# **MIAMI MARINE STADIUM BOAT RAMP**



Commission:

Mayor Francis Suarez

Chairman / D2 Commissioner Ken Russell

Vice Chairman / D1 Commissioner Alex Diaz de la Portilla

D3 Commissioner Joe Carollo

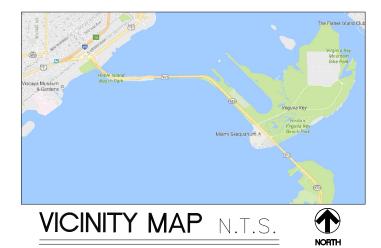
D4 Commissioner Manolo Reyes

D5 Commissioner Keon Hardemon

City Manager Emilio T. Gonzalez Ph. D

Capital Improvements Program Director

Steven C. Williamson



**CITY OF MIAMI** VIRGINIA KEY, FL 33149

# LOCATION:

FLORIDA

GULF OF MEXICO

PROJECT

LOCATION

3501 RICKENBACKER CSWY Miami, FL 33149-1021

# LEGAL DESCRIPTION:

17 18 54 42 20.487 AC M/L BEG 1709.52FTW & 1954.40FTNW OF SE COR OF SEC TH N 45 DEG W 3075FT S 00 DEG W 650FT 45 DEG E2620FT N 44 DEG E 460FT TO POB LESS BEG 1709FTS & 1954.40FTNW OF SE COR OF SEC TH SW263FT NW90FT NE63FT NW245FT NE200FT SE335FT O POB LESS PORT OF CITY OF MIAMI OWNED LAND ON VIRGINIA



MIAMI MARINE STADIUM BOAT RAMP PROJECT LOCATION

N.T.S. NORTH

		CITY OF MIAMI DFFICE DF CAPITAL IMPROVEMENTS Projet Name
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P-5.0 P-6.0 CM-1.0 CM-1.1 CM-2.0 CM-2.1 CM-2.2 CM-2.3 CM-2.3 CM-2.4 CM-3.0	TURBIDITY CONTROL ENVIRONMENTAL IMPACTS GENERAL NOTES BOAT RAMP EXISTING CONDITIONS PROPOSED BOAT RAMP PLAN BOAT RAMP LONGITUDINAL SECTION DOCKS CROSS SECTION DETAIL PROPOSED GRADING PLAN FLOATING DOCK SPECIFICATIONS	Decision Decisi
- FLORIDA DEP. AND FY 2020	ANDARDS AND SPECIFICATIONS: ARTMENT OF TRANSPORTATION 2020 DESIGN MANUAL -21 STANDARD PLANS FOR ROAD AND BRIDGE IN, AS AMENDED BY CONTRACT DOCUMENTS.	PE MARINE ENGINEER CUMMINS CEDERBERG, INC. 7550 RED RDAD, SUTTE 217 7550 RED RDAD, SUTTE 217 755
DESIGN AND	I ENGINEERING STANDARDS FOR CONSTRUCTION DATED DECEMBER 2010 THE DATED MAY 2010.	FRANCISCO ALONSO, P.E. State of Fuldea LEXES N. Genits State of Admented Crists: N. Genits Card Godes, Randa 3334 Drawing THE MARINE STADIUM BOAT RAMP COVER State AS SHOWN Designed MA Title fing No Deron MA Designed Checkel CH De-22-2018 Checkel

GENERAL NOTES

- 1. GENERAL NOTES ON THE PROJECT PLANS AND DRAWINGS ARE SOLELY TO AID AND ASSIST THE CONTRACTOR WITH THE FIELD OPERATIONS FOR THE PROJECT. SAID GENERAL NOTES MAY NOT FULLY DESCRIBE ALL OF THE REQUIREMENTS FOR AN ITEM. THEREFORE, THE CONTRACTOR SHALL READ AND VERIFY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE PLANS, SPECIFICATIONS, GENERAL TERMS AND CONDITIONS, AND THE SUPPLEMENTAL TERMS AND CONDITIONS, TO FULLY UNDERSTAND AND COMPLY WITH ALL THE REQUIREMENTS THEREIN.
- 2. THE CONTRACTOR MUST HAND EXCAVATE AROUND AREAS WHERE EXISTING UNDERGROUND UTILITIES ARE EXPECTED OR SUSPECTED IN ORDER TO AVOID DAMAGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND COSTS TO CORRECT DAMAGES RESULTING FROM FAILURE TO TAKE ALL NECESSARY PRECAUTIONS INCLUDING LOCATING, MARKING AND CAREFUL EXCAVATION, AND SHOULD BE INCIDENTAL TO THE COST OF THE PROJECT.
- 3. IT IS THE OBLIGATION OF THE BIDDER OR THE CONTRACTOR TO MAKE HIS OWN INVESTIGATION AND SATISFY HIMSELF FULLY OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING HIS BID. FAILURE TO DO SO, WILL NOT RELIEVE HIM OF HIS OBLIGATION TO COMPLETE THE WORK FULLY AND ACCEPTABLE TO THE ENGINEER AND THE OWNER FOR THE CONSIDERATION SET FORTH IN HIS BID.
- 4. CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM PRINTS FOR CONSTRUCTION PURPOSES.
- 5. ALL DISTURBED GRASS AREAS SHALL BE RESTORED WITH SUITABLE SOIL AND SOLID ST AUGUSTINE SOD IF NOT SPECIFIED OTHERWISE ON THE PLANS.
- 6. IT IS THE INTENT OF THESE PLANS TO BE IN COMPLIANCE WITH APPLICABLE CODES OF AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
- 7. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING TREES, STRUCTURES, UTILITIES AND UTILITY MARKERS, WHICH MAY NOT BE SHOWN ON PLANS. ANY EXISTING STRUCTURES, PAVEMENT, TREES, UTILITIES, UTILITY MARKERS OR OTHER EXISTING IMPROVEMENT NOT SPECIFIED FOR REMOVAL WHICH IS TEMPORARILY DAMAGED, EXPOSED OR IN ANY WAY DISTURBED BY CONSTRUCTION PERFORMED UNDER THIS CONTRACT, SHALL BE REPAIRED, PATCHED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- 8. ANY DISCREPANCIES IN THESE DRAWINGS WITH THE FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. CONSTRUCTION SHALL NOT CONTINUE UNTIL ENGINEER ADDRESSES THE DISCREPANCIES.

CONSTRUCTION NOTES

- 1. ALL WORK TO BE IN COMPLIANCE WITH THE REQUIREMENTS OF AND ACCEPTABLE TO CITY OF MIAMI PUBLIC WORKS DEPARTMENT AND MIAMI-DADE COUNTY R.E.R.
- 2. CONTRACTOR SHALL PROVIDE HIS OWN LINE AND GRADE FROM HORIZONTAL AND VERTICAL CONTROL. CONTRACTOR SHALL ALSO PROVIDE "AS BUILT" GRADES CERTIFIED BY A REGISTERED LAND SURVEYOR AS REQUIRED BY THE CITY OF MIAMI PUBLIC WORKS DEPARTMENT.
- 3. BID PRICES SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS COMPLETE IN PLACE, TESTED, AND ACCEPTED BY THE ENGINEER.
- 4. THE CONTRACTOR SHALL USE SWEEPER (USING WATER) OR OTHER EQUIPMENT CAPABLE OF CONTROLLING AND REMOVING DUST. APPROVAL OF THE USE OF SUCH EQUIPMENT IS CONTINGENT UPON ITS DEMONSTRATED ABILITY TO DO WORK.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING EXISTING INLETS AND CULVERTS CLEAN OF DEBRIS AND ANY OTHER MATERIALS USED DURING CONSTRUCTION. THIS SHALL BE DONE DURING THE CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. ALL EXISTING LINES AND STRUCTURES SHALL BE CLEANED PRIOR TO FINAL INSPECTION AND ACCEPTANCE.
- 6. CONTRACTOR SHALL CONTACT SUNSHINE AT (800) 432-4770 AT LEAST 48 HOURS PRIOR TO PERFORMING ANY DIGGING TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES.
- 7. ALL TREES TO BE RELOCATED OUTSIDE OF CONSTRUCTION AREA WHERE FEASIBLE. UNAVOIDABLE IMPACT TO MANGROVE TREES ARE TO BE MITIGATED IN ACCORDANCE TO APPROVED PERMITS.
- 8. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL ITEMS LISTED IN PROJECT SPECIFICATION (WHERE APPLICABLE).
- 9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
- 10. ALL EXISTING DRAINAGE STRUCTURES AND PIPES ARE TO REMAIN AND TO BE PROTECTED UNLESS OTHERWISE SPECIFIED AND APPROVED.
- 11. CONTRACTOR SHALL IMPLEMENT AND ENFORCE ALL NPDES EROSION AND SEDIMENT CONTROL RULES AND REGULATIONS.
- 12. CONTRACT SHALL INCLUDE IN THE BID PRICE FOR CLEARING AND GRUBBING.

#### ENVIRONMENTAL NOTES

- 1. ANY MATERIAL TO BE STOCKPILED FOR PERIODS GREATER THAN APPROPRIATE EROSION CONTROL DEVICES.
- 2. THE CONTRACTOR SHALL REVIEW ENVIRONMENTAL REQUIREMENTS OF THE PROJECT ENGINEER AT LEAST SEVENTY-TWO (72) HOURS PRIOR
- 3. NO STAGING OR OTHER ACTIVITIES FOR THIS PROJECT WILL BE SENSITIVE AREAS.
- 4. CONTRACTOR SHALL NOT STAGE OR OPERATE EQUIPMENT WITHIN THE
- 5. CONTRACTOR TO PROVIDE A CERTIFIED ARBORIST WHO WILL DETER OTHER TRIMMING ACTIVITIES. COST TO BE INCIDENTAL TO CONSTRU-WILL BE PROVIDED.

#### STRUCTURAL NOTES

CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FDOT 2020-21 ST/CONSTRUCTION.

STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH THE 2020 FDOT I STRUCTURES DESIGN BULLETINS, THE FDOT STRUCTURAL DESIGN STAND. BY CONTRACT DOCUMENTS, AND ALL SUBSEQUENT INTERIMS.

ENVIRONMENT IS CLASSIFIED AS EXTREMELY AGGRESSIVE.

#### MATERIALS

5.1. BULKHEADS REINFORCED C.I.P. CONCRETE CAP: CONCRETE CLASS FUME, METAKAOLIN, OR ULTRA FINE FLY ASH.

#### CONCRETE COVER

3"CLEAR COVER, COVER DOES NOT INCLUDE TOLERANCES. REFER TO F TOLERANCES.

PLAN DIMENSIONS

ALL DIMENSIONS IN THESE PLANS ARE MEASURED IN FEET EITHER HORIZ OTHERWISE NOTED.

#### UTILITIES

8.1. LOCATIONS AND ELEVATIONS SHALL BE VERIFIED BY THE CONTRACT 8.2. FOR STORM DRAINS AND OTHER UTILITIES, FOLLOW GENERAL NOTES UTILITIES.

JOINTS IN CONCRETE: CONSTRUCTION JOINTS WILL BE PERMITTED ONLY PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE THE ENGINEER.

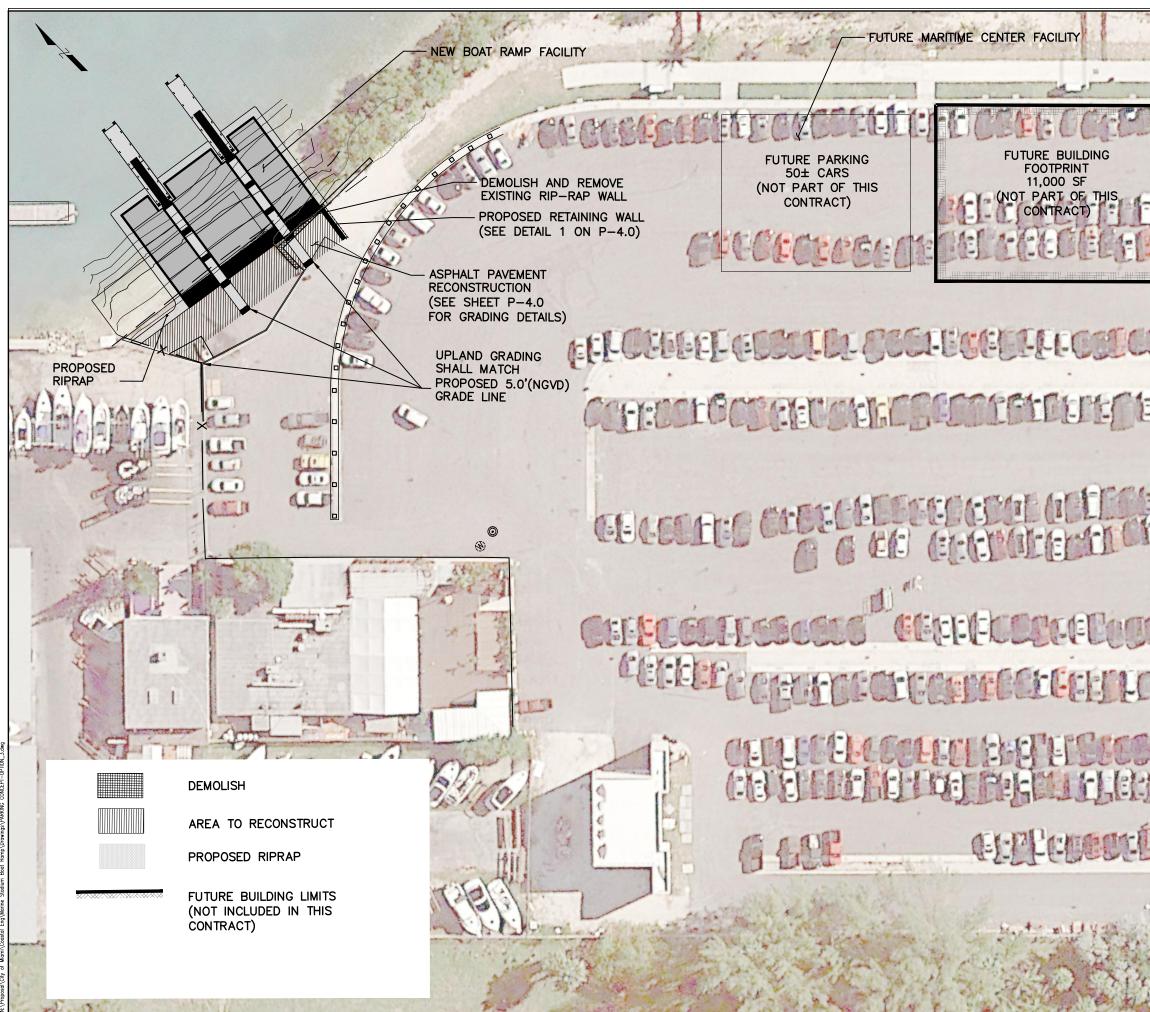
#### CUT AND FILL OPERATIONS

10.1. THE CONTRACTOR SHALL NOTIFY ADJACENT OWNERS AND INVOLVED BEFORE EXCAVATION OPERATIONS BEGIN.

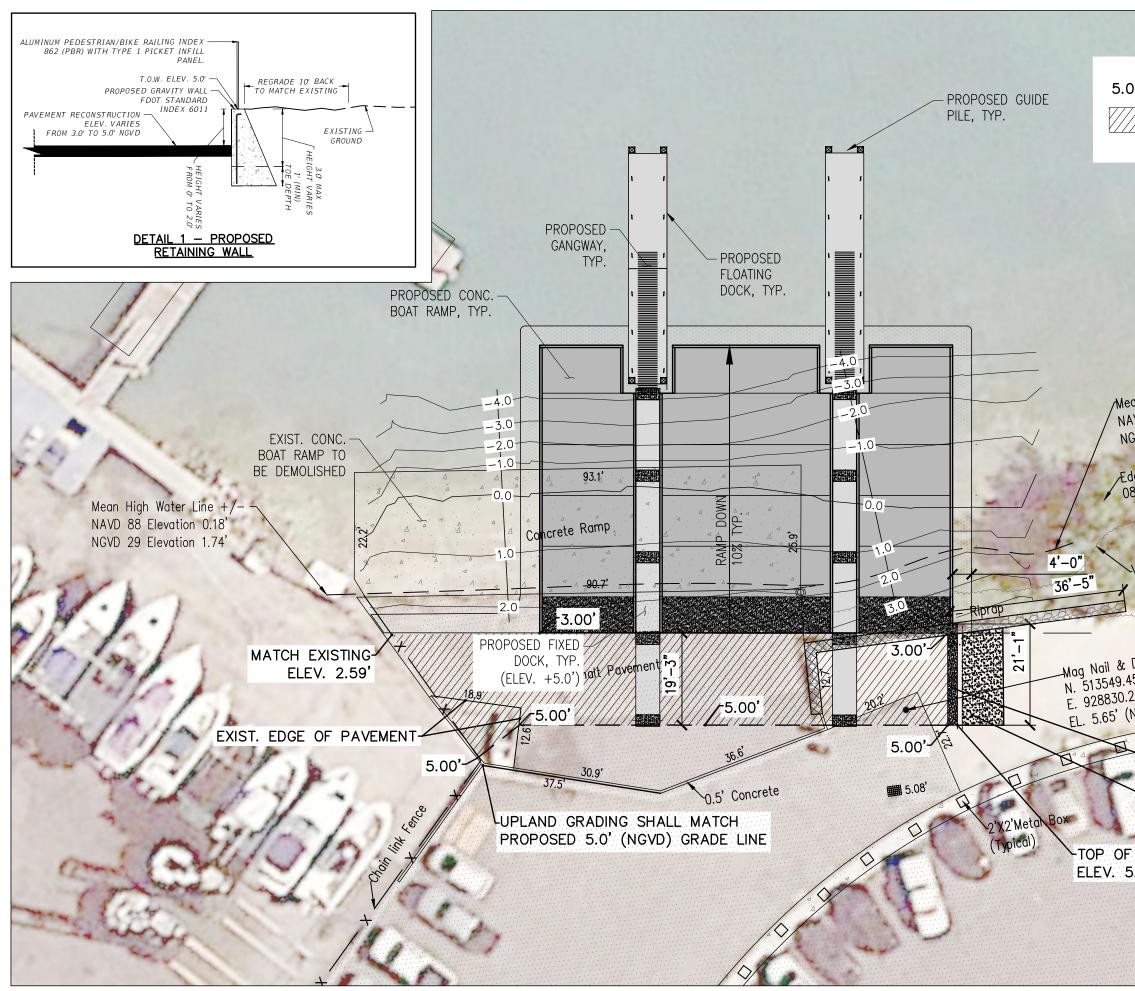
10.2. QUANTITIES FOR CUT AND FILL SHOWN IN THESE PLANS ARE APP THE CONTRACTOR BEFORE BIDDING.

10.3. ANY EXCAVATED MATERIAL THAT IS DEEMED BY THE ENGINEER UN PROPERLY DISPOSED OF BY THE CONTRACTOR AT AN APPROVED FACILIT DISPOSAL OF UNSUITABLE MATERIAL SHALL BE INCLUDED IN THE COST

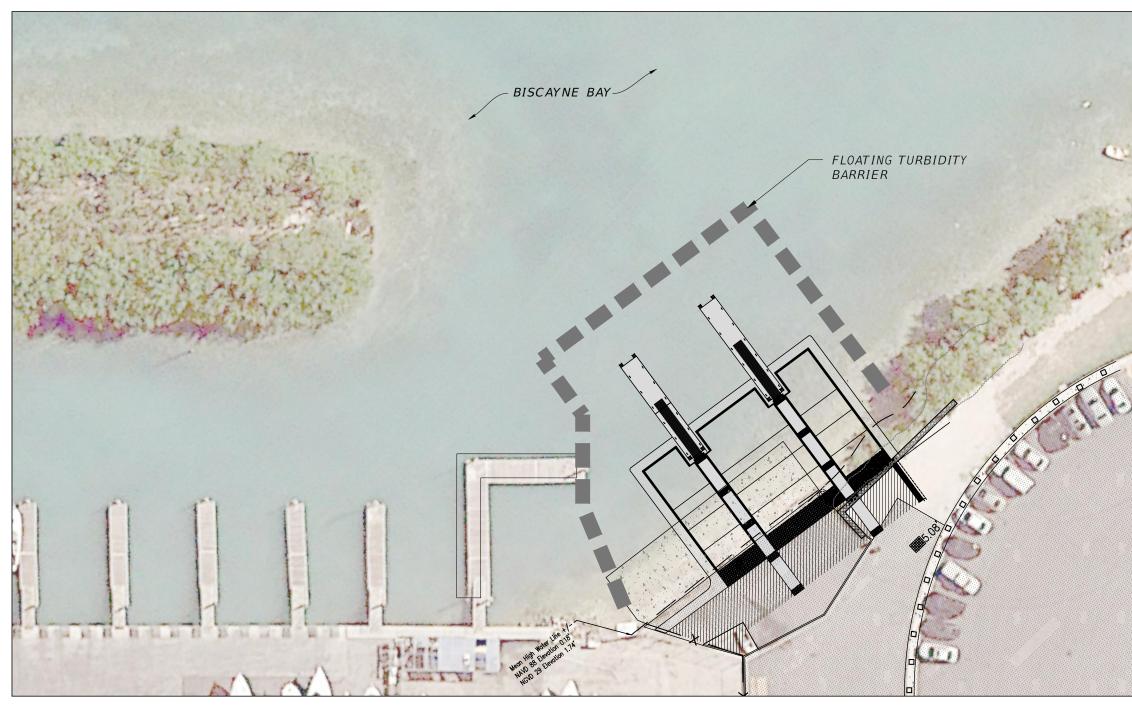
	PROJECT
	MIAMI MARINE STADIUM BOAT RAMPS
24 HOURS SHALL BE PROTECTED BY	RICKENBACKER CAUSEWAY MIAMI, FLORIDA 33435
ANY PROPOSED STAGING AREAS WITH TO USE.	201 Alhambra Circle Suite
ALLOWED WITHIN ENVIRONMENTALLY	900 Coral Gables, Florida 33134 Phone: 305-567-1888
E DRIPLINE OF TREES.	Fax: 305-567-1771
RMINE ANY ROOT PRUNING AND ANY ICTION. NO ADDITIONAL COMPENSATION	MARINE ENGINEER CUMMINS CEDERBERG, INC. 7550 RED ROAD, SUITE 217 SOUTH MIAM, FLORIDA 33143 TEL: +1 305 741-6155 FAX: +1 305-974-1969 WWW.CUMMINSCEDERBERG.COM COA # 29062 CUMMINS   CEDERBERG Coastal & Marine Engineering
ANDARD PLANS FOR ROAD AND BRIDGE	
DESIGN MANUAL, AND SUBSEQUENT ARD INDEXES/DRAWINGS, AS AMENDED	
V(SPECIAL) f'c = 6,000psi, WITH SILICA	SEAL
FDOT SPECIFICATION 415 FOR ALLOWABLE	
ZONTALLY OR VERTICALLY UNLESS	FRANCISCO J. ALONSO P.E. No. 66918
TOR BEFORE CONSTRUCTION BEGINS. S ON PROCEDURES INVOLVING EXISTING	/ REVISION
AT THE LOCATIONS INDICATED IN THE SHOWN SHALL REQUIRE APPROVAL OF	NOISSING
D UTILITIES IN WRITING TWO (2) WEEKS	DATE
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NSUITABLE FOR FILLING SHALL BE TY OR DUMP SITE. THE COST FOR T OF CUT AND FILL.	CC PROJECT NO 551191.14 DRAWN MA CHECKED SCALE SHEET TITLE
	GENERAL NOTES
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	P-2.0



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	RICKENBACKER CAUSEWAY MIAMI, FLORIDA 33435
	201 Alhambra Circle Suite 900 Coral Gables, Florida 33134 Phone: 305–567–1888 Fax: 305–567–1771
	MARINE ENGINEER CUMMINS CEDERBERG, INC. 7550 RED ROAD, SUITE 217 SOUTH MIAMI, FLORIDA 33143 TEL: +1 305 741-6155 FAX: +1 305-974-1969 WWW.CUMMINSCEDERBERG.COM WWW.CUMMINSCEDERBERG.COM COA # 29062 CUMMINS   CEDERBERG Coastal & Marine Engineering
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	FRANCISCO J. ALONSO P.E. No. 66918
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	SSUE DATE
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	SHEET P-3.0



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		GRADING PLAN SHEET P-4.0



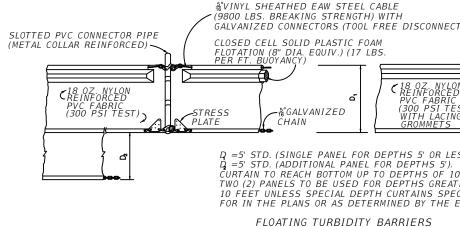


TURBIDITY BARRIER NOTES

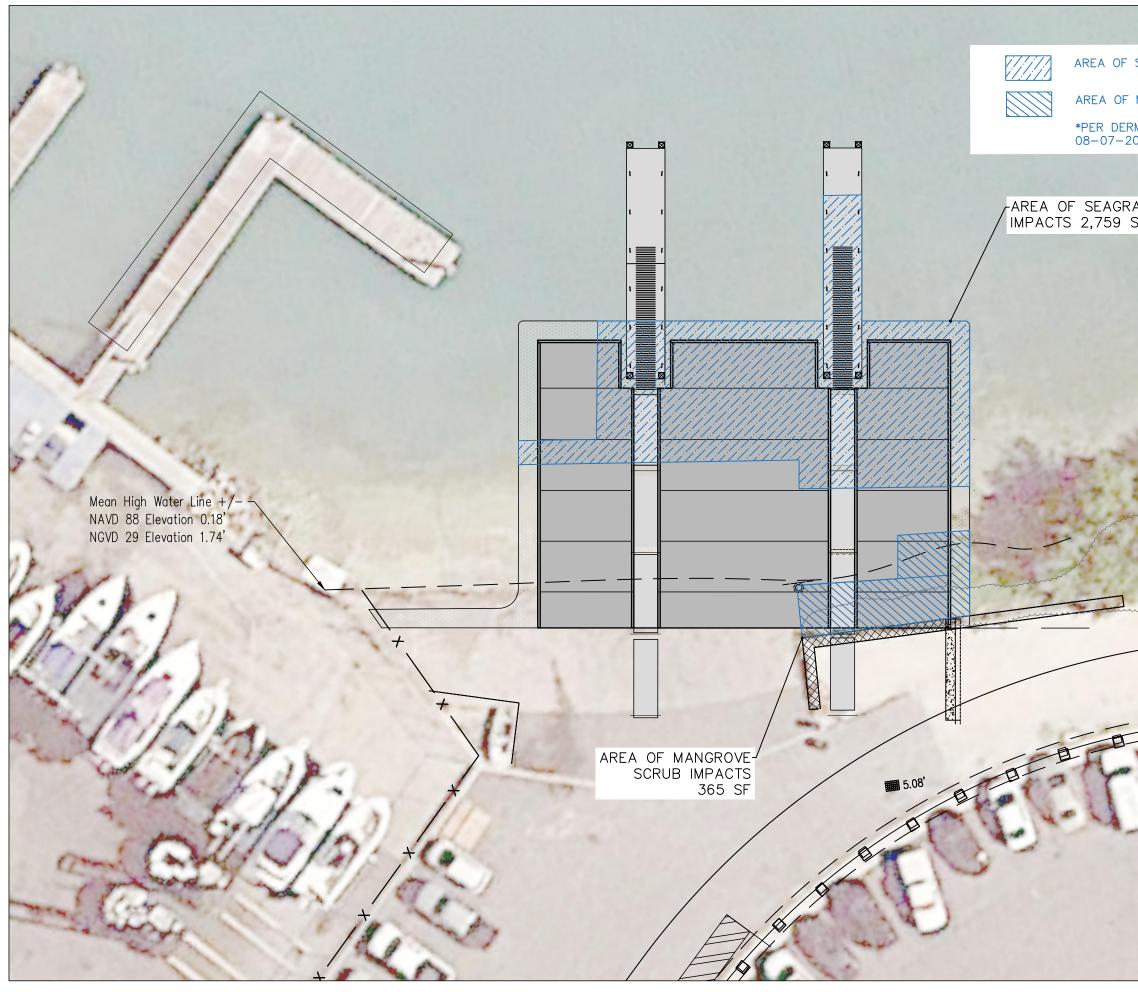
- 1. TURBIDITY CURTAINS SHALL BE DEPLOYED IN A MANNER NOT TO ENTANGLE OR HARM MANATEES.
- TURBIDITY SHALL BE MONITORED AS OUTLINED IN THE REGULATORY PERMITS.
   TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF THE WATER DEPTH.
- NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
   DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO
- ACCOMMODATE CONSTRUCTION OPERATIONS.
- 6. NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.

#### EROSION/SEDIMENT CONTROL NOTES

THE PURPOSE OF EROSION CONTROL IS TO PREVENT POLLUTION OF BODIES OF WATER ON OR ADJACENT TO THE PROJECT SITE. IN ADDITION, EROSION CONTROL SHALL PREVENT DAMAGE TO ADJACENT PROPERTY, AND WORK IN PROGRESS. ALL EROSION AND SILTATION MEASURES ARE TO BE PLACED PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT ALL EROSION CONTROL DEVICES PERIODICALLY AND AFTER EVERY RAINFALL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.



	PROJECT
	MIAMI MARINE STADIUM BOAT RAMPS
	RICKENBACKER CAUSEWAY MIAMI, FLORIDA 33435
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The The	305-974-1969 WWW.CUMMINSCEDERBERG.COM COA # 29062
	CUMMINS   CEDERBERG
	Coastal & Marine Engineering
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	P-5.0



	PROJECT MIAMI MARINE STADIUM BOAT RAMPS
SEAGRASS IMPACTS*	RICKENBACKER CAUSEWAY MIAMI, FLORIDA 33435
MANGROVE SCRUB IMPACTS*	201 Alhambra Circle Suite
RM SURVEY PERFORMED ON 2019	900 Coral Gables, Florida 33134 Phone: 305-567-1888 Fax: 305-567-1771
RASS SF	MARINE ENGINEER CUMMINS CEDERBERG, INC. 7550 RED ROAD, SUITE 217 SOUTH MIAMI, FLORIDA 33143 TEL: +1 305 741-6155 FAX: +1 305-974-1969 WWW.CUMMINSCEDERBERG.COM COA # 29062 CUMMINS   CEDERBERG Coastal & Marine Engineering
	SEAL

#### 1. General

- 1.1. The work consists of providing all construction, labor, equipment, material and operations in connection with the repair of the seawall and related improvements as shown on these drawings.
- 1.2. Any discrepancies in the plans with the field conditions shall be brought to the immediate attention of the Engineer. Construction shall not continue until the Engineer has addressed the discrepancies.
- 1.3. The contractor shall take all necessary precautions to protect existing structures in the project vicinity. Any damage to private or public property within the Project vicinity, including staging sites, work and access areas shall be repaired promptly by the Contractor. Any damage as a result of the Contractor's operations shall be repaired at no cost to the Owner. All access and staging areas shall be kept neat, orderly and in a safe manner. All access and staging areas shall be restored to the pre-construction condition upon project completion at the cost of the Contractor. The site shall be restored by removing and finishing all evidence for construction. In the event infrastructure (such as walkways, sidewalks, fences, vegetation, etc.) is temporarily removed or relocated or there is unauthorized damage to vegetation and/or facilities by the Contractor, the Contractor shall restore all damage to structures and natural features to pre-construction conditions or better.
- 1.4. Utilities are not shown in the plans. Contractor is responsible for locating all present utilities prior to construction.
- 1.5. Contractor is responsible for providing proper clearance and protection to all overhead wires and obstructions.
- 1.6. The Contractor shall exclude the public from the work areas in the immediate vicinity of operations. Contractor shall provide appropriate safety measures to protect the public.
- 1.7. All new structural work including concrete and reinforcement shall be accurately field measured and dimensions verified by the Contractor prior to ordering materials. Contractor shall be prepared to make field adjustments to accurately fit the new work to existing conditions.
- 1.8. No construction shall commence until all required permits and approvals have been secured and the contractor has been issued Notice to Proceed.
- 1.9. Attention is directed to the fact that these plans may have been changed in size by reproduction. This should be considered when obtaining scaled data.
- 1.10. Construction work shall be executed in accordance with all local, state, and national building codes and governing regulations.FDEP, USACE, and Miami Dade County. Contractor shall adhere to all conditions of the permits and exemptions.
- 1.11. Extend existing drainage pipes through steel sheet pile at same elevation.

#### 2. Layout and Testing

2.1. All construction stakeout shall be performed by and paid for by the contractor under the supervision of a surveyor registered in the state of Florida. All testing and inspection for concrete materials shall be in accordance with FDOT specifications and shall be performed by an independent testing laboratory.

#### 3. Demolition

- 3.1. Contractor shall verify the extents, location and quantities of existing elements to be removed.3.2. All debris within the limits of the project shall be hauled off site by the Contractor, as directed
- by the Owner, and disposed of at an appropriate facility.
- 3.3. Contractor shall not damage any structural components beyond the demolition requirements depicted in these drawings. Any damage shall be repaired at the Contractor's expense.

#### 4. Concrete

- 4.1. Forms for this work shall be made of either wood or metal. They shall be straight and free of warp or bends. They shall have sufficient strength and rigidity, when staked, to resist the pressure of the concrete without springing. If wooden forms are used, they shall be of adequate section and shall have a flat surface on top. Forms shall have a depth at least equal to the vertical dimensions for the depth of the concrete being deposited against them. When ready for the concrete to be deposited, they shall not vary from the approved line and grade, and shall be kept so until the concrete has set.
- 4.2. Just prior to placing the concrete any wooden forms shall be moistened and all steel reinforcing shall be rinsed with fresh water. The concrete shall be placed in the forms and tamped in place so that all honeycombs will be eliminated and sufficient mortar brought to a smooth even finish by means of a float.
- 4.3. Contractor shall be prepared to place concrete of lower members of the marine structures in submerged conditions utilizing tremie methods at no additional cost.
- 4.4. No concrete shall be poured during unfavorable weather or sea conditions.
- 4.5. All steel shall have a minimum of 3 inches concrete cover, unless otherwise noted. No chairs or other metal shall protrude from surface of concrete.
- 4.6. Cast-in-place concrete shall be a minimum of 5,000 PSI compressive strength at 28 days. Water cement ratio (W/C) shall be less than or equal to 0.4. Provide mix design for a Class IV concrete for an extremely aggressive (marine) environment in accordance with FDOT specifications. Provide sufficient amount of fly ash and silica fume to the cement content. Contractor shall provide mix design to Engineer for approval 10 days prior to concrete placement.
- 4.7. No water shall be added to concrete at the job site unless authorized by the Engineer or Special Inspector.
- 4.8. When surface finishing is completed, the structure shall be protected against wave splash for two days and cured per applicable paragraphs of Section 400-16 of the FDOT Standard Specifications. Curing shall occur for at least 7 days.
- 4.9. A surface penetrant sealer of alkyl-alkoxy silane classification, such as BASF Enviroseal, or approved equal shall be applied all exposed concrete.
- 4.10. Apply Sika Armatec 110 bonding agent, or approved equal, at construction joints prior to placement of new concrete.
- 4.11. Components not constructed according to these specifications shall be removed and replaced properly at the expense of the contractor.

- 4.12. The faces of the finished structures shall be true, straight, and of uniform width, free from humps, sags, or other irregularities except as specified in the plans. The contractor shall replace any deficient segments.
- 4.13. Concrete Formworkers and Finishers: The contractor shall supply a sufficient number of experienced concrete formworkers and finishers in order to complete the work. A concrete foreman who has a thorough understanding of the plans, specifications, and referenced specifications shall supervise all formworkers and finishers. No sub-standard workmanship will be accepted. Provide standard light brown finish U N O
- 4 14 Concrete Transportation:

Concrete delivered from a ready mix plant shall be transported in accordance to FDOT Section 345-13. Concrete that is not placed in the form within the specified time limits will be rejected and not included in the work. Contractor shall bear all costs for rejected concrete. Concrete shall not be placed in the forms until the reinforcing steel placement has been approved by the Engineer.

- 4.15. Reinforced Concrete Materials Testing:
  - The Contractor shall have an independent testing laboratory test the concrete used in the work. The test shall include 7, 14, and 28 day compressive strength tests. The results shall be supplied to the Engineer. The tests shall be in accordance with ASTM C31, C39, and C617.
- 4.16. Adhesive bonded dowels shall be installed in accordance with FDOT Section 416. **5. Steel**
- 5.1. All reinforcing bar shall conform to ASTM A615, Grade 60, deformed bars free from loose rust and scale.
- 5.2. Reinforcing steel, supports, and tie wire shall be hot-dipped galvanized in accordance with ASTM A767.
- 5.3. MMFX or CHROMX 4100 steel can be used as an alternate to hot-dipped galvanized steel at Contractors option, with no additional cost to owner.
- 5.4. Steel shall be placed as shown in the plans. All accessories shall be plastic only to support reinforcing exposed to weather. All reinforcing steel shall be accurately located and firmly held in place before and during the place of concrete.
- 5.5. WWM shall conform to ASTM A185 or A497.
- 5.6. Contractor to allow 10% additional reinforcing steel to be used at engineer's discretion during construction.

#### 6. Concrete Piles

- 6.1. Piles shall be 14" square prestressed concrete piles with (8) 0.6" diameter strands, grade 270 ksi, LRS.
- 6.2. Concrete to be minimum 6,000 psi, and follow FDOT Class-V concrete specifications. Minimum concrete cover to internal reinforcement shall be 3" on all sides.
- 6.3. Piles shall be driven a minimum of 20 feet. Pile logs shall be recorded for all driven piles & shall be submitted to engineer for approval prior to pile cut-off or cap pour.
- 6.4. Piles shall be cut off at elevations shown in the plans and sections herein.
- 6.5. Contractor to submit shop drawings for concrete piles.
- 6.6. Piles shall be from a FDOT certified facility of prestressed concrete products.
- 6.7. Piling shall be installed in accordance with geotechnical report, unless otherwise noted.
- 6.8. Refer to geotechnical report by NV5 dated April 24, 2018 for soil boring logs.
- 6.9. Piles may be pre-punched but must be driven to final tip elevation.

### 7. Tidal Data

7.1. Contractor may need to adjust his work plan to account for actual water levels and changing water levels. The site may be subject to variable wave and surge conditions and it is the responsibility of the contractor to provide temporary support for marine structures and shoreline during construction. Tidal data obtained from Virginia Key, Florida Station ID 8723214.

#### 8. Submittals

- 8.1. Review of submittals by the structural engineer is for general conformance with the design concept as presented by the contract documents. No detailed check of quantities or dimensions will be made.
- 8.2. All shop drawings must bear evidence of the Contractor's approval prior to submitting to the Engineer.
- 8.3. The following minimum submittals shall be prepared by the Contractor and submitted to the Engineer for review and approval prior to related construction activity:
- 8.3.1. Schedule for completion of work with tasks and durations defined
- 8.3.2. Demolition Methods & Disposal Plan
- 8.3.3. Concrete Mix Design
- 8.3.4. Reinforcing Steel
- 8.3.5. Precast concrete piles/slabs
- 8.3.6. Floating Docks (specialty engineered item)
- 8.3.7. Rock/Gravel
- 8.3.8. Pile caps
- 8.4. Submittals for specialty engineered items shall be signed/sealed by Florida Professional Engineer.

## 9. Design Criteria

- 9.1. FBC 2014, ASCE 7-10 unoccupied wind Vult= 175 mph, Vasd = 136 mph, Risk Cat. II, Exp. D, Gcpi = 0
- occupied wind V= 40 mph (sustained) 9.2. Dock/Ramp LL = 100 psf.
- 9.3. Design Vessel LOA = 40'
- 9.4. Occupied Wave Ht. = 1.5 ft
- Unoccupied Wave Ht. = 2 ft
  - Storm Surge = 2 ft (Mean Range NOAA)

9.5. FDOT std. spec. for road & bridge c 10. Rock/Revetment

- 10.1. Proposed rock source(s) must be a commencement of the work. Once not use material from another source to qualify the other source(s).
- 10.2. All rock shall meet the following min providing guarry certifications and p
- 10.3. Clean, sound, and durable, and free earth, clay, refuse, or adherent coa
- 10.3.1. Minimum specific gravity of 2.
- 10.3.2. soundness 15% max loss (ast
- 10.3.3. Such character that it will not of handling and placing. Maxim
- 10.3.4. Rough angular quarried mater rock.
- 10.4. All rock will be subject to on-site ran Rock that does not conform in spect will be rejected. The presence of ur of contractor provided rock will be rock. Any such load of rock shall be expense.
- 10.5. Rock used for the revetment constr
- 10.5.1. Weight: 80 260 lbs 10.5.2. Nominal dimension: 1 - 1.5 ft
- 10.5.2. Nominal dimension: 1 1.5 it 10.5.3. The least dimension of any roo
  - dimension of that rock. Square taken as the average of the roc perpendicular axes. The in-plac size specified.

### 11. Geotechnical

11.1. Subgrade for ramp slab shall be pr dated april 2018.

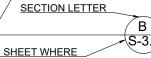
#### 12. Lumber

- 12.1. Design is in accordance with 2017 12.2. All dimensional lumber shall be pr
- comply with A.I.T.C. 109-69 specif

	ABB
ACI	AMERICAN CONCRE
ASTM	AMERICAN SOCIETY
CONT	CONTINUOUS
CONT'D	CONTINUED
CTD	CENTERED
FDEP	FLORIDA DEPARTME
FDOT	FLORIDA DEPARTME
KSI	KIPS PER SQUARE II
LOA	LENGTH OVERALL
MHW	MEAN HIGH WATER
MIN	MINIMUM
MLW	MEAN LOW WATER
NAVD	NORTH AMERICAN V
NGVD	NATIONAL GEODETI
PERA	PERMITTING, ENVIR
PSI	POUNDS PER SQUA
TYP	TYPICAL
USACE	UNITED STATES AR
W/C	WATER/CEMENT RA
UNO	UNLESS NOTED OTH

# SYMBOLS LEG

#### -DIRECTION OF VIEW FOR SECTION CUT



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SECTION IS SHOWN

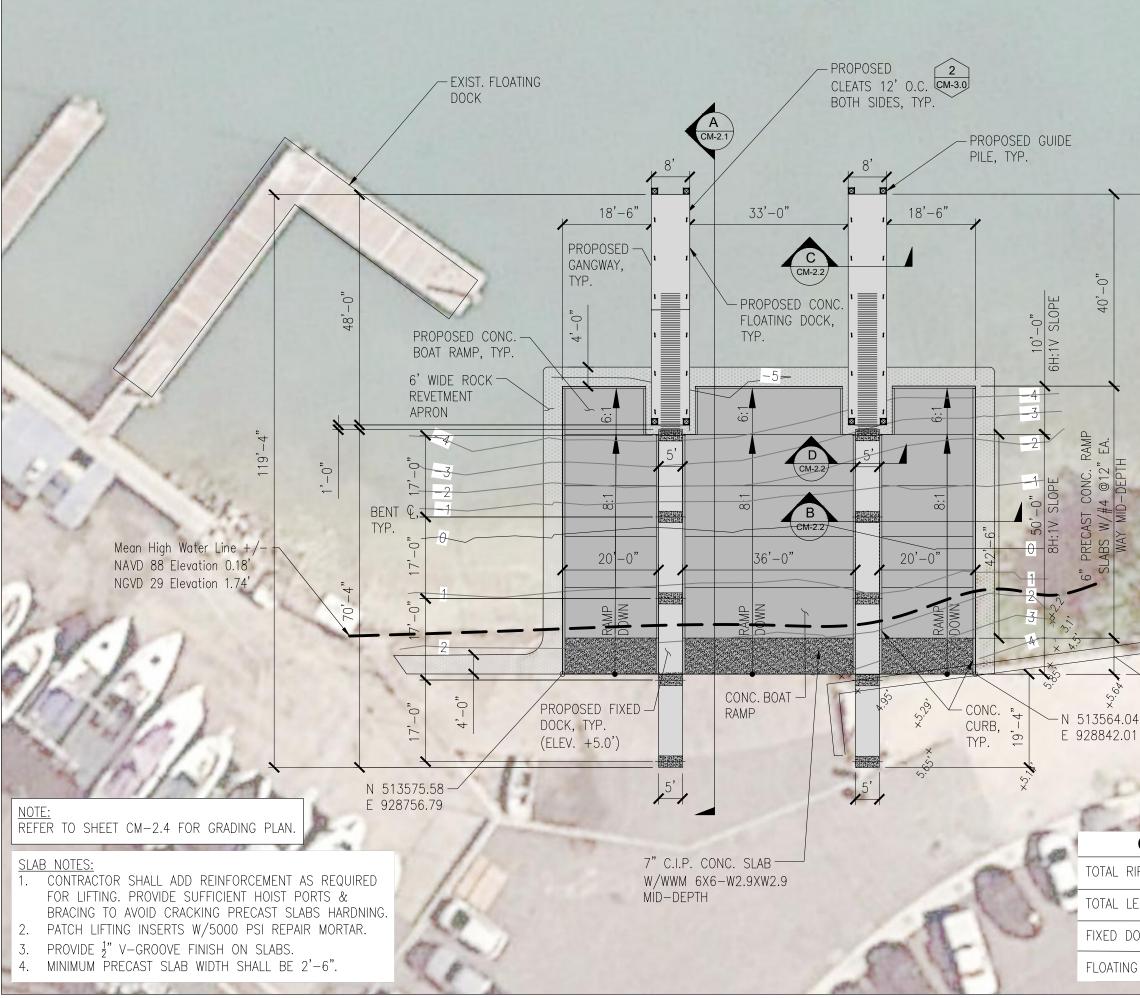
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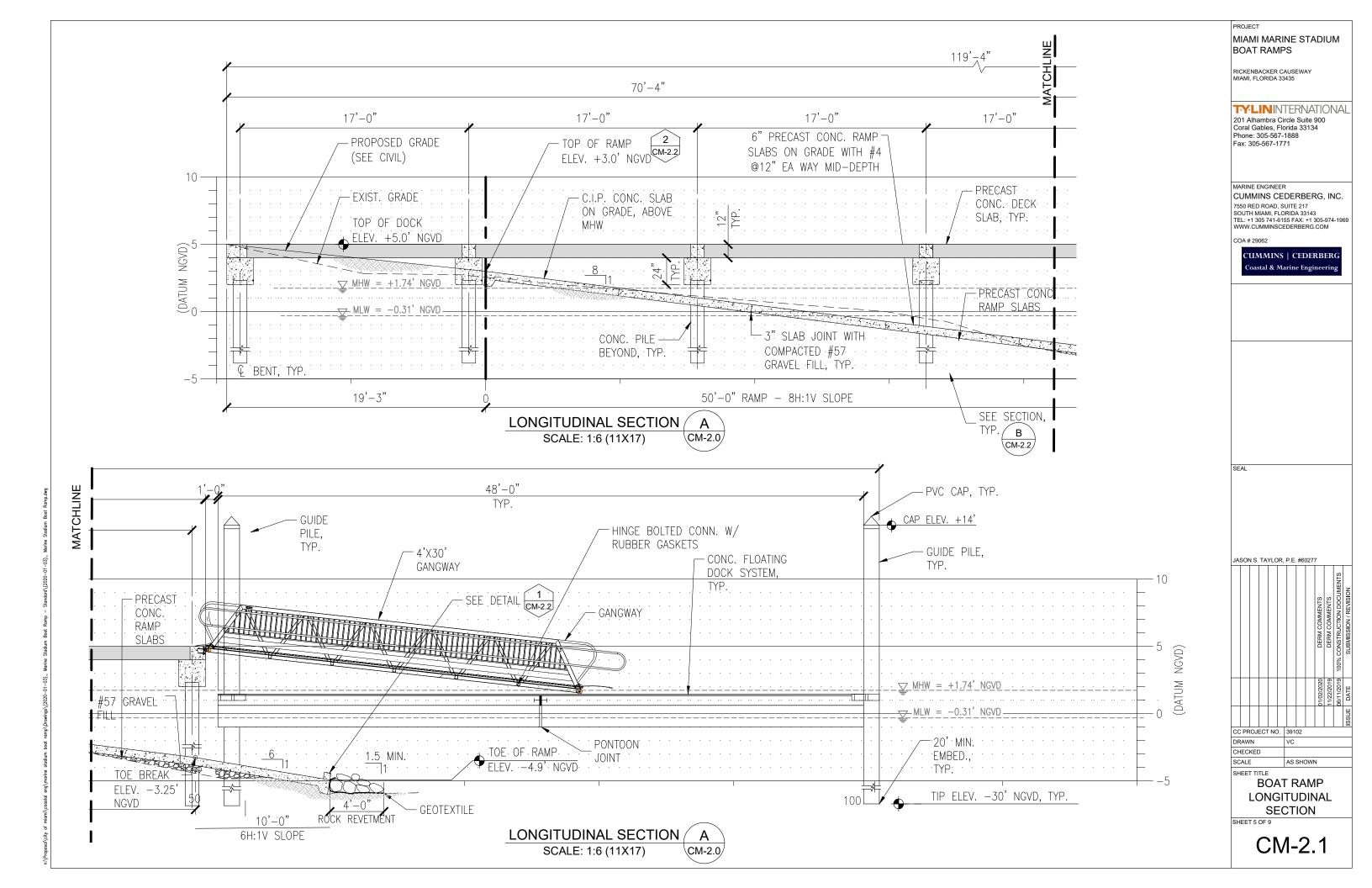
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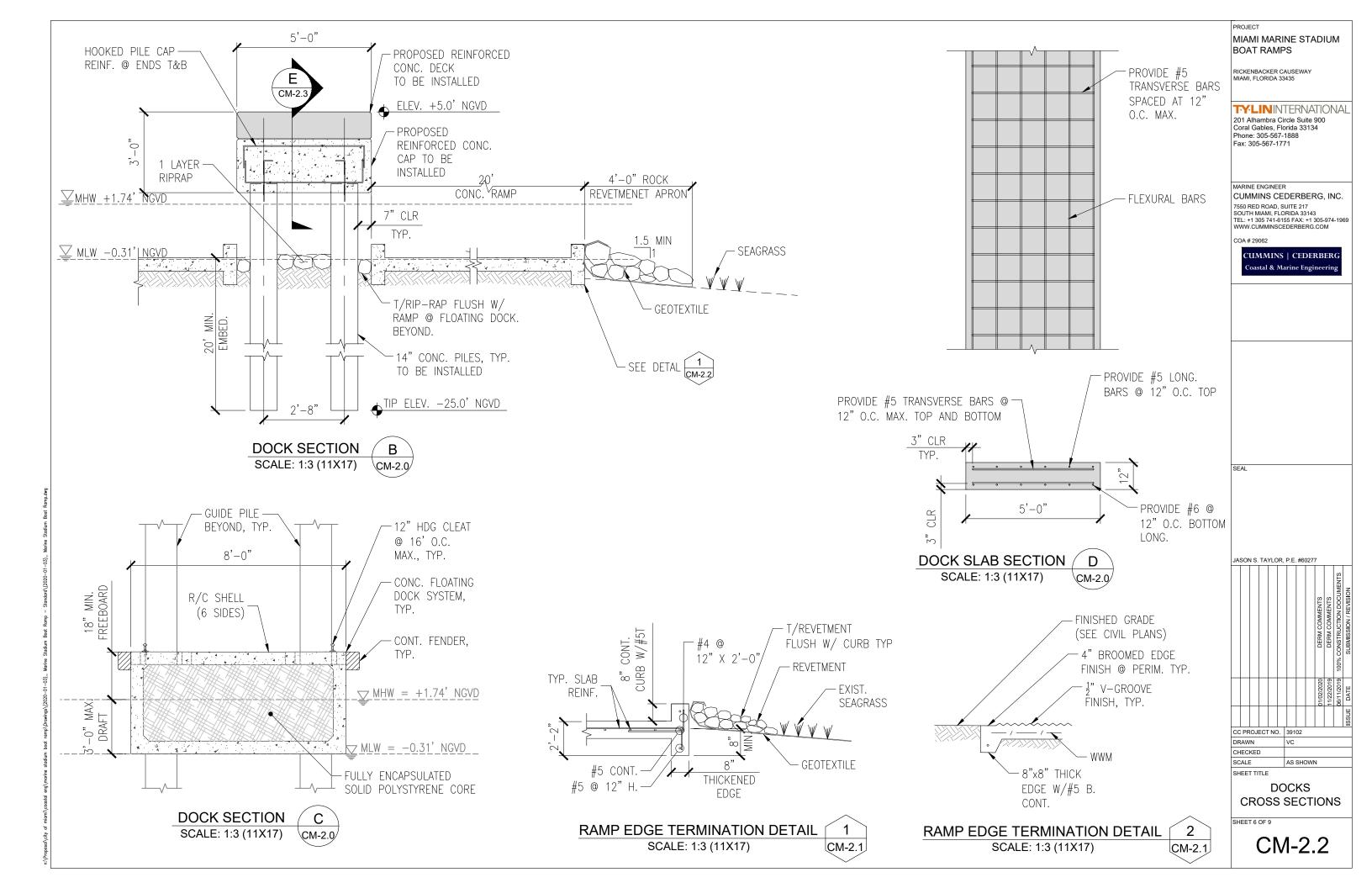


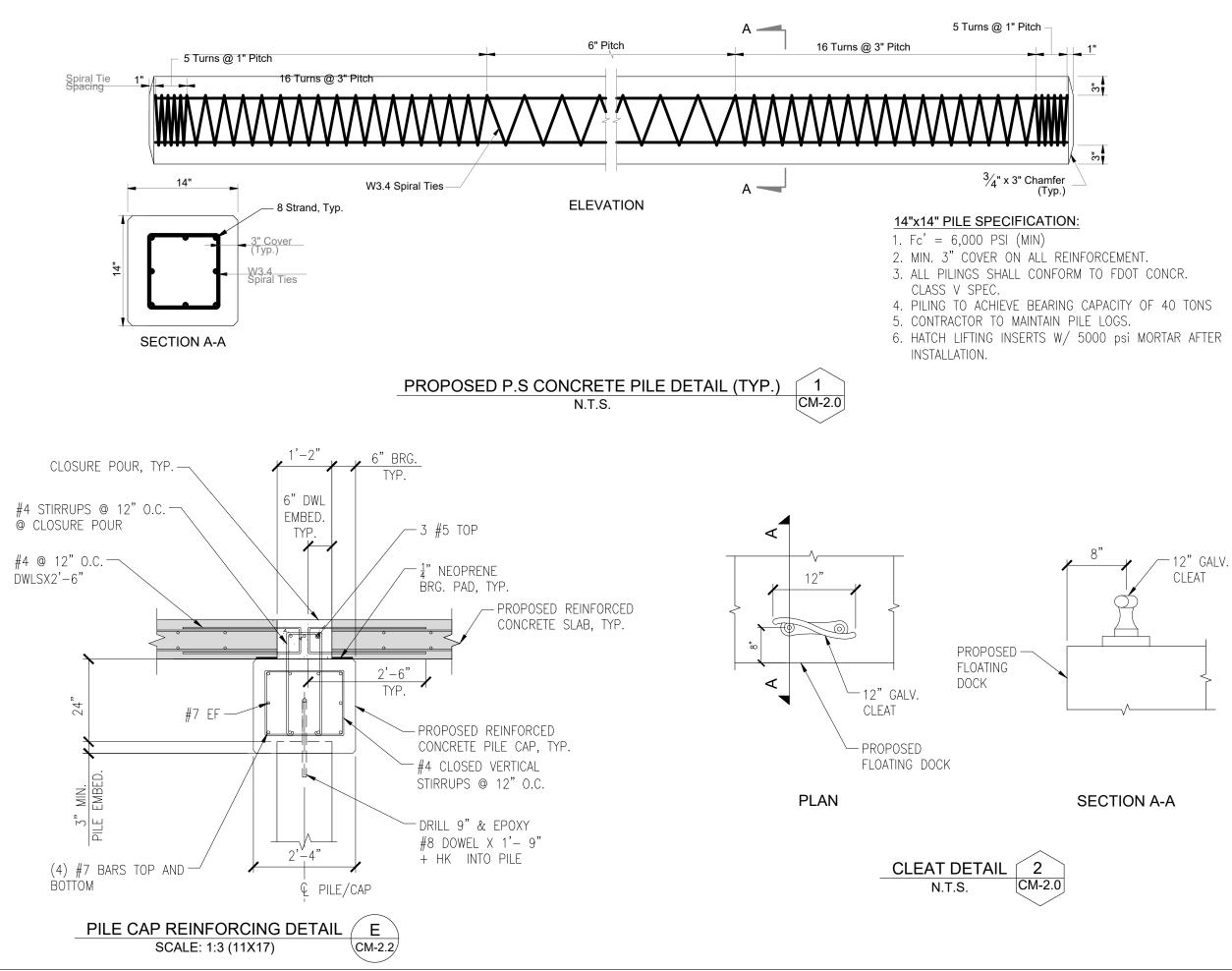
E.R. BROWN & ASSOCIATES INC. DATED ON	PROJECT MIAMI MARINE STADIUM BOAT RAMPS
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	MARINE ENGINEER CUMMINS CEDERBERG, INC. 7550 RED ROAD, SUITE 217 SOUTH MIAMI, FLORIDA 33143 TEL: +1 305 741-6155 FAX: +1 305-974-1969 WWW.CUMMINSCEDERBERG.COM
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Mean High Water Line +/- NAVD 88 Elevation 0.18' NGVD 29 Elevation 1.74' Edge of Water 08-04-2017 1:15 PM	
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	SHEET 3 OF 9 CM-1.1



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PRAP VOLUME	68 CY	CHECKED SCALE AS SHOWN
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CK AREA OVER WATER	416 SQ. FT	PLAN SHEET 4 OF 9
DOCK AREA	960 SQ. FT	CM-2.0

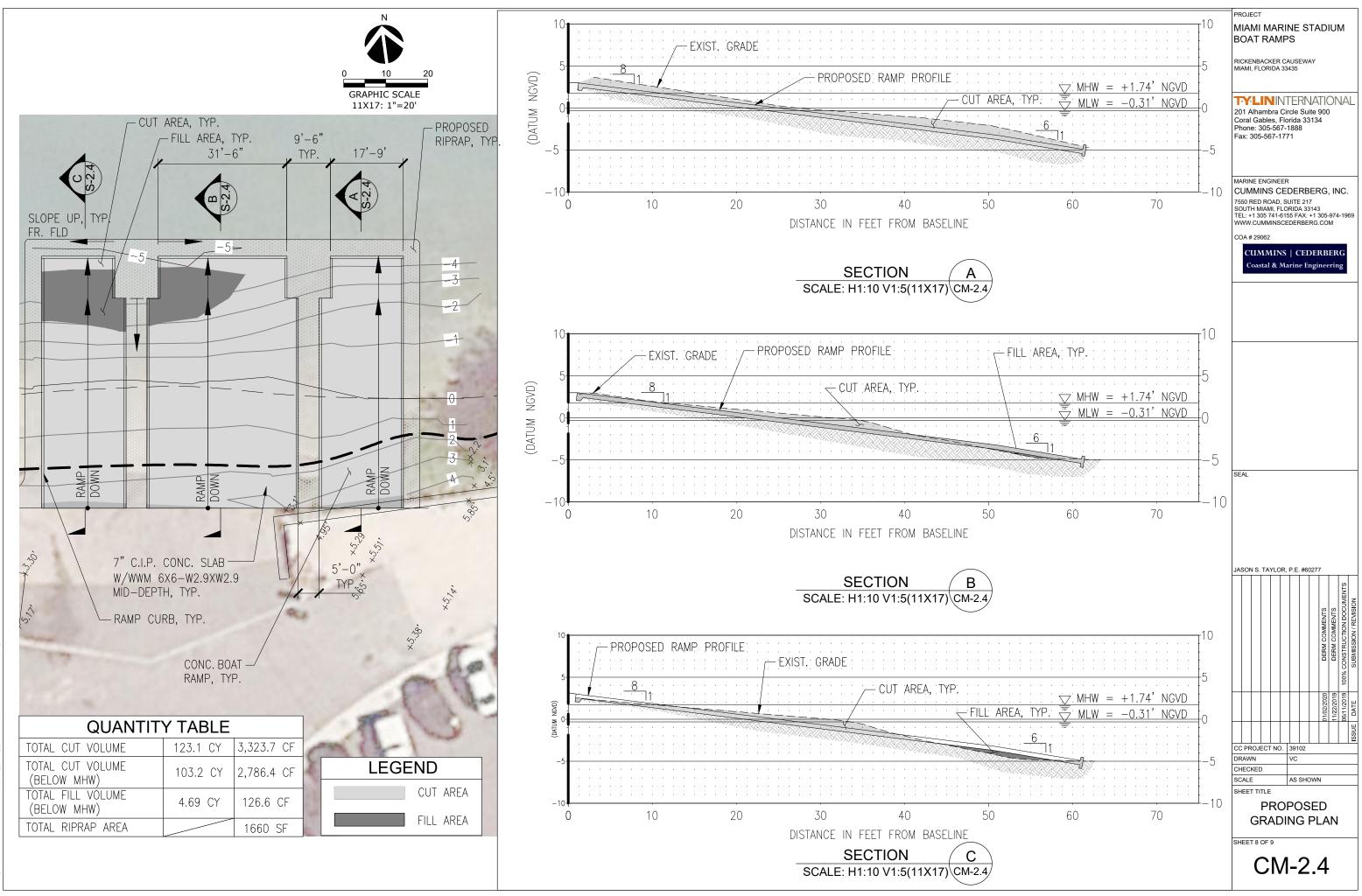






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DETAILS
SHEET 7 OF 9
CM-2.3

PROJECT



# **General Notes**

- 1. The use of non-encapsulated polystyrene for flotation is prohibited by Miami Dade County ordinance. All polystyrene flotation used for floating concrete walkway or non-motorized vehicle launch area shall be fully encapsulated.
- 2. The contractor shall furnish all tools, equipment, materials and supplies and shall perform all labor, supervision, fabrication, assembly, and installation of a complete concrete float system and non-motorized craft launch dock with ADA accessible gangways. The contractor shall furnish complete product shop drawings and calculations for approval to the owner. Drawings and calculations shall be signed and sealed by a Florida registered professional engineer.
- 3. The following notes are for use as a guide standard. a structural engineer licensed in Florida shall prepare calculations and structural drawings as per Florida Building Code (FBC) with submittal. The design shall provide floating concrete docks for ADA accessibility.
- 4. The floating dock system shall be comprised of the following basic components:
  - 4.1. individual float units, attached, and forming a continuous walkway.
  - 4.2. aluminum gangway onto the float of the size and at locations shown in the plans.
  - 4.3. Pilings and pile guides forming the primary support of the floating dock structure.
  - 4.4. industry standard "D" shape fenders to surround entire floating dock.
  - 4.5. Galvanized cleats.

# **Concrete Floats**

- Floating docks shall be of the concrete type. 1.
- Sufficient floatation shall be provided to support a live load of one 2. hundred (100) pounds per square foot of deck area, with a minimum freeboard of not less than eighteen (18) inches.
- Floats shall be cast in forms with a smooth, true surface. Floats 3. cast from forms more than 1/2" out of square (measured diagonally) shall be rejected. Floats shall be monolithic castings with no cold joints in any part of the float.
- 4. Concrete shall have a minimum twenty-eight (28) day compressive strength of 5,000 psi. Concrete for the top surface of the flotation units shall contain polypropylene fibrous reinforcement at a rate recommended by its supplier.
- 5. All concrete testing shall be done under the guidance of personnel certified in accordance with national ready mix concrete association guidelines, all concrete testing methods shall be done in accordance with the respective ASTM specifications and provided prior to shipment.
- Float modules shall have a minimum shell thickness of  $2-\frac{1}{2}$ ". 6.
- 7. Walking surface of concrete floats shall be level and flush with respect to the adjacent floats. Provide SS cover at joints.
- Floats shall be designed to float level under dead load only. The 8. decks shall be within the following minimum tolerances of being level:
  - Maximum transverse slope: one inch per ten feet •
  - Maximum longitudinal slope: one inch per ten feet
- 8. Galvanized welded wire fabrication used as concrete reinforcement

shall be 2"x2"-2.9/2.9. Welded wire fabric is required in the deck and bottom sections with a minimum of 2" return to the sides and ends, where splicing occurs, the overlap shall be a minimum of four (4) inches. Galvanized wire mesh shall meet ASTM A-185, reinforcing steel bars shall be Grade 60, conform to ASTM 615 and shall be HDG. FRP reinf. may be substitute for HDG CORE (EPS).

- 9. Closed cell expanded polystyrene core used inside the concrete shell shall meet federal specification C.578-85. The expanded polystyrene core must be fully encapsulated with concrete (all six sides). Or encapsulated with concrete top and sides with polyurea (rhino-liner or equal) at the bottom. The foam shall weigh between 0.95 and 1.10 pounds per cubic EPS to have a maximum absorption of three (3) percent by volume as tested by ASTM C-272.
- 10. The foam core shall be held in a true position during casting with an allowable variation of 1/8" from the dimensions shown on the shop drawings.
- 11. Foam core may not have more than ten (10) percent reground EPS foam material. Reground foam pieces shall not exceed  $\frac{3}{8}$  inch in diameter.
- 12. Foam billets will have a dimensional tolerance of plus or minus 1/8 inch. Foam core shall be made of of not more than four laminated sections, and no horizontal laminations may occur in the upper ten (10) inches of the foam core.

# **Accessible Gangways**

- 1. Gangway deck and structural components shall be designed to support the dead load of the gangway plus utilities and a uniform live load of one hundred (100) psf. Deck material shall be designed for a concentrated vertical load of three hundred (300) pounds, distributed over one square Handrails shall be designed for a horizontal load of twenty (50) plf or 200# min..
- 2. The gangway shall have continuous Handrails along both sides of the walking surface and shall extend a minimum of one foot beyond the primary walking surface at each end. The top of the handrails shall not be less than 34 inches nor more than 38 inches above the walking surface. The ends shall be returned into the truss body or terminate with no sharp or catching edges. The handrail portion of the handrails shall not be less than  $1-\frac{1}{4}$  inches nor more than 2 inches in cross-sectional dimension, or the shape shall provide an equivalent gripping surface. The handgrip portion of the handrails shall have a smooth surface with no sharp corners. A minimum of 1-1/2 inches clearance shall be provided between the gangway truss and the backside of the handgrip portion. Guardrails shall not be less than 42" in height. Gangway decking shall be slip and skid resistant and made from aluminum or other marine grade material appropriate to this use. Samples and/or catalog cut sheets shall be provided for approval prior to fabrication. Method of securing the decking product to the ramp frame shall be described and approved prior to fabrication. Full width, hinged transition plates shall be provided at both ends of the ramp. the length of both shall be long enough to provide a slope which does not exceed the maximum slope of the gangway. The leading edge of each transition plate shall be UHMW that has been profiled to create no more than a quarter inch rise. Transition plates shall have arc-sprayed "thermion" ceramic core TH604 anti-skid aluminum garnet traction coating.
- 3. The gangway shall be supplied with two solid UHMW rollers or

UHMW skid shoes. Rollers shall have a solid stainless axle. Rollers. axles and skid shoes shall be designed to accommodate all loads to ramps and any job specific requirements. Roller/skid shoe tracks shall be provided ready to install to the float surface. These guide tracks shall be long enough to allow for full longitudinal movement through all water elevation changes. The guide tracks shall restrict any transverse lateral movement of the gangway at the landing. All structural aluminum, including tubes, plates, angles, and pipe shall be alloy 6061-T6 per ASTM B308. All bolts shall be stainless steel per ASTM A316. Isolators shall be used when connecting

- 4. dissimilar metals.
- 5. walkway surface as per the gangway manufacturer the upland structure.

# **Pile Guides**

1. Piling roller guides shall be provided at each pile and consist of

The gangway shall be installed on the floating concrete walkway and the toe end adjusted as to allow the walkway system free movement to travel the full range of water levels without binding or stressing the gangway or walkway system. The gangway roller guide tracks shall be adjusted to suit the full range of lateral movement of the rollers and shall be adequately secured to the recommendations. Gangway shall be connected by a fixed hinge at

four-roller pile guides with UHMW rollers and SS roller pins. Pile guide hardware and metal sections shall be 6061-T6 Aluminum. Pile guides shall have 3-inches clearance from piling to each roller.

PROJECT MIAMI MARINE STADIUM BOAT RAMPS RICKENBACKER CAUSEWAY MIAMI, FLORIDA 33435 **TYLIN**INTERNATIONAL 201 Alhambra Circle Suite 900 Coral Gables, Florida 33134 Phone: 305-567-1888 Fax: 305-567-1771 MARINE ENGINEER CUMMINS CEDERBERG, INC. 7550 RED ROAD, SUITE 217 SOUTH MIAMI, FLORIDA 33143 TEL: +1 305 741-6155 FAX: +1 305-974-1969 WWW.CUMMINSCEDERBERG.COM COA # 29062 CUMMINS | CEDERBERG oastal & Marine Engineering JASON S. TAYLOR, P.E. #60277 CC PROJECT NO. 39102 DRAWN VC CHECKED AS SHOWN SCALE SHEET TITLE FLOATING DOCK **SPECIFICATIONS** SHEET 9 OF 9 CM-3.0