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Design and Motion Media for Modern Theatre

By

Patrick W. Mathis

A Plan B Report submitted in partial fulfillment of required elements for
the degree of Master of Fine Arts in Theatre Arts

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Logan, Utah

2018

This work is dedicated in full to the multitudes of wonderful people who have helped me achieve more than I ever could have dreamed possible. My loving family, stalwart friends and sagacious mentors. I wish to give ample thanks to Shawn Fisher, Bruce Duerden, Marian Zielinski, and Scot Mann without whom I would not be the person I am today. With deepest love and gratitude as well to my darling Grandmother, all my love for all eternity.

To those we've Loved, and those we've left behind, long may they wave.

Acknowledgments

I wish to acknowledge the faculty and staff of Utah State University as well as its past graduates; Spencer Potter, Mandolynn Browning and Joshua Roberts, whose mentorship and comradery gave me the fortitude to survive my years as a graduate student.

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Projection Media design for *Dogfight*

Music and Lyrics by: Benj Pasek and Justin Paul

Book by: Peter Duchan

Directed by: Jason Spelbring

Set Design by: Kimberly Jackson

Lighting Design by: Mandolynn Browning

Utah State Department of Theatre Arts

Caine Lyric Theatre

Spring 2016

Introduction

Dogfight is the story of a Marine's wild last night state side before being sent to Vietnam.

The show takes place in nineteen sixties San Francisco, shifting from scene to scene as a series of flashbacks take the characters to unique locales. Despite its split focus between the love story of its primary characters, and the effects of war and the military on America's youth, *Dogfight* explores a number of social and cultural themes relevant to modern audiences. Issues such as women's rights, forgotten veterans, and PTSD serve as the building blocks of the play's foundation.

Play Synopsis

Dogfight begins its story in the year 1967, as Eddie Birdlace, a Marine having just returned from Vietnam, rides aboard a Greyhound bus headed to San Francisco. As he travels through the night he is visited by visions of one of his past loves, Rose Fenny, and the night they spent together in San Francisco four years earlier. As these memories overtake him we are transported back to November 21, 1963. The bus he is riding becomes a military transport, carrying Private First Class Birdlace and his rowdy fellow Marines. The passengers include his two best friends, Boland and Bernstein. As they arrive in San Francisco, the Marines are eager to take the town by storm. Some of the soldiers decide to participate in a dogfight, a competition in which the Marine who brings the ugliest date to a party wins a cash prize.

Birdlace ends up in a diner where he spies Rose, a shy waitress, quietly playing guitar in a corner booth. After a meager attempt to win her over with his knowledge of music, he eventually invites Rose to be his date. Rose is ecstatic and happily accepts. Later that evening at the Nite Lite, a seedy night club, Rose learns the true nature of the evening and the cruel game in which she has become a player. Broken hearted, Rose retreats from the dingy confines of the club feeling as though she were a fool to believe that she of all people could ever find love in the first place. The Marines continue their revelries, undaunted by Rose's outburst and departure. They head first to a local arcade and then a brothel. Birdlace, unable to shake his mounting guilt is haunted by his terrible treatment of Rose. He leaves his friends behind and seeks her out to attempt to make amends. He decides to take her out on a real date which cumulates in the two spending the night together. The next morning, Birdlace returns to his friends and fellow Marines as they ship out to Vietnam. The scene shifts to a shadow-scape of the jungles of Vietnam where Birdlace sees his friends Boland and Bernstein killed, one by one before his eyes. These nightmarish images remain at the forefront of his mind as the setting changes once more to the same bus from the show's opening. Broken, lost, and jaded Birdlace returns to San Francisco. He goes back to the diner where he first met Rose, and finds her there, as welcoming as ever; the only lasting bastion of his forgotten innocence.

Musical Numbers

Act I

“Prelude: Take Me Back”	- Rose, Birdlace and Company
“Some Kinda Time”	-Birdlace and Marines
“We Three Bees”	- Birdlace, Boland and Bernstein
“Hey Good Lookin’”	- Marines and Girls
“Come to a Party”	- Birdlace and Rose
“Nothing Short of Wonderful”	- Rose
“Come to a Party (Reprise)”	- Rose, Marcy, Birdlace and Marines
“That Face”	- Lounge Singer and Marines
“Dogfight”	- Marcy and Rose
“Pretty Funny”	– Rose

Act II

“Hometown Hero’s Ticker Tape Parade” - Birdlace, Marines

“First Date”/ “Last Night” - Rose and Birdlace

“Before It’s Over” – Rose

“Give Way” - Rose and Company

“Some Kinda Time (Reprise)” - Birdlace, Marines

“Come Back” - Birdlace

“Finale: Take Me Back” - Company

Character Breakdown

Eddie Birdlace:

A Marine Private First Class, Birdlace is a natural leader and is well respected amongst his comrades. He is initially a hotheaded a cocky smooth talker, but sheds his brash exterior when he falls for Rose.

Rose Fenny:

Rose is a waitress who dreams of life as a musician. She is a naturally shy girl, naive of the world around her.

Bernstein:

Bernstein, like Birdlace, is a Marine Private First Class and one of the three bees. He is a bit nerdy and very inexperienced with women.

Boland:

Boland is the third primary Marine private first class and Birdlace's closest friend. Boland is the third of the "Three bees".

Marcy:

Marcy is Boland's date for the dogfight. She is a nearly toothless and homely prostitute.

Location Breakdown

1. Greyhound Bus
2. The streets of San Francisco
3. Rose's Family Diner
4. Rose's Room
5. The Nite Lite Club
6. Rose's Room (restore)
7. San Francisco Arcade
8. Tattoo Parlor
9. Restaurant
10. Rose's Room (restore)
11. Rose's Room Morning
12. Military Bus Depot
12. The jungles of Vietnam
13. Greyhound Station
14. Rose's Family Diner (Years Later)

Venue

The venue for *Dogfight* was the Caine Lyric Theatre, a historic proscenium theatre with apron in the heart of downtown Logan, Utah. The Caine Lyric is a beautiful theatre, but its productions are often limited by the venue's size. These space limitations, along with the rapid pace of scene changes inherent in the piece necessitated a flexible set that made the most of every inch of available space. This clearly defined the support role of projections in the production. With the aid of both the set and lighting designers, we worked in tandem to flesh out and give life to each of the play's distinctive locations.

Design Concept and Objectives

My primary objective for the design of *Dogfight* was to aid the set designer in building and managing the ever-shifting world of the play, and to fill it with details that would have otherwise been impossible without projections. I endeavored to create the minute details that encapsulate the vibrance and unique energy indicative of 1960s San Francisco. This took shape in everything from the flickering neon signs of a city experiencing rolling brownouts, to the posters and paraphernalia adorning the walls of Rose's bedroom. I wanted to stay true to the spirit of the San Francisco and its inhabitant, as well as eclectic energy that gave birth to the many sociopolitical changes of the time period. As such, a sense of verisimilitude was extremely important to the development of my design.

Research

I began my search for inspiration by researching the period specific looks of the bay area. The elements that stood out the most to me were the neon and other lit signage that seemed to inundate the crowded streets. This gave the city a feeling of electric vigor that bespoke the frenetic energy of the place and time. As I continued to research the area and the ways in which it was influenced by the conflict in Vietnam, I began to give shape to what I envisioned as the world of the play. A grungy urban sprawl filled to the brim with equal parts vibrance and grit, amidst a sea of turbulent changes and political strife.



Figure 1.1 North Beach Broadway Street 1960



Figure 1.2 Streets of San Francisco 1960

Once I had established the bounds of the play's world on my own, I checked in with the scenic designer to be sure that my understanding of the space was reflective of her own.

Together we refined the elements that we wished to include in our San Francisco such as neon signage, grunge textures, and period posters. After this I began focusing on separating the detail from its surroundings. I started to refine my research, looking more specifically at signage and poster styles of the period. This ultimately led me to a number of images that would serve as the basis for the creation of the three-dimensional models that would be animated and manipulated for my media content. Images such as figures 1.1 and 1.2 served as the crux of my research, and the beginning of the long process that would mark my first foray into three-dimensional design.

Design Development

As I began to build the projections for *Dogfight* I learned quickly that my standard projection design tool set would not be able to produce the level of depth and detail necessary to create the final product I desired. This prompted me to seek out a new way of rendering projection media elements and eventually lead me to begin delving into the use of three-dimensional modeling tools. Because of its integration with Adobe After Effects, I chose to use Maxon Cinema 4D for my media renderings. With a bare-bones knowledge of digital three-dimensional modeling I dove into teaching myself the application. Only after a great deal of time and tedium would I be able to create and illuminate my own interpretation of the neon signs of nineteen sixties San Francisco.

I began the modeling process by finding a number of reference images to gauge the appropriate shape and composition of my digital signs. After compiling a sizable store of these images, I began to set up my three-dimensional rig. I created a



Figure 1.3 Open Sign Reference

small three-dimensional workspace in the program and set up a standard camera position so that all of the signs would be viewed from the same position in every media file.

To display my flat references appropriately in a three-dimensional space, I created a geometric plane within the program and applied the reference images to the plane



Figure 1.4 Mermaid Reference

as flat textures. Using the editor's texturing dialogue, I was able to stretch the image to fit the full width and height of the plane. This gave me a larger canvas upon which to work through the development of the glass piping that carries the electrified gas of neon signs, at the cost of minor distortion. Using the image on the plane as my base, I began to model the specific tubing elements of my signage using curve or spline modeling. Curve modeling is a three-dimensional modeling method that relies on curves to generate surface geometry. These curves are influenced by weighted control points, as displayed in figure 1.5. Curve modelling can be either parametric or freeform and relies on non-uniform rational B-splines or NURBS to describe surface forms.

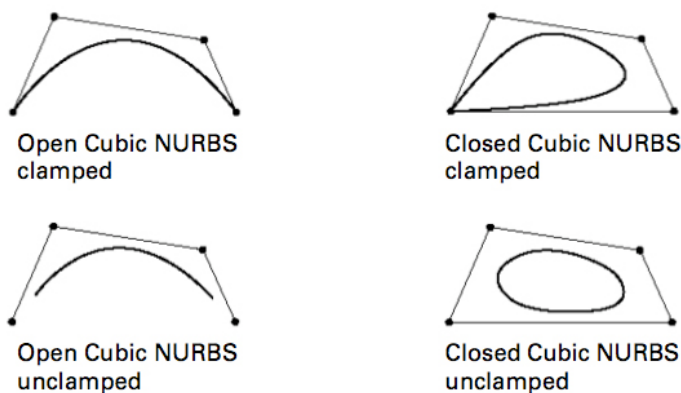


Figure 1.5 NURBS Illustration

NURBS or non-uniform rational basis spline, is a mathematical model commonly used in computer rendering for generating smooth curves. It offers great flexibility and precision for handling both analytic and modeled shapes. They can be efficiently handled by computer programs and yet allow for easy human interaction. NURBS surfaces are functions of two



Figure 1.6

Nite Lite Unit Glass Base Rendering

parameters mapping to a surface in three-dimensional space. The shape of the surface is determined by manipulatable control points. These control points are always either connected directly to the curve/surface, or act as if they were connected by a rubber band.

Using the textured plane as a tracing overlay, I set up a series of these splines to create the tubing for each of the reference images. Though it would have been much more efficient to trace the spline paths in Adobe Illustrator and import them into Cinema 4D, I decided against this method as it lacked the depth and displacement capabilities of working in fully three-dimensional environment. After completing the piping path, I needed to add shape and depth to the splines to model the tubing as a solid object in the editor. To achieve this, I used a circular spline paired with a sweep NURBS object to apply the shape of circular spline as a three-dimensional mesh over the pre-traced paths. A Sweep NURBS requires two or three splines. The first spline, the contour spline, defines the cross section and is swept along the second spline, the path, to create the final NURBS object. With this method I was able to quickly create the tubing

for the neon sign, but it's edges were flat and abrupt, having been cut at the extremes of the spline. By adjusting the caps of the sweep NURBS object I was able to add a fillet which gave the object the rounded edges that were necessary to emulate a physical neon sign. Having built the



Figure 1.7

Tattoo Parlor Unlit Glass tubing concept

basis of the tubing for my neon sign I applied a glass texture to the extruded splines. By altering the refraction values for the texture I was able to create a milky feel for the glass tubing which helped to accent and solidify the stage presence of the unit. This ensured its visibility in both the on and off states. Creating a lit and unlit version of the signs was necessitated by the director's desire to emulate the rolling brown outs of nineteen sixties San Francisco.

Having created a satisfactory model of each sign's glass portions I began to work towards creating their individual backings. I initially attempted to model intricate backing for each complete with appropriate cabling and mounting brackets, but I found that such minute detail read poorly on stage. The major impact of the sign was clearly achievable through the animation of the lighting elements in the sign's model. This realization coupled with the overall time cost of modeling each individual background component, lead me to abandon the concept of hyper detailed models and move more towards accenting the luminous properties of the signage without adding superfluous detail.

To create the lighting effect for the signs I began with a base of the glass texture that was created for glass tubing. Using the glass, I created a luminosity channel by altering the texture

properties. By changing both its color and glow parameters I was able to create a believable phosphorescent quality that accurately mimicked the luminescence of neon. This effect was further sold by the altering the reflectance levels of the background elements. This gave the metallic backing of the signs a realistic sheen that accurately reflected the color temperature and intensity of the bounce light generated by the glow. Once I had tweaked each of the lighting elements to perfection, I rendered each sign in both its illuminated and off state.

After completing these renderings, I imported each of the images into Adobe After Effects. I began setting up my composition by matching the position and placement of the images, while preserving a full 1080p resolution. By animating the opacity of the lit version, I was able to create the illusion of a random flicker. To create a truly random flicker, I utilized a wiggle expression with a random seed tied to the opacity value with very specific numeric constraints. These constraints served to keep the flicker from becoming too stark or strobe like. In addition to this, I made sure that the animation's keyframes were set up to allow the animated elements to ease in and out. This gave the flicker a more organic feel and helped to sell the illusion of rolling brownouts.

Once I had completed the basic animation, I took time to make each video a seamless loop. Starting with the sign in its on position I duplicated the animation and created several cycles by placing the duplicates in a larger composition and spreading them across the new animation's expanded timeline. This allowed me to time the loop out exactly and create a lighter product that could be looped throughout a scene instead of existing as a single large file timed

out to play throughout the entirety of a scene. These loops offered a multitude of advantages including timing flexibility, media size, render time, and reduced stress on the production machine's processor.

Because the media was created as a seamless loop it could be looped and vamped or de-vamped by [Qlab] the show's playback application. This meant that the projections could be brought in and out, as well as being started or stopped by [Qlab] at any point during a scene. This could be done while maintaining the organic timing of the loop's flicker sequence. I rendered the final product as Apple ProRes4444 with alpha, an apple propriety video codec which increased the file size but gave the animations a transparent alpha layer. This not only gave the animations a greater sense of realism, it allowed a greater overall flexibility when programming the content.

Having completed the creation of then projection media, I then moved to preparing the projections playback system. The chosen playback application, as before stated, was Figure 53's [Qlab] which served as the backbone of the projections delivery system. [Qlab] was run on a 2013 Apple Mac pro which was linked to the university's 20,000 lumen Panasonic projector directly via a DVI or digital video interface cable as displayed in figure 1.8.

This direct connection eliminated unnecessary cable runs and created a system in which there were as few points of failure as possible. It also allowed me to keep all of my equipment and cabling within the confines of the booth, making minor shifts in set up or projector focus easily

manageable. This element of simplicity is something that would become a hold over in each of my designs at Utah State. The creation of this content delivery system taught me that, by eliminating unnecessary complexity and working towards function and elegance, the realization of my designs could be completed in a more efficient, more cost-effective manner.

Once the overall setup was complete I began programing the playback system to deliver the media content in a cued structure. [Qlab] is an extremely versatile playback and mapping application that allows for independent media files to be prepared and played back as controlled cues. By creating a series of cues and initializing them with the pre-rendered media I was able to create a basic structure for the show before even entering the theatre space. This approach saved me a great deal of time upon entering the production environment as it allowed me to focus specifically on mapping and placement of the projection media, which became a challenge because of alterations to the tracking of scenic elements.

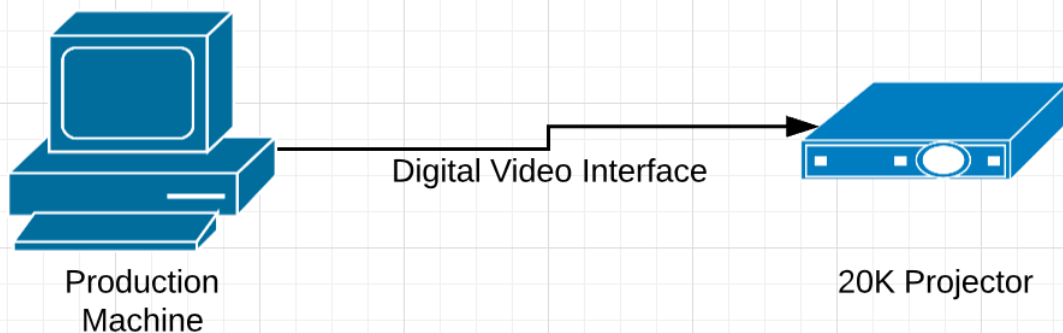


Figure 1.8 Dogfight Projection Signal Flow

[Qlab]'s robust capabilities allowed me to place and resize the media anywhere within the throw of the projector as well as control the media's looping mechanics. This gave me the flexibility of choosing not only the placement of the overall media, but also where the loop began and how many times each part of the sequence played down to the second. With continuous tweaking throughout the tech process I was able to fine tune the looping and placement of the media in a way that organically blended the signage and other elements with the scenes as the show moved fluidly through each locale.

My primary design objective was to create projection elements that blended seamlessly with the physical set and helped to evoke the vibrant energy and sensibilities of nineteen sixties San Francisco, a goal that was easily achievable with the neon elements I was able to create. I wanted to play to the cinematic qualities of the script, while using my less subtle media elements to mirror the over the top bravado and reckless patriotism of the show's marines. As the technical process of the show progressed, the scope of the projection design also shifted. To further enhance the immersive elements of the production a number of subtle projection elements were added to the design. These included: classic band posters projected in Rose's room, twinkling stars and a photo realistic moon, color changing animated chase lights in the arcade, and hyper theatrical elements such a full stage American flag.

GO

Preshow

Target Pre Wait Action Post Wait

Number	Q	Target	Pre Wait	Action	Post Wait
		▼ Preshow	00:00.00		00:00.00
		Preshow OUT	00:00.00	00:05.00	00:00.00
1	▶	Diner p.28	00:00.00		00:00.00
2	▶	Diner OUT	00:00.00	00:02.00	00:00.00
3	▶	Rose's Room IN	00:00.00		00:00.00
4	▶	Rose's Room OUT	00:00.00	00:05.00	00:00.00
5	▶	Nite Lite p.44	00:00.00		00:00.00
6	▶	Nite Lite Out	00:00.00	00:05.00	00:00.00
7	▶	Rose's Room IN	00:00.00		00:00.00
8	▶	Rose's Room OUT	00:00.00	00:05.00	00:00.00
		▼ Intermission	00:00.00		00:00.00
9	▶	Arcade	00:00.00		00:00.00
10	▶	Arcade OUT	00:00.00	00:05.00	00:00.00
11	▶	Tattoo Parlor	00:00.00		00:00.00
12	▶	Tattoo OUT	00:00.00	00:05.00	00:00.00
13	▶	Rose's Room Pre Vietnam IN	00:00.00		00:00.00
14	▶	Rose's Room OUT	00:00.00	00:05.00	00:00.00
15	▶	Rose's Room Morning IN	00:00.00		00:00.00
16	▶	Rose's Room Morning OUT	00:00.00	00:05.00	00:00.00
18	▶	Bus Stop IN	00:00.00		00:00.00
19	▶	Bus Stop OUT	00:00.00	00:05.00	00:00.00
		▼ Post	00:00.00		00:00.00

Figure 1.9 [Qlab] Master Cue List



Figure 1.10 Preshow Look



Figure 1.11 Hometown Hero's Ticker Tape Parade Look



Figure 1.1 Primary Nite Lite Look

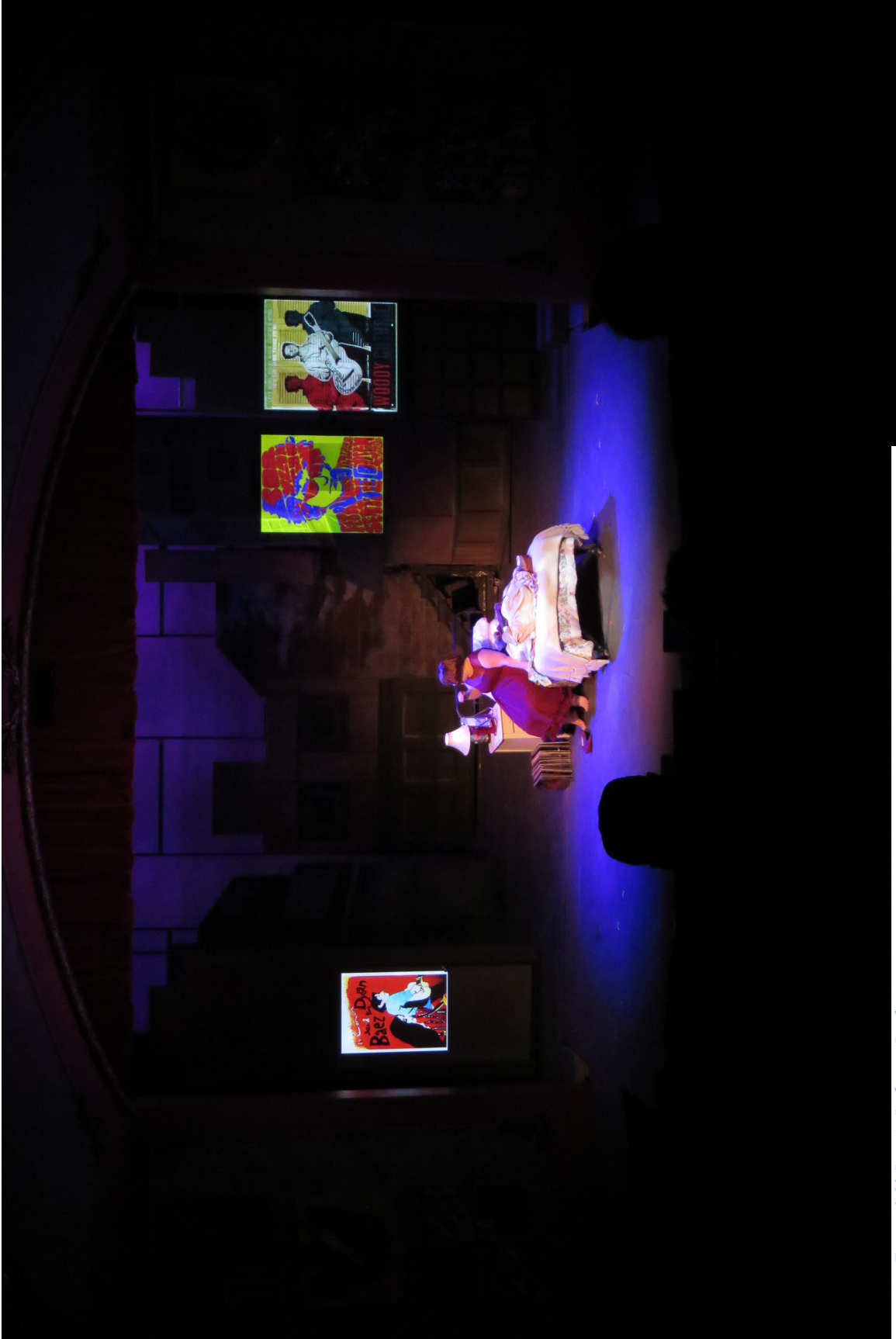


Figure 1.13 Rose's Bedroom Look



Figure 1.14 Golden Gate Night Look

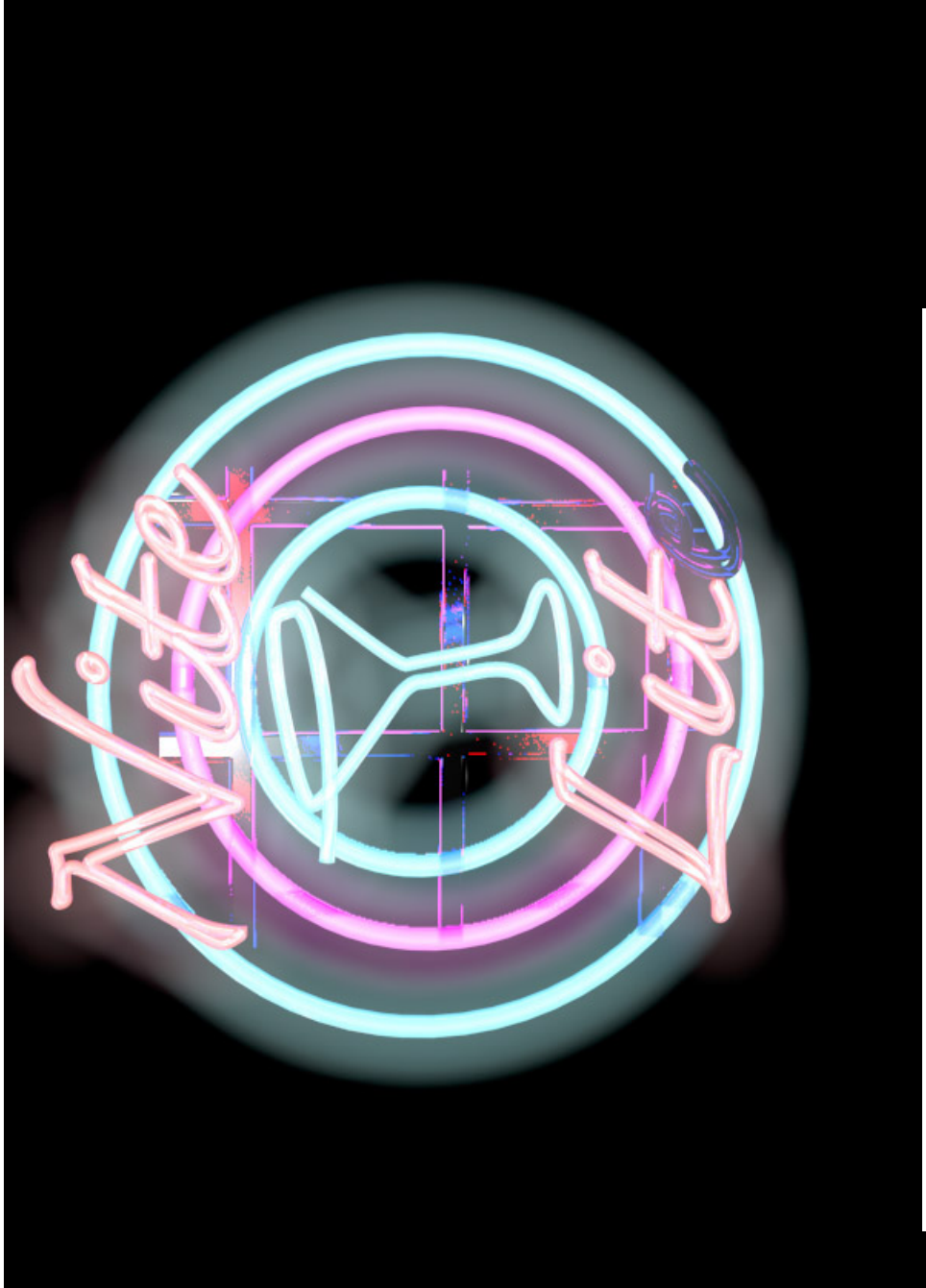


Figure 1.15 Nite Lite Rendering

Process Reflection

As a whole the product was exactly what I had hoped to deliver and served to further both the text and the production as a whole. It also served as a testament to supplemental projection design, as opposed to projection design, as a replacement for scenery. It was an excellent example of how a minimalistic projection design can accent and enhance a well-designed set without being distracting or feeling “dropped in”. This concept of set enhancement or augmentation helped to solidify my own design ideals and validate my methodology. *Dogfight* was the first show to push me into the realm of three-dimensional rendering, which has proven to be one of the greatest assets to my design and development as a designer during my time at USU. The systems and workflow that I developed to circumvent the many challenges inherent in the musical, allowed me to build upon the knowledge of projections that I had learned on my own, and served as the foundation for each of my successive projection designs, both academic and professional.

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Lighting Design for *Next to Normal*

Music and Lyrics by: Brian Yorkey

Book by: Peter Tom Kitt

Directed by: Ken Rich

Set Design by: Matt Stowe

Projection Design by: Tanner Funk

Utah State Department of Theatre Arts

Caine Lyric Theatre

Fall 2016

Introduction

Next to Normal is an American rock musical that was first performed in 2008. The plot details the deteriorating mental health of Diana, whose fixation with the death of her infant son years prior causes deep rifts within the relationships she has with her family. As her mania consumes her everyday life, Diana is ultimately driven to the point of suicide, and later removes herself from the family entirely. The show takes place in numerous locations including a High School, psychiatric office, and hospital, amongst others. Because of these many distinct locales, the set was molded into an abstract, neutral space that could be shaped into each location through lighting and subtle scenic shifts.

Play Synopsis

Next to Normal opens as suburban mother, Diana Goodman, waits up for her son, who we are lead to believe has a habit of staying out past his curfew. While waiting, Diana attempts to console her over-stressed, sleep deprived daughter Natalie who is up late working on school assignments. After Natalie leaves, Diana's son Gabe returns. He promptly heads to his room, frightened that his father may find out about him arriving so late. Dan, Diana's husband, then awakens and comes to help her prepare for the day. Everything appears normal until Dan and Natalie find Diana in a compulsive sandwich making spiral, covering every surface in the kitchen with sandwiches. As Dan helps Diana clean up, the children head off to school. Natalie escapes the psychodrama that is her everyday life by seeking refuge in her school's piano

practice room. There she is interrupted by Henry, a classmate who very clearly has feelings for her.

As time progresses, Diana makes a series of visits to her psychopharmacologist while Dan waits in the car and searches for ways to cope with his wife's worsening mental state. We eventually learn that Diana has been suffering from extreme bipolar disorder for the past sixteen years. Throughout a series of appointments, Diana's doctor continually adjusts her medications, stopping only when she says she doesn't feel anything, at which point he considers her stable.

The relationship between Natalie and Henry continues to blossom until he eventually professes his love for her and they kiss for the first time. Diana sees this through the window of their home and longs for a time when she too felt something, anything. She decides that despite the roller-coaster of emotions that comes with bipolar disorder, the feelings are genuine and intense, and that the highs were worth it. With encouragement from her son, she flushes away the medication that brought about her neutral state.

Sometime later, an exceptionally chipper Dan looks forward to dinner with his family. A family which seems to be its way to becoming normal and functioning. Henry is invited to join the family despite Natalie's vehement protests. As dinner begins Diana emerges with a cake singing "Happy Birthday" to their son, and both Dan and Natalie are floored. Dan carefully reminds her that Gabe died as an infant sixteen years ago. Dan suggests returning to Diana's doctor, but she refuses, explaining that he can't possibly understand her intense feelings. Dan

and the hallucinatory specter of Gabe battle to gain Diana's trust, as the scene comes to a close with Natalie storming off followed by Henry.

Diana, attempting a drug-free treatment, begins sessions with a new physician, Doctor Madden.

Madden proposes hypnosis to help Diana discover the roots of her trauma. Meanwhile Natalie has begun experimenting with her mother's unused prescription drugs and succumbs to addiction to cope with her familial situation.

With Madden's help, Diana comes to terms with the fact that it's finally time to let her son go. Heading home to remove the reminders she has been harboring of her long dead son, she pauses to listen to a music box, sparking a scene during which Gabe appears to her. They enter into a dreamlike dance in which he invites Diana to go away with him. After the episode Diana, distraught and alone, attempts suicide and is hospitalized. At the hospital doctor Madden explains to Dan that ECT or electroconvulsive therapy is the standard course of treatment for drug-resistant patients with a high risk of suicide. Dan, shaken by the whole of the experience, goes home to clean, up barely avoiding a breakdown. When Doctor Madden proposes the treatment to Diana, she is extremely resistant, comparing the treatment to the lobotomies performed in *One Flew Over the Cuckoo's Nest*. After some time, Dan is able to convince her that this may be their last chance at normalcy.

Diana receives a series of ECT treatments over the coming weeks, while Natalie explores a life of extremes, frequenting dance clubs and experimenting with hard drugs. In a moment of

sheer theatricality, the two share a moment of hallucination. Diana returns home from the hospital, but she has lost many of her memories from the past nineteen years. Henry eventually confronts Natalie about her drug usage and invites her to accompany him to the spring formal dance. Dan and Diana visit Doctor Madden, who assures them some memory loss is normal. He encourages Dan to use photos, mementos, and the like to help Diana recover her lost memories. Dan gathers the family to do so, with minor success, but attempts to fabricate a past better than the family's reality. When Natalie pulls the same music box from her earlier episode with Gabe from a pile of keepsakes, he snatches it and hides it from her, leaving Diana puzzled. Gabe then appears, as an unseen specter, while Diana tells Dan there's something she's desperate to remember that's just beyond her reach.

Henry arrives looking for Natalie, and Diana asks his age, telling him that he reminds her of someone. Henry hurries up to Natalie's room, hoping to convince her to join him at the dance. Diana returns to Doctor Madden, and he asks Diana about memories of her son, not knowing that Dan has purposely avoided mentioning the subject. He suggests she further explore her lost memories and talk more with Dan. Diana returns home and searches through the boxes of keepsakes, finding the old music box. Dan enters and attempts to keep it from her, but the memories of their infant son come rushing back. Diana demands to know his name, but Dan refuses and instead insists they go back to Madden for more treatment. Henry arrives to pick up

Natalie for the dance, just in time for both of them to witness Dan snatch the box from Diana in a fit of rage and smash it to pieces on the floor.

After Natalie and Henry have slipped away to Natalie's room, Diana confronts Dan wondering why he perseveres after how much trouble she's caused him. While upstairs, Natalie asks Henry the same question. Dan and Henry both profess their love and desire to stay true to their love no matter what the consequences. Diana returns to Doctor Madden asking what can be done if the medicine won't work. It becomes apparent to her that it is not her brain that's hurt, but her soul. Madden assures her relapse is common and suggests more ECT but Diana refuses. Doctor Madden urges her to continue treatment, but she simply thanks him and leaves. Natalie, waiting outside, is distressed to learn her mother has stopped the treatment. Diana attempts to explain herself and urges Natalie to go to the school dance, where Henry awaits her. When she returns to their home, Diana tells Dan she is leaving him. She feels that she needs to take a risk and deal with things on her own. Dan sits alone and wonders how she could leave him after he has stood by her for so long. Growing increasingly distraught Dan finally faces Gabe and acknowledges the sorrow that has been living within him. Natalie enters and finds her father alone in the dark. She comforts him and assures him the two of them will figure things out. As light fills the recesses of the stage, the ensemble brings the piece to a close on a hopeful note by joining together in singing "Light".

Musical Numbers:

Act I

“Prelude”	– Orchestra
“Just Another Day”	– Diana, Natalie, Gabe, Dan
“Everything Else”	– Natalie
“Who's Crazy” / “My Psychopharmacologist and I”	– Dan, Doctor Fine, Diana
“Perfect for You”	– Henry, Natalie
“I Miss the Mountains”	– Diana
“It's Gonna Be Good”	– Dan, Natalie, Henry, Diana
“He's Not Here”	– Dan
“You Don't Know”	– Diana
“I Am the One”	– Dan, Gabe, Diana
“Superboy and the Invisible Girl”	– Natalie, Diana, Gabe
“I'm Alive”	– Gabe

“Make Up Your Mind” / “Catch Me I’m Falling” – Full Cast

“I Dreamed a Dance” – Diana, Gabe

“There’s a World” – Gabe

“I’ve Been” – Dan

“Didn’t I See This Movie?” – Diana

“A Light in the Dark” – Dan, Diana

Act II

“Wish I Were Here” – Diana, Natalie

“Song of Forgetting” – Dan, Diana, Natalie

“Hey #1” – Henry, Natalie

“Seconds and Years” – Doctor Madden, Dan, Diana

“Better Than Before” – Dan, Natalie, Diana

“Aftershocks” – Gabe

“Hey #2” – Henry, Natalie

“You Don't Know” (Reprise) – Diana, Doctor Madden

“How Could I Ever Forget?” – Diana, Dan

“It's Gonna Be Good” (Reprise) – Dan, Diana

“Why Stay?” / “A Promise” – Diana, Natalie, Dan, Henry

“I'm Alive” (Reprise) – Gabe

“The Break” – Diana

“Make Up Your Mind” / “Catch Me I'm Falling” (Reprise) – Full Cast

“Maybe (Next to Normal)” – Diana, Natalie

“Hey #3” / “Perfect for You” (Reprise) – Henry, Natalie

“So Anyway” – Diana

“I Am the One” (Reprise) – Dan, Gabe

“Light” – Full Cast

Character Breakdown

Diana Goodman:

Diana is a housewife in her late thirties described as sexy and sharp. She suffers from bipolar disorder, which drastically impacts her life and the lives of her family as a whole.

Natalie Goodman:

Natalie is the teenage daughter of Diana and Dan, and the sister of Gabe who died before she was born.

Gabriel Goodman:

Gabe is the son of Diana and Dan, and brother of Natalie. Gabe is an enigmatic character, and ultimately exists as a hallucinogenic manifestation of Diana's fixation with her past.

Dan Goodman:

Dan is Diana's husband and the father of Natalie and Gabe. He is a caring husband who is utterly unable to deal with the reality of his wife's condition.

Henry:

Henry is a seventeen-year-old stoner and musician who serves as an emotional outlet as well as the primary love interest of Natalie.

Location Breakdown

Act I:

1. The Goodman Kitchen
2. A practice Room at Natalie's School
3. Dr. Fine's Office
4. Henry's House
5. The Goodman Home
6. Natalie's Bedroom
7. Dr. Madden's Office
8. The Goodman House
9. Dr. Madden's Office
10. Piano Recital Hall / Madden's Office
11. Gabe's Bedroom
12. Outside of a Dance Club
13. A Hospital Operating Room
14. A Dance Club

- 15.A Hospital Room
- 16.The Goodman Home Kitchen
- 17.A School Hallway
- 18.Dr. Madden's Office
19. The Goodman Kitchen
20. A School Hallway
- 21.Dr. Madden's Office
- 22.The Goodman Home
- 23.The Goodman Home / Natalie's bedroom
- 24.Dr. Madden's Office
- 25.Outside of Dr. Madden's Office
26. Outside of a Dance
- 27.The Goodman Kitchen

Venue

The venue selected for the production was the Caine Lyric Theatre, a historic proscenium theatre with apron in the heart of downtown Logan, Utah. The set was abstract and flexible in a way that facilitated a number of unique lighting looks, with much of the paneling being skinned entirely in vellum. This afforded me the potentiality to play with shadow and translucence in a way that would have otherwise been impossible. As I learned in my earlier experiences in the Caine Lyric Theatre with *Dogfight*, the sight lines and space constraints necessitated clever execution of a number of elements of my design, especially when focusing the instruments that were in line with the venue's many chandeliers.

Design Concept and Objectives

As I discussed the show's aesthetic with Kenneth Risch, the show's director, he provided me with a very clear vision of presenting something very sharp and sterile- An environment full of stark light and rigid shutter looms constantly over the show as a whole. As more scenic elements came into play, Ken and I revisited this initial concept. In lieu of a stark, static world without color we developed a schema that took into account the tumultuous world of emotions that ruled over Diana. In the new design concept her shifting moods were to be reflected in the space through the use of the shifting color and intensity. As Diana fell further into the depths of her mania more saturate, and vibrant colors would fill the stage to enhance the since of her depression or rage.

Research

I started my research by delving into the rock and roll elements of the production. I wanted to serve not only the text of the show but also its score's inherent musicality and flow. This led me to lighting looks that contained a great deal of atmosphere and more often than not volumetric lighting. Volumetric lighting is an effect achieved by the dispersion of light in an atmospheric particulate of some kind such as fog or haze, it is illustrated here in figure 2.1. This, in conjunction with highly theatrical back and side lighting, served as the backbone for much of the rock and roll stylization of lighting that I wanted to emulate in the production. Having forged a basic tie to the music I took a step away from the over the top theatricality of rock and roll and moved towards understanding the heavy element of mental illness that permeates the show.

Diana's psychosis is the primary driving force in the show, manifesting itself in elements such as



depression, mood swings, and suicidal tendencies. I wanted to find imagery and elements of shape and color that were evocative of these struggles. It seemed to me that Diana was adrift and drowning in her emotions-being smothered by something that

Figure 2.1 Volumetric Rock and Roll Lighting

might be considered beautiful in another circumstance.

Something immaterial yet very real and equally deadly.

My chief inspirational image in this vein was figure 2.2.

Electroconvulsive Therapy was also a point of interest for me because of its extreme nature, and the effects it can have on patients. To better understand the way in which it influenced the characters and the overall tone of the play I dedicated specific research to its practice and origins. Convulsive therapy as a practice has been



Figure 2.2 Show/Inspiration

Falling by Elena Kalis



Figure 2.3 The Art of ECT

utilized in the treatment of psychiatric conditions since nineteen thirty-four. With electric shock being used as the inducing agent as early as nineteen thirty-eight. Electroconvulsive therapy or ECT, is a procedure in which small electric currents are passed through the brain, intentionally triggering a brief seizure. It is utilized in the treatment of extreme cases of mental illness, especially in cases in which patients are suicidal or resistant to medication.

Researching the esthetic tied to the therapy and art created by patients that underwent the procedure, such as figure 2.3, helped to inform my creation of the show's atmosphere and gave shape to some of the more isolated and ephemeral moments of the play.

Design Development

Armed with my knowledge of Diana's world and its many intricacies I began the process of translating both her internal and external turmoil into the harsh light and sharp lines of my design. Using a combination of very light ambers and R60 or "no color blue", I set up the front of house instrumentation to provide area light that had a color temperature just slightly off of natural light. This was intended to give the production a feeling of crisp, almost fluorescent hospital sterility. This aesthetic was striking especially when juxtaposed with the crumbling family dynamic and loss of control that is so prevalent in the piece. The LED and intelligent luminaries were positioned upstage of the proscenium and served as the medium through which the vibrant hue and intensity shifts that were representative of Diana's manic tendencies took shape.

Because of the unique potentialities created by the set's panels and layers, using it to create areas of light and shadow became a vastly important part of my design. The prominent central portal that dominated the set served as a gateway that gave new and exciting life to what might have been a boring cyclorama. This central piece quickly became one of the most impressive parts of the set. In addition to creating an abstract surface for directing bounce light and glow, the portal also gave me the ability to create the illusion of nonlinear motion by applying simple step-based effects to the instruments behind it. An excellent example of the portal's use is exhibited in figure 2.7. Because its wide range of creative potential, the central

portal became a pivotal part of transforming the space when transitioning from the standard world of the play into that of Diana's delusions. It served as the place from which the stage picture grew, as if the portal itself were the birthplace of the vision. The color and intensity palettes applied to the portal were pacifically designed to build and radiate outward. This was done in an attempt to mirror the brokenness within Diana as it's intensity and hold upon her grew procedurally strong.

Isolation was also an important element of building the world of the show. It served both as a way to differentiate the many locales that were a part of the same playing space, and as a way to illustrate the rift that Diana's illness has created within her family. Using light and shadow to carve out pieces of the space allowed the stage picture to parallel the fractured nature of not only the Goodman family, but Diana's world at large. Using this technique I was able to make the space an organically evolving extension of the action on stage, rather than a static shell for the characters to inhabit.

In addition to the show's elements of isolation, the text's emphasis on terms relating to light and darkness were instrumental to my understanding of how this pivotal dynamic related to the show. Light is portrayed as a symbol of hope and cleansing. As such I did my best to find ways for warmth and light to appear and dissipate at pivotal moments of loss and triumph throughout the show. This cumulated with a final sequence in which shafts of angular light grow from dim embers into the finale look in figure 2.4 at the shows climax. These elements were my deepest ties to the text and the most effective design element of the show at large.



Figure 2.4 There Will be Light Finale look



Figure 2.5 Dr. Madden's Office Look



Figure 2.6 ECT Look With Projections

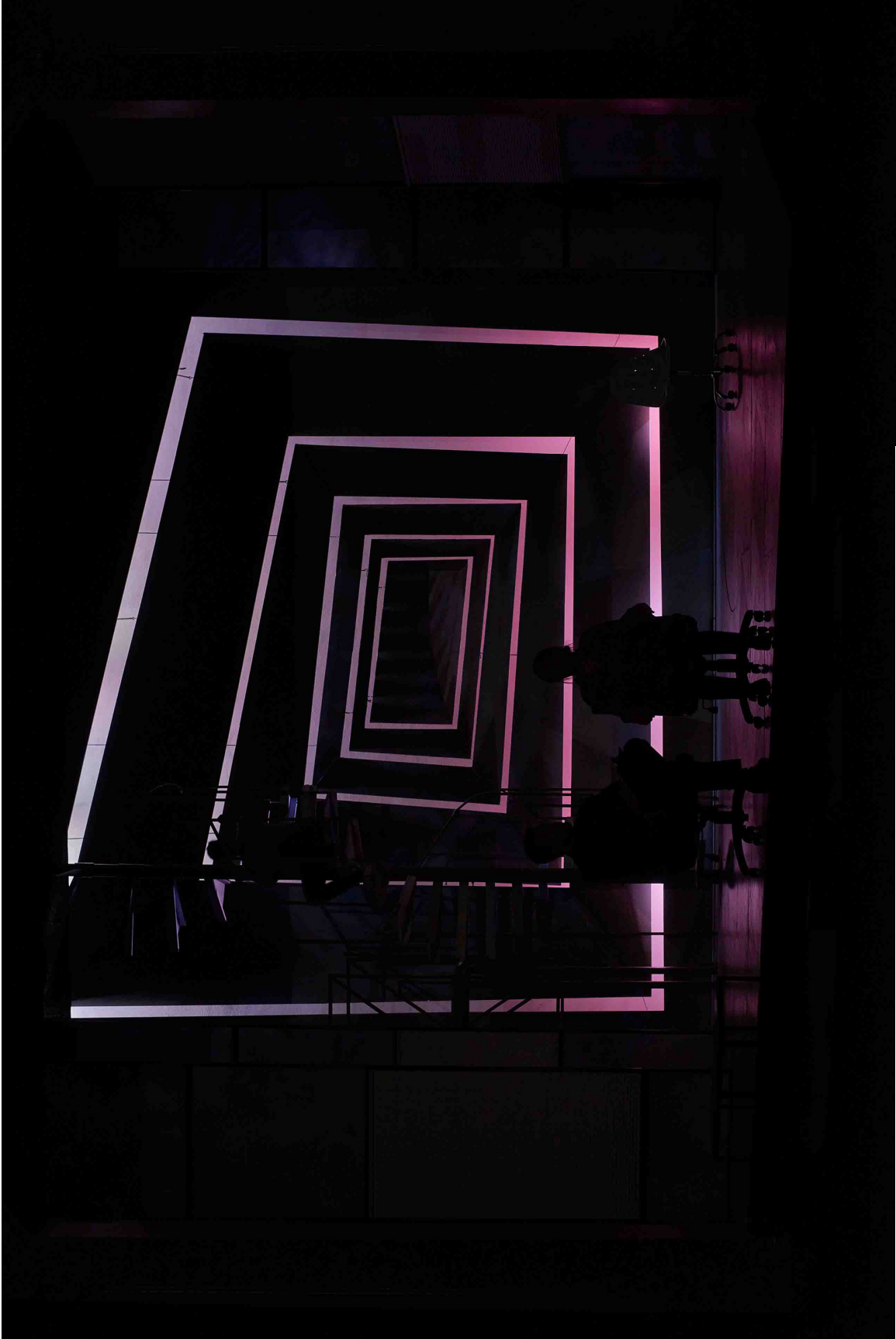


Figure 2.7 Hypnosis Look



Figure 2.8 Evening Dance Look



Figure 2.9 It's Gonna be Good Look

Process Reflection

Despite the lessons I learned about the Lyric in *Dogfight* the design and implementation of *Next to Normal* was an especially difficult task for me. In the design phase I struggled to find ways to merge my own artistic desires with Ken's concept of a stark and sterile stage picture and still produce a cohesive and meaningful design. Though conceptually intriguing, Ken's stark realism left little room for the use of saturate colors and called predominately for a wash of naturalistic light. This played well with my own desire to create areas of stark difference using only light and shadow but left little room for advancement from that singular concept. *Next to Normal* also served as my first foray into the three-dimensional rendering and lighting of set models in Maxon Cinema 4D. While I had some base knowledge from creating the neon signage used in *Dogfight*, much of the program was still new to me and the learning curve proved to be rather steep. Despite this I was able to create a basic model that was representative of the model created by the set designer. One of the major road blocks encountered in the modeling process was the creation of a believable translucent texture to represent the vellum that covered the paneling on set. Because the material had to be opaque when lit from the front, simply altering the transparency values of the material was out of the question. This necessitated the creative use of texture shaders and the refraction offset of the vellum material. Working with both I was able to create an effect similar to that of a light shining within a sheer lamp shade. Though perhaps

not the exact effect of lighting through vellum, it produced the desired effect and allowed for stunning shadow work within the renderings.

The tech process for *Next to Normal* was both a challenge, and an excellent learning experience. We began the tech process without a cue to cue, which was something that I was extremely unprepared for at the time. This was further compounded by the absence of large parts of the set throughout much of tech week, and the design changes that came with the addition of those pieces. This continuous addition of set pieces late in the process made it exceptionally difficult to solidify cues and deliver them to stage management in a timely manner.

Overall the process was a challenge, but one that forced me to stretch the bounds of both my technical and creative abilities, as well as my ability to adapt and collaborate under pressure. The design was not one that fully realized my vision for the piece, however it worked well for the overall aesthetic of the production and served the and served Ken's overall desires. The final design was something much more colorful and emotive than the initial design and gave me much more room to experiment with expressive and evocative looks than might have been possible had we stuck to the concept of stark sterility. The process, while difficult, was one that was a perfect representation of the brilliance that can be derived from working with and overcoming obstacles in production.

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Set Design for *Three Sisters*

Written by: Anton Chekhov

Directed by: Leslie Brott

Lighting Design by: Tanner Funk

Utah State Department of Theatre Arts

Black Box Theatre

Spring 2017

Introduction

Three Sisters often considered one of Chekhov's outstanding plays, is an exploration of the collision of reality with the dreams of youth. It brings to bear the ways in which we as humans often give ourselves over to lives of quiet desperation, adrift in a world uninterested in the fantastic lives we long to lead.

Play Synopsis

The play begins on the first anniversary of the death of the titular sisters' father, which is also Irina, the youngest sister's name-day. Whereas her sisters have become jaded by their own unfulfilling and seemingly hopeless lives, Irina is full of a youthful vigor. Olga, the eldest sister is working as a teacher and is extremely displeased with her position and longs for a life outside of academia. Masha, the middle sister and the artist of the family, is married to Feodor Ilyich Kulygin, a schoolteacher. The bliss of the marriage has long worn thin, and Masha now finds Kulygin practically unbearable and entirely pedantic. Andrei, the sister's only brother, like Irina, full of hope as the play begins. He is head over heels in love with Natalia Ivanovna, a common woman in respect to the Prosorov family. The soldiers stationed in the surrounding town are familiar friends of the family and arrive in due time to help Irina celebrate her name-day. As the act draws to a close, Andrei confesses his feelings to Natasha in private and fatefully asks her to marry him.

The second act begins almost a year later with Andrei and Natasha having been wed, and their first child already born. Natasha, we learn is having an affair with Andre's direct superior at work, Protopopov. This affair somewhat mirrors that of Masha and Lieutenant-Colonel Vershinin, who are fostering a secret mutual love for one another. Irina is still without a proper suitor, but through the course of the act both Tuzenbach and Solyony declare their love for her causing a rift between the two soldiers.

Act three takes place after the passing of another year. The sisters are now sharing a room, as Natasha has deviously played upon her husband's weakness to take Irina's old room for her infant child. Olga, Masha, and Irina are furious to find out that their brother has mortgaged their home to pay off his gambling debts and confront him, leading to harsh words between the siblings. After this exchange Masha, alone with her sisters, confides in them her romance with Vershinin.

Irina, has at this point lost much of her headstrong youthful vibrance. She disparages the common turn her life has taken, and out of resignation to her hum drum life she decides to accept Tuzenbach's offer of marriage. Andrei later comes to his sister and vents his own self-hatred, leading to a heartfelt discourse that shows despite his best efforts to hide it, he is a broken man and completely disgusted by the actions of Natasha. He begs his sister's forgiveness, giving himself over to the loss of control that has become his life.

In the fourth and final act, in a garden behind the Prozorov home, the soldiers are preparing to leave. Solyony has challenged Baron Tuzenbach to a duel, a fact that the Baron hides from Irina. He and Irina share a heartbreaking moment in which she confesses that she does not and cannot love him, likening her heart to a piano whose key has been lost. Just as the soldiers begin to leave, a shot is heard and Tuzenbach's death is announced, which despite her lack of love for the Baron, crushes Irina. Masha, who has found true love at last in Vershinin's arms, is devastated by the fact that he is leaving. She is left brokenhearted and sobbing with her distraught sisters as the soldiers depart. Olga has reluctantly accepted the position of permanent headmistress of the school so that she can care for the sister's elderly nanny Anfisa and escape the tyrannical rule of Natahsa. In the final moments of the play, the sisters share a desperate embrace, gazing off into the distance. With her final line Olga almost hopefully cries out for understanding of what drives us to continue to live and to suffer.

Character Breakdown

Olga Sergeyevna Prozorova (Olga):

Olga eldest of the three sisters, and the matriarchal figure of the Prozorov family. Though at the beginning of the play she is only 28 years old. Olga is a school teacher and frequently fills in for the headmistress whenever she is absent. She is a spinster who longs for love stating that she would have married “any man, even an old man if he had asked her.”

Maria Sergeyevna Kulygina (Masha):

Masha is the middle sister and is 23 at the beginning of the play. She married her husband Kulygin, when she was 18 and just out of school. Masha has grown tired of the pedantic school teacher and falls madly in love with the idealistic Lieutenant-Colonel Vershinin. She has the most wit and vibrance of the three sisters and is often the sister most vehemently and directly opposed to Natasha.

Irina Sergeyevna Prozorova:

Irina is the youngest sister, being only 20 at the start of the play. Her chief desire, is to go back to Moscow which serves as an idealistic reality to which the sisters cannot return to. Irina has a sense of youthful idealism that is thoroughly shattered as the play progresses.

Andrei Sergeevich Prozorov (Andrey):

Andrey is the only brother of the Prozorov sisters and begins the play a young man of dreams and ideals. As the play progresses his marriage to Natasha binds him to the provincial home he shares with his sisters and destroys every remnant of the dreams and ideals he once held.

Natalia Ivanovna (Natasha):

Natasha is Andrey's love interest at the play's beginning and quickly becomes his wife. She is a common woman of no stature which gives Andrey's sisters reason to look down upon her. As the play progresses Natasha grows progressively more manipulative and domineering, lording over the Prozorov family home and carrying on most brazenly with Andrey's superior whom we may be led to believe is the father of her second child.

Fyodor Ilyich Kulygin:

Kulygin is Masha's older husband and the Latin teacher at the local school. He is a jovial, kindly man who also longs for a life different from his own. In the depths of the knowledge that his wife no longer loves him Kulygin confesses to Olga that he might have married her instead and that together they might have been happy.

Aleksandr Ignatyevich Vershinin:

Lieutenant Colonel Vershinin is a philosopher at heart and the play's iridescent source of optimism. Despite this he shares in an equally unhappy life, living with a wife who makes constant attempts on her own life, and whom he can no longer love.

Baron Nikolaj Lvovich Tuzenbach:

Tuzenbach is an army lieutenant who falls in love with Irina and attempts to court her favor.

Going so far as to leave his military post to go to work in an attempt to impress her. He is said to be a plain unhandsome man and though Irina promises him her hand in marriage, she does so only out of resignation to the fact that he may be her best option. Despite the fact that she does not love him.

Vassily Vasilyevich Solyony:

Solyony is a social misfit and like Tuzenbach is infatuated with Irina who finds him crude and unappealing. He is said to have a remarkable resemblance to the poet Lermontov in both face and personality, is often found quoting him.

Ivan Romanovich Chebutykin:

Chebutykin has long been a family friend of the Prozorovs he seems a jovial old man at the plays beginning, but his own tragic misgivings are revealed as the story progresses. Chebutykin dearly loved the mother of the sisters and may even be the father of Irina.

Location Breakdown

1. The prozorov Living Room
2. The prozorov Living Room Night
3. Olga and Irina's Shared Room
4. A Garden Outside the Prozorov home

Venue

The venue selected for the production was the university's Black Box Theatre which proved to be an immense challenge. The cast was one of the largest of the season and thus could easily fill the playing space even without a set. The inherently small size of the playable space in the black box, combined with the tight seating and difficult sight lines, made each design decision a unique new challenge. These challenges pushed me towards a more nuanced approach to the show and fueled much of the creative problem solving throughout the design process.

Design Concept and Objectives

My design for the show began as a series of projections surfaces that would serve to supplement the onstage action. I chose this approach as a means to mitigate the set foot print, and keep the acting space unobstructed for the large cast while still serving the text and telling a story through design. In this iteration the set took the shape of an abstract deconstructed portal that was intended to mirror the shattered lives of Chekov's characters, and serve as vehicle for the delivery of the show's media content. Despite its initial promise, this design did very little to create a sense of space and made differentiating between the plays settings exceptionally difficult. Taking elements from the scrapped design, I reinvented my use of the portal structure and refashioned the pieces into a set of modular screens that could shape the space without drastically influencing the amount of space playable for the actors. In its early stages this design still included projections, however, when such elements were deemed impractical, I discovered a way to create a similar delivery using shadow play as exhibited in figure 3.6.

Research

My research began with an exploration of the influences and aesthetics that were prominent in nineteenth century Russia. The single most important event in the history of nineteenth century Russia was the emancipation reform of 1861. This reform freed the serfs and marked a definitive end to the reign of the Russian monarchy. Overtones of reform are evident throughout the play, and thus I felt it was prudent to understand how it affected the people of Russia as well as their art and architecture. I learned quickly that the art of the period took a distinct turn towards realism and often focused on scenes from everyday life. This provided me with a wealth of materials from which to draw inspiration, informing in large part the shape and texture of both the panel treatment and the furniture for the set.



Figure 3.1 Barge Haulers on the Volga by Ilya Repin



Figure 3.2 Reading of the Manifest of 1909 by Boris Kustodie

Despite this wealth of inspiration, I still found myself lacking a definitive motif for the architectural elements of the show. I wanted to give the audience a sense of the Prozorov family's social status, as I found it very important to the understanding of how the sisters and their brother fit into the tumultuously changing world of their time. For this I looked towards elements of the Rococo Revival that would have been occurring during the time period of the play. This style helped me to sell the affluence and social clout of the sisters, while at the same time providing interesting texture and detail for both the furniture and the mobile units that made up the set.

Design Development

As I began developing the design I created a number of rough models in Vectorworks.

I did this in an attempt to solve the space problems that were the director's chief concern. In addition to space concerns there was the added issue of the venue's lack of offstage storage and wing space for storage of furniture and masking of entrances and exits. The necessity of wing space gave me the basis for the static parts of my design. There were to be two masking walls in

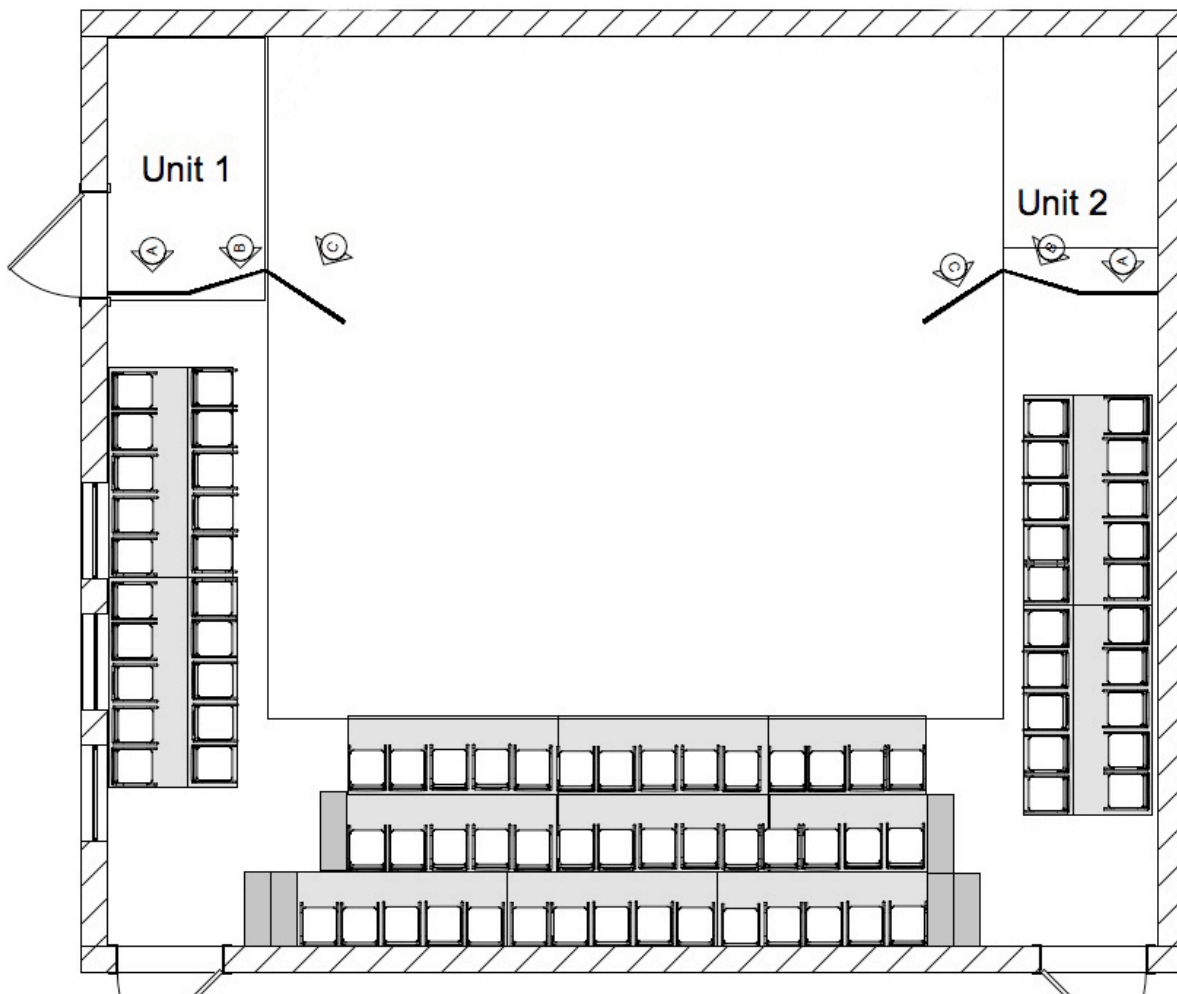


Figure 3.3 Ground Plan View of Stationary Unit Setup

the same style as the other moveable flats that would create the bounds of the playing space. The nature of the black box's layout as well as the three-quarter thrust seating arrangement dictated the upstage positioning of these walls as well as to some degree their angle towards the audience. Having established the stationary pieces of the set I began working with both a digital three-dimensional model, and a physical hand-built model to come up with panel placement for the various scenes throughout the show. There were many factors that dictated the placement size and orientation of the paneling and furniture, such as optimization of the playing space, audience sight lines, and offstage storage of furniture and props. With each arrangement I attempted to maximize playability of the space while minimizing any visual obstructions and creating ample room for the enormous cast to elegantly share the space. I developed a series of looks using the panels in different configurations to give simple shape to the playing space, and evoke the confines of smaller spaces when necessary without physically closing off any of the acting spaces. By changing the ways in which the panels hinged and folded, I was able to create scenes that both functional and aesthetically interesting without sacrificing any of the other elements I was pursuing. In much the same way that a painter might use abstract lines to create an air of elegance or danger, I used angles and edges to create a differentiation between each of the scenes without ever drastically changing the overall footprint of the scenic elements. Using just these simple elements I was able to create an interesting and functional composition, but I still wanted to do more to define each of the show's locations. This added definition was subject to the same space considerations as the rest of the scenic elements. It could in no way affect the amount of playable space or obstruct audience sight lines.

I began with the concept of using the screens as projection surfaces. This would allow me to drastically change the space without the cost of adding elements that would consume three-dimensional playing space. Working with my model as a base, I set up the panels for each scene and then took a photograph which was imported into Photoshop. In the program I cropped out any unnecessary distractions to create a tight viewport of the black box model from the middle of the three-quarter thrust. I then created selections around each set of panels and separated them from the background layer. This allowed me to create clipping masks that would trim the projection content to the panels alone, effectively creating the illusion that the images had been mapped to the panels. Once I finished creating the masking for my content I started working towards an aesthetic that supported the inherent realism of the show.

I was entirely unwilling to simply project architecture or furniture as if it were meant to be a realistic part of the set. Designs in this vein are exceptionally hard to achieve, and more often than not create a situation that pulls the audience out of the world of the show. To avoid this, I sought out stylized content drawing inspiration from line art and gothic architectural drawings such as that displayed in figure 3.4. Combining royalty free imagery with the masking that had been set up in the Photoshop document, I was able to create a rough representation of some of the looks .

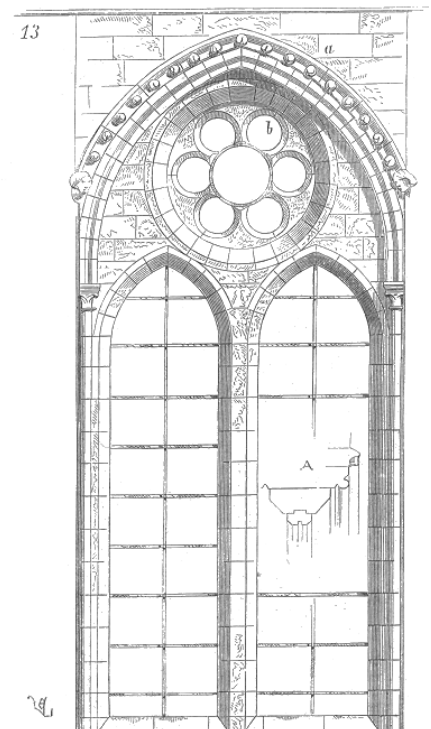


Figure 3.4

Projection Media Style Reference



Figure 3.5 Digital Projection Rendering

The use of projections would have given me immense flexibility but created an entirely new set of issues specific to the projection medium. Because of the space's set up and the available lighting positions, lighting the show without washing out the projections would have been nearly impossible. This, in addition to the necessity of using front projections, would have created a shadow laden, washed out mess. This very clearly made projections a less than viable solution to the problem of altering the scenery without adding any physical elements.

While working on a separate media project I became very interested in the concept of shadow play, and ways in which it can be implemented in a theatrical environment. Taking inspiration from performances built entirely upon the idea of shadow theatre I found what I considered an elegant solution to my inability to alter the static paneling. When lit from the front

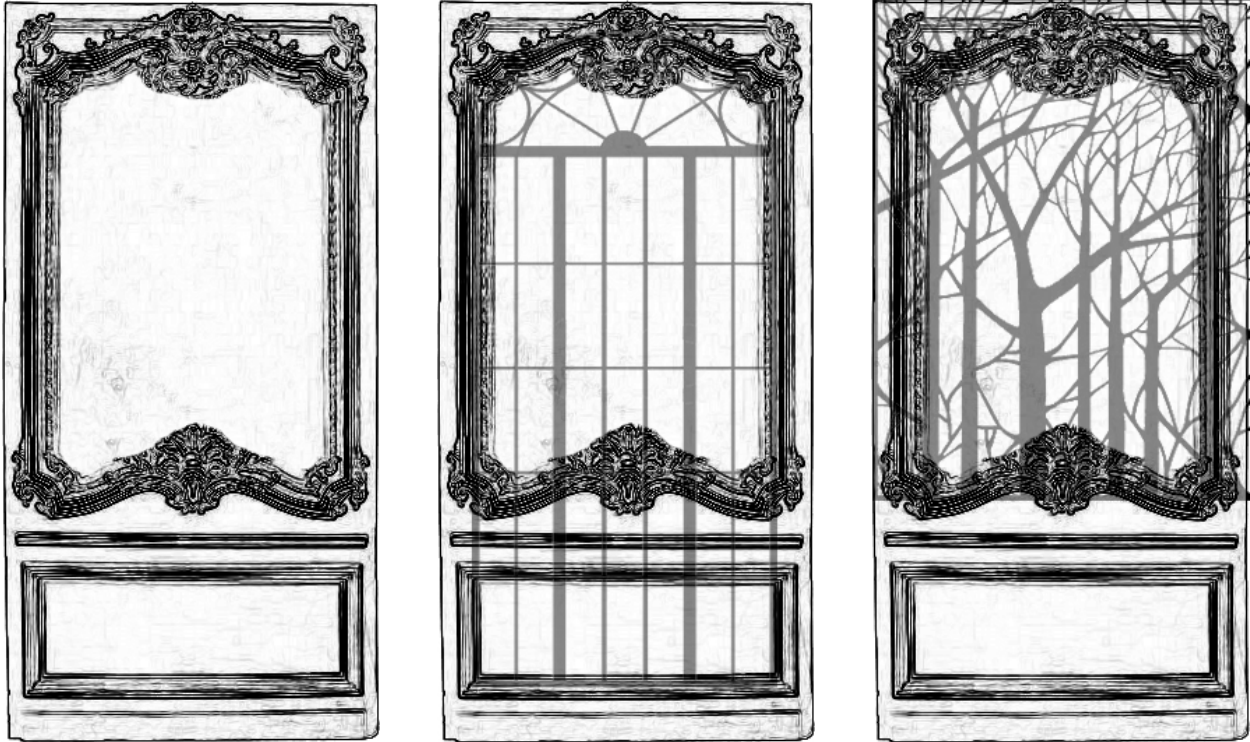


Figure 3.6

Panel and stencil Mockups

the panels would give the appearance of solid walls, but when lit from behind they would reveal scenic elements such as windows in the home, or foliage in the garden. By independently controlling the illumination of each panel I could paint the stage with an entirely new pallet of intricate design elements without adding weight or dimension to any of the physical scenic elements. The director was very pleased with this unintrusive take on altering the space, and in collaboration with the lighting designer, I began to redesign my panels in a way that supported this vision

Starting with the basic shapes I had in mind, I worked with the scenic charge and her team to develop the shapes of the stencils that would be hidden within the panels. Once these had been solidified, I immediately began working with the lighting designer to develop the best

possible way to create a system for the illumination of the stencils. The lighting designer and Master Electrician both had experience with LED tape, which was a technology which would afford us yet another layer of flexibility in the form of color mixing. With their combined experience and the promise that the panels could retain their mobility while gaining full color changing capability, we moved forward with the idea of using the tape to illuminate the interiors of the paneling. The system was to consist of a battery tied into the tape along with a wireless receiver facilitating DMX transmission to the LEDs. By creating multiple systems of this kind, we would be able to fully isolate each panel's illumination and color giving both myself and the lighting designer a wide range of ways to alter the mood and tone of the set. The tape itself had a very minimal impact upon the design of the paneling, however the elements to allow for portable power and data necessitated added depth in the panels that were to house them. This alteration negligibly increased the overall footprint of the units, and the increased base size ultimately added a great deal of solidity to the freestanding units that I was very much thankful for. After creating a scaled down mockup, I worked with the lighting team to wire and assemble the shadow boxes both in the scene shop and in the space itself. Though a tedious process for myself and the electricians crew the whole of the tech process was minimally stressful. Despite the fact that much of the promised functionality of the LED tape was not present in the final design, the finished product was still largely interesting and flexible enough to serve the visions of both myself and the director.

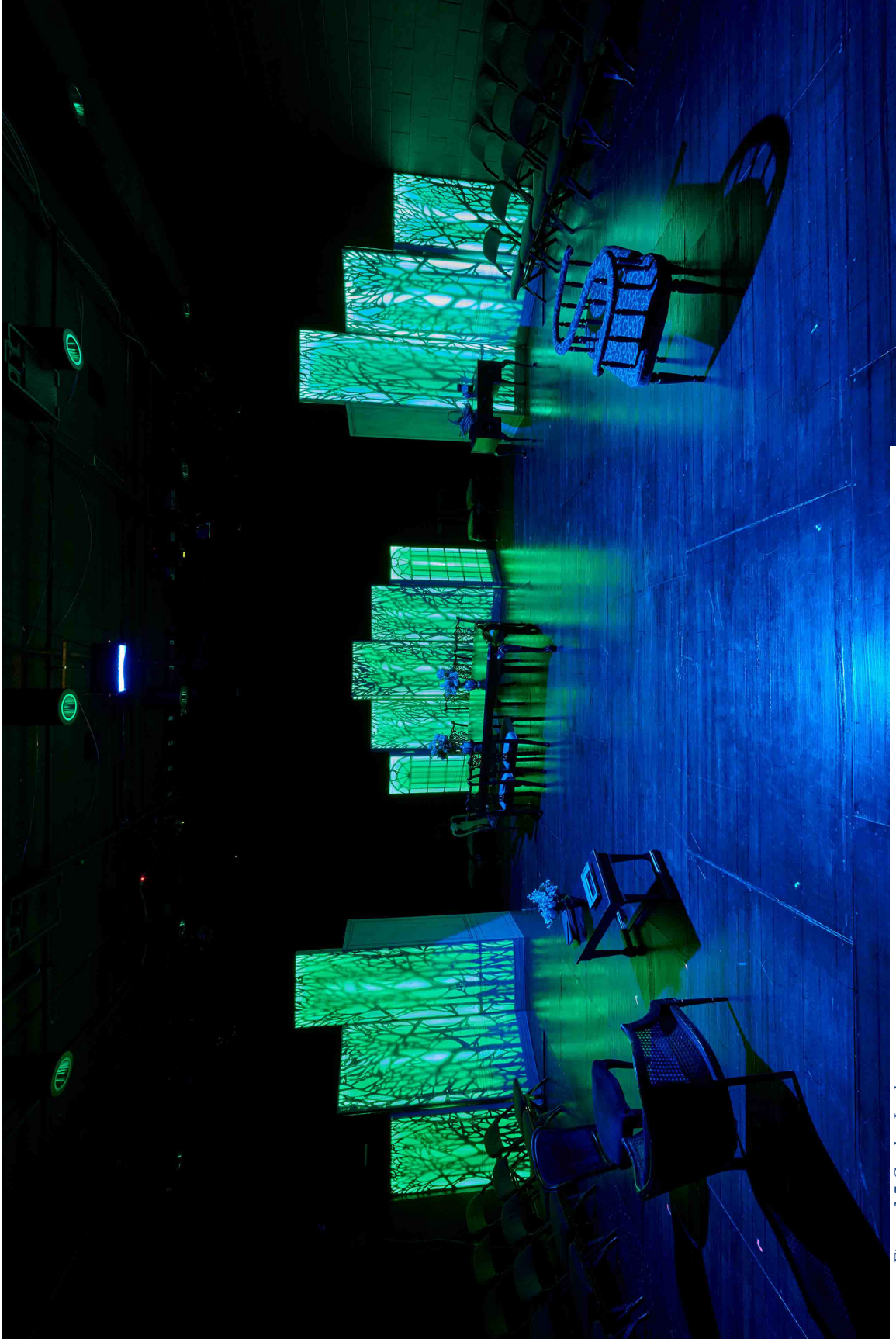


Figure 3.7 Garden Look



Figure 3.8 Dining Room Look



Figure 3.9 Evening Dining Room Look



Figure 3.10 Evening Parlor Look

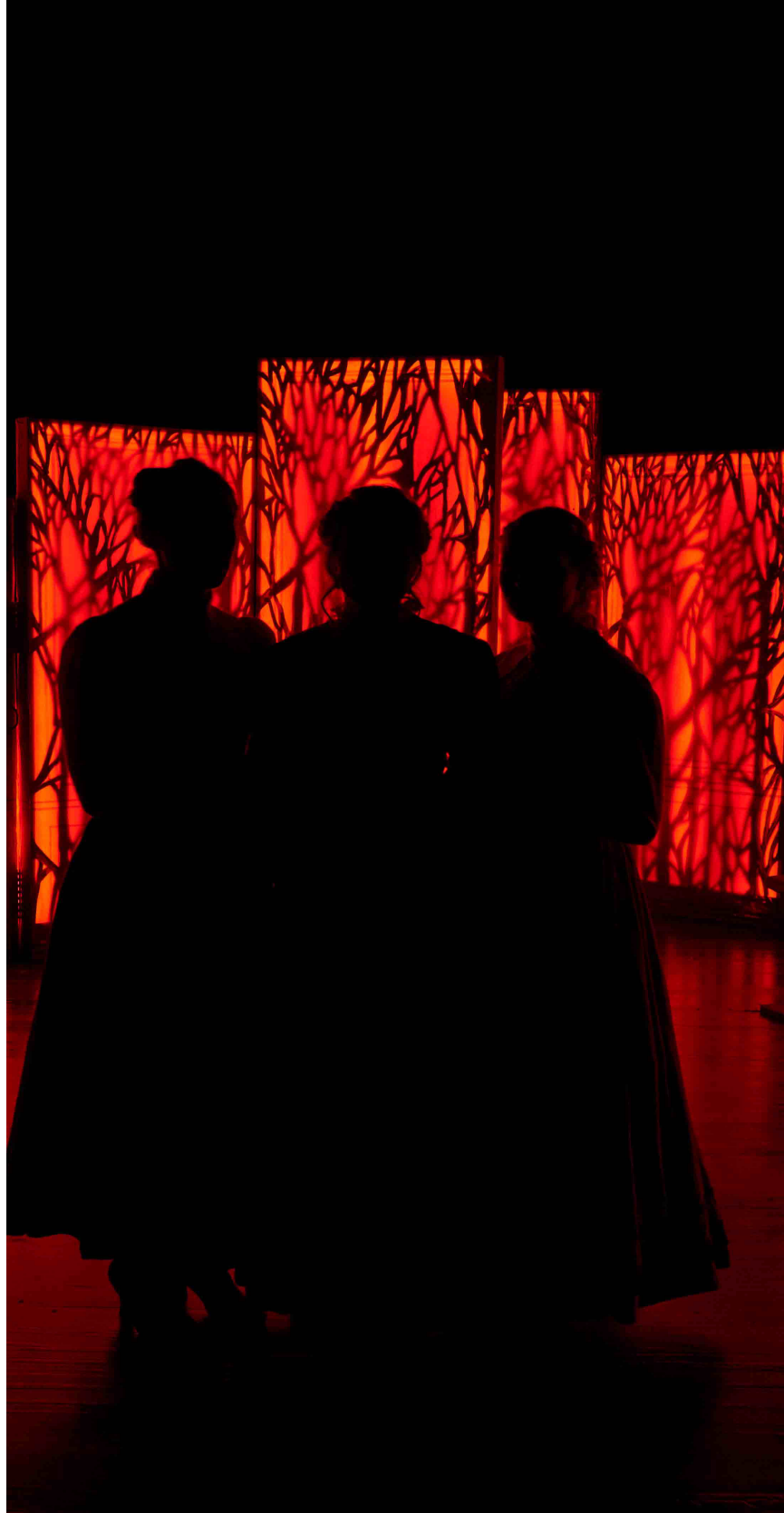


Figure 3.11 The Sisters' Final Embrace

Process Reflection

Three Sisters was as a whole the most difficult design that I completed during my graduate career. This was in large part due to a number of outside factors as well as my own inability to stand firm in my desires as a designer and to see my own vision through to fruition without aid from other members of the design team. I relied much too heavily on the promise of collaboration to carry my design to completion and functioned too often as a facilitator rather than a designer. The promise of sharing some of my workload with the lighting team seemed at the time the best option, as it allowed me to pull from their combined experience to fill holes in my own understanding. This proved a flawed endeavor and I soon realized that much of the promised functionality of using the LED technology were made without a solid foundation in the implementation of that same technology.

I found my own lack of ability similarly frustrating in the area of scenic painting, as I had to rely wholly on the expertise of my painters and could only offer rudimentary support. This made the ill-fated starching and painting process for the flats immensely frustrating for both myself and my team. Had I been capable of offering more support to my compatriots, I feel that the overall product would have been greatly improved. Despite these major issues the design remains one of my most interesting and most inventive.

References

Repin, Ilya. Barge Haulers on the Volga. Digital image. Guggenheim.org. N.p., n.d. Web. <<https://www.guggenheim.org/arts-curriculum/topic/art-and-society>>.

Kustodie, Boris. Reading of the Manifest - Kustodie, . Digital image. Guggenheim.org. N.p., n.d. Web. <https://commons.wikimedia.org/wiki/File:Reading_of_the_Manifest_-_Kustodie,_1909.jpg>.

Viollet-le-Duc, Eugène. Fenetre Cathedrale Soissons. Digital image. N.p., n.d. Web. <<https://commons.wikimedia.org/wiki/File:Fenetre.cathedraleSoissons.png>>.

Dogfight

Projections Preshow Check List

1. Before beginning operation ensure that the 20k Lens cap is removed.
2. Check the power connections for all equipment to ensure that nothing has come loose or been erroneously unplugged.
3. Power on the Mac pro and the projector. Be sure to power on the Mac pro first as to establish the necessary media link.
4. Check the connection between the projector and the Mac Pro **notify stage management**

immediately if there is an issue with the connection.

5. Ensure that the Mac Pro is prepared for the show. All outside connections should be blocked, and it should be disconnected from the internet. The sound should be turned off.

6. Double click the show file labeled Dogfight Final located on the desktop.

7. If the file does not open or Qlab otherwise fails **notify stage management immediately**.

8. Once the show file has booted fire the projector test cue and wait for it to complete. If the test pattern does not display properly or fails to play at all **notify stage management immediately**.

9. If the projector test cue checks out and all equipment is functioning normally step through each of the cue to ensure that they display normally. Pay special attention to fades

and any cues that utilize Qlab's internal video effects.

10. If all of the show's cues check out use the escape key to stop all cues and move back to the top of the cue list.

11. On the stage manager's call, fire the preshow cue and wait for further instructions.

Dogfight

Projections Post-show Check

1. Wait until the stage manager notifies you that the house is clear before stopping the post show and closing cue lab.
2. Once all of the show's cues have stopped and Qlab has closed you may power down the Mac Pro.
3. Begin the power off sequence for the projector by placing it in standby mode. The projector's fans will need a good deal of time to dissipate the heat of the projector's lamps. Please be patient while the unit powers off.
Under no circumstances should the projector be unplugged at any time during operation unless it has been fully powered down.
4. Replace the lens cap on the projector lens and clean up your work area before leaving the booth.

Dogfight

Projections Cue Build List

Preshow Look

Fade Preshow

1. Diner IN Page 28
2. Diner OUT
3. Rose's Room IN
4. Rose's Room OUT
5. Nite Lite IN Page 44
6. Nite Lite OUT
7. Rose's Room IN
8. Rose's Room OUT

Intermission

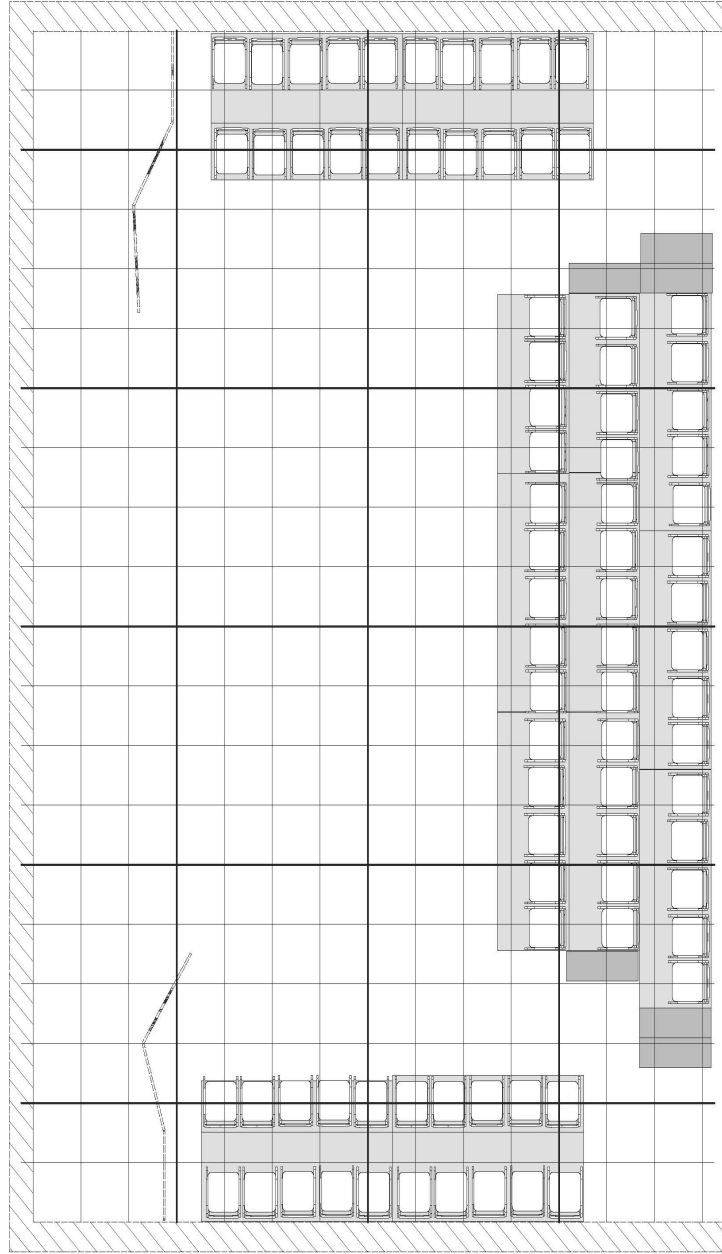
9. Arcade IN
10. Arcade OUT
11. Tattoo Parlor IN
12. Tattoo Parlor OUT
13. Rose's Room IN
14. Rose's Room OUT
15. Rose's Room Morning IN
16. Rose's Room Morning OUT
17. Bus Stop IN
18. Bus Stop OUT

Post Show

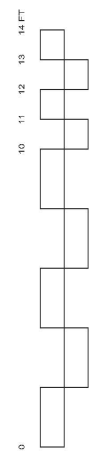
Appendix B

Three Sisters Technical Documentation

VECTORWORKS EDUCATIONAL VERSION



Grid is two feet by two feet to allow for appropriate spacing
All elements are in **half inch scale**



VECTORWORKS EDUCATIONAL VERSION

Dimensions:

Twin Bed Iron headboard:

Width: 6'8"

Height: 3'4"

Chaise Lounge:

Width: 4'10"

Height 2'6"

Dining Table:

Width: 7'6"

Height: 3'5"

Dining Table Chairs:

Width: 1'10"

Height: 1'10"

Mirror:

Width: 1'4"

Height: 6'

* 1'3" Deep at base

Outdoor Bench:

Width: 1'2"

Height: 1'8"

*Rectangular Footprint: 1'10" by 4'6"

Three Sisters

UST Black Box

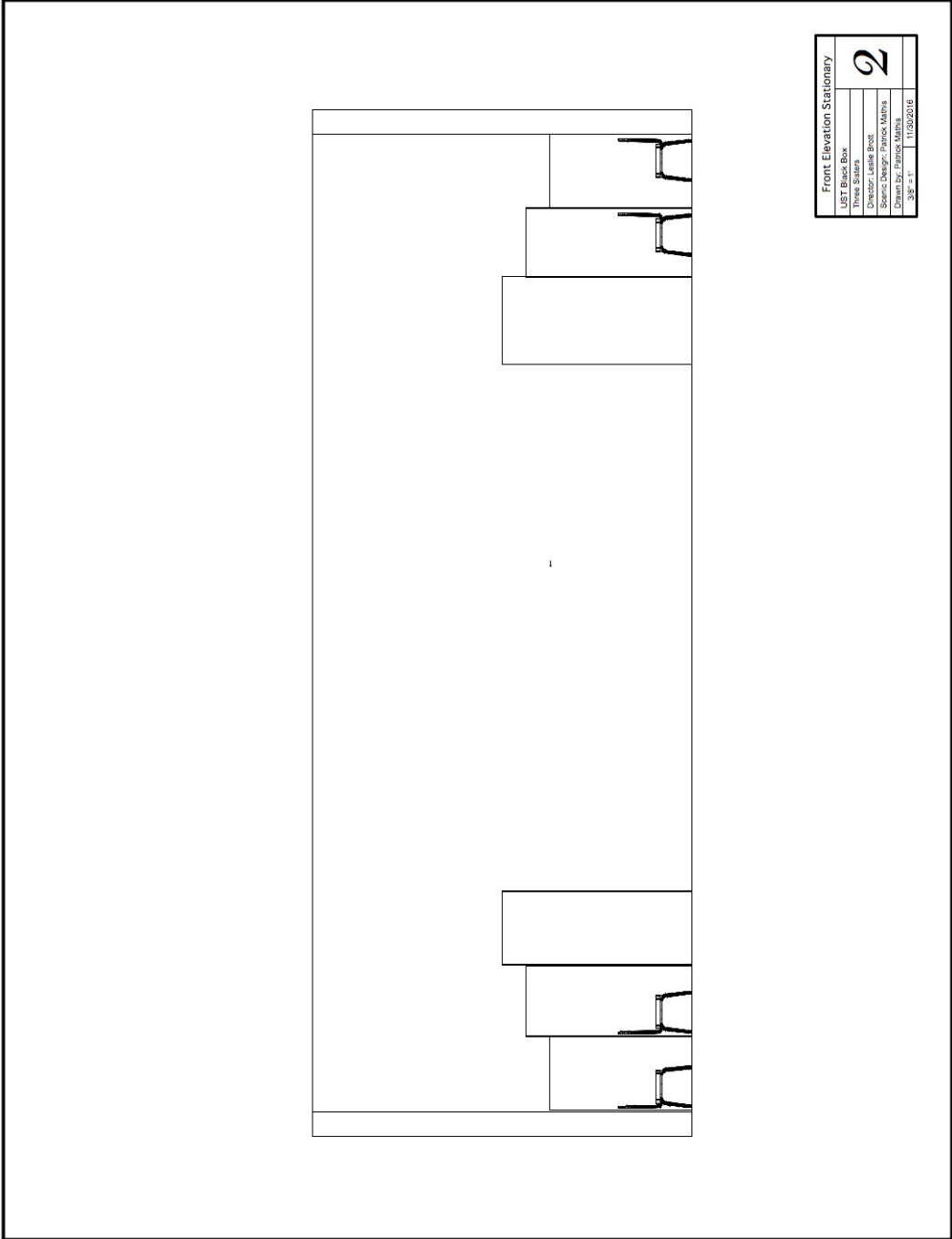
DIRECTOR: Leslie Brott

SCENIC DESIGN: Patrick Mathis

LIGHTING DESIGN: Tanner Funk

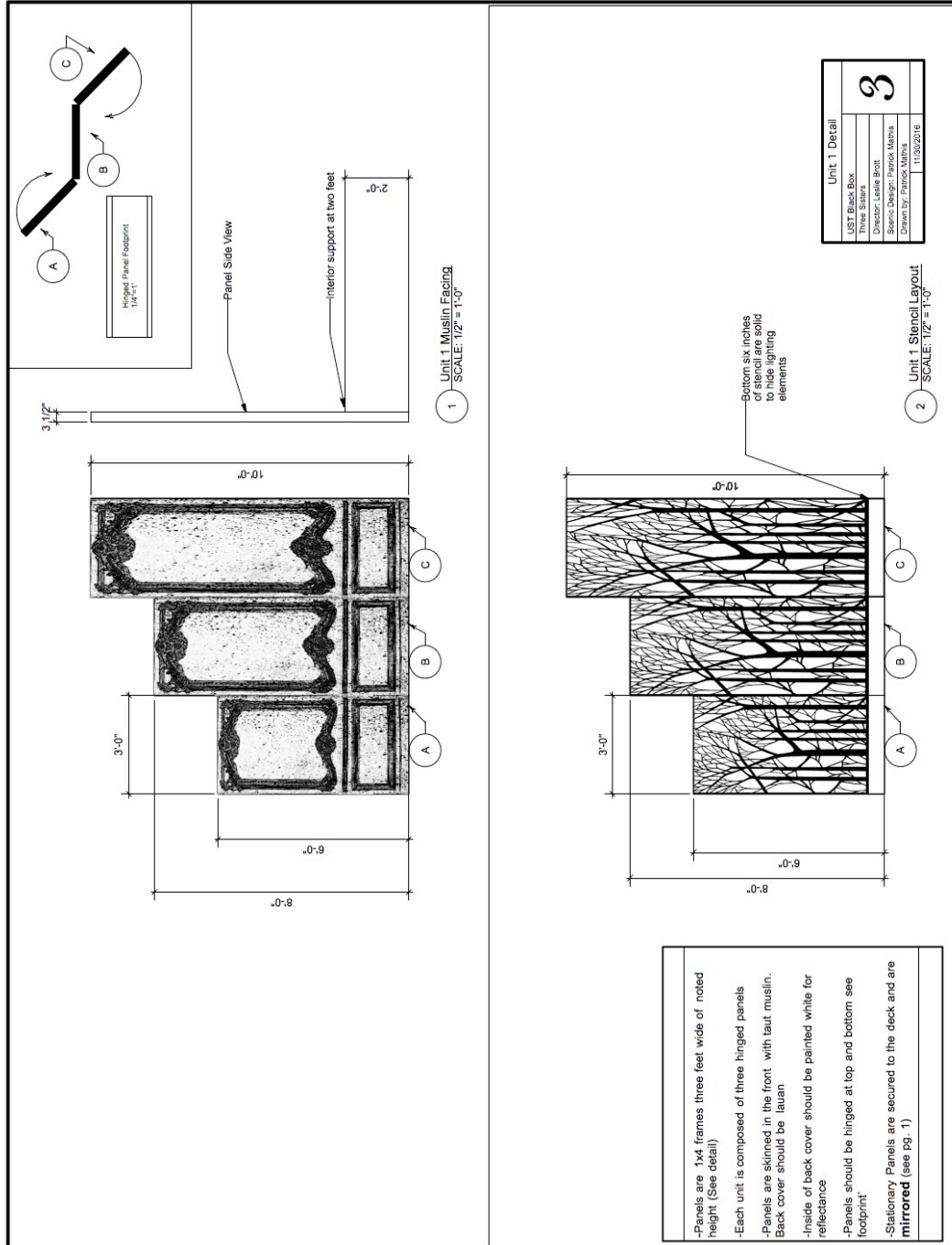
TECHNICAL DIRECTOR: Dwight Camillucci

Stationary Units 1 & 2

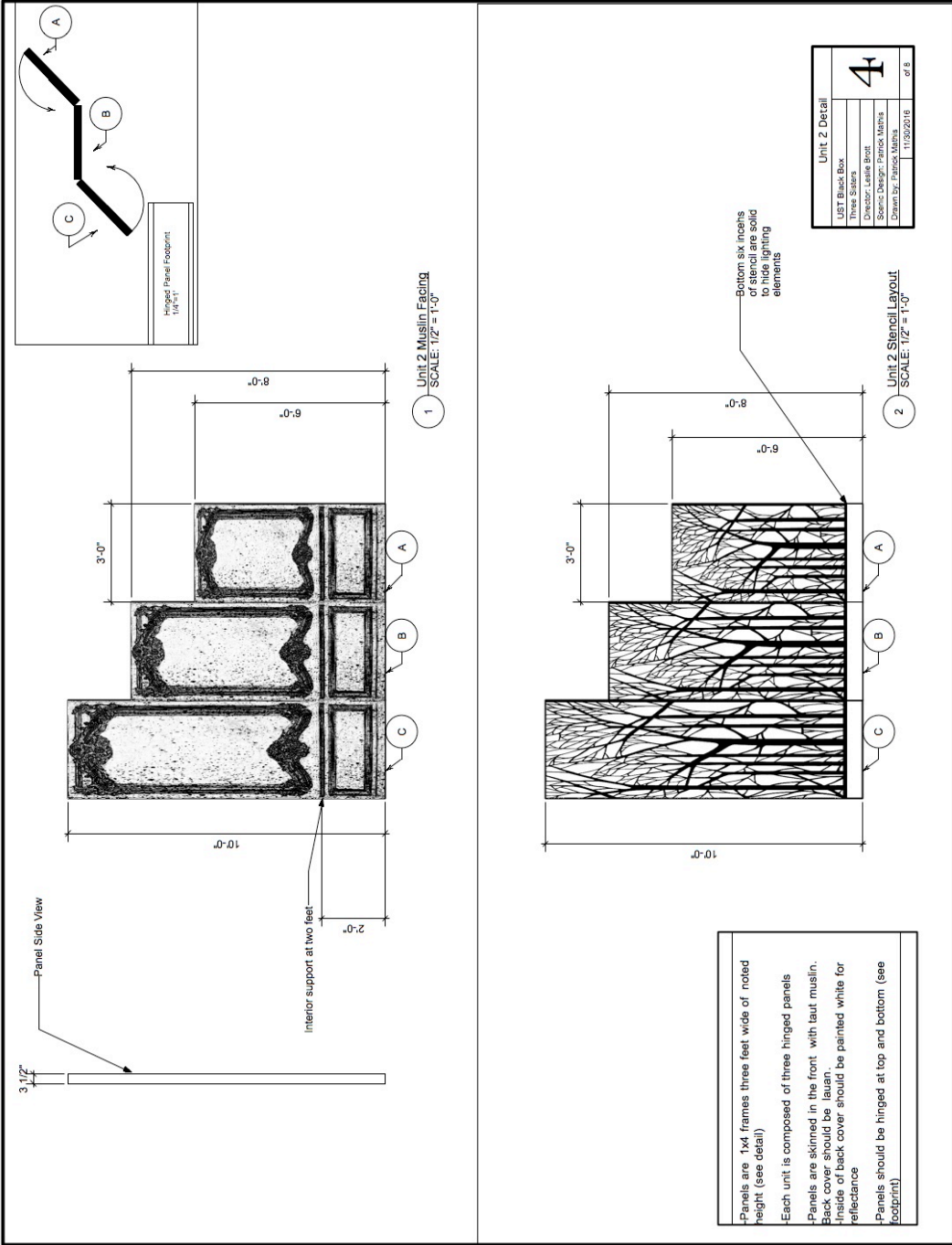


Front Elevation Stationery	
UST Basic Box	
Three Sides	
Director, Leslie Brett	
Senior Design Project Mgrs	
Design by Patrick	
3/24/11	11/20/2018

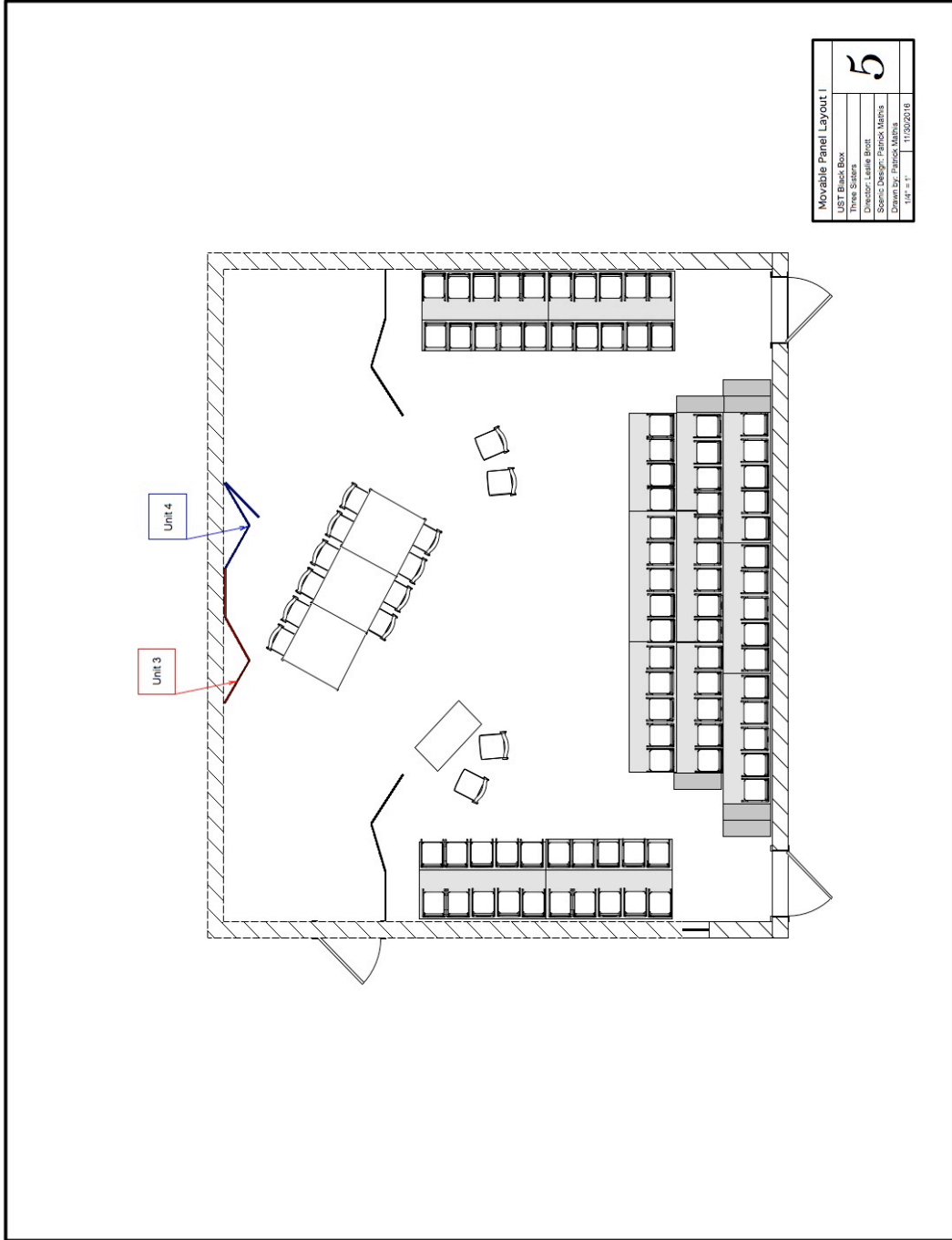
2

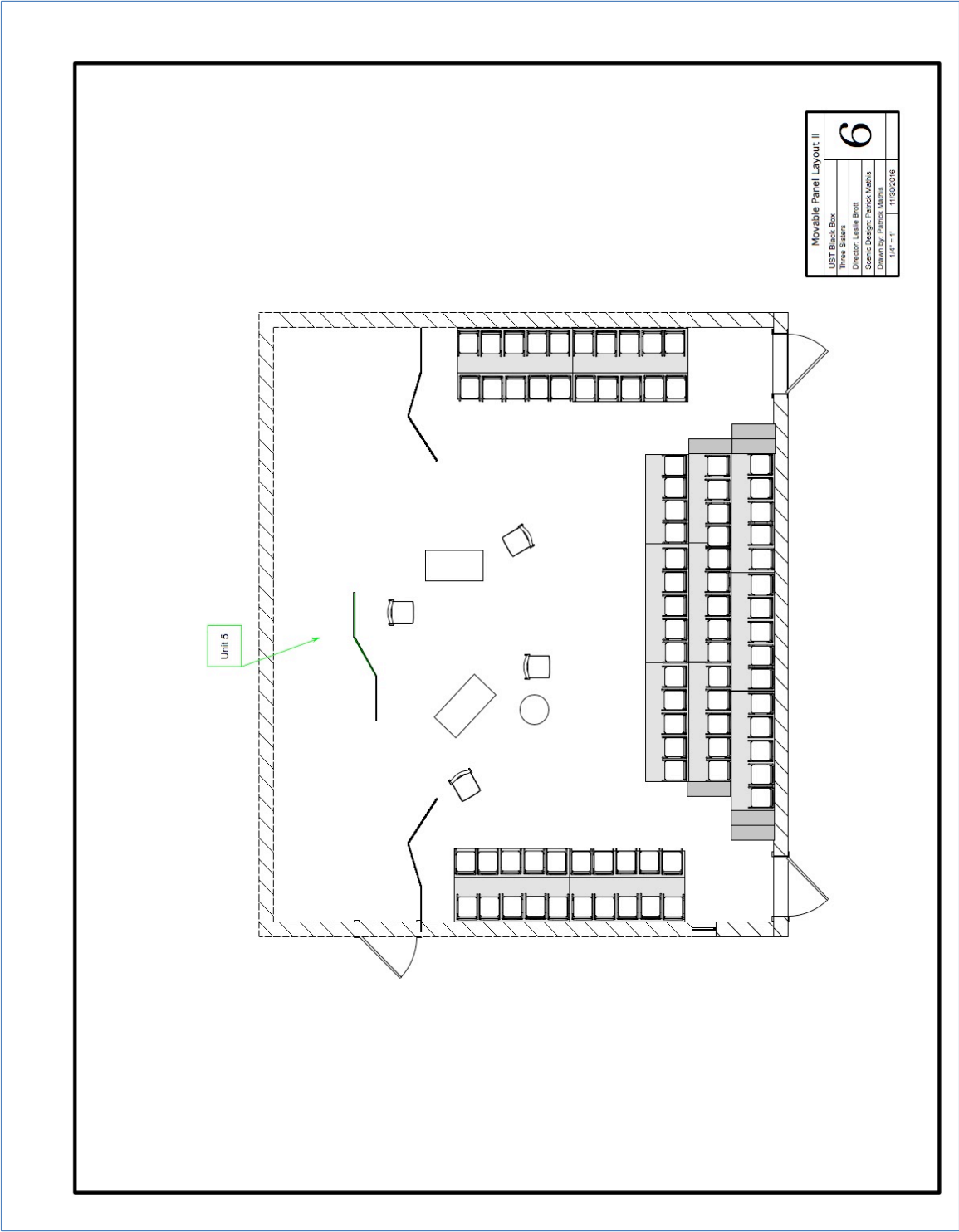


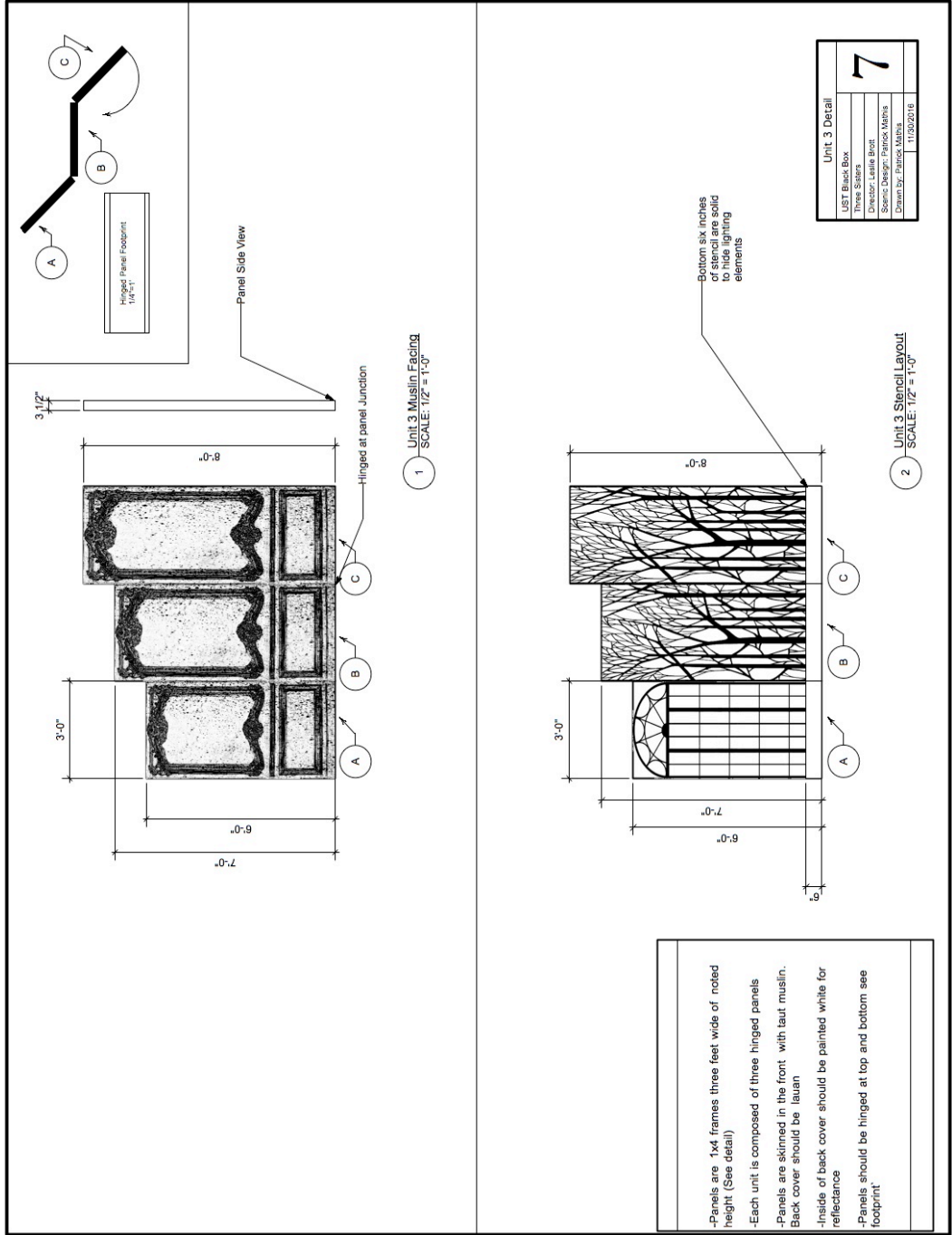
- Panels are 1x4 frames three feet wide of noted height (See detail)
- Each unit is composed of three hinged panels
- Panels are skinned in the front with taut muslin. Back cover should be Iauan
- Inside of back cover should be painted white for reflectance
- Panels should be hinged at top and bottom see footprint
- Stationary Panels are secured to the deck and are **mirrored** (see pg. 1)

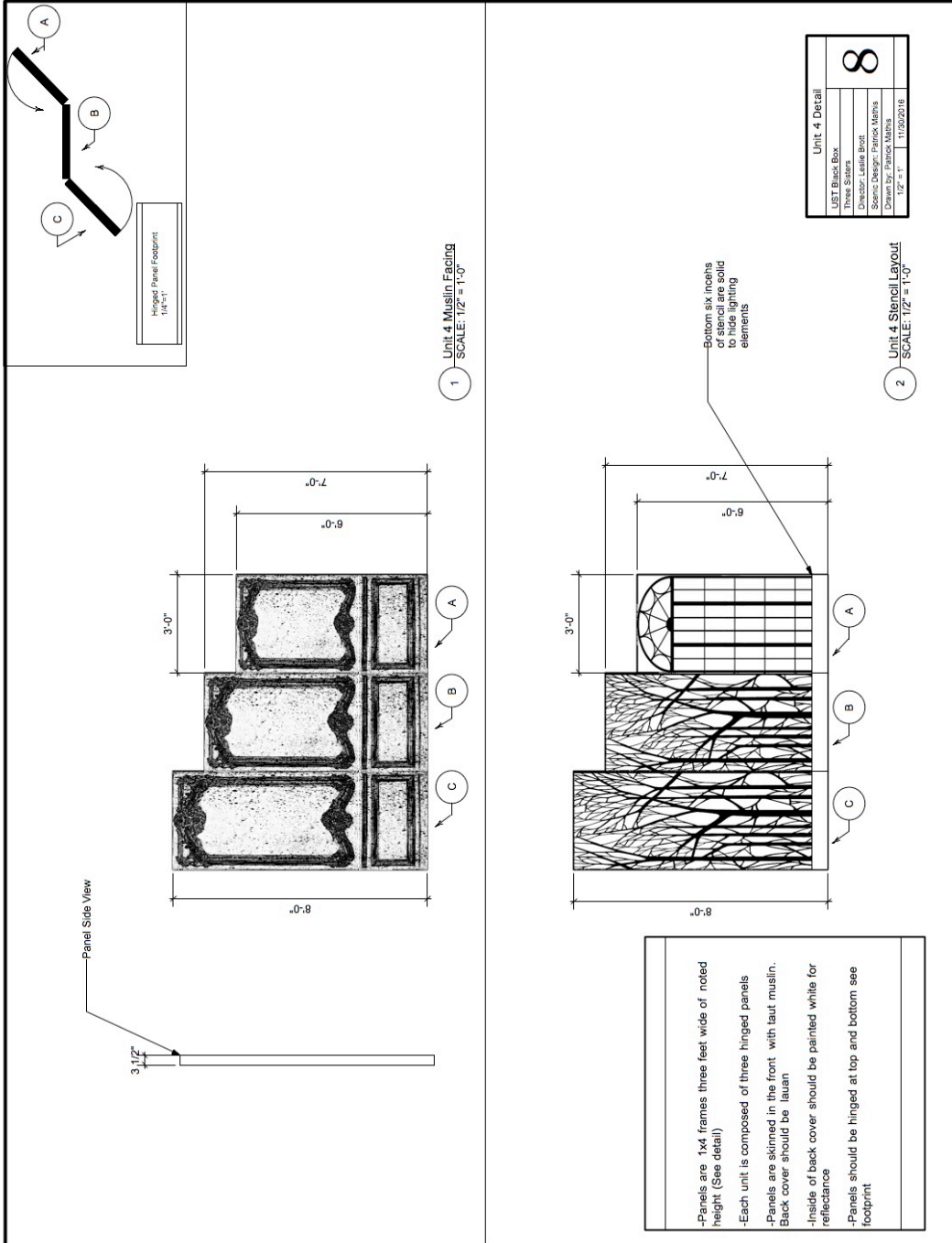


Moveable Units 3, 4, & 5







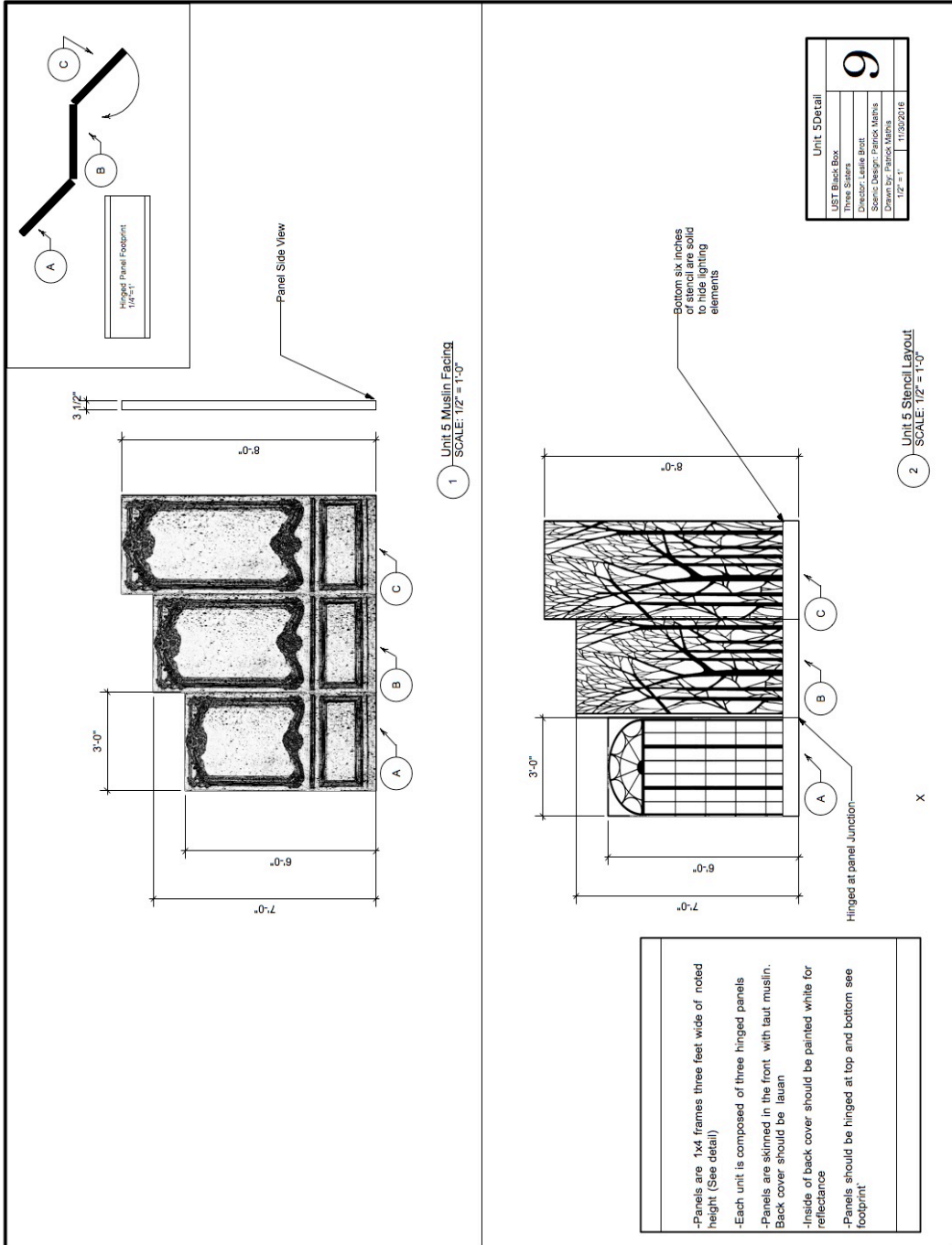


1 Unit 4 Muslin Facing
SCALE: 1/2" = 1'-0"

2 Unit 4 Stencil Layout
SCALE: 1/2" = 1'-0"

-Panels are 1x4 frames three feet wide of noted height (See detail)
 -Each unit is composed of three hinged panels
 -Panels are skinned in the front with laut muslin. Back cover should be lauan.
 -Inside of back cover should be painted white for reflectance
 -Panels should be hinged at top and bottom see footprint

Unit 4 Detail	
UNIT Block Box	8
Unit Stencil Layout	
Checked: [Signature]	
Specialty Designer: Patrick Malina	
Drawn by: Patrick Malina	
1/2" = 1'	11/30/2016



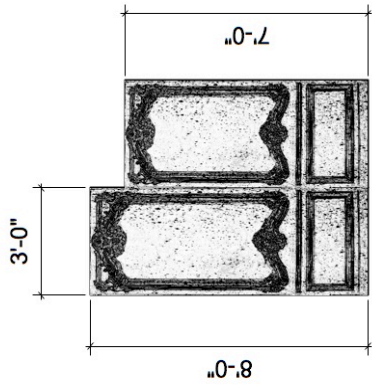
1 Unit 5 Muslin Facing
SCALE: 1/2" = 1'-0"

2 Unit 5 Stencil Layout
SCALE: 1/2" = 1'-0"

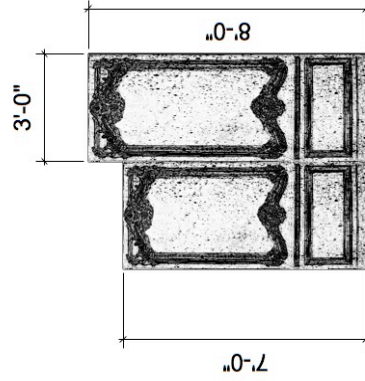
-Panels are 1x4 frames three feet wide of noted height (See detail)
 -Each unit is composed of three hinged panels
 -Panels are skinned in the front with taut muslin. Back cover should be lauan
 -Inside of back cover should be painted white for reflectance
 -Panels should be hinged at top and bottom see footprint

Unit 5 Detail
UST Black Box
Project Name: Black
Design: Patrick Mahony
Scale: Design: Patrick Mahony
Drawn by: Patrick Mahony
1/2" = 1'
11/20/2018

Masking Units & Sectional



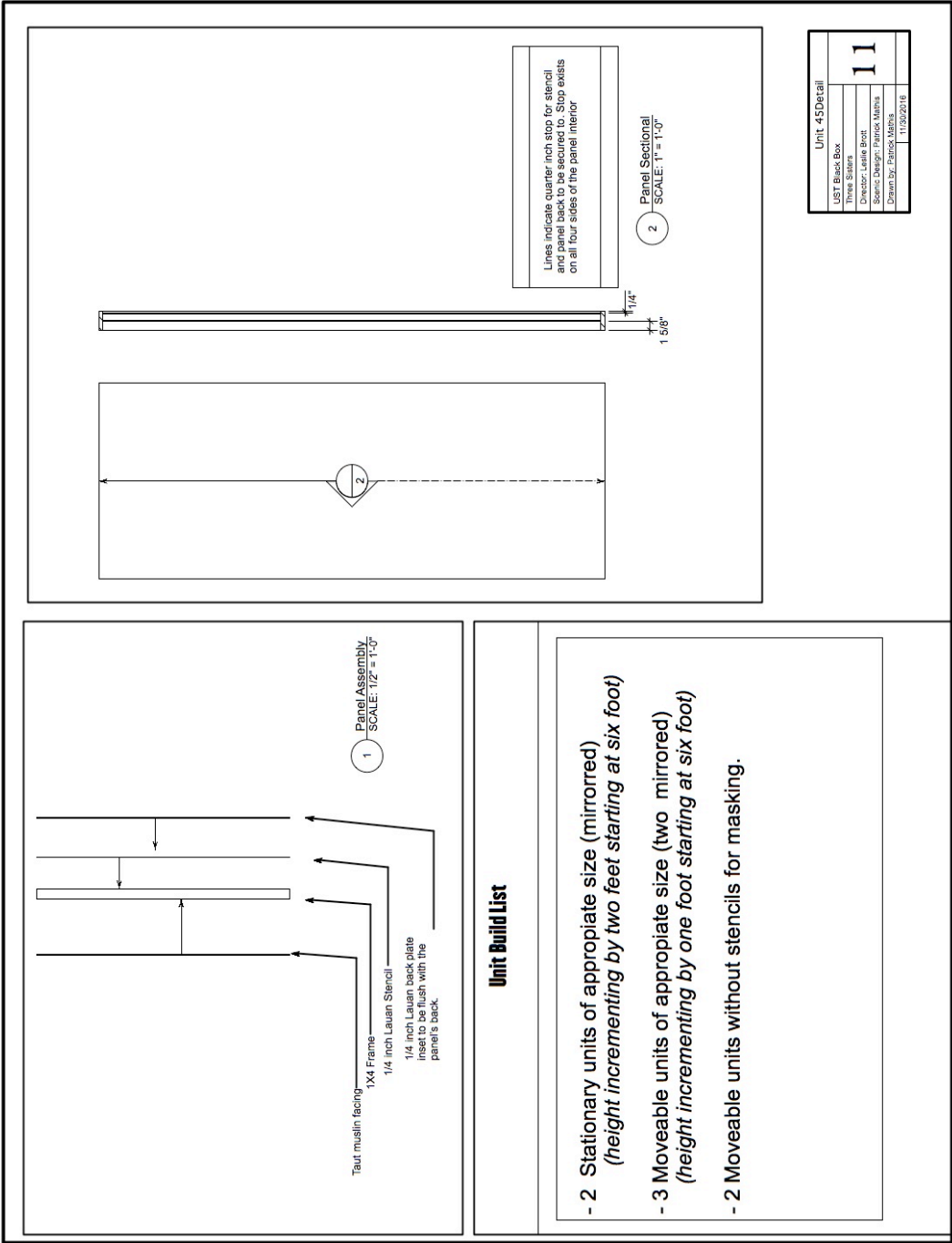
1 Masking Unit 6
SCALE: 1/2" = 1'-0"



2 Masking Unit 7
SCALE: 1/2" = 1'-0"

No Stencils in Masking Flats

Masking Detail	
USF Block Box	
Drawn By: [Name]	
Checked By: [Name]	
Scale: Design: Patrick Mathis	
Drawn By: Patrick Mathis	
1/2" = 1'	11/09/2018
	10



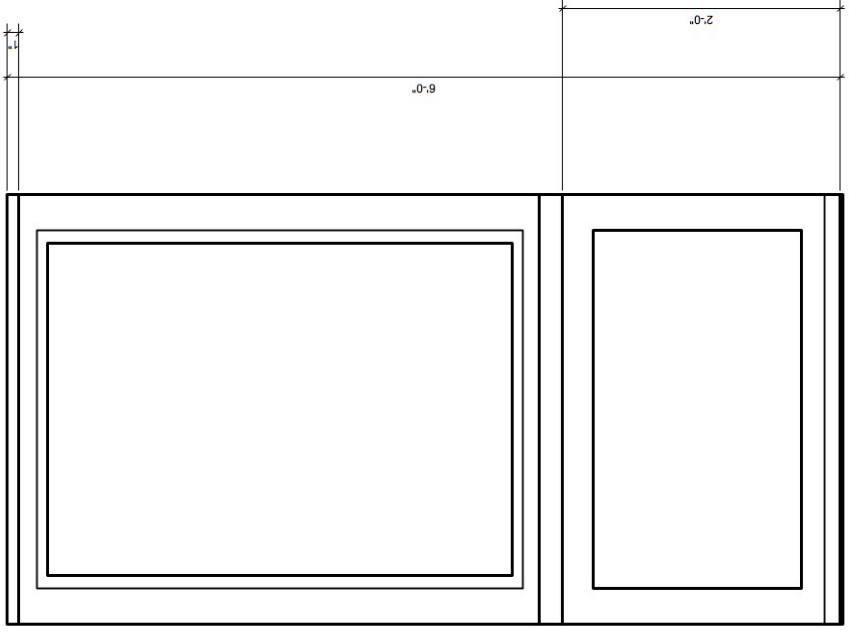
Unit 45 Detail	
LIST Back Box	
Three Slats	
Director Leslie Bort	
Schema Design Patrick Miller	
Drawn By Patrick Miller	
	11/20/2018

11

Unit Build List

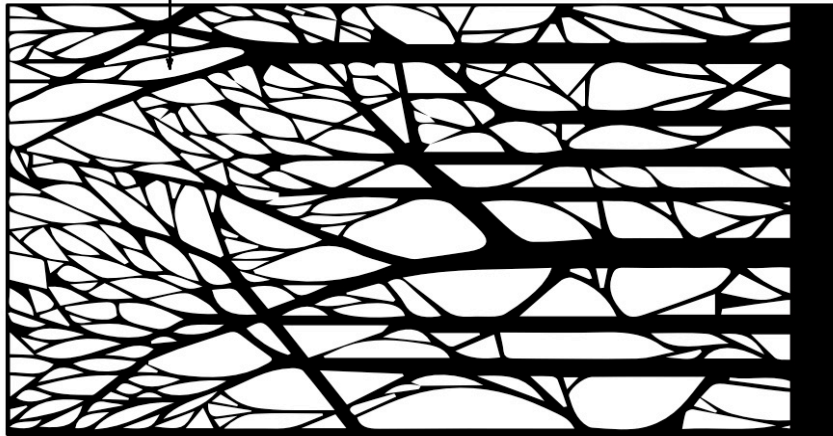
- 2 Stationary units of appropriate size (mirrored)
(height incrementing by two feet starting at six foot)
- 3 Moveable units of appropriate size (two mirrored)
(height incrementing by one foot starting at six foot)
- 2 Moveable units without stencils for masking.

Paint Elevations



- Paneling constructed of simple geometrics
- Chair rail always rests at two foot mark.
- Lining must be light.
- Dull with grey wash (preserve translucency)
- Spatter with shades of grey

Six Foot Front Elevation	
JUST Black Box	
Three Siders	
Director, Leslie Egot	
Senior Design, Patrick Malins	
Drawn by, Patricia Malins	
2" = 1'	11/20/2018
	12

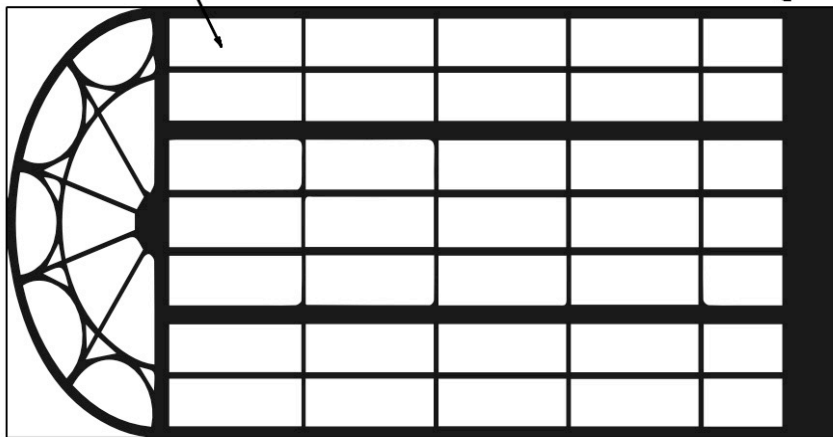


White is provided for contrast and should be left translucent

Paint Six inch rectangle at base of plastic to hide lighting elements

Six foot Stencil Elevation I
LST Blank Box
Three Sides
Director: Laila Broth
Stencil Designer: Patrick Mathis
Drawn By: Patrick Mathis
2" = 1' 11/02/2018

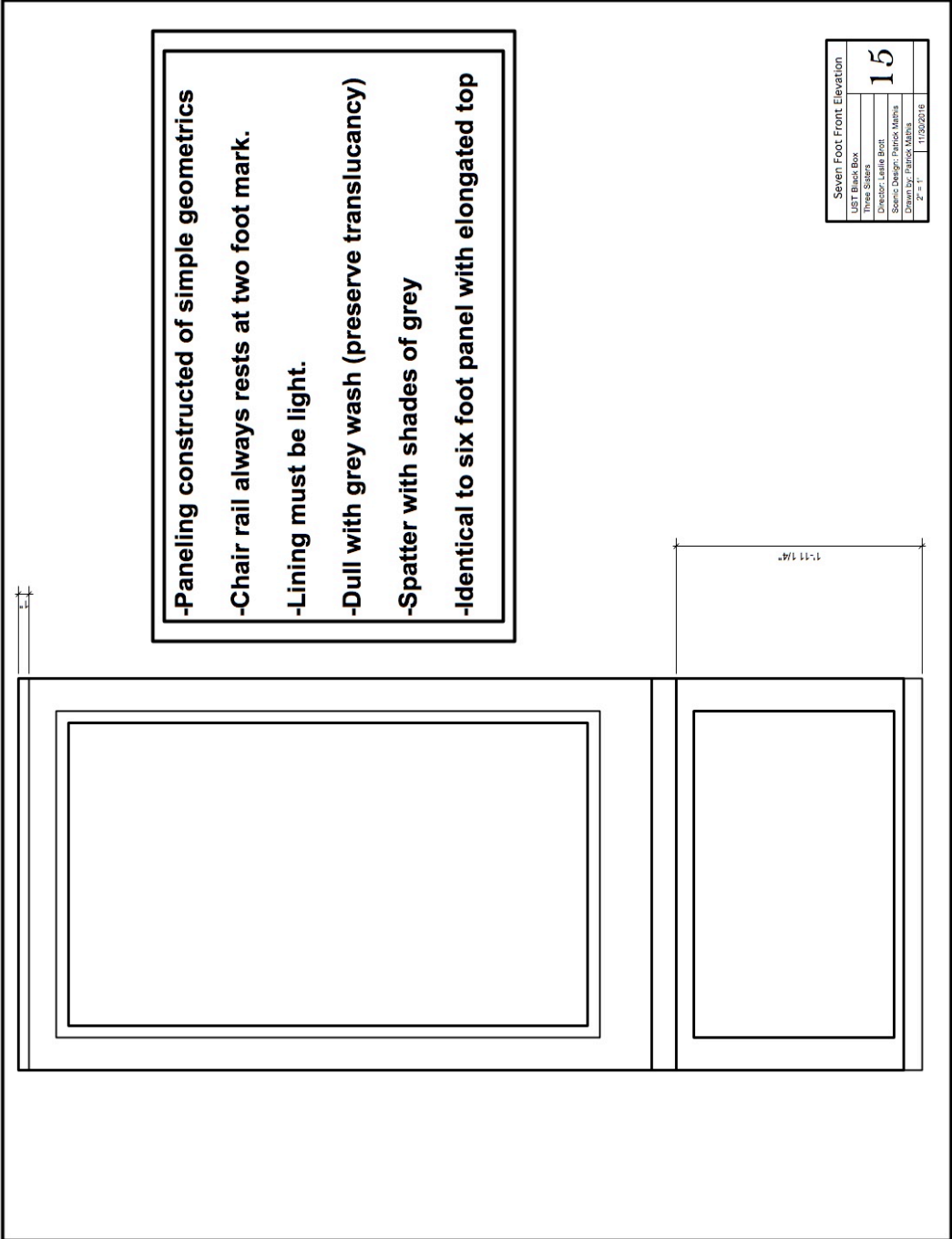
13



White is provided for contrast and should be left translucent

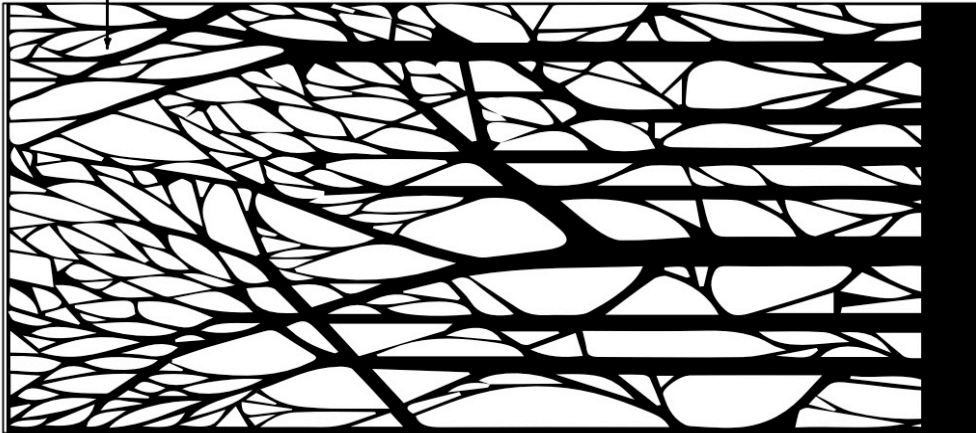
Paint Six inch rectangle at base of platic to hide lighting elements

Six Foot Stencil Elevation II	
UST Black Box	
Three States	
Director: Leslie Bost	
Scene Design: Patrick Murns	
Drawn by: Lillian Mathis	
2" = 1'	11/05/2018
14	



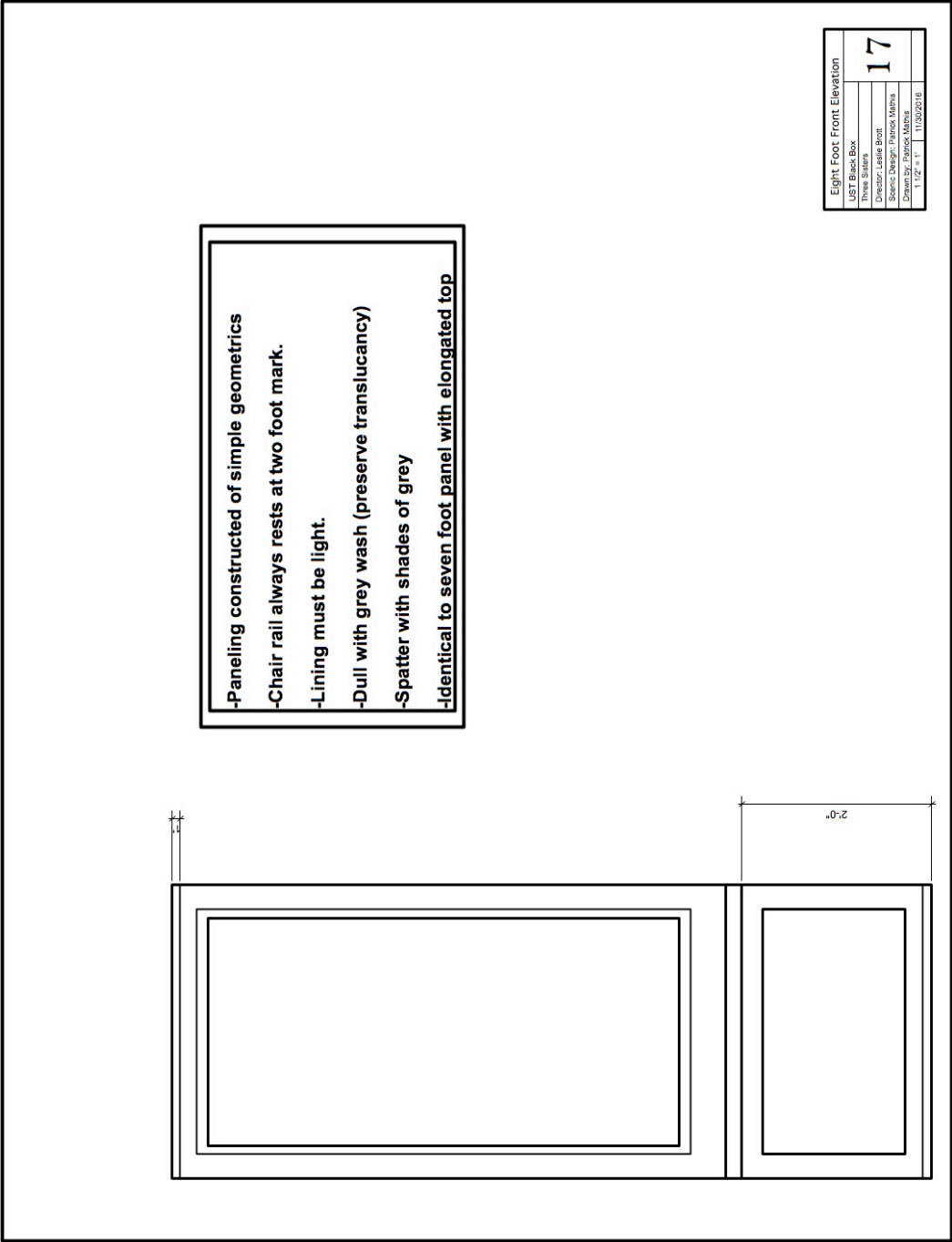
White is provided for contrast and should be left translucent

Paint Six inch rectangle at base of plastic to hide lighting elements

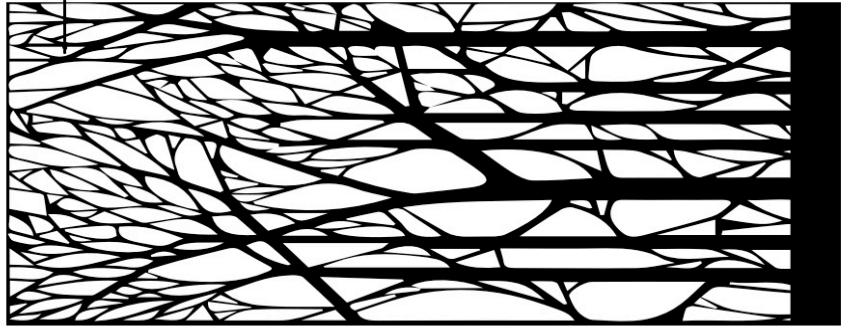


Seven foot Stencil Elevation
UST Black Box
Three Sides
Director: Leslie Brott
Stencils Design: Patrick Mathis
Created by: Patrick Mathis
2" x 1" 1/20/2016

16



Eight Foot Front Elevation	
UST Black Box	17
Three Siders	
Director: Leslie Bort	
Senior Design: Patrick Mathis	
Drawn By: Patrick Mathis	
11/2 #1	1/26/2016



White is provided for contrast and should be left translucent

Paint Six inch rectangle at base of plastic to hide lighting elements

Eight Foot Stencil Elevation	
LST Black Box	
Three Sides	
Director: Leslie Bort	
Schematic Design: Patrick Mahony	
Drawn by: Patrick Mahony	
1/12/11	1/12/2016

18

