

BUSINESS IMPROVEMENT DISTRICT No. 2

August 26, 2024



Business Improvement District #2 Riverwalk Lighting Project for 2024/2025

PROJECT NARRATIVE

Location:

The existing Riverwalk on the east side of the Milwaukee River, extending from the Water Street Bridge at the south end to the Clybourn Street Bridge at the north end.

Historic Third Ward Riverwalk Site Plan Review Overlay Zone (SPROZ):

This project area falls within the Historic Third Ward Riverwalk SPROZ boundary, though the Riverwalk structure that is the subject of this proposal is located beyond the city's official property line, built over the water and within the riparian ownership of the adjacent property. Because the lighting project is located beyond the property line and is within the public waterway, it is not under the city's permitting or zoning authority. Given this, consistent with past files relating to the Riverwalk that is located within the public waterway, the BID has submitted this proposal to demonstrate compliance with the SPROZ for approval in concept by the City Plan Commission. . The section of the Riverwalk located south of the subject locations on land along 105 and 125 N. Water Street is subject to the Riverwalk SPROZ standards. If the property owner of those sites wishes to extend the updated lighting design along the Riverwalk within this area, an application will be submitted in the future for SPROZ approval. .

This section of the Historic Third Ward Riverwalk, from the Clybourn Street Bridge to the north to a point at approximately 129 N Water Street to the south, has specific design standards developed in partnership with Mary Miss in 1999 and approved by the Common Council as File No. 990968. Regarding lighting, the SPROZ states:

"Lighting unique to the Riverwalk should enhance surfaces and objects along the way as well as light the pedestrian path and promote security for night use. Lighting is a critical feature of the Riverwalk. Half of the time (evening hours), it is the most important element for bringing the Riverwalk to life. It is often used as a fundamental repetitive design element. Lighting that is too bright as well as too dim is to be avoided. Lighting that is too dim will discourage night use of the Riverwalk for those concerned with safety. Lighting that is too bright will destroy the intimate ambiance these guidelines are striving to encourage."

The information below demonstrates that this lighting proposal is consistent with the overlay zone's rules.

Need:

Currently, there is very little lighting on the Riverwalk, other than some intermittent lighting from buildings, which is not uniform and not always on. Security is becoming increasingly important, and additional lighting on the Riverwalk will improve safety and increase usage.

Goals:

Business Improvement District #2 (BID) owns and maintains this portion of the Riverwalk. Our project will:

- Improve much-needed lighting along this stretch of the Riverwalk, enhancing illumination levels and providing a greater sense of security.
- Provide uniform lighting consistent with existing Third Ward street lighting, aiming for a minimum of 1.0 footcandles on the Riverwalk and an average of 1.5 footcandles.
- Avoid shining light into the windows of apartments and condos along the Riverwalk.
- Not provide lighting onto the boat docks and piers attached to the Riverwalk, but with the option to turn one of the two directional plate LED lights to illuminate the docks and piers if desired.
- Ensure that light does not spill into residences adjacent to the Riverwalk. With dimmable and adjustable lights, we anticipate being able to fine-tune lighting levels and directions quickly and easily.
- Add substantial lighting infrastructure (which is Dark Sky compliant) without narrowing the width of the Riverwalk pedestrian travel path.

Project Approvals:

On May 14, 2024, the Historic Third Ward Architectural Review Board (ARB) unanimously approved the project. On May 24, 2024, the ARB issued the Certificate of Appropriateness, confirming that the design, materials, and location meet the district's design standards.

On May 21, 2024, the BID Board of Directors voted unanimously to approve the project and its estimated funding.

Design Requirements:

- Refrain from blocking or narrowing the travel path width of the Riverwalk.
- The project includes 30 light poles. Approximately 60% of the Riverwalk has black railings with stainless wire mesh infill, while the remaining 40% has timber benches on the water side and no railing. There will be five different ways the light poles will be mounted on the Riverwalk structure, as shown in the Riverwalk Lighting Details document. In some locations, existing benches will either be removed or shifted to accommodate the light pole location.

For the proposed lighting:

- 15 light poles are mounted outboard of the railings (Detail 1).
- 11 light poles are mounted between benches where there is no railing (Details 5 & 6).
- 3 light poles are mounted inboard of the railing but between benches (Detail 3).
- 1 light pole is mounted on concrete bases (Detail 2).
- No light poles will reduce the current width of the travel path.

Aesthetics:

The Third Ward is known for its unique street lighting, characterized by green poles with double-head railway fixtures on a double arch head. The existing streetlights are on 17' poles. We intend to purchase the Riverwalk lights from the same manufacturer, using the same model fixtures and head, but at a smaller scale. The Riverwalk poles will be 2/3rds the size of the street poles. The existing street poles are 6" octagonal extruded aluminum with large decorative aluminum bases. The Riverwalk poles will be 5" round, 12' high aluminum tubes without decorative bases, as most of the bases will be behind the railings.

Aside from size, the other differences include:

- The poles and fixtures will be powder-coated black, not green, as all the railings and other steel elements of the Riverwalk are black.
- The fixtures do not have the glass jar, but do have an aluminum cage to maintain the same look, minus the jar due to the photo optics.
- The existing street lights originally had HID bulbs, later converted to LEDs, which cast light in all directions and used the jar as a diffuser. The Riverwalk lights will use flat directional LED plates that cast light in a rectangular pattern, placing almost all of their light onto the Riverwalk with minimal light spillage.
- The light heads will be mounted parallel to the Riverwalk, unlike the existing street lights, where the heads are mounted perpendicular to the street.
- The poles are 12' high, so the bottoms of the fixtures will be about 10' high, positioned outside the travel path to prevent people from attempting to jump and hit the fixtures.
- There will be flag brackets on the poles, perpendicular to the Riverwalk. The flags are smaller than the existing streetlight flags, measuring 1' x 3'. The bottoms of the flags will be at 9'. No flower basket mounts are included.
- The light temperature will be 4,000K, matching the existing street lighting in the Third Ward.

Lighting Pattern:

The fixtures will use a flat plate LED board, which differs from a round bulb that throws light in all directions. The shape of the light throw is controlled by the custom board the LEDs are molded into. Earlier in the design process, some areas had round dispersion fixtures, while others had flat plates. The included photometric plan is an older design to illustrate the difference between the two. The light level on the Riverwalk with a plate LED is nearly three times the footcandle level of the round fixtures using the same 20 watts.

A photometric plan was also created for the sidewalls of the adjacent buildings, showing a significant reduction in light wash on the building walls when using plate LEDs. The average lighting level, using all plate LEDs, is 3.2 fc on the Riverwalk and 1.3 fc on the boat docks. This exceeds the design goals listed above, so the lights will be dimmed to achieve the correct lighting level.

After extensive research, the selected lights are designed to control illumination, avoid spillage beyond the Riverwalk zone, and substantially limit the amount of illumination on adjacent buildings.

Controls:

We have chosen to use Ubiqquia-branded lighting controls. Each pole has a photocell socket on top, fitted with a Ubiqcell control instead of a photocell. These wireless devices communicate via a cellular connection to software we will have on a computer and a cell phone. This allows us to control or dim the fixtures to the desired level. We will walk the Riverwalk with a light meter and adjust the wattage of each fixture to achieve the desired lighting level of 1.5 footcandles. We can also control the on/off schedule. The Ubiqquia controls monitor the fixtures, notifying us if one is not functioning properly, and monitor kWh consumption. If occupants of adjacent buildings request more or less light in their area, we have the ability to adjust accordingly. For events, we could increase the light level. The system comes with a 10-year warranty and software upgrades. If we decide to illuminate the boat docks more, one of the two fixtures can be rotated, and the dimming adjusted to maintain the desired footcandle levels on the Riverwalk.

Replacements and Repairs:

Replacement drivers and LED plates will be stocked for repairs and replacements as needed.

Installation:

Light poles are anticipated to be installed in the first half of 2025.

Outreach:

Both condo associations and property owners along the corridor have been sent information about the proposed lighting plans/upgrades via email. They were invited to reply with any questions or feedback. Several other stakeholders are on the Business Improvement District #2 Board of Directors, which voted in favor of the project in May 2024.

Sincerely,



Paul Schwartz
Executive Director
Business Improvement District #2;
Milwaukee Public Market
414-336-1111 - paul@milwaukeepublicmarket.org

BID NO. 2

Riverwalk Lighting

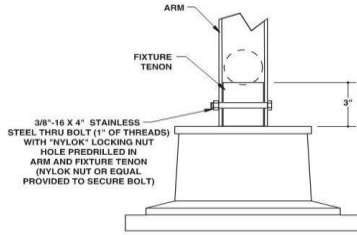
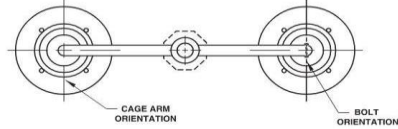
Presented by: Kendall Breunig P.E.



CUSTOMER APPROVAL: _____ DATE: _____
 X _____
 A signed approval will be required with the released order.
 PROPRIETARY SUBMITTAL, DO NOT MODIFY.

XBE-2-180"
 ASSEMBLY

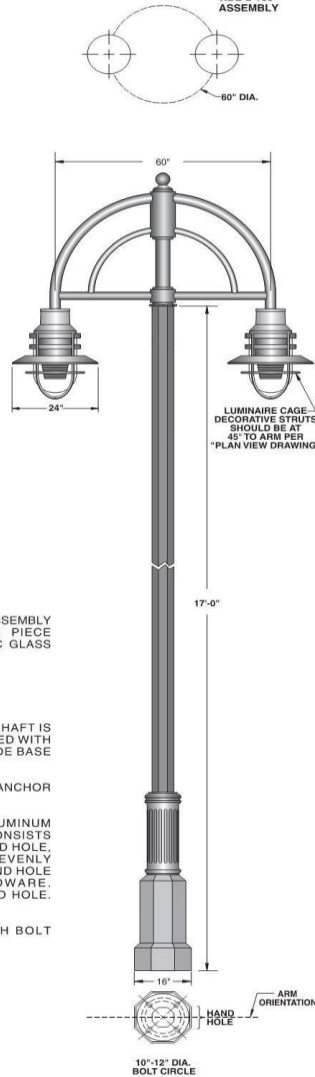
ARM AND BOLT ORIENTATION



SPECIFICATIONS:

- LUMINAIRE:** CAST ALUMINUM HOUSING AND DECORATIVE CAGE. ENTIRE ASSEMBLY SEALED WITH CONTINUOUS NEOPRENE GASKET. ONE PIECE **SANDBLASTED ACRYLIC LENS** ENCASES CLEAR PRISMATIC GLASS REFRACTOR. TYPE V (SYMMETRIC) LIGHT DISTRIBUTION.
- LAMP HOLDER:** MEDIUM BASE PORCELAIN.
- LAMP:** INCANDESCENT (BY OTHERS)
- SHAFT:** 6" OCTAGONAL EXTRUDED FROM 6063 ALLOY ALUMINUM. SHAFT IS HEAT TREATED TO PRODUCE A T6 TEMPER. SHAFT PROVIDED WITH HAND HOLE AND COVER, GROUNDING LUG PROVIDED INSIDE BASE OPPOSITE HAND HOLE.
- BASE PLATE:** CAST ALUMINUM CONSTRUCTION OF 356 ALUMINUM ALLOY, ANCHOR BASE IS CIRCUMFERENTIALLY WELDED TO SHAFT.
- DECORATIVE BASE:** ONE PIECE CORROSION RESISTANT, DURABLE CAST ALUMINUM CONSTRUCTION. MINIMUM .250 WALL THICKNESS. BASE CONSISTS OF SMOOTH, STEPPED BOTTOM SECTION WITH FLUSH HAND HOLE, AND A DECORATIVE FLUTED SECTION CONSISTING OF EVENLY SPACED, HIGHLY DETAILED RAISED VERTICAL FLUTES. HAND HOLE COVER SUPPLIED WITH TAMPER RESISTANT HARDWARE. GROUNDING LUG PROVIDED INSIDE BASE OPPOSITE HAND HOLE. DECORATIVE BASE SLIDES OVER POLE.
- ANCHORAGE:** (4) 3/4" X 24" FULLY GALVANIZED ANCHOR BOLTS. EACH BOLT SUPPLIED WITH TWO NUTS AND TWO WASHERS.
- FINISH:** POLYESTER POWDER COAT (THIRD WARD GREEN TEXTURED, RAL-6033-T)
- NOTES:** 5 YEAR (60 MONTHS) PARTS WARRANTY.

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



1	SYMBOL	REVISION	BY	DATE

		PART NO.	1	
		DRN	CHK'D	MATL
TOLERANCE UNLESS NOTED DESCRIPTION		DATE	SCALE	SHEET
660 WEST AVENUE O, PALMDALE, CA.93551 Ph. (661) 233-2000 - Fax (661) 233-2001		11/29/23		
CS-7606 REV. 1				

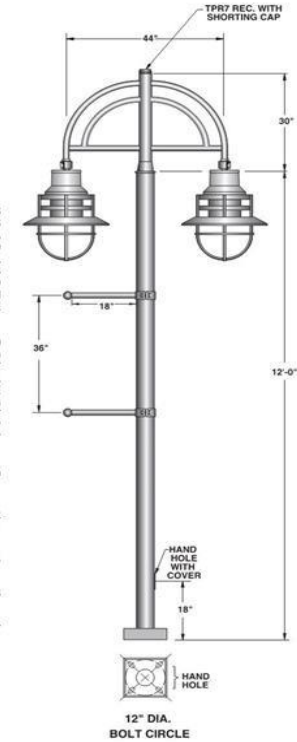
CUSTOMER APPROVAL: _____ DATE: _____
 X _____
 A signed approval will be required with the released order.
 PROPRIETARY SUBMITTAL, DO NOT MODIFY.

RNTA-125-125XBB-MOD-2-180/OV1-8-NO DIFFUSER/PLED-COLOR

SPECIFICATIONS:

- LUMINAIRE:** CAST ALUMINUM HOUSING AND DECORATIVE CAGE.
- REFLECTOR:** SPUN ALUMINUM CONSTRUCTION.
- DIFFUSER:** NO DIFFUSER
- P-LED:** 20 EMITTERS (LED'S) DRIVEN AT 350mA FOR 23 TOTAL INPUT WATTS (4,828 LUMENS). LED'S ARE NEUTRAL WHITE (CCT 4000K). EMITTERS ARE ARRAYED ON A METAL CORE PCB PANEL LOCATED ON A COPPER THERMAL TRANSFER PAD, EACH EMITTER IS ENCLOSED BY AN INJECTION MOLDED H12 ACRYLIC LED REFRACTOR. ALL REFRACTORS ARE RETAINED BY AN ALUMINUM FRAME. ALL PANELS IN A LUMINAIRE HAVE THE SAME OPTICAL PATTERN. LED REFRACTORS PRODUCE STANDARD SITE/AREA DISTRIBUTION TYPE II. PANELS ARE FIELD REPLACEABLE AND FIELD ROTATABLE IN 90° INCREMENTS.
- DRIVERS:** CONSTANT CURRENT ELECTRONIC WITH A POWER FACTOR OF >.90 AND A MINIMUM OPERATING TEMPERATURE OF -40°F. DRIVER(S) IS/ARE UL AND CUL RECOGNIZED AND MOUNTED DIRECTLY AGAINST THE ELECTRICAL HOUSING TO FACILITATE THERMAL TRANSFER, HELD DOWN BY UNIVERSAL CLAMPS TO FACILITATE EASY REMOVAL. IN-LINE TERMINAL BLOCKS FACILITATE WIRING BETWEEN THE DRIVER AND OPTICAL ARRAYS. DRIVERS ACCEPT AN INPUT OF 240V, 50/60HZ, 20KA SURGE PROTECTOR WITH "ON" LED OPERATIONAL INDICATOR AND END OF LIFE OPEN CIRCUIT PROTECTION FOR LUMINAIRE.
- ARM:** DURABLE CORROSION RESISTANT, CAST AND EXTRUDED ALUMINUM CONSTRUCTION.
- SHAFT:** 5" DIA. EXTRUDED (.125 WALL) FROM 6063 ALLOY ALUMINUM. SHAFT IS HEAT TREATED TO PRODUCE A T6 TEMPER. SHAFT INCLUDES HAND HOLE FURNISHED WITH COVER.
- ANCHOR BASE:** CAST ALUMINUM CONSTRUCTION OF 356 ALUMINUM ALLOY, ANCHOR BASE IS CIRCUMFERENTIALLY WELDED TO SHAFT.
- BASE COVER:** TWO PIECE, HEAVY WALL CONSTRUCTION ENTIRELY CONCEALS ANCHOR BASE.
- ANCHORAGE:** (4) 3/4" X 24" FULLY GALVANIZED ANCHOR BOLTS. EACH BOLT SUPPLIED WITH TWO NUTS AND TWO WASHERS.
- FINISH:** POLYESTER POWDER COAT (COLOR: BLACK SMOOTH, RAL-9005-S.)

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



1	SYMBOL	REVISION	BY	DATE

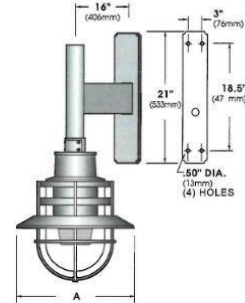
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TOLERANCE UNLESS NOTED: NOTED: ± .02" HOLES: ± .01"		DATE	SCALE	SHEET
660 WEST AVENUE O, PALMDALE, CA.93551 Ph. (661) 233-2001 Fax (661) 233-2001		04/2324		

12' Height Poles

OV SERIES - LED

SPECIFICATIONS

WALL MOUNT



FIXTURE	A
OV1	24" 610mm
OV2	16" 406mm

EXTRUDED ALUMINUM ARM AND CAST ALUMINUM WALL BRACKET. SHOWN WITH XAO-WM.

LED POWER ARRAY™ MODULES

OV1-LED E.P.A. = 1.85
GLASS REFRACTOR w/ VERTICAL ARRAY
Available in:
6 Array 36 LED Max.
VERTICAL ARRAY
Available in:
8 Array 64 LED Max.
10 Array 80 LED Max.

OV2-LED E.P.A. = 0.82
GLASS REFRACTOR w/ VERTICAL ARRAY
Available in:
6 Array 36 LED Max.
VERTICAL ARRAY
Available in:
6 Array 48 LED Max.

GRV - Glass Refractor w/ Vertical Array Top Mount

VPA - Vertical Array Top Mount

Spec / Order Example: OV1-LED / GRV-III / 36WW208 / 2-90 / RAL6005-T / 10SP

SPEC / ORDERING INFORMATION							
LUMINAIRE-FITTER	OPTICS	# of LED's	COLOR	VOLTAGE	MOUNTING	FINISH	OPTIONS
LUMINAIRE	OPTICS	LED		COLOR	MOUNTING	FINISH	OPTIONS
LUMINAIRE-FITTER	GLASS REFRACTOR (CLEAR SMOOTH POLYCARBONATE STANDARD)	# of LEDs			ARM MOUNT	STANDARD TEXTURED FINISH	LENS OPTIONS:
<input type="checkbox"/> OV1-LED	<input type="checkbox"/> GRV - III	<input type="checkbox"/> OV1 36LED (40 Watts)	<input checked="" type="checkbox"/> NW (4000K)* *STANDARD	<input checked="" type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)	<input type="checkbox"/> XPD <input type="checkbox"/> XPK <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2-180 <input type="checkbox"/> 3-120 <input type="checkbox"/> 4-90	<input checked="" type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T	<input type="checkbox"/> CLEAR SMOOTH ACRYLIC CA <input type="checkbox"/> OPAL SMOOTH ACRYLIC WA <input type="checkbox"/> CLEAR SMOOTH POLYCARBONATE CP <input type="checkbox"/> OPAL SMOOTH POLYCARBONATE WP
<input checked="" type="checkbox"/> OV2-LED	<input type="checkbox"/> GRV - V	Vertical Power Array (OPAL POLYCARBONATE STANDARD)	OTHER LED COLORS AVAILABLE CONSULT FACTORY	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347 <input type="checkbox"/> 480	<input type="checkbox"/> WALLMOUNT <input type="checkbox"/> WM	FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH SUFFIX "S" (EXAMPLE: RAL-9005-S)	<input type="checkbox"/> HOUSE SIDE SHIELD HS <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW <input type="checkbox"/> PHOTO CELL + VOLTAGE (EXAMPLE: PC120V) PC-V <input type="checkbox"/> SINGLE FUSE (120V, 277V, 347V) SF <input type="checkbox"/> DOUBLE FUSE (208V, 240V, 480V) DF
	VERTICAL POWER ARRAY (OPAL POLYCARBONATE STANDARD)	<input type="checkbox"/> OV1 80LED (89 Watts) 64LED (71 Watts) 48LED (53 Watts)	<input type="checkbox"/> OV2 36LED (40 Watts) 36LED (40 Watts)			SEE US.ATLG.COM FOR ADDITIONAL FINISH STYLES	SEE US.ATLG.COM FOR ADDITIONAL COLORS

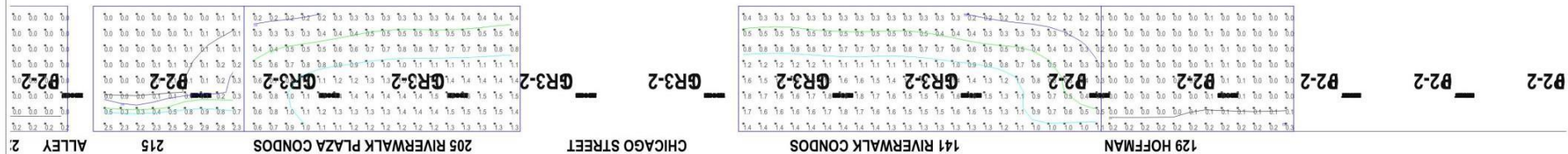
Sun Valley Lighting 640 West Avenue O, Palmolive, CA 93551 Phone (661) 233-2000 Fax (661) 233-2001 www.usatlg.com



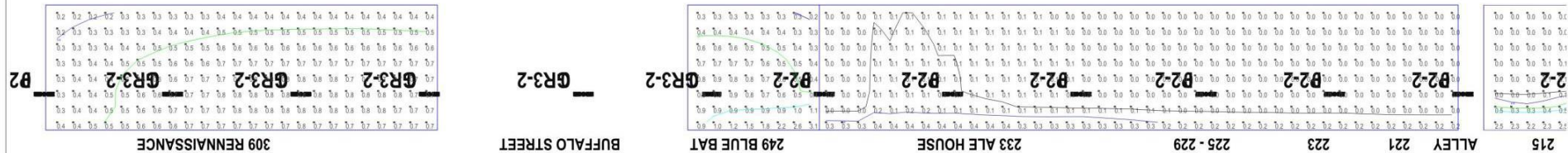
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Luminaire Schedule								
Scenario: L2								
Symbol	Qty	Label	Arrangement	Manufacturer	Description	Arr. Luminaire Lumens	Arr. Watts	LLF
	21	P2-2	GROUP	Sun Valley Lighting	OV1-PLED-CA-II-20LED-350mA-40K_Rotated +/-90°	4828	44	0.920
	14	GR3-2	GROUP	Sun Valley Lighting	OV1-CA-LED-GRV-III-36LED-350mA-40K_Rotated +/-90°	7274	80	0.920

Calculation Summary							
Scenario: L2							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Blgd 249	Illuminance	Fc	0.7	3.1	0.2	3.7	15.5
Blgd 309	Illuminance	Fc	0.6	0.8	0.2	2.9	4.0
Bldgs 129 - 141	Illuminance	Fc	0.6	1.8	0.0	N.A.	N.A.
Bldgs 205 - 215	Illuminance	Fc	0.7	2.9	0.0	N.A.	N.A.
Bldgs 225 - 233	Illuminance	Fc	0.1	0.4	0.0	N.A.	N.A.



Riverwalk_South



Riverwalk_North

NOTES:
 See schedule for luminaire specifications.
 Luminaire Symbols are not to scale.
 Varying the position, mounting height,
 or orientation from what is specified in this
 drawing will invalidate the calculation performed.

DRAWN BY: L.C.P.
 AGENCY: Enterprise Lighting & Control
 Date: 4/8/2024
 SCALE: 1" = 250'

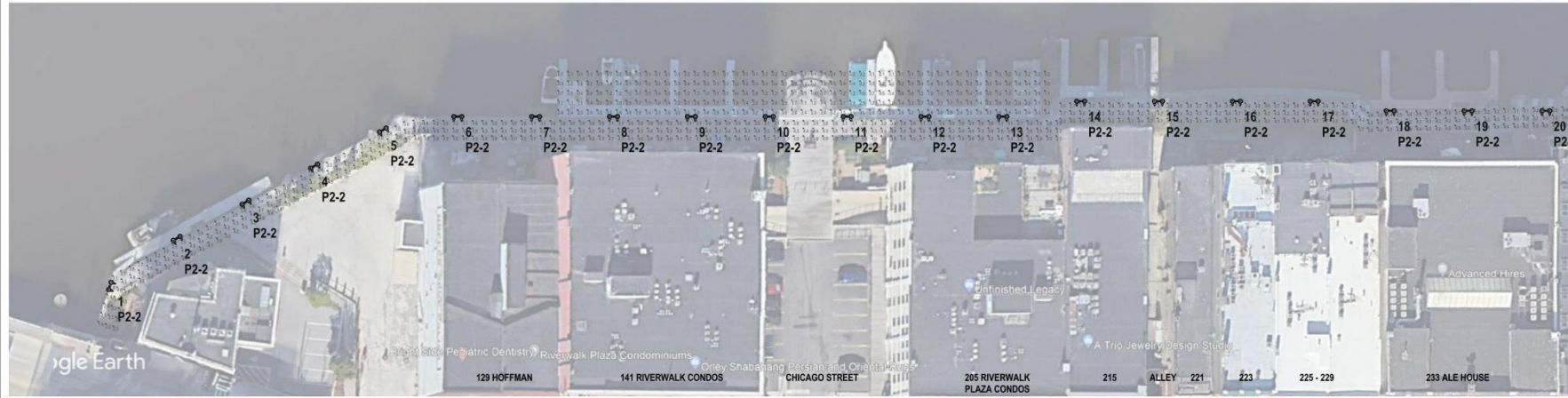
Point-By-Point Illuminance Calculation
 (At Grade)
 North Riverwalk Way
 Milwaukee, WI



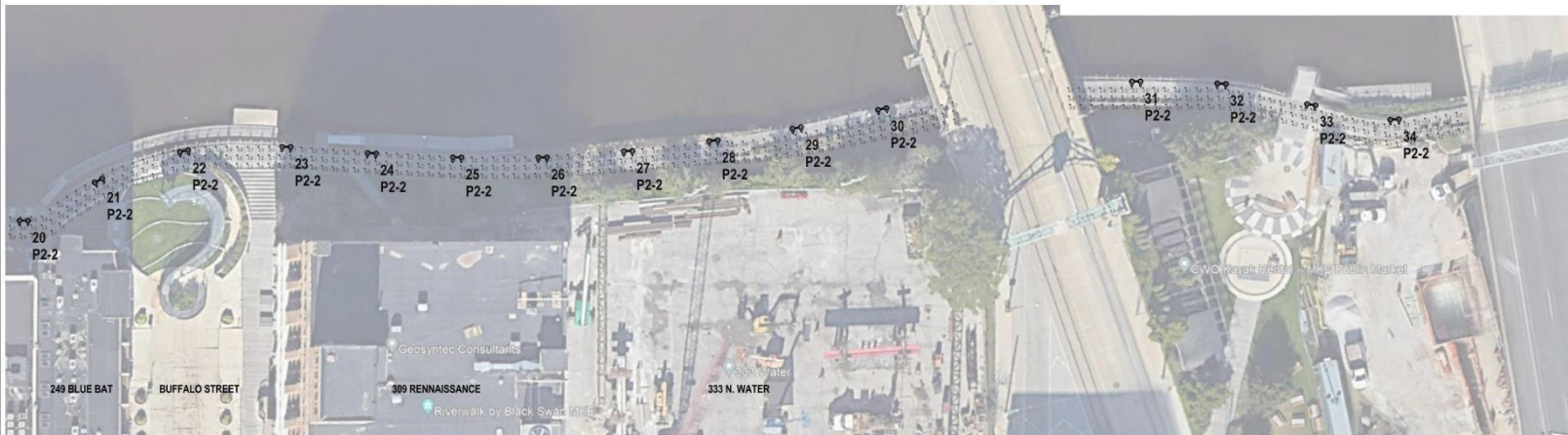
ALL TYPES: 120" MOUNTING HEIGHT

Luminaire Schedule						
Scene: L1						
Symbol	Qty	Label	Arrangement	Manufacturer	Description	Arr. Luminaire Lumens
☒	35	P2-2	GROUP	Sun Valley Lighting	OV1-PLD-CA-II-20LED-350mA-40K_Rotated +90°	4828
						44
						0.920

Calculation Summary						
Scene: L1						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
Dock Area (typ)	Illuminance	Fc	1.3	4.0	0.1	12.5
Riverwalk_ALL	Illuminance	Fc	3.2	5.0	0.1	32.3
						50.0



Riverwalk_South



Riverwalk_North

NOTES:
See schedule for luminaire specifications.
Luminaire Symbols are not to scale.
Orientation from what is specified in this drawing will invalidate the calculation performed.

DRAWN BY: L.C.P.
AGENCY: Enterprise Lighting & Control
Date: 3/25/2024
SCALE: 1" = 25'0"

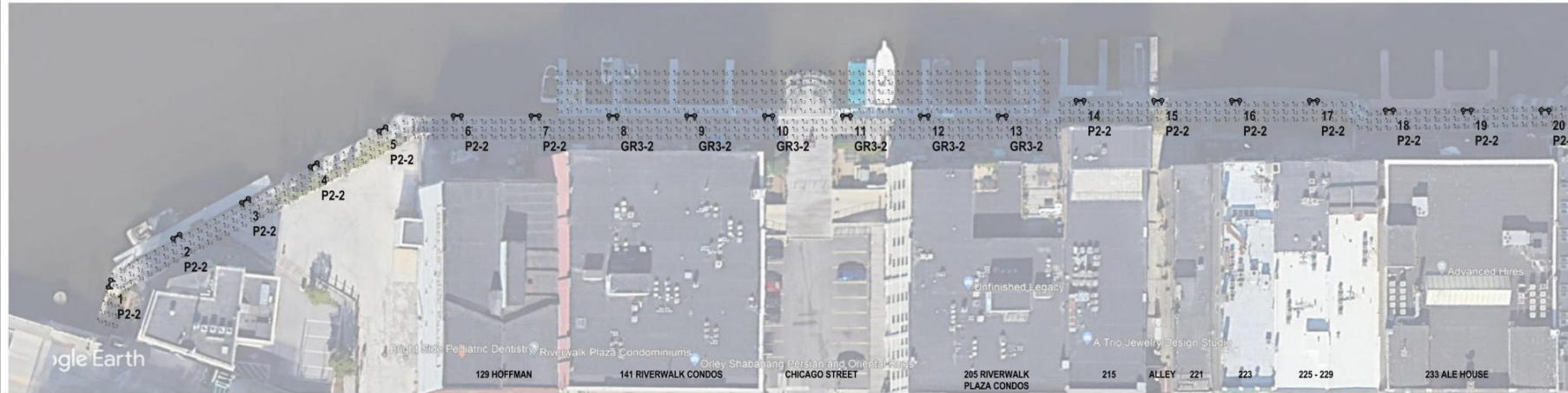
Point-By-Point Illuminance Calculation
(At Grade)
North Riverwalk Way
Milwaukee, WI



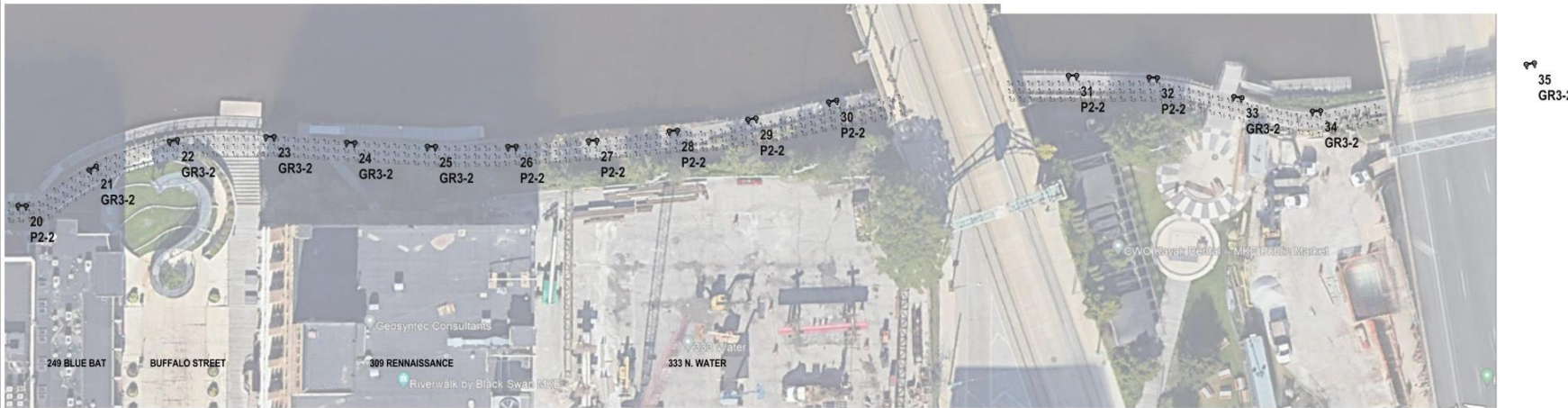
ALL TYPES: 12'0" MOUNTING HEIGHT

Luminaire Schedule								
Scene: L2								
Symbol	Qty	Label	Arrangement	Manufacturer	Description	Arr. Luminaire Lumens	Arr. Watts	LLF
☐	21	P2-2	GROUP	Sun Valley Lighting	OV1-PLD-CA-II-20LED-350mA-40K_Rotated +1-90°	4828	44	0.920
☐	14	GR3-2	GROUP	Sun Valley Lighting	OV1-CA-LED-GRV-III-36LED-350mA-40K_Rotated +1-90°	7274	80	0.920

Calculation Summary									
Scene: L2									
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min		
Dock Area (typ)	Illuminance	Fc	1.1	3.0	0.3	3.5	10.0		
Riverwalk_ALL	Illuminance	Fc	2.4	5.0	0.3	8.1	16.7		



Riverwalk_South



Riverwalk_North



NOTES:
See schedule for luminaire specifications.
Luminaire symbols are for location, or orientation from what is specified in this drawing will invalidate the calculation performed.

DRAWN BY: L.C.P.
AGENCY: Enterprise Lighting & Control
Date: 3/25/2024
SCALE: 1" = 250'

Point-By-Point Illuminance Calculation
(At Grade)
North Riverwalk Way
Milwaukee, WI

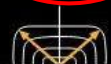
AVAILABLE LIGHT DISTRIBUTIONS



Type II*



Type II FR*



Type III M*



Type III W*



Type IV*



Type IV FT*



Type V Sq. N



Type V Sq. M



Type V Sq. W

*Asymmetric optics field rotatable in 90° increments.

HOUSE SIDE SHIELD



House side shields are applied to each individual LED in asymmetric distributions and result in outstanding house side cutoff to control property line trespass and unwanted brightness in residential areas.

PLED® Optics

Enhanced Performance Optics

The U.S. Architectural PLED® (Panel LED) System utilizes a micro reflector behind each LED in asymmetric distributions to enhance forward throw and reduce backlight. Each LED is optically controlled by a lens that has its distribution type and direction of light throw molded into it.

The LED's and lenses are arrayed on circuit boards that are field rotatable in 90° increments and field replaceable.

OPTIONS FOR CONTROLLING MARBELLA

HLSW - Selecting the HLSW option provides an externally switched circuit for step dimming the luminaire from 50% to 100%. The control may be an external timer, an on/off signal from the building automation system, a master motion sensor or any other digital on/off signal

TPR7 - Selecting the TPR7 option provides a 7-pin ANSI C136.41 dimming receptacle

MS-F211 - Selecting this option provides a motion sensor pre-programmed to step dim the fixture from 50% to 100%

In addition, the Marbella LED Electrical Housing has the capacity to be called out with a wide variety of wireless control systems provided by others.

Ultra high performance optics developed by U.S. Architectural



90° field rotatable



Distribution type and direction of light throw



Micro-reflector behind LED enhances forward throw and reduces backlight



The Marbella LED Optical Housing is cast of an A356 aluminum alloy that conducts heat 30% more efficiently than other popular die-cast aluminum alloys. In addition, the mounting surface of the PLED® Optics is milled to a flatness of .003" over 12" to allow complete contact of the PLED® and Optical Housing surfaces promoting outstanding thermal control over the LED's.

Smart Street Lighting Control

ubicell®



ubicquia simply **connected** simply **smart**.

Lighting Adjustment Technology



Smart Street Lighting Controls that Deliver Significant Savings



Advanced Light Control, Monitoring & Metering



Sensors & Applications

The UbiCell smart lighting solution brings real-time control and visibility to your street light assets. Its remote sensing and communication technology alerts you immediately to lighting problems such as a day burners, outages, or ballast failures.

The UbiCell also offers advanced control capabilities. Users can group lights by location, set custom on/off schedules, and create dimming profiles that extend the life of LED fixtures.

This valuable insight enables cities and utilities to reduce the cost of managing and operating streetlights by up to 40%, while providing customers with unparalleled service.

DEPLOYMENT AS EASY AS ONE, TWO, THREE

The UbiCell is purposefully designed for ease of deployment. It connects directly to a standard NEMA socket and is compatible with over 360 million streetlights worldwide including LED, HID and HPS luminaires.

The node is self-commissioning and communicates over LTE cellular to UbiVu®, our cloud-based software asset management platform. There is no need to build a separate network. The UbiCell leverages existing mobile infrastructure that is proven to be reliable and secure.

Within minutes, you get location and health metrics for all your lighting assets.

By combining the UbiCell lighting control node, a hardened LTE communication network, and the UbiVu platform, cities and utilities get complete visibility and control across the service territory.

With the UbiCell smart street lighting solution you receive:

- Energy and O&M savings
- 360° asset management
- Intuitive cloud management platform
- Simple and fast deployment

Start your journey to a more efficient and robust street lighting system with UbiCell.



Tangible Benefits for Cities and Utilities



Energy and O&M Savings

- 20-40% reduction in energy costs
- Identify day burners and dim lights during off-peak hours
- Extend the life of LED fixtures by up to 30% through intelligent dimming
- Eliminate unnecessary truck rolls with real-time fault and outage alerts



360° Asset Management

- Detailed fixture and pole information
- GIS integration with accurate GPS location information
- Real-time tilt, knock-down and power quality status
- Revenue-grade metrology for accurate billing



Intuitive Cloud Management

- Top-down view of streetlight assets with filtering capabilities
- Organize assets by group for mass control
- Unlimited number of on/off/dimming schedules and threshold alerts
- Detailed reporting and analytics



Simple and Fast Deployment

- Installs in seconds and data in minutes
- Compatible with 360 million streetlights
- Immediate node visibility via cellular connectivity
- Foundation of the Smart City: easily add air quality monitors, cameras and other sensors



Use Cases That Go Beyond Illumination

Improve Customer Satisfaction

With a real-time view of lighting assets, cities and utilities now can proactively address most lighting problems before a customer calls.

Active Street Light Control

Operators get complete control over their streetlight assets and can remotely set dimming levels, create customized on/off schedules, develop analytical reports and more.

Optimize Asset Management

Get a top-down visualization of your deployed lighting assets and actively monitor the fixture and pole health including tilt, vibration, and power quality status.

Remote Grid Monitoring

Grid operators can use streetlight monitoring and control to identify momentary outages, see voltage sag/swells and initiate a demand response event.

Build a Solid Smart City Foundation

Communities are leveraging smart lighting networks to support other intelligent devices—bringing a strategic approach to smart city initiatives.

Positive Environmental Impact

Reduce your carbon footprint and make the world a better place by extending the life of streetlights, lowering energy consumption, and eliminating truck rolls.





FLEXIBLE & INTUITIVE DATA MANAGEMENT

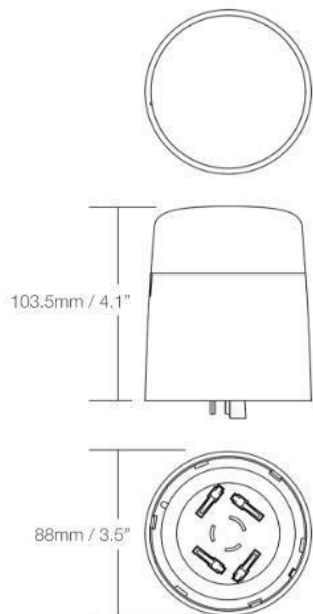
The UbiVu cloud-based management system, allows cities and utilities to provision, manage, and operate a variety of smart devices through a single pane of glass platform. APIs are also available, allowing this rich data to integrate into other software platforms.

With UbiVu, you receive:

- Over-the-air firmware updates
- Customizable reports and configurations
- Remote troubleshooting
- User access management
- Deployment map with hierarchical device view
- Alert and thresholds settings
- Key performance metrics

Reporting capabilities are constantly being evaluated and updated to solve our customer's needs. Receive reports on:

- All node details
- Power usage
- Alert notifications
- Active alerts report
- Schedule updates & transactions
- Light state
- Device burn hours
- Momentary outage report
- Thresholds
- Audit reports



SPECIFICATIONS

- Dimensions** 103.5mm x 88mm
- Weight** 375g
- Color/Housing** Multiple colors
- Housing Material** UV stabilized, outdoor rated and flame resistant polymer
- Enclosure Sealing** IP66
- Operating Temperature Range** -40C to +70C
- Voltage Range** 120-480 V
- Surge Rating** 20 kV/10 kA Type C
- Average Power Consumption** 1 W Typical
- Impact Rating** IK08
- Security** AES 128/256-bit encryption, Trust M security
- Lamp On/Off** Photocell control, automated and astronomical scheduling w/adjustable offsets
- Dimming Control** Auto select: 0-10V, DALI, DALI2
- WARRANTY** 5-Year Warranty
Optional 10-Year

COMMUNICATIONS

- Modem** Cat 1 LTE
- Reporting Frequency** Programmable
- Network Protocol** IPV4 and IPV6 compliant
- External Sensor Interface** Pins 6 & 7 using DALI/DALI2
- POWER METERING**
- Metering Accuracy** +/- 0.5%, optical infrared pulse verification
- Load Switching** 10A
- Line Voltage** 90V to 506V (50/60Hz)
- Power** Active power with PF
- Energy Consumption** kWh

ANALYTICS

- Data** Storage and query of metering data
- History and Reporting** Event log, details and time stamp. Available daily/weekly/monthly
- Life Cycle Tracking** Cycle count, burn hours

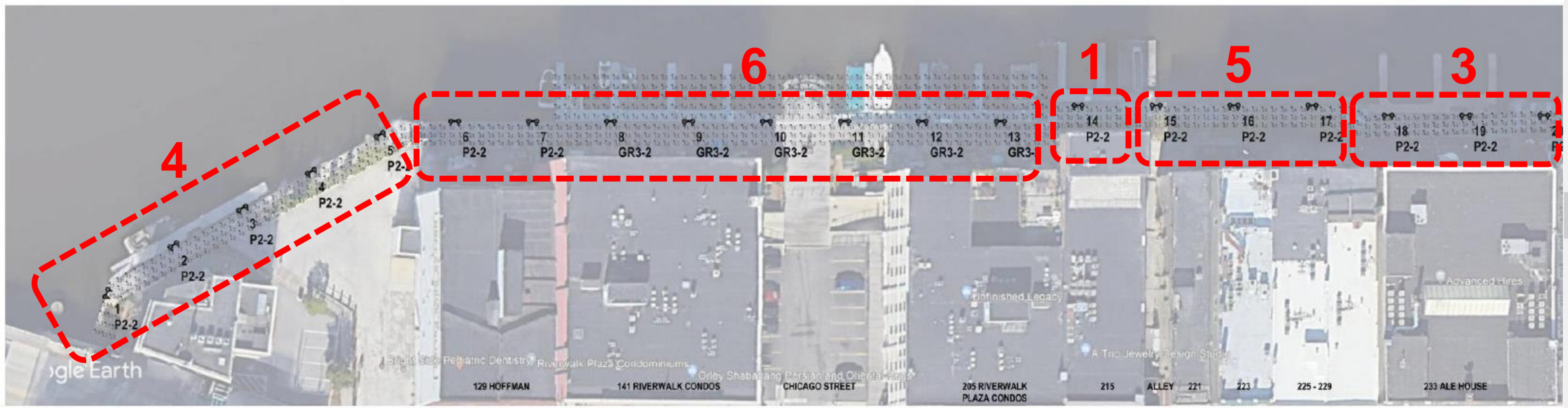
CERTIFICATIONS & COMPLIANCES

- Metrology** ANSI C136.5-C12.20
- Safety** UL773*
- FCC** Part 15, Subpart B, Class B

FEATURE HIGHLIGHTS

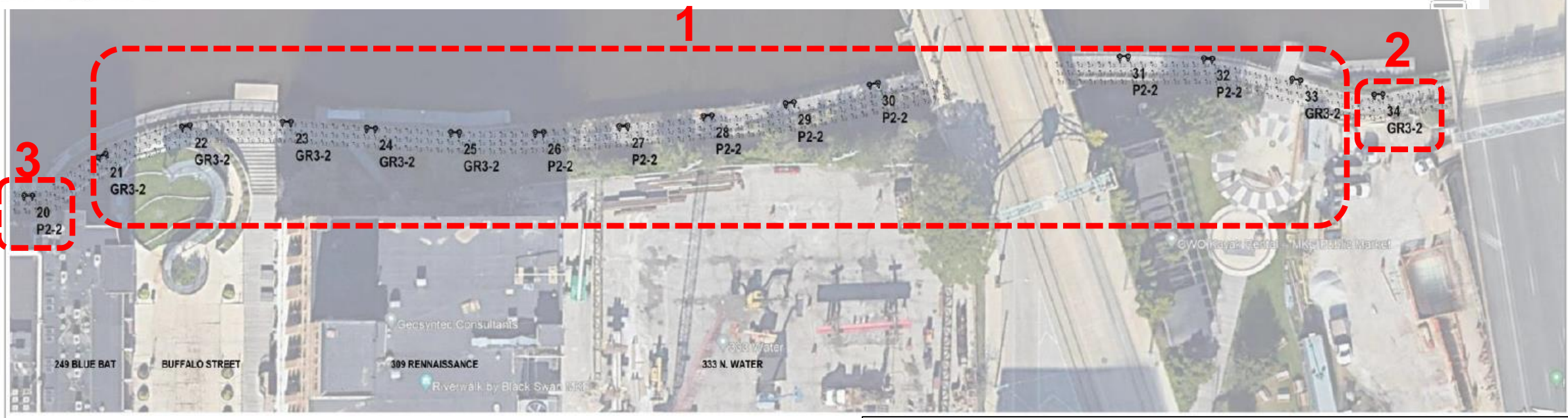
- Public or private LTE
- Data transfer speeds up to 100MB/s*
- OTA firmware upgrades
- Voltage sag/swell detection
- Impact & tilt detection (0 to 90° with 1° resolution and knock down alarm)
- Triac assisted relay
- Circuit switch prediction
- Power loss detection w/last gasp notification





Riverwalk_South

NOTE: Section 4 is not part of approval but might be a separate application in future

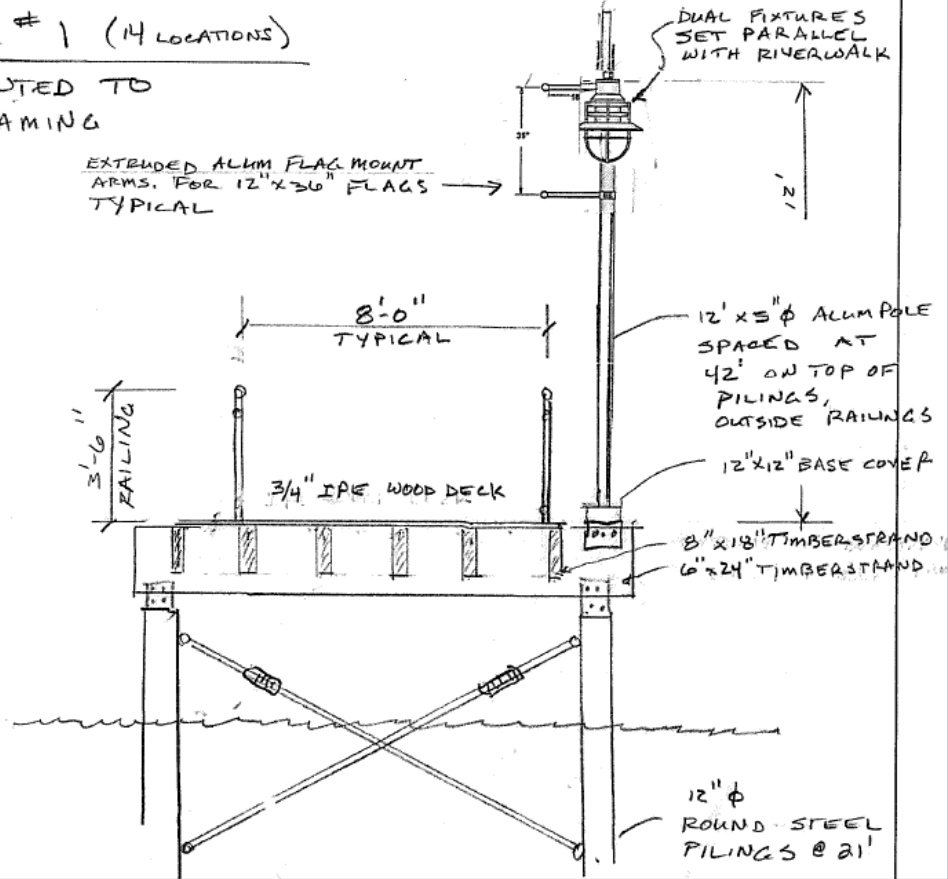


Riverwalk_North

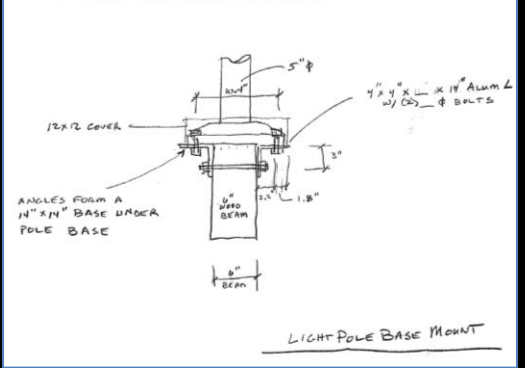
Overview of Mounting Details

DETAIL # 1 (14 LOCATIONS)

POLE MOUNTED TO WOOD FRAMING

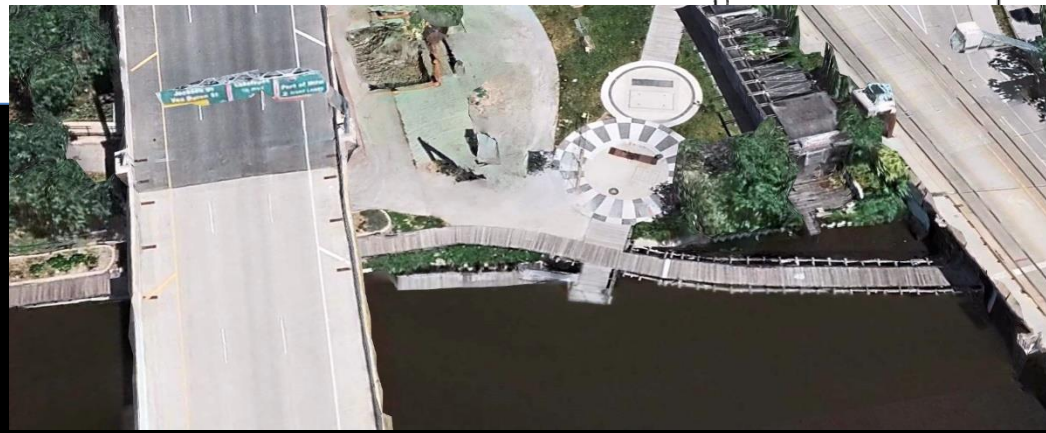
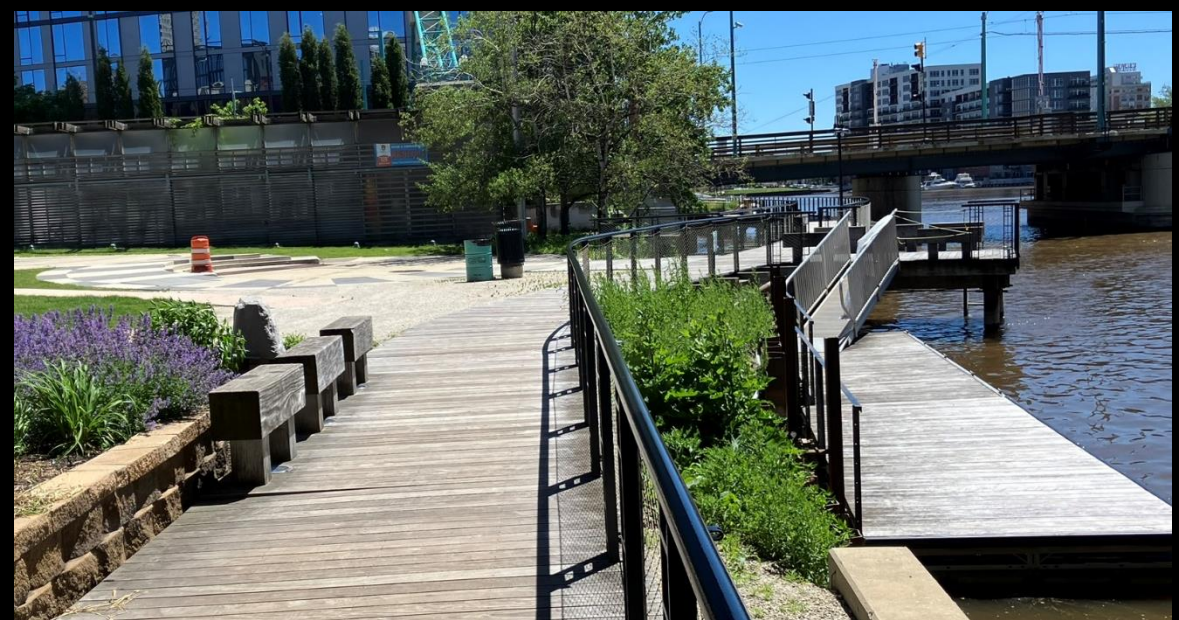
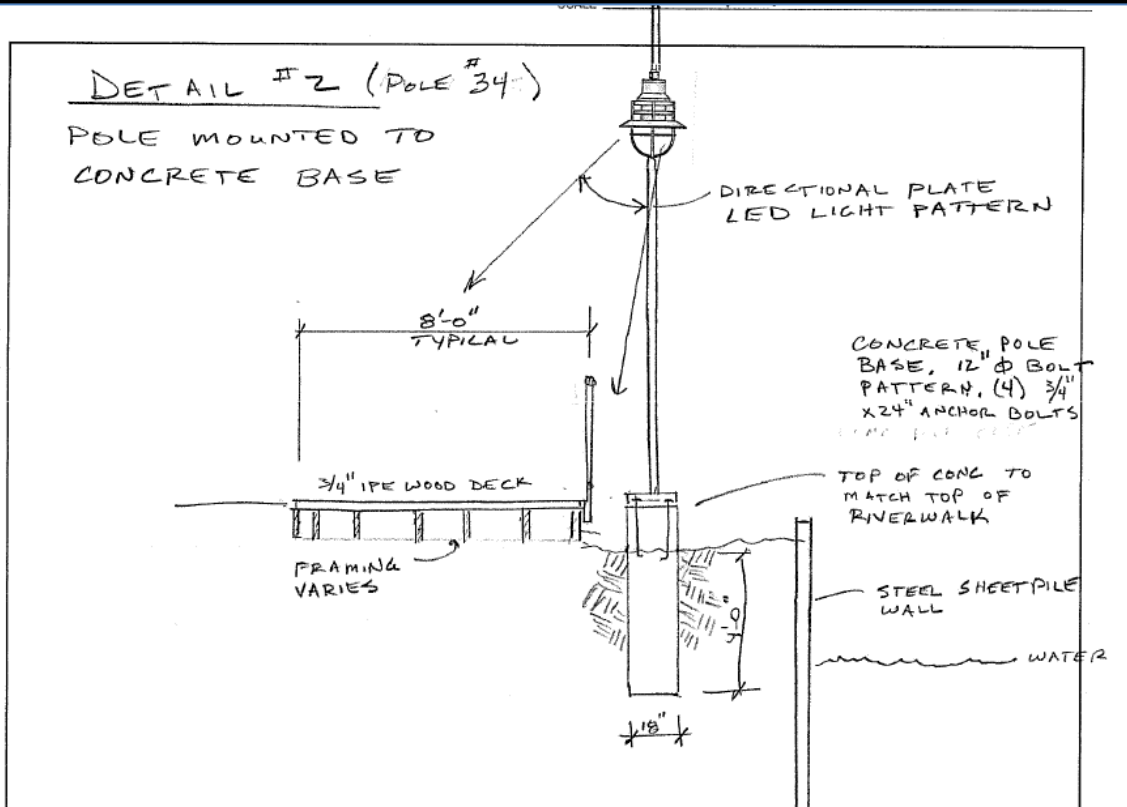


DETAIL OF POLE MOUNT ON WOOD BEAM



Detail 1 - Poles at 14 Locations -

Mounting Details

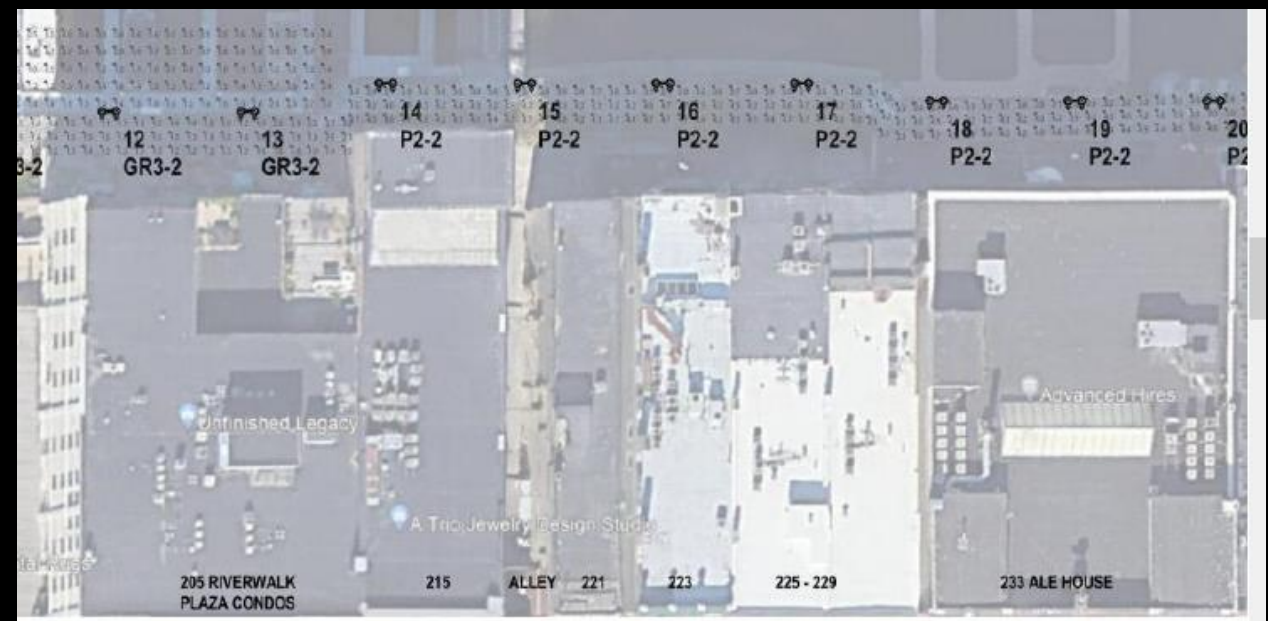
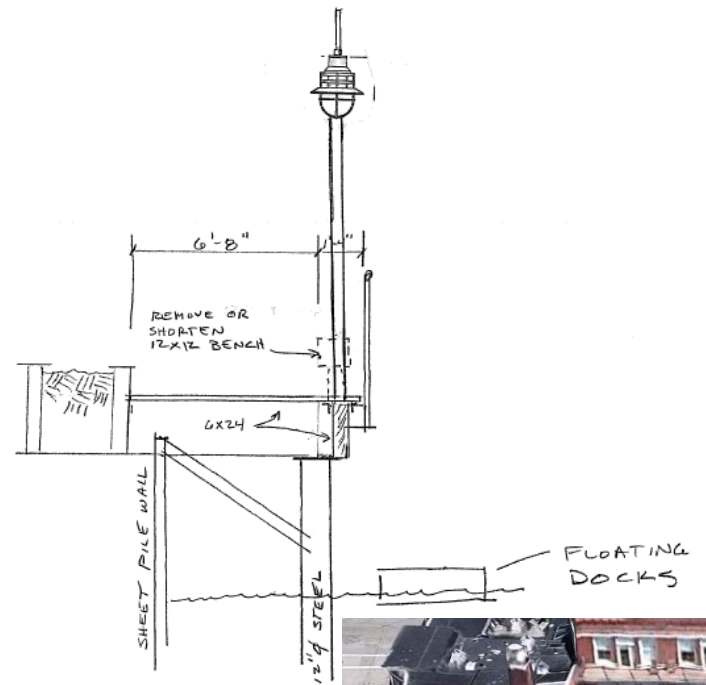


Detail 2 – Pole 34

Mounting Details

DETAIL #3 (POLES 18,19,20)

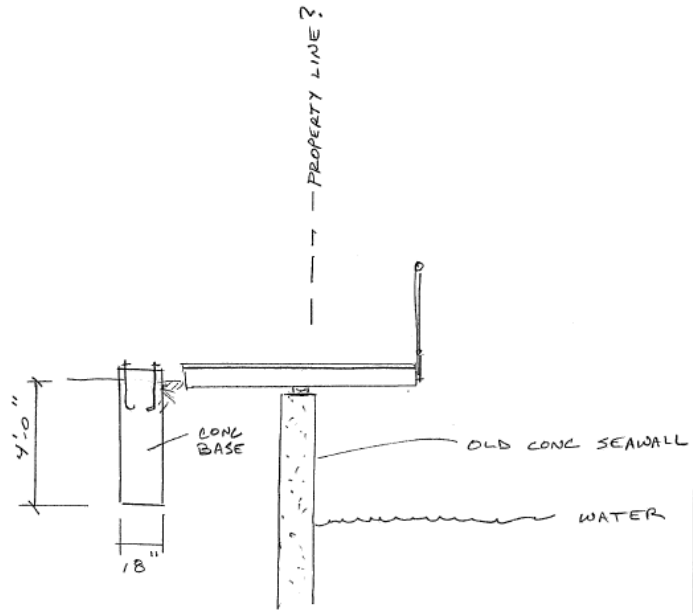
POLE MOUNTED TO
STEEL PILING



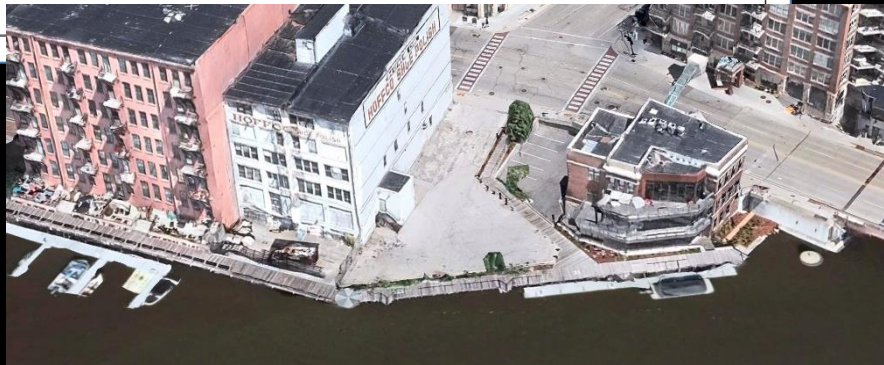
Detail 3 - Poles 18 to 20

Mounting Details

DETAIL #4 (POLES # 1-5)



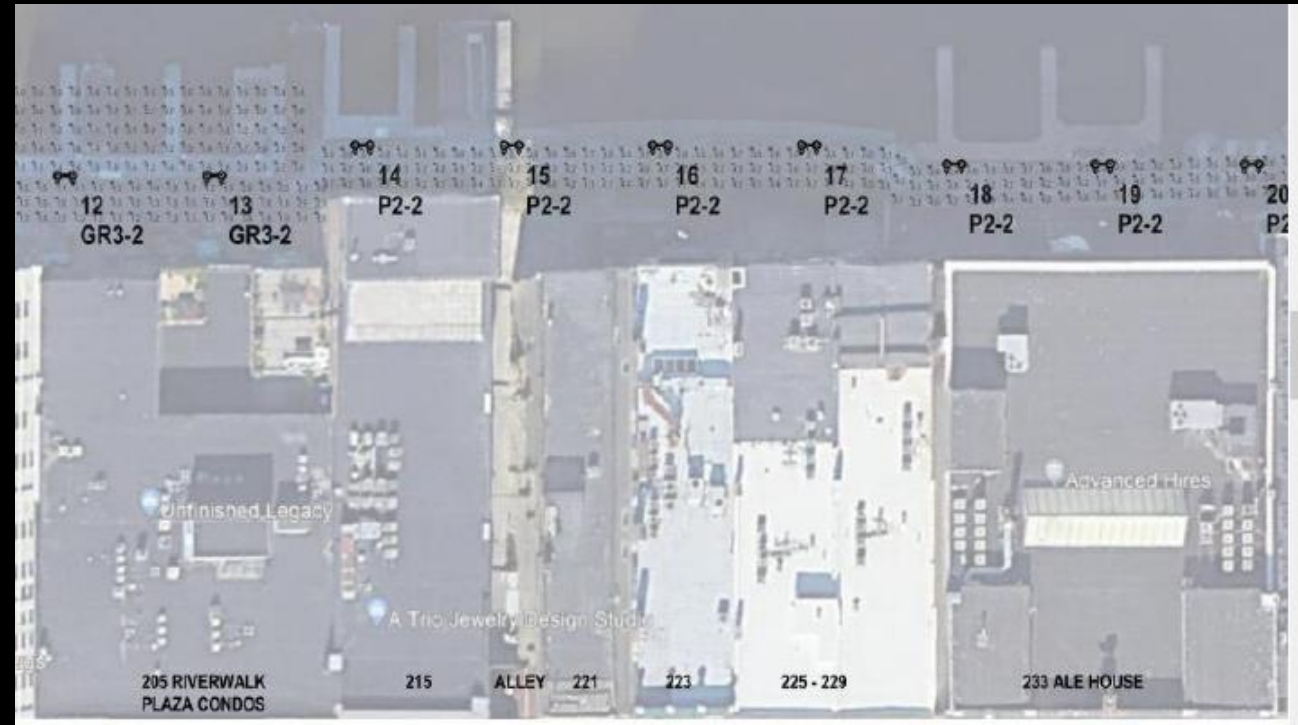
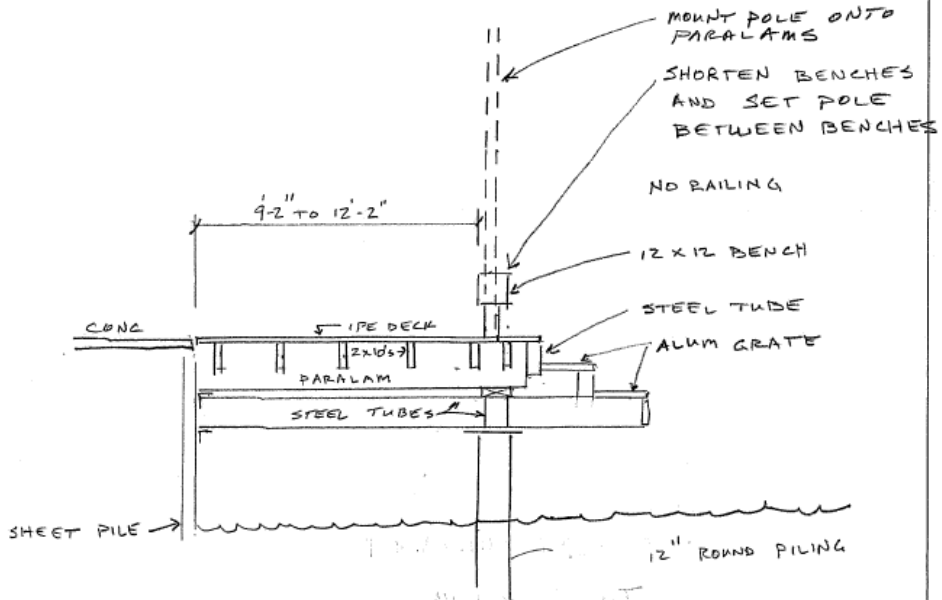
FRAMING DETAILS?
NEED BOAT



Detail 4 - Poles 1 to 5

Possible Future Expansion – Not Subject to Current Approval

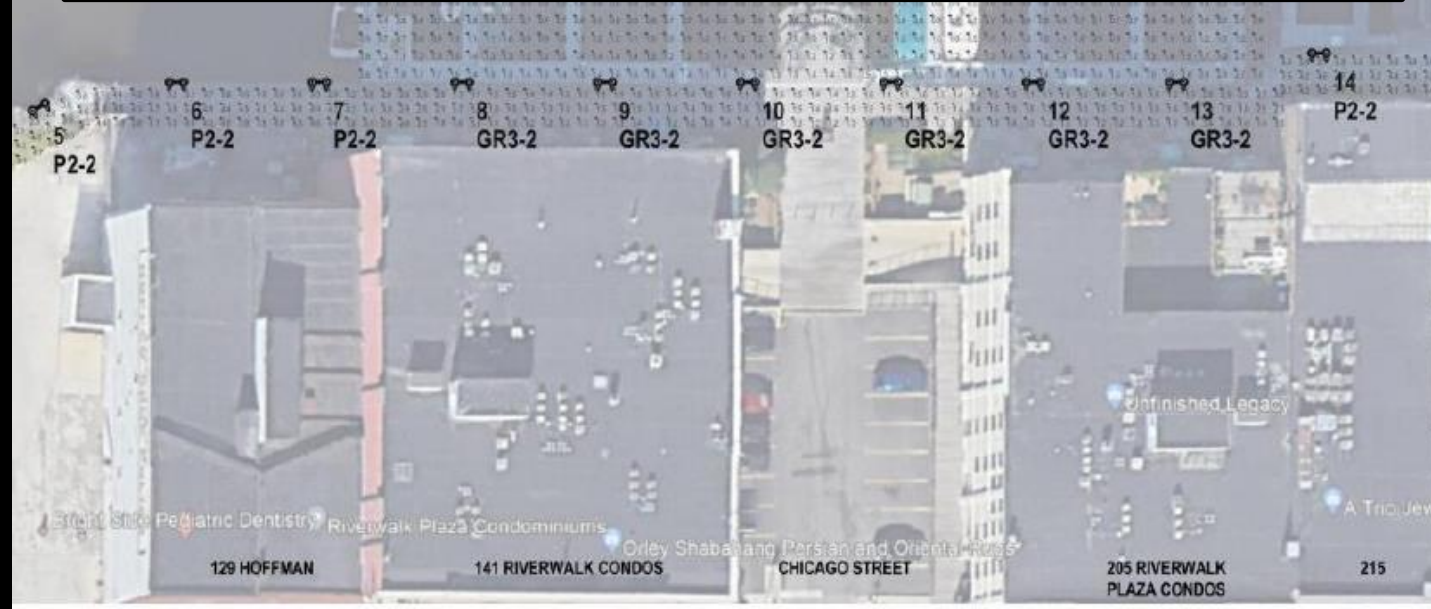
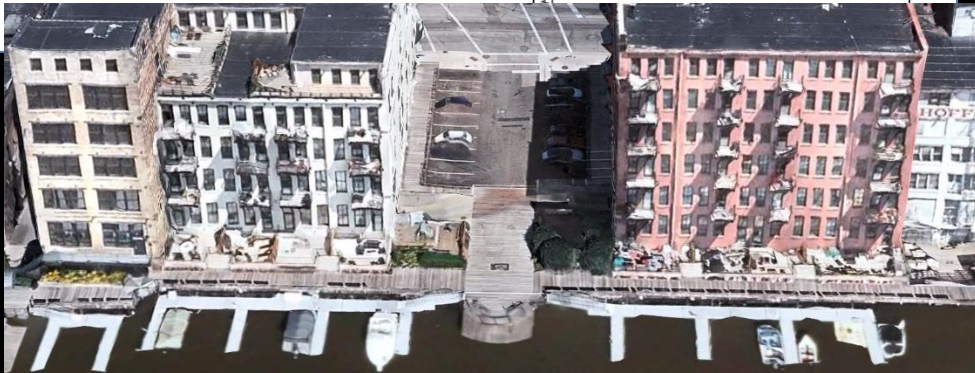
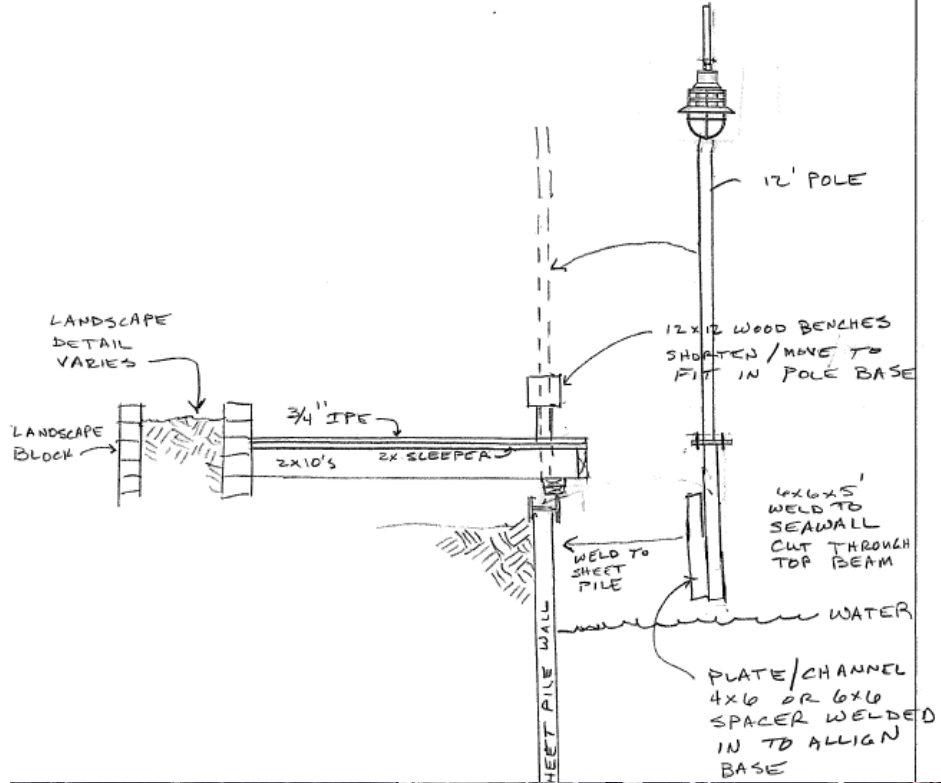
DETAIL #5 (POLES 15, 16, 17)



Detail 5 - Poles 15 to 17

Mounting Details

DETAIL #6 (8 LOCATIONS) POLES 6 TO 13



Detail 6 - Poles 6 to 13

Mounting Details

END of PRESENTATION