THE GOVERNING BOARD OF THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
TAYLOR CREEK RESERVOIR IMPROVEMENTS PROJECT
BORROW EXPLORATION, DAM BREACH ANALYSIS, WETLAND DELINEATION
REQUEST FOR QUALIFICATIONS 39171

The Governing Board of the St. Johns River Water Management District (the "District") requests that interested parties respond to the solicitation below by 2:00 p.m., November 22, 2023. Further information is available through DemandStar at *Demandstar.com* [(800) 711-1712], Vendor Registry at *Vendorregistry.com*, or the District's website at *sjrwmd.com*. Solicitation packages may be obtained from DemandStar, Vendor Registry, or the District by calling or emailing Kendall Matott, Contracts Manager, at 386-312-2324 or kmatott@sjrwmd.com. Responses will be opened at District Headquarters, in the procurement conference area at 4049 Reid St, Palatka, FL 32177-2571.

The District desires to enter into an agreement with an engineering firm licensed to do business in the state of Florida, which has Professional Engineers licensed in the state of Florida. The work to be performed under the agreement shall include subsurface exploration for potential borrow material at Taylor Creek Reservoir, dam breach analysis, flood inundation mapping, and wetland delineation as described in the Statement of Work. The estimated completion date of the awarded agreement is September 30, 2024.

The District is conducting a Non-Mandatory virtual Pre-Solicitation meeting for the above referenced Request for Qualifications: Wednesday October 18, 2023, at 2:00 p.m.

Virtual Meeting Instructions: Please note a presentation will be given, please join by computer for full participation capabilities.

For Microsoft Teams or Skype:

Meeting ID: 259 298 807 203
Passcode: 6WqFvk
Link: Click here to join the meeting

Or audio only:

Conference phone number 1-386-256-1151 Meeting ID: 430 653 937#

The District's Evaluation Committee will meet at the Palatka DHQ, 4049 Reid Street, Palatka, FL 32177-2571, to evaluate and rank Submitttals as follows:

- 1:30 pm on Thursday, December 7, 2023 to
  - Discuss the responses
  - Finalize the initial ranking
  - Determine a shortlist of Respondents

- 10:00 am on January 16, 2024 to
    - Negotiate professional fees and project cost with the top-ranked Respondent as authorized by the District's Governing Board at its January 09, 2024, meeting.

One or more members of the District's Evaluation Committee may attend the meetings via Communication Media Technology, such as Microsoft Teams. Public attendance is available at the address listed above.

Americans With Disabilities Act (ADA)

The District does not discriminate on the basis of disability in its services, programs, or activities. Special accommodations for disabilities may be requested through Kendall Matott, or by calling (800) 955-8771 (TTY), at least five business days before the date needed.

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INSTRUCTIONS TO RESPONDENTS

1. **CONTRACT ADMINISTRATION**

All inquiries related to this solicitation may only be directed to the Procurement Specialist:

Kendall Matott, Contracts Manager Phone: 386-312-2324 Email: kmatott@sjrwmd.com

Between the release of this solicitation and the posting of the notice of intended decision, Respondents to this solicitation or persons acting on their behalf may not contact any employee or officer of the District concerning any aspect of this solicitation, except the procurement employee listed above. Violation of this provision is grounds for rejecting a response.

2. **WHERE TO DELIVER SUBMITTAL**

Respondent must submit its Submittal in electronic format (no paper copies) either by:

(1) uploading to Demandstar directly at www.demandstar.com **, or**

(2) delivering all files on a single pin/thumb/jump drive either by mail or hand delivery in a sealed envelope labeled as follows:

SEALED SUBMITTAL – DO NOT OPEN Respondent's Name: _____ Request for Qualifications: 39171 Opening Time: 2:00 p.m. Opening Date: November 22, 2023 Kendall Matott, Contracts Manager St. Johns River Water Management District Attn: Office of Financial Services 4049 Reid Street Palatka, FL 32177-2571

DO NOT SUBMIT YOUR SUBMITTAL BY EMAIL — THIS WILL RESULT IN THE SUBMITTAL BEING REJECTED AS NONRESPONSIVE.

Please note that the United States Postal Service does not deliver regular mail or express mail to the above address. The District's experience is that Federal Express and United Parcel Service will.

3. **OPENING OF SUBMITTALS**

Respondents or their authorized agents are invited to attend the opening of the Submittals at the following time and place:

2:00 p.m., November 22, 2023 St. Johns River Water Management District 4049 Reid St, Palatka, Florida 32177-2571

The Florida Public Records Act, §119.071(1)(b), Fla. Stat., exempts sealed Submittals from inspection and copying until such time as the District provides notice of an intended decision pursuant to §120.57(3)(a), Fla. Stat., or until 30 days after opening of bids, proposals, submittals, or final replies, whichever is earlier. This exemption is not waived by the public opening of the Submittals.

Unless otherwise exempt, Respondent's Submittal is a public record subject to disclosure upon expiration of the above exemption period. If any information submitted with the Submittal is a trade secret as defined in §812.081, Fla. Stat., and exempt from disclosure pursuant to §815.04, Fla. Stat., Respondent must clearly identify any such material as "CONFIDENTIAL TRADE SECRET" in its Submittal and explain the basis for such exemption. The District reserves the right, in its sole judgment and discretion, to reject a Submittal for excessive or unwarranted assertion of trade secret confidentiality and return the Submittal to Respondent.

4. PREPARATION AND ORGANIZATION OF SUBMITTALS

1. Respondent must submit its Submittal either by uploading to Demandstar or in "digital format". Instructions for submitting are provided below. Respondents shall provide and complete the following forms and questionnaires, and include them in their Submittal under the tabs identified below (responses to the forms and questionnaires can be submitted on reproduced copies):

Tab 1: Forms and Minimum Qualifications:

Respondents must submit the following fully completed documents on reproduced copies of the attached forms provided in FORMS:

a) Submittal Form (all blank spaces on the Submittal Form shall be typed or legibly printed in ink)
b) Proposed Subcontractors Form
c) Certificate as to Corporation
d) Affidavit as to Non-collusion and Certification of Material Conformance with Specifications
e) Qualifications (General, Similar Projects, Client References)
f) Licenses (Respondent provided documentation)
g) Drug-Free Workplace Form (not required unless there is a tie)

Tab 2: Firm's and subcontractors' overall qualifications, capabilities, and business certifications

No forms are provided for this criterion. Respondent is responsible for providing relevant information and requested certification(s), if applicable, that demonstrate its capabilities to conduct work presented in the Statement of Work.

a) Description of the Respondent and their overall qualifications and capabilities
b) Description of subcontractor(s) and their overall qualifications and capabilities
c) Understanding of requested services
d) Willingness to meet time and budget requirements
e) Woman-, veteran-, or minority-owned business enterprise certified by the State of Florida's Office of Supplier Diversity? (if yes, provide certification)
f) Small business certification? (if yes, provide certification)

Tab 3: Key personnels' technical qualifications, relevant experience, past performance, and availability

No forms are provided for this criterion. Respondent is responsible for providing information to demonstrate its key personnels' capabilities to conduct work presented in the Statement of Work.

a) Team organizational structure with specific names, titles, and/or roles of key personnel

b) Project management methods and QA/QC process
c) Qualifications and work history of key personnel
d) Projects completed in last 10 years. Incorporate details on obstacles and completion of projects relative to initial schedule and budget
e) Current and projected work loads of key personnel
f) Hours committed to project

Tab 4: Location of Respondent's Management Office or Project Manager:

Higher consideration will be given to firms whose Management Office or Project Manager is located in proximity of the entrance to the project site (28.32893, -80.92527). The District shall utilize the website maps.google.com and the shortest driving route to determine mileage to a District office. Points will be awarded as follows:

- Within 0-75 miles = 10 points
- Within 76-150 miles = 5 points
- Greater than 150 miles = 0 points

Tab 5: Volume of District work previously awarded to Respondent

No forms are provided for this criterion. Respondent should submit documentation as to the volume of work (in dollars) awarded by the District to firm in the past five years, including contracts, work orders and purchase orders. District staff will review and confirm the volume of work and calculate Respondent's score for this criterion.

2. Respondent is encouraged to include as much pertinent data and information under each section as necessary to ensure proper evaluation of its qualifications. Each section shall be evaluated separately on its own merit.
3. Respondent must follow all procedures for uploading to Demandstar or digital submission or the Respondent's Bid may be determined as "non-responsive" and rejected.
4. Unless directed otherwise, all information required by the solicitation, including the forms and questionnaires listed under Tab 1 above must be completed (typed or handwritten) and included in the submission in electronic format (forms must be completed and converted/scanned to PDF format (Adobe).
5. All of the forms and questionnaires in the Request for Qualifications package are available upon request in Microsoft® Word to aid the Respondent in providing its Submittal in electronic format.
6. The file-naming conventions for the Submittal shall include:
   a) Submittal: RFQ # Respondent's name (abbreviated) Due Date
   (Example: RFQ _____ ABC Company 11-11-15)
7. The Submittal must include a separator page between each "Tabbed" section:
   a) Example: Tab 1 – Background and Qualifications
8. All electronically submitted files shall be saved to a single CD or pin/thumb/jump drive. The CD or pin/thumb/jump drive MUST be placed in a sealed envelope pursuant to the instructions under Item 3 for sealed responses – **DO NOT SUBMIT YOUR RESPONSE BY EMAIL — THIS WILL RESULT IN THE SUBMITTAL BEING REJECTED AS NON-RESPONSIVE.**
9. **Please do NOT password protect your files.** The District recommends that Respondents confirm their Submittal will open correctly on a non-company owned computer. Any electronic submittal received by the District that does not open on a District-owned computer is subject to rejection as a defective response.

A RESPONDENT'S BID MAY BE REJECTED AS NON-RESPONSIVE FOR (1) FAILING TO COMPLETE ALL FORMS AND QUESTIONNAIRES; (2) FAILING TO PROVIDE ALL

REQUIRED MATERIALS; AND (3) OTHERWISE FAILING TO COMPLY WITH INSTRUCTIONS FOR PREPARATION AND ORGANIZATION OF BID.

In the event you decline to submit a Submittal, the District would appreciate submission of the "No Response Form" provided at the end of the "FORMS" section to describe the reason for not submitting a Submittal.

5. **INQUIRIES AND ADDENDA**

District staff are not authorized to orally interpret the meaning of the specifications or other Agreement documents, or correct any apparent ambiguity, inconsistency, or error therein. In order to be binding upon the District, the interpretation or correction must be given by the Procurement Specialist and must be in writing. The Procurement Specialist may orally explain the District's procedures and assist Respondents in referring to any applicable provision in the Request for Qualifications documents, but the Respondent is ultimately responsible for submitting the Submittal in the appropriate form and in accordance with written procedures.

Every request for a written interpretation or correction must be received at least nine days prior to opening of Submittals in order to be considered. Requests may be submitted by email to Kmatott@sjrwmd.com. Interpretations, corrections, and supplemental instructions will be communicated by written addenda to this solicitation posted by DemandStar and Vendor Registry to all prospective Respondents (at the respective addresses furnished for such purposes) no later than five days before the opening of Submittals.

Submission of a Submittal constitutes acknowledgment of receipt of all addenda. Submittals will be construed as though all addenda had been received. Failure of the Respondent to receive any addenda does not relieve Respondent from any and all obligations under the Submittal, as submitted. All addenda become part of the Agreement.

6. **MINIMUM QUALIFICATIONS**

Respondent must use the "Qualification" forms (General, Similar Projects, and Client References) provided in these documents to document the minimum qualifications listed below. Failure to include these forms with the Submittal may be considered non-responsive.

a. Similar Projects (*must use District-provided Qualification – Similar Projects form)*.

Respondent, or a combination of the firm, individual, or project manager assigned to the work, must have successfully completed a minimum of three projects of a similar nature as described below. In addition to the identification of each similar project described below, each similar project must comply with the following criteria:

- Each project listed below must have been successfully completed within the past seven (7) years as of the response due date.
- The similar project may have been completed by a subconsultant named in the Proposed Subcontractor Form only where indicated.
- For each Similar Project, the Respondent (or named subconsultant, if applicable) must have had overall responsibility for completion of the work.
- The "project value" is the value of the scope of work described for each Similar Project described below; it is not the value of a construction project for which the work supported.
- If the Respondent (or named subconsultant, if applicable) was not the prime consultant on the similar project, the "project value" of the similar project shall be determined based upon the component of the similar project for which the Respondent (or subconsultant) was responsible.
- A project may not be listed more than once as a similar project.

Similar Project 1 – Borrow Exploration: One project that involved developing a subsurface exploration plan, conducting the field work, and evaluating the borrow material for potential use in construction of a new or expansion of an existing earthen, above ground reservoir, dam, or levee. This similar project may have been completed by a subcontractor named in the Proposed Subcontractor form. The project value must be no less than $35,000.

Similar Project 2 – Dam Breach Analysis and Inundation Mapping: One project that involved conducting a breach analysis and developing subsequent inundation mapping on a dam that is classified as a high hazard or intermediate hazard dam based on federal guidelines or as a high hazard dam based on guidelines established by the State of Florida or any one of Florida's five water management districts. The project value must be no less than $25,000.

Similar Project 3 – Wetland Delineation: One project that involved identifying and flagging lands that are defined as wetlands in accordance with Chapter 62-340, Florida Administrative Code (F.A.C.) and developing a wetland boundary survey that is certified by a Florida licensed Surveyor and Mapper. This similar project may have been completed by a subcontractor named in the Proposed Subcontractor form. The project value must be no less than $10,000.

b. Respondent's Project Manager must have no less than ten years of experience on water resources projects with elements similar to those specified in subparagraph (a) above.

c. Respondent's Key Personnel should have appropriate professional licenses. Respondent's Key Personnel, who will be responsible for the work, shall have active Professional Engineering licenses in the state of Florida. A copy of Professional Engineering licenses and other appropriate licenses, including a state of Florida Professional Surveyor and Mapper license, must be included with the submittal.

d. Client References *(must use District-provided Qualifications – Client References form)*.

Respondent must provide three client references who can verify Respondent's qualifications and past performance record. Up to two of the client references may be from the similar projects listed in response to subparagraph (a), above. No more than one of the references may be from completed District projects. If a District project is cited, the Evaluation Committee will use the cited project's contract closeout documents and may consult with the District project manager.

Irrespective of the minimum qualifications stated above, the District may make such investigations as it deems necessary to determine the ability of the Respondent to perform the Work. The District reserves the right to reject any Submittal if the evidence submitted by such Respondent and/or the District's independent investigation of such Respondent fails to satisfy the District that such Respondent is properly qualified to carry out the obligations of the Agreement and complete the Work in a manner acceptable to the District within the time period specified.

7. SIGNATURE AND CERTIFICATION REQUIREMENTS

An individual submitting a Response must sign his/her name therein and state his/her address and the name and address of every other person interested in the Submittal as principal. If a firm or partnership submits the Submittal, state the name and address of each member of the firm or partnership. If a corporation submits the Submittal, an authorized officer or agent must sign the Submittal, subscribing the name of the corporation with his or her own name and affixing the corporate seal. Such officer or agent must also provide the name of the state under which the corporation is chartered, and the names and business addresses of the President, Secretary, and Treasurer. Corporations chartered in states other than Florida must submit evidence of registration with the Florida Secretary of State for doing business in the State of Florida. Respondent must certify that all persons or entities having an interest as principal in the Submittal or in substantial performance of the Work have been identified in the Submittal forms.

8. DISQUALIFICATION OF RESPONDENTS

Any of the following causes will be considered as sufficient grounds for disqualification of a Respondent and rejection of the Submittal:

a. Contacting a District employee or officer other than the procurement employee named in this solicitation about any aspect of this solicitation before the notice of intended decision is posted.
b. Submission of more than one Submittal for the same subject matter by an individual, firm, partnership, or corporation under the same or different names;
c. Evidence of collusion among Respondents;
d. Submission of materially false information with the Submittal;
e. Information gained through checking of references or other sources which indicates that Respondent may not successfully perform the Work;
f. Respondent is failing to adequately perform on any existing contract with the District;
g. Respondent has defaulted on a previous contract with the District;
h. The evidence submitted by Respondent, or the District's investigation of Respondent, fails to satisfy the District that Respondent is properly qualified to carry out the obligations of the Agreement in a manner acceptable to the District and within the time period specified;
i. Any other cause that is sufficient to raise doubt regarding the ability of a Respondent to perform the Work in a manner that meets the District's objectives for the Work.

9. REJECTION OF SUBMITTALS

Submittals must be delivered to the specified location and received before the Submittal opening in order to be considered. Untimely Submittals will be returned to the Respondent unopened. Submittals will be considered irregular and may be rejected if they show material omissions, alterations of form, additions not called for, conditions, limitations, or other material irregularities. The District may consider incomplete any Submittal not prepared and submitted in accordance with the provisions specified herein, and reserves the right to waive any minor deviations or irregularities in an otherwise valid Submittal.

The District reserves the right to reject any and all Submittals and cancel this request for qualifications when it determines, in its sole judgment and discretion, that it is not in its best interest to award the agreement. In addition, the District reserves the right to increase, decrease, or delete any class, item, or part of the Work in order to reduce costs for any reason. The District may discuss alternatives for reducing the cost of the Work with Respondents and make such modifications as it determines to be in its best interest.

10. WITHDRAWAL OF SUBMITTAL

Respondent may withdraw its Submittal if it submits such a written request to the District prior to the designated date and hour of opening of Submittals. Respondent may be permitted to withdraw its Submittal no later than 72 hours after the Submittal opening for good cause, as determined by the District in its sole judgment and discretion.

11. EVALUATION AND AWARD PROCEDURES

a. Submittals will be evaluated by a staff Evaluation Committee based upon the criteria and weighting set forth in "EVALUATION CRITERIA." The committee members will meet at District headquarters or other location as appropriate to discuss the Submittals and their individual evaluations. Each committee member completes an evaluation form, from which the overall ranking of Submittals is compiled. Evaluation forms may be submitted at or subsequent to the Evaluation Committee meeting. If it is determined that it will assist the committee's evaluation for some or all Respondents to make an oral presentation, such presentations will be scheduled at District headquarters or other location as appropriate.

b. Section 286.0113, Fla. Stat., exempts from being open to the public, any portion of a meeting at which: (1) a negotiation with a Respondent is conducted pursuant to a competitive solicitation; (2) a Respondent makes an oral presentation as part of a competitive solicitation; (3) a Respondent answers questions as part of a competitive solicitation; or (4) negotiation strategies are discussed. Also, recordings of, and any records presented at, the exempt meeting are exempt from §119.07(1) and §24(a), Art. I of the State Constitution (Public Records) until such time as the District provides notice of an intended decision or until 30 days after opening the bids, proposals, submittals, or final replies, whichever occurs earlier. A complete recording shall be made of any portion of an exempt meeting. No portion of the exempt meeting may be held off the record.

c. Pursuant to §286.0113 Fla. Stat., if the District rejects all Submittals and concurrently provides notice of its intent to reissue the competitive solicitation, any recordings or records presented at any exempt meeting relating to the solicitation shall remain exempt from §119.07(1) and §24(a), Art. I of the State Constitution (Public Records) until such time as the District provides notice of an intended decision concerning the reissued competitive solicitation or until the District withdraws the reissued competitive solicitation. A recording and any records presented at an exempt meeting are not exempt for longer than 12 months after the initial District notice rejecting all Submittals.

d. The Committee will meet to evaluate and rank the Submittals in the location(s), time(s) and date(s), stated at the beginning of this Request for Qualifications package.

e. Following the evaluation process, the District will submit the final ranking of Submittals to the Governing Board for approval, except for those instances in which the authority to approve and execute the Agreement has been delegated by the Governing Board to the Executive Director, or designee. All Respondents will be notified in writing of the Evaluation Committee's final ranking of Submittals.

f. Contract negotiations will then commence with the Respondents submitting the highest-ranked Submittals. If negotiations fail with the highest-ranked Respondent, negotiations will proceed with the other Respondents in ranked order.

g. The Agreements will be awarded to the Respondent having the highest ranked Submittal, which successfully concludes negotiations with the District (the "Successful Respondent"). The Agreement may be modified based on the District's acceptance of any alternatives listed in this Request for Qualifications that the District deems in its best interest.

h. If two or more Submittals are equal in all respects, the Agreement will be awarded as follows: (1) to the Respondent that certifies compliance with §287.087, Fla. Stat., via the Drug-Free Workplace Form; (2) to a Respondent university in the State University System pursuant to §373.63, Fla. Stat.; or (3) by lot.

i. The District reserves the right to award the Agreement to the next highest ranked and available Respondent in the event the Successful Respondent fails to enter into the Agreement, or the Agreement with said Respondent is terminated within 90 days of the effective date.

j. All Respondents will be notified of the District's intent to award or decision to award the Agreement. For the purpose of filing a protest under §120.57(3), Fla. Stat., the time period will commence as provided in "NOTICES AND SERVICES THEREOF."

12. EVALUATION CRITERIA

Responses shall include sufficient information and documentation. Responses shall be evaluated using the criteria set forth below. The evaluation rating scale is as follows or as indicated for each criterion:

More adequate.....8 – 10 Less adequate ..... 1 – 4
Adequate .....5 – 7 Not covered in submittal 0

Tab	CRITERIA	SCORE	WEIGHT	TOTAL
1	**Forms and Minimum Qualifications** a) Submittal Form (all blank spaces on the Submittal Form shall be filled out) b) Proposed Subcontractors Form c) Certificate as to Corporation d) Affidavit as to Non-collusion and Certification of Material Conformance e) Qualifications (General, Similar Projects, Client References f) Licenses g) Drug-Free Workplace Form (not required unless there is a tie)		20%	
2	**Respondent's and subconsultants' overall qualifications, capabilities, and business certifications** a) Description of the Respondent and their overall qualifications and capabilities b) Description of subconsultant(s) and their overall qualifications and capabilities c) Understanding of requested services d) Willingness to meet time and budget requirements e) Woman-, veteran-, or minority-owned business enterprise certified by state of Florida Office of Supplier Diversity (if yes, provide certification) f) Small business certification (if yes, provide certification)		30%	
3	**Key Personnels' technical qualifications, relevant experience, past performance, and availability** a) Team organizational structure with specific names, titles, and/or roles of key personnel b) Project management approach and QA/QC process c) Qualifications and work history of key personnel d) Projects completed in last 10 years. Incorporate details on obstacles and completion of projects relative to initial schedule and budget e) Current and projected work loads of key personnel f) Hours committed to project		45%	
4	**Location of Respondent's Management Office or Project Manager** Higher scores will be given to Respondents whose Management Office or Project Manager are located in proximity of the entrance to the project site (28.32893, -80.92527). The District shall utilize the website maps.google.com and the shortest driving route to determine mileage to a District office. Points will be awarded as follows: • Within 0 - 75 miles = **10 points** • Within 76 - 150 miles from the project site = **5 points** • Greater than 150 miles from the project site = **0 points**		3%	
5	**Volume of District work previously awarded to Respondent** Submit documentation as to the volume of work (in dollars) awarded by the District to Respondent in the past five years, including contracts, work orders, and purchase orders. Points will be allocated from 0 to 10; Respondents with higher awarded contract totals in the last five years based on the solicitation date of this RFQ shall receive fewer award points. Respondents with no previous work awards may receive the highest allocation of points (10). Respondent with the highest volume of work will receive zero points. The District shall rely on its official financial records to resolve any discrepancies. Contracts, work orders, and purchase orders issued by the District in the last five years shall be included in this total even if Respondent has not yet received payment. The District shall calculate scores as follows: The amount (in dollars) awarded to the Respondent with the highest volume of work in the last five years shall represent the Allocation Basis Total (ABT). The ABT less a Respondent's total volume of work awarded shall be divided by the ABT and then multiplied by 10; the result rounded to the tenths shall represent the Respondent's score for this criterion.		2%	
	TOTAL		100%	

13. **EXECUTION OF AGREEMENT**

Submittal of a Response binds the Successful Respondents to perform the Work upon acceptance and execution of the Agreement by the District.

Unless all Responses are rejected, a contract substantially in the form included in these documents will be provided to the Successful Respondent, who must execute and return the Agreement to the District within ten days of the date of receipt, along with the following:

a. A completed Internal Revenue Service Form W-9
b. Satisfactory evidence of all required insurance coverage
c. Proof satisfactory to the District of the authority of the person or persons executing the Agreement on behalf of Respondent
d. All other information and documentation required by the Agreement

The District will not execute the Agreement with a Successful Respondent until the above documents have been executed and delivered to the District. The Agreement will not be binding until executed by the District. A copy of the fully executed Agreement will be delivered to the Successful Respondent. The District reserves the right to cancel award of the Agreement to a Successful Respondent without liability at any time before the Agreement has been fully executed by all appropriate parties and delivered to the Successful Respondent.

Failure upon the part of a Successful Respondent to execute the Agreement or timely submit the required evidence of insurance coverage, or any other matter required by the Agreement, will be just cause, if the District so elects, for the recommended award to be annulled.

14. **EXAMINATION OF AGREEMENT DOCUMENTS AND WORK AREA**

Respondent is solely responsible for being fully informed of the conditions under which the Work is to be performed in relation to existing conditions. Respondent is responsible for carefully examining the general area of the Work, the requirements of the drawings and other contract documents related to the Work, the time in which the Work must be completed, and any other details of the Work. Respondent must satisfy itself from its own personal knowledge and experience or professional advice as to the character of the Work, the conditions and materials to be encountered, the character, quality, and quantities of the Work, and any other conditions affecting the Work, including surrounding land.

Failure to satisfy the obligations of this paragraph will not relieve a Successful Respondent of its obligation to furnish all material, equipment, and labor necessary to perform the Agreement and to complete the Work for the consideration set forth in its response, awarded Contract or fee schedule. Any such failure will not be sufficient cause to submit a claim for additional compensation.

No verbal agreement or conversation with any District officer, agent or employee, either before or after the execution of the Agreement, will affect or modify any of its terms.

15. **DIVERSITY**

The District is committed to the opportunity for diversity in the award and performance of all procurement activities. The District encourages its Respondents to make a good faith effort to ensure that women and minority-owned business enterprises (W/MBE) are given the opportunity for maximum participation as second and lower tier participants. The District will assist Respondents by sharing information on W/MBEs to encourage their participation.

16. **FLORIDA SALES TAX**

The District is exempt from payment of State of Florida sales tax pursuant to §212.08(6), Fla. Stat. Any tangible personal property that is the subject of this Request for Qualifications is intended to remain tangible personal property and not become part of a public work owned by the District.

17. **PUBLIC ENTITY CRIMES/DISCRIMINATORY VENDORS**

In accordance with §287.133 and §287.134, Fla. Stat., a person or affiliate who has been placed on the convicted vendor lists following a conviction for a public entity crime or placed on the discriminatory vendor list may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in §287.017 for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted or discriminatory vendor lists.

18. **NOTICES AND SERVICES THEREOF**

The District will publish notice of specifications and criteria, including addenda, intended agency decisions, or other matters pertinent to this solicitation on Onvia DemandStar at *DemandStar.com* and Vendor Registry at *vendorregistry.com*. Onvia DemandStar and Vendor Registry may also be accessed through the District's web site at *sjrwmd.com*. In addition, the District will post notices of intended agency decisions at the District's headquarters, 4049 Reid Street, Palatka, Florida, Administration Building, Procurement Bulletin Board, on the date the publication is posted on Onvia DemandStar and Vendor Registry.

Notices will be posted for a minimum of 72 hours. The time period for filing a Notice of Protest pursuant to §120.57(3), Fla. Stat., and Rule 28-110.003, Fla. Admin. Code, commences at the time notices are posted.

As a courtesy to Respondents, the District may send copies of the notices of intended agency decisions via email or facsimile to Respondent. These courtesy communications neither constitute official notice nor vary the times of receipt set forth above.

19. **PROTEST PROCEDURES**

Pursuant to§120.57(3), Fla. Stat., and Rule 28-110.003, Fla. Admin. Code, any person adversely affected by the terms, conditions, or specifications contained in a solicitation, including addenda, must file a written Notice of Protest within 72 hours after its posting.

Pursuant to §120.57(3), Fla. Stat., and Rule 28-110.003, Fla. Admin. Code, any person adversely affected by a District decision or intended decision to award a contract, or to reject all bids, proposals, or qualifications, must file a written Notice of Protest within 72 hours after posting of the decision or intended decision.

Pursuant to §120.57(3), Fla. Stat., and Rule 28-110.004, Fla. Admin. Code, the protester must also file with the District Clerk a Formal Written Protest within ten days after the date the Notice of Protest is filed with the District. The Formal Written Protest must state with particularity the facts and law upon which the protest is based. Pursuant to §287.042(2)(c), Fla. Stat., any person who files an action protesting the decision or intended decision must post with the District Clerk at the time of filing the Formal Written Protest a bond, cashier's check, or money order made payable to the St. Johns River Water Management District in an amount equal to one percent (1%) of the District's estimated contract amount.

No additional time will be added for mailing. All filings must comply with Rule 28-106.104, Fla. Admin. Code, and must be addressed to and received by the District Clerk at the District Headquarters in Palatka, Florida within the prescribed time periods. The District will not accept as filed any electronically transmitted facsimile pleadings, petitions, Notice of Protest or other documents.

The District's acceptance of pleadings, petitions, Notice of Protest, Formal Written Protest, or other documents filed by email is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at sjrwmd.com. These conditions include, but are not limited to, the document being in the form of a PDF or TIFF file and being capable of being stored and printed by the District.

Failure to file a protest within the time prescribed in §120.57(3), Fla. Stat., or failure to post the bond or other security required by law within the time allowed for filing a bond will constitute a waiver of proceedings under chapter 120, Fla. Stat. Mediation under §120.573, Fla. Stat., is not available.

FORMS

SUBMITTAL FORM

Include this form in the response

RESPONDENT:

The undersigned, as Respondent, hereby declares and certifies that the only person(s) or entities interested in this submittal as principal(s), or as persons or entities who are not principal(s) of the Respondent but are substantially involved in performance of the Work, is or are named herein, and that no person other than herein mentioned has any interest in this submittal or in the Agreement to be entered into; that this submittal is made without connection with any other person, company, or parties making a submittal; and that this submittal is in all respects fair and in good faith without collusion or fraud.

Respondent represents to the District that, except as may be disclosed in an addendum hereto, no officer, employee or agent of the District has any interest, either directly or indirectly, in the business of Respondent to be conducted under the Agreement, and that no such person shall have any such interest at any time during the term of the Agreement, should it be awarded to Respondent.

Respondent further declares that it has examined the Agreement and informed itself fully in regard to all conditions pertaining to this solicitation; it has examined the specifications for the Work and any other Agreement documents relative thereto; it has read all of the addenda furnished prior to the submittal opening, as acknowledged below; and has otherwise satisfied itself that it is fully informed relative to the Work to be performed.

The District anticipates qualifying and negotiating fee schedules with up to five Respondents. Respondent agrees that if its submittal is accepted, Respondent shall contract with the District in the form of the attached Agreement and shall furnish everything necessary to complete the Work in accordance with the time for completion specified in the Agreement, and shall furnish the required evidence of the specified insurance.

Acknowledgment is hereby made of the following addenda (identified by number) received:

Addendum No.	Date	Addendum No.	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

_____ _____
Respondent (firm name) Date

_____
Address

_____
Email address

_____ _____
Signature Telephone number

_____ _____
Typed name and title Fax number

PROPOSED SUBCONTRACTORS

Include this form in the response

Respondent must submit with its Submittal a list of all known subcontractors/subconsultants who will participate in more than ten percent of the Work by providing the information requested below. Acceptance of the Submittal does not constitute approval of the subcontractors identified in the Submittal.

1. Name and address of subcontractor: _____

   _____

   Description of work: _____

   _____

   Estimated value of Work: _____

2. Name and address of subcontractor: _____

   _____

   Description of work: _____

   _____

   Estimated value of Work: _____

3. Name and address of subcontractor: _____

   _____

   Description of work: _____

   _____

   Estimated value of Work: _____

4. Name and address of subcontractor: _____

   _____

   Description of work: _____

   _____

   Estimated value of Work: _____

5. Name and address of subcontractor: _____

   _____

   Description of work: _____

   _____

   Estimated value of Work: _____

6. Name and address of subcontractor: _____

   _____

   Description of work: _____

   _____

   Estimated value of Work: _____

CERTIFICATE AS TO CORPORATION

Include this form in the response

The below Corporation is organized under the laws of the State of _____; is authorized by law to respond to this Request for Qualification and perform all work and furnish materials and equipment required under the Agreement, and is authorized to do business in the state of Florida.

Corporation name: _____

Address: _____

Registration No.: _____

Registered Agent: _____

By: _____

_____
(Official title)

(Affix corporate seal)

Attest: _____
(Secretary)

The full names and business or residence addresses of persons or firms interested in the foregoing submittal as principals or officers of Respondent are as follows (specifically include the President, Secretary, and Treasurer and state the corporate office held of all other individuals listed):

_____

_____

_____

_____

Identify any parent, subsidiary, or sister corporations involving the same or substantially the same officers and directors that will or may be involved in performance of the Project, and provide the same information requested above on a photocopy of this form.

_____

_____

_____

If applicable, attach a copy of a certificate to do business in the state of Florida, or a copy of the application that has been accepted by the state of Florida to do business in the state of Florida, for the Respondent and/or all out-of-state corporations that are listed pursuant to this form.

AFFIDAVIT AS TO NON-COLLUSION AND CERTIFICATION OF
MATERIAL CONFORMANCE WITH SPECIFICATIONS

Include this form in the response

STATE OF _____

COUNTY OF _____

I, the undersigned, _____ being first duly sworn, depose and say that:

1. I am the owner or duly authorized officer, representative, or agent of:

   _____

   the Respondent that has submitted the attached submittal.
2. The attached submittal is genuine. It is not a collusive or sham submittal.
3. I am fully informed respecting the preparation and contents of, and knowledgeable of all pertinent circumstances respecting the attached submittal.
4. Neither Respondent nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Respondent, firm, or person to submit a collusive or sham submittal in connection with the Agreement for which the attached response has been submitted, or to refrain from submitting in connection with such Agreement, or has in any manner, directly or indirectly, sought by agreement, collusion, communication, or conference with any other Respondent, firm, or person to fix the price or prices in the attached submittal of any other Respondent, or to fix any overhead, profit, or cost element of the submittal prices or the submittal price of any other Respondent, or to secure through collusion, conspiracy, connivance, or unlawful agreement any advantage against the District or any other person interested in the proposed Agreement.
5. The attached submittal is fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Respondent or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.
6. No official or other officer or employee of the District, whose salary or compensation is payable in whole or in part by the District, is directly or indirectly interested in this submittal, or in the supplies, materials, equipment, work, or labor to which it relates, or in any of the profits therefrom.
7. Any materials and equipment proposed to be supplied in fulfillment of the Agreement to be awarded conform in all respects to the specifications thereof. Further, the proposed materials and equipment will perform the intended function in a manner acceptable and suitable for the intended purposes of the District.

Signature: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20 ___.

Notary Public, state of _____ at Large

My commission expires:

(SEAL)

QUALIFICATIONS — GENERAL

Include this form in the response

As part of the submittal, Respondent shall complete the following so that the District can determine Respondent's ability, experience, and facilities for performing the Work.

Name of Respondent and Project Manager: _____

Year company was organized/formed: _____

Number of years Respondent has been engaged in business under the present firm or trade name: _____

Total number of years Respondent has experience in similar Engineering Services as described in the INSTRUCTIONS TO RESPONDENTS and STATEMENT OF WORK: _____

Total number of years Project Manager has experience in similar Engineering Services as described in the INSTRUCTIONS TO RESPONDENTS and STATEMENT OF WORK: _____

Has Respondent previously been engaged in the same or similar business under another firm or trade name? If so, please describe each such instance.

_____

_____

_____

_____

Has Respondent ever been adjudicated bankrupt, initiated bankruptcy, or been the subject of bankruptcy proceedings on behalf of the current entity submitting this submittal or a prior entity that Respondent substantially operated or controlled? If yes, please describe the nature and result of those proceedings and the entity involved.

_____

_____

_____

_____

Describe the background/experience of the person or persons who will be primarily responsible for directing the Work that will be performed pursuant to this submittal. This inquiry is intended to encompass the project manager who will be engaged on a daily basis in directing performance of the Work.

_____

_____

_____

_____

QUALIFICATIONS — SIMILAR PROJECTS

Include this form in the response

Respondent (or a combination of the firm, individual, or project manager assigned to the work) must have successfully completed at least three similar projects within the seven years immediately preceding the date set for receipt of the response, as described in the INSTRUCTIONS TO RESPONDENTS. Do not list a project more than once as a similar project. Add additional sheets for optional, additional completed projects.

All requested information for the three similar projects must be included in this District-provided Qualifications – Similar Projects form. Respondent must complete all blanks in this form. In determining whether a Respondent satisfies the minimum qualifications for similar projects, the District will not consider any additional projects or materials submitted by Respondent beyond this District-provided form. Failure to provide all requested information in the form may result in Respondent's proposal being rejected as non-responsive.

Completed Similar Project 1 – Borrow Exploration: One project that involves developing a subsurface exploration plan, conducting the field work, and evaluating the borrow material for potential use in construction of a new or expansion of an existing earthen, above ground reservoir, dam, or levee. This similar project may be completed by a subcontractor named in the Proposed Subcontractor form. The project value must be no less than $35,000.

Agency/company: _____

Current contact person at agency/company: _____

Telephone: _____ Email: _____

Address of agency/company: _____

Name of project: _____

Project Description: _____

_____

_____

_____

_____

_____

_____

Project value: _____ Start date: _____ Completion date: _____

Project completed by (check one and include name of Subconsultant, if applicable):

☐ Respondent ☐ Subconsultant_____
(Subconsultant name)

Name(s) of assigned personnel:

Project manager: _____

Others: _____

Completed Similar Project 2 – Dam Breach Analysis and Inundation Flood Mapping: One project that involved conducting a breach analysis and developing subsequent inundation flood maps on a dam that is classified as a high hazard or intermediate hazard dam based on federal guidelines or as a high hazard dam based on guidelines established by the State of Florida or any one of Florida's five water management districts. The project value must be no less than $25,000.

Agency/company: _____

Current contact person at agency/company: _____

Telephone: _____ Email: _____

Address of agency/company: _____

Name of project: _____

Project Description: _____

Project value: _____ Start date: _____ Completion date: _____

Name(s) of assigned personnel:

Project manager: _____

Others: _____

Completed Similar Project 3 – Wetland Delineation: One project that involved identifying and flagging lands that are defined as wetlands in accordance with Chapter 62-340, Florida Administrative Code (F.A.C.) and developing a wetland boundary survey that is certified by a Florida licensed Surveyor and Mapper. This similar project may have been completed by a subcontractor named in the Proposed Subcontractor form. The project value must be no less than $10,000.

Agency/company: _____

Current contact person at agency/company: _____

Telephone: _____ Email: _____

Address of agency/company: _____

Name of project: _____

Project Description: _____

Project value: _____ Start date: _____ Completion date: _____

Project completed by (check one and include name of Subconsultant, if applicable):

☐ Respondent ☐ Subconsultant _____
(Subconsultant name)

Name(s) of assigned personnel:

Project manager: _____

Others: _____

QUALIFICATIONS — CLIENT REFERENCES

Include this form in the response

Respondent must provide three client references. Up to two of the client references may be from the similar projects listed in response to subparagraph 6(a) of the Minimum Qualifications section. No more than one of the references may be from completed District projects. If a District project is cited, the Evaluation Committee will use the cited project's contract closeout documents and may consult with the District project manager. (For similar projects listed above, simply state "Similar Project No. ___.")

Client Reference 1:

Agency/company: _____

Current contact person at agency/company: _____

Telephone: _____ Alternate phone: _____ Email: _____

Agency/Company Address: _____

Name of project: _____

Description: _____

_____

_____

_____

_____

Project value: _____ Start date: _____ Completion date: _____

Project manager: _____

Client Reference 2:

Agency/company: _____

Current contact person at agency/company: _____

Telephone: _____ Alternate phone: _____ Email: _____

Agency/Company Address: _____

Name of project: _____

Description: _____

_____

_____

_____

_____

Project value: _____ Start date: _____ Completion date: _____

Project manager: _____

Client Reference 3:

Agency/company: _____

Current contact person at agency/company: _____

Telephone: _____ Alternate phone: _____ Email: _____

Agency/Company Address: _____

Name of project: _____

Description: _____

_____

_____

_____

_____

Project value: _____ Start date: _____ Completion date: _____

Project manager: _____

DRUG-FREE WORKPLACE FORM

This form required only in the event of a tie response

The Respondent, (business name) _____, in accordance with §287.087, Fla. Stat., hereby certifies that Respondent does the following:

1. Informs employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations

2. Publishes a statement notifying employees that

   a. the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against its employees for violations of such prohibition.

   b. as a condition of working on the contractual services that are the subject of this solicitation, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893, Fla. Stat., or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five days after such conviction.

3. Gives each employee engaged in providing the contractual services that are the subject of this solicitation a copy of the statement specified in paragraph 2, above.

4. Imposes a sanction on, or requires the satisfactory participation in, a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee convicted of a violation listed in sub-paragraph 2.b., above.

5. Makes a good faith effort to continue to maintain a drug-free workplace through implementation of §287.087, Fla. Stat.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

By: _____

Title: _____

Date: _____

NO RESPONSE FORM

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
REQUEST FOR QUALIFICATIONS

Your reasons for not responding to this Request for Qualifications are valuable to the St. Johns River Water Management District's procurement process. Please complete this form and return it to the Office of Financial Services no later than the date set for receipt of submittals. Thank you for your cooperation.

Please check (as applicable):

_____ Specifications too "general" (explain below)

_____ Insufficient time to respond to the solicitation

_____ Do not provide this type of work for this project

_____ Schedule would not permit us to perform

_____ Unable to meet solicitation specifications

_____ Specifications unclear (explain below)

_____ Disagree with solicitation or Agreement terms and conditions (explain below)

_____ Other (specify below)

Remarks: _____

_____

_____

_____

_____

DATE

_____

RESPONDENT (FIRM NAME)

_____

ADDRESS

_____

E-MAIL ADDRESS

_____ _____

SIGNATURE TYPED NAME AND TITLE

_____ _____

TELEPHONE NUMBER FAX NUMBER

AGREEMENTBETWEEN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
AND _____ FOR
TAYLOR CREEK RESERVOIR IMPROVEMENTS PROJECT
BORROW EXPLORATION, DAM BREACH ANALYSIS, WETLAND DELINEATION

THIS AGREEMENT is entered into by and between the GOVERNING BOARD of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (the "District"), whose address is 4049 Reid Street, Palatka, Florida 32177-2571, and _____ ("Consultant"), whose address is _____. All references to the parties hereto include the parties, their officers, employees, agents, successors, and assigns.

In consideration of the payments hereinafter specified, Consultant agrees to furnish and deliver all materials and perform all labor required for 39171, Taylor Creek Reservoir Improvements Project Borrow Exploration, Dam Breach Analysis, Wetland Delineation (the "Work"). In accordance with RFQ 39171, Consultant shall complete the Work in conformity with this Agreement, which consists of and incorporates all of the following documents: (1) advertisement for bids, proposals, or qualifications; (2) Instructions to Respondents; (3) addenda; certifications, and affidavits; (4) bid, proposal, or qualifications submittals; (5) Agreement, including the Statement of Work, and any Special Conditions or other attachments. If any provision in the body of this Agreement conflicts with any attachment hereto, the body of this Agreement shall prevail. This Agreement, including attachments, shall take precedence over all solicitation documents (items 1 – 4). The parties hereby agree to the following terms and conditions.

1. **TERM**

(a) The term of this Agreement shall be from the Effective Date to the Completion Date. Time is of the essence for each and every aspect of this Agreement. Where additional time is allowed to complete the Work, the new time limit shall also be of the essence. All provisions of this Agreement that by their nature extend beyond the Completion Date survive termination or expiration hereof.

(b) **Effective Date.** The Effective Date is the date upon which the last party to this Agreement has dated and executed the same.

(c) **Completion Date.** The Completion Date of this Agreement is September 30, 2024, unless extended by mutual written agreement of the parties.

(d) **Commencement of Work.** Consultant shall commence the Work within 14 days of issuance of a Contract by the District. This date shall be known as the "Commencement Date." Consultant shall prosecute the Work regularly, diligently, and uninterruptedly so as to complete the Work ready for use in accordance with the Statement of Work and the time for completion stated therein. Consultant shall not commence the Work until any required submittals are received and approved.

2. **DELIVERABLES**

(a) The Work is specified in the Statement of Work, Attachment A. Consultant shall deliver all products and deliverables as stated therein, and shall correct errors or omissions without additional compensation. In addition to hard copies, all written deliverables (reports, papers, analyses, etc.) shall be submitted in machine readable form in formats consistent with the District's standard software products, which include the Microsoft® Office Suite (Word, Excel, Access, and PowerPoint). Other formats may be accepted if approved by the District's Project

Manager. If the Statement of Work does not include assistance in litigation undertaken or defended by the District, Consultant agrees to testify and assist the District in any such litigation that is dependent upon or related to the Work, except suits or claims between the parties, at the hourly rate provided in the Statement of Work. This obligation shall survive termination or expiration of this Agreement.

(b) If not otherwise addressed in the Statement of Work, upon written request, Consultant shall submit written progress reports to the District's Project Manager at the frequency requested in a form approved by the Project Manager at no additional cost to the District. The progress report shall provide an updated progress schedule, taking into account all delays and approved changes in the Work. Failure to provide a progress report will be cause to withhold payment.

3. **OWNERSHIP OF DELIVERABLES.** All deliverables, including Work not accepted by the District, are District property when Consultant has received compensation therefor, in whole or in part. Any District source documents or other District or non-District documents, specifications, materials, reports, or accompanying data developed, secured, or used in the performance of the Work, excluding proprietary materials, as outlined in the Statement of Work, are District property and shall be safeguarded and provided to the District upon request. District plans and specifications shall not be used on other work and, with the exception of the original plans and specifications, shall be returned to the District upon request. This obligation shall survive termination or expiration of this Agreement.

4. **FUNDING OF AGREEMENT**

For satisfactory performance of the Work, the District agrees to pay Consultant a sum not to exceed $_____ ("Total Compensation").

5. **PAYMENT OF INVOICES**

(a) Consultant shall submit itemized invoices on a monthly basis by one of the following two methods: (1) by email to acctpay@sjrwmd.com (preferred) or (2) by mail to the St. Johns River Water Management District, Accounting Director, 4049 Reid Street, Palatka, Florida 32177-2571. Each invoice shall be submitted in detail sufficient for proper pre-audit and post-audit review. If necessary for audit purposes, Consultant shall provide additional supporting information as required to document invoices.

(b) **End of District Fiscal Year Reporting.** The District's fiscal year ends on September 30. Irrespective of the invoicing frequency, the District is required to account for all encumbered funds at that time. When authorized under the Agreement, submittal of an invoice for work completed as of September 30 satisfies this requirement. The invoice shall be submitted no later than October 30. If the Agreement does not authorize submittal of an invoice as of September 30, Consultant shall submit, prior to October 30, a description of the additional Work completed between the last invoice and September 30, and an estimate of the additional amount due as of September 30 for such Work. If there have been no prior invoices, Consultant shall submit a description of the Work completed on the project through September 30 and a statement estimating the dollar value of that Work as of September 30.

(c) **Final Invoice.** The final invoice must be submitted no later than 45 days after the Completion Date; provided, however, that when the Completion Date corresponds with the end of the District's fiscal year (September 30), the final invoice must be submitted no later than 30 days after the Completion Date. **Final invoices that are submitted after the requisite date shall be subject to a penalty of ten percent of the invoice. This penalty may be waived by the District, in its sole judgment and discretion, upon a showing of special circumstances that prevent the timely submittal of the final invoice. Consultant must request approval for**

delayed submittal of the final invoice not later than ten days prior to the due date and state the basis for the delay.

(d) **Required Invoice Information**. All invoices shall include the following information: (1) District contract number; (2) District encumbrance number; (3) District work-order number; (4) Consultant's name and address (include remit address, if necessary); (5) Consultant's invoice number and date of invoice; (6) District Project Manager; (6) Consultant's Project Manager; (7) supporting documentation as to cost and/or project completion (as per the cost schedule and other requirements of the Statement of Work; (8) Progress Report (if required). Invoices that do not correspond with this paragraph shall be returned without action, stating the basis for rejection. Payments shall be made within 45 days of receipt of an approved invoice. Disputes regarding invoice sufficiency are resolved pursuant to the dispute resolution procedure of this Agreement. Additional supporting documentation is required.

(e) **Travel expenses.** If the cost schedule for this Agreement includes a line item for travel expenses, travel expenses shall be drawn from the project budget and are not otherwise compensable. If travel expenses are not included in the cost schedule, they are a cost of providing the service that is borne by Consultant and are only compensable when specifically approved by the District as an authorized District traveler. In such instance, travel expenses must be submitted on District or State of Florida travel forms and shall be paid pursuant to District Administrative Directive 391.

(f) **Payments.** Absent exceptional circumstances, Consultant is required to sign up and receive payment(s) electronically from the District via Automated Clearing House (ACH) payment. The District shall pay Consultant 100% of each approved invoice.

6. **CONSULTANT'S FEE SCHEDULE**. Consultant's fees are firm and fixed for the initial term of this Agreement.

7. **PAYMENT AND RELEASE.** Upon satisfactory completion of the Work, the District will provide Consultant a written statement accepting all deliverables. Consultant's acceptance of final payment shall constitute a release in full of all Consultant claims against the District arising from the performance of this Agreement, with the exception of any pending claims for additional compensation that have been documented and filed as required by this Agreement.

8. **PAYMENT OF LABORERS, SUBCONTRACTORS, MATERIAL SUPPLIERS, AND MATERIALMEN, PURSUANT TO §218.735 FLA. STAT.**

   If Consultant receives a payment from the District for labor, services, or materials furnished by subcontractors and suppliers hired by the Consultant, Consultant must remit payment due to those subcontractors and suppliers within 10 days after Consultant's receipt of payment in accordance with section 218.735, Fla. Stat.

9. **INDEMNIFICATION.** Consultant shall indemnify and hold harmless, release, and forever discharge the District, its public officers, employees, agents, representatives, successors, and assigns, from any and all liabilities, damages, losses, and costs, including, but not limited to, reasonable attorney's fees, arising from or caused by Consultant, in the performance of the Work. Consultant shall further indemnify the District for all costs and penalties the District incurs related to any failure to offer Patient Protection and Affordable Care Act compliant health care coverage to Consultant-employees performing under this Agreement.

10. **INSURANCE.** Consultant shall acquire and maintain all insurance required by Attachment B, Insurance Requirements, and shall not commence Work until it has provided Certificates of Insurance to the District as per Attachment B. Receipt of Certificates of Insurance indicating less coverage than

required does not constitute a waiver of the Insurance Requirements. Consultant waives its right of recovery against the District to the extent permitted by its insurance policies. Consultant's insurance shall be considered primary, and District insurance shall be considered excess, as may be applicable to Consultant's obligation to provide insurance.

11. **CONTRACTUAL LIMITATION OF LIABILITY PURSUANT TO §558.0035 FLA. STAT. PURSUANT TO §558.0035, FLORIDA STATUTES, AN INDIVIDUAL EMPLOYEE OR AGENT OF CONSULTANT MAY NOT BE HELD INDIVIDUALLY LIABLE FOR ECONOMIC DAMAGES RESULTING FROM NEGLIGENCE UNDER THIS AGREEMENT IF THE CONDITIONS OF SECTION §558.0035 ARE SATISFIED.**

12. **FUNDING CONTINGENCY.** This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) ad valorem tax revenues appropriated by the District's Governing Board; (2) annual appropriations by the Florida Legislature, or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the District's Governing Board for each succeeding Fiscal Year. Should the Work not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the District shall so notify Consultant and this Agreement shall be deemed terminated for convenience five days after receipt of such notice, or within such additional time as the District may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

13. **PROJECT MANAGEMENT PERSONNEL**

(a) The Project Managers listed below shall be responsible for overall coordination and management of the Work. Either party may change its Project Manager upon three business days' prior written notice to the other party. Written notice of change of address shall be provided within five business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; or (4) email. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one business day after having been deposited with the courier. Notices via email are deemed delivered on the date transmitted and received.

DISTRICT	CONSULTANT
Gretchen Kelley, Project Manager	TBD, Project Manager
St. Johns River Water Management District	TBD
525 Community College Parkway, S.E	TBD
Palm Bay, FL 32909-2231	TBD
Phone: 321-676-6602	Phone: TBD
Email: gkelley@sjrwmd.com	Email: TBD

(b) The District's Project Manager shall have sole responsibility for transmitting instructions, receiving information, and communicating District policies and decisions regarding all matters pertinent to performance of the Work.

(c) Consultant shall provide efficient supervision of the Work, using its best skill and attention. Consultant shall keep on the worksite during its progress a competent Project Manager that is satisfactory to the District. The Project Manager shall not be changed except with the District's consent, unless the Project Manager proves to be unsatisfactory to Consultant and/or ceases to be in its employ. All directions given to the Project Manager shall be as binding as if given to Consultant. If the District has reason to believe that any person on the job is incompetent, disorderly, or is working contrary to the Agreement or the District's instructions, and notifies Consultant of such, then that person shall be immediately dismissed from the project and shall not perform any further work connected with this Agreement. The District may request Consultant replace its Project Manager if said manager fails to carry the Work forward in a competent manner, follow instructions or specifications, or for other reasonable cause.

(d) Consultant shall maintain qualified and competent professional staff. Consultant's employees, subcontractors, or agents shall be properly trained to meet or exceed any specified licensing, training and/or certification applicable to their profession. Upon request, Consultant shall furnish proof thereof.

14. **SCHEDULING AND WORK PLANNING; PROGRESS REPORTING**

(a) **Progress Reports.** Consultant shall provide to the District update/status reports as provided in the applicable Statement of Work. Reports will provide detail on progress of the Work and outline any potential issues affecting completion or the overall schedule. Reports may be submitted in any form agreed to by District's Project Manager and Consultant, and may include emails, memos, and letters.

1. **Progress Meetings.** The District may conduct progress meetings with Consultant on a frequency to be determined by the District. In such event, Consultant shall make available its Project Manager and other appropriate personnel to discuss matters pertinent to the Work.

2. **Failure to Meet Schedule.** If progress of the Work falls five percent or more behind schedule, except as a result of District-approved delays, Consultant shall take all necessary steps to augment the work effort to get the project back on schedule. Should the progress of the Work fall ten percent or more behind schedule, the District may advise Consultant through a "cure" notice that this Agreement is subject to termination for cause if the failure is not cured within the time frame specified in said notice.

15. **FORCE MAJEURE; DELAYS**

(a) **Force Majeure.** Consultant shall not be liable for failure to carry out the terms of this Agreement to the extent such failure is due to a Force Majeure event, except for failures that could have been reasonably foreseen and guarded against so as to avoid or reduce the adverse impact thereof. A Force Majeure event is hereby defined as the failure to carry out any of the terms of this Agreement due to any one of the following circumstances beyond the control of Consultant: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, municipality, or governmental agency of the State of Florida or the United States, (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction, (c) war, (d) flood, (e) earthquake, (f) fire, (g) severe wind storm, (h) acts of public disturbance, (i) quarantine restrictions, (j) epidemics, (k) strikes, (l) freight embargoes, or (m) sabotage. The times specified herein for performances include delays that can ordinarily be anticipated due to adverse weather conditions. The District is not obligated to grant an extension of time due to adverse weather conditions unless such conditions rise to the level of Force Majeure.

(b) **Delay.** Consultant shall not be compensated for delays caused by Consultant's inefficiency, rework made necessary by Consultant's error, failure to perform the Work as scheduled, or any other corrective or productivity measures made necessary by errors, omissions, or failures to properly perform the Work. Within ten calendar days after the onset of a delay, Consultant shall notify the District in writing of the delay, which shall provide: (1) a detailed description the delay and its probable duration, (2) the specified portion of the Work affected, and (3) an opinion as to the cause of the delay and liability (if any) for the delay. Notices provided more than ten calendar days after the inception of the delay shall only be effective as to additional costs or delay incurred during the ten-day period preceding receipt of such notice. In the case of continuing cause delay for the same cause, only one notice of delay is necessary. **Failure to provide this notice waives any claim for extension of time or additional compensation resulting from such delay**. If the delay is due to the failure of another District contractor to complete its work in a timely manner, changes ordered in the Work, a Force Majeure event, or any other cause which the District, in its sole judgment and discretion, determines to justify the delay, then the Completion Date may be extended as necessary to compensate for the delay. All time extensions shall be in the form of a written amendment signed by both parties.

16. **AMENDMENTS; EMERGENCY CHANGES IN WORK**

(a) **Amendments.** The parties may not amend this Agreement except in writing. Modifications that alter, add to, or deduct from the Work, or otherwise modify the terms of this Agreement, shall be implemented through a change order or formal amendment, specifying the nature of the change and any associated change in the Total Compensation and/or Completion Date. The District's Project Manager may also issue a District Supplemental Instruction (DSI) form (Attachment C) to authorize minor adjustments to the Work that are consistent with the Statement of Work. Both parties must sign the DSI. A DSI may not be used to change the Total Compensation, quantity, quality or the Completion Date, or to change or modify the Agreement.

(b) **Emergency Changes in Work.** In the event an emergency endangering life or property requires immediate action, the District may give Consultant an oral instruction to proceed with an emergency change in the Work, which will be confirmed in writing within five calendar days. Within 15 calendar days after commencement of the emergency change in the Work, Consultant shall provide the District with a written estimate of any increased costs or delays as a result thereof. **Failure to so notify the District constitutes a waiver of any right to an extension of time or increase in compensation**. Within 15 calendar days after receipt of Consultant's estimate, the parties shall negotiate a Change Order. If unable to reach agreement, disputed issues shall be resolved pursuant to the dispute resolution procedure. In no event shall Consultant decline to perform the emergency change in the Work.

17. **TERMINATION AND SUSPENSION**

(a) **District Termination for Cause.** The Agreement, may be terminated by the District for cause in the event of any breach hereof, including, but not limited to, Consultant's: (1) failing to carry forward and complete the Work as provided herein; (2) failing to comply with applicable laws, regulations, permits, or ordinances; (3) failing to timely correct defective Work; (4) making a general assignment for the benefit of its creditors; (5) having a receiver appointed because of insolvency; (6) filing bankruptcy or having a petition for involuntary bankruptcy filed against it; (7) failing to make payments when due to subcontractors, vendors, or others for materials or labor used in the Work; (8) making a material misrepresentation to the District regarding the Work, or (9) any other material breach of this Agreement. In such event, the District shall provide Consultant with written notice of its intention to terminate this Agreement, stating the nature of the deficiency and the effective date of termination. At the District's sole judgment and

discretion, the District may afford Consultant an opportunity to cure as provided in **REMEDIES FOR NONPERFORMANCE; Contractor Correction of Deficiencies**. Upon termination, the District may take possession of the premises and of all materials thereon and finish the Work by whatever means it deems expedient. In such event, Consultant shall not receive any further payment until the Work is completed by the District. Consultant shall be liable for all costs involved in completing the Work, including additional managerial and administrative services, which shall be offset against any amount due to Consultant.

(b) **District Termination for Convenience.** Notwithstanding any other provision hereof, the District may at any time terminate this Agreement, in whole or in part, without cause, upon 30 days' written notice to Consultant. In such event, Consultant shall be compensated for any Work performed prior to the date of termination and for materials that were ordered prior to receipt of notice of termination that cannot be returned to the vendor, which shall become District property. Upon receipt of notice, Consultant shall discontinue the Work on the date and to the extent specified therein and shall place no further orders for materials, equipment, services, or facilities, except as needed to continue any portion of the Work not terminated. Consultant shall also make every reasonable effort to cancel, upon terms satisfactory to the District, all orders or subcontracts related to the terminated Work. Consultant may not claim any compensation not specifically provided for herein, including, but not limited to: loss of anticipated profits; idle equipment, labor, and facilities; any additional claims of subcontractors and vendors.

(c) **District Suspension for Cause.** The District may issue a written partial or full Stop Work Notice in the event Consultant fails to comply with or is negligent in performing any provision of the Agreement. All performance shall immediately cease as per such notice and no further billable costs shall be incurred. The District may terminate this Agreement if Consultant fails or refuses to comply with a Stop Work Notice.

(d) **District Suspension for Convenience.** The District may direct Consultant to stop Work, in whole or in part, whenever, in the District's sole judgment and discretion, such stoppage is necessary to ensure proper completion of the Work, avoid injury to third persons, or otherwise meet the District's objectives. The District shall provide Consultant not less than five days' written notice, except in emergency circumstances. Consultant shall immediately comply with such notice. Should such stoppage increase Consultant's cost, an equitable adjustment will be made by Change Order. The notice shall be effective until rescinded in writing, unless the period of suspension is stated in the notice.

(e) Consultant's Right to Stop Work or Terminate Agreement

(i) **Stop Work.** Consultant may stop work only under the following circumstances: (1) the Work is ordered temporarily discontinued by a court or other public authority; (2) it is necessary to stop work to protect the safety of Consultant or third persons; or (3) the District fails to pay Consultant when due any undisputed and adequately documented sum certified for payment by the District Project Manager. In such event, Consultant shall provide the District not less than seven days prior written notice of its intention to stop work, except in emergency circumstances or when necessary to prevent injury to persons or property.

(ii) **Termination.** Consultant may terminate this Agreement under only the following circumstances: (1) the Work is ordered discontinued by a court or other public authority, through no act or fault of Consultant, for a period of not less than three months; (2) the District fails to pay Consultant when due any undisputed and adequately documented sum certified for payment by the District Project Manager. In such event, Consultant shall provide not less than 20 days written notice of its intention to terminate and afford the District the opportunity to cure said deficiency within said time period.

(iii) **Duty to Perform.** Except as expressly provided above, in the event of any event, dispute, or other matter arising under this Agreement, Consultant shall fully perform the Work in accordance with the District's written instructions and may claim additional compensation as a Change Order, subject to the dispute resolution procedure.

ADDITIONAL PROVISIONS
(In Alphabetical Order)

18. **DEFINITIONS**

ADDENDA: Written or graphic instruments issued prior to the opening of responses, which make additions, deletions, or revisions to the solicitation or contract documents.

AGREEMENT: The written contract between the District and Consultant covering the Work, which includes all documents attached to this Agreement or incorporated herein by reference. The words "contract" and "Agreement" are synonymous in these documents.

AMENDMENT: Any written change made to the terms and conditions of the Agreement.

BUSINESS DAY: Monday through Friday, excepting those holidays observed by the District

CHANGE ORDER: A written agreement of the parties after the Commencement Date to amend this Agreement so as to modify the Statement of Work or the Total Compensation or provide for an extension of time.

CONSULTANT: Consultant, its officers, employees, agents, successors, and assigns.

CONSULTANT's PROJECT MANAGER: The individual designated by the Consultant to be responsible for overall coordination, oversight, and management of the Work for Consultant.

DAY: All references to "day" shall be interpreted as a calendar day, unless specifically designated as a business day or holiday.

HOLIDAY: The following holidays as observed by the District: New Year's Day, Birthday of Martin Luther King, Jr., Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving and the Friday after Thanksgiving, and Christmas Day.

PERSON: Any individual, partnership, society, association, joint stock company, corporation, estate, receiver, trustee, assignee, referee, or capacity, whether appointed by a court or others, and any combination of individuals.

REQUEST FOR QUALIFICATIONS: An advertised solicitation for sealed Submittals, with the title, date, and hour of the public opening designated. It includes a detailed description of the services sought, the date for submittal of the response, and all contractual terms and conditions.

RESPONDENT: Any person who submits a response to a solicitation.

STATEMENT OF WORK: The District's written directions, requirements and technical specifications for completing the Work. Standards for specifying materials or testing that are incorporated therein by reference shall have the same force and effect as if fully set forth therein.

SUBCONSULTANTS: The same meaning as **SUBCONTRACTORS.**

SUBCONTRACTORS: Those persons having a direct contract with Consultant relating to performance of the Work, including one who furnishes material worked into a special design in accordance with the plans or specifications of the Work, but not including one who merely furnishes material.

TOTAL COMPENSATION: The total funds to be expended pursuant to this Agreement upon satisfactory completion of the Work.

WORK: All labor, materials, equipment, transportation, supporting documentation, and other products, services, or facilities necessary for complete performance of the Agreement.

19. **ASSIGNMENT AND SUBCONTRACTS**

    (a) Consultant shall not sublet, assign, or transfer any Work, or assign any monies due hereunder, without the District's prior written consent. As soon as practicable after signing this Agreement, but not less than seven business days prior to the effective date of any subcontracts, Consultant shall notify the District's Project Manager in writing of the name of any subcontractor that has not been previously disclosed in the procurement process. Within five business days the District shall indicate its approval or disapproval, which shall not be unreasonably withheld. Failure to timely provide such approval or disapproval shall constitute approval. Neither District approval of a subcontractor nor any other provision of this Agreement creates a contractual relationship between any subcontractor and the District.

    (b) Consultant is responsible for fulfilling all work elements in any subcontracts and payment of all monies due. Consultant is fully responsible to the District for the acts and omissions of its subcontractors and persons directly or indirectly employed by them, and shall hold the District harmless from any liability or damages resulting from any subcontract to the extent allowed by law.

20. **AUDIT; ACCESS TO RECORDS.** Consultant must preserve its books and other records involving transactions related to this Agreement and provide the District, or its duly authorized representatives, access and necessary facilities to inspect and audit those records for five years after the receipt of funds. If an examination or audit is performed, Consultant must continue to maintain all required records until such audit has been completed and all questions arising from it are resolved. Consultant shall refund any payment(s) that are found to not constitute allowable costs based upon an audit examination.

21. **CIVIL RIGHTS.** Pursuant to chapter 760, Fla. Stat., Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, pregnancy, or national origin, age, handicap, or marital status.

22. **COOPERATION WITH THE INSPECTOR GENERAL, PURSUANT TO §20.055(5) FLA. STAT.** Consultant and any subcontractors understand and will comply with their duty, pursuant to §20.055(5), Fla. Stat., to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing.

23. **COORDINATION WITH THE DISTRICT AND OTHER DISTRICT CONTRACTORS**

    (a) The District may let other contracts in connection with the Work. Wherever work done by the District or another District contractor is contiguous to Consultant's Work, the respective rights of the various interests shall be established by the District so as to secure completion of the Work. Consultant shall arrange its Work so as not to interfere with the District or other District contractors and join its Work to that of others in a proper manner, and in accordance with the intent of the Statement of Work. Consultant shall perform its Work in the proper sequence in relation to that of other District contractors, as may be directed by the District. Consultant shall afford other District contractors reasonable opportunity for introduction and storage of their materials and execution of their work, and shall properly conduct and coordinate its Work with theirs. Consultant shall take into account all contingent work to be done by others and shall not

plead its want of knowledge of such contingent work as a basis for delay or non-performance. Consultant shall be liable for any damage it causes to the work performed by other District contractors.

(b) If any part of the Work depends for proper execution or results upon the work of other District contractors, Consultant shall inspect and promptly report any defects in the other contractors' work that render it unsuitable for Consultant's Work. Failure to so inspect and report shall constitute an acceptance of the other contractors' work as fit and proper for the reception of its Work, except as to defects which may develop in the other contractors' work after execution of the Work.

24. **CONTINGENCY FEES.** Pursuant to §287.055(6)(a), Fla. Stat., Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, or other consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of these provisions, the District may terminate this Agreement without liability and, at its discretion, deduct from the contract price or otherwise recover the full amount of any such fee, commission, percentage, gift, or other consideration.

25. **COMPUTER CODES**

(a) **Consultant Computer Codes.** Should Consultant incorporate proprietary software, methods or computer models ("Proprietary Software") developed by Consultant in the Work, such development not having been funded by the District pursuant to this Agreement or any prior agreement, Consultant may retain the proprietary rights to such Proprietary Software. Consultant shall identify in writing any such Proprietary Software to the extent it is incorporated in the Work. As part of the consideration for this Agreement, Consultant hereby grants the District a perpetual, non-exclusive license to the use of such Proprietary Software, including, but not limited to, its incorporation into a web-based computer model application that may be utilized by the general public. Documentation of Consultant's proprietary rights shall be provided to the District upon request. If a third party seeks access to the Proprietary Software as public records pursuant to §119.07, Fla. Stat., the District shall notify Consultant in writing of the request so that Consultant may assert its proprietary interest. Consultant agrees to indemnify and hold the District harmless from all costs, damages, and expenses, including attorney's fees, arising from any suit by a third party claiming an interest in the Proprietary Software or a right to inspect the Proprietary Software as a public record. This obligation shall survive termination of this Agreement.

(b) **District Computer Codes.** Consultant shall not be entitled to claim any proprietary right to computer codes that are developed by Consultant in fulfilling the requirements of the Work, which shall be considered a "work for hire" under applicable copyright and/or patent law. Such computer codes, which constitute a Deliverable hereunder, are the sole and exclusive property of the District. The District may copyright or patent such computer codes in its own name to the full extent authorized by law.

26. **CORRELATION AND INTENT OF DOCUMENTS; QUESTIONS OR ISSUES REGARDING PERFORMANCE OF THE WORK**

(a) This Agreement and all attachments are complementary. What is called for by one is as binding as if called for by all. The intent is to include all labor and materials, equipment, transportation, and incidentals necessary for the proper and complete execution of the Work. Materials or work

described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

(b) It is the District's intention to fully assist Consultant in the successful performance of the Work and to respond in a timely manner to questions or issues that arise. Consultant should discuss any questions or issues with the District's Project Manager and communicate such questions or issues in writing when required by this Agreement. The District shall respond through its Project Manager.

27. **DISPUTE RESOLUTION**

(a) **During the course of work.** In the event any dispute arises during the course of the Work, Consultant shall fully perform the Work in accordance with the District's written instructions and may claim additional compensation. Consultant is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute by submitting a formal request for additional compensation, schedule adjustment, or other dispute resolution to the District's Project Manager no later than 15 days after the precipitating event. If not resolved by the Project Manager within five business days, the Project Manager shall forward the request to the District's Office of General Counsel, which shall issue a written decision within 15 days of receipt. This determination shall constitute final action of the District and shall then be subject to judicial review upon completion of the Work. **Consultant shall proceed with the Work in accordance with said determination. This shall not waive Consultant's position regarding the matter in dispute.**

(b) **Invoices.** In the event the District rejects an invoice as improper, and the Consultant declines to modify the invoice, the Consultant must notify the District in writing within ten days of receipt of notice of rejection that the Consultant will not modify the invoice and state the reason(s) therefor. Within five business days of receipt of such notice, if not informally resolved through discussion with the District Project Manager, the Project Manager shall forward the disputed invoice and the Consultant's written response to the District's Office of General Counsel. The matter shall then proceed as described in subsection (a), above.

28. **DIVERSITY OPPORTUNITIES.** The District is committed to the opportunity for diversity in its procurement activities, and encourages its vendors (contractors and suppliers) to make a good faith effort to ensure that women and minority-owned business enterprises (W/MBE) are given the opportunity for maximum participation as sub-contractors. The District will assist Consultant by sharing information on W/MBEs.

29. **DUTY TO INSPECT AND REPORT DEFICIENCIES IN PLANS AND SPECIFICATIONS**

(a) For any Work that is dependent upon conditions at the worksite, Consultant's acceptance represents and warrants that Consultant has inspected and satisfied itself concerning the nature and location of the Work and general and local conditions, including, without limitation: (1) conditions affecting transportation, disposal, handling, and storage of materials; (2) availability and quality of labor; (3) availability and condition of roads; (4) climatic conditions and seasons; (5) hydrology of the terrain; (6) topography and ground surface conditions; (7) nature and quantity of surface materials to be encountered; (8) equipment and facilities needed preliminary to and during the Work; and (9) all other matters that can affect the Work and the cost thereof. Consultant's failure to acquaint itself with such conditions will not relieve it from its responsibility for properly estimating the time required or cost of performing the Work. Where the District has investigated subsurface conditions, this data may be provided to Consultant or is available upon request. Consultant must either seek clarification concerning the data or assume the responsibility for its interpretation.

(b) If Consultant discovers hidden or subsurface conditions that differ materially from those normally expected or indicated in the technical specifications, Consultant shall immediately, and before such conditions are disturbed, notify the District in writing of: (1) subsurface or latent physical conditions differing materially from those indicated in the technical specifications, or (2) unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for herein. The District shall promptly investigate the conditions and determine whether they materially differ so as to cause an increase or decrease in Consultant's cost. Where the differing site conditions materially impact Consultant's cost, an equitable adjustment shall be made and the Agreement modified accordingly. No claim will be allowed if Consultant fails to provide the required notice.

(c) If Consultant in the course of the Work finds any defect in the plans and specifications, including, but not limited to, any discrepancy between the drawings and the physical conditions at the worksite, or any errors or omissions in the drawings or in the layout, as given by points and instructions, it shall immediately inform the District in writing, which shall be promptly verified by the District. Any Work done after such discovery, until authorized, will be done at Consultant's risk as to cost overruns and modifications necessary to correct deficiencies in the Work. To ensure the proper execution of its subsequent Work, Consultant shall measure Work already in place or completed and shall immediately report any discrepancy between the executed Work and the drawings or other specifications.

30. **EMPLOYMENT ELIGIBILITY.**

(a) Pursuant to section 448.095, Fla. Stat., Consultant must use the United States Department of Homeland Security's E-Verify system ("E-Verify") to verify the work authorization status of all newly hired employees during the term of this Agreement. Within 30 days of this Agreement's Effective Date, Consultant must provide the District with evidence that Consultant is enrolled in the E-Verify system. Answers to questions regarding E-Verify as well as instructions on enrollment may be found at the E-Verify website: www.e-verify.gov.

(b) Consultant shall include in related subcontracts, if authorized under this Agreement, a requirement that subcontractors performing work or providing services pursuant to this Agreement utilize the E-Verify system to verify employment eligibility of all employees used by the subcontractor for the performance of the Work. The subcontractor must provide Consultant with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. Consultant must maintain a copy of such affidavit for the duration of the Agreement. If the District has a good faith belief that a subcontractor knowingly violated section 448.095, Fla. Stat., and notifies Consultant of such, but the Consultant otherwise complied with the statute, then Consultant shall immediately terminate the contract with the Subcontractor.

31. **GOVERNING LAW, VENUE, ATTORNEY'S FEES, WAIVER OF RIGHT TO JURY TRIAL.** This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) venue for any state legal proceedings is Putnam County and federal legal proceedings shall be in Orange County; (2) each party shall bear its own attorney's fees, including appeals; (3) for civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

32. **INTEREST IN THE BUSINESS OF CONSULTANT; NON-LOBBYING.** Consultant certifies that no officer, agent, or employee of the District has any material interest, as defined in chapter 112,

Fla. Stat., either directly or indirectly, in the business of Consultant to be conducted under this Agreement, and that no such person shall have any such interest at any time during the term of this Agreement. Pursuant to §216.347, Fla. Stat., monies received from the District pursuant to this Agreement shall not be used to lobby the Florida Legislature or any other state agency.

33. **INDEPENDENT CONTRACTOR.** Consultant is an independent contractor. Neither Consultant nor Consultant's employees are employees or agents of the District. Consultant controls and directs the means and methods by which the Work is accomplished. Consultant is solely responsible for compliance with all labor and tax laws pertaining to it, its officers, agents, and employees, and shall indemnify and hold the District harmless from any failure to comply with such laws. Consultant's duties include, but not be limited to: (1) providing Workers' Compensation coverage for employees as required by law; (2) hiring employees or subcontractors necessary to perform the Work; (3) providing any and all employment benefits, including, but not limited to, annual leave, sick leave, paid holidays, health insurance, retirement benefits, and disability insurance; (4) payment of all federal, state and local taxes, income or employment taxes, and, if Consultant is not a corporation, self-employment (Social Security) taxes; (5) compliance with the Fair Labor Standards Act, 29 U.S.C. §§ 201, et seq., including payment of overtime as required by said Act; (6) compliance with the Patient Protection and Affordable Care Act 42 U.S.C. §§ 18001, et seq.; and (7) providing employee training, office or other facilities, equipment and materials for all functions necessary to perform the Work. In the event the District provides training, equipment, materials, or facilities to meet specific District needs or otherwise facilitate performance of the Work, this shall not affect Consultant's duties hereunder or alter Consultant's status as an independent contractor. This paragraph does not create an affirmative obligation to provide any employee benefits not required by law.

34. **NUISANCE.** Consultant shall exercise every reasonable means to avoid creating or continuing a public or private nuisance resulting from the Work, including, but not limited to: (1) excessive noise associated with radio or other forms of electronic entertainment for persons at the worksite; (2) dust from construction operations, and (3) the uncontrolled flow of surface waters.

35. **PERMITS AND LICENSES; COMPLIANCE WITH LAW.** Consultant shall comply with all applicable federal, state and local laws and regulations, including those pertaining to health and safety. All materials used and work performed must conform to the laws of the United States, the state of Florida and county and municipal ordinances. Consultant represents and warrants that it is duly licensed to perform the Work in accordance with the laws of the state of Florida and the county or municipality in which the Work is to be performed. Unless otherwise specifically provided for herein, Consultant shall give to the proper authorities all required notices relative to the Work in its charge; obtain and pay for all official permits or any other licenses, including any and all professional licenses required by the nature of the Work; and furnish any bonds, security, or deposits required to permit performance of the Work. Consultant is responsible for the resolution of any issues resulting from a finding of noncompliance by any regulatory agencies, due to the Consultant's failure to comply with applicable regulatory requirements, including all costs for delays, litigation, fines, or other costs.

36. **PUBLIC RECORDS**

(a) Consultant is responsible for identifying confidential trade secret information as such upon submittal to the District. Notwithstanding any other provision hereof, the District shall not be liable to Consultant for release of confidential information not identified as such upon submittal. If the District receives a public records request that requests information claimed to be confidential by Consultant, the District shall take such steps as are necessary to comply with

Chapter 119, Fla. Stat., while protecting the confidentiality of trade secret information. In the event of a dispute as to whether the requested information is a trade secret, Consultant shall be liable for all costs incurred by the District resulting from the dispute, including any court costs and attorney's fees. The calculation of those costs shall not include costs that are charged to the public records requestor.

(b) Consultant shall comply with Florida Public Records law under Chapter 119, Fla. Stat. Records made or received in conjunction with this Agreement are public records under Florida law, as defined in §119.011(12), Fla. Stat. Consultant shall keep and maintain public records required by the District to perform the services under this Agreement.

(c) If Consultant meets the definition of "Contractor" found in §119.0701(1)(a), Fla. Stat.; [i.e., an individual, partnership, corporation, or business entity that enters into a contract for services with a public agency and is acting on behalf of the public agency], then the following requirements apply:

(i) Pursuant to §119.0701, Fla. Stat., a request to inspect or copy public records relating to this Agreement for services must be made directly to the District. If the District does not possess the requested records, the District shall immediately notify the Consultant of the request, and the Consultant must provide the records to the District or allow the records to be inspected or copied within a reasonable time. If Consultant fails to provide the public records to the District within a reasonable time, the Consultant may be subject to penalties under § 119.10, Fla. Stat.

(ii) Upon request from the District's custodian of public records, Consultant shall provide the District with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Fla. Stat., or as otherwise provided by law.

(iii) Consultant shall identify and ensure that all public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Agreement term and following completion of the Agreement if the Consultant does not transfer the records to the District.

(iv) Upon completion of the Agreement, Consultant shall transfer, at no cost to District, all public records in possession of Consultant or keep and maintain public records required by the District to perform the services under this Agreement. If the Consultant transfers all public records to the District upon completion of the Agreement, the Consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public disclosure requirements. If the Consultant keeps and maintains public records upon completion of the Agreement, the Consultant shall meet all applicable requirements for retaining public records. All records that are stored electronically must be provided to the District, upon request from the District's custodian of public records, in a format that is accessible by and compatible with the information technology systems of the District.

(d) IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLA. STAT., TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE DISTRICT'S CUSTODIAN OF PUBLIC RECORDS AT:

District Clerk
St. Johns River Water Management District

4049 Reid Street
Palatka, Florida 32177-2571
(386) 329-4127
clerk@sjrwmd.com

37. **RELEASE OF INFORMATION.** Consultant shall not publish or release any information related to performance of this Agreement, or prepare, publish, or release any news or press release in any way related to this Agreement, without prior District review and written consent.

38. **REMEDIES FOR NON-PERFORMANCE**

(a) **District Remedies.** The remedies enumerated herein are non-exclusive. In addition to the remedies set forth below, the District may avail itself of any statutory and/or common law remedies not set forth herein. In the event of a breach, the District may terminate this Agreement for cause. Alternatively, the District may allow Consultant to correct the deficiency, or may take such action as is necessary to correct such deficiency through District action or that of a third party. Delay or failure by the District to enforce any right or remedy hereunder shall not impair, or be deemed a waiver of, any such right or remedy, or impair the District's rights or remedies for any subsequent breach of this Agreement.

(b) **Consultant Correction of Deficiencies.** The District shall provide Consultant with written notice of deficiency. At the District's sole judgment and discretion, the District may afford an opportunity to correct said deficiency, in which event the notice shall specify the time allowed to cure. If Consultant disputes that a failure of performance has occurred, Consultant shall, nevertheless, perform the corrective action and may submit a request for a Change Order subject to the dispute resolution procedure. Unless authorized through a Change Order, the Completion Date shall not be extended in order to correct deficiencies. Consultant shall bear the cost of correcting all work of other contractors that is destroyed, damaged, or otherwise negatively impacted by its corrective action. Failure to take timely corrective action may result in termination for cause or the District pursuing alternative remedies, as provided herein.

(c) **Alternative Remedies to Correct Deficiency.** If the District determines that it is not in its best interest for Consultant to correct incomplete or damaged Work caused by Consultant's failure of performance, the District may pursue any or all of the following remedies, in whole or in part: (1) accept the Work as is and deduct the reasonable value of the deficient Work from the Total Compensation; (2) complete the Work through the utilization of District employees and deduct the cost thereof from the Total Compensation; (3) contract with a third party to complete the deficient Work and deduct the cost thereof from the Total Compensation.

(d) **District Technical Assistance.** The District may elect to provide technical assistance to Consultant in order to complete satisfactory performance of the Work. If the District is performing a function that Consultant is required to perform, the District may deduct the cost of providing such technical assistance from the Total Compensation. Prior to providing any such technical assistance, the District shall notify Consultant that it considers such assistance to be above and beyond its duties under this Agreement and that it intends to deduct the cost of providing such assistance from the Total Compensation. Consultant shall not be entitled to reject technical assistance when the District determines that such assistance is necessary to complete the Work.

39. **ROYALTIES AND PATENTS.** Consultant certifies that, to the best of its information and belief, the Work does not infringe on any patent rights. Unless provided otherwise herein, Consultant shall: (1) pay all royalties, patent, and license fees necessary for the Work; (2) defend all suits or claims for

infringement of any patent rights, and (3) save and hold the District harmless from loss on account thereof; provided, however, that the District shall be responsible for any such losses when the utilization of a particular process or product of a particular manufacturer is specified by the District. If Consultant obtains information that the process or article so specified is a patent infringement, it shall be responsible for such loss unless it promptly so notifies the District.

40. **SAFETY.** For any Work that is to be performed on premises that are owned or controlled by the District (the Premises), Consultant has the sole and exclusive duty for the safety of the premises. Consultant shall provide and maintain sufficient protection for the safety of its employees and other persons who may utilize the Premises, and prevent damage to District property, materials, and equipment. Consultant shall at all times enforce strict discipline and good order among its employees and shall not employ any unfit person or anyone not skilled in the work assigned. Neither Consultant nor its subcontractors shall allow or cause to be allowed any hunting or any weapons, animals, alcohol, or drugs, on or from the Premises or adjacent property. Consultant employees shall not park their vehicles or store equipment or materials adjacent to roads where it may be a hazard to traffic. A clear distance of at least 30 feet from the edge of the pavement or right-of-way shall be kept free of any obstacles unless otherwise authorized by the District. Consultant shall ensure that only authorized personnel are allowed on the worksite and shall post notices warning both employees and the public of all safety hazards created by Consultant.

41. **SCRUTINIZED COMPANIES.** Consultant certifies that it is not on the Scrutinized Companies that Boycott Israel List or engaged in a boycott of Israel. Pursuant to §287.135, Fla. Stat., the District may terminate this Agreement at its sole option if is found to have submitted a false certification; or if is placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement. If this Agreement is for more than one million dollars, Consultant certifies that it is also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in §287.135, Fla. Stat. Pursuant to §287.135, Fla. Stat., the District may terminate this Agreement at its sole option if Consultant is found to have submitted a false certification; or if Consultant is placed on the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

42. **SURVEYS; PRESERVATION OF MONUMENTS; POINTS AND INSTRUCTION**

(a) **Surveys**. Consultant is responsible for interim staking during the job and all staking and layout work not otherwise furnished by the District. Consultant shall furnish all construction layout of the Work, including layout, centerline, and grade stakes for access roadways. Consultant shall furnish all personnel, equipment, and materials to make such surveys as are necessary to determine the quantity of Work performed. Field notes and computations for estimates shall be verified by the District's Project Manager as to the quantities estimated.

(b) **Preservation of Monuments.** Consultant shall maintain and preserve all new and existing benchmarks, monuments, markers, reference points, and stakes established by others and/or the District. Should any of the aforesaid be destroyed or damaged by Consultant, the same shall be replaced by Consultant's licensed land surveyor at no cost to the District. Consultant shall be responsible for the cost of any deficiencies in the Work caused by such loss or disturbance.

(c) **Points and Instructions.** Consultant shall provide reasonable and necessary opportunities and facilities for setting points and making measurements. Consultant shall not proceed until it has made a timely request to the District for, and has received, such points and instructions as may be

necessary as the Work progresses. The Work shall be done in strict conformity with such points and instructions.

43. **TRUTH IN NEGOTIATIONS**. This provision applies only to lump sum or cost-plus-a-fixed-fee contracts entered into in excess of $195,000 (see §287.055(5)(a), Fla. Stat.). Consultant certifies that wage rates and other factual unit costs supporting the compensation are accurate, complete, and current at the time of contracting. The original contract price and any additions shall be adjusted to exclude any significant sums by which the District determines the contract price was increased due to inaccurate, incomplete, or noncurrent wage rates and other actual unit costs.

44. **USE OF COMPLETED PORTIONS OF THE WORK.** The District shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the fact that the time for completing the entire Work or such portions may not have expired. Such taking of possession and use will not be deemed an acceptance of any Work not completed. If such possession and use increases the cost of or delays the Work, Consultant shall be entitled to a Change Order for extra compensation, or extension of time, as necessary, to offset the effect of such prior possession and use.

45. **WORK SCHEDULE.** For construction or other services upon District property, no Work shall be accomplished on Holidays or weekends unless approved in advance by the District Project Manager. Unless otherwise approved by the District Project Manager, Consultant's work hours on District property shall not commence before 7:00 a.m. and shall conclude on or before 6:00 p.m. All requests to change the schedule shall be coordinated with the District a minimum of 24 hours in advance of the change and confirmed in writing.

IN WITNESS WHEREOF, the St. Johns River Water Management District has caused this Agreement to be executed on the day and year written below in its name by its Executive Director, or duly authorized designee, and Consultant has caused this Agreement to be executed on the day and year written below in its name by its duly authorized representatives, and, if appropriate, has caused the seal of the corporation to be attached. This Agreement may be executed in separate counterparts, which shall not affect its validity. Upon execution, this Agreement constitutes the entire agreement of the parties, notwithstanding any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. This Agreement cannot be changed by any means other than written amendments referencing this Agreement and signed by all parties.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT	CONSULTANT
By: _____ Mary Ellen Winkler, J.D., Assistant Executive Director	By: _____ _____ Typed Name and Title
Date: _____	Date: _____
	Attest: _____ _____ Typed Name and Title

Attachments:
Attachment A — Statement of Work
Attachment B — Insurance Requirements
Attachment C — District's Supplemental Instructions (sample)
Attachment D — Taylor Creek Reservoir Improvements Proposed Borrow Areas
Attachment E — Taylor Creek Reservoir Improvements drawings
Attachment F — Geotechnical report

ATTACHMENT A — STATEMENT OF WORK

TAYLOR CREEK RESERVOIR IMPROVEMENTS PROJECT
BORROW EXPLORATION, DAM BREACH ANALYSIS, WETLAND DELINEATION

I. INTRODUCTION/BACKGROUND

The Taylor Creek Reservoir (TCR) is located in Orange and Osceola Counties near the St. Johns River and State Road 520. The TCR levee, L-73 Section 1 (L-73) and Structure S-164 were built in 1969 by the U.S. Army Corps of Engineers (USACE) as part of the original Upper St. Johns River Basin Project. The levee was de-authorized under the Water Resources Development Act of 2020 and is no longer classified as a federal levee. The St. Johns River Water Management District (District) recognizes TCR as a potential, regional alternative water supply source and is referenced in past District Water Supply Plans, the original 2015 Central Florida Water Initiative Regional Water Supply Plan (CFWI RWSP), and the latest 2020 CFWI RWSP. To increase the potential water supply yield from TCR, certain enhancements, such as extending, raising, and improving L-73, reinforcing the slopes at S-164, and updating the operation schedule are necessary. The District is performing in-house design of the proposed levee improvements. In 2016, the hazard classification of L-73 was re-evaluated and re-classified as a high hazard dam based on the Federal Emergency Management Agency's (FEMA's) hazard potential evaluation guidelines for dam safety. The District is designing the levee improvements based on USACE design guidelines for high hazard dams. The District is seeking an outside consultant for design support.

II. OBJECTIVE

The objective of this work is for the Consultant to explore subsurface conditions and evaluate the use of in situ soils for borrow material, conduct a dam breach analysis of L-73 in its proposed condition, prepare related flood inundation maps, and delineate wetlands onsite for future permit application submittals.

III. SCOPE OF WORK

The Consultant shall develop and execute a plan for subsurface exploration and lab testing of in-situ soils at the proposed borrow locations (Attachment D) and evaluate its potential use as suitable fill material to improve L-73 as depicted on the District's initial drawings for TCR Improvements (Attachment E). Consultant shall perform a dam breach analysis and complete related inundation mapping. Consultant shall flag and survey wetland lines located at and adjacent to the footprint of the proposed levee extension, emergency spillway, and general locations of the borrow sites. Consultant shall submit a report of their findings, analyses, and recommendations.

IV. TASK IDENTIFICATION

Task 1 – Project Management

The Consultant shall coordinate and monitor the level of effort for each task. Consultant shall participate in project meetings virtually or in person with District staff to develop and schedule field work, discuss existing and proposed conditions, results of the analyses, the draft final report and any potential, alternative borrow sites or subsequent work and change orders. It is anticipated that one to three meetings onsite with District staff located at TCR will be required.

Task 1 Deliverables – Consultant shall provide an initial project schedule, meet with District staff as needed, and email brief meeting summaries when requested by the District. Consultant shall provide

an updated project schedule on a monthly basis. The schedule updates shall include detail on progress of the Work and outline any potential issues affecting completion or the overall schedule.

Task 2 – Borrow Exploration

Based on the District's initial drawings for TCR Improvements, the District estimates 1,620,000 cubic yards of fill is needed for the proposed levee improvements. Consultant shall review the District's initial drawings (Attachment E), revised drawings, if any, and previous geotechnical report (Attachment F). Consultant shall evaluate the existing site conditions and develop an agreed upon subsurface investigation and testing plan to be implemented. Soil borings and/or test pits shall be conducted in the areas of the proposed borrow locations (Attachment D). The Consultant shall implement the approved subsurface exploration and laboratory testing plan and evaluate the results and suitability of soils for levee construction. Gated, improved access points from Nova Road to L-73 are available at two locations. The District shall provide and facilitate access to the test site(s) to the greatest extent possible. Consultant shall report their investigation in a final report, which describes and summarizes all exploratory findings, boring logs, test pit logs, test results, assumptions, and recommendations in addition to the following:

- Description of the project, project scope, and District-provided information.
- Site location map.
- Subsurface investigation plan.
- Field and laboratory test procedures.
- Soil boring profiles and locations.
- Laboratory test results.
- Written discussion of the subsurface conditions encountered.
- Evaluation of the suitability of soils explored for construction of TCR Levee Improvements project, recommendations or potential alternative borrow sites.
- Evaluation of the quantity of suitable soils explored relative to the District's estimated quantity needed.

Task 2 Deliverables – Within 14 days of contract execution, Consultant shall submit a subsurface exploration and testing plan for District staff review and approval prior to implementation of the field investigation. Within 75 days of contract execution, consultant shall email preliminary boring logs, lab results, and provide general discussion on the suitability of in situ soils for use as levee fill. Consultant shall email the draft final report in Word and PDF format to the District for review and comment within 90 days of contract execution. Consultant shall incorporate the District's review comments, if any, into the final report. The final report shall be signed and sealed by a Florida licensed Professional Engineer. Consultant shall submit the final report in PDF format and three signed and sealed hard copies within 14 days after the District's review of the draft report.

*Note – Task 2 may be deleted from the final contract, pending the outcome of negotiations between the District and property owner.

Task 3 – Dam Breach Analysis and Inundation Mapping

The Consultant shall perform breach analysis and develop downstream inundation mapping for the L-73 Section 1 Levee and Structure S-164. Consultant shall use the methodology established in *FEMA P-946, July 2013 Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures*. The scope for this task will require, but may not be limited to the following activities:

- Review reference documents and background information as available, necessary, and appropriate. Information to be reviewed should include, but not be limited to:
  - The District's initial drawings for TCR Improvements and revised drawings, if any
  - High resolution Digital Elevation Models from previous surveys and latest available United States Geological Survey statewide Light Detection and Ranging mapping for the area
  - Channel cross-sections/bathymetries
  - Structure dimensions and gate operations
  - Pool elevations (both upstream and downstream)
  - Land use and cover
  - Precipitation
  - Gate operations and/or regulation schedule
  - Lake bathymetry or depth-area-storage curve
- Perform reconnaissance of the site and anticipated downstream inundation area as appropriate.
- Develop modeling parameters and information as required to adequately model the dam, reservoir, and downstream inundation zone.
- Develop an appropriate computer model for the dam and downstream inundation zone.
  - Prior to beginning this task, Consultant shall propose suitable model(s) to the District and provide justifications for the recommendation. No work on model development shall occur without District approval of the proposed model(s).
- Perform computerized breach analysis for L-73 and S-164. This analysis should include the following:
  - Non-Hydrologic Fair Weather (Sunny Day) Dam Breach using a simplified method such as the GeoDamBREACH model, Dams Sector Analysis Tool (DSAT), or HEC-RAS model to a point downstream until the flood elevations are attenuated to the estimated capacity of the channel.
  - Hydrologic Dam Breach Analysis to calculate the flood elevations with and without a hypothetical dam failure.
  - Establish the combined downstream limit of study as the most downstream point where habitable structures are not located in the non-hydrologic fair weather dam beach inundation zone and the with- and without-dam breach flood elevations for the hydrologic failure converge to a specified vertical tolerance.
- Route the breach flood hydrograph downstream to determine the extent of flood inundation resulting from the breach.
- Refine and repeat analysis as necessary for model stability and reasonableness of results.
- Using information determined from the breach analysis and flood routing, prepare inundation maps satisfying the mapping requirements in *FEMA P-946, Section 11 Dam Breach Mapping Guidance*. The inundation maps will be incorporated into the District's Emergency Action Plan for L-73 and S-164.
- Prepare draft and final reports for the analysis.

Task 3 Deliverables – Consultant shall provide the dam break model with all model input, output, parameterization, and scenario files and GIS shape files/ maps for each of the created inundation maps. Consultant shall email the draft final report in Word and PDF format to the District for review and comment within 180 days of contract execution. The report shall document all procedures, analysis methods, parameters and assumptions used to develop the inundation maps. The inundation maps should be attached as exhibits or appendices in standard sizes such as 8 ½" x 11" or 11"x17" and created so that they produce well in black and white. Consultant shall incorporate the District's review comments, if any, into the final report. The final report shall be signed and sealed by a Florida licensed Professional Engineer. Consultant shall submit the final report in PDF format and three signed and sealed hard copies within 14 days after the District's review of the draft report.

Task 4 – Wetland Delineation and Survey

Consultant shall identify and flag lands defined as wetlands in accordance with Chapter 62-340, Florida Administrative Code (F.A.C.); the land to be considered in this task is located in the vicinity of the levee extension and earthen spillway shown in the District's drawings and near proposed borrow areas with wetlands mapped in close proximity. Consultant shall review and adjust the wetland lines in the field with District staff and survey the wetland boundaries upon approval of the wetland lines. Consultant shall initiate and complete the survey field work within a reasonable timeframe before flags are displaced or disappear due to weather and the presence of cattle and wildlife. Consultant shall notify the District no less than five business days before accessing the property located outside of the District's Right-of-Way so that District staff can coordinate with the property owner. District staff shall notify the property owner for planned entry for survey work pursuant to Section 472.029, Florida Statutes.

Task 4 Deliverable – Consultant shall submit the draft AutoCAD and PDF files for the wetland boundary for District review within 180 days of contract execution. Consultant shall submit the final AutoCAD, PDF of the survey, and three hard copies to the District within 14 days after the District's review of the draft information. The final survey shall be signed and sealed by a Florida licensed Surveyor and Mapper.

V. TIME FRAMES AND DELIVERABLES

The contract shall expire September 30, 2024. Time frames and deliverables for tasks are detailed in Section IV of the Statement of Work above and summarized in the table below.

Task		Deliverable	Due Date
1	Project Management	Initial project schedule	Within 7 days of contract execution
		Meeting summaries	Within 7 days of request
		Updated project schedule	Monthly
2	Borrow Exploration	Subsurface exploration and testing plan	Within 14 days of contract execution
		Preliminary borings, lab results, general discussion	Within 75 days of contract execution
		Draft final report	Within 90 days of contract execution
		Certified final report	Within 14 days of District review/ comment
3	Dam Breach Analysis and Inundation Mapping	Model files, shape files, maps	Within 180 days of contract execution
		Draft final report	Within 180 days
		Certified final report	Within 14 days of District review/ comment
4	Wetland Delineation and Survey	Draft survey	Within 180 days of contract execution
		Final survey	Within 14 days of District review/ comment

VI. BUDGET/ COST SCHEDULE

District agrees to compensate the Consultant in an amount not to exceed the Total Compensation. Consultant shall submit monthly invoices based on a percentage of completion for each fixed price task set forth in the cost schedule below.

	Task	Total Fixed Price
1	Project Management	$_____
2	Borrow Exploration	$_____
3	Dam Breach Analysis and Inundation Mapping	$_____
4	Wetland Delineation and Survey	$_____
	Total Compensation	$_____

ATTACHMENT B — INSURANCE REQUIREMENTS

Consultant shall acquire and maintain until completion of the Work the insurance coverage listed below, which constitutes primary coverage. Consultant shall not commence the Work until the District receives and approves Certificates of Insurance documenting required coverage. Consultant's General Liability policy shall include Endorsement CG 20 10 04 13, or equivalent, naming the St. Johns River Water Management District (the "District") as Additional Insured. All required policies shall include: (1) endorsement that waives any right of subrogation (Endorsement CG 24 04 05 09, or equivalent) against the District for any policy of insurance provided under this requirement or under any state or federal worker's compensation or employer's liability act; (2) endorsement to give the District no less than 30 days' notice in the event of cancellation or material change. Certificates of Insurance must be accompanied by copies of the requested endorsements.

Any deductibles or self-insured retentions above $100,000 must be declared to and approved by the District. Approval will not be unreasonably withheld. Consultant is responsible for any deductible or self-insured retention. Insurance must be placed with insurers having an A.M. Best rating of A-V or greater. District receipt of insurance certificates providing less than the required coverage does not waive these insurance requirements.

(a) **Workers' Compensation Insurance.** Workers' compensation and employer's liability coverage, including maritime workers' compensation, if applicable, in not less than the minimum limits required by Florida law. If Consultant claims an exemption from workers' compensation coverage, Consultant must provide a copy of the Certificate of Exemption from the Florida Division of Workers' Compensation for all officers or members of an LLC claiming exemption who will be participating in the Work. In addition, Consultant must provide a completed District "Affidavit (Non-Construction)" for non-construction contracts.

(b) **General Liability.** Commercial General Liability Insurance on an "Occurrence Basis," with limits of liability for each occurrence of not less than $1,000,000 for personal injury, bodily injury, and property damage, with a(n) project aggregate of $2,000,000. Coverage shall include: (1) contractual liability, (2) products and completed operations, (3) independent contractors, and (4) property in the care, control, or custody of the Consultant. Extensions shall be added or exclusions deleted to provide the necessary coverage.

(c) **Automobile Liability.** $500,000 combined single limit.

(d) **Professional Liability.** (Per claim) $1,000,000 single limit and $2,000,000 annual project aggregate limit. Continuous coverage shall be in place for four years after the contract is completed.

ATTACHMENT C — DISTRICT'S SUPPLEMENTAL INSTRUCTIONS (sample)

DISTRICT SUPPLEMENTAL INSTRUCTIONS #

DATE:

TO: _____
_____
_____
, _____

FROM: Gretchen Kelley, Project Manager

CONTRACT NUMBER: 39171

CONTRACT TITLE: Taylor Creek Reservoir Improvements – Borrow Exploration, Dam Breach Analysis, Wetland Delineation

The Work shall be carried out in accordance with the following supplemental instruction issued in accordance with the Contract Documents without change in the Contract Sum or Contract Time. Prior to proceeding in accordance with these instructions, indicate your acceptance of these instructions for minor adjustments to the work as consistent with the Contract Documents and return to the District's Project Manager.

1. CONSULTANT'S SUPPLEMENTAL INSTRUCTIONS:

2. DESCRIPTION OF WORK TO BE CHANGED:

3. DESCRIPTION OF SUPPLEMENTAL INSTRUCTION REQUIREMENTS: .

Consultant's approval: (choose one of the items below):

Approved: _____ Date: _____

(It is agreed that these instructions shall not result in a change in the Total Compensation or the Completion Date.)

Approved: _____ Date: _____

(Consultant agrees to implement the Supplemental Instructions as requested but reserves the right to seek a Change Order in accordance with the requirements of the Agreement.)

Approved: _____ Date: _____
Gretchen Kelley, District Project Manager

Acknowledged: _____ Date: _____
Kendall Matott, District Contracts Manager

c: Contract file
Financial Services

ATTACHMENT D – TAYLOR CREEK RESERVOIR IMPROVEMENTS PROPOSED BORROW AREAS
(See following pages)

LEGEND:

- EXISTING L-73 BL 8.66 MILES
- 3,700 L.F. LEVEE EXTENSION
- EXISTING NOVA ROAD CR-532 R/W
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 R/W
- PROPOSED DOWNSTREAM LEVEE TOE
- PROPOSED BORROW
- 3,000 - FT. SPILLWAY FOR DISCHARGE TO JIM CREEK
- EXISTING DOWNSTREAM WETLANDS FLAGGED AND SURVEYED
- DOWNSTREAM WETLANDS AFFECTED BY L-73 LEVEE IMPROVEMENTS (11.23 ACRES)
- UPSTREAM WETLANDS FROM SJRWMD ARC-GIS DATABASE, LAYER "WETLANDS VEG SJRWMD".
- FLOW DIRECTION
- SHEET NUMBER
- SECTION NUMBER

TCR BORROW NOTE:

1. THE PROPOSED BORROW AREAS WILL BE LOCATED ADJACENT TO THE EXISTING BORROW DITCHES AND WILL BE APPROXIMATELY 300 FEET WIDE.
2. THE APPROXIMATE STATIONING AND ACREAGE FOR THE BORROW AREAS WILL BE:

AREA 1:	13+00 TO 67+50	37.5 AC.
AREA 2:	75+00 TO 103+50	19.6 AC.
AREA 3:	228+00 TO 275+00	30.8 AC.
AREA 4:	296+00 TO 304+00	5.5 AC.
AREA 5:	316+00 TO 323+00	4.7 AC.
AREA 6:	339+00 TO 365+00	17.8 AC.
AREA 7:	432+00 TO 444+50	8.6 AC.

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: SEPTEMBER 11, 2023 REVIEWER: W.R.C.
SCALE: 1" = 800' DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

PROPOSED BORROW AREAS

CERTIFICATION:
DRAFT
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

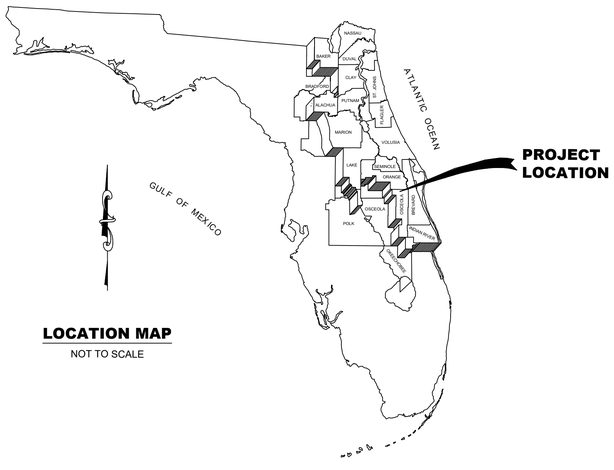
FILE NAME: TCRI BORROW 02.dwg
PROJECT NO.:
SHEET: 1 OF 1

ATTACHMENT E – TAYLOR CREEK RESTORATION IMPROVEMENTS DRAWINGS – SEPARATE COVER

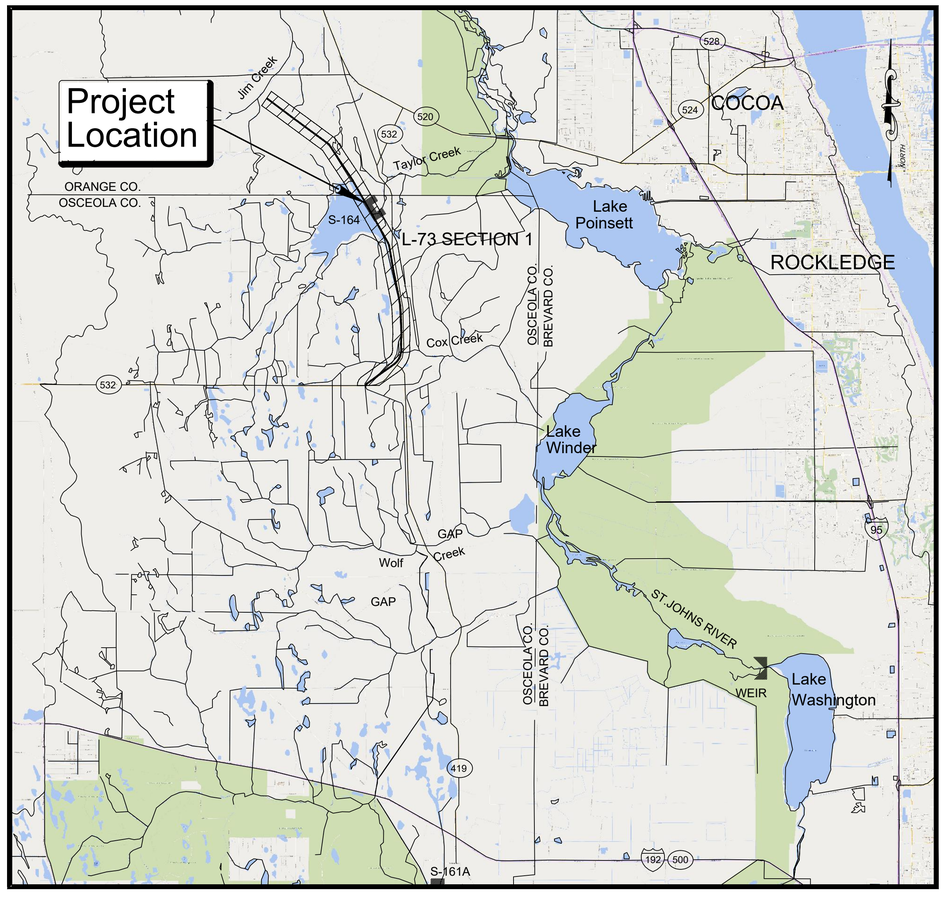
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

NAVD 1988

ALL ELEVATIONS DEPICTED HEREIN REFERENCE NAVD 1988 UNLESS OTHERWISE NOTED. THE CONVERSION FACTOR TO NGVD 1929 IS +1.26.



LOCATION MAP
NOT TO SCALE



VICINITY MAP

INDEX OF PLANS

ENGINEER'S NOTES:

1. These drawings are prepared for the sole and exclusive use of the St. Johns River Water Management District and shall not be relied upon by any other entity or individual.
2. Reproductions of these drawings are "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL SEAL OF A FLORIDA LICENSED ENGINEER."

NO.	REVISION	BY	DATE	APPROVED	DATE

CALL 2 WORKING DAYS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's Call below. before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

DRAWING FILENAME: TCRI COVER.dwg

SHEET: C1

U:\Projects\CADD\JS.RB\TCRI\05 Production Drawings\TCRI COVER.dwg

LEGEND:

- EXISTING L-73 BL 8.66 MILES
- 3,700 L.F. LEVEE EXTENSION
- EXISTING NOVA ROAD CR-532 R/W
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 R/W
- PROPOSED DOWNSTREAM LEVEE TOE
- 3,000 - FT. SPILLWAY FOR DISCHARGE TO JIM CREEK
- EXISTING WETLANDS
- AFFECTED WETLANDS (11.23 ACRES)
- FLOW DIRECTION
- SHEET NUMBER
- SECTION NUMBER

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

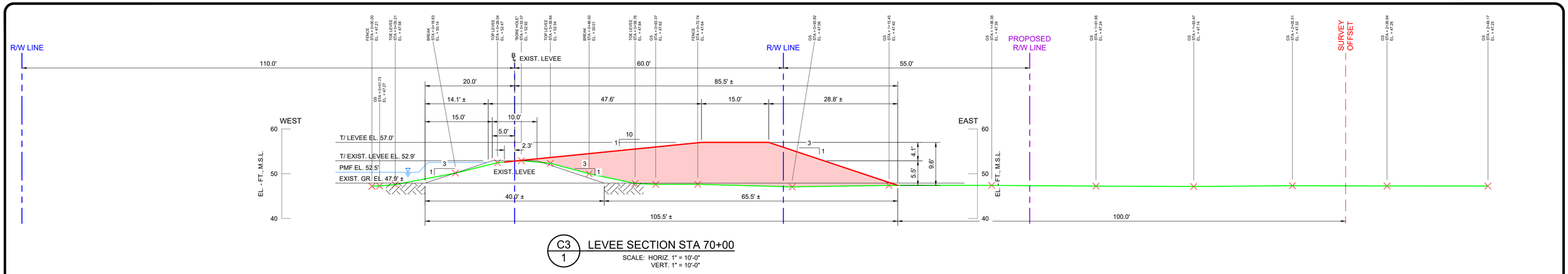
ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1" = 800'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

OVERALL PROJECT PLAN

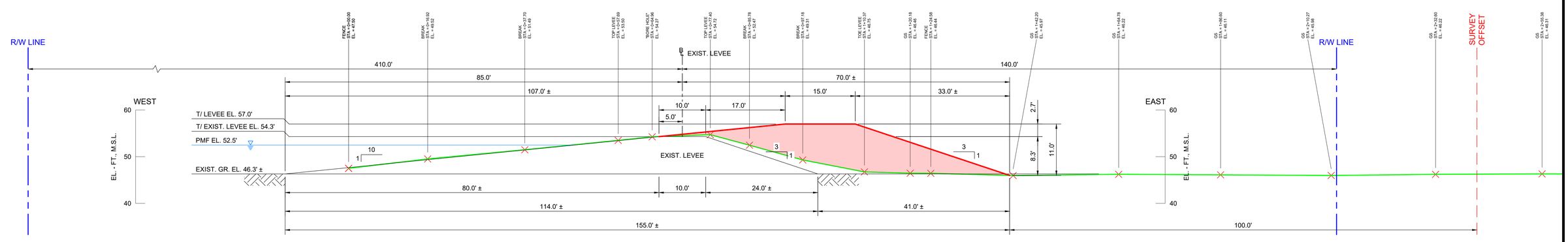
CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI OVER.dwg
PROJECT NO.:
SHEET: C2



C3 / 1 LEVEE SECTION STA 70+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



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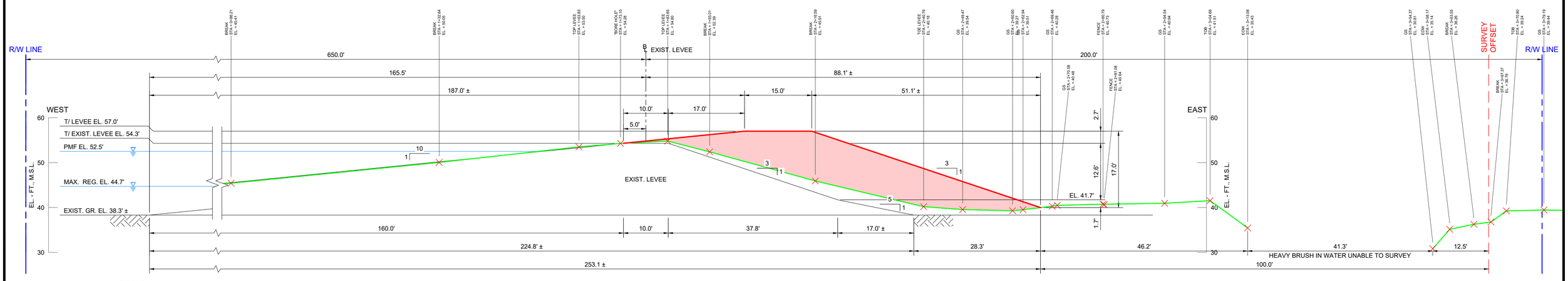
VERT. 1" = 10'-0"



C3 / 3 LEVEE SECTION STA 150+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 5 10 20 HORIZONTAL
0 5 10 20 VERTICAL

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 70+00, 110+00, AND 150+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C3

U:\Projects\CAD\Civil\TCRI\Production Drawings\TCRI XSECT.dwg

C4 1 LEVEE SECTION STA 163+00

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

C4 2 LEVEE SECTION STA 185+50

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
HORIZONTAL: 0 10 20 40
VERTICAL: 0 5 10 20

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

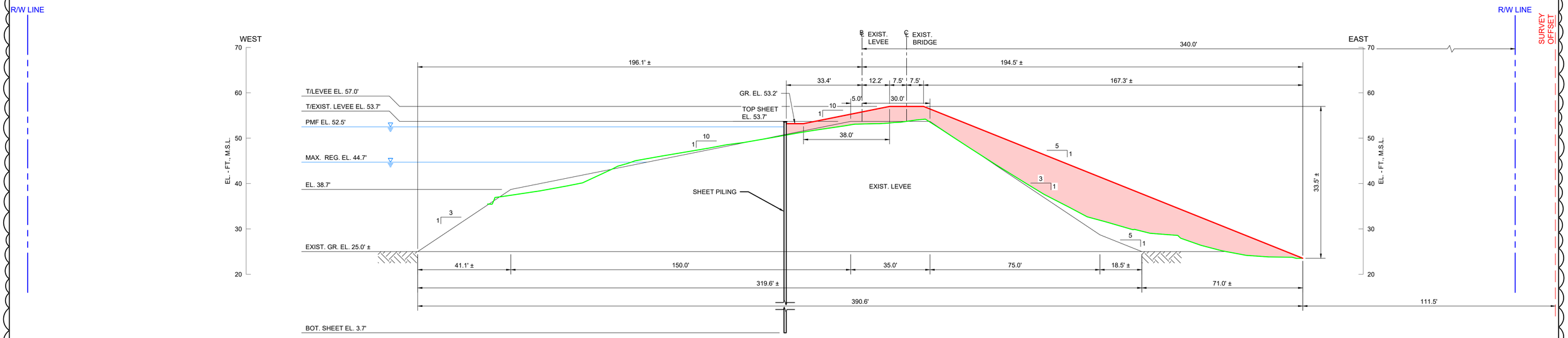
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O.BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. | DATE: SEPTEMBER 11, 2023 | REVIEWER: W.R.C.
SCALE: AS NOTED | DESIGNER: W.R.C. | SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 163+00 AND 185+50

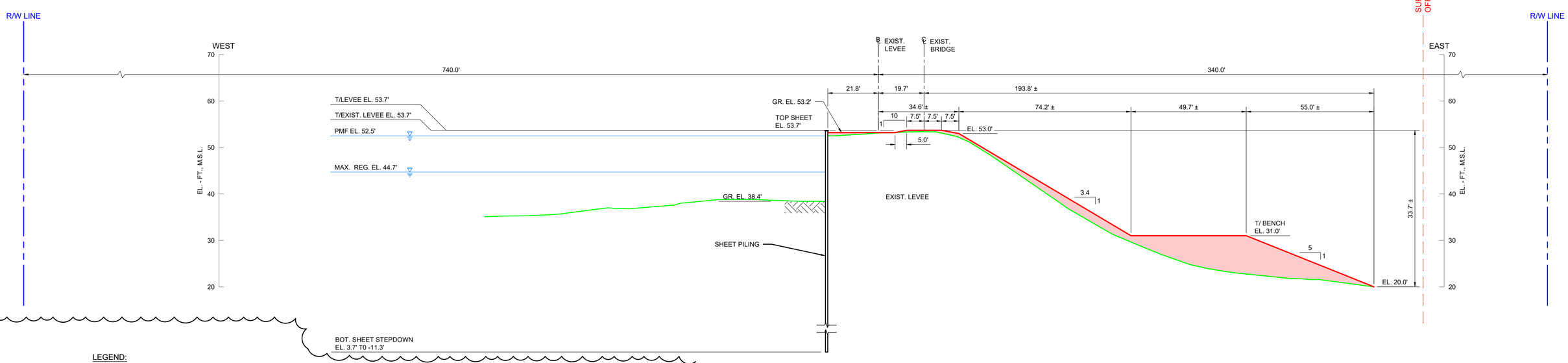
CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C4



C5/1 LEVEE SECTION STA 186+45 (END OF NEW SHEETS)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"



C5/2 LEVEE SECTION STA 187+51 (BOT. SHEET STEPDOWN)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET

HORIZONTAL: 0 10 20 40

VERTICAL: 0 5 10 20

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

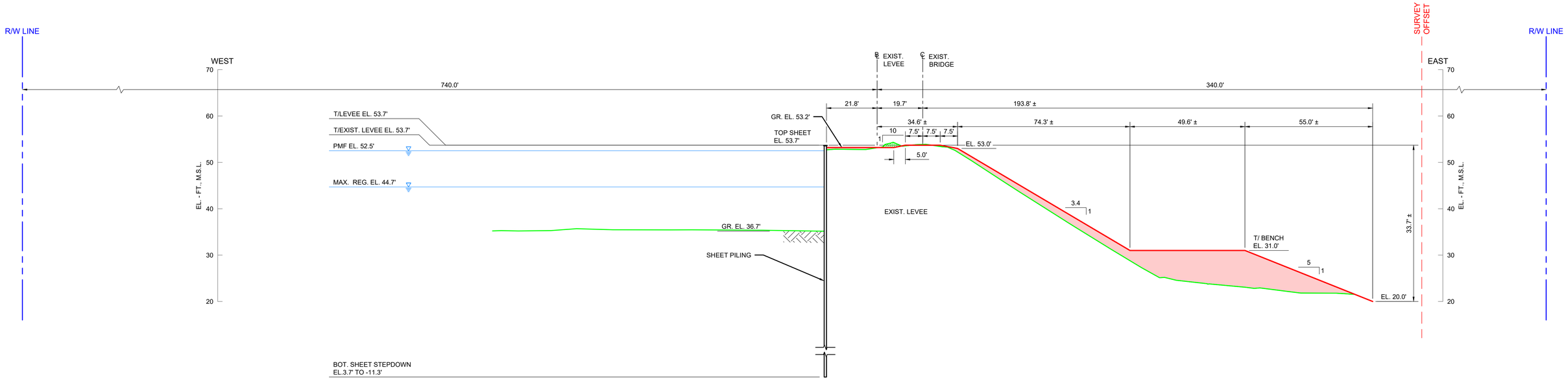
LEVEE SECTION STA. 186+45 AND 187+51

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C5

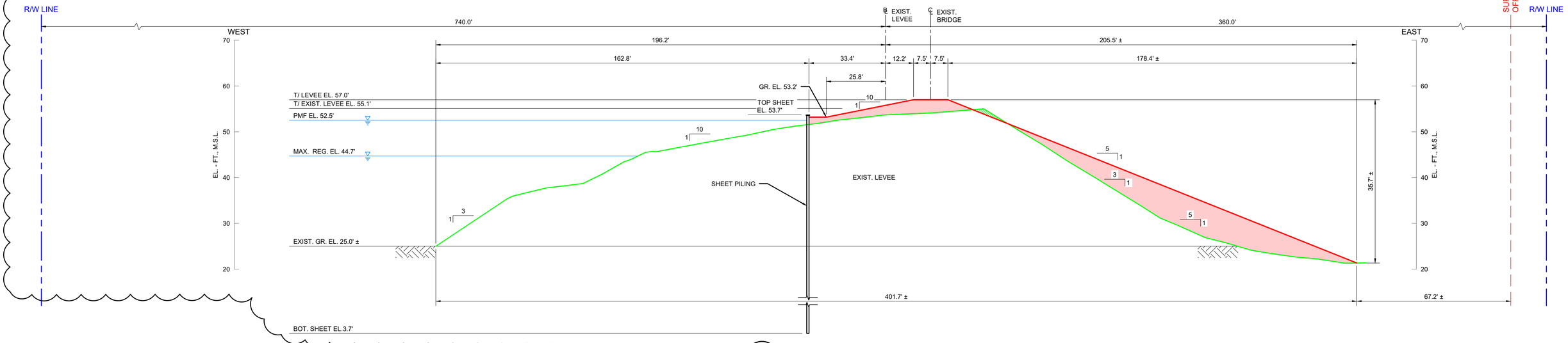
U:\Projects\Orange\Taylor Creek Reservoir\Design\TCRI XSECT.dwg



C6
1

LEVEE SECTION STA 188+63 (BOT. SHEET STEPDOWN)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"



C6
2

LEVEE SECTION STA 189+69 (END OF NEW SHEETS)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET

HORIZONTAL: 0 10 20 40

VERTICAL: 0 5 10 20

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 188+63 AND 189+69

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C6

U:\Projects\Civil\Drawings\TCRI XSECT.dwg

C7
1
LEVEE SECTION STA 191+05
SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

C7
2
LEVEE SECTION STA 215+00
SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 10 20 40 HORIZONTAL
0 5 10 20 VERTICAL

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

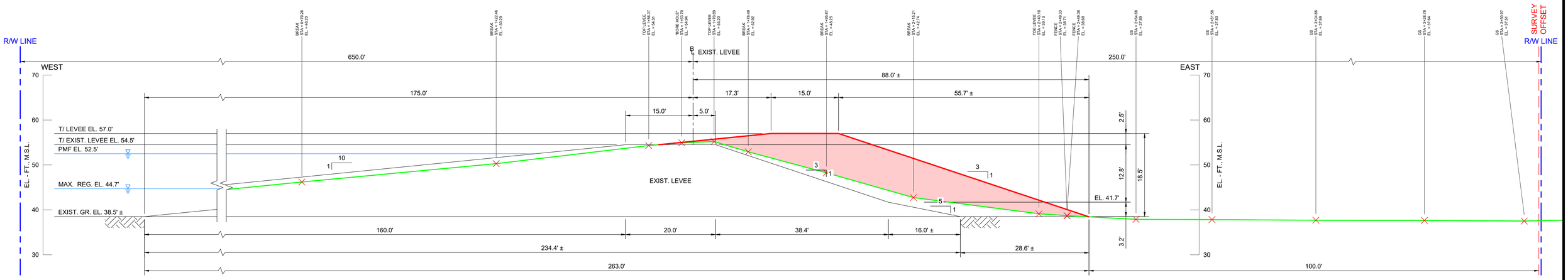
ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: SEPTEMBER 11, 2023 REVIEWER: W.R.C.
SCALE: AS NOTED DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 191+05 AND 215+00

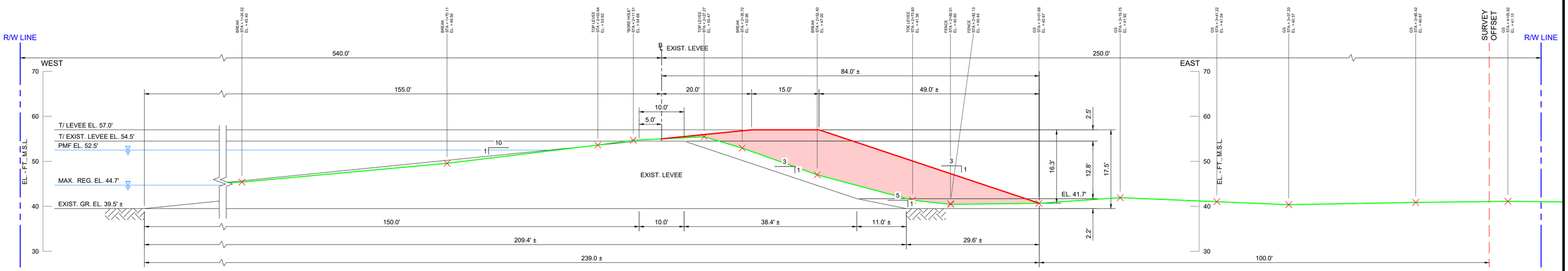
CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C7



C8 / 1 — LEVEE SECTION STA 226+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



C8 / 2 — LEVEE SECTION STA 270+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 5 10 20 HORIZONTAL
0 5 10 20 VERTICAL

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

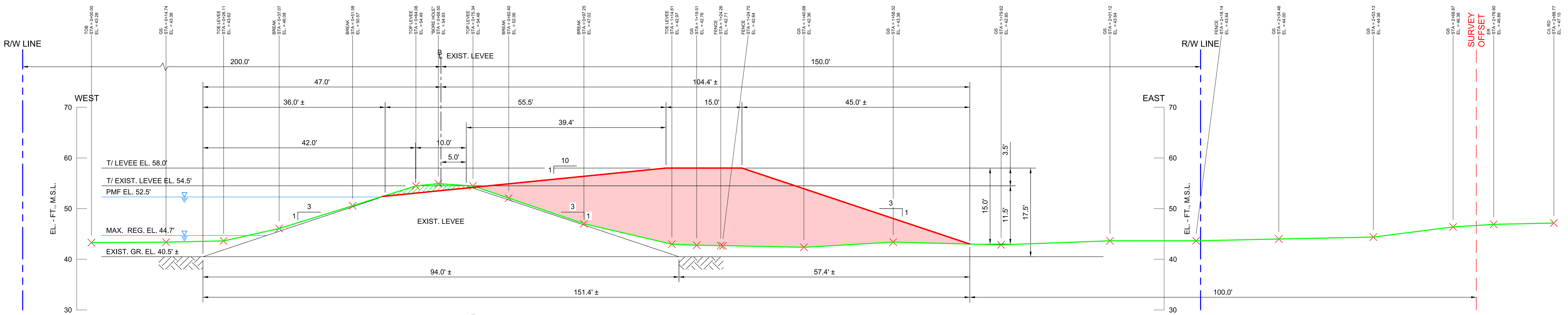
LEVEE SECTION STA. 226+00 AND 270+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

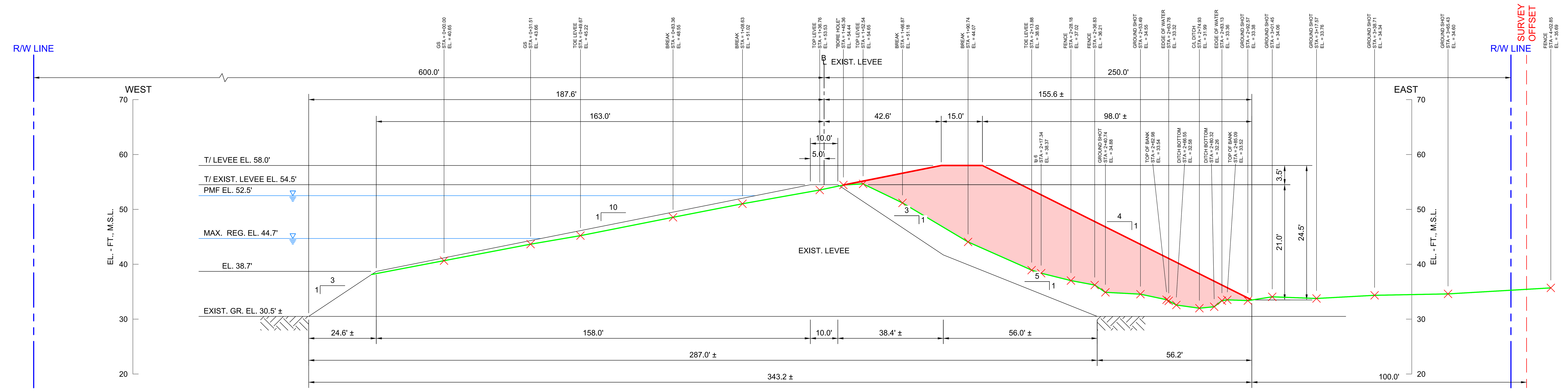
FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C8

C:\Projects\Taylor Creek\Design\TCRI XSECT.dwg



C9
1
LEVEE SECTION STA 310+00
SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

GRAPHIC SCALE IN FEET
0 5 10 20
HORIZONTAL
0 5 10 20
VERTICAL



C9
2
LEVEE SECTION STA 400+00
SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZONTAL
0 5 10 20
VERTICAL

FOR REVIEW ONLY
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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: SEPTEMBER 11, 2023 REVIEWER: W.R.C.
SCALE: AS NOTED DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

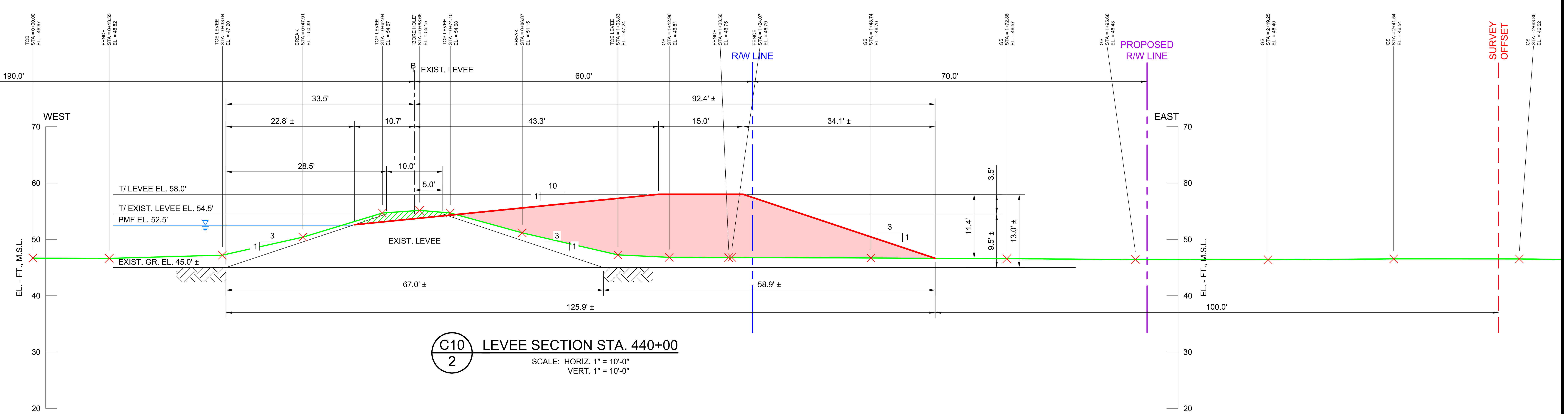
LEVEE SECTION STA. 310+00 AND 400+00

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C9

C10 / 1 LEVEE SECTION STA 419+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



C10 / 2 LEVEE SECTION STA. 440+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET: 0 5 10 20 HORIZONTAL; 0 5 10 20 VERTICAL

FOR REVIEW ONLY
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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

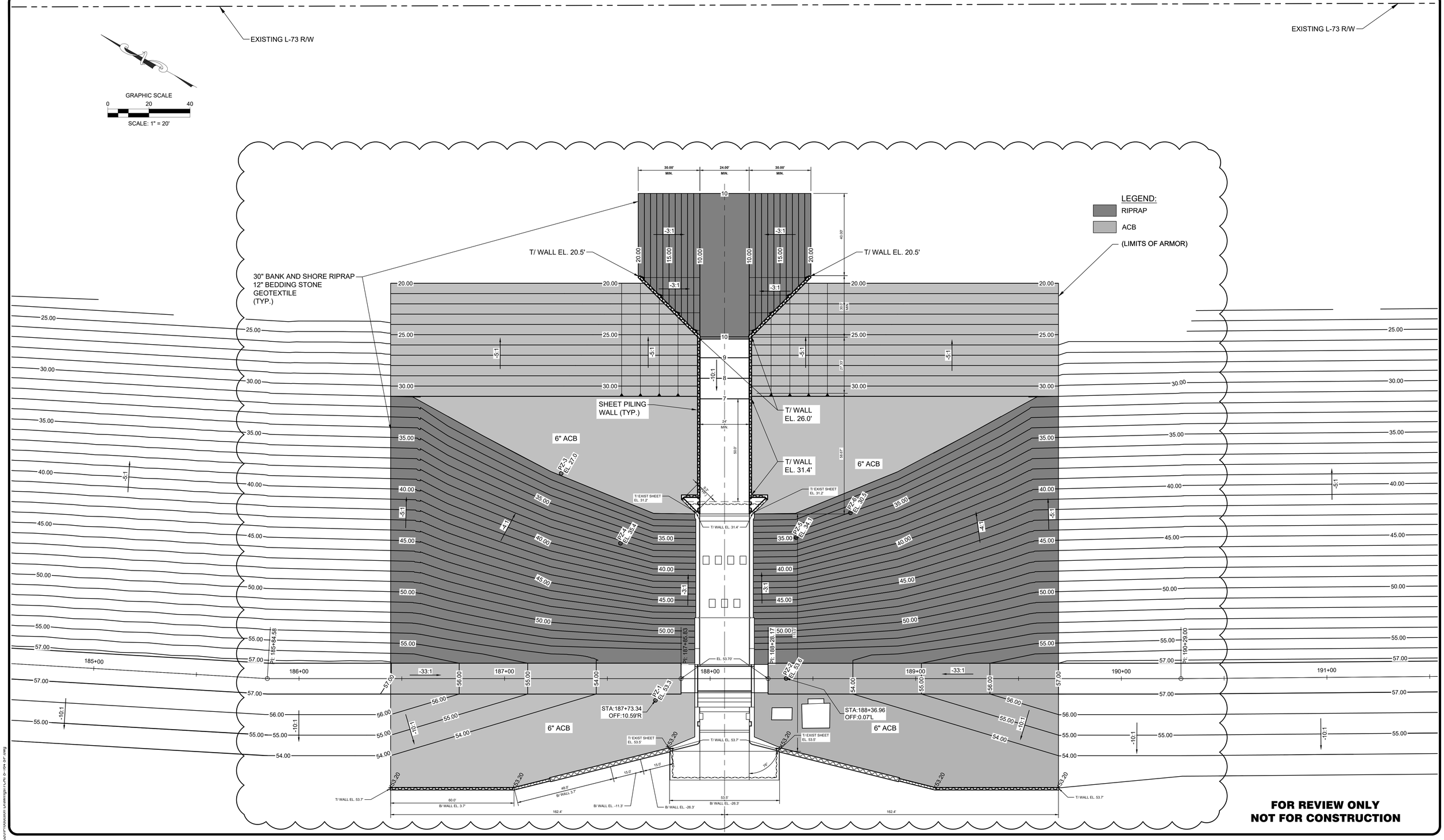
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. | DATE: SEPTEMBER 11, 2023 | REVIEWER: W.R.C.
SCALE: AS NOTED | DESIGNER: W.R.C. | SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 419+00 AND 440+00

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C10



NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O.BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1" = 20'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

PROPOSED S-164 SITE PLAN

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI S-164 SP.dwg
PROJECT NO.:
SHEET: C41

U:\Projects\Projects\TCRI\Drawings\TCRI S-164 SP.dwg

EXISTING L-73 R/W

EXISTING L-73 R/W

GRAPHIC SCALE
0 20 40
SCALE: 1" = 20'

LEGEND:
RIPRAP
ACB
(LIMITS OF ARMOR)

30" BANK AND SHORE RIPRAP
12" BEDDING STONE
GEOTEXTILE
(TYP.)

T/ WALL EL. 20.5'

T/ WALL EL. 20.5'

SHEET PILING WALL (TYP.)

T/ WALL EL. 26.0'

T/ WALL EL. 31.4'

6" ACB

6" ACB

6" ACB

6" ACB

PZ-3 EL. 37.0

PZ-4 EL. 38.4

PZ-5 EL. 34.1

PZ-5 EL. 29.5

PZ-1 EL. 53.3

PZ-2 EL. 53.6

STA:187+73.34
OFF:10.59'R

STA:188+36.96
OFF:0.07'L

T/ EXIST SHEET EL. 31.2'

T/ EXIST SHEET EL. 31.2'

T/ EXIST SHEET EL. 53.5'

T/ EXIST SHEET EL. 53.5'

T/ WALL EL. 31.4'

T/ WALL EL. 53.7'

T/ WALL EL. 53.7'

T/ WALL EL. 53.7'

EL. 53.70'

Pt: 185+84.58

Pt: 187+85.63

Pt: 188+28.17

Pt: 190+29.00

185+00

186+00

187+00

188+00

189+00

190+00

191+00

B/ WALL EL. 3.7'

B/ WALL EL. -11.3'

B/ WALL EL. -26.3'

B/ WALL EL. -26.3'

B/ WALL EL. 3.7'

60.0'

45.0'

15.0'

11.0'

53.0'

162.4'

162.4'

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O.BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1" = 20'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

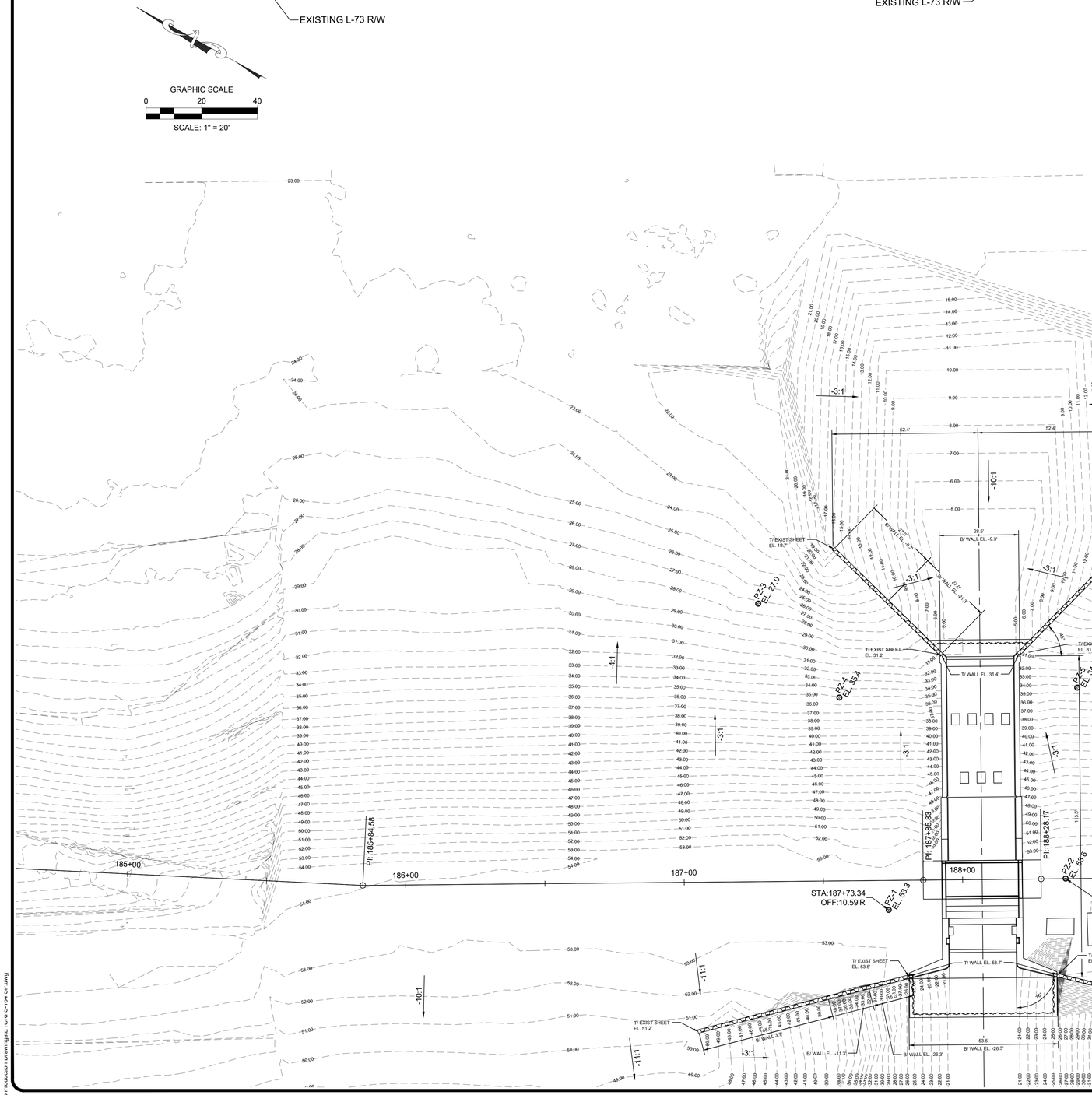
PROPOSED S-164 SITE PLAN WITH AERIAL

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI S-164 SP.dwg
PROJECT NO.:
SHEET: C41A

C:\Projects\Taylor Creek\Drawings\TCRI S-164 SP.dwg



S1 SURVEY REFERENCE DOCUMENTS:

1. SPECIFIC PURPOSE LIDAR SURVEY REPORT, PREPARED BY DEWBERRY, DATED MAY 24, 2010.
3. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO. 2), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 DOWNSTREAM X SECTIONS.DWG, DATED OCTOBER 14, 2010
   - B2701 LEVEE X SECTIONS.DWG, DATED AUGUST 24, 2010
   - DOWNSTREAM X SECTIONS POINTS.TXT, DATED OCTOBER 14, 2011
4. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO. 3), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 ADD LEVEE X SECTIONS.DWG, DATED JUNE 5, 2014
   - B2701 ADD LEVEE POINTS.TXT, DATED FEBRUARY 17, 2011
   - ADDITIONAL DOWNSTREAM X SECTIONS POINTS.TXT, DATED FEBRUARY 17, 2011
3. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO.4), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 DOWNSTREAM X SECTIONS 2013.DWG, DATED MARCH 4, 2013
   - B2701 LEVEE SURVEY 2013.DWG, DATED MARCH 5, 2013
   - B2701 SURVEY POINTS.TXT, DATED MARCH 4, 2013
4. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO.10), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - 58704001C.DWG, DATED AUGUST 12, 2014
5. TAYLOR CREEK RESERVOIR - LEVEE BOUNDARY (SURVEY WORK ORDER NO. 4709-14), PREPARED BY SJRWMD, DATED APRIL 16, 2014. DELIVERABLES:
   - 4709-14.DWG
6. TAYLOR CREEK RESERVOIR TCR WETLANDS (SURVEY WORK ORDER NO. 4621-14), PREPARED BY SJRWMD, DATED JUNE 3, 2014. DELIVERABLES:
   - 4621-14.DWG
7. TAYLOR CREEK RESERVOIR TCR WETLANDS (SURVEY WORK ORDER NO. 4741-15), PREPARED BY SJRWMD, DATED APRIL 17, 2015. DELIVERABLES:
   - 4741-15 4-17-2015.DWG
8. L-73 TAYLOR CREEK S-231 REMOVAL (SURVEY WORK ORDER NO. 6683-19), PREPARED BY SJRWMD, DATED OCTOBER 10, 2019. DELIVERABLES:
   - 6683-19.DWG
9. TAYLOR CREEK RESERVOIR IMPROVEMENTS (SURVEY WORK ORDER NO. 7130-20), PREPARED BY SJRWMD, DATED MARCH 15, 2020. DELIVERABLES:
   - 7130-20.DWG
10. TAYLOR CREEK RESERVOIR IMPROVEMENTS (SURVEY WORK ORDER NO. 7264-21), PREPARED BY SJRWMD, DATED JULY 12, 2021. DELIVERABLES:
    - 7264-21.DWG
11. MAP SHOWING A SPECIFIC PURPOSE TOPOGRAPHIC SURVEY (SURVEY WORK ORDER NO. D-22-444), PREPARED BY L.D. BRADLEY LAND SURVEYORS, DATED DECEMBER 2, 2022. DELIVERABLES:
    - 22444.DWG
12. TAYLOR CREEK RESERVOIR IMPROVEMENTS (SURVEY WORK ORDER NO. 7625-22), PREPARED BY SJRWMD, DATED MARCH 27, 2023. DELIVERABLES:
    - 7625-22.DWG

NAVD 1988

ALL ELEVATIONS DEPICTED HEREIN REFERENCE NAVD 1988 UNLESS OTHERWISE NOTED. THE CONVERSION FACTOR TO NGVD 1929 IS +1.26.

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1" = 20'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

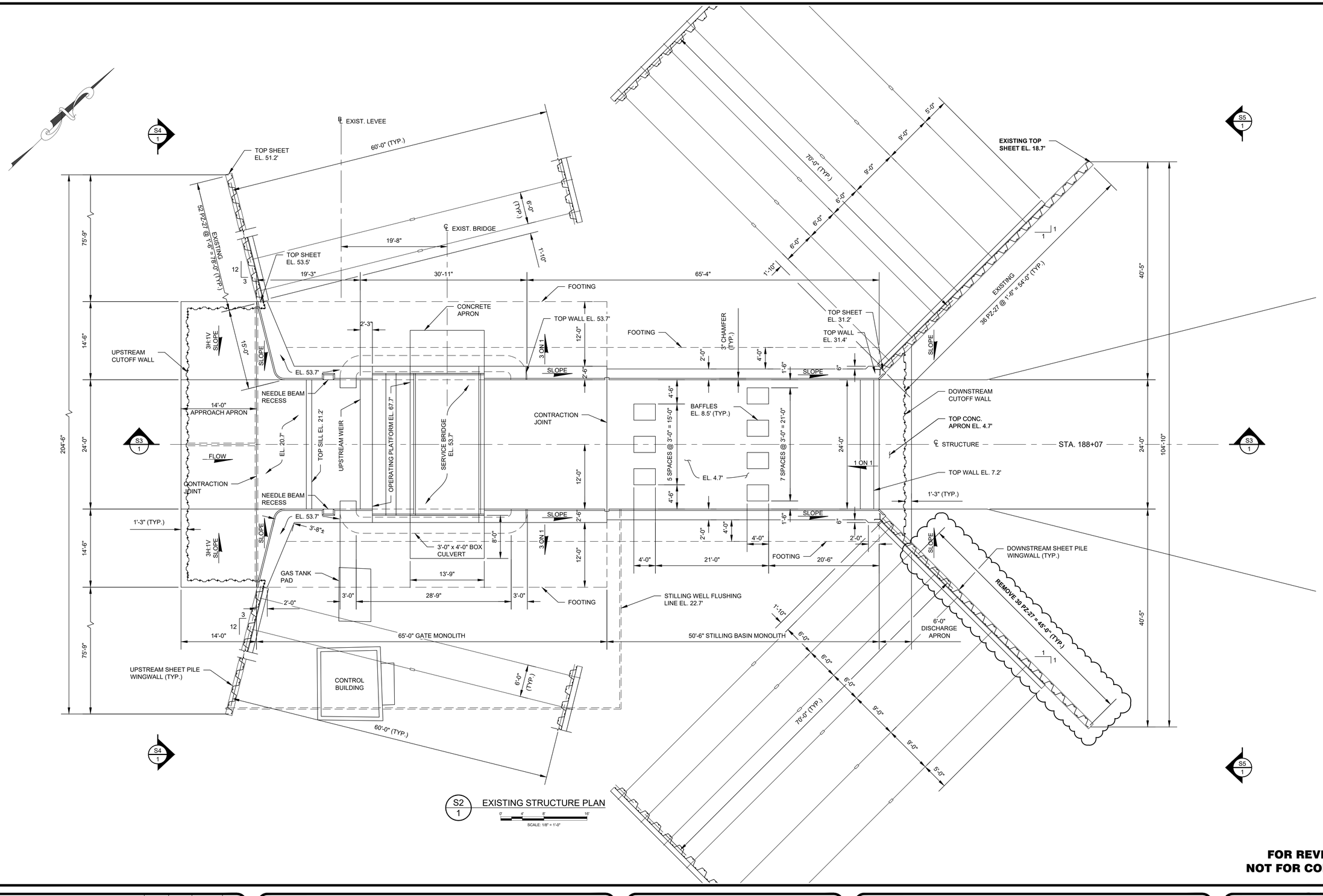
EXISTING S-164 SITE GRADE

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: ETCRI S-164 SP.dwg
PROJECT NO.:
SHEET: S1

S:\Projects\Taylor Creek\Design Products\Drawings\ETCRI S-164 SP.dwg



S2 / 1 EXISTING STRUCTURE PLAN

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

EXISTING STRUCTURE PLAN

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S2

S:\Projects\Projects\Taylor Creek Reservoir\Drawings\ETCRI STR.dwg

S3 / 1 EXISTING STRUCTURE SECTION

SCALE: 1/8" = 1'-0"

NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

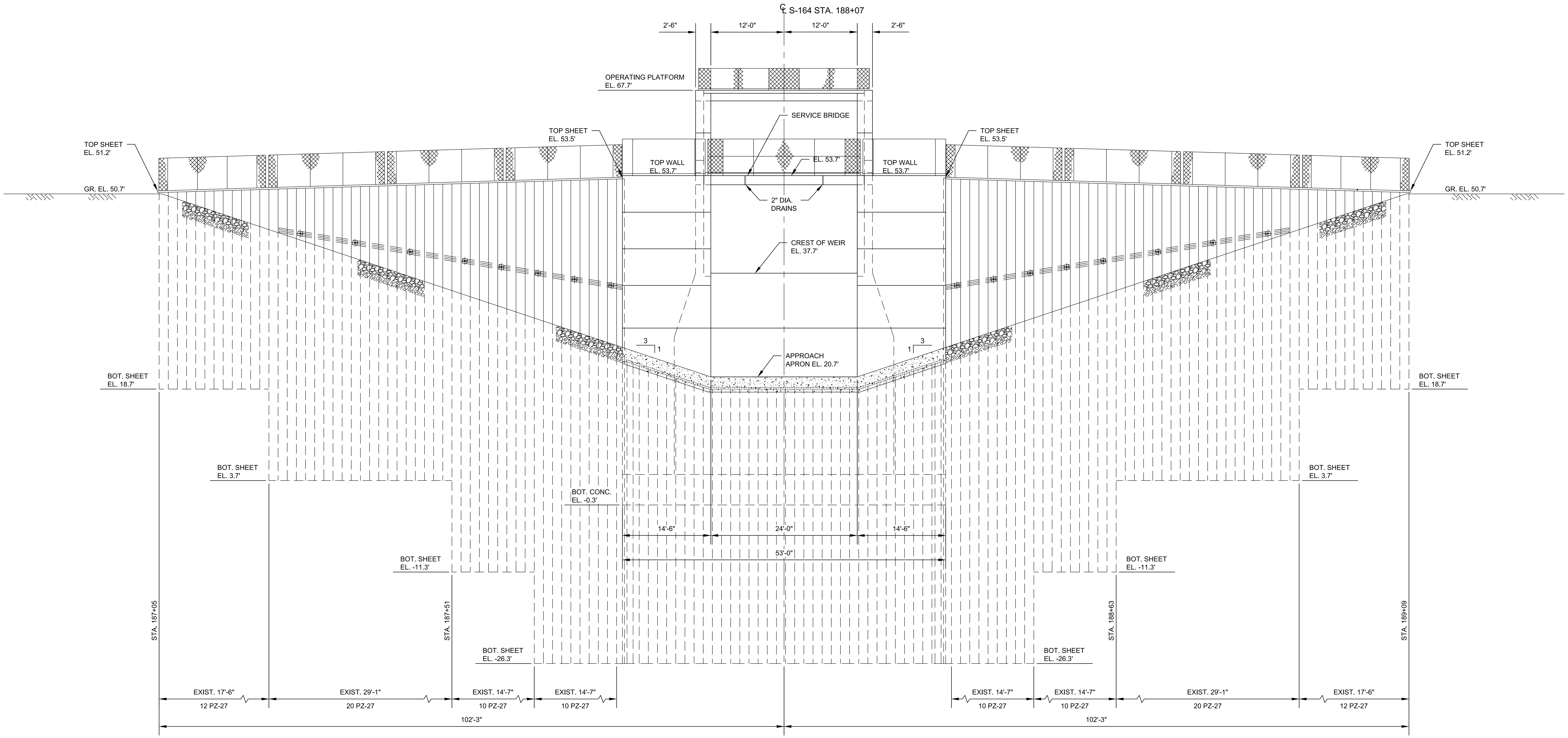
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O.BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: SEPTEMBER 11, 2023 REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

EXISTING STRUCTURE SECTION

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S3



NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S4 / 1 EXISTING UPSTREAM ELEVATION

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

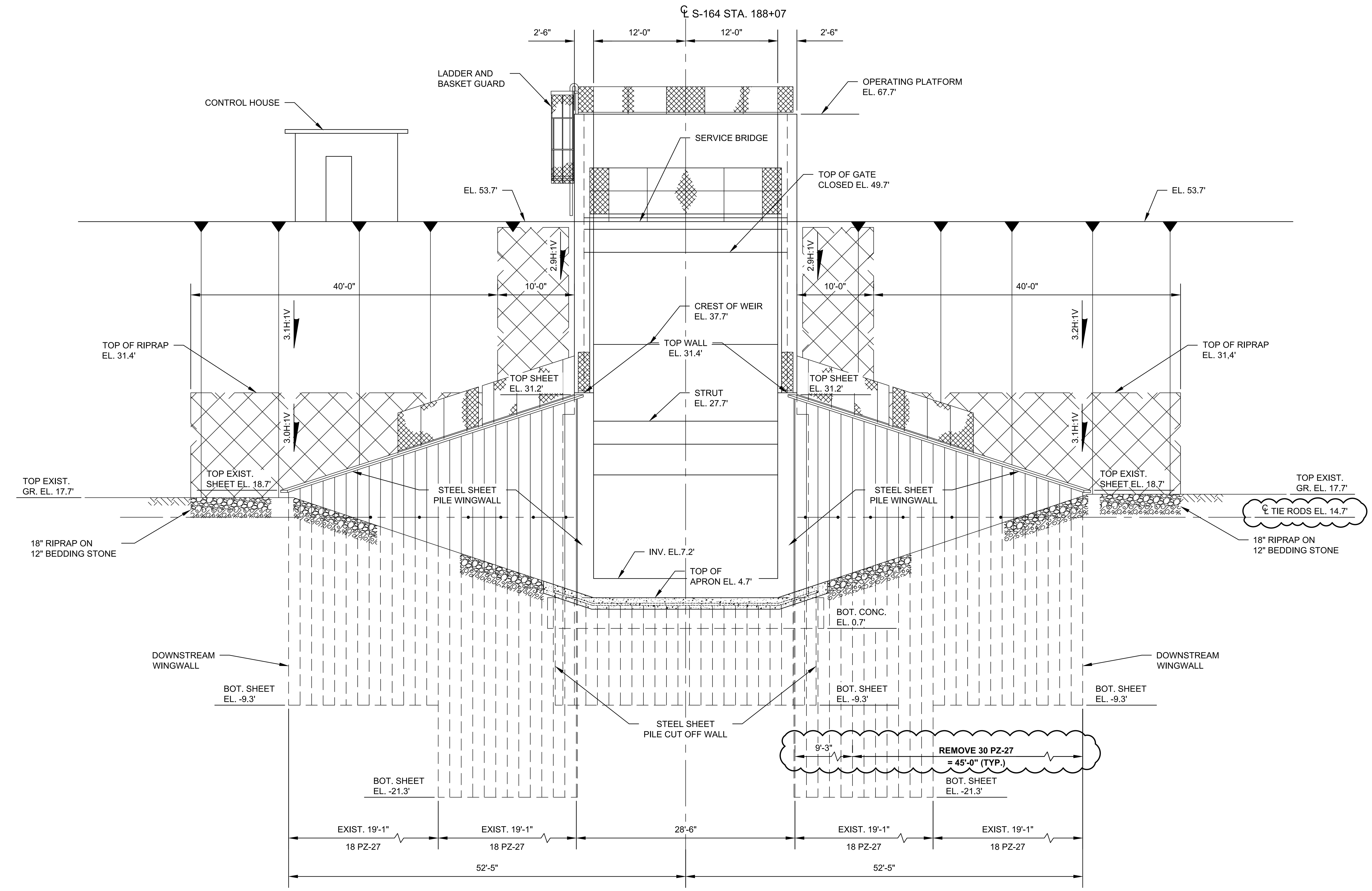
ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O.BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

EXISTING UPSTREAM ELEVATION

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S4



NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S5 / 1 EXISTING DOWNSTREAM ELEVATION

SCALE: 1/8" = 1'-0"

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ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

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WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. | DATE: SEPTEMBER 11, 2023 | REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" | DESIGNER: W.R.C. | SECTION CHIEF: W.R.C.

EXISTING DOWNSTREAM ELEVATION

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S5

S6 1 STRUCTURE PLAN

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

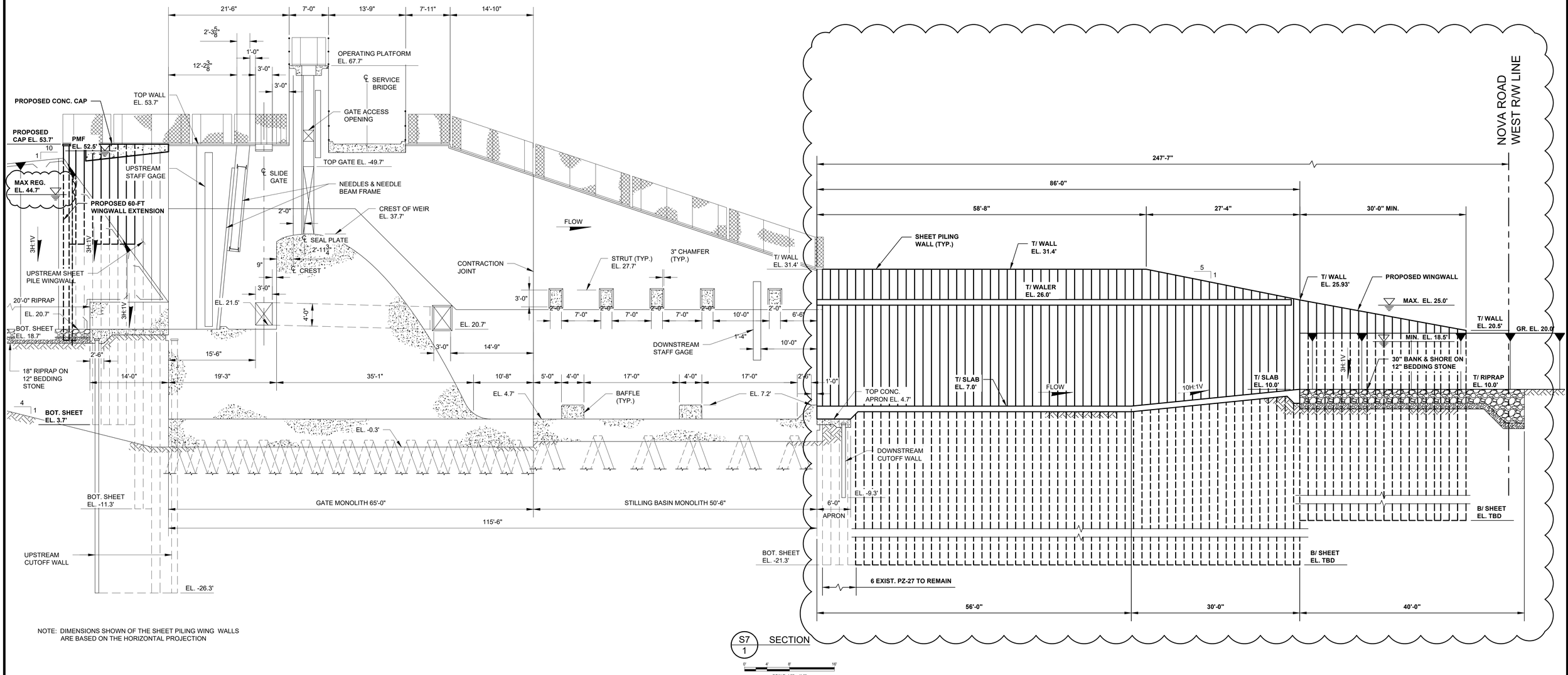
ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: SEPTEMBER 11, 2023 REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

STRUCTURE PLAN

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S6



NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S7
1
SECTION

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

STRUCTURE SECTION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S7

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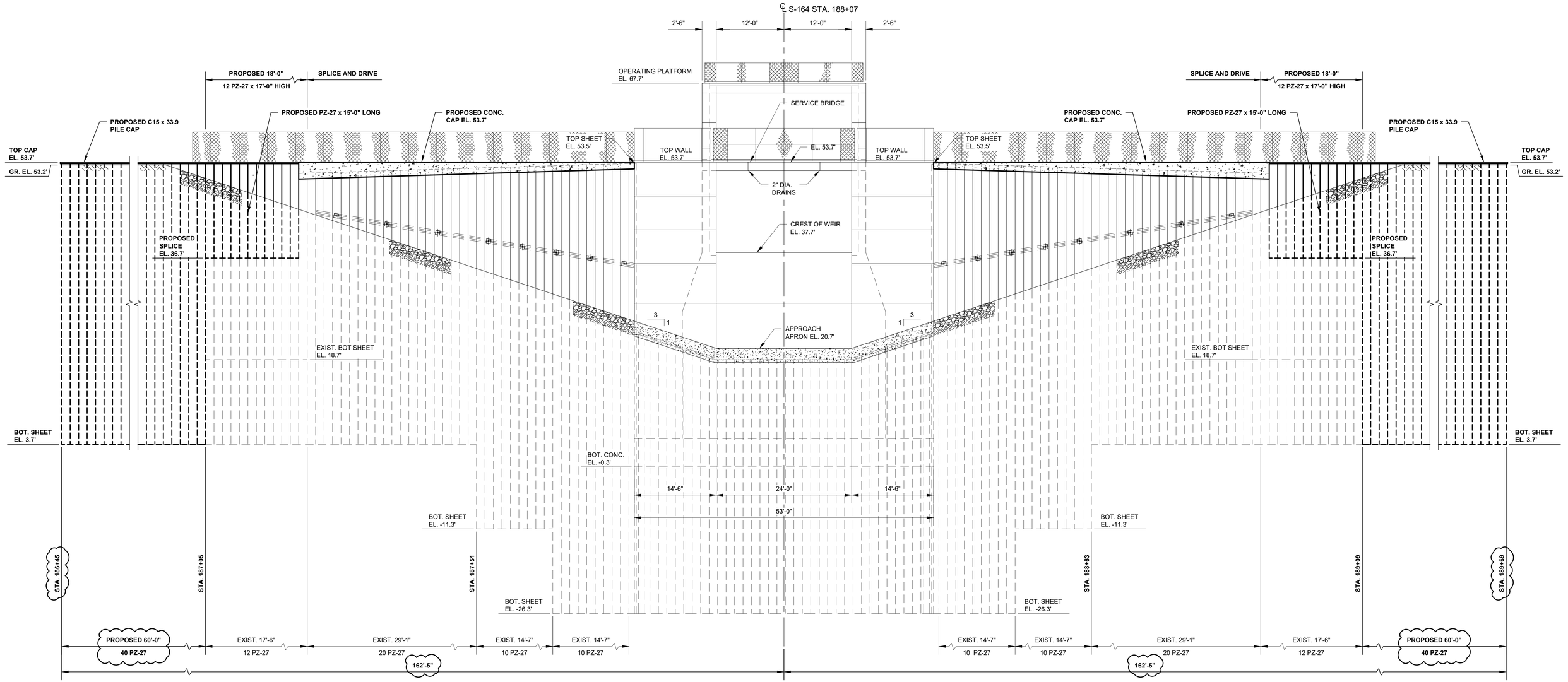

NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S8
1
UPSTREAM ELEVATION

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

NOTE: PROPOSED ADDITIONAL SHEET PILING IS SHOWN IN BOLD.

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

UPSTREAM ELEVATION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S8

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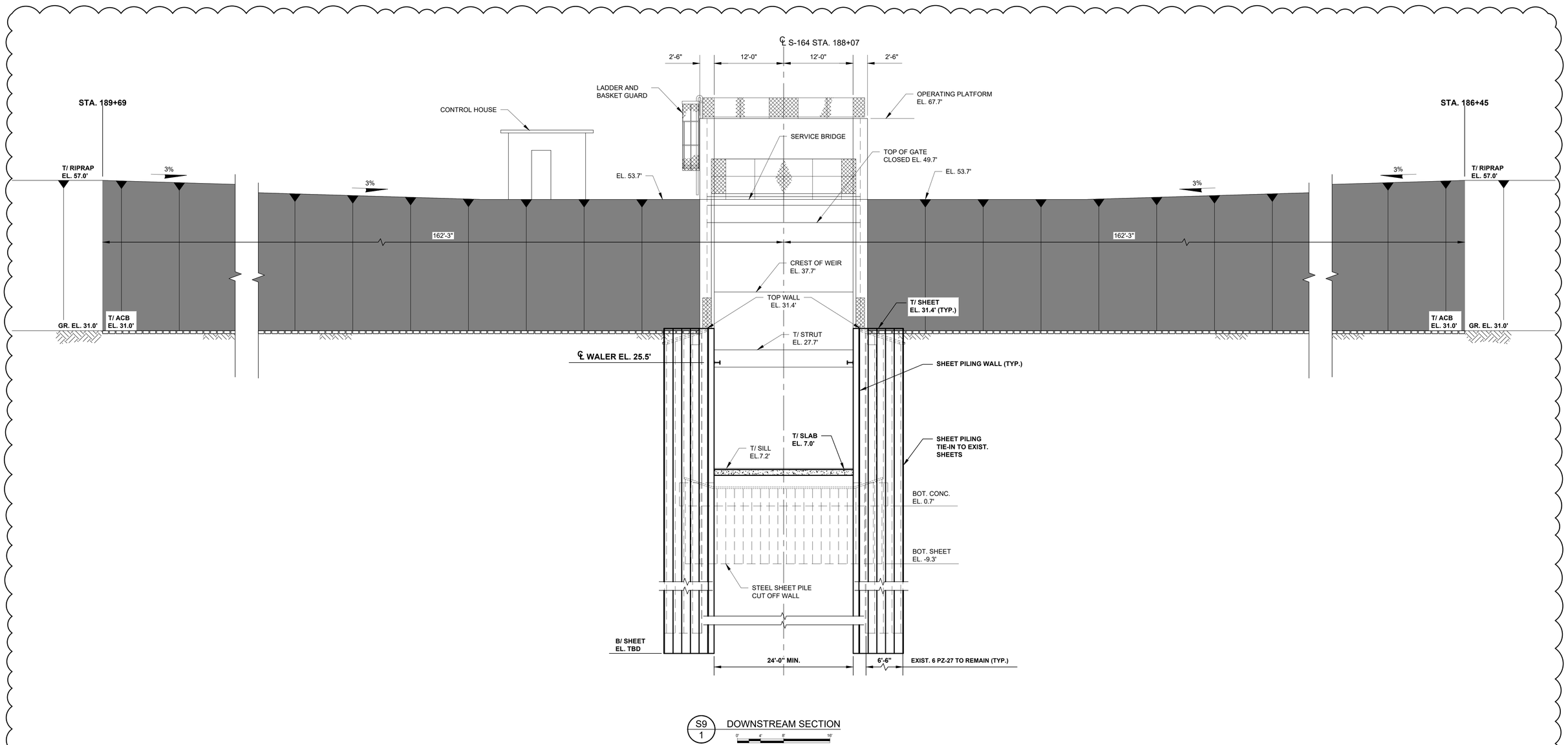

S9
1
DOWNSTREAM SECTION

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: SEPTEMBER 11, 2023	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

DOWNSTREAM SECTION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: SEPTEMBER 11, 2023

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S9

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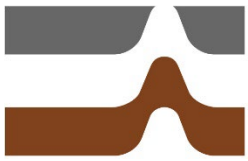
ATTACHMENT F – GEOTECHNICAL REPORT

Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Taylor Creek Reservoir Improvements
Orange and Osceola Counties



Ardaman & Associates, Inc.

CORPORATE HEADQUARTERS

8008 S. Orange Avenue, Orlando, Florida 32809 - Phone: (407) 855-3860 Fax: (407) 859-8121

Branch Office Locations

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, West Palm Beach
Louisiana: Baton Rouge, New Orleans, Shreveport
Texas: Houston

MEMBERS:

ASTM International
Society of American Military Engineers
American Council of Engineering Companies

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

March 3, 2023
File No. 20-6426

St. Johns River Water Management District
4049 Reid Street
Palatka, Florida 32718-1429

Attention: Ms. Gretchen Kelley, P.E.

Subject: Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Taylor Creek Reservoir Improvements
Orange and Osceola Counties

Dear Ms. Kelley:

As requested and authorized, we have completed a subsurface soil exploration and geotechnical engineering evaluation for the subject project. The purpose was to analyze seepage and slope stability of levee cross sections under normal and flood conditions for the Taylor Creek Reservoir. This report documents our exploration and our engineering evaluation.

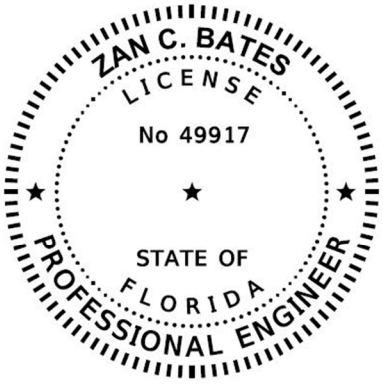
We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.
Florida Registry No. 5950

Charles H. Cunningham, P.E.
Vice President
Florida License No. 38189

Zan C. Bates, P.E.
Senior Engineer
Florida License No. 49917

Evelio N. Horta, Ph.D., P.E.
Principal Engineer
Florida License No. 46625



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ARDAMAN & ASSOCIATES, INC.
8008 S. ORANGE AVENUE
ORLANDO, FLORIDA 32809
(407) 855-3860
CERTIFICATION OF AUTHORIZATION 5950
ZAN C. BATES, P.E. NO. 49917

CHC/ZCB/ENH/lms/mde
20-6426 SJRWMD Taylor Creek Reservoir Improvements 3-2-23.docx

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1.0 SITE LOCATION AND DESCRIPTION

The site for the proposed improvements along Levee L-73 is located in Orange and Osceola Counties, Florida (Sections 30, 31 and 32, Township 24S, Range 34 E and Sections 5, 8, 9, 16, 21, 28 and 29, Township 25S, Range 34 E). The general site location is shown superimposed on the Lake Poinsett SW, Florida U.S.G.S. quadrangle map presented on Figure 1.

The site is currently developed with the existing Levee L-73 which provides impoundment for the Taylor Creek Reservoir.

2.0 PROPOSED CONSTRUCTION

It is our understanding that the proposed improvements to Levee L-73 will consist of increasing the height to maximum crest elevations of +57.0 feet NAVD (Stations 0+00 to 290+00) and +58.0 feet NAVD (Station 290+00 to 457+58) to accommodate a Probable Maximum Flood (PMF) which is estimated to reach an elevation of +52.5 feet NAVD. Widening of the levee by buttressing the downstream slope is planned along most of the levee. The proposed downstream slope varies from 3 horizontal to 1 vertical (3h:1v) to 5h:1v depending on location along the levee. In the vicinity of the outlet structure, widening the levee is not planned; however, some buttressing in this area is planned to be accomplished by adding some fill soil accommodated by increasing the height of sheetpiles. No significant changes to the upstream slope of the existing levee are anticipated, except in the vicinity of the outlet structure where some fill and increasing the height of the sheetpile is planned on the upstream slope.

3.0 BACKGROUND INFORMATION

Ardaman & Associates previously submitted to SJRWMD a “Subsurface Soil Exploration and Geotechnical Engineering Evaluation, Taylor Creek Reservoir Improvements” report dated June 18, 2021/revised July 21, 2021 (Ardaman File Number 20-6426). This report included exploration and evaluation of seepage/slope stability for proposed cross sections of the levee at 13 station number locations. The intent was to calculate the factors of safety for seepage-induced piping failure and for stability of the downstream slope of the levee under two reservoir water level scenarios. One scenario included the water level in the reservoir at normal pool Elevation +44.7 feet NAVD. The second scenario included a transient condition where the water level in the reservoir increases to Probable Maximum Flood (PMF) Elevation +52.6 feet NAVD in one day, and then recedes to Elevation +46.3 feet NAVD over 10 days, then further recedes to Elevation +44.7 feet NAVD over an additional 10 days.

Of the 13 levee sections evaluated and presented in June 18, 2021/revised July 21, 2021 report, 9 of the 13 sections were determined to be adequate; specifically, adequate sections were designated in the July 18, 2021/revised July 21, 20221 report as C3-1 (Station 70+00), C3-2 (Station 110+00), C3-3 (Station 150+00), C6-1 (Station 226+00), C6-2 (Station 270+00), C7-1

(Station 310+00), C7-2 (Station 400+00), C8-1 (Station 419+00), and C8-2 (Station 440+00). It was determined that evaluation of the sections of the levee in the vicinity of the outlet structure using 2-Dimensional analysis was not sufficient to adequately model the conditions in this area due to the complexity of the structure.

Subsequent to the June 18, 2021/revised June 21, 2021 report, SJRWMD requested Ardaman to perform 2-Dimensional analyses of revised geometry at 3 levee sections that were previously explored and analyzed, to perform exploration and 2-Dimensional analysis of two new proposed levee sections, and to perform exploration and 3-Dimensional analysis of the levee in the area of the outfall structure.

For this evaluation, the water elevation in the reservoir scenarios that were analyzed as discussed above were used except that the PMF for the additional evaluation was Elevation +52.5 feet NAVD rather than Elevation +52.6 feet NAVD.

This report dated September 2, 2022 includes the results of the previous and the recently performed explorations and laboratory testing, the results of the analyses of the previously proposed levee sections that remain unchanged and were considered to be adequate, the results of 2-Dimensional analyses of the two new proposed sections and the three revised proposed sections, and the results of the 3-Dimensional analyses of the area in the vicinity of the outfall structure. For the purpose of this report, the vicinity of the outfall structure for which the 3-Dimensional analyses were performed includes the portion of the levee between Stations 185+50 and 191+00.

Proposed levee sections at various stations were provided by SJRWMD. Copies of those drawings, dated March 21, 2022, are included in Appendix I.

4.0 REVIEW OF AVAILABLE INFORMATION

As part of our investigation, Ardaman & Associates reviewed the following documents relative to the project provided by SJRWMD:

- Preliminary Levee Cross Sections, Taylor Creek Reservoir Improvement Project, prepared by SJRWMD, dated March 21, 2022.
- Geotechnical Engineering Report, Taylor Creek Reservoir Improvement Project, prepared by Dunkelberger Engineering and Testing, Inc. dated February 27, 2014.
- Addendum to Geotechnical Engineering Report, Taylor Creek Reservoir Improvement Project, prepared by Dunkelberger Engineering and Testing, Inc. dated March 31, 2014.
- USACE Inspection Report for Levee L-73 Section 1 dated November 19, 2019.

- Central and Southern Florida Project, As-Built Plans for Construction of Levee 73, Section 1, Structure 164 and Cox Creek Irrigation Structure, USACE, 1967.
- Central and Southern Florida Project, Part III Upper St. Johns River Basin and Related Areas, Supplement 6 – Detailed Design Memorandum, USACE, December 1963.

5.0 FIELD EXPLORATION PROGRAM

5.1 SPT Borings

The field exploration program included performing seventeen (17) Standard Penetration Test (SPT) borings. The SPT borings were advanced to depths ranging between 35 and 85 feet below the ground surface using the methodology outlined in ASTM D-1586. A summary of this field procedure is included in Appendix I. Split-spoon soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory in sealed sample jars.

A total of 10 relatively undisturbed Shelby-tube samples were obtained from Borings TH-14 and TH-15 for the purpose of performing soil permeability testing. The Shelby-tube samples were sealed and transported to our laboratory.

An attempt was made to measure the groundwater level at each of the boring locations during drilling. The borings were grouted with cement-bentonite slurry upon completion.

5.2 Temporary Piezometers

Two temporary piezometers designated PZ-1 and PZ-2 were installed in the crest of the levee near the outlet in order to obtain the elevation of the phreatic surface within the levee at the piezometer locations. The piezometers were installed to a depth of 30 feet. The piezometers were constructed using 2-inch diameter Schedule 40 PVC pipe. Solid riser pipe was installed to a depth of 20 feet, then 0.010 slot size well screen to a depth of 30 feet. The annulus to a depth of 19 feet deep was filled with 30-65 sand, and the annulus from 19 to 30 feet deep was filled with 20-30 sand.

5.3 Hand Augers and Temporary Piezometers

Four auger borings were performed in the downstream face of the levee to depths ranging from 5½ to 10 feet below ground surface using a 3-inch diameter hand bucket auger. Samples were removed from the auger and classified in the field by a geotechnical engineer. Selected samples were transported in sealed containers to our laboratory for additional testing.

A temporary piezometer was installed in each of the boreholes in order to obtain the elevation of the phreatic surface within the levee at the piezometer locations. The piezometers were constructed using 2-inch diameter Schedule 40 PVC, with 5 feet of 0.010-slot well screen installed to the bottom of each borehole and solid riser pipe above the well screen. The piezometers installed in the hand auger borings are designated PZ-3, PZ-4, PZ-5 and PZ-6.

5.4 Test Locations

The approximate locations of the borings and piezometers are schematically illustrated on the Boring Location Plans on Figures 2A and 2B. The boring locations were staked in the field by Ardaman and Associates Engineer, Mr. Charles Cunningham, P.E. These locations were later surveyed by representatives of SJRWMD. Boring locations should be considered accurate only to the degree implied by the method of locating used.

5.5 Water Level Measurements

Water level measurements were made in Piezometers PZ-1 through PZ-6 on April 13, 2022. Reservoir water elevation and the outlet tailwater elevation on April 13, 2022, were provided by SJRWMD. Ground surface elevations at the piezometer locations in the levee crest were provided by SJRWMD. Ground surface elevations in the downstream face of the levee were obtained by Ardaman using a zip-level to measure the height above the known tailwater water elevation at the time that the zip-level measurements were made. The water levels on April 13, 2022, combined with the ground surface elevations as described above, were used to obtain the phreatic surface elevations at the piezometer locations within the levee.

6.0 LABORATORY TESTING PROGRAM

6.1 Visual Examination and Classification Testing

Representative soil samples obtained during our field sampling operation were packaged and transferred to our laboratory for further visual examination and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions are shown on the soil boring profiles presented on Figures 3 through 9.

In addition, we conducted sieve analysis tests (ASTM D1140), percent fines analyses (ASTM D1140), organic content tests (ASTM D2974-87), natural moisture content tests (ASTM D2216), and an Atterberg limits test (ASTM D4318) on selected soil samples obtained from the borings. The results of these tests are presented adjacent to the sample depth on the boring profiles on Figures 3 through 9.

6.2 Permeability Testing

Laboratory permeability tests were performed on a subsample obtained from each of the 10 Shelby-tube samples taken from Boring TH-14 and TH-15. The tests were run in triaxial cells in order to back pressure saturate the samples. The results of the permeability tests are presented adjacent to the sample depths on the boring profiles on Figure 7.

7.0 GENERAL SUBSURFACE CONDITIONS

7.1 General Soil Profile

The results of the field exploration and laboratory programs are graphically summarized on the soil boring profiles presented on Figures 3 through 9. The stratification of the boring profiles represents our interpretation of the field boring logs and the results of laboratory examinations of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied. Please refer to Figures 3 through 9 for soil profile details.

7.2 Groundwater Level

An attempt was made to measure the groundwater level in the boreholes during drilling. As shown on Figures 3 through 9, groundwater was not encountered within the top 10.5 feet of the SPT borings and could not be measured below a depth of 10.5 feet due to the mudded condition of the boreholes (referenced “GNM” on Figures 3 through 9). However, this does not necessarily mean that groundwater would not be encountered within the top 10.5 feet at some other time. Groundwater levels were measured in piezometers PZ-1 through PZ-6 on April 13, 2022. The groundwater levels measured in the piezometers are presented adjacent to the soil boring profiles on Figures 7 and 9.

Fluctuation in groundwater levels should be anticipated throughout the year primarily due to the water level in the reservoir, seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.

8.0 ENGINEERING EVALUATION

The levee cross sections provided by SJRWMD were analyzed by 2-Dimensional methods except in the vicinity of the outfall structures (between Stations 185+50 and 191+00) where 3-Dimensional analyses were performed.

8.1 General (2-Dimensional Analyses)

As requested, we performed 2-Dimensional analyses of thirteen (13) cross sections of the levee provided by SJRWMD. The proposed new levee geometry and existing geometry were provided in the Taylor Creek Reservoir Improvements plan set dated March 21, 2022. A copy of the plan set is included in Appendix I. The designations of the cross sections analyzed and their locations along the levee alignment are as follows:

Section Designation	Previous Section Designation*	Section Location
C3-1	C3-1	70+00
C3-2	C3-2	110+00
C3-3	C3-3	150+00
C4-1	new	163+50
C4-2	new	185+50
C7-1	new	191+05
C7-2	new	215+00
C8-1	C6-1	226+00
C8-2	C6-2	270+00
C9-1	C7-1	310+00
C9-2	C7-2	400+00
C10-1	C8-1	419+00
C10-2	C8-2	440+00

*The Previous Section Designation refers to the section name in Ardaman's June 18, 2021 (revised July 21, 2021) report.

Review of the US Army Corps of Engineers (USACE) Slope Stability manual (EM 1110-2-1902) indicates that a minimum factor of safety of 1.5 is required for long-term steady state conditions such as those existing when the water level in the reservoir is at the maximum storage level. A minimum factor of safety of 1.4 is required for transient conditions involving the Maximum Surcharge Pool such as when flood conditions raise the water level to the PMF. The factor of safety against internal erosion caused by seepage (i.e., piping failure) is recommended to be a minimum of 2.5 to 3.0 as stated in the USACE manual for Seepage Analysis and Control for Dams (EM 1110-2-1901).

Our initial analyses were based on the results of seepage and stability analyses provided in the Geotechnical Engineering Report (Project No. HD148003, dated February 27, 2014) submitted by Dunkelberger Engineering and Testing. Cross sections analyzed by Dunkelberger in close proximity to the sections that are the subject of this report were modeled in-house by Ardaman & Associates for calibration purposes using the same soil parameters and subsurface profiles used by Dunkelberger in their analyses. The subsurface soil profiles and soil parameters from these

models were then used in preparing models for the cross sections which are the focus of this report. The soil borings performed by Ardaman & Associates (Figures 3 through 9) were reviewed and soil parameters were revised where deemed necessary to reflect the conditions encountered by Ardaman & Associates during our exploration.

8.1.1 Seepage Analyses (2-Dimensional)

Seepage analyses were performed using the computer program SEEP/W by Geostudios. This program uses two-dimensional finite element methodology to model both steady-state and transient conditions. For each of the cross sections, the steady-state condition using the normal operating reservoir pool elevation of +44.7 feet NAVD was first analyzed. In addition, starting at the normal operating pool elevation of +44.7 feet NAVD, a transient condition was analyzed where the water elevation rose to the PMF of +52.6 feet NAVD before receding back to +44.7 feet NAVD, with the exception that a PMF elevation of 52.5 feet NAVD was used for the analyses for levee sections C4-1, C4-2, C7-1, C7-2 and C9-2. Based on information provided by SJRWMD, the initial rise in water occurred over a period of approximately one day, and subsequently, the water level will lower to approximately +46.3 NAVD feet over 10 days before lowering to +44.7 feet over an additional 10 days.

8.1.2 Slope Stability Analyses (2-Dimensional)

The slope stability analyses were performed using the computer program Slope/W. Circular arc type failure modes using the Morgenstern-Price method of slices were analyzed. The analyses were performed utilizing the soil conditions discussed above and water pressures imported into the model using output from SEEP/W. A search feature of the program locates the surface that represents the minimum factor of safety.

8.1.3 Results (2-Dimensional Analyses)

The factors of safety for each of the cross sections analyzed are presented on Table 1. The results of our analyses indicate that the cross sections presented in Table 1 provided by SJRWMD meet the required factors of safety for both the steady-state condition representing the normal reservoir storage condition as well as the Maximum Surcharge Pool when the water level has risen to the PMF. Computer output from the SEEP/W and SLOPE/W analyses are presented in Appendix III.

8.2 General (3-Dimensional Analyses)

Slope stability analyses was performed by developing 3-dimensional numerical models of the levee and supporting sheet pile system. The models extended between Stations 185+50 and 191+00. Initial models, including the spillway structures, were complex and required extended time for analysis. Within the portion of the levee analyzed using 3-dimentional modeling, alternative models were developed for the north part of the levee from Stations 185+50 to 187+95 and for the south part from Stations 188+19 to 191+00.

A generalized soil profile based on the exploratory borings completed by Ardaman and Associates Inc. was developed for the model area. The profile includes different soil strata with properties consistent with those used for the 2-dimensional analyses. Figure A in Appendix IV presents the soil profile along the levee axis included in the 3-dimensional models.

The reservoir elevations considered in the analyses included the following:

a) +41.2 feet NAVD (Reservoir elevation on April 13, 2022, when piezometer elevation installed on the downstream slope were read. Used for model calibration)
b) +45.0 feet NAVD, historic maximum reservoir elevation
c) +49 to +52.6 feet NAVD

An elevation of +52.6 feet NAVD was the target maximum reservoir elevation. However, the numerical analysis generally does not converge when factors of safety are smaller than one, as is the case for that reservoir elevation. Lower alternative maximum reservoir elevations were used to obtain a factor of safety larger than one.

The details of the numerical model for the North section (Stations 185+50 to 188+19) include the entrance and exit channels configuration, the presence of the upstream and downstream wing walls, and the anchor sheet piles that provide support for the upstream and downstream wing walls through anchor cables. Figure B in Appendix IV presents the North model's geometry.

8.2.1 3-D Model Calibration with the Reservoir at Elevation +41.2 feet NAVD

On April 13, 2022, and October 5, 2022, piezometric water elevations were taken at six (6) temporary piezometers installed in the levee within the area of the 3-dimensional model. The results of these measurements allowed us to compare actual water elevation inside the levee with the predicted elevation obtained through the 3-dimensional model.

The results of this comparison confirmed that the permeability assigned to the different embankment and foundation soils provides a good agreement between calculated water elevations in the levee and actual field conditions. The observed versus calculated water

elevation within the downstream slope was found to be between one and two feet. It should be noted that the calculated water elevation was lower than the observed water elevation.

A similar comparison with piezometers close to the levee axis indicates that the difference between the observed and calculated water elevation is less than a foot.

The location of the piezometers and observed water elevations are included in Figure C in Appendix IV.

8.2.2 3-D Slope Stability Analyses of the Existing Levee

The factor of safety of the levee in a 3-dimensional numerical model is assessed by performing a c-φ reduction analysis (systematic reduction of shear strength properties until failure is reached). The results of the analysis for different reservoir water elevations are shown in the following table:

Reservoir Elevation (feet NAVD)	Factor of Safety
+41.2	1.84
+45.0	1.45
+49.0	1.06

Deformations predicted in the levee when the reservoir reaches Elevation +49 feet NAVD in a transient condition are illustrated in Figure D in Appendix IV. Notice that the critical stability conditions develop behind the downstream sheet pile where the upper flow line daylights well above the downstream wing wall. In addition, up to 3.5 inches of displacement is predicted within a large area of the downstream slope that extends well beyond the wing wall.

Based on the results discussed above, the SJRWMD requested to modify the model to increase the length of the upstream sheet piles (wing wall) to improve the efficiency of that cut-off. Alternative models extending the upstream sheet piles by 50, 100, and 150 feet were studied and discussed in August 2022.

8.2.3 3-D Slope Stability Analyses of the Modified Levee

Based on the results presented in August 2022 for the extension of the upstream sheet pile, a request was made to extend the length of the upstream sheet pile to 60 feet resulting in an upstream “cutoff” with a total length of 150 feet. In addition, the SJRWMD requested to extend down the existing and new sheet pile to Elevation +3.7 feet NAVD to intersect the estimated lower permeability soil encountered in some of the test borings. The extension of the downstream sheet pile for additional 30 feet (21.2 feet parallel to the levee’s axis) and the flattening of the downstream slope were also requested and included in the model. The downstream slope was

modified to vary from 3H:1V at the spillway to reach 5H:1V at about 160 feet from the spillway on the North section and 210 feet from the spillway on the South section. The transition details between these two slopes were defined in plan C41, shown below in Figure E in Appendix IV. The Plaxis models, north and south of the Spillway, are presented in Figures F and G in Appendix IV. New embankment material is shown in dark blue or purple in Figures F and G in Appendix IV.

Variation of the safety factor with different water elevations in the reservoir for the north section is shown in Figure H in Appendix IV. To assess the impact of the new modifications, we included the results for Model O, which considers the original levee slopes and downstream sheet piles but extended upstream sheet piles to 50 feet (140 feet total cutoff length). Model Dr included the new structural modifications, including the flatter slopes away from the spillway but keeping the soil properties used for the levee's existing soils. Model Er considers the same geometrical exterior features, but now the properties considered for the new embankment are applied. The new embankment material was considered with an angle of internal friction of 31 degrees and permeability of 3 feet/day (the same used for the soils within the lower part of the levee). The results for Model Fr correspond with a new embankment material with the same friction angle but 15 ft/day permeability as currently considered for the soils within the upper part of the levee.

The difference in the safety factor between Model O and Model Dr is noticeable for the reservoir water levels between Elevations +41 and +48 feet NAVD. This difference is caused by the extended downstream sheet pile that inhibits water from draining in that area and consequently elevates the water exit level downstream. Figure I in Appendix IV presents the variation of the seepage exit elevation in the downstream slope near the spillway for different reservoir water elevations.

It can also be seen that a reduced friction angle and lower permeability for the new embankment adversely affect the safety factor. However, at a reservoir water elevation of +50 feet, the safety factor rapidly converges toward one or less for both Model O and Dr.

For the South section, the results of the analysis of the safety factor versus different reservoir water elevations are presented in Figure J in Appendix IV. Model Er considers SJRWMD's requested modified slopes and the sheet pile extensions, in the same manner, requested and modeled for the north section.

Safety factors for the south section were consistently slightly higher than the equivalent cases for the north section. The South section became unstable when the water level reached an elevation of +52 feet NAVD in the reservoir.

8.2.4 Conclusions and Recommendations (3-D Analyses)

The three-dimensional constraints imposed by the entrance and exit channels, the related wing walls, anchor walls, and slope changes in the levee require a 3-dimensional analysis like the one discussed in this report.

The low factors of safety encountered for the downstream slope above the downstream wing walls are significantly related to the flow constraints that the sheet piles impose on the system. Solutions that eliminate the existing downstream wing walls or permanently depress the water flow through the levee should be applied.

The extension of the upstream sheet piles to improve cut-off improves the factor of safety within certain limits but cannot solve the low safety factor problems by itself.

The extension of the downstream sheet piles at 45 degrees angle does not provide a significant improvement to the system.

Alternative downstream solutions considering the extension of the spillway structure exit channel, buttressing the downstream slope, and/or including a downstream slope reinforced with riprap and filters should be modeled to assess potential solutions for this area of the project (i.e., the portion of the levee from Station 185+50 to 191+00).

9.0 EARTHWORK RECOMMENDATIONS

9.1 Stripping and Grubbing

Areas where fill will be placed plus a minimum margin of five feet, should be stripped of all surface vegetation, stumps, debris, organic topsoil, muck or other deleterious materials, as encountered. Buried utilities should be removed or plugged to eliminate conduits into which surrounding soils could erode.

After stripping, the site should be grubbed or root-raked such that roots with a diameter greater than ½ inch, stumps, or small roots in a dense state, are completely removed. The actual depth(s) of stripping and grubbing must be determined by visual observation and judgment during the earthwork operation.

9.2 Proof-rolling

We recommend proof-rolling the cleared surface to locate any unforeseen soft areas or unsuitable surface or near-surface soils, to increase the density of the upper soils, and to prepare the existing surface for the addition of the fill soils (as required). Proof-rolling should consist of at least 5

passes of a compactor capable of achieving the density requirements described in the next paragraph.

Each pass should overlap the preceding pass by 30 percent to achieve complete coverage. If deemed necessary, in areas that continue to "yield", remove all deleterious material and replace with clean, compacted sand backfill. The proof-rolling should occur after cutting and before filling.

A density equivalent to or greater than 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value for a depth of 1 foot must be achieved beneath the stripped and grubbed ground surface. Additional passes and/or overexcavation and recompaction may be required if these minimum density requirements are not achieved. The soil moisture should be adjusted as necessary during compaction.

Due to the potential for relatively high groundwater level at this site, proof-rolling may cause upward movement or "pumping" of the groundwater. However, we recommend that the existing surface be level and firm prior to the addition of fill soils. Proof-rolling with a front-end loader may help achieve the desired surface and compaction condition before adding the fill soils. The site should be dewatered as necessary.

Care should be exercised to avoid damaging any neighboring structures while the compaction operation is underway. Prior to commencing compaction, occupants of adjacent structures should be notified and the existing condition (i.e., cracks) of the structures documented with photographs and survey (if deemed necessary). Compaction should cease if deemed detrimental to adjacent structures, and Ardaman & Associates should be notified immediately. Heavy vibratory compaction should not be used within 150 feet of existing structures without prior approval of a structural engineer.

9.3 Suitable fill Material and Compaction of Fill Soils

All fill materials should be free of organic materials, such as roots and vegetation. Fill should consist of sand having an in situ permeability rate of between 10 and 30 feet/day.

All fill should be placed in level lifts not to exceed 12 inches in uncompacted thickness. Each lift should be compacted to at least 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value. The filling and compaction operations should continue in lifts until the desired elevations(s) is achieved. If hand-held compaction equipment is used, the lift thickness should be reduced to not more than 6 inches. In order to achieve compaction near the outside face of the levee, it may be necessary to place fill laterally beyond the face of the levee and then cut back to proposed finished grade.

The fill soil should be of a homogenous nature such that a layer(s) of relatively permeable soil is not placed beneath relatively low permeable soils. This could create undesirable preferential seepage paths through the levee that could cause stability problems.

We recommend establishing erosion control on the graded slopes as soon as possible using grass sod and/or other material. If seeding rather than sodding is preferred, then additional temporary erosion control will likely be required until the grass becomes well established.

A designated representative from Ardaman & Associates, Inc. should observe and test all prepared and compacted areas to verify that the fill is prepared and compacted in accordance with the aforementioned specifications.

9.4 **Dewatering**

The control of the groundwater and surface water will be required to perform the earthwork and achieve compaction requirements presented in the following sections. The actual method(s) of dewatering should be determined by the Contractor, however, regardless of the method(s) used, we suggest drawing down the water table sufficiently; say 2 to 3 feet, below the bottom of excavation(s) and compaction surfaces to preclude "pumping" and/or compaction-related problems with the foundation soils.

10.0 **QUALITY ASSURANCE**

We recommend establishing a comprehensive quality assurance program to verify that all site preparation, fill placement and construction of drains is conducted in accordance with the appropriate plans and specifications. Materials testing and inspection services should be provided by Ardaman & Associates.

As a minimum, an on-site engineering technician should monitor all stripping, grubbing and excavation to verify that all deleterious materials have been removed, and should observe the proof-rolling operation to verify that the appropriate number of passes are applied to the subgrade. In-situ density tests should be conducted during filling activities to verify that the required densities have been achieved. In-situ density values should be compared to laboratory Proctor moisture-density results for each of the different natural and fill soils encountered. Permeability testing should be performed on soil from potential fill sources to verify that the soil meets the permeability rate requirements. Additional permeability testing should also be performed during construction to verify that the fill soil meets the permeability requirements after the fill has been placed and compacted.

11.0 CLOSURE

The analyses and recommendations submitted herein are based on the data obtained from the soil borings presented on Figures 3 through 9. This report does not reflect any variations which may occur adjacent to or between the borings. The nature and extent of the variations between the borings may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the construction period and noting the characteristics of the variations.

In the event any changes occur in the design of the proposed levee improvements, we should review the applicability of conclusions and recommendations in this report. We recommend a general review of final design and specifications by our office to verify that recommendations are properly interpreted and implemented in the design specifications. Ardaman and Associates should attend the pre-bid and preconstruction meetings to verify that the bidders/contractor understand the recommendations contained in this report.

This study is based on a relatively shallow exploration and is not intended to be an evaluation for sinkhole potential. This study does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

This report has been prepared for the exclusive use of St. Johns River Water Management District in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made.

TABLE 1

Calculated Factors of Safety for 2D Analyses

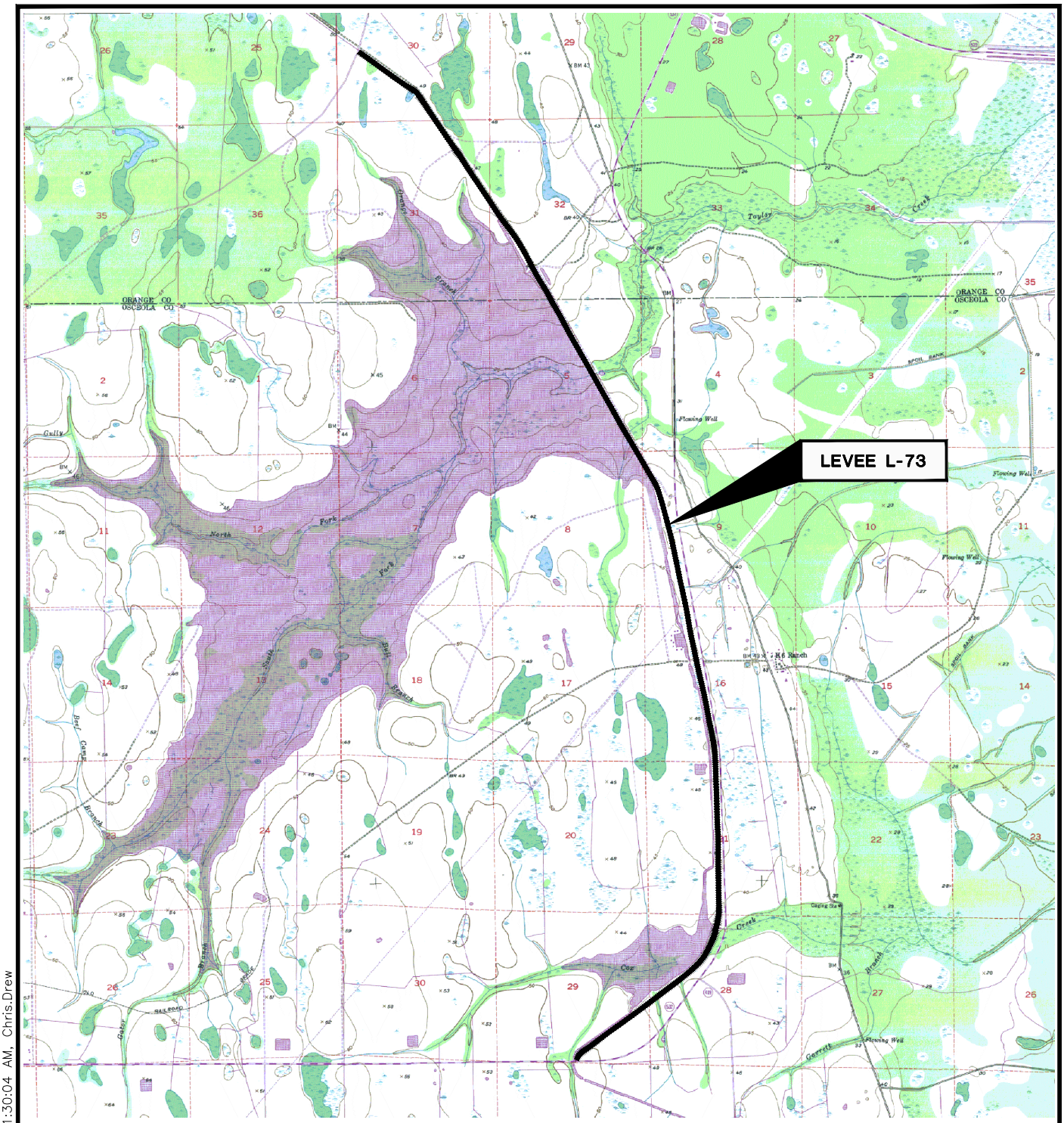
Taylor Creek Reservoir Improvements

Orange and Osceola Counties, Florida

Section Designation	Section Location	Previous Section Designation	Steady State Condition (at +44.7')			Transient Condition (+44.7' to +52.5')		
				Factors of Safety			Factors of Safety	
			Maximum Seepage Exit Gradient	Seepage	Slope Stability	Maximum Seepage Exit Gradient	Seepage	Slope Stability
C3-1	70+00	unchanged	0	n/a	2.0	0.25	4.0	1.6
C3-2	110+00	unchanged	0	n/a	2.0	0.18	5.6	1.6
C3-3	150+00	unchanged	0.21	4.8	1.6	0.36	2.8	1.4
C4-1	163+00	new	0.25	4.0	2.0	0.25	4.0	1.8
C4-2	185+50	new	0.23	4.3	1.9	0.24	4.2	1.7
C7-1	191+05	new	0.34	2.9	1.7	0.36	2.8	1.4
C7-2	215+00	new	0.09	11.1	2.0	0.24	4.2	1.7
C8-1	226+00	C6-1	0.21	4.8	1.6	0.26	3.8	1.5
C8-2	270+00	C6-2	0.20	5.0	1.7	0.32	3.1	1.5
C9-1	310+00	C7-1	0.06	16.7	1.8	0.22	4.5	1.5
C9-2	400+00	C7-2	0.23	4.3	1.8	0.30	3.3	1.7
C10-1	419+00	C8-1	0.19	5.3	1.7	0.28	3.6	1.6
C10-2	440+00	C8-2	0	n/a	1.9	0.13	7.7	1.7

Notes : USACE (Army Corps of Engineers) minimum required factors of safety.

Seepage	2.5 to 3.0
Steady State Slope Stability	1.5
Transient Slope Stability	1.4



SECTIONS 5, 8, 9, 16, 21, 28, 29, 30, 31 & 32
TOWNSHIPS 24 & 25 SOUTH
RANGE 35 EAST

OBTAINED FROM U.S.G.S. QUAD MAP: LAKE POINSETT SW, FLORIDA 1953
(PHOTOREVISED 1972)

N

0 2500 5000
SCALE: (FEET)

QUADRANGLE LOCATION

SITE LOCATION MAP

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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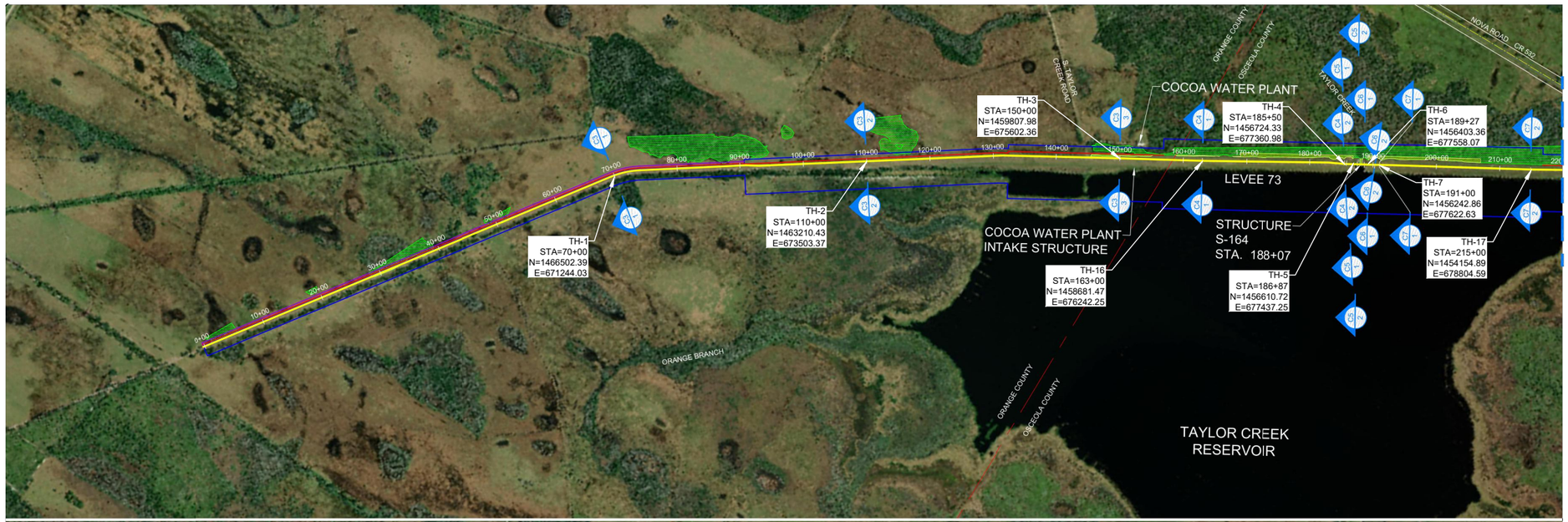

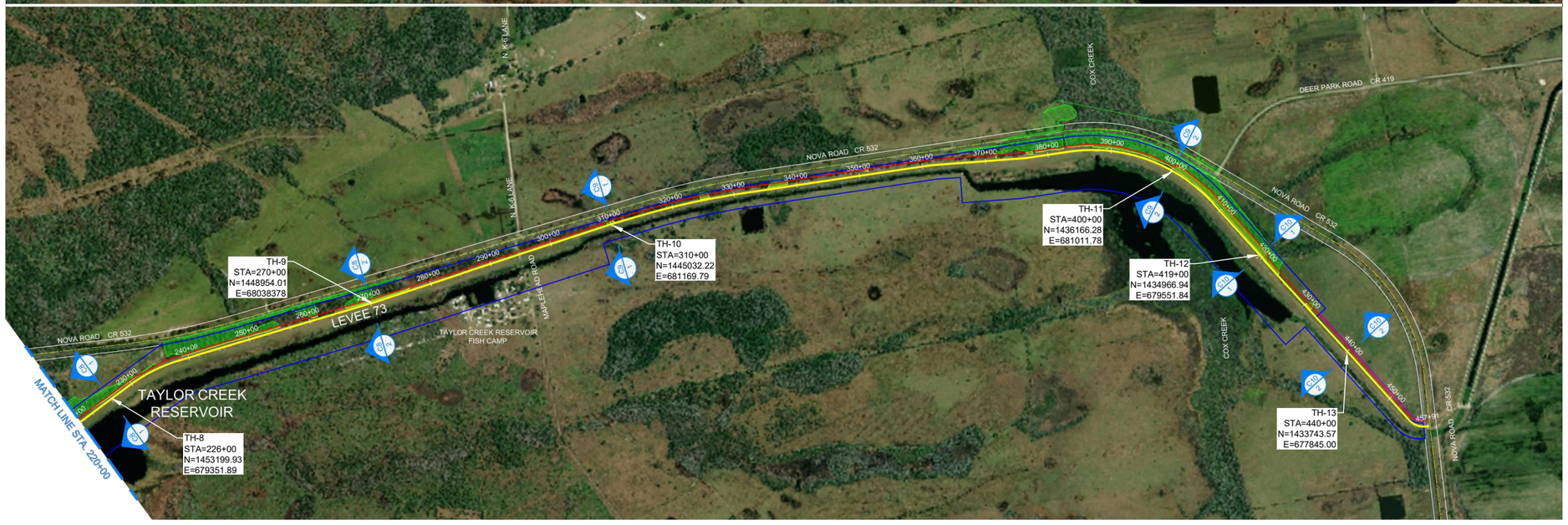

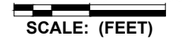

LEGEND

TH STANDARD PENETRATION TEST (SPT) BORING LOCATION

NOTES:
1. THE BASE MAP FOR THE BORING LOCATION PLAN IS THE OVERALL SITE PLAN DATED MARCH 21, 2022 PROVIDED BY ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
2. THE LOCATION OF BORINGS TH-14, TH-15, PZ-3, PZ-4, PZ-5 AND PZ-6 ARE SHOWN ON FIGURE 2B.

BORING LOCATION PLAN

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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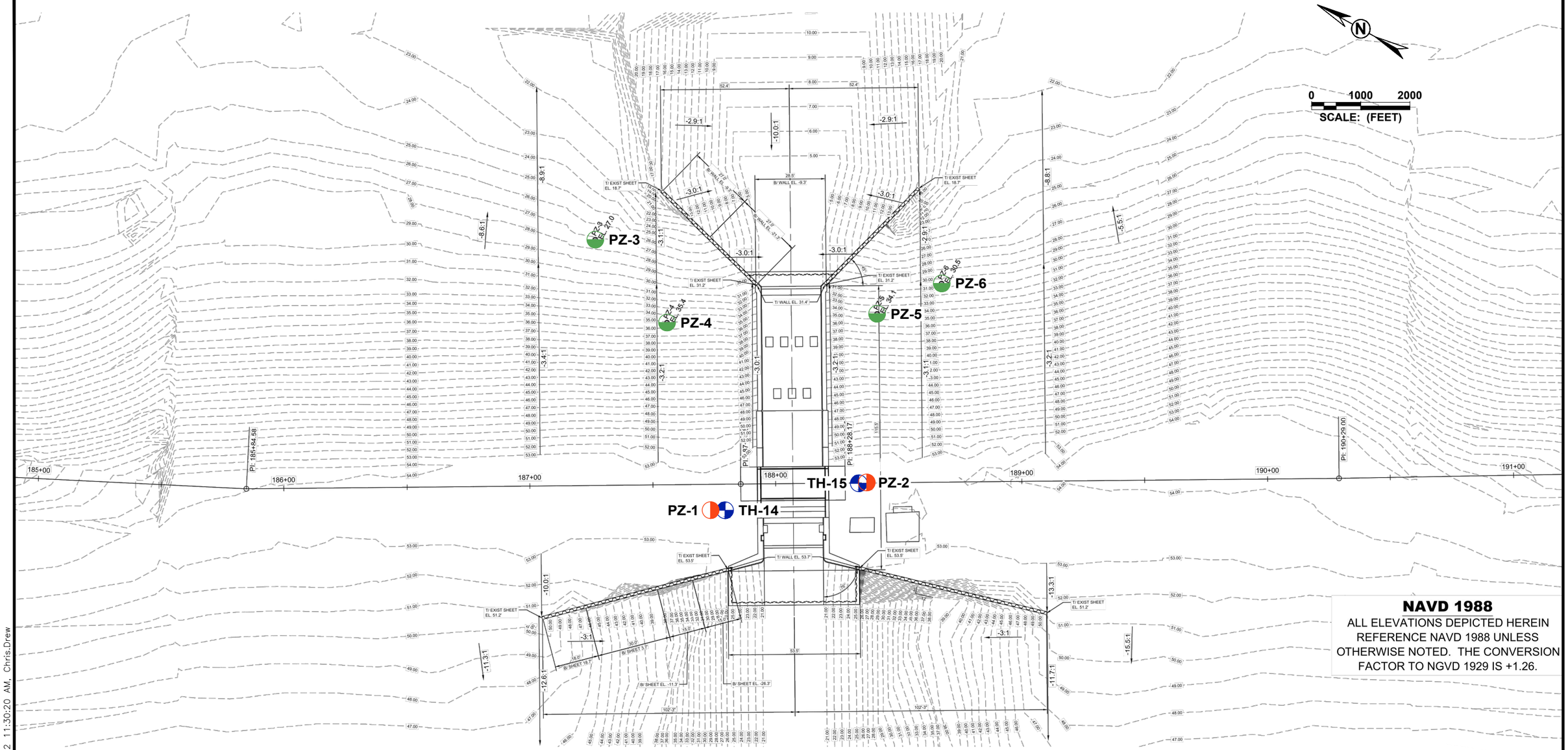

NAVD 1988

ALL ELEVATIONS DEPICTED HEREIN REFERENCE NAVD 1988 UNLESS OTHERWISE NOTED. THE CONVERSION FACTOR TO NGVD 1929 IS +1.26.

LEGEND

TH	STANDARD PENETRATION TEST (SPT) BORING LOCATION
PZ	AUGER BORING/PIEZOMETER LOCATION
PZ	PIEZOMETER LOCATION

NOTE: THE BASE MAP FOR THE BORING AND PIEZOMETER LOCATION PLAN IS THE EXISTING S-164 SITE GRADE PLAN DATED MARCH 21, 2022 PROVIDED BY ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.

BORING AND PIEZOMETER LOCATION PLAN

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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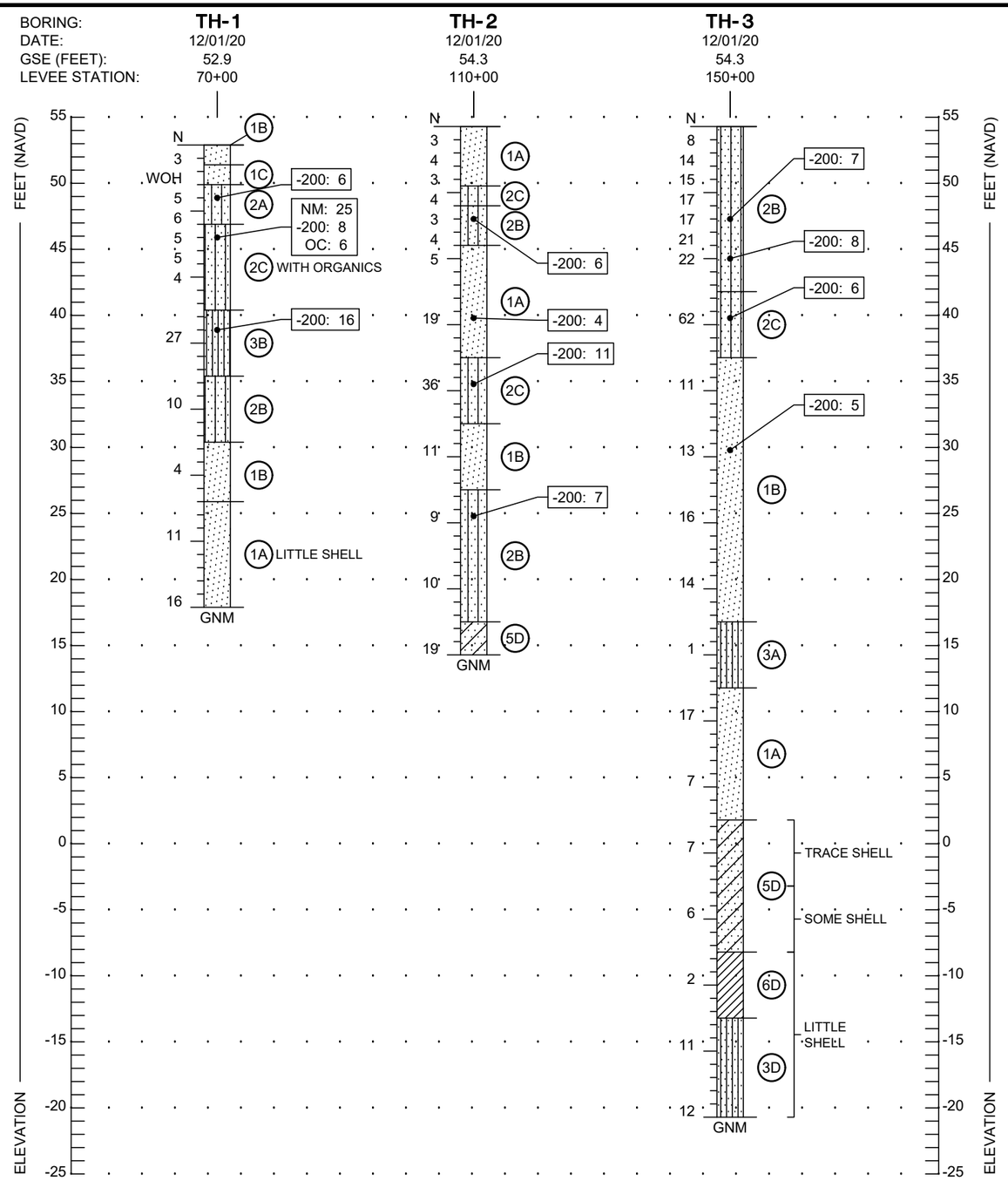

LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
5. CLAYEY FINE SAND (SC)
6. SANDY CLAY TO CLAY (CH)
7. ORGANIC CLAYEY SAND TO CLAY
8. SHELL AND SAND

COLORS

- A GRAY BROWN
- B LIGHT BROWN TO BROWN
- C DARK BROWN
- D GREEN GRAY
- E VERY DARK GRAY OR VERY DARK BROWN

TH	STANDARD PENETRATION TEST (SPT) BORING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
OC	ORGANIC CONTENT IN PERCENT (ASTM D-2974)
GSE	SURVEYED GROUND SURFACE ELEVATION
WOH	SAMPLER ADVANCED BY STATIC WEIGHT OF HAMMER AND RODS ONLY
GNM	GROUNDWATER NOT MEASURED (i.e., NOT ENCOUNTERED IN THE TOP 10 FEET AND NOT MEASURED BELOW 10 FEET DUE TO THE MUDDED CONDITION OF THE BOREHOLE)
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	<4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	<2
SOFT	1/4 TO 1/2	2 TO 4
FIRM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA IN THE BORING IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THIS LOCATION OR WITHIN THE VERTICAL REACHES OF THIS BORING IN THE FUTURE.

NOTES:
1. THE SPT BORINGS WERE PERFORMED USING AN AUTOMATIC HAMMER TO THE BORING TERMINATION DEPTH. AUTOMATIC HAMMER N-VALUES MAY BE CONVERTED TO EQUIVALENT SAFETY HAMMER N-VALUES BY MULTIPLYING BY 1.24.
2. THE BORINGS WERE PERFORMED IN THE MIDDLE OF THE LEVEE CREST ROAD.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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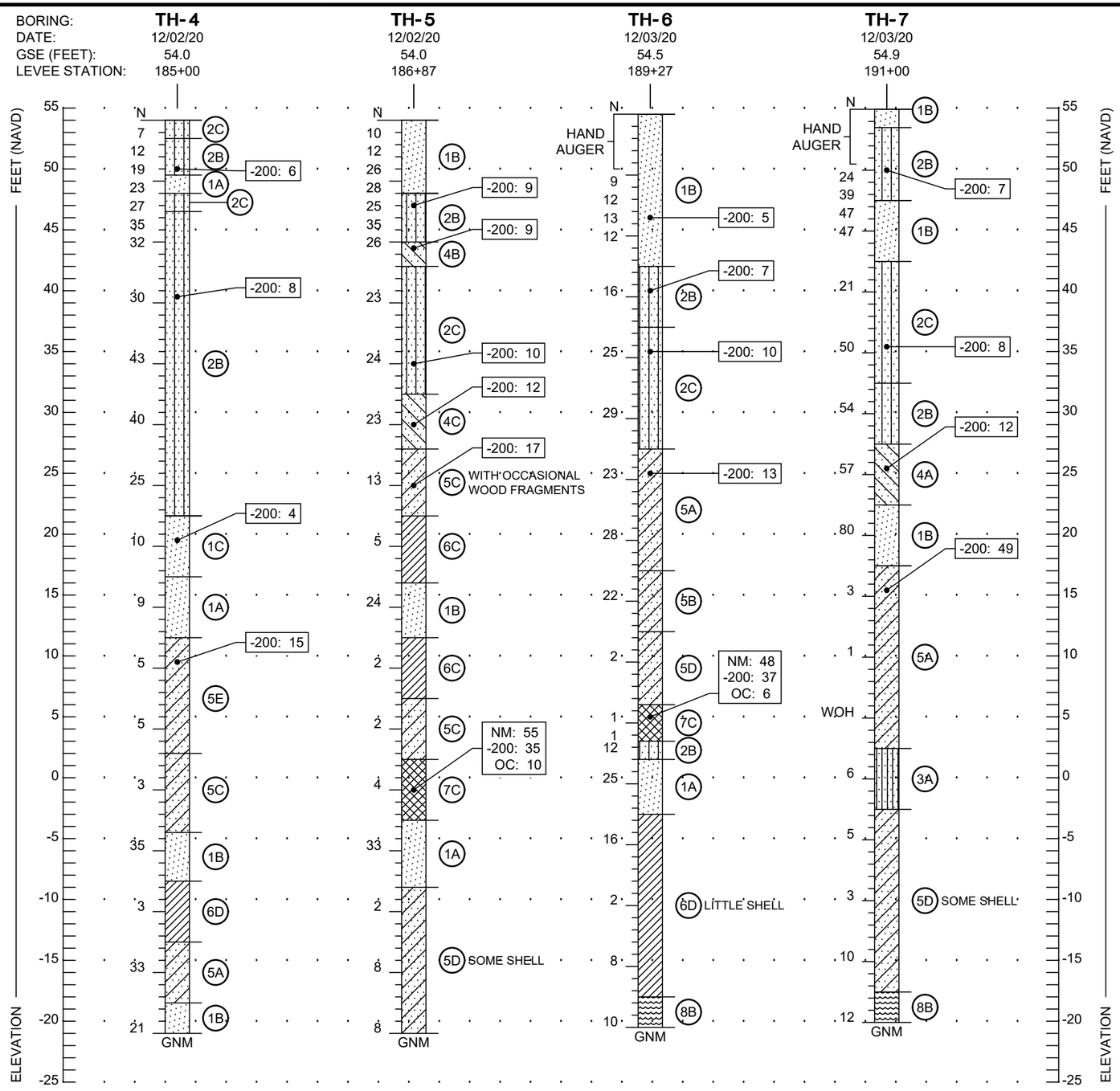

LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
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8. SHELL AND SAND

COLORS

A. GRAY BROWN
B. LIGHT BROWN TO BROWN
C. DARK BROWN
D. GREEN GRAY
E. VERY DARK GRAY OR VERY DARK BROWN

TH	STANDARD PENETRATION TEST (SPT) BORING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
OC	ORGANIC CONTENT IN PERCENT (ASTM D-2974)
GSE	SURVEYED GROUND SURFACE ELEVATION
WOH	SAMPLER ADVANCED BY STATIC WEIGHT OF HAMMER AND RODS ONLY
GNM	GROUNDWATER NOT MEASURED (i.e., NOT ENCOUNTERED IN THE TOP 10 FEET AND NOT MEASURED BELOW 10 FEET DUE TO THE MUDDED CONDITION OF THE BOREHOLE)
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	<4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	<2
SOFT	1/4 TO 1/2	2 TO 4
FIRM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA IN THE BORING IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THIS LOCATION OR WITHIN THE VERTICAL REACHES OF THIS BORING IN THE FUTURE.

NOTES:
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2. THE BORINGS WERE PERFORMED IN THE MIDDLE OF THE LEVEE CREST ROAD.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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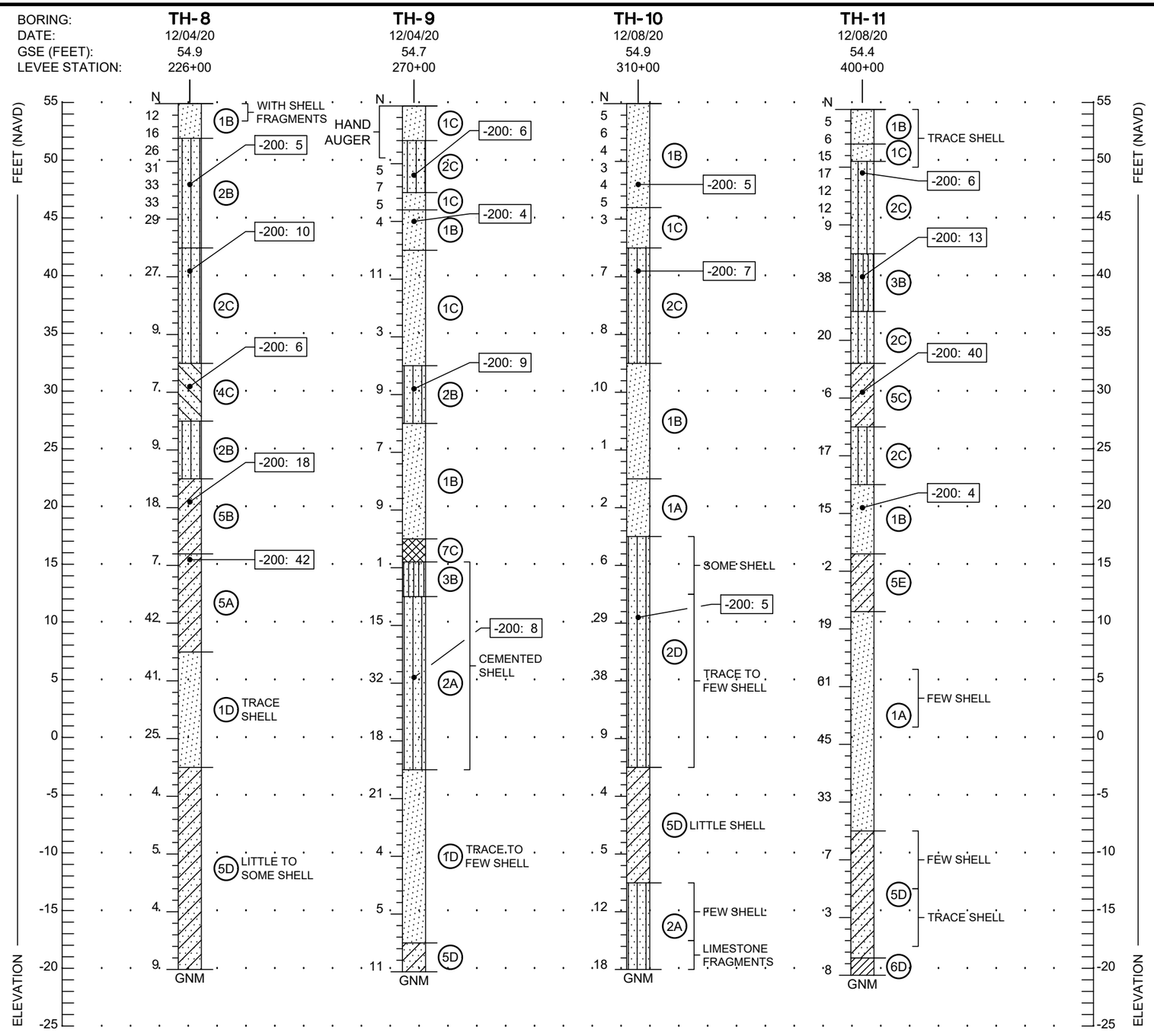

LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
5. CLAYEY FINE SAND (SC)
6. SANDY CLAY TO CLAY (CH)
7. ORGANIC CLAYEY SAND TO CLAY
8. SHELL AND SAND

COLORS

A. GRAY BROWN
B. LIGHT BROWN TO BROWN
C. DARK BROWN
D. GREEN GRAY
E. VERY DARK GRAY OR VERY DARK BROWN

TH	STANDARD PENETRATION TEST (SPT) BORING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
OC	ORGANIC CONTENT IN PERCENT (ASTM D-2974)
GSE	SURVEYED GROUND SURFACE ELEVATION
WOH	SAMPLER ADVANCED BY STATIC WEIGHT OF HAMMER AND RODS ONLY
GNM	GROUNDWATER NOT MEASURED (i.e., NOT ENCOUNTERED IN THE TOP 10 FEET AND NOT MEASURED BELOW 10 FEET DUE TO THE MUDDED CONDITION OF THE BOREHOLE)
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	<4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	<2
SOFT	1/4 TO 1/2	2 TO 4
FIRM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA IN THE BORING IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THIS LOCATION OR WITHIN THE VERTICAL REACHES OF THIS BORING IN THE FUTURE.

NOTES:
1. THE SPT BORINGS WERE PERFORMED USING AN AUTOMATIC HAMMER TO THE BORING TERMINATION DEPTH. AUTOMATIC HAMMER N-VALUES MAY BE CONVERTED TO EQUIVALENT SAFETY HAMMER N-VALUES BY MULTIPLYING BY 1.24.
2. THE BORINGS WERE PERFORMED IN THE MIDDLE OF THE LEVEE CREST ROAD.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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FILE NO. 20-6426	APPROVED BY:	FIGURE: 5

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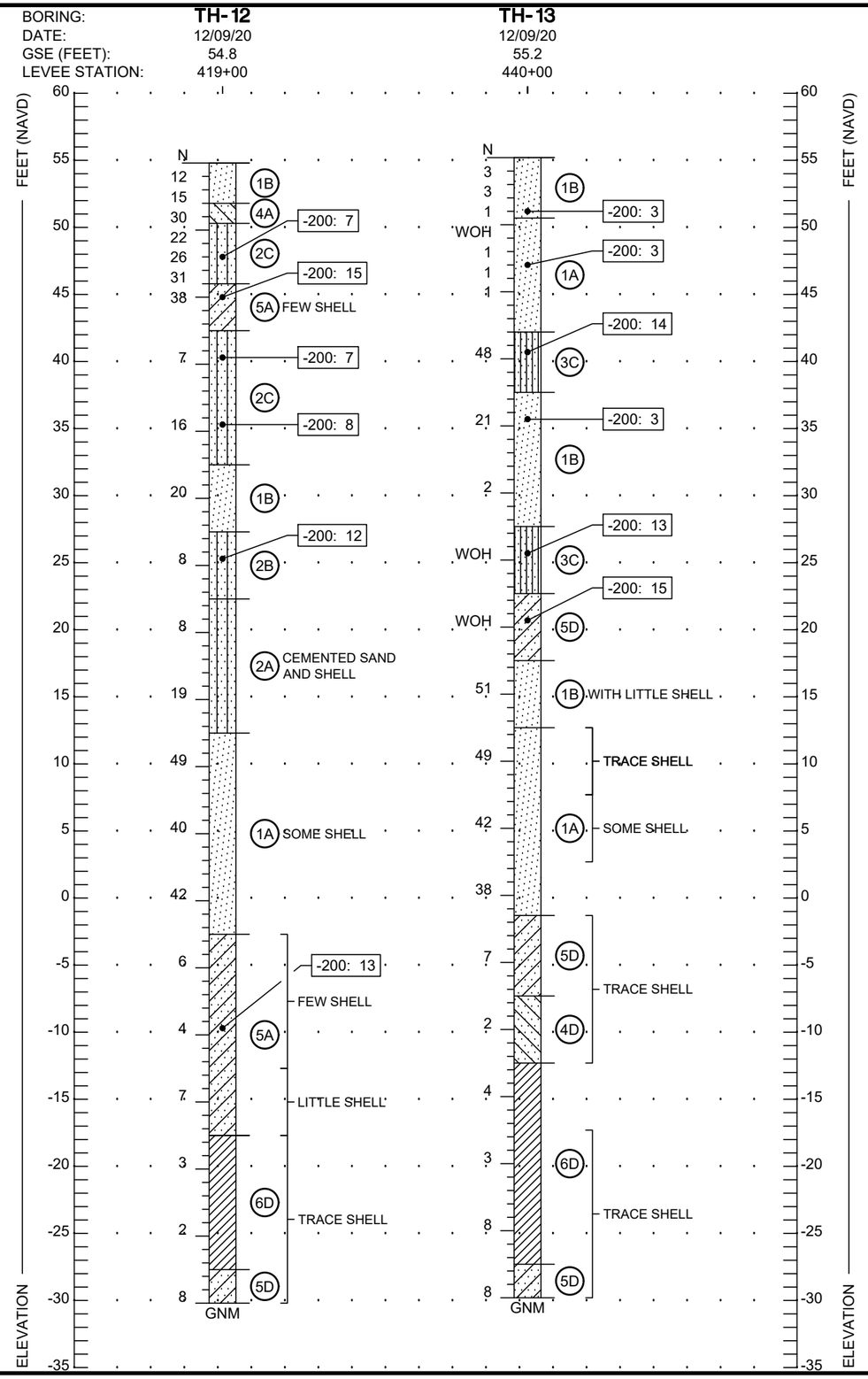

LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
5. CLAYEY FINE SAND (SC)
6. SANDY CLAY TO CLAY (CH)
7. ORGANIC CLAYEY SAND TO CLAY
8. SHELL AND SAND

COLORS

- A GRAY BROWN
- B LIGHT BROWN TO BROWN
- C DARK BROWN
- D GREEN GRAY
- E VERY DARK GRAY OR VERY DARK BROWN

TH	STANDARD PENETRATION TEST (SPT) BORING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
OC	ORGANIC CONTENT IN PERCENT (ASTM D-2974)
GSE	SURVEYED GROUND SURFACE ELEVATION
WOH	SAMPLER ADVANCED BY STATIC WEIGHT OF HAMMER AND RODS ONLY
GNM	GROUNDWATER NOT MEASURED (i.e., NOT ENCOUNTERED IN THE TOP 10 FEET AND NOT MEASURED BELOW 10 FEET DUE TO THE MUDDED CONDITION OF THE BOREHOLE)
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	<4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	<2
SOFT	1/4 TO 1/2	2 TO 4
FIRM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

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NOTES:
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2. THE BORINGS WERE PERFORMED IN THE MIDDLE OF THE LEVEE CREST ROAD.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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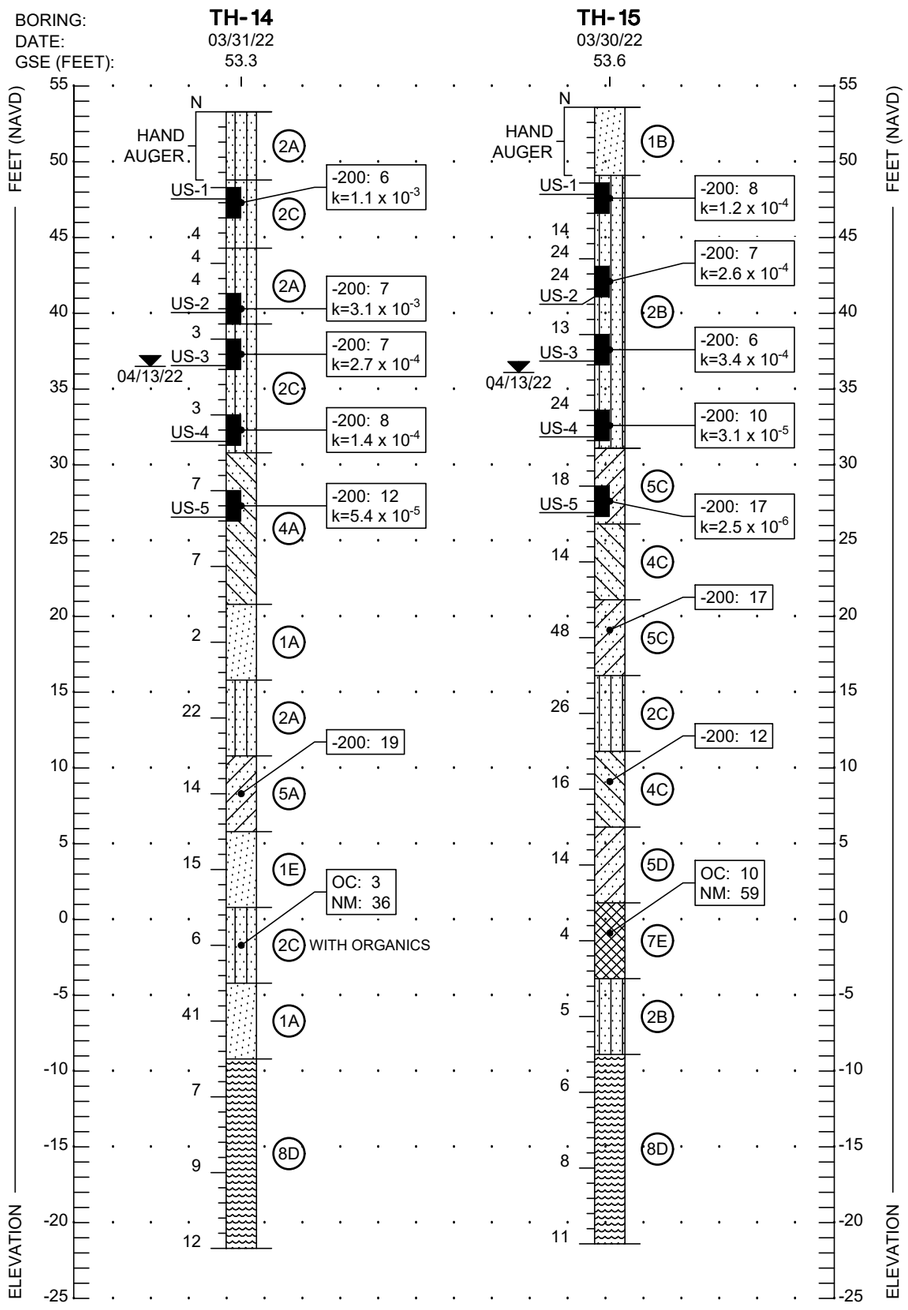
FILE NO. 20-6426	APPROVED BY:	FIGURE: 6



LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
5. CLAYEY FINE SAND (SC)
6. SANDY CLAY TO CLAY (CH)
7. ORGANIC CLAYEY SAND TO CLAY
8. SHELL AND SAND

COLORS

A. GRAY BROWN
B. LIGHT BROWN TO BROWN
C. DARK BROWN
D. GREEN GRAY
E. VERY DARK GRAY OR VERY DARK BROWN

TH	STANDARD PENETRATION TEST (SPT) BORING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
▼	GROUNDWATER LEVEL MEASURED IN ADJACENT PIEZOMETER ON APRIL 13, 2022
k	PERMEABILITY IN CENTIMETERS/SECOND (ASTM 5084)
OC	ORGANIC CONTENT IN PERCENT (ASTM D-2974)
GSE	APPROXIMATE GROUND SURFACE ELEVATION
US-1 ■	UNDISTURBED SAMPLE OBTAINED WITH A 3-INCH DIA. SHELBY TUBE
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	<4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	<2
SOFT	1/4 TO 1/2	2 TO 4
FIRM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

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NOTES:
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2. BORINGS TH-14 AND TH-15 WERE PERFORMED AT THE LOCATIONS SHOWN ON FIGURE 2B.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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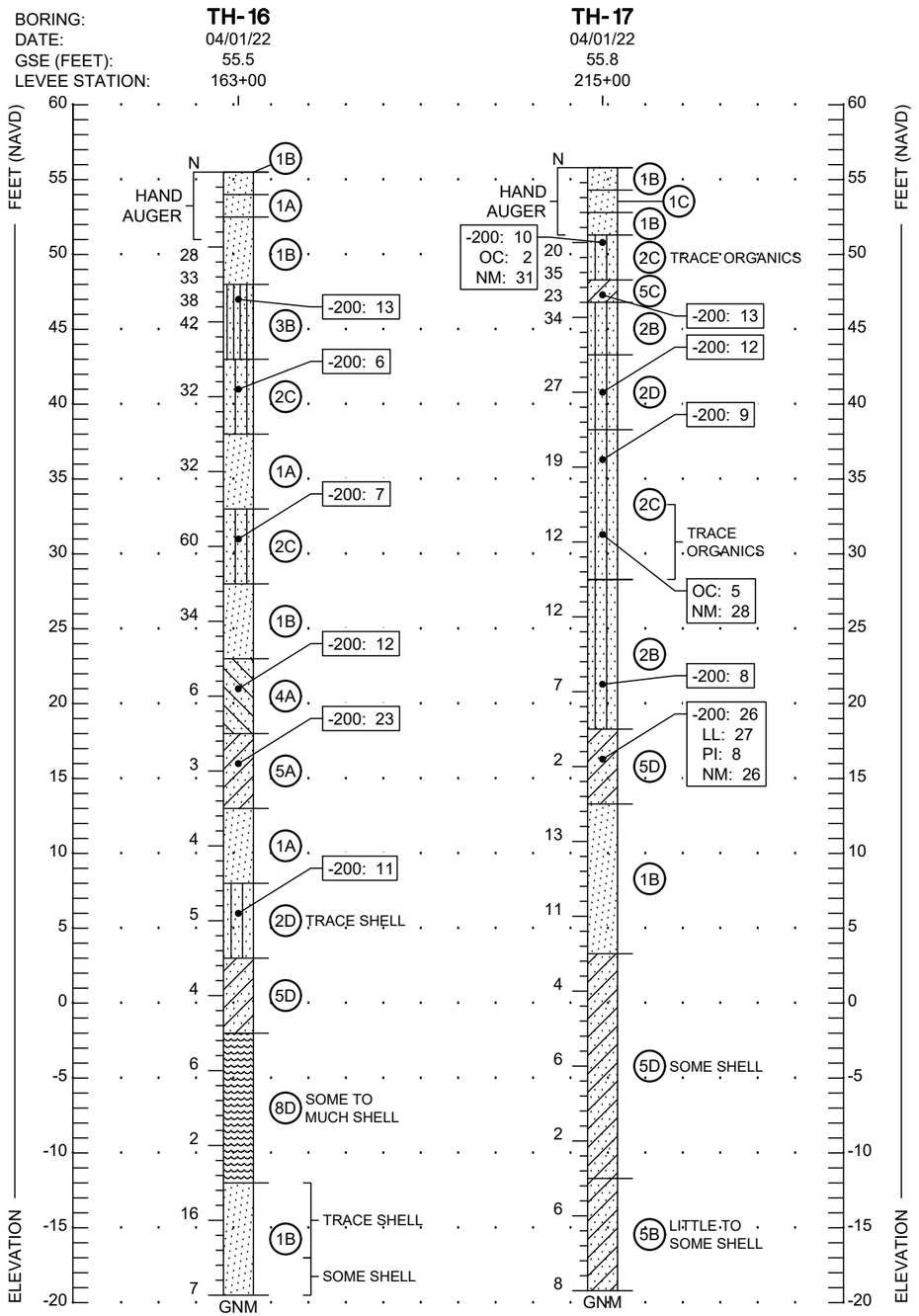

LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
5. CLAYEY FINE SAND (SC)
6. SANDY CLAY TO CLAY (CH)
7. ORGANIC CLAYEY SAND TO CLAY
8. SHELL AND SAND

COLORS

A. GRAY BROWN
B. LIGHT BROWN TO BROWN
C. DARK BROWN
D. GREEN GRAY
E. VERY DARK GRAY OR VERY DARK BROWN

TH	STANDARD PENETRATION TEST (SPT) BORING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
OC	ORGANIC CONTENT IN PERCENT (ASTM D-2974)
LL	LIQUID LIMIT (ASTM D-4318)
PI	PLASTICITY INDEX (ASTM D-4318)
GSE	APPROXIMATE GROUND SURFACE ELEVATION
WOH	SAMPLER ADVANCED BY STATIC WEIGHT OF HAMMER AND RODS ONLY
GNM	GROUNDWATER NOT MEASURED (i.e., NOT ENCOUNTERED IN THE TOP 10 FEET AND NOT MEASURED BELOW 10 FEET DUE TO THE MUDDED CONDITION OF THE BOREHOLE)
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	<4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	<2
SOFT	1/4 TO 1/2	2 TO 4
FIRM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

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2. THE SPT BORINGS WERE PERFORMED IN THE MIDDLE OF THE LEVEE CREST ROAD.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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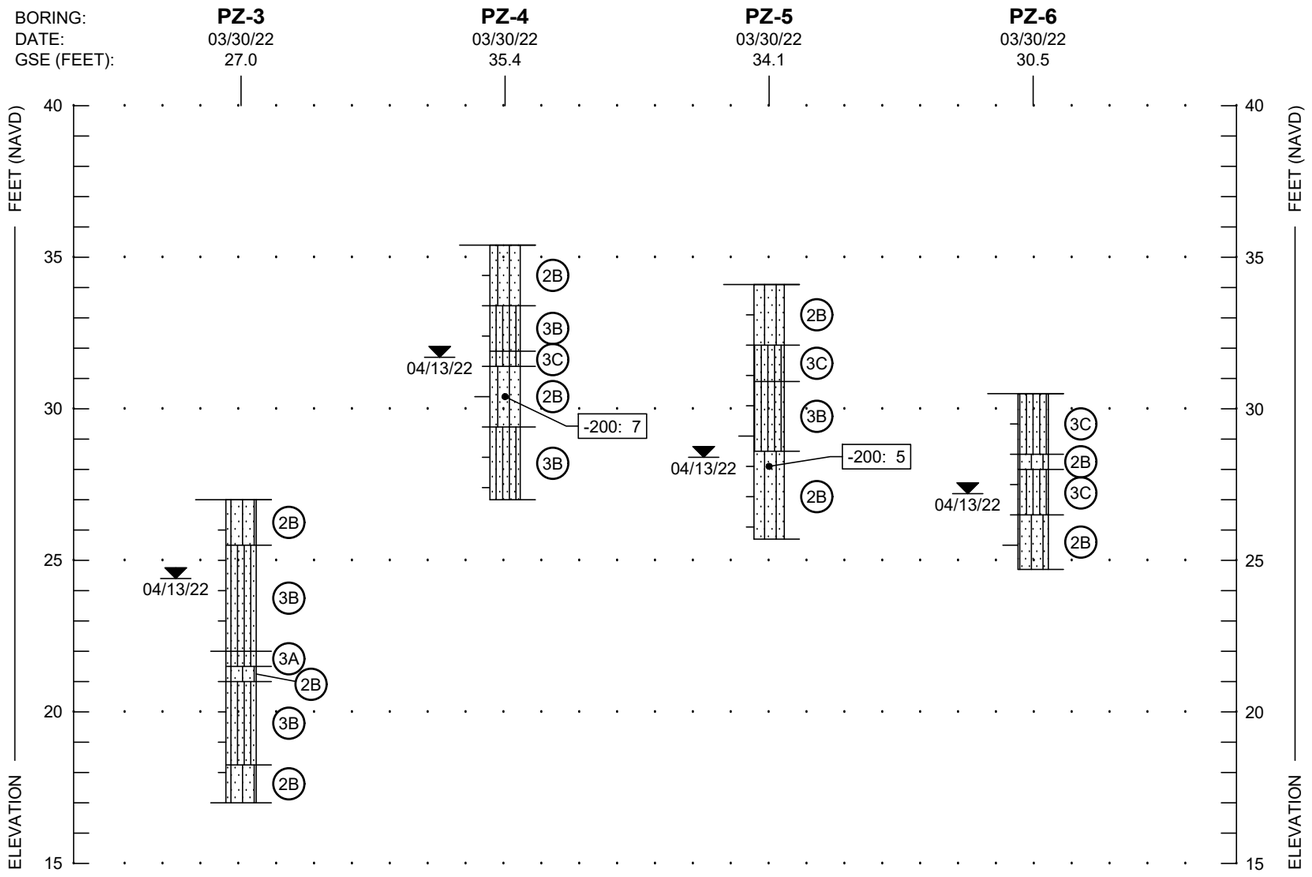

LEGEND

SOIL DESCRIPTIONS

1. FINE SAND (SP)
2. FINE SAND WITH SILT (SP-SM)
3. SILTY FINE SAND (SM)
4. FINE SAND WITH CLAY (SP-SC)
5. CLAYEY FINE SAND (SC)
6. SANDY CLAY TO CLAY (CH)
7. ORGANIC CLAYEY SAND TO CLAY
8. SHELL AND SAND

COLORS

- A GRAY BROWN
- B LIGHT BROWN TO BROWN
- C DARK BROWN
- D GREEN GRAY
- E VERY DARK GRAY OR VERY DARK BROWN

PZ	HAND AUGER BORING FOR PIEZOMETER INSTALLATION
-200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)
▼	GROUNDWATER LEVEL MEASURED ON APRIL 13, 2022.
GSE	GROUND SURFACE ELEVATION MEASURED WITH ZIP LEVEL
SP,SP-SM SM,SC,CH	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

NOTES:

1. THE BORINGS WERE PERFORMED AT THE LOCATIONS SHOWN ON FIGURE 2B.
2. RESERVOIR WATER ELEVATION +41.2 FEET NAVD ON APRIL 13, 2022.
3. TAILWATER ELEVATION +19.5 FEET NAVD ON APRIL 13, 2022.

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATE SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

SOIL BORING PROFILES

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

SUBSURFACE SOIL EXPLORATION
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE AND OSCEOLA COUNTIES, FLORIDA

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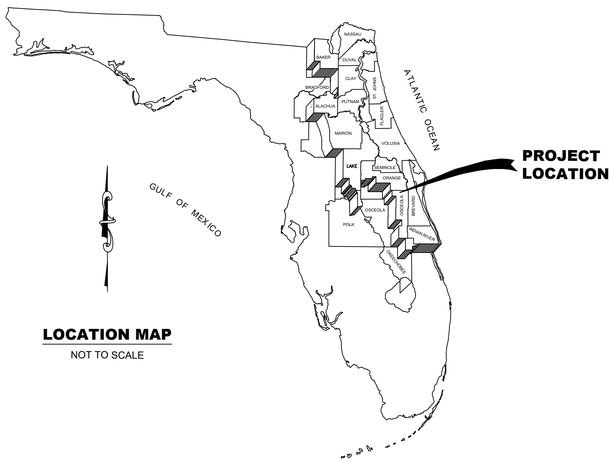
APPENDIX I

Taylor Creek Reservoir Improvements Preliminary Plans (dated March 21, 2022)

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

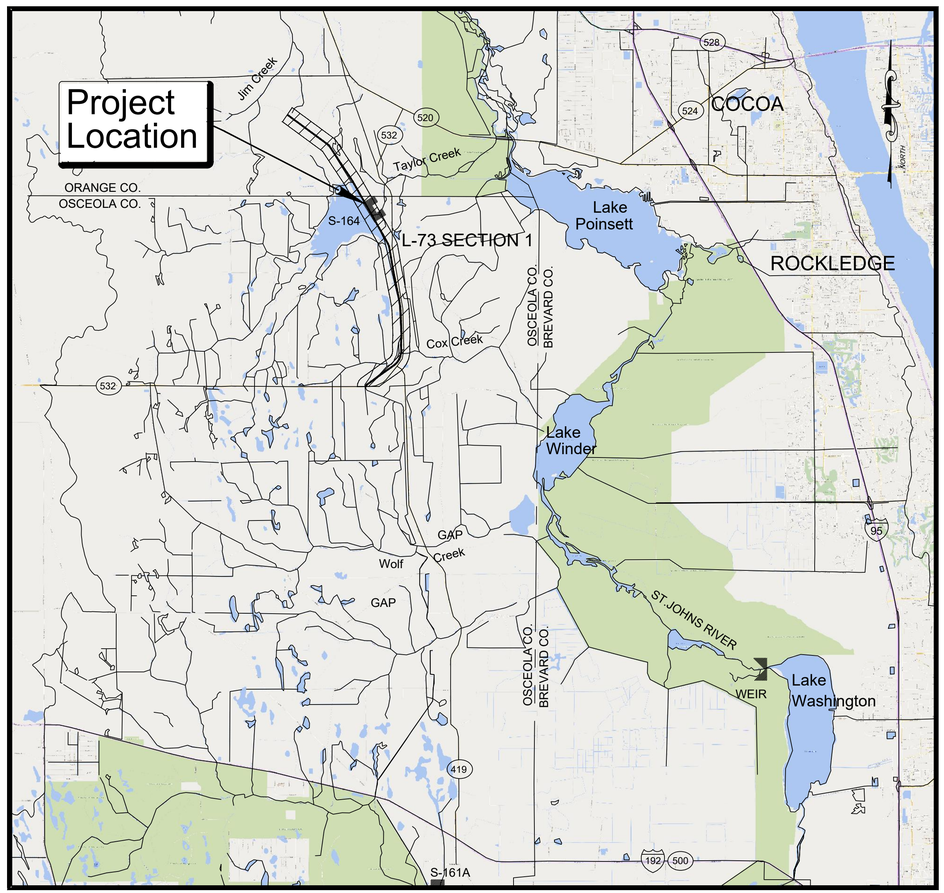
NAVD 1988

ALL ELEVATIONS DEPICTED HEREIN REFERENCE NAVD 1988 UNLESS OTHERWISE NOTED. THE CONVERSION FACTOR TO NGVD 1929 IS +1.26.



LOCATION MAP

NOT TO SCALE



VICINITY MAP

INDEX OF PLANS

SHEET NO.	SHEET TITLE
C1	COVER SHEET
C2	OVERALL SITE PLAN
C3	LEVEE SECTION STA. 70+00, 110+00, AND 150+00
C4	LEVEE SECTION STA. 163+00 AND 185+50
C5	LEVEE SECTION STA. 185+85 AND 187+51
C6	LEVEE SECTION STA. 188+63 AND 190+29
C7	LEVEE SECTION STA. 191+05 AND 215+00
C8	LEVEE SECTION STA. 226+00 AND 270+00
C9	LEVEE SECTION STA. 310+00 AND 400+00
C10	LEVEE SECTION STA. 419+00 AND 440+00
C11	L-73 PLAN AND PROFILE STA -0+27.86 TO STA 6+00.00
C12	L-73 PLAN AND PROFILE STA 6+00.00 TO STA 22+00.00
C13	L-73 PLAN AND PROFILE STA 22+00.00 TO STA 38+00.00
C14	L-73 PLAN AND PROFILE STA 38+00.00 TO STA 54+00.00
C15	L-73 PLAN AND PROFILE STA 54+00.00 TO STA 70+00.00
C16	L-73 PLAN AND PROFILE STA 70+00.00 TO STA 86+00.00
C17	L-73 PLAN AND PROFILE STA 86+00.00 TO STA 102+00.00
C18	L-73 PLAN AND PROFILE STA 102+00.00 TO STA 118+00.00
C19	L-73 PLAN AND PROFILE STA 118+00.00 TO STA 134+00.00
C20	L-73 PLAN AND PROFILE STA 134+00.00 TO STA 150+00.00
C21	L-73 PLAN AND PROFILE STA 150+00.00 TO STA 166+00.00
C22	L-73 PLAN AND PROFILE STA 166+00.00 TO STA 182+00.00
C23	L-73 PLAN AND PROFILE STA 182+00.00 TO STA 198+00.00
C24	L-73 PLAN AND PROFILE STA 198+00.00 TO STA 214+00.00
C25	L-73 PLAN AND PROFILE STA 214+00.00 TO STA 230+00.00
C26	L-73 PLAN AND PROFILE STA 230+00.00 TO STA 246+00.00
C27	L-73 PLAN AND PROFILE STA 246+00.00 TO STA 262+00.00
C28	L-73 PLAN AND PROFILE STA 262+00.00 TO STA 278+00.00
C29	L-73 PLAN AND PROFILE STA 278+00.00 TO STA 294+00.00
C30	L-73 PLAN AND PROFILE STA 294+00.00 TO STA 310+00.00
C31	L-73 PLAN AND PROFILE STA 310+00.00 TO STA 326+00.00
C32	L-73 PLAN AND PROFILE STA 326+00.00 TO STA 342+00.00
C33	L-73 PLAN AND PROFILE STA 342+00.00 TO STA 358+00.00
C34	L-73 PLAN AND PROFILE STA 358+00.00 TO STA 374+00.00
C35	L-73 PLAN AND PROFILE STA 374+00.00 TO STA 390+00.00
C36	L-73 PLAN AND PROFILE STA 390+00.00 TO STA 406+00.00
C37	L-73 PLAN AND PROFILE STA 406+00.00 TO STA 422+00.00
C38	L-73 PLAN AND PROFILE STA 422+00.00 TO STA 438+00.00
C39	L-73 PLAN AND PROFILE STA 438+00.00 TO STA 454+00.00
C40	L-73 PLAN AND PROFILE STA 454+00.00 TO STA 457+92.19
C41	PROPOSED S-164 SITE PLAN
C42	CROSS SECTIONS STA 0+00.00 - 28+00.00
C43	CROSS SECTIONS STA 30+00.00 - 48+00.00
C44	CROSS SECTIONS STA 50+00.00 - 68+00.00
C45	CROSS SECTIONS STA 70+00.00 - 88+00.00
C46	CROSS SECTIONS STA 90+00.00 - 108+00.00
C47	CROSS SECTIONS STA 110+00.00 - 128+00.00
C48	CROSS SECTIONS STA 130+00.00 - 148+00.00
C49	CROSS SECTIONS STA 150+00.00 - 164+00.00
C50	CROSS SECTIONS STA 166+00.00 - 172+00.00
C51	CROSS SECTIONS STA 174+00.00 - 180+00.00
C52	CROSS SECTIONS STA 182+00.00 - 188+00.00
C53	CROSS SECTIONS STA 190+00.00 - 196+00.00
C54	CROSS SECTIONS STA 198+00.00 - 204+00.00
C55	CROSS SECTIONS STA 206+00.00 - 212+00.00
C56	CROSS SECTIONS STA 214+00.00 - 228+00.00
C57	CROSS SECTIONS STA 230+00.00 - 248+00.00
C58	CROSS SECTIONS STA 250+00.00 - 268+00.00
C59	CROSS SECTIONS STA 270+00.00 - 288+00.00
C60	CROSS SECTIONS STA 290+00.00 - 308+00.00
C61	CROSS SECTIONS STA 310+00.00 - 328+00.00
C62	CROSS SECTIONS STA 330+00.00 - 348+00.00
C63	CROSS SECTIONS STA 350+00.00 - 368+00.00
C64	CROSS SECTIONS STA 370+00.00 - 388+00.00
C65	CROSS SECTIONS STA 390+00.00 - 408+00.00
C66	CROSS SECTIONS STA 410+00.00 - 428+00.00
C67	CROSS SECTIONS STA 430+00.00 - 448+00.00
C68	CROSS SECTIONS STA 450+00.00 - 457+00.00
S1	EXISTING S-164 SITE GRADE
S2	EXISTING STRUCTURE PLAN
S3	EXISTING STRUCTURE SECTION
S4	EXISTING UPSTREAM ELEVATION
S5	EXISTING DOWNSTREAM ELEVATION
S6	STRUCTURE PLAN
S7	STRUCTURE SECTION
S8	UPSTREAM ELEVATION
S9	DOWNSTREAM ELEVATION

ENGINEER'S NOTES:

1. These drawings are prepared for the sole and exclusive use of the St. Johns River Water Management District and shall not be relied upon by any other entity or individual.
2. Reproductions of these drawings are "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL SEAL OF A FLORIDA LICENSED ENGINEER."

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CALL 2 WORKING DAYS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's Call 811 below. before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

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CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

DRAWING FILENAME: TCRI COVER.dwg

SHEET: C1

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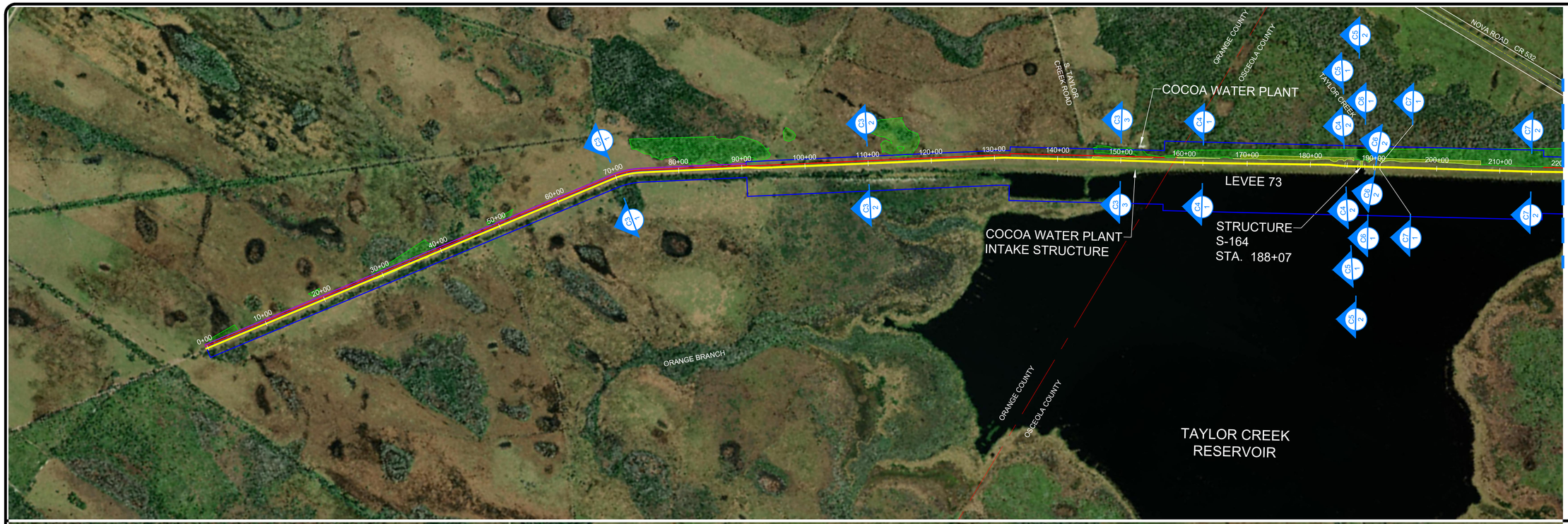

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1" = 800'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

OVERALL SITE PLAN

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI OVER.dwg
PROJECT NO.:
SHEET: C2

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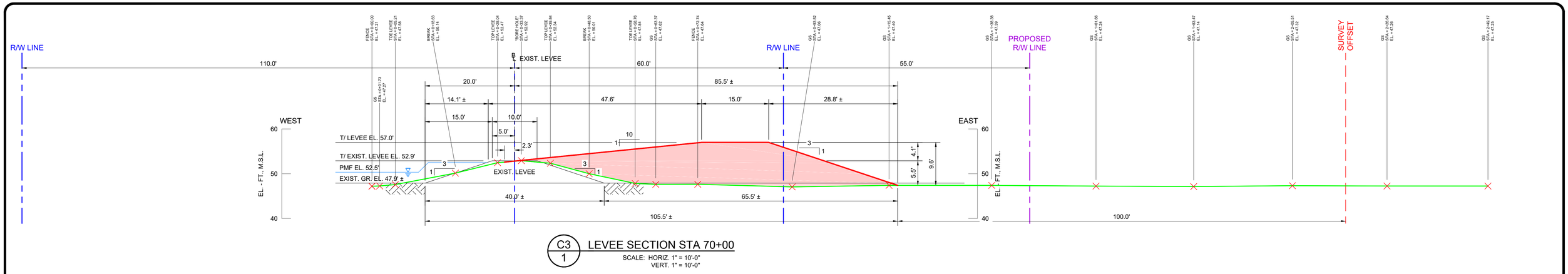
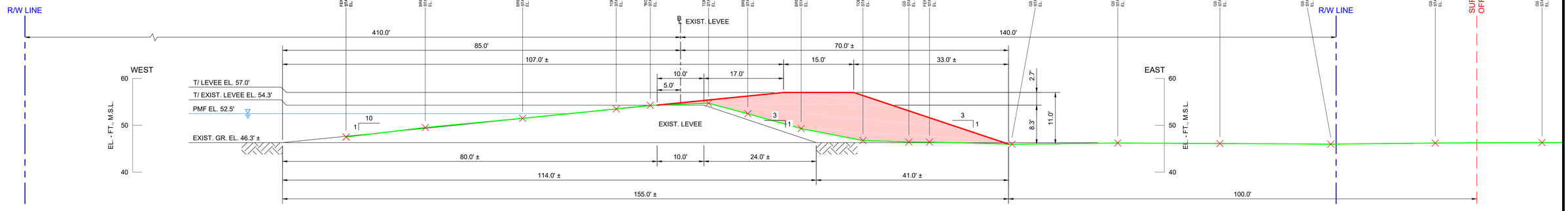


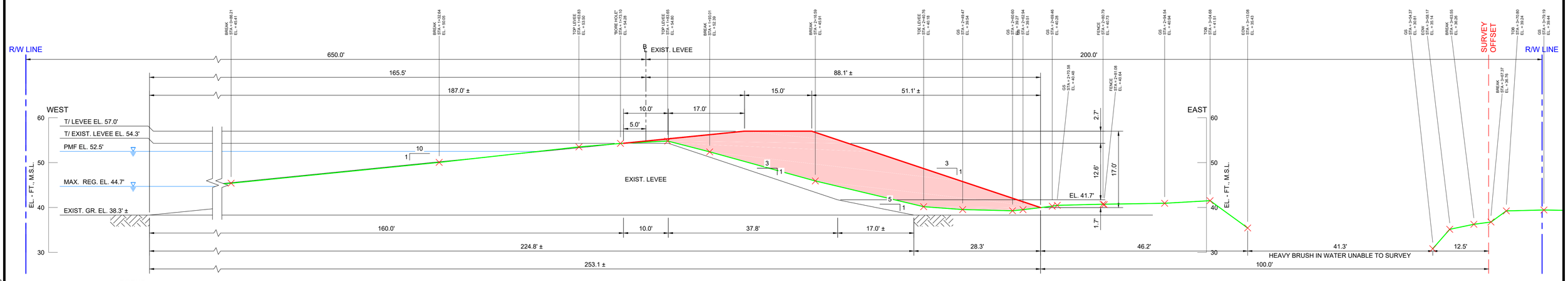
C3 / 1 LEVEE SECTION STA 70+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



C3 / 2 LEVEE SECTION STA 110+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



C3 / 3 LEVEE SECTION STA 150+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 5 10 20 — HORIZONTAL
0 5 10 20 — VERTICAL

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 70+00, 110+00, AND 150+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C3

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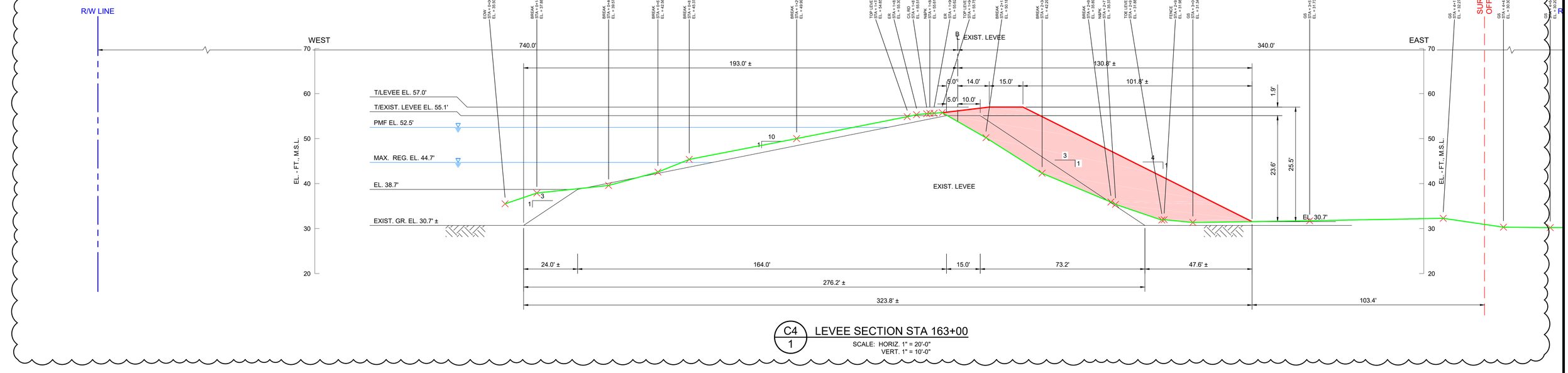
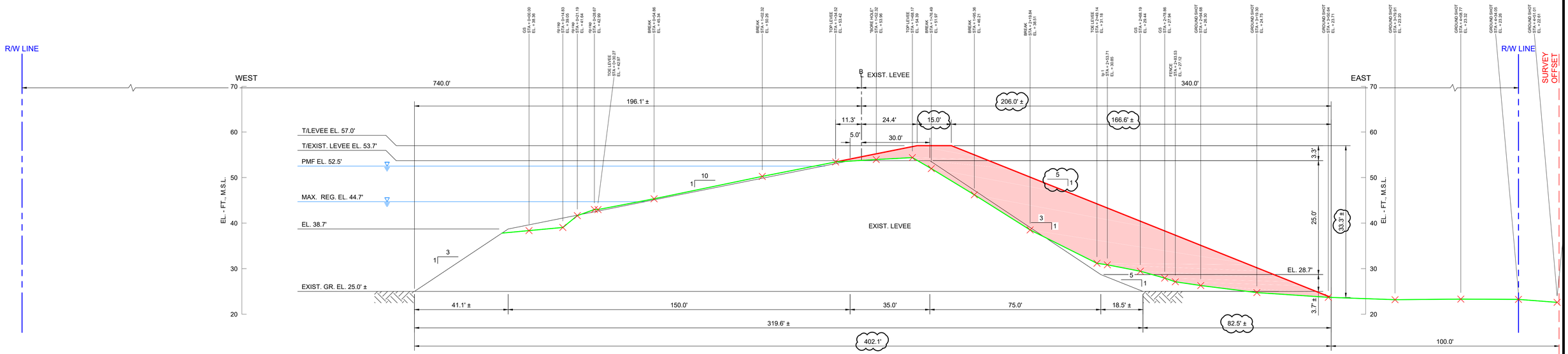


C4
1

LEVEE SECTION STA 163+00

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"



C4
2

LEVEE SECTION STA 185+50

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
HORIZONTAL: 0 10 20 40
VERTICAL: 0 5 10 20

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 163+00 AND 185+50

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C4

G:\Projects\Taylor Creek\Design\Drawings\TCRI XSECT.dwg

C5 1 LEVEE SECTION STA 185+85 (END OF NEW SHEETS)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

C5 2 LEVEE SECTION STA 187+51 (BOT. SHEET STEPDOWN)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET: HORIZONTAL 0 10 20 40; VERTICAL 0 5 10 20

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: MARCH 21, 2022 REVIEWER: W.R.C.
SCALE: AS NOTED DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 185+85 AND 187+51

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C5

C6 1 LEVEE SECTION STA 188+63 (BOT. SHEET STEPDOWN)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

C6 2 LEVEE SECTION STA 190+29 (END OF NEW SHEETS)

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET

0 10 20 40 HORIZONTAL

0 5 10 20 VERTICAL

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UPPER ST. JOHNS RIVER BASIN
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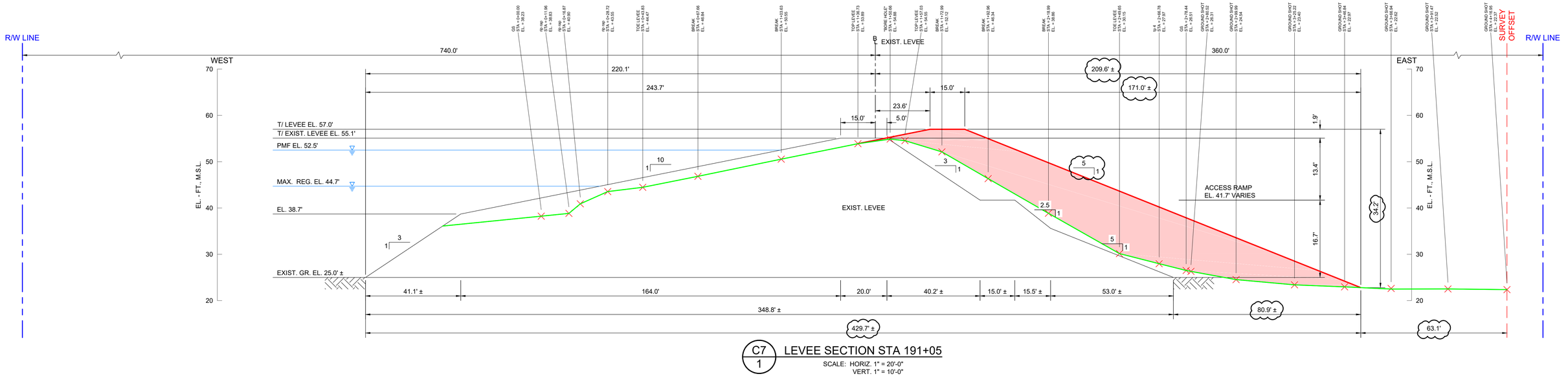
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: MARCH 21, 2022 REVIEWER: W.R.C.
SCALE: AS NOTED DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 188+63 AND 190+29

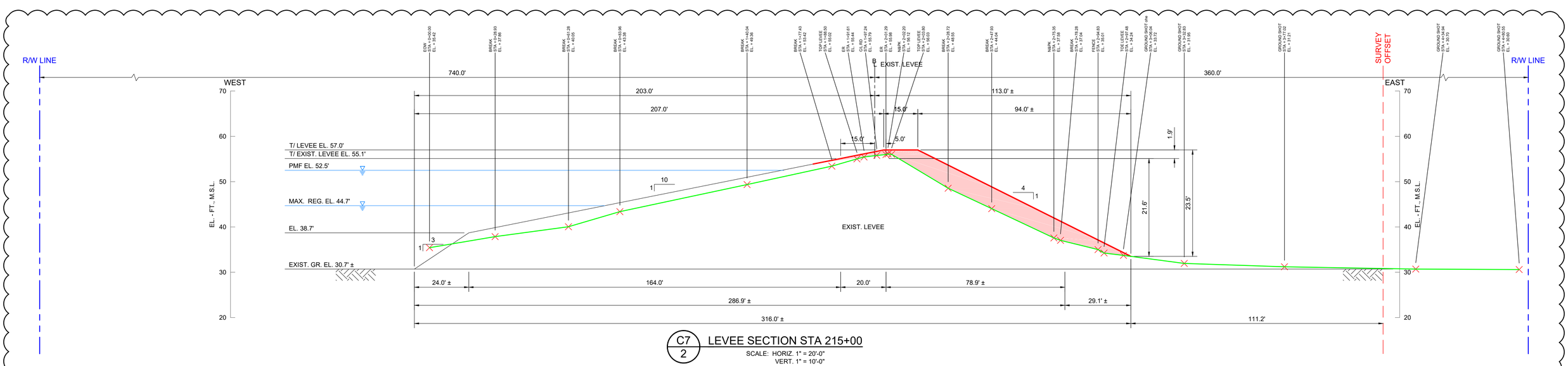
CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C6



C7/1 LEVEE SECTION STA 191+05

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"



C7/2 LEVEE SECTION STA 215+00

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 10 20 40 HORIZONTAL
0 5 10 20 VERTICAL

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SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 191+05 AND 215+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
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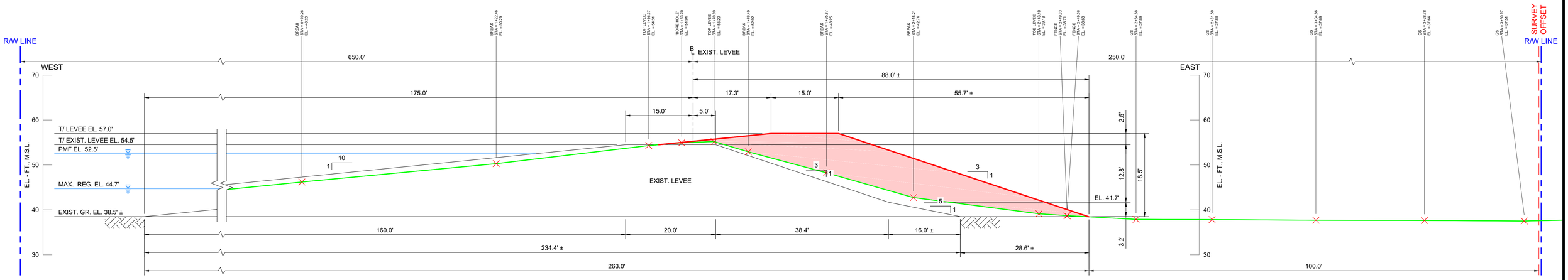
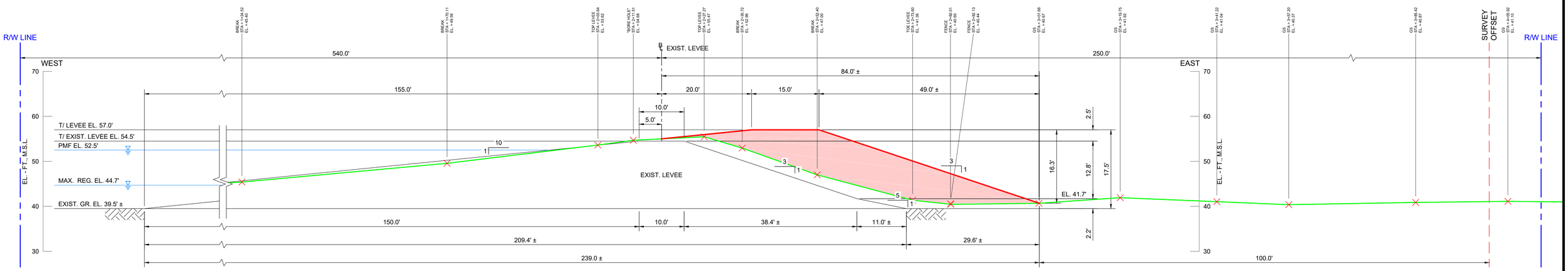


C8 / 1 — LEVEE SECTION STA 226+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



C8 / 2 — LEVEE SECTION STA 270+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 5 10 20 — HORIZONTAL
0 5 10 20 — VERTICAL

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UPPER ST. JOHNS RIVER BASIN
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ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

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P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 226+00 AND 270+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C8

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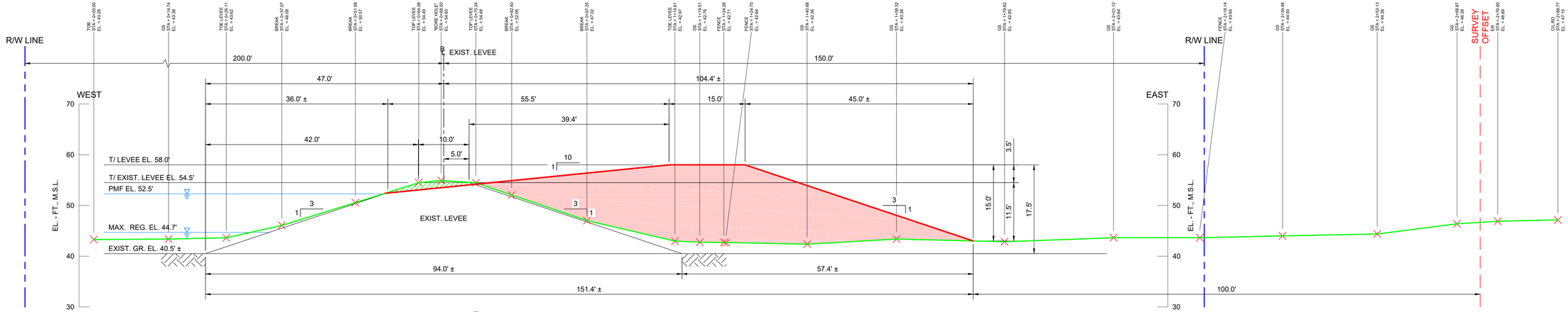
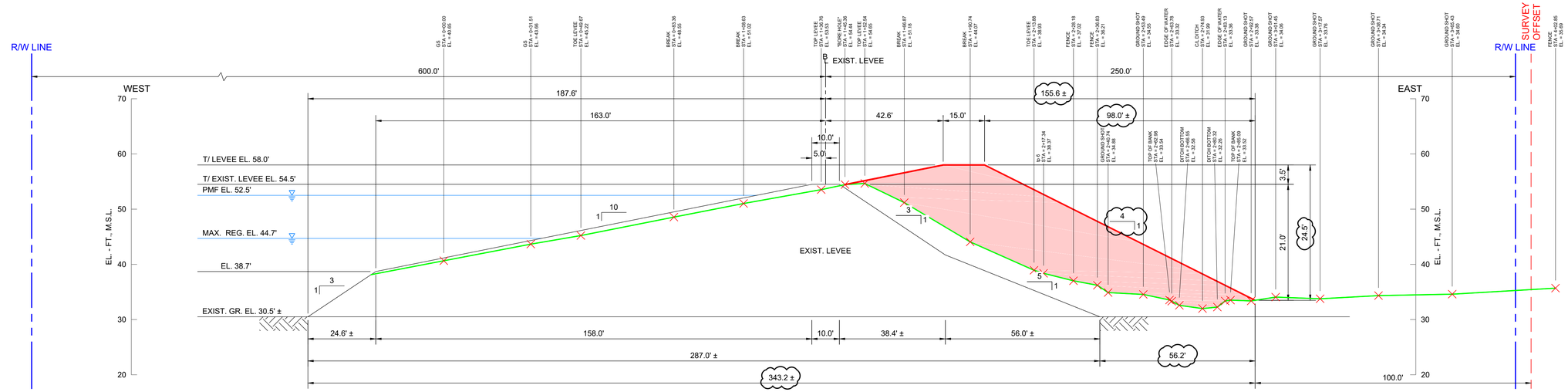


C9 / 1 — LEVEE SECTION STA 310+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

GRAPHIC SCALE IN FEET
0 5 10 20
HORIZONTAL

0 5 10 20
VERTICAL



C9 / 2 — LEVEE SECTION STA 400+00

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZONTAL

0 5 10 20
VERTICAL

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UPPER ST. JOHNS RIVER BASIN
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ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
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DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

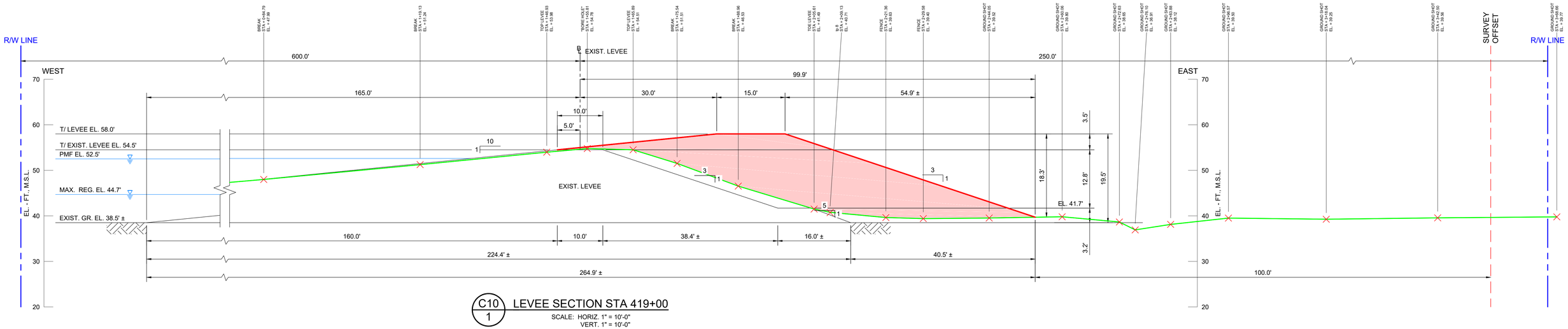
LEVEE SECTION STA. 310+00 AND 400+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

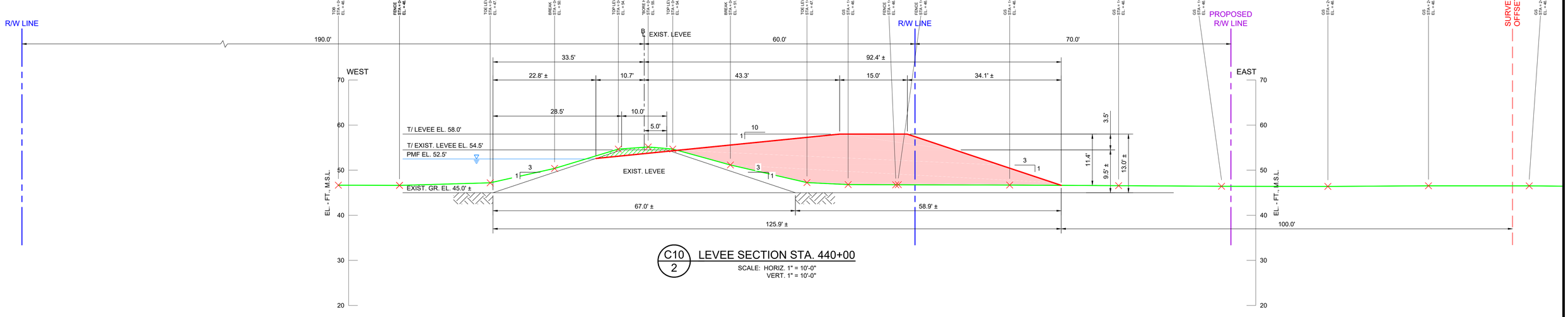
FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C9

C:\Projects\Taylor Creek\Design\Drawings\TCRI XSECT.dwg



C10 / 1 — LEVEE SECTION STA 419+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"



C10 / 2 — LEVEE SECTION STA. 440+00

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 10'-0"

LEGEND:

- CUT
- FILL
- EXISTING L-73 R/W
- PROPOSED ADDITIONAL L-73 LEVEE R/W
- ℄ EXIST. LEVEE
- USACE DESIGN GRADE
- EXISTING GRADE
- PROPOSED GRADE
- SURVEY OFFSET

GRAPHIC SCALE IN FEET
0 5 10 20 HORIZONTAL
0 5 10 20 VERTICAL

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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: AS NOTED	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

LEVEE SECTION STA. 419+00 AND 440+00

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI XSECT.dwg
PROJECT NO.:
SHEET: C10

U:\Projects\Orange\Taylor Creek\Drawings\TCRI XSECT.dwg

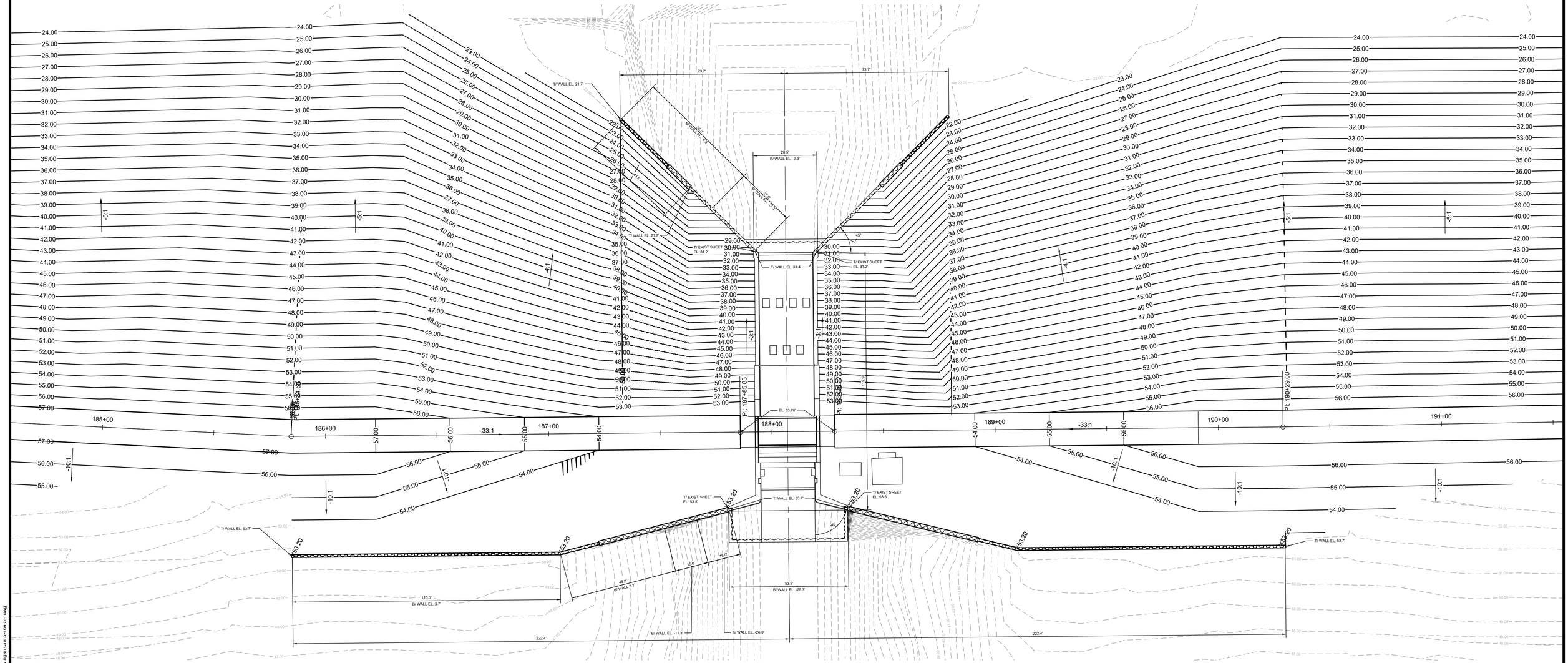
GRAPHIC SCALE

0 20 40

SCALE: 1" = 20'

C-41 SURVEY REFERENCE DOCUMENTS:

1. SPECIFIC PURPOSE LIDAR SURVEY REPORT, PREPARED BY DEWBERRY, DATED MAY 24, 2010.
2. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO. 3), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 LEVEE X SECTIONS.DWG, DATED FEBRUARY 17, 2011
   - B2701 ADD LEVEE POINTS.TXT, DATED FEBRUARY 17, 2011
   - B2701 ADDITIONAL DOWNSTREAM X SECTIONS POINTS.TXT, DATED FEBRUARY 17, 2011
3. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO.4), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 DOWNSTREAM X SECTIONS 2013.DWG, DATED MARCH 4, 2013
   - B2701 LEVEE SURVEY 2013.DWG, DATED MARCH 5, 2013
   - B2701 SURVEY POINTS.TXT, DATED MARCH 4, 2013
4. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO.10), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - 58704001C.DWG, DATED AUGUST 12, 2014
5. TAYLOR CREEK RESERVOIR - LEVEE BOUNDARY (SURVEY WORK ORDER NO. 4709-14), PREPARED BY SJRWMD, DATED APRIL 16, 2014. DELIVERABLES:
   - 4709-14.DWG
6. TAYLOR CREEK RESERVOIR TCR WETLANDS (SURVEY WORK ORDER NO. 4621-14), PREPARED BY SJRWMD, DATED JUNE 3, 2014. DELIVERABLES:
   - 4621-14.DWG
7. TAYLOR CREEK RESERVOIR TCR WETLANDS (SURVEY WORK ORDER NO. 4741-15), PREPARED BY SJRWMD, DATED APRIL 17, 2015. DELIVERABLES:
   - 4741-15 4-17-2015.DWG
8. L-73 TAYLOR CREEK S-231 REMOVAL (SURVEY WORK ORDER NO. 6683-19), PREPARED BY SJRWMD, DATED OCTOBER 10, 2019. DELIVERABLES:
   - 6683-19.DWG
9. TAYLOR CREEK RESERVOIR IMPROVEMENT (SURVEY WORK ORDER NO. 7130-20), PREPARED BY SJRWMD, DATED MARCH 15, 2020. DELIVERABLES:
   - 7130-20.DWG
10. TAYLOR CREEK RESERVOIR IMPROVEMENT (SURVEY WORK ORDER NO. 7264-21), PREPARED BY SJRWMD, DATED JULY 12, 2021. DELIVERABLES:
    - 7264-21.DWG



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NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1" = 20'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

PROPOSED S-164 SITE PLAN

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI S-164 SP.dwg
PROJECT NO.:
SHEET: C41

U:\Projects\Projects01\CA_Civil\Projects\Drawings\TCRI S-164 SP.dwg

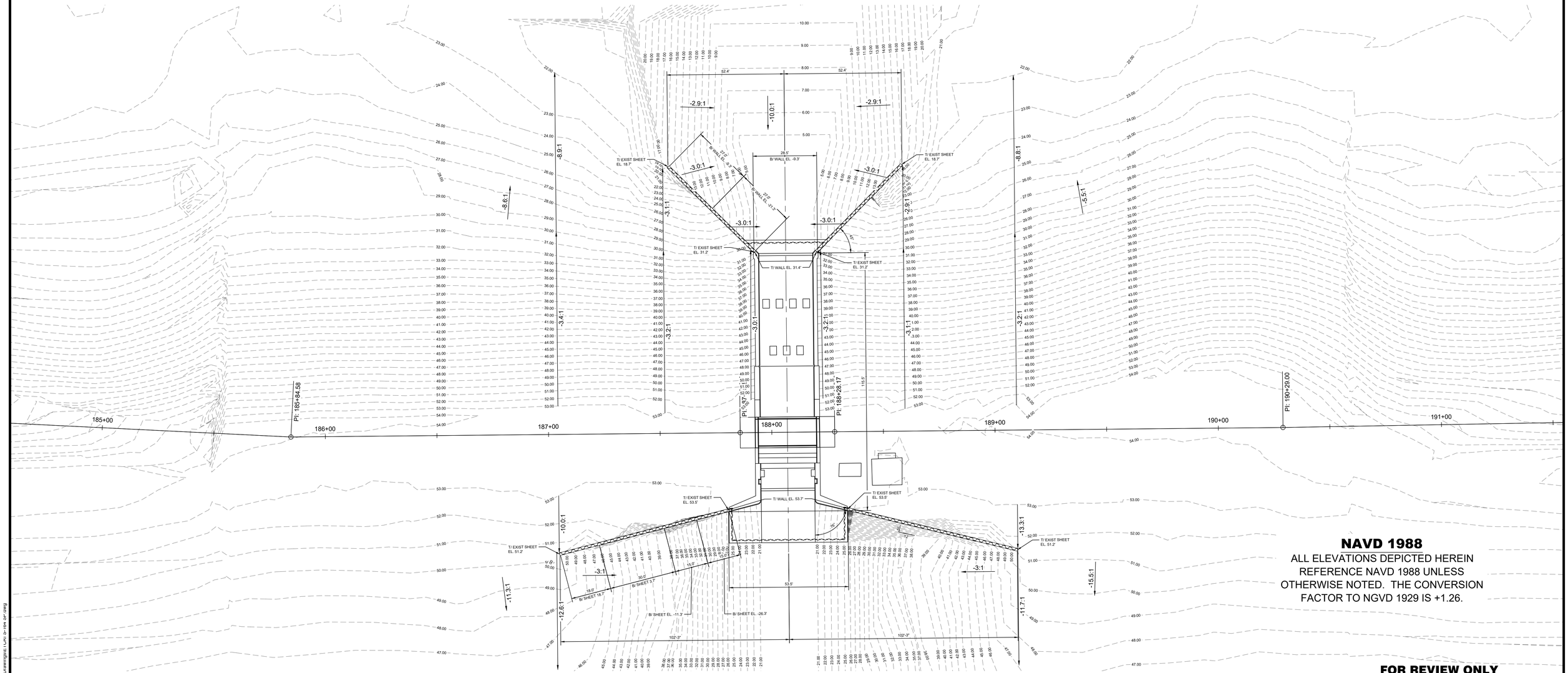
GRAPHIC SCALE

0 20 40

SCALE: 1" = 20'

C-41 SURVEY REFERENCE DOCUMENTS:

1. SPECIFIC PURPOSE LIDAR SURVEY REPORT, PREPARED BY DEWBERRY, DATED MAY 24, 2010.
2. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO. 3), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 LEVEE X SECTIONS.DWG, DATED FEBRUARY 17, 2011
   - B2701 ADD LEVEE POINTS.TXT, DATED FEBRUARY 17, 2011
   - B2701 ADDITIONAL DOWNSTREAM X SECTIONS POINTS.TXT, DATED FEBRUARY 17, 2011
3. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO.4), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - B2701 DOWNSTREAM X SECTIONS 2013.DWG, DATED MARCH 4, 2013
   - B2701 LEVEE SURVEY 2013.DWG, DATED MARCH 5, 2013
   - B2701 SURVEY POINTS.TXT, DATED MARCH 4, 2013
4. TOPOGRAPHIC SURVEYS (BROWN AND CALDWELL WORK ORDER NO.10), PREPARED BY GEODATA CONSULTANTS, INC. SURVEYING AND MAPPING. DELIVERABLES:
   - 58704001C.DWG, DATED AUGUST 12, 2014
5. TAYLOR CREEK RESERVOIR - LEVEE BOUNDARY (SURVEY WORK ORDER NO. 4709-14), PREPARED BY SJRWMD, DATED APRIL 16, 2014. DELIVERABLES:
   - 4709-14.DWG
6. TAYLOR CREEK RESERVOIR TCR WETLANDS (SURVEY WORK ORDER NO. 4621-14), PREPARED BY SJRWMD, DATED JUNE 3, 2014. DELIVERABLES:
   - 4621-14.DWG
7. TAYLOR CREEK RESERVOIR TCR WETLANDS (SURVEY WORK ORDER NO. 4741-15), PREPARED BY SJRWMD, DATED APRIL 17, 2015. DELIVERABLES:
   - 4741-15 4-17-2015.DWG
8. L-73 TAYLOR CREEK S-231 REMOVAL (SURVEY WORK ORDER NO. 6683-19), PREPARED BY SJRWMD, DATED OCTOBER 10, 2019. DELIVERABLES:
   - 6683-19.DWG
9. TAYLOR CREEK RESERVOIR IMPROVEMENT (SURVEY WORK ORDER NO. 7130-20), PREPARED BY SJRWMD, DATED MARCH 15, 2020. DELIVERABLES:
   - 7130-20.DWG
10. TAYLOR CREEK RESERVOIR IMPROVEMENT (SURVEY WORK ORDER NO. 7264-21), PREPARED BY SJRWMD, DATED JULY 12, 2021. DELIVERABLES:
    - 7264-21.DWG



NAVD 1988

ALL ELEVATIONS DEPICTED HEREIN REFERENCE NAVD 1988 UNLESS OTHERWISE NOTED. THE CONVERSION FACTOR TO NGVD 1929 IS +1.26.

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UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1" = 20'	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

EXISTING S-164 SITE GRADE

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: ETCRI S-164 SP.dwg
PROJECT NO.:
SHEET: S1

C:\Projects\4709\4709-14\Drawings\ETCRI S-164 SP.dwg

NO.	REVISION	BY	DATE	APPROVED	DATE

UPPER ST. JOHNS RIVER BASIN
TAYLOR CREEK RESERVOIR IMPROVEMENTS
ORANGE COUNTY AND OSCEOLA COUNTY, FLORIDA

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: MARCH 21, 2022 REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

EXISTING STRUCTURE PLAN

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S2

S3
1
EXISTING STRUCTURE SECTION

SCALE: 1/8" = 1'-0"

NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

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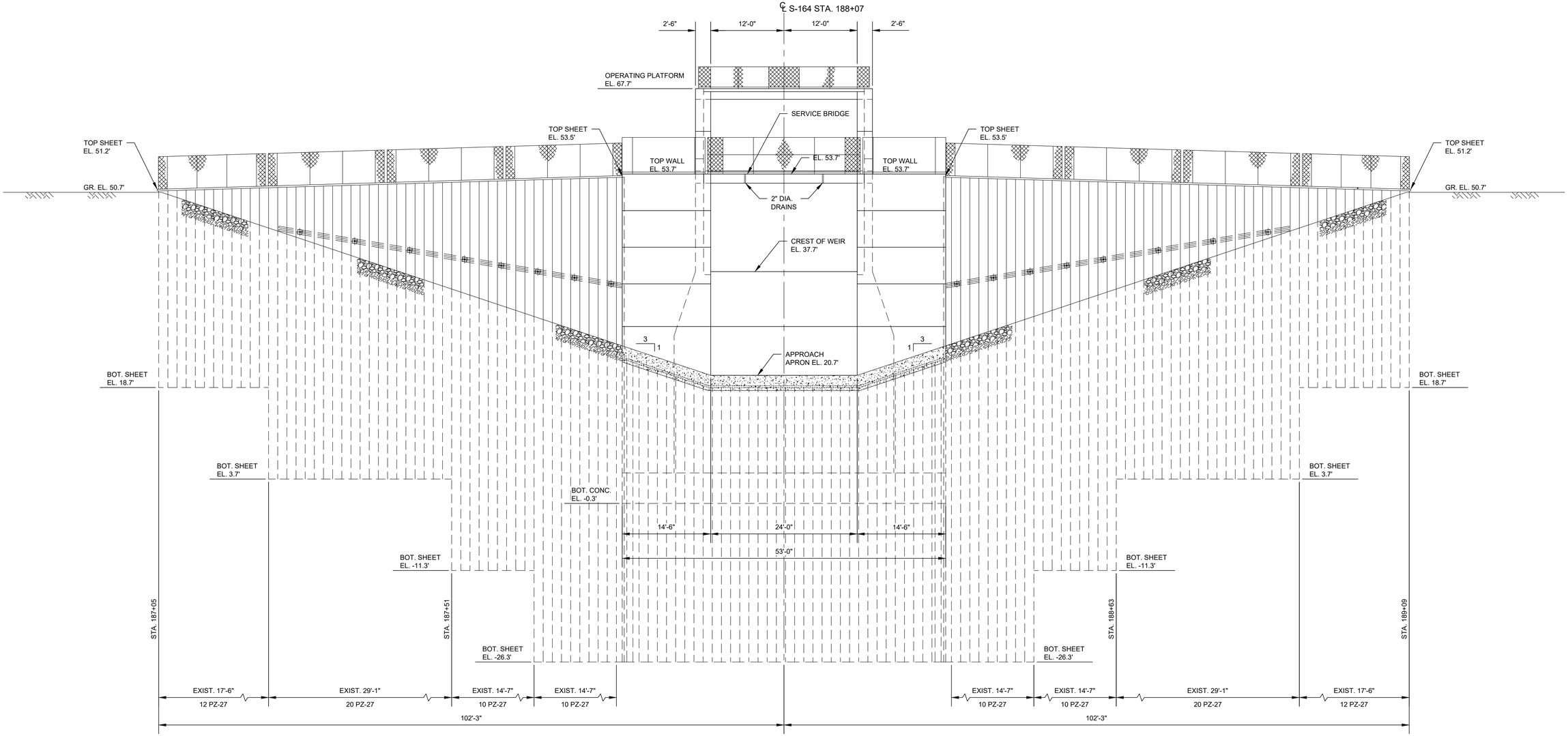
DRAWN: N.J.G. | DATE: MARCH 21, 2022 | REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" | DESIGNER: W.R.C. | SECTION CHIEF: W.R.C.

EXISTING STRUCTURE SECTION

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S3



NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S4
1
EXISTING UPSTREAM ELEVATION

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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WATER MANAGEMENT DISTRICT
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DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

EXISTING UPSTREAM ELEVATION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S4

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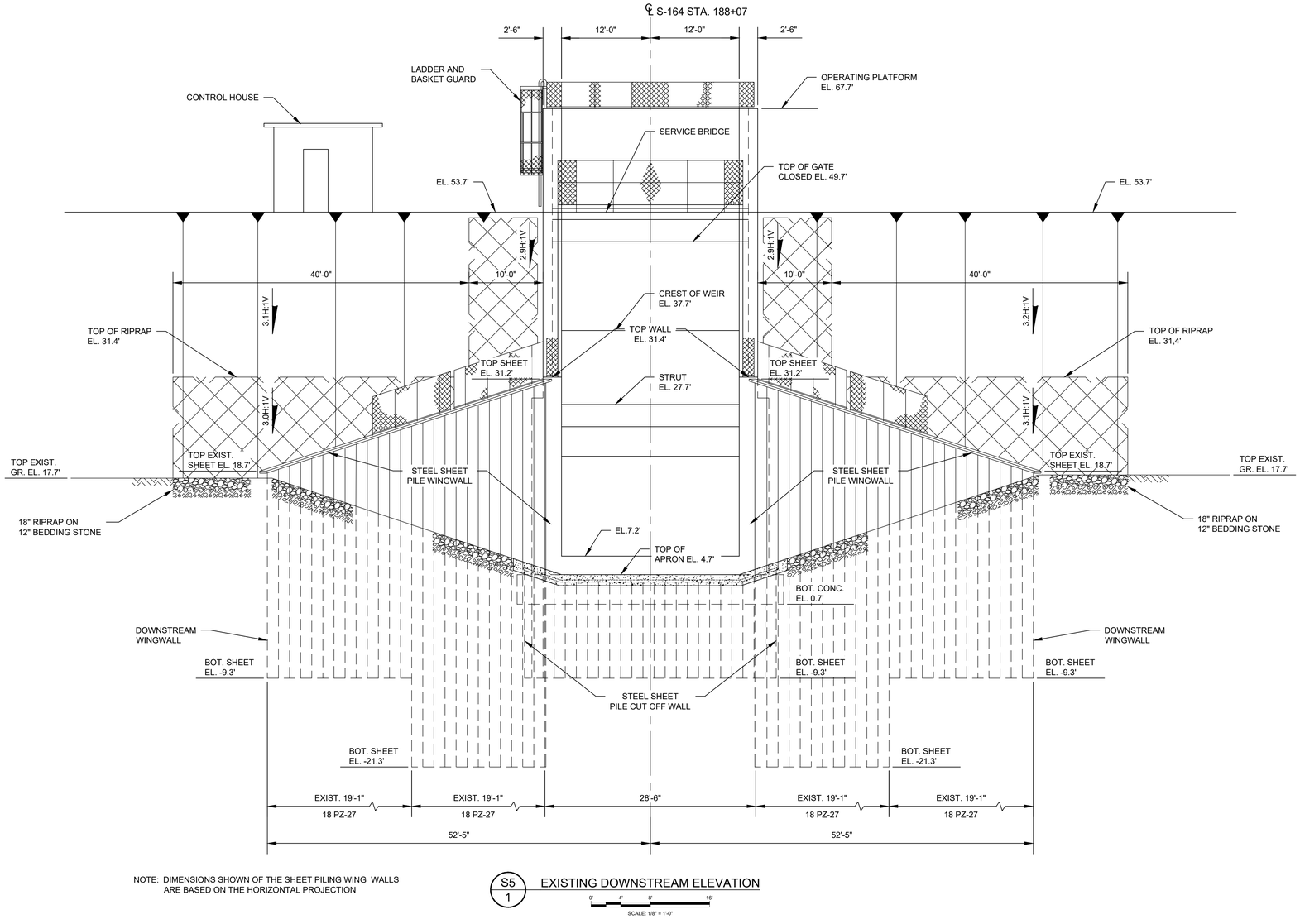

NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S5
1
EXISTING DOWNSTREAM ELEVATION

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

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UPPER ST. JOHNS RIVER BASIN
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ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

EXISTING DOWNSTREAM ELEVATION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: ETCRI STR.dwg
PROJECT NO.:
SHEET: S5

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UPPER ST. JOHNS RIVER BASIN
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P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: MARCH 21, 2022 REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

STRUCTURE PLAN

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S6

NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

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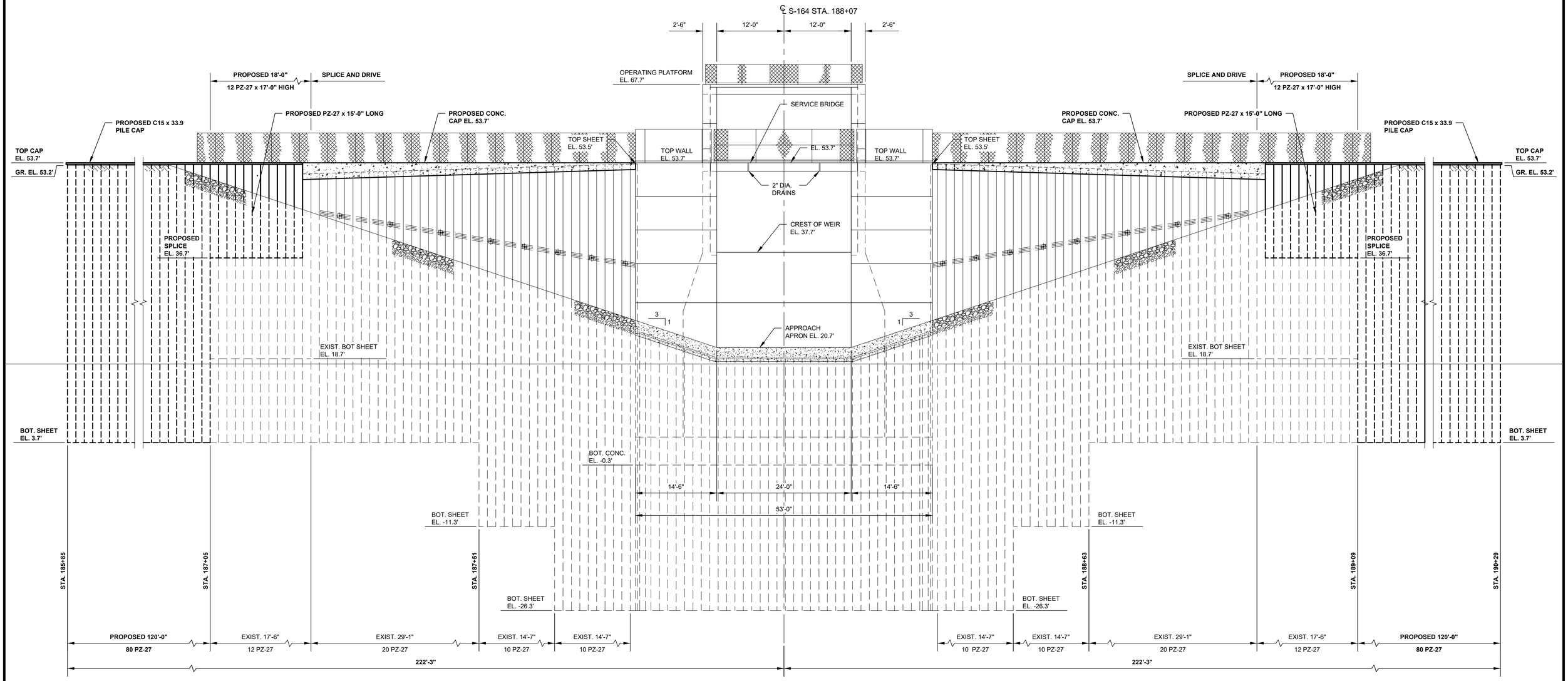
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G. DATE: MARCH 21, 2022 REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0" DESIGNER: W.R.C. SECTION CHIEF: W.R.C.

STRUCTURE SECTION

CERTIFICATION:
WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S7



NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S8
1
UPSTREAM ELEVATION

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

NOTE: PROPOSED ADDITIONAL SHEET PILING IS SHOWN IN BOLD.

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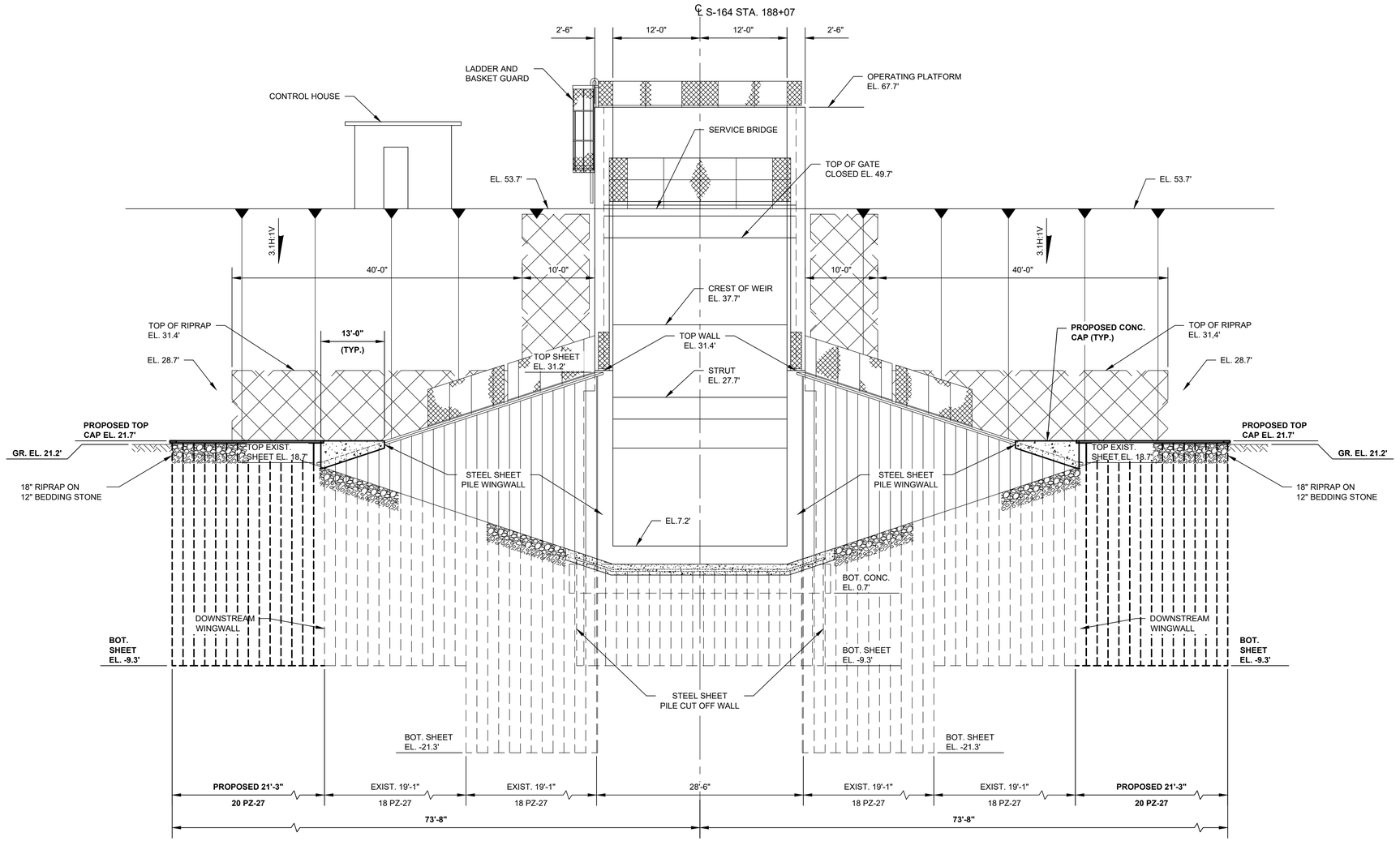
DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

UPSTREAM ELEVATION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S8



NOTE: DIMENSIONS SHOWN OF THE SHEET PILING WING WALLS ARE BASED ON THE HORIZONTAL PROJECTION

S9/1 DOWNSTREAM ELEVATION

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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WATER MANAGEMENT DISTRICT
P.O. BOX 1429 PALATKA, FLORIDA

DRAWN: N.J.G.	DATE: MARCH 21, 2022	REVIEWER: W.R.C.
SCALE: 1/8" = 1'-0"	DESIGNER: W.R.C.	SECTION CHIEF: W.R.C.

DOWNSTREAM ELEVATION

CERTIFICATION:

WILLIAM R. COTE
P.E. NUMBER: 53746
DATE: MARCH 21, 2022

FILE NAME: TCRI STR.dwg
PROJECT NO.:
SHEET: S9

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APPENDIX II

Standard Penetration Test and Hand Auger Boring Procedures

STANDARD PENETRATION TEST

The standard penetration test is a widely accepted test method of *in situ* testing of foundation soils (ASTM D 1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load.

The tests are usually performed at 5-foot intervals. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from the soils are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. Samples not used in testing are stored for 30 days prior to being discarded.

HAND AUGER BORINGS

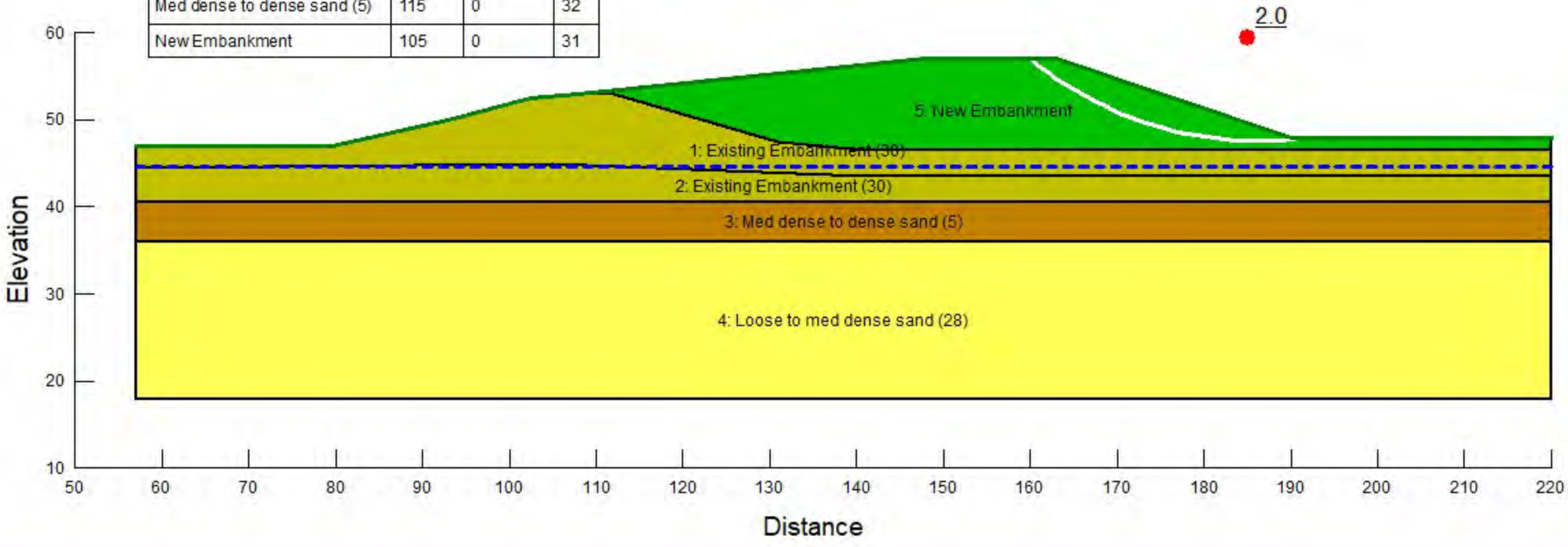
Auger borings are used when continuous sampling of soil strata close to ground surface is desired. A 3-inch diameter, hand-held bucket auger with a cutting head at its end is screwed into the ground in 1-foot sections. The sample is recovered by withdrawing the auger out of the ground without rotating it. The soil sample so obtained, is classified and representative samples put in bags or jars and brought back to the laboratory for classification testing.

APPENDIX III

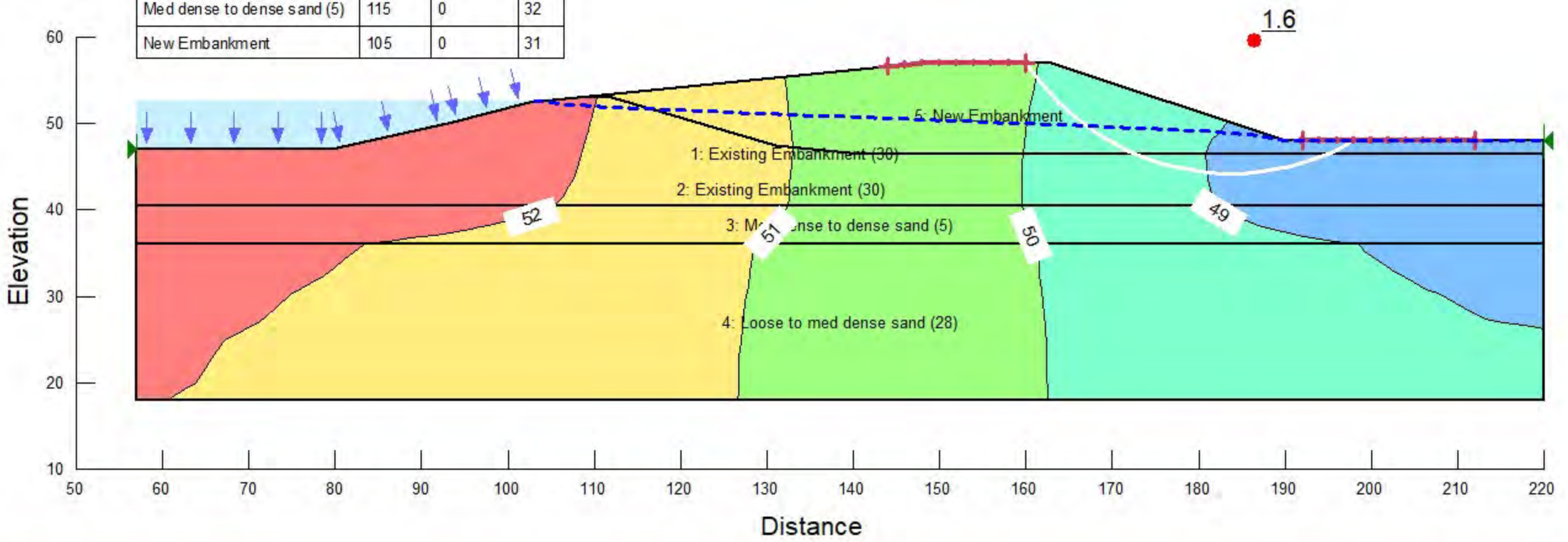
Computer Output for SEEP/W and SLOPE/W Analyses

Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (30)	105	0	29
Loose to med dense sand (28)	110	0	30
Med dense to dense sand (5)	115	0	32
New Embankment	105	0	31

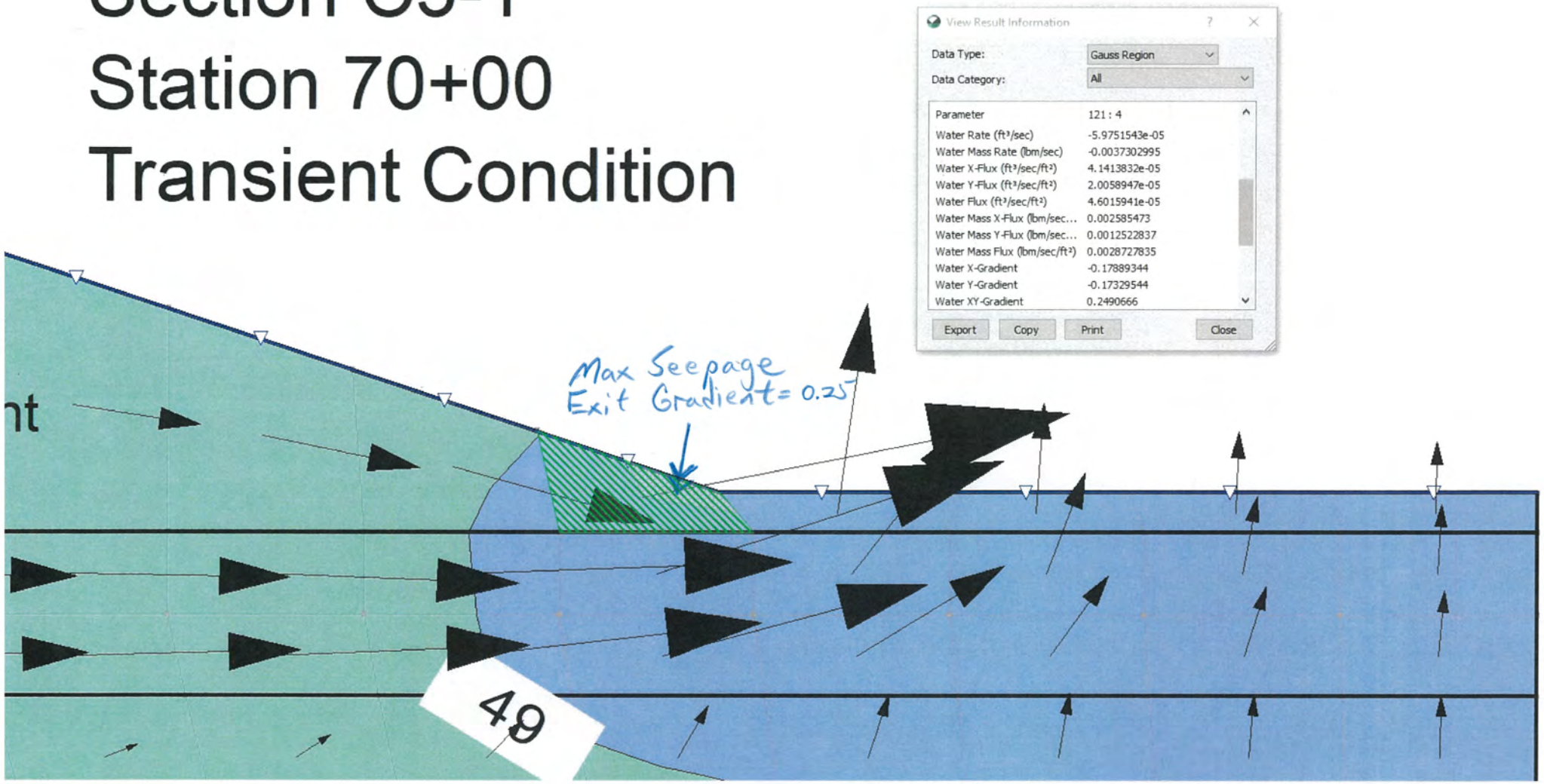
Section C3-1
Station 70+00
Steady State Condition



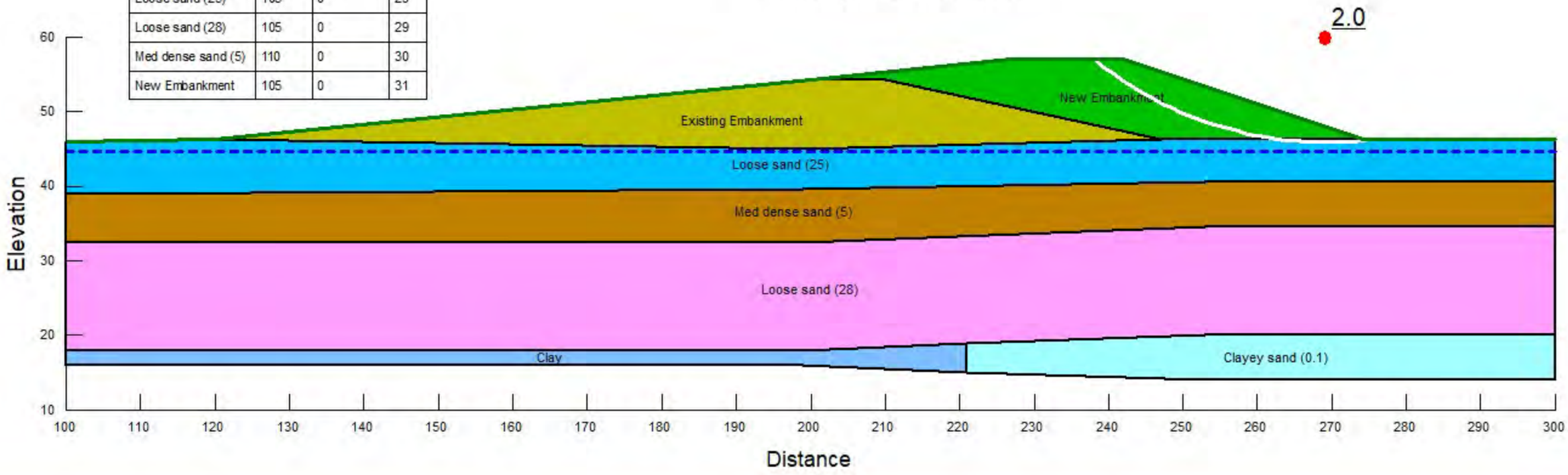
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (30)	105	0	29
Loose to med dense sand (28)	110	0	30
Med dense to dense sand (5)	115	0	32
New Embankment	105	0	31



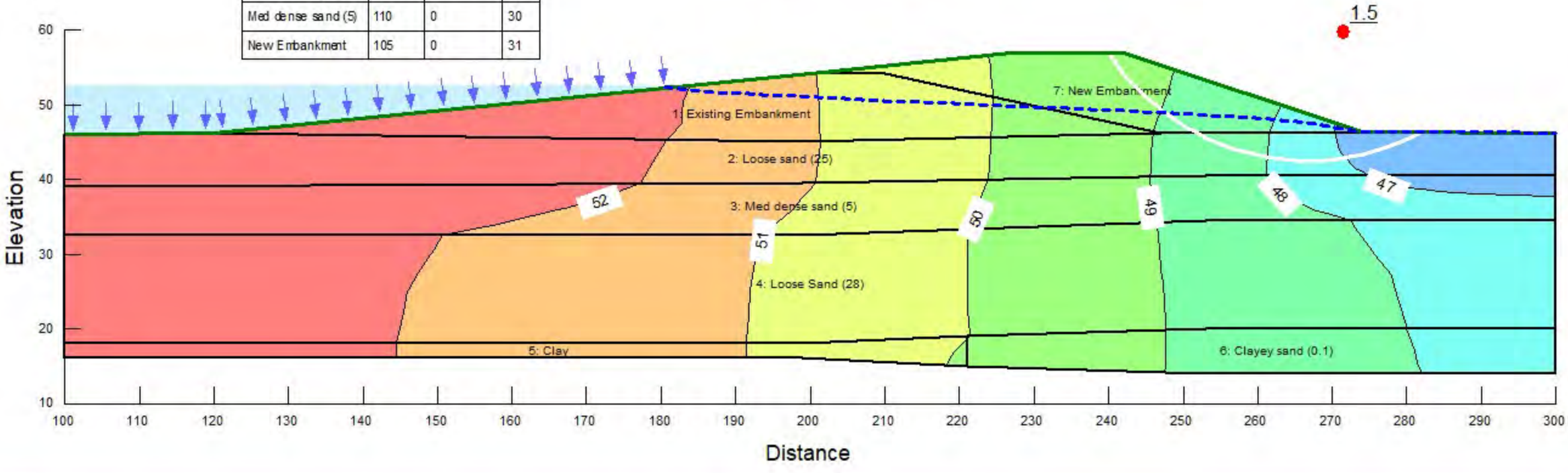
Section C3-1
Station 70+00
Transient Condition



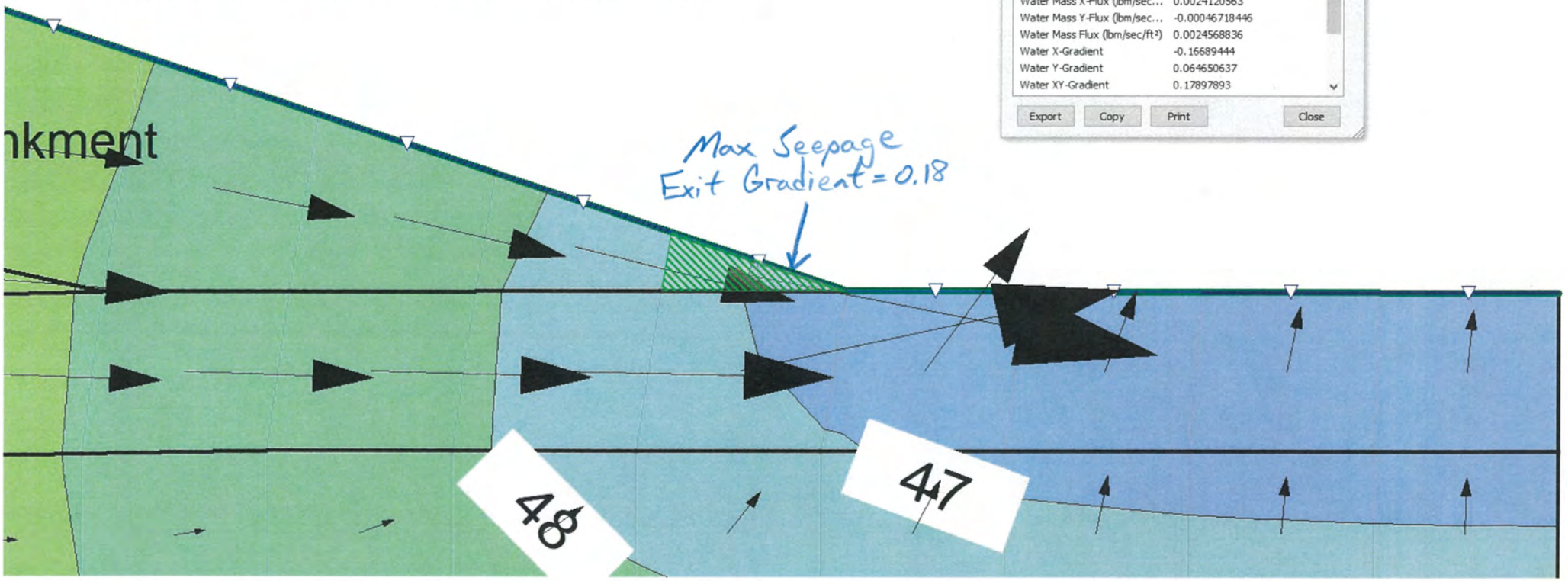
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Clay	115	1,000	0
Clayey sand (0.1)	100	0	26
Existing Embankment	105	0	29
Loose sand (25)	105	0	29
Loose sand (28)	105	0	29
Med dense sand (5)	110	0	30
New Embankment	105	0	31



Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Clay	115	1,000	0
Clayey sand (0.1)	100	0	26
Existing Embankment	105	0	29
Loose sand (25)	105	0	29
Loose Sand (28)	105	0	29
Med dense sand (5)	110	0	30
New Embankment	105	0	31



Section C3-2
Station 110+00
Transient Condition



View Result Information

Data Type:	Gauss Region
Data Category:	All

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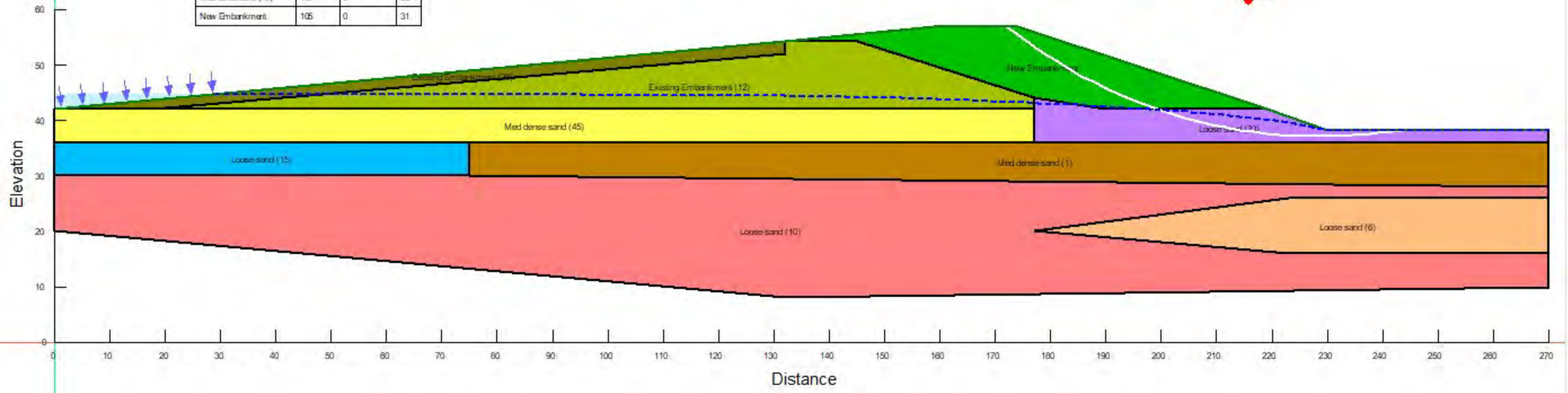
Water Mass Rate (lbm/sec)	-0.0013337218
Water X-Flux (ft³/sec/ft²)	3.8636063e-05
Water Y-Flux (ft³/sec/ft²)	-7.4833112e-06
Water Flux (ft³/sec/ft²)	3.9354101e-05
Water Mass X-Flux (lbm/sec...	0.0024120563
Water Mass Y-Flux (lbm/sec...	-0.00046718446
Water Mass Flux (lbm/sec/ft²)	0.0024568836
Water X-Gradient	-0.16689444
Water Y-Gradient	0.064650637
Water XY-Gradient	0.17897893

Export Copy Print Close

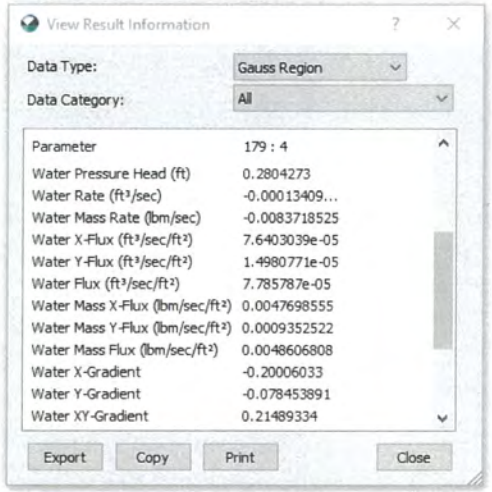
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (12)	120	0	33
Existing Embankment (28)	110	0	30
Loose sand (10)	110	0	30
Loose sand (15)	110	0	30
Loose sand (39)	105	0	29
Loose sand (6)	105	0	29
Med dense sand (1)	114	0	32
Med dense sand (45)	115	0	32
New Embankment	105	0	31

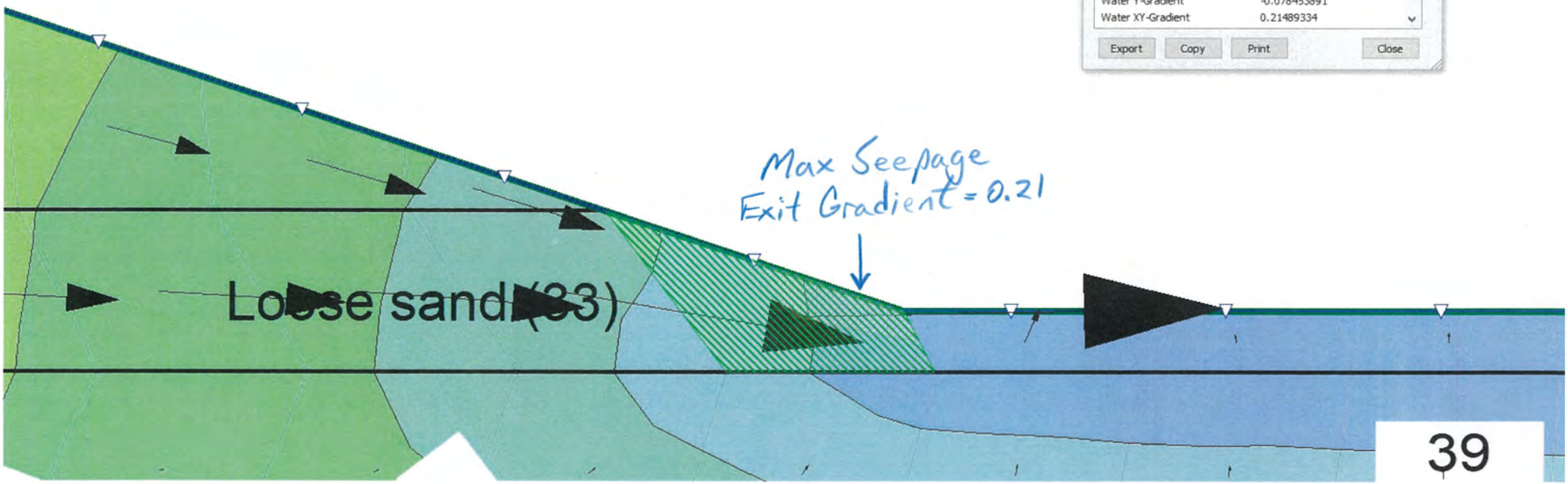
Section C3-3
Station 150+00
Steady State Condition

1.6

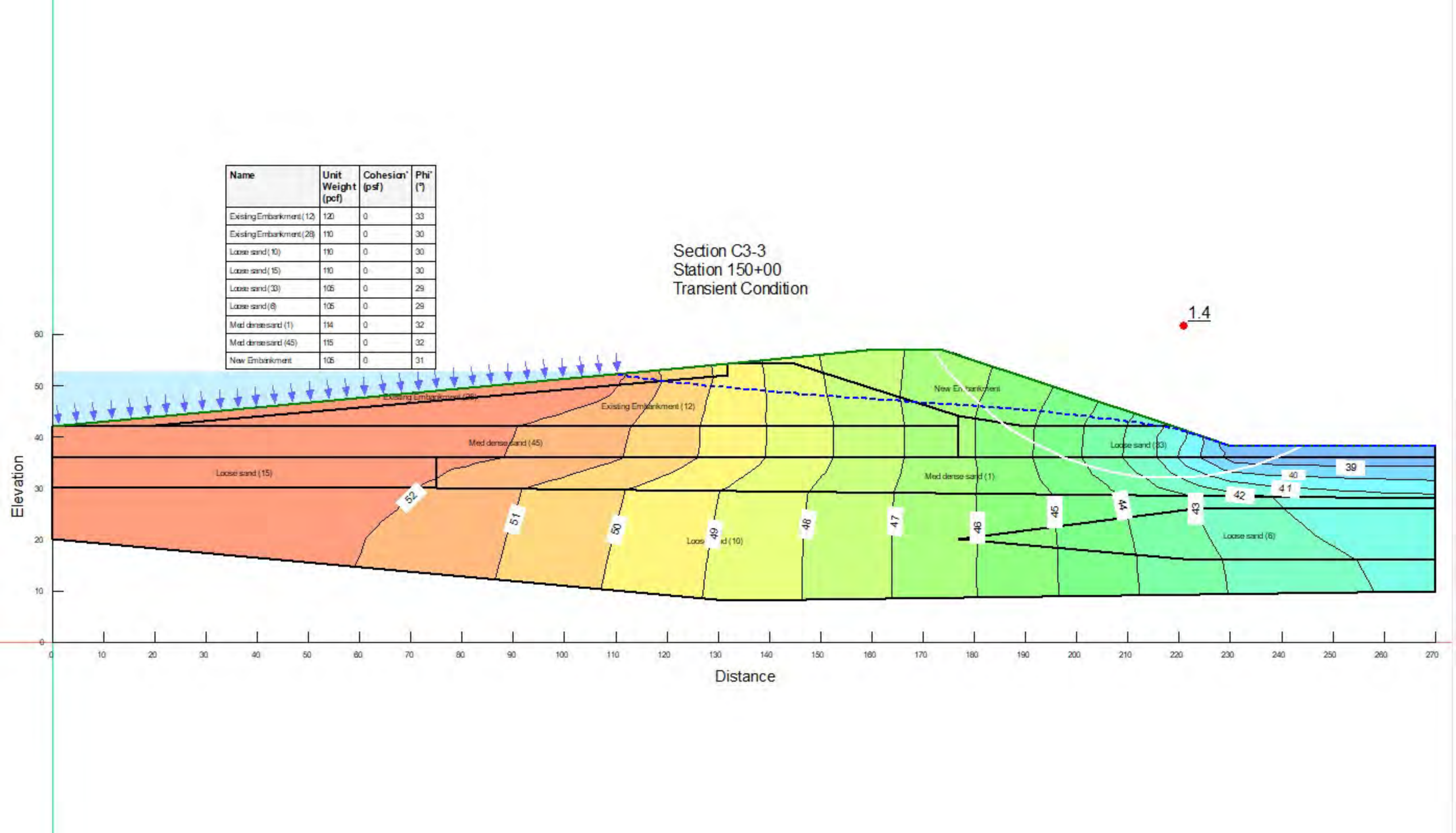


Section C3-3
Station 150+00
Steady State Condition

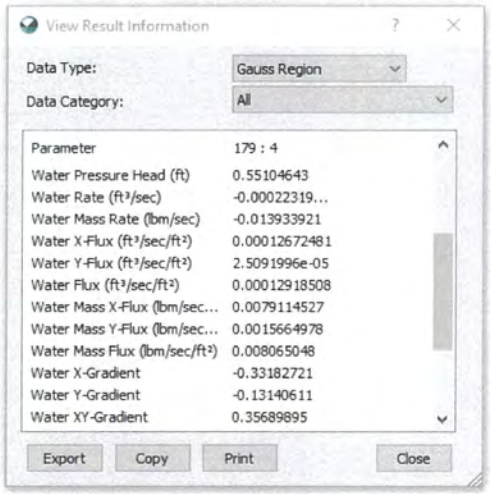


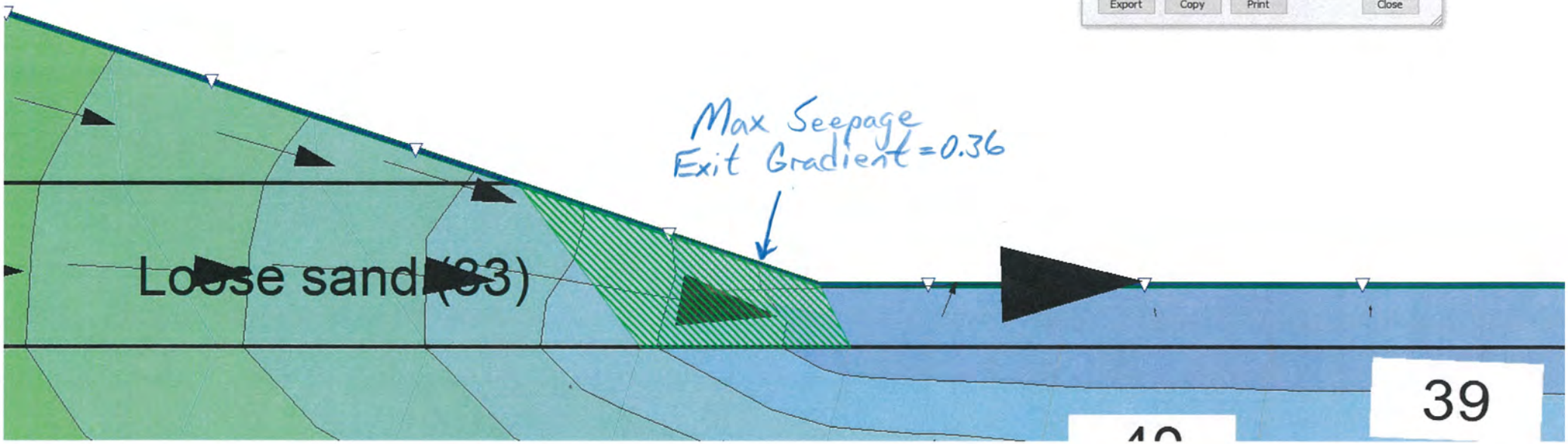


Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (12)	120	0	33
Existing Embankment (28)	110	0	30
Loose sand (10)	110	0	30
Loose sand (15)	110	0	30
Loose sand (33)	105	0	29
Loose sand (6)	105	0	29
Med dense sand (1)	114	0	32
Med dense sand (45)	115	0	32
New Embankment	105	0	31



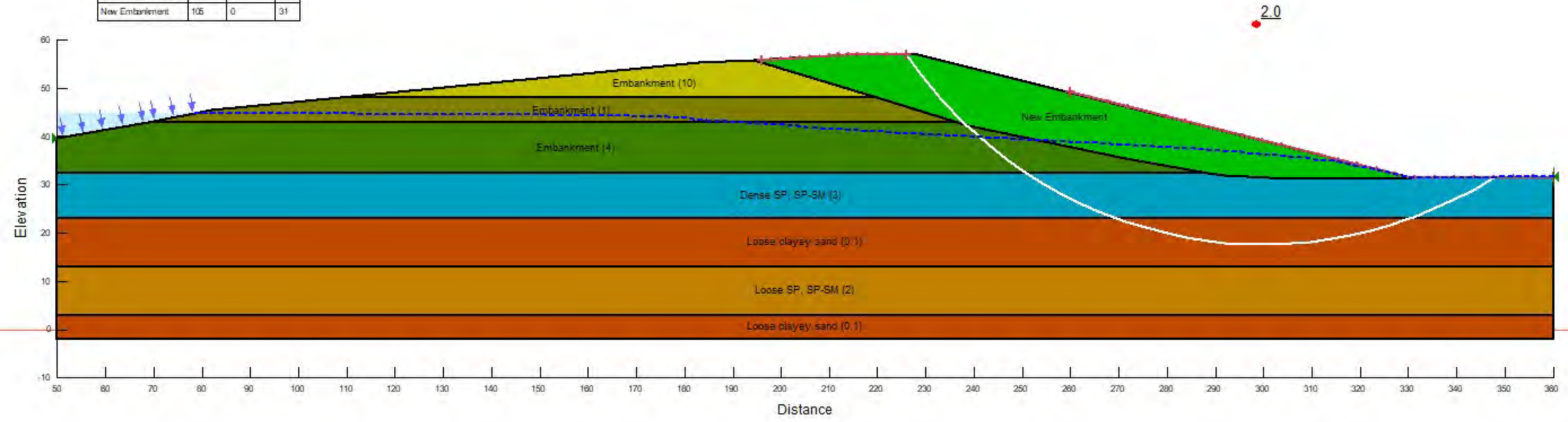
Section C3-3
Station 150+00
Transient Condition





Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Dense SP, SP-SM (3)	114	0	32
Embankment (1)	114	0	32
Embankment (10)	111	0	31
Embankment (4)	112	0	32
Loose clayey sand (0.1)	111	0	30
Loose SP, SP-SM (2)	111	0	30
New Embankment	105	0	31

Section C4-1
Station 163+00
Steady State Condition



Section C4-1
Station 163+00
Steady State Condition

View Result Information

Data Type:	Gauss Region
Data Category:	All

Parameter	227 : 2
Water Pressure Head (ft)	0.34672404
Water Rate (ft³/sec)	-2.8934082e-05
Water Mass Rate (lbm/sec)	-0.0018063599
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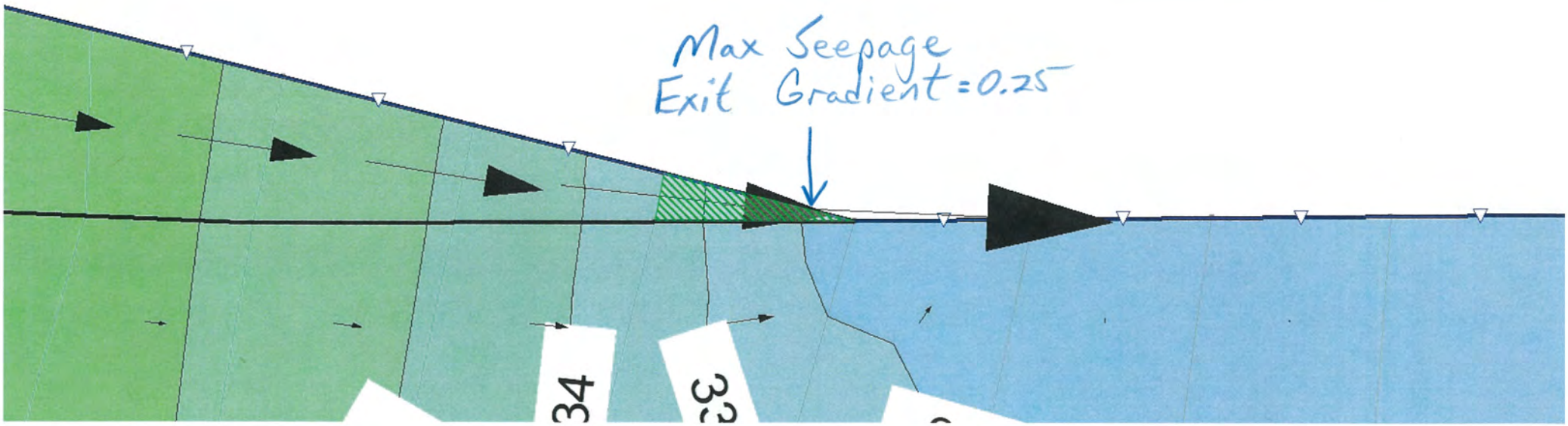
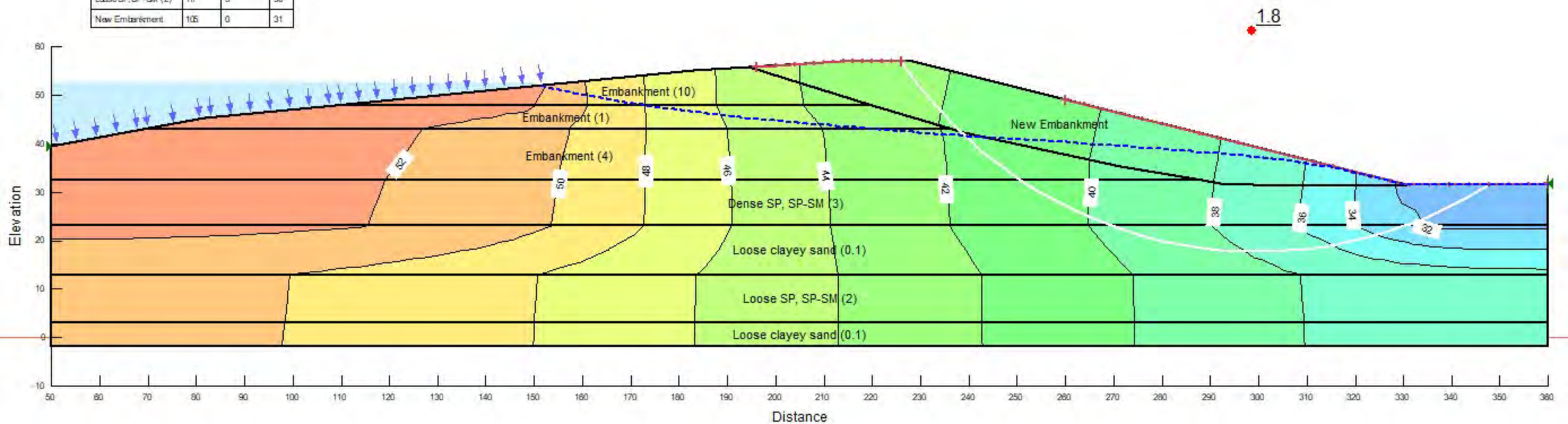
Water Y-Flux (ft³/sec/ft²)	-2.5989617e-06
Water Flux (ft³/sec/ft²)	5.7278651e-05
Water Mass X-Flux (lbm/sec/ft²)	0.0035722335
Water Mass Y-Flux (lbm/sec/ft²)	-0.00016225...
Water Mass Flux (lbm/sec/ft²)	0.0035759165
Water X-Gradient	-0.24716915
Water Y-Gradient	0.011226616
Water XY-Gradient	0.24742398

Export Copy Print Close

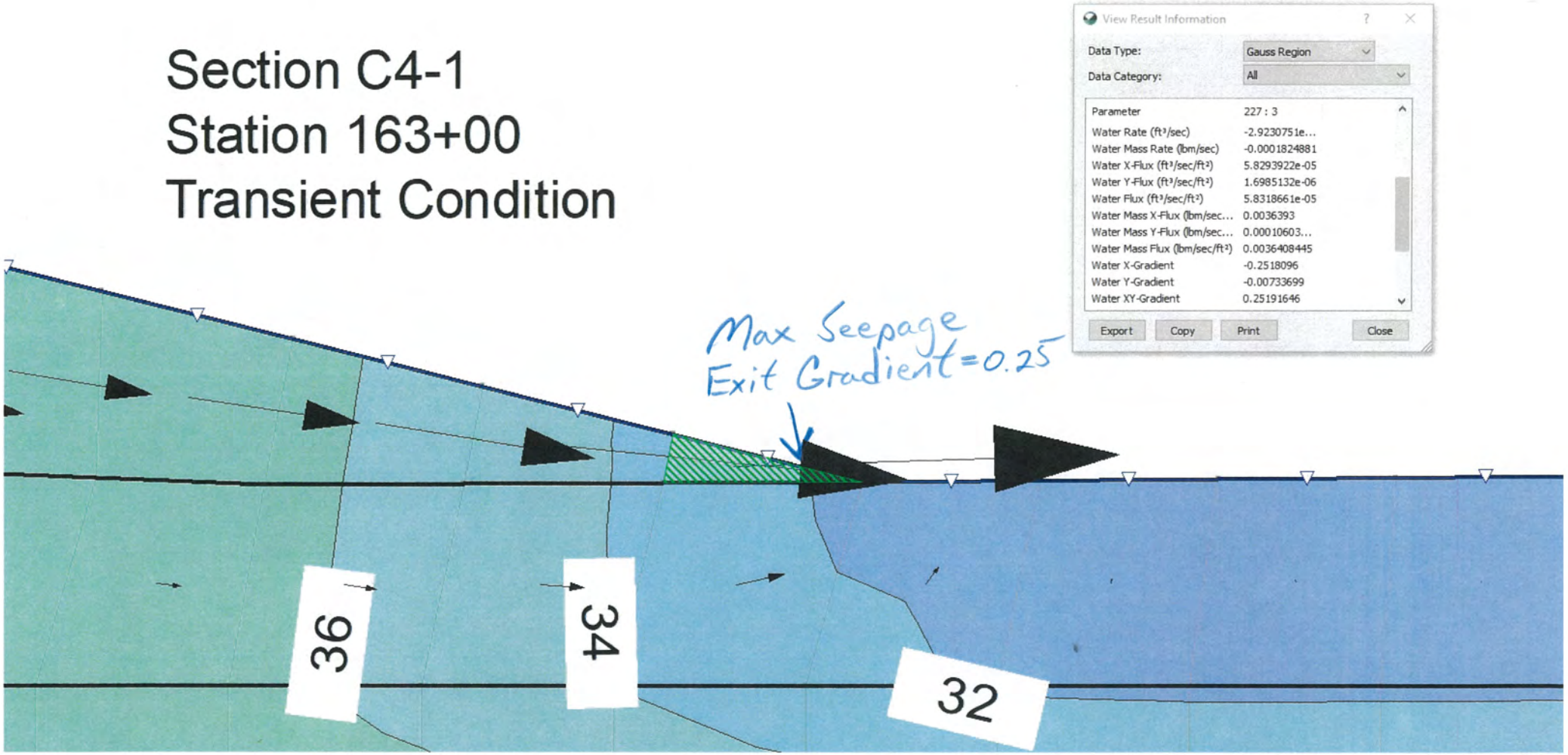


Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Dense SP, SP-SM (3)	114	0	32
Embankment (1)	114	0	32
Embankment (10)	111	0	31
Embankment (4)	112	0	32
Loose clayey sand (0.1)	111	0	30
Loose SP, SP-SM (2)	111	0	30
New Embankment	105	0	31

Section C4-1
Station 163+00
Transient Condition



Section C4-1
Station 163+00
Transient Condition



View Result Information

Data Type:	Gauss Region
Data Category:	All

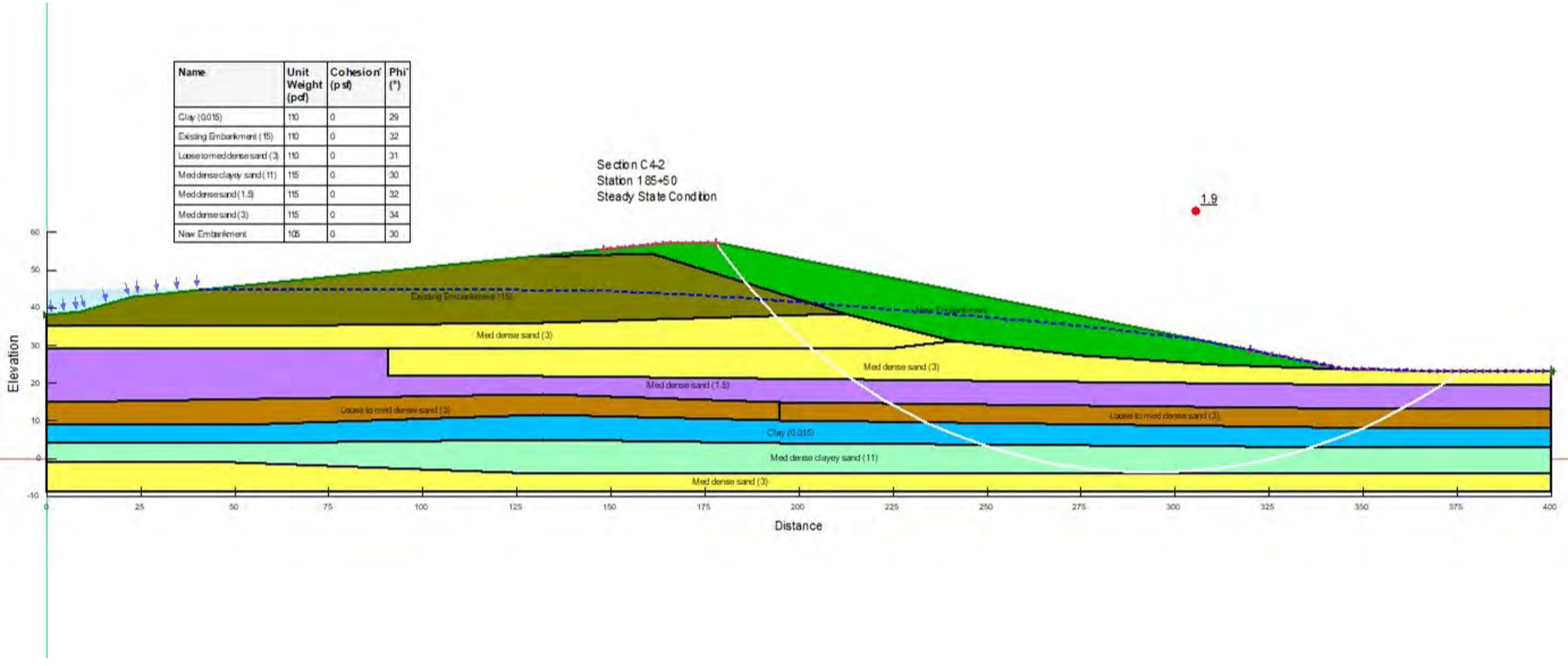
Parameter	227 : 3
Water Rate (ft³/sec)	-2.9230751e...
Water Mass Rate (lbm/sec)	-0.0001824881
Water X-Flux (ft³/sec/ft²)	5.8293922e-05
Water Y-Flux (ft³/sec/ft²)	1.6985132e-06
Water Flux (ft³/sec/ft²)	5.8318661e-05
Water Mass X-Flux (lbm/sec...	0.0036393
Water Mass Y-Flux (lbm/sec...	0.00010603...
Water Mass Flux (lbm/sec/ft²)	0.0036408445
Water X-Gradient	-0.2518096
Water Y-Gradient	-0.00733699
Water XY-Gradient	0.25191646

Export Copy Print Close

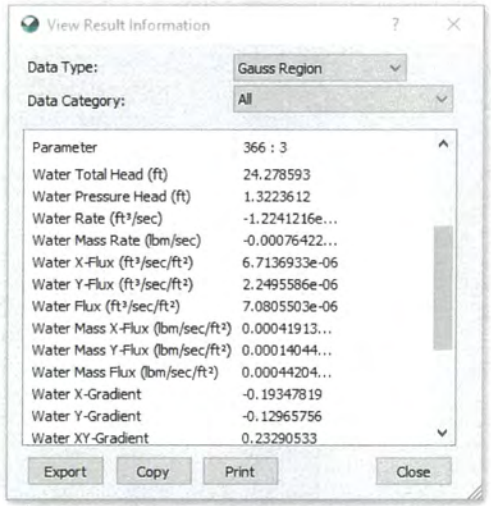
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Clay (0.015)	110	0	29
Existing Embankment (15)	110	0	32
Loose to med dense sand (3)	110	0	31
Med dense clayey sand (11)	115	0	30
Med dense sand (1.5)	115	0	32
Med dense sand (3)	115	0	34
New Embankment	105	0	30

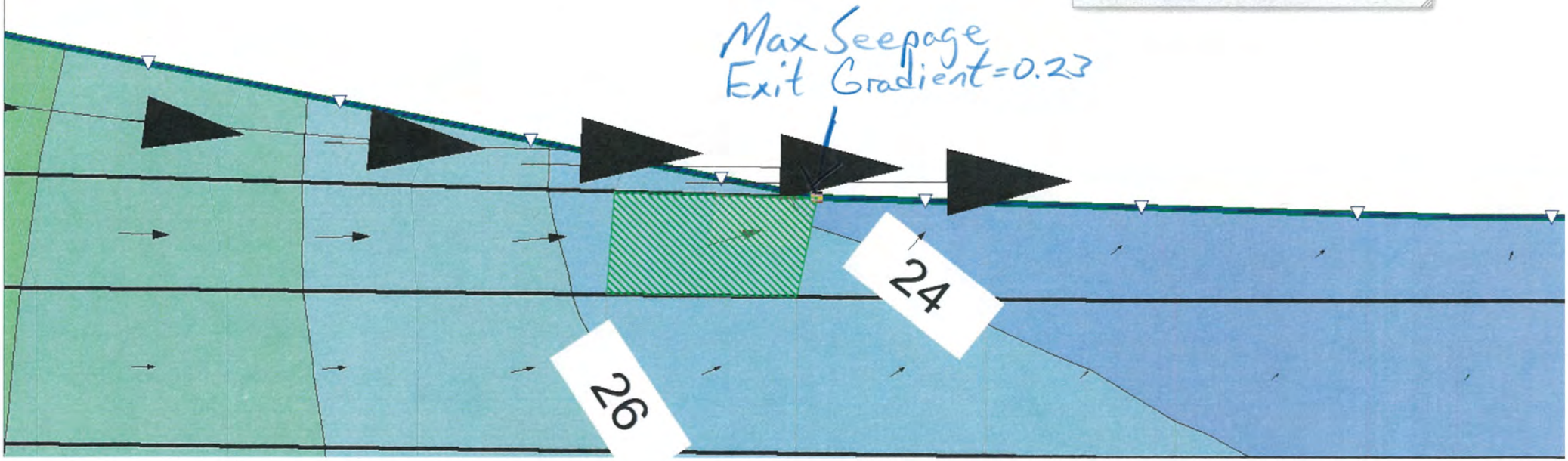
Section C4-2
Station 185+50
Steady State Condition

1.9



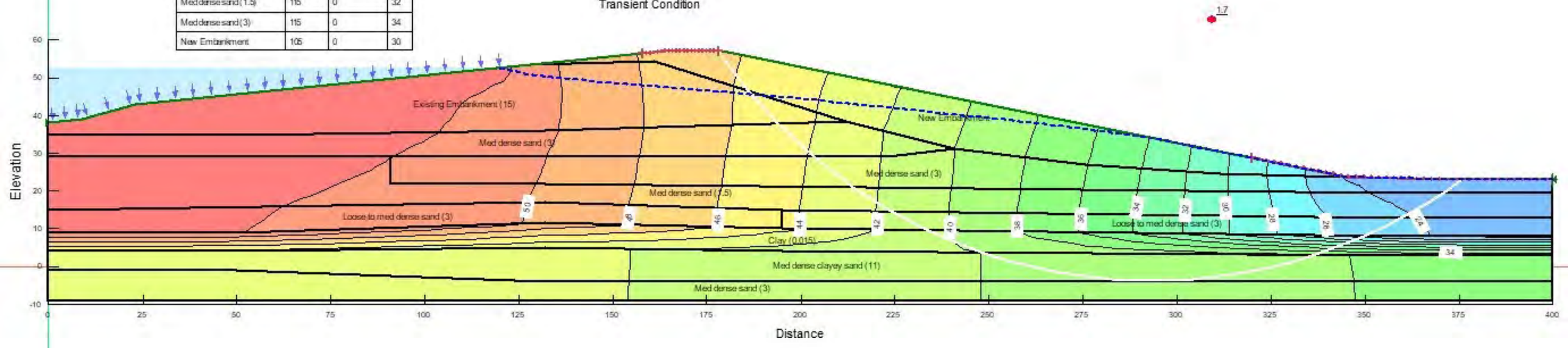
Section C4-2
Station 185+50
Steady State Condition
5:1 Slope



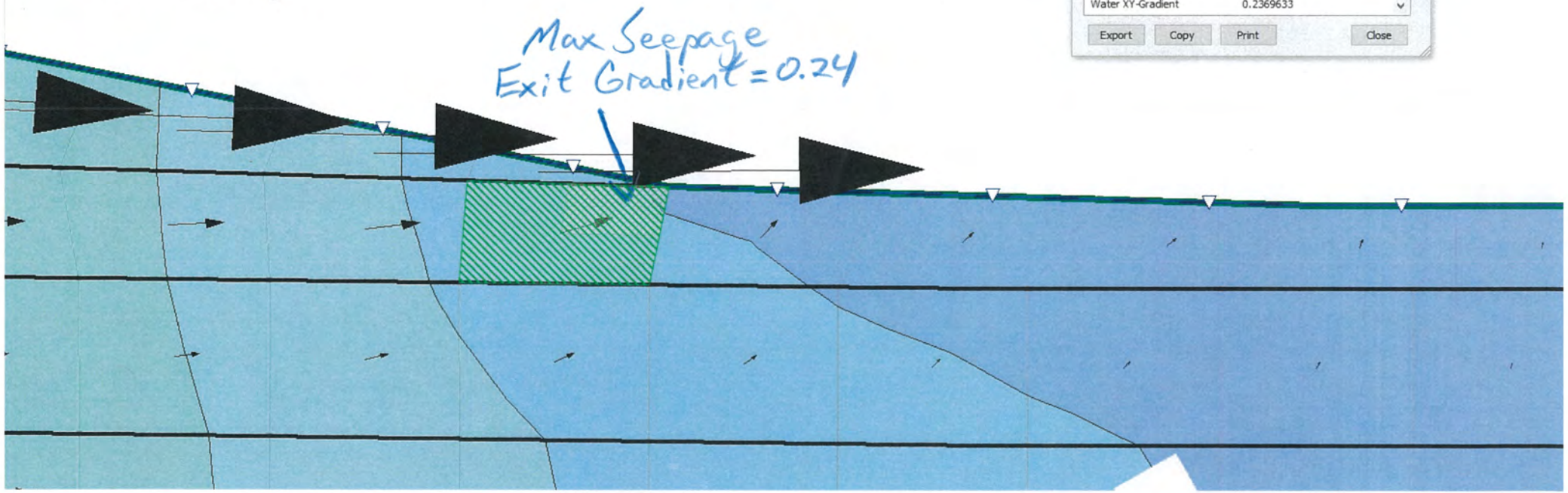


Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Clay (0.015)	110	0	29
Existing Embankment (15)	110	0	32
Loose to med dense sand (3)	110	0	31
Med dense clayey sand (11)	115	0	30
Med dense sand (1.5)	115	0	32
Med dense sand (3)	115	0	34
New Embankment	105	0	30

Section C4-2
Station 185+50
Transient Condition



Section C4-2
Station 185+50
Transient Condition
5:1 Slope



View Result Information

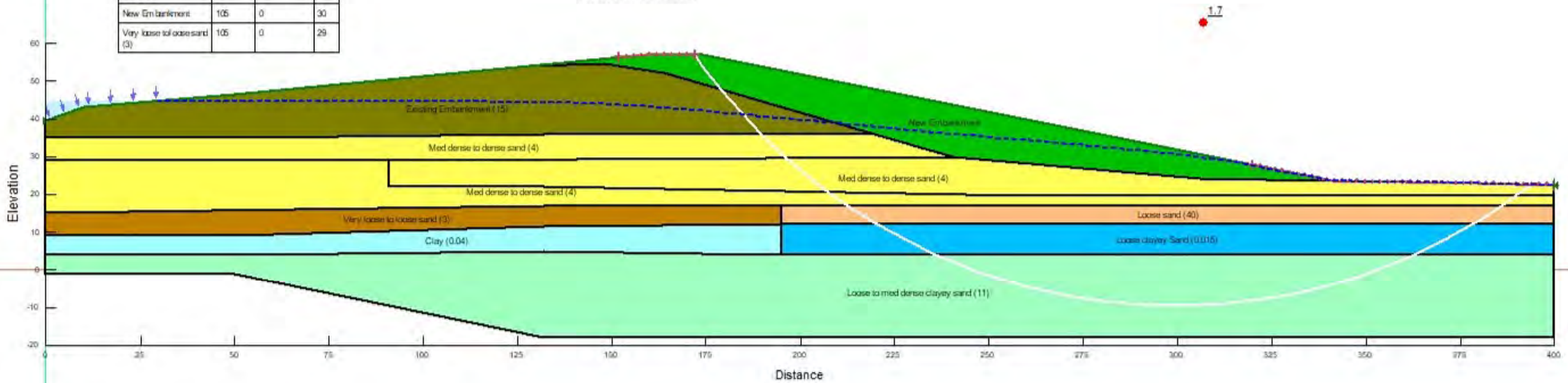
Data Type:	Gauss Region
Data Category:	All

Parameter	366 : 3
Water Pressure Head (ft)	1.3283299
Water Rate (ft³/sec)	-1.2527906e...
Water Mass Rate (lbm/sec)	-0.00078211...
Water X-Flux (ft³/sec/ft²)	6.7337854e-06
Water Y-Flux (ft³/sec/ft²)	2.3594343e-06
Water Flux (ft³/sec/ft²)	7.1351801e-06
Water Mass X-Flux (lbm/sec...	0.00042039...
Water Mass Y-Flux (lbm/sec...	0.00014729...
Water Mass Flux (lbm/sec/ft²)	0.00044545...
Water X-Gradient	-0.19405722
Water Y-Gradient	-0.13599045
Water XY-Gradient	0.2369633

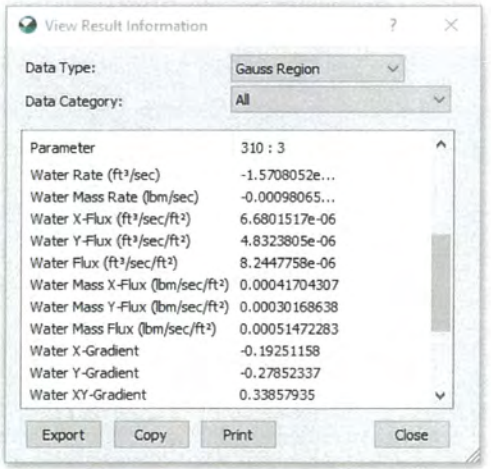
Export Copy Print Close

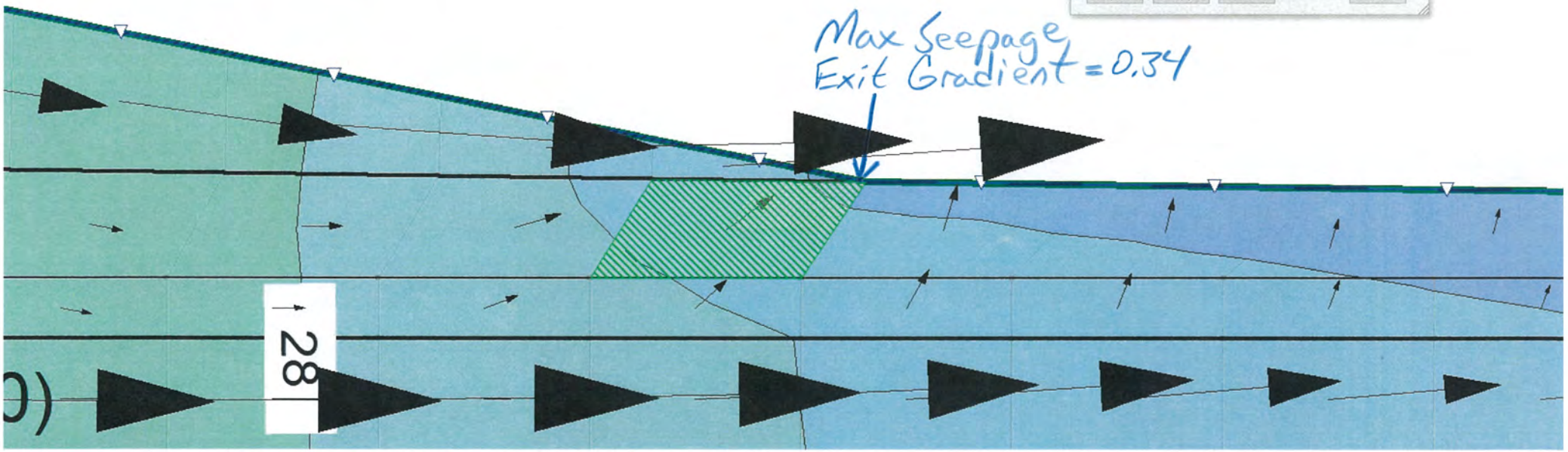
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Clay (004)	115	1,000	0
Existing Embankment (15)	110	0	32
Loose clayey Sand (0.015)	110	0	29
Loose sand (40)	105	0	30
Loose to med dense clayey sand(11)	105	0	30
Med dense to dense sand (4)	115	0	34
New Embankment	105	0	30
Very loose to loose sand (3)	105	0	29

Section C7-1
Station 191+05
Steady State Condition



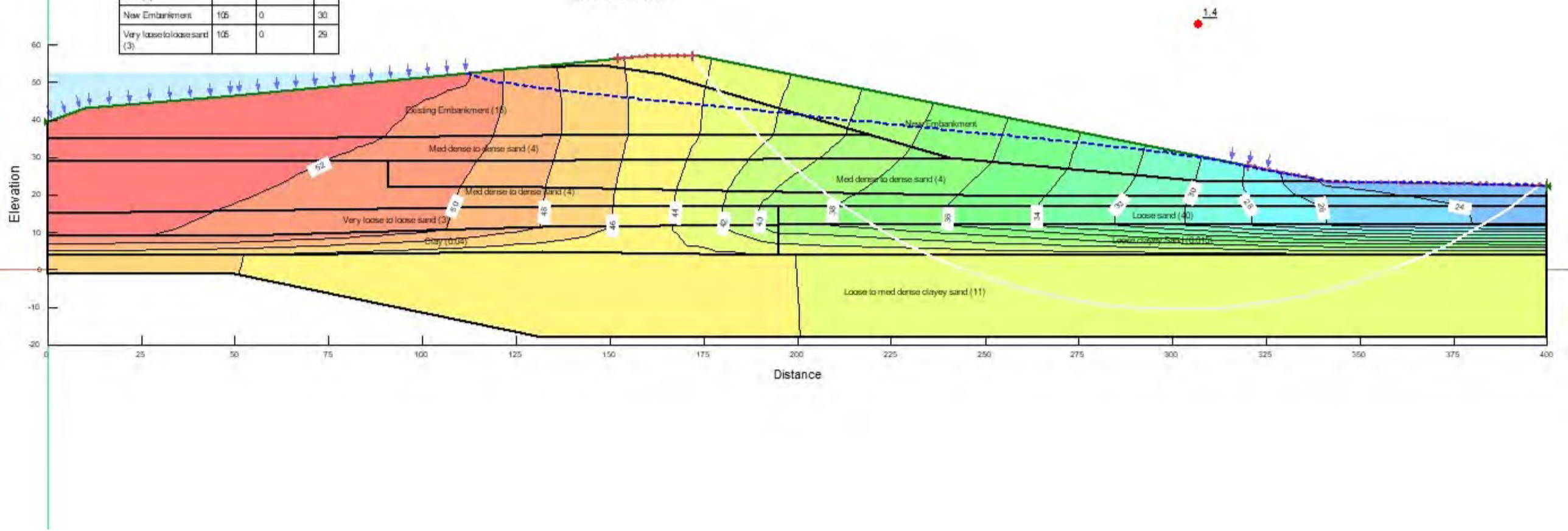
Section C7-1
Station 191+05
Steady State Condition
5:1 Slope





Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Clay (0.04)	115	1,000	0
Existing Embankment (15)	110	0	32
Loose clayey Sand (0.015)	110	0	29
Loose sand (40)	105	0	30
Loose to med dense clayey sand (11)	105	0	30
Med dense to dense sand (4)	115	0	34
New Embankment	105	0	30
Very loose to loose sand (3)	105	0	29

Section C7-1
Station 191+05
Transient Condition



Section C7-1
Station 191+05
Transient Condition
5:1 Slope

338.59744, 45.384843 ft

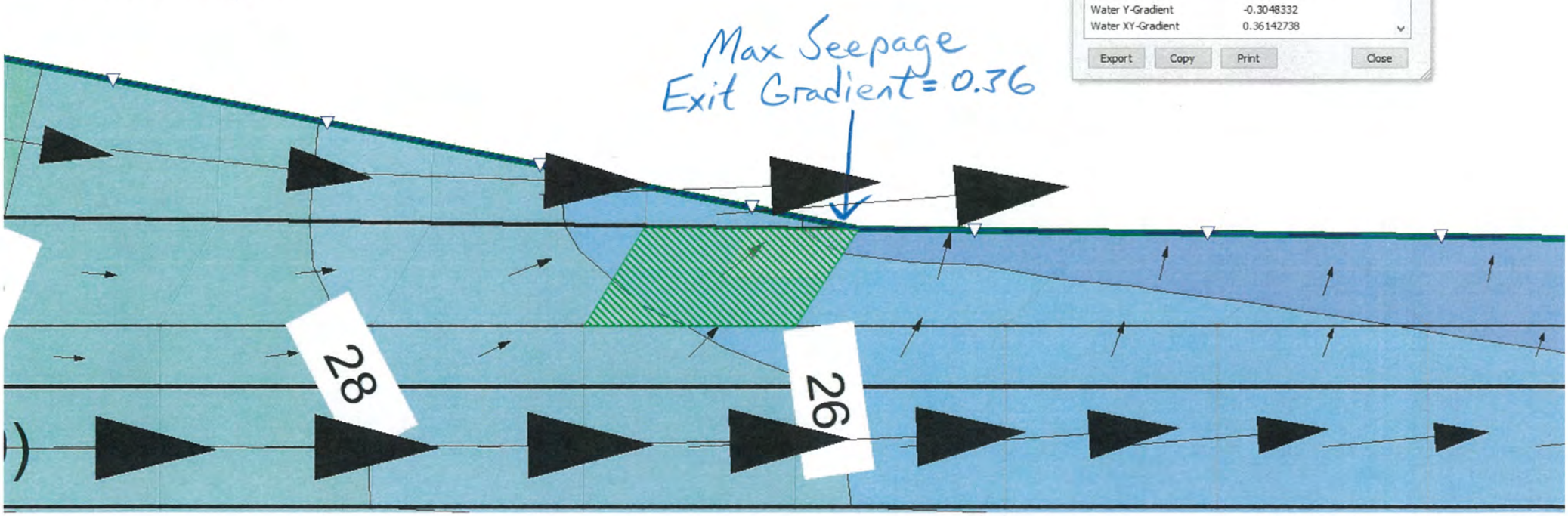
View Result Information

Data Type: Gauss Region

Data Category: All

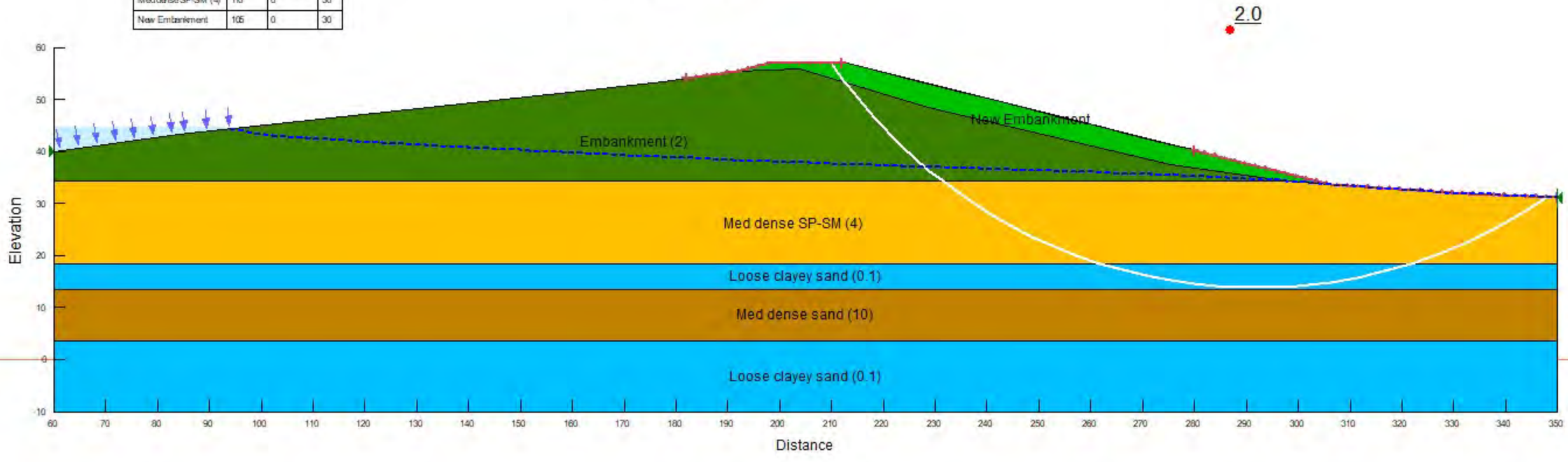
Parameter	310 : 3
Water Pressure Head (ft)	1.583075
Water Rate (ft³/sec)	-1.6631406e-05
Water Mass Rate (lbm/sec)	-0.0010383017
Water X-Flux (ft³/sec/ft²)	6.7380996e-06
Water Y-Flux (ft³/sec/ft²)	5.288856e-06
Water Flux (ft³/sec/ft²)	8.5658615e-06
Water Mass X-Flux (lbm/sec...	0.00042066077
Water Mass Y-Flux (lbm/sec...	0.00033018423
Water Mass Flux (lbm/sec/ft²)	0.00053476828
Water X-Gradient	-0.19418155
Water Y-Gradient	-0.3048332
Water XY-Gradient	0.36142738

Export Copy Print Close

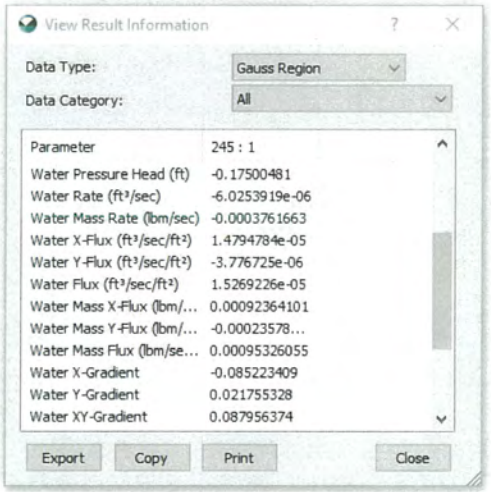


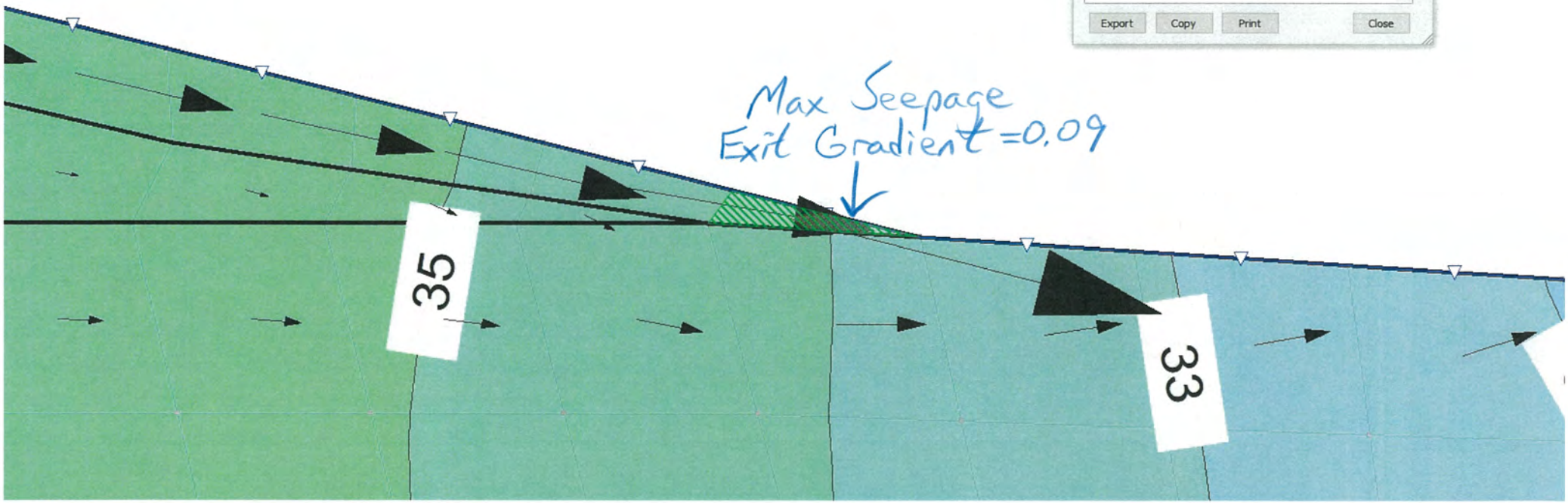
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Embankment (2)	112	0	31
Loose clayey sand (0.1)	110	0	29
Med dense sand (10)	110	0	30
Med dense SP-SM (4)	110	0	30
New Embankment	105	0	30

Section C7-2
Station 215+00
Steady State Condition



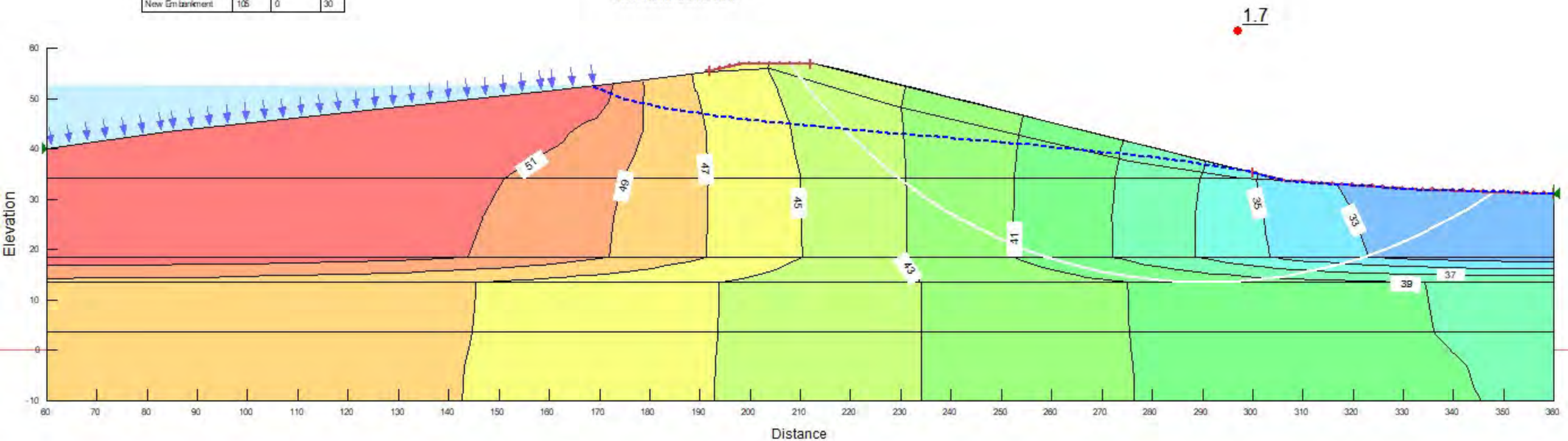
Section C7-2
Station 215+00
Steady State Condition



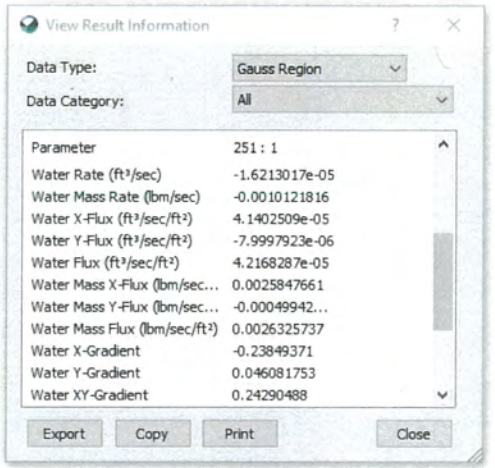


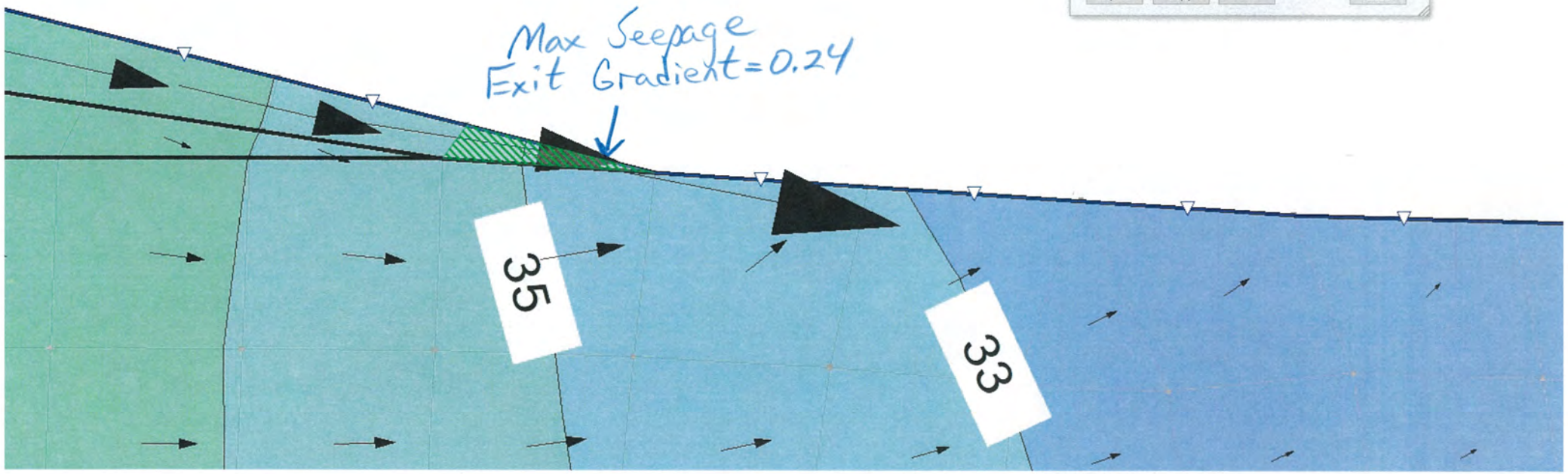
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Embankment (2)	12	0	31
Loose clayey sand (0.1)	110	0	29
Medderse sand (10)	110	0	30
Medderse SP-SM (4)	110	0	30
New Embankment	105	0	30

Section C7-2
Station 215+00
Transient Condition



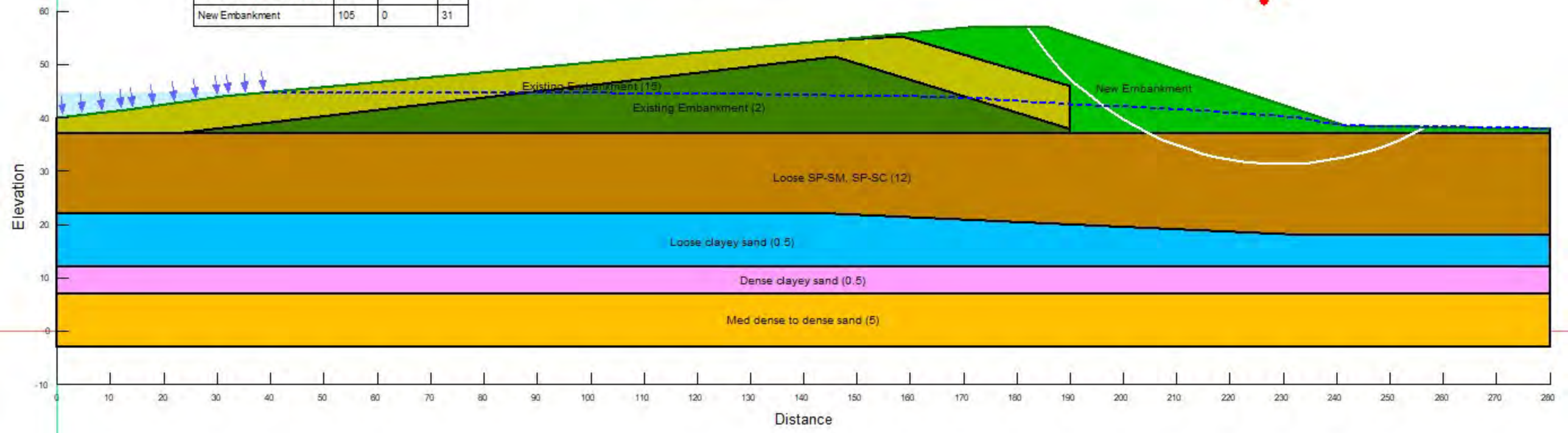
Section C7-2
Station 215+00
Transient Condition



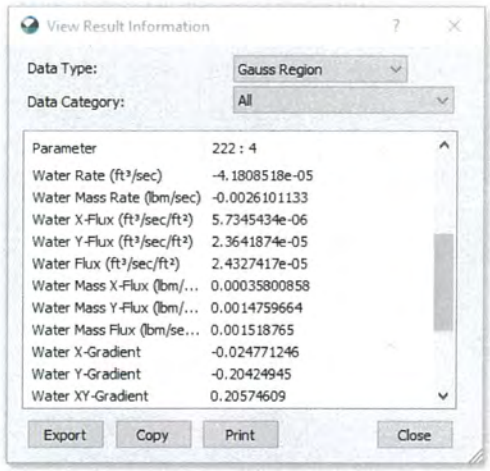


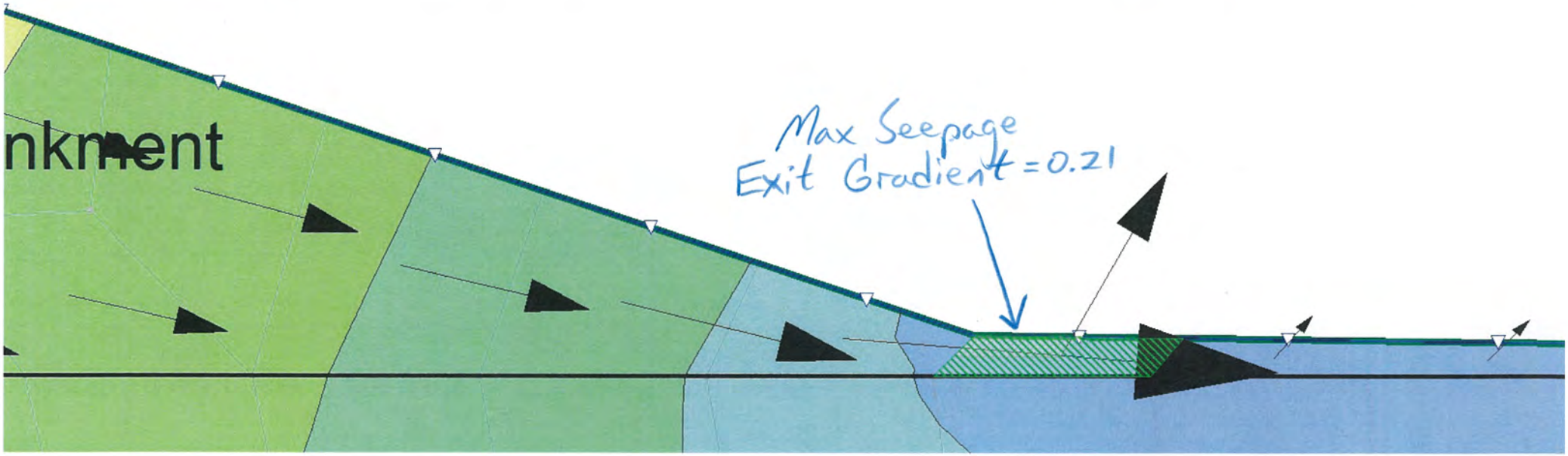
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Dense clayey sand (0.5)	120	0	33
Existing Embankment (15)	110	0	30
Existing Embankment (2)	120	0	33
Loose clayey sand (0.5)	110	0	30
Loose SP-SM, SP-SC (12)	105	0	29
Med dense to dense sand (5)	120	0	33
New Embankment	105	0	31

Section C8-1
(Previous Section C6-1)
Station 226+00
Steady State Condition



Section C8-1
(Previous Section C6-1)
Station 226+00
Steady State Condition

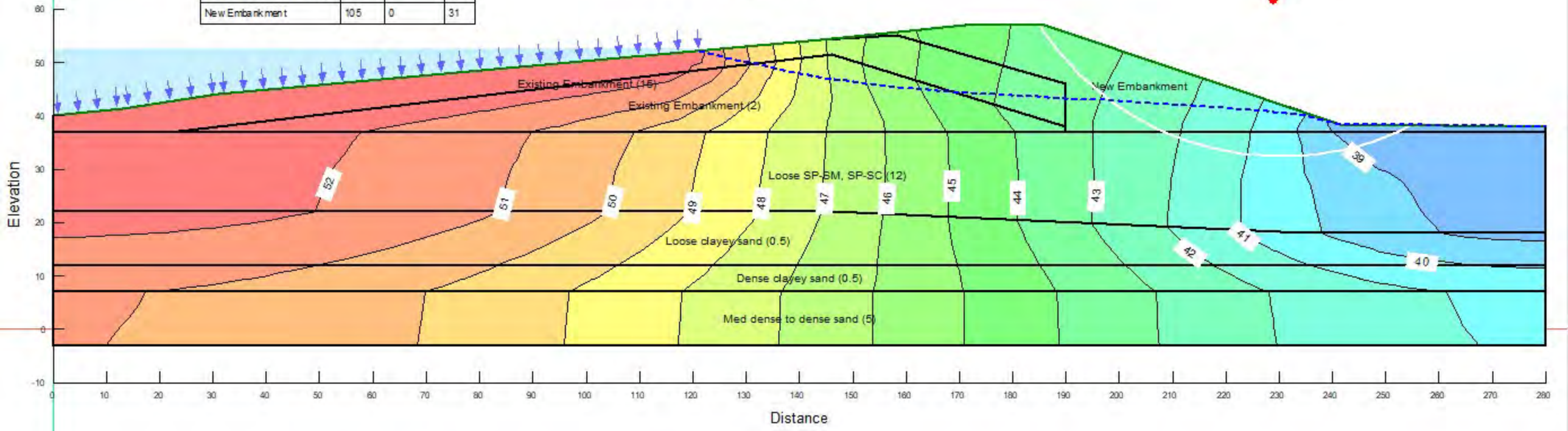




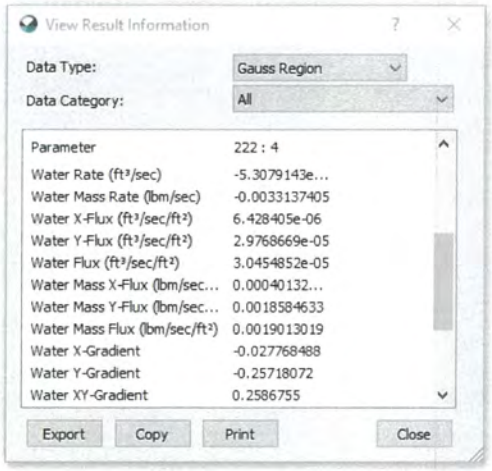
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Dense clayey sand (0.5)	120	0	33
Existing Embankment (15)	110	0	30
Existing Embankment (2)	120	0	33
Loose clayey sand (0.5)	110	0	30
Loose SP-SM, SP-SC (12)	105	0	29
Med dense to dense sand (5)	120	0	33
New Embankment	105	0	31

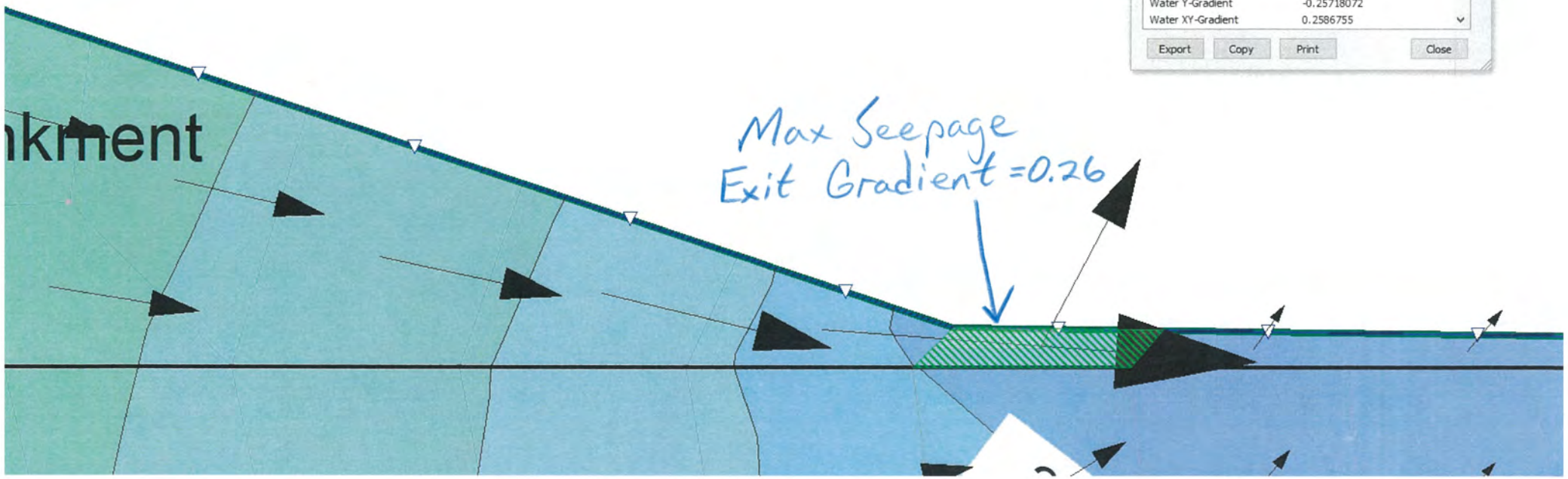
Section C8-1
(Previous Section C6-1)
Station 226+00
Transient Condition

1.5



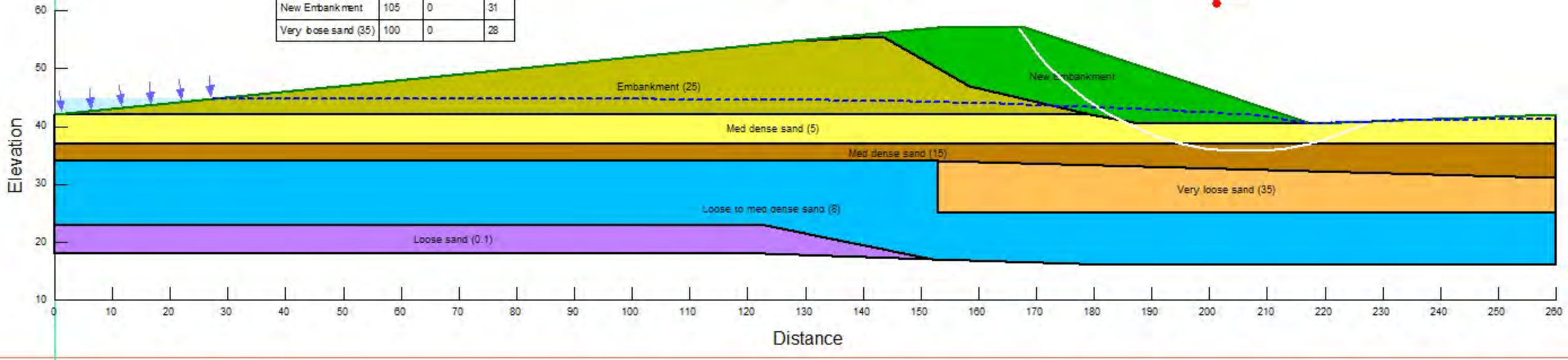
Section C8-1
(Previous Section C6-1)
Station 226+00
Transient Condition





Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Embankment (25)	105	0	30
Loose sand (0.1)	105	0	29
Loose to med dense sand (8)	110	0	29
Med dense sand (15)	110	0	30
Med dense sand (5)	112	0	31
New Embankment	105	0	31
Very loose sand (35)	100	0	28

Section C8-2
(Previous Section C6-2)
Station 270+00
Steady State Condtion



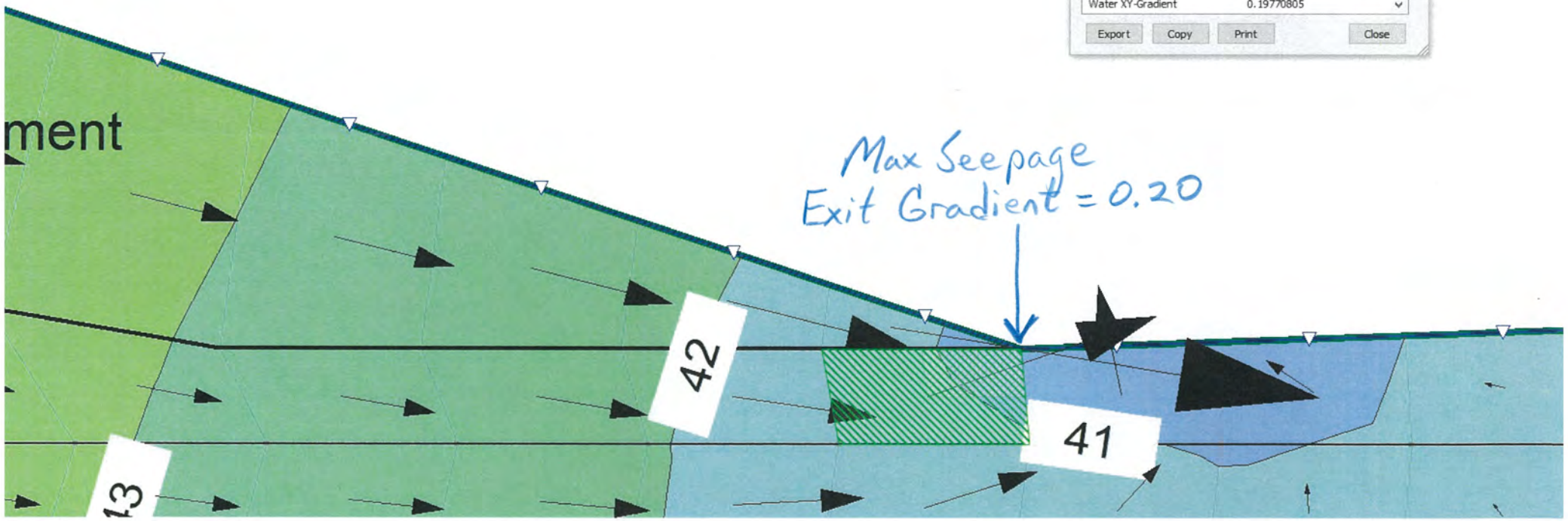
Section C8-2
(Previous Section C6-2)
Station 270+00
Steady State Condtion

View Result Information

Data Type:	Gauss Region
Data Category:	All

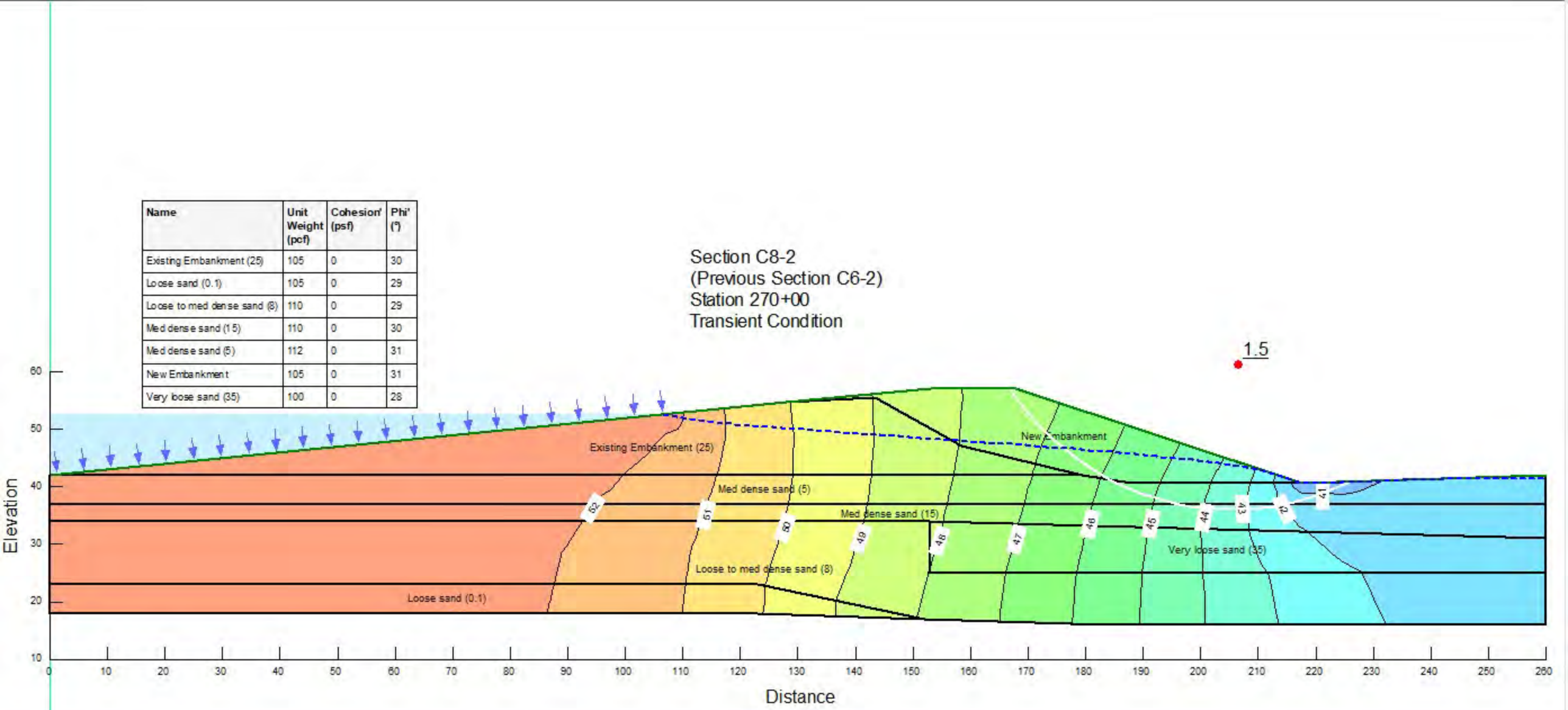
Parameter	194 : 4
Water Pressure Head (ft)	1.0793036
Water Rate (ft³/sec)	-4.0109955e-05
Water Mass Rate (lbm/sec)	-0.0025040717
Water X-Flux (ft³/sec/ft²)	2.4392425e-05
Water Y-Flux (ft³/sec/ft²)	1.2072876e-05
Water Flux (ft³/sec/ft²)	2.7216626e-05
Water Mass X-Flux (lbm/sec/ft²)	0.0015228235
Water Mass Y-Flux (lbm/sec/ft²)	0.00075371183
Water Mass Flux (lbm/sec/ft²)	0.0016991389
Water X-Gradient	-0.14050936
Water Y-Gradient	-0.13908844
Water XY-Gradient	0.19770805

Export Copy Print Close

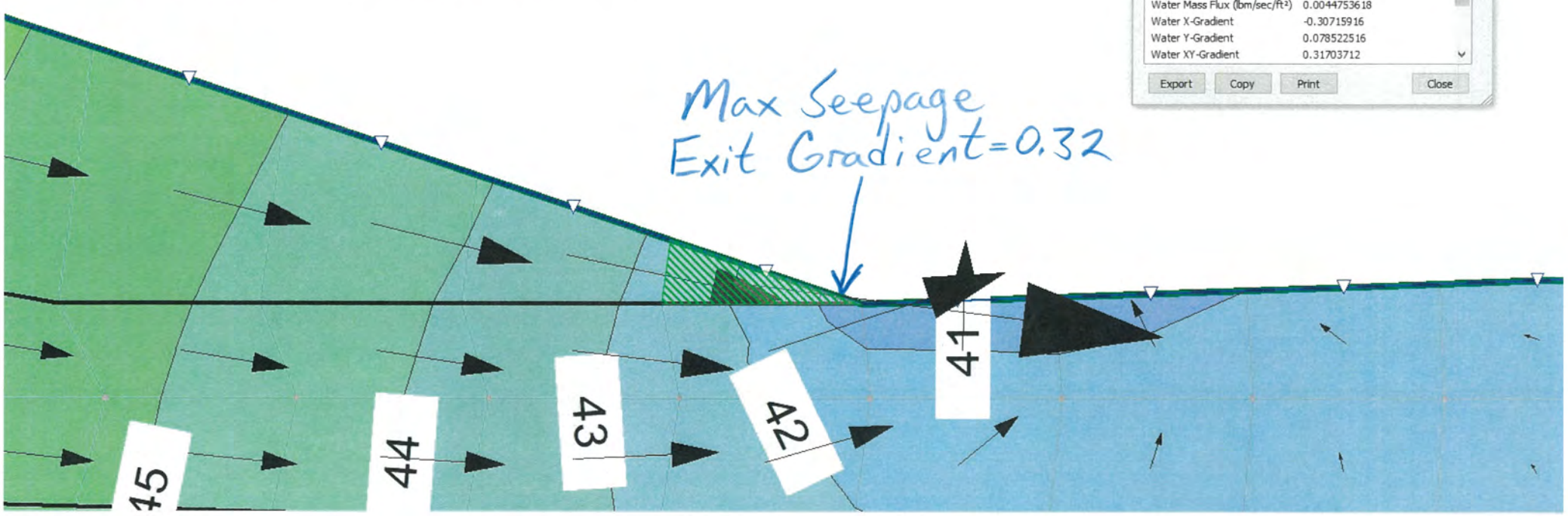


Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (25)	105	0	30
Loose sand (0.1)	105	0	29
Loose to med dense sand (8)	110	0	29
Med dense sand (15)	110	0	30
Med dense sand (5)	112	0	31
New Embankment	105	0	31
Very loose sand (35)	100	0	28

Section C8-2
(Previous Section C6-2)
Station 270+00
Transient Condition



Section C8-2
(Previous Section C6-2)
Station 270+00
Transient Condition



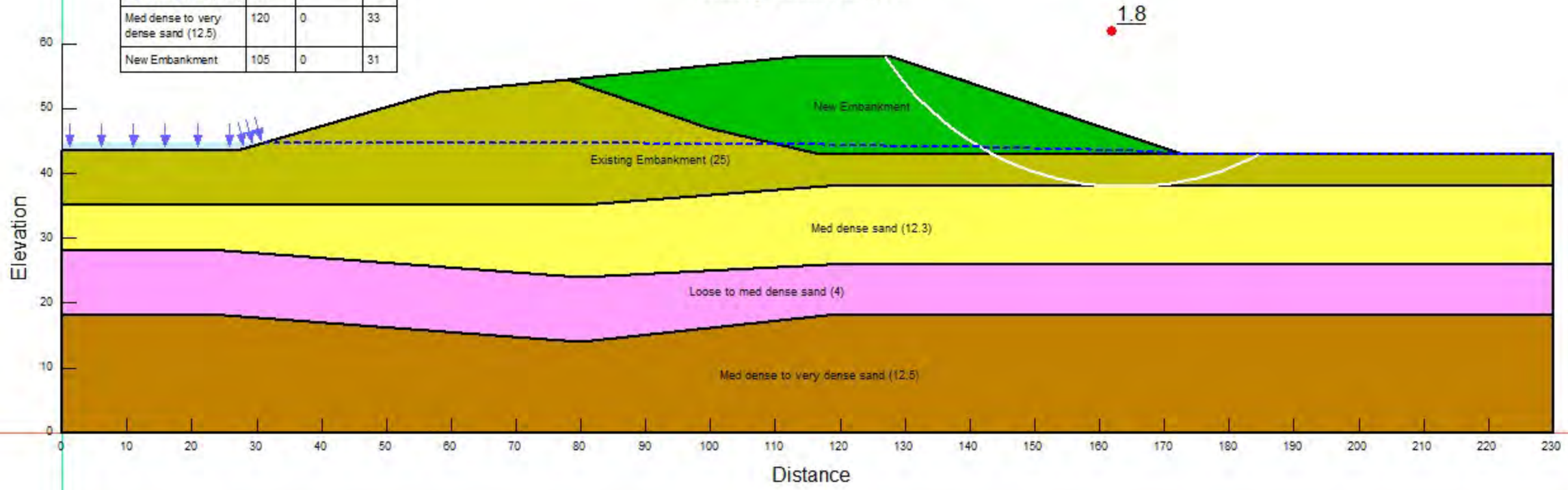
View Result Information

Data Type:	Gauss Region
Data Category:	All
Parameter	192 : 3
Water Rate (ft³/sec)	-4.2592332e-05
Water Mass Rate (lbm/sec)	-0.0026590469
Water X-Flux (ft³/sec/ft²)	7.1107346e-05
Water Y-Flux (ft³/sec/ft²)	-9.0889813e-06
Water Flux (ft³/sec/ft²)	7.1685872e-05
Water Mass X-Flux (lbm/sec...	0.0044392444
Water Mass Y-Flux (lbm/sec...	-0.00056742...
Water Mass Flux (lbm/sec/ft²)	0.0044753618
Water X-Gradient	-0.30715916
Water Y-Gradient	0.078522516
Water XY-Gradient	0.31703712

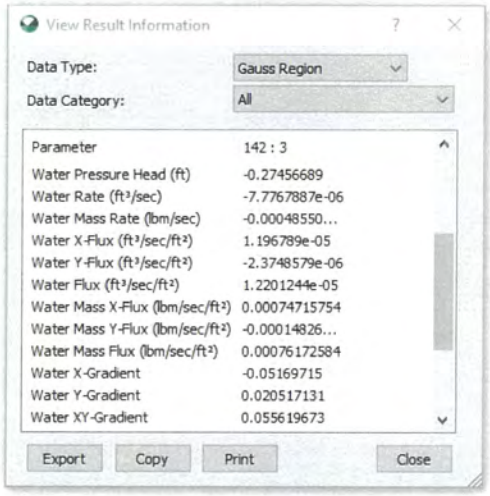
Export Copy Print Close

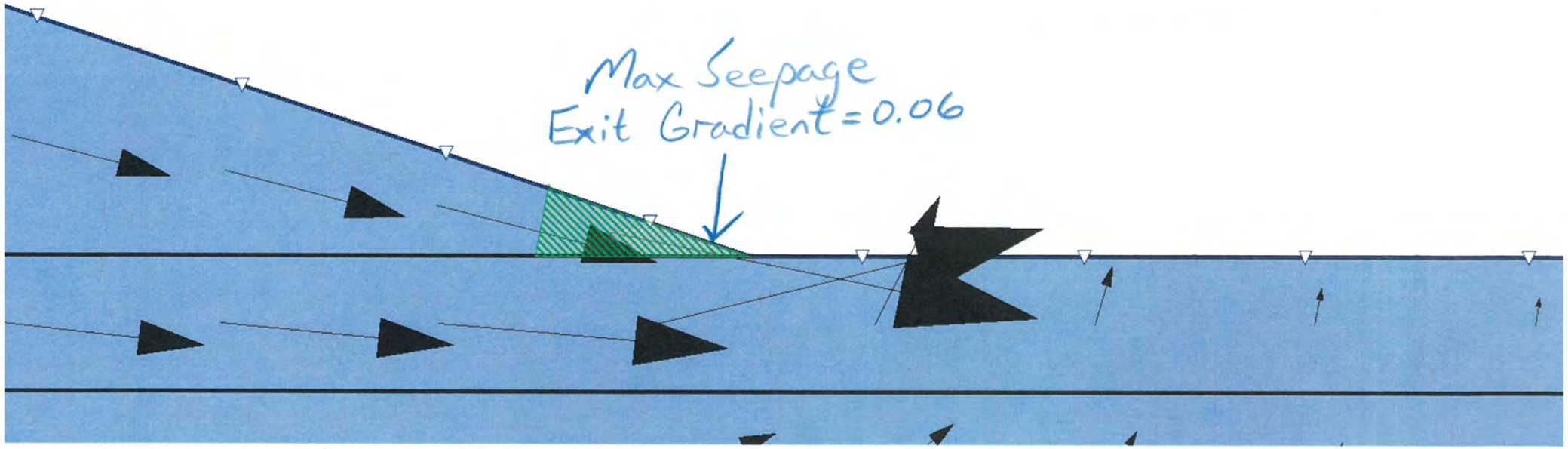
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (25)	105	0	30
Loose to med dense sand (4)	105	0	29
Med dense sand (12.3)	110	0	30
Med dense to very dense sand (12.5)	120	0	33
New Embankment	105	0	31

Section C9-1
(Previous Section C7-1)
Station 310+00
Steady State Condition



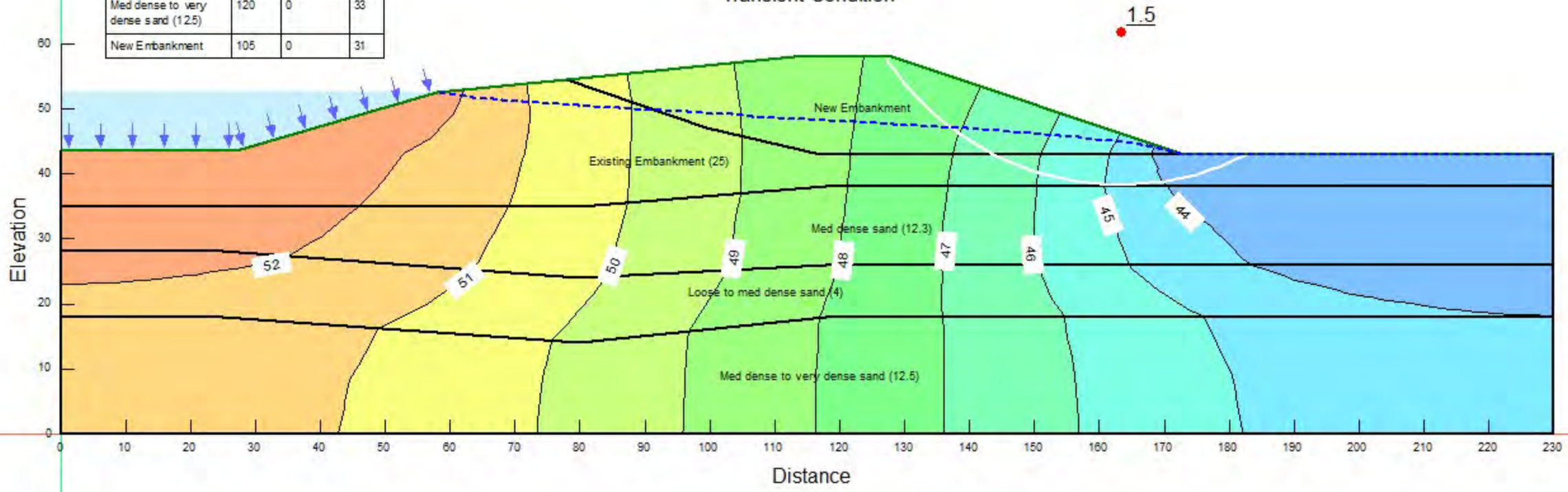
Section C9-1
(Previous Section C7-1)
Station 310+00
Steady State Condition



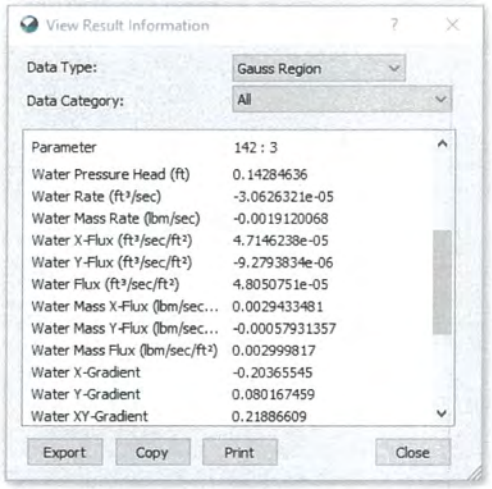


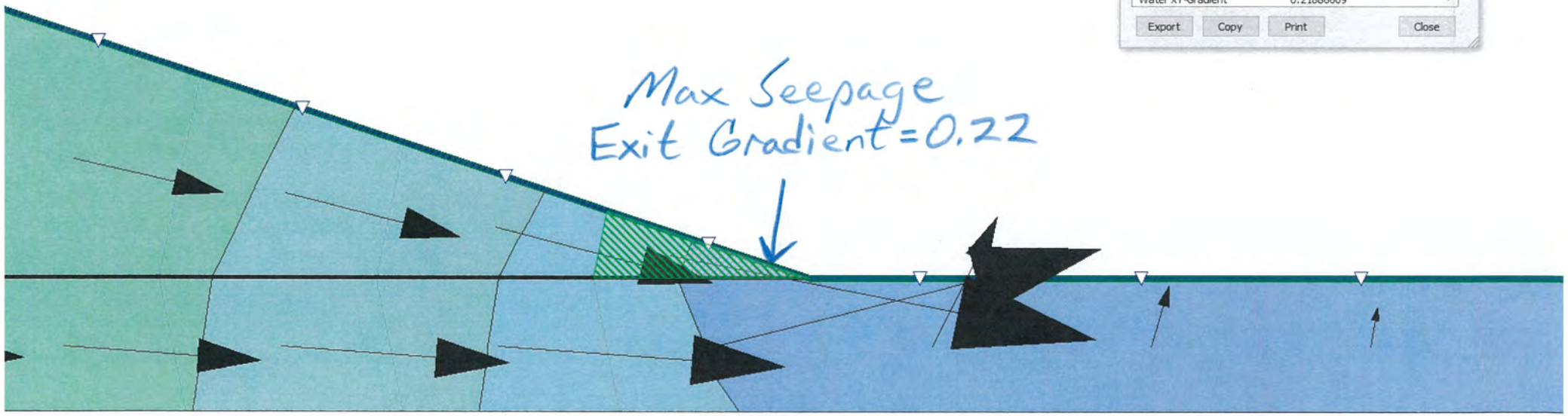
Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (25)	105	0	30
Loose to med dense sand (4)	105	0	29
Med dense sand (12.3)	110	0	30
Med dense to very dense sand (12.5)	120	0	33
New Embankment	105	0	31

Section C9-1
(Previous Section C7-1)
Station 310+00
Transient Condition



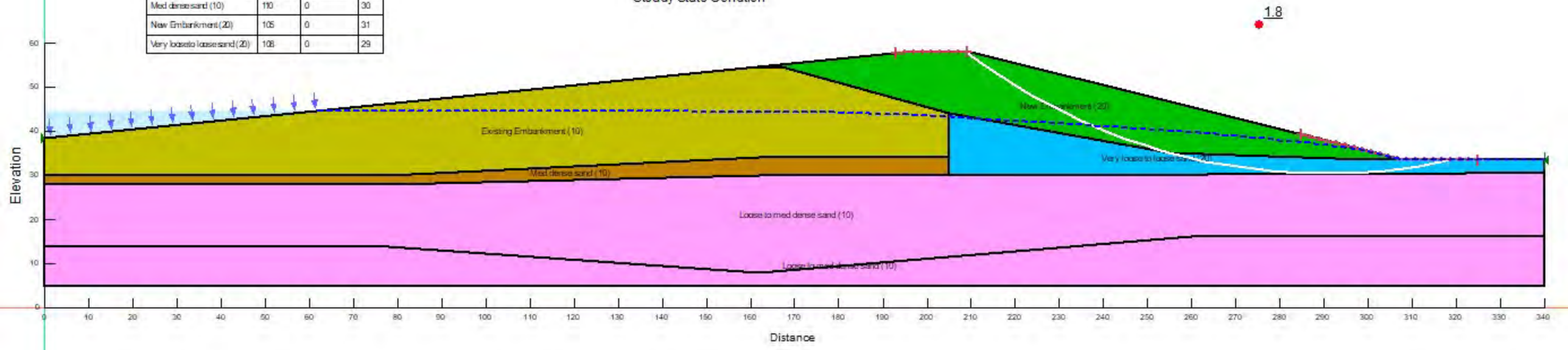
Section C9-1
(Previous Section C7-1)
Station 310+00
Transient Condition





Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment(10)	110	0	31
Loose to med dense sand (10)	110	0	30
Med dense sand (10)	110	0	30
New Embankment (20)	105	0	31
Very loose to loose sand (20)	108	0	29

Section C9-2
(Previous Section C7-2)
Station 400+00
Steady State Condtion



Section C9-2
(Previously C7-2)
Station 400+00
Steady State Condtion

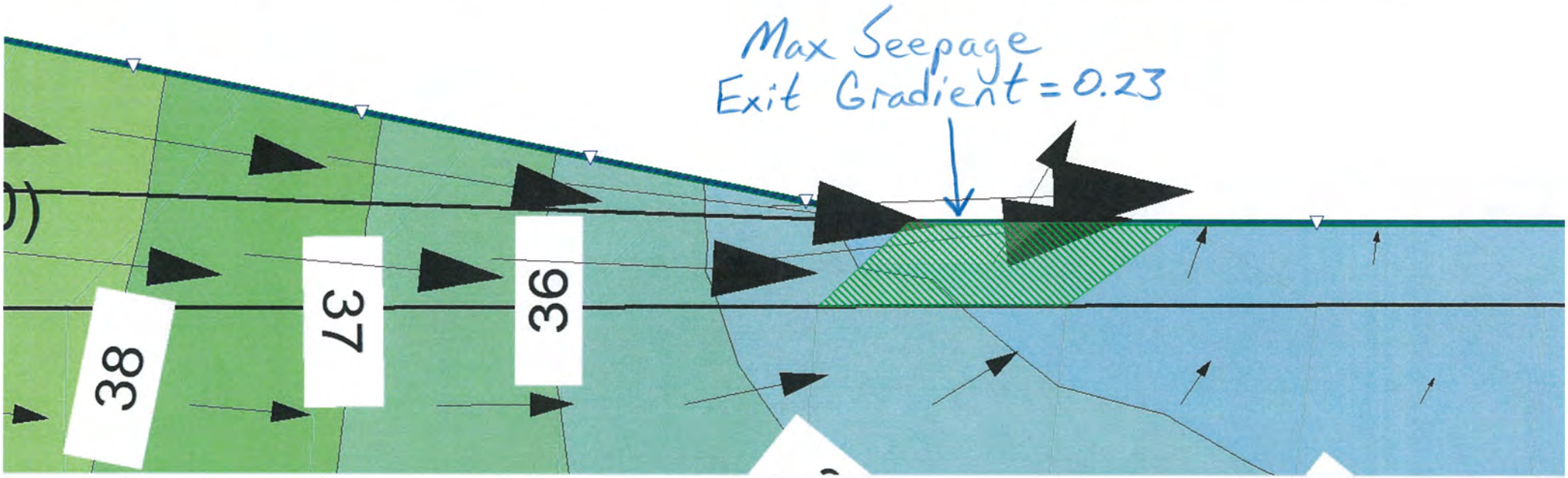
View Result Information

Data Type: Gauss Region

Data Category: All

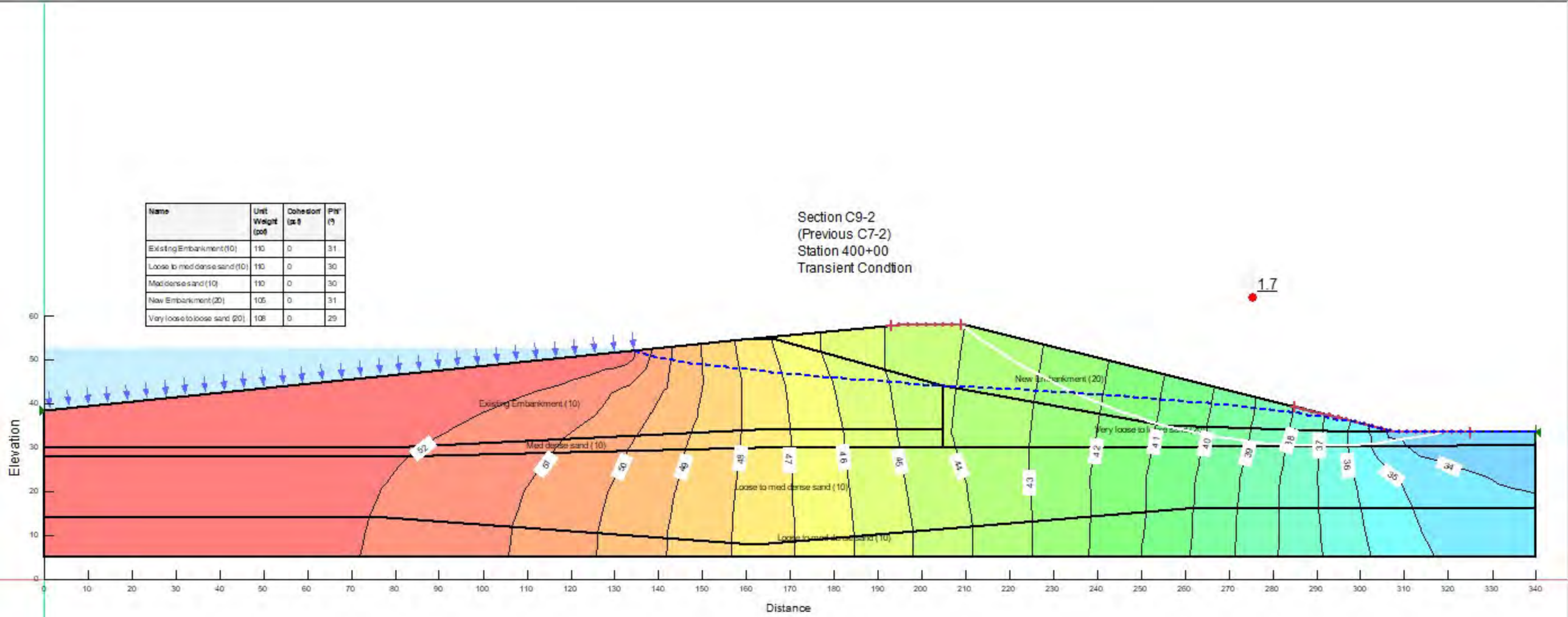
Parameter	199 : 2
Water Rate (ft³/sec)	-6.106913e-05
Water Mass Rate (lbm/sec)	-0.0038125568
Water X-Flux (ft³/sec/ft²)	3.6226827e-06
Water Y-Flux (ft³/sec/ft²)	2.6713739e-05
Water Flux (ft³/sec/ft²)	2.6958258e-05
Water Mass X-Flux (lbm/sec/ft²)	0.00022616473
Water Mass Y-Flux (lbm/sec/ft²)	0.0016677435
Water Mass Flux (lbm/sec/ft²)	0.0016830089
Water X-Gradient	-0.015648737
Water Y-Gradient	-0.23078824
Water XY-Gradient	0.23131817

Export Copy Print Close



Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Existing Embankment (10)	110	0	31
Loose to med dense sand (10)	110	0	30
Med dense sand (10)	110	0	30
New Embankment (20)	105	0	31
Very loose to loose sand (20)	108	0	29

Section C9-2
(Previous C7-2)
Station 400+00
Transient Condtion



Section C9-2
(Previous C7-2)
Station 400+00
Transient Condtion

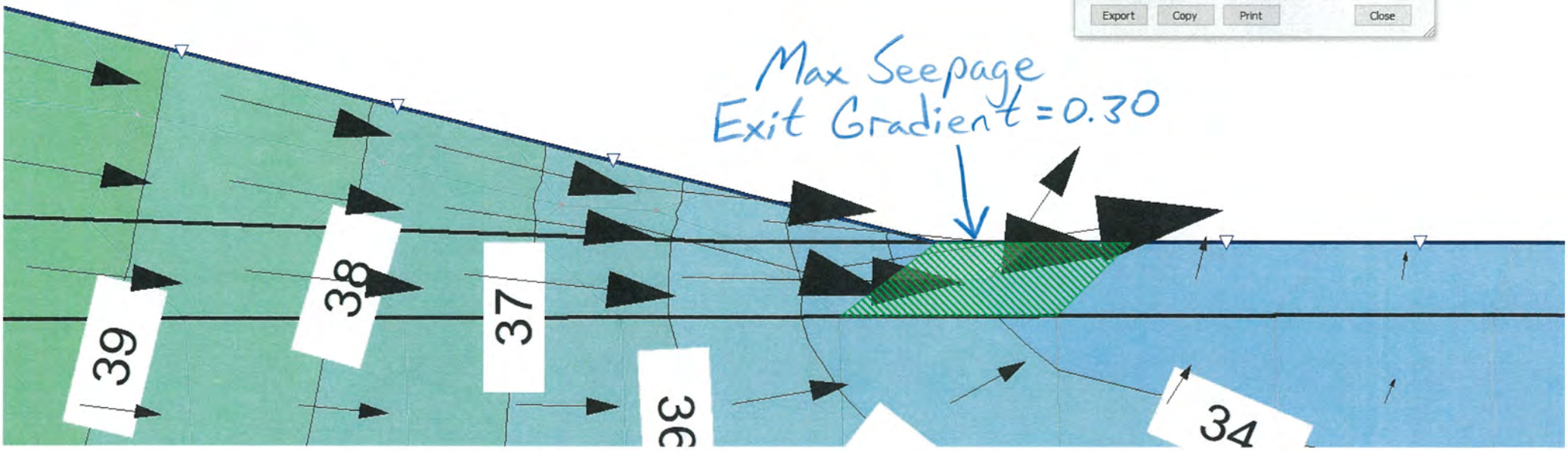
View Result Information

Data Type: Gauss Region

Data Category: All

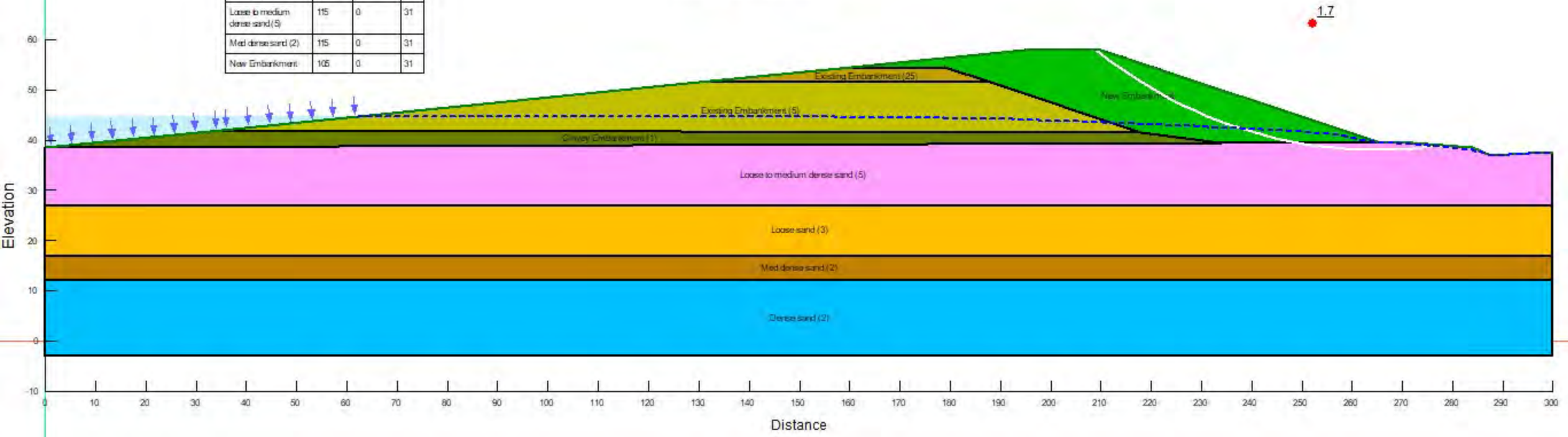
Parameter	209 : 2
Water Total Head (ft)	33.712134
Water Pressure Head (ft)	0.86064683
Water Rate (ft³/sec)	-6.9246864e-05
Water Mass Rate (lbm/sec)	-0.0043230942
Water X-Flux (ft³/sec/ft²)	5.7707391e-06
Water Y-Flux (ft³/sec/ft²)	3.43006e-05
Water Flux (ft³/sec/ft²)	3.4782648e-05
Water Mass X-Flux (lbm/sec...	0.00036026828
Water Mass Y-Flux (lbm/sec...	0.0021413926
Water Mass Flux (lbm/sec/ft²)	0.002171487
Water X-Gradient	-0.024927599
Water Y-Gradient	-0.29633348
Water XY-Gradient	0.29738009

Export Copy Print Close

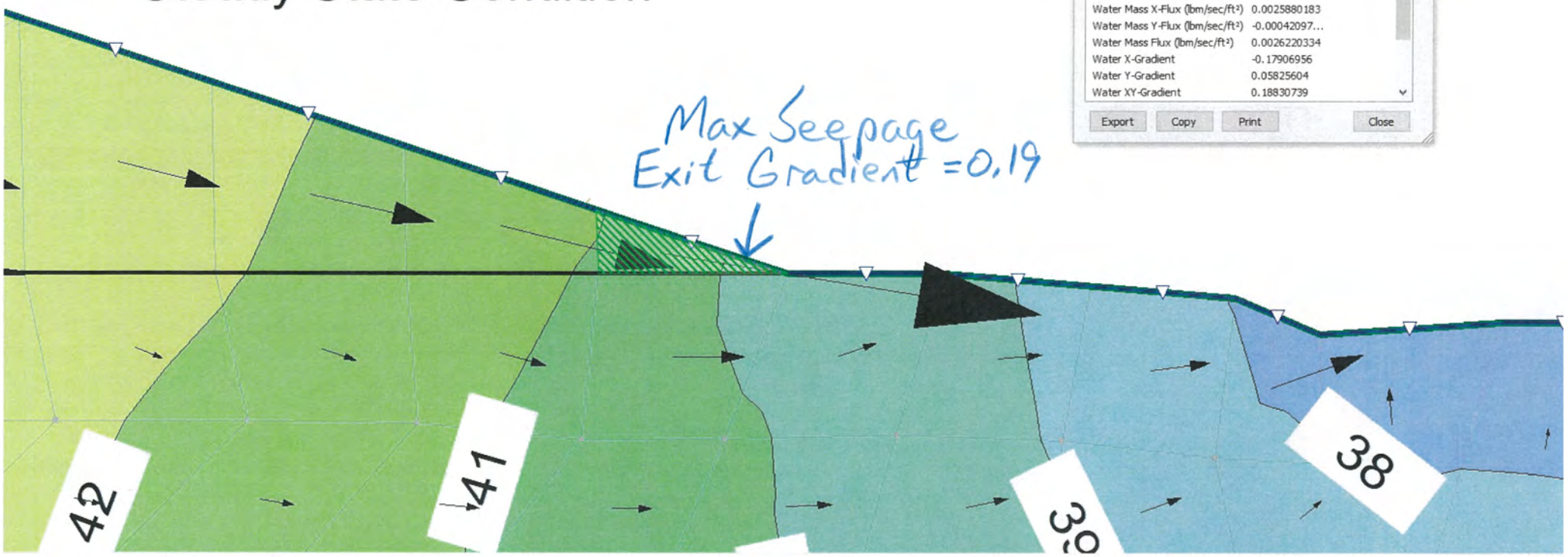


Name	Unit Weight (pcf)	Cohesion' (psf)	Phi (°)
Clayey Embankment (1)	118	0	32
Dense sand (2)	122	0	34
Existing Embankment (25)	105	0	30
Existing Embankment (5)	118	0	32
Loose sand (3)	110	0	30
Loose to medium dense sand (5)	115	0	31
Med dense sand (2)	115	0	31
New Embankment	105	0	31

Section C10-1
(Previous Section C8-1)
Station 419+00
Steady State Condition



Section C10-1
(Previous Section C8-1)
Station 419+00
Steady State Condition



View Result Information

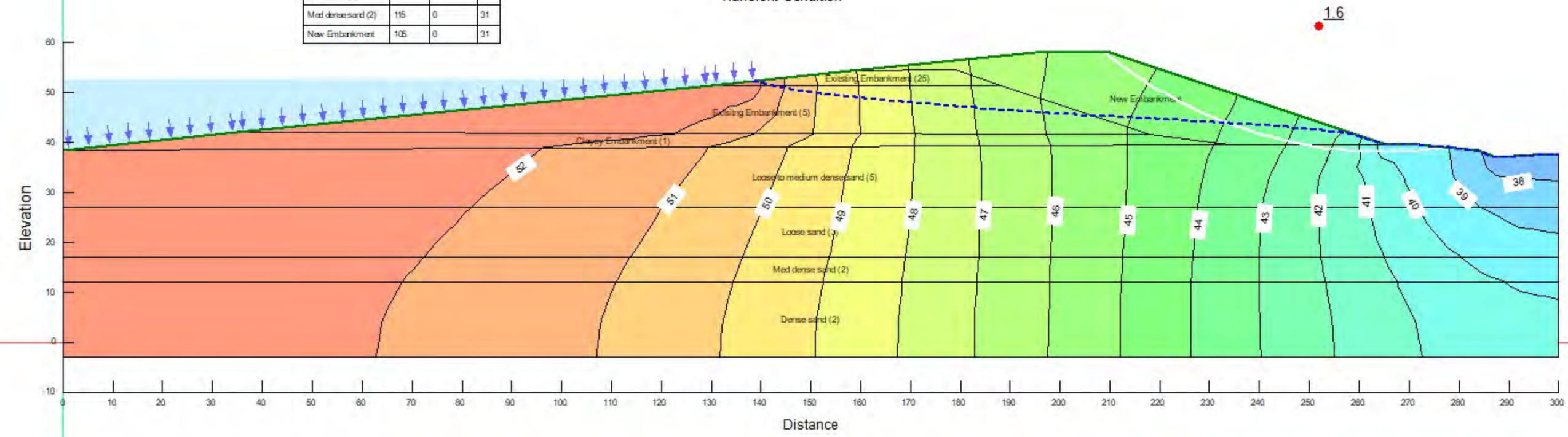
Data Type:	Gauss Region
Data Category:	All

Parameter	260 : 1
Water Pressure Head (ft)	0.056840639
Water Rate (ft³/sec)	-2.7299339e-05
Water Mass Rate (lbm/sec)	-0.0017043026
Water X-Flux (ft³/sec/ft²)	4.1454603e-05
Water Y-Flux (ft³/sec/ft²)	-6.7431366e-06
Water Flux (ft³/sec/ft²)	4.1999453e-05
Water Mass X-Flux (lbm/sec/ft²)	0.0025880183
Water Mass Y-Flux (lbm/sec/ft²)	-0.00042097...
Water Mass Flux (lbm/sec/ft²)	0.0026220334
Water X-Gradient	-0.17906956
Water Y-Gradient	0.05825604
Water XY-Gradient	0.18830739

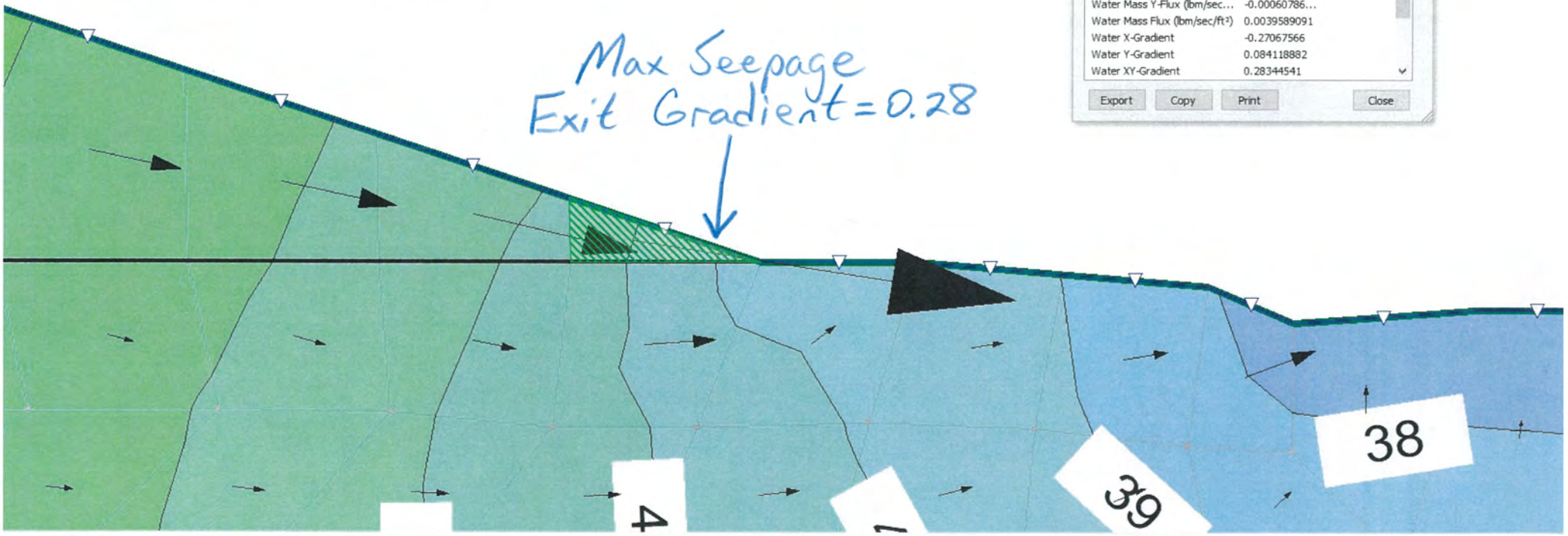
Export Copy Print Close

Name	Unit Weight (pcf)	Cohesion' (psf)	Phi (°)
Clayey Embankment (1)	118	0	32
Dense sand (2)	122	0	34
Existing Embankment (5)	118	0	32
Existing Embankment (25)	105	0	30
Loose sand (3)	110	0	30
Loose to medium dense sand (5)	115	0	31
Med dense sand (2)	115	0	31
New Embankment	105	0	31

Section C10-1
(Previous Section C8-1)
Station 419+00
Transient Condition



Section C10-1
(Previous Section C8-1)
Station 419+00
Transient Condition



View Result Information

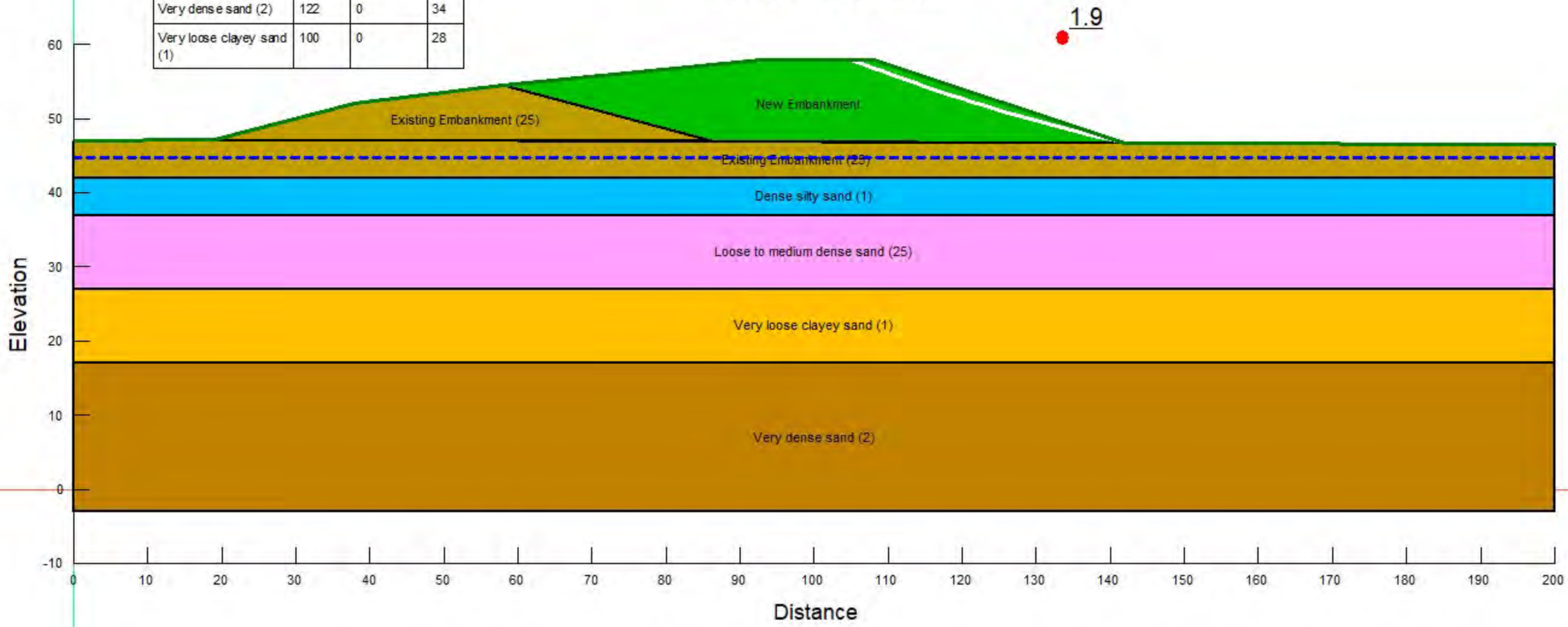
Data Type:	Gauss Region
Data Category:	All

Parameter	260 : 1
Water Pressure Head (ft)	0.30951653
Water Rate (ft³/sec)	-4.1270889e-05
Water Mass Rate (lbm/sec)	-0.002576549
Water X-Flux (ft³/sec/ft²)	6.2661416e-05
Water Y-Flux (ft³/sec/ft²)	-9.7367606e-06
Water Flux (ft³/sec/ft²)	6.3413386e-05
Water Mass X-Flux (lbm/sec...	0.0039119634
Water Mass Y-Flux (lbm/sec...	-0.00060786...
Water Mass Flux (lbm/sec/ft²)	0.0039589091
Water X-Gradient	-0.27067566
Water Y-Gradient	0.084118882
Water XY-Gradient	0.28344541

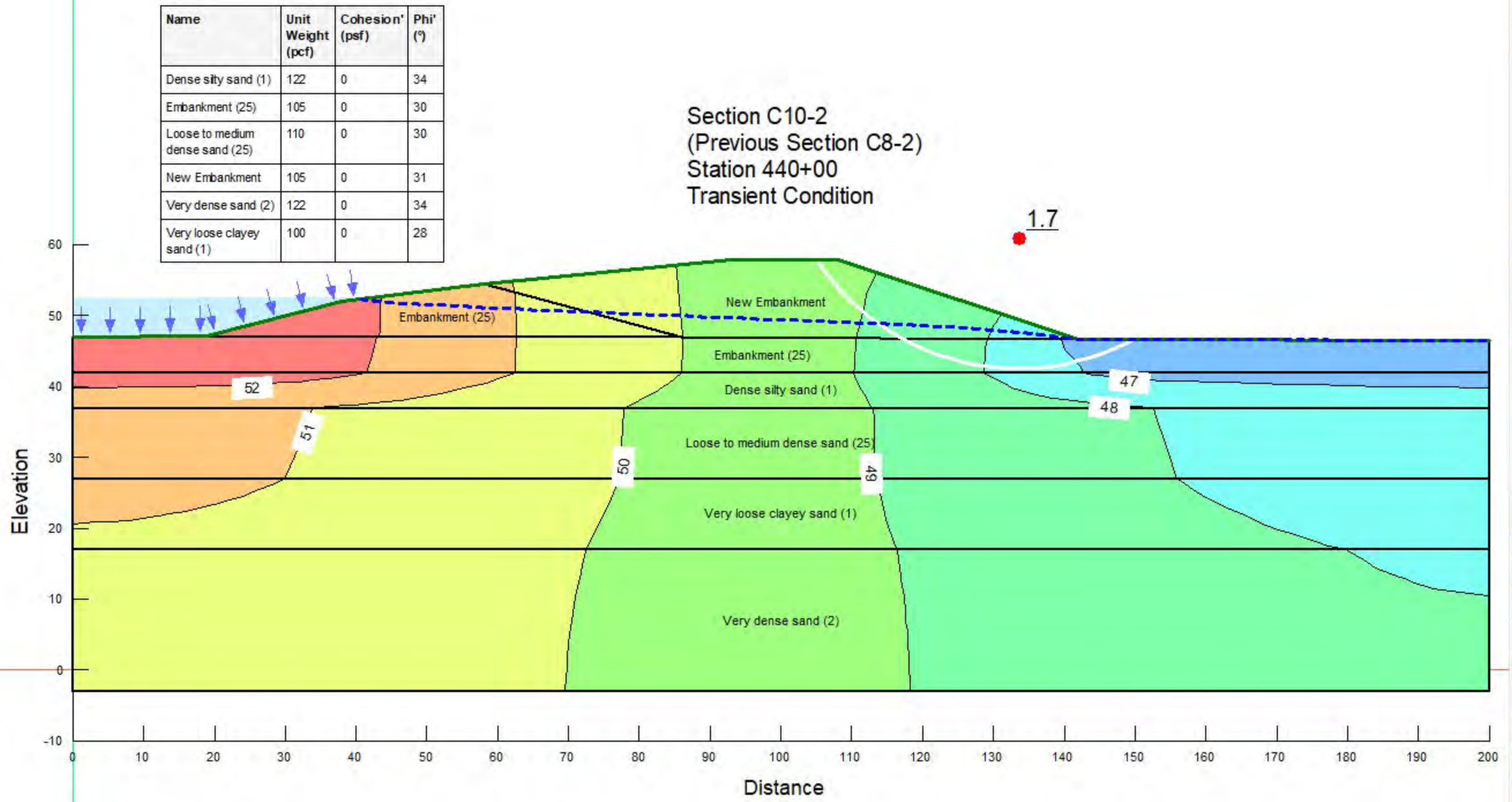
Export Copy Print Close

Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Dense silty sand (1)	122	0	34
Existing Embankment (25)	105	0	30
Loose to medium dense sand (25)	110	0	30
New Embankment	105	0	31
Very dense sand (2)	122	0	34
Very loose clayey sand (1)	100	0	28

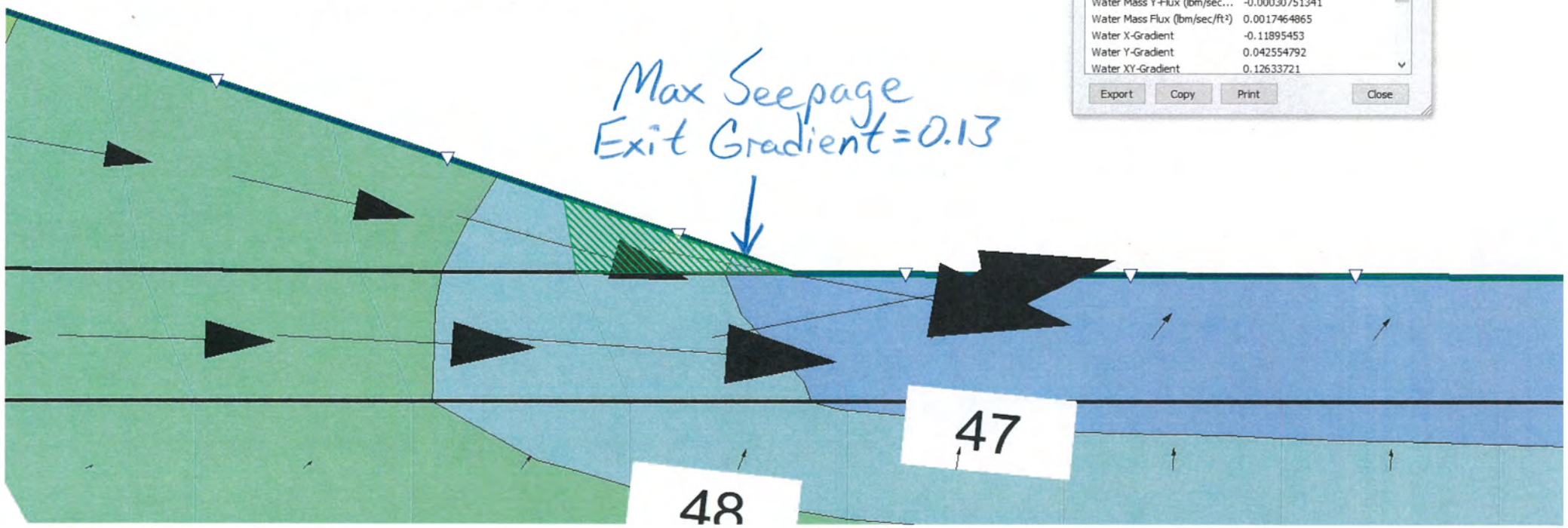
Section C10-2
(Previous Section C8-2)
Station 440+00)
Steady State Condition



Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Dense silty sand (1)	122	0	34
Embankment (25)	105	0	30
Loose to medium dense sand (25)	110	0	30
New Embankment	105	0	31
Very dense sand (2)	122	0	34
Very loose clayey sand (1)	100	0	28



Section C10-2
(Previous Section C8-2)
Station 440+00
Transient Condition



View Result Information

Data Type:	Gauss Region
Data Category:	All

Parameter	139 : 3
Water Total Head (ft)	47.047465
Water Pressure Head (ft)	-0.13051106
Water Rate (ft³/sec)	-1.8537929e-05
Water Mass Rate (lbm/sec)	-0.0011573263
Water X-Flux (ft³/sec/ft²)	2.7537973e-05
Water Y-Flux (ft³/sec/ft²)	-4.9257172e-06
Water Flux (ft³/sec/ft²)	2.7975036e-05
Water Mass X-Flux (lbm/sec...	0.0017192006
Water Mass Y-Flux (lbm/sec...	-0.00030751341
Water Mass Flux (lbm/sec/ft²)	0.0017464865
Water X-Gradient	-0.11895453
Water Y-Gradient	0.042554792
Water XY-Gradient	0.12633721

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APPENDIX IV

3-Dimensional Analyses Figures
(Elevations on Figures are in NAVD 88)

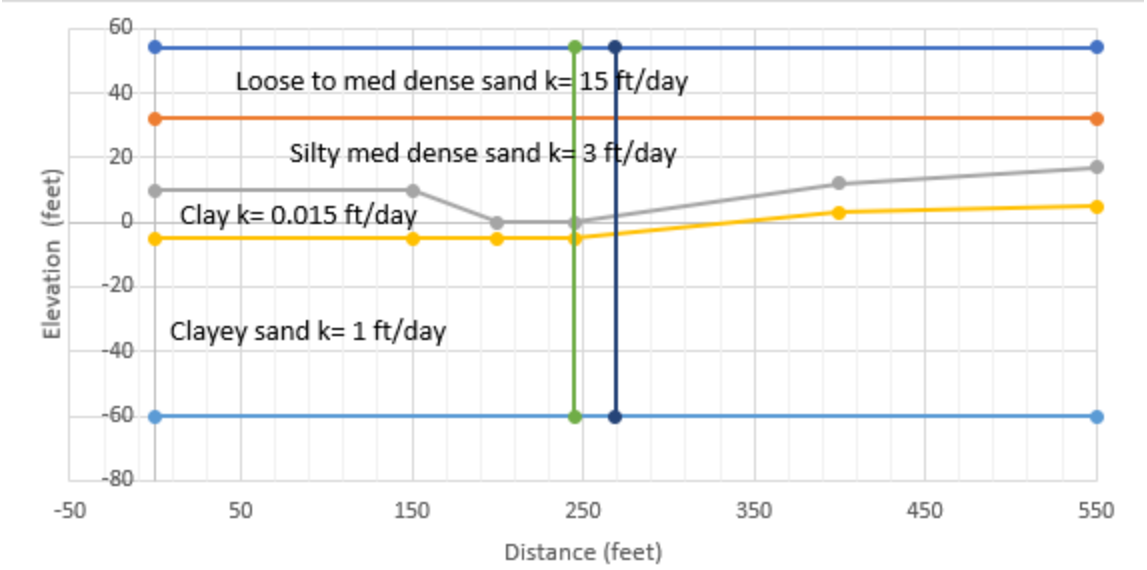

Figure A. Soil Profile

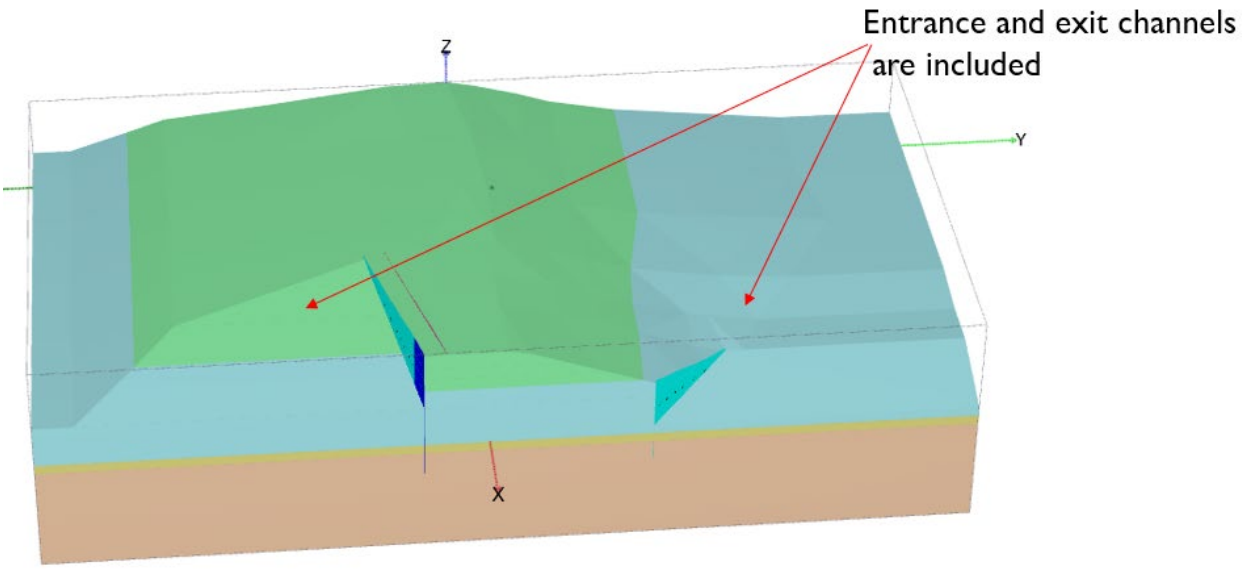

Figure B. North Numerical Model

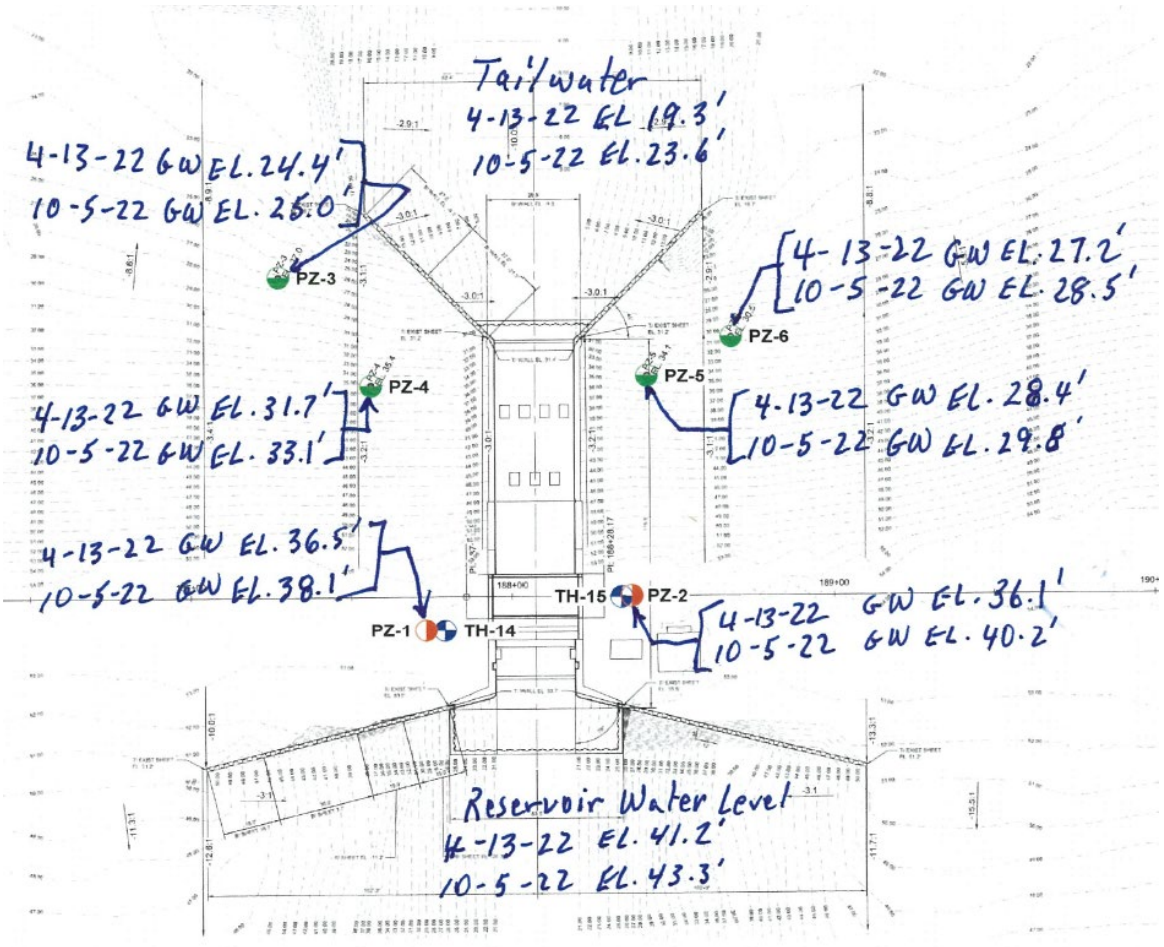

Figure C. Water Elevations in the Levee on April 13, 2022 and October 5, 2022

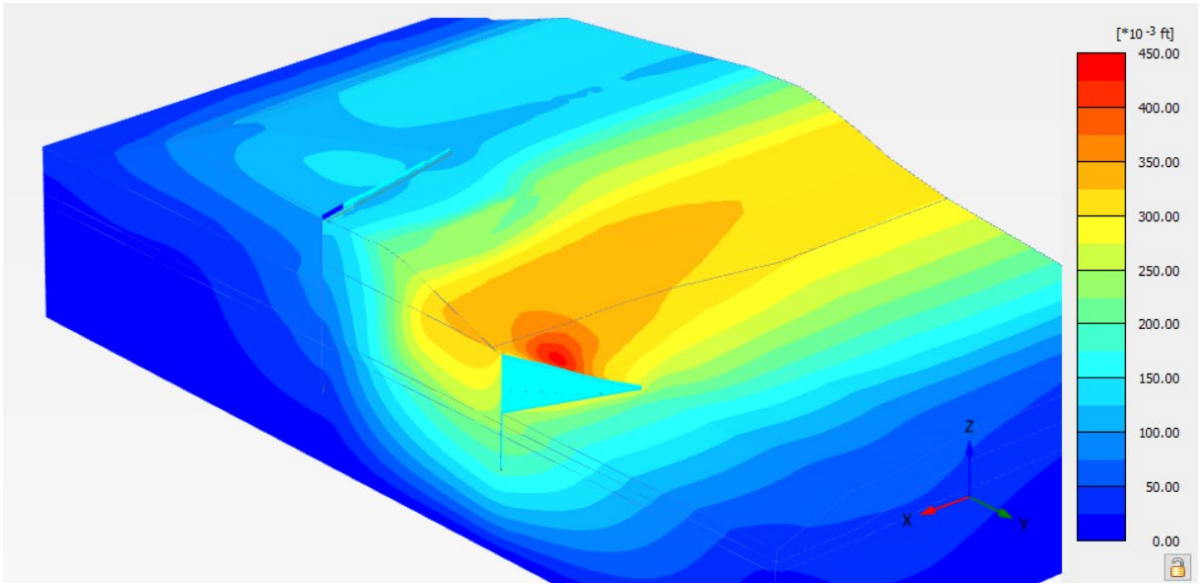

Figure D. Downstream Deformations When the Reservoir Reaches Elevation +49 feet NAVD

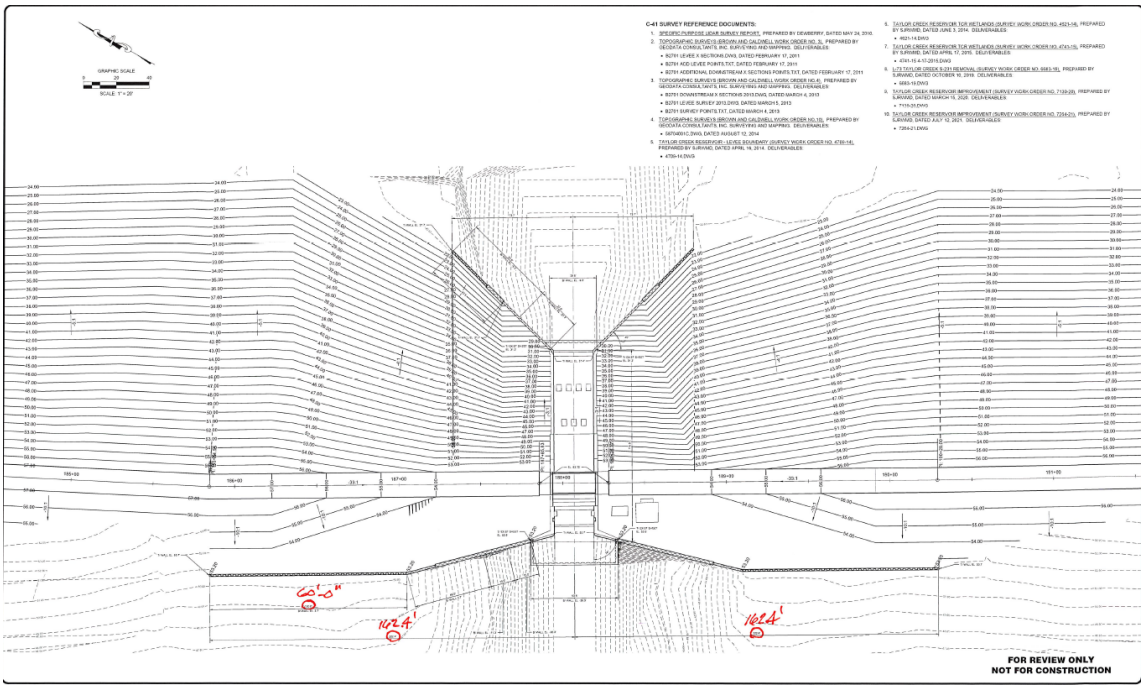

Figure E. Modified Slopes and Structures in the Spillway Proximity

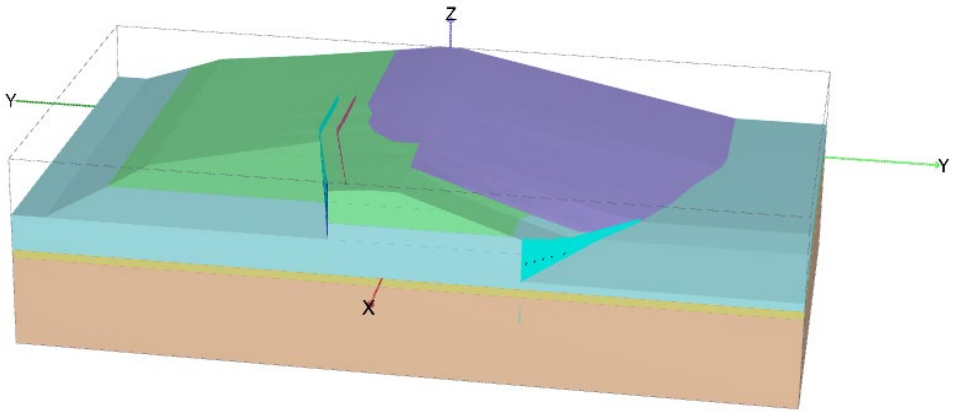

Figure F. Modified North Model

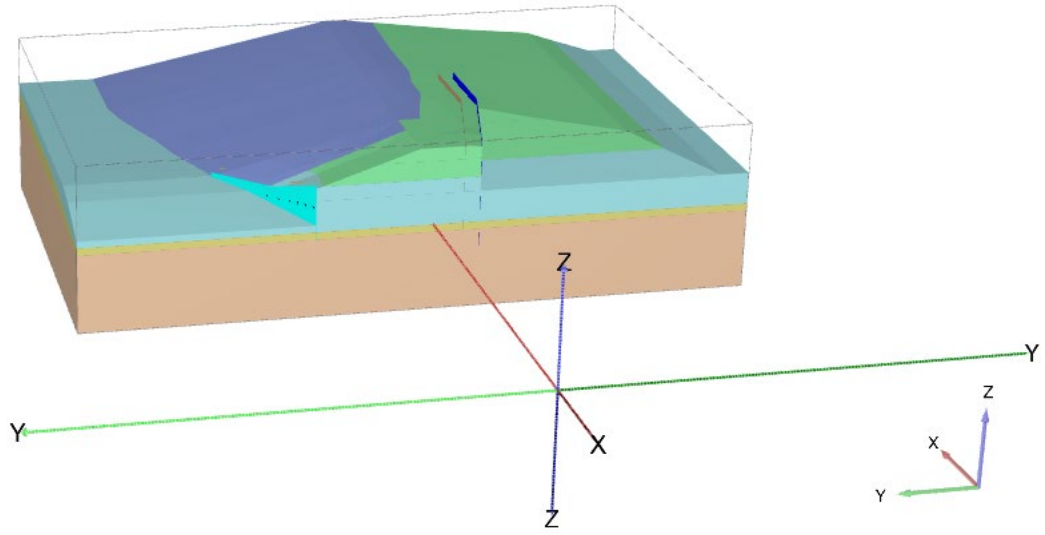

Figure G. Modified South Model

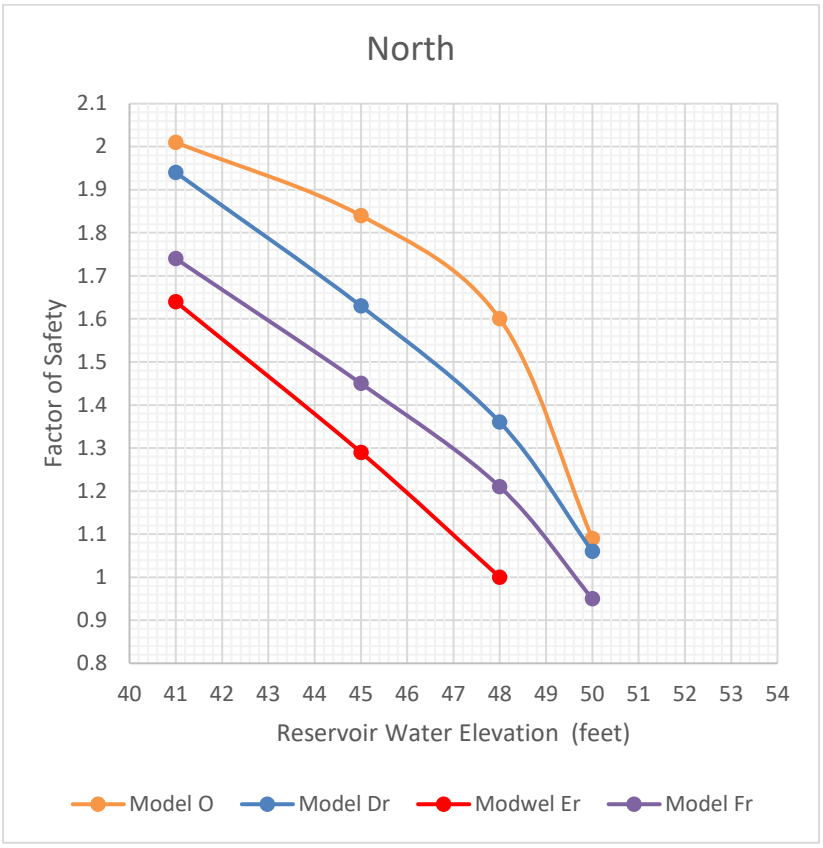

Figure H. Factors of Safety vs. Reservoir Water Elevation on the North Levee

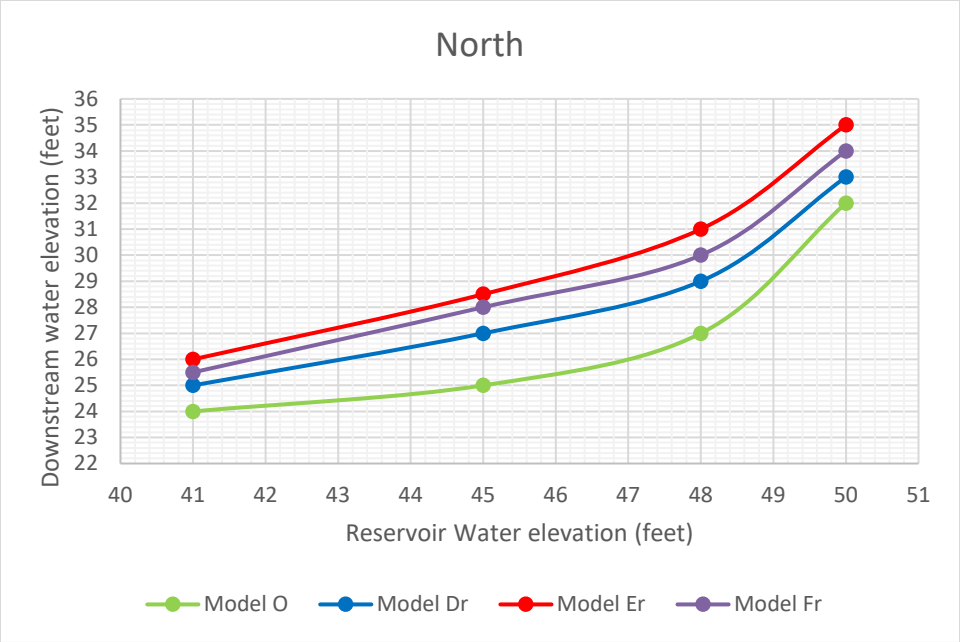

Figure I. Variation of Downstream Water Elevation for Different Reservoir Water Elevations

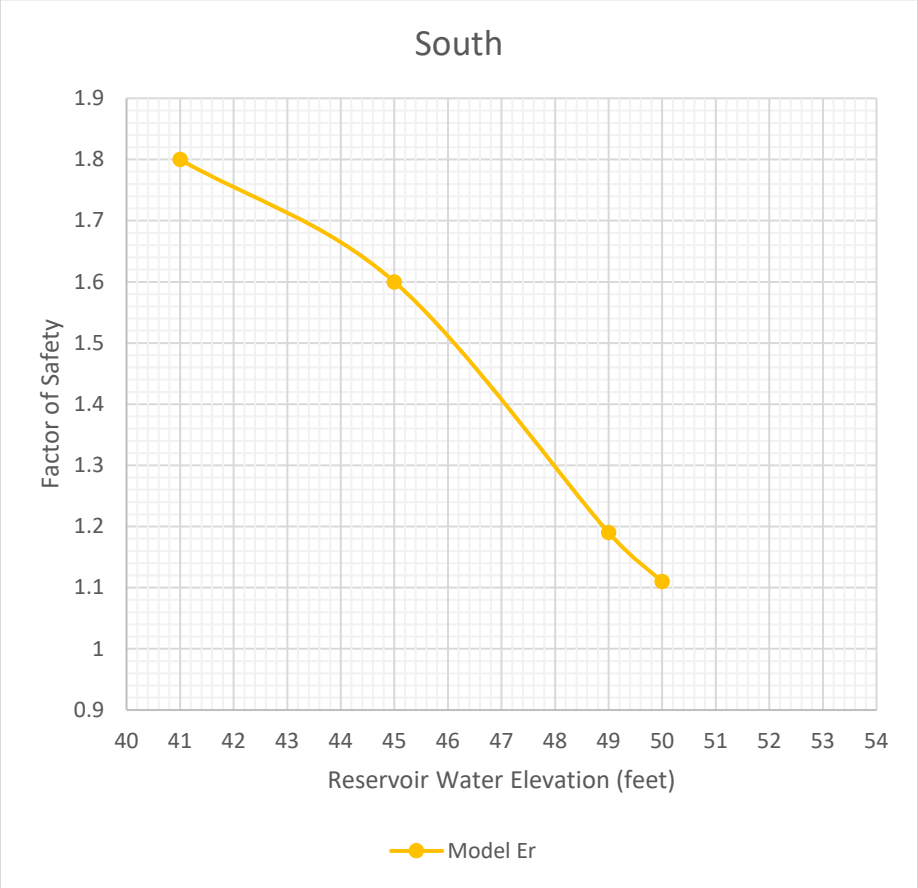

Figure J. Factors of Safety vs. Reservoir Water Elevation for the South Levee