Carnegie Mellon University

Entertainment Technology Center

World's Fair for Kids®

Fair for

Family Spring Break®

April 15 - 23, 2006

ORLANDO®

ETC

Event Production Guide

version 1.2

Event Production Guide

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World's Fair for Kids 2006
Event Information

Key Event Dates

February 1, 2006 - First ETC Jam-o-Drum Delivery (2 units)

February 7, 2006 - Florida State Fair Ship Out

February 9-20, 2006 - Florida State Fair

February 20, 2006 - Show Element Fabrication Completed

March 24-27, 2006 - Pittsburgh Dress Rehearsal & Playtest

April 9, 2006 - Final Event Pack and Ship Out

April 12-14, 2006 - WFK Load-In

April 15-23, 2006 - WFK Event

April 24, 2006 - WFK Strike

April 26, 2006 - ETC Unload

ETC/CMU Schedule

November 23-27, 2005 - Thanksgiving Break

December 5-7, 2005 - Building Virtual Worlds Show

December 14, 2005 - Final Presentaion of Project

December 16, 2005 - January 15, 2006 - Christmas Break

January 6-15, 2006 - ETC West Coast Trip

February 8-10, 2006 - 1/4 Finished Presentation

March 7-8, 2006 - 1/2 Finished Presentation

March 10-19, 2006 - Spring Break

Key Locations

WFK Event - Orange County Convention Center, Orlando, FL

Florida State Fair - Florida State Fairgrounds, Tampa, FL

Pittsburgh Dress Rehearsal - TBD, Pittsburgh, PA

Entertainment Technology Center

700 Technology Drive

Pittsburgh, PA 15219

Primary ETC Contacts

Andrew Hosmer - Project Producer - 412.512.4967

Lenny Larsen - Production Manager - 847.641.9478

Brenda Harger - ETC Faculty Advisor - 412.268.3741

Project Partners

Christie Lites - Orlando, FL - 407.856.0016

CMU School of Drama - Pittsburgh, PA - 412.268.8218

Introducing the Entertainment Technology Center...

Carnegie-Mellon University's Entertainment Technology Center is the first graduate program in the country to offer a Master of Entertainment Technology degree. Within this interdisciplinary program, technologists and artists work together on projects to produce experiences that entertain, inform, inspire, or otherwise affect an audience/guest/player/participant. The backbone of the ETC curriculum is a sequence of project courses, each of which places students in interdisciplinary teams. Teams of 3-6 students are assigned to work on a project each semester with the objective of providing a hands-on working experience with teammates of different backgrounds and disciplines.

Entertainment Technology Center developments include:
- networked and free-standing interactive computer games
- massive multi-player online games
- console and PC interactive game design
- augmented and virtual reality experiences
- attractions for specialty venues such theme parks, themed retail, specialty restaurants, and other location-based entertainment
- motion-base rides
- the creation of unique input devices
- massive immersive display environments such as planetaria and Omnimax
- interactive animatronic characters
- synthetic interview technology and speech recognition
- telepresence for entertainment and education purposes
- digital production and post-production
- sound synthesis, surround sound, 3-D sound, and streaming audio

Introducing the ETC/WFK Team...

Brenda Harger - ETC FacultyAdvisor

bharger@andrew.cmu.edu · 412.268.3741

Ben Buchwald - Software Development Lead

bb2@andrew.cmu.edu · 617.780.0380

Ben has always been fascinated by the way technology could be used to create an environment or tell a story. He was attracted to Carnegie Mellon University for his undergraduate work because of its strong programs in both drama and computer science. Initially studying drama, Ben graduated in 2003 with a Bachelor's in Computer Science. As an undergrad he spent three years working with the Stage3 Research Group on both educational and entertaining technologies such as the Alice 3D graphic system for teaching programming, virtual reality, and real-time optical motion capture. Now, at the Entertainment Technology Center Ben finds the most rewarding experience to be using his technical skills, working alongside artists, to build things that will entertain kids by combining technologies in interesting ways. Animateering, the first ETC project he worked on, is a virtual puppeteering kiosk originally developed for the Children's Museum of Pittsburgh, and is now also installed at the Give Kids the World Village. Next, Ben was involved with the ORB Initiative to add interactivity and game-like fun to the portable, inflatable domes that NASA and several science museums bring to schools to teach kids about the Earth. Now working with the Worlds Fair for Kids and Quasi, Ben hopes to work with a whole new set of devices and gadgets and instill them with life to fill kids with the wonders of the world around them.

Andrew Hosmer - ETC Project Producer

alhosmer@andrew.cmu.edu · 412.512.4967

Andrew Hosmer's interests led him to the city of Pittsburgh where he attended the Art Institute of Pittsburgh. His field of study was Industrial Design with a focus in Creature/Character Special Effects. After graduating, he began working for Henderson Design and Productions on a new video series for the Kentucky based Answers In Genesis. His tasks on the production focused on the animatronic dinosaur Proto, as well as assistance in script writing, acting, and general production work. Once the project had wrapped up, he began other animatronics work for other Pittsburgh based companies and schools. He returned to the Art Institute of Pittsburgh to finish up his undergraduate degree and as his thesis, created an animatronc gorilla head for the school. Shortly after, Andrew was contacted by Carnegie Mellon University's Entertainment Technology Center where he joined a group of five students set on the idea of creating a fun interactive character. Andrew's previous experience helped him design, fabricate, and assemble the mechanics of this new animatronic character, Quasi. Andrew decided to enroll in the Entertainment Technology program and since then has been on the team that created the second iteration of Quasi the robot. Andrew is one of the active members in the newly formed Interbots company and is excited to see what the future holds for himself and for Quasi.

Jim Valenti - Technology Coordinator

javalent@andrew.cmu.edu · 412.445.8398

Jim Valenti is a native Pittsburgher who, from his earliest memories, has always been interested in taking things apart to see how they work. In second grade he began to play musical instruments. His first was the violin and then he began to learn piano, clarinet, saxophone and bass. As an undergraduate, he majored in Electrical Engineering but also took many classes in musical composition and Computer Science. After being in the real world for some time, Jim returned to school to study computer science. While working as an audio engineer, he discovered the Entertainment Technology Center. Following completion of his graduate degree, Jim hopes to be able to continue working on projects like Quasi that combine both art and science.

Tim Lander - Game Artist/CGI Modeler

tlander@andrew.cmu.edu · 724.991.8973

Tim, a native of the Pittsburgh area, comes from a background in Computer Science from Gannon University in Erie, Pennsylvania. While his coursework through college had all been in the technology realm, he had interests in many other areas including 3D modeling, animation, and most notably producing. After graduating from Gannon University, he was accepted into an internship program at Electronic Arts in Redwood city, CA working as a production intern on one of their "Sims" products, before going on to graduate school at the Entertainment Technology Center. Once at the ETC, Tim continued his pursuit of both modeling and production knowledge. Upon the approach of his second semester, he became involved in a group project in association with Give Kids the World, in which he helped create a 6 minute animated film over the course of the semester. Finally, most recently he participated in an internship at Shaba Games, a subsidiary of Activision, as a production coordinator/game designer. This semester he hopes to be involved in bringing many technologies to the World's Fair for Kids including perhaps audience interaction pieces, Jam-O-Drum worlds, and content creation using Quasi. While he still has a year of graduate school to complete before venturing into a career, his current plans are to continue on into the games industry in a role most likely as an associate producer.

Lenny Larsen - Production Manager

llarsen@andrew.cmu.edu · 847.641.9478

With a passion for visual storytelling and a background in theatrical design and production, Lenny has been creating immersive entertainment experiences for nearly eight years. His diverse portfolio includes everything from professional and educational theatre, to large-scale events and conceptual work for themed entertainment. In addition to staying busy as freelance designer, Lenny has been working with the Walt Disney Company in one capacity or another for the past five years; beginning as a performer and most recently as a lead scenic artist for a new attraction at Disney's Animal Kingdom. He is currently completing both the final year of his custom undergraduate degree in Themed Environment Design and the first year of his graduate degree in Entertainment Technology at Carnegie Mellon. As the newest member of the Worlds Fair for Kids/Quasi team, Lenny looks forward to the challenge of developing interactive experiences for the World Fair for Kids and furthering Quasi's inherent theatrical potential.

Dan Sorge - Graphic Artist/Game Artst

dansorge@gmail.com · 202.271.6487

Dan was born in Washington D.C. and grew up right outside the city in the quaint suburb of Fort Washington MD. His passion for visual mediums developed in high school through his video and photography classes. Whether making films with friends or running around town Dan could usually be found sticking a camera in someone's face. It was in college that he began exploring digital media and interactive narrative, and graduated with a Bachelor of Science in Cinema and Photography from Ithaca College in 1999. With a solemn vow to his new love the computer, Dan decided to sit behind one for the next few years as a Multimedia Designer/Developer. Dan moved to Pittsburgh in the summer of 2004 to join the ETC with the hopes of moving his interactive expertise away from the 2D world of the screen and into physical space. At the ETC Dan worked with a group of students to create an interactive theater experience for Give Kids the World in Orlando Florida. Excited to move into the fields of location-based entertainment/edutainment, Dan looks forward to working with the Quasi Team and the Worlds Fair for Kids to create an engaging and entertaining experience.

Quasi
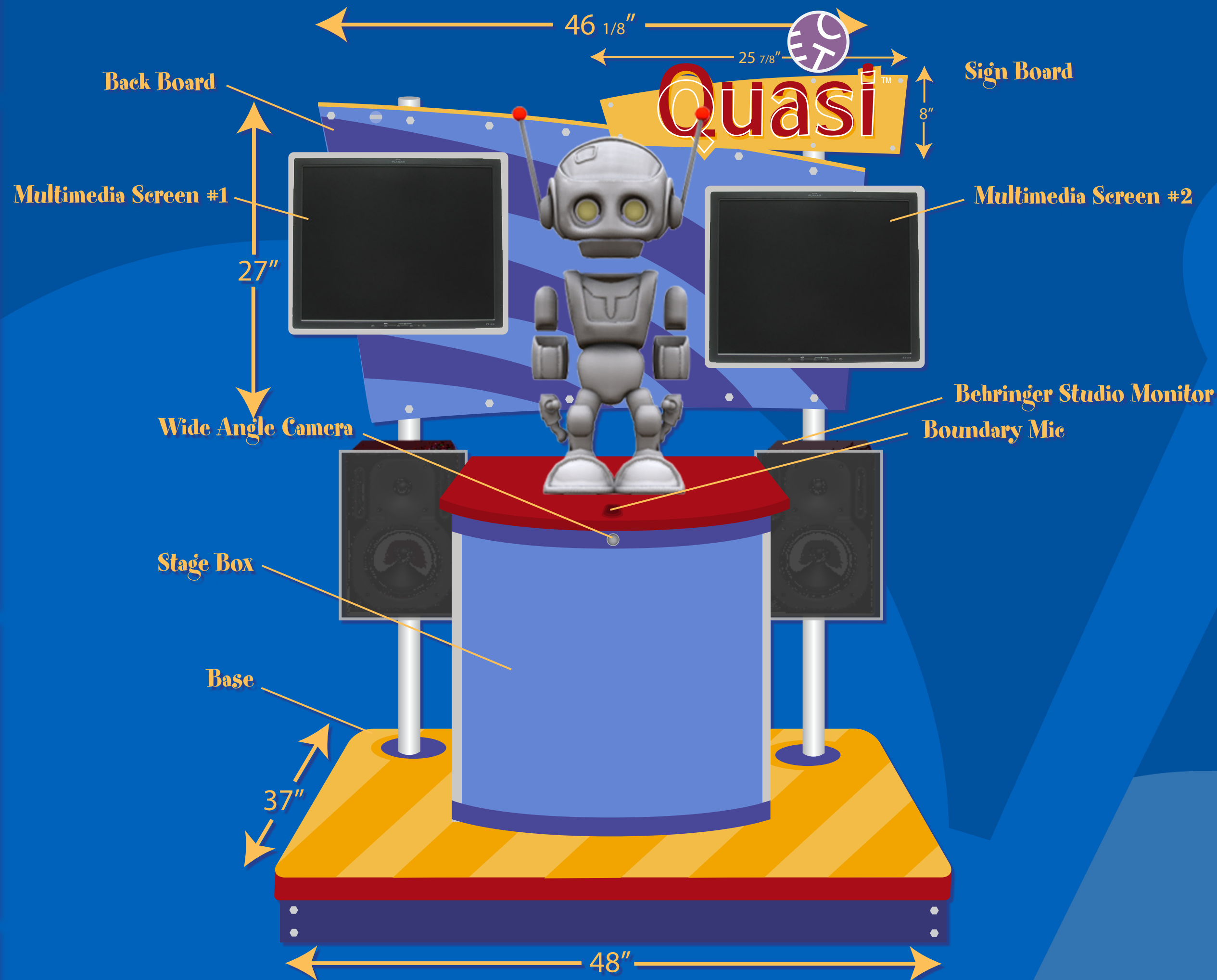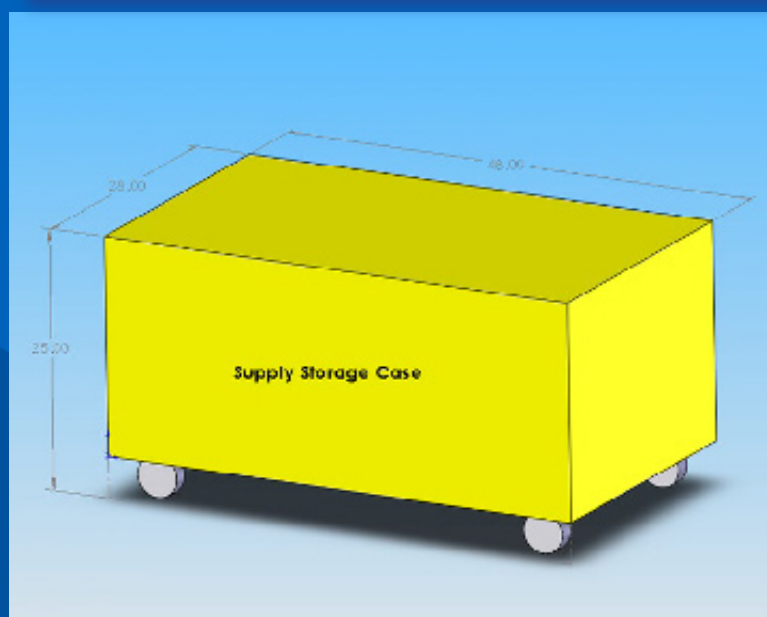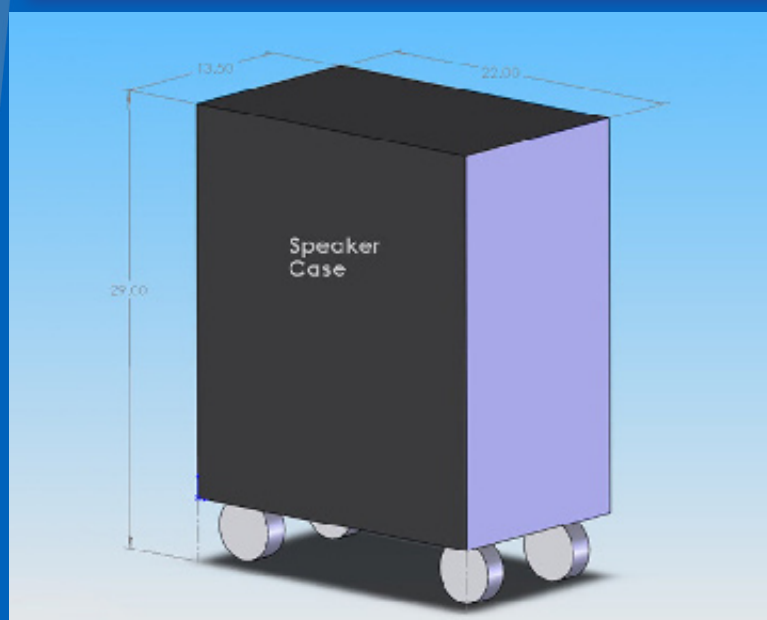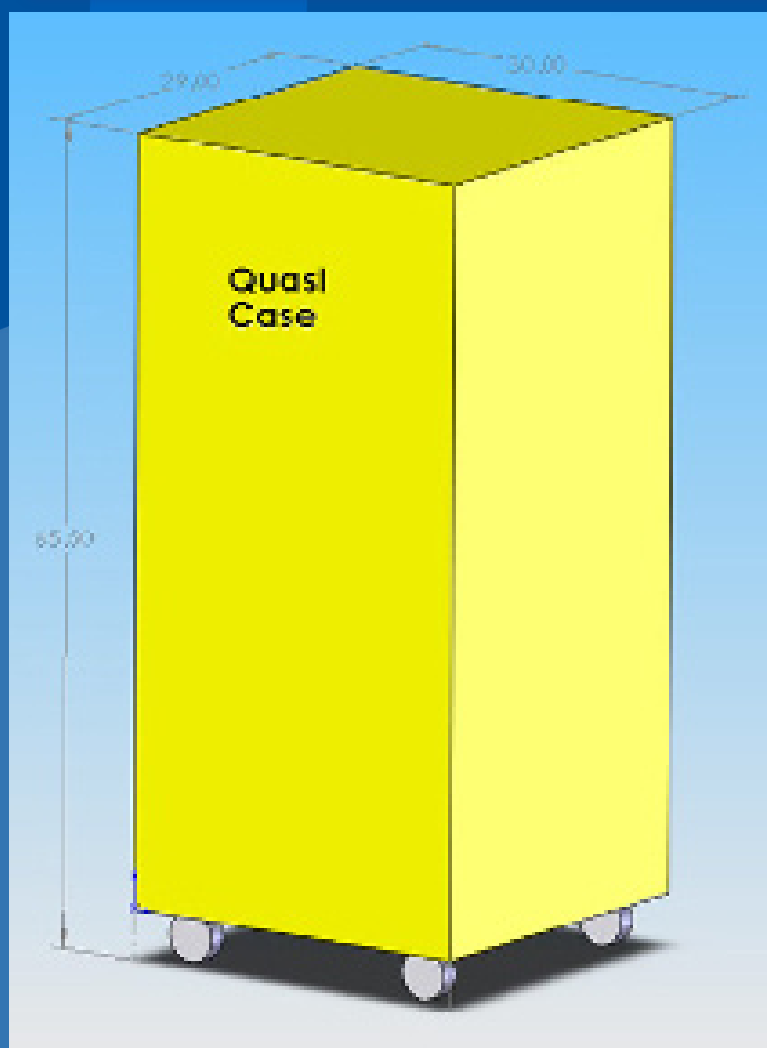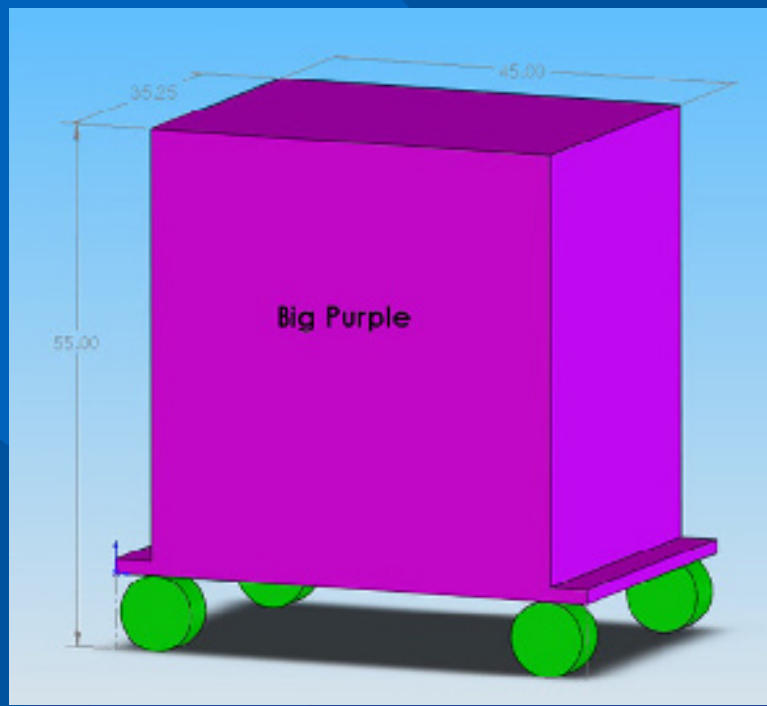
Introducing Quasi the Robot...
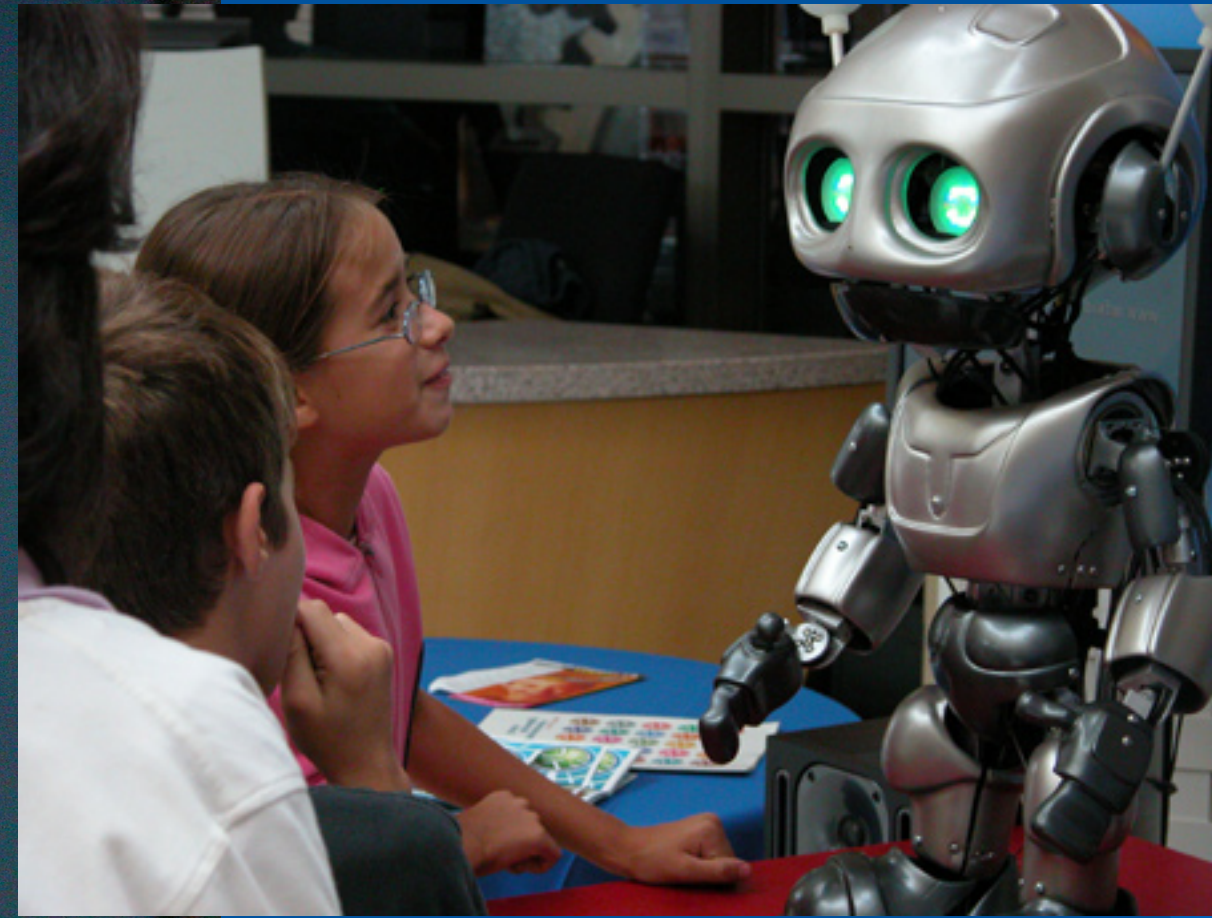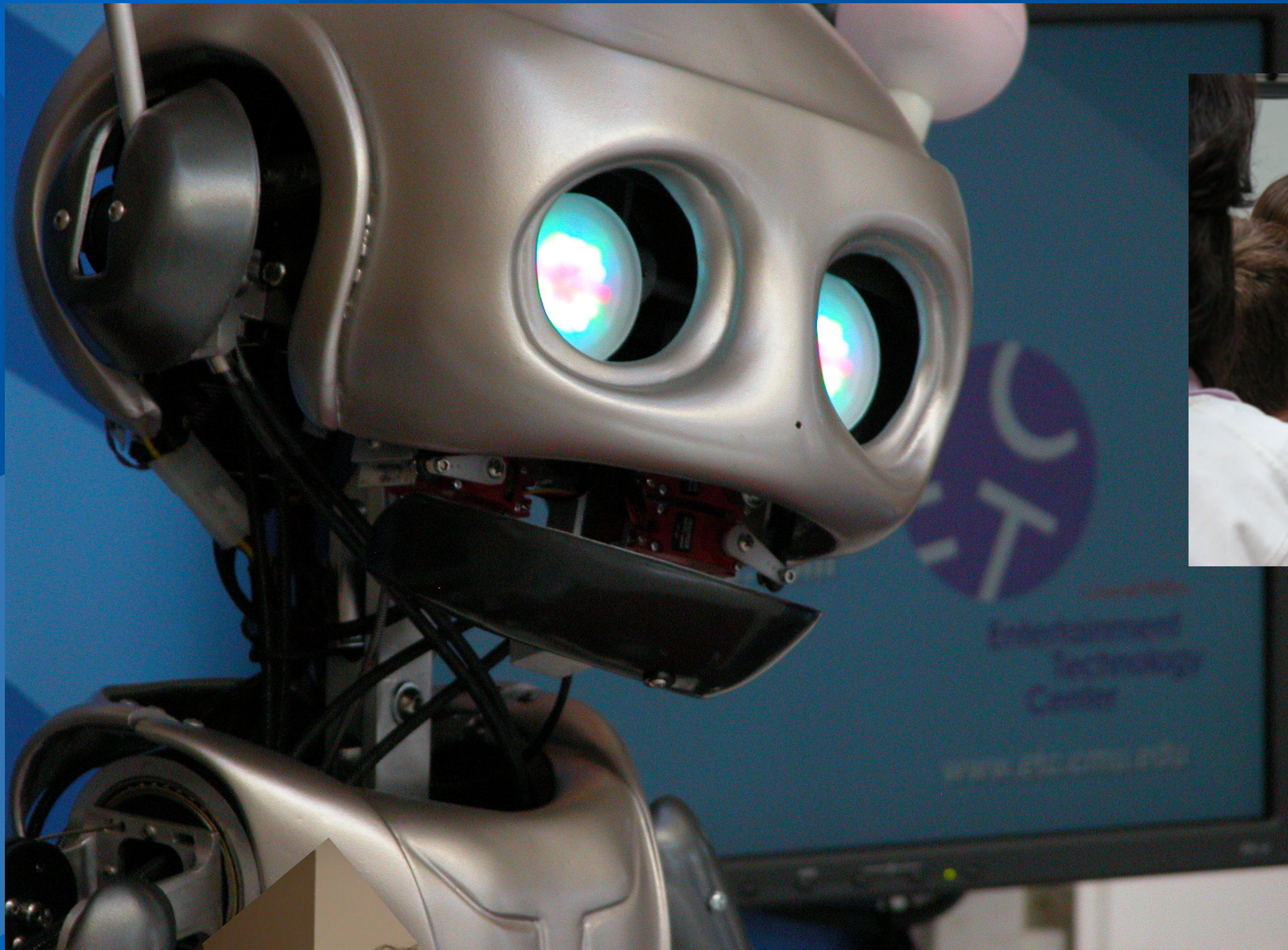
A curious young robot at heart, Quasi has organized the first-ever World's Fair for Kids to help him figure out what it's like to live in a real kids world.

He's really excited about meeting thousands of kids from all over the world and can't wait for April!

Quasi's Production Requirements

Big Purple

Quasi Case

Speaker Case

Supply Storage Case

Back Board

Sign Board

46 1/8"

25 7/8"

8"

Quasi

Multimedia Screen #1

Multimedia Screen #2

27"

Wide Angle Camera

Behringer Studio Monitor

Boundary Mic

70 1/2"

Stage Box

Base

37"

48"

Power Requirement

20 Amp Dedicated Circuit

Location Considerations

Quasi must be protected from the elements.

24-Hour location security or secure lock-up area.

Skirted "Offstage" area for Big Purple and Puppeteer.

Layout Specifications

Maximum 20'-0" distance from Power Source to Big Purple.

Maximum 20'-0" distance from Big Purple to Quasi

Access to Site

Loading dock with Lift (preferred)
or
Paved access with wheelchair ramps (required)

Time and Labor

Average staff: 4 people.
Average setup time: 45 minutes

Interactive Stadium Game

Interactive Stadium Game - Overview

This preshow/audience warm-up experience is based on the classic arcade game: Pong. By using high-intensity video projectors and moving mirros, the field itself will become the projection surface for this very unique video game.
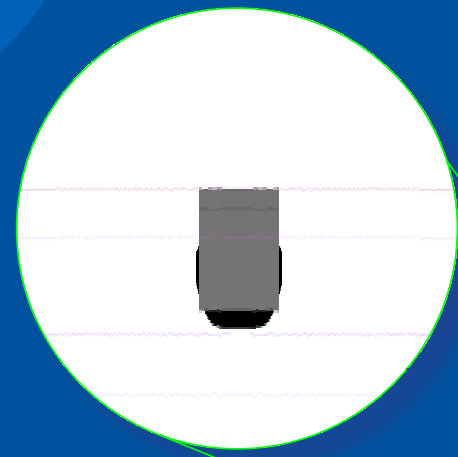
Two robotic Pong "paddle" projections move up and down the sides of the field; controlled by the audience on that side of the stadium. As the audience leans left or right and the "paddle" on the field follows suit. The projected ball bounces between the paddles untill one team misses. Quasi will be operating the game and keeping score on the Stadium Jumbotrons, so you just never know what might happen.

Adding to the fun is the game's host; a high school soccer coach right out of your worst nightmares. Think you can let your team down by not playing? If the coach sees you, you might just be running laps!

Get ready!
The world's largest interactive video game
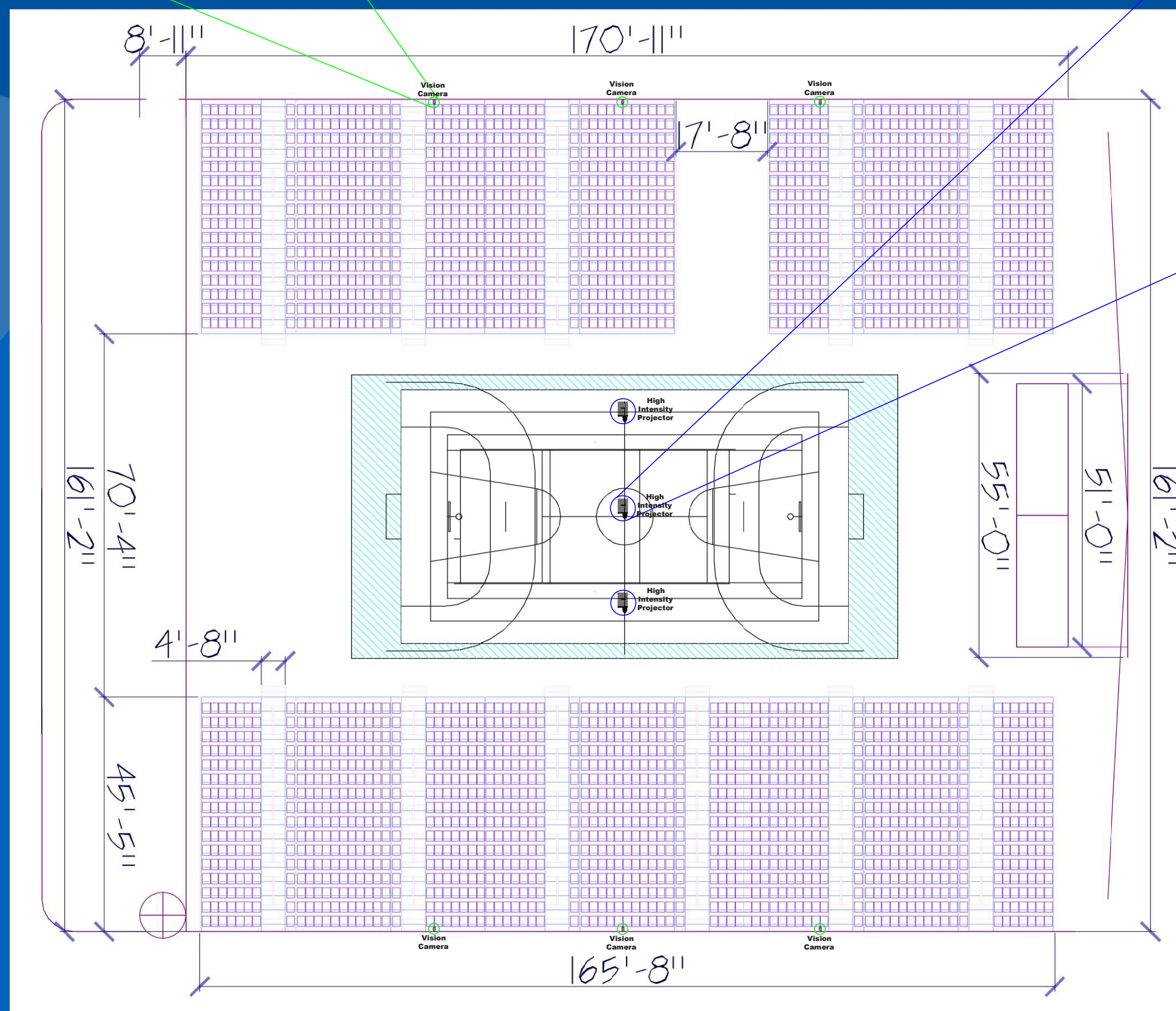is bouncing its way into the
Worlds Fair for Kids in April of 2006!

Interactive Stadium Game - CAD Groundplan

**Computer Vision Camera
(6 Units)**

**High-Intensity
DLP Projector
(3 Units)**

Interactive Stadium Game - Technology Specifications

Computer Vision Camera (6 Units)

Each camera location consists of...

(1) High Resolution Camera

-Exact camera specifications to be determined.

(1) 6'-0" camera mount/support stand (attached to top row of stadium risers)

(1) Power outlet (15amps @120 VAC)

(1) Coaxial cable w/Female BNC connector (home run to control room Video Input Computer)

Cable, cameras, and mount/support to be supplied by ETC.
Power drop to be provided by OCC.

Final Camera elevation to be 6'0" above the railing at the top of the stadium risers.

Installation and debug to be completed exclusively by ETC labor force.

Preferred Operating Conditions

Field should be clear of platforms, props, etc. that would interfere with projected images.

Game computer will require a tie-in to the Stadium audio system.

Game specific content is being developed for the JumboTron/plasma screens.

Entire system will likely depend on 3-4 individual computers.

Attraction will require (2) ETC operators and (1) show host (provided by WFK)

High Intensity DLP Projector (3 Units)

Each projector location consists of...

(1) Approx. 25,000 Lumen DLP Projector (ex. Barco XLM25)

-Exact projector specifications to be determined.

(1) Flying Rig for Large Projector

(1) High End Systems Orbital Head Moving Mirror

(1) Power outlet (8000 Watts @ 3-phase 220 VAC)

(1) Power outlet (15 amps @ 120 VAC)

(1) VGA Monitor cable (home run to control room Game Computer)

(1) Ethernet CAT5 cable (home run to control room Projection Computer)

(1) 5-pin DMX cable (home run to control room Game Computer)

All equipment to be supplied by ETC via outside vendors.
Power drop to be provided by OCC.

Final projector trim to be as high as possible given the structural grid of OCC.
Final projector location is determined by the field below it and the structural grid.

-Ultimately, the lens/moving mirror assembly of each projector should be situated at midfield directly over the center of its axis of movement. (Indicated positions are for reference only.)

Assembly and debug of the projectors at ground level to be completed by ETC.
Installation and rigging to be completed exclusively by OCCC staff riggers.
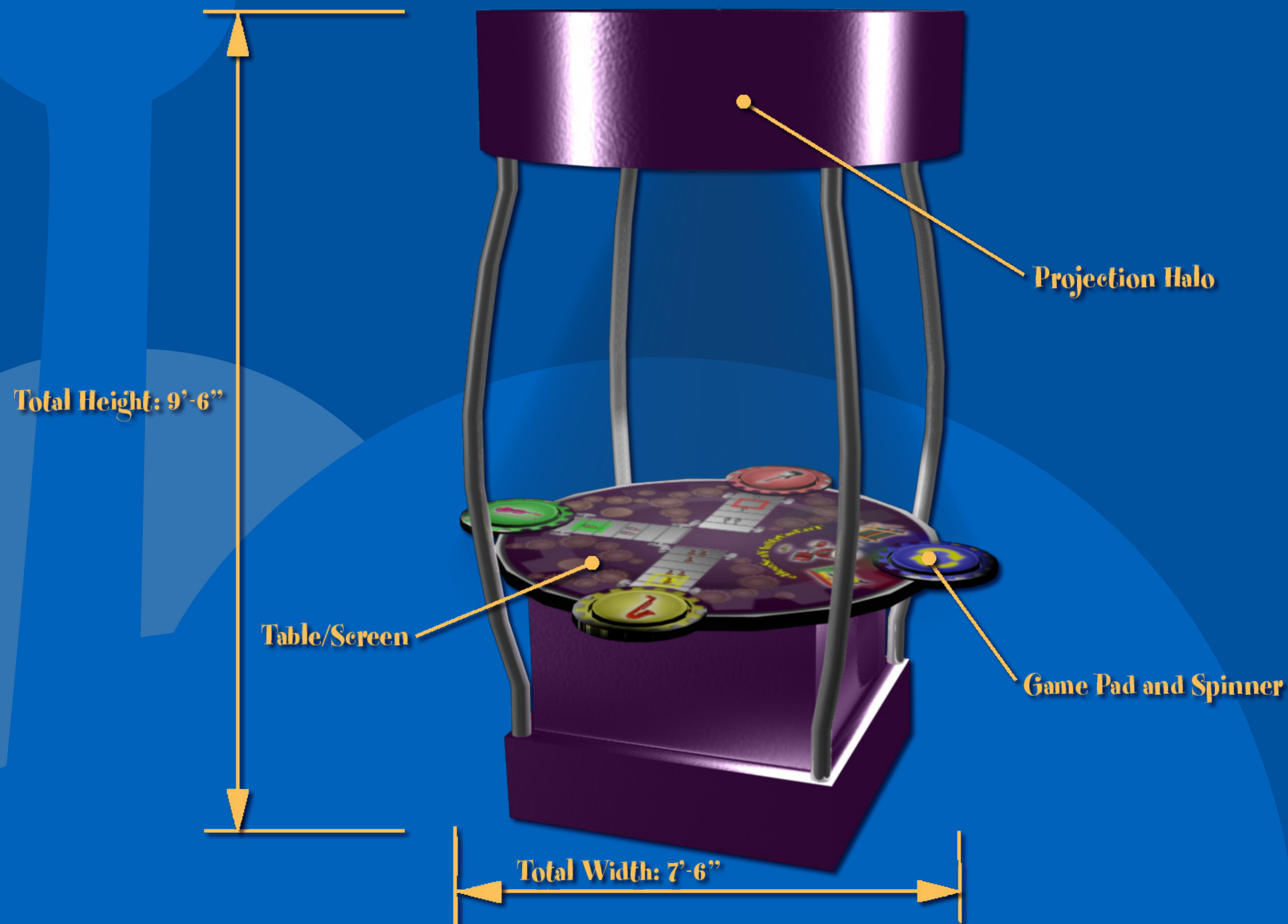
Jammin' Kids

Jammin' Kids - Overview

This Jam-o-Drum based experience features a musical game hosted by a holographic Quasi.

Jammin' Kids - The Jam-o-Drum

Projection Halo

Total Height: 9'-6"

Table/Screen

Game Pad and Spinner

Total Width: 7'-6"

So, what's a Jam-o-Drum?

The Jam-O-Drum is a multiplayer audio-visual gaming platform with 4 player stations equally spaced around it. Each station has a drum pad that a player can hit with his or her hands. The drum pad is surrounded by a disc that can be turned left or right. A projector mounted in the halo structure above the table displays images on the table surface and on each of the stations. The four stations and the projector are all linked to a proprietary computer program which reacts to the players input and controls the sounds ands images. The first Jam-O-Drum was designed by ETC faculty member Tina (Bean) Blaine in 1998 as an interactive drumming table for collaborative music making. Currently, there are Jam-O-Drum installations in several cities including New York, Pittsburgh, Seattle, and Linz, Austria. The Carnegie Mellon Entertainment Technology Center is pleased to sponsor the World's Fair for Kids with access to a number of Jam-O-Drum platforms.

http://www.jamodrum.net/

Technical Specifications

Minimum Power Requirement: 15 Amp @ 120 VAC (dedicated circuit)

Actual Device Footprint: 8'-0" x 8'-0"

Average Setup Time: 90 minutes per Jam-o-Drum

Preferred Operating Conditions

Every effort should be made to limit the amount of ambient light in the general area of install.

Each Jam-o-Drum should be placed no closer than 6'-0" to another Jam-o-Drum.

These are music making devices with 5.1 spatialized sound, in other words: They're LOUD.

If used in an outdoor or semi-outdoor environment, the device must be protected from the elements.

Attraction will require (2) ETC operators and sufficient time for debugging after initial setup.

Jammin' Kids - The Show Elements

Curved Truss and Rigging

Truss layout consists of 6 independent units.

Each unit assembled from an assortment of 16"x16" truss sections.

Each unit will be assembled, rigged, and debugged prior to flying to trim.

Unit assembly to be performed by ETC labor.

All rigging/flying to trim is to be performed by OCCC staff.

Trim height of all truss units is 20'-0" from the OCCC floor.

Truss, rigging hardware and motors to be supplied by Christie Lites, Orlando.

Environmental Effects

(8) DMX contolled Bubble Machines (power to each, DMX to console)

(12) Dataflash Strobe Lights (power to each, DMX to console)

(2) DF-50 Diffusion Hazers (power to each, DMX to console) (fans with each)

(8) DMX controlled Fog Machines (power to each, DMX to console)

Position and Channeling TBD by Lighting Designer.

All effects gear to be provided by Christie Lites, Orlando.

Installation and debug of all effects gear to be performed by ETC labor.

Theatrical Lighting System

System comprised of:

(1) Power Distribution Unit (Input: 3-phase 220 VAC)

(1) 2x24 ETC Sensor Dimmer Rack (DMX to console)

(approx. 5) Martin Mac 500 Fixtures (wide angle lens) (power & DMX to each)

(approx. 60) Conventional Lighting Fixtures (ETC Source4) (power to each)

(approx. 30) Scrollers (ChromaQ) (default gel string) (power & DMX to each)

(1) GrandMA Control Console (DMX from all elements)

Various Gobos and Gels TBD by Lighting Designer

All lighting gear specified above is to be supplied by Christie Lites, Orlando.

Installation and debug of all lighting gear to be performed by ETC labor.

Show will be pre-cued and tested prior to load-in.

Screens and Projection System

(1) 4'x6' Holographic Projection Screen (rigged directly from OCCC grid)

(1) High Output Projector with an extremely short throw lens
(ex. Christie Roadster X4 w/Roadie 0.8 XGA Lens & Adapter Ring)
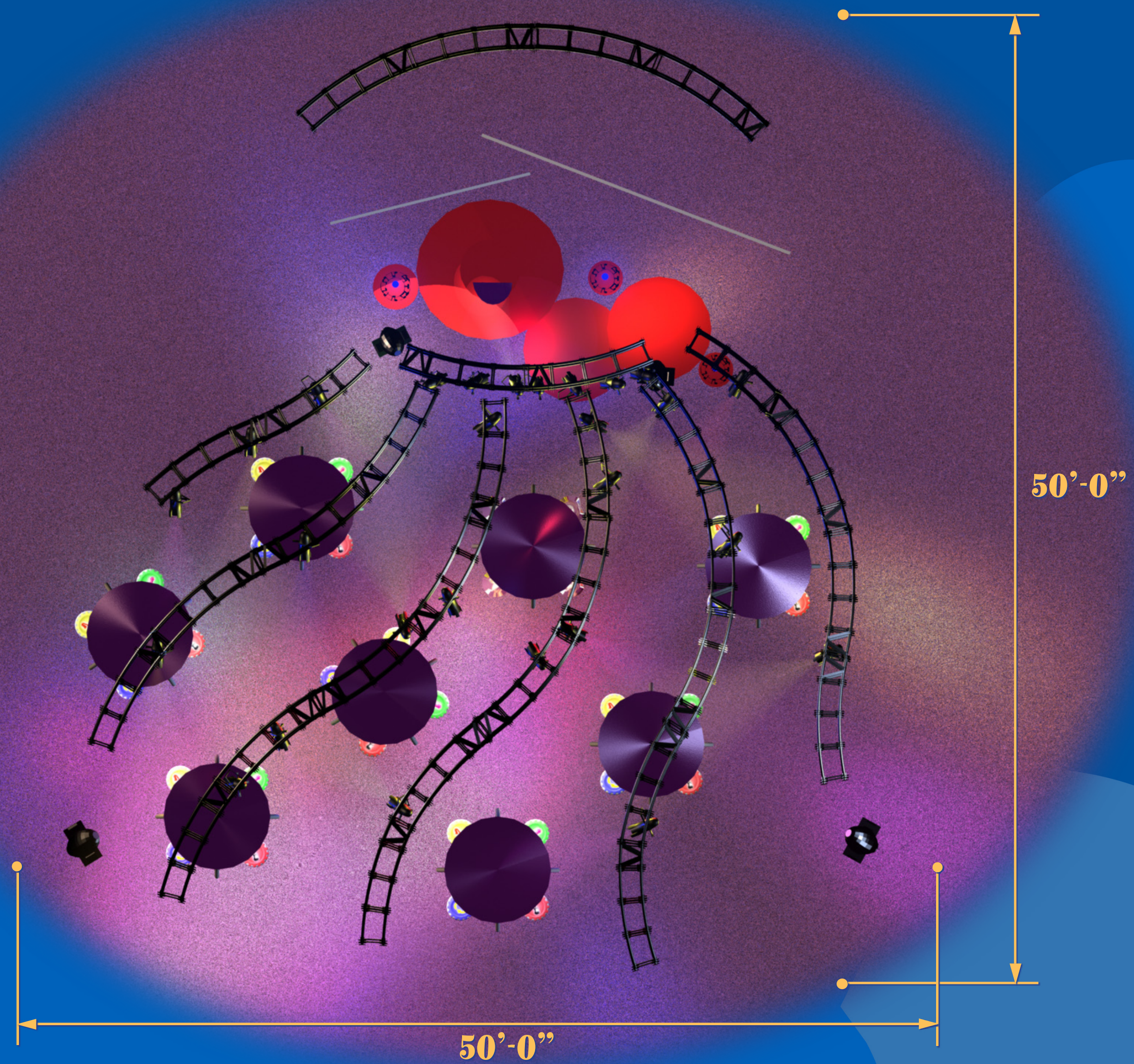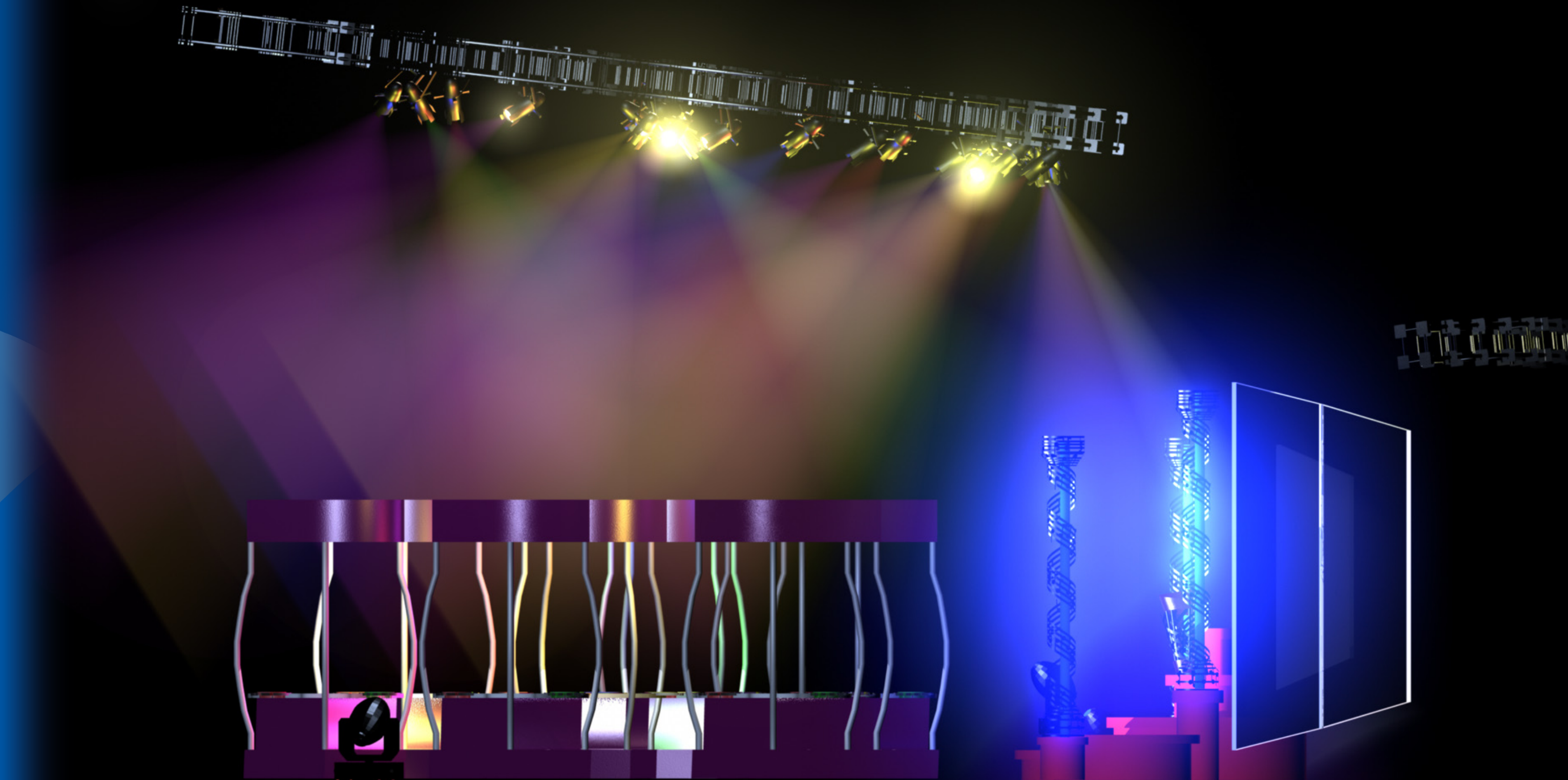(Power: 20 Amps @ 120 VAC, VGA cable home run to Central JoD computer)

(1) 16'x12' Rear Projection Screen (rigged directly from OCCC grid)

(1) High Output Projector with an extremely short throw lens
(ex. Christie Roadster X4 w/Roadie 0.8 XGA Lens & Adapter Ring)
(Power: 20 Amps @ 120 VAC, VGA cable home run to Central JoD computer)

(1) 10'x8' Rear Projection Screen (rigged directly from OCCC grid)

(1) High Output Projector with an extremely short throw lens
(ex. Christie Roadster X4 w/Roadie 0.8 XGA Lens & Adapter Ring)
(Power: 20 Amps @ 120 VAC, VGA cable home run to Central JoD computer)

Jammin' Kids - Groundplan

50'-0"

50'-0"

Jammin' Kids - Elevation

Jammin' Kids - Stage Details

36"

24"

24"

24"

12"

18"

12"

16"

36"

24"

18"

8'-0"

4'-0"

5'-0"

24"

18"

12"
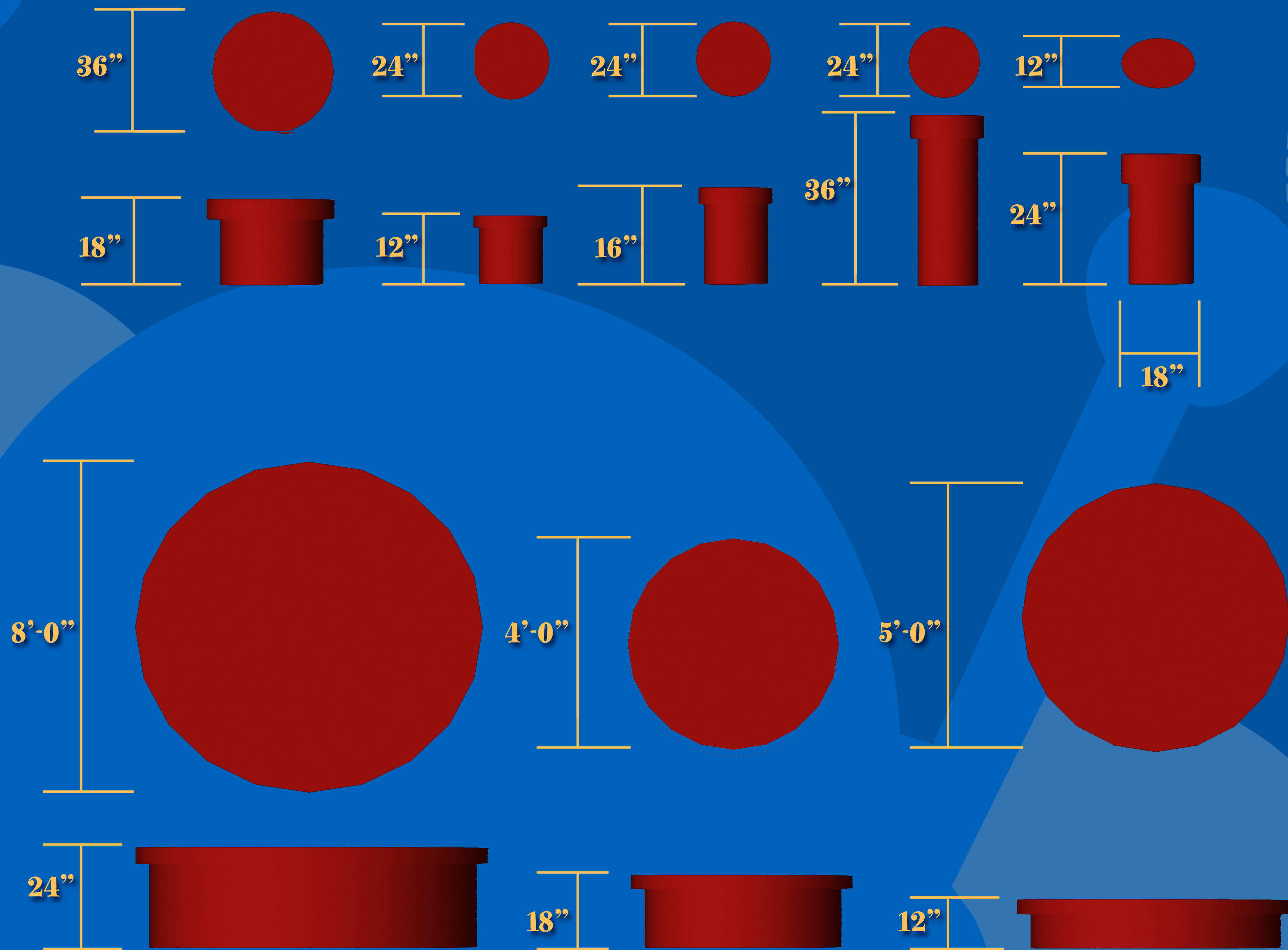
Jammin' Kids - Column Details

Frosted Acrylic Tube
(lit from below w/ColorKinetics)

Musical Staff
(cut from brushed aluminum)

Musical Notes
(treated w/color-shifting auto paint)

10'-0"

1'-0"   4"   1'-6"
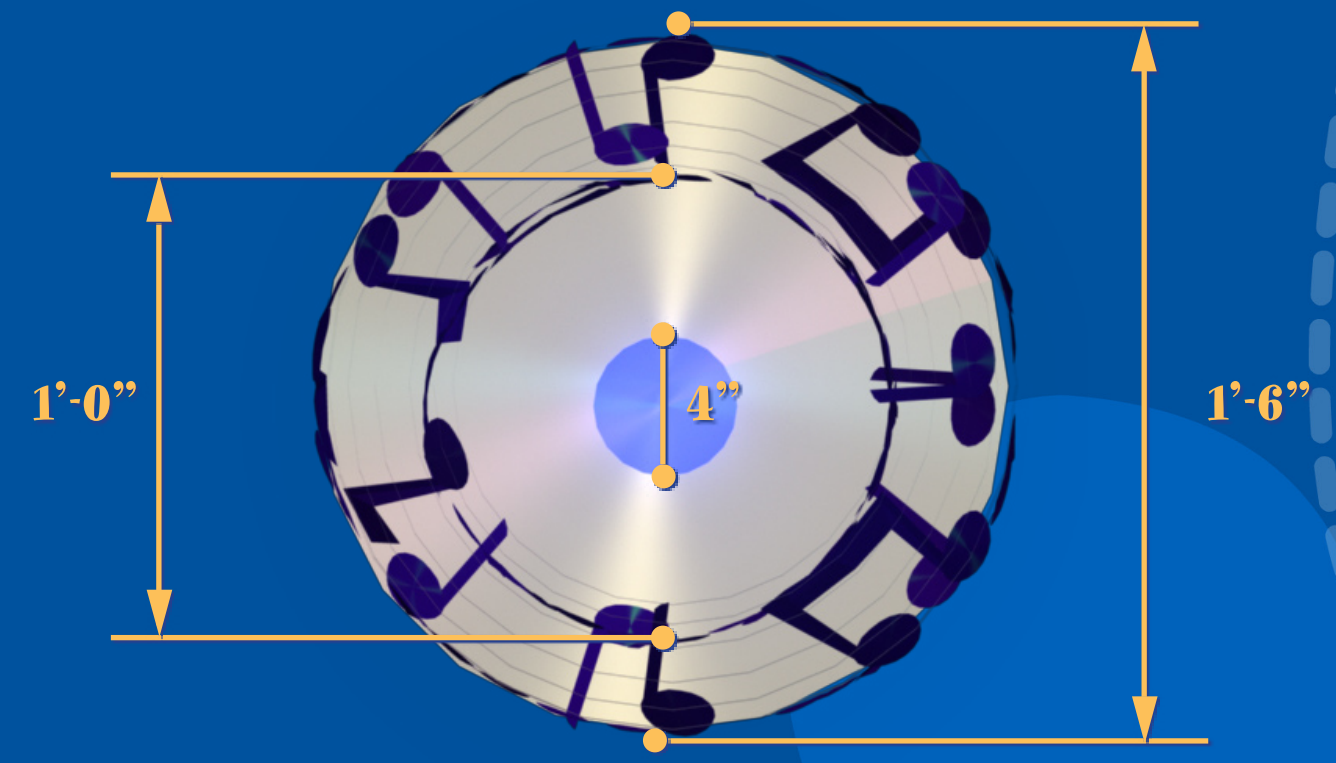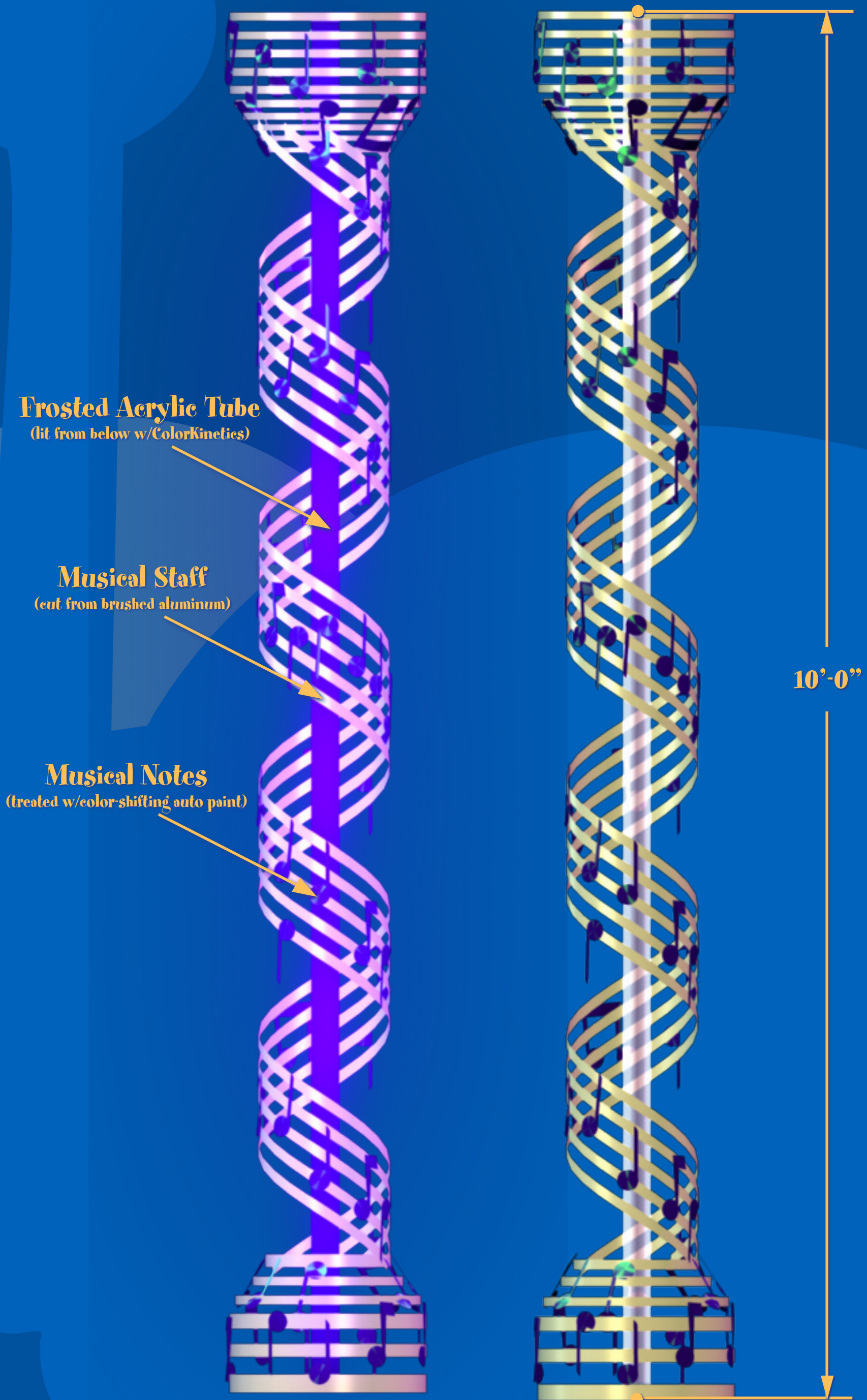
Musical Notes

Notes are approximatly $6\frac{1}{2}$" tall.
To be Laser or Water-Jet cut from an unspecified material.
Notes are to be finished in color-shifting automotive paint.

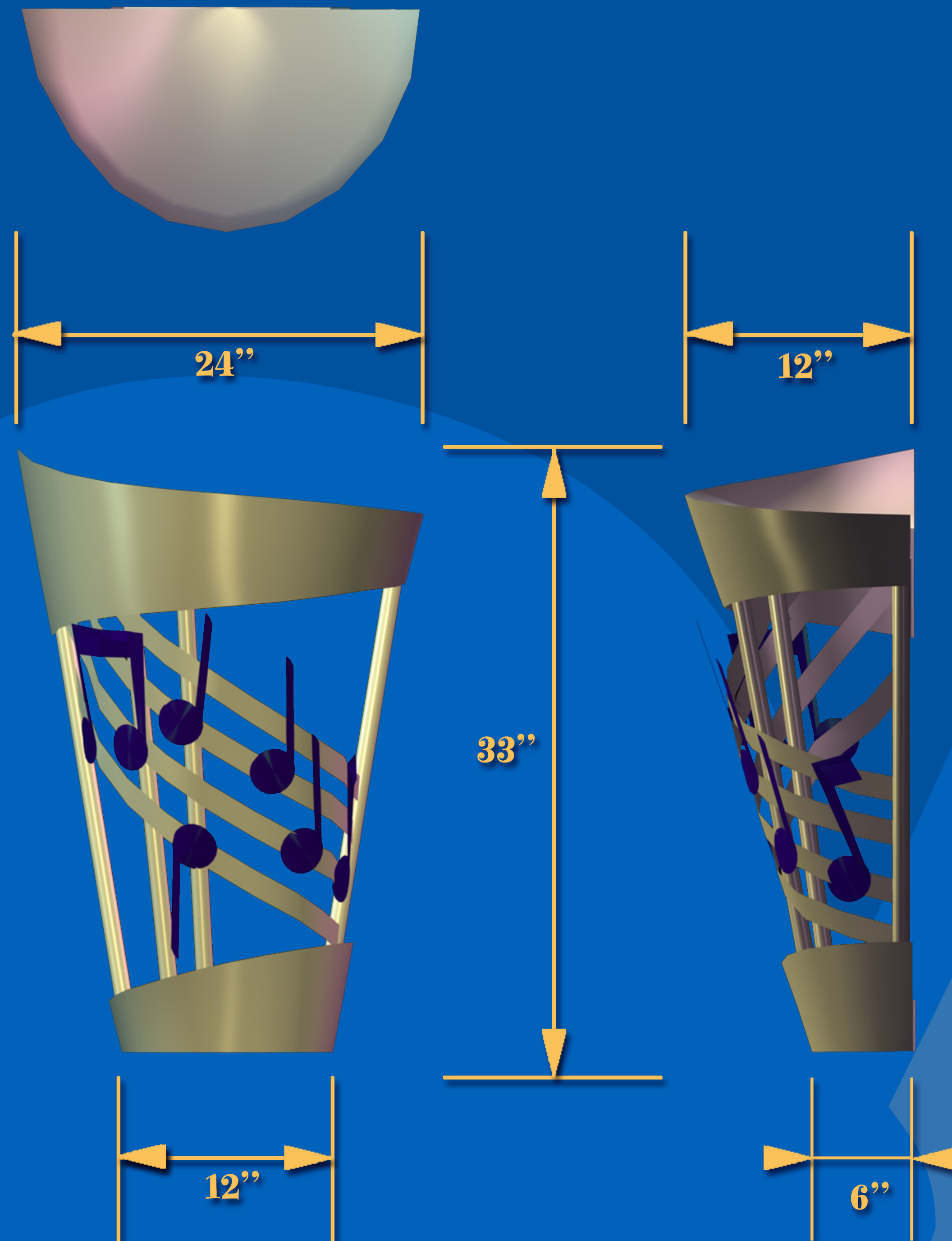$0'-6\frac{13}{16}$"

$0'-6\frac{5}{16}$"

Scale: 3" = 1'-0"

Musical Staff

To be Laser or Water-Jet Cut from $\frac{1}{8}$" or $\frac{1}{4}$" Aluminum Sheet Stock.
Once cut, the piece should be rolled at a 120° angle to acheive the desired spiral.
Musical Notes will be attached to fully-assembled comlumn.

$18'-8\frac{13}{16}$"

$17'-0"$

$0'-1\frac{5}{16}$"   1'-0"

Scale: $\frac{1}{2}$" = 1'-0"
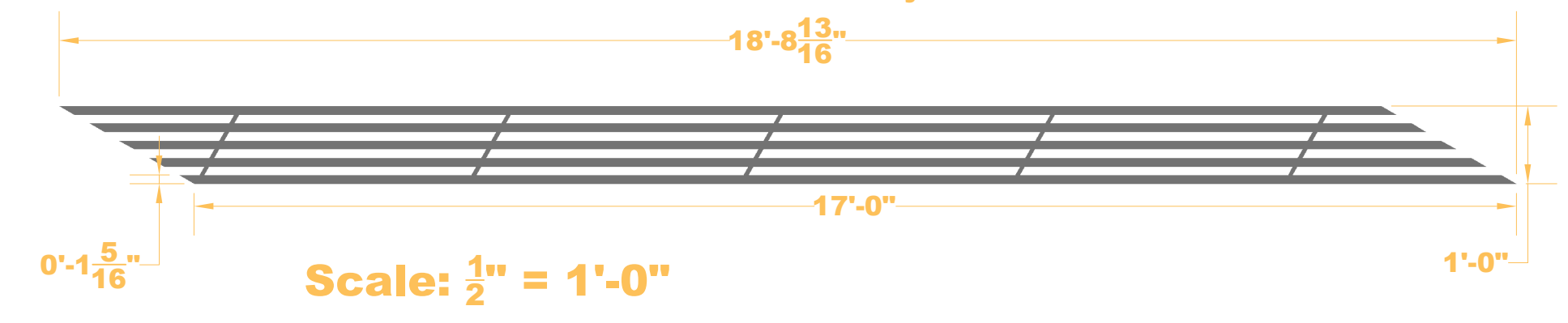
Jammin' Kids - Podium Details

24"

12"

33"

12"

6"

World's Fair for Kids 2006

We'll be there.
Will you?