

FREY PIVOT SERVICE

SEPTEMBER 30, 2025

WISH-119640

CUSTOMER : ROBBI SMITH

LINDSAY 9500 - 30
11 TOWER - 1928.63 FT
SYSTEM 1200 GPM @ 31 PSI

LEGAL : JOHANSON 2
P.O. NO. : S/N LB5565

SENNINGER UP3 XCEL TOP
SENNINGER 10 PSI REGULATORS
NELSON SR-100 .75 TB
ELEVATION 0 FT UP, 12 FT DOWN

77 COUNTY ROAD 40
STAPLETON, NEBRASKA 69163
(308)636-2327

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.

DEALER
FREY PIVOT SERVICE
77 COUNTY ROAD 40
STAPLETON, NEBRASKA 69163

IRRIGATOR
ROBBI SMITH
JOHANSON 2
S/N LB5565

TOTAL TARGET GPM	1200.00	FRICTION FACTOR USED	138	SPANS	LENGTH	PIPE I.D.
TOP OF PIVOT PRESSURE	31.00	TOTAL LENGTH	1928.63	1	181.60	7.782
ENDGUN TARGET GPM	122.81	NUMBER OF TOWERS	11	6	179.00	7.782
NUMBER OF OUTLETS	785	NUMBER OF SPRINKLERS	189	4	157.04	6.395
				OH	44.87	5.369
SENNINGER UP3 XCEL TOP						
SENNINGER PSR-2 10 PSI SERIES REGULATORS						
ELEVATION IS 0 FT UP AND 12 FT DOWN						

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. 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.

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.
49		120.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
50		122.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43
51		125.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
52	14.68	127.69	1.08	1.00	28.78	11.40	XCEL	TOP	UP3	6.5	GOLD						8	SPSR2-10	
53		130.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45
54		132.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46
55		135.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47
56		137.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48
57		139.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49
58	14.64	142.33	1.21	1.16	28.80	11.40	XCEL	TOP	UP3	7	LIME						9	SPSR2-10	
59		144.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50
60		147.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51
61		149.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52
62		152.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
63		154.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54
64	14.68	157.01	1.33	1.35	28.90	11.40	XCEL	TOP	UP3	7.5	LIME						10	SPSR2-10	
65		159.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55
66		161.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56
67		164.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57
68		166.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58
69		169.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59
70	14.68	171.69	1.36	1.35	29.05	11.40	XCEL	TOP	UP3	7.5	LIME						11	SPSR2-10	
71		174.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
72		176.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
73		179.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62
TOWER 1	181.60	181.60																	
74		181.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63
75	12.81	184.50	1.33	1.35	28.91	11.40	XCEL	TOP	UP3	7.5	LIME						12	SPSR2-10	
76		186.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64
77		189.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
78		191.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
79		194.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67
80	12.17	196.67	1.39	1.35	28.61	11.40	XCEL	TOP	UP3	7.5	LIME						13	SPSR2-10	
81		199.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68
82		201.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69
83		204.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
84		206.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71
85	12.26	208.93	1.48	1.53	28.23	11.40	XCEL	TOP	UP3	8	LAVENDER						14	SPSR2-10	
86		211.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72
87		213.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73
88		216.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74
89		218.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
90	12.26	221.19	1.56	1.53	27.89	11.40	XCEL	TOP	UP3	8	LAVENDER						15	SPSR2-10	
91		223.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76
92		226.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
93		228.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78
94		230.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79
95	12.14	233.33	1.65	1.73	27.60	11.40	XCEL	TOP	UP3	8.5	LAVENDER						16	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.
144	12.34	353.19	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	119
145		355.69	2.57	2.63	27.03	11.34	XCEL	TOP	UP3	10.5	TURQ		26	SPSR2-10	
146		358.02	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	120
TOWER 2	179.00	360.60													
147	12.64	360.92	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	121
148		363.50	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	122
149		365.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	123
150	12.26	368.33	2.65	2.63	26.89	11.34	XCEL	TOP	UP3	10.5	TURQ		27	SPSR2-10	
151		370.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	124
152		373.25	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	125
153	12.26	375.67	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	126
154		378.17	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	127
155		380.59	2.70	2.63	26.49	11.34	XCEL	TOP	UP3	10.5	TURQ		28	SPSR2-10	
156	12.26	383.01	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	128
157		385.51	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	129
158		387.93	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	130
159	12.26	390.35	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	131
160		392.85	2.77	2.89	26.13	11.31	XCEL	TOP	UP3	11	YELLOW		29	SPSR2-10	
161		395.27	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	132
162	12.17	397.69	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	133
163		400.19	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	134
164		402.69	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	135
165	12.23	405.02	2.86	2.89	25.82	11.31	XCEL	TOP	UP3	11	YELLOW		30	SPSR2-10	
166		407.50	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	136
167		409.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	137
168	12.26	412.33	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	138
169		414.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	139
170		417.25	2.95	2.89	25.55	11.31	XCEL	TOP	UP3	11	YELLOW		31	SPSR2-10	
171	12.26	419.67	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	140
172		422.17	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	141
173		424.59	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	142
174	12.18	427.01	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	143
175		429.51	3.03	3.15	25.33	11.28	XCEL	TOP	UP3	11.5	YELLOW		32	SPSR2-10	
176		431.93	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	144
177	12.14	434.35	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	145
178		436.85	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	146
179		439.27	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	147
180	12.34	441.69	3.11	3.15	25.15	11.28	XCEL	TOP	UP3	11.5	YELLOW		33	SPSR2-10	
181		444.19	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	148
182		446.69	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	149
183	12.14	449.02	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	150
184		451.50	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	151
185		453.83	3.21	3.15	25.02	11.28	XCEL	TOP	UP3	11.5	YELLOW		34	SPSR2-10	
186	12.34	456.33	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	152
187		458.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	153
188		461.25	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	154
189	12.34	463.67	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	155
190		466.17	3.30	3.44	24.93	11.26	XCEL	TOP	UP3	12	RED		35	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.
286		701.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229
287		703.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230
288	9.76	706.27	3.98	4.03	23.48	11.20	XCEL	TOP	UP3	13	WHITE						58	SPSR2-10	
289		708.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231
290		711.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232
291		713.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233
292	9.75	716.02	4.15	4.03	23.46	11.20	XCEL	TOP	UP3	13	WHITE						59	SPSR2-10	
TOWER 4	179.00	718.60																	
293		718.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	234
294		721.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235
295		723.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	236
296	10.31	726.33	4.23	4.34	23.36	11.17	XCEL	TOP	UP3	13.5	WHITE						60	SPSR2-10	
297		728.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	237
298		731.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238
299		733.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239
300	9.84	736.17	4.17	4.03	23.06	11.20	XCEL	TOP	UP3	13	WHITE						61	SPSR2-10	
301		738.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240
302		741.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241
303		743.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	242
304	9.76	745.93	4.21	4.34	22.78	11.17	XCEL	TOP	UP3	13.5	WHITE						62	SPSR2-10	
305		748.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	243
306		750.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	244
307		753.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245
308	9.76	755.69	4.27	4.34	22.53	11.17	XCEL	TOP	UP3	13.5	WHITE						63	SPSR2-10	
309		758.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246
310		760.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247
311		763.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248
312	9.81	765.50	4.33	4.34	22.31	11.17	XCEL	TOP	UP3	13.5	WHITE						64	SPSR2-10	
313		767.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	249
314		770.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250
315		772.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	251
316	9.75	775.25	4.37	4.34	22.12	11.17	XCEL	TOP	UP3	13.5	WHITE						65	SPSR2-10	
317		777.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	252
318		780.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	253
319		782.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254
320	9.76	785.01	4.45	4.34	21.96	11.17	XCEL	TOP	UP3	13.5	WHITE						66	SPSR2-10	
321		787.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255
322		789.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256
323		792.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	257
324	9.84	794.85	4.52	4.66	21.82	11.13	XCEL	TOP	UP3	14	BLUE						67	SPSR2-10	
325		797.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	258
326		799.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	259
327		802.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260
328	9.84	804.69	4.53	4.66	21.72	11.13	XCEL	TOP	UP3	14	BLUE						68	SPSR2-10	
329		807.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	261
330		809.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262
331		811.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	263
332	9.64	814.33	4.58	4.66	21.65	11.13	XCEL	TOP	UP3	14	BLUE						69	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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
333		816.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.
428	9.76	1049.59	5.92	6.04	20.51	10.91	XCEL	TOP	UP3	16	ORANGE		93	SPSR2-10					
429		1052.01	-	-	-	-	-	-	-	-	-	-	-	-	336				
430		1054.51	-	-	-	-	-	-	-	-	-	-	-	-	337				
431		1056.93	-	-	-	-	-	-	-	-	-	-	-	-	338				
432	9.76	1059.35	6.00	6.04	20.65	10.91	XCEL	TOP	UP3	16	ORANGE		94	SPSR2-10					
433		1061.85	-	-	-	-	-	-	-	-	-	-	-	-	339				
434		1064.27	-	-	-	-	-	-	-	-	-	-	-	-	340				
435		1066.69	-	-	-	-	-	-	-	-	-	-	-	-	341				
436	9.84	1069.19	6.22	6.40	20.76	10.85	XCEL	TOP	UP3	16.5	ORANGE		95	SPSR2-10					
437		1071.69	-	-	-	-	-	-	-	-	-	-	-	-	342				
438		1074.02	-	-	-	-	-	-	-	-	-	-	-	-	343				
TOWER 6	179.00	1076.60																	
439		1076.92	-	-	-	-	-	-	-	-	-	-	-	-	344				
440	10.31	1079.50	6.25	6.40	20.70	10.85	XCEL	TOP	UP3	16.5	ORANGE		96	SPSR2-10					
441		1081.83	-	-	-	-	-	-	-	-	-	-	-	-	345				
442		1084.33	-	-	-	-	-	-	-	-	-	-	-	-	346				
443		1086.83	-	-	-	-	-	-	-	-	-	-	-	-	347				
444	9.75	1089.25	6.14	6.04	20.53	10.91	XCEL	TOP	UP3	16	ORANGE		97	SPSR2-10					
445		1091.67	-	-	-	-	-	-	-	-	-	-	-	-	348				
446		1094.17	-	-	-	-	-	-	-	-	-	-	-	-	349				
447		1096.59	-	-	-	-	-	-	-	-	-	-	-	-	350				
448	9.76	1099.01	6.22	6.04	20.26	10.91	XCEL	TOP	UP3	16	ORANGE		98	SPSR2-10					
449		1101.51	-	-	-	-	-	-	-	-	-	-	-	-	351				
450		1103.93	-	-	-	-	-	-	-	-	-	-	-	-	352				
451		1106.35	-	-	-	-	-	-	-	-	-	-	-	-	353				
452	9.84	1108.85	6.30	6.40	20.02	10.85	XCEL	TOP	UP3	16.5	ORANGE		99	SPSR2-10					
453		1111.27	-	-	-	-	-	-	-	-	-	-	-	-	354				
454		1113.69	-	-	-	-	-	-	-	-	-	-	-	-	355				
455		1116.19	-	-	-	-	-	-	-	-	-	-	-	-	356				
456	9.84	1118.69	6.29	6.40	19.81	10.85	XCEL	TOP	UP3	16.5	ORANGE		100	SPSR2-10					
457		1121.02	-	-	-	-	-	-	-	-	-	-	-	-	357				
458		1123.50	-	-	-	-	-	-	-	-	-	-	-	-	358				
459		1125.83	-	-	-	-	-	-	-	-	-	-	-	-	359				
460	9.64	1128.33	6.35	6.41	19.63	10.85	XCEL	TOP	UP3	16.5	ORANGE		101	SPSR2-10					
461		1130.83	-	-	-	-	-	-	-	-	-	-	-	-	360				
462		1133.25	-	-	-	-	-	-	-	-	-	-	-	-	361				
463		1135.67	-	-	-	-	-	-	-	-	-	-	-	-	362				
464	9.84	1138.17	6.44	6.41	19.48	10.85	XCEL	TOP	UP3	16.5	ORANGE		102	SPSR2-10					
465		1140.59	-	-	-	-	-	-	-	-	-	-	-	-	363				
466		1143.01	-	-	-	-	-	-	-	-	-	-	-	-	364				
467		1145.51	-	-	-	-	-	-	-	-	-	-	-	-	365				
468	9.76	1147.93	6.47	6.41	19.36	10.85	XCEL	TOP	UP3	16.5	ORANGE		103	SPSR2-10					
469		1150.35	-	-	-	-	-	-	-	-	-	-	-	-	366				
470		1152.85	-	-	-	-	-	-	-	-	-	-	-	-	367				
471		1155.27	-	-	-	-	-	-	-	-	-	-	-	-	368				
472	9.76	1157.69	6.54	6.41	19.27	10.85	XCEL	TOP	UP3	16.5	ORANGE		104	SPSR2-10					
473		1160.19	-	-	-	-	-	-	-	-	-	-	-	-	369				
474		1162.69	-	-	-	-	-	-	-	-	-	-	-	-	370				

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.
475	9.81	1165.02	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	371
476		1167.50	6.60	6.78	19.21	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	105	SPSR2-10	
477		1169.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	372
478		1172.33	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	373
479		1174.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	374
480	9.75	1177.25	6.63	6.78	19.18	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	106	SPSR2-10	
481		1179.67	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	375
482		1182.17	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	376
483		1184.59	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	377
484		1187.01	6.72	6.78	19.18	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	107	SPSR2-10	
485	9.76	1189.51	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	378
486		1191.93	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	379
487		1194.35	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	380
488		1196.85	6.80	6.78	19.21	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	108	SPSR2-10	
489		1199.27	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	381
490	9.84	1201.69	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	382
491		1204.19	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	383
492		1206.69	6.79	6.78	19.26	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	109	SPSR2-10	
493		1209.02	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	384
494		1211.50	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	385
495	9.64	1213.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	386
496		1216.33	6.84	6.78	19.35	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	110	SPSR2-10	
497		1218.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	387
498		1221.25	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	388
499		1223.67	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	389
500	9.84	1226.17	6.94	6.78	19.47	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	111	SPSR2-10	
501		1228.59	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	390
502		1231.01	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	391
503		1233.51	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	392
504		1235.93	6.97	6.78	19.61	10.78	XCEL	TOP	UP3	17	DK	GREEN	- - - -	112	SPSR2-10	
505	9.76	1238.35	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	393
506		1240.85	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	394
507		1243.27	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	395
508		1245.69	7.19	7.16	19.79	10.71	XCEL	TOP	UP3	17.5	DK	GREEN	- - - -	113	SPSR2-10	
509		1248.19	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	396
510	179.00	1250.69	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	397
511		1253.02	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	398
TOWER 7		1255.60	PIPE ID CHANGES FROM 7.782 TO 6.395													
512	10.23	1255.92	7.31	7.16	19.66	10.71	XCEL	TOP	UP3	17.5	DK	GREEN	- - - -	114	SPSR2-10	
513		1258.50	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	399
514		1260.83	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	400
515		1263.33	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	401
516		1265.83	7.19	7.16	19.46	10.71	XCEL	TOP	UP3	17.5	DK	GREEN	- - - -	115	SPSR2-10	
517	9.91	1268.25	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	402
518		1270.67	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	403
519		1273.17	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	404
520		1275.59	7.20	7.16	19.10	10.71	XCEL	TOP	UP3	17.5	DK	GREEN	- - - -	116	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.
521		1278.01	-	-	-	-	-	-	-	-	-	-	-	-	-	405
522		1280.51	-	-	-	-	-	-	-	-	-	-	-	-	-	406
523		1282.93	-	-	-	-	-	-	-	-	-	-	-	-	-	407
524	9.76	1285.35	7.28	7.16	18.79	10.71	XCEL	TOP	UP3	17.5	DK	GREEN		117	SPSR2-10	
525		1287.85	-	-	-	-	-	-	-	-	-	-	-	-	-	408
526		1290.27	-	-	-	-	-	-	-	-	-	-	-	-	-	409
527		1292.69	-	-	-	-	-	-	-	-	-	-	-	-	-	410
528	9.84	1295.19	7.30	7.16	18.51	10.71	XCEL	TOP	UP3	17.5	DK	GREEN		118	SPSR2-10	
529		1297.69	-	-	-	-	-	-	-	-	-	-	-	-	-	411
530		1300.02	-	-	-	-	-	-	-	-	-	-	-	-	-	412
531		1302.51	-	-	-	-	-	-	-	-	-	-	-	-	-	413
532	9.65	1304.84	7.35	7.16	18.28	10.71	XCEL	TOP	UP3	17.5	DK	GREEN		119	SPSR2-10	
533		1307.34	-	-	-	-	-	-	-	-	-	-	-	-	-	414
534		1309.84	-	-	-	-	-	-	-	-	-	-	-	-	-	415
535		1312.26	-	-	-	-	-	-	-	-	-	-	-	-	-	416
536	9.84	1314.68	7.49	7.55	18.08	10.64	XCEL	TOP	UP3	18	PURPLE			120	SPSR2-10	
537		1317.18	-	-	-	-	-	-	-	-	-	-	-	-	-	417
538		1319.68	-	-	-	-	-	-	-	-	-	-	-	-	-	418
539		1322.01	-	-	-	-	-	-	-	-	-	-	-	-	-	419
540	9.86	1324.54	7.51	7.55	17.92	10.64	XCEL	TOP	UP3	18	PURPLE			121	SPSR2-10	
541		1326.87	-	-	-	-	-	-	-	-	-	-	-	-	-	420
542		1329.37	-	-	-	-	-	-	-	-	-	-	-	-	-	421
543		1331.87	-	-	-	-	-	-	-	-	-	-	-	-	-	422
544	9.75	1334.29	7.53	7.55	17.80	10.64	XCEL	TOP	UP3	18	PURPLE			122	SPSR2-10	
545		1336.71	-	-	-	-	-	-	-	-	-	-	-	-	-	423
546		1339.21	-	-	-	-	-	-	-	-	-	-	-	-	-	424
547		1341.63	-	-	-	-	-	-	-	-	-	-	-	-	-	425
548	9.76	1344.05	7.62	7.55	17.72	10.64	XCEL	TOP	UP3	18	PURPLE			123	SPSR2-10	
549		1346.55	-	-	-	-	-	-	-	-	-	-	-	-	-	426
550		1348.97	-	-	-	-	-	-	-	-	-	-	-	-	-	427
551		1351.39	-	-	-	-	-	-	-	-	-	-	-	-	-	428
552	9.84	1353.89	7.71	7.55	17.68	10.64	XCEL	TOP	UP3	18	PURPLE			124	SPSR2-10	
553		1356.31	-	-	-	-	-	-	-	-	-	-	-	-	-	429
554		1358.73	-	-	-	-	-	-	-	-	-	-	-	-	-	430
555		1361.23	-	-	-	-	-	-	-	-	-	-	-	-	-	431
556	9.84	1363.73	7.68	7.55	17.68	10.64	XCEL	TOP	UP3	18	PURPLE			125	SPSR2-10	
557		1366.06	-	-	-	-	-	-	-	-	-	-	-	-	-	432
558		1368.54	-	-	-	-	-	-	-	-	-	-	-	-	-	433
559		1370.87	-	-	-	-	-	-	-	-	-	-	-	-	-	434
560	9.64	1373.37	7.74	7.55	17.72	10.64	XCEL	TOP	UP3	18	PURPLE			126	SPSR2-10	
561		1375.87	-	-	-	-	-	-	-	-	-	-	-	-	-	435
562		1378.29	-	-	-	-	-	-	-	-	-	-	-	-	-	436
563		1380.71	-	-	-	-	-	-	-	-	-	-	-	-	-	437
564	9.84	1383.21	7.85	7.95	17.80	10.57	XCEL	TOP	UP3	18.5	PURPLE			127	SPSR2-10	
565		1385.63	-	-	-	-	-	-	-	-	-	-	-	-	-	438
566		1388.05	-	-	-	-	-	-	-	-	-	-	-	-	-	439
567		1390.55	-	-	-	-	-	-	-	-	-	-	-	-	-	440
568	9.76	1392.97	7.87	7.95	17.92	10.57	XCEL	TOP	UP3	18.5	PURPLE			128	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.
569		1395.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	441	
570		1397.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	442	
571		1400.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	443	
572	9.76	1402.73	8.11	7.95	18.07	10.57	XCEL	TOP	UP3	18.5	PURPLE		129	SPSR2-10				
573		1405.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	444	
574		1407.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	445	
575		1410.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	446	
TOWER 8	157.04	1412.64																
576	10.23	1412.96	8.24	8.35	18.02	10.50	XCEL	TOP	UP3	19	BLACK		130	SPSR2-10				
577		1415.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	447	
578		1417.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	448	
579		1420.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	449	
580	9.91	1422.87	8.10	7.95	17.85	10.57	XCEL	TOP	UP3	18.5	PURPLE		131	SPSR2-10				
581		1425.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	450	
582		1427.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451	
583		1430.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	452	
584	9.76	1432.63	8.09	7.95	17.52	10.57	XCEL	TOP	UP3	18.5	PURPLE		132	SPSR2-10				
585		1435.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	453	
586		1437.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	454	
587		1439.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	455	
588	9.76	1442.39	8.19	8.35	17.24	10.49	XCEL	TOP	UP3	19	BLACK		133	SPSR2-10				
589		1444.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456	
590		1447.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	457	
591		1449.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	458	
592	9.84	1452.23	8.19	8.35	17.00	10.49	XCEL	TOP	UP3	19	BLACK		134	SPSR2-10				
593		1454.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	459	
594		1457.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	460	
595		1459.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	461	
596	9.65	1461.88	8.24	8.35	16.80	10.50	XCEL	TOP	UP3	19	BLACK		135	SPSR2-10				
597		1464.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	462	
598		1466.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	463	
599		1469.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	464	
600	9.84	1471.72	8.39	8.35	16.63	10.50	XCEL	TOP	UP3	19	BLACK		136	SPSR2-10				
601		1474.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	465	
602		1476.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	466	
603		1479.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	467	
604	9.86	1481.58	8.41	8.35	16.51	10.50	XCEL	TOP	UP3	19	BLACK		137	SPSR2-10				
605		1483.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	468	
606		1486.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	469	
607		1488.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	470	
608	9.75	1491.33	8.42	8.35	16.42	10.50	XCEL	TOP	UP3	19	BLACK		138	SPSR2-10				
609		1493.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	471	
610		1496.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	472	
611		1498.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	473	
612	9.76	1501.09	8.51	8.35	16.37	10.50	XCEL	TOP	UP3	19	BLACK		139	SPSR2-10				
613		1503.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474	
614		1506.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	475	
615		1508.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	476	

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.
758	7.34	1859.17	7.85	7.95	15.61	10.57	XCEL	TOP	UP3	18.5	PURPLE	180	SPSR2-10	
759		1861.67	-	-	-	-	-	-	-	-	-	-	-	579
760		1864.09	-	-	-	-	-	-	-	-	-	-	-	580
761	7.34	1866.51	7.87	7.95	15.77	10.57	XCEL	TOP	UP3	18.5	PURPLE	181	SPSR2-10	
762		1869.01	-	-	-	-	-	-	-	-	-	-	-	581
763		1871.43	-	-	-	-	-	-	-	-	-	-	-	582
764	7.34	1873.85	7.88	7.95	15.95	10.57	XCEL	TOP	UP3	18.5	PURPLE	182	SPSR2-10	
765		1876.35	-	-	-	-	-	-	-	-	-	-	-	583
766		1878.85	-	-	-	-	-	-	-	-	-	-	-	584
767	7.33	1881.18	9.08	9.18	15.98	10.35	XCEL	TOP	UP3	20	DK TURQUOISE	183	SPSR2-10	
TOWER 11	157.04	1883.76	PIPE ID CHANGES FROM 6.395 TO 5.369											
768		1885.87	-	-	-	-	-	-	-	-	-	-	-	585
769		1888.20	-	-	-	-	-	-	-	-	-	-	-	586
770	9.52	1890.70	9.11	9.18	15.96	10.35	XCEL	TOP	UP3	20	DK TURQUOISE	184	SPSR2-10	
771		1893.20	-	-	-	-	-	-	-	-	-	-	-	587
772		1895.62	-	-	-	-	-	-	-	-	-	-	-	588
773	7.34	1898.04	7.95	7.95	15.95	10.57	XCEL	TOP	UP3	18.5	PURPLE	185	SPSR2-10	
774		1900.54	-	-	-	-	-	-	-	-	-	-	-	589
775		1902.96	-	-	-	-	-	-	-	-	-	-	-	590
776	7.34	1905.38	7.98	7.95	15.94	10.57	XCEL	TOP	UP3	18.5	PURPLE	186	SPSR2-10	
777		1907.88	-	-	-	-	-	-	-	-	-	-	-	591
778		1910.30	-	-	-	-	-	-	-	-	-	-	-	592
779	7.34	1912.72	8.02	7.95	15.93	10.57	XCEL	TOP	UP3	18.5	PURPLE	187	SPSR2-10	
780		1915.22	-	-	-	-	-	-	-	-	-	-	-	593
781		1917.64	-	-	-	-	-	-	-	-	-	-	-	594
782	7.34	1920.06	8.10	7.95	15.92	10.57	XCEL	TOP	UP3	18.5	PURPLE	188	SPSR2-10	
783		1922.56	-	-	-	-	-	-	-	-	-	-	-	595
784		1925.06	-	-	-	-	-	-	-	-	-	-	-	596
785	7.33	1927.39	7.88	7.95	15.91	10.57	XCEL	TOP	UP3	18.5	PURPLE	189	SPSR2-10	
OVERHANG	44.87	1928.63	121.26 ENDGUN (1) NELSON SR-100 .75 TB											
LINDSAY 5HP BOOSTER PUMP														

BOOSTER PUMP AT END ADDS 40.87 PSI TO PIPE PRESSURE FOR A PRESSURE OF 56.78 PSI
 FRICTION LOSS THROUGH ENDGUN VALVE IS 1.14 PSI - ENDGUN PRESSURE IS 55.64 PSI

TOTAL GPM = 1200.82
 GPA = 4.02
 GPA for 180° Circle = 8.03

MINIMUM RECOMMENDED REGULATOR INLET PRESSURE IS 15.00 PSI
 WITH GRADUATED ELEVATION OF .00 FT THE INLET PRESSURE IS 15.10 PSI FOR SPRINKLER 173
 THIS POSITION IS THE CLOSEST TO THE MINIMUM RECOMMENDED INLET PRESSURE

HYDRAULICS SUMMARY

<u>TOWER NUMBER</u>	<u>ACRES UNDER SPAN</u>	<u>GPM NEED</u>	<u>ACTUAL GPM</u>	<u>PERCENT DEVIATION</u>	<u>GPM PER ACRE</u>	<u>AVERAGE IN. PER HR DELIVERED UNDER SPAN</u>	<u>AVERAGE IN. DELIVERED FOR REVOLUTION TIME</u>		
							<u>36 HR</u>	<u>48 HR</u>	<u>60 HR</u>
1	2.38	9.55	11.35	19%	4.77	0.011	0.38	0.51	0.63
2	7.00	28.11	28.01	0%	4.00	0.009	0.32	0.42	0.53
3	11.62	46.66	46.53	0%	4.00	0.009	0.32	0.42	0.53
4	16.24	65.22	65.42	0%	4.03	0.009	0.32	0.43	0.53
5	20.86	83.78	83.68	0%	4.01	0.009	0.32	0.43	0.53
6	25.49	102.34	102.69	0%	4.03	0.009	0.32	0.43	0.53
7	30.11	120.90	120.27	-1%	3.99	0.009	0.32	0.42	0.53
8	30.22	121.35	120.23	-1%	3.98	0.009	0.32	0.42	0.53
9	33.78	135.63	136.05	0%	4.03	0.009	0.32	0.43	0.53
10	37.33	149.91	149.56	0%	4.01	0.009	0.32	0.42	0.53
11	40.89	164.20	164.74	0%	4.03	0.009	0.32	0.43	0.53
OVERHANG	12.34	49.54	51.01	3%	4.13	0.009	0.33	0.44	0.55
ENDGUN	29.23	122.81	121.26	3%	4.15				
TOTAL	297.49	1200.00	1200.82		4.04				

SUMMARY OF SPRINKLERS

6 XCEL TOP UP3 6 GOLD
2 XCEL TOP UP3 6.5 GOLD
1 XCEL TOP UP3 7 LIME
4 XCEL TOP UP3 7.5 LIME
2 XCEL TOP UP3 8 LAVENDER
3 XCEL TOP UP3 8.5 LAVENDER
2 XCEL TOP UP3 9 GREY
3 XCEL TOP UP3 9.5 GREY
2 XCEL TOP UP3 10 TURQUOISE
3 XCEL TOP UP3 10.5 TURQ
3 XCEL TOP UP3 11 YELLOW
7 XCEL TOP UP3 11.5 YELLOW
10 XCEL TOP UP3 12 RED
7 XCEL TOP UP3 12.5 RED
5 XCEL TOP UP3 13 WHITE
6 XCEL TOP UP3 13.5 WHITE
7 XCEL TOP UP3 14 BLUE
4 XCEL TOP UP3 14.5 BLUE
8 XCEL TOP UP3 15 DK BROWN
6 XCEL TOP UP3 15.5 DK BROWN
5 XCEL TOP UP3 16 ORANGE
8 XCEL TOP UP3 16.5 ORANGE
8 XCEL TOP UP3 17 DK GREEN
7 XCEL TOP UP3 17.5 DK GREEN
22 XCEL TOP UP3 18 PURPLE
15 XCEL TOP UP3 18.5 PURPLE
8 XCEL TOP UP3 19 BLACK
7 XCEL TOP UP3 19.5 BLACK
11 XCEL TOP UP3 20 DK TURQUOISE
6 XCEL TOP UP3 20.5 DK TURQ
1 XCEL TOP UP3 21 MUSTARD

596 PLUGS**SUMMARY OF REGULATORS**

189 Senn PSR2 10 psi

TOTAL OF 189 REGULATORS

NOZZLE POSITION CHART

XCEL TOP UP3 6 GOLD	1, 2, 3, 4, 5, 6
XCEL TOP UP3 6.5 GOLD	7, 8
XCEL TOP UP3 7 LIME	9
XCEL TOP UP3 7.5 LIME	10, 11, 12, 13
XCEL TOP UP3 8 LAVENDER	14, 15
XCEL TOP UP3 8.5 LAVENDER	16, 17, 18
XCEL TOP UP3 9 GREY	19, 20
XCEL TOP UP3 9.5 GREY	21, 22, 23
XCEL TOP UP3 10 TURQUOISE	24, 25
XCEL TOP UP3 10.5 TURQ	26, 27, 28
XCEL TOP UP3 11 YELLOW	29, 30, 31
XCEL TOP UP3 11.5 YELLOW	32, 33, 34, 42, 43, 44, 45
XCEL TOP UP3 12 RED	35, 36, 37, 38, 41, 46, 47, 48, 49, 50
XCEL TOP UP3 12.5 RED	39, 40, 51, 52, 53, 54, 55
XCEL TOP UP3 13 WHITE	56, 57, 58, 59, 61
XCEL TOP UP3 13.5 WHITE	60, 62, 63, 64, 65, 66
XCEL TOP UP3 14 BLUE	67, 68, 69, 70, 71, 72, 73
XCEL TOP UP3 14.5 BLUE	74, 75, 76, 77
XCEL TOP UP3 15 DK BROWN	78, 79, 80, 81, 82, 83, 84, 85
XCEL TOP UP3 15.5 DK BROWN	86, 87, 88, 89, 90, 91
XCEL TOP UP3 16 ORANGE	92, 93, 94, 97, 98
XCEL TOP UP3 16.5 ORANGE	95, 96, 99, 100, 101, 102, 103, 104
XCEL TOP UP3 17 DK GREEN	105, 106, 107, 108, 109, 110, 111, 112
XCEL TOP UP3 17.5 DK GREEN	113, 114, 115, 116, 117, 118, 119
XCEL TOP UP3 18 PURPLE	120, 121, 122, 123, 124, 125, 126, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177
XCEL TOP UP3 18.5 PURPLE	127, 128, 129, 131, 132, 178, 179, 180, 181, 182, 185, 186, 187, 188, 189
XCEL TOP UP3 19 BLACK	130, 133, 134, 135, 136, 137, 138, 139
XCEL TOP UP3 19.5 BLACK	140, 141, 142, 143, 144, 148, 162
XCEL TOP UP3 20 DK TURQUOISE	145, 146, 147, 149, 150, 151, 152, 153, 154, 183, 184
XCEL TOP UP3 20.5 DK TURQ	155, 156, 157, 158, 159, 160
XCEL TOP UP3 21 MUSTARD	161

FREY PIVOT SERVICE
77 COUNTY ROAD 40
STAPLETON, NEBRASKA 69163

SEPTEMBER 30, 2025
WISH-119640
ROBBI SMITH
JOHANSON 2
1200 GPM @ 31 PSI

LINDSAY 9500 - 30
SENNINGER 10 PSI REGULATORS
NO DROPS
NELSON SR-100 .75 TB

Rotation time at 100% = 16.17 Hours Or 970 minutes

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	Out #	Drop Len	Sprk #	Noz Size	Reg
1	PLUG				61	PLUG				47		21	9.5	PSR210	33	PLUG				19	PLUG			
2	PLUG				62	PLUG				48	PLUG				34		33	11.5	PSR210	20	PLUG			
3	PLUG				63	PLUG				49	PLUG				35	PLUG				21		46	12	PSR210
4	PLUG				64		10	7.5	PSR210	50	PLUG				36	PLUG				22	PLUG			
5	PLUG				65	PLUG				51	PLUG				37	PLUG				23	PLUG			
6	PLUG				66	PLUG				52		22	9.5	PSR210	38	PLUG				24	PLUG			
7	PLUG				67	PLUG				53	PLUG				39		34	11.5	PSR210	25		47	12	PSR210
8	PLUG				68	PLUG				54	PLUG				40	PLUG				26	PLUG			
9	PLUG				69	PLUG				55	PLUG				41	PLUG				27	PLUG			
10		1	6	PSR210	70		11	7.5	PSR210	56	PLUG				42	PLUG				28	PLUG			
11	PLUG				71	PLUG				57		23	9.5	PSR210	43	PLUG				29		48	12	PSR210
12	PLUG				72	PLUG				58	PLUG				44		35	12	PSR210	30	PLUG			
13	PLUG				73					59	PLUG				45	PLUG				31	PLUG			
14	PLUG									60	PLUG				46	PLUG				32	PLUG			
15	PLUG				1	TOWER 1				61	PLUG				47	PLUG				33		49	12	PSR210
16		2	6	PSR210	2		12	7.5	PSR210	62		24	10	PSR210	48	PLUG				34	PLUG			
17	PLUG				3	PLUG				63	PLUG				49		36	12	PSR210	35	PLUG			
18	PLUG				4	PLUG				64	PLUG				50	PLUG				36	PLUG			
19	PLUG				5	PLUG				65	PLUG				51	PLUG				37		50	12	PSR210
20	PLUG				6	PLUG				66	PLUG				52	PLUG				38	PLUG			
21	PLUG				7		13	7.5	PSR210	67		25	10	PSR210	53	PLUG				39	PLUG			
22		3	6	PSR210	8	PLUG				68	PLUG				54		37	12	PSR210	40	PLUG			
23	PLUG				9	PLUG				69	PLUG				55	PLUG				41		51	12.5	PSR210
24	PLUG				10	PLUG				70	PLUG				56	PLUG				42	PLUG			
25	PLUG				11	PLUG				71	PLUG				57	PLUG				43	PLUG			
26	PLUG				12		14	8	PSR210	72		26	10.5	PSR210	58	PLUG				44	PLUG			
27	PLUG				13	PLUG				73	PLUG				59		38	12	PSR210	45		52	12.5	PSR210
28		4	6	PSR210	14						TOWER 2				60	PLUG				46	PLUG			
29	PLUG				15	PLUG				1	PLUG				61	PLUG				47	PLUG			
30	PLUG				16	PLUG				2	PLUG				62	PLUG				48	PLUG			
31	PLUG				17		15	8	PSR210	3	PLUG				63	PLUG				49		53	12.5	PSR210
32	PLUG				18	PLUG				4		27	10.5	PSR210	64		39	12.5	PSR210	50	PLUG			
33	PLUG				19	PLUG				5	PLUG				65	PLUG				51	PLUG			
34		5	6	PSR210	20	PLUG				6	PLUG				66	PLUG				52	PLUG			
35	PLUG				21	PLUG				7	PLUG				67	PLUG				53		54	12.5	PSR210
36	PLUG				22		16	8.5	PSR210	8	PLUG				68	PLUG				54	PLUG			
37	PLUG				23	PLUG				9		28	10.5	PSR210	69		40	12.5	PSR210	55	PLUG			
38	PLUG				24	PLUG				10	PLUG				70	PLUG				56	PLUG			
39	PLUG				25	PLUG				11	PLUG				71	PLUG				57		55	12.5	PSR210
40		6	6	PSR210	26	PLUG				12	PLUG				72	PLUG				58	PLUG			
41	PLUG				27		17	8.5	PSR210	13	PLUG				73					59	PLUG			
42	PLUG				28	PLUG				14		29	11	PSR210		TOWER 3				60	PLUG			
43	PLUG				29	PLUG				15	PLUG				1		41	12	PSR210	61		56	13	PSR210
44	PLUG				30	PLUG				16	PLUG				2	PLUG				62	PLUG			
45	PLUG				31	PLUG				17	PLUG				3	PLUG				63	PLUG			
46		7	6.5	PSR210	32		18	8.5	PSR210	18	PLUG				4	PLUG				64	PLUG			
47	PLUG				33	PLUG				19		30	11	PSR210	5		42	11.5	PSR210	65		57	13	PSR210
48	PLUG				34	PLUG				20	PLUG				6	PLUG				66	PLUG			
49	PLUG				35	PLUG				21	PLUG				7	PLUG				67	PLUG			
50	PLUG				36	PLUG				22	PLUG				8	PLUG				68	PLUG			
51	PLUG				37		19	9	PSR210	23	PLUG				9		43	11.5	PSR210	69		58	13	PSR210
52		8	6.5	PSR210	38	PLUG				24		31	11	PSR210	10	PLUG				70	PLUG			
53	PLUG				39	PLUG				25	PLUG				11	PLUG				71	PLUG			
54	PLUG				40	PLUG				26	PLUG				12	PLUG				72	PLUG			
55	PLUG				41	PLUG				27	PLUG				13		44	11.5	PSR210	73		59	13	PSR210
56	PLUG				42		20	9	PSR210	28	PLUG				14	PLUG					TOWER 4			
57	PLUG				43	PLUG				29		32	11.5	PSR210	15	PLUG				1	PLUG			
58		9	7	PSR210	44	PLUG				30	PLUG				16	PLUG				2	PLUG			
59	PLUG				45	PLUG				31	PLUG				17		45	11.5	PSR210	3	PLUG			
60	PLUG				46	PLUG				32	PLUG				18	PLUG				4		60	13.5	PSR210

FREY PIVOT SERVICE

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SENNINGER 10 PSI REGULATORS
NO DROPS
NELSON SR-100 .75 TB

Rotation time at 100% = 16.17 Hours Or 970 minutes

Installation Chart

Page 2

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

FREY PIVOT SERVICE
77 COUNTY ROAD 40
STAPLETON, NEBRASKA 69163

LINDSAY 9500 - 30

SEPTEMBER 30, 2025

WISH-119640

ROBBI SMITH

JOHANSON 2

1200 GPM @ 31 PSI

SENNINGER 10 PSI REGULATORS

NO DROPS

NELSON SR-100 .75 TB

Rotation time at 100% = 16.17 Hours Or 970 minutes

Installation Chart

Page 3

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
17		134	19	PSR210	12	PLUG				7		164	18	PSR210	1	PLUG			
18	PLUG				13		149	20	PSR210	8	PLUG				2	PLUG			
19	PLUG				14	PLUG				9	PLUG				3		184	20	PSR210
20	PLUG				15	PLUG				10		165	18	PSR210	4	PLUG			
21		135	19	PSR210	16	PLUG				11	PLUG				5	PLUG			
22	PLUG				17		150	20	PSR210	12	PLUG				6		185	18.5	PSR210
23	PLUG				18	PLUG				13		166	18	PSR210	7	PLUG			
24	PLUG				19	PLUG				14	PLUG				8	PLUG			
25		136	19	PSR210	20	PLUG				15	PLUG				9		186	18.5	PSR210
26	PLUG				21		151	20	PSR210	16		167	18	PSR210	10	PLUG			
27	PLUG				22	PLUG				17	PLUG				11	PLUG			
28	PLUG				23	PLUG				18	PLUG				12		187	18.5	PSR210
29		137	19	PSR210	24	PLUG				19		168	18	PSR210	13	PLUG			
30	PLUG				25		152	20	PSR210	20	PLUG				14	PLUG			
31	PLUG				26	PLUG				21	PLUG				15		188	18.5	PSR210
32	PLUG				27	PLUG				22		169	18	PSR210	16	PLUG			
33		138	19	PSR210	28	PLUG				23	PLUG				17	PLUG			
34	PLUG				29		153	20	PSR210	24	PLUG				18		189	18.5	PSR210
35	PLUG				30	PLUG				25		170	18	PSR210					
36	PLUG				31	PLUG				26	PLUG								
37		139	19	PSR210	32	PLUG				27	PLUG								
38	PLUG				33		154	20	PSR210	28		171	18	PSR210					
39	PLUG				34	PLUG				29	PLUG								
40	PLUG				35	PLUG				30	PLUG								
41		140	19.5	PSR210	36	PLUG				31		172	18	PSR210					
42	PLUG				37		155	20.5	PSR210	32	PLUG								
43	PLUG				38	PLUG				33	PLUG								
44	PLUG				39	PLUG				34		173	18	PSR210					
45		141	19.5	PSR210	40	PLUG				35	PLUG								
46	PLUG				41		156	20.5	PSR210	36	PLUG								
47	PLUG				42	PLUG				37		174	18	PSR210					
48	PLUG				43	PLUG				38	PLUG								
49		142	19.5	PSR210	44	PLUG				39	PLUG								
50	PLUG				45		157	20.5	PSR210	40		175	18	PSR210					
51	PLUG				46	PLUG				41	PLUG								
52	PLUG				47	PLUG				42	PLUG								
53		143	19.5	PSR210	48	PLUG				43		176	18	PSR210					
54	PLUG				49		158	20.5	PSR210	44	PLUG								
55	PLUG				50	PLUG				45	PLUG								
56	PLUG				51	PLUG				46		177	18	PSR210					
57		144	19.5	PSR210	52	PLUG				47	PLUG								
58	PLUG				53		159	20.5	PSR210	48	PLUG								
59	PLUG				54	PLUG				49		178	18.5	PSR210					
60	PLUG				55	PLUG				50	PLUG								
61		145	20	PSR210	56	PLUG				51	PLUG								
62	PLUG				57		160	20.5	PSR210	52		179	18.5	PSR210					
63	PLUG				58	PLUG				53	PLUG								
64	PLUG				59	PLUG				54	PLUG								
	TOWER 9				60	PLUG				55		180	18.5	PSR210					
1			146	20	PSR210	61		161	21	PSR210	56	PLUG							
2		PLUG				62	PLUG				57	PLUG							
3		PLUG				63	PLUG				58		181	18.5	PSR210				
4	PLUG				64	PLUG				59	PLUG								
5		147	20	PSR210		TOWER 10				60	PLUG								
6	PLUG				1			162	19.5	PSR210	61		182	18.5	PSR210				
7	PLUG				2		PLUG				62	PLUG							
8	PLUG				3	PLUG				63	PLUG								
9		148	19.5	PSR210	4		163	18	PSR210	64		183	20	PSR210					
10	PLUG				5	PLUG					TOWER 11								
11	PLUG				6	PLUG													

PRECIPITATION CHART FOR 180° CIRCLE

WISH-119640

SEPTEMBER 30, 2025

DEALER - FREY PIVOT SERVICE

IRRIGATOR - ROBBIE SMITH

FIELD - JOHANSON 2

TOTAL LENGTH PIPE = 1928.63 SYSTEM PRESSURE = 31 PSI
GPM UNDER PIPE = 1079.56 TOTAL GPM = 1200.82
ACRES UNDER PIPE = 134.13
RANGE OF ENDGUN = 102.36 RUN FOR MINIMUM PRESSURE
GPM OF ENDGUN = 121.26
ACRES UNDER ENDGUN = 14.61
WATERING LENGTH = 2030.99

MOTOR SIZE (HP) = 3/4
LOADED MOTOR RPM = 1750
CENTER GEAR BOX RATIO = 40
WHEEL GEAR BOX RATIO = 50
TIRE SIZE = 11.2 X 38
LAST TOWER SPEED (FPM) = 12.20

PRECIPITATION DATA FIGURED WITH ENDGUN RUNNING

PRECIPITATION BASED			% TIMER BASED		
PRECIPITATION INCHES	% TIMER SETTING	TIME HOURS	% TIMER SETTING	PRECIPITATION INCHES	TIME HOURS
.14	100.00	8.08 - 485(min)	100.00	.14	8.08 - 485(min)
.20	71.89	11.25	90.00	.16	8.98
.25	57.51	14.06	80.00	.18	10.11
.30	47.93	16.87	70.00	.21	11.55
.40	35.94	22.49	60.00	.24	13.47
.50	28.76	28.12	50.00	.29	16.17
.60	23.96	33.74	45.00	.32	17.97
.70	20.54	39.36	40.00	.36	20.21
.75	19.17	42.17	35.00	.41	23.10
.80	17.97	44.98	30.00	.48	26.95
.90	15.98	50.61	25.00	.58	32.34
1.00	14.38	56.23	20.00	.72	40.42
1.25	11.50	70.29	15.00	.96	53.90
1.50	9.59	84.35	10.00	1.44	80.85
1.75	8.22	98.40	5.00	2.88	161.69

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.