

Improvements to the Collins, Garrison and Morison statue nodes

Landmarks Commission | 11.27.18



AGENDA

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4

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5

PROPOSED LIGHTING FIXTURES

B



FRIENDS
OF THE
PUBLIC GARDEN

PROJECT TEAM

Friends of the Public Garden

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Director of Historic Parks

Fleming Brothers

Liam Fleming

Weston & Sampson

Gene Bolinger, RLA

Cassie Bethoney, RLA

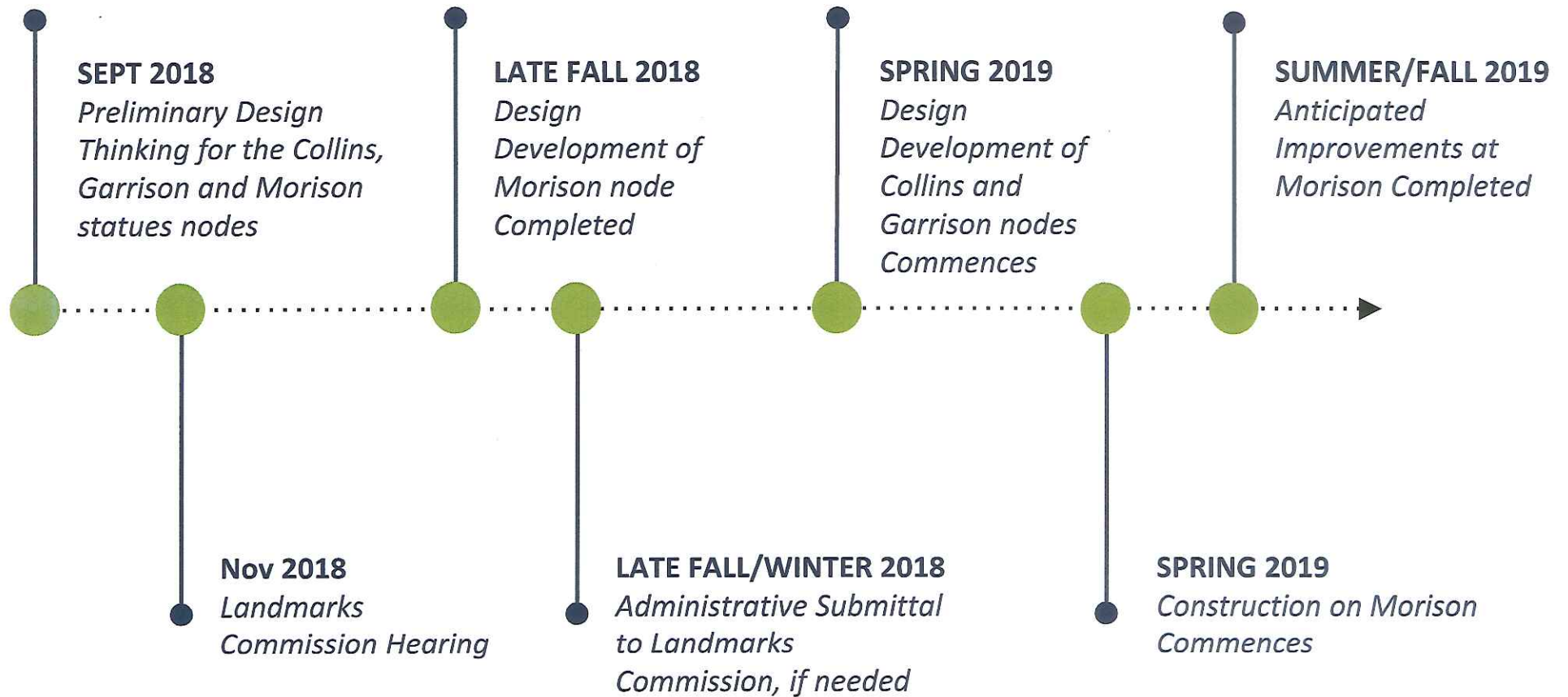
Bob McAleer, PE



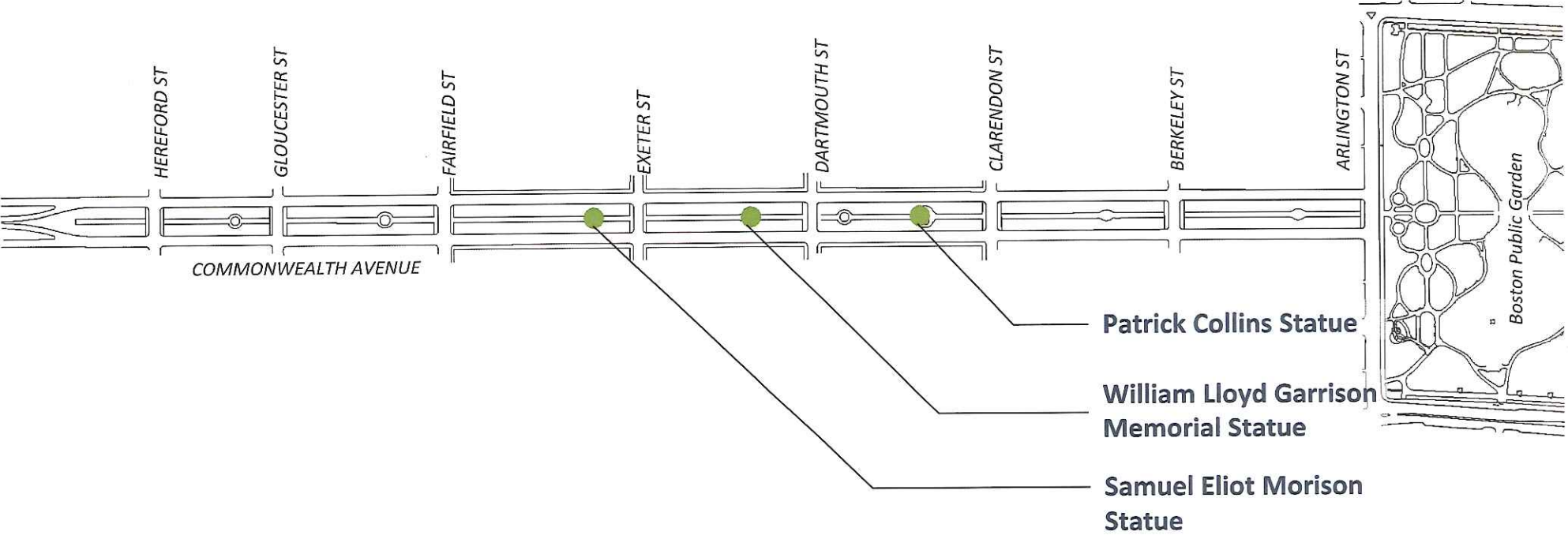
B



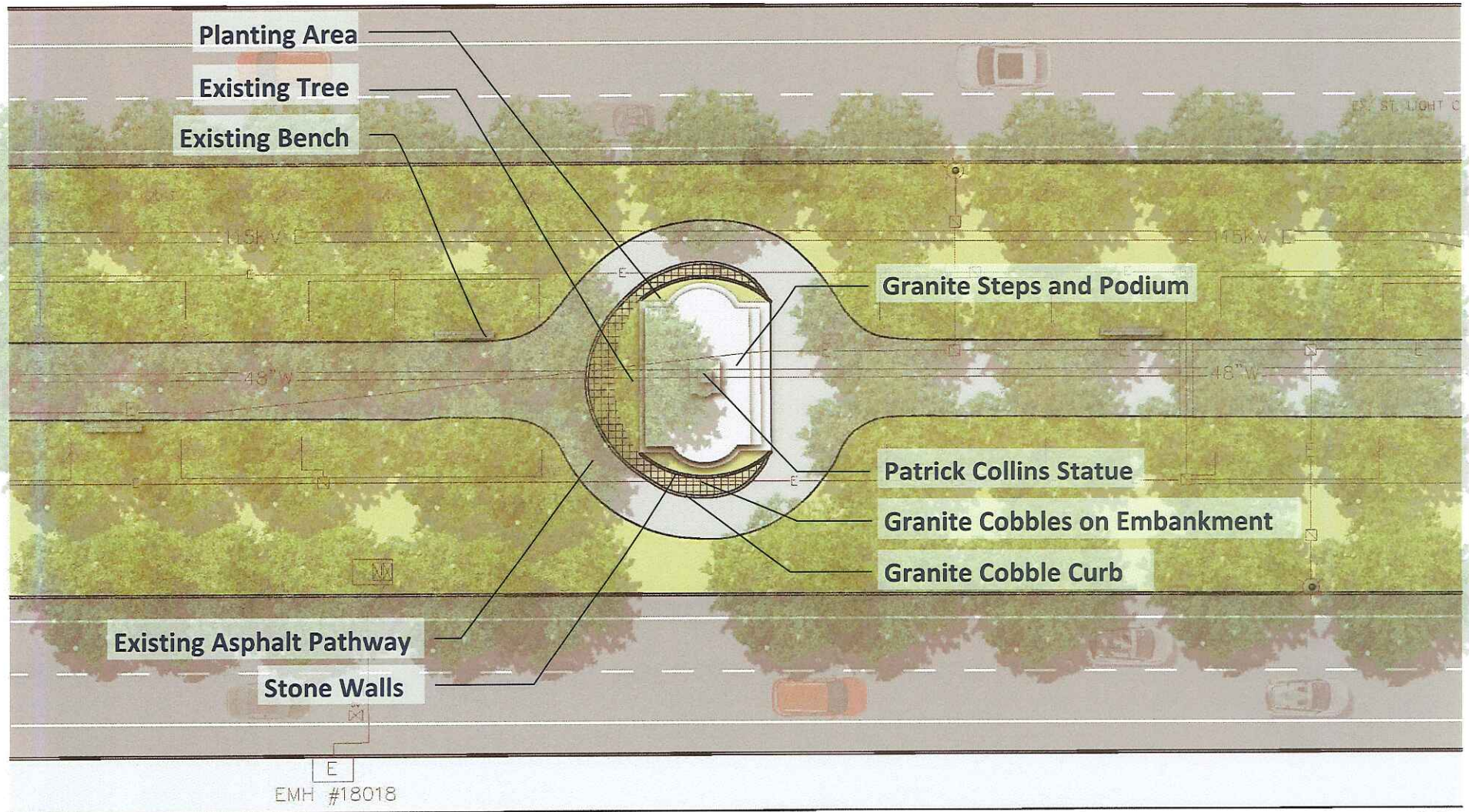
PROJECT SCHEDULE



LOCUS PLAN



EXISTING SITE CONDITIONS: COLLINS



NORTH



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B



PROPOSED IMPROVEMENT PROGRAM: COLLINS



- Statue tree & uplighting and incidental electrical work
- Repointing of statue elements
- Walkway repaving
- Redesign of granite cobble surround and planting
- Site restoration
- Protection of existing trees















ORIGINAL LOCATION: COLLINS



8 - COMMONWEALTH AVENUE AND CHARLESGATE

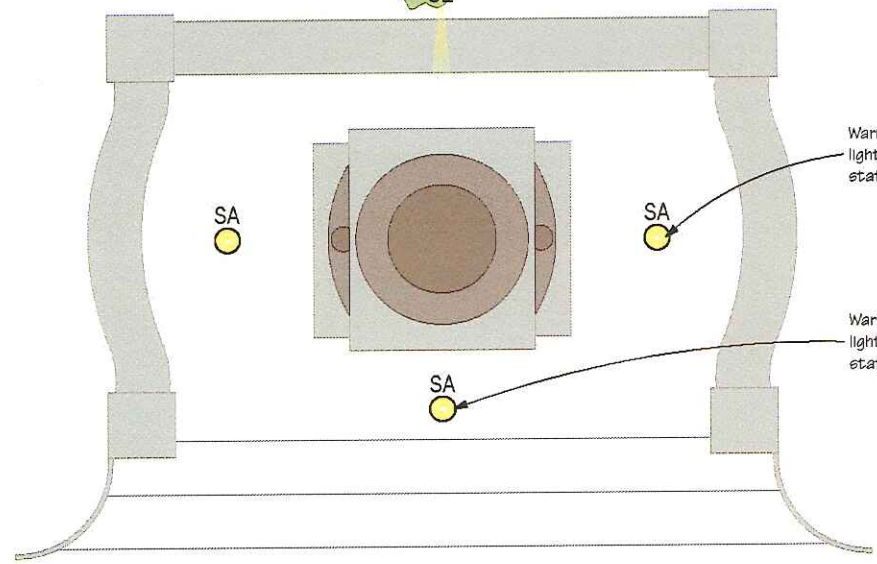
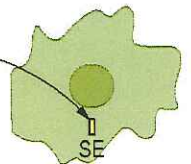


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PUBLIC GARDEN

LIGHTING FIXTURE PLAN: COLLINS

Lighting Plan View

Tree with spotlight mounted as high as possible to illuminate rear side of statue and create pool of light surrounding statue.

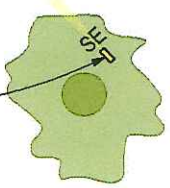


Warm In-ground adjustable light to illuminate side statues. Typ.

Warm In-ground adjustable light to illuminate front of statue and inscription.



Tree with spotlight mounted as high as possible to illuminate fill in shadows on front of statue.



Photos from Mockup
12 February 2018



Lighting Symbol Key

SA	11" dia. 3000K Inground Uplight (12w)
SB	11" dia. 4000K Inground Uplight (12w)
SC	8" dia. 3000K Inground Uplight (6w)
SD	8" dia. 4000K Inground Uplight (6w)
SE	Tree Mounted Spotlight (11.5w)



LIGHTING FIXTURE PLAN: COLLINS

Fixture Type	Description	Quan.	Unit Price	Extended
Type SA	11" dia. 3000K Inground Adjustable	3	\$2,236.00	\$6,708.00
Type SE	Tree Mounted Spotlight	2	\$568.00	\$1,136.00
Type Control 1	Dedicated Control System	1	\$2,500.00	\$2,500.00
Hardware Total				\$10,344.00

Patrick Collins

The lighting schematic we developed for the Collins statue may be the most technically challenging to implement as we learned that putting recessed luminaires in the stone floor adjacent to the piece were quite successful and beautiful. Hopefully, the cost of boring recess holes in the stone and running power to these light fixtures will not prove to be an insurmountable challenge. This bust was lit from the front by a high angle, tree-mounted spotlight. A similar spotlight, tree-mounted directly above the pedestal, created both a dramatic bust back light and a pool of ambient light on the stone plaza. Three warm uplights, recessed in the plaza each uplight either an allegorical figure or the carved inscription on the face of the pedestal.

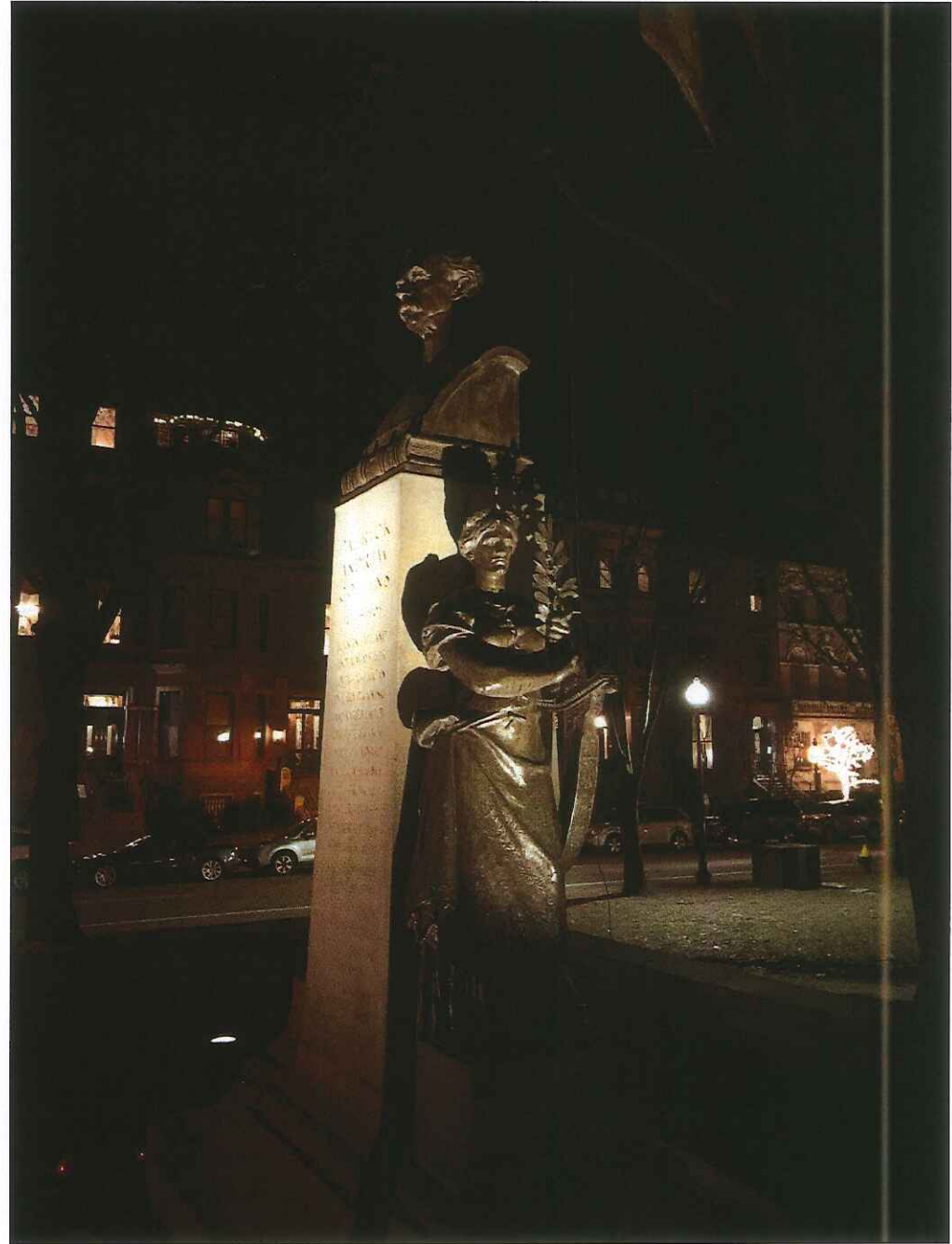




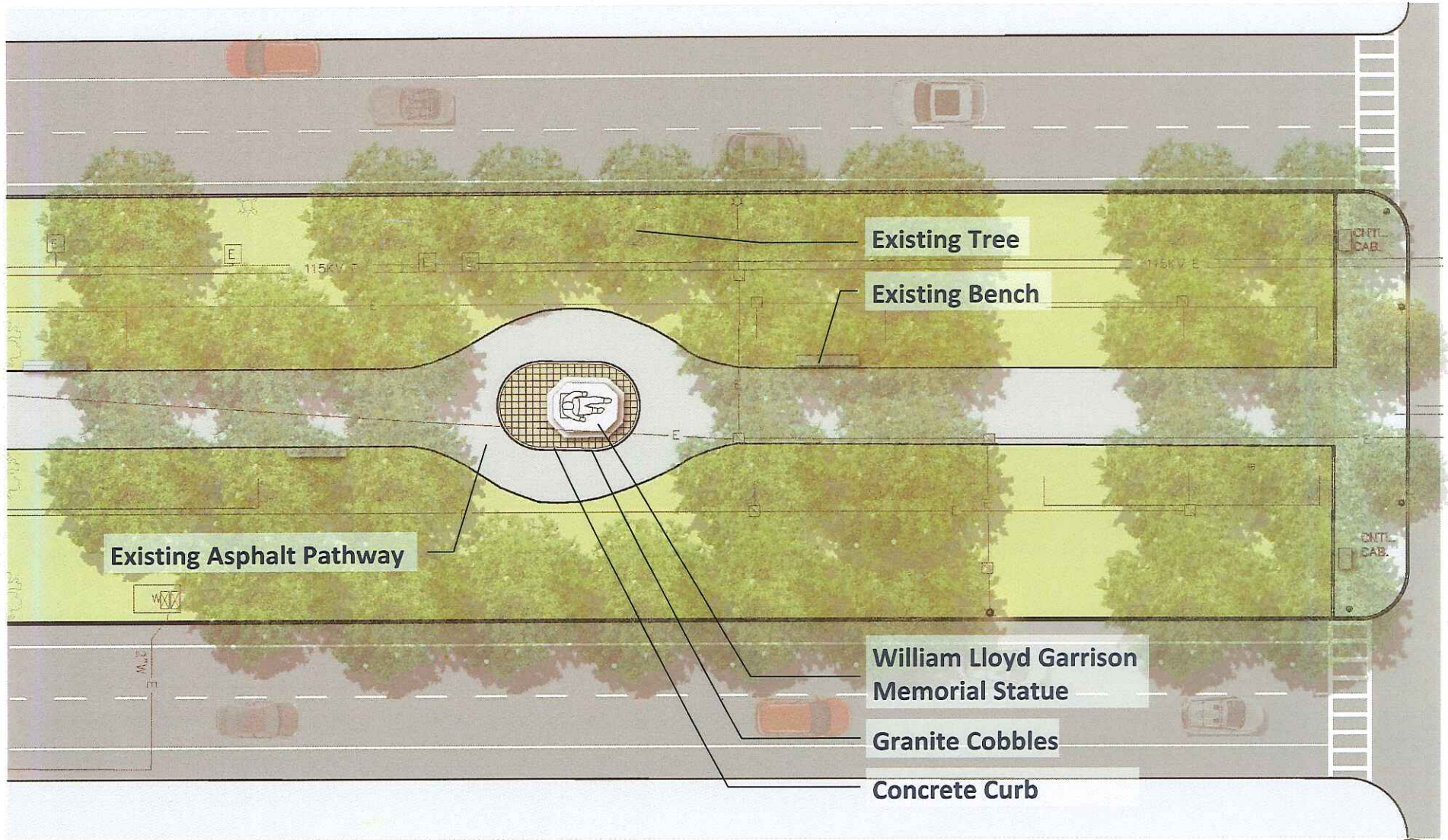




LIGHTING FIXTURE PLAN: COLLINS



EXISTING SITE CONDITIONS: GARRISON

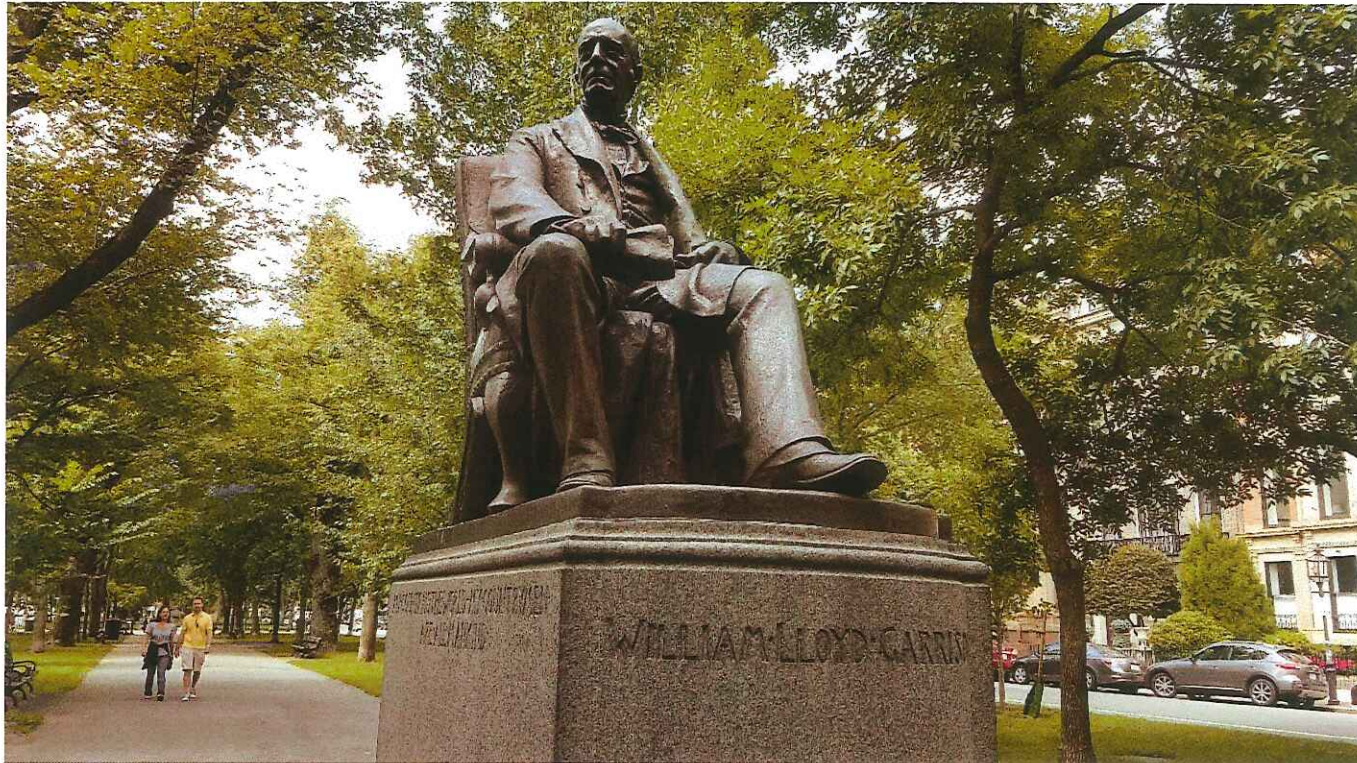


NORTH



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PROPOSED IMPROVEMENT PROGRAM: GARRISON



- Statue tree & uplighting and incidental electrical work
- Repointing of statue elements (steps, podium)
- Treatment of set cobbles
- Curb replacement
- Walkway repaving
- Site restoration
- Protection of existing trees



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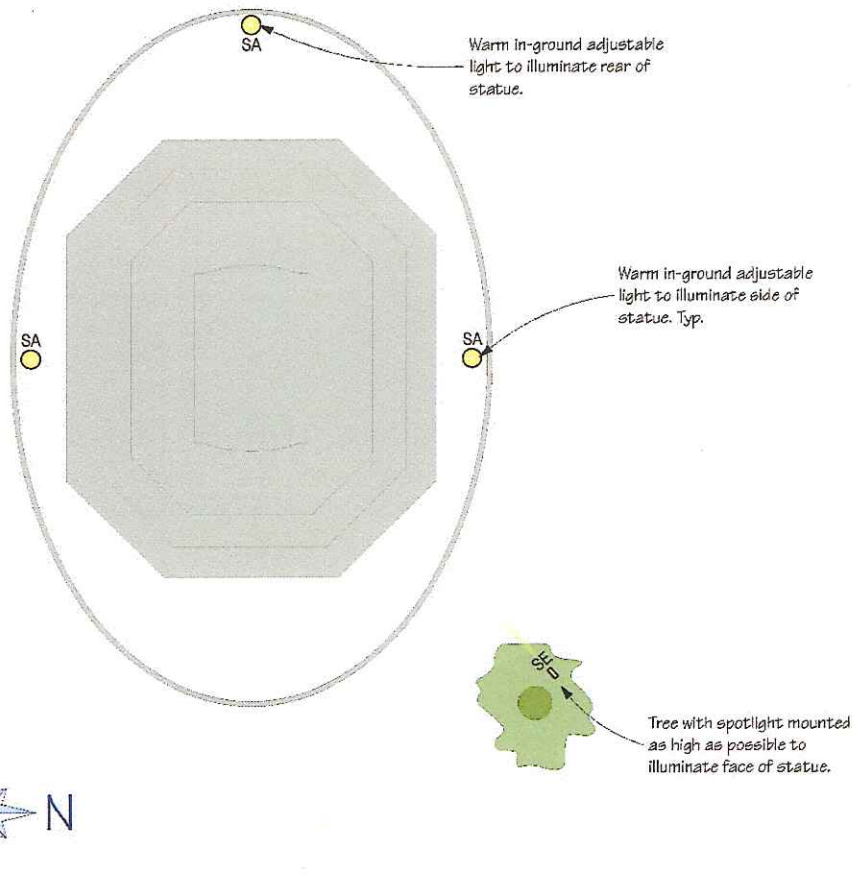




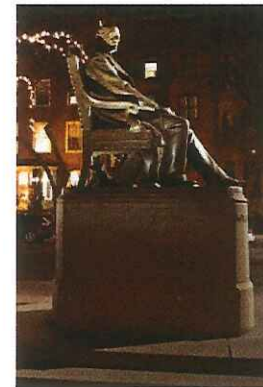


LIGHTING FIXTURE PLAN: GARRISON

Lighting Plan View



Photos from Mockup
12 February 2018



Lighting Symbol Key

SA	11" dia. 3000K Inground Uplight (12w)
SB	11" dia. 4000K Inground Uplight (12w)
SC	8" dia. 3000K Inground Uplight (6w)
SD	8" dia. 4000K Inground Uplight (6w)
SE	Tree Mounted Spotlight (11.5w)

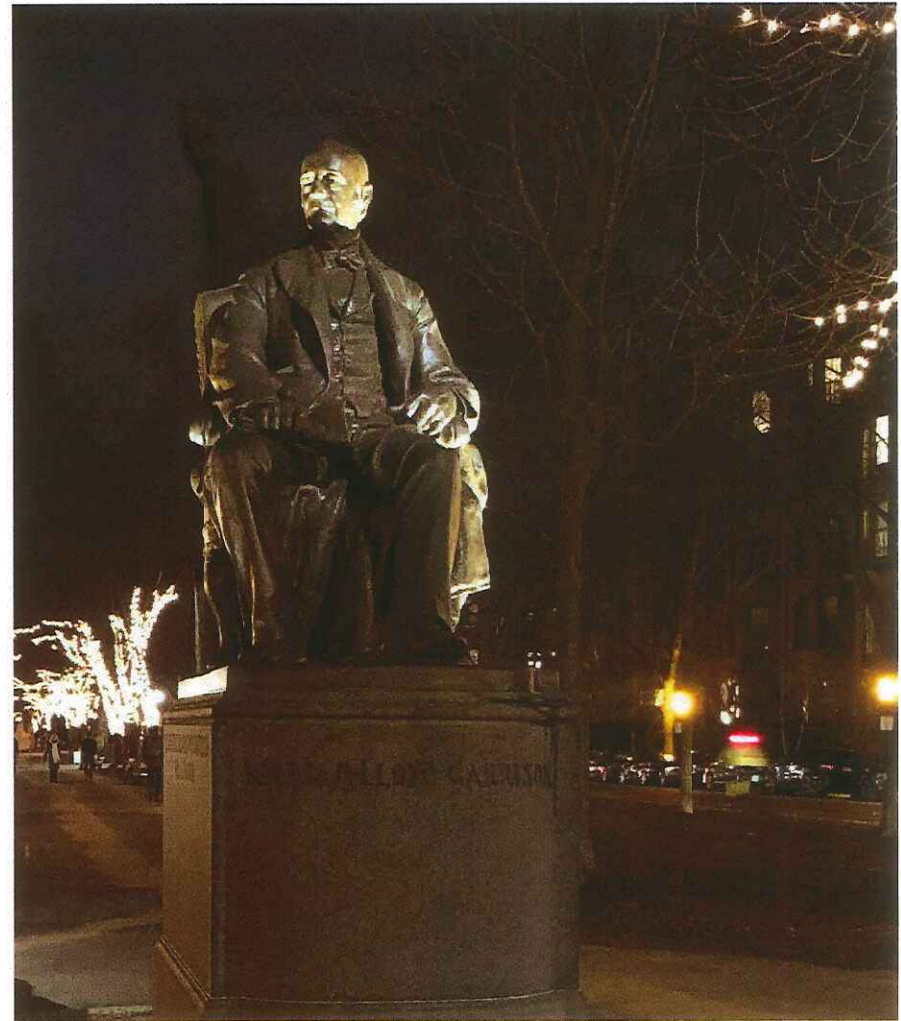


LIGHTING FIXTURE PLAN: GARRISON

Fixture Type	Description	Quan.	Unit Price	Extended
Type SA	11" dia. 3000K Inground Adjustable	3	\$2,236.00	\$6,708.00
Type SE	Tree Mounted Spotlight	1	\$568.00	\$568.00
Type Control 1	Dedicated Control System	1	\$2,500.00	\$2,500.00
Hardware Total				\$9,776.00

William Garrison

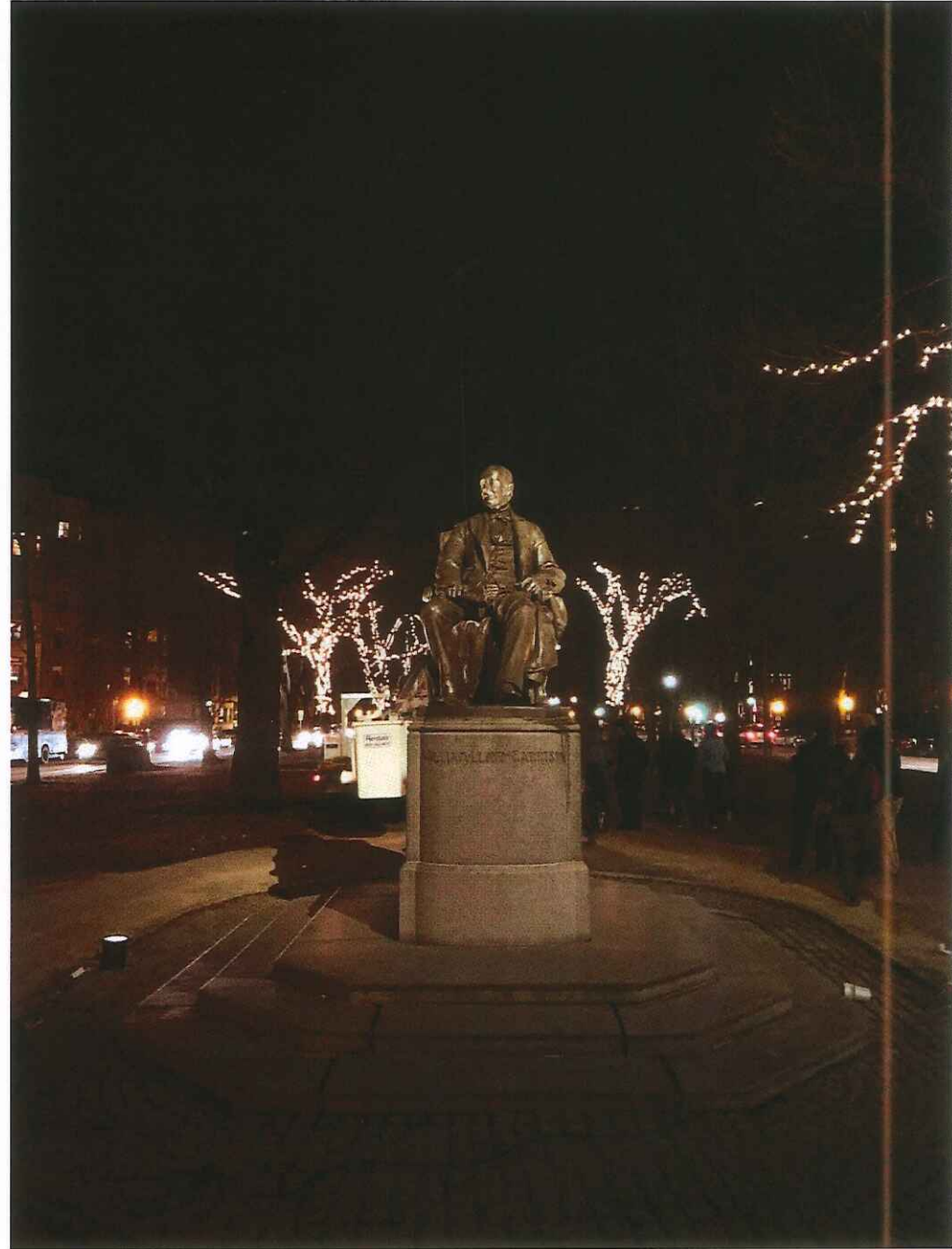
During the mockup, this statue was simply lit with four luminaires. First, a tree-mounted, high angle (to minimize glare) front light accented Mr. Garrison's face, illuminated the pedestal inscription, and provided some ambient circulation light. Additionally, the sides and rear of the statue were illuminated with three warm color temperature uplight fixtures each highlighting inscriptions on the sides and rear of the pedestal.



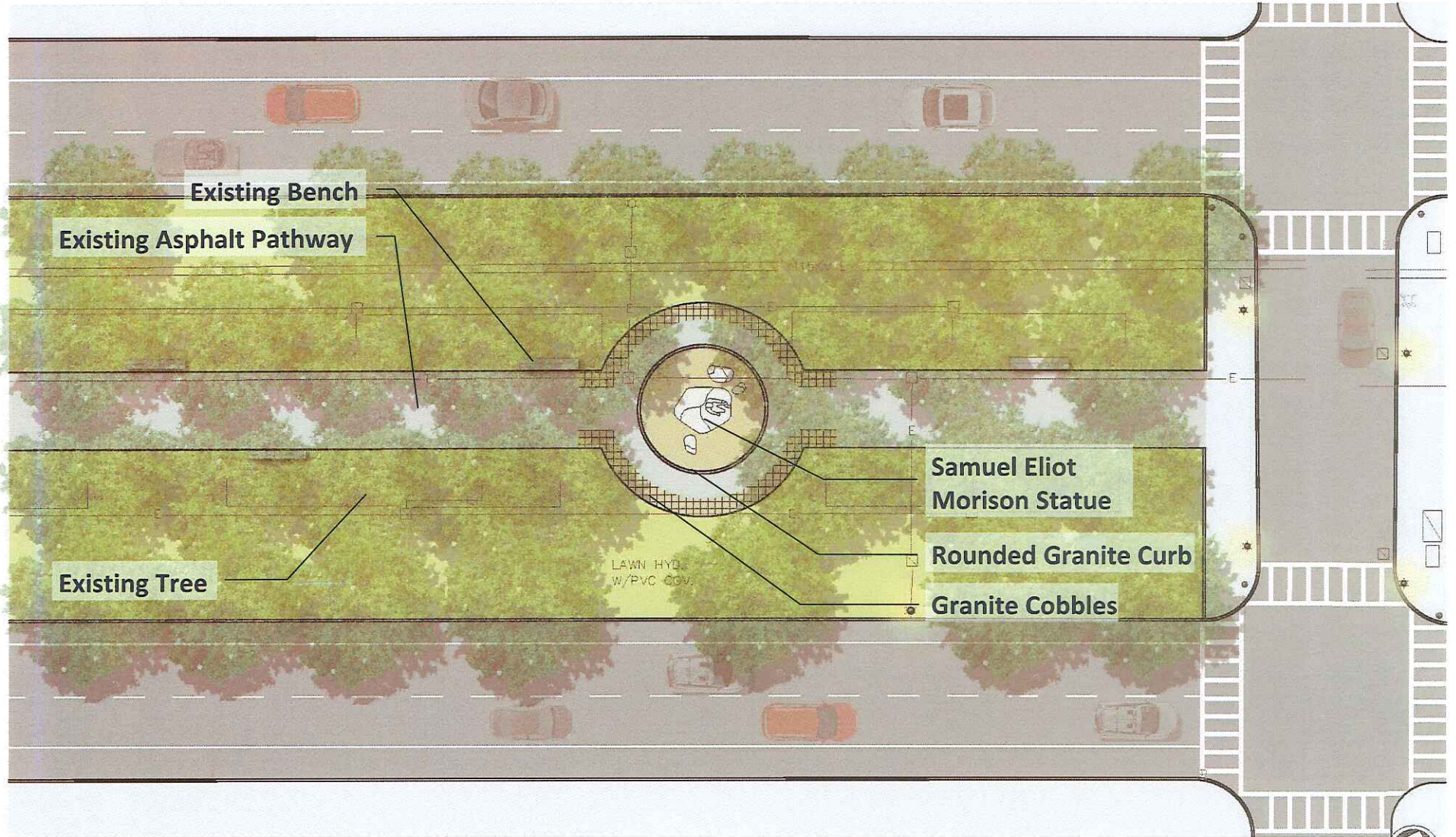




LIGHTING FIXTURE PLAN: GARRISON



EXISTING SITE CONDITIONS: MORISON



NORTH



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PUBLIC GARDEN

PROPOSED IMPROVEMENT PROGRAM: MORISON

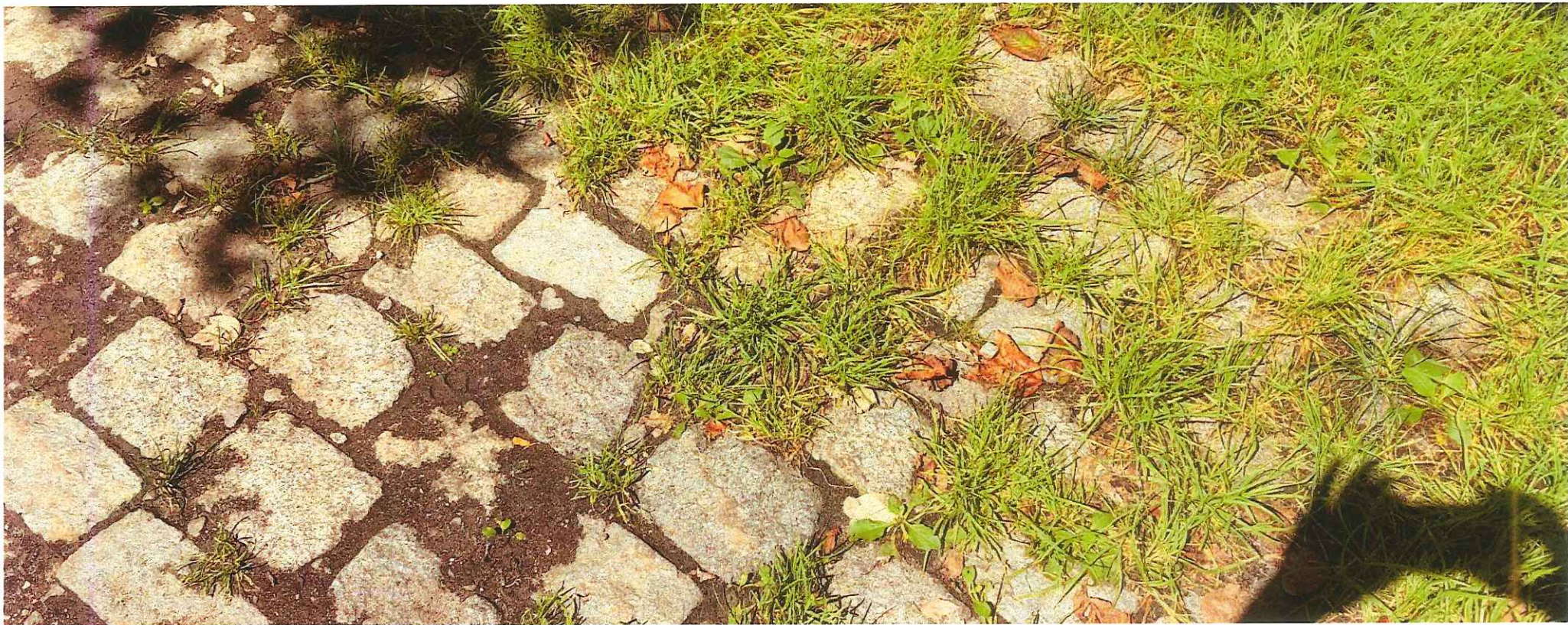


- Statue tree & uplighting and incidental electrical work
- Curb treatment
- Regrading and resetting of granite block band
- Site restoration
- Protection of existing trees

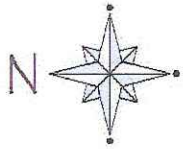








LIGHTING FIXTURE PLAN: MORISON



Lighting Plan View

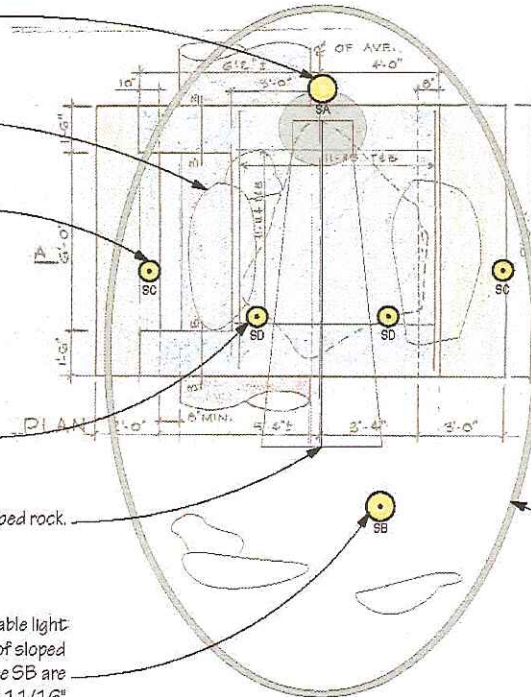
Warm In-ground adjustable light to illuminate inscription of front of statue. Type SA and Type SB are 1 1/4" diameter x 8 11/16" tall.

Rock with inscription
Warm In-ground adjustable light to illuminate inscriptions on rock. Typ. Type SC and Type SD are 8 1/8" diameter x 6 5/8" tall.

Cool In-ground adjustable light to graze sides of sloped rock. Typ. Type SC and Type SD are 8 1/8" diameter x 6 5/8" tall.

Large sloped rock.

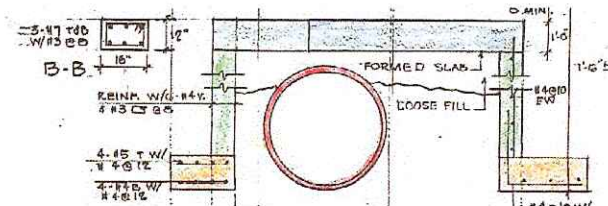
Cool In-ground adjustable light to graze back side of sloped rock. Type SA and Type SB are 1 1/4" diameter x 8 11/16" tall.



Tree with spotlight mounted roughly 10'-0" off of ground to light face of statue under baseball cap.

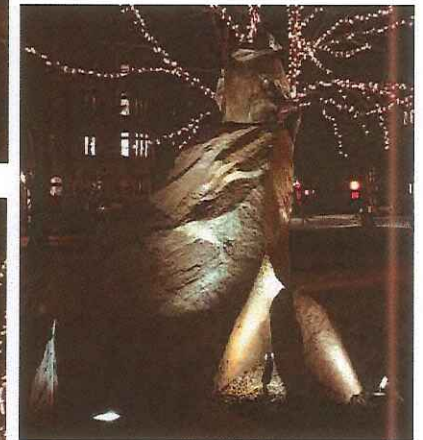
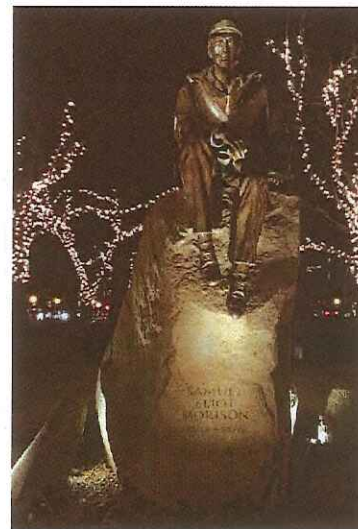
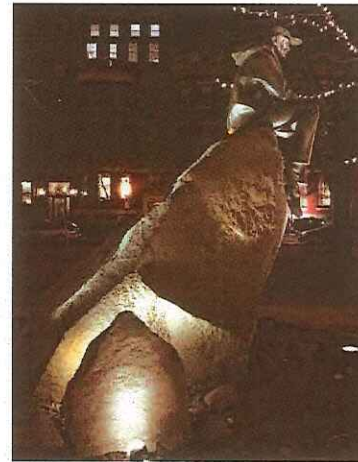
Engineering Plan and Fixture Layouts are approximately scaled.

Underground Section



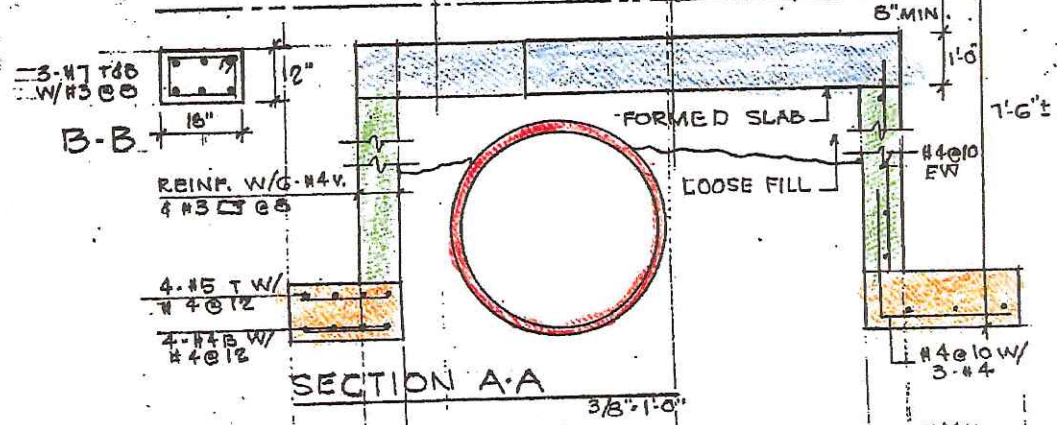
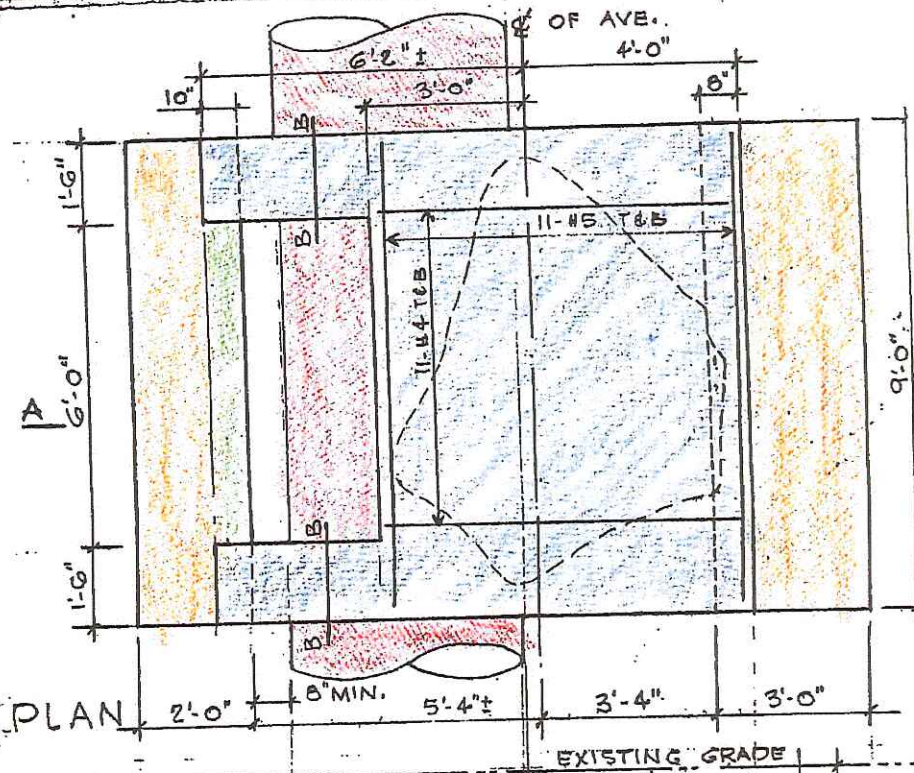
Photos from Mockup

12 February 2016



Lighting Symbol Key

SA	1" dia. 3000K Inground Uplight (12w)
SB	1" dia. 4000K Inground Uplight (12w)
SC	8" dia. 3000K Inground Uplight (6w)
SD	8" dia. 4000K Inground Uplight (6w)
SE	Tree Mounted Spotlight (11.5w)



- NOTES:
1. CONCRETE SHALL BE TYPE 2 CEMENT, 3,000 PSI, PREQUALIFIED MIX.
 2. REINFORCING BARS SHALL BE GRADE 40 DEFORMED
 3. VERIFY LOCATION OF WATER MAIN AND LOCATE BOTT. OF FOOTINGS NO HIGHER THAN 4" ABOVE BOTT. OF MAIN
 4. PROVIDE SHOP DRAWINGS FOR APPROVAL

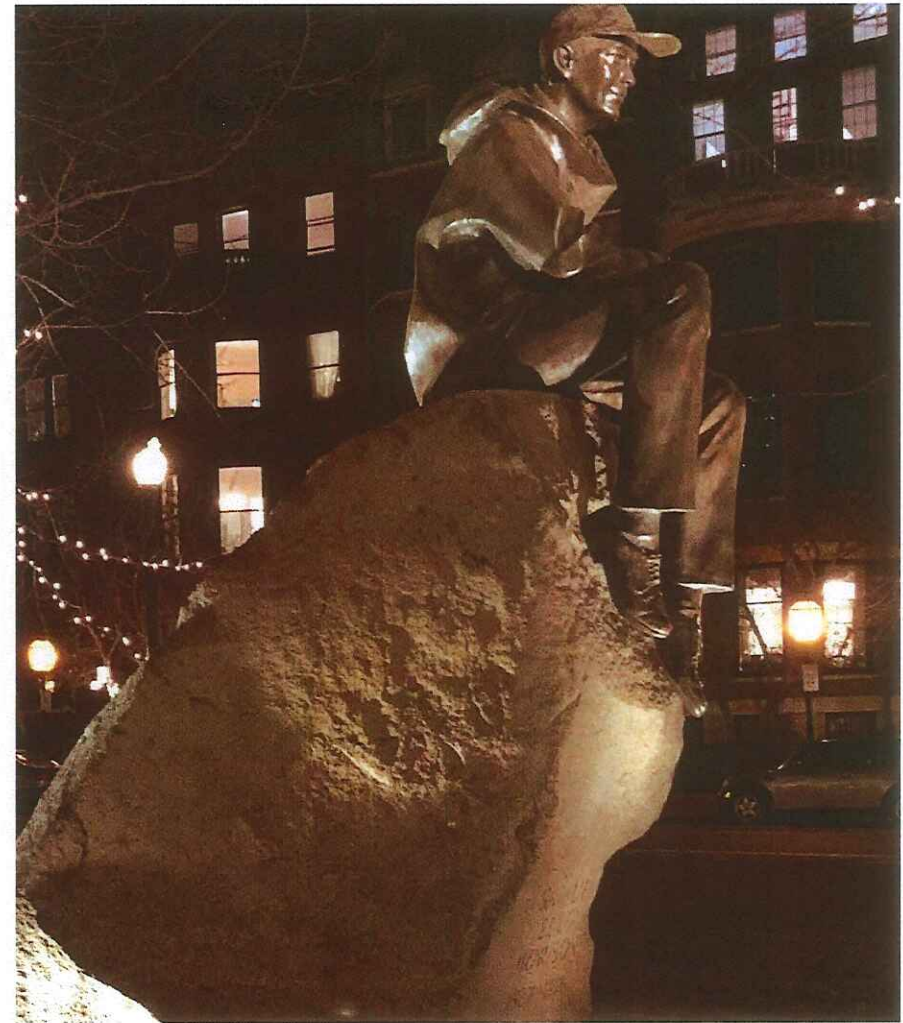


LIGHTING FIXTURE PLAN: MORISON

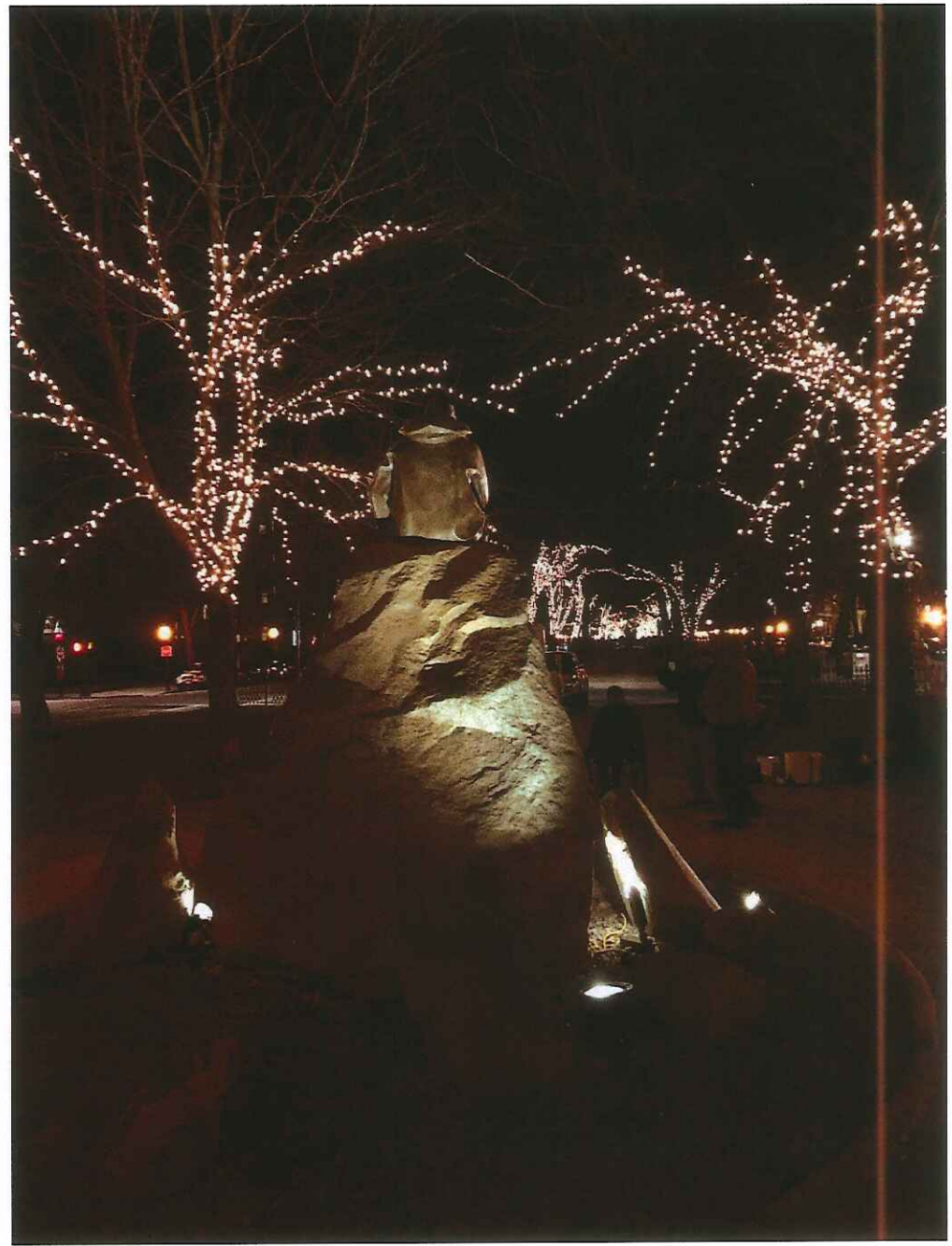
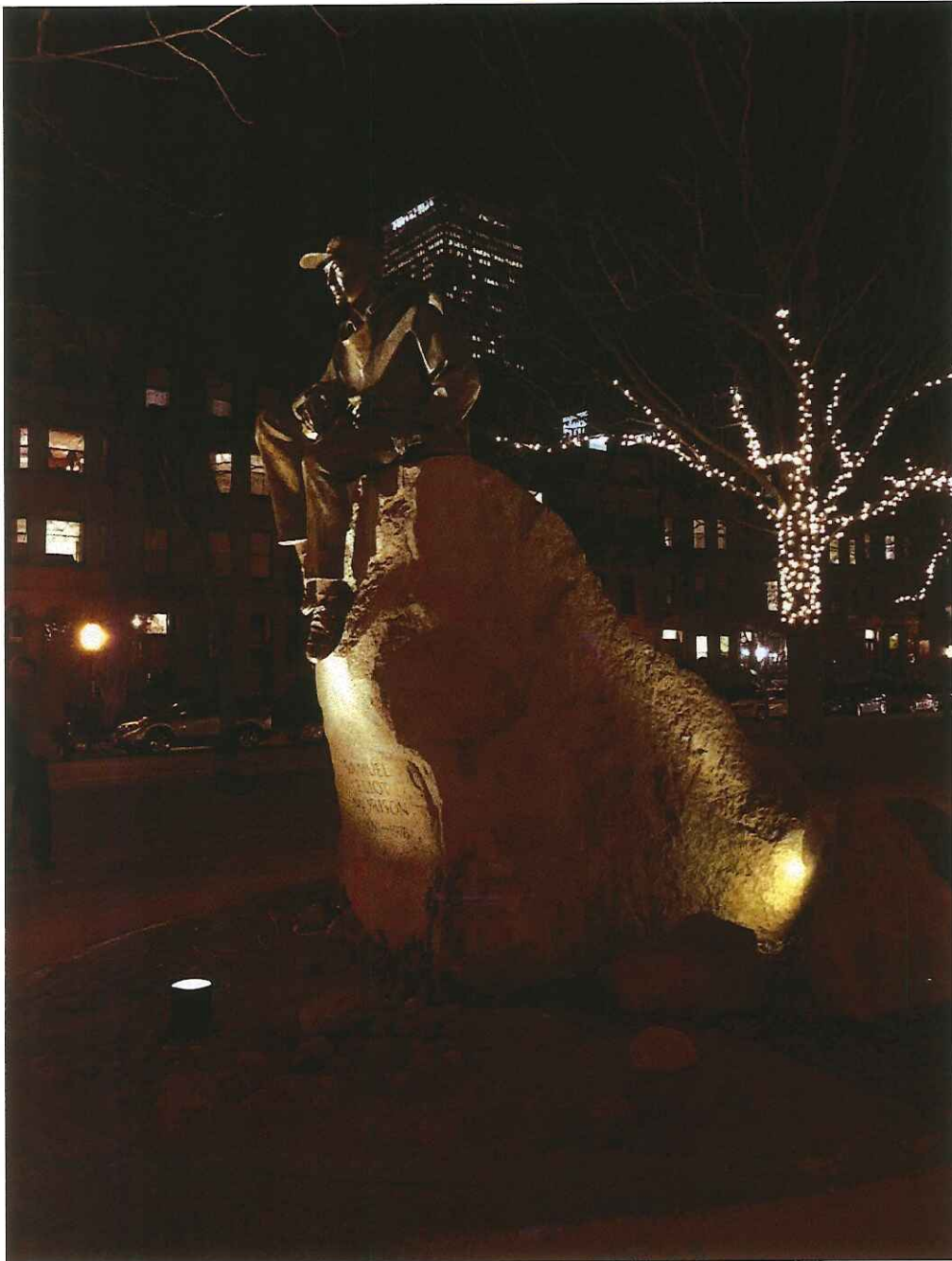
Fixture Type	Description	Quan.	Unit Price	Extended
Type SA	11" dia. 3000K Inground Adjustable	1	\$2,236.00	\$2,236.00
Type SB	11" dia. 4000K Inground Adjustable	1	\$2,236.00	\$2,236.00
Type SC	8" dia. 3000K Inground Adjustable	2	\$2,103.00	\$4,206.00
Type SD	8" dia. 4000K Inground Adjustable	2	\$2,103.00	\$4,206.00
Type SE	Tree Mounted Spotlight	1	\$568.00	\$568.00
Type Control 1	Dedicated Control System	1	\$2,500.00	\$2,500.00
			Hardware Total	\$15,952.00

Admiral Morison

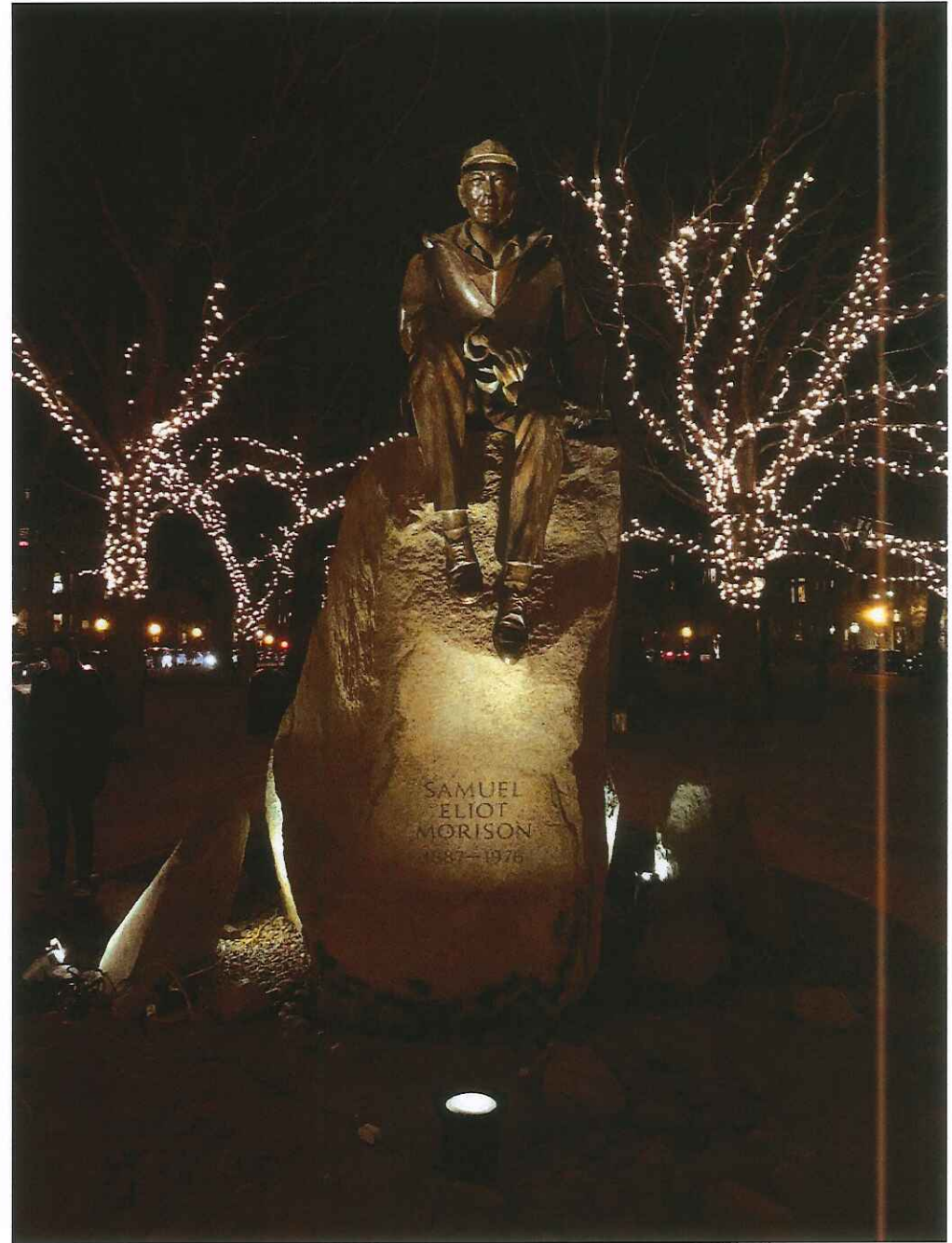
The lighting for Admiral Morison ended up being a bit more involved than the other two mockup scenarios. This was due to the long-brimmed baseball hat which made face lighting more difficult and because of the interesting rock layering surround that offered a great opportunity for nighttime viewing. Admiral Morison's face was illuminated by a tree-mounted low angle front. Three warm color temperature uplights were used to accent three different inscriptions and three cool color temperature uplights were used to simulate light reflecting off water on three unadorned rock faces.



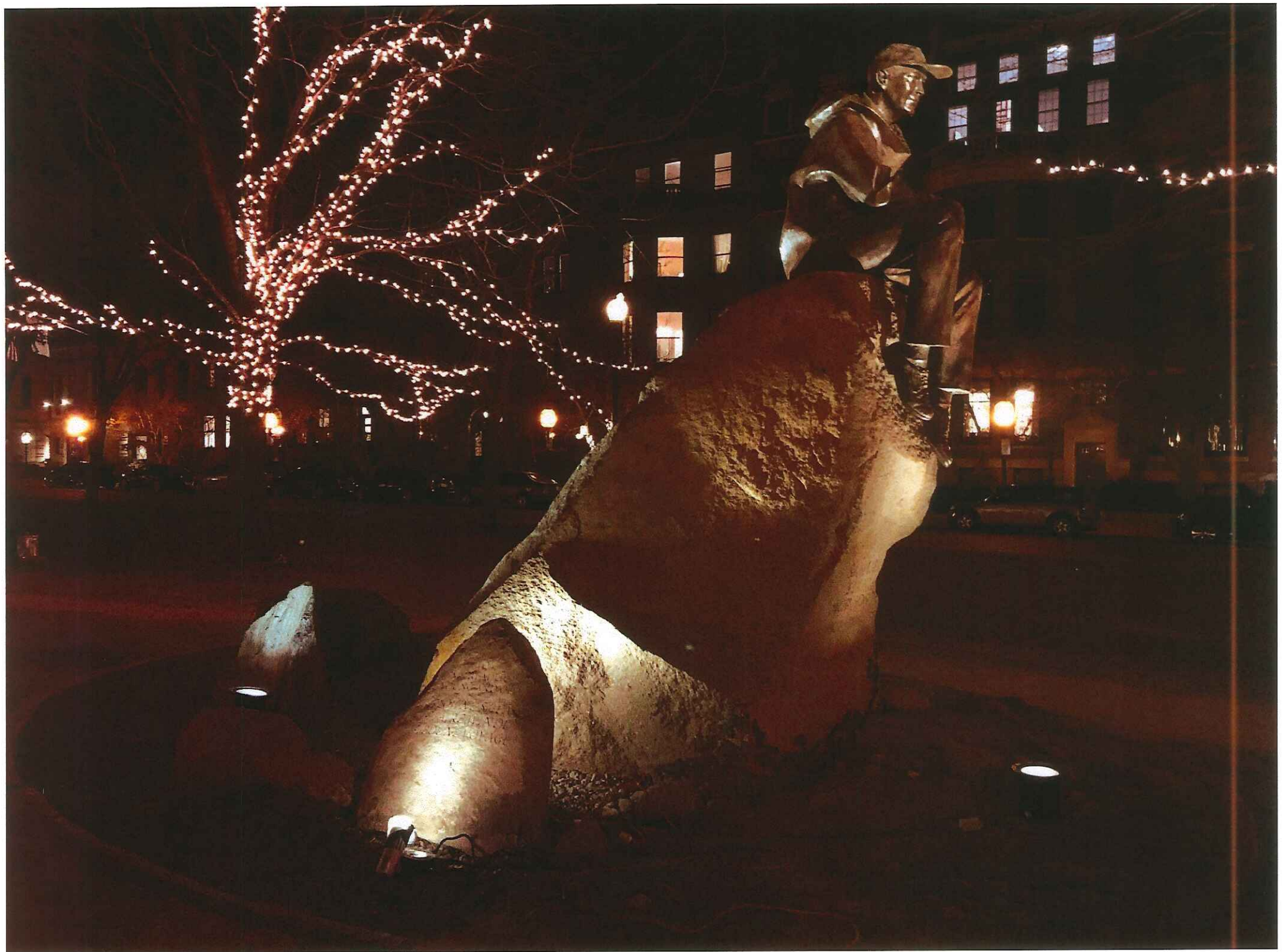
LIGHTING FIXTURE PLAN: MORISON



LIGHTING FIXTURE PLAN: MORISON







LIGHTING FIXTURE CUT SHEETS: TYPE - SA

ERCO

Tesis In-ground luminaire

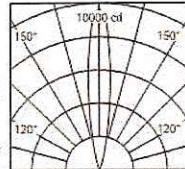
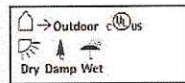
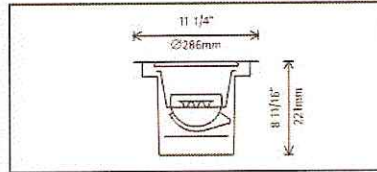
Directional luminaire



35130.023
LED 12W 120lm 2000K warm white
0-10V dimmable
Version B
Covered mounting detail
Spherulite lens, spot

Product description
Housing: polymer, black.
Control gear: 120V/277V, 60Hz, dimmable, longitudinally watertight cable SW/WG14, L 31 1/2" / 800mm.
LED modules: high-power LEDs on metal-core PCB. Collimating lens made of optical polymer, 0-50° tiltable, rotatable through 360°.
Optical cut-off: 40° from horizontal.
Screen-realized cover ring with flush safety glass: stainless steel. Safety glass: 3/16" / 15mm, clear.
Installation with separate connection sleeve.
Mounting in recessed housing: can be driven over in vehicles with pneumatic tyres. Load 11240lbwt / 50kN.
Mounting in hollow floor: mounting kit to be ordered separately.
Dimming with external dimmers possible (0-10V).
Suitable for wet location (IP68): dust-proof.
Weight 12.06lbs / 5.47kg

Technical data	
Luminous flux of the luminaire	967lm
Connected load	16W
Luminaire efficacy	60lm/W
Color deviation	2 SDCM
Color rendition index	CRI >80
Lumen maintenance (LM-80/TM-21)	L90/B10 <=50000h
Lumen maintenance (LED manufacturer specifications)	L90 <=100000h
LED failure rate	UL File #50809sh
LMF	E
Temperature on the cover glass	90°F / 32°C



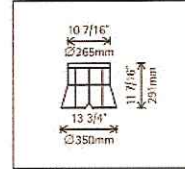
h/d	E (cd)	D
15	43	3'11"
12	67	3'2"
9	119	2'4"
6	268	1'7"
3	1071	0'5"



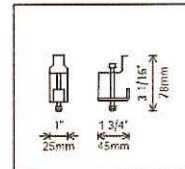
33958.023
Connection sleeve
for cable diameters of 0.25" - 0.50".
Polymer conduit, two-part PUR cast resin.
Length 5 1/8" / 150mm.
Width 1 1/4" / 32mm.
Height 2 3/8" / 59mm.
Weight 0.99lbs / 0.45kg



33964.000
Recessed housing
Polymer, black.
4 cable entries.
Load 11240lbwt / 50kN



33988.000
Mounting kit
Mounting in hollow floors.
3 mounting brackets stainless steel.
Clamp extension 7 7/16" - 1 13/16" / 114-60mm.
Load 4500lbwt / 20kN.
Floor aperture:
Size 5: ø 10 1/16" / 255mm
Size 7: ø 11 9/16" / 293mm



Cleaning [a]	1				2				3			
	P	C	N	D	P	C	N	D	P	C	N	D
Ambient conditions	0.96	0.94	0.90	0.86	0.93	0.91	0.86	0.81	0.92	0.90	0.84	0.79
LMF	0.91	0.83	0.68	0.51	0.50	0.81	0.67	0.50	0.90	0.80	0.67	0.50
RSMF												
Hours of operation [h]	1000	5000	10000	20000	30000	40000	50000					
LMF	1.00	0.99	0.96	0.96	0.94	0.92	0.90					
LSF	1	1	1	1	1	1	1					

LMF UNFARSVFLLIFALSF
ME Maintenance Factor
LMF Luminaire Maintenance Factor
RSMF Room Surface Maintenance Factor
LLMF Lamp Lumen Maintenance Factor
LSF Lamp Survival Factor
P Room pure
C Room clean
N Room normal
D Room dirty

Technical data based on international standards and directives
IEC 60598
Luminaires - Parts 1 + 2: General requirements, particular requirements and tests
IEC 62031
LED modules for general lighting - Safety specifications
IEC 62471
Photobiological safety of lamps and lamp systems
UL 1598
Luminaires
UL 1574
Standard for Track Lighting Systems
UL 8750
Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products
IES LM-79-08
Electrical and Photometric Measurements of Solid-State Lighting Products
IES LM-80-08
Measuring Lumen Maintenance of LED Light Sources
CIE 13
Method of measuring and specifying color rendering properties of light sources

All technical data are subject to industry standard tolerances.
See also www.ercos.com/ercos-101



LIGHTING FIXTURE CUT SHEETS: TYPE - SB

ERCO

Tesis In-ground luminaire

Directional luminaire

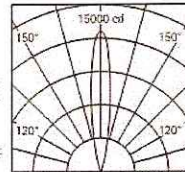
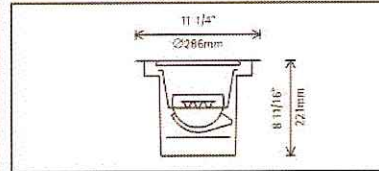


35131.023
LED 12V 1850lm 4000K neutral white,
0-10V dimmable
Version B
Covered mounting detail
Scherer lens, seal

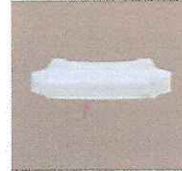
Product description
Housing: polymer, black,
dimmable, longitudinally watertight
cable Se-119/14, L31 1/2" / 302mm.
LED module: high-power LEDs on
metal-core PCB, Collimating lens made
of optical polymer, 0-30° (rotatable,
adjustable through 360°).
Optical cut-off: 40° from horizontal.
Screw-fastened cover ring with flush
safety glass: stainless steel, Safety glass:
9/16" / 15mm, clear.
Installation with separate connection
slcock.
Mounting in recessed housing: can be
driven over in vehicles with pneumatic
tyres. Load 11240lb wt / 50kN.
Mounting in hollow floor: mounting kit
to be ordered separately.
Dimming with external dimmers possi-
ble (0-10V).
Suitable for wet location (IP68); dust-
proof.
Weight 12.06lbs / 5.47kg

Technical data

Luminous flux of the luminaire	1267lm
Connected load	16W
Luminaire efficacy	78lm/W
Color deviation	2 SDCM
Color rendition index	CRI >80
Lumen maintenance (LM-80/1M-21)	L90/B10 = 50000h
Lumen maintenance (LED manufacturer specifications)	L90 > 100000h
LED lifetime rate	0.1% < 500000h
LMF	E
Temperature on the cover glass	90°F / 32°C



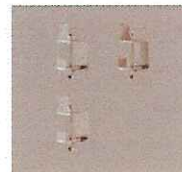
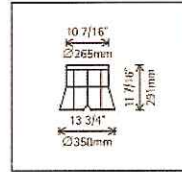
h(f)	E(f)	D
15	56	3'11"
12	88	3'2"
9	150	2'4"
6	351	1'7"
3	1403	0'5"



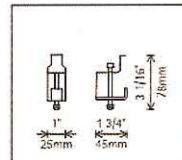
33958.023
Connection sleeve
for cable diameters of 0.25" - 0.60".
Polymer conduit, two-part PUR cast
resin.
Length 5 15/16" / 150mm.
Width 1 1/4" / 32mm.
Height 2 3/8" / 58mm.
Weight 0.99lbs / 0.45kg



33964.000
Recessed housing
Polymer, black.
4 cable entries.
Load 11240lb wt / 50kN



33988.000
Mounting kit
Mounting in hollow floors.
3 mounting brackets stainless steel.
Clamp extension 7 1/8" - 1 13/16" /
114-6mm.
Load 4500lb wt / 20kN.
Floor aperture:
Size 5: ø 10 1/16" / 255mm
Size 7: ø 11 9/16" / 293mm



Cleaning (a)	1				2				3			
	P	C	N	D	P	C	N	D	P	C	N	D
Ambient conditions	0.96	0.94	0.90	0.86	0.93	0.91	0.86	0.81	0.82	0.80	0.84	0.79
LMF	0.91	0.83	0.68	0.51	0.90	0.81	0.67	0.50	0.50	0.81	0.67	0.50
RSMF												
Hours of operation (h)	1000	5000	10000	20000	30000	40000	50000					
LLMF	1.00	0.99	0.98	0.96	0.94	0.93	0.90					
LSF	1	1	1	1	1	1	1					

MF	LMF	RSMF	LLMF	LSF
MF	Maintenance Factor			
LMF	Luminaire Maintenance Factor			
RSMF	Room Surface Maintenance Factor			
LLMF	Lamp Lumen Maintenance Factor			
LSF	Lamp Survival Factor			
P	Room dirty			
C	Room clean			
N	Room normal			
D	Room dusty			

Technical data based on international standards and directives
IEC 60588 Luminaires - Parts 1 + 2: General requirements, particular requirements and tests
IEC 62031 LED modules for general lighting - Safety specifications
IEC 62471 Photobiological safety of lamps and lamp systems
UL 1598 Luminaires
UL 1574 Standard for Track Lighting Systems
UL 8750 Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products
IES LM-79-08 Electrical and Photometric Measurements of Solid-State Lighting Products
IES LM-60-08 Measuring Lumen Maintenance of LED Light Sources
CIE 13 Method of measuring and specifying color rendering properties of light sources

All technical data are subject to industry standard tolerances.
See also www.ercos.com/ercos-led



LIGHTING FIXTURE CUT SHEETS: TYPE - SC

ERCO

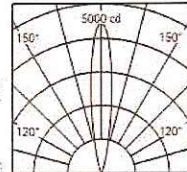
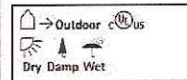
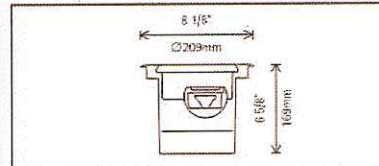
Tesis In-ground luminaire

Directional luminaire



35075.023
LED 6W 630lm 2000K warm white
0-10V dimmable
Version B
Covered mounting detail
Silver/soft lens, spot

Product description
Housing: polymer, black.
Control gear 120V/27V, 60Hz, dimmable. Longitudinally watertight cable 5x0.90V14, L31 1/2" / 800mm. LED module: high-power LEDs on metal-core PCB. Collimating lens made of optical polymer, 0-50° tiltable, rotatable through 360°. Reflector: aluminum, black lacquered. Optical cut-off 30° from horizontal. Screw-finished cover ring with flush safety glass: stainless steel. Safety class: 0/16" / 15mm, clear.
Installation with separate connection sleeve.
Mounting in recessed housing: can be driven over in vehicles with pneumatic tyres. Load 4500lbs wt / 20kN.
Mounting in hollow floor: mounting kit to be ordered separately.
Dimming with external dimmers possible (0-10V).
Suitable for wet location (IP68): dust-proof.
Weight: 5.5lbs / 2.50kg

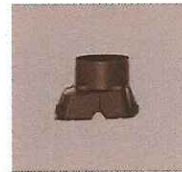


hft	Effic	D
15	20	4.3°
12	31	3.4°
9	55	2.6°
6	124	1.8°
3	484	0.70°

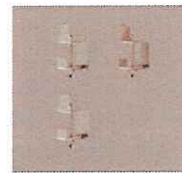
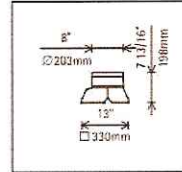
Technical data	
Luminous flux of the luminaire	465lm
Connected load	9W
Luminaire efficacy	52lm/W
Color deviation	2 SDCM
Color rendition index	CRI >80
Lumen maintenance (LM-80/TM-21)	1.90/810 = 30000h
Lumen maintenance (LED manufacturer specifications)	1.90 = 100000h
LED failure rate	0.1% = 50000h
LMF	E
Temperature on the cover glass	93°F / 34°C



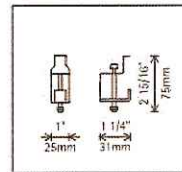
33958.023
Connection sleeve for cable diameters of 0.25" - 0.50". Polymer conduit, two-part PUR cast resin.
Length 5 15/16" / 150mm.
Width 1 1/4" / 32mm.
Height 2 3/8" / 59mm.
Weight 0.99lbs / 0.45kg



33299.000
Recessed housing
Polymer, black.
4 cable entries.
Load 4500lbs wt / 20kN.
Weight 2.65lbs / 1.20kg



33296.000
Mounting kit
Mounting in hollow floors.
3 mounting brackets stainless steel.
Clamp extension 7 1/8" - 1 1/4" / 16" / 11-46mm.
Load 4500lbs wt / 20kN.
Floor aperture:
Size 2: ø 6 7/16" / 164mm
Size 4: ø 7 5/8" / 193mm



Cleaning [a]	1				2				3			
	P	C	N	D	P	C	N	D	P	C	N	D
Ambient conditions	0.96	0.94	0.90	0.86	0.93	0.91	0.86	0.81	0.92	0.90	0.84	0.79
RSMF	0.91	0.83	0.66	0.51	0.50	0.81	0.67	0.50	0.50	0.81	0.67	0.50
Hours of operation [h]	1000	5000	10000	20000	20000	20000	40000	50000				
LLMF	1.00	0.99	0.98	0.95	0.84	0.82	0.80					
LSF	1	1	1	1	1	1	1					

MF LMF RSMF LLMF LSF
MF Maintenance Factor
LMF Luminaire Maintenance Factor
RSMF Room Surface Maintenance Factor
LLMF Lamp Lumen Maintenance Factor
LSF Lamp Survival Factor
P Room pure
C Room clean
N Room normal
D Room dirty

Technical data based on international standards and directives
IEC 60588 Luminaires - Parts 3 + 2: General requirements, particular requirements and tests
IEC 62031 LED modules for general lighting - Safety specifications
IEC 62471 Photobiological safety of lamps and lamp systems
UL 1598 Luminaires
UL 1574 Standard for Track Lighting Systems
UL 8750 Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products
IES LM-79-08 Electrical and Photometric Measurements of Solid-State Lighting Products
IES LM-80-08 Measuring Lumen Maintenance of LED Light Sources
CIE 13 Method of measuring and specifying color rendering properties of light sources

All technical data are subject to industry standard tolerances.
See also www.ercoc.com/ercoc-led



LIGHTING FIXTURE CUT SHEETS: TYPE - SD

ERCO

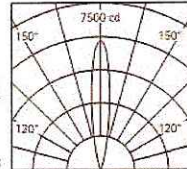
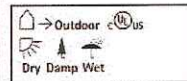
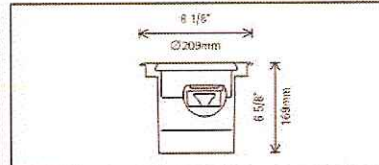
Tesis In-ground luminaire

Directional luminaire



35074.023
LED 6W 625lm 4000K neutral white
0-10V dimmable
Version B
Covered mounting detail
Spherulite lens, spot

Product description
Housing: polymer, black.
Control gear: 120V/277V, 50Hz, dimmable. Longitudinally watertight cable 5x0.9/14, L31 1/2" / 805mm. LED module: high-power LEDs on metal-core PCB. Collimating lens made of optical polymer. 0-30° tiltable, rotatable through 360°. Reflector: aluminum, black lacquered. Optical cut-off: 30° from horizontal. Screw-fastened cover ring with flush safety glass: stainless steel. Safety glass: 9/16" / 15mm, clear.
Installation with separate connection sleeve.
Mounting in recessed housings: can be driven over in vehicles with pneumatic tyres. Load 4500lbwt / 20kN.
Mounting in hollow floor: mounting kit to be ordered separately.
Dimming with external dimmers possible (0-10V).
Suitable for wet location (IP68): dust-proof.
Weight: 5.5lbs / 2.5kg



h/ft	Effic	D
15	26	43"
12	40	34"
9	77	26"
6	162	18"
3	647	0"10"

Technical data

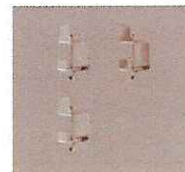
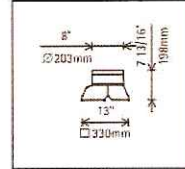
Luminous flux of the luminaire	608lm
Connected load	9W
Luminaire efficacy	88lm/W
Color deviation	2 SDCM
Color rendition index	CRi >80
Lumen maintenance (LM-60/TM-21)	L90/B10 <=30000h
Lumen maintenance (LED manufacturer specifications)	L90 <=100000h
LED failure rate	0.1% <=30000h
LMF	E
Temperature on the cover glass	93°F / 34°C



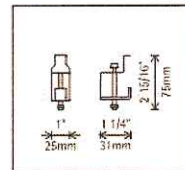
33958.023
Connection sleeve
for cable diameters of 0.25" - 0.50".
Polymer conduit, two-part PUR cast resin.
Length 5 1/8" / 150mm.
Width 1 1/4" / 32mm.
Height 2 3/8" / 59mm.
Weight 0.99lb / 0.45kg



33299.000
Recessed housing
Polymer, black.
4 cable entries.
Load 4500lbwt / 20kN.
Weight 2.65lb / 1.20kg



33296.000
Mounting kit
Mounting in hollow floors,
3 mounting brackets stainless steel.
Clamp extension 7/16" - 1 1/2" /
11-46mm.
Load 4500lbwt / 20kN.
Floor aperture:
Size 3: ø 6 7/16" / 164mm
Size 4: ø 7 5/8" / 193mm



Cleaning lab	1				2				3			
	P	C	N	D	P	C	N	D	P	C	N	D
Ambient conditions	0.96	0.94	0.90	0.96	0.93	0.91	0.86	0.81	0.92	0.90	0.84	0.79
LMF	0.91	0.83	0.68	0.51	0.50	0.81	0.67	0.50	0.50	0.81	0.67	0.50
RSM												
Hours of operation (h)	1000	2000	10000	20000	30000	40000	50000					
LLM*	1.00	0.88	0.98	0.96	0.94	0.92	0.90					
LSF	1	1	1	1	1	1	1					

MF UNF/RSM/LLM/LSF
MF Maintenance Factor
LMF Luminance Maintenance Factor
RSMF Room Surface Maintenance Factor
LLMF Lamp Lumens Maintenance Factor
LSF Lamp Survival Factor
P Room pure
C Room clean
N Room normal
D Room dirty

Technical data based on international standards and directives
IEC 60528 Luminaires - Parts 1 + 2: General requirements, particular requirements and tests
IEC 62021 LED modules for general lighting - Safety specifications
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IES LM-80-08 Measuring Lumen Maintenance of LED Light Sources
CIE 13 Method of measuring and specifying color rendering properties of light sources

All technical data are subject to industry standard tolerances.
See also www.ercocan.com/ercocan-led



LIGHTING FIXTURE CUT SHEETS: TYPE - SE

ECOSENSE

RISE™

OVERVIEW • SPECIFICATIONS • ORDERING INTERIOR • EXTERIOR | **F080 SINGLE**

DATE: _____ PROJECT: _____ RISE#: _____ TYPE: _____

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE F080 SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE DELIVERING UP TO 746 LUMENS THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN ADJUSTABILITY USING ONLY ONE TWIST.

FEATURES:

- POWERFUL 50W
- ONLY 5" LAZER SPOT
- EXTREMELY COMPACT
- POWERFUL OUTPUT 220-746LMS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 11 UNIFORM BEAM ANGLES
- MULTICOLOR (160-377°)
- 5 CCTs: 2200K THROUGH 6500K
- 10° AND 90° CRI
- DIMMABLE TO 5%
- IP68 RATED



FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
F080	15 - Simple Head	LO - Low Output MO - Medium Output HO - High Output	22 - 2200K 25 - 2500K 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K 50 - 5000K 65 - 6500K RD - Red GR - Green BL - Blue AM - Amber	0 - 80 9 - 90 X - Full Spec GR, BL, AM W - White C - Custom *See separate cut sheet for finishes	05 - Laser Spot (5°) 9 - 9° 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 30 - Flood (30°) 40 - Flood (40°) 60 - Wide Flood (60°) 80 - Very Wide Flood (80°) 81 - Elliptical 1 (81°x60°) 82 - Elliptical 2 (82°x60°) 83 - Elliptical 3 (83°x60°) 84 - Elliptical 4 (84°x20°)	H - Black Z - Bronze S - Silver W - White C - Custom *See separate cut sheet for finishes	X - No Accessory W - Wall Mount F - Full Spec C - Custom *See separate cut sheet for finishes	A - 10" Flying Leads + Internal Cable ID B - 1/2" NPT Taper, Cable Length is 19" NPT, UL/CE Rated B - 10" External Cable Side Exit Surface Mount, UL/CE Rated C - 10" External Cable Bottom Exit, Surface Mount, 1/2" NPT, UL/CE Rated W - WMA - 6" (K, S, C)

EXAMPLE: F080-15-LO-22-B-05-S-X-A
*See Prefabricating Chart for Cable Data

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT	DPIC	EFFICIENCY	C&C*
	4	Low Output	308	5"	77	21.991
	7.5	Medium Output	511	5"	71	57.834
	11.5	High Output	746	5"	66	53.048

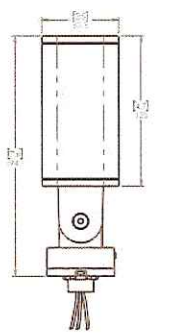
ALL LUMEN DATA IS FROM APPROX 4000K BY-TYPE. RANGE SEE FWH02HETV SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX R9+ 90+
COLOR CONSISTENCY S-8729 MACADAM ELLIPSE

LUMEN DEPRECIATION / RATED LIFE	WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
HIGH	>60,500**	>76,3000**	>60,500**	>31,700*	
	>181,000**	>103,000**	>60,500**		

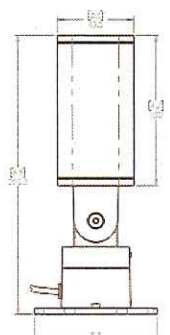
* ENERGY STAR APPROVED TESTING HOURS (RD DATE) CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT CORRELATE WITH IES LM-79 TESTING PROCEDURES AND ARE THE CALCULATED HOURS.
** 621 HOURS

Flying Leads - Internal Cable (UL + CE Rated)



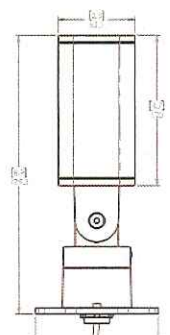
- For use with standard junction boxes
- 1/2" NPT Taper, Cable Length is 19"
- Compatible with EcoSense Canopy Junction Box Cover
- 18 AWG Stranded Copper Cable - 3 Conductors

External Cable Side Exit (UL + CE Rated)

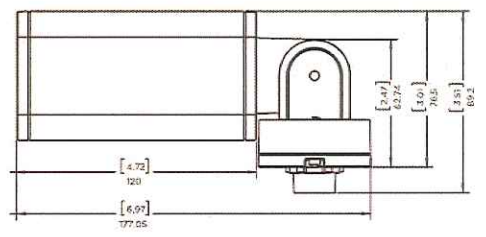
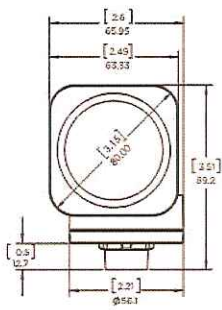


- For use when external, exterior rated cable is required to run to remote junction box or mains
- Cable exits the side of the base
- Comes with a Surface Mount Plate, for mounting direct to surface
- Cable Length is 10" (3.05m)

External Cable Bottom Exit (UL + CE Rated)



- For use when external, exterior rated cable is required to run to remote junction box or mains
- Cable exits the bottom for use with various accessories such as Wall Mount Arm and Ground Stake
- 1/2" NPT taper for mounting
- Comes with a Surface Mount Plate, for mounting direct to surface
- Cable Length is 10" (3.05m)



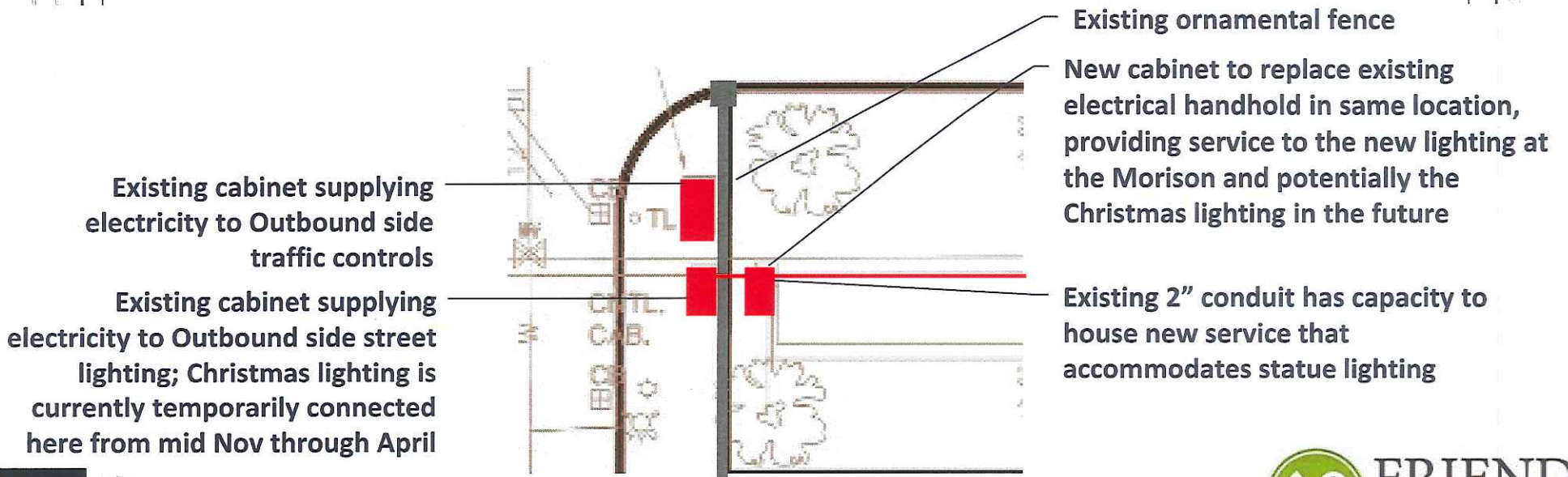
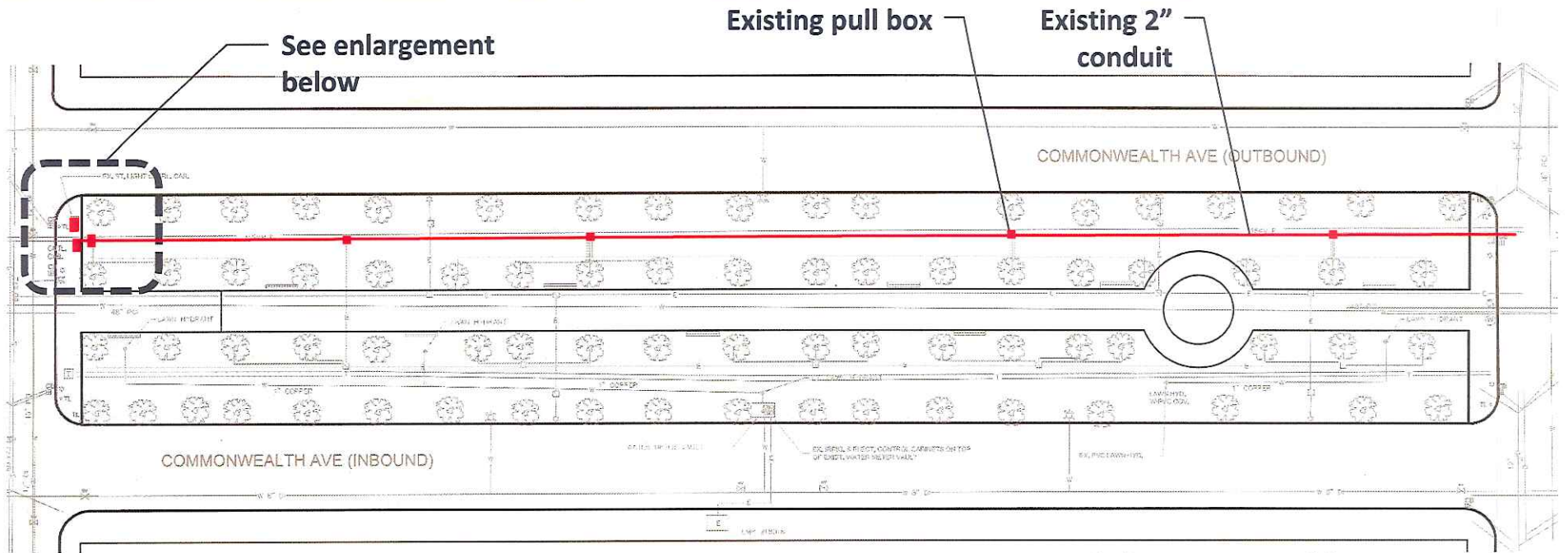
- Color Filters**
- Red F080-FILTER-RED
 - Blue F080-FILTER-BLUE
 - Green F080-FILTER-GREEN
 - Amber F080-FILTER-AMBER

- F080 Wall Mount Arm** (for use only with Wiring Option C - External Cable Bottom Exit)
- Wall Mount Arm, 6 inch, Color Finish (K=Black, S=Silver, C=Custom) F080-WMA-06-(K,S,C)
 - Wall Mount Arm, 12 inch, Color Finish (K=Black, S=Silver, C=Custom) F080-WMA-12-(K,S,C)
 - Wall Mount Arm, 18 inch, Color Finish (K=Black, S=Silver, C=Custom) F080-WMA-18-(K,S,C)
 - Wall Mount Arm, 24 inch, Color Finish (K=Black, S=Silver, C=Custom) F080-WMA-24-(K,S,C)

- Ground Stake** (for use only with Wiring Option A and C Only - 1/2" NPT, not for use with multi-fixture units)
- Landscape Stake, 12in (for use with F080 Single Head only, not for use with multi-fixture units) F080-L5-TS-STK-12



ELECTRICAL CONNECTIONS: MORISON



ELECTRICAL CONNECTIONS: MORISON



New cabinet and precast concrete base are proposed to be located on the park side at the existing hand hole location (pictured in the right bottom of this image at the yellow arrow).

This proposed cabinet will likely look similar to the cabinet on the left, in keeping with Boston Street Lighting standards.