GENERAL CONDITIONS
33 CFR PART 320-330
PUBLISHED FEDERAL REGISTER DATED 13 NOVEMBER 1986

1. The time limit for completing the work authorized ends on **October 26, 2014**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort of if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: NW-03

Application Number: SAJ-2012-01344(NW-MEP)

Permittee's Name & Address (please print or type):_____

_____

_____

Telephone Number:_____

Location of the Work:_____

_____

Date Work Started:_____ Date Work Completed:_____

Description of the Work (e.g., bank stabilization, residential or commercial filling, docks, dredging, etc.):_____

_____

_____

Acreage or Square Feet of Impacts to Waters of the United States:

_____

Describe Mitigation completed (if applicable):_____

_____

_____

Describe any Deviations from Permit (attach drawing(s) depicting the deviations): _____

_____

_____

****

I certify that all work, and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

_____

Signature of Permittee

_____

Date

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2010-01344(NW-01344)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019.

_____
(TRANSFEREE-SIGNATURE)

_____
(DATE)

_____
(NAME-PRINTED)

_____

_____
(MAILING ADDRESS)

_____
(CITY, STATE, ZIP CODE)

_____
(SUBDIVISION)

_____ _____
(LOT) (BLOCK)

_____
(STREET ADDRESS)

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK
2011

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

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

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

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

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

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

RE: [EXTERNAL] Permit Number SAJ 2010 01344 (NW-MEP) (UNCLASSIFIED)

Brent Morris to: Fellows, John P SAJ, Donna Stevens, Jeff Streitmatter 06/24/2014 11:34 AM

Cc: "Brent.Morris@mymanatee.org"

Thanks you sir, the county shall move forward on this email.

Regards

Brent A. Morris, P.E.
Manatee County Public Works
Project Management Division
Project Manager II
brent.morris@mymanatee.org
1022 26th Avenue East
Bradenton, FL 34208
Ph 941-708-7450 Ext. 7338
Cell 941-587-4306

"Fellows, John P SAJ" Classification: UNCLASSIFIED Caveats: NON 06/23/2014 04:24:48 PM

From: "Fellows, John P SAJ" <John.P.Fellows@usace.army.mil>
To: "Brent.Morris@mymanatee.org" <Brent.Morris@mymanatee.org>
Date: 06/23/2014 04:24 PM
Subject: RE: [EXTERNAL] Permit Number SAJ 2010 01344 (NW-MEP) (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hello Brent -

I checked into this, and in January 2013, the Corps amended the 2012 Nationwide Permit rule to allow verifications to go longer than two years. Since then, we've been sending verification letters that allow construction up to the expiration date of the 2012 Nationwide Permits, which is March 18, 2017. So, please accept this e-mail as an extension of the previous October 26, 2014, deadline to March 18, 2017, unless the Nationwide Permit is modified, reissued, or revoked prior to that date.

I'll make sure the information in our tracking system is updated, so there won't be any questions about the expiration date later.

If you have any other questions, please let me know.

John

-----Original Message-----
From: Brent.Morris@mymanatee.org [mailto:Brent.Morris@mymanatee.org]
Sent: Monday, June 23, 2014 1:27 PM
To: Fellows, John P SAJ
Subject: [EXTERNAL] Permit Number SAJ 2010 01344 (NW-MEP)

John,
As discussed the attached permit needs to be extended to allow for the bid process and a design

discussion a few months back that dragged out a little. Suffice it to say if we could extend this to the following approximate days it would be of great assistance.
IFB 7/23/14
Information Conference 7/30/14
Bid opening 8/22/14
Notice of intent nobs and contract award 9/15/14
Precon 9/22/14
Contract duration 120 days
So it looks as if extending the permit through March would be a reasonable estimation of completion of this work.

Thanks for your help

Brent A. Morris, P.E.
Manatee County Public Works
Project Management Division
Project Manager II
brent.morris@mymanatee.org
1022 26th Avenue East
Bradenton, FL 34208
Ph 941-708-7450 Ext. 7338
Cell 941-587-4306

Classification: UNCLASSIFIED
Caveats: NONE

Florida Department of
Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

WCIND
c/o Charles W. Listowski
200 East Miami Avenue
Venice, FL 34285

File No. 41-0299360-001, Manatee County

Dear Mr. Listowski:

This is to acknowledge receipt of your notice on February 2, 2010 of intent to use a Noticed General Permit (NGP), pursuant to Rule 62-341.443, Florida Administrative Code (F.A.C.) to install approximately 6,967 square feet of articulated concrete blocks or grout-filled mat at the existing grade to provide scouring protection to the bridge supports within Terra Ceia Bay, a Class II Florida Waterbody. The project is located at the Snead Island Bridge, Palmetto, Section 17, Township 34 South, Range 18 East, Manatee County.

In addition to regulatory authorization under Rule 62-341.443, F.A.C., this type of activity also requires both proprietary and federal authorizations. Proprietary authorization is required pursuant to Chapters 253 and 258, Florida Statute (F.S.), to use state-owned submerged lands for private purposes. Federal authorization is needed for works in waters of the United States through the State Programmatic General Permit (SPGP) program.

Your notice has been reviewed by Department staff for all three types of authorizations: regulatory, proprietary and federal. The authority for review and the outcomes of the reviews are listed below. Please read each section carefully. Your project may not have qualified for all three authorizations. If your project did not qualify for one or more of the authorizations, the specific section dealing with that authorization will advise you how to obtain it. **You may NOT commence your project without all three authorizations.** If you change the project from what you submitted, the authorization(s) granted may no longer be valid at the time of commencement of the project. Please contact us prior to beginning your project if you wish to make any changes.

REGULATORY REVIEW - APPROVED

Based on the forms, drawings, and documents submitted/revised with your notice, it appears that the project meets the requirements for the Noticed General Permit under Rule 62-341.443, F.A.C.

Please be advised that the construction phase of the NGP must be completed within five years from the date the notice to use the NGP was received by the Department. If you wish to continue this NGP beyond the expiration date, you must notify the Department at least 30 days before its expiration. Any activities performed under a noticed general permit are subject to general conditions required in Rule 62-341.215, F.A.C. (attached), and the specific conditions of Rule 62-341.443, F.A.C. (attached). Any deviations from these conditions may subject the permittee to enforcement action and possible penalties.

Authority for review- Part IV of Chapter 373, F.S., Title 62, F.A.C. and in accordance to operating agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C.

PROPRIETARY REVIEW –APPROVED

Please be advised that any use of sovereign submerged lands without specific prior authorization from the Board of Trustees will be considered a violation of Chapter 253, F.S., and may subject the affected upland riparian property owners to legal action as well as potential fines for the prior unauthorized use of sovereign land.

A review of the location of your proposed project indicates that it is not on state-owned submerged lands. Therefore, your project is exempt from the further requirements of Chapter 253, F.S.

Authority for review - Chapter 253 and Chapter 258, F.S., and Chapter 18-21, F.A.C. and Chapter 18-20, F.A.C., (if located in an aquatic preserve), and Section 62-343.075, F.A.C., as required.

SPGP REVIEW – NOT APPROVED

Your project does not qualify for federal authorization for works in waters of the United States through the State Programmatic General Permit (SPGP) program.

A copy of your application also has been sent to the U.S. Army Corps of Engineers (USACOE) for review. The USACOE may require a separate permit. Failure to obtain this authorization prior to construction could subject you to enforcement action by that agency. For further information, you should contact the USACOE Tampa Regulatory Field Office at (813) 769-7060 or the Gainesville Regulatory Field Office at (352) 264-7672.

If you revise your project after submitting the initial joint application the above authorization(s) may no longer be valid. Please contact us prior to construction if you wish to make any changes. Also, if you have any questions, please contact Michelle Press at (813) 632-7600, ext. 430. When referring to this project, please use the file number listed above.

Executed in Hillsborough County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Allyson Minick
Environmental Manager
Environmental Resource Management

Copies furnished to:
U.S. Army Corps of Engineers
File
Manatee County, P.O. Box 1000, Bradenton, FL 34206
Independent Environmental Consultants, LLC., c/o Sam Johnston, 6709 16th Avenue Drive West

Enclosures:
Ch. 62-341.443, F.A.C.
Ch. 62-341.215, F.A.C.
General Consent Conditions for Use of Sovereignty Submerged Lands
Standard Manatee Construction Conditions
Notice of Rights of Substantially Affected Persons

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this determination, including all copies, was mailed before the close of business on 3/1/10, to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to 120.52(7),
Florida Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Clerk E Robinson Date 3/1/10

62-341.443 General Permit to the Florida Department of Transportation, Counties, and Municipalities for Minor Bridge Alteration, Replacement, Maintenance and Operation.

(1) A general permit is hereby granted to the Florida Department of Transportation, counties and municipalities to conduct the activities described below:
(a) The replacement, modification, or maintenance of bridges and approaches where the combined total of dredging and filling, both temporary and permanent, in wetlands and other surface waters does not exceed 0.50 acre (2023 square meters or 0.2 hectares); and
(b) Channel clearing and shaping, not to exceed a combined total of 0.5 acres (2023 square meters or 0.2 hectares) of dredging and filling in wetlands and other surface waters, to facilitate maximum hydraulic efficiency of the structures detailed in paragraph (a) above, where the spoil material is used on an upland portion of the project or is deposited on a self-contained, upland spoil site. Escape of spoil material or water from the spoil deposition area into wetlands or other surface waters is prohibited.
(2) This general permit shall be subject to the following specific conditions:
(a) In addition to compliance with the notice provisions of subsection 62-343.090(1), F.A.C., within 90 days following completion of construction, the permittee will notify by letter the Department office to which notice was originally given of the date construction activities were completed;
(b) No dredging of access or work channels is authorized by this general permit;
(c) Temporary fill roads shall not be constructed waterward of mean high water or ordinary high water;
(d) All fill placed in wetlands, other than fill on which a bridge or approach described in paragraph (1)(a) is constructed, shall be regraded to the original wetland elevations and these filled wetland areas revegetated with native wetland species endemic to adjoining, undisturbed wetlands, within seven days of completion of construction. Within "clear zones", as described in Chapter 3, Roadside Design Guide (American Association of State Highway and Transportation Officials dated October 1988) revegetation shall be with native herbaceous species endemic to adjoining, undisturbed wetlands. These wetland areas shall be maintained, and planted as necessary to ensure that satisfactory revegetation occurs. For the purposes of this general permit, "satisfactory revegetation" means that the herbaceous wetlands, and forested wetlands within the clear zones, that are disturbed by fill shall have achieved not less than 33 percent cover of planted or naturally reestablished herbaceous wetland species within 18 months of completion of construction, and forested wetlands other than forested wetlands in clear zones that are disturbed by fill shall have achieved a survival rate of not less than 400 wetland trees per acre within 18 months of completion of construction. A maintenance plan must be developed implemented to ensure the survival of the planted or naturally reestablishing wetland species. Within the revegetated wetland areas, non-native vegetation must be controlled such that it does not constitute more than 10 percent of the areal cover in any stratum at any time for the five year period following the initial planting or restoration of the site;
(e) Hydraulic openings of bridges constructed under paragraph (1)(a) above shall be sufficient to prevent downstream scour, increased downstream water velocities, and increased elevations on the property of others;
(f) Minimum horizontal and vertical navigational clearances on bridges over navigable waters of the United States shall be established in accordance with procedures outlined in the U.S. Coast Guard Bridge Administration Manual, COMDTINST M16590.5A, June 6, 1994;
(g) Horizontal and vertical clearances for replacement bridge structures shall meet or exceed those of the bridge being replaced;
(h) Temporary erosion controls for all exposed soils within wetlands and other surface waters shall be completed within seven calendar days of the most recent construction activity;
(i) The fill areas and the banks of the water body shall be stabilized with vegetation or riprap within seven days following completion of slope construction. This stabilization is considered a construction priority

and completed fill slopes in wetlands and other surface waters shall not remain unstabilized while other construction continues;
(j) This general permit does not authorize the use of dredged material for roadway construction;
(k) The permittee shall use erosion and sediment control best management practices, including turbidity curtains or similar devices, in strict adherence to these practices as described in Chapter 6, The Florida Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation, 1988), incorporated by reference herein to prevent violations of state water quality standards;
(l) This general permit authorizes dredging and filling for the replacement, modification, or maintenance of a bridge and approaches for a specific crossing of a wetland or other surface water. Replacement or modification of a bridge that includes changes in the configuration of the bridge and fill areas due to changes in materials, construction techniques, or meeting current construction codes or safety standards are authorized under this permit. Any connecting road expansion or alteration associated with such replacement or modification must be authorized by a separate general or individual permit under Part IV of Chapter 373, F.S., as applicable, before the start of construction; and
(m) This general permit does not authorize replacement or modification of bridges or approaches which involve the construction of additional traffic lanes.
Specific Authority 373.026(7), 373.043, 373.118(1), 373.406(5), 373.414(9), 373.418, 403.805(1) FS. Law Implemented 373.118(1), 373.406(5), 373.413, 373.414(9), 373.416, 373.418, 373.419 FS. History–New 10-3-95, Amended 10-1-07.

GENERAL CONDITIONS FOR ALL NOTICED GENERAL PERMITS

Rule 62-341.215, Florida Administrative Code

(1) The terms, conditions, requirements, limitations, and restrictions set forth in this section are general permit conditions and are binding upon the permittee for all noticed general permits in this chapter. These conditions are enforceable under Part IV of Chapter 373, F.S.

(2) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit. A violation of the permit is a violation of Part IV of Chapter 373, F.S., and may result in suspension or revocation of the permittee's right to conduct such activity under the general permit. The Department also may begin legal proceedings seeking penalties or other remedies as provided by law for any violation of these conditions.

(3) This general permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any construction, alteration, operation, maintenance, removal or abandonment authorized by this permit.

(4) This general permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the general permit as provided by Chapter 62-330, F.A.C.

(5) The general permit does not relieve the permittee from liability and penalties when the permitted activity causes harm or injury to: human health or welfare; animal, plant or aquatic life; or property. It does not allow the permittee to cause pollution in contravention of Florida Statutes and Department rules.

(6) The permittee is hereby advised that Section 253.77, F.S., states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

(7) The authorization to conduct activities pursuant to a general permit may be modified, suspended or revoked in accordance with Chapter 120, F.S., and Section 373.429, F.S.

(8) This permit shall not be transferred to a third party except pursuant to Section 62-343.130, F.A.C. The permittee transferring the general permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located.

(9) Upon reasonable notice to the permittee, Department staff with proper identification shall have permission to enter, inspect, sample and test the permitted system to insure conformity with the plans and specifications approved by the permit.

(10) The permittee shall maintain any permitted system in accordance with the plans submitted to the Department and authorized in this general permit.

(11) A permittee's right to conduct a specific noticed activity under this noticed general permit is authorized for a duration of five years.

(12) Construction, alteration, operation, maintenance, removal and abandonment approved by this general permit shall be conducted in a manner which does not cause violations of state water quality standards, including any anti-degradation provisions of Sections 62-4.242(1)(a) and (b), 62-4.242(2) and (3), and 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters. The permittee shall implement best management practices for erosion, turbidity, and other pollution control to prevent violation of state water quality

standards. Temporary erosion control measures such as sodding, mulching, and seeding shall be implemented and shall be maintained on all erodible ground areas prior to and during construction. Permanent erosion control measures such as sodding and planting of wetland species shall be completed within seven days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into wetlands and other surface waters exists due to the permitted activity. Turbidity barriers shall remain in place and shall be maintained in a functional condition at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

(13) The permittee shall hold and save the Department harmless from any and all damages, claims, or liabilities, which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the general permit.

(14) The permittee shall immediately notify the Department in writing of any previously submitted information that is later discovered to be inaccurate. Specific Authority: 373.026, 373.043, 373.044, 373.118, 373.406, 403.813, 403.814, F.S. Law Implemented: 373.026, 373.043, 373.046, 373.118, 373.403, 373.413, 373.416, 373.418, 373.419, 373.422, 373.423, 373.426, 403.813, 403.814, F.S. History—New 10-3-95.

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2009

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

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida.

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used (see MyFWC.com). One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 81/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

RIGHTS OF AFFECTED PARTIES

This letter acknowledges that the proposed activity may be conducted under general permit rule 62-341.443, F.A.C. This determination is final and effective on the date filed with the Clerk of the Department unless a sufficient petition for an administrative hearing is timely filed under sections 120.569 and 120.57 of the F.S. as provided below. If a sufficient petition for an administrative hearing is timely filed, this determination automatically becomes only proposed agency action subject to the result of the administrative review process. Therefore, on the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because an administrative hearing may result in the reversal or substantial modification of this action, the applicant is advised not to commence construction or other activities until the deadlines noted below for filing a petition for an administrative hearing or request for an extension of time have expired.

Mediation is not available.

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the F.S. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Under rule 62-110.106(4) of the F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon. If a request is filed late, the Department may still grant it upon a motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect.

If a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Intervention will be permitted only at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

In accordance with rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under section 120.60(3) of the F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. Under section 120.60(3) of the F.S, however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that right.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;
(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Under sections 120.569(2)(c) and (d) of the F.S., a petition for administrative hearing must be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

This determination constitutes an order of the Department. Subject to the provisions of paragraph 120.68(7)(a) of the F.S., which may require a remand for an administrative hearing, the applicant has the right to seek judicial review of the order under section 120.68 of the Florida Statutes, by the filing of a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department. The applicant, or any party within the meaning of section 373.114(1)(a) or 373.4275 of the F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under section 373.114(1) or 373.4275 of the F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when the final order is filed with the Clerk of the Department. The applicant, or any party within the meaning of paragraph 20.255(5)(a) of the F.S., may also seek appellate review of the order before the Land and Water Adjudicatory Commission under subsection 20.255(5) of the F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when the order is filed with the Clerk of the Department.

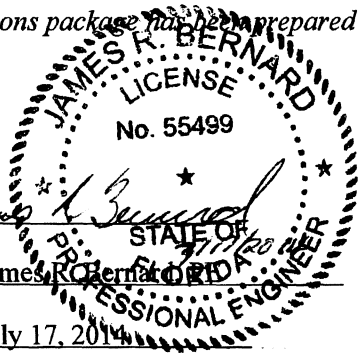
July 17, 2014

PREPARED BY: James R. Bernard, PE

SPECIFICATIONS PACKAGE

MANATEE COUNTY

I hereby certify that this specifications package has been prepared by me, or under my responsible charge.



Signature and Seal: _____

Engineer of Record: James R. Bernard, PE

Date: July 17, 2014

Fla. License No.: 55499

Firm Name: TBE Group, dba Cardno TBE

Firm Address: 22 Sarasota Center Blvd.

City, State, Zip code: Sarasota, FL 34240

SPECIAL PROVISIONS

GENERAL

This Section amends, enhances or otherwise revises the Contract Documents and Technical Specifications.

STANDARD SPECIFICATIONS

The standard Specifications to be used for this work shall be the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction (2014 Edition)*, and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, except as amended under this Contract.

These specifications cover the usual construction requirements for work specified by the County Transportation Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the *Standard Specifications*, such work shall be performed in accordance with the Special Provisions.

The apparent silence of the Specifications as to any detail of the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used. Interpretation of these specifications shall be made upon that basis.

PRIORITY

In any instance where there is an apparent conflict between these special provisions and the corresponding terms of the "Standard Specifications", these special provisions followed by these Technical Special Provisions shall be controlling.

NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item, applicable pay item or as part of the lump sum quantity for Mobilization.

BASE AND OPTIONAL BIDS

This contract includes base and optional bids. Both base and optional bids will be considered optional. The bidder may submit bids for the base items, optional items or both. The County may select the low bidder based on the option preferred by the County.

CONSTRUCTION STAKING

All construction staking and survey work shall be completed prior to Clearing and Grubbing activities and shall be performed by a Registered Land Surveyor, unless otherwise approved.

MATERIALS

a. **Delivery Tickets**: It will be necessary to submit a copy of all delivery tickets for materials used on the project, regardless of the basis of payment.

b. **Job Mix Formula for Portland Cement Concrete**: Attention is directed to the requirement that job mix design formulas for all Portland Cement Concrete, of the type specified, be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived or approved by the County Representative and/or his agents.

LABORATORY TESTING

Testing, including the cost of all re-testing due to defective materials or construction, for the Work shall be performed at Contractor's expense. The testing laboratory shall be approved by the County Representative.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition.

Testing shall be in accordance with the applicable portions of the *Standard Specifications*.

MEASUREMENT AND PAYMENT

a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.

b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.

c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the County Representative.

d. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and embraced under this contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the County Representative.

e. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.

f. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The County will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor

should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

g. Bid Form - the blank spaces in the bid form shall be filled in correctly where indicated for each and every item for which a description is given, as the bidder must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid form does not use the written words for the unit price, then the numerically correct "total price", shall be considered as being the total price.

h. As a prerequisite for payment, Contractor is to submit a Pay Application showing the amount of progress payment which the Contractor is requesting.

i. PAY ITEM 101-1 – MOBILIZATION - Measurement and payment for this Pay Item shall be in accordance with the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Current Edition, except as amended elsewhere by the contract documents and drawings. Specific attention is directed to the following items that shall be included in the cost of Mobilization:

    a. Record drawings (see Contract Drawings and Special Provisions).
    b. Clean-up (see Contract Drawings).
    c. Debris survey (see Contract Drawings).
    d. Photography and video (see Special Provisions)
    e. Safe access, including furnishing, operating and maintaining boats for the Engineer and County Representative (see Special Provisions).
    f. Any survey and utility location work (see Special Provisions).

    The **unit of measure** for the work specified under this Pay Item shall be one **lump sum** quantity for **Mobilization** and shall include all work and materials described and specified herein.

j. PAY ITEM 104-11 – TURBIDITY BARRIER (FLOATING) – All costs for placing and relocating turbidity barrier in accordance with the Contract Drawings and the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (dated June 2007) shall be included in the cost of Turbidity Barrier. Additionally, the costs of all erosion controls required by the plans, County Representative or regulatory agency direction shall be included in the cost of Turbidity Barrier.

    The **unit of measure** for work specified under this Pay Item shall be the number of **linear feet** of **Turbidity Barrier (Floating)** actually constructed, as authorized by the Engineer, and maintained to the satisfaction of the County Representative for the duration of the construction period.

k. PAY ITEM 530-78-A - SCOUR COUNTERMEASURE – OPTION A, ARTICULATING BLOCK MAT AND PAY ITEM 530-78-B – SCOUR COUNTERMEASURE – OPTION B, ARTICULATING CONCRETE BLOCK. Measurement of the scour countermeasure for payment shall be made on the basis of surface area. The pay lines will be neat lines taken off the contract drawings and will include embedded blocks / mats and/or blocks / mats placed in

termination trenches. Included are all costs for provision of product specific design calculations, debris removal and disposal, grading and other preparatory work, furnishing and installing the geotextile and Articulating Concrete Block (ACB) or Articulating Block Mat (ABM), constructing termination trenches and all other excavation, securing cables and fasteners, provision and installation of toe-depth indicators, providing cable splices, grouting of voids between mats and piles, installing soil anchors if used, backfilling, dewatering, cofferdam, sheeting and bracing, and other items incidental to construction of the ACB or ABM systems. Payment will be made at the respective unit price per square yard (SY). Payment will be full compensation for all material, labor, and equipment to complete the work. The finished surface of the installation should be measured to ensure that the as-built lines and grades meet the design plans within the specified tolerance.

The **unit of measure** for work specified under this Pay Item shall be the number of **square yards** of **Scour Countermeasure - Option A, Articulating Block Mat** or **Scour Countermeasure - Option B – Articulating Concrete Block** actually constructed and accepted.

l. MISCELLANEOUS ALLOWANCE (CONTINGENCY) Payment for all work performed under Miscellaneous Allowance (Contingency) shall be made only at the County's discretion in order to satisfactorily complete the project in accordance with the Plans and Specifications. Payment for work performed under Miscellaneous Allowance (Contingency) shall not exceed 10% (ten percent) of the total bid offer.

RESTORATION

If a specific restoration Pay Item is not listed in the Bid Form, the cost of such work shall be included in the applicable Pay Item.

SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The County assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the County. The County also assumes no responsibility for any understanding or representations made by its representatives or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the County Representative or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the County.

CONTRACTOR'S SUPERVISION

a. Prosecution of Work: The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the County Representative and with other Contractors at work in the vicinity.

b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the County Representative or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the County Representative and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours.

d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to the public and property owners and shall provide access as directed or as may be required by the County Representative. All final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the County Representative. Good housekeeping at the job site shall include: Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the County Representative. Dust will be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the County Representative, the County Representative shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of and in the opinion of the County Representative, the County shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

NOTICE AND SERVICE THEREOF

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the County in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the County, unless otherwise specified in writing to the Contractor, shall be delivered to the County's Project Manager, and any notice to or demand upon the County shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the County or to such other address as the County may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference may be held by the Project Manager to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project.

All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the County Representative at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the County Representative without additional compensation. The Contractor will continuously control the work until completed.

USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction

easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the County Representative prior to utilization of said private properties. The County assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the County's right-of-way. Pipe and other materials shall not be strung out along the right-of-way, but will be delivered in quantities adequate for one day's installation. The County Representative will coordinate with the Contractor to identify possible storage sites.

PRE-CONSTRUCTION AND CONSTRUCTION PROGRESS PHOTOGRAPHY AND VIDEO

The Contractor shall provide photographs of the entire work area prior to any construction for the purpose of records of conditions prior to construction. The Photographs should comprehensively document the condition of the site both above and below the water surface. Above water photographs should clearly depict the condition of the work area, staging areas, shorelines, vegetation, upstream and downstream channels, utilities, and the bridge structure, particularly the condition of beams and piles where they may be susceptible to damage from construction activities. Below surface photography should fully document the condition of the piles below the waterline to the channel bottom, the condition of the channel bottom adjacent to the piles and the presence of debris, materials or other features that require removal or may interfere or affect the work.

Provide one color print (8-1/2" x 11" size) of each picture to the County Representative. Each print shall have clearly marked on the back the name of the project, the orientation of view, the date and time of exposure, name and address of photographer.

The Contractor shall have available for use by the County Representative a surface deployable underwater video camera capable of providing a minimum color resolution of 480 vertical lines. The Contractor shall supply the camera and conduct work activities in a manner that facilitates progress observation of underwater work activities by the County Representative.

All project photographs shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the County Representative at each period of photography for instructions concerning views required.

The Contractor shall deliver prints in conformance with the above requirements to the County Representative. No construction shall begin until pre-construction photographs are completed and submitted to the County Representative. The Contractor shall retain negatives or digital copies for the duration of the project and furnish this data to County upon request.

The costs associated with the required photography shall be included in the cost of mobilization.

SAFE ACCESS

The Contractor shall provide safe access to work areas by the County Representative. This includes making available a boat and operator for the use of the County Representative as required to complete as-needed progress observations and inspections. The cost of providing safe access shall be included in the cost of mobilization.

DEWATERING, SHEETING AND BRACING

All costs of dewatering, sheeting, and bracing shall be included in the cost for Scour Countermeasure - Option A, Articulating Block Mat or Scour Countermeasure - Option B – Articulating Concrete Block. No separate payment for dewatering, sheeting and bracing shall be provided.

Approval of Dewatering Plan:

At least 10 days prior to the commencement of any dewatering activity, the Contractor shall submit to the County Representative for record purposes only, a detailed description of the proposed dewatering system. This plan shall include design computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

MAINTENANCE OF TRAFFIC/ PEDESTRIAN ACCESS

Lane closures and other traffic impacting activities are strongly discouraged. Should the Contractor deem that work from the bridge or roadway is necessary, the Contractor shall be responsible for preparing a Maintenance of Traffic plan and submitting it to the County for review at the time of bid. The Contractor's Maintenance of Traffic plan shall be in accordance with the latest edition of the FDOT Series 600 indices. It must be designed and sealed by a Florida Licensed Professional Engineer with a current Advanced Work Zone Traffic Control Certification. No separate payment shall be made for Maintenance of Traffic and the County reserves the right to reject the bid based on the requirement for Maintenance of Traffic.

UNDERGROUND UTILITY LOCATIONS

The Contractor shall contact "Sunshine State One-Call) and coordinate with the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the County.

The Contractor shall field verify by means of subsurface locating or other approved method all existing utilities to remain and conditions as may be required for the work area. This shall include all areas of potential conflicts with proposed storm, sanitary, force main and water main. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for Mobilization. A Florida registered land surveyor shall perform all survey work.

UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The County will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

UTILITY COORDINATION

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners along the project in order to avoid delays. The work includes remobilization if required after utility relocation is complete. The intent is to coordinate utility construction activities so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements.

RECORD DRAWINGS AND PROJECT CERTIFICATION

The County will furnish the Contractor copies of the bid plans to be used for the record drawings. A Florida Registered Surveyor shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

Upon completion of the work, four (4) sets of draft "Record Drawings" shall be submitted to the County Representative for review. Such drawings shall accurately show all approved field changes to the original Construction Drawings, including actual locations, dimensions and elevations and shall be subject to a field review in the presence of the County or its representative. The drawings are to be prepared by competent personnel, neatly drafted and certified, signed and sealed by a Florida Registered Surveyor.

The "Record Drawings" shall, as a minimum, include the following:

A. Bridge Outline
B. Present water elevation and shoreline location.
C. Pile and pile bent locations.
D. Limits of scour countermeasure including overall dimensions of placement and dimensions from pile bents.
E. Channel cross sections along each side of the bridge. The cross sections shall include points at and midway between each pile bent location.

Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements.

The Contractor shall incorporate any comments from the County and shall submit two write-only CD-ROMs (showing changes in AutoCAD format) and four sets of 24 by 36-inch certified prints with the Surveyor's certification.

In addition, $25,000 or five percent (whichever is smaller) of the Contract price shall be retained until the County has approved the "Record Drawings". The County will review and approve the "Record Drawings within 30 days unless additional information is required. No final payment shall be made until such time as the "Record Drawings" have been approved and accepted. Unless there is a separate pay item for Record Drawings, payment shall be included as part of the lump sum quantity for Mobilization.

PERMITS

The County has secured the following permits for this project:

- Florida Department of Environmental Protection Noticed General Permit # 41-0299360.001.
- United States Army Corp of Engineers Nationwide Permit No 3. (File No. SAJ-2010-01344 (NW-MEP)).

Contractor shall review, comply and adhere to all stipulated permit conditions.

TECHNICAL SPECIAL PROVISIONS

SCOUR COUNTERMEASURE – OPTION A, ARTICULATING BLOCK MAT

The work specified under this Technical Special Provision consists of the construction of a Scour Countermeasure consisting of Articulating Block Mats. Unless specified otherwise herein, construction shall conform to applicable sections of the Florida Department of Transportation (FDOT) *Standard Specifications*, current edition, the details and notes shown on the Plans, and, where specified herein or on the Plans, applicable drawings of the FDOT *Roadway and Traffic Design Standards*, current edition.

An Articulating Block Mat (ABM, mat) is a type of grout-filled mattress that is reinforced by cables laced through the mattress before the concrete is pumped into the fabric form. Otherwise, ABM's, like grout-filled mattresses, are composed of a double layer of strong synthetic fabric, typically woven nylon or polyester, sewn into a series of pillow-shaped compartments that are connected internally by ducts. The compartments are filled with a concrete grout that flows from compartment to compartment via the ducts. ABM's are typically sewn together or otherwise connected (less commonly) by special zips, straps, or ties prior to filling. When set, the grout forms a mattress made up of a grid of interconnected blocks.

Flexibility and permeability are important functions for pier scour countermeasures. Therefore, ABM systems that incorporate filter points or weep holes (allowing for pressure relief through the mat) combined with relatively small-diameter ducts (to allow breakage and articulation between blocks) are required.

PART 1: DESIGN

1.1 Hydraulic Stability Design Procedure

Design calculations, signed and sealed by a Florida Licensed Professional Engineer and prepared for the specific Articulating Block Mat (ABM) product proposed for installation by Contractor, shall be provided to County for review and approval prior to the start of work. The calculations shall conform to the guidelines of Hydraulic Engineering Circular No. 23 (HEC-23), notably Design Guideline 9, and by reference Appendix G - Guidelines for Pier Scour Countermeasures Using Grout-Filled Mattresses included in the National Cooperative Highway Research Program (NCHRP) Report 593.

For basis of design, the County will furnish available Phase 1 thru Phase 4 Scour Evaluation Reports prepared by the Florida Department of Transportation.

1.1.1 Factor of Safety

The ABM system shall meet or exceed the factor of safety of 6.6 calculated by the Phase 4 Scour Evaluation Report prepared by the Florida Department of Transportation.

1.2 Layout Dimensions

Layout dimensions shall comply with the limits and dimensions shown by the plans. Identify any deviations or variations proposed; for example the use or rectilinear corners versus rounded corners or minor variations due to proprietary mat dimensions.

The ABM shall meet or exceed the minimum thickness values identified by the plans.

ABM's should be placed so that the long axis is parallel to the direction of flow. The mattresses must be sloped away or toed-in as shown by the plans.

Contractor shall furnish and install Toe Depth Indicators as detailed by the plans so that the toe-in depth and location can be verified by inspector.

The mattresses should not be laid on a slope steeper than 1V:2H (50%).

1.3 Filter Requirements

A geo-textile filter layer shall be provided. The fabric material shall be FDOT Standard Index 199 Type D-2. The filter fabric shall be provided in accordance with Section 514 of the *FDOT Standard Specifications for Road and Bridge Construction*, current edition.

1.4 Guidelines for Seal Around the Pier

A grout seal between the ABM and the pier shall be provided to prevent sediments from winnowing out from beneath the mattress system. Structural attachment of the mattress to the pier shall is not desired or allowed.

1.5 Anchors

Anchors may be used with ABM's; however, the layout requirements presented in Section 1.2 indicates that the system should be toed-down to the termination depth shown by the plans. If anchors are proposed, provide anchor design calculations conforming to the example included in NHCRP Report 593. The calculations shall be signed and sealed by a Florida Licensed Professional Engineer. The spacing of the anchors should be determined based on a factor of safety of at least 5.0 for pullout resistance based on calculated drag on the exposed leading edge. Spacing between anchors of no more than 4 ft (1.3 m) is recommended.

PART 2: CONSTRUCTION

This section addresses the preparation of the subgrade, geotextile placement, Articulating Block Mat (ABM) placement and installation, backfilling and finishing, and measurement and payment.

2.1 General Guidelines

The contractor is responsible for constructing the project according to the plans and specifications. Prior to construction, the contractor should provide a quality control plan to the County and provide labor and equipment to perform any tests as required by the project specifications.

Construction requirements for ABM placement are included in the project plans and specifications.

Inspection of ABM placement consists of visual inspection of the placement operation and the finished surface. Inspection and quality assurance must be carefully organized to ensure that materials delivered to the job site meet the specifications. Acceptance of the work should not be made until measurement for payment has been completed. The engineer and inspectors reserve the right to reject incorrect or unsuitable materials (e.g., wrong geotextile, torn or ripped fabric, grout that does not exhibit the proper flowability, etc.) at the job site. Material that has been improperly placed should also be rejected throughout the duration of the contract and require removal and replacement at the contractor's expense. Rejected material should be removed from the project site.

Construction techniques can vary tremendously from one installation to another. Competency in construction techniques and management of the work are required as is prior experience and training on similar projects under the guidance of experienced senior personnel. The following sections provide some general information regarding construction of ABM installations and some basic information and description of techniques and processes involved.

2.2 Materials

2.2.1 ABM Fabric Forms

The geotextile composing the fabric form must exhibit sufficient strength to resist the pressure of the grout during filling. Cords shall connect the two layers of fabric at the center of each compartment. The cords shall be interwoven with the fabric in two sets of four cords each: one set for the upper layer and one set for the lower layer. Each cord shall have a minimum breaking strength of 160 lb.

The grout filled ducts shall be no more than 10% of the maximum thickness of the block compartment so that flexibility and articulation can be achieved in the finished installation. Cables shall enter and exit each compartment through opposing grout ducts; alternatively, cable ducts may be provided for insertion of cables through each compartment. When cable ducts are used, the maximum allowable diameter shall be 1.0 in. The geotextile composing the fabric form shall meet or exceed the values shown for the properties shown in Table G1.1.

Table G1.1. Geotextile minimum property requirements.

Property	Test Method	Units	Value
Composition			Nylon or polyester
Mass per unit area (double layer)	ASTM D 5261	oz/yd^2	12
Thickness	ASTM D 5199	mils	25
Mill width		in	76
Wide-width tensile strength (Machine direction) (Cross direction)	 ASTM D 4595 ASTM D 4595	 lbf/in lbf/in	 140 110
Elongation at break (Machine direction) (Cross direction)	 ASTM D 4595 ASTM D 4595	 % %	 20 30
Trapezoid tear strength (Machine direction) (Cross direction)	 ASTM D 4533 ASTM D 4533	 lbf lbf	 150 100
Apparent opening size	ASTM D 4751	US Std Sieve	40
Flow Rate	ASTM D 4491	$gal/min/ft^2$	90

Notes:

1. Conformance of fabric to specification property requirements per ASTM D 4759.
2. Numerical values represent minimum average roll values (MARV). Lots shall be sampled per ASTM D 4354.

Fabric forms shall be sound and free of defects that would interfere with proper placement or that would impair the integrity of the system. Factory seams should be inspected to ensure integrity. Factory seams shall meet or exceed a strength of 90 lbf/in when tested in accordance with ASTM D 4884. Fabric may not be exposed to sunlight for more than 5 days prior to installation and grout filling.

Field sewing shall be permitted only to join the factory assembled fabric panels together. It is recommended that field seams be constructed of colored thread to allow broken thread or poor seams to be more visible. All field seams shall be made using two lines of U.S. Federal Standard Type 101 stitches with nylon and/or polyester thread.

2.2.2 Cables

Cables shall be installed between the two layers of fabric and through the compartments in a manner that provides for lateral and longitudinal connection. The cables shall enter and exit the compartments through opposing grout ducts. Cables shall be high-tenacity, low-elongation continuous filament polyester fibers, with a core contained within an outer jacket. The core shall be 65% to 75% of the total weight of the cable.

Cable splices shall be made with aluminum compression fittings such that a single fitting results in a splice strength of 80% of the breaking strength of the cable. Two fittings separated by a

minimum of 6 in. shall be used per splice. When the installation is completed, the cables and splices shall be completely encased by the concrete grout.

2.2.3 Concrete Grout

Grout used to fill the fabric forms shall be a fluid, pumpable, fine aggregate concrete. The fine aggregate shall conform to ASTM C 33. Portland cement should comply with the requirements of ASTM C 150-04 Type I or Type II and AASHTO M85.

The concrete grout shall consist of a mixture of Portland cement, fine aggregate, water, admixtures, and fly ash (optional) to provide a pumpable slurry. The grout shall have an air content of not less than 5% nor more than 8% of the volume of the grout. The mix shall obtain a minimum 28-day compressive strength of 2,000 lb/in2. The mix shall result in a dry unit weight of the cured concrete of no less than 130 lb/ft3. The grout shall be tested for flowability using the flow cone method of ASTM D 6449 and shall have an efflux time not less than 9 seconds nor more than 12 seconds using this method.

The engineer may require adjustment of the mix proportions to achieve proper solids suspension and optimum flowability. After the mix has been designated, it shall not be changed without approval of the engineer. A recommended basic mix design consists of the following:

- Cement shall be Portland Type I or Type II, at the rate of 10 sacks (940 lb) per cubic yard.
- Fly ash may be substituted for cement for up to 25% by weight (mass) of cement.
- Fine aggregate: 2,100 lb (surface dry weight)/yd3.
- Water: 45 gal (375 lb)/yd3, or enough to provide a thick, creamy consistency.
- Air-entraining admixtures may be required to achieve the required air content.
- Liquid curing compounds may be required to achieve the required strength and set time.

2.2.4 Articulating Block Mats

When installed, the articulating block mat shall exhibit the nominal properties of grout-filled mattresses as shown in Table G1.2.

Table G1.2. Nominal grout-filled mattress properties.

Property	4-in. mattress	6-in. mattress	8-in. mattress
Average thickness, in.	4	6	8
Mass per unit area, lb/ft^2	45	68	90
Mass per block, lb	88	188	325
Nominal block dimensions, in.	20x14	20x20	20x26
Cable diameter, in.	0.25	0.312	0.312
Cable breaking strength, lbf	3,700	4,500	4,500

2.2.5 Filter

Geotextile. The fabric material shall be FDOT Standard Index 199 Type D-2. The filter fabric shall be provided in accordance with Section 514 of the FDOT Standard Specifications for Road and Bridge Construction, current edition. Each roll of geotextile shall be labeled with the manufacturer's name, product identification, roll dimensions, lot number, and date of manufacture. Geotextiles shall not be exposed to sunlight prior to placement.

Granular Filters. Granular filter material may be used for filling bottom irregularities. Samples of granular filter material shall be tested for grain size distribution to ensure compliance with the gradation specification used in design. Sampling and testing frequency shall be in accordance with the requirements of the County or the County's authorized representative.

2.2.6 Subgrade Soils

When the ABM system is placed under water, compaction of the subgrade is impractical. However, the surface must be relatively smooth, with no abrupt irregularities that would prevent intimate contact between the system and the subgrade. Under no circumstances may the ABM be draped over large stones or debris, bridged over subgrade voids, or placed over other irregularities that would prevent achievement of intimate contact between the system and the subgrade. Placing a granular filter layer or a sand transition layer (with associated geotextile filter) may assist in achieving a suitable surface on which to place the ABM system.

2.3 Installation

2.3.1 Subgrade Preparation

Stable subgrade soil shall be prepared to the lines, grades, and cross sections shown on the contract drawings. Termination trenches and transitions between slopes, embankment crests, benches, berms, and toes shall be comprised of self-compacting coarse sand or other suitable fine aggregate materials, shaped, and uniformly graded to facilitate the development of intimate contact between the ABM system and the underlying grade. Termination between the ABM

system and a concrete slab, footer, pier, wall, or similar structure shall be sealed in a manner that prevents soil migration.

The subgrade soil conditions shall meet or exceed the required material properties described in Section 2.2.6 prior to placement of the ABM. Soils not meeting the requirements shall be removed and replaced with acceptable material.

When placement is in the dry, the areas to receive the ABM shall be graded to establish a smooth surface and ensure that intimate contact is achieved between the subgrade surface and the filter, and between the filter and the mattress. The subgrade should be uniformly compacted. If the subgrade surface for any reason becomes rough, corrugated, uneven, textured, or traffic marked prior to ABM installation, such unsatisfactory portion shall be scarified, reworked, or replaced as directed by the engineer.

When ABM placement is under water, divers shall be used to ensure that the bed is free of logs, large rocks, construction materials, or other blocky materials that would create irregularities in the mattress surface, or that would create voids beneath the system as described in Section 2.2.6. Immediately prior to placement of the filter and the ABM system, the prepared subgrade must be inspected.

2.3.2 Placing the Filter

A geotextile filter layer shall be provided. Whether the filter comprises one or more layers of granular material or is made of geotextile, its placement should result in a continuous installation that maintains intimate contact with the soil beneath. Voids, gaps, tears, or other holes in the filter must be avoided to the extent practicable, and the filter must be replaced or repaired when they occur.

The geotextile shall be placed directly on the prepared area, in intimate contact with the subgrade. When a geotextile is placed, it should be rolled or spread out directly on the prepared area and be free of folds or wrinkles. The rolls shall not be dragged, lifted by one end, or dropped. The geotextile should be placed in such a manner that placement of the overlying materials will not excessively stretch or tear the geotextile.

After geotextile filter placement, the work area shall not be trafficked or disturbed in a manner that might result in a loss of intimate contact between the ABM, the geotextile, and the subgrade. The geotextile shall not be left exposed more than 48 hours so that potential damage due to ultraviolet radiation is minimized; therefore, the ABM should be placed as soon as practicable.

The geotextile shall be placed so that upstream strips overlap downstream strips. Overlaps shall be in the direction of flow wherever possible. The longitudinal and transverse joints shall be overlapped at least 3 ft for below-water installations. If a sewn seam is to be used for the seaming of the geotextile, the thread to be used shall consist of high-strength polypropylene or polyester and shall be resistant to ultraviolet radiation. If necessary to expedite construction and

to maintain the recommended overlaps, anchoring pins, U-staples, or temporary weights such as sandbags may be used.

Placing geotextiles under water can be problematic for a number of reasons. Most geotextiles that are used as filters beneath grout-filled mattresses are made of polyethylene or polypropylene. These materials have specific gravities ranging from 0.90 to 0.96, meaning that they will float unless weighted down or otherwise anchored to the subgrade prior to placement of the grout-filled mattress.

Flow velocities greater than about 1.0 ft/s (0.3 m/s) create large forces on the geotextile. These forces cause the geotextile to act like a sail, often resulting in wavelike undulations of the fabric (a condition that contractors refer to as "galloping") that are extremely difficult to control. Where currents are strong, the preferred method of controlling geotextile placement is to isolate the work area from currents by use of a temporary cofferdam. In mild currents, geotextiles precut to length can be placed by divers, with sandbags to hold the fabric temporarily.

If granular filters are required, placing granular media under water around a bridge pier is best accomplished using a large-diameter tremie pipe to control the placement location and thickness, while minimizing the potential for segregation. When a granular filter is placed under water, the thickness should be increased by 50%.

2.3.3 Placing the ABM System

Manufacturer's assembly instructions should be followed. Fabric forms shall be placed on the filter layer and arranged according to the contract drawings prior to field seaming. An excess of fabric should be included to allow for as much as a 10% contraction in size after filling of the fabric forms. The manufacturer should be consulted to determine the amount of contraction anticipated for site-specific conditions. Fabric forms should be positioned so that the preferred direction of filling, from upstream to downstream, is performed. Filling must always be performed from the lowest elevation first to the uppermost elevation last. Filling of toed-in portions shall be completed prior to placement of any significant backfill that may prevent complete filling of the mattress. Prior to filling, the double layers of adjacent mattresses should be connected by sewing with a hand-held sewing machine or zipping, depending on the manufacturer's instructions, as described in Section 2.2.1. Custom fitting of mattresses around corners or curves should be done in accordance with the manufacturer's recommendations.

Care shall be taken during installation so as to avoid damage to the geotextile or subgrade during the installation process. Preferably, the ABM placement and filling shall begin at the upstream section and proceed downstream. If a mattress system is to be installed starting downstream and proceeding in the upstream direction, a contractor option is to construct a temporary toe trench at the front edge of the mattress system to protect against flow that could otherwise undermine the system during flow events that may occur during construction. Only the amount of fabric forms that can be filled in a day should be laid into position. After being filled with grout, the mattresses shall not be pulled or pushed in any direction.

ABM's placed under water require close observation and increased quality control to ensure a continuous countermeasure system. A systematic process for placing and continuous monitoring to verify that the grout is flowing to achieve the desired thickness is important.

Excavation, grading, and placement of ABM and filter under water require additional measures. For installations on larger rivers or in deeper water, it may be feasible to temporarily enclose the work area with cofferdam, which allows for construction dewatering if necessary. Alternatively, a silt curtain made of plastic sheeting may be suspended by buoys around the work area to minimize environmental degradation during construction. Once under water and in the correct positions, the individual fabric forms can be sewn together or otherwise connected by divers prior to filling with grout.

Depending on the depth and velocity of the water, sounding surveys using a sounding pole or sounding basket on a lead line, divers, sonar bottom profiles, and remote operated vehicles (ROVs) or surface deployable cameras can provide some information about the mattress placement and toe-down during construction. Install and maintain Toe Depth Indicators as detailed by the plans for verification of toe-in during final dive inspection.

2.3.4 Filling of ABM Mattresses

Concrete grout should be checked each day of construction using the flow cone method of ASTM D 6449 prior to pumping. Grout is pumped into the fabric form by inserting a small diameter pipe into a slit or valve in the upper layer of fabric. A seal is typically created by wrapping the pipe with extra geotextile fabric.

Concrete spilled on the outside of the fabric form should be cleaned up immediately using a hand trowel and the area smoothed by cloth or trowel. Freshly pumped concrete units should never be washed or sprayed under pressure in an effort to clean or remove spills. Washing may remove Portland cement from inside the fabric form, resulting in a poor surface condition of the finished product.

Fabric forms might be considered to serve as filters as well as forms. Water in the grout mix will bleed through the fabric, producing a reduction in the water/cement ratio, which increases strength and durability. The cement film provides a bond between the concrete fill and the fabric, as well as a degree of protection against ultra- violet degradation. However, in view of the long-term performance at bridge piers that ABM's must provide, performance should not depend on the fabric form material, but instead upon the weight and durability of the (cured) concrete grout, its cabled connections, and its ability to articulate, combined with the effectiveness of the underlying filter.

Care should be taken to avoid over-pressurizing the mattress fabric forms that may cause seams to burst. Overfilling of the fabric form may create an obstruction to the stream flow and should be avoided. Any seam damaged during assembly, placement, or filling with grout should be promptly repaired or replaced according to manufacturer's instructions. Excessive damage may require replacement of entire fabric form panels.

Disturbance of the newly filled ABM should be kept to a minimum for at least 1 hour, or until the concrete grout can resist indentation.

2.4 Finishing

2.4.1 System Termination

Termination of the ABM system shall be in excavated trenches that are properly backfilled with approved material flush with the top of the finished surface of the pillow-shaped blocks. In the case of mattresses abutting a pile, the gap between the mattress and the pile shall be filled with cast-in-place concrete or structural grout and finished flush with the top surface of the ABM system.

Depending on the depth and velocity of the water, sounding surveys using a sounding pole or sounding basket on a lead line, divers, sonar bottom profiles, and remote operated vehicles (ROVs) or surface deployable cameras can provide some information about ABM placement under water during construction. Install and maintain Toe Depth Indicators as detailed by the plans for verification of toe-in during final dive inspection.

2.4.2 Anchors

If soil anchors are used, they shall be comprised of non-corrosive materials and may be either helical or duckbill type. Anchors must be capable of being attached directly to the mattresses, or to the ABM system cables. Anchors should have the capability of being load tested to ensure that the specified pullout capacity is achieved. Anchor penetrations through the geotextile shall be sealed with approved structural grout, mastic, or other sealant as approved by the engineer to prevent migration of subsoil through the penetration point.

2.4.3 Backfilling the ABM System

Backfilling with soil or granular fill within the cells of the system shall not be completed for a time designated by the engineer, generally at least 8 hours or more until the concrete grout has set and is durable enough for surface loading.

2.4.4 Inspection

The subgrade preparation, filter placement, ABM system installation, and overall finished condition including termination trenches shall be inspected before work acceptance. Inspection guidelines are presented in detail in Part 3 of this appendix.

PART 3: INSPECTION

3.1 Inspection During Construction

Underwater inspection of an Articulating Block Mat (ABM) system shall be performed only by divers specifically trained and certified for such work.

3.1.1 Subgrade

Inspection of the subgrade shall be performed immediately prior to geotextile placement. The subgrade should be clean and free of projections, debris, construction materials, or other foreign objects that would prevent the filter and fabric form system from being properly placed. Likewise, there should be no potholes, rills, or other voids that the geotextile might bridge over.

The subgrade material itself should not be muddy and should not contain organic material or other deleterious substances. Variations in subgrade characteristics over the project area shall be noted and photographed; observations of such should be brought to the attention of the County Representative as they may represent conditions that are different from those used for design.

3.1.2 Geotextile

Each roll of geotextile delivered to the job site must have a label with the manufacturer's name and product designation. The inspector must check the labels to ensure that the geotextile is the same as that specified in the design. Spun-bond fabrics and slit-film geotextiles should never be used in ABM applications.

The geotextile must be stored so that it is out of direct sunlight, as damage can occur from exposure to ultraviolet radiation. When placed, it must be free of wrinkles, folds, or tears. Sand bags, anchor pins, or U-shaped soil staples may be used to hold the geotextile in position while the mattress is being placed and filled with grout. The ABM should be placed within 48 hours after the geotextile is placed unless unusual circumstances warrant otherwise.

3.1.3 Articulating Block Mats

The inspector shall check to ensure that the mats are sound and have been connected at edges with seams or zippers to form a continuous unit. ABM's used for pier scour countermeasures should never be allowed to overlap one another. The fabric forms must be stored out of direct sunlight, as damage can occur from exposure to ultraviolet radiation.

During inspection prior to pumping, the fabric form should be loose and an excess of fabric should be visible to account for form contraction, up to 10% in each direction. Seams joints, or zippers, should be carefully inspected. Termination trenches must be checked to ensure that the specified toe-down depth is achieved prior to pumping. After pumping is complete, the trenches must be backfilled to ambient bed level with approved material.

PART 4: PAYMENT

The work specified under this Section shall be paid for under the pay items for **Scour Countermeasure - Option A, Articulating Block Mat.**

PART 5: PAY QUANTITY

Measurement of the grout-filled mattress system for payment shall be made on the basis of surface area. The pay lines will be neat lines taken off the contract drawings and will include embedded mattresses and/or mattresses placed in termination trenches. The pay quantity for work specified under this Section shall be the number of **square yards** of **Scour Countermeasure - Option A, Articulating Block Mat** of the thicknesses specified actually constructed and accepted.

PART 6: BASIS OF PAYMENT

The work specified under this Technical Special Provision shall be paid for at the contract price per **square yard**. The work includes provision of product specific design calculations, debris removal and disposal, grading and other preparatory work, furnishing and installing the geotextile and Articulating Block Mat (ABM), constructing termination trenches and all other excavation, securing cables and fasteners, provision and installation of toe-depth indicators, providing cable splices, grouting of voids between mats and piles, installing soil anchors if used, backfilling, dewatering, cofferdam, sheeting and bracing, and other items incidental to construction of the ABM system. Payment will be made at the respective unit price per square yard (SY). Payment will be full compensation for all material, labor, and equipment to complete the work. The finished surface of the installation should be measured to ensure that the as-built lines and grades meet the design plans within the specified tolerance.

SCOUR COUNTERMEASURE – OPTION B, ARTICULATING CONCRETE BLOCK

The work specified under this Technical Special Provision consists of the construction of a Scour Countermeasure consisting Articulating Concrete Block. Unless specified otherwise herein, construction shall conform to applicable sections of the Florida Department of Transportation (FDOT) *Standard Specifications*, current edition, the details and notes shown on the Plans, and, where specified herein or on the Plans, applicable drawings of the FDOT *Roadway and Traffic Design Standards*, current edition.

Articulating Concrete Block (ACB) systems provide a flexible armor for use as a pier scour countermeasure. These systems consist of preformed concrete units that are held together by cables. After installation is complete, the units form a continuous blanket or mat. This design guideline considers the application of ACB systems as a pier scour countermeasure.

The term "articulating," as used in this Technical Special Provision, implies the ability of individual blocks of the system to conform to changes in the subgrade while remaining interconnected by virtue of cables. Block systems are typically available in both open-cell and closed-cell varieties.

PART 1: DESIGN

1.1 Hydraulic Stability Design Procedure

Design calculations, signed and sealed by a Florida Licensed Professional Engineer and prepared for the specific Articulating Concrete Block (ACB) product proposed for installation by Contractor, shall be provided to County for review and approval prior to the start of work. The calculations shall conform to the guidelines of Hydraulic Engineering Circular No. 23 (HEC-23), notably Design Guideline 8, and by reference Appendix E - Guidelines for Pier Scour Countermeasures Using Articulating Concrete Block (ACB) Systems included in the National Cooperative Highway Research Program (NCHRP) Report 593 . For basis of design, the County will furnish available Phase 1 thru Phase 4 Scour Evaluation Reports prepared by the Florida Department of Transportation. The design calculations shall be furnished with the applicable material shop drawings.

1.1.1 Factor of Safety

The ACB system shall meet or exceed the factor of safety values of 1.6 (added projection) or 7.3 (no projection) calculated by the Phase 4 Scour Evaluation Report prepared by the Florida Department of Transportation.

1.2 Layout Dimensions

Layout dimensions shall comply with the limits and dimensions shown by the plans. Identify any deviations or variations proposed; for example the use or rectilinear corners versus rounded corners or minor variations due to proprietary mat dimensions.

The ACB system shall meet or exceed the minimum thickness values identified by the plans.

Contractor shall furnish and install Toe Depth Indicators as detailed by the plans so that the toe-in depth and location can be verified by inspector.

The blocks should not be laid on a slope steeper than 1V:2H (50%).

1.3 Filter Requirements

A geo-textile filter layer shall be provided. The fabric material shall be FDOT Standard Index 199 Type D-2. The filter fabric shall be provided in accordance with Section 514 of the *FDOT Standard Specifications for Road and Bridge Construction*, current edition.

1.4 Guidelines for Seal Around the Pier

A grout seal between the ACB system and the pier shall be provided to prevent sediments from winnowing out from beneath the mattress system. Structural attachment of the ACB system to the pier shall not be performed.

1.5 Anchors

Anchors may be used with ACB system; however, the layout requirements presented in Section 1.2 indicates that the system should be toed-down to the termination depth shown by the plans. If anchors are proposed, provide anchor design calculations conforming to the example included in NHCRP Report 593. The calculations shall be signed and sealed by a Florida Licensed Professional Engineer. The spacing of the anchors should be determined based on a factor of safety of at least 5.0 for pullout resistance based on calculated drag on the exposed leading edge. Spacing between anchors of no more than 4 ft is recommended.

PART 2: CONSTRUCTION

2.1 General Guidelines

The contractor is responsible for constructing the project according to the plans and specifications. Prior to construction, the contractor should provide a quality control plan to the County Representative (for example, see ER 1180-1-6 [U.S. Army Corps of Engineers 1995]) and provide labor and equipment to perform tests as required by the project specifications.

Construction requirements for ACB placement are included in the project plans and specifications Standard

Inspection of ACB placement consists of visual inspection of the placement operation and the finished surface. Inspection and quality assurance must be carefully organized to ensure that materials delivered to the job site meet the specifications. Acceptance of the work should not be made until measurement for payment has been completed. The engineer and inspectors reserve the right to reject incorrect or unsuitable materials (e.g., broken blocks, wrong geotextile, etc.) at the job site. Material that has been improperly placed should also be rejected throughout the duration of the contract, and require removal and replacement at the contractor's expense. Rejected material should be removed from the project site

Construction techniques can vary tremendously from one installation to another. Competency in construction techniques and management of the work are required as is prior experience and training on similar projects under the guidance of experienced senior personnel. The following sections provide some general information regarding construction of ACB installations and some basic information and description of techniques and processes involved.

2.2 Materials

2.2.1 Blocks

Materials composing the ACB system shall be in accordance with the properties listed in table E.1.1. of this Technical Special Provision. Blocks shall be sound and free of defects that would interfere with proper placement or that would impair the integrity of the system. Blocks with the following defects shall be discarded:

- Broken blocks
- Blocks having chips larger than 2 in. (50 mm) in any dimension
- Blocks having cracks wider than 0.02 in. (0.5 mm) and longer than one-third the nominal height of the block.

Table E1.1. Concrete properties required by ASTM D 6684.

Property	Average of 3 Units	Individual Unit
Minimum allowable compressive strength, lb/in^2	4,000	3,500
Maximum allowable water absorption, lb/ft^3, (%)	9.1 (7.0%)	11.7 (9.4%)
Minimum allowable density in air, lb/ft^3	130	125
Freeze-thaw durability	As specified by owner in accordance with ASTM C 67, C 666, or C 1262	

Minor cracks incidental to the usual method of manufacture or chipping that results from customary handling during shipping, delivery, and placement will not be deemed grounds for rejection.

The blocks shall be a cable tied, using cable suitable for use in an aggressive saltwater environment and meeting the additional requirements listed in Section 2.2.3.

2.2.2 Geotextile

Each roll of geotextile shall be labeled with the manufacturer's name, product identification, roll dimensions, lot number, and date of manufacture. The rolls shall not be dragged, lifted by one end, or dropped. Geotextiles shall not be exposed to sunlight prior to placement.

2.2.3 Cable

Cable may be composed of polyester or stainless steel suitable for a saltwater environment. Cable used for preassembled mats shall be sufficiently sized and fastened for the size and weight of the assembled mats such that the mats can be placed in compliance with Occupational Safety and Health Administration (OSHA) requirements. The manufacturer shall be responsible for determining the minimum allowable cable strength compatible with mat size and weight to assure safe handling. The cable strength shall be based on a minimum factor of safety of 5 for mat lifting and shall include appropriate reduction factors for mechanically crimped cables, clamps, or other fasteners. Any systems that rely on the geotextile as a carrier fabric instead of cables must also meet the applicable portions of this section, with particular attention given to the grab points.

2.2.4 Subgrade Soils

When a block system is placed under water, compaction of the subgrade is impractical. However, the surface must be relatively smooth, with no abrupt irregularities that would prevent intimate contact between the ACB system and the subgrade. Under no circumstances may an ACB system be draped over boulders, bridged over subgrade voids, or placed over other irregularities that would prevent achievement of intimate contact between the system and the subgrade. Placing a layer of bedding stone may assist in achieving a suitable surface on which to place the block system.

2.3 Installation

2.3.1 Subgrade Preparation

Stable and compact subgrade soil shall be prepared to the lines, grades, and cross sections shown on the contract drawings. Termination trenches and transitions between slopes, embankment crests, benches, berms, and toes shall be compact, shaped, and uniformly graded to facilitate the development of intimate contact between the ACB system and the underlying grade. Termination between the ACB revetment system and a concrete slab, footer, pier, wall, or similar structure shall be sealed in a manner that prevents soil migration.

The subgrade soil conditions shall meet or exceed the required material properties described in Section 2.2.4 prior to placement of the block. Soils not meeting the requirements shall be removed and replaced with acceptable material.

When placing underwater, divers shall be used to ensure that the bed is free of logs, large rocks, construction materials, or other blocky materials that would create irregularities in the block surface, or that would create voids beneath the system, in accordance with section 2.2.4. Immediately prior to placing the geotextile and ACB system, the prepared subgrade shall be inspected.

2.3.2 Placement of the Geotextile

The geotextile shall be placed directly on the prepared area, in intimate contact with the sub-grade and free of folds or wrinkles. The geotextile shall be placed in such a manner that placement of the overlying materials will not excessively stretch or tear the geotextile. After geotextile placement, the work area shall not be trafficked or disturbed so as to result in a loss of intimate contact between the concrete block, the geotextile, and the subgrade. The geotextile shall not be left exposed longer than the manufacturer's recommendation to minimize potential damage due to ultraviolet radiation.

The geotextile shall be placed so that upstream strips overlap downstream strips and so that upslope strips overlap downslope strips. Overlaps shall be in the direction of flow wherever possible. The longitudinal and transverse joints shall be overlapped at least 3 ft for below- water installations. If a sewn seam is to be used for the seaming of the geotextile, the thread to be used shall consist of high-strength polypropylene or polyester and shall be resistant to ultraviolet radiation. For bank protection, the geotextile shall extend beyond the top, toe and side termination points of the revetment. If necessary to expedite construction and to maintain the recommended overlaps, anchoring pins, U-staples, or weights shall be used.

If the system is to be placed under water, the geotextile should be securely attached to the bottom of the preassembled ACB mat prior to lifting with crane and spreader bar. In shallow water where velocities are low, the geotextile may be placed under water and held in place temporarily with weights until the blocks are placed.

2.3.3 Placement of the ACB System

Placement of the ACB system shall be performed to ensure that each block lies in intimate contact with the geotextile and subgrade. The joint spacing between adjacent blocks is to be maintained so that binding of blocks does not occur and so that block-to-block interconnection is achieved. In areas of curvature or grade change, alignment of an individual block with adjacent blocks shall be oriented such that intimate contact between the block, geotextile, and subgrade is maintained and block-to-block interconnection is achieved.

Care shall be taken during block installation to avoid damage to the geotextile or subgrade during the installation process. Mats or individual blocks shall not be pushed or pulled laterally once they are on the geotextile. Preferably, where the geotextile is laid on the ground prior to the ACB installation, the ACB placement shall begin at the upstream section and proceed downstream. If an ACB system is to be installed starting downstream and proceeding in the upstream direction, a contractor option is to construct a temporary toe trench at the front edge of the ACB system to protect against flow that could otherwise undermine the system during flow events that may occur during construction. On sloped sections where practical, placement shall begin at the toe of the slope and proceed upslope. Block placement shall not bring block-to-block interconnections into tension. Individual blocks within the plane of the finished system shall not exceed a protrusion greater than the tolerance referenced in the con- tract documents.

If assembled and placed as mats, the ACB mats can be attached to a spreader bar to aid in the lifting and placing of the mats in their proper position with a crane or backhoe. The mats shall be placed side by side and/or end to end, so that the mats abut each other. Mat seams or openings between mats that are 2 in. or greater in the matrix shall be filled with grout. Whether the blocks are placed individually or as mats, distinct grade changes shall be accommodated with a well-rounded transition (i.e., minimum radius per specific system characteristics). However, if a discontinuous revetment surface exists in the direction of flow, a grout seam at the grade change location shall be provided to produce a continuous, flush finished surface. Mats may be cut using a concrete saw where mitered joints are required. Partial blocks less than one half of a full-size block shall be removed, and the resulting gaps along the joint shall be filled with grout. Mats must never be overlapped on top of one another.

ACB systems placed under water require close observation and increased quality control to ensure a continuous countermeasure system. A systematic process for placing and continuous monitoring to verify the quantity and layer thickness is important.

Excavation, grading, and placement of ACBs and filter under water require additional measures. For installations on larger rivers or in deeper water, a cofferdam may allow temporarily enclosure of the area, which allows for construction dewatering if necessary. Alternatively, a silt curtain made of plastic sheeting may be suspended by buoys around the work area to minimize environmental degradation during construction. ACBs can be assembled in the dry, and a crane and spreader bar can be used to lift and place the system under water. Once under water and in the correct positions, the individual mats can be cabled together by divers.

Depending on the depth and velocity of the water, sounding surveys using a sounding pole or sounding basket on a lead line, divers, sonar bottom profiles, and remote operated vehicles (ROVs) or surface deployable cameras can provide some information about ACB placement under water during construction. Install and maintain Toe Depth Indicators as detailed by the plans for verification of toe-in during final dive inspection.

2.4 Finishing

2.4.1 System Termination

Termination of the ACB system shall be either (1) in excavated trenches that are properly backfilled with approved material flush with the top of the finished surface of the blocks or (2) abutted to a structural feature such as a pier, footing, or pile cap. In the case of blocks abutting a structural feature, the gap between the blocks and the structure shall be filled with cast-in-place concrete or grout, and finished flush with the top surface of the ACB system.

2.4.2 Concrete Joints

The use of cast-in-place concrete joints shall be minimized to the extent practicable. The following joints shall require concrete:

- Joints between cabled mats where the joint is more than 2 in. (50 mm) wider than the nominal joint of the particular ACB system
- Joints where block interlock is discontinuous, for example where mats are saw cut to accommodate bends or structural features
- Locations where the ACB system abuts a structural feature
- Areas where there are partial blocks (to avoid small elements that have reduced hydraulic stability)

2.4.3 Anchors

If soil anchors are used, they may be either helical or duckbill type. Anchors must be capable of being attached directly to the blocks, or to the ACB system cable. Anchors shall have the capability of being load tested to ensure that the specified pullout capacity is achieved. Anchor penetrations through the geotextile shall be sealed with cast-in-place concrete or structural grout to prevent migration of subsoil through the penetration point.

2.4.4 Inspection

The subgrade preparation, geotextile placement, ACB system installation, and overall finished condition including termination trenches shall be inspected before work acceptance. Inspection guidelines are presented in detail in Part 3 of this Technical Special Provision.

PART 3 INSPECTION

3.1 Inspection During Construction

Underwater inspection of an ACB system shall be performed only by divers specifically trained and certified for such work.

3.1.1 Subgrade

Inspection of the subgrade shall be performed immediately prior to geotextile placement. The construction inspector should be alert to any condition that could cause the ACB system to not be in intimate contact with the subgrade, even if only in small, localized areas. The subgrade should be clean and free of debris, rocks, construction materials, or other foreign objects that would prevent the blocks from being firmly seated. Likewise, there should be no potholes, rills, or other voids that the blocks could bridge over.

The subgrade material itself should not be muddy or frozen and should not contain organic material or other deleterious substances. Variations in subgrade characteristics over the project area shall be noted and photographed; observations of such should be brought to the attention of the project engineer as they may represent conditions that are different than those used for design.

3.1.2 Geotextile

Each roll of geotextile delivered to the job site must have a label with the manufacturer's name and product designation. The inspector must check the labels to ensure that the geotextile is the same as that specified in the design. Spun-bond fabrics and slit-film geotextiles should never be used in ACB applications.

The geotextile must be stored so that it is out of direct sunlight, as damage can occur from exposure to ultraviolet radiation. When placed, it must be free of wrinkles, folds, or tears. Sandbags, extra concrete blocks, or U-shaped soil staples may be used to hold the geotextile in position while the blocks are being placed. The blocks should be placed within 48 hours after the geotextile is placed unless unusual circumstances warrant otherwise.

3.1.3 Blocks

The inspector shall check the blocks to ensure that they are sound and are not excessively cracked or chipped. Interlocking blocks are typically hand placed and should be installed such that the interlock is not brought into tension. The block-to-block joints should be neutrally spaced such that there is equal free-play in all directions for the joint to be able to open and close.

If the block pattern becomes skewed to an extent that blocks bind or protrude above the allowable placement tolerance, the placed ACB that is determined to be out of tolerance shall be removed and replaced. The inspector must be aware that in cases where warped subgrade slopes or structural elements cause the joint pattern to become skewed, cast-in-place concrete joints may be field located in concurrence with the project engineer.

When pre-assembled mats are placed, the mats should abut one another as tightly as practicable. Mats should never be dragged laterally across the geotextile. If the mattress is not aligned properly, it must be lifted before being repositioned. Mats should never be allowed to overlap one another. Gaps between mats, or between mats and structural features, that are more than 2 in. (50 mm) greater than the nominal system spacing shall be filled with cast-in-place concrete or structural grout.

Unless specifically intended as part of the design, vehicle traffic should not be allowed on either the geotextile or the blocks. If the inspector notices vehicle traffic on the installation, the project engineer should be notified and should clearly identify which pieces of equipment are allowed on the block system and which pieces are not. Usually, light rubber-tired equipment can be tolerated, whereas heavier vehicles and tracked vehicles cannot.

PART 4: PAYMENT

The work specified under this Technical Special Provision shall be paid for under the pay item for **Scour Countermeasure - Option B, Articulating Concrete Block.**

PART 5: PAY QUANTITY

Measurement of the articulating concrete block system for payment shall be made on the basis of surface area. The pay lines will be neat lines taken off the contract drawings and will include embedded mattresses and/or mattresses placed in termination trenches. The pay quantity for work specified under this Section shall be the number of **square yards** of **Scour Countermeasure - Option B, Articulating Concrete Block,** of the thicknesses specified, actually constructed and accepted.

PART 6: BASIS OF PAYMENT

The work specified under this Technical Special Provision shall be paid for at the contract price per **square yard**. The work includes provision of product specific design calculations, debris removal and disposal, grading and other preparatory work, furnishing and installing the geotextile and Articulating Concrete Block (ACB), constructing termination trenches and all other excavation, securing cables and fasteners, provision and installation of toe-depth indicators, providing cable splices, grouting of voids between mats and piles, installing soil anchors if used, backfilling, dewatering, cofferdam, sheeting and bracing, and other items incidental to construction of the ACB system. Payment will be made at the respective unit price per square yard (SY). Payment will be full compensation for all material, labor, and equipment to complete the work. The finished surface of the installation should be measured to ensure that the as-built lines and grades meet the design plans within the specified tolerance.