

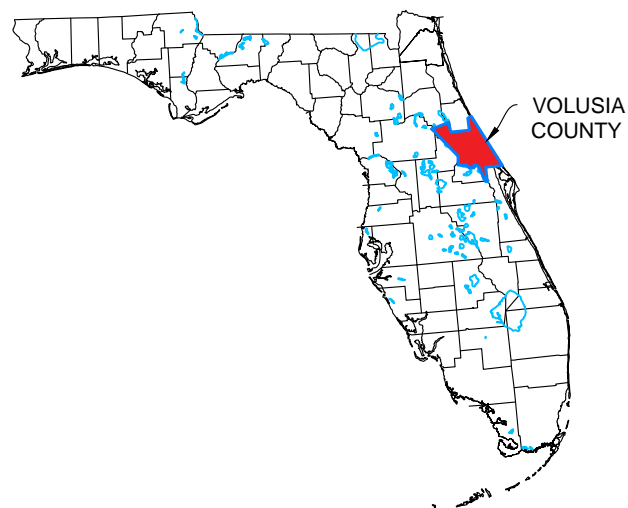
CONSTRUCTION DRAWINGS

THE CITY OF DAYTONA BEACH RIVERFRONT PARK DAY DOCKS

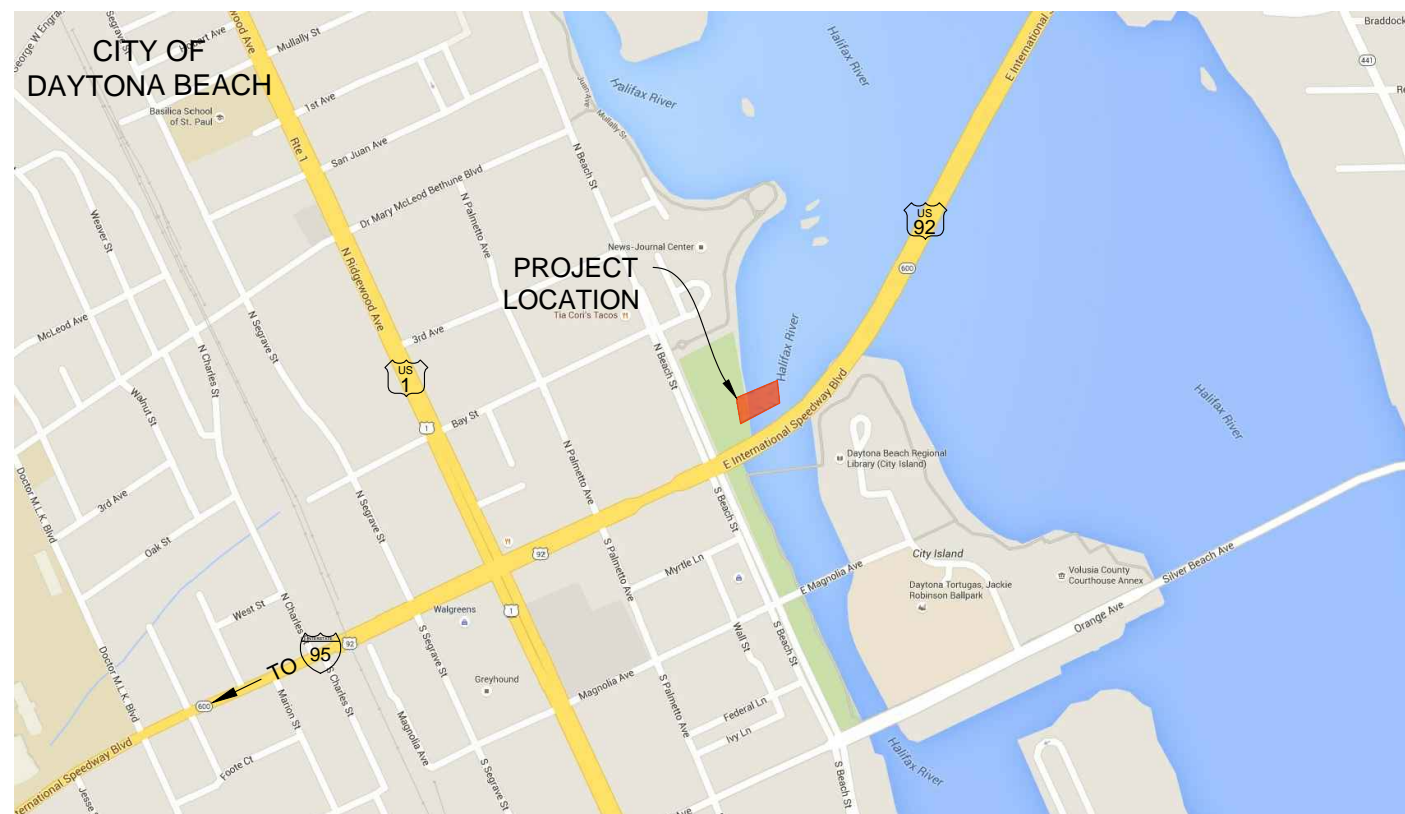
FEBRUARY 22, 2018



FLORIDA



PROJECT LOCATION MAP



INDEX

| SHEET | DESCRIPTION |
|-------|----------------------------------|
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| C-05 | TIMBER & FLOATING DOCK ELEVATION |
| C-06 | TIMBER DOCK PLAN & CROSS-SECTION |
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| C-08 | GANGWAY & FLOATING DOCK DETAILS |
| C-09 | LIGHTING & SIGNAGE DETAILS |
| C-10 | GENERAL NOTES |
| C-11 | GENERAL NOTES |
| C-12 | SPECIAL ENVIRONMENTAL CONDITIONS |
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| E4 | ELECTRICAL RISER, NOTES |

CITY COUNCIL

| | |
|---------------------|--------------|
| DERRICK L. HENRY | MAYOR |
| RUTH TRAGER | COMMISSIONER |
| PAM WOODS | COMMISSIONER |
| KELLY WHITE | COMMISSIONER |
| ROBERT A. GILLILAND | COMMISSIONER |
| PATRICK HENRY | COMMISSIONER |
| PAULA R. REED | COMMISSIONER |
| JAMES V. CHISHOLM | CITY MANAGER |

NOTE:

THESE DRAWINGS AND THE PROJECT SPECIFICATIONS ARE COMPLEMENTARY, AND ANY REQUIREMENT OF ONE SHALL BE A REQUIREMENT OF THE OTHER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE THE DRAWINGS AND SPECIFICATIONS AND TO COMPARE THE REQUIREMENTS OF EACH DIVISION AND ENSURE THAT EACH TRADE OR SUBCONTRACTOR IS MAKING THE ALLOWANCES NECESSARY TO PROVIDE THE OWNER A COMPLETE FACILITY, OPERATIONAL IN ALL RESPECTS, UNLESS OTHERWISE SPECIFICALLY STATED IN THE DRAWINGS OR PROJECT MANUAL.

IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY DEFICIENCIES OR DISCREPANCIES AMONG THE DIVISIONS OF THE DRAWING AND SPECIFICATIONS PRIOR TO THE BID DATE. NEITHER THE OWNER OR ENGINEER WILL BE RESPONSIBLE FOR ANY DEFICIENCIES OR DISCREPANCIES RAISED AFTER THE BID OPENING. ACCORDINGLY, IN LIGHT OF THESE OBLIGATIONS, THE ENGINEER IS OBLIGATED TO INTERPRET THE DRAWINGS SPECIFICATIONS IN A MANNER THAT WILL PROVIDE THE OWNER WITH A COMPLETE, FUNCTIONING FACILITY FOR THE BID PRICE.

ENGINEER CERTIFICATION:

I HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA PRACTICING WITH DMC, DREDGING & MARINE CONSULTANTS LLC, A CORPORATION, AUTHORIZED TO OPERATE AS AN ENGINEERING BUSINESS, CERTIFICATE OF AUTHORIZATION # 9410, BY THE STATE OF FLORIDA DEPARTMENT OF PROFESSIONAL ENGINEERS, AND THAT I, OR OTHERS UNDER MY DIRECT SUPERVISION, HAVE PREPARED OR APPROVED THE EVALUATIONS, FINDINGS, OPINIONS, CALCULATIONS, CONCLUSIONS OR TECHNICAL ADVICE HEREBY REPRESENTED BY THESE DRAWINGS.

STEPHEN J. KUHN, P.E.
FLORIDA LICENSE No. 67486

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 Port Orange, FL 32129
 Phone:(386) 304-6505
 Fax:(386) 304-6506
 www.dmces.com

Drawing Name: \\Server\014 Server\DMC PROJECTS\06 - City of Daytona Beach\16-006-32 Riverfront Day Docks\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: AERIAL 2/23/2018



| | | | | |
|---|---|---|--|--|
| Dredging & Marine Consultants DMC ENGINEERS • SCIENTISTS | 4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmcsc.com | | PROJECT NAME: RIVERFRONT PARK DAY DOCKS | DRAWING: AERIAL |
| | 301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400 | CLIENT: CITY OF DAYTONA BEACH | DMIC JOB NO.: 16-006-32 | DRAWN: GA CHECKED: CNT APPROVED: SKP |

Drawing Name: \\Server\014 Server\DMC PROJECTS\06 - City of Daytona Beach\16-006-32 Riverfront Day Dockage\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: DOCK PLAN - 2/23/2018



| | | | |
|--------------------|-----------|----------------|------------|
| DRAWING: DOCK PLAN | | | |
| DMC JOB NO. | 16-006-32 | | |
| DRAWN | GA | CAD | C3D |
| CHECKED | CNT | SCALE AS SHOWN | SHEET NO. |
| APPROVED | SKP | DATE | 02-22-2018 |
| | | | 03 |

PROJECT NAME: RIVERFRONT PARK DAY DOCKS
 CLIENT: CITY OF DAYTONA BEACH

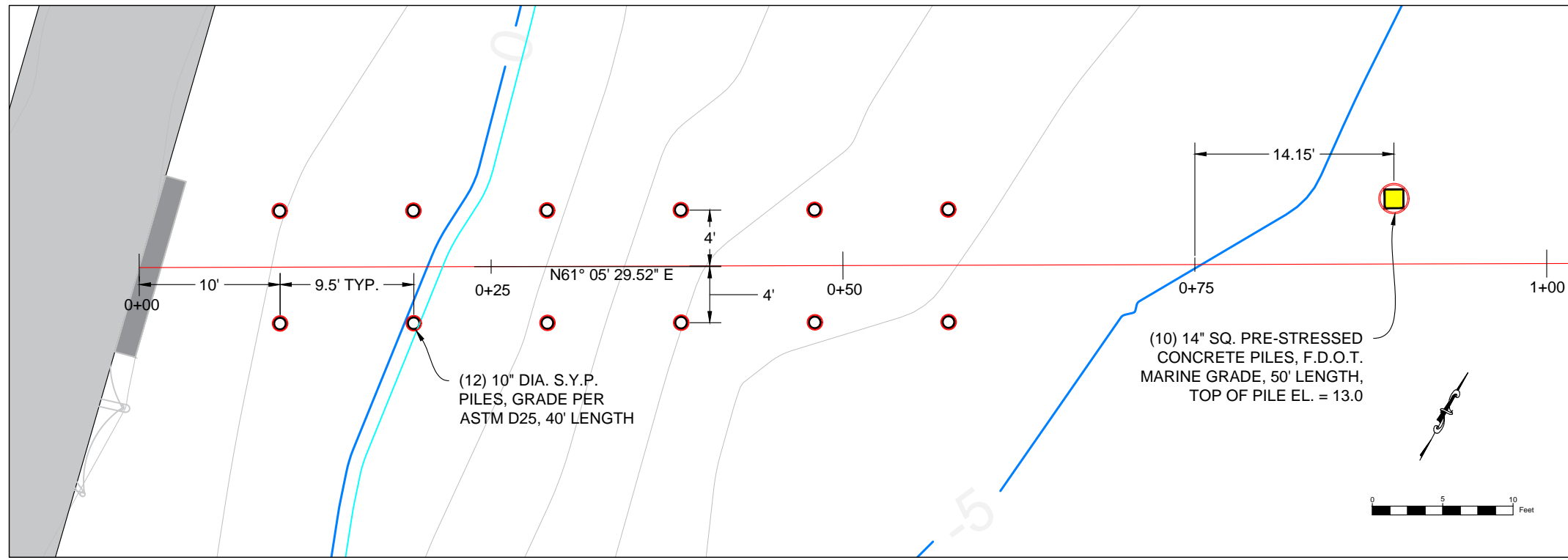
Stephen J. Kohn, P.E.
 FLORIDA LICENSE No. 67486

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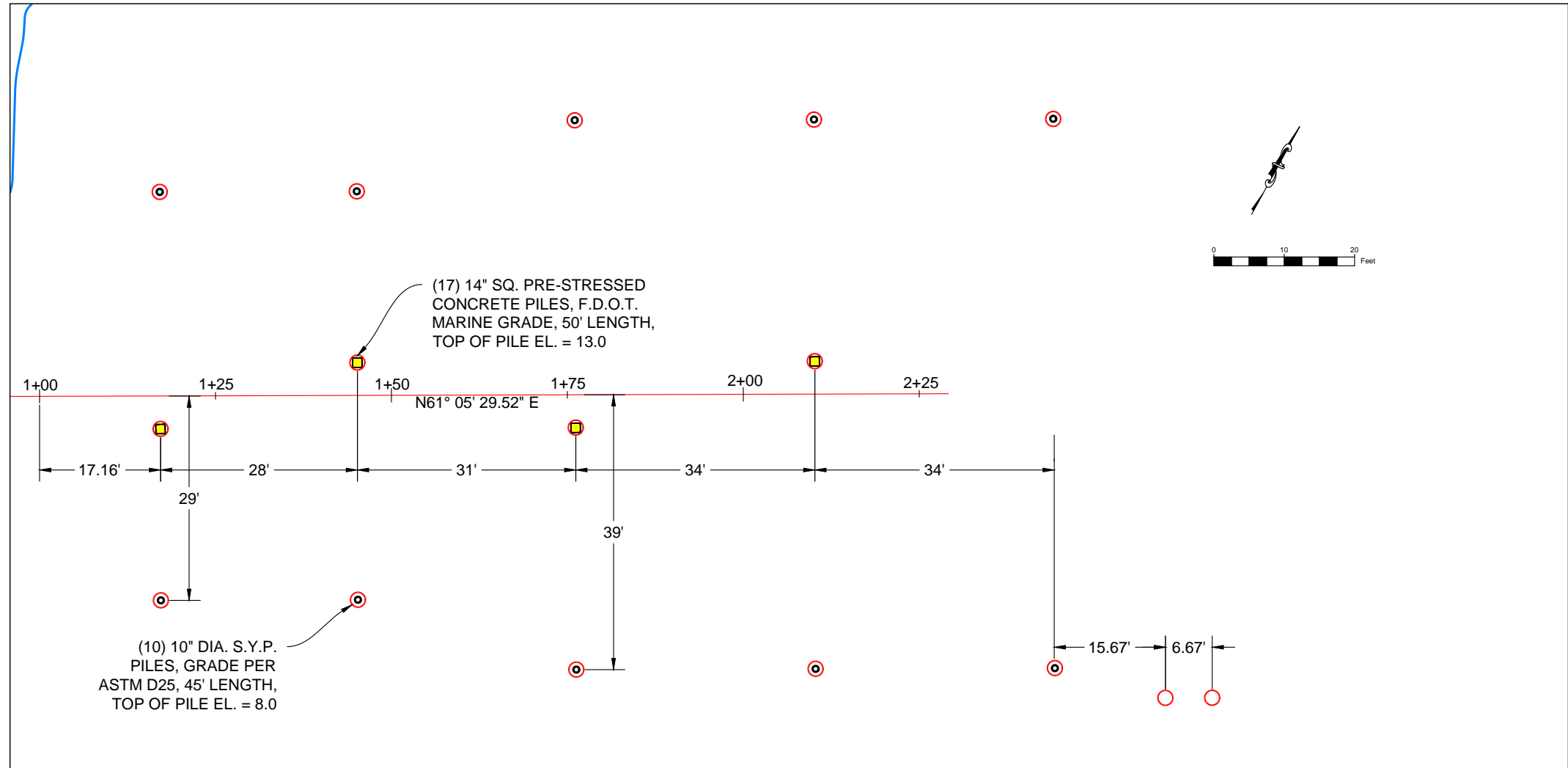
301 S. RIDGEWOOD AVE.,
 DAYTONA BEACH, FL 32114
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Drawing Name: \\Server\014 Server\DMC PROJECTS\066 - City of Daytona Beach\16-006-32 Riverfront Day Docks\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: PILING PLAN 2/23/2018



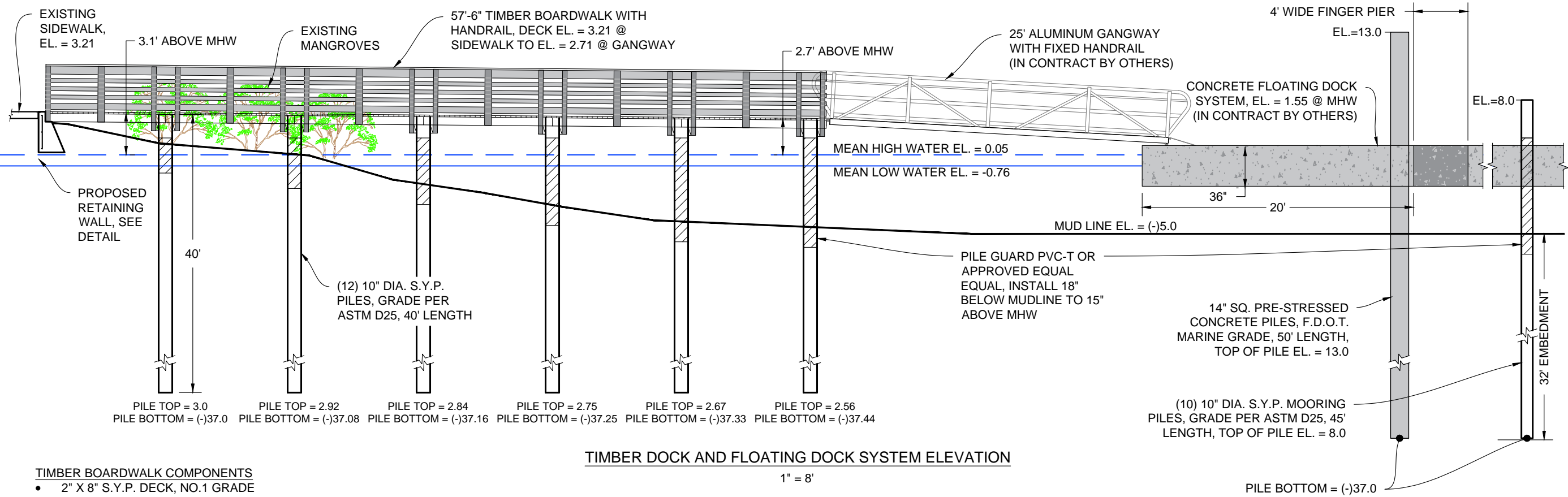
NOTE:

1. ALL PILING DIMENSIONS ARE AT CENTER OF PILES (C.C.)
2. CONCRETE PILES FOR FLOATING DOCK SYSTEM SHALL BE INSTALLED AFTER FLOATING SYSTEM IS IN PLACE. DIMENSIONS SHOWN FOR CONCRETE PILES ON THESE PLANS ARE FOR REFERENCE ONLY.



| | | |
|---|-----------------------|---------------------|
| DRAWING: PILING PLAN | DMC JOB NO. 16-006-32 | SHEET NO. 04 |
| | DRAWN: GA | CAD: C3D |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | CHECKED: CNT | SCALE AS SHOWN |
| CLIENT: CITY OF DAYTONA BEACH | APPROVED: SKP | DATE: 02-22-2018 |
| <p>Dredging & Marine Consultants DMC ENGINEERS • SCIENTISTS</p> <p>4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmc.com</p> | | |
| <p>301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400</p> | | |

Drawing Name: \\Server\014 Server\DMC PROJECTS\06 - City of Daytona Beach\16-006-32 Riverfront Day Dockage\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: ELEVATION 2/23/2018

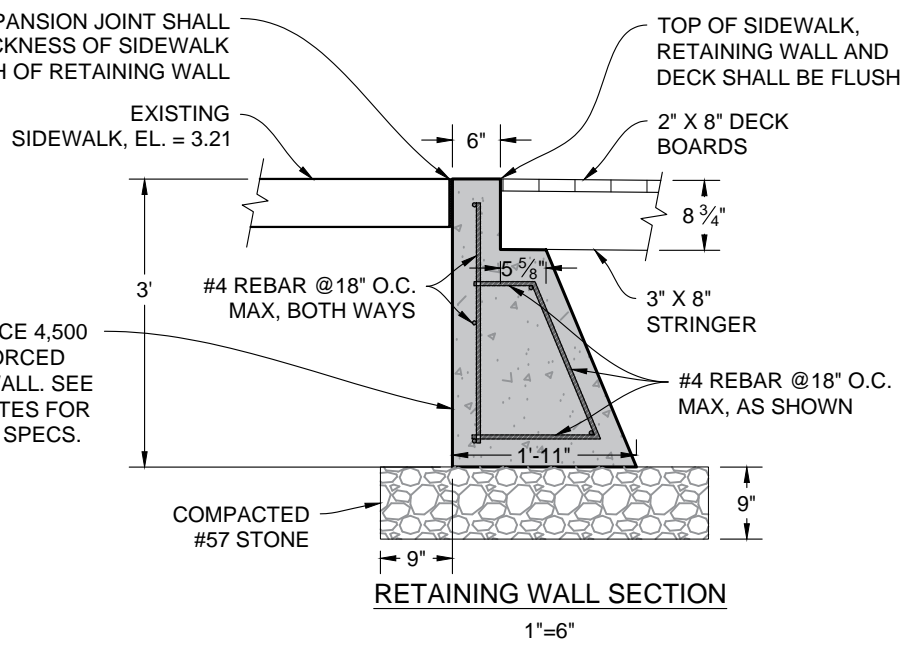
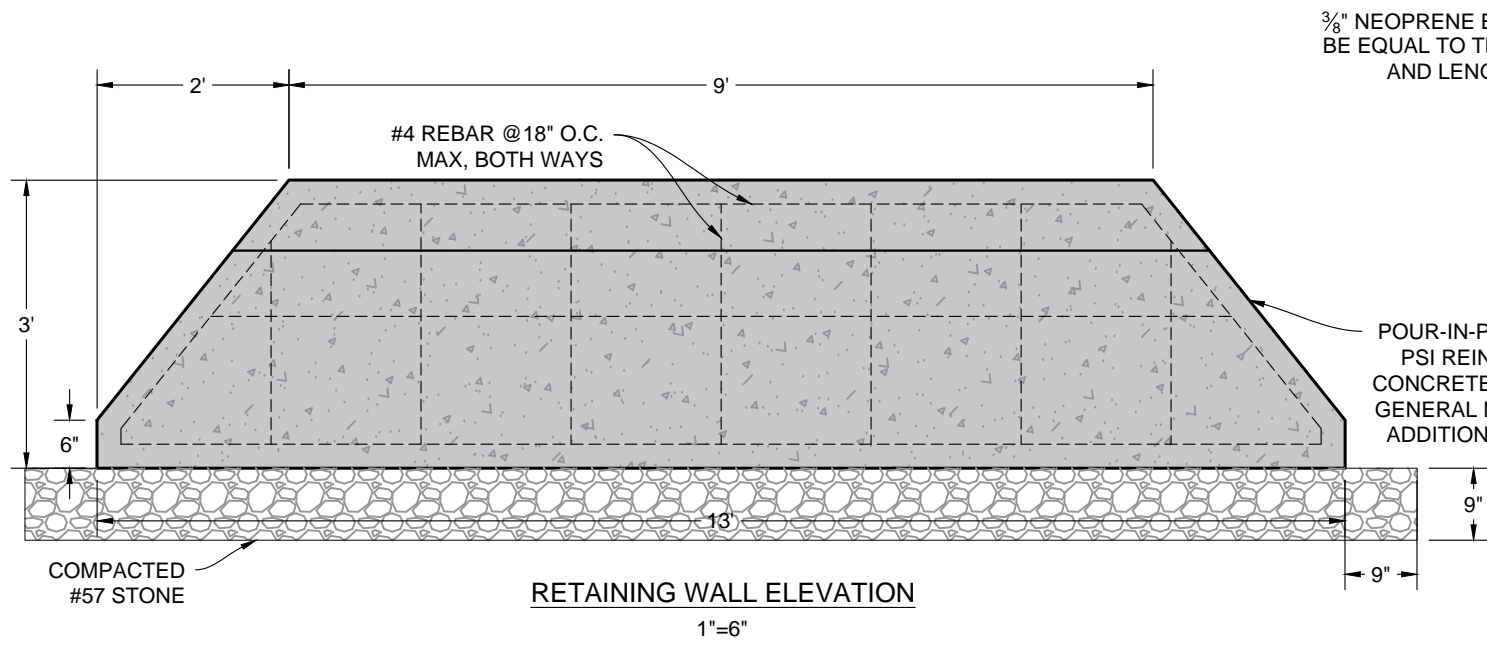


TIMBER DOCK AND FLOATING DOCK SYSTEM ELEVATION

1" = 8'

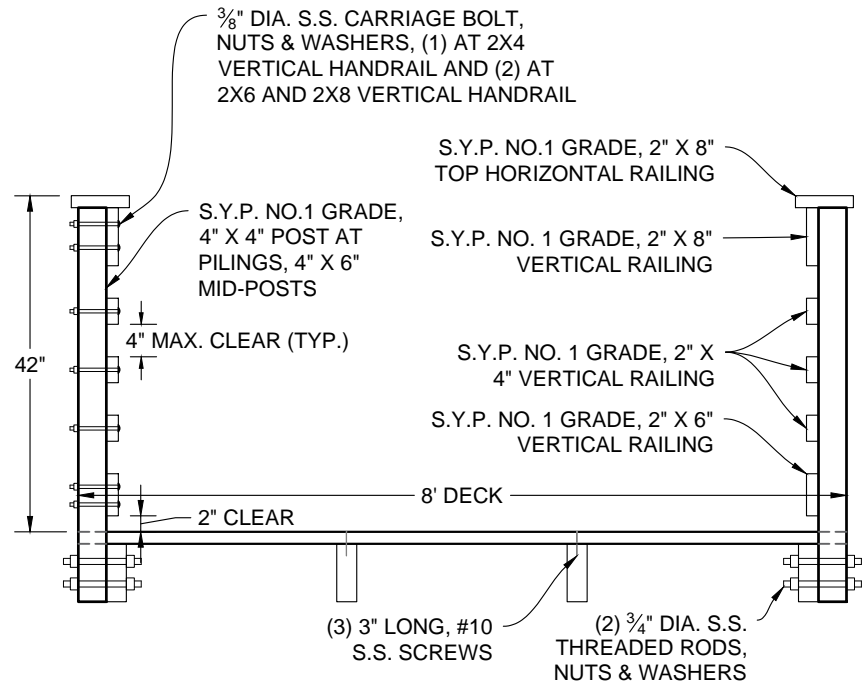
TIMBER BOARDWALK COMPONENTS

- 2" X 8" S.Y.P. DECK, NO.1 GRADE
- 3" X 8" S.Y.P. STRINGERS, NO. 2 GRADE
- 3" X 8" S.Y.P. CAP BOARDS, NO. 2 GRADE
- HANDRAIL:
 - 2" X 8" S.Y.P. HORIZONTAL TOP RAIL, NO.1 GRADE
 - 2" X 8" S.Y.P. VERTICAL RAILING, NO. 1 GRADE
 - 2" X 4" S.Y.P. VERTICAL RAILING, NO. 1 GRADE
 - 2" X 6" S.Y.P. VERTICAL RAILING, NO. 1 GRADE
- PILE BENT 9'-6" C.C.



| | | |
|--|---|--|
| <p>DRAWING: TIMBER & FLOATING DOCK ELEVATION</p> <p>DMIC JOB NO. 16-006-32</p> <p>DRAWN GA CAD C3D CHECKED CNT SCALE AS SHOWN APPROVED SKP DATE 02-25-2018</p> <p>SHEET NO. 05</p> | <p>PROJECT NAME: RIVERFRONT PARK DAY DOCKS</p> <p>CLIENT: CITY OF DAYTONA BEACH</p> | <p>Dredging & Marine Consultants</p> <p>DMC</p> <p>ENGINEERS • SCIENTISTS</p> <p>4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmiccs.com</p> |
| <p>301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400</p> | | |
| | | |

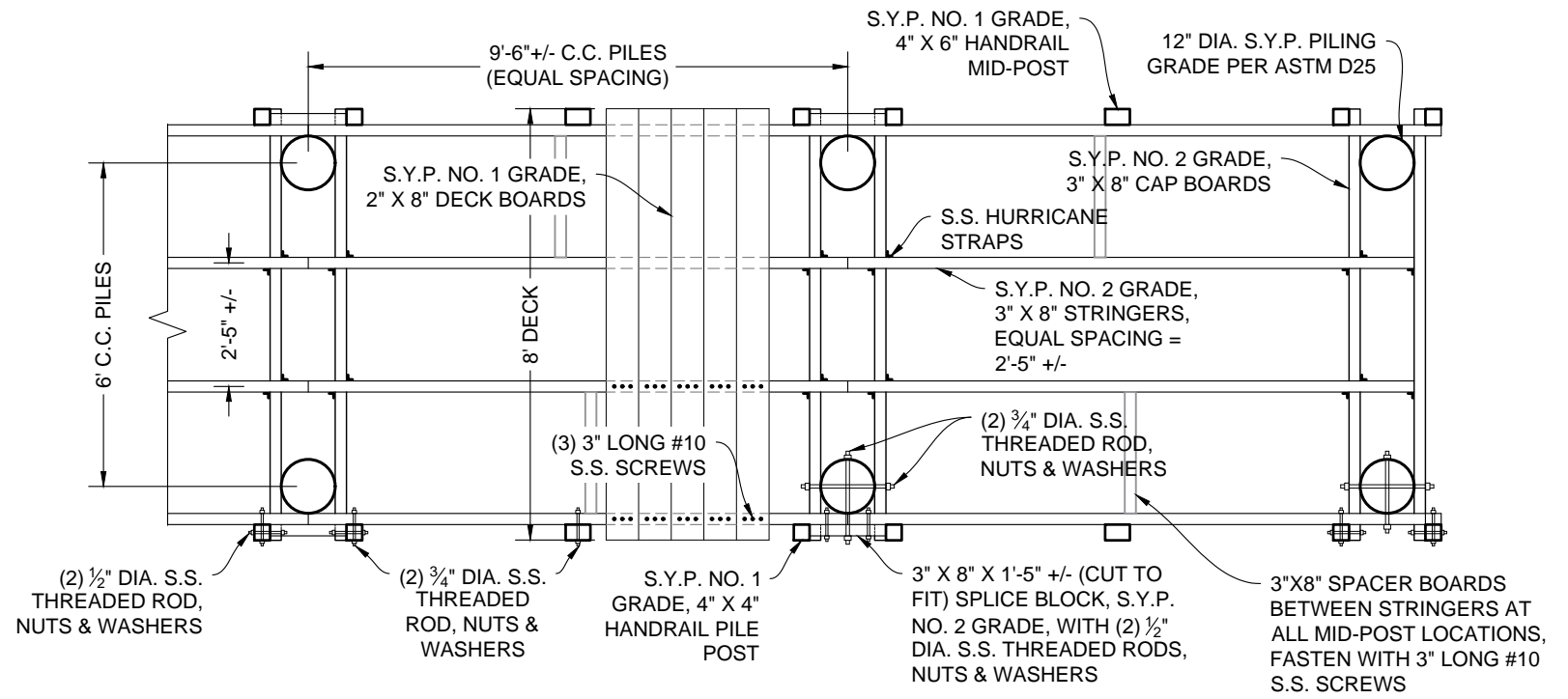
Drawing Name: \\Server\014 Server\DMC PROJECTS\006 - City of Daytona Beach\16-006-32 Riverfront Day Dockage\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: X SECTION 2/23/2018



TYPICAL TIMBER DOCK CROSS-SECTION - NO PILING

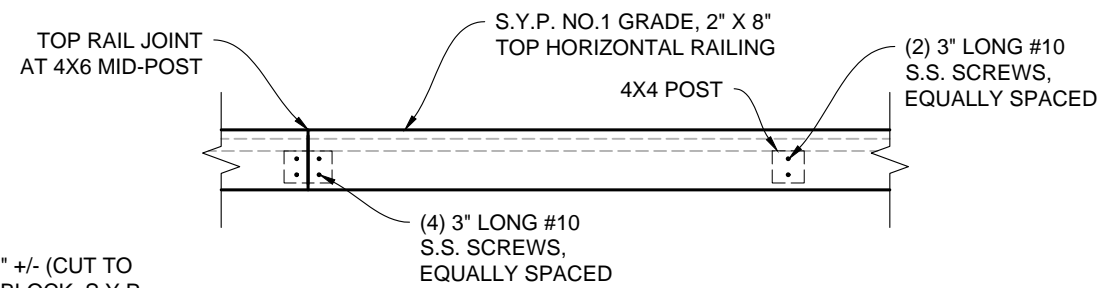
1"=6"

NOTE: VERTICAL HANDRAILS SHALL BE SPLICED AT 4X6 MID-POSTS



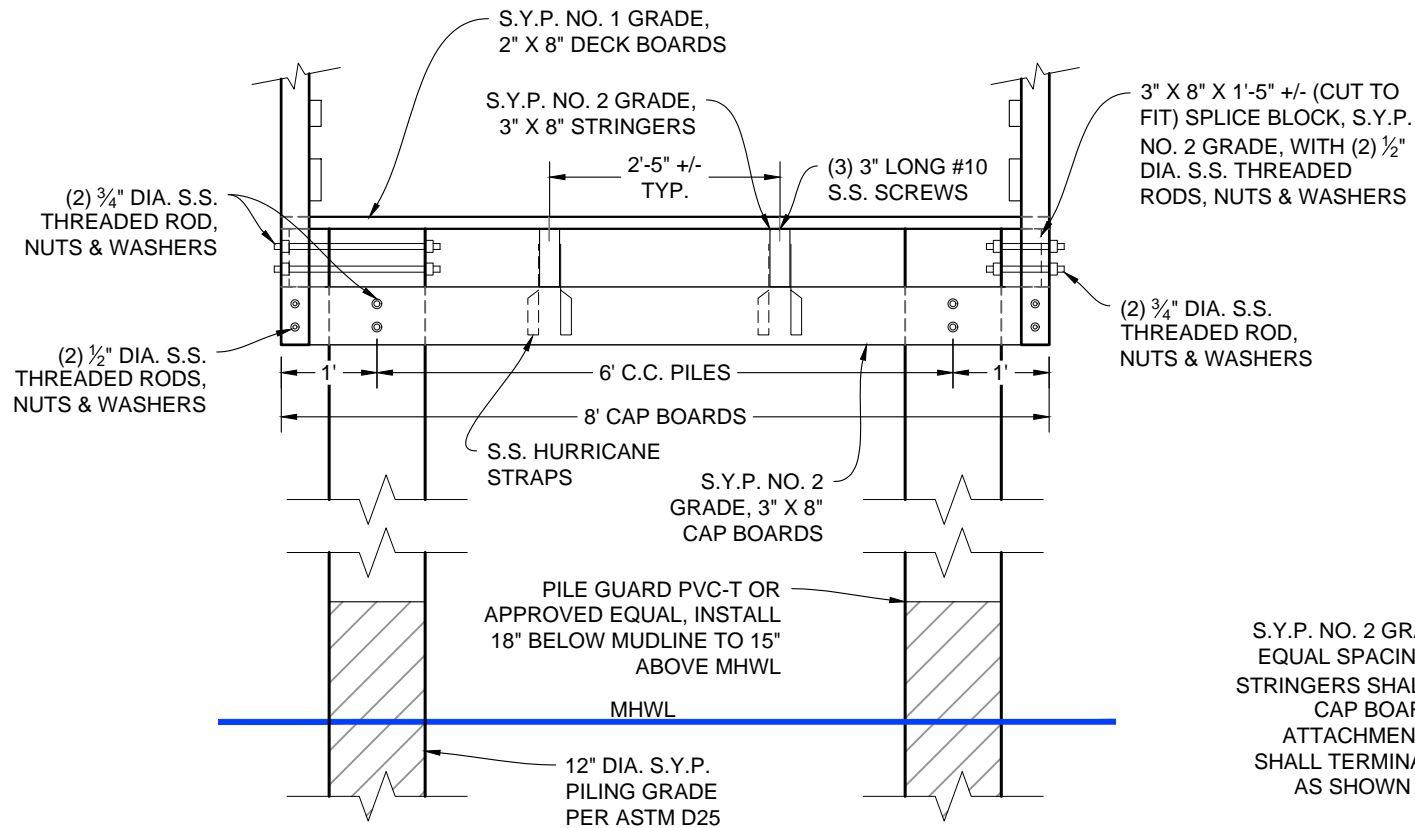
TYPICAL 8' TIMBER DOCK PLAN

N.T.S.



TOP RAILING DETAIL

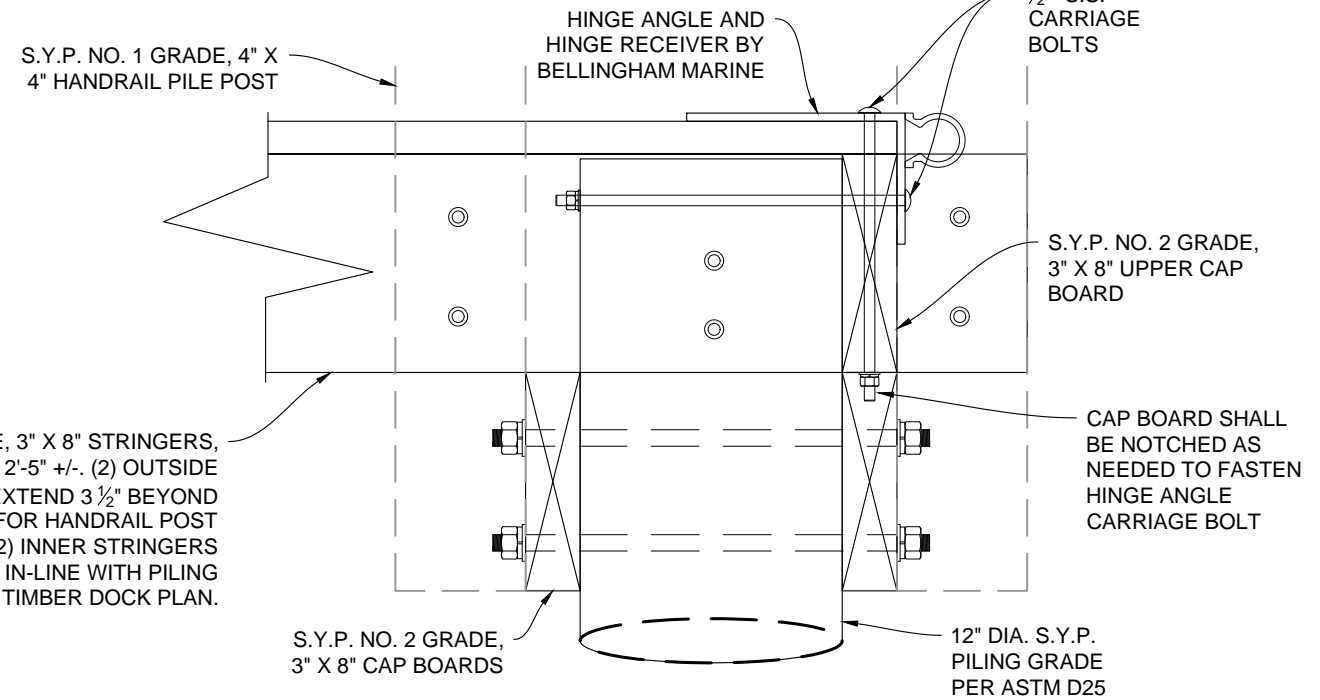
1"=6"



TYPICAL TIMBER DOCK CROSS-SECTION - PILING

1"=6"

S.Y.P. NO. 2 GRADE, 3" X 8" STRINGERS, EQUAL SPACING = 2'-5" +/- (2) OUTSIDE STRINGERS SHALL EXTEND 3 1/2' BEYOND CAP BOARD FOR HANDRAIL POST ATTACHMENT, (2) INNER STRINGERS SHALL TERMINATE IN-LINE WITH PILING AS SHOWN ON TIMBER DOCK PLAN.

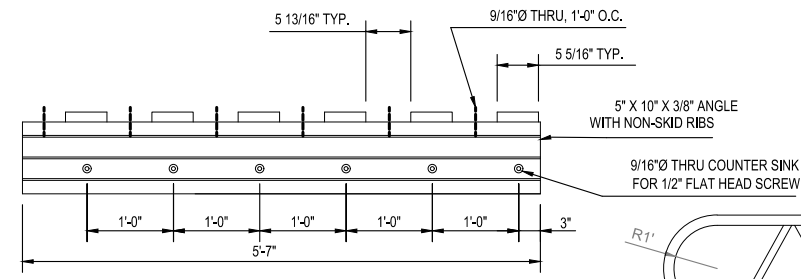


TYPICAL TIMBER DOCK TO GANGWAY CONNECTION

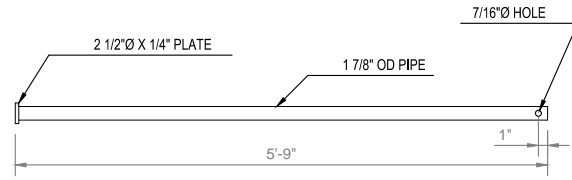
N.T.S.

| | | | |
|---|------------------------------|--|---------------------------|
| DRAWING: TIMBER DOCK PLAN & CROSS-SECTION | | SHEET NO. 06 | |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | DMC JOB NO. 16-006-32 | DRAWN BY: GA | CHECKED BY: CNT |
| CITY OF DAYTONA BEACH | DATE: 02-25-2018 | SCALE: AS SHOWN | APPROVED SKP: DATE |
| <p>4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmc.com</p> | | <p>301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400</p> | |
| <p>Dredging & Marine Consultants DMC ENGINEERS • SCIENTISTS</p> | | <p>THE CITY OF DAYTONA BEACH FLORIDA DEPARTMENT OF TRANSPORTATION</p> | |

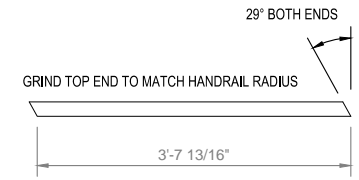
Drawing Name: \\Server\014 Server\DMC PROJECTS\06 - City of Daytona Beach\16-006-32 Riverfront Day Dockage\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: RAMP FLOATER 2/23/2018



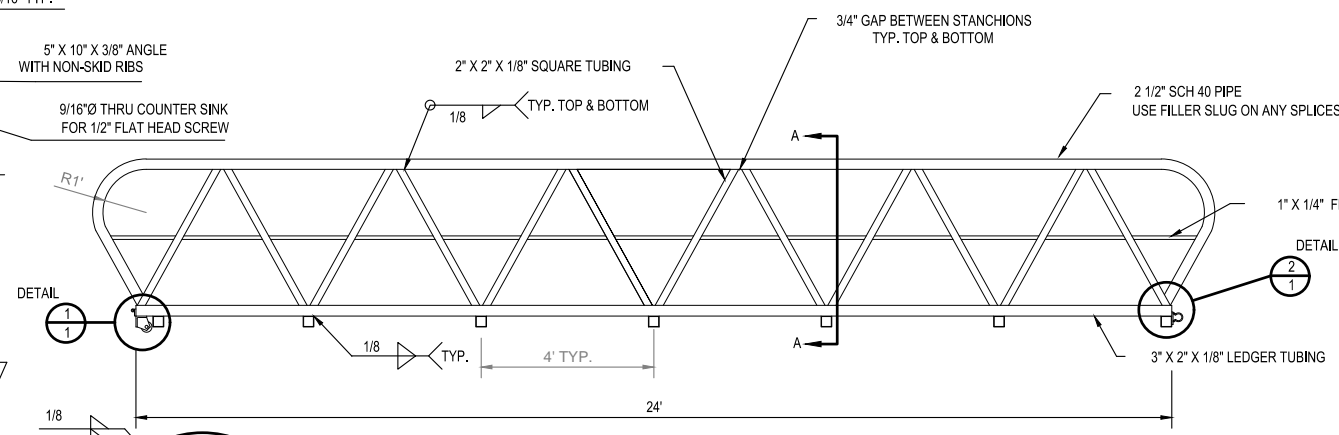
HINGE ANGLE N.T.S.



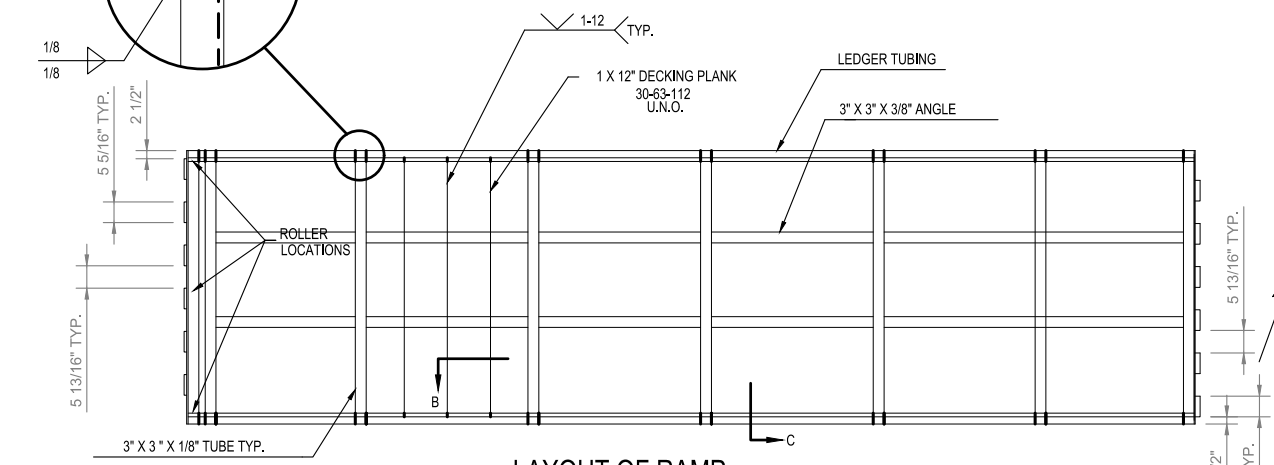
HINGE PIN N.T.S.



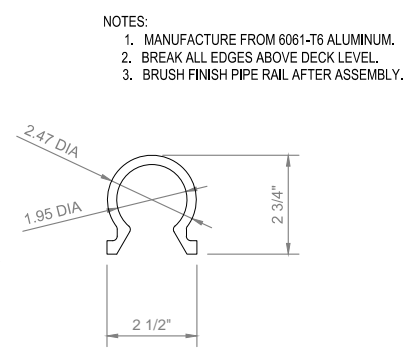
STANCHION FOR 4' TRUSS



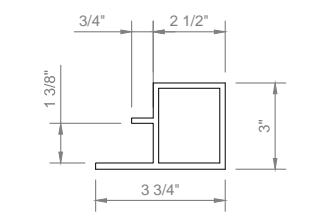
SIDE ELEVATION



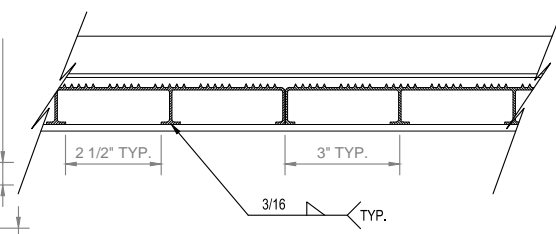
LAYOUT OF RAMP



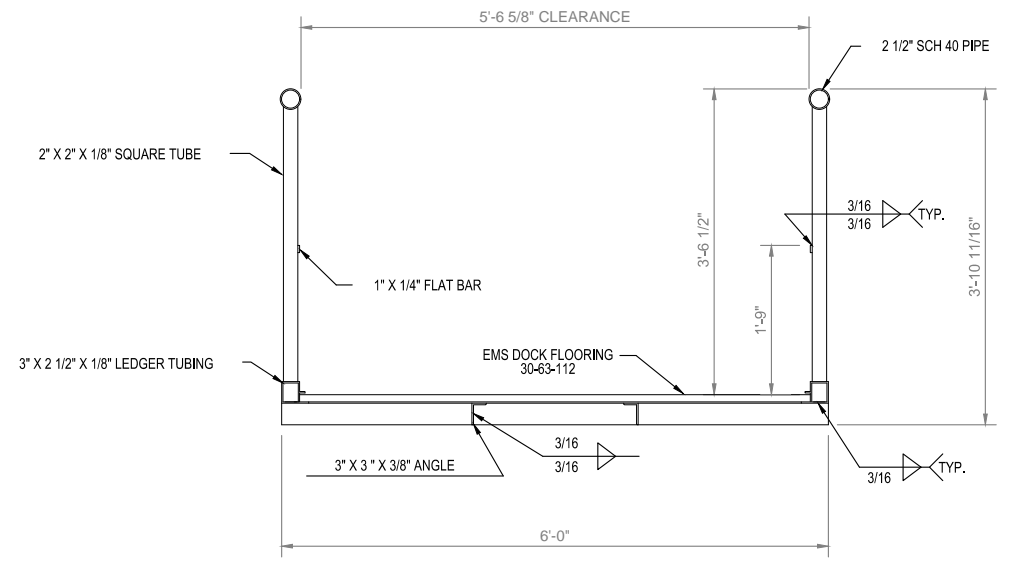
HINGE RECEIVER SECTION



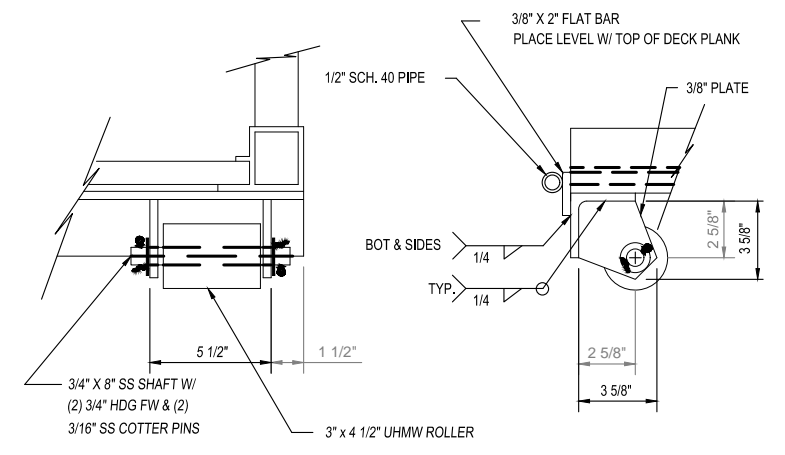
SECTION C N.T.S.



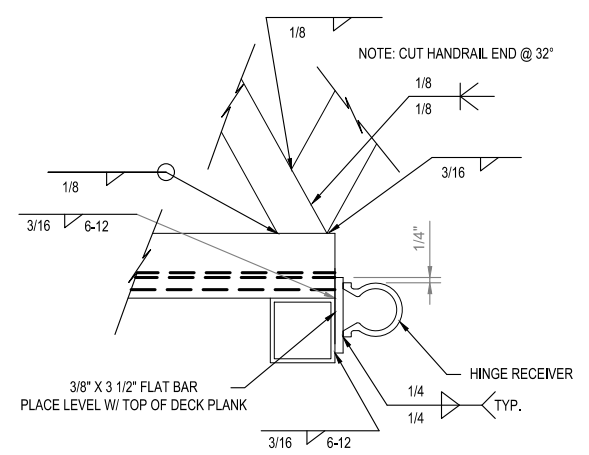
SECTION B N.T.S.



SECTION A-A N.T.S.



DETAIL 1 N.T.S.



DETAIL 2 N.T.S.

- NOTES:
1. MANUFACTURE FROM 6061-T6 ALUMINUM.
 2. BREAK ALL EDGES ABOVE DECK LEVEL.
 3. BRUSH FINISH PIPE RAIL AFTER ASSEMBLY.

ALL ALUMINUM GANGWAY AND CONCRETE FLOATING SYSTEM COMPONENTS BY BELLINGHAM MARINE. THESE COMPONENTS DEPICTED ARE FOR INFORMATION AND BIDDING PURPOSES ONLY. SHOP DRAWINGS TO BE SUBMITTED TO PROJECT ENGINEER PRIOR TO ORDERING COMPONENTS.

| | | | | | |
|--|-----|-----------------------|------------|--------------|----------|
| DRAWING: GANGWAY & FLOATING DOCK DETAILS | | DMC JOB NO. 16-006-32 | | SHEET NO. 07 | |
| DRAWN | GA | CAD | C3D | SCALE | AS SHOWN |
| CHECKED | CNT | DATE | 02-25-2018 | APPROVED | SKP |

PROJECT NAME: RIVERFRONT PARK DAY DOCKS
 CLIENT: CITY OF DAYTONA BEACH

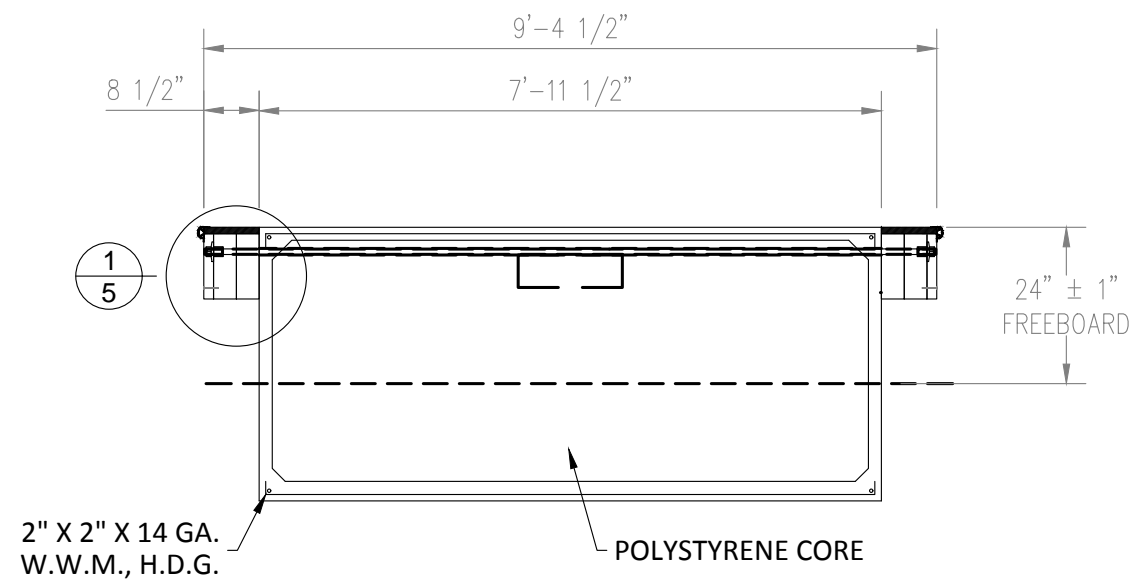
Stephen J. Kahn, P.E.
 FLORIDA LICENSE No. 67486

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 Port Orange, FL 32129
 Phone: (386) 304-6505
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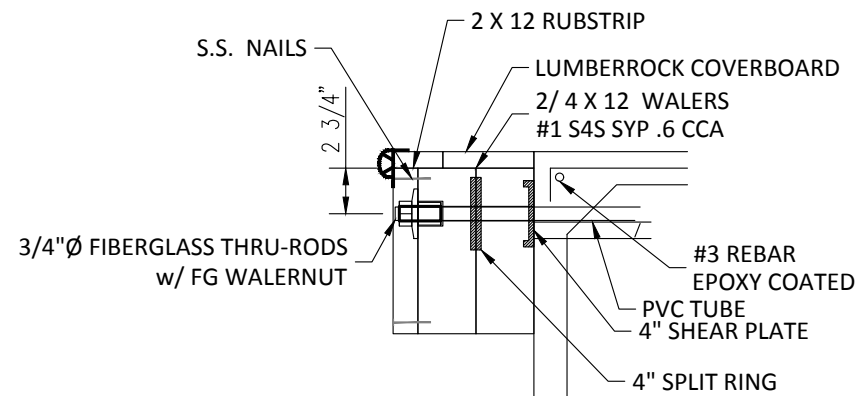
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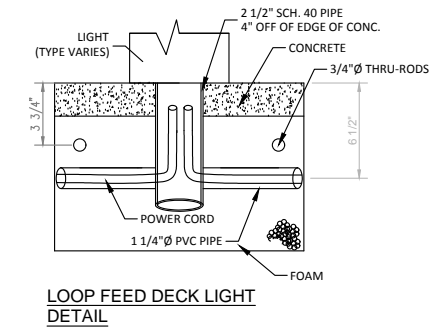
Drawing Name: \\Server\014 Server\DMC PROJECTS\006 - City of Daytona Beach\16-006-32 Riverfront Day Dockage\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: RAMP FLOATER (2) 2/23/2018



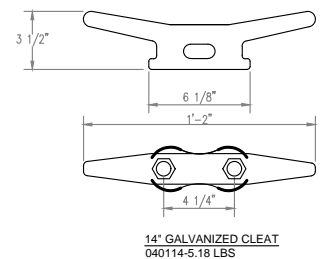
SECTION



DETAIL (1/5)



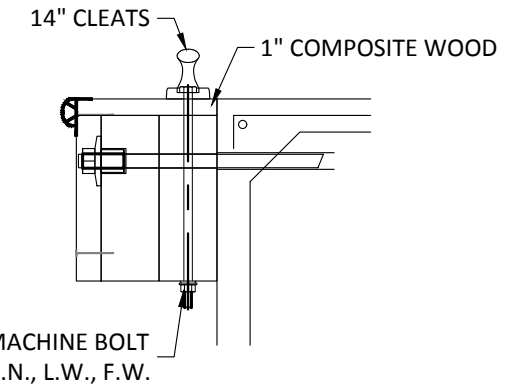
LOOP FEED DECK LIGHT DETAIL



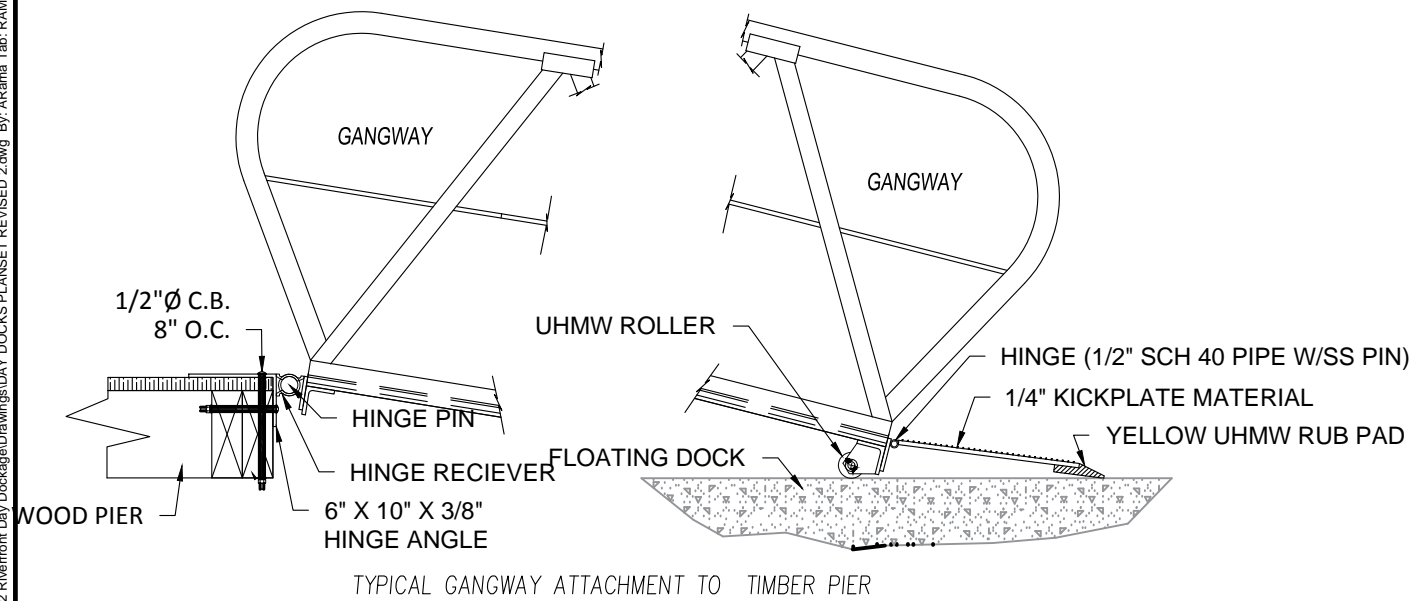
14" GALVANIZED CLEAT (040114-5.18 LBS)

CLEAT ATTACHMENT DETAIL

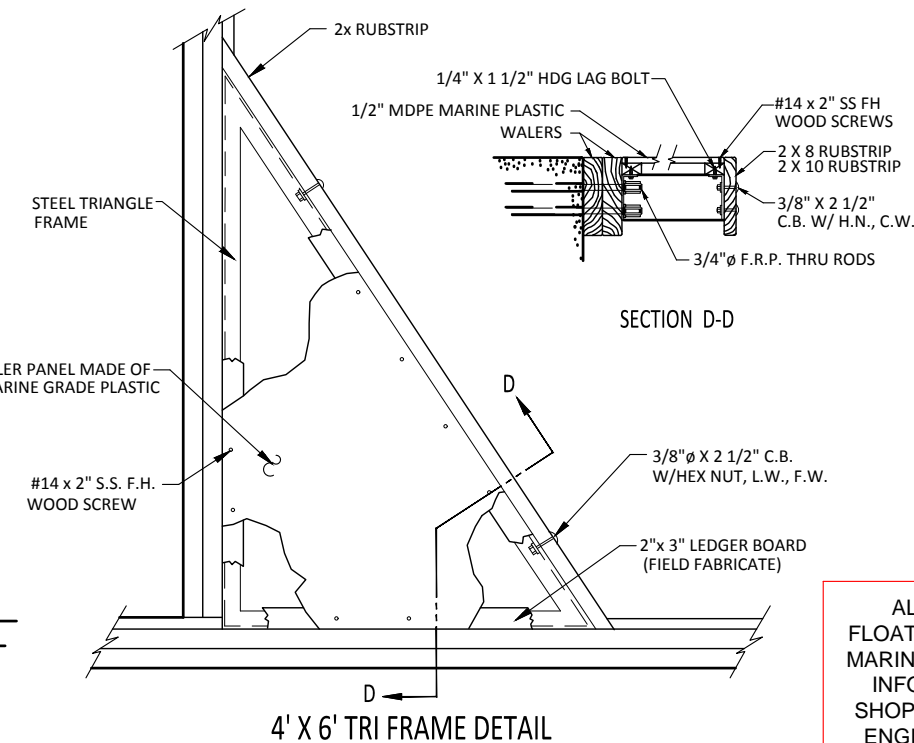
- NOTES:
1. CLEATS ARE INSTALLED ON INSIDE WALER
 2. CLEATS AT THE END SHALL BE INBOARD OF THE LAST THRU-ROD
 3. AVOID LOCATING CLEATS AT FLOAT JOINTS
 4. CLEATS SHALL BE 6" MIN FROM NEAREST WOOD SPLICE



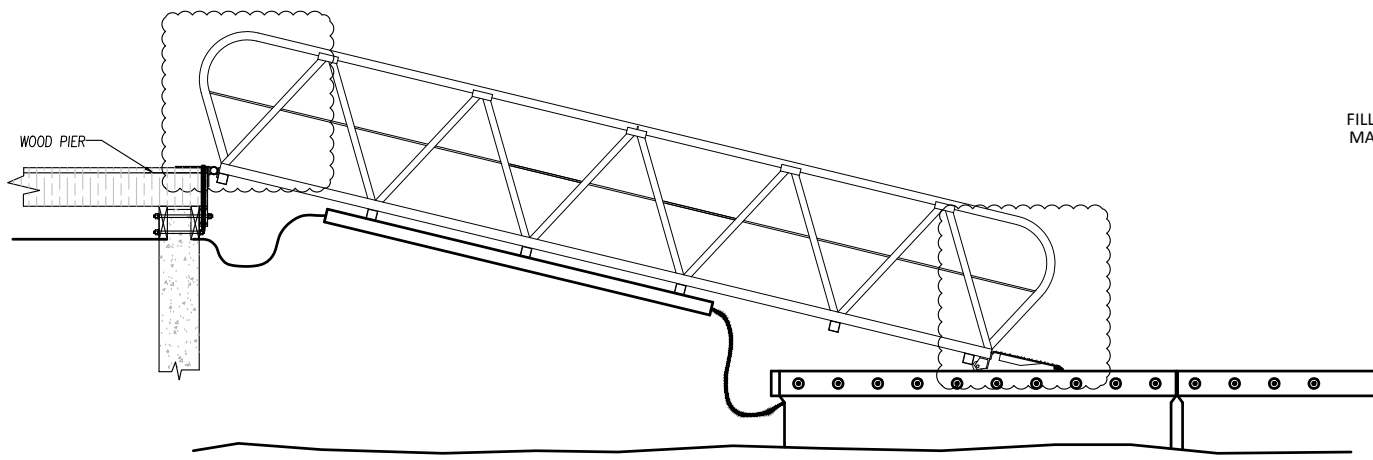
1/2" Ø MACHINE BOLT w/ H.N., L.W., F.W.



TYPICAL GANGWAY ATTACHMENT TO TIMBER PIER



4' X 6' TRI FRAME DETAIL



TYPICAL GANGWAY ELECTRICAL FLEX CONNECTION

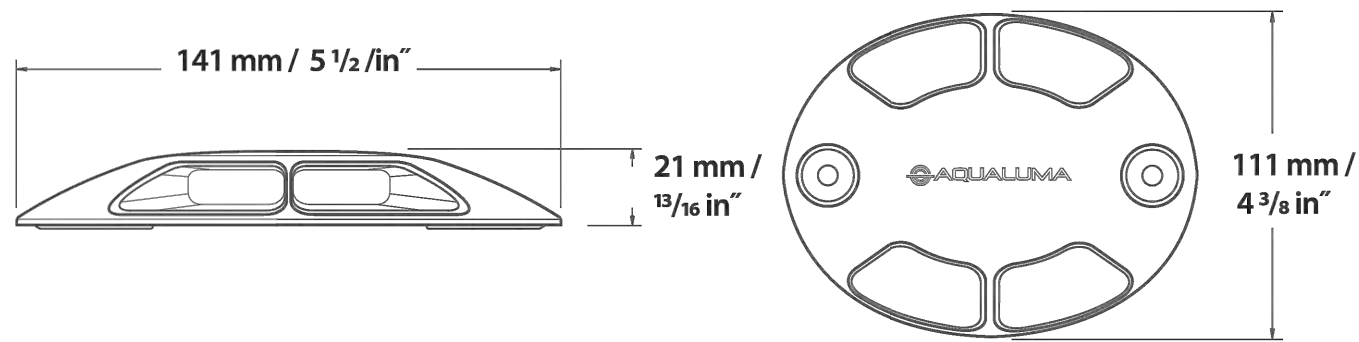
ALL ALUMINUM GANGWAY AND CONCRETE FLOATING SYSTEM COMPONENTS BY BELLINGHAM MARINE. THESE COMPONENTS DEPICTED ARE FOR INFORMATION AND BIDDING PURPOSES ONLY. SHOP DRAWINGS TO BE SUBMITTED TO PROJECT ENGINEER PRIOR TO ORDERING COMPONENTS.

| | | | | | |
|--|--|---|---------|--------------|----------------|
| DRAWING: GANGWAY & FLOATING DOCK DETAILS | | DMC JOB NO. 16-006-32 | | SHEET NO. 08 | |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | | DRAWN GA | CAD CSD | CHECKED CNT | SCALE AS SHOWN |
| CLIENT: CITY OF DAYTONA BEACH | | APPROVED SKP | DATE | 02-25-2018 | |
| Dredging & Marine Consultants | | 4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmc.com | | | |
| ENGINEERS • SCIENTISTS | | 301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400 | | | |



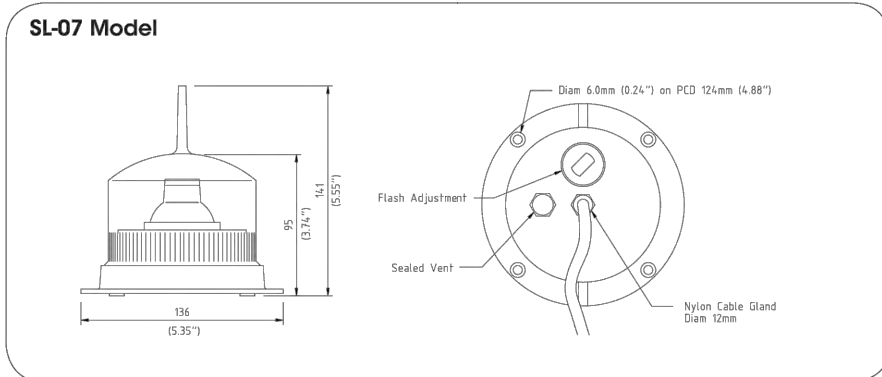
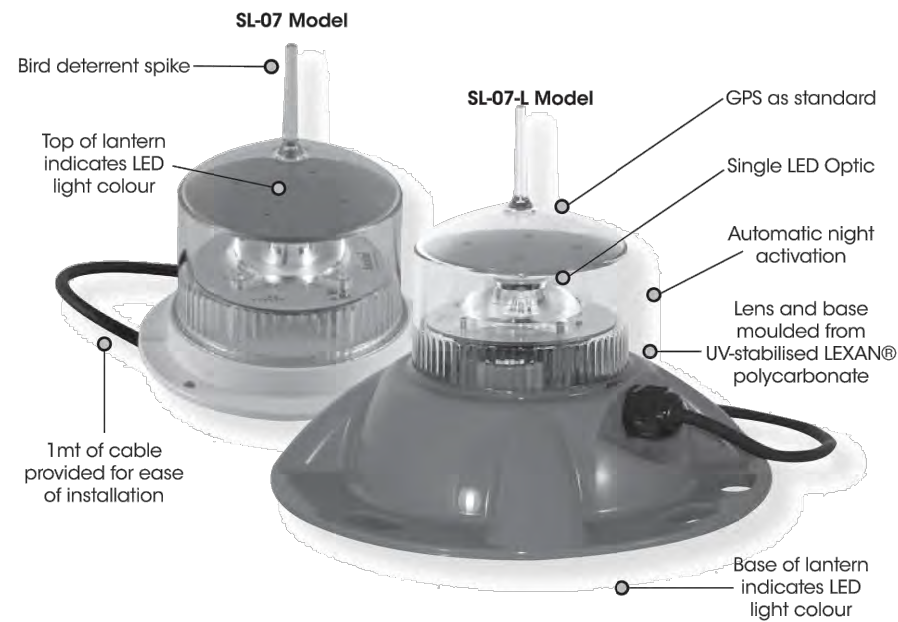
Drawing Name: \\Server\014 Server\DMC PROJECTS\066 - City of Daytona Beach\16-006-32 Riverfront Day Dockage\Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab LIGHTING DETAILS 2/23/2018

AQUALUMA PATHWAY LIGHT
 - 12V AC/DC
 - WHITE/BLUE
 - HIGH OUTPUT LEDS
 - 316 MARINE GRADE STAINLESS STEEL HOUSING
 - IP66 RATED

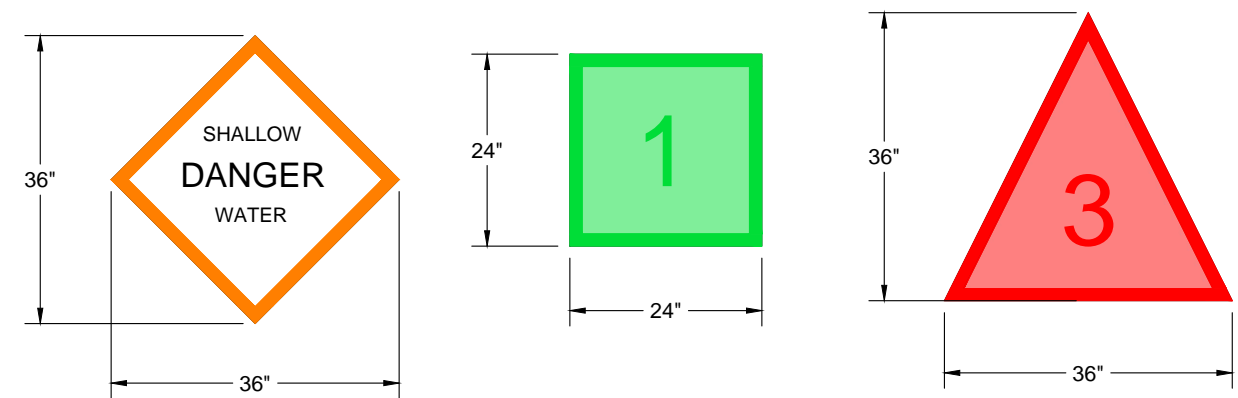


DECK MOUNTED DOCK LIGHTS
N.T.S.

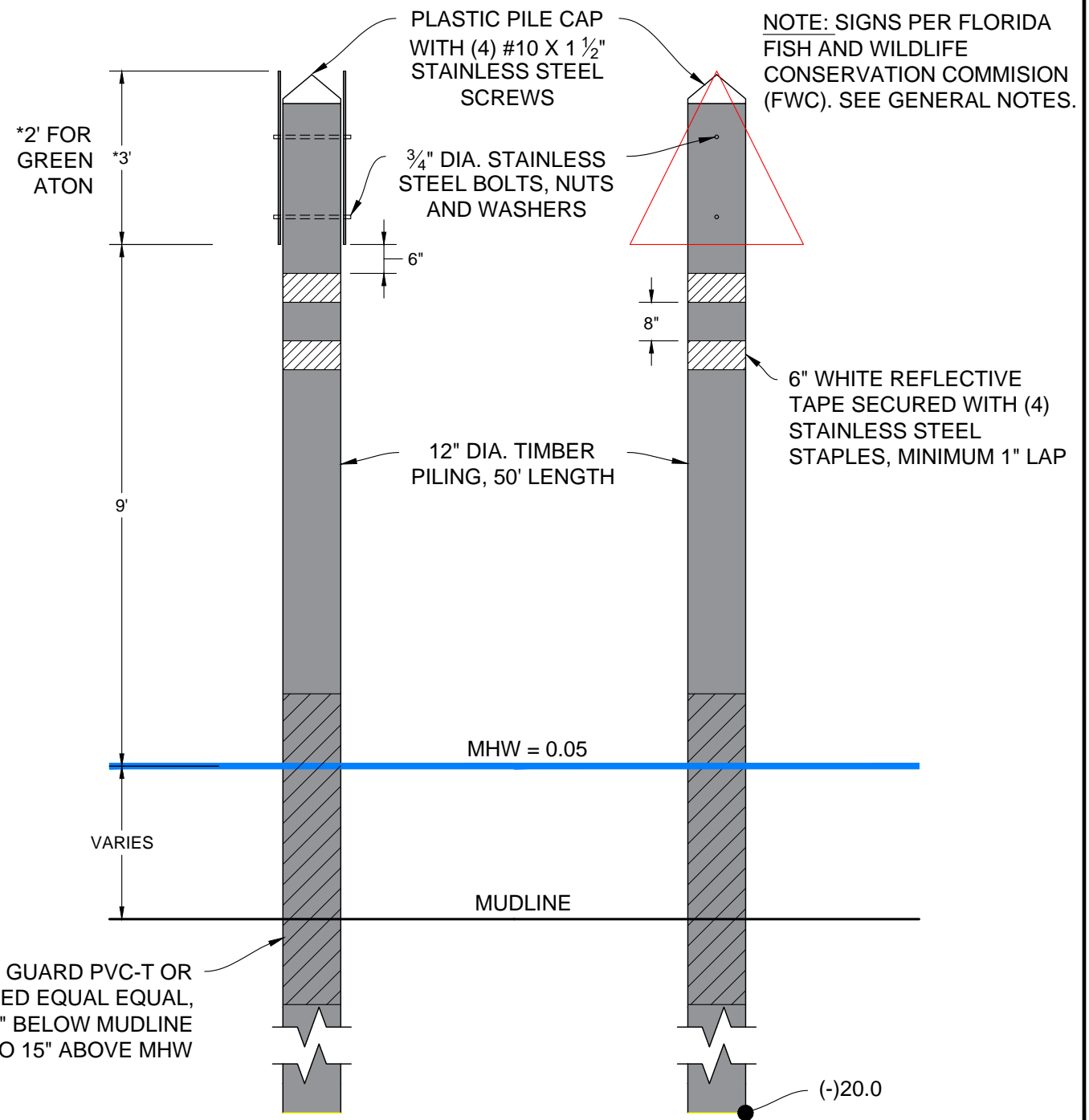
SEALITE MARINE LANTERN



DECK MOUNTED DOCK LIGHTS
N.T.S.



NOTE: SIGNS PER FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC). SEE GENERAL NOTES.



CHANNEL MARKER AND WARNING SIGN DETAIL
N.T.S.

| | | | | | |
|-------------------------------------|----|-----------------------|-----------------|--------------|-----|
| DRAWING: LIGHTING & SIGNAGE DETAILS | | DMC JOB NO. 16-006-32 | | SHEET NO. 09 | |
| DRAWN | GA | CAD | C3D | CHECKED | CNT |
| SCALE AS SHOWN | | | DATE 02-22-2018 | | |

PROJECT NAME: RIVERFRONT PARK DAY DOCKS
 CLIENT: CITY OF DAYTONA BEACH

Stephen J. Kahn, P.E.
 FLORIDA LICENSE No. 67486

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Drawing Name: \\Server\014 Server\DMC PROJECTS\06 - City of Daytona Beach\16-006-32 Riverfront Day Docking Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: GEN NOTES 2/23/2018

IMPORTANT NOTES TO BIDDERS:

- The Contractor shall keep a pile driving log as specified in the plans and may not cut off piles until the Engineer has given approval to do so. The Contractor must provide advanced notification of a request to cut off pilings so that the Engineer may make field observations, if necessary. The Engineer will not make a structure certification if the Contractor does not comply with this requirement. If a vibratory hammer or jetting equipment is used to install pilings, the time needed to hammer and/or jet each piling shall be recorded.
- The Contractor shall retain all material delivery tickets, material testing reports an cut-sheets/shop drawings for manufactured products for the project and provide copies to the engineer on a weekly basis. The Engineer will not make a structure certification if the Contractor does not comply with this requirement.
- The Engineer must be under contract with the Owner, Developer or Contractor for construction observations in order to provide certification of the constructed project. The Engineer must be given advanced notice of the critical stages of construction such as initial construction stakeout, first pile driving, forming and rebar placement prior to placing concrete, first casting of concrete, framing timber, etc. The Engineer will not make a structure certification if the contractor does not comply with this requirement.

GENERAL:

- All elevations in the project plans are referenced to feet N.A.V.D. 1988, except in-water elevations of river bottom which are referenced to Mean Low Water
- Any deviation from these plans, notes or specifications must be approved in writing by the Owner, Owner's Representative or Engineer, or else the deviation will be considered construction non-compliant with the plans and specifications.
- Any discrepancies amongst the plans, notes, specifications and other bid documents must be resolved in writing by the Owner, Owner's Representative or Engineer prior to continuing the work in question.
- These plans, notes and specifications, along with the other components of the project bidding documents, constitute the only instructions to bidders/contractors, unless written addenda are issued.
- All construction, manufacturing, fabrication and testing of materials shall be performed under the guidelines set forth in applicable local, state and federal codes, and/or under recommendations provided in technical publications of respected professional or industry organizations. Material testing programs, where applicable, shall be presented to the Engineer for review and approval prior to construction.
- All products constructed or manufactured/supplied for the project shall be accompanied by industry acceptable warranties or guarantees.
- For the purpose of these specifications. "Project Completion" is defined as completion of an agreed upon list of punchlist items compiled in a planned project walkthrough held at a time the Contractor considers the project to be "Substantially Complete". The Contractor shall notify the owner and engineer at least 48 hours in advance of substantial completion and schedule a mutually agreeable walkthrough.

AS-BUILT SURVEY AND RECORD DRAWINGS

- As-built survey and record drawings shall be submitted at the time of the punchlist review and shall be reviewed by the Engineer for completeness and correctness.
- The record drawings shall be a designated set of drawings maintained on site for the purpose of hand-making all changes and deviations from the original design, no matter how slight. Color markings are preferred.
- The record drawings shall also contain any and all field changed with respect to location, alignment, height, width, length, depth, materials, products, etc.

DESIGN SPECIFICATIONS:

- U.S.C.O.E. Coastal Engineering Manual, EM 1110-2-1100, Latest edition.
- Fishing Pier Design Guidance, Florida Department of Environmental Protection, March 2011.
- U.S.C.O.E. Engineering Manual, Design of Pile Foundations, EM 110-1-2906, 1991.
- Simplified Design of Structural Wood, Third edition, Harry Parker.
- Florida Building Code: Accessibility, 2010 Edition.
- Florida Safety Code, Latest edition.
- Wind calculations per ASCE 7-10, "Other Standards", Section 29.5, Page 308.
- Saint Johns River Water Management Permit Specifications
- Florida Fire Prevention Code, 5th Edition.

DESIGN LOAD - LL, DL & WIND/LATERAL:

- Live Load: 60 psf (Boardwalk)
- Dead Load: 29 psf Total (SYP)
Piles, Railings, Stringers, Cap Boards and Decks.
- Wind Load: Category 1, 130 mph (plus factors, coefficients, figures and tables).

SOIL BORINGS:

- Structural calculations based on the Geotechnical Report for Structures, dated March 23, 2016 by Universal Engineering Sciences, Inc. Six soil borings: D1 to D6.

MOBILIZATION AND DEMOBILIZATION:

- It is understood that this project will require work in and over water. Access to near water construction areas is required for material storing, hauling, erection and construction. All facilities, public or private, used for such purposes shall be repaired to their original condition following "Completion" of the project, including grade and topping (sod, tree/vegetation cover, established road, etc.)
- The Contractor shall present a Shipping, Stockpile and Site Administration Plan (SSSAP) to the Owner, Owner's Representative or Engineer for approval. The plan shall be specific to the project requirements for the particular materials to be delivered to the site, describing delivery points, stockpile areas, temporary debris/trash storage areas, temporary field office (incl. utilities maintained there), fencing, security and a statement of commitment and details for maintaining safety on the site.
- The Owner, Owner's Representative or Engineer shall have the right to exercise reasonable alterations or additions to the SSSAP.
- It is the contractor's responsibility to coordinate, and pay for, necessary utilities to occupy the site and perform the work.
- The Contractor shall not demobilize until project completion.

SITE MAINTENANCE:

- The Contractor shall maintain a clean and neat site, void of loose debris, trash, remnant parts or materials.
- Trash receptacles and removal service shall be maintained by the Contractor specifically for this project. Pre-existing trash/debris facilities shall not be used to maintain the project.
- Temporary debris piles shall be limited in number as much as practical and contained in designated areas until removal. Debris and trash shall not be scattered in areas outside the limited designated areas at anytime.
- Removal of trash/debris shall be scheduled as appropriate to not allow piles to reach five feet in height or greater than ten feet in diameter. Debris individually larger than these dimensions shall be removed from the site within five working days. Receptacles shall not overflow at any time.
- Where necessary, the Contractor shall employ a Maintenance of Traffic (MOT) plan for vehicles and pedestrians, including material deliveries, stockpile area(s), worker parking and construction equipment. The plan must be in writing, including sketches or drawings, and must be submitted to the Owner, Owner's Representative or Engineer for review and approval before commencement of any work.
- The Contractor shall follow all applicable local, state and federal codes regarding site maintenance.

SITE SAFETY:

The Contractor shall prepare and adhere to a Site-Specific Safety Plan.

The contents of the plan are:

- Identification of potential hazards and injuries pertaining to the specific site and project.
- Location nearest hospital.
- Assure availability of at least one working cell phone and one vehicle on site at all times.
- Emergency contacts within the subcontractor's organization and at the prime contractor's organization.
- All field personnel wear appropriate safety attire and utilize appropriate personal protection equipment for a given task/operations such as safety glasses/goggles, masks, shields, gloves, harnesses, hard hats, steel-toed boots, etc.
- Safety kit available onsite at all times with materials for potential hazards and injuries.
- The Site-Specific Safety Plan shall be distributed and reviewed with all site workers prior to said workers commencing work on the project site.
- The Contractor shall follow all applicable local, state, and federal codes regarding site safety.

DEMOLITION, CLEARING AND RESTORATION:

- Demolition or clearing may require permits. The contractor shall acquire all necessary building permits from the local municipality prior to commencing work.
- Clearing and removal of vegetation, rocks and debris will be required within the project structure footprint.
- Demolition or removal of objects, debris, or material specified or obstructing construction shall take place only to the extent necessary.
- Any permitted demolition or removal from submerged lands or adjacent uplands shall be fully contained within siltation devices such that permit turbidity requirements and state water quality standards are met.
- The site shall be restored by removing and finishing all evidence of construction including temporary haul roads, vehicle ruts, stockpile areas, shoreline slopes and vegetation, sod and areas subject to project work.

CONSTRUCTION SURVEYING:

- Stake-out survey of the project is the responsibility of the Contractor. Beginning and end points will be provided by the Owner, Owner's Representative or Engineer either by stakes in the field or in the project drawings.
- The staked project must be approved by the Engineer prior to commencing construction. The Engineer reserves the right to make alignment changes based on conditions portrayed by the initial stakeout.
- Methods and frequency of continuing stake-out during construction shall be submitted to the Engineer for approval prior to beginning construction.
- The Contractor must perform an independent construction record survey (as-built survey) as a check for compliance at the end of the project. The record survey must be signed and sealed by a State of Florida licensed Professional Surveyor. The record survey must be referenced to feet N.A.V.D. 1988.
- The Prime Contractor is advised that certification of the project elevations and alignment is required by the Engineer for final acceptance of work.

ENVIRONMENTAL AND PERMITS:

- The U.S. Army Corps of Engineers (USACE), Florida Department of Environmental Protection (FDEP), regional Water Management District (WMD) and the local city or county may exert jurisdiction over construction of the project. The contractor shall be responsible to understand and comply with all applicable permit conditions imposed by the jurisdictional agencies, if permits are necessary. If not, the Contractor must at least comply with general state water quality standards for siltation and guidelines for encounters with threatened and endangered species, including, but not limited to, the state manatee guidelines.
- All building and construction-related permits from the local (city or county) or state authorities are the responsibility of the Contractor.
- National Marine Fisheries Services has special conditions for sea turtles, smalltooth sawfish and manatees. See details.

TIMBER:

- Southern Yellow Pine (SYP) Lumber:
Wood Decking, Railing and Post - SYP No. 1 Grade
Stringers and Cap Boards - SYP No. 2 Grade
Southern Pine Treated Round Timber:
Pile grade in accordance with ASTM D25.
- All ramps established within the wooden dock sections should be established to ADA requirements. Slopes must not exceed 1:12 (V:H) and handrails must be established on both sides of the ramp according to the typical section found in plans. Transition of the wooden access ramps should be flush with the deck and a minimum clearance of 36" of space should be between handrails.
- All stringers, pile cap boards or other timber components not within the walkways shall be SYP No. 2 Grade.
- Treatment of timber shall be as follows: Handrails and decking -0.25 PCF CCA (Copper Chromium Arsenate), stringers, pile cap boards and other components except pilings -0.6 CCA, pilings/posts -2.5 CCA. If required by the owner or local agency, treatment shall be equivalent levels of ACQ (Alkaline Copper Quaternary). Refer to timber supplier for equivalent ACQ levels of protection.
- All timber, lumber and pilings shall be marine grade and identified by the grade and treatment mark of a recognized organization or independent agency certified by the American Lumber Standards Committee.
- Decking shall be placed with 1/4 inch gaps between boards.
- One layer of roofing felt shall be placed between deck (each one) and stringers.
- All boards for decking shall be installed crown down.

PILINGS:

- The minimum tip elevations are based on the penetration required to establish lateral stability of the foundation.
- The minimum tip elevations are based on preventing the piles from tipping just above any soft silt or clay layers indicated in the boring logs.
- No jetting of piles. Contractor shall coordinate with the engineer of record to obtain written approval prior to jetting.
- Due to soil variabilities in borings, blow counts for each piling driven shall be recorded and verified by the engineer of record. If a vibratory hammer or jetting equipment is used to install pilings, the time needed to hammer and/or jet each piling shall be recorded.
- The pilings shall be of the size and length shown in the plans.

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| DRAWING: GENERAL NOTES | DMIC JOB NO. 16-006-32 | SHEET NO. 10 |
| | DRAWN: GA CAD CSB | CHECKED: CNT SCALE AS SHOWN |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | CITY OF DAYTONA BEACH | APPROVED SKP DATE 02-25-2018 |
| Dredging & Marine Consultants DMC ENGINEERS • SCIENTISTS | | 4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmiccs.com |
| 301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400 | | Stephen J. Kuhn, P.E. FLORIDA LICENSE No. 67486 |



Drawing Name: \\Server\01\Server\DMC\PROJECTS\006 - City of Daytona Beach\16-006-32 Riverfront Day Dockage Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: GEN NOTES (2) 2/25/2018

- All pilings shall be setted full length with top elevation as shown in plans. Cut-offs are not allowed except for minimal required (max. 6") to remove tops damaged by the pile-driver.
- The pile-setting equipment used must be of proper size, set-up and maintenance as to not cause excessive damage to pilings. Damaged piles must be removed, discarded and replaced at the contractor's expense. The contractor shall provide information regarded the model and operating specifications if the pile-driving equipment to be used on the job for approval by the engineer prior to commencing pile-driving.
- If solid rock, debris or refusal is encountered prior to achieving the minimum penetration, then the strata shall be tool-punched at least two feet into the strata. A minimum of 2/3 of the total embedment requirement must be achieved. No additional payment will be made for pile driving where this work is required.
- For whatever reason, if piling cut-off is requested, the piling must remain "in place-as is" and the engineer must be given 72 hours advanced notice to make observations and recommendations.
- Contractor shall keep a pile driving log on the site at all times which shall include the following information: date, time, weather conditions, equipment used, pile location designation, blows per foot over entire driving sequence, total length of pile (after driving and cut-off, if cut-off allowed), amount of jetting or punching (if requested and approved), unusual pile behavior, damage and re-driving. This log shall be available to the Engineer or Owner's Representative at any time during the job. Updated copies of log pages shall be provided to the Engineer at least weekly throughout the project. If a vibratory hammer or jetting equipment is used to install pilings, the time needed to hammer and/or jet each piling shall be recorded.
- Proper care shall be taken for aligning piles. Rail post are to be centered on piles.

BOLTS & SCREWS:

- All fasteners, including nails, screws, threaded rods, bolts, nuts, washers, plates, lags, etc. shall be grade 316 stainless steel (SS). Washers used with single-bolted or double bolted connections (for example: stringer to piling connection, cap board connections or cross-bracing) shall be minimum 3-inch diameter "dock washers". Standard Washers for Splice Block and Railings.
- Bolts shall extend fully through the nuts but not extend beyond the nut more than 1/2 inch.
- Stainless Steel (SS) screws as shown in plans.

HURRICANE STRAP:

- Simpson Strong Tie Twist Straps (hurricane straps), Stainless Steel.
- Fourteen (14) total screws, half stringers and half cap boards. Screws shall be Simpson Strong Tie SD#9 x 1 1/2" S.S. screws.

CONCRETE - RETAINING WALL:

- All mix designs by the concrete supplier or contractor must be submitted to the Engineer for approval prior to submitting order.
- Concrete cover from all exterior faces shall be 4" clear to the outermost face of any reinforcement, including stirrups, unless otherwise noted in the plans.
- No greater than 45 minutes may transpire between individual castings. Trucks may not sit on site for greater than 45 minutes. Trucks sitting full on site for greater than 45 minutes shall be rejected at the contractor's expense. Delays in casting a given form greater than 45 minutes shall be rejected unless an acceptable construction joint can be made.
- A working concrete vibrator must be on site prior to delivery of first concrete. The Owner, Owner's Representative or Engineer shall not allow concrete to be cast otherwise.
- Vibrate concrete fully, particularly at corners and edges, in a continuous vertical plunging motion, never allowing the vibrator to become motionless in the concrete. Concrete with substantial voids or honeycombing will be rejected.
- Continually wet water cure horizontal surfaces for at least three days and all exposed concrete surfaces after concrete is set. For the purpose of this specification "set" is when the concrete surface is hard enough so that when "knocked" with the knuckles the concrete is not dented. The Contractor is responsible for arranging a water source for curing purposes prior to commencing casting of concrete.
- Use non-metallic chairs and spacers in reinforcement placing, or for any other necessary in-form attachments or alignments.
- Concrete materials testing per acceptable ASTM methods and intervals. A material testing program must be prepared by the Contractor and/or Manufacture for review and approval by the Engineer. At least one set of four cylinders shall be cast for any one day's work, or work between construction joints, or more if prescribed by ASTM.

FLOATING DOCKS:

- The gangways may, or may not be, provided by the floating dock manufacturer, at the manufacturer's and/or contractor's preference. Gangway ramps shall be of length and width shown on the plans. Gangway ramps shall be constructed of Aluminum Alloy 6061-T6 and designed to carry its own dead load plus a live load of 50 pounds per square foot (psf). Gangway handrails shall be 42 inches in height and designed for 50 pounds per linear foot (plf) applied horizontally along the top rail and a point load of 200 pounds applied on the top rail mid-way between posts. The decking shall be a non-skid surface to prevent slippage when wet at maximum angle. The deck material shall be aluminum planking unless otherwise directed by the owner/developer. Gangway hardware shall be aluminum or stainless steel. The fixed hinge shall be at the top of the ramp and shall freely rotate over the entire range of design water level fluctuations.
- Piling design (number, size, length and type) has been performed by the project engineer. Where pilings are shown in plans, the floating dock manufacturer shall provide HDG four-roller pile guides with UHMW rollers and stainless steel roller pins. Other pile guide hardware and metal sections required shall be hot-dip galvanized. The pile guides shall have 2 1/2" inches of clearance from the piling to each roller.
- The Floating Dock System shall be compromised of the following basic components:
 - Individual float units with main pier, when attached, forming a continuous walkway surface of the material and finish desired by the City.
 - Aluminum gangway onto the float of the size and at locations shown in the plans.
 - Pilings and pile guides, which shall be the primary support of the floating dock system.
 - Industry standard "D" shaped bumpers to surround the entire floating dock.
 - Transition plates as detailed in plans.
- Contractor is responsible for ensuring that the floating dock system properly functions and that no debris hinders its functionality. If debris is located within the footprint of the floating system then the contractor must remove the hindrances in order to allow proper function.
- The method and material type of floatation, deck system, and connection between floatation units shall be clearly described in detailed shop drawings for review by the owner and owner's representatives. For the purposes of this project, the floating dock shall be of concrete composition. System hardware shall be HDG or stainless steel, as appropriate.

The environmental forces and criteria for the floating docks design shall be as follows:

- Wind Speed - 68 mph (facility full of boats), 130 mph (no boats in place)
 - Wave Height - 2.5 feet
 - Storm Surge - 100 year flood elevation
 - Vessel Impact - 30-foot power boat at 1.5 knots
 - Live Load (LL) - 50 pounds per square foot (psf)
 - Dock freeboard (no load/dead load) - 19" +/- 1"
 - Dock Freeboard (DL+LL) - 9" minimum
- Pre-stressed FDOT grade 14" square concrete piles to be 55 linear feet, top elevation of +13.0 N.A.V.D. 1988.
 - The contractor shall provide and properly install industrial aluminum cleats on the floating concrete system as located on the plans.
 - White square vinyl caps shall be properly placed and secured on all newly installed concrete piles. This cost should be incorporated into the cost of the floating dock.

SIGNS:

Signs by Florida Fish and Wildlife Conservation Commission (FWC), titled, "Guidelines for Posting Uniform Waterway Markers in Florida's Waterways", March 2008.

INSPECTION COORDINATION:

- The Engineer will be conducting routine observations and observations at critical stages of construction. A minimum of 72 hours notice shall be given to the Engineer prior to commencing the critical stages of construction. In general, critical stages are the initial work on the major structure components. Examples of critical stages of construction are: completion of construction stakeout, initial sheet piling installation, framing, concrete forming and rebar placement prior to casting concrete, first section of concrete casting and finishing, first section of backfilling and compaction, etc.
- The local city or county may perform their own construction observations in addition to the Engineer. No observers other than the Engineer or his/her designated representative shall have the authority to determine compliance with plans and specifications.
- Other observers may relay information to the Engineer, but it will be the Contractor's ultimate responsibility to maintain contact and resolve disputes, questions, field changes, payment requests, etc. directly with the Owner, Owner's Representative or Engineer.

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| DRAWING: GENERAL NOTES | | | |
| DMIC JOB NO. | 16-006-32 | CAD | CSD |
| DRAWN | GA | CAD | CSD |
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| APPROVED | SKP | DATE | 02-25-2018 |

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|---------------|---------------------------|
| PROJECT NAME: | RIVERFRONT PARK DAY DOCKS |
| CLIENT: | CITY OF DAYTONA BEACH |

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Drawing Name: \\Server\014 Server\DMC PROJECTS\066 - City of Daytona Beach\16-006-32 Riverfront Day Dockage Drawings\DAY DOCKS PLANSET REVISED 2.dwg By: ARama Tab: ENV NOTES 2/23/2018

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK 2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

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| DRAWING: SPECIAL ENVIRONMENTAL CONDITIONS | DMIC JOB NO. | 16-006-32 | SHEET NO. | 12 |
| | DRAWN | GA | CAD | C3D |
| | CHECKED | CNT | SCALE | AS SHOWN |
| | APPROVED | SKP | DATE | 02-22-2018 |

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| PROJECT NAME: | RIVERFRONT PARK DAY DOCKS |
| CLIENT: | CITY OF DAYTONA BEACH |

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DIVISION 26 - ELECTRICAL SPECIFICATIONS

GENERAL

1. ALL WORK PERFORMED AND ALL MATERIALS FURNISHED SHALL CONFORM TO THE 2010 FLORIDA BUILDING CODE AND ANY ADOPTED AMENDMENTS, THE LATEST ADOPTED VERSION OF THE NEC, ALL APPLICABLE FEDERAL AND LOCAL CODES, AND UTILITY COMPANY REQUIREMENTS. ARRANGE ALL INSPECTIONS AND OBTAIN ALL CERTIFICATIONS REQUIRED BY THE APPLICABLE CODE ENFORCEMENT AGENCIES.
2. THE DRAWINGS ARE DIAGRAMMATIC AND THE OMISSION OF AN ITEM NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM DOES NOT RELIEVE THE EC FROM PROVIDING THAT ITEM.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL-LISTED AND LABELED. EC SHALL PROVIDE ALL LABOR NECESSARY FOR A COMPLETE AND PROPERLY OPERATING SYSTEM. ALL ELECTRICAL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER.
4. COORDINATE ALL ELECTRICAL WORK WITH THAT OF OTHER TRADES AND AVOID INTERFERENCE WITH STRUCTURES AND WITH WORK OF OTHER TRADES.
5. BEFORE SUBMITTING BID, CONTRACTOR SHALL VISIT AND BE RESPONSIBLE FOR HAVING ASCERTAINED LOCAL CONDITIONS SUCH AS LOCATION, ACCESSIBILITY AND GENERAL CHARACTER OF THE SITE, EXTENT OF REMOVAL AND INSTALLATION WORK. THE CONTRACTOR SHALL FULLY EXAMINE ALL DRAWINGS RELATING TO THE WORK AND BECOME COMPLETELY INFORMED OF THE EXTENT AND CHARACTER OF THE WORK REQUIRED AND OF THE PREVAILING EXISTING CONDITIONS. NO ALLOWANCES SHALL BE MADE FOR THE CONTRACTOR'S FAILURE TO AVAIL HIMSELF OF THIS INFORMATION.
6. BEFORE ORDERING ANY MATERIALS OR EQUIPMENT, THE EC SHALL SUBMIT ENGINEERING DATA FOR ALL MATERIALS AND EQUIPMENT HE PROPOSES TO FURNISH AND INSTALL. THE EC SHALL BE RESPONSIBLE FOR CHECKING EQUIPMENT DIMENSIONS OF THE PROPOSED SUBSTITUTE EQUIPMENT AND SHALL BE RESPONSIBLE FOR IT FITTING IN THE SPACE AVAILABLE. THE COST OF ANY REDESIGN CAUSED BY A SUBSTITUTION SHALL BE BORNE BY THE EC.
7. THE EC SHALL DO ALL CUTTING, DRILLING AND PATCHING REQUIRED BY HIS WORK. STRUCTURAL MEMBERS SHALL NOT BE CUT, UNLESS APPROVED BY THE ENGINEER.
8. THE EC SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR REPAIRING ANY DAMAGES HE CAUSES.
9. ANY WARRANTY CLAUSE FOR CONTRACTING PURPOSE SHALL BE DISCUSSED DIRECTLY BETWEEN THE AWAREDED CONTRACTOR AND THE OWNER, AS DEFINED IN CONTRACT TERMS. ALL MANUFACTURER'S WARRANTIES SHALL APPLY.
10. EC SHALL MAINTAIN TWO SETS OF PROGRESS DRAWINGS INDICATING ALL CHANGES IN EQUIPMENT OR LOCATION FROM THE DESIGN DOCUMENTS. EC SHALL PROVIDE ONE SET OF PROGRESS DRAWINGS FOR ENGINEER'S REVIEW AT SUBSTANTIAL COMPLETION.
11. PROVIDE TWO OPERATION AND MAINTENANCE MANUALS TO OWNER PRIOR TO PROJECT CLOSE OUT. MANUALS SHALL INCLUDE SUBMITTAL DATA STATING EQUIPMENT RATINGS AND SELECTED OPTIONS FOR ALL EQUIPMENT REQUIRING MAINTENANCE. ROUTINE MAINTENANCE PROCEDURES SHALL BE CLEARLY IDENTIFIED. MANUALS SHALL INCLUDE NAME AND ADDRESS OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

GROUNDING

1. ALL FEEDER AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT-GROUND WIRE. NO METAL CONDUIT OF ANY KIND OR LENGTH SHALL BE USED AS THE EQUIPMENT-GROUNDING CONDUCTOR.
2. EQUIPMENT-GROUNDING CONDUCTORS AND STRAPS SHALL BE SIZED IN ACCORDANCE WITH THE NEC, UNLESS OTHERWISE NOTED. ALL EQUIPMENT-GROUNDING CONDUCTORS SHALL BE PROVIDED WITH GREEN INSULATION EQUIVALENT TO THE INSULATION ON THE ASSOCIATED PHASE CONDUCTORS.
3. GROUNDING CONDUCTORS SHALL BE CONTINUOUS. NO SPLICING OF CONDUCTORS UNLESS ALLOWED BY THE NEC.

IDENTIFICATIONS

1. COMPLY WITH GOVERNING REGULATIONS AND REQUESTS OF GOVERNING AUTHORITIES FOR IDENTIFICATION OF ELECTRICAL WORK.

TESTING

1. THE EC SHALL VERIFY THAT EACH KEY SYSTEM INTERFACES CORRECTLY WITH ALL RELATED SYSTEMS. THE EC SHALL FURNISH ALL TEST DATA TO THE ENGINEER VERIFYING THAT ALL SYSTEMS HAVE BEEN INSTALLED CORRECTLY AND ARE WORKING TOGETHER TO PROVIDE A COMPLETE, OPERATIONAL ELECTRICAL SYSTEM AS DESIGNED.

WIRE AND CABLE

1. ALL WIRE SHALL BE COPPER WITH INSULATION RATED AT 600-VOLTS, 75-DEGREES CELSIUS MINIMUM. WIRE SHALL BE SOLID TYPE THHN OR THWN UP TO SIZE 10 AWG .
2. MINIMUM WIRE SIZES SHALL BE #10 FOR POWER AND CONTROL WIRING.
3. MOLDED CONNECTORS (WIRE NUTS) MAY BE USED FOR SPLICING SIZE 10 AWG OR SMALLER WIRES ON LIGHTING CIRCUITS . ALL OTHER WIRING SHALL BE SPLICED WITH BARREL SPLICES, LUGS AND/OR TERMINAL BLOCKS OR APPROVED MOLDED CONNECTORS.
4. TERMINAL LUGS SHALL BE MECHANICAL CLAMP OR COMPRESSION TYPE, UNLESS PART OF A CIRCUIT BREAKER OR SWITCH ASSEMBLY. SET-SCREW TYPE LUGS, IN WHICH THE SET SCREW BEARS DIRECTLY ON THE CONDUCTOR, SHALL NOT BE USED.
5. FEEDERS SHALL NOT BE SPLICED WITHOUT ENGINEER'S WRITTEN APPROVAL.
7. BRANCH CIRCUIT CONDUCTORS SHALL BE INCREASED, AS REQUIRED, TO PROVIDE A MAXIMUM THREE PERCENT VOLTAGE DROP.
8. INSTALL WIRE CABLES AND CONNECTORS IN COMPLIANCE WITH NEC ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND NECA'S "STANDARD OF INSTALLATION."
9. COLOR CODE SERVICE, FEEDER AND BRANCH CIRCUIT CONDUCTORS WITH FACTORY-APPLIED COLOR AS FOLLOWS:

| | |
|------------------|-----------------|
| <u>CONDUCTOR</u> | <u>120/208V</u> |
| PHASE A | BLACK |
| PHASE B | RED |
| PHASE C | BLUE |
| NEUTRAL | WHITE |
| GROUND | GREEN |

RACEWAY

1. USE THE FOLLOWING WIRING METHODS:

| | |
|------------------|-------------|
| EXPOSED | OUTDOORS |
| DAMP LOCATIONS | RNC |
| UNDERGROUND | RNC |
| BOXES/ENCLOSURES | NEMA 3R PVC |
2. MINIMUM CONDUIT SIZE SHALL BE 3/4".
3. ALL RACEWAY SHALL COMPLY WITH THE NEC AND ALL STATE AND LOCAL REGULATIONS.
4. GROUP TOGETHER EXPOSED CONDUIT WHERE POSSIBLE. INSTALL ALL CONDUITS EITHER PARALLEL OR PERPENDICULAR TO THE BUILDING SURFACES. ALL CONDUITS SHALL BE RIGIDLY SUPPORTED TO THE BUILDING STRUCTURE. THE MAXIMUM SPACING OF SUPPORTS SHALL BE AS FOLLOWS:

| |
|-----------------------------|
| A. VERTICAL RUNS - 5 FEET |
| B. HORIZONTAL RUNS - 4 FEET |
5. ALL CONDUIT BENDS SHALL BE MADE WITH AN APPROVED CONDUIT BENDER AND NO BEND SHALL HAVE A CENTERLINE RADIUS LESS THAN SIX TIMES THE DIAMETER OF THE CONDUIT.
2. USE RACEWAY FITTINGS THAT ARE OF TYPES COMPATIBLE WITH THE ASSOCIATED RACEWAY AND SUITABLE FOR THE USE AND LOCATION.
3. UTILIZE FLEXIBLE CONDUIT, CARFLEX OR EQUAL, AT FLOATING DOCK SECTIONS/EXPANSION JOINTS.








GENERAL ELECTRICAL NOTES

1. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH NEC 2011 AND ALL OTHER CODES AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
2. THE USE OF ANY PROCESS INVOLVING ASBESTOS OR PCB, AND THE INSTALLATION OF ANY PRODUCT, INSULATION, COMPOUND OF MATERIAL CONTAINING OR INCORPORATING ASBESTOS OR PCB, IS PROHIBITED. THE REQUIREMENTS OF THIS SPECIFICATION FOR A COMPLETE AND PROPERLY OPERATING ELECTRICAL SYSTEM SHALL BE MET WITHOUT THE USE OF ASBESTOS OR PCB.
3. THE CONTRACTOR SHALL PROVIDE ELECTRICAL DISTRIBUTION AND UTILIZATION EQUIPMENT WHICH HAVE AIC/WITHSTAND RATINGS GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT AT EACH POINT IN THE ELECTRICAL SYSTEM.
4. VISIT THE SITE AND CAREFULLY EXAMINE THOSE PORTIONS OF THE SITE AFFECTED BY THIS WORK BEFORE SUBMITTING PROPOSALS, SO AS TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
5. ALL DEVICES INSTALLED OUTSIDE OF BUILDING/EXPOSED TO WEATHER SHALL BE WEATHERPROOF TYPE OR EQUIPPED WITH A WEATHERPROOF DOME.
6. ALL UNDERGROUND CONDUIT TO BE BURIED A MINIMUM OF 18" BELOW FINISHED GRADE UNDERNEATH NON-TRAFFIC RATED AREAS, AND 24" BELOW FINISHED GRADE UNDERNEATH TRAFFIC RATED AREAS (TYP.). COORDINATE FINAL CONDUIT ROUTING WITH OTHER TRADES AND ALL OTHER UNDERGROUND UTILITIES LOCATION AND INSTALLATION.
7. ALL ELECTRICAL EQUIPMENT AND DEVICES TO BE CORROSION PROOF, MARINE GRADED.

ELECTRICAL ABBREVIATIONS

| | |
|--------|----------------------------------|
| A | AMPERE |
| C | CONDUIT |
| GFI | GROUND FAULT CIRCUIT INTERRUPTER |
| GND. | GROUND |
| M.C.B. | MAIN CIRCUIT BREAKER |
| MIN. | MINIMUM |
| SPD | SURGE PROTECTION DEVICE |
| TYP | TYPICAL |
| V | VOLT |
| WP | WEATHERPROOF OR NEMA 3R |

ELECTRICAL SYMBOL LEGEND

| | |
|---|--|
|  | JUNCTION BOX |
|  | 120V PHOTOCCELL |
|  | DOCK MOUNTED LUMINAIRE, SEE PLANS |
|  | PANELBOARD, SURFACE MOUNTED |
|  | HOMERUN TO PANEL (ONE ARROW PER CIRCUIT) |
|  | CONNECTION TO EQUIPMENT |
|  | ELECTRICAL CONDUIT |

DRAWING: SPECS, NOTES

DMC JOB NO. 16-006-32
SHEET NO. E1
DRAWN: CAD
CHECKED: EWB
APPROVED: AEZ
SCALE AS SHOWN
DATE 08-15-2016

PROJECT NAME: RIVERFRONT PARK DAY DOCKS
CLIENT: CITY OF DAYTONA BEACH


ALEXANDER E ZIONAROV, P.E.
FLORIDA LICENSE NO. 60953

Dredging & Marine Consultants 4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmcsc.com



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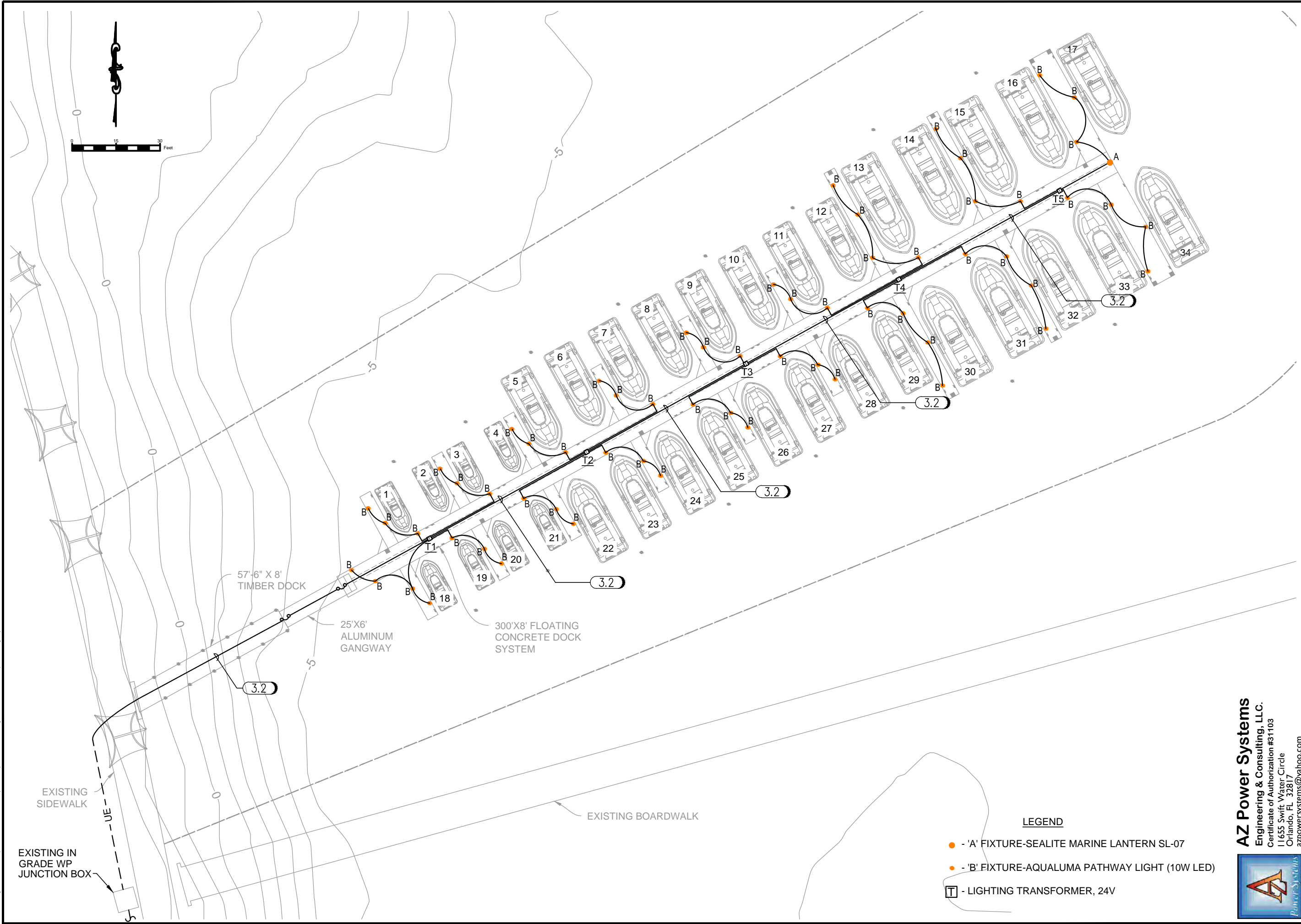
301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400



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Drawing Name: C:\Projects\DMC\4776.00 Daytona Day Dock\DMC\Drawgs\Electrical\Latest by AZ1.dwg By: Alex Tab: E2-Dock Plan 1/03/2017



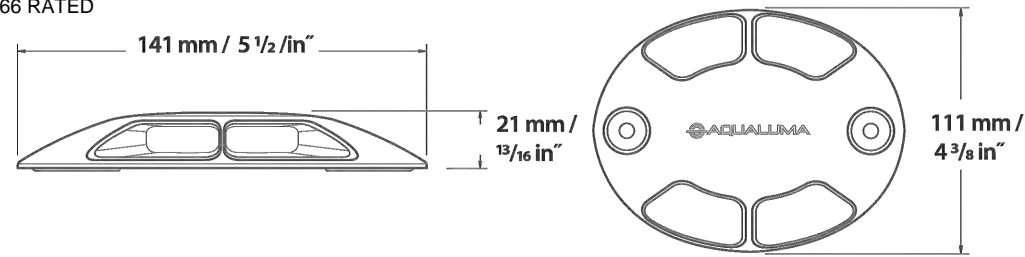
| | |
|---|------------------|
| DOCK PLAN | |
| DRAWING: DMC JOB NO. 16-006-32 | SHEET NO. E2 |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | DRAWN: TKR |
| CLIENT: CITY OF DAYTONA BEACH | CHECKED: EWB |
| | APPROVED: AEZ |
| | DATE: 08-15-2016 |
| ALEXANDER E ZIONAROV, P.E. FLORIDA LICENSE No. 60953 | |
| <p>Dredging & Marine Consultants DMC ENGINEERS • SCIENTISTS</p> <p>4643 S. Clyde Morris Blvd Unit 302 Port Orange, FL 32129 Phone: (386) 304-6505 Fax: (386) 304-6506 www.dmc.com</p> | |
| <p>AZ Power Systems Engineering & Consulting, LLC. Certificate of Authorization #31103 11655 Swift Water Circle Orlando, FL 32817 azpowersystems@yahoo.com</p> | |
| <p>301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400</p> | |

LEGEND

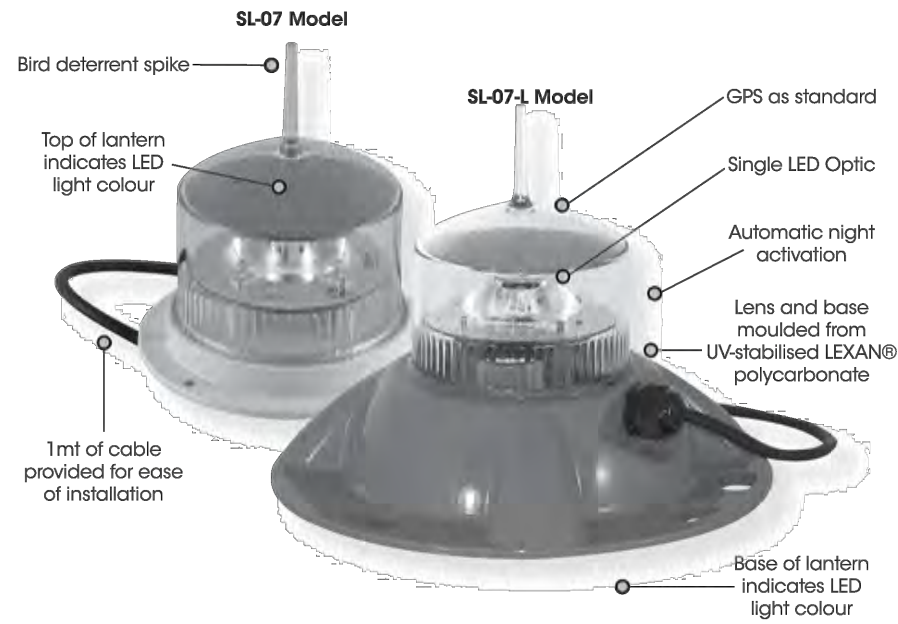
- - 'A' FIXTURE-SEALITE MARINE LANTERN SL-07
- - 'B' FIXTURE-AQUALUMA PATHWAY LIGHT (10W LED)
- ⊞ - LIGHTING TRANSFORMER, 24V

- AQUALUMA PATHWAY LIGHT**
 - 12V AC/DC, 0.2A
 - HIGH OUTPUT LEDS
 - 316 MARINE GRADE STAINLESS STEEL HOUSING
 - IP66 RATED

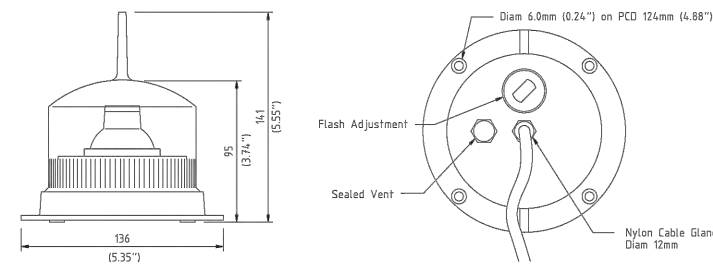
- LED COLOR:**
 WHITE - DOCK SIDE
 BLUE - WATER SIDE



1 DECK MOUNTED PATHWAY LIGHT
 E3 NO SCALE

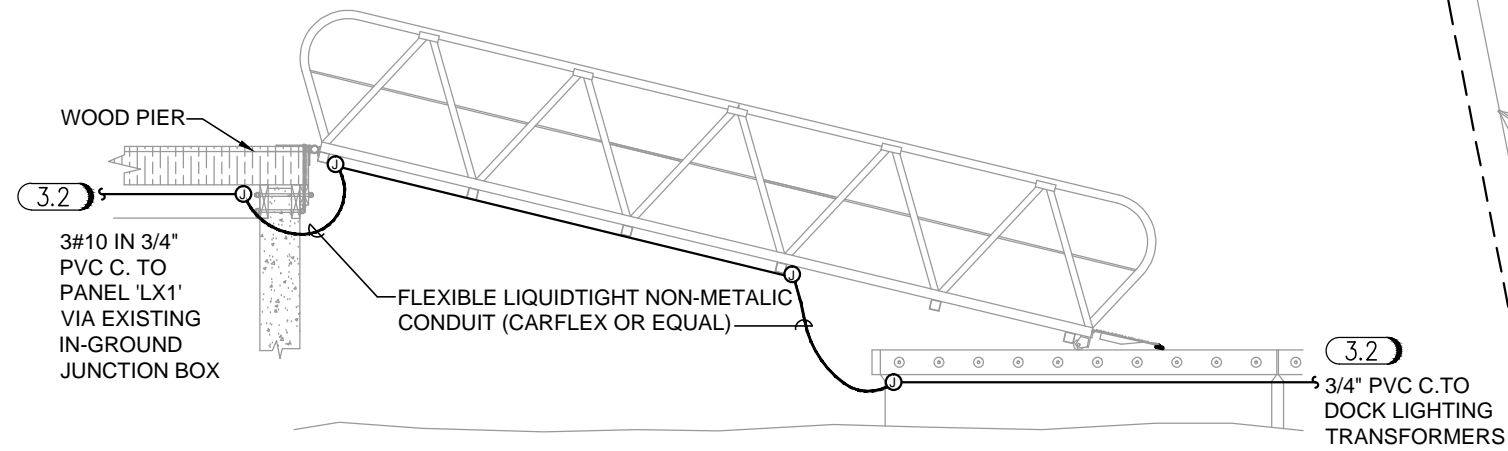
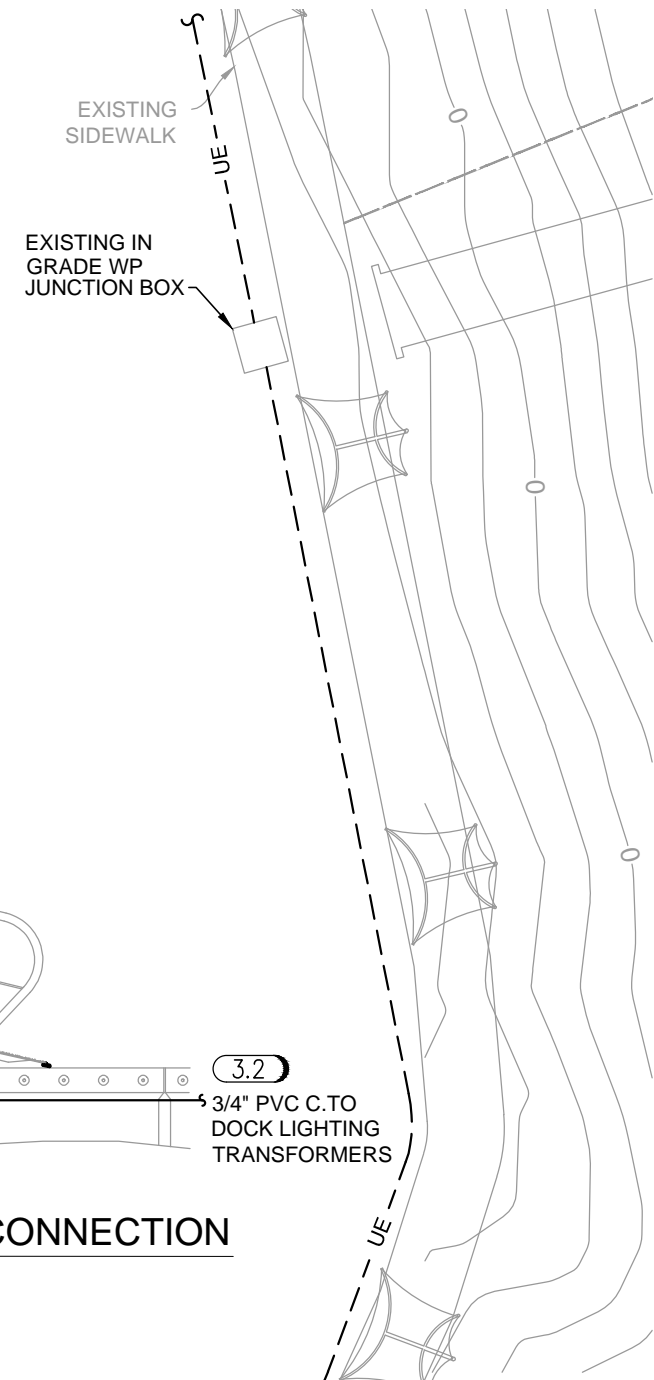
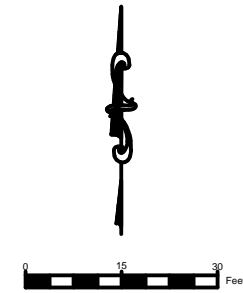


SL-07 Model

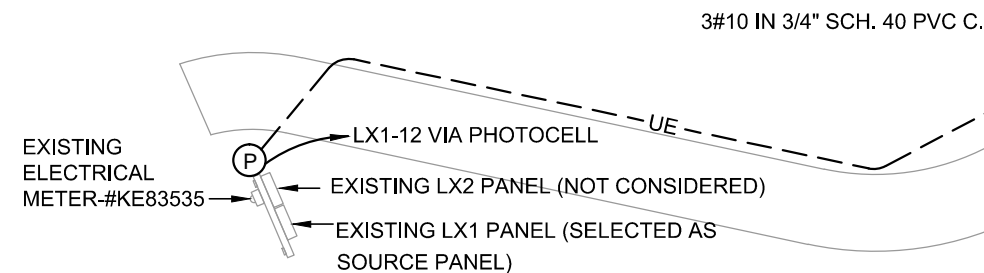


- SEALITE NAVIGATION LIGHT**
 - 12V AC/DC, 0.2A
 - HIGH OUTPUT LEDS
 - 316 MARINE GRADE STAINLESS STEEL HOUSING
 - IP66 RATED

2 DECK MOUNTED NAVIGATION LIGHT
 E3 NO SCALE



3 TYPICAL GANGWAY ELECTRICAL FLEX CONNECTION
 E3 NO SCALE



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| | |
|--|---------------------|
| SITE PLAN | |
| DRAWING: DMC JOB NO. 16-006-32 | SHEET NO. E3 |
| DRAWN: TRK | CAD: SCALE AS SHOWN |
| CHECKED: EWB | DATE: 08-15-2016 |
| APPROVED: AEZ | |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | |
| CLIENT: CITY OF DAYTONA BEACH | |
| ALEXANDER E ZIONAROV, P.E. FLORIDA LICENSE No. 60953 | |
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| DMC ENGINEERS • SCIENTISTS | |
| 301 S. RIDGEWOOD AVE., DAYTONA BEACH, FL 32114 (386) 671-8400 | |
| | |

Drawing Name: C:\Projects\DMC\4776.00 Daytona Day Dock\DMC\Draws\Electrical Latest by AZ1.dwg By: Alex Tab. E4 - Riser. 10/02/2017

| | | | | |
|------------------------|--|--------------------------|----------------------------|--|
| BUS AMPS: 100 (10.4) | | PHASE: 1 | LUG LOCATION: BOTTOM | |
| MAIN AMPS: 100A M.C.B. | | WIRE: 3 | MOUNTING: SURFACE, ON RACK | |
| SERVICE: 208/120 V | | OPTIONS: STAINLESS STEEL | TYPE: CUTLER H. | |
| | | | CIRCUITS: 18 | |
| | | | AIC RATING: 18 K | |

| KVA | | | LOAD SERVED | | | CB | | CKT. NO. | | BUS | | CKT. NO. | | CB | | LOAD SERVED | | | KVA | | |
|-------|-----|-----|-----------------------|------|------|----|---|----------|----|------|------|----------|--|----------------------|--|-------------|-----|-----|-----|-------|--|
| OTHER | LTG | REC | | POLE | TRIP | | A | B | | TRIP | POLE | | | | | | REC | LTG | | | |
| | | | M.C.B. | 2 | 100 | 1 | ● | | 2 | 20 | 2 | | | EXISTING LOAD | | | | | | | |
| | | | 'PCP' | --- | --- | 3 | | ● | 4 | --- | --- | | | --- | | | | | | | |
| | | | EXISTING LOAD | 1 | 20 | 5 | ● | | 6 | --- | --- | | | EXISTING LOAD | | | | | | | |
| | | | EXISTING LOAD | 1 | 20 | 7 | | ● | 8 | 20 | 1 | | | EXISTING LOAD | | | | | | | |
| | | | EXISTING LOAD | 1 | 20 | 9 | | ● | 10 | 20 | 1 | | | EXISTING LOAD | | | | | | | |
| | | | EXISTING LOAD | 1 | 15 | 11 | | ● | 12 | 20 | 1 | | | LTG, DOCKS SEGMENT 1 | | | | | | 0.148 | |
| | | | EXISTING LTG. - TRAIL | 2 | 15 | 13 | | ● | 14 | | | | | SPACE | | | | | | | |
| | | | ----- | --- | --- | 15 | | ● | 16 | 30 | 2 | | | EXISTING SPD | | | | | | | |
| | | | SPACE | | | 17 | | ● | 18 | --- | --- | | | ----- | | | | | | | |

| | | | | |
|------------------------------------|-----------------------------------|------------------|-----|------|
| PROVIDE: TYPEWRITTEN DIRECTORY. | EXISTING CONNECTED LOAD: 5.86 KVA | CONNECTED KVA | | 6.0 |
| | NEW CONNECTED LOAD: 0.148 KVA | DEMAND FACTOR | 1.0 | 1.25 |
| | TOTAL CONNECTED LOAD: 6.0 KVA | DEMAND KVA | | 7.5 |
| | TOTAL DEMAND LOAD: 7.5 KVA | TOTAL DEMAND KVA | 7.5 | LX1 |
| | | DEMAND AMPS | 36 | |

PANEL NOTES:

1. VERIFY EXISTING DEMAND PER 2011 NEC 220.87 PRIOR TO ADDING ANY NEW LOAD.
2. PROVIDE NEW CIRCUIT BREAKER AND WIRING/CONDUIT FOR DOCK LIGHTING OF SAME TYPE AND AIC RATING AS EXISTING BREAKERS.
3. VERIFY SURGE PROTECTION. IF NOT INSTALLED, THEN THE ELECTRICAL CONTRACTOR SHALL PROVIDE IT.
4. CIRCUIT BREAKER SERVING NEW DOCK LIGHTING WITHIN PANEL SHALL BE GFI TYPE, 4-6mA TRIP SETTING.

ELECTRICAL KEY NOTES:

1. FULL COORDINATION WITH THE CITY ELECTRICIAN IS REQUIRED BEFORE START OF ELECTRICAL WORK, ABOUT OPERATION OF THE PRESENT ELECTRICAL EQUIPMENT CONNECTED TO PANEL LX1.
2. PROVIDE A PHOTOCCELL FACING NORTH, TORK OR EQUAL. INSTALL ON EXISTING EQUIPMENT RACK VIA GALVANIZED MOUNTING HARDWARE.

VOLTAGE DROP CALCULATIONS

CIRCUIT XL1-12 LENGTH: PANEL TO JUNCTION BOX - 400'
 JUNCTION BOX TO TRANSFORMER 'T5' - 650'
 TOTAL CIRCUIT LENGTH: 1050'

CIRCUIT XL1-12 LOAD: 148.4 VA @ 120V = 1.24A

#10 AWG MAX. VOLTAGE DROP: 2.28% VD (1050' LENGTH), AT 120 VAC

#10 AWG MAX. VOLTAGE DROP: 0.63% VD (60' LENGTH), AT 12V AC

TOTAL MAXIMUM VOLTAGE DROP: 2.91%

12VAC TRANSFORMER LOADING

LOAD 'T1': 13('B') = 13*0.2A=2.6A AT 12VAC = 31.2 VA

LOAD 'T2': 12('B') = 12*0.2A = 2.4A AT 12VAC = 28.8VA

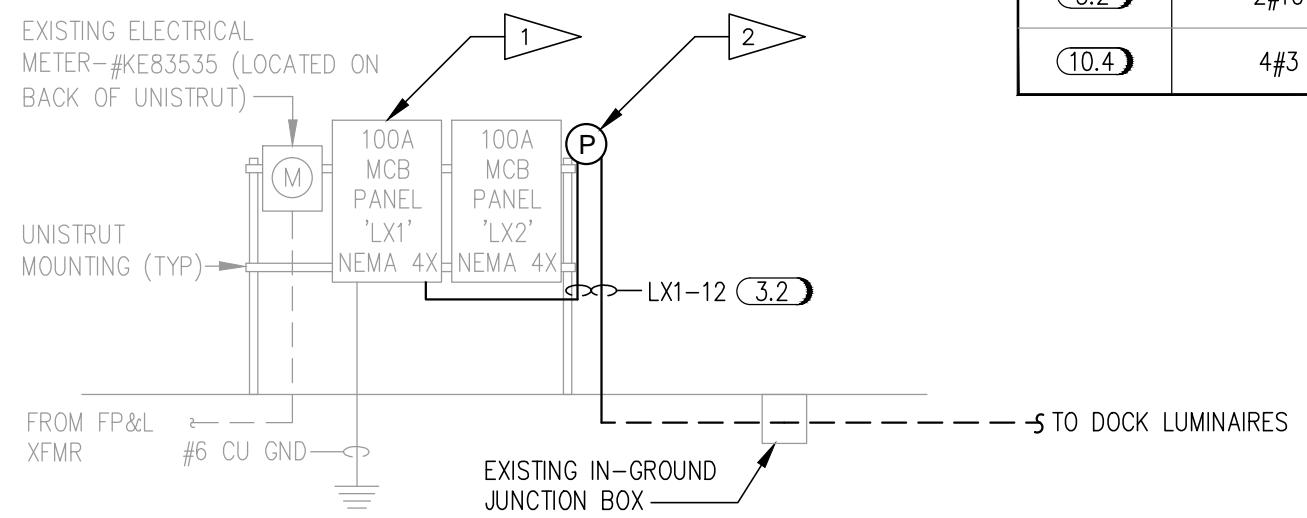
LOAD 'T3': 12('B') = 12*0.2A = 2.4A AT 12VAC = 28.8VA

LOAD 'T4": 15('B') = 15*0.2A = 3.0A AT 12VAC = 36VA

LOAD 'T5': 11('B') = 11*0.2 = 2.2A; 1('A') = 1*0.167A=0.167A AT 12VAC
 TOTAL = 2.367A AT 12VAC = 28.4VA

- LOW VOLTAGE TRANSFORMER NOTES:**
1. TRANSFORMER SHALL BE RATED 50W AT 12VAC.
 2. TRANSFORMER SHALL BE COMPLETELY EPOXY SEALED, ENCAPSULATED, POTTED TYPE, RATED FOR HARSH AND CORROSIVE ENVIRONMENT.
 3. INSTALL TRANSFORMER ABOVE HIGH WATER LINE UNDERNEATH DOCK.

| WIRE / CONDUIT SCHEDULE | | | |
|--------------------------------|---------------------|-------------------|--------------|
| ID MARK | WIRE SIZE (AWG CU.) | GROUND SIZE (AWG) | CONDUIT SIZE |
| (3.2) | 2#10 | #10 | 3/4" |
| (10.4) | 4#3 | #8 | 1-1/4" |



1
E4 **ONE-LINE RISER DIAGRAM**
NO SCALE

| | | |
|---|-----------------------|----------------|
| DRAWING: RISER, NOTES | DMC JOB NO. 16-006-32 | SHEET NO. E4 |
| | CAD | SCALE AS SHOWN |
| DRAWN | CHECKED | DATE |
| TRK | EWB | AEZ |
| PROJECT NAME: RIVERFRONT PARK DAY DOCKS | | |
| CLIENT: CITY OF DAYTONA BEACH | | |
| ALEXANDER E ZIONAROV, P.E. FLORIDA LICENSE NO. 60953 | | |
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