Twelfth Night
Final Production Book
Technical Director
Tabitha Wimsett

Work Breakdown Structure

WORK BREAK DOWN STRUCTURE WITH ESTIMATED TIME

ID #	Description	Duration (IN MINUTES)	Duration (IN HOURS)	Pessimistic	Optimistic	Most Likely	Estimated Time
1	**Portals A & B**	**671.19**	**11.19**				
1.0	Stock Flats Pulled	16.15	0.27	30	10	15	16.67
1.1	4- 4x6 flats constructed	121.15	2.02	180	90	120	125.00
1.2	Flats prepped for rigging	96.92	1.62	140	60	100	100.00
1.3	Top Portals Assembled	116.31	1.94	180	60	120	120.00
1.4	Prep AC Cable	42.81	0.71	60	25	45	44.17
1.5	Top Portals Installed On Batter	58.15	0.97	90	30	60	60.00
1.6	Bottom of Portals Installed	45.23	0.75	80	20	45	46.67
1.7	Seams glued	31.50	0.53	60	15	30	32.50
1.8	Cut seams	31.50	0.53	60	15	30	32.50
1.9	Bottom of Portals Removed	25.85	0.43	45	15	25	26.67
###	Top Portals Removed from Bat	25.85	0.43	45	15	25	26.67
###	Flats seperated and stored	29.88	0.50	45	20	30	30.83
###	Rigging Hardware Removed	29.88	0.50	45	20	30	30.83
2	**Trees**	**1562.88**	**26.05**				
2.0	Lauan cut on CNC Router	152.65	2.54	280	105	140	157.50
2.1	Foam cut on CNC Router	655.85	10.93	1050	490	630	676.67
2.2	Jacks constructed	202.73	3.38	280	175	200	209.17
2.3	Lauan and Foam Assembled	327.92	5.47	560	210	315	338.33
2.4	Jacks Attached	80.77	1.35	120	60	80	83.33
2.5	Trees Installed	87.23	1.45	120	60	90	90.00
2.6	Trees Removed	30.69	0.51	60	10	30	31.67
2.7	Trees Deconstructed	25.04	0.42	45	10	25	25.83
3	**Olivia's Platform**	**552.95**	**9.22**				
3.0	Ring of plywood cut	121.15	2.02	180	90	120	125.00
3.1	Circular Plywood cut	58.15	0.97	90	30	60	60.00
3.2	Ring Platform Frames Constru	130.85	2.18	180	90	135	135.00
3.3	Circular platform frames const	77.54	1.29	100	60	80	80.00
3.4	Facing Ripped	15.35	0.26	30	5	15	15.83
3.5	Legs and compression plates c	25.85	0.43	45	15	25	26.67
3.6	Circular Platform installed	14.54	0.24	25	5	15	15.00
3.7	Ring Platform frames installed	29.08	0.48	45	15	30	30.00
3.8	All platforming faced	29.08	0.48	45	15	30	30.00
3.9	Facings Removed	10.50	0.18	20	5	10	10.83
###	Plywood Ring Top Removed	9.69	0.16	15	5	10	10.00
3.1	Ring framing removed	9.69	0.16	15	5	10	10.00
3.1	Circular Platfrom Removed	5.33	0.09	10	3	5	5.50
###	Platforms deconstructed	16.15	0.27	30	10	15	16.67
4	**Olivia's Arch**	**1647.69**	**27.46**				
4.0	Steel Cleaned	15.35	0.26	25	10	15	15.83
4.1	Decorative Steel Bent	600.92	10.02	840	480	600	620.00
4.2	Decorative Steel Cut	465.23	7.75	600	360	480	480.00
4.3	Support Steel Cut	29.08	0.48	45	15	30	30.00
4.4	Support Steel Frame Welded	121.15	2.02	210	60	120	125.00
4.5	Decorative Steel Welded	261.69	4.36	390	150	270	270.00
4.6	Arch Assembled	87.23	1.45	120	60	90	90.00
4.7	Arch Installed	31.50	0.53	60	15	30	32.50
4.8	Arch Removed	10.50	0.18	20	5	10	10.83
4.9	Arch Deconstructed	25.04	0.42	45	10	25	25.83
5	**Orsino's Platform**	**1205.88**	**20.10**				
5.0	Platforms Constructed	126.00	2.10	210	90	120	130.00
5.1	4' Staircase Constructed	179.31	2.99	270	120	180	185.00
5.2	8' Steps constructed	179.31	2.99	270	120	180	185.00
5.3	Spindles constructed	348.92	5.82	450	270	360	360.00
5.4	Handrails constructed	126.00	2.10	210	90	120	130.00
5.5	Facings Cut	31.50	0.53	60	15	30	32.50
5.6	Platforms Installed	21.00	0.35	40	10	20	21.67
5.7	4' Staircase Installed	13.73	0.23	20	5	15	14.17
5.8	8' Steps Installed	18.58	0.31	25	10	20	19.17
5.9	Facings Installed	24.23	0.40	35	15	25	25.00
###	Balustrade Installed	29.08	0.48	45	15	30	30.00
5.1	Balusrade Removed	14.54	0.24	25	5	15	15.00
###	Facings Removed	9.69	0.16	15	5	10	10.00
###	8' steps removed	14.54	0.24	25	5	15	15.00
5.1	4' staircase removed	9.69	0.16	15	5	10	10.00
###	Platforms Removed	9.69	0.16	15	5	10	10.00
5.2	Balustrade Deconstructed	14.54	0.24	20	10	15	15.00
5.2	Staircase/Steps Deconstructed	19.38	0.32	30	10	20	20.00
###	Platforms Deconstructed	16.15	0.27	30	10	15	16.67
6	**Orsino's Gateway**	**353.77**	**5.90**				
6.0	2x4 Ripped Down	20.19	0.34	35	10	20	20.83
6.1	2x2 Frames Assembled	122.77	2.05	180	100	120	126.67
6.2	Lauan Ripped to Size	14.54	0.24	20	10	15	15.00
6.3	Lauan Attached to Frame	58.15	0.97	90	30	60	60.00
6.4	Trim Assembled	60.58	1.01	90	45	60	62.50
6.5	Trim Installed to Frame	13.73	0.23	20	5	15	14.17
6.6	Frame Installed into platform	30.69	0.51	60	10	30	31.67
6.7	Frame Removed from platform	19.38	0.32	30	10	20	20.00
6.8	Frame Deconstructed	13.73	0.23	20	5	15	14.17
7	**Orsino's Gate (Doors)**	**308.54**	**5.14**				
7.0	Foam Cut on CNC Router	59.77	1.00	90	40	60	61.67
7.1	Lauan Cut On CNC Router	37.15	0.62	90	20	30	38.33
7.2	2x Material Ripped	16.15	0.27	30	10	15	16.67
7.3	Door Assembled	88.04	1.47	120	65	90	90.83
7.4	Hinges Installed	31.50	0.53	60	15	30	32.50
7.5	Door Installed	56.54	0.94	90	20	60	58.33
7.6	Doors Removed	9.69	0.16	15	5	10	10.00
7.7	Doors Deconstructed	9.69	0.16	15	5	10	10.00
8	**Dock**	**177.69**	**2.96**				
8.0	Legs Constructed	42.00	0.70	60	20	45	43.33
###	Platform Constructed	58.15	0.97	90	30	60	60.00
###	Facings Cut	16.15	0.27	30	10	15	16.67
8.3	Legs Installed on Platform	16.15	0.27	30	10	15	16.67
8.4	Platform Installed	25.85	0.43	45	15	25	26.67
8.5	Platform Removed	9.69	0.16	15	5	10	10.00
8.6	Platform Deconstructed	9.69	0.16	15	5	10	10.00
9	**Fountain**	**1039.98**	**17.33**				
9.0	Holes drilled for PVC	58.15	0.97	90	30	60	60.00
9.1	PVC Cut to size	16.15	0.27	30	10	15	16.67
9.2	Fountain Assembled	169.62	2.83	240	90	180	175.00
9.3	Fountain Textured	29.08	0.48	45	15	30	30.00
9.4	Outer Ring Frame Constructed	169.62	2.83	240	90	180	175.00
9.5	outer ring of plywood cut	121.15	2.02	180	90	120	125.00
9.6	Fountain outer ring assembled	65.42	1.09	120	45	60	67.50
9.7	Facing Cut	14.54	0.24	20	10	15	15.00
9.8	Outer Platform Installed	21.00	0.35	35	15	20	21.67
9.9	Resevoir Installed	5.33	0.09	10	3	5	5.50
###	Liner installed	19.38	0.32	30	10	20	20.00
###	Install fountain	42.81	0.71	60	25	45	44.17
###	Pump Installed	19.38	0.32	30	10	20	20.00
###	Troubleshoot Fountain	164.77	2.75	240	60	180	170.00
###	Install Facings	24.23	0.40	40	10	25	25.00
###	Remove Pump	9.69	0.16	15	5	10	10.00
9.2	Drain Water	21.81	0.36	45	10	20	22.50
###	Fountain Removed	9.69	0.16	15	5	10	10.00
###	Liner Removed	9.69	0.16	15	5	10	10.00
9.2	Resevoir Removed	9.69	0.16	15	5	10	10.00
###	Outer Ring Facings Removed	9.69	0.16	15	5	10	10.00
###	Outer Ring Removed	13.73	0.23	20	5	15	14.17
###	Deconstruct Ring Framing	15.35	0.26	30	5	15	15.83
10	**Trap Door**	**590.42**	**9.84**				
###	Steel Cleaned	19.38	0.32	30	10	20	20.00
10	Grate Constructed	179.31	2.99	300	90	180	185.00
10	Lid Constructed	87.23	1.45	120	60	90	90.00
10	Trap Removed	87.23	1.45	120	60	90	90.00
10	Grate Installed	58.15	0.97	90	30	60	60.00
11	Lid Installed	35.54	0.59	60	20	35	36.67
11	Platform Under the Stage Insta	31.50	0.53	60	15	30	32.50
11	Platform Removed and Decons	29.08	0.48	45	15	30	30.00
11	Lid Removed	14.54	0.24	25	5	15	15.00
11	Grate Removed	9.69	0.16	15	5	10	10.00
###	Trap Installed	38.77	0.65	60	20	40	40.00

EFFICENCY MULTIPLIER

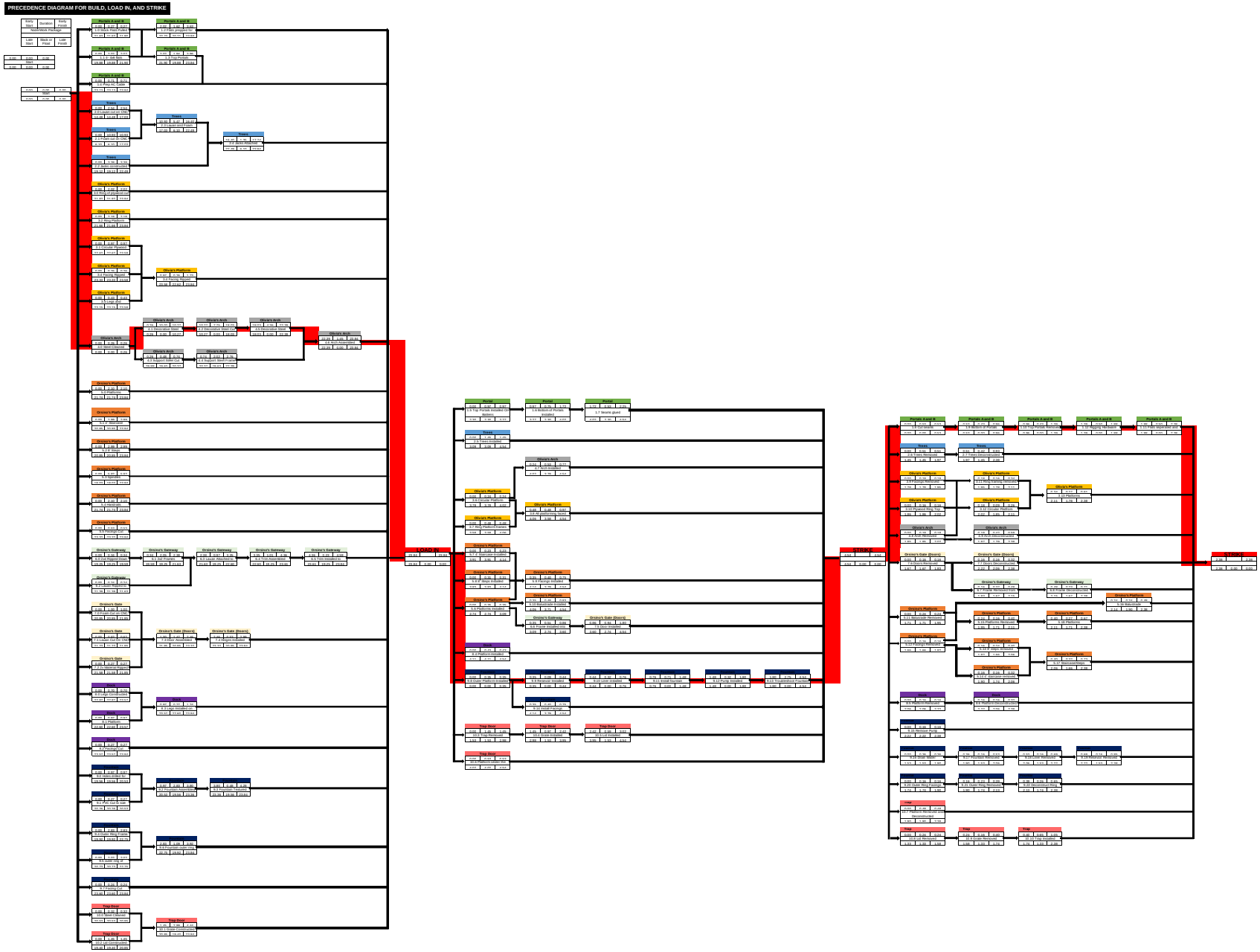
Hworked	Hunproductive	N	C
7.5	1	0.75	1.12

0.969230769

WORK BREAKDOWN PREDECESSOR AND SUCCESSOR

ID #	Description	Duration (IN MINUTES)	Duration (IN HOURS)	Predecessors	Successors
1	**Portals A & B**	**671.19**	**11.19**		
1.0	Stock Flats Pulled	16.15	0.27		1.2, 1.3
1.1	4- 4x6 flats constructed	121.15	2.02		1.2, 1.3
1.2	Flats prepped for rigging	96.92	1.62	1.0, 1.1	
1.3	Top Portals Assembled	116.31	1.94	1.0, 1.1	1.5
1.4	Prep AC Cable	42.81	0.71		1.5
1.5	Top Portals Installed On Batte	58.15	0.97	1.3, 1.4	1.6
1.6	Bottom of Portals Installed	45.23	0.75	1.5	1.7
1.7	Seams glued	31.50	0.53	1.6	
1.8	Cut seams	31.50	0.53		1.9
1.9	Bottom of Portals Removed	25.85	0.43	1.8	1.10
1.10	Top Portals Removed from Ba	25.85	0.43	1.9	1.11, 1.12
1.11	Flats seperated and stored	29.88	0.50	1.10, 1.12	
1.12	Rigging Hardware Removed	29.88	0.50	1.10	1.11
2	**Trees**	**1562.88**	**26.05**		
2.0	Lauan cut on CNC Router	152.65	2.54		2.3
2.1	Foam cut on CNC Router	655.85	10.93		2.3
2.2	Jacks constructed	202.73	3.38		2.4
2.3	Lauan and Foam Assembled	327.92	5.47	2.0, 2.1	2.4
2.4	Jacks Attached	80.77	1.35	2.2, 2.3	2.5
2.5	Trees Installed	87.23	1.45	2.4	
2.6	Trees Removed	30.69	0.51		2.7
2.7	Trees Deconstructed	25.04	0.42	2.6	
3	**Olivia's Platform**	**552.95**	**9.22**		
3.0	Ring of plywood cut	121.15	2.02		
3.1	Circular Plywood cut	58.15	0.97		3.3
3.2	Ring Platform Frames Constr	130.85	2.18		
3.3	Circular platform frames cons	77.54	1.29	3.1, 3.4, 3.5	
3.4	Facing Ripped	15.35	0.26		3.3
3.5	Legs and compression plates	25.85	0.43		3.3
3.6	Circular Platform installed	14.54	0.24		3.8, 4.7
3.7	Ring Platform frames installed	29.08	0.48		3.8
3.8	All platforming faced	29.08	0.48	3.6, 3.8	
3.9	Facings Removed	10.50	0.18		3.11
3.10	Plywood Ring Top Removed	9.69	0.16		3.11
3.11	Ring framing removed	9.69	0.16	3.9, 3.10	3.1
3.12	Circular Platfrom Removed	5.33	0.09	3.9, 3.10	3.11, 3.13
3.13	Platforms deconstructed	16.15	0.27	3.11, 3.12	
4	**Olivia's Arch**	**1647.69**	**27.46**		
4.0	Steel Cleaned	15.35	0.26		4.1, 4.3
4.1	Decorative Steel Bent	600.92	10.02	4	4.2
4.2	Decorative Steel Cut	465.23	7.75	4.1	4.5
4.3	Support Steel Cut	29.08	0.48	4.0	4.4
4.4	Support Steel Frame Welded	121.15	2.02	4.3	4.6
4.5	Decorative Steel Welded	261.69	4.36	4.2	4.6
4.6	Arch Assembled	87.23	1.45	4.4, 4.5	
4.7	Arch Installed	31.50	0.53	3.6	
4.8	Arch Removed	10.50	0.18		4.9
4.9	Arch Deconstructed	25.04	0.42	4.8	
5	**Orsino's Platform**	**1205.88**	**20.10**		
5.0	Platforms Constructed	126.00	2.10		
5.1	4' Staircase Constructed	179.31	2.99		
5.2	8' Steps constructed	179.31	2.99		
5.3	Spindles constructed	348.92	5.82		
5.4	Handrails constructed	126.00	2.10		
5.5	Facings Cut	31.50	0.53		
5.6	Platforms Installed	21.00	0.35		5.7, 5.8, 5.9, 5.10, 6.6
5.7	4' Staircase Installed	13.73	0.23		5.9
5.8	8' Steps Installed	18.58	0.31		5.9
5.9	Facings Installed	24.23	0.40	5.6, 5.7, 5.8	
5.10	Balustrade Installed	29.08	0.48	5.6	
5.11	Balusrade Removed	14.54	0.24		5.15, 5.16
5.12	Facings Removed	9.69	0.16		5.13, 5.14, 5.15
5.13	8' steps removed	14.54	0.24	5.12	5.17
5.14	4' staircase removed	9.69	0.16	5.12	5.17
5.15	Platforms Removed	9.69	0.16	5.11, 5.12	5.18
5.16	Balustrade Deconstructed	14.54	0.24	5.11	
5.17	Staircase/Steps Deconstructe	19.38	0.32	5.13, 5.14	
5.18	Platforms Deconstructed	16.15	0.27	5.11, 5.15	
6	**Orsino's Gateway**	**353.77**	**5.90**		
6.0	2x4 Ripped Down	20.19	0.34		6.1
6.1	2x2 Frames Assembled	122.77	2.05	6	6.3
6.2	Lauan Ripped to Size	14.54	0.24		6.3
6.3	Lauan Attached to Frame	58.15	0.97	6.1, 6.2	6.4
6.4	Trim Assembled	60.58	1.01	6.3	6.5
6.5	Trim Installed to Frame	13.73	0.23	6.4	
6.6	Frame Installed into platform	30.69	0.51	5.6	7.5
6.7	Frame Removed from platfor	19.38	0.32		6.8
6.8	Frame Deconstructed	13.73	0.23	6.7	
7	**Orsino's Gate (Doors)**	**308.54**	**5.14**		
7.0	Foam Cut on CNC Router	59.77	1.00		7.3
7.1	Lauan Cut On CNC Router	37.15	0.62		7.3
7.2	2x Material Ripped	16.15	0.27		7.3
7.3	Door Assembled	88.04	1.47	7.0, 7.1, 7.2	7.4
7.4	Hinges Installed	31.50	0.53	7.3	7.5
7.5	Door Installed	56.54	0.94	7.4, 6.6	8.4
7.6	Doors Removed	9.69	0.16		7.7
7.7	Doors Deconstructed	9.69	0.16	7.6	
8	**Dock**	**177.69**	**2.96**		
8.0	Legs Constructed	42.00	0.70		8.3
8.1	Platform Constructed	58.15	0.97		8.3
8.2	Facings Cut	16.15	0.27		8.4
8.3	Legs Installed on Platform	16.15	0.27	8.0, 8.1	8.4
8.4	Platform Installed	25.85	0.43	8.2, 8.3	
8.5	Platform Removed	9.69	0.16		8.6
8.6	Platform Deconstructed	9.69	0.16	8.5	
9	**Fountain**	**1039.98**	**17.33**		
9.0	Holes drilled for PVC	58.15	0.97		9.2
9.1	PVC Cut to size	16.15	0.27		9.2
9.2	Fountain Assembled	169.62	2.83	9.0, 9.1	9.3
9.3	Fountain Textured	29.08	0.48	9.20	
9.4	Outer Ring Frame Constructe	169.62	2.83		9.60
9.5	outer ring of plywood cut	121.15	2.02		9.60
9.6	Fountain outer ring assemble	65.42	1.09	9.4, 9.5	
9.7	Facing Cut	14.54	0.24		
9.8	Outer Platform Installed	21.00	0.35		9.9, 9.14
9.9	Resevoir Installed	5.33	0.09	9.8	9.10
9.10	Liner installed	19.38	0.32	9.9	9.11
9.11	Install fountain	42.81	0.71	9.10	9.12
9.12	Pump Installed	19.38	0.32	9.11	9.13
9.13	Troubleshoot Fountain	164.77	2.75	9.12	
9.14	Install Facings	24.23	0.40	9.8	
9.15	Remove Pump	9.69	0.16		9.16
9.16	Drain Water	21.81	0.36		9.17
9.17	Fountain Removed	9.69	0.16	9.16	9.18
9.18	Liner Removed	9.69	0.16	9.17	9.19
9.19	Resevoir Removed	9.69	0.16	9.18	
9.20	Outer Ring Facings Removed	9.69	0.16		9.21
9.21	Outer Ring Removed	13.73	0.23	9.20	9.22
9.22	Deconstruct Ring Framing	15.35	0.26	9.21	
10	**Trap Door**	**590.42**	**9.84**		
10.0	Steel Cleaned	19.38	0.32		10.1
10.1	Grate Constructed	179.31	2.99	10.00	
10.2	Lid Constructed	87.23	1.45		
10.3	Trap Removed	87.23	1.45		10.4
10.4	Grate Installed	58.15	0.97	10.3	10.5
10.5	Lid Installed	35.54	0.59	10.4	
10.6	Platform Under the Stage Inst	31.50	0.53		
10.7	Platform Removed and Decor	29.08	0.48		
10.8	Lid Removed	14.54	0.24		10.9
10.9	Grate Removed	9.69	0.16	10.8	10.10
10.10	Trap Installed	38.77	0.65	10.9	

Precedence Diagram


PRECEDENCE DIAGRAM FOR BUILD, LOAD IN, AND STRIKE

Gantt Charts

Build, Load in, and Strike

Project Planner

Period Highlight: | Plan Duration | Actual Duration | % Complete | Actual (beyond plan) | % Complete (beyond plan) | Milestone Symbol

PERIODS

NODE ID	NODE DESCRIPTION	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE	ASSIGNED RESOURCES	PREDECESSOR NODES	SUCCESSOR NODES	NODE ID
4	Olivia's Arch Steel Cleaned	1	0.5	1	1	0%	Trevor, Tabitha, Vince		4.1, 4.3	4
4.1	Olivia's Arch Decorative Steel Bent	2	15	2	19	0%	Trevor, Tabitha, Vince	4	4.2	4.1
4.2	Olivia's Arch Decorative Steel Cut	16	10	2	19	0%	Trevor, Tabitha, Vince	4.1	4.5	4.2
4.5	Olivia's Arch Decorative Steel Welded	26	6	21	20	0%	Trevor, Tabitha, Vince	4.2	4.6	4.5
4.6	Olivia's Arch Assembled	35	2	21	20	0%	Trevor, Tabitha, Vince	4.4, 4.5		4.6
4.3	Olivia's Arch Support Steel Cut	32	1	1	8	0%	Trevor, Tabitha, Vince	4	4.4	4.3
4.4	Olivia's Arch Support Steel Frame Welded	33	2	8	7	0%	Trevor, Tabitha, Vince	4.3	4.6	4.4
1.0	Stock Flats Pulled	41	1	41	1	0%	2-4 people		1.2, 1.3	1
1.1	2- 4x6 flats constructed	42	4	42	5	0%	2-4 people		1.2, 1.3	1.1
1.2	Flats prepped for rigging	46	5	0	0	0%	2 people	1.0, 1.1		1.2
1.3	Top Portals Assembled	136	5	46	3	0%	3-4 people	1.0, 1.1	1.5	1.3
1.4	Prep AC Cable	141	3	0	0	0%	2-3 people		1.5	1.4
2.0	Lauan cut on CNC Router	61	3	64	20	0%	1 person		2.3	2
2.1	Foam cut on CNC Router	46	15	49	50	0%	1 person		2.3	2.1
2.2	Jacks constructed	61	2	49	8	0%	2-4 people		2.4	2.2
2.3	Lauan and Foam Assembled	63	8	176	14	0%	2-4 people	2.0, 2.1	2.4	2.3
2.4	Jacks Attached	144	4	190	4	0%	2-3 people	2.2, 2.3	2.5	2.4
3	Ring of plywood cut	96	5	105	6	0%	2-3 people			3
3.1	Circular Plywood cut	101	2	79	5	0%	2-3 people		3.3	3.1
3.2	Ring Platform Frames Constructed	104	4	57	5	0%	2-3 people			3.2
3.3	Circular platform frames constructed	108	4	83	6	0%	2-3 people	3.1, 3.4, 3.5		3.3
3.4	Facing Ripped	112	1	156	1	0%	2 people		3.3	3.4
3.5	Legs and compression plates cut	113	1	156	2	0%	1 person		3.3	3.5
5	Platforms Constructed	114	2	110	32	0%	2 people		4.1, 4.3	2.4
5.1	4' Staircase Constructed	116	4	0	0	0%	2 people	4	4.2	3
5.2	8' Steps constructed	120	3	0	0	0%	2 people	4.1	4.5	3.1
5.3	Spindles constructed	123	6	0	0	0%	2-3 people	4	4.4	3.2
5.4	Handrails constructed	129	3	0	0	0%	2-3 people	4.3	4.6	3.3
5.5	Facings Cut	132	1	0	0	0%	1-2 people	4.2	4.6	3.4
6	2x4 Ripped Down	71	1	59	1	0%	3 people	4.4, 4.5		3.5
6.1	2x2 Frames Assembled	71	5	59	8	0%	2-3 people			5
6.2	Lauan Ripped to Size	76	1	67	1	0%	3 people			5.1
6.3	Lauan Attached to Frame	77	1	67	4	0%	2-3 people			5.2
6.4	Trim Assembled	78	1	0	0	0%	2 people			5.3
6.5	Trim Installed to Frame	79	1	0	0	0%	2 people			5.4
7	Foam Cut on CNC Router	81	2	119	3	0%	1 person			5.5
7.1	Lauan Cut On CNC Router	83	2	122	2	0%	1 person		6.1	6
7.2	2x Material Ripped	81	1	124	1	0%	2 people	6	6.3	6.1
7.3	Door Assembled	82	7	125	16	0%	2 people		6.3	6.2
7.4	Hinges Installed	89	1	0	0	0%	2 people	6.1, 6.2	6.4	6.3
8	Legs Constructed	91	1	120	1	0%	2 people	6.3	6.5	6.4
8.1	Platform Constructed	92	1	143	1	0%	2 people	6.4		6.5
8.2	Facings Cut	93	1	144	1	0%	1 person		7.3	7
8.3	Legs Installed on Platform	94	1	145	1	0%	2 people		7.3	7.1
9	Holes drilled for PVC	96	1	0	0	0%	Tabitha, +1 person		7.3	7.2
9.1	PVC Cut to size	97	1	0	0	0%	Tabitha, +1 person	7.0, 7.1, 7.2	7.4	7.3
9.2	Fountain Assembled	106	5	0	0	0%	Tabitha, +2	7.3	7.5	7.4
9.3	Fountain Textured	111	1	0	0	0%	Tabitha +1		8.3	8
9.4	Outer Ring Frame Constructed	112	3	100	10	0%	Tabitha, +1		8.3	#REF!
9.5	outer ring of plywood cut	115	5	115	4	0%	2 people		8.4	#REF!
9.6	Fountain outer ring assembled	120	2	120	14	0%	2 people	8.0, 8.1	8.4	8.3
9.7	Facing Cut	122	1	166	2	0%	1-2 people		9.2	9
10	Steel Cleaned	123	1	146	1	0%	2 people		9.2	9.1
10.1	Grate Constructed	124	7	147	47	0%	Trevor, +1	9.0, 9.1	9.3	9.2
10.2	Lid Constructed	131	3	156	4	0%	Trevor +1	9.2		8.1

Project Planner

Select a period to highlight below. A legend describing the charting follows.

Period Highlight | Plan Duration | Actual Duration | % Complete | Actual (beyond plan) | % Complete (beyond plan) | Milestone Symbol

PERIODS

Monday, January 31 | Tuesday, February 1 | Wednesday, February 2 | Thursday, February 3 | Friday, February 4 | Monday, February 7 | Tuesday, February 8 | Wednesday, February 9 | Thursday, February 10 | Friday, February 11

NODE ID	NODE DESCRIPTION	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE	ASSIGNED RESOURCES	PREDECESSOR NODES	SUCCESSOR NODES	NODE ID
9.8	FOUNTAIN Outer Platform Installed	11	2	9	1	0%	All HANDS (+2)		9.9, 9.14	9.8
9.9	FOUNTAIN Reservoir Installed	18	1	9	1	0%	All HANDS (+3)	9.8	9.1	9.9
9.10	FOUNTAIN Liner installed	19	1	81	1	0%	All HANDS (+3)	9.9	9.11	9.1
9.11	FOUNTAIN Install fountain	20	1	81	1	0%	All HANDS (+3)	9.1	9.12	9.11
9.12	FOUNTAIN Pump Installed	21	1	81	1	0%	All HANDS (+3)	9.11	9.13	9.12
9.13	FOUNTAIN Troubleshoot Fountain	0	1	81	14	0%	All HANDS (+3)	9.12		9.13
9.14	FOUNTAIN Install Facings	22	1	65	1	0%		9.8		9.14
1.5	PORTAL Top Portals Installed On Battens	1	3	1	3	0%	All HANDS (+5)	1.3, 1.4	1.6	1.5
1.7	PORTAL Seams sealed	4	1	0	0	0%	All HANDS (+2)	1.6		2.5
1.6	PORTAL Bottom of Portals Installed and Lauan Revel attached	14	4	14	4	0%	ALL HANDS (+4)	1.5	1.7	1.6
2.5	Trees Installed	23	5	63	2	0%	All HANDS (+6)	2.4		2.5
3.6	OLIVIA: Circular Platform installed	4	1	8	1	0%	All HANDS (+5)		3.8, 4.7	3.6
3.7	OLIVIA:Ring Platform frames installed	5	1	9	1	0%	All HANDS (+3)		3.8	3.7
3.8	OLIVIACAll platforming faced	6	1	76	3	0%	All HANDS (+3)	3.6, 3.8		3.8
4.7	OLIVIA:Arch Installed	13	1	13	1	0%	ALL HANDS (+4)	3.6		4.7
5.6	ORSINO:Platforms installed	7	3	10	5	0%	All HANDS (+3)		5.7, 5.8, 5.9, 5.10, 6.6	5.6
5.7	ORSINO:4' Staircase Installed	28	1	18	3	0%	All HANDS (+2)		5.9	5.7
5.8	ORSINO: 8' Steps Installed	29	1	18	3	0%	All HANDS (+2)		5.9	5.8
5.9	ORSINO: Facings Installed	30	1	58	2	0%	All HANDS (+2)	5.6, 5.7, 5.8		5.9
5.10	ORSINO: Balustrade Installed	10	1	51	6	0%	All HANDS (+2)	5.6		5.1
6.6	ORSINO: Frame Installed into platform	7	3	8	14	0%	All HANDS (+3)	5.6	7.5	6.6
7.5	ORSINO: Doors Installed	31	2	51	4	0%	All HANDS (+3)	7.4, 6.6	8.4	7.5
8.4	Platform Installed	32	1	51	1	0%	All HANDS (+2)	8.2, 8.3		8.4
10.3	Trap Removed	36	1	68	1	0%			10.4	5.7
10.4	Grate Installed	37	4	68	19	0%		10.3	10.5	5.8
10.5	Lid Installed	41	3	78	7	0%		10.4		5.9
10.6	Platform Under the Stage Installed		3	17	1	0%				5.1
	Arch Appliques	44	3	81	3	0%				6.6
	Ground ROW TBD	0	0	0	0	0%				7.5

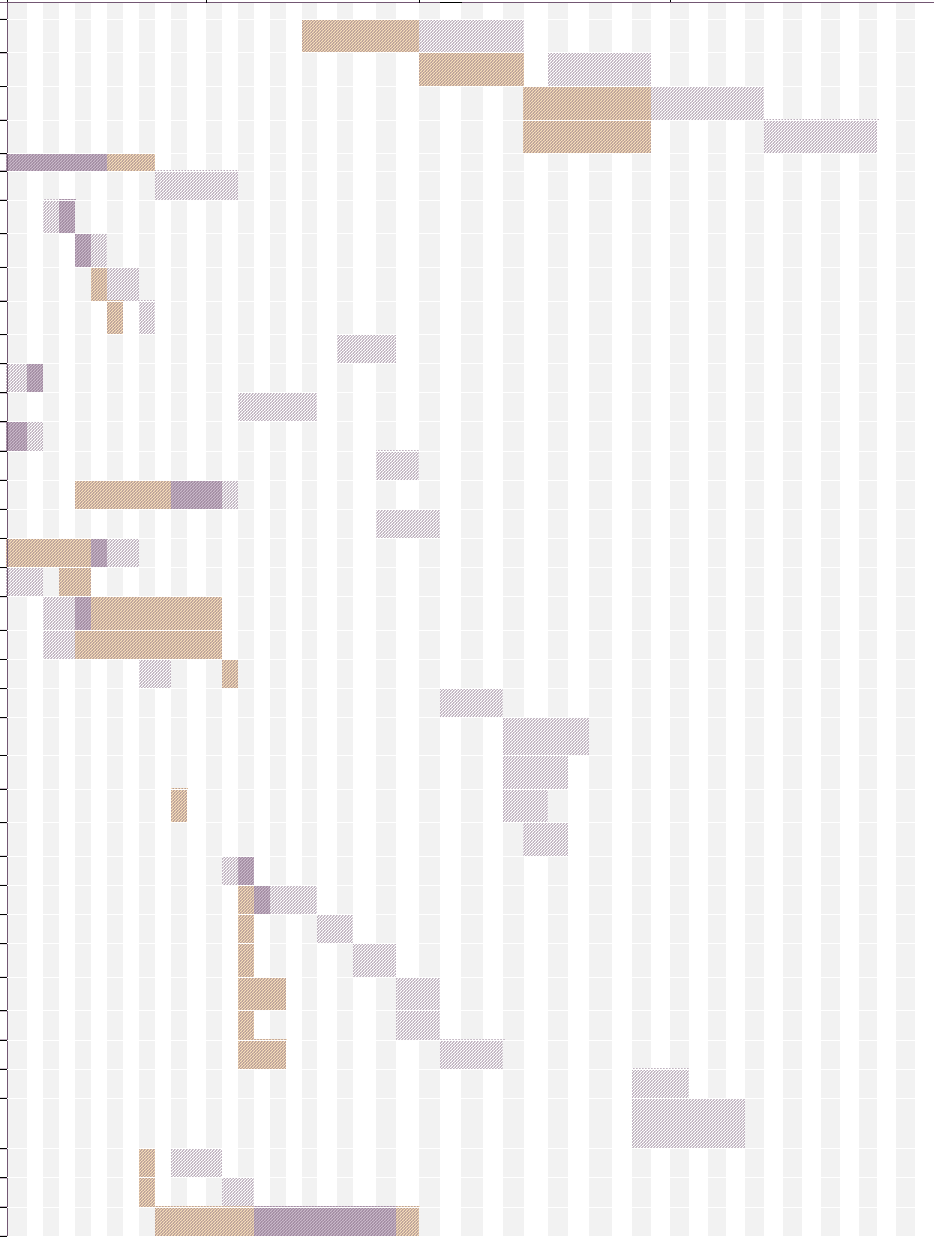
Project Planner

Select a period to highlight below. A legend describing the charting follows.

Period Highlight: | Plan Duration | Actual Duration | % Complete | Actual (beyond plan) | % Complete (beyond plan) | Milestone Symbol

PERIODS

NODE ID	NODE DESCRIPTION	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE	ASSIGNED RESOURCES	PREDECESSOR NODES	SUCCESSOR NODES	NODE ID
				0	0	0%			1.9	
1.9	PORTAL: Bottom of Portals Removed	25	5	19	6	0%	Team 1	1.8	1.1	1.9
1.10	PORTAL: Top Portals Removed from Battens	31	5	25	5	0%	Team 1 and 2	1.9	1.11, 1.12	1.1
1.11	PORTAL: Flats seperated and stored	36	6	30	6	0%	Team 1 and 2	1.10, 1.12		1.11
1.12	PORTAL: Rigging Hardware Removed	42	6	30	6	0%	Team 1 and 2	1.1	1.11	1.12
2.6	Trees Removed	1	6	1	9	0%	Team 3		2.7	2.6
2.7	~~Trees Deconstructed~~	10	5	0	0	0%	Team 3	2.6		2.7
3.9	OLIVIA: Facings Removed	3	2	4	1	0%	Team 1		3.11	3.9
3.10	OLIVIA: Plywood Ring Top Removed	5	2	5	1	0%	Team 1		3.11	3.12
3.11	OLIVIA: Ring framing removed	7	2	6	1	0%	Team 1	3.9, 3.10	3.1	3.11
3.12	OLIVIA: Circular Platfrom Removed	9	1	7	1	0%	Team 1	3.9, 3.10	3.11, 3.13	3.12
~~3.13~~	~~OLIVIA: Platforms deconstructed~~	~~21~~	~~3~~	~~0~~	~~0~~	0%	~~Team 3~~	~~3.11, 3.12~~		~~3.13~~
4.8	OLIVIA: Arch Removed	1	2	2	1	0%	Team 1		4.9	4.8
4.9	~~OLIVIA: Arch Deconstructed~~	15	5	0	0	0%	Team 3	4.8		4.9
7.6	ORSINO: Doors Removed	1	2	1	1	0%	Team 2		7.7	7.6
7.7	ORSINO: Doors Deconstructed	23	2	0	0	0%	Team 3	7.6		7.7
6.7	ORSINO: Frame Removed from platform	11	4	5	9	0%	Team 2		6.8	6.7
6.8	~~ORSINO: Frame Deconstructed~~	23	3	0	0	0%	Team 3	6.7		6.8
5.11	ORSINO: Balusrade Removed	6	3	1	6	0%	Team 2		5.15, 5.16	5.11
5.12	ORSINO: Facings Removed	1	2	4	2	0%	Team 2		5.13, 5.14, 5.15	5.12
5.13	ORSINO: 8' steps removed	3	3	5	9	0%	Team 2	5.12	5.17	5.13
5.14	ORSINO: 4' staircase removed	3	2	5	9	0%	Team 2	5.12	5.17	5.14
5.15	ORSINO: Platforms Removed	9	2	14	1	0%	Team 2	5.11, 5.12	5.18	5.15
5.16	~~ORSINO: Balustrade Deconstructed~~	26	3	0	0	0%	Team 3	5.11		6.7
5.17	~~ORSINO: Staircase/Steps Deconstructed~~	29	4	0	0	0%	Team 3	5.13, 5.14		6.8
5.18	~~ORSINO: Platforms Deconstructed~~	29	3	0	0	0%	Team 3	5.11, 5.15		5.11
8.5	DOCK: Platform Removed	29	2	11	1	0%	Team 3		8.6	5.12
8.6	~~DOCK: Platform Deconstructed~~	30	2	0	0	0%	Team 3	8.5		5.13
9.15	FOUNTAIN: Remove Pump	14	2	15	1	0%	Team 2		9.16	5.14
9.16	FOUNTAIN:Drain Water	16	4	15	2	0%	Team 2		9.17	5.15
9.17	FOUNTAIN: Fountain Removed	20	2	15	1	0%	Team 2	9.16	9.18	5.16
9.18	FOUNTAIN:Liner Removed	22	2	15	1	0%	Team 2	9.17	9.19	5.17
9.19	FOUNTAIN:Resevoir Removed	24	2	15	3	0%	Team 2	9.18		5.18
9.2	FOUNTAIN: Outer Ring Facings Removed	24	2	15	1	0%	Team 2		9.21	8.5
9.21	FOUNTAIN:Outer Ring Removed	26	3	15	3	0%	Team 2	9.2	9.22	8.6
9.22	~~FOUNTAIN: Deconstruct Ring Framing~~	35	3	0	0	0%	Team 3	9.21		9.15
10.7	~~FOUNTAIN: Platform Removed and Deconstructed~~	35	6	0	0	0%	Team 3			9.16
10.8	TRAP: Lid Removed	11	3	9	1	0%	Team 1		10.9	9.17
10.9	TRAP: Grate Removed	14	2	9	1	0%	Team 1	10.8	10.1	9.18
10.10	TRAP: Trap Installed	16	8	10	15	0%	Team 1	10.9		9.19



Material Estimate

Original Estimate

And

Adjusted Estimate

Twelfth Night

TWELFTH NIGHT

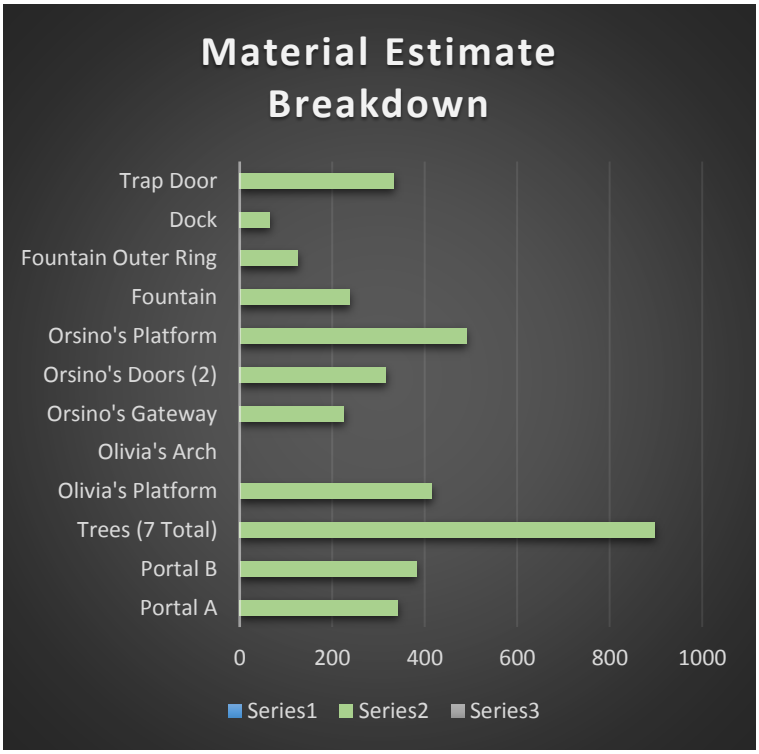
Version:	1	Date:	11/7/2021	**Scenic Designer:**	Sydney Hagen		
Director:	Kristine Holtvedt			**Technical Director:**	Tabitha Wimsett	**Assitant TD:**	Kyle Bickel

Summary:

Scenic Estimate:	$4,832.28				
Strike Dumpster:	$150.00			**Build Time Estimate:**	3 weeks and 3 days
Paint Estimate:	$650.00			**Total Build Time:**	4 Weeks
Total Material Estimate:	$4,032.28	**OVER:**	$1,832.28	**Total Load-in Time:**	2 Weeks
Total Scenic Budget:	$3,000.00				

Scenic Elements

Scenic Item	Materials
Portal A	$341.64
Portal B	$382.04
Trees (7 Total)	$897.88
Olivia's Platform	$414.88
Olivia's Arch	$0.00
Orsino's Gateway	$224.98
Orsino's Doors (2)	$316.39
Orsino's Platform	$490.00
Fountain	$237.79
Fountain Outer Ring	$125.16
Dock	$65.68
Trap Door	$333.24
Ground Row	$202.61
TOTAL ESTIMATE:	$4,032.28



Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

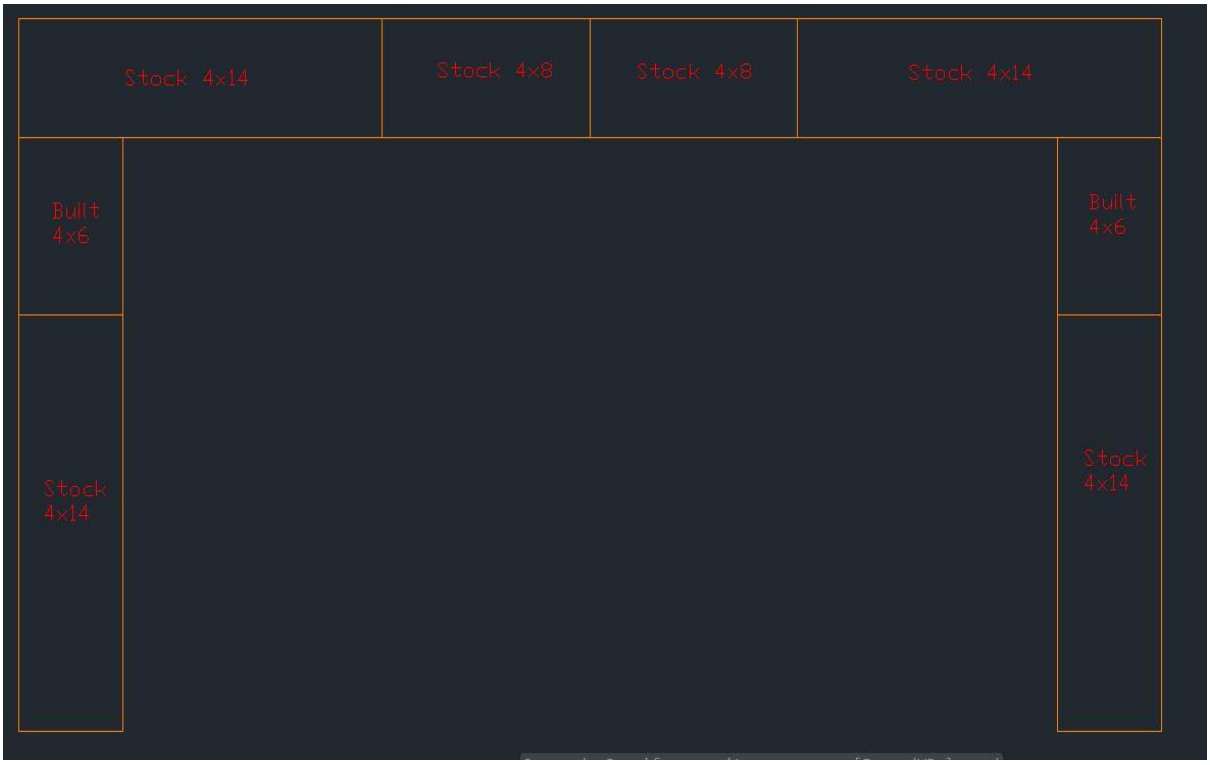
Scenic Element: Portal A

Portal A will be constructed out of 4- 4x14 stock flats, 2- 4x8 stock flats, and 2 4x6 constructed Hollywood style flats. Flats will be covered with med weight muslin.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1x6x16 Primed Pine	Von Tobel	2		$29.25		$58.50	
1/4" Lauan	Menards	3.5		$21.99		$76.97	
Med. Weight 60" Muslin	Rosebrand	28		$5.03		$140.84	
Uncoated Cable, Galvanized						$0.00	
Steel, 7 x 19, 1/8 in Cable Size	Grainger	1		$34.28		$34.28	
						$0.00	
						$0.00	
					Subtotal:	310.59	
					10% Contingency:	31.06	
AC Cable is for both portals.					**Total:**	341.64	

Construction Technique



PORTAL A LAYOUT

Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

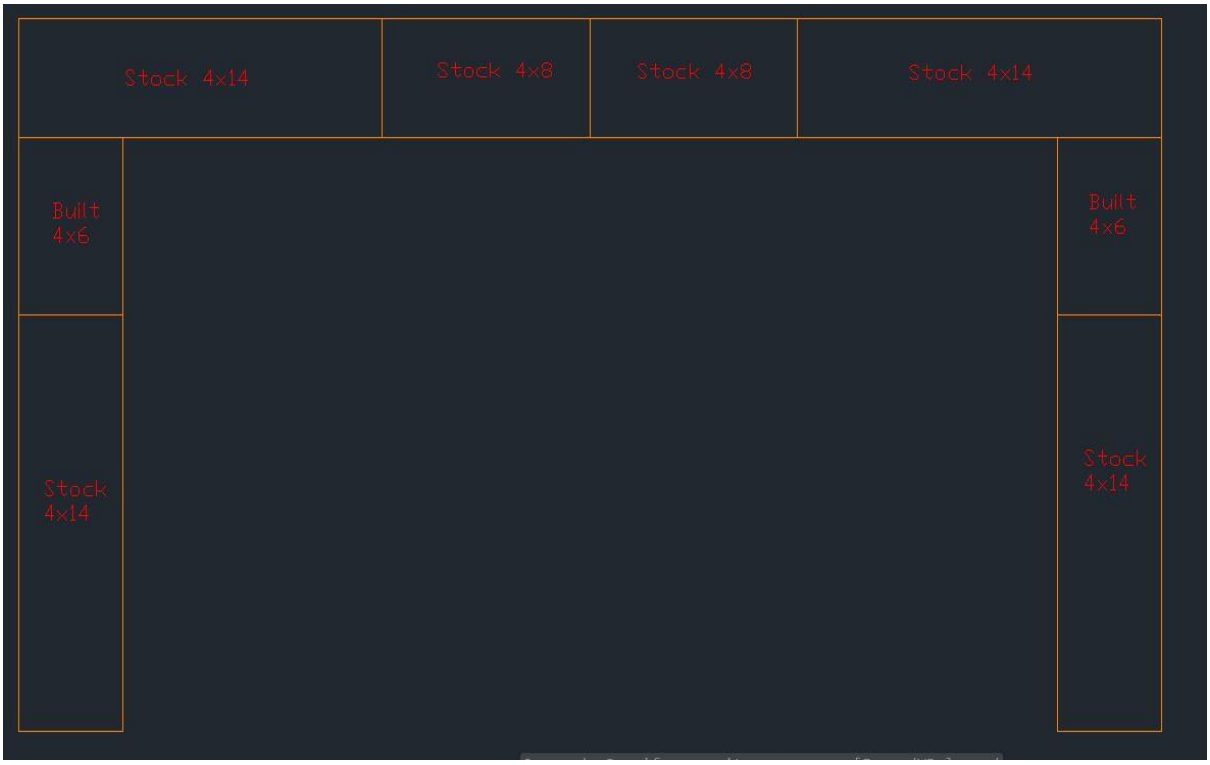
Scenic Element: Portal B

Portal B will be constructed out of 4- 4x14 stock flats, 2- 4x8 stock flats, and 2 4x6 constructed Hollywood style flats. Flats will be covered with med weight muslin.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1x6x16 Primed Pine	Von Tobel	2		$29.25		$58.50	
1/4" Lauan	Menards	3.5		$21.99		$76.97	
Med. Weight 60" Muslin	Rosebrand	28		$5.03		$140.84	
Shipping	Rosebrand	1		$71.00		$71.00	
						$0.00	
						$0.00	
						$0.00	
Shipping only shown on Portal B, but reflects total shipping cost for 56 yards of muslin.				Subtotal:		347.31	
				10% Contingency:		34.73	
				Total:		382.04	

Construction Technique



PORTAL B LAYOUT

Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

Scenic Element: Trees

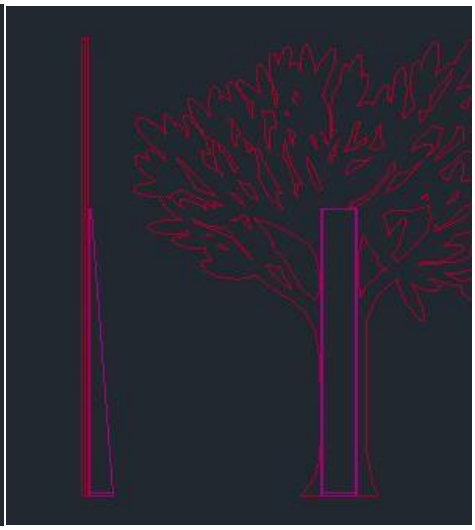
Trees will be constructed out of 1/2" extruded foam and covered with 1/4" lauan. Material will be secured together with simalfa, and seams will be offset. Trees will be supported with custom plywood jacks. Jacks will be constructed with 3/4" and 1/2" plywood. Trees will be cut on the CNC router.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1/2" Extruded Foam	Menards	21		$12.78		$268.38	
1/4" Lauan	Menards	21		$21.99		$461.79	
1/2" BCX Plywood	Menards	4		$21.52		$86.08	
3/4" Plywood Scrap	Menards	0		$0.00		$0.00	
						$0.00	
						$0.00	
						$0.00	
					Subtotal:	816.25	0.00
					10% Contingency:	81.63	
					Total:	897.88	0.00

Construction Technique

LAUAN AND FOAM LAYOUT



TREE SUPPORTS

Twelfth Night

Version:	1	**Date:**	11/7/2021
Director:	Kristine Holtvedt	**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen	**Assistant TD:**	Kyle Bickel

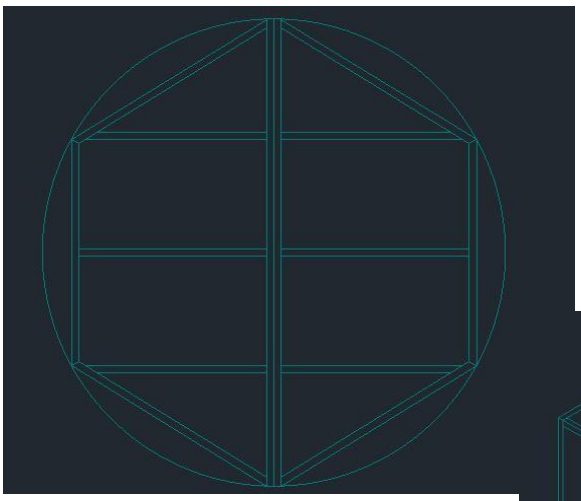
Scenic Element: Olivia's Platform

Olivia's Platform will be constructed out of 2x4 framing/legs and covered with 3/4" BCX plywood and 1/8" Masonite.

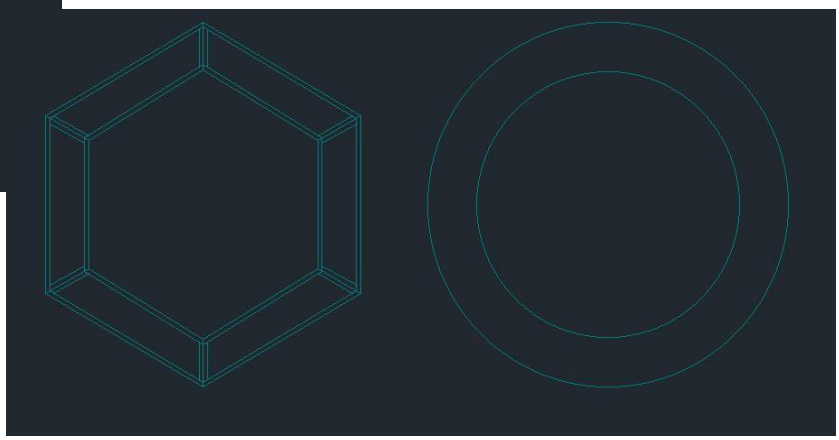
Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16 (Bottom Ring)	Menards	5		$10.45		$52.25	
2x4x16 (Top Platform)	Menards	4		$10.45		$41.80	
3/4" BCX Plywood	Menards	5		$36.99		$184.95	
1/8" Maso	Menards	8		$12.27		$98.16	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		377.16	0.00
				10% Contingency:		37.72	
				Total:		414.88	0.00

Construction Technique



Upper Platform Framing



Lower Ring Framing

Twelfth Night

Version:	1	**Date:**	11/7/2021		
Director:	Kristine Holtvedt			**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen			**Assistant TD:**	Kyle Bickel

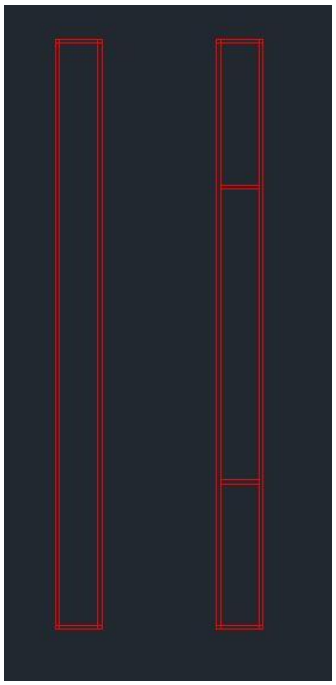
Scenic Element: Olivia's Arch

Olivia's Arch will be constructed out of 3/4" and 1/2" Box Steel.

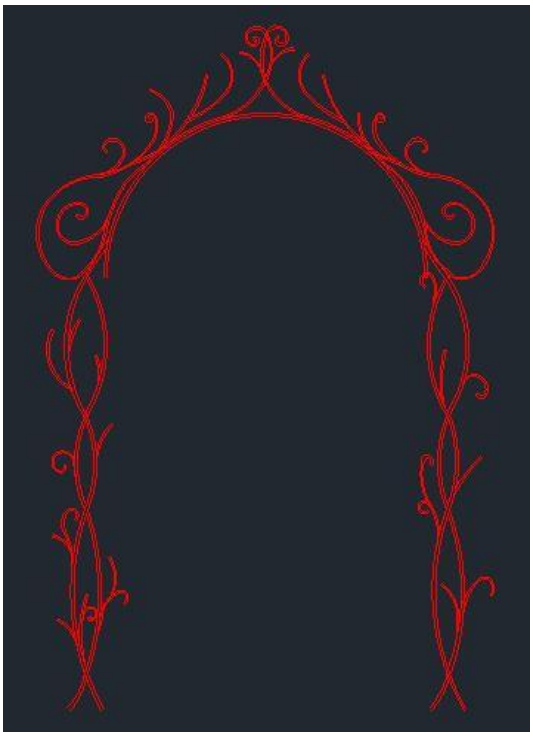
Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
Rebar Scrap From Shop		0		$0.00		$0.00	
1x1 Box Tube From Shop		0		$0.00		$0.00	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		0.00	0.00
				10% Contingency:		0.00	
				Total:		0.00	0.00

Construction Technique



FRONT and SIDE VIEW
Arch Support



Decorative Arch Work

Twelfth Night

Version:	1	**Date:**	11/7/2021		
Director:	Kristine Holtvedt			**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen			**Assistant TD:**	Kyle Bickel

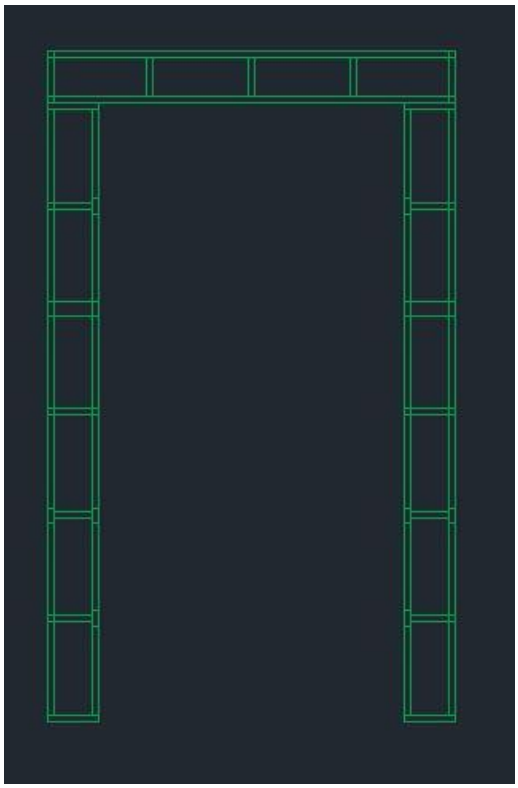
Scenic Element: Orsino's Gateway

Orsino's Gateway will be constructed out of 2x2 box frames covered with lauan.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16	Menards	8		$10.45		$83.60	
1/4" Lauan	Menards	3		$21.99		$65.97	
1-1/2" Foam	Menards	1		$32.97		$32.97	
Lauan for trim	Menards	1		$21.99		$21.99	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		204.53	
				10% Contingency:		20.45	
				Total:		224.98	

Construction Technique



Front View of Framing

Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

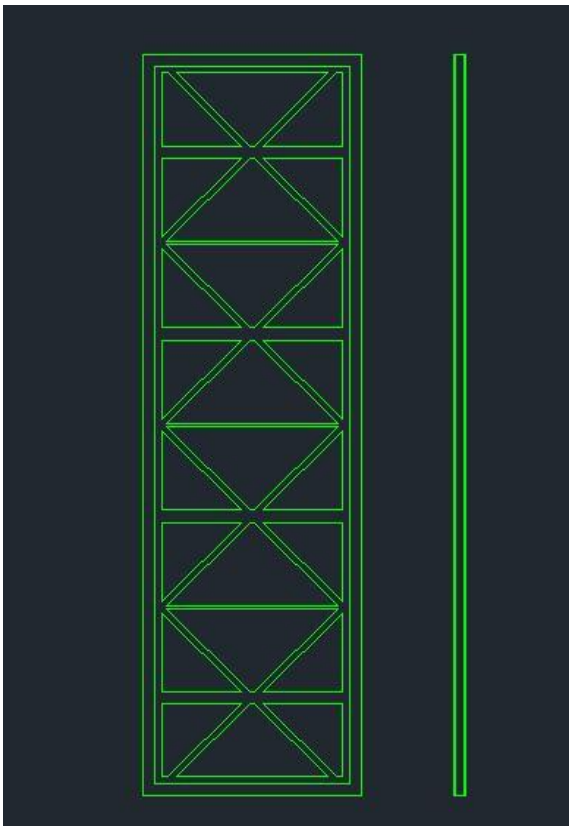
Scenic Element: Orsino's Door (Build 2)

Doors will be constructed out of 2x material, 1-1/2" Foam, and Lauan. Outer frame will be 1-1/2" x 2" on face. The inside of the door will be cut out of 1-1/2" foam on the CNC router. The whole door will be faced with 1/4" Lauan on both sides. Stock hinges and bullet catches will be used.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1-1/2" Extruded Foam	Menards	4		$33.97		$135.88	
1/4" Lauan	Menards	5		$21.99		$109.95	
2x4x16	Menards	4		$10.45		$41.80	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		287.63	
				10% Contingency:		28.76	
				Total:		316.39	

Construction Technique



FRONT and SIDE View

Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

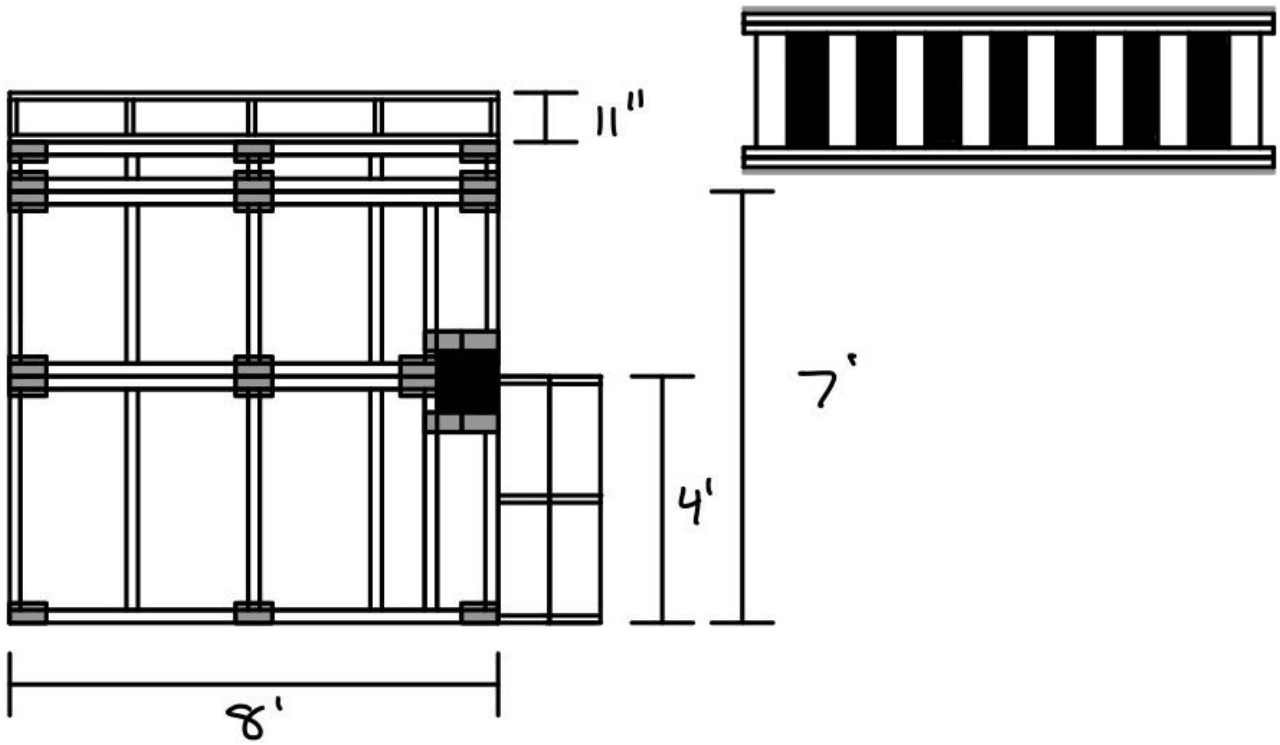
Scenic Element: Orsino's Platform

The two main platforms of Orsino's Platform will have a framing of 2x4 with plywood and Masonite on top. The top step on the longest stairs will be constructed the same way. The bottom step will be constructed with 3/4" plywood. The shorter staircase will be made using plywood and 2x4 to support the treads. The balustrade will be PVC and 2x10x8. The decorative caps will be constructed out of MDF scrap.

Material and Cost (Created by ATD: Kyle Bickel)

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1/4" Lauan	Menards	2		$21.99		$43.98	
3/4" BCX Plywood	Menards	3		$36.99		$110.97	
1/8" Maso	Menards	3		$12.27		$36.81	
2x4x16	Menards	9		$10.45		$94.05	
3" PVC	Menards	2		34.46		$68.92	
2x10x8	Menards	6		$15.12		$90.72	
						$0.00	
					Subtotal:	445.45	0.00
					10% Contingency:	44.55	
					Total:	490.00	0.00

Construction Technique (Created by ATD: Kyle Bickel)



Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

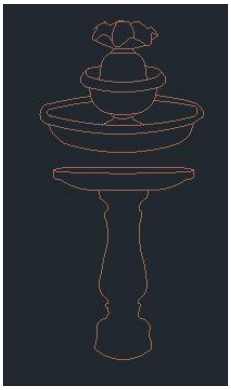
Scenic Element: Fountain

Fountain will be constructed out of various purchased parts. Once assembled and sealed, the entire fountain will be sprayed with simalfa to create a cohesive stone-like texture.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
Bloem Promo Bird Bath with Pedestal 25" x 17"	Walmart	1		$32.80		$32.80	
Akro Mils Deep Saucer 21-inch	Amazon	1		$15.68		$15.68	
Grecian Urn Planter 12-inch	Amazon	1		$14.75		$14.75	
Arcadia Garden Products PL20BG	Amazon	1		$10.70		$10.70	
Recycled Vinyl Record Bowl	Amazon	1		$5.00		$5.00	
Pineapple Resin Décor	Amazon	1		$9.99		$9.99	
PVC Pipe scrap	Scene Shop	0		$0.00		$0.00	
PVC Pipe Connections: 90-Degree S x S Elbow Fitting (3.74)		1		$3.74		$3.74	
AQQA 265-800GPH Submersible Water Pump,Ultra-quiet Fountain Pump	Amazon	1		$29.99		$29.99	
Paintable Silicone Supreme 9.5 oz. White Kitchen and Bath	Home Depot	3		$9.98		$29.94	
Fish Pond Liner: White 10'x6.6'	Walmart	1		$17.99		$17.99	
Summer Escapes Round Plastic Wading Pool 7.9 in. H X 45 in. D	Ace Hardware	1		$17.99		$17.99	
Oatey Handy Pack Milky Clear Primer and Cement For PVC 2 pk	Ace Hardware	1		$9.59		$9.59	
				Subtotal:		198.16	
				20% Contingency:		39.63	
CLEANER FOR WATER?				**Total:**		237.79	

Construction Technique



Twelfth Night

ADD MATERIAL FOR OUTER RING

Twelfth Night

Twelfth Night

Version: 1 **Date:** 11/7/2021

Director: Kristine Holtvedt **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

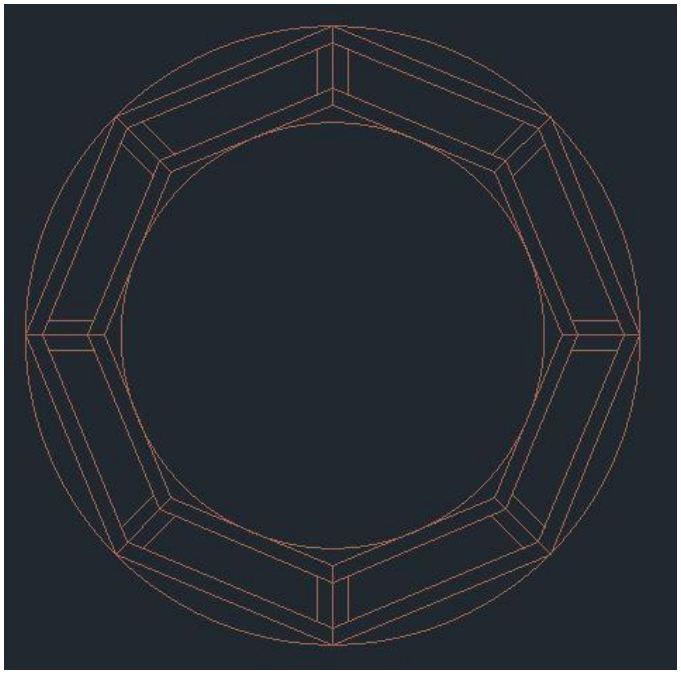
Scenic Element: Fountain Outer Ring

The outer ring of the fountain will be constructed with 2x4 , 3/4" plywood, and masonite.The 6" thickness of the upper section will be applied to the constructed frame. Due to speaker placement inside of the fountain ring, scrim will be used on the lower section.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16 (Bottom Ring)	Menards	5		$10.45		$52.25	
3/4" BCX Plywood	Menards	1		$36.99		$36.99	
1/8" Maso	Menards	2		$12.27		$24.54	
Scrim: Scrap from shop	Scene Shop	0		$0.00		$0.00	
				Subtotal:		113.78	
				10% Contingency:		11.38	
CLEANER FOR WATER?				**Total:**		125.16	

Construction Technique



Twelfth Night

Version:	1	**Date:**	11/7/2021
Director:	Kristine Holtvedt	**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen	**Assistant TD:**	Kyle Bickel

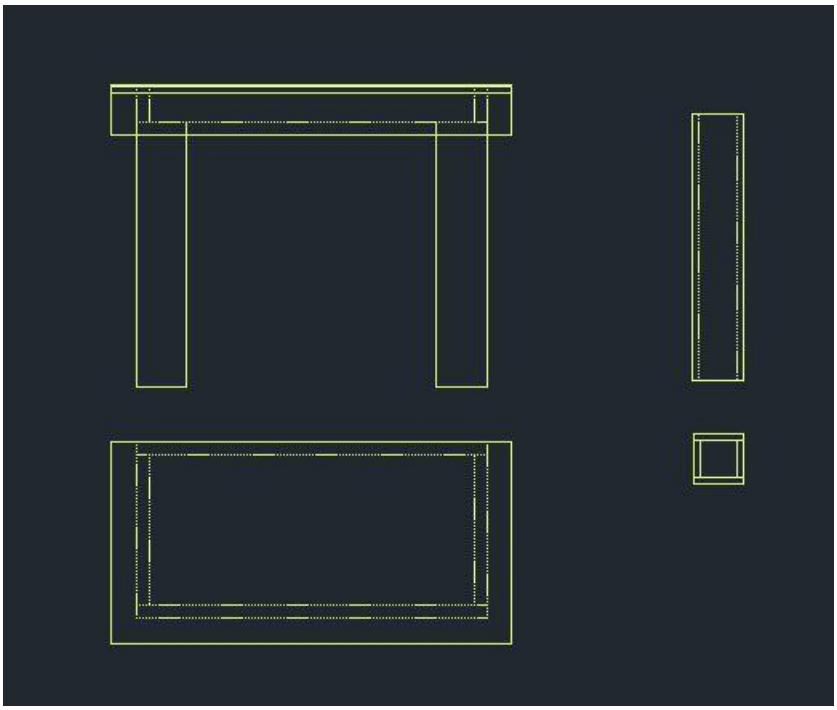
Scenic Element: Dock

Dock will be constructed as a standard platform with a plywood overhang of 3". Masonite and scrap material will be used to achieve appearance of proper thickness. Legs in front will be constructed out of 3/4" plywood. 2-2x4 legs will be used to support the back. Stock hardware will be use to secure dock to the stage front.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16	Menards	1		$10.45		$10.45	
3/4" BCX Plywood	Menards	1		$36.99		$36.99	
1/8" Maso	Menards	1		$12.27		$12.27	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		59.71	
				10% Contingency:		5.97	
				Total:		65.68	

Construction Technique



Dock and Leg Construction

Twelfth Night

Version:	1	**Date:**	11/7/2021		
Director:	Kristine Holtvedt			**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen			**Assistant TD:**	Kyle Bickel

Scenic Element: Trap Door

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x2 16ga mechanical tube	Alro	1		$115.59		$115.59	
1x2 16 ga mechanical tube	Alro	1		$87.25		$87.25	
3/4" BC Plywood	Menards	1		$36.99		$36.99	
Folding Round Pull Handle with Mount Plate	McMaster Carr	1		$16.97		$16.97	
2x4x16	Menards	2		$10.45		$20.90	
						$0.00	
						$0.00	
					Subtotal:	277.70	0.00
					20% Contingency:	55.54	
					Total:	333.24	0.00

Construction Technique

Twelfth Night

Version:	1	**Date:**	11/7/2021
Director:	Kristine Holtvedt	**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen	**Assistant TD:**	Kyle Bickel

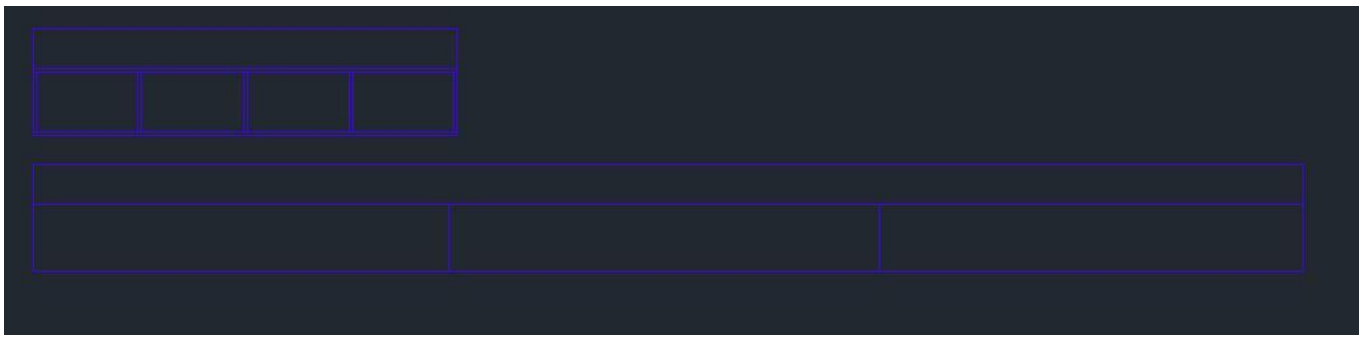
Scenic Element: Ground Row

Ground Row will be constructed as 2x2 framing with lauan overhang. Lauan will be cut on the CNC router.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16	Menards	5		$10.45		$52.25	
1/4" Lauan	Menards	6		$21.99		$131.94	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		184.19	0.00
				10% Contingency:		18.42	
				Total:		202.61	0.00

Construction Technique



Ground Row Layout and Framing

Twelfth Night

Twelfth Night

TWELFTH NIGHT

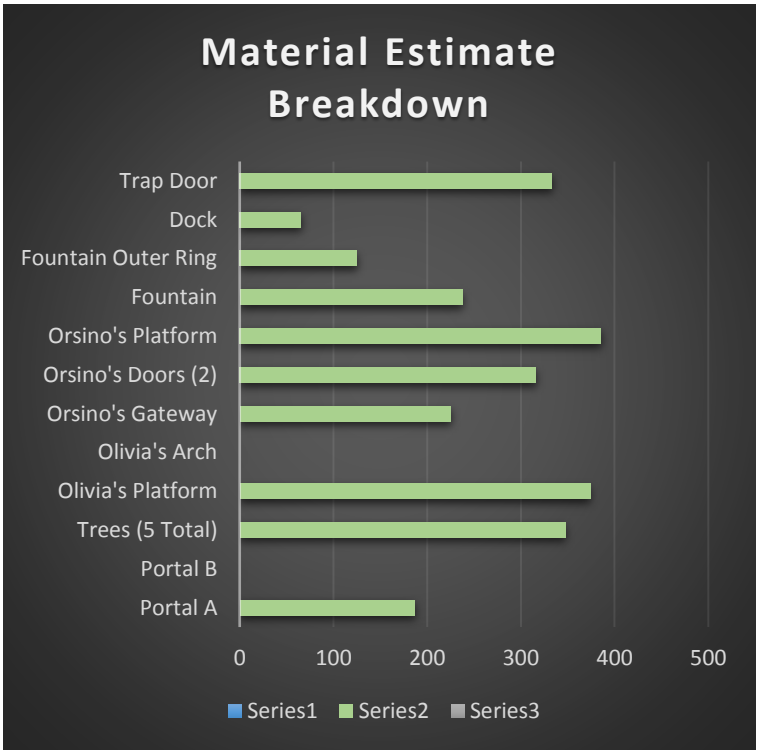
Version:	2	Date:	11.17.21	**Scenic Designer:**	Sydney Hagen
Director:	Kristine Holtvedt	**Technical Director:**	Tabitha Wimsett	**Assitant TD:**	Kyle Bickel

Summary:

Scenic Estimate:	$3,454.99				
Strike Dumpster:	$150.00			**Build Time Estimate:**	
Paint Estimate:	$650.00			**Total Build Time:**	4 Weeks
Total Material Estimate:	$2,654.99	**OVER:**	$454.99	**Total Load-in Time:**	2 Weeks
Total Scenic Budget:	$3,000.00				

Scenic Elements

Scenic Item	Materials
Portal A	$186.72
~~Portal B~~	~~$0.00~~
Trees (5 Total)	$347.73
Olivia's Platform	$374.19
Olivia's Arch	$0.00
Orsino's Gateway	$224.98
Orsino's Doors (2)	$316.39
Orsino's Platform	$385.63
Fountain	$237.79
Fountain Outer Ring	$125.16
Dock	$65.68
Trap Door	$333.24
Ground Row	$57.48
TOTAL ESTIMATE:	$2,654.99



Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

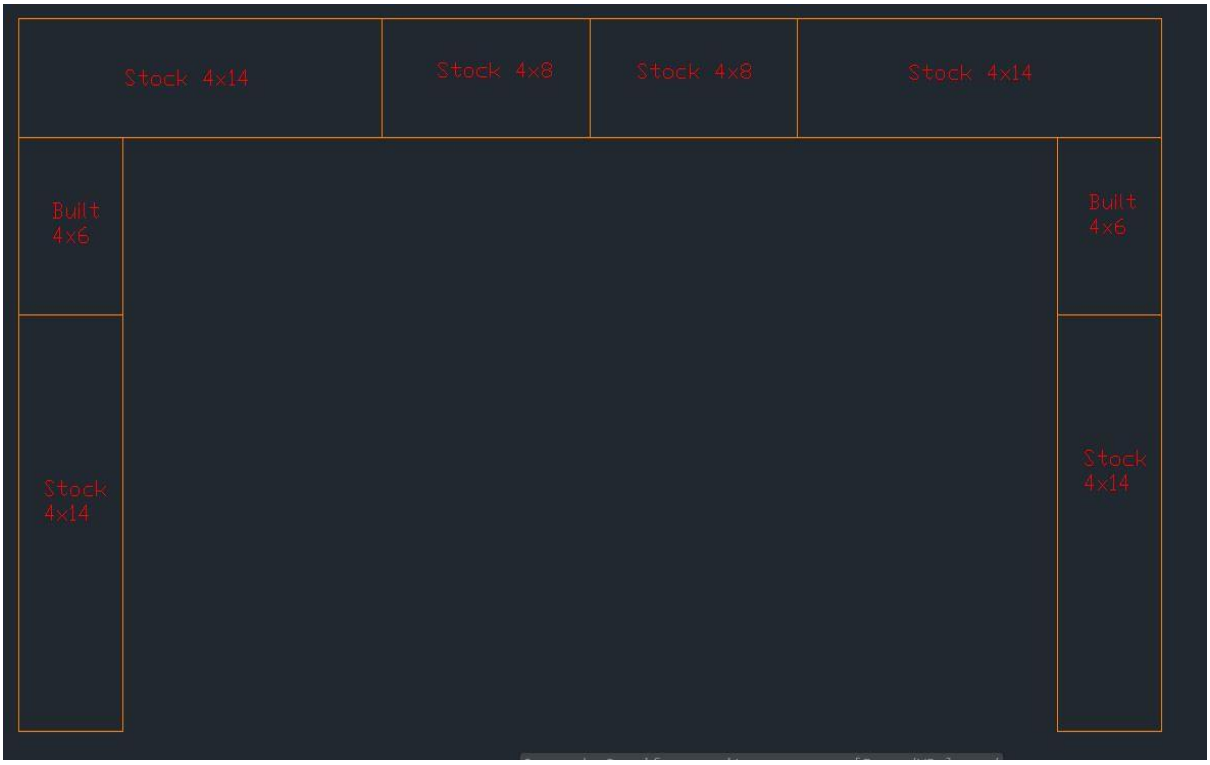
Scenic Element: Portal A

Portal A will be constructed out of 4- 4x14 stock flats, 2- 4x8 stock flats, and 2 4x6 constructed Hollywood style flats. Flats will be covered with med weight muslin.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1x6x16 Primed Pine	Von Tobel	2		$29.25		$58.50	
1/4" Lauan	Menards	3.5		$21.99		$76.97	
~~Med. Weight 60" Muslin~~	~~Rosebrand~~			~~$5.03~~		~~$0.00~~	
Uncoated Cable, Galvanized						$0.00	
Steel, 7 x 19, 1/8 in Cable Size	Grainger	1		$34.28		$34.28	
						$0.00	
						$0.00	
				Subtotal:		169.75	
				10% Contingency:		16.97	
AC Cable is for both portals.				**Total:**		186.72	

Construction Technique



PORTAL A LAYOUT

Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

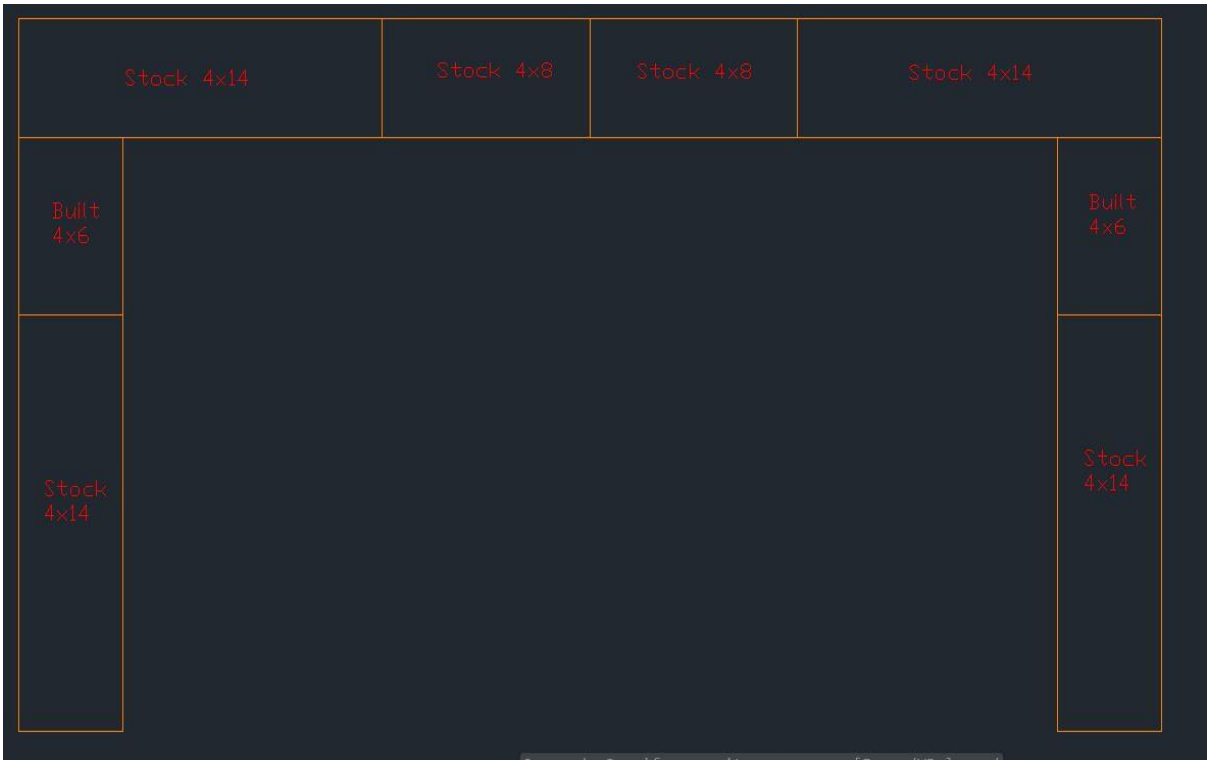
Scenic Element: ~~Portal B~~

~~Portal B will be constructed out of 4- 4x14 stock flats, 2- 4x8 stock flats, and 2 4x6 constructed Hollywood style flats. Flats will be covered with med weight muslin.~~

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
~~1x6x16 Primed Pine~~	~~Von Tobel~~			~~$29.25~~		$0.00	
~~1/4" Lauan~~	~~Menards~~			~~$21.99~~		$0.00	
~~Med. Weight 60" Muslin~~	~~Rosebrand~~			~~$5.03~~		$0.00	
~~Shipping~~	~~Rosebrand~~			~~$71.00~~		$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		0.00	
				10% Contingency:		0.00	
				Total:		0.00	

Construction Technique



PORTAL B LAYOUT

Twelfth Night

Version:	2	**Date:**	11.17.2021		
Director:		2	**Technical Director:**	Tabitha Wimsett	
Scenic Designer:	Sydney Hagen		**Assistant TD:**	Kyle Bickel	

Scenic Element: Trees

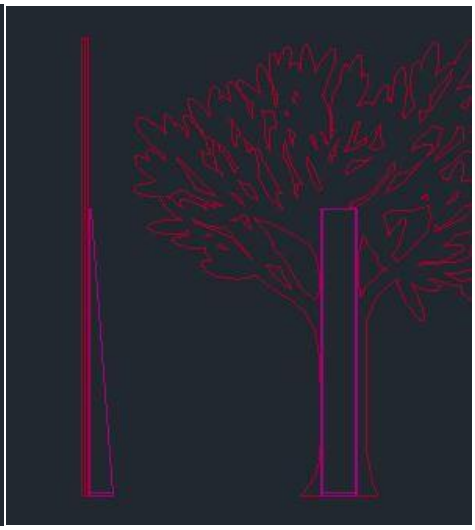
Trees will be constructed out of 1/2" extruded foam and covered with 1/4" lauan. Material will be secured together with simalfa, and seams will be offset. Trees will be supported with custom plywood jacks. Jacks will be constructed with 3/4" and 1/2" plywood. Trees will be cut on the CNC router.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1/2" Extruded Foam	Menards	18		$12.78		$230.04	
~~1/4" Lauan~~	~~Menards~~	~~0~~		~~$21.99~~		~~$0.00~~	
1/2" BCX Plywood	Menards	4		$21.52		$86.08	
3/4" Plywood Scrap	Menards	0		$0.00		$0.00	
						$0.00	
						$0.00	
						$0.00	
1/4" Lauan Sheets Used from FEFU				Subtotal:		316.12	0.00
Material Cut from 2 trees: 6 sheets of 1/2" foam				10% Contingency:		31.61	
				Total:		347.73	0.00

Construction Technique

LAUAN AND FOAM LAYOUT



TREE SUPPORTS

Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

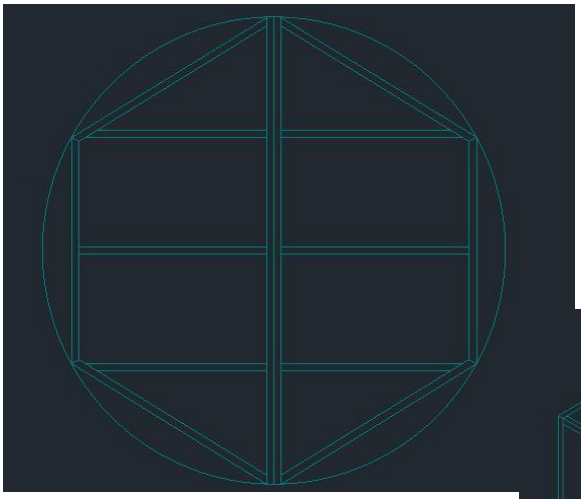
Scenic Element: Olivia's Platform

Olivia's Platform will be constructed out of 2x4 framing/legs and covered with 3/4" BCX plywood and 1/8" Masonite.

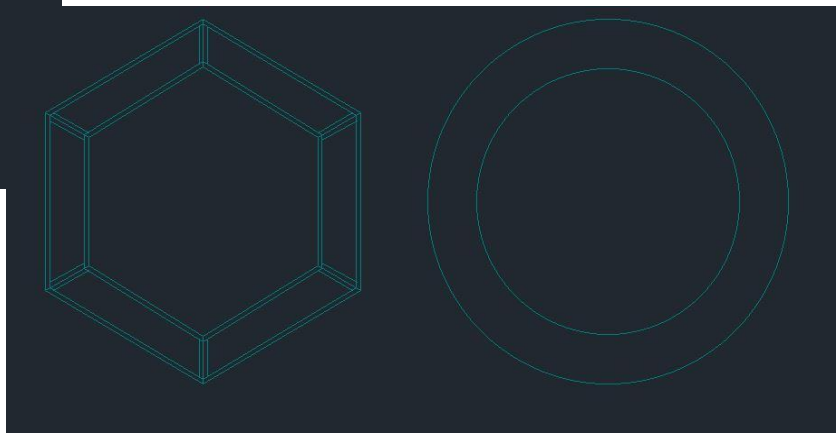
Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16 (Bottom Ring)	Menards	5		$10.45		$52.25	
2x4x16 (Top Platform)	Menards	4		$10.45		$41.80	
3/4" BCX Plywood	Menards	4		$36.99		$147.96	
1/8" Maso	Menards	8		$12.27		$98.16	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		340.17	0.00
				10% Contingency:		34.02	
				Total:		374.19	0.00

Construction Technique



Upper Platform Framing



Lower Ring Framing

Twelfth Night

Version:	2	**Date:**	11.17.2021		
Director:		2	**Technical Director:**	Tabitha Wimsett	
Scenic Designer:	Sydney Hagen		**Assistant TD:**	Kyle Bickel	

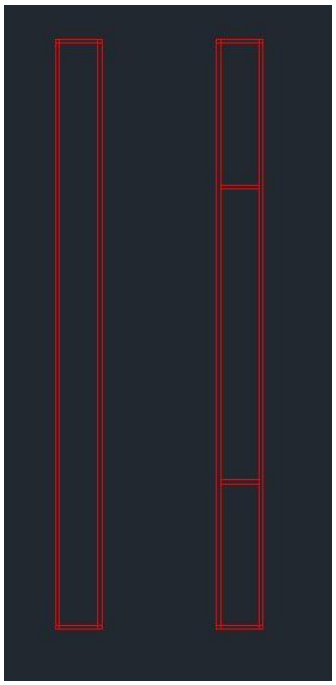
Scenic Element: Olivia's Arch

Olivia's Arch will be constructed out of 1x1 box tube and rebar. The decorative leaves and birds will be constructed out of lauan scrap. All steel material required will be stock from the scene shop.

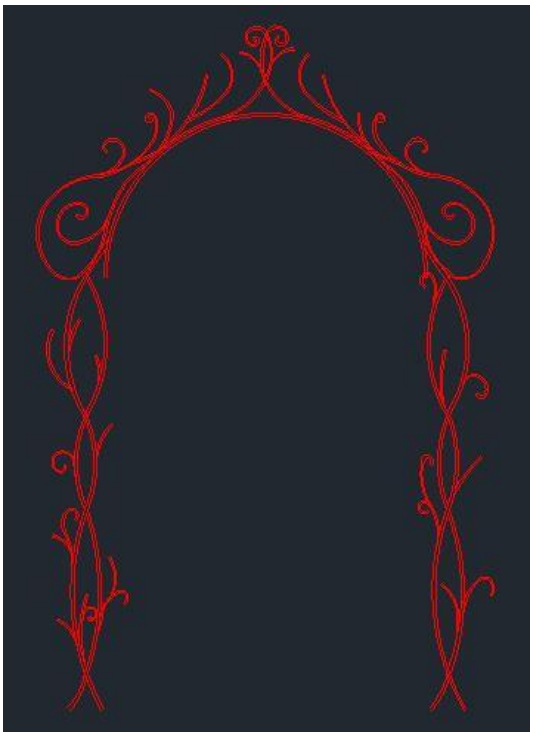
Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
Rebar Scrap From Shop		0		$0.00		$0.00	
1x1 Box Tube From Shop		0		$0.00		$0.00	
Lauan		0		$0.00		$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		0.00	0.00
				10% Contingency:		0.00	
				Total:		0.00	0.00

Construction Technique



FRONT and SIDE VIEW
Arch Support



Decorative Arch Work

Twelfth Night

Version:	2	**Date:**	11.17.2021		
Director:		2		**Technical Director:**	Tabitha Wimsett
Scenic Designer:	Sydney Hagen			**Assistant TD:**	Kyle Bickel

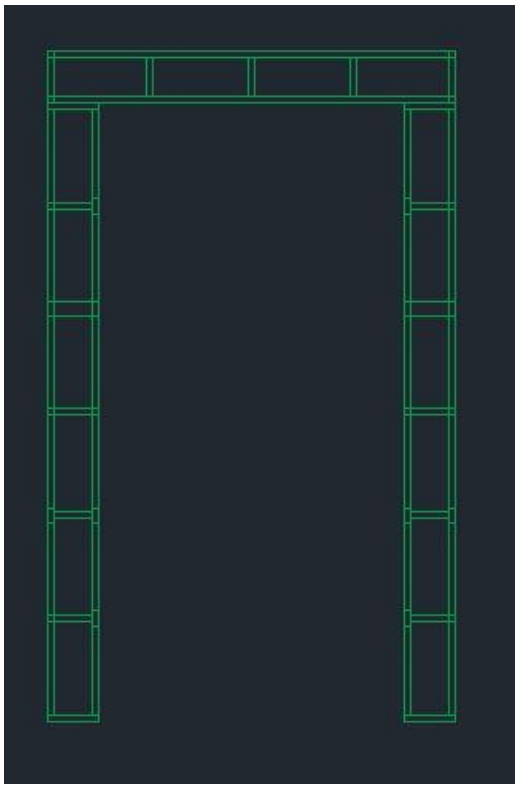
Scenic Element: Orsino's Gateway

Orsino's Gateway will be constructed out of 2x2 box frames covered with lauan.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16	Menards	8		$10.45		$83.60	
1/4" Lauan	Menards	3		$21.99		$65.97	
1-1/2" Foam	Menards	1		$32.97		$32.97	
Lauan for trim	Menards	1		$21.99		$21.99	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		204.53	
				10% Contingency:		20.45	
				Total:		224.98	

Construction Technique



Front View of Framing

Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

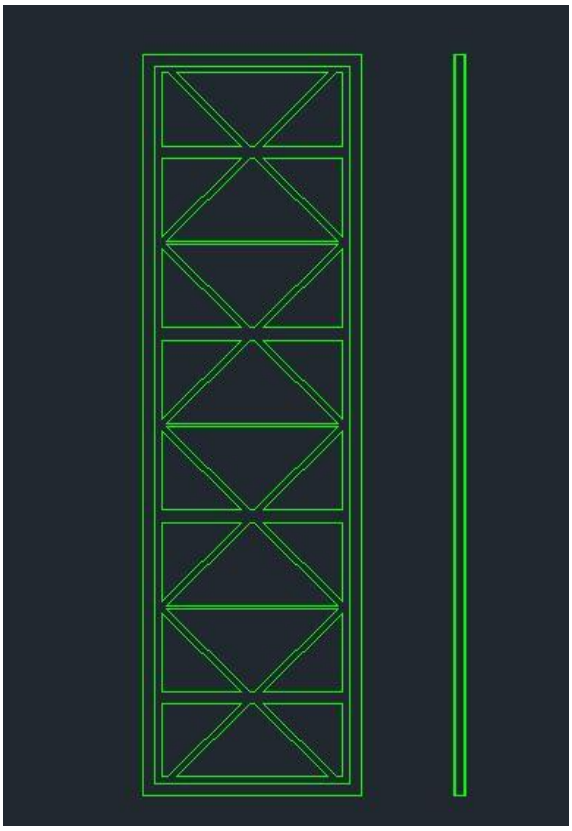
Scenic Element: Orsino's Door (Build 2)

Doors will be constructed out of 2x material, 1-1/2" Foam, and Lauan. Outer frame will be 1-1/2" x 2" on face. The inside of the door will be cut out of 1-1/2" foam on the CNC router. The whole door will be faced with 1/4" Lauan on both sides. Stock hinges and bullet catches will be used.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1-1/2" Extruded Foam	Menards	4		$33.97		$135.88	
1/4" Lauan	Menards	5		$21.99		$109.95	
2x4x16	Menards	4		$10.45		$41.80	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		287.63	
				10% Contingency:		28.76	
				Total:		316.39	

Construction Technique



FRONT and SIDE View

Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

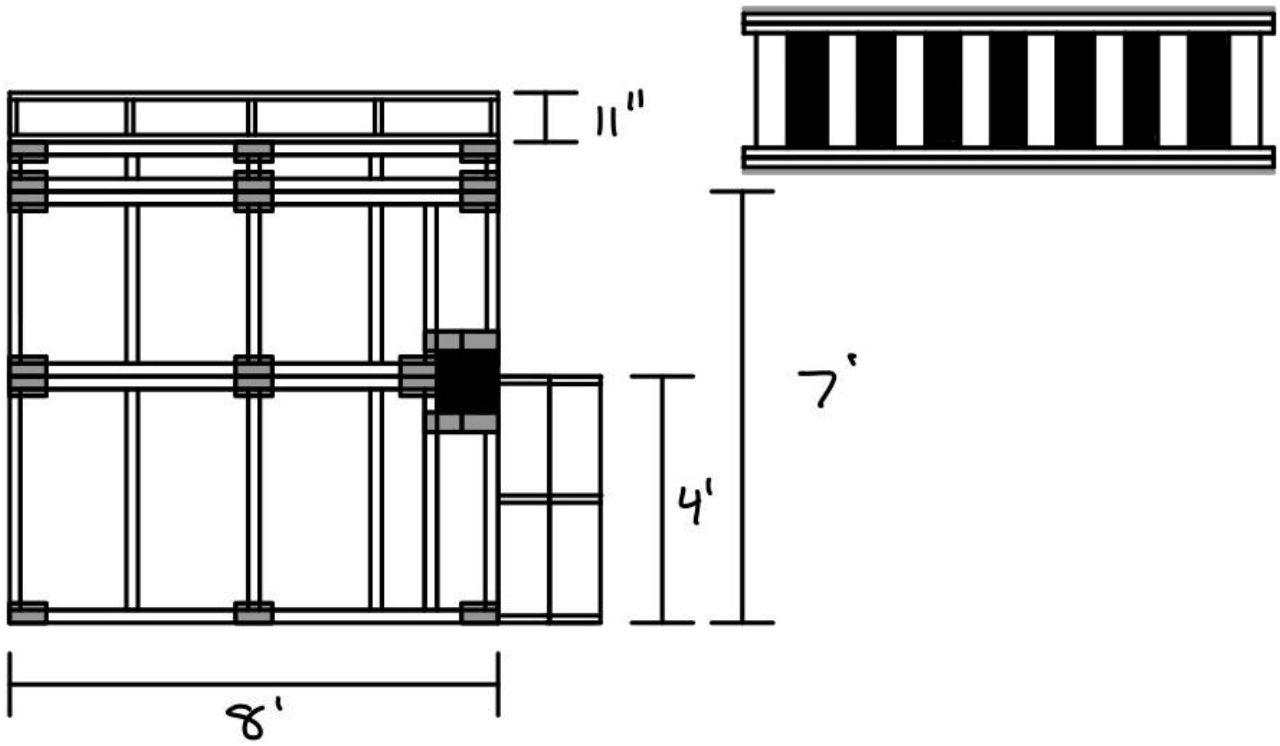
Scenic Element: Orsino's Platform

The two main platforms of Orsino's Platform will have a framing of 2x4 with plywood and Masonite on top. The top step on the longest stairs will be constructed the same way. The bottom step will be constructed with 3/4" plywood. The shorter staircase will be made using plywood and 2x4 to support the treads. The balustrade will be PVC and 2x10x8. The decorative caps will be constructed out of MDF scrap.

Material and Cost (Created by ATD: Kyle Bickel)

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1/4" Lauan	Menards	2		$21.99		$43.98	
3/4" BCX Plywood	Menards	1		$36.99		$36.99	
1/8" Maso	Menards	3		$12.27		$36.81	
2x4x16	Menards	7		$10.45		$73.15	
3" PVC	Menards	2		34.46		$68.92	
2x10x8	Menards	6		$15.12		$90.72	
						$0.00	
Material from shop or FEFU: 2 sheets of plywood, the framing for the 3x8 platform, MDF scrap				Subtotal:		350.57	0.00
				10% Contingency:		35.06	
				Total:		385.63	0.00

Construction Technique (Created by ATD: Kyle Bickel)



Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

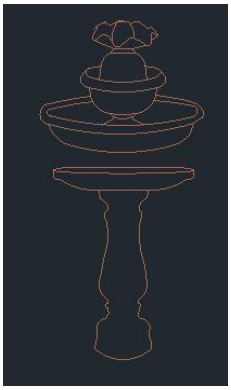
Scenic Element: Fountain

Fountain will be constructed out of various purchased parts. Once assembled and sealed, the entire fountain will be sprayed with simalfa to create a cohesive stone-like texture.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
Bloem Promo Bird Bath with Pedestal 25" x 17"	Walmart	1		$32.80		$32.80	
Akro Mils Deep Saucer 21-inch	Amazon	1		$15.68		$15.68	
Grecian Urn Planter 12-inch	Amazon	1		$14.75		$14.75	
Arcadia Garden Products PL20BG	Amazon	1		$10.70		$10.70	
Recycled Vinyl Record Bowl	Amazon	1		$5.00		$5.00	
Pineapple Resin Décor	Amazon	1		$9.99		$9.99	
PVC Pipe scrap	Scene Shop	0		$0.00		$0.00	
PVC Pipe Connections: 90-Degree S x S Elbow Fitting (3.74)		1		$3.74		$3.74	
AQQA 265-800GPH Submersible Water Pump,Ultra-quiet Fountain Pump	Amazon	1		$29.99		$29.99	
Paintable Silicone Supreme 9.5 oz. White Kitchen and Bath	Home Depot	3		$9.98		$29.94	
Fish Pond Liner: White 10'x6.6'	Walmart	1		$17.99		$17.99	
Summer Escapes Round Plastic Wading Pool 7.9 in. H X 45 in. D	Ace Hardware	1		$17.99		$17.99	
Oatey Handy Pack Milky Clear Primer and Cement For PVC 2 pk	Ace Hardware	1		$9.59		$9.59	
				Subtotal:		198.16	
				20% Contingency:		39.63	
CLEANER FOR WATER?				**Total:**		237.79	

Construction Technique



Twelfth Night

Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

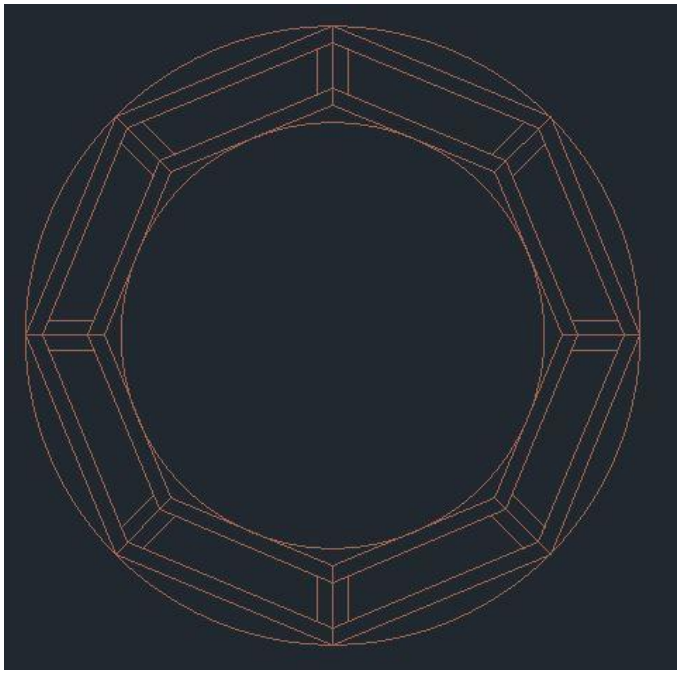
Scenic Element: Fountain Outer Ring

The outer ring of the fountain will be constructed with 2x4 , 3/4" plywood, and masonite.The 6" thickness and 2" overhange of the upper section will be applied to the constructed frame. Due to speaker placement inside of the fountain ring, scrim will be used on the lower section.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16 (Bottom Ring)	Menards	5		$10.45		$52.25	
3/4" BCX Plywood	Menards	1		$36.99		$36.99	
1/8" Maso	Menards	2		$12.27		$24.54	
Scrim: Scrap from shop	Scene Shop	0		$0.00		$0.00	
				Subtotal:		113.78	
				10% Contingency:		11.38	
				Total:		125.16	

Construction Technique



Twelfth Night

Version:	2	**Date:**	11.17.2021		
Director:		2	**Technical Director:**	Tabitha Wimsett	
Scenic Designer:	Sydney Hagen		**Assistant TD:**	Kyle Bickel	

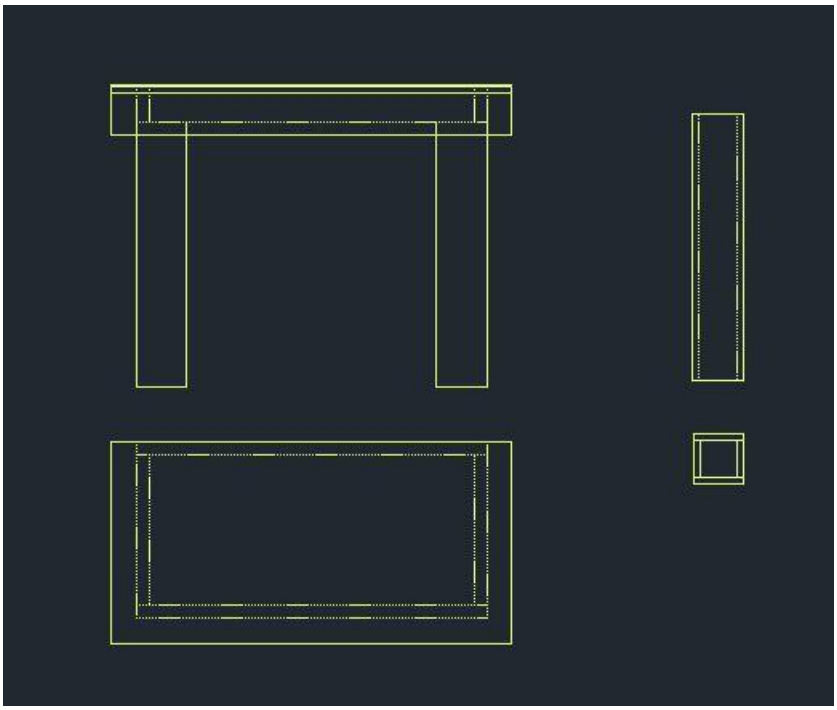
Scenic Element: Dock

Dock will be constructed as a standard platform with a plywood overhang of 3". Masonite and scrap material will be used to achieve appearance of proper thickness. Legs in front will be constructed out of 3/4" plywood. 2-2x4 legs will be used to support the back. Stock hardware will be use to secure dock to the stage front.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16	Menards	1		$10.45		$10.45	
3/4" BCX Plywood	Menards	1		$36.99		$36.99	
1/8" Maso	Menards	1		$12.27		$12.27	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
				Subtotal:		59.71	
				10% Contingency:		5.97	
				Total:		65.68	

Construction Technique



Dock and Leg Construction

Twelfth Night

Version: 2 **Date:** 11.17.2021

Director: 2 **Technical Director:** Tabitha Wimsett

Scenic Designer: Sydney Hagen **Assistant TD:** Kyle Bickel

Scenic Element: Trap Door

The trap door will consist of a grate and a lid. The grate will be constructed out of 1x2 and 2x2 box tube. The structural part will be purchased, but the asthetic grate will be scrap pieces from the shop. The lid will be constructed as a standard platform with 2x framing underneath. The entire lid will hinge open to reveal the grate underneath. This trap will not support the genie lift.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x2 16ga mechanical tube	Alro	1		$115.59		$115.59	
1x2 16 ga mechanical tube	Alro	1		$87.25		$87.25	
3/4" BC Plywood	Menards	1		$36.99		$36.99	
Folding Round Pull Handle with Mount Plate	McMaster Carr	1		$16.97		$16.97	
2x4x16	Menards	2		$10.45		$20.90	
						$0.00	
						$0.00	
					Subtotal:	277.70	0.00
					20% Contingency:	55.54	
					Total:	333.24	0.00

Construction Technique

TRAP GRATE TOP VIEW

Twelfth Night

Version:	2	**Date:**	11.17.2021		
Director:		2	**Technical Director:**	Tabitha Wimsett	
Scenic Designer:	Sydney Hagen		**Assistant TD:**	Kyle Bickel	

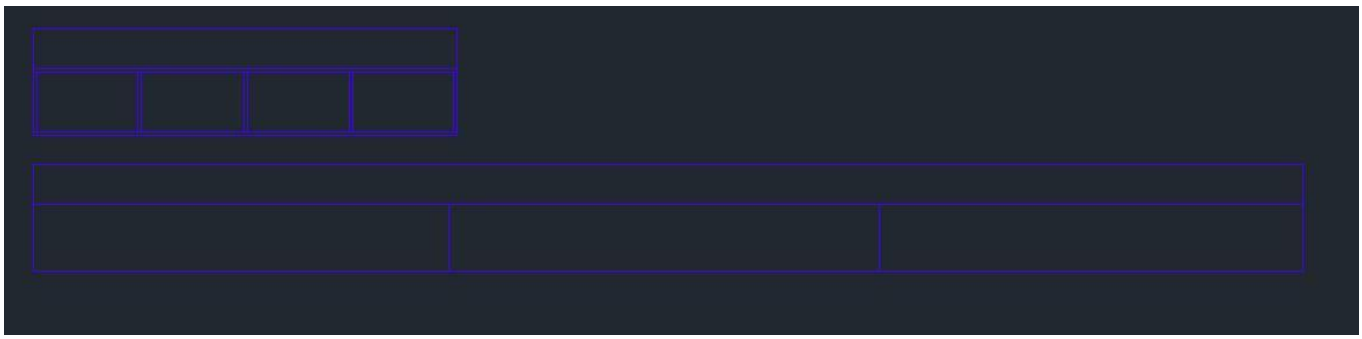
Scenic Element: Ground Row

Ground Row will be constructed as 2x2 framing with lauan overhang. Lauan will be cut on the CNC router.

Material and Cost

Item	Vendor	Quantity		Unit Price		Price	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
2x4x16	Menards	5		$10.45		$52.25	
1/4" Lauan	Menards	6		$0.00		$0.00	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
						$0.00	
Lauan sheets used from FEFU				Subtotal:		52.25	0.00
				10% Contingency:		5.23	
				Total:		57.48	0.00

Construction Technique



Ground Row Layout and Framing

Twelfth Night

Design Questions and Analysis

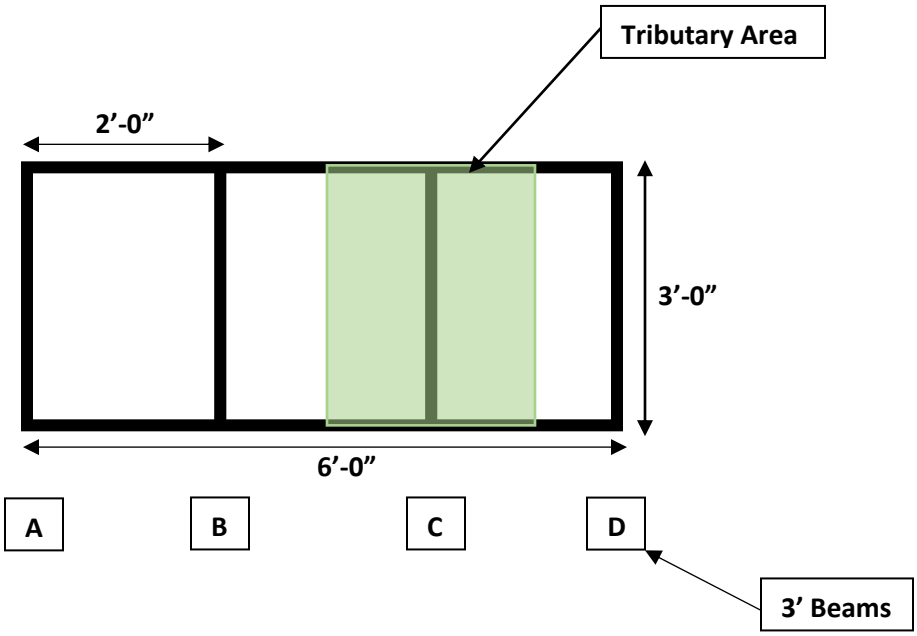
Design of the Trap Door:

1. How do you envision the trap door being used?
    a. Will Malvolio (or anyone) be entering the trap from above (onstage)?
    b. How many people will be used to “open” the trap door?
2. How do you envision the door looking once open?
    a. Will it open all the way upstage and lay flat?
    b. Will it open half way where we can still see the door upright?
    c. Do you envision the door as something that is lifted out and set off stage?
3. When the trap door is not in use, are you okay with seeing inset handles and low profile hinges? For Example (NOT ACTUAL HARDWARE)


Design of the Fountain:

1. Use of water?
2. Do you envision the water fountain running the entire time?
3. What type of water pressure are you wanting? More of a “bubbling fountain”?
4. Any desire for variance in water pressure?
5. Will anyone be playing in the water?
6. Will anyone be getting on the edge of the fountain?

Structural Analysis: Second Pass with Genie and Adjusted Plywood



Tributary Area

Live load:

$$\frac{180\ \#}{2\times2} = 45\ psf$$

Dead load:

1 ¼" Plywood = 122#
¼" Hardboard= 38#

$$\frac{160\ \#}{3\times6} = 8.9\ psf \qquad Combined\ Load = 45psf + 8.9\ psf = 60psf$$

BC Beams:

$$BC = 60psf \times 2' = 120plf$$

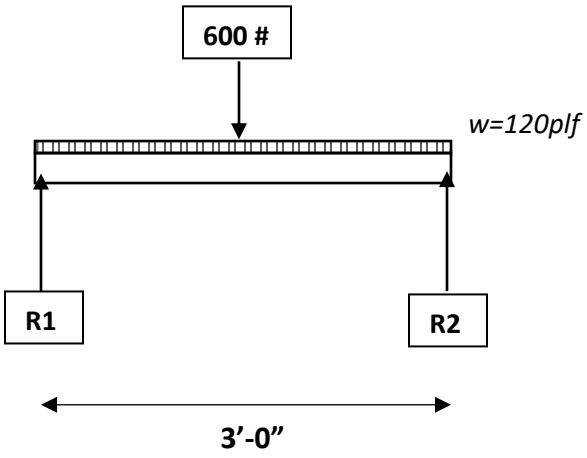
AD Beams:

$$AD = 60psf \times 1' = 60plf$$

Genie Lift:

$$817 + 350 = 1{,}167\# \qquad Round\ up = 1{,}200\#$$

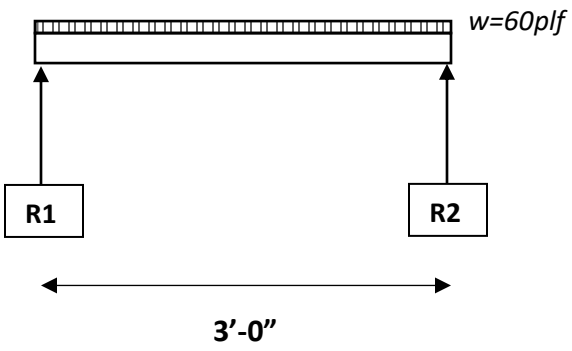
Beams B and C



$\frac{120(3')+600}{2} = 480\#$

$R1\ and\ R2\ = 480\#$

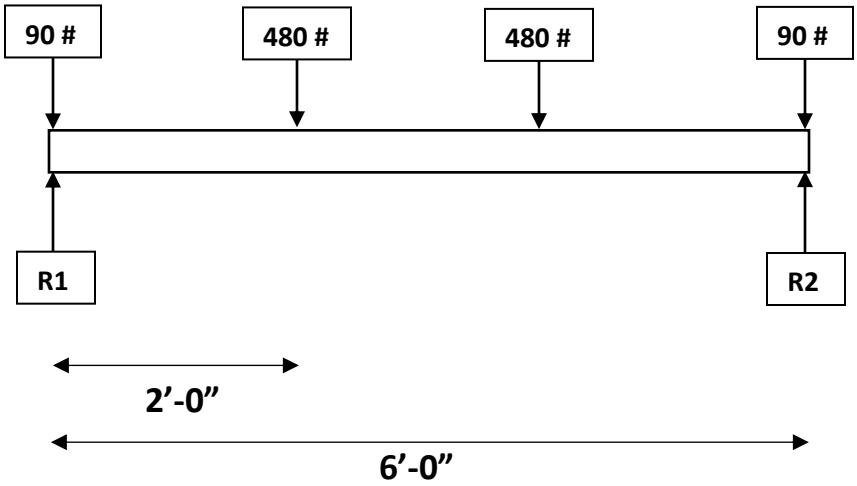
Beams A and D



$\frac{60(3')}{2} = 90\#$

$R1\ and\ R2\ = 90\#$

Girders

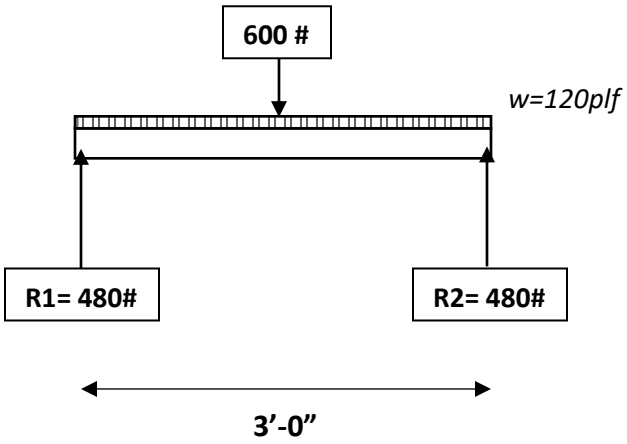


$\frac{1140}{2} = 570\#$

$R1\ and\ R2\ = 570\#$

Shear and Moment Diagrams

Beams B and C



Shear

$V_{0-} = 0$

$V_{0+} = 480$ $\qquad V_{\max} = 480\#$

$V_{1.5-} = 480$

$V_{1.5+} = 480 - 120(1.5) - 600 = -300$

$V_{3-} = 480 - 120(1.5) - 600 = -300$

$V_{3+} = 480 - 120(1.5) - 600 + 480 = 0$

Moment

$M_0 = 0$ $\qquad M_{\max} = 720\ ftlb\ or\ 8640 inlb$

$M_{1.5} = 1.5(480)$

$M_3 = 3(480) - 1.5(600) - 1.5(120) + 0(480) = 360$

Possible Material

4x4 Spruce Pine Fir No. 1

$Area = 12.25$	$C_F = 1.5$	$F_v = 135$
$S = 7.146$	$C_D = 1.15$	$F_C = 1{,}150$
$I = 12.51$	$F_b = 875$	$E = 1.4 \times 10^6$

Bending

$F'_b = (C_D\, C_F\ C_r\,)F_b$

$F'_b = (1.15 \times 1.5 \times 1)875 = 1509.375$

$S_{Req'd} = \frac{M_{\max}}{F'_b}$ $\qquad$ $S_{Req'd} = \frac{8640\ inlb}{1509.375} = 5.725in^3$

Shear

$F'_v = C_D F_V$

$F'_v = 1.15(135) = 155.25$

$A_{Req'd} = \left(\frac{480}{155.25}\right)1.5 = 4.637in^2$

Deflection

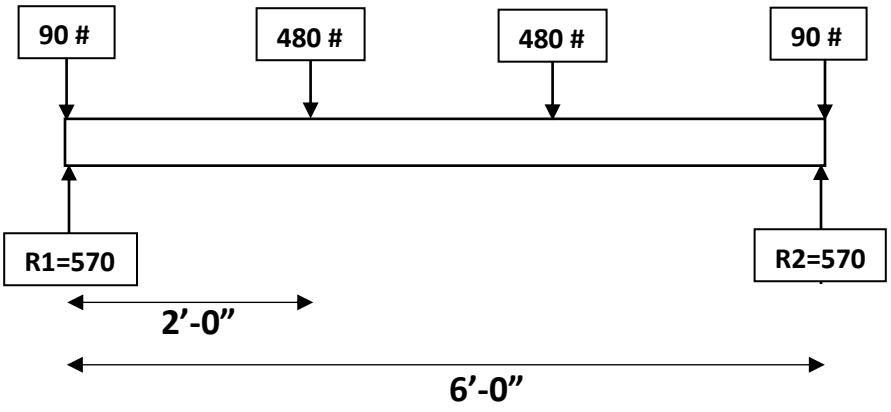
$\Delta_{all} = \frac{l}{240}$

$\Delta_{all} = \frac{36"}{240} = 0.15"$

$W_{Equiv} = \frac{8M_{max}}{l^2}$ $\qquad$ $W_{Equiv} = \frac{8(8640)}{36^2} = 53.333$

$\Delta = \frac{5W_{Equiv}\, l^4}{384EI}$ $\qquad$ $\Delta = \frac{5(53.333)\ 36^4}{384(1.4\times10^6)(12.51)} = 0.067"$

Girders



Shear

$V_{0-} = 0$

$V_{0+} = 570 - 90 = 480$ $\qquad V_{\max} = 480\#$

$V_{2-} = 480$

$V_{2+} = 570 - 90 - 480 = 0$

$V_{4-} = 0$

$V_{4+} = 570 - 90 - 480 - 480 = -480$

$V_{6-} = -480$

$V_{6+} = 0$

Moment

$M_0 = 0$ $\qquad M_{\max} = 960\ ftlb\ or\ 11{,}520 inlb$

$M_2 = 2(570) - 2(90) = 960$

$M_4 = 4(570) - 4(90) - 2(480) = 960$

$M_6 = 6(570) - 6(90) - 4(480) - 2(480) = 0$

Possible Material

2x6 Spruce Pine Fir No. 1

$Area = 8.25$	$C_F = 1.3$	$F_v = 135$	$F_b = 875$
$S = 7.563$	$C_D = 1.15$	$F_C = 1{,}150$	
$I = 20.80$	$C_r = 1.15$	$E = 1.4 \times 10^6$	

Bending

$F'_b = (C_D\, C_F\, C_r)F_b$

$F'_b = (1.3 \times 1.15 \times 1.15)875 = 1504.34375$

$S_{Req'd} = \frac{M_{\max}}{F'_b}$ $\qquad S_{Req'd} = \frac{11520\ inlb}{1504.34375} = 7.6578 in^3$ ✖

2x6 would fail in bending.

Bending: material adjusted to 4x4

$F'_b = (C_D\, C_F\ C_r\,)F_b$

$F'_b = (1.15 \times 1.5 \times 1.15)875 = 1735.78$

$S_{Req'd} = \frac{M_{\max}}{F'_b}$ $\qquad$ $S_{Req'd} = \frac{11520\ inlb}{1735.78} = 6.6367in^3$

Shear

$F'_v = C_D F_V$

$F'_v = 1.15(135) = 155.25$

$A_{Req'd} = \left(\frac{480}{155.25}\right)1.5 = 4.637in^2$

Deflection

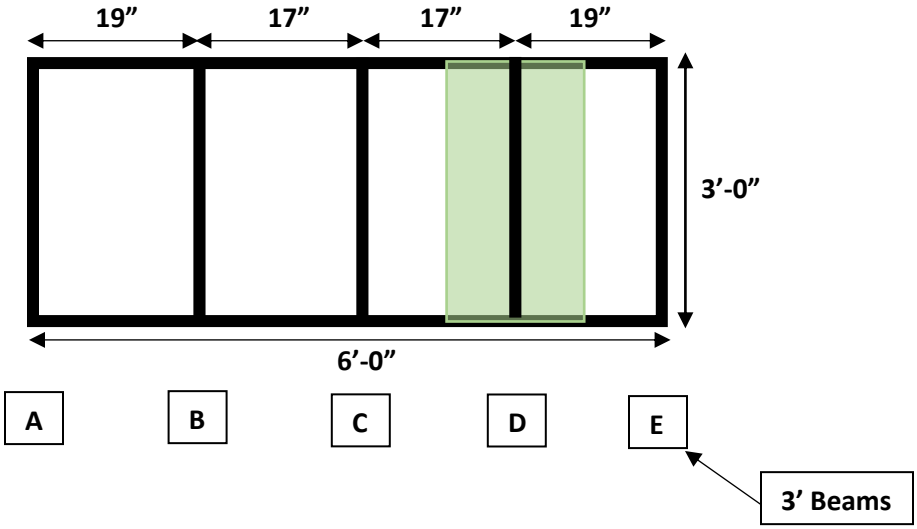
$\Delta_{all} = \frac{l}{240}$

$\Delta_{all} = \frac{72"}{240} = 0.3"$

$W_{Equiv} = \frac{8M_{max}}{l^2}$ $\qquad$ $W_{Equiv} = \frac{8(11520)}{72^2} = 17.7778$

$\Delta = \frac{5W_{Equiv}\, l^4}{384EI}$ $\qquad$ $\Delta = \frac{5(17.7778)\ 72^4}{384(1.4\times10^6)(12.51)} = 0.35"$

Structural Analysis: Second Pass without Genie



Tributary Area

A and E:

$50\ psf\ \times 0.79' = 39.58\ plf$

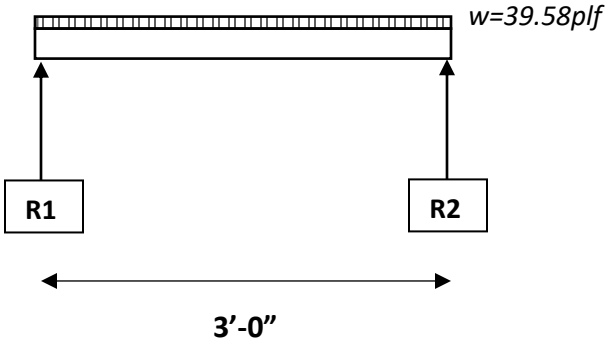
B and D:

$50\ psf\ \times 1.5 = 75\ plf$

C:

$50\ psf\ \times 1.42 = 70.8\ plf$

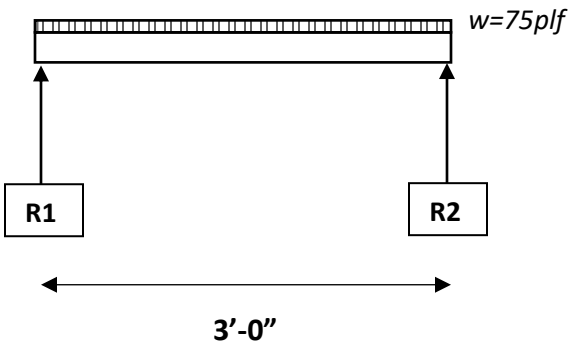
Beams A and E



$\frac{39.58(3')}{2} = 59.37\#$

$R1\ and\ R2\ = 59.37\#$

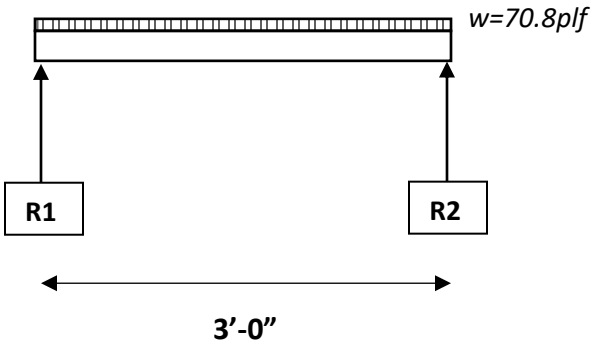
Beams B and D



$\frac{75(3')}{2} = 112.5\#$

$R1\ and\ R2\ = 112.5\#$

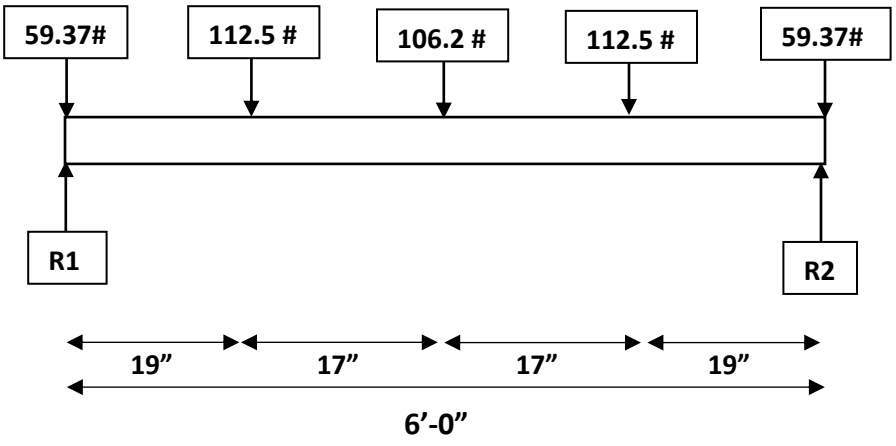
Beam C



$\frac{70.8(3')}{2} = 106.2\#$

$R1\ and\ R2\ = 106.2\#$

Girders



$\frac{449.94}{2} = 224.97\#$

$R1\ and\ R2\ = 224.97\#$

Shear

$V_{0-} = 0$

$V_{0+} = 224.97 - 59.37 = 165.6$ $\qquad V_{\max} = 165.6\#$

$V_{19-} = 165.6$

$V_{19+} = 165.6 - 112.5 = 53.1$

$V_{36-} = 53.1$

$V_{36+} = 53.1 - 106.2 = -53.1$

$V_{53-} = -53.1$

$V_{53+} = -53.1 - 112.5 = -165.6$

$V_{72-} = -165.6 - 59.37 + 224.97 = 0$

$V_{72-} = 0$

Moment

$M_0 = 0$ $\qquad M_{\max} = 4{,}049.1 inlb$

$M_{19} = 19(224.97) - 19(59.37) = 3146.4$

$M_{36} = 36(224.97) - 36(59.37) - 17(112.5) = 4049.1$

$M_{53} = 53(224.97) - 53(59.37) - 34(112.5) - 17(106.2) = 3146.4$

$M_{72} = 72(224.97) - 72(59.37) - 53(112.5) - 36(106.2) - 19(112.5) = 0$

Possible Material

2x2 16 ga Mechanical (compact)

$F_Y = 32000$ $\qquad C_v = 4$ $\qquad \Delta_{all} = \frac{6x12}{240} = 0.3"$

$Z = 0.313$ $\qquad h = 1.819$ $\qquad t_{des} = 0.060$

$I = 0.308$ $\qquad \Omega = 1.67$

Deflection

$W_{Equiv} = \frac{8M_{max}}{l^2}$ $\qquad W_{Equiv} = \frac{8(4049.1)}{6\times12^2} = 6.248 pli$

$I_{Req'd} = \frac{5W_{Equiv}\, l^4}{384EI}$ $\qquad I_{Req'd} = \frac{5(6.248)(6\times12)^4}{384(2.9\times10^7)(0.3)} = 0.25"$

Bending

$Z_{Req'd} = \frac{\Omega_b M_{\max}}{F_y}$ $Z_{Req'd} = \frac{1.67(4049.1)}{32000} = 0.2113$

Shear

$A_w = 2ht_{des}$ $A_w = 2(1.819)(0.060) = 0.21828$

$V_{all} = \frac{0.6F_y\ A_w\ C_v}{\Omega_v}$ $V_{all} = \frac{0.6(32000)(0.21828)\ (4)}{1.67} = 10038.266\#$

Possible Material

1x1 16 ga Mechanical (compact)

$F_Y = 32000$ $\Delta_{all} = \frac{3x12}{240} = 0.15"$

$Z = 0.068$ $h = 0.819$ $t_{des} = 0.060$

$I = 0.034$ $\Omega = 1.67$

$V_{Max} = R = 112.5\#$

$M_{Max} = \frac{wl^2}{8}$ $M_{Max} = \frac{75plf3^2}{8} = 1012.5$ inlb

Deflection

$I_{Req'd} = \frac{5W_{Equiv}\ l^4}{384EI}$ $I_{Req'd} = \frac{5(75/12)(36)^4}{384(2.9\times10^7)(0.034)} = 0.1386"$

1x1 would fail under deflection.

Possible Material

1x2 16 ga Mechanical (compact)

$F_Y = 32000$ $\Delta_{all} = \frac{3x12}{240} = 0.15"$

$Z = 0.195$ $h = 1.819$ $t_{des} = 0.060$

$I = 0.186$ $\Omega = 1.67$

Deflection

$$I_{Req'd} = \frac{5W_{Equiv}\, l^4}{384EI} \qquad I_{Req'd} = \frac{5(75/12)(36)^4}{384(2.9\times10^7)(0.186)} = 0.025"$$

Bending

$$Z_{Req'd} = \frac{\Omega_b M_{\max}}{F_y} \qquad Z_{Req'd} = \frac{1.67(1012.5)}{32000} = 0.0528$$

Shear

$$A_w = 2ht_{des} \qquad A_w = 2(1.819)(0.060) = 0.21828$$

$$V_{all} = \frac{0.6F_y\ A_w\ C_v}{\Omega_v} \qquad V_{all} = \frac{0.6(32000)(0.21828)\ (4)}{1.67} = \ 10{,}038.266\#$$

Plywood Analysis

Three Span Condition

BC Group 1/ Sanded S-2

$Area = 2.884$ $KS = 0.412$ $F_v = 190$ $F_s = 53$

$t_{des} = 0.568$ $\frac{Ib}{Q} = 6.762$ $F_C = 1{,}540$

$I = 0.197$ $F_{b/t} = 1650$ $E = 1.8 \times 10^6$

Bending

$$w_b = \frac{120F_b\, KS}{l^2}$$

$$w_b = \frac{120(1650)(0.412)}{24^2} = 141.625psf$$

Shear

$$w_s = \frac{20F_s\, Ib/Q}{l}$$

$$w_s = \frac{20(53)(6.762)}{24} = 298.655psf$$

Deflection

$$w_{\Delta} = \frac{1743EI\Delta all}{l^4}$$

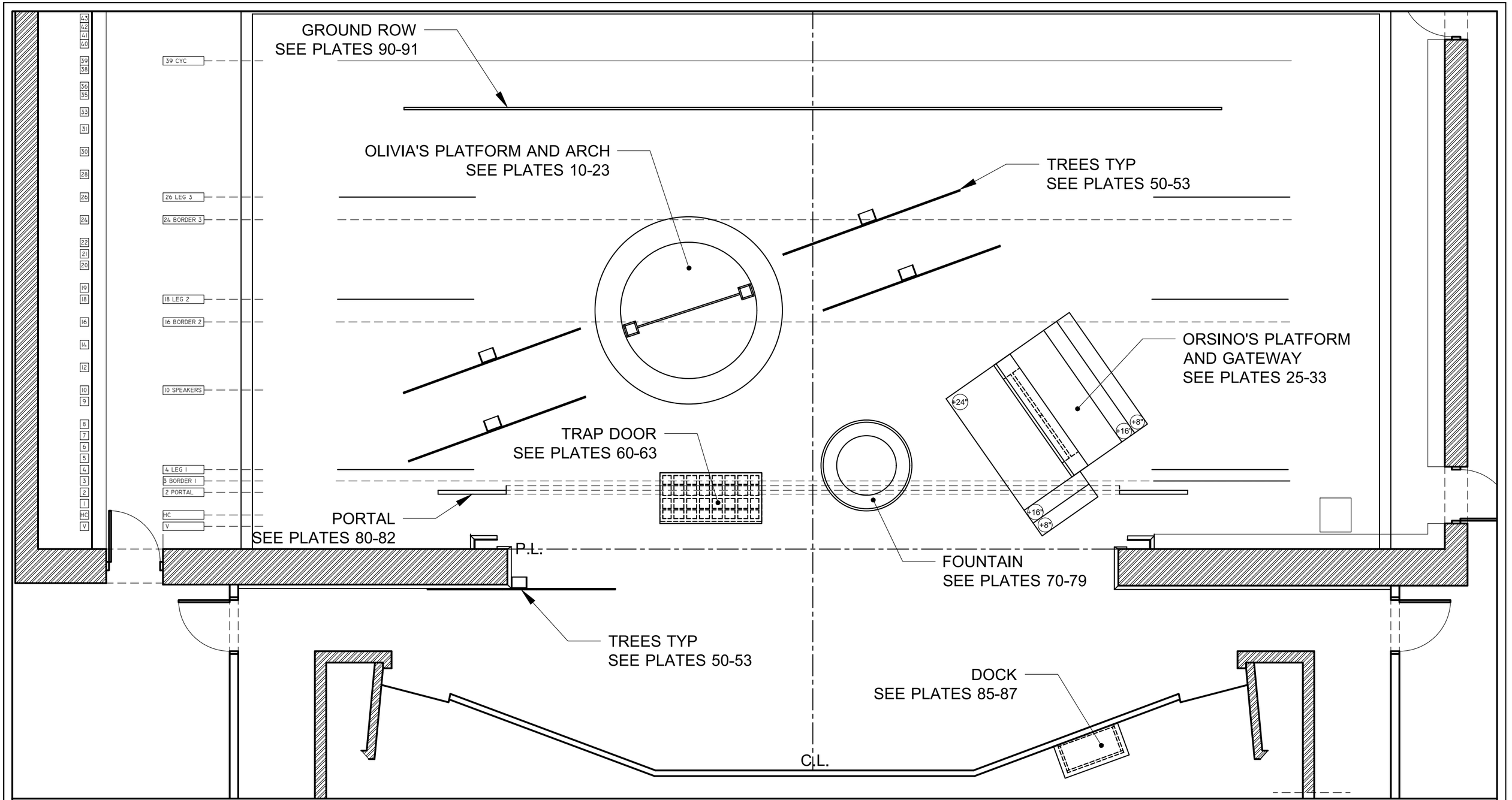
$$w_{\Delta} = \frac{1743(1.8 \times 10^6)(0.197)(0.1)}{24^4} = 186.29\text{psf}$$

Construction Drawings

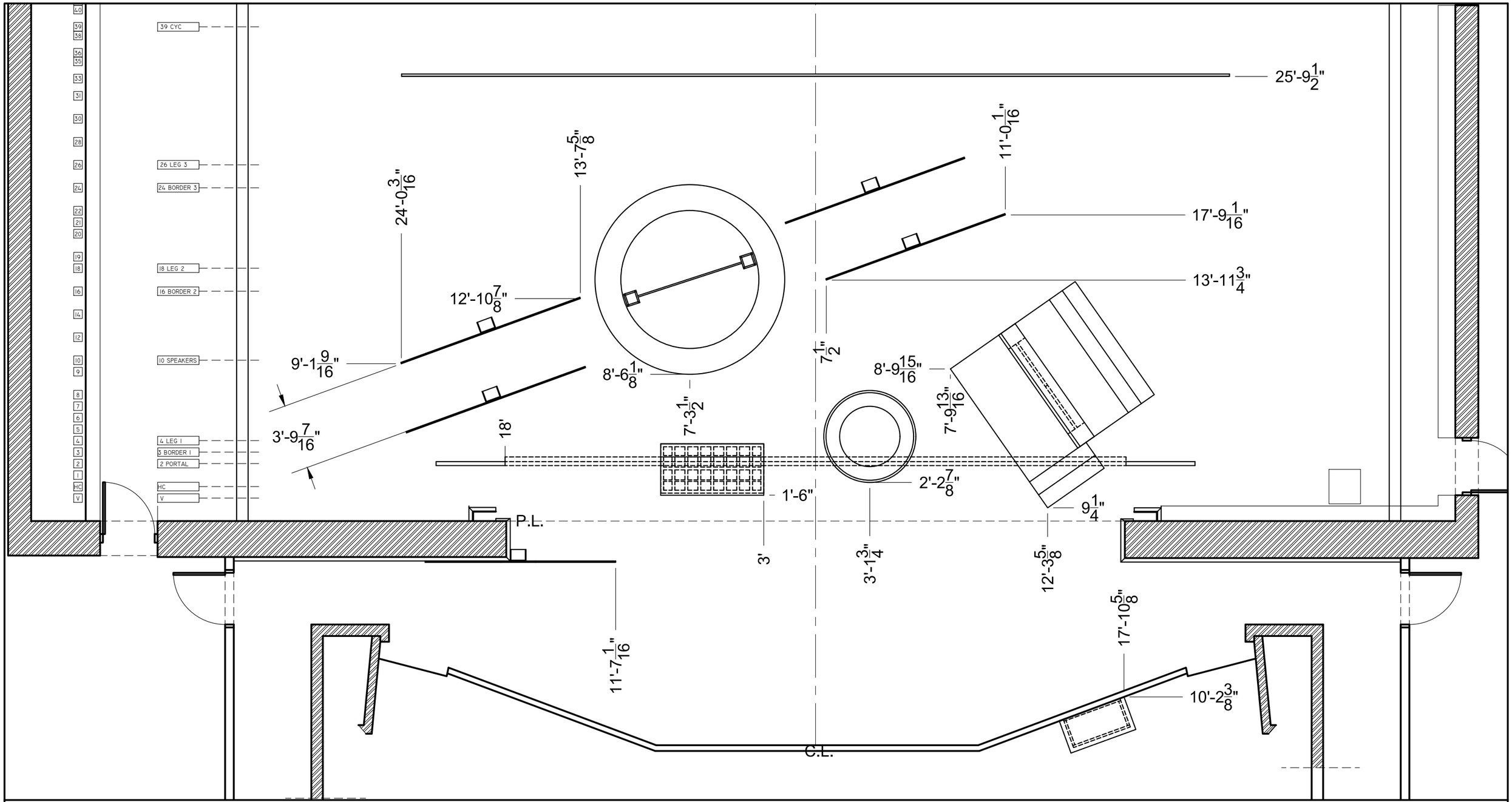
PLATE #	PLATE DESCRIPTION
1	Ground Plan (Callouts)
2	Ground Plan (Dimensions)
3	Section View (Callouts)
4	Section View (Dimensions)
OLIVIA	
10	Olivia’s Platform Layout
11	Olivia’s Inner Platform Leg and Plywood Top
12	Olivia’s Upper Platform Frame Construction
13	Olivia’s Upper Platform Frame Construction
14	Olivia’s Platform Ring Frame
15	Olivia’s Platform Ring Frame Construction
16	Plywood Layout
17	Olivia’s Arch
18	Olivia’s Arch Top
19	Olivia’s Arch Legs
20	Olivia’s Arch Appliques
ORSINO	
25	Orsino’s Overall Platform Layout
26	Orsino’s Front Platform Construction
27	Orsino’s Back Platform Construction 1
28	Orsino’s Back Platform Construction 2
29	Orsino’s Short 4’ Stair Step
30	Orsino’s Tall 4’ Stair Step
31	Orsino’s Short 8’ Stair Step
32	Orsino’s Tall 8’ Stair Step
33	Balustrade Layout
34	Long Balustrade Construction
35	Short Balustrade Construction

PLATE #	PLATE DESCRIPTION
40	Orsino’s Gateway Layout
41	Orsino’s Gateway Frame Layout
42	Orsino’s Gateway Frame A and C Construction
43	Orsino’s Gateway Frame B Construction
44	Orsino’s Door Layout, Construction, and Assembly
TREES	
50	Tree Layout
51	Tree Lauan and Foam Layout
52	Tree Assembly
53	Jack Construction
TRAP DOOR	
60	Trap Door Layout
61	Trap Door Lid Construction
62	Trap Door Grate Construction
63	Trap Door Grate Construction
FOUNTAIN	
70	Fountain Layout
71	Fountain Construction
72	Fountain Outer Ring Construction
73	Fountain Outer Ring Framing Construction
74	Fountain Outer Ring Plywood Ribs
75	Fountain Outer Ring Plywood Construction

PLATE #	PLATE DESCRIPTION
PORTAL	
80	Portal Layout
81	Portal Construction
82	Portal Rigging
DOCK	
85	Dock Layout
86	Dock Construction
87	Dock Leg Support Construction
GROUND ROW	
90	Ground Row Layout
91	Ground Row Construction



Revision Notes	Ground Plan	Notes: Use as a reference for construction and load in.	Date Drafted: 11.28.21 Drafted By: Tabitha Wimsett Scale: $\frac{3}{16}$" = 1'-0"	PURDUE UNIVERSITY Department of Theatre	*TWELFTH NIGHT*	Director: Kristine Holtvedt Set Designer: Sydney Hagen Technical Director: Tabitha Wimsett Assistant Technical Director: Kyle Bickel	1



Revision Notes			

Ground Plan

Notes: Use as a reference for load in.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 3/16" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

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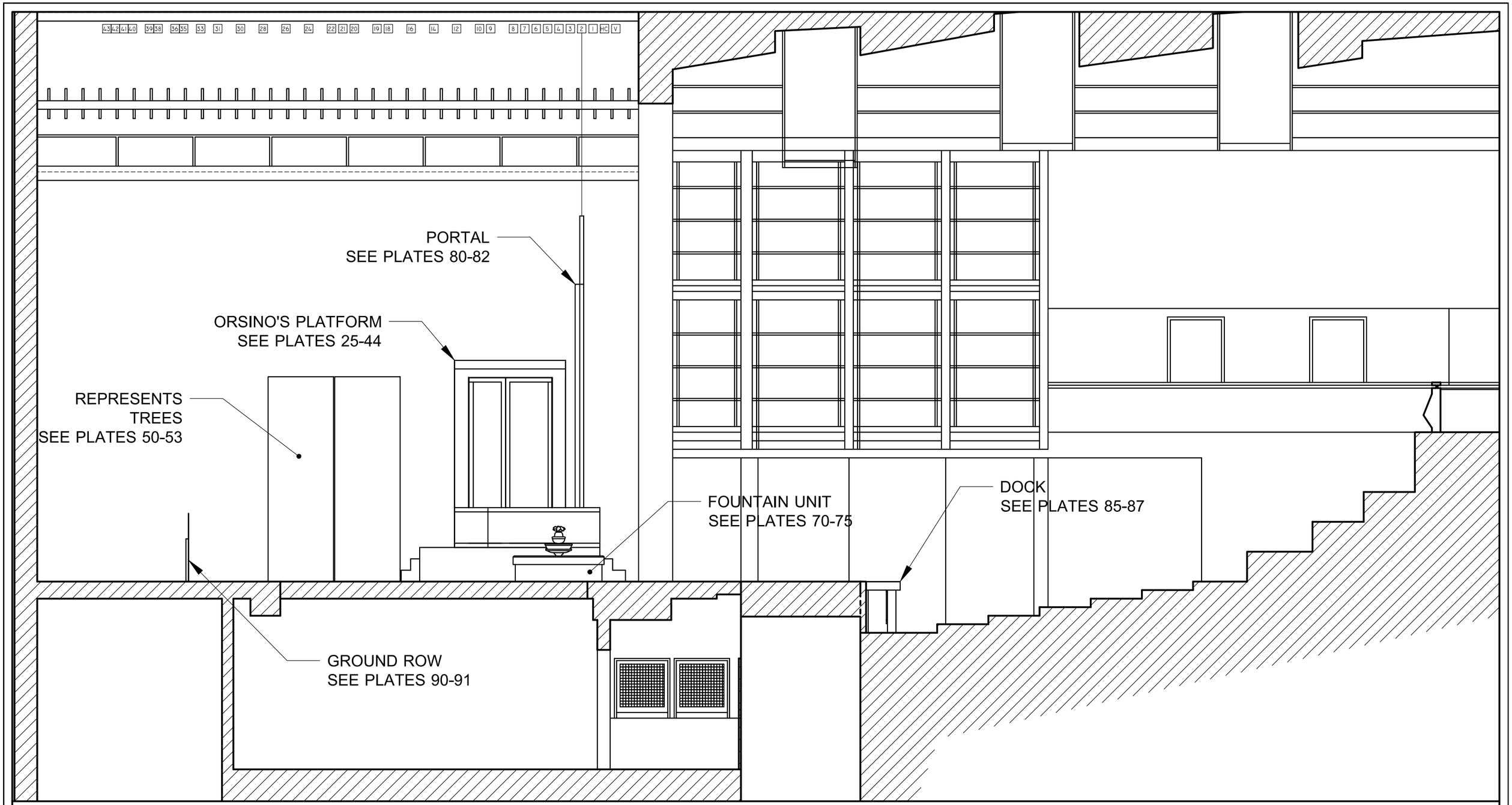
Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

2



Revision Notes	Section View	Notes: Use as a reference for load in.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{3}{16}$" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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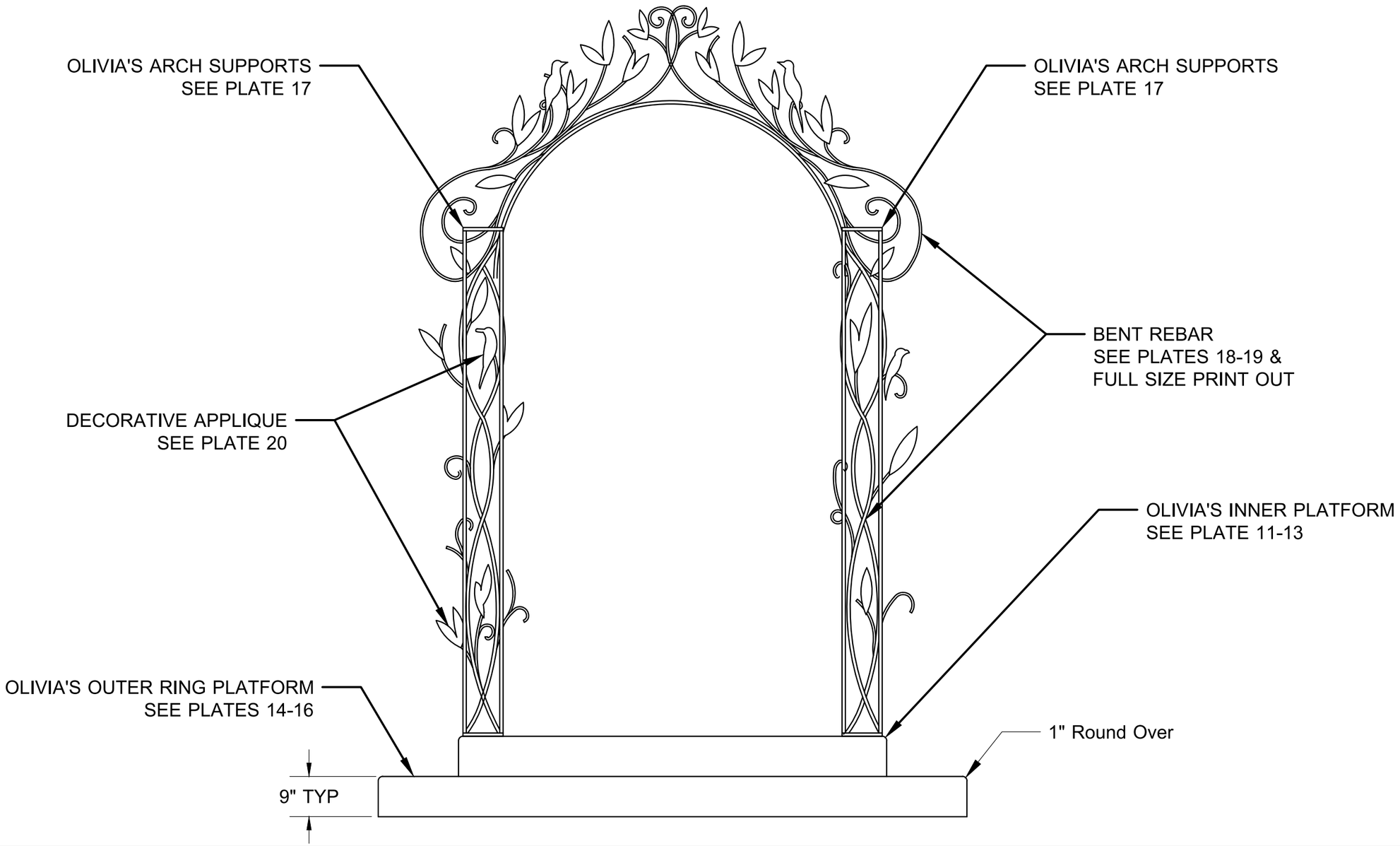
Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

3



Revision Notes	Olivia's Platform Unit	Notes: Layout of Olivia's Platform. Use as reference for install.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{2}$" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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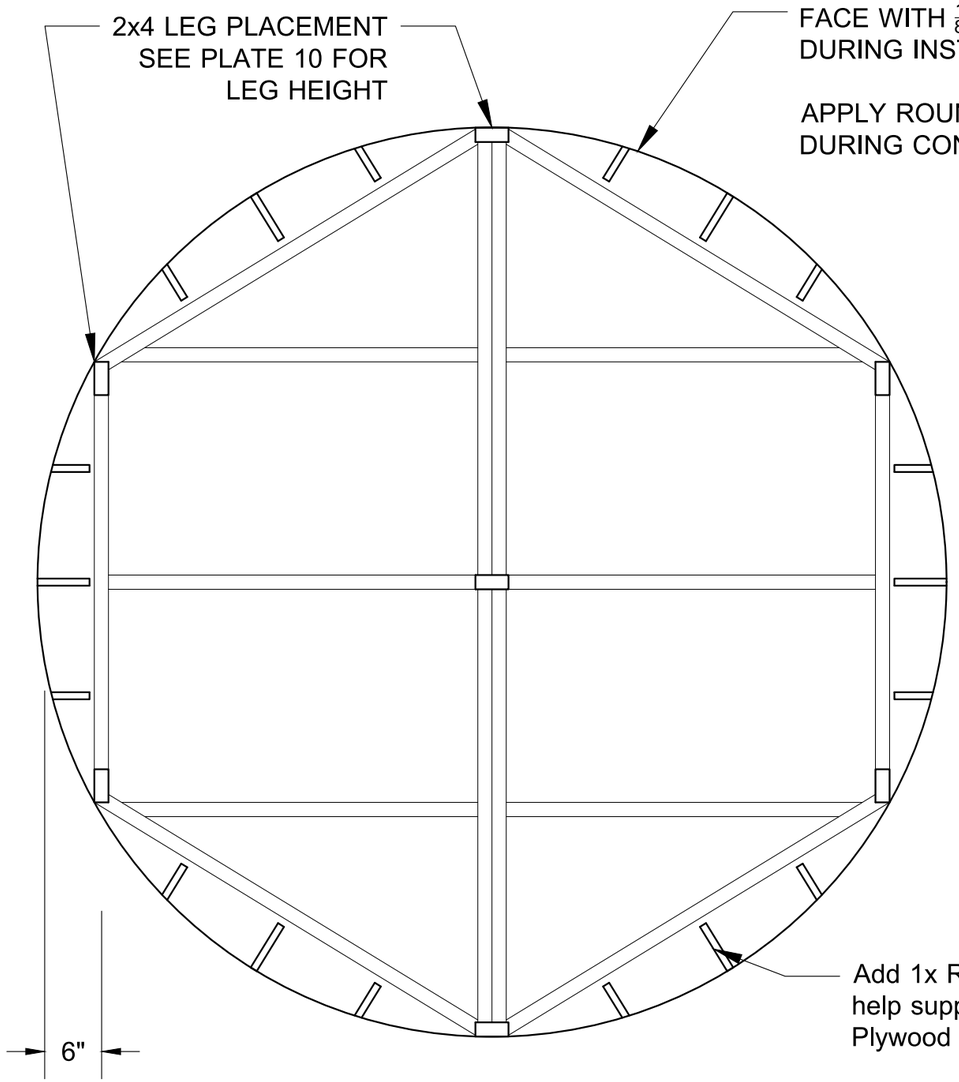
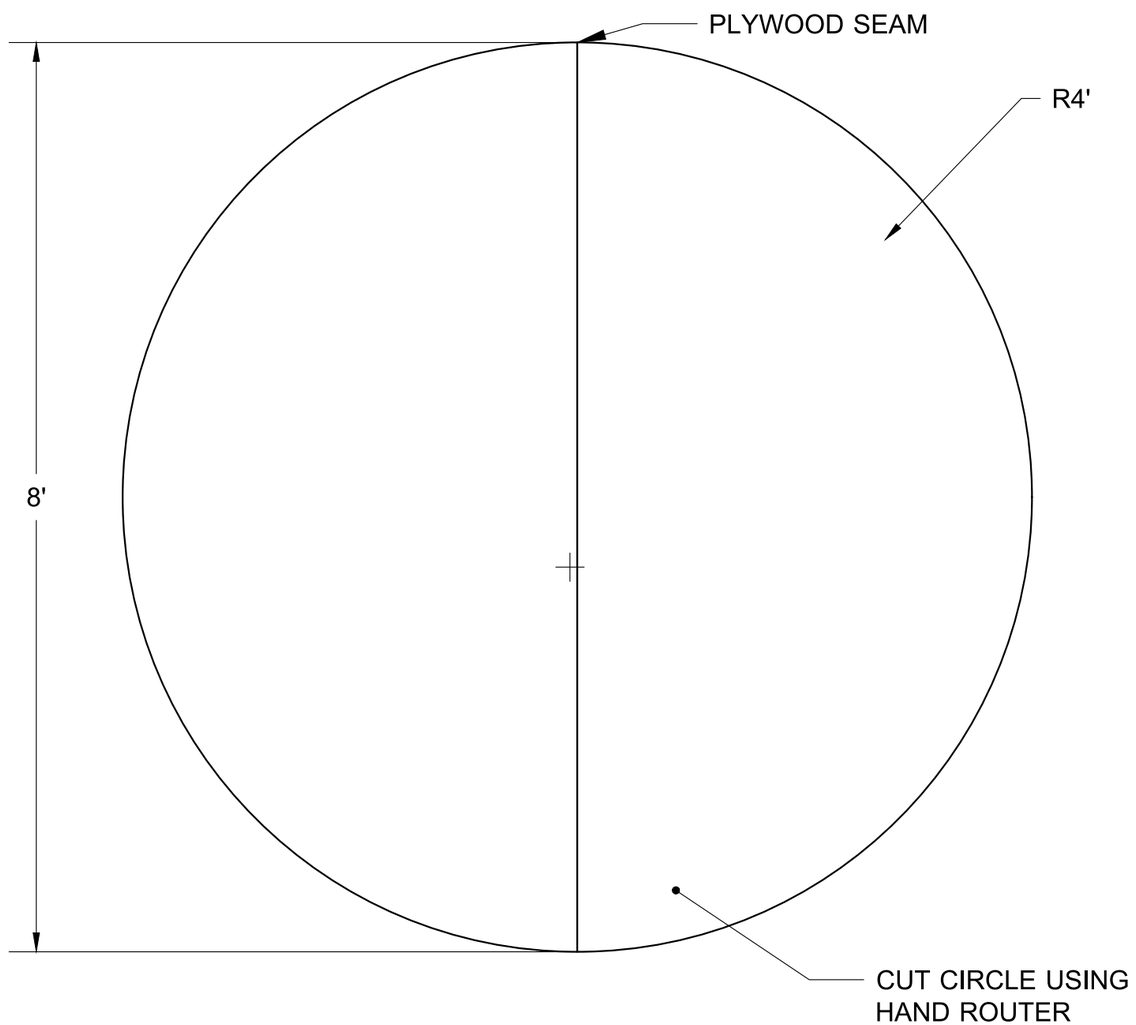
Assistant Technical Director: Kyle Bickel

10



Bottom View: Leg Placement and Overhang Detail

Scale: 3/4" = 1'-0"



Top View: Plywood Detail

Scale: 3/4" = 1'-0"

Revision Notes		

Olivia's Inner Platform
Plywood and Leg Detail

Notes: 2x4 legs should be in compression and secured with 3/4" plywood plates. Plywood lid should be 3/4" BC Plywood. Cap plywood with 1/8" masonite and round over edge.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 3/4" = 1'-0"

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TWELFTH NIGHT

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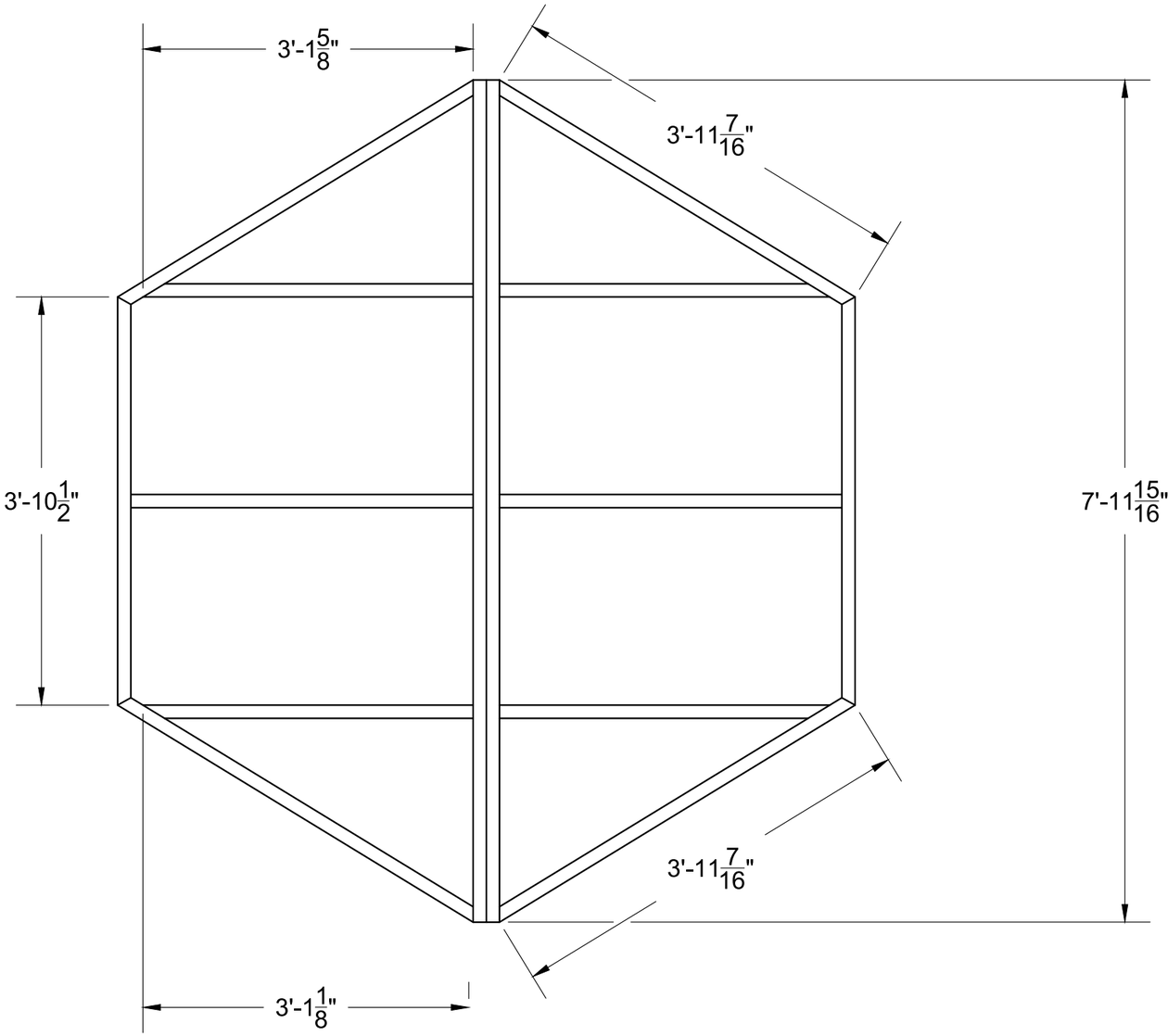
Assistant Technical Director:
Kyle Bickel

11

PLEASE SEE PLATE 13 FOR ANGULAR DIMENSIONS. BUILD ONE TOTAL.

ASSEMBLY NOTE: KEEP LEFT AND RIGHT HALVES SEPARATE UNTIL INSTALL.



Top View: Inner Platform Frame

Scale: 3/4" = 1'-0"

Revision Notes		

Olivia's Inner Platform Construction

Notes: Build 1. Construct framing out of 2x4. Glue and screw. Left and right side of frame mirror each other. Dimensions should be considered TYP.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 3/4" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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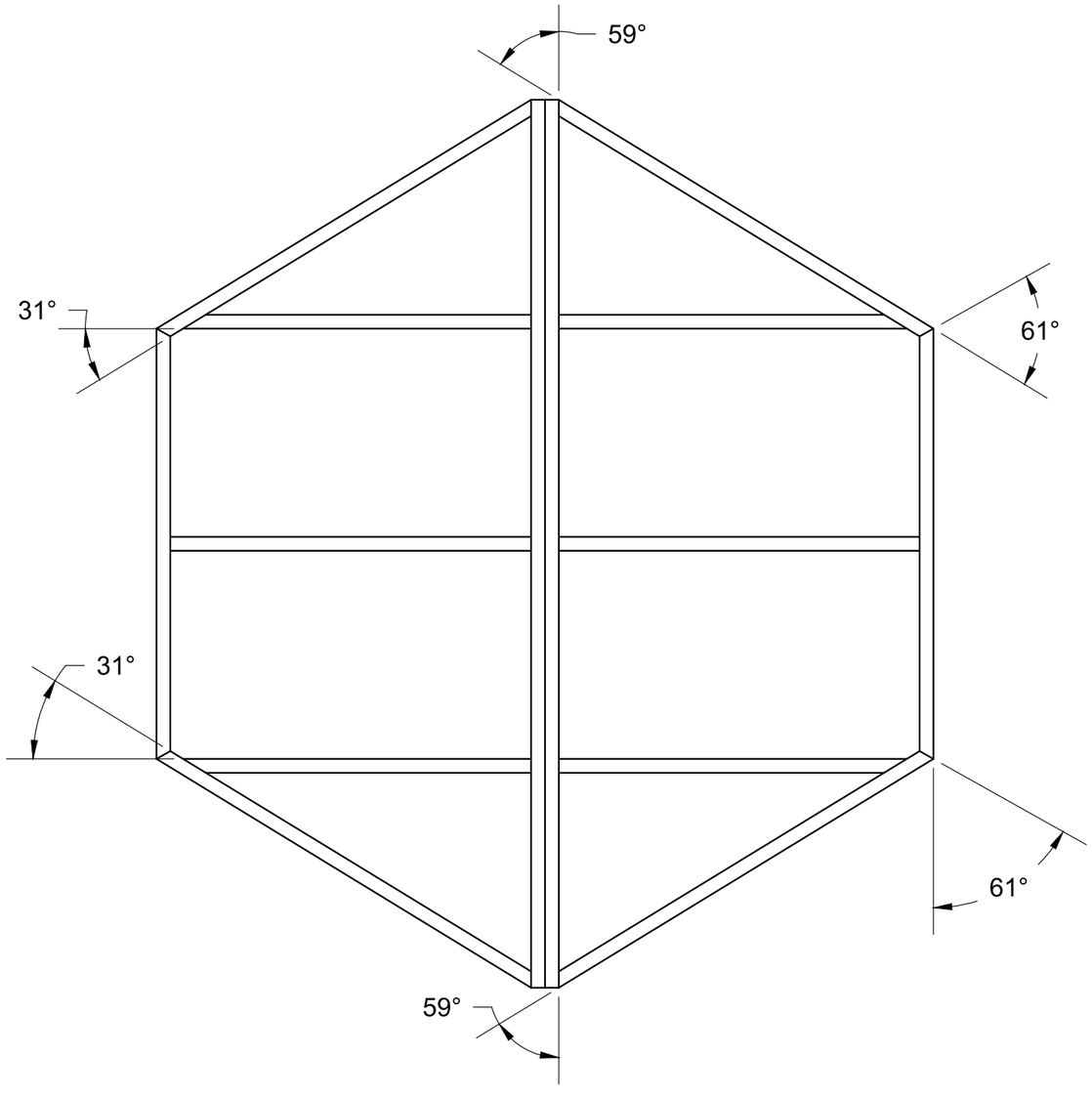
Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

12

PLEASE SEE PLATE 12 FOR LINEAR DIMENSIONS. BUILD ONE TOTAL.



Top View: Inner Platform Frame

Scale: $\frac{3}{4}$" = 1'-0"

Revision Notes	Olivia's Inner Platform Angular Dimensions	Notes: Please see plate 12. Left and right side of frame mirror each other. Dimensions should be considered TYP.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale= $\frac{3}{4}$" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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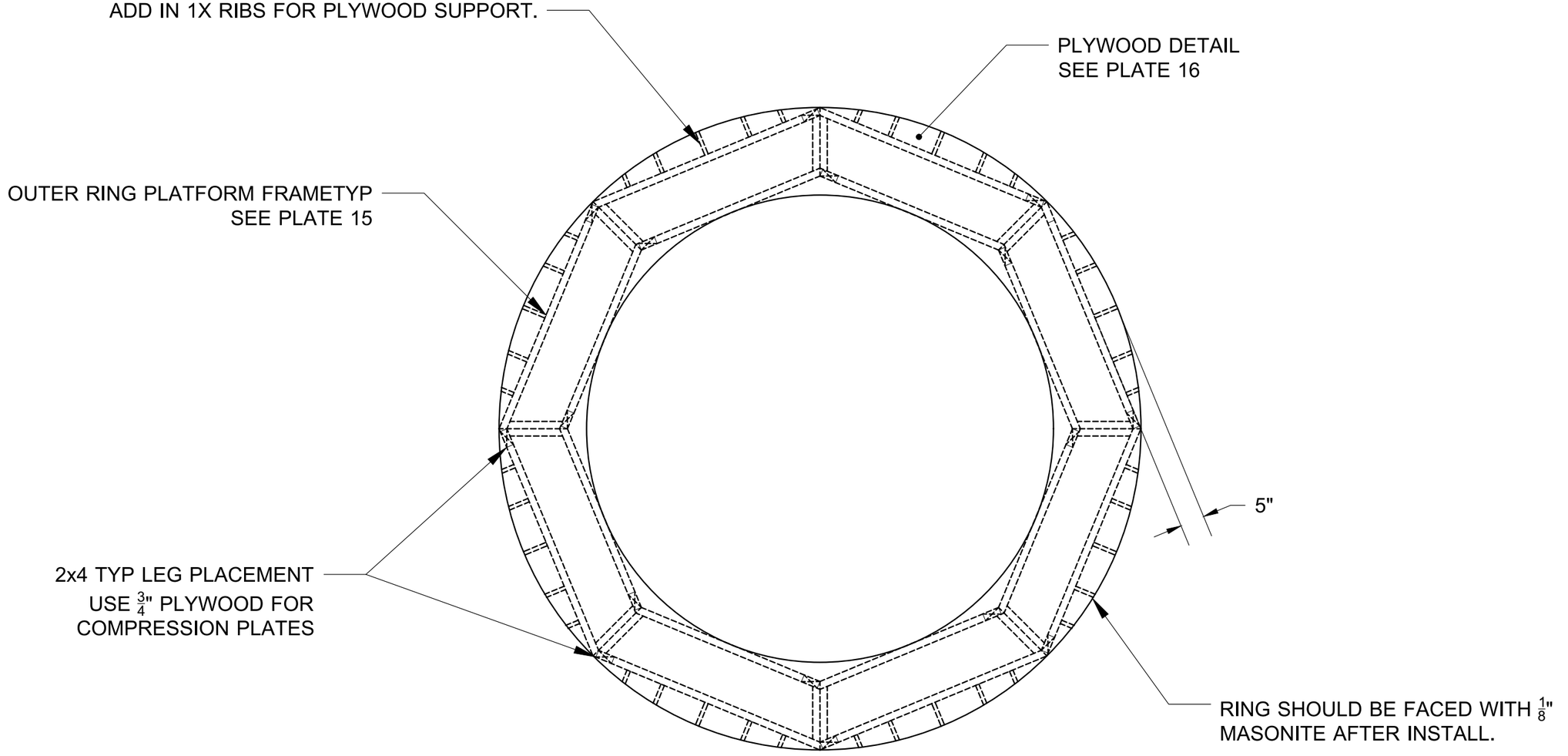
Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

13



Top View: Outer Ring Layout

Scale: $\frac{1}{2}$" = 1'-0"

Revision Notes		

Olivia's Outer Ring Platform Layout

Notes: Use as reference during assembly.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{2}$" =1'-0"

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Department of Theatre

TWELFTH NIGHT

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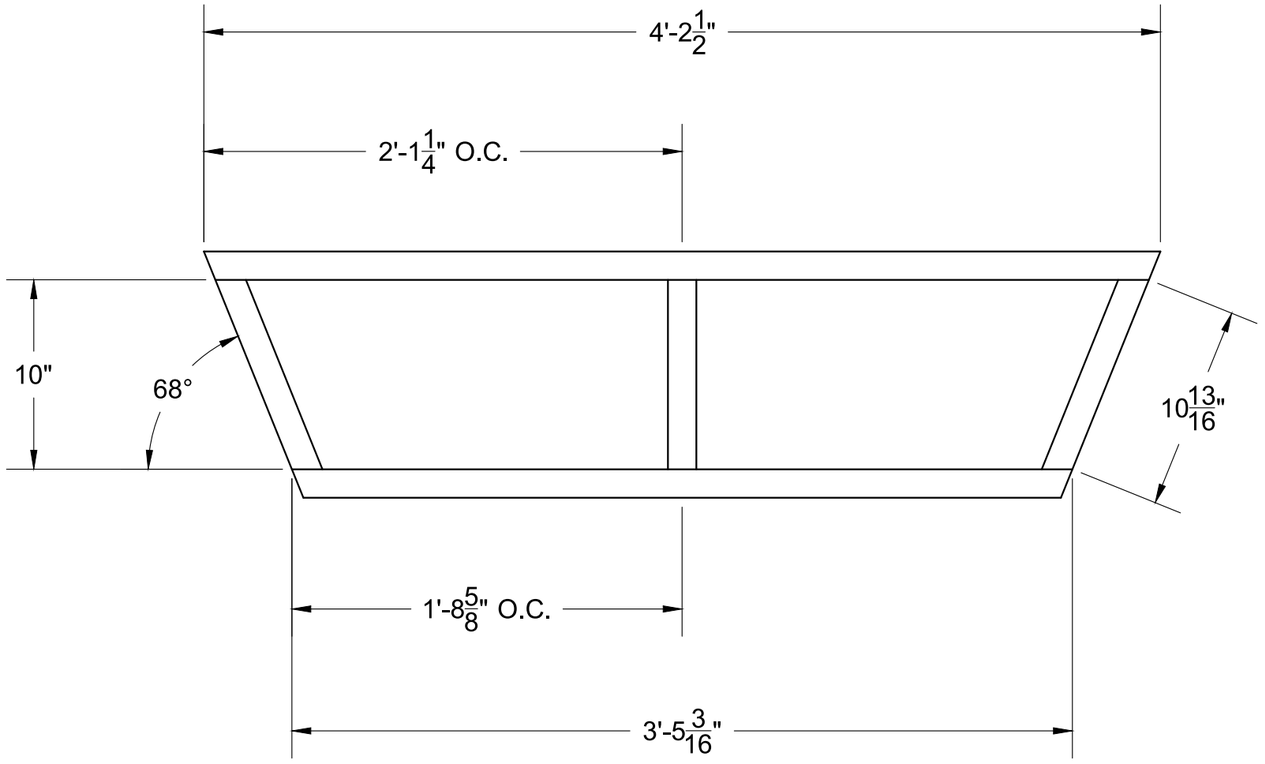
Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

14



Top View: Outer Ring Frame Construction

Scale:1- ½" = 1'-0"

Revision Notes	Olivia's Outer Ring Platform Construction	Notes: BUILD EIGHT. Construct out of 2x4. Glue and screw.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale= ½" = 1'-0"

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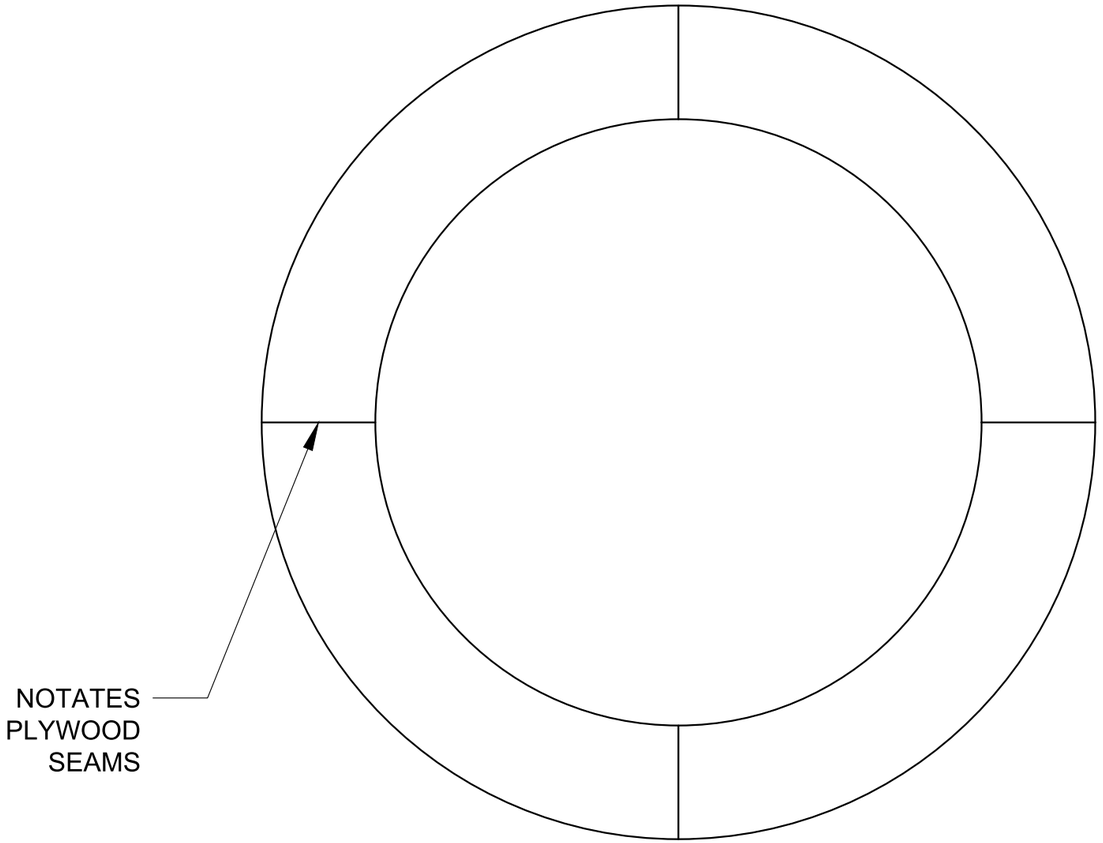
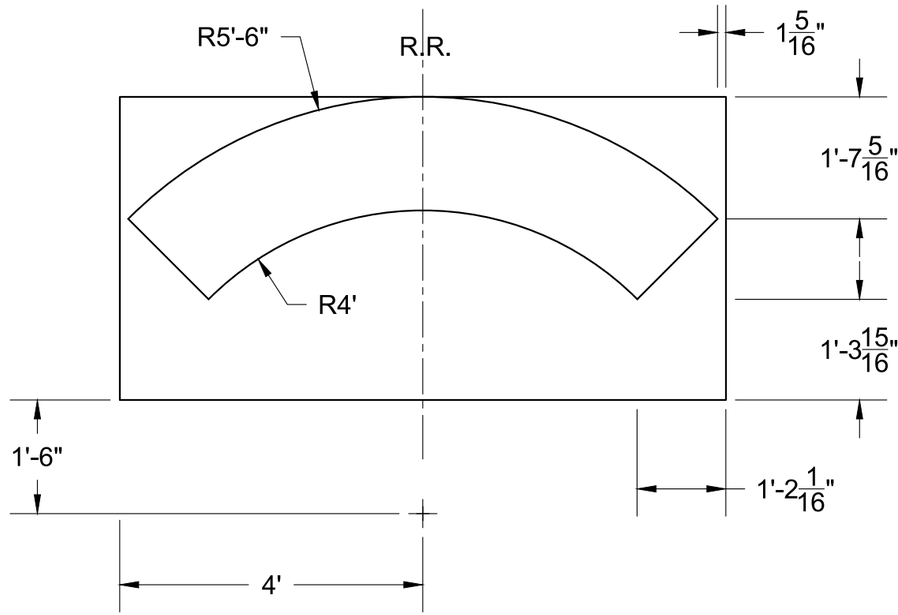
15

ASSEMBLY NOTE: LEAVE PLATFORM IN
FOUR SECTIONS FOR EASE OF INSTALL



Top View: Outer Ring Plywood Layout
Scale: $\frac{1}{2}$" = 1'-0"



Top View: Plywood Cut Out
Scale: $\frac{1}{2}$" = 1'-0"

Revision Notes	Olivia's Outer Ring Plywood Construction	Notes: Cut four total. Construct out of BC Plywood. Use hand router.

Date Drafted: 11.28.21
Drafted By: Tabitha Wimsett
Scale: $\frac{1}{2}$" = 1'-0"

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TWELFTH NIGHT

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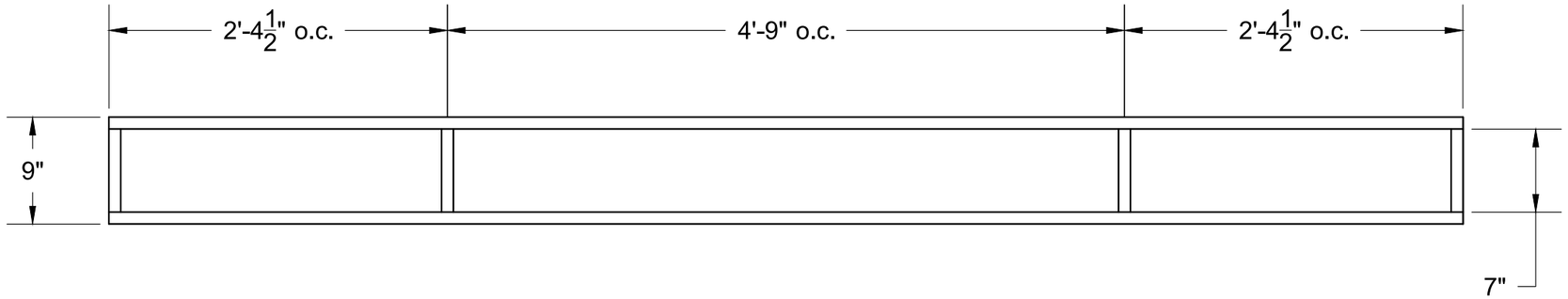
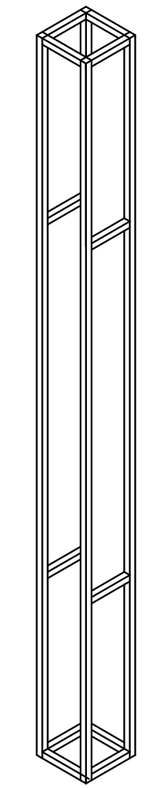
16

ARCH SUPPORT
ROTATED 90
DEGREES TO SHOW
DETAIL



Side View: Arch Support
Scale: 1" = 1'-0"



Isometric View: Arch Support
Scale: 1/2" = 1'-0"

Top View: Arch Support
Scale: 1" = 1'-0"

Front View: Arch Support
Scale: 1" = 1'-0"

Revision Notes	Olivia's Arch Supports	Notes: BUILD TWO. Construct out of 1x1 box tube. Weld and grind smooth.

Date Drafted: 11.28.21
Drafted By: Tabitha Wimsett
Scale as shown.

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TWELFTH NIGHT

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Assistant Technical Director: Kyle Bickel

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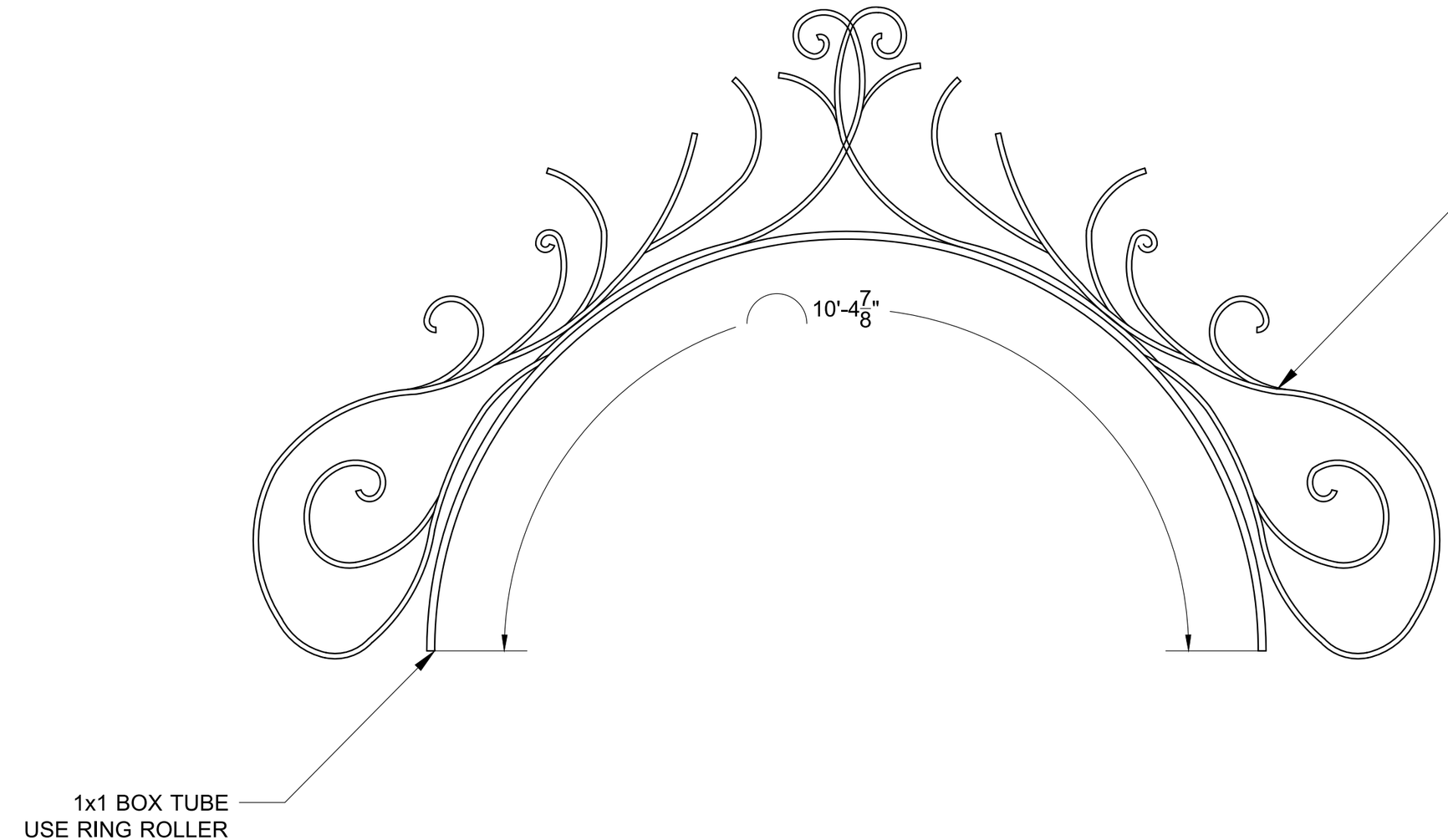

Revision Notes	Olivia's Arch Top Construction	Notes: Construct Arch out of 1x1 box tube. The decorative elements should be bent rebar. Weld and grind smooth.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 1"= 1'-0"

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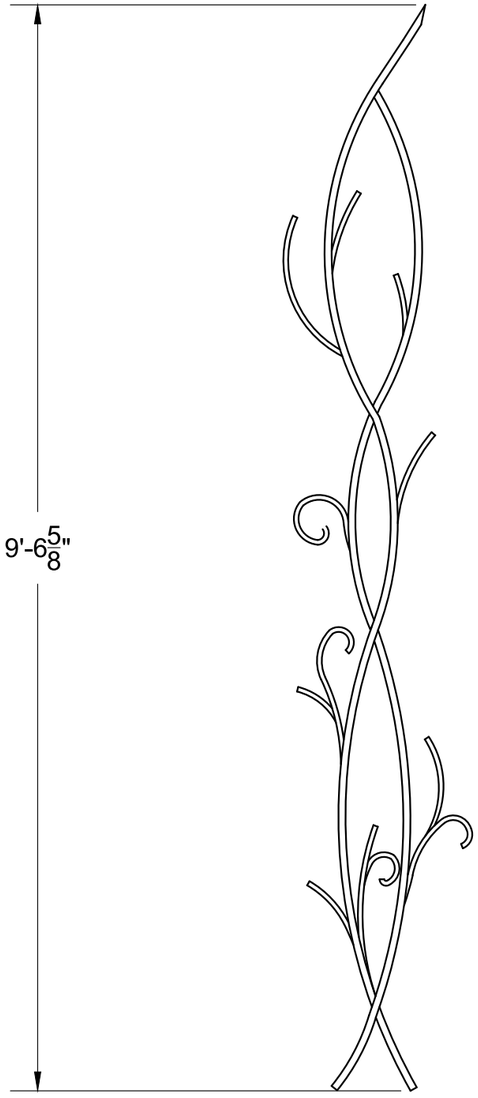
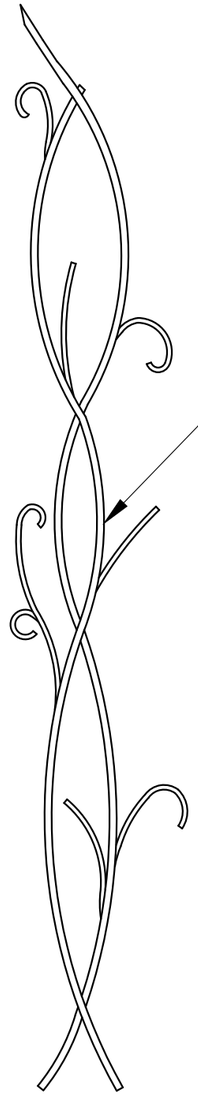
18





SEE FULL SIZE PRINT OUT FOR REFERENCE. BEND REBAR USING HOSSFELD BENDER.

Revision Notes		

Olivia's Arch Legs

Notes: The decorative elements should be bent rebar. Weld and grind smooth.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 3/4" = 1'-0"

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PLEASE NOTE: EXACT LOCATION OF LEAVES AND BIRDS IS NOT CRUCIAL. REFER TO FULL SCALE DRAWING FOR PLACEMENT.

LEAF AND BIRD APPLIQUE CUT WITH LASER CUTTER.

Revision Notes		

Olivia's Arch Applique

Notes: Use as a reference for assembly. Applique pieces will be constructed out of lauan cut on the laser cutter. Use construction adhesive and conduit clamps to secure birds and leaves.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{2}$" = 1'-0"

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Assistant Technical Director: Kyle Bickel

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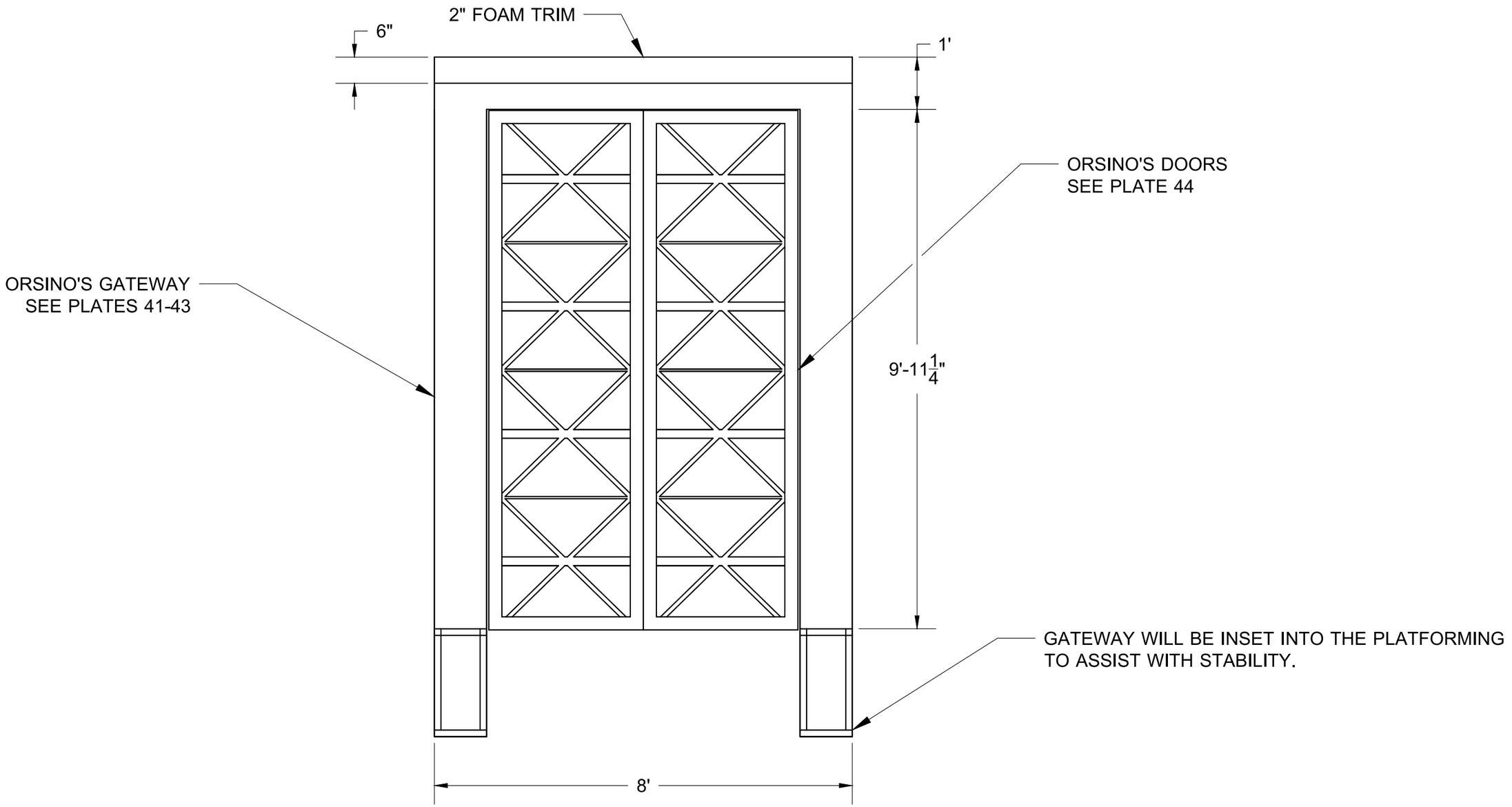

Revision Notes	Orsino's Gateway	Notes: Use as a reference during assembly/install.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{2}$" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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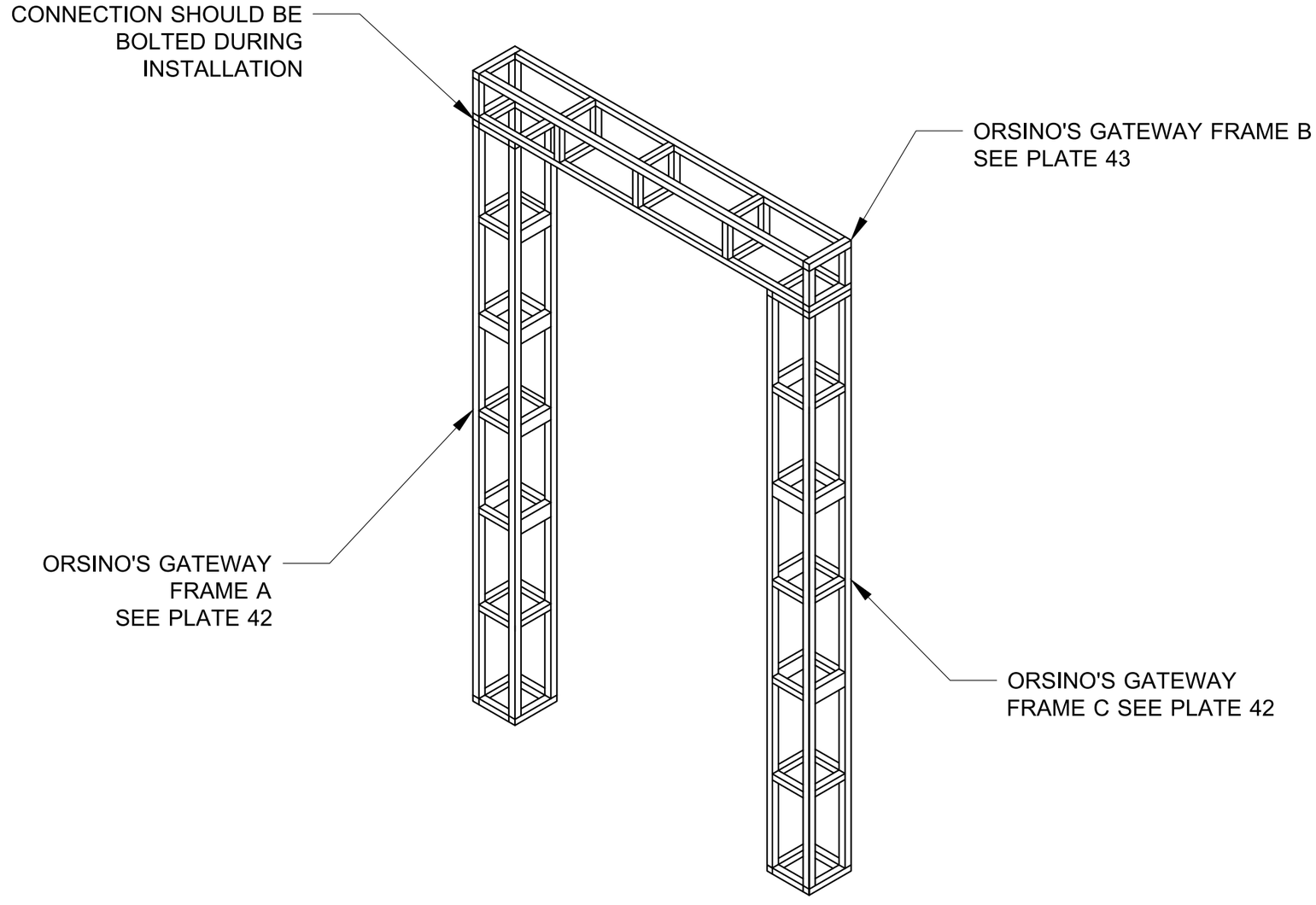

Isometric View: Gateway

Scale: $\frac{3}{8}$" = 1'-0"

Revision Notes	Orsino's Gateway Assembly	Notes: Use as a reference during assembly.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{3}{8}$" = 1'-0"

PURDUE UNIVERSITY
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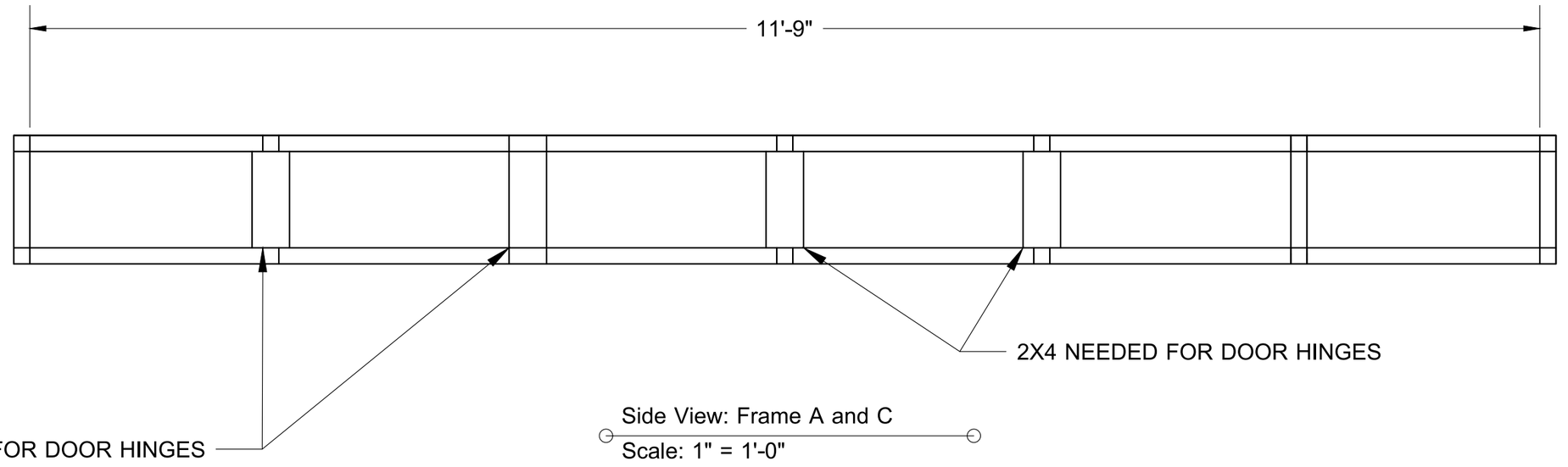
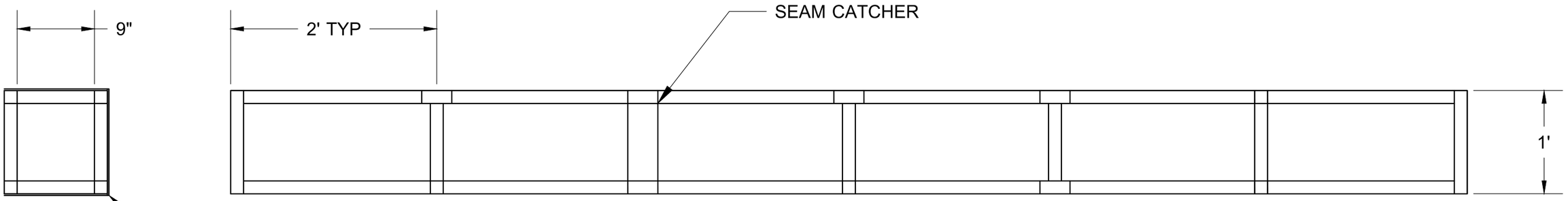
Assistant Technical Director: Kyle Bickel

41

ROTATED 90 AND SHOWN WITHOUT LAUAN FOR CLARITY.
SEE PLATE 41 AND TOP VIEW FOR LAUAN DETAIL.



Side View: Frame A and C
Scale: 1" = 1'-0"



Top View: Frame A and C
Scale: 1" = 1'-0"

Front View: Frame A and C
Scale: 1" = 1'-0"

Revision Notes	Orsino's Gateway Frames A and C	Notes: R&R Need two total. Construct out of 2x2 and 2x4. Pre-drill, countersink, glue, and screw. Note 2x4 placement needed for seam and hinge placement. Glue and staple lauan. Fill staple holes with joint compound.

Date Drafted: 11.28.21
Drafted By: Tabitha Wimsett
Scale: 1" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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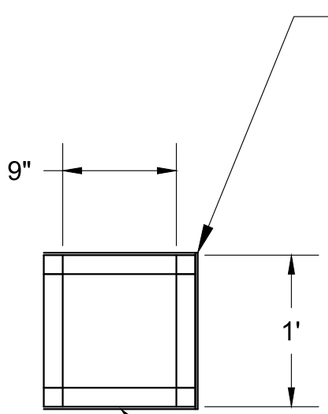
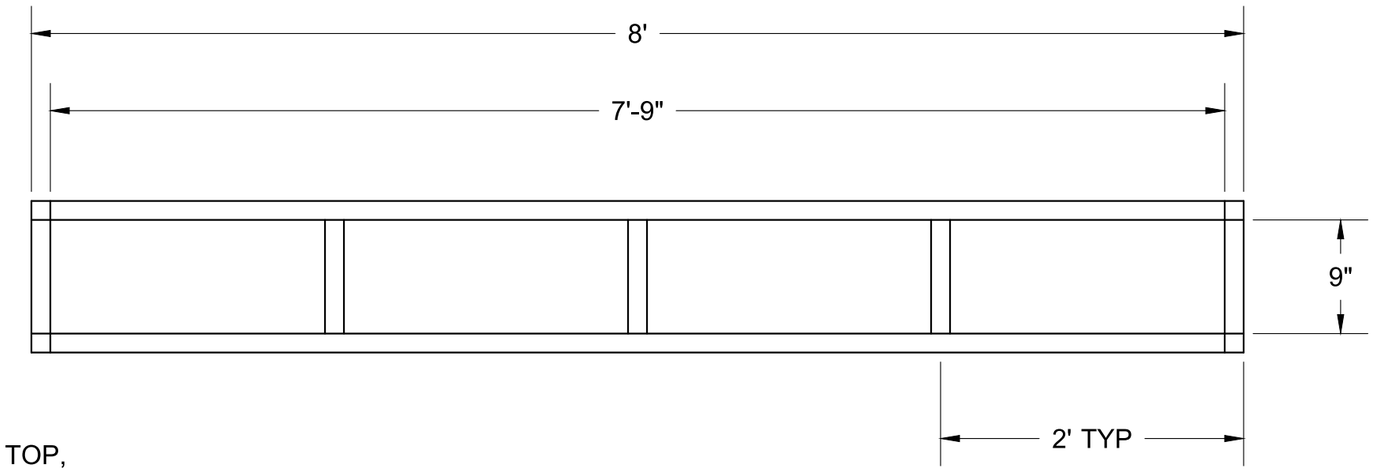
Assistant Technical Director: Kyle Bickel



Top View: Frame B

Scale: 1" = 1'-0"



Front View: Frame B

Scale: 1" = 1'-0"

SHOWN WITHOUT LAUAN FOR CLARITY.
SEE PLATE 41 AND SIDE VIEW FOR
LAUAN DETAIL.

Revision Notes		

Orsino's Gateway
Frame B

Notes: Build one. Construct out of 2x2. Pre-drill, countersink, glue, and screw. Glue and staple lauan.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 1" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

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Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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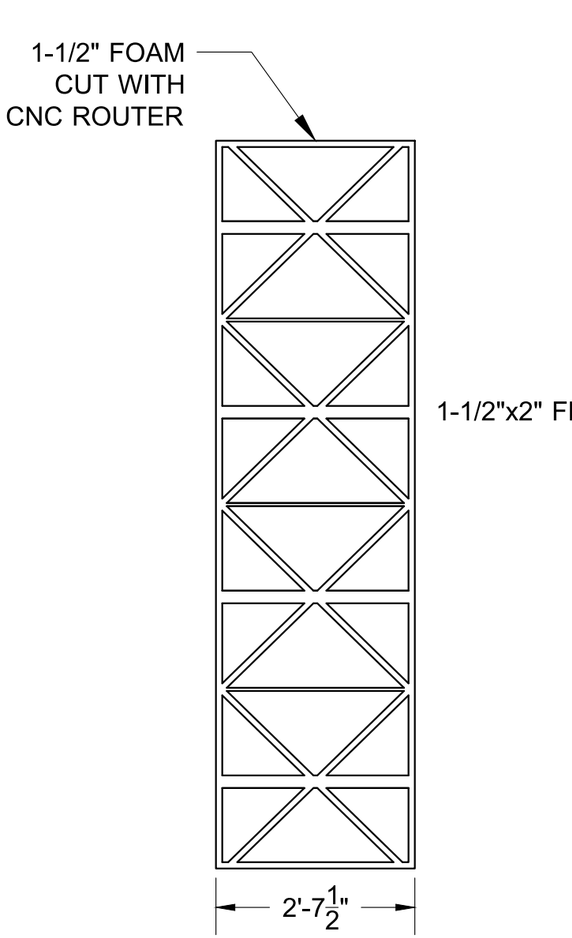
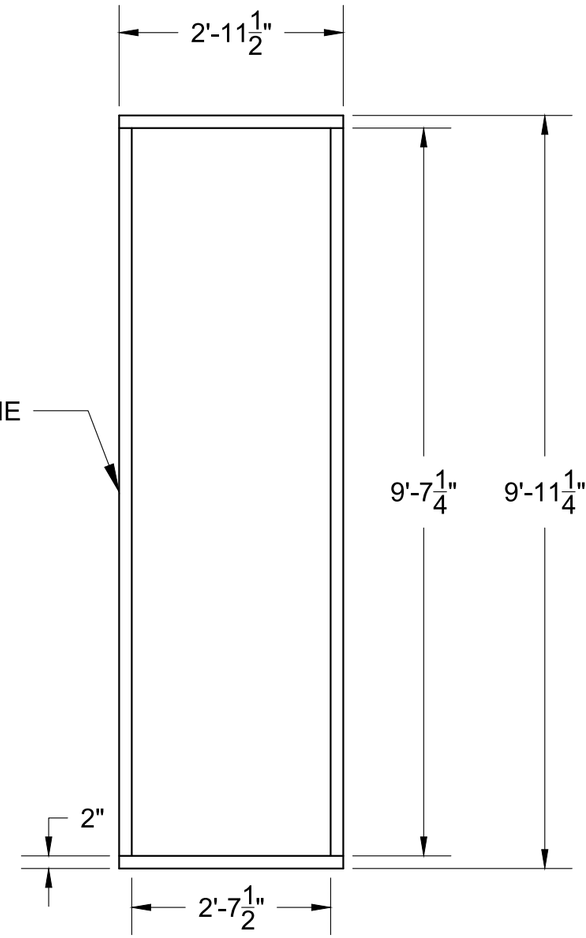


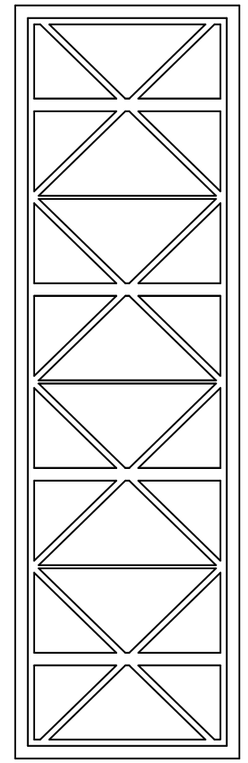
Front View: Foam Cut on CNC

Scale: 1/2" = 1'-0"



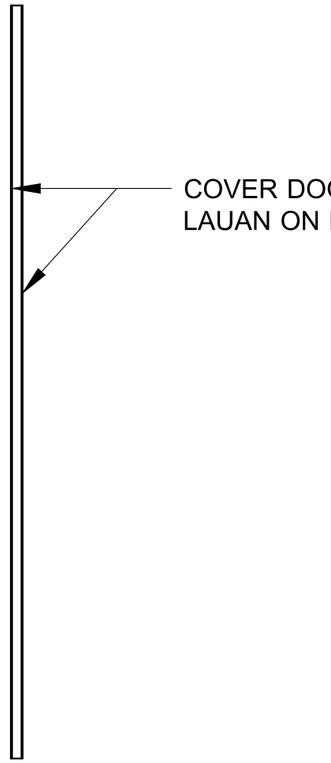
Front View: Door Frame

Scale: 1/2" = 1'-0"



Front View: Assembled Door

Scale: 1/2" = 1'-0"



Side View: Assembled Door

Scale: 1/2" = 1'-0"

Revision Notes

Orsino's Doors

Notes: BUILD TWO. Inside design will be foam and cut on the CNC Router. Construct door frame out of 1-1/2"x2" true. Glue and screw using pocket jig. Assembled door covered on both sides by lauan cut on the CNC Router. Assemble using Simalfa.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 1/2" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

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Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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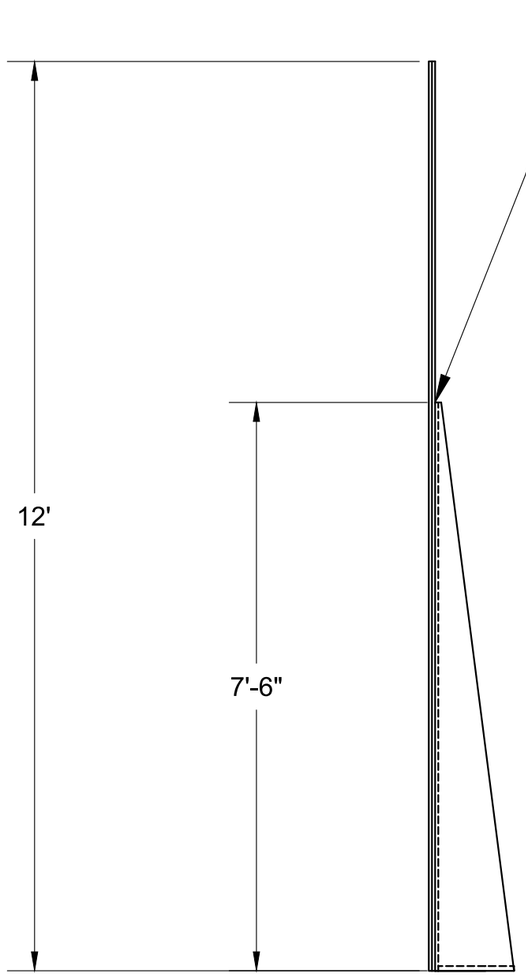
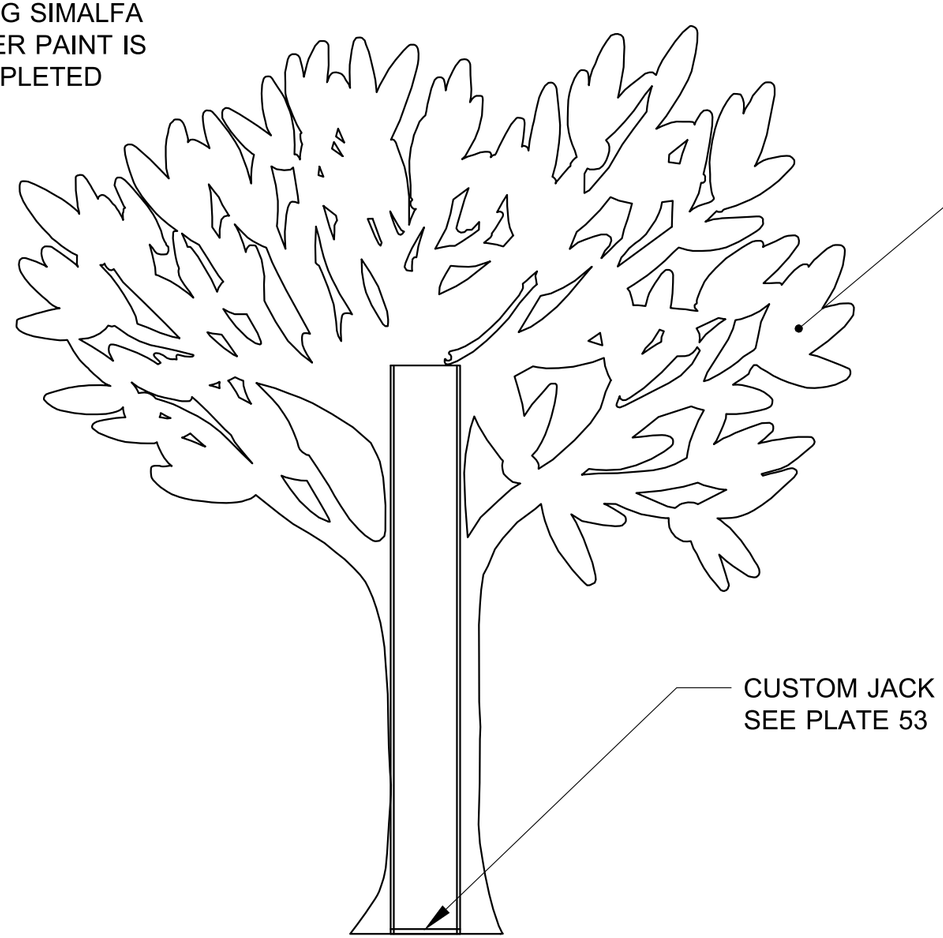


Side View: Tree with jack

Scale: $\frac{1}{2}$" = 1'-0"



Back View: Tree with jack

Scale: $\frac{1}{2}$" = 1'-0"

Revision Notes	Tree Layout	Notes: Use as a reference during assembly/install.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{2}$" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

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Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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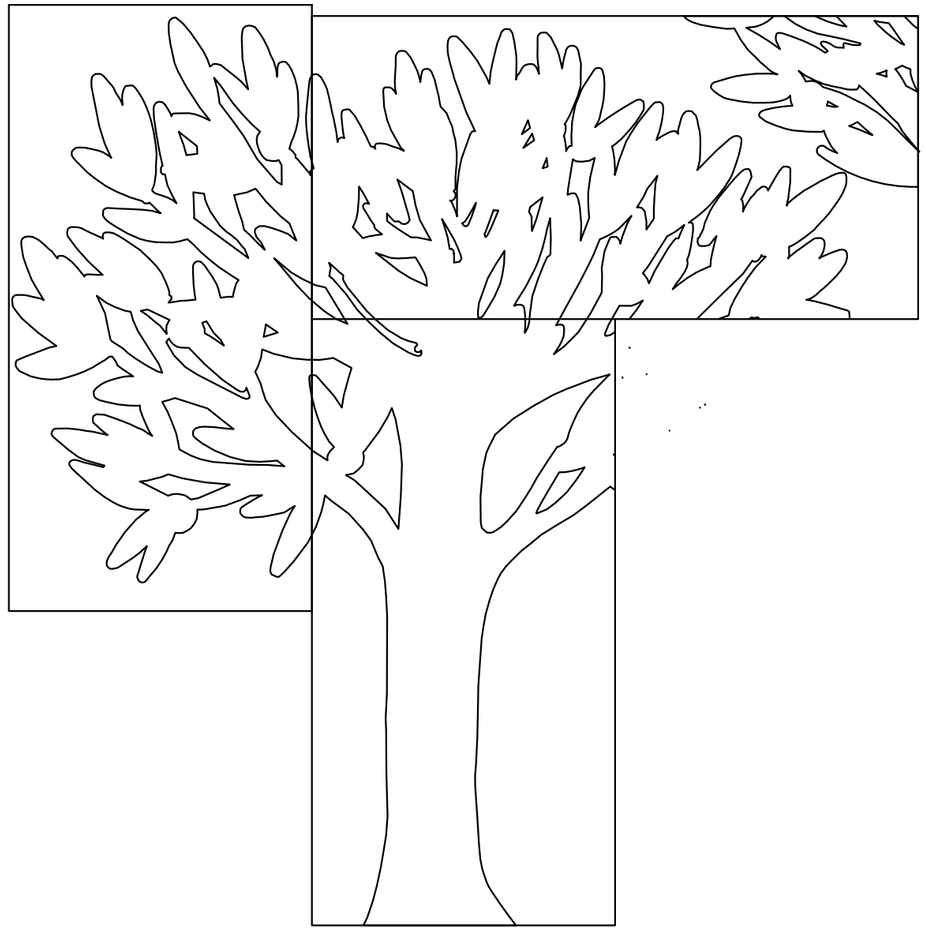
Front View: Lauan layout

Scale: $\frac{1}{2}$" = 1'-0"



Front View: Foam layout

Scale: $\frac{1}{2}$" = 1'-0"

Revision Notes		

Tree Layout For CNC Router

Notes: Use as a reference during assembly. Cut profile on CNC Router. Constructed out of $\frac{1}{4}$" Lauan and $\frac{1}{2}$" Foam.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{2}$" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt

Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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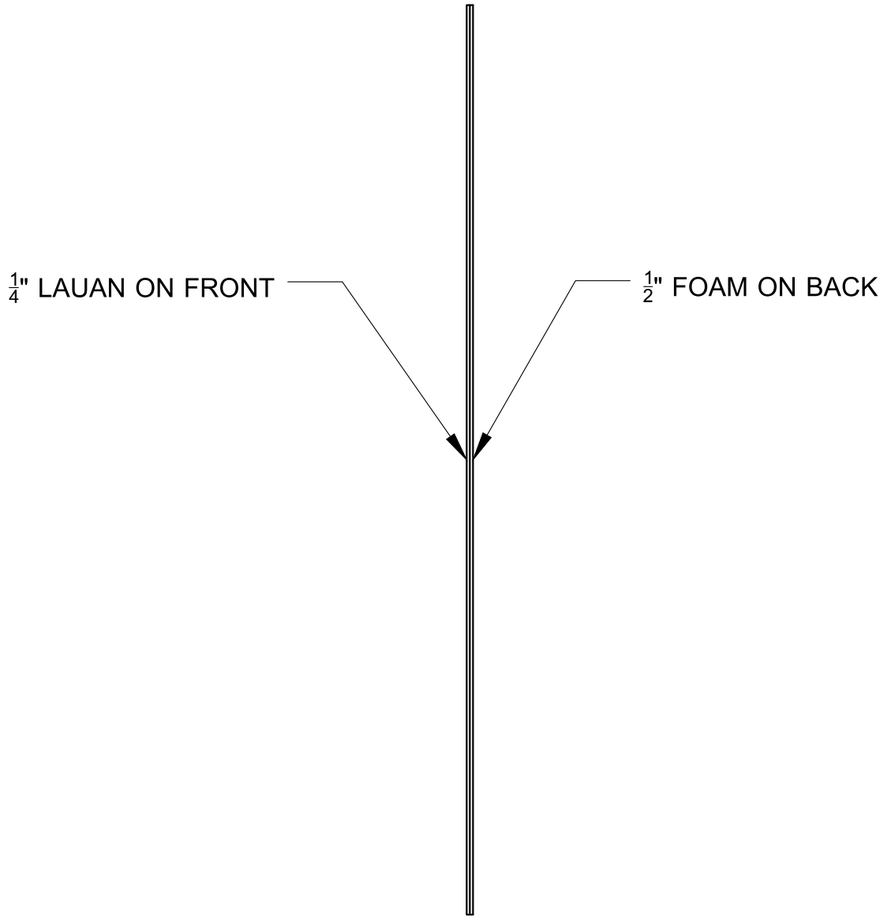
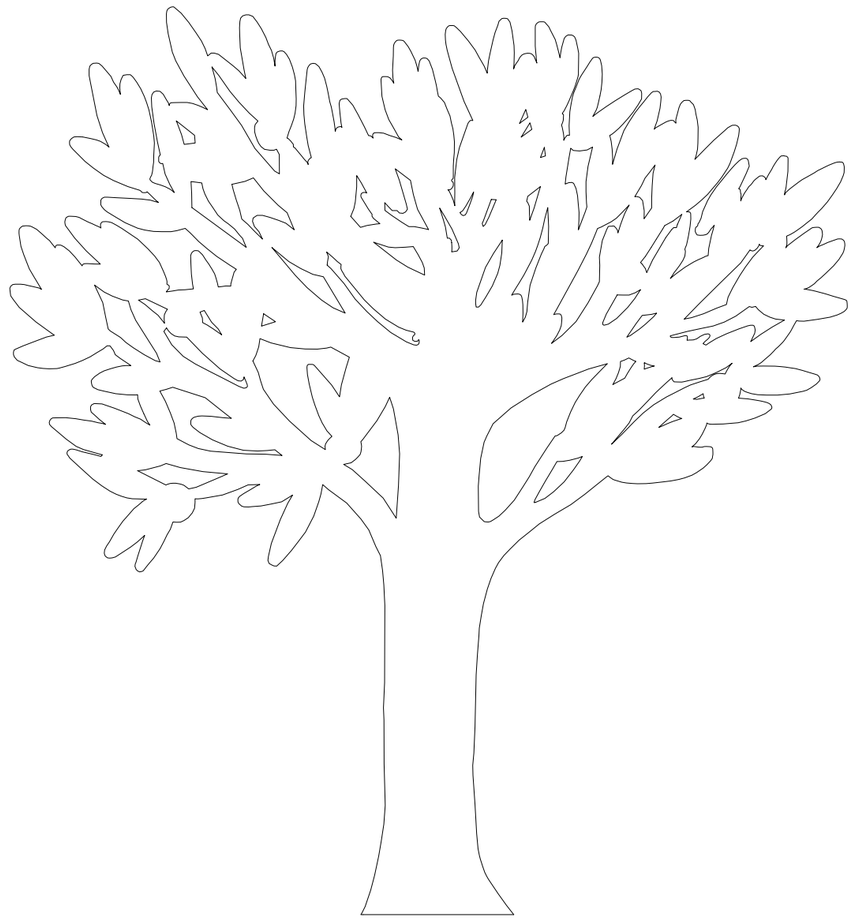


Side View: Assembly

Scale: ½" = 1'-0"



Front View: Seam Reference

Scale: ½" = 1'-0"

Revision Notes	Tree Layout For CNC Router	Notes: Use as a reference during assembly. Constructed out of ¼" Lauan and ½" Foam. Use Simalfa to secure lauan and foam together.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: ½" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt

Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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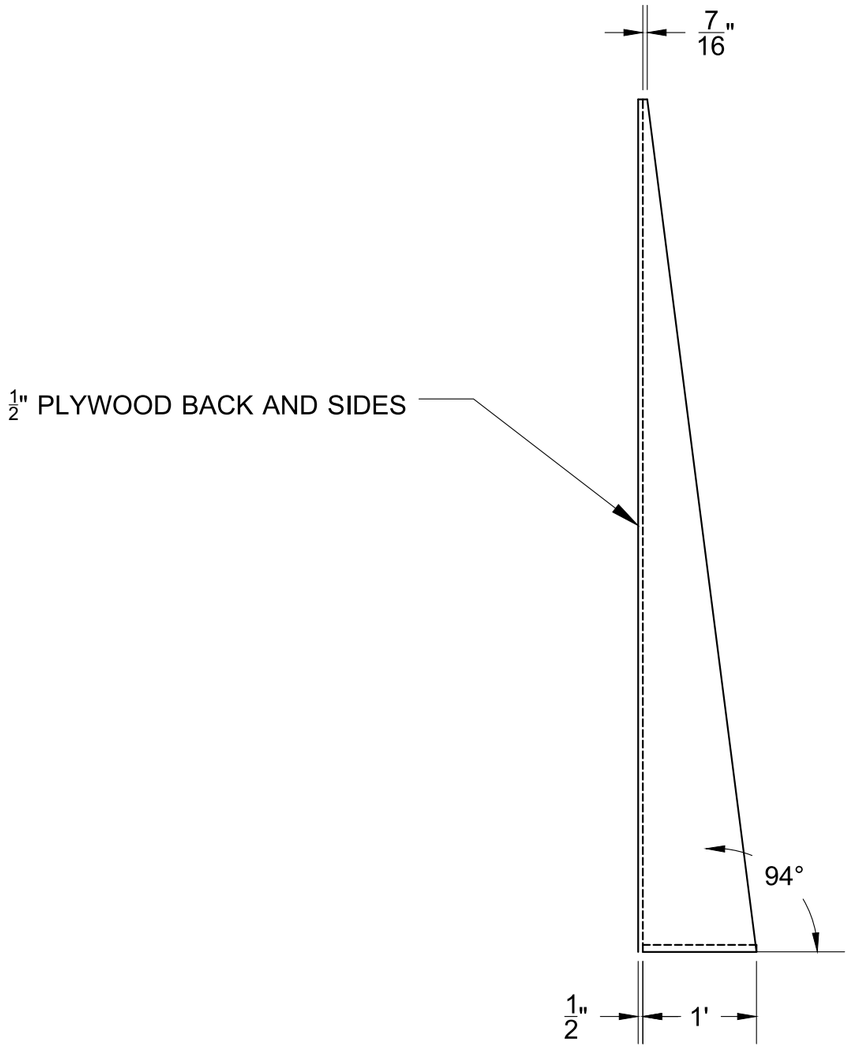
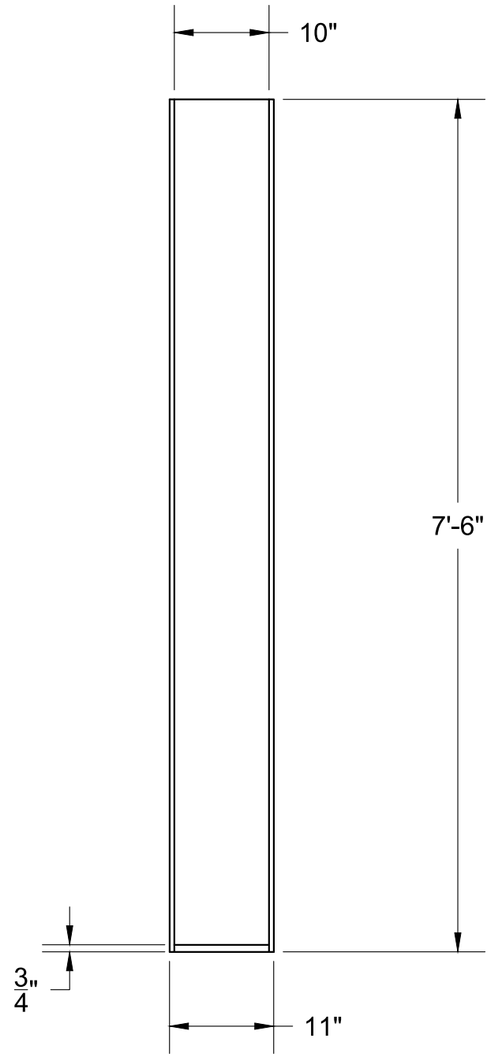


Side View: Jack

Scale: 3/4" = 1'-0"



Back View: Jack

Scale: 3/4" = 1'-0"

Revision Notes		

Tree Jack Construction

Notes: Construct out of 1/2" and 3/4" Plywood. Glue and staple. Use track saw to cut angled sides.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 1/2" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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Assistant Technical Director: Kyle Bickel

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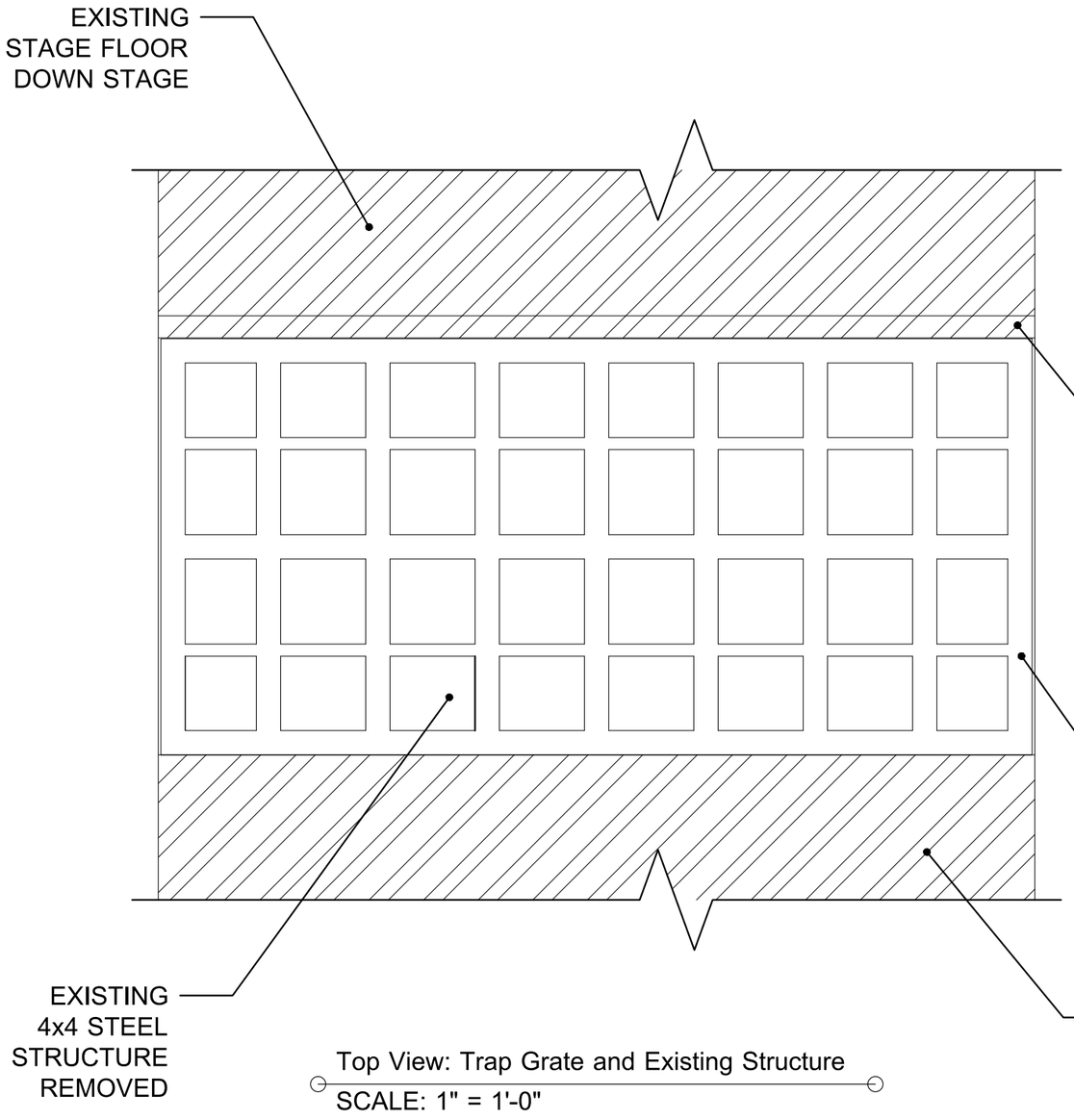
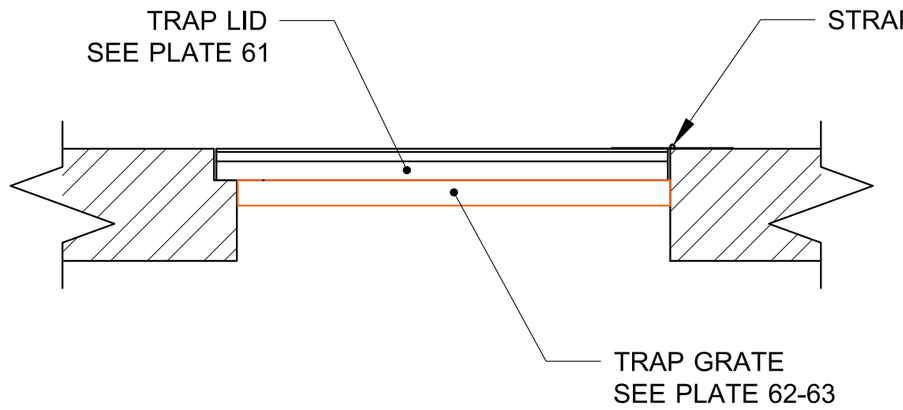


Top View: Trap Grate and Existing Structure

SCALE: 1" = 1'-0"

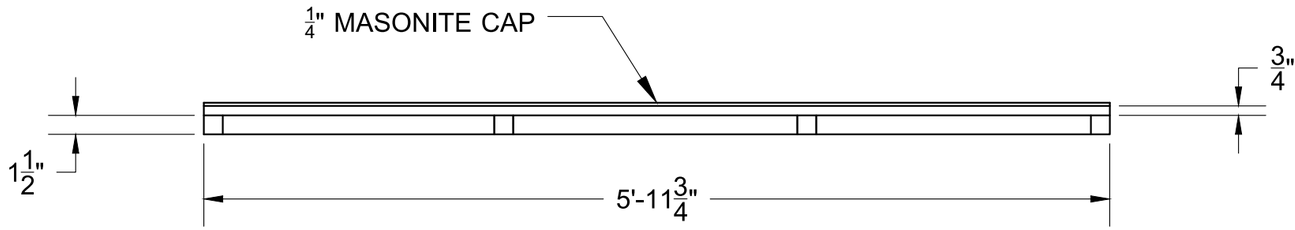


Rotated Side View: Existing Structure With Lid and Grate

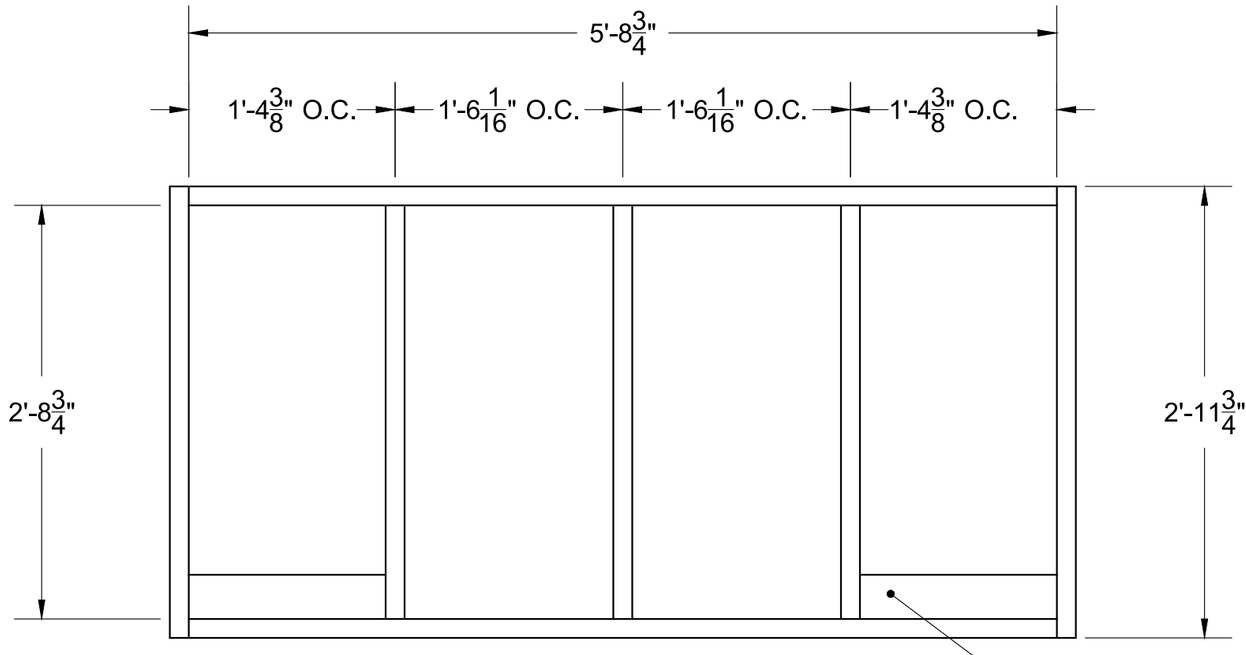
SCALE: 1" = 1'-0"

PLEASE NOTE:
TRAP SHOWN WITHOUT LID FOR CLARITY.

Revision Notes	Trap Door Layout	Notes: Use as reference for load in.	Date Drafted: 11.28.21 Drafted By: Tabitha Wimsett Scale: 1" = 1'-0"	PURDUE UNIVERSITY Department of Theatre	*TWELFTH NIGHT*	Director: Kristine Holtvedt Set Designer: Sydney Hagen Technical Director: Tabitha Wimsett Assistant Technical Director: Kyle Bickel	60



Front View: Trap Lid Framing
SCALE: 1" = 1'-0"

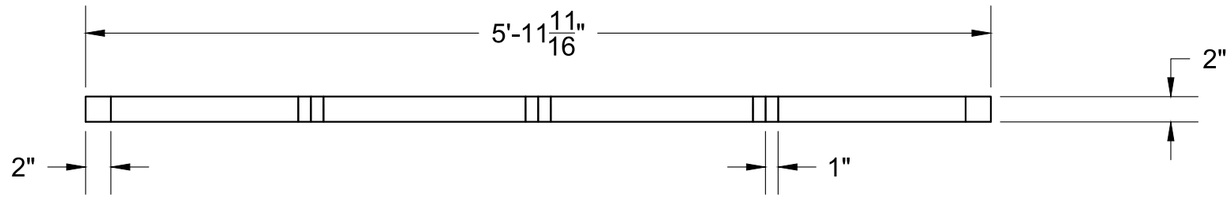


Top View: Trap Lid Framing
SCALE: 1" = 1'-0"

2X4 ON FACE FOR HINGE ATTACHMENT

PLEASE NOTE:
TOP VIEW SHOWN WITHOUT PLYWOOD AND MASONITE. WHEN CHOOSING MATERIAL FROM RACK, IT IS IMPORTANT FOR FRAME AND PLYWOOD TO LAY AS FLAT AS POSSIBLE.

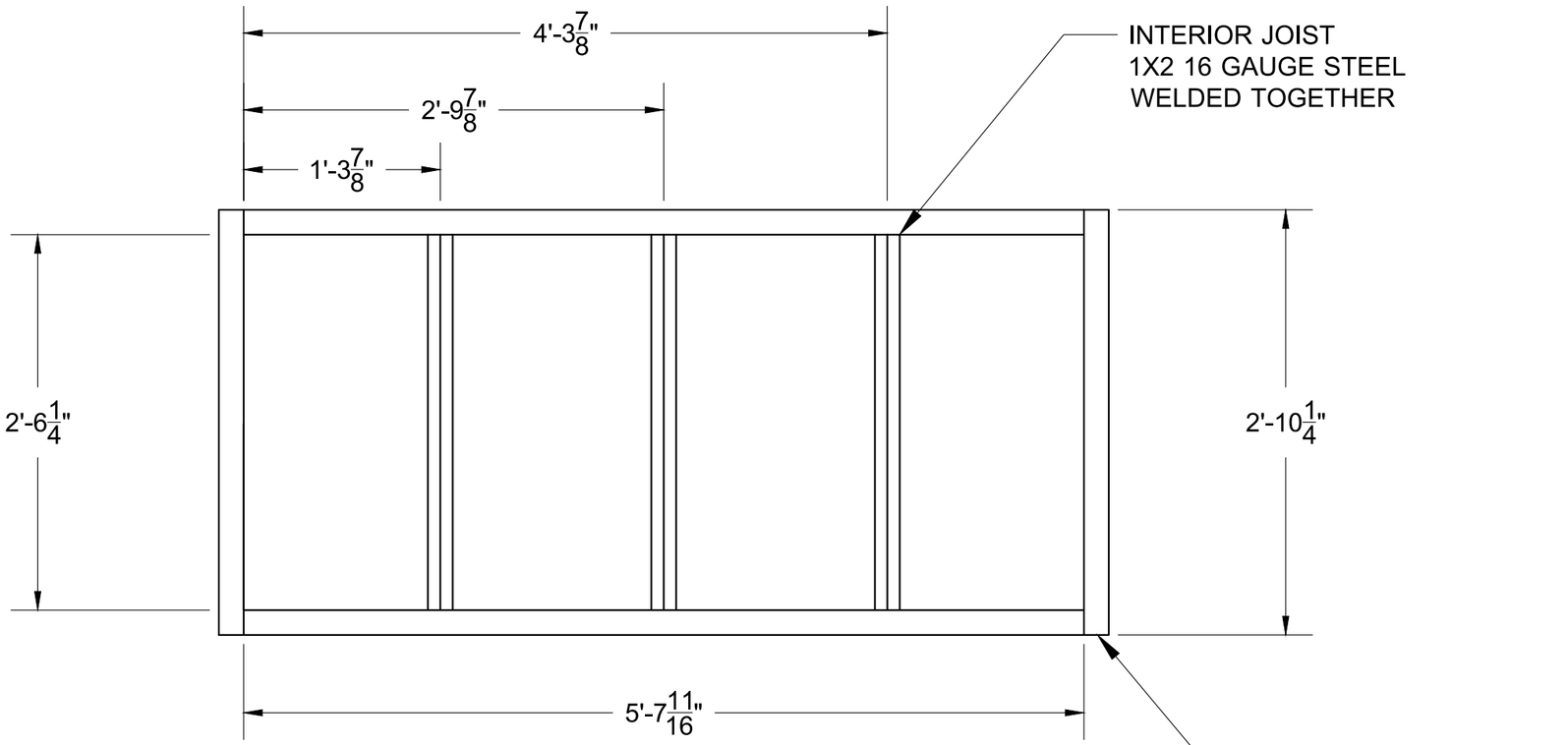
Revision Notes	Trap Door Lid	Notes: Construct out of 2x2 and 2x4 on face. Glue, pre-drill, countersink, and screw. Use ¾" BC plywood for lid and cover with ¼" masonite.	Date Drafted: 11.28.21 Drafted By: Tabitha Wimsett Scale: 1" = 1'-0"	PURDUE UNIVERSITY Department of Theatre	*TWELFTH NIGHT* Technical Director: Tabitha Wimsett Assistant Technical Director: Kyle Bickel	Director: Kristine Holtvedt Set Designer: Sydney Hagen	61



Front View: Trap Grate Structural Framing
SCALE: 1" = 1'-0"

PLEASE NOTE:
ONLY STRUCTURAL FRAMING SHOWN IN THIS PLATE.
SEE PLATE 63 FOR FULL GRATE.

WELDING NOTE:
BE MINDFUL OF HEAT TRANSFER. TACK WELD JOINTS BEFORE FULL WELD. JUMP AROUND FROM JOINT TO JOINT TO PREVENT HEAT FROM WARPING FRAME.



Top View: Trap Grate Structural Framing
SCALE: 1" = 1'-0"

Revision Notes	Trap Door Grate Structural Frame	Notes: Construct out of 1x2 and 2x2 16 gauge steel. Weld all four sides and grind smooth.

Date Drafted: 11.28.21
Drafted By: Tabitha Wimsett
Scale: 1" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt
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Technical Director: Tabitha Wimsett
Assistant Technical Director: Kyle Bickel

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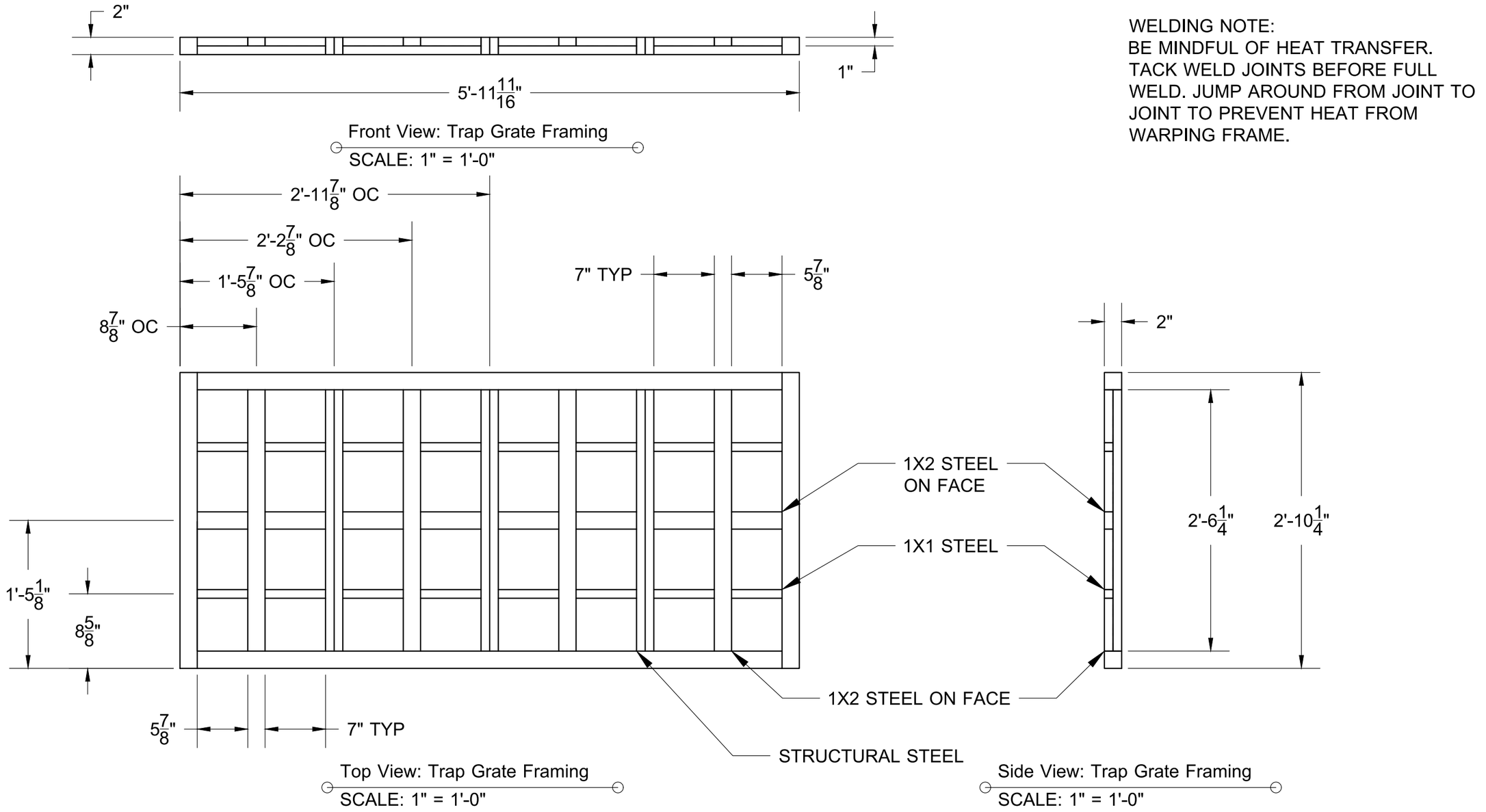

WELDING NOTE:
BE MINDFUL OF HEAT TRANSFER. TACK WELD JOINTS BEFORE FULL WELD. JUMP AROUND FROM JOINT TO JOINT TO PREVENT HEAT FROM WARPING FRAME.

Revision Notes	Trap Door Grate	Notes: Construct out of 1x2 and 2x2 16 gauge steel. Weld and grind smooth.

Date Drafted: 11.28.21
Drafted By: Tabitha Wimsett
Scale: 1" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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Set Designer: Sydney Hagen
Technical Director: Tabitha Wimsett
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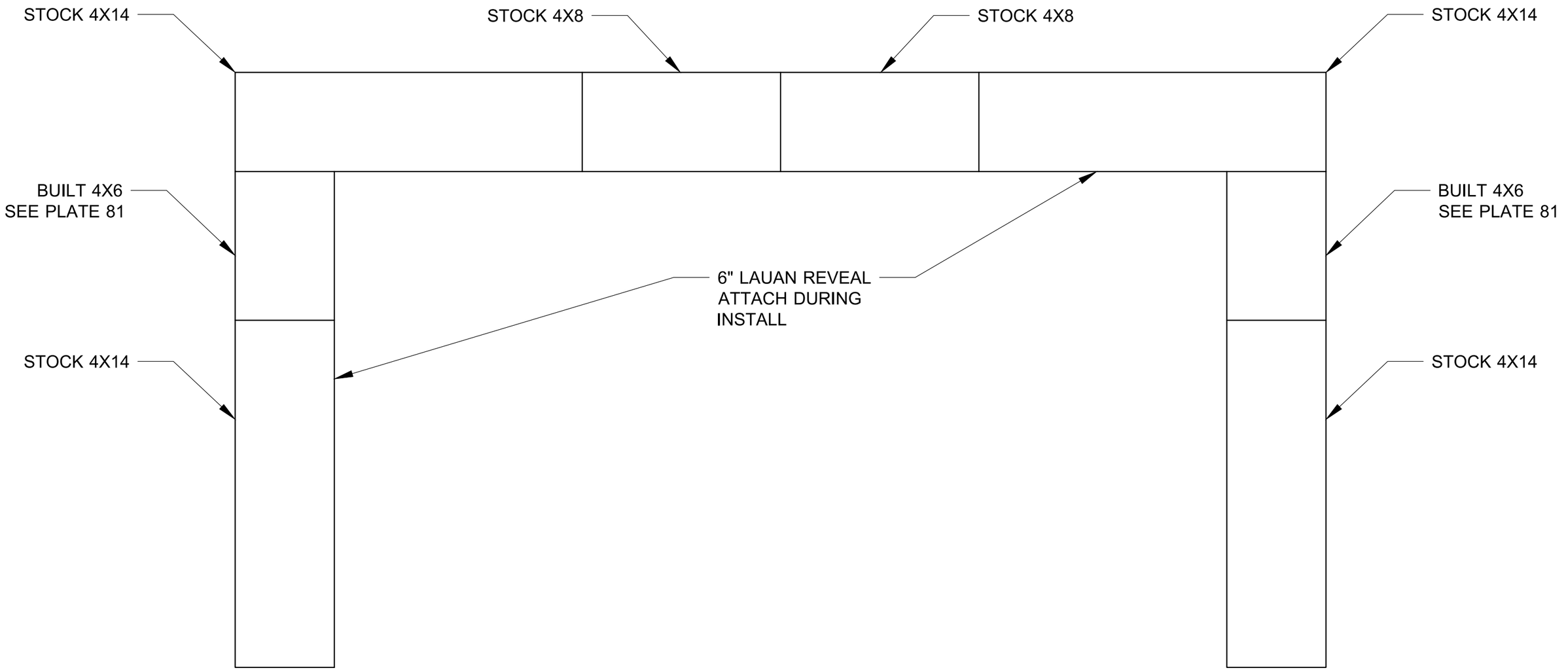

Revision Notes		

Portal Layout

Notes: Use painters caulk on seams after install.
See plate 82 for rigging details.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: $\frac{1}{4}$" = 1'-0"

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Department of Theatre

TWELFTH NIGHT

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Technical Director: Tabitha Wimsett

Assistant Technical Director:
Kyle Bickel

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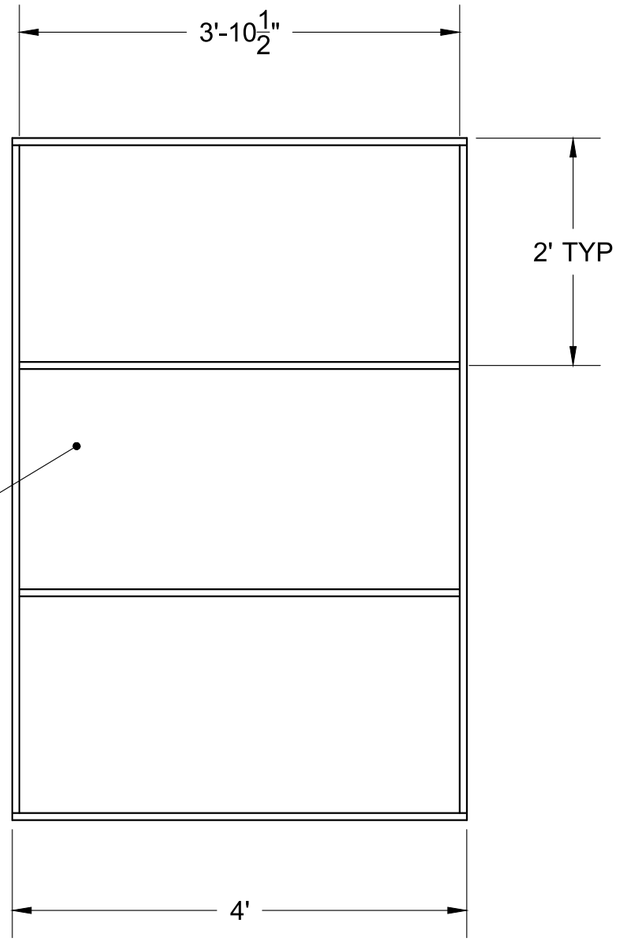
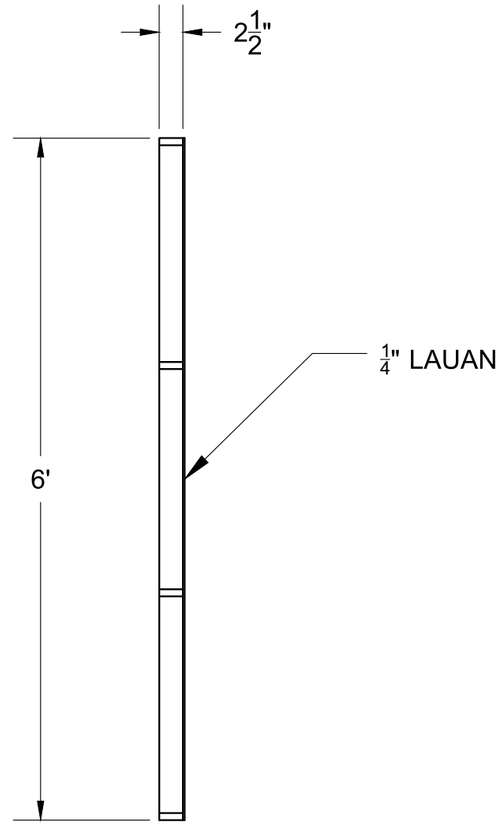
PLEASE NOTE: BUILD TWO

SHOWN WITHOUT
LAUAN FOR CLARITY



Front View: Portal 4x6 Frame

Scale: 3/4" = 1'-0"



Side View: Portal 4x6 Frame

Scale: 3/4" = 1'-0"

Revision Notes		

Portal 4x6 Frame Construction

Notes: BUILD TWO. Construct out of 1x3 and Lauan. Glue and staple. Fill staple holes with joint compound.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 3/4" = 1'-0"

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TWELFTH NIGHT

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Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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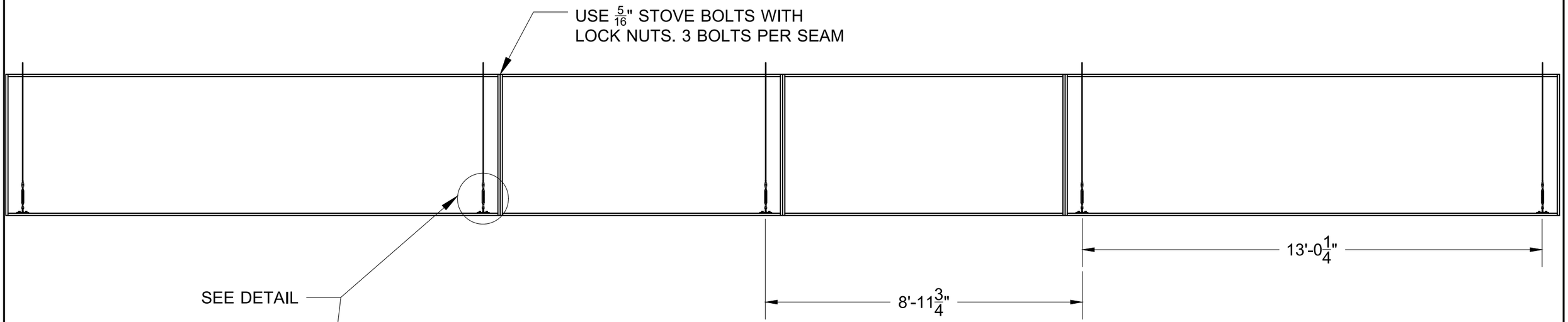
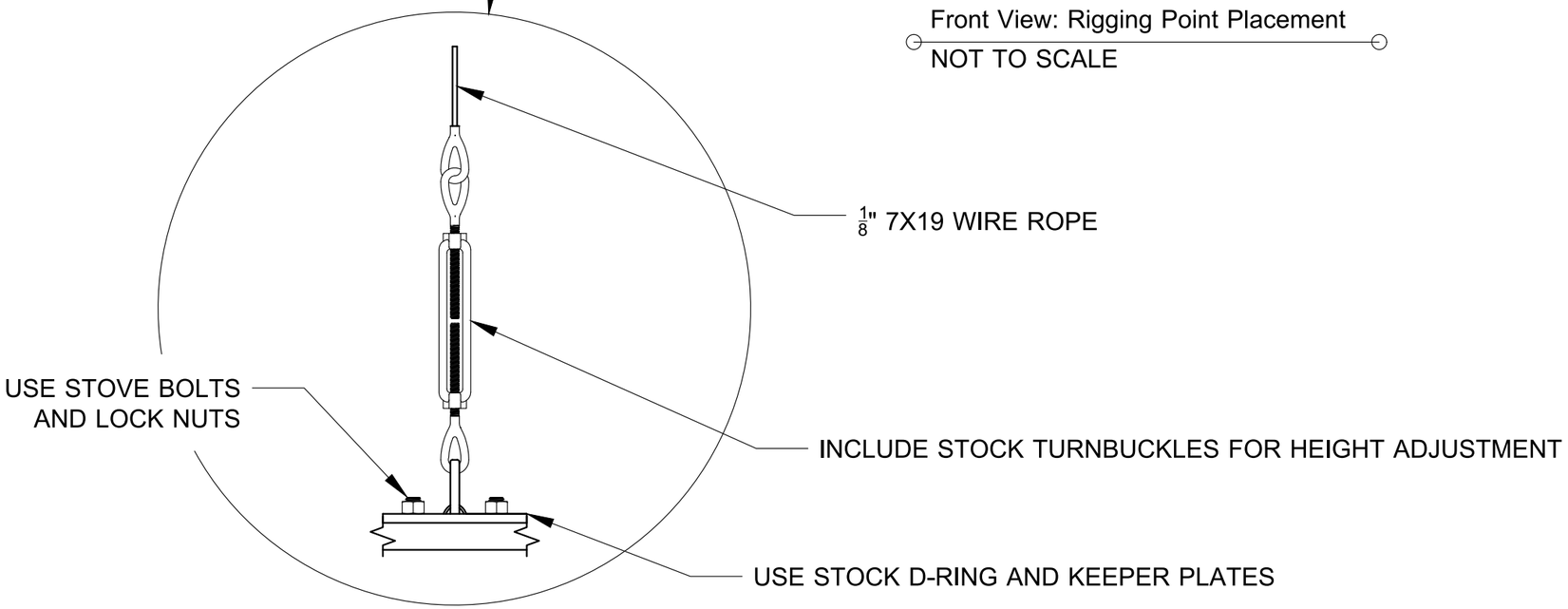


Front View: Rigging Point Placement

NOT TO SCALE



Front View: Rigging Detail

Scale: 3" = 1'-0"

SHACKLES NOT SHOWN IN DETAIL.
PLEASE INCLUDE TWIST PIN SHACKLES
IN ACTUAL ASSEMBLY AT EACH CONNECTION POINT.

RIGGING POINT PLACEMENT DOES NOT NEED TO BE EXACT. RIGGING POINTS SHOULD SUPPORT THE FLATS CLOSE TO THE SEAMS AND ENDS.

Revision Notes	Portal Rigging Detail	Notes: All hardware choices are subject to change due to stock availability in shop. Exact hardware can be changed at the shop supervisor's discretion.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

SCALE AS SHOWN

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt

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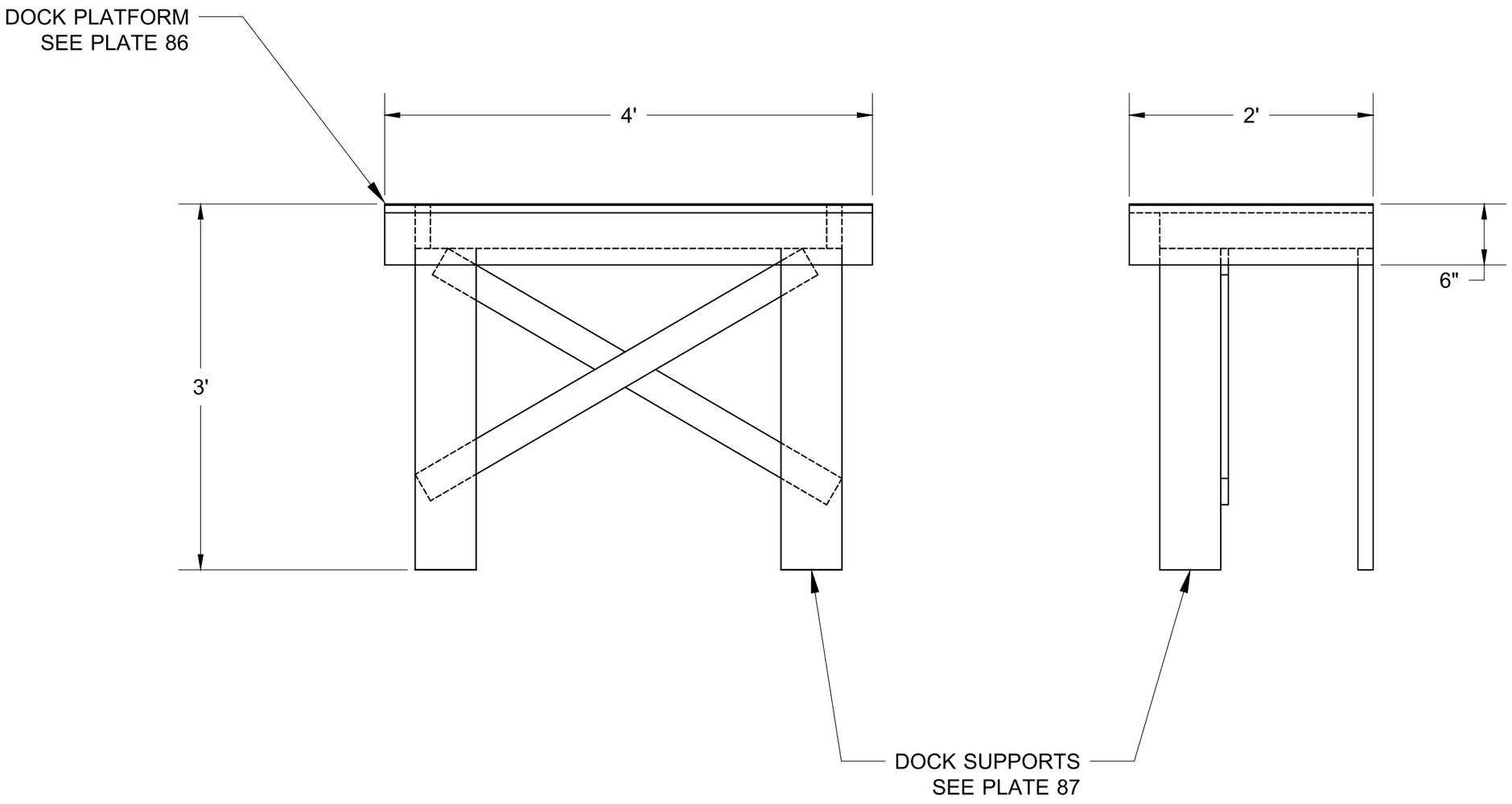
Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel



Revision Notes	Dock Layout	Notes: Use as a reference during assembly.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 1" = 1'-0"

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt

Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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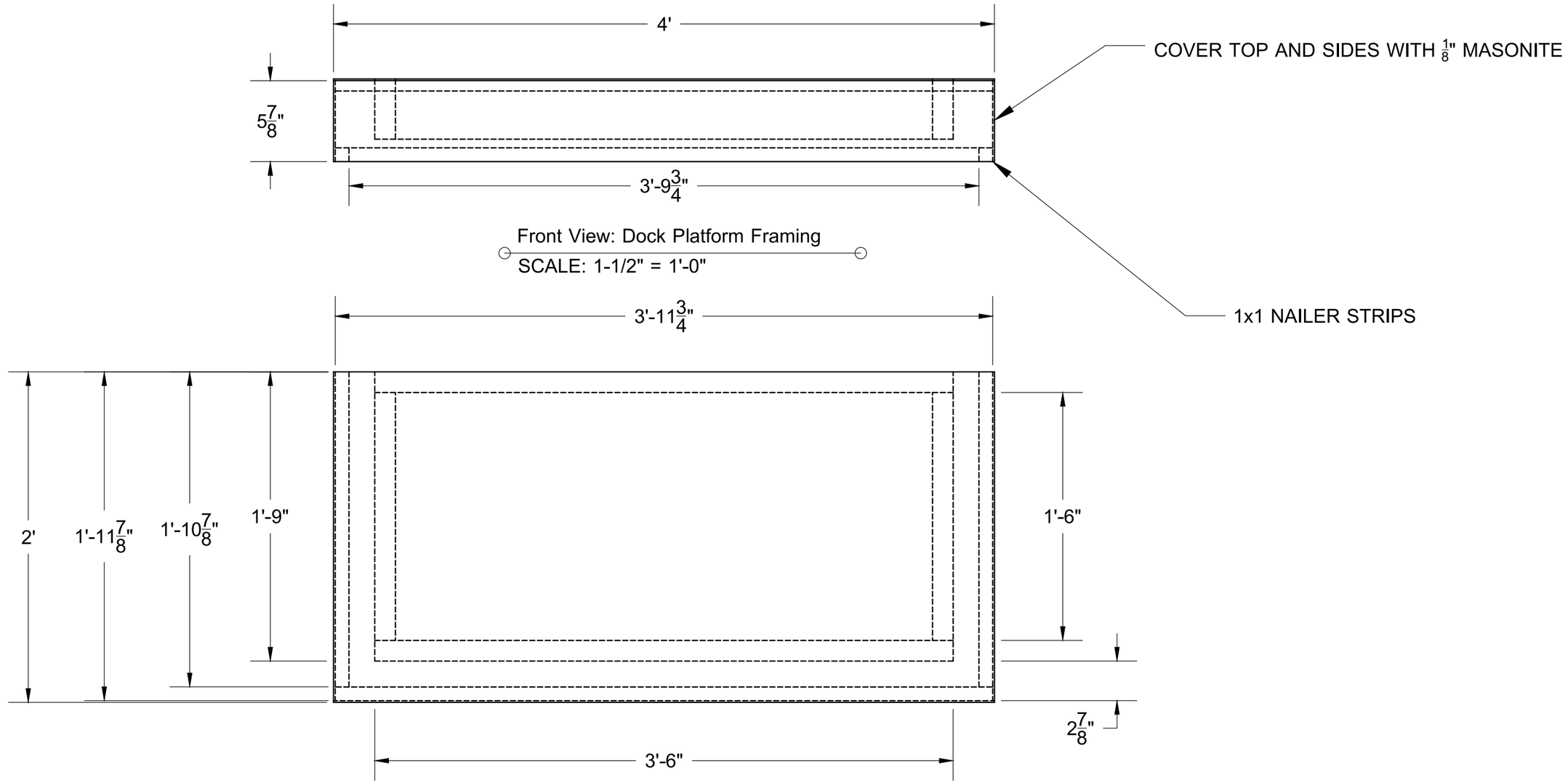

Front View: Dock Platform Framing
SCALE: 1-1/2" = 1'-0"

Top View: Dock Platform Framing
SCALE: 1-1/2" = 1'-0"

Revision Notes		

Dock Construction

Notes: Construct platform out of 2x4 and $\frac{3}{4}$" BC Plywood. Glue and screw. Cover with $\frac{1}{8}$" Masonite. Use 1x1 strips as a nailer block around bottom edge.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale As Shown

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt

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Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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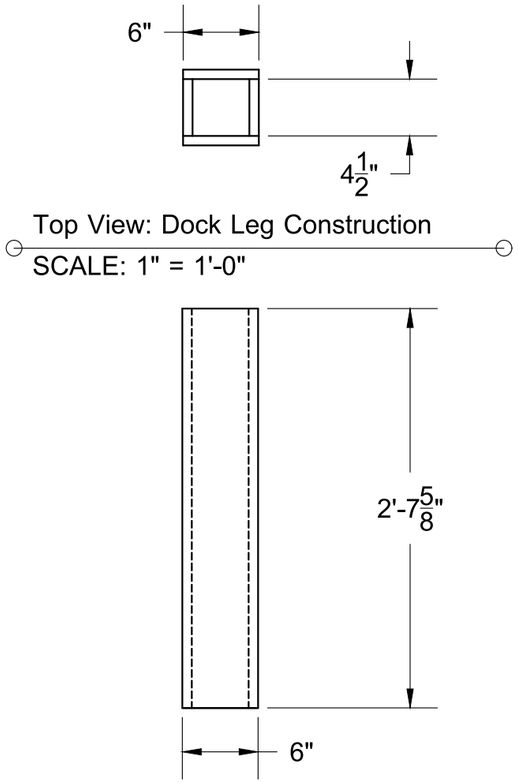
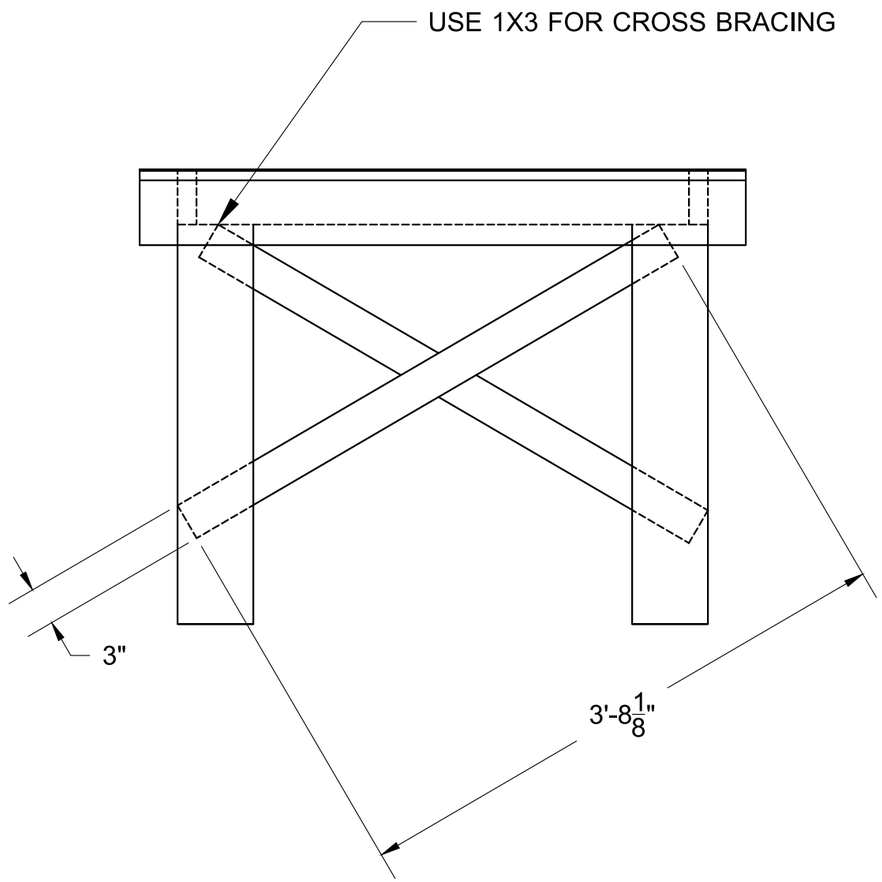
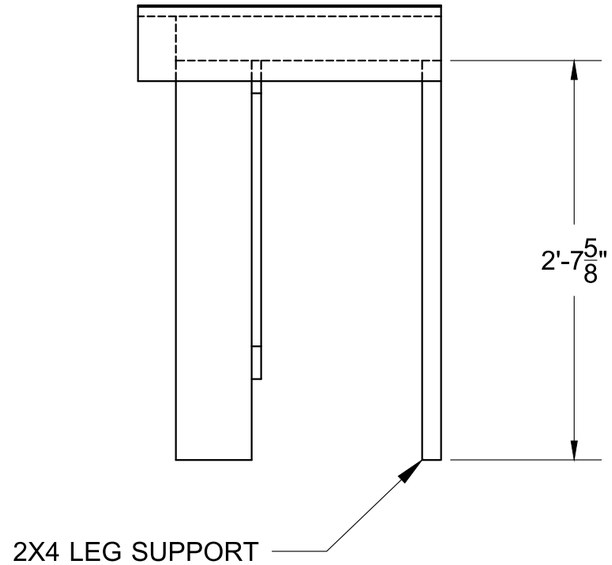


Top View: Dock Leg Construction
SCALE: 1" = 1'-0"

Front View: Dock Leg Construction
SCALE: 1" = 1'-0"



Front View: Dock with Leg Support
SCALE: 1" = 1'-0"



Side View: Dock with Leg Support
SCALE: 1" = 1'-0"

Revision Notes		

Dock Support Construction

Notes: Use as a reference during assembly. Construct cross bracing out of 1x3. Front legs should be constructed out of $\frac{3}{4}$" plywood. Glue and staple. Back legs should be 2x4 in compression.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale As Shown

PURDUE UNIVERSITY
Department of Theatre

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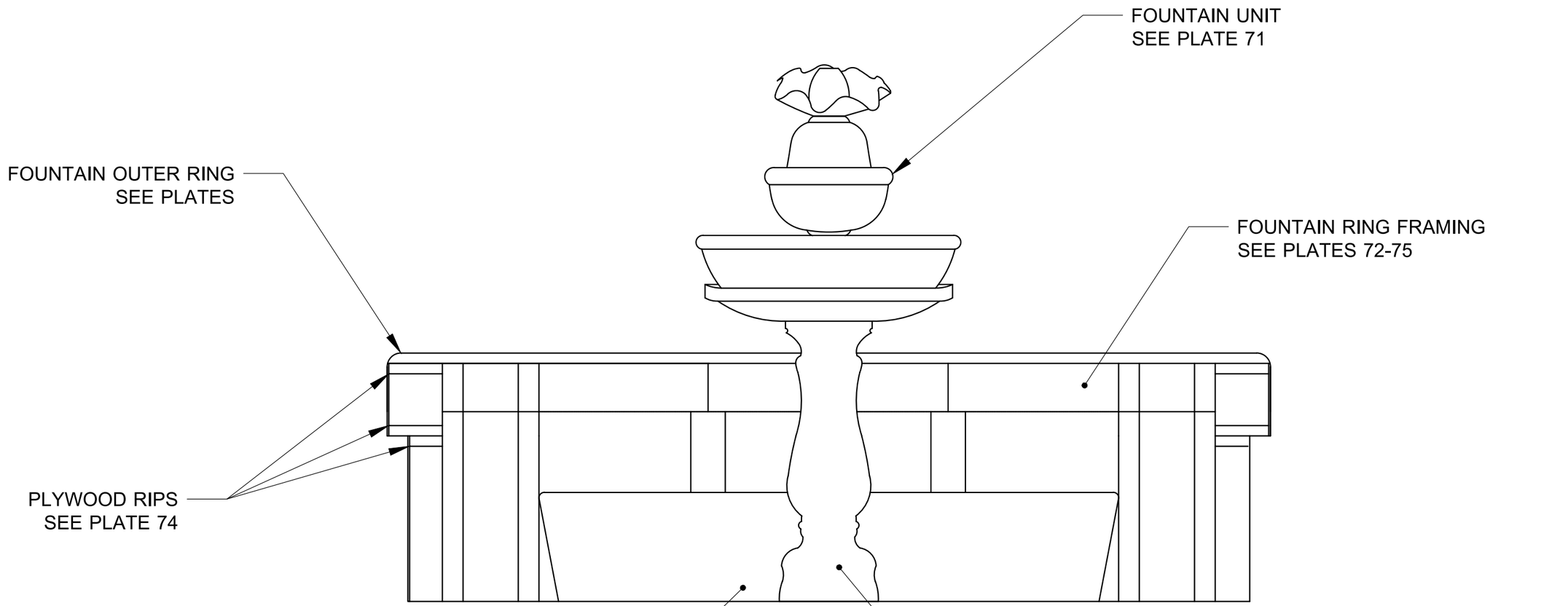
Assistant Technical Director: Kyle Bickel



Section View: Fountain

SCALE: 1- $\frac{1}{2}$" = 1'-0"

Revision Notes	Fountain Layout	Notes: Use as a reference for assembly and install.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale: 1-1/2" = 1'-0"

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Department of Theatre

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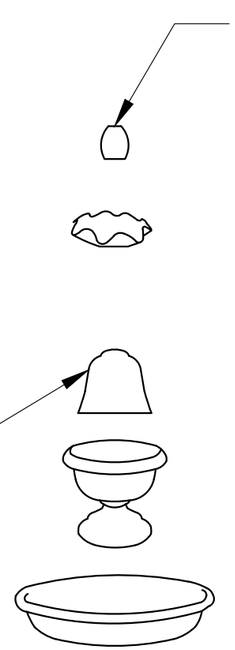
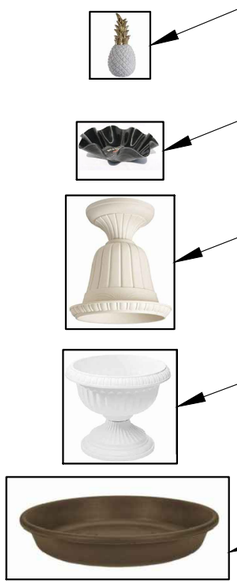
ASSEMBLY NOTES: BUILD FROM BOTTOM UP. INSTALL PVC AND SEAL UNIT PIECE BY PIECE. AFTER ASSEMBLY IS COMPLETE, COVER PVC HOLE ON TOP AND AT BOTTOM. SPRAY UNIT WITH SIMALFA FOR A CONCRETE-LIKE TEXTURE.



CUT OFF TOP OF PINEAPPLE

PIECE INSTALLED UPSIDE DOWN. CUT OFF TOP EDGE TO FIT INSIDE "GRECIAN URN". BOTTOM SHOULD BE FULLY REMOVED.

HOLLOW BASE MAY HAVE TO BE WEIGHTED WITH SAND AFTER INSTALL OF PVC PIPE.



VENDOR: AMAZON
PINEAPPLE RESIN DECOR

VENDOR: AMAZON
RECYCLED VINYL RECORD BOWL

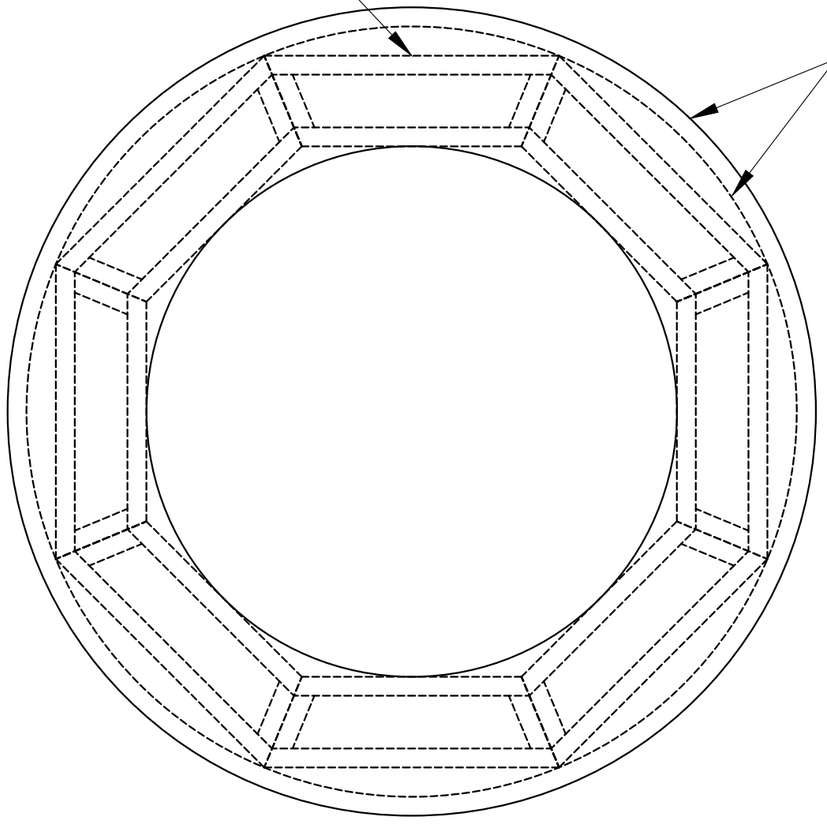
VENDOR: AMAZON
ARCADIA GARDEN PRODUCTS
PL20BG

VENDOR: AMAZON
GRECIAN URN PLANTER 12"

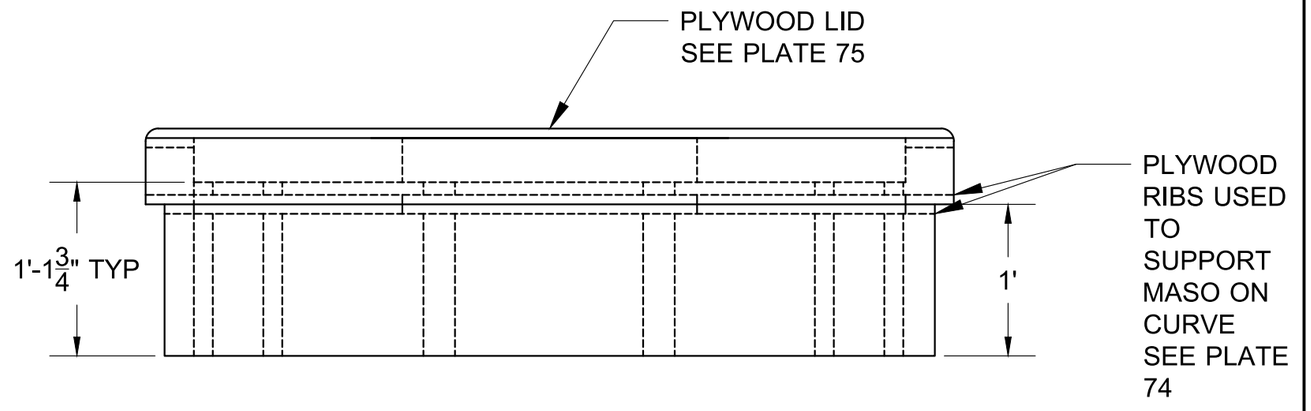
VENDOR: AMAZON
AKRO MILS DEEP SAUCER 21"

VENDOR: WALMART
BLOEM PROMO BIRD BATH
WITH PEDESTAL 25"X17"

Revision Notes	Fountain Unit Layout and Assembly	Notes: Each piece should have the center drilled out to allow for 1" PVC pipe to travel from bottom to top. Use paintable silicone to seal each seam/joint.	Date Drafted: 11.28.21 Drafted By: Tabitha Wimsett Scale: 3/4" = 1'-0"	PURDUE UNIVERSITY Department of Theatre	*TWELFTH NIGHT* Director: Kristine Holtvedt Set Designer: Sydney Hagen Technical Director: Tabitha Wimsett Assistant Technical Director: Kyle Bickel	71



Top View: Fountain Outer Ring
SCALE: 1" = 1'-0"



Front View: Fountain Outer Ring
SCALE: 1" = 1'-0"

Revision Notes	Fountain Outer Ring	Notes: Use as reference for assembly and install.

Date Drafted: 11.28.21
Drafted By: Tabitha Wimsett
Scale as Shown

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt
Set Designer: Sydney Hagen
Technical Director: Tabitha Wimsett
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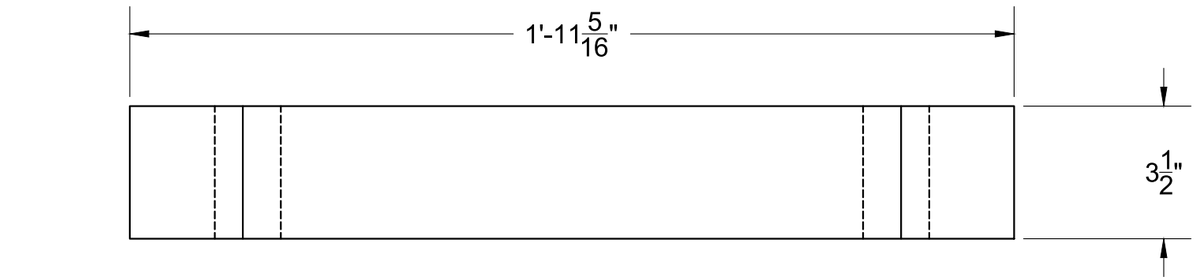
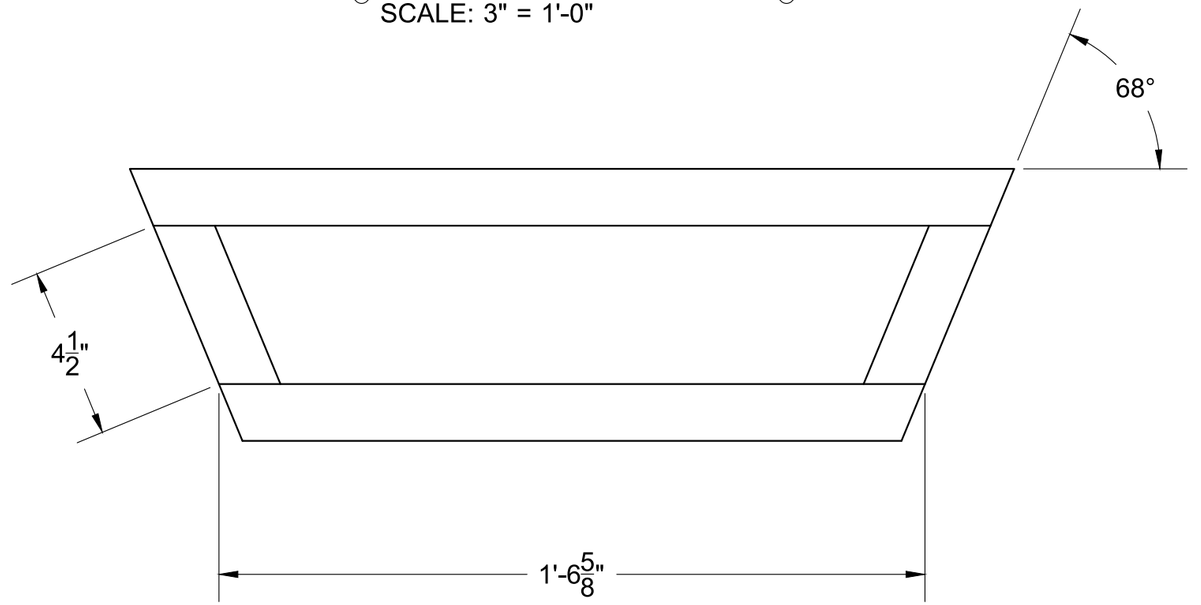


Front View: Fountain Outer Ring

SCALE: 3" = 1'-0"



Top View: Fountain Outer Ring

SCALE: 3" = 1'-0"

Revision Notes		

Fountain Outer Ring Frame

Notes: BUILD EIGHT. Construct out of 2x4. Glue and screw.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale as Shown

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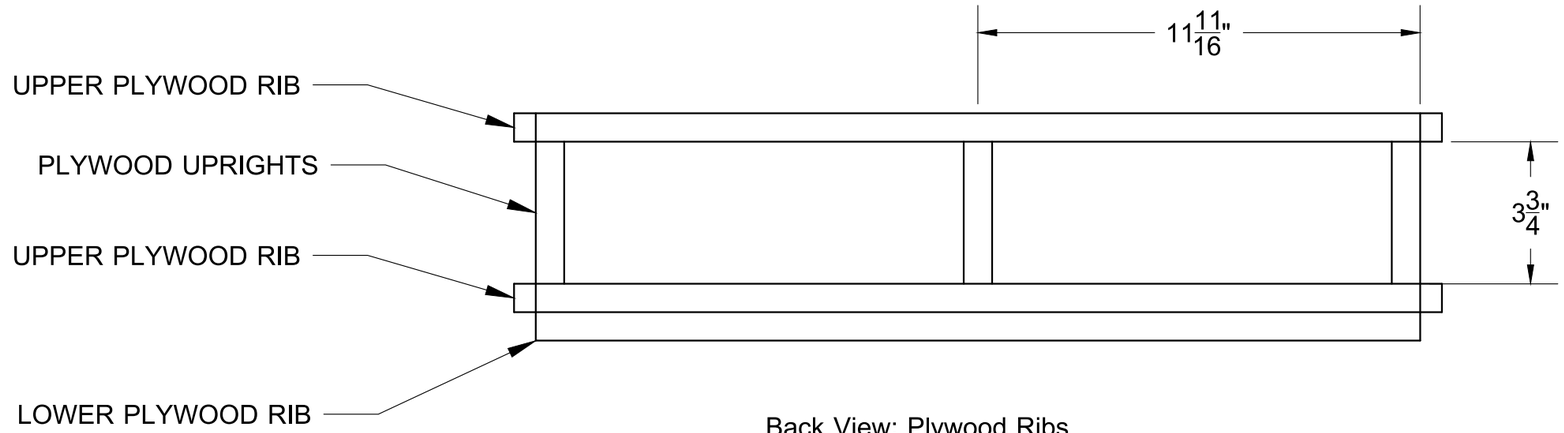
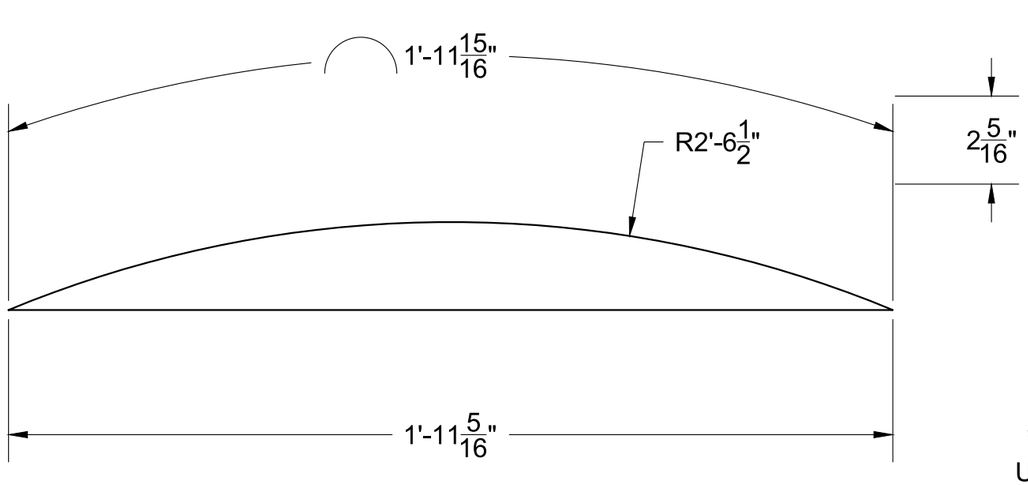


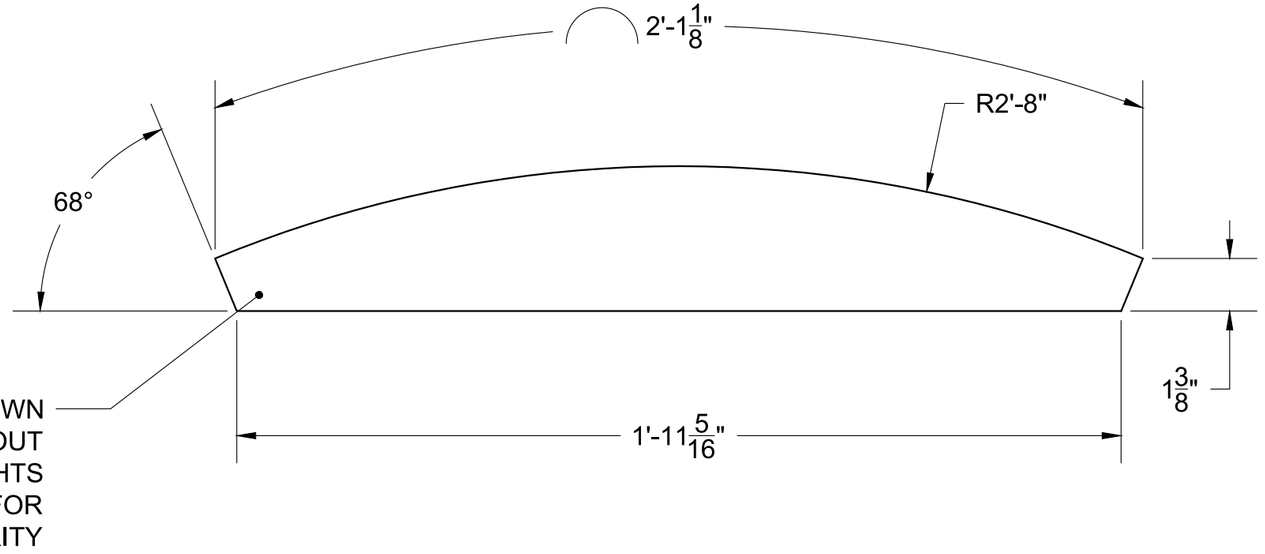
Back View: Plywood Ribs

SCALE: 3" = 1'-0"



Top View: Lower Plywood Ribs

SCALE: 3" = 1'-0"



Top View: Upper Plywood Ribs

SCALE: 3" = 1'-0"

Revision Notes		

Fountain Outer Ring Frame

Notes: Build 8 of each. Construct out of $\frac{3}{4}$" Plywood.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale as Shown

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Department of Theatre

TWELFTH NIGHT

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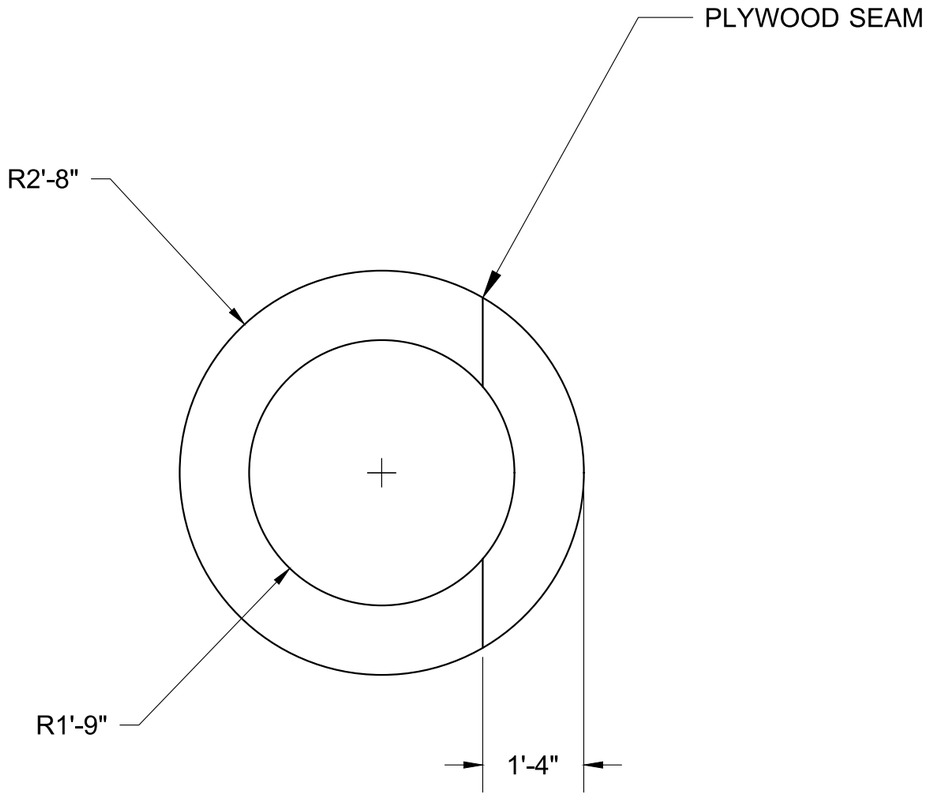
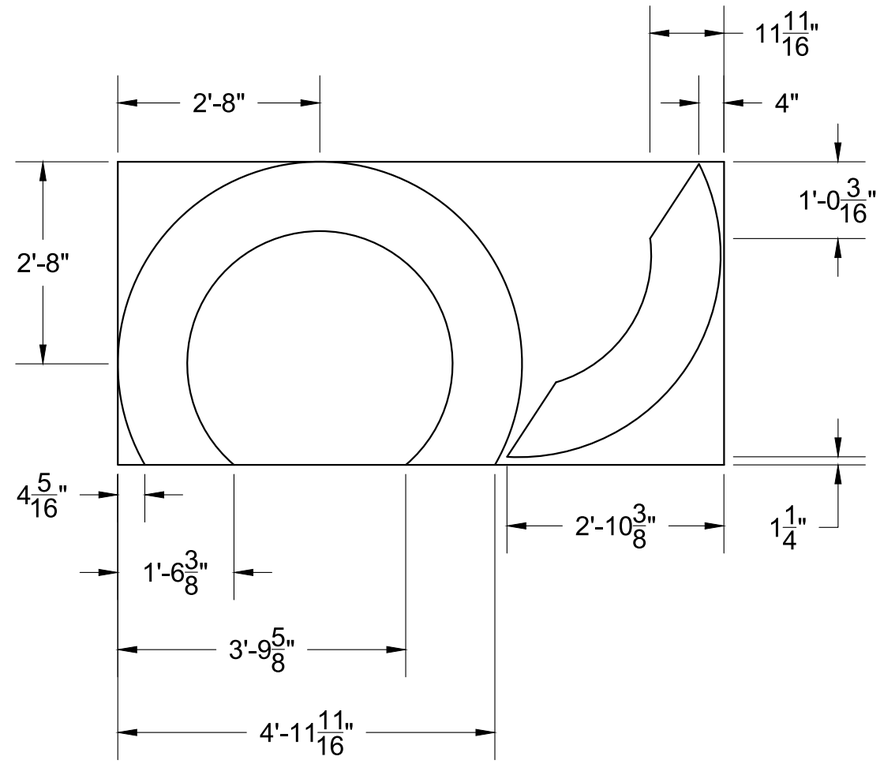


Top View: Plywood Ring

SCALE: $\frac{1}{2}$" = 1'-0"



Top View: Plywood Layout

SCALE: $\frac{1}{2}$" = 1'-0"

Revision Notes		

Fountain Outer Ring Frame

Notes: Construct out of $\frac{3}{4}$" BC Plywood.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale as Shown

PURDUE UNIVERSITY
Department of Theatre

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Assistant Technical Director: Kyle Bickel

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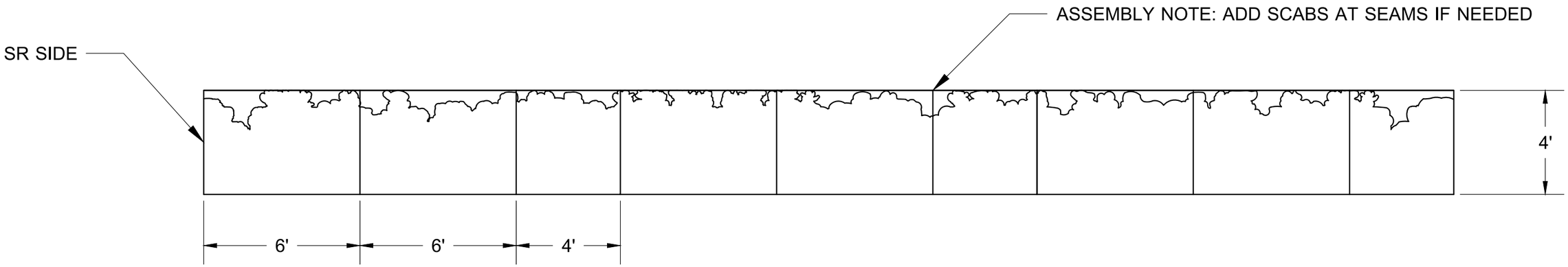
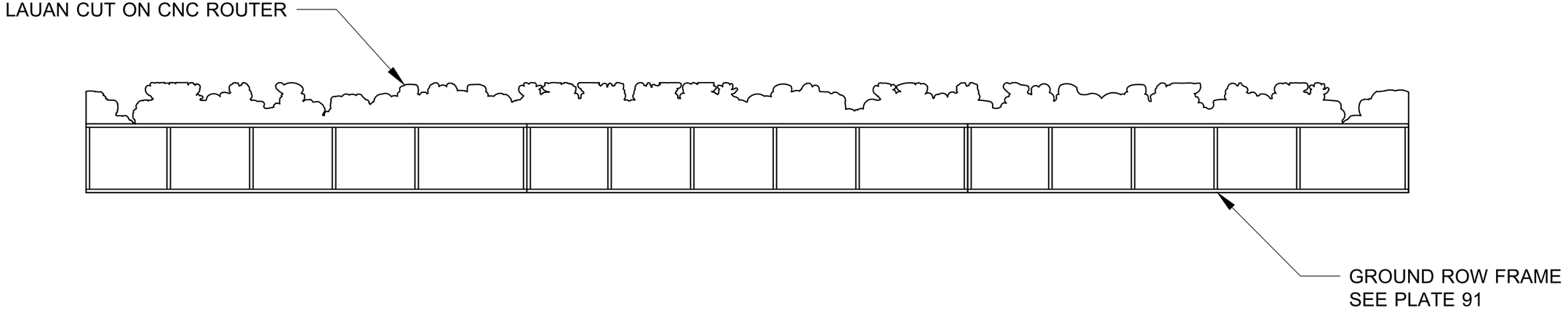


Back View: Lauan Layout

SCALE: $\frac{1}{4}$" = 1'-0"



Back View: Framing Layout With Lauan

SCALE: $\frac{1}{4}$" = 1'-0"

Revision Notes	Ground Row	Notes: Use as a reference during assembly.	Date Drafted: 11.28.21 Drafted By: Tabitha Wimsett Scale As Shown

PURDUE UNIVERSITY
Department of Theatre

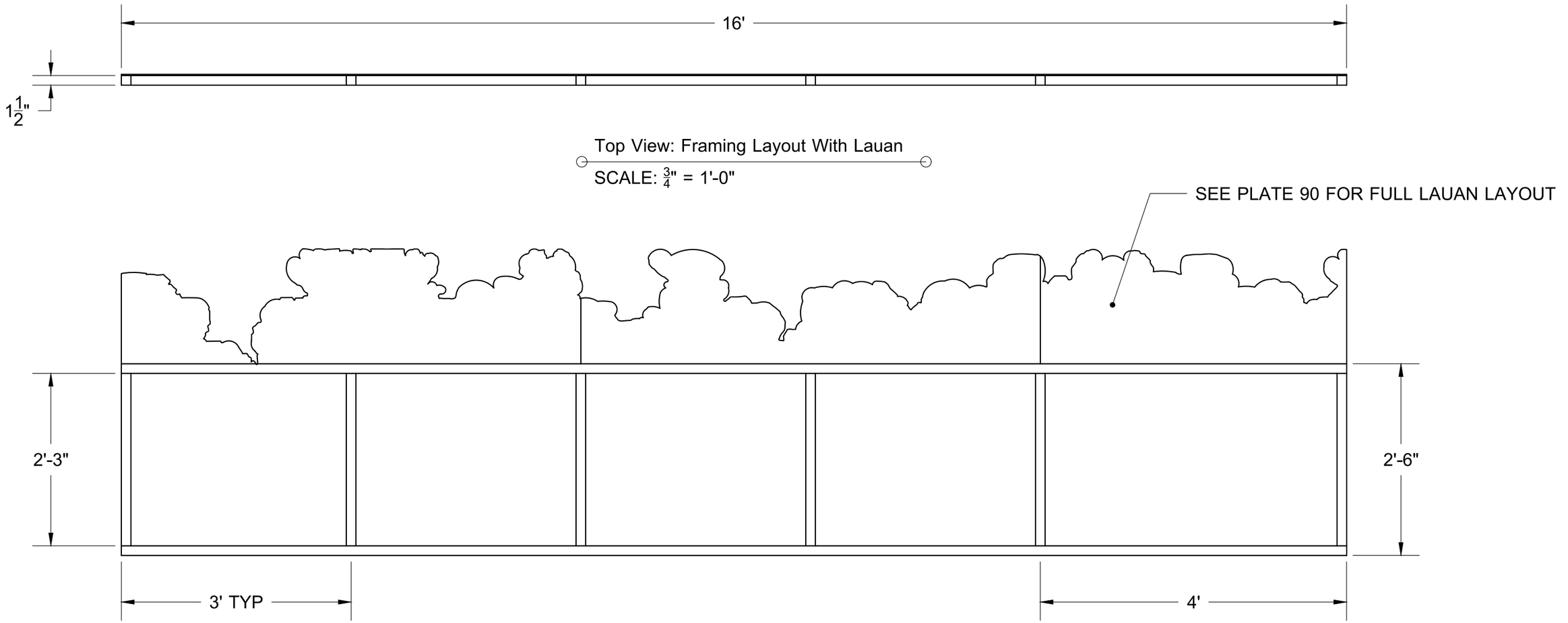
TWELFTH NIGHT

Director: Kristine Holtvedt

Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel



Revision Notes	Ground Row	Notes: BUILD THREE. Construct out of 2x2 and lauan. Glue, pre-drill, and screw. Add plywood scabs if needed at lauan seams.

Date Drafted: 11.28.21

Drafted By: Tabitha Wimsett

Scale As Shown

PURDUE UNIVERSITY
Department of Theatre

TWELFTH NIGHT

Director: Kristine Holtvedt

Set Designer: Sydney Hagen

Technical Director: Tabitha Wimsett

Assistant Technical Director: Kyle Bickel

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Build Schedule

Original Build Schedule

Week 1, 2, and 3 Adjusted Schedule

TWELFTH NIGHT ORIGINAL BUILD SCHEDULE

MONDAY (1-10)

9:30am-12pm
Tabi, Trevor, Alejandro, Clare

-Pull stock flats: (See Plates 80-81)
4 @ 4'-14' AND 2 @ 4'-8'
-Start construction of 2 4'x6' flats. (See Plates 80-81)

1pm-3:00pm
Alejandro, Clare (@1:30)

-Cut Lauan Reveal for Portal (See Plate 80)
*Use scrap as much as possible. Label and take to paint
-Attach 2 4x8 stock flats end to end for painting (See Plates 80-81)
*Label and take to paint
Start Cleaning Shop @ 3:15pm

TUESDAY (1-11)

8:30am-12pm
Tabi, Heather (8:30a-10a)

-Start cutting foam for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Construct Tree Jacks (See Plates 53)

1pm-5pm
Trevor, Evan (@1:30p), Heather (1:30-4pm)

-Finish constructing Tree Jacks (See Plates 53) *Label and take to paint
-Continue cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
Start Cleaning Shop @ 4:45pm

6pm-10pm
Trevor, Tabi, Kelsie, Miles

-Continue cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
-Start construction for Orsino's Gateway (See Plates 40-43)
Start Cleaning Shop @ 9:45pm

WEDNESDAY (1-12)

8:30am-12pm
Tabi, Clare, Jack, Joshua, Evan (@10a)

-Continue cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
-Finish construction for Orsino's Gateway (See Plates 40-43)

1pm-3:00p
No Labor

-Finish cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
Start Cleaning Shop @ 3:15pm

THURSDAY (1-13)

8:30am- 12pm
Tabi, Heather (8:30a-10a)

-Start cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Start construction of Olivia's Platform Ring (See Plates 10, 14-16)

1:00pm-5pm
Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)

-Continue cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Continue construction of Olivia's Platform Ring (See Plates 10, 14-16)
Start Cleaning Shop @ 4:45pm

FRIDAY (1-14)

8:30am-12p
Trevor, Joshua, Szczesny

-Continue cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Start construction of Olivia's Center Platform (See Plates 10-13)

1p-3:00pm
Trevor

-Finish cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Continue construction of Olivia's Center Platform (See Plates 10-13)
Start Cleaning Shop @ 3:00pm

TWELFTH NIGHT ORIGINAL BUILD SCHEDULE

MONDAY (1-17)

9:30am-12pm Tabi, Trevor, Alejandro, Clare	**CAMPUS CLOSED FOR MLK DAY**
1pm-3:00pm Clare (@1:30)	Start Cleaning Shop @ 2:50pm

TUESDAY (1-18)

8:30am-12pm Tabi, Heather (8:30a-10a)	**-Layout Portal in Hansen for Paint** **-Assemble Trees** (See Plates 50-52) *2-3 people needed
1pm-5pm Trevor, Evan (@1:30p), Heather (1:30-4p), Kelsie (1:30-4p), Ashlynne (3:30p-5p)	**-Finish Assembling Trees**(See Plates 50-52) *2-3 people needed **-Start Fountain Ring** (See Plate 73-75) *1-2 people ****Tabi-Lumber Pick up**** Start Cleaning Shop @ 4:45pm
6pm-10pm Trevor, Tabi, Miles	**-Run CNC File for Doors (Foam and Lauan)** (See Plate 44) **-Construct Orsino's Platform Unit** Start Cleaning Shop @ 9:45pm

WEDNESDAY (1-19)

8:30am-12pm Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),	**-Construct Doors and attach hinges** (See Plate 44) *2 people **-Continue Fountain Ring** (See Plate 73-75) *1-2 people **-Start Fountain Unit** (See Plate 70-72) *1 person (Tabi)
1pm-3:00p Conner	**-Continue Fountain Ring** (See Plate 73-75) Start Cleaning Shop @ 2:45pm

THURSDAY (1-20)

8:30am- 12pm Tabi, Heather (8:30a-10a)	**-Continue Fountain Unit** (See Plate 70-72) *1 person (Tabi) **-Alter existing Platform For Orsino's Unit** (See Plates 25-28) *1-2 people
1:00pm-5pm Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)	**-Construct Trap Lid** (See Plate 60-61) **-Start constructing frames for ground row** (See Plates 90-91) Start Cleaning Shop @ 4:45pm

FRIDAY (1-21)

8:30am-12p Trevor, Joshua, Szczesny	**-Continue ground row frames** (See Plates 90-91)
1p-3:00pm Trevor	**-Run CNC Files for Ground Row** (See Plates 90-91) Start Cleaning Shop @ 3:00pm

TWELFTH NIGHT ORIGINAL BUILD SCHEDULE

MONDAY (1-24)

9:30am-12pm Tabi, Trevor, Alejandro, Clare	**-Layout Lauan for Trees** **-Start CNC Files for Ground Row**(See Plates 90-91) *1 Person **-Finish Cutting Steel for Trap** (See Plates 60 & 62-63) *1-2 people
1pm-3:00pm Clare (@1:30)	**- Continue cutting Steel for Trap** (See Plates 60 & 62-63) *1-2 people Start Cleaning Shop @ 2:50pm

TUESDAY (1-25)

8:30am-12pm Tabi, Heather (8:30a-10a)	- **- Continue cutting Steel for Trap** (See Plates 60 & 62-63) *1-2 people
1pm-5pm Trevor, Evan (@1:30p), Heather (1:30-4p), Kelsie (1:30-4p), Ashlynne (3:30p-5p)	**-Masking Change Over** *All Hands + Lab Students Start Cleaning Shop @ 4:45pm
6pm-10pm Trevor, Tabi, Miles	- **-Start welding trap grate** (See Plates 60 & 62-63) *1-2 people Start Cleaning Shop @ 9:45pm

WEDNESDAY (1-26)

8:30am-12pm Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),	- **-Continue with welding trap grate** (See Plates 60 & 62-63) *1-2 people
1pm-3:00p Conner	**-Finish welding trap grate** (See Plates 60 & 62-63) *1-2 people Start Cleaning Shop @ 2:45pm

THURSDAY (1-27)

8:30am- 12pm Tabi, Heather (8:30a-10a)	**-Construct Dock** (See Plates 85-87) **-Finish Cutting Lauan Appliques With Laser Cutter** (See Plates 17 & 20) *1 Person
1:00pm-5pm Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)	**-Finish Constructing Dock** (See Plates 85-87) **-Prep portal for rigging** (See Plates 85-87) Start Cleaning Shop @ 4:45pm

FRIDAY (1-28)

8:30am-12p Trevor, Joshua, Szczesny	**-Construct Ground Row** (See Plates 90-91)
1p-3:00pm Trevor	- Start Cleaning Shop @ 3:00pm

TWELFTH NIGHT

MONDAY (1-10)

9:30am-12pm
Tabi, Trevor, Alejandro, Clare

-Pull stock flats: (See Plates 80-81)
4 @ 4'-14' AND 2 @ 4'-8'
-Start construction of 2 4'x6' flats. (See Plates 80-81)

1pm-3:00pm
Alejandro, Clare (@1:30)

-Cut Lauan Reveal for Portal (See Plate 80)
*Use scrap as much as possible. Label and take to paint
-Attach 2 4x8 stock flats end to end for painting (See Plates 80-81)
*Label and take to paint
Start Cleaning Shop @ 3:15pm

TUESDAY (1-11)

8:30am-12pm
Tabi, Heather (8:30a-10a)

-Start cutting foam for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Construct Tree Jacks (See Plates 53)

1pm-5pm
Trevor, Evan (@1:30p), Heather (1:30-4pm)

-Finish constructing Tree Jacks (See Plates 53) *Label and take to paint
-Continue cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
Start Cleaning Shop @ 4:45pm

6pm-10pm
Trevor, Tabi, Kelsie, Miles

-Continue cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
-Start construction for Orsino's Gateway (See Plates 40-43)
Start Cleaning Shop @ 9:45pm

WEDNESDAY (1-12)

8:30am-12pm
Tabi, Clare, Jack, Joshua, Evan (@10a)

-Continue cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
-Finish construction for Orsino's Gateway (See Plates 40-43)

1pm-3:00p
No Labor

-Finish cutting foam for Trees (See Plates 50-52)
*Please label pieces as clearly as possible.
Start Cleaning Shop @ 3:15pm

THURSDAY (1-13)

8:30am- 12pm
Tabi, Heather (8:30a-10a)

-Start cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Start construction of Olivia's Platform Ring (See Plates 10, 14-16)

1:00pm-5pm
Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)

-Continue cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Continue construction of Olivia's Platform Ring (See Plates 10, 14-16)
Start Cleaning Shop @ 4:45pm

FRIDAY (1-14)

8:30am-12p
Trevor, Joshua, Szczesny

-Continue cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Start construction of Olivia's Center Platform (See Plates 10-13)

1p-3:00pm
Trevor

-Finish cutting Lauan for Trees (See Plates 50-52)
*Please label them as clearly as possible.
-Continue construction of Olivia's Center Platform (See Plates 10-13)
Start Cleaning Shop @ 3:00pm

TWELFTH NIGHT

MONDAY (1-17)

9:30am-12pm Tabi, Trevor, Alejandro, Clare	**CAMPUS CLOSED FOR MLK DAY**
1pm-3:00pm Clare (@1:30)	Start Cleaning Shop @ 2:50pm

TUESDAY (1-18)

8:30am-12pm Tabi, Heather (8:30a-10a)	**-Layout Portal in Hansen for Paint** **-Assemble Trees** (See Plates 50-52) *2-3 people needed
1pm-5pm Trevor, Evan (@1:30p), Heather (1:30-4p), Kelsie (1:30-4p), Ashlynne (3:30p-5p)	**-Finish Assembling Trees**(See Plates 50-52) *2-3 people needed **-Start Fountain Ring** (See Plate 73-75) *1-2 people ****Tabi-Lumber Pick up****
	Start Cleaning Shop @ 4:45pm
6pm-10pm Trevor, Tabi, Miles	**-Run CNC File for Doors (Foam and Lauan)** (See Plate 44) **-Construct Orsino's Platform Unit**
	Start Cleaning Shop @ 9:45pm

WEDNESDAY (1-19)

8:30am-12pm Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),	**-Construct Doors and attach hinges** (See Plate 44) *2 people **-Continue Fountain Ring** (See Plate 73-75) *1-2 people **-Start Fountain Unit** (See Plate 70-72) *1 person (Tabi)
1pm-3:00p Conner	**-Continue Fountain Ring** (See Plate 73-75)
	Start Cleaning Shop @ 2:45pm

THURSDAY (1-20)

8:30am- 12pm Tabi, Heather (8:30a-10a)	**-Continue Fountain Unit** (See Plate 70-72) *1 person (Tabi) **-Alter existing Platform For Orsino's Unit** (See Plates 25-28) *1-2 people
1:00pm-5pm Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)	**-Construct Trap Lid** (See Plate 60-61) **-Start constructing frames for ground row** (See Plates 90-91)
	Start Cleaning Shop @ 4:45pm

FRIDAY (1-21)

8:30am-12p Trevor, Joshua, Szczesny	**-Continue ground row frames** (See Plates 90-91)
1p-3:00pm Trevor	**-Run CNC Files for Ground Row** (See Plates 90-91)
	Start Cleaning Shop @ 2:45pm

TWELFTH NIGHT	
MONDAY (1-24)	
9:30am-12pm Tabi, Trevor, Alejandro, Clare	**-Run CNC Files for Trees: 2" foam** *1 person **-Layout Trees for Jake to paint** *3-4 people **Clean up tree in shop before paint **-Clean up Doors and take to paint** **-Continue construction of Olivia's Platform Ring** (See Plates 10, 14-16)
1pm-3:00pm Clare (@1:30)	**-Finish construction of Olivia's Platform Ring** (See Plates 10, 14-16) Start Cleaning Shop @ 2:50pm
TUESDAY (1-25)	
8:30am-12pm Tabi, Heather (8:30a-10a)	**-Continue CNC Files for Trees: 2" foam** *1 person **-Finish Fountain Ring** (See Plate 73-75) *1-2 people **-Start cleaning and cutting steel for Trap** (See Plates 60 & 62-63) *1-2 people
1pm-5pm Trevor, Evan (@1:30p), Heather (1:30-4p), Kelsie (2-4p), Ashlynne (3:30p-5p)	**-Finish cleaning and cutting steel for Trap** (See Plates 60 & 62-63) **-Start welding trap grate** (See Plates 60 & 62-63) *Trevor, Heather, and Kelsie **Please be mindful of heat distribution. The trap grate will be a snug fit so preventing warping is crucial. **-Construct Dock** (See Plates 85-87) Start Cleaning Shop @ 4:45pm
6pm-10pm Trevor, Tabi, Miles	**-Continue welding trap grate** (See Plates 60 & 62-63) *Trevor and Miles **-Continue CNC Files for Trees: 2" foam** *1 person Start Cleaning Shop @ 9:45pm
WEDNESDAY (1-26)	
8:30am-12pm Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),	**-Run CNC Files for Ground Row**(See Plates 90-91) *1 Person **-Finish Orsino's Platform Unit** *2-3 people Cover Platforms with Plywood and attach legs. **-Start attaching lauan to Ground Row** (See Plates 90-91)
1pm-3:00p Conner	**-Finish welding and grinding down trap grate** (See Plates 60 & 62-63) **When grate is finish, please clean with simple green before paint. Start Cleaning Shop @ 2:45pm
THURSDAY (1-27)	
8:30am- 12pm Tabi, Heather (8:30a-10a)	**-Run CNC Files for Lauan Appliques** (See Plates 17 & 20) *1 Person **-Finish Ground Row** (See Plates 90-91) **-Construct Trap Lid** (See Plate 60-61)
1:00pm-5pm Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)	**-Masking Change Over @ 1:30p** *All Hands + Lab Students **-Construct Balustrade** *2-3 people needed Start Cleaning Shop @ 4:45pm
FRIDAY (1-28)	
8:30am-12p Trevor, Joshua, Szczesny	**-Start Assembling Trees**(See Plates 50-52) *2-3 people needed ***Attach Jacks
1p-3:00pm Trevor, Sara, Conner, Ashlynne (1p-2p)	**-Continue Assembling Trees**(See Plates 50-52) *2-3 people needed ***Attach Jacks **-Finish Balustrade** *2-3 people needed Start Cleaning Shop @ 2:45pm

Load In Schedule

Original and Adjusted Schedule

Decision Parameters

TWELFTH NIGHT

MONDAY (1-31)

9:30am-12pm
Tabi, Trevor, Alejandro, Clare

Install Top of Portal (2-5 people, 2-2.5 hours)
See plates 80-82
-Attach D-ring and keepers to flats using stove bolt and lock nuts
-Prep 1/8" AC: leave one end open to feed through the flats. Should be at a minimum of 18'
-Attach cable to D-rings and feed up through the top of the flats.
-Bolt flats end to end using 5/16" Bolts 3 per seam with washers and lock nuts.
-Fly in line set 2. Lock off arbor with uncle buddy.
-Attach portal to batten using trim chain and AC cable.
-Add 6 bricks to arbor, level portal, and fill seams with paintable caulk
***Do not attach portal legs yet. Jake will touch up paint on header first.

1pm-3:00pm
Conner, Clare (@1:30)

Grind and Clean Trap Grate (1 person, 0.75 hours)
-Grind all seams smooth and inspect welds for any cracks or pits.
-Clean with Simple Green

Construct Compression Legs for 8' Steps (1 person, 0.75 hours)
-Use ¾" Plywood Scrap
-Attach to steps.

Attach jacks to back of Trees (2 people, 1 hour)
-Use Simalfa and store flat on stage if possible

Start Cleaning Stage @ 2:50pm

TUESDAY (2-1)

8:30am-12pm
Tabi, Heather (8:30a-10a)

Install OLIVIA's Center Platform (3 people, 0.75 hours)
-Mark location of platform
-Move platform into place and screw together.
-Toenail legs into floor (minimum of 4 places)
***Seam of platform should run parallel with archway.

Install OLIVIA's Ring Platform (3 people, 0.5 hours)
-Install units around the center platform. Screw to floor and center unit.

Install Fountain Outer Ring (2-3 people, 0.75 hours)
-Mark location of fountain and place reservoir.
-Move fountain ring into place mark location and drill hole into trap room for speaker and electric cable from water pump.
-Once, fountain ring is back in place, toenail legs into floor.
***Do not toenail through the reservoir.
***Please be sure the front of the unit is facing down stage for speaker placement.

Install Orsino's Platform and Gateway (2 people, 1.5 hours)
-Mark location of platform and place front platform unit
-Toenail legs into floor
-Place downstage leg of the gateway in place and screw to floor and into platform
-Place stock *"Fefu"* platform in place and screw into front platform.
-Toenail legs into floor.
-Place upstage leg of the gateway in place and screw to floor and into platform.
-Place back two "side" platforms and screw into "*Fefu"* stock platform.
-Toenail legs into floor.

1pm-5pm
Trevor, Evan (@1:30p), Heather (1:30-4p), Kelsie (1:30-4p), Ashlynne (3:30p-5p)

Install Olivia's Arch (5 people, 0.5-1 hour)
-Move arch into place and lag bolt into framing of the center platform.

Install Portal Legs (5 people +2 lab students, 2-2.5hours)
-Fly in line set 2 where arbor is at a loadable height. Add 1 brick to arbor.
-Fly batten so the bottom of portal header is about 6' from the ground. Uncle Buddy the line.

-Bolt 4x6 flats to portal header using 5/16" Bolts 3 per seam with washers and lock nuts.
-Check weight and fly batten out to set height and set up genie lifts behind each portal leg.
-Stand up 4x14 flats and position under portal legs.
-Bolt the top connection from the genie lift.
-Once portal is set, screw 4x14 to floor.
-Staple 1-8' section of reveal starting at the bottom of each leg.

***Only attach one 8' section of reveal on each portal leg for working set. The remaining reveal will be attached next week.

Start Cleaning Stage @ 4:45pm

6pm-10pm
Trevor, Tabi, Miles

Run over to Stewart and pull 4' staircase. (1 person, 0.5-1 hour)

Top of Gateway (No doors) (2 people, 0.5-1 hour)

-Set up two genie lifts. One on the upstage side of the gateway, and one on the downstage side of the gateway.
-Clamp in place. Reaching through the back, bolt frames together.

Install Orsino's Platform Staircases (3 people, 1.5-2 hours)

-Leg steps by screwing on compression legs.
-Place downstage stairs and screw into front platform.
-Secure stairs to the floor.
-Place upstage stairs and screw into *"Fefu"* and back two "side" platforms.
-Secure stairs to the floor.

Start Construction of Balustrade

Start Cleaning Stage @ 9:45pm

WEDNESDAY (2-2)

8:30am-12pm
Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),

Install Trap Grate and Lid (5-6 people, 3.5 hours)

See plate 6

-Set up 2 ladders in trap room and sawhorses on stage to block opening in floor.
-Remove sheet of Masonite from stage floor.
-When clear, remove clamps on trap from trap room.
-Lift trap straight up and slide towards down stage.
-Replace 2x4 blocks with 2x2 where possible.
-Remove the 2- 4x4 steel supports running upstage to downstage.
-Move grate into place. This should be a tight fit.
-Cut and attach existing masonite to allow lid to open
-Attach hinges to trap lid. Hinges must be inset into the masonite to prevent a tripping hazard.
-Place Trap lid into place and attach hinges.
-Install inset handles.

1pm-3:00p
Conner

Install Orsino's Doors (2 people, 1.5 hours)

-Mortise hinges into doors.
-Attach hinges and hang doors.

Install Dock (2 people, 0.5 hours)

-Attach legs
-Move dock into place and attach to stage using flat surface brackets.

Start Cleaning Shop @ 2:45pm

THURSDAY (2-3)

8:30am- 12pm
Tabi, Heather (8:30a-10a)

Finish Construction of Balustrade

Construct Fountain Unit (1-2 people, 3.5 hours)

See Plates 70-71

1:00pm-5pm
Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p), Kelsie (2-4p)

Install Trees (5 people +2-3 lab students, 3.5 hours)

-Start with the tree near the SR proscenium. Moving from SR to SL
-Stand up tree units: Use ladders or lifts if needed.
-Screw jacks into floor and place 2 stage weights on the base of the jacks.

Start Cleaning Shop @ 4:45pm

FRIDAY (2-4)

8:30am-12p
Trevor, Joshua, Szczesny, Sara (10a-12p)

Install Orsino's Doors (2 people, 0.5-1 hour)
-Install bullet catches at the bottoms of the doors.

Finish CNC Files for Ground Row and Arch Appliques (1 person, 1 hour)
-Use a down cut bit and lauan
-9 files for the GR and 1 file for the Arch Appliques
**Be sure to label on back.

Construct Ground Row (2 people, 1.5-2 hours)
-Glue and staple.

1p-3:00pm
Trevor, Conner, Sara, Ashlynne (1p-2p)

Install Balustrade (2 people, 0.5 hours)
-Place and screw both balustrade units into the front platform, completing the back unit first.

Move Rolling Staircase into Trap Room (3-4 people, 0.5 hours)
-Staircase will not fit through the door if upright, but should fit if you tip it down.

Clean up Stage for Working Set

Start Cleaning Shop @ 2:30pm

TWELFTH NIGHT

MONDAY (2-7)

9:30am-12pm
Tabi, Trevor, Alejandro, Clare

Construct Trim for Orsino's Platform (1-2 people, 1 hour)
-Take to Paint when complete

Install Portal Reveal (3 people, 2-2.5 hours)
-Set up two genie lifts
-Attach with trim head screws

1pm-3:00pm
Clare (@1:30)

Install facings on Orsino's Platform
-Cut facings and install on to platform using trim head screws.

Start Cleaning Shop @ 2:50pm

TUESDAY (2-8)

8:30am-12pm
Tabi, Heather (8:30a-10a)
Ella (10a-11:15)

Install Fountain Unit (1-2 people, 3.5 hours)
-Layout liner: Please leave seam on downstage side for speaker access if needed.
-Attach to framing with staples and use caulk to seal liner to reservoir.
-Place water pump and attach ½" pvc pipe to water pump.
-Carefully slide fountain unit over the pvc pipe. Weight if needed.
**Do not add water at this time.

1pm-5pm
Trevor, Evan (@1:30p), Heather (1:30-4p), Kelsie (1:30-4p), Ashlynne (3:30p-5p)

Apply Arch Appliques (2-3 people, 2 hours)
-Attach using hot glue

Trim for Orsino's Platform (1-2 people, 1 hour)
-Install trim using trim head screws.

Start Cleaning Shop @ 4:45pm

6pm-10pm
Trevor, Tabi, Miles

NO LABOR ON STAGE

Start Cleaning Shop @ 9:45pm

WEDNESDAY (2-9)

8:30am-12pm

Troubleshoot Fountain Unit (3-4 people, 3.5 hours)
-Add water to fountain and troubleshoot pump

Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),	
1pm-3:00p Conner	**-**
	Start Cleaning Shop @ 2:45pm

THURSDAY (2-10)

8:30am- 12pm Tabi, Heather (8:30a-10a)	**-**
1:00pm-5pm Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)	**Install Ground Row (3-4 people,0.5-1 hour)** -Place ground row and screw into place. Add 2x4 diagonals if needed to keep ground row upright.
	Start Cleaning Shop @ 4:45pm

FRIDAY (2-11)

8:30am-12p Trevor, Joshua, Szczesny	**-**
1p-3:00pm Trevor	**-** Start Cleaning Shop @ 2:45pm

TWELFTH NIGHT

MONDAY (2-7)

9:30am-12pm
Tabi, Trevor, Alejandro, Clare

Install Orsino's Doors (2 people, 2-2.5 hours)
-Mortise hinges into doors.
-Attach hinges and hang doors.
-Install bullet catches at the bottoms of the doors.

Drill Hole for speaker cable/fountain plug (1 person, 0.5 hours)

Construct Balustrade (2 people, 2-2.5 hours)

1pm-3:00pm
Conner, Clare (@1:30)

Finish Installing Balustrade (2 people, 0.5 hours)
-Place and screw both balustrade units into the front platform, completing the back unit first.

Attach jacks to back of Trees (2 people, 1 hour)
-Use Simalfa and store flat on stage if possible

Vince after 3pm:

CNC Files for Ground Row and Arch Appliques (1 person, 2 hours)
-Use a down cut bit and lauan, z to table
-9 files for the GR and 1 file for the Arch Appliques
**Be sure to label on back. Adjust depth of files if necessary.

Start Cleaning Shop @ 2:50pm

TUESDAY (2-8)

8:30am-12pm
Tabi, Heather (8:30a-10a)

Install Dock (2 people, 0.5 hours)
-Attach legs
-Move dock into place and attach to stage using flat surface brackets.

Construct Fountain Unit (1-2 people, 3.5 hours)
See Plates 70-71

1pm-5pm
Trevor, Tabitha, Evan (@1:30p), Heather (1:30-4p), Kelsie (1:30-4p), Ashlynne (3:30p-5p)

Install Trees (5 people +1-2 lab students, 3.5 hours)
-Start with the tree near the SR proscenium. Moving from SR to SL
-Stand up tree units: Use ladders or lifts if needed.
-Screw jacks into floor and place 2 stage weights on the base of the jacks.

Start Cleaning Shop @ 4:45pm

WEDNESDAY (2-9)

8:30am-12pm
Tabi, Clare, Jack, Joshua, Evan (@10a), Conner (8:30-10a),

Install Trap Grate and Lid (5-6 people, 3.5 hours)
See plate 6
-Set up 2 ladders in trap room and sawhorses on stage to block opening in floor.
-Remove sheet of Masonite from stage floor.
-When clear, remove clamps on trap from trap room.
-Lift trap straight up and slide towards down stage.
-Replace 2x4 blocks with 2x2 where possible.
-Remove the 2- 4x4 steel supports running upstage to downstage.
-Move grate into place. This should be a tight fit.
-Cut and attach existing masonite to allow lid to open
-Attach hinges to trap lid. Hinges must be inset into the masonite to prevent a tripping hazard.

-Place Trap lid into place and attach hinges.
-Install inset handles.

1pm-3:00p
Conner

Start Constructing Ground Row (2 people, 1.5-2 hours)
-Glue and staple.

Vince after 3pm if needed:
Finish CNC Files for Ground Row and Arch Appliques (1 person, 2 hours)
-Use a down cut bit and lauan, z to table
-9 files for the GR and 1 file for the Arch Appliques
**Be sure to label on back. Adjust depth of files if necessary.

Start Cleaning Shop @ 2:45pm

THURSDAY (2-10)

8:30am- 12pm
Tabi, Trevor, Heather (8:30a-10a)

Install Fountain Unit (1-2 people, 3.5 hours)
-Layout liner: Please leave seam on downstage side for speaker access if needed.
-Attach to framing with staples and use caulk to seal liner to reservoir.
-Place water pump and attach ½" pvc pipe to water pump.
-Carefully slide fountain unit over the pvc pipe. Weight if needed.
**Do not add water at this time.

1:00pm-5pm
Trevor, Tabi (1-3:30p), Evan (@ 1:30p), Heather (1:30p-4p)

Move Rolling Staircase into Trap Room (3-4 people, 0.5 hours)
-Staircase will not fit through the door if upright but should fit if you tip it down.
Construct Trim for Orsino's Platform (1-2 people, 1 hour)
-Take to Paint when complete
Finish Constructing Ground Row (2 people, 1 hour)
-Glue and staple.

Start Cleaning Shop @ 4:45pm

FRIDAY (2-11)

8:30am-12p
Trevor, Joshua, Szczesny, Sara (10a-12p)

Troubleshoot Fountain Unit (3-4 people, 3.5 hours)
-Add water to fountain and troubleshoot pump

1p-3:00pm
Trevor, Conner, Sara, Ashlynne

Install facings on Orsino's Platform (1-2 people, 1-1.5 hours)
-Cut facings and install on to platform using trim head screws.
Install Portal Reveal (3 people, 2-2.5 hours)
-Set up two genie lifts **Be mindful of trap
-Attach with trim head screws
Start Cleaning Shop @ 2:45pm

Apply Arch Appliques (2-3 people, 2 hours)
-Attach using hot glue

Install Ground Row (3-4 people,0.5-1 hour)
-Place ground row and screw into place. Add 2x4 diagonals if needed to keep ground row upright.

Trim for Orsino's Platform (1-2 people, 1 hour)
-Install trim using trim head screws.

Decision Parameters for Shop Supervisor While TD is Absent		
Scenic Element	**Important Things to Note**	**Who Can Make the Decision**
Portal	Must be on LS #2. 4x6 legs will hang from header, and 4x14 legs will be attached to the 4x6 flats and the ground.	Shop Supervisor can adjust the plan as needed if the previously stated conditions are met. Exact hardware/hardware placement can be adjusted at the supervisor's discretion.
Trees	All trees are independent of each other. Please note the location of Leg 1 and the location of the furthest tree on stage right are close but is not used as an entrance/exit.	Shop Supervisor can make calls on exact tree placement.
Fountain	Fountain installation will be reliant on speaker installation.	Shop Supervisor can adjust the plan as needed if the previously stated conditions are in mind.
Trap	Trap grate should be fully supported on 3 sides. (Upstage, Stage Left, and Stage Right). Trap lid framing should align with trap grate framing. Hinges should lay as flat as possible within the Masonite.	Shop Supervisor can adjust the plan as needed if the previously stated conditions are met.
Olivia's Platform	Seam of center platform should run parallel with archway so that the bolts will hit the framing.	Shop Supervisor can make adjustment to hardware choice if needed. Use best judgement if additional framing is needed to support archway.
Archway	Seam of center platform should run parallel with archway so that the bolts will hit the framing.	Shop Supervisor can make adjustment to hardware choice if needed. Use best judgement if additional framing is needed to support archway.
Orsino's Platform/Gateway/ Doors	Gateway should fit within the notches of the platforming. Downstage edge should be lined up first. Gateway contains functional double doors.	Shop Supervisor can adjust the plan as needed if the previously stated conditions are in mind.
PLEASE NOTE: All issues involving safety will supersede any boundaries described in this document. The shop supervisor can make any changes/temporary changes required to protect the safety of our students and staff. Timely communication to the TD (and TD mentor) of those changes will be expected.		

Tech Paperwork

Deck Carpenter/Actor Training

Pre_Post Show Checklist

What Ifs

FMEA for Portal

DECK CARP TRAINING (15 min)

- → **A quick walk through** of the stage to go over pre/post show checklist.
  - Facings/appliques, doors, fountain, trap, dock, portal, and trees
- → **Explain trap lid, fountain, doors, portal**

  Things to look out for:
  - Trap
    - Hinges stop functioning smoothly or handles start to loosen
    - Lid is no longer flush with the stage floor
  - Fountain
    - Pools of water, water damage from leaks
    - Pump stops functioning
  - Door
    - Ensure both doors close and stay closed.
    - Hinges stop functioning smoothly or hinges/handles start to loosen.
  - Portal
    - Excessive leaning
    - Appearance of one of the lift lines no longer supporting the header (Part of header dropped)
- → **Decision Parameters:**
  - Issues with facing/decorative elements
  - Doors, staircases: minor problems that don't involve total reconstruction
  - Fountain leaks or portal: Call me

ACTOR/PA TRAINING FOR TRAP (10 min) Tabi on stage, Kyle in trap room

- → **Opening the trap**
  - Grab handle and lift with your legs
  - Be sure to make eye contact and signal to each other before lifting
  - Lid will stay part way open
- → **Closing the trap**
  - Stand at the corner
  - Support the lid with hand not on handle.
  - Drop hand on lid and finish lowering it with the handle
- → **Trap Room staircase**
  - Follow taped lines on floor, and double check locking mechanism before climbing
  - Hands should remain clear until lid is open
  - Notify SM via headset that actor is in place

Preshow Checklist for Tech Rehearsals/Perf.	Sat. 2-12	Mon. 2-14	Tues. 2-15	Wed. 2-16	Thur. 2-17	Fri. 2-18	Sat. 2-19	Sun. 2-20	Thur. 2-24	Fri. 2-25	Sat. 2-26	Sun. 2-27
DECORATIVE ELEMENTS												
Visual Inspection: → Check all decorative elements. There should be no gaps or signs that the trim/molding is loose. → **Check:** Facings, Arch Appliques, and Trim on Orsino's platform												
TREES and PORTAL												
Visual Inspection: → Inspect jack connection to the tree units. There should be no gaps or signs that the tree and jack are separating. → Inspect portal for any changes. Physical inspection is not needed unless there are significant changes.												
MOVING ELEMENTS												
Physical Inspection: Hardware and Operation of Doors and Trap → Ensure that both doors open and close properly. Bullet catches should cause the door to latch, and the door hinges should not squeak. → Remove cones from trap lid → Ensure the trap lid opens and closes properly. Hinges should not squeak. Handles should be tightly set into lid. → Ensure that hardware (handles, etc.) is not loose. Operation of the trap lid and doors should be consistent.												
FOUNTAIN												
Physical and Visual Inspection: → Check fountain unit/reservoir for any signs of leaks such as pools of water, water damage to lumber, etc. → Ensure the pump is operating consistently. The water in the fountain should be changed prior to the second weekend of the show.												
DOCK												
Visual Inspection: → Facings should be tight to platform. → Platform should be tight to stage.												

Post show Checklist for Tech Rehearsals/Perf.	Sat. 2-12	Mon. 2-14	Tues. 2-15	Wed. 2-16	Thur. 2-17	Fri. 2-18	Sat. 2-19	Sun. 2-20	Thur. 2-24	Fri. 2-25	Sat. 2-26	Sun. 2-27
FOUNTAIN												
→ Fountain pump should remain on overnight to agitate the water.												
TRAP LID												
→ Return cones to trap lid.												
FIRE CURTAIN												
→ @ end of night bring in fire curtain → Key should be turned to the "ON" position → Green light must be on to operate. If light is red: make sure e-stop is pulled out and then press the reset button → To bring curtain in or out: press and hold "UP" or "DOWN"												
COMMUNICATION												
→ Make sure all notes or issues have been communicated to the Stage Manager if not done already. → Email TD with a general update.												

LEVELS OF SEVERITY		
Level of severity	**When to contact**	**Who to contact**
MINOR SEVERITY Anything low impact. Aesthetic elements (trim, facing, etc.) Normal wear and tear from actors	@ earliest convivence, verbally	Stage Management
	After rehearsal/performance, via email	Technical Director
MAJOR SEVERITY Any issue severe enough to render a scenic element unusable in the show but does not pose immediate danger to cast/crew.	Immediately.	Stage Management
	Evaluate the situation: Can you fix it within the time allotted on your own? Yes- Fix it, and then contact via email after show. No- Immediately contact.	Technical Director
CRITICAL SEVERITY Anything that endangers cast and crew Significant damage to the structural integrity of any scenic element. (Catastrophic rigging malfunction)	Immediately.	Stage Management
	Immediately after SM.	Technical Director
	TD will Immediately contact Production Management.	

HOW TO CONTACT			
Name	**Position**	**Cell phone**	**Email**
Tabitha Wimsett	Technical Director	(217) 251-5660	twimsett@purdue.edu
Kyle Bickel	Assistant Technical Director	(812) 746-5405	bickel5@purdue.edu
Rich Dionne	Production Manager	(765) 337-3223	rdionne@purdue.edu
Fritz Bennett	Associate Production Manager	---	fbennett@purdue.edu
Vince Lobello	Scene Shop Supervisor	---	vlobello@purdue.edu

Please Note: This is not an exhaustive list.

Decorative Elements		
What If...	**What to do...**	**Who to contact...**
Facings fall off	Reattach using narrow crown stapler. Use trim head screws if facing(s) need to be reattached quickly.	Notify SM. Email TD @ end of night.
Arch Appliques fall off	Reattach using the hot glue gun. Extra appliques have been cut and painted if they break.	Notify SM. Email TD @ end of night.
Trim fall off	Reattach using finish nailer. Use trim head screws if facing(s) need to be reattached quickly.	Notify SM. Email TD @ end of night.
Moving Elements (Trap Lid and Doors)		
What If...	**What to do...**	**Who to contact...**
Hinges start to squeak	Spray hinges with WD-40. Use a rag to avoid any cast off or drips on the set.	Notify SM. Email TD @ end of night.
Hardware comes loose (handles or hinges)	Tighten or replace screws.	Notify SM. Email TD @ end of night.
Trap lid warps and is no longer flush	Assess the situation. Call TD. If a latch is deemed necessary, go ahead, and begin adding a latch while waiting for the TD to arrive.	Notify SM immediately. Call TD immediately.
Fountain		
What If...	**What to do...**	**Who to contact...**
Pump stops working.	**Unplug pump immediately** (located on stage) and remove from water. Troubleshoot to the best of your ability. Show could continue without the water if needed.	Notify SM immediately. Call TD.
Water damage to fountain ring or stage floor.	Assess situation and **unplug pump (**located on stage). Troubleshoot to the best of your ability and locate the leak. Based on location of leak, use best judgement to determine whether to remove the water or not. Temporarily patch leak if needed (towel/tape/etc.)	Notify SM immediately. Call TD.
Major water leak.	Get assistance from SM team. Unplug pump immediately and start removing water with buckets. Determine location of leak and call TD.	Notify SM immediately. Call TD immediately after water leak has stopped.
Portal		
What If...	**What to do...**	**Who to contact...**
Reveal falls off.	Reattach using trim head screws or glue and staple.	Notify SM. Email TD @ end of night.
If any visual changes occur. For example: major changes to the height, or if portal appears to be leaning significantly.	Assess the situation. Clear the stage and contact the TD.	Notify SM immediately. Call TD immediately.

TWELFTH NIGHT Portal FMEA					
Component	**Part**	**Failure Mode(s)**	**Likelihood of Failure** **0-Least likely 5- Highly likely**	**Effect(s) of Failure**	**Ways to Prevent Failure**
Rigging	Trim Chain	Chain Breaks	0-1	Part of wall becomes unsupported, may cause imbalanced system	Visual inspection of connection.
	Shackle (Trim chain to AC)	Bell breaks Pin breaks Pin loosens	Bell breaks: 0-1 Pin breaks: 0-1 Pin loosens: 1	One or more pick points fail, may cause wall to collapse and cause imbalanced line set	Visual inspection of shackles. Mouse shackles to prevent loosening. Use appropriately rated hardware.
	AC Cable Compression sleeves	Compression sleeve fails	1	One or more pick points fail, may cause wall to collapse and cause imbalanced line set	Physical inspection before install. Visual inspection of AC cable. Use appropriately rated hardware.
	Lift Lines	Cable fails	0-1	One or more pick points fail, may cause wall to collapse and cause imbalanced line set	Visual inspection for any abrasions, bird caging, or cuts.
	Shackle (Lift lines to turnbuckles)	Bell breaks Pin breaks Pin loosens	Bell breaks: 0-1 Pin breaks: 0-1 Pin loosens: 1	One or more pick points fail, may cause wall to collapse and cause imbalanced line set	Visual inspection of shackles. Mouse shackles to prevent loosening. Use appropriately rated hardware.
	Turnbuckles	Fails Loosens	0-1	One or more pick points fail, may cause wall to collapse and cause imbalanced line set	Visual inspection of shackles. Mouse turnbuckles to prevent loosening. Use appropriately rated hardware.
	D-Ring and Keeper	D-Ring breaks Stove Bolts shear Keeper breaks Lock nuts loosen	D-Ring breaks: 0-1 Stove Bolts shear: 0-1 Keeper breaks: 0-1 Lock nuts loosen:0-1	One or more pick points fail, may cause wall to collapse and cause imbalanced line set	Visual inspection of D-Ring, keepers, and bolts prior to install. Use appropriately rated hardware.
Flats	Framing	Fasteners fail and framing pulls apart.	1	Part of wall might become unsupported, may cause imbalanced system	Hang flat from bottom board. Check construction of flat before hanging.
	Bolted connections	Bolts shear or fail Nuts loosen	Bolts shear or fail: 0-1 Nuts loosen: 0-1	Wall might be stuck in its position.	Visual inspection. Drill appropriately sized hole for threaded insert.

Strike Plan

Twelfth Night Strike

TEAM 1	TEAM 2	TEAM 3
Team Leader: Trevor **Team:** Conner, Szczesny, Miles **THTR 160:** Margo Gaughn	**Team Leader:** Kyle **Team:** Kelsie, Evan, Heather **THTR 160:** Ari Casas	**Team Leader:** Clare **Team:** Ashlynne, Alejandro **THTR 160:** Anna Surine, Yuki Hoon
Tools needed: 2 impact drivers, 2 ½" socket drivers, 2 pry bars, 1 mallet, 1 hammer, 2 phillip screw drivers, ½" socket wrenches/box wrenches, 2 End-Nippers, tack lifters	**Tools needed:** Extendable ladder, 1 genie lift, 2 impact drivers, 2 pry bars, 1 mallet, 1 hammer, 2 phillip screw drivers, ½" socket wrenches/box wrenches, 2 End-Nippers, tack lifters, Extension cord	**Tools needed:** 2 dolly carts, 2 impact drivers, 2 pry bars, 1 mallet, 1 hammer, Sawz-All, Portable Band Saw, 3 End-Nippers,
Start @ 5:20		
Fly out borders, legs, and RP (Approx. 5-10 Min) ☐ Fly out line sets: 3, 4, 14, 16, 18, 24, 26, 31, 39 **START:_____** **END:_____** **Remove Arch (Approx. 10-15 Min)** ☐ Keep hands on the arch ☐ Unbolt from platforming using ½" socket driver ☐Take to shop for deconstruction **START:_____** **END:_____** **Remove Olivia's Platform (Approx. 45 Min)** ☐ Pull facings from ring and center unit ☐ Remove ring: connected at 4 seams and to the floor ☐Remove center platforms: screwed together at seam on underside and to floor through the outer legs. **START: _____** **END: _____**	**Remove Orsino's Doors/Balustrade (Approx. 10-15 Min)** ☐ Remove doors from the gateway ☐ Remove upstage balustrade and then downstage balustrade- Start by removing maso top cover **START:_____** **END:_____** **Remove Orsino's Staircase/ Gateway (Approx. 45 Min)** ☐ Group of 2 should remove one staircase while another group of 2 remove the other ☐ Remove facing from staircases ☐ Unscrew staircases ☐ Take to shop for deconstruction ☐ Unscrew the two smaller back side platforms ☐ Take to shop for deconstruction ☐ Unscrew the main back (*Fefu*) platform ☐ Take to shop for deconstruction ☐ Set up both Genie lifts to remove the top of the gateway. ☐ Take to shop for deconstruction ☐ Carefully foot and walk down each side of the gateway one at a time ☐ Take to shop for deconstruction **START:_____** **END:_____**	**Remove the 2 trees from SL (Approx. 10-15 Min)** ☐Keep hands on the tree ☐Pull stage weights ☐Unscrew from stage floor ☐Carefully place tree on a dolly and place a stage weight on the jack. ☐Take to shop ☐Remove weights and dolly ☐**Clear the area** ☐Foot the tree from the back at the foam ☐Float down ☐Return stage weight to fly rail **START:_____** **END:_____** **Remove Ground Row (Approx. 10 Min)** ☐ Move SL to SR being sure to keep hands on each piece ☐ Unscrew from the floor and at the seams ☐ Take to shop for deconstruction **START:_____** **END:_____** **Remove remaining 3 trees SR (Approx. 15-20 min)** ☐Keep hands on the tree ☐Pull stage weights ☐Unscrew from stage floor ☐Carefully place tree on a dolly and place a stage weight on the jack.

	Remove Remaining Platforms **(Approx. 10 Min)** ☐ Unscrew the upstage platform ☐ Take to shop for deconstruction **START:_____** **END:_____**	☐ Take to shop for deconstruction ☐ Remove weights and dolly ☐ **Clear the area** ☐ Foot the tree from the back at the foam ☐ Float down ☐ Return stage weight to fly rail **START:_____** **END:_____** **Remove Dock** **(Approx. 5 Min)** ☐ Unscrew mending plates (3). ☐ Take to shop for deconstruction **START: _____** **END: _____**
70 Minute Mark (6:30 PM)		
Remove Trap Lid **(Approx. 15 Min)** ☐ Set up sawhorses around the trap ☐Open trap lid and remove chains ☐Remove hinges from trap lid ☐ Remove lid and take to shop **START: _____** **END: _____** **Remove Trap Grate** **(Approx. 10 Min)** ☐Lift trap grate out and take to shop for deconstruction ☐Remove all shims from under trap grate. **START: _____** **END: _____** **Restore Trap + VINCE** **(Approx. 60 Min)** ☐Set up 2 ladders in trap room ☐Replace 2x2 sleepers with 2x4 ☐Reinstall steel supports ☐Set up trap plug and have 2 people in the trap room. ☐When everyone is ready, slide plug into place	**Remove Fountain** **(Approx. 20-30 Min)** ☐ Pull center fountain unit out and take to trash ☐ **Unplug** fountain pump from onstage and switch hoses. ☐ Plug the pump back in with a different extension cord and start removing as much water as possible by filling 5-gallon buckets with the hose. ****Bottom of pump must be submerged** ****Wipe up any water outside of fountain with towels provided.** ☐ Pull masonite facing on lower section of fountain to expose legs ☐ Remove screws toe nailing fountain into floor. ☐ Take fountain ring to shop for deconstruction. ☐ Take kiddy pool outside and remove remaining water. (Keep kiddy pool) ☐ **Unplug** extension cord from trap room and remove end of cable. Pull cable up through the stage.	**Move to shop for deconstruction** **Keep:** ☐Trap lid (remove hinges only) ☐2x4 from Olivia's Circle Platform, Fountain Legs, Orsino's Platform, Orsino's staircase legs, dock legs ☐Long uprights of 1x1 from steel arch (8 total) ☐Plywood sheet from Orsino's large platform ☐Plywood lid from dock ☐2- 8' long steps (remove legs only) ☐2-4' long steps (remove legs only) ☐kiddy pool ☐water pump **Trash:** ☐Trees ☐Tree jacks ☐curved pieces of plywood ☐All facings ☐Lauan ☐Fountain unit ☐Olivia's Ring platforms ☐Fountain Ring **Recycle Pile:** ☐Remaining steel from Olivia's arch

□Replace masonite with new sheet. **START:_____** **END:_____**	**START: _____** **END: _____** **Remove Portal Legs SL and SR (Approx. 60 Min)** □ Set up a genie lift on SR behind the portal leg. □Remove portal reveal that covers the seam of the flats. □With hands on SL and SR of the flat, unbolt the seam connection on the 4x14. □Walk flat down the 4x14 and remove reveal. Pull all staples and return to flat rack. □Repeat for SL **START: _____** **END: _____**	□Trap Grate (do not disassemble)
155-160 Minute Mark (8:00 PM)		
Remove Portal Header +VINCE (Approx. 75 Min) □ Send 2 people up to loading rail. □ Fly portal to working height □Remove 2 full bricks and lock off batten. □Unbolt 4x6 flats from header. □Fly portal the rest of the way down and lock off batten. □Be sure that flats are face down □Strip batten to pipe weight and remove header from batten. □ Unbolt all seams and remove bracing □Remove reveal and pull all staples □Remove rigging hardware □Return flats to flat rack. **START: _____** **END: _____**		**Strike Staircase in Trap (Approx. 35-40 Min)** ❑ Send Heather and Ashlynne downstairs to strike staircase ❑ Remove ladder from platform by unscrewing plumbers strap ❑ Remove toe rail ❑ Unscrew triscuit using Torx bits. ❑ Break down all 2x4 framing. ❑ Bring lumber, triscuit, and tools upstairs to shop ❑ Grab a few friends to help move the rolling staircase from the trap room to costume storage. ****Do NOT take apart the triscuit.** **START: _____** **END: _____**
235 Minute Mark (9:20 PM)		