

# Children's TherAplay

# Project Overview: Client Needs

## What the Client Wants:

Important elements: reception desk, donor wall, graduation tree

Rustic, contemporary design

Incorporate raw, natural materials - wood, stone, brick

Calming colors, minimize visual stimuli

## Parent Survey Results

**Lighting:** soft lighting is better than bright fluorescent or natural light, avoid glare - causes distraction or discomfort (covers eyes, escapes)

- lighting is dim and inconsistent, harsh sunlight in waiting area

**Acoustics:** loud/unexpected/high pitched noises are distracting or upsetting and causes children to cover ears/scream/cry/withdraw

-sound proofing needed in therapy and sensory rooms, horse arena echoes

**Color:** most impactful element, children drawn to bright colors and bold contrasts, earth tones provide calmness and focus, therapy rooms should be playful but not busy

**Temperature:** arena is cold in the winter

**Privacy/Transparency:** more privacy in therapy rooms, larger windows in parent viewing area and more outdoor viewing area

**Layout:** larger therapy rooms with more storage, separate therapy rooms from horse area to avoid distraction, play area is cramped between sessions (people have to pass through play area upon entry), need restroom close to waiting area, wheelchair access is difficult, transition areas and wayfinding needed

## Staff Survey Results:

**Lighting:** need softer controllable lighting and more natural light overall, insufficient in arena depending on time of day, important aspect in office area

**Acoustics:** sound-absorbing materials and acoustic insulation needed in arena - exterior noise and echoes makes it hard to hear, all spaces are too loud

**Color:** bright colors are overstimulating, therapy rooms are too busy visually, pastel colors are preferred, dark green trim creates too much contrast, prefer more consistent color scheme throughout space

**Temperature:** most impactful aspect, better insulation needed in arena

**Privacy/Transparency:** areas needed for private discussions

**Layout:** Therapy rooms need to be bigger with more storage and increased visual and acoustic privacy, waiting room is crowded between sessions, need mud room, entrances are too small, poor traffic flow, more seating needed near outside for parents

**Materials:** flooring (carpet and tile) is hard to keep clean, linoleum is slippery with dirt, too many flooring changes



Highest rated image from client and staff

# Project Overview: Furniture Design



Sensory tunnel



Sensory spaceship



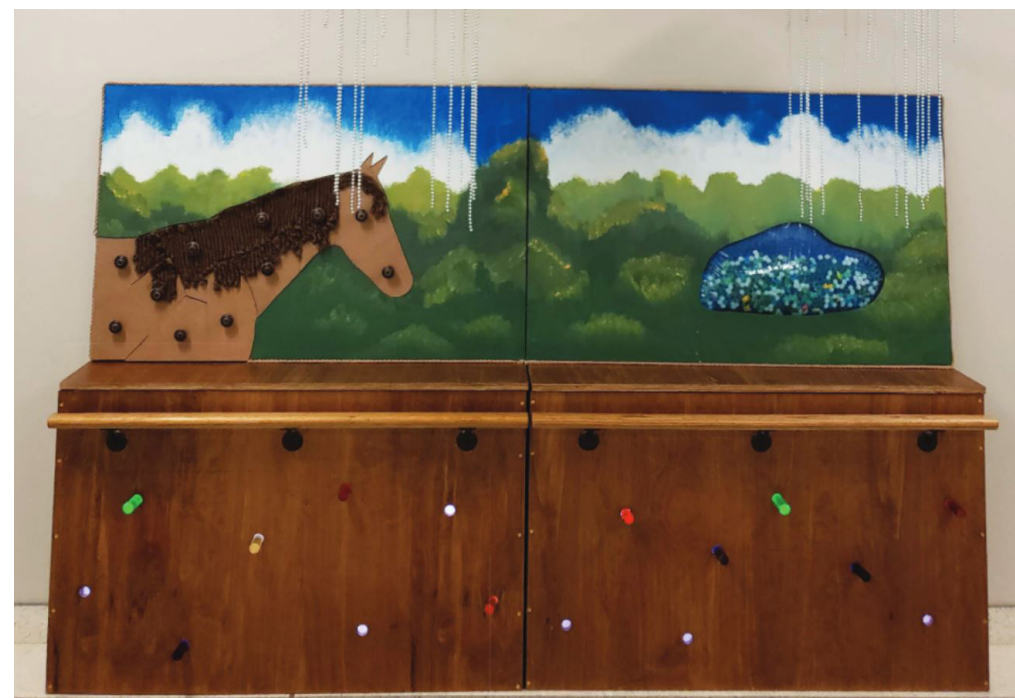
Rock climbing tree



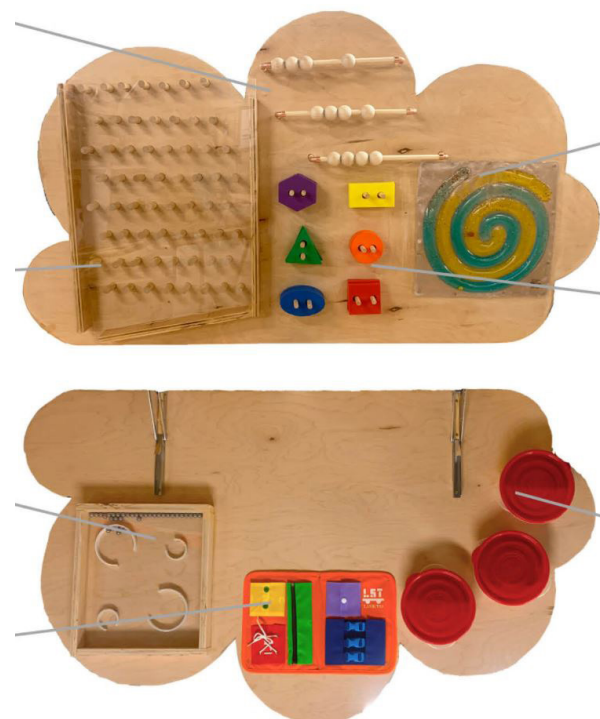
Living wall



Walking aid



Cruising wall



Sensory wall and table



Sensory wall

# Case Study: First Place Apartments

Located in Phoenix, AZ, First Place is an independent not-for-profit organization for individuals with autism and other neuro-diversities, which engaged RSP Architects to develop their exciting novel vision to fulfill the needs of those with ASD who are transitioning from their secure family homes into greater society.



## Acoustics

Acoustic baffles and inset entries for each apartment limits noise transfer.

## Lighting

Diffused LED lighting, which is less harsh, and ample natural lighting with strategically placed windows and doors provide comfort and illumination throughout the design, with operable windows providing the auxiliary benefit of controlled access to fresh air and passive ventilation.

## Colors

It is recommended to specify more muted colors like light blues, greens, tans, grays, and even lavender, which promote calmness, rather than bright punchy colors that can overwhelm and exacerbate hypersensitivities.

## Furniture

The space features contemporary furniture in a natural, sophisticated color palette.

## Materials

Natural materials that are chemical free or have low toxicity levels (no VOCs) were also considered when specifying paints, sealants, plastics, adhesives and carpets. Increased durability in materials is another measure applied throughout.

## Wayfinding

A refined and repeated material palette is strategically placed throughout to increase familiarity with spaces, with subtly colored visual paths and signage to assist individuals in transitioning through spaces,

## Spatial configuration

In terms of safety and security, a single point of entry with 24-hour concierge services is provided, with individuals having different locking options available to apartments to promote greater independence.

## Source:

First Place Apartments: <http://rsparch.com/2017/07/18/autism-aware-design/>

# Evidence-Based Design

Autism means not feeling relaxed. Criterion include deficits in social interactions and restricted, repetitive behaviors and interests. Most individuals with ASD experience **sensory hypersensitivity or hyposensitivity**, especially in hearing and touch. Sensory rooms are popular in autism-friendly spaces because they provide a **controllable environment** as a retreat from overwhelming stimuli. Sensory stimulation can be effective in developing **cognitive regulation skills**. Through spaces that afford control of stimuli, inhabitants can learn to manage sensory overload - a skill that has long-term benefits.

## Acoustics

Individuals on the autism spectrum are extremely sensitive to sounds. Providing better insulated spaces and allowing for manipulation of sound pressure levels is beneficial. Adding background noise with biophilic elements, such as birdsong or water sounds, can reduce occupants' stress. Adding pink noise is another common strategy for creating sound privacy in spaces with diverse activities. 50-55DB is more bothersome than louder sounds.

## Lighting

Using indirect, dimmable lighting is the best solution. Facilities should also provide access to sunlight, both through quality daylight design indoors and by making outdoor spaces available to inhabitants.

## Color

Autism friendly designs have small areas of bright color and light, unsaturated earth tones. A monochromatic color scheme works well.

## Sources:

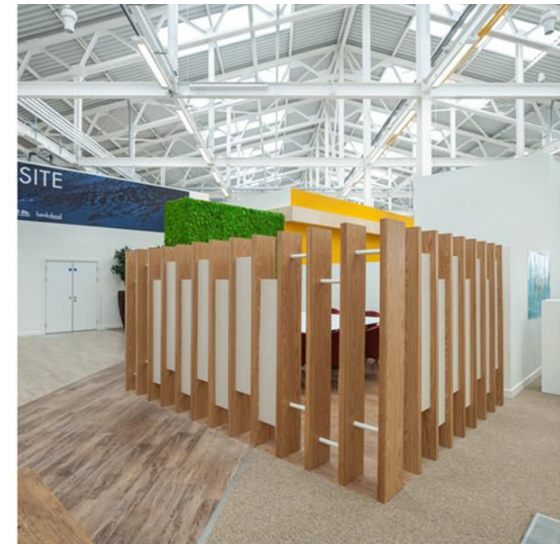
What Autism Teaches us About Design: <https://branchpattern.com/autism-teaches-design/>

Kids Furniture Market according to Ergonomical and Environmental Design: <http://jisr.szabist.edu.pk/JISR-MSSE/Publication/2016/14/1/494/Article>

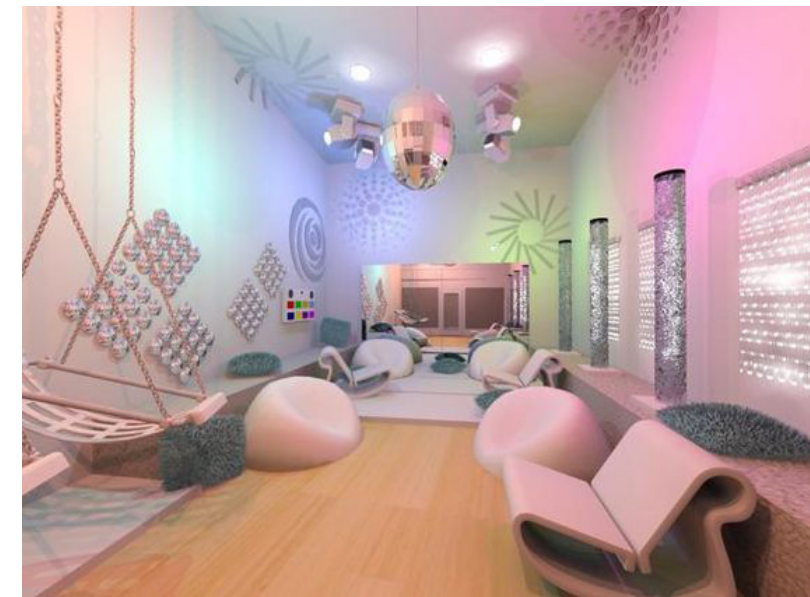
Four keys to designing autistic-friendly spaces: <https://www.bdcnetwork.com/blog/four-keys-designing-autistic-friendly-spaces>

Importance of Interior Design for Autism: <https://algedra.com.tr/en/blog/importance-of-interior-design-for-autism>

ACOUSTICS



LIGHTING



COLOR



# Evidence-Based Design

## Furniture

Furniture has the potential to influence the function, privacy, and size of a space. Subdividing rooms so that spaces contain a single activity increases learning. Bookshelves, workstations and seating are examples of furnishings that define the size and privacy of spaces. Because of the importance of these dimensions for people with ASD, modular, movable furniture is better than built-in furniture. Providing storage spaces for non-relevant materials also helps to further encourage focus.

## Spatial configuration

Spaces that are orderly and defined are easier for the autistic mind to process. The use of sequential circulation, storage for non-essential items, sub-dividing rooms, and making spaces reconfigurable can help individuals with autism to better focus.

## Materials

Natural, solid materials are preferred - no complicated patterns, no highly reflective surfaces, design of textiles should not be intrusive or bright. Easily sanitized finishes are important because some people on the autism spectrum can have a compulsive-like need for cleanliness.

## Wayfinding

Symbols and coordinated colors or distinctive landmarks can improve navigation. This is especially true when the signals are culturally relevant and related to the intended use of the space. Individuals with ASD are better at navigating spaces when there is a clear objective.

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Kids Furniture Market according to Ergonomical and Environmental Design: <http://jisr.szabist.edu.pk/JISR-MSSE/Publication/2016/14/1/494/Article>

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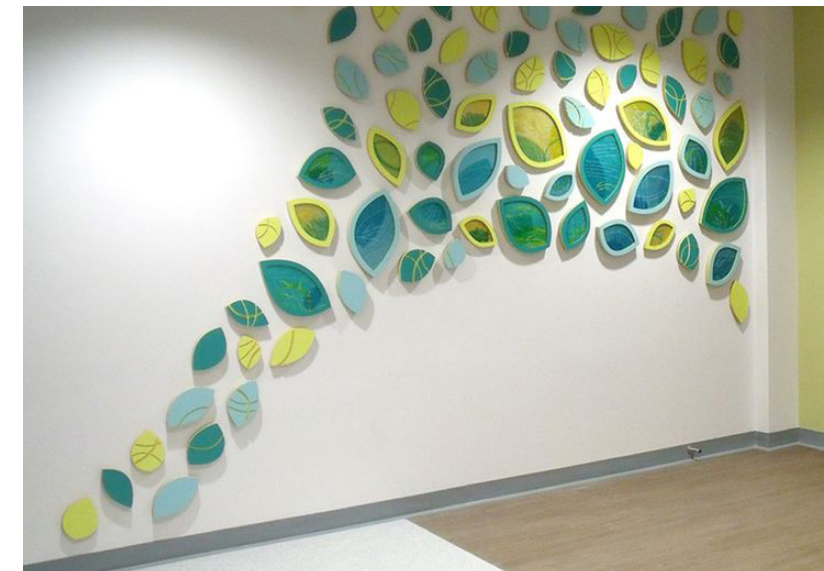
FURNITURE



MATERIALS



WAYFINDING



# Observations

## Behaviors Observed:

1. Repetitive behaviors
2. Rapid Movements
3. Singing (could mean they are focused or in a good mood)
4. Interest and curiousness in activity
5. Listening and following directions
6. Reaction to loud noises or bright lights
7. Self-control: See if they get angry or frustrated quickly
8. Mood Swings: An abrupt change in mood or emotional state
9. Strong need for order or routine
10. Adaptability: Being able to adjust to new conditions
11. Eye Contact
12. Refuse or ignore request
13. Engage in conversations
14. Difficulty communicating their needs
15. Fidgeting - playing with fingers, hair, or personal objects
16. Reaction to textures - what they choose to touch or avoid
17. Mood before and after horseback riding

## 11/24 Observations: Comments

**2:10** - Immediately drawn to spaceship  
Went out of way to get to it - climbed over items  
Stomping on platform  
Pushing buttons

3 kids- more chaotic environment  
Ball - crying  
Swing - crying  
Trampoline - stopped crying  
Basketball with hoop  
Puzzle

### 2:20

Spaceship - visual distraction  
Horse visual distraction - happy, yelling  
Puzzle with music - fascinated  
Therapist moved arms to do motions with the song  
Child waited to hear end of each song before replacing puzzle piece

### 2:30 - SWITCH KIDS

Fascinated by toys with lights and sounds  
Obstacle course focusing on balance and coordination (balance beam, ladder, soft stepping stones) - purpose is to get pieces for toy  
Orange is preferred color  
Child enjoys process  
Child enjoys ability to choose path  
Child is able to carry conversation

**2:40** - Person came in and interrupted, conversed with therapist, child showed recognition and was happy to see person  
Child busied herself with other toys  
Child was verbal while they were conversing  
Child drawn to swing - enjoyment, smiling  
Draw with chalk on trampoline - engaged  
Jumping on trampoline  
Ring around the Rosie on trampoline  
Horse - visual distraction  
Jumping on trampoline - enthusiastic  
Didn't want to put chalk away - said no when told to  
Does not want to help clean up - said no, but followed direction anyway  
Cleaning up stepping stones served as exercise in learning colors  
Child chose to go back to swing while therapist cleaned up  
Verbal while sitting on swing - happy conversation

# Conceptualization

Storage for prep room - define process for patients

Space for personal belongings

Collect riding gear - harness, helmet, etc.

Seating (with built-in storage)

Chair: hammock, "escape pod"

Storage for exercise balls

Not too high

Staircase with landing

Longer than just a few stairs

In gym or outside

Bed - learning life skills

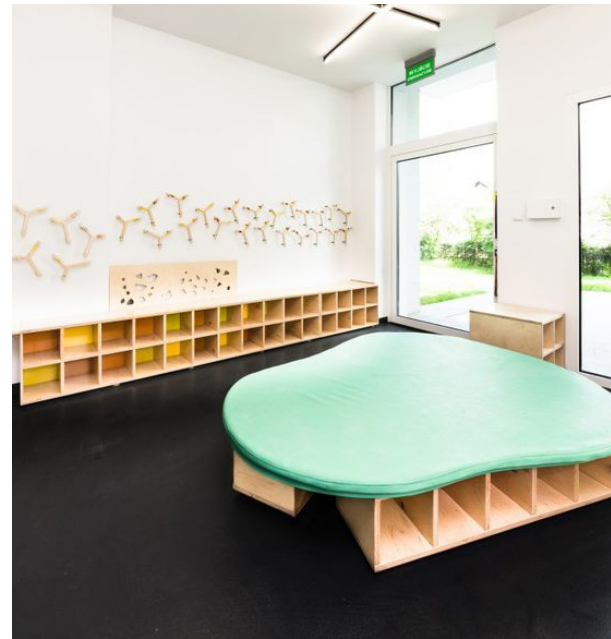
Not heavy

Murphy bed - ensure safety

## Balance training

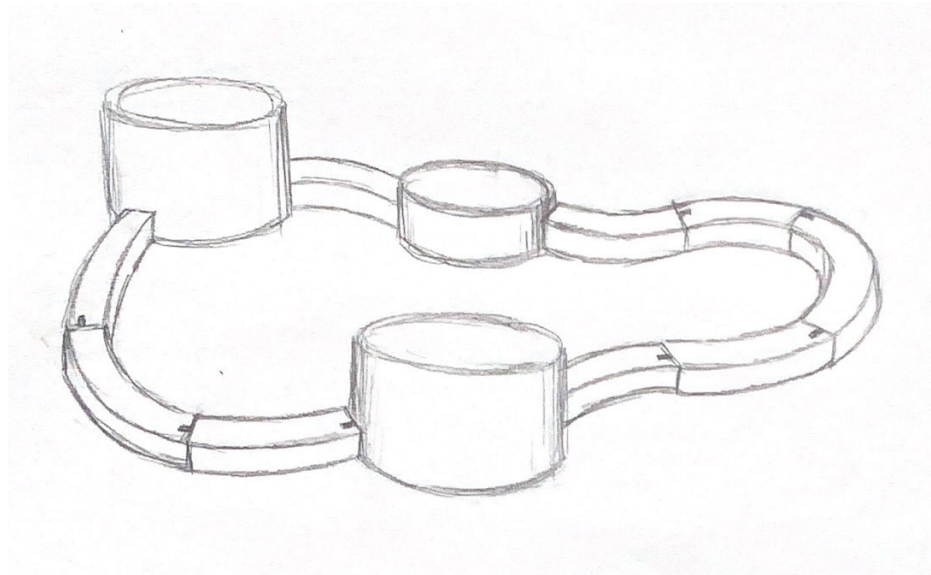
Multipurpose - bench, storage, beam

"Puzzle" beam - stored in bins that can be used as seating



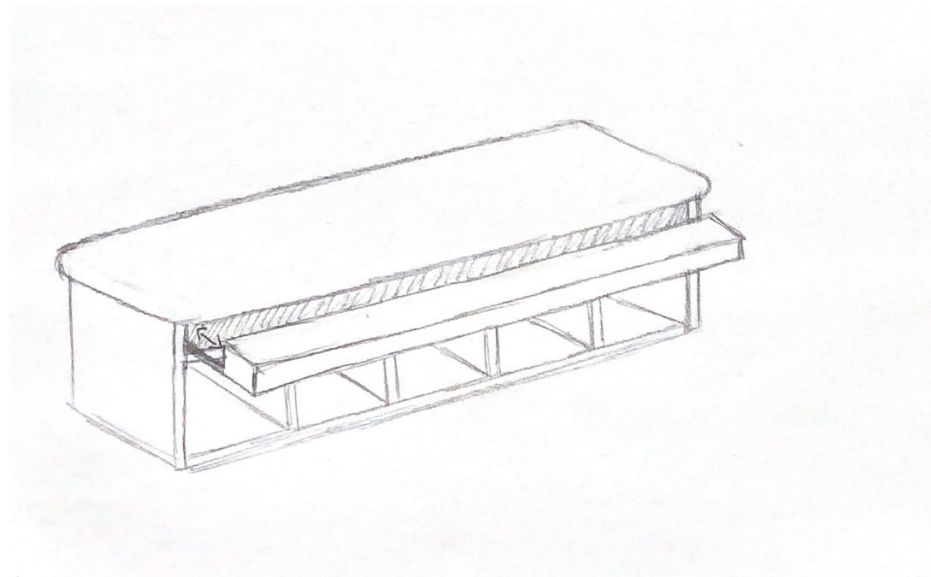


# Conceptualization: Issue Based



## **Modular Balance Beam**

With this piece kids would be able to build their own path and then practice balance by walking on it. The larger pieces will serve as checkpoints along the path and can be used as casual seating as well. The larger pieces will also be hollow to allow storage of the smaller pieces of the balance system.



## **Balance Bench**

This piece is a bench with built in storage underneath and a balance beam that can be pulled out when needed. This will give the therapists seating, storage, and a balance beam all in one piece, which would help save space, reduce clutter, and solve the issue of trying to put away a balance beam in order to avoid distraction.



OT Room 2

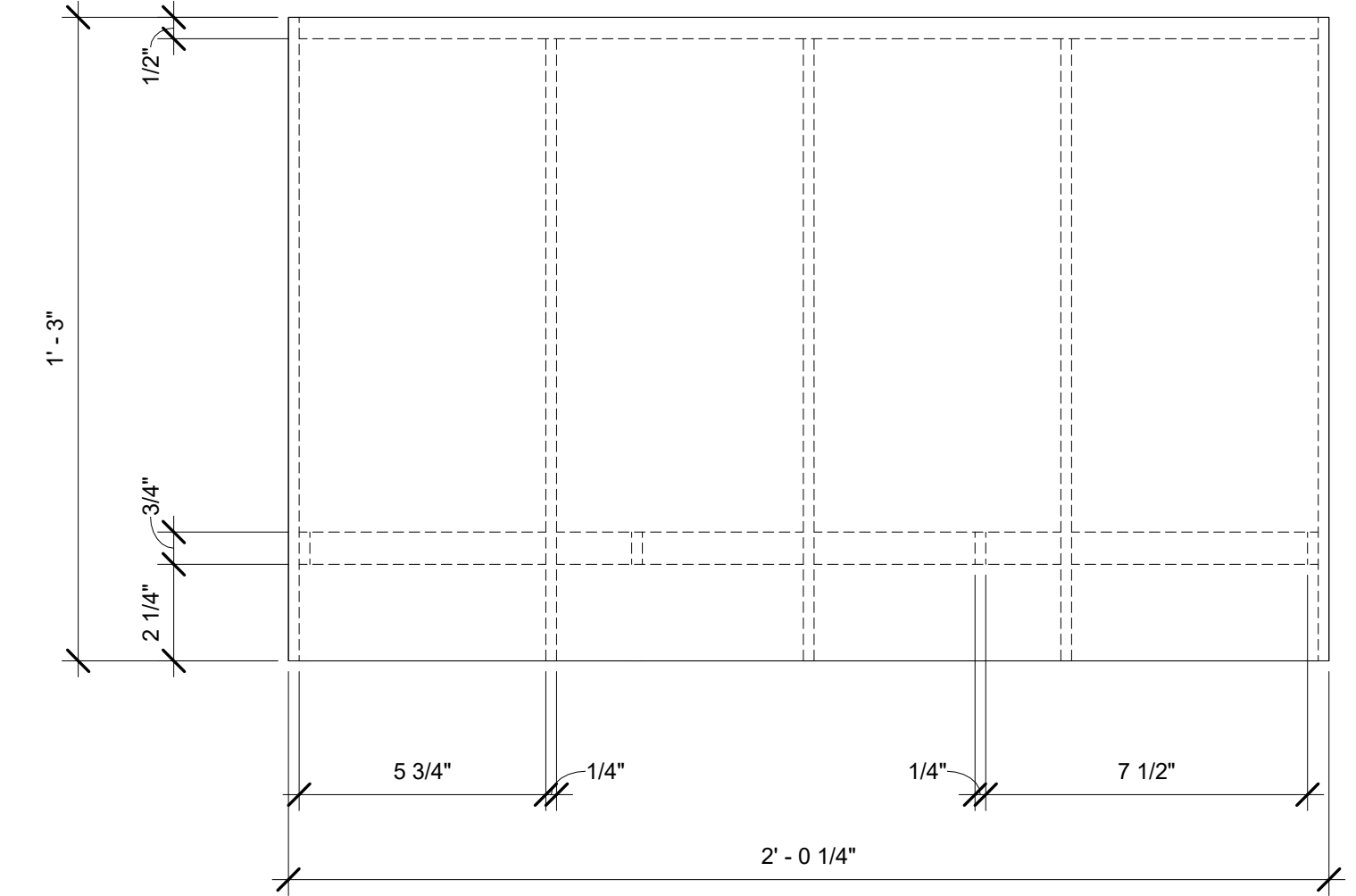
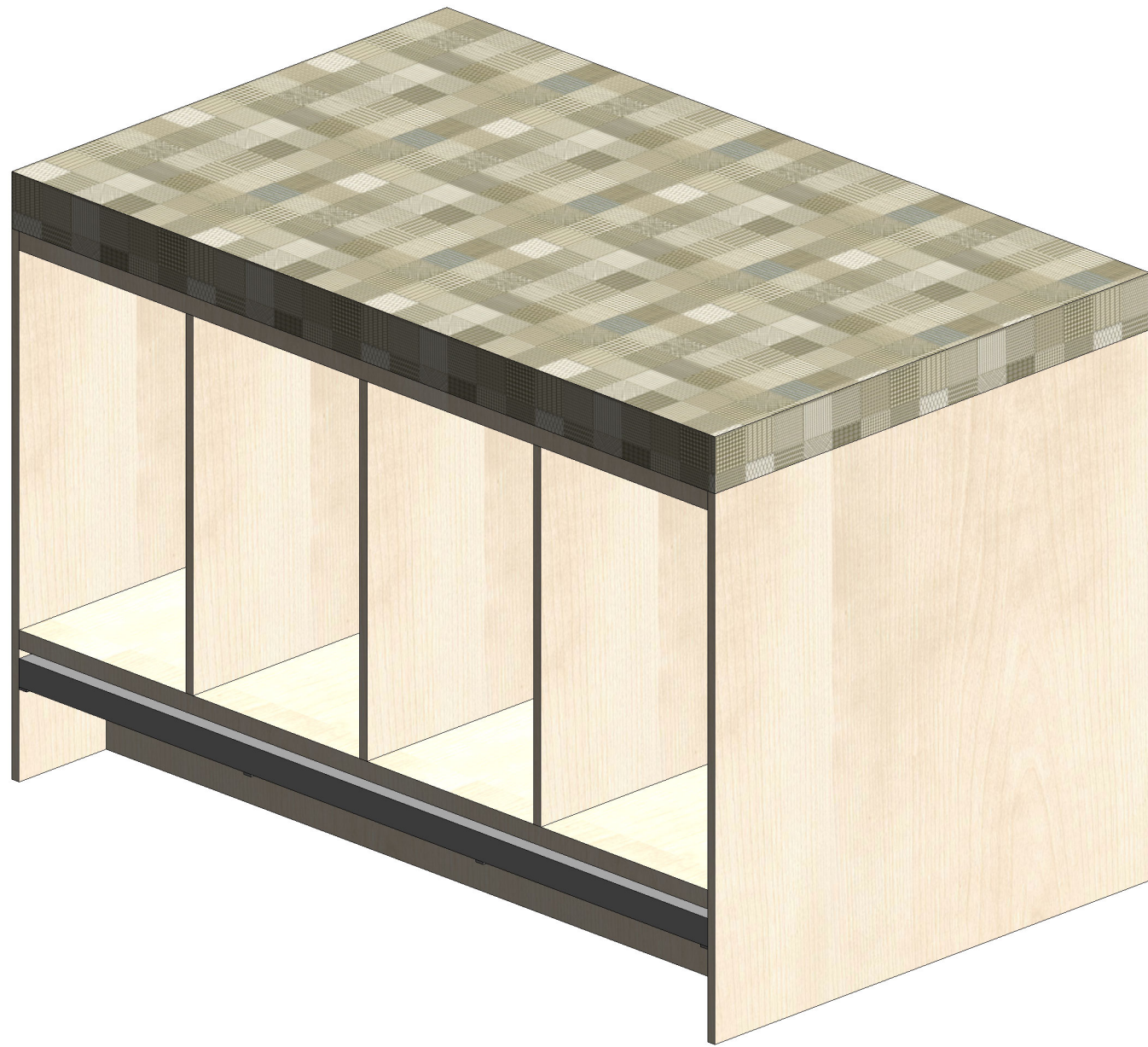


1 Floor Plan

# TherAplay Furniture

No.	Description	Date

Floor Plan		A101
Project number	Project Number	
Date	12/10/20	
Drawn by	Elise McQueen	
Checked by	Checker	Scale

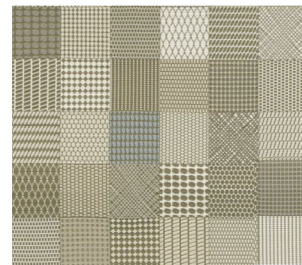


① Level 1  
3" = 1'-0"

### Finishes



Wood:  
White Birch

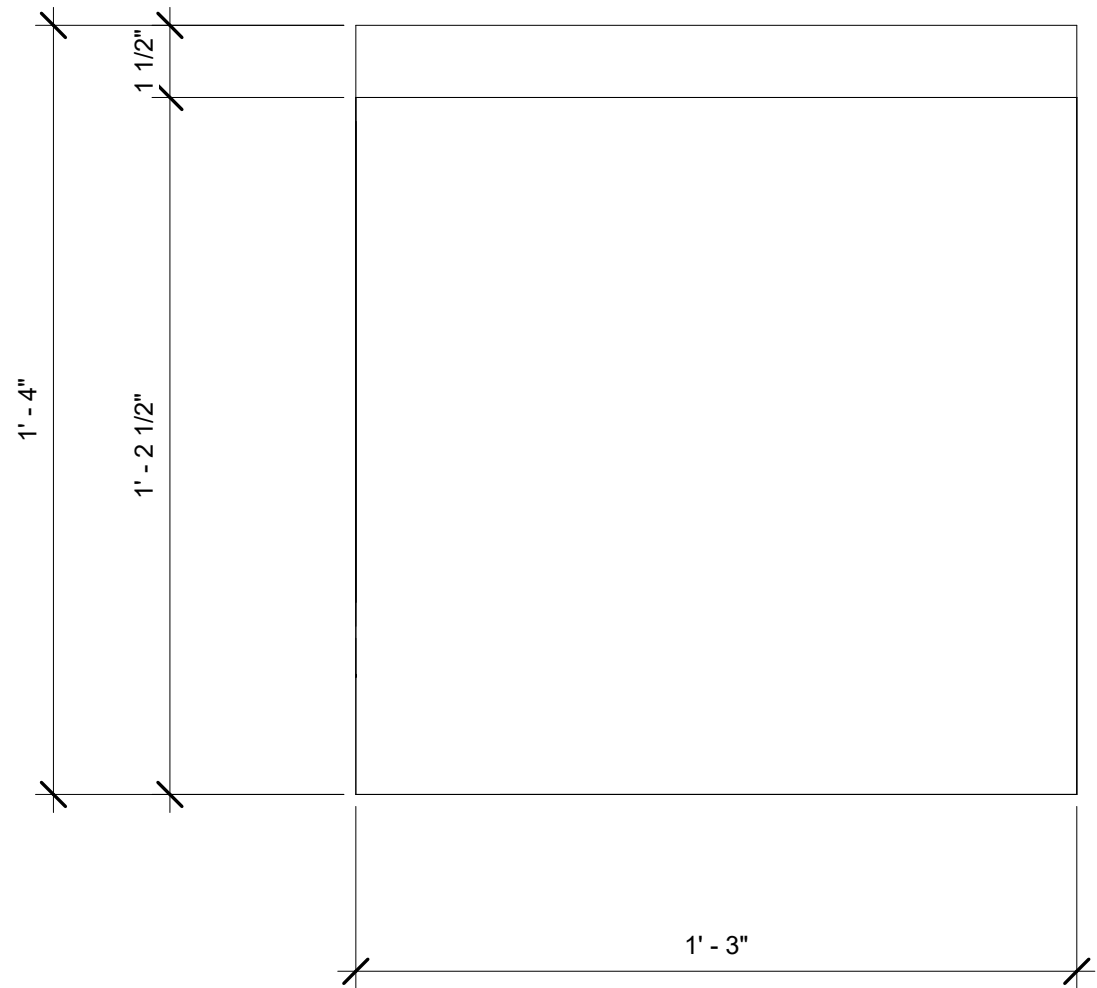


Upholstery:  
Patchwork - Cobblestone  
Knoll

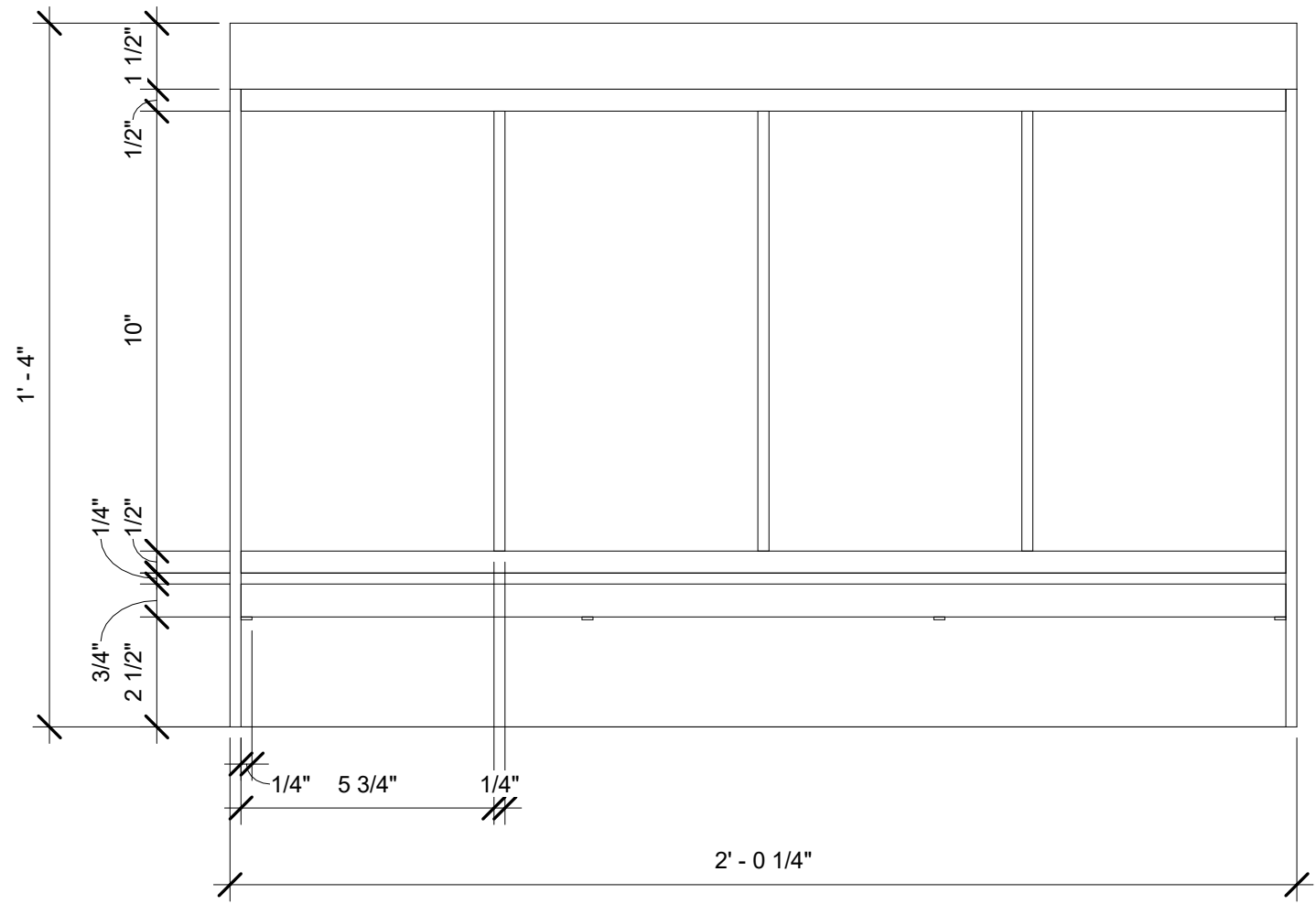
## TherAplay Furniture

No.	Description	Date

Furniture Plan		
Project number	Project Number	<b>A102</b>
Date	12/10/20	
Drawn by	Elise McQueen	
Checked by	Checker	
		Scale 3" = 1'-0"



① East Elevation  
3" = 1'-0"

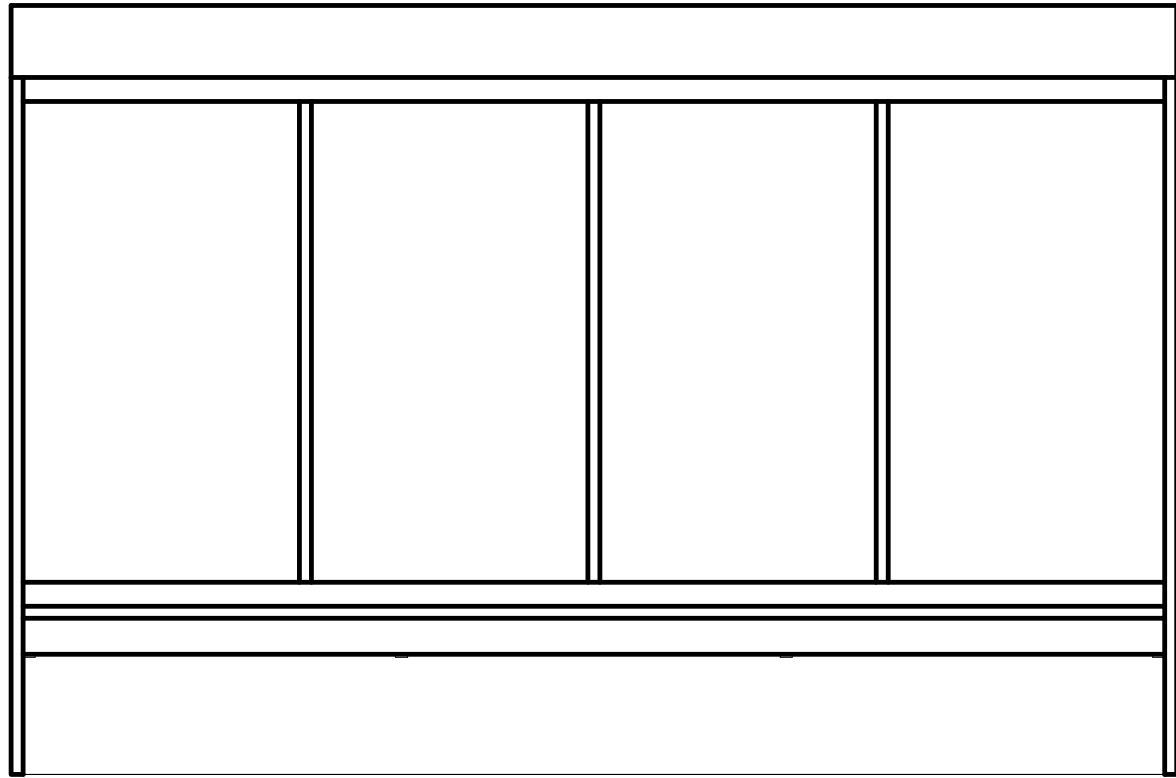


② South Elevation  
3" = 1'-0"

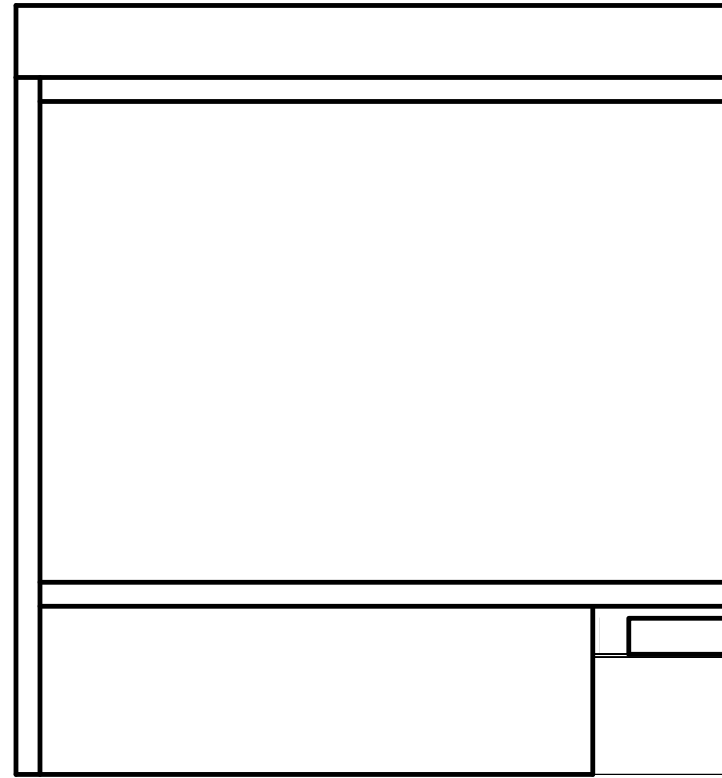
# TherAplay Furniture

No.	Description	Date

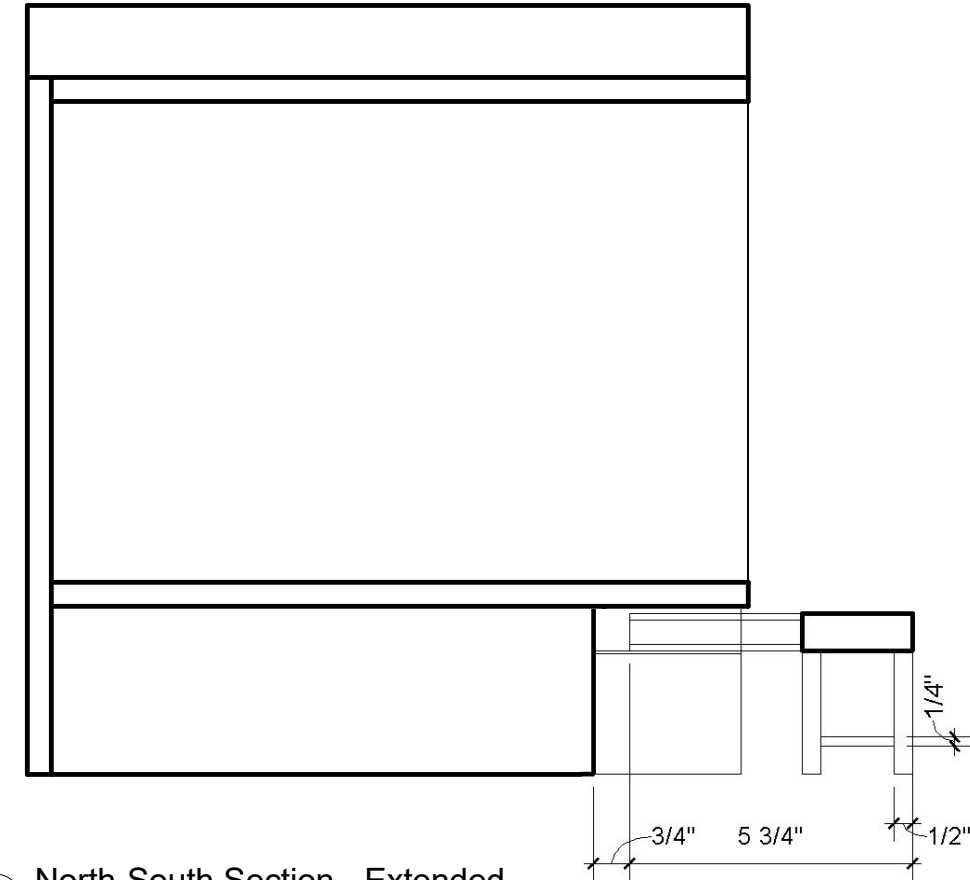
Elevations		A103
Project number	Project Number	
Date	12/10/20	
Drawn by	Elise McQueen	
Checked by	Checker	Scale 3" = 1'-0"



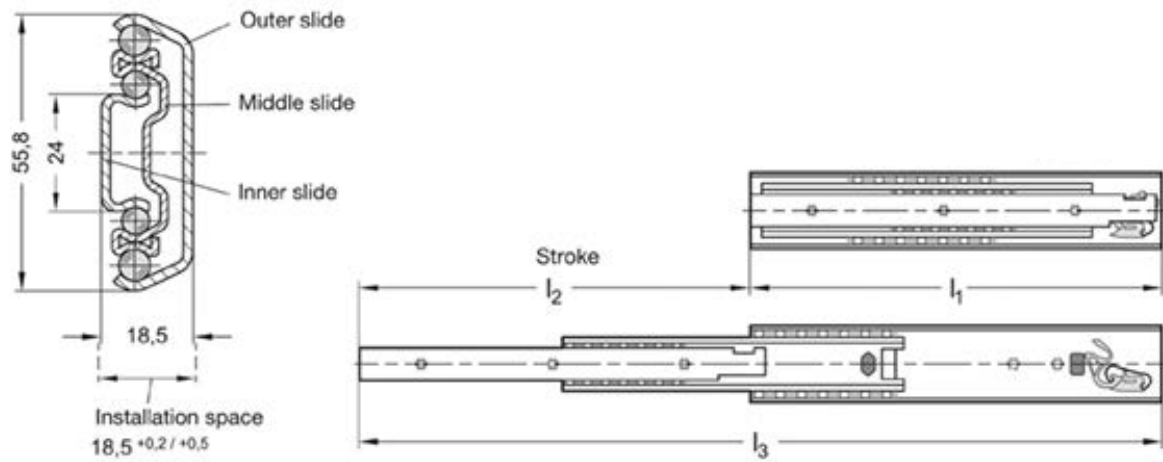
① East-West Section  
3" = 1'-0"



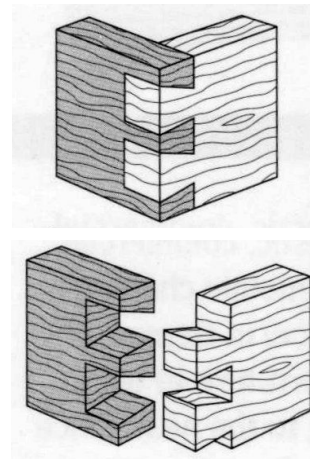
② North-South Section  
3" = 1'-0"



③ North-South Section - Extended  
3" = 1'-0"

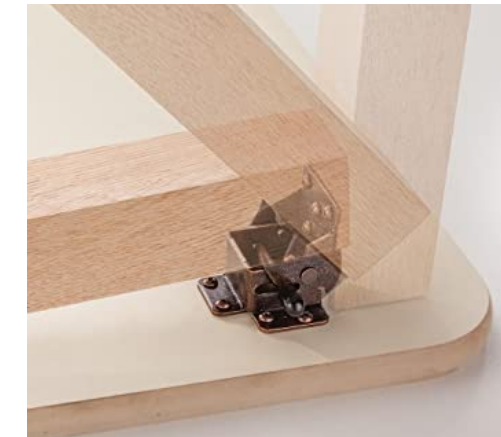


Telescoping Slide Mechanics



Dovetail Joint

The dovetail joint will be used at all wood connections to ensure that the piece is safe and secure.



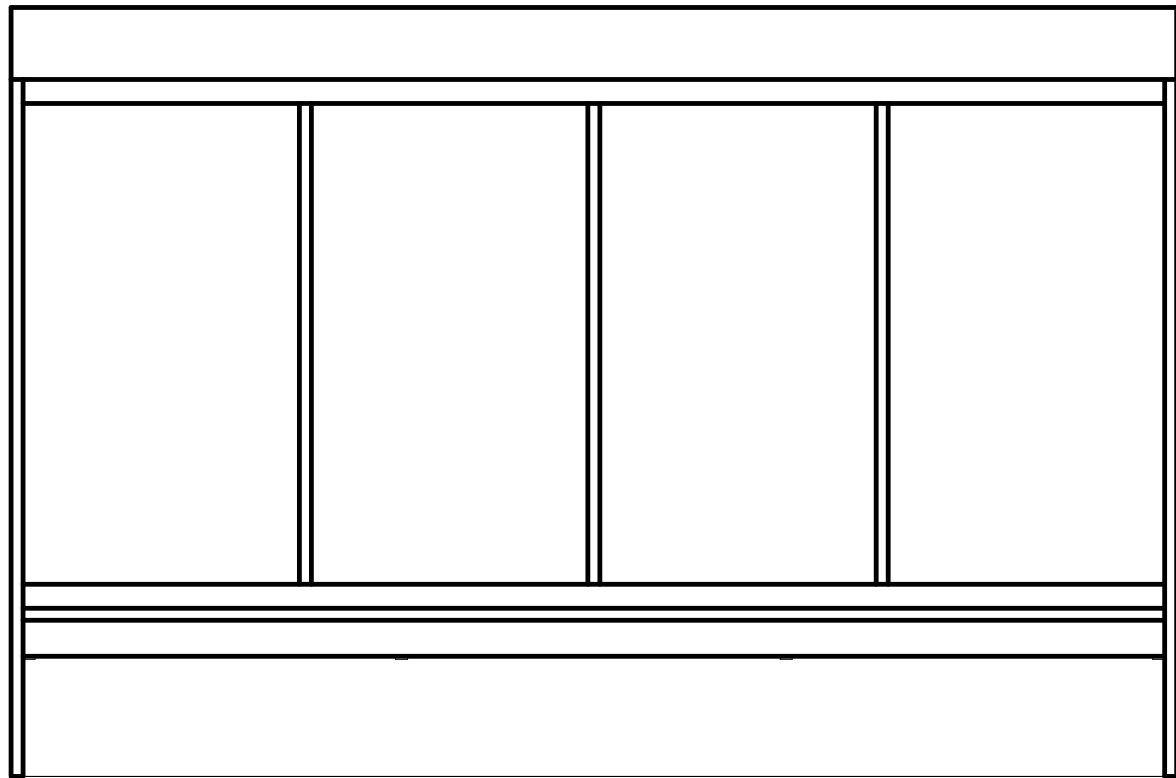
Folding Leg Bracket

This bracket will be used to attach supports, or "legs", on the under side of the balance beam, which can be folded out when the beam is in use.

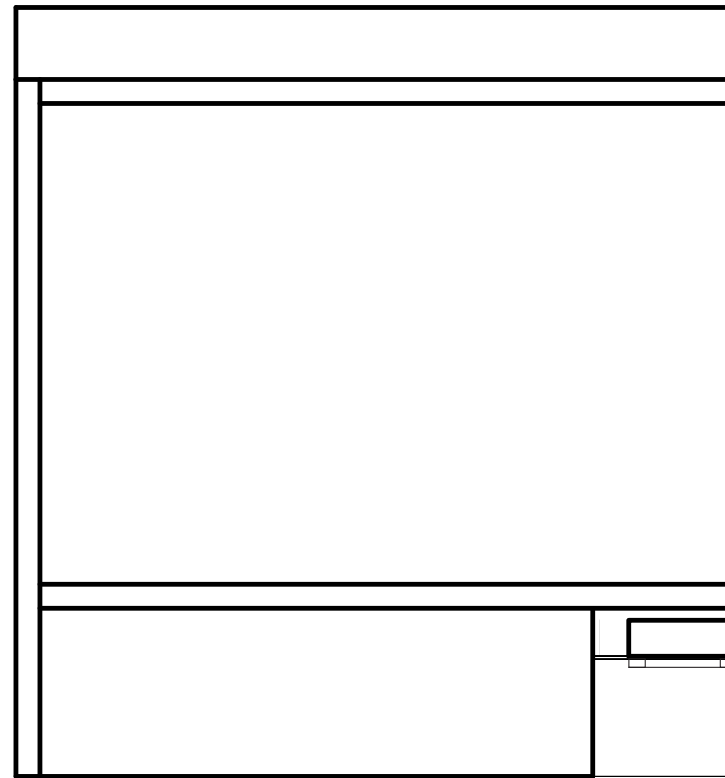
# TherAplay Furniture

No.	Description	Date

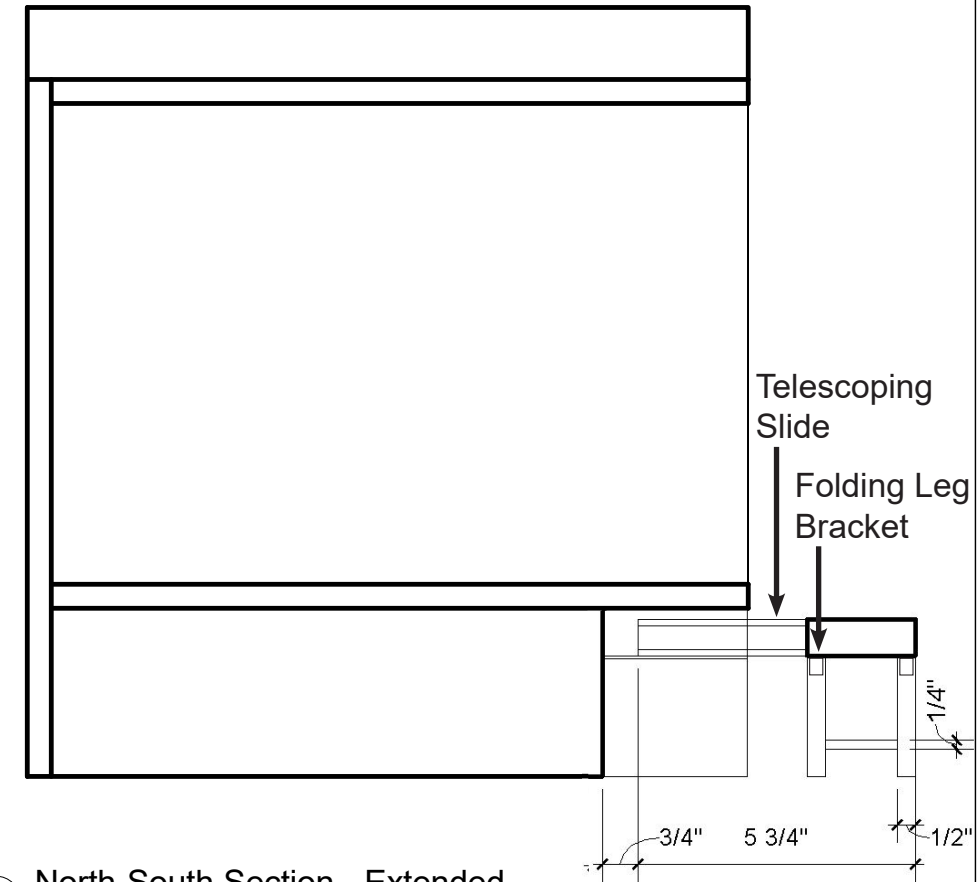
Sections and Details		A104
Project number	Project Number	
Date	12/10/20	
Drawn by	Elise McQueen	
Checked by	Checker	Scale 3" = 1'-0"



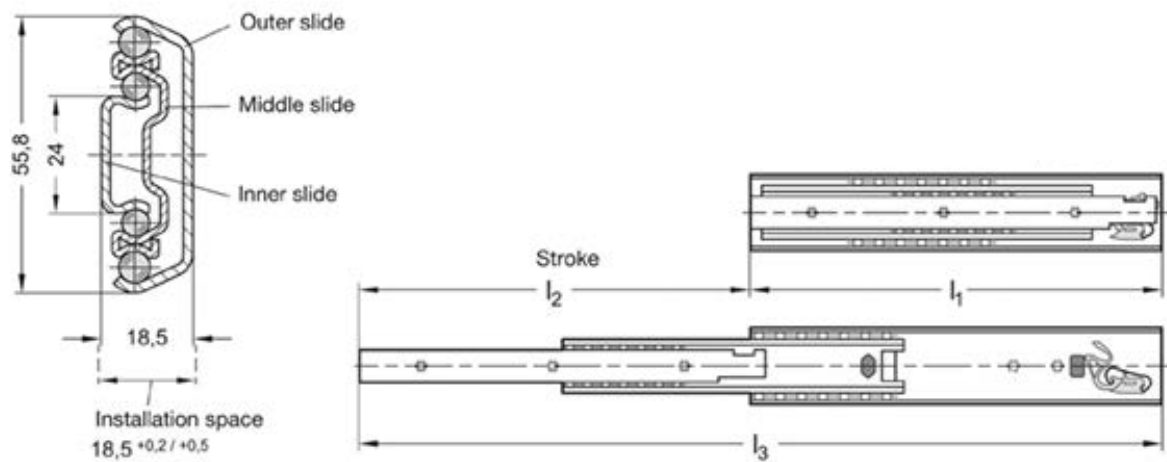
① East-West Section  
3" = 1'-0"



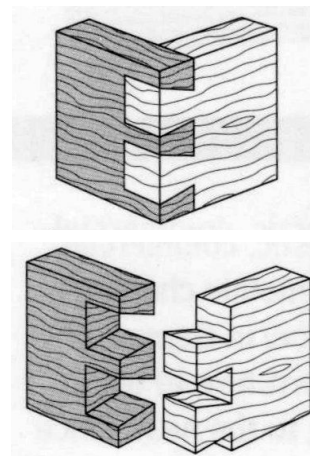
② North-South Section  
3" = 1'-0"



③ North-South Section - Extended  
3" = 1'-0"

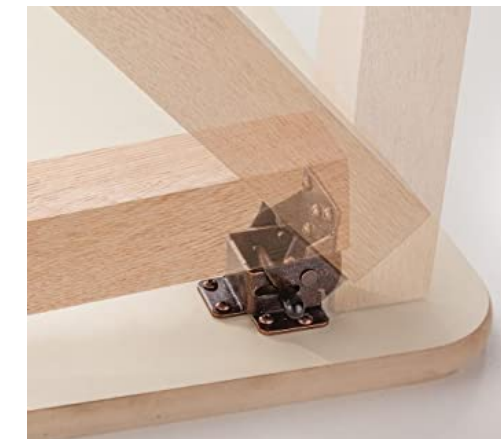


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Sections and Details		A104
Project number	Project Number	
Date	12/10/20	
Drawn by	Elise McQueen	
Checked by	Checker	Scale 3" = 1'-0"