



# BREWER FOUNTAIN

## Lighting Improvements

Original Design  
and evolution to  
Proposed Design

The Friends of the Public Garden

Ripman Lighting Consultants

Ron Buia Engineering





EARLIER DESIGN  
Note low water sensor conduit.





Design Study  
Fixtures + shields mounted to new struts  
Fixtures + shields rotated to follow aim





Design Study  
Fixtures + shields mounted to floor of basin  
Fixtures + shields rotated to follow aim





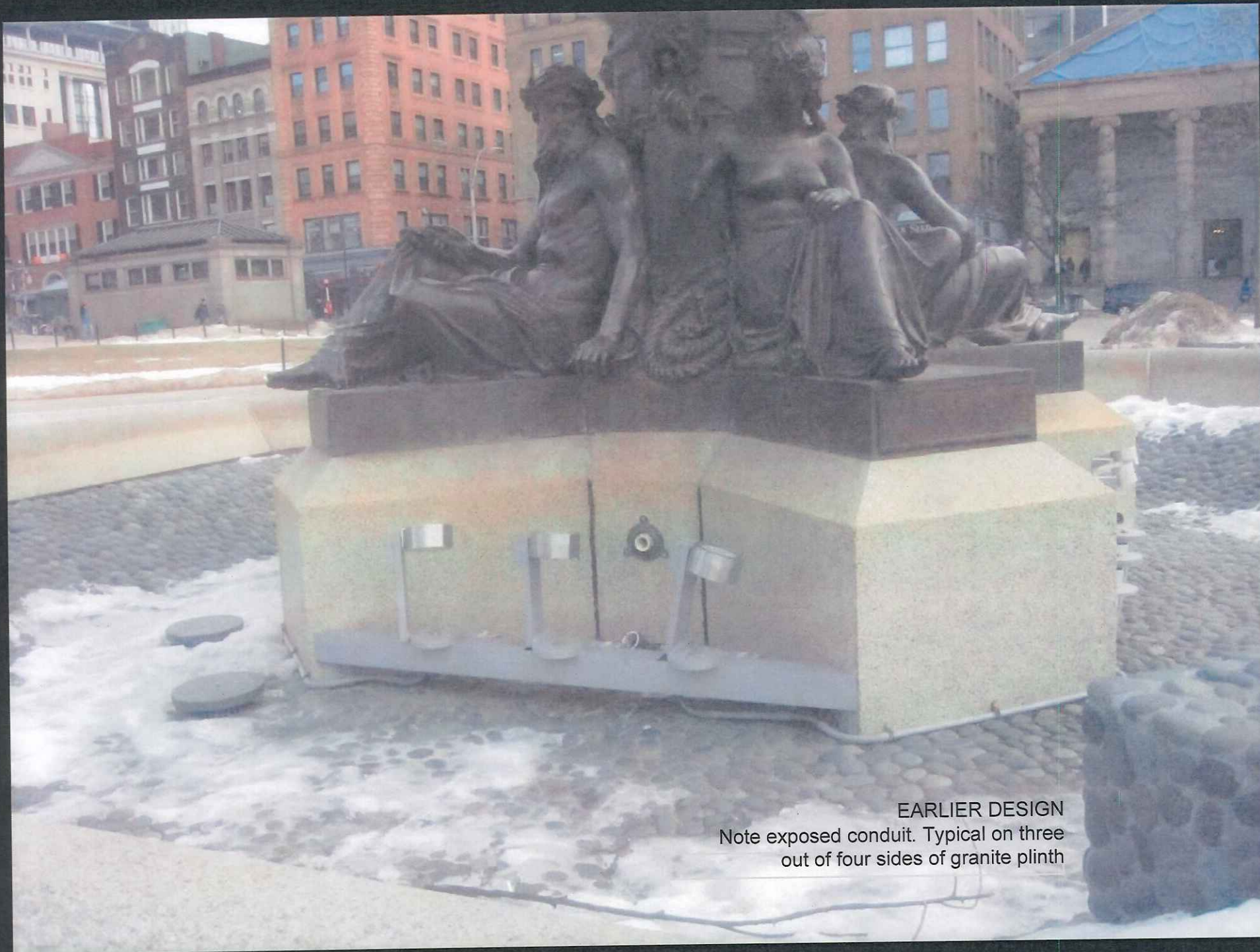
Proposed Design  
Fixtures + shields sunk into floor of basin  
Fixtures + shields rotated to follow aim  
Pitch of top of shield reduced





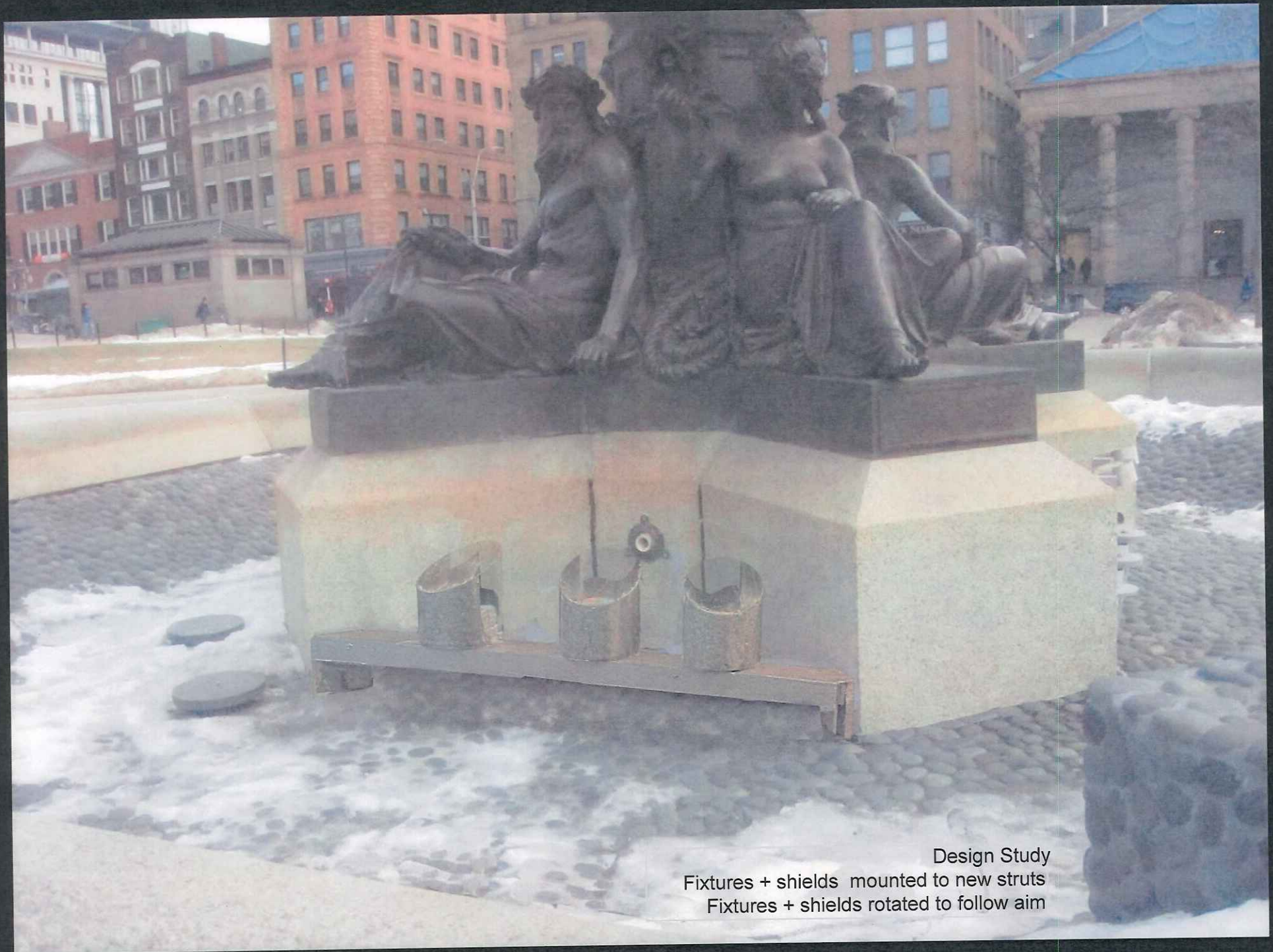
Proposed Design with Option  
Fixtures + shields sunk into floor of basin  
Fixtures rotated, shields identical orientation  
Pitch of top of shield reduced





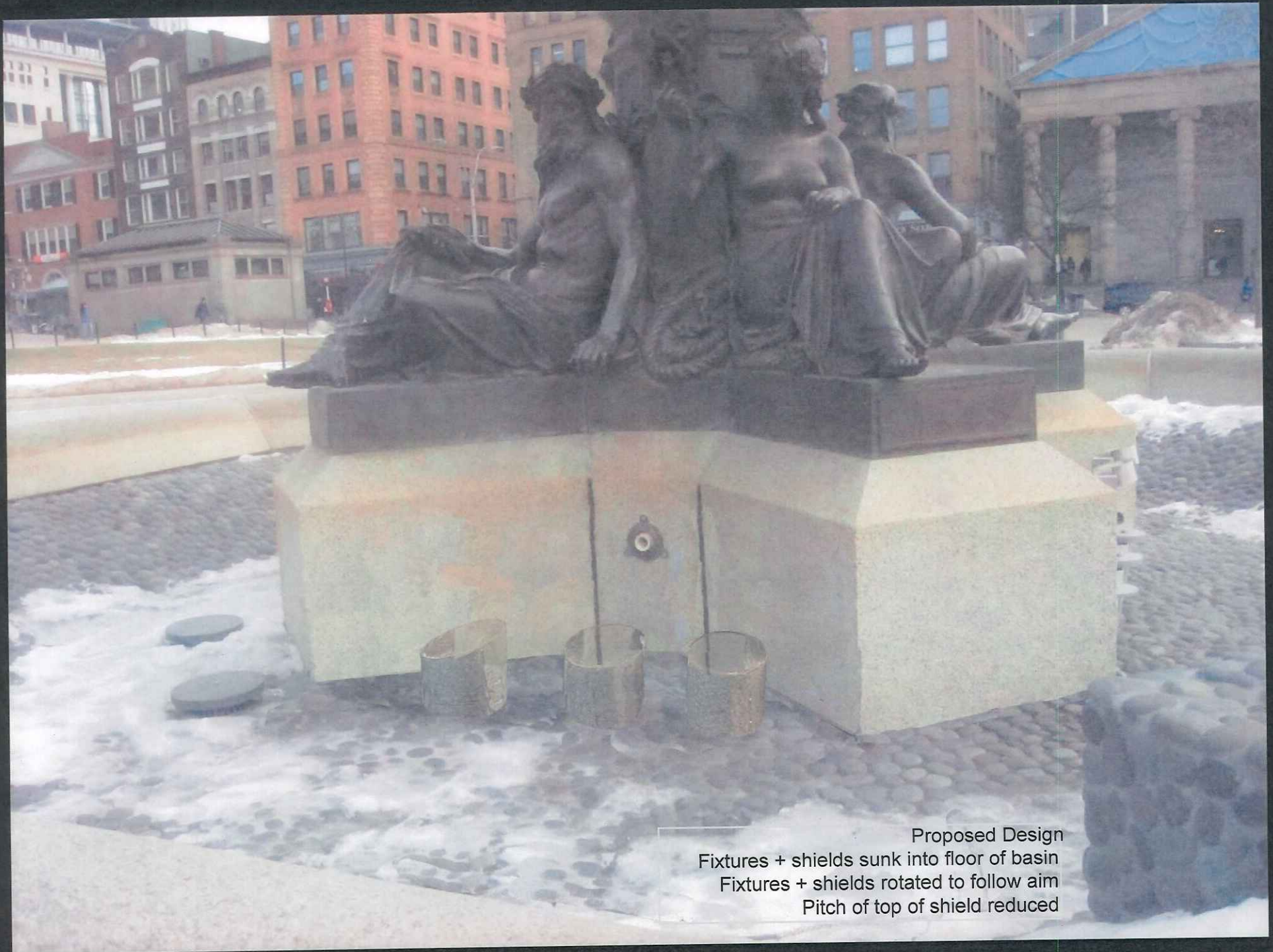
EARLIER DESIGN  
Note exposed conduit. Typical on three  
out of four sides of granite plinth





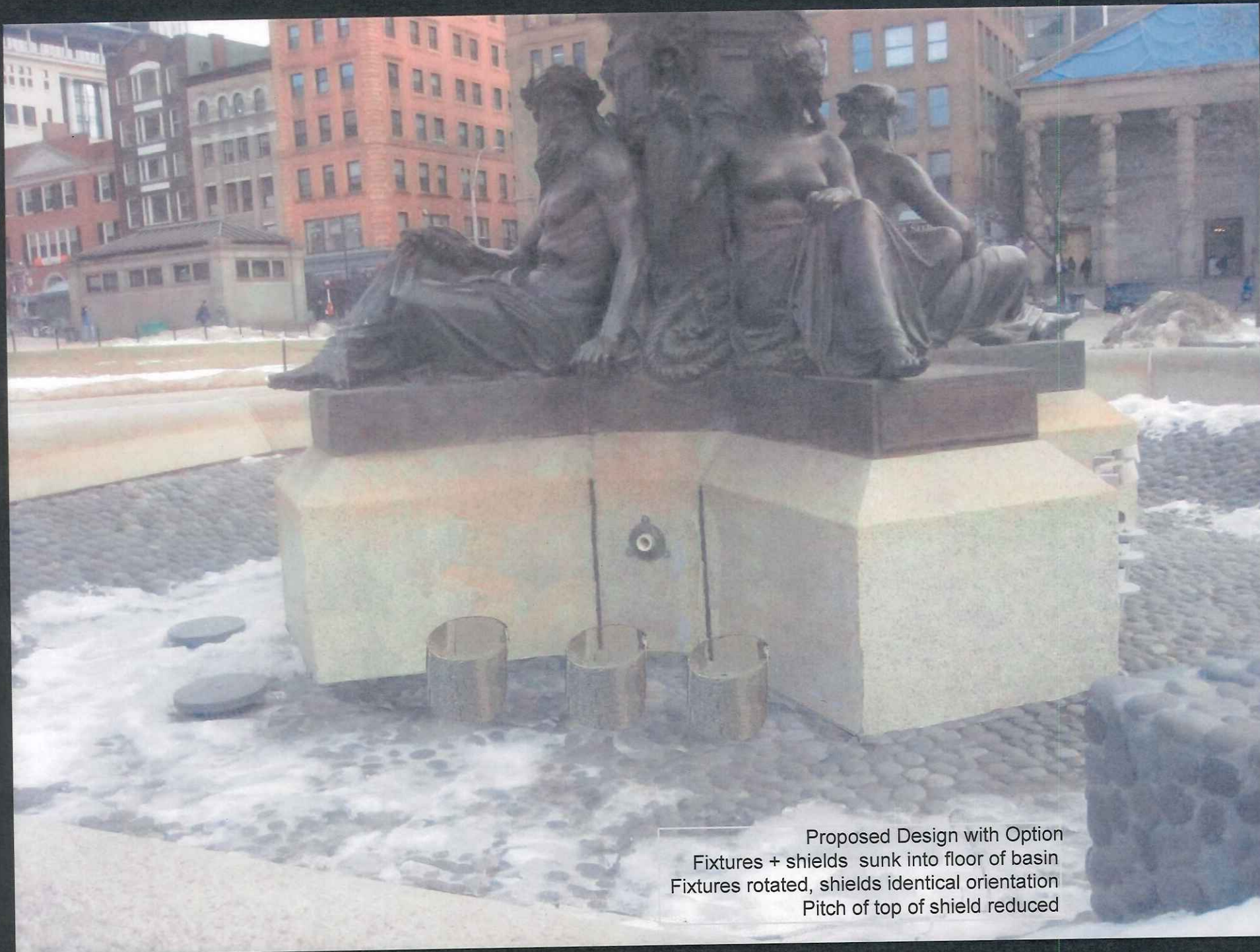
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Proposed Design  
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EARLIER DESIGN





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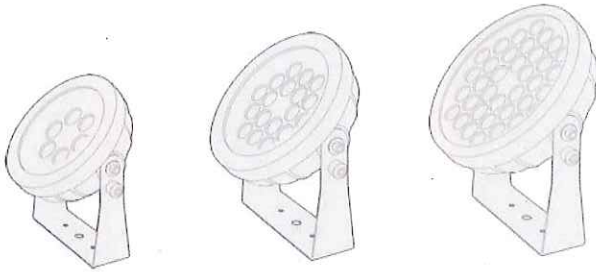




Proposed Design with Option  
Fixtures + shields sunk into floor of basin  
Fixtures rotated, shields identical orientation



# AQUA DRUM™



Client: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Order Code: \_\_\_\_\_  
 Quantity: \_\_\_\_\_

**Aqua Drum** is a series of high output, submersible, LED flood fixtures. It features an all stainless steel construction, included in-grade housing mounting option, and is submersible up to 20' (6M). Available in multiple color temperatures of white and color changing versions, it is ideal for outdoor facade wash, fountains, ponds, and landscape applications.

## SPECIFICATIONS

Colors	2700K, 3000K, 3500K, 4000K, RGBW (W=4000K), RGBA
Beam Angles	10° x 10°, 25° x 25°, 40° x 40°, 10° x 60°, 10° x 35°
Photometrics	4000K 10° - <b>EO:</b> 700 lm / <b>SO:</b> 1600 lm / <b>HO:</b> 3259 lm
Fixture Sizes	EO (8 LED), SO (18 LED), HO (36 LED)
Control	DMX via Aqua Driver 150, 0-10V via external UDM
Max Fixtures per Aqua Driver 150	<b>EO &amp; SO:</b> 4 fixtures / <b>HO:</b> 2 fixtures
Power Consumption	<b>EO:</b> 8W / <b>SO:</b> 18W / <b>HO:</b> 36W
Operating Voltage	24VDC, constant current
Lumen Maintenance	L70 @ 150,000 hours (25° C)
Mounting	0.47" (11mm) mounting holes on mounting bracket
Finish	Silver / stainless steel, marine environment ready
Material	316 marine grade stainless steel housing, sealed glass top
Ambient Operating Temperature	-40° F to 122° F (-40° C to 50° C)
IP Rating	IP68, submersible up to 20' (6M)
IK Rating	IK08, protection against 5 joule impact, walk over rated
Fixture Connectors	98.4' (30m) cable included, attached 8 pin terminal blocks
Warranty	5 Years, limited
Weight	<b>EO:</b> 4 lbs (1.8kg) / <b>SO:</b> 6.6 lbs (3kg) / <b>HO:</b> 8 lbs (3.6kg)
Dimensions	See page 4
Certifications	

**TERMINAL BLOCKS TO BE SUITABLE FOR FIELD REMOVAL AND REPLACEMENT FOR PULLING CABLES THROUGH CONDUIT**



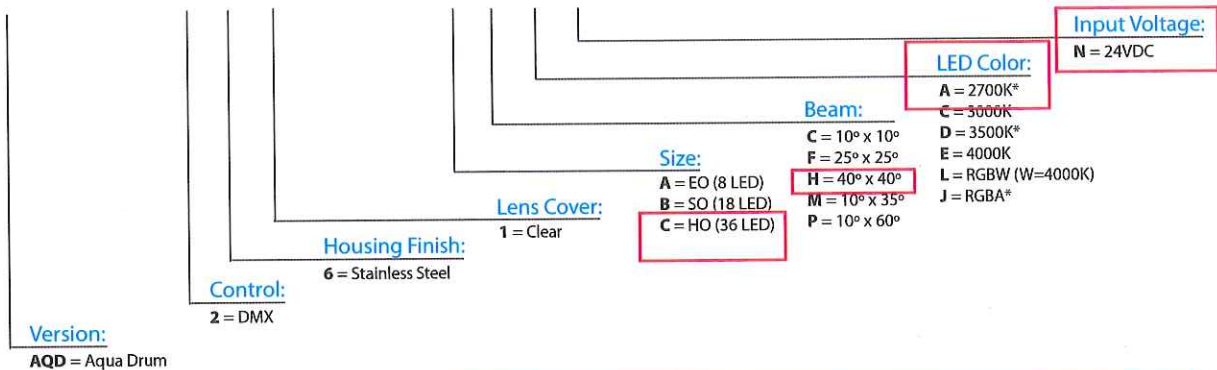
# AQUA DRUM™



## ORDER CODES

\* indicates special order

**AQD - 2 6 1 - # # # N**



ACCLAIM "AQUA DRUM" #AQD-261-C-H-A-N

## RELATED COMPONENTS

### Mounting Accessories



**AQD-IGH-EO**

*In-grade housing for Aqua Drum EO*  
Includes sleeve, trim ring, and screws

**AQD-IGH-SO**

*In-grade housing for Aqua Drum SO*  
Includes sleeve, trim ring, and screws

**AQD-IGH-HO**

*In-grade housing for Aqua Drum HO*  
Includes sleeve, trim ring, and screws

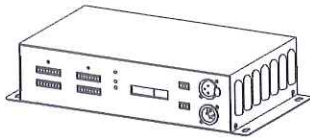


# AQUA DRUM™



## RELATED COMPONENTS

### Remote Driver / Power Supply



CD5

### ADR150

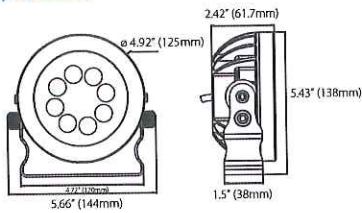
#### Aqua Driver 150

100-277V Input, 24VDC + PWM Output

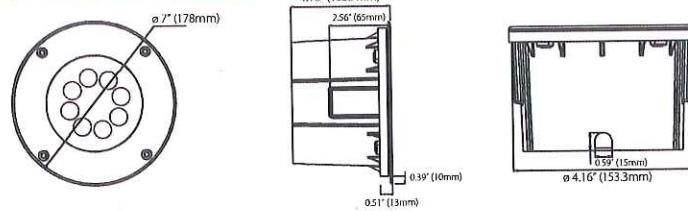
Powers up to 4 Aqua Drum EO or SO units, or up to 2 Aqua Drum HO units

## DIMENSIONS

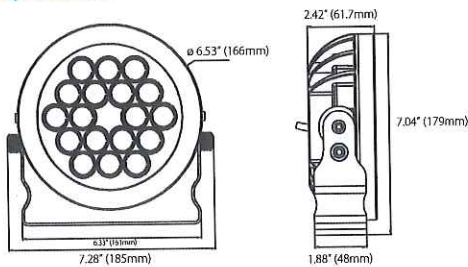
### Aqua Drum EO



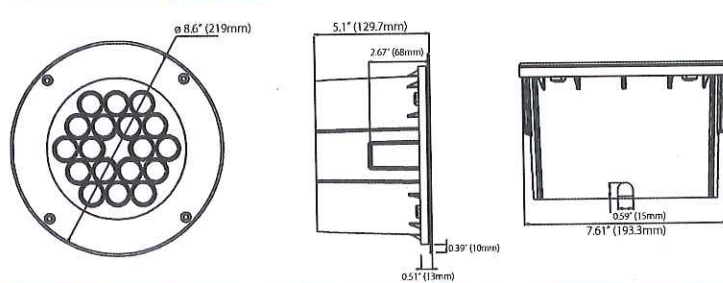
### Aqua Drum EO with in-grade sleeve



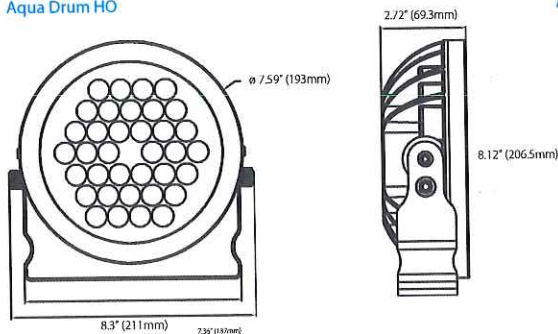
### Aqua Drum SO



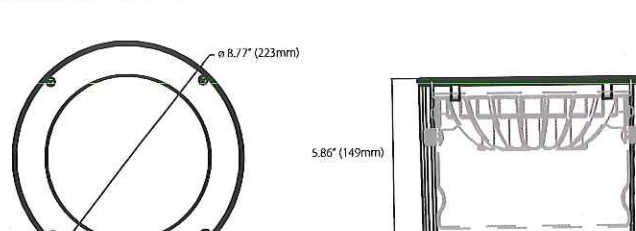
### Aqua Drum SO with in-grade sleeve



### Aqua Drum HO



### Aqua Drum HO with in-grade sleeve

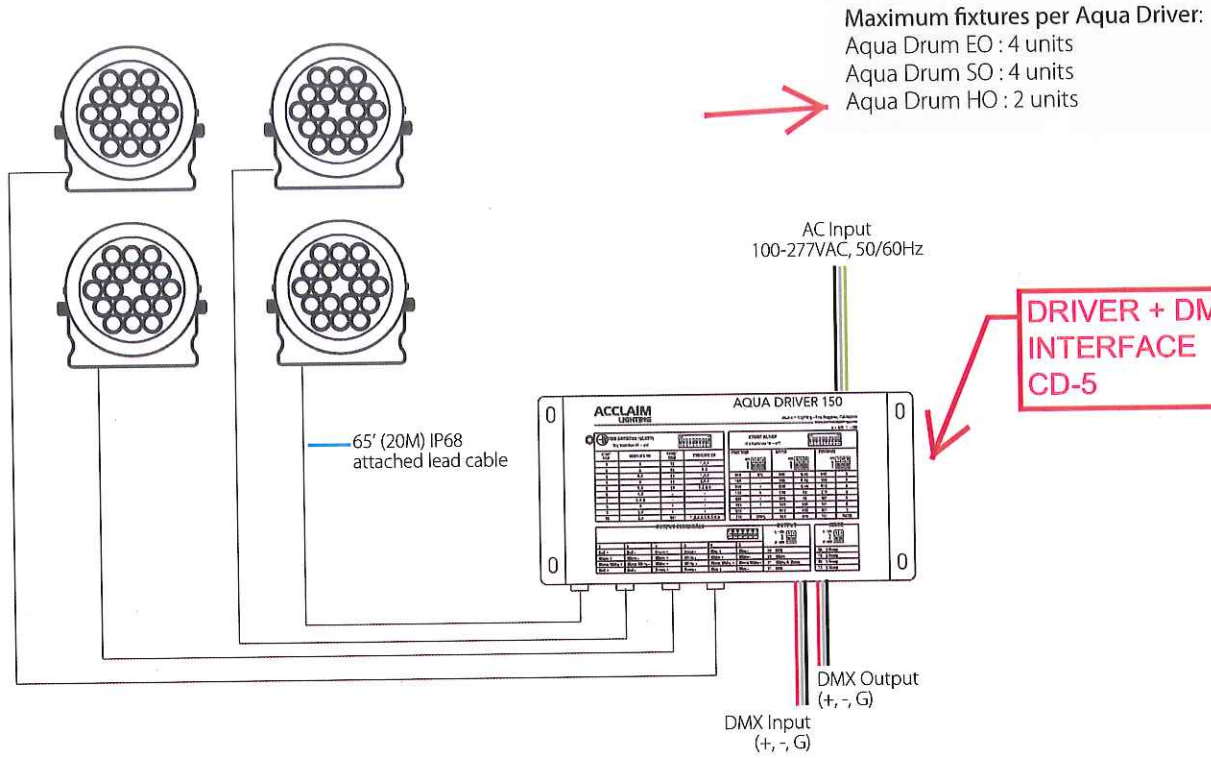




# AQUA DRUM™



## WIRING

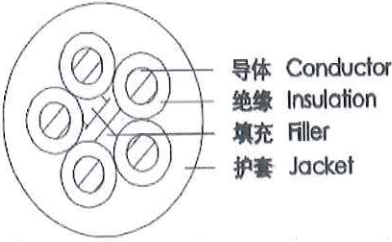


## PHOTOMETRICS

Size / Color Temp	Lumens	Center Candela	Efficacy (l/pw)	CRI (Ra)	CRI (r9)
EO, 2700K	668	8006	41	81.5	-
SO, 3500K	1568	20055	64	82.7	-
HO, 4000K	3259	41849	73	80.8	-
EO, RGBW	424	6502	27	-	-

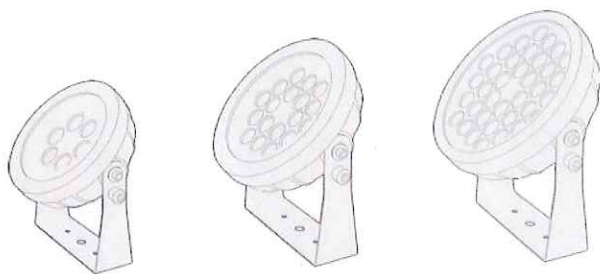
**2700K  
REQUIRED**



SPEC/规格: STOW 18AWGX5C		Customer/客户:	Coding/客户编码:
DIAGRAMS OF/结构图		EXPLAIN/产品说明	
		STANDARD 参考标准	UL62
		INSTITUTIONS 认证机构	UL
MARKING/印字要求		Rated Voltage 额定电压 (V)	600
<UL> STOW 105°C VW-1 18AWGX5C E231324 JINGYI 463217-001 600V <sub>AC</sub> (UL) STOW 105°C 600V FT1 18AWG (0.824mm <sup>2</sup> ) x5C		Temperature rating 额定温度 (°C)	105
Process parameters/工艺参数			
Project/项目	parameters/技术参数		
CONDUCTOR/导体	Bare copper/裸铜	Electrical Performance/电气性能	
CONSTRUCTION/构造规格	48/0.15TS±0.005		
		Conductor Resistance	
INSULATION/绝缘	PVC	导体电阻 (Ω/km, 20°C) ≤22.40	
Nom. Thickness/平均厚度 (mm)	0.76		
Min. Thickness/最薄点厚度 (mm)	0.69		
OD/绝缘外径 (mm)	2.5±0.05		
ASSEMBLE/绞线	5C	深圳市首亮电子有限公司 SHENZHEN SHOU LIANG ELECTRONICS CO., LTD	
FILLER/填充	PVC or other PVC条或其它		
产品规格承认书			
Product specification Book			
JACKET/护套	PVC	电话/TEL: 0755-81758041	
Nom. Thickness/平均厚度 (mm)	2.03		
Min. Thickness/最薄点厚度 (mm)	1.62		
DIAMETER/直径 (mm)	12±0.5		
Extrude method/挤押方法	Tight/挤压		
		MAKE 制作	林阳 The new version 新版发行
Colour/颜色		CHECK 审核	张小平 DATE日期:2018-05-03
INSULATION 绝缘	black White green red yellow 黑白绿红黄	APPROVAL 核准	王亚新 DATE日期:2018-05-03 DATE日期:2018-05-03
JACKET/护套	black(黑)	Version版本	A/O page页码: 1/1
		CUSTOMER ACKNOWLEDGED 客户确认	



# AQUA DRUM™



Client: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Order Code: \_\_\_\_\_  
 Quantity: \_\_\_\_\_

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Fixture Sizes	EO (8 LED), SO (18 LED), HO (36 LED)
Control	DMX via Aqua Driver 150, 0-10V via external UDM
Max Fixtures per Aqua Driver 150	<b>EO &amp; SO: 4 fixtures</b> / <b>HO: 2 fixtures</b>
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Operating Voltage	24VDC, constant current
Lumen Maintenance	L70 @ 150,000 hours (25° C)
Mounting	0.47" (11mm) mounting holes on mounting bracket
Finish	Silver / stainless steel, marine environment ready
Material	316 marine grade stainless steel housing, sealed glass top
Ambient Operating Temperature	-40° F to 122° F (-40° C to 50° C)
IP Rating	IP68, submersible up to 20' (6M)
IK Rating	IK08, protection against 5 joule impact, walk over rated
Fixture Connectors	98.4' (30m) cable included, attached 8 pin terminal blocks
Warranty	5 Years, limited
Weight	<b>EO: 4 lbs (1.8kg)</b> / <b>SO: 6.6 lbs (3kg)</b> / <b>HO: 8 lbs (3.6kg)</b>
Dimensions	See page 4
Certifications	

**TERMINAL BLOCKS TO BE SUITABLE FOR FIELD REMOVAL AND REPLACEMENT FOR PULLING CABLES THROUGH CONDUIT**



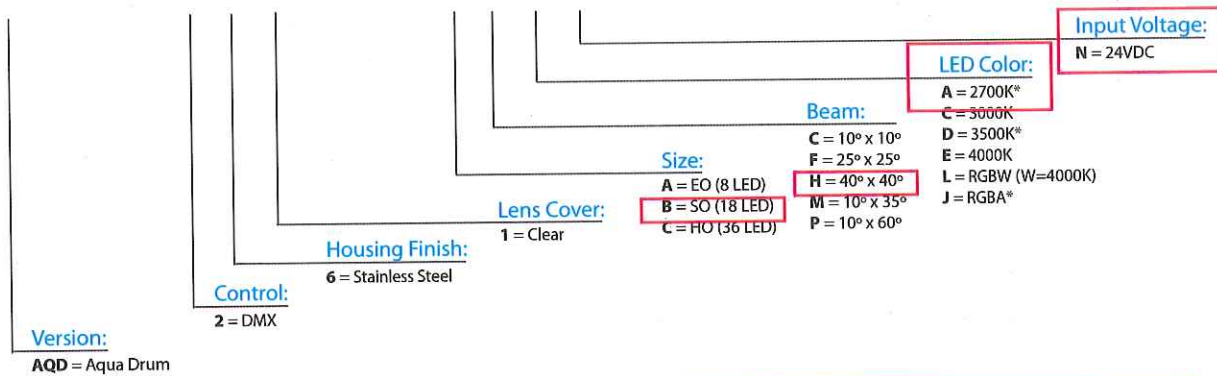
# AQUA DRUM™



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**AQD - 261 - ### N**



ACCLAIM "AQUA DRUM" #AQD-261-B-H-A-N

## RELATED COMPONENTS

### Mounting Accessories



**AQD-IGH-EO**

*In-grade housing for Aqua Drum EO*  
Includes sleeve, trim ring, and screws

**AQD-IGH-SO**

*In-grade housing for Aqua Drum SO*  
Includes sleeve, trim ring, and screws

**AQD-IGH-HO**

*In-grade housing for Aqua Drum HO*  
Includes sleeve, trim ring, and screws



# AQUA DRUM™



## RELATED COMPONENTS

### Remote Driver / Power Supply



CD5 ALT 2

### ADR150

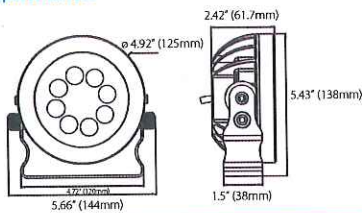
#### Aqua Driver 150

100-277V Input, 24VDC + PWM Output

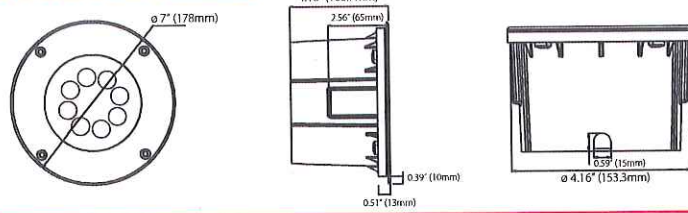
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## DIMENSIONS

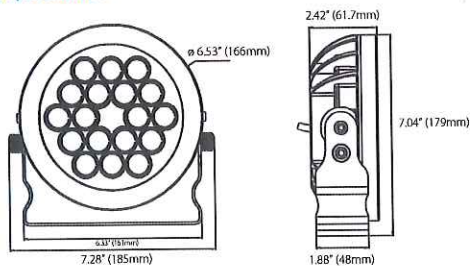
### Aqua Drum EO



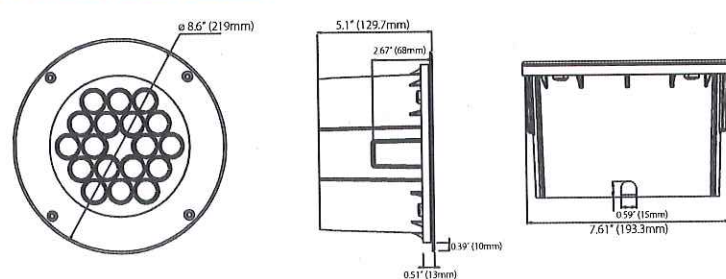
### Aqua Drum EO with in-grade sleeve



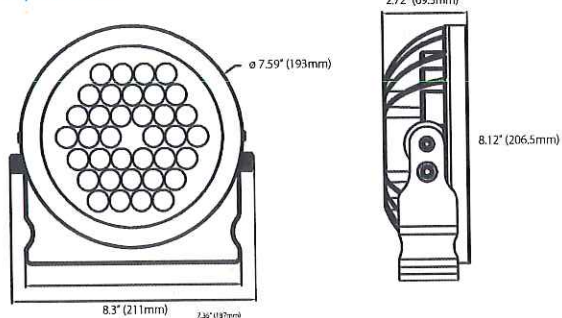
### Aqua Drum SO



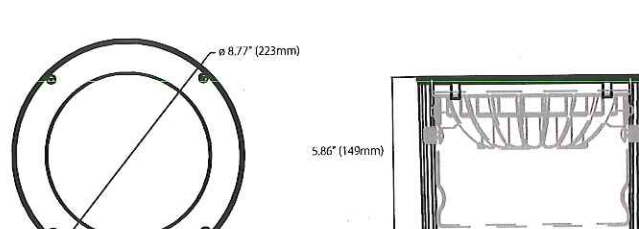
### Aqua Drum SO with in-grade sleeve



### Aqua Drum HO



### Aqua Drum HO with in-grade sleeve

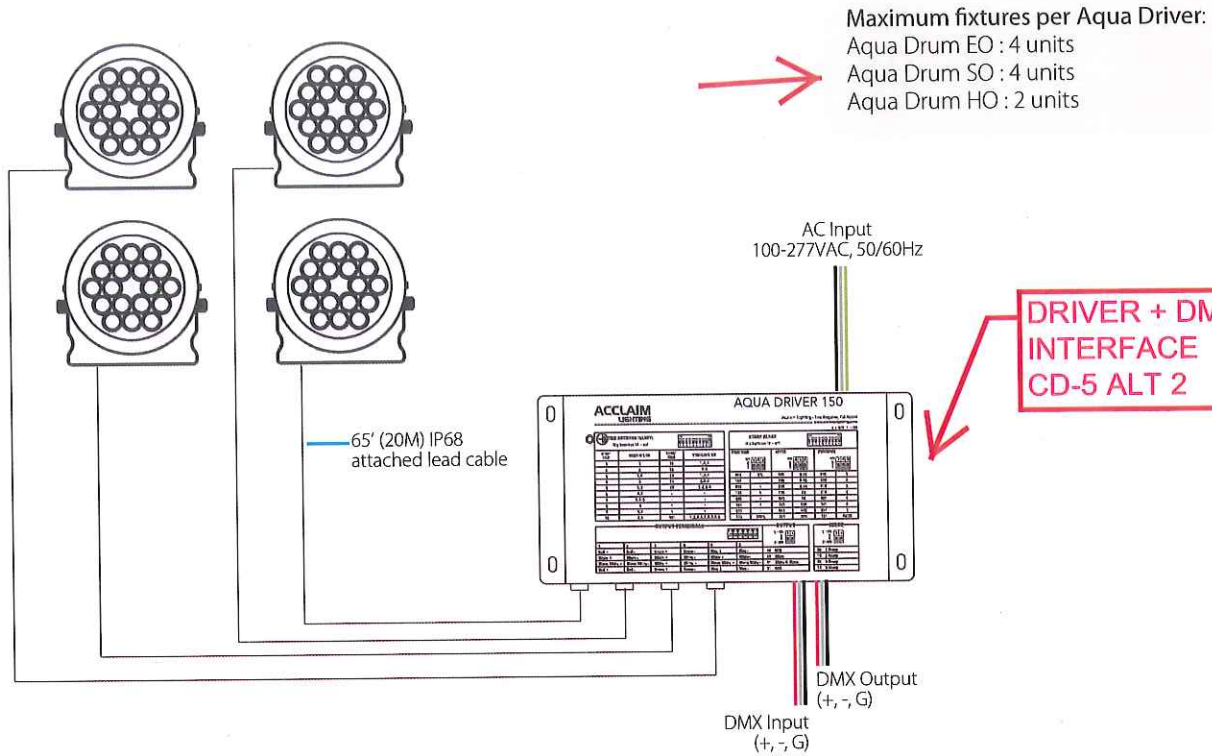




# AQUA DRUM™



## WIRING

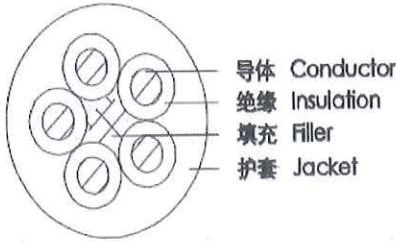


## PHOTOMETRICS

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HO, 4000K	3259	41849	73	80.8	-
EO, RGBW	424	6502	27	-	-

2700K  
 REQUIRED



SPEC/规格: STOW 18AWGX5C		Customer/客户:	Coding/客户编码:
DIAGRAMS OF/结构图		EXPLAIN/产品说明	
		STANDARD 参考标准	UL62
		INSTITUTIONS 认证机构	UL
		Rated Voltage 额定电压 (V)	600
		Temperature rating 额定温度 (°C)	105
MARKING/印字要求			
<UL> STOW 105°C VW-1 18AWGX5C E231324 JINGYI 463217-001 600VHC(UL) STOW 105°C 600V FT1 18AWG (0.824mm <sup>2</sup> ) x5C			
Process parameters/工艺参数			
Project/项目	parameters/技术参数		
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CONSTRUCTION/构造规格	48/0.15TS±0.005		
		Conductor Resistance	
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JACKET/护套	PVC	电话/TEL: 0755-81758041	
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		MAKE 制作	林阳 The new version 新版发行
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Colour/颜色		Version版本	A/O page页码: 1/1
JACKET/护套	black(黑)	CUSTOMER ACKNOWLEDGED 客户确认	



# AQUA DRUM™



Client:  
Project:  
Type:  
Order Code:  
Quantity:

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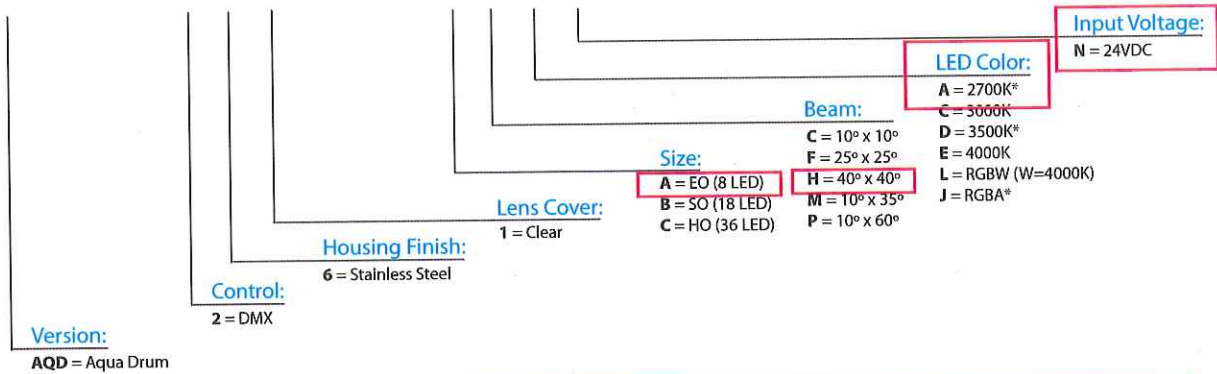
# AQUA DRUM™



## ORDER CODES

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**AQD - 2 6 1 - # # # N**



ACCLAIM "AQUA DRUM" #AQD-261-A-H-A-N

## RELATED COMPONENTS

### Mounting Accessories



**AQD-IGH-EO**

*In-grade housing for Aqua Drum EO*  
Includes sleeve, trim ring, and screws

**AQD-IGH-SO**

*In-grade housing for Aqua Drum SO*  
Includes sleeve, trim ring, and screws

**AQD-IGH-HO**

*In-grade housing for Aqua Drum HO*  
Includes sleeve, trim ring, and screws

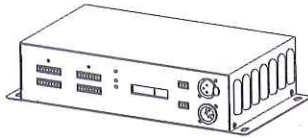


# AQUA DRUM™



## RELATED COMPONENTS

### Remote Driver / Power Supply



CD5 ALT 2

### ADR150

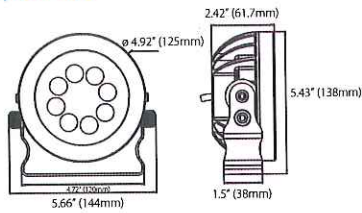
#### Aqua Driver 150

100-277V Input, 24VDC + PWM Output

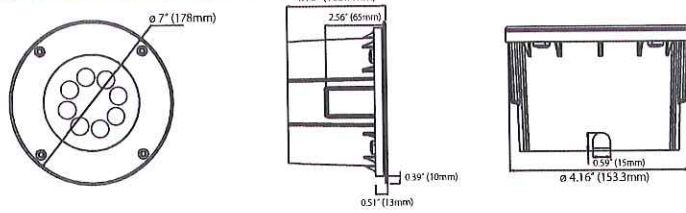
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## DIMENSIONS

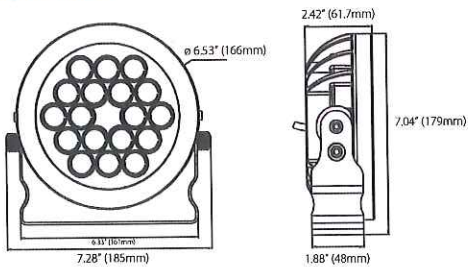
### Aqua Drum EO



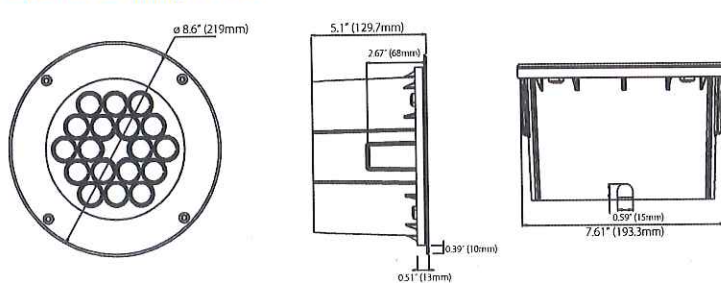
### Aqua Drum EO with in-grade sleeve



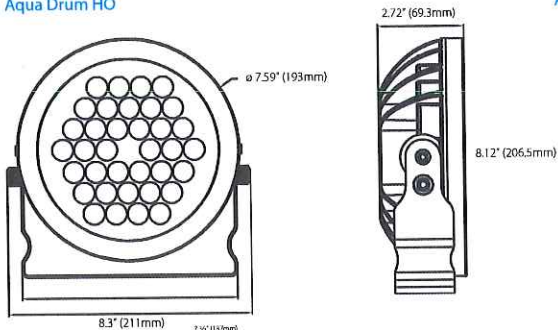
### Aqua Drum SO



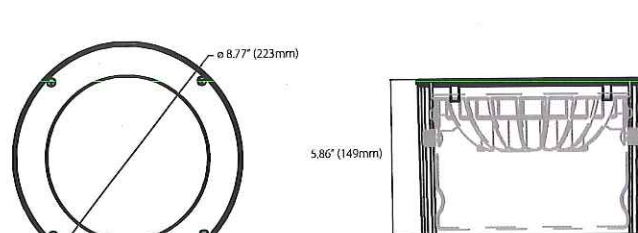
### Aqua Drum SO with in-grade sleeve



### Aqua Drum HO



### Aqua Drum HO with in-grade sleeve

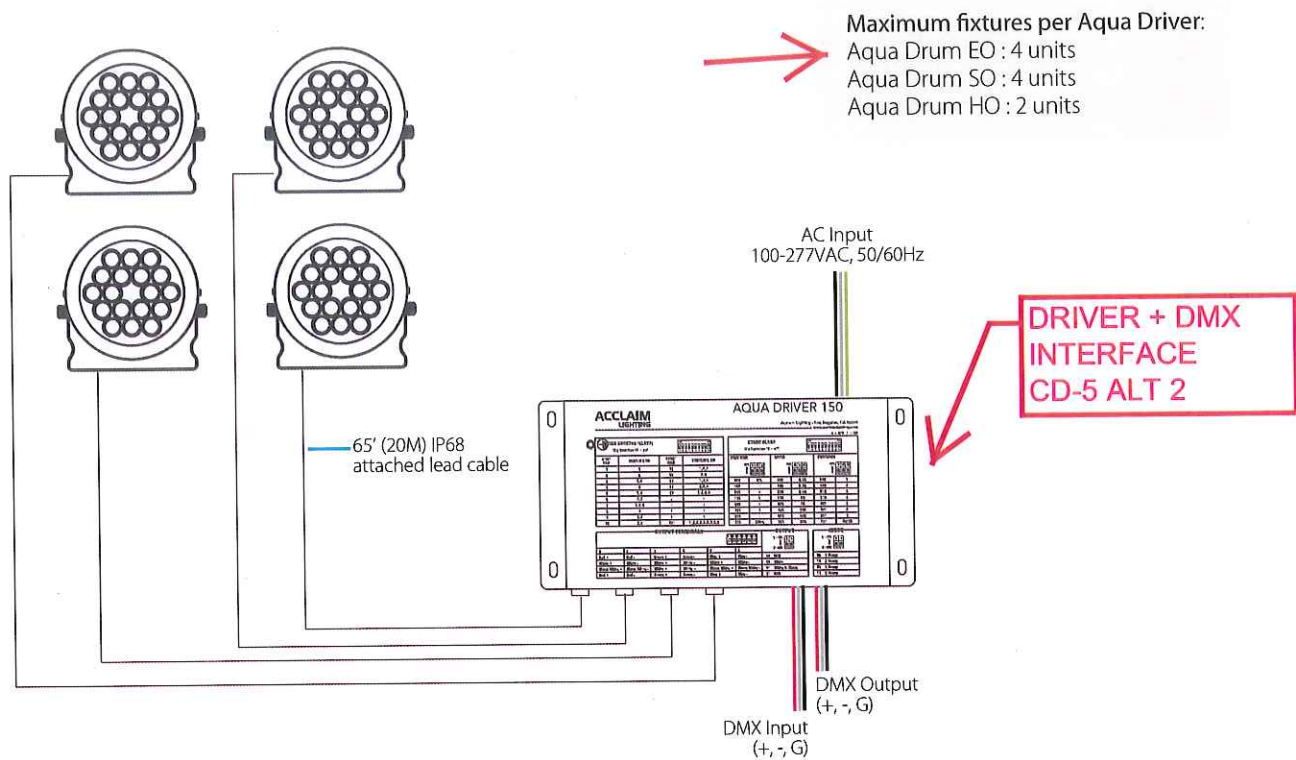




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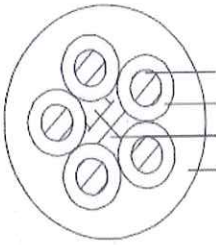
## WIRING



## PHOTOMETRICS

Size / Color Temp	Lumens	Center Candela	Efficacy (l/pw)	CRI (Ra)	CRI (r9)
EO, 2700K	668	8006	41	81.5	-
SO, 3500K	1568	20055	64	82.7	-
HO, 4000K	3259	41849	73	80.8	-
EO, RGBW	424	6502	27	-	-



SPEC/规格: STOW 18AWGX5C		Customer/客户:	Coding/客户编码:
DIAGRAMS OF/结构图		EXPLAIN/产品说明	
 <p>导体 Conductor 绝缘 Insulation 填充 Filler 护套 Jacket</p>		STANDARD 参考标准	UL62
		INSTITUTIONS 认证机构	UL
		Rated Voltage 额定电压 (V)	600
		Temperature rating 额定温度 (°C)	105
MARKING/印字要求			
<UL> STOW 105 °C VW-1 18AWGX5C E231324			
JINGYI 463217-001 600VHC(UL) STOW 105 °C			
600V FT1 18AWG (0.824mm <sup>2</sup> ) x5C			
Process parameters/工艺参数			
Project/项目	parameters/技术参数		
CONDUCTOR/导体	Bare copper/裸铜	Electrical Performance/电气性能	
CONSTRUCTION/构造规格	48/0.15TS±0.005		
		Conductor Resistance	
INSULATION/绝缘	PVC	导体电阻 (Ω/km, 20°C) ≤22.40	
Nom. Thickness平均厚度 (mm)	0.76		
Min. Thickness/最薄点厚度 (mm)	0.69		
OD/绝缘外径 (mm)	2.5±0.05		
		深圳市首亮电子有限公司	
ASSEMBLE/绞线	5C	SHENZHEN SHOU LIANG ELECTRONICS CO., LTD	
FILLER/填充	PVC or other PVC条或其它		
		产品规格承认书	
		Product specification Book	
JACKET/护套	PVC	电话/TEL: 0755-81758041	
Nom. Thickness平均厚度 (mm)	2.03		
Min. Thickness/最薄点厚度 (mm)	1.62		
DIAMETER/直径 (mm)	12±0.5		
Extrude method/挤押方法	Tight/挤压		
		MAKE 制作	林阳 The new version 新版发行
		CHECK 审核	张小平 DATE日期:2018-05-03
Colour/颜色		王亚新	DATE日期:2018-05-03
INSULATION 绝缘	black White green red yellow 黑白绿红黄	王亚新	DATE日期:2018-05-03
		Version版本	A/0 page页码: 1/1
JACKET/护套	black(黑)	CUSTOMER ACKNOWLEDGED 客户确认	



# LP[G]MM[B]-7-27[-24-58] 'Great White'

Low Profile MiMo Antenna

31/03/2016 v.2

## Low Profile MiMo Antenna

- Rugged low profile design
- 2x Wideband LTE/cellular elements
- Optional integrated GPS antenna
- Optional MiMo WiFi



The Panorama LP[G]MM low profile MIMO antenna range has been designed to support the new generation of vehicular LTE routers.

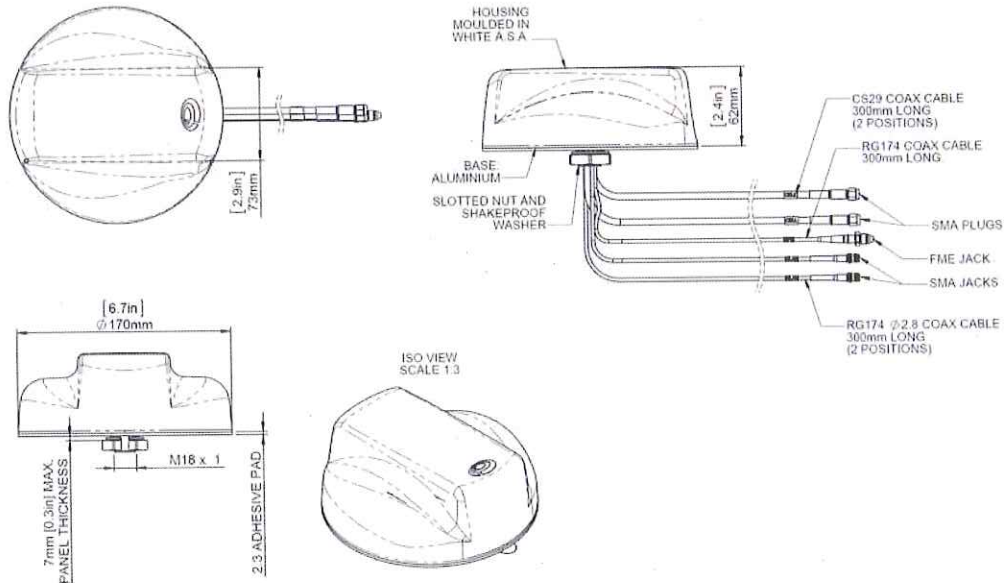
The antenna enclosure contains two to five isolated high performance antenna elements; two ultra-wideband elements covering 698-2700MHz support MiMo/diversity at cellular/LTE frequencies and in the case of the LGMM range a high performance GPS antenna with an integrated 26dB gain LNA and high quality filtering to combat noise. There are also variants incorporating two dualband WiFi elements covering 2.4/4.9-6.0GHz designated by the suffix 24-58.

The antenna does not require a metallic ground plane, and maintains a high level of performance even when mounted on a non-metallic surface.

The GPS module in the LP[G]MM carries an E11 Mark type approval under ECE R10.4 and versions with FAKRA cables (L[G]MMF) and 3 x 3 WiFi (LGTM-7-27-24-58) are also available.

### Technical Drawing

LGMM-7-27-24-58 Shown



Waiver: The data given above is indicative of the performance of the product/s under particular conditions and does not imply a guarantee of performance. These specifications are subject to change without notice.

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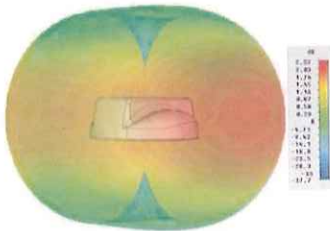
ANTENNA PANORAMA # LPMM-7-27-24-58		Product Data	
Part No.		LPMM-7-27	LGMM-7-27
		LGMM-7-27-24-58	LPMM-7-27-24-58
<b>Electrical Data</b>			
Frequency Range (MHz)	Elements 1&2	698-960 / 1700-2700	
	Elements 3&4	2.4/4.9-6GHz	
Operational Bands	Elements 1&2	LTE / Cellular	
	Elements 3&4	WiFi	
Peak Gain: Isotropic	Elements 1&2	698-960MHz	2.3dBi
		1710-2700MHz	5dBi
	Elements 3&4	2.4/4.9-6.0GHz	2dBi
Isolation	Elements 1&2	>15dB	
Correlation Co-efficient	Elements 1&2	<0.1	
Polarisation	Vertical		
Impedance	50Ω		
Max Input Power (W)	50		
<b>GPS Data</b>			
Frequency Range (MHz)	-	1575	-
VSWR	-	<2.0:1 ± 4MHz	-
Gain: LNA	-	26dB	-
Operating Voltage	-	3 - 5V DC (fed via coax)	-
Type Approval	E11 (ECE R10.4)		
<b>Mechanical Data</b>			
Dimensions	Height	2.4" (62mm)	
	Diameter	6.7" (176mm)	
Operating Temp	-22° / 176°F (-30° / +80°C)		
Colour	White (Black also available - add [B] suffix to part number e.g., LGMMB)		
Ingress Protection	IP66 (Certificate No. 45214)		
Approx. Weight (g)	480		
<b>Mounting Data</b>			
Mounting type	Panel mount		
Max panel thickness	0.27" (7mm)		
Mounting hole	3/4" (19mm)		
<b>Cable Data</b>			
Cell / LTE Cables	Type	CS29 (double shielded RG58)	
	Diameter	0.2" (5mm)	
	Length	1' (0.3m)	
	Termination	SMA Plugs	
GPS Cable	Type	RG174	
	Diameter	0.11" (2.8mm)	
	Length	1' (0.3m)	
	Termination	FME Jack	
WiFi Cables	Type	RG174	
	Diameter	0.11" (2.8mm)	
	Length	1' (0.3m)	
	Termination	SMA Jacks	

Waiver: The data given above is indicative of the performance of the product/s under particular conditions and does not imply a guarantee of performance. These specifications are subject to change without notice.  
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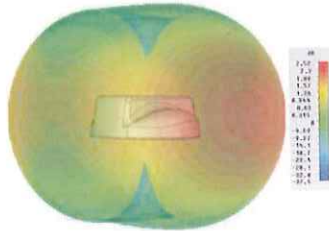


Electrical Data

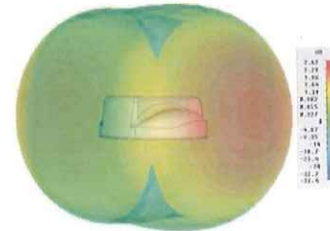
Typical 3D Pattern - Elements 1&2 700MHz



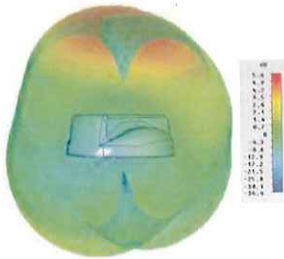
Typical 3D Pattern - Elements 1&2 800MHz



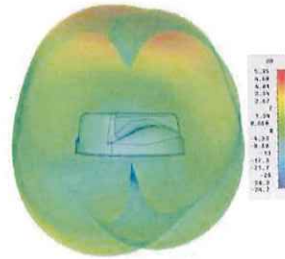
Typical 3D Pattern - Elements 1&2 900MHz



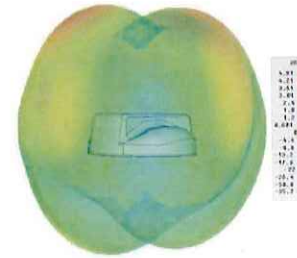
Typical 3D Pattern - Elements 1&2 1800MHz



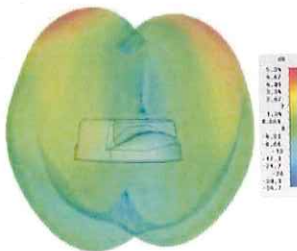
Typical 3D Pattern - Elements 1&2 1900MHz



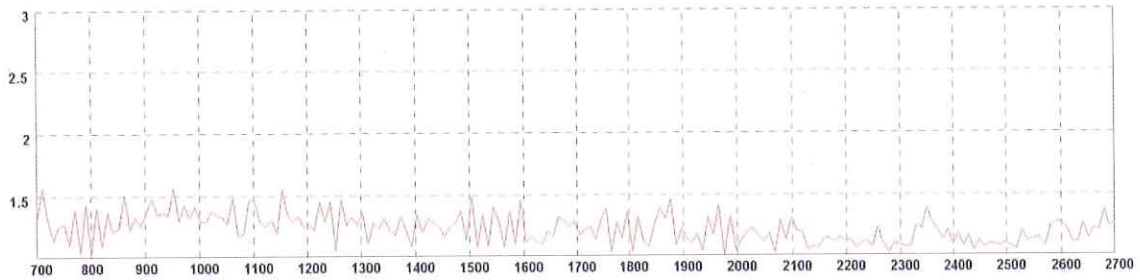
Typical 3D Pattern - Elements 1&2 2100MHz



Typical 3D Pattern - Elements 1&2 2400MHz

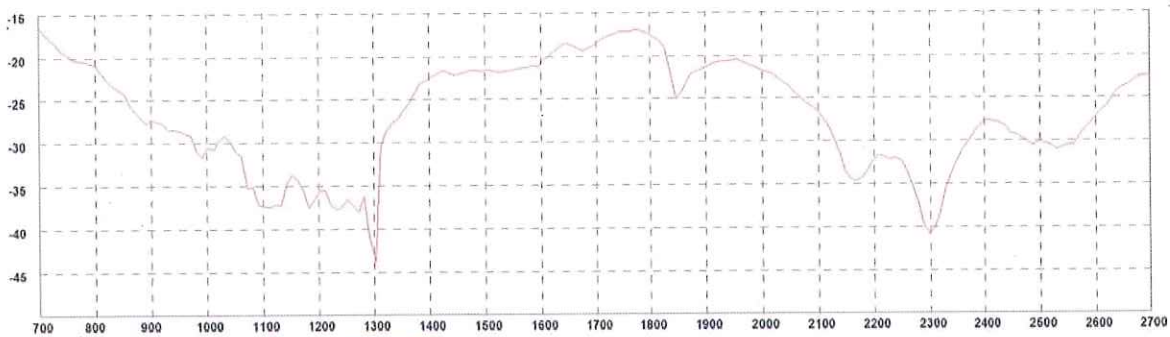


Typical VSWR (Elements 1 & 2)\*



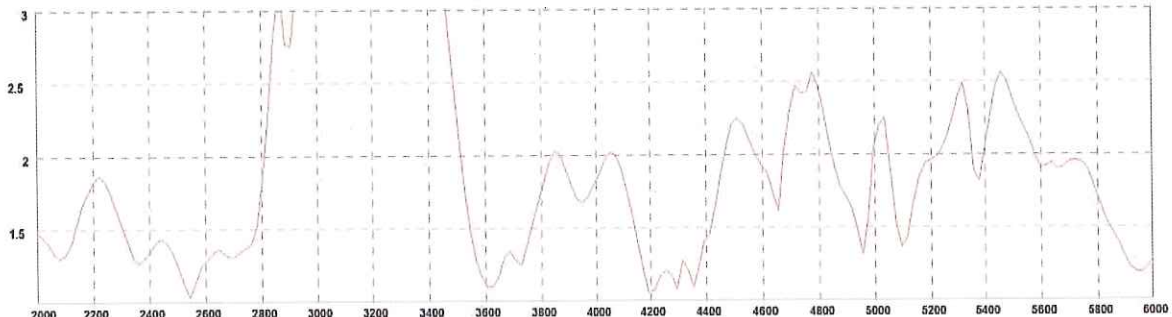
\* VSWR measured with 5m (16') of cable.

Typical Isolation (elements 1 & 2)\*



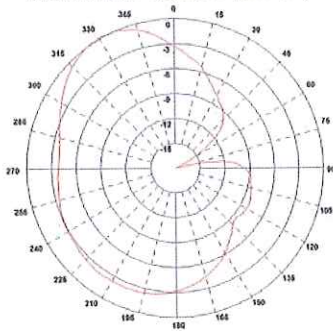
\* Isolation measured without a groundplane or additional cable

Typical VSWR - (Elements 3 & 4)

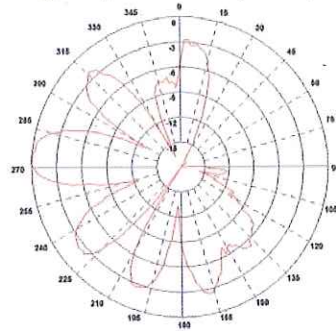


\* VSWR measured without additional cable

Typical H-plane - Element 3 (2400MHz)



Typical H-plane - Element 3 (5400MHz)



Waiver: The data given above is indicative of the performance of the product/s under particular conditions and does not imply a guarantee of performance. These specifications are subject to change without notice.

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## 10x8x5 Inch Weatherproof Industrial Enclosure with Corner Screws and Blank Non-Metallic Mounting Plate - Model: NBC100805-KIT01

### Applications

- Wireless LAN WiFi equipment installations
- Indoor and outdoor installations
- Industrial control equipment installations
- High temperature or corrosive environments
- Hydraulic or pneumatic control installations

### Features

- Rugged FRP Material with gasketed lid
- Stainless steel cover screws
- Excellent temperature range
- UL/CSA/NEMA/IP rated
- Includes blank Non-Metallic Starboard mounting plate



### Description

The NBC series is a UL/CSA® Listed rugged weatherproof enclosure that is ideal for both indoor and outdoor applications. Constructed from molded halogen free self extinguishing fiberglass reinforced polyester, it is well suited for high temperature or corrosive environments. The integral mounting flange allows it to be wall mounted as well as on a flat surface without the need for extra mounting hardware. The fully gasketed lid features four stainless steel captive screws that secure the cover to the base by means of four threaded brass inserts contained in the base that provide a weather-proof seal protecting the contents inside. The light grey color of the NBC series is cleaner, cooler and more aesthetically pleasing. Users can enjoy the physical benefits of better heat reflection and better UV resistance due to the lighter color. The contoured body provides an attractive and contemporary appearance.

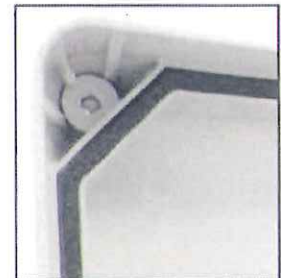
The NBC series is ideal for custom applications, which may require special modifications to the enclosure. Contact L-com with your custom requirements and let us provide it for you. Integral mounting stand-offs inside the enclosure can be used for mounting plates.

The NBC100805-KIT01 includes a Blank Non-Metallic Starboard Mounting Plate permitting free form layout of equipment. The Enclosure and Mounting Plate combination is ideal for custom applications. Mounting stand-offs inside the enclosure are used to secure the Mounting Plate.

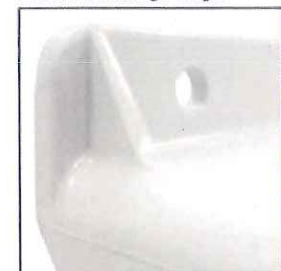
Mushroom Head Cover



Ribbed Cover Corners



Molded Mounting Flanges





**Specifications**

**Enclosure Specifications**

<b>Enclosure Material</b>	Halogen free, self extinguishing fiberglass reinforced polyester (FRP)
<b>Enclosure Color</b>	Light Grey (RAL 7036)
<b>Weight</b>	6.0 lbs (2.72 kg)
<b>Outside Dimensions (max)</b>	9.30 x 11.31 x 5.43 in (236 x 287 x 137mm)
<b>Inside Dimensions</b>	8.00 x 10.00 x 4.69 in (203 x 254 x 119mm)
<b>Temperature Ratings</b>	Continuous: -58°F to 302°F (-50°C to 150°C) Momentary exposure up to 392°F (200°C).
<b>UL and CSA Approved</b>	Yes
<b>RoHS Compliant</b>	Yes
<b>NEMA Ratings*</b>	Type 3, 3R, 3S, 4, 4X, 12 and 13
<b>IEC 529 Ratings*</b>	IP66-11

\*Ratings prior to modifications

**Mounting Plate Specifications**

<b>Plate Material</b>	Non-Metallic Starboard
<b>Dimensions</b>	7.0 x 9.0 in. (177 x 228 mm)





Lighting Design Prepared by:

**RIPMAN  
LIGHTING  
CONSULTANTS**

3 LEXINGTON STREET  
BELMONT, MA 02478  
(617) 489-3366  
FAX (617) 489-5223

www.ripmanlighting.com

In Association with:

**BARBIZON  
LIGHTING COMPANY**

www.barbizon.com

3 Draper St. Woburn, MA  
Phone: 1(800) 935-3920

Electrical Engineering Prepared by:

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Electrical Engineers

5 Tilton Lane  
Andover, MA 01810  
Tel: 978-475-5184

RBUIA@BUIAENGINEERING.COM

Civil Engineering Prepared by:



Project Funded by the:  
**Friends of the Public Garden**



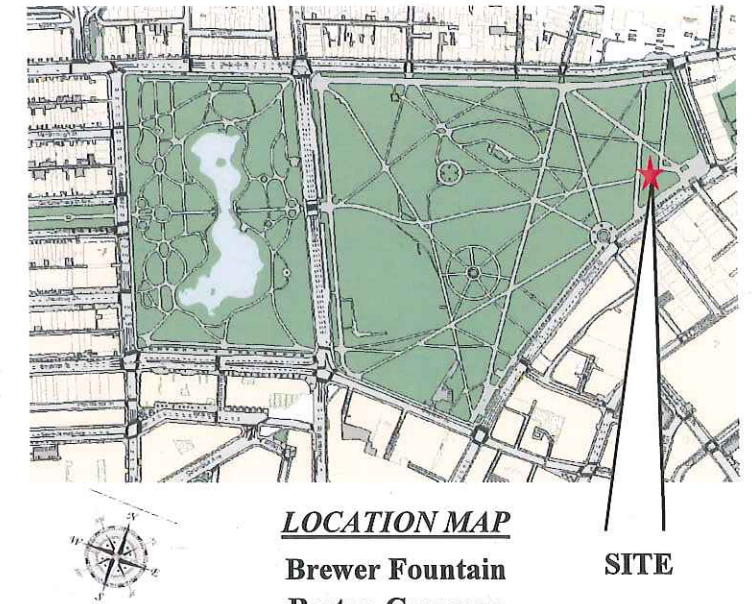
# Lighting Improvements to the Brewer Fountain

In cooperation with the:

City of Boston

Boston Parks & Recreation Department

Boston, Massachusetts



LOCATION MAP

**Brewer Fountain  
Boston Common  
Boston, MA 02118**

**SITE**

June 19, 2019

**60% PROGRESS SET  
- NOT FOR CONSTRUCTION -**

## DRAWING INDEX:

Sheet C1—General Notes

Sheet C2—Existing Conditions Plan

Sheet C3—Site Plan

Sheet C4—Civil Details

Sheet C5—Site Photographs (Vault install)

Sheet C6—Record Vault Structural Drawings

Sheet E1—Site Power Plan

Sheet E2—Vault Layout Plan

Sheet E3—Electrical Specifications and Notes

Sheet LC1—Drawing Index

Sheet LC2—Bill of Materials

Sheet LC3—Rack Detail—Closed

Sheet LC4—Rack Detail—Open

Sheet LC5—Lighting Control System Riser

Sheet LC6—Control Equipment Tray

Sheet LC7—LED Driver Tray

Sheet R1—Existing lighting Plan

Sheet R2—Proposed Lighting Plan

Sheet R3—Existing Site Reference Plans and Elevation

Sheet R4—Proposed Site Reference Plan, Elevation, and Images

Sheet R5—Lighting Schedule and Notes



**GENERAL NOTES:**

1. THE EXISTING CONDITIONS FIELD SURVEY WAS CONDUCTED BY BRYANT ASSOCIATES IN 2008, 2010 AND 2013 ALONG WITH PROPOSED CONDITIONS FROM BRYANT ASSOCIATES AND PRESSLEY ASSOCIATES FROM 2014.
2. THE FIELD SURVEY INFORMATION WAS SUPPLEMENTED WITH RECORD INFORMATION OBTAINED FROM THE BOSTON PARKS AND RECREATION DEPARTMENT, THE STREET LIGHTING DIVISION OF BOSTON PUBLIC WORKS DEPARTMENT AND THE MBTA.
3. THE HORIZONTAL DATUM IS ASSUMED.
4. THE VERTICAL DATUM IS BOSTON CITY BASE.
5. CONTRACTOR TO ACCESS SITE FROM CHARLES STREET @ BEACON STREET ENTRANCE.
6. ALL WORK MUST MEET OR EXCEED THE BOSTON WATER AND SEWER COMMISSION AND THE BOSTON PUBLIC WORKS DEPARTMENT STANDARD REQUIREMENTS.
7. UNDERGROUND UTILITIES ARE BASED UPON FIELD OBSERVATIONS AND PLANS OF RECORD. THESE UTILITIES ARE NOT WARRANTED TO BE CORRECT NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES ARE SHOWN.
8. REFER TO LANDSCAPE PLANS FOR SITE LAYOUT, CURB, GRADING, AND PAVING MATERIALS.
9. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS & REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION.
10. CONTRACTOR SHALL NOTIFY DIG-SAFE AT 1-800-DIG-SAFE (344-7233) AT LEAST 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) BEFORE STARTING ANY EXCAVATION IN PUBLIC OR PRIVATE PROPERTY.
11. PEDESTRIAN WALKWAY OPENINGS SHALL BE SECURELY COVERED AT END OF EACH DAY'S OPERATION TO ENSURE SAFE PASSAGE.
12. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES BEFORE STARTING ANY UTILITY WORK.
13. THE CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, FENCES, ETC. AROUND THE PROJECT SITE TO PROTECT THE PUBLIC FROM INJURY AND TO MAINTAIN PEDESTRIAN AND VEHICULAR TRAFFIC.
14. ALL STAGING, STORAGE, AND OTHER AREAS USED BY THE CONTRACTOR DURING THE COURSE OF CONSTRUCTION SHALL BE RETURNED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO OWNER. ALL DISTURBED LAWN AREAS TO BE LOAMED AND SEEDED PER SEEDED LAWN DETAIL ON SHEET C-4. THERE SHALL ABSOLUTELY BE NO STAGING, STOCKPILING OF ANY MATERIAL, OR PARKING UNDER THE DRIPLINE OF ANY AND ALL TREES BOTH WITHIN AND OUTSIDE THE PROJECT LIMIT OF WORK.

**CONSTRUCTION ACCESS NOTES**

1. CONTRACTOR SHALL EMPLOY SPECIAL CARE IN SCHEDULING CONSTRUCTION SO AS TO MINIMIZE DISRUPTION TO SURROUNDING ACCESSIBLE, PEDESTRIAN, AND VEHICULAR TRAFFIC INCLUDING THE ON-GOING USE AND ACCESS TO THE MBTA HEADHOUSE AND PARK PEDESTRIAN ROUTES.
2. CONTRACTOR SHALL EMPLOY SPECIAL CARE AND USE SIGNAGE OR OTHER APPROPRIATE METHODS TO PROTECT SAFETY OF PEDESTRIANS INSIDE AND OUTSIDE OF CONTRACT LIMIT OF WORK LINE.
3. CONTRACTOR SHALL KEEP A CLEAR, ACCESSIBLE PEDESTRIAN ROUTE AROUND SITE AT ALL TIMES. ANY BLOCKING OF PEDESTRIAN ROUTES SHALL BE SCHEDULED IN ADVANCE AND APPROVED BY FOPC.
4. THE CONTRACTOR SHALL TO PROVIDE A MATERIALS DELIVERY PLAN, INCLUDING A MAP AND DELIVERY ROUTE, TO ALL MATERIAL SUPPLIERS INDICATING THE PREFERRED TRUCK ROUTE AND ENTRANCE POINT TO BOSTON COMMON AT BEACON STREET AND CHARLES STREET.
5. CONTRACTOR, SUBCONTRACTOR, AND ALL DELIVERY VEHICLES FOR CONTRACTORS SHALL ABIDE BY THE PARK-WIDE 5 MPH SPEED LIMIT. ALL VEHICLES SHALL USE FLASHERS. PARK RANGERS MAY BE REQUIRED TO ESCORT LARGE DELIVERY VEHICLES THROUGH PARK. ANY COSTS INCURRED FOR RANGER AND/OR POLICE DETAILS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL LARGE DELIVERIES MUST BE SCHEDULED AND PERMISSION GRANTED IN ADVANCE.

**LIMIT OF WORK:**

1. PROPOSED LIMIT OF WORK IS NOTED ON C-3. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO OPERATIONS INSIDE AND OUTSIDE THE CONTRACT LIMIT OF WORK LINE.

**FENCING:**

1. CONSTRUCTION FENCE SHALL BE A TEMPORARY, MOVABLE CHAIN LINK FENCE WITH GREEN WIND SCREEN.

**PROPOSED ABBREVIATION AND LEGEND**

	PROPOSED ELECTRIC CONDUIT
	PROPOSED RECONNECTED WATER SERVICE
	EXISTING STRUCTURE TO BE ABANDONED
	EXISTING UTILITY TO BE ABANDONED
	EXISTING GRADE
	CUT AND CAP
	PROPOSED GRADE
	PROPOSED GRADE - BOTTOM OF CURB
	PROPOSED GRADE - TOP OF CURB
	NEW BITUMINOUS CONCRETE PAVEMENT
	NEW CEMENT CONCRETE PAVEMENT
	TEXT IN BOX IS PROPOSED WORK
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BR	BOTTOM OF RAMP
BW	BOTTOM OF WALL
CI	CAST IRON
CLF	CHAIN LINK FENCE
CIE	CONNECT TO EXISTING
CTN	CONNECT TO NEW
DI	DUCTILE IRON
DIOL	DUCTILE IRON CEMENT LINED
DMH	DRAIN MANHOLE
DW	DOMESTIC WATER
EX	EXISTING
FD	FOUNDATION DRAIN
FW	FIRE WATER SERVICE
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HH	HAND HOLE
INV	INVERT
LF	LINEAR FEET
MW	MONITOR WELL
PROP	PROPOSED
RD	ROOF DRAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SD	STORM DRAIN
SGR	STEEL GUARD RAIL
SMH	SANITARY MANHOLE
SS	SANITARY SEWER
SQCS	STORMWATER QUALITY CONTROL STRUCTURE
TC	TOP OF CURB
TR	TOP OF RAMP
TW	TOP OF WALL
TYP	TYPICAL
VGC	VERTICAL GRANITE CURB
WCR	WHEELCHAIR RAMP

**NOTE: SEE SHEET C-2 FOR EXISTING CONDITIONS PLAN**

**INDEX OF DRAWINGS**

SHEET NO.	DESCRIPTION
C-1	GENERAL NOTES, LEGEND AND CIVIL LEGEND
C-2	EXISTING CONDITIONS PLAN (PREPARED BY OTHERS)
C-3	CIVIL SITE PLAN
C-4	CIVIL DETAILS
C-5	SITE PHOTOGRAPHS
C-6	RECORD VAULT STRUCTURAL DRAWINGS
E1	SITE POWER PLAN
E2	VAULT DETAILS
E3	ELECTRICAL SPECIFICATIONS



NO.	REVISION	DATE

PREPARED FOR:  
**FRIENDS OF THE PUBLIC GARDEN**  
69 BEACON ST  
BOSTON, MA 02108

SHEET TITLE:  
**GENERAL NOTES, ABBREVIATIONS AND CIVIL LEGEND**

PROJECT TITLE:  
REPLACEMENT OF THE BREWER EXISTING UTILITY VAULT

DRAWN BY:	ERN
DESIGNED BY:	ERN
CHECKED BY:	JHC
RECORD CHG:	XXX

DATE: 01/17/2019  
SCALE: NTS  
PROJECT NO. 216072  
DRAWING NO.:

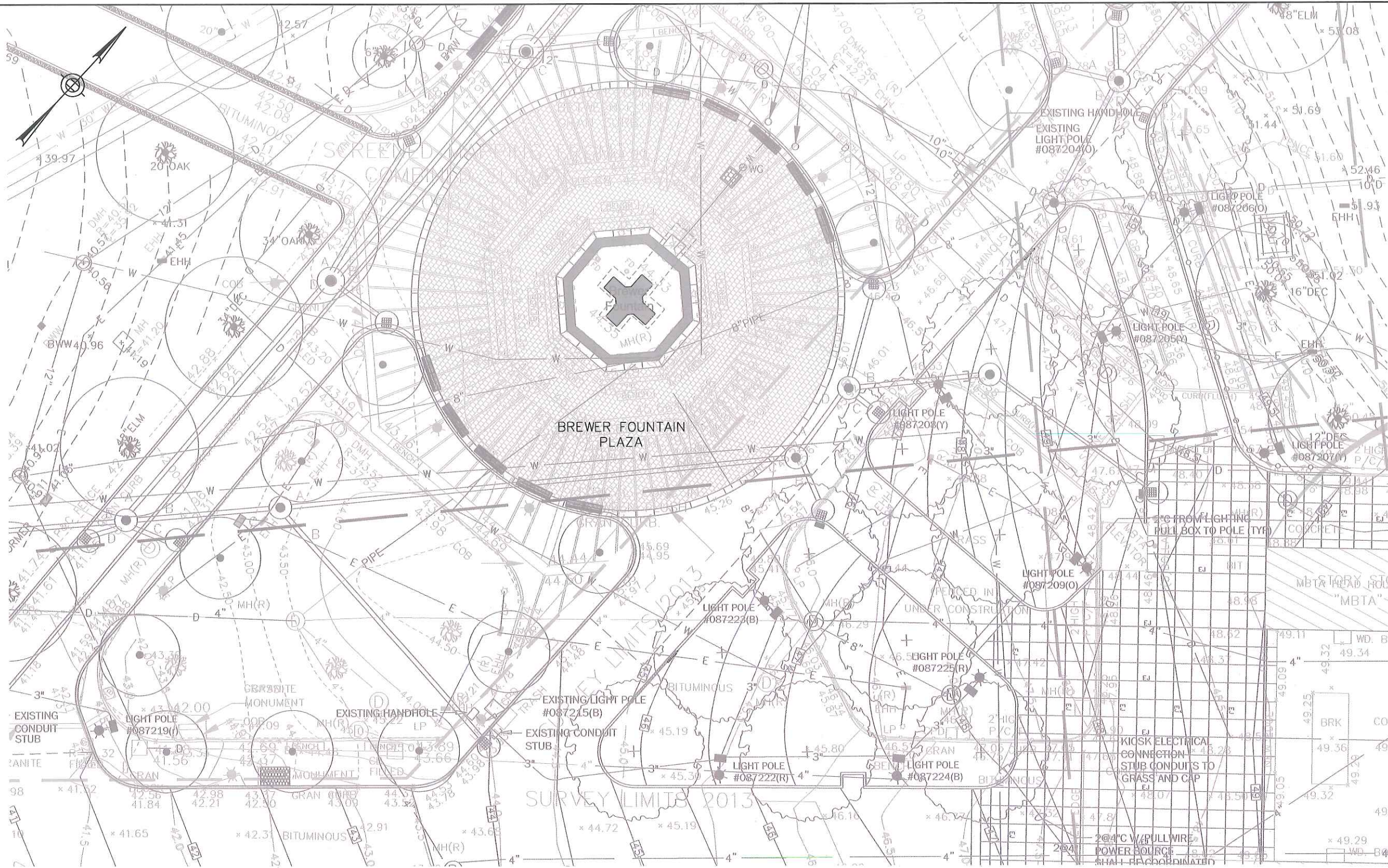
**INTERMEDIATE SUBMISSION**  
JANUARY 17, 2019

**C-1**

SHEET NO.: 1 OF 6



X:\216072-Brewer Fountain Vault Replacement\Civil\Drawg\Intermediate Submission\216072-C-2.dwg - 1/17/2019



TREMONT STREET

**BRYANT ASSOCIATES**  
 Engineers, Surveyors, Construction Managers  
 100 State Street, Suite 1000  
 Boston, Massachusetts 02114  
 Tel: (617) 746-0300  
 Fax: (617) 746-0302  
 www.bryant.com

NO.	REVISION	DATE

PREPARED FOR:  
**FRIENDS OF THE PUBLIC GARDEN**  
 69 BEACON ST  
 BOSTON, MA 02108

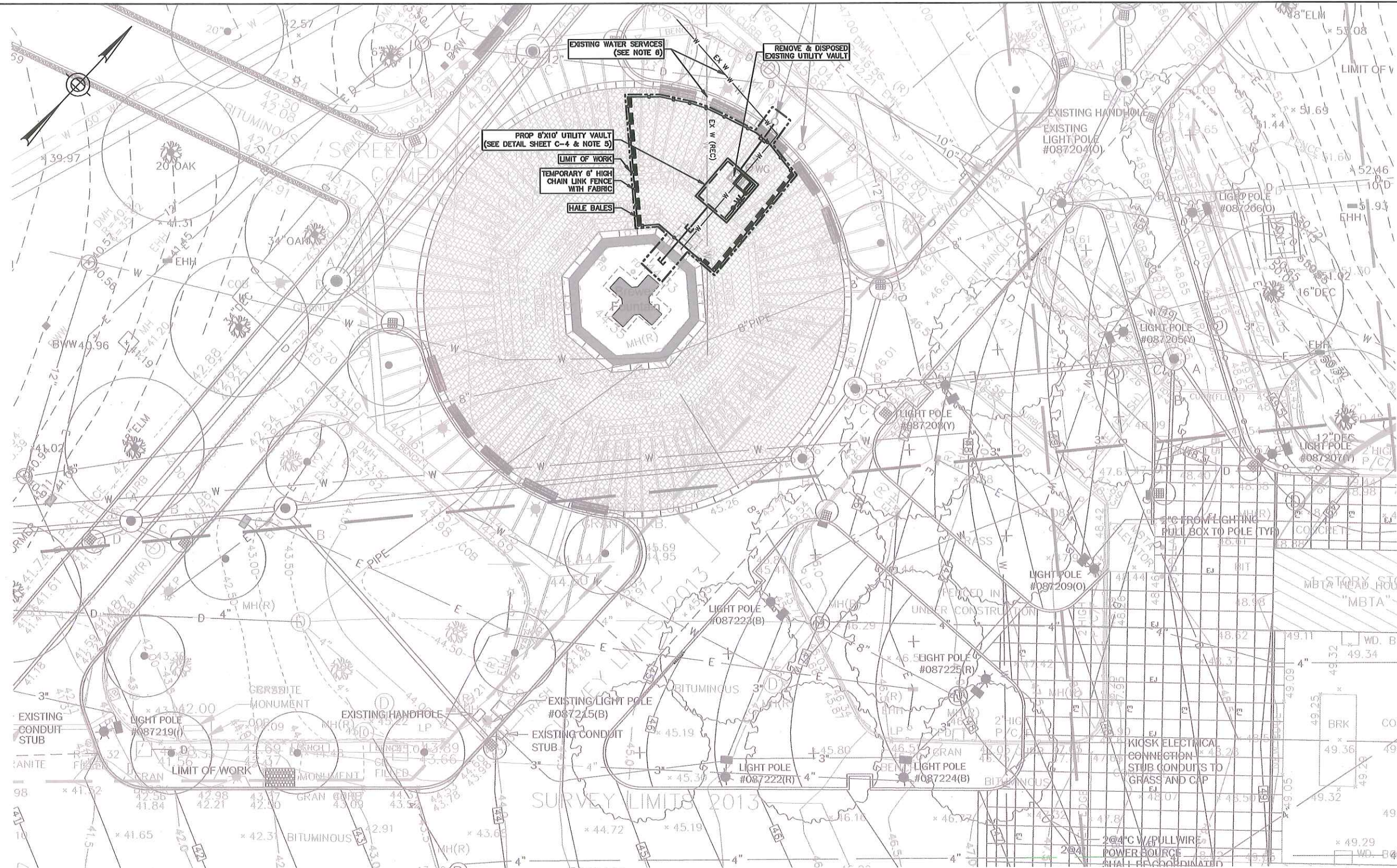
SHEET TITLE:  
**EXISTING CONDITIONS PLAN**  
 PROJECT TITLE:  
**REPLACEMENT OF THE BREWER EXISTING UTILITY VAULT**

GRAPHIC SCALE: 1" = 20'
DATE: 01/17/2019
SCALE: 1" = 20'
PROJECT NO. 216072
DRAWING NO.:

**INTERMEDIATE SUBMISSION**  
 JANUARY 17, 2018

**C-2**  
 SHEET NO.: 2 OF 6





- NOTES**
1. FOR WORK WITHIN BREWER FOUNTAIN PLAZA, CONTRACTOR TO REUSE EXISTING PAVERS PER DETAIL SHEET C-4.
  2. CONTRACTOR TO REUSE CURBING AND REINSTALL CURBING AND REPLACE BITUMINOUS CONCRETE PER DETAILS INDICATED ON SHEET C-4.
  3. EXCESS SOIL EXCAVATION AS A RESULT OF LARGER VAULT REPLACEMENT SHALL BE DISPOSED OF OF SITE AT NO COST TO THE OWNER.
  4. CONTRACTOR TO PROVIDE TEMPORARY ACCESS GATE FENCE TO PROJECT WORK ZONE AREA.
  5. FOR ELECTRICAL VAULT AND CONDUIT DETAILS, REFER TO DRAWINGS "E1 AND E2".
  6. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER SERVICES AS SHOWN ON PLANS.

LEGEND	
	LIMIT OF WORK
	HAY BALES
	TEMPORARY CHAIN LINK FENCE
	PROPOSED ELECTRIC CONDUIT

**INTERMEDIATE  
SUBMISSION  
JANUARY 17, 2019**

**BRYANT ASSOCIATES**  
Engineers, Surveyors, Construction Managers  
100 State Street, Suite 2000  
Boston, Massachusetts 02114  
Tel: (617) 248-0300  
Fax: (617) 248-0300  
www.bryant-assoc.com

B

NO.	REVISION	DATE

**PREPARED FOR:**  
**FRIENDS OF THE PUBLIC GARDEN**  
69 BEACON ST  
BOSTON, MA 02108

**SHEET TITLE:**  
**SITE PLAN**

**PROJECT TITLE:**  
**REPLACEMENT OF THE BREWER EXISTING UTILITY VAULT**

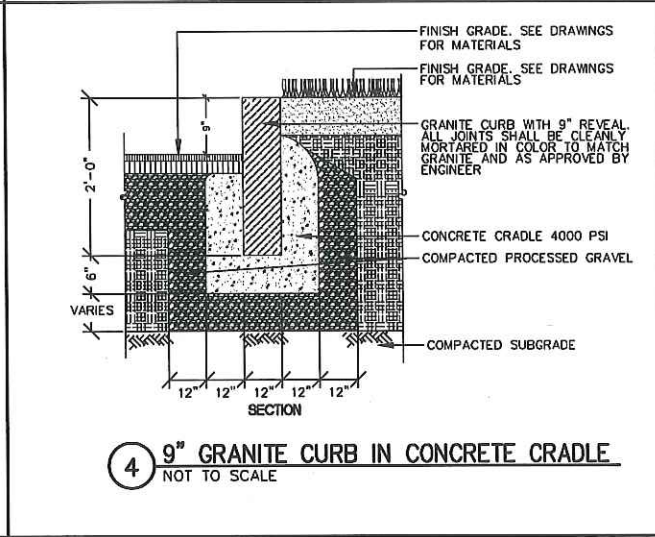
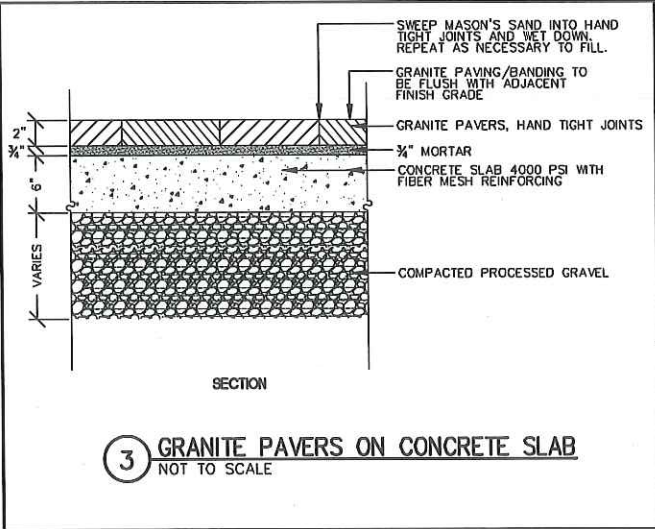
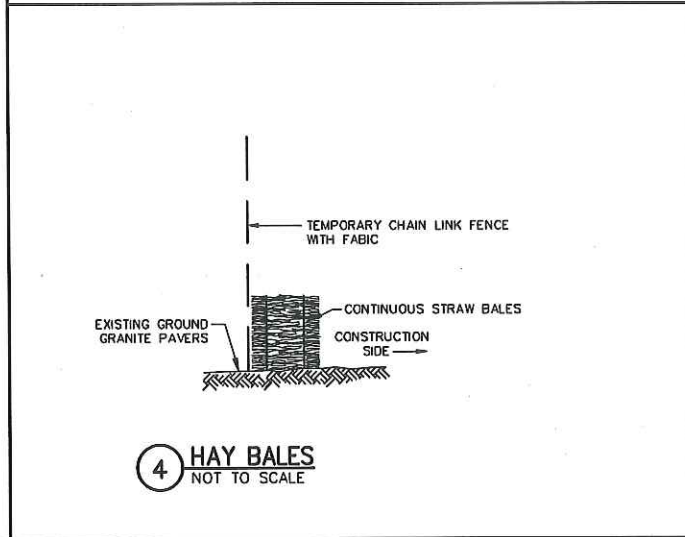
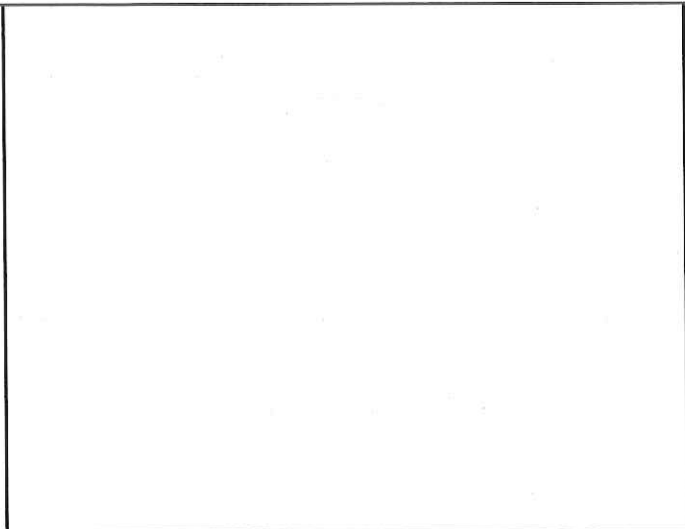
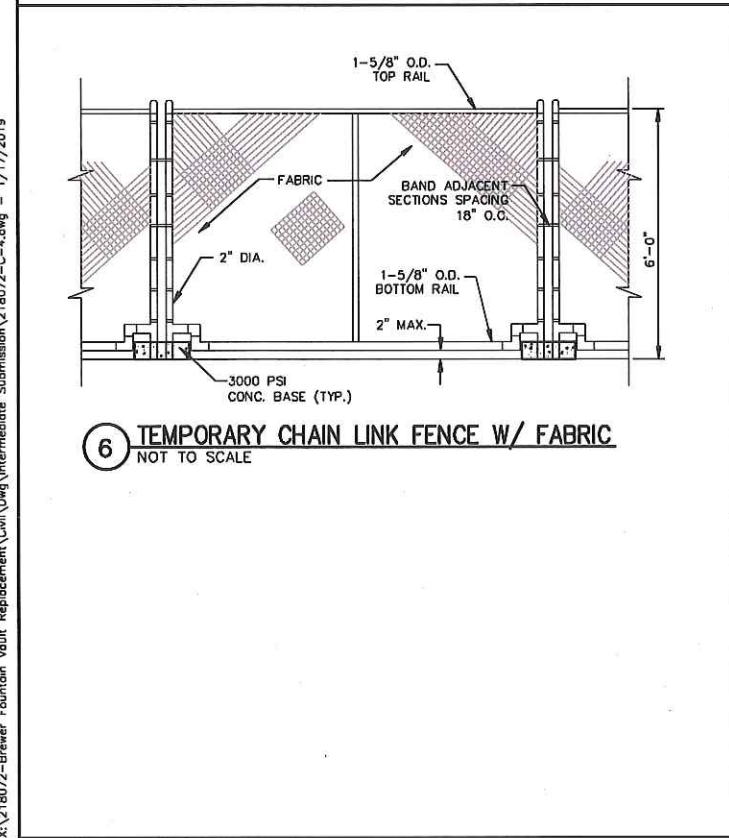
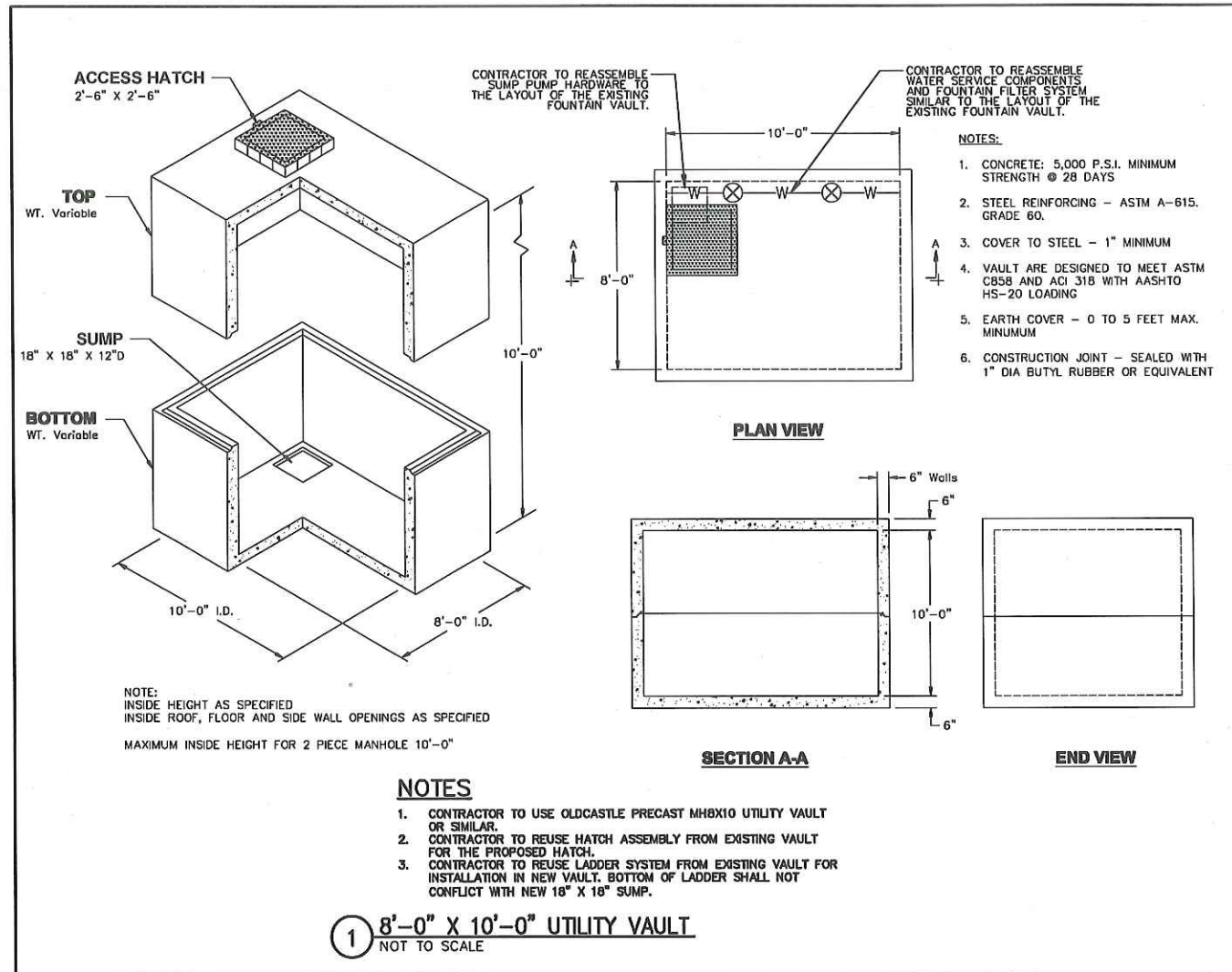
DATE: 01/17/2019  
SCALE: 1" = 10'  
PROJECT NO: 218072  
DRAWING NO:

C-3

SHEET NO.: 3 OF 6



X:\218072-Brewer Fountain Vault Replacement\Civil\Draw\Intermediate Submission\218072-C-4.dwg - 1/17/2019



**BRYANT ASSOCIATES**  
Engineers, Surveyors, Construction Managers  
Boston, Massachusetts 02114  
Tel: (617) 748-0000  
Fax: (617) 748-0000  
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NO.	REVISION	DATE

PREPARED FOR:  
**FRIENDS OF THE PUBLIC GARDEN**  
69 BEACON ST  
BOSTON, MA 02108

SHEET TITLE:  
**CIVIL DETAILS**

PROJECT TITLE:  
REPLACEMENT OF THE BREWER EXISTING UTILITY VAULT

DRAWN BY:	ERN
DESIGNED BY:	ERN
CHECKED BY:	JRC
RECORD DWG:	XXX

DATE: 01/17/2019  
SCALE: NTS  
PROJECT NO: 218072  
DRAWING NO:

INTERMEDIATE SUBMISSION  
JANUARY 17, 2018

C-4

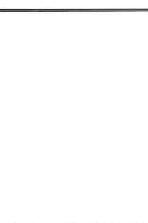
SHEET NO.: 4 OF 6



X:\218072-Brewer Fountain Vault Replacement\Civil\Drawg\Intermediate Submission\218072-C-5.dwg - 1/17/2019



**BRYANT ASSOCIATES**  
 Professional Engineers  
 50 Canal Street, Suite 301  
 Boston, Massachusetts 02114  
 Tel: (617) 248-2012  
 www.bryant-eng.com



NO.	REVISION	DATE

PREPARED FOR:  
**FRIENDS OF THE PUBLIC GARDEN**  
 69 BEACON ST  
 BOSTON, MA 02108

SHEET TITLE:  
**SITE PHOTOGRAPHS**

PROJECT TITLE:  
 REPLACEMENT OF THE BREWER EXISTING UTILITY VAULT

DRAWN BY:	ERN
DESIGNED BY:	ERN
CHECKED BY:	JRC
RECORD DWGS:	XXX
DATE:	01/17/2019
SCALE:	NTS
PROJECT NO.:	218072
DRAWING NO.:	

**INTERMEDIATE SUBMISSION**  
 JANUARY 17, 2019

**C-5**

SHEET NO.: 5 OF 6



**CONSTRUCTION NOTES:**

1. ALL WORK SHALL CONFORM TO 703 CMR - THE MASSACHUSETTS STATE BUILDING CODE-SPIN EDITION, THE 2009 INTERNATIONAL BUILDING CODE AND ASCE 7.05.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK. WHERE DIMENSIONS AND CONDITIONS OF EXISTING CONSTRUCTION DO NOT AFFECT THE NEW CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FIELD MEASUREMENTS AS REQUIRED.
3. ALL CONTRACTORS ARE REQUIRED TO EXAMINE THE DRAWINGS AND SPECIFICATIONS CAREFULLY, WITH THE SITE AND FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS PRIOR TO AGREEING TO PERFORMING THE WORK. FAILURE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND LIMITATIONS WILL IN NO WAY RELIEVE THE CONTRACTOR FROM FURNISHING ALL MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO THE OWNER.

**CONCRETE**

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318M-08) AND THE IRC 2009 CHAPTER 19 "FOUNDATIONS" AND CHAPTER 19 "CONCRETE".
2. THE CONCRETE FOR THE VAULT ENCASUREMENT SHALL BE NORMAL WEIGHT CONCRETE, TYPE II PORTLAND CEMENT-HIGH EARLY STRENGTH, WITH A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI AND 5 TO 7% AIR ENTRAINED. THE CONCRETE SHALL BE PLACED WITH A MAXIMUM 4" SLUMP AND BE VIBRATED IN A WORKMAN-LIKE MANNER. THE AGGREGATE SHALL CONFORM TO ASTM C-33 AND SHALL HAVE A MAXIMUM DIAMETER OF 3/4".
3. THE CONCRETE SHALL BE MIXED, PLACED, AND CURED WITHOUT THE USE OF CALCIUM CHLORIDE. THE CONCRETE PLACEMENT SHALL COMPLY WITH THE AMERICAN CONCRETE CODES (ACC) INCLUDING ACC 308R-88 (REAPPROVED 2002) "COLD WEATHER CONCRETING" AND ACC 308R-99 "HOT WEATHER CONCRETING".

2. ALL CONCRETE SHALL BE PLACED AS SHOWN IN THE DRAWINGS. ALL TOPSOIL, LOOSE FILL, AND DELETERIOUS MATERIAL SHALL BE REMOVED BEFORE PLACING ANY CONCRETE.
5. NO CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN GROUND. THE BOTTOM OF THE CONCRETE ENCASUREMENT SHALL BE AS SHOWN ON THE DRAWINGS UNLESS OTHERWISE NOTED.

**BACKFILL**

1. THE EXCAVATION OUTSIDE THE ENCASUREMENT SHALL BE BACKFILLED WITH MATERIAL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS AND LARGE ROCKS.
2. ALL STRUCTURAL FILL SHALL BE BANKRUN GRAVEL, CRUSHED BANKRUN GRAVEL OR CRUSHED STONE. THE MAXIMUM STONE SIZE IN THE GRAVELS SHALL BE 2" IN DIAMETER. THE CRUSHED STONE SHALL BE A WASHED SAND THAT CONFORMS TO ASTM C-33 "CONCRETE AGGREGATE". THE STRUCTURAL FILL SHALL BE PLACED IN MAXIMUM 12" LIFTS AND COMPACTED TO 95% OF ASTM 1557, METHOD D.
3. BACKFILL ADJACENT TO THE CONCRETE ENCASUREMENT SHALL NOT BE PLACED UNTIL THE CONCRETE HAS SUFFICIENT STRENGTH.

**REINFORCEMENT STEEL:**

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO ASTM A775/A775M, GRADE 60.
2. MINIMUM COVER FOR ALL REINFORCING STEEL SHALL BE AS FOLLOWS:
  - A. 3" WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST THE SOIL, WITHOUT THE USE OF A FORM.
  - B. 2" WHERE CONCRETE IS EXPOSED TO THE WEATHER.
  - C. 2" FOR WALLS AND SLABS.

- A. 3" WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST THE SOIL, WITHOUT THE USE OF A FORM.
- B. 2" WHERE CONCRETE IS EXPOSED TO THE WEATHER.
- C. 2" FOR WALLS AND SLABS.

**ENCASUREMENT**

1. PRIOR TO CONCRETE PLACEMENT, INSPECT ALL AREAS TO ENSURE THEY ARE PREPARED.
- A. ALL CONCRETE SHALL BE PLACED ON THE EXISTING CONCRETE ANCHOR SLAB BELOW THE EXISTING VAULT.
- B. FORMWORK IS OF THE CORRECT SIZE AND PROPERLY PLACED.
- C. REINFORCEMENT IS IN PLACE, PROPERLY SPACED, SECURE, AND WILL HAVE PROPER COVER.
- D. QUALIFIED WORK PERSONNEL AND EQUIPMENT (TESTING EQUIPMENT, TEST CYLINDERS, CONSOLIDATION AND FINISHING TOOLS, ETC.) SHALL BE ON SITE AND AVAILABLE FOR TESTING AND FINISHING.

**FORMWORK AND FORMWORK ACCESSORIES**

1. MATERIALS FOR FORM FACES IN CONTACT WITH CONCRETE SHALL MEET THE REQUIREMENTS OF ACI 308R-03 FOR UNDESIGNED FINISHES AND SHALL BE AS FOLLOWS:
  - A. FOR FINISH FORM FINISH NOT EXPOSED TO PUBLIC VIEW, NO FORM FACING MATERIAL IS SPECIFIED.
  - B. FOR SMOOTH FORM FINISH EXPOSED TO PUBLIC VIEW, USE PLYWOOD, TEMPERED CONCRETE FORM-GRADE HARDBOARD, METAL, PLASTIC, PAPER, OR OTHER ACCEPTABLE MATERIALS CAPABLE OF PRODUCING THE DESIRED FINISH FOR FORM-FACING MATERIALS. FORM FACING MATERIALS SHALL PRODUCE A SMOOTH, UNIFORM TEXTURE ON THE CONCRETE. DO NOT USE FORM FACING MATERIALS WITH RAISED GRAIN, TORN SURFACES, WORN EDGES, FURROWS, GAINS, OR OTHER DEFECTS THAT WILL IMPAIR THE TEXTURE OF THE CONCRETE SURFACES.
2. USE COMMERCIAL MANUFACTURED ACCESSORIES FOR FORMWORK ACCESSORIES THAT ARE WHOLLY OR PARTIALLY EMBEDDED IN THE CONCRETE, INCLUDING TIES AND WANGERS. DO NOT USE NON-FABRICATED WIRE FORM TIES.
3. USE COMMERCIAL MANUFACTURED FORM RELEASE AGENTS THAT WILL PREVENT THE FORMWORK FROM ABSORBING MOISTURE, PREVENT BOND WITH THE CONCRETE, AND NOT STAIN THE CONCRETE SURFACES.
4. DESIGN AND ENGINEERING OF THE FORMWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODES.

**PLACING CONCRETE**

1. CONCRETE, WHEN PLACED, SHALL HAVE A TEMPERATURE RANGING BETWEEN A MINIMUM OF 55°F AND MAXIMUM OF 85°F.
2. THE CONCRETE SHALL BE MIXED IN SUCH QUANTITIES AS REQUIRED FOR IMMEDIATE USE AND SHALL BE PLACED WHILE FRESH BEFORE THE LOSS OF SLUMP OCCURS. DISCHARGE OF THE CONCRETE SHALL BE COMPLETED WITHIN 90 MINUTES OR BEFORE THE DRAIN HAS REVOLVED 350 REVOLUTIONS AFTER THE INITIAL INTRODUCTION OF THE MIXING WATER TO THE CEMENT AND AGGREGATES OR THE INTRODUCTION OF THE CEMENT TO THE AGGREGATES AT THE BATCHING PLANT.

3. THE CONCRETE SHALL BE PLACED WITH A MAXIMUM 5" SLUMP AND SHALL BE VIBRATED IN A WORKMAN-LIKE MANNER. NO WATER FROM THE MIXING WATER SYSTEM OR PLACEMENT SHALL BE ADDED AFTER THE INITIAL INTRODUCTION OF MIXING WATER FOR THE BATCH EXCEPT WHEN ON ARRIVAL AT THE JOB SITE THE SLUMP IS LESS THAN SPECIFIED HEREIN. ADDITION OF WATER SHALL BE AS DIRECTED BY THE ENGINEER AND IN ACCORDANCE WITH ASTM C94. THE WATER SHALL BE ADDED ONLY UP TO THE AMOUNT REQUIRED TO ACHIEVE THE SPECIFIED SLUMP AND SHALL NOT EXCEED THE SPECIFIED WATER-CEMENT RATIO.
4. THE CONCRETE SHALL BE MIXED, PLACED AND CURED WITHOUT THE USE OF CALCIUM CHLORIDE. THE PLACEMENT OF ALL CONCRETE SHALL COMPLY WITH THE LATEST AMERICAN CONCRETE INSTITUTE (ACI) CODES, INCLUDING ACC 308R-88 (REAPPROVED 2002) "COLD WEATHER CONCRETING" AND ACC 308R-99 "HOT WEATHER CONCRETING".

**PROTECTION OF NEW WORK:**

1. ALL FRESHLY PLACED CONCRETE SHALL BE ADEQUATELY PROTECTED FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES AND OCCASIONAL HEAVY LOAD, SUCH THAT THE CONCRETE HAS PROPERLY CURED.
2. PROTECT CONCRETE DURING THE CURING PERIOD SUCH THAT THE CONCRETE TEMPERATURE DOES NOT DROP BELOW 50°F OR EXCEED 90°F. MAINTAIN THE CONCRETE TEMPERATURE TO THE PRELAP FREEZING OF THE CONCRETE AND TO ENSURE THE NECESSARY STRENGTH DEVELOPMENT FOR STRUCTURAL SAFETY.
3. MEASURE CONCRETE TEMPERATURE USING A METHOD ACCEPTABLE TO THE STRUCTURAL ENGINEER. WHEN THE SURFACE TEMPERATURE OF THE CONCRETE IS WITHIN 2°F OF THE AMBIENT OR SUBSURROUNDING TEMPERATURE AND HAS PROPERLY CURED, PROTECTION MEASURES MAY BE REMOVED.

**CURING**

1. CURING SHALL BE STARTED IMMEDIATELY UPON COMPLETION OF THE FINISHING OPERATION. CONCRETE SHALL BE MAINTAINED ABOVE 55°F FOR A MINIMUM PERIOD OF SEVEN (7) DAYS UNLESS A LONGER PERIOD IS HEREAFTER SPECIFIED. RAPID DRYING UPON COMPLETION OF THE CURING SHALL BE PREVENTED. AT NO TIME DURING THE CURING PERIOD SHALL THE TEMPERATURE OF THE CONCRETE BE PERMITTED TO DROP BELOW 50°F.
2. MOISTURE PRESERVATION OF THE FRESHLY PLACED CONCRETE SHALL BE ACHIEVED BY ONE OR MORE OF THE FOLLOWING METHODS:
  - A. FORTING, CONTINUOUS FORTING OR CONTINUOUS SPRINKLING.
  - B. APPLICATION OF MATS OR FABRIC SUCH AS BURLAP KEPT CONTINUOUSLY WET.
  - C. CONTINUOUS APPLICATION OF STEAM (UNDER 150°F)
  - D. APPLICATION OF SHEET MATERIALS CONFORMING TO ASTM C171
3. THE CONCRETE SHALL HAVE ATTAINED AT LEAST FIFTY PERCENT (50%) OF ITS 28 DAY COMPRESSIVE STRENGTH PRIOR TO REMOVAL OF ANY FORMS.

NO.	DATE	DESCRIPTION

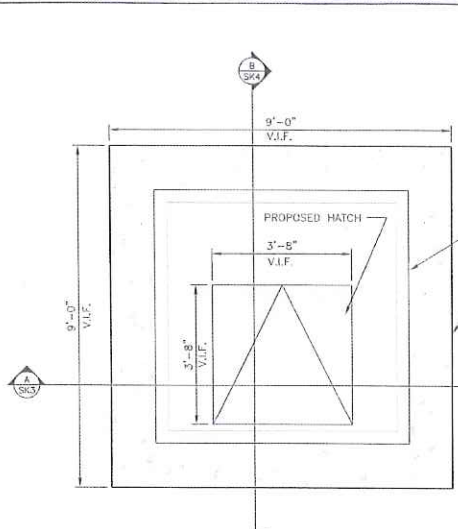
**BREWSTER FOUNTAIN**  
BOSTON, MA

**FOUNTAIN VAULT REINFORCING**

**BAYSIDE ENGINEERING**  
100 STATE STREET, SUITE 200  
BOSTON, MA 02109  
TEL: 617-552-2200  
WWW.BAYSIDEENGINEERING.COM

**PROJECT NOTES**

NO.	DATE	DESCRIPTION



**PROPOSED ENCASUREMENT PLAN**  
SCALE: 1/2"=1'-0"



NO.	DATE	DESCRIPTION

**BREWSTER FOUNTAIN**  
BOSTON, MA

**FOUNTAIN VAULT REINFORCING**

**BAYSIDE ENGINEERING**  
100 STATE STREET, SUITE 200  
BOSTON, MA 02109  
TEL: 617-552-2200  
WWW.BAYSIDEENGINEERING.COM

**PROPOSED ENCASUREMENT PLAN**

NO.	DATE	DESCRIPTION

**INTERMEDIATE SUBMISSION**  
JANUARY 17, 2019

**BRYANT ASSOCIATES**  
100 South Street, Suite 300  
Boston, Massachusetts 02114  
Tel: (617) 748-1000  
www.bryant-eng.com

**PREPARED FOR:**  
**FRIENDS OF THE PUBLIC GARDEN**  
69 BEACON ST  
BOSTON, MA 02108

**SHEET TITLE:**  
**RECORD VAULT STRUCTURAL DRAWINGS**

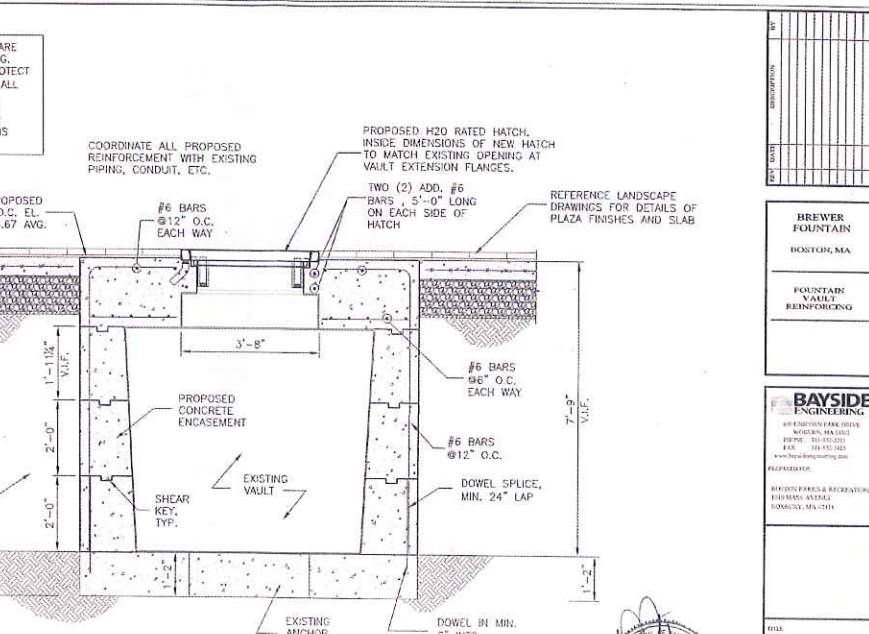
**PROJECT TITLE:**  
**REPLACEMENT OF THE BREWSTER EXISTING UTILITY VAULT**

<b>DRAWN BY:</b>	ERN
<b>DESIGNED BY:</b>	ERN
<b>CHECKED BY:</b>	JFC
<b>RECORD DWG:</b>	XXX
<b>DATE:</b>	01/17/2019
<b>SCALE:</b>	N/A
<b>PROJECT NO:</b>	216072
<b>DRAWING NO:</b>	

**C-6**

SHEET NO.: 6 OF 6

ALL PIPING, CONDUIT, ETC. ARE NOT SHOWN IN THIS DRAWING. THE CONTRACTOR SHALL PROTECT AND SLEEVE (IF REQUIRED) ALL EXISTING UTILITIES DURING CONSTRUCTION AND ENSURE UTILITIES WILL HAVE PROPER SUPPORT WHEN THE WORK IS COMPLETED.



**PROPOSED ENCASUREMENT AND HATCH SECTION**  
SCALE: 1/2"=1'-0"

NO.	DATE	DESCRIPTION

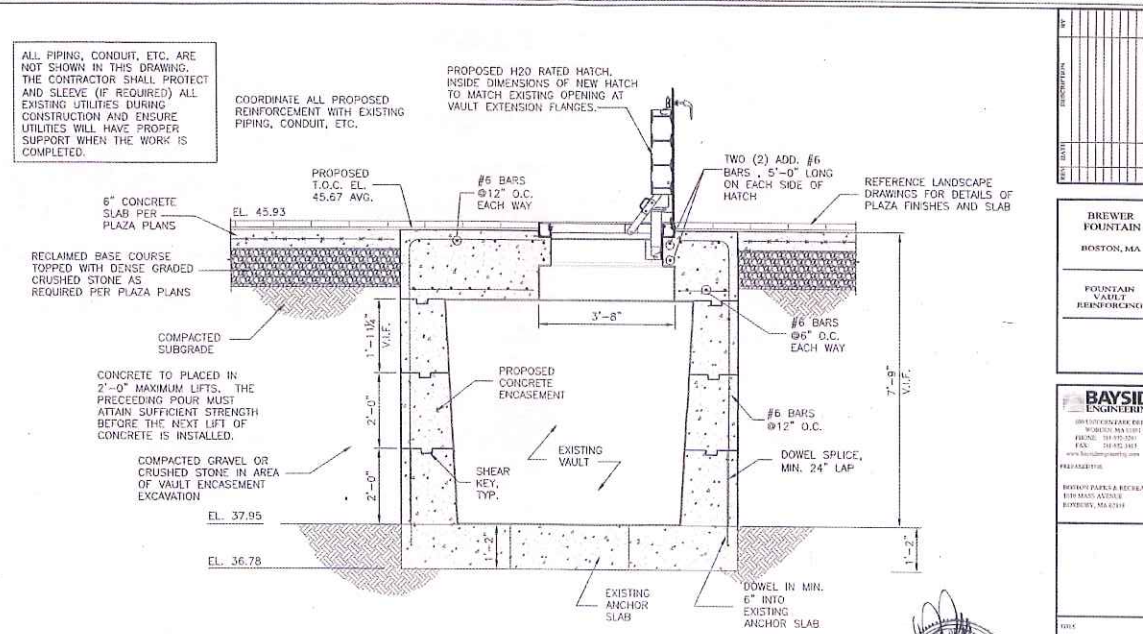
**BREWSTER FOUNTAIN**  
BOSTON, MA

**FOUNTAIN VAULT REINFORCING**

**BAYSIDE ENGINEERING**  
100 STATE STREET, SUITE 200  
BOSTON, MA 02109  
TEL: 617-552-2200  
WWW.BAYSIDEENGINEERING.COM

**PROPOSED HATCH SECTION**

NO.	DATE	DESCRIPTION



**PROPOSED ENCASUREMENT AND HATCH SECTION**  
SCALE: 1/2"=1'-0"



NO.	DATE	DESCRIPTION

**BREWSTER FOUNTAIN**  
BOSTON, MA

**FOUNTAIN VAULT REINFORCING**

**BAYSIDE ENGINEERING**  
100 STATE STREET, SUITE 200  
BOSTON, MA 02109  
TEL: 617-552-2200  
WWW.BAYSIDEENGINEERING.COM

**PROPOSED HATCH SECTION**

NO.	DATE	DESCRIPTION



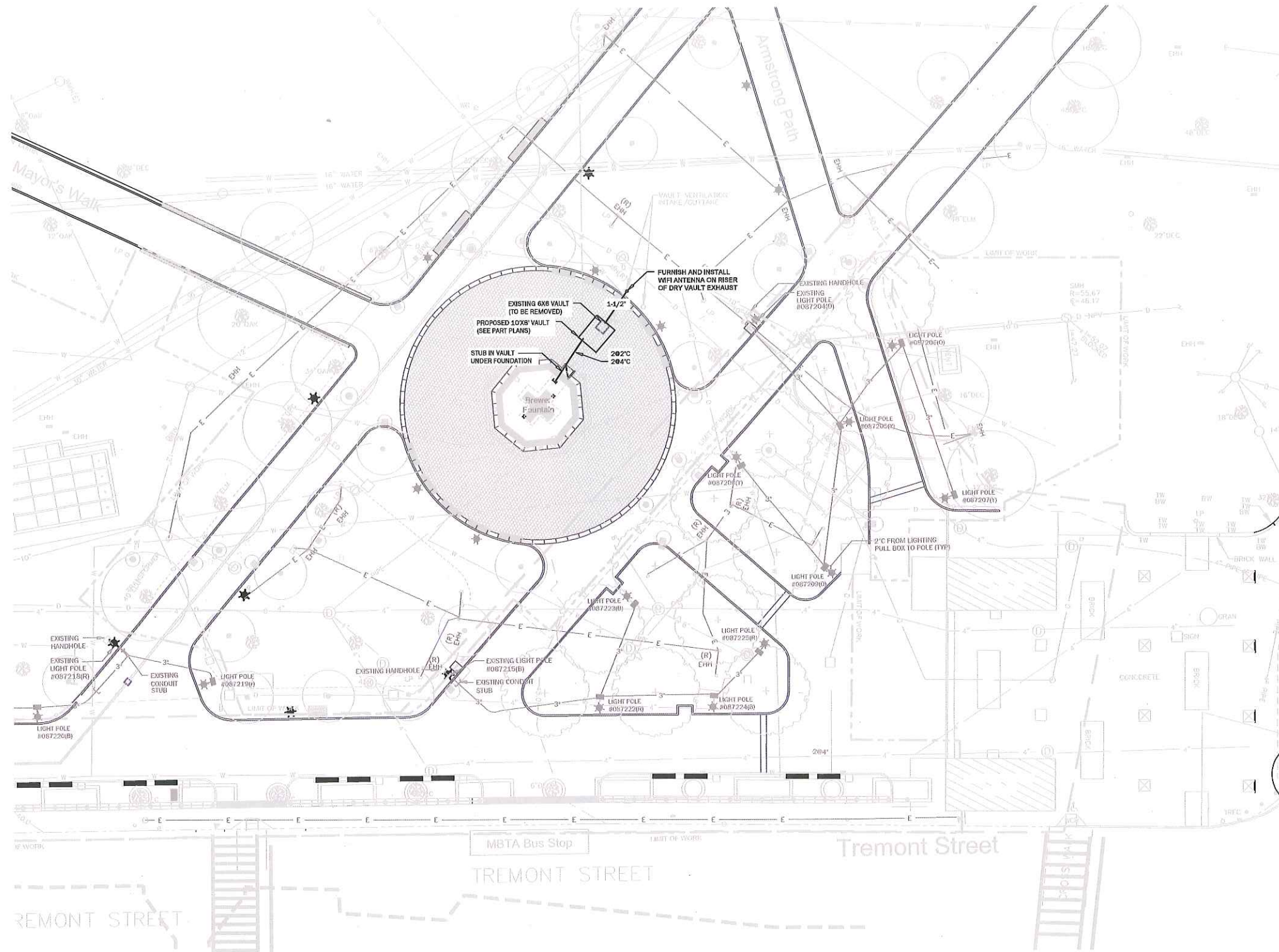


**FRIENDS**  
OF THE  
PUBLIC GARDEN

69 Beacon Street  
Boston, MA 02108  
(617) 723-8144

**BREWER FOUNTAIN  
VAULT REPLACEMENT**

Boston Common Boston, Massachusetts



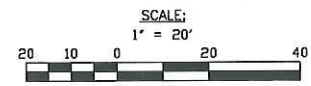
REVISIONS		
NO.	DATE	REMARKS

**RONALD W. BUIA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUIA@BUIAENGINEERING.COM

DRAWING TITLE  
**Site Power Plan**

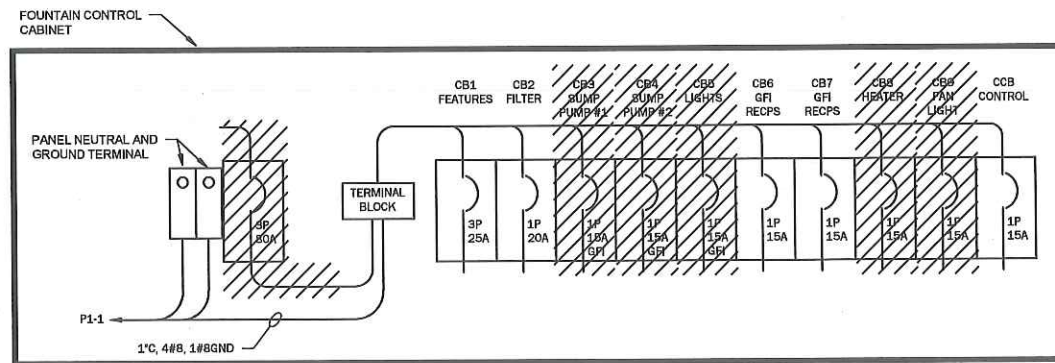
SEAL	NORTH

DRAWN BY: KML	DRAWING NO.
CHECKED BY: RWB	<b>E1</b>
DATE: 1/18/19	
SCALE: 1"=20'	
PROJECT NO.: 270118	



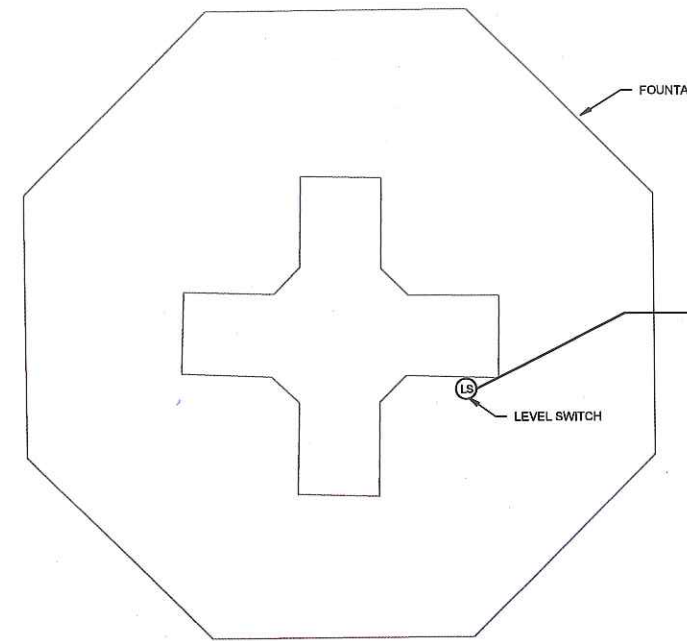


PANEL 'P1'				22KAIC	
100A, 120/208V, 3Ø, 4W, W/MLO				FOUNTAIN VAULT	
CKT NO	BKR SIZE	LOAD DESCRIPTION	LOAD DESCRIPTION	BKR SIZE	CKT NO
1	50	FOUNTAIN CONTROL PANEL	FOUNTAIN LIGHTING CONTROL PANEL	15	2
3	-		FOUNTAIN LIGHTING CONTROL PANEL	15	4
5	-		FOUNTAIN LIGHTING CONTROL PANEL	15	6
7	20	VAULT LIGHTING	VAULT DEHUMIDIFIER	20	8
9	20	VAULT EXHAUST FAN	VAULT UNIT HEATER	20	10
11	20	VAULT GFI RECEPTACLES		-	12
13	20	UV LIGHT	SUMP PUMP NO. 1 GFI RECP	15	14
15	20	SPARE	SUMP PUMP NO. 2 GFI RECP	15	16
17	-		SPARE	20	18
19	-		SPARE	20	20
21	20	SPARE	SPARE	20	22
23	20	SPARE	SPARE	20	24



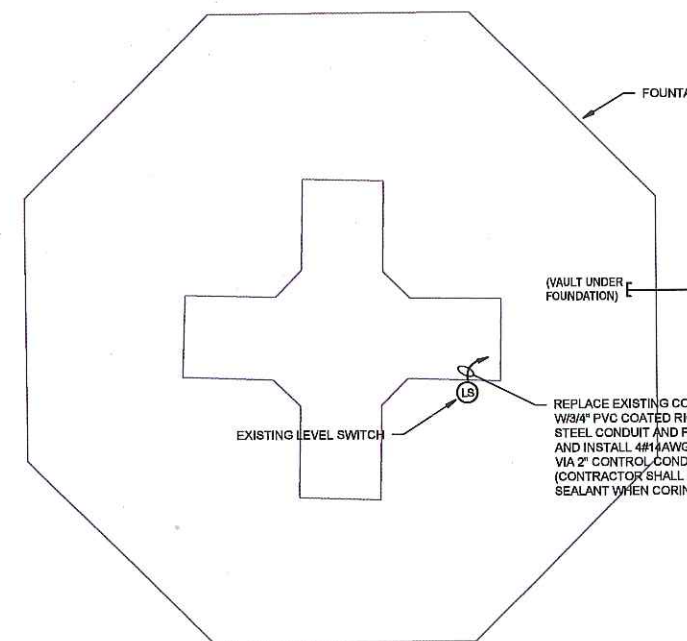
**EXISTING DELTA FOUNTAIN CONTROL PANEL 'FCP'**

RECONNECT CIRCUIT BREAKERS NO'S CB1, CB2, CB6, CB7, CB8 TO EXISTING LOADS. CIRCUIT BREAKERS SHOWN HATCHED SHALL BE MADE SPARE AND THEIR RESPECTIVE LOADS SHALL BE RE-POWERED FROM PANELBOARD 'P1'.  
DELTA FOUNTAINS - JACKSONVILLE, FL - TEL: (904)866-9030



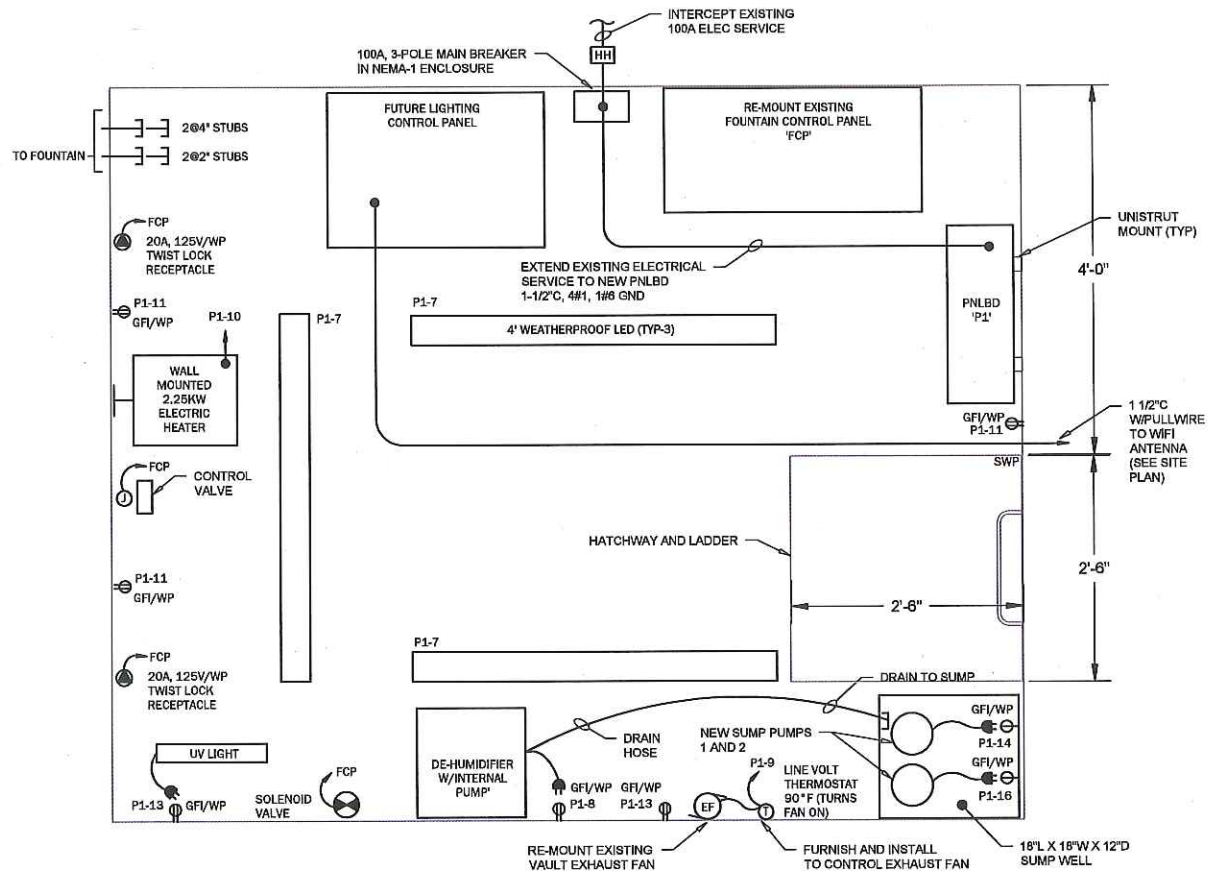
**EXISTING FOUNTAIN / VAULT EQUIPMENT LAYOUT**

NOT TO SCALE



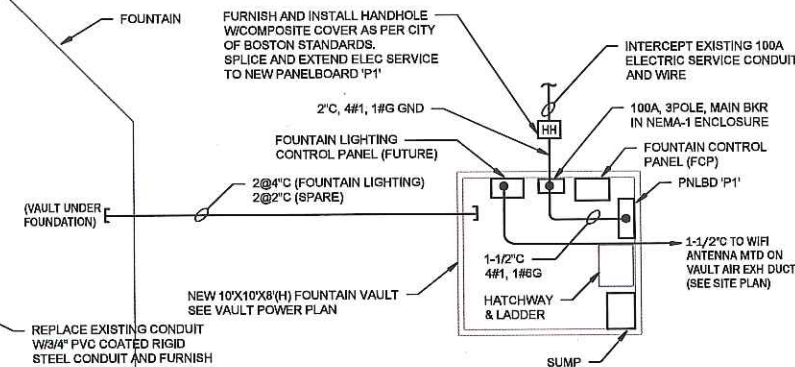
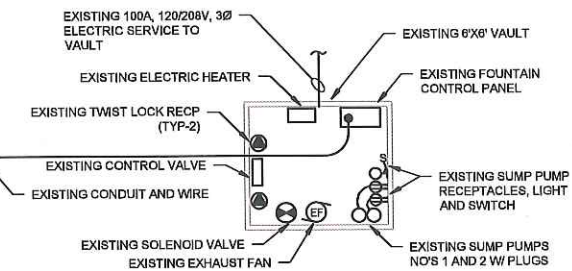
**PROPOSED FOUNTAIN / VAULT PANEL AND CONDUIT LAYOUT**

NOT TO SCALE



**VAULT POWER PLAN**

SCALE: 1"=1'-0"



**FRIENDS**  
OF THE  
PUBLIC GARDEN

69 Beacon Street  
Boston, MA 02108  
(617) 723-8144

**BREWER FOUNTAIN  
VAULT REPLACEMENT**

Boston Common Boston, Massachusetts

REVISIONS	NO.	DATE	REMARKS

**RONALD W. BUIA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUIA@BUIAENGINEERING.COM

**DRAWING TITLE**  
Vault Details

SEAL NORTH

DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 1/18/19  
SCALE: AS NOTED  
PROJECT NO.: 270118

DRAWING NO.  
**E2**



## ELECTRICAL SPECIFICATIONS

1. FURNISH AND INSTALL ALL LABOR, MATERIALS, APPLIANCES, EQUIPMENT TOOLS, TRANSPORTATION, SUPERVISION AND SERVICES REQUIRED TO ELECTRICAL WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
2. THE ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FURNISHING OF MATERIALS AND INSTALLATION OF THE FOLLOWING IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
  1. HANDHOLES
  2. WIRING DEVICES
  3. LIGHTING SYSTEMS
  4. CONDUIT, WIREWAYS, RACEWAYS, ETC.
  5. BRANCH CIRCUIT WIRING
  6. PANELBOARD
  7. POWER WIRING
  8. GROUNDING SYSTEM
  9. WIRE AND CABLE
  10. ELECTRIC UNIT HEATER
  11. DE-HUMIDIFIER
  12. MAIN CIRCUIT BREAKER
  13. DEMOLITION OF EXISTING EQUIPMENT
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE MEC, MASSACHUSETTS STATE BUILDING CODE, OSHA, ADA, ALL LOCAL CODES AND LOCAL UTILITY CO. STANDARDS & SPECIFICATIONS
4. CONTRACTOR SHALL PAY FOR ALL INSPECTION FEES, LICENSES AND PERMITS.
5. COORDINATE ANY REQUIRED POWER INTERRUPTIONS AND PERFORM WORK AT TIME CONVENIENT TO OWNER. INCLUDE COSTS FOR REQUIRED PREMIUM TIME.
6. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT FOR APPROVAL BEFORE PURCHASING SAME. ALL EQUIPMENT SHALL BEAR THE LABEL OF A NATIONALLY-RECOGNIZED TESTING LABORATORY.
7. PANELBOARD
  - A. FURNISH AND INSTALL THE PANELBOARD FOR LIGHTING AND POWER AS INDICATED AND AS SCHEDULED ON THE DRAWINGS.
  - B. PANELBOARD SHALL BE OF DEAD FRONT CONSTRUCTION WITH THERMAL MAGNETIC CIRCUIT BREAKERS AND SHALL CONFORM TO THE REQUIREMENTS OF NEMA AND MEC. PANELBOARD SHALL BE UL APPROVED AND LABELED.
  - C. PANELBOARD SHALL CONSIST OF CIRCUIT BREAKERS, CODE GAUGE STEEL CABINET OR BACKBOARD, BUS ASSEMBLY, TRIM WITH CODE GAUGE GALVANIZED STEEL DOORS. GUTTER SPACE SHALL BE A MINIMUM OF 4" ON ALL SIDES.
  - D. CIRCUIT BREAKERS OF THE QUICK-MAKE, QUICK BREAK TRIP FREE THERMAL MAGNETIC TYPE WITH CHARACTERISTICS AS SCHEDULED. AUTOMATIC TRIPPING SHALL BE CLEARLY INDICATED BY THE OPERATING HANDLE ASSUMING A MID-POSITION BETWEEN ON AND OFF. TWO AND THREE POLE BREAKERS SHALL HAVE COMMON TRIP. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.
  - E. PANELBOARD SHALL BE PROVIDED WITH SOLID NEUTRALS. IN ADDITION, GROUNDING BUS WITH LUGS SHALL BE PROVIDED ON ALL PANELBOARDS MEETING UL AND NEMA STANDARDS. ALL BUSSWORK SHALL BE COPPER.
  - F. TWO MILLED TYPE KEYS SHALL BE PROVIDED WITH PANEL AND ALL PANEL LOCKS SHALL BE KEYS ALIKE.
  - G. BUS ARRANGEMENTS SHALL BE SEQUENCE PHASED SUCH THAT ADJACENT SINGLE POLE BREAKERS SHALL BE CONNECTED TO OPPOSITE PHASES IN SUCH A MANNER, SUCH THAT ANY TWO OR THREE POLE BREAKERS COULD BE INSTALLED ANYWHERE IN THE PANELBOARD.
8. LIGHTING
  - A. FURNISH AND INSTALL LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS. THE LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE VAULT STRUCTURE.
9. MECHANICAL SUSPENSION CHANNEL
  - A. MECHANICAL SUSPENSION CHANNEL SHALL BE FURNISHED AND INSTALLED TO SUPPORT ELECTRICAL EQUIPMENT (PANELBOARDS, DISCONNECT SWITCHES, STARTERS, ETC.).
10. GROUNDING
  - A. PROVIDE GROUNDING FOR ALL ELECTRICAL EQUIPMENT AND DEVICES IN ACCORDANCE WITH THE OWNERS STANDARDS AND THE APPLICABLE REQUIREMENTS OF THE MASSACHUSETTS ELECTRICAL CODE AND AS INDICATED ON THE DRAWINGS.
  - B. BONDING JUMPERS SHALL BE INSTALLED AT ALL LOCATIONS REQUIRED BY MEC.
  - C. A GREEN GROUNDING CONDUCTOR OF PROPER SIZE SHALL BE INSTALLED AND CONNECTED WITH THE FEEDER CIRCUIT CONDUCTORS TO ALL PANELBOARDS, MOTOR FRAMES, ETC. CONNECTIONS TO THE EQUIPMENT MAY BE BOLTED OR SCREWED USING CORROSION RESISTING BOLTS, SCREWS. A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL BRANCH AND FEEDER CIRCUITS.
  - D. ALL EXPOSED CONNECTIONS SHALL BE MADE BY GROUNDED GROUNDING CLAMPS.
11. ELECTRIC HEATER
  - A. REZNOR EGW ELECTRIC FORCED AIR HEATER, 2.5KW, 208V, 1Ø W/MONITORING BRACKET AND BUILD IN THERMOSTAT OR EQUAL
12. DE-HUMIDIFIER
  - A. 70 PINT DE-HUMIDIFIER WITH INTERNAL PUMP AND 2Ø DRAIN HOSE.
13. RACEWAYS
  - A. ALL VAULT WIRING SHOWN RUN IN CONDUIT ON THE DRAWINGS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
  - B. ALL EXPOSED EXTERIOR CONDUIT RUNS OUTSIDE THE VAULT SHALL BE PVC COATED GALVANIZED STEEL CONDUIT.
  - C. UNDERGROUND CONDUIT SHALL BE SCHEDULE-40 PVC.
  - D. LIQUID-TITE FLEXIBLE METAL CONDUIT SHALL BE USED FOR CONNECTION TO MOTORIZED EQUIPMENT, WITH AN INTERWOVEN GROUND CONDUCTOR (1 1/4" MAXIMUM DIAMETER).
  - E. SET SCREW-TYPE CONNECTORS AND COUPLINGS FOR METAL CONDUIT WILL NOT BE ALLOWED.
14. HANGERS & SUPPORTS
  - A. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, SLEEVES, CLAMPS, ETC., AS REQUIRED AND AS INDICATED ON THE DRAWINGS.
15. OUTLET BOXES
  - A. BOXES SHALL BE FS OR FD SERIES, WITH CADMIUM PLATED COVERS. STEEL BOXES WILL NOT BE PERMITTED.
16. PULL & JUNCTION BOXES
  - A. PULL BOXES SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL AND SHALL BE INSTALLED AT POINTS WHETHER INDICATED ON THE DRAWINGS OR NOT. MINIMUM DIMENSION SHALL NOT BE LESS THAN MEC REQUIREMENTS.
17. FEEDER & BRANCH CIRCUIT CONDUCTORS
  - A. ALL FEEDER, BRANCH CIRCUIT, REMOTE CONTROL, SIGNAL CIRCUIT AND INTERLOCK WIRING SHALL BE MANUFACTURED OF COPPER AND RATED 600 VOLTS.
  - B. MINIMUM SIZE WIRE FOR BRANCH CIRCUIT AND POWER WIRING SHALL BE #12 AWG.
  - C. INSULATION TYPE SHALL BE XHHW FOR FEEDERS AND POWER WIRING; THHN/THWN FOR LIGHTING, REMOTE CONTROL, AND SIGNAL CIRCUITS.
  - D. INSULATION TYPE SHALL BE XHHW FOR FEEDERS AND POWER WIRING; THHN/THWN FOR LIGHTING, REMOTE CONTROL, AND SIGNAL CIRCUITS.
  - E. ALL WIRING SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE FOR CONSTRUCTION AND USE.
18. WIRING DEVICES
  - A. FURNISH AND INSTALL WIRING DEVICES, AND SPECIFICATION GRADE, COMPLETE WITH ALL ACCESSORIES AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREUNDER. ALL WIRING DEVICES SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER EXCEPT WHERE SPECIFICALLY STATED OTHERWISE.
19. DUPLEX RECEPTACLES SHALL BE NYLON SPECIFICATION GRADE, U-GROUND, RATED FOR 125VAC, 20A, MANUFACTURED BY BRYANT CAT. NO. 5362H OR EQUAL.
20. SWITCHES SHALL BE NYLON SPECIFICATION GRADE, AC TYPE, RATED 20 AMPS FOR 120/277 VOLTS, BRYANT CAT. NUMBERS 4001-I, 4003-I, 4004-I
21. DUPLEX RECEPTACLES WITH GROUND FAULT INTERRUPTER CHARACTERISTICS SHALL BE INSTALLED WHERE SPECIFIED ON THE DRAWINGS. ALL WET AREAS SHALL BE GROUND FAULT TYPE WHETHER INDICATED ON THE DRAWINGS OR NOT. GROUND FAULT RECEPTACLES SHALL BE NYLON MANUFACTURED BY BRYANT CAT. NO. 5362-IGI OR EQUAL.
22. TWIST LOCK RECEPTACLES SHALL BE AS INDICATED ON THE DRAWINGS.
23. FURNISH AND INSTALL NAMEPLATES ON ALL ELECTRICAL EQUIPMENT (SCREW ON TYPE).
24. ALL EQUIPMENT EXPOSED TO MOISTURE SHALL BE OF THE APPROPRIATE (NEMA) WEATHERPROOF TYPE. SEAL ALL CONDUITS THAT PENETRATE EXTERIOR WALLS.
25. MOTOR ALL TESTS REQUIRED AND VERIFY CORRECT ROTATION OF ALL MOTORIZED EQUIPMENT. PHASE BALANCE ALL PANELBOARDS IN THE FIELD.
  - A. COMPLETE TEST AND INSPECTION RECORDS SHALL BE MADE AND TESTED. ALL READINGS TAKEN SHALL BE RECORDED. TEST REPORTS SHALL BE SUBMITTED TO THE OWNERS APPROVAL.
  - B. FURNISH NECESSARY METERS, INSTRUMENTS, TEMPORARY WIRING AND LABOR TO PERFORM ALL REQUIRED TESTS AND ADJUSTMENTS OF EQUIPMENT AND WIRING INSTALLED AND/OR CONNECTED UNDER THIS CONTRACT, INCLUDING ELECTRICAL EQUIPMENT FURNISHED BY OTHERS, TO DETERMINE PROPER POLARITY, PHASING, FREEDOM FROM GROUND AND SHORTS AND OPERATION OF EQUIPMENT. ALL MEASURING INSTRUMENTS SHALL BE PROPERLY CALIBRATED.
  - C. ALL MATERIALS AND MANNER OF INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF STATE AND LOCAL AUTHORITIES, THE UTILITY COMPANY AND THE CODES OF NATIONAL BOARD OF FIRE UNDERWRITERS.
  - D. WHENEVER ANY OF THE FOREMENTIONED CODES, LAWS, ETC., REQUIRE THAT ANY WORK BE TESTED OR APPROVED, THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR ACCESS AND FOR INSPECTION, ALL AT HIS OWN EXPENSE.
26. WIRING
  - A. THE CONTRACTOR SHALL CORRECT OR REPLACE ANY NOMINAL CURRENT-CARRYING CIRCUIT WHICH IS DEFECTIVE OR GROUNDED AND HE SHALL ALSO CORRECT ALL OTHER TROUBLES ENCOUNTERED BY THESE TESTS. ALL DEFECTS WHETHER THROUGH FAULTY WORKMANSHIP OR MATERIAL FURNISHED SHALL BE CORRECTED UNDER THIS SECTION AT THE CONTRACTORS EXPENSE
27. ALL ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. DEFECTS SHALL BE CORRECTED WITHOUT CHARGE, INCLUDING ALL PATCHING, PAINTING AND OTHER INCIDENTAL REPAIRS AND REPLACEMENTS. COORDINATE ALL WORK WITH OTHER TRADES. FURNISH AND INSTALL ALL POWER AND CONTROL WIRING FOR A COMPLETE INSTALLATION.
28. FOR EXACT LOCATION OF MECHANICAL EQUIPMENT SEE MECHANICAL DRAWINGS.
29. ALL ELECTRICAL EQUIPMENT, MATERIALS, ETC. STORED ON SITE SHALL BE STORED IN SUCH A MANNER THAT IT IS SAFE FROM DAMAGE BY MOISTURE, IMPACT, ETC.
30. THE CONTRACTOR SHALL PERFORM HIS WORK IN A NEAT AND ORDERLY, WORKMANLIKE MANNER, ALL REFUSE, DIRT, AND DEBRIS RESULTANT FROM HIS WORK SHALL BE REMOVED AND PROPERLY DISPOSED OF AT THE END OF THE DAY.
  - A. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETED, AND SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM INCLUDING ANY DEMOLITION, PANELBOARDS, CIRCUIT BREAKERS, LIGHTING FIXTURES, CONDUITS, RACEWAYS, WIRING, JUNCTION BOXES, RECEPTACLES, SWITCHES, SUPPORTS, AND ALL OTHER NECESSARY APPURTENANCES REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM, INCLUDING THE HANGING AND LAMPING OF ALL FIXTURES.
31. THE CONTRACTOR IS REQUIRED TO COORDINATE HIS WORK WITH ALL UTILITIES INVOLVED.
32. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE MANUFACTURERS INSTALLATION RECOMMENDATIONS AND DIRECTIONS FOR ALL EQUIPMENT AND MATERIALS USED.
33. IF CONFLICTS ARISE FROM EQUIPMENT INSTALLATION, SCHEDULING, ETC., THESE SHALL BE RESOLVED AS DIRECTED BY THE OWNER TO THE ENTIRE SATISFACTION OF THE OWNER.
34. UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO DEMONSTRATE PROPER OPERATION OF ALL SYSTEMS AND EQUIPMENT IN THE PRESENCE OF THE OWNER AND THE ENGINEER PRIOR TO ACCEPTANCE BY THE OWNER. WRITTEN RESULTS FOR ALL TESTS AND OPERATIONS SHALL BE SUBMITTED TO THE OWNER OR OWNERS AGENT (ENGINEER).
35. ALL MATERIALS SHALL BE NEW (UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS) AND SHALL CONFORM TO THE NEMA, MASSACHUSETTS ELECTRIC CODE (MEC) AND UNDERWRITERS LABORATORIES INC. STANDARDS IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION.
36. ANY MATERIAL, ITEM OR WORK NOT SHOWN ON THE DRAWINGS BUT MENTIONED ON THE SPECIFICATIONS OR VICE-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE INCLUDED IN THE CONTRACTORS BID, AND SUCH ITEMS SHALL NOT BE A CAUSE FOR EXTRA WORK OR EXTRA COST TO OWNER.
37. THE CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS AND EXISTING EQUIPMENT.
38. TEMPORARY ELECTRIC SERVICE
  - A. CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL SERVICE FOR POWER TOOLS, ILLUMINATION, ETC., ELECTRICAL ENERGY WILL BE PAID FOR BY THE OWNER.
  - B. CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING REQUIRED DURING THE PROGRESS OF THE WORK TO ADEQUATELY ILLUMINATE WORKING AREA.
  - C. ALL TEMPORARY ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS BIDDING, BUT ONLY AS VOLUNTARY ALTERNATES AND THEY MUST MEET THE LETTER AND INTENT OF THE MASSACHUSETTS ELECTRICAL CODE, OSHA, AND ANY LOCAL REGULATIONS. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS, CHARGES, ETC..
  - D. THE TEMPORARY ELECTRICAL SERVICE AS WELL AS ALL LIGHT FIXTURES, RECEPTACLES, CABLES ETC. SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE.
39. RECORD DRAWINGS
  - A. DRAWINGS & SUBMIT THEM TO THE ARCHITECT FOR APPROVAL. CONTRACTOR SHALL PREPARE A COMPLETE SET OF RECORD CONSTRUCTION
40. SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 10 DAYS AFTER AWARD OF CONTRACT, CHECK, STAMP, AND MARK SUBMITTALS WITH PROJECT NAME BEFORE TRANSMITTING TO THE ARCHITECT.
41. WHERE MATERIAL IS CALLED OUT IN THE LEGEND, FIXTURE SCHEDULE, NOTES, SPECIFICATIONS, OR ELSEWHERE BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OF DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL THE ARCHITECT.
42. FINAL INSPECTION
  - A. WHEN THE WORK ON THIS PROJECT HAS BEEN COMPLETED AND IS READY FOR FINAL INSPECTION, SUCH INSPECTION WILL BE MADE. AT THIS TIME, THE CONTRACTOR FOR THE WORK OF THIS SECTION SHALL DEMONSTRATE THAT THE REQUIREMENTS OF THESE SPECIFICATIONS HAVE BEEN MET. WRITTEN RESULTS FOR ALL TESTS SHALL BE SUBMITTED TO THE ENGINEER.



69 Beacon Street  
Boston, MA 02108  
(617) 723-8144

**BREWER FOUNTAIN  
VAULT REPLACEMENT**  
 Boston Common Boston, Massachusetts

REVISIONS		
NO.	DATE	REMARKS

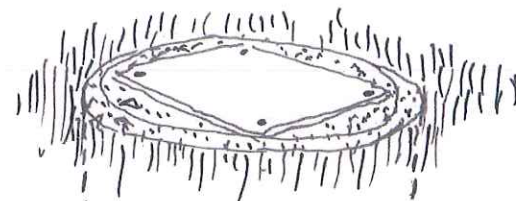
**RONALD W. BUIA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUA@BUIAENGINEERING.COM

DRAWING TITLE  
**Electrical Specifications**

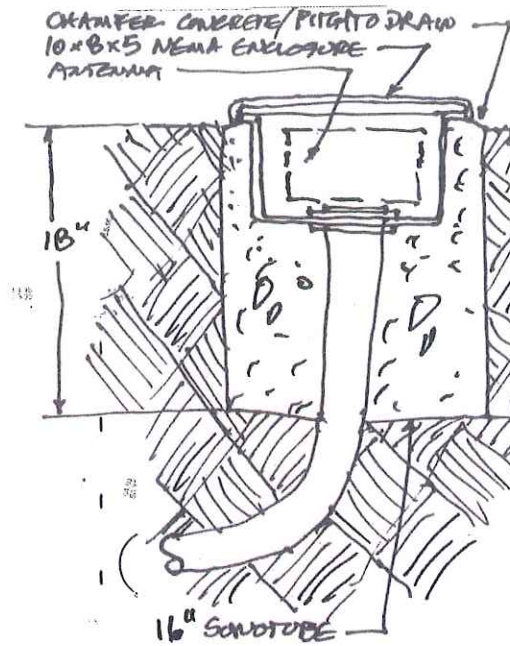
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DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 1/18/19  
SCALE: AS NOTED  
PROJECT NO.: 270118  
DRAWING NO.  
**E3**



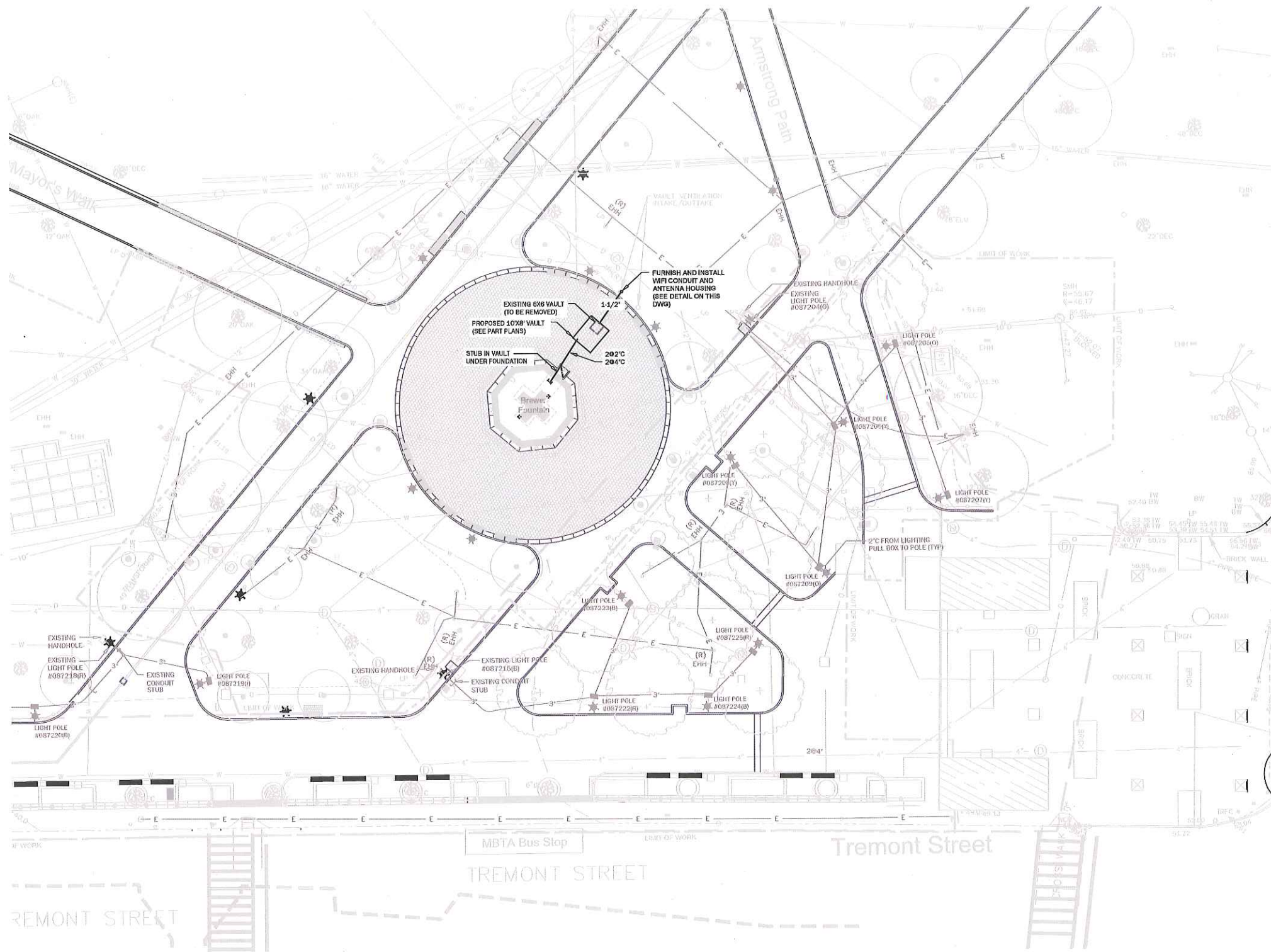


PERSPECTIVE SKETCH 1.  
N.P.S.



SECTION FOR CONCEPT  
N.P.S.

WiFi Install and Enclosure  
Detail Sketch



**FRIENDS**  
OF THE  
PUBLIC GARDEN

69 Beacon Street  
Boston, MA 02108  
(617) 723-8144

**BREWER FOUNTAIN  
VAULT REPLACEMENT**

Boston Common Boston, Massachusetts

REVISIONS	
NO.	DATE

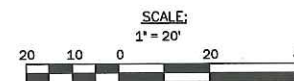
**RONALD W. BUIA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUJA@BUJAENGINEERING.COM

DRAWING TITLE  
**Site Power Plan**

SEAL NORTH

DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 2/5/19  
SCALE: 1"=20'  
PROJECT NO.: 270118

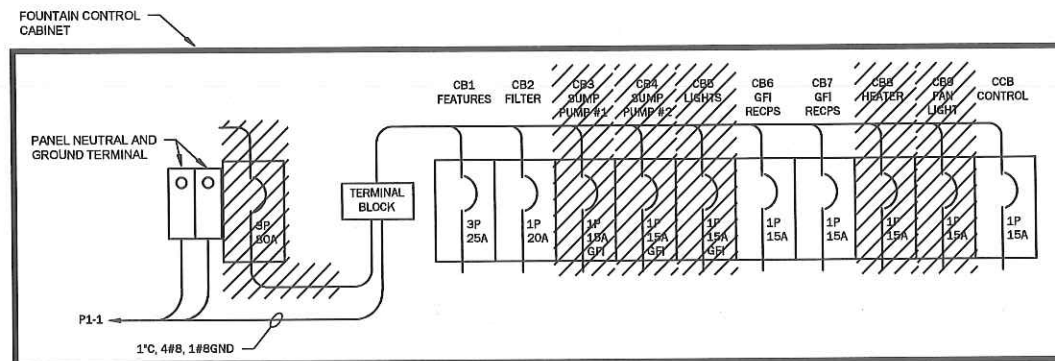
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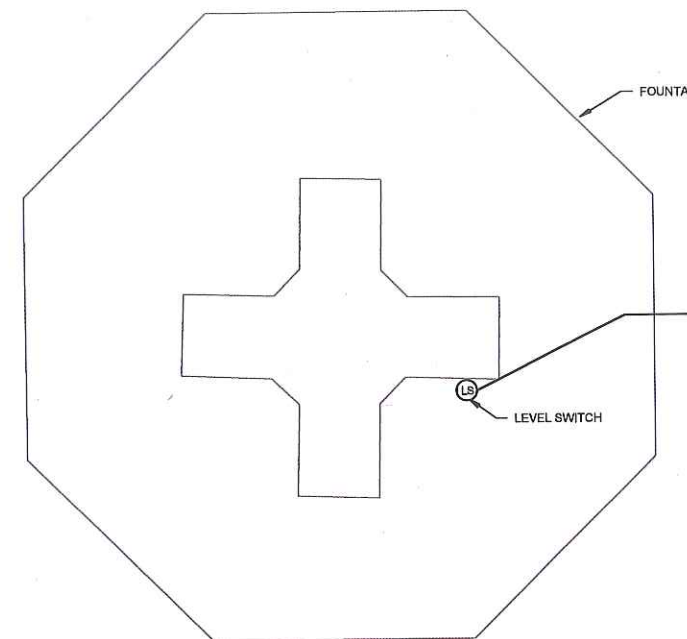
PANEL 'P1'		FOUNTAIN VAULT		22KAIC	
CKT NO	BKR SIZE	LOAD DESCRIPTION	LOAD DESCRIPTION	BKR SIZE	CKT NO
1	50	FOUNTAIN CONTROL PANEL	FOUNTAIN LIGHTING CONTROL PANEL	15	2 *
3	-	FOUNTAIN LIGHTING CONTROL PANEL	FOUNTAIN LIGHTING CONTROL PANEL	15	4 *
5	-	FOUNTAIN LIGHTING CONTROL PANEL	FOUNTAIN LIGHTING CONTROL PANEL	15	6 *
7	20	VAULT LIGHTING	VAULT DEHUMIDIFIER	20	8
9	20	VAULT EXHAUST FAN	VAULT UNIT HEATER	20	10
11	20	VAULT GFI RECEPTACLES	-	-	12
13	20	UV LIGHT	SUMP PUMP NO. 1 GFI RECP	15	14
15	20	SPARE	SUMP PUMP NO. 2 GFI RECP	15	16
17	-	SPARE	SPARE	20	18
19	-	SPARE	SPARE	20	20
21	20	SPARE	SPARE	20	22
23	20	SPARE	SPARE	20	24

\*GFI CIRCUIT BREAKER



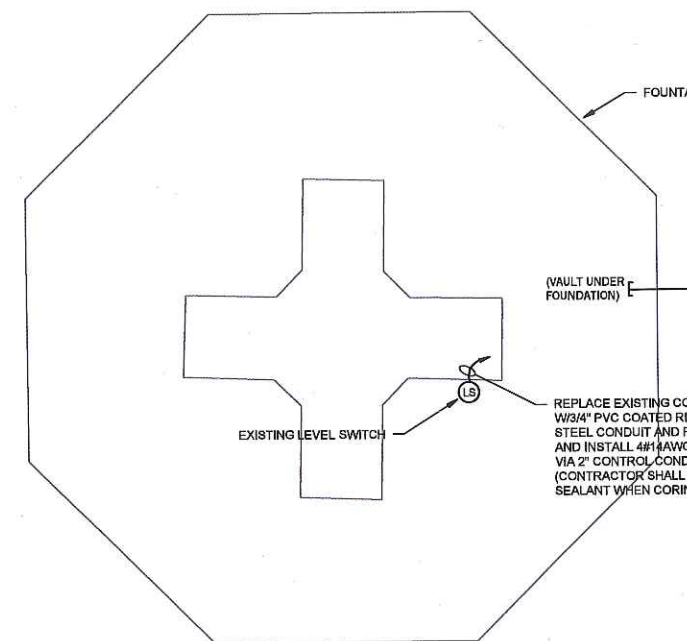
EXISTING DELTA FOUNTAIN CONTROL PANEL 'FCP'

RECONNECT CIRCUIT BREAKERS NO'S CB1, CB2, CB6, CB7, CCB TO EXISTING LOADS. CIRCUIT BREAKERS SHOWN HATCHED SHALL BE MADE SPARE AND THEIR RESPECTIVE LOADS SHALL BE RE-POWERED FROM PANELBOARD 'P1'. DELTA FOUNTAINS - JACKSONVILLE, FL - TEL: (904)886-9030



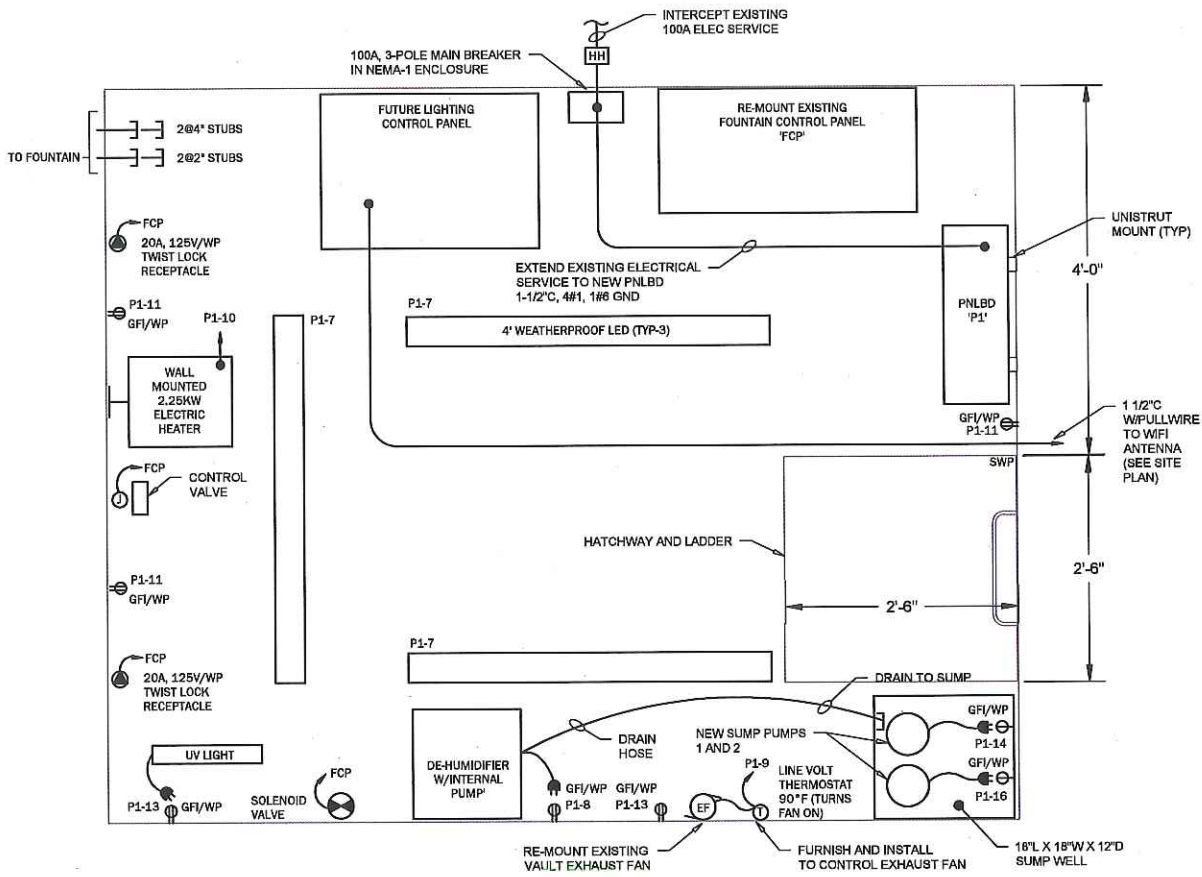
EXISTING FOUNTAIN / VAULT EQUIPMENT LAYOUT

NOT TO SCALE



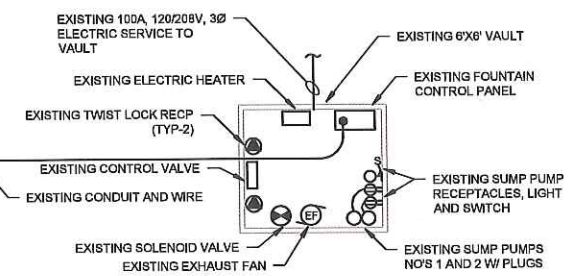
PROPOSED FOUNTAIN / VAULT PANEL AND CONDUIT LAYOUT

NOT TO SCALE



VAULT POWER PLAN

SCALE: 1"=1'-0"



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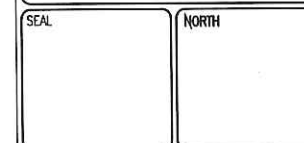
**BREWER FOUNTAIN  
VAULT REPLACEMENT**

Boston Common Boston, Massachusetts

REVISIONS	NO.	DATE	REMARKS

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Andover, MA 01810  
TEL: 978.475.5184  
RBUJA@BUJAENGINEERING.COM

DRAWING TITLE  
**Vault Details**



DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 2/5/19  
SCALE: AS NOTED  
PROJECT NO.: 270118

**E2**



## ELECTRICAL SPECIFICATIONS

1. FURNISH AND INSTALL ALL LABOR, MATERIALS, APPLIANCES, EQUIPMENT TOOLS, TRANSPORTATION, SUPERVISION AND SERVICES REQUIRED TO ELECTRICAL WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
2. THE ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FURNISHING OF MATERIALS AND INSTALLATION OF THE FOLLOWING IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
  1. HANDHOLES
  2. WIRING DEVICES
  3. LIGHTING SYSTEMS
  4. CONDUIT, WIREWAYS, RACEWAYS, ETC.
  5. BRANCH CIRCUIT WIRING
  6. PANELBOARD
  7. POWER WIRING
  8. GROUNDING SYSTEM
  9. WIRE AND CABLE
  10. ELECTRIC UNIT HEATER
  11. DEHUMIDIFIER
  12. MAIN CIRCUIT BREAKER
  13. DEMOLITION OF EXISTING EQUIPMENT
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE MEC, MASSACHUSETTS STATE BUILDING CODE, OSHA, ADA, ALL LOCAL CODES AND LOCAL UTILITY CO. STANDARDS & SPECIFICATIONS
4. CONTRACTOR SHALL PAY FOR ALL INSPECTION FEES, LICENSES AND PERMITS.
5. COORDINATE ANY REQUIRED POWER INTERRUPTIONS AND PERFORM WORK AT TIME CONVENIENT TO OWNER. INCLUDE COSTS FOR REQUIRED PREMIUM TIME.
6. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT FOR APPROVAL BEFORE PURCHASING SAME. ALL EQUIPMENT SHALL BEAR THE LABEL OF A NATIONALLY-RECOGNIZED TESTING LABORATORY.
7. PANELBOARD
  - A. FURNISH AND INSTALL THE PANELBOARD FOR LIGHTING AND POWER AS INDICATED AND AS SCHEDULED ON THE DRAWINGS.
  - B. PANELBOARD SHALL BE OF DEAD FRONT CONSTRUCTION WITH THERMAL MAGNETIC CIRCUIT BREAKERS AND SHALL CONFORM TO THE REQUIREMENTS OF NEMA AND MEC. PANELBOARD SHALL BE UL APPROVED AND LABELED.
  - C. PANELBOARD SHALL CONSIST OF CIRCUIT BREAKERS, CODE GAUGE STEEL CABINET OR BACKBOARD, BUS ASSEMBLY, TRIM WITH CODE GAUGE GALVANIZED STEEL DOORS, GUTTER SPACE SHALL BE A MINIMUM OF 4" ON ALL SIDES.
  - D. CIRCUIT BREAKERS OF THE QUICK-MAKE, QUICK BREAK TRIP FREE THERMAL MAGNETIC TYPE WITH CHARACTERISTICS AS SCHEDULED. AUTOMATIC TRIPPING SHALL BE CLEARLY INDICATED BY THE OPERATING HANDLE ASSUMING A MID-POSITION BETWEEN ON AND OFF. TWO AND THREE POLE BREAKERS SHALL HAVE COMMON TRIP. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.
  - E. PANELBOARD SHALL BE PROVIDED WITH SOLID NEUTRALS. IN ADDITION, GROUNDING BUS WITH LUGS SHALL BE PROVIDED ON ALL PANELBOARDS MEETING UL AND NEMA STANDARDS. ALL BUSSWORK SHALL BE COPPER.
  - F. TWO MILLED TYPE KEYS SHALL BE PROVIDED WITH PANEL AND ALL PANEL LOCKS SHALL BE KEYS ALIKE.
  - G. BUS ARRANGEMENTS SHALL BE SEQUENCE PHASED SUCH THAT ADJACENT SINGLE POLE BREAKERS SHALL BE CONNECTED TO OPPOSITE PHASES IN SUCH A MANNER, SUCH THAT ANY TWO OR THREE POLE BREAKERS COULD BE INSTALLED ANYWHERE IN THE PANELBOARD.
8. LIGHTING
  - A. FURNISH AND INSTALL LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS. THE LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE VAULT STRUCTURE.
9. MECHANICAL SUSPENSION CHANNEL
  - A. MECHANICAL SUSPENSION CHANNEL SHALL BE FURNISHED AND INSTALLED TO SUPPORT ELECTRICAL EQUIPMENT (PANELBOARDS,

- DISCONNECT SWITCHES, STARTERS, ETC.).
- B. CHANNEL SHALL BE DESIGNED BY UNISTRUT TYPE P3600. ALL FASTENERS AND FITTINGS SHALL BE SUPPLIED TO PROVIDE A COMPLETE INSTALLATION AS REQUIRED.
- C. ALL CHANNEL AND FITTINGS SHALL BE FURNISHED WITH THE MANUFACTURERS STANDARD RUSTPROOF FINISH.
10. GROUNDING
  - A. PROVIDE GROUNDING FOR ALL ELECTRICAL EQUIPMENT AND DEVICES IN ACCORDANCE WITH THE OWNERS STANDARDS AND THE APPLICABLE REQUIREMENTS OF THE MASSACHUSETTS ELECTRICAL CODE AND AS INDICATED ON THE DRAWINGS.
  - B. BONDING JUMPERS SHALL BE INSTALLED AT ALL LOCATIONS REQUIRED BY MEC.
  - C. A GREEN GROUNDING CONDUCTOR OF PROPER SIZE SHALL BE INSTALLED AND CONNECTED WITH THE FEEDER CIRCUIT CONDUCTORS TO ALL PANELBOARDS, MOTOR FRAMES, ETC. CONNECTIONS TO THE EQUIPMENT MAY BE BOLTED OR SCREWED USING CORROSION RESISTING BOLTS, SCREWS, A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL BRANCH AND FEEDER CIRCUITS.
  - D. ALL EXPOSED CONNECTIONS SHALL BE MADE BY GROUNDED GROUNDING CLAMPS.
11. ELECTRIC HEATER
  - A. REZNOR EGW ELECTRIC FORCED AIR HEATER, 2.5KW, 208V, 1Ø W/MONITORING BRACKET AND BUILD IN THERMOSTAT OR EQUAL
12. DEHUMIDIFIER
  - A. 7Ø PINT DEHUMIDIFIER WITH INTERNAL PUMP AND 2Ø DRAIN HOSE.
13. RACEWAYS
  - A. ALL VAULT WIRING SHOWN RUN IN CONDUIT ON THE DRAWINGS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
  - B. ALL EXPOSED EXTERIOR CONDUIT RUNS OUTSIDE THE VAULT SHALL BE PVC COATED GALVANIZED STEEL CONDUIT.
  - C. UNDERGROUND CONDUIT SHALL BE SCHEDULE-40 PVC.
  - D. LIQUID-TITE FLEXIBLE METAL CONDUIT SHALL BE USED FOR CONNECTION TO MOTORIZED EQUIPMENT, WITH AN INTERWOVEN GROUND CONDUCTOR (1 1/4" MAXIMUM DIAMETER).
  - E. SET SCREW-TYPE CONNECTORS AND COUPLINGS FOR METAL CONDUIT WILL NOT BE ALLOWED.
14. HANGERS & SUPPORTS
  - A. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, SLEEVES, CLAMPS, ETC., AS REQUIRED AND AS INDICATED ON THE DRAWINGS.
15. OUTLET BOXES
  - A. BOXES SHALL BE FS OR FD SERIES, WITH CADMIUM PLATED COVERS. STEEL BOXES WILL NOT BE PERMITTED.
16. PULL & JUNCTION BOXES
  - A. PULL BOXES SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL AND SHALL BE INSTALLED AT POINTS WHETHER INDICATED ON THE DRAWINGS OR NOT, MINIMUM DIMENSION SHALL NOT BE LESS THAN MEC REQUIREMENTS.
17. FEEDER & BRANCH CIRCUIT CONDUCTORS
  - A. ALL FEEDER, BRANCH CIRCUIT, REMOTE CONTROL, SIGNAL CIRCUIT AND INTERLOCK WIRING SHALL BE MANUFACTURED OF COPPER AND RATED 600 VOLTS.
  - B. MINIMUM SIZE WIRE FOR BRANCH CIRCUIT AND POWER WIRING SHALL BE #12 AWG.
  - C. INSULATION TYPE SHALL BE XHHW FOR FEEDERS AND POWER WIRING; THHN/THWN FOR LIGHTING, REMOTE CONTROL, AND SIGNAL CIRCUITS.
  - D. INSULATION TYPE SHALL BE XHHW FOR FEEDERS AND POWER WIRING; THHN/THWN FOR LIGHTING, REMOTE CONTROL, AND SIGNAL CIRCUITS.
  - E. ALL WIRING SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE FOR CONSTRUCTION AND USE.
18. WIRING DEVICES
  - A. FURNISH AND INSTALL WIRING DEVICES, AND SPECIFICATION GRADE, COMPLETE WITH ALL ACCESSORIES AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREUNDER. ALL WIRING DEVICES SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER EXCEPT WHERE SPECIFICALLY

- STATED OTHERWISE.
- B. DUPLEX RECEPTACLES SHALL BE NYLON SPECIFICATION GRADE, U-GROUND, RATED FOR 125VAC, 2ØA -MANUFACTURED BY BRYANT CAT. NO. 5362-I OR EQUAL
- C. SWITCHES SHALL BE NYLON SPECIFICATION GRADE, AC TYPE, RATED 2Ø AMPS FOR 12Ø/277 VOLTS, BRYANT CAT. NUMBERS 4ØØ1-I, 4ØØ3-I, 4ØØ4-I
- D. DUPLEX RECEPTACLES WITH GROUND FAULT INTERRUPTER CHARACTERISTICS SHALL BE INSTALLED WHERE SPECIFIED ON THE DRAWINGS. ALL WET AREAS SHALL BE GROUND FAULT TYPE WHETHER INDICATED ON THE DRAWINGS OR NOT. GROUND FAULT RECEPTACLES SHALL BE NYLON MANUFACTURED BY BRYANT CAT. NO. 5362-IGI OR EQUAL.
- E. TWIST LOCK RECEPTACLES SHALL BE AS INDICATED ON THE DRAWINGS.
19. FURNISH AND INSTALL NAMEPLATES ON ALL ELECTRICAL EQUIPMENT (SCREW ON TYPE).
20. ALL EQUIPMENT EXPOSED TO MOISTURE SHALL BE OF THE APPROPRIATE (NEMA) WEATHERPROOF TYPE. SEAL ALL CONDUITS THAT PENETRATE EXTERIOR WALLS.
21. PERFORM ALL TESTS REQUIRED AND VERIFY CORRECT ROTATION OF ALL MOTORIZED EQUIPMENT, PHASE BALANCE ALL PANELBOARDS IN THE FIELD.
  - A. COMPLETE TEST AND INSPECTION RECORDS SHALL BE MADE AND TESTED. ALL READINGS TAKEN SHALL BE RECORDED. TEST REPORTS SHALL BE SUBMITTED TO THE OWNERS APPROVAL.
  - B. FURNISH NECESSARY METERS, INSTRUMENTS, TEMPORARY WIRING AND LABOR TO PERFORM ALL REQUIRED TESTS AND ADJUSTMENTS OF EQUIPMENT AND WIRING INSTALLED AND/OR CONNECTED UNDER THIS CONTRACT, INCLUDING ELECTRICAL EQUIPMENT FURNISHED BY OTHERS, TO DETERMINE PROPER POLARITY, PHASING, FREEDOM FROM GROUND AND SHORTS AND OPERATION OF EQUIPMENT. ALL MEASURING INSTRUMENTS SHALL BE PROPERLY CALIBRATED.
  - C. ALL MATERIALS AND MANNER OF INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF STATE AND LOCAL AUTHORITIES, THE UTILITY COMPANY AND THE CODES OF NATIONAL BOARD OF FIRE UNDERWRITERS.
  - D. WHENEVER ANY OF THE AFOREMENTIONED CODES, LAWS, ETC., REQUIRE THAT ANY WORK BE TESTED OR APPROVED, THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR ACCESS AND FOR INSPECTION, ALL AT HIS OWN EXPENSE.
  - E. WIRING
    - a. THE CONTRACTOR SHALL CORRECT OR REPLACE ANY NOMINAL CURRENT-CARRYING CIRCUIT WHICH IS DEFECTIVE OR GROUNDED AND HE SHALL ALSO CORRECT ALL OTHER TROUBLES ENCOUNTERED BY THESE TESTS. ALL DEFECTS WHETHER THROUGH FAULTY WORKMANSHIP OR MATERIAL FURNISHED SHALL BE CORRECTED UNDER THIS SECTION AT THE CONTRACTORS EXPENSE
22. ALL ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. DEFECTS SHALL BE CORRECTED WITHOUT CHARGE, INCLUDING ALL PATCHING, PAINTING AND OTHER INCIDENTAL REPAIRS AND REPLACEMENTS. COORDINATE ALL WORK WITH OTHER TRADES, FURNISH AND INSTALL ALL POWER AND CONTROL WIRING FOR A COMPLETE INSTALLATION.
23. FOR EXACT LOCATION OF MECHANICAL EQUIPMENT SEE MECHANICAL DRAWINGS.
24. ALL ELECTRICAL EQUIPMENT, MATERIALS, ETC. STORED ON SITE SHALL BE STORED IN SUCH A MANNER THAT IT IS SAFE FROM DAMAGE BY MOISTURE, IMPACT, ETC.
25. THE CONTRACTOR SHALL PERFORM HIS WORK IN A NEAT AND ORDERLY, WORKMANLIKE MANNER. ALL REFUSE, DIRT, AND DEBRIS RESULTANT FROM HIS WORK SHALL BE REMOVED AND PROPERLY DISPOSED OF AT THE END OF THE DAY.
  - A. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETED, AND SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM INCLUDING ANY DEMOLITION, PANELBOARDS, CIRCUIT BREAKERS, LIGHTING FIXTURES, CONDUITS, RACEWAYS, WIRING, JUNCTION BOXES, RECEPTACLES, SWITCHES, SUPPORTS, AND ALL OTHER NECESSARY APPURTENANCES REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM, INCLUDING THE HANGING AND LAMPING OF ALL FIXTURES.
26. THE CONTRACTOR IS REQUIRED TO COORDINATE HIS WORK WITH ALL UTILITIES INVOLVED.
27. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE MANUFACTURERS INSTALLATION RECOMMENDATIONS AND DIRECTIONS FOR ALL EQUIPMENT AND MATERIALS USED.

28. IF CONFLICTS ARISE FROM EQUIPMENT INSTALLATION, SCHEDULING, ETC., THESE SHALL BE RESOLVED AS DIRECTED BY THE OWNER TO THE ENTIRE SATISFACTION OF THE OWNER.
29. UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO DEMONSTRATE PROPER OPERATION OF ALL SYSTEMS AND EQUIPMENT IN THE PRESENCE OF THE OWNER AND THE ENGINEER PRIOR TO ACCEPTANCE BY THE OWNER. WRITTEN RESULTS FOR ALL TESTS AND OPERATIONS SHALL BE SUBMITTED TO THE OWNER OR OWNERS AGENT (ENGINEER).
30. ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS AND SHALL CONFORM TO THE NEMA, MASSACHUSETTS ELECTRIC CODE (MEC) AND UNDERWRITERS LABORATORIES INC. STANDARDS IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION.
31. ANY MATERIAL, ITEM OR WORK NOT SHOWN ON THE DRAWINGS BUT MENTIONED ON THE SPECIFICATIONS OR VICE-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE INCLUDED IN THE CONTRACTORS BID, AND SUCH ITEMS SHALL NOT BE A CAUSE FOR EXTRA WORK OR EXTRA COST TO OWNER.
32. THE CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS AND EXISTING EQUIPMENT.
33. TEMPORARY ELECTRIC SERVICE
  - A. CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL SERVICE FOR POWER TOOLS, ILLUMINATION, ETC., ELECTRICAL ENERGY WILL BE PAID FOR BY THE OWNER.
  - B. CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING REQUIRED DURING THE PROGRESS OF THE WORK TO ADEQUATELY ILLUMINATE WORKING AREA.
  - C. ALL TEMPORARY ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS BIDDING, BUT ONLY AS VOLUNTARY ALTERNATES AND THEY MUST MEET THE LETTER AND INTENT OF THE MASSACHUSETTS ELECTRICAL CODE, OSHA, AND ANY LOCAL REGULATIONS. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS, CHARGES, ETC..
  - D. THE TEMPORARY ELECTRICAL SERVICE AS WELL AS ALL LIGHT FIXTURES, RECEPTACLES, CABLES ETC. SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE.
34. RECORD DRAWINGS
  - A. DRAWINGS & SUBMIT THEM TO THE ARCHITECT FOR APPROVAL. CONTRACTOR SHALL PREPARE A COMPLETE SET OF RECORD CONSTRUCTION
35. SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 10 DAYS AFTER AWARD OF CONTRACT, CHECK, STAMP, AND MARK SUBMITTALS WITH PROJECT NAME BEFORE TRANSMITTING TO THE ARCHITECT.
36. WHERE MATERIAL IS CALLED OUT IN THE LEGEND, FIXTURE SCHEDULE, NOTES, SPECIFICATIONS, OR ELSEWHERE BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OF DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL THE ARCHITECT.
37. FINAL INSPECTION
  - A. WHEN THE WORK ON THIS PROJECT HAS BEEN COMPLETED AND IS READY FOR FINAL INSPECTION, SUCH INSPECTION WILL BE MADE. AT THIS TIME, THE CONTRACTOR FOR THE WORK OF THIS SECTION SHALL DEMONSTRATE THAT THE REQUIREMENTS OF THESE SPECIFICATIONS HAVE BEEN MET. WRITTEN RESULTS FOR ALL TESTS SHALL BE SUBMITTED TO THE ENGINEER.



69 Beacon Street  
Boston, MA 02108  
(617) 723-8144

**BREWER FOUNTAIN  
VAULT REPLACEMENT**  
 Boston Common Boston, Massachusetts

REVISIONS		REMARKS
NO.	DATE	

**RONALD W. BUIA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUIA@BUIAENGINEERING.COM

DRAWING TITLE  
**Electrical Specifications**

SEAL	NORTH
------	-------

DRAWN BY: KML	DRAWING NO.
CHECKED BY: RWB	<b>E3</b>
DATE: 2/5/19	
SCALE: AS NOTED	
PROJECT NO.: 270118	





**FRIENDS**  
OF THE  
PUBLIC GARDEN

69 Beacon Street  
Boston, MA 02108  
Phone: 617.723.8144

Barbizon Light of New England Submittal Package for:

# Brewer Fountain

Barbizon Light of New England Order #: B180020

Barbizon Light of New England Project Manager: Kyle Costa



3 Draper St. Woburn, MA  
Phone: 1(800) 935-3920

Rev D	RCS	1/17/2019
Rev C	RCS	11/26/2018
Rev B	RCS	9/18/2018
Rev A	RCS	5/20/2018
Revision	By	Date

Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:  
**Drawing  
Index**

Drawing Number:

# LC-1

Submittal Package Contents:

- Bill of Materials
- Rack Detail – Closed
- Rack Detail – Open
- Lighting Control System Riser
- Control Equipment Tray Plan View
- LED Driver Tray Plan View

Any questions concerning this system should be directed to the project manager who can be reached at our offices:

The phone number is: 781-935-3920

The fax number is: 781-935-9273

***For system energization, contact your Project Manager at least three weeks prior to your requested date.***





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Rev D	RCS	1/17/2019
Rev C	RCS	11/26/2018
Rev B	RCS	9/18/2018
Rev A	RCS	5/20/2018
Revision	By	Date

Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:

**Bill of Materials**

Drawing Number:

**LC-2**

Item	Qty	Description
------	-----	-------------

**Section I - Control Equipment**

1.1		<u>Mosaic</u>
	1	Mosaic Show Controller - 1 Universe
	2	Mosaic 1-Gang, 8-Button Wall Station
	1	Rack Mount Faceplate for 8-Button Station, 3U
1.2		<u>Networking &amp; Accessories</u>
	1	NEMA 3R Rated Heated & Cooled Control Enclosure - 16RU Rack Dimensions: 32" Tall x 28" Wide x 22" Deep
	1	UFA Rackshelf, 14.5" Deep
	1	UFA Face Plate, 3U
	2	500mm x 35mm x 7.5mm DIN-Rail
	1	DIN Powersupply 48V 100W
	1	8-Port PoE+ Industrial Switch (IP30) (24V/120W Max)
	1	DIN-Rail Adapter
	4	Keystone DIN-Rail Mounting Module
	1	CAT6 RJ45 Keystone Jack - Full Set
	4	CAT6 Patch Cable 1'
	1	Cradle Point Wireless Router
	1	Cradle Point Antenna
	1	DIN Powersupply 12V 30W
1.3		<u>LED Driver Accessories</u>
	5	UFA Rackshelf, 14.5" Deep
	5	UFA Face Plate, 2U
	4	500mm x 35mm x 7.5mm DIN-Rail
	12	Terminal Block Connector
	12	Terminal Strip Jumper
	28	DIN Powersupply 12V 100W

**Section II - Programing & Site Work**

2.1	1	Overnight On-Site Progmaing Session - Not to Exceed 3 Days
2.2	1	Control System Low Voltage Terminations
2.3	1	Mosaic Controller Configuration & Pre-Programming

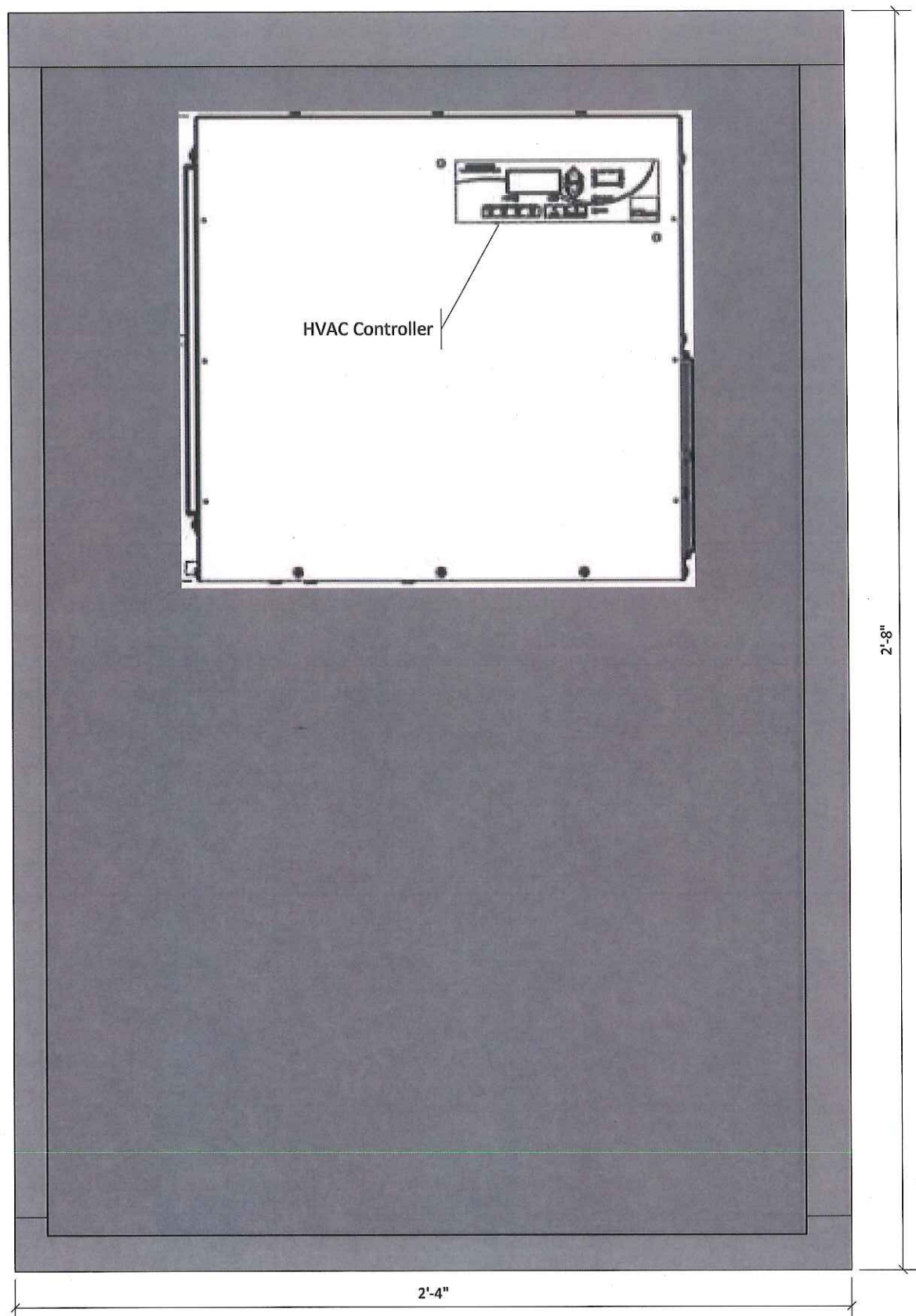
Item	Qty	Description
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**Section III - Project Notes**

		This quote is based on Barbizon's interpretation the project and is limited to the bill of materials and/or scope of work detailed above.
		Pricing reflects a 3% discount for payment by cash or check within stated terms or by credit card at the time of order. If these pricing terms are not met, this discount will be forfeited by the customer.
		Included Services:
3.1		Project management and coordination.
3.2		Drawings for approval within 6-weeks upon acceptance of order.
3.3		Production requires 8 to 12 weeks for delivery of equipment after receipt of written approval and release.
3.4		2-year limited manufacturer's warranty on ETC parts and workmanship. 1-year warranty on all other manufacturers.
3.5		Services of a factory engineer to test and energize system and instruct user personnel.
3.6		All work requires 21 days notice. Work completed M-F during normal working hours.
3.7		Complete set of As-Built drawings and Operation manuals.
3.8		Freight allowed to the job site. Expedited freight is not included.
3.9		Barbizon's standard insurance applies, certificates available upon request
3.10		Sale subject to Barbizon Terms & Conditions, found at <a href="http://www.barbizon.com">www.barbizon.com</a>
		Exclusions:
3.11		Contents of the General Conditions, related sections or other drawings are not included.
3.12		Conduit and wire not included.
3.13		Asbestos remediation, if called for or encountered is not included.
3.14		Painting and/or Patching of walls or ceilings is not included
3.15		Trash disposal & removal is not included.
3.16		Disconnects, breaker panels and feeders not included.
3.17		Installation of dimmung and control system not included.
3.18		Sales tax, bonding, fees and permits not included.

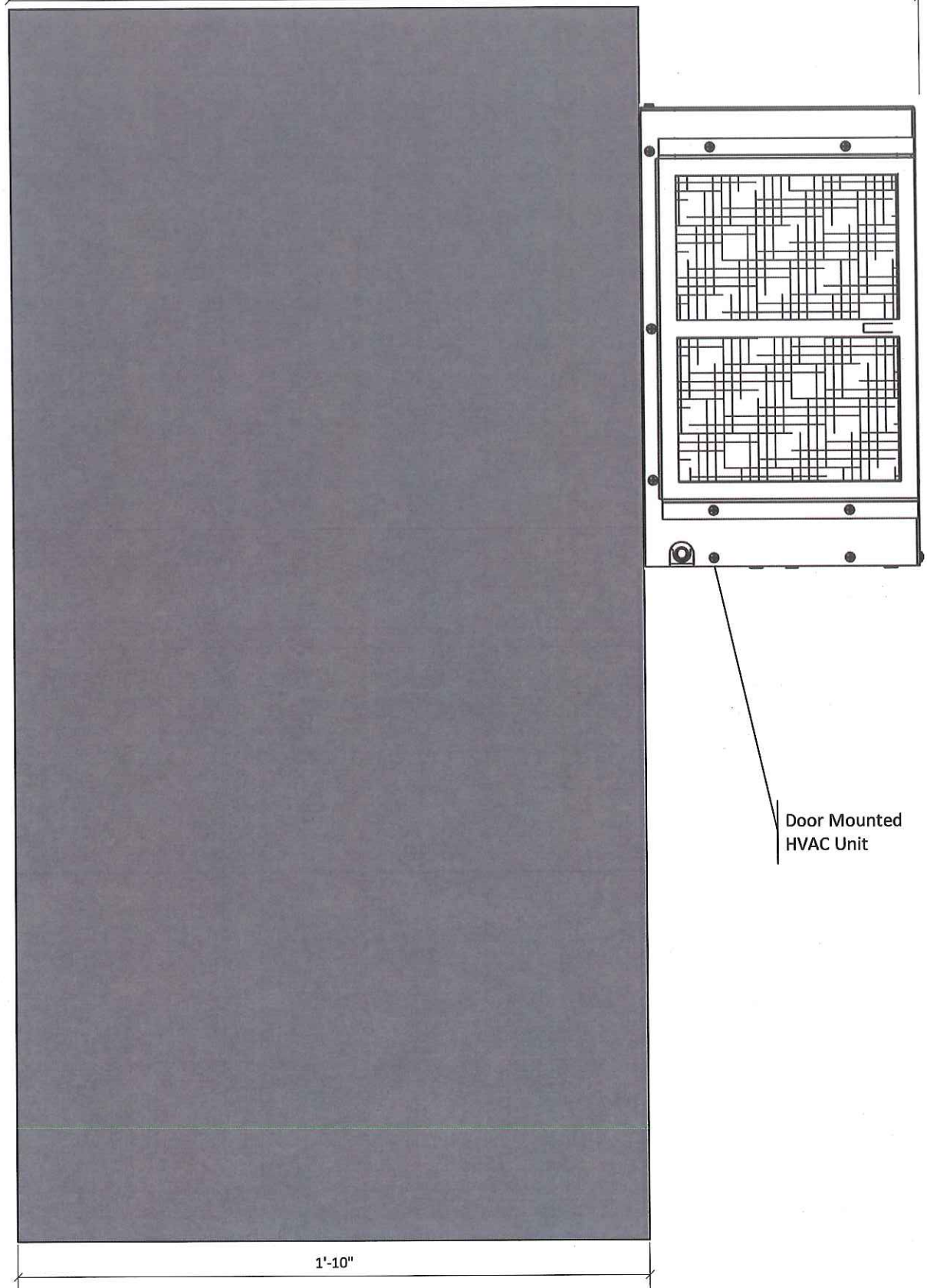


# Climate Controlled Enclosure



HVAC Controller

Front View



Door Mounted HVAC Unit

Side View



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69 Beacon Street  
Boston, MA 02108  
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3 Draper St. Woburn, MA  
Phone: 1(800) 935-3920

Revision	By	Date
Rev D	RCS	1/17/2019
Rev C	RCS	11/26/2018
Rev B	RCS	9/18/2018
Rev A	RCS	5/20/2018

Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:  
**Rack Detail –  
Closed**

Drawing Number:

**LC-3**





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69 Beacon Street  
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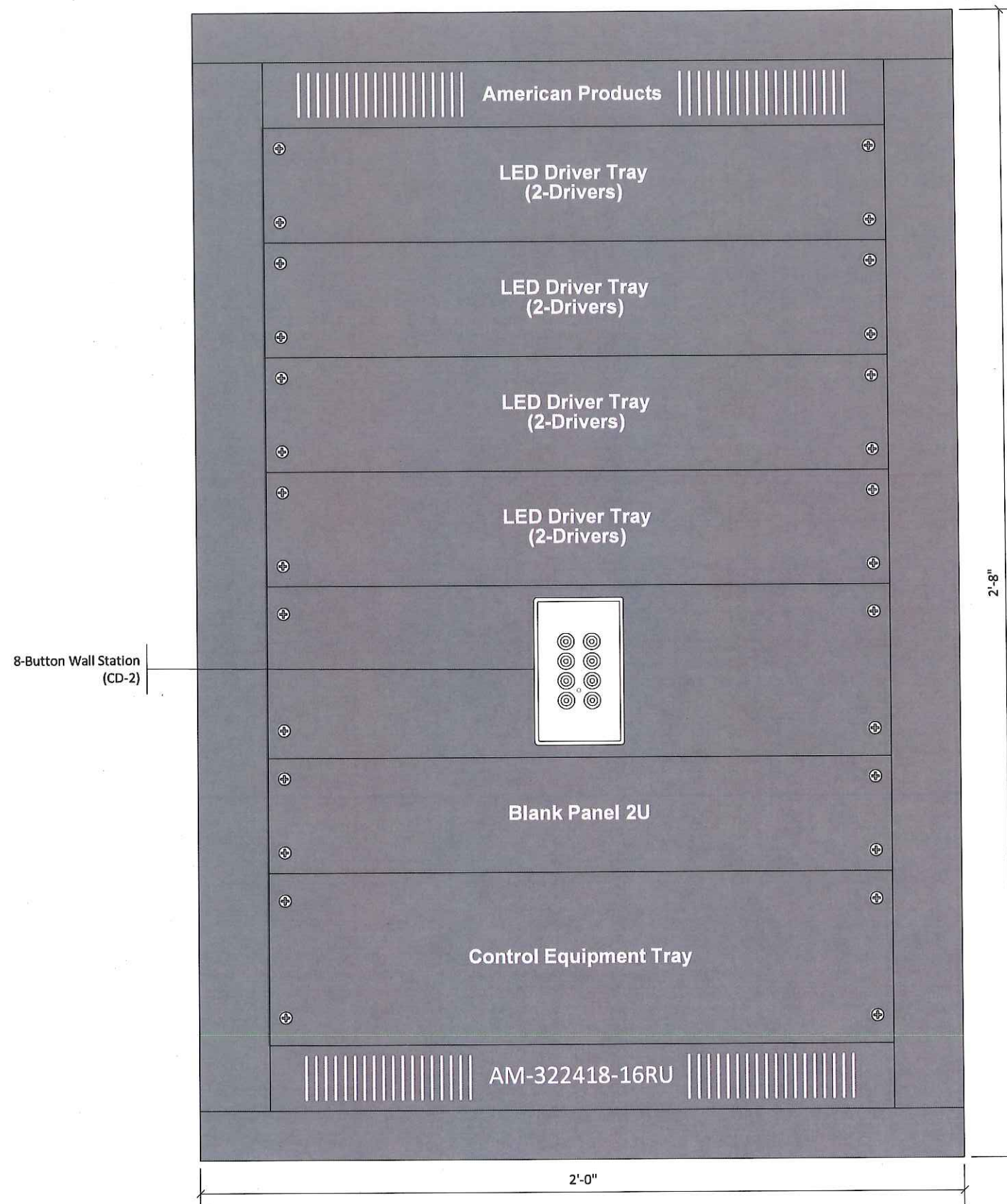
Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:  
**Rack Detail –  
Open**

Drawing Number:

**LC-4**





Rev D	RCS	1/17/2019
Rev C	RCS	11/26/2018
Rev B	RCS	9/18/2018
Rev A	RCS	5/20/2018
Revision	By	Date

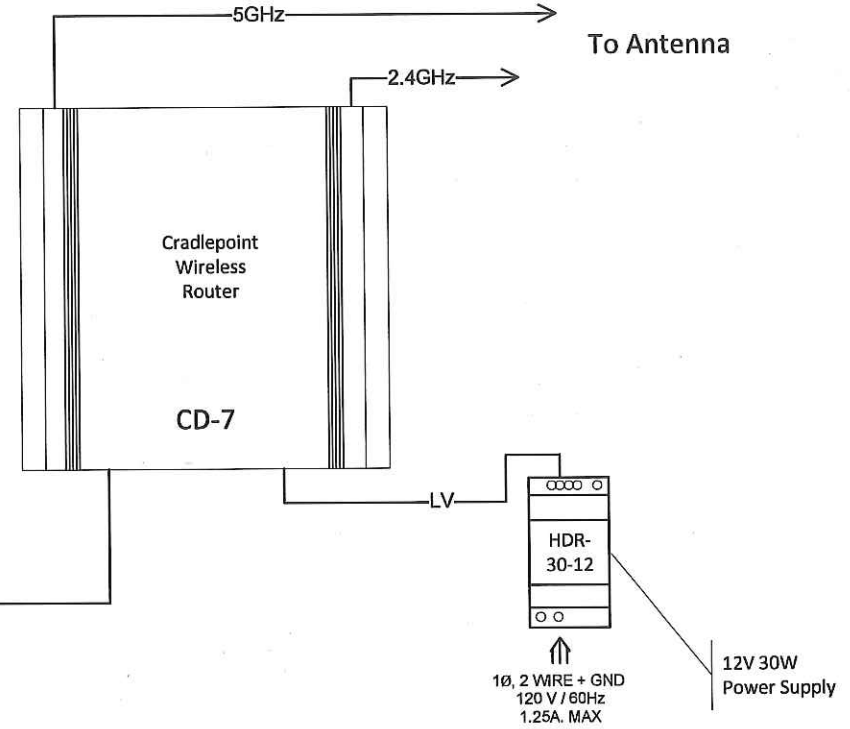
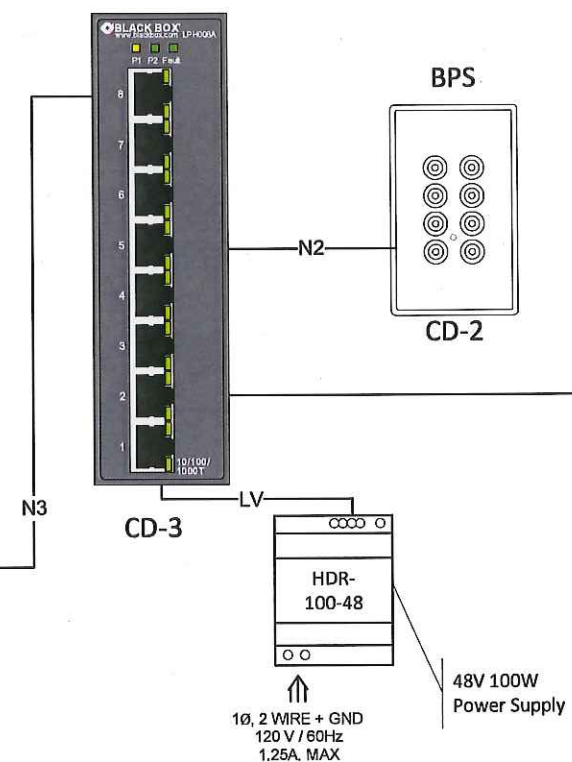
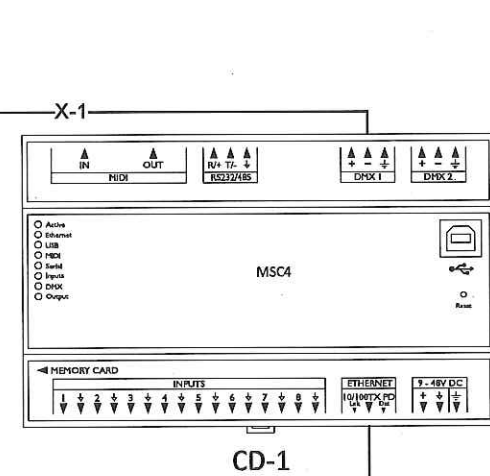
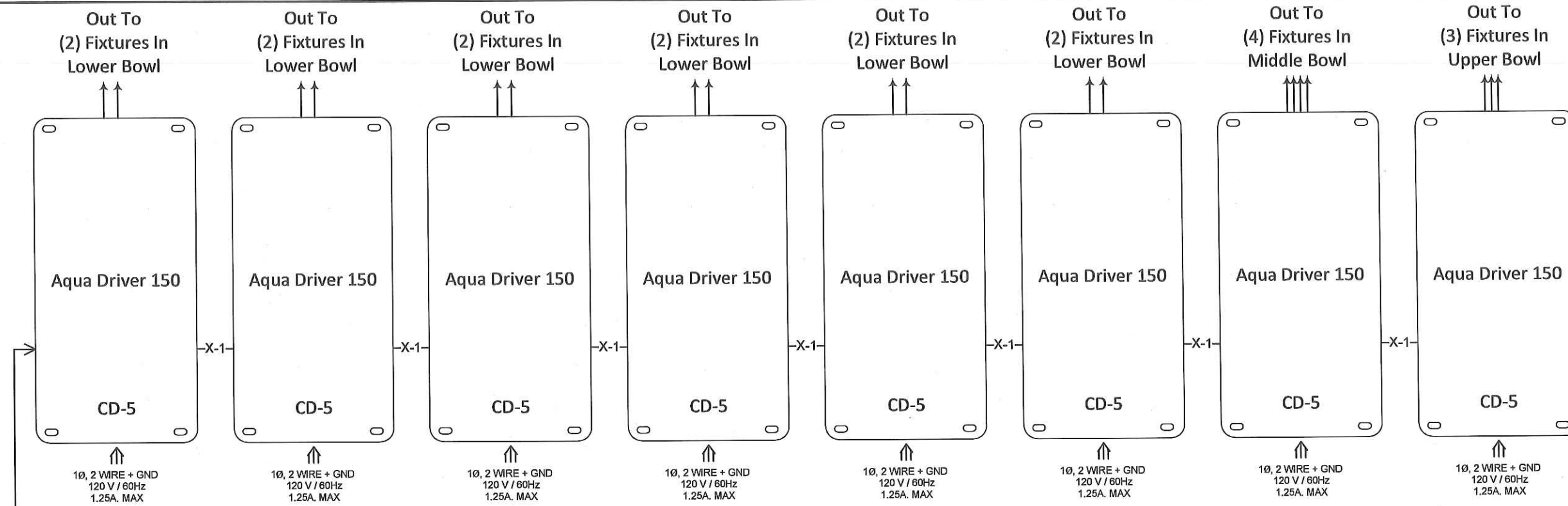
Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:  
**Lighting Control  
System Riser**

Drawing Number:

**LC-5**



**Notes:**

- These are design drawings and not intended for construction purposes
- All circuits must be 2-wire + ground. **No common neutrals allowed.**
- All Control Wiring is provided by others unless otherwise noted.
- Total combined length of Unison Wiring runs cannot exceed 1640 feet (500 meters).
- All ETCNet runs shall be continuous, unspliced run less than 300 feet (90 meters).
- All network connections to be IEEE T568B.
- A service disconnect in the dimmer room is strongly recommended.

**Wire Designations**

D*	(1) Belden 9729	DMX IN	U* OR E*	(1) Belden 8471 (1) #14 AWG	UNISON OR ECHO	N*	(1) Belden 1583A	NETWORK CAT5E	EM*	(1) #14 - #22 AWG	PANIC INPUT
X*	(1) Belden 9729	DMX OUT	UV* OR EV*	(1) Belden 8471 (2) #16 AWG (1) #14 AWG	STATION W/ 24V POWER	NG*	(1) Belden 1583A (1) #14 AWG	NETWORK W/ GROUND	LV*	(2) #16 AWG	Low Voltage

(P) Following the wire designation indicates an uninterrupted pull-through at the previous station in signal path.





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Rev C	RCS	11/26/2018
Rev B	RCS	9/18/2018
Rev A	RCS	5/20/2018
Revision	By	Date

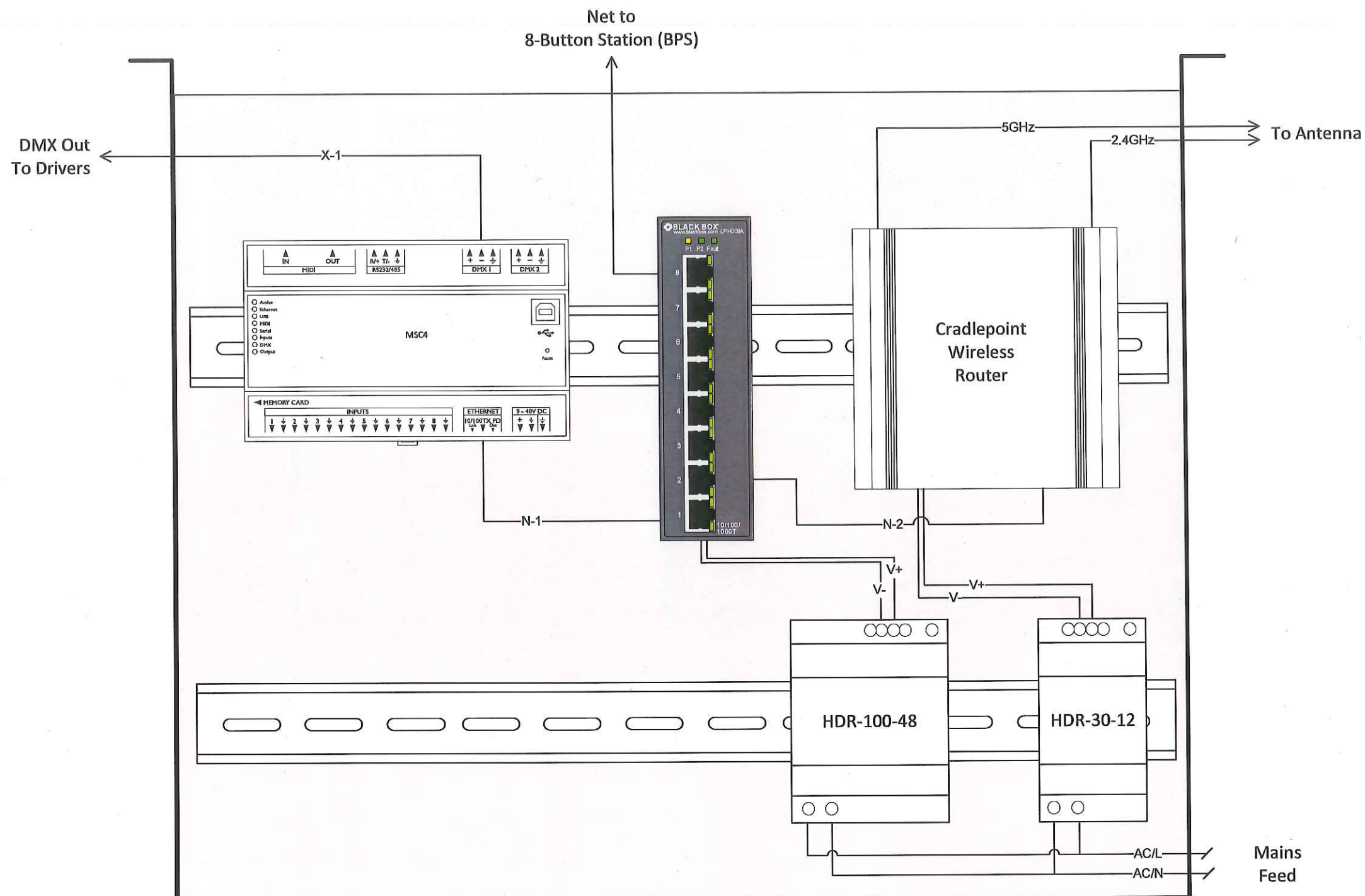
Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:  
**Control Equipment  
Tray – Plan View**

Drawing Number:

**LC-6**



**Notes:**

- These are design drawings and not intended for construction purposes
- All circuits must be 2-wire + ground. **No common neutrals allowed.**
- All Control Wiring is provided by others unless otherwise noted.
- Total combined length of Unison Wiring runs cannot exceed 1640 feet (500 meters).
- All ETCNet runs shall be continuous, unspliced run less than 300 feet (90 meters).
- All network connections to be IEEE T568B.
- A service disconnect in the dimmer room is strongly recommended.

**Wire Designations**

D*	(1) Belden 9729	DMX IN	U* or E*	(1) Belden 8471 (1) #14 AWG	UNISON or ECHO	N*	(1) Belden 1583A	NETWORK CAT5E	EM*	(1) #14 - #22 AWG	PANIC INPUT
X*	(1) Belden 9729	DMX OUT	UV* or EV*	(1) Belden 8471 (2) #16 AWG (1) #14 AWG	STATION W/ 24V POWER	NG*	(1) Belden 1583A (1) #14 AWG	NETWORK W/ GROUND	LV*	(2) #16 AWG	Low Voltage

(P) Following the wire designation indicates an uninterrupted pull-through at the previous station in signal path.





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Rev D	RCS	1/17/2019
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Rev B	RCS	9/18/2018
Rev A	RCS	5/20/2018
Revision	By	Date

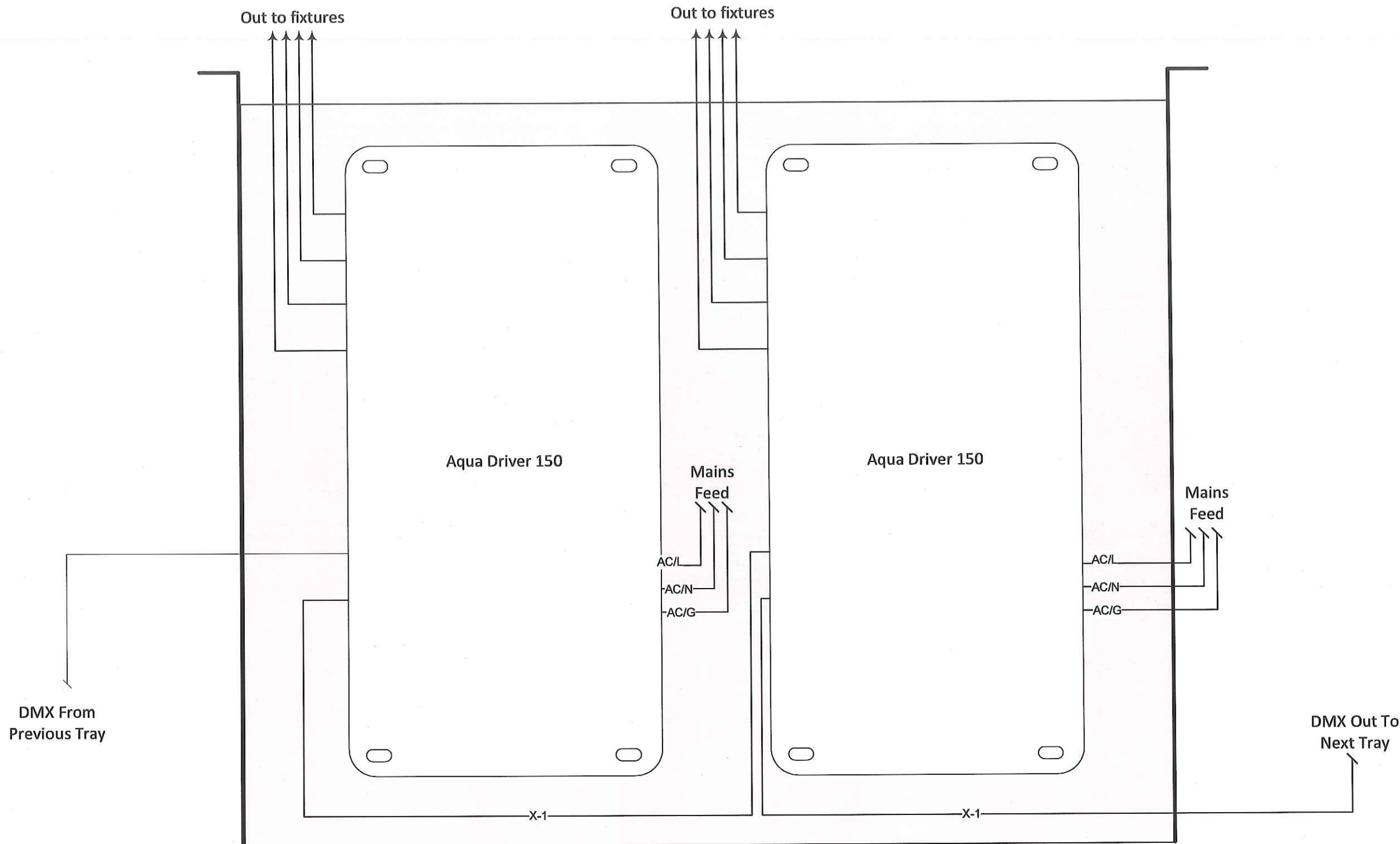
Brewer Fountain  
Tremont Street, Boston, MA

Project Number:  
B180020

Drawing Title:  
**LED Driver Tray  
Plan View**

Drawing Number:

**LC-7**



**Notes:**

- These are design drawings and not intended for construction purposes
- All circuits must be 2-wire + ground. **No common neutrals allowed.**
- All Control Wiring is provided by others unless otherwise noted.
- Total combined length of Unison Wiring runs cannot exceed 1640 feet (500 meters).
- All ETCNet runs shall be continuous, unspliced run less than 300 feet (90 meters).
- All network connections to be IEEE T568B.
- A service disconnect in the dimmer room is strongly recommended.

**Wire Designations**

D*	(1) Belden 9729	DMX IN	U* or E*	(1) Belden 8471 (1) #14 AWG	UNISON or ECHO	N*	(1) Belden 1583A	NETWORK CAT6E	EM*	(1) #14 - #22 AWG	PANIC INPUT
X*	(1) Belden 9729	DMX OUT	UV* or EV*	(1) Belden 8471 (2) #16 AWG (1) #14 AWG	STATION W/ 24V POWER	NG*	(1) Belden 1583A (1) #14 AWG	NETWORK W/ GROUND	LV*	(2) #16 AWG	Low Voltage

(P) Following the wire designation indicates an uninterrupted pull-through at the previous station in signal path.

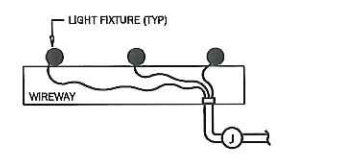
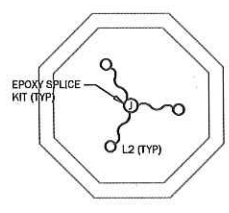
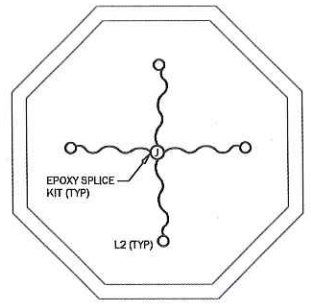
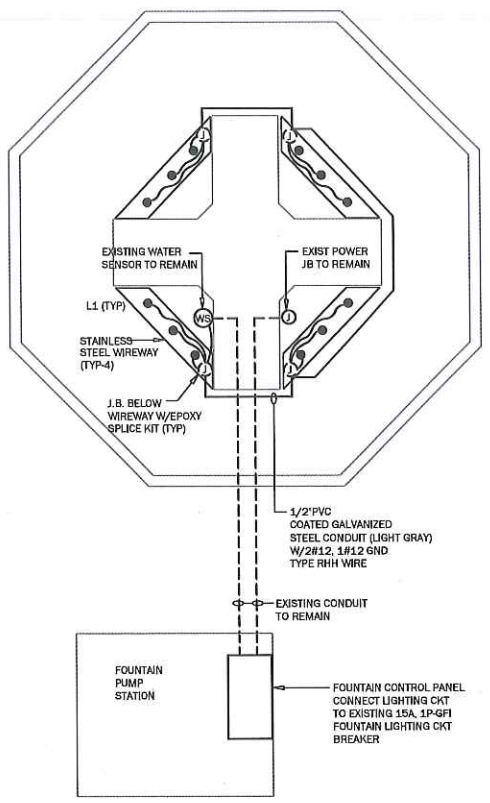
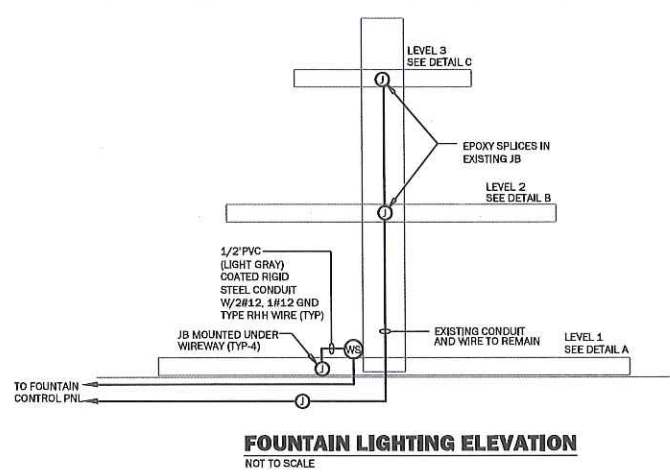


**LIGHTING LEGEND**

⊙ JUNCTION BOX  
 WS WATER SENSOR

**LIGHTING FIXTURE SCHEDULE**

L1 - EMFA ATLANTIS 5, 27W, 120V WITH INTEGRAL CABLE  
 L2 - EMFA ATLANTIS 5, 9W, 120V WITH INTEGRAL CABLE



**ELECTRICAL SPECIFICATIONS**

1. FURNISH AND INSTALL ALL LABOR, MATERIALS, APPLIANCES, EQUIPMENT TOOLS, TRANSPORTATION, SUPERVISION AND SERVICES REQUIRED TO FURNISH AND INSTALL, COMPLETELY TEST AND MAKE OPERATIVE, ALL ELECTRICAL WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
2. THE ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FURNISHING OF MATERIALS AND INSTALLATION OF THE FOLLOWING IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
  1. GROUNDING
  2. LIGHTING FIXTURES
  3. CONDUIT, WIREWAYS ETC.
  4. BRANCH CIRCUIT WIRING
  5. JUNCTION BOXES
  6. EPOXY SPLICE BOXES
  7. WIRE AND CABLE
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE MEC, MASSACHUSETTS STATE BUILDING CODE, OSHA, ADA, ALL LOCAL CODES AND LOCAL UTILITY CO. STANDARDS & SPECIFICATIONS.
4. CONTRACTOR SHALL PAY FOR ALL INSPECTION FEES, LICENSES AND PERMITS.
5. COORDINATE ANY REQUIRED POWER INTERRUPTIONS AND PERFORM WORK AT TIME CONVENIENT TO OWNER. INCLUDE COSTS FOR REQUIRED PREMIUM TIME.
6. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT FOR APPROVAL BEFORE PURCHASING SAME. ALL EQUIPMENT SHALL BEAR THE LABEL OF A NATIONALLY-RECOGNIZED TESTING LABORATORY.
7. LIGHTING
  - A. FURNISH AND INSTALL LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS.
8. MECHANICAL SUSPENSION CHANNEL
  - A. MECHANICAL SUSPENSION CHANNEL SHALL BE FURNISHED AND INSTALLED TO SUPPORT ELECTRICAL EQUIPMENT (PANELBOARDS, DISCONNECT SWITCHES, STARTERS, ETC.).
9. GROUNDING
  - A. PROVIDE GROUNDING FOR ALL ELECTRICAL EQUIPMENT AND DEVICES IN ACCORDANCE WITH THE MASSACHUSETTS ELECTRICAL CODE AND AS INDICATED ON THE DRAWINGS.
  - B. BONDING JUMPERS SHALL BE INSTALLED AT ALL LOCATIONS REQUIRED BY NEC.
  - C. A GREEN GROUNDING CONDUCTOR OF PROPER SIZE SHALL BE INSTALLED AND CONNECTED WITH THE FEEDER CIRCUIT CONDUCTORS TO ALL PANELBOARDS, MOTOR FRAMES, ETC. CONNECTIONS TO THE EQUIPMENT MAY BE BOLTED OR SCREWED USING CORROSION RESISTING BOLTS, SCREWS. A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL BRANCH AND FEEDER CIRCUITS.
10. RACEWAYS
  - A. ALL CONDUIT RUNS SHALL BE PVC COATED (LIGHT GRAY) SHALL BE NOT DIPPED GALVANIZED STEEL CONDUIT.
11. HANGERS & SUPPORTS
  - A. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, SLEEVES, CLAMPS, ETC. AS REQUIRED AND AS INDICATED ON THE DRAWINGS.
12. JUNCTION BOXES
  - A. BOXES FOR EXTERIOR WORK SHALL BE FS OR FD SERIES, WITH CADMIUM PLATED COVERS. STEEL BOXES WILL NOT BE PERMITTED.
13. EPOXY SPLICE BOXES
  - A. EPOXY SPLICE KITS SHALL BE USED FOR ALL LIGHTING SPLICE CONNECTIONS.
14. BRANCH CIRCUIT CONDUCTORS
  - A. ALL BRANCH CIRCUIT WIRING SHALL BE MANUFACTURED OF COPPER AND RATED 600 VOLTS.
  - B. MINIMUM SIZE WIRE FOR BRANCH CIRCUIT AND POWER WIRING SHALL BE #12 AWG.
  - C. INSULATION TYPE SHALL BE RHH FOR ALL WIRING.
  - D. ALL WIRING SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE FOR CONSTRUCTION AND USE.
15. WRING
  1. THE CONTRACTOR SHALL CORRECT OR REPLACE ANY NOMINAL CURRENT-CARRYING CIRCUIT WHICH IS DEFECTIVE OR GROUNDED AND HE SHALL ALSO CORRECT ALL OTHER TROUBLES ENCOUNTERED BY THESE TESTS. ALL DEFECTS WHETHER THROUGH FAULTY WORKMANSHIP OR MATERIAL FURNISHED SHALL BE CORRECTED UNDER THIS SECTION AT THE CONTRACTOR'S EXPENSE.
16. ALL ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. DEFECTS SHALL BE CORRECTED WITHOUT CHARGE, INCLUDING ALL PATCHING, PAINTING AND OTHER INCIDENTAL REPAIRS AND REPLACEMENTS. COORDINATE ALL WORK WITH OTHER TRADES, FURNISH AND INSTALL ALL POWER AND CONTROL WIRING FOR A COMPLETE INSTALLATION.
17. ALL ELECTRICAL EQUIPMENT, MATERIALS, ETC. STORED ON SITE SHALL BE STORED IN SUCH A MANNER THAT IT IS SAFE FROM DAMAGE BY MOISTURE, IMPACT, ETC.
18. ELECTRICAL CONTRACTOR SHALL PERFORM HIS WORK IN A NEAT AND ORDERLY, WORKMANLIKE MANNER. ALL REFUSE, DIRT, AND DEBRIS RESULTANT FROM HIS WORK SHALL BE REMOVED AND PROPERLY DISPOSED OF AT THE END OF THE DAY.
19. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETED, AND SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM INCLUDING LIGHTING FIXTURES EPOXY SPLICE KITS, WIREWAYS, SUPPORTS, CONDUITS, WIRING JUNCTION BOXES, AND ALL OTHER NECESSARY APPURTENANCES REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM, INCLUDING THE LAMPING OF ALL FIXTURES.
20. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND DIRECTIONS FOR ALL EQUIPMENT AND MATERIALS USED.
21. IF CONFLICTS ARISE FROM EQUIPMENT INSTALLATION, SCHEDULING, ETC., THESE SHALL BE RESOLVED AS DIRECTED BY THE OWNER TO THE ENTIRE SATISFACTION OF THE OWNER.
22. UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO DEMONSTRATE PROPER OPERATION OF THE LIGHTING SYSTEM AND EQUIPMENT IN THE PRESENCE OF THE OWNER AND THE ENGINEER PRIOR TO ACCEPTANCE BY THE OWNER.
23. ALL MATERIALS SHALL BE NEW (UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS) AND SHALL CONFORM TO THE NEC, MASSACHUSETTS ELECTRIC CODE (MEC) AND UNDERWRITERS LABORATORIES INC. STANDARDS IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION.
24. ANY MATERIAL, ITEM OR WORK NOT SHOWN ON THE DRAWINGS BUT MENTIONED ON THE SPECIFICATIONS OR VICE-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE INCLUDED IN THE CONTRACTORS BID, AND SUCH ITEMS SHALL NOT BE A CAUSE FOR EXTRA WORK OR EXTRA COST TO OWNER.
25. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS AND EXISTING EQUIPMENT.
26. RECORD DRAWINGS
  - A. CONTRACTOR SHALL PREPARE A COMPLETE SET OF RECORD CONSTRUCTION DRAWINGS & SUBMIT THEM TO THE ARCHITECT FOR APPROVAL.
27. SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 10 DAYS AFTER AWARD OF CONTRACT. CHECK, STAMP, AND MARK SUBMITTALS WITH PROJECT NAME BEFORE TRANSMITTING TO THE ARCHITECT.
28. FINAL INSPECTION
  - A. WHEN THE WORK ON THIS PROJECT HAS BEEN COMPLETED AND IS READY FOR FINAL INSPECTION, SUCH INSPECTION WILL BE MADE AT THIS TIME. THE CONTRACTOR FOR THE WORK OF THIS SECTION SHALL DEMONSTRATE THAT THE REQUIREMENTS OF THESE SPECIFICATIONS HAVE BEEN MET.

EXISTING CONDITIONS DRAWING FOR REFERENCE ONLY

**FRIENDS OF THE PUBLIC GARDEN**

69 Beacon Street  
 Boston, MA 02108  
 (617) 723-8144

**BREWER FOUNTAIN PLAZA  
 PHASE 3 - LAFA YETTE MALL**  
 Landscape Site Improvements  
 Boston Common Boston, Massachusetts

REVISIONS		
NO.	DATE	REMARKS

**RONALD W. BUIA, INC.**  
 Electrical Engineers  
 5 Tilton Lane  
 Andover, MA 01810  
 TEL: 978.475.5184  
 RBUIA@BUIAENGINEERING.COM

DRAWING TITLE  
**Existing Lighting Plan**

SEAL NORTH

DRAWN BY: KML  
 CHECKED BY: RWB  
 DATE: 2/5/19  
 SCALE: AS NOTED  
 PROJECT NO.: 2380118

DRAWING NO.  
**R1**



**LIGHTING LEGEND**

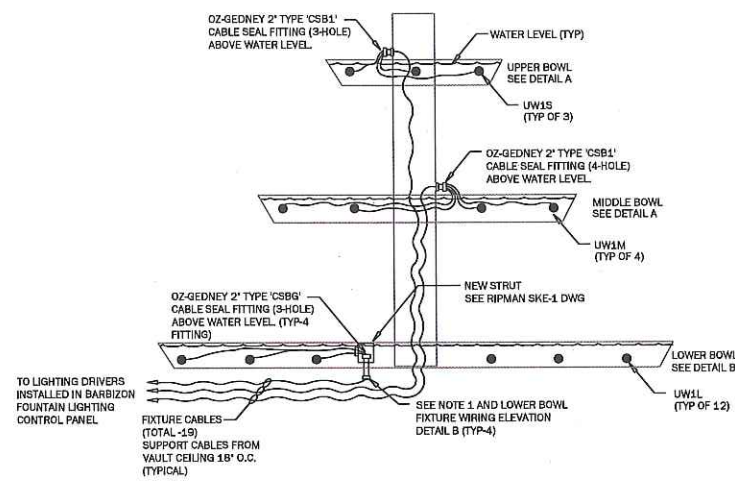
- LIGHTING DRIVER CABLE (FURNISHED WITH LIGHTING FIXTURE)
- CONDUIT STUB W/BUSHING
- LED LIGHT FIXTURE

**FOUNTAIN LIGHTING NOTES**

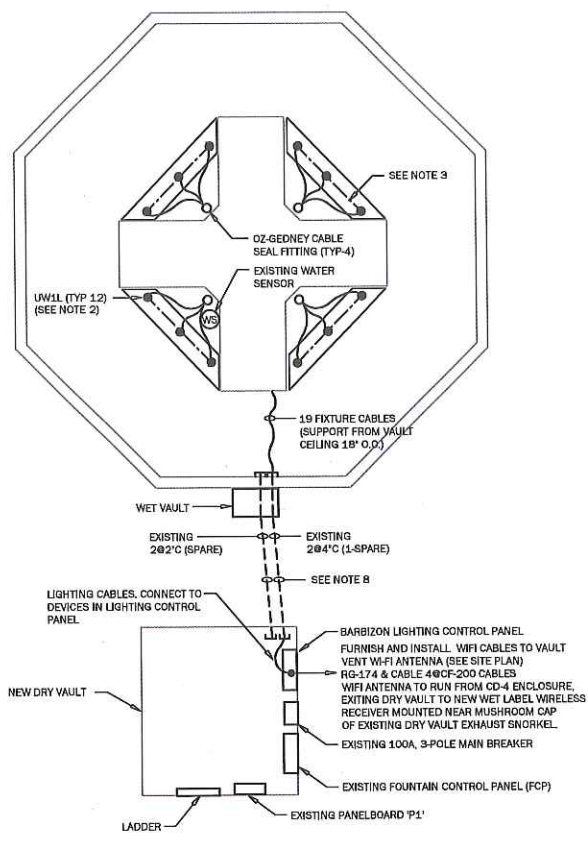
1. EXISTING CONDUIT AND CORE TO REMAIN FOR WATER SENSOR ONLY. GC DRILL FOUR NEW 3" DIAMETER CORES THROUGH BOTTOM OF LOWER BOWL AND SEAL w/ EPOXY GROUT.
2. 12 @ 2700K WHITE LED UNDERWATER ACCENT FIXTURES TYPE UW1L MOUNTED TO NEW ALUMINUM SUPPORT STRUTS, 3 PER STRUT, RUN FEED CABLES TO COMPRESSION FITTINGS IN MULTI-HUB UNDERWATER EXTRUDED STRUT.
3. NEW ALUMINUM FIXTURE SUPPORT STRUTS AND ATTACH NEW FIXTURES TO STRUTS, FABRICATE AND ATTACH NEW 1/2" CLEAR LEXAN CYLINDRICAL SHIELDS w/ INNER ALUMINUM SLEEVES TO RESIST VANDALISM, PER DETAIL. SEE RIPMAN DRAWINGS SKE-1 & 2
4. 4 @ 2700K WHITE LED UNDERWATER ACCENT FIXTURES TYPE UW1M MOUNTED TO NEW STAINLESS STEEL SLOTTED CHANNEL.
5. NEW SLOTTED CHANNEL SUPPORT RINGS, SEE RIPMAN DRAWING SKE-3
6. 3 @ 2700K WHITE LED UNDERWATER ACCENT FIXTURES TYPE UW1S MOUNTED TO NEW STAINLESS STEEL SLOTTED CHANNEL.
7. CONTRACTOR SHALL USE AND ENLARGE EXISTING HOLE IN FOUNTAIN SHAFT PREVIOUSLY USED FOR A LIGHTING CONDUIT PENETRATION.
8. AFTER ALL CABLES HAVE BEEN INSTALLED IN CONDUIT TO THE DRY VAULT, CONTRACTOR SHALL CAP/FOAM SEAL CONDUITS. SEALS SHALL BE TEMPORARY TO ALLOW FOR FUTURE WIRE INSTALLATION IN CONDUIT.

EXISTING PANEL 'P1'		FOUNTAIN VAULT	
CKT NO	BKR SIZE	LOAD DESCRIPTION	LOAD DESCRIPTION
1	50	FOUNTAIN CONTROL PANEL	FOUNTAIN LIGHTING CONTROL PANEL
3	-	-	FOUNTAIN LIGHTING CONTROL PANEL
5	-	-	FOUNTAIN LIGHTING CONTROL PANEL
7	20	VAULT LIGHTING	VAULT DEHUMIDIFIER
9	20	VAULT EXHAUST FAN	VAULT UNIT HEATER
11	20	VAULT GFI RECEPTACLES	-
13	20	UV LIGHT	SUMP PUMP NO. 1 GFI RECP
15	20	SPARE	SUMP PUMP NO. 2 GFI RECP
17	-	-	SPARE
19	-	-	SPARE
21	20	SPARE	SPARE
23	20	SPARE	SPARE

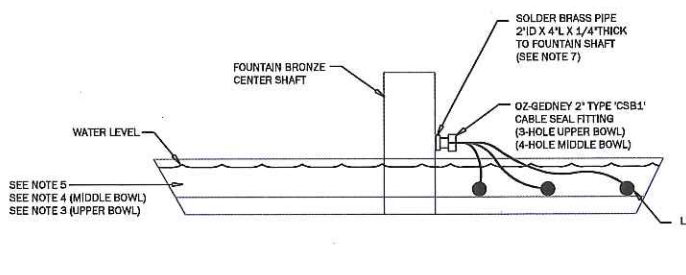
\* GFI CIRCUIT BREAKER  
NOTE: CONTRACTOR TO POWER BARBIZON FOUNTAIN LIGHTING CONTROL PANEL FROM PANELBOARD 'P1', CKT NO. 2,4,6



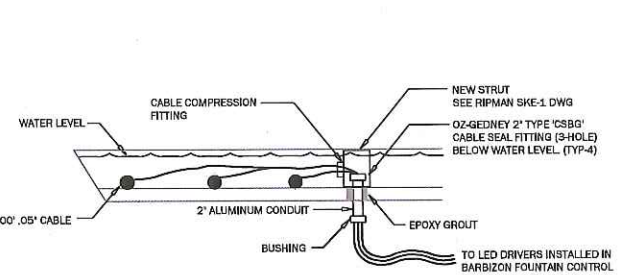
**FOUNTAIN LIGHTING ELEVATION**  
NOT TO SCALE



**LIGHTING DETAIL 'C'**  
NOT TO SCALE



**UPPER/MIDDLE BOWL WIRING DETAIL 'A'**  
NOT TO SCALE



**LOWER BOWL WIRING DETAIL 'B' - TYP-4 QUADRANTS**  
NOT TO SCALE

**Conduit Sealing Bushings**

NEC - Suitable for use in the following Hazardous Locations: Class I, Division 2 per NEC 501.10(B)(4)

**Details of Construction:**

- Pressure Discs:**
  - Thick metal discs with custom drilled holes to accommodate cables. Steel discs are slotted at cable holes to eliminate induction heating effect of single conductor alternating current.
  - Steel discs are PVC coated for corrosion protection. In slotted cable holes used to prevent plates from bridging to other ferrous parts. Uncoated aluminum plates are available.
  - Copper alloy, stainless steel or phenolic discs are available at price addition.
- Screws and Washers:**
  - Corrosion-proof stainless steel socket head screws are used to compress the face discs against the sealing ring.
  - Hex head stainless steel machine screws are available.
  - PVC coated discs have stainless steel washers to prevent screws from damaging coating. (Suffix -P type only)

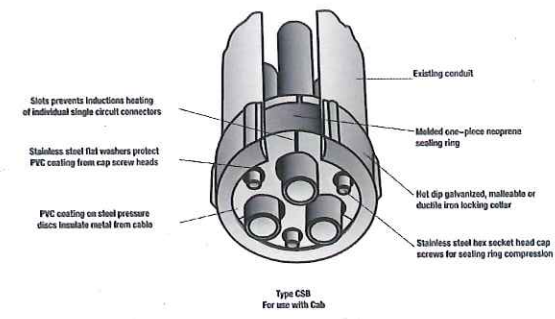
**Locking Collar:**

- Malleable iron hot dip galvanized; suffix -A for aluminum
- Gaskets are provided to prevent locking collar and end of conduit from damaging PVC coated disc. (Suffix -P type only)

**Sealing Ring:**

- Thick one-piece neoprene ring custom drilled. Neoprene is specifically compounded for the following operating characteristics:
  1. Low compression modulus (the ability of the neoprene sealing ring to seal with low tightening force)
  2. Very low compression set (maintain seal over extended period without losing its tightness)
  3. Anti-oxidant (resistance to ozone attack)
  4. Anti-oxidant (resistance to weathering)
  5. Low crystallization (suitable for use at low temperatures)
  6. Fire retardant (will not support combustion)

For modifications or special requirements, contact your local representative for price and availability.



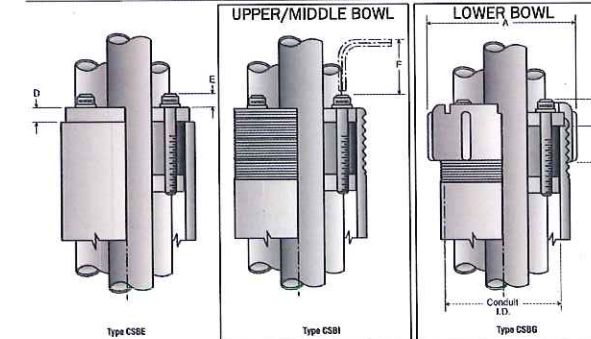
**Conduit Sealing Bushings**

For Use with Cable in Rigid Conduit

NEC - Suitable for use in the following Hazardous Locations: Class I, Division 2 per NEC 501.10(B)(4)

**Type CSB Series Dimensional Data:**

Conduit Size	Max. Diameter of Wire Permitted				Dimensions in Millimeters (Inches)						
	1 Hole	2 Holes	3 Holes	4 Holes	Conduit ID	A	B	C	D	E	F
1-1/2"	19.91 (0.779)	12.45 (0.490)	13.46 (0.530)	11.18 (0.440)	1.610 (0.260)	60.45 (2.380)	16.00 (0.630)	22.32 (0.880)	7.67 (0.301)	7.67 (0.301)	31.75 (1.250)
2"	25.91 (1.020)	15.56 (0.613)	16.03 (0.631)	15.49 (0.610)	2.067 (0.250)	74.42 (2.930)	16.00 (0.630)	22.35 (0.880)	7.67 (0.301)	7.67 (0.301)	31.75 (1.250)
2-1/2"	33.53 (1.320)	24.38 (0.960)	22.61 (0.890)	19.61 (0.772)	2.489 (0.250)	85.65 (3.372)	19.05 (0.750)	22.35 (0.880)	7.67 (0.301)	7.67 (0.301)	31.75 (1.250)
3"	48.91 (1.890)	30.48 (1.200)	28.70 (1.130)	24.28 (0.956)	3.008 (0.250)	104.50 (4.113)	19.05 (0.750)	22.35 (0.880)	7.67 (0.301)	7.67 (0.301)	31.75 (1.250)
3-1/2"	54.10 (2.130)	35.53 (1.398)	35.05 (1.380)	28.70 (1.130)	3.548 (0.250)	115.62 (4.550)	22.35 (0.880)	22.35 (0.880)	11.18 (0.436)	9.65 (0.380)	38.10 (1.500)
4"	66.28 (2.570)	41.40 (1.630)	38.35 (1.510)	32.60 (1.283)	4.026 (0.250)	130.30 (5.130)	22.35 (0.880)	22.35 (0.880)	11.18 (0.436)	9.65 (0.380)	38.10 (1.500)
5"	87.63 (3.450)	58.80 (2.313)	47.75 (1.880)	41.40 (1.630)	5.047 (0.250)	158.75 (6.250)	22.35 (0.880)	22.35 (0.880)	11.18 (0.436)	9.65 (0.380)	38.10 (1.500)
6"	100.73 (4.320)	63.75 (2.510)	60.45 (2.380)	54.10 (2.130)	6.065 (0.250)	187.45 (7.380)	22.35 (0.880)	22.35 (0.880)	11.18 (0.436)	9.65 (0.380)	38.10 (1.500)



Standard fittings may be used with corresponding sizes of schedule 40 pipe or tubes and cured holes which have the same nominal diameter as conduit I.D. shown above.  
Minimum diameter is 1/8" O.D. Plus or minus wires can be accommodated; contact your local representative for sizing.

69 Beacon Street  
Boston, MA 02108  
(617) 723-8144

**BREWER FOUNTAIN PLAZA  
FOUNTAIN LIGHTING  
RENOVATION**  
Boston Common Boston, Massachusetts

NO.	DATE	REMARKS
1	11/8/18	VAULT COORDINATE

**RONALD W. BUIA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUIA@BUIAENGINEERING.COM

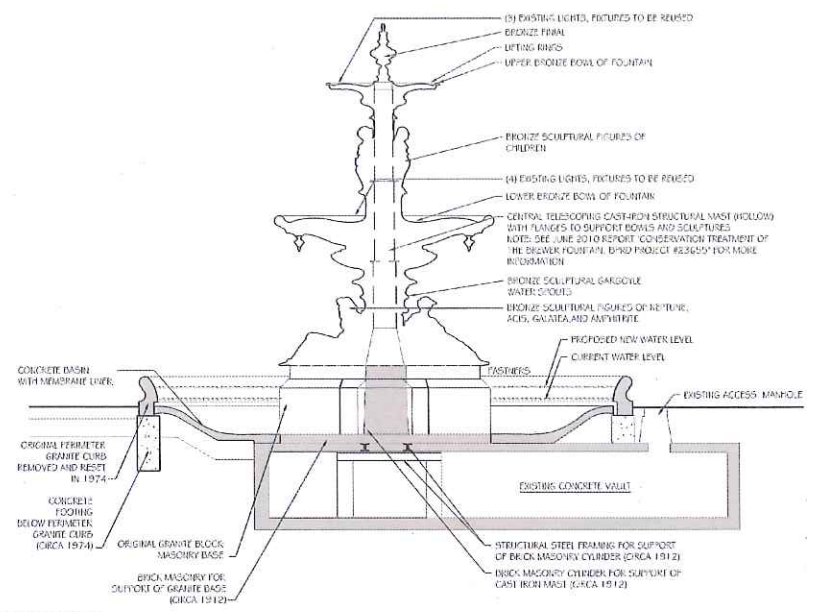
DRAWING TITLE  
**Proposed Lighting Plan**

SEAL NORTH

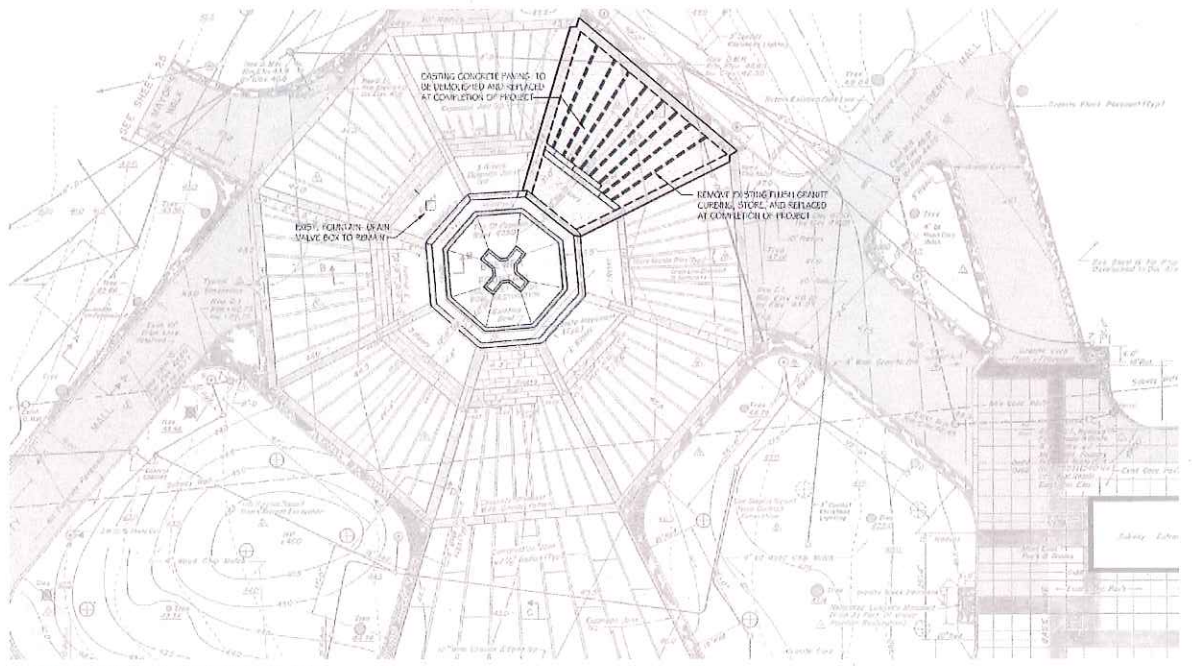
DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 2/5/19  
SCALE: AS NOTED  
PROJECT NO.: 2380118

DRAWING NO.  
**R2**

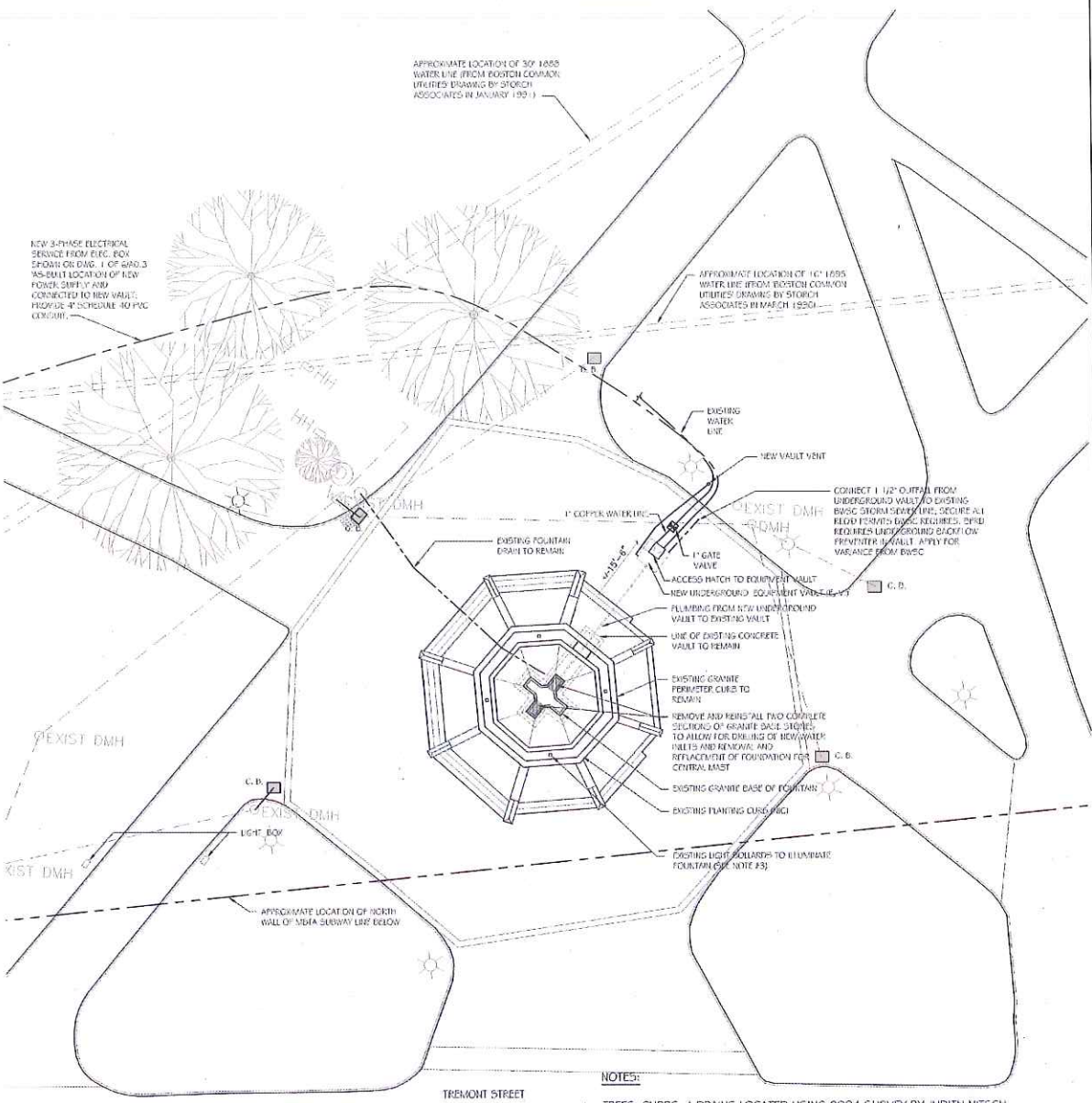




1 Reference Section/Elevation  
SCALE: 1/4" = 1'-0"



2 1974 As-Built Partial Site Plan  
SCALE: 1/16" = 1'-0"



3 Reference Site Plan  
SCALE: 1/16" = 1'-0"



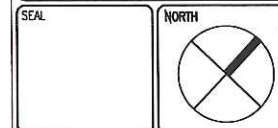
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**BREWER FOUNTAIN PLAZA  
FOUNTAIN LIGHTING  
RENOVATION**  
Boston Common Boston, Massachusetts

REVISIONS		
NO.	DATE	REMARKS

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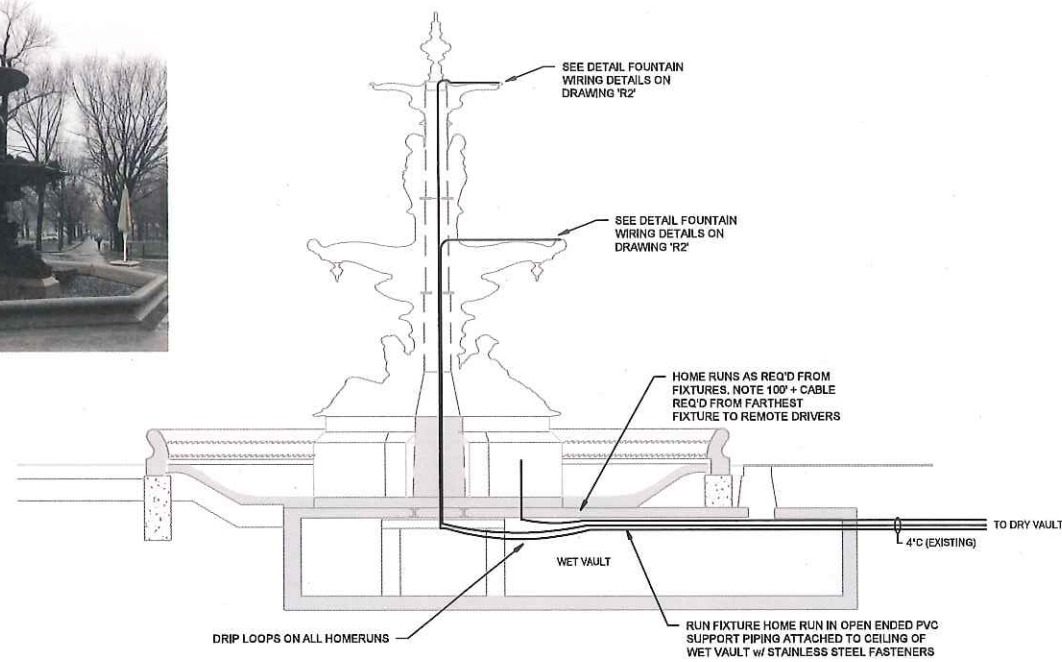
DRAWING TITLE  
**Existing  
Lighting Plan**



DRAWN BY: KML  
 CHECKED BY: RWB  
 DATE: 9/14/18  
 SCALE: A NOTED  
 PROJECT NO.: 2380118

DRAWING NO.  
**R3**

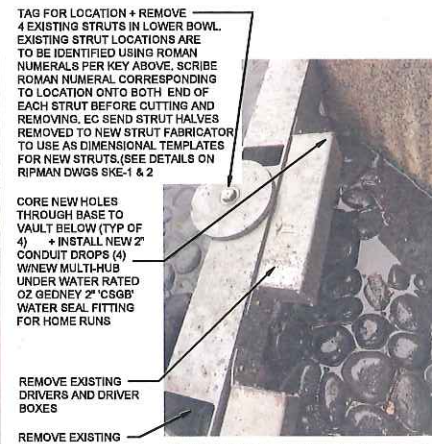




REFERENCE SECTION/ELEVATION  
NOT TO SCALE



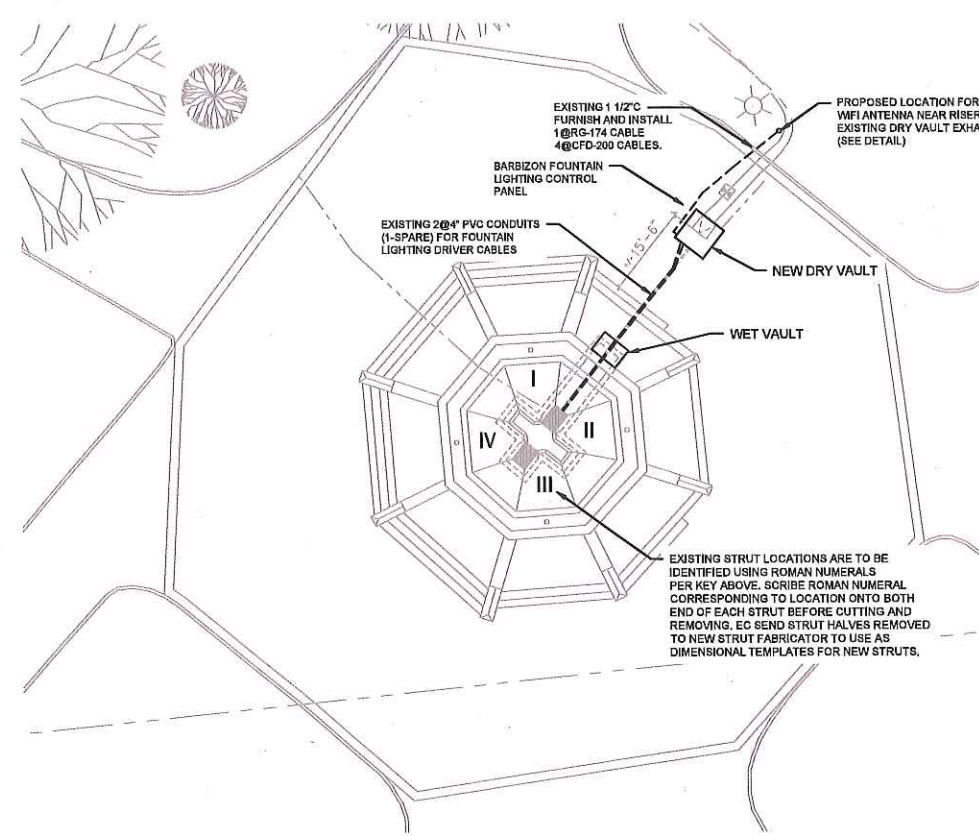
FOUNTAIN - UPPER BOWL, EMPTY



EXISTING STRUT, LOWER BOWL



FOUNTAIN - MIDDLE BOWL, EMPTY



REFERENCE SITE PLAN  
SCALE 1/16" = 1'-0"



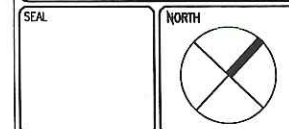
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**BREWER FOUNTAIN PLAZA  
FOUNTAIN LIGHTING  
RENOVATION**  
Boston Common Boston, Massachusetts

REVISIONS		
NO.	DATE	REMARKS
1	11/8/18	VAULT COORDINATE

**RONALD W. BUJA, INC.**  
Electrical Engineers  
5 Tilton Lane  
Andover, MA 01810  
TEL: 978.475.5184  
RBUJA@BUJAENGINEERING.COM

DRAWING TITLE  
**Proposed  
Lighting Details**



DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 2/5/19  
SCALE: AS NOTED  
PROJECT NO.: 2380118  
DRAWING NO.  
**R4**



**ELECTRICAL SPECIFICATIONS**

1. FURNISH AND INSTALL ALL LABOR, MATERIALS, APPLIANCES, EQUIPMENT TOOLS, TRANSPORTATION, SUPERVISION AND SERVICES REQUIRED TO FURNISH AND INSTALL, COMPLETELY TEST AND MAKE OPERATIVE, ALL ELECTRICAL WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

2. THE ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FURNISHING OF MATERIALS AND INSTALLATION OF THE FOLLOWING IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.

1. DISCONNECT AND REMOVE EXISTING FOUNTAIN LIGHTING FIXTURES WITH ASSOCIATED CONDUIT, WIRING SUPPORTS, FITTING, ETC.
2. GROUNDING
3. LIGHTING FIXTURES FURNISHED W/CABLE (100)
4. LIGHTING FIXTURE MOUNTING BRACKETS, UNISTRUT, ETC.
5. LED LIGHTING DRIVERS (TOTAL-8)
6. CONDUIT, WIREWAYS ETC.
7. BRANCH CIRCUIT WIRING
8. OZ GEDNEY 3 & 4 HOLE WATER SEAL FITTINGS
9. WIRE AND CABLE
10. WFT CABLES AND HOUSING
11. INSTALLATION OF BARBIZON LIGHTING CONTROL PANEL

3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE MEC, MASSACHUSETTS STATE BUILDING CODE, OSHA, ADA, ALL LOCAL CODES AND LOCAL UTILITY CO. STANDARDS & SPECIFICATIONS.

4. CONTRACTOR SHALL PAY FOR ALL INSPECTION FEES, LICENSES AND PERMITS.
5. COORDINATE ANY REQUIRED POWER INTERRUPTIONS AND PERFORM WORK AT TIME CONVENIENT TO OWNER. INCLUDE COSTS FOR REQUIRED PREMIUM TIME.
6. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT FOR APPROVAL BEFORE PURCHASING SAME. ALL EQUIPMENT SHALL BEAR THE LABEL OF A NATIONALLY-RECOGNIZED TESTING LABORATORY.

**7. FOUNTAIN LIGHTING**

A. FURNISH AND INSTALL LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS.

**8. MECHANICAL SUSPENSION CHANNEL**

A. MECHANICAL SUSPENSION CHANNEL AND BRACKETS SHALL BE FURNISHED AND INSTALLED TO SUPPORT FOUNTAIN LIGHTING FIXTURES.

B. CHANNEL SHALL BE STAINLESS STEEL B-LINE CHANNEL OR APPROVED EQUAL MATERIAL. TYPE M-2) ALL FASTENERS AND FITTINGS SHALL BE SUPPLIED TO PROVIDE A COMPLETE INSTALLATION AS REQUIRED.

C. ALL CHANNEL AND FITTINGS SHALL BE STAINLESS STEEL.

**9. GROUNDING**

A. PROVIDE GROUNDING FOR ALL ELECTRICAL EQUIPMENT AND DEVICES IN ACCORDANCE WITH THE MASSACHUSETTS ELECTRICAL CODE AND AS INDICATED ON THE DRAWINGS.

B. BONDING JUMPERS SHALL BE INSTALLED AT ALL LOCATIONS REQUIRED BY MEC.

C. A GREEN GROUNDING CONDUCTOR OF PROPER SIZE SHALL BE INSTALLED AND CONNECTED WITH THE FEEDER CIRCUIT CONDUCTORS TO ALL PANELBOARDS, MOTOR FRAMES, ETC. CONNECTIONS TO THE EQUIPMENT MAY BE BOLTED OR SCREWED USING CORROSION RESISTING BOLTS, SCREWS. A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL BRANCH AND FEEDER CIRCUITS.

**10. RACEWAYS**

A. CONDUIT SHALL BE GRAY EPOXY COATED TYPE GRC.

**11. HANGERS & SUPPORTS**

A. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, SLEEVES, CLAMPS, ETC., AS REQUIRED AND AS INDICATED ON THE DRAWINGS.

**12. JUNCTION BOXES**

A. BOXES FOR EXTERIOR WORK SHALL BE FS OR FD SERIES, WITH CADMIUM PLATED COVERS. STEEL BOXES WILL NOT BE PERMITTED.

**13. BRANCH CIRCUIT CONDUCTORS**

A. ALL BRANCH CIRCUIT WIRING SHALL BE MANUFACTURED OF COPPER AND RATED 600 VOLTS.

B. MINIMUM SIZE WIRE FOR BRANCH CIRCUIT AND POWER WIRING SHALL BE #12 AWG.

C. INSULATION TYPE SHALL BE XHHW FOR ALL WIRING.

D. ALL WIRING SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE FOR CONSTRUCTION AND USE.

**E. WIRING**

1. THE CONTRACTOR SHALL CORRECT OR REPLACE ANY NOMINAL CURRENT-CARRYING CIRCUIT WHICH IS DEFECTIVE OR GROUNDED AND HE SHALL ALSO CORRECT ALL OTHER TROUBLES ENCOUNTERED BY THESE TESTS, ALL DEFECTS WHETHER THROUGH FAULTY WORKMANSHIP OR MATERIAL FURNISHED SHALL BE CORRECTED UNDER THIS SECTION AT THE CONTRACTOR'S EXPENSE.

14. ALL ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. DEFECTS SHALL BE CORRECTED WITHOUT CHARGE, INCLUDING ALL PATCHING, PAINTING AND OTHER INCIDENTAL REPAIRS AND REPLACEMENTS. COORDINATE ALL WORK WITH OTHER TRADES, FURNISH AND INSTALL ALL POWER AND CONTROL WIRING FOR A COMPLETE INSTALLATION.

15. ALL ELECTRICAL EQUIPMENT, MATERIALS, ETC. STORED ON SITE SHALL BE STORED IN SUCH A MANNER THAT IT IS SAFE FROM DAMAGE BY MOISTURE, IMPACT, ETC.

16. CONTRACTOR SHALL PERFORM HIS WORK IN A NEAT AND ORDERLY WORKMANLIKE MANNER. ALL REFUSE, DIRT, AND DEBRIS RESULTANT FROM HIS WORK SHALL BE REMOVED AND PROPERLY DISPOSED OF AT THE END OF THE DAY.

A. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETED, AND SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM INCLUDING FOUNTAIN LIGHTING FIXTURES, DRIVERS WIREWAYS, SUPPORTS, CONDUITS, WIRING, JUNCTION BOXES AND ALL OTHER NECESSARY APPURTENANCES REQUIRED FOR A COMPLETE OPERATIONAL FOUNTAIN LIGHTING SYSTEM

19. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND DIRECTIONS FOR ALL EQUIPMENT AND MATERIALS USED.

18. IF CONFLICTS ARISE FROM EQUIPMENT INSTALLATION, SCHEDULING, ETC., THESE SHALL BE RESOLVED AS DIRECTED BY THE OWNER TO THE ENTIRE SATISFACTION OF THE OWNER.

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22. THE CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS AND EXISTING EQUIPMENT.

**23. RECORD DRAWINGS**

A. CONTRACTOR SHALL PREPARE A COMPLETE SET OF RECORD CONSTRUCTION DRAWINGS & SUBMIT THEM TO THE ENGINEER FOR APPROVAL.

24. SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 10 DAYS AFTER AWARD OF CONTRACT, CHECK, STAMP, AND MARK SUBMITTALS WITH PROJECT NAME BEFORE TRANSMITTING TO THE ENGINEER.

**25. FINAL INSPECTION**

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PROJECT: BREWER FOUNTAIN

60% CD CONTROLS, FIXTURES, MATERIALS SCHEDULE

**RIPMAN LIGHTING CONSULTANTS**

BY: CWB RLC JOB NUMBER: 1701.2 DATE: JAN 31, 2019 R1 (617) 489-3366 FAX (617) 489-6223 EMAIL: charlie@ripmanlighting.com

IN BIDDING OR ORDERING FIXTURES, LAMPS OR CONTROL EQUIPMENT, REFER TO FIXTURE SCHEDULE NOTES AND ELECTRICAL SPECIFICATIONS (DIV 230000 AND 265000) FOR ADDITIONAL INFO + REQUIREMENTS SPECIFIC TO THIS PROJECT. INCLUDE ALL FIXTURES AND INSTALLATION IN BASE

FIXT TYPE	GENERIC DESCRIPTION OF FIXTURE MANUFACTURER'S SPECIFICATION	LOCATION	LAMP WPG	LAMP WATTS	MOUNTING	NOTES, VOLTAGE
CD-1	DMX SHOW CONTROLLER WITH TIMECLOCK + SHOW DESIGN SOFTWARE ETC. UNISON MOSAIC #MSC1 CONTROLLER + UNISON MOSAIC DESIGNER SOFTWARE	(DRY VAULT)	N/A	0	INSIDE CD-4	ONE DMX UNIVERSE CAPACITY. BUILT IN ASTRONOMICAL CLOCK. REQUIRES A CONDITIONED ENVIRONMENT THERMAL RANGE 32-122 DEGREES F. RELATIVE HUMIDITY 10-50%. ETL LISTED 120V. EC CARRY 8 HOURS OF ON-SITE COMMISSIONING TIME BY QUALIFIED FACTORY TRAINED INTEGRATOR.
CD-2	EIGHT BUTTON CONTROL KEYPAD ETC. UNISON MOSAIC #M1085US	(DRY VAULT)	N/A	0	INSIDE CD-4	WHITE FINISH. ENGRAVED BUTTONS PER LEGEND. REQUIRES A CONDITIONED ENVIRONMENT THERMAL RANGE 32-122 DEGREES F. RELATIVE HUMIDITY 10-50%. ETL LISTED 120V.
CD-3	NETWORK SWITCH BLACK BOX 8GBIT UNMANAGED PoE SWITCH #UPOB4RZ	(DRY VAULT)	N/A	0	INSIDE CD-4	BLACK FINISH. SUPPORTS POWER OVER ETHERNET EIGHT PoE PORTS 12.5W DC INPUT.
CD-4	HEATED WET LABEL ENCLOSURE SIZED FOR CONTROLS + DRIVERS AMERICAN PRODUCTS 14IN FORD #AM-32221RS1 + EXHHAUST AC UNIT #AMMF-AC 100W-102A + INSULATION PKG #AM-32222INS + COPPER GROUND BAR #AM-205GB + WALL MOUNT BRACKET #AM-2418 WM + EXTRA RAILS #AM-32222RS	(DRY VAULT)	N/A	0	WALL MOUNT DRY VAULT	SEE BARBIZON DRAWINGS FOR COMPLETE SPECIFICATION. 32 HX20 HX22D AIRCRAFT GRADE CORROSION RESISTANT ALUMINUM HOUSING WITH STAINLESS STEEL MOUNTING HARDWARE. GRAY GR46 POWEROAT PAINT (ONE) 2X4 QUAD RECEPTACLE. BY OR 2' EQUIPMENT RACKS. 7 POSITION ALUM.
CD-5	24V DMX CONTROLLED DRIVER ACCLAIM AQUA DRIVER 150 #ADR150	(DRY VAULT)	N/A	0	INSIDE CD-4	150W TOTAL OUTPUT. 350mA CONSTANT CURRENT OUTPUT. 4 PORTS. EACH 4 CHANNELS OF CONTROL (8 CHANNELS TOTAL) DRY LOCATION RATED. UNIVERSAL 10-277V INPUT. EC. PROVIDE ONE SPARE BEYOND COUNT FROM DRAWINGS FOR OWNER'S BACK STOCK.
CD-7 (ADDA1T1)	WiFi ROUTER + MODEM + ANTENNA CERAPOINT #COR1800R SERIES	(DRY VAULT + EXHAUST VENT)	N/A	0	ANTENNA SURFACE MOUNT ROUTER + MODEM WITHIN ENCLOSURE	DO NOT INCLUDE IN BASE COST ESTIMATE. PROVIDES THE CAPABILITY TO MANUALLY SELECT SHOWS AND OVERRIDE TIMECLOCK SHOW SELECTION, WITHOUT OPENING HATCH AND DESCENDING INTO VAULT TO ACCESS BUTTON KEYPADS. ROUTER AND MODEM IN DRY VAULT. ANTENNA LOCATED WITHIN N.
UW-1L	3200LM WHITE LED LIGHT IP68 FIXTURE. DMX CONTROLLABLE ACCLAIM AQUA DRUM #ACD-2616 H-A-N	(LOWER BOWL)	2700K	8	SURFACE BRACKET MOUNT	7.5" DIAMETER IP68 SUBMERSIBLE RATED FOR OPERATION ABOVE OR BELOW WATER. 3/16" MARINE GRADE STAINLESS STEEL HOUSING WITH SEALED GLASS TOP. ADJUSTABLE YOKE MOUNT. 40 DEGREE FLOOD DISTRIBUTION. MODIFICATION: 100 FOOT FEED CABLE FACTORY INSTALLED AND SEAL.
UW-1M	1070LM WHITE LED LIGHT IP68 FIXTURE. DMX CONTROLLABLE ACCLAIM AQUA DRUM #ACD-2616 H-A-N	(MIDDLE BOWL)	2700K	18	SURFACE BRACKET MOUNT	6.5" DIAMETER IP68 SUBMERSIBLE RATED FOR OPERATION ABOVE OR BELOW WATER. 3/16" MARINE GRADE STAINLESS STEEL HOUSING WITH SEALED GLASS TOP. ADJUSTABLE YOKE MOUNT. 40 DEGREE FLOOD DISTRIBUTION. MODIFICATION: 100 FOOT FEED CABLE FACTORY INSTALLED AND SEAL.
UW-1S	700LM WHITE LED LIGHT IP68 FIXTURE. DMX CONTROLLABLE ACCLAIM AQUA DRUM #ACD-2616 H-A-N	(UPPER BOWL)	2700K	8	SURFACE BRACKET MOUNT	4.9" DIAMETER IP68 SUBMERSIBLE RATED FOR OPERATION ABOVE OR BELOW WATER. 3/16" MARINE GRADE STAINLESS STEEL HOUSING WITH SEALED GLASS TOP. ADJUSTABLE YOKE MOUNT. 40 DEGREE FLOOD DISTRIBUTION. MODIFICATION: 100 FOOT FEED CABLE FACTORY INSTALLED AND SEAL.

**MATERIALS SCHEDULE**

M-2	SLOTTED STAINLESS STEEL STRUT 6 LINE, UNISTRUT OR EQ	(FOUNTAIN BOWLS)	N/A	N/A	FIXTURE SUPPORTS IN MIDDLE AND UPPER BOWLS	SEE ELECTRICAL DRAWING R4 AND RIPMAN LIGHTING CONSULTANTS SKETCH #3 DATED 23 JAN 2019 FOR DETAILS. IN INTENT IS TO PROVIDE MOUNTING FOR FIXTURES IN UPPER AND MIDDLE BOWLS. WITH LOADS TRANSFERRED TO FLOOR OF EACH BASIN WITHOUT PUTTING PRESSURE ON, OR CONT.
M-4	1/2" CLEAR POLYCARBONATE SHEET CYLINDRICAL TUBING J FREEMAN OR EQ	(LOWER BOWL)	N/A	N/A	SHIELD OVER FIXTURES (LOWER BOWL)	SEE RIPMAN LIGHTING CONSULTANTS SKETCHES #1 AND #2, DATED 23 JAN 2019 FOR DETAILS.



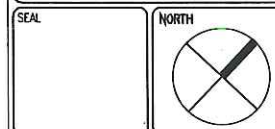
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(617) 723-8144

**BREWER FOUNTAIN PLAZA  
FOUNTAIN LIGHTING  
RENOVATION**  
Boston Common Boston, Massachusetts

REVISIONS		REMARKS
NO.	DATE	
1	11/8/18	VAULT COORDINATE

**RONALD W. BUIA, INC.**  
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DRAWING TITLE  
**Lighting Schedules  
Details & Spec's**



DRAWN BY: KML  
CHECKED BY: RWB  
DATE: 2/5/19  
SCALE: NONE  
PROJECT NO.: 2380118  
DRAWING NO.  
**R5**