

2011 Lights on Gold

Construction Manual



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#1 – Gutter Icicle/White Lights & Controller Q

- Icicles
 - o Icicle String 1 starts at the north, increasing south.
 - o Male Plugs on South end of string for light strings north of the porch-garage corner
 - o Male Plugs on North end of string for light strings south of the porch-garage corner
 - o String 8 folds over on itself at south end of gutter.
 - o Icicle strings zip-tied to gutter clips
 - ~ 3 Clips
- White Mini Lights
 - o Secured using mini gutter clips at light string spacing length
 - o Light strings daisy chained – male plugs facing porch-garage corner plugs
- Controller Q
 - o Sits on north-west corner of porch, just south of the post
- Control Wire Securing
 - o Control Power Wires zip-tied to bottom edge of gutter clips (see diagram)
 - ~ Every 5-6 Clips
 - o Control wires run up back side of north post

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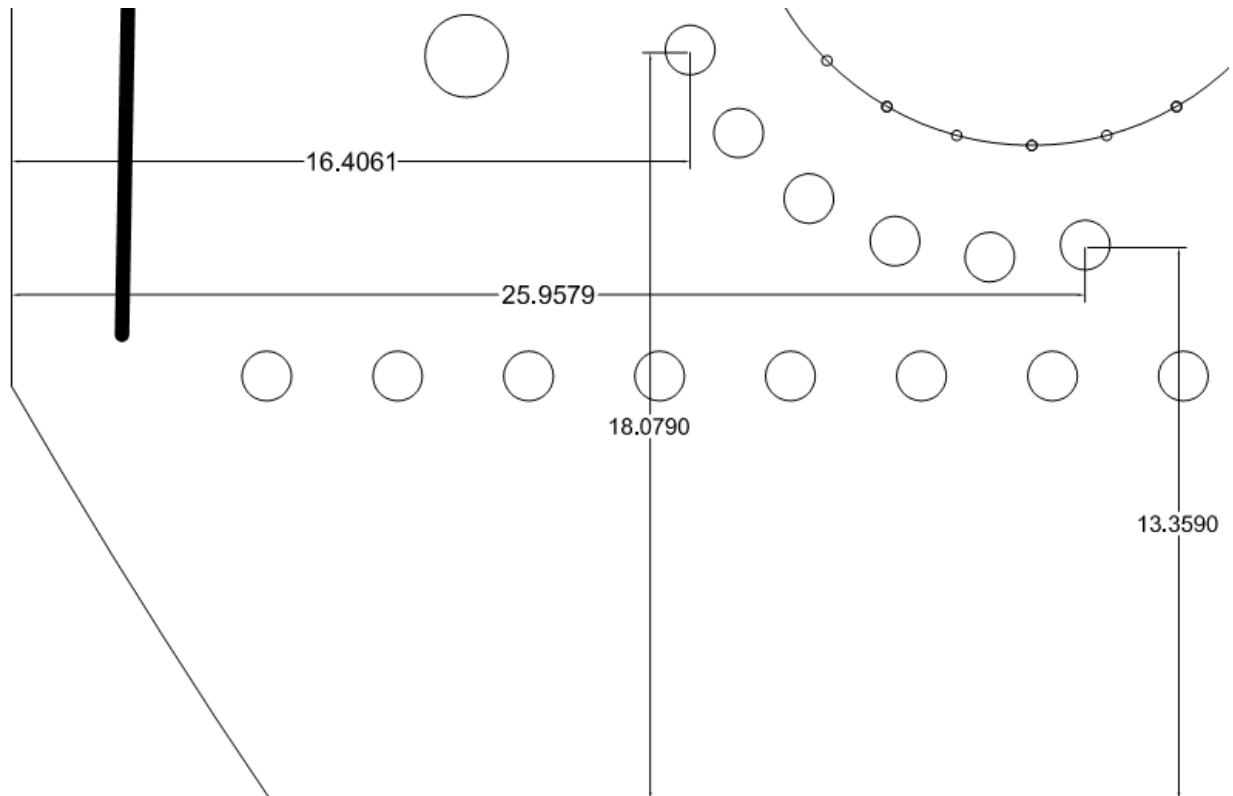
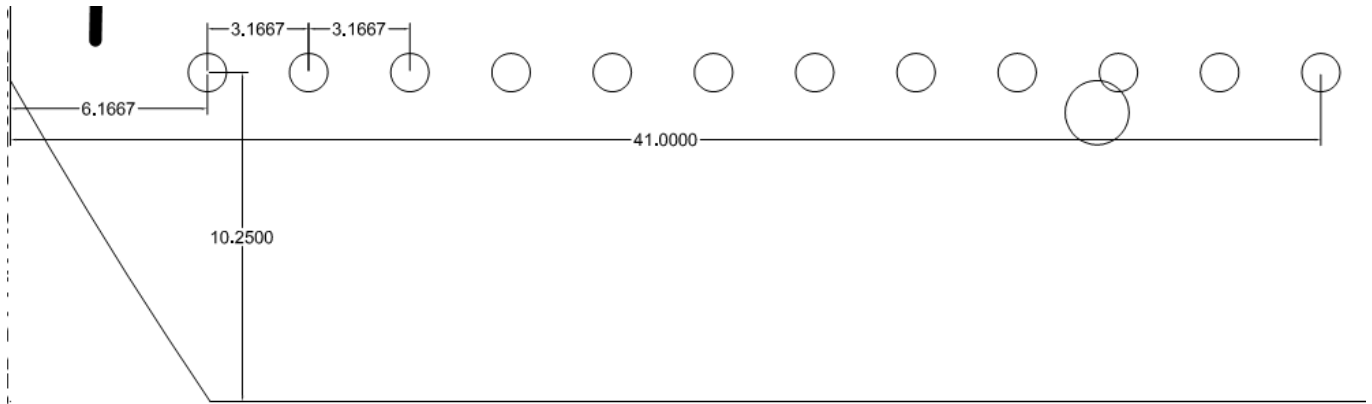
#2 – Yard Outline

- 260 large white LED lights
- Lights are staked at string spacing
- All attempts should be made to keep bulbs as straight as possible
- North Side
 - o Male plug begins at corner of driveway
 - o Light strings are then plugged into one-another.
 - o Lights then travel north to property line, then east in a straight line (using long tape measure) to the fence joint
- South Side
 - o Male plug begins at corner of driveway
 - o Light strings are then plugged into one-another.
 - o Lights then travel south to property line, then east in a straight line (using long tape measure) to the fence joint

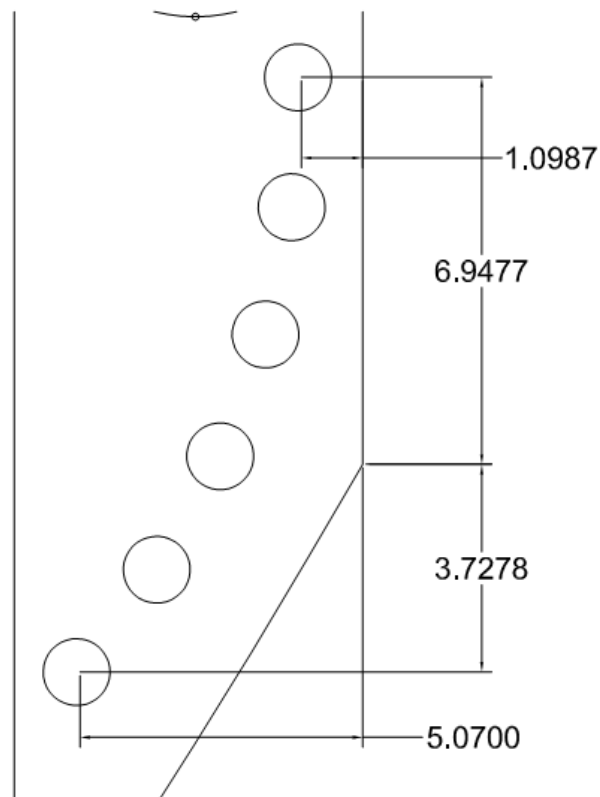
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#3 – Mini Tree Placement, Stakedown

- 2-3 Stakes should be used to tie down each mini-tree
- Measurements should be to the center of the mini-tree
- Male light plugs should be direct outside of the ring and facing east
- Main yard – Front row trees are 12 Red-green-blue mini trees
- Main yard – Back arc trees are 6 smaller white mini trees (**Mega tree must be in place first!**)
- North yard – Side arc trees are 6 larger white mini trees



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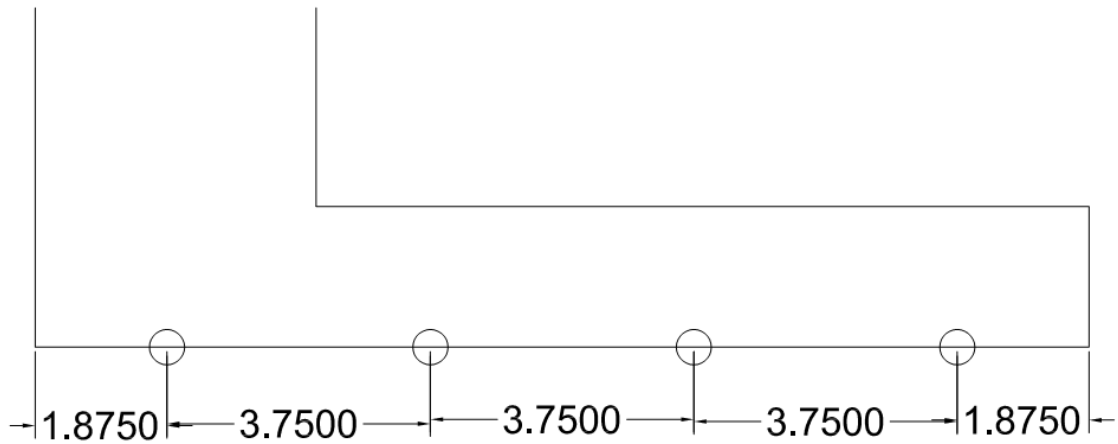
#4 – Wreath

Due to the white LED mini lights wrapping around the porch poles, the wreath needs to move to the side of the house. 1-2 large command hooks mount the wreath to the wall.

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#5 – Flower Bed Snowflakes

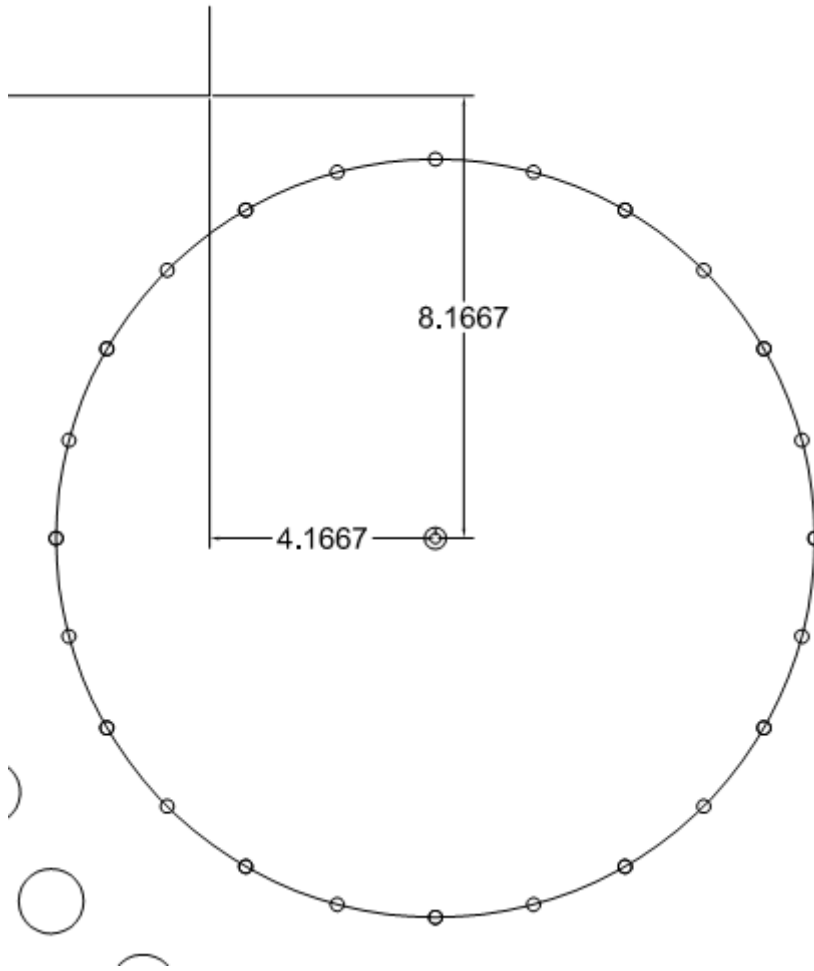
- 4 Snowflakes mount on metal stakes at the front (west) edge of the front flowerbed
- Small wire, fishing line, or some material we find laying around, can run in between snowflakes to keep them all facing forward (wind rotate them around).



#6 – Porch Post Lights

Each porch post receives 2 strings of 100 mini white LED lights. This will provide a total of 66 feet, which will be rotated around the post. The north post will receive around 50 turns, the south pole will receive around 40 turns due to the gutter. These rotations can be secured with large zip-ties.

#7 – Mega Tree Placement & Light Attachment



- Base is first put into the ground in the proper position with the 4 stakes

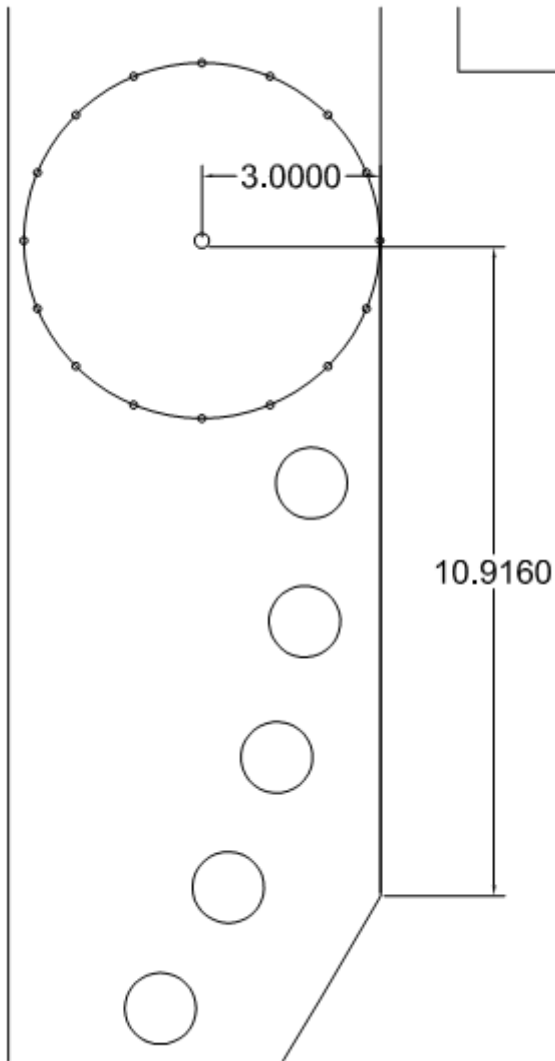
- The pole is then inserted into the base and rotated so that the plane of the star is parallel to the road

- 4 guy wires are positioned in N, S, E, W directions. It is best to stake down one set of directions at a time to stabilize it in each axis (N&S, E&W).

- Lights are attached to the top of the tree one strand at a time. Strands end **6.63 ft (6' 8")** from the center.

- Arc Length between stakes: 1.74 ft (1' 9")

#8 – Medium Tree Placement & Light Attachment



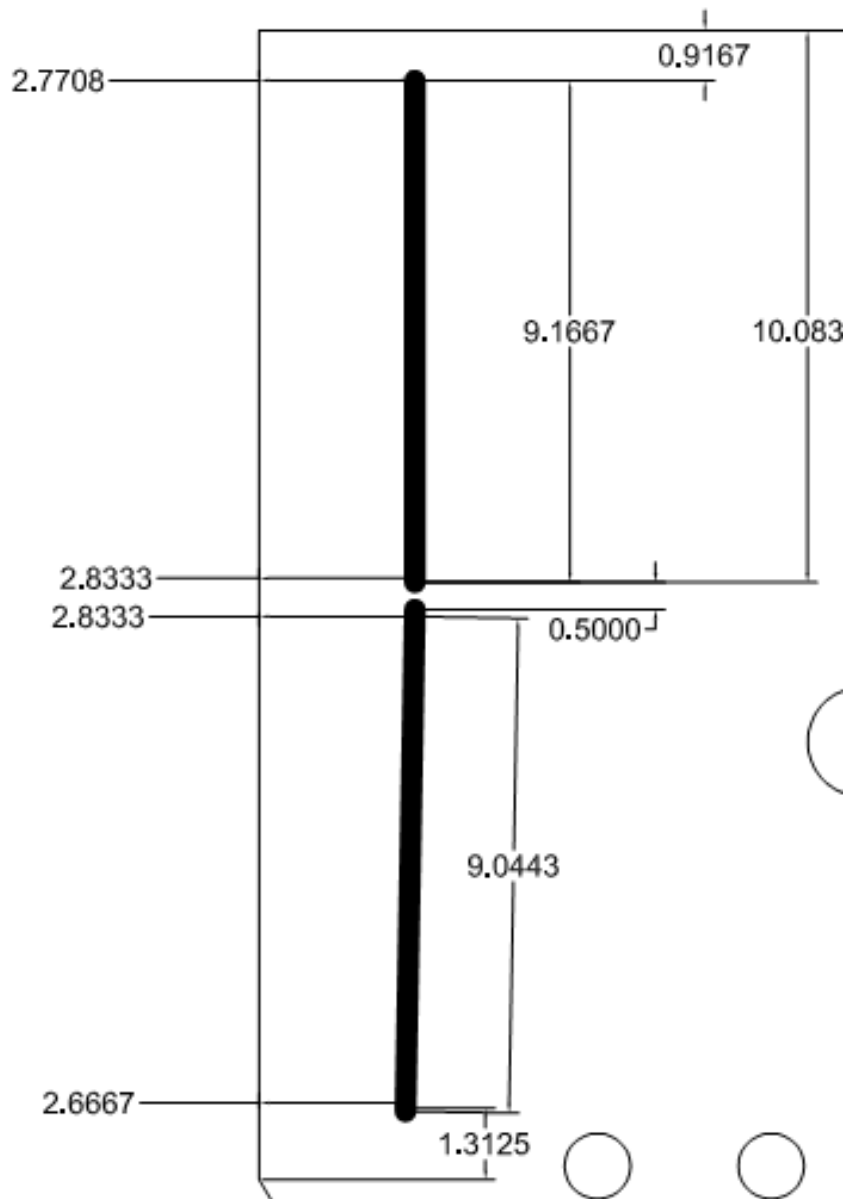
- Base is first put into the ground in the proper position with the 4 stakes
- The pole is then inserted into the base and rotated so that the plane of the star is parallel to the road
- 4 guy wires are positioned in NW,SW,NE,SE directions. It is best to stake down one set of directions at a time to stabilize it in each axis (NE&SW, SE&NW).
- Lights are attached to the top of the tree one strand at a time. Strands end **3 ft** from the center.
- Arc Length between stakes: 1.17 ft

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#9 – Arch Placement & Tiedown

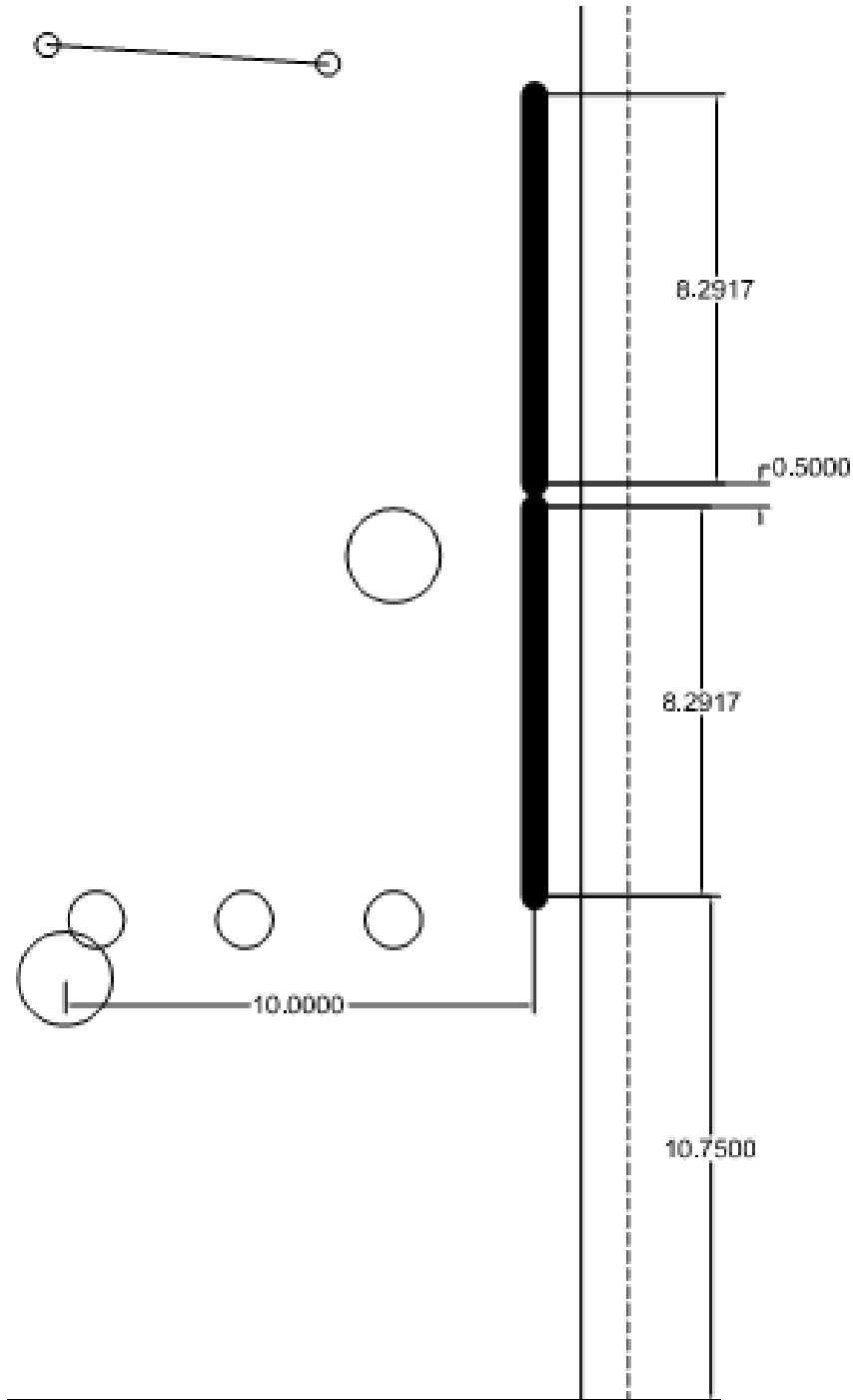
- **Shorter arches (non-painted PVC pipe) go on the south side**
- Each end stake (angled rebar) is pounded mostly into the ground at the proper location
- Once stakes are in place, arch is bent onto rebar stakes
- Guy wires are then secured into the ground for extra security

North Arches:



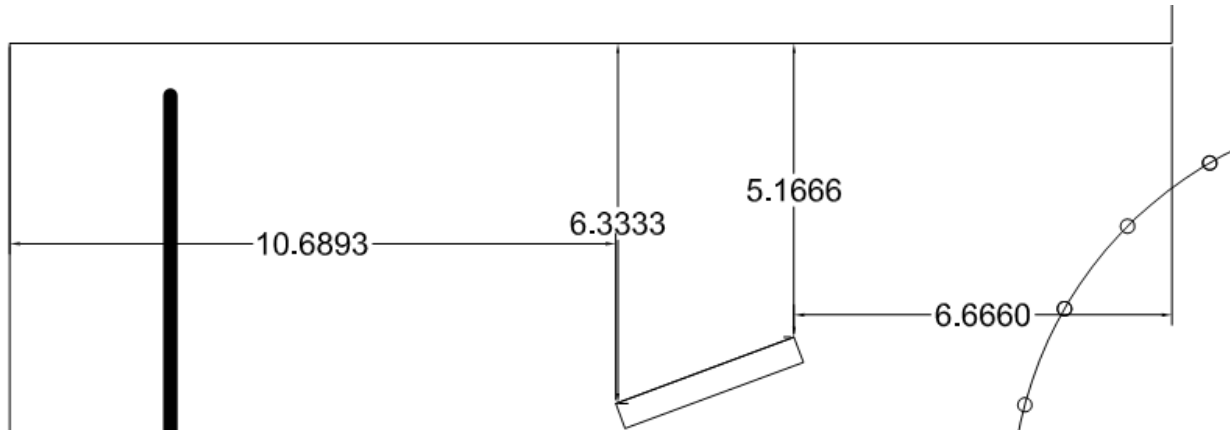
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South Arches:



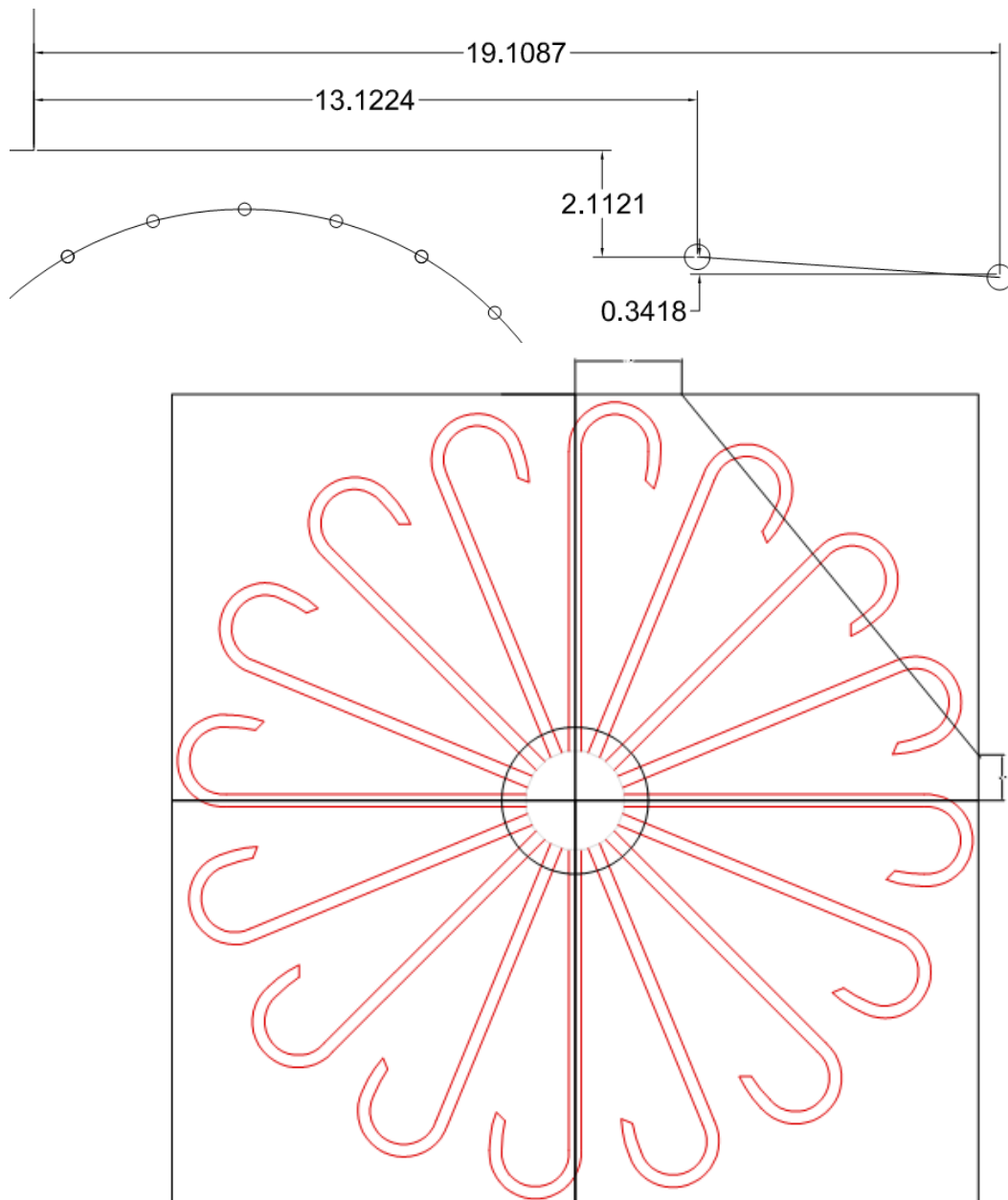
#10 – Digidisplay Placement & Stakedown

- Tiedown stakes are put in a ^ formation to keep the digidisplay from falling over.



#11 – Candy Cane Array: Placement, Tie down, Attachment

- Painted PVC pieces go together into a grid. Permanent Marker Notes on the poles help everything to together smoothly
- Long rebar pieces go into the ground slightly, spaced at the same width as this grid. The grid lifts on top of the rebar
- Guy wires with dog tie-downs will secure the grid from wind motion
- Bungee cords attach across the grid to allow attachment of candy canes
- Candy canes will be arranged at 22.5 degree angles (4 per 90 degrees)
- Candy canes will be attached with zip ties



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#12 – Garage Preparation

- The shelving on the south wall next to the garage door needs to be cleaned for computer equipment
- Antenna for radio needs to be placed in the garage corner
- Extension cord for computer equipment goes up the south wall, wrapped around the rafters and plugs into the garage door opener outlet

#13 – Floodlights, Tie down

- Four RGB floodlights (A,B,C,D) are placed in front of the house, aimed at the front of the house. (About 10-12 feet away, evenly spaced).
- White floodlight (E) is placed by the north tree, facing into the display
 - o This can be used as a security light
- These floodlights can be tied down with tent stakes and/or guy wire material from the shed

#14 – Security Camera Mounting, Wiring

- The security camera can be mounted on the south porch post using zip ties.
- We can test mounting it on the digidisplay box to see if it will provide a better vantage point.
- Wiring for the security camera snakes with the data cable stack (step 17) back to the garage.

#15 – Controller Tiedown

- Small plastic bins will be staked down at controller locations using metal pin style stakes
- Controllers are then elevated off the snowy ground, and can be attached to the small bins using large zip ties.

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#16 – Controller Wiring

- Cables coming out of controllers are numbered. These must be hooked up according to the tables:

A	1	Mini 7 - R
A	2	Mini 7 - G
A	3	Mini 7 - B
A	4	Mini 8 - R
B	5	Mini 8 - G
B	6	Mini 8 - B
B	7	Mini 9 - R
B	8	Mini 9 - G
C	9	Mini 9 - B
C	10	Mini 10 - R
C	11	Mini 10 - G
C	12	Mini 10 - B
D	13	CC 0
D	14	CC 22.5
D	15	CC 45
D	16	CC 67.5
E	17	CC 90
E	18	CC 112.5
E	19	CC 135
E	20	CC 157.5
F	21	CC 180
F	22	CC 202.5
F	23	CC 225
F	24	CC 247.5
G	25	CC 270
G	26	CC 292.5
G	27	CC 315
G	28	CC 337.5
H	29	Mini White 7
H	30	Mini White 8
H	31	Mini White 9
H	32	Mini White 10

I	33	Mini White 11
I	34	Mini White 12
I	35	Mega 9 - R
I	36	Mega 9 - G
J	37	Mega 9 - B
J	38	Mega 10 - R
J	39	Mega 10 - G
J	40	Mega 10 - B
K	41	Mega 11 - R
K	42	Mega 11 - G
K	43	Mega 11 - B
K	44	
L	45	
L	46	Porch Post S.
L	47	Star - Small
L	48	Star - Big
M	49	Mega 12 - R
M	50	Mega 12 - G
M	51	Mega 12 - B
M	52	
N	53	Mini 3 - R
N	54	Mini 3 - G
N	55	Mini 3 - B
N	56	Mini 4 - R
O	57	Mini 4 - G
O	58	Mini 4 - B
O	59	Mini 5 - R
O	60	Mini 5 - G
P	61	Mini 5 - B
P	62	Mini 6 - R
P	63	Mini 6 - G
P	64	Mini 6 - B

Q	1	Isicle 1
Q	2	Isicle 2
Q	3	Isicle 3
Q	4	Isicle 4
Q	5	Isicle 5
Q	6	Isicle 6
Q	7	Isicle 7
Q	8	Isicle 8
Q	9	Roofline Whites 1
Q	10	Roofline Whites 2
Q	11	Wreath
Q	12	Snowflake 1
Q	13	Snowflake 2
Q	14	Snowflake 3
Q	15	Snowflake 4
Q	16	Porch Post N.

R	1	MiniWhite 1
R	2	MiniWhite 2
R	3	MiniWhite 3
R	4	MiniWhite 4
R	5	MiniWhite 5
R	6	MiniWhite 6
R	7	Medi W 1
R	8	Medi W 2
R	9	Medi W 3
R	10	Medi W 4
R	11	Medi W 5
R	12	Medi W 6
R	13	Yard Outline North
R	14	Medi W 7
R	15	Medi W 8
R	16	Medi Star

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S	1	Mega 1 - R	T	1	Arch 1a	U	1	Arch 3a	W	1	Floodlight A - R
S	2	Mega 1 - G	T	2	Arch 1b	U	2	Arch 3b	W	2	Floodlight A - B
S	3	Mega 1 - B	T	3	Arch 1c	U	3	Arch 3c	W	3	Floodlight A - G
S	4	Mega 2 - R	T	4	Arch 1d	U	4	Arch 3d	W	4	
S	5	Mega 2 - G	T	5	Arch 1e	U	5	Arch 3e	W	5	Floodlight B - R
S	6	Mega 2 - B	T	6	Arch 1f	U	6	Arch 3f	W	6	Floodlight B - B
S	7	Mega 3 - R	T	7	Arch 1g	U	7	Arch 3g	W	7	Floodlight B - G
S	8	Mega 3 - G	T	8	Arch 2a	U	8	Arch 4a	W	8	
S	9	Mega 3 - B	T	9	Arch 2b	U	9	Arch 4b	W	9	Floodlight C - R
S	10	Mega 4 - R	T	10	Arch 2c	U	10	Arch 4c	W	10	Floodlight C - B
S	11	Mega 4 - G	T	11	Arch 2d	U	11	Arch 4d	W	11	Floodlight C - G
S	12	Mega 4 - B	T	12	Arch 2e	U	12	Arch 4e	W	12	
S	13	Mega 5 - R	T	13	Arch 2f	U	13	Arch 4f	W	13	Floodlight D - R
S	14	Mega 5 - G	T	14	Arch 2g	U	14	Arch 4g	W	14	Floodlight D - B
S	15	Mega 5 - B	T	15	Mini 1 - R	U	15	Mini 11 - R	W	15	Floodlight D - G
S	16	Mega 6 - R	T	16	Mini 1 - G	U	16	Mini 11 - G	W	16	
S	17	Mega 6 - G	T	17	Mini 1 - B	U	17	Mini 11 - B	W	17	
S	18	Mega 6 - B	T	18	Mini 2 - R	U	18	Mini 12 - R	W	18	
S	19	Mega 7 - R	T	19	Mini 2 - G	U	19	Mini 12 - G	W	19	
S	20	Mega 7 - G	T	20	Mini 2 - B	U	20	Mini 12 - B	W	20	Floodlight E - White
S	21	Mega 7 - B	T	21		U	21				
S	22	Mega 8 - R	T	22		U	22	BROKEN			
S	23	Mega 8 - G	T	23	Yard Outline South	U	23	Mini Star			
S	24	Mega 8 - B	T	24		U	24				

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#17 – Data Wiring

Channel Order:

Port 1	W
1-112	A-P
Port 2	Q
113-216	R
	T
	S
	U

- A-P are on the porch
- Port 2 to R comes from the garage

#18 – Power Wiring

Breaker	1	2	3	4	5	6	7	8	9
1A	S								
1B	D	E	F	G	H	I	J	K	M
2A	T	N							
2B	U	C							
Rear	R	O	P	A	B				
Front	Q	L							

- Power stakes can help group multiple controllers in a small area
- 1A, 1B, 2A, 2B are in the garage

#19 – Cleaning

- Self-explanatory...

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#20 – Testing

1	Floodlight A - R	41	81	Mini White 11
2	Floodlight A - B	42	82	Mini White 12
3	Floodlight A - G	43	83	Mega 9 - R
4		44	84	Mega 9 - G
5	Floodlight B - R	45	85	Mega 9 - B
6	Floodlight B - B	46	86	Mega 10 - R
7	Floodlight B - G	47	87	Mega 10 - G
8		48	88	Mega 10 - B
9	Floodlight C - R	49	89	Mega 11 - R
10	Floodlight C - B	50	90	Mega 11 - G
11	Floodlight C - G	51	91	Mega 11 - B
12		52	92	
13	Floodlight D - R	53	93	
14	Floodlight D - B	54	94	Porch Post S.
15	Floodlight D - G	55	95	Star - Small
16		56	96	Star - Big
17		57	97	Mega 12 - R
18		58	98	Mega 12 - G
19		59	99	Mega 12 - B
20	Floodlight E - W	60	100	
21		61	101	Mini 3 - R
22		62	102	Mini 3 - G
23		63	103	Mini 3 - B
24		64	104	Mini 4 - R
25		65	105	Mini 4 - G
26		66	106	Mini 4 - B
27		67	107	Mini 5 - R
28		68	108	Mini 5 - G
29		69	109	Mini 5 - B
30		70	110	Mini 6 - R
31		71	111	Mini 6 - G
32		72	112	Mini 6 - B
33		73	113	Isicle 1
34		74	114	Isicle 2
35		75	115	Isicle 3
36		76	116	Isicle 4
37		77	117	Isicle 5
38		78	118	Isicle 6
39		79	119	Isicle 7
40		80	120	Isicle 8

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121	Roofline Whites 1	154	Arch 2c	187	Mega 7 - R
122	Roofline Whites 2	155	Arch 2d	188	Mega 7 - G
123	Wreath	156	Arch 2e	189	Mega 7 - B
124	Snowflake 1	157	Arch 2f	190	Mega 8 - R
125	Snowflake 2	158	Arch 2g	191	Mega 8 - G
126	Snowflake 3	159	Mini 1 - R	192	Mega 8 - B
127	Snowflake 4	160	Mini 1 - G	193	Arch 3a
128	Porch Post N.	161	Mini 1 - B	194	Arch 3b
129	MiniWhite 1	162	Mini 2 - R	195	Arch 3c
130	MiniWhite 2	163	Mini 2 - G	196	Arch 3d
131	MiniWhite 3	164	Mini 2 - B	197	Arch 3e
132	MiniWhite 4	165		198	Arch 3f
133	MiniWhite 5	166		199	Arch 3g
134	MiniWhite 6	167	Yard Outline S	200	Arch 4a
135	Medi W 1	168		201	Arch 4b
136	Medi W 2	169	Mega 1 - R	202	Arch 4c
137	Medi W 3	170	Mega 1 - G	203	Arch 4d
138	Medi W 4	171	Mega 1 - B	204	Arch 4e
139	Medi W 5	172	Mega 2 - R	205	Arch 4f
140	Medi W 6	173	Mega 2 - G	206	Arch 4g
141	Yard Outline N	174	Mega 2 - B	207	Mini 11 - R
142	Medi W 7	175	Mega 3 - R	208	Mini 11 - G
143	Medi W 8	176	Mega 3 - G	209	Mini 11 - B
144	Medi Star	177	Mega 3 - B	210	Mini 12 - R
145	Arch 1a	178	Mega 4 - R	211	Mini 12 - G
146	Arch 1b	179	Mega 4 - G	212	Mini 12 - B
147	Arch 1c	180	Mega 4 - B	213	
148	Arch 1d	181	Mega 5 - R	214	BROKEN
149	Arch 1e	182	Mega 5 - G	215	Mini Star
150	Arch 1f	183	Mega 5 - B	216	
151	Arch 1g	184	Mega 6 - R	217	Digisplay
152	Arch 2a	185	Mega 6 - G		
153	Arch 2b	186	Mega 6 - B		

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Appendix A – Master Yard Map

