

FREY PIVOT SERVICE

SEPTEMBER 30, 2025

WISH-119639

CUSTOMER : KEVIN MULVEY

2002 LINDSAY GEN II - 30
7 TOWER - 1300.47 FT
SYSTEM 900 GPM @ 32 PSI
SENNINGER UP3 XCEL TOP
SENNINGER 10 PSI REGULATORS
NELSON SR-100 .80 TB
ELEVATION 5 FT UP, 5 FT DOWN

LEGAL : NW 1/4 10-16-28

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.

2002 LINDSAY GEN II - 30

SEPTEMBER 30, 2025

WISH-119639

DEALER

FREY PIVOT SERVICE
77 COUNTY ROAD 40
STAPLETON, NEBRASKA 69163

IRRIGATOR

KEVIN MULVEY
NW 1/4 10-16-28

TOTAL TARGET GPM	900.00	FRICTION FACTOR USED	138	SPANS	LENGTH	PIPE I.D.
TOP OF PIVOT PRESSURE	32.00	TOTAL LENGTH	1300.47	1	181.60	6.395
ENDGUN TARGET GPM	125.73	NUMBER OF TOWERS	7	6	179.00	6.395
NUMBER OF OUTLETS	529	NUMBER OF SPRINKLERS	124	OH	44.87	5.369

SENNINGER UP3 XCEL TOP
SENNINGER PSR-2 10 PSI SERIES REGULATORS

ELEVATION IS 5 FT UP AND 5 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	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	41
50	12.26	122.85	1.37	1.35	29.05	11.40	XCEL TOP UP3 7.5 LIME	9	SPSR2-10	
51		125.27	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	42
52		127.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	43
53		130.19	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	44
54		132.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	45
55	12.17	135.02	1.51	1.53	28.98	11.40	XCEL TOP UP3 8 LAVENDER	10	SPSR2-10	
56		137.50	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	46
57		139.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	47
58		142.33	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	48
59		144.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	49
60	12.23	147.25	1.65	1.73	28.96	11.40	XCEL TOP UP3 8.5 LAVENDER	11	SPSR2-10	
61		149.67	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	50
62		152.17	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	51
63		154.59	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	52
64		157.01	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	53
65	12.26	159.51	1.78	1.73	28.98	11.40	XCEL TOP UP3 8.5 LAVENDER	12	SPSR2-10	
66		161.93	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	54
67		164.35	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	55
68		166.85	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	56
69		169.27	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	57
70	12.18	171.69	1.96	1.93	29.04	11.40	XCEL TOP UP3 9 GREY	13	SPSR2-10	
71		174.19	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	58
72		176.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	59
73		179.02	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	60
TOWER 1	181.60	181.60	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	61
74		181.92	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
75	12.81	184.50	2.10	2.16	28.83	11.38	XCEL TOP UP3 9.5 GREY	14	SPSR2-10	
76		186.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	62
77		189.33	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	63
78		191.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	64
79		194.25	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	65
80	12.17	196.67	2.20	2.16	28.46	11.38	XCEL TOP UP3 9.5 GREY	15	SPSR2-10	
81		199.17	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	66
82		201.59	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	67
83		204.01	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	68
84		206.51	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	69
85	12.26	208.93	2.34	2.39	28.01	11.36	XCEL TOP UP3 10 TURQUOISE	16	SPSR2-10	
86		211.35	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	70
87		213.85	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	71
88		216.27	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	72
89		218.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	73
90	12.26	221.19	2.47	2.39	27.60	11.36	XCEL TOP UP3 10 TURQUOISE	17	SPSR2-10	
91		223.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	74
92		226.02	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	75
93		228.50	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	76
94		230.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	77
95	12.14	233.33	2.60	2.63	27.25	11.34	XCEL TOP UP3 10.5 TURQ	18	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		353.19	-	-	-	-	-	-	-	117
145	12.34	355.69	4.06	4.03	26.06	11.20	XCEL TOP UP3 13 WHITE	28	SPSR2-10	
146		358.02	-	-	-	-	-	-	-	118
TOWER 2	179.00	360.60								
147		360.92	-	-	-	-	-	-	-	119
148		363.50	-	-	-	-	-	-	-	120
149		365.83	-	-	-	-	-	-	-	121
150	12.64	368.33	3.78	3.73	25.87	11.23	XCEL TOP UP3 12.5 RED	29	SPSR2-10	
151		370.83	-	-	-	-	-	-	-	122
152		373.25	-	-	-	-	-	-	-	123
153		375.67	-	-	-	-	-	-	-	124
154	9.84	378.17	3.39	3.44	25.50	11.26	XCEL TOP UP3 12 RED	30	SPSR2-10	
155		380.59	-	-	-	-	-	-	-	125
156		383.01	-	-	-	-	-	-	-	126
157		385.51	-	-	-	-	-	-	-	127
158	9.76	387.93	3.46	3.44	25.16	11.26	XCEL TOP UP3 12 RED	31	SPSR2-10	
159		390.35	-	-	-	-	-	-	-	128
160		392.85	-	-	-	-	-	-	-	129
161		395.27	-	-	-	-	-	-	-	130
162	9.76	397.69	3.56	3.44	24.85	11.26	XCEL TOP UP3 12 RED	32	SPSR2-10	
163		400.19	-	-	-	-	-	-	-	131
164		402.69	-	-	-	-	-	-	-	132
165		405.02	-	-	-	-	-	-	-	133
166	9.81	407.50	3.65	3.73	24.57	11.23	XCEL TOP UP3 12.5 RED	33	SPSR2-10	
167		409.83	-	-	-	-	-	-	-	134
168		412.33	-	-	-	-	-	-	-	135
169		414.83	-	-	-	-	-	-	-	136
170	9.75	417.25	3.72	3.73	24.32	11.23	XCEL TOP UP3 12.5 RED	34	SPSR2-10	
171		419.67	-	-	-	-	-	-	-	137
172		422.17	-	-	-	-	-	-	-	138
173		424.59	-	-	-	-	-	-	-	139
174	9.76	427.01	3.83	3.73	24.10	11.23	XCEL TOP UP3 12.5 RED	35	SPSR2-10	
175		429.51	-	-	-	-	-	-	-	140
176		431.93	-	-	-	-	-	-	-	141
177		434.35	-	-	-	-	-	-	-	142
178	9.84	436.85	3.93	4.03	23.90	11.20	XCEL TOP UP3 13 WHITE	36	SPSR2-10	
179		439.27	-	-	-	-	-	-	-	143
180		441.69	-	-	-	-	-	-	-	144
181		444.19	-	-	-	-	-	-	-	145
182	9.84	446.69	3.98	4.03	23.74	11.20	XCEL TOP UP3 13 WHITE	37	SPSR2-10	
183		449.02	-	-	-	-	-	-	-	146
184		451.50	-	-	-	-	-	-	-	147
185		453.83	-	-	-	-	-	-	-	148
186	9.64	456.33	4.07	4.03	23.61	11.20	XCEL TOP UP3 13 WHITE	38	SPSR2-10	
187		458.83	-	-	-	-	-	-	-	149
188		461.25	-	-	-	-	-	-	-	150
189		463.67	-	-	-	-	-	-	-	151
190	9.84	466.17	4.18	4.03	23.51	11.20	XCEL TOP UP3 13 WHITE	39	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		9.76	701.35	6.29	6.40	21.40	10.85 XCEL TOP UP3 16.5 ORANGE	63	SPSR2-10	
287			703.85	-	-	-	-	-	-	224
288			706.27	-	-	-	-	-	-	225
289			708.69	-	-	-	-	-	-	226
290		9.84	711.19	6.56	6.41	21.47	10.85 XCEL TOP UP3 16.5 ORANGE	64	SPSR2-10	
291			713.69	-	-	-	-	-	-	227
292			716.02	-	-	-	-	-	-	228
TOWER 4		179.00	718.60							229
293			718.92	-	-	-	-	-	-	
294		10.31	721.50	6.62	6.78	21.37	10.78 XCEL TOP UP3 17 DK GREEN	65	SPSR2-10	
295			723.83	-	-	-	-	-	-	230
296			726.33	-	-	-	-	-	-	231
297			728.83	-	-	-	-	-	-	232
298		9.75	731.25	6.53	6.41	21.17	10.85 XCEL TOP UP3 16.5 ORANGE	66	SPSR2-10	
299			733.67	-	-	-	-	-	-	233
300			736.17	-	-	-	-	-	-	234
301			738.59	-	-	-	-	-	-	235
302		9.76	741.01	6.65	6.78	20.86	10.78 XCEL TOP UP3 17 DK GREEN	67	SPSR2-10	
303			743.51	-	-	-	-	-	-	236
304			745.93	-	-	-	-	-	-	237
305			748.35	-	-	-	-	-	-	238
306		9.84	750.85	6.76	6.78	20.59	10.78 XCEL TOP UP3 17 DK GREEN	68	SPSR2-10	
307			753.27	-	-	-	-	-	-	239
308			755.69	-	-	-	-	-	-	240
309			758.19	-	-	-	-	-	-	241
310		9.84	760.69	6.78	6.78	20.35	10.78 XCEL TOP UP3 17 DK GREEN	69	SPSR2-10	
311			763.02	-	-	-	-	-	-	242
312			765.50	-	-	-	-	-	-	243
313			767.83	-	-	-	-	-	-	244
314		9.64	770.33	6.87	6.78	20.14	10.78 XCEL TOP UP3 17 DK GREEN	70	SPSR2-10	
315			772.83	-	-	-	-	-	-	245
316			775.25	-	-	-	-	-	-	246
317			777.67	-	-	-	-	-	-	247
318		9.84	780.17	7.00	7.16	19.96	10.71 XCEL TOP UP3 17.5 DK GREEN	71	SPSR2-10	
319			782.59	-	-	-	-	-	-	248
320			785.01	-	-	-	-	-	-	249
321			787.51	-	-	-	-	-	-	250
322		9.76	789.93	7.05	7.16	19.81	10.71 XCEL TOP UP3 17.5 DK GREEN	72	SPSR2-10	
323			792.35	-	-	-	-	-	-	251
324			794.85	-	-	-	-	-	-	252
325			797.27	-	-	-	-	-	-	253
326		9.76	799.69	7.16	7.16	19.69	10.71 XCEL TOP UP3 17.5 DK GREEN	73	SPSR2-10	
327			802.19	-	-	-	-	-	-	254
328			804.69	-	-	-	-	-	-	255
329			807.02	-	-	-	-	-	-	256
330		9.81	809.50	7.24	7.16	19.60	10.71 XCEL TOP UP3 17.5 DK GREEN	74	SPSR2-10	
331			811.83	-	-	-	-	-	-	257
332			814.33	-	-	-	-	-	-	258

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		1049.59	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	330
429		1052.01	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	331
430	9.84	1054.51	9.44	9.60	18.85	10.27	XCEL TOP UP3 20.5 DK TURQ	99	SPSR2-10	
431		1056.93	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	332
432		1059.35	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	333
433		1061.85	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	334
434	9.76	1064.27	9.48	9.60	19.03	10.27	XCEL TOP UP3 20.5 DK TURQ	100	SPSR2-10	
435		1066.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	335
436		1069.19	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	336
437		1071.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	337
438	9.75	1074.02	9.83	10.02	19.05	10.19	XCEL TOP UP3 21 MUSTARD	101	SPSR2-10	
TOWER 6	179.00	1076.60	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
439		1076.92	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	338
440		1079.50	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	339
441		1081.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	340
442	10.31	1084.33	9.96	10.02	19.02	10.19	XCEL TOP UP3 21 MUSTARD	102	SPSR2-10	
443		1086.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	341
444		1089.25	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	342
445		1091.67	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	343
446	9.84	1094.17	9.77	9.60	18.77	10.28	XCEL TOP UP3 20.5 DK TURQ	103	SPSR2-10	
447		1096.59	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	344
448		1099.01	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	345
449		1101.51	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	346
450	9.76	1103.93	9.83	10.02	18.55	10.19	XCEL TOP UP3 21 MUSTARD	104	SPSR2-10	
451		1106.35	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	347
452		1108.85	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	348
453		1111.27	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	349
454	9.76	1113.69	9.93	10.02	18.36	10.19	XCEL TOP UP3 21 MUSTARD	105	SPSR2-10	
455		1116.19	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	350
456		1118.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	351
457		1121.02	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	352
458	9.81	1123.50	10.01	10.03	18.19	10.19	XCEL TOP UP3 21 MUSTARD	106	SPSR2-10	
459		1125.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	353
460		1128.33	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	354
461		1130.83	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	355
462	9.75	1133.25	10.07	10.03	18.06	10.19	XCEL TOP UP3 21 MUSTARD	107	SPSR2-10	
463		1135.67	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	356
464		1138.17	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	357
465		1140.59	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	358
466	9.76	1143.01	10.21	10.03	17.96	10.20	XCEL TOP UP3 21 MUSTARD	108	SPSR2-10	
467		1145.51	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	359
468		1147.93	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	360
469		1150.35	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	361
470	9.84	1152.85	10.35	10.44	17.88	10.08	XCEL TOP UP3 21.5 MUSTARD	109	SPSR2-10	
471		1155.27	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	362
472		1157.69	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	363
473		1160.19	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	364
474	9.84	1162.69	10.32	10.44	17.84	10.08	XCEL TOP UP3 21.5 MUSTARD	110	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		9.84	1279.72	11.50	11.30	18.64	9.87 XCEL TOP UP3 22.5 MAROON	122	SPSR2-10	
522			1282.14	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	400
523			1284.56	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	401
524			1287.06	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	402
525	9.76		1289.48	11.56	11.72	18.62	9.75 XCEL TOP UP3 23 CREAM	123	SPSR2-10	
526			1291.90	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	403
527			1294.40	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	404
528			1296.90	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	405
529	9.75		1299.23	11.68	11.72	18.61	9.75 XCEL TOP UP3 23 CREAM	124	SPSR2-10	
OVERHANG	44.87	1300.47		122.11	ENDGUN	(1) NELSON SR-100 .80 TB	LINDSAY 2HP BOOSTER PUMP			

BOOSTER PUMP AT END ADDS 30.01 PSI TO PIPE PRESSURE FOR A PRESSURE OF 48.62 PSI
 FRICTION LOSS THROUGH ENDGUN VALVE IS 4.93 PSI - ENDGUN PRESSURE IS 43.69 PSI

TOTAL GPM = 900.80

GPA = 6.35

MINIMUM RECOMMENDED REGULATOR INLET PRESSURE IS 15.00 PSI
 WITH GRADUATED ELEVATION OF 5.00 FT THE INLET PRESSURE IS 15.88 PSI FOR SPRINKLER 111
 THIS POSITION IS THE CLOSEST TO THE MINIMUM RECOMMENDED INLET PRESSURE

HYDRAULICS SUMMARY

TOWER NUMBER	ACRES UNDER SPAN	GPM NEED	ACTUAL GPM	PERCENT DEVIATION	GPM PER ACRE	AVERAGE IN. PER HR DELIVERED UNDER SPAN	AVERAGE IN. DELIVERED FOR REVOLUTION TIME		
							36 HR	48 HR	60 HR
1	2.38	15.10	16.48	9%	6.93	0.015	0.55	0.73	0.92
2	7.00	44.43	43.68	-2%	6.24	0.014	0.50	0.66	0.83
3	11.62	73.77	73.80	0%	6.35	0.014	0.51	0.67	0.84
4	16.24	103.11	102.62	0%	6.32	0.014	0.50	0.67	0.84
5	20.86	132.45	132.54	0%	6.35	0.014	0.51	0.67	0.84
6	25.49	161.78	162.57	0%	6.38	0.014	0.51	0.68	0.85
7	30.11	191.12	190.37	0%	6.32	0.014	0.50	0.67	0.84
OVERHANG	8.27	52.51	56.63	8%	6.85	0.015	0.54	0.73	0.91
ENDGUN	18.33	125.73	122.11	5%	6.66				
TOTAL	140.30	900.00	900.80		6.42				

SUMMARY OF SPRINKLERS

5 XCEL TOP UP3 6 GOLD
1 XCEL TOP UP3 6.5 GOLD
2 XCEL TOP UP3 7 LIME
1 XCEL TOP UP3 7.5 LIME
1 XCEL TOP UP3 8 LAVENDER
2 XCEL TOP UP3 8.5 LAVENDER
1 XCEL TOP UP3 9 GREY
2 XCEL TOP UP3 9.5 GREY
2 XCEL TOP UP3 10 TURQUOISE
2 XCEL TOP UP3 10.5 TURQ
2 XCEL TOP UP3 11 YELLOW
2 XCEL TOP UP3 11.5 YELLOW
5 XCEL TOP UP3 12 RED
6 XCEL TOP UP3 12.5 RED
5 XCEL TOP UP3 13 WHITE
3 XCEL TOP UP3 13.5 WHITE
3 XCEL TOP UP3 14 BLUE
5 XCEL TOP UP3 14.5 BLUE
4 XCEL TOP UP3 15 DK BROWN
4 XCEL TOP UP3 15.5 DK BROWN
4 XCEL TOP UP3 16 ORANGE
3 XCEL TOP UP3 16.5 ORANGE
5 XCEL TOP UP3 17 DK GREEN
5 XCEL TOP UP3 17.5 DK GREEN
4 XCEL TOP UP3 18 PURPLE
3 XCEL TOP UP3 18.5 PURPLE
6 XCEL TOP UP3 19 BLACK
5 XCEL TOP UP3 19.5 BLACK
5 XCEL TOP UP3 20 DK TURQUOISE
3 XCEL TOP UP3 20.5 DK TURQ
7 XCEL TOP UP3 21 MUSTARD
5 XCEL TOP UP3 21.5 MUSTARD
6 XCEL TOP UP3 22 MAROON
3 XCEL TOP UP3 22.5 MAROON
2 XCEL TOP UP3 23 CREAM

405 PLUGS**SUMMARY OF REGULATORS**

124 Senn PSR2 10 psi

TOTAL OF 124 REGULATORS

NOZZLE POSITION CHART

XCEL TOP UP3 6 GOLD	1, 2, 3, 4, 5
XCEL TOP UP3 6.5 GOLD	6
XCEL TOP UP3 7 LIME	7, 8
XCEL TOP UP3 7.5 LIME	9
XCEL TOP UP3 8 LAVENDER	10
XCEL TOP UP3 8.5 LAVENDER	11, 12
XCEL TOP UP3 9 GREY	13
XCEL TOP UP3 9.5 GREY	14, 15
XCEL TOP UP3 10 TURQUOISE	16, 17
XCEL TOP UP3 10.5 TURQ	18, 19
XCEL TOP UP3 11 YELLOW	20, 21
XCEL TOP UP3 11.5 YELLOW	22, 23
XCEL TOP UP3 12 RED	24, 25, 30, 31, 32
XCEL TOP UP3 12.5 RED	26, 27, 29, 33, 34, 35
XCEL TOP UP3 13 WHITE	28, 36, 37, 38, 39
XCEL TOP UP3 13.5 WHITE	40, 41, 42
XCEL TOP UP3 14 BLUE	43, 44, 45
XCEL TOP UP3 14.5 BLUE	46, 47, 48, 49, 50
XCEL TOP UP3 15 DK BROWN	51, 52, 53, 54
XCEL TOP UP3 15.5 DK BROWN	55, 56, 57, 58
XCEL TOP UP3 16 ORANGE	59, 60, 61, 62
XCEL TOP UP3 16.5 ORANGE	63, 64, 66
XCEL TOP UP3 17 DK GREEN	65, 67, 68, 69, 70
XCEL TOP UP3 17.5 DK GREEN	71, 72, 73, 74, 75
XCEL TOP UP3 18 PURPLE	76, 77, 78, 79
XCEL TOP UP3 18.5 PURPLE	80, 81, 82
XCEL TOP UP3 19 BLACK	83, 84, 85, 86, 87, 88
XCEL TOP UP3 19.5 BLACK	89, 90, 91, 92, 93
XCEL TOP UP3 20 DK TURQUOISE	94, 95, 96, 97, 98
XCEL TOP UP3 20.5 DK TURQ	99, 100, 103
XCEL TOP UP3 21 MUSTARD	101, 102, 104, 105, 106, 107, 108
XCEL TOP UP3 21.5 MUSTARD	109, 110, 111, 112, 113
XCEL TOP UP3 22 MAROON	114, 115, 116, 117, 119, 120
XCEL TOP UP3 22.5 MAROON	118, 121, 122
XCEL TOP UP3 23 CREAM	123, 124

FREY PIVOT SERVICE
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2002 LINDSAY GEN II - 30

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KEVIN MULVEY
NW 1/4 10-16-28
900 GPM @ 32 PSI

SENNINGER 10 PSI REGULATORS
NO DROPS
NELSON SR-100 .80 TB

Rotation time at 100% = 10.07 Hours Or 604 minutes

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

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NW 1/4 10-16-28
900 GPM @ 32 PSI

SENNINGER 10 PSI REGULATORS
NO DROPS
NELSON SR-100 .80 TB

Rotation time at 100% = 10.07 Hours Or 604 minutes

Page 2

Installation Chart

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	66	16.5	PSR210	65	PLUG	81	18.5	PSR210	51	PLUG	52	PLUG		37	PLUG			
6					66	PLUG	81	18.5	PSR210	53	PLUG	96	20	PSR210	38	PLUG			
7	PLUG				67	PLUG				54	PLUG				39	PLUG			
8	PLUG				68	PLUG				55	PLUG				40	PLUG			
9	PLUG				69	PLUG				56	PLUG				41	PLUG			
10					70	PLUG	82	18.5	PSR210	57	PLUG	97	20	PSR210	42	PLUG			
11	PLUG				71	PLUG				58	PLUG				43	PLUG			
12	PLUG				72	PLUG				59	PLUG				44	PLUG			
13	PLUG				73	PLUG				60	PLUG				45	PLUG			
14					68	17	PSR210	TOWER 5		61	PLUG	98	20	PSR210	46	PLUG			
15	PLUG				1	PLUG	83	19	PSR210	62	PLUG				47	PLUG			
16	PLUG				2	PLUG				63	PLUG				48	PLUG			
17	PLUG				3	PLUG				64	PLUG				49	PLUG			
18					4	PLUG				65	PLUG	99	20.5	PSR210	50	PLUG			
19	PLUG				5	PLUG	84	19	PSR210	66	PLUG				51	PLUG			
20	PLUG				6	PLUG				67	PLUG				52	PLUG			
21	PLUG				7	PLUG				68	PLUG				53	PLUG			
22					70	17	PSR210	8	PLUG	69	PLUG	100	20.5	PSR210	54	PLUG			
23	PLUG				9	PLUG	85	19	PSR210	70	PLUG				55	PLUG			
24	PLUG				10	PLUG				71	PLUG				56	PLUG			
25	PLUG				11	PLUG				72	PLUG				57	PLUG			
26					71	17.5	PSR210	12	PLUG	73	PLUG	101	21	PSR210	58	PLUG			
27	PLUG				13	PLUG	86	19	PSR210	74	PLUG				59	PLUG			
28	PLUG				14	PLUG				75	PLUG	TOWER 6			60	PLUG			
29	PLUG				15	PLUG				76	PLUG	1	PLUG		61	PLUG			
30					16	PLUG				77	PLUG	2	PLUG		62	PLUG			
31	PLUG				17	PLUG	87	19	PSR210	78	PLUG	3	PLUG		63	PLUG			
32	PLUG				18	PLUG				79	PLUG	102	21	PSR210	64	PLUG			
33	PLUG				19	PLUG				80	PLUG	4	PLUG		65	PLUG			
34					20	PLUG				81	PLUG	5	PLUG		66	PLUG			
35	PLUG				21	PLUG	88	19	PSR210	82	PLUG	6	PLUG		67	PLUG			
36	PLUG				22	PLUG				83	PLUG	7	PLUG		68	PLUG			
37	PLUG				23	PLUG				84	PLUG	8	PLUG		69	PLUG			
38					24	PLUG				85	PLUG	9	PLUG		70	PLUG			
39	PLUG				25	PLUG	89	19.5	PSR210	86	PLUG	10	PLUG		71	PLUG			
40	PLUG				26	PLUG				87	PLUG	11	PLUG		72	PLUG			
41	PLUG				27	PLUG				88	PLUG	12	PLUG		73	PLUG			
42					28	PLUG				89	PLUG	13	PLUG		74	PLUG	TOWER 7		
43	PLUG				29	PLUG	90	19.5	PSR210	90	PLUG	14	PLUG		75	PLUG	1		
44	PLUG				30	PLUG				91	PLUG	15	PLUG		76	PLUG	2		
45	PLUG				31	PLUG				92	PLUG	16	PLUG		77	PLUG	3		
46					32	PLUG				93	PLUG	17	PLUG		78	PLUG	4		
47	PLUG				33	PLUG	91	19.5	PSR210	94	PLUG	18	PLUG		79	PLUG	5		
48	PLUG				34	PLUG				95	PLUG	19	PLUG		80	PLUG	6		
49	PLUG				35	PLUG				96	PLUG	20	PLUG		81	PLUG	7		
50					36	PLUG				97	PLUG	21	PLUG		82	PLUG	8		
51	PLUG				37	PLUG	92	19.5	PSR210	98	PLUG	22	PLUG		83	PLUG	9		
52	PLUG				38	PLUG				99	PLUG	23	PLUG		84	PLUG	10		
53	PLUG				39	PLUG				100	PLUG	24	PLUG		85	PLUG	11		
54					40	PLUG				101	PLUG	25	PLUG		86	PLUG	12		
55	PLUG				41	PLUG	93	19.5	PSR210	102	PLUG	26	PLUG		87	PLUG	13		
56	PLUG				42	PLUG				103	PLUG	27	PLUG		88	PLUG	14		
57	PLUG				43	PLUG				104	PLUG	28	PLUG		89	PLUG	15		
58					44	PLUG				105	PLUG	29	PLUG		90	PLUG	16		
59	PLUG				45	PLUG	94	20	PSR210	106	PLUG	30	PLUG		91	PLUG	17		
60	PLUG				46	PLUG				107	PLUG	31	PLUG		92	PLUG	18		
61	PLUG				47	PLUG				108	PLUG	32	PLUG		93	PLUG	19		
62					48	PLUG				109	PLUG	33	PLUG		94	PLUG	20		
63	PLUG				49	PLUG	95	20	PSR210	110	PLUG	34	PLUG		95	PLUG	21		
64	PLUG				50	PLUG				111	PLUG	35	PLUG		96	PLUG	22		

PRECIPITATION CHART FOR FULL CIRCLE

WISH-119639

SEPTEMBER 30, 2025

DEALER - FREY PIVOT SERVICE

IRRIGATOR - KEVIN MULVEY
FIELD - NW 1/4 10-16-28

TOTAL LENGTH PIPE = 1300.47 SYSTEM PRESSURE = 32 PSI
 GPM UNDER PIPE = 778.69 TOTAL GPM = 900.80
 ACRES UNDER PIPE = 121.97
 RANGE OF ENDGUN = 94.31 RUN FOR MINIMUM PRESSURE
 GPM OF ENDGUN = 122.11
 ACRES UNDER ENDGUN = 18.33
 WATERING LENGTH = 1394.78

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) = 13.06

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	10.07 - 604(min)	100.00	.14	10.07 - 604(min)
.20	71.01	14.18	90.00	.16	11.19
.25	56.81	17.72	80.00	.18	12.58
.30	47.34	21.27	70.00	.20	14.38
.40	35.50	28.36	60.00	.24	16.78
.50	28.40	35.45	50.00	.28	20.14
.60	23.67	42.53	45.00	.32	22.37
.70	20.29	49.62	40.00	.36	25.17
.75	18.94	53.17	35.00	.41	28.77
.80	17.75	56.71	30.00	.47	33.56
.90	15.78	63.80	25.00	.57	40.27
1.00	14.20	70.89	20.00	.71	50.34
1.25	11.36	88.61	15.00	.95	67.12
1.50	9.47	106.34	10.00	1.42	100.68
1.75	8.12	124.06	5.00	2.84	201.36

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.