



eppstein uhen : architects

| | |
|-------------------------------------|--------------|
| milwaukee : 333 E Chicago St | 414.271.5350 |
| madison : 309 W Johnson St, Ste 202 | 608.442.5350 |
| denver : 1899 Wynkoop St, Ste 300 | 303.595.4500 |
| des moines : 699 Walnut St, Ste 400 | 515.724.5840 |

eua.com

February 25, 2020 Revised

Ms. Kristin Connelly
Department of City Development/ Planning Administration
809 N. Broadway
Milwaukee WI 53202

Re: 105 W. Michigan St. Riverwalk

Dear Kristin:

This Narrative provides a description of the Riverwalk improvements being proposed for the 105 W. Michigan St. Property. This section of Riverwalk extends from W. Michigan St to E. Clybourn St. along the west side of the river.

The improvements include concrete pavement repair at areas where there is spalling and significant cracking. There is also a section of concrete pavement that will be removed because of its poor condition. A new concrete slab will be poured in this area. No changes are proposed to the width of the Riverwalk. The elevated south balcony is being removed.

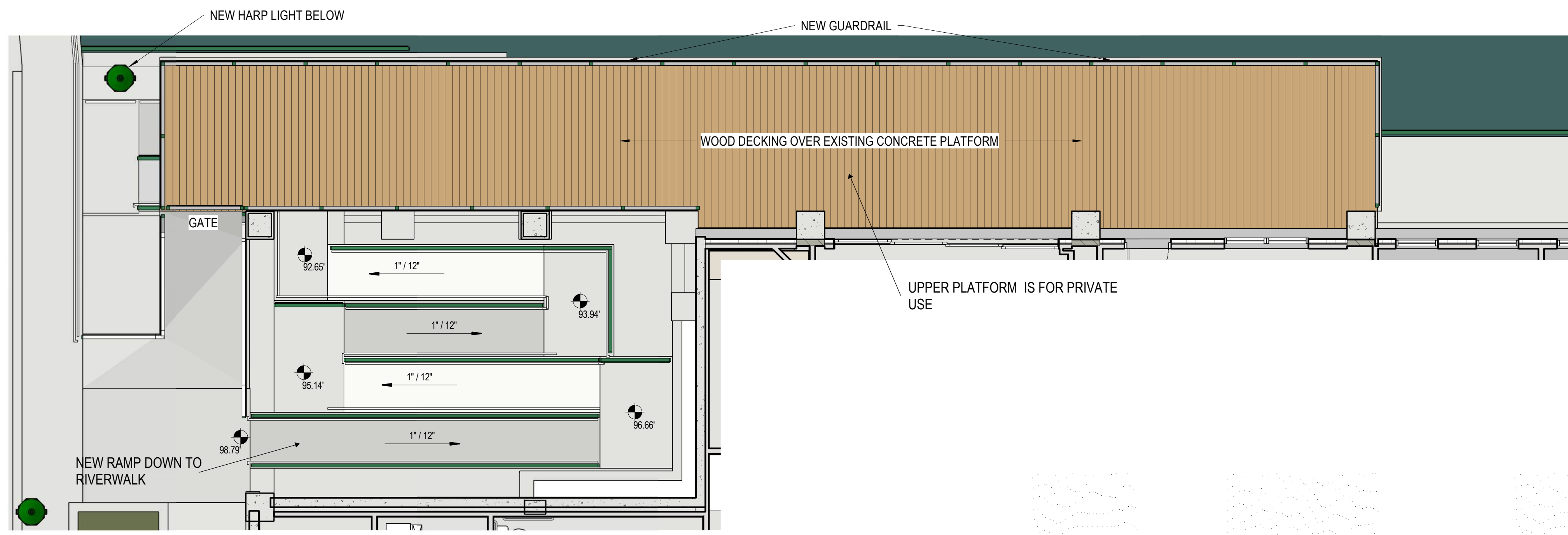
The existing guardrail along the edge of the Riverwalk will be removed. It shows signs of significant rusting especially at the baseplates. It will be replaced with a new guardrail assembly comprised of steel bar stock (painted green to match the Riverwalk standard) and stainless steel wire mesh infill.

Because of how narrow the Riverwalk is we are proposing wall mounted harp lights along the majority of the Riverwalk with building frontage. Consequently several pole mounted harp lights will be removed. Two (2) of these lights will be relocated to the north and south ends of the Riverwalk. Three (3) of the existing pole mounted harp lights at the south end of the Riverwalk and access ramp will remain in place. New light fixtures will be mounted to the underside of the north balcony/ upper platform. Cut sheets are included as part of this submittal for your review.

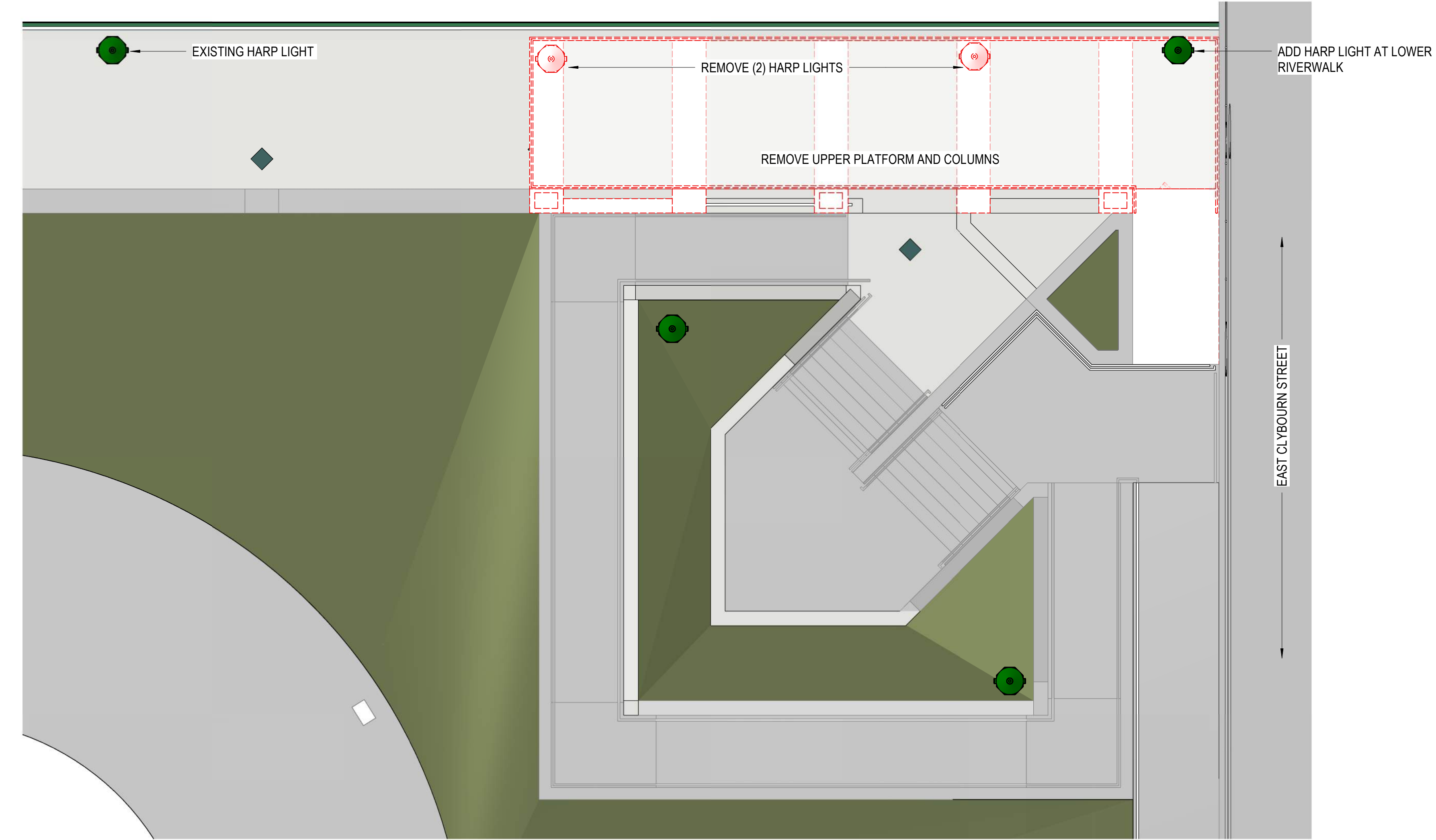
Additional improvements are proposed adjacent to the Riverwalk, however, they are not part of this submittal. The north balcony/ upper platform which is part of the 105 Building will be for private use. Improvements include repair of the structural concrete, installation of a new guardrail. The existing stairs and elevator at the north end (Michigan St.) of the Riverwalk will be replaced with a new accessible ramp that will provide access down to the Riverwalk.

Sincerely,

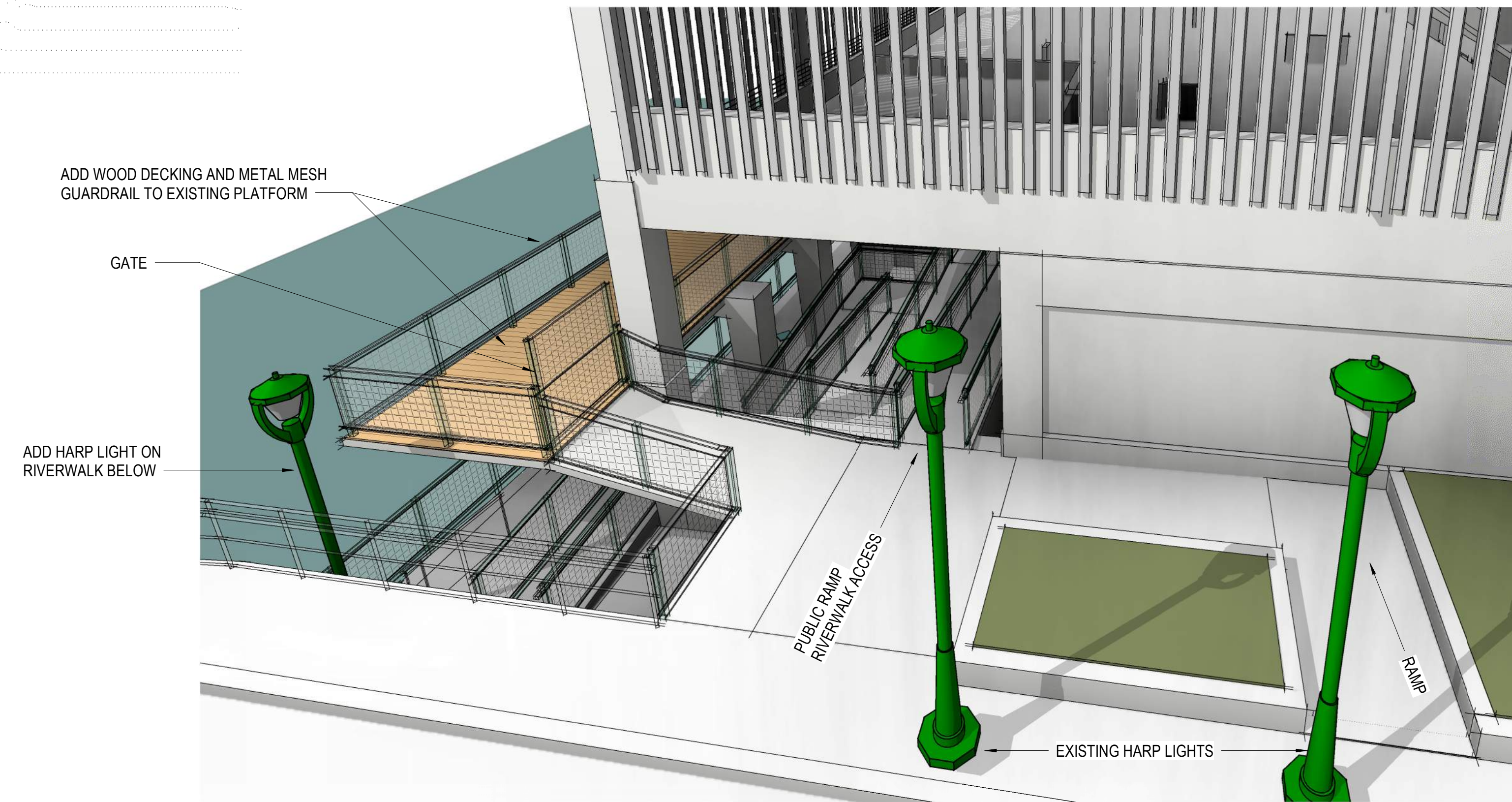
Peter Kucha
Principal, Senior Project Manager



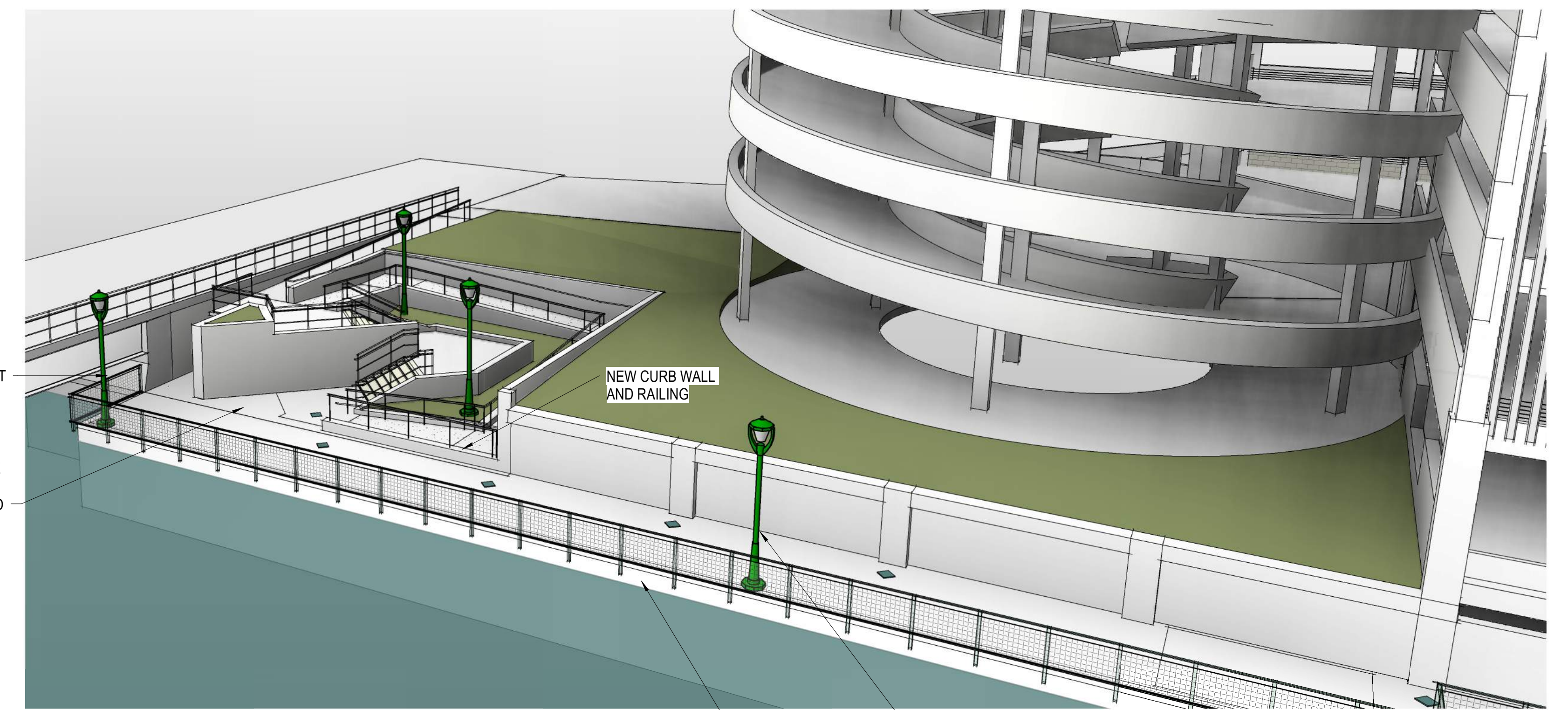
UPPER RIVERWALK PLATFORM AND PUBLIC RAMP



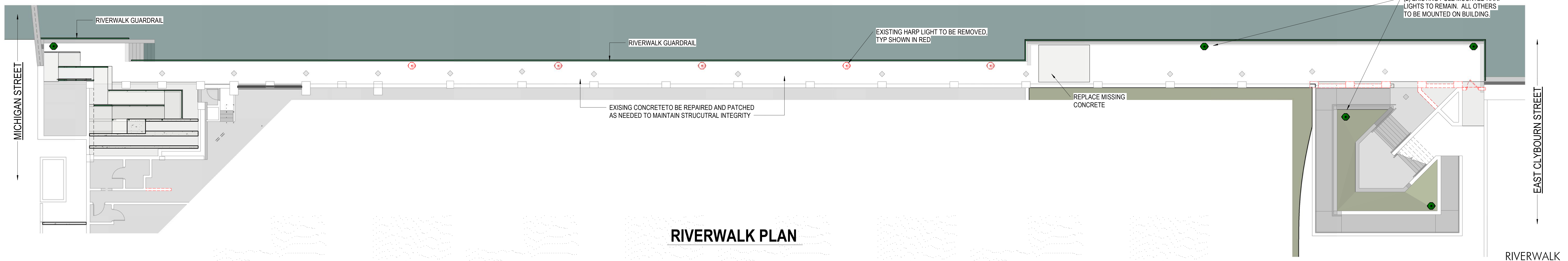
PUBLIC RAMP AT CLYBOURN ST



VIEW OF NEW RAMP TO RIVERWALK



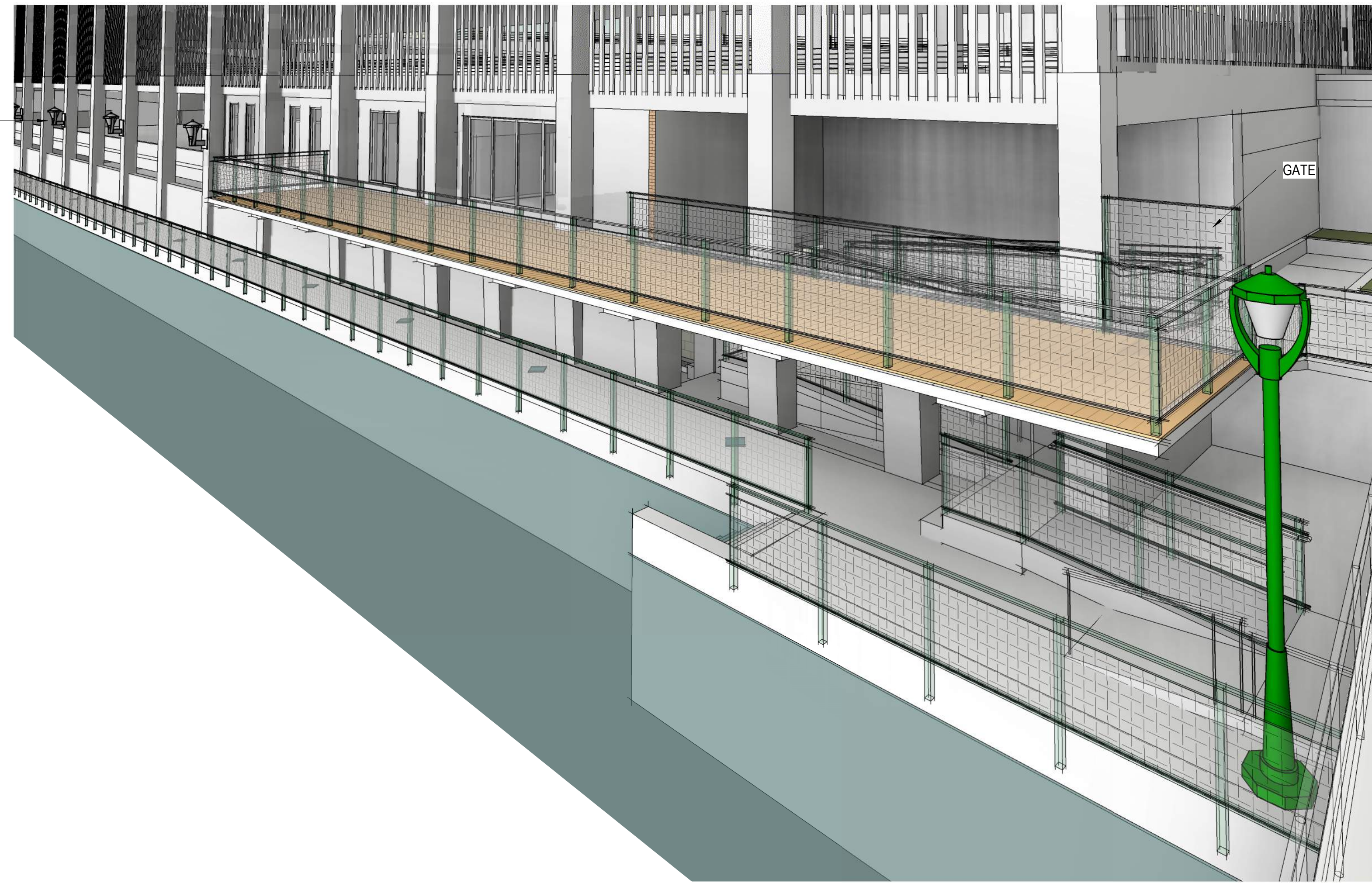
SOUTH RAMP LOOKING SW



RIVERWALK PLAN



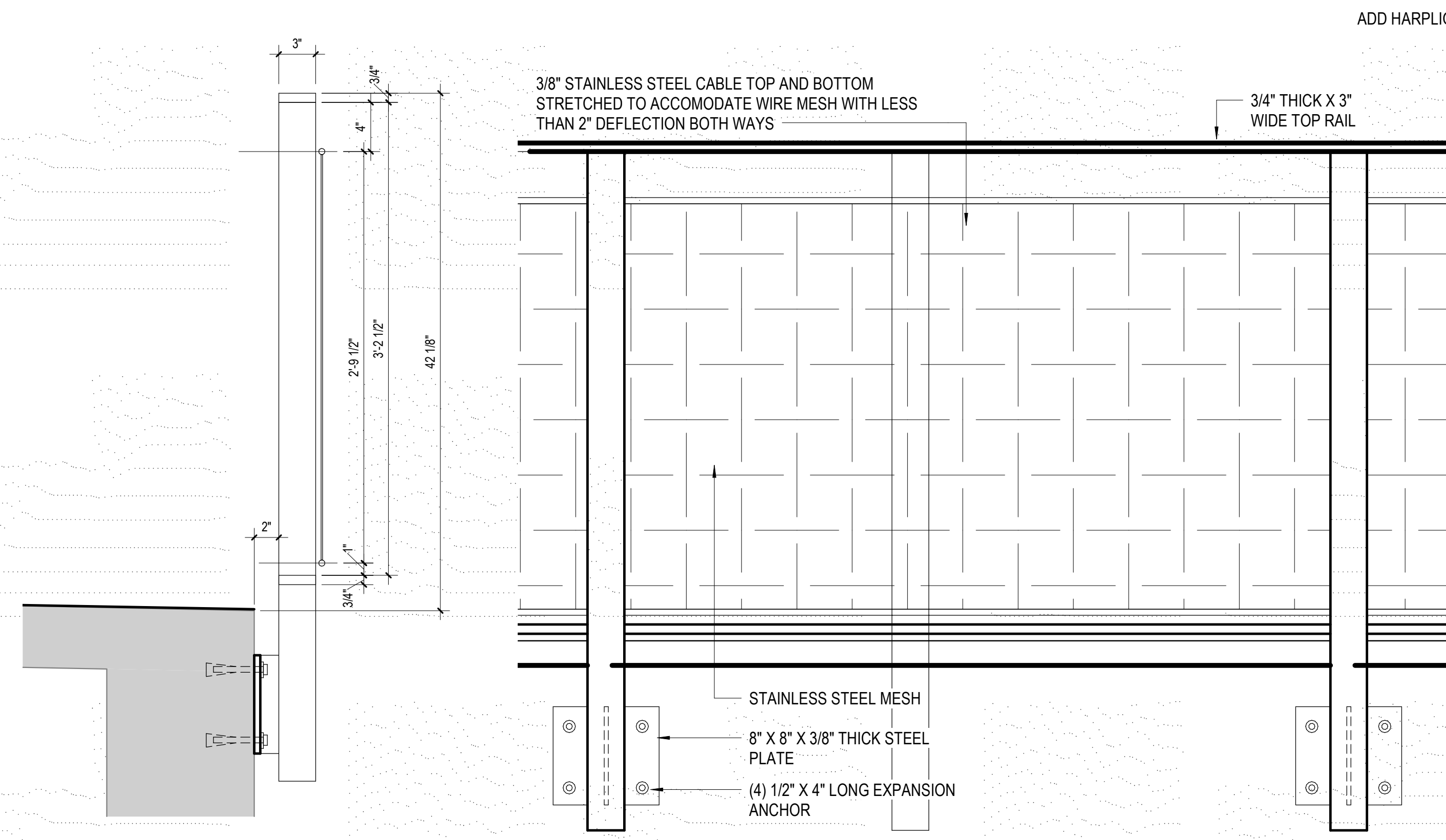
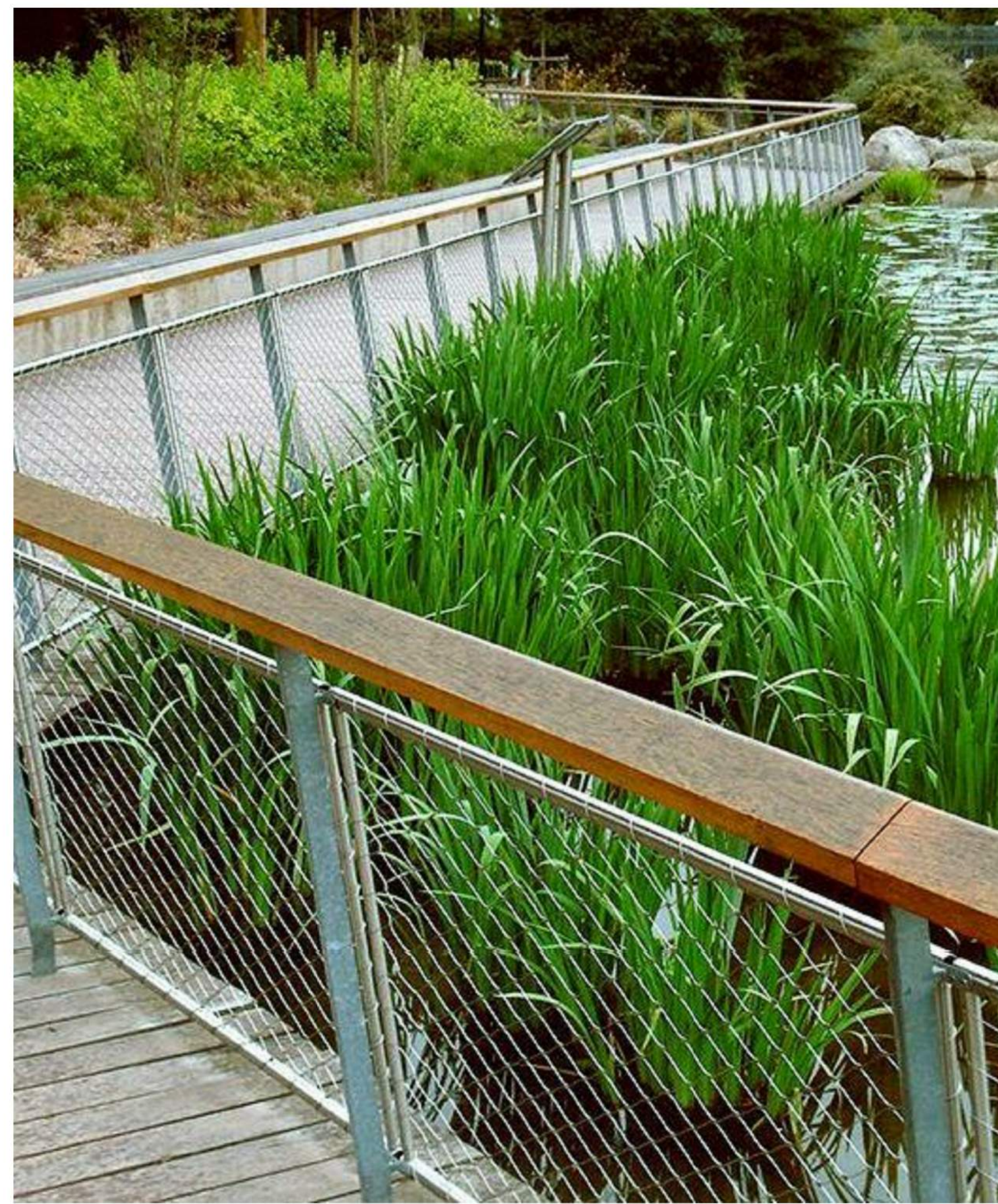
VIEW LOOKING NORTH



VIEW LOOKING SOUTH

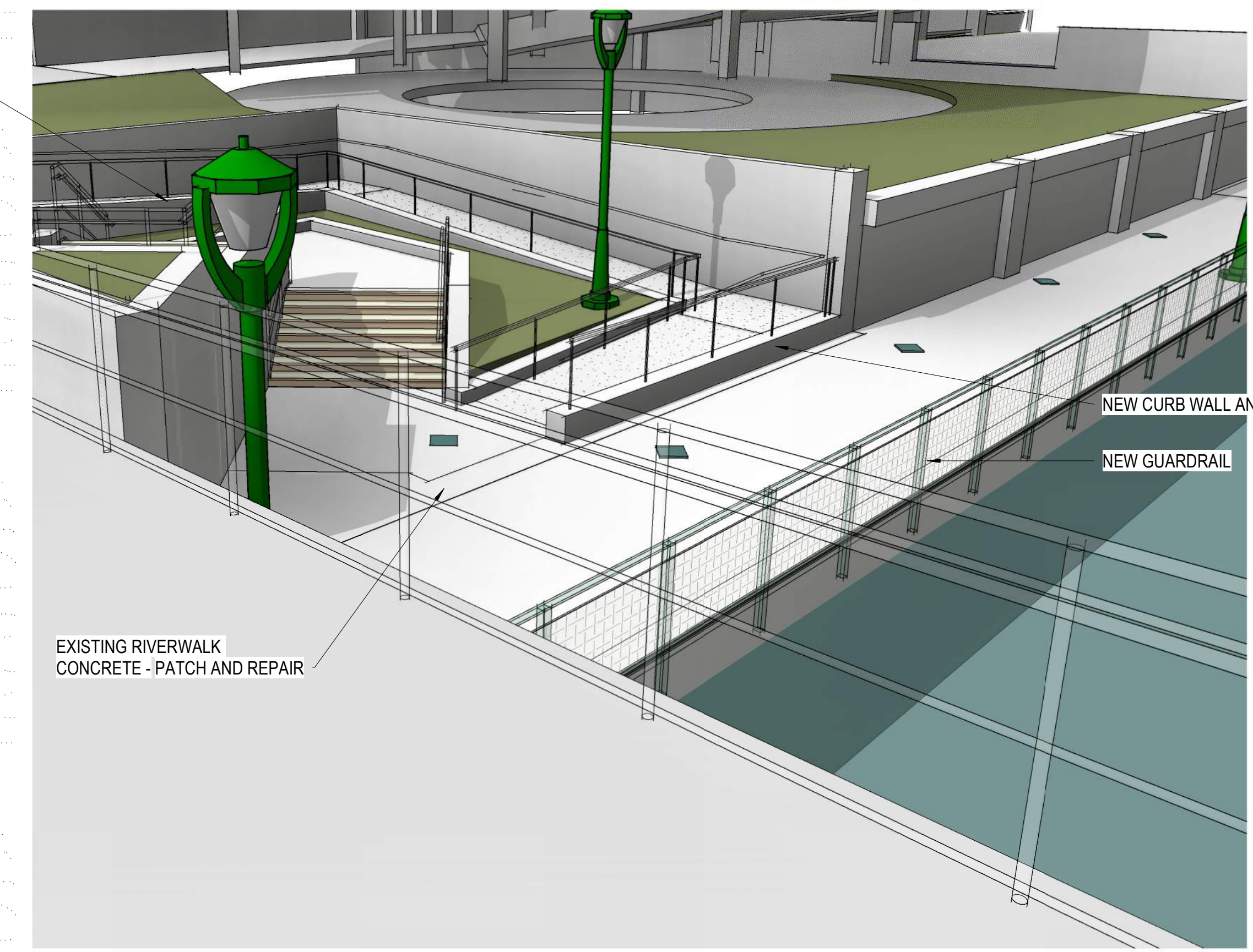


RIVERWALK LOOKING NORTH



GUARDRAIL SECTION

TYPICAL RIVERWALK GUARDRAIL

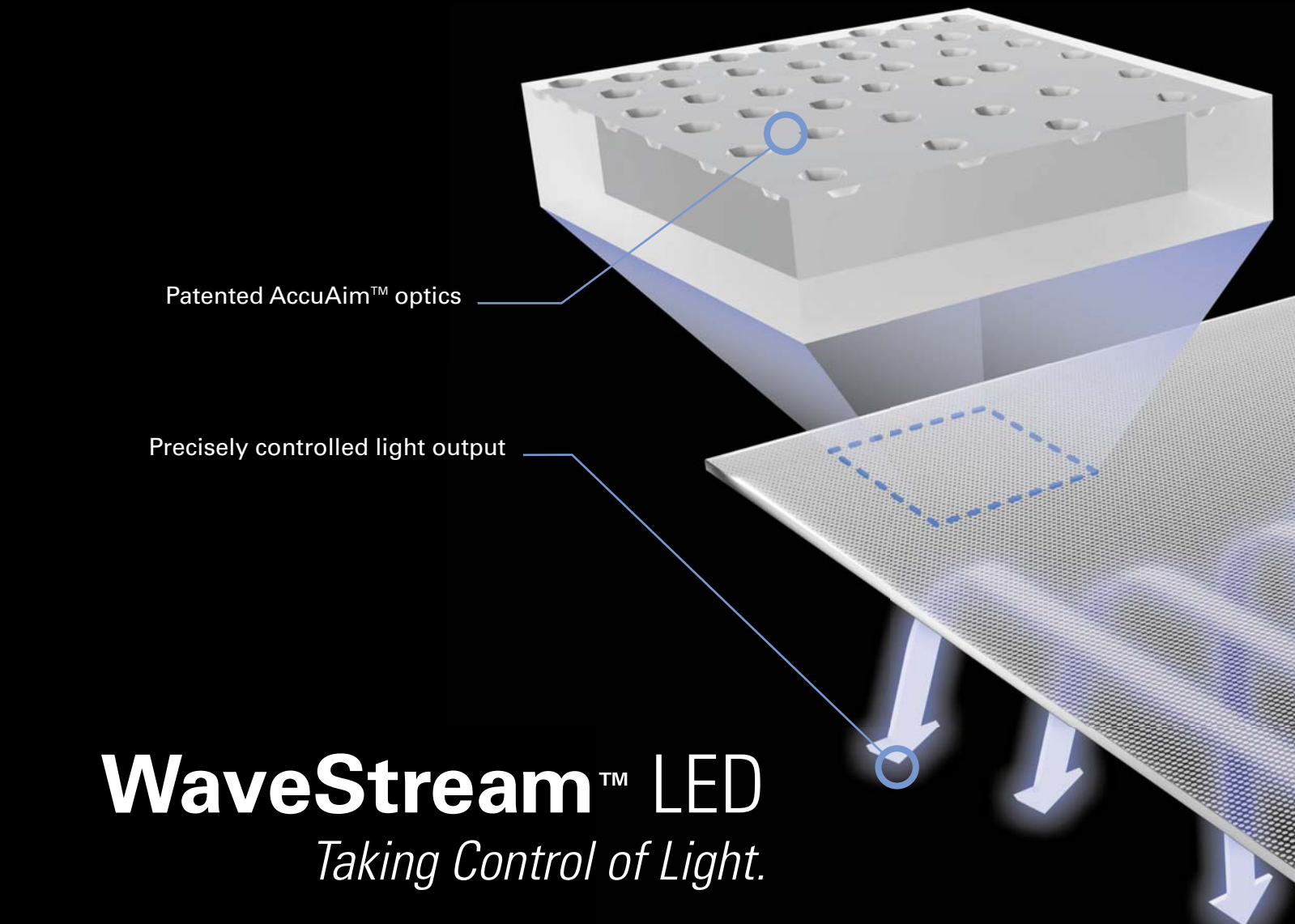


SOUTH PLAZA

PROPOSED FIXTURE
MOUNTED TO UNDERSIDE OF
NORTH BALCONY



Cooper Lighting
by **EAT•N**



Patented AccuAim™ optics

Precisely controlled light output

WaveStream™ LED

Taking Control of Light.

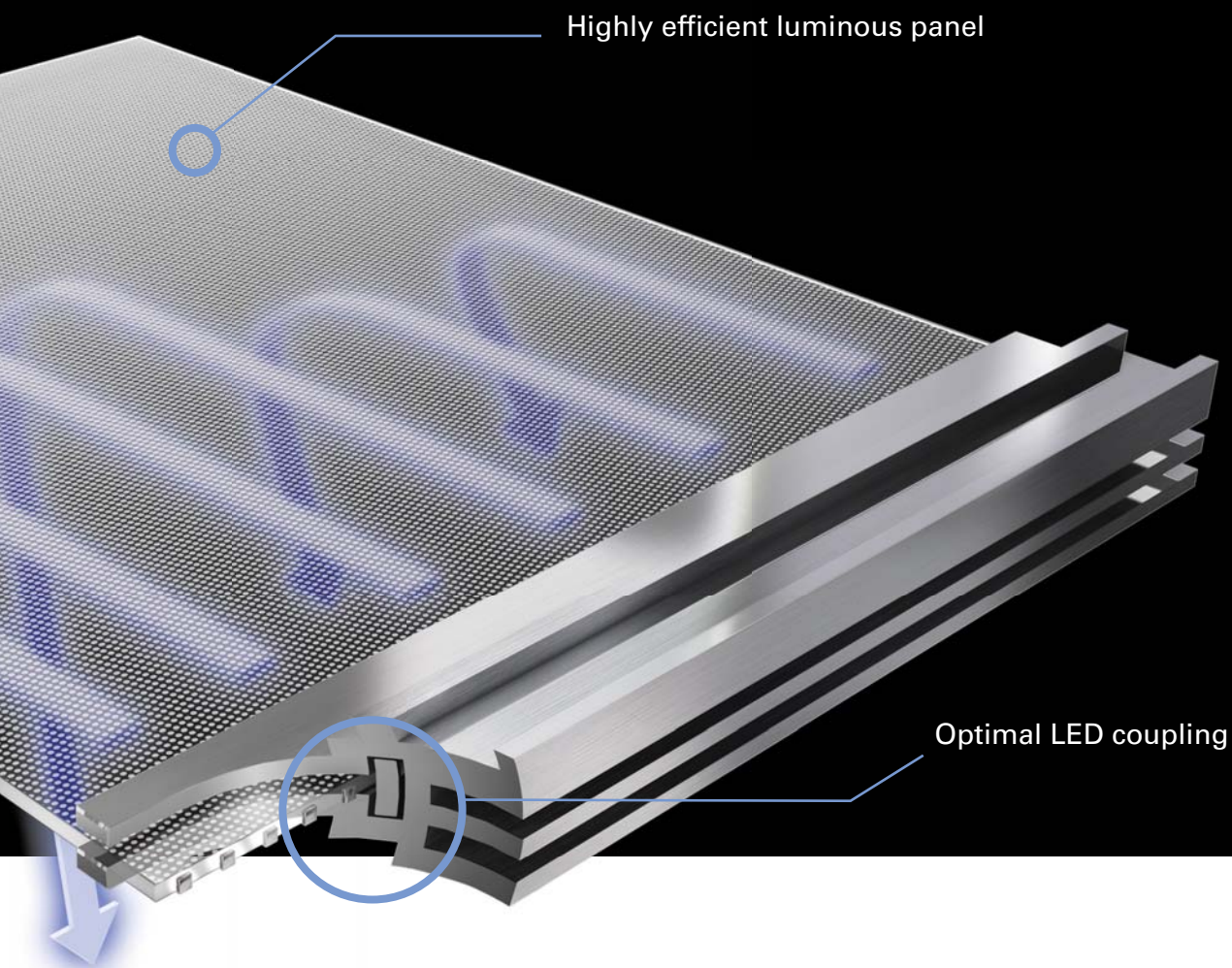
Design Freedom
Optical Control
Energy Efficiency
Brightness Control
Mainstream Value

The Breakthrough You've Been Waiting For

WaveStream™ LED technology presents a new paradigm that will take LEDs mainstream in a way that hasn't been possible before — transforming the LED point source into a highly efficient and elegant luminous plane. It's a groundbreaking technology that delivers unparalleled design freedom, maximum energy efficiency and unrivaled optical and brightness control.

The Science Behind the Beauty

A patented optical coupling process maximizes the amount of light injected into the WaveStream panel, dramatically improving luminaire efficiency. Laser-precise, patented AccuAim™ optics arranged in exacting patterns provide unparalleled brightness control while delivering optimal distributions tailored to each fixture and application.



WaveStream is the first lighting technology designed and optimized exclusively for LEDs — with form and function that allows mainstream adoption like never before. Once you factor in all the ways you can build and customize WaveStream lighting solutions, over 500,000 configurations are available to address nearly every major lighting application.



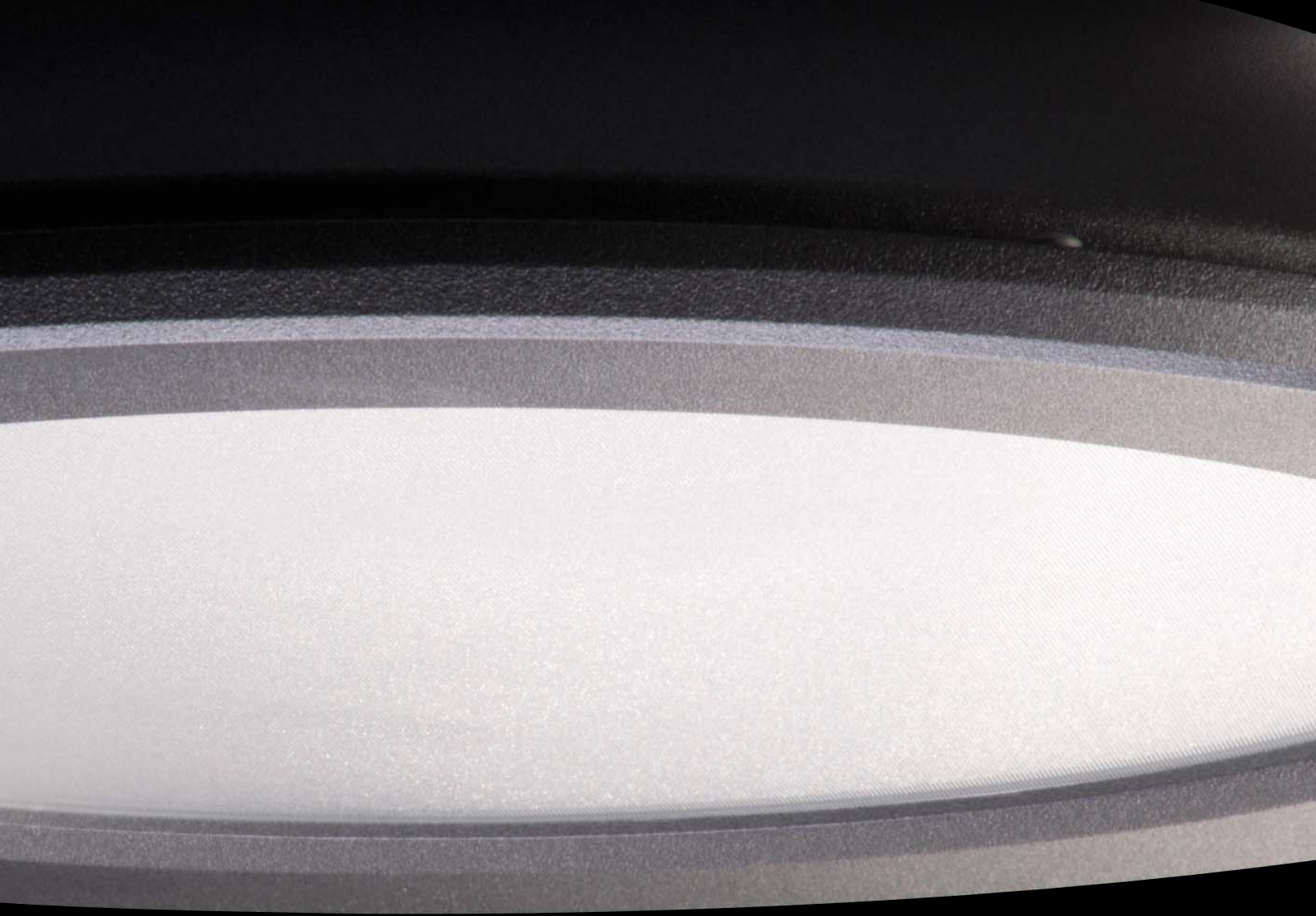
A New Benchmark in Visual Comfort

Unparalleled Performance and Comfort

TopTier™ LED Parking Garage and Canopy Luminaire is an innovative solution that delivers an unparalleled combination of performance and visual comfort. Patented WaveStream™ optical technology disrupts the line of sight of the LED light sources from the observer, while extracting the maximum amount of light on task. This approach results in a high level of uniformity and vertical footcandles which enhances the level of safety in the application.

Long Life and Low Maintenance Cost

In addition to delivering superior performance, the TopTier LED Parking Garage and Canopy Luminaire is designed for low maintenance, long life and low cost of ownership. These are key benefits which provide compelling justification to retrofit traditional HID solutions, or allow end users to capitalize on these advantages in new construction applications. The TopTier luminaire can be tailored to meet your most important needs without compromising on specification features. The fixture housing is IP66 rated, which provides years of reliable operation with minimal service requirements.



Universal functionality, energy-efficient optical control, easy installation and a low-profile design prove that the TopTier LED Parking Garage and Canopy Luminaire is the best choice for parking garage, stairwell, low-bay and canopy illumination.

Design Performance Features

Construction

- Low profile, die-cast aluminum housing
- Spun aluminum top sloped to minimize bird nesting
- Universal, galvanized steel quick-mount plate with click-and-lock tab releases
- Mounts to standard one-gang, two-gang and 4" round wet location junction boxes
- IP66 rated
- 3G vibration rated
- UL and cUL wet location listed

Electrical

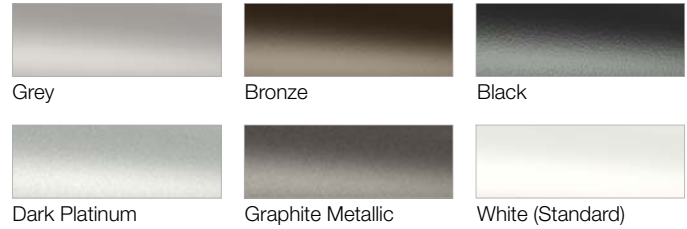
- Operates in -40°C to 40°C ambient conditions. Optional high ambient 50°C configuration
- 120-277V 50/60Hz, 347V 60Hz, or 480V 60Hz operation
- Standard proprietary circuit module designed to withstand 10kV of transient line surge
- Optional occupancy sensor provides additional energy savings
- Scalable in six lumen packages ranging from 3,000 to 11,000 nominal delivered lumens

Optical

- Available in concentrated (CQ), medium (MQ) and wide (WQ) distributions
- Standard in 4000K CCT, optional 3000K and 6000K CCT
- Minimum 70 CRI
- Optional clear or Solite® glass lens

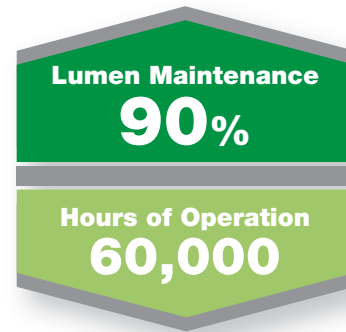
Finish

- Five-stage super durable TGIC paint resists extreme weather conditions while providing optimal color and gloss retention. Available in white or optional grey, bronze, black, dark platinum and graphite metallic finishes.



Warranty

- Five-year warranty



NOTE: Compliant with IESNA TM-21.



Surge Protection

Standard UL 1449 Listed 10kV/10kA surge protective device protects against common (line-to-ground) and differential (line-to-line) mode surges.



Dimming Occupancy Sensor

Optional integral occupancy sensing reduces power consumption and enhances payback. Factory programmed to 50% in low mode and field adjustable with the FSIR-100 remote programmer.

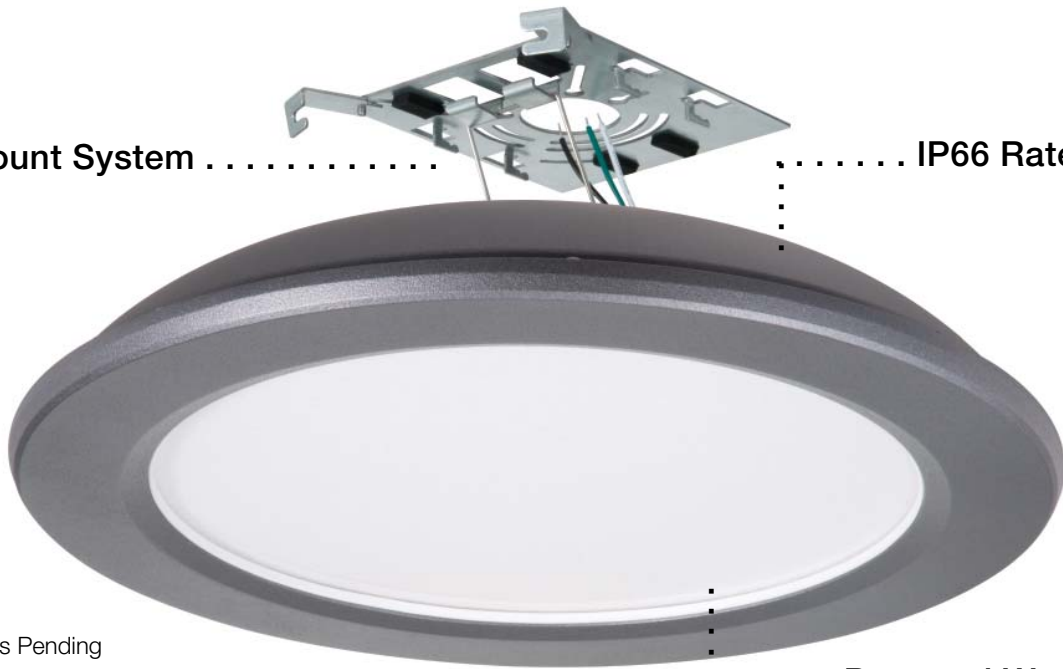


Quick-Mount System

Rugged, quick-mount system with secure click-and-lock tab releases ensures safe and easy installation.

Quick-Mount System

IP66 Rated



Patents Pending

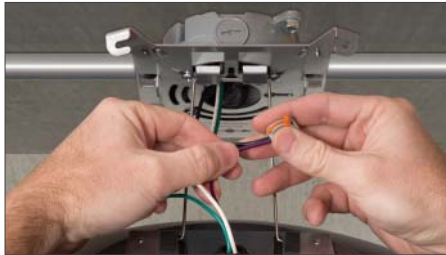
Patented WaveStream™
LED Technology

Three-Step Installation



Step 1

Install quick-mount plate to wet location junction box.



Step 2

Secure fixture on wire hanger and make electrical connections.



Step 3

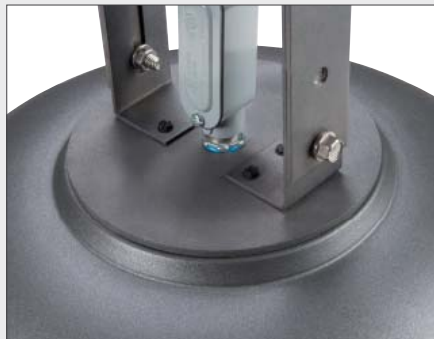
Lift and slide fixture until it clicks. Lock release tabs with captive hardware.

Mounting Options



Surface and J-box Mount (Standard)

Quick-mount plate adapts to all wet location junction boxes allowing for surface, free-swing or rigid pendant installation (J-box supplied by others).



Trunnion Mount

Trunnion mount bracket allows direct attachment to ceiling using anchors, and provides a 1/2" threaded connection box for wiring connections outside the fixture.



Wall Mount

Wall mount arm allows you to match path or perimeter lighting within or outside the parking garage.

Parking Garage Applications

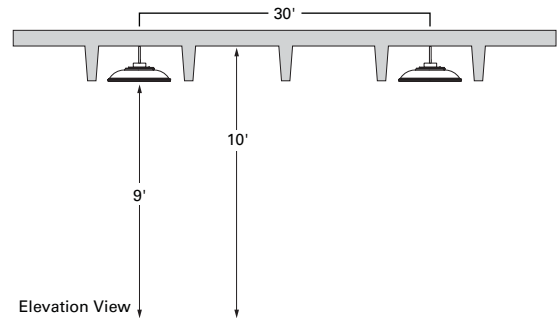
Design Practices

Lighting design for parking structures normally follows specific published guidelines and design practices as defined by the Illuminating Engineering Society of North America (IESNA). IESNA publishes recommended guidelines to help facilitate garage lighting design. The following minimum guidelines are established for safety and security of pedestrians and property within the space.

IESNA RP-20-98 Recommended Maintained Illuminance Values for Parking Garage Facilities

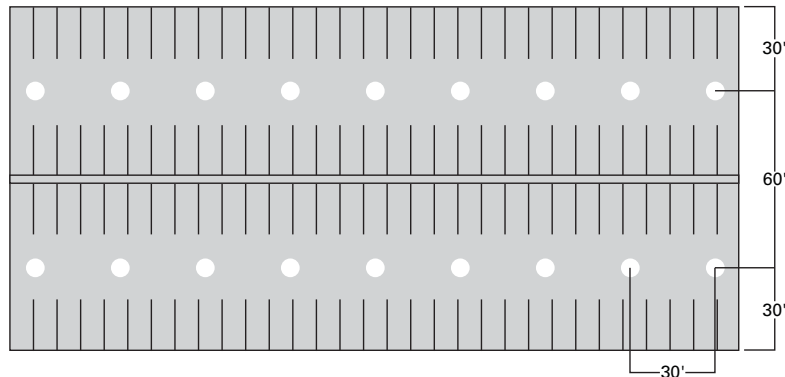
| Area of Illumination | Minimum Footcandle Level (On Floor) | Maximum / Minimum Footcandle Level (On Floor) | Vertical Reading Area Of Illumination (On Floor) | Minimum Footcandle Level (60" Above Floor) ¹ |
|------------------------|-------------------------------------|---|--|---|
| Basic | 1.0 | 10:1 | Basic | 0.5 |
| Ramps (Day) | 2.0 | 10:1 | Ramps (Day) | 1.0 |
| Ramps (Night) | 1.0 | 10:1 | Ramps (Night) | 0.5 |
| Entrance Areas (Day) | 50 | 10:1 | Entrance Areas (Day) | 25 |
| Entrance Areas (Night) | 1.0 | 10:1 | Entrance Areas (Night) | 0.5 |
| Stairways | 2.0 | N/A | Stairways | 1.0 |

NOTE: 1 Vertical reading is taken at lowest point of horizontal illumination level.



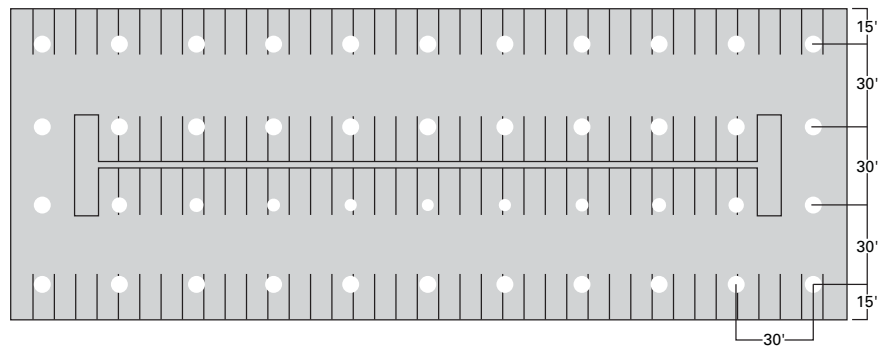
Center of Drive Fixture Location

Fixture spacing = 30' centered down drive lane; 60' on center between driving lanes (one per bay). Fixtures mounted 9' to bottom of fixture, even with the bottom of t-joists.



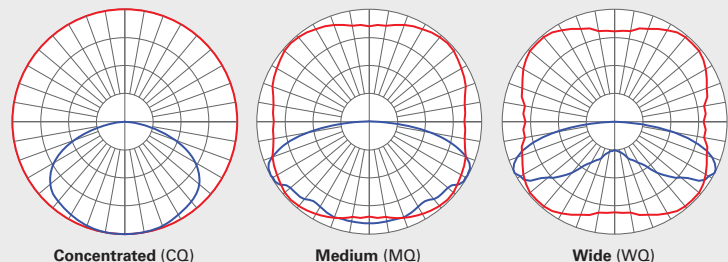
Sides of Drive Fixture Location

Fixture spacing = 30' x 30' on center spacing (two per bay). Fixtures mounted 9' to bottom of fixture, even with the bottom of t-joists.



Optical Distributions

The TopTier Luminaire is designed with three different optical distributions, each optimized for different applications. The concentrated (CQ) distribution is designed for the entrance of a parking garage or building canopies, where IES recommended light levels are higher and where fixture spacings are approximately one to two times the mounting height. The medium (MQ) distribution is ideal for mounting heights above 12', or for applications that have higher than typical light levels. The wide (WQ) distribution is for typical parking garages and is designed for optimal fixture spacing and reduced fixture counts.



Occupancy Sensing

Accelerate Payback on your Investment

To further enhance energy savings, the TopTier Luminaire offers an optional occupancy sensor that is integral to each individual luminaire. When the area surrounding the luminaire is unoccupied, the sensor has the ability to reduce light levels and power consumption. In addition to financial benefits, the control options for the TopTier are designed to be simple and cost-effective ASHRAE and Title 24 compliant solutions.

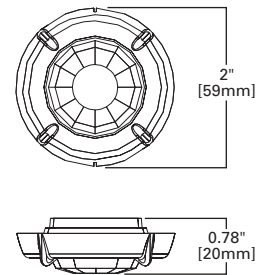
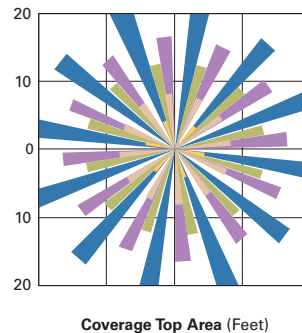
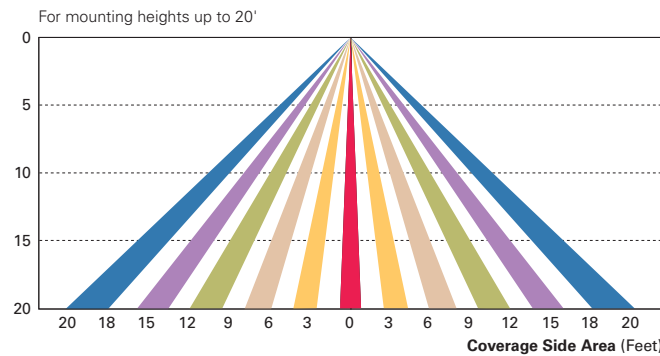
Dimming Occupancy Sensor (DOS)

When the DOS option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The sensor is factory preset to dim down to approximately 50% lumen output with a time delay of five minutes. To change these settings, the FSIR-100 accessory can be purchased. The FSIR-100 is a wireless configuration tool that allows the dimming level, time delay, sensitivity and other parameters to be changed. Consult a representative from Eaton's Cooper Lighting business for additional details.

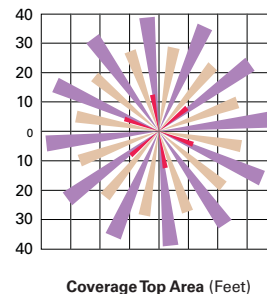
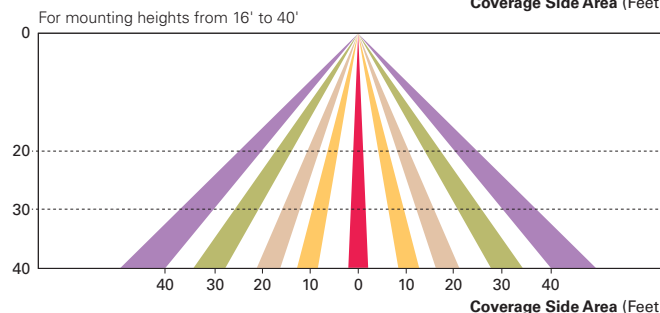
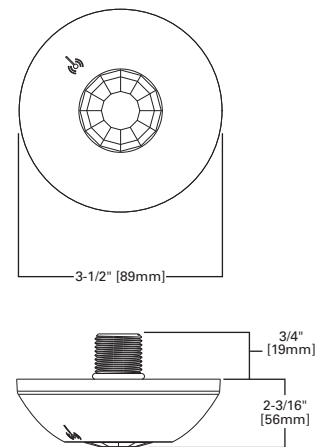
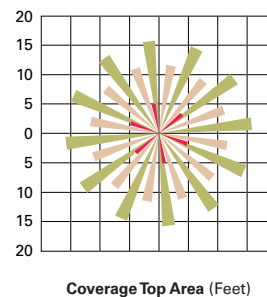
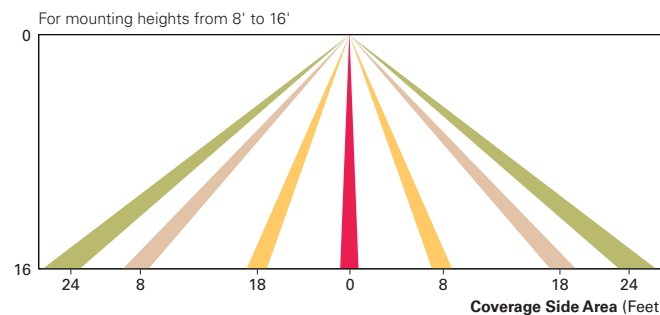
LumaWatt Wireless Control and Monitoring System (DIMRF-LW and DIMRF-LN)

The LumaWatt system is best described as a peer to peer wireless network of luminaire-integral sensors that operate in accordance with programmable profiles. The end user can create and manage sensor profiles with browser based management software and broadcast to sensors as necessary via wireless gateways. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. For additional details, refer to www.cooperlighting.com.

Dimming Occupancy Sensor (DOS)



LumaWatt (DIMRF-LW and DIMRF-LN)



Energy Savings

Reduced Energy Consumption

Operating and maintenance costs of a lighting system are dramatically impacted by the specified lamp source, system power consumption and the duration time of operation. Total system input watts and fixture operating life should be the driving considerations when addressing energy consumption and total cost of ownership. Energy savings increase when energy consumption is reduced and maintenance intervals are extended.

Annualized Energy and Maintenance Savings/Cost Comparison

| Product | Hours/Year | Life (Hours) ¹ | Wattage | Energy Cost/Year at .10 kWh ² | Relamp/Fixture ³ | Total Energy Cost/Fixture and Maintenance | Savings Per Fixture | % Savings |
|-----------------------|------------|---------------------------|---------|--|-----------------------------|---|---------------------|-----------|
| LED TopTier | 24 / 8,760 | 60,000 | 50W | \$43.80 | \$0.00 | \$43.80 | \$203.84 | 82% |
| Metal Halide 175W | | 7,500 | 208W | \$182.21 | \$65.43 | \$247.64 | | |
| LED TopTier | 24 / 8,760 | 60,000 | 50W | \$43.80 | \$0.00 | \$43.80 | \$83.56 | 66% |
| 4 x 32W (Fluorescent) | | 24,000 | 114W | \$99.86 | \$27.50 | \$127.36 | | |
| LED TopTier | 24 / 8,760 | 60,000 | 50W | \$43.80 | \$0.00 | \$43.80 | \$84.75 | 66% |
| 2 x 54W (Fluorescent) | | 36,000 | 121W | \$106.00 | \$22.55 | \$128.55 | | |

NOTE: 1. Lamp life for non-LED sources is defined as 50% failures. 2. Cost = (Watts x 24 hours per day x 365 days per year) / 1000 = Daily Kilowatt hour (kWh), kWh x 0.10 cents/kWh = Cost/Year at .10 kWh. 3. Relamping cost is calculate based on an average relamping period associated with each fixture; MH: .85 yr, T8: 2.74 years, T5: four years.

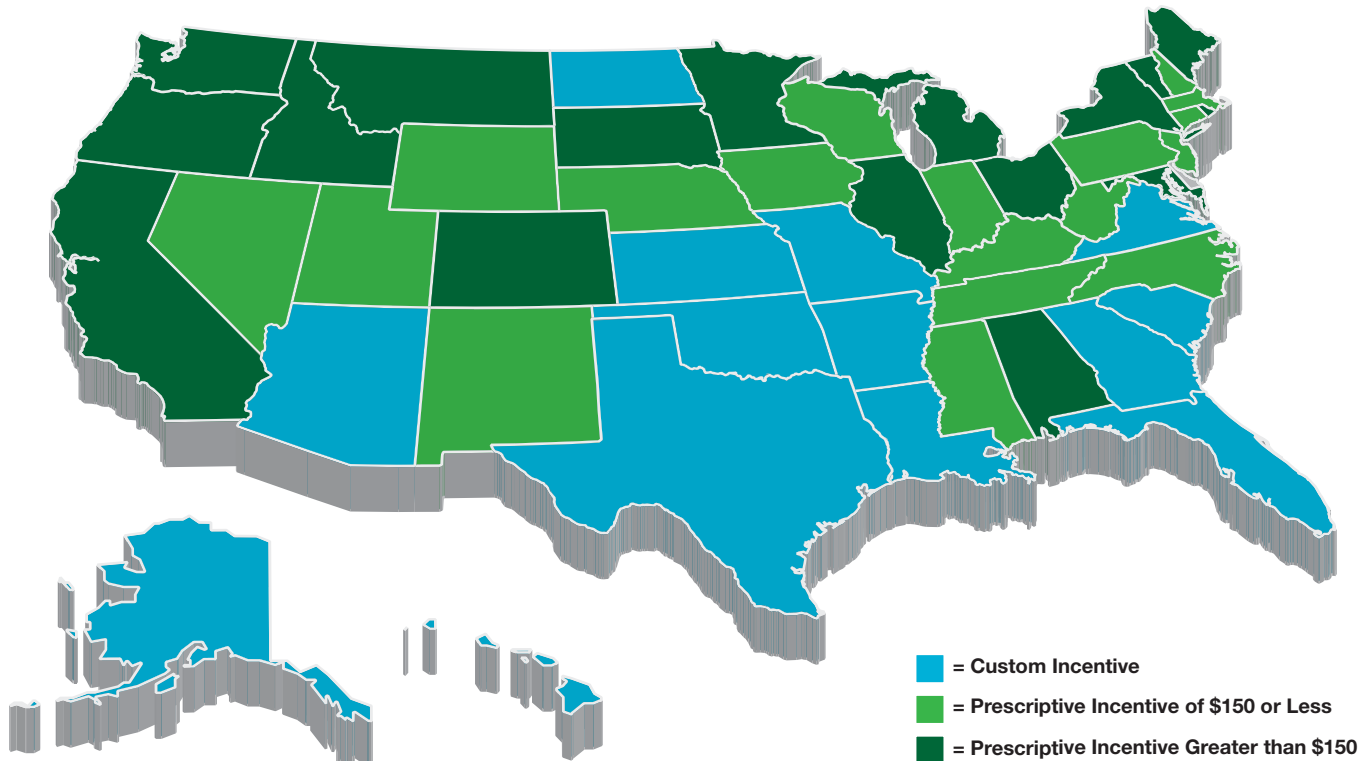
Energy Savings/Equivalency/Cross Reference Guide

| Product | HID Equivalency | Fluorescent Equivalency | Lamp System | Wattage | Rated Avg. Life (Hours) | TopTier Wattage | TopTier Life (Hours) ¹ | Energy Savings % |
|-------------|-----------------|-------------------------|--------------------------|---------|-------------------------|-----------------|-----------------------------------|------------------|
| LED TopTier | 175W | 4 x 32W 2 x 54W | 175W Metal Halide (HID) | 208W | 7,500 | 50W | 60,000 | 76% |
| | | | 4 x 32W T8 (Fluorescent) | 114W | 24,000 | | | 56% |
| | | | 2 x 54W T5 (Fluorescent) | 121W | 36,000 | | | 59% |

NOTE: Nominal lumens prior to optical and configuration losses based on 4000 CCT, 4000K package at 25°C ambient. TopTier = 5,280 lumens. 1. Hours of life based on 85% lumen maintenance.

Utility Incentive Programs*

Utility companies are leading the way in responding to climate change and the power sector's role in reducing greenhouse gases while meeting the country's growing energy needs. Monetary incentives toward the purchase of high-efficient parking garage luminaires support clean energy resources and technologies, which are critical to our transition to a sustainable, low carbon society.



* As of November 1, 2013.

Ordering Information

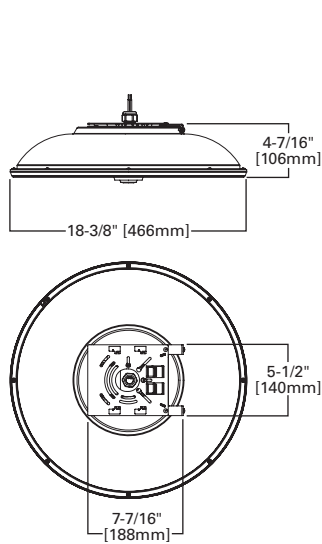
Sample Number: TT-B2-LED-E1-WQ-AP

| Product Family | Lumen Package | Lamp Type | Voltage | Distribution | Mounting | Color |
|--|--|---------------------------------------|--|---|---|---|
| TT=TopTier | B1=Nominal 3,000 Lumens B2=Nominal 4,000 Lumens B3=Nominal 5,000 Lumens B4=Nominal 7,000 Lumens ¹ B5=Nominal 9,000 Lumens ^{1,2,3} B6=Nominal 11,000 Lumens ^{1,2,3} | LED=Solid State Light Emitting Diodes | E1=Electrical (120-277V) ⁴ 347=347V 480=480V ⁵ | CQ=Concentrated MQ=Medium WQ=Wide | [BLANK]=Surface or Pendant Mount TMB=Trunnion Mount with Connection Box WM=Wall Mount | [BLANK]=White AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic |
| Options (Add as Suffix) | | | | Accessories (Order Separately) | | |
| 7060=70 CRI / 6000K ⁶ 8030=80 CRI / 3000K ⁶ 30L=Extra Long 30" Wires ⁷ HA=50°C High Ambient ^{1,8} CG=Clear Glass ⁹ SG=Solite® Glass ¹⁰ TR=Tamper Resistant Hardware X=Driver Surge Protection Only 5LTD=Fifth Light DALI Driver(s) ^{4,6,7,11,12} IBP=Integral Battery Pack (Specify 120V or 277V. Must Specify Voltage) ^{2,8} ICP=Integral Cold Weather Battery Pack (Specify 120V or 277V. Must Specify Voltage) ^{3,8} MSP/DIM-L12=Mini Dimming Occupancy Sensor (8' - 12' Mounting) ¹³ MSP/DIM-L30=Mini Dimming Occupancy Sensor (12' - 30' Mounting) ¹³ DOS=Dimming Occupancy Sensor (8' - 20' Mounting) ¹⁴ DIMRF-LW=LumaWatt Wireless Sensor, Wide Lens (8' - 16' Mounting) ¹⁵ DIMRF-LN=LumaWatt Wireless Sensor, Narrow Lens (16' - 40' Mounting) ¹⁵ | | | | FSIR-100=Wireless Configuration Tool for Occupancy Sensor ¹⁴ MA1252=10kV Circuit Module Replacement | | |

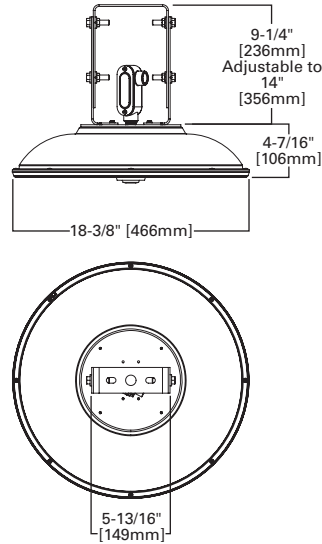
NOTES: 1 The B5 and B6 lumen packages are not available with the HA high ambient option. 2 The IBP option is only available in 120V or 277V, must specify voltage. 0°C minimum, 25°C maximum ambient temperature. Not available with B6 lumen package. 3 The ICP option is only available in 120V or 277V, must specify voltage. -20°C minimum, 25°C maximum ambient temperature. Not available with B6 lumen package. 4 Replace E1 with specific voltage when selecting the 5LTD option (120, 208, 240 or 277V). 5 Not to be used with un-grounded systems. 6 Extended lead times apply. 7 Not available with WM or TMB mounting options. 8 The 5LTD, IBP and ICP options are not available with dimming (DIM, DOS, DIMRF-LN or DIMRF-LW) or the HA high ambient option. 9 CG clear glass option only available with MQ and WQ distributions. 10 SG (Solite® glass) – Included as standard with the CQ distribution. Only available with WQ distribution. 11 Not available in combination with the IBP and ICP options. 12 Multiply published IES files by .95 when 5LTD is used with the B5 or B6 lumen package. 13 Available to order in April 2015. 14 The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your Eaton's Cooper Lighting business representative for more information. 15 DIMRF-LN and DIMRF-LW are not available in 347 or 480V.

Dimensions

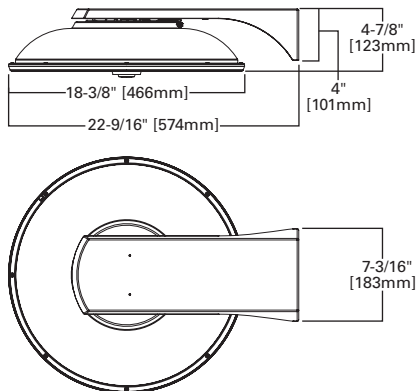
SURFACE OR PENDANT MOUNT



TRUNNION MOUNT



WALL MOUNT



Additional Information

| Compliances | Technical Data (Electronic LED Driver) | Shipping Data (Approximate Net Weight) |
|---|--|--|
| UL and cUL Wet Location Listed 3G Vibration Rated LM79/LM80 Compliant IP66 Rated | >0.9 Power Factor <20% Total Harmonic Distortion 120-277V, 50/60Hz, 347V/60Hz, 480V/60Hz -40°C Minimum Ambient Temperature Rating 40°C Maximum Ambient Temperature Rating 50°C Maximum Ambient Temperature Rating (HA Option) | 16 lbs. (7.2 kgs.) |

NOTE: Specifications and dimensions subject to change without notice.



IP66 Rated

Eaton's Cooper Lighting Business

Headquarters
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

Canada Sales
5925 McLaughlin Road
Mississauga, Ontario L5R 1B8
P: 905-501-3000
F: 905-501-3172

Our Lighting Product Brands

Halo
Halo Commercial
Portfolio
IRiS
RSA
Metalux
Corelite
Neo-Ray
Fail-Safe
MWS
Ametrix
Shaper
io
Lumark
McGraw-Edison
Invue
Lumière
Streetworks
AtLite
Sure-Lites

Our Controls Product Brands

Greengate
iLumin
Zero 88
Fifth Light Technology
iLight (International Only)