED	138	SPAN #	LENGTH	PIPE I.D.	# OF HEADS
TOP OF PIVOT PRESSURE	20.00	TOTAL LENGTH	1278.53	1	170.66	6.395	11
ENDGUN TARGET GPM	39.57	NUMBER OF TOWERS	7	2	179.00	6.395	12
NUMBER OF OUTLETS	182	NUMBER OF SPRINKLERS	148	3	179.00	6.395	24
				4	179.00	6.395	24
SENNINGER UP3 SUPER SPRAYS - FLAT 36 DEEP GROOVED PADS				5	179.00	6.395	24
SENNINGER PSR-2 10 PSI SERIES REGULATORS				6	179.00	6.395	24
DROPS AVERAGE 10 FT OF .75 I.D. PREMIUM RED FLEXIBLE HOSE - EXTERNAL POLYWEIGHT®				7	179.00	6.395	24
ELEVATION IS 0 FT UP AND 0 FT DOWN				OH	33.87	5.369	5

CAUTIONS AND WARNINGS

1. Over watering at beginning of system due to practical limitations on smallest nozzle sizes available and/or allowable for proper operation.

2. When using spray nozzles with five foot ground clearance or less, nozzle should travel between crop rows and spacing should not exceed 80 inches.

3. This system designed for minimum pressure. Failure to deliver indicated pressure at the top of pivot point will adversely affect regulator and/or sprinkler/spray performance. Elevations, pipe sizes and type of drop pipe must be as shown.

4. Endgun pressure is lower than manufacturer's recommendation for adequate rotation and/or satisfactory distribution and droplet size.

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE										SPRK NO.	REG SIZE	PLUG NO.
1		2.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
2		7.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2		
3	15.26	15.26	0.20	0.37	19.66	11.40	SS	UP3	4	LT	BLUE			1	SPSR2-10				
4		22.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3		
5	14.67	29.93	0.34	0.37	19.21	11.40	SS	UP3	4	LT	BLUE			2	SPSR2-10				
6		37.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4		
7	14.83	44.76	0.51	0.48	18.83	11.40	SS	UP3	4.5	LT	BLUE			3	SPSR2-10				
8		51.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5		
9	14.50	59.26	0.72	0.72	18.53	11.40	SS	UP3	5.5	BEIGE				4	SPSR2-10				
10		66.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6		
11		71.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7		
12		73.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		
13	16.52	75.78	0.97	1.00	18.27	11.40	SS	UP3	6.5	GOLD				5	SPSR2-10				
14		78.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
15		80.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10		
16		84.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11		
17	16.54	92.32	1.11	1.16	18.10	11.40	SS	UP3	7	LIME				6	SPSR2-10				
18		99.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12		
19	14.67	106.99	1.23	1.16	18.02	11.40	SS	UP3	7	LIME				7	SPSR2-10				
20		114.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13		
21	14.83	121.82	1.39	1.35	18.02	11.40	SS	UP3	7.5	LIME				8	SPSR2-10				
22		128.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14		
23	14.50	136.32	1.55	1.53	18.09	11.40	SS	UP3	8	LAVENDER				9	SPSR2-10				
24		143.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15		
25	14.67	150.99	1.73	1.73	18.23	11.40	SS	UP3	8.5	LAVENDER				10	SPSR2-10				
26		158.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16		
27	14.83	165.82	2.09	2.16	18.32	11.38	SS	UP3	9.5	GREY				11	SPSR2-10				
TOWER 1	170.66	170.66																	
28		171.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17		
29		175.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18		
30	17.50	183.32	2.28	2.39	18.04	11.36	SS	UP3	10	TURQUOISE				12	SPSR2-10				
31		190.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19		
32	14.67	197.99	2.27	2.16	17.60	11.38	SS	UP3	9.5	GREY				13	SPSR2-10				
33		205.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		
34	14.83	212.82	2.42	2.39	17.21	11.36	SS	UP3	10	TURQUOISE				14	SPSR2-10				
35		219.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21		
36	14.50	227.32	2.58	2.63	16.90	11.34	SS	UP3	10.5	TURQUOISE				15	SPSR2-10				
37		234.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22		
38	14.67	241.99	2.77	2.89	16.65	11.31	SS	UP3	11	YELLOW				16	SPSR2-10				
39		249.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23		
40	14.83	256.82	2.93	2.89	16.46	11.31	SS	UP3	11	YELLOW				17	SPSR2-10				
41		263.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24		
42	14.50	271.32	3.08	3.15	16.35	11.28	SS	UP3	11.5	YELLOW				18	SPSR2-10				
43		278.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25		
44	14.67	285.99	3.28	3.16	16.29	11.28	SS	UP3	11.5	YELLOW				19	SPSR2-10				
45		293.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26		
46	14.83	300.82	3.43	3.44	16.31	11.26	SS	UP3	12	RED				20	SPSR2-10				
47		307.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27		

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE				SPRK NO.	REG SIZE	PLUG NO.
48	14.50	315.32	3.57	3.44	16.39	11.26	SS	UP3	12	RED	21	SPSR2-10	28
49		322.65	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	
50	14.67	329.99	3.78	3.73	16.53	11.23	SS	UP3	12.5	RED	22	SPSR2-10	
51		337.32	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	29
52	14.83	344.82	3.32	3.44	16.62	11.26	SS	UP3	12	RED	23	SPSR2-10	
TOWER 2	179.00	349.66											30
53		350.65	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	
54	10.00	354.82	2.41	2.39	16.53	11.36	SS	UP3	10	TURQUOISE	24	SPSR2-10	
55	7.50	362.32	2.09	2.16	16.36	11.38	SS	UP3	9.5	GREY	25	SPSR2-10	
56	7.33	369.65	2.11	2.16	16.14	11.38	SS	UP3	9.5	GREY	26	SPSR2-10	
57	7.34	376.99	2.15	2.16	15.93	11.38	SS	UP3	9.5	GREY	27	SPSR2-10	
58	7.33	384.32	2.21	2.16	15.74	11.38	SS	UP3	9.5	GREY	28	SPSR2-10	
59	7.50	391.82	2.21	2.16	15.56	11.38	SS	UP3	9.5	GREY	29	SPSR2-10	
60	7.00	398.82	2.25	2.16	15.41	11.38	SS	UP3	9.5	GREY	30	SPSR2-10	
61	7.50	406.32	2.34	2.39	15.27	11.36	SS	UP3	10	TURQUOISE	31	SPSR2-10	
62	7.33	413.65	2.36	2.39	15.14	11.36	SS	UP3	10	TURQUOISE	32	SPSR2-10	
63	7.34	420.99	2.40	2.39	15.03	11.36	SS	UP3	10	TURQUOISE	33	SPSR2-10	
64	7.33	428.32	2.47	2.39	14.94	11.36	SS	UP3	10	TURQUOISE	34	SPSR2-10	
65	7.50	435.82	2.46	2.39	14.86	11.36	SS	UP3	10	TURQUOISE	35	SPSR2-10	
66	7.00	442.82	2.50	2.39	14.81	11.36	SS	UP3	10	TURQUOISE	36	SPSR2-10	
67	7.50	450.32	2.60	2.63	14.77	11.34	SS	UP3	10.5	TURQUOISE	37	SPSR2-10	
68	7.33	457.65	2.61	2.63	14.74	11.34	SS	UP3	10.5	TURQUOISE	38	SPSR2-10	
69	7.34	464.99	2.65	2.63	14.73	11.34	SS	UP3	10.5	TURQUOISE	39	SPSR2-10	
70	7.33	472.32	2.72	2.63	14.74	11.34	SS	UP3	10.5	TURQUOISE	40	SPSR2-10	
71	7.50	479.82	2.70	2.63	14.77	11.34	SS	UP3	10.5	TURQUOISE	41	SPSR2-10	
72	7.00	486.82	2.75	2.63	14.81	11.34	SS	UP3	10.5	TURQUOISE	42	SPSR2-10	
73	7.50	494.32	2.85	2.89	14.87	11.31	SS	UP3	11	YELLOW	43	SPSR2-10	
74	7.33	501.65	2.86	2.89	14.94	11.31	SS	UP3	11	YELLOW	44	SPSR2-10	
75	7.34	508.99	2.90	2.89	15.03	11.31	SS	UP3	11	YELLOW	45	SPSR2-10	
76	7.33	516.32	2.98	2.89	15.14	11.31	SS	UP3	11	YELLOW	46	SPSR2-10	
77	7.50	523.82	3.57	3.44	15.15	11.26	SS	UP3	12	RED	47	SPSR2-10	
TOWER 3	179.00	528.66											31
78		529.65	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	
79	10.00	533.82	3.63	3.73	15.07	11.23	SS	UP3	12.5	RED	48	SPSR2-10	
80	7.50	541.32	3.12	3.15	14.91	11.28	SS	UP3	11.5	YELLOW	49	SPSR2-10	
81	7.33	548.65	3.13	3.15	14.70	11.28	SS	UP3	11.5	YELLOW	50	SPSR2-10	
82	7.34	555.99	3.17	3.15	14.50	11.28	SS	UP3	11.5	YELLOW	51	SPSR2-10	
83	7.33	563.32	3.25	3.16	14.32	11.28	SS	UP3	11.5	YELLOW	52	SPSR2-10	
84	7.50	570.82	3.22	3.16	14.16	11.28	SS	UP3	11.5	YELLOW	53	SPSR2-10	
85	7.00	577.82	3.26	3.16	14.02	11.28	SS	UP3	11.5	YELLOW	54	SPSR2-10	
86	7.50	585.32	3.38	3.44	13.89	11.26	SS	UP3	12	RED	55	SPSR2-10	
87	7.33	592.65	3.38	3.44	13.77	11.26	SS	UP3	12	RED	56	SPSR2-10	
88	7.34	599.99	3.43	3.44	13.68	11.26	SS	UP3	12	RED	57	SPSR2-10	
89	7.33	607.32	3.51	3.44	13.60	11.26	SS	UP3	12	RED	58	SPSR2-10	
90	7.50	614.82	3.47	3.44	13.54	11.26	SS	UP3	12	RED	59	SPSR2-10	
91	7.00	621.82	3.51	3.44	13.49	11.26	SS	UP3	12	RED	60	SPSR2-10	
92	7.50	629.32	3.63	3.73	13.46	11.23	SS	UP3	12.5	RED	61	SPSR2-10	
93	7.33	636.65	3.63	3.73	13.45	11.23	SS	UP3	12.5	RED	62	SPSR2-10	

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE				SPRK NO.	REG SIZE	PLUG NO.
94	7.34	643.99	3.68	3.73	13.46	11.23	SS	UP3	12.5	RED	63	SPSR2-10	
95	7.33	651.32	3.76	3.73	13.48	11.23	SS	UP3	12.5	RED	64	SPSR2-10	
96	7.50	658.82	3.72	3.73	13.52	11.23	SS	UP3	12.5	RED	65	SPSR2-10	
97	7.00	665.82	3.76	3.73	13.57	11.23	SS	UP3	12.5	RED	66	SPSR2-10	
98	7.50	673.32	3.89	4.03	13.65	11.20	SS	UP3	13	WHITE	67	SPSR2-10	
99	7.33	680.65	3.88	4.03	13.73	11.20	SS	UP3	13	WHITE	68	SPSR2-10	
100	7.34	687.99	3.92	4.03	13.84	11.20	SS	UP3	13	WHITE	69	SPSR2-10	
101	7.33	695.32	4.01	4.03	13.96	11.20	SS	UP3	13	WHITE	70	SPSR2-10	
102	7.50	702.82	4.79	4.66	13.98	11.13	SS	UP3	14	BLUE	71	SPSR2-10	
TOWER 4	179.00	707.66											
103		708.65	-	-	-	-	-	-	-	-	-	-	32
104	10.00	712.82	4.85	4.99	13.93	11.10	SS	UP3	14.5	BLUE	72	SPSR2-10	
105	7.50	720.32	4.15	4.03	13.78	11.20	SS	UP3	13	WHITE	73	SPSR2-10	
106	7.33	727.65	4.15	4.03	13.58	11.20	SS	UP3	13	WHITE	74	SPSR2-10	
107	7.34	734.99	4.19	4.34	13.40	11.17	SS	UP3	13.5	WHITE	75	SPSR2-10	
108	7.33	742.32	4.28	4.34	13.24	11.17	SS	UP3	13.5	WHITE	76	SPSR2-10	
109	7.50	749.82	4.23	4.34	13.09	11.17	SS	UP3	13.5	WHITE	77	SPSR2-10	
110	7.00	756.82	4.27	4.34	12.96	11.17	SS	UP3	13.5	WHITE	78	SPSR2-10	
111	7.50	764.32	4.40	4.34	12.84	11.17	SS	UP3	13.5	WHITE	79	SPSR2-10	
112	7.33	771.65	4.40	4.34	12.75	11.17	SS	UP3	13.5	WHITE	80	SPSR2-10	
113	7.34	778.99	4.44	4.34	12.67	11.17	SS	UP3	13.5	WHITE	81	SPSR2-10	
114	7.33	786.32	4.53	4.66	12.60	11.13	SS	UP3	14	BLUE	82	SPSR2-10	
115	7.50	793.82	4.47	4.34	12.56	11.17	SS	UP3	13.5	WHITE	83	SPSR2-10	
116	7.00	800.82	4.52	4.66	12.53	11.13	SS	UP3	14	BLUE	84	SPSR2-10	
117	7.50	808.32	4.66	4.66	12.51	11.13	SS	UP3	14	BLUE	85	SPSR2-10	
118	7.33	815.65	4.65	4.66	12.52	11.13	SS	UP3	14	BLUE	86	SPSR2-10	
119	7.34	822.99	4.69	4.66	12.54	11.13	SS	UP3	14	BLUE	87	SPSR2-10	
120	7.33	830.32	4.79	4.66	12.57	11.13	SS	UP3	14	BLUE	88	SPSR2-10	
121	7.50	837.82	4.72	4.66	12.63	11.13	SS	UP3	14	BLUE	89	SPSR2-10	
122	7.00	844.82	4.76	4.66	12.70	11.13	SS	UP3	14	BLUE	90	SPSR2-10	
123	7.50	852.32	4.92	4.99	12.79	11.10	SS	UP3	14.5	BLUE	91	SPSR2-10	
124	7.33	859.65	4.90	4.99	12.89	11.10	SS	UP3	14.5	BLUE	92	SPSR2-10	
125	7.34	866.99	4.94	4.99	13.01	11.10	SS	UP3	14.5	BLUE	93	SPSR2-10	
126	7.33	874.32	5.04	4.99	13.15	11.10	SS	UP3	14.5	BLUE	94	SPSR2-10	
127	7.50	881.82	6.00	6.04	13.18	10.91	SS	UP3	16	ORANGE	95	SPSR2-10	
TOWER 5	179.00	886.66											
128		887.65	-	-	-	-	-	-	-	-	-	-	33
129	10.00	891.82	6.06	6.04	13.15	10.91	SS	UP3	16	ORANGE	96	SPSR2-10	
130	7.50	899.32	5.18	5.34	13.02	11.04	SS	UP3	15	DK BROWN	97	SPSR2-10	
131	7.33	906.65	5.17	5.34	12.84	11.04	SS	UP3	15	DK BROWN	98	SPSR2-10	
132	7.34	913.99	5.21	5.34	12.67	11.04	SS	UP3	15	DK BROWN	99	SPSR2-10	
133	7.33	921.32	5.30	5.34	12.52	11.04	SS	UP3	15	DK BROWN	100	SPSR2-10	
134	7.50	928.82	5.23	5.34	12.39	11.04	SS	UP3	15	DK BROWN	101	SPSR2-10	
135	7.00	935.82	5.27	5.34	12.28	11.04	SS	UP3	15	DK BROWN	102	SPSR2-10	
136	7.50	943.32	5.43	5.34	12.18	11.04	SS	UP3	15	DK BROWN	103	SPSR2-10	
137	7.33	950.65	5.41	5.34	12.09	11.04	SS	UP3	15	DK BROWN	104	SPSR2-10	
138	7.34	957.99	5.45	5.34	12.03	11.04	SS	UP3	15	DK BROWN	105	SPSR2-10	
139	7.33	965.32	5.56	5.68	11.98	10.98	SS	UP3	15.5	DK BROWN	106	SPSR2-10	

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE				SPRK NO.	REG SIZE	PLUG NO.
140	7.50	972.82	5.47	5.34	11.95	11.04	SS	UP3	15	DK BROWN	107	SPSR2-10	
141	7.00	979.82	5.52	5.68	11.93	10.98	SS	UP3	15.5	DK BROWN	108	SPSR2-10	
142	7.50	987.32	5.68	5.68	11.93	10.98	SS	UP3	15.5	DK BROWN	109	SPSR2-10	
143	7.33	994.65	5.66	5.68	11.95	10.98	SS	UP3	15.5	DK BROWN	110	SPSR2-10	
144	7.34	1001.99	5.70	5.68	11.99	10.98	SS	UP3	15.5	DK BROWN	111	SPSR2-10	
145	7.33	1009.32	5.81	5.68	12.04	10.98	SS	UP3	15.5	DK BROWN	112	SPSR2-10	
146	7.50	1016.82	5.72	5.68	12.11	10.98	SS	UP3	15.5	DK BROWN	113	SPSR2-10	
147	7.00	1023.82	5.77	5.68	12.19	10.98	SS	UP3	15.5	DK BROWN	114	SPSR2-10	
148	7.50	1031.32	5.94	6.04	12.30	10.91	SS	UP3	16	ORANGE	115	SPSR2-10	
149	7.33	1038.65	5.92	6.04	12.42	10.91	SS	UP3	16	ORANGE	116	SPSR2-10	
150	7.34	1045.99	5.96	6.04	12.55	10.91	SS	UP3	16	ORANGE	117	SPSR2-10	
151	7.33	1053.32	6.06	6.04	12.70	10.91	SS	UP3	16	ORANGE	118	SPSR2-10	
152	7.50	1060.82	7.21	7.16	12.75	10.71	SS	UP3	17.5	DK GREEN	119	SPSR2-10	
TOWER 6	179.00	1065.66											
153		1066.65	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	34
154	10.00	1070.82	7.27	7.16	12.74	10.71	SS	UP3	17.5	DK GREEN	120	SPSR2-10	
155	7.50	1078.32	6.21	6.04	12.62	10.91	SS	UP3	16	ORANGE	121	SPSR2-10	
156	7.33	1085.65	6.19	6.04	12.45	10.91	SS	UP3	16	ORANGE	122	SPSR2-10	
157	7.34	1092.99	6.24	6.40	12.30	10.85	SS	UP3	16.5	ORANGE	123	SPSR2-10	
158	7.33	1100.32	6.34	6.41	12.17	10.85	SS	UP3	16.5	ORANGE	124	SPSR2-10	
159	7.50	1107.82	6.24	6.40	12.04	10.85	SS	UP3	16.5	ORANGE	125	SPSR2-10	
160	7.00	1114.82	6.27	6.40	11.95	10.85	SS	UP3	16.5	ORANGE	126	SPSR2-10	
161	7.50	1122.32	6.45	6.41	11.86	10.85	SS	UP3	16.5	ORANGE	127	SPSR2-10	
162	7.33	1129.65	6.43	6.41	11.79	10.85	SS	UP3	16.5	ORANGE	128	SPSR2-10	
163	7.34	1136.99	6.47	6.41	11.74	10.85	SS	UP3	16.5	ORANGE	129	SPSR2-10	
164	7.33	1144.32	6.59	6.41	11.70	10.85	SS	UP3	16.5	ORANGE	130	SPSR2-10	
165	7.50	1151.82	6.49	6.41	11.68	10.85	SS	UP3	16.5	ORANGE	131	SPSR2-10	
166	7.00	1158.82	6.54	6.41	11.68	10.85	SS	UP3	16.5	ORANGE	132	SPSR2-10	
167	7.50	1166.32	6.74	6.78	11.69	10.78	SS	UP3	17	DK GREEN	133	SPSR2-10	
168	7.33	1173.65	6.70	6.78	11.72	10.78	SS	UP3	17	DK GREEN	134	SPSR2-10	
169	7.34	1180.99	6.74	6.78	11.77	10.78	SS	UP3	17	DK GREEN	135	SPSR2-10	
170	7.33	1188.32	6.85	6.78	11.83	10.78	SS	UP3	17	DK GREEN	136	SPSR2-10	
171	7.50	1195.82	6.75	6.78	11.91	10.78	SS	UP3	17	DK GREEN	137	SPSR2-10	
172	7.00	1202.82	6.78	6.78	12.01	10.78	SS	UP3	17	DK GREEN	138	SPSR2-10	
173	7.50	1210.32	6.98	7.16	12.12	10.71	SS	UP3	17.5	DK GREEN	139	SPSR2-10	
174	7.33	1217.65	6.93	6.78	12.25	10.78	SS	UP3	17	DK GREEN	140	SPSR2-10	
175	7.34	1224.99	6.99	7.16	12.40	10.71	SS	UP3	17.5	DK GREEN	141	SPSR2-10	
176	7.33	1232.32	7.08	7.16	12.56	10.71	SS	UP3	17.5	DK GREEN	142	SPSR2-10	
177	7.50	1239.82	8.02	7.95	12.62	10.57	SS	UP3	18.5	PURPLE	143	SPSR2-10	
TOWER 7	179.00	1244.66											
PIPE ID CHANGES FROM 6.395 TO 5.369													
178	9.21	1249.03	8.09	7.95	12.61	10.57	SS	UP3	18.5	PURPLE	144	SPSR2-10	
179	7.50	1256.53	7.26	7.16	12.61	10.71	SS	UP3	17.5	DK GREEN	145	SPSR2-10	
180	7.33	1263.86	6.81	6.78	12.61	10.78	SS	UP3	17	DK GREEN	146	SPSR2-10	
181	6.42	1270.28	5.95	6.04	12.61	10.91	SS	UP3	16	ORANGE	147	SPSR2-10	
182	5.50	1275.78	6.02	6.04	12.61	10.91	SS	UP3	16	ORANGE	148	SPSR2-10	
OVERHANG	33.87	1278.53		39.68	ENDGUN	(1)	NELSON	R65i	#80	GREEN			

THERE IS NO BOOSTER PUMP
FRICTION LOSS THROUGH ENDGUN VALVE IS 0.52 PSI - ENDGUN PRESSURE IS 12.09 PSI

TOTAL GPM = 675.72
GPA = 5.39

MINIMUM RECOMMENDED REGULATOR INLET PRESSURE IS 15.00 PSI
WITH GRADUATED ELEVATION OF .00 FT THE INLET PRESSURE IS 15.24 PSI FOR SPRINKLER 144
THIS POSITION IS THE CLOSEST TO THE MINIMUM RECOMMENDED INLET PRESSURE

<u>HYDRAULICS SUMMARY</u>									
<u>TOWER</u> <u>NUMBER</u>	<u>ACRES</u> <u>UNDER</u> <u>SPAN</u>	<u>GPM</u> <u>NEED</u>	<u>ACTUAL</u> <u>GPM</u>	<u>PERCENT</u> <u>DEVIATION</u>	<u>GPM</u> <u>PER</u> <u>ACRE</u>	<u>AVERAGE</u> <u>IN. PER HR</u> <u>DELIVERED</u> <u>UNDER SPAN</u>	<u>AVERAGE IN. DELIVERED</u> <u>FOR</u> <u>REVOLUTION TIME</u> <u>36 HR</u>	<u>48 HR</u>	<u>60 HR</u>
1	2.10	11.32	11.58	2%	5.51	0.012	0.44	0.58	0.73
2	6.72	36.21	35.84	-1%	5.34	0.012	0.42	0.57	0.71
3	11.34	61.12	60.76	-1%	5.36	0.012	0.43	0.57	0.71
4	15.96	86.03	86.44	0%	5.42	0.012	0.43	0.57	0.72
5	20.58	110.94	111.02	0%	5.39	0.012	0.43	0.57	0.72
6	25.20	135.85	136.14	0%	5.40	0.012	0.43	0.57	0.72
7	29.83	160.76	160.50	0%	5.38	0.012	0.43	0.57	0.71
OVERHANG	6.16	33.22	33.76	2%	5.48	0.012	0.44	0.58	0.73
ENDGUN	6.01	39.57	39.68	22%	6.60				
TOTAL	123.90	675.00	675.72		5.45				

SUMMARY OF SPRINKLERS

2 SS UP3 4 LT BLUE
1 SS UP3 4.5 LT BLUE
1 SS UP3 5.5 BEIGE
1 SS UP3 6.5 GOLD
2 SS UP3 7 LIME
1 SS UP3 7.5 LIME
1 SS UP3 8 LAVENDER
1 SS UP3 8.5 LAVENDER
8 SS UP3 9.5 GREY
9 SS UP3 10 TURQUOISE
7 SS UP3 10.5 TURQUOISE
6 SS UP3 11 YELLOW
8 SS UP3 11.5 YELLOW
10 SS UP3 12 RED
8 SS UP3 12.5 RED
6 SS UP3 13 WHITE
8 SS UP3 13.5 WHITE
9 SS UP3 14 BLUE
5 SS UP3 14.5 BLUE
10 SS UP3 15 DK BROWN
8 SS UP3 15.5 DK BROWN
10 SS UP3 16 ORANGE
10 SS UP3 16.5 ORANGE
8 SS UP3 17 DK GREEN
6 SS UP3 17.5 DK GREEN
2 SS UP3 18.5 PURPLE

34 PLUGS**SUMMARY OF REGULATORS**

148 Senn PSR2 10 psi

TOTAL OF 148 REGULATORS

NOZZLE POSITION CHART

SS UP3 4 LT BLUE	1, 2
SS UP3 4.5 LT BLUE	3
SS UP3 5.5 BEIGE	4
SS UP3 6.5 GOLD	5
SS UP3 7 LIME	6, 7
SS UP3 7.5 LIME	8
SS UP3 8 LAVENDER	9
SS UP3 8.5 LAVENDER	10
SS UP3 9.5 GREY	11, 13, 25, 26, 27, 28, 29, 30
SS UP3 10 TURQUOISE	12, 14, 24, 31, 32, 33, 34, 35, 36
SS UP3 10.5 TURQUOISE	15, 37, 38, 39, 40, 41, 42
SS UP3 11 YELLOW	16, 17, 43, 44, 45, 46
SS UP3 11.5 YELLOW	18, 19, 49, 50, 51, 52, 53, 54
SS UP3 12 RED	20, 21, 23, 47, 55, 56, 57, 58, 59, 60
SS UP3 12.5 RED	22, 48, 61, 62, 63, 64, 65, 66
SS UP3 13 WHITE	67, 68, 69, 70, 73, 74
SS UP3 13.5 WHITE	75, 76, 77, 78, 79, 80, 81, 83
SS UP3 14 BLUE	71, 82, 84, 85, 86, 87, 88, 89, 90
SS UP3 14.5 BLUE	72, 91, 92, 93, 94
SS UP3 15 DK BROWN	97, 98, 99, 100, 101, 102, 103, 104, 105, 107
SS UP3 15.5 DK BROWN	106, 108, 109, 110, 111, 112, 113, 114
SS UP3 16 ORANGE	95, 96, 115, 116, 117, 118, 121, 122, 147, 148
SS UP3 16.5 ORANGE	123, 124, 125, 126, 127, 128, 129, 130, 131, 132
SS UP3 17 DK GREEN	133, 134, 135, 136, 137, 138, 140, 146
SS UP3 17.5 DK GREEN	119, 120, 139, 141, 142, 145
SS UP3 18.5 PURPLE	143, 144

WATER WORKS IRRIGATION INC.

6217 CRAMER RD
ALAMOSA, COLORADO 81101

SEPTEMBER 29, 2025
WISH-119629
HAUGEN

LINDSAY 8500 - 90
SENNINGER UP3 SUPER SPRAYS
SENNINGER 10 PSI REGULATORS
.75 I.D. PREMIUM RED FLEXIBLE HOSE
NELSON R65i #80 GREEN

Rotation time at 100% = 15.70 Hours Or 942 minutes

675 GPM @ 20 PSI

Installation Chart

Page 1

Out #	Drop Len	Sprk #	Noz Size	Reg	Out #	Drop Len	Sprk #	Noz Size	Reg	Out #	Drop Len	Sprk #	Noz Size	Reg	Out #	Drop Len	Sprk #	Noz Size	Reg
1	PLUG				7		29	9.5	PSR210	15		85	14	PSR210	23		141	17.5	PSR210
2	PLUG				8		30	9.5	PSR210	16		86	14	PSR210	24		142	17.5	PSR210
3		1	4	PSR210	9		31	10	PSR210	17		87	14	PSR210	25		143	18.5	PSR210
4	PLUG				10		32	10	PSR210	18		88	14	PSR210		TOWER 7			
5		2	4	PSR210	11		33	10	PSR210	19		89	14	PSR210	1		144	18.5	PSR210
6	PLUG				12		34	10	PSR210	20		90	14	PSR210	2		145	17.5	PSR210
7		3	4.5	PSR210	13		35	10	PSR210	21		91	14.5	PSR210	3		146	17	PSR210
8	PLUG				14		36	10	PSR210	22		92	14.5	PSR210	4		147	16	PSR210
9		4	5.5	PSR210	15		37	10.5	PSR210	23		93	14.5	PSR210	5		148	16	PSR210
10	PLUG				16		38	10.5	PSR210	24		94	14.5	PSR210					
11	PLUG				17		39	10.5	PSR210	25		95	16	PSR210					
12	PLUG				18		40	10.5	PSR210		TOWER 5 PLUG								
13		5	6.5	PSR210	19		41	10.5	PSR210	1									
14	PLUG				20		42	10.5	PSR210	2		96	16	PSR210					
15	PLUG				21		43	11	PSR210	3		97	15	PSR210					
16	PLUG				22		44	11	PSR210	4		98	15	PSR210					
17		6	7	PSR210	23		45	11	PSR210	5		99	15	PSR210					
18	PLUG				24		46	11	PSR210	6		100	15	PSR210					
19		7	7	PSR210	25		47	12	PSR210	7		101	15	PSR210					
20	PLUG					TOWER 3 PLUG				8		102	15	PSR210					
21		8	7.5	PSR210	1					9		103	15	PSR210					
22	PLUG				2		48	12.5	PSR210	10		104	15	PSR210					
23		9	8	PSR210	3		49	11.5	PSR210	11		105	15	PSR210					
24	PLUG				4		50	11.5	PSR210	12		106	15.5	PSR210					
25		10	8.5	PSR210	5		51	11.5	PSR210	13		107	15	PSR210					
26	PLUG				6		52	11.5	PSR210	14		108	15.5	PSR210					
27		11	9.5	PSR210	7		53	11.5	PSR210	15		109	15.5	PSR210					
	TOWER 1				8		54	11.5	PSR210	16		110	15.5	PSR210					
1					9		55	12	PSR210	17		111	15.5	PSR210					
2					10		56	12	PSR210	18		112	15.5	PSR210					
3		12	10	PSR210	11		57	12	PSR210	19		113	15.5	PSR210					
4					12		58	12	PSR210	20		114	15.5	PSR210					
5		13	9.5	PSR210	13		59	12	PSR210	21		115	16	PSR210					
6	PLUG				14		60	12	PSR210	22		116	16	PSR210					
7		14	10	PSR210	15		61	12.5	PSR210	23		117	16	PSR210					
8	PLUG				16		62	12.5	PSR210	24		118	16	PSR210					
9		15	10.5	PSR210	17		63	12.5	PSR210	25		119	17.5	PSR210					
10	PLUG				18		64	12.5	PSR210		TOWER 6 PLUG								
11		16	11	PSR210	19		65	12.5	PSR210	1									
12	PLUG				20		66	12.5	PSR210	2		120	17.5	PSR210					
13		17	11	PSR210	21		67	13	PSR210	3		121	16	PSR210					
14	PLUG				22		68	13	PSR210	4		122	16	PSR210					
15		18	11.5	PSR210	23		69	13	PSR210	5		123	16.5	PSR210					
16	PLUG				24		70	13	PSR210	6		124	16.5	PSR210					
17		19	11.5	PSR210	25		71	14	PSR210	7		125	16.5	PSR210					
18	PLUG					TOWER 4 PLUG				8		126	16.5	PSR210					
19		20	12	PSR210	1					9		127	16.5	PSR210					
20	PLUG				2		72	14.5	PSR210	10		128	16.5	PSR210					
21		21	12	PSR210	3		73	13	PSR210	11		129	16.5	PSR210					
22	PLUG				4		74	13	PSR210	12		130	16.5	PSR210					
23		22	12.5	PSR210	5		75	13.5	PSR210	13		131	16.5	PSR210					
24	PLUG				6		76	13.5	PSR210	14		132	16.5	PSR210					
25		23	12	PSR210	7		77	13.5	PSR210	15		133	17	PSR210					
	TOWER 2				8		78	13.5	PSR210	16		134	17	PSR210					
1					9		79	13.5	PSR210	17		135	17	PSR210					
2		24	10	PSR210	10		80	13.5	PSR210	18		136	17	PSR210					
3		25	9.5	PSR210	11		81	13.5	PSR210	19		137	17	PSR210					
4		26	9.5	PSR210	12		82	14	PSR210	20		138	17	PSR210					
5		27	9.5	PSR210	13		83	13.5	PSR210	21		139	17.5	PSR210					
6		28	9.5	PSR210	14		84	14	PSR210	22		140	17	PSR210					

PRECIPITATION CHART FOR FULL CIRCLE

WISH-119629

SEPTEMBER 29, 2025

DEALER - WATER WORKS IRRIGATION INC.

IRRIGATOR - HAUGEN

TOTAL LENGTH PIPE = 1278.53 SYSTEM PRESSURE = 20 PSI
GPM UNDER PIPE = 636.04 TOTAL GPM = 675.72
ACRES UNDER PIPE = 117.89
RANGE OF ENDGUN = 32.20 RUN FOR MINIMUM PRESSURE
GPM OF ENDGUN = 39.68
ACRES UNDER ENDGUN = 6.01
WATERING LENGTH = 1310.73

MOTOR SIZE (HP) = 3/4
LOADED MOTOR RPM = 1750
CENTER GEAR BOX RATIO = 40
WHEEL GEAR BOX RATIO = 50
TIRE SIZE = 11.2 X 24
LAST TOWER SPEED (FPM) = 8.30

PRECIPITATION DATA FIGURED WITH ENDGUN RUNNING

PRECIPITATION BASED			% TIMER BASED		
PRECIPITATION INCHES	% TIMER SETTING	TIME HOURS	% TIMER SETTING	PRECIPITATION INCHES	TIME HOURS
.19	100.00	15.70 - 942(min)	100.00	.19	15.70 - 942(min)
.20	93.60	16.78	90.00	.21	17.45
.25	74.88	20.97	80.00	.23	19.63
.30	62.40	25.17	70.00	.27	22.43
.40	46.80	33.55	60.00	.31	26.17
.50	37.44	41.94	50.00	.37	31.41
.60	31.20	50.33	45.00	.42	34.90
.70	26.74	58.72	40.00	.47	39.26
.75	24.96	62.91	35.00	.53	44.87
.80	23.40	67.11	30.00	.62	52.35
.90	20.80	75.50	25.00	.75	62.81
1.00	18.72	83.89	20.00	.94	78.52
1.25	14.98	104.86	15.00	1.25	104.69
1.50	12.48	125.83	10.00	1.87	157.04
1.75	10.70	146.80	5.00	3.74	314.07

CAUTION: The relationship between precipitation rate, timer setting, and hours per revolution provided above are theoretical numbers based on the data list at the top of the page. Actual precipitation rates may vary due to the following field and machine conditions: wind drift; evaporation; tire slippage, tire loaded radius; drive train efficiency; elevation changes; soil type. Due to these varying field and machine conditions the above chart should be used as a guide only.