



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

CESAD-RBT

5 September 2019

MEMORANDUM FOR Commander, Jacksonville District, 701 San Marco Boulevard,
Jacksonville, Florida 32207

SUBJECT: Approval of the Review Plan for Section 408 Permission Package for Central
Everglades Planning Project (CEPP) New Water – Everglades Agricultural Area (EAA) –
Stormwater Treatment Area Project, Palm Beach County, Florida

1. References:

a. Memorandum, CESAJ-EN-Q, subject as above.

b. Engineering Circular (EC) 1165-2-220, Policy and Procedural Guidance for Processing
Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408,
10 September 2018

c. Engineering Circular (EC) 1165-2-217, Water Resources Policies and Authorities
Review Policy for Civil Works, 20 February 2018.

2. The Review Plan (RP) for the Section 408 review of the CEPP EAA Stormwater Treatment
Area project submitted by the Jacksonville District via reference 1.a. noted above has been
reviewed by South Atlantic Division (SAD) and is hereby approved in accordance with
references 1.b. and 1.c.

3. The South Atlantic Division Office shall be the Review Management Organization for this
project.

4. SAD concurs with the District's RP recommendation that outlines the requirements for
Agency Technical Review (ATR) of the submitted request and the conclusion that a Safety
Assurance Review/Type II Independent External Peer Review is not required. Documents to be
reviewed include the final versions of the Plans and Specifications and the Design
Documentation Report (DDR).

6. The SAD point of contact is

Major General, USA
Commanding



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

CESAJ-EN-Q

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT), 60 Forsyth Street SW, Room 10M15, Atlanta, GA 30303

SUBJECT: Approval of Review Plan for Section 408 Permission Package for Central Everglades Planning Project New Water – Everglades Agricultural Area – Stormwater Treatment Area Project, Palm Beach County, Florida

1. References.

- a. Engineering Circular (EC) 1165-2-217, Review Policy for Civil Works, 20 Feb 18.
- b. Flood Control Act of 1946, Public Law 79-526, 24 Jul 46.

2. CESAJ- EN has reviewed the Review Plan for the Section 408 Permission Package Central Everglades Planning Project New Water – Everglades Agricultural Area – Stormwater Treatment Area Project, Palm Beach County, Florida, and concurs that this Review Plan provides for an adequate level of review and complies with the current policy requirements outlined in EC 1165-2-216.

3. This Review Plan was prepared by the South Florida Water Management District (SFWMD), reviewed by Jacksonville District and the South Atlantic Division, and all review comments have been satisfactorily resolved.

4. The design for this project is under development by the SFWMD and their A-E who will perform quality checks on all products they developed. This Review Plan outlines the Jacksonville District-led Agency Technical Review of the submitted 408 permission package. Documents to be reviewed include plans, specifications, and a design documentation report.

5. The district will post the CESAD approved Review Plan to its website and provide a link to the CESAD for its use. Names of Corps/Army employees will be withheld from the posted version, in accordance with guidance.

6. If you have any questions regarding the information in this memo, please feel free to contact me or contact [REDACTED].

Encl

[REDACTED]

COL, EN
Commanding

PROJECT REVIEW PLAN

For Review of

Section 408 Permission Package

For

CEPP NEW WATER - EVERGLADES AGRICULTURAL AREA – STORMWATER TREATMENT AREA A-2 (EAA A-2 STA) Project

Palm Beach County, Florida

August 2019

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.

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1. PURPOSE AND REQUIREMENTS

a. Purpose

This Review Plan defines the scope and level of review activities for the 33 USC 408 (Section 408) Permission Package to be submitted for the Central Everglades Planning Project (CEPP) New Water - Everglades Agricultural Area – Stormwater Treatment Area (EAA A-2 STA) Project, Palm Beach County, Florida. The Project scope includes construction of a 6,500 acre Stormwater Treatment Area (STA) creating three flow ways adjacent to the proposed EAA A-2 Reservoir. Design and construction of the Project is being performed by the non-Federal sponsor, the South Florida Water Management District (SFWMD), and their design consultant. The design documents to be reviewed are Final Plans and Specifications (P&S) and Design Documentation Report (DDR) prepared by the non-Federal sponsor and their design consultant. As discussed below, the review activities for these documents consist of a Quality Assurance (QA) effort by the local sponsor and a Quality Control (QC) by their design consultant, as well as a Preliminary, Intermediate, and Final U.S. Army Corps of Engineers (USACE) Technical Review. A District-led Agency Technical Review (ATR), which is discussed below, will be performed on the Section 408 Package to determine if requirements set forth in EC 1165-2-220 have been met. An Independent External Peer Review (IEPR) is not recommended on this implementation effort.

b. References

- (1). EC 1165-2-217, "Review Policy for Civil Works," 20 February 2018
- (2). EC 1165-2-220, "Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408," 10 September 2018
- (3). SFWMD Everglades Restoration and Capital Projects Engineering Submittal Requirements, 05 November 2009
- (4). ER 1110-2-1150, "Engineering and Design for Civil Works Projects," 31 August 1999
- (5). ER 1110-1-12, "Engineering and Design Quality Management," 31 March 2011

c. Requirements

This Review Plan was developed in accordance with EC 1165-2-220 and EC 1165-2-217. EC 1165-2-220 provides the policy and procedural guidance for processing requests by private, public, tribal, or other federal entities, to make alterations to, or temporarily or permanently occupy or use, any USACE federally authorized Civil Works project pursuant to Section 408. Proposed alterations must not be injurious to the public interest or affect the USACE project's ability to meet its authorized purpose.

EC 1165-2-217 establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines five levels of review: District Quality Control (DQC), ATR, an IEPR, Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review and a Policy and Legal Review. The Review Plan identifies the most important skill sets needed in the reviews and the objective of the review and the specific advice sought,

thus setting the appropriate scale and scope of review for the individual project. This Review Plan should be provided to the PDT, DQC, ATR, and IEPR teams (if applicable).

d. Review Plan Approval and Updates

The South Atlantic Division (SAD) Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving Jacksonville District, SAD, and HQUSACE members) as to the appropriate scope and level of review. The Review Plan is a living document and may change as the project progresses. The SFWMD is responsible for keeping the Review Plan up to date. Minor changes to the Review Plan since the last SAD Commander approval are documented in Attachment A. Significant changes to the Review Plan (such as changes to the scope and/or level of review) will be re-approved by the SAD Commander following the process used for initially approving the plan. The latest Review Plan will be provided to the home SAD.

2. PROJECT INFORMATION AND BACKGROUND

a. Project Description

The project is located in Palm Beach County East of the Miami Canal (L-23), North of the Holey Land, approximately 5 miles West of the A-1 FEB and 7 miles West of US 27 and North New River Canal (L-18), and approximately 14 miles South of Lake Okeechobee. The A-2 STA will work in conjunction with the proposed EAA A-2 Reservoir, as shown in Figure 1. The purpose of the Caloosahatchee River (EAA A-2) West Basin Storage Reservoir Project is to improve the ecological function of the Caloosahatchee Estuary by capturing and storing excess surface water runoff from the Caloosahatchee River basin and excess releases from Lake Okeechobee, and then releasing the stored water to augment inadequate flows during the dry season to the Caloosahatchee Estuary. The Comprehensive Everglades Restoration Plan (CERP) identifies restoration of the Caloosahatchee Estuary as an integral step in achieving system-wide benefits in the south Florida ecosystem.

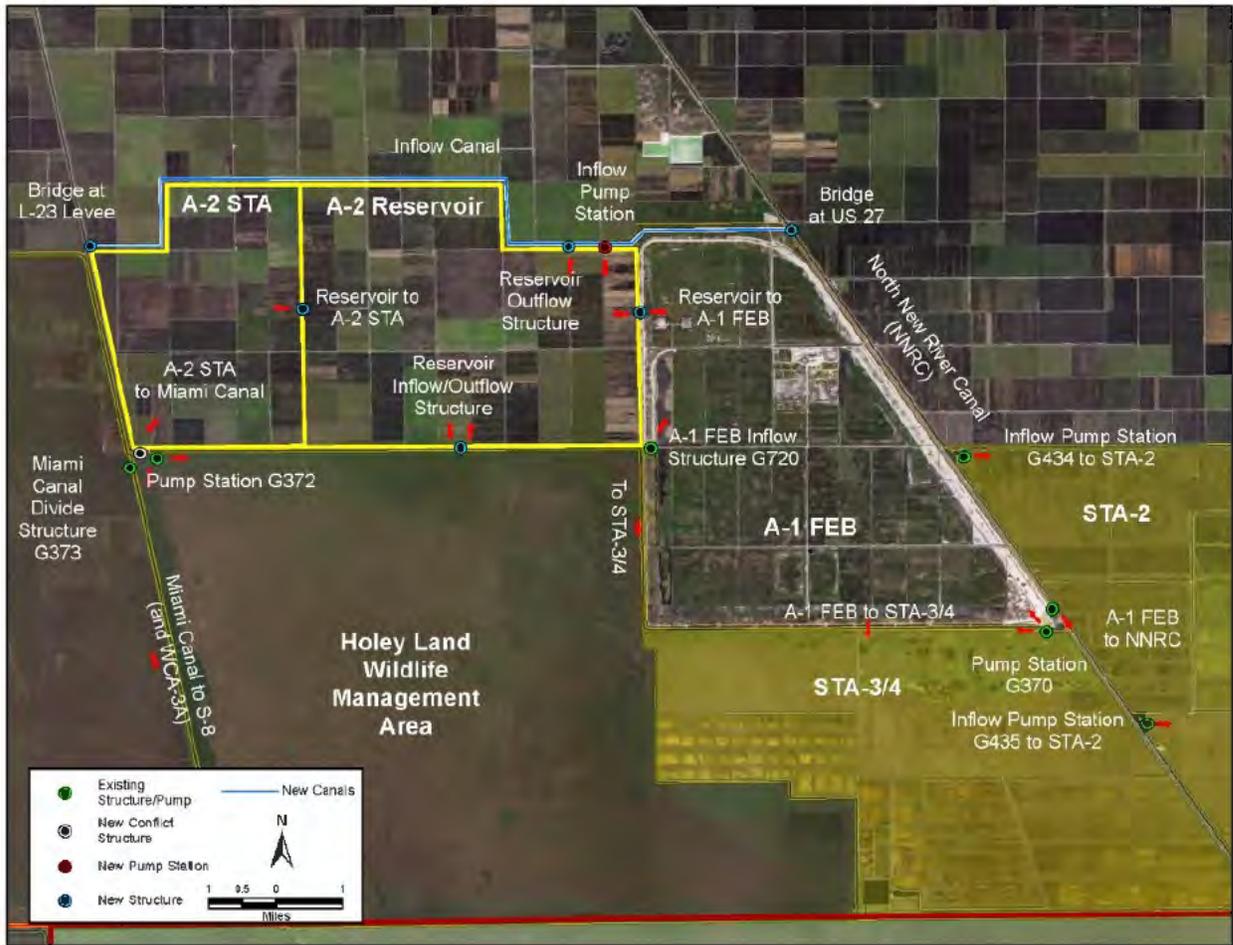


Figure 1: Aerial Map of Project Area

The EAA A-2 STA project will construct an STA creating three flow ways adjacent to the proposed EAA A-2 Reservoir covering approximately 6,500 acres of effective treatment area. The STA will be filled with a 650 cubic feet per second (cfs) double barrel gated culvert structure drawing water from the proposed EAA A-2 Reservoir. The STA features include embankments, canals, control structures, and an interim pump station. This 650 cfs pump station will be drawing water from the new proposed Inflow Canal connected to the Miami Canal to provide water to the STA until the Reservoir is completed.

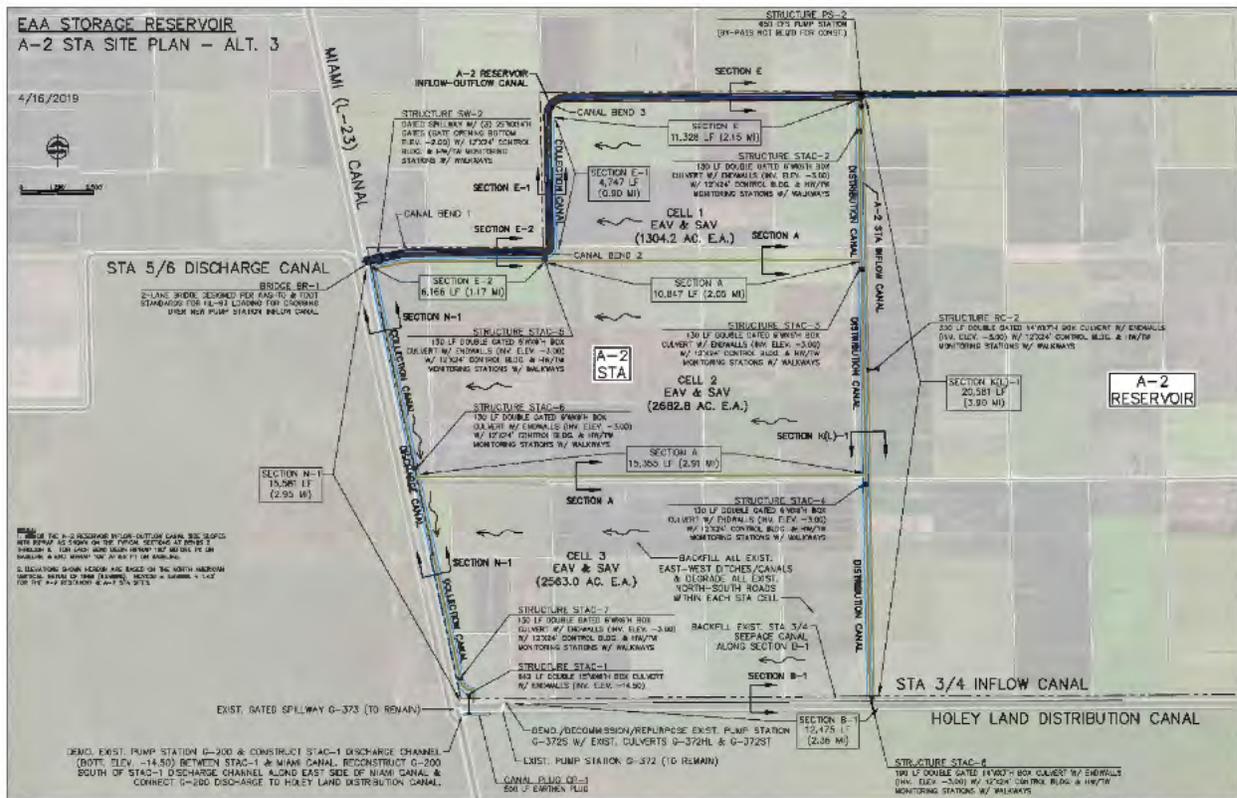
The project scope includes design and construction of a 6,500 acre STA with the following features:

Feature Name	Feature Description	Location	Purpose of Feature
A-2 Reservoir Inflow/Outflow Canal	Canal	North boundary of STA area.	Allows for inflow to the A-2 STA inflow canal during the Interim Condition. Approx. 4.23 MI
A-2 STA	Stormwater Treat.	West side of A-2	Provide treatment of water from

Feature Name	Feature Description	Location	Purpose of Feature
	Area	Reservoir	A-2 Reservoir. Approx. 6,500 Acre of treatment area
A-2 STA Inflow/Distribution Canal	Canal/Embankments	East perimeter of STA	Allows for inflow and Distribution into the STA cells. Approx. 3.9 miles
A-2 STA Collection/Discharge Canal	Canal/Embankments	West perimeter of STA	Allows for collection and discharge from the STA. Approx. 5 miles
Divider Embankments	Embankments	Interior STA	Allows to divide the STA into 3 cells
STAC-1	Ungated Culvert	Southwest corner of A-2 STA	Allows for A-2 STA to discharge to Miami Canal south of G-373
STAC-2	Gated Culvert	East of A-2 STA Cell 1	Allows for inflow to Cell 1 of the A-2 STA from the A-2 STA Inflow Canal
STAC-3	Gated Culvert	East of A-2 STA	Allows for inflow to Cell 2 of the A-2 STA from the A-2 STA Inflow Canal
STAC-4	Gated Culvert	East of STA	Allows for inflow to Cell 3 of the A-2 STA from the A-2 STA Inflow Canal
STAC-5	Gated Culvert	West side of STA	Allows for inflow to the A-2 STA Discharge Canal from Cell 1 of the A-2 STA
STAC-6	Gated Culvert	West side of STA	Allows for inflow to the A-2 STA Discharge Canal from Cell 2 of the A-2 STA
STAC-7	Gated Culvert	West side of STA	Allows for inflow to the A-2 STA Discharge Canal from Cell 3 of the A-2 STA
STAC-8	Gated Culvert	South of A-2 STA Inflow Canal	Allows for inflow to the A-2 STA Inflow Canal from the STA ¾ Inflow Canal
PS-2	Pump Station	North East Corner of A-2 Reservoir Inflow/Outflow Canal	Allows for water to be pumped from the A-2 Reservoir Inflow-Outflow Canal to the A-2 STA Inflow Canal during Interim Conditions
SW-2	Gated Spillway	Near west end of A-2 Reservoir Inflow-Outflow canal, east of B-1	Allows for the flowrate from the Miami Canal to the P-1 intake to be controlled when P-1 is pumping
SW-4	Gated Spillway	Within STA 3/4 Inflow Canal, near south side of G-720	Allows for the west reach of the STA 3/4 Inflow Canal to be hydraulically isolated from the east reach of the STA 3/4 Inflow

Feature Name	Feature Description	Location	Purpose of Feature
			Canal
A1C-1	Ungated Culvert	Northeast side of A-1 FEB	Allows for the hydraulic connection between the remnant of the northern reach of the A-1 FEB Seepage Canal & the eastern reach of the A-1 FEB Seepage Canal
BR-1	Bridge	Intersection of L-23 Levee w/ A-2 Reservoir Inflow-Outflow Canal (near Miami Canal)	Allows traffic along L-23 Levee road to cross over A-2 Reservoir Inflow-Outflow Canal

Other miscellaneous features may include filling or plugging existing ditches, demolition, etc.



The project design is anticipated to include H&H modeling, structural, civil, geotechnical, survey, electrical, and instrumentation and controls components and will comply with USACE regulations. The project timeline is expedited and shall include preliminary, intermediate and final design.

This project is a feature of the CEPP, which has a primary goal of improving the quantity, quality, timing, and distribution of water flows to the Northern Estuaries, Central Everglades, and Florida Bay, while increasing water supply for municipal, industrial, and agricultural users.

b. Public Participation

The project Section 408 request will be posted on the USACE Section 408 tracking website. Any comments or questions regarding the Section 408 review will be addressed by SAJ or SFWMD.

c. Cost Engineering Directory of Expertise Review and Certification

The cost related documents associated with this contract do not require external peer review or certification since the design and construction will be performed by the SFWMD. Therefore, no additional review requirements will be executed by the Cost Engineering Mandatory Center of Expertise (MCX) for the implementation documents addressed by this review plan.

3. QUALITY CONTROL BY NON-FEDERAL SPONSOR

The design will be subjected to quality assurance reviews by the non-federal sponsor and quality control reviews by their consultant as outlined in the SFWMD Quality Control Plan (Attachment C), the SFWMD Design and Engineering Review Process (Attachment D), and the Consultant Quality Control Plan (Attachment E).

4. DISTRICT-LED AGENCY TECHNICAL REVIEW

a. General

For the purposes of Section 408, a District-Led ATR is conducted in order to determine if the requirements set forth in EC 1165-2-220 have been met and assists USACE review team members in the formulation and agreement of the determinations described in EC 1165-2-220. The District-Led ATR will be conducted after submission of the Section 408 Permission Package by SFWMD. USACE team members conducting the District-Led ATR may be from within SAJ. If lacking the appropriate expertise, SAJ may supplement their staff with outside subject matter experts through appropriate communities of practice, centers of expertise, or other offices. Review teams shall be comprised of reviewers with the appropriate independence and expertise to conduct a comprehensive review in a manner commensurate with the complexity of the Section 408 proposal. The District-Led ATR team will make the following determinations:

- **Impacts to the Usefulness of the Project Determination.** The objective of this determination is to ensure that the proposed alteration will not limit the ability of the project to function as authorized and will not compromise or change any authorized project conditions, purposes or outputs. All appropriate technical analyses including geotechnical, structural, hydraulic and hydrologic, real estate, and operations and maintenance requirements must be conducted and the technical adequacy of the design must be reviewed. If at any time it is concluded that the usefulness of the authorized project will be negatively impacted, any further evaluation under 33 USC 408 should be terminated.
- **Injurious to the Public Interest Determination.** Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. Evaluation of the probable impacts that the proposed alteration to the USACE project may have on the public interest requires a careful weighing of all those factors that are relevant

in each particular case. The benefits that reasonably may be expected to accrue from the proposal must be compared against its reasonably foreseeable detriments. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks. If the potential detriments are found to outweigh the potential benefits, then it may be determined that the proposed alteration is injurious to the public interest. This determination is not the same as the "contrary to the public interest determination" that is undertaken pursuant to Sections 10/404/103. Factors that may be relevant to the public interest depend upon the type of USACE project being altered and may include, but are not limited to, such things as conservation, economic development, historic properties, cultural resources, environmental impacts, water supply, water quality, flood hazards, floodplains, residual risk, induced damages, navigation, shore erosion or accretion, and recreation. This evaluation should consider information received from the interested parties, including tribes, agencies, and the public.

- **Legal and Policy Compliance Determination.** A determination will be made as to whether the proposal meets all legal and policy requirements. CESAJ Office of Counsel concurrence is required. The compliance determination for any Section 10/404/103 permit decision associated with the proposed alteration is separate from and will not be included in this compliance determination.

b. Documentation

After reviewing the documents included in the Section 408 Permission Package, the review team members shall utilize DrCheckssm to capture team member input for the determinations described in EC 1165-2-220. A separate DrCheckssm review will also be used to consolidate any requests for additional information (RAI) concerning the Section 408 Permission Package. These RAIs will be forwarded to SFWMD for response.

5. USACE TECHNICAL REVIEW

a. General

The P&S and DDR produced by the SFWMD and their consultant are not work products of the USACE. Therefore, the specific ATR requirements in EC 1165-2-217 do not apply. However, as stated in EC 1165-2-217, the use of and compliance with the EC may be advisable to help expedite an eventual USACE review and approval process. A rigorous technical review commensurate with the risk of the proposed EAA A-2 STA Project design activities will be performed by USACE personnel. This review will assist the sponsor in assuring that the work is in accordance with the authorized project and USACE guidance. USACE shall develop a charge to reviewers to assist the USACE team members in their review by clarifying the scope of the review required. Since the P&S and DDR are being prepared by SFWMD and their consultant, the USACE review team may be led by and contain members from SAJ. The review team will be supplemented with outside subject matter experts if necessary.

b. Documentation

All comments from the USACE review will be documented in the DrChecks_{sm} model review documentation database. DrChecks_{sm} is a module in the ProjNet_{sm} suite of tools developed and operated at ERDC-CERL (www.projnet.org). SFWMD will provide evaluations to all comments, and USACE staff will be responsible for backchecking and if appropriate closing of all comments. USACE shall prepare a report that consolidates the results of the USACE review and documents that all comments have been closed. SAD shall receive a copy of the summary report for information only.

c. **Required Review Team Expertise**

The District-led Review Team is comprised of reviewers with the appropriate independence and expertise to conduct a comprehensive review in a manner commensurate with the type of proposed alteration described in this review plan. The Review Team will be comprised of members from the Jacksonville District.

The team expertise required for the ATR is listed below:

Review Team Lead: The Review team lead is a senior professional with extensive experience in reviewing Civil Works documents and Section 408 alteration requests. The review lead has the necessary skills and experience to lead a team through the review process. The review lead may also serve as a reviewer for a specific discipline.

Geotechnical Engineer: The Geotechnical Engineering team member should be a senior-level geotechnical engineer with experience in the field of geotechnical engineering, analysis, design, and construction of embankment dams and levees. The team member should have knowledge and experience in the forensic investigation and evaluation of seepage and piping, settlement, slope stability, and deformations problems associated with embankments constructed on weathered and jointed rock and alluvial soils.

Engineering Geologist: The team member should be a senior-level geologist familiar with identification of geological hazards, exploration techniques, field and laboratory testing, and instrumentation. The team member should be proficient in assessing seepage and piping through and beneath embankments constructed on fractured and faulted rock, karstic rock, or within various geologic environments, including but not limited to alluvial (including open-work gravels) and colluvial (including boulders and cobbles) materials.

Hydraulic Engineer: The senior-level team member should have experience with engineering analysis related to flood risk management and dam safety projects. The team member should have experience with unsteady flow dam failure analysis modeling. The team member must demonstrate knowledge and experience with the routing of inflow hydrographs through multipurpose flood control reservoirs. Experience should emphasize modeling spillways and outlet works related to flood control reservoirs. Demonstrate experience in dealing with discharge being utilized at the individual flood control reservoir during a large flood event such as the Probable Maximum Flood (PMF).

Structural Engineer: The senior-level team member should be proficient in performing stability analysis, finite element analysis, seismic time history studies, and external stability analysis including foundations on high head mass concrete dams. The structural engineer shall have specialized experience in the design, construction, and analysis of concrete dams.

Civil Engineer: Reviewer should be a senior level professional engineer experienced with civil/site work projects to include embankments, roads and highways, relocations, paving and drainage.

Mechanical Engineer: Reviewer should be a senior level professional engineer with experience in machine design and familiarity with design of mechanical gates and controls for flood control structures.

Electrical Engineer: Reviewer should be a senior level professional engineer with experience in design of flood control project features such as pump stations, control structures, related system components, and instrumentation and control.

Construction Engineer: Reviewer should be a senior level, professionally registered engineer with extensive experience in the engineering construction field with particular emphasis on dam safety projects. The Construction reviewer should have a minimum of 10 years of experience.

NEPA Compliance: The team member should have 7 or more years of experience in NEPA compliance activities and preparation of Environmental Assessments and Environmental Impact Statements for complex civil/site work projects.

The SAJ Levee Safety Program Manager and SAJ 408 Coordinator may also participate on the ATR Team if needed.

d. Completion and Certification of the ATR

At the conclusion of the ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- (1) Identify the document(s) reviewed and the purpose of the review;
- (2) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- (3) Include the charge to the reviewers;
- (4) Describe the nature of their review and their findings and conclusions;
- (5) Identify and summarize each unresolved issue (if any); and
- (6) Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR lead will prepare a completion of ATR and Certification of ATR. The Certification will certify that the issues raised by the ATR team have been resolved.

6. INDEPENDENT EXTERNAL PEER REVIEW

a. General.

EC 1165-2-217 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases). The EC defines the Section 2034 Independent Peer Review, Type I Independent External Peer Review, and the Section 2035 Safety Assurance Review, Type II Independent External Peer Review.

According to EC 1165-2-217, when a non-Federal interest undertakes a study, design, or implementation of a Federal project, or requests permission to alter a Federal project, the non-

Federal interest is required to undertake, at its own expense, any IEPR that the Government determines would have been required if the Government were doing the work. The non-Federal interest shall make a risk informed decision on whether to undertake a Type I and/or Type II IEPR and document their proposed reviews in a Review Plan that will be reviewed by the local district and approved by the host MSC Commander. Any IEPR undertaken by a non-Federal Interest shall be submitted as part of the decision package for review by USACE and ultimate action by USACE.

b. Type I Independent External Peer Review Determination.

Because the P&S and DDR covered by this Review Plan are not a planning study, a Type I IEPR is not required.

c. Type II Independent External Peer Review Determination.

This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-214); therefore, a review under Section 2035 is not required. The factors in determining whether a review of design and construction activities of a project are necessary as stated under Section 2035 along with the applicability statements for this Review Plan are as follows:

- 1) The failure of the project would pose a significant threat to human life.

The proposed EAA A-2 STA is not near facilities that would represent a potential lifeline loss. The east perimeter is currently active farmland and will become the EAA A-2 Reservoir. The South perimeter is adjacent to the STA $\frac{3}{4}$ inflow canal and the Holey Land Wildlife Refuge. The West Perimeter is adjacent to the L-23 and the Rotenberger Wildlife Refuge. The North Perimeter is adjacent to active farmland. The L-23 will be minimally impacted. The minimal disturbance of levee embankments during construction will not impact the function of the project because disturbed areas will be restored or rebuilt to meet current levee construction standards. The level of protection provided by the existing system is not changing.

Due to their low water depths and locations typically far from residential areas, STAs that have been previously designed were evaluated as low hazard potential classification (HPC) facilities. The low levels are dictated by the growth of the treatment vegetation which require water depths to be between 1 ft to 2 ft. Maximum water depths are not more than 4 ft. The embankments will be designed and evaluated as per the Design Criteria Memorandum (DCM) requirements.

No change to the risk of significant threat to human life will be caused by the construction of the EAA A-2 STA. The project will be discussed with adjacent owners. Evacuation routes are not expected to be impacted or changed due to this project construction.

- 2) The project involves the use of innovative materials or techniques.

This project will utilize methods and procedures previously used by the USACE and the project sponsor on other similar works.

- 3) The project design lacks redundancy.

The project does not require the addition of redundant project features or redundancy design considerations.

4) The project has unique construction sequencing or a reduced or overlapping design construction schedule.

This project's construction activities do not have unique sequencing or a reduced or overlapping design schedule. Construction will be coordinated with the adjacent owners and the USACE.

Based on the discussion above, SAJ does not recommend a Type II IEPR of the P&S and DDR.

7. SUMMARY OF FINDINGS

Upon completion of the District-Led ATR, demonstration of environmental compliance, and receipt of responses to RAIs from SFWMD, USACE will develop a Summary of Findings to summarize the district rationale and conclusions for recommending approval or denial of the 408 request. The Summary of Findings will serve as the basis for the final decision on the approval/disapproval of the proposed alteration. The Summary of Findings will be signed by the SAJ Commander and contain the following, if applicable:

- Summary of rationale and conclusions for recommending approval or denial;
- Written request;
- A physical and functional description of the existing project, including a map;
- Project history and authorization;
- Impact to the usefulness of the USACE project determination;
- Injurious to the public interest determination;
- Policy Compliance certification;
- Certification of Legal Sufficiency from District Office of Counsel;
- Certification by the Chief of the District Real Estate Division that the real estate documentation is adequate;
- A description of any related, ongoing USACE studies (if applicable), including how the proposed alteration may impact those studies;
- Summary of any changes to the O&M manual. If the district has determined that USACE would assume O&M responsibilities as part of its responsibilities for the USACE project, include the rationale and any anticipated increase in USACE O&M costs;
- Summary of any changes to a project partnership agreement (PPA) or local cooperation agreement (if applicable);
- Applicable environmental compliance documentation including but not limited to NEPA documentation, Endangered Species Act (ESA) documentation, and other necessary documentation;
- Finding of No Significant Impact (FONSI) or Record of Decision (ROD); these will be signed concurrently with the Section 408 decision. If HQUSACE approval is required, these will be draft and will be signed by the Director of Civil Works;
- Summary of the acceptance and use of funds pursuant to Section 214 if applicable;
- Any additional final conclusions or information, including any associated controversial issues.

8. PROJECT DELIVERY TEAM DISCIPLINES

Discipline/Expertise
Project Manager
Project Controls (Schedule and Cost Estimating)
Procurement
Survey
Civil Design
Mechanical Engineering
Electrical Engineering
Structural Engineering
Environmental Engineering
Hydrogeology & Geology
Geotechnical Engineering
Hydraulic & Hydrologic Engineering
Water Mgmt (Project Operations Manual)
STA Management
NEPA Compliance
Real Estate
Field Stations — Operation and Maintenance

9. SCHEDULE AND COST

a. Schedule.

The table below summarizes the schedule of reviews identified in this review plan:

Review Schedule	Start	Finish
Section 408 Permission Submittal Review		
USACE District-Led ATR (STA Buildout Final P&S)	09/11/2020	10/02/2020
USACE Provides RAIs from District-Led ATR	10/03/2020	10/03/2020
SFWMD Provides Responses to RAIs	10/04/2020	10/10/2020
USACE Backcheck of RAIs	10/11/2020	10/28/2020
USACE Preparation of Summary of Findings	10/29/2020	11/08/2020
Routing of Summary of Findings for Approval	11/09/2020	11/20/2020
Issuance of 408 Permit Package Determination	11/21/2020	11/21/2020
Review Schedule		
Review Schedule	Start	Finish
Technical Submittal Review Complete Process		
General Tasks		
SFWMD Submits Draft Survey Report	09/24/2019	09/24/2019
USACE Dr. Checks Review (1, 1, 1)	09/25/2019	10/15/2019
SFWMD Submits Hazard Classification Report	10/22/2019	10/22/2019
USACE Dr. Checks Review (2, 1, 1)	10/23/2019	11/19/2019
SFWMD Submits Draft Geotechnical Design	03/03/2020	03/03/2020
Report		
USACE Dr. Checks Review (1, 1, 1)	03/04/2020	03/24/2020
Package 1 - Inflow Canal		
SFWMD Submits Preliminary Design	10/15/2019	10/15/2019
USACE Dr. Checks Review (1, 1, 1)	10/16/2019	11/05/2019
TRB Inflow Canal Preliminary Design	11/06/2019	11/06/2019
SFWMD Submits Final P&S	12/03/2019	12/03/2019
USACE Dr. Checks Review (1, 1, 1)	12/04/2019	12/24/2019
TRB Inflow Canal Final P&S	01/08/2020	01/08/2020
SFWMD Submits Corrected Final (Check Set)(1)	01/09/2020	01/15/2020
SFWMD Submits Corrected Final (RTA)(1)	01/16/2020	05/07/2020
Package 2 - STA Buildout		
SFWMD Submits Preliminary Design	03/10/2020	03/10/2020
USACE Dr. Checks Review (2, 2, 1)	03/11/2020	04/14/2020
TRB Preliminary Design	04/29/2020	04/29/2020
SFWMD Submits Intermediate P&S	06/10/2020	06/10/2020
USACE Dr. Checks Review (2, 2, 1)	06/11/2020	07/15/2020
SFWMD Submits Final P&S	09/11/2020	09/11/2020
USACE Dr. Checks Review (2, 2, 1)	09/12/2020	10/16/2020
TRB Final P&S	10/21/2020	10/21/2020
SFWMD Submits Corrected Final (Check Set)	10/23/2020	10/23/2020

Check Set Review & Revisions (2)	10/23/2020	11/06/2020
SFWMD Submits Corrected Final (RTA)	11/07/2020	11/07/2020

Note: Review Periods shown (a, b, c). Start to Finish duration includes a, b, c.

a= Plan and Specifications Review

b= Evaluation Period

c= Backchecks Period

b. Review Cost.

The estimated cost for the District-Led ATR is between \$75,000 to \$100,000.

ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS

Revision Date	Description of Change Page /	Paragraph Number

ATTACHMENT B: PARTIAL LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms	Defined
AFB	Alternatives Formulation Briefing
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability Review
CAP	Continuing Authorities Program
CERCAP	Corps of Engineers Reviewer Certification and Access Program
CY	Cubic Yards
DDR	Design Documentation Report
DQC	District Quality Control
DQCR	Discipline Quality Control Review
EC	Engineering Circular
ER	Engineering Regulation
EA	Environmental Assessment
ERDC-CERL	Engineer Research and Development Center — Construction Engineering Research Laboratory
ESA	Endangered Species Act
ETL	Engineering Technical Lead
FDEP	Florida Department of Environmental Protection
FONSI	Findings of No Significant Impacts
FSCA	Feasibility and Cost Sharing Agreement
FY	Fiscal Year
GRR	General Reevaluation Report
IEPR	Independent External Peer Review
LPP	Locally Preferred Plan
MCX	Mandatory Center of Expertise
MLLW	Mean Low Low Water
MSC	Major Subordinate Command
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
ODMDS	Ocean Dredged Material Disposal Site
OMB	Office of Management and Budget
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
P&S	Plans and Specifications
PED	Preconstruction Engineering and Design
PDT	Project Delivery Team
PM	Project Manager
PMP	Project Management Plan
PPA	Project Partnering Agreement

Acronyms	Defined
PQCR	Product Quality Control Review
QA	Quality Assurance
QCP	Quality Control Plan
QMP	Quality Management Plan
QMS	Quality Management System
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
RTS	Regional Technical Specialist
SAJ	South Atlantic Jacksonville District Office
SAD	South Atlantic Division Office
SAR	Safety Assurance Review (also referred as Type II IEPR)
SME	Subject Matter Expert
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources and Development Act

ATTACHMENT E: CONSULTANT QUALITY CONTROL PLAN



Transmittal Cover Sheet

1475 Centrepark Boulevard
 Suite 210
 West Palm Beach, FL 33401
 T: 561.684.3456

To: [Redacted] Project Manager South Florida Water Management District 3301 Gun Club Road West Palm Beach, FL 33406	Date: July 12, 2019	Transmittal No.:
	Project No.: 153770	Task No.: 1
	Project Title: A-2 STA Preliminary Design	
From: [Redacted]		Contract No.: 4600003986-W02
We are sending the following item(s): <input type="checkbox"/> Record Drawings <input type="checkbox"/> Prints <input type="checkbox"/> Plans <input type="checkbox"/> Samples <input type="checkbox"/> Change Order <input type="checkbox"/> Specifications <input checked="" type="checkbox"/> QA/QC Plan		Sent via: <input checked="" type="checkbox"/> E-Mail <input type="checkbox"/> U.S. Mail <input type="checkbox"/> Fed Ex <input type="checkbox"/> Courier <input type="checkbox"/> UPS <input type="checkbox"/> Hand Carried <input type="checkbox"/> Overnight Express
These are transmitted as checked below: <input checked="" type="checkbox"/> For approval <input type="checkbox"/> For review and comment <input type="checkbox"/> Issued for construction <input type="checkbox"/> As requested <input type="checkbox"/> Reviewed as noted <input type="checkbox"/> Issued for bid <input type="checkbox"/> For your use <input type="checkbox"/> For reference only		

If attachments are not as noted, please notify sender at once.

No. of Copies	Revision Date or No.	Document or Drawing No.	Description
1			Electronic copy of QA/QC Plan for A-2 STA Preliminary Design Project

Remarks: [Redacted] Please find attached a copy of Brown and Caldwell's QA/QC Plan for the A-2 STA Preliminary Design Project. This deliverable is being submitted in satisfaction of Deliverable 1.2.3 under Task 1.2 of the Work Break-down Structure. Please call if there are any questions. Thanks, [Redacted]	
cc: [Redacted]	Prepared by: [Redacted] Title: Project Manager

Quality Management Plan
South Florida Water Management District
A-2 STA Preliminary Design



July 8, 2019

Date



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List of Abbreviations

CCC	Coordinating Cross-Check
CR	Constructability Review
DL	Discipline Lead
DPM	Deputy Project Manager
ECPM	Engineering & Construction Project Manager
mgd	million gallons per day
PM	Project Manager
PQO	Project Quality Officer
QA	Quality Assurance
QMP	Quality Management Plan
QC	Quality Control
SFWMD	South Florida Water Management District

Section 1

Introduction

This Quality Management Plan (QMP) supports execution of the **South Florida Water Management District (District) A-2 STA Preliminary Design Project**. It is a part of the Project Management Plan (PMP) and readers of this QMP should review the full PMP for an understanding of the project.

The purpose of this document is to provide guidance for, and support of, the quality management procedures for each element of the project and the quality control organization. Additionally, this document provides a framework for implementation of standards, processes, and procedures to be used by the design team to ensure that the project meets or exceeds project quality criteria.

There are five primary parts of the quality management process for this project and these are discussed in more detail in the body of this QMP.

1. Continuous Stakeholder Dialog
2. Continuous Quality Assurance (QA)
3. Quality Assurance Review Period
4. Quality Control (QC) Review Period
5. Client Quality Control Review Period

The objectives of the Project are to complete the Design Process for the Project features through the Preliminary Design level for the A-2 Storm Treatment Area (STA) and through Final Design and Corrected Final Design/Ready to Advertise (RTA) for the Inflow/Outflow Canal. Previous Work Orders have advanced the design through the Conceptual Design level. This Work Order includes the continuation of the Project design by the Consultant from the Conceptual Design level through Preliminary Design documents suitable for the Consultant to advance the design through the Intermediate Design, Final Design and Corrected Final Design/RTA levels.

The Consultant, in consultation with the District Engineering and Construction Project Manager (ECPM), shall coordinate with the District to brief them on the substantive elements of the Preliminary Design for the Project. The Consultant shall provide support to the District, including engineering and decision-making process documentation as defined in this SOW to defend the recommendations made.

The data generated during the execution of this Work Order include areas that require additional design efforts such as:

- Seepage system design
- Perimeter embankment design
- Interior divider embankment design
- Spillways
- Canal conveyance improvements
- Culverts
- Inflow and outflow structures
- Flow-ways
- Canal Extensions

- Spreader Canals
- Seepage Pump Stations
- Inflow Pump Stations
- Hydration Pump Stations
- Earthwork and grading improvements
- Bridges

The Design Process as defined for this QMP shall include preparation of the following:

- Design calculations, plans, specifications list, opinions of probable construction costs, and construction schedule for the required submittals (Preliminary Design) in accordance with Everglades Restoration Engineering Submittal Requirements.
- Briefings for the District, Design Review Team (DRT) and other Project Stakeholders.

Section 2

Quality Management Overview

2.1 Overview

The key elements of Quality Management are as follows:

- All written deliverables, drawings, specifications, and supporting design calculations will undergo a quality management process in accordance with the QMP.

Checking is required of all engineering and scientific results, calculations, and findings by someone other than the person who originally produced the work. All reports, memoranda, technical papers, or contract-related documents (e.g., subcontracts, proposals, or scopes of work) must undergo a readability review prior to submittal. In many cases, technical (by senior technical personnel) reviews and readability reviews occur simultaneously. Included in these reviews are subconsultant work package basic reviews, which must be reviewed by a qualified, senior reviewer prior to internal use or submittal to the client.

- Quality Management on this Project is comprised of five components:
 - Continuous Stakeholder Dialog
 - Continuous Quality Assurance
 - Quality Assurance Review Period
 - Quality Control Review Period
 - Client Review Period

The QA, QC and Client Review Periods are defined on the Project Schedule with time for QA, QC and client review deliverable preparations, review and rectification.

- **Continuous Stakeholder Dialog** is the ongoing communication and review with the District's ECPM and other key District staff regarding Project features and design elements.
- **Continuous Quality Assurance** is the ongoing review and critique performed by the project team and assigned senior advisors.
- The **Quality Assurance Review Period** is the formal period where the Project Manager, Design Manager, Process Area Leads, BIM/CAD Leads and Discipline Leads perform quality assurance activities including calculation reviews, inter- and intra- disciplinary coordination of drawings and specs and make final adjustments leading up to the QC period. It is important to note that the calculation reviews performed during this portion of the work include the Engineer of Record reviews of these calculations, Subject Matter Expert review as needed and Design Manager review. The QC period is typically not used to do a detailed check of the calculations. Some moderate/informal reviews by the quality control team may also occur during this period. A QA comment log will not be kept during the QA Review Period. Following the QA Review Period, the drawings and specifications will enter the QC Review Period.

Subconsultants will be expected to use the QA Review Period to perform a thorough review of their scope of work items including cross-coordination of their work.

- The **Quality Control Review Period** is the formal period of quality control review by the quality control team. The quality control team is shown on the organization chart. Quality control assignments are provided in the QMP QC Matrix which is located in Appendix A.

During the QC Review Period, BC reviewers will perform a thorough review of its scope of work items and will perform a more cursory review of our subconsultants scope of work to verify general conformance with industry standards and District expectations. Calculations will be reviewed; however, because QC reviewers are typically not registered in the state where the work is being performed and they are not the Engineers of Record, their review of the calculations is most frequently to verify that the calculations have been performed and checked and appear appropriate for the scope of work.

The QC review will be performed via a QC comment log. The QA/QC Manager will direct the issuance, completion and resolution of the QC comments and the QC comment log.

Subcontractors will be required to complete the QC Completion Form indicating that their firm has performed a formal quality control activity on their work.

- The **Client Review Period** is the review and rectification period to account for client comments on the deliverable. The Client Review Period will be conducted using the DrChecks process. BC's Project Manager will be responsible for assuring that all comments received from District reviewers and other Project stakeholders are satisfactorily addressed.

2.2 Project Deliverables and Schedules

The project deliverable list is located in the District's Work Order and in the Project Management Plan. The deliverables include reports, modeling studies, and milestone deliverables of plans, drawings, schedules and cost estimates. The major milestone deliverables are shown below.

- Preliminary (30%) Design for the A-2 Stormwater Treatment Area
- Preliminary (30%) Design for the Inflow / Outflow Canal
- Final (100 %) Design for the Inflow / Outflow Canal

The baseline milestone schedule is located in the Internal BC Project Directory. These schedules include the time allocations for Quality Assurance Period, Quality Control Period and Client Review Period for the major deliverables.

The Quality Control Review Periods (QC only) and assigned staff are provided in the QC Matrix which is located in Appendix A of this QMP.

Section 3

QMP Team

The QMP Team varies with each quality management phase.

- **Continuous Stakeholder Dialog.** Consists of all team-members but is primarily led by the project leadership members which include the Project Director, Project Manager, Deputy Project Manager, and Design Manager.
- **Continuous Quality Assurance.** Consists of all team-members but is primarily led by the Design Manager, BIM Lead, CAD Lead and Project Discipline Leads.
- **Quality Assurance Review Period.** Consists primarily of the Design Manager, BIM Lead, CAD Lead and Project Discipline Leads. This effort is directed and controlled by the QA/QC Manager.
- **Quality Control Review Period.** Consists of the Quality Control Team which is defined in the Project Organization Chart (Appendix D of the PMP), and the QC Matrix (Appendix A of this QMP). This effort is directed and controlled by the QA/QC Manager or the Project Manager.
- **Client Review Period.** Consists of the SFWMD and external Project Stakeholders such as the USACE, FDEP and adjacent property owners. This effort is internally directed and controlled by the QA/QC Manager or the Project Manager and externally by the SFWMD.

Section 4

Quality Assurance Review Period

The Quality Assurance Review Period is the formal period where the Project Manager, Design Manager, Process Area Leads, BIM Leads and Discipline Leads perform quality assurance activities and make final adjustments leading up to the QC Review Period.

Some moderate/informal reviews by the quality control team may also occur during this period.

A QA comment log will not be kept during the QA period. Following the QA period, the drawings and specifications will enter the QC Period.

The Quality Assurance Review Period includes readability reviews, calculation reviews, and inter- and intra-disciplinary coordination of drawings and specifications. It is important to note that the calculation reviews performed during this portion of the work include the Engineer of Record reviews of these calculations, Subject Matter Expert review as needed and Design Manager review. The QC Review Period is typically not used to do a detailed check of the calculations.

Subconsultants will be expected to use the QA Review Period to perform a thorough review of their scope of work items including cross-coordination of their work.

The Quality Assurance Review Period time-lines are defined in the baseline milestone schedule located in the PMP.

Section 5

Quality Control Review Period

The Quality Control Review Period is the formal period of quality control review by the quality control team. The quality control team is shown on the organization chart and quality assignments are provided in the QC Matrix which is located in Appendix A of this QMP.

The QC Matrix provides a comprehensive overview of the deliverables for this project, the associated project phase for the review work, the lead staff member for the deliverable, and the staff members that has been identified for the Formal Technical, word processing, and readability reviews. Dates for the reviewers to receive the deliverables for review and to complete the review are listed, as well as the number of hours budgeted to complete the review. This table will be modified as needed as the project proceeds.

During the QC Review Period, BC will perform a thorough review of its scope of work items and will perform a more cursory review of our subconsultants scope of work to verify general conformance with industry standards and District expectations. The QC Review includes readability reviews, calculation reviews, code and industry standard reviews, and inter- and intra- disciplinary coordination of drawings and specifications. Calculations will be reviewed; however, in part due to that QC reviewers are typically not registered in the state where the work is being performed and they are not the Engineers of Record, their review of the calculations is most frequently to verify that the calculations have been performed and checked and appear appropriate for the scope of work.

During the QC Review Period, Subconsultants will be expected to perform a thorough review of their scope of work items including cross-coordination of their work with other team members.

The QC effort will be performed via a QC comment log. The QA/QC Manager will direct the issuance, completion and resolution of the QC comments and the QC comment log. A template for the QC comment log is located in the QC Matrix in Appendix A of this QMP.

Subcontractors will be required to complete the Subcontractor QC Completion Form indicating that their firm has performed a formal quality control activity on their work. The Subcontractor QC Completion Form is located in Appendix B of this QMP.

The Quality Control Review Period time-line is defined in the baseline milestone schedule located in Appendix A of the QMP.

To close out the QC Control Period, a "closed" date must be entered into the QC comment log for each comment to signify full agreement and adjudication of the comment/resolution and the QC Matrix is updated and dated to signify that the comments have been addressed.

Section 6

Client Review Period

The Client Review Period is the formal period of quality control review by the SFWMD and other external Project Stakeholders for satisfaction of Project requirements, conformance with SFWMD standards, and consistency with related projects being designed by other project teams or agencies.

Client Review Periods will follow submittal of each major deliverable as defined in Section 2.2 above. The SFWMD's DrChecks process will be followed to complete the Client Reviews. Following the submittal of each major design deliverable, reviewers will be given a certain amount of time to review the design documents and log their comments into DrChecks. The amount of time allowed for review will be set by the SFWMD. After the review period is completed, the BC project team will be given a certain amount of time to evaluate the comments and log responses into DrChecks. A subsequent set of backcheck comments and responses are possible in this process. A QC workshop may be held to facilitate discussion and resolution of comments. To close out the Client Review Period, all SFWMD and Project Stakeholder QC comments must be "closed" in the DrChecks system.

Appendix A: QC Matrix

153770 - A-2 STA Preliminary Design - Quality Control Matrix

Review Topic	Project Lead	Engineer of Record / Responsible Individual	QC Reviewer(s)	Quality Control Reviews			
				Scheduled Dates	Budget (Hours)	Review Performed	
QA Management	█	█	--	--	--	--	--
Project Control							
PMP, QMP, H&S Plan	█	█	PMP - █ QMP - █ H&S Plan - █	6/24/19 - 7/12/19	12	--	--
Project Schedule and Updates	█	█	█	Monthly	24	--	--
Monthly Invoices	█	█	█	Monthly	10	--	--
Geotechnical							
Draft Geotechnical Field Logs - I / O Canal	█	█	█	8/6/19 - 8/8/19	4		
Draft Geotechnical Field Logs - STA	█	█	█	10/1/19 - 10/3/19	12		
Final Geotechnical Field Logs - I / O Canal	█	█	█	8/20/19 - 8/22/19	4		
Final Geotechnical Field Logs - STA	█	█	█	10/15/19 - 10/17/19	8		
Geotechnical Data Report - I / O Canal	█	█	█	9/25/19 - 9/27/19	4		
Geotechnical Data Report - STA	█	█	█	12/11/19 - 12/13/19	8		
Geotechnical Basis of Design TM	█	█	█	12/23/19 - 12/27/19	8		
Draft Geotech Design Report - I / O Canal	█	█	█	10/1/19 - 10/3/19	12		
Final Geotech Design Report - I / O Canal	█	█	█	11/5/19 - 11/7/19	4		
Geotech Design Report - STA	█	█	█	2/24/20 - 3/6/20	16		
Surveying							
Aerial Photography / LiDAR Data Update	█	█	█	As Completed	4		
Boundary Survey	█	█	█	As Completed	4		
Control Survey	█	█	█	As Completed	4		
STA Perimeter Cross-Sections	█	█	█	As Completed	8		
STA Interior Cross-Sections and Control	█	█	█	As completed	4		
H&H Modeling							
Control Structure Flow Calculations	█	█	█ / █	8/19/19 - 8/23/19	8		
Updated 1D and 2D Model Networks	█	█	█	9/23/19 - 9/25/19	8		
STA Control Structure and Internal Works Model Results and Narrative Summary	█	█	█	1/13/20 - 1/31/20	32		
Inflow / Outflow Canal Modeling	█	█	█	10/1/19 - 10/3/19	8		
Hazard Classification	█	█	█	10/7/19 - 10/8/19	4		
Wind Set-up / Wave Run-up Calculations	█	█	█	11/13/19 - 11/15/19	8		
STA Preliminary Design							
Civil Design - Levees and Canals	█	█	█	2/17/19 - 2/28/19	32		
Civil Design - Control Structures	█	█	█	2/17/19 - 2/28/19	8		
Civil Design - Remote Control Structures / Bridge	█	█	█	2/17/19 - 2/28/19	8		
Structural Design	█	█	█	2/17/19 - 2/28/19	32		
Architectural Design	█	█	█	2/17/19 - 2/28/19	8		
Mechanical Design	█	█	█	2/17/19 - 2/28/19	28		
Electrical Design	█	█	█	2/17/19 - 2/28/19	28		
Instrumentation Design	█	█	█	2/17/19 - 2/28/19	12		
Cost Estimating	█	█	█	2/24/20 - 2/28/20	16		
Preliminary Design Report	█	█	█	2/24/20 - 3/6/20	40		
Inflow / Outflow Canal Design							
Civil Design - Levees and Canals	█	█	█	9/23/19 - 10/2/19	16		
Cost Estimating	█	█	█	9/30/19 - 10/2/19	8		
Preliminary Design Submittal	█	█	█	9/23/19 - 10/2/19	8		
Civil Design - Levees and Canals	█	█	█	1/13/20 - 1/17/20	16		
Cost Estimating	█	█	█	1/15/19 - 1/17/19	12		
Final Design Submittal	█	█	█	1/13/20 - 1/17/20	12		
Corrected Final / RTA Design Submittal	█	█	█	3/9/20 - 3/13/20	8		

Appendix B: Subcontractor QC Completion Form

SUBCONTRACTOR QUALITY CONTROL REVIEW COMPLETION RECORD	
1. PROJECT INFORMATION	
Project: A-2 Stormwater Treatment Area	Date:
Client: South Florida Water management District	
Subcontractor:	
2. DELIVERABLE INFORMATION	
Deliverable Name:	
Submit to: Brown and Caldwell, Miami, FL	Submittal Date:
3. SUBMITTAL DESCRIPTION	
4. CONFIRMATION OF PROJECT QUALITY CONTROL ACTIVITY (DISCIPLINE REVIEWS)	
<u>Drawings</u>	
Drawings underwent an inter and intra-disciplinary coordination review including with review with other firms related work by the subconsultant's quality control team and these team-members are not close to the project.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
<u>Specifications</u>	
Specifications were reviewed for coordination with the drawings and concordance with the calculations by the subconsultant's quality control team and these team-members are not close to the project.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Specifications have been reviewed by their named manufactures and revisions made as necessary.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
<u>Study/Report</u>	
Study/Report underwent a readability review.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Study/Report underwent a technical review by the subconsultant's quality control team and these team-members are not close to the project.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
<u>Calculations</u>	
Calculations underwent a technical review by the subconsultant's quality control team and these team-members are not close to the project.	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
<u>Additional Comments</u>	
5. RELEASE AUTHORIZATION	
The deliverable package has been reviewed for overall completeness, compatibility, and conformance with scope and other contract requirements. The deliverable package has been reviewed by the subconsultants quality control team and these team members are not close to the project.	
Subcontractor Project Manager	Date

