

WESTREC MARINA MANAGEMENT, INC.
ON BEHALF OF THE CHICAGO PARK DISTRICT

**INVITATION FOR BID (IFB) ADDENDUM 1
FOR
CONSTRUCTION OF FLOATING DOCKS AT BURNHAM HARBOR**

**W-18011
ADDENDUM 1**

CONTRACT TERM
One Hundred Eighty (180) Days from Notice to Proceed

Contact Person: JAY KORN
(312) 741-3601
Fax (312) 877-5771
jkorn@chicagoharbors.com

ADVERTISED: November 29, 2018

PRE-BID MEETING: December 10, 2018 at 10:00 A.M. C.S.T.
2nd Floor Meeting Room
1521 S. Linn White Drive, First Floor South, Chicago, IL 60605

Any questions and/or requests for clarifications must be submitted in writing to Westrec no later than Wednesday, December 12, 2018 at 10:00AM. CST

BID DUE DATE: Monday, December 17, 2018, AT 3 P.M. C.S.T.

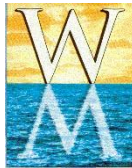


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GENERAL INFORMATION

1) Attendee List Pre-Bid Meeting

Name	Company	Telephone	E-mail
Steve James	FLS Plumbing	773-571-9518	sjames@FLSplumbing.com
Bill Rausch	Rausch Infrastructure	708-363-7553	wmrausch@RICCLC.com
Scott Stevenson	Westrec	312-371-4601	sstevenson@chicagoharbors.com
Alex George	Westrec	312-741-3611	ageorge@chicagoharbors.com
Ben Alden	Westrec	312-741-3614	balden@chicagoharbors.com
Roberta Kane	Westrec	312-741-3612	rkane@chicagoharbors.com

2) Questions and Answers from pre-bid meeting - 12/10/2018

Below are listed the questions from the pre-bid meeting along with responses from Westrec.

What will the chain size needed be?

A - We expect ½ inch and grade 70 chain. Shackles and other hardware must be stronger or equivalent to ½" chain in strength.

Are the dock manufacturers supplying the chain?

A - No that will be the bidder's responsibility.

Are you looking for the hot dipped chain or electro galvanized?

A – Chain shall be G-70 yellow chromate.

How much chain is required?

Please provide us with the overall total length of the ½" Grade 70 chain.

A - Dock O = 1495'
Dock P = 2460'
Dock Q = 2665'
Dock R = 985'
Grand Total = 7605'

Is there any objection on reusing the existing piles?

A - No objection on reusing the soldier piles (between fingers). Piles along main walkways as shown on the revised Meeco Sullivan dock plan.

Where is the staging area for the docks?

A - The staging area will be the parking lot located near the docks, if more space is needed, we can also make accommodations in the lot further north.

MBE and WBE specifications

A - The project costs of the Construction of Floating Docks at Burnham Harbor include several items that are not within the scope of the W-18011 IFB. Westrec's obligation is to meet the MBE/WBE compliance totals of 25% MBE and 5% WBE on the entire job. As other components are already being contracted for with MBE contractors, we are lowering the bid requirement for MBE compliance to 8%. The 5% WBE requirement remains the same.

What is going to happen to the old docks?

A - It is part of the demo package; they are part of the bidder's salvage.

There are two covers spec'd, one is a heat shrunk cover. Who do you go to for them? The other piles are HDPE piles?

A – All covers shall be HDPE.

What about cleats?

A – Mooring Cleats

A. Cleat Type and Material

1. All Mooring cleats shall be "S" shaped.
2. All parts of cleats should be smooth with large radius.
3. Cleats shall be manufactured utilizing a heavy duty Almag 35 Alloy, 319 or 356 Marine Grade Aluminum Alloys.
4. Cleat Material shall be rated for minimum 27,000 psi tensile and 18,000 psi.

B. Cleat Placement

1. For double or single-loaded slips 45' and less, a total of four (4) 12-inch (nominal) mooring cleats shall be provided. Three cleats shall be equally spaced broadside on the finger pier and one (1) mooring cleat shall be provided on the header pier.
2. For double or single-loaded slips 50' and larger, a total of six (6) 15-inch (nominal) mooring cleats shall be provided. Four (4) cleats shall be equally spaced broadside on the finger pier, one (1) mooring cleat shall be provided on the header pier, and a single cleat (one cleat per slip, two per pile) attached to the vertically to the fender pile at +6' LWD.
3. For single loaded slips, cleat placement on header pier shall be a single cleat centered on the midline of the slip. Cleat placement for single-loaded finger piers shall be consistent with adjacent double loaded finger piers.
4. For Tee and Finger piers loaded on one side only, cleats are required on the side of the pier directly adjacent to the moored vessel. Cleat placement shall be consistent with adjacent finger piers of the same length.

5. For Broadside Mooring, cleats shall be placed at 30 foot intervals along the fuel dock and all piers where broadside mooring can be anticipated.

C. Attachment

1. Cleats to be secured to the deck structural framing or steel piling with through bolts. Bolts shall be structurally adequate to achieve the full design strength of the Cleat without failure. Bolts shall be recessed to prevent chaffing. Cleats shall be through bolted to the main outer structural member as dimensioned in the plans. Cleats shall be placed in a location where tightening of the bolts and nuts holding cleats are as easy as possible.

3) Submitted Questions with Answers

Pile questions:

There is no overall length to the HDPE covering on the mooring piles. The HDPE pipe comes in lengths of 40'. If the overall length was 20' we would need 480 LF. Please verify.

A - The HDPE pile sleeves should be at least 16'.

What is the Ht above the dock will the Anchor piles be driven. This elevation is needed to determine the overall length of the UHWM Heat shrunk pile covering. In the alternative just tell us the overall length of the UHWM cover on the pile.

A - The top of the piles should be 9' above the current water line. Using the USACOE Chart Datum, this is approximately elevation 589'. We are revising our specification and requiring HDPE pile sleeves instead of UHMW.

Electrical questions:

Are termination cabinets/panels O, P, Q & R furnished by the owner? How big are the cabinets? Are they free standing or rack mounted? None shown on owner furnished BOM.

Will owner be supplying termination cabinets for each dock or should EC be supplying cabinets as part of their bid?

A - No, they are part of the electrical scope. The manner in which they are mounted and dimensions are up to the contractor as they vary by manufacturer. All termination cabinets should be capable of containing up to, but not exceeding, six (6) 400A terminal blocks. Cabinet housings should also be stainless steel and of NEMA listing 3R or greater.

Are the subpanels furnished by the owner? How big are the cabinets? Are they freestanding or rack mounted? None shown on owner furnished BOM.

Are sub panel cabinets OA, OB, PA, PB, PC, QA, QB, QC, QD, QE, RA, RB, RC, RD being supplied by owner or should EC be supplying sub panels as part of the bid?

A - No, they are part of the electrical scope. The manner in which they are mounted and dimensions are up to the contractor as they vary by manufacturer. Subpanel housings should also be stainless steel and of NEMA listing 3R or greater and copper bus.

If EC is to supply termination cabinet please provide quantity of cabinets needed for each dock and specification for each cabinet.

A – See drawing

Who furnishes the cable from subpanels to pedestals? None shown on owner furnished BOM.

Will owner be supplying hardware to make final electrical connections to the pedestal and if so will the hardware be mechanical or compression type?

A – **See Section 5, Westrec will supply g-cable. Sizes are listed in the panel schedules. Hardware to be provided by EC, compression type.**

Is there support criteria for the cabling?

A - **Cabling shall be supported per NEC 555.13 "Wiring Methods and Installation" Standards.**

What is the design of the distribution cabinet at the bottom of the gangway? Size, mounting and is this furnished by the owner?

Are panel cabinets O, P, Q, and R as shown on document E-1 pages 2-5 existing panels or are these panels to be provided under the scope of this project?

A - **The manner in which the distribution cabinets are mounted and dimensions are up to the contractor as they vary by manufacturer. All termination cabinets should be capable of containing up to, but not exceeding, six (6) 400A terminal blocks. Cabinet housings should also be stainless steel and of NEMA listing 3R or greater. These are part of the electrical contractors scope and not provided by the owner. On shore panels are existing and not part of the current scope of work.**

If panels are rack mounted, we need a design for the racking.

If EC is to supply sub panels, please provide specification for sub panel

A - **The manner in which the panels and subpanels are mounted and dimensions are up to the contractor as they vary by manufacturer. Subpanel housings should also be stainless steel and of NEMA listing 3R or greater.**

It is stated in bid documents to provide low voltage cabinets every 250' including 2X the length of the slip, by our estimate that will be numerous cabinets per dock, this section of the bid document states that each low voltage cabinet shall have (2) 20 amp receptacles and (2) 30 amp receptacles, but these circuits are not shown on any of the sub panel circuit directories. Please advise on where power is to be fed from to supply these cabinets and quantity of cabinets required?

Please clarify size of cabinet for voice data and mounting. Freestanding or Rack mounted? We also need a line diagram for system. The spacing formula needs to be clarified.

A - **Docks O, P, and Q shall have 2 low voltage cabinets for data and R will have 3 based the specifications provided. It *may* be possible to have 2 cabinets for R if placed properly. Contractor shall provide required circuits from nearest sub-panel.**

Regarding distance formula:

50 foot dock: Max distance from telecom cabinet to pedestal = $250 - (2 \times 50) = 150$ feet

40 foot dock: Max distance from telecom cabinet to pedestal = $250 - (2 \times 40) = 170$ feet

35 foot dock: Max distance from telecom cabinet to pedestal = $250 - (2 \times 35) = 180$ feet

Other:

Can we get a catalog cut in the addendum on the pedestal for installation purposes?

Please provide cut sheets for owner supplier power pedestals.

A – See attached files in Addendum

1) Who provides the fire Stations?

A – Westrec will provide fire stations.

4) Additional Pile Work

In addition to the piles to be driven for the floating docks, please drive four (4) 12" x 1/2" x 60' piles to anchor the relocated floating washroom building. Contractor may re-use piles extracted from the existing docks. Moving the floating washroom, attaching the gangways and utilities and other work will be performed by Westrec crews. The floating washroom will have pile guides with rollers, through which Contractor can drive the piles.

In addition, Westrec requires that Contractor leave on-site, at a location to be determined, ten (10) of the existing piles.

5) G-Cable Provided by Westrec

DOCK SIDE FEEDER							
FROM TERMINATION CABINET TO EACH BREAKER CABINET (DOCK)							
DOCK	REEL #	SIZE	TYPE	CONDUCTORS	LENGTH	SERVICE	EST. WEIGHT
O	O-D1	350	G	4C	205	SUB-OA	1715
O	O-D2	350	G	4C	440	SUB-OB	3624
P	P-D1	350	G	4C	490	SUB-PC	4030
P	P-D2	350	G	4C	530	SUB-PA, SUB-PB	4354
Q	Q-D1	350	G	4C	590	SUB-QE	4841
Q	Q-D2	350	G	4C	465	SUB-QD	3826
Q	Q-D3	350	G	4C	335	SUB-QC	2771
Q	Q-D4	350	G	4C	295	SUB-QA, SUB-QB	2446
R	R-D1	350	G	4C	380	SUB-RA, SUB-RB	3136
R	R-D2	350	G	4C	405	SUB-RC	3339
R	R-D3	350	G	4C	540	SUB-RD (cable 1)	4435
R	R-D4	350	G	4C	540	SUB-RD (cable 2)	4435
R	R-D5	4/0	G	4C	590	SUB-RE	3046

DOCK SIDE BRANCH WIRING							
FROM BREAKER CABINET OUT TO PEDS (DOCK)							
DOCK	REEL #	SIZE	TYPE	CONDUCTORS	LENGTH	SERVICE	EST. WEIGHT
O	O-ODB1	#4	G	4C	770	Peds - OA-1, OA-2, OA-3, OA-4, OA-5	944
O	O-ODB2	#4	G	4C	310	Peds - OB-1, OB-2, OB-3	410
O & P & Q	OPQ-ODB3	#2	G-GC	3C	250	Peds - OB-4, PC-2, QE-1	416
P	P-PDB1	#2	G	4C	620	Peds - PA-1, PA-2, PA-3, PA-4	1236
P	P-PDB2	#2	G	4C	480	Peds - PB-1, PB-2, PB-3, PC-1	969
Q	Q-QDB1	#2	G	4C	520	Peds - QA-1, QA-2, QB-1, QB-2	1045
Q	Q-QDB2	#2	G	4C	655	Peds - QC-1, QC-2, QD-1, QD-2, QE-2	1304
R	R-RDB1	#2	G-GC	3C	405	Peds - RA-1, RA-1, RA-3, RA-4, RA-5, RA-6	644
R	R-RDB2	#2	G-GC	3C	620	Peds - RB-1, RB-2, RB-3, RB-4, RB-5, RB-6, RC-3, RC-4, RC-5, RC-6	958
R	R-RDB3	#1	G-GC	3C	190	Peds - RC-1, RC-2	394
R	R-RDB4	#2	G-GC	3C	405	Peds - RD-1, RD-2, RD-3, RD-4, RD-5, RD-6	644
R	R-RDB5	4/0	G	4C	585	Peds - RE-1	3021

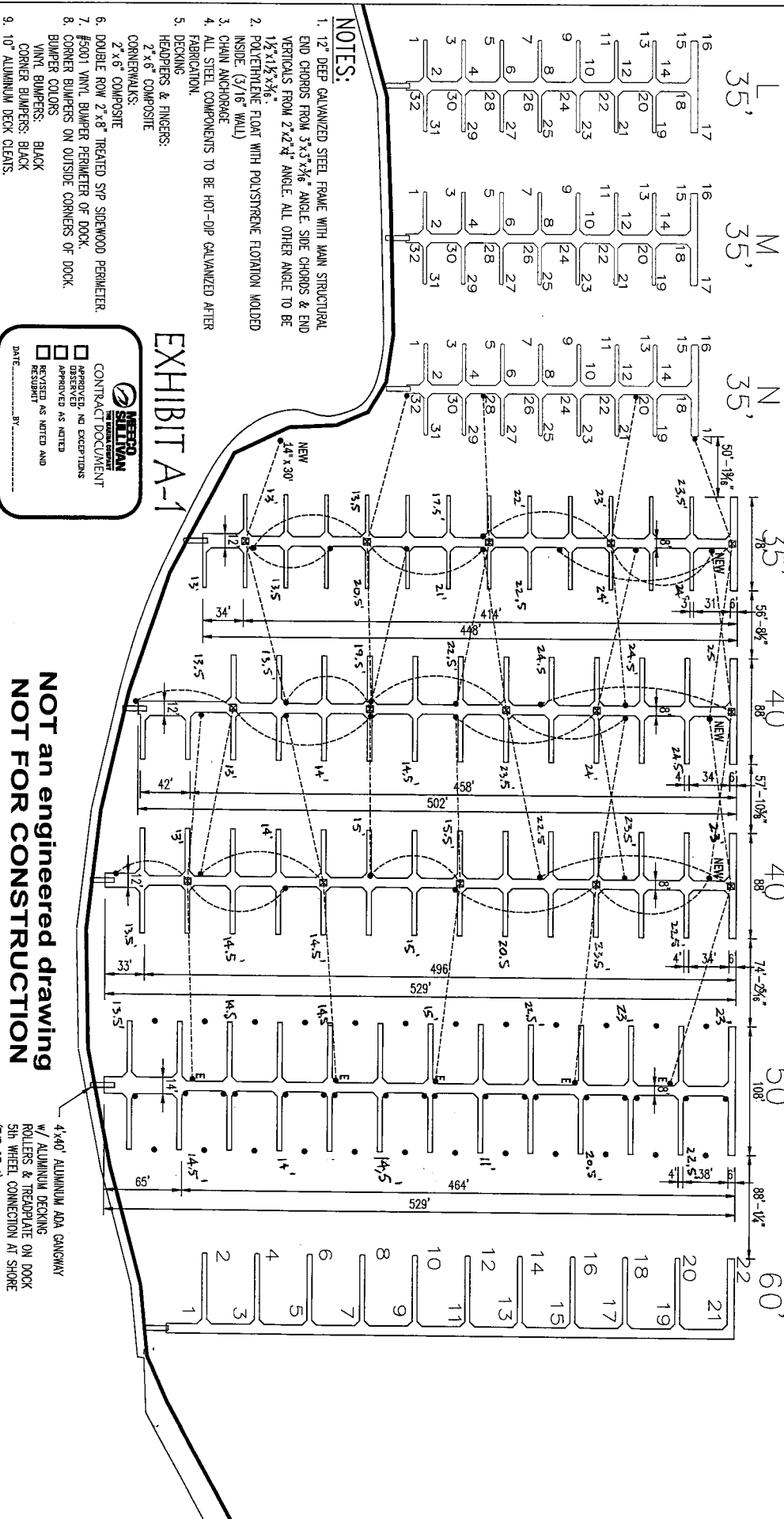
Note: Where possible, dock anchor chain to be secured to existing piles by:
 a) Cutting existing piles 36" to 48" above bottom
 b) Attaching collar to existing piles 36" to 48" above bottom
 c) Other proposed method

**NOT an engineered drawing
 NOT FOR CONSTRUCTION**

ON DOCKS 'O, P, Q' ALL PILING IS
 ARE EXISTING
 EXCEPT (4) MARKED 'NEW'

ON DOCK 'R' ALL NEW PILES
 EXCEPT (5) MARKED 'E'

*WATER DEPTH'S
 SOUNDINGS ON 12/12/18
 LAKE LEVEL 580.21'*



NOTES:

1. 12" DEEP GALVANIZED STEEL FRAME WITH MAIN STRUCTURAL END CHORDS FROM 3x3x3/8" ANGLE, SIDE CHORDS & END VERTICALS FROM 2x2x1/4" ANGLE. ALL OTHER ANGLE TO BE 1 1/2"x1 1/2"x3/8".
2. POLYETHYLENE FLOAT WITH POLYSTYRENE FLOTATION MOLDED INSIDE (3/16" WALL)
3. CHAIN ANCHORAGE
4. ALL STEEL COMPONENTS TO BE HOT-DIP GALVANIZED AFTER FABRICATION
5. DECKING HEADPIERS & FINISERS 2"x6" COMPOSITE
6. DOUBLE ROW 2"x8" TREATED SPW SIDEWOOD PERIMETER.
7. #5001 VINYL BUMPER PERIMETER OF DOCK.
8. CORNER BUMBERS ON OUTSIDE CORNERS OF DOCK. BUMPER COLORS VINYL BUMBERS: BLACK CORNER BUMBERS: BLACK
9. 10' ALUMINUM DECK CLEANES.
10. DECK FLOTATION UNLOAD-- ~30 P.S.F.

MEECO SULLIVAN
 CONTRACT DOCUMENT
 APPROVED, NO EXCEPTIONS
 OBSERVED AS NOTED
 REVISED AS NOTED AND RESUBMIT
 DATE: _____ BY: _____

**NOT an engineered drawing
 NOT FOR CONSTRUCTION**

MEECO SULLIVAN
 THE FABRICATION COMPANY
 1501 E. ELECTRIC AVE.
 WAKESTON, OKLAHOMA, USA 74501
 Phone: (918) 423-6833
 Fax: (918) 423-3215

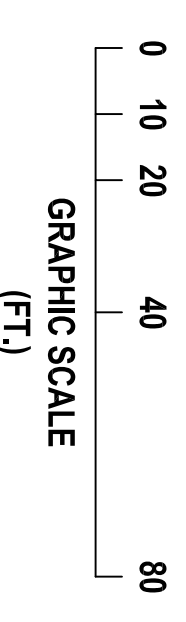
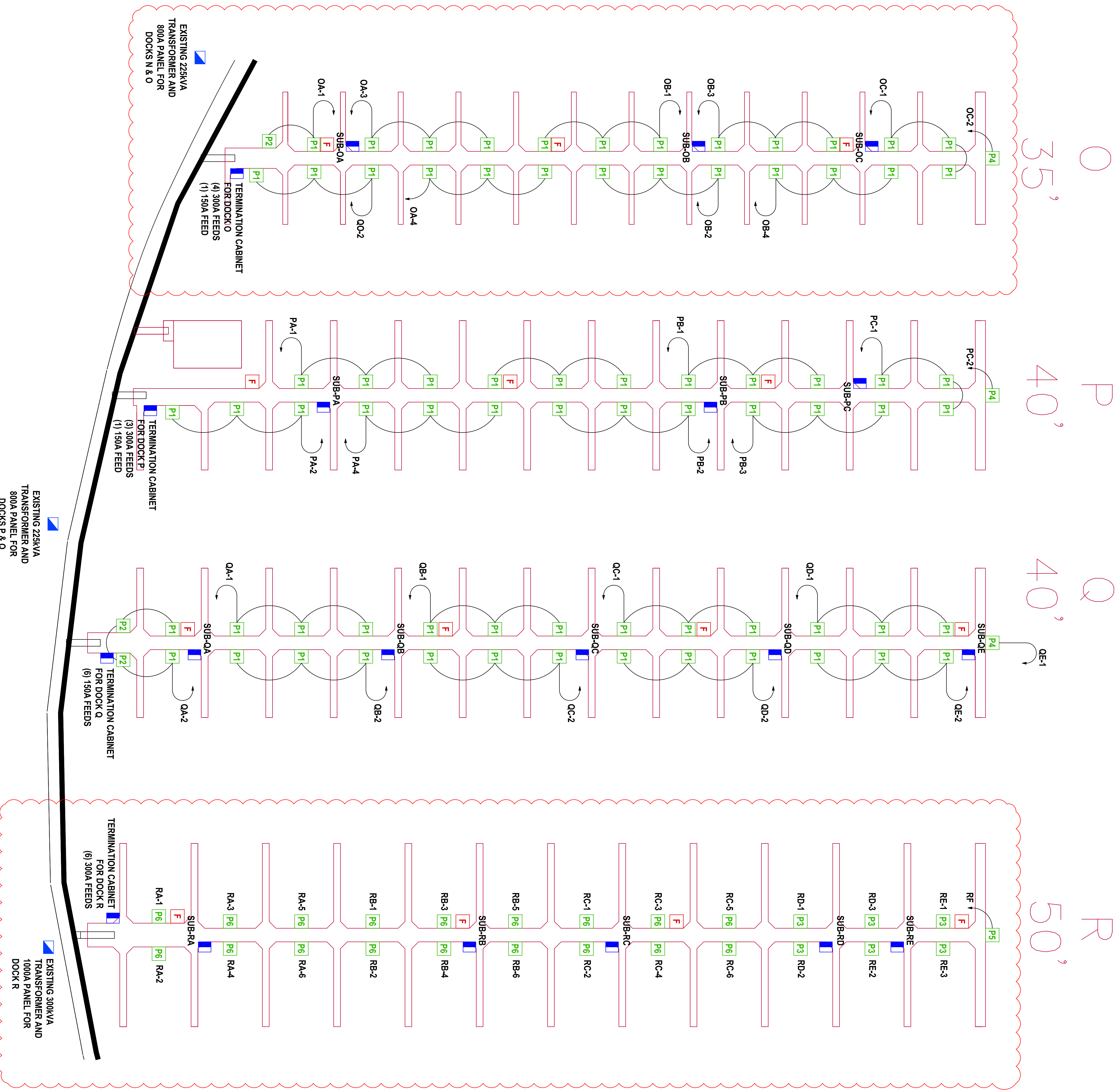
DRAWN BY: RTL
 CHECKED BY:
 FILE NAME: 8419-1
 JOB #
 DATE: 11/27/18
 PLAN # 8419
 SHEET 1

BURNHAM HARBOR
 CHICAGO, IL

LEGEND

- P1 HARBOR LIGHT SS
SIDE 1: 30A 125V - 20A 125V GF-CI - 30A 125V, 3/4" WATER
SIDE 2: 30A 125V - 20A 125V GF-CI - 30A 125V, 3/4" WATER
- P2 HARBOR LIGHT SS
SIDE 1: 30A 125V - 20A 125V GF-CI - 30A 125V, 3/4" WATER
SIDE 2: BLANK
- P3 HARBOR LIGHT SS
SIDE 1: 50A 125/250V - 20A 125V GF-CI - 50A 125/250V, 3/4" WATER
SIDE 2: 50A 125/250V - 20A 125V GF-CI - 50A 125/250V, 3/4" WATER
- P4 HARBOR LIGHT SS
SIDE 1: 50A 125/250V - 20A 125V GF-CI - 30A 125V, 3/4" WATER
SIDE 2: 50A 125/250V - 20A 125V GF-CI - 30A 125V, 3/4" WATER
- P5 HARBOR LIGHT SS
SIDE 1: 100A 120/208V - 50A 125/250V - 20A 125V GF-CI, 3/4" WATER
SIDE 2: 100A 120/208V - 50A 125/250V - 20A 125V GF-CI, 3/4" WATER
- P6 HARBOR LIGHT SS
SIDE 1: 50A 125/250V - 20A 125V GF-CI, 3/4" WATER
SIDE 2: 50A 125/250V - 20A 125V GF-CI, 3/4" WATER
- F FIRE STATION
2 1/2" LIFE RING
10-LB TYPE ABC EXTINGUISHER
AUDIBLE STROBE

- NOTES:
1. ELECTRICAL DESIGN WAS DEVELOPED USING THE FOLLOWING EXISTING ON-SHORE CONDITIONS:
 - 1.1. DOCK O - FOUR (4) 300A FEEDERS, ONE (1) 150A FEEDER
 - 1.2. DOCK P - THREE (3) 300A FEEDERS, ONE (1) 150A FEEDER
 - 1.3. DOCK Q - FIVE (5) 150A FEEDERS
 - 1.4. DOCK R - SIX (6) 300A FEEDERS
 2. ALL FEEDER CABLES SHALL BE IN ACCORDANCE WITH THE ATTACHED WIRING SCHEDULE.
 3. ALL ELECTRICAL CONNECTIONS, INCLUDING, BUT NOT LIMITED TO TAPS AND SPLICES, LOCATED BELOW THE ELECTRICAL DATUM PLANE SHALL UTILIZE APPROVED JUNCTION BOXES AND SEALED WIRE CONNECTORS LISTED AND IDENTIFIED FOR SUBMERSION.
 4. ALL POWER PEDESTALS SHALL INCLUDE POLYCARBONATE HOUSING, LED LIGHTING ASSEMBLY WITH CLEAR LENS, FACTORY-WIRED COPPER BUS SYSTEM, 3/4" WATER VALVES (ONE PER ACTIVE SLIP), HIGH-SPEED RJ-45 INTERNET JACK (ONE PER ACTIVE SLIP), AND ELECTRONIC METERING WITH VISUAL KWH DISPLAY AND OPTIONAL WIRELESS OUTPUT.
 5. EACH 30A AND 50A RECEPTACLE SHALL BE PROTECTED AT A 30mA GFI LEVEL WITH SHUNT-TRIP CIRCUIT BREAKERS AND A GROUND-FAULT MONITOR INTEGRAL TO EACH POWER PEDESTAL. THIS METHOD IS PREFERRED DUE TO THE HIGH FAILURE RATE OF GROUND-FAULT CIRCUIT BREAKERS CURRENTLY IN USE IN MARINA FACILITIES.
 6. EACH DOCK SHALL HAVE A DISTRIBUTION CABINET AT THE BOTTOM OF THE GANGWAY FOR WINTERIZATION / DISCONNECTION PURPOSES.
 7. ALTERNATE: NEW TRANSFORMERS PROVIDING 127/200V SECONDARY VOLTAGES TO BE PROVIDED PER CUSTOMER REQUEST.



<p>NO. REVISION DATE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>1</td> <td>Trap Feed Layout</td> <td>11/5/18</td> </tr> <tr> <td>2</td> <td>Cabinet Layout</td> <td>11/14/18</td> </tr> <tr> <td>3</td> <td>Cabinets on Dock</td> <td>11/21/18</td> </tr> <tr> <td>4</td> <td>O-dock Design</td> <td>11/28/18</td> </tr> <tr> <td>5</td> <td>O & R Changes</td> <td>12/19/18</td> </tr> </table> <p>DATE 12/13/2018</p> <p>DRAWN CLD</p> <p>CHECKED ---</p> <p>SCALE SEE DRAWING</p> <p>REVISED ELECTRICAL LAYOUT</p> <p>SHEET</p>	1	Trap Feed Layout	11/5/18	2	Cabinet Layout	11/14/18	3	Cabinets on Dock	11/21/18	4	O-dock Design	11/28/18	5	O & R Changes	12/19/18	<p>MARINA ELECTRICAL EQUIPMENT, INC. 1715 MERRIMAC TRAIL WILLIAMSBURG, VA 23185</p> <p>TEL: 1-855-258-3939 FAX: 757-258-3988 WEB: www.marinaelectricequipment.com</p>	<p>PROJECT</p> <p>BURNHAM HARBOR</p> <p>CHICAGO, IL</p>
1	Trap Feed Layout	11/5/18															
2	Cabinet Layout	11/14/18															
3	Cabinets on Dock	11/21/18															
4	O-dock Design	11/28/18															
5	O & R Changes	12/19/18															

E-1



*Highest Quality Weatherproof
Electrical Equipment*

Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Fax: 757-258-3988
Web: www.marinaelectricequipment.com

*Complimentary Electrical Design and Layout Services Provided for:
Westrec - Chicago Harbors*

Project: Burnham Harbor
Original Design Date: 10/26/18
Rev.1: 11/14/18 **Rev.4:** 12/13/18
Rev.2: 11/21/18 **Rev.5:** -
Rev.3: 11/28/18 **Rev.6:** -
Contact: Scott Stevenson
Street: 541 N. Fairbanks Ct. - Suite 1020
City, State, Zip: Chicago, IL 60611
Phone: 312-742-8520
Fax: -
E-mail: sstevenson@chicagoharbors.com

Filenames:
Layout Drawing: Burnham Harbor OPQR 12-13-18.dwg
One-Line Diagram: -
Calculations Filename: Burnham Harbor OPQR 12-13-18.xls

Primary Voltage: -
Secondary Voltage: 120/208V
Voltage Drop: 5% Cumulative
Wire Type: G-GC, G

Design Person: CLD **E-mail:** chrisdolan@marinaee.com
Salesperson: Chris Dolan

Thank you for the opportunity to provide an electrical design and quotation. Marina Electrical Equipment, Inc. (MEE) has provided the following electrical design as a complimentary service to assist you in planning your project. Please note that all wire lengths, electrical calculations, short-circuit current ratings, etc. are based on information provided to MEE by others. It is the responsibility of the customer to verify all equipment and wire lengths, and to determine that the electrical design meets all appropriate codes and standards before purchasing any equipment or material.

*THIS DESIGN IS THE PROPERTY OF MARINA ELECTRICAL EQUIPMENT, INC. (MEE).
THE USE OF THIS DESIGN, IN WHOLE OR IN PART, WITHOUT THE EXPRESS WRITTEN PERMISSION OF MEE IS PROHIBITED. IF THIS DESIGN, IN WHOLE OR IN PART, IS USED FOR PURCHASING SIMILAR COMPETITIVE EQUIPMENT, THE COMPLETE CHARGE OF THE DESIGN WILL BE BILLED TO THE INITIATING PARTY ON THE BASIS OF TIME SPENT ON THE PROJECT AT A RATE OF \$300.00 PER HOUR*

Project Name: Burnham Harbor
 Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
 Panel Cabinet: O

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors			Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 2Ø8Y/12ØV				Rec.	Meter	Power Factor					Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
O A	3	3	120 / 208		42				420.00	50.40	42	50%	90%	1	189.00	68.04	300	3	G	95	0.0380	350MCM	4	Incl.	-	1.732	1.18	0.57%
O B	3	3	120 / 208		48				480.00	57.60	48	50%	90%	1	216.00	77.76	300	3	G	300	0.0380	350MCM	4	Incl.	-	1.732	4.26	2.05%
O C	3	3	120 / 208		12	2			186.67	22.40	14	80%	90%	1	134.40	48.38	150	3	G	405	0.0380	350MCM	4	Incl.	-	1.732	3.58	1.72%
SEE PANEL SCHEDULE BELOW																			EXISTING FEEDER CABLES TO REMAIN									

Panel Schedule:														
Panel Cabinet: O														
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
O A	300	3	50.40			AØ	57.60			3	300	O B		
				50.40		BØ	57.60							
					50.40	CØ	57.60							
O C	150	3	26.40			AØ	0.00			3	SPACE	O -4		
				14.40		BØ	0.00							
					26.40	CØ	0.00							
O -5	SPACE	3	0.00			AØ	0.00			3	SPACE	O -6		
				0.00		BØ	0.00							
					0.00	CØ	0.00							
O -7	SPACE	3	0.00			AØ	0.00			3	SPACE	O -8		
				0.00		BØ	0.00							
					0.00	CØ	0.00							
TOTAL PHASE BALANCE														
			AØ kW				BØ kW				CØ kW			
			134.40				122.40				134.40			

ELECTRICAL ABBREVIATIONS	
ST	Shunt Trip
GFM	Ground Fault Monitor
GFCI	Class A Ground Fault Circuit Interrupter (People Protection)
EPD	Class B Equipment Protective Device (Equipment Protection)
SPD	Surge Protective Device
MCB	Main Circuit Breaker
MLO	Main Lug Only
LSIG	Long Time, Short Time, Instantaneous & Ground Fault
GEC	Equipment Grounding Conductor
GEC	Grounding Electrode Conductor
kAIC	Ampere Interrupting Capacity (x 1000)
ECB	Enclosed Circuit Breaker

NOTE: P Calculated as P=I*E*cos(θ)

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Project Name: Burnham Harbor
 Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
 Panel Cabinet: P

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors			Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 2Ø8Y/12ØV				Rec.	Meter	Power Factor					Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
P A	3	3	120 / 208		48				480.00	57.60	48	50%	90%	1	216.00	77.76	300	3	G	175	0.0380	350MCM	4	Incl.	-	1.732	2.49	1.20%
P B	3	3	120 / 208		36				360.00	43.20	36	60%	90%	1	194.40	69.98	300	3	G	405	0.0380	350MCM	4	Incl.	-	1.732	5.18	2.49%
P C	3	3	120 / 208		12				186.67	22.40	14	80%	90%	1	134.40	48.38	150	3	G	475	0.0380	350MCM	4	Incl.	-	1.732	4.20	2.02%
SEE PANEL SCHEDULE BELOW																			EXISTING FEEDER CABLES TO REMAIN									

Panel Schedule:														
Panel Cabinet: P														
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
P A	300	3	57.60			AØ	43.20			3	300	P B		
				57.60		BØ		43.20						
					57.60	CØ		43.20						
P C	150	3	26.40			AØ	0.00			3	300	P -4		
				14.40		BØ		0.00						
					26.40	CØ		0.00						
P -5	SPACE	3	0.00			AØ	0.00			3	SPACE	P -6		
				0.00		BØ		0.00						
					0.00	CØ		0.00						
P -7	SPACE	3	0.00			AØ	0.00			3	SPACE	P -8		
				0.00		BØ		0.00						
					0.00	CØ		0.00						
TOTAL PHASE BALANCE														
			AØ kW				BØ kW				CØ kW			
			127.20				115.20				127.20			

ELECTRICAL ABBREVIATIONS	
ST	Shunt Trip
GFM	Ground Fault Monitor
GFCI	Class A Ground Fault Circuit Interrupter (People Protection)
EPD	Class B Equipment Protective Device (Equipment Protection)
SPD	Surge Protective Device
MCB	Main Circuit Breaker
MLO	Main Lug Only
LSIG	Long Time, Short Time, Instantaneous & Ground Fault
GEC	Equipment Grounding Conductor
GEC	Grounding Electrode Conductor
kAIC	Ampere Interrupting Capacity (x 1000)
ECB	Enclosed Circuit Breaker

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Project Name: Burnham Harbor
 Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
 Panel Cabinet: Q

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
Q A	3	3	120 / 208		24				240.00	28.80	24	70%	90%	1	151.20	54.43	150	3	G	125	0.0380	350MCM	4	Incl.	-	1.732	1.24	0.60%
Q B	3	3	120 / 208		24				240.00	28.80	24	70%	90%	1	151.20	54.43	150	3	G	240	0.0380	350MCM	4	Incl.	-	1.732	2.39	1.15%
Q C	3	3	120 / 208		24				240.00	28.80	24	70%	90%	1	151.20	54.43	150	3	G	355	0.0380	350MCM	4	Incl.	-	1.732	3.53	1.70%
Q D	3	3	120 / 208		24				240.00	28.80	24	70%	90%	1	151.20	54.43	150	3	G	470	0.0380	350MCM	4	Incl.	-	1.732	4.68	2.25%
Q E	3	3	120 / 208		12	2			186.67	22.40	14	80%	90%	1	134.40	48.38	150	3	G	585	0.0380	350MCM	4	Incl.	-	1.732	5.17	2.49%
Panel	3	3	120 / 208	0	108	2	0	0	SEE PANEL SCHEDULE BELOW										EXISTING FEEDER CABLES TO REMAIN									

Panel Schedule: Panel Cabinet: Q													
Service Voltage: 120 / 208			Phase: 3				Bussing: Tin Plated Copper				kAIC: 22		Fully Rated
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
Q A	150	3	28.80			AØ	28.80			3	150	Q B	
				28.80		BØ	28.80						
					28.80	CØ	28.80						
Q C	150	3	28.80			AØ	28.80			3	150	Q D	
				28.80		BØ	28.80						
					28.80	CØ	28.80						
Q E	150	3	14.40			AØ	0.00			3	SPACE	Q -6	
				26.40		BØ		0.00					
					26.40	CØ		0.00					
Q -7	SPACE	3	0.00			AØ	0.00			3	SPACE	Q -8	
				0.00		BØ		0.00					
					0.00	CØ		0.00					
TOTAL PHASE BALANCE													
			AØ kW	BØ kW	CØ kW								
			129.60	141.60	141.60								

ELECTRICAL ABBREVIATIONS	
ST	Shunt Trip
GFM	Ground Fault Monitor
GFCI	Class A Ground Fault Circuit Interrupter (People Protection)
EPD	Class B Equipment Protective Device (Equipment Protection)
SPD	Surge Protective Device
MCB	Main Circuit Breaker
MLO	Main Lug Only
LSIG	Long Time, Short Time, Instantaneous & Ground Fault
EGC	Equipment Grounding Conductor
GEC	Grounding Electrode Conductor
kAIC	Ampere Interrupting Capacity (x 1000)
ECB	Enclosed Circuit Breaker

NOTE: P Calculated as P=I'E*cos(θ)

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Panel Cabinet: R

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
R A	3	3	120 / 208			12			400.00	48.00	12	80%	90%	1	288.00	103.68	300	3	G	85	0.0380	350MCM	4	Incl.	-	1.732	1.61	0.77%
R B	3	3	120 / 208			12			400.00	48.00	12	80%	90%	1	288.00	103.68	300	3	G	240	0.0380	350MCM	4	Incl.	-	1.732	4.55	2.19%
R C	3	3	120 / 208			12			400.00	48.00	12	80%	90%	1	288.00	103.68	300	3	G	325	0.0380	350MCM	4	Incl.	-	1.732	6.16	2.96%
R D	3	3	120 / 208			12			400.00	48.00	12	80%	90%	1	288.00	103.68	300	3	G	450	0.0190	Two (2) 350MCM	4	Incl.	-	1.732	4.26	2.05%
R E	3	3	120 / 208			12			400.00	48.00	12	80%	90%	1	288.00	103.68	300	3	G	490	0.0190	Two (2) 350MCM	4	Incl.	-	1.732	4.64	2.23%
R F	3	3	120 / 208					2	200.00	24.02	2	100%	90%	1	180.00	64.85	300	3	G	535	0.0380	350MCM	4	Incl.		1.732	6.34	3.05%
Panel	3	3	120 / 208	0	0	60	0	2	SEE PANEL SCHEDULE BELOW										EXISTING FEEDER CABLES TO REMAIN									

Panel Schedule:															
Panel Cabinet: R															
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			KAIC: 22			Fully Rated			
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID			
R A	300	3	48.00			AØ	48.00			3	300	R B			
				48.00		BØ		48.00							
					48.00		CØ		48.00						
R C	300	3	48.00			AØ	48.00			3	300	R D			
				48.00		BØ		48.00							
					48.00		CØ		48.00						
R E	300	3	48.00			AØ	24.02			3	300	R F			
				48.00		BØ		24.02							
					48.00		CØ		24.02						
R -7	SPACE	3	0.00			AØ	0.00			3	SPACE	R -8			
				0.00		BØ		0.00							
					0.00		CØ		0.00						
TOTAL PHASE BALANCE															
			AØ kW				BØ kW				CØ kW				
			264.02				264.02				264.02				

ELECTRICAL ABBREVIATIONS	
ST	Shunt Trip
GFM	Ground Fault Monitor
GFCI	Class A Ground Fault Circuit Interrupter (People Protection)
EPD	Class B Equipment Protective Device (Equipment Protection)
SPD	Surge Protective Device
MCB	Main Circuit Breaker
MLO	Main Lug Only
LSIG	Long Time, Short Time, Instantaneous & Ground Fault
EGC	Equipment Grounding Conductor
GEC	Grounding Electrode Conductor
KAIC	Ampere Interrupting Capacity (x 1000)
ECB	Enclosed Circuit Breaker

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: OA

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
OA -1	3	3	120 / 208		6				60.00	7.20	6	90%	90%	1	48.60	17.50	60	3	G	70	0.3100	#4	4	Incl.	-	1.732	1.83	0.88%
OA -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	105	0.1900	#2	4	Incl.	-	1.732	2.99	1.44%
OA -3	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	95	0.1900	#2	4	Incl.	-	1.732	2.70	1.30%
OA -4	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	135	0.1900	#2	4	Incl.	-	1.732	3.84	1.85%
Panel	3	3	120 / 208	0	42	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: OA														
Service Voltage: 120 / 208			Phase: 3				Bussing: Tin Plated Copper				kAIC: 22		Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
OA -1	60	3	7.20			AØ	14.40			3	100	OA -2		
				7.20		BØ		14.40						
					7.20	CØ		14.40						
OA -3	100	3	14.40			AØ	14.40			3	100	OA -4		
				14.40		BØ		14.40						
					14.40	CØ		14.40						
OA -5	SPACE	3	0.00			AØ	0.00			3	SPACE	OA -6		
				0.00		BØ		0.00						
					0.00	CØ		0.00						

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
50.40	50.40	50.40	

Total Connected kW:	151.20	Demand kW:	68.04	SPD Protection (kA/Phase):	-	
Total Receptacles:	42	Demand Current:	188.86	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	50%	Demand kVA:	68.04	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	300	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: OB

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
OB -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	105	0.1900	#2	4	Incl.	-	1.732	2.99	1.44%
OB -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	105	0.1900	#2	4	Incl.	-	1.732	2.99	1.44%
OB -3	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	95	0.1900	#2	4	Incl.	-	1.732	2.70	1.30%
OB -4	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	140	0.1900	#2	4	Incl.	-	1.732	3.98	1.91%
Panel	3	3	120 / 208	0	48	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: OB														
Service Voltage: 120 / 208			Phase: 3				Bussing: Tin Plated Copper				kAIC: 22		Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
OB -1	100	3	14.40	14.40		AØ	14.40			3	100	OB -2		
					14.40	BØ		14.40						
					14.40	CØ		14.40						
OB -3	100	3	14.40	14.40		AØ	14.40			3	100	OB -4		
					14.40	BØ		14.40						
					14.40	CØ		14.40						
OB -5	SPACE	3	0.00			AØ	0.00			3	SPACE	OB -6		
				0.00		BØ		0.00						
					0.00	CØ		0.00						

TOTAL PHASE BALANCE						
AØ kW		BØ kW		CØ kW		
57.60		57.60		57.60		
Total Connected kW:	172.80	Demand kW:	77.76	SPD Protection (kA/Phase):	-	
Total Receptacles:	48	Demand Current:	215.84	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	50%	Demand kVA:	77.76	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	300	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: OC

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
OC -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	80	0.1900	#2	4	Incl.	-	1.732	2.27	1.09%
OC -2	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	85	0.3100	#4	3	Incl.	-	2	4.74	2.28%
Panel	3	3	120 / 208	0	12	2	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: OC													
Service Voltage: 120 / 208		Phase: 3			Bussing: Tin Plated Copper					kAIC: 22		Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
OC -1	100	3	14.40			AØ	12.00			2	100	OC -2	
				14.40		BØ	0.00						
					14.40	CØ	12.00						
OC -3	SPACE	3	0.00			AØ	0.00			3	SPACE	OC -4	
				0.00		BØ	0.00						
					0.00	CØ	0.00						
OC -5	SPACE	3	0.00			AØ	0.00			3	SPACE	OC -6	
				0.00		BØ	0.00						
					0.00	CØ	0.00						

TOTAL PHASE BALANCE													
			AØ kW	BØ kW	CØ kW								
			26.40	14.40	26.40								
Total Connected kW:			67.20	Demand kW:	48.38	SPD Protection (kA/Phase):		-					
Total Receptacles:			14	Demand Current:	134.30	GFM Trip Setting (mA):		-					
Demand Factors:	Rec:	80%	Demand kVA:		48.38	GFM Branch/Main Protection:		-					
	Meter:	90%	MLO SIZE:		150	Enclosure Type:	N3RX Stainless Steel						
	PF:	1.000	Poles:		3								

NOTE: P Calculated as P=I²E*cos(θ)

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: PA

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
PA -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	110	0.1900	#2	4	Incl.	-	1.732	3.13	1.50%
PA -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	120	0.1900	#2	4	Incl.	-	1.732	3.41	1.64%
PA -3	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	205	0.1900	#2	4	Incl.	-	1.732	5.83	2.80%
PA -4	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	125	0.1900	#2	4	Incl.	-	1.732	3.55	1.71%
Panel	3	3	120 / 208	0	48	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: PA														
Service Voltage: 120 / 208			Phase: 3				Bussing: Tin Plated Copper				kAIC: 22		Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
PA -1	100	3	14.40	14.40		AØ	14.40			3	100	PA -2		
					14.40	BØ		14.40						
						CØ		14.40						
PA -3	100	3	14.40	14.40		AØ	14.40			3	100	PA -4		
					14.40	BØ		14.40						
						CØ		14.40						
PA -5	SPACE	3	0.00			AØ	0.00			3	SPACE	PA -6		
				0.00		BØ		0.00						
					0.00	CØ		0.00						

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
57.60	57.60	57.60	

Total Connected kW:	172.80	Demand kW:	77.76	SPD Protection (kA/Phase):	-	
Total Receptacles:	48	Demand Current:	215.84	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	50%	Demand kVA:	77.76	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	300	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

NOTE: P Calculated as P=I*E*cos(Ø)

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: PB

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
PB -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	120	0.1900	#2	4	Incl.	-	1.732	3.41	1.64%
PB -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	110	0.1900	#2	4	Incl.	-	1.732	3.13	1.50%
PB -3	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	125	0.1900	#2	4	Incl.	-	1.732	3.55	1.71%
Panel	3	3	120 / 208	0	36	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule:														
Subpanel: PB														
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
PB -1	100	3	14.40			AØ	14.40			3	100	PB -2		
				14.40		BØ		14.40						
					14.40	CØ			14.40					
PB -3	100	3	14.40			AØ	0.00			3	SPACE	PB -4		
				14.40		BØ		0.00						
					14.40	CØ			0.00					
PB -5	SPACE	3	0.00			AØ	0.00			3	SPACE	PB -6		
				0.00		BØ		0.00						
					0.00	CØ			0.00					

TOTAL PHASE BALANCE					
AØ kW		BØ kW		CØ kW	
43.20		43.20		43.20	
Total Connected kW:		Demand kW:		SPD Protection (kA/Phase):	
129.60		69.98		-	
Total Receptacles:		Demand Current:		GFM Trip Setting (mA):	
36		194.26		-	
Demand Factors:		Demand kVA:		GFM Branch/Main Protection:	
Rec:	60%	69.98		-	
Meter:	90%	MLO SIZE:		Enclosure Type:	
PF:	1.000	3		N3RX Stainless Steel	

NOTE: P Calculated as P=I'E*cos(θ)

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Project Name: Burnham Harbor
 Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
 Subpanel: PC

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
PC -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	80	0.1900	#2	4	Incl.	-	1.732	2.27	1.09%
PC -2	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	100	0.1900	#2	3	Incl.	-	2	3.42	1.64%
Panel	3	3	120 / 208	0	12	2	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: PC															
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated			
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID			
PC -1	100	3	14.40			AØ	12.00			2	100	PC -2			
				14.40		BØ	0.00								
					14.40	CØ	12.00								
PC -3	SPACE	3	0.00			AØ	0.00			3	SPACE	PC -4			
				0.00		BØ	0.00								
					0.00	CØ	0.00								
PC -5	SPACE	3	0.00			AØ	0.00			3	SPACE	PC -6			
				0.00		BØ	0.00								
					0.00	CØ	0.00								

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
26.40	14.40	26.40	

Total Connected kW:	67.20	Demand kW:	48.38	SPD Protection (kA/Phase):	-	
Total Receptacles:	14	Demand Current:	134.30	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	80%	Demand kVA:	48.38	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	150	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

NOTE: P Calculated as P=I'E*cos(θ)

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Project Name: Burnham Harbor
 Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
 Subpanel: QA

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
QA -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	130	0.1900	#2	4	Incl.	-	1.732	3.70	1.78%
QA -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	100	0.1900	#2	4	Incl.	-	1.732	2.84	1.37%
Panel	3	3	120 / 208	0	24	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: QA														
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
QA -1	100	3	14.40			AØ 14.40	14.40			3	100	QA -2		
				14.40		BØ		14.40						
					14.40	CØ			14.40					
QA -3	SPACE	3	0.00			AØ 0.00				3	SPACE	QA -4		
				0.00		BØ		0.00						
					0.00	CØ			0.00					
QA -5	SPACE	3	0.00			AØ 0.00				3	SPACE	QA -6		
				0.00		BØ		0.00						
					0.00	CØ			0.00					

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
28.80	28.80	28.80	

Total Connected kW:	86.40	Demand kW:	54.43	SPD Protection (kA/Phase):	-	
Total Receptacles:	24	Demand Current:	151.09	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	70%	Demand kVA:	54.43	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	150	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: QB

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
OB -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	130	0.1900	#2	4	Incl.	-	1.732	3.70	1.78%
OB -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	110	0.1900	#2	4	Incl.	-	1.732	3.13	1.50%
Panel	3	3	120 / 208	0	24	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: QB													
Service Voltage: 120 / 208		Phase: 3			Bussing: Tin Plated Copper					kAIC: 22		Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
OB -1	100	3	14.40			AØ	14.40			3	100	OB -2	
				14.40		BØ		14.40					
					14.40	CØ		14.40					
OB -3	SPACE	3	0.00			AØ	0.00			3	SPACE	OB -4	
				0.00		BØ		0.00					
					0.00	CØ		0.00					
OB -5	SPACE	3	0.00			AØ	0.00			3	SPACE	OB -6	
				0.00		BØ		0.00					
					0.00	CØ		0.00					

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
28.80	28.80	28.80	

Total Connected kW:	86.40	Demand kW:	54.43	SPD Protection (kA/Phase):	-	
Total Receptacles:	24	Demand Current:	151.09	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	70%	Demand kVA:	54.43	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	150	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

NOTE: P Calculated as P=I'E*cos(θ)

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Project Name: Burnham Harbor
 Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
 Subpanel: QC

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
QC -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	130	0.1900	#2	4	Incl.	-	1.732	3.70	1.78%
QC -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	110	0.1900	#2	4	Incl.	-	1.732	3.13	1.50%
Panel	3	3	120 / 208	0	24	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: QC													
Service Voltage: 120 / 208		Phase: 3			Bussing: Tin Plated Copper				kAIC: 22		Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
QC -1	100	3	14.40			AØ	14.40			3	100	QC -2	
				14.40		BØ		14.40					
					14.40	CØ		14.40					
QC -3	SPACE	3	0.00			AØ	0.00			3	SPACE	QC -4	
				0.00		BØ		0.00					
					0.00	CØ		0.00					
QC -5	SPACE	3	0.00			AØ	0.00			3	SPACE	QC -6	
				0.00		BØ		0.00					
					0.00	CØ		0.00					

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
28.80	28.80	28.80	

Total Connected kW:	86.40	Demand kW:	54.43	SPD Protection (kA/Phase):	-	
Total Receptacles:	24	Demand Current:	151.09	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	70%	Demand kVA:	54.43	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	150	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: QD

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
OD -1	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	130	0.1900	#2	4	Incl.	-	1.732	3.70	1.78%
OD -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	110	0.1900	#2	4	Incl.	-	1.732	3.13	1.50%
Panel	3	3	120 / 208	0	24	0	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: QD													
Service Voltage: 120 / 208		Phase: 3			Bussing: Tin Plated Copper					kAIC: 22		Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
OD -1	100	3	14.40			AØ	14.40			3	100	OD -2	
				14.40		BØ		14.40					
					14.40	CØ		14.40					
OD -3	SPACE	3	0.00			AØ	0.00			3	SPACE	OD -4	
				0.00		BØ		0.00					
					0.00	CØ		0.00					
OD -5	SPACE	3	0.00			AØ	0.00			3	SPACE	OD -6	
				0.00		BØ		0.00					
					0.00	CØ		0.00					

TOTAL PHASE BALANCE			
AØ kW	BØ kW	CØ kW	
28.80	28.80	28.80	

Total Connected kW:	86.40	Demand kW:	54.43	SPD Protection (kA/Phase):	-	
Total Receptacles:	24	Demand Current:	151.09	GFM Trip Setting (mA):	-	
Demand Factors:	Rec:	70%	Demand kVA:	54.43	GFM Branch/Main Protection:	-
	Meter:	90%	MLO SIZE:	150	Enclosure Type:	N3RX Stainless Steel
	PF:	1.000	Poles:	3		

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: QE

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
QE -1	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	40	0.1900	#2	3	Incl.	-	2	1.37	0.66%
QE -2	3	3	120 / 208		12				120.00	14.40	12	80%	90%	1	86.40	31.10	100	3	G	110	0.1900	#2	4	Incl.	-	1.732	3.13	1.50%
Panel	3	3	120 / 208	0	12	2	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: QE													
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
QE -1	100	2	0.00			AØ	14.40			3	100	QE -2	
				12.00		BØ		14.40					
					12.00	CØ		14.40					
QE -3	SPACE	3	0.00			AØ	0.00			3	SPACE	QE -4	
				0.00		BØ		0.00					
					0.00	CØ		0.00					
QE -5	SPACE	3	0.00			AØ	0.00			3	SPACE	QE -6	
				0.00		BØ		0.00					
					0.00	CØ		0.00					

TOTAL PHASE BALANCE													
			AØ kW	BØ kW	CØ kW								
			14.40	26.40	26.40								
Total Connected kW:			67.20	Demand kW:	48.38	SPD Protection (kA/Phase):		-					
Total Receptacles:			14	Demand Current:	134.30	GFM Trip Setting (mA):		-					
Demand Factors:	Rec:	80%	Demand kVA:		48.38	GFM Branch/Main Protection:		-					
	Meter:	90%	MLO SIZE:		150	Enclosure Type:	N3RX Stainless Steel						
	PF:	1.000	Poles:		3								

NOTE: P Calculated as P=I'E*cos(θ)

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: RA

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
RA -1	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	55	0.1900	#2	3	Incl.	-	2	1.88	0.90%
RA -2	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	45	0.1900	#2	3	Incl.	-	2	1.54	0.74%
RA -3	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	40	0.1900	#2	3	Incl.	-	2	1.37	0.66%
RA -4	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	35	0.1900	#2	3	Incl.	-	2	1.20	0.58%
RA -5	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	80	0.1900	#2	3	Incl.	-	2	2.74	1.32%
RA -6	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	70	0.1900	#2	3	Incl.	-	2	2.39	1.15%
Panel	3	3	120 / 208	0	0	12	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: RA													
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22		Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
RA -1	100	2	12.00			AØ	0.00			2	100	RA -2	
				12.00		BØ		12.00					
					0.00	CØ		12.00					
RA -3	100	2	12.00			AØ	12.00			2	100	RA -4	
				0.00		BØ		12.00					
					12.00	CØ		0.00					
RA -5	100	2	0.00			AØ	12.00			2	100	RA -6	
				12.00		BØ		0.00					
					12.00	CØ		12.00					

TOTAL PHASE BALANCE																	
			AØ kW			BØ kW			CØ kW								
			48.00			48.00			48.00								
Total Connected kW:			144.00			Demand kW:			103.68			SPD Protection (kA/Phase):			-		
Total Receptacles:			12			Demand Current:			287.79			GFM Trip Setting (mA):			-		
Demand Factors:			Rec:		80%		Demand kVA:		103.68		GFM Branch/Main Protection:			-			
			Meter:		90%		MLO SIZE:		300		Enclosure Type:			N3RX Stainless Steel			
			PF:		1.000		Poles:		3								

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: RB

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
RB -1	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	80	0.1900	#2	3	Incl.	-	2	2.74	1.32%
RB -2	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	70	0.1900	#2	3	Incl.	-	2	2.39	1.15%
RB -3	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	40	0.1900	#2	3	Incl.	-	2	1.37	0.66%
RB -4	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	35	0.1900	#2	3	Incl.	-	2	1.20	0.58%
RB -5	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	50	0.1900	#2	3	Incl.	-	2	1.71	0.82%
RB -6	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	40	0.1900	#2	3	Incl.	-	2	1.37	0.66%
Panel	3	3	120 / 208	0	0	12	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: RB														
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID		
RB -1	100	2	12.00			AØ	0.00			2	100	RB -2		
				12.00		BØ		12.00						
					0.00	CØ		12.00						
RB -3	100	2	12.00			AØ	12.00			2	100	RB -4		
				0.00		BØ		12.00						
					12.00	CØ		0.00						
RB -5	100	2	0.00			AØ	12.00			2	100	RB -6		
				12.00		BØ		0.00						
					12.00	CØ		12.00						
TOTAL PHASE BALANCE														
			AØ kW	BØ kW	CØ kW									
			48.00	48.00	48.00									
Total Connected kW:			144.00	Demand kW:			103.68	SPD Protection (kA/Phase):			-			
Total Receptacles:			12	Demand Current:			287.79	GFM Trip Setting (mA):			-			
Demand Factors:			Rec:	80%	Demand kVA:			103.68	GFM Branch/Main Protection:			-		
			Meter:	90%	MLO SIZE:			300	Enclosure Type:			N3RX Stainless Steel		
			PF:	1.000	Poles:			3						

NOTE: P Calculated as P=I²*E*cos(θ)

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: RC

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
RC -1	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	40	0.1900	#2	3	Incl.	-	2	1.37	0.66%
RC -2	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	35	0.1900	#2	3	Incl.	-	2	1.20	0.58%
RC -3	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	50	0.1900	#2	3	Incl.	-	2	1.71	0.82%
RC -4	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	40	0.1900	#2	3	Incl.	-	2	1.37	0.66%
RC -5	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	90	0.1900	#2	3	Incl.	-	2	3.08	1.48%
RC -6	1	2	120 / 208			2			100.00	12.00	2	100%	90%	1	90.00	21.60	100	2	G-GC	85	0.1900	#2	3	Incl.	-	2	2.91	1.40%
Panel	3	3	120 / 208	0	0	12	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: RC													
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22		Fully Rated		
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
RC -1	100	2	12.00			AØ	0.00			2	100	RC -2	
				12.00		BØ		12.00					
					0.00	CØ		12.00					
RC -3	100	2	12.00			AØ	12.00			2	100	RC -4	
				0.00		BØ		12.00					
					12.00	CØ		0.00					
RC -5	100	2	0.00			AØ	12.00			2	100	RC -6	
				12.00		BØ		0.00					
					12.00	CØ		12.00					
TOTAL PHASE BALANCE													
			AØ kW	BØ kW	CØ kW								
			48.00	48.00	48.00								
Total Connected kW:			144.00	Demand kW:		103.68	SPD Protection (KA/Phase):		-				
Total Receptacles:			12	Demand Current:		287.79	GFM Trip Setting (mA):		-				
Demand Factors:			Rec:	80%	Demand kVA:		103.68	GFM Branch/Main Protection:		-			
			Meter:	90%	MLO SIZE:		300	Enclosure Type:		N3RX Stainless Steel			
			PF:	1.000	Poles:		3						

NOTE: P Calculated as P=I²E*cos(θ)

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Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: RD

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
RD -1	1	2	120 / 208			4			200.00	24.00	4	100%	90%	1	180.00	43.20	200	2	G-GC	40	0.1200	#1/0	3	Incl.	-	2	1.73	0.83%
RD -2	1	2	120 / 208			4			200.00	24.00	4	100%	90%	1	180.00	43.20	200	2	G-GC	35	0.1200	#1/0	3	Incl.	-	2	1.51	0.73%
RD -3	1	2	120 / 208			4			200.00	24.00	4	100%	90%	1	180.00	43.20	200	2	G-GC	50	0.1200	#1/0	3	Incl.	-	2	2.16	1.04%
Panel	3	3	120 / 208	0	0	12	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule: Subpanel: RD													
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated	
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID	
RD -1	200	2	24.00			AØ	0.00			2	200	RD -2	
				12.00		BØ		12.00					
					0.00	CØ		24.00					
RD -3	200	2	24.00			AØ	0.00			2	SPACE	RD -4	
				0.00		BØ		12.00					
					24.00	CØ		0.00					
RD -5	SPACE	2	0.00			AØ	0.00			2	SPACE	RD -6	
				12.00		BØ		0.00					
					0.00	CØ		0.00					
TOTAL PHASE BALANCE													
			AØ kW	BØ kW			CØ kW						
			48.00	48.00			48.00						
Total Connected kW:	144.00		Demand kW:		103.68		SPD Protection (kA/Phase):		-				
Total Receptacles:	12		Demand Current:		287.79		GFM Trip Setting (mA):		-				
Demand Factors:	Rec:	80%	Demand kVA:		103.68		GFM Branch/Main Protection:		-				
	Meter:	90%	MLO SIZE:		300		Enclosure Type:		N3RX Stainless Steel				
	PF:	1.000	Poles:		3								

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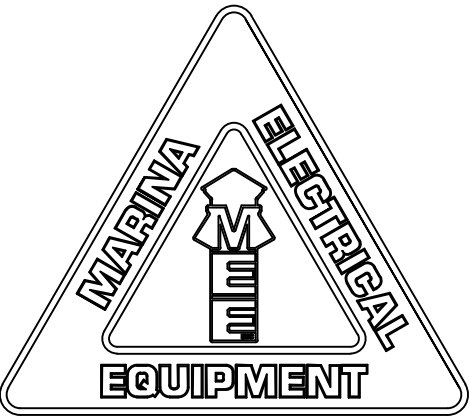
Project Name: Burnham Harbor
Original Design Date: 10/26/2018 Rev.1: 11/14/18 Rev.2 11/21/18 Rev.3 11/28/18 Rev.4 12/13/18 Rev.5 - Rev.6 -
Subpanel: RE

Circuit ID	Phase	Phase Adj	Voltage	Receptacles					Total Line Current	Total Line kW	Total Rec.	Demand Factors		Power Factor	Dem. Current	Dem. kW	CB Size	CB Poles	Cable									
				20A GFCI, 120V	30A, 120V	50A, 120/240V	100A 1Ø, 120/240V	100A 3Ø, 208Y/120V				Rec.	Meter						Cable Type	Circuit Length	Resist.	Size	Qty. Cond.	EGC	GEC	Phase Adj.	VD	VD%
RE -1	1	2	120 / 208			4			200.00	24.00	4	100%	90%	1	180.00	43.20	200	2	G-GC	50	0.1900	#2	3	Incl.	-	2	3.42	1.64%
RE -2	1	2	120 / 208			4			200.00	24.00	4	100%	90%	1	180.00	43.20	200	2	G-GC	35	0.1900	#2	3	Incl.	-	2	2.39	1.15%
RE -3	1	2	120 / 208			4			200.00	24.00	4	100%	90%	1	180.00	43.20	200	2	G-GC	40	0.1900	#2	3	Incl.	-	2	2.74	1.32%
Panel	3	3	120 / 208	0	0	12	0	0	SEE PANEL SCHEDULE BELOW										SEE MAIN PANEL SCHEDULE FOR FEEDER CALCULATIONS									

Panel Schedule:															
Subpanel: RE															
Service Voltage: 120 / 208			Phase: 3			Bussing: Tin Plated Copper			kAIC: 22			Fully Rated			
Circuit ID	CB Size	CB Poles	AØ kW	BØ kW	CØ kW	Ø Bal.	AØ kW	BØ kW	CØ kW	CB Poles	CB Size	Circuit ID			
RE -1	200	2	24.00			AØ	0.00			2	200	RE -2			
				12.00		BØ		12.00							
					0.00	CØ		24.00							
RE -3	200	2	24.00			AØ	0.00			2	SPACE	RE -4			
				0.00		BØ		12.00							
					24.00	CØ		0.00							
RE -5	SPACE	2	0.00			AØ	0.00			2	SPACE	RE -6			
				12.00		BØ		0.00							
					0.00	CØ		0.00							
TOTAL PHASE BALANCE															
			AØ kW	BØ kW			CØ kW								
			48.00	48.00			48.00								
Total Connected kW:	144.00		Demand kW:		103.68		SPD Protection (kA/Phase):		-						
Total Receptacles:	12		Demand Current:		287.79		GFM Trip Setting (mA):		-						
Demand Factors:	Rec:	80%	Demand kVA:		103.68		GFM Branch/Main Protection:		-						
	Meter:	90%	MLO SIZE:		300		Enclosure Type:		N3RX Stainless Steel						
	PF:	1.000	Poles:		3										

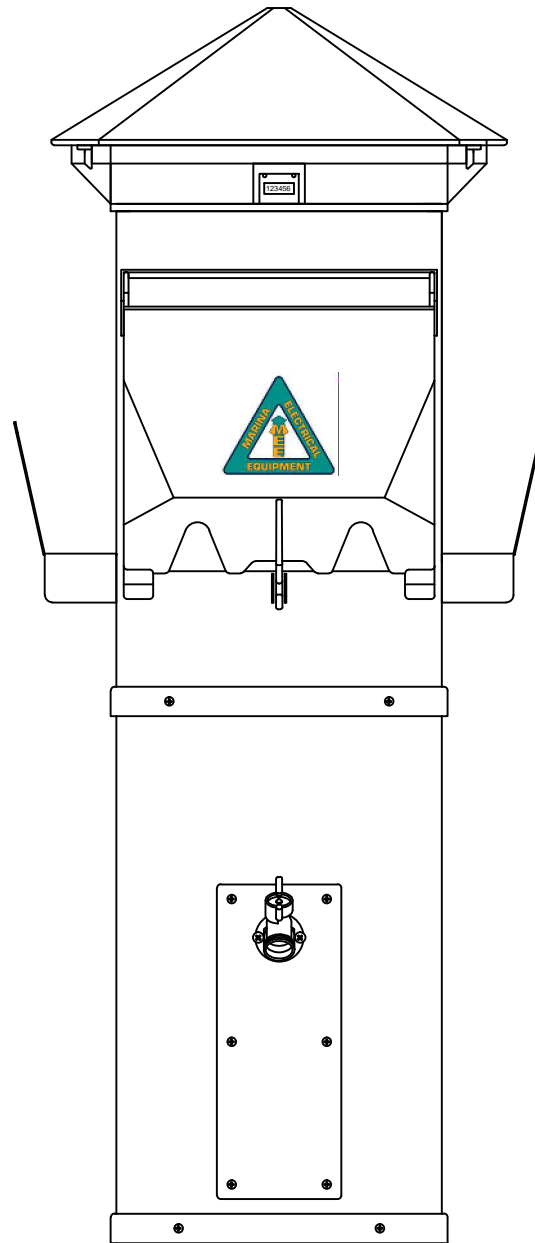
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Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual



Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Fax: 1-757-258-3988



Intertek

4005786

CONFORMS TO STD. ANSI/UL231
CERT. TO CAN/CSA STAD.C22.2
NO 29

Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual

INTRODUCTION:

PRODUCT DESCRIPTION:

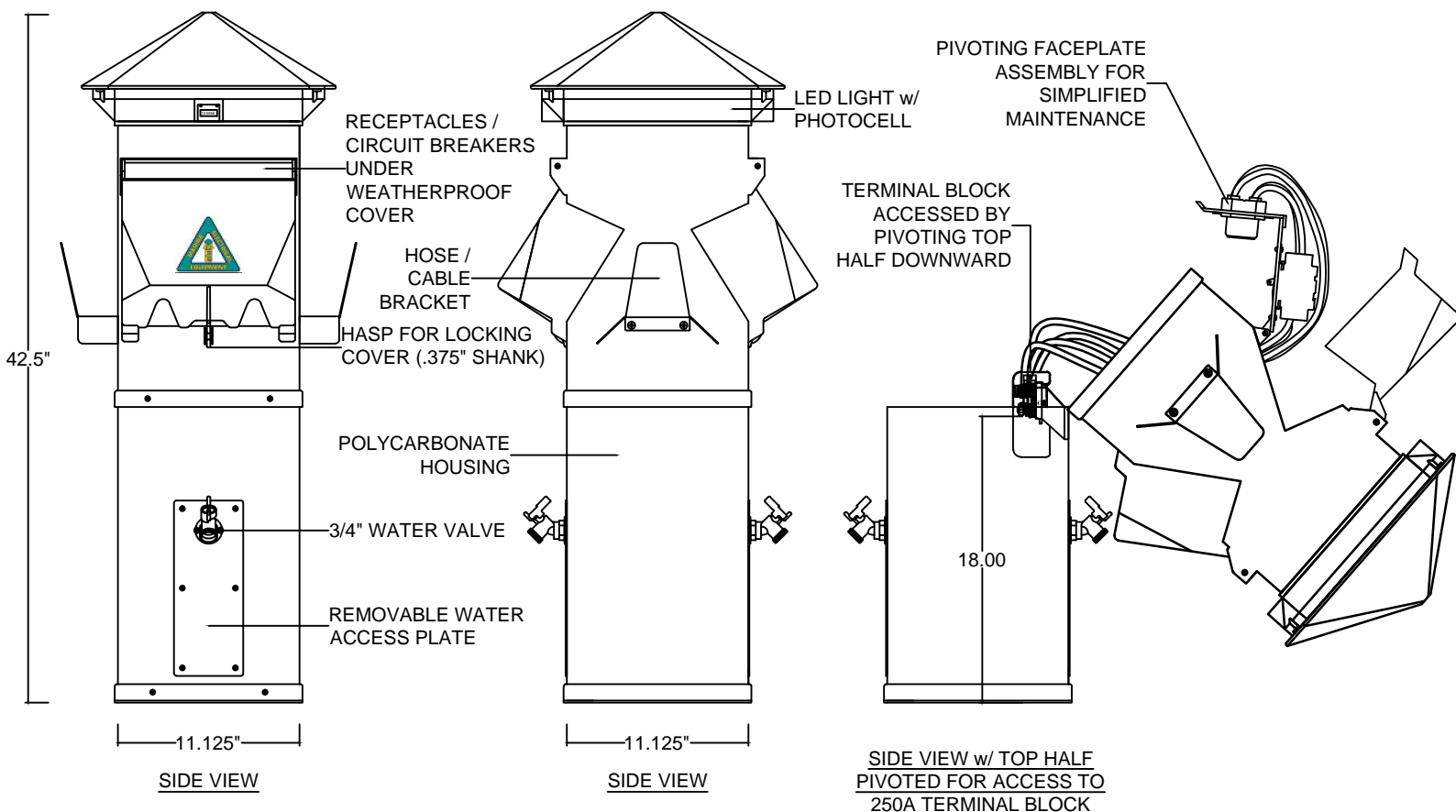
The power outlet shall be listed and marked, tested and certified to conform to Standard ANSI/UL® 231 entitled "Power Outlets" and CAN/CSA Standard C22.2 No. 29 entitled "Panelboards and Enclosed Panelboards." It is designed as a rainproof NEMA type 3R enclosure for outdoor locations such as marinas, and boatyards where power is required to operate portable, mobile, or temporarily installed equipment to supply shore power to vessels.

Power outlet may contain NEMA and / or IEC receptacles, circuit breakers, fuses, and watt-hour monitors for submetering electricity.

WARNING: Disconnect power before servicing. Marina Electrical Equipment, Inc. recommends that only qualified personnel or an electrician, familiar with the operation of this power outlet equipment, should install or service this power outlet. This product must be installed in accordance with the National Electrical Code (NEC) or the Canadian Standards Association (CSA) and any other applicable local codes. Before installing equipment, check with your local electrical inspector for specific requirements and information for your area.

NOTE: ELECTRICAL CONNECTIONS PER NEC 555.9 - All electrical connections shall be located at least 12 inches above the deck of a floating pier, but not below the electrical datum plane.

CAUTION: Marina Electrical Equipment, Inc. will not assume any responsibility for property damage or personal injury resulting from misuse of the information in this manual.



Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual

INSTALLATION:

IMPORTANT: The Harbor Light is thoroughly painted on the bottom and the mounting base plate is specially designed to protect the bottom of the pedestal from direct contact with the dock surface to inhibit the corrosive effects of treated deck board lumber and/or concrete. Please handle the pedestal with care while mounting so as not to scrape or damage the paint on the bottom, which could lead to corrosion problems and a cancellation of the factory warranty.

Step 1: Securing the Base Plate to Mount the Harbor Light:

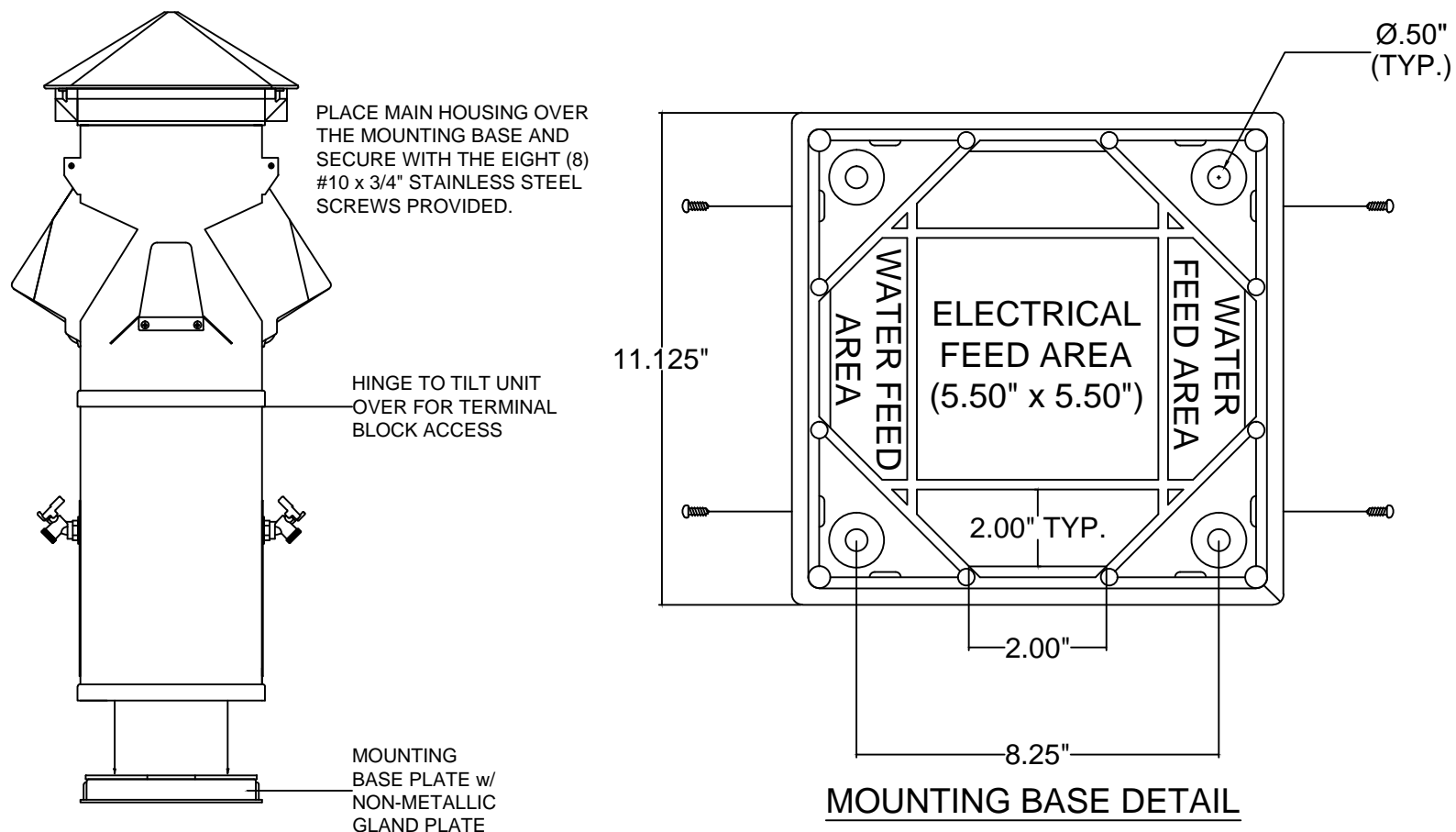
Note: The pedestal mounting surface must be flat and level for proper mounting. Warped decking or uneven concrete surfaces can be shimmed with stainless steel washers to provide a level surface for mounting base installation.

On Wooden Docks: At each corner, fit the mounting base plate to the dock surface with one (1) 3/8" stainless steel bolt and washer for through-bolting, or (1) 3/8" stainless steel lag bolt and washer for surface mounting.

On Concrete Docks: At each corner, fit the mounting base plate to the dock surface with one (1) 3/8" stainless steel compression bolt or 3/8" stainless steel threaded rod cast in concrete on 8-1/4" centers.

Step 2: Mounting the Harbor Light:

Place the Harbor Light over the mounting base and secure with the included four (4) #10 X 3/4" stainless steel screws (see figure below).



Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual

Step 3: Using the Non-Metallic Gland Plate:

The Harbor Light mounting base includes a non-metallic gland plate designed to prevent the intrusion of water and other items into the unit after installation. The installer should cut the necessary holes for cable, wire, water, and/or communication connections into the gland plate. Following the installation of all utilities, all holes should be sealed with water-tight cable grip, water-tight grommets, and/or RTV silicone-based sealants. **THE FACTORY WARRANTY WILL BE VOIDED IF THE NON-METALLIC GLAND PLATE IS REMOVED OR NOT INSTALLED TO THE METHODS LISTED ABOVE.**

Step 4: Connecting the Power Lines to the Terminal Block:

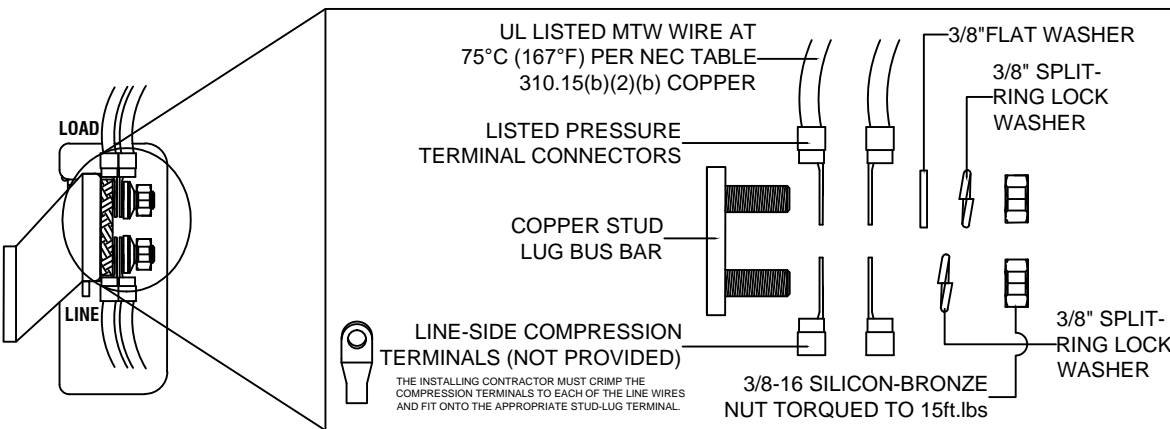
The Harbor Light power pedestal contains a 3/8" stud-lug compression type terminal block within the housing interior. Remove the four (4) stainless steel screws on the outside corners of the pedestal and hinge the top half of the unit over to expose the terminal block assembly. Termination of the lines shall be made by means of compression terminals to place on the 3/8" stud-lug terminal block as directed by the wiring diagram instructions located inside the housing (see figure below). The terminated lines shall be secured by means of one (1) stainless steel split-ring lock washer and (1) silicon-bronze hex nut, which are all provided for each of the incoming lines. These connections shall be torqued to **15 foot-pounds**.

CAUTION: NEVER PLACE ANY HARDWARE BETWEEN THE TERMINAL/BUS BAR CONNECTION. THIS CREATES A HIGH-RESISTANCE CONNECTION THAT COULD CAUSE OVERHEATING/FIRE.

WARNING: DO NOT ALTER FACTORY-SIDE CONNECTIONS. FACTORY WARRANTY WILL BE VOIDED.

WARNING: FACTORY WARRANTY WILL BE VOIDED IF ALUMINUM MECHANICAL LUGS ARE USED FOR LINE SIDE WIRING.

IMPORTANT: Contractor shall mount line side feeders per the diagram below. Heat shrink tubing shall be used when uninsulated copper terminal extend below bus bar insulation divider to keep proper spacing between live and grounded conductors, per NEC spacing requirements.

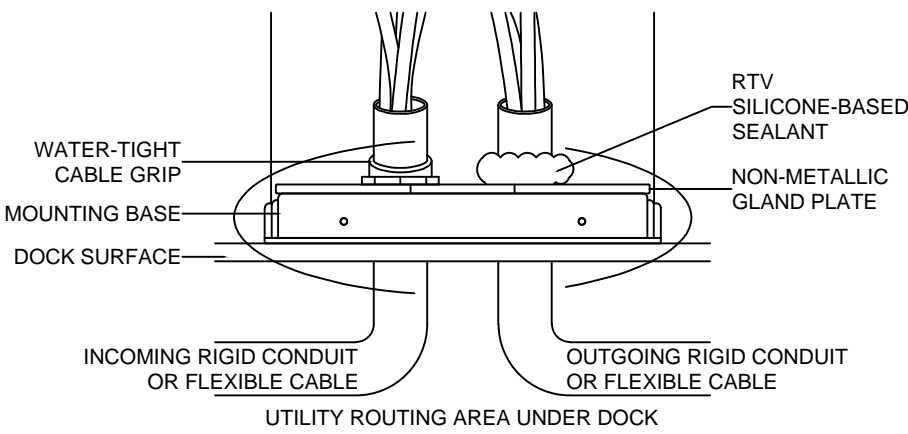


USE ONLY 75°C (167°F) COPPER CONDUCTORS ONLY ON ALL FIELD INSTALLED LINE, LOAD TERMINATIONS INTENDED FOR USE WITH TERMINATED CONDUCTORS.

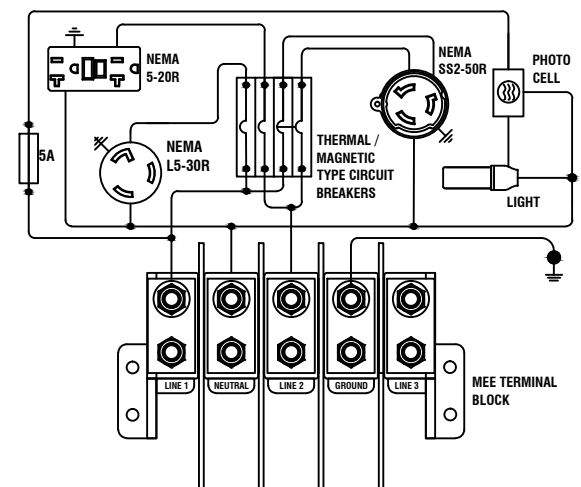
CAUTION: BONDING BETWEEN CONDUIT CONNECTIONS IS NOT AUTOMATIC AND MUST BE PROVIDED AS PART OF THE INSTALLATION.

CAUTION: NONMETALLIC ENCLOSURE DOES NOT PROVIDE GROUNDING BETWEEN CONDUIT CONNECTIONS, USE GROUNDING TYPE BUSHINGS AND JUMPER WIRES.

BUS BAR ASSEMBLY - EXPLODED VIEW



BASE ENTRY DETAIL



TYPICAL WIRING DIAGRAM*

*Varies based on receptacle and circuit breaker selection

Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual

Step 5: Water Connection:

Remove the water access panel to access the back side of the 3/4" female ball valve (see figure below). Remove the water access filler cap(s) from the non-metallic gland plate. Feed the piping through the bottom of the water compartment and plumb into the ball valve. Marina Electrical Equipment recommends using a 90° street elbow or a Pex to male-threaded elbow (for flexible piping). After plumbing, guide the assembly back into the water compartment and mount the water access panel back onto the pedestal, repeat on opposite side if necessary.

Step 6: Phone (RJ-11), Cable TV (F), Ethernet (RJ-45) Connections:

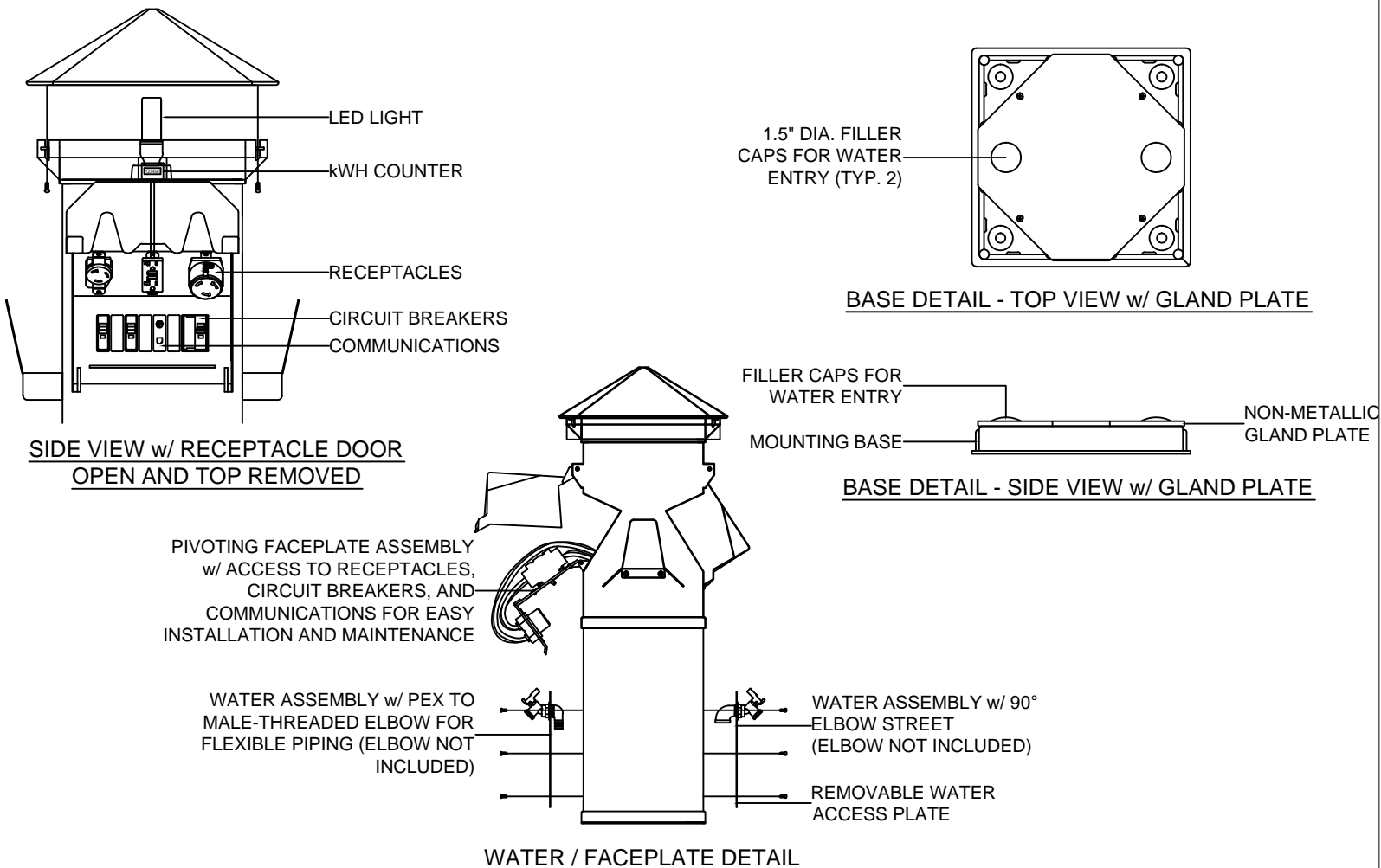
THE STEPS LISTED BELOW ARE THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR

The Harbor Light contains an innovative, patented pivoting faceplate assembly to simplify telecommunications installation. Simply remove the four screws fastening the breaker plate and faceplate to the pedestal and pivot the entire assembly outward. This will allow for full access to the telecommunications jacks for installation.

- Through non-metallic tubing extending to the base of the unit, pull the phone, CATV, and/or Ethernet line(s) to the location of the corresponding jacks within the pedestal / utility center.
- Carefully guide heat-shrink tubing over the lines and make the appropriate terminations into the back of each of the connections.
- Shrink the tubing around the connections and carefully guide the lines back into the housing. Re-fasten the pivoting receptacle/breaker/communications plate assembly back to the main housing.

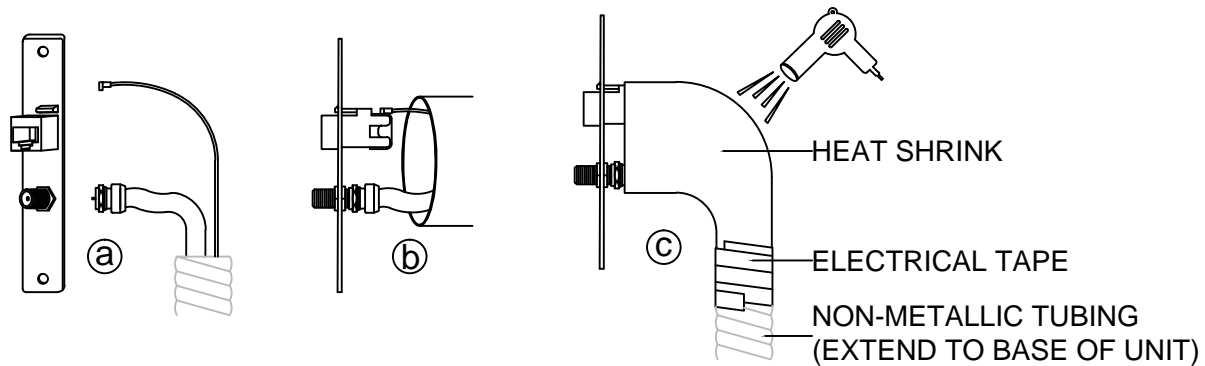
Step 7: Changing the LED Bulb:

Unscrew the four (4) screws underneath the top to remove the top and expose the lamp holder and bulb. Replace the bulb and top (see figure below).



Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual



COMMUNICATIONS CONNECTIONS (SEE STEP 6 ON PREVIOUS PAGE)

EXTERIOR MAINTENANCE:

Dirt, grime, bird droppings and insect residue can be removed by use of a mild degreasing solution mixture of one teaspoon per gallon of warm water. Gently scrub the housing exterior and rinse clean. Spiders and other insects can be controlled by use of a **WATER-BASED** insect spray.

WARNING: DO NOT use any petroleum or solvent-based insect spray or corrosion inhibiting products on any part of the power pedestal. These solvents will compromise the structural integrity of the polycarbonate material and cause stress cracking and material failure. Use of any such solvents will void the manufacturer's warranty.

TOUCH UP DAMAGED PAINT:

- 1) Scuff the area well with wet and dry 220-grit sandpaper.
- 2) Clean the area (dishwashing detergent and water) and allow to dry.
- 3) Spray or brush even wet coats of basecoat. Two wet coats should be sufficient. Allow each coat to dry 20 minutes before recoating. Note small areas can be touched up by brushing, while large areas will require a spray kit.

INTERIOR MAINTENANCE:

WARNING: Turn off or disconnect the power supplying this equipment before beginning work. This might require you to contact your local utility to disconnect the power to an existing panel board or disconnect. The line side of the main breaker in a panel board is energized unless power is disconnected upstream. Marina Electrical Equipment, Inc. will not assume any responsibility for property damage or personal injury resulting from misuse of the information in this manual.

1. Annual Terminal Block Maintenance:

Loosen the eight (8) stainless steel screws holding the electrical access panel to the pedestal. Remove the panel to expose the **de-energized** terminal block assembly. The terminal block should then be thoroughly examined for signs of excessive heating, loose and/or corroded connections, and any other sign of damage or wear. All loose or damaged connections need to be tightened or replaced.

Thoroughly examine the copper wire to pressure terminal connections for signs of corrosion. If any corrosion is found, simply remove the copper wire, clean the wire, coat with **synthetic** anti-corrosion grease and reinstall the wire.

2. Annual Receptacle and Circuit Breaker Maintenance:

The receptacles and circuit breakers should be examined on an annual basis. If any sign of heating or corrosion is evident, the component should be replaced. The Harbor Light contains an innovative, patented pivoting faceplate assembly to simplify field maintenance. Simply remove the four screws fastening the breaker plate and faceplate to the pedestal and pivot the entire assembly outward. This will allow for full access to the receptacles and circuit breakers for maintenance or replacement.

Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual

3. Annual Water Assembly Maintenance:

In colder climates, water supply lines should be blown-out with compressed air as part of the winterization process to prevent damage from freezing. The 3/4" ball valve should be worked opened and closed, and then left open to allow any water to escape and avoid damage to the valve from freezing temperatures.

4. Annual Light Fixture Maintenance:

The light fixture can be tested by covering the photocell for 2-4 minutes to simulate darkness. The photocell should close the circuit to illuminate the bulb. Should the bulb not illuminate, unscrew the four (4) screws underneath the top to remove the top and expose the lamp holder and bulb. Check the 5A protective inline fuse and replace if necessary. Replace the bulb and re-fasten the top.

OPERATION:

1. Connect Shore Power Cord to Vessel:

Insert the female end of the shore power cord into the vessel's power inlet connection. Twist the plug to lock on and tighten the locking plug retainer nut until the cord set is snug to the vessel.

2. Connect Shore Power Cord to Power Pedestal:

With the circuit breakers in the OFF position, insert the shore power cord into the receptacle and twist the plug clockwise until it locks onto the receptacle.

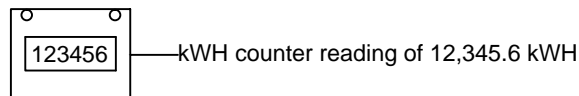
3. Turn the Circuit Breaker ON:

With both connections secured, turn the circuit breaker to the ON position. Check to see that the power indicator light on the vessel indicates a successful attachment of the shore power cord. A circuit breaker which trips under load indicates an issue with the vessel wiring and or equipment. Short circuits, overload and/or ground faults (if the power outlet panel is equipped with ground fault protective circuit breakers) will cause circuit breakers to trip, requiring the vessel's electrical system to be examined and repaired by a qualified electrician before the vessel can reconnect to the power pedestal.

For power outlet panels equipped with optional ground fault circuit breakers: if the breaker immediately trips upon inserting the shore power cord, the grounded (neutral) conductor and the equipment ground conductor are improperly bonded on the vessel. A qualified electrician must repair this faulty wiring/equipment before the vessel can reconnect to the power pedestal.

4. Reading the Kilowatt-Hour (kWH) Counter:

Power outlet panels equipped with kWH Meters provide an electromechanical odometer output with six (6) digits. The far right digit on this counter represents tenths of a kWH. For example, a kWH counter reading of " 1 2 3 4 5 6" would indicate 12,345.6 kWH. The previous reading would be deducted from this reading to determine the kWH used between readings. For example, a previous reading of 9,688.2 kWH: $12,345.6 - 9,688.2 = \underline{2,657.4}$ kWH used between readings. This usage would be multiplied by the kWH rate for billing.



Specifications Subject to Change Without Notice

Harbor Light Model HL30100

Installation, Maintenance, and Operation Manual

WARRANTY POLICY

Housings:

Marina Electrical Equipment, Inc. (MEE) warrants that the main housing and attached parts (top, lens, doors, receptacle faceplates, circuit breaker plates, and mounting base plate) will be free from failure resulting from defects in material and/or workmanship, and are covered by a limited warranty of one (1) year. Should any of the above parts fail to comply with the above-mentioned warranty, MEE will either repair or replace the defective part(s), or credit the purchaser for the purchase price of the part. This warranty is voided if any petroleum-based solvent is used anywhere on or near any of the polycarbonate parts. These parts include: the top, lens, doors, receptacle faceplates, circuit breaker plates, and the mounting base plate.

Internal Components:

MEE warrants that all internal electrical components shall be covered by a limited warranty of one (1) year. Items covered include: receptacles, circuit breakers, photocells, lamp holders, coil transformers, counters and wiring harnesses. Should any of the above parts fail to comply with this warranty policy, MEE will coordinate the repair or replacement of the defective part(s) with the respective supplier.

Solid-State Electric kWh Monitors:

MEE warrants that the International Intelligent Meter (IIM) solid-state electric kWh monitors will be free from failure resulting from defects in material and/or workmanship, and are covered for one (1) year. Although the IIM meters contain integrated surge protection, MEE and IIM will not warrant the product against severe over-voltage conditions such as lightning strikes or abnormal utility surges. Should an electric monitor fail to comply with the above-mentioned warranty, MEE will either repair or replace the defective part(s)/components, or credit the purchaser for the purchase price of the part. This warranty is voided if the damage to any or all of the components is the result of abuse, misuse, or Force Majeure. This warranty is voided if the factory seal is broken or manipulated.

This warranty policy does not cover damage or failure resulting from abuse, misuse, negligence or Force Majeure. All warranty claims must be made in writing and all defective products shall be returned to MEE for evaluation unless stated otherwise by MEE. MEE will not be responsible for reimbursing the purchaser for any sort of expense incurred by the purchaser as a result of the repair or replacement of a warranty claim.

Send all warranty claims to:

Marina Electrical Equipment, Inc. -
1715 Merrimac Trail
Williamsburg, VA 23185

Toll Free: 1-855-258-3939

Fax: 757-258-3988

Harbor Light Power Pedestal Model HL30100

The "Harbor Light" power pedestal has been developed as a polycarbonate sister to the "Harbor Light SS" and sets a new standard for durability and ease-of-use. Built to withstand the harshest in environmental conditions, the "Harbor Light" keeps with the Marina Electrical Equipment philosophy of being incredibly simple to install, maintain and operate for many years.

Standard Dimensions:
42.5" H
11.125" W
11.125" D



Standard Features

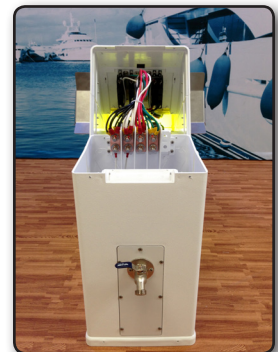
- Intertek-ETL Listed, tested in accordance with Underwriters Laboratories-231 standards, CAN/CSA Standard C22.2 No.29 and NFPA 303.
- Heavy-duty .1875" thick injection-molded polycarbonate main housing, lens and top assemblies.
- Limited 1-Year Warranty.
- Extra wide back-lit receptacle faceplate for easier plug-in.
- Highest quality twist-lock receptacles.
- Patented pivoting receptacle faceplate assembly, which simplifies field-maintenance tasks such as replacing circuit breakers, receptacles or meter current transformer coils.
- Photocell-controlled 10-Watt LED light fixture with fuse protection.
- 250-Amp rated copper stud-lug single phase 125/250V terminal block.
- Newly designed, highly functional dual hose/cable brackets, capable of holding min. 50' of standard 5/8" ID garden hose or 50' of 50-ampere, 4-wire shore power (S.O.) cord.
- Clean-looking flush-mounted access panels.
- Durable polycarbonate mounting base plate which isolates the bottom housing from the dock surface.
- Lockable polycarbonate weatherproof doors which shield the receptacles and circuit breakers from the elements while in use (as required by NFPA 303 and NEC Article 555).



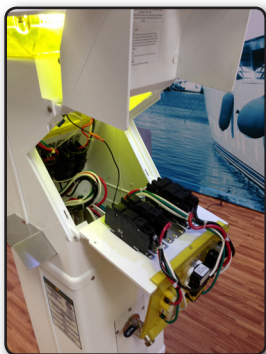
Extra-Wide Back-Lit Receptacle Faceplate

Optional Features

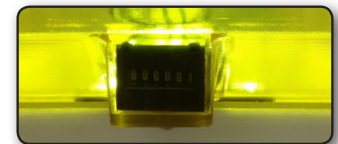
- Receptacle Options:
 - 20A, 125V Duplex GFCI.
 - 20A, 125V L5-20R Twist-Lock Shorepower.
 - 30A, 125V L5-30R Twist-Lock Shorepower.
 - 50A, 125V SS-1 Twist-Lock Shorepower.
 - 50A, 125/250V SS-2 Twist-Lock Shorepower.
- Interlocking circuit breakers, ground fault circuit breakers.
- Solid-state electric monitoring for sub-metering kWh consumption.
- Wireless NUCORE™ remote meter reading.
- Ground Fault Monitoring at each slip (patent-pending).
- 250-Amp rated copper stud-lug three phase 125/250V terminal block.
- 250-Amp rated split terminal block.
- 3/4" IPS ball valve hose bibs.
- Hose bib vacuum breakers.
- Water metering.
- Phone, Cable TV, and/or Data ports.
- Amber or Clear Polycarbonate Lens.



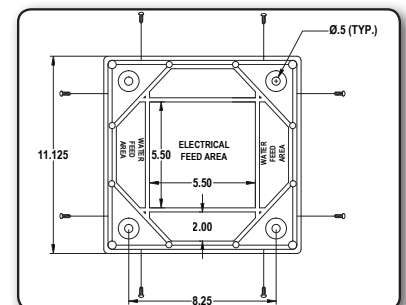
Easy-Access Terminal Block



Pivoting Faceplate Assembly



Protected kWh Counter



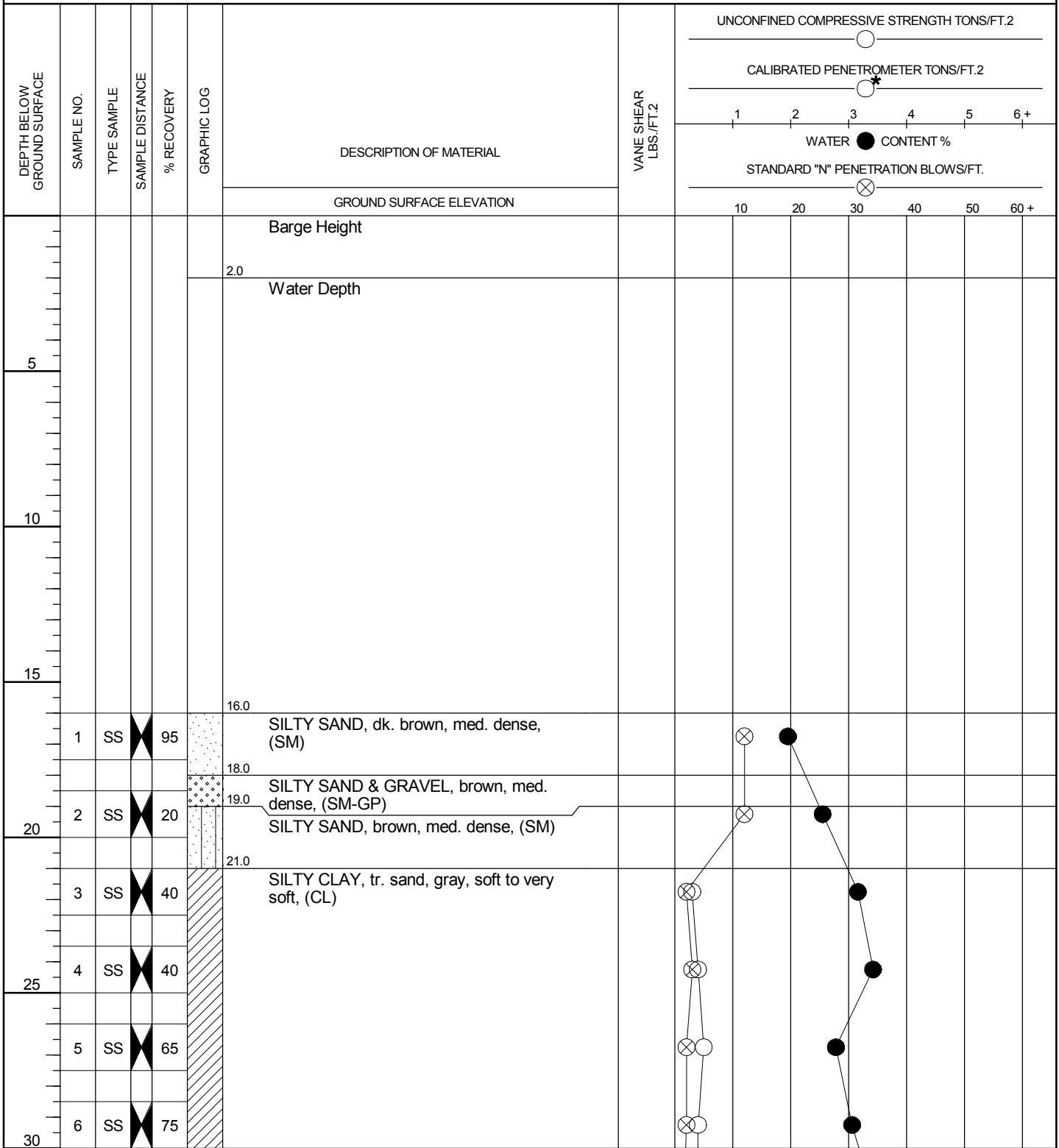
Harbor Light Mounting Detail

CLIENT: Westrec Marinas

PROJECT: Floating Dock

STATION:

LOCATION: Burnham Harbor
Chicago, Illinois



Continued Next Page

WATER LEVEL OBSERVATIONS		<p>Ground Engineering Consultants, Inc. 350 Pfingsten Road, Suite 106 Northbrook, Illinois 60062 Tel: (847) 559-0085 Fax: (847) 559-0181</p>	BORING STARTED	12/10/18
W.L.	▽		BORING COMPLETED	12/10/18
W.L.	▽		BORING DRILLED BY	FOREMAN Dan
W.L.	▽		CDI	APPROVED BL

CLIENT: Westrec Marinas

PROJECT: Floating Dock

STATION:

LOCATION: Burnham Harbor
Chicago, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL (CONTINUED)	VANE SHEAR LBS./FT ²	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2		CALIBRATED PENETROMETER TONS/FT.2		WATER CONTENT %		STANDARD "N" PENETRATION BLOWS/FT.		
								○	○	○*	●	⊗	○	○	○	○
35	7	SS	100			SILTY CLAY, tr. sand, gray, soft to very soft, (CL) <i>(continued)</i>										
40	8	SS	100													
45	9	SS	10				45.0									

WATER LEVEL OBSERVATIONS	
W.L.	▽
W.L.	▼
W.L.	▼

Ground Engineering Consultants, Inc.
350 Pfingsten Road, Suite 106
Northbrook, Illinois 60062
Tel: (847) 559-0085 Fax: (847) 559-0181

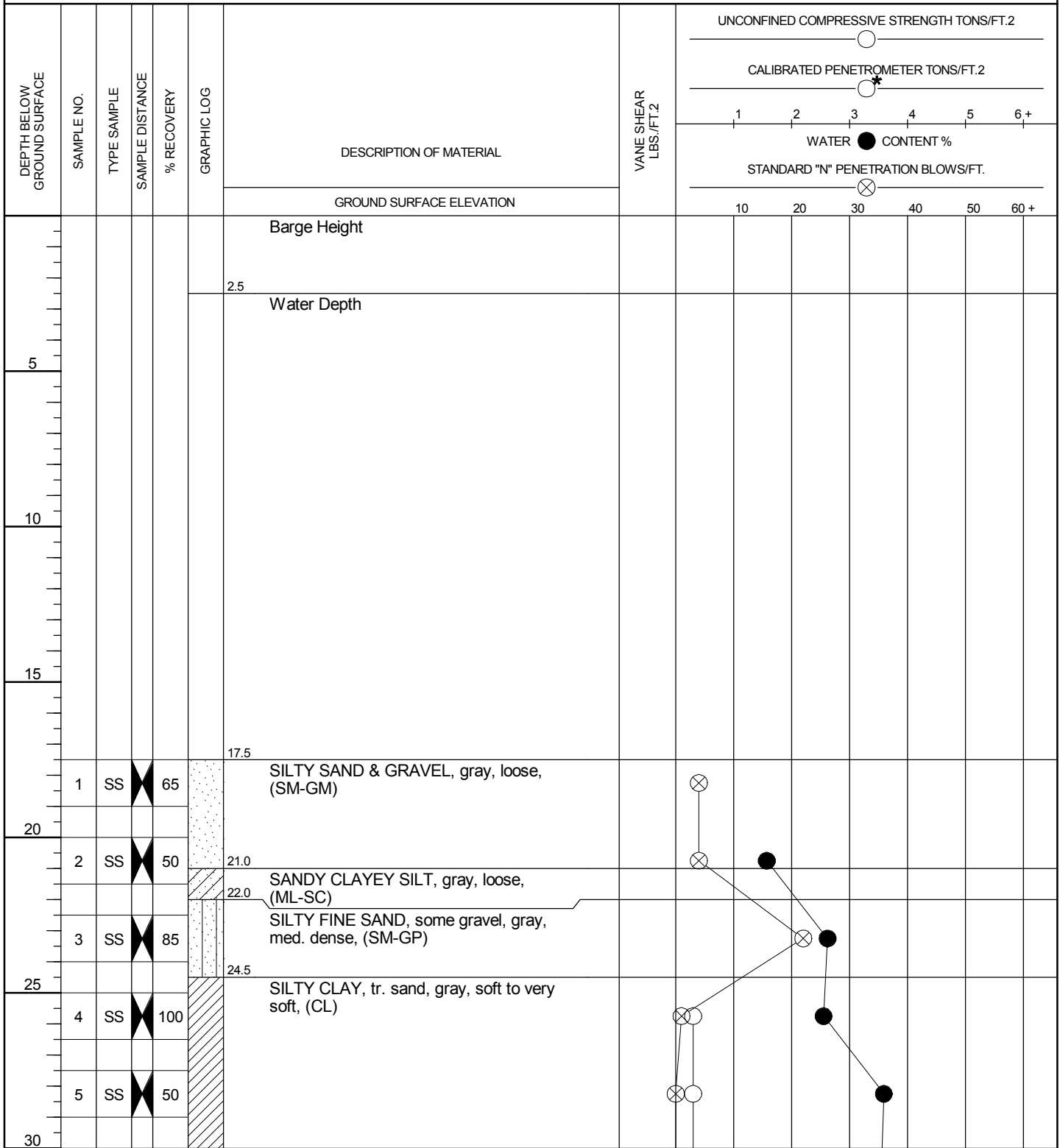
BORING STARTED	12/10/18
BORING COMPLETED	12/10/18
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CDI	APPROVED BL

CLIENT: Westrec Marinas

PROJECT: Floating Dock

STATION:

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Chicago, Illinois



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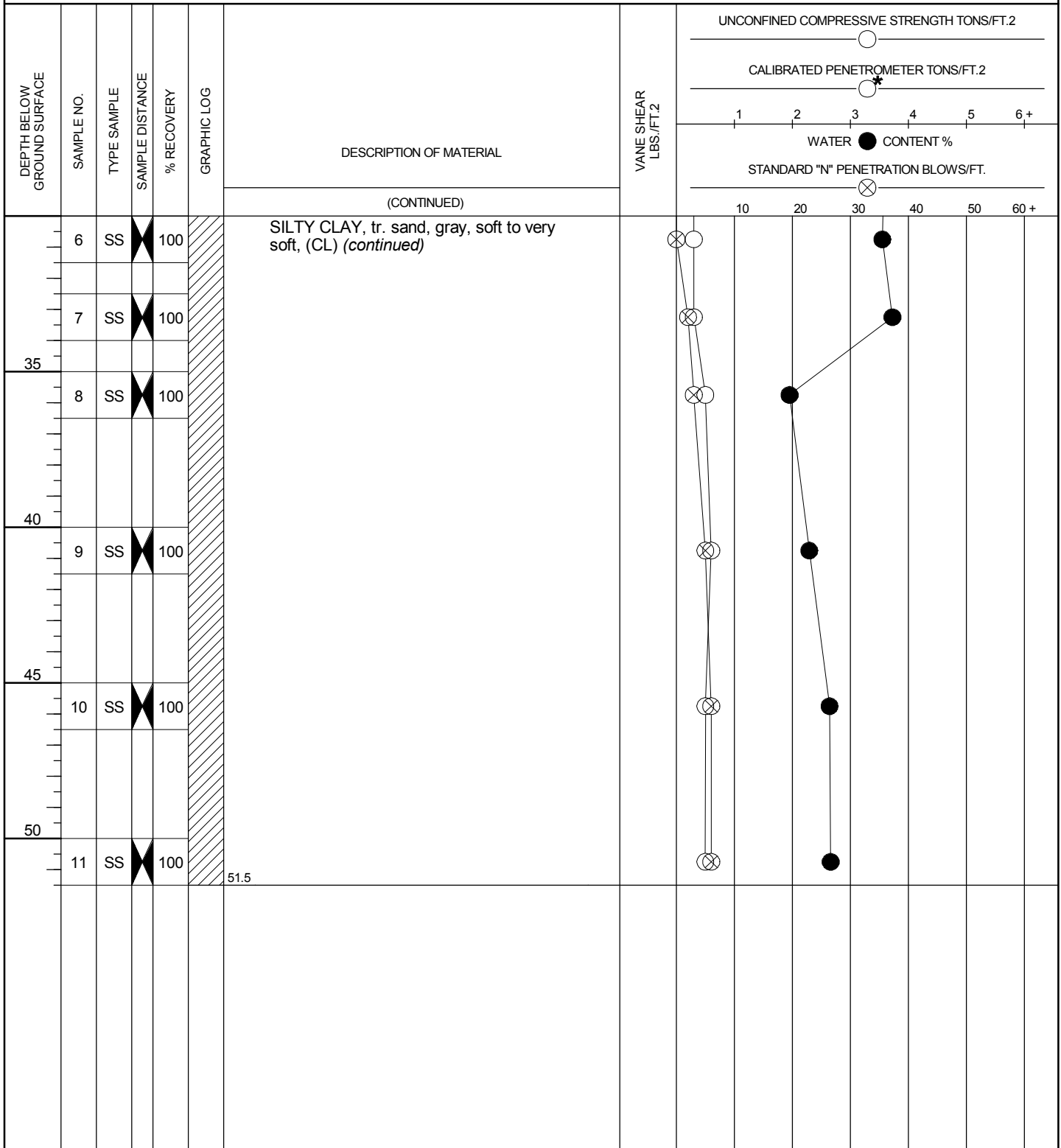
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W.L.	▽		CDI	APPROVED BL

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CLIENT: Westrec Marinas

PROJECT: Floating Dock

STATION:

LOCATION: Burnham Harbor
Chicago, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	GROUND SURFACE ELEVATION	VANE SHEAR LBS./FT ²	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2							CALIBRATED PENETROMETER TONS/FT.2							WATER CONTENT %	STANDARD "N" PENETRATION BLOWS/FT.									
									1	2	3	4	5	6+	1	2	3	4	5	6+	10	20		30	40	50	60+						
Barge Height																																	
2.0																																	
Water Depth																																	
5																																	
10																																	
15																																	
20																																	
25	2 1	SS SS		100 10		ORGANIC SILT, tr. clay, dk. brown & black, very loose, (OL)	24.0																							>> ●			
30																																	

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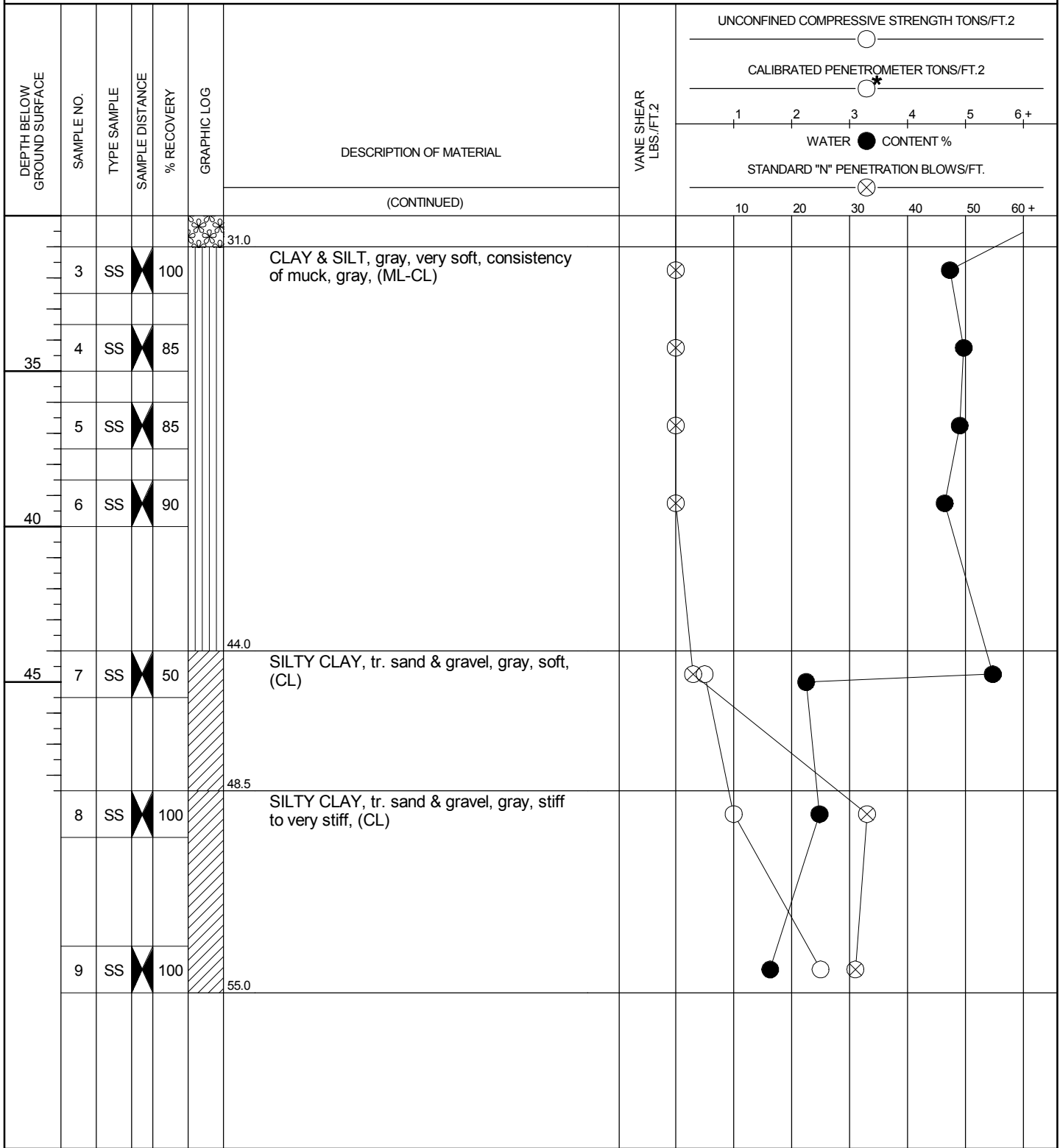
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W.L.	▼		CDI	APPROVED BL

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