



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

7/15/21

MEMORANDUM FOR Commander, Mobile District, P.O. Box 2288, Mobile, Alabama
36628-0001

SUBJECT: Approval of the Review Plan for Perimeter Berm Improvements at RM Clayton
Water Reclamation Center Project, Atlanta, Georgia

1. References:

a. Memorandum, CESAM-PM-C, 29 June 2021, subject as above.

b. Engineering Regulation (ER) 1165-2-217, Water Resources Policies and Authorities Civil
Works Review Policy, 1 May 2021.

2. The Review Plan (RP) for the Perimeter Berm Improvements at RM Clayton Project,
submitted by the Mobile District via reference 1.a noted above, has been reviewed by South
Atlantic Division (SAD). The RP is hereby approved in accordance with reference 1.b.

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

4. SAD concurs with the District's RP recommendation that outlines the requirements for
District Quality Control (DQC), Agency Technical Review (ATR), and Biddability,
Constructability, Operability, Environmental, and Sustainability (BCOES) Review and the
conclusion that a Safety Assurance Review (SAR) is not required.

5. Subsequent significant changes to this RP, such as scope or level of review changes, should
they become necessary, will require new written approval from this office.

6. The SAD point of contact is Ms. Shannon L. Geoly, CESAD-RBT, (404) 562-5121.

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Encl

LARRY D. MCCALLISTER, PhD, PE, SES
Director of Programs



US Army Corps
of Engineers.

Prepared by:
South Atlantic Division
Mobile District

Review Plan

for

Preconstruction, Engineering, and Design (PED)
Implementation Documents

Perimeter Berm Improvements

RM Clayton Water Reclamation Center
Atlanta, GA

P2# 488346

MSC Approval Date: Pending

Expiration Date: Pending

Last Revision Date: None

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PRE-DISSEMINATION REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT DOES NOT REPRESENT AND MAY NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.

1 INTRODUCTION

1.1 PURPOSE

This Review Plan (RP) defines the scope of review activities for the design implementation documents for the construction of the perimeter berm improvements for the RM Clayton Water Reclamation Center, Atlanta, Georgia. This project is the first increment of new work under the Project Partnering Agreement executed on 1 Feb 2021 with the City of Atlanta for the overarching Atlanta Environmental Infrastructure Project. Review activities for the implementation products for this project increment consist of Quality Control/Quality Assurance (QC/QA), Agency Technical Review (ATR), and Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) reviews. As addressed below, a Safety Assurance Review (SAR) is not recommended. The project is currently in the Preconstruction, Engineering, and Design (PED) Phase. The related implementation products for review consist of Plans and Specifications (P&S) and the Design Documentation Report (DDR). The Review Management Organization (RMO) is the South Atlantic Division (SAD).

1.2 REFERENCES

- ER 1110-2-1150, “Engineering and Design for Civil Works Projects,” dated 31 August 1999
- ER 1110-1-12, “Engineering and Design Quality Management,” dated 31 March 2011
- ER 1165-2-217, “Civil Works Review Policy,” dated 1 May 2021
- ER 415-1-11, “Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review,” dated 1 January 2013

1.3 REQUIREMENTS

This RP was developed in accordance with ER 1165-2-217, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The ER provides the procedures for ensuring the quality and credibility of USACE documents and work products. This RP outlines the review requirements for the Design Document Report (DDR) and the Construction Documents (Plans and Specifications) that will be produced by a contracted A/E firm. The Architect-Engineer (AE) contractor selected will be responsible for the development of the plans, specifications, and the DDR and will be required to meet the review requirements outlined in this RP.

1.4 REVIEW MANAGEMENT ORGANIZATION

The Review Management Organization (RMO) is primarily designated based on the type of project and the phase of work being reviewed. For this implementation document, the South Atlantic Division (SAD) is designated as the RMO and will oversee the quality reviews. The RMO, in cooperation with the vertical team, will approve the ATR Team members. Mobile District (SAM) will assist SAD with management of the ATR and development of the charge to reviewers.

2 PROJECT DESCRIPTION

2.1 DESCRIPTION OF PROJECTS

The project is in Atlanta, Georgia, and consists of the design and construction of perimeter berm improvements for RM Clayton Water Reclamation Center to provide additional height and address backflow issues from culverts. The berms already provide some floodwater protection from the Chattahoochee River, but the City wishes to elevate the berm to approximately 3 feet above the 100-year flood river stage (approximately 4 feet above the existing crest elevation). See Attachment 4 for the plan view of the 3 berms that will be raised.



Figure 1. Existing Conditions

2.2 BACKGROUND

In 2009, the RM Clayton Water Reclamation Center flooded from the Chattahoochee River. The stormwater outlets could not evacuate due to river stage and surcharged into the interior. Additionally, the perimeter berm along the river was overtopped. This flooding resulted in a multi-million-dollar cleanup, which was the impetus for this project. The Section 219 authority (WRDA 1992, as amended) provides design and construction support to municipalities named to the authority for water related projects.



Figure 2. 2009 Flooding at RM Clayton Water Reclamation Center

2.3 PROJECT SPONSOR

The non-federal sponsor for this project is the City of Atlanta, GA. They are the owners and operators of the RM Clayton Water Reclamation Center.

3 PROJECT DELIVERY TEAM REVIEWS

The Project Delivery Team (PDT) Reviews are in addition to the independent DQC Reviews described in Section 4. The PDT Reviews are to ensure consistency and effective coordination across all project disciplines for the implementation documents. For example, the PDT will perform a complete reading and review of the implementation documents to assure the overall coherence and integrity of the documents before approval. The PDT will normally include a variety of stakeholders, each with his/her own important project requirements and a different, but interlocking, review responsibility. The PDT Review may also include a plans-in-hand review at the end of development. The PDT is comprised of those individuals involved directly in the development of the scope of work for the Design-Build contract request for proposals (RFP). The individual contact information and disciplines of the District PDT are included in Attachment 1 of this document.

4 DISTRICT QUALITY CONTROL

4.1 REQUIREMENTS

All implementation documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC/QA in accordance with ER 1165-2-217. DQC/QA is an internal review process of basic science and engineering implementation documents focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). SAM shall manage the DQC/QA in accordance with ER 1110-1-12, Engineering & Design Quality Management; ECB 2016-9, Civil Works Review; ER 1165-2-

217, Civil Works Review Policy; and the District Quality Management Plan. As part of the Design-Build RFP, requirements will be detailed regarding the submission and government acceptance of a Quality Control Plan (QCP) that outlines the AE’s internal quality control processes. The AE will be required to provide documentation of the QC processes enacted in addition to a signed QC certification. Upon receipt of each deliverable from the AE, SAM will conduct appropriate quality assurance reviews for the implementation documents provided to verify the QC from the AE was effective in producing a implementation document that meets the desired end quality. The documentation of DQC/QA will be filed in the appropriate project folders within ProjectWise. A copy of the AE’s QCP will be included as an addendum to this RP when received after contract award. Environmental and cultural reviewers will be included in DQC/QA review at each milestone to assure no adjustments are necessary to NEPA or cultural/tribal coordination as the design becomes more refined and will be included in the pre-work conference held at notice to proceed. All DQC/QA reviewers will be provided opportunity for at least one site visit, or as necessary, during critical elements of construction.

4.2 PRODUCTS TO UNDERGO DQC/DQA

The intermediate and final P&S, and the final DDR will undergo DQC/QA.

4.3 SCHEDULE AND ESTIMATED COST OF DQC

Although DQC/QA is seamless and continuous throughout implementation document development, the following milestone reviews are scheduled. The cost for the DQC is approximately \$20,000. The cost of the QC for the P&S and the DDR will be included as part of the AE’s proposal for the design and construction of the described project.

Project Phase / Submittal	Review Start Date	Review End Date
35% P&S	120 days after NTP (Jan 2022)	141 days post NTP (21 days)
65% P&S	186 days after NTP (Apr 2022)	216 days post NTP (30 days)
Final P&S & Intermediate DDR	246 days after NTP (Jun 2022)	267 days post NTP (21 days)
DDR	288 days after NTP (Jul 2022)	302 days post NTP (14 days)

5 AGENCY TECHNICAL REVIEW

5.1 REQUIREMENTS

ATR is undertaken to “ensure the quality and credibility of the government’s scientific information” in accordance with ER 1165-2-217 and ER 1110-1-12. The ATR team will consist of individuals that represent the significant disciplines involved in the accomplishment of the work. ATR will be managed within the Corps and conducted by

senior USACE personnel outside of the home District and are not involved in the day to day production of the plans, specifications, and DDR. The ATR Team leader will be from outside the home MSC. DrChecksSM review software will be used to document all ATR comments, responses, and associated resolutions accomplished throughout the review process.

An ATR team site visit will not be required. Photographs and requested additional project information will be provided in order to ensure a thorough and complete ATR of the project is performed.

5.2 PRODUCTS TO UNDERGO ATR

The plans, specifications, and DDR produced under the Design-Build contract will undergo ATR to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published Corps guidance. The documents to be reviewed are the 65% P&S and the DDR. The ATR will take place at the 65% submittal, at which point the contractor will also respond to the ATR comments. The ATR team will use the 100% Unreviewed submittal to backcheck their comments.

5.3 REQUIRED TEAM EXPERTISE AND REQUIREMENTS

As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); subject matter experts (SME) certified in CERCAP; senior level experts from other districts; Center of Expertise staff; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills and abilities; and experience levels.

ATR Team Member Discipline	Expertise Required
ATR Team Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works implementation documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead should be someone from outside of SAD.
Geotechnical Engineering	Team member shall have expertise in geotechnical engineering analysis, design, and construction of levee embankments. Team member shall be an actively licensed professional engineer.
Civil Engineering	Team member shall have expertise in civil engineering design and review of site/civil layout, grading, drainage, and utilities. Team member shall be an actively licensed professional engineer.
Construction Manager	Team member shall have experience in the management of civil works construction projects. Team member shall have experience as an Administrative Contracting Officer of projects involving construction of water system distribution lines and pipes. Team member shall be a registered professional engineer.
Continued on next page	

Hydrology and Hydraulic Engineering	Team member shall have expertise in inland hydraulics and hydrologic engineering and shall have a thorough understanding of applications of hydraulic and hydrologic modeling techniques.
Structural Engineer	Team member shall have experience with structural design, analysis, and construction of sheetpile wall, concrete T-walls, and flood risk management-type structures. Team member shall be an actively licensed professional engineer.

5.4 REPORTS AND CERTIFICATION

For each formal ATR event, the ATR Team will examine relevant QC records and will provide comment as to the adequacy of the QC effort. For the final deliverable implementation documents, the ATR Team Leader will prepare an ATR Report. At a minimum, the report will include a statement as to the effectiveness of the QC review, a brief summary of the review, brief resumes of the reviewers, the Charge to Reviewers, description of significant or unresolved issues, and a printout of the DrChecksSM comments and responses. Additionally, the ATR Team Leader must complete a Statement of Technical Review and an ATR Certification for the final deliverable implementation documents.

5.5 SCHEDULE AND ESTIMATED COST OF ATR

The preliminary ATR milestone schedule is provided. The cost for the ATR is approximately \$50,000. The ATR will not occur concurrently with DQC.

Project Phase / Submittal	Review Start Date	Review End Date
65% P&S	April 2022 (186 days post NTP)	May 2023 (216 days post NTP)
Final DDR	Jul 2022 (288 days post NTP)	Jul 2022 (302 days post NTP)

6 SAFETY ASSURANCE REVIEW

The District Chief of Engineering, as the Engineer-In-Responsible-Charge, has made a risk informed decision that this project would not benefit from conducting a SAR; therefore, a SAR is not required. The design for the berm improvements will be reviewed throughout the design process. If information is presented that impacts this decision or the AE introduces the use of innovative materials and/or techniques, the District Chief of Engineering will reassess the determination of the SAR requirement. Some factors considered during this risk informed decision making process are as follows:

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

The perimeter berm provides flood risk management to personnel and contractors who support the treatment plant as well as critical infrastructure for the City of Atlanta. It is estimated that as many as 75 people can be in the area at one time during maximum operations. The resulting loss-of-life due to a breach of the perimeter berm has not been

quantified, though there is potential. However, the berm was overtopped in 2009 and the area flooded, but all personnel were safely evacuated prior to water coming into the area. Current measures in place at the center have proven to adequately protect the personnel during a flooding event. The improvements planned for the berm will further improve the condition and stability of the berm.

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

This project will utilize methods and techniques routinely used by the USACE on other similar projects. It is not anticipated the design for the improvements will include innovative techniques or materials that are untested and unproven for this particular scope of work.

- 3) The project design lacks redundancy.

Redundancy will be built into the design through safety factors for stability and seepage. However, redundancy or duplication of critical components is not required for this scope of work.

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

The project should not have or pose unique sequencing or a reduced or overlapping design. It is anticipated the construction methods and procedures that will be included in the design of the berm improvements will have been used successfully by the USACE on other similar works.

Based on the information presented above, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a SAR be conducted at this time. Should information become available during the design that alters this decision, the District Chief of Engineering will reassess the risk and re-evaluate the determination regarding the benefit of conducting a SAR.

7 BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY REVIEW

The value of a BCOES review is based on minimizing problems during the construction phase through effective checks performed by knowledgeable, experienced personnel prior to advertising for a contract. BCOES requirements must be emphasized throughout the planning and design processes for all programs and projects. This will help to ensure that the government's contract requirements are clear, executable, and readily understandable by private sector bidders or proposers. It will also help ensure that the construction may be done efficiently

and in an environmentally sound manner and that the construction activities and projects are sufficiently sustainable. Effective BCOES reviews of the RFP will reduce risks of cost and time growth, unnecessary changes and claims, as well as support safe, efficient, sustainable operations and maintenance by the facility users and maintenance organization after construction is complete. A BCOES Review will be conducted for the full solicitation package for the Design-Build RFP. BCOES will be managed by SAM with team members from the District staff.

8 POLICY AND LEGAL COMPLIANCE

All implementation documents will be reviewed throughout the design process for their compliance with law and policy. The SAM Office of Counsel reviews all contract actions for legal sufficiency in accordance with Engineer Federal Acquisition Regulation Supplement 1.602-2 Responsibilities. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods. The subject implementation documents and supporting environmental documents will be reviewed for legal sufficiency by the SAM Office of Counsel prior to advertisement. Construction will comply with applicable industry codes and EM 385-1-1, USACE Safety and Health Requirements.

9 ENGINEERING MODELS

The use of certified, validated, or agency approved engineering models is required for all activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, Policy and Legal Compliance review, and SAR (if required). Where such approvals have not been completed, appropriate independent checks of critical calculations will be performed and documented.

Model Name	Version
HEC-RAS	5.0.7 or later
HEC-HMS	4.2 or later
HEC-LifeSim	1.0.1 or later

10 REVIEW PLAN APPROVAL AND UPDATES

The SAD Commander, or delegated official, is responsible for approving this RP. The Commander’s approval reflects vertical team concurrence as to the appropriate scope and level of review for these implementation documents. The RP is a living document and may change as the project progresses. SAM is responsible for keeping the RP up to date. Minor changes to the RP since the last SAD Commander’s approval will be documented in Attachment 2. Significant changes to the RP (such as changes to the scope and/or level of review) will be re-approved by the SAD Commander following the process used to initially approve the plan.

11 REVIEW PLAN POINTS OF CONTACT

Title	Organization	Phone
Project Manager	Mobile District	251 605 2739
Engineering Technical Lead	Mobile District	251-487-9795
RMO Representative	South Atlantic Division	404-562-5121

ATTACHMENT 1 – TEAM ROSTER

Product Delivery Team Members

Discipline	Name	Office/Agency
Project Manager	Dean Trawick	CESAM-PM-CM
Engineering Technical Lead (ETL)	John Bass	CESAM-EN-H
Civil Site Engineer	James DeFalco	CESAM-EN-GC
Hydraulics and Hydrologic Engineer	Marshall Hayden	CESAM-EN-HH
Geotechnical Engineer	Marcus Shekouh	CESAM-EN-GG
Structural Engineer	Juan Ortiz	CESAM-EN-DA
Cost Estimators	Allan Annaert	CESAM-EN-TC
Environmental Specialists	Velma Diaz	CESAM-PD-EI
Cultural Resources	Patrick O’Day	CESAM-PD-EI
Construction Division	Richard Thomas	CESAS-CD

ATTACHMENT 3 – ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
BCOES	Biddability, Constructability, Operability Environmental, and Sustainability	O&M	Operation and maintenance
CAP	Continuing Authorities Program	OMB	Office and Management and Budget
CSDR	Coastal Storm Damage Reduction	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DPR	Detailed Project Report	OEO	Outside Eligible Organization
DQC	District Quality Control/Quality Assurance	OSE	Other Social Effects
DX	Directory of Expertise	PCX	Planning Center of Expertise
EA	Environmental Assessment	PDT	Project Delivery Team
EC	Engineer Circular	PAC	Post Authorization Change
EIS	Environmental Impact Statement	PMP	Project Management Plan
EO	Executive Order	PL	Public Law
ER	Ecosystem Restoration	QMP	Quality Management Plan
FDR	Flood Damage Reduction	QA	Quality Assurance
FEMA	Federal Emergency Management Agency	QC	Quality Control
FRM	Flood Risk Management	RED	Regional Economic Development
FSM	Feasibility Scoping Meeting	RMC	Risk Management Center
GRR	General Reevaluation Report	RMO	Review Management Organization
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RTS	Regional Technical Specialist
IEPR	Independent External Peer Review	SAR	Safety Assurance Review
ITR	Independent Technical Review	SEIS	Supplemental Environmental Impact Statement
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act

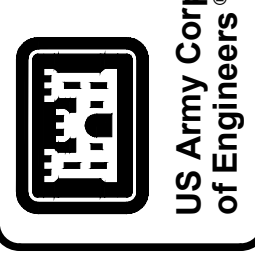
ATTACHMENT 4 – PROJECT PLAN VIEW

ATLANTA, GEORGIA
RM CLAYTON SANITARY SEWER TREATMENT PLANT
APPROX. SITE PROJECT LIMITS
RM CLAYTON BERM IMPROVEMENTS

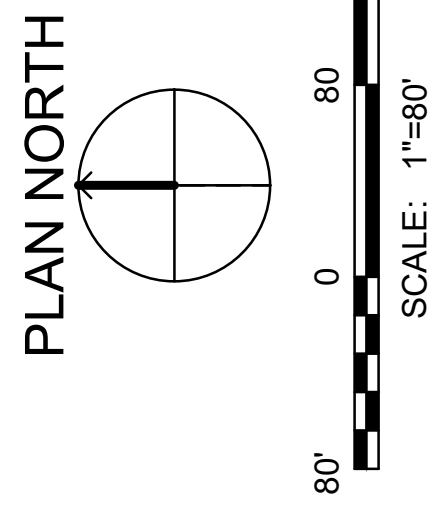
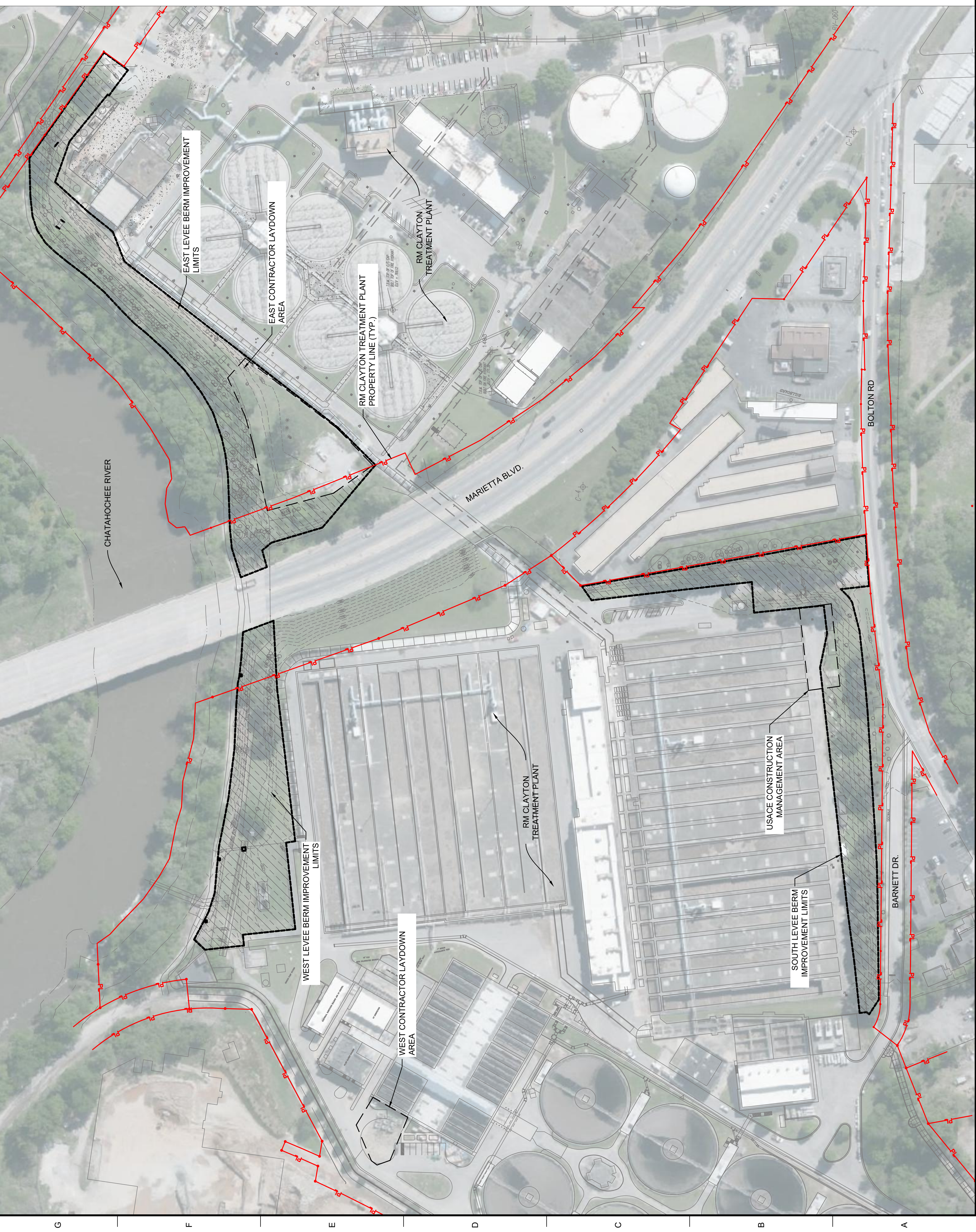
U.S. ARMY CORPS OF ENGINEERS
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MOBILE, ALABAMA

DESIGNED BY:	MM MM YYYY
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CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	PROJECT NUMBER:
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SHEET NOTES

1. EAST LEVEE BERM IMPROVEMENT LIMITS ENCOMPASS APPROX. (2.30±AC)
2. WEST LEVEE BERM IMPROVEMENT LIMITS ENCOMPASS APPROX. (1.16±AC)
3. SOUTH LEVEE BERM IMPROVEMENT LIMITS ENCOMPASS APPROX. (1.54±AC)

SHEET LEGEND

- APPROX. AREAS OF DISTURBANCE
- CONTRACTOR STORAGE AND LAYDOWN
- PROPERTY LINE