



# SkySong

Lighting Concept

January 26, 2009

TANTERI + ASSOCIATES

88-DR-2005#5  
1st: 2/09/09

**Color Lighting**



TANTERI + ASSOCIATES



# FIXTURE CUTS


## FIXTURE TYPE F-3

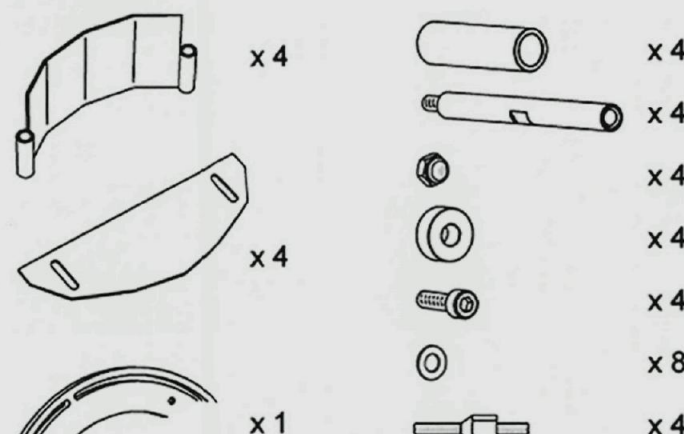
### Specifications

### Exterior 200 LED™

Exterior 200 LED, Aluminum, EU model, Medium: P/N 90545010  
 Exterior 200 LED, Aluminum, EU model, Wide: P/N 90545020  
 Exterior 200 LED, Aluminum, EU model, no diffuser: P/N 90545040  
 Exterior 200 LED, Aluminum, US model, Narrow: P/N 90545100  
 Exterior 200 LED, Aluminum, US model, Medium: P/N 90545110  
 Exterior 200 LED, Aluminum, US model, Wide: P/N 90545120  
 Exterior 200 LED, Aluminum, US model, no diffuser: P/N 90545140  
 Exterior 200 LED, White, EU model, Narrow: P/N 90545002  
 Exterior 200 LED, White, EU model, Medium: P/N 90545012  
 Exterior 200 LED, White, EU model, Wide: P/N 90545022  
 Exterior 200 LED, White, EU model, no diffuser: P/N 90545042  
 Exterior 200 LED, White, US model, Narrow: P/N 90545102  
 Exterior 200 LED, White, US model, Medium: P/N 90545112  
 Exterior 200 LED, White, US model, Wide: P/N 90545122  
 Exterior 200 LED, White, US model, no diffuser: P/N 90545142

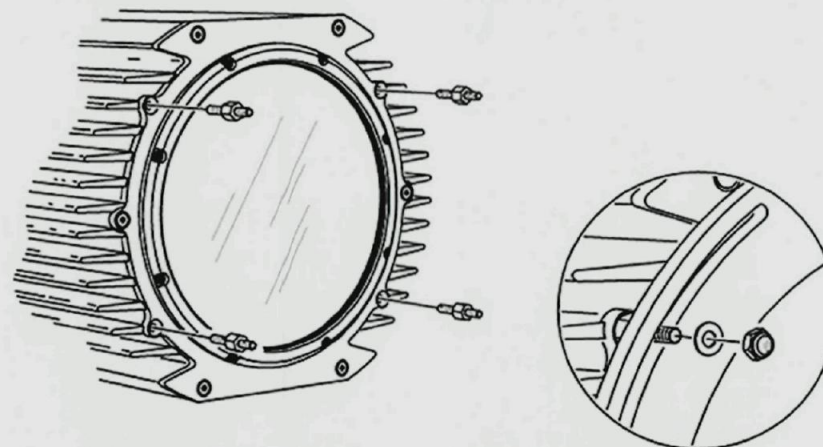
### Photometric Data

 <b>Very Narrow (Balanced white 5600 Kelvin, Without diffuser)</b>	Efficiency: 0% Half-peak angle: 13° Total output: 1500 lm
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<b>Narrow (Balanced white 5600 Kelvin)</b>	Efficiency: 0% Half-peak angle: 21° Total output: 1400 lm
<b>Narrow (Balanced white 5600 Kelvin)</b>	Efficiency: 0% Half-peak angle: 21° Total output: 1400 lm
<b>Medium (Balanced white 5600 Kelvin)</b>	Efficiency: 0% Half-peak angle: 27° Total output: 1300 lm
<b>Medium (Balanced white 5600 Kelvin)</b>	Efficiency: 0% Half-peak angle: 27° Total output: 1300 lm
<b>Wide (Balanced white 5600 Kelvin)</b>	Efficiency: 0% Half-peak angle: 32° Total output: 0 lm
<b>Wide (Balanced white 5600 Kelvin)</b>	Efficiency: 0% Half-peak angle: 32° Total output: 0 lm



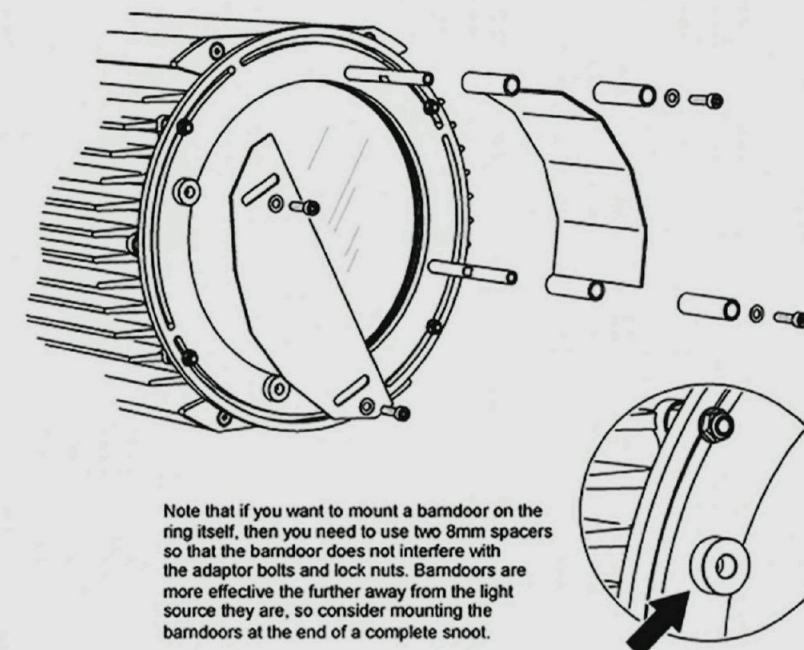
This installation note describes the mounting of snoot plates and/or barn doors on an Exterior 200 or Exterior 600. Barn doors are typically used for beam shaping and control, while snoot plates are used to reduce glare. You can mount a complete or partial snoot (using the 1/4 circle snoot plates), one or more barn doors, or any combination of these. The illustrations depict an Exterior 600, but the process is the same for Exterior 200 fixtures.

Remove 4 screws from the front (as shown) and mount the 4 adaptor bolts. Cross-tighten with a torque of 3 Nm (2.2 Ft-lbs) for the Exterior 600 and 1.8 Nm (1.3 Ft-lbs) for the Exterior 200.



Mount the ring over the adaptor bolts, so that the bolts protrude through the guides in the ring. Attach the washers and lock nuts, but do not tighten them fully at this point.

Mount the barn doors and snoot plates in the required configuration using the screws and posts provided.



Note that if you want to mount a barn door on the ring itself, then you need to use two 8mm spacers so that the barn door does not interfere with the adaptor bolts and lock nuts. Barn doors are more effective the further away from the light source they are, so consider mounting the barn doors at the end of a complete snoot.

Lastly, rotate the ring to align the beam correctly and tighten the lock nuts.



To extend the snoot plates further than one level, you need an extension kit. This extension makes the lamp more sensitive to severe winds and the fixture should be secured with this in mind.

Extension Kit Exterior 600: P/N 91611030  
 Extension Kit Exterior 200: P/N 91611032



# FIXTURE CUTS

## FIXTURE TYPE F-2

### Specifications | 7870MH WITH 25 DEGREE BEAM ANGLE

Large scale floodlights  
with very narrow beam light distribution

**Housing:** Two piece die-cast aluminum consisting of a reflector housing with integral yoke mounting flanges and a separate cylindrical ballast housing with cooling fins. Ballast housing is secured to reflector housing by two stainless steel latches which allow easy access to the ballast. All aluminum used in the construction is marine grade and copper free.

**Enclosure:** Two piece die-cast aluminum consisting of an outer lens frame and a inner accessory holder. The lens is secured between the two die-castings and is hinged to provide easy lamp maintenance. Two captive, stainless steel fasteners seal the lens/frame assembly to the reflector housing. Tempered glass lens, 3/16" thick. One piece molded, U-channel, high temperature silicone rubber gasket.

**Mounting Yoke:** 3/16" thick stainless steel allows for full vertical adjustment with die-cast aluminum aiming angle indicators and two (2) heavy duty stainless steel locking bolts. Yoke is provided with mounting holes for various BEGA mounting accessories.

**Electrical:** Lampholders: G12, bi-pin porcelain with nickel plated contacts, pulse rated 5 KV. Ballasts are integral, magnetic, HPF, available in 120V or 277V - specify.

**Finish:** These luminaires are available in five standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV); Eurocoat™ (URO). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

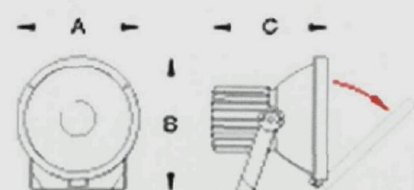
U.L. listed, suitable for wet locations. Protection class: IP 67.

#### Mounting options:

- 435 Mounting bracket for pole top Ø 3"
- 553 Pole mount canopy for 5" O.D. pole
- 554 Wall mount canopy
- 550 Pole mount arm for 5" O.D. pole
- 551 Wall mount arm
- 555 Pole mount hub for pole top Ø 3"
- 762 Pole top for 2 floodlights
- 763 Pole top for 3 floodlights
- 764 Pole top for 4 floodlights
- 766 Pole top for 6 floodlights
- 761 Cross beam for 3 floodlights
- 765 Cross beam for 6 floodlights

**CUSTOM WIDE BEAM  
ANGLE WITH FROSTED  
GLASS.**

Type:  
BEGA Product::  
Project:  
Voltage:  
Color:  
Options:  
Modified:



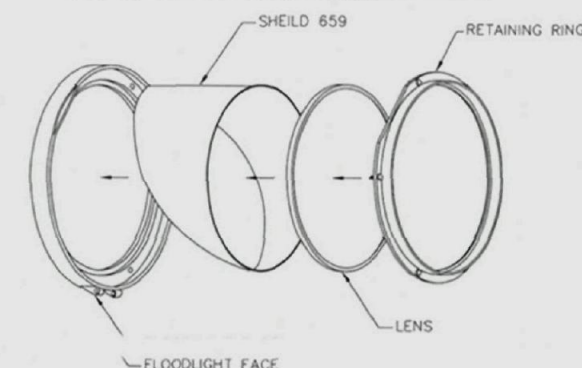
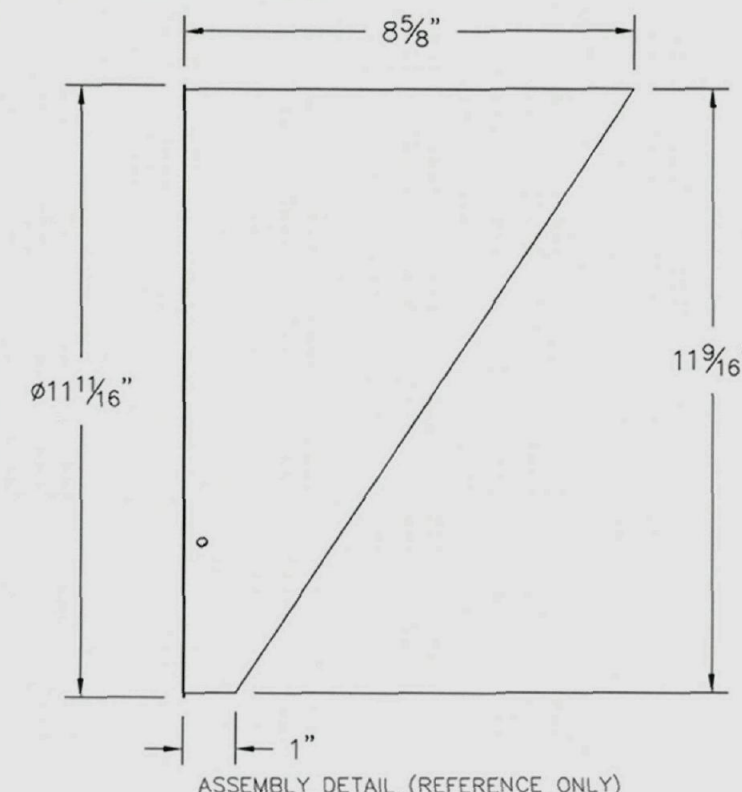
Floodlights - very narrow beam

	Lamp	β	Lumen	A	B	C	
7870MH	1 150W T6 G12 MH	5°	14000	13 3/4	16 3/4	14 1/4	659 - 108 109 110
180° glare shield							
Color effect filters							
β = Beam angle							

BEGA-US 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com  
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#### NOTES:

1. ACCESSORY #659 -SEE SPECIFICATIONS
2. SHIELD ATTACHES TO FLOODLIGHT
3. CAN BY INSTALLED BY 360°, PREVENTS LATERAL GLARE FROM ONE DIRECTION UP TO 45°
4. BLACK FINISH.



Catalog No.: 659  
Description: FLOODLIGHT SHIELD  
Drawn by: DBN Date: 9/5/07 File Name: 659  
SCALE: NONE - DO NOT SCALE DRAWING

**BEGA**

1000 Bega Way  
Carpinteria, Ca. 93013  
(805) 684-0533



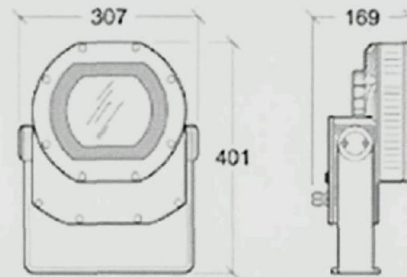
# FIXTURE CUTS

## FIXTURE TYPE

# F-3

### Specifications

#### Exterior 200 LED™



The Exterior 200 LED is a long-life programmable luminaire offering full RGB + Amber and White color mixing. Weatherproofed for outdoor use, it features 44 high power LEDs and a choice of lens options.

- 44 high power LEDs in 5 colors: Red, Green, Blue, Amber and white
- RGBAW color mixing, broader range of colors
- Choice of narrow, medium or wide beam options
- High optical performance: uniform distribution of light and color
- 0-100% intensity control
- Weatherproof rating: IP65
- DMX, stand-alone, synchronized (master/slave)
- Choice of DMX control modes: RGB, RGBAW, HSI, I

**Physical** Length: 169 mm (6.7 in.) including cable gland  
Width: 307 mm (12.1 in.)  
Height: 401 mm (15.8 in.)  
Weight: 7.6 kg (16.8 lbs.) including bracket

**Dynamic Effects** Color mixing: RGBAW  
Red: 0 - 100%  
Green: 0 - 100%  
Blue: 0 - 100%  
Amber: 0 - 100%  
White: 0 - 100%

**Control and Programming** Color control modes: RGBAW, RGB, HSI, HSIC  
Control options: DMX, stand-alone, synchronized (master/slave)  
DMX channels: 3, 4 or 5  
DMX address setting: PC with Martin MUM software and DABS1 hardware interface  
Stand-alone trigger options: Internal timer and/or ambient light level  
Stand-alone and master/slave programming: PC with Martin MUM software and DABS1 hardware interface  
26-bit control (internal): RGBAW, RGB, HSI, HSIC  
Protocol: USITT DMX512-A  
Receiver: RS-485  
Firmware update: Serial upload via DMX link

**Photometric Data** Light source: Luxeon K2 high power emitters  
Total output: 1400 lm with narrow diffuser, balanced white 5600 K at 25° C (77° F)  
Half-peak angle: 21° with narrow diffuser  
Minimum LED source lifetime (to 50% of initial output level): 30 000 hours at full intensity

**Construction** Color: Clear anodized, white, custom colors to special order  
Housing: Anodized aluminum  
Mounting bracket: 8 mm (0.3 in.) anodized aluminum  
Front glass: 6 mm (0.2 in.) anti-reflection coated  
Protection rating: IP65

**Installation** Orientation: Any  
Vertical aiming: 330°  
Minimum distance to illuminated surfaces: 0.1 m (0.3 ft.)

**Connections** Power cable entry: IP68 cable gland  
Power connection: 1.8 m (5.9 ft.) cable tail  
Data cable entry: IP68 cable gland  
Data connection: 1.8 m (5.9 ft.) combined input + output cable tail

**Electrical** AC power: 100-240 V nominal, 50/60 Hz  
Typical power consumption (at 100 V, 50/60 Hz): 139 W  
Power supply unit: Integrated, auto-sensing multi-voltage  
Main fuse: 2.5 AT (slow blow)

**Typical Power and Current** 100 V, 50 Hz: 139 W, 1.4 A, PF 0.990  
100 V, 60 Hz: 139 W, 1.4 A, PF 0.989  
110 V, 60 Hz: 137 W, 1.3 A, PF 0.988  
120 V, 60 Hz: 136 W, 1.2 A, PF 0.986  
208 V, 60 Hz: 133 W, 0.7 A, PF 0.932  
230 V, 50 Hz: 132 W, 0.7 A, PF 0.925  
240 V, 50 Hz: 131 W, 0.7 A, PF 0.886  
*Measurements made at nominal voltage with all LEDs at full intensity. Allow for a deviation of +/- 10%.*

**Thermal** Cooling: Convection  
Maximum ambient temperature (Ta max.): 45° C (113° F)  
Minimum ambient temperature (Ta min.): -30° C (-22° F)  
Maximum surface temperature, steady state, Ta=40° C (104° F): 90° C (194° F)  
Total heat dissipation (calculated, +/- 10%): 860 BTU/hr.

#### Approvals



EU safety: EN 60598-1, EN 60598-2-1, IEC/EN 60825-1  
EU EMC: EN 55103-1, EN 55103-2, EN 61000-3-2, EN 61000-3-3  
US safety (US model): UL 1598  
Canadian safety (US model): CAN/CSA C.22.2 No. 250

**Included Items** Adjustable mounting yoke  
Diffuser (installed) depending on model  
User manual: P/N 35000211

**Accessories** Narrow beam angle kit (diffuser sheet): P/N 41600110  
Medium beam angle kit (diffuser sheet): P/N 41600111  
Wide beam angle kit (diffuser sheet): P/N 41600112  
Exterior 200 floor stand: P/N 91611305  
Safety eyebolt: P/N 91611239  
3-pin male XLR connector, cable-type, IP65: P/N 91611306  
3-pin female XLR connector, cable-type, IP65: P/N 91611307

**Spare Parts** 2.5 AT main fuse: P/N 05020010

**Ordering Information** Exterior 200 LED, Aluminum, EU model, Narrow: P/N 90545000

**Martin**

Olof Palmes Allé 18 8200 Århus N Denmark Tel: +45 87 40 00 00 Fax: +45 87 40 00 10

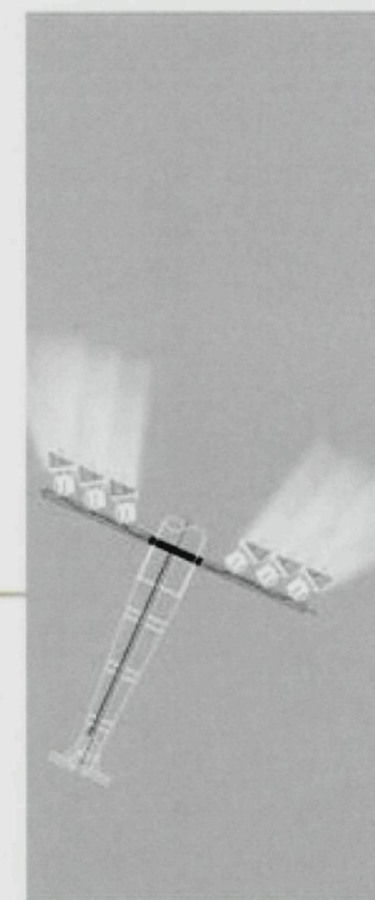
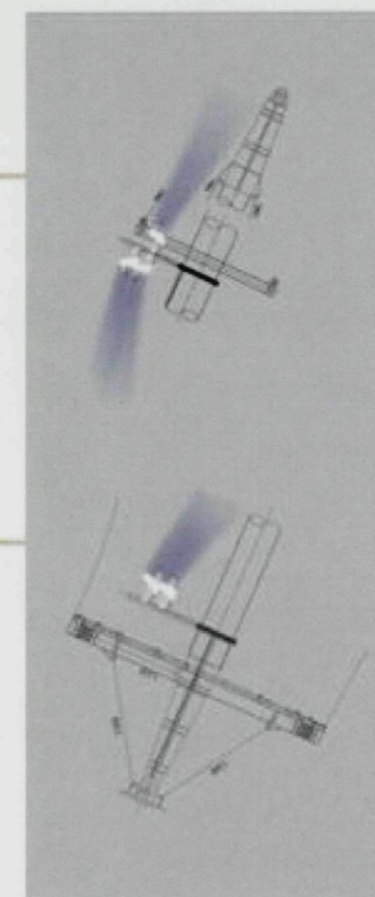
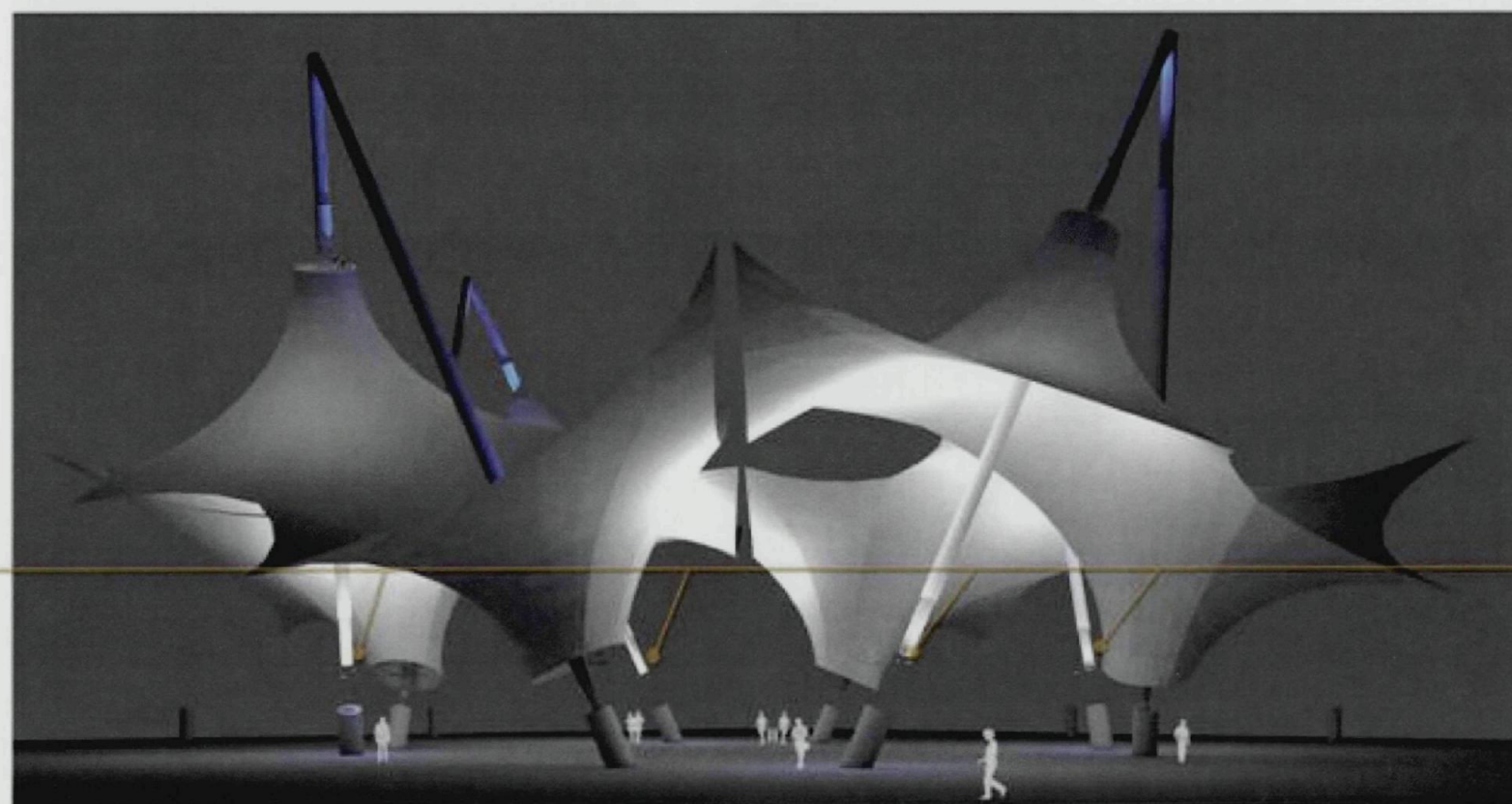
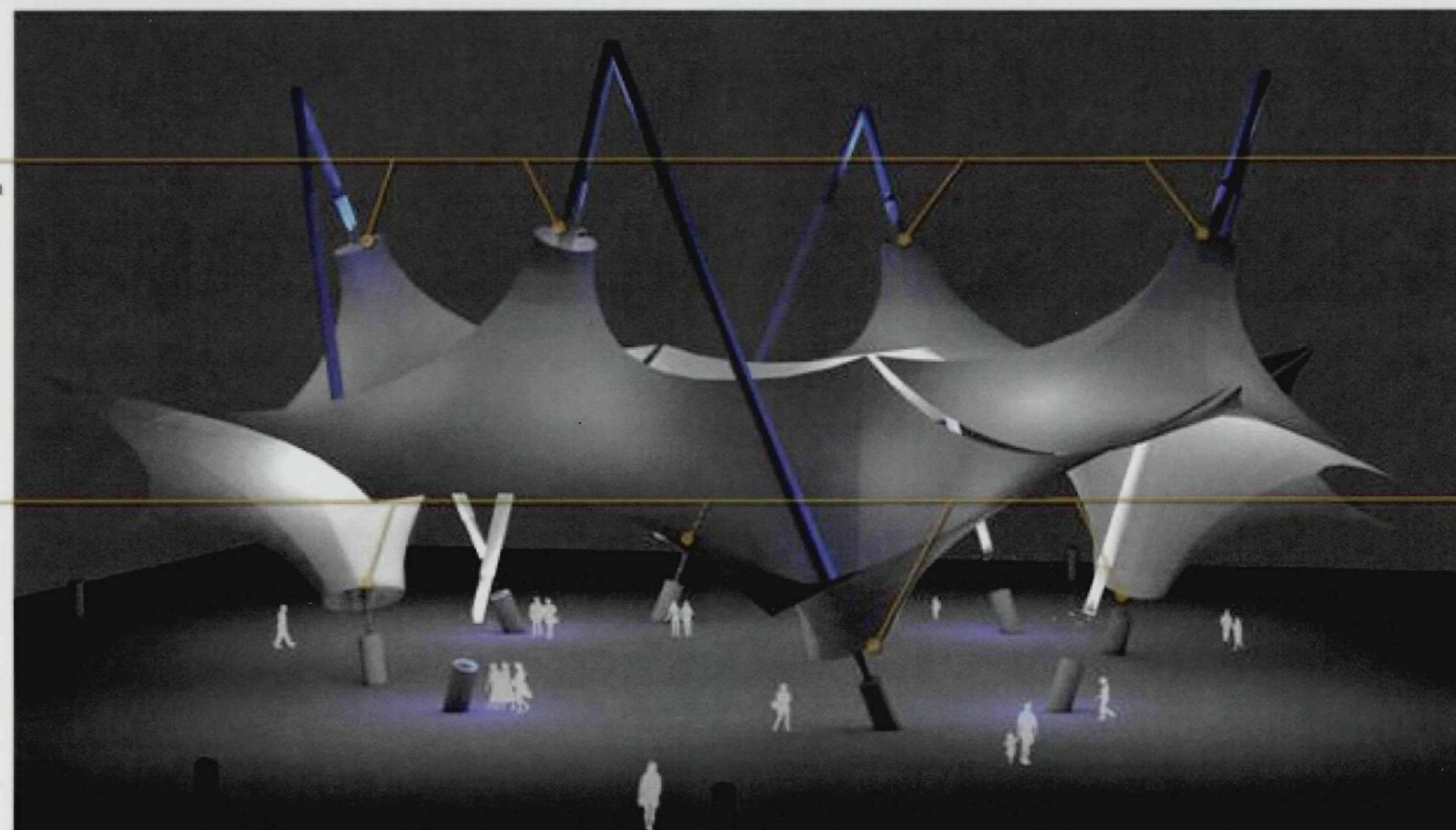
TANTERI + ASSOCIATES, LLC



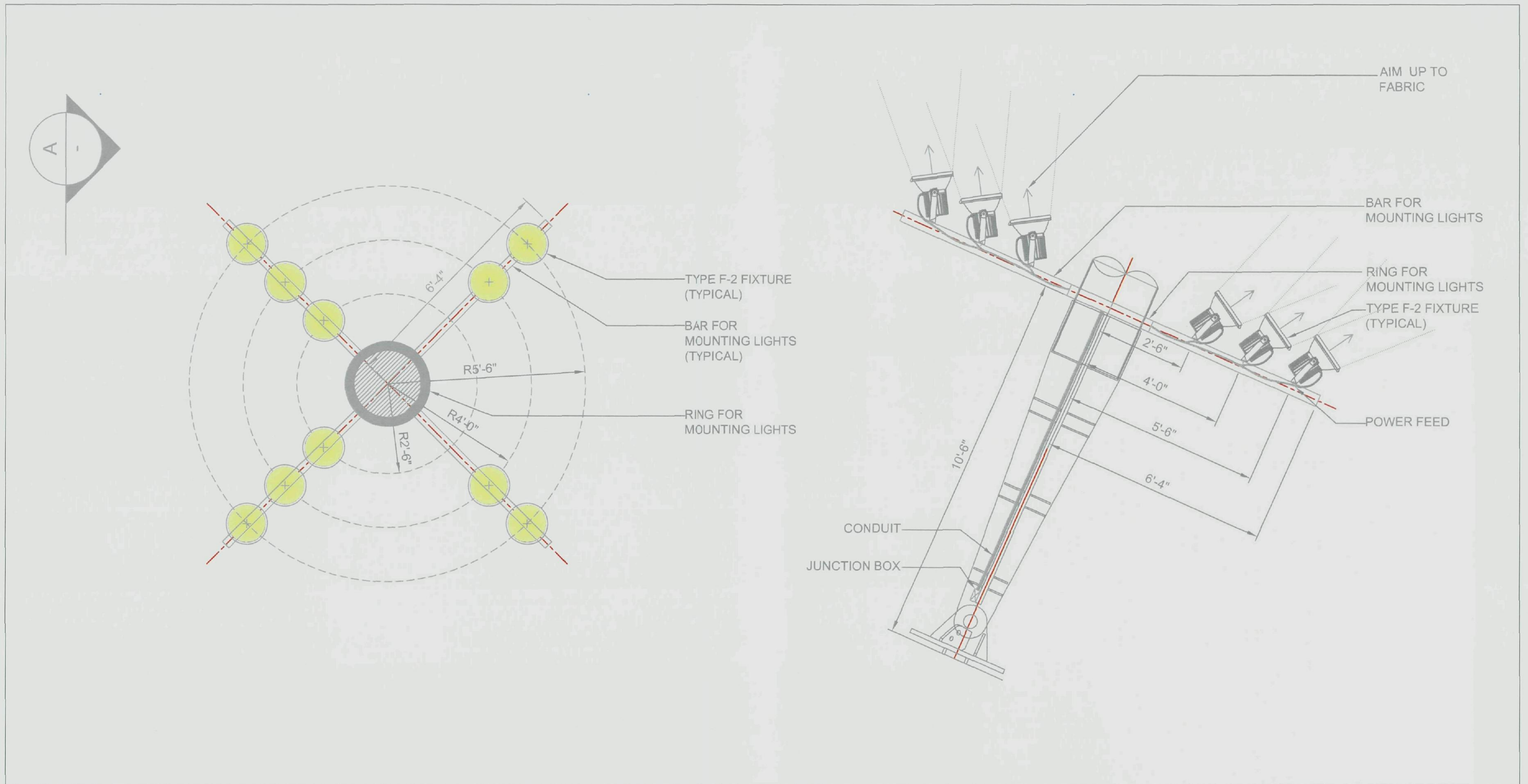
COLUMN ACCENT LIGHTING  
(8) TYPE F-3 IN HALF-RADIAL PATTERN  
@ TOP RING OF COLUMN 'B'  
(3 AIM UP / 5 AIM DOWN)  
TOTAL: (32) F3 FIXTURES

COLUMN ACCENT LIGHTING  
(5) TYPE F-3 IN HALF RADIAL  
PATTERN @ BASE OF COLUMN 'A'  
(3 UNITS AIM UP TO MIDDLE OF  
COLUMN/ 2 UNITS AIM UP TO TOP  
OF COLUMN)  
TOTAL: (20) F3 FIXTURES

FABRIC UPLIGHTING  
(10) TYPE F-2 IN RADIAL PATTERN  
@ BASE OF EACH COLUMN 'B'  
TOTAL: (40) F2 FIXTURES







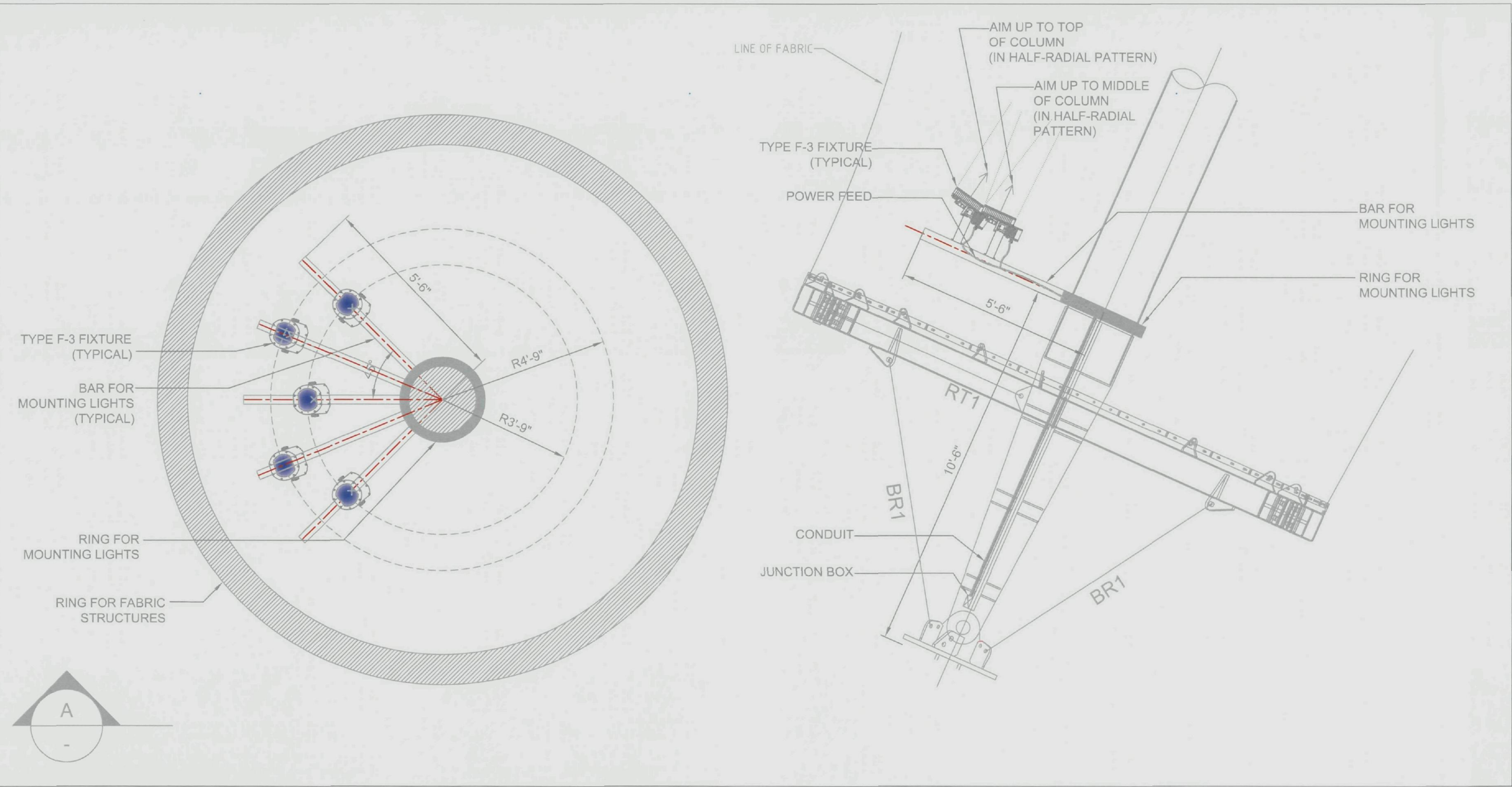
**1** Typical Plan View at Bottom of Column B  
 Scale: 3/8" = 1'-0"

**A** View  
 Scale: 3/8" = 1'-0"

**Lighting Detail: TYPE F-02 @ COLUMN B**

NOTES: Drawing for design intent only. NOT for construction.





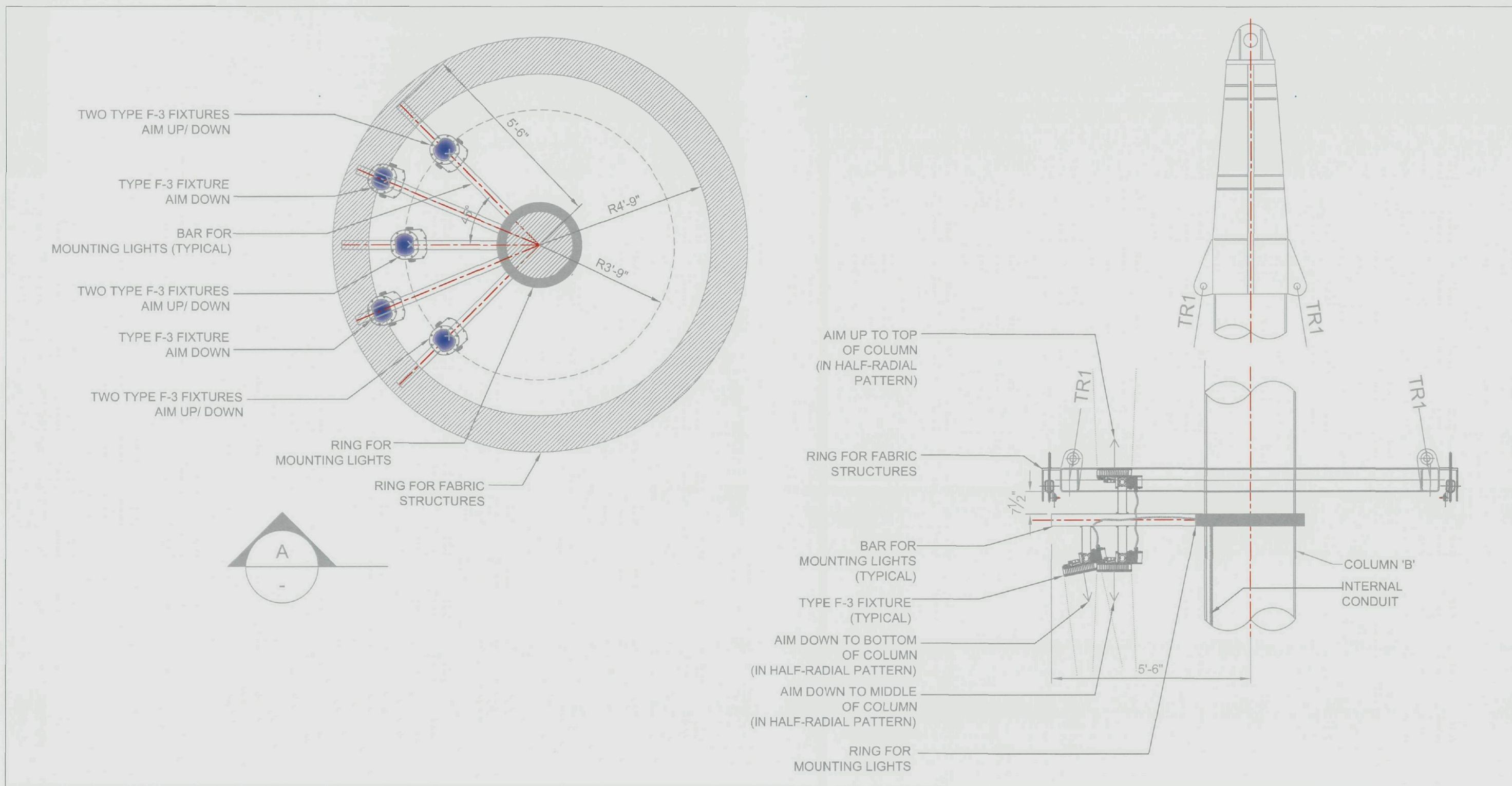
1 Typical Plan View at Bottom of Column A  
Scale: 3/8" = 1'-0"

A View  
Scale: 3/8" = 1'-0"

Lighting Detail: TYPE F-03 @ COLUMN A

NOTES: Drawing for design intent only. NOT for construction.





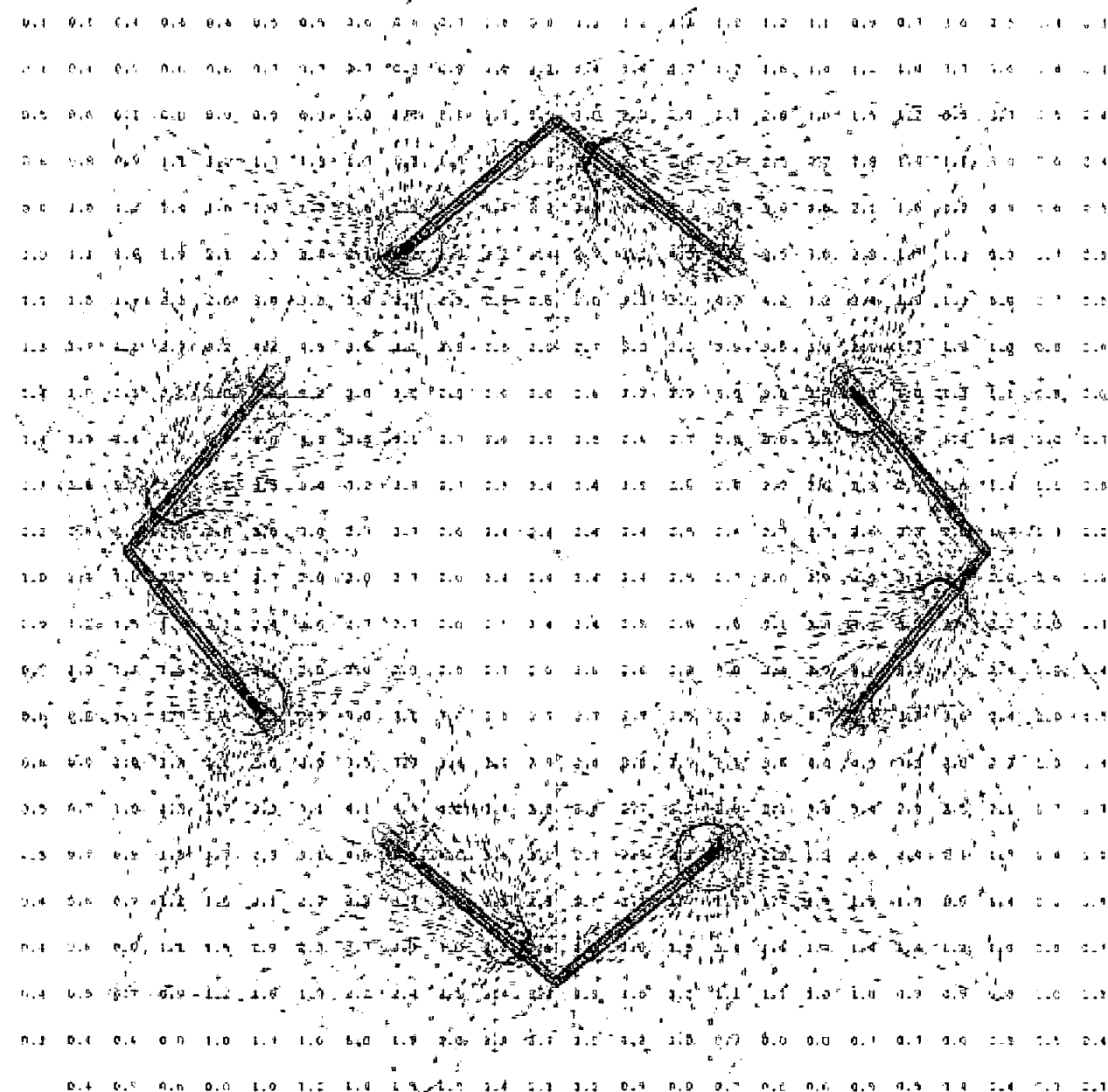
**1** Typical Plan View at Top of Column B  
 Scale: 3/8" = 1'-0"

**A** View  
 Scale: 3/8" = 1'-0"

**Lighting Detail: TYPE F-03 @ COLUMN B**

NOTES: Drawing for design intent only. NOT for construction.





# Numeric Summary

Label	CalcType	Units	Avg	Max
CalcPts-Floor	Illuminance	Fc	1.94	5.2







