



Congress Street Bridge Lighting Project Community Meeting

April 6, 2017



**boston planning &
development agency**

CSBLP Community Meeting Agenda

- Introductions
- Context for Lighting Project
- Initial Concept Designs
- Open Discussion



Image: Boston Planning & Development Agency (credit: Landslides Aerial Photography)

Hartranft Lighting Design – Project team

Andrea Hartranft
Principal



Paula Ziegenbein
Sr. Consultant



Kim Daley
Senior Designer



Klara Boyer
Designer



Firm profile

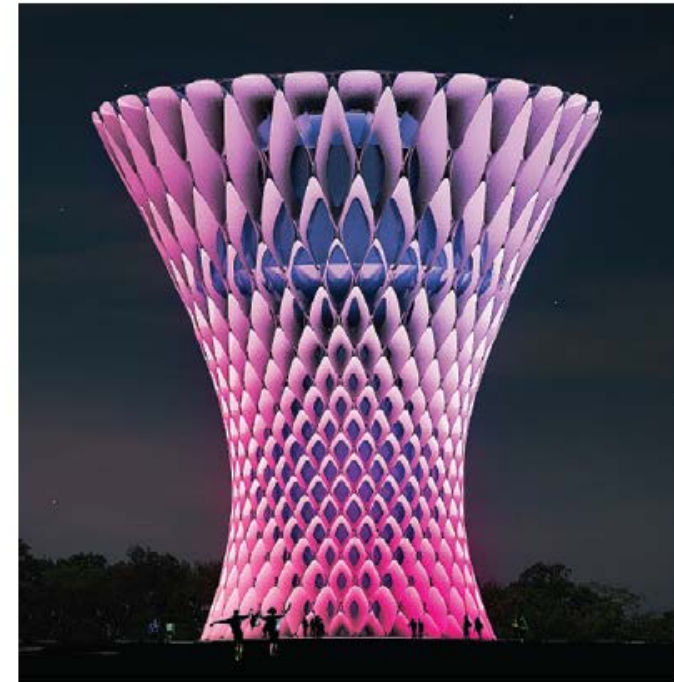
- Internationally recognized, award winning lighting design firm with.....
 - Over 30 years experience on 1000+ diverse commercial lighting projects
 - WBE with offices in North Carolina, Maryland and Massachusetts
 - Architectural engineering, electrical engineering, architectural backgrounds
 - Ability to realize large scale, complex lighting solutions
 - Creative, thoughtful consideration given to sustainable project design
 - Historic preservation & municipal experience
 - Lighting design, controls design, daylight design, photometric calculations & studies, energy efficiency & lighting life cycle cost analysis
- Actively engaged in lighting industry associations – IALD, IESNA, DLF, WILD, Light Boston



Project experience

Interactive Design

- Anacostia Water Tower (not yet built)
 - Howeler & Yoon Architecture
 - Tower will be visible from Downtown DC
 - Tower is designed to be a living machine
 - Changes to lighting may inform community regarding water quality, rainfall, river safety
 - Design required to meet stakeholder approval
 - Cultural Arts Commission
 - Historic Preservation Board
 - DC office of planning
 - Local community



Jacobs Engineering Group – Project team



Jacobs Engineering Group – Firm profile

- Who we are ...
- Diverse engineering consulting services:
 - Buildings & transportation infrastructure
 - Planning and consulting
 - Program/Construction management
 - 60+ years in business
 - 200+ staff in New England offices
 - Full complement of design disciplines including civil, structural, geotechnical, mechanical, electrical

Jacobs Engineering Group Inc.

Lighting/Electrical

8 electrical engineers in New England
Street & Bridge Lighting Experience

- Tobin Bridge – Electrical & Lighting
- Longfellow Bridge – Electrical & Lighting
- Edward Everett Square – Lighting
- MassDOT Braga Bridge Lighting Study
- MassDOT Fall River Route 79 Lighting
- MassDOT Lowell Connector Lighting



Congress Street Bridge

- Congress Street Bridge is one of four existing bridges across the Fort Point Channel connecting Downtown Boston and the South Boston Waterfront
- Completed in 1930, rehabbed in 2008
- Historic single-leaf, Strauss multiple-trunnion bascule bridge
- No longer operational

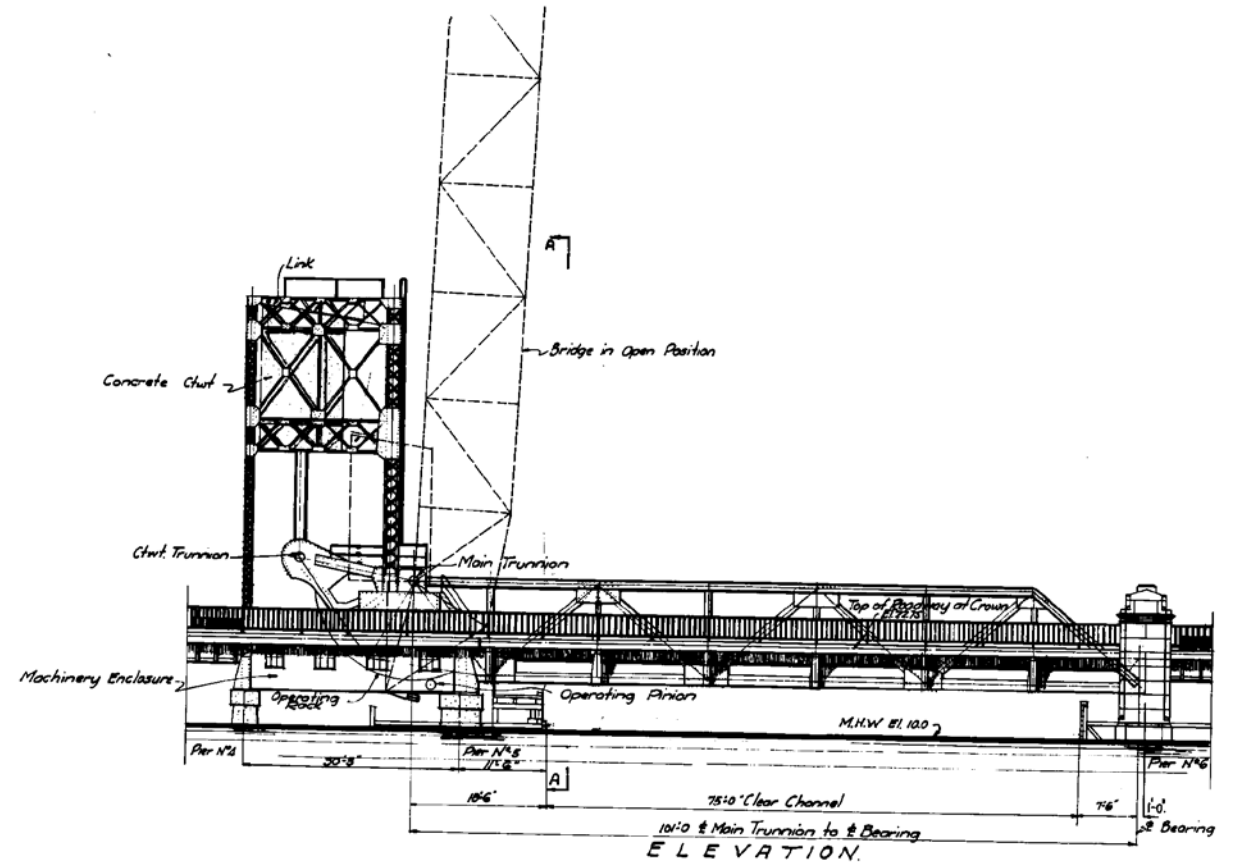


Image: Historic American Engineering Record (HAER No. MA-38-34)

Illuminating Boston: The Diamond Necklace Report

- 2000 report issued by the City of Boston and LIGHT Boston for “a vision of downtown Boston at night”
- Identified 25 downtown landmarks for enhanced nighttime illumination, including the Fort Point Channel
- Specific recommendations for the Congress Street Bridge Lighting Project include:
 - “Remove and restore the major lanterns that crown [its] piers...[which] should be lit...and the massive counterweight strongly uplit.”
 - “Strongly light the Boston Tea Party Ships [& Museum]...”

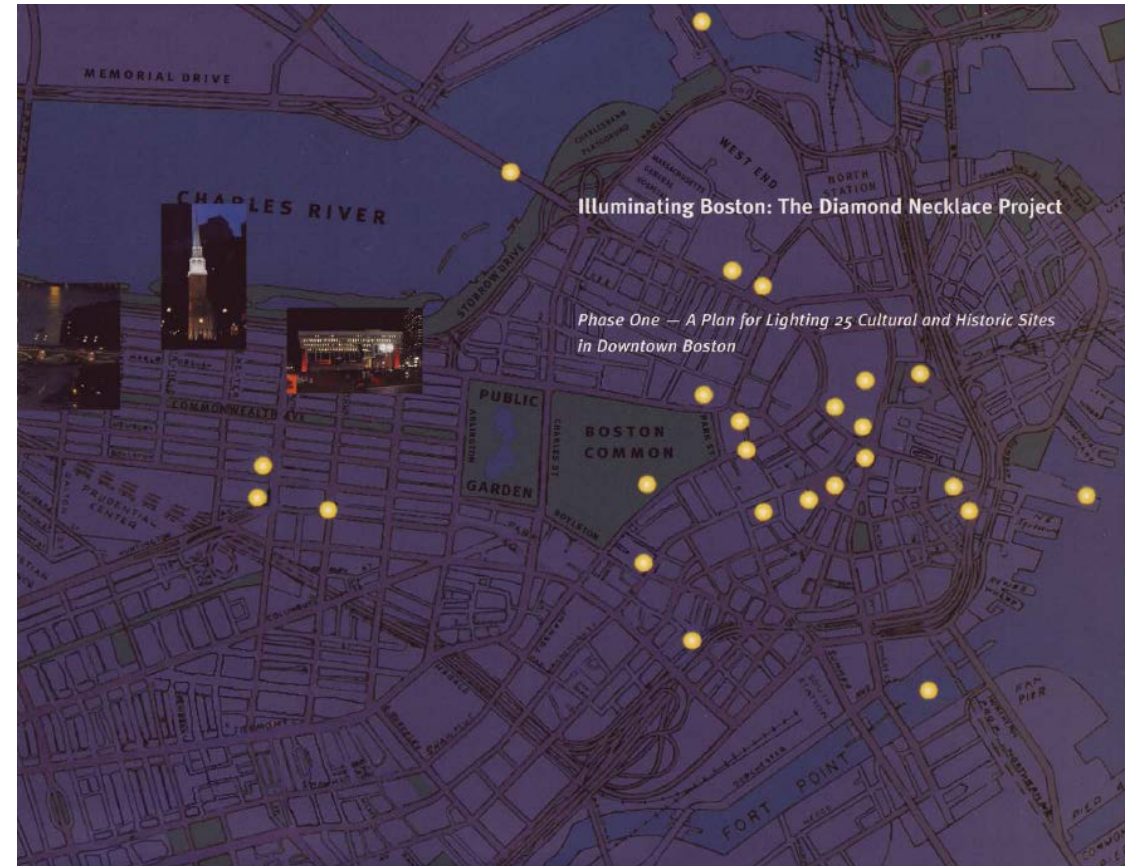


Image: “Illuminating Boston: The Diamond Necklace Project,” City of Boston and LIGHT Boston

Congress Street Bridge Lighting Project

- In 2003, Fisher Marantz Stone developed concept lighting plan
- Funding for bridge lighting project secured through Article 80 and Ch. 91 licenses for nearby redevelopments, namely Atlantic Wharf
- Changes in lighting technology and urban fabric since 2003



Images: Fisher Marantz Stone, Congress Street Bridge Concept Lighting Design

Congress Street Bridge Lighting Project RFP

- Focus of RFP:
 - Implementation of “Illuminating Boston: The Diamond Necklace Project”
 - Use aesthetic lighting enhancements to reveal and reinforce historic functions and cultural significance of bridge
 - Improve and enliven the atmosphere of the bridge
 - Enhance public’s access to and enjoyment of the city’s waterfront



Image: U.S. Library of Congress (HAER MAS, 13-BOST,77--4)

Congress Street Bridge Lighting Project Draft Schedule

- Concept design: April 2017
- Preliminary design: July 2017
- Public comment & permitting: Spring/summer 2017
- Final design: September 2017
- Installation: Fall/winter 2017
- Boston Tea Party Reenactment: December 16

Our approach

Respectful
Responsive
Realizable



Link to Congress St. Bridge Video

<https://youtu.be/DSeWPU23Ag4>

Design concepts



Design concepts



Design concepts



Design concepts

- Traffic indication



Design concepts

- Traffic indication



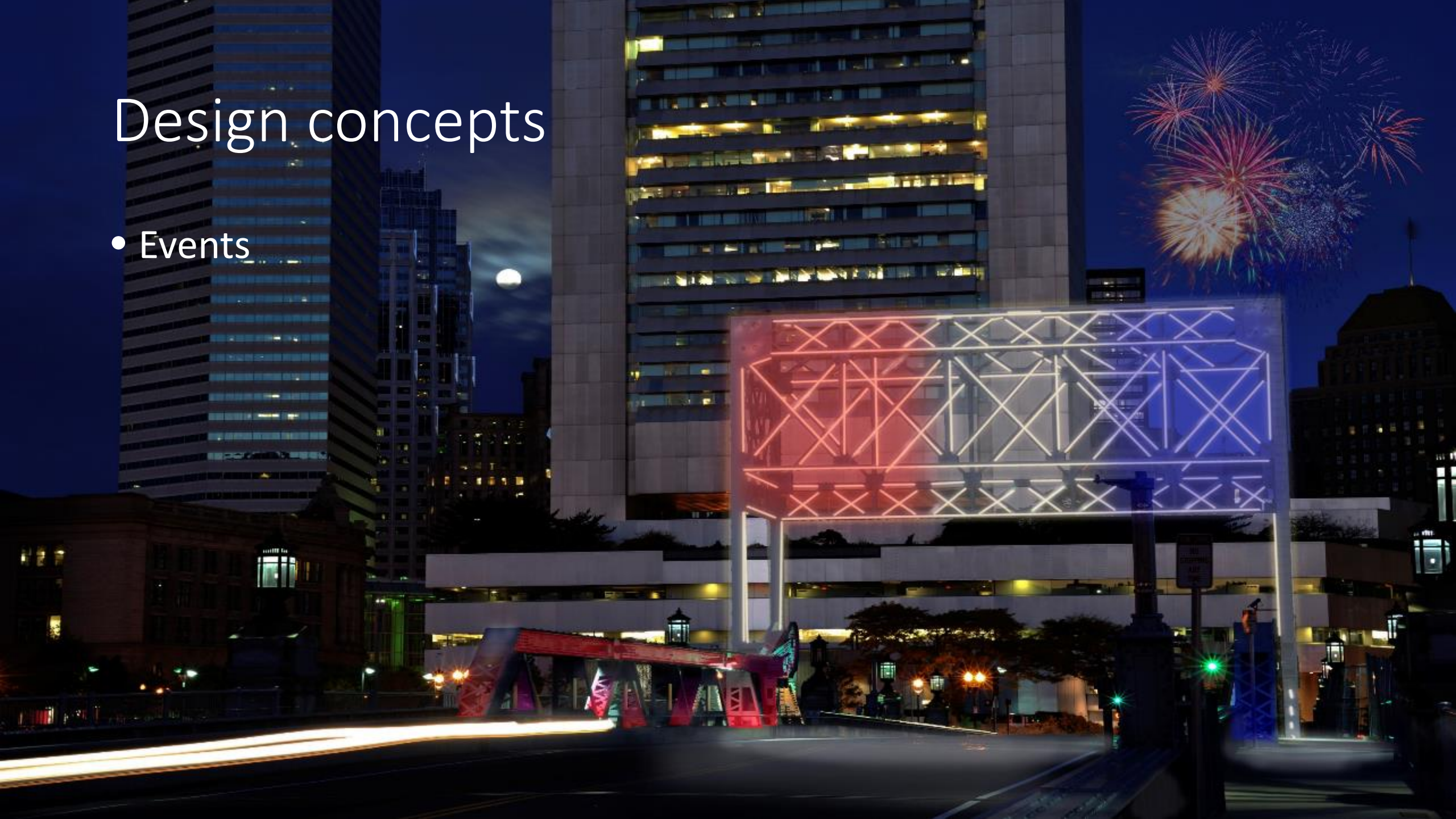
Design concepts

- Traffic indication



Design concepts

- Events



Design concepts

- User input
 - Awareness
 - Favorite color
 - Motion





Design concepts

- Retrofit lanterns with Type III LED
- Replace nostalgic Edison filament LED



△ FINISH TO BE BLACK. DUPONT 921 EPOXY PRIMER WITH A DUPONT IMRON 5000 POLYURETHANE ENAMEL FINISH OR THE INDUSTRIAL EQUIVALENT TO THE DUPONT IMRON BY CARDINAL PAINTS.

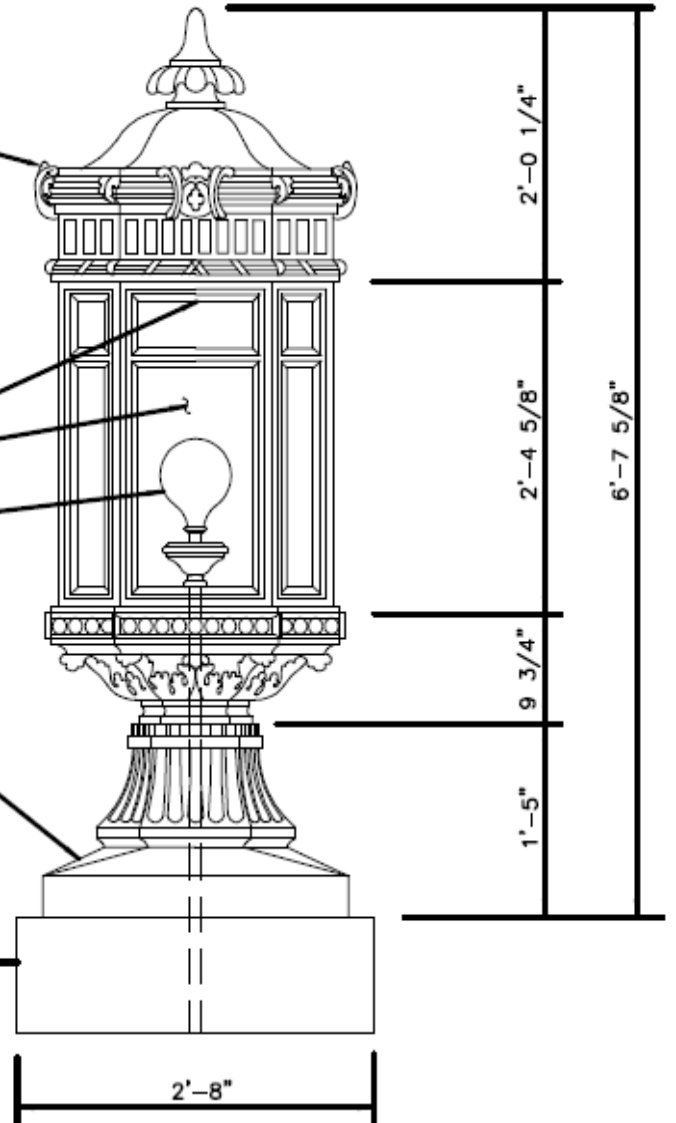
△ TYPE III CUT-OFF LUMINAIRE RECESSED INTO LANTERN CAP (150W HPS, 120V, HIGH POWER FACTOR REACTOR TYPE-20°F BALLAST) (175W MH W/ MOGUL BASE SOCKET, 120V, HIGH POWER FACTOR REACTOR TYPE-20°F BALLAST)

CLEAR TEMPERED GLASS (TYP)

PASSIVE REFLECTIVE GLOBE WHICH SIMULATES A GLOWING INCANDESCENT LAMP

LANTERN BASE

EXIST. GRAN. PIER



ELEVATION

BRIDGE LANTERN DETAIL

SCALE: 1 1/2"=1'-0"

Realization

- Design review with respective stakeholders to gain necessary approvals
- Combined design and engineering skillsets to realize concepts
 - Capabilities to meet aesthetic requirements of respective stakeholders
 - Photometric calculations and studies to ensure lanterns perform as good as if not better than present
 - Able to furnish complete construction documents for contractor bid
 - Close proximity to job site
- Budgetary product and construction costs obtained
 - Design concepts as shown are within budget target



A long term plan

- LED life cycles of 50,000 hours for color changing lighting
 - @ typical operating cycles of 6 hour/day ~ 22 years
- LED life cycles of 100,000 hours for lanterns
 - @ typical operating cycles of 12 hours/day ~ 22 years
- All LED luminaires to have replaceable drivers and LED light sources
- Consider extended warranty on luminaires
- Consider long term plan for 3rd party programming of light shows





Questions & comments?
