

LIGHTBOX

LABORATORY-GROWN DIAMONDS





PLANS

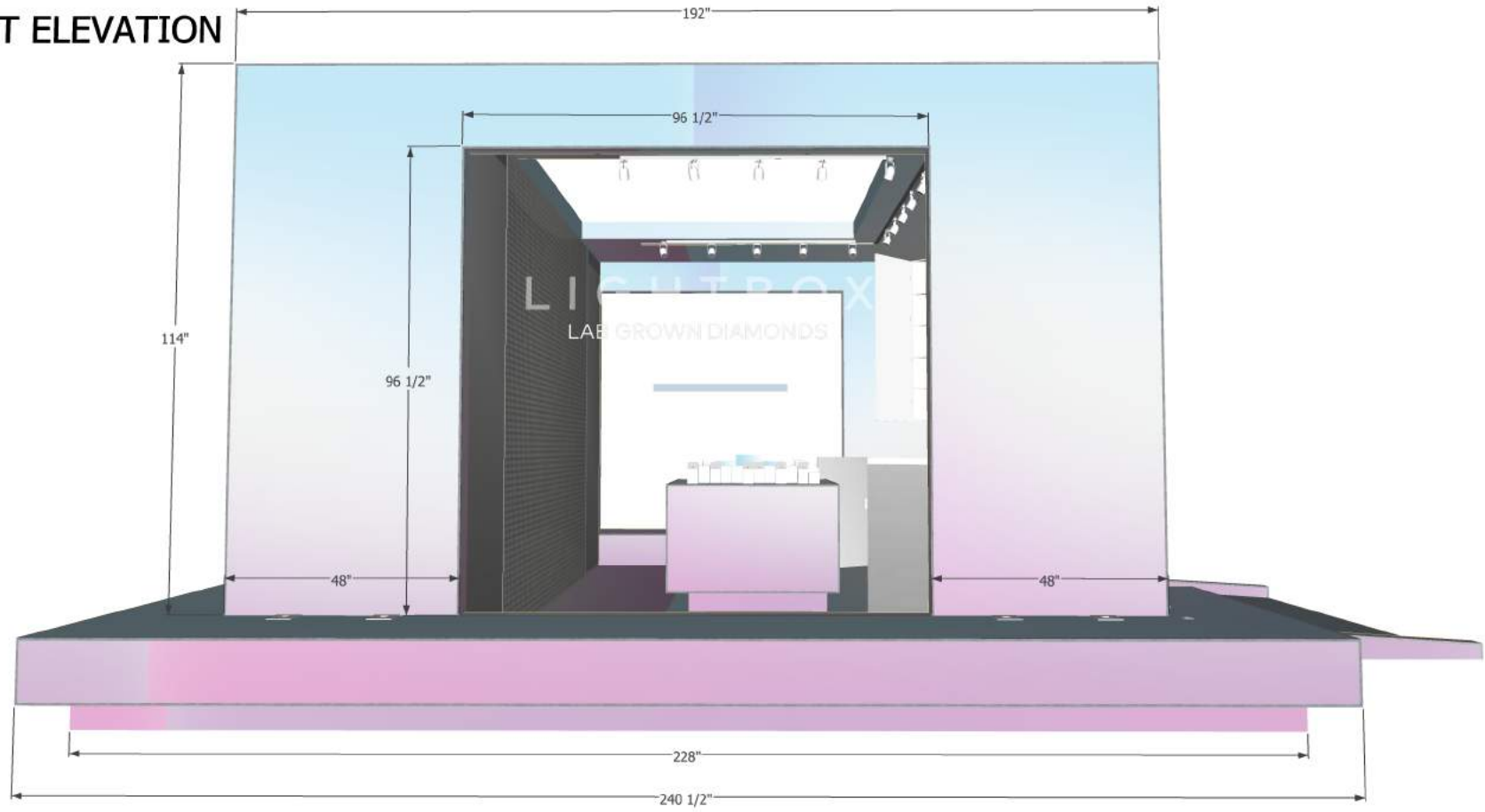
LIGHTBOX
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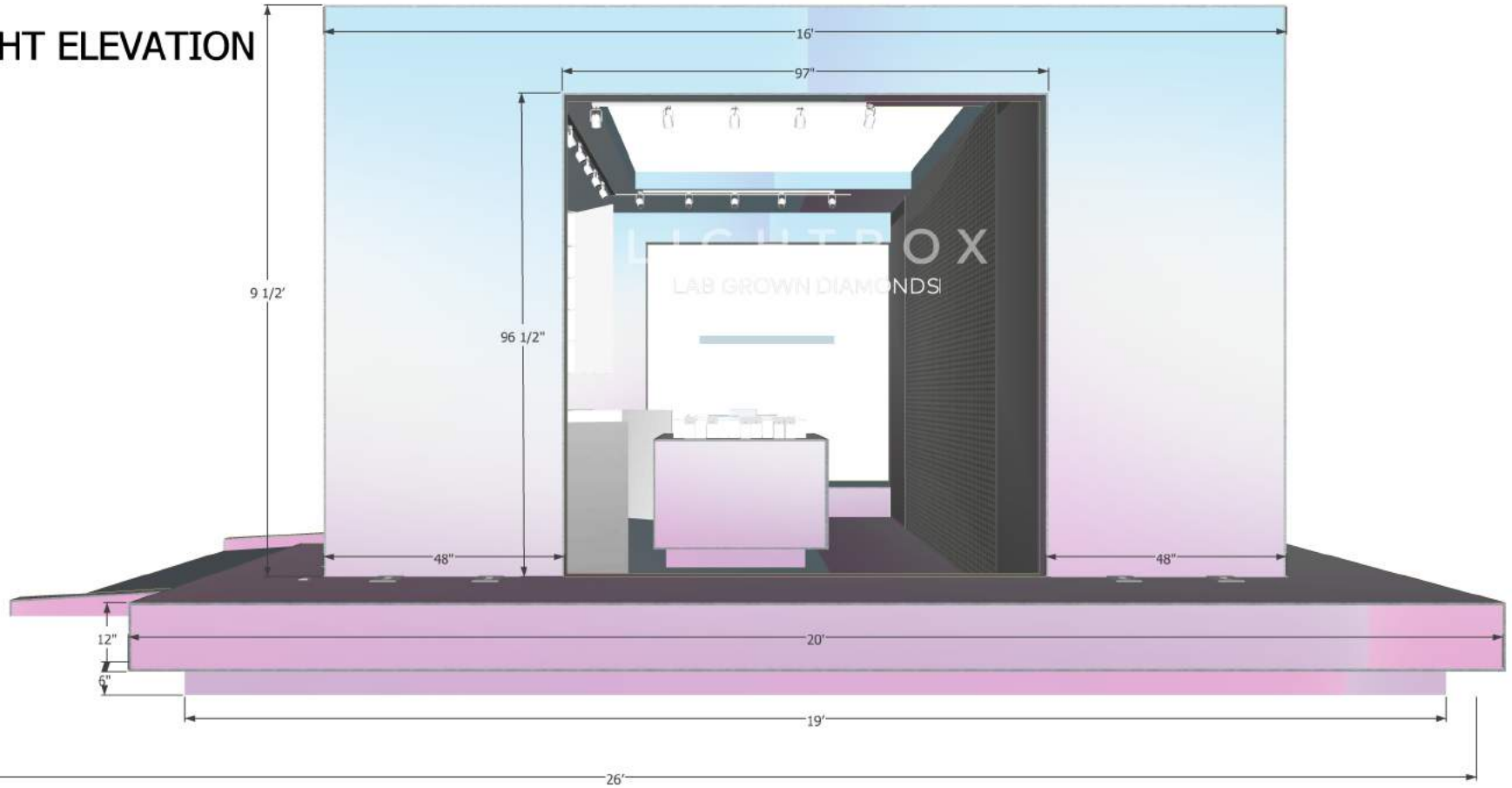
FRONT ELEVATION



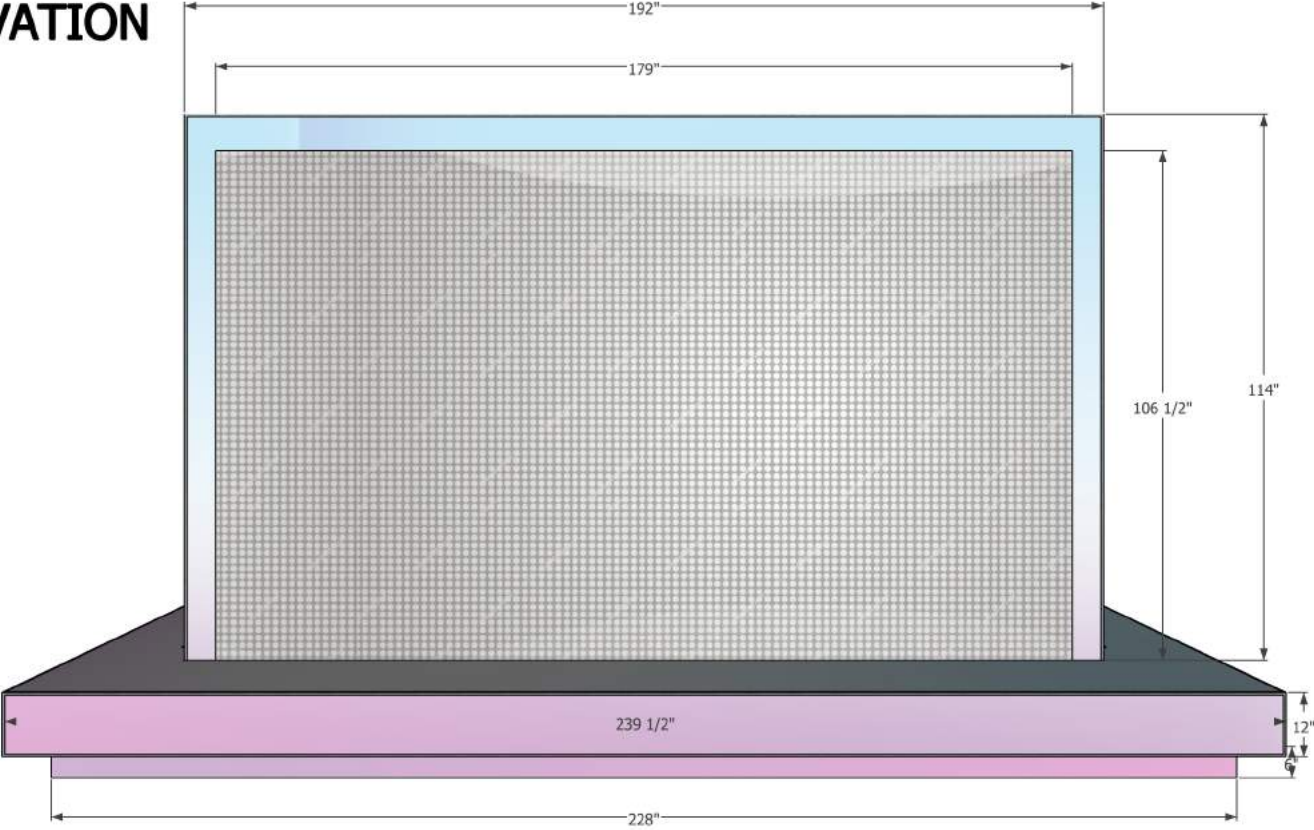
LEFT ELEVATION

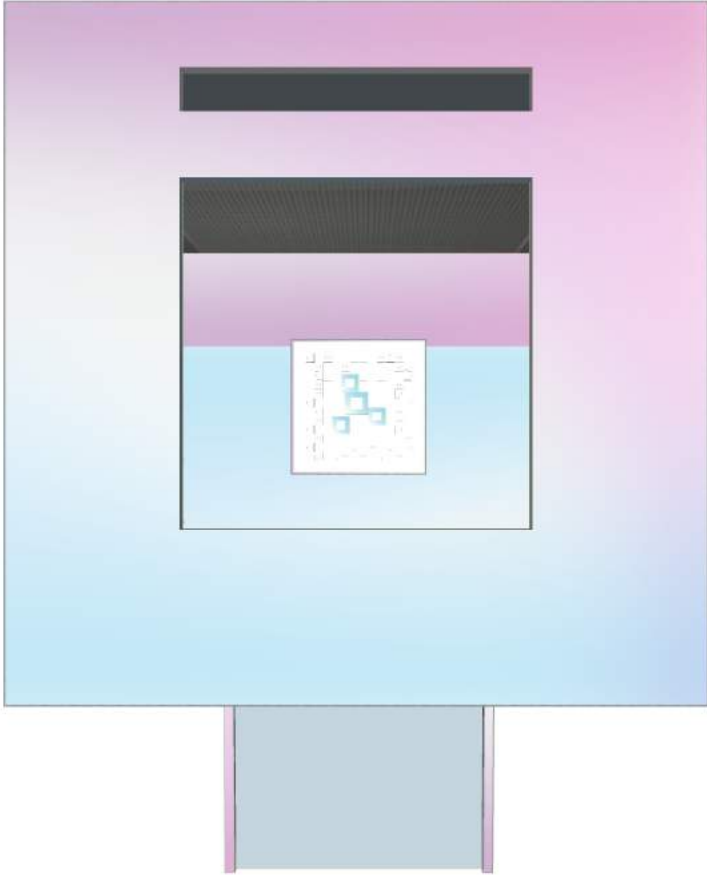


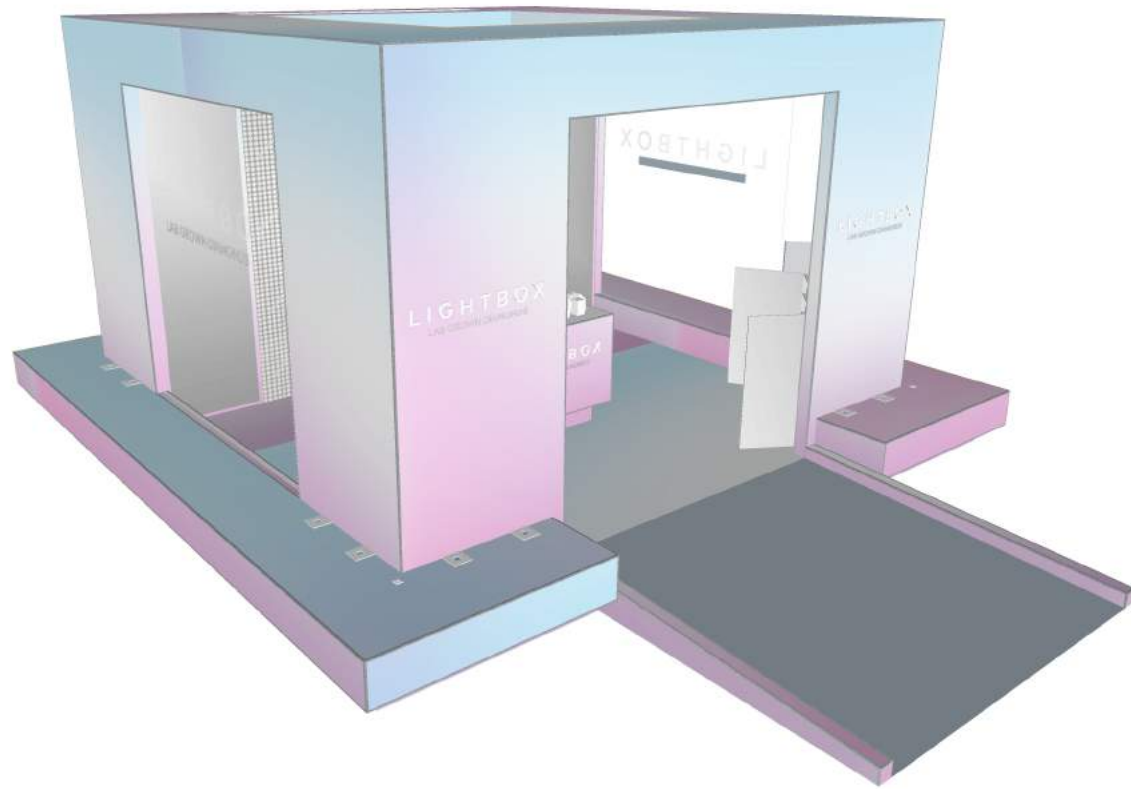
RIGHT ELEVATION

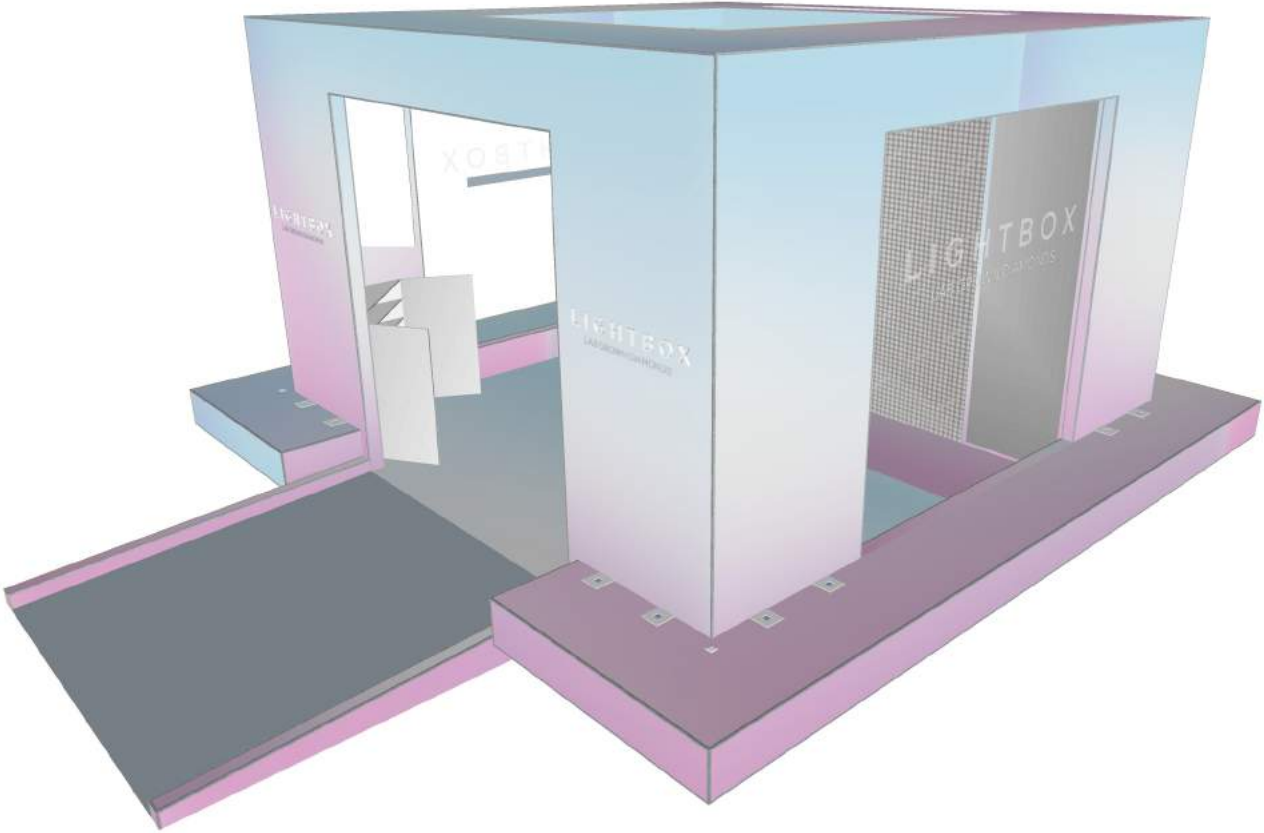


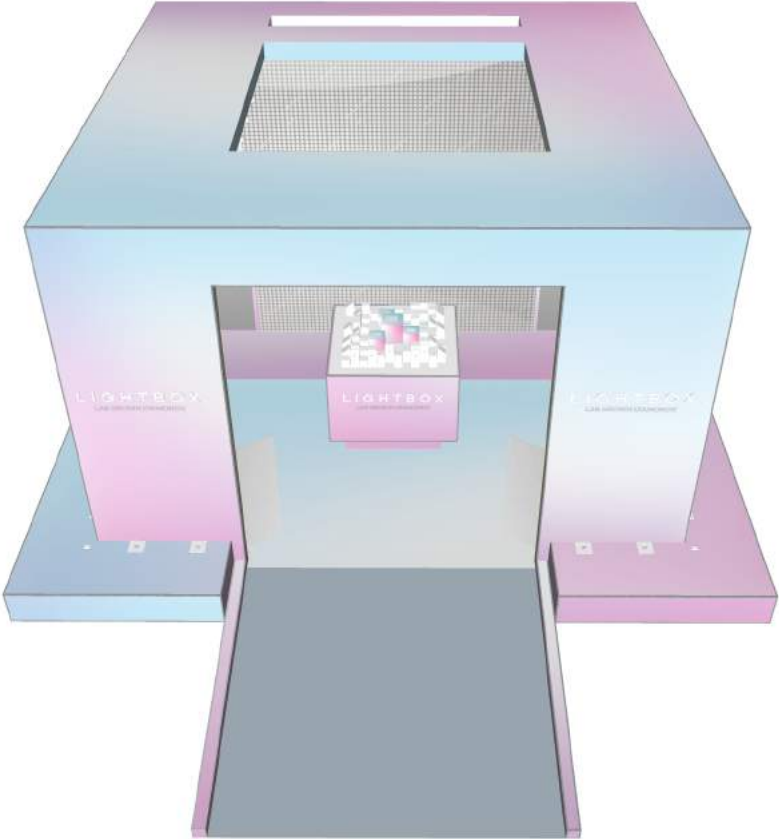
BACK ELEVATION



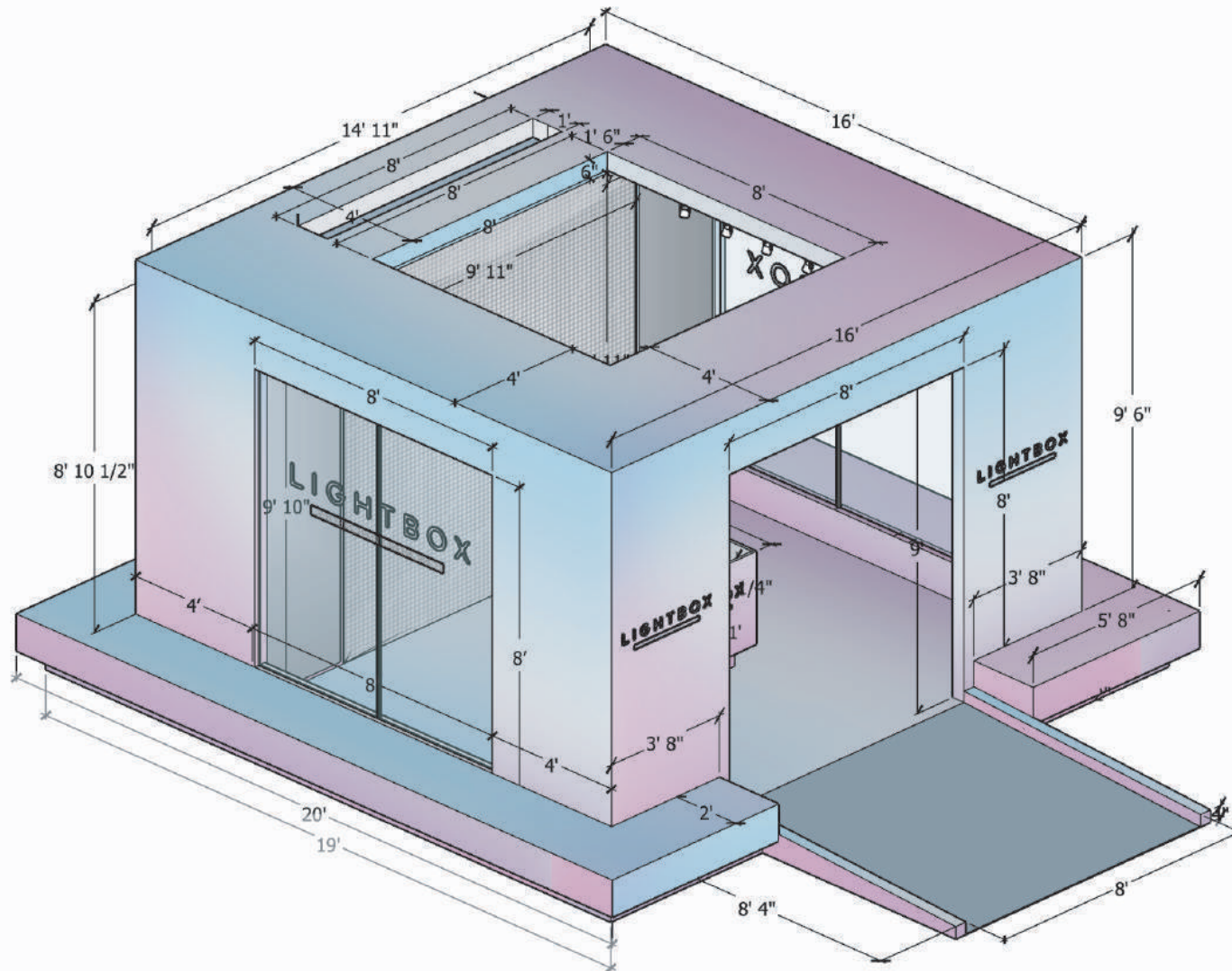




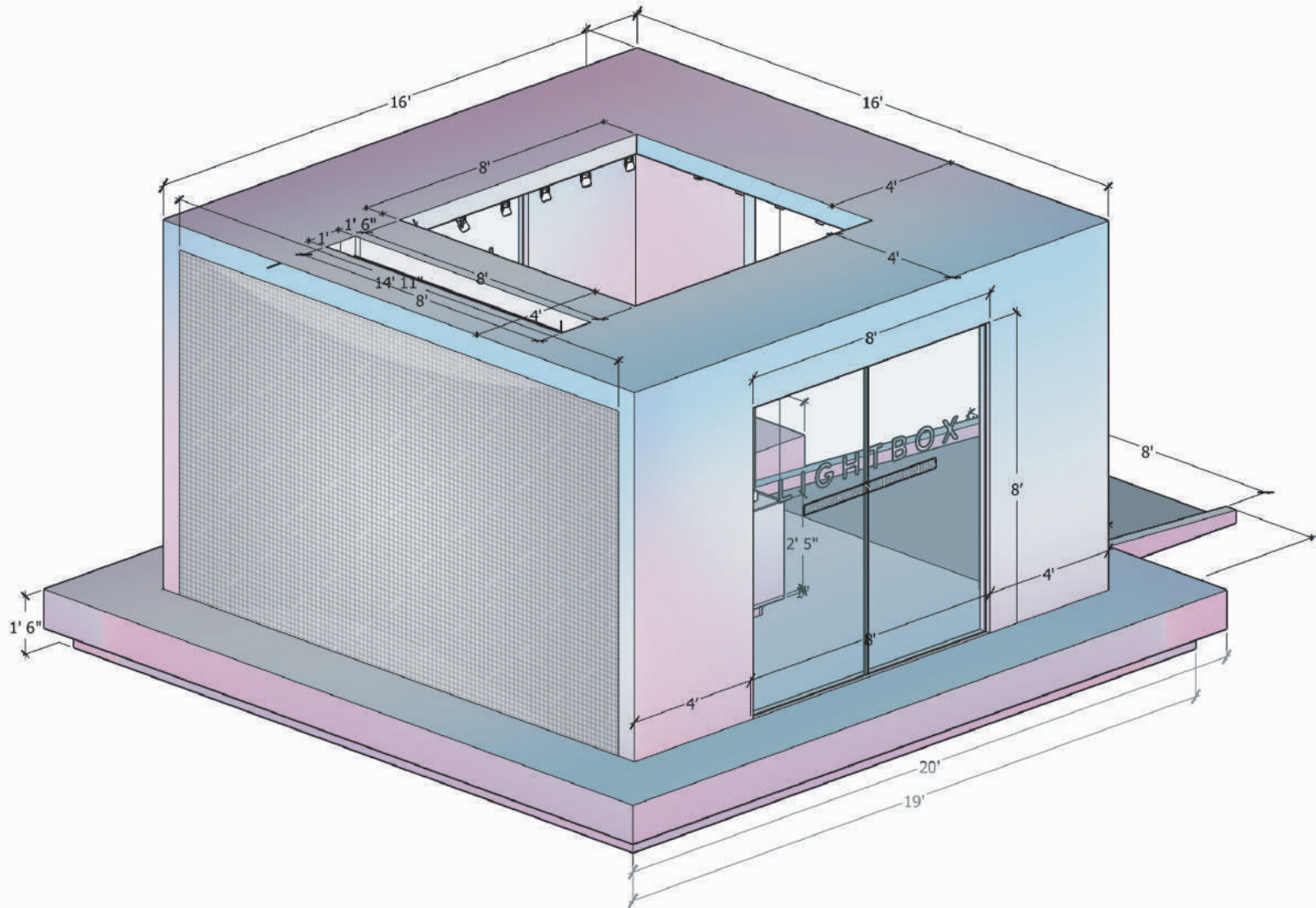




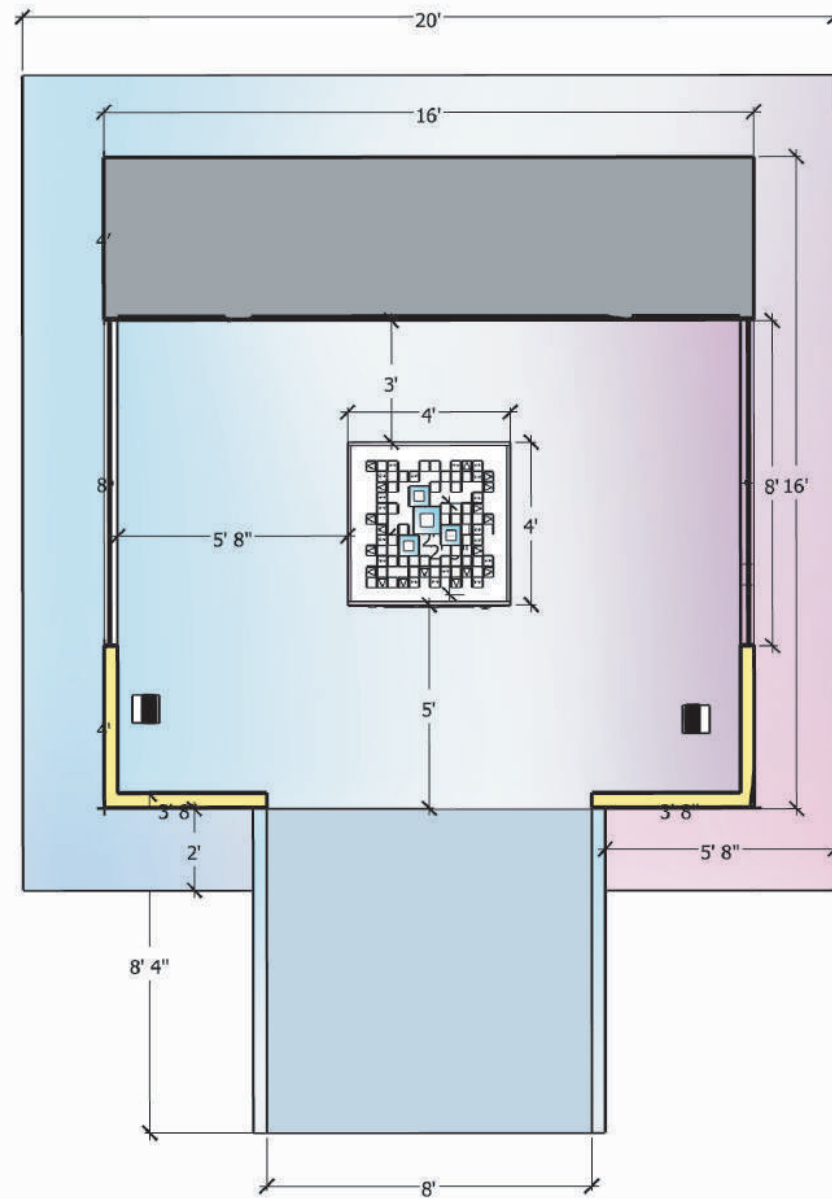
Completed Front ISO



Completed Rear ISO



Completed Section Plan





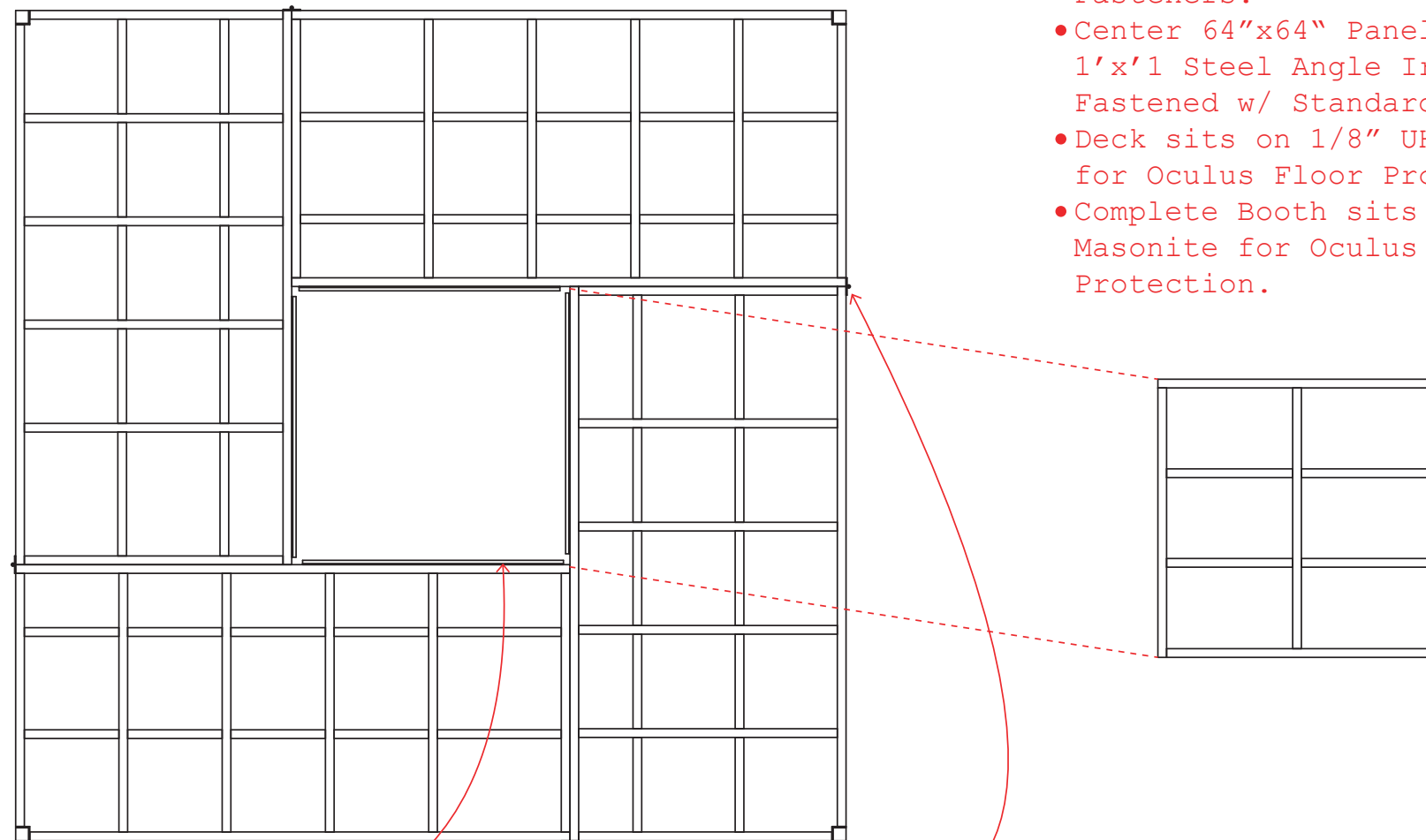
ASSEMBLY

LIGHTBOX

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Booth Deck Assembly Detail

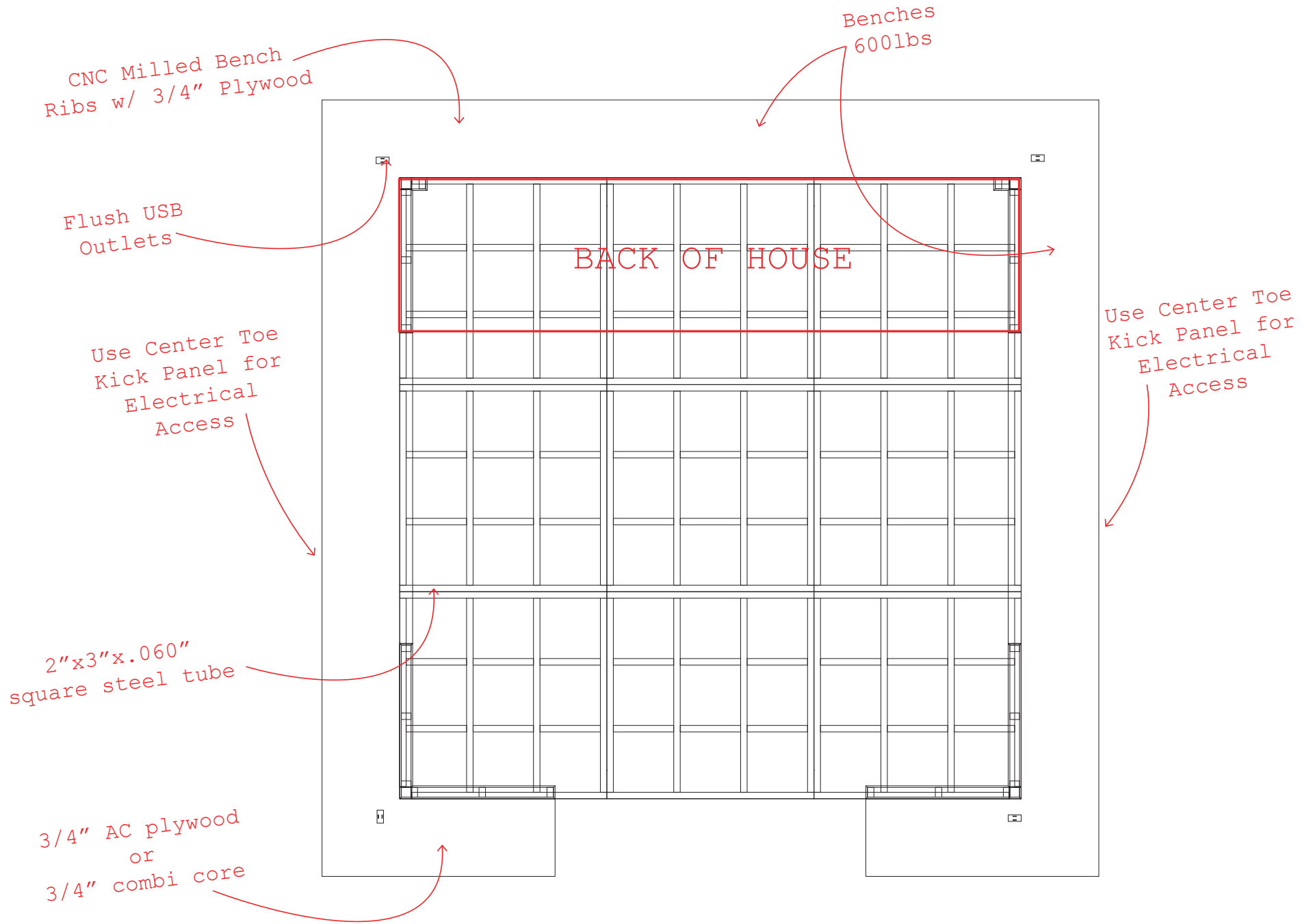


- 4x 64"x128" Panels Hinge Pinned and Fastened w/ Standard Fasteners.
- Center 64"x64" Panel Set on 1"x1" Steel Angle Iron and Fastened w/ Standard Fasteners.
- Deck sits on 1/8" UHMW Pads for Oculus Floor Protection.
- Complete Booth sits on 1/8" Masonite for Oculus Floor Protection.

1" x 1" Steel
Angle Iron

Loose Pin Hinges
w/ 3/8" Pins

Deck With Benches Detail



ELECTRICAL AND LIGHTING

LIGHTBOX
LABORATORY-GROWN DIAMONDS



Lightbox Electrical and Lighting Plans

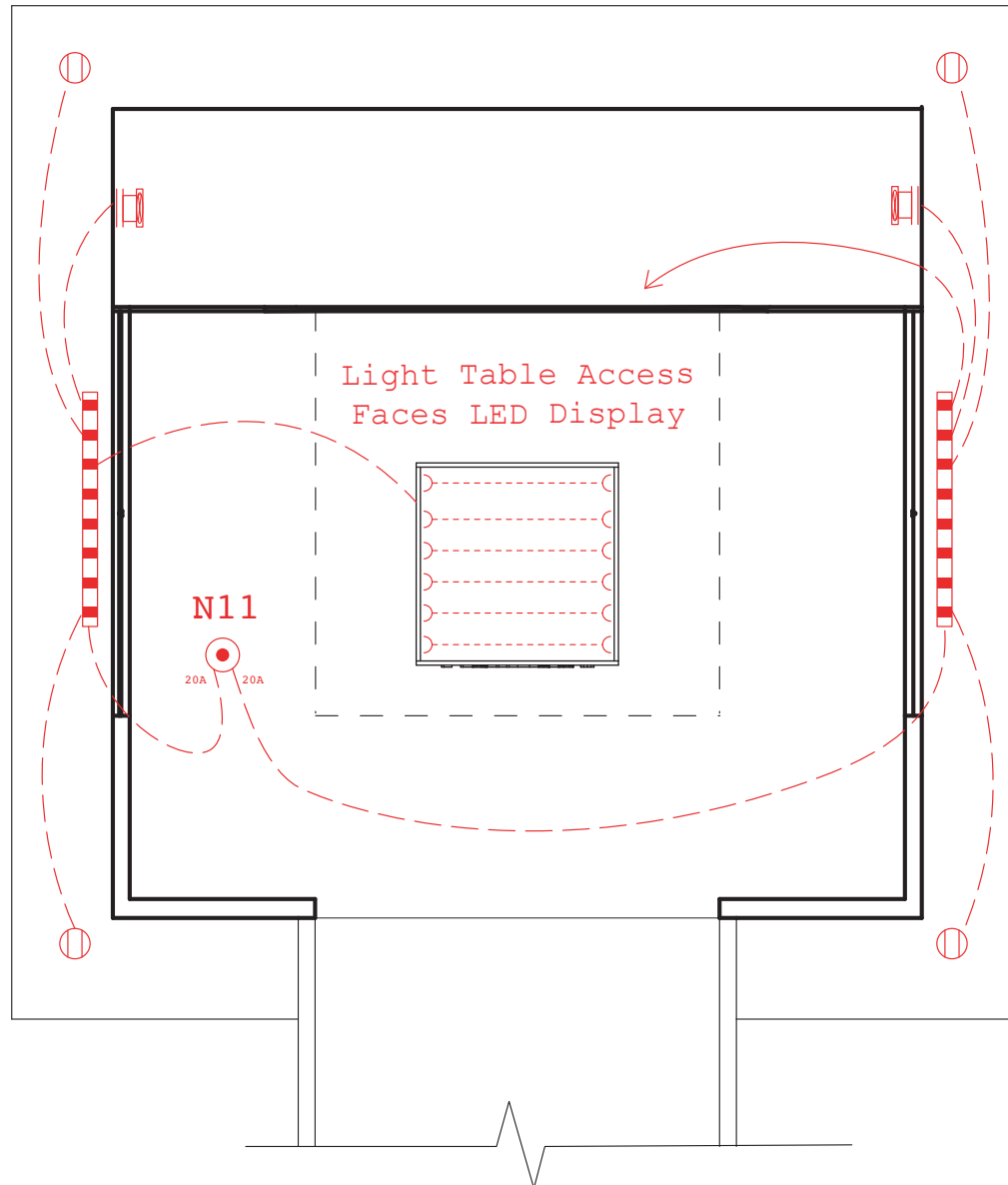
Notes:

- Power for booth lighting, ventilation fans, and USB receptacles will come from two 20A floor outlets "N11" located under the booth.
- Floor Access Box Must be Installed above "N11" access
- Each circuit will be distributed by two 14 gauge wires to two multi-outlet bench strips located inside the left and right benches.
- The Stage Right circuit will power two Stage Right USB Recptacles, two low-power ventilation fans, and the LED lighting in the light table box.
- The Stage Left circuit will power two Stage Left USB Recptacles, two low-power ventilation fans, and the LED track lighting in the ceiling.
- Cabling will run underneath the booth and need to be laid out before the deck is installed.
- Access to "N11" will be through a floor access panel
- Access to the bench strips will be through kick plate access panels on the benches
- Total power draw per 20A circuit will be less than 15A.

Floor Lighting & Electrical Plan

Notes:

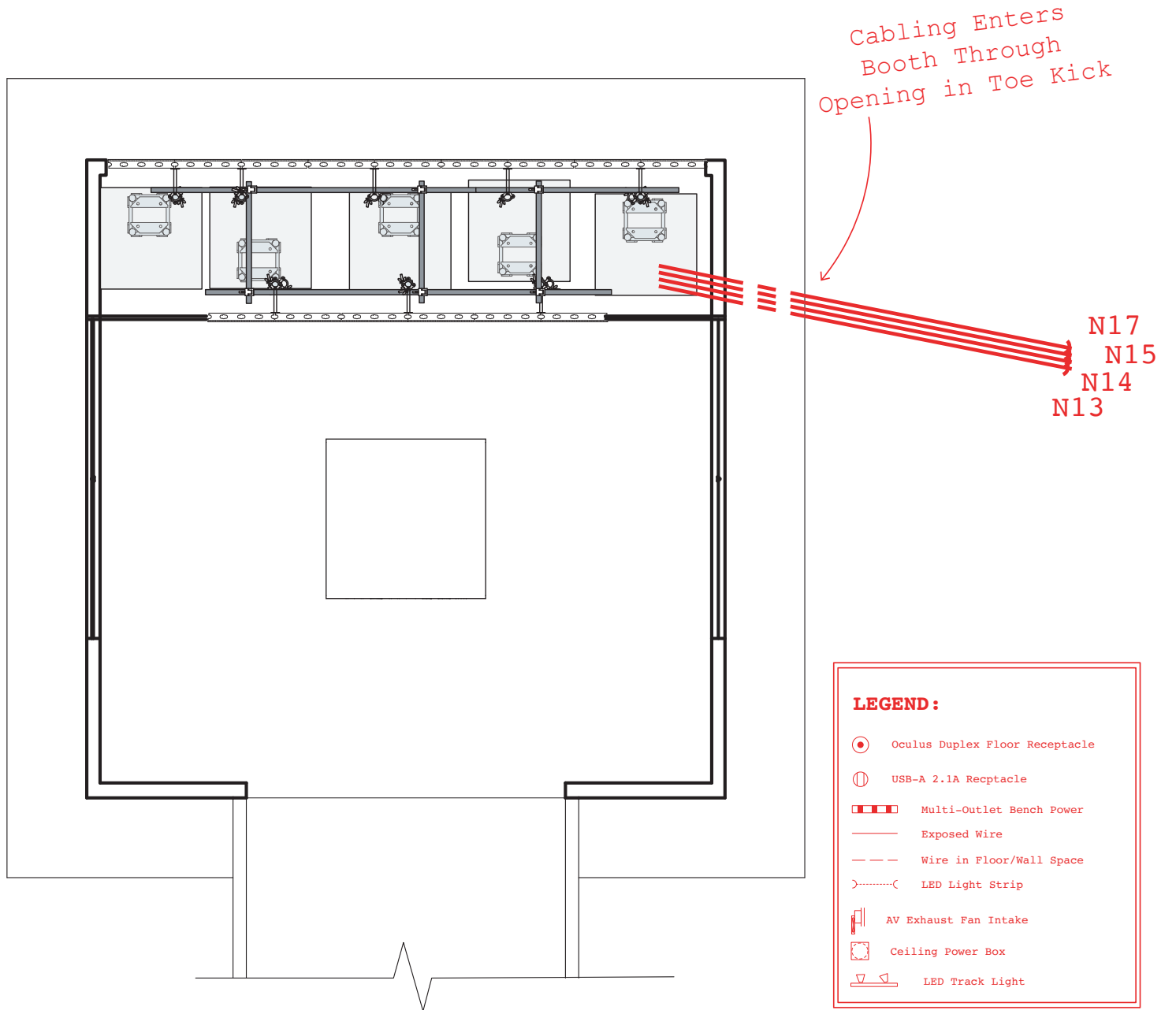
- Lay Power Distribution before Deck is laid
- Route as needed underneath and through Back of House



LEGEND:

- Oculus Duplex Floor Receptacle
- ⊖ USB-A 2.1A Receptacle
- ▨ Multi-Outlet Bench Power
- Exposed Wire
- - - Wire in Floor/Wall Space
- ⋈ LED Light Strip
- ⊖ AV Exhaust Fan Intake
- ⊖ Ceiling Power Box
- ▨ LED Track Light

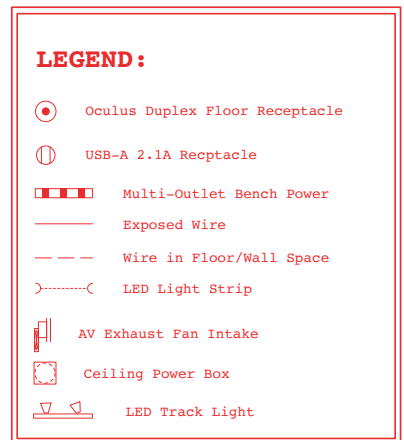
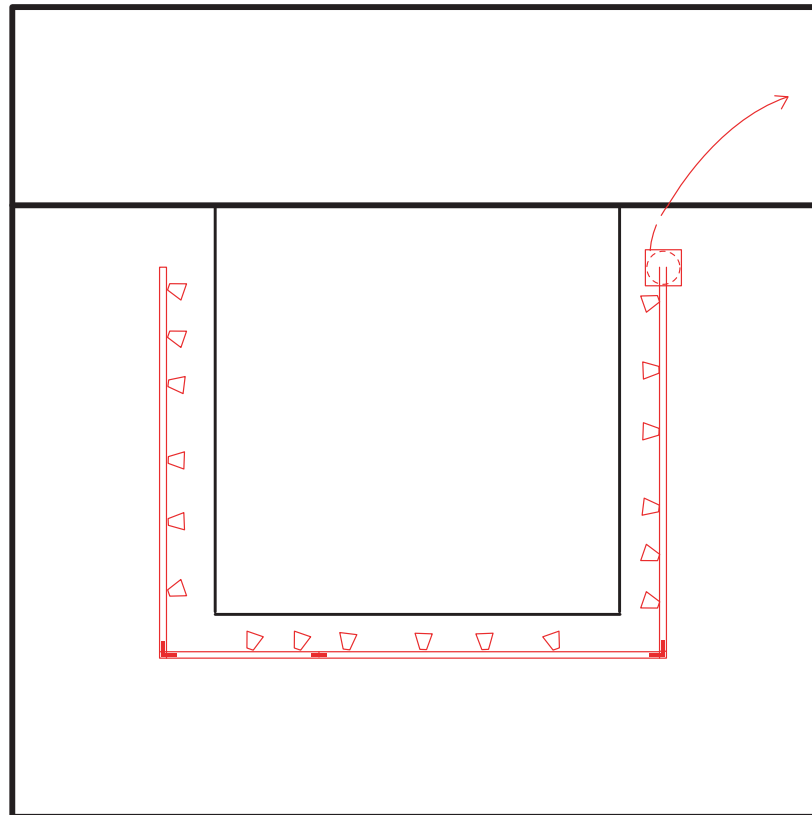
LED Panel Electrical Plan



Reflected Ceiling Lighting & Electrical Plan

Notes:

- All LED Lights aimed toward Light Table Display
- Overlap Pattern to create even lighting around edge of table on jewelry



WALL DETAILS

LIGHTBOX

LABORATORY-GROWN DIAMONDS

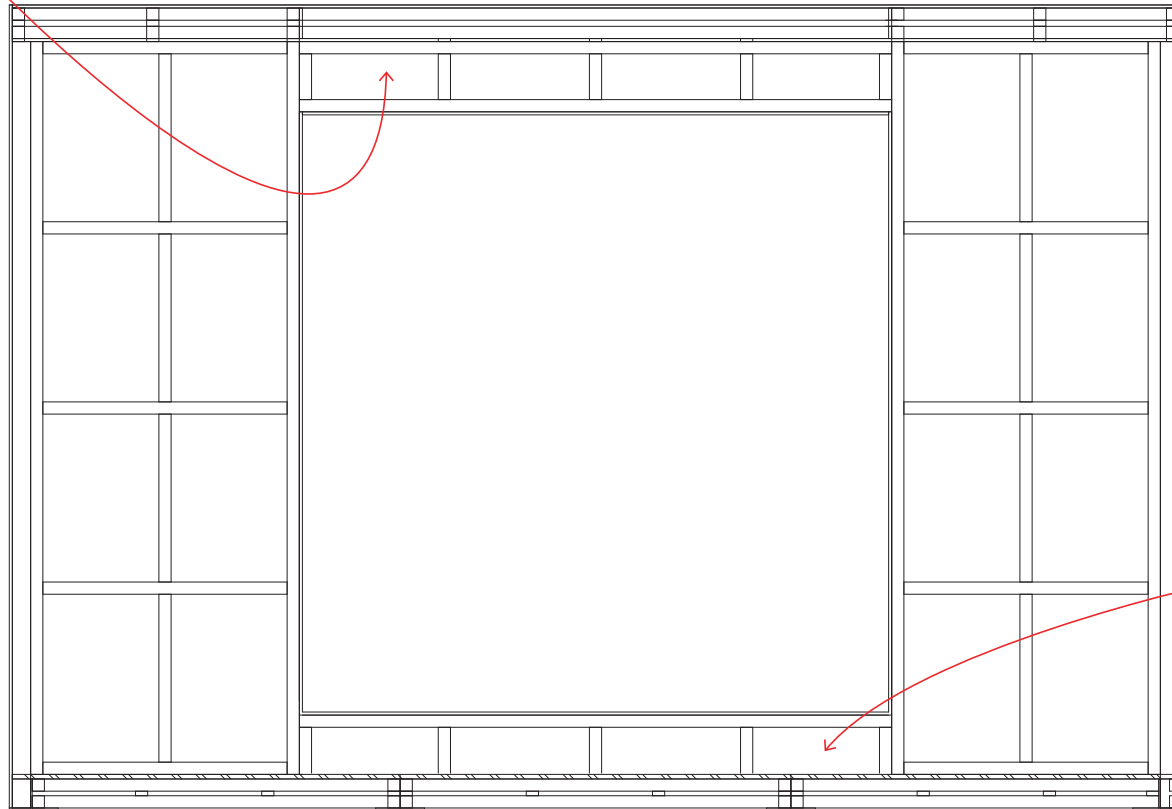


Wall Detail

Notes:

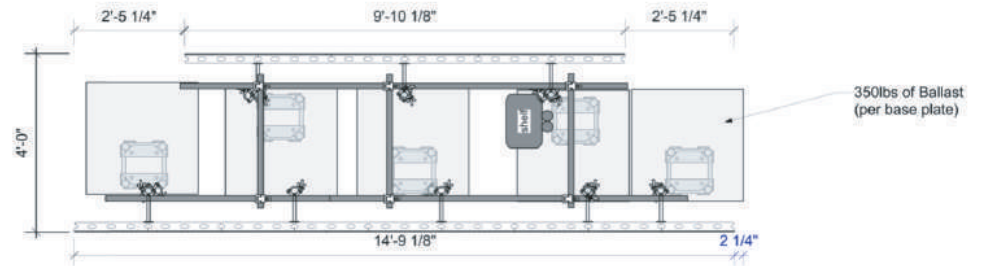
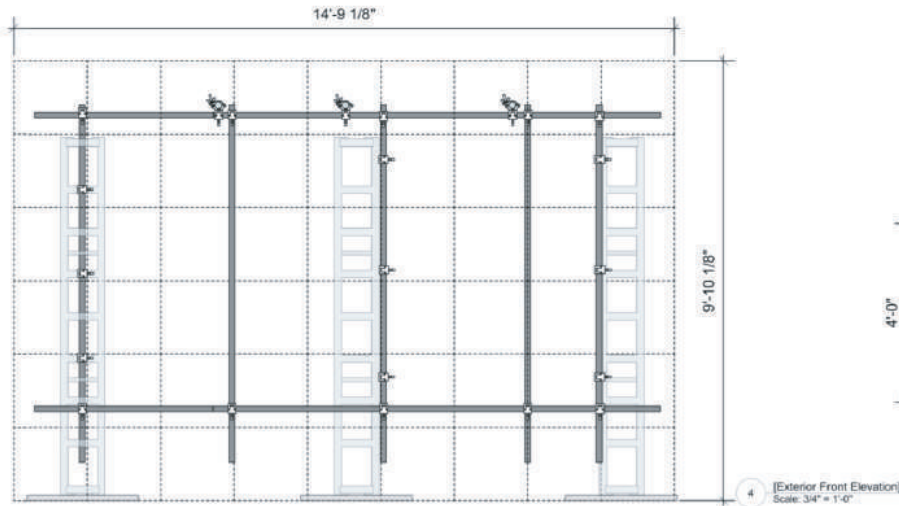
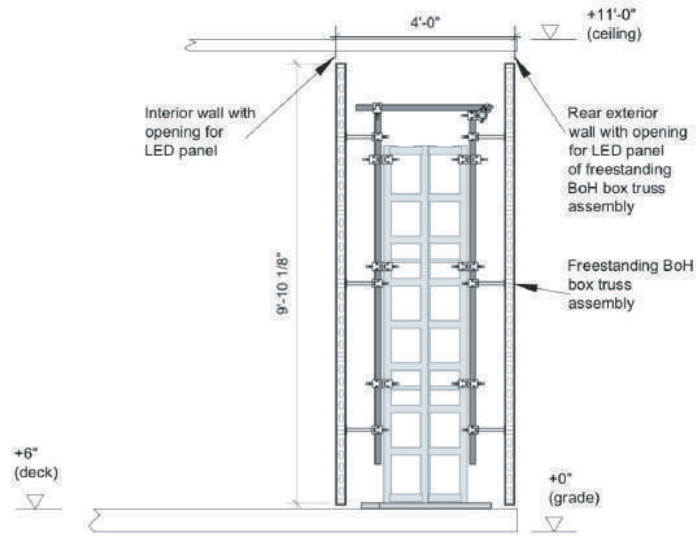
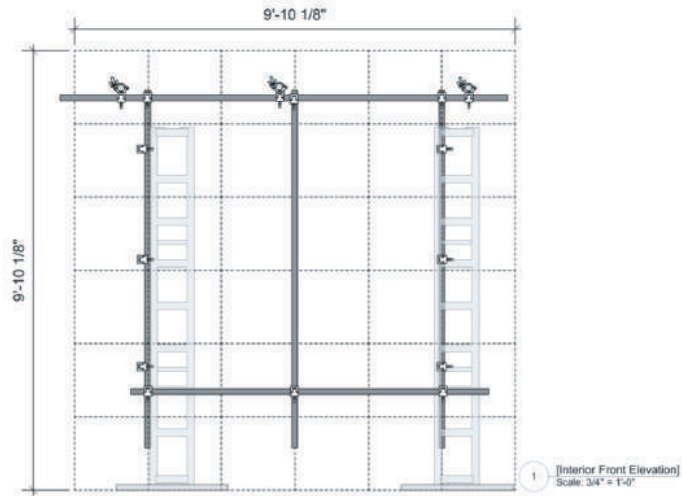
- Lay Electrical Before Laying Deck
- Set Deck on 1/2" Glider Pads and route Electrical
- Erect Walls
- Lay Ramp and roll up Lift onto Deck
- Install Long Ceiling Panels
- Install Short Ceiling Panels by lifting 90° rotated on plan above Long Ceiling Panels, rotating 90°, and lowering into final position
- Use Pins to hold Short Ceiling Panels in place
- Loosely Bolt Ceiling Frame
- Install Header
- Install Footer
- Tighten when frame is completed
- Remove Stage Back Left Ceiling Pin for electrical routing of Track Lighting power supply into Back of House
- Benches Install After LED Display Walls are Completed

Install Header
After Walls and Ceiling
are Installed



Install
Footer Last

LED Display Walls

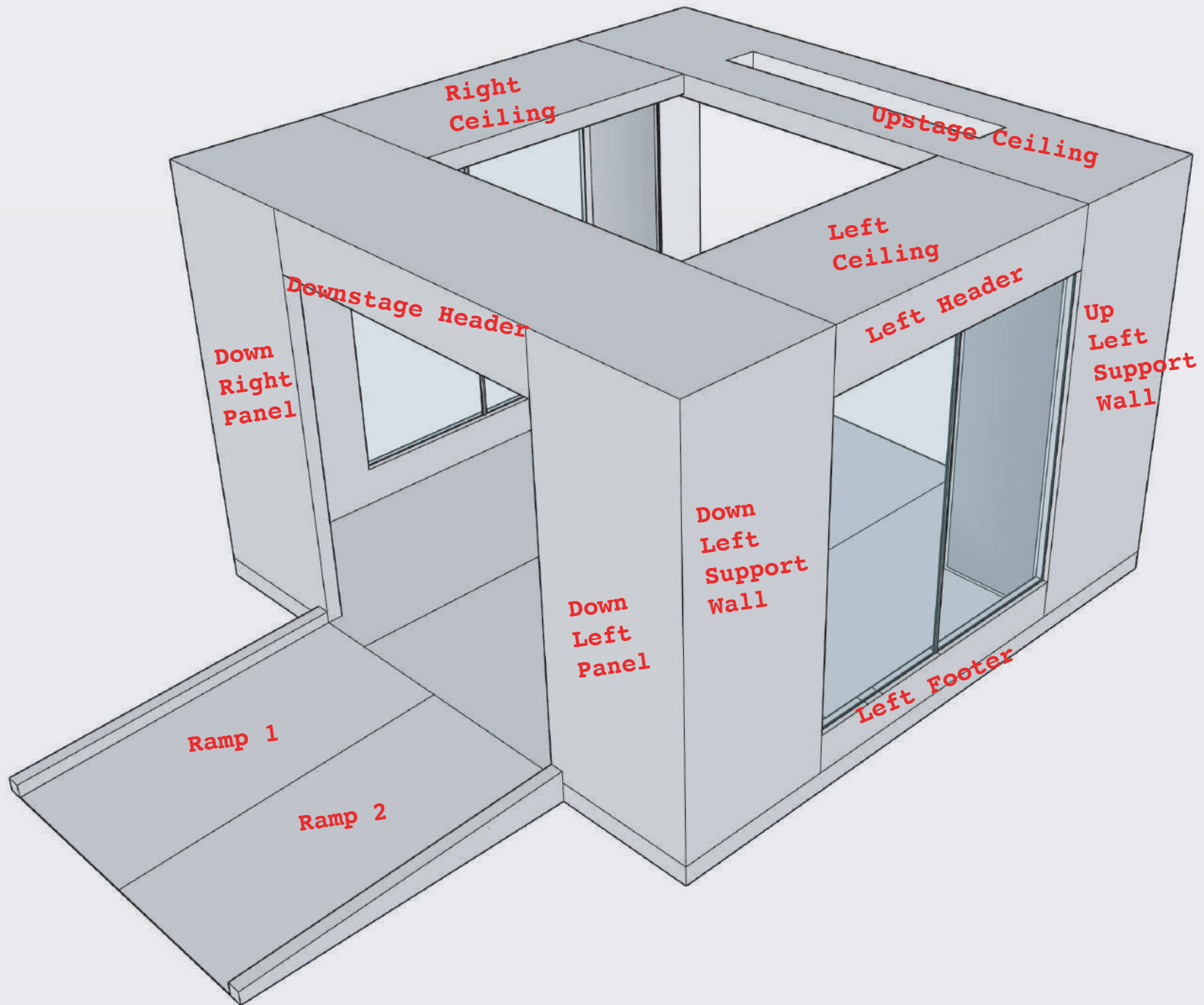


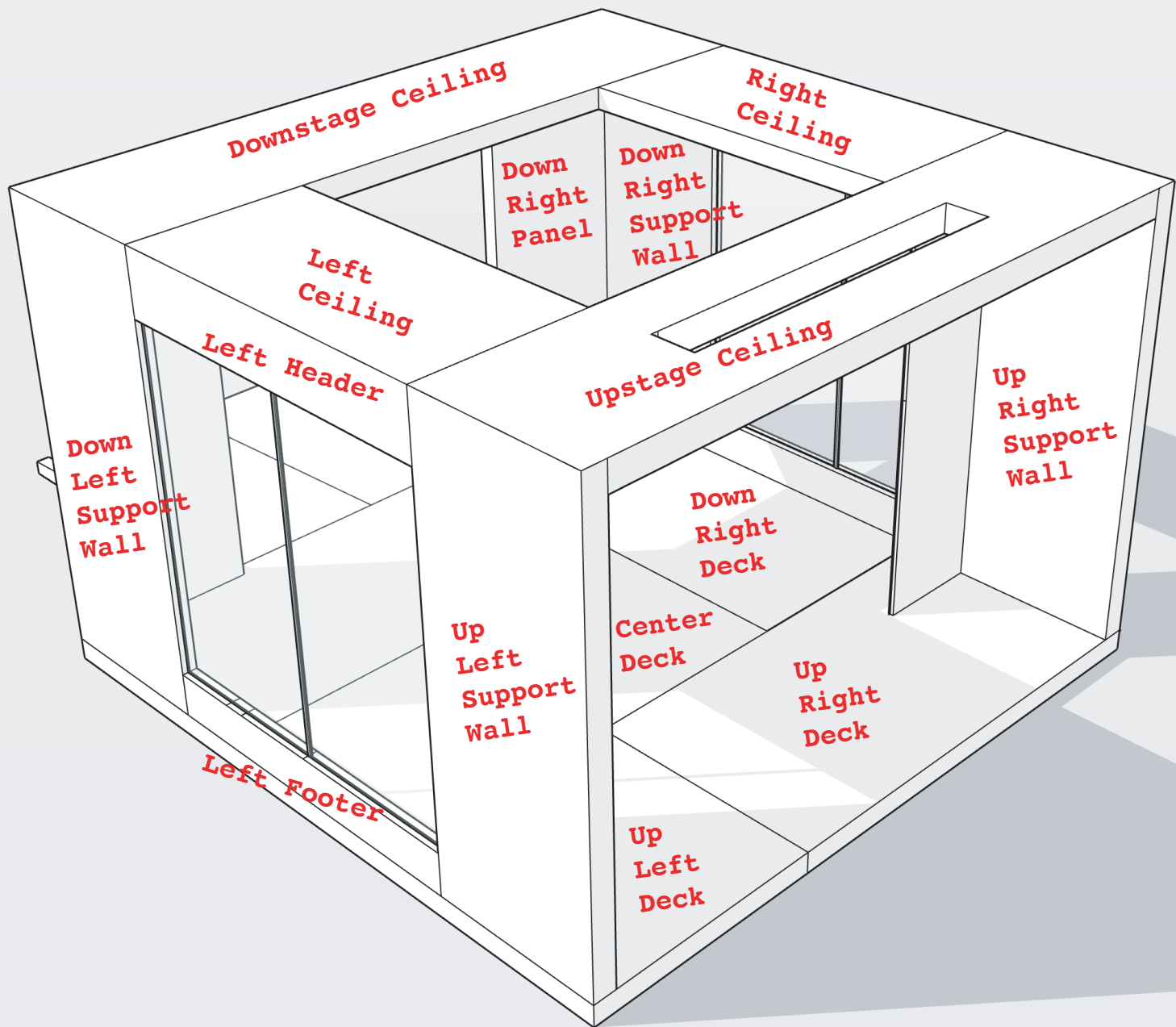
STRUCTURE TAGS

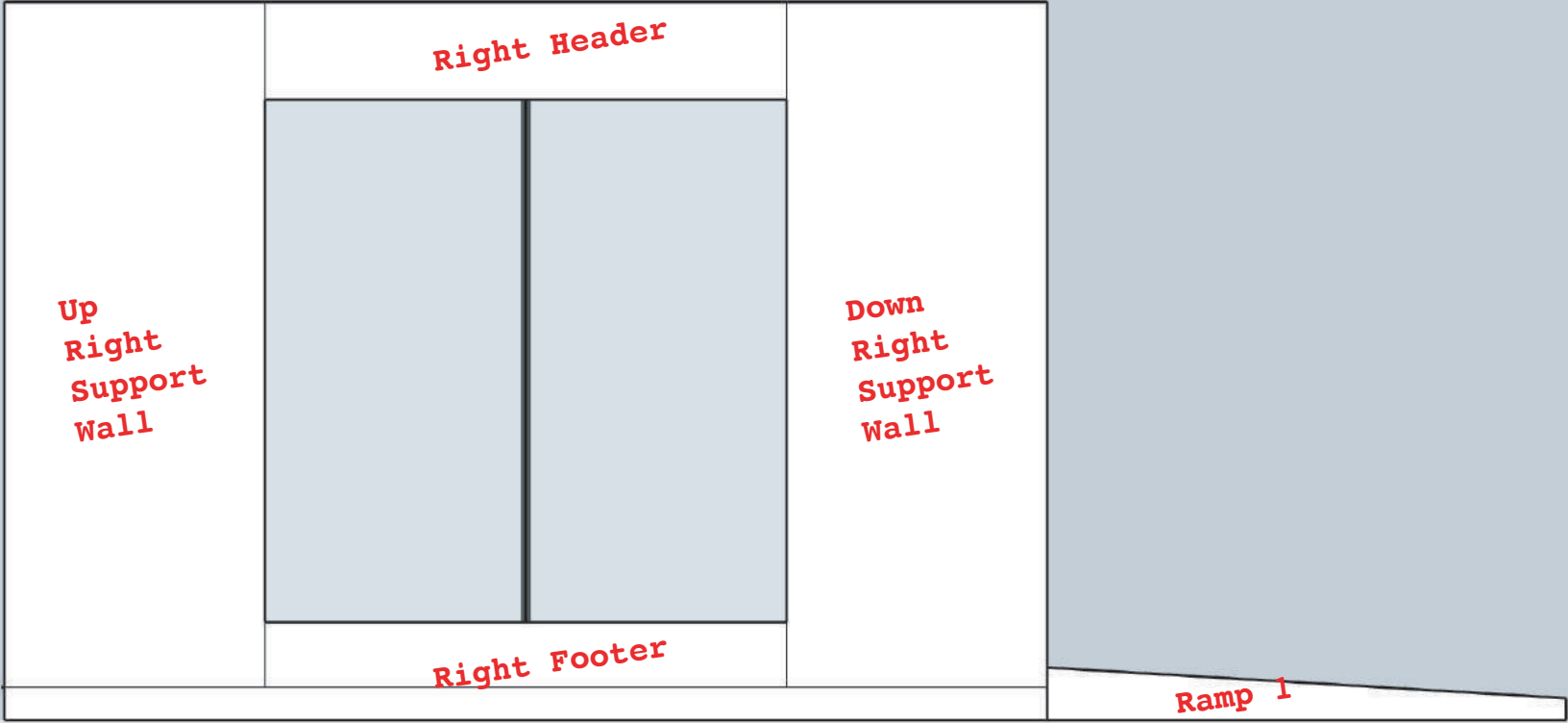
LIGHTBOX

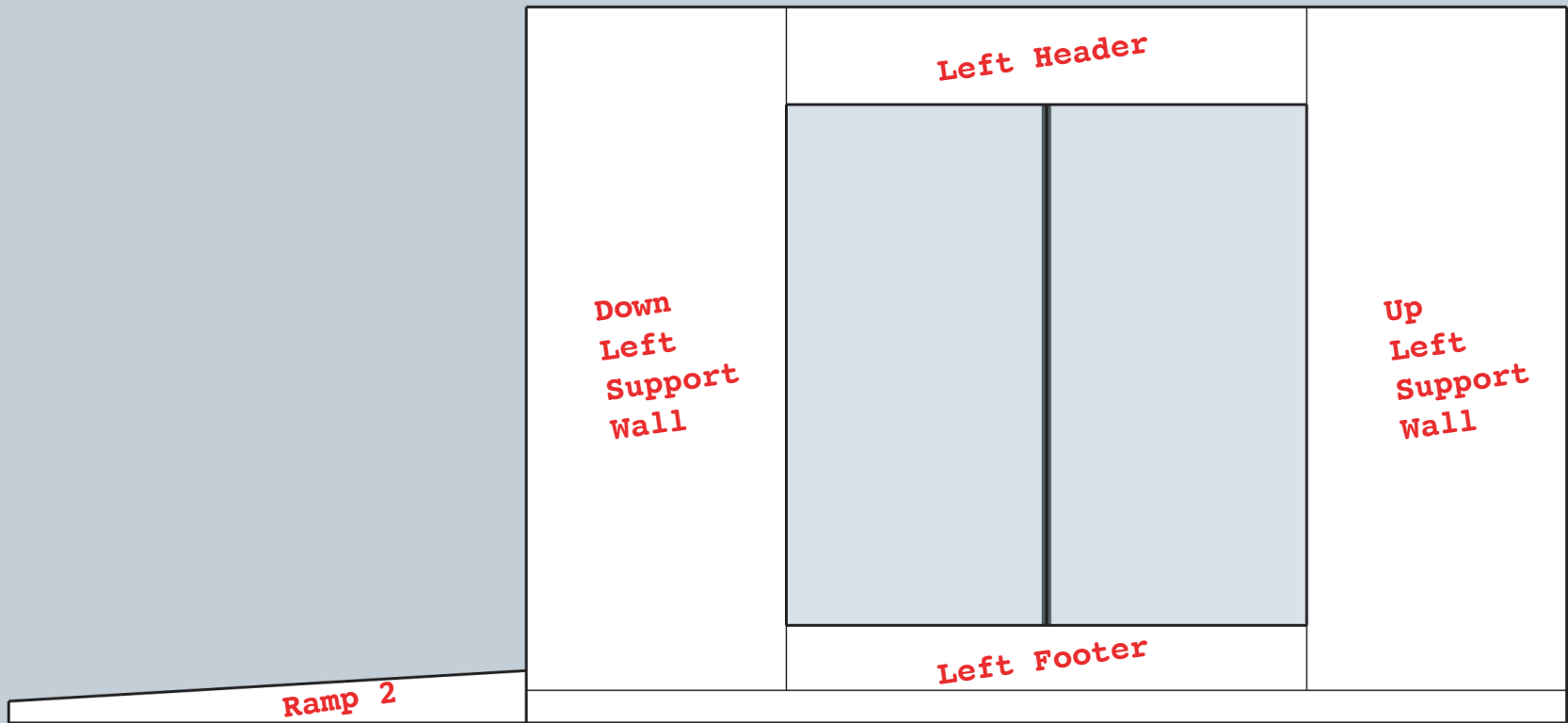
LABORATORY-GROWN DIAMONDS

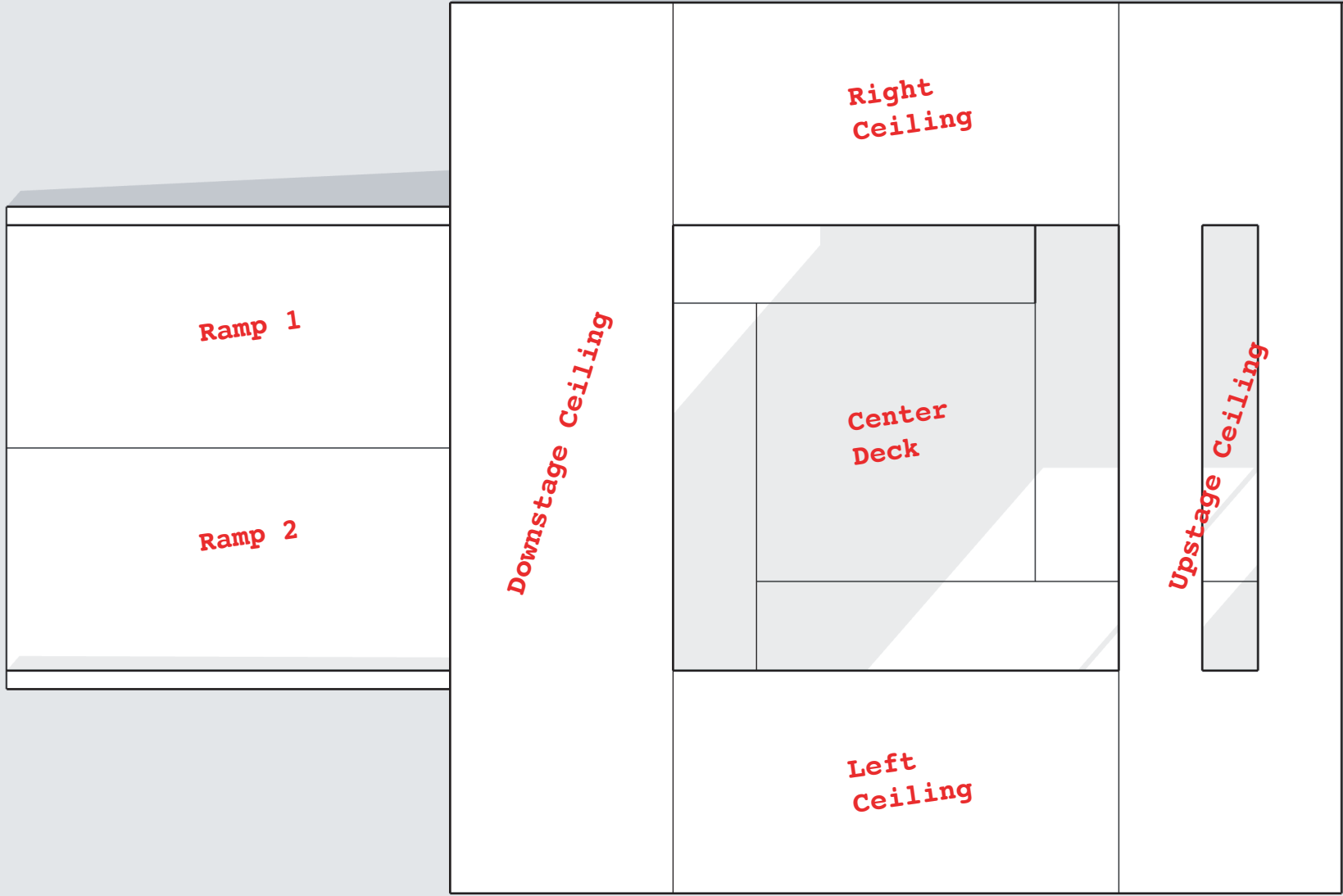


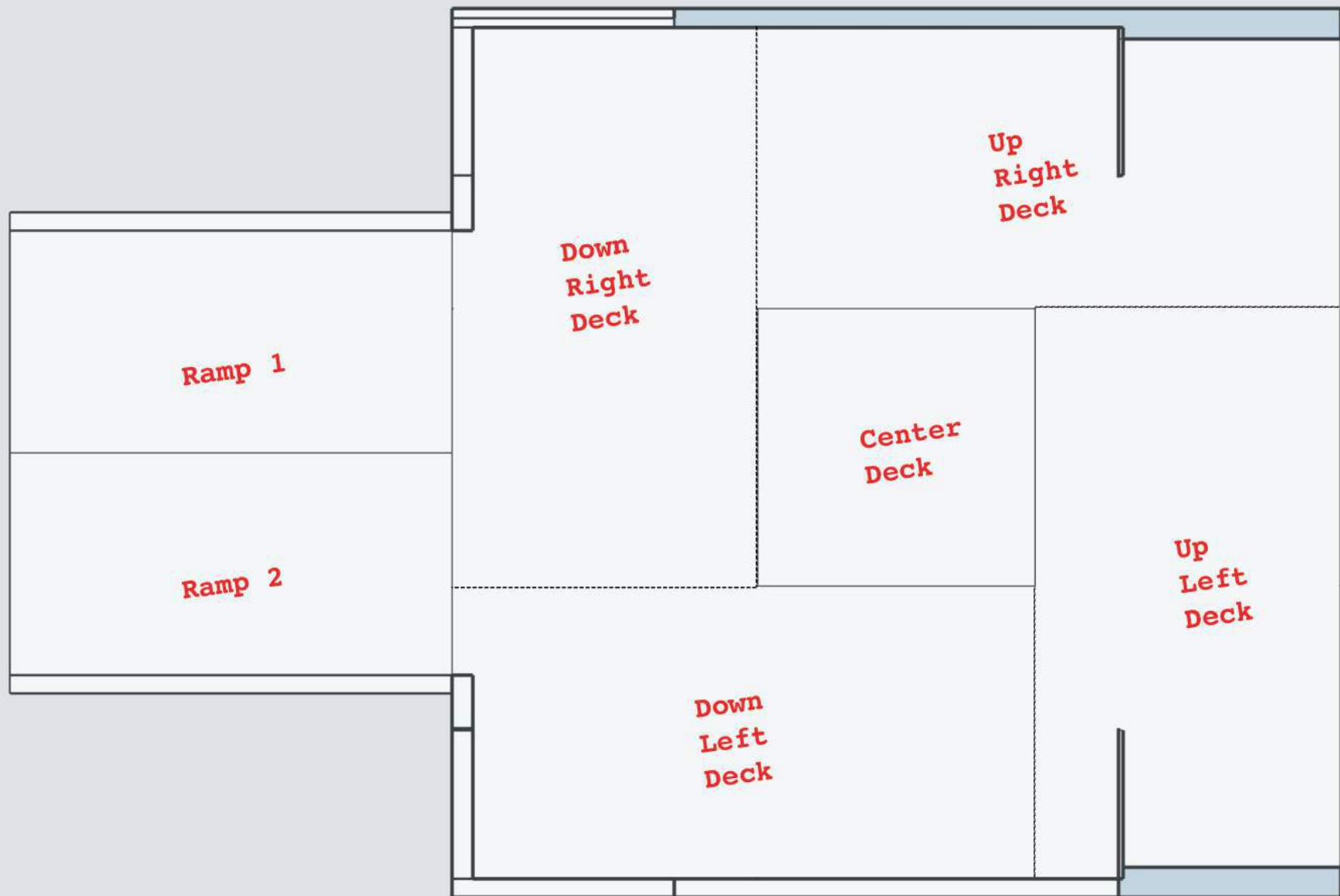












POWER REQUIREMENTS

LIGHTBOX

LABORATORY-GROWN DIAMONDS



POWER NEEDS

Display requires (12) 20amp circuits.

DATES

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DATES

- Dec. 6 store goes live.
- Strike on Friday, 12/20.

INSTALLATION DATES

- Start 10pm, Wed., 12/4. Work overnight.
- Work all day Thurs., 12/5 adhering vinyl to the structure.
- Work overnight 12/5-12/6 finalizing trim and fine details to the build.
- Show ready 8a on Fri., 12/6.

FLOORING SPECIFICATIONS

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FLOORING PROTECTION SPECIFICATIONS

- It's a tile floor.

MATERIALS

LIGHTBOX

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ENGINEERING STAMPS

LIGHTBOX

LABORATORY-GROWN DIAMONDS





8/29/2019

Whalefilm
2800 Casitas Ave
Los Angeles, CA 90039
Attn: Chris Clemo

RE: Lightbox - Aventura Mall
CRE Project: 19.601.246

Dear Chris,

Clark Reder Engineering Inc. has completed our structural review of the temporary exhibit for Lightbox Jewelry. The structure is proposed to be installed on September 6, 2019 for a temporary installation of no more than 6 weeks. The structure will be constructed within the Aventura Mall located in Miami, FL.

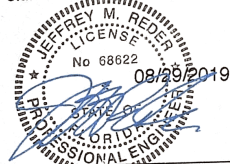
The structure has nominal dimensions of 16' by 16' by 11' high centered on a 20' square footprint for perimeter benches. All wall panels, open ceiling panel and floor deck are framed with 2"x3" and 3"x3" tubes and 1/2" and 3/4" light weight MDF sheathing using standard scenic construction methods. The rear of the structure consists of 12"x12" standard aluminum box truss and pipe supporting interior and exterior LED panels.

The overall structure has been reviewed for structural stability of the greater of lateral seismic loads or a 6.8 pound per square foot imposed lateral wind load. A minimum factor of safety of 1.5 is applied the review against both sliding, overturning and uplift. The total weight of the structure is approximately 7,500 pounds. Based on the analysis, a selfweight of 4,469 pounds is required which indicates that no additional ballast is required. The LED structure is required to have ballast at the base in order to resist overturning due to lateral loads. A ballast weight of 1,600 pounds is required to be spread evenly across the truss base plates.

Clark Reder Engineering Inc. deems that the drawings and calculations represent a safe design in accordance with the structural provisions of the 2017 Florida Building Code. Please note that Clark Reder Engineering Inc. has not reviewed nor are we responsible for the connection of any scenic elements or structures not mentioned herein.

We trust this information is suitable for your needs at this time. If you have any questions, please do not hesitate to contact our office.

Regards,
Clark-Reder Engineering, Inc.



Jeffrey M. Reder, P.E.
FL Registration No.: 68622

Westfield Lightbox

Event Date & Location: Aventura Mall, Miami, FL

Codes and Referenced Standards

- 2017 Florida Building Code
- Aluminum Design Manual, 2010 ed.
- American Institute of Steel Construction, Steel Construction Manual 14th Edition
- American Society of Civil Engineers 7-10 (ASCE 7-10) "*Minimum Design Loads for Buildings and Other Structures*"
- American Society of Civil Engineers 37-14 (ASCE 37-14) "*Design Loads on Structures During Construction*"
- ANSI E 1.21-2013 "*Temporary Structures Used for Technical Production of Outdoor Entertainment Events*"
- ANSI E 1.2-2012 "*Manufacture and Use of Aluminum Trusses and Towers*"

Project Description

Temporary lightbox structure installed inside of shopping centre. Area of installed is open air but fairly enclosed.

Analysis Assumptions/Design Criteria

Design of structure for lateral wind load equal to 67 mph service level wind (Exposure B)
Check wind versus lateral seismic loads.

Wind Loads - Per ASCE 37-14 & ASCE 7-10

Ultimate wind speed (LRFD): $V_u := 115$ mph
 Service level wind speed (ASD): $V_s := \sqrt{V_u^2 \cdot 0.6}$ $V_s = 89.08$ mph
 HWAP service level wind speed (ASD): $V_{hwap} := 40$ mph
 Exposure category (service): $Exp_s :=$ B
 Exposure category (HWAP): $Exp_{hwap} :=$ B
 Gust effect factor: $G_w := 0.85$
 Topographic factor: $K_{zt} := 1.0$

ASCE 37-14 Reduction Factor

Construction Period	Factor
Less than six weeks	0.75
From six weeks to one year	0.8
From one to two years	0.85
From two to five years	0.9

Reduction coefficient for temporary structure: $red :=$ 0.75

Service level (ASD) wind speed for design of temporary structure: $V_{temp_service} := V_s \cdot red$ $V_{temp_service} = 66.81$ mph

Ultimate level (LRFD) wind speed for design of temporary structure: $V_{temp_ultimate} := V_u \cdot red$ $V_{temp_ultimate} = 86.25$ mph

▢ Kh Tables

6.2.1.1.1 Construction Period in Hurricane-Prone Areas
 For construction between November 1 and June 30 (outside of the hurricane season), the basic wind speed of 115 mph (51 m/s) shall be permitted for structures sited near the Gulf Coast and Eastern Seaboard, where the ASCE/SEI 7-10 specified basic wind speed exceeds 115 mph (51 m/s) (3 second gust) (hurricane-prone areas). The 115 mph (51 m/s) wind speed is permitted to be reduced by the factors in Section 6.2.1 only for a construction period between November 1 and June 30. If the construction period shifts into the period between July 1 and October 31, the design shall be reviewed and modified, as appropriate, to conform to the requirements shown below for a construction period between July 1 and October 31.

Between July 1 and October 31, basic wind speed of 115 mph (51 m/s) shall be permitted for structures sited near the Gulf Coast and Eastern Seaboard, where the ASCE/SEI 7-10 specified basic wind speed exceeds 115 mph (51 m/s) (3 second gust) provided additional bracing is prepared in advance and applied in time before the onset of an announced hurricane. The 115 mph (51 m/s) wind speed shall not be reduced by the factors in Section 6.2.1 for the construction period. The bracing shall be designed for the full, unmodified wind load determined using the mapped wind speed and procedures found in ASCE/SEI 7-10.

Wind Loads on Scrim / Signs

This Mathcad sheet calculates the wind pressures on a sign or scrim in accordance with figure 29.4-1 of ASCE7-10.

Top of sign height: $h := 11\text{-ft}$ Sign Width: $B := 16\text{-ft}$
 Vertical dimension of sign: $s := 11\text{-ft}$ Wind directionality factor: $K_d := 0.85$
 Aspect ratio, B/s: $B_s := \frac{B}{s} = 1.45$ Clearance ratio, s/h: $sh := \frac{s}{h} = 1.00$

Cf Calculation

Velocity Pressure Exposure Coefficient (service): $K_{z_s} := K_{z_f_s}(h) = 0.57$

Velocity Pressure Exposure Coefficient (HWAP): $K_{z_{hwap}} := K_{z_f_{hwap}}(h) = 0.57$

Wind velocity pressure (service): $q_{h_s} := 0.00256 \cdot K_{z_s} \cdot K_{zt} \cdot K_d \cdot (\text{red} \cdot V_s)^2 \cdot \text{psf}$ $q_{h_s} = 5.58 \cdot \text{psf}$

Wind velocity pressure (HWAP): $q_{h_{hwap}} := 0.00256 \cdot K_{z_{hwap}} \cdot K_{zt} \cdot K_d \cdot (V_{hwap})^2 \cdot \text{psf}$ $q_{h_{hwap}} = 2.00 \cdot \text{psf}$

Case A:

Force coefficient $C_{f_{AB}} = 1.43$

Case A sign wind pressure (service): $P_{\text{sign}_s} := q_{h_s} \cdot C_{f_{AB}} \cdot G_w$ $P_{\text{sign}_s} = 6.77 \cdot \text{psf}$

Case A sign wind pressure (HWAP): $P_{\text{sign}_{hwap}} := q_{h_{hwap}} \cdot C_{f_{AB}} \cdot G_w$ $P_{\text{sign}_{hwap}} = 2.43 \cdot \text{psf}$

Case A total sign wind load (service): $P_{\text{sign}_s} := P_{\text{sign}_s} \cdot B \cdot s$ $P_{\text{sign}_s} = 1.19 \cdot \text{kip}$

Case A total sign wind load (HWAP): $P_{\text{sign}_{hwap}} := P_{\text{sign}_{hwap}} \cdot B \cdot s$ $P_{\text{sign}_{hwap}} = 0.43 \cdot \text{kip}$

Wind load on structure: $P_{\text{wind}} := 11\text{-ft} \cdot 16\text{-ft} \cdot P_{\text{sign}_s} = 1191.85 \text{ lbf}$

Seismic Loads - Per ASCE 37-14 & ASCE 7-10

6.5 EARTHQUAKE

If required by Section 6.5.1 and not exempted by Section 6.5.3, earthquake loads shall be calculated in accordance with procedures in ASCE/SEI 7-10 as modified by Section 6.5.2. All structures shall be treated as Risk Category II, per Table 1.5-1 of ASCE/SEI 7-10, regardless of the group classification of the completed structure.

6.5.1 Applicability Earthquake loads need not be considered unless required by the authority having jurisdiction and the mapped Risk-Targeted MCE_R , 5% damped, spectral response acceleration parameter at a period of 1 s, S_1 , defined in Section 11.4.1 of ASCE/SEI 7-10 equals or exceeds 0.40.

6.5.2 Use of ASCE/SEI 7-10 For use of the earthquake load provisions of ASCE/SEI 7-10, the following modifications should be made:

1. The mapped values for S_S and S_1 may be multiplied by a factor less than 1 to represent the reduced exposure period, but the factor shall not be less than 0.20.
2. The restrictions on types of structural systems in seismic performance categories D and E do not apply, as long as the height of the temporary bracing system designed in accordance with this section is limited in height to 60 ft (18.3 m) or five stories, whichever is less, above the completed bracing of the permanent structure.

Basic Parameters

Name	Value	Description
S_S	1.797	MCE_R ground motion (period=0.2s)
S_1	0.656	MCE_R ground motion (period=1.0s)
S_{MS}	1.797	Site-modified spectral acceleration value
S_{M1}	0.984	Site-modified spectral acceleration value
S_{DS}	1.198	Numeric seismic design value at 0.2s SA
S_{D1}	0.656	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	D	Seismic design category
F_w	1	Site amplification factor at 0.2s
F_1	1.5	Site amplification factor at 1.0s
PGA	0.648	MCE_R peak ground acceleration
F_{PGA}	1	Site amplification factor at PGA
PGA_M	0.648	Site modified peak ground acceleration

Seismic Analysis - ASCE 7-10 & ASCE 37-14

Site coefficients per ASCE 7-10, Site Class D assumed

Mapped MCE, 5% damped, spectral response, acceleration parameter at short periods: $S_S := 1.797$

Mapped MCE, 5% damped, spectral response, acceleration parameter at 1s: $S_1 := 0.656$

Design 5% damped, spectral response, acceleration parameter at short periods: $S_{DS} := 1.198$

Design 5% damped, spectral response, acceleration parameter at 1s: $S_{D1} := 0.656$

Per ASCE 37-14, does seismic need to be considered? Consider_seismic := "NO" if $S_1 < 0.4$ = "YES"
 "YES" otherwise **Consider_seismic = "YES"**

If seismic is required to be considered:

Temporary reduction coefficient as allowed by ASCE 37-14 (minimum value = 0.2): $red_{eq} := 0.2$

Response modification factor: $R_{eq} := 2.5$

Importance factor/Risk Category II: $I_e := 1.0$

Structural height (FT): $h_n := 11$

Approximate period parameters (Table 12.8-2, Page 90): $C_t := 0.02$

Long period transition period (Figure 22-12, Page 224): $T_L := 12$

Approximate Fundamental Period: $T_a := C_t \cdot h_n^{.75} = 0.12$

Modified spectral responses with reduction coefficient: $S_{S_mod} := S_S \cdot red_{eq} = 0.36$ $S_{DS_mod} := S_{DS} \cdot red_{eq} = 0.24$

$S_{1_mod} := S_1 \cdot red_{eq} = 0.13$ $S_{D1_mod} := S_{D1} \cdot red_{eq} = 0.13$

ASCE 37-14, Section 6.5.2.3:

3. The R factor used for temporary bracing systems shall not exceed 2.5 unless the system is detailed in accordance with the provisions of ASCE/SEI 7-10. Where R = 2.5 is used, only the requirements dealing with the strength of the seismic-resisting structural system need be satisfied.

Seismic response coefficient:

$$C_{s,calc} := \min \left[\frac{S_{DS_mod}}{\left(\frac{R_{eq}}{I_e} \right)}, \begin{cases} \frac{S_{D1_mod}}{T_a \cdot \left(\frac{R_{eq}}{I_e} \right)} & \text{if } T_a \leq T_L \\ \frac{S_{D1_mod} \cdot T_L}{T_a^2 \cdot \left(\frac{R_{eq}}{I_e} \right)} & \text{if } T_a > T_L \end{cases} \right] = 0.096$$

$$C_{s,min} := \begin{cases} \max(0.044 \cdot S_{DS_mod} \cdot I_e, 0.01) & \text{if } S_1 < 0.6 \\ \max \left(0.044 \cdot S_{DS_mod} \cdot I_e, 0.01, \frac{0.5 \cdot S_{1_mod}}{\frac{R_{eq}}{I_e}} \right) & \text{if } S_1 \geq 0.6 \end{cases} = 0.026$$

$$C_s := \begin{cases} 0 & \text{if Consider_seismic} = \text{"NO"} \\ \max(C_{s,calc}, C_{s,min}) & \text{otherwise} \end{cases} \quad C_s = 0.096$$

Weight of structure: $W_{t_structure} := 8550 \text{ lbf}$

Lateral load due to seismic: $P_{lateral} := W_{t_structure} \cdot C_s = 819.43 \text{ lbf}$ less than wind load, therefore wind control

Overturning Due to Signage Wind Loads

Overturning moment due to wind: $M_{OTwind} := P_{wind} \cdot 11 \cdot ft \cdot 0.55 = 7.21 \cdot ft \cdot kip$

Weight required to resist overturning: $weight_{req_OT} := \frac{1.5 \cdot M_{OTwind}}{8 \cdot ft} = 1352.01 \text{ lbf}$

The selfweight of the structure is adequate to resist overturning.

Sliding Due to Signage Wind Loads

Sliding due to wind: $V_{slide_wind} := P_{wind} = 1.19 \cdot kip$

Weight required to resist overturning: $weight_{req_slide} := \frac{1.5 \cdot V_{slide_wind}}{0.4} = 4469.45 \text{ lbf}$

The selfweight of the structure is adequate to resist sliding.

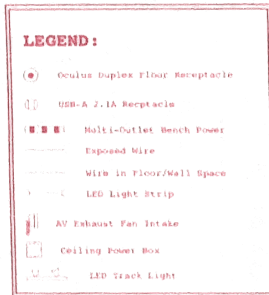
Bearing on Mall Floor

Total weight on floor: $w_{t_floor} := W_{t_structure}$

Bearing area of floor: $A_{floor} := 16 \cdot ft \cdot 16 \cdot ft = 256.00 \text{ ft}^2$

Bearing pressure on floor: $brg_floor := \frac{w_{t_floor}}{A_{floor}} = 33.40 \text{ psf}$ very low

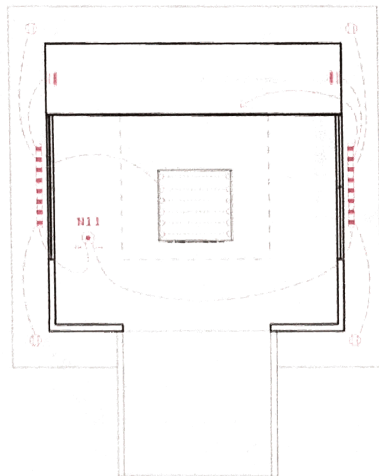
Lightbox Electrical and Lighting Plans



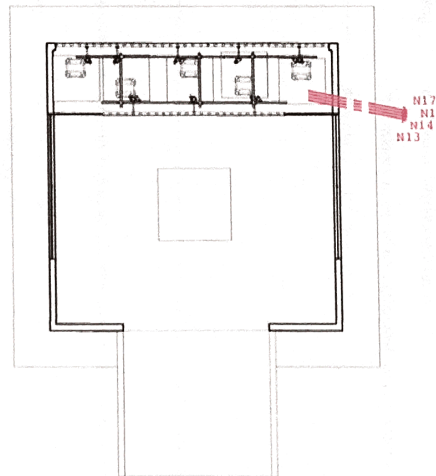
Notes:

- Power for booth lighting, ventilation fans, and USB receptacles will come from two 20A floor outlets "N11" located under the booth.
- Each circuit will be distributed by two 14 gauge wires to two multi-outlet bench strips located inside the left and right benches.
- The Stage Right circuit will power two Stage Right USB Receptacles, two low-power ventilation fans, and the LED lighting in the light table box.
- The Stage Left circuit will power two Stage Left USB Receptacles, two low-power ventilation fans, and the LED track lighting in the ceiling.
- Cabling will run underneath the booth and need to be laid out before the deck is installed.
- Access to "N11" will be through a floor access panel
- Access to the bench strips will be through kick plate access panels on the benches.
- Total power draw per 20A circuit will be less than 15A.

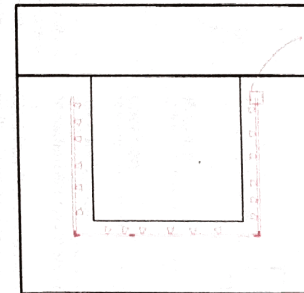
Floor Lighting & Electrical Plan



LED Panel Electrical Plan



Reflected Ceiling Lighting & Electrical Plan



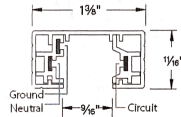
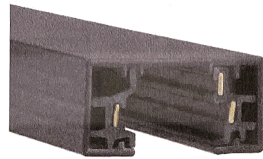
"NOT TO SCALE"

H TRACK

120V Single Circuit Track System

WAC LIGHTING

Responsible Lighting®



Fixture Type:

Catalog Number:

Project: _____

Location: _____

PRODUCT DESCRIPTION

Designed for nearly every application and interior environment, our extensive 120V Track collection offers hundreds of luminaires that integrate cutting edge design and aerospace detailing with designer glass and metal finishes. Versatile yet sturdy, the track systems can be surface mounted or suspended from the ceiling, liberating luminaires from the constraints of rigid mountings and enabling the lighting design to adapt to changing styles and spaces.

FEATURES

- May be field cut and easily installed on a variety of surfaces
- Available extension accessories
- Use compatible Quick Connect™ pendants and fixtures with each system
- End caps and mounting hardware included
- Retrofits into many popular track systems on the market today.

SPECIFICATIONS

Materials: Aluminum extrusion with copper bus wire.

Electrical: 20 Amps rated, 120V. It is common practice to use tracks at 80% capacity to insure compatibility with dimmers and connectors (1920W maximum).

Mounting: Can be installed on drywall, or suspended ceilings.

Standards: UL & CUL listed

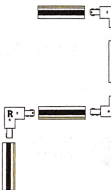
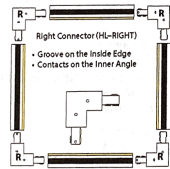
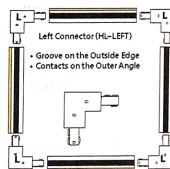
Selecting Connectors (example using H Track)

In order to select the appropriate connectors to maintain electrical continuity, start at your power source and walk the length of the track. If you turn left, use a left connector. If you turn right, use a right connector.

Polarity is just a matter of matching ends.
The 2 wide side of an "H" Track has an indicator groove running its length

- Using a left connector, the track would run with the groove along the outside
- Using a right connector, the track would run with the groove along the inside

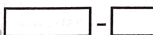
= Electrical Continuity



ORDER NUMBER

Model	Length	Finish
HT	2 2'	BK Black
	4 4'	BN Brushed Nickel
	6 6'	WT White
	8 8'	DB Dark Bronze

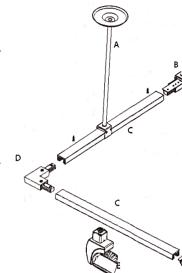
Each section includes two matching end caps.



Example: HT6-DB

Sample Layout

- A SK18 18" Track suspension rod
- B HLE Live end connector
- C HT2 2 Foot Section of H Track
- D HL-LEFT "H" Connector (Left)
- E H-LED175-27 LEDme™ LED track head
- F H-ENDCAP End Cap (Included with track section)



WAC Lighting
www.waclighting.com
Phone (800) 526.2588 • Fax (800) 526.2585

Headquarters/Eastern Distribution Center
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Phone (516) 515.5000 • Fax (516) 515.5050

Western Distribution Center
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Phone (800) 526.2588 • Fax (800) 526.2585

WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement program. SFR 7011

H TRACK

120V Single Circuit Track System

WAC LIGHTING

Responsible Lighting®

Accessories				Adapters			
Model	Finish	Description	Model	Finish	Description		
Live End Connector	HLE	BK BN WT DB 4 1/4" x 1 3/8" x 3/4"	Quick Connect™ Adapter	EN-HQ50AR	BK BN WT DB Connects pendant or fixture to track.		
Live End BX Connector	HBXLE	BK BN WT DB 6" x 1 3/8" x 1 1/4"	Monopoint Canopy Adapter	HMP Ø 4 1/4"	BK BN WT DB Mount a single H, L or J system track fixture to a junction box. When used with a low voltage track head the transformer box will protrude off of the face of the monopoint.		
"T" Power Connector	HI-PWR	BK BN WT DB 6 3/4" x 1 3/8" x 3/4"					
"L" Connector Left	HL-LEFT	BK BN WT DB 2 3/4" x 2 3/4" x 3/4"					
"L" Connector Right	HL-RIGHT						
"T" Connector	HT	BK BN WT DB 4" x 2 3/4" x 3/4"					
"X" Connector	HX	BK BN WT DB 4 1/8" x 4 1/8" x 3/4"					
"I" Connector	HI	BK BN WT DB 3" x 1 3/8" x 3/4"					
"I" Dead End Connector	HI-DEC	BK BN WT DB 3" x 1 3/8" x 3/4"					
Flexible Track Connector	HFLX	BK BN WT DB 11" x 1 3/8" x 3/4"					
Suspension Loop	H-LOOP	BK BN WT DB 1 3/8" x 1 3/8" x 3"					
15' Cord, Male Plug	HCORD	BK WT 15'					
T-Bar Drop Ceiling Attach	T-BARCLIP	1 1/2" x 1 1/4"					
Canopy Plate	CP	BK BN WT DB 4 1/2" x 4 1/2"					
Floating Canopy Connector	HFC	BK BN WT DB 4 1/2" x 4 1/2" x 1 1/2"					
Track Suspension				Adapters			
Model	Finish	Description	Model	Finish	Description		
All Track Suspension Kit	SK	18 18" 24 24" 36 36" 48 48"					
Suspension Kit Extender	R	18 18" 24 24" 36 36" 48 48" 72 72"					
Sloped Ceiling Adapter	SK14						
Rod Coupler	RI						
Suspension Adjustment Collar kit	SK05						
Low Voltage Track Head Extension	X	6 6" 12 12" 18 18" 24 24" 36 36" 48 48"					
Line Voltage Track Head Extension	H	18 18" 24 24" 36 36" 48 48"					
Wall Mount Suspension Bracket	TBKT	18"					

H TRACK CURRENT LIMITER

120V Track System

WAC LIGHTING

Responsible Lighting®

Low Cost Energy Code Compliance Made Easy

- Easy to install and assures compliance to California Title 24 or ASHRAE 90.1 requirements
- Energy code track installations are subject to wattage limitations based upon the size and usage of the space
- To order appropriate current limiter, select the model number which corresponds to the H system to the maximum allowable wattage
- May be mounted as a standard canopy, used in place of an "I" connector or as a live-end

How It Works

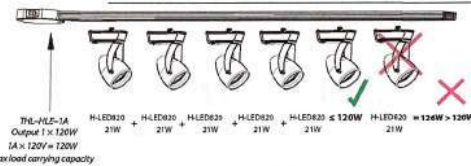
- If the track is overloaded the current limiter circuit breaker will trip and shut down power to the track.
- May be reset when the overall sum of fixture wattages are reduced, below the circuit breaker rating.
- It's that easy to ensure energy efficient usage of track installations.

Fixture Type:

Catalog Number:

Project:

Location:



Model	H Track	Circuit Breaker	Max Wattage	Finishes	Dimensions
Single Live End	THL-HLE-1A	1 x 1A	1 x 120W	BK Black BN Brushed Nickel DB Dark Bronze WT White	7 1/2" x 5" x 1 1/4"
	THL-HLE-2A	1 x 2.5A	1 x 300W		
	THL-HLE-5A	1 x 5A	1 x 600W		
	THL-HLE-7A	1 x 7.5A	1 x 900W		
	THL-HLE-10A	1 x 10A	1 x 1200W		
Double Live End	THL-HI-1-1A	1 x 1A	1 x 120W		
	THL-HI-2-1A	2 x 1A	2 x 120W		
	THL-HI-1-2A	1 x 2.5A	1 x 300W		
	THL-HI-2-2A	2 x 2.5A	2 x 300W		
	THL-HI-1-5A	1 x 5A	1 x 600W		
	THL-HI-2-5A	2 x 5A	2 x 600W		
	THL-HI-1-7A	1 x 7.5A	1 x 900W		
	THL-HI-2-7A	2 x 7.5A	2 x 900W		
	THL-HI-1-10A	1 x 10A	1 x 1200W		
	THL-HI-2-10A	2 x 10A	2 x 1200W		
Double Live End (Left)	THL-LEFT-1-1A	1 x 1A	1 x 120W		
	THL-LEFT-2-1A	2 x 1A	2 x 120W		
	THL-LEFT-1-2A	1 x 2.5A	1 x 300W		
	THL-LEFT-2-2A	2 x 2.5A	2 x 300W		
	THL-LEFT-1-5A	1 x 5A	1 x 600W		
	THL-LEFT-2-5A	2 x 5A	2 x 600W		
	THL-LEFT-1-7A	1 x 7.5A	1 x 900W		
	THL-LEFT-2-7A	2 x 7.5A	2 x 900W		
	THL-LEFT-1-10A	1 x 10A	1 x 1200W		
	THL-LEFT-2-10A	2 x 10A	2 x 1200W		
Double Live End (Right)	THL-RIGHT-1-1A	1 x 1A	1 x 120W		
	THL-RIGHT-2-1A	2 x 1A	2 x 120W		
	THL-RIGHT-1-2A	1 x 2.5A	1 x 300W		
	THL-RIGHT-2-2A	2 x 2.5A	2 x 300W		
	THL-RIGHT-1-5A	1 x 5A	1 x 600W		
	THL-RIGHT-2-5A	2 x 5A	2 x 600W		
	THL-RIGHT-1-7A	1 x 7.5A	1 x 900W		
	THL-RIGHT-2-7A	2 x 7.5A	2 x 900W		
	THL-RIGHT-1-10A	1 x 10A	1 x 1200W		
	THL-RIGHT-2-10A	2 x 10A	2 x 1200W		

Example: THL-LEFT-1-1A-WT

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150W Single Output Switching Power Supply

LRS-150 series



■ **Features**

- AC input range selectable by switch
- Withstand 300VAC surge input for 5 second
- No load power consumption<0.5W
- Miniature size and 1U low profile
- High operating temperature up to 70°C
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Compliance to IEC/EN 60335-1(PD3) and IEC/EN61558-1, 2-16 for household appliances
- Operating altitude up to 5000 meters
- Withstand 5G vibration test
- High efficiency, long life and high reliability
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

■ **Applications**

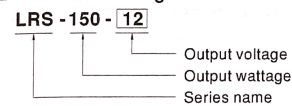
- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances

■ **Description**

LRS-150 series is a 150W single-output enclosed type power supply with 30mm of low profile design. Adopting the input of 115VAC or 230VAC(selectable by switch), the entire series provides an output voltage line of 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 90%, the design of metallic mesh case enhances the heat dissipation of LRS-150 that the whole series operates from -30°C through 70°C under air convection without a fan. Delivering an extremely low no load power consumption (less than 0.5W), it allows the end system to easily meet the worldwide energy requirement. LRS-150 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as TUV EN60950-1, EN60335-1, EN61558-1/-2-16, UL60950-1 and GB4943. LRS-150 series serves as a high price-to-performance power supply solution for various industrial applications.

■ **Model Encoding**





150W Single Output Switching Power Supply

LRS-150 series

SPECIFICATION

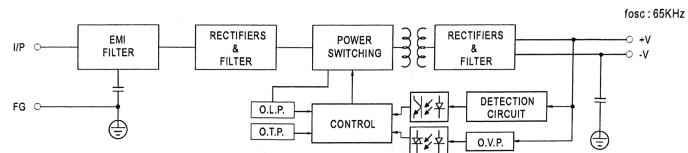
MODEL	LRS-150-12	LRS-150-15	LRS-150-24	LRS-150-36	LRS-150-48	
OUTPUT	DC VOLTAGE	12V	15V	24V	36V	48V
	RATED CURRENT	12.5A	10A	6.5A	4.3A	3.3A
	CURRENT RANGE	0 ~ 12.5A	0 ~ 10A	0 ~ 6.5A	0 ~ 4.3A	0 ~ 3.3A
	RATED POWER	150W	150W	156W	154.8W	158.4W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	32.4 ~ 39.6V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 30ms/230VAC	500ms, 30ms/115VAC at full load			
HOLD UP TIME (Typ.)	40ms/230VAC	35ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC by switch			240 ~ 370VDC (switch on 230VAC)	
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	87.5%	88.5%	89%	89%	90%
	AC CURRENT (Typ.)	2.8A/115VAC		1.6A/230VAC		
	INRUSH CURRENT (Typ.)	COLD STAR 60A/230VAC				
LEAKAGE CURRENT	<0.75mA / 240VAC					
PROTECTION	OVER LOAD	110 ~ 140% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	13.8 ~ 16.2V	18.75 ~ 21.75V	28.8 ~ 33.6V	41.4 ~ 48.6V	55.2 ~ 64.8V
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP, HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)				
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, EN60335-1, EN61558-1/-2-16, CCC GB4943 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH				
	EMC EMISSION	Compliance to EN5022 (CISPR22), GB9254 Class B, EN55014, EN61000-3-2Class A(≤75% Load), EN61000-3-3				
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61000-6-2 (EN50082-2), heavy industry level, criteria A				
	MTBF	601K hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	159*97*30mm (L*W*H)				
PACKING	0.48Kg ; 30pcs/15.4Kg/0.75CUFT					
	NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Line regulation is measured from low line to high line at rated load. Load regulation is measured from 0% to 100% rated load. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com) The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m (6500ft). 				



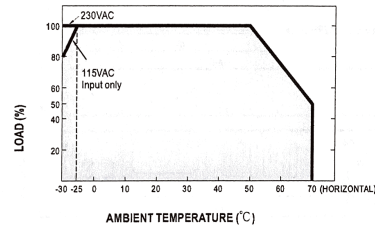
150W Single Output Switching Power Supply

LRS-150 series

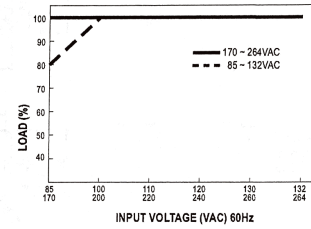
■ Block Diagram



■ Derating Curve



■ Static Characteristics





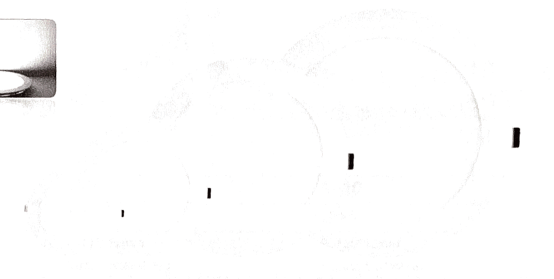
Richee Lighting Inc. WWW.Richeeled.com richeelighting@gmail.com Tel :213.814.1638

ROUND RECESSED LED PANEL LIGHTS SPECIFICATION



DC
12V

DC
24V



3
YEARS
WARRANTY

GENERAL DESCRIPTION:

Our Led panel lights are adopted by aerometer shell with simple and fashionable design. Different sprayed colors available for your choice; It takes high brightness led lamp, side-emitting design, ultra thin height; Use constant current driver, No flicker, no glare, soft and even light; High light efficiency, low power consumption, save much energy, reach up to 50,000 hrs lifespan, easily embedded installation

MAIN FEATUERS:

- ✧ High efficiency & energy saving. Under the condition of the same illumination, it saves more than 67% energy compared with the traditional lamp.
- ✧ Long life span, using semiconductor chip as the light resource, the life can be over 50,000hrs.
- ✧ No UV & IR . It won't distribute ray radiation.
- ✧ Eco-friendly, No Hg & Xe , or other harmful element. Recyclable, also it won't generate EMI.
- ✧ High performance external constant current drivers, no stroboscopic, good for eyesight protection;

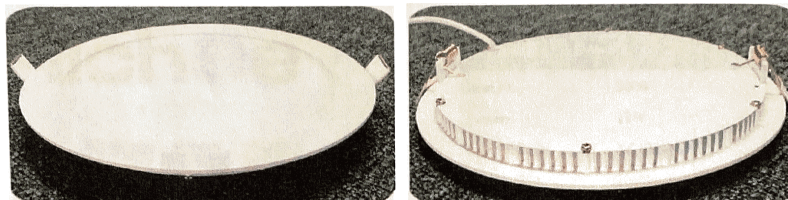
APPLICATIONS:

Commercial Lighting
Residential Lighting
Office, Living Room Meeting Room,



Lobby, Hotel, Bank,
Super Market, Shopping Mall,

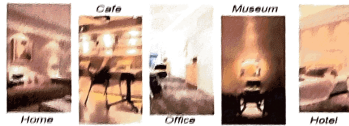
TECHNICAL PARAMETERS:



Model	3001	3010
Power	6 Watt	12 Watt
Product Size	Ø 115*12mm Cutout Size:Φ96mm	Ø 180*12mm Cutout Size:Φ160mm
Input Voltage	DC 12V	DC 12V
Frequency	50/60Hz	50/60Hz
LED Quantity (pcs)	33pcs 2835 SMD	66pcs 2835 SMD
Lumen Output	600±50LM	1200±50LM
Color Temperature	2800-3300K 4000-4500K 6000-6500K	2800-3300K 4000-4500K 6000-6500K
Color Rendering Index	Ra≥80	Ra≥80
Power Factor(Typ)	PF>0.90	PF>0.90
Efficiency(Typ)	η >0.85	η >0.85
Beam Angle	120°	120°
Protection Class	IP20	IP20
Operating Temperature	-25~60 °C	-25~60 °C
Storage Temperature	-40~80 °C	-40~80 °C
Lumen Maintenance	>85% (5000Hrs)	>85% (5000Hrs)
Lifespan	50000Hrs	50000Hrs
Application Class	Class II	Class II
Certificate	ETL CE, RoHS	ETL, CE, RoHS

NOTICE: Light optic with a little deviation for different color temperature of LED, deviation value ≤5%





FEATURES

- Integrated fixture, easy installation, no trim and can required
- High quality aluminum heat sink, good heat dissipation
- 12 watts 1000 lumens with high brightness COB light source
- Isolated constant current driver, works stable
- North American standard junction box inside, easy wiring
- New Generation led light with 360° rotation
- Free of harmful mercury, environment friendly
- 2700K 3000K 4000K 6000K color temperature for optional
- Suitable For Damp Location
- eULus certification

INSTALLATION

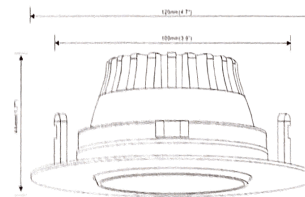
- Risk of electric shock!
- Turn power off before installation and removal.
- Do not use other drivers.



4° Gimbal LED Downlight

Item No.:	3006
Power:	12W
Input Voltage:	AC120V
Lumen Flux:	1000lm ± 5%
LED Type:	COB LED (Chips On Board)
CRI:	RA80
Product Size:	Φ 120*44mm Cut-out size: Φ 100mm
Dimmable:	Yes
Beam Angle:	36°
PF:	>0.9
Lifespan:	35,000H
IC-rated:	Yes
Package	20pcs/ctn, 43*31x38cm, 2700K: 3006-WWW-120V 3000K: 3006-WW-120V 4000K: 3006-NW-120V 6000K: 3006-CW-120V
CCT	

Product Dimension



Model: 178
120V Track Line Voltage Luminaire

WAC LIGHTING
Responsible Lighting®



Fixture Type:

Catalog Number:

Project:

Location:

PRODUCT DESCRIPTION

Line voltage luminaire offered in black, brushed nickel or white finishes and can be used with various lamp options.

FEATURES

- Available with LED lamping option
- Fixed position socket
- 350° horizontal rotation and 90° lockable vertical aiming
- Available barn door accessory for glare control
- Accepts 1 lens with the use of a lens clip
- 5 year WAC product warranty

SPECIFICATIONS

Construction: Formed metal track head with die-cast locking knob for aiming and polycarbonate track adapter. Medium base 250V porcelain socket with nickel-plated copper screw shell.

Finish: Available in Black (BK), Brushed Nickel (BN) and White (WT).

Lamp: Order lamps separately. Uses LED BR20/30/40, LED PAR20/30/38, or Halogen 50W max PAR20/BR20, 75W max PAR30/BR30, 150W max PAR38/BR40.

Dimming: Dim to 5% with Triac dimmer. LED lamp dims to 10% with electronic low voltage (ELV) dimmer.

Standards: UL & CUL Listed.

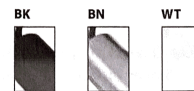
ORDER NUMBER

System	Model	Finish
LTK L Track	178	BK Black
HTK H Track		BN Brushed Nickel
JTK J/1/2 Track		WT White

- -

Example: HTK-178-BN

FINISHES



LED LAMPS		Finish
PAR20LED-10N30	PAR20	BK
PAR30LED-L14N30	PAR30	WT
PAR38LED-17N30	PAR38	WT
BR20LED-7N27	BR20	WT
BR30LED-11N27	BR30	WT

BARN DOOR ACCESSORY

PAR20BD	BK	Black
PAR30BD	BN	Brushed Nickel
PAR38BD	WT	White



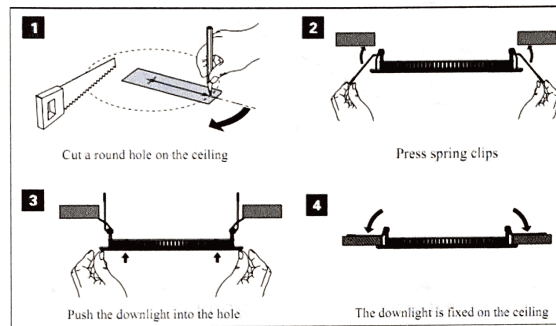
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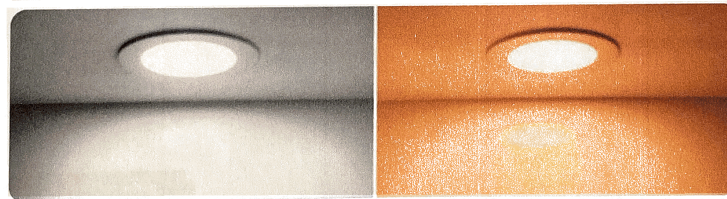
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Richee Lighting Inc. WWW.Richeeled.com richeelighting@gmail.com Tel : 213.814.1638



APPLICATION:

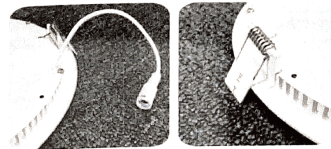


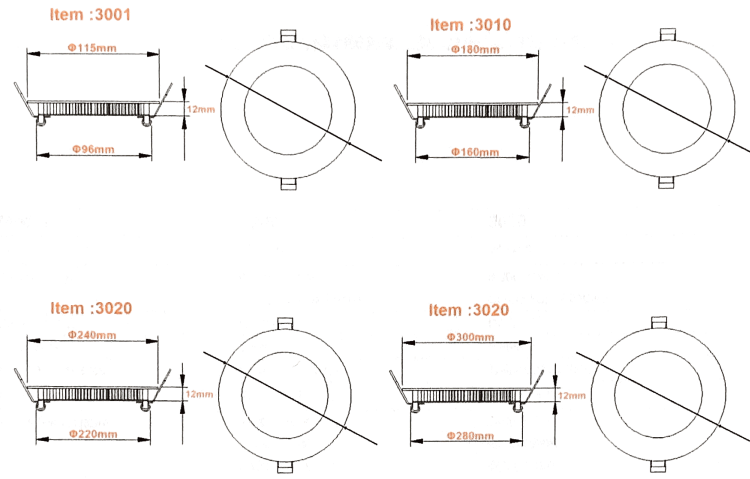
Notice:

Input voltage DC 12V or 24V

Indoor use only and don't used in high temperature place.

When the temperature is too high, Over-temperature control circuitry activates, Output will be cut off, and the lamp will light off for a few minutes. After lowering temperature will be back to normal.





Packing Details:

Model	Inner Box Size (L*W*H)	Carton Size (L*W*H)	Product Q'ty/Carton	G.W.	N.W
3001	140x32x169mm	350*300*358mm	40PCS	11.5Kg	17.5Kg
3010	190x32x220mm	460*350*400mm	40PCS	14Kg	19.5Kg
3020	243x32x273mm	506*350*288mm	20PCS	12Kg	17.5Kg
3030	320x32x290mm	548*350*305mm	20PCS	13.5Kg	19.5Kg

INSTALLATION INSTRUCTION:



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Model	3020	3030
Power	18 Watt	24 Watt
Product Size	Ø 240*12mm Cutout Size: Φ220mm	Ø 300*12mm Cutout Size: Φ280mm
Input Voltage	DC 12V	DC 24V
Frequency	50/60Hz	50/60Hz
LED Quantity (pcs)	93pcs 2835 SMD	120pcs 2835 SMD
Lumen Output	1800±50LM	2500±50LM
Color Temperature	2800-3300K 4000-4500K 6000-6500K	2800-3300K 4000-4500K 6000-6500K
Color Rendering Index	Ra≥80	Ra≥80
Power Factor(Typ)	PF>0.90	PF>0.90
Efficiency(Typ)	η >0.85	η >0.85
Beam Angle	120°	120°
Protection Class	IP20	IP20
Operating Temperature	-25~60 °C	-25~60 °C
Storage Temperature	-40~80 °C	-40~80 °C
Lumen Maintenance	>85% (5000Hrs)	>85% (5000Hrs)
Lifespan	50000Hrs	50000Hrs
Application Class	Class II	Class II
Certificate	ETL, CE, RoHS	ETL, CE, RoHS

NOTICE: Light optic with a little deviation for different color temperature of LED, deviation value ≤5%

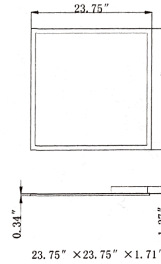


Product Dimensions:

JOB NAME: _____
DATE: _____
TYPE: _____

DIMENSIONS:

23.75"(L) x 23.75"(H) x 1.71"(D)



- LP-2X2-40W-50K-DS
- LP-2X2-40W-40K-DS
- LP-2X2-40W-35K-DS
- LP-2X2-40W-30K-DS
- LP-2X2-40W-27K-DS

LED PANEL LIGHTS (2X2)40W

Ideal for hotel, offices, retail outlets, restaurant, parking garages, storage room, conference room, education facilities and more.

ELECTRICAL SPECIFICATIONS:

- Voltage: 100-277VAC, 50/60Hz
- Wattage: 40W
- Current: 1050mA
- Power factor: >0.90
- Efficacy: 110LM/W, 150LM/W, 90LM/W
- THD: <15%

HOUSING SPECIFICATIONS:

- External driver mounted on top
- Earthquake hooks and suspension hooks pre-installed
- Operating temperature: -68°F ~ 104°F
- Lifespan: 50,000 Hrs.

CERTIFICATIONS: FC, UL



MODEL	WATTS	VOLTAGE	LUMENS	COLOR TEMP
LP-2X2-40W-50K-DS	40W	100~277VAC	4400LM	5000K
LP-2X2-40W-40K-DS	40W	100~277VAC	4400LM	4000K
LP-2X2-40W-35K-DS	40W	100~277VAC	4200LM	3500K
LP-2X2-40W-30K-DS	40W	100~277VAC	3600LM	3000K
LP-2X2-40W-27K-DS	40W	100~277VAC	3600LM	2700K

LIGHTING SPECIFICATIONS:

- Dimming: 0~10V dimmable
- LED type: 4014SMD LM80
- No. of LED: 216
- Total lumens: 4400LM/4200LM/3600LM
- Color temperature: 5000K/4000K/3500K/3000K/2700K
- Color rendering index: >80
- Soft and wide light emitting
- No infrared rays, no ultraviolet radiation, no thermal effect
- No flickering, no humming, no RF interference

WARRANTY: 5 years

Rev. 2012



FIRE-PROOFING INFORMATION

LIGHTBOX

LABORATORY-GROWN DIAMONDS



FIRE-POOF™
PRODUCT DATA SHEET
INTERIOR FLAME RETARDANT
FOR FABRIC, WOOD, CARDBOARD and
OTHER DECORATIVE MATERIALS



SATURANT

ITEM #333

FABRIC PRODUCT DESCRIPTION: Fire-Poof™ is an interior non-hazardous, water-based flame retardant for most textile fibers, raw wood and OEM uses. Fire-Poof™ is easy to use and has no smell; one product for most fibers. No need to buy more than one product.

TECHNICAL DATA:

Weight - 5-gallon pail is 50 lbs (ready to use), ph=6.5-7. Available in all quantities.
May need up to 24 hrs. to cure depending upon fiber characteristics.

Appearance - appearance of water.

Store between 40° and 100°F. Shelf life, 5 years if unopened. Keep container closed at all times.

Fire-Poof is water-soluble. Do not allow treated surface to come in contact with liquid.

Do not add water or change chemical composition in any way. Always make sure cap stays on container.

Do not expose to heat above 300° f. after application.

Certification requires application by a CA State Certified Applicator to meet requirements of the CA State Fire Marshal. Water based product, do not allow product to come in contact with any metal surfaces.

COMMERCIAL APPLICATION APPROVALS:

Wood Approvals: Class A / Class 1 ASTM E-84 on Plywood, Class B / Class 2 on Birch. CA Title 19 1236.4, NFPA 255, UL 723, UBC 42-1

Fabric Approvals: NFPA 701 & CA Title 19 1237.1, No. C-26501, NYC COA #5687, CAN/ULC-S109-03, CAN/ULC-S109-14, Small and Large Scale, FAA 25.853, NFPA 260, BFD 1X-1, ASTM E84, CA 117, UFAC, Class 1. BS 5867 Part B. Please inquire about detailed fiber testing.

READY TO USE APPLICATION INSTRUCTIONS ARE LISTED BELOW

Users of this product must determine the suitability of this product for its intended use. Do not use an airless sprayer as the pressure can atomize the product, which can prevent proper performance. Recommend wear of chemical resistant gloves, goggles and N95 mask for protection. Fire-Poof is ready to use. Pre-vacuuming or cleaning may be needed prior to application. Test for dye stability in inconspicuous area. Some unstable dyes, especially reds are prone to bleeding. We are not responsible for any aesthetic changes that may occur. Apply to clean surface free of dust and dirt with a "Hudson" type orchard sprayer with a fan spray tip at 40-100 PSI. Spray all exposed surfaces. Other coatings, glue, etc. can increase flame spread and must be tested as a system.

For Fabric: 200-800 square feet per gallon depending on the fiber content and density of the item being treated. All surfaces must be free of dirt or coatings. Testing results by a trained professional will determine chemical amount and cure time if needed. May need to be applied to both sides of the textile to ensure all areas are treated with Fire-Poof™. Not effective on 100% nylon, acetate, acrylic, plastic, metal or surfaces with water, glue or stain / water repellent. Sizing, oil and dirt can also prevent absorption. May be effective over scenic paint but must be tested for use with specific paint being used.

For Wood: All wood must be free from coatings such as paint, sealant or dirt. Apply 150 square feet per gallon to raw wood to achieve Class A or Class 1 rating on plywood or 250 sq. ft./gal. for Class B or Class 2 rating. 150 Sq. Ft. per Gallon on Birch to achieve a Class B or Class 2 rating.

Cardboard: Apply to all sides at approximately 195 square feet per gallon. Thicker cardboard may need to be submerged for Fire-Poof to penetrate all sides and middle of cardboard. Length of dipping or spray time may vary depending upon thickness of cardboard to determine absorption effectiveness and desired strength.

Other material: may also need to be submerged until positive results have been achieved. Length of time may vary depending upon substrate saturation capabilities.

CLEAN-UP:

Flush sprayer and tips with warm water and wash hands with soap and water.

CAUTION:

Keep out of reach of children. Do not ingest. Call physician if swallowed. Clean with soap and water all contacted areas. Flush eyes with chemical eye wash or flush eyes with cool water for at least 15 minutes. If irritation persists, seek advice of a Physician.

WARRANTY AND DISCLAIMER:

Use only as directed. Sellers and Mfrs. only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or inability to use the product. The user assumes all risk and liability whatsoever in connection therewith. Any statement or recommendation not contained herein shall have no force or effect unless contained in an agreement signed by officers of seller and manufacturer. Deterioration of coatings can occur due to cleaning, atmospheric and other conditions. Fire Retardants shall possess the desired degree of permanency and shall be maintained to retain the effectiveness of the treatment under the service conditions encountered in actual use. Periodic testing by a trained official should be performed to insure flame-retardant effectiveness.

DETAILS ON CARTS

LIGHTBOX

LABORATORY-GROWN DIAMONDS

