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## Technical Direction of Paragon Springs

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TECHNICAL DIRECTION OF PARAGON SPRINGS

by

Christine Ann Donaghy

A THESIS

Presented to the Faculty of  
The Graduate College at the University of Nebraska  
In Partial Fulfillment of Requirements  
For the Degree of Master of Fine Arts

Major: Theatre Arts

Under the Supervision of Professor Edward Stauffer

Lincoln, Nebraska

May, 2013

## TECHNICAL DIRECTION OF PARAGON SPRINGS

Christine Donaghy, M.F.A

University of Nebraska, 2013

Advisor: Edward Stauffer

My thesis show, Paragon Springs, is a play based on An Enemy of the People by Henrik Ibsen. My first reading of the show leads me to hope that this undertaking will be profitable for all concerned. Paragon Springs, like the Ibsen play on which it is based, takes place in more than one location. This will contribute to my chances of having a set that might be a little more complicated and challenging than a basic unit set. My first concern was staging the show in the Studio and knowing we would have a smaller budget than shows on the Howell stage. Budgetary limitations affect not only the creativity of the scenic designer but also me, who would be left with a very basic set to build.

My greatest concerns about the process of working on Paragon Springs are as follows: I want to have plenty for my students in the shop to build. I want the final set to look as professional as possible. If I do my job well, I will keep the process organized, keep the lines of communication open and have a great thesis project. In the end, it is not the set design itself that makes or breaks a great thesis show. It is instead how well I fulfill my duties as a Technical Director to the best of my abilities. All shows, large and small, need an organized, efficient and communicative Technical Director to make the production a success. That will be my main goal during this Thesis project. I aim to make this production a success.

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## **Chapter One: Introduction**

The purpose of this thesis is to provide insight into the technical processes of the production that occurred before and during build and that made the show Paragon Springs possible. In this paper I will take a journey from my initial thoughts and early production meetings through to the strike of the show and my final reactions and conclusions. As Technical Director, not only was I in charge of getting the set built well and on time, it was also my job to supervise all technical aspects of the show throughout the entire production process. Luckily for me, the production team was a great group and I could let each department take care of itself.

Paragon Springs' success was achieved by a talented group of people. The director, stage manager, crew and supervisors within every shop worked together to create the best show possible. Our director was Carrie Lee Patterson and her stage manager was Megan Kraft. The technical team was made up of scenic designer David Tousley, props master Alma Cerretta, lighting designer Michael Fortkamp, sound designer Richard McDermott, costume designer Beth Skinner, master electrician Clay Van Winkle, paint charge Lauren Blunk and me as the technical director.

## **Chapter Two: Production Meeting Discussions**

### **(Pre-build)**

The director, scenic designer and I met for the first time on August 23<sup>rd</sup> 2012. Both the director and scenic designer agree that setting the play in arena (or the round) staging (with the audience on all four sides, with four open corners) would be the most powerful set up. Arena staging would also make it feel more like the audience is also a part of the big crowd scene by the bonfire later in the show. The show takes place in four locations: the radio station, newspaper office, and both the kitchen and sitting room of the Stockman home. There is also a population sign that is present several times in the show, so the scenic designer needed to decide where this sign would end up, where it would come from and how it would get from point A to point B. The population number will also have to change. The scenic designer's idea for this was to put clear adhesive sheets on the sign that the character can paint on and the sheets could be easily removed at the end of each performance.

The director and scenic designer agreed that since the radio station is on the roof of the newspaper office, it should at the very least be elevated in some way. The director liked the idea of having something permanent in each corner to constantly be visible that reflects each corner's location and theme. Set pieces may roll on from the corners but only go as far as to block the corner and not roll all the way into the middle of the staging area. When the show is not using a particular rolling unit, it will roll away from the main playing area to make room for actors to enter and exit

through that corner. Smaller pieces of furniture and props will travel to the more interior playing area. The script mentions the use of torches held by actors and then used to light the bonfire in the crowd scene. This raises a very important question. If the show has torches on stage, will they have live (real) flame, or will they be electrical and just represent (imitate) live flame? Also, does the director want some other actors to be carrying lanterns? Will the lanterns be live flame or electrical? These are questions that both the director and scenic designer decided to mull over a bit before settling on a decision.

I met briefly with the scenic designer on the 27<sup>th</sup> and he shared a sketch with me. In the sketch was a modified 3-sided thrust set up. He said that he would be getting in touch with the director as soon as possible to discuss the sketch. On the 28<sup>th</sup> the scenic designer and I talked again. He had spoken with the director and she did not like the thrust style seating arrangement. She felt very strongly about the arena staging and because most of the actors in the school do not have any experience with acting on an arena stage, she thought it would be a positive educational experience for them. The scenic designer also proposed that the house be mostly permanent but the director does not want to see the house all the time. Regarding the Stockman home, the director would rather do more with lights than with scenery when their home is destroyed.

September 6<sup>th</sup> was our first production meeting. We established that designers should show up to the first rehearsal to give presentations of their work to the actors in the show. First rehearsal would be October 1<sup>st</sup>, at 6:30pm. The director also asked

that the designers keep in mind a few elements within the show that are very important to her: 1926, the radio, music and Lars' (one of the characters) voice on the radio, working class people, and the play is a question unanswered by the end. The scenic designer had sent out a Google invite that included research photos and color ideas. He also presented those in our meeting. All the other technical staff learned that we would definitely be playing the show in the round, or arena style with audience on all four sides of the stage. The director requested that no seats be on the theatre floor. There was so far a plan for a town seal that represents a coin to be on the floor of the stage, but other floor treatment remained undecided. The costume designer and sound designer also showed their research photos in the meeting and the lighting designer was told to play a lot and have fun designing the northern lights.

At the next production meeting on September 10<sup>th</sup>, we began our discussions regarding live flame on stage. The director would like live flame on stage and we could definitely have it, it was just a matter of taking all the necessary safety precautions. I needed to find out our requirements for having live flame on stage and preventing accidents. We knew that GAMPRODUCTS INC., a theatrical lighting manufacturer, makes a torch that goes out when you let go of it (which seems ideal for our needs) and Lincoln Community Playhouse had one we could borrow, enabling everyone to see what they look like and how they work. We all agreed that a decision needed to be made as soon as possible whether we would have live flame or not. All departments needed to determine: where the flame will be on stage and where will it travel, and how having live flame on stage would effect each of our departments.



The costume designer came with research, color ideas and rough sketches.

The costume designer will have two actors cut their hair and we are hoping to not use any wigs. The age makeup will be minimal, while the show will rely more on costuming and performance to portray age. The sound designer would like a bigger radio as a more permanent structure on the set and would like the dimensions so that he can plan what kind of speaker he can mount inside it. He is going to incorporate water sounds into the transitions. During the transitions the lighting designer will be using “Twin Spins” to create a water effect on the set, which will work well with the sound design to create the environment steeped in the importance of water to the town. There will also most likely be fog used at the top of the show.

The scenic designer showed his white model today. There will be panels or slats in the air that will rotate on an axis. There is also talk about possible wire mesh elements for the northern lights to reflect on above or near the rotating panels. Soon the scenic designer, the props mistress and I will be meeting to discuss what scenic elements will be the responsibility of the scene shop and what will be the responsibility of the prop shop. Everyone, and mostly the director, loved the idea of the middle circular platform moving up and down during the show. It was then that I began to research how I could get the platform to move up and down and happen correctly every time.

I began to make a list of all the questions surrounding the rising circular platform. How much weight will the platform need to support? Will I need to construct a metal truss support underneath the plywood lid? Would I use hydraulics,

pneumatics, or electric motor to move the platform up and down? The seal will not rise up more than the original height of the platform, which will make my job easier. This way, I will be able to put standard hardboard (masonite) around the outside of the seal and the inside of the surrounding platform and not worry about it raising so high that we will run out of masonite masking. I may even be able to create something surrounding the seal underneath to keep it in line while it raises up and down.

I spoke with Bryan Ruhs, our shop supervisor, the next day regarding live flame regulations. First and foremost, if we have live flame all technical departments need to be alerted, especially costumes. We will need to know the staging during the scene with the live flame, which characters will be holding the torches and what entrances and exits will they be using. Everything near the torches (within five feet) will need to be inherently flame retardant, meaning that if the flame comes in contact with it, it will extinguish itself. Most fabrics that are made today are made to be inherently flame retardant because of federal safety regulations. We will also need to have a fire extinguisher at every exit, which for our show, it will come to three fire extinguishers. Bryan also let me know that he may have the money in the shop budget to purchase a GAM torch. This would help my budget tremendously.

I looked up online what GAM torches look like, both bare and modified for a production. I sent the pictures in an email to the director, scenic designer, and props mistress. On September 13<sup>th</sup>, I met with the scenic designer again. He was still working on his model. He said that things are still changing and that he may be

rotating the set so that the corners would not line up with the audience. I mentioned that his design elevations are due on the 17<sup>th</sup>. He seemed very surprised by that, and as a result I was a little concerned about getting all of the information I would need in time to estimate my budget.

As it turns out, I had enough information from the scenic designer to have my budget submitted by our production meeting on October 1<sup>st</sup>. He also had a beautiful updated model of the set that he shared with us at the meeting. The shop will have to build the radio and as soon as it is drafted the scenic designer will share the dimensions with the sound designer so he can plan his speaker equipment. The costume designer came to the meeting in October 1<sup>st</sup> with renderings, research images and fabric swatches. The swatches were shared with the lighting designer so that he can begin to pick out more specific colors for his light color media (gels). The props mistress sent out an email to the production team regarding the GAM torches. She found one at Lincoln Community Playhouse that they were generous enough to let us borrow and test before we went ahead and bought two of our own. We happened to already have the fuel cartridges for the torch in our storage so now we were fully prepared to test out the torch and decide if that is the direction we wanted to go. The scene shop supervisor will be coming to our production meeting on the 8<sup>th</sup> to help demonstrate the torch.

The seal platform that would rise and lower was an interesting challenge for me and was also a scenic element that I had no experience with. I had the idea of using car jacks for the one-directional movement. They were fairly cheap and I could

buy three to space evenly beneath the platform so that the platform would have more stability than having only one contact point. Instead of investing quite a bit of money and time to modify each of them in order for them to rise and lower at the same time and speed, I researched to see if there were jacks in existence that were more easily modified or built differently than a standard car jack. I found some jacks that were sold by only one company that had individual motors on each jack that controlled their movement. I consulted our scene shop supervisor and he said that it would be no problem at all to rewire them and connect them all to one single control that would supply their power. I was very lucky to have someone so experienced with wiring that could help me with that process, otherwise I would have had to spend more time and money to investigate the wiring system and do it all myself, or go back to the drawing board. Once we rigged up the three-jack system to the platform, all of the tests before our final on stage installation went even better than expected and I was thrilled to see my experiment in action.

## **Chapter Three: Production Meeting Notes and Daily Calendars**

During our first week of build, beginning October 3<sup>rd</sup>, the shop started by building platforms D and E, the circular seal platform and the surrounding platform. Once platforms D and E were built, we added four casters to the surrounding platform (E). The casters would line up with 2x4s on the outside of the seal and keep the seal in line while it travels up and down. The shop also began to construct the scenic elements that would be suspended from the grid, surround the deck and rotate multiple times during the show. We lovingly referred to those suspended rotating units as “the fingers,” or for some, “the fingers of death” (because they were large and hanging and somewhat resembled some sort of torture device). The shop workers had also pulled stock 4’x8’ platforms for the deck and I had planned on just having the students in the shop cover them in masonite, but we came across a few speed bumps along the way. Much of the plywood needed to be replaced and as we detached the plywood lid from the 2x4 frame, we discovered that the most of the framing would have to be replaced as well. Luckily I had money in my budget to cover those repairs. The students working in the shop spent many days ripping those platforms apart and rebuilding them.

I had to build the set for Paragon Springs so that it could easily pack up and travel for the Kennedy Center American College Theatre Festival (KCACTF) in which the show was entered. I had hoped to coffin lock all the platforms together for ease of load in and load out of the set. Because of budget I had decided to use stock

platforms for the majority of the deck. The stock platforms had slots precut for coffin locks, but the slots did not line up from platform to platform. I did not want to cut anymore into the stock platforms, so I decided that we would just toenail the legs starting from the center of the deck and work our way out to the perimeter. This would also save us some time since the repairs of some of the stock platforms had been eating up our time.

The scene shop workers built the rolling platform and faced it with masonite during the second week of build. We set it aside and did not load it in right away because it would be in the way of the lighting department working in the space. We created muling blocks for the rigging of the fingers by using stock pulleys. After we had determined how many pulleys and muling blocks we would need and where, we began to rig them to the grid with trim chain. It was also during this week that the shop began to build the benches for the set. These ended up taking longer than expected because the construction needed to be very accurate due to the close proximity of the audience. We also had to adjust the hinges on the hinged lids several times because the hinged lids kept shifting and the hinges sat too high on the top of the bench for the scenic designer's liking.

The third week of build was a three-day week because of fall break on that Monday and Tuesday, but a lot was accomplished in those three days. Some of the pulleys for the fingers operation did line up with a pipe on the grid, so I needed to add some pipe extensions to accommodate their placement. There was some confusion between where the grid sat in reality and where it sat on the design elevation, so the

scenic designer and I figured out that the fingers should be 7'-8" from the bottom of the grid. This allowed us to determine the length of all the finger operating cables and cut all of them to be ready for install.

On the 18<sup>th</sup>, the stage manager informed me that while all other pulley operators could be seen by the audience, whoever controlled the sign must not be seen. The director wanted to give the audience the impression that a character in the scene was raising and lowering the sign. The crank that the character uses would be stored inside one of the benches, pulled out and set just inside the bench on a built out lip. The shop workers added that lip to the inside of the bench that held the file cabinet box extension. The director decided that when the Stockman home is destroyed, the only broken things would be teacups and glassware and other set pieces would just be turned over. This transition would be more easily executed than destroying and having to clean up everything. The destruction would be enhanced with the lighting.

I bought a drawer slide and the shop workers built the working drawer for the file cabinet box top. I also decided to use a material thicker and smoother than the 1/4" lauan that the scenic designer wanted because I was afraid the lauan would be too fragile and break when it is taken on and off the set. I decided to use medium density fiberboard (MDF) for the box tops. Because the material would be different, I also had to talk to paint to see if it would cause a problem for them. I assumed that the paint would take to the material somewhat differently. I determined that it would be easier to place the fingers in the air if we knew their distance from the ground instead

of the grid, so my assistant, Matt Rightmire, found that to be 10'-9". I wanted to get the fingers hung in the air early enough so that I could troubleshoot if we hit any speed bumps but the master electrician needed the fingers down by the end of the day Friday so they would not be in the way of their hang day on Saturday. They did however want to have them up for Sunday so that they could rough focus to them, so my crew and I showed them how they could put them back up.

I received an email on the 19<sup>th</sup> from the scenic designer regarding the rolling platform (radio station):

"I talked to Carrie Lee yesterday about a props issue and it is definitely something that I need to run by you. The script asks for Erik and Lars to have a phonograph during the scene while they are up on the tracking platform. Since we don't have a phonograph (we found one online that costs \$240) and since there really isn't anywhere to place one up there with the actors anyway, we may have come up with a creative solution.

First of all, CL has asked if we can place a lip on the edge of the tracking platform so that the actors don't accidentally go over the edge once they're at the top. A small lip probably about 1.5"-2" high. But with the phonograph issue, she suggested that we make the lip a little bit higher so that they can "play" like there is a phonograph just at their feet, hidden from the audience. They are supposed to be on a rooftop so I've drafted it to suggest a roof as well. If props pays for the materials, do you think it could happen? It might



even be a scrap material project. The \$240 for a phonograph would wipe props out.”

The solution of adding a lip to the front of the rolling platform was an easy addition and I let the scenic designer know as much and he drafted out exactly what he wanted it to look like so that the shop could build it. Not only did it solve a logistical problem, I thought it also added some visual interest to the rolling unit.

There were four screens that would hang in the air around the same perimeter as the deck of platforms. The frames were made of 2x2 and painted black and the front of the screens would be silver hardware cloth. The scenic designer and I had never worked with hardware cloth, so part of one shop day was spent experimenting with paint and texture of the hardware cloth. The scenic designer decided that he wanted to bend the hardware cloth in quite a few places so as to give it more texture and interesting surfaces for the light to bounce off. He also decided to sponge on some black paint to make the hardware cloth less silver and not quite so reflective. So, the scene and paint shop workers did just that and attached the hardware cloth to the frames, and set them aside to hang them later in the process so they were not in the way of the rigging of the fingers.

When we reached the fourth week of build, it was time to take our publicity photos. The pictures were taken outside, so there was nothing in particular that needed to be finished on the set by this time. The paint charge worked on painting the seal, the other parts of the floor and the benches this week and set the paint call for the 27<sup>th</sup>. This was a busy week for the prop department. There were many decisions

made concerning the soapbox, the color of paper props, and experimentation with the jar of water and coins falling into it. The jar needed to contain more than just water because the coins were falling too fast to the bottom and it lost the effect of pouring them in the jar.

I met with the director and the scenic designer on Tuesday of that week to move the circular platform up and down and talk about how it would be controlled. The platform moved fine and the director was pleased with the amount of noise it made and how long it took to move up and down, about fifty seconds.

The master electrician left the fingers hanging in the air after their rough focus on Sunday, which was great because I did not have to put them back up before my crew started running the operating cables through the pulleys. Again, even though I would have to take down and re-run the operating cables after that next weekend's focus, I still wanted to run the operating cables as soon as possible to allow time for adjustments. On Tuesday we began to thread the cables from the fingers through the pulleys and to the operating stations.

The next order of business was to shim all the platforms so that they were flush on the top and toenail all of them to the floor. When the shop workers toenailed them they worked from the center platform out to the perimeter. Now the platforms were ready to be faced along the outside with masonite. I talked to the sound designer and our shop supervisor about facing the platform and I left a piece of it off temporarily so that they could easily run their cables from the platform. The cables had to run through a groove in the floor because they ran from the platform, across an

actor and audience walkway and under the seating risers. Now that the platforms were shimmed up and level, it was time to talk to paint about taping over the seams between the platforms. Normally I would not want to have noticeable seams on my platforming, but because the set was built to travel, each platform had to be lidded with masonite separately from the others. This made every little incorrect measurement in each platform very noticeable because the platforms would not butt up against each other perfectly. Both the paint charge and I preferred not to tape the seams because the lines that the outside of the tape leaves never quite goes away, but because the gaps between platforms were so bad, I decided to go ahead and tape them. It was the lesser of two evils.

Though I had heard that the school had enough studio seating risers to set up a show in an arena setting, I found out that we did not have enough risers and railings for our audience set up. The show would not be using any of the triangular pieces that fill in the corners and the scenic designer did not have rows of seats on the floor. I heard that Steve Grair at the Lied Center most likely had risers and railings that I could borrow. I needed seven side railings (they are about 2'-9 1/2" wide), and either five 3'x8' risers or two 3'x8' risers and two 3'x6' risers. Also, the legs for the platforms would either have to be compatible with our department's risers, or they would have to be the right height that I needed. We would not be able to accommodate any risers that were four feet long instead of three feet because the size of every entrance was already just big enough for code. I contacted Steve Grair and he had risers that were four feet wide, and none that were three feet wide. He was

sure that the dance department had the platform size that we needed but he had to check on the exact sizes and numbers that they had. The dance department had four 3'x8' and four 4'x8' platforms with legs that were not the right height and one railing that we could use. I decided to borrow the four 3'x8' risers and one railing. The scene shop workers would pick up the risers and railing on Wednesday, October 24<sup>th</sup>.

Many alterations were made to the set up of the seating risers before Wednesday's riser pick up. While I was trying to solve the problem of the risers, other people in the shop offered suggestions. I discovered that I actually only needed three 3'x8' or four 3'x6' risers. I also had the shop workers replace a couple railings with stairs coming down from the tallest risers on one bank of seats and built a railing for the remaining risers that needed railings. Late in the day, someone mentioned that there were 3'x6' risers up in the lab theatre that I could borrow and all of my problems with the risers were solved. I called Steve and let him know that we no longer needed to borrow anything from the dance department. This problem being solved took a lot of stress off my mind. I was very grateful to the people who chimed in and helped me solve the problem. Sometimes it takes a village.

The shop finished the radio and file cabinet tops of the benches trimmed out the bottom of the benches during the fifth week of build. I also figured out and had one of the shop workers install the supports for the end of the finger operating cables. Getting all of the hanging stationary screens to be level and meet cleanly at the corners was quite a process. My assistant technical director suggested that we attach them at the ends with angle brackets and that solved the problem very well. The

process took a significant amount of time, as had the rigging of the fingers, because it took some time to navigate the personal lifts around to each corner with the deck and risers in the way. This was also a week of many paint details and touch ups.

This week, I spent a great deal of time working with the scenic designer on black masking. Changes kept being made as to how or if we would be hanging blacks behind two of the seating risers the lighting strips to illuminate, as well as director-wanted aesthetic. Eventually the director and scenic designer decided to hang blacks behind those two scenic units and to not steam out the wrinkles so that the lights had a more dynamic surface on which to project. There was also one entrance that did not allow the actors to leave the corner of the room, and certainly not the studio theater. That corner needed enclosed black masking so that the audience would not see the actors or all of the furniture that was stored when it was not onstage. A general clean up of the space was also performed to get the entire theater ready for technical rehearsals that would begin at the end of the week.

Our scene shop supervisor demonstrated GAM torch safety to the cast and crew on November 1<sup>st</sup>. We had paint call on Saturday, October 27<sup>th</sup> and clean up focus on the 28<sup>th</sup>. Now that lighting had finished with their clean up focus, I was able to have my shop rig the fingers permanently in the air. We ran the operating lines from each of the fingers to their cable tie-off supports on their respective sides of the theater. As soon as the fingers were up permanently, Kathy Lorenzen, our staff lighting supervisor/lecturer, and our scene shop supervisor attached additional pipes from the moveable grid to the wall pipes to prevent swinging. I met with the stage

manager and we went through how the finger operating lines should be handled and what my different labels on the supports meant. Finally, I spoke with the scenic designer about the exact angles of the fingers when they rotate up and down so that he could determine that all four of the fingers were at identical, correct angles. The shop set locking positions on the cable supports at their operating stations and the finger rigging was complete.

The benches were finished and it was time to permanently attach them to the deck. Some confusion came about because there were some inconsistencies between my ground plan and the paint charge's paint ground plan. The confusion was resolved quite easily though and the benches were permanently installed. From the beginning of the build for this show there had been problems with the population sign. When it was built, I saw how big and heavy it was and I remembered that the intention was that one of the actresses would take it down, carry it and put it back up all on her own. I brought my concerns to the scenic designer and we decided to at least take off the back of the framing around the sign to make it lighter. However, it was still awkward and large for one person to handle while un-hooking it from its rigging. A decision on what to do with the sign must have been hard to settle on because we built it in the first week and the director and scenic designer did not decide until the fifth week of build. They decided that the actress would not be taking down the sign. Instead, there would be placards with different numbers on them that would hang on hooks on the sign and she would remove and replace those placards instead of painting directly on the large sign. So, the clear adhesive sheets were cut

and the props department made the placards to take their place. We then rigged the sign.

The scene shop workers installed the rolling platform/step unit and set the two positions closer to the stage. Originally, I wanted the rolling platform to run in a track in the floor where a knife that would be attached would run along the track to keep it always in line from front to back. Without attempting my plan, one of my scene shop employees suggested that it would work better if we put a wheel in the rear of the unit and ran it along a rail. When that idea alone did not work because the front of the unit still drifted right and left, I learned that I should have just stuck to my initial thoughts and gone with the knife and track. Instead, I learned a second lesson when I discovered the employee was trying to fix the problem by putting down two pieces of lumber on the ground to keep the wheels in line. The length of the boards had to be long enough to catch all four wheels, but the platform would not go back all the way to the way to the wall (its starting position) because the lumber was hitting the front of the unit. I ended up going back to the wheel and track in the rear of the unit, with my knife and track inside the front of the platform. Together, the wheel and track in the back and the knife in the front worked together to keep the entire unit in line from front to back.

The first technical rehearsal was on Friday, November 2<sup>nd</sup>. Unfortunately, I was very ill and could not be there, but the assistant technical director, Matt Rightmire, sat in for me. There were not many notes for all departments overall from the director. The director noted that she would like more texture on the lip that was

added to the rolling step platform that would better represent that the characters are on a rooftop. The scenic designer picked up some shingles from Menards; they were painted black and installed them on the front of the added lip. My assistant noticed a couple paint touch ups that were needed, a leaking run light in the no-exit exit, and that we needed to pad the insides of the file cabinet and radio box top additions to avoid scraping of paint and noise. The first time the crew member moved the circular platform during the run, it malfunctioned. When they raised it up, it rose unevenly because one of the jacks was not working properly. Matt got the platform to go back down for the rest of the run, and he called the scene shop supervisor the next morning to see if there was anything he could do to fix it. It turns out that the gears inside one of the jacks broke and there was no way to repair them without spare parts. So, at our next technical rehearsal on Sunday we had to keep the circular platform down the entire time.

On Monday I ordered a new jack to replace our broken one and paid extra to have it sent overnight. Tuesday we took apart the new jack and replaced the broken gears in the old one. The platform ran up and down perfectly fine through at least two hours of our shop time that day with people on top of it as well. When we got to tech rehearsal however, the very first time that the platform rose up, it went up unevenly, so there was another problem with the jacks. I left the platform down for the rehearsal. The director, scenic designer and I decided to cut the raising and lowering of the platform from the show because we had tried to fix the problem once and it was the day before the preview performance. Even if I fixed the platform



again, I learned from experience that there was a good chance it could break again and worse yet, it could break during a performance.

When the crew took the platform apart at strike we discovered that it was a different jack that had broken the second time around. It was the same problem with the broken gears. It could have just been a matter of our jacks being poorly made by the manufacturer, but I was determined to see if there was possibly another reason the gears on two of the jacks would break when one of them was designed to lift a car and I was using three. My best guess is that the jacks were designed to lift a car and shift in the process, not having been secured permanently to the car and the ground, and not designed to work in the way I intended. In order for the platform to stay in one location but rise up and down, I had to attach the jacks to the lid of the platform and bolt them to the floor. I think that they must not have been built to withstand the kind of torque; no matter how small, the rising motion must have put on them. I believe that using the jacks was a good idea that did not pan out as I had expected. Having never constructed such a set piece before, I think that I made a fairly good educated guess. But you live and you learn. I certainly learned from that unfortunately ineffective trial and error.

The run of the show went quite well. I only had to go in once during an intermission to fix a bolt that came loose on the pulley system for the population sign. Other than that, there were just tiny adjustments here and there that needed to be added like making props more sturdy and paint making some touch ups on the set. My next order of business was to establish a detailed schedule for the strike of the set

that would happen on November 18<sup>th</sup>. I will discuss more about and share my strike schedule in Chapter Five.

## **Chapter Four: Budget and Materials**

My budget for the Paragon Springs set was \$2,200. The costume department had \$2,500, the lighting department \$325, sound \$150, and the props department \$475. The show budget in total was \$5,650. This budget was the smallest of all the main stage shows in University of Nebraska-Lincoln's fall and spring semesters. We were working in the Studio Theater, which is a black box theater, so the smaller budget was not surprising. I was a little bit concerned about the prop budget because I knew that the show had a lot of props and they would be making a custom table and end tables, not to mention the torches that we needed to purchase. Usually lights and sound have no problem coming in under budget, so there was no concern there. This show was also the costume designer's thesis show, so I was fairly confident she would be careful about her budget.

As the technical director, as soon as I got the ground plan, sections, and design elevations from the scenic designer, my first order of business was to break it down into parts and materials. Once I determined what I would like to build each item with, it was time to price it all out and see if the cost would come in under budget. Usually at this time I would have to further assess my choices of materials to cut down on cost in order to come in under budget. On Paragon Springs my budget was right on track and I even managed to take on \$300 of the \$530 that the GAM torches would cost us and set aside \$330 for a contingency fund. Luckily there was already fuel in the scene shop for the GAM torches, so I did not have to figure that cost into the budget.

I chose basic materials of 2x4 and plywood, covered in masonite for the rolling stair platform. There were also six casters mounted to the bottom and a knife attached so that the platform would ride in the track that we cut into the floor. The back of the platform had a wheel mounted there that rode inside of an angle bracket to keep the back in line. I was lucky enough to use six platforms that we had in stock for the majority of the deck. Using stock platforms saved me a lot of money even though I had to buy some new plywood and 2x4 for some of the older ones that were in bad shape. The circular seal platform and the platform surrounding it were built out of 2x4 and plywood and I added a metal triangular support of box steel to the underside of the circular platform's plywood lid. The stock platforms, the shop's casters, and being able to use the shop's hardware in the case of the fingers saved my budget quite a bit of money. I had factored into my budget aircraft cable and pulleys but in the end I was allowed to use and return what the scene shop had on hand. I also did not have to pay for the two GAM torches because they benefitted the technical department of the University of Nebraska-Lincoln to have on hand for future productions. The money for the GAM torches came from the scene shop's budget for miscellaneous items.

The rigging of the fingers was accomplished with long lengths of aircraft cable running through pulleys and muling blocks; at the end of the lines, they were secured to a simple  $\frac{3}{4}$ " plywood vertical piece that was secured to the floor. The sign was also rigged with the scene shop's hardware and ran on a pulley system to a single purchase rig line to raise and lower it. The sign was built of plywood and 1x4. The

benches were made completely of  $\frac{3}{4}$ " plywood and masonite, and the removable boxes on top of the benches, the file cabinet and radio were built of  $\frac{3}{4}$ " plywood, masonite, and MDF. We did not end up buying the molding for the benches, but rather layered plywood and lauan to create the shape the designer wanted. This saved me even more money.

Originally, I priced out building the fingers with box steel. This would have been a large chunk of my budget as well. My advisor made a very good suggestion to pull out the one full length of box steel that we had available in the shop and see how much it would fluctuate and bow at the middle. I had thought that the box steel would stay pretty straight and it turned out that the bowing was more than I had expected and would be too much for the long runs (16'-0") of the fingers that had only one support on each end. My advisor suggested that we make a box out of 1x that would be bigger than the box steel, but would bow a lot less. He had some of the shop workers build a demo for me, and the scenic designer and I took a look at it. The scenic designer signed off on it so I changed my budget and ordered 1x6 that we would rip down so it would be cheaper than 1x3 or 1x4 instead of the box steel. The shop workers then also made all of the somewhat perpendicular pieces that created the fingers out of 1x as well.

The mesh screens that were hanging as well were made out of 2x2 for the rectangular frame and hardware cloth for the screen material itself. Originally, the designer had hoped to let the screen hang loosely but straight while in the air. I tried to find the sturdiest material I could find (within a reasonable price range) that may

hang straight. As it turned out, the hardware cloth hung straight but not straight enough for the designer so we decided to make the 2x2 frames. The hardware cloth was then too reflective and not textured enough for the designer's liking, so we experimented with paint and bending the hardware cloth. The scenic designer finally decided that we would sponge on some black paint here and there and bend the hardware cloth in many places to give it more texture. The screens kept their shape on the 2x2 frames because it was so durable.

I am very proud to say that all of the technical departments came in under budget for Paragon Springs. No one even pushed the boundaries of his or her budget. The scenic budget was \$2,200 and I ended up spending just \$1,508.24, saving \$691.76. The costume shop's budget was \$2,500 and it only spent \$1,928.87, the lighting department only spent \$175.62 of its \$325 budget, sound spent nothing of \$150, and the prop department spent \$303 of its \$475. I feel that it is important to note all of these figures because in the heat of the moment, one can get wrapped up in the pace of the show and not check in with the budget every step of the way. The professionalism of our technical team, especially on this point, is well worth mentioning. I spent \$3,915.73 of my overall budget of \$5,650. This attention to detail saved the school \$1,734.27.

## **Chapter Five: Strike Schedule**

When coming up with an effective schedule for the strike of the show, the most important thing is to coordinate our time in the space with all of the different technical departments. A well-coordinated strike maximizes efficiency and minimizes mistakes while allowing for each department to complete their tasks in the shortest amount of time. It may make more sense to the scene shop or the electrics shop that they strike their set and lights in a certain order, but at strike it is of the utmost importance that they give and take and work together to do what is best for the whole.

As I mentioned earlier, the University of Nebraska-Lincoln Johnny Carson School of Theatre and Film submitted Paragon Springs to the Kennedy Center American College Theatre Festival. Because of this submission, the set had to be built to accommodate for potential travel in a truck and when it was struck, it had to be stored in good condition while the production team waited to see if the show was chosen to go to the festival. Saving the set is not a common occurrence in our school, so it was essential that I made it very clear that the set would not be destroyed at all. Everything in the theatre including the seating risers was in the way of the electrics department striking their lights. Normally I would not worry about taking down the seating risers during strike, but the first couple of things on my list were to move the seating risers and rolling stair platform from that side of the theatre to get out of the way of the electricians. Then electrics and scenic could work at the same time and stay out of each other's way. Electrics would then work in a counter

clockwise direction while the set was struck in front of them and from the center of the theatre.

This strike schedule was very detailed and thorough so that everything was taken apart and stored very carefully. I made one strike list that was available to everyone that would be taking part in the strike and another list that broke down every step of the set strike. The second, more detailed list was handed to my fellow graduate technical directors and our scene shop supervisor. They would be leading teams of people throughout the strike and making sure that everything on the set is taken apart in the way that I intended. The strike went very well; in fact it went better than expected. I was very impressed at our teamwork on all accounts and we finished the entire strike in less than two hours.



## Paragon Springs Strike Schedule

### **SAVE EVERYTHING**

**Costume crew:** Show costume crew and Costume Grads

**Props crew:** Alma Cerretta and Props Grads

**Scenic and Lighting crew:** All actors, run crew, board ops, TD and Lighting Grads

### Props

Strike all props and furniture to prop shop and attic

### Set

Take rolling platform unit to scene shop

remove caster guide from the floor and store in scene shop

Strike seating unit risers next to scene shop

store on carts

Disconnect cables and un-thread flying fingers

store on sawhorses in scene shop

store cable position supports in scene shop

Disconnect screens from each other and then from pods

store on sawhorses in scene shop

Remove benches from the deck

store in scene shop

Remove maso and 2x2 skirt from the outside of the deck

store in scene shop

Separate platforms on the deck

store in scene shop

Disconnect seal platform from the floor (leaving jacks connected to platform)

store in scene shop

Fly in population sign. Disconnect and un-thread cabling

store in scene shop

Cabinet and radio bench toppers

store in scene shop

Strike and fold soft goods borrowed from Lab and Howell

store Howell soft goods in bins stage left Howell

return Lab soft goods to Lab

Remove all pulleys and remaining cables from pods

### Lights

Start at scene shop wall and move counter-clockwise around the studio

Fly in Pods to strike remaining lights

## **Paragon Springs Strike Schedule**

### **DETAILS**

Save EVERYTHING

#### **Rolling platform unit:**

detach knife from underneath  
use scenery mover at front of unit  
move into shop

#### **Seating unit risers:**

completely take down unit against scene shop wall  
remove chairs from bottom two levels of lobby and prop shop seating sections  
stack lowest rows of platforms so they are out of lighting's way  
when lighting is done by scene shop, stack howell side seating risers

#### **Flying fingers:**

hold on to cables  
cut cables above crosby connections  
slowly let down fingers to resting position  
un-thread cables from pulleys  
remove fingers from their support cables  
put fingers in shop on sawhorses  
by scene shop wall

#### **Screens:**

disconnect angle brackets  
disconnect chain supports from pods  
put in shop on  
sawhorses

#### **Deck:**

disconnect and put benches in the shop  
with a knife, score all the taped seams on deck  
carefully remove maso from the outside  
remove 2x2 skirt from legs  
remove toenails from legs and take 4x8 platforms into shop  
remove toenails from square platform and lift up. Take to shop  
carefully remove maso from sides of the seal  
disconnect jacks from the ground and take to shop

#### **Population sign:**

fly in sign  
disconnect cable from rope  
cut cables right above sign  
put sign in shop

## **Chapter Six: Overall Reflection**

Working on Paragon Springs was a good challenge for me. I had to step outside my comfort zone more than once and I learned a lot from those moments. I had never worked with live flame on stage, so making sure that the design team went through all the correct channels to ensure our actor, crew, and audience safety was nerve-wracking for me but essential. I have had experience with rigging, but I had never mapped out a pulley rigging system and I had never worked with moving flying scenery that was not controlled by a permanent fly system. I know about tracks and knives for moving scenery and I have implemented them in theoretical situations, but never in a real-life situation. Last but not least, I had never worked with wired together motorized car jacks in order to raise and lower scenery. Needless to say, my nerves throughout the build process were tested and became frayed. I therefore second-guessed myself a lot. I was not only emotionally strained, but I was also ill for much of the build process.

During the preparation for and during the Paragon Springs build in the shop, I was wishing that I just had a basic unit set to work on. What I would not have given to draft out a lot of flats and platforms with opening doors as the only moving scenery. I would have felt more comfortable and confident throughout the process. But looking back, I am glad that my thesis show challenged me and pulled me out of my comfort zone. I can draft and build basic flats and platforms any day. Being enrolled in a graduate program allows a person to try new things, to take risks and to

learn from them. The professional world is not as forgiving. For me, Paragon Springs was not only a chance to show what I already know, but also to show what I can do when I try new things and implement theoretical knowledge that I have gained. I am proud to have been a part of Paragon Springs.

## **Appendix A: Build Process Photos**



The Fingers





The Fingers

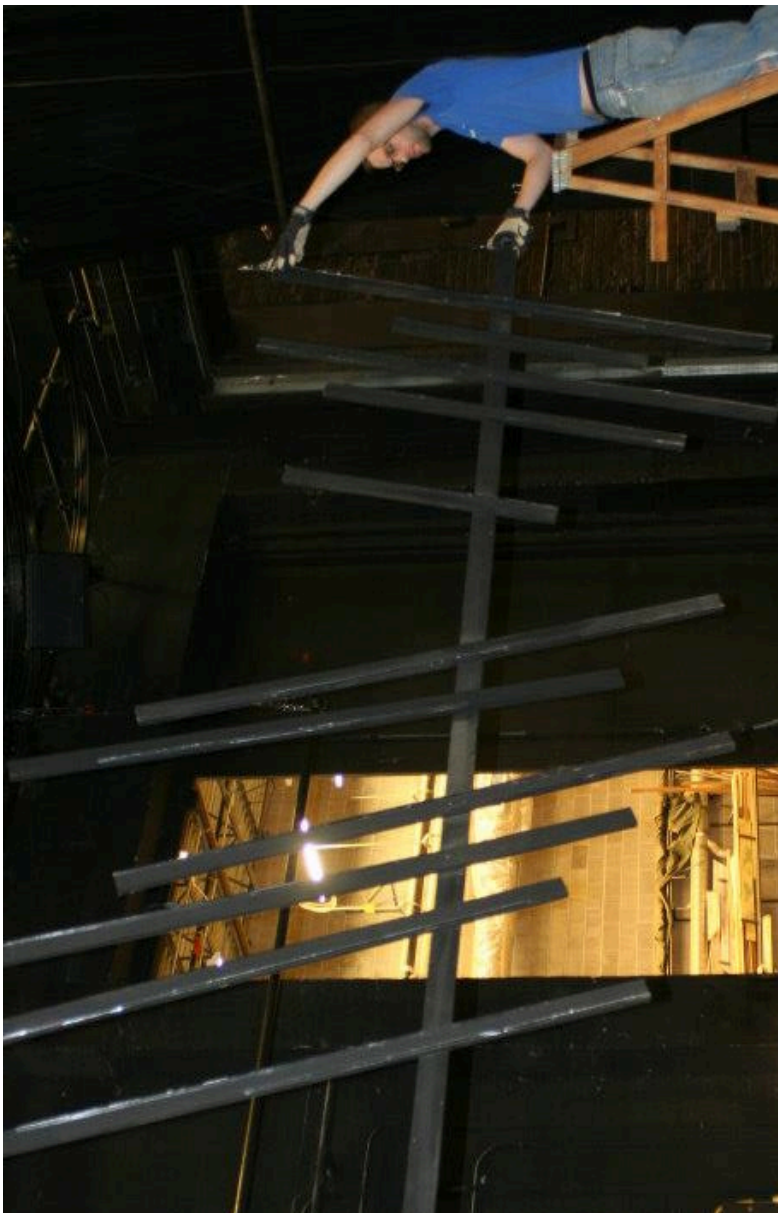


The end of each of the fingers (to keep the cable from sliding off)





The Fingers (painted and trimmed with silver tape)



Rigging the Fingers



Underside of the rolling stair platform





Circular platform and its surrounding platform (D&E)

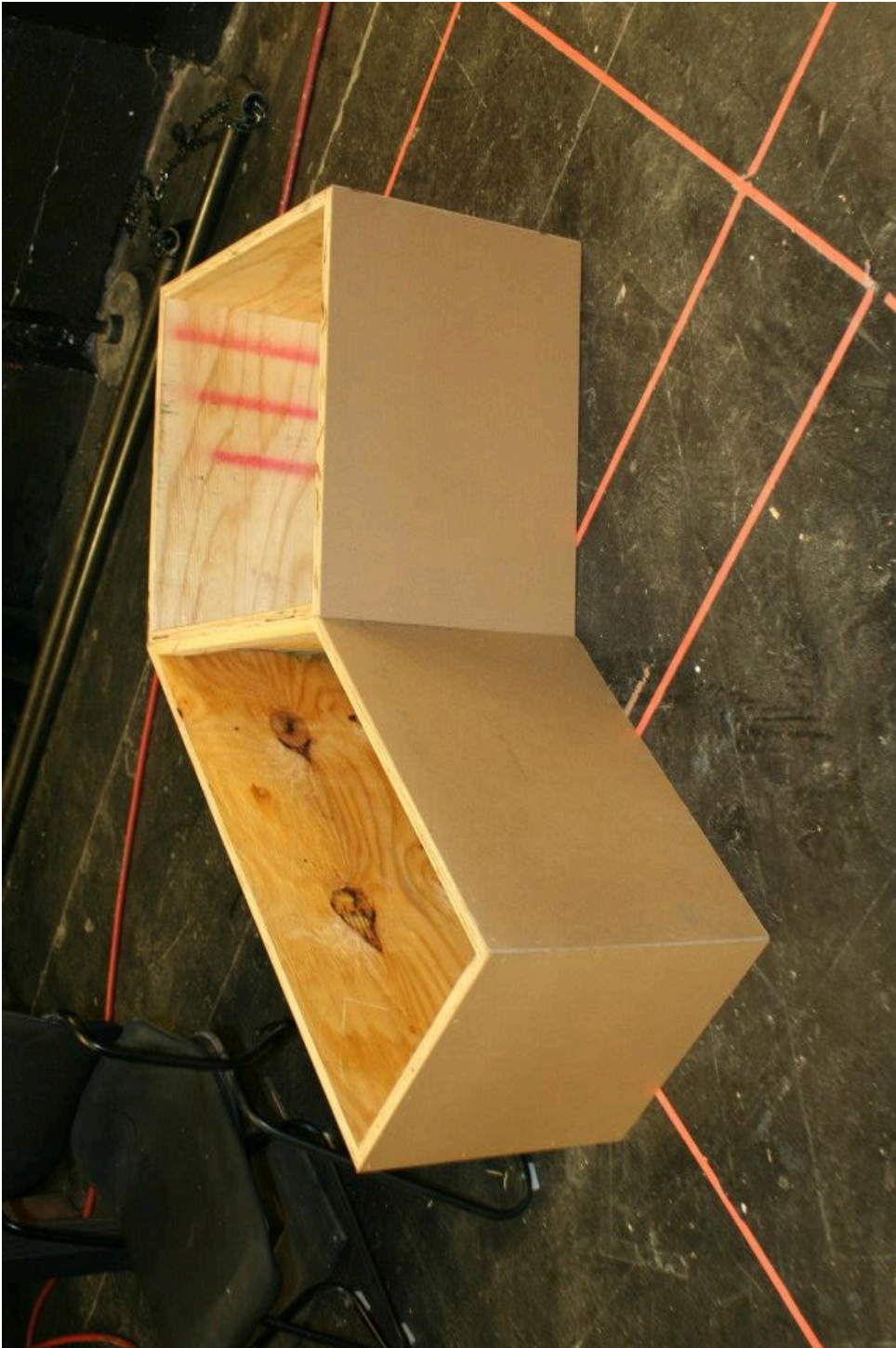


Platform D



Platform E on jacks





One of two benches



File cabinet bench and removable top





File cabinet removable top



Radio bench with removable top

## **Appendix B: Show Photos**

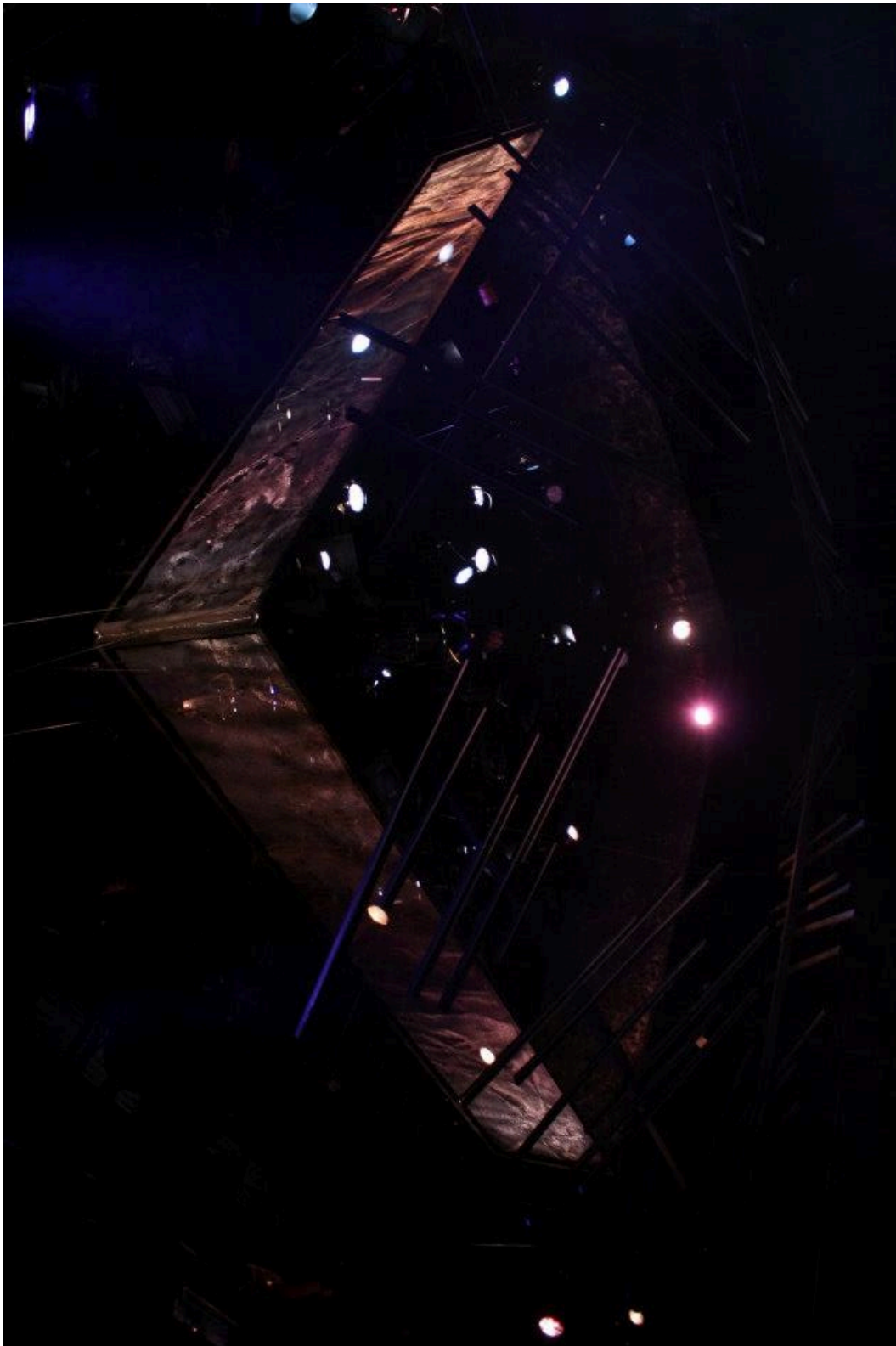


The Radio Station (rolling stair unit)





The Stockman Home Destroyed



The flying screens with Northern Lights



The Northern Lights



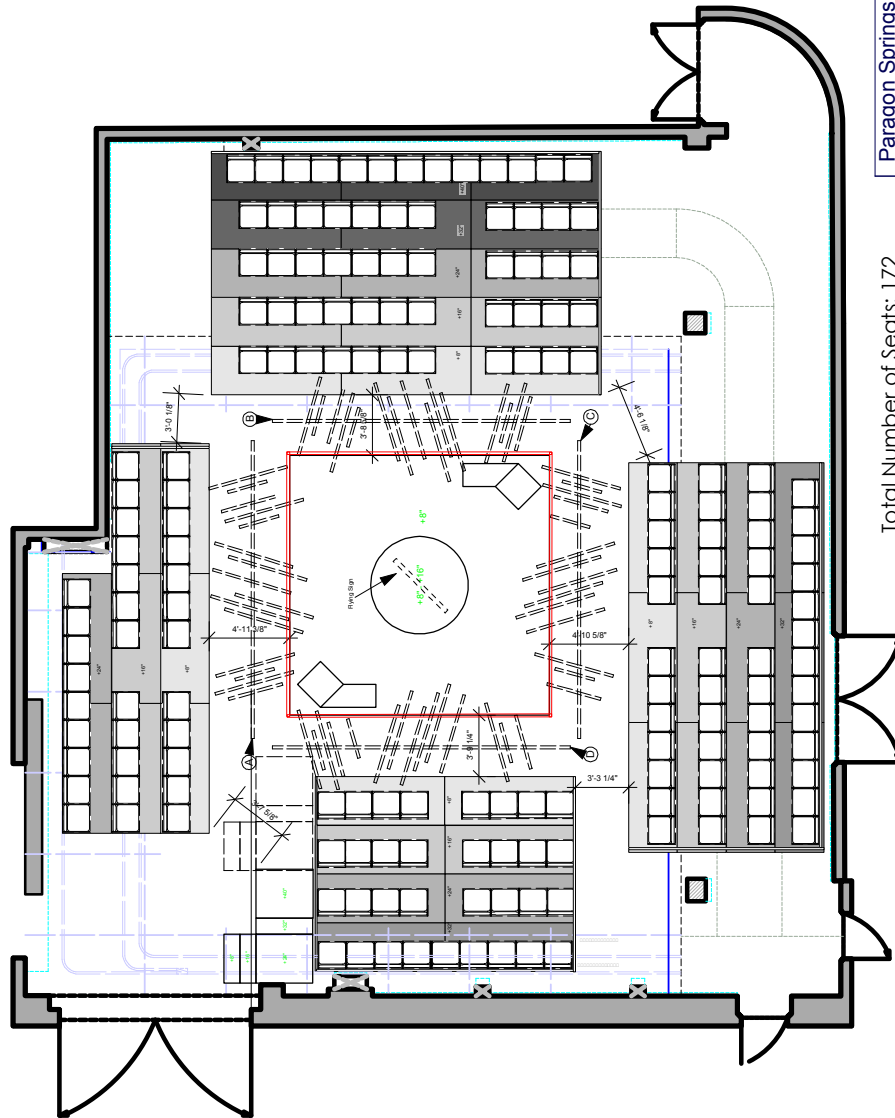


The Bonfire Scene with GAM torches



## **Appendix C: Drawings**

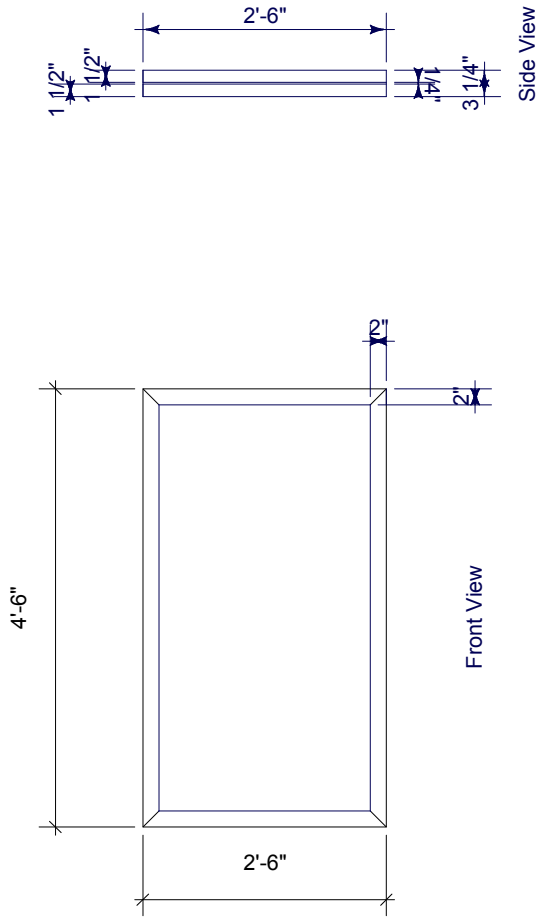
VECTORWORKS EDUCATIONAL VERSION



Paragon Springs	
Studio Theatre	
Groundplan	
9/22/12	Scale: 1/4"=10"
Drafted by: David Tousley	

Total Number of Seats: 172

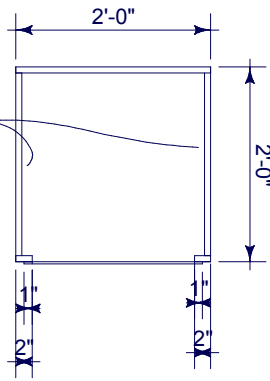
VECTORWORKS EDUCATIONAL VERSION



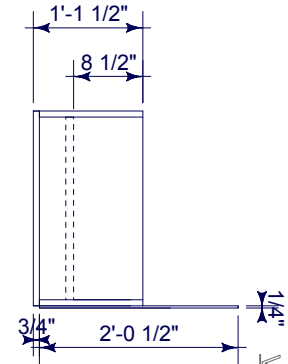
**Paragon Springs Sign**  
scale: 3/4"=1'-0"  
Build from 2x4 (or 2x6) and 1/4" luan  
See Christine with any questions

Paragon Springs	
Studio Theatre	
Paragon Springs Sign	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

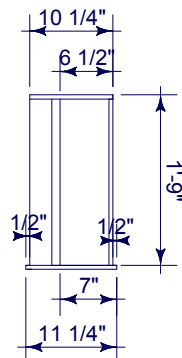
You will need to build out these walls where the slide will be. Determine this after measuring actual slide.



File Cabinet box  
Top View



File Cabinet box  
Side View  
(mirror on other side)



Drawer  
Side View  
(mirror on other side)

### Drawer slide placement

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

-use purchased drawer slides

## Paragon Springs

Studio Theatre

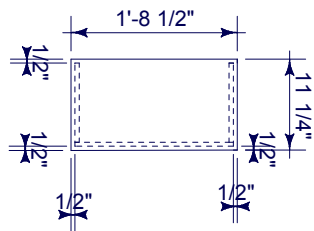
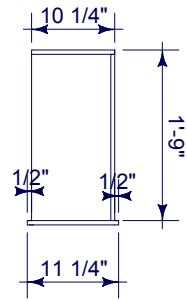
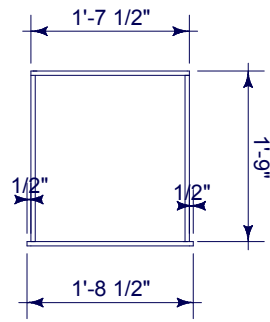
Drawer Slide Placement

9/28/12

Scale: 1/4"=1'0"

Drafted by: Christine Donaghy

VECTORWORKS EDUCATIONAL VERSION

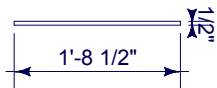


### Drawer

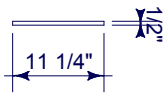
scale: 3/4"=1'0"  
build out of 1/2" MDF

VECTORWORKS EDUCATIONAL VERSION

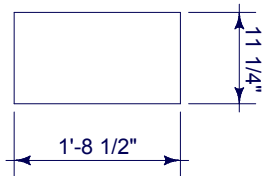
Paragon Springs	
Studio Theatre	
Drawer	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



Top View



Side View



Front View

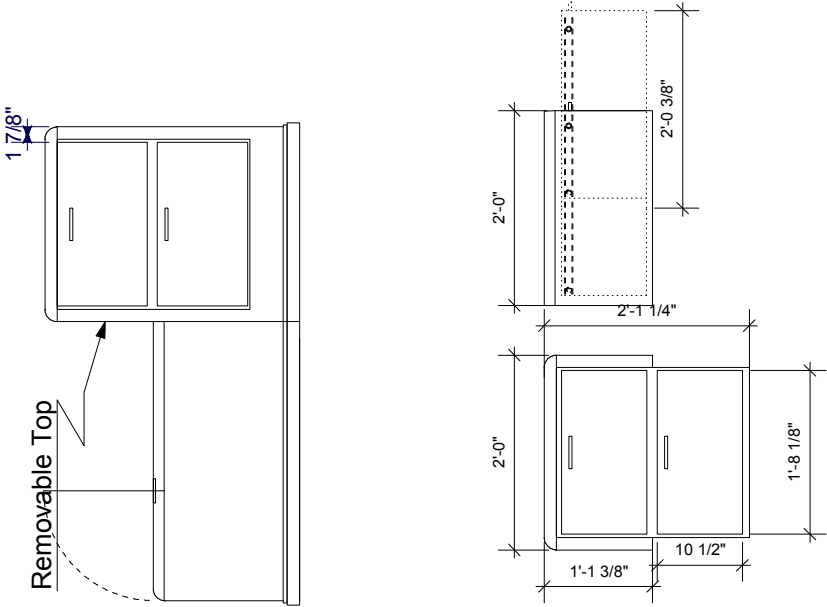
**Faux Drawer Front**

scale: 3/4"=1'-0"  
build out of 1/2" MDF

VECTORWORKS EDUCATIONAL VERSION

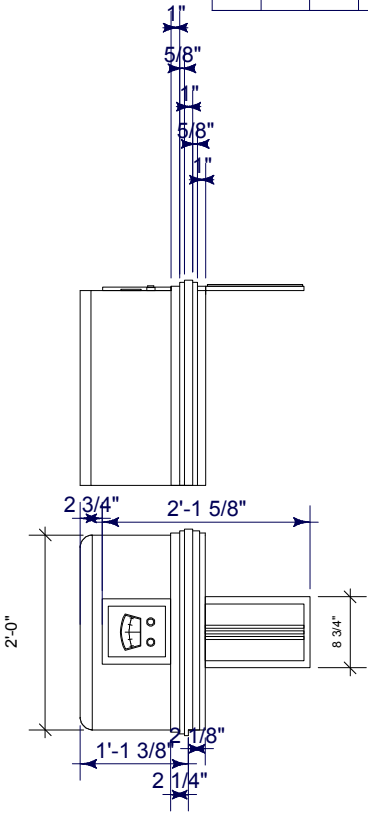
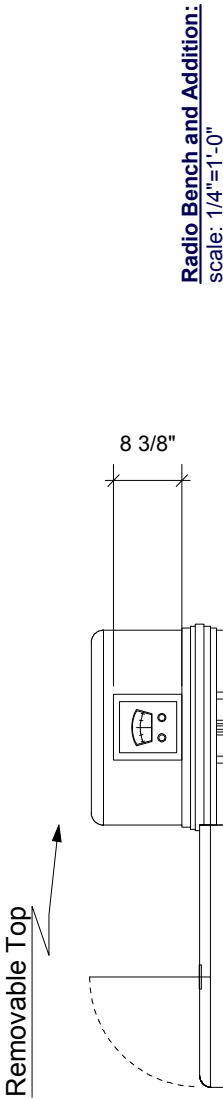
VECTORWORKS EDUCATIONAL VERSION

Paragon Springs	
Studio Theatre	
Faux Drawer Front	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



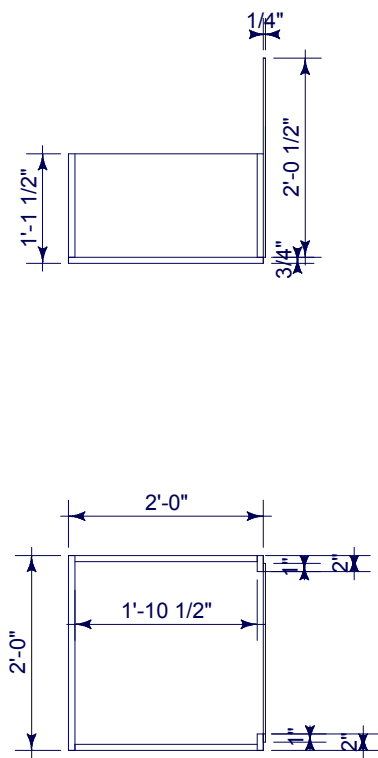
**File Cabinet Bench and Addition:**  
scale: 1/4"=1'-0"

Paragon Springs	
Studio Theatre	
File Cabinet Bench and Addition	
9/22/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy and David Tousley	

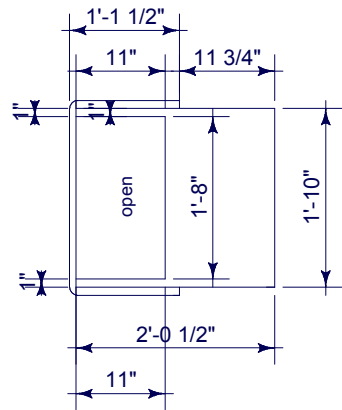


Paragon Springs	
Studio Theatre	
Radio Bench and Addition	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy and David Tousley	





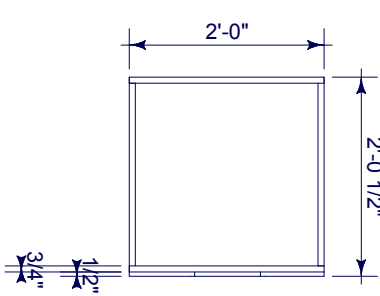
Side View



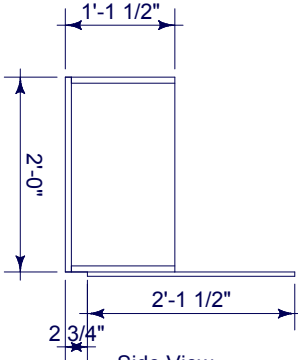
Front View

**File cabinet addition:**  
scale: 1/4"=1'-0"  
Made with 3/4" and 1/4" plywood

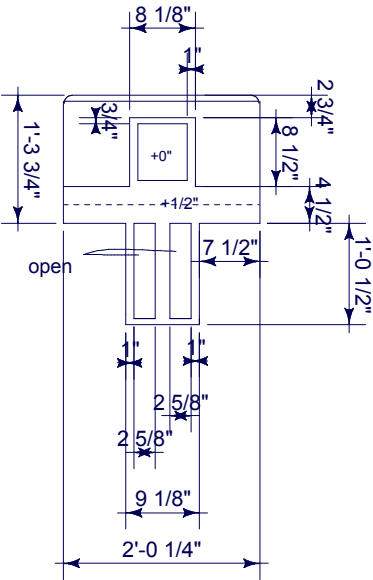
Paragon Springs	
Studio Theatre	
File Cabinet Addition	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



Top View



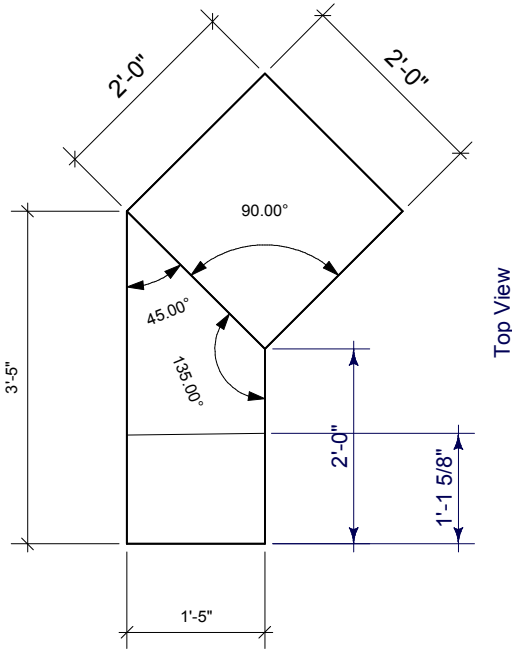
Side View



Front View

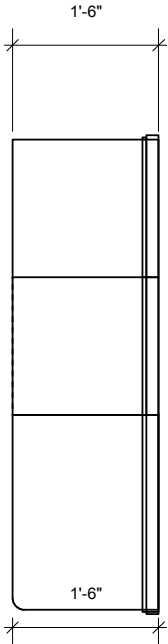
**Radio addition:**  
scale: 1/4"=1'-0"  
Made with 3/4" and 1/2" plywood

Paragon Springs	
Studio Theatre	
Radio Addition	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



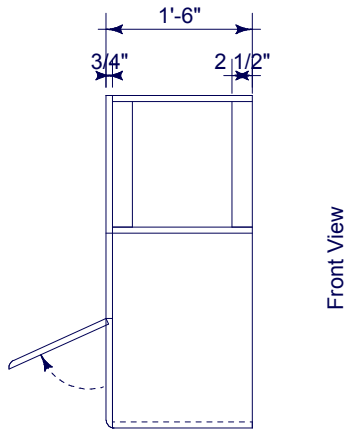
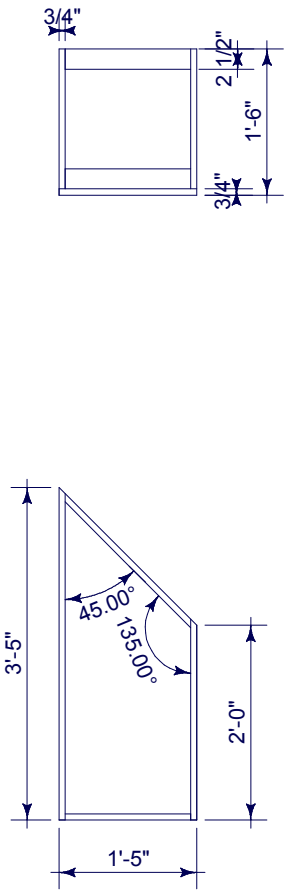
Top View

**Benches:**  
Scale: 1/4"=1'-0"  
Build with 3/4" PLY  
cover in 1/4" Masonite  
Build 2



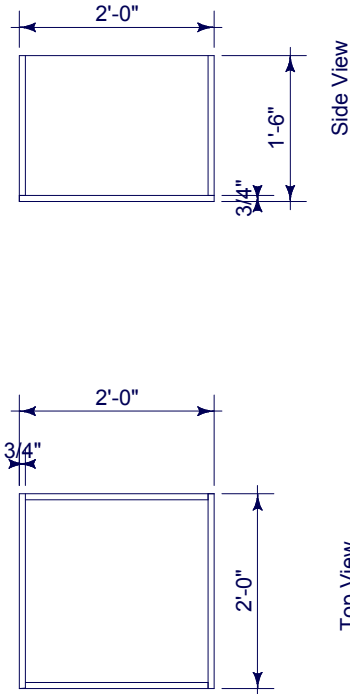
Front View

Paragon Springs	
Studio Theatre	
Benches	
9/28/12	Scale: 1/4"=1'0"
Drafted by: David Tousley	

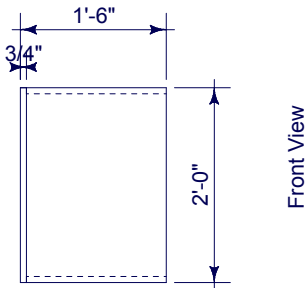


**Long portion of benches:**  
scale: 1/4"=1'-0"  
Build with 3/4" PLY  
Build 2

Paragon Springs	
Studio Theatre	
Long Portion of Benches	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

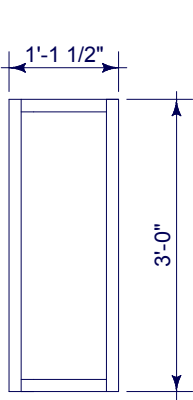
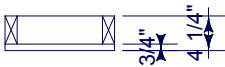


**Square portion of benches:**  
scale: 1/4"=1'-0"  
Build with 3/4" PLY  
Build 2

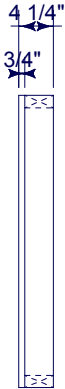


Paragon Springs	
Studio Theatre	
Square Portion of Benches	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

Side View

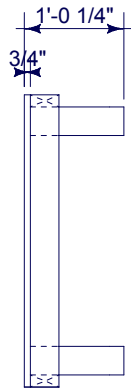
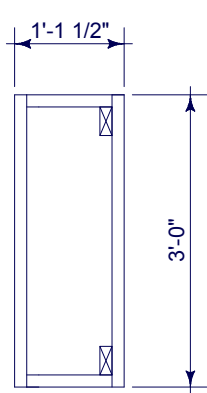
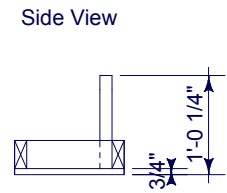


Top View



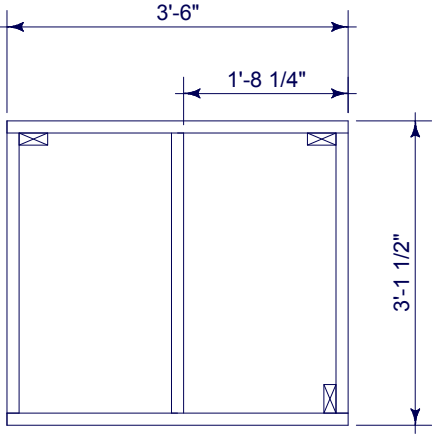
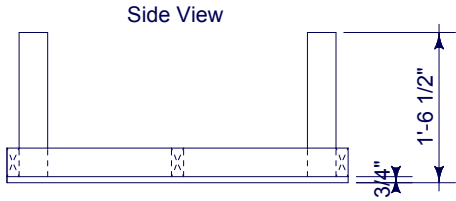
Front View

Paragon Springs	
Studio Theatre	
Rolling Stair Unit -step #1	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

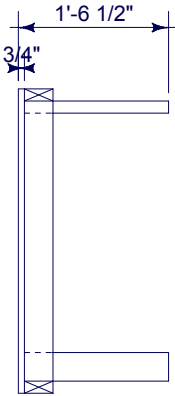


Paragon Springs	
Studio Theatre	
Rolling Stair Unit -step #2	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

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Top View

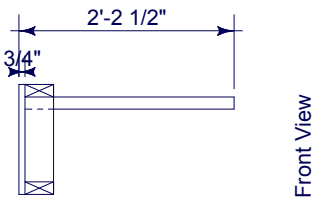
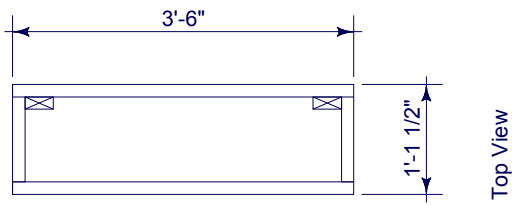
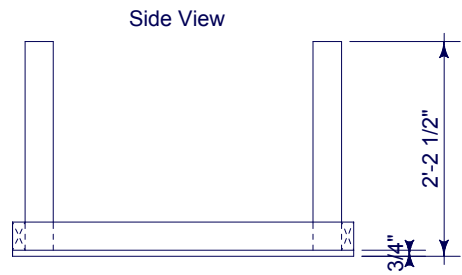


Front View

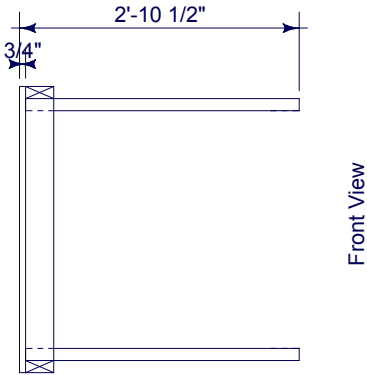
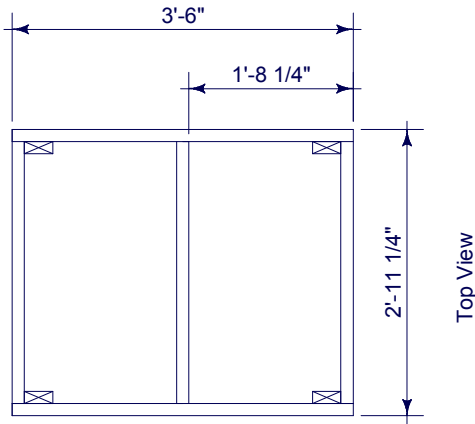
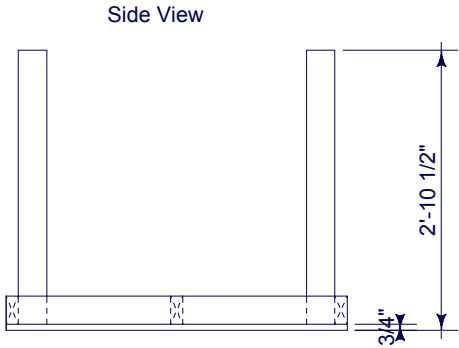
Paragon Springs	
Studio Theatre	
Rolling Stair Unit -step #3	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

VECTORWORKS EDUCATIONAL VERSION



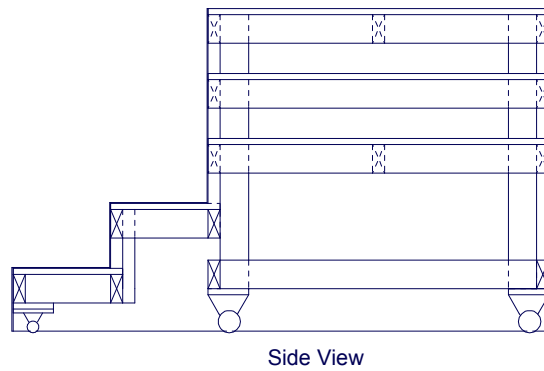
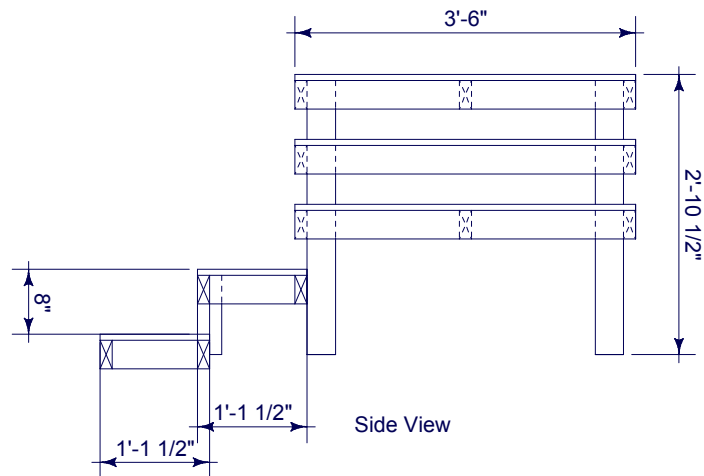


Paragon Springs		
Studio Theatre		
Rolling Stair Unit -step #4		
9/28/12	Scale: 1/4"=1'0"	
Drafted by: Christine Donaghy		



Paragon Springs		
Studio Theatre		
Rolling Stair Unit -step #5		
9/28/12	Scale: 1/4"=1'0"	
Drafted by: Christine Donaghy		

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VECTORMARKS EDUCATIONAL VERSION

## Paragon Springs

Studio Theatre

Rolling Stair Unit -side view and casters

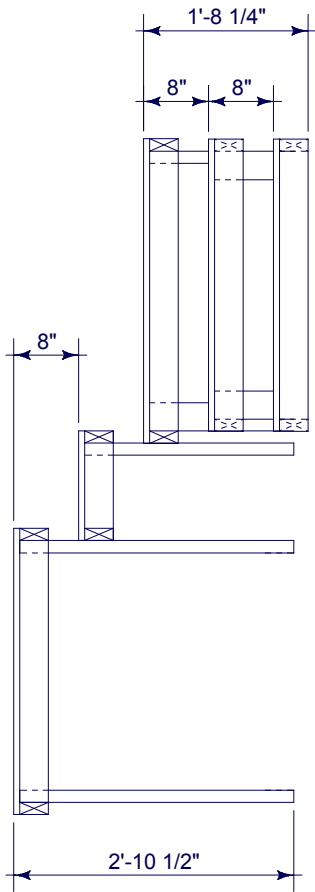
9/28/12

Scale: 1/4"=1'0"

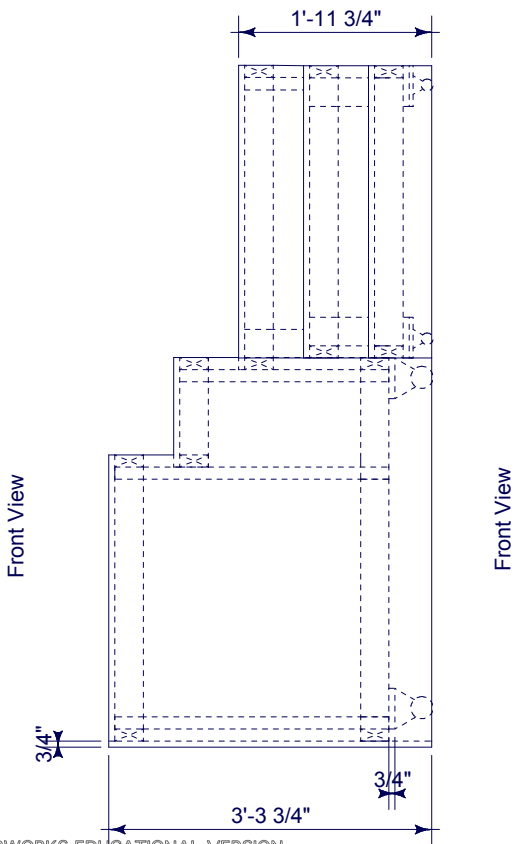
Drafted by: Christine Donaghy

VECTORWORKS EDUCATIONAL VERSION

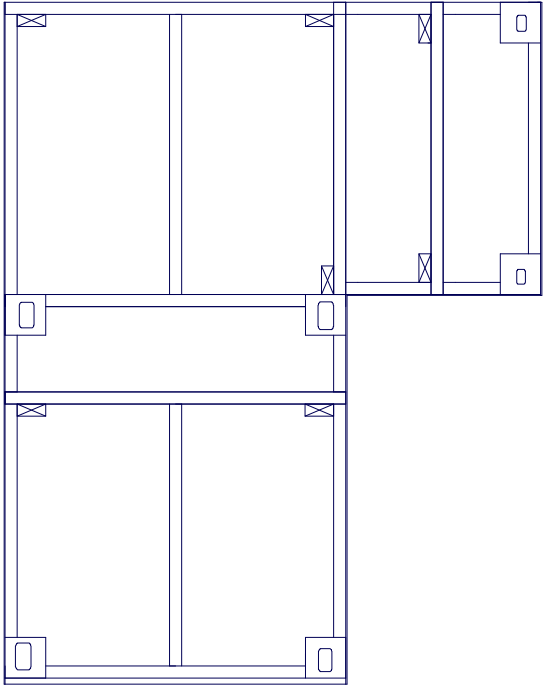
Paragon Springs	
Studio Theatre	
Rolling Stair Unit -front view and casters	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



VECTORWORKS EDUCATIONAL VERSION

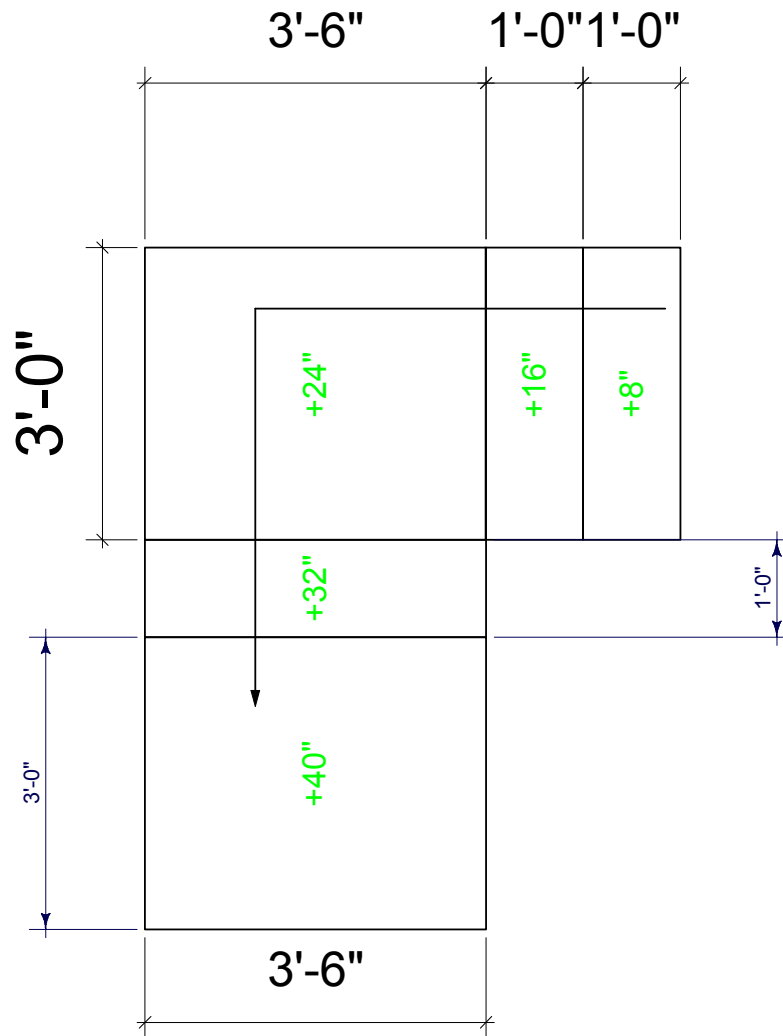


VECTORWORKS EDUCATIONAL VERSION



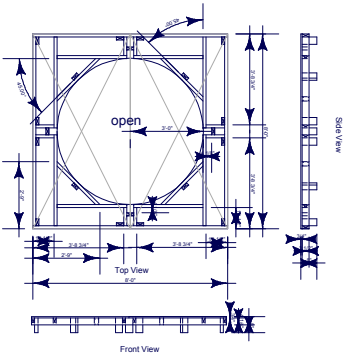
VECTORWORKS EDUCATIONAL VERSION

Paragon Springs	
Studio Theatre	
Rolling Stair Unit -underneath view	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



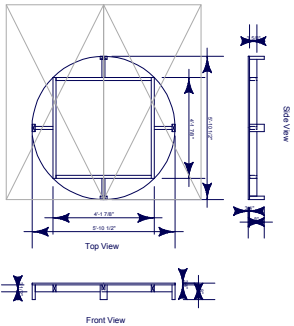
Paragon Springs	
Studio Theatre	
Rolling Stair Unit -top view	
9/28/12	Scale: 1/4"=1'0"
Drafted by: David Tousley	

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Platform D

Cut 3/4" plywood lid first and build frame to lid  
Build frame and legs with 2x4  
Lid with 3/4" Plywood  
Legs cut to a length of 7 1/4"  
Lid with 1/8" Masonite  
\*See Christine with any questions.



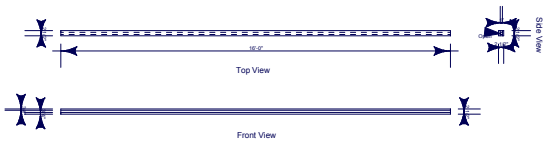
Platform E

Cut 3/4" Plywood lid first and frame to lid  
Build frame and legs with 2x4  
Lid with 3/4" Plywood  
Legs cut to length of 7 1/4"  
\*See Christine with any questions

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Paragon Springs	
Studio Theatre	
Platforms D and E	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	

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Structure for "finger" flying units

\*\*\*\*Build 4\*\*\*\*

Rip down 1x6 to widths of 2 1/2" and 1" respectively

Construct with glue and staples

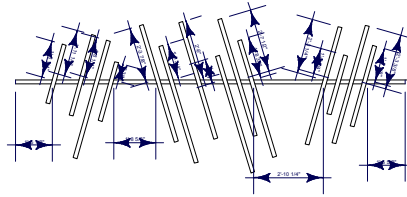
\*See Christine with any questions

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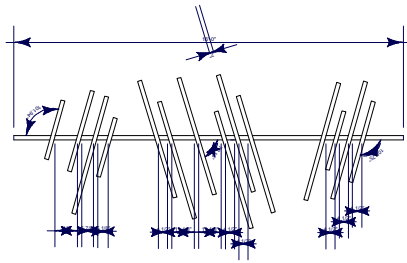
Paragon Springs	
Studio Theatre	
Structure for "finger" flying units	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	



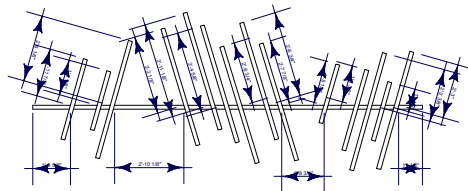




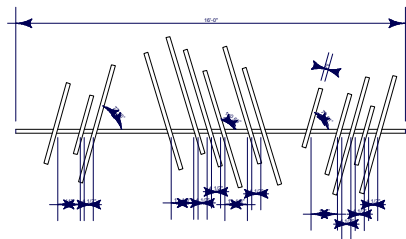
C



C



D



D

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Paragon Springs	
Studio Theatre	
C and D "finger" placement	
9/28/12	Scale: 1/4"=1'0"
Drafted by: Christine Donaghy	