

**Indian River County
Purchasing Division
1800 27th Street
Vero Beach, FL 32960
Phone (772) 226-1416**



ADDENDUM NO. 1

Date: **March 19, 2019**

Project Name: **WABASSO CAUSEWAY FISHING PIER DEMOLITION PROJECT
(IRC-1712)**

Bid Number: **2019035**

Bid Opening Date: **Wednesday, March 28, 2019 at 2:00 p.m.**

This addendum is released to provide clarification and plans update. All information provided herein is hereby incorporated into the bid documents.

Q: The instructions state that the “bidder must have at least five years’ experience in the construction of similar projects of this size and larger”. For the purpose of meeting this requirement, will the experience of the bidder’s principals, management, and supervisory staff be considered? In other words, if the firm does not meet this requirement but its staff does, will the bidder be qualified?

A: The Experience of the bidder’s principals, management and supervisory staff will be considered to meet this requirement as long as that staff is assigned and responsible for direct oversight of the project activities. This experience and the proposed staff’s associated experience must be clearly identified as part of the submitted bid package.

Q: The instructions state that the “bidder must have successfully constructed, as prime CONTRACTOR, at least three projects similar in scope to this project”. Can this be amended to state “the bidder and/or its subcontractors must have...”? Also, will the County consider striking “as prime contractor” from this requirement? The experience is the same regardless of the firm’s role in the overall project and it is likely that all (or most) of the bidders will be using subcontractors for portions of the work. Some firms may have not been the prime on similar projects but are nonetheless qualified.

A: Due to the unique nature of the scope of work set forth in this Contract, requiring both bridge demolition and offshore reef deployment, the County is amenable to amending the bid requirements to reflect “the bidder and/or its subcontractors must have” and replacing the ‘Prime Contractor’ term with ‘Contractor Team’.

Q: At the prebid, it was stated that a survey would be provided. Will this survey include both the project site and the travel route shown in the bid documents? Bidders need this information ASAP in order to determine whether the material has to be trucked away from the site. If the material has to be trucked, can the County property on Wabasso Island Lane be available for use?

A: Please see the survey attached in this Addendum No. 1. Two areas have been identified for material storage, the area available for staging on the east side of the project is delineated in the plans. An approximate 100' x 40' section, sketch is attached with Addendum No.1, of the parking lot on the west side of the bridge will be provided for the Contractor to use.

Attachments:

1. Pre-Bid Conference Minutes
2. Pre-Bid Conference Sign-In Sheet
3. Updated Itemized Bid Schedule, and updated Page 2 of Specifications Division 2 – Technical Provisions
4. Wabasso Fishing Pier Demolition and Debris Removal, Bid Plans, March 2019
5. Permit Boundary and Potential Deployment, Artificial Reef Zone 5
6. Bathymetric Survey
7. Original Plan "Fishing Walks at Structure B over Indian River", Drawing 1, 1968
8. Wabasso Fishing Piers Rehabilitation, 2006
9. Available staging area on the west side of the bridge

*******This Addendum must be acknowledged with submittal package and/or by return of this Acknowledgement with your submittal package *******

Company Name _____

Name: _____ **Title:** _____
(Type / Printed)

Authorized Signature: _____ **Date:** _____

Telephone: _____ **Email:** _____



Board of County Commissioners

1801 27th Street
Vero Beach, Florida 32960-3365
Telephone: (772) 567-8000
Fax: (772) 778-9391

PRE-BID MEETING MINUTES

March 7, 2019 at 10:00 AM

INDIAN RIVER COUNTY ADMINISTRATION BUILDING

Room A1-303 Building A

WABASSO CAUSEWAY FISHING PIER DEMOLITION PROJECT

Project No. IRC-1712

The following meeting notes set forth our understanding of the discussions and decisions made at the subject meeting. If no objections, questions, additions, or comments are received within three (3) working days from issuance of the meeting notes, we will assume that our understandings are correct. The project will move forward according to the bid plans and specifications and the understandings herein.

PROJECT NAME: Wabasso Causeway Fishing Pier Demolition Project
PROJECT NUMBER: IRC-1712
BID NUMBER: 2019035

INTRODUCTIONS/SIGN IN SHEET

Attendance at this conference by all bidders was **MANDATORY**. No bidder arriving after the meeting has begun was allowed to sign in. This meeting was recorded as part of the project records.

PROJECT DESCRIPTION:

The project consists of the demolition and disposal of the existing Wabasso Causeway Fishing Pier, approach sidewalks and associated debris. The pier was severely damaged during Hurricane Matthew in 2016, with eight sections displaced and laying at the river bottom. The entire pier and support structure, which is in two sections and is approximately 1000 feet long, will be removed and placed at a permitted offshore artificial reef site.

CONTRACT DETAILS

Bid Opening: Thursday, March 28, 2019 at 2:00 PM
Contract Time: 60 days to substantial completion
90 days to final completion
Engineer's Estimate: \$1,614,300.00 (Includes Force Account)
Liquidated Damages: \$1,665.00 per day

CONTACTS BIDDING PROCESS

All communications concerning this bid shall be directed to Indian River County Purchasing

Division at purchasing@ircgov.com.

PROJECT CONSULTANTS:

Atkins, Melbourne, Florida – Kenneth M. Good, PE

UTILITIES:

FP&L – A known electric cable is running along the waterway bottom to the south of the pier. Other utilities shall be located by the One-Call System.

PERMITS:

All permitting for the project has been completed. The permits include:

Department of the Army Permit - SAJ-2016-02916 (SP-AWP)

Department of the Army Permit – SAJ-2017-00473 (NWP-CMM)

Department of Environmental Protection – 31-0354699-006-EE

OTHER ISSUES

- Review and comment with questions and clarifications as soon as possible, no further comments 10 days prior to bid opening (Monday, March 18, 2019).
- The Notice to Proceed tentative of Contract Award.
- Maintenance of Traffic:
 - Contractor shall submit a Maintenance of Traffic Plan to the Indian River County, Traffic Division for acceptance.
 - The Maintenance of Traffic Plan shall meet the FDOT Index 600, January 2018 Edition and shall be signed and sealed by a Florida P.E.
 - Traffic Signs approved by FDOT may be required for Trucks/Equipment entering/leaving the park from the CR-510 Wabasso Bridge Traffic Lanes.
 - *James Ennis (IRC-Assistant Public Works Director) stated that the Wabasso Causeway Bridge falls under FDOT jurisdiction and any operation from the bridge would need approval from FDOT, which would include the Contractor obtaining a permit from FDOT any MOT device or signage to be installed. The County has no ability to grant permission to operate from the structure.*
 - Driveway, business and road access shall be maintained at all times
- The Contractor will be permitted to restrict the boat ramp usage of the boat ramp for up to 30 min two times a day for loading and unloading.
- Staging area is shown on the plan, space is limited for staging and contractor may need to arrange for frequent removal of unsuitable material and construction debris.
- The Contractor shall be responsible for removal of all debris generated by the marine & land-based demolition operations, along with restoration of the impacted areas. Excavated material – such as the concrete sidewalk, is to be removed and disposed of by Contractor.
- Preparation of Concrete for Reef Deployment – all metal or exposed reinforcement shall be removed as close to the concrete as possible, and extend no more than 6 inches, per the permit requirements. Removed metal material shall be disposed of in an approved manner.
- All clean concrete sections over 500 lbs shall be prepared and deployed within the

permitted OIARC reef area located approximately 3 miles off shore and about 5 miles south of the Sebastian inlet. Contractor shall comply with all conditions and requirements of the permits.

- *James Ennis (IRC) stated, the reef shall be deployed in Reef Zone 5, Sub-Section C of the attached Plan (Center Coordinates: -80.34668584, 27.82888667), all material must to be placed within a 100-foot radius of the provided coordinates, in a uniform fashion with a maximum relief of 12 feet. The County will confirm the depths with a sound depth finder. If Contractor exceeds this maximum relief, they will be responsible for removing material to meet permit requirements.*
- All demolition, removal, and disposal work shall be conducted from a barge or vessel. No work shall be conducted from the CR-510 Highway Bridge.
- Contractor will be responsible for Notifying the US Coast Guard for a Notice to Mariners.
- Work hours – IRC work hours are from 7AM to 5PM, however on-water work time will also be limited to ½ hour after sunrise through ½ hour before sundown. Night time demolition/construction operations will not be allowed, work on weekends or holidays will need approval from IRC.
- *James Ennis (IRC) emphasized the following requirements found in the Contract Documents:*
 - *A minimum two (2) week notification prior to material deployment is required under the Department of the Army Permit - SAJ-2016-02916 (SP-AWP).*
 - *Pre-deployment dives are required by the Permit and will be conducted by County staff.*
 - *Maximum deployment at each Reef Zone is 1000 tons, as per Department of the Army Permit - SAJ-2016-02916 (SP-AWP),*
 - *Barge for deployment is required to have Hydrostatic Number Charts to confirm the tonnage of material deployed.*
 - *Army Corps requires clean concrete with no rebar sticking out more than 6 inches – See Department of the Army Permit - SAJ-2016-02916 (SP-AWP).*
 - *Handrails shall be removed on all sections and this is to be considered as part of the pay item for disposal of each deck section.*
 - *Site restoration item on bid sheet shall include all concrete removal not suitable for deployment or broken concrete (pieces less than 500 lb)*
- *Ken Good (Atkins) stated that post-tensioning and pre-tensioning cables which are exposed will require removal and would fall under the rebar removal requirement*

DISCUSSION

Questions & Answers

Q: Will FPL buoy their line?

A: It will be up to the contractor to coordinate with FP&L as to how they want their line protected during construction.

Q: What is the anticipated timing for Notice to Proceed?

A: Approximate 4 weeks after bid opening, the Bid Opening and/or Notice to Proceed will not be delayed due to the typical conditions favorable to deployment.

Q: Is there a specific reason for 5-day work week?

A: Regular working hours are defined as Monday through Friday 7AM to 5PM. Cost of inspection or testing during overtime work will be paid by the contractor, see Section 0800, Supplementary Conditions to the General Conditions, Article SC-6.02. Overtime Rate for Inspectors: \$50.00/ per hour for county inspector for 8 hours minimum and \$110.00/ hour for Atkins' Engineers.

Q: Lead time for diving inspection.

A: A minimum two (2) week notification prior to material deployment is required under the Department of the Army Permit - SAJ-2016-02916 (SP-AWP). County staff will conduct the pre- and post-deployment dives required for permit reporting. The total number of anticipated deployments necessary to deploy up to 1000 tons of bridge material will be required at the time of the two (2) week notification.

Q: Will a County inspector be on site at all times?

A: Yes, the County or an engineering consultant will be onsite.

Q: Can the Contractor work on both sides of the bridge demolition at the same time?

A: Yes.

Q: Can deployment of the material be taken out to the sea after hours?

A: There are no restrictions on the transportation time of the material by the contract or permit.

Q: What happens if the site is not acceptable following the inspection dive?

A: The rule is to move 500 ft from any newly identified hardbottom.

Q: Can the dive be done a day before deployment?

A: The site can be checked a few days before however, it's most likely County staff will be onsite the morning of the first deployment to complete a pre-deployment assessment. If a pre-deployment dive is conducted days prior to deployment of material, County staff will still be on site to observe and record material deployment for permit reporting purposes.

Q: Will slabs be able to handle the removal of post tension cables, and what if concrete is crumbling once it has been removed?

A: There are plans available from the rehabilitation and the contractor shall make his own judgement, pieces of concrete acceptable can be cut to 10 ft lengths with a minimum weight of 500 lb. Available drawings are attached to this document. Only exposed cables would need to be removed.

Q: Is there a restriction on placement?

A: It should be a uniform drop from the barge. For example, a loader can be used to push the material from the barge.

Q: What type of turbidity boom will need to be used?

A: The floating turbidity barrier type is at the contractor's discretion as necessary to achieve their demolition operation while meeting permit requirements. The Contractor shall be responsible for providing BMP's sufficient for the location and conditions.

Q: Does the work area and sea grass area need to be protected by the turbidity booms.

A: Yes, the sea grass shall be protected with turbidity barriers as shown on the contract drawings. The work area shall be protected with a floating turbidity barrier in accordance with the permit SAJ-2017-00473.

Q: Will be additional park area made available?

A: No, the intent of this project was, to have the deployment material be stored on the barge and not in the park area. A bathymetric survey of the channel from the pier south to the Intracoastal Waterway is attached.

Q: Can the park be used to truck material off site?

A: The area available for staging on the east side of the project is delineated in the plans. An approximate 100' x 40' section, sketch attached, of the parking lot on the west side of the bridge will be provided for the Contractor to use. Please be aware that the Contractor will be responsible for restoring the lay down areas to the condition prior to use.

Q: Does all debris material need to be deployed to the reef?

A: The Contractor shall use all suitable material from the existing bridge components to build an artificial reef located in reef zone 5C, center coordinates provided above.5C. Up to 1000 TN can be deployed at this location. No materials should be tampered with to minimize the amount of suitable material eligible for deployment.

Q: What happens if the Army Corps finds the material not suitable during inspection? While it has been selected on established material criteria as outlined in the permits?

A: Material staged for placement will be inspected by County staff and the Contractor to confirm it complies with all requirements outlined in the permit prior to any and all AOCE inspections pre-deployment. If any unforeseen conditions arise, they will be addressed at that time.

Q: Do the piles have stingers?

A: The details of the piles are not known.

Q: What is the force account used for?

A: Force Account Funds can be used by the County staff for unforeseen conditions, expenses or overrun on quantities due to additional work required. Any work proposed to utilize contingency funds must be identified and agreed upon before any work is performed and a Work Change Directive issued prior to any work being performed.

Q: Bid Item No2.01 Crane, when will that be used?

A: Revised bid sheets will be issued with this Addendum which remove this pay item. All equipment costs necessary for the project work to be completed shall be included in the respective pay items bid prices the work is associated with.

Q: What if bids are exceeding the County's budgets?

A: Options to address a low bid in excess of the current project budget will be evaluated at that time.

Q: Is there a commercial diving requirement? OSHA? Commercial? Or Army Corps?

A: It is up to the Contractor to follow their business requirements/OSHA/company policies. This is not an Army Corps project and specific dive requirements are not mandated by the County. An Army Corps dive plan is not required.

Meeting adjourned at 11:00AM

**MANDATORY PRE-BID MEETING
SIGN-IN SHEET
INDIAN RIVER COUNTY ENGINEERING
INDIAN RIVER COUNTY ADMINISTRATION BUILDING
Room A1-303 Building A
WABASSO CAUSEWAY FISHING PIER DEMOLITION PROJECT
PROJECT No. IRC-1712
March 7, 2019 at 10:00 A.M.**

NAME	COMPANY & ADDRESS	PHONE # / FAX # / CELL #	EMAIL ADDRESS
KEN GOOD	ATKINS - ENGINEER	321-775-6270	kenneth.good@atkinsglobal.com
Bob Begano	CUSTOM BUILT MARINE CONSTRUCTION	772-333-2383	bob@custombuiltmarines.com
Alain Peña	POSEIDON DREDGE & MARINE	561-296-4981 541-234-6587	AlainP@PDMarincinc.com
ED Williams	Shoreline Foundation	954-985-0460	edwilliams@shorelinefoundation.com
Tony LANDRY	RUSH MARINE LLC	813-393-7375	tlandry@rushinc.com
Kristin Leindecker	IRC Eng	772-226-1327	kleindecker@ircgov.com
MIKE HELLER	IRC ENG.	772-226-1585	mheller@ircgov.com
GRAHAM COFER	BALLARD MARINE CONSTRUCTION	912-438-0542	graham.cofere@ballardmc.com
Richard King	McCulley Marine Serv	772-216-9716	richard@mccluleymarine.com
Mike Andy Sobush	IRC PW	772-226-1931	Asobush@irc.gov
Diane Lystlund	IRC Purchasing	772-226-1418	dlystlund@ircgov.com

**MANDATORY PRE-BID MEETING
SIGN-IN SHEET
INDIAN RIVER COUNTY ENGINEERING
INDIAN RIVER COUNTY ADMINISTRATION BUILDING
Room A1-303 Building A
WABASSO CAUSEWAY FISHING PIER DEMOLITION PROJECT
PROJECT No. IRC-1712
March 7, 2019 at 10:00 A.M.**

NAME	COMPANY & ADDRESS	PHONE # / FAX # / CELL #	EMAIL ADDRESS
LYZA AICHOW	BCI 6526 S. KANINE TRAIL #345 STUART	772-260-0828	LYZABROTHERS CONSTRUCTION FL. CORP
ANDREW CONNELLY	UNDERWATER ENGINEERING SERVICES, INC. (UESI)	772-337-3116 PH 772-337-0294 FAX	aconnelly@uesi.com
SCOTT BACHMAN	MCCULLY MARINE 2309 N OGDONIA PIKE	772-216-3907 cell 772-489-6069 office	SCOTT@mcculleyMARINE.com

PROJECT NAME:WABASSO CAUSEWAY FISHING PIER DEMOLITION PROJECT**PROJECT NO. IRC-1712****BID NO. 2019035****BIDDER'S NAME** _____

Item No.	Description	Unit	Quantity	Unit Price	Amount
2	MOBILIZATION/DEMobilIZATION	EA	1		
3	DEMOLITION - WEST STRUCTURES				
3.01	FULL 50 FOOT SECTIONS ABOVE WATER, REMOVAL	EA	8		
3.02	40 FOOT SECTION/ABUTMENT	EA	1		
3.03	FULL PIERS	EA	11		
3.04	UNDERWATER SUPERSTRUCTURE SECTIONS (INCLUDES DIVERS, BMP'S ENVIRONMENTAL MONITORING), REMOVAL	EA	2		
3.05	PARTIAL PIERS TO BE RECOVERED	EA	5		
3.06	UPLAND SIDEWALK REMOVAL	SF	300		
4	DEMOLITION -EAST STRUCTURES				
4.01	FULL 50 FOOT SECTIONS ABOVE WATER, REMOVAL	EA	3		
4.02	30 FOOT SECTION/ABUTMENT	EA	1		
4.03	FULL PIERS	EA	5		
4.04	UNDERWATER SUPERSTRUCTURE SECTIONS (INCLUDES DIVERS, BMP'S ENVIRONMENTAL MONITORING), REMOVAL	EA	6		
4.05	PARTIAL PIERS TO BE REMOVED	EA	5		
4.06	PARTIAL PIERS TO BE RECOVERED	EA	5		
4.07	UPLAND SIDEWALK REMOVAL	SF	300		
5	DISPOSAL OF MATERIALS (OFFSHORE REEF DEPLOYMENT)	LS	1		
6	SITE RESTORATION	LS	1		
WABASSO CAUSEWAY FISHING PIER DEMOLITION PROJECT				SUB-TOTAL	
FORCE ACCOUNT					\$220,000.00
TOTAL PROJECT ESTIMATE (INCLUDING FORCE ACCOUNT)				TOTAL	

TOTAL PROJECT BID AMOUNT IN WORDS _____

NOTE: IF THERE IS A DISCREPANCY BETWEEN THE PLANS (SUMMARY OF PAY ITEMS) AND THE ITEMIZED BID SCHEDULE. THE BID SCHEDULE WILL BE UTILIZED FOR BIDDING PURPOSES.

SF=Square Feet LS=Lump Sum EA=Each PD=Per Day

SECTION 1 – MOBILIZATION/DEMobilIZATION

Perform preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities. Include the costs of bonds and any required insurance and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials.

Demobilization shall be deemed to consist of all tasks necessary for removal of materials, plant, and equipment from the site upon completion of the work, restoration of the site and site access to original condition.

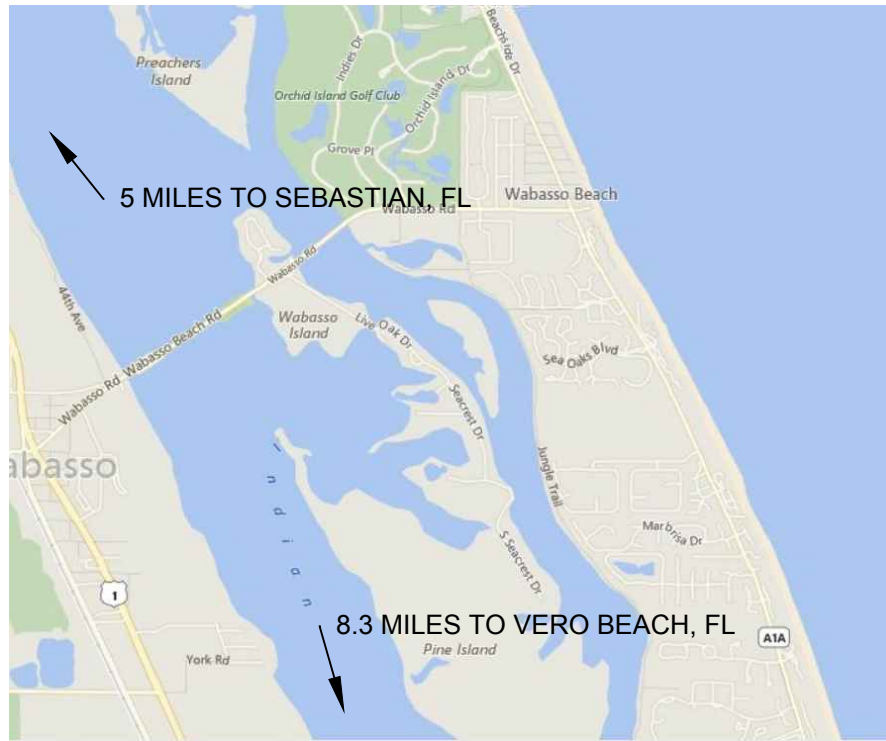
SECTION 2 - PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION

PART 1 – GENERAL

1.1 SCOPE

- A. This Section covers erosion control and the treatment of dewatering water and stormwater runoff from the construction site and work area. Pollution control measures shall prevent polluted or turbid waters from being discharged from the construction site or work area to undeveloped portions of the site or offsite, including but not limited to Multiple Separate Storm Sewer Systems (MS4s) and Waters of the State.
- B. The OWNER considers pollution from dewatering water and stormwater runoff from a construction site or work area to be a very serious offense. The CONTRACTOR is solely responsible for preventing pollution caused by dewatering water and stormwater runoff from the construction site or work area. Note that state regulations do not allow mixing stormwater and dewatering groundwater in the same release – separate and independent discharges are required.
- C. Pollution control measures specified herein represent minimum standards to be adhered to by the CONTRACTOR throughout the Project's construction. The OWNER reserves the right to require the CONTRACTOR to employ additional pollution control measures, when in the sole opinion of the OWNER, they are warranted. If site specific conditions require additional erosion and stormwater pollution control measures during any phase of construction or operation to prevent erosion or to control sediment or other pollution,

WABASSO FISHING PIER DEMOLITION AND DEBRIS REMOVAL WABASSO, FL BID PLANS



LOCATION MAP NTS DRAWING INDEX

G-001 TO G-002	GENERAL NOTES
V-100	PRE-HURRICANE MATHEW CONDITIONS
V-101	POST-HURRICANE MATHEW CONDITIONS
V-102	EXISTING PIER COMPONENT INVENTORY PLAN - WEST
V-103	EXISTING PIER COMPONENT INVENTORY PLAN - EAST
C-100	DEMOLITION PLAN - WEST SECTION
C-101	DEMOLITION PLAN - EAST SECTION
C-110	BARGE TRANSIT ROUTE
C-500 TO C-501	BMP PLAN VIEW AND DETAILS



Indian River County
1801 27th Street,
Vero Beach, FL 32960
Project Manager: Kirstin Leiendecker



7175 Murrell Road
Melbourne, Florida 32940
321-242-4942
FBPR Certificate of Authorization No. 24
Engineer of Record: Kenneth M. Good, PE
Fl. Lic. No. 61687

File Name: C:\Users\BART6907\Documents\Wabasso Pier\Justin Files\CAD\C-0 COVER SHEET.dwg Layout Name: GENERAL NOTES Plot Time: Wednesday, March 06, 2019 - 8:59am Plotted by: BART6907

GENERAL NOTES

- THIS PROJECT INCLUDES THE COMPLETE DEMOLITION AND REMOVAL OF THE ENTIRE EAST AND WEST SPANS OF THE WABASSO FISHING PIER, ALONG WITH THE CONNECTING SIDEWALKS AT EACH END. ALL COMPONENTS OF THE PIER (INTACT AND DAMAGED/DISPLACED), INCLUDING PILES, CAPS, DECK SECTIONS AND LOOSE DEBRIS, ARE TO BE REMOVED. THE ENGINEER OR OWNER SHALL BE INFORMED UPON DISCOVERY OF ANY DEBRIS UNRELATED TO WABASSO FISHING PIER.
- CONTRACTOR SHALL COMPLY WITH ALL NOTES, CONDITIONS AND REQUIREMENTS GIVEN WITHIN THE DRAWINGS, SPECIFICATIONS, AND PERMITS. THE SPECIFICATIONS HAVE BEEN PREPARED BY INDIAN RIVER COUNTY STAFF INDEPENDENT OF THE PLANS. THESE SPECIFICATIONS COVER THE OFFSHORE PLACEMENT AND PROVIDE SUPPLEMENTAL INFORMATION AND REQUIREMENTS FOR THE DEMOLITION. IN THE EVENT THERE IS A DISCREPANCY BETWEEN THESE PLANS AND THE SPECIFICATIONS OR OTHER COUNTY SUPPLIED DOCUMENTS, IT IS THE CONTRACTORS RESPONSIBILITY TO REQUEST CLARIFICATION. GENERALLY THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
- ALL METAL RAILINGS, BRACKETS, EXPOSED REINFORCING, OR OTHER FITTINGS SHALL BE REMOVED AS CLOSE TO THE CONCRETE AS PRACTICABLE, WITH PROTRUSION NOT TO EXCEED 6 INCHES IN LENGTH FROM THE CONCRETE IT IS INCASED IN. SAID MATERIALS SHALL BE DISPOSED OF AT AN APPROVED UPLAND FACILITY.
- ALL CLEAN CONCRETE COMPONENTS OVER 500 LBS SHALL BE DISPOSED OF AT 1 OF 12 OFFSHORE ARTIFICIAL REEF SITES LOCATED APPROXIMATELY FIVE MILES EAST-SOUTHEAST OF SEBASTIAN INLET. THIS REEF SITE WAS AUTHORIZED BY USACE PERMIT SAJ-2016-02916 (SP-AWP). CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS AND REQUIREMENTS WITHIN AUTHORIZED PERMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.
- THE FOLLOWING IS A SUMMARY OF THE MAJOR PIER COMPONENTS TO BE REMOVED.
 - 11 - INTACT 50' CONCRETE PIER DECK SECTIONS
 - 2 - INTACT 25' CONCRETE PIER DECK ABUTMENT SECTIONS
 - 8 - SUBMERGED/DISPLACED/DAMAGED CONCRETE PIER DECK SECTIONS
 - 38 - FULL LENGTH INTACT CONCRETE PILES
 - 5 - PARTIAL/BROKEN/DISPLACED CONCRETE PILES
 - 16 - INTACT CONCRETE PILE CAPS
 - 5 - SUBMERGED/DISPLACED/DAMAGED CONCRETE PILE CAPS
 - 1,530 SQ. FT. - CONCRETE SIDEWALK
- PIER COMPONENTS SHALL BE REMOVED FROM THE WATERWAY WITHOUT ADVERSELY IMPACTING AQUATIC NATURAL RESOURCES.
- PIER COMPONENTS WILL BE LIFTED STRAIGHT UP AND NOT DRAGGED, SO THAT NO POTENTIAL SEAGRASS AND/OR HARDBOTTOM IS HARMED OR DAMAGED.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTION TO PROTECT EXISTING STRUCTURES INCLUDING UNDERGROUND AND ABOVE GROUND UTILITIES. AN 811 UTILITY LINE LOCATION CALL (1-800-432-4770) SHALL BE CONDUCTED BY CONTRACTOR TO LOCATE ANY UTILITIES IN THE FACILITY. A KNOWN FPL ELECTRICAL CABLE(S) IS RUNNING ALONG THE WATERWAY BOTTOM JUST TO THE SOUTH OF THE PIER. THE CABLE(S) SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION OPERATIONS. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH FPL TO INSURE CLEARANCE AND PROTECTION REQUIREMENTS, APPROPRIATE FOR THE CONTRACTOR'S PROPOSED EQUIPMENT ARE MET. PRIOR TO MOBILIZATION, THE CONTRACTOR SHALL SUBMIT A PLAN, WHICH HAS BEEN APPROVED BY FPL, IDENTIFYING REQUIRED

- CLEARANCES AND PROTECTION METHODS.
- SUBMERGED PIER SECTIONS WERE LOCATED WITH A DIVER AND HAND-HELD GPS UNIT. LOCATIONS ARE APPROXIMATE. THE ORIENTATION OF THE SUBMERGED DECK SECTIONS IS APPROXIMATE BASED ON DIVER OBSERVATIONS WITH LIMITED VISIBILITY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE POSITION, ORIENTATION, CONDITIONS, ETC. OF ALL PIER COMPONENTS AND DEBRIS PRIOR TO MOBILIZATION.
- COMPLETE REMOVAL OF THE PILES IS PREFERRED. IF IT IS NOT PRACTICAL OR POSSIBLE TO COMPLETELY REMOVE A PILE, IT SHALL BE CUT OFF AT LEAST ONE FOOT BELOW THE MUDLINE, WITH ALL REINFORCING CUT FLUSH WITH THE CONCRETE. BASED ON CRANE CAPACITY LIMITS, DECK SECTIONS MAY BE CUT TO MINIMUM LENGTH OF 10 FEET.
- ALL EQUIPMENT INCLUDING VESSELS AND TURBIDITY CURTAIN WILL BE REQUIRED TO FOLLOW PROPER U.S.C.G. PROTOCOL FOR OVERNIGHT STORAGE.
- THE CONTRACTOR SHALL PROVIDE ALL WARNING SIGNS, LIGHTS, & SIGNALS AS REQUIRED TO ADEQUATELY WARN THE PUBLIC AGAINST DANGER AND TRESPASS WITHIN THE DESIGNATED CONSTRUCTION SITE.
- ALL PIER DEMOLITION, REMOVAL, AND DISPOSAL WORK SHALL BE CONDUCTED FROM A BARGE OR SIMILAR VESSEL. NO WORK SHALL BE CONDUCTED FROM THE HIGHWAY BRIDGE, AND THE WORK SHALL NOT IMPACT TRAFFIC ON THE HIGHWAY BRIDGE.
- NOTICE TO MARINERS:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE U.S. COAST GUARD IN SUFFICIENT TIME TO ALLOW FOR PUBLICATION OF A NOTICE TO MARINERS. THE LOCAL COAST GUARD IS:
 COMMANDER
 7TH COAST GUARD DISTRICT
 BRICKELL PLAZA FEDERAL BUILDING
 909 S.E. FIRST AVENUE, ROOM 406
 MIAMI, FLORIDA 33131-3028
 ATTN: (LNM)
 TELEPHONE: (305)415-6750
 FAX: (305)415-6757
 THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE U.S. COAST GUARD FOR ALL BUOYS, MARKERS, AND OTHER NAVIGATION AIDS PRIOR TO INSTALLATION. AIDS, LIGHTS OR TARGETS SHALL NOT BE PLACED OR COLORED IN A MANNER THAT THEY WILL OBSTRUCT OR BE CONFUSED WITH NAVIGATION AIDS.
- GENERAL HOURS OF OPERATIONS WILL BE LIMITED TO ONE HALF HOUR AFTER SUNRISE THROUGH ONE HALF HOUR BEFORE SUNDOWN; NO NIGHTTIME OPERATIONS WILL BE ALLOWED. NO WORK SHALL BE PERFORMED ON SUNDAY'S OR HOLIDAYS WITHOUT PRIOR APPROVAL FROM THE OWNER OR ENGINEER

RESOURCE PROTECTION NOTES

- THE CONTRACTOR SHALL COMPLY WITH ALL WATER QUALITY REQUIREMENTS AND REGULATORY PERMITS ISSUED BY LOCAL, STATE AND FEDERAL AUTHORITIES PRIOR TO AND AT THE TIME OF CONSTRUCTION.
- MANGROVES SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION OPERATIONS. A MINIMUM FIFTEEN FOOT WIDE BUFFER AROUND LANDWARD SIDE OF THE MANGROVES DRIP LINE SHALL BE FENCED OFF WITH ORANGE CONSTRUCTION SAFETY FENCE.
- SEAGRASS SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION OPERATIONS. NO VESSELS OR EQUIPMENT SHALL OPERATE OVER OR TRAVERSE ATOP OF THE SEAGRASS BED. A MINIMUM TWENTY-FIVE FOOT BUFFER AROUND THE SEAGRASS BED SHALL BE PROTECTED WITH A FLOATING TURBIDITY BARRIER.



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WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
GENERAL NOTES

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
LIC. NO. 61687



JOB No.
100055899
CAD FILE
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SHEET NUMBER
G-001

4. ALL PIER REMOVAL OPERATIONS SHALL BE CONTAINED WITHIN WATER QUALITY BMPs SUCH AS, BUT NOT LIMITED TO, TURBIDITY BARRIERS AND SILT FENCES.
5. PIER COMPONENTS SHALL BE LIFTED STRAIGHT UP AND NOT DRAGGED, SO THAT ANY POTENTIAL SEAGRASS AND/OR HARBOTTOM IS NOT DAMAGED.
6. AT ALL TIMES, A MINIMUM 1 FOOT VERTICAL CLEARANCE BETWEEN THE KEEL OR LOWEST PORTION OF THE VESSEL RUNNING GEAR AND THE BOTTOM OF THE WATERWAY SHALL BE MAINTAINED.
7. WORK SHALL COMPLY WITH STANDARD MANATEE CONDITION FOR IN-WATER WORK. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONDITIONS INTENDED TO PROTECT MANATEES FROM DIRECT PROJECT EFFECTS:
 - 7.1. 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 CONTRACTOR 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.
 - 7.2. 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.
 - 7.3. 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.
 - 7.4. 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 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.
 - 7.5. 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 IN VERO BEACH (1-722-562-3909) FOR SOUTH FLORIDA, AND EMAILED TO FWC AT IMPERILEDSPESIES@MYFWC.COM
 - 7.6. A TEMPORARY SIGN CONCERNING MANATEES SHALL BE POSTED PRIOR TO AND DURING ALL IN-WATER PROJECT ACTIVITIES. ALL SIGNS ARE TO BE REMOVED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. TEMOPORARY 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 ENAGAGED IN WATER-RELATED ACTIVITES. THESE SIGNS CAN BE VIEWED AT
[HTTP://WWW.MYFWC.COM/WILDLIFEHABITATS/MANTEE_SIGN_VENDORS.HTM](http://www.myfwc.com/wildlifehabitats/manatee_sign_vendors.htm).
 QUESTIONS CONCERNING THESE SIGNS CAN BE FORWARDED TO THE EMAIL ADDRESS LISTED ABOVE.

8. WORK SHALL COMPLY WITH SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING PROTECTED SPECIES CONSTRUCTION CONDITIONS:
 - 8.1. THE CONTRACTOR 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.
 - 8.2. THE CONTRACTOR SHALL ADVISE ALL CONSTRUCTION PERSONNEL THAT THERE ARE CIVIL AND CRIMINAL PENALTIES FOR HARMING, HARRASSING, OR KILLING SEA TURTLES OR SMALLTOOTH SAWFISH, WHICH ARE PROTECTED UNDER THE ENDANGERED SPECIES ACT OF 1973.
 - 8.3. 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.
 - 8.4. 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.
 - 8.5. IF 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.
 - 8.6. 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 (272-824-5312) AND THE LOCAL AUTHORIZED SEA TURTLE STRANDING/RESCUE ORGANIZATION.



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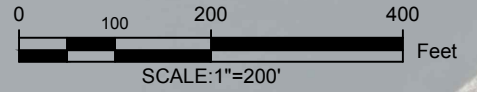
WABASSO FISHING PIER
 DEMOLITION AND DEBRIS REMOVAL
 INDIAN RIVER COUNTY
 GENERAL NOTES

ENGINEER OF RECORD:
 KENNETH M. GOOD, PE
 LIC. NO. 61687



JOB No.
 100055899
 CAD FILE
 1
 SHEET NUMBER
 G-002

File Name: C:\Users\BART6907\Documents\Wabasso Pier\Justin Files\CAD\EX-1 EX.PLAN.dwg Layout Name: Layout1 Plot Time: Wednesday, March 06, 2019 - 8:59am Plotted by: BART6907



INDIAN RIVER

WABASSO BRIDGE ROAD (C.R. 510)

475± LF EASTERN FISHING PIER

NO EXISTING PIER BETWEEN EAST AND WEST SECTIONS

525± LF WESTERN FISHING PIER

INDIAN RIVER

FDOT APLUS IMAGERY
PRE HURRICANE MATTHEW (2015)

ATKINS

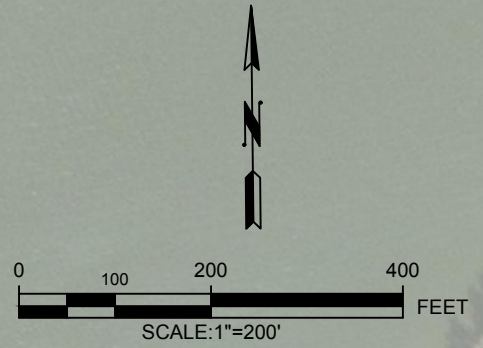
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WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
PRE-HURRICANE MATTHEW CONDITIONS

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
L.C. NO. 61687



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CAD FILE
2
SHEET NUMBER
V-100



INDIAN RIVER

WABASSO BRIDGE ROAD (C.R. 510)

120± LF SIDEWALK

175± LF EASTERN FISHING PIER (INTACT)

300± LF EASTERN DAMAGED/SUBMERGED DEBRIS AREA

158± LF SIDEWALK

100± LF WESTERN DAMAGED/SUBMERGED DEBRIS AREA




425± LF WESTERN FISHING PIER (INTACT)

APPROX. LOCATION OF FPL POWER LINE (SUB AQUEOUS CROSSING)

INDIAN RIVER

MICROSOFT BING MAPS - POST HURRICANE MATHEW (2017)

LEGEND:

-  FPL POWERLINE
-  CONCRETE SIDEWALK
-  DAMAGED/SUBMERGED DEBRIS AREA



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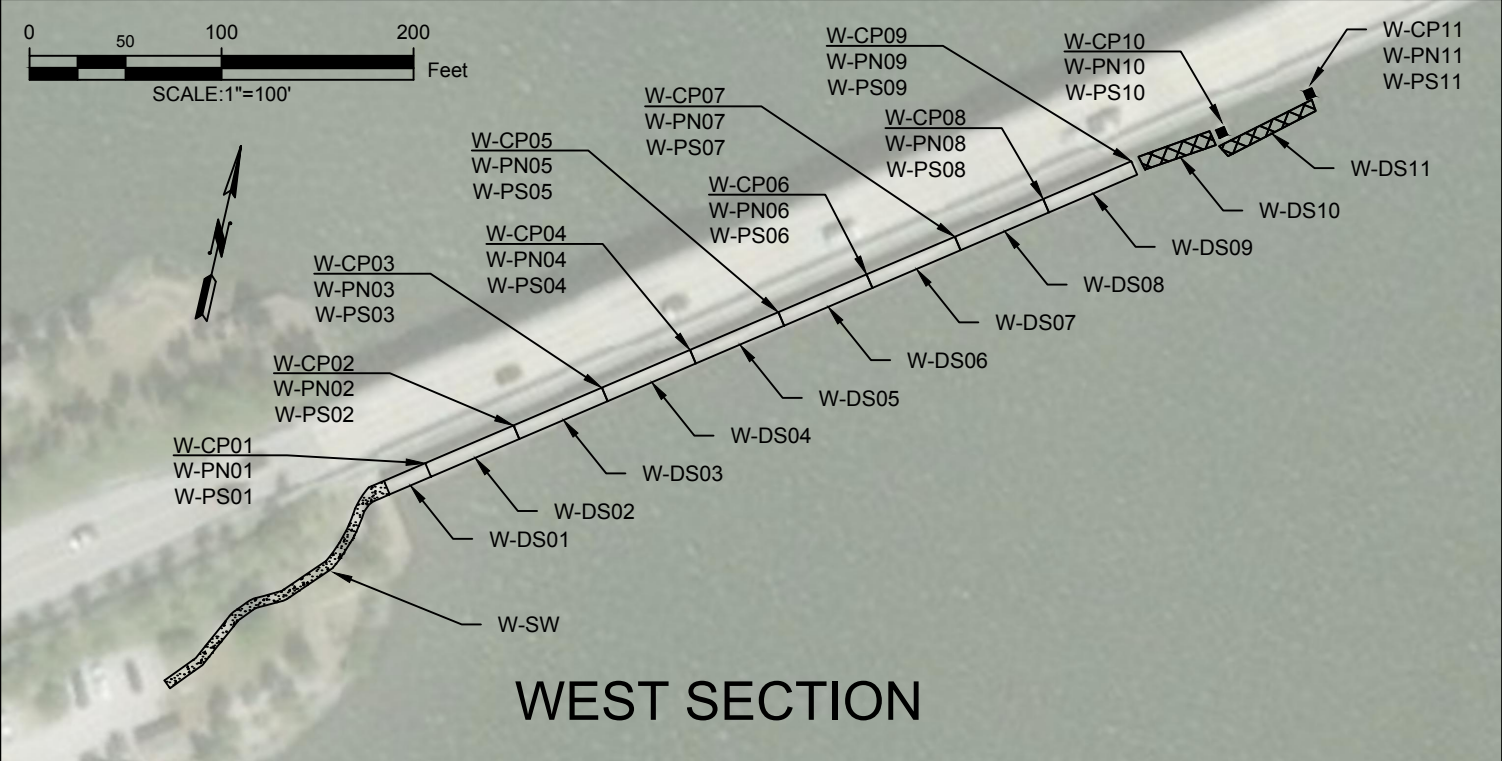
WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
POST HURRICANE MATHEW

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
LIC. NO. 61687



JOB No.
100055899
CAD FILE
3
SHEET NUMBER
V-101

File Name: C:\Users\BART6907\Documents\Wabasso Pier\Justin Files\CAD\D-1 DEMO PLAN_job.dwg Layout Name: OVERALL PLAN (4) Plot Time: Wednesday, March 06, 2019 - 8:59am Plotted by: BART6907



WEST SECTION

ID	Description	Position	Weight (TN)	ID	Description	Position	Weight (TN)
W-DS01	Concrete Deck Section (25')	In place and intact	12	W-DS07	Concrete Deck Section (50')	In place and intact	25
W-CP01	Concrete Pile Cap	In place and intact	4	W-CP07	Pile Cap	In place and intact	4
W-PN01	14" Concrete Pile (North)	In place and intact	7	W-PN07	14" Concrete Pile (North)	In place and intact	7
W-PS01	14" Concrete Pile (South)	In place and intact	7	W-PS07	14" Concrete Pile (South)	In place and intact	7
W-DS02	Concrete Deck Section (50')	In place and intact	25	W-DS08	Concrete Deck Section (50')	In place and intact	25
W-CP02	Pile Cap	In place and intact	4	W-CP08	Pile Cap	In place and intact	4
W-PN02	14" Concrete Pile (North)	In place and intact	7	W-PN08	14" Concrete Pile (North)	In place and intact	7
W-PS02	14" Concrete Pile (South)	In place and intact	7	W-PS08	14" Concrete Pile (South)	In place and intact	7
W-DS03	Concrete Deck Section (50')	In place and intact	25	W-DS09	Concrete Deck Section (50')	In place and intact	25
W-CP03	Pile Cap	In place and intact	4	W-CP09	Pile Cap	In place and intact	4
W-PN03	14" Concrete Pile (North)	In place and intact	7	W-PN09	14" Concrete Pile (North)	In place and intact	7
W-PS03	14" Concrete Pile (South)	In place and intact	7	W-PS09	14" Concrete Pile (South)	In place and intact	7
W-DS04	Concrete Deck Section (50')	In place and intact	25	W-DS10	Concrete Deck Section (50')	Submerged, upright & intact	25
W-CP04	Pile Cap	In place and intact	4	W-CP10	Pile Cap	In place and intact	4
W-PN04	14" Concrete Pile (North)	In place and intact	7	W-PN10	14" Concrete Pile (North)	In place and intact	7
W-PS04	14" Concrete Pile (South)	In place and intact	7	W-PS10	14" Concrete Pile (South)	In place and intact	7
W-DS05	Concrete Deck Section (50')	In place and intact	25	W-DS11	Concrete Deck Section (50')	Submerged, upright & intact	25
W-CP05	Pile Cap	In place and intact	4	W-CP11	Pile Cap	In place and intact	4
W-PN05	14" Concrete Pile (North)	In place and intact	7	W-PN11	14" Concrete Pile (North)	In place and intact	7
W-PS05	14" Concrete Pile (South)	In place and intact	7	W-PS11	14" Concrete Pile (South)	In place and intact	7
W-DS06	Concrete Deck Section (50')	In place and intact	25	W-SW	158LF Concrete Sidewalk	In place and intact	NA
W-CP06	Pile Cap	In place and intact	4				
W-PN06	14" Concrete Pile (North)	In place and intact	7				
W-PS06	14" Concrete Pile (South)	In place and intact	7				

NOTES:

1. ALL DESCRIPTION SIZES ARE APPROXIMATE AND BASED ON INFORMATION IN THE 2006 REHABILITATION PLANS. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS FOR THEIR NEEDS.
2. SUBMERGED POSITIONS ARE BASED ON VISUAL OBSERVATION MADE BY A DIVER WITH LIMITED VISIBILITY ON 07/20/2017. CONTRACTOR IS RESPONSIBLE TO VERIFY THE CURRENT POSITION AS NECESSARY FOR THEIR NEEDS.
3. ALL WEIGHTS WERE ESTIMATED BASED ON INFORMATION IN THE 2006 REHABILITATION PLANS. PILE WEIGHTS ASSUME AN INTACT 60' LONG PILE. ACTUAL PILE LENGTH IS NOT KNOWN. CONTRACTOR IS RESPONSIBLE TO VERIFY THE ESTIMATED WEIGHTS AS NECESSARY FOR THEIR NEEDS.

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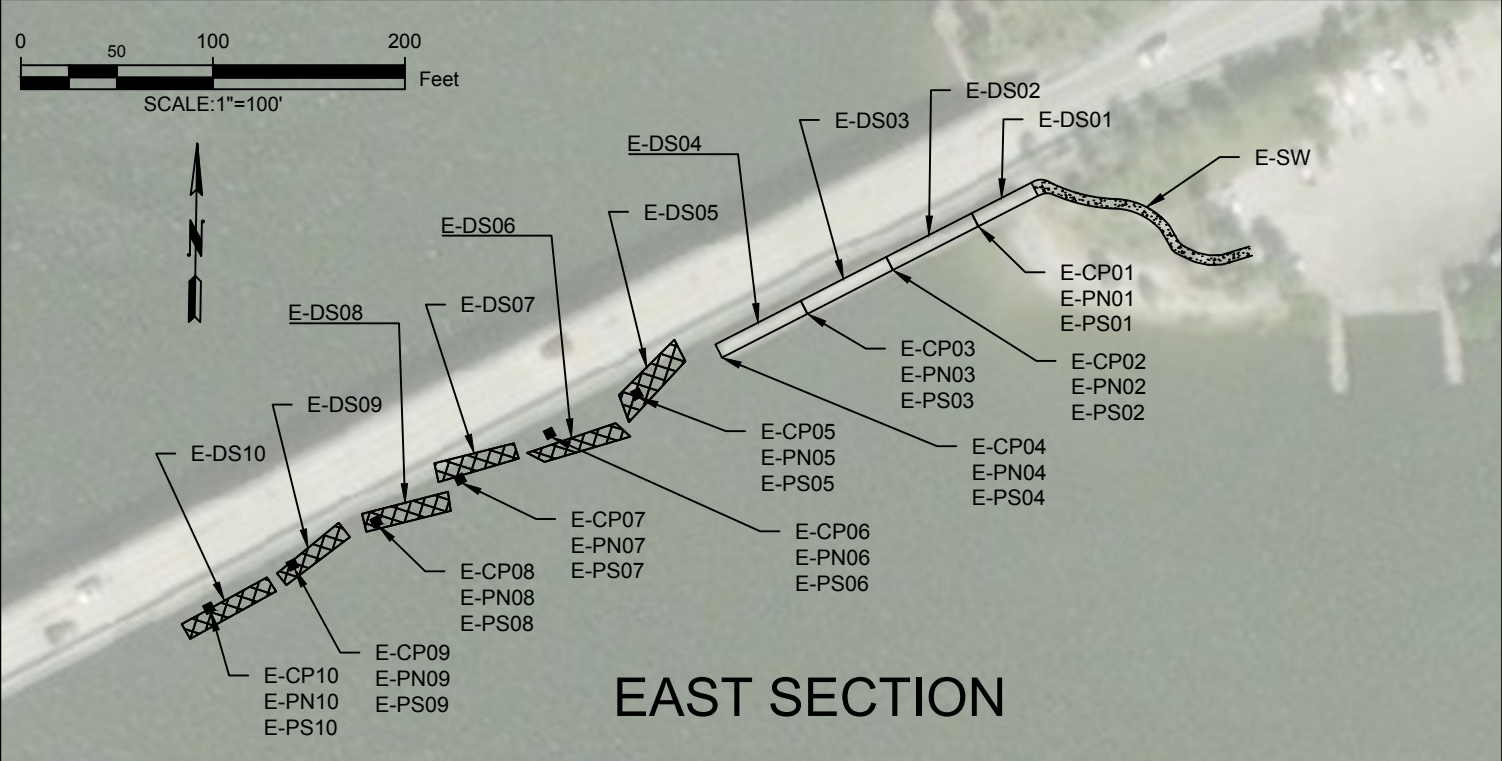
WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
EXISTING PIER COMPONENT
INVENTORY PLAN - WEST

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
LIC. NO. 61687



JOB No.
100055899
CAD FILE
1
SHEET NUMBER
V-102

File Name: C:\Users\BART6907\Documents\Wabasso Pier\Justin\Job.dwg DEMO PLAN\D-1 OVERALL PLAN (5) Plot Time: Wednesday, March 06, 2019 - 8:59am Plotted by: BART6907



EAST SECTION

ID	Description	Position	Weight (TN)	ID	Description	Position	Weight (TN)
E-DS01	Concrete Deck Section (25')	In place and intact	12	E-DS06	Concrete Deck Section (50')	Submerged, rolled & intact	25
E-CP01	Concrete Pile Cap	In place and intact	4	E-CP06	Pile Cap	Submerged, unknown	4
E-PN01	14" Concrete Pile (North)	In place and intact	7	E-PN06	14" Concrete Pile (North)	In place and intact	7
E-PS01	14" Concrete Pile (South)	In place and intact	7	E-PS06	14" Concrete Pile (South)	Submerged, unknown	7
E-DS02	Concrete Deck Section (50')	In place and intact	25	E-DS07	Concrete Deck Section (50')	Submerged, rolled & intact	25
E-CP02	Pile Cap	In place and intact	4	E-CP07	Pile Cap	Submerged, unknown	4
E-PN02	14" Concrete Pile (North)	In place and intact	7	E-PN07	14" Concrete Pile (North)	In place and intact	7
E-PS02	14" Concrete Pile (South)	In place and intact	7	E-PS07	14" Concrete Pile (South)	Submerged, unknown	7
E-DS03	Concrete Deck Section (50')	In place and intact	25	E-DS08	Concrete Deck Section (50')	Submerged, rolled & intact	25
E-CP03	Pile Cap	In place and intact	4	E-CP08	Pile Cap	Submerged, unknown	4
E-PN03	14" Concrete Pile (North)	In place and intact	7	E-PN08	14" Concrete Pile (North)	In place and intact	7
E-PS03	14" Concrete Pile (South)	In place and intact	7	E-PS08	14" Concrete Pile (South)	Submerged, unknown	7
E-DS04	Concrete Deck Section (50')	In place and intact	25	E-DS09	Concrete Deck Section (50')	Submerged, rolled & intact	25
E-CP04	Pile Cap	In place and intact	4	E-CP09	Pile Cap	Submerged, unknown	4
E-PN04	14" Concrete Pile (North)	In place and intact	7	E-PN09	14" Concrete Pile (North)	In place and intact	7
E-PS04	14" Concrete Pile (South)	In place and intact	7	E-PS09	14" Concrete Pile (South)	Submerged, unknown	7
E-DS05	Concrete Deck Section (50')	Submerged, upright & intact	25	E-DS10	Concrete Deck Section (50')	Submerged, upright & intact	25
E-CP05	Pile Cap	In place and intact	4	E-CP10	Pile Cap	Submerged, unknown	4
E-PN05	14" Concrete Pile (North)	In place and intact	7	E-PN10	14" Concrete Pile (North)	In place and intact	7
E-PS05	14" Concrete Pile (South)	In place and intact	7	E-PS10	14" Concrete Pile (South)	In place and intact	7
				E-SW	120LF Concrete Sidewalk	In place and intact	NA

- NOTES:**
- ALL DESCRIPTION SIZES ARE APPROXIMATE AND BASED ON INFORMATION IN THE 2006 REHABILITATION PLANS. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS FOR THEIR NEEDS.
 - SUBMERGED POSITIONS ARE BASED ON VISUAL OBSERVATION MADE BY A DIVER WITH LIMITED VISIBILITY ON 07/20/2017. CONTRACTOR IS RESPONSIBLE TO VERIFY THE CURRENT POSITION AS NECESSARY FOR THEIR NEEDS.
 - ALL WEIGHTS WERE ESTIMATED BASED ON INFORMATION IN THE 2006 REHABILITATION PLANS. PILE WEIGHTS ASSUME AN INTACT 60' LONG PILE. ACTUAL PILE LENGTH IS NOT KNOWN. CONTRACTOR IS RESPONSIBLE TO VERIFY THE ESTIMATED WEIGHTS AS NECESSARY FOR THEIR NEEDS.

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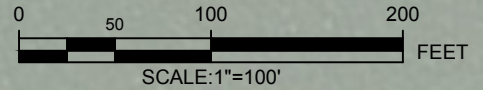
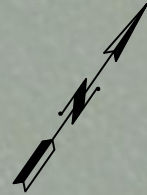
WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
EXISTING PIER COMPONENT
INVENTORY PLAN - EAST

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
LIC. NO. 61667

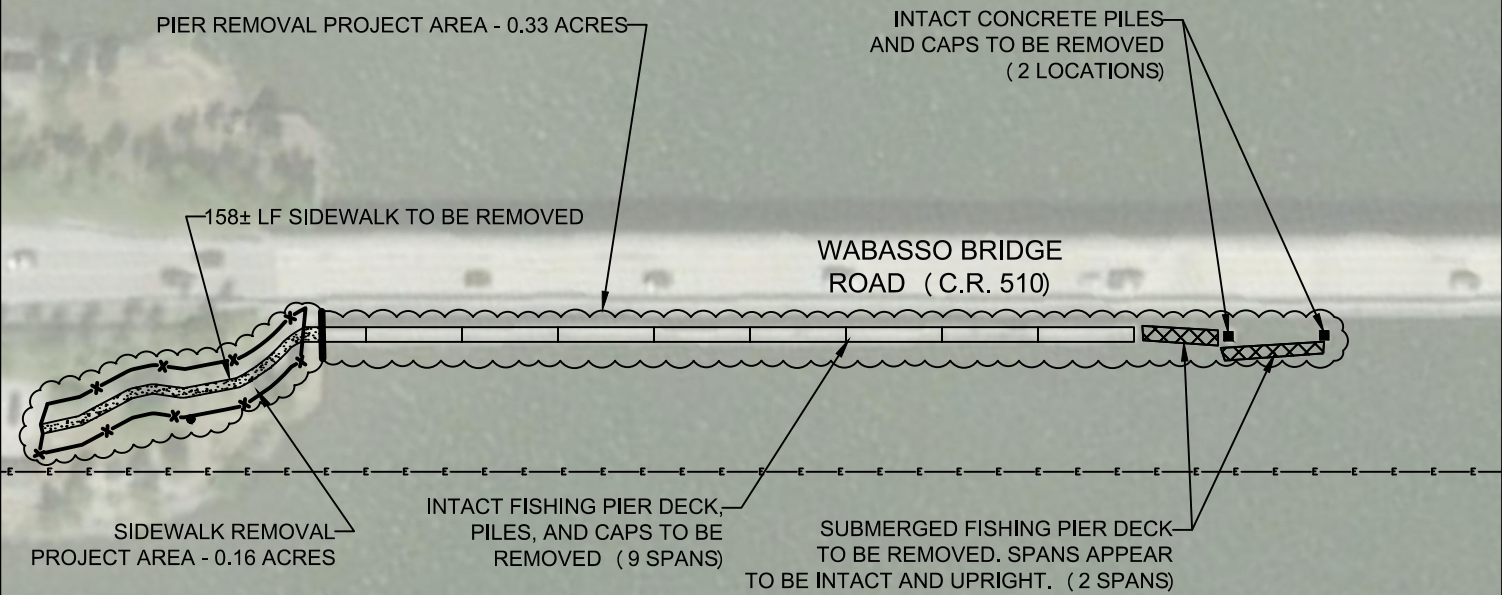


JOB No.
100055899
CAD FILE
1
SHEET NUMBER
V-103

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INDIAN RIVER



INDIAN RIVER

WEST SECTION

MICROSOFT BING MAPS - POST HURRICANE MATTHEW (2017)

LEGEND:	
	PROJECT AREA OF DEMOLITION AND DEBRIS TO BE REMOVED
	FPL POWERLINE
	CONCRETE SIDEWALK
	SUBMERGED PIER DECK/DEBRIS
	CONCRETE PILES
	SILT FENCE



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WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
DEMOLITION PLAN - WEST SECTION


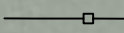
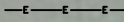


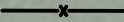




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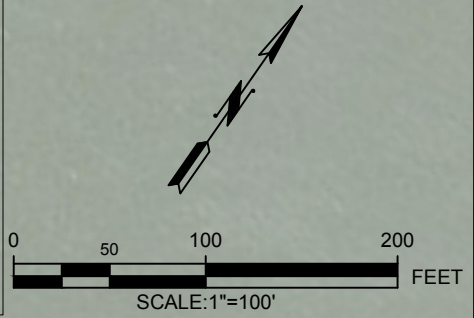


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100055899
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SHEET NUMBER
C-100

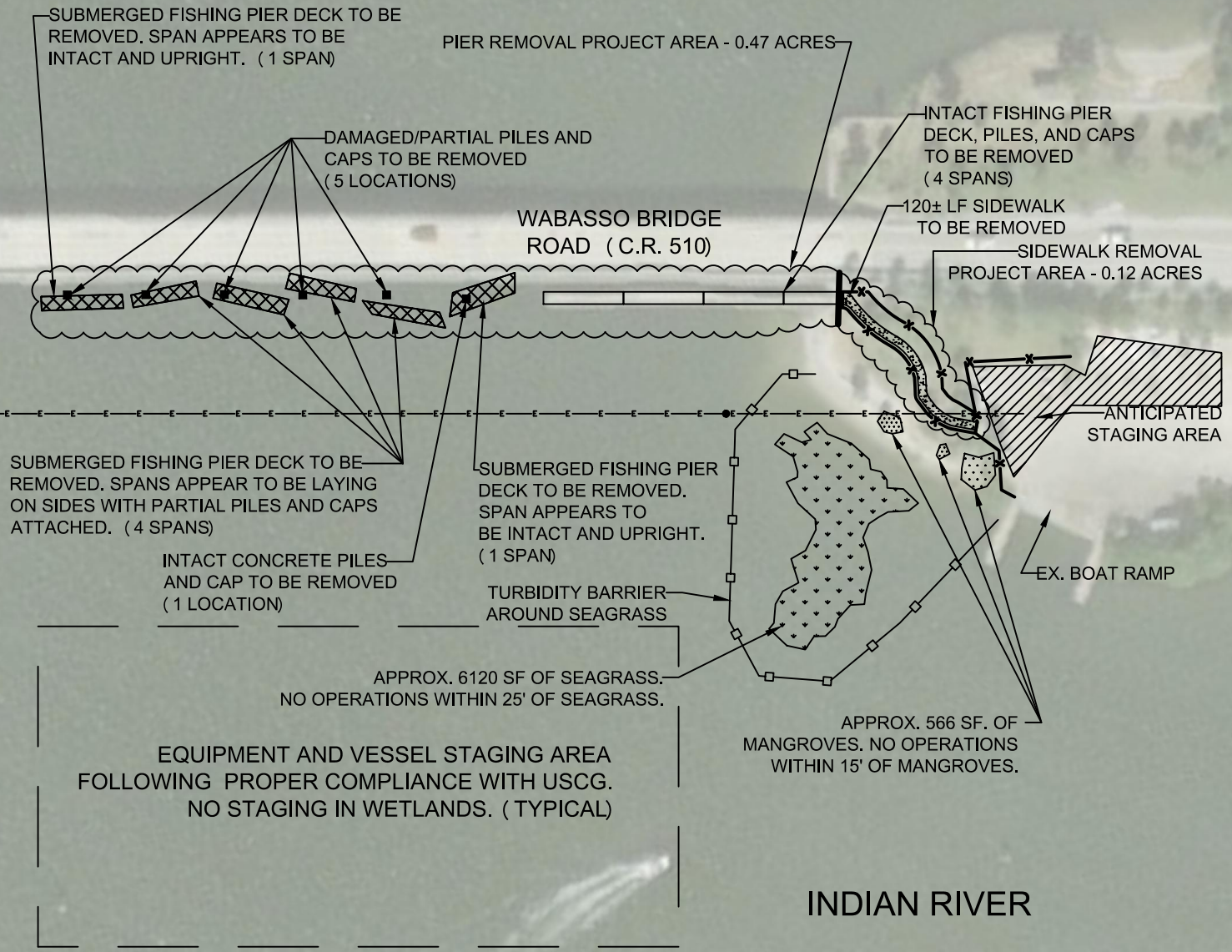
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LEGEND:

- | | | | |
|---|---|---|---|
|  | PROJECT AREA OF DEMOLITION AND DEBRIS TO BE REMOVED |  | TURBIDITY CURTAIN MIN. 25' BUFFER AROUND SEAGRASS |
|  | FPL POWERLINE |  | MANGROVES |
|  | CONCRETE SIDEWALK |  | SILT FENCE |
|  | SUBMERGED PIER DECK/DEBRIS |  | CONCRETE PILES |
|  | SEAGRASS BED (SURVEY CONDUCTED JULY 2017) |  | ANTICIPATED STAGING AREA |



INDIAN RIVER



EAST SECTION

MICROSOFT BING MAPS - POST HURRICANE MATTHEW (2017)

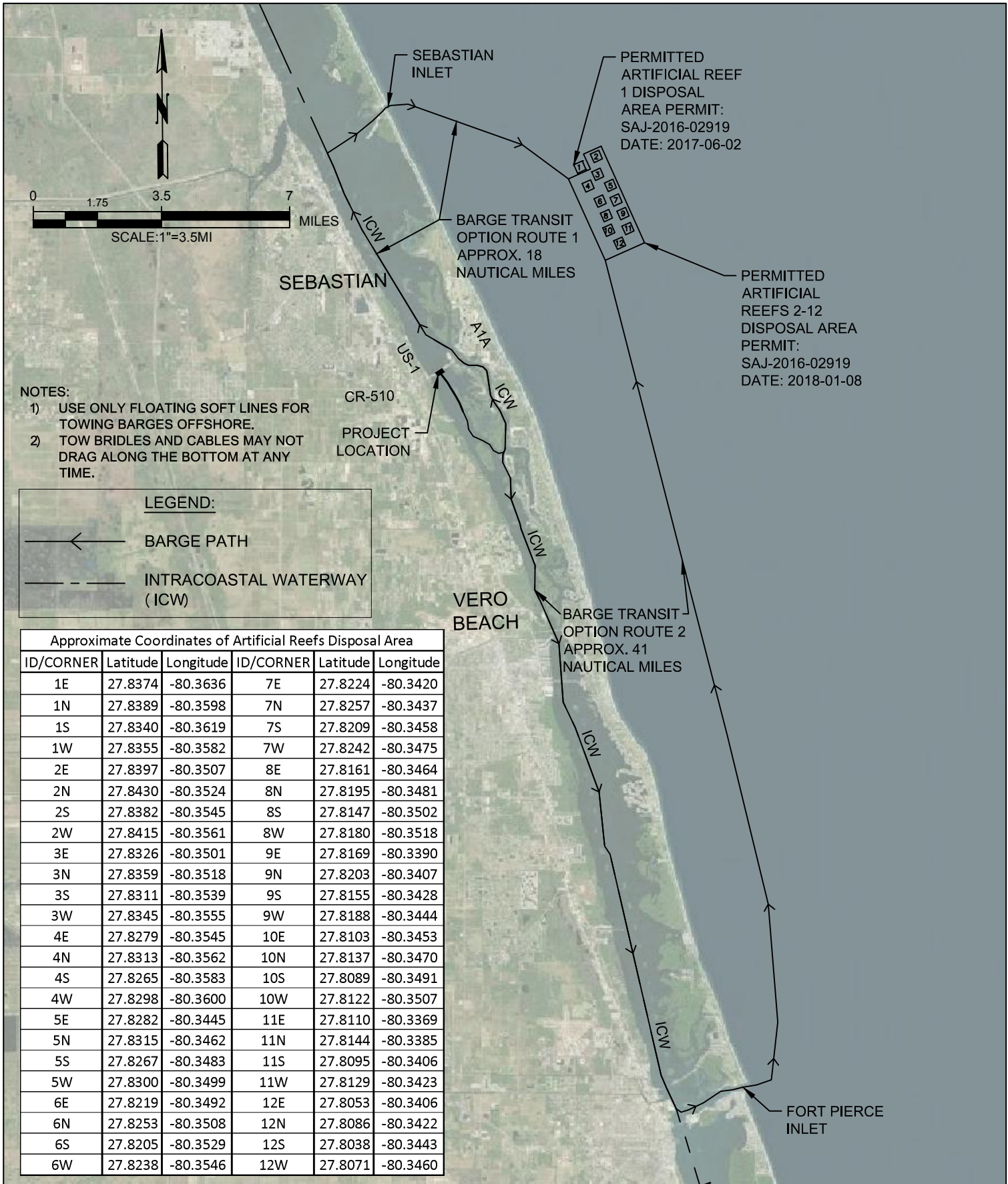
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WABASSO FISHING PIER
 DEMOLITION AND DEBRIS REMOVAL
 INDIAN RIVER COUNTY
 DEMOLITION PLAN - EAST SECTION

ENGINEER OF RECORD:
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JOB No.
 100055899
 CAD FILE
 5
 SHEET NUMBER
 C-101



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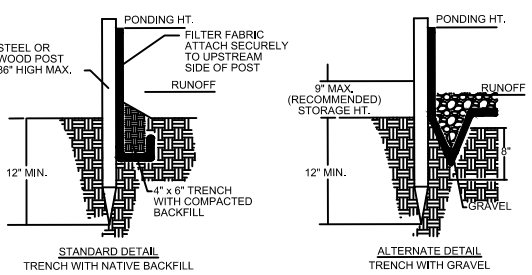
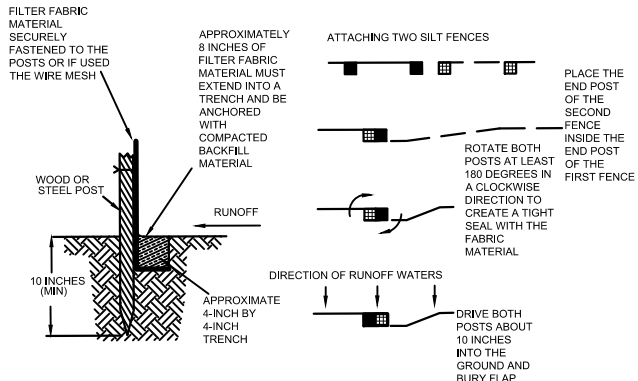
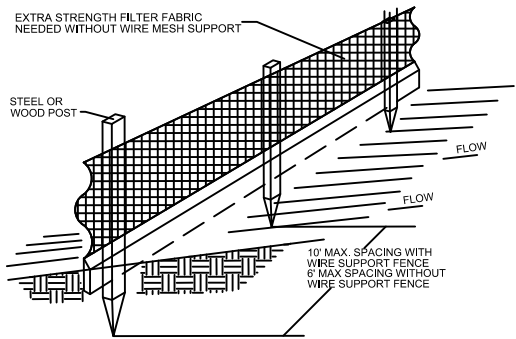
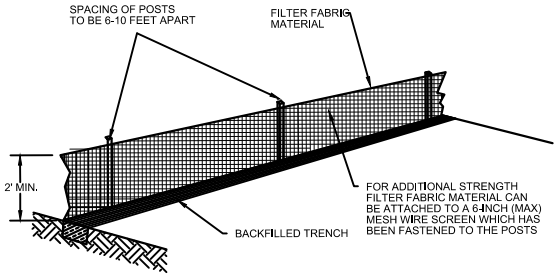
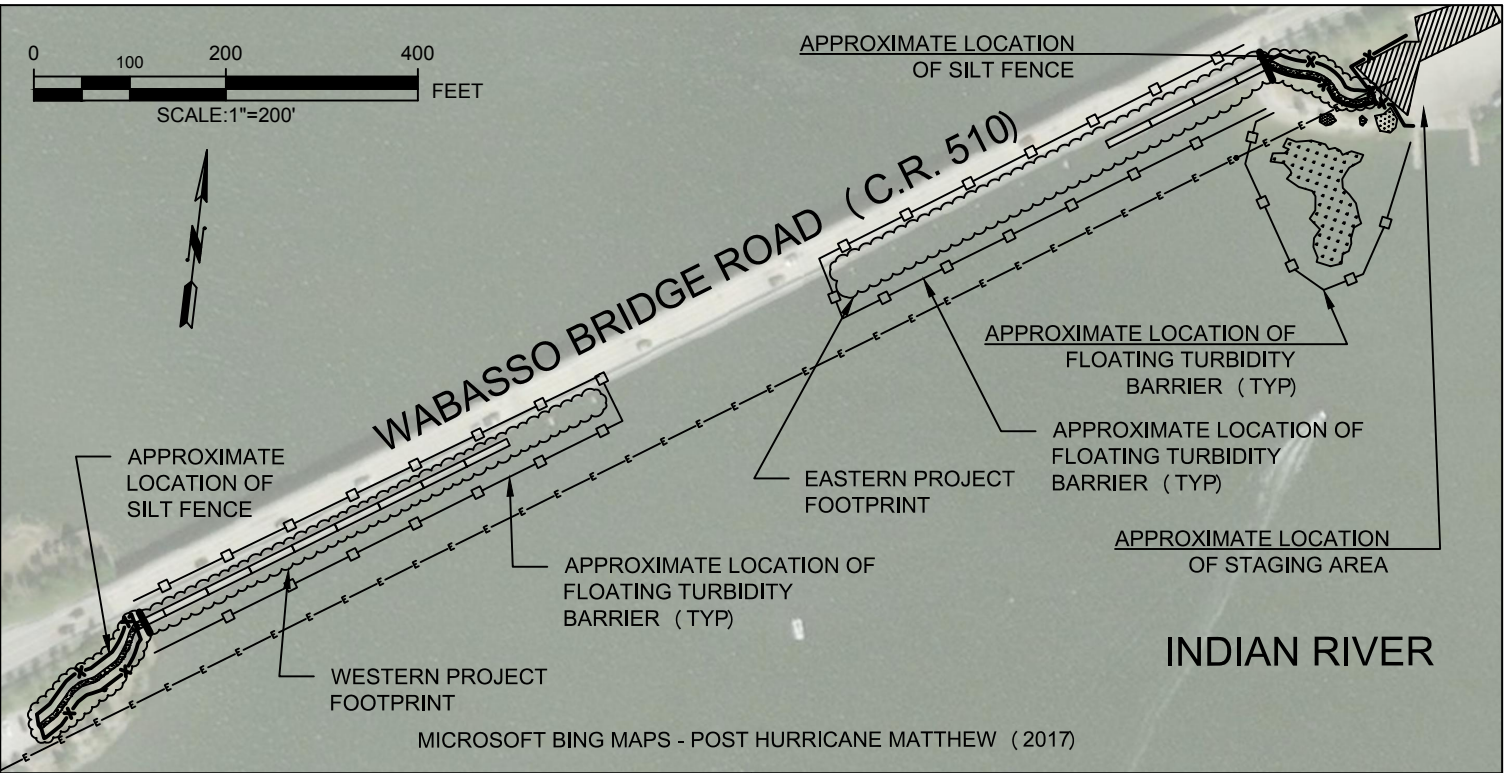
WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
BARGE TRANSIT ROUTE

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
LIC. NO. 61687



JOB No.
100055899
CAD FILE
6
SHEET NUMBER
C-110

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- NOTES:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
 2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
 3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

INSTALLING A FILTER FABRIC SILT FENCE

INSTALLING A FILTER FABRIC SILT FENCE

ATKINS

7175 Murrell Road
Melbourne, Florida 32940
321-242-4942
FBPR Certificate of Authorization No. 24

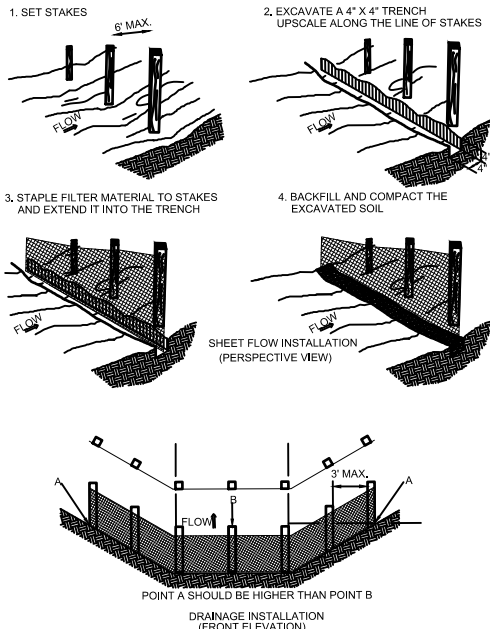
WABASSO FISHING PIER
DEMOLITION AND DEBRIS REMOVAL
INDIAN RIVER COUNTY
BMP PLAN VIEW AND DETAILS

ENGINEER OF RECORD:
KENNETH M. GOOD, PE
LIC. NO. 61687

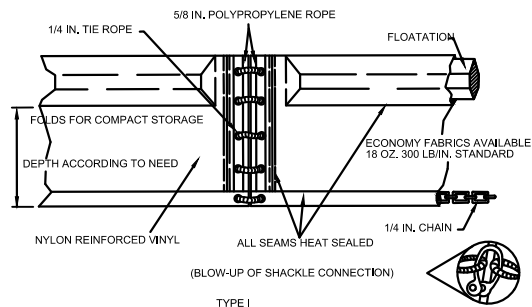
INDIAN RIVER COUNTY
FLORIDA

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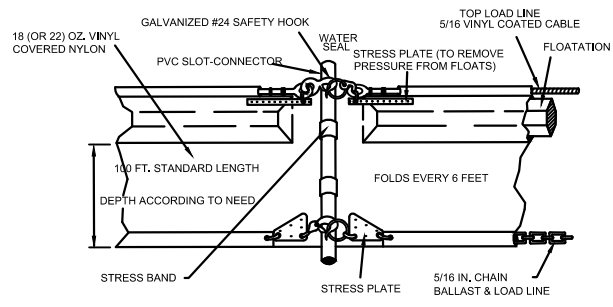
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INSTALLING A FILTER FABRIC SILT FENCE

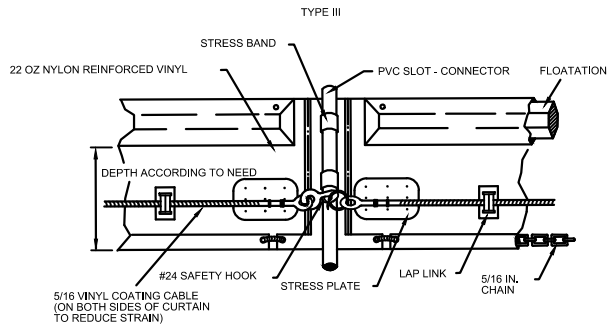


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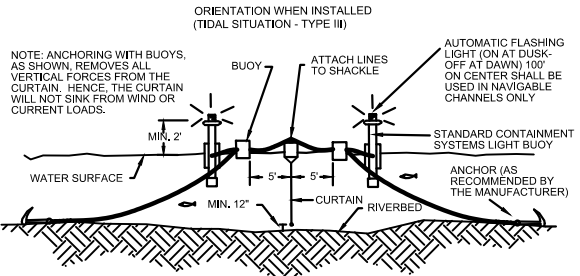


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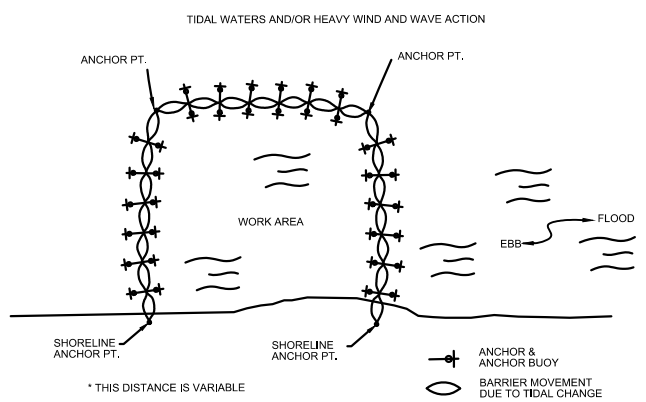
FLOATING TURBIDITY BARRIER TYPE(S) I & II



TYPE III



FLOATING TURBIDITY BARRIER TYPE III



TYPICAL INSTALLATION LAYOUT OF FLOATING TURBIDITY BARRIERS

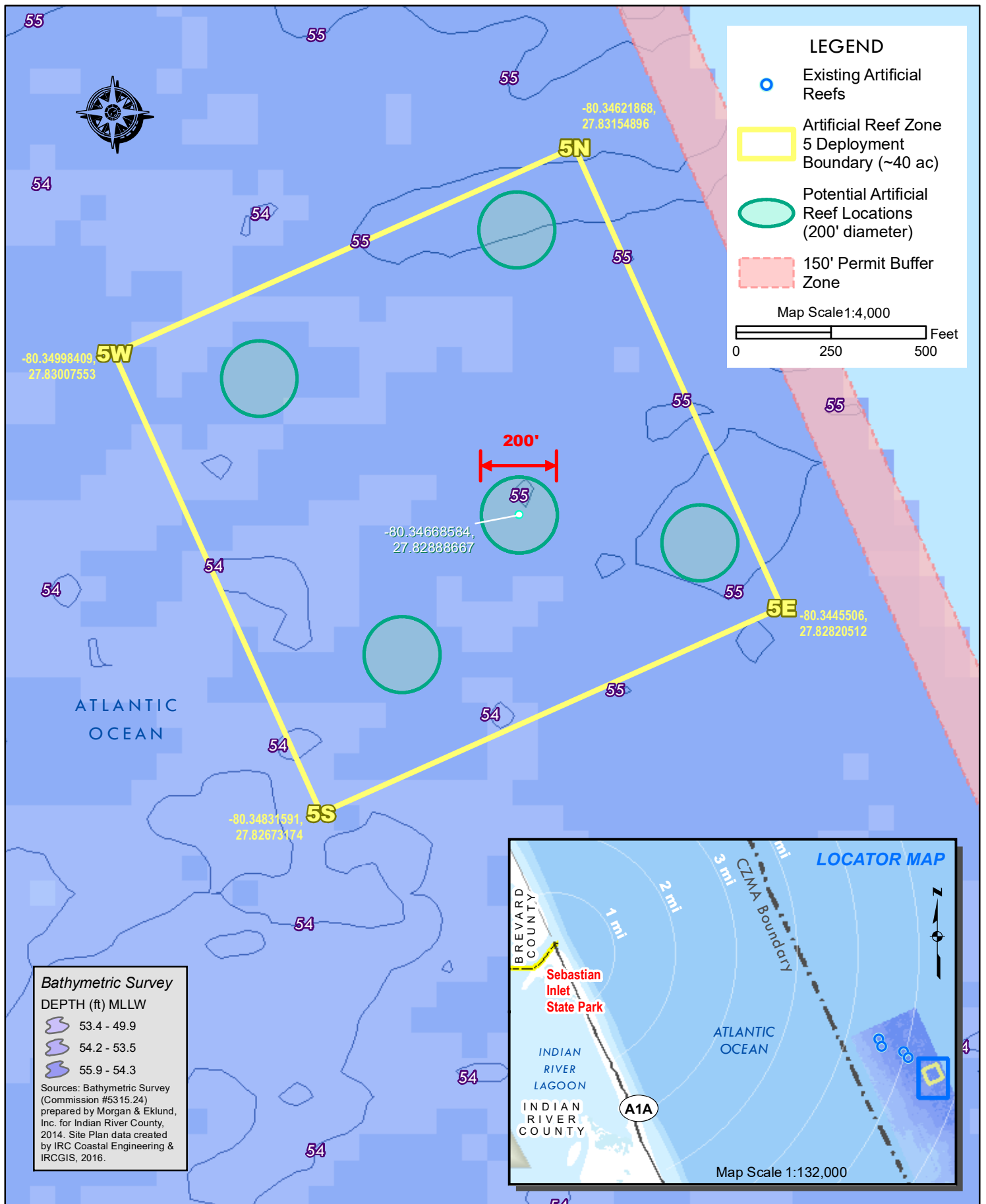
ATKINS
 7175 Murrell Road
 Melbourne, Florida 32940
 321-242-4942
 FBPR Certificate of Authorization No. 24

WABASSO FISHING PIER
 DEMOLITION AND DEBRIS REMOVAL
 INDIAN RIVER COUNTY
 BMP DETAILS

ENGINEER OF RECORD:
 KENNETH M. GOOD, PE
 LIC. NO. 61687



JOB No. 100055899
 CAD FILE 3
 SHEET NUMBER C-501



Artificial Reef Zone 5 Permit Boundaries and Potential Deployment



BATHYMETRIC SURVEY INDIAN RIVER CHANNEL WABASSO PIER REMOVAL ROUTE INDIAN RIVER COUNTY, FLORIDA

-FOR-

ATKINS NORTH AMERICA

COMMISSION NO.: 35667-1

DATE: MARCH 27, 2018

PREPARED BY:

Morgan & Eklund Inc.

PROFESSIONAL SURVEY CONSULTANTS



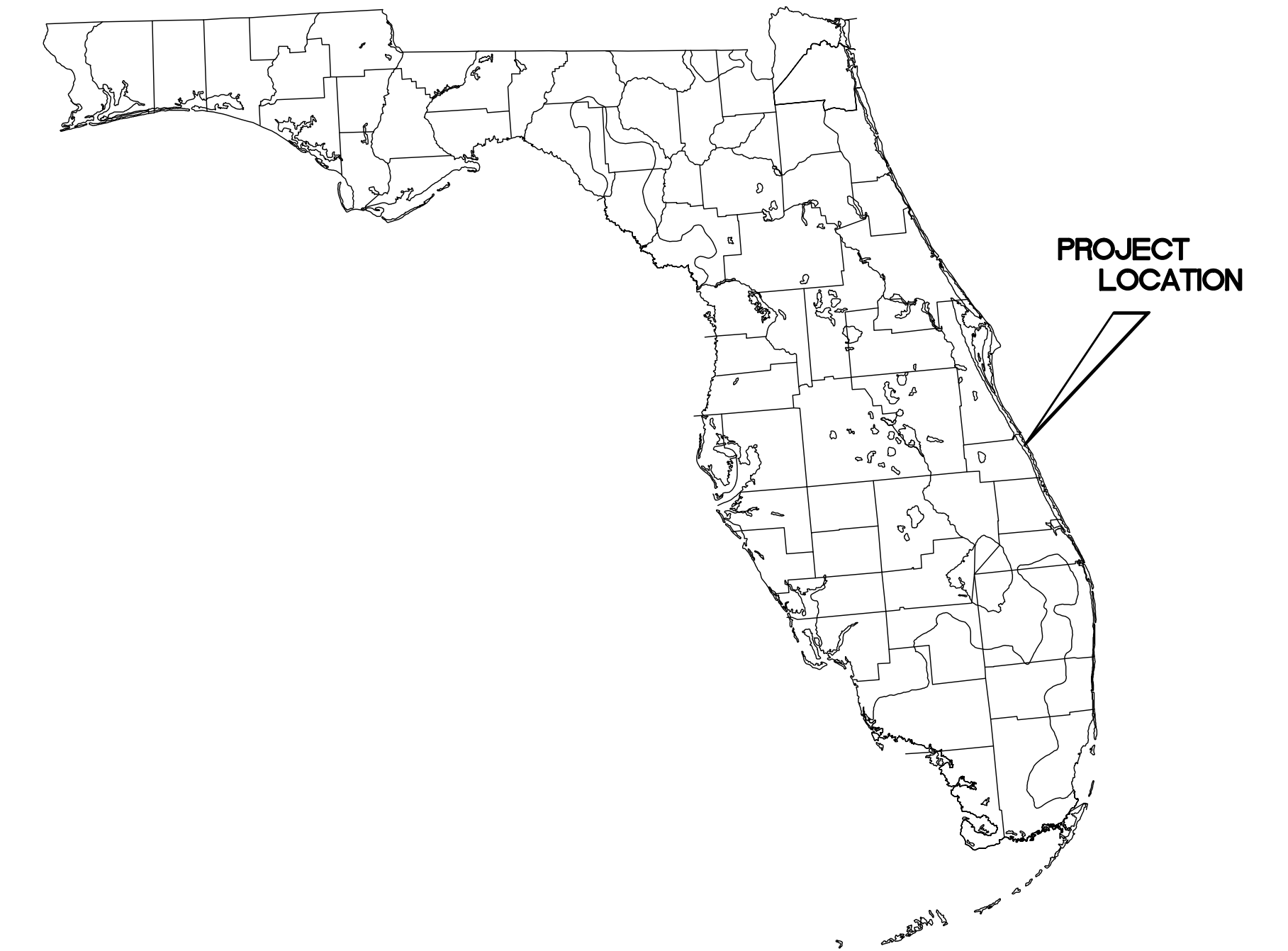
4909 US HIGHWAY #1
VERO BEACH, FL 32967
PHONE: (772) 388-5364
FAX: (772) 388-3165

1612 NW 2D AVENUE SUITE 3
BOCA RATON, FL 33432
PHONE: (954) 421-6882
FAX: (954) 421-0425
LB #4298

SUITE 211
1001 NORTH AMERICAN WAY
MIAMI, FL 33132
PHONE: (305) 364-5158



LOCATION MAP
1" INCH = 3,000 FEET



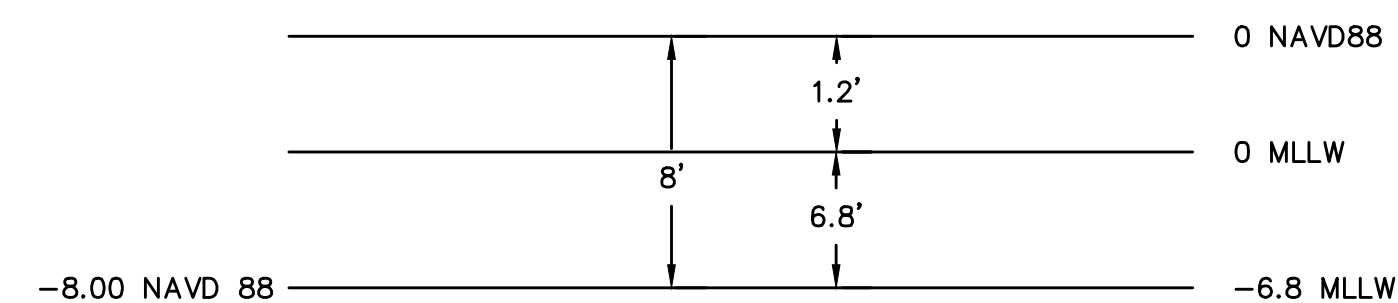
SURVEY NOTES:

- GRID COORDINATES SHOWN ARE IN FEET, AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 1990 (NAD 83/90).
- GRID COORDINATES ARE BASED ON MONUMENTS AS SHOWN IN THE CONTROL TABLE.
- ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- ELEVATIONS ARE BASED ON MONUMENTS AS SHOWN IN THE CONTROL TABLE.
- BATHYMETRIC INFORMATION DEPICTED ON THIS SURVEY REPRESENTS THE EXISTING CONDITIONS ON THE DATE OF THE FIELD SURVEY.
- AERIAL IMAGERY WAS TAKEN IN 2015 BY ACA, INC. AND WAS PROVIDED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION.
- AERIAL IMAGERY IS DISPLAYED HEREON FOR INFORMATION PURPOSES ONLY, NO PHOTOGRAPHIC ACCURACY IS IMPLIED BY THIS MAP.
- NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
- UNDERGROUND UTILITIES AND IMPROVEMENTS NOT LOCATED.

CONTROL TABULATION

DESIGNATION	NAD 83/90		NAVD 88 ELEVATION	DESCRIPTION	STAMPING
	NORTHING	EASTING			
GPS 1020	1231002.76	843541.55	10.52	DISK IN CONCRETE MONUMENT	GPS 03 32 39 02 1020 1991
GPS 148	1235024.63	842193.32	9.27	DISK IN CONCRETE MONUMENT	GPS 148 1998
POINT 200	1231522.13	847420.47	2.28	SET IRON ROD AND CAP	LB #4298
POINT 201	1231454.82	847446.76	1.18	SET IRON ROD AND CAP	LB #4298

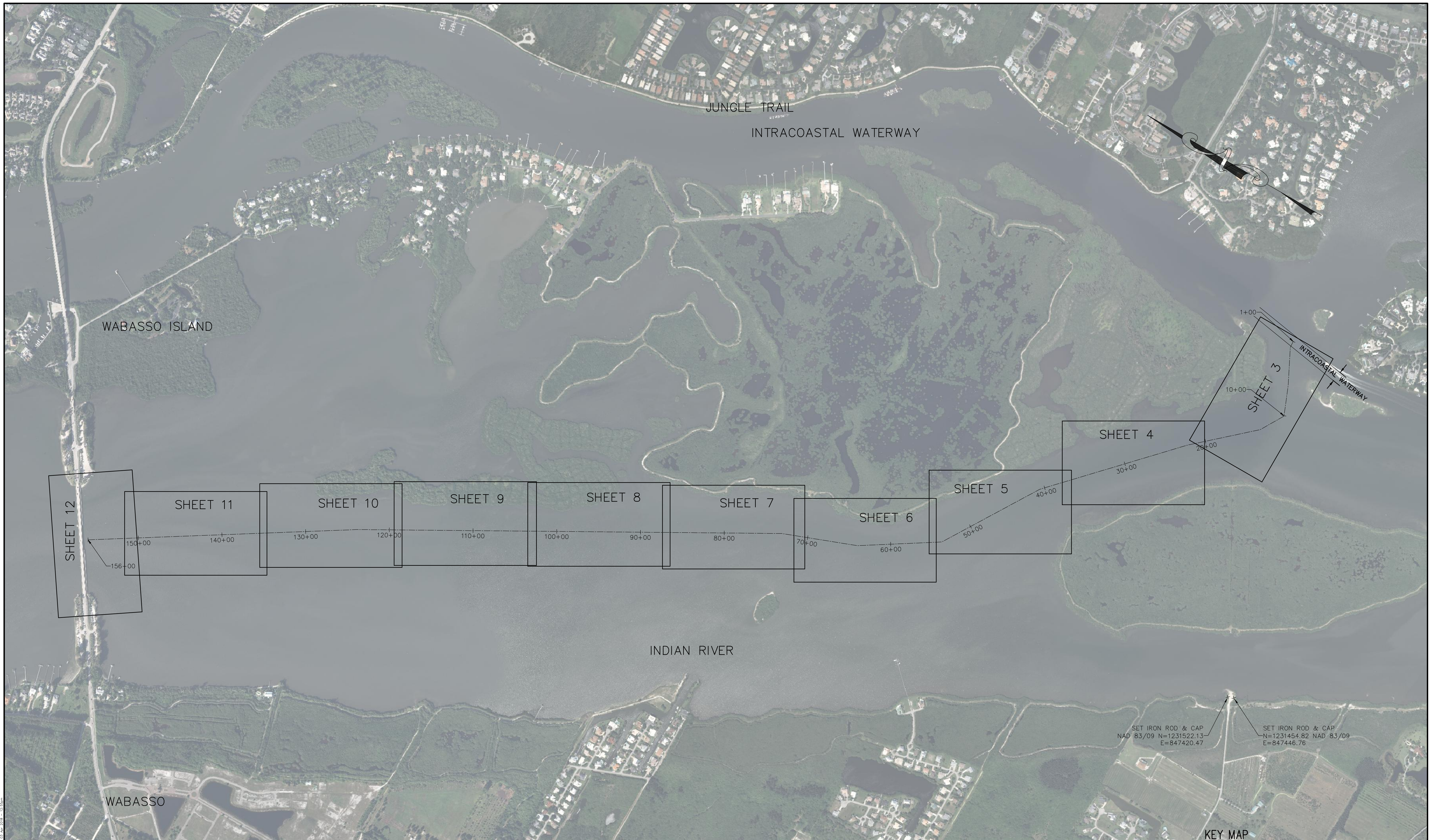
VERTICAL DATUM DIAGRAM



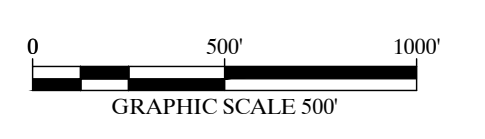
SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	KEY MAP
3-12	ELEVATION CONTOURS
13	ROUTE PROFILE

FIELD BOOKS: INDIAN RIVER 271, PAGES 1-2




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Morgan & Eklund Inc.

PROFESSIONAL SURVEY CONSULTANTS

 <p>4909 US HIGHWAY #1 VERO BEACH, FL 32967 PHONE: (772) 388-5364 FAX: (772) 388-3165</p>	<p>1612 NW 2ND AVENUE SUITE 3 BOCA RATON, FL 33432 PHONE: (954) 421-6882 FAX: (954) 421-0425</p>
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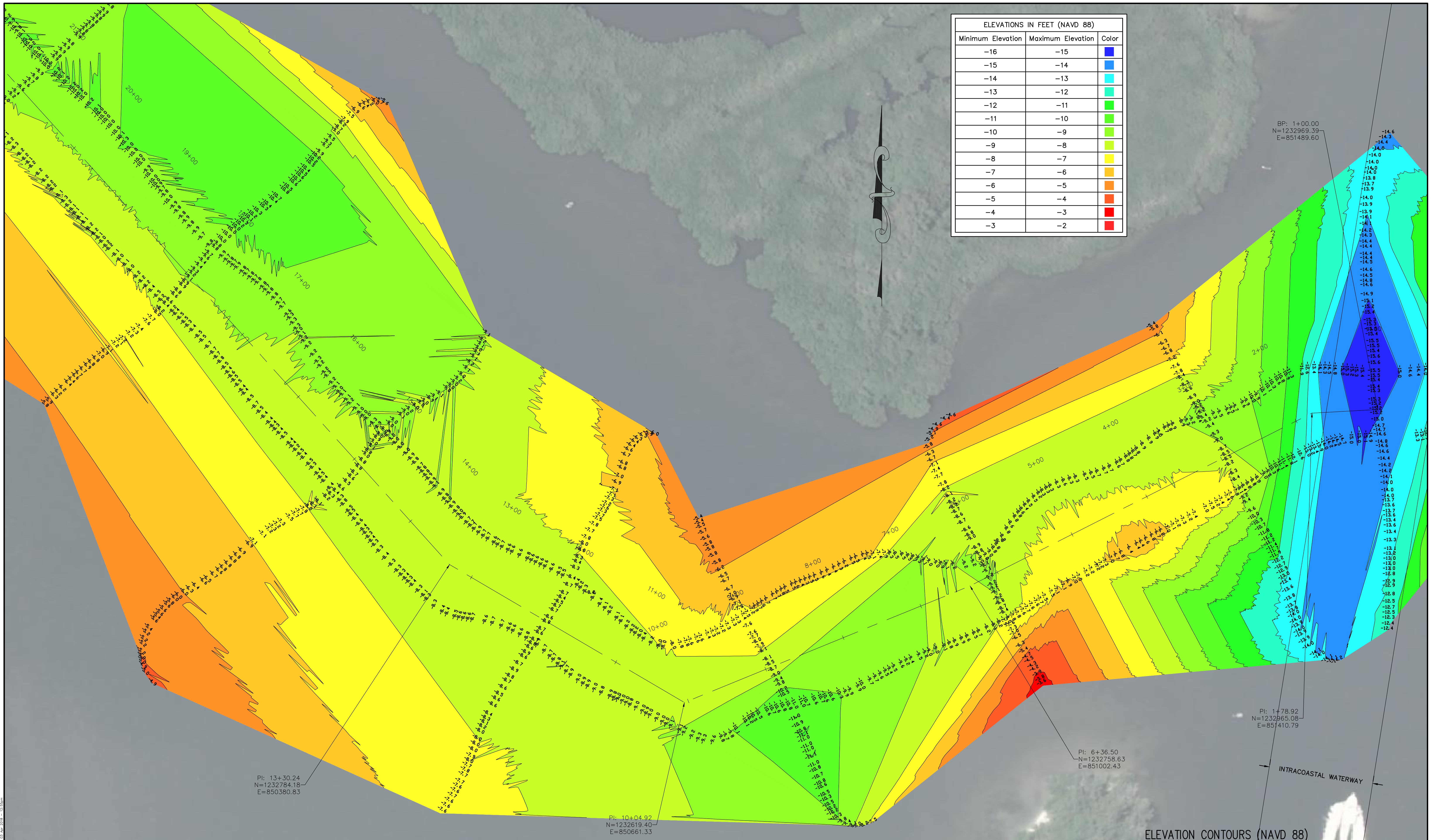
JOHN R. MORGAN II, PSM
 FLORIDA CERTIFICATION #3520

LB #4298

CERTIFICATE OF SURVEYOR - I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS IN ACCORDANCE WITH A RECENT FIELD SURVEY MADE UNDER MY DIRECTION AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND MEETS THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 55-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

JOHN R. MORGAN II, PLS
 PROFESSIONAL LAND SURVEYOR #3520
 STATE OF FLORIDA

KEY MAP BATHYMETRIC SURVEY INDIAN RIVER CHANNEL WABASSO PIER REMOVAL ROUTE - FOR - ATKINS NORTH AMERICA				COMMISSION NO. 35667-1
SCALE AS SHOWN				DATE 4/2/18
DRAWN BY LFP	CHECKED BY JRM	FIELD BOOK PAGE NO.	SEE COVER	DATE OF SURVEY 3/27/18
SHEET 2 OF 13				



ELEVATIONS IN FEET (NAVD 88)		
Minimum Elevation	Maximum Elevation	Color
-16	-15	Dark Blue
-15	-14	Blue
-14	-13	Cyan
-13	-12	Light Green
-12	-11	Green
-11	-10	Light Green
-10	-9	Yellow-Green
-9	-8	Yellow
-8	-7	Orange
-7	-6	Light Orange
-6	-5	Red-Orange
-5	-4	Red
-4	-3	Dark Red
-3	-2	Red

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E=851489.60

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-14.0
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-13.8
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-13.9
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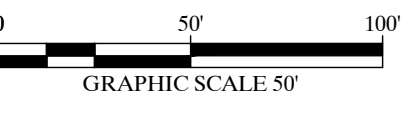
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ELEVATION CONTOURS (NAVD 88)

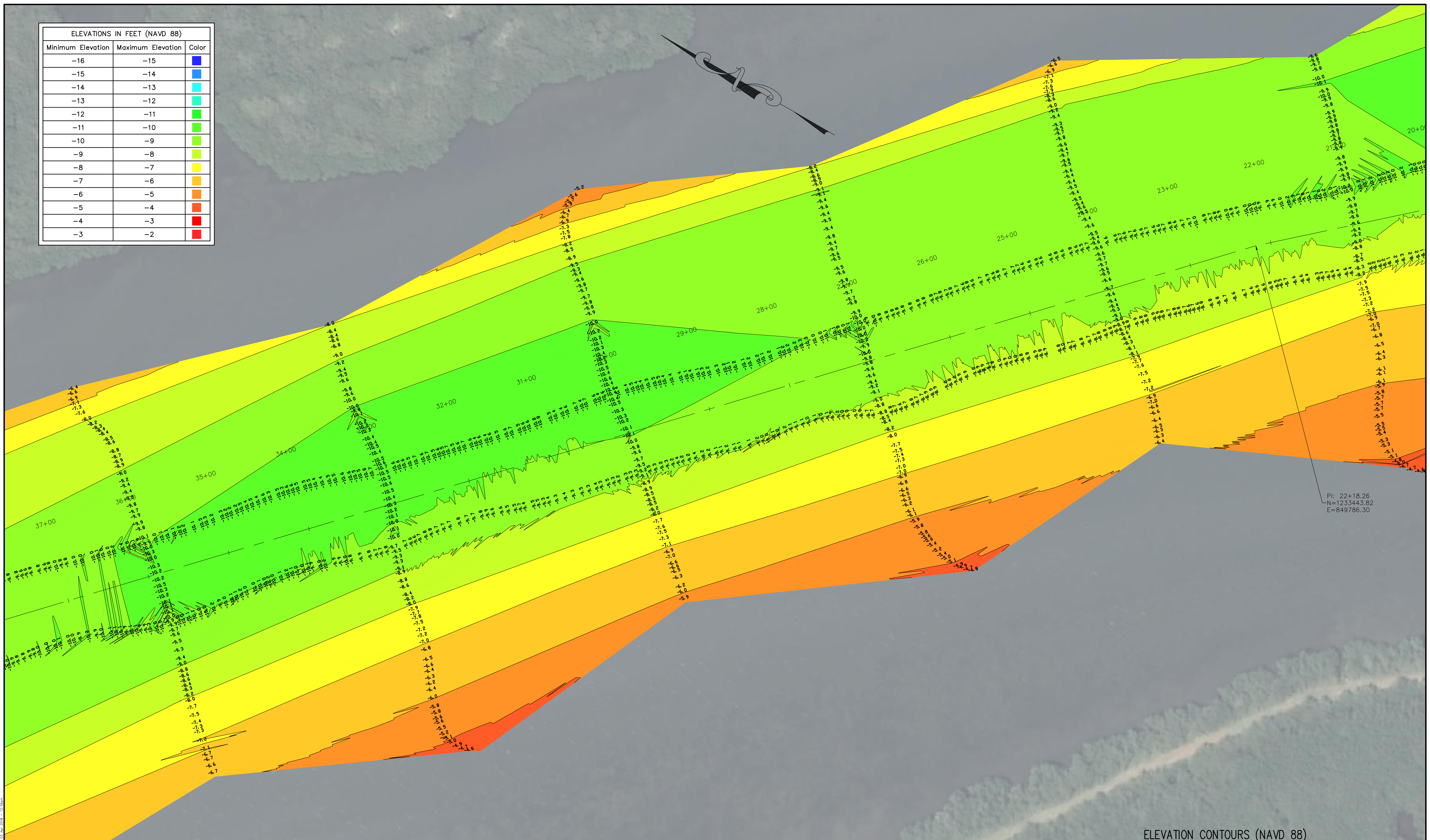
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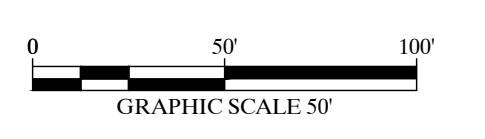
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<p>Morgan & Eklund Inc. PROFESSIONAL SURVEY CONSULTANTS</p> <p>4909 US HIGHWAY #1 VERO BEACH, FL 32967 PHONE: (772) 388-5364 FAX: (772) 388-3165</p> <p>1612 NW 2ND AVENUE SUITE 3 BOCA RATON, FL 33432 PHONE: (954) 421-6882 FAX: (954) 421-0425</p> <p>JOHN R. MORGAN II, PSM FLORIDA CERTIFICATION #3520</p> <p>LB #4298</p>		<p>CERTIFICATE OF SURVEYOR - I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS IN ACCORDANCE WITH A RECENT FIELD SURVEY MADE UNDER MY DIRECTION AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND MEETS THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHARTER 61-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.</p> <p>JOHN R. MORGAN II, PLS PROFESSIONAL LAND SURVEYOR #3520 STATE OF FLORIDA</p>		<p>BATHYMETRIC SURVEY INDIAN RIVER CHANNEL WABASSO PIER REMOVAL ROUTE - FOR - ATKINS NORTH AMERICA</p>		<p>COMMISSION NO. 35667-1</p>
				<p>SCALE AS SHOWN</p>	<p>DATE 4/2/18</p>	
<p>DRAWN BY LFP</p>	<p>CHECKED BY JRM</p>	<p>FIELD BOOK PAGE NO.</p>	<p>SEE COVER</p>	<p>DATE OF SURVEY 3/27/18</p>	<p>SHEET 3 OF 13</p>	

ELEVATIONS IN FEET (NAVD 88)		
Minimum Elevation	Maximum Elevation	Color
-16	-15	Blue
-15	-14	Light Blue
-14	-13	Cyan
-13	-12	Green
-12	-11	Light Green
-11	-10	Yellow-Green
-10	-9	Yellow
-9	-8	Light Orange
-8	-7	Orange
-7	-6	Dark Orange
-6	-5	Red-Orange
-5	-4	Red
-4	-3	Dark Red
-3	-2	Red



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ELEVATION CONTOURS (NAVD 88)

BATHYMETRIC SURVEY
 INDIAN RIVER CHANNEL
 WABASSO PIER REMOVAL ROUTE
 - FOR -
 ATKINS NORTH AMERICA

COMMISSION NO.	35667-1
SCALE	AS SHOWN
DATE	4/2/18
SHEET	4 OF 13

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PROFESSIONAL SURVEY CONSULTANTS

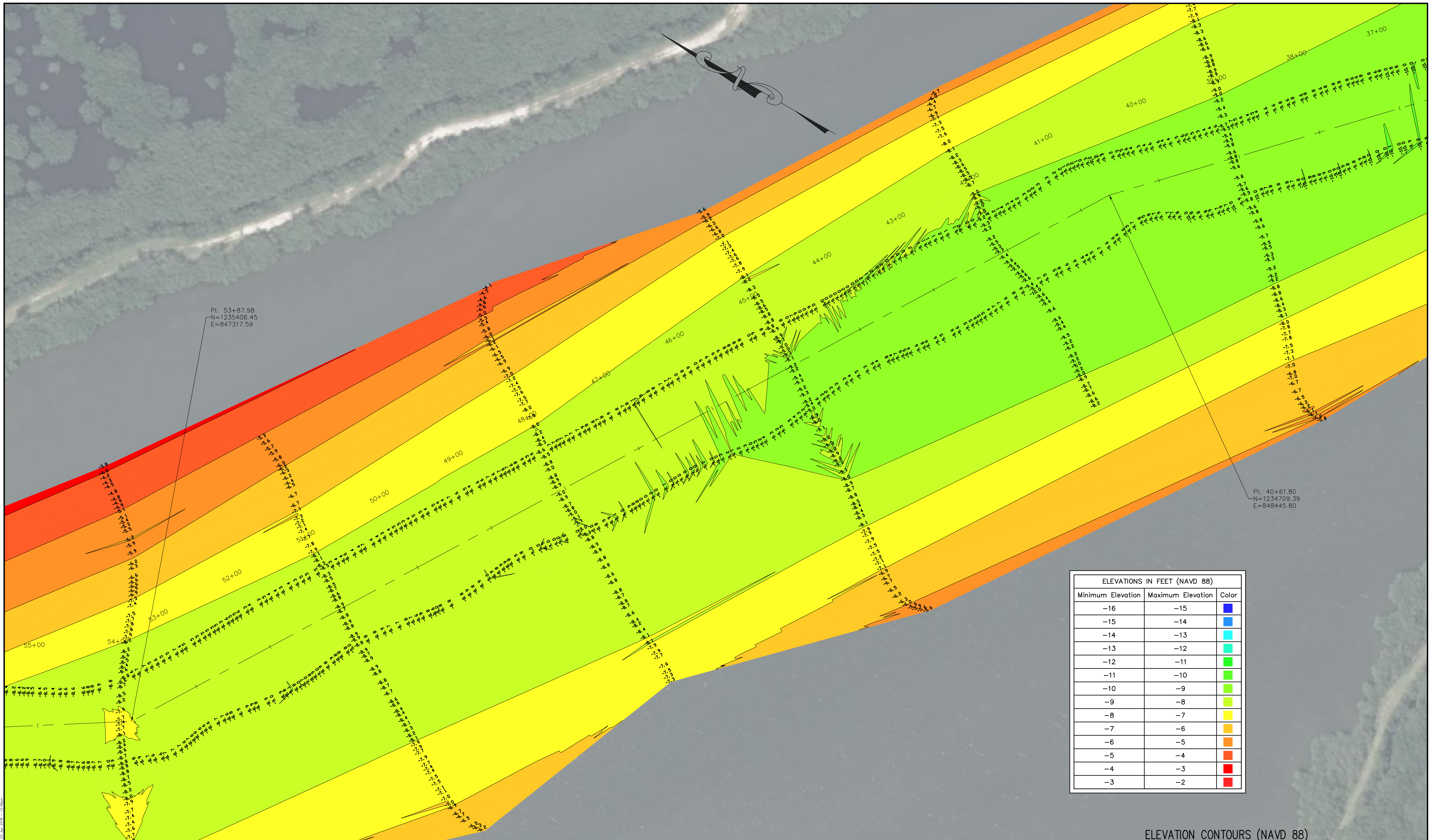
4909 US HIGHWAY #1 VERO BEACH, FL 32967 PHONE: (772) 388-5364 FAX: (772) 388-3165	1612 NW 2ND AVENUE SUITE 3 BOCA RATON, FL 33432 PHONE: (954) 421-6882 FAX: (954) 421-0425
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JOHN R. MORGAN II, PSM
 FLORIDA CERTIFICATION #3520

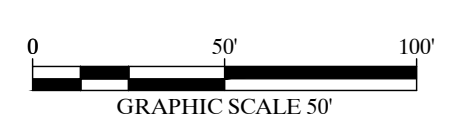
CERTIFICATE OF SURVEYOR - I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS IN ACCORDANCE WITH A RECENT FIELD SURVEY MADE UNDER MY DIRECTION, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

JOHN R. MORGAN II, PLS
 PROFESSIONAL LAND SURVEYOR #3520
 STATE OF FLORIDA

DRAWN BY	CHECKED BY	FIELD BOOK	SEE	DATE OF SURVEY
LFP	JRM	PAGE NO.	COVER	3/27/18



ELEVATIONS IN FEET (NAVD 88)		
Minimum Elevation	Maximum Elevation	Color
-16	-15	Blue
-15	-14	Light Blue
-14	-13	Cyan
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-12	-11	Green
-11	-10	Light Green
-10	-9	Yellow-Green
-9	-8	Yellow
-8	-7	Light Yellow
-7	-6	Orange
-6	-5	Light Orange
-5	-4	Red-Orange
-4	-3	Red
-3	-2	Dark Red



ELEVATION CONTOURS (NAVD 88)

BATHYMETRIC SURVEY
 INDIAN RIVER CHANNEL
 WABASSO PIER REMOVAL ROUTE
 - FOR -
 ATKINS NORTH AMERICA

COMMISSION NO.
35667-1
 SCALE
AS SHOWN
 DATE
4/2/18
 SHEET 5 OF 13

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1612 NW 2ND AVENUE
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 PHONE: (954) 421-6882
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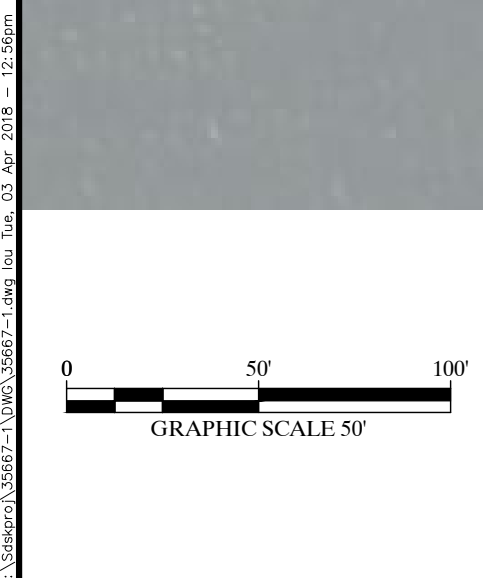
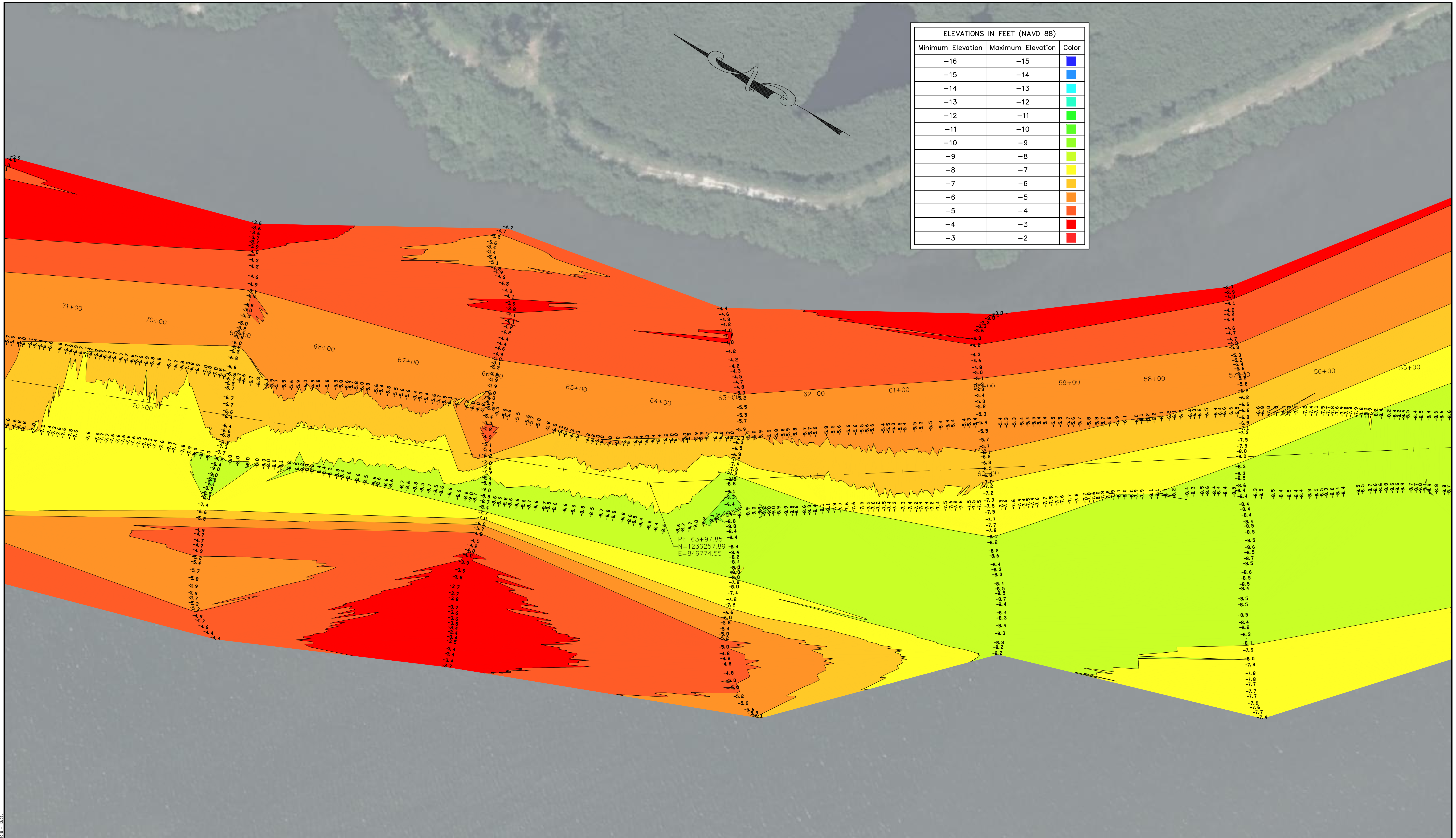
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JOHN R. MORGAN, II, PLS
 PROFESSIONAL LAND SURVEYOR #3520
 STATE OF FLORIDA

DRAWN BY LFP	CHECKED BY JRM	FIELD BOOK PAGE NO.	SEE COVER	DATE OF SURVEY 3/27/18
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ELEVATIONS IN FEET (NAVD 88)		
Minimum Elevation	Maximum Elevation	Color
-16	-15	Blue
-15	-14	Light Blue
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-13	-12	Light Green
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-11	-10	Light Yellow
-10	-9	Yellow
-9	-8	Light Orange
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-7	-6	Dark Orange
-6	-5	Red-Orange
-5	-4	Red
-4	-3	Dark Red
-3	-2	Red



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 FLORIDA CERTIFICATION #3520

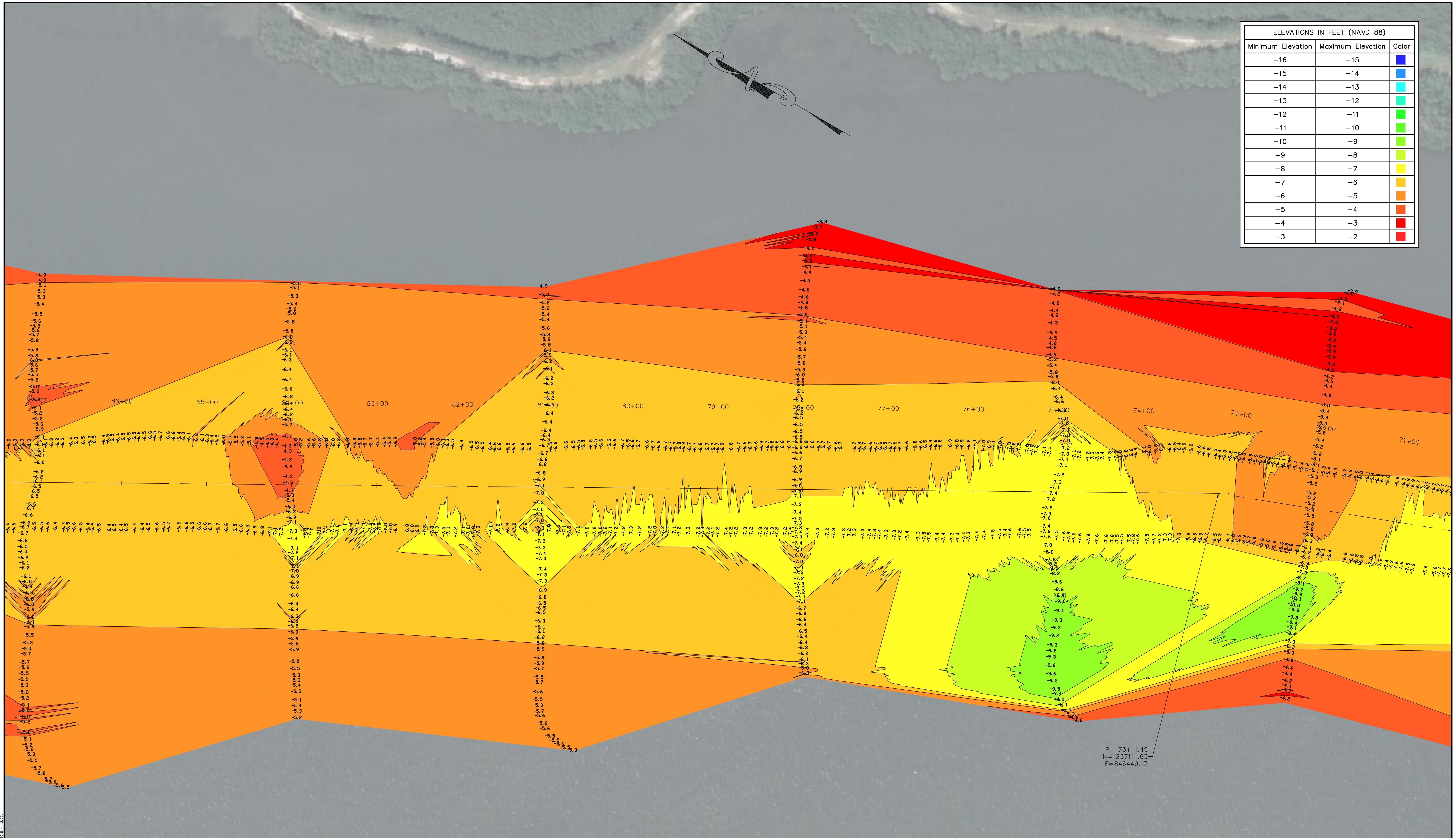
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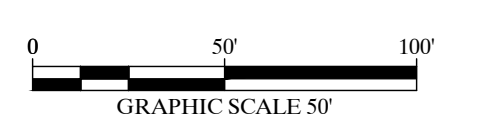
JOHN R. MORGAN II, PLS
 PROFESSIONAL LAND SURVEYOR #3520
 STATE OF FLORIDA

ELEVATION CONTOURS (NAVD 88)				COMMISSION NO. 35667-1	
BATHYMETRIC SURVEY INDIAN RIVER CHANNEL WABASSO PIER REMOVAL ROUTE - FOR - ATKINS NORTH AMERICA				SCALE AS SHOWN	
				DATE 4/2/18	
DRAWN BY LFP	CHECKED BY JRM	FIELD BOOK PAGE NO.	SEE COVER	DATE OF SURVEY 3/27/18	SHEET 6 OF 13

ELEVATIONS IN FEET (NAVD 88)		
Minimum Elevation	Maximum Elevation	Color
-16	-15	Blue
-15	-14	Light Blue
-14	-13	Cyan
-13	-12	Light Green
-12	-11	Green
-11	-10	Light Yellow-Green
-10	-9	Yellow
-9	-8	Light Orange
-8	-7	Orange
-7	-6	Light Red
-6	-5	Red
-5	-4	Dark Red
-4	-3	Dark Red
-3	-2	Dark Red



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ELEVATION CONTOURS (NAVD 88)

**BATHYMETRIC SURVEY
INDIAN RIVER CHANNEL
WABASSO PIER REMOVAL ROUTE
- FOR -
ATKINS NORTH AMERICA**

COMMISSION NO. 35667-1
SCALE AS SHOWN
DATE 4/2/18
SHEET 7 OF 13

Morgan & Eklund Inc.
PROFESSIONAL SURVEY CONSULTANTS

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1612 NW 2ND AVENUE
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LB #4298

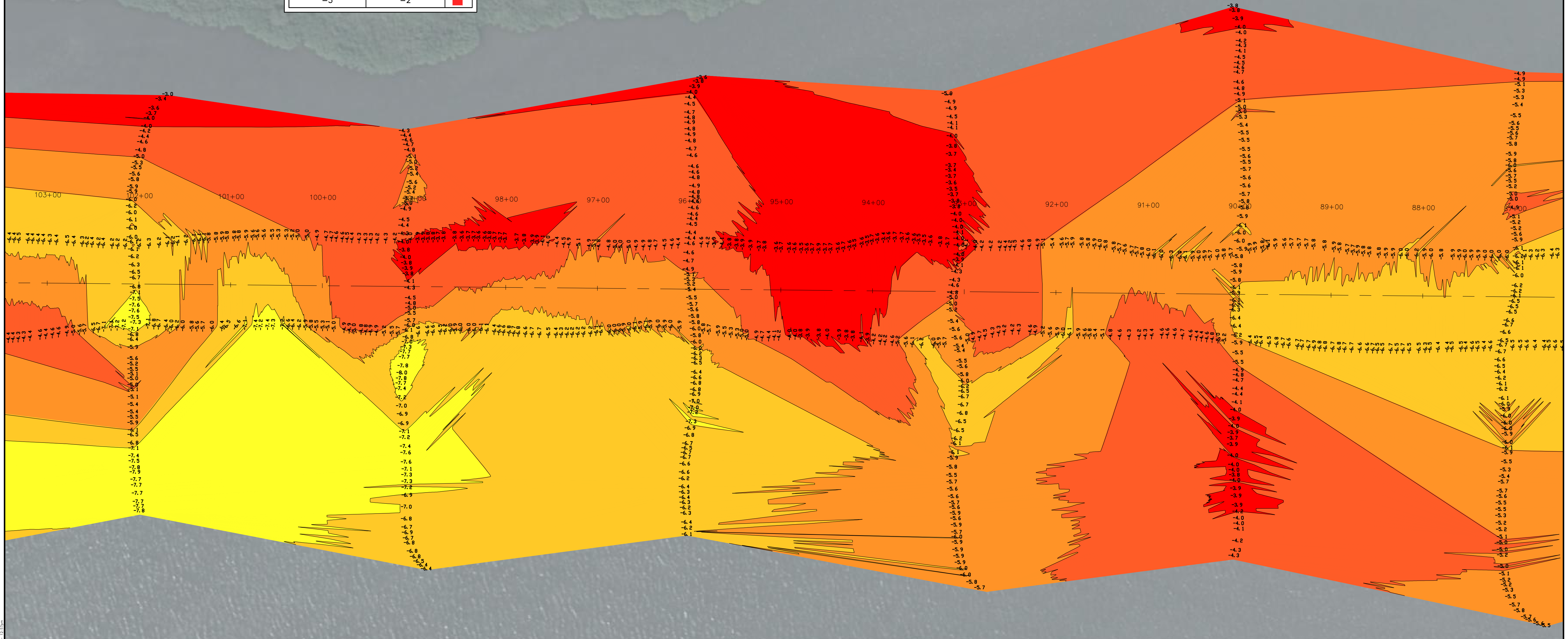
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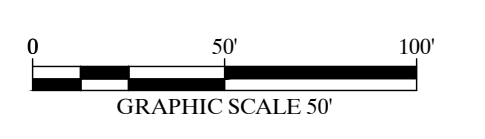
JOHN R. MORGAN II, PLS
PROFESSIONAL LAND SURVEYOR #3520
STATE OF FLORIDA

DRAWN BY LFP	CHECKED BY JRM	FIELD BOOK PAGE NO.	SEE COVER	DATE OF SURVEY 3/27/18
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ELEVATIONS IN FEET (NAVD 88)		
Minimum Elevation	Maximum Elevation	Color
-16	-15	Blue
-15	-14	Light Blue
-14	-13	Cyan
-13	-12	Light Green
-12	-11	Green
-11	-10	Light Yellow-Green
-10	-9	Yellow
-9	-8	Light Orange
-8	-7	Orange
-7	-6	Light Red
-6	-5	Red
-5	-4	Dark Red
-4	-3	Red-Orange
-3	-2	Dark Red-Orange



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ELEVATION CONTOURS (NAVD 88)

BATHYMETRIC SURVEY
 INDIAN RIVER CHANNEL
 WABASSO PIER REMOVAL ROUTE
 - FOR -
 ATKINS NORTH AMERICA

COMMISSION NO.	35667-1
SCALE	AS SHOWN
DATE	4/2/18
SHEET	8 OF 13

Morgan & Eklund Inc.
 PROFESSIONAL SURVEY CONSULTANTS

4909 US HIGHWAY #1
 VERO BEACH, FL 32967
 PHONE: (772) 388-5364
 FAX: (772) 388-3165

1612 NW 2ND AVENUE
 SUITE 3
 BOCA RATON, FL 33432
 PHONE: (954) 421-6882
 FAX: (954) 421-0425

LB #4298

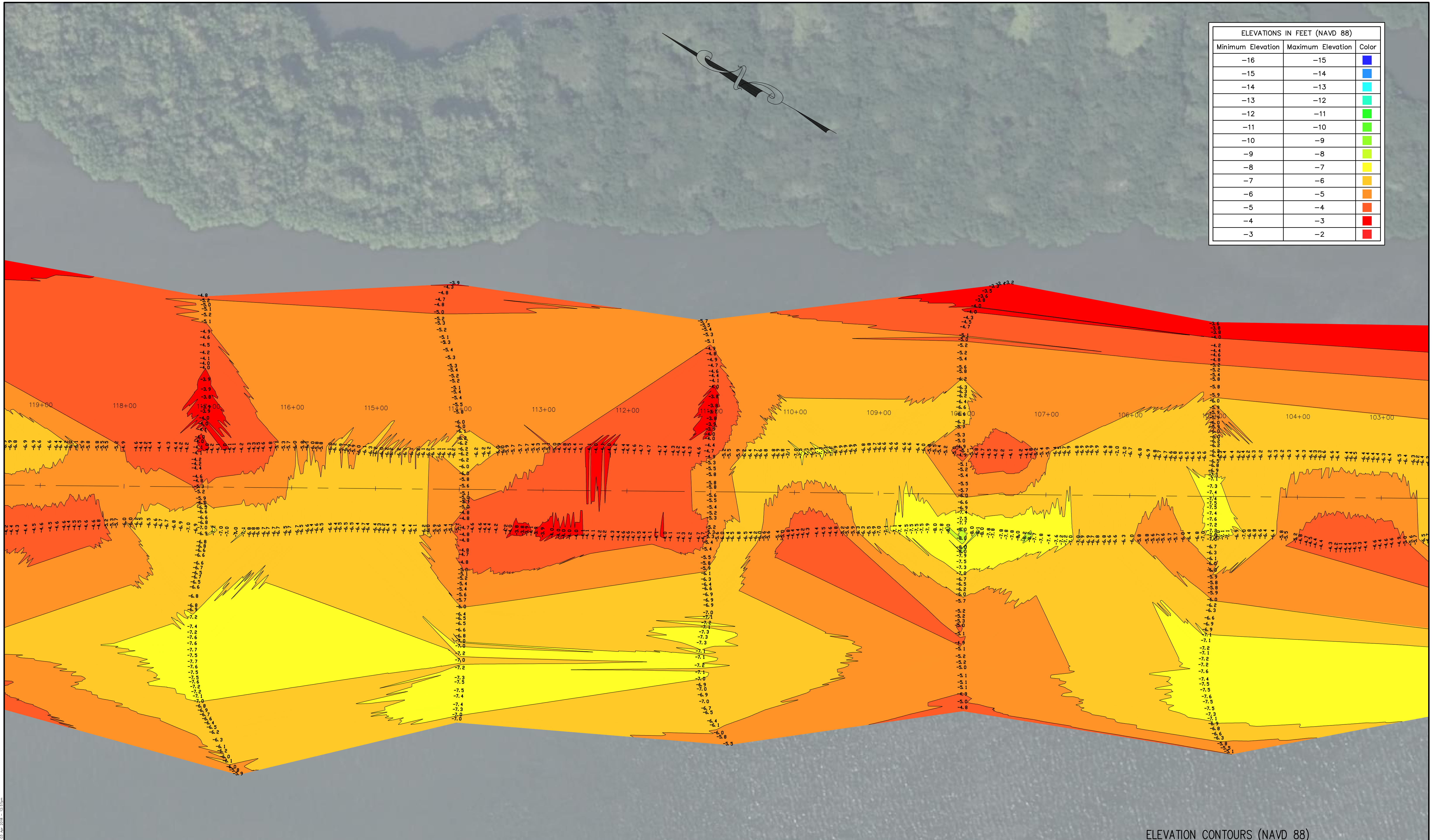
JOHN R. MORGAN II, PSM
 FLORIDA CERTIFICATION #3520

CERTIFICATE OF SURVEYOR - I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS IN ACCORDANCE WITH A RECENT FIELD SURVEY MADE UNDER MY DIRECTION, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 63-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

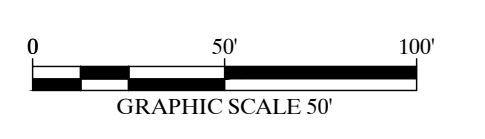
JOHN R. MORGAN II, PLS
 PROFESSIONAL LAND SURVEYOR #3520
 STATE OF FLORIDA

DRAWN BY	CHECKED BY	FIELD BOOK	SEE	DATE OF SURVEY
LFP	JRM	PAGE NO.	COVER	3/27/18

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-7	-6	Dark Orange
-6	-5	Red-Orange
-5	-4	Red
-4	-3	Dark Red
-3	-2	Red



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ELEVATION CONTOURS (NAVD 88)

BATHYMETRIC SURVEY
 INDIAN RIVER CHANNEL
 WABASSO PIER REMOVAL ROUTE
 - FOR -
 ATKINS NORTH AMERICA

COMMISSION NO. 35667-1
SCALE AS SHOWN
DATE 4/2/18
SHEET 9 OF 13

Morgan & Eklund Inc.

PROFESSIONAL SURVEY CONSULTANTS

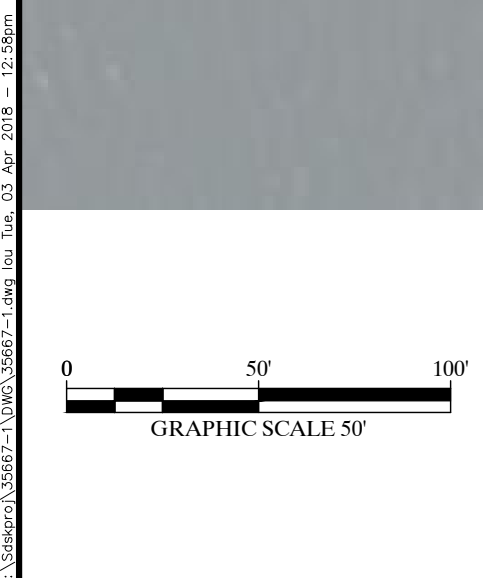
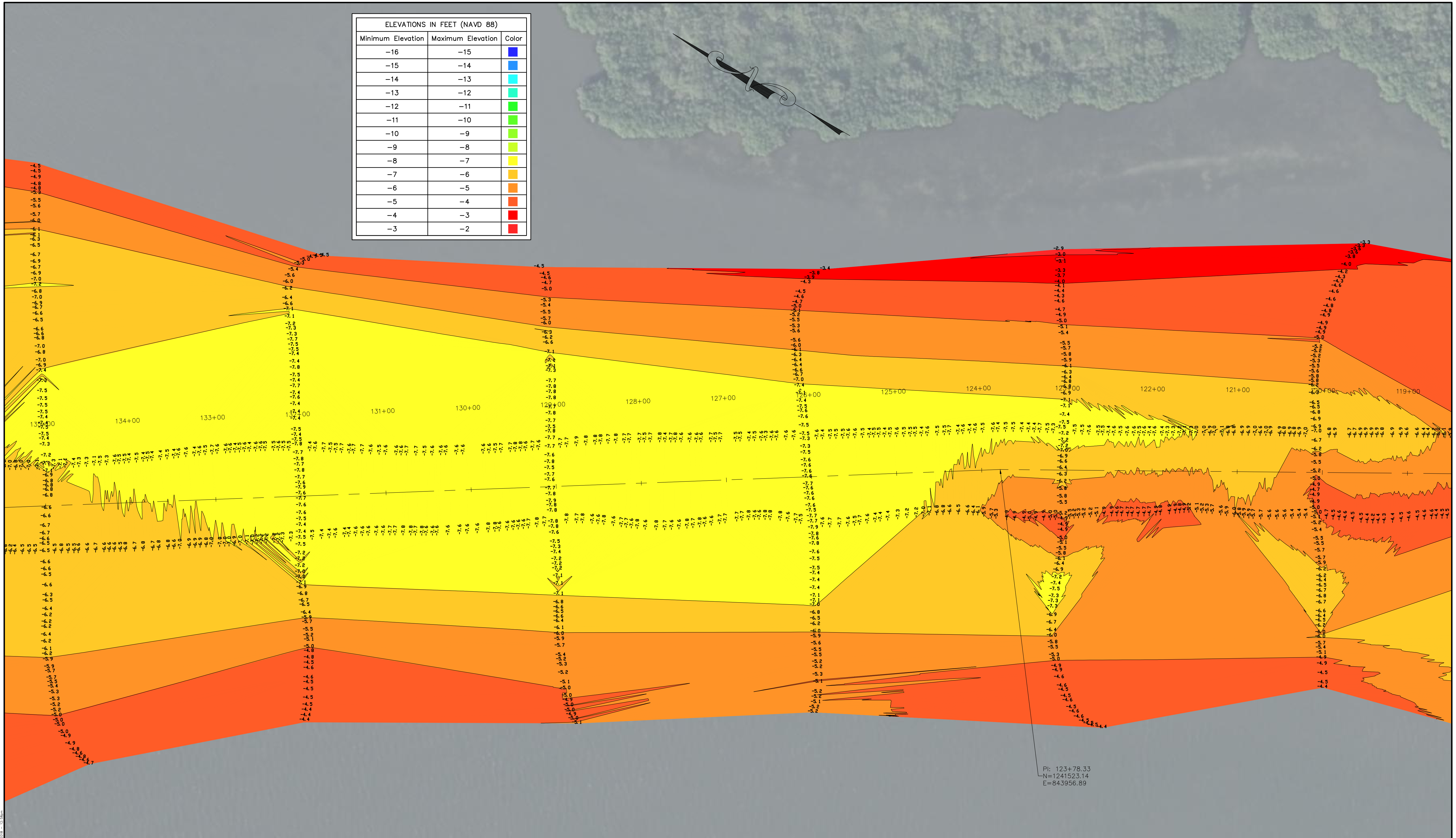
 JOHN R. MORGAN II, PSM FLORIDA CERTIFICATION #3520	4909 US HIGHWAY #1 VERO BEACH, FL 32967 PHONE: (772) 388-5364 FAX: (772) 388-3165
1612 NW 2ND AVENUE SUITE 3 BOCA RATON, FL 33432 PHONE: (954) 421-6882 FAX: (954) 421-0425	LB #4298

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JOHN R. MORGAN, II, PLS
 PROFESSIONAL LAND SURVEYOR #3520
 STATE OF FLORIDA

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ELEVATION CONTOURS (NAVD 88)

BATHYMETRIC SURVEY
 INDIAN RIVER CHANNEL
 WABASSO PIER REMOVAL ROUTE
 - FOR -
 ATKINS NORTH AMERICA

COMMISSION NO. 35667-1
SCALE AS SHOWN
DATE 4/2/18
SHEET 10 OF 13

Morgan & Eklund Inc.
 PROFESSIONAL SURVEY CONSULTANTS

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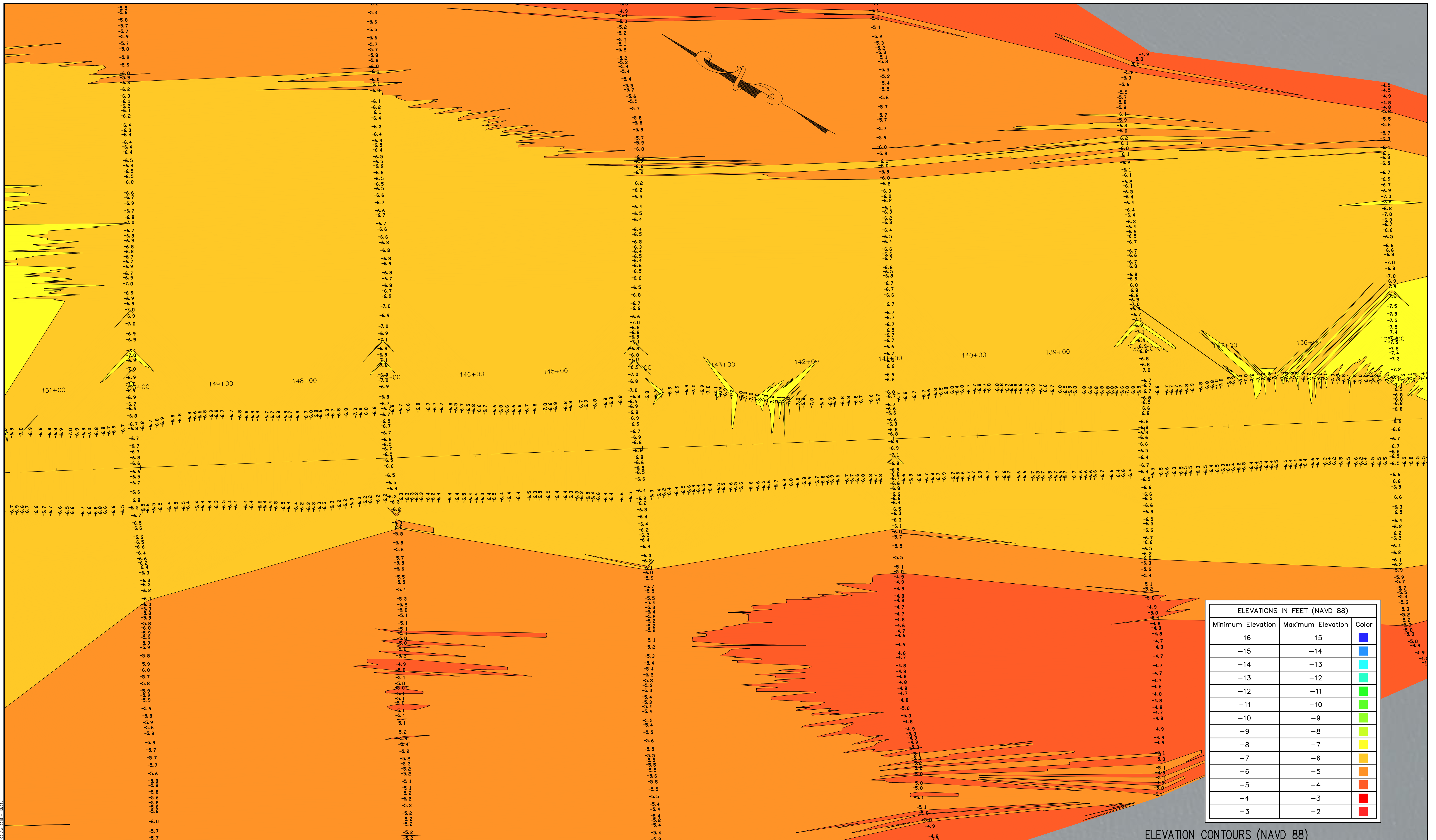
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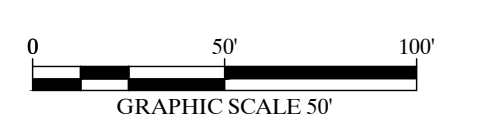
JOHN R. MORGAN, II, PLS
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 STATE OF FLORIDA

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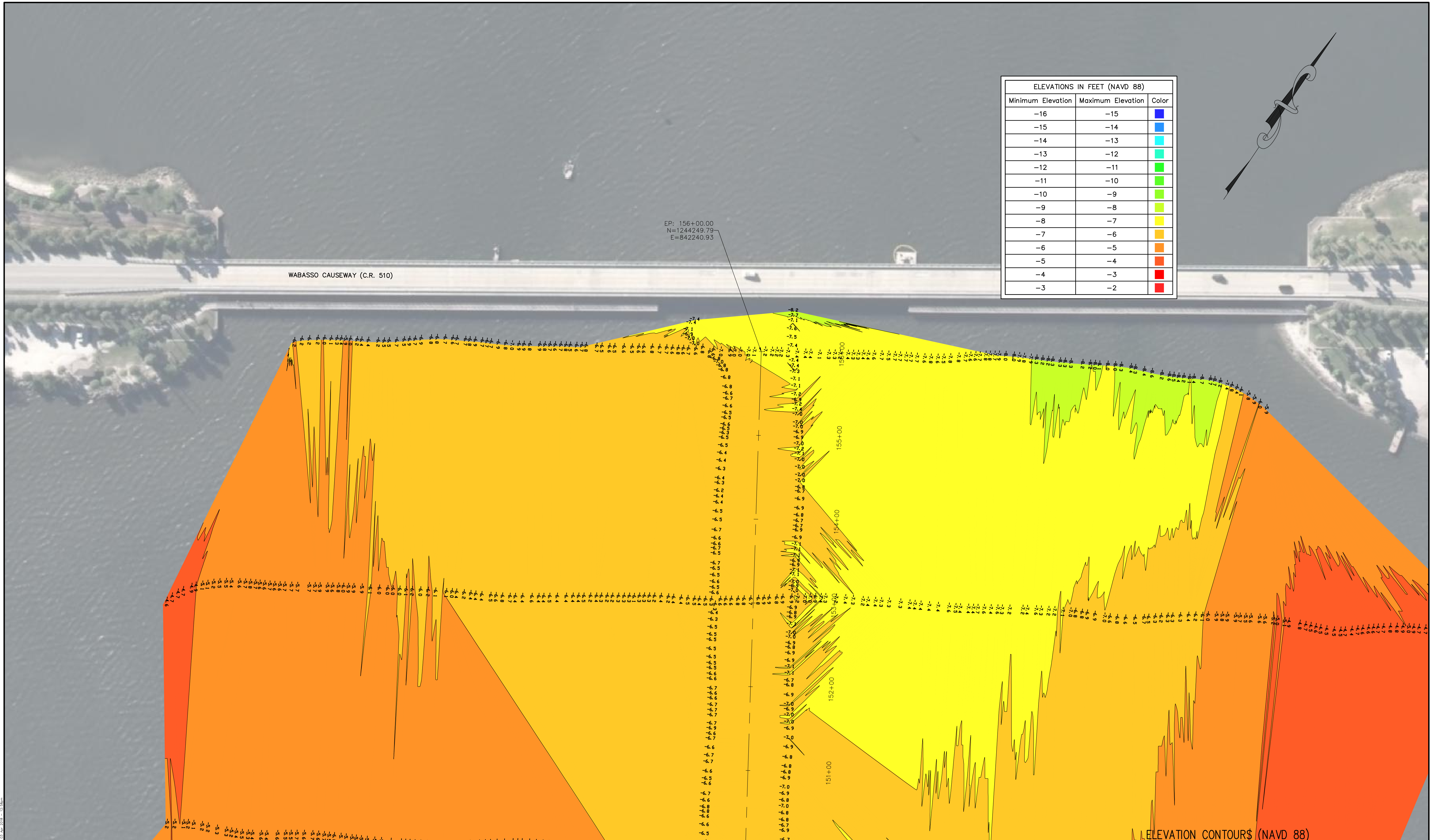


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-3	-2	Dark Red

ELEVATION CONTOURS (NAVD 88)



<p>Morgan & Eklund Inc. PROFESSIONAL SURVEY CONSULTANTS</p> <p>4909 US HIGHWAY #1 VERO BEACH, FL 32967 PHONE: (772) 388-5364 FAX: (772) 388-3165</p> <p>1612 NW 2ND AVENUE SUITE 3 BOCA RATON, FL 33432 PHONE: (954) 421-6882 FAX: (954) 421-0425</p> <p>LB #4298</p>	<p>CERTIFICATE OF SURVEYOR - I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS IN ACCORDANCE WITH A RECENT FIELD SURVEY MADE UNDER MY DIRECTION AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND MEETS THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 63-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.</p> <p>JOHN R. MORGAN, II, PLS PROFESSIONAL LAND SURVEYOR #3520 STATE OF FLORIDA</p>	<p>BATHYMETRIC SURVEY INDIAN RIVER CHANNEL WABASSO PIER REMOVAL ROUTE - FOR - ATKINS NORTH AMERICA</p>		<p>COMMISSION NO. 35667-1</p>	
		<p>DRAWN BY LFP</p>	<p>CHECKED BY JRM</p>	<p>FIELD BOOK PAGE NO.</p>	<p>SEE COVER</p>
<p>SHEET 11 OF 13</p>					

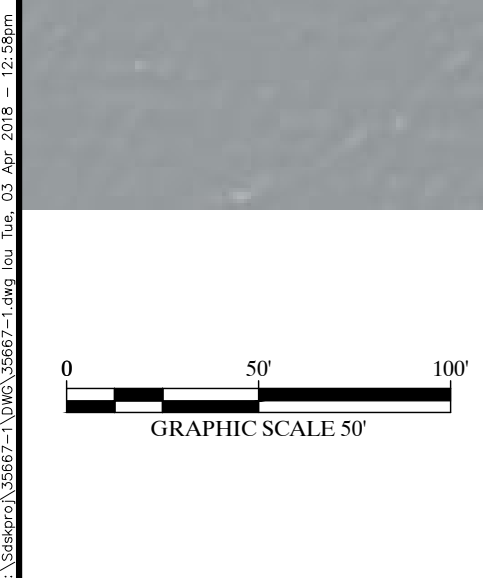


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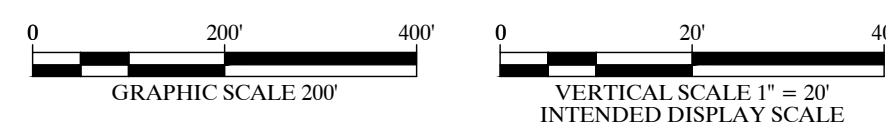
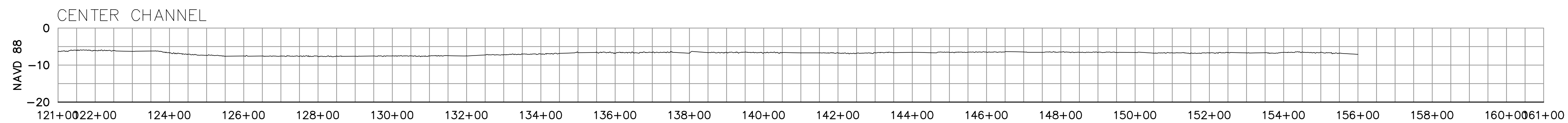
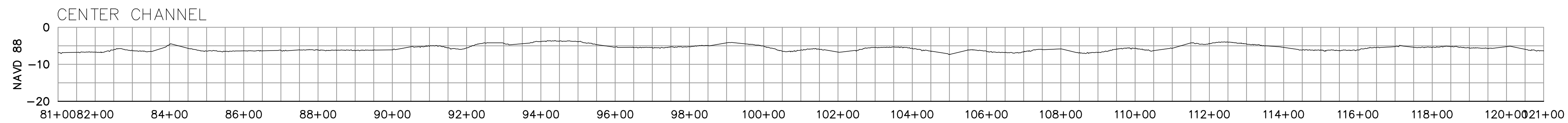
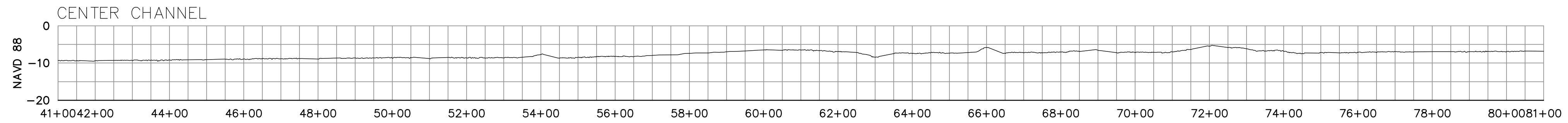
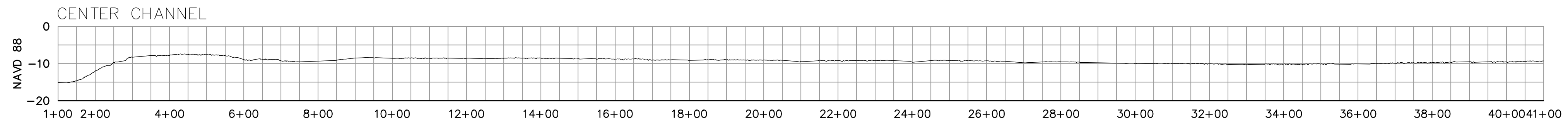
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WABASSO CAUSEWAY (C.R. 510)

ELEVATION CONTOURS (NAVD 88)



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		<p>SCALE AS SHOWN</p>	<p>DATE 4/2/18</p>	<p>DRAWN BY LFP</p>	<p>CHECKED BY JRM</p>	<p>FIELD BOOK PAGE NO.</p>	<p>SEE COVER</p>



Morgan & Eklund Inc.

PROFESSIONAL SURVEY CONSULTANTS

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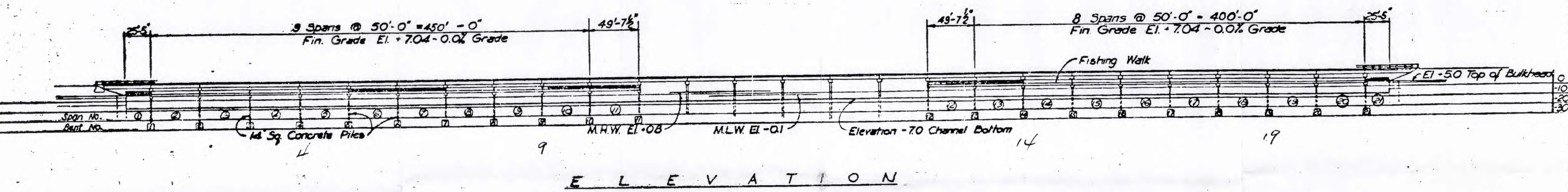
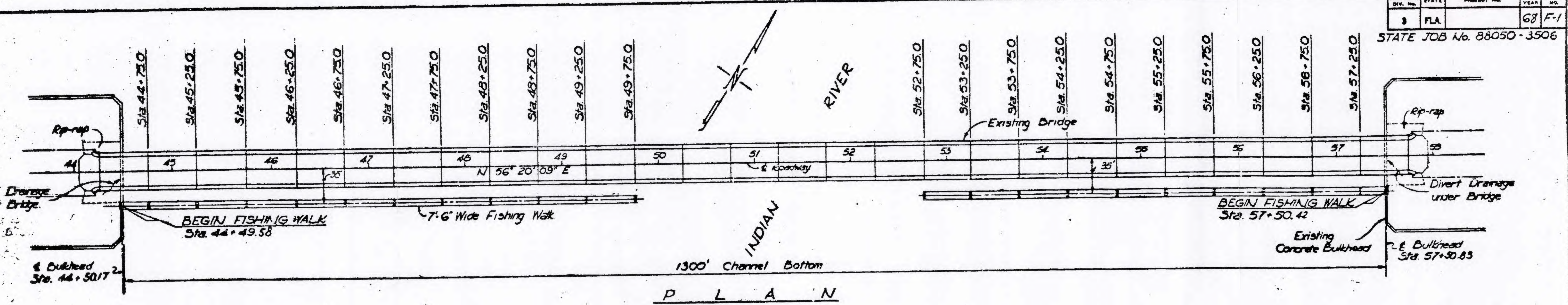
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JOHN R. MORGAN II, PLS
PROFESSIONAL LAND SURVEYOR #3520
STATE OF FLORIDA

ROUTE PROFILE (NAVD 88)				COMMISSION NO.	
				35667-1	
BATHYMETRIC SURVEY INDIAN RIVER CHANNEL WABASSO PIER REMOVAL ROUTE - FOR - ATKINS NORTH AMERICA				SCALE	
				AS SHOWN	
DRAWN BY LFP				DATE	
				4/2/18	
CHECKED BY JRM		FIELD BOOK PAGE NO.	SEE COVER	DATE OF SURVEY 3/27/18	SHEET 13 OF 13

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E L E V A T I O N

A No.	ITEM	UNIT	QUANTITY
1-4	Class A Concrete (Superstructure)	Cu. Yd.	54
1-5	Class A Concrete (Substructure)	Cu. Yd.	39
1-2	Reinforcing Steel	Lbs	6700
30-1	Prestressed Tees (Type A)	Lin. Ft.	1897
30-2	Prestressed Tees (Type B)	Lin. Ft.	101
3-1	Pre-cast Concrete Piling Furnished (14" Sp.) [Prestressed]	Lin. Ft.	1330
4-1	Pre-cast Concrete Piling Driven (14" Sp.) [Prestressed]	Lin. Ft.	1330
9-11	Unloaded Test Piles (Pre-cast Concrete Piling) (14" Sp.) [Prestressed]	Lin. Ft.	160
55-1	Pile Splices (14")	Each	10
1-1-2	Pipe Handrail (Aluminum)	Lin. Ft.	2013

INDEX OF SHEETS

- F-1 Plan, Elevation & Quantities.
- F-2 & F-3 Fishing walk Details.
- F-4 Prestressed Concrete Piles - Index No. 3400

Note: Drive un-load 14" Sq. Concrete test piles (40' long) in the position of permanent piles in bents 4, 5, 14 & 19 at locations directed by the Engineer.

GENERAL NOTES

- GENERAL SPECIFICATIONS: - Florida State Road Department Standard Specifications for Road and Bridge Construction dated 1966.
- DESIGN SPECIFICATIONS: - 1965 Edition of AASHTO Standard Specifications for Bridges.
- CONCRETE: -
 - Prestressed Concrete - Class P
 - Superstructure and Substructure - Class A

Material Stress	5,000 psi	Working Stress	2,000 psi. (Final)
			1,200 psi.
- REINFORCING: - Intermediate or Hard Grade.
- PILES: - 14" Sq. Prestressed Concrete driven to a minimum capacity of 25 Tons.
- BORINGS: - For Borings See Sheet A-7 of State Job No. 88050-3506

26/30

18
16
34

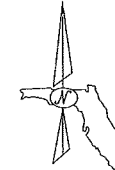
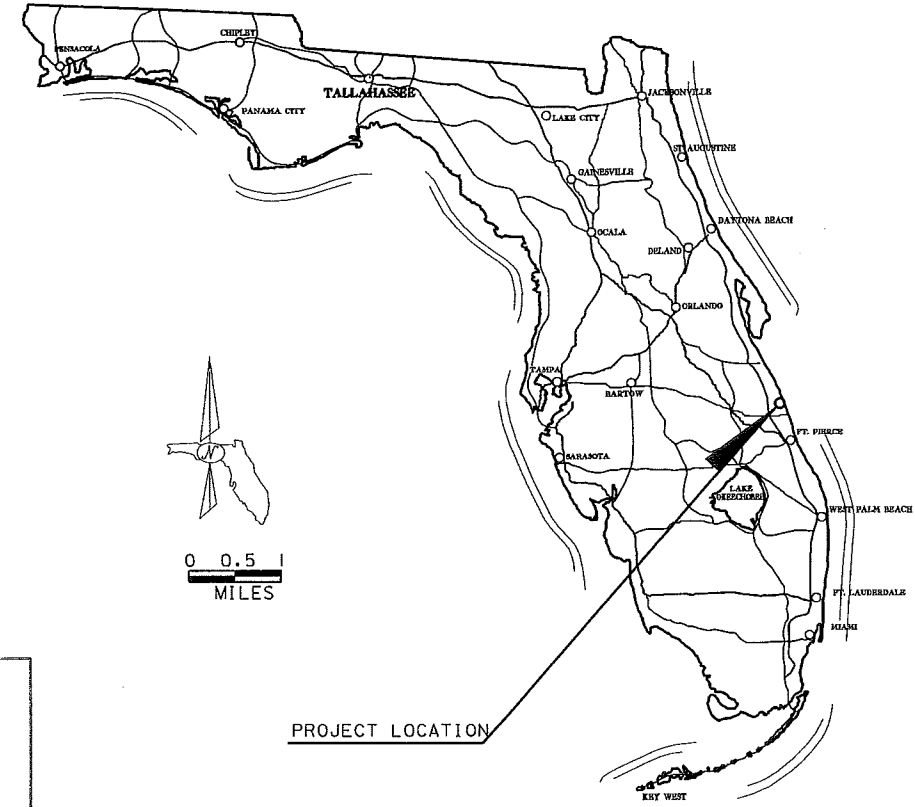
31
1330
101
310
306
4

STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
FISHING WALKS AT STRUCTURE B OVER INDIAN RIVER			
ROAD NO.		COUNTY	PROJECT NO.
S. 510		INDIAN RIVER	88050-3506
REVISIONS		APPROVED BY	
Date	Description	Name	Date
		T. O. ...	
Detailed by		KNT 6-67	
Checked by		RAR 1-68	
Quantity by		KNT 6-67	
Checked by		RAR 1-68	
Traced by		1 of 4	

INDIAN RIVER COUNTY
DEPARTMENT OF PUBLIC WORKS

CONTRACT PLANS

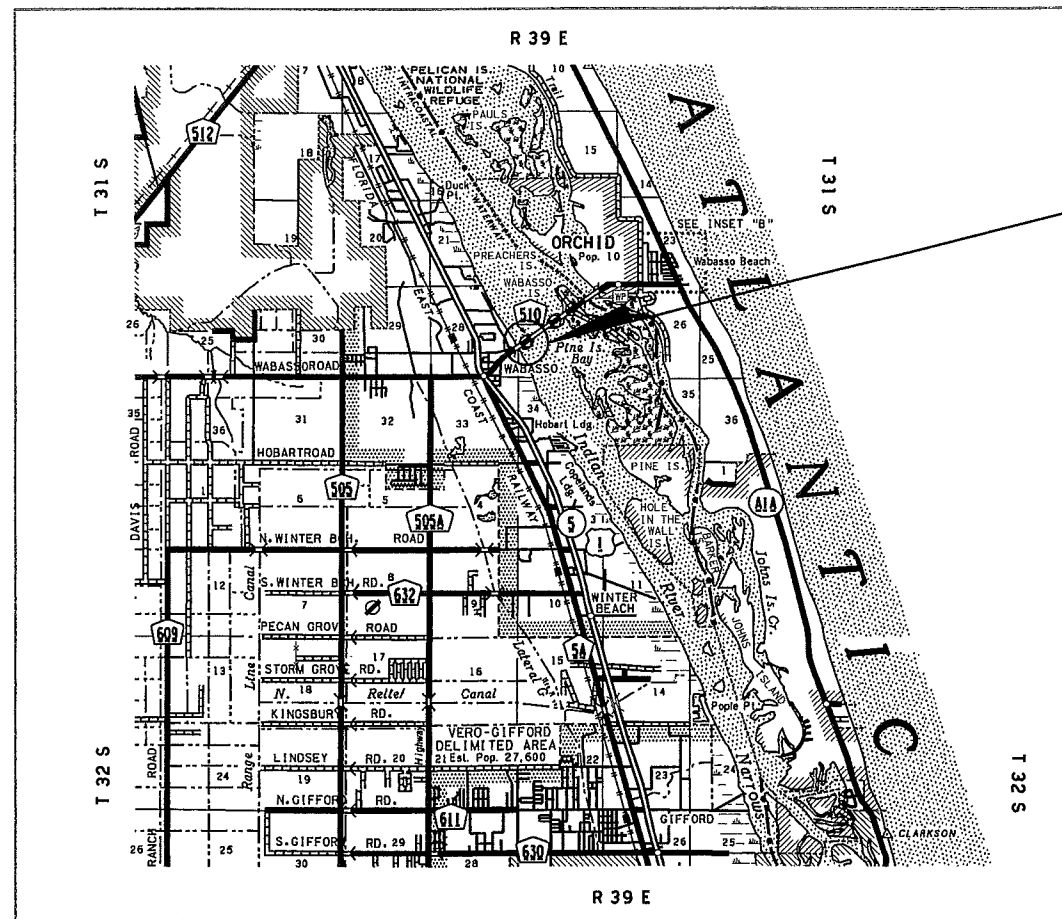
INDIAN RIVER COUNTY (880051)
CR 510 OVER INTRACOSTAL WATERWAY
WABASSO FISHING PIERS REHABILITATION



0 0.5 1
MILES

INDEX OF FISHING PIER REHABILITATION

SHEET NO.	SHEET DESCRIPTION
B-1	KEY SHEET
BI-A	TABULATION OF QUANTITIES
BI-1	GENERAL NOTES
BI-2	STRUCTURAL NOTES
BI-3	GENERAL PLAN & ELEVATION
BI-4	WEST PIER TYPICAL SECTION, PLAN & ELEVATION
BI-5	WEST PIER BULKHEAD REPAIR DETAILS
BI-6	WEST PIER PILE CAP REPAIR DETAILS
BI-7	WEST PIER BEAM REPAIR DETAILS I
BI-8	WEST PIER BEAM REPAIR DETAILS II
BI-9	WEST PIER DECK REPAIR DETAILS
BI-10	WEST PIER BEAM REPLACEMENT (SPAN 10)
BI-11	WEST PIER JACKING DETAILS
BI-12	EAST PIER DEMOLITION LIMITS
BI-13	EAST PIER NEW TYPICAL SECTION, PLAN & ELEVATION
BI-14	EAST PIER NEW PILE CAP AND ABUTMENT MODIFICATION
BI-15	EAST PIER NEW DECK SLAB REINFORCING
BI-16	BAR LIST
BI-17	TYPICAL INVERTED-T BEAM DETAILS AND NOTES INDEX NO. 310
BI-18	INVERTED-T BEAM - STANDARD DETAILS INDEX NO. 320
BI-19	INVERTED-T BEAM - TABLE OF BEAM VARIABLES INDEX NO. S-321
BI-20	STANDARD BAR BENDING DETAILS INDEX NO. 1300
BI-21	GENERAL ELECTRIC PLAN
BI-22	CONDUIT DETAILS
BI-23	LOAD CENTER DETAILS



PROJECT LOCATION
BRIDGE NO. 880051

STRUCTURE SHOP DRAWINGS
TO BE SUBMITTED TO:

CESAR GRANADOS, P.E.
HARDESTY & HANOVER, LLP
1000 SAWGRASS CORPORATE PARKWAY
SUNRISE, FLORIDA 33323

PLANS PREPARED BY:



HARDESTY & HANOVER, LLP
1000 SAWGRASS CORPORATE PKWY SUITE 544
SUNRISE, FLORIDA 33323
(954) 835-9119

CERTIFICATE OF AUTHORIZATION NO.00000171

NOTE, THE SCALE OF THESE PLANS MAY
HAVE CHANGED BY REPRODUCTION.

GOVERNING STANDARDS & SPECIFICATIONS,
FLORIDA DEPARTMENT OF TRANSPORTATION,
ROADWAY AND TRAFFIC DESIGN STANDARDS
DATED JANUARY 2006 AND
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE
CONSTRUCTION DATED 2004,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS I-1-06

FOR DESIGN STANDARDS MODIFICATIONS CLICK ON
"DESIGN STANDARDS" AT THE FOLLOWING WEBSITE,
[HTTP://WWW.DOT.STATE.FL.US/RDDSIGN](http://www.dot.state.fl.us/rddesign)

REVISIONS:

LENGTH OF PROJECT	
	FEET
ROADWAY	N/A
BRIDGES	N/A
NET LENGTH OF PROJ.	N/A
EXCEPTIONS	N/A
GROSS LENGTH OF PROJ.	N/A

PROJECT MANAGER, CLIFFORD J. SUTHARD, P.E.

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

Timothy J. Noles
4-15-07

STRUCTURE PLANS
ENGINEER OF RECORD, TIMOTHY J. NOLES

DATE, AUGUST 11TH, 2006
P.E. NO., 49891

PISCAL YEAR	DRAWING NO.
06	B-1

PAY ITEM NOTES

ITEM NO.	ITEM	UNIT	QUANTITY
101 - 1	Mobilization	LS	1.00
102 - 1	Maintenance Of Traffic	LS	1.00
102 - 74	Barricade (Temporary) (Type III)	ED	120.00
104 - 11	Turbidity Barrier Floating	LF	2340.00
110 - 3	Removal Of Existing Structures	LS/SF	4432.00
400 - 4	Concrete Class IV (Superstructure)	CY	123.66
400 - 4	Concrete Class IV (Substructure)	CY	21.70
400 - 134	Epoxy Material	GA	18.00
400 - 135	Inject And Seal Cracks	LF	31.00
400 - 143	Concrete Surfaces Cleaning And Coating	SF	17,836.00
400 - 153	Non-Shrinking Grout	CF	3.00
401 - 70	Restore Spalled Areas (Epoxy)	CF	70.00
413 - 149	Penetrant Sealer	GA	50.00
415 - 1	Reinforcing Steel (Superstructure)	LB	20,107.00
415 - 1	Reinforcing Steel (Substructure)	LB	4132.00
450 - 1	Prestressed Beams (Inverted T)	LF	1002.00
515 - 2	Pipe Handrail (Reinstall)	LF	1113.00
715 - 1	Conductors (F&I) (Insulated) (No 10)	LF	4479.00
715 - 1	Conductors (Remove)	LF	4479.00
715 - 2	Conduit (F&I - Underground) (PVC SCH 40) (3/4")	LF	410.00
715 - 2	Conduit (F&I - Surface Mount) (RGS) (3/4")	LF	550.00
715 - 2	Conduit (F&I - Surface Mount) (FMC) (3/4")	LF	33.00
715 - 2	Conduit (F&I - Embedded) (RGS) (3/4")	LF	500.00
715 - 2	Conduit (Remove)	LF	550.00
715 - 7	Load Center (F&I) (Secondary Voltage)	EA	2.00
715 - 7	Load Center (Remove) (Secondary Voltage)	EA	2.00
715 - 11	Luminaire (F&I) (Curb Mount) (Special)	EA	11.00
715 - 11	Luminaire (F&I) (Curb Embedded) (Special)	EA	19.00
715 - 11	Luminaire (Remove) (Curb Mount) (Special)	EA	11.00
715 - 14	Pull Box (F&I) (Roadside)	EA	3.00
715 - 14	Pull Box (F&I) (Embedded)	EA	1.00
715 - 14	Pull Box (F&I) (Surface Mount)	EA	12.00
715 - 14	Pull Box (Remove) (Surface Mount)	EA	24.00
999 - 25	Initial Contingency Amount	LS	1.00

- 102-1 Includes the cost to furnish Fishing Pier Closed sign and to implement any required traffic controlscheme during the construction phase.
- 110-3 Includes the cost to remove and dispose of the entire East Pier superstructure (deck, railing, curb, prestressed beams and diaphragm) and substructure (pile caps and pile extension). It also includes the partial removal of West Pier superstructure (prestressed beam, deck, curb, diaphragm and railing) of Span 10.
- 400-4 Includes the cost of preparation, labor and materials to provide new concrete curb, concrete deck, (Superstructure) diaphragm, concrete sidewalk modifications and miscellaneous concrete work.
- 400-4 Includes the cost of preparation, labor and materials to provide new concrete pile cap, pile extension (Substructure) and new concrete shear blocks.
- 400-153 Includes the cost of labor and materials to repair undermine Sidewalk at west pier.
- 401-70 Includes the cost of labor and materials to repair spalls at west pier superstructure (abutment, curb, deck, prestressed beams and diaphragms) and substructure (shear blocks, pile caps and piles).
- 415-1 Includes the cost of labor and materials to install the reinforcing for the new concrete curb, deck and (Superstructure) diaphragms.
- 415-1 Includes the cost of labor and materials to install the reinforcing for the new concrete pile, pile extension (Substructure) and diaphragms.

CESAR GRANADOS
4-16-07

REVISIONS						NAMES		DATES		ENGINEER OF RECORD:			SHEET TITLE:		
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	AKB	8/06	HARDESTY & HANOVER, LLP			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT				
						CG	8/06	1000 SAWGRASS CORPORATE PKWY			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						CG	8/06	SUITE 544			CR 510	INDIAN RIVER			
						TJN	8/06	Sunrise, FL 33323						PROJECT NAME:	
						T.J. Noles, P.E.		Cesar A. Granados, P.E. #64221						CR 510 OVER INTRACOASTAL WATERWAY	
								Certificate of Authorization #171						WABASSO FISHING PIER REPAIRS	
														SHEET NO.	
														BI-A	

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

GENERAL NOTES:

1. GENERAL SPECIFICATIONS

FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (DATED 2004), AS AMENDED BY CONTRACT DOCUMENTS.

2. DESIGN SPECIFICATIONS

A. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS (THIRD EDITION) AND APPROVED INTERIMS AS SPECIFIED IN THE STRUCTURES DESIGN GUIDELINES.

B. FDOT STRUCTURES DESIGN GUIDELINES JULY 2006.

C. FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, JANUARY 2006 EDITION, AS AMENDED AND MUTCD 2003 EDITION.

3. ENVIRONMENT

SUPERSTRUCTURE - EXTREMELY AGGRESSIVE
SUBSTRUCTURE - CONCRETE: EXTREMELY AGGRESSIVE
STEEL: EXTREMELY AGGRESSIVE

4. FIELD VERIFICATION AND CONDITIONS

DIMENSIONS SHOWN IN THE CONTRACT PLANS WERE OBTAINED FROM FIELD OBSERVATIONS, AND ARE INTENDED FOR INFORMATION AND ESTIMATING PURPOSES ONLY. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS REQUIRED TO PERFORM THE REPAIRS. FAILURE TO FIELD VERIFY DIMENSIONS WILL NOT BE JUSTIFICATION FOR CLAIMS. IF ANY DISCREPANCIES ARE FOUND, IMMEDIATELY NOTIFY THE ENGINEER.

5. EROSION CONTROL

COMPLY WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 104 "PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION". COMPLY AS WELL TO STATE, FEDERAL AND LOCAL LAWS, STATUTES AND ORDINANCES.

THE CONTRACTOR MUST PROVIDE MEANS TO PREVENT REMOVED MATERIAL FROM FALLING OR ENTERING THE WATERWAY.

6. MANATEE SIGN NOTE

THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 4 MANATEE AWARENESS SIGNS, POST MOUNTED AT EACH QUADRANT OF THE FISHING PIER. COUNTY PERSONNEL WILL GIVE INSTRUCTIONS ON EXACT LOCATION AND TYPE OF MOUNTING REQUIRED AT THE PRE-CONSTRUCTION MEETING. IN ADDITION, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING MANATEE AWARENESS SIGNS ON ALL MOTORIZED VESSELS, INCLUDING BARGES WHICH ARE SUPPORTING DRIVING EQUIPMENT. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAID SIGNS FOR THE DURATION OF THE PROJECT. ALL COST ASSOCIATED WITH MANATEE SIGNS IS TO BE INCLUDED UNDER MOBILIZATION COST.

7. PROTECTION OF SURVEY MONUMENTS:

ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE ENGINEER SHOULD NOTIFY THE COUNTY.

8. MAINTENANCE OF TRAFFIC:

PROVIDE INFORMATION SIGN TO PUBLIC AND PROVIDE TYPE III BARRICADE TO CLOSE PIER. PAID FOR UNDER MAINTENANCE OF TRAFFIC.

9. NAVIGABLE WATERWAY:

AT NO TIME DURING THE REPAIRS WILL THE WATERWAY BE CLOSED TO NAVIGATION. LOCAL MARINE TRAFFIC CONSISTS OF SMALL RECREATIONAL BOATS FROM ADJACENT RESIDENCES AND BUSINESSES.

10. NOISE ORDINANCE:

CONTRACTOR SHALL COMPLY WITH LOCAL NOISE ORDINANCES.

11. INSPECTION:

THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER AT ALL TIMES TO INSPECT ALL ASPECTS OF THE PROJECT. THIS INCLUDES (BUT IS NOT LIMITED TO) SCAFFOLDING, INSPECTION BOAT, SAFETY BOAT, MANLIFTS AND OTHER EQUIPMENT REQUIRED TO PROVIDE SAFE ACCESS FOR THE ENGINEER TO PERFORM ALL NECESSARY INSPECTIONS.

12. UTILITIES:

EXISTING UNDERGROUND AND ABOVE GROUND UTILITIES WITHIN THE CONSTRUCTION ZONE MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND AVOIDING ALL UTILITIES. BEFORE BEGINNING OF WORK CONTACT SUNSHINE ONE CALL FOR LOCATION OF EXISTING UTILITIES AT (800) 432-4770.

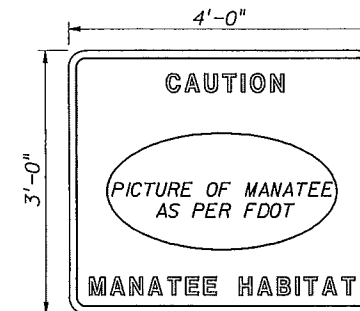
THE FOLLOWING UTILITIES EXIST OR MAY EXIST IN THE PROJECT VICINITY:

INDIAN RIVER COUNTY UTILITIES:
1840 25th STREET
VERD BEACH, FL 32960
ATTN: MR. BILL McCAIN
(561) 770-5325

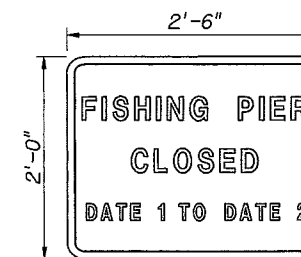
BELL SOUTH:
3300 OKEECHOBEE ROAD
FT. PIERCE, FL 34947
ATTN: MR. RONNIE LUTRELL
(561) 562-1618

FLORIDA POWER & LIGHT:
810 CHARLOTTE AVENUE
WEST PALM BEACH, FL 33401
ATTN: MR. LEONARD CHIOLCA
(561) 616-1618

COMCAST:
2501 SW 145 AVENUE
MIRAMAR, FL 33027
ATTN: LEONARD MAXWEL
(954) 444-5113



MANATEE SIGN
See Note 6 on This Sheet



PIER CLOSED SIGN
See Note 8 on This Sheet

CESAR GRANADOS
4-16-07

BRIDGE NO. 880051

REVISIONS						ENGINEER OF RECORD			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATES	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	GENERAL NOTES		SHEET NO.
						DRAWN BY	AKB 8/06	CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS		BI-1
						CHECKED BY	CG 8/06						
						DESIGNED BY	CG 8/06						
						CHECKED BY	TJN 8/06						
						APPROVED BY	T.J. Noles, P.E.						

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STRUCTURAL NOTES:

1. DESIGN LOADS:

DEAD LOAD: THE FOLLOWING UNIT LOADS SHALL BE USED IN CALCULATING DEAD LOADS:

STRUCTURAL STEEL - 490 pcf
 REINFORCED CONCRETE - 150 pcf
 ALUMINUM - 165 pcf

2. DESIGN METHODS:

REINFORCED CONCRETE: LOAD AND RESISTANCE FACTOR DESIGN

3. THERMAL FORCES:

A. SEASONAL VARIATION:
 TEMPERATURE RANGE FOR DESIGN OF STRUCTURE:
 TEMPERATURE RISE = 30° F
 TEMPERATURE FALL = 40° F

B. MEAN TEMPERATURE = 70° F
 C. THERMAL COEFFICIENT = 0.000006 PER DEGREE F

4. CREEP AND SHRINKAGE:

STRAINS ARE AS PER AASHTO.
 ULTIMATE CONCRETE SHRINKAGE COEFFICIENT = 0.0004 IN/IN

5. STAY-IN-PLACE FORMS ARE NOT PERMITTED DUE TO EXTREMELY AGGRESSIVE ENVIRONMENT.

6. ALLOWABLE STRESSES/LOADS:

REINFORCED CONCRETE: AS PER AASHTO.

PRESTRESSED CONCRETE:

CONCRETE STRENGTH AT TRANSFER, $f'_{ci} = 0.8f'_c = 6.8$ ksi
 CONCRETE STRENGTH AT 28 DAYS, $f'_c = 8.5$ ksi

A. TEMPORARY STRESSES BEFORE LOSSES:

COMPRESSION = $0.60f'_{ci} = 4.08$ ksi
 TENSION (WITHOUT BONDED REINFORCEMENT) = 0.200 ksi
 TENSION (WITH BONDED REINFORCEMENT) = 0.625 ksi

B. SERVICE LIMIT STATES AFTER LOSSES, FULLY PRESTRESSED:

DUE TO EFFECTIVE PRESTRESS AND PERMANENT LOADS = $0.45f'_c$ (3.82 ksi)

DUE TO LL AND $\frac{1}{2}$ THE SUM OF EFFECTIVE PRESTRESSING AND PERMANENT LOADS = $0.40f'_c$ (3.40 ksi)

DUE TO PRESTRESS, PERMANENT AND TRANSIENT/LIVE LOAD = $0.6f'_c$ (5.10 ksi)
 TENSION (UNLESS OTHERWISE NOTED) 0.280 ksi

7. MATERIALS:

A. EPOXY MORTAR: ALL EPOXY MORTAR SHALL CONFORM WITH FDOT STANDARD SPECIFICATIONS SECTION 346.

B. REINFORCING STEEL: ALL REINFORCING STEEL SHALL BE UNCOATED ASTM A615 GRADE 60.

CONCRETE COVERS SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):
 SUPERSTRUCTURE:

PRE-STRESSED BEAMS: 2"
 TOP DECK SURFACE: $2\frac{1}{2}$ "
 ALL OTHER SURFACES: 2"

SUBSTRUCTURE:
 EXTERNAL FORMED SURFACES, PILE CAPS, SHEAR BLOCKS AND PILE EXTENSIONS NOT IN CONTACT WITH WATER: 4"

CONCRETE COVER SHOWN IN THE PLANS DO NOT INCLUDE REINFORCEMENT PLACEMENT AND FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER". SEE SPECIFICATIONS FOR ALLOWABLE REINFORCEMENT PLACEMENT TOLERANCES.

C. PRESTRESSING STEEL: ALL PRE-STRESSING STEEL SHALL BE STRAND ASTM A416 GRADE 270, LOW RELAXATION.

PRESTRESSING PARAMETERS (STRAND):

APPARENT MODULUS: 28,000 ksi
 MAXIMUM JACKING STRESS: 216 ksi (80% ULTIMATE)
 MAXIMUM ANCHORING STRESS AT ANCHOR: 202 ksi (75% ULTIMATE) FOR PRETENSIONING
 STRAND DIAMETER: 0.60"

CONTRACTOR SHALL NOT RELEASE PRESTRESSING UNTIL ADEQUATE STRENGTH HAS BEEN ACHIEVED AS SHOWN BY THE RESULTS OF THE TEST CYLINDERS AND APPROVED BY THE ENGINEER.

D. CONCRETE: (28 DAY CYLINDER STRENGTH AS NOTED)

PRE-STRESSED CONCRETE BEAMS (FLORIDA INVERTED-T)

CLASS VI $f'_c = 8,500$ psi

CAST-IN-PLACE SUPERSTRUCTURE (BRIDGE DECK, DIAPHRAGMS, CURB)

CLASS IV $f'_c = 5500$ psi

CAST-IN-PLACE SUBSTRUCTURE (PILE EXTENSION AND PILE CAPS)

CLASS IV $f'_c = 5500$ psi

E. MAXIMUM AGGREGATE SIZE FOR PRECAST MEMBERS = $\frac{3}{4}$ "

F. PROVIDE $\frac{3}{4}$ " CHAMFERS ON ALL EXPOSED EDGES (UNLESS OTHERWISE NOTED).

8. ALLOWABLE STRESSES ARE IN ACCORDANCE WITH THE REFERENCED DESIGN SPECIFICATIONS FOR ALL MATERIAL SHOWN ON THE PLANS.

9. EXISTING ELEMENTS TO REPAIR:

EXERCISE SPECIAL CARE NOT TO DAMAGE ANY ELEMENTS OF THE STRUCTURE THAT ARE TO REMAIN, INCLUDING EXISTING REINFORCING. REPAIR OR REPLACE, TO THE SATISFACTION OF THE ENGINEER, ANY ELEMENTS THAT ARE TO REMAIN, WHICH ARE DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE COUNTY.

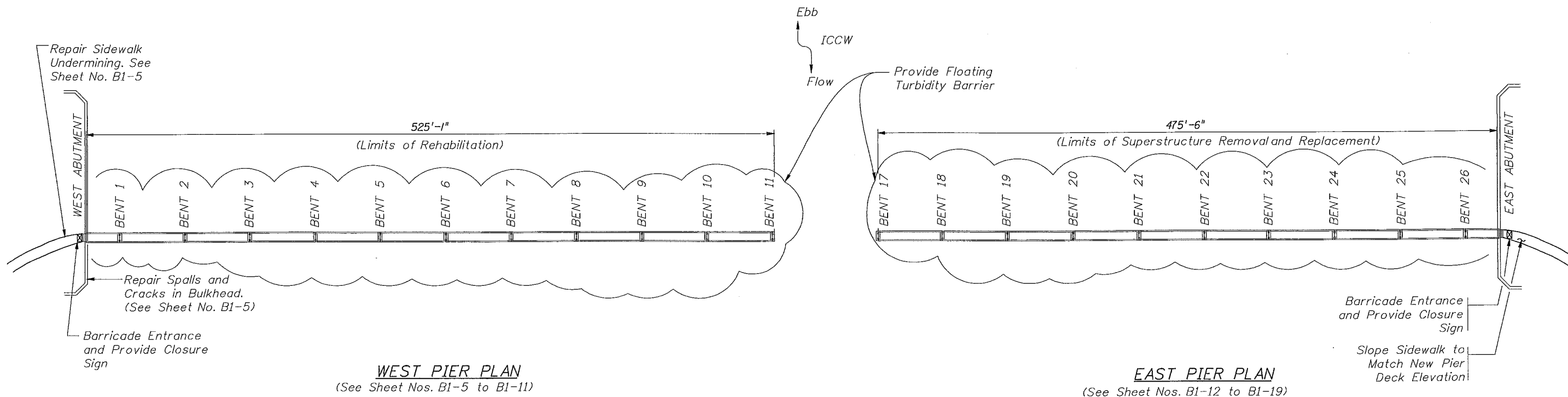
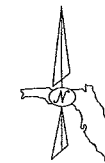
10. DIMENSIONS:

VERIFY ALL DIMENSION AND ELEVATIONS WITHIN THESE PLANS PRIOR TO CONSTRUCTION AND REPAIRS. IF ANY DISCREPANCIES ARE FOUND IMMEDIATELY NOTIFY THE ENGINEER. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FABRICATION AND FIT OF HIS WORK TO PROPERLY INTERFACE WITH THE EXISTING STRUCTURE.

CESAR GRANADOS
 4-16-07

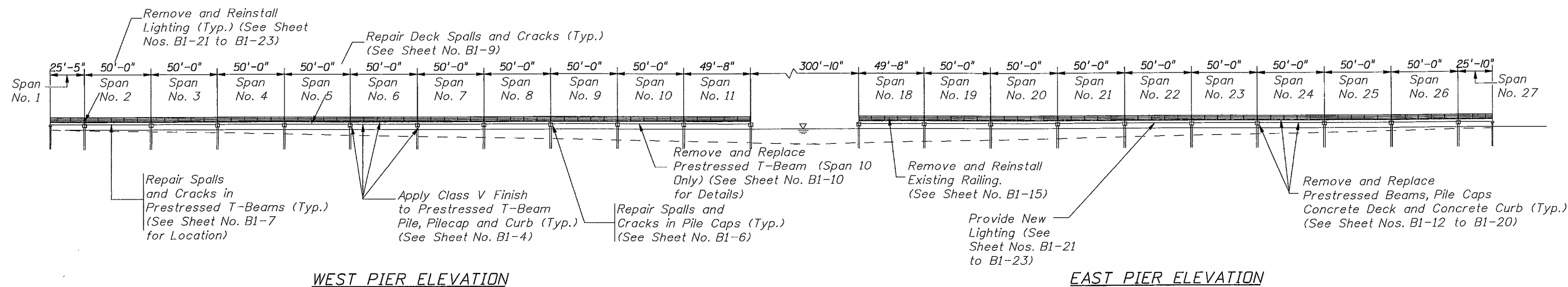
SHEET TITLE		REVISIONS				DRAWN BY		ENGINEER OF RECORD		INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			STRUCTURAL NOTES	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATES	NAME	DATE	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.
						AKB	8/06	HARDESTY & HANOVER, LLP		CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	BI-2
						CG	8/06	1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323						
						CG	8/06	Cesar A. Granados, P.E. #64221						
						TJN	8/06	Certificate of Authorization #171						
						T.J. Noles, P.E.								

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WEST PIER PLAN
(See Sheet Nos. B1-5 to B1-11)

EAST PIER PLAN
(See Sheet Nos. B1-12 to B1-19)



WEST PIER ELEVATION

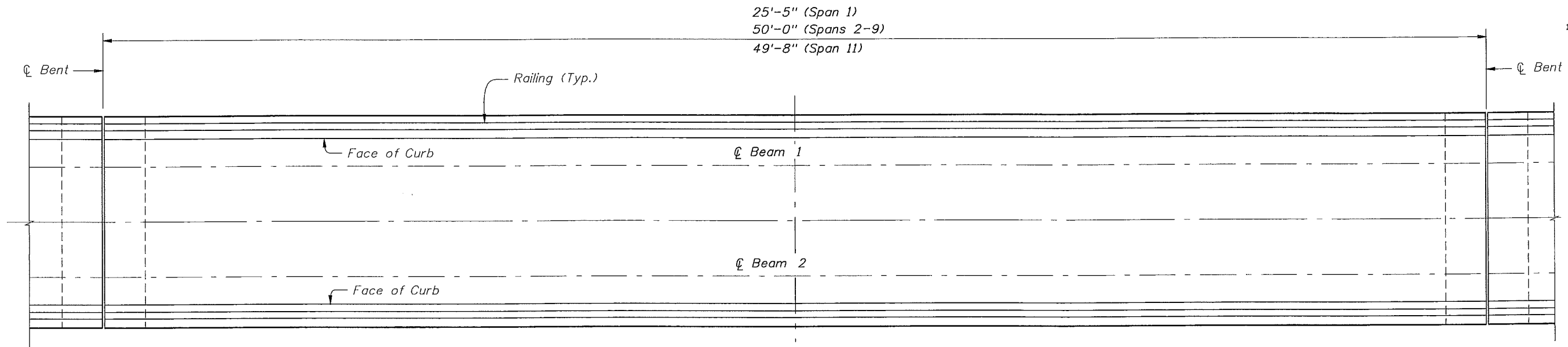
EAST PIER ELEVATION

CESAR GRANADOS
4-16-07

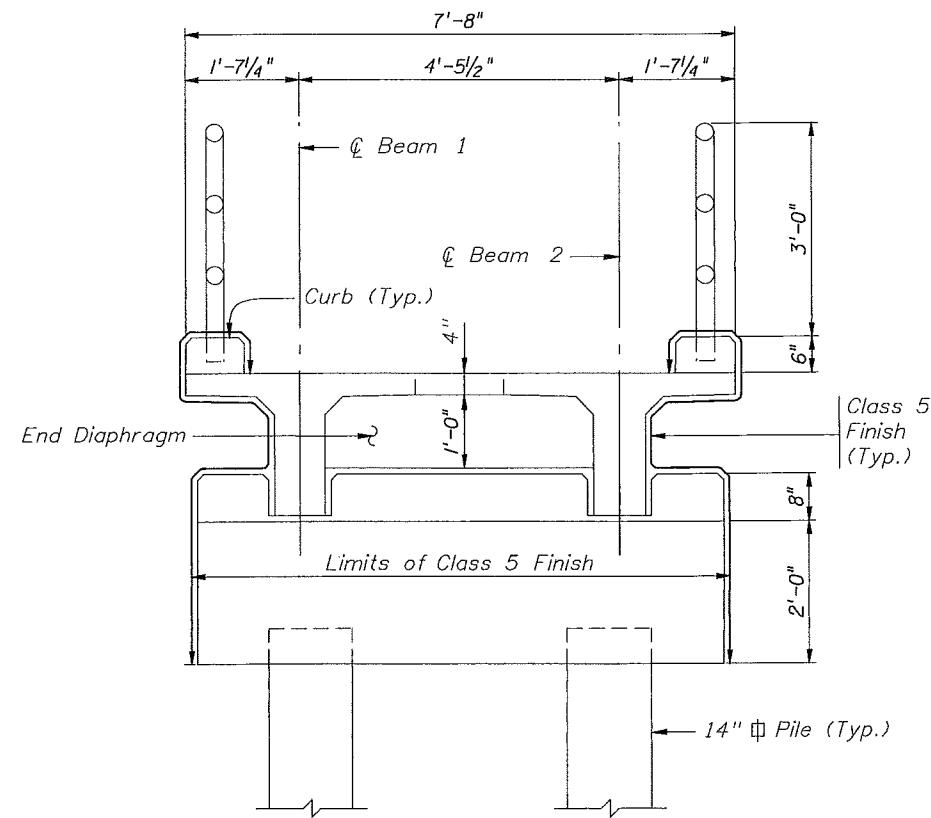
BRIDGE NO. 880051

REVISIONS				NAMES		DATES		ENGINEER OF RECORD:			SHEET TITLE:		
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	AKB	8/06	HARDESTY & HANOVER, LLP			GENERAL PLAN & ELEVATION		
						CG	8/06	1000 SAWGRASS CORPORATE PKWY			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT		
						CG	8/06	SUITE 544			ROAD NO. COUNTY FINANCIAL PROJECT ID		
						TJN	8/06	Sunrise, FL 33323			PROJECT NAME:		
						T.J. Noles, P.E.		CR 510 INDIAN RIVER			CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS		
								Certificate of Authorization #171			SHEET NO. B1-3		

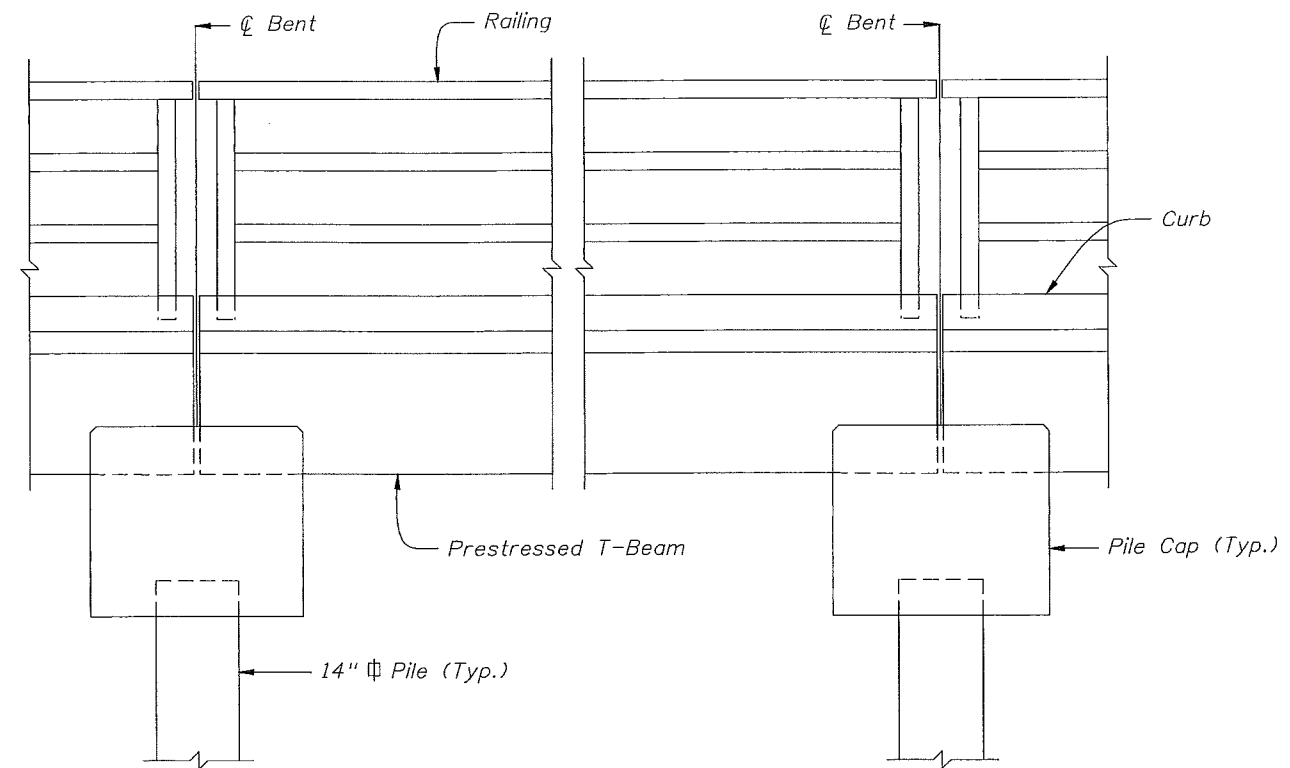
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TYPICAL PLAN



TYPICAL PIER SECTION AT BENT



TYPICAL SPAN ELEVATION

CESAR GRANADOS
4-10-07

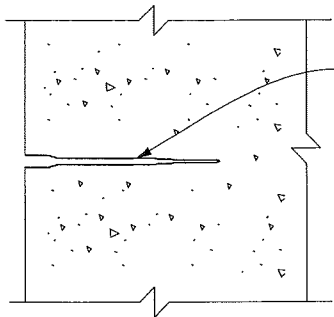
BRIDGE NO. 880051

REVISIONS						DRAWN BY			ENGINEER OF RECORD			SHEET TITLE		
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	AKB	8/06	HARDESTY & HANOVER, LLP			WEST PIER			
						CG	8/06	1000 SAWGRASS CORPORATE PKWY			TYPICAL SECTION, PLAN & ELEVATION			
						CG	8/06	SUITE 544			CR 510 OVER INTRACOASTAL WATERWAY			
						TJN	8/06	Sunrise, FL 33323			WABASSO FISHING PIER REPAIRS			
						T.J. Noles, P.E.		Cesar A. Granados, P.E. #64221			CR 510 INDIAN RIVER			
								Certificate of Authorization #171			FINANCIAL PROJECT ID			
											PROJECT NAME			
											CR 510 OVER INTRACOASTAL WATERWAY			
											WABASSO FISHING PIER REPAIRS			
											SHEET NO.			
											B1-4			

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TYPICAL CRACK REPAIR DETAIL

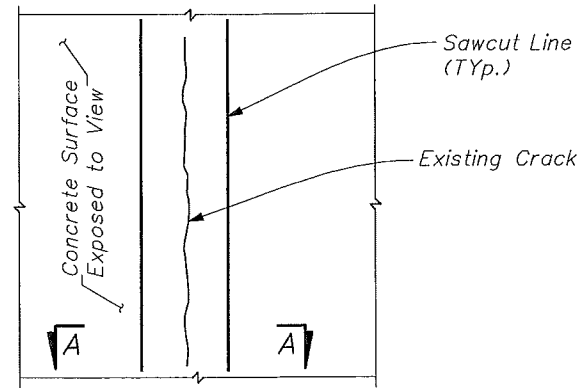
(For Cracks Between 1/25" to 1/2")



Cracks between 1/25" and 1/2" shall be "veed" out to a depth of at least 1/4" prior to drilling. Voids greater than 1/4" wide by 1/4" deep shall be patched with epoxy repair paste.

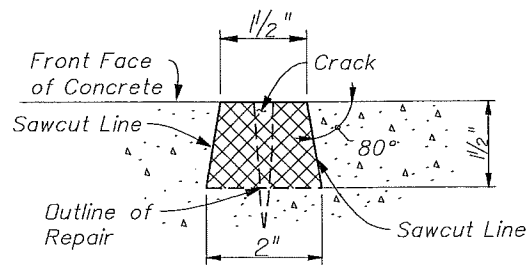
STEP A

Clean out crack with hand tools, high pressure air blast, or vacuum clean surface.



TYPICAL CRACK REPAIR - CHASE AND PATCH

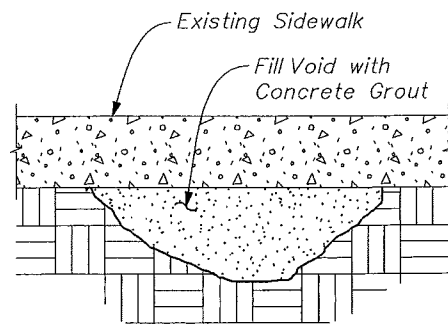
(For cracks wider than 1/2")



SECTION A-A
Not to Scale

CRACK REPAIR NOTE:

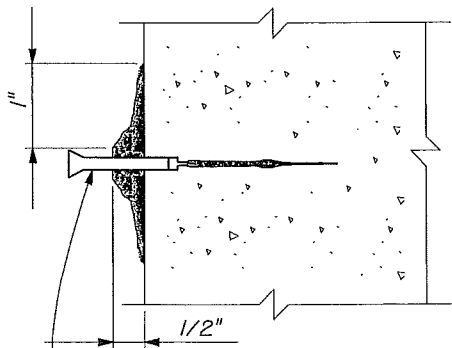
Concrete shall be cut along cracks to form a chase as shown. Chased area shall be cleaned by sandblasting before applying thin coat of cement paste or 1:1 mortar. Fill approved patching material.



SIDEWALK UNDERMINING DETAIL

STEP B

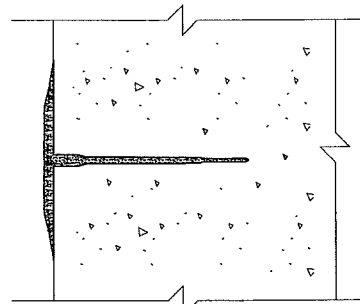
Drill holes for ports to a width and depth sufficient to assure a snug fit of the port. Clean out debris with high pressure air blasting. Insert ports and seal surface of crack with epoxy repair paste. Seal shall extend above concrete surface a minimum of 1/16" and extend a minimum of 1" to either side of crack. Allow a minimum of 6 hours curing before initiating injection process.



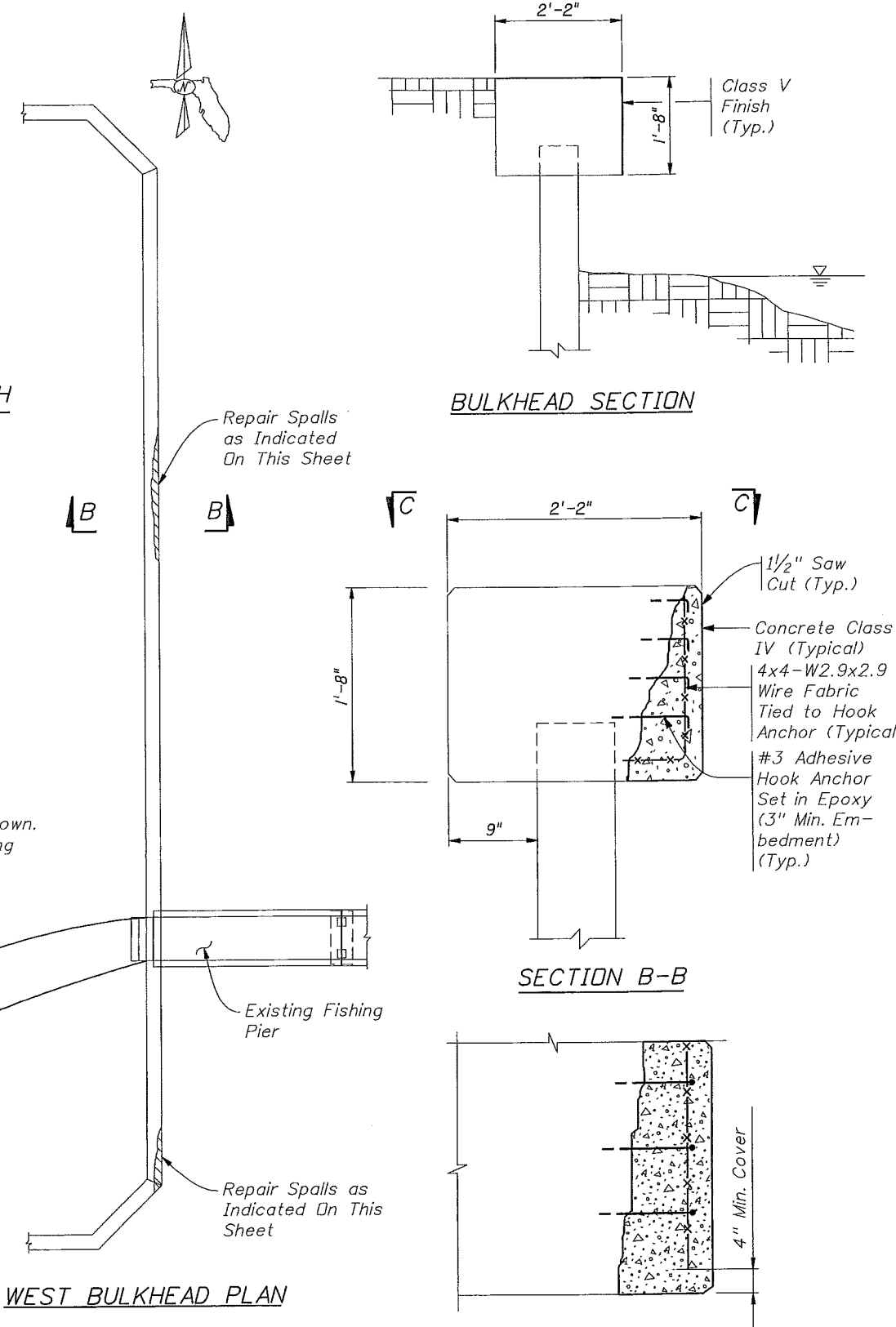
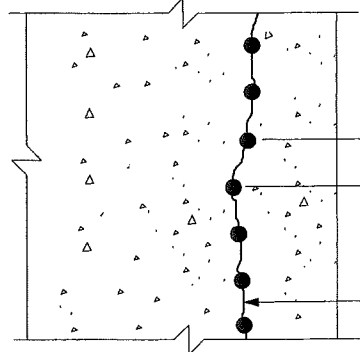
1/4" D.D. steel or copper tubing 1" long. Flare exposed end.

STEP C

Inject epoxy polysulfide grout as detailed in the Specifications. Allow minimum of 6 hours curing time. Remove ports and grind surface smooth to remove a minimum amount of epoxy paste and sealer and to the satisfaction of the engineer.



Space ports as detailed in the Specification. Epoxy injection starts at lower end of vertical crack and proceed upward to end of crack, or until thickness of crack decreases to less than 1/25". Patch beam stem with epoxy repair mortar to original lines.



WEST BULKHEAD PLAN

BULKHEAD SECTION

SECTION B-B

SECTION C-C

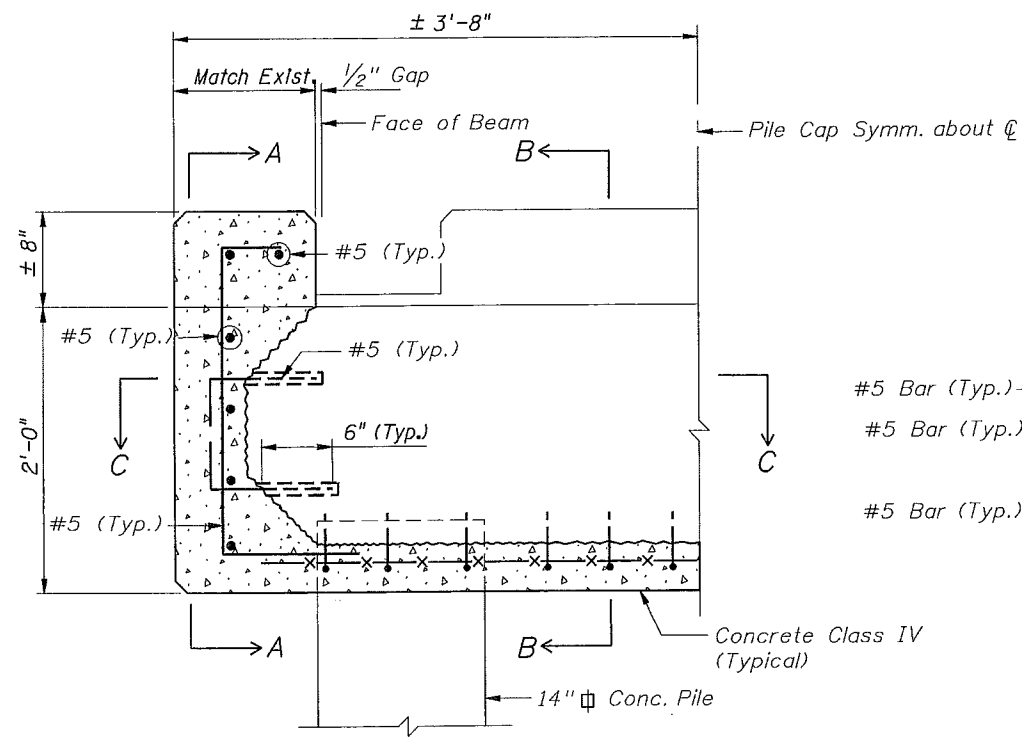
TABLE OF DEFICIENCIES		
Location	Deficiencies	Remarks
Bulkhead-South End	10'x1'x8" Spall	Exposed and Corroded Rebar
Bulkhead-North End	20'x2'x1' Spall - Significant Section Loss	Exposed and Corroded Rebar

NOTE: SEE SPALL REPAIR NOTES ON SHEET NO. B1-8

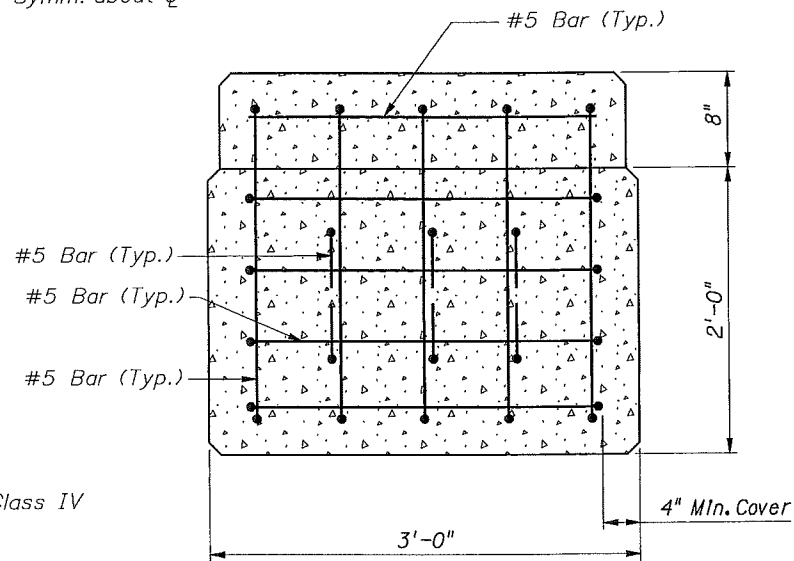
BRIDGE NO. 880051

REVISIONS				DRAWN BY		ENGINEER OF RECORD		INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE		
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	NAME	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.
						AKB	8/06	HARDESTY & HANOVER, LLP	CR 510	INDIAN RIVER		WEST PIER BULKHEAD REPAIR DETAILS	B1-5
						CG	8/06	1000 SAWGRASS CORPORATE PKWY SUITE 544				CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	
						CG	8/06	Sunrise, FL 33323					
						TJN	8/06	Cesar A. Granados, P.E. #64221					
						T.J. Noles, P.E.		Certificate of Authorization #171					

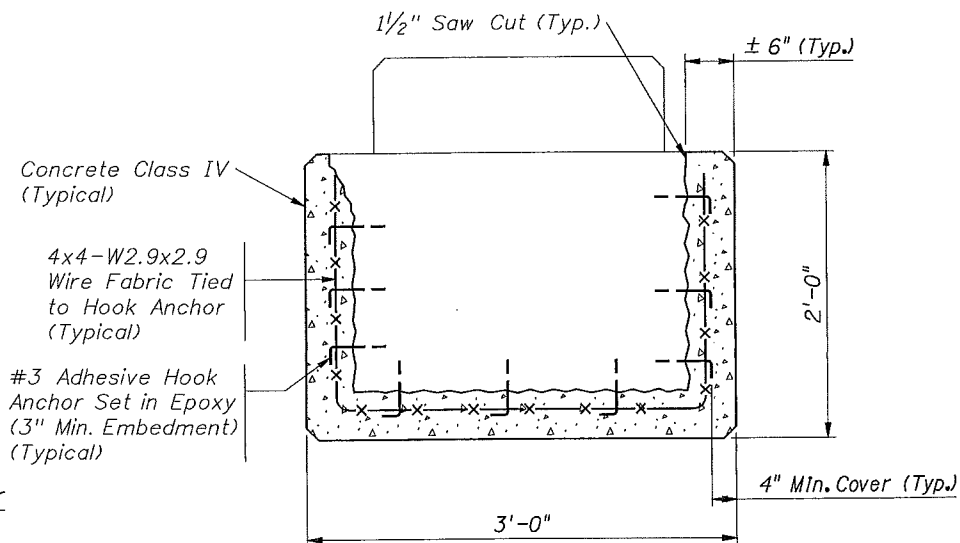
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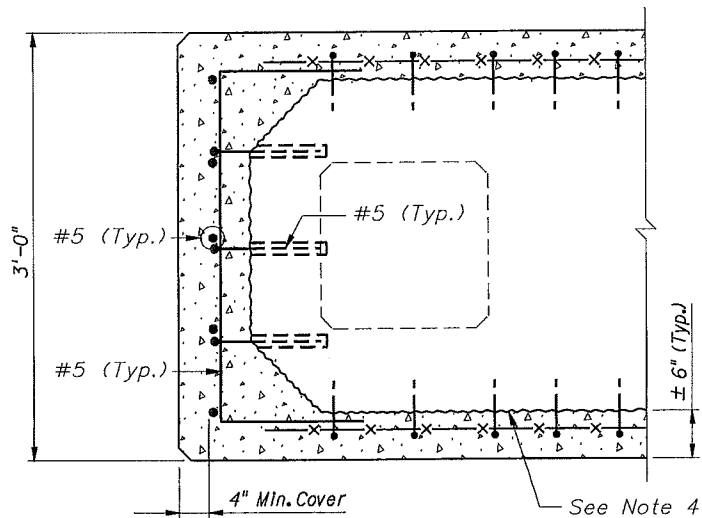
PILE CAP REPAIR DETAIL
Longitudinal half-section



SECTION A-A



SECTION B-B



SECTION C-C

CONCRETE RESTORATION PROCEDURE (SPALLS)

1. Sawcut 1/2" along perimeter of area to be restored.
2. Remove all unsound concrete within the sawcut limits by chipping to sound concrete.
3. Sandblast the exposed concrete surfaces and any reinforcing steel to remove all bond-inhibiting materials.
4. Provide an aggregate-fracture surface with a minimum surface profile amplitude of 1/16" by use of scabbler or other appropriate means as necessary.
5. Apply an approved epoxy coating to all existing reinforcing steel. (Cost to be included in the unit price for Concrete Class IV).
6. Install reinforcing steel, wire fabric and adhesive hook anchors.
7. Wet exposed concrete surfaces with clean fresh water; substrate shall be saturated, surface dry.
8. Apply an epoxy-bonding agent to the exposed concrete surfaces.
9. Place Concrete Class IV.
10. Cure as required.

TABLE OF DEFICIENCIES		
Location	Deficiencies	Remarks
Bent No. 2-West End	1'4" Long Delamination of Bottom Face	Bleeding
Bent No. 2-East End	3"x3" Spall of Bottom Face	
Bent No. 3-South End	3'x6"x2" Deterioration of SW Corner	
Bent No. 4-West End	6"x4"x1" Spall of SW Corner	
Bent No. 5-North End	Large Spall Along Length of Cap-15% Section Loss	Exposed and Corroded Rebar
Bent No. 5-East End	Large Spall Along Length of Cap-20% Section Loss	Exposed and Corroded Rebar
Bent No. 5-South End	Large Spall Along Length of Cap-20% Section Loss	Exposed and Corroded Rebar
Bent No. 7-South End	1/8" Cracks Along Depth of Cap	Bleeding
Bent No. 7-North End	1'x1'x1" Spall of Top West Corner	Exposed and Corroded Rebar
Bent No. 8-South End	Cap Depth x 2' Spall of SE Corner	Exposed and Corroded Rebar
Bent No. 8-South End	3'x1'x4" Spall of East Face	
Bent No. 8-South End	Numerous Large Cracks	
Bent No. 12-East Face	Up to 40% Section Loss of East Face	Exposed and Corroded Rebar
Bent No. 12-East Face	Up to 40% Section Loss of NE Corner	Bleeding
Bent No. 12-South Face	1'x1'x8" Spall of SE Corner	

MARK SIZE	LENGTH FEET	NO. BARS	TYPE BAR
PILE CAP REPAIRS			
#5	1'-4"	*	10
#5	2'-6"	*	1
#5	4'-6"	*	11
#5	4'-2"	*	11

* As Required

NOTES:

1. See Crack Repair Details on Sheet No. B1-5.
2. For Bar Bending Details, See Sheet No. B1-20.

CESAR GRANADOS
4-16-07

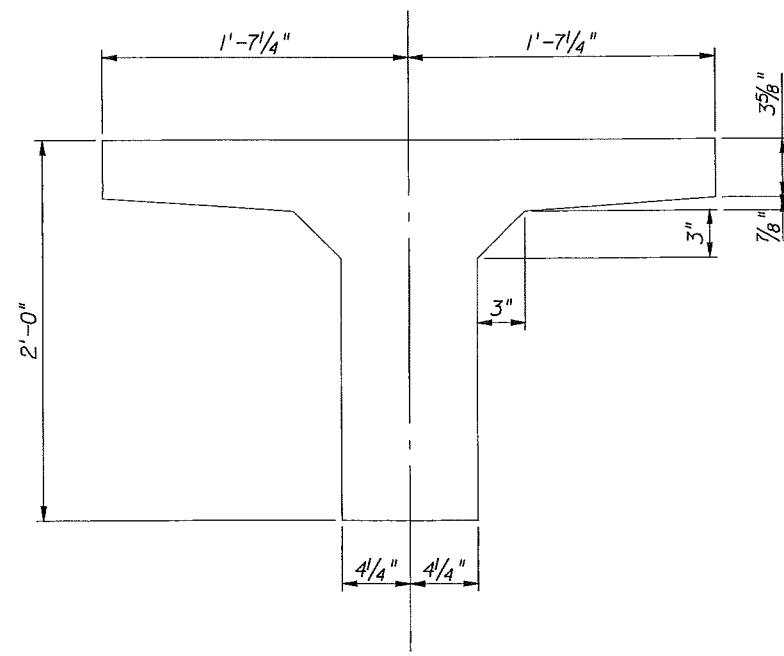
BRIDGE NO. 880051

REVISIONS				DRAWN BY		ENGINEER OF RECORD		INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.
						AKB	8/06	CR 510	INDIAN RIVER		WEST PIER PILE CAP REPAIR DETAILS	B1-6
						CG	8/06				CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	
						CG	8/06					
						TJN	8/06					
						T.J. Noles, P.E.						

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TABLE OF DEFICIENCIES		
Location	Deficiencies	Remarks
SPAN NO. 1		
Beam 1-West End	1'-10 1/2" x 8" Deterioration	Exposed and Corroded Rebar
Beam 2	2'x9"x2" Spall of Bottom Face of Flange	Bleeding
SPAN NO. 2		
Beam 1	10' Long Crack up to 1" Wide	
Beam 1	Minor Spall of Bottom Face of Stem	
Beam 1	10'x1' Delamination with 1/4" Crack in Bottom Face	
End Diaphragm	3'x1'x6" Spall of East Face	
Beam 2	6"x3"x1" Spall of Bottom Face of Stem	
End Diaphragm	2'x8"x6" Spall	
SPAN NO. 3		
Beam 1	8"x8"x1" Spall of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 1	8"x5"x1" Spall of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 1	6"x4"x1" Spalls (3) of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 2	8"x8"x1" Spall of Bottom Face of Stem	
Beam 2	3"x4" Spall of Outside Face of Stem	
Beam 2	8"x4"x1" Spall of Outside Face of Stem	
Beam 2	1' Long Delamination	
SPAN NO. 4		
Beam 1	8"x4"x1" Spall of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 1	4"x4"x1" of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 1	12' Long Crack up to 1/4" Wide	
Beam 1	1/4 Span Length x 8" Delaminated Patch with 1/4" Crack	
Beam 2	Bleeding and Cracks up to 1/4"	
SPAN NO. 5		
Beam 1	2'x8 1/2"x2" Spall of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 1	6"x6" Spall of Bottom Face of Flange	Exposed and Corroded Rebar
Beam 1	(2) Small Spalls at Bottom Face of Flange	Exposed and Corroded Rebar
Beam 2	6"x3"x1" Spall of Outside Face of Flange	Exposed and Corroded Rebar
SPAN NO. 6		
Beam 1	8"x6"x4" Spall of Bottom Face	Exposed and Corroded Rebar
Beam 1	(2) 5"x2" Spalls at Bottom Face of Flange	Exposed and Corroded Rebar
Beam 1	Span Length Longitudinal Cracking	Corrosion Staining
Beam 2	Staining, Bleeding and Cracks	
Beam 2	6" Long Delamination	Staining
SPAN NO. 7		
Beam 1	(2) 2' Long Delaminations of Inside Corner of Flange	
Beam 1	5'x1'-6"x7" Spall of Outside Face of Flange	Exposed and Corroded Rebar
Beam 1	7' Long Delamination of Bottom Face of Stem	
Beam 1	Large Crack	
Beam 1	2'x1'-6"x3" Spall of Bottom Face of Flange	Exposed and Corroded Rebar
Beam 2	(4) 6"x6" Spalls of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 1	3"x4" Spall of Bottom Face of Stem	Exposed and Corroded Rebar

TABLE OF DEFICIENCIES		
Location	Deficiencies	Remarks
SPAN NO. 8		
End Diaphragm	Up to 40% Section Loss at Support	
SPAN NO. 9		
Beam 1	14" x Stem Width x 4" Spall of Outside Face	Exposed and Corroded Rebar
Beam 1	1'-6"x8" Spall Near Midspan	Exposed and Corroded Rebar
Beam 2	9"x7"x2" Spall of Bottom Face of Flange	Exposed and Corroded Rebar
Beam 2	7"x7"x1" Spall of Outside Face of Stem	Exposed and Corroded Rebar
Beam 2	Stem Width x 8" Spall of Bottom Face of Stem	Exposed and Corroded Rebar
Beam 2	1/2 Stem Width x 12" Spall of Bottom Face of Stem	Exposed and Corroded Rebar
SPAN NO. 10		
Beam 1	1/3 Span Length x 4" Spall and Delamination	Exposed and Heavily Corroded Rebar
Beam 1	1'x6"x4" Spall of Stem at Support	Exposed and Corroded Rebar
Beam 2	2'x6" Spall of Outside Corner of Flange	Exposed and Corroded Rebar
Beam 2	1'x6" Spall of Outside Corner of Flange	Exposed and Corroded Rebar
End Diaphragm	8"x4"x2" Spall of East Face	
SPAN NO. 11		
Beam 1	8"x4" Spall of Inside Corner of Stem	Exposed and Corroded Rebar
Beam 1	2'x2"x4" Spall of Bottom Face of Deck	
Beam 1	3"x3" Spall of Outside Face of Flange	
Beam 1	5"x3"x1" Spall of Bottom Face of Flange	Exposed and Corroded Rebar



T-BEAM SECTION

NOTES:

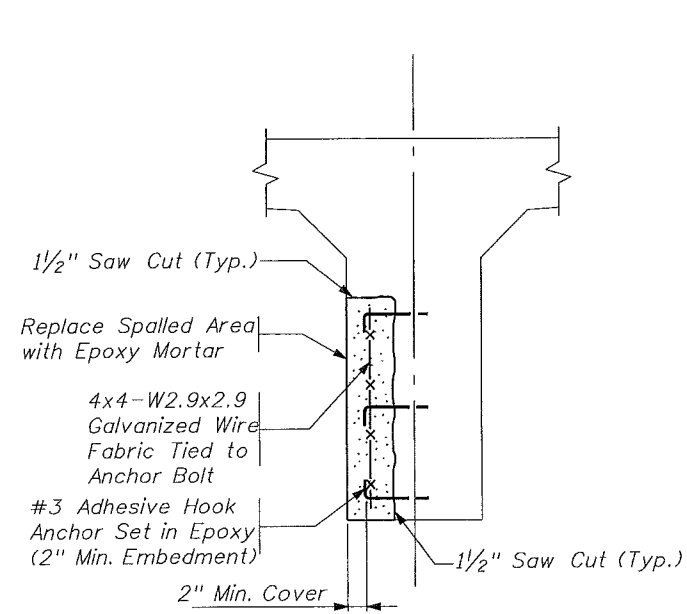
1. There are other small cracks and delaminations in the beams at various locations
2. There is bleeding on the outside face of the flanges at every deck joint.
3. Replace Beam 1, Span 10 due to extensive damage (see sheet no. B1-10).

CESAR GRANADOS
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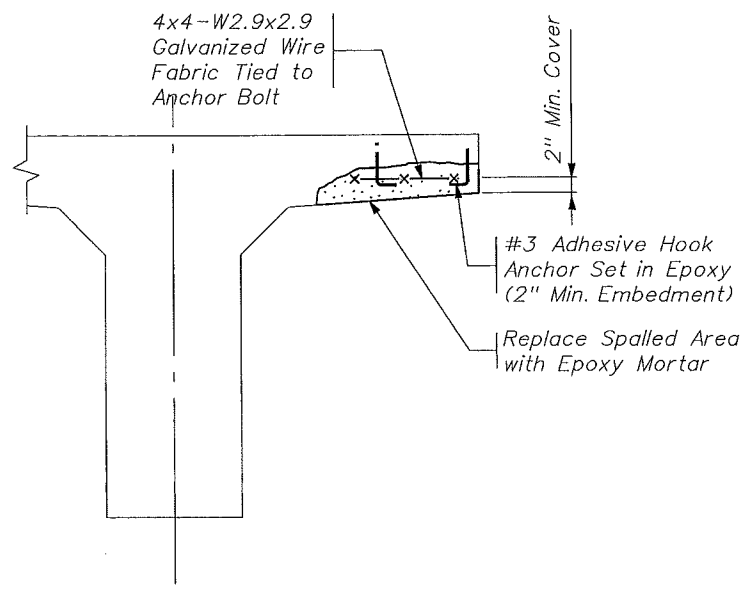
BRIDGE NO. 880051

REVISIONS					ENGINEER OF RECORD			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATES	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.
						AKB	8/06	CR 510	INDIAN RIVER		WEST PIER BEAM REPAIR DETAILS I	B1-7
						CG	8/06	CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS				
						CG	8/06					
						TJN	8/06					
						T.J. Noles, P.E.						

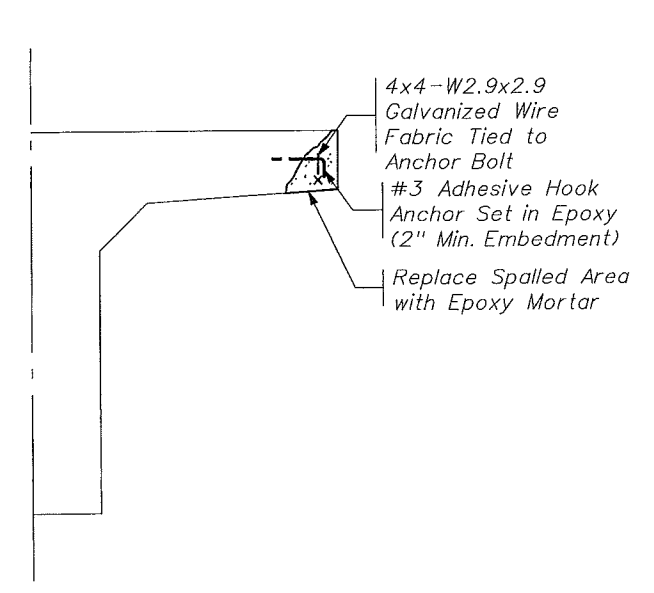
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.



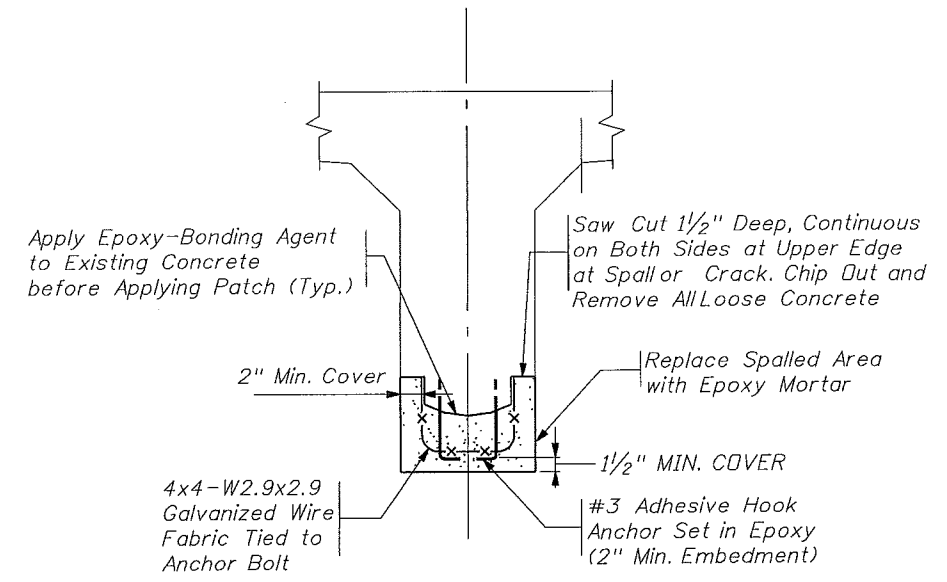
SPALL REPAIR DETAIL NO.2



SPALL REPAIR DETAIL NO.3



SPALL REPAIR DETAIL NO.4



SPALL REPAIR DETAIL NO.1

REPAIR NOTES:

1. Spalls and cracks shall be repaired as detailed on this sheet.
2. All anchor bolts shall be installed as not to interfere with existing prestressed strands.
3. All bolts and WWF shall be hot dip galvanized as per ASTM A-123.
4. The Contractor shall verify all dimensions in the field.

WELDED WIRE FABRIC (WWF) NOTES:

1. Maximum spacing between adhesive hook anchor is 6". Adhesive hook anchors are to be spaced to avoid any prestressed strands.
2. Field bend WWF to conform with any changes in the concrete surface profile (i.e., bend as to wrap around concrete edges).
3. Tie each adhesive hook anchor to WWF with galvanized wire.
4. Payment for welded wire fabric, tie wire and adhesive hook anchor shall be included under Restore Spalled Areas (Epoxy)

CONCRETE RESTORATION PROCEDURE (SPALLS)

1. Sawcut 1/2" along perimeter of area to be restored.
2. Remove all unsound concrete within the sawcut limits by chipping to sound concrete. Any reinforcing steel that is damaged is to be repaired at no cost to the Indian River County.
3. Sandblast the exposed concrete surfaces and any reinforcing steel to remove all bond-inhibiting materials.
4. Provide an aggregate-fracture surface with a minimum surface profile amplitude of 1/16" by use of scabbler or other appropriate means as necessary.
5. Apply an approved epoxy coating to all existing reinforcing steel. (Cost to be included in the unit price for restoring spalled areas).
6. When the depth of concrete removal exceeds 2", install galvanized wire fabric and adhesive hook anchors.
7. Wet exposed concrete surfaces with clean fresh water; substrate shall be saturated, surface dry.
8. Apply an epoxy-bonding agent to the exposed concrete surfaces.
9. Place epoxy repair mortar. Match repair mortar surface to surrounding concrete surfaces. Provide "V" groove construction joints to match any existing.
10. Cure as required.
11. For location of deficiencies see table on Sheet No. B1-7.

CESAR GRANADOS
4-16-07

BRIDGE NO. 880051

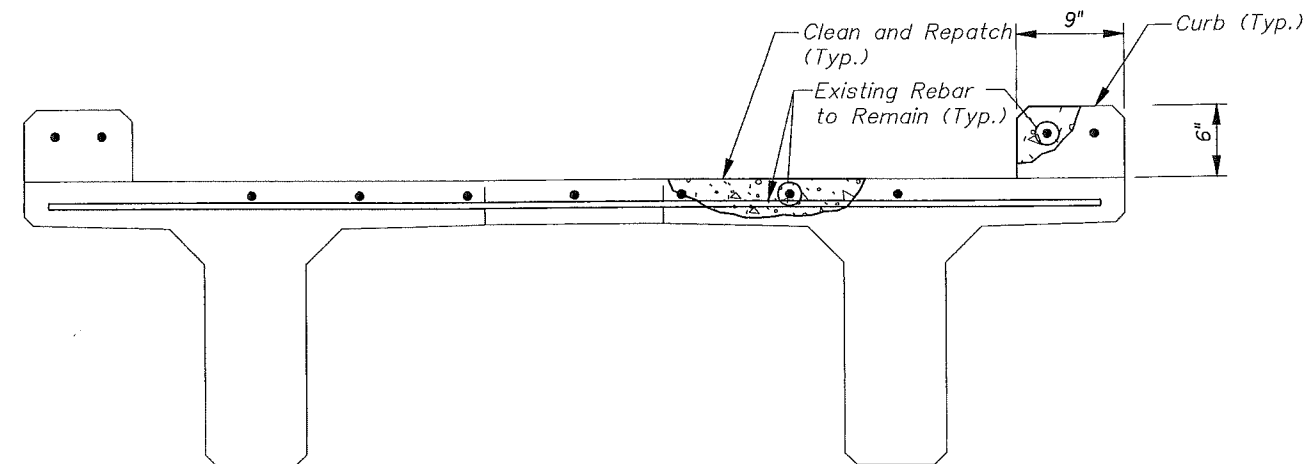
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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DRAWN BY	AKB	8/06	DESIGNED BY	CG	8/06	INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT				
						CHECKED BY	CG	8/06	CHECKED BY	TJN	8/06	WEST PIER BEAM REPAIR DETAILS 11				
						APPROVED BY	T.J. Noles, P.E.		1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323 Cesar A. Granados, P.E #64221 Certificate of Authorization #171			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.
									CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS			B1-8	

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TABLE OF DEFICIENCIES		
Location	Deficiencies	Remarks
SPAN NO. 1		
Post No. 1	Cracks on North and South Curb	
Drainage Hole	Cracks on North and South Curb Between Posts	
Drainage Hole	Cracks on South Curb Beyond Post No. 3	Previously Repaired
Post No. 4	Cracks in South Curb Near Post No. 4	
Joint	Up to 1/8" Cracks on Deck at North and South Sides	
SPAN NO. 2		
Post No. 1	Cracks on South Curb	
Post No. 5	Delamination on Inside Face of South Curb	
Post No. 7	Delamination on Inside Face of South Curb	
Joint	Cracks on Deck at North and South Sides	
SPAN NO. 3		
Post No. 1	Crack on South Side Near Post No. 1	Previously Repaired
Post No. 3	3"x3" Spall of Top Face of South Curb	
Joint	Cracks on Deck at North and South Sides	
SPAN NO. 4		
Post No. 1	Crack on South Side Near Post No. 1	Previously Repaired
Joint	Rust Stains	
Post No. 8	Crack on North Curb	
SPAN NO. 5		
Joint	Cracks on Deck at North and South Sides	
Joint	Crack on North Curb Near Joint	
SPAN NO. 6		
Joint-Span No. 5 and 6	Cracks Across Deck	
Post No. 8	Crack on North Curb Near Last Post	
Joint-Span No. 6 and 7	Bleeding Crack on North Curb Near Joint	
SPAN NO. 7		
Post No. 3	Cracks Across Deck	
Joint-Span No. 7 and 8	Cracks and Spalling	
Joint-Span No. 6 and 7	Bleeding Crack on North Curb Near Joint	
SPAN NO. 9		
Joint-Span No. 9 and 10	Rust, Cracks, and Spalls	
Drainage Hole	Crack on North Curb Near Last Drainage Hole	
SPAN NO. 10		
Post No. 1	Crack on South Curb	
SPAN NO. 11		
North Curb	Chipping Along East Half of Span	

NOTES:

1. Cracks are up to 1/16" wide.
2. Posts are numbered from west to east per span.
3. Drainage holes lie halfway between posts.
4. Span No. 8 is in good condition.



TYPICAL CONCRETE DECK REPAIR

(Railing Not Shown for Clarity)

CONCRETE REPAIR PROCEDURE

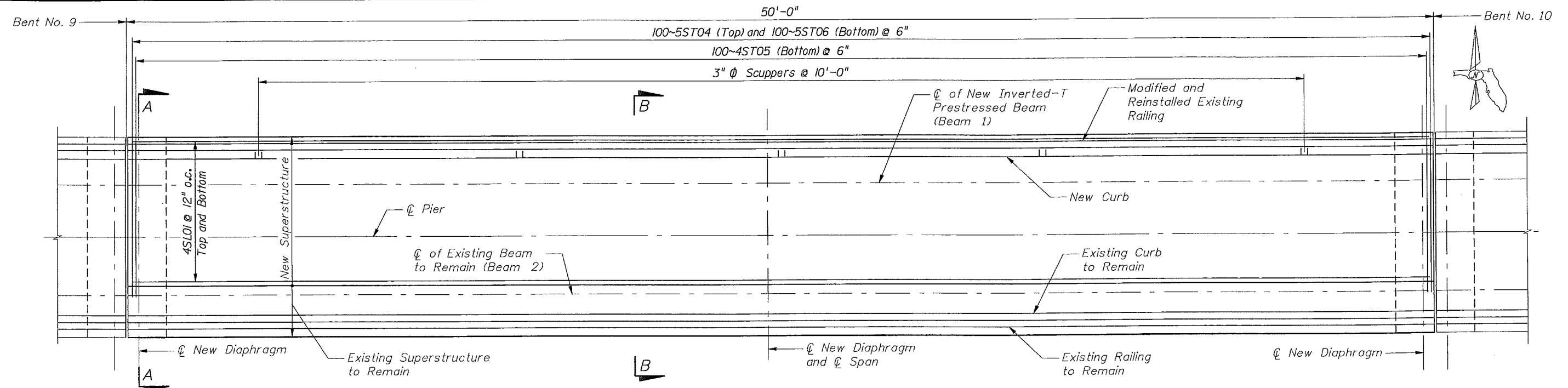
1. All dimensions must be verified in the field by Contractor before proceeding with work.
2. See concrete restoration procedure notes on Sheet No. B1-8.
3. See crack repair details on sheet no. B1-5.

CESAR GRANADOS
4-16-07

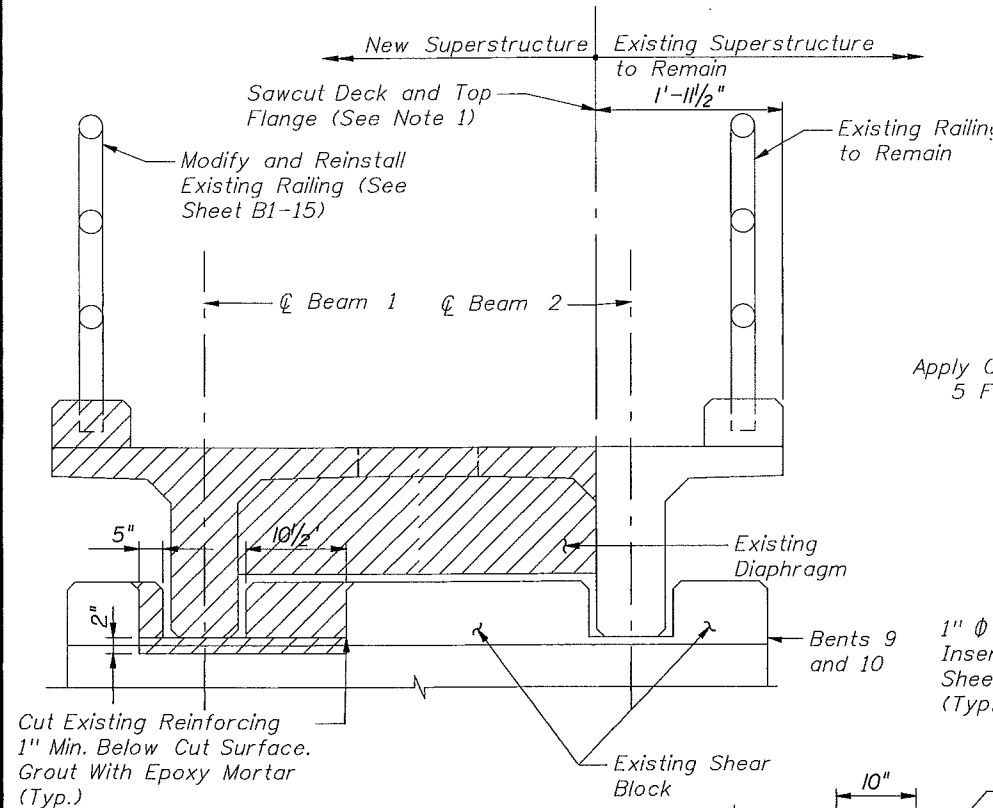
BRIDGE NO. 880051

REVISIONS						ENGINEER OF RECORD:			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE:	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATES	ADDRESS	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	WEST PIER DECK REPAIR DETAILS	
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						CHECKED BY	CG	8/06				SHEET NO. B1-9	
						DESIGNED BY	CG	8/06					
						CHECKED BY	TJN	8/06					
						APPROVED BY	T.J. Nales, P.E.						

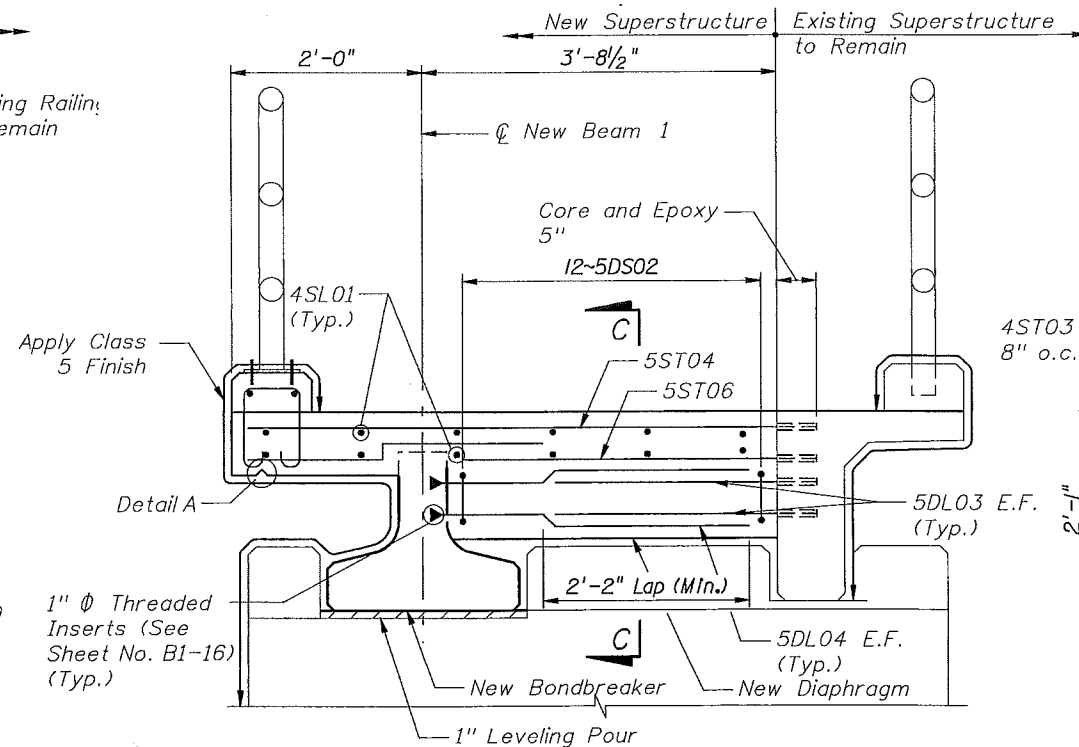
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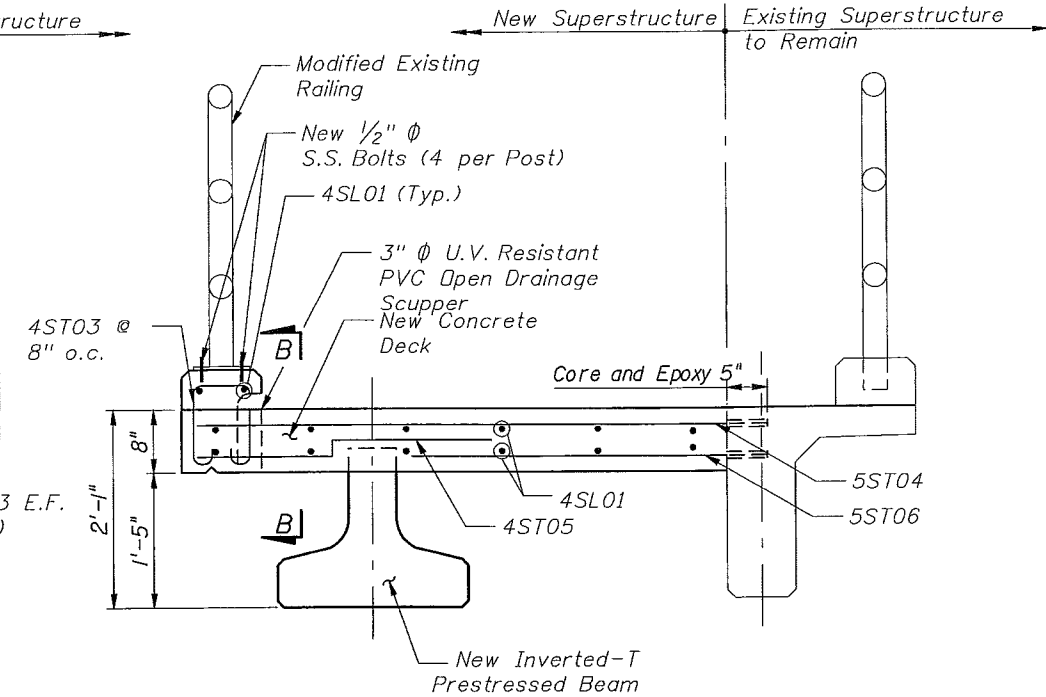
PLAN (SPAN NO. 10)



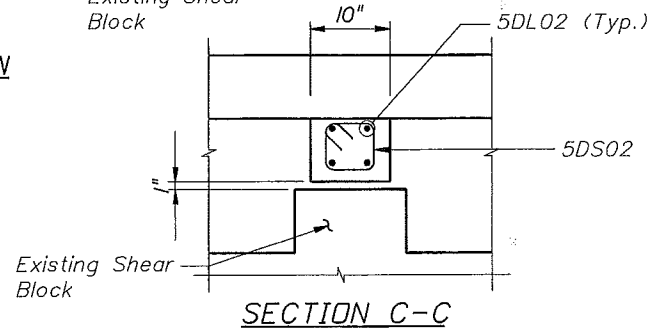
BEAM DEMOLITION



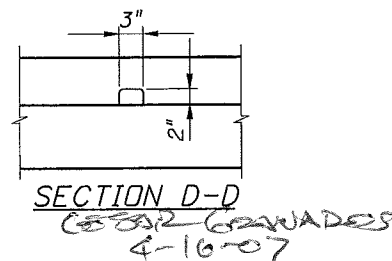
NEW SECTION @ DIAPHRAGM (SECTION A-A)



NEW TYPICAL SECTION (SECTION B-B)



SECTION C-C



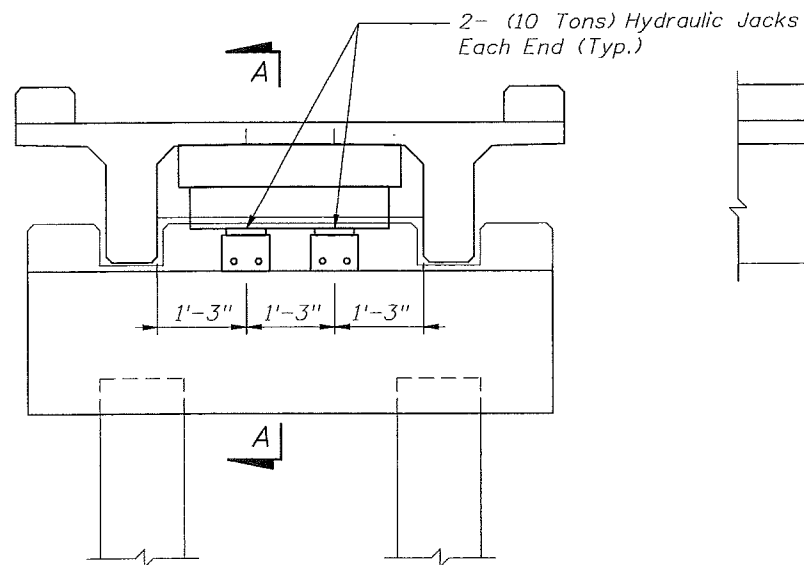
SECTION D-D
CONCRETE GRADES
4-10-07

- NOTES:
1. Support Existing Structure to Remain Until New Superstructure has Reached the Minimum Design Strength.
 2. Stagger Vertical Location of Horizontal Bars.
 3. For Detail A, See Sheet No. B1-13.

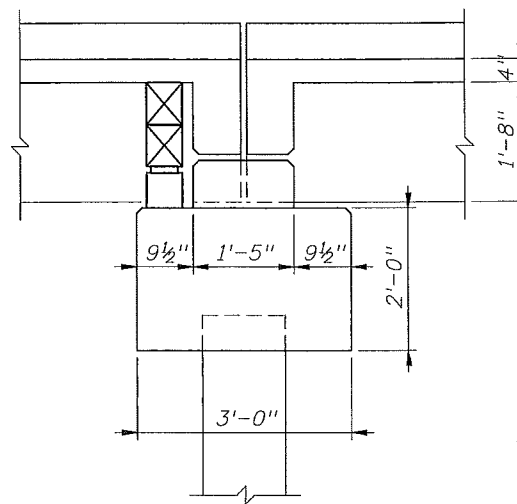
BRIDGE NO. 880051

REVISIONS						ENGINEER OF RECORD:			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE:	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	HARDESTY & HANOVER, LLP			ROAD NO.			WEST PIER BEAM REPLACEMENT (SPAN 10)	
						1000 SAWGRASS CORPORATE PKWY			CR 510			INDIAN RIVER	
						SUNRISE, FL 33323			FINANCIAL PROJECT ID			PROJECT NAME:	
						Cesar A. Granados, P.E. #64221			INDIAN RIVER			CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	
						Certificate of Authorization #171						SHEET NO. B1-10	

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SPAN JACKING DETAIL



SECTION A-A

SUPERSTRUCTURE JACKING NOTES:

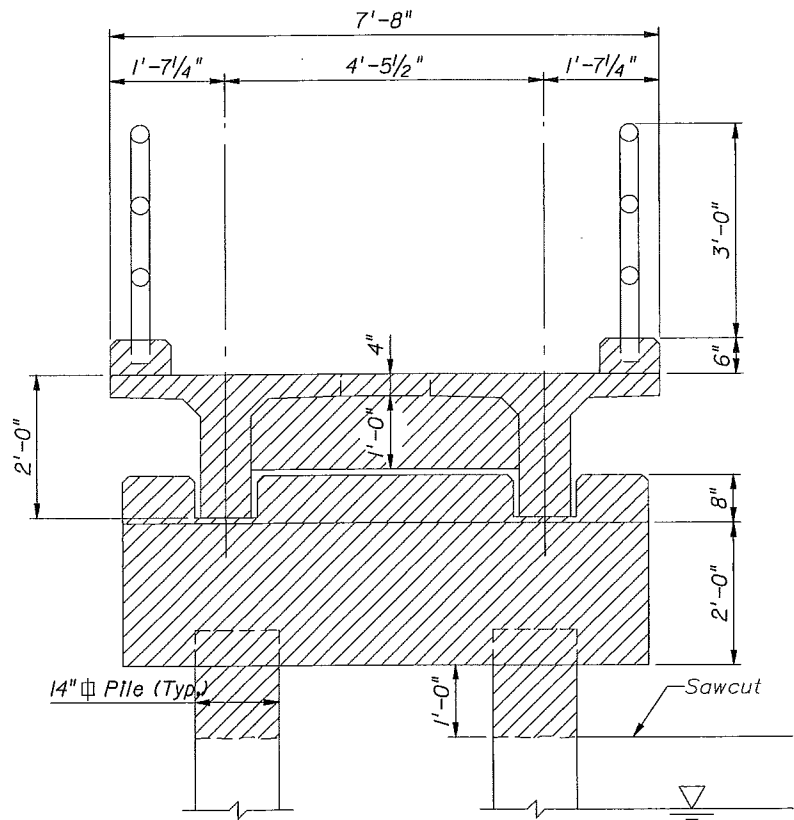
- 1.Span jacking shall be used to repair beam stems at bearing location.
- 2.Submit to County Resident Engineer Jacking Plan and Procedure signed and sealed by Contractor's Engineer Registered in the State of Florida.
- 3.Obtain flat self locking Jacks with 10 ton capacity for end of span.
- 4.Place Jacks as shown on cap.
- 5.Raise the ends of a span simultaneously.
A set of jacks is required for each span. Operate the jacking system such that the vertical movement of the deck is even across the bridge.
- 6.Once superstructure is raised and before the commencement of any work, Contractor shall either secure jack pressure or provide temporary supports to hold superstructure at desired elevation. Contractor shall submit shop drawing for Engineer's approval on how to secure jack pressure or how to temporarily support the superstructure.
- 7.Lower superstructure after stem repair is completed, while keeping the jack loads at the same magnitude.
- 8.During the repair, live load shall not be permitted.
- 9.Payment for span jacking shall be included in Restore Spalled Areas.

CESAR GRANADOS
4-16-07

BRIDGE NO. 880051

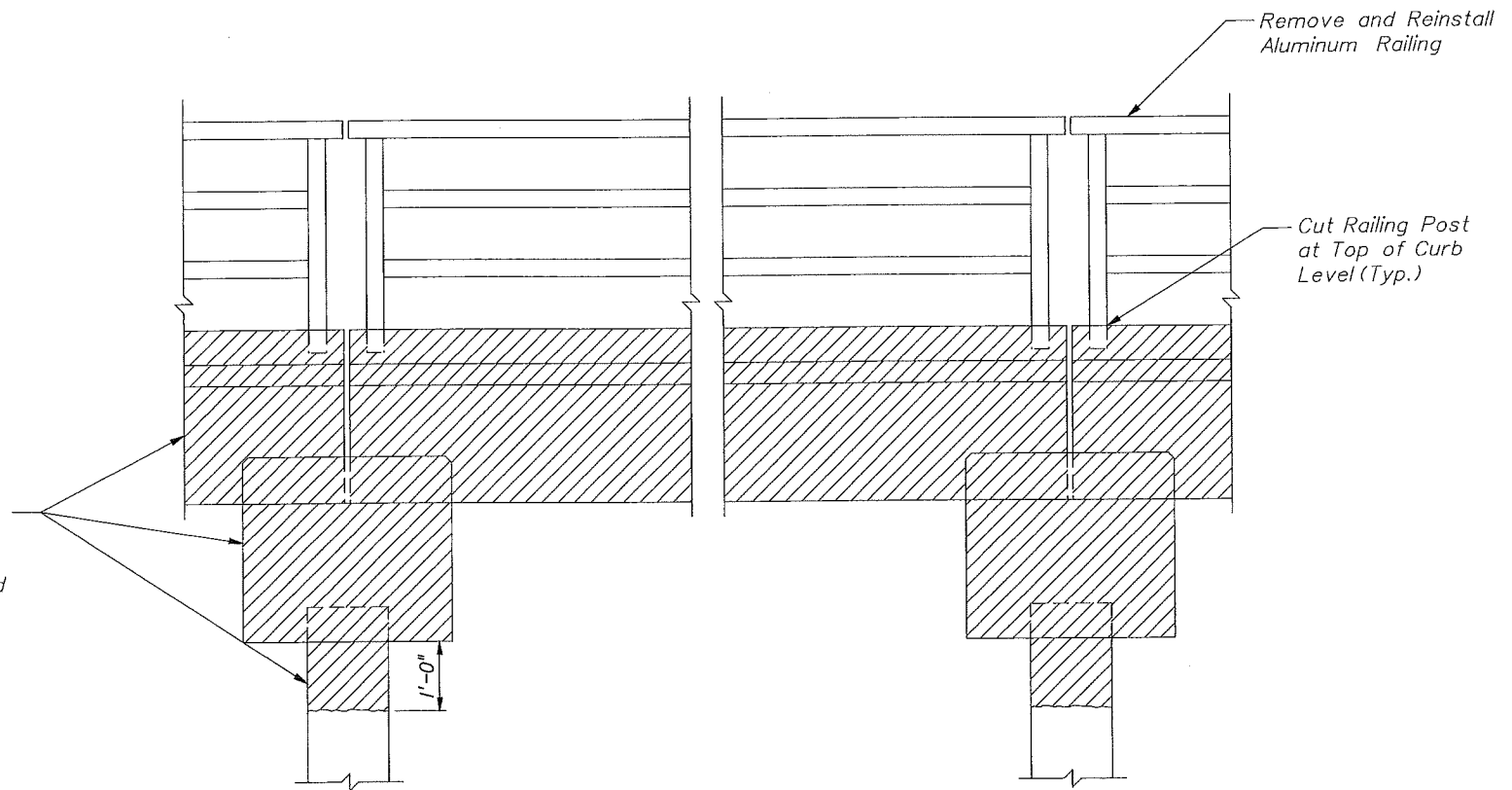
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						CG	8/06	1000 SAWGRASS CORPORATE PKWY SUITE 544			CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS		
						TJN	8/06	Sunrise, FL 33323						SHEET NO. BI-11		
						T.J. Noles, P.E.		Cesar A. Granados, P.E. #64221 Certificate of Authorization #171								

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EXISTING TYPICAL PIER SECTION AT PILE CAP

Demolish Concrete Curb, Prestressed Beams, Pile Caps, Diaphragms, and Pile Sections as Indicated



EXISTING TYPICAL SPAN ELEVATION

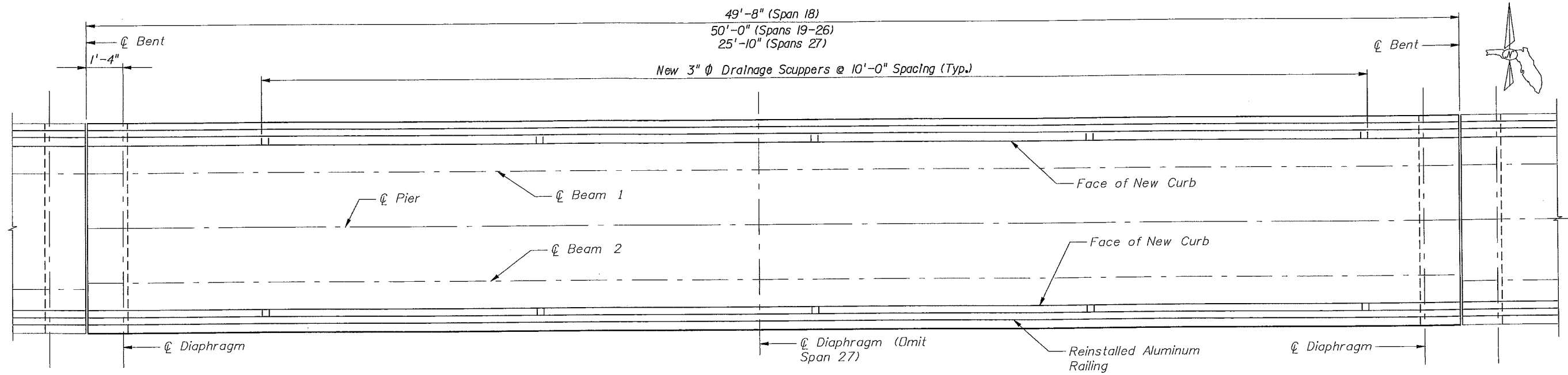
LEGEND:
 Demolition Limits

CESAR GRANADOS
 4-16-07

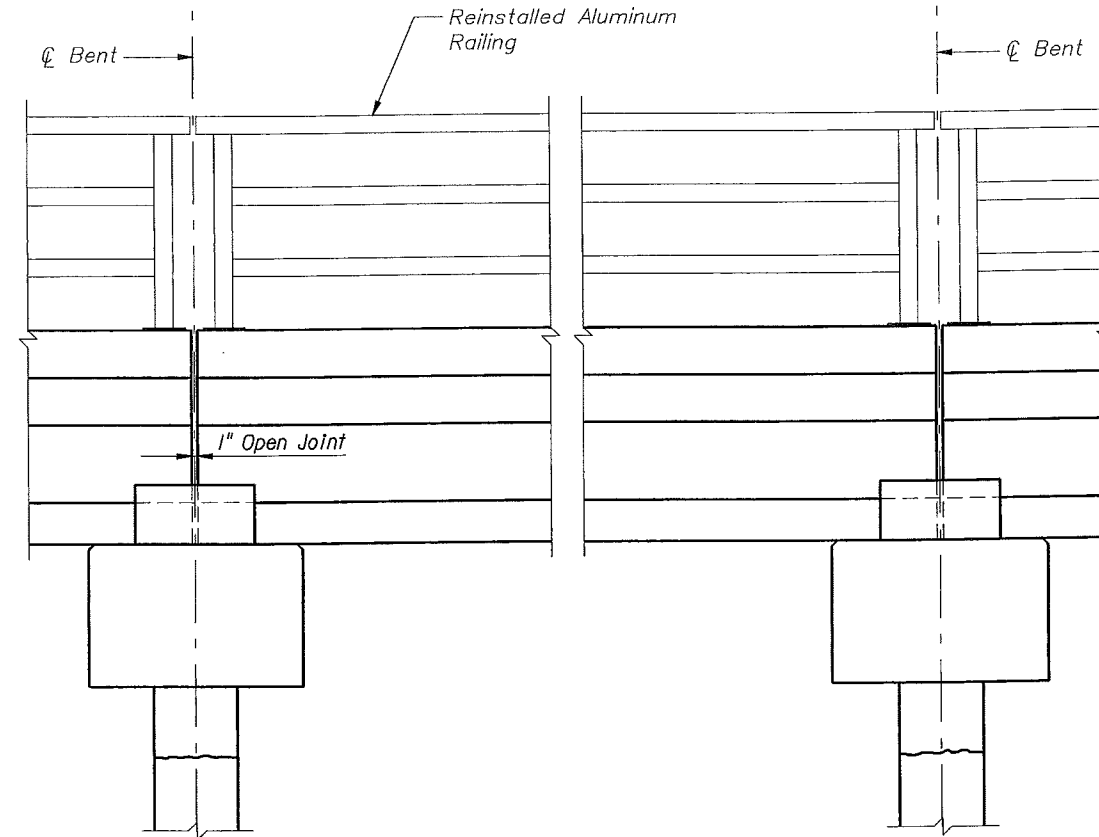
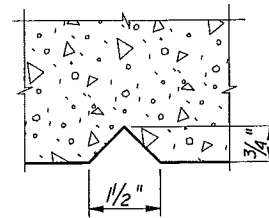
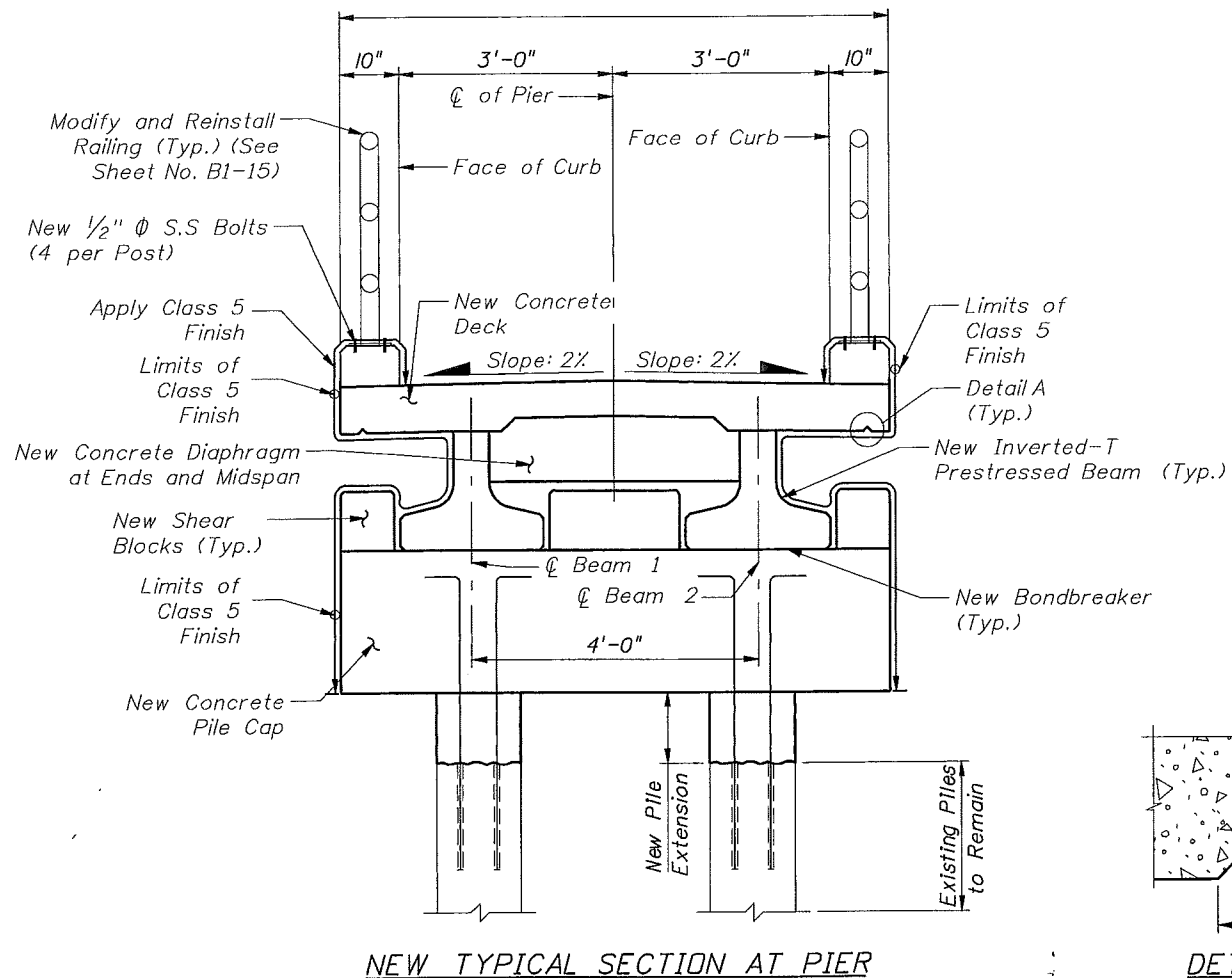
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						AKB	8/06	HARDESTY & HANOVER, LLP	CR 510	INDIAN RIVER		EAST PIER DEMOLITION LIMITS	B1-12
						CG	8/06	1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323				CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	
						TJN	8/06	Cesar A. Granados, P.E. #64221					
						T.J. Noles, P.E.		Certificate of Authorization #171					

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TYPICAL PLAN

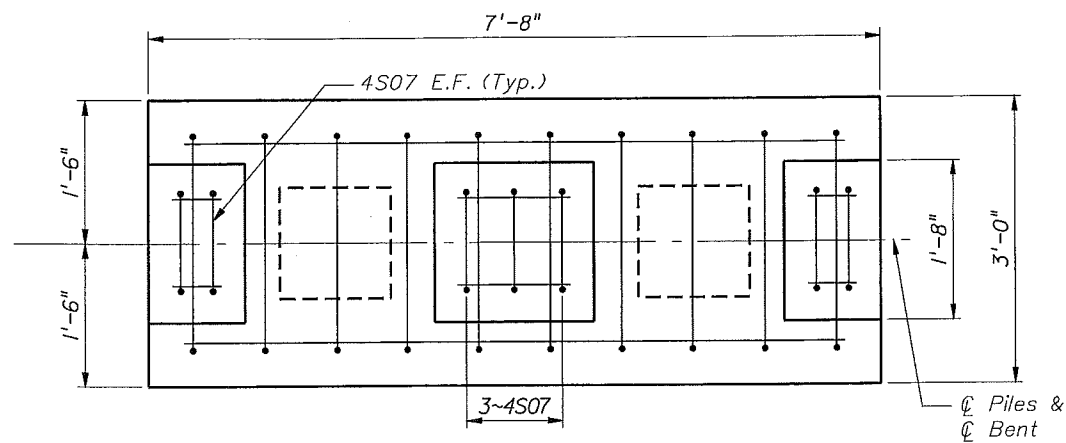


CESAR GRANADOS
 4-16-07

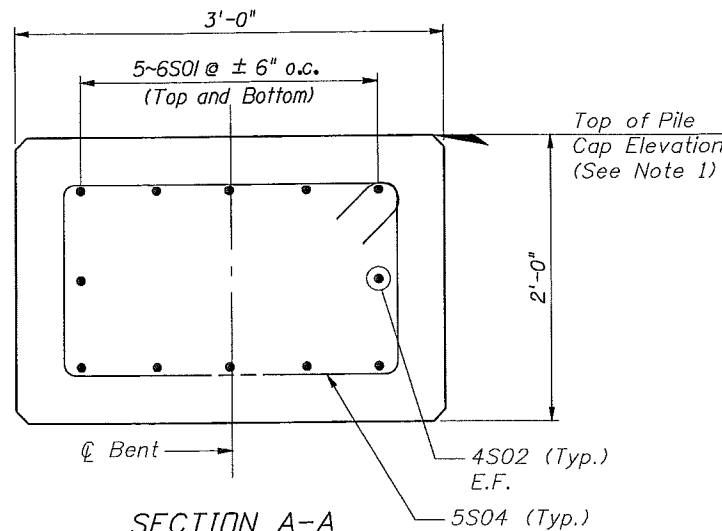
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						AKB	8/06	CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	B1-13
						CG	8/06					
						TJN	8/06					
						T.J. Noles, P.E.						

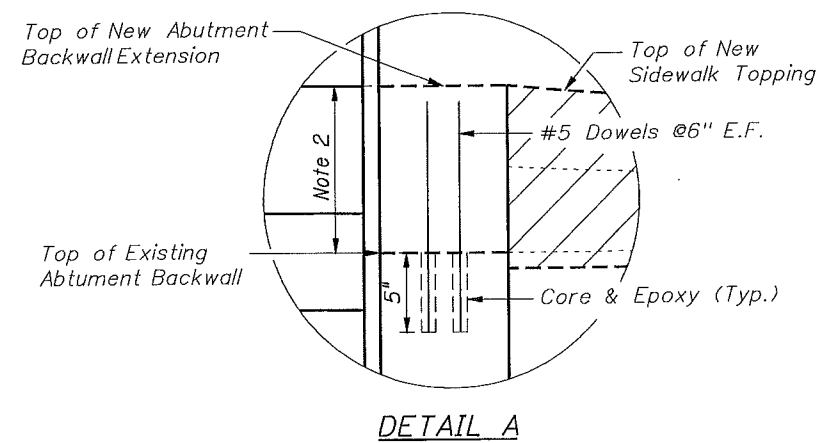
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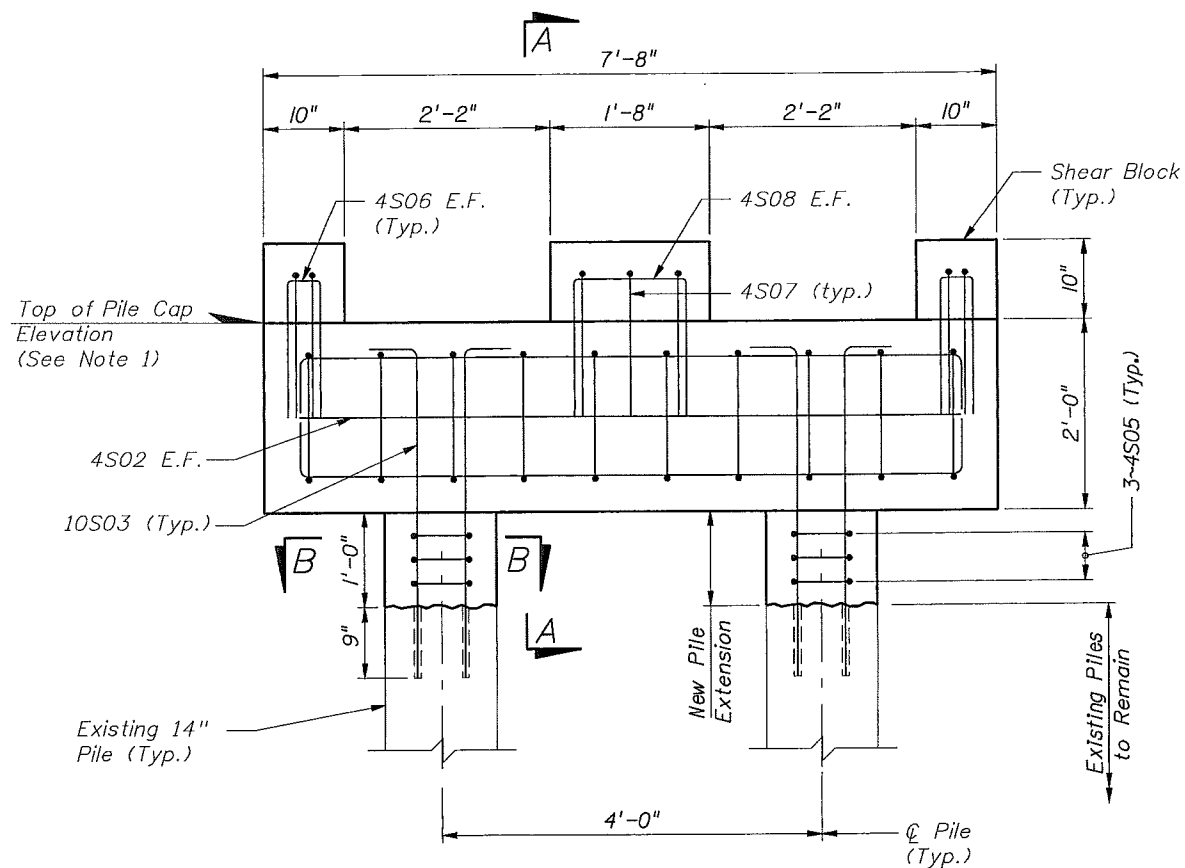
NEW PILE CAP PLAN



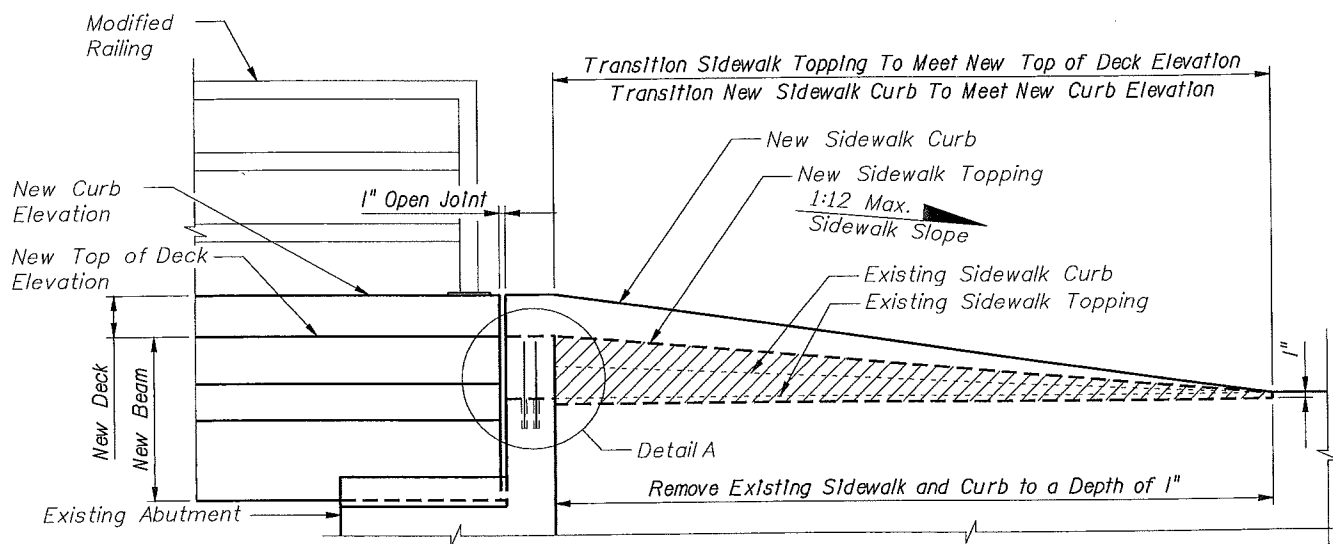
SECTION A-A



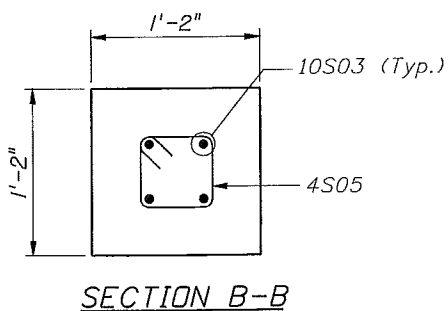
DETAIL A



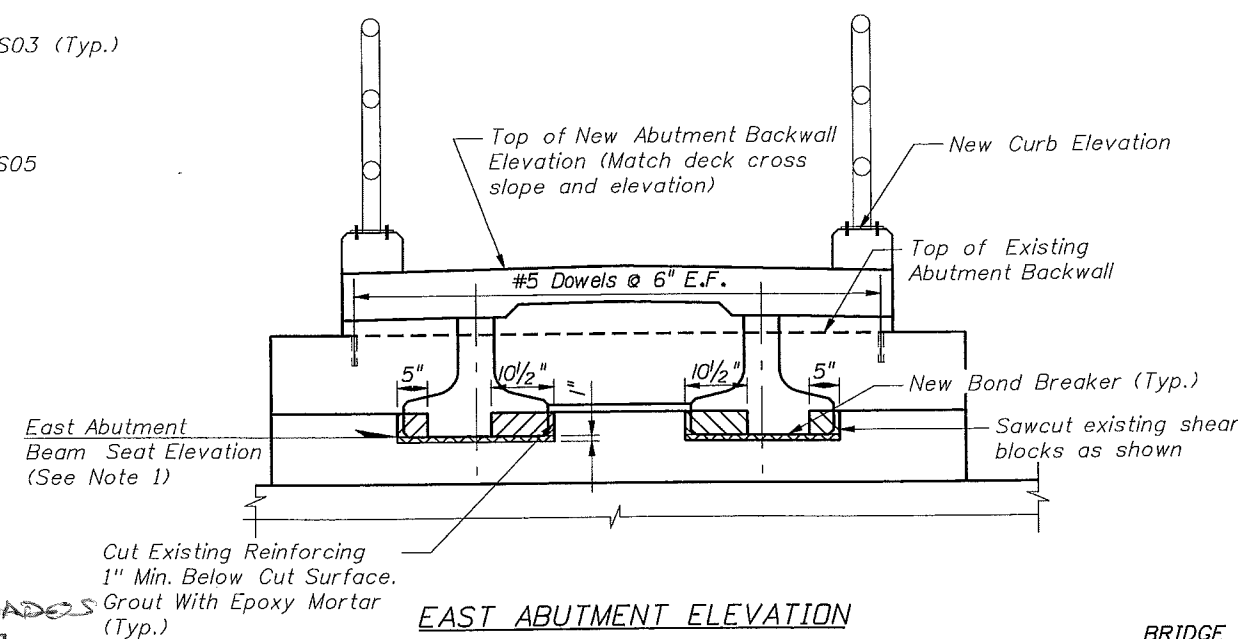
NEW PILE CAP ELEVATION



EAST ABUTMENT & SIDEWALK DETAIL



SECTION B-B



EAST ABUTMENT ELEVATION

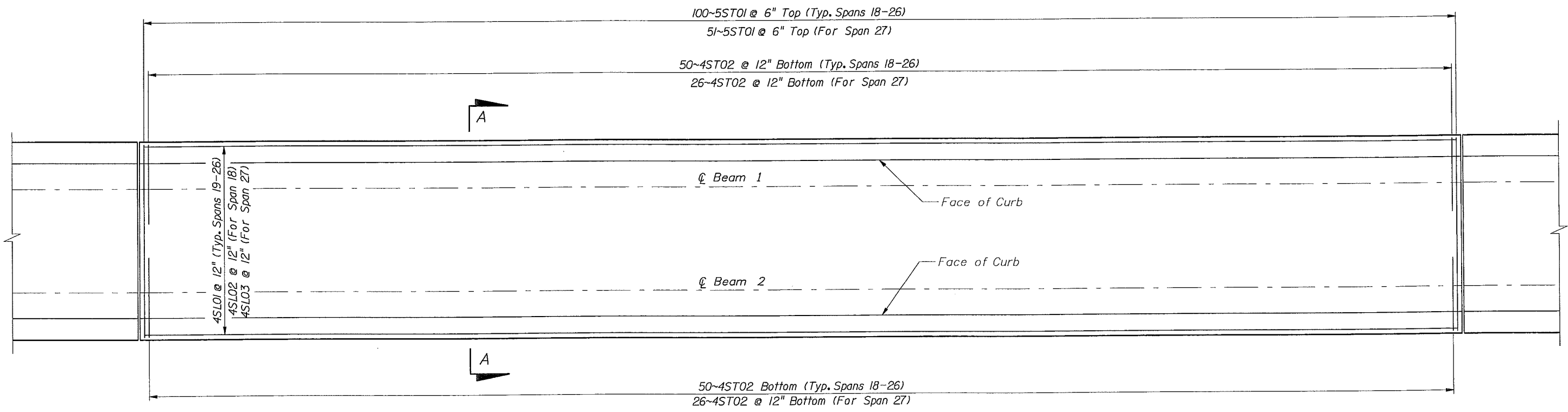
- NOTES:
1. Set the top of pile cap elevation to the East Abutment beam seat elevation.
 2. Extend the Abutment Backwall to match New Deck Elevation and Sidewalk Topping

Cesar Granados
4-16-07

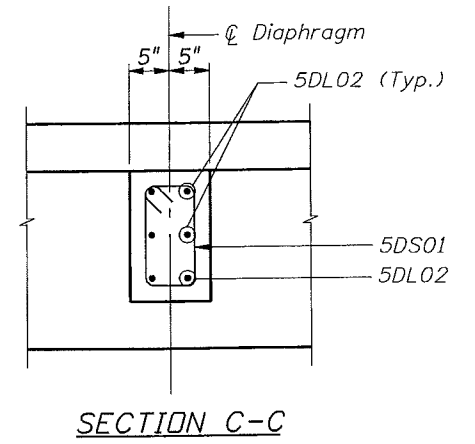
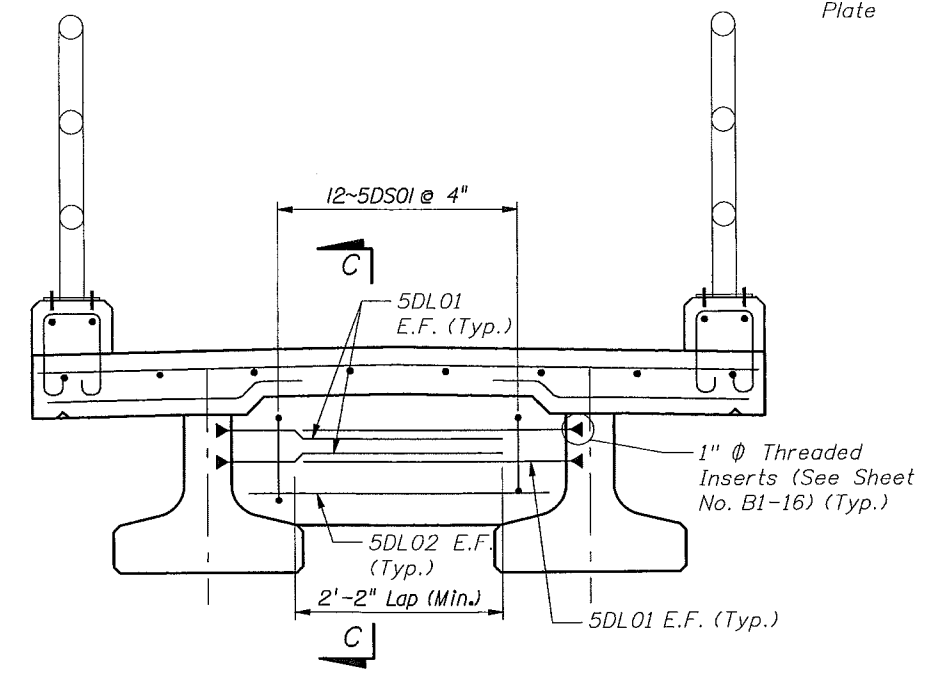
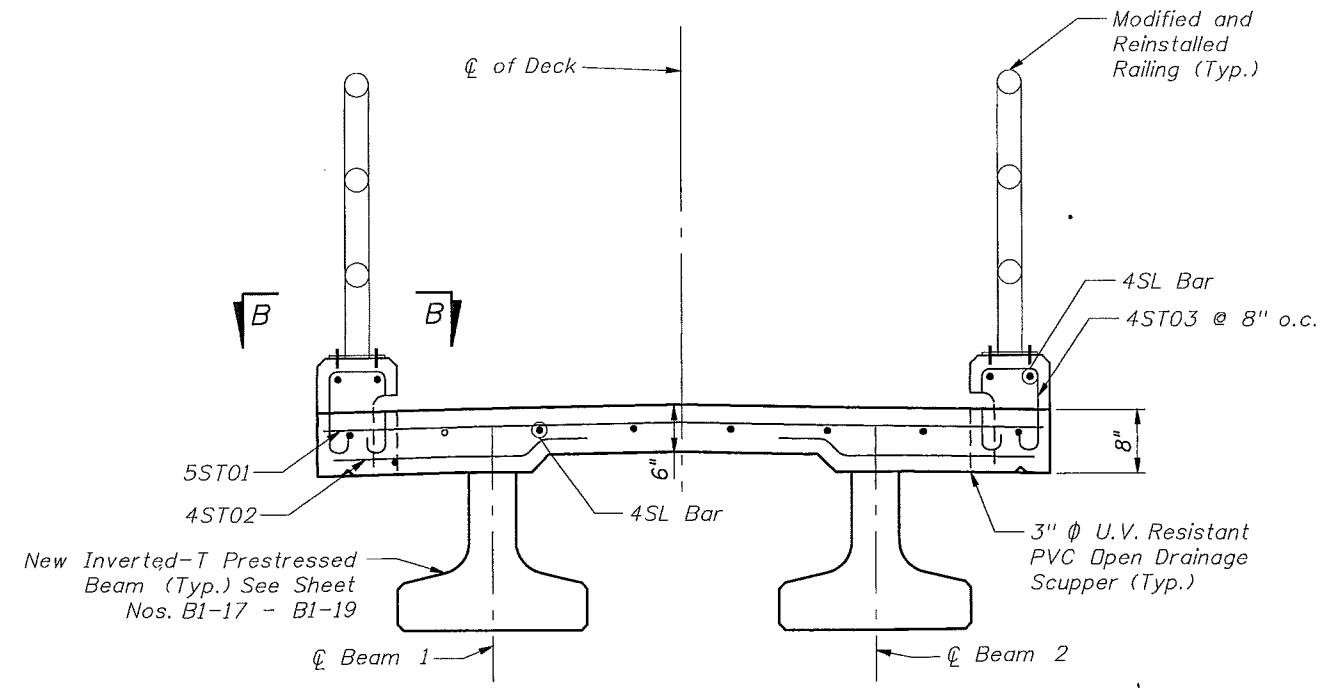
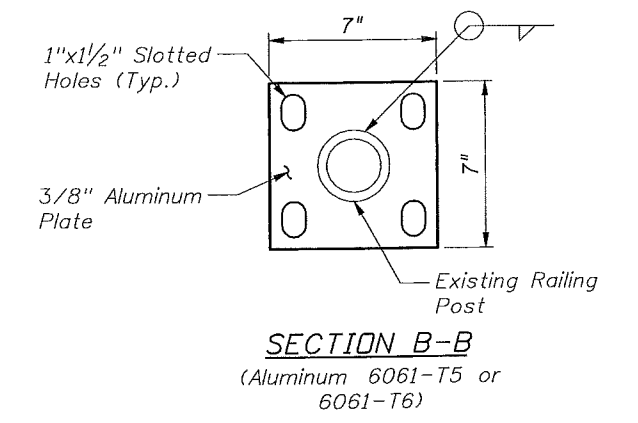
BRIDGE NO. 880051

REVISIONS						DRAWN BY			ENGINEER OF RECORD			SHEET TITLE		
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	NAME	DATE	NAME	DATE	PROJECT NAME	SHEET NO.	
						AKB	8/06	HARDESTY & HANOVER, LLP		INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT		EAST PIER NEW PILE CAP AND ABUTMENT MODIFIC		
						CG	8/06	1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323		ROAD NO.	COUNTY	CR 510 INDIAN RIVER		
						CG	8/06	Cesar A. Granados, P.E. #64221 Certificate of Authorization #171		FINANCIAL PROJECT ID		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	BI-14	
						TJN	8/06							
						T.J. Noles, P.E.								

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DECK SLAB REINFORCING AND SCUPPER LAYOUT PLAN
 (50'-0" Span Shown, Other Spans Similar)



NEW SUPERSTRUCTURE (SECTION A-A)

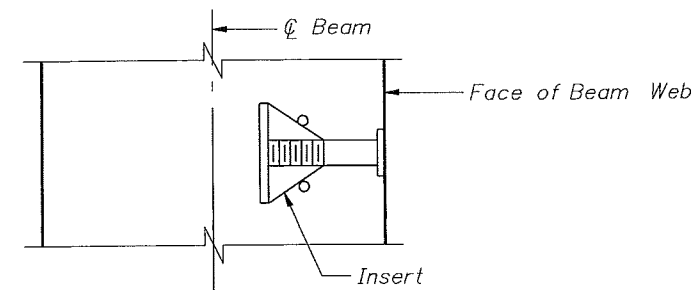
NEW DIAPHRAGM

BRIDGE NO. 880051

REVISIONS						NAMES			DATES			ENGINEER OF RECORD			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DRAWN BY	CHECKED BY	DESIGNED BY	CHECKED BY	APPROVED BY	ENGINEER OF RECORD	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.			
						AKB	CG	CG	TJN	T.J. Noles, P.E.	HARDESTY & HANOVER, LLP 1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323 Cesar A. Granados, P.E. #64221 Certificate of Authorization #171	CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	B1-15			

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MARK SIZE	DES	LENGTH FEET	NO. BARS	TYPE BAR	STY		DETAIL DIMENSIONS											Ø	N
					A	G	B	C	D	E	F	H	J	K					
WEST PIER - SPAN 10																			
4	ST03	3'-6"	75	11	1	1	6"	1'-0"	1'-0"										
5	ST04	5'-11 1/2"	100	1			5'-11 1/2"												
4	ST05	3'-3"	100	32			2"	1'-5"	1'-8"										
5	ST06	3'-8 1/2"	100	1			3'-8 1/2"												
4	SLO1	49'-8"	36	1			49'-8"												
5	DS02	3'-2"	42	4	1	1	6"	6"											
5	DLO3	3'-2 3/4"	12	1			3'-2 3/4"												
5	DLO4	2'-11 3/4"	12	1			2'-11 3/4"												
EAST PIER DECK - SPANS 18-27																			
5	ST01	7'-4"	951	1			7'-4"												
4	ST02	2'-10"	951	28			5"	2'-0"	4"	2"									
4	ST03	3'-6"	713	11	1	1	6"	1'-0"	1'-0"										
5	DS01	4'-2"	348	4	1	1	1'-0"	6"											
5	DLO1	3'-0"	220	1			3'-0"												
5	DLO2	3'-1 3/8"	58	1			3'-1 3/8"												
EAST PIER DECK - SPANS 18																			
4	SLO2	49'-4"	12	1			49'-4"												
EAST PIER DECK - SPANS 19-26																			
4	SLO1	49'-8"	108	1			49'-8"												
EAST PIER DECK - SPANS 18																			
4	SLO3	25'-6"	12	1			25'-6"												
EAST PIER SUBSTRUCTURE																			
6	S01	8'-2"	100	11			7'-0"	7"	7"										
4	S02	7'-0"	20	1			7'-0"												
10	S03	4'-1 1/4"	80	10			3'-1 3/4"	1'-0"											
5	S04	8'-6"	100	4	1	1	2'-4"	1'-4"											
4	S05	4'-4"	60	4	1	1	10"	10"											
4	S06	3'-2"	40	11			2"	1'-6"	1'-6"										
4	S07	4'-0"	70	11			1'-0"	1'-6"	1'-6"										
4	S08	4'-0"	20	11			1'-0"	1'-6"	1'-6"										



SECTION THRU BEAM WEB
AT INSERT FOR DIAPHRAGM REINFORCING

INSERT NOTES:

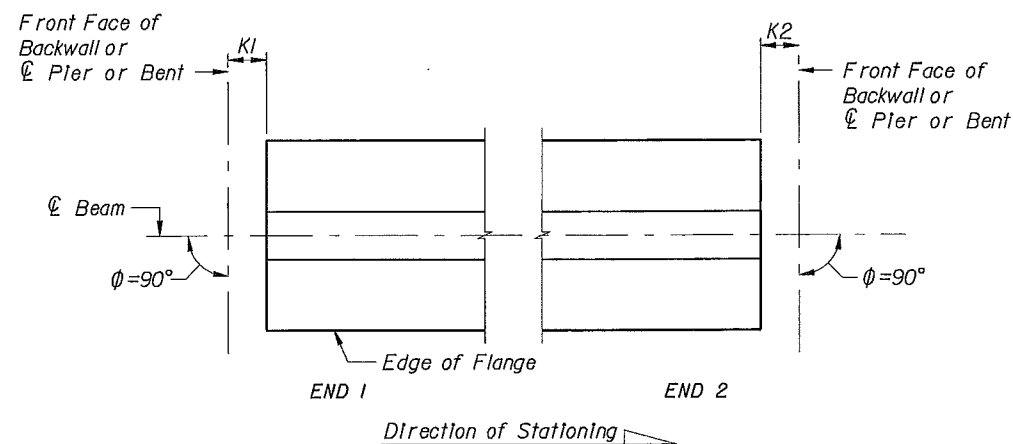
1. Insert shall be 1" Ø, zinc-electroplated, ferrule wing nut, UNC threads, 1/0 minimum gage wire, not more than 4" in depth and shall have a minimum ultimate tensile strength of 4,000 psi concrete.
2. For locations for inserts, see sheet no. B1-18.

CESAR GRANADOS
4-16-07

BRIDGE NO. 880051

REVISIONS				NAMES		DATES		ENGINEER OF RECORD:			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE:	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.			
								CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	B1-16			

HARDESTY & HANOVER, LLP
1000 SAWGRASS CORPORATE PKWY
SUITE 544
Sunrise, FL 33323
Cesar A. Granados, P.E. #64221
Certificate of Authorization #171



CASE 1

BEAM NOTES

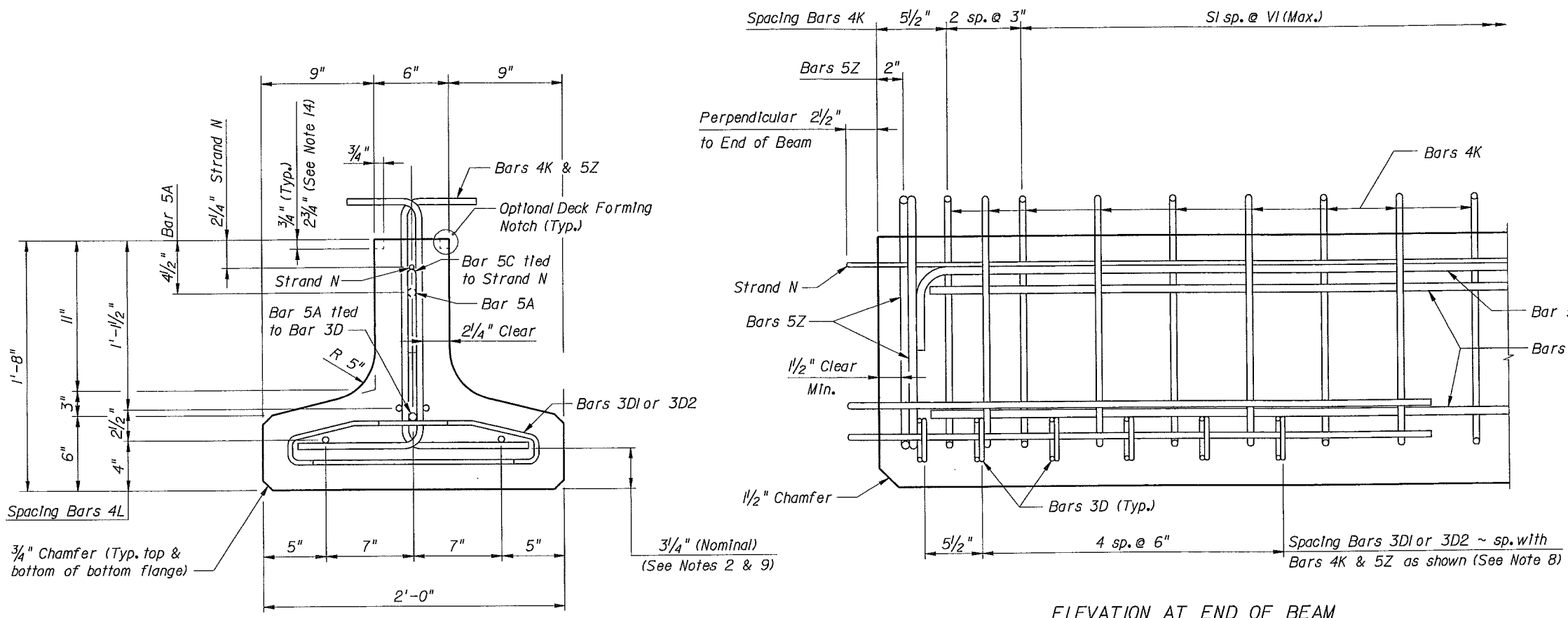
1. All bar dimensions are out-to-out.
2. Place two (2) Bars 5Z at each end, and then one (1) Bar 4K each location as detailed alternating the direction of the ends for each bar (see "ELEVATION AT END OF BEAM").
3. Bars 4L shall be bent prior to the beam leaving the prestressing yard. Bars 4L shall be bent parallel to the ends of the beams.
4. Caution should be used with Bars 4L in the ends of exterior beams to assure the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.
5. Strand N shall be either ASTM A416, Grade 250 or Grade 270, seven-wire strands $\frac{3}{8}$ " ϕ or larger, stressed to 10,000 lbs.
6. Unless otherwise noted, the minimum concrete cover for reinforcing steel shall be 2".
7. At option of the Contractor, welded deformed wire fabric may be used in lieu of Bars 3D, 4K and 4L except as noted below for skewed end conditions. The wire sizes and spacing shall match those shown on the Standard Beam Details sheet for these bars. In this event, Bars 4K may be fabricated with the omission of the lower outstanding leg provided that two longitudinal wires are placed (welded) at the lower end of the bar. The first (lower) wire shall be located 1" from the end of Bars 4K and the second wire 2" minimum from the first wire, but no less than $\frac{1}{4}$ of the beam depth from mid-depth of the beam. Welded wire fabric shall conform to ASTM A497. When welded deformed wire fabric is used, the end Bars 5Z shall remain conventional mild reinforcing.
8. Bars 4K and 5Z shall be placed and tied to the fully bonded strands (see "STRAND PATTERN").
9. Bars 3D shall be bent around a 1" diameter pin.
10. For Bearing and Framing Details, see Structures Plans.
11. For Camber and Build-up Details, see Structures Plans.
12. For referenced Dimensions, Angles and Case Numbers see Inverted-T Beam - Table of Beam Variables in Structures Plans.

CESAR GRANADOS
4-16-07

BRIDGE NO. 880051

REVISIONS				NAMES		DATES		ENGINEER OF RECORD			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.		
01-31-05		Standard Drawing Issue Date							CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	BI-17		
				DRAWN BY	AKB	8/06	HARDESTY & HANOVER, LLP 1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323 Cesar A. Granados, P.E. #64221 Certificate of Authorization #171								
				CHECKED BY	CG	8/06									
				DESIGNED BY	CG	8/06									
				CHECKED BY	TJN	8/06									
				APPROVED BY	T.J. Noles, P.E.										

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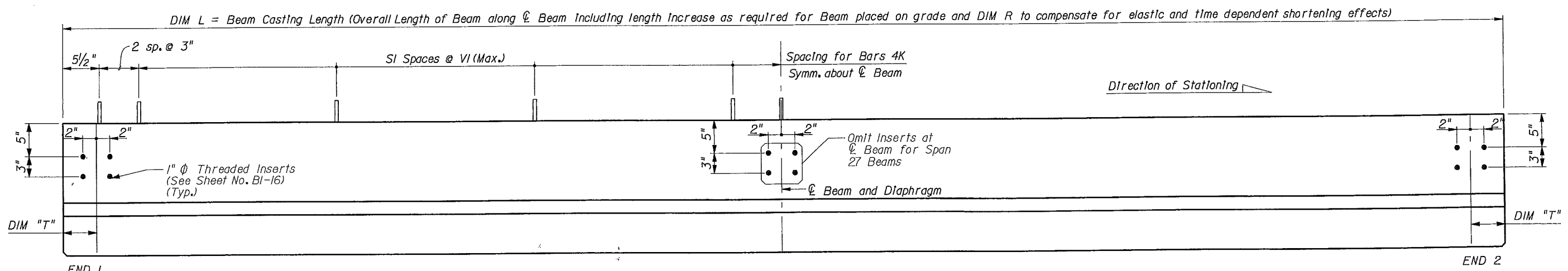
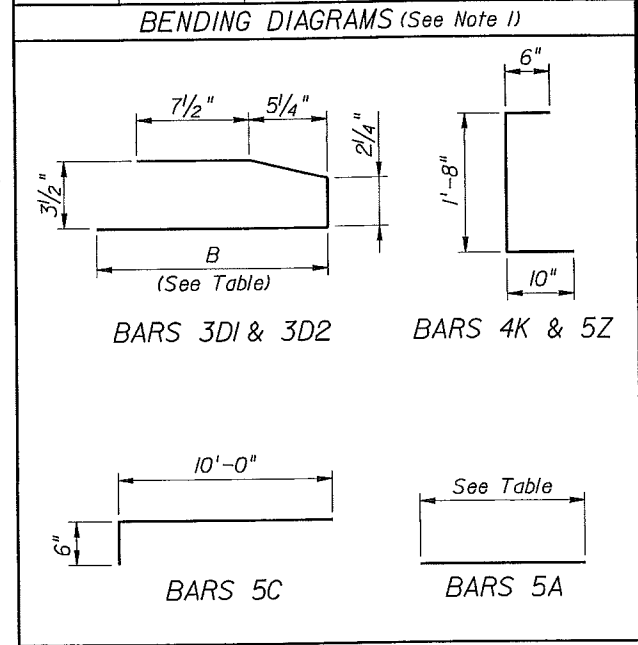
END VIEW

ELEVATION AT END OF BEAM
(Flange Not Shown For Clarity)

NOTES:
 Work this sheet with the following drawings:
 Index No. 310 - Typical Beam Details and Notes
 Index No. S-321 - Table of Beam Variables
 For referenced notes, see Index No. 310.
 For Dimensions L, R, VI thru V4 and number of spaces SI thru S4, see Table of Beam Variables Index No. S-321.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	5	4	See Table
C	—	5	2	10'-6"
D1	7, 8 & 10	3	12	See Table
D2	7, 8 & 10	3	12	See Table
K	2, 7, 8 & 9	4	See Table	3'-0"
L	3, 4 & 7	4	8	3'-10"
N	5	3/8" ϕ Strand	1	DIM L + 5"
Z	2, 8 & 9	5	4	3'-0"



ELEVATION
 Cesar A. GRANADOS
 8-16-07

BRIDGE NO. 880051

REVISIONS						ENGINEER OF RECORD			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATES	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME		SHEET NO.
						AKB	8/06	CR 510	INDIAN RIVER		INVERTED-T BEAM - STANDARD DETAILS INDEX NO. 320 (MODIFIED)		BI-18
						CG	8/06	1000 SAWGRASS CORPORATE PKWY SUITE 544 Sunrise, FL 33323			CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS		
						TJN	8/06	Cesar A. Granados, P.E. #64221 Certificate of Authorization #171					
						T.J. Noles, P.E.							

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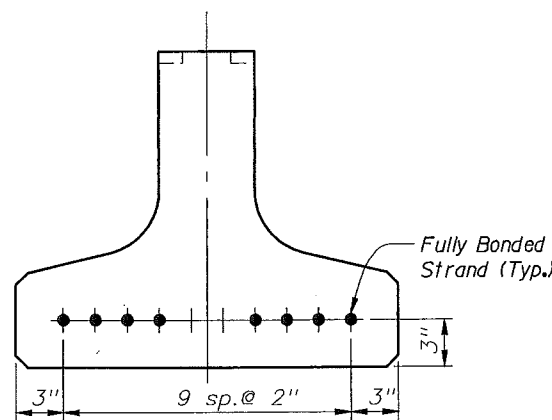
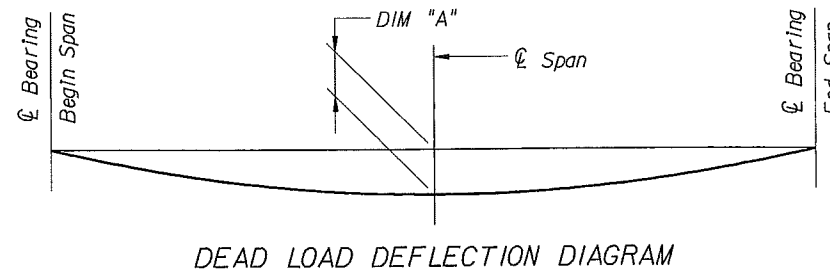
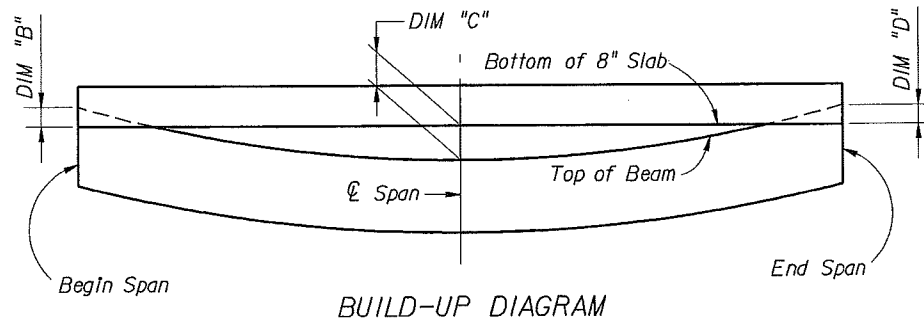
TABLE OF BEAM VARIABLES

LOCATION		CONCRETE PROPERTIES		STND. PTRN. TYPE	PLAN VIEW CASE		END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			REINFORCING STEEL								
SPAN NO.	BEAM NO.	CLASS	STRENGTHS (psi) 28 Day Release		END 1	END 2	END 1	END 2	DIM K1	DIM K2	DIM L	DIM R	DIM T	5A * Length	3D1 B Length		3D2 B Length		4K NO.	NO. OF SPACES BARS 4K S1	SPACING FOR BARS 4K * V1	
10	1	VI	8500 6800	1	1	1	1	90.00°	90.00°	1"	1"	49'-10"	3/16"	5"	49'-1"	1'-8"	2'-11"	1'-8"	2'-11"	53	48	1'-0"
18	1 & 2	VI	8500 6800	1	1	1	1	90.00°	90.00°	1"	1"	49'-6"	3/16"	16"	48'-9"	1'-8"	2'-11"	1'-8"	2'-11"	53	48	1'-0"
19-26	1 & 2	VI	8500 6800	1	1	1	1	90.00°	90.00°	1"	1"	49'-10"	3/16"	16"	49'-1"	1'-8"	2'-11"	1'-8"	2'-11"	53	48	1'-0"
27	1 & 2	VI	8500 6800	2	1	1	1	90.00°	90.00°	1"	2"	25'-7"	0"	16"	49'-10"	1'-8"	2'-11"	1'-8"	2'-11"	29	23	1'-0"

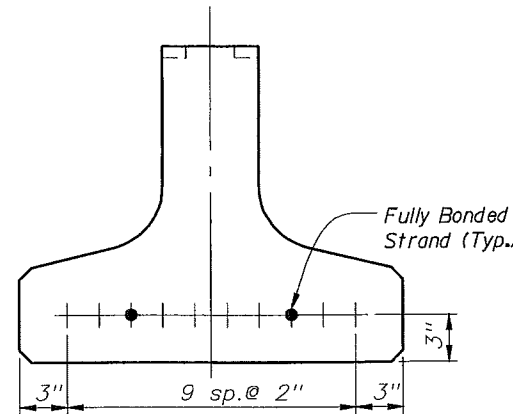
BUILDUP & DEFLECTION DATA						
LOCATION		REQUIRED THEORETICAL BUILDUP OVER ϕ BEAM			NET BEAM CAMBER - DEAD LOAD OF BEAM @ 120 DAYS	DEAD LOAD DEFLECTION DURING POUR @ 120 DAYS DIM "A"
SPAN NO.	BEAM NO.	AT BEGIN SPAN DIM "B"	AT ϕ SPAN DIM "C"	AT END SPAN DIM "D"		
10	1	5/8"	0"	5/8"	5/8"	1/4"
18	1 & 2	5/8"	0"	5/8"	5/8"	1/4"
19-26	1 & 2	5/8"	0"	5/8"	5/8"	1/4"
27	1 & 2	0"	0"	0"	0"	0"

BEAM CAMBER AND BUILDUP NOTES:

The buildup values given in the table are based on theoretical beam cambers. The Contractor shall monitor beam cambers for the purpose of predicting camber values at the time of the deck pour. If the predicted cambers based on field measurements differ more than +/- 1/2" from the theoretical "Net Beam Camber @ 120 Days" shown in the table, modify the buildup dimensions as required. When the measured beam cambers create a conflict with the bottom mat of slab steel, notify the Engineer a minimum a 21 days prior to casting.



TYPE ① 8 STRANDS



TYPE ② 2 STRANDS

STRAND DESCRIPTION: Use .06" Diameter, Grade 270, LOW RELAXATION Strands stressed at 43.9 kips each. Area per strand equals 0.217 sq. in. per strand.

STRAND PATTERNS

NOTE: Work this sheet with the following drawings:
Index No. 310 - Typical Inverted-T Beam Details and Notes
Index No. 320 - Inverted-T Beam - Standard Details

DIMENSION NOTES

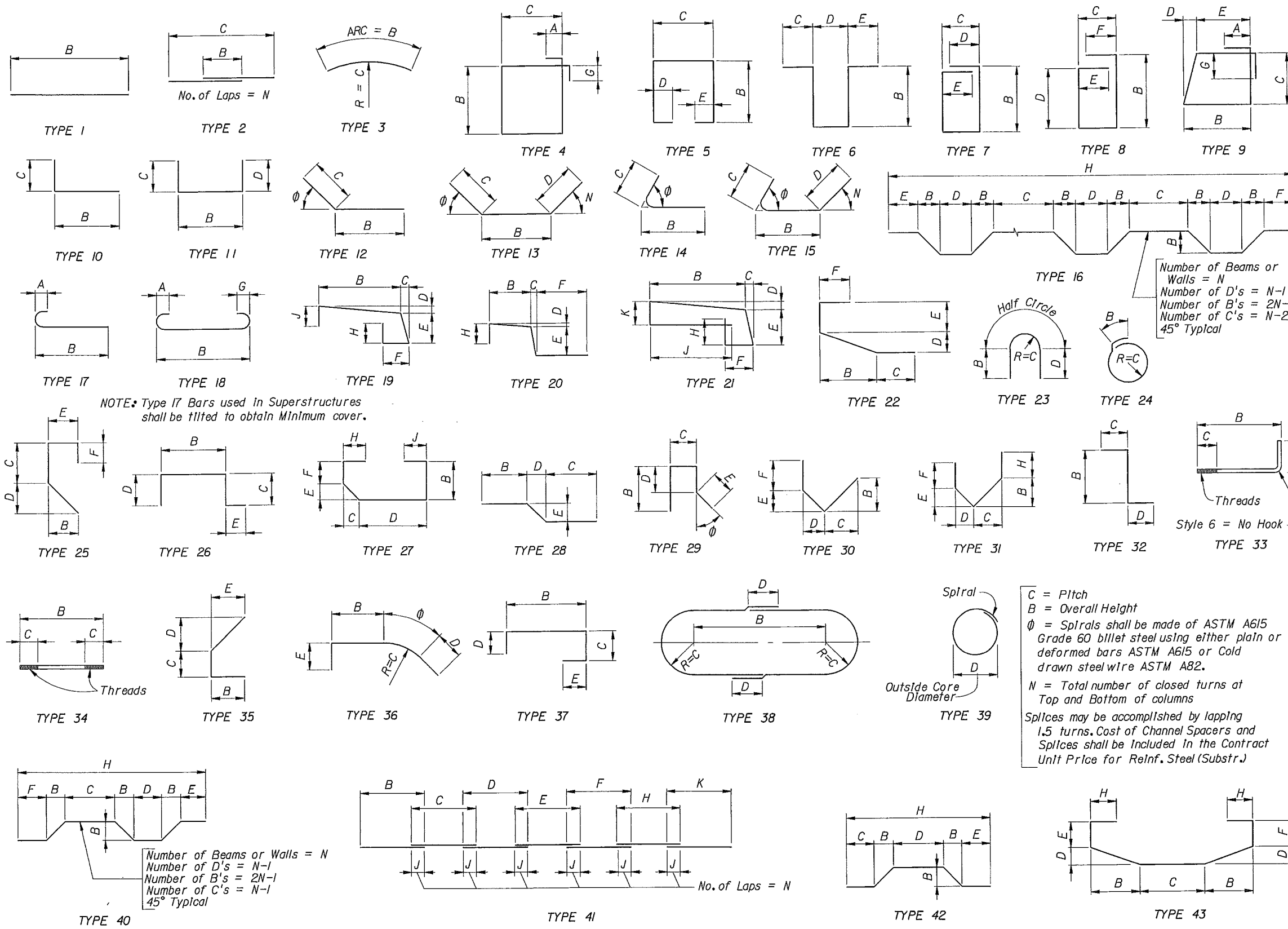
- * All longitudinal beam dimensions shown on this on this sheet with a single asterisk (*) are measured along the top of beam at the centerline of beam.
- ** End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.

BRIDGE NO. 880051

REVISIONS				NAMES		DATES		ENGINEER OF RECORD, HARDESTY & HANOVER, LLP			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE: INVERTED-T BEAM - TABLE OF BEAM VARIABLES INDEX NO. S-321 (MODIFIED)	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	SHEET NO.			
07-30-04	SDO	Semi-Standard Drawing Issue Date				AKB	8/06	CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	81-19			
						CG	8/06								
						TJN	8/06								
						T.J. Noles, P.E.									

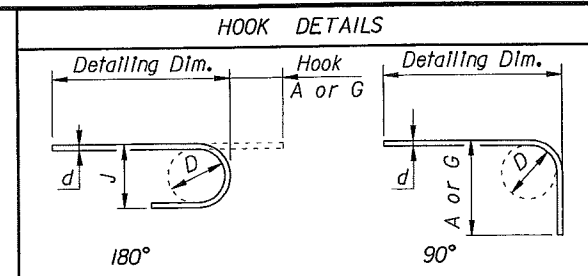
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CESAR GRANADOS
4-10-07

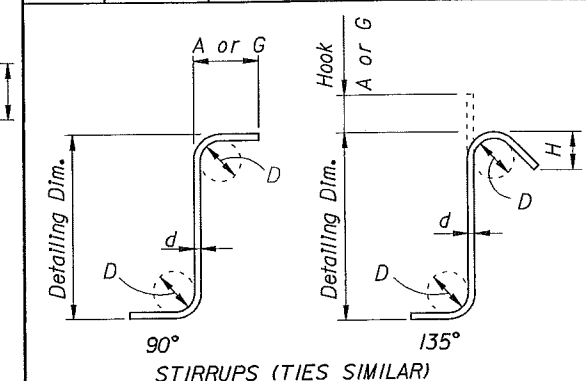


NOTE: Type 17 Bars used in Superstructures shall be tilted to obtain Minimum cover.

C = Pitch
 B = Overall Height
 Ø = Spirals shall be made of ASTM A615 Grade 60 billet steel using either plain or deformed bars ASTM A615 or Cold drawn steel wire ASTM A82.
 N = Total number of closed turns at Top and Bottom of columns
 Splices may be accomplished by lapping 1.5 turns. Cost of Channel Spacers and Splices shall be Included In the Contract Unit Price for Reinf. Steel (Substr.)



BAR SIZE	D	180° HOOKS		90° HOOKS
		A OR G	J	A OR G
#3	2 1/4"	5	3	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	1'-0"
#7	5 1/4"	10"	7"	1'-2"
#8	6"	11"	8"	1'-4"
#9	9 1/2"	1'-3"	11 3/4"	1'-7"
#10	10 3/4"	1'-5"	1'-1 1/4"	1'-10"
#11	12"	1'-7"	1'-2 3/4"	2'-0"
#14	18 1/4"	2'-3"	1'-9 3/4"	2'-7"
#18	24"	3'-0"	2'-4 1/2"	3'-5"
STYLE		1		3



BAR SIZE	D	90° HOOKS		135° HOOKS	
		A or G	A or G	A or G	H*
#3	1 1/2"	4"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	5 1/2"	3 3/4"
#6	4 1/2"	1'-0"	8"	8"	4 1/2"
#7	5 1/4"	1'-2"	9"	9"	5 1/4"
#8	6"	1'-4"	10 1/2"	10 1/2"	6"
STYLE		4		5	

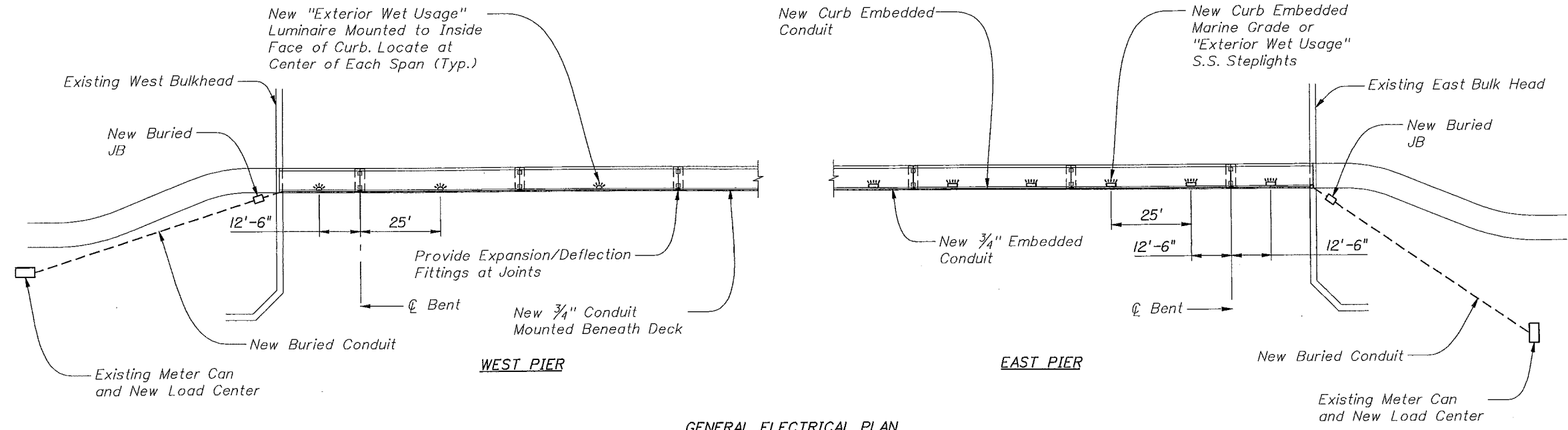
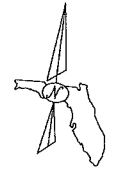
STYLE 6 = NO HOOK
 * Dimension is approximate.
 Hook Styles Detailed on this sheet are for Illustration Only.
 Actual Hook Style for any particular bar will be shown under A or G Heading on REINFORCING BAR LIST sheet.
 All Dimensions are out-to-out.

NOTE: For Bar Dimensions See BAR LIST Sheet.
 CESAR GRANADOS
 4-16-07

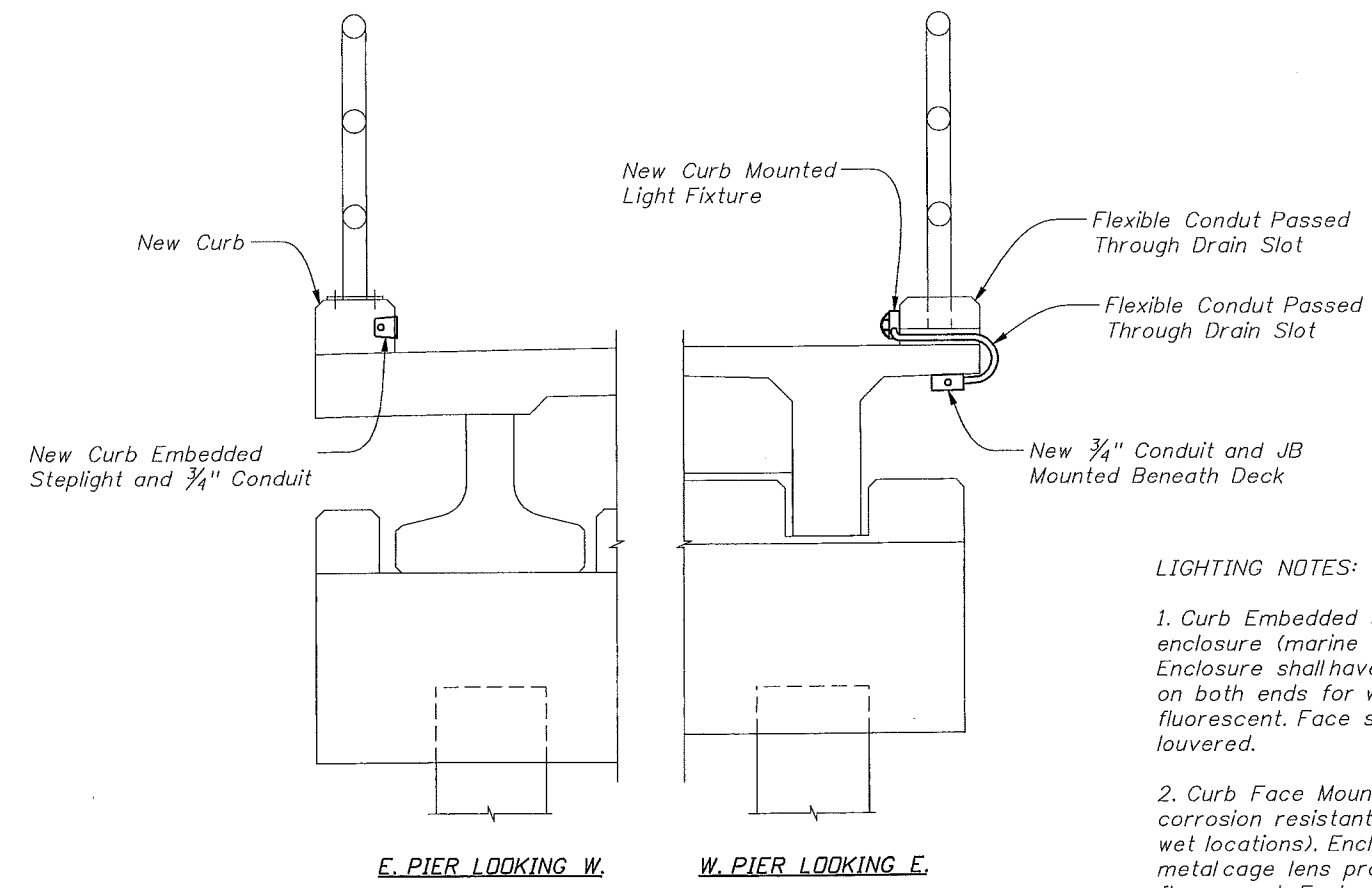
BRIDGE NO. 880051

REVISIONS				DRAWN BY		ENGINEER OF RECORD		INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATES	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME	SHEET NO.
						AKB	8/06	CR 510	INDIAN RIVER		CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	BI-20
						CG	8/06					
						CG	8/06					
						TJN	8/06					
						T.J. Noles, P.E.						

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GENERAL ELECTRICAL PLAN



TYPICAL PIER SECTIONS

- LIGHTING NOTES:**
1. Curb Embedded Steplight: Provide steplight with corrosion resistant enclosure (marine grade or suitable for exterior wet locations). Enclosure shall have vandal resistant fasteners and conduit knockouts on both ends for wire-through. Lamp shall be 120V LED or compact fluorescent. Face shall be approximately 11" X 4 1/2" and shall be louvered.
 2. Curb Face Mounted Light: Provide wall-sconce type light with corrosion resistant enclosure (marine grade or suitable for exterior wet locations). Enclosure shall have vandal resistant fasteners and metal cage lens protection. Lamp shall be 120V LED or compact fluorescent. Enclosure shall be oval approximately 9" X 4 1/2" and be suitable for surface mounting with side conduit entry.

GENERAL NOTES:

1. Comply with NEC 2005 and all local ordinance and regulations.
2. Coordinate electrical work with structural work.
3. The plans are diagrammatic and are not to be scaled. Locations shown are approximate. Exact locations shall be determined based upon approved shop drawings.

ABBREVIATIONS:

- 1PH Single Phase
- CF Compact Fluorescent
- JB Junction Box
- LED Light Emitting Diode
- NEC National Electrical Code
- NEMA National Electrical Manufacturers Association
- S.S. Stainless Steel

SYMBOL LEGEND:

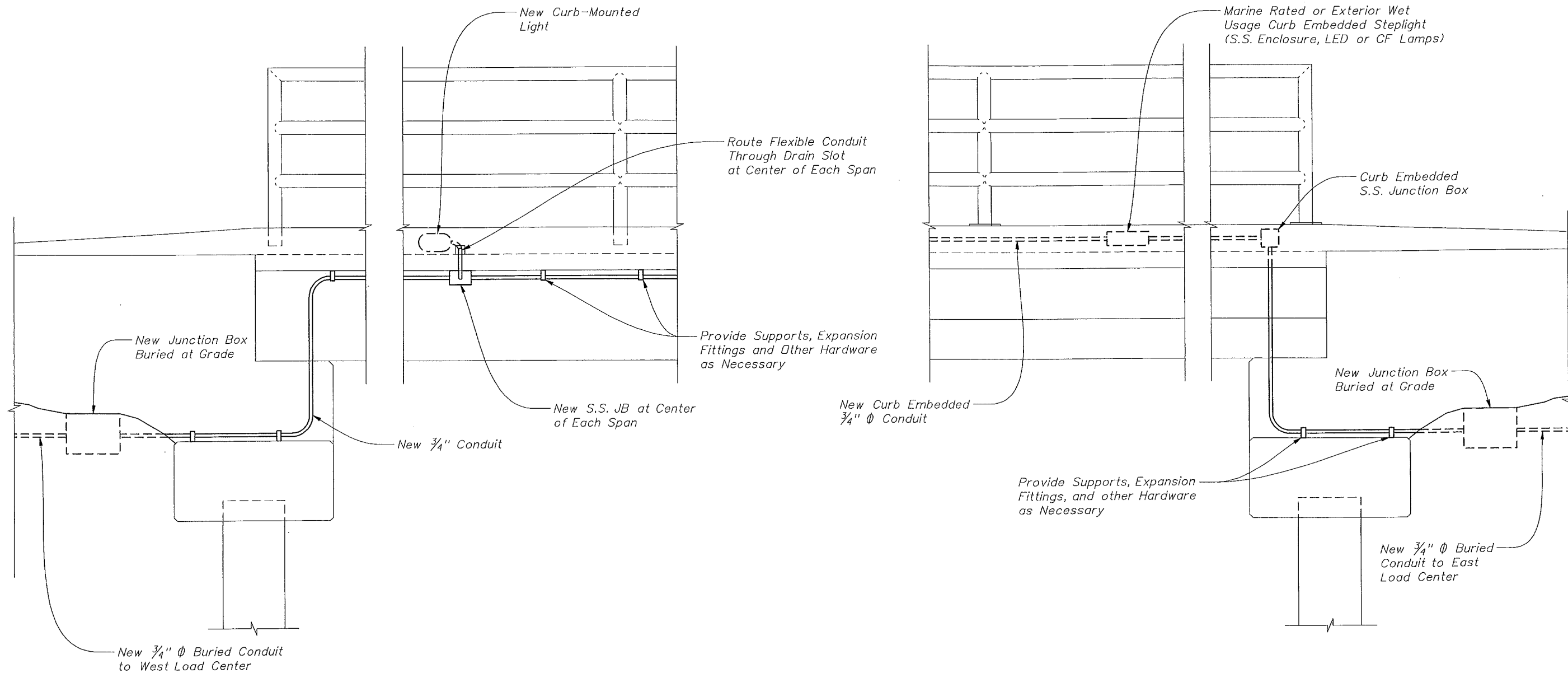
- Circuit Breaker
- Control Relay Coil
- Control Relay Contact
- Curb Embedded Luminaire
- Curb Mounted Luminaire
- Existing Line
- Fuse
- Ground
- Hidden Line
- New Line
- Transformer

Cesar Granados
4-16-07

BRIDGE NO. 880051

REVISIONS						ENGINEER OF RECORD:			INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE:	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	HARDESTY & HANOVER, LLP			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	GENERAL ELECTRICAL PLAN	
						DRAWN BY	AKB	8/06	CR 510	INDIAN RIVER		PROJECT NAME: CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	
						CHECKED BY	CG	8/06				SHEET NO. B1-21	
						DESIGNED BY	APB	8/06					
						CHECKED BY	TJN	8/06					
						APPROVED BY	T.J. Noles, P.E.						

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WEST PIER CONDUIT DETAIL, SOUTH ELEVATION

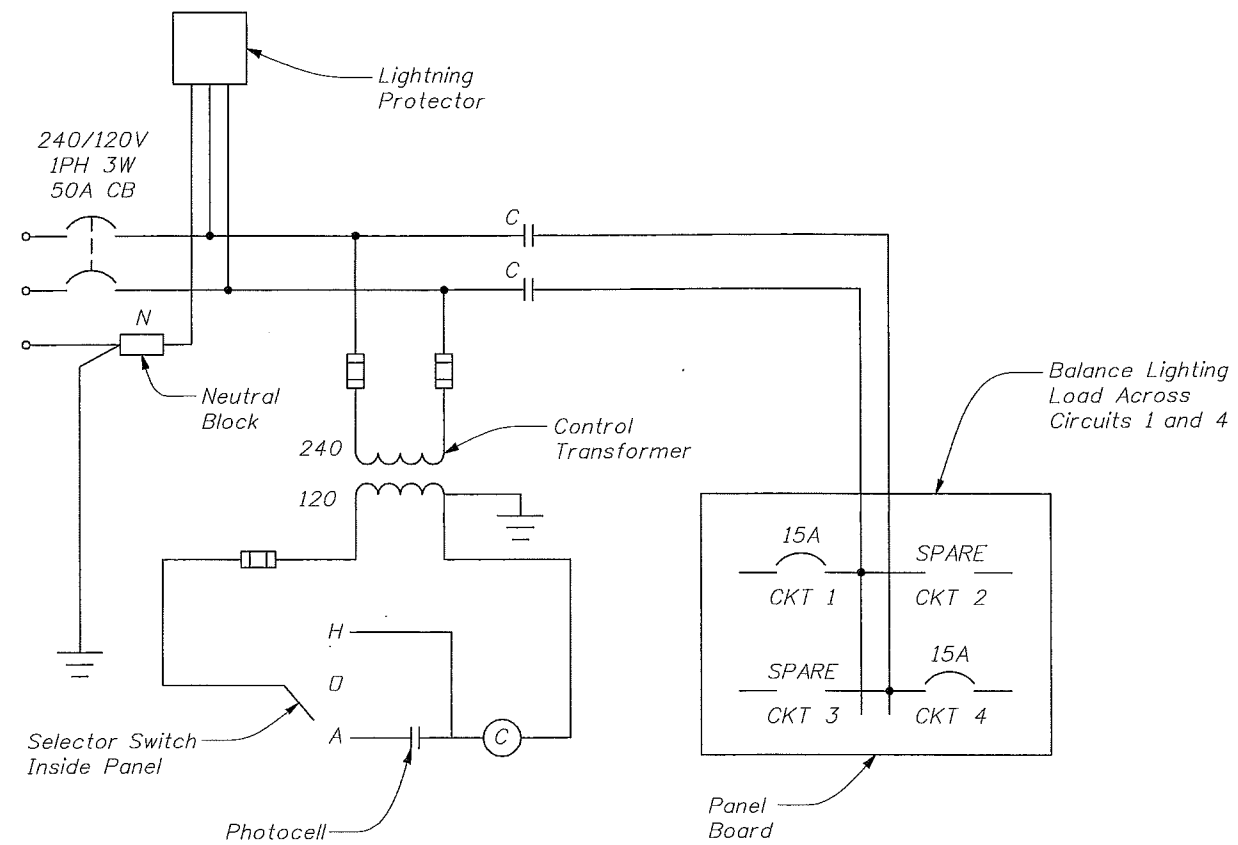
CONDUIT DETAIL AT EAST ABUTMENT, SOUTH ELEVATION

CESAR GRANADOS
4-16-07

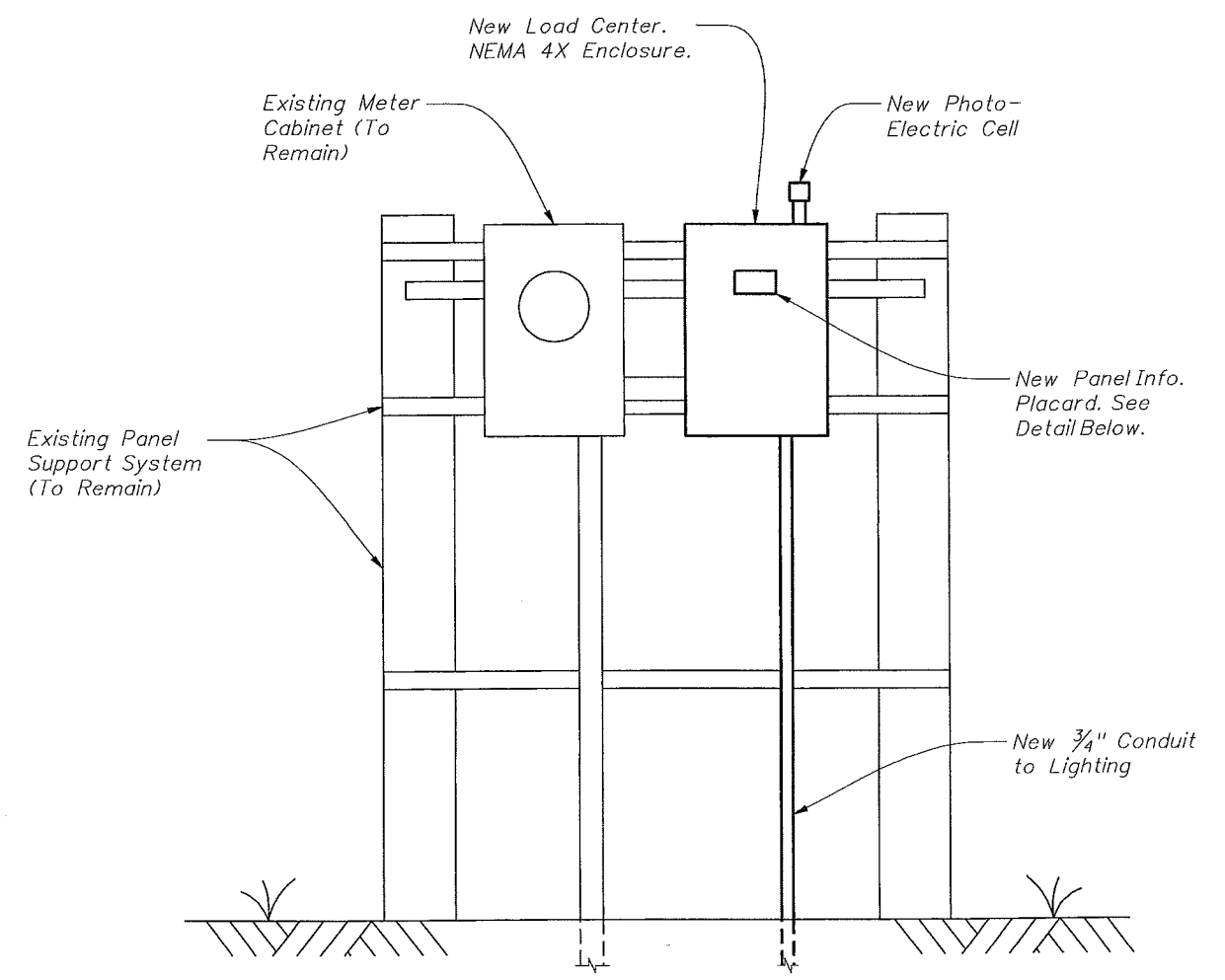
BRIDGE NO. 880051

REVISIONS					DRAWN BY		ENGINEER OF RECORD:		INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			SHEET TITLE:	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	HARDESTY & HANOVER, LLP	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	CONDUIT DETAILS	
						AKB	8/06	1000 SAWGRASS CORPORATE PKWY	CR 510	INDIAN RIVER		PROJECT NAME: CR 510 OVER INTRACOASTAL WATERWAY WABASSO FISHING PIER REPAIRS	
						CG	8/06	SUITE 544				SHEET NO. B1-22	
						APB	8/06	Sunrise, FL 33323					
						TJN	8/06	Cesar A. Granados, P.E. #64221					
						T.J. Noles, P.E.		Certificate of Authorization #171					

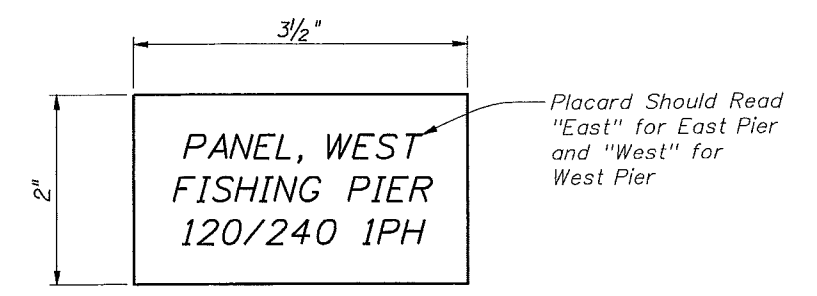
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TYPICAL 240/120V LOAD CENTER WIRING DIAGRAM



LOAD CENTER DETAIL
Typ. East and West Piers



PANEL INFORMATION
PLACARD

CESAR GRANADOS
4-1607

BRIDGE NO. 880051

REVISIONS				NAMES		DATES		ENGINEER OF RECORD:			SHEET TITLE:		
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	INDIAN RIVER COUNTY PUBLIC WORKS DEPARTMENT			LOAD CENTER DETAILS	
									HARDESTY & HANOVER, LLP			PROJECT NAME:	
									1000 SAWGRASS CORPORATE PKWY			CR 510 OVER INTRACOASTAL WATERWAY	
									SUITE 544			WABASSO FISHING PIER REPAIRS	
									Sunrise, FL 33323			SHEET NO.	
									Casar A. Granados, P.E. #64221			BI-23	
									Certificate of Authorization #171				
									ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
									CR 510	INDIAN RIVER			
									#USER#	#DATE#	#TIME#	#FILE#	

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Attachment

Available staging area 100' x 40' at the parking lot on the west side of the bridge.

