

# Project Manual

For

# Lake Peachtree Spillway Replacement Project

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July 10, 2017

*Prepared by:*

Schnabel Engineering  
6445 Shiloh Road, Suite A  
Alpharetta, GA 30005

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## DIVISION 00

# PROCUREMENT & CONTRACTING

### DIVISION 00 - PROCUREMENT & CONTRACTING

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SECTION 00 11 13  
INVITATION FOR BIDS

Project Name: Lake Peachtree Spillway Replacement Project      Date of Issue: July 10, 2017

City of Peachtree Contract No.: 17-123BPW      Bid Date: August 10, 2017 at 9:00 a.m.

GEFA Loan No.: CW-2017-013

Georgia EPD No.: 2017-089

<u>Owner</u>	<u>Engineer</u>
City of Peachtree City 151 Willowbend Road Peachtree City, GA 30269 (email) aegan@peachtree-city.org	Schnabel Engineering 6445 Shiloh Road Alpharetta, GA 30005

The City of Peachtree City will be receiving separate sealed Bids for all material, labor and equipment for the "Lake Peachtree Spillway Replacement Project". This includes the following, with all related accessories as shown on the Construction Drawings and called for in the Contract Documents and Technical Specifications:

The Lake Peachtree Spillway Replacement Project is a Public Works project to reconstruct the principal spillway for Lake Peachtree. The existing spillway is 50 plus years old and inspection in 2014 revealed significant voids in the structure. The structure was temporarily repaired in 2016 and the lake pool restored. The project is located off Kelly Drive in Peachtree City, approximately 1700' east of the intersection of Kelly Drive and State Route 74. The work shall include but not be limited to removal of trees and other vegetation in the project area, removal and disposal of the existing spillway, construction of a temporary coffer dam, earthwork and drainage, construction of a new piano key weir, limited roadway construction, utilities coordination, and other ancillary site improvements.

This contract will be funded with Local Funds and a GEFA Loan.

Contract Documents may be downloaded at the following location:

- [www.peachtree-city.org](http://www.peachtree-city.org), then click on "Bids" link at bottom of page

It is mandatory that all prospective bidders download the Project Manual and Construction Drawings from the website above. Each Bidder is responsible for checking the website above for any future Addendums and emailing the Purchasing Agent with any questions.

Each Bidder must deposit with his bid, security in the amount of 5%, and shall be subject to the conditions provided in Section 00 21 13 "Instruction to Bidders."

Each Bidder is required to submit a "Construction Contractors Qualification Statement", "Bid Security", "Bid Form", Non-Collusion Affidavit", and "Security and Immigration Compliance Affidavit" as outlined in Section 00 22 13 "Supplementary Instructions to Bidders."

The City of Peachtree City prequalified bidders on June 23<sup>rd</sup> 2017, and will receive sealed bids only from those bidders who have been prequalified by the City until August 10, 2017 at 9:00 a.m. at 151

Willowbend Road, Peachtree City, GA 30269. Bids received after this time will not be accepted. Bids will be opened and publicly read aloud. The contract will be awarded to the low, responsive, and responsible bidder with reservation of right to reject all bids. Bids may not be withdrawn by Bidders for 60 days following opening of the bids.

The project shall be Substantially Complete within 240 calendar days from the date of Notice to Proceed of the contract. Liquidated Damages shall be assessed in the amount of \$2,250.00 per day for each calendar day required to achieve Substantial Completion.

The project shall be Final Complete within 60 calendar days beyond Substantial Completion. Liquidated Damages shall be assessed in the amount of \$150.00 per day for each calendar day required to achieve Final Completion.

There will be a "Pre-Bid" meeting on July 19, 2017 at 10:00 a.m. located at the City of Peachtree City Hall, 151 Willowbend Rd, in the Community Room. All contractors submitting a Bid are required to attend.

The City of Peachtree City provides assurances to Bidder that all anticipated Federal, State, and Local Permits along with anticipated Rights of Way and Easements have been obtained or will be obtained by August 19, 2017.

The City of Peachtree City will not accept pre-bid project questions within a period of 120 hours prior to the advertised time for opening bids, excluding Saturdays, Sundays, and Peachtree City Legal Holidays.

The City of Peachtree City will not issue or cause to be issued any addenda modifying the Project Manual or Construction Drawings within a period of 72 hours prior to the advertised time for opening bids, excluding Saturdays, Sundays, and Peachtree City Legal Holidays.

Agreement will require a Payment Bond in the amount of 110%, and a Performance Bond in the amount of 100% of the project cost.

The City of Peachtree City reserves the right to bid this Project in phases and award the contract on the phases it deems to be in the City's best interest. The City reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalances, or conditional bids. The City further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible or having outstanding debt to the City or other governmental entity. The City may also reject the Bid of any Bidder if the City believes that it would not be in the best interest of the Project to make an award to that Bidder. The City also reserves the right to waive any and all irregularities and to negotiate contract terms with the Successful Bidder. The City also reserves the right to reject all Bids and re-do the Bidding process in the event that it determines irregularities in the Bidding process or if it deems doing so to be in the best interest of the City.

The Agreement and all Documents in connection with the Bid are subject to the approval and modifications by the City Council of Peachtree City, Georgia.

• END OF SECTION •

SECTION 00 21 13  
INSTRUCTIONS TO BIDDERS  
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## **ARTICLE 1 – DEFINED TERMS**

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. The City of Peachtree City or [www.peachtree-city.org](http://www.peachtree-city.org) – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered, otherwise known as issuing office.
  - B. Business Day(s) – 24 hours measured from midnight to next midnight excluding weekend and Peachtree City observed holidays.
  - C. Calendar Day(s) – 24 hours measured from midnight to next midnight including weekend and Peachtree City observed holidays.

## **ARTICLE 2 – COPIES OF BIDDING DOCUMENTS**

- 2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid may be obtained electronically from the Issuing Office.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

## **ARTICLE 3 – QUALIFICATIONS OF BIDDERS**

- 3.01 Bidders have been pre-qualified by Peachtree City and The City's engineering consultants to perform the Work. Each Bidder shall include the same data in Section 00 45 13 that was previously submitted to the Owner on June 8, 2017. Bidders will also include a copy of the notification of prequalification received from Peachtree City, sent to Bidders on June 23, 2017.
- 3.02 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

## **ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE**

- 4.01 *Subsurface and Physical Conditions, if applicable in Section 00 31 00*
- A. The Supplementary Conditions identify:
    - 1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site.
    - 2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
  - B. Copies of reports and drawings referenced in Paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions has been identified and established in Paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or



conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 *Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 *Hazardous Environmental Condition, if applicable in Section 00 31 00*

- A. The Supplementary Conditions identify any reports and drawings known to Owner relating to a Hazardous Environmental Condition identified at the Site.
- B. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.06 of the General Conditions has been identified and established in Paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.06 of the General Conditions.

4.05 On request and subsequent approval of Owner and Property Owner, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates. Bidder to provide a description of tests, etc. prior to approval.

- 4.06 A. On request, Owner will provide to each Bidder for examination, access to, or copies of contract documents for such other work. If a reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents.
- B. Paragraph 6.13.C of the General Conditions indicates that if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations

- that may affect cost, progress, and performance of the Work;
- D. if provided in Section 00 31 00, Available Project Information carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Paragraph 4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Paragraph 4.06 of the Supplementary Conditions as containing reliable "technical data";
  - E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;
  - F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
  - G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
  - H. promptly give Peachtree City written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Peachtree City is acceptable to Bidder; and
  - I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Peachtree City written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Peachtree City are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

#### **ARTICLE 5 – PRE-BID CONFERENCE**

- 5.01 There will be a "Pre-Bid" meeting on July 19, 2017 at 10:00 a.m. located at the City of Peachtree City office or other noted location. All contractors submitting a Bid are required to attend. Representatives of Peachtree City and Engineer will be present to discuss the Project. Peachtree City will post to the website for all prospective Bidders of record such Addenda as Peachtree City considers necessary in response to questions arising at the conference or thereafter. Oral statements may not be relied upon and will not be binding or legally effective. It is the responsibility of the Bidder to check the Peachtree City website for such Addenda.

#### **ARTICLE 6 – SITE AND OTHER AREAS**

- 6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless

otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

#### **ARTICLE 7 – INTERPRETATIONS AND ADDENDA**

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted in writing via Email Communication to the Purchasing Agent – Angela Egan. Interpretations or clarifications considered necessary by Peachtree City in response to such questions will be issued by Addenda posted to the website. Questions received less than five business days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Peachtree City. No Addenda shall be issued later than 72 hours prior to the date and time fixed for opening the Bids. Failure of any Bidder to receive any such Addendum shall not relieve the Bidder from any obligation under his Bid submitted. All Addenda so issued shall become a part of the Contract.

#### **ARTICLE 8 – BID SECURITY**

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% of Bidder's maximum Bid price and in the form of a certified check, bank money order, or a Bid bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
- 8.02 The bidder to whom the award is made shall execute a written contract to do the work and maintain the same in good repair until final acceptance by the proper authorities, and shall furnish good and sufficient bonds as hereinafter specified, within ten (10) calendar days after receiving such contract for execution. If the bidder to whom the first award is made fails to enter into a contract as herein provide, the award may be annulled and the contract let to the next higher bidder who is reliable, and responsible in the opinion of the City Council. Such bidder shall fulfill every stipulation embraced herein as if he were the original party to whom award was made.
- 8.03 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven calendar days after the Bid award.

#### **ARTICLE 9 – CONTRACT TIMES**

- 9.01 The number of calendar days within which, or the dates by which the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

#### **ARTICLE 10 – LIQUIDATED DAMAGES**

- 10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

#### **ARTICLE 11 – SUBSTITUTE AND "OR EQUAL" ITEMS**

- 11.01 The Contract, if awarded, will be on the basis of new (not used) materials and equipment specified or described in the Bidding Documents, or those substitute or "or-equal" materials and equipment approved by Peachtree City and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. No item of material or equipment will be considered by Peachtree City as a substitute or "or-equal" unless written request for approval has been submitted by Bidder and has been received by Peachtree City at least 13 calendar days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit

of the proposed item is upon Bidder. Peachtree City's decision of approval or disapproval of a proposed item will be final. If Peachtree City approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

#### **ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS AND OTHERS**

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five business days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award. Owner shall be notified if at any time after award, Contractor substitutes a Subcontractor, Supplier, or other entity doing work on the project so Owner will have same opportunity to object.
- 12.02 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

#### **ARTICLE 13 – PREPARATION OF BID**

- 13.01 The Bid Form is included with the Bidding Documents.
- 13.02 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein. In the case of optional alternatives the words "No Bid," "No Change," or "Not Applicable" may be entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the Administrative Assistant. The corporate address and state of incorporation shall be shown.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official street address of the firm shall be shown.
- 13.06 A Bid by an individual shall show the Bidder's name and official address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.08 All names shall be printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall

be filled in on the Bid Form.

- 13.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

#### **ARTICLE 14 – BASIS OF BID; COMPARISON OF BIDS**

##### **14.01 *Unit Price***

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- D. Unit Prices for Lump Sum contracts or bids are only relevant if the quantities reflected in the schedule of values are exceeded or are less than such quantities projected in the bid due to change in the scope of work via a duly executed change order.

##### **14.02 *Allowances***

- A. For cash allowances the Bid price shall include such amounts as the Owner deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 11.02.B of the General Conditions.

#### **ARTICLE 15 – SUBMITTAL OF BID**

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. Or, if Bidding Documents are all electronic, it will be the Contractor's responsibility to print from online resource. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the following documents:
- A. See Section 00 22 13 for a list of documents typically required to be submitted with the Bid.
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title and number (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. For bids sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to City of Peachtree City, Attention: Purchasing Agent, 151 Willowbend Road, Peachtree City, GA 30269.

#### **ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID**

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

- 16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

#### **ARTICLE 17 – OPENING OF BIDS**

- 17.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders within five business days after the opening of Bids.

#### **ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

#### **ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible or having outstanding debt to the City or other government entity. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive any and all irregularities and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, proposed Sub-Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.

#### **ARTICLE 20 – CONTRACT SECURITY AND INSURANCE**

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.
- 20.02 Agreement will require a Payment Bond in the amount of 110%, and a Performance Bond in the amount of 100% of the project cost. The City of Peachtree City reserves the right to bid a project in phases and award the contract on the phases it deems to be in the City's best interest.

**ARTICLE 21 – SIGNING OF AGREEMENT**

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 business days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten business days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

• END OF SECTION •

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SECTION 00 22 13

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

The City will make available a copy of the Project Manual on the website ([www.peachtree-city.org](http://www.peachtree-city.org)). It is the responsibility of the Bidder to complete and submit one separate unbound copy of the Bidding Documents, which includes the following documents:

1. Bid Form – Section 00 41 00
2. Bid Security – Section 00 43 13
3. Bidder's Qualifications – Section 00 45 13
4. Non-Collusion Affidavit – Section 00 45 19
5. Security and Immigration Compliance – Section 00 45 20
6. Drug-Free Workplace Certification – Section 00 73 19

Place all of the above in a sealed envelope clearly marked as follows:

**BID FOR**  
City of Peachtree City  
Lake Peachtree Spillway Replacement Project  
Contract No. 17-123BPW

NOTE: The envelope should bear on the outside the **NAME** and **ADDRESS** of the **QUALIFIED BIDDER**, and **Georgia Utilities Contractors License Number (if applicable)**.

If mailed, this envelope should be placed inside the mailing envelope.

Bids will be opened at August 10, 2017 at 9:00 a.m. at 151 Willowbend Road, Peachtree City, GA 30269.

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SECTION 00 31 00

AVAILABLE PROJECT INFORMATION

1.01 SUMMARY

A. Document Includes:

1. Subsurface and physical conditions.
2. Underground facilities.
3. Hazardous environmental condition.

B. Available Project information has been furnished by Owner for use in designing this Project.

1. Each Bidder shall be fully familiar with available Project information, which has been prepared for Owner by separate consultants.
2. Available Project information is offered solely for reference and shall not be considered part of Contract Documents. Data contained in Documents prepared by Owner's separate consultants is believed to be reliable; however, Owner and Architect/Engineer do not guarantee their accuracy or completeness.
3. In preparing their Bids, Bidders shall consider and evaluate data contained in available Project information as well as Contract Documents prepared by Architect/Engineer.

1.02 SUBSURFACE AND PHYSICAL CONDITIONS REPORT

- A. A copy of a geotechnical report is included as an attachment to this Document, titled Subsurface Exploration Data Report – Proposed Piano Key Weir Spillway, dated March 14, 2016, Revised May 26, 2017, and prepared by Schnabel Engineering.

1.03 UNDERGROUND FACILITIES REPORT

- A. A copy of an underground facilities report is included as an attachment to this Document, titled n/a, dated n/a, and prepared by n/a.

1.04 HAZARDOUS ENVIRONMENTAL CONDITION REPORT

- A. A copy of a Hazardous Environmental Condition Report is included as an attachment to this Document, titled n/a, dated n/a, and prepared by n/a.

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SECTION 00 41 00

BID FORM

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to: City of Peachtree City  
151 Willowbend Road  
Peachtree City, GA 30269

This Bid is submitted from: \_\_\_\_\_  
\_\_\_\_\_

(Name and Address of Individual, Partnership, or Corporation)  
*P.O. Box Not Acceptable*

\_\_\_\_\_ Georgia Utility Contractor No. (if applicable)

This Bid is for: Lake Peachtree Spillway Replacement Project  
August 10, 2017 at 9:00 a.m.

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 calendar days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  - C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
  - D. Bidder has carefully studied all (if applicable): (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."
  - E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports (if applicable) and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
  - F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
  - G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
  - H. Bidder has given Purchasing Agent written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Purchasing Agent is acceptable to Bidder.
1. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

#### **ARTICLE 4 – BIDDER'S CERTIFICATION**

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### **ARTICLE 5 – BASIS OF BID**

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

All specified cash allowances are included in the price(s) set forth above, and have been computed in accordance with Paragraph 11.02 of the General Conditions.



LAKE PEACHTREE SPILLWAY REPLACEMENT BID FORM

Bid Item	Lump Sum Items	Units	Bid Price
1	Lump Sum for all Contract work not Paid by Lump Sum and Unit Prices Below	LS	
2	Mobilization and Demobilization	LS	
3	Construction Facilities & Temporary Controls	LS	
4	Field Office and Sheds	LS	
5	Control of Water		
	a. Cofferdam System	LS	
	b. Misc Surface and Groundwater	LS	
6	Structure Removal	LS	
7	Miscellaneous Metals	LS	
8	Instrumentation	LS	
9	Erosion and Sedimentation Controls		
	a. Installation and Removal	LS	
	b. Maintenance	LS	
10	Tuff Boom Log Protection	LS	
11	Sluice Gates, to include pipe, fittings, install	LS	
12	Clearing, Grubbing, Stripping - Spillway and primary work areas	LS	

Item No.	Unit Price Items	Units	Quantity	Unit Price	Bid Price
13	Excavation				
	a. Common Excavation	CY	15,700		
	b. Rock Excavation	CY	200		
	c. Haul off Spoils	CY	14,000		
14	Fill				
	a. Structural Earthfill	CY	7,500		
	b. Non-Structural Earthfill (Spoil Berm)	CY	2,000		
	c. Fine Drain Fill	CY	275		
	d. Coarse Drain Fill	CY	75		
15	Rip Rap				
	a. GDOT Type 1	TON	2,560		
	b. GDOT Type 3	TON	400		
	c. Recycled Riprap	TON	340		
	d. Bedding Stone	TON	680		
16	Cast-in-Place Concrete				
	a. Piano Key Concrete	CY	1,080		
	b. Structural Concrete	CY	1,300		
	c. Slab Concrete	CY	1,250		
	d. Backfill Concrete	CY	25		
17	PVC Drain Pipes				
	a. 6-Inch Non-perforated PVC Pipe	LF	200		
	b. 6-Inch Perforated PVC Pipe	LF	370		
18	Concrete Waterproofing	SF	3600		
19	Permanent Stabilization				
	a. Sodding	AC	2		
	b. Topsoil	CY	2,420		
20	Chain Link Fence	LF	450		

Base Bid Total: \$ \_\_\_\_\_

Base Bid Total: \_\_\_\_\_

Alternate

Alternate Bid Item No.	Alternate Bid item	Units	Quantity	Unit Price	Bid Price
21	Clearing, Grubbing, Leveling, Topsoiling and Sodding the backslope of the dam, remove fence from existing dam crest	LS			
22	Reinforced-Concrete Parapet	CY	125		

Alternate Bid Total: \$ \_\_\_\_\_

Alternate Bid Total: \_\_\_\_\_

Unit Prices have been computed in accordance with Paragraph 11.03.B of the General Conditions. If the product of the Estimated Quantity and Bid Unit Price indicated in the Bid Price column is incorrect, then the Bid Unit Price will govern to determine the actual Bid Price. If the quantity is in excess of the estimate quantity, no increase in price will be permitted unless approved, in writing, by the Project Manager before such quantity is used in the Project. If the quantity is less than the estimated quantity, the city will be given a credit on such price.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities in-place, determined as provided in the Contract Documents.

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are submitted with and made a condition of this Bid:
  - A. All documents as outlined in Section 00 22 13 “Supplementary Instructions to Bidders.”

**ARTICLE 8 – DEFINED TERMS**

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

**ARTICLE 9 – BID SUBMITTAL**

- 9.01 This Bid is submitted by:  
If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_  
(Individual’s signature)

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
(Signature -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_  
(CORPORATE SEAL)

Attest \_\_\_\_\_

Date of Qualification to do business in Georgia is \_\_\_\_/\_\_\_\_/\_\_\_\_.

A Joint Venture

Name of Joint Venture: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address \_\_\_\_\_

Phone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

E-mail \_\_\_\_\_

SUBMITTED on \_\_\_\_\_, 20\_\_\_\_.

State Contractor License No. \_\_\_\_\_ [If applicable]

• END OF SECTION •

SECTION 00 43 13  
BID SECURITY FORM

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):  
City of Peachtree City  
151 Willowbend Road  
Peachtree City, GA 30269

BID

Bid Due Date: August 10, 2017 at 9:00 a.m.  
Description: The Lake Peachtree Spillway Replacement Project is a Public Works project to reconstruct the principal spillway for Lake Peachtree. The existing spillway is 50 plus years old and inspection in 2014 revealed significant voids in the structure. The structure was temporarily repaired in 2016 and the lake pool restored. The project is located off Kelly Drive in Peachtree City, approximately 1700' east of the intersection of Kelly Drive and State Route 74. The work shall include but not be limited to removal of trees and other vegetation in the project area, removal and disposal of the existing spillway, construction of a temporary coffer dam, earthwork and drainage, construction of a new piano key weir, limited roadway construction, utilities coordination, and other ancillary site improvements.

BOND

Bond Number:  
Date (Not earlier than Bid due date):  
Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

**BIDDER**

**SURETY**

\_\_\_\_\_  
Bidder's Name and Corporate Seal (Seal)      \_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (Attach Power of Attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

*Note: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2 All Bids are rejected by Owner, or
  - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

• END OF SECTION •

SECTION 00 45 13  
BIDDER'S QUALIFICATIONS

**Submitted by:**

Name of Organization: \_\_\_\_\_

Name of Individual: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: (     ) \_\_\_\_\_

**Submitted to:**

Name: City of Peachtree City  
Address: 151 Willowbend Road  
Peachtree City, GA 30269  
Telephone: (770) 487-7657

**Project Name and Description (if applicable):**

Lake Peachtree Spillway Replacement Project

The Lake Peachtree Spillway Replacement Project is a Public Works project to reconstruct the principal spillway for Lake Peachtree. The existing spillway is 50 plus years old and inspection in 2014 revealed significant voids in the structure. The structure was temporarily repaired in 2016 and the lake pool restored. The project is located off Kelly Drive in Peachtree City, approximately 1700' east of the intersection of Kelly Drive and State Route 74. The work shall include but not be limited to removal of trees and other vegetation in the project area, removal and disposal of the existing spillway, construction of a temporary coffer dam, earthwork and drainage, construction of a new piano key weir, limited roadway construction, utilities coordination, and other ancillary site improvements.

**Bidder must insert identical data submitted to Peachtree City in the Pre-Qualification Form dated June 8, 2017, and a copy of the notification received from Peachtree City acknowledging prequalification on June 23, 2017 here:**

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SECTION 00 45 19  
NON-COLLUSION AFFIDAVIT

State of Georgia

County of \_\_\_\_\_

\_\_\_\_\_, being first duly sworn, deposes and says that:

(1) He is (owner, partner, officer, representative, or agent) of \_\_\_\_\_ the Bidder that has submitted the attached Bid;

(2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham Bid;

(4) Neither the said Bidder 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 Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the \_\_\_\_\_ or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title Date

Subscribed and sworn before me  
on this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Notary Public

My Commission Expires:  
\_\_\_\_\_

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SECTION 00 45 20

SECURITY AND IMMIGRATION COMPLIANCE

**Federal Work Authorization Program (§ O.C.G.A. 13-10-91)**

The City may not enter into a contract for the physical performance of services unless the contractor registers and participates in the federal work authorization program. "Physical performance of services" is defined as the building, altering, repairing, improving, or demolishing of any public structure or building or other public improvements of any kind to public property within Georgia, including the construction, reconstruction, or maintenance of all or part of a public road; or any other performance of labor for a public employer within Georgia under a contract or other bidding process".

Although the Georgia law for private employers has a structured phase-in timeline in an attempt to ease private employers into compliance based upon their business size, only those companies registered with, authorized to use and currently using the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in § O.C.G.A. 13-10-91, shall be considered.

Before a bid for the physical performance of services is considered by the City, the bid must include a signed, notarized affidavit from the contractor attesting to the following:

- (1) The affiant has registered with, is authorized to use, and uses the federal work authorization program.
- (2) The user identification number and date of authorization for the affiant;
- (3) The affiant will continue to use the federal work authorization program throughout the contract period;

and

- (4) The affiant will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the same information as required in numbers 1-3 above.

If a contractor does not have any employees and does not intend to hire any employees, in lieu of the above affidavit the contractor may provide a copy of state-issued driver's license or identification card to the City for each independent contractor utilized in satisfaction of part or all of the contract with the City. However, a driver's license or identification card will be acceptable if it is issued by a state that verifies lawful immigration status. The Georgia Attorney General will provide a list of states that verify lawful immigration status and post this list on its website. The City must confirm that all of the copies of driver's licenses and identification cards presented to it come from states that verify lawful immigration status.

**CONTRACTOR AFFIDAVIT UNDER O.C.G.A. § 13-10-91(b)(1)**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of City of Peachtree City has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91.

Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
*Federal Work Authorization User Identification Number*                      *Date of Authorization*

\_\_\_\_\_  
*Company Name / Contractor Name*

\_\_\_\_\_  
*Name of Project*

\_\_\_\_\_  
*Name of Public Employer*

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_\_, 20\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

\_\_\_\_\_  
*Signature of Authorized Officer or Agent*

\_\_\_\_\_  
*Printed Name and Title of Authorized Officer or Agent*

Subscribed and sworn before me

on this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
*Notary Public*

My Commission Expires: \_\_\_\_\_

**SUBCONTRACTOR AFFIDAVIT UNDER O.C.G.A. § 13-10-91(b) (3)**

By executing this affidavit, the undersigned subcontractor verifies its compliance with § O.C.G.A. 13-10-91 , stating affirmatively that the individual, firm , or corporation which is engaged in the physical performance of services under a contract with \_\_\_\_\_(name of Contractor) on behalf of City of Peachtree City has registered with, is authorized to use and uses federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in § O.C.G.A. 13-10-91.

Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-contractor with the information required by § O.C.G.A. 13-10-91 (b).

Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice of receipt of an affidavit from any sub-subcontractor that has contracted with a sub-subcontractor to forward, within five business days of receipt, a copy of such notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
*Federal Work Authorization User Identification Number*

\_\_\_\_\_  
*Date of Authorization*

\_\_\_\_\_  
*Company Name / Subcontractor Name*

\_\_\_\_\_  
*Name of Project*

\_\_\_\_\_  
*Name of Public Employer*

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_\_, 20\_\_\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

\_\_\_\_\_  
*Signature of Authorized Officer or Agent*

\_\_\_\_\_  
*Printed Name and Title of Authorized Officer or Agent*

Subscribed and sworn before me

on this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
*Notary Public*

My Commission Expires: \_\_\_\_\_

• END OF SECTION •

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SECTION 00 51 00  
NOTICE OF AWARD

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Project: Lake Peachtree Spillway Replacement Project

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Owner: City of Peachtree City

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Owner's Contract No.: 17-123BPW

---

Bidder:

---

Bidder's Address:

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You are notified that your Bid dated \_\_\_\_\_ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for Lake Peachtree Spillway Replacement Project.

The Contract Price of your Contract is \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

Accompanying this Notice of Award is a CD containing the proposed Contract Documents and Drawings.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner [3] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent: \_\_\_\_\_

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited. Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

**ISSUED:**

**ACCEPTED:**

City of Peachtree City

Contractor

By: \_\_\_\_\_  
Purchasing Agent

By: \_\_\_\_\_  
Authorized Signature

Project Manager

Print Name

Date

Title

Date

• END OF SECTION •

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SECTION 00 52 00

AGREEMENT

THIS AGREEMENT is by and between \_\_\_\_\_ City of Peachtree City \_\_\_\_\_ (“Owner”) and \_\_\_\_\_ (“Contractor”).

Owner and Contractor hereby agree as follows:

**ARTICLE 1 – Work**

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Lake Peachtree Spillway Replacement Project

**ARTICLE 2 – The Project**

- 2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

The **Lake Peachtree Spillway Replacement Project** is a Public Works project to reconstruct the principal spillway for Lake Peachtree. The existing spillway is 50 plus years old and inspection in 2014 revealed significant voids in the structure. The structure was temporarily repaired in 2016 and the lake pool restored. The project is located off Kelly Drive in Peachtree City, approximately 1700' east of the intersection of Kelly Drive and State Route 74. The work shall include but not be limited to removal of trees and other vegetation in the project area, removal and disposal of the existing spillway, construction of a temporary coffer dam, earthwork and drainage, construction of a new piano key weir, limited roadway construction, utilities coordination, and other ancillary site improvements.

**ARTICLE 3 – Engineer**

- 3.01 The Project has been designed by Schnabel Engineering (Engineer). Engineer will assist Owner as requested with review, interpretation, inspections, etc. of the Contract Documents, Technical Specifications, and Construction Drawings.

**ARTICLE 4 – Contract Times**

4.01 *Time of the Essence*

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve Substantial Completion and Final Payment*

- A. The Work will be substantially completed within 240 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 60 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times

specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$2,250.00 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$150.00 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

**ARTICLE 5 – Contract Price**

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A and 5.01.B below:

A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item:

UNIT PRICE WORK

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Bid Unit Price</u>	<u>Bid Price</u>
-----------------	--------------------	-------------	---------------------------	-----------------------	------------------

Total of all Bid Prices (Unit Price Work) \$ \_\_\_\_\_

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by the Peachtree City Project Manager as provided in Paragraph 9.07 of the General Conditions. Contractor shall determine an estimate of the quantities and no increase in the quantities so estimated shall be owed by the City unless such are approved, in writing, by the Project Manager prior to the installation or use of such materials or labor.

B. For all work other than Unit Price Work, the lump sums indicated on the Bid Form shall be paid in accordance with the Agreement and completion of the work set forth therein. All specific cash allowances are included in the lump sum prices in accordance with Paragraph 11.02 of the General Conditions.

**ARTICLE 6 – Payment Procedures**

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by the Peachtree City Project Manager as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of approved Contractor's Applications for Payment on or about Net 15 days of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as the Peachtree City Project Manager may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.
- a. 100 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by the Peachtree City Project Manager, and if the character and progress of the Work have been satisfactory to Owner, then as long as the character and progress of the Work remain satisfactory to Owner, there will be no additional retainage; and
- b. 100 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage). Paid invoices for stored materials required.
- c. "Balance Being Retainage" as noted above shall be considered as 10 percent of the progress payment amount until the job is at 50 percent complete. As long as the character and progress of the work remain satisfactory to the City of Peachtree City, there will be no additional retainage until substantial completion. Leaving 5 percent at substantial completion. Payment upon Substantial Completion shall be noted as below.
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as the Peachtree City Project Manager shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and or 200 percent of the Peachtree City Project Manager's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

#### 6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by the Peachtree City Project Manager as provided in said Paragraph 14.07.

#### **ARTICLE 7 – Interest**

- 7.01 All moneys not paid to a properly approved pay request when due as provided in Article 14 of the General Conditions shall bear interest at the rate allowed per Georgia Code 13-11-17.

#### **ARTICLE 8 – Contractor's Representations**

- 8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

- D. Contractor has carefully studied all, if any: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph SC-4.06 of the Supplementary Conditions as containing reliable "technical data."
- E. Contractor has considered the information known to Contractor, if any; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given the Peachtree City Project Manager written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by the Peachtree City Project Manager is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## **ARTICLE 9 – Contract Documents**

### **9.01 Contents**

- A. The Contract Documents consist of the following:
  - 1. This Agreement
  - 2. The Project Manual
  - 3. Performance bond
  - 4. Payment bond.
  - 5. General Conditions.
  - 6. Supplementary Conditions.
  - 7. Specifications.
  - 8. Engineering Plans prepared by Schnabel Engineering for the Lake Peachtree Spillway Replacement Project.
  - 9. Erosion, Sediment & Pollution Control Plans prepared by Integrated Science & Engineering.
  - 10. Addenda.
  - 11. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid.
    - b. Documentation submitted by Contractor prior to Notice of Award.
  - 12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Notice to Proceed.
    - b. Work Change Directives.

- c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

## **ARTICLE 10 – Miscellaneous**

### **10.01 Terms**

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

### **10.02 Assignment of Contract**

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

### **10.03 Successors and Assigns**

- A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

### **10.04 Severability**

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

### **10.05 Contractor's Certifications**

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
  1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons

or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on \_\_\_\_\_ (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR

City of Peachtree City \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

151 Willowbend Road \_\_\_\_\_

\_\_\_\_\_

Peachtree City, GA 30269 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

License No.: \_\_\_\_\_

(Where applicable)

Agent for service of process:

\_\_\_\_\_

• END OF SECTION •

SECTION 00 55 00  
NOTICE TO PROCEED

Project: Lake Peachtree Spillway Replacement Project	
Owner: City of Peachtree City	Owner's Contract No.: 17-123BPW
Contractor:	
Contractor's Address:	

You are notified that the Contract Times under the above Contract will commence to run on \_\_\_\_\_. On or before that date, you are to start performing your obligations under the Contract Documents. No field work to proceed prior to this date. In accordance with Article 4 of the Agreement, the date of Substantial Completion is \_\_\_\_\_, and the date of readiness for final payment is \_\_\_\_\_ [(or) the number of days to achieve Substantial Completion is \_\_\_\_\_, and the number of days to achieve readiness for final payment is \_\_\_\_\_].

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

**ISSUED:**

City of Peachtree City \_\_\_\_\_

By: \_\_\_\_\_  
Purchasing Agent

\_\_\_\_\_

Project Manager

\_\_\_\_\_

Date

**ACCEPTED:**

\_\_\_\_\_

Contractor

By: \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_

Print Name

\_\_\_\_\_

Title

\_\_\_\_\_

Date

• END OF SECTION •

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SECTION 00 61 13  
PERFORMANCE BOND

CONTRACTOR (name and address): SURETY (name and address of principal place of business):

OWNER: City of Peachtree City  
151 Willowbend Road  
Peachtree City, GA 30269

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Lake Peachtree Spillway Replacement Project - The Lake Peachtree Spillway Replacement Project is a Public Works project to reconstruct the principal spillway for Lake Peachtree. The existing spillway is 50 plus years old and inspection in 2014 revealed significant voids in the structure. The structure was temporarily repaired in 2016 and the lake pool restored. The project is located off Kelly Drive in Peachtree City, approximately 1700' east of the intersection of Kelly Drive and State Route 74. The work shall include but not be limited to removal of trees and other vegetation in the project area, removal and disposal of the existing spillway, construction of a temporary coffer dam, earthwork and drainage, construction of a new piano key weir, limited roadway construction, utilities coordination, and other ancillary site improvements.

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal (seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (attach power of attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

*Note: Contractor and/or surety company's standard forms are allowable in lieu of this document provided intent is met.*

*Note: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.*

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:
  - 3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
  - 3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
  - 3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
  - 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
  - 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
  - 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new

- contractor, and with reasonable promptness under the circumstances:
- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
  - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
  7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
    - 7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
    - 7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
    - 7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
  8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
  9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
  10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
  11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.
  12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
  13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
  14. Definitions

- 14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
  - 14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
  - 14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
16. Modifications to this Bond are as follows:  
<Contractor/surety to list if any>

• END OF SECTION •

SECTION 00 61 15

PAYMENT BOND

CONTRACTOR (name and address): SURETY (name and address of principal place of business):

OWNER: City of Peachtree City  
151 Willowbend Road  
Peachtree City, GA 30269

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Lake Peachtree Spillway Replacement Project - The Lake Peachtree Spillway Replacement Project is a Public Works project to reconstruct the principal spillway for Lake Peachtree. The existing spillway is 50 plus years old and inspection in 2014 revealed significant voids in the structure. The structure was temporarily repaired in 2016 and the lake pool restored. The project is located off Kelly Drive in Peachtree City, approximately 1700' east of the intersection of Kelly Drive and State Route 74. The work shall include but not be limited to removal of trees and other vegetation in the project area, removal and disposal of the existing spillway, construction of a temporary coffer dam, earthwork and drainage, construction of a new piano key weir, limited roadway construction, utilities coordination, and other ancillary site improvements.

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal (seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (attach power of attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

*Note: Contractor and/or surety company's standard forms are allowable in lieu of this document provided intent is met.*

*Note: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.*

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
  - 5.1 Claimants who do not have a direct contract with the Contractor,
    - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2 Pay or arrange for payment of any undisputed amounts.
  - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of

reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
  - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
    1. The name of the Claimant;
    2. The name of the person for whom the labor was done, or materials or equipment furnished;
    3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    4. A brief description of the labor, materials, or equipment furnished;
    5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
    6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
    7. The total amount of previous payments received by the Claimant; and

8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

<Contractor/surety to list if any>

• END OF SECTION •



SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

---

Project: Lake Peachtree Spillway Replacement Project

---

Owner: City of Peachtree City

Contract No.: 17-123BPW

---

Engineer's Project No.: 16C17043.00

---

**This [tentative] [definitive] Certificate of Substantial Completion applies to:**

- All Work under the Contract Documents:                       The following specified portions of the Work:

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Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and/or Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [definitive] list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:**

- Amended Responsibilities     Not Amended

Owner's Amended Responsibilities:

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SECTION 00 65 19

AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS

TO OWNER:  
City of Peachtree City

ENGINEER'S PROJECT NO.:  
16C17043.00

PROJECT:  
Lake Peachtree Spillway Replacement Project

CONTRACT DATED:

STATE OF: Georgia

COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all material and equipment furnished, for all work, labor and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner's property might in any way be held responsible or encumbered, as of this date, and the amount indicated below is the full amount owed as of the date of submission to Owner, including any and all change orders, general conditions, or other sums that could be owed by Owner as of this date.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED  
HERETO:

1. Consent of Surety to Final Payment.
2. Contractor's Affidavit of Release of Liens.

The above personally appeared before me, the undersigned notary public, and provided satisfactory evidence of identification to be the person who signed this document in my presence and swore or affirmed to me that the contents of this document are truthful and accurate to the best of his/her knowledge and belief.

Date:

Notary Public:

My Commission expires:

CONTRACTOR: *(name and address)*

By: \_\_\_\_\_  
*(Signature of authorized representative)*

\_\_\_\_\_  
*(Printed name and title)*

The above personally appeared before me, the undersigned notary public, and provided satisfactory evidence of identification to be the person who signed this document in my presence and swore or affirmed to me that the contents of this document are truthful and accurate to the best of his/her knowledge and belief.

Date:

Notary Public:

My Commission expires:

• END OF SECTION •

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SECTION 00 65 20

AFFIDAVIT OF PAYMENT RELEASE OF LIENS

TO OWNER:  
City of Peachtree City

ENGINEER'S PROJECT NO.:  
16C17043.00

PROJECT:  
Lake Peachtree Spillway Replacement Project

CONTRACT DATED:

STATE OF: Georgia

COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED  
HERE TO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens form Subcontractors and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(name and address)*

By: \_\_\_\_\_  
*(Signature of authorized representative)*

\_\_\_\_\_  
*(Printed name and title)*

The above personally appeared before me, the undersigned notary public, and provided satisfactory evidence of identification to be the person who signed this document in my presence and swore or affirmed to me that the contents of this document are truthful and accurate to the best of his/her knowledge and belief.

Date:

Notary Public:

My Commission expires:

• END OF SECTION •

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SECTION 00 65 21

CONSENT OF SURETY TO FINAL PAYMENT

TO OWNER:  
City of Peachtree City

ENGINEER'S PROJECT NO.:  
16C17043.00

PROJECT:  
Lake Peachtree Spillway Replacement Project

CONTRACT DATED:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the

*(insert name and address of Surety)*

, SURETY,

on bond of

*(insert name and address of Contractor)*

, CONTRACTOR,

herby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to

*(insert name and address of Owner)*

, OWNER,

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:

*(insert in writing the moth followed by the numeric date and year)*

\_\_\_\_\_  
*(Surety)*

\_\_\_\_\_  
*(Signature of authorized representative)*

Attest:  
*(Seal):*

\_\_\_\_\_  
*(Printed name and title)*

• END OF SECTION •

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SECTION 00 72 00  
GENERAL CONDITIONS

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
  3. *Application for Payment*—The form acceptable to Peachtree City - Project Manager which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
  5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
  7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
  8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
  9. *Change Order*—A document recommended by Peachtree City - Project Manager which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
  10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
  11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
  12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
  13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work

in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Peachtree City - Project Manager's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Peachtree City - Project Manager which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Peachtree City - Project Manager*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Peachtree City - Project Manager which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Peachtree City - Project Manager who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Peachtree City - Project Manager, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.



45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Peachtree City - Project Manager ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

- A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
  1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Peachtree City - Project Manager. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Peachtree City - Project Manager as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Peachtree City - Project Manager any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.
- C. *Day:*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

**D. Defective:**

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - c. has been damaged prior to Peachtree City - Project Manager's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

**E. Furnish, Install, Perform, Provide:**

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

**ARTICLE 2 – PRELIMINARY MATTERS**

**2.01 Delivery of Bonds and Evidence of Insurance**

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

**2.02 Copies of Documents**

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Peachtree City - Project Manager for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
  2. a preliminary Schedule of Submittals; and
  3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Peachtree City - Project Manager, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Peachtree City - Project Manager, and others as appropriate will be held to review for acceptability to Peachtree City - Project Manager as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Peachtree City - Project Manager.
1. The Progress Schedule will be acceptable to Peachtree City - Project Manager if it

provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Peachtree City - Project Manager responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Peachtree City - Project Manager if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Peachtree City - Project Manager as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

### **ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Peachtree City - Project Manager as provided in Article 9.

#### **3.02 *Reference Standards***

- A. Standards, Specifications, Codes, Laws, and Regulations
  1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Peachtree City - Project Manager, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Peachtree City - Project Manager, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

#### **3.03 *Reporting and Resolving Discrepancies***

##### **A. *Reporting Discrepancies:***

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract

Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Peachtree City - Project Manager any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Peachtree City - Project Manager before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Peachtree City - Project Manager in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Peachtree City - Project Manager for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

**B. Resolving Discrepancies:**

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
  - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

**3.04 Amending and Supplementing Contract Documents**

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  1. A Field Order;
  2. Peachtree City - Project Manager's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
  3. Peachtree City - Project Manager's written interpretation or clarification.

**3.05 Reuse of Documents**

- A. Contractor and any Subcontractor or Supplier shall not:
  1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Peachtree City - Project Manager or its consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Peachtree City - Project Manager and specific written verification or adaptation by Peachtree City - Project Manager.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Peachtree City - Project Manager to Contractor, or by Contractor to Owner or Peachtree City - Project Manager, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

**ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;  
HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

**B. *Limited Reliance by Contractor on Technical Data Authorized:*** Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Peachtree City - Project Manager, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

**A. *Notice:*** If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Peachtree City - Project Manager in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

**B. *Peachtree City - Project Manager's Review:*** After receipt of written notice as required by Paragraph 4.03.A, Peachtree City - Project Manager will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Peachtree City - Project Manager's findings and conclusions.

**C. *Possible Price and Times Adjustments:***

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase

or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
  - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
- a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
  - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
  - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Peachtree City - Project Manager, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Peachtree City - Project Manager by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Peachtree City - Project Manager shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
  - a. reviewing and checking all such information and data;
  - b. locating all Underground Facilities shown or indicated in the Contract Documents;
  - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
  - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.



**B. *Not Shown or Indicated:***

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Peachtree City - Project Manager. Peachtree City - Project Manager will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Peachtree City - Project Manager concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

**4.05 *Reference Points***

- A.** Owner shall provide Peachtree City - Project Managering surveys to establish reference points for construction which in Peachtree City - Project Manager's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Peachtree City - Project Manager whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

**4.06 *Hazardous Environmental Condition at Site***

- A. *Reports and Drawings:*** The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:*** Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Peachtree City - Project Manager, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Peachtree City - Project Manager (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Peachtree City - Project Manager concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Peachtree City - Project Manager, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 5 – BONDS AND INSURANCE**

### **5.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Peachtree City - Project Manager and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

### **5.02 *Licensed Sureties and Insurers***

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### **5.03 *Certificates of Insurance***

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required

- to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
  - C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
  - D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
  - E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
  - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
  - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
    - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
    - b. by any other person for any other reason;
  - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
  - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
  - 1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Peachtree City - Project Manager, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and

subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations coverage:
  - a. Such insurance shall remain in effect for two years after final payment.
  - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  1. include the interests of Owner, Contractor, Subcontractors, and Peachtree City - Project Manager, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of Peachtree City - Project Managers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Peachtree City - Project Manager;
  5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Peachtree City - Project Manager with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Peachtree City - Project Manager, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Peachtree City - Project Manager, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and

- subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Peachtree City - Project Manager, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner

and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

**ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES**

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Peachtree City - Project Manager in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Peachtree City - Project Manager except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Peachtree City - Project Manager.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.



- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Peachtree City - Project Manager, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Peachtree City - Project Manager for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Peachtree City - Project Manager for review under the circumstances described below.
  - 1. *"Or-Equal" Items:* If in Peachtree City - Project Manager's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Peachtree City - Project Manager as an "or-equal" item, in which case review and approval of the proposed item may, in Peachtree City - Project Manager's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Peachtree City - Project Manager determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
      - 3) it has a proven record of performance and availability of responsive service.
    - b. Contractor certifies that, if approved and incorporated into the Work:

- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
- 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Peachtree City - Project Manager's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Peachtree City - Project Manager to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Peachtree City - Project Manager from anyone other than Contractor.
- c. The requirements for review by Peachtree City - Project Manager will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Peachtree City - Project Manager may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Peachtree City - Project Manager for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - 1) shall certify that the proposed substitute item will:
    - a) perform adequately the functions and achieve the results called for by the general design,
    - b) be similar in substance to that specified, and
    - c) be suited to the same use as that specified;
  - 2) will state:
    - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
    - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
    - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
  - 3) will identify:
    - a) all variations of the proposed substitute item from that specified, and
    - b) available Peachtree City - Project Manager, sales, maintenance, repair, and replacement services; and
  - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Peachtree City - Project Manager. Contractor shall submit sufficient information to allow Peachtree City - Project Manager, in Peachtree City - Project Manager's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Peachtree City - Project Manager will be similar to those provided in Paragraph 6.05.A.2.
- C. *Peachtree City - Project Manager's Evaluation:* Peachtree City - Project Manager will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Peachtree City - Project Manager may require Contractor to furnish additional data about the proposed substitute item. Peachtree City - Project Manager will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Peachtree City - Project Manager's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Peachtree City - Project Manager will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Peachtree City - Project Manager's Cost Reimbursement:* Peachtree City - Project Manager will record Peachtree City - Project Manager's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Peachtree City - Project Manager approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Peachtree City - Project Manager for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Peachtree City - Project Manager for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Peachtree City - Project Manager to reject defective Work.

- C. Contractor shall be fully responsible to Owner and Peachtree City - Project Manager for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Peachtree City - Project Manager and any such Subcontractor, Supplier or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Peachtree City - Project Manager to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Peachtree City - Project Manager through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Peachtree City - Project Manager. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Peachtree City - Project Manager, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Peachtree City - Project Manager, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals, and all court or arbitration or other dispute

resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Peachtree City - Project Manager shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

#### 6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 6.11 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to the site, or any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
  2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall before final payment settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
  3. To the fullest extent permitted by Georgia Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Peachtree City - Project Manager, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Peachtree City - Project Manager for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Peachtree City - Project Manager for Owner.

#### 6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
  2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Peachtree City - Project Manager of the specific requirements of Contractor's safety program with which Owner's and Peachtree City - Project Manager's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Peachtree City - Project Manager or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Peachtree City - Project Manager has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- 6.14 *Safety Representative*
- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- 6.15 *Hazard Communication Programs*
- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.
- 6.16 *Emergencies*
- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury,

or loss. Contractor shall give Peachtree City - Project Manager prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Peachtree City - Project Manager determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Peachtree City - Project Manager for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Peachtree City - Project Manager may require.
1. *Shop Drawings:*
    - a. Submit number of copies specified in the General Requirements.
    - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Peachtree City - Project Manager the services, materials, and equipment Contractor proposes to provide and to enable Peachtree City - Project Manager to review the information for the limited purposes required by Paragraph 6.17.D.
  2. *Samples:*
    - a. Submit number of Samples specified in the Specifications.
    - b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Peachtree City - Project Manager may require to enable Peachtree City - Project Manager to review the submittal for the limited purposes required by Paragraph 6.17.D.
- B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Peachtree City - Project Manager's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Submittal Procedures:*
1. Before submitting each Shop Drawing or Sample, Contractor shall have:
    - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
    - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
    - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
  2. Each submittal shall bear a stamp or specific written certification that Contractor has



satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Peachtree City - Project Manager specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Peachtree City - Project Manager for review and approval of each such variation.

*D. Peachtree City - Project Manager's Review:*

1. Peachtree City - Project Manager will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Peachtree City - Project Manager. Peachtree City - Project Manager's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Peachtree City - Project Manager's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Peachtree City - Project Manager's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Peachtree City - Project Manager has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Peachtree City - Project Manager's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

*E. Resubmittal Procedures:*

1. Contractor shall make corrections required by Peachtree City - Project Manager and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Peachtree City - Project Manager on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Peachtree City - Project Manager and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Peachtree City - Project Manager;
  2. recommendation by Peachtree City - Project Manager or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Peachtree City - Project Manager or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Peachtree City - Project Manager;
  6. any inspection, test, or approval by others; or
  7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Peachtree City - Project Manager or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Peachtree City - Project Manager and Peachtree City - Project Manager's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Peachtree City - Project Manager will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Peachtree City - Project Manager.
- C. Owner and Peachtree City - Project Manager shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Peachtree City - Project Manager have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Peachtree City - Project Manager's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Peachtree City - Project Manager's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

**ARTICLE 7 – OTHER WORK AT THE SITE**

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
  1. written notice thereof will be given to Contractor prior to starting any such other work; and
  2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage

of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Peachtree City - Project Manager and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Peachtree City - Project Manager in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

#### 7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
  - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
  - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

### **ARTICLE 8 – OWNER'S RESPONSIBILITIES**

#### 8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Peachtree City - Project Manager.

8.02 *Replacement of Peachtree City - Project Manager*

A. In case of termination of the employment of Peachtree City - Project Manager, Owner shall appoint an Peachtree City - Project Manager to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Peachtree City - Project Manager.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing Peachtree City - Project Managing surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

**ARTICLE 9 – PEACHTREE CITY - PROJECT MANAGER'S STATUS DURING CONSTRUCTION**

9.01 *Owner's Representative*

- A. Peachtree City - Project Manager will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Peachtree City - Project Manager as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Peachtree City - Project Manager will make visits to the Site at intervals appropriate to the various stages of construction as Peachtree City - Project Manager deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Peachtree City - Project Manager, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Peachtree City - Project Manager will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Peachtree City - Project Manager's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Peachtree City - Project Manager will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Peachtree City - Project Manager's visits and observations are subject to all the limitations on Peachtree City - Project Manager's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Peachtree City - Project Manager's visits or observations of Contractor's Work, Peachtree City - Project Manager will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Peachtree City - Project Manager agree, Peachtree City - Project Manager will furnish a Resident Project Representative to assist Peachtree City - Project Manager in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Peachtree City - Project Manager's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Peachtree City - Project Manager may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed

Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Peachtree City - Project Manager will have authority to reject Work which Peachtree City - Project Manager believes to be defective, or that Peachtree City - Project Manager believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Peachtree City - Project Manager will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Peachtree City - Project Manager's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Peachtree City - Project Manager's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Peachtree City - Project Manager's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Peachtree City - Project Manager's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Peachtree City - Project Manager will determine the actual installed quantities and classifications of Unit Price Work performed by Contractor. Peachtree City - Project Manager will review with Contractor the Peachtree City - Project Manager's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Peachtree City - Project Manager's written decision thereon will be final and binding (except as modified by Peachtree City - Project Manager to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Peachtree City - Project Manager will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Peachtree City - Project Manager in writing within 30 days of the event giving rise to the question.
- B. Peachtree City - Project Manager will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Peachtree City - Project Manager's decision shall be the date

of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

- C. Peachtree City - Project Manager's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Peachtree City - Project Manager will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Peachtree City - Project Manager's Authority and Responsibilities*

- A. Neither Peachtree City - Project Manager's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Peachtree City - Project Manager in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Peachtree City - Project Manager shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Peachtree City - Project Manager to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Peachtree City - Project Manager will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Peachtree City - Project Manager will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Peachtree City - Project Manager will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Peachtree City - Project Manager's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Peachtree City - Project Manager's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Peachtree City - Project Manager has been informed pursuant to Paragraph 6.13.D.

**ARTICLE 10 – CHANGES IN THE WORK; CLAIMS**

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).



- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Peachtree City - Project Manager covering:
  1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
  2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
  3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Peachtree City - Project Manager pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.
  4. Change Orders that increase the Contract Price by more than Twenty Thousand Dollars (\$20,000.00) must be approved by the City Council of Peachtree City in order to be valid. In the event that Contractor proceeds with the work proposed by the change order which increases the contract price by more than Twenty Thousand Dollars (\$20,000.00) prior to obtaining approval of the City Council, the Contractor has waived its right to collect such additional sum; provided, however that the City Council may ratify such work after it is completed, which ratification shall not be unreasonably withheld.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Peachtree City - Project Manager's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Peachtree City - Project Manager for decision. A decision by Peachtree City - Project Manager shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Peachtree City - Project Manager and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Peachtree City - Project Manager and the other party to the Contract within 60 days after the start of such event (unless Peachtree City - Project Manager allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Peachtree City - Project Manager and the claimant within 30 days after receipt of the claimant's last submittal (unless Peachtree City - Project Manager allows additional time).
- C. *Peachtree City - Project Manager's Action:* Peachtree City - Project Manager will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
  2. approve the Claim; or
  3. notify the parties that the Peachtree City - Project Manager is unable to resolve the Claim if, in the Peachtree City - Project Manager's sole discretion, it would be inappropriate for the Peachtree City - Project Manager to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Peachtree City - Project Manager does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Peachtree City - Project Manager's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## **ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **11.01 *Cost of the Work***

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other

personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Peachtree City - Project Manager, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to Peachtree City - Project Managers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Peachtree City - Project Manager, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with

the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

**B. *Costs Excluded:*** The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, Peachtree City - Project Managers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

**C. *Contractor's Fee:*** When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

**D. *Documentation:*** Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Peachtree City - Project Manager an itemized cost breakdown together with supporting data.

11.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Peachtree City - Project Manager.
- B. *Cash Allowances:*
1. Contractor agrees that:
    - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
    - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Peachtree City - Project Manager to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Peachtree City - Project Manager subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  2. there is no corresponding adjustment with respect to any other item of Work; and
  3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Peachtree City - Project Manager and the other party to the Contract in accordance with the provisions of Paragraph 10.05. The Contract Price may not be increased by more than Twenty Thousand Dollars (\$20,000.00) unless such increase is approved by the City Council of Peachtree City. In the event that Contractor proceeds with the work that increases the Contract Price by more than Twenty Thousand Dollars (\$20,000.00) prior to obtaining approval of the City Council, the Contractor has waived its right to collect such additional sum; provided, however that the City Council may ratify such work after it is completed, which ratification shall not be unreasonably withheld
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost

plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

#### 12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Peachtree City - Project Manager and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

#### 12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Peachtree City - Project Manager, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Peachtree City - Project Manager, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

### **ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF**

## DEFECTIVE WORK

### 13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Peachtree City - Project Manager has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

### 13.02 *Access to Work*

- A. Owner, Peachtree City - Project Manager, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

### 13.03 *Tests and Inspections*

- A. Contractor shall give Peachtree City - Project Manager timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
  - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
  - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Peachtree City - Project Manager the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Peachtree City - Project Manager's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Peachtree City - Project Manager.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Peachtree City - Project Manager, Contractor shall, if requested by Peachtree City - Project Manager, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Peachtree City - Project Manager timely notice of Contractor's intention to cover the same and Peachtree City - Project Manager has not acted with reasonable promptness in response to such notice.



13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Peachtree City - Project Manager, it must, if requested by Peachtree City - Project Manager, be uncovered for Peachtree City - Project Manager's observation and replaced at Contractor's expense.
- B. If Peachtree City - Project Manager considers it necessary or advisable that covered Work be observed by Peachtree City - Project Manager or inspected or tested by others, Contractor, at Peachtree City - Project Manager's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Peachtree City - Project Manager may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Peachtree City - Project Manager, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as

may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
  2. correct such defective Work; or
  3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

#### 13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Peachtree City - Project Manager's recommendation of final payment, Peachtree City - Project Manager) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Peachtree City - Project Manager as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Peachtree City - Project Manager's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Peachtree City - Project Manager to correct defective Work, or to remove and replace rejected Work as required by Peachtree City - Project Manager in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Peachtree City - Project Manager and Peachtree City - Project Manager's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

**ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION**

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Peachtree City - Project Manager. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Peachtree City - Project Manager for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another

location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

**B. Review of Applications:**

1. Peachtree City - Project Manager will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Peachtree City - Project Manager's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Peachtree City - Project Manager's recommendation of any payment requested in an Application for Payment will constitute a representation by Peachtree City - Project Manager to Owner, based on Peachtree City - Project Manager's observations of the executed Work as an experienced and qualified design professional, and on Peachtree City - Project Manager's review of the Application for Payment and the accompanying data and schedules, that to the best of Peachtree City - Project Manager's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Peachtree City - Project Manager's responsibility to observe the Work.
3. By recommending any such payment Peachtree City - Project Manager will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Peachtree City - Project Manager in the Contract Documents; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Peachtree City - Project Manager's review of Contractor's Work for the purposes of recommending payments nor Peachtree City - Project Manager's recommendation of

any payment, including final payment, will impose responsibility on Peachtree City - Project Manager:

- a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Peachtree City - Project Manager may refuse to recommend the whole or any part of any payment if, in Peachtree City - Project Manager's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Peachtree City - Project Manager may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Peachtree City - Project Manager's opinion to protect Owner from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
  - d. Peachtree City - Project Manager has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

*C. Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Peachtree City - Project Manager's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

*D. Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Peachtree City - Project Manager because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
  - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or

- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Peachtree City - Project Manager, Owner will give Contractor immediate written notice (with a copy to Peachtree City - Project Manager) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Peachtree City - Project Manager in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Peachtree City - Project Manager issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Peachtree City - Project Manager shall make an inspection of the Work to determine the status of completion. If Peachtree City - Project Manager does not consider the Work substantially complete, Peachtree City - Project Manager will notify Contractor in writing giving the reasons therefor.
- C. If Peachtree City - Project Manager considers the Work substantially complete, Peachtree City - Project Manager will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Peachtree City - Project Manager as to any provisions of the certificate or attached list. If, after considering such objections, Peachtree City - Project Manager concludes that the Work is not substantially complete, Peachtree City - Project Manager will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Peachtree City - Project Manager considers the Work substantially complete, Peachtree City - Project Manager will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Peachtree City - Project Manager believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Peachtree City - Project Manager will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Peachtree City - Project Manager in writing prior to Peachtree City - Project Manager's issuing the definitive certificate of Substantial Completion, Peachtree City - Project Manager's aforesaid recommendation will be binding on Owner and Contractor until final payment.

- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Peachtree City - Project Manager, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Peachtree City - Project Manager will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
  - 2. Contractor at any time may notify Owner and Peachtree City - Project Manager in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Peachtree City - Project Manager to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Peachtree City - Project Manager shall make an inspection of that part of the Work to determine its status of completion. If Peachtree City - Project Manager does not consider that part of the Work to be substantially complete, Peachtree City - Project Manager will notify Owner and Contractor in writing giving the reasons therefor. If Peachtree City - Project Manager considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Peachtree City - Project Manager will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

- 1. After Contractor has, in the opinion of Peachtree City - Project Manager, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
- 2. The final Application for Payment shall be accompanied (except as previously delivered) by:

- a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
  - b. consent of the surety, if any, to final payment;
  - c. a list of all Claims against Owner that Contractor believes are unsettled; and
  - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

**B. *Peachtree City - Project Manager's Review of Application and Acceptance:***

1. If, on the basis of Peachtree City - Project Manager's observation of the Work during construction and final inspection, and Peachtree City - Project Manager's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Peachtree City - Project Manager is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Peachtree City - Project Manager will, within ten days after receipt of the final Application for Payment, indicate in writing Peachtree City - Project Manager's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Peachtree City - Project Manager will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Peachtree City - Project Manager will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

**C. *Payment Becomes Due:***

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Peachtree City - Project Manager, less any sum Owner is entitled to set off against Peachtree City - Project Manager's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

**14.08 *Final Completion Delayed***

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Peachtree City - Project Manager so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Peachtree City - Project Manager, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Peachtree City - Project Manager with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not



constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
  2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

**ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION**

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Peachtree City - Project Manager which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
  2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
  3. Contractor's repeated disregard of the authority of Peachtree City - Project Manager; or
  4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
  2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
  3. complete the Work as Owner may deem expedient.

- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to

- receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Peachtree City - Project Manager as to their reasonableness and, when so approved by Peachtree City - Project Manager, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Peachtree City - Project Manager, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
  3. all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
  4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Peachtree City - Project Manager fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally

determined to be due, then Contractor may, upon seven days written notice to Owner and Peachtree City - Project Manager, and provided Owner or Peachtree City - Project Manager do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Peachtree City - Project Manager has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Peachtree City - Project Manager, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## **ARTICLE 16 – DISPUTE RESOLUTION**

### **16.01 *Methods and Procedures***

- A. Either Owner or Contractor may request mediation of any Claim submitted to Peachtree City - Project Manager for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Peachtree City - Project Manager's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
  2. agrees with the other party to submit the Claim to another dispute resolution process; or
  3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

## **ARTICLE 17 – MISCELLANEOUS**

### **17.01 *Giving Notice***

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
  2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

• END OF SECTION •

SECTION 00 73 00  
SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC No. C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions, which are not so amended or supplemented, remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

**SC-1.01 Defined Terms**

SC-1.01.A.52 Add the following paragraphs immediate after Paragraph 1.01.A.52:

53. *Peachtree City - Project Manager's Consultant* — An individual or entity having a contract with Peachtree City - Project Manager to furnish services as Peachtree City - Project Manager's independent professional associate or consultant with respect to the Project. Peachtree City - Project Manager's Consultants are identified as follows:

- a) Project Manager - Integrated Science & Engineering, Dan Davis, P.E.
- b) Engineer of Record – Schnabel Engineering, Randy Bass, P.E.
- c) Geotechnical Consultant – Schnabel Engineering, Randy Bass, P.E.
- d) Testing Agency – Schnabel Engineering, Randy Bass, P.E.
- e) Environmental Consultant – Corblu Ecology Group, John Vermont, PWS, CE

SC-1.01.A.9 Amend paragraph 1.01.A.9 of the General conditions to read as follows:

Change Order: A document which is signed by Contractor, Owner, and by Peachtree City - Project Manager, or approved by the City Council of Peachtree City, Georgia, as required, and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after Effective Date of the Agreement.

SC1.01.A.14 Amend paragraph 1.01.A.14 of the General Conditions by the addition of the following provision:

Execution of this Agreement by Contractor constitutes an acknowledgement and agreement by Contractor that all Contract Times stated in the Contract Documents are reasonable and are of sufficient duration for the Work required to be performed within such times. Contractor acknowledges that Work on Saturdays, Sundays, or legal holidays requires the prior written consent of Owner and further requires that Contractor shall be responsible for, and shall pay, any and all overtime or extra cost incurred by Owner or Peachtree City - Project Manager resulting from such Work on Saturdays, Sundays, or legal holidays. Contractor further acknowledges that unless expressly stated otherwise, all days and times set forth in the Contract Documents shall be measured by calendar days.

**SC-2.01 Delivery of Bonds and Evidence of Insurance**

SC-2.01.B Add the following new paragraph immediately after Paragraph 2.01.B:

1. Provide Owner, at the time Contracts are returned by Owner for execution, three (3) copies of all insurance certificates. In addition, all coverages held jointly in names of Owner and/or Peachtree City - Project Manager, three (3) additional copies of policies shall be furnished. Each additional insured identified in the Supplementary Conditions shall be provided one copy of all insurance certificates. Owner reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "originally signed copies" and so designated.

**SC-2.02 Copies of Documents**

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following in its place:

- A. Owner shall furnish to Contractor up to one (1) printed or hard copies of the Drawings and Project Manual and one (1) set in electronic format. Additional copies will be furnished upon request at the cost of reproduction.

**SC-2.03 Commencement of Contract Times; Notice to Proceed**

SC-2.03.A Add the following paragraph immediately after Paragraph 2.03.A:

- B. Should the Owner require additional time to award a Contract, the time may be extended by the mutual agreement between the Owner and the successful Bidder. If an award of Contract has not been made within 60 days from the Bid date or within the extension mutually agreed upon by written agreement, the Bidder may withdraw the Bid without further liability on the part of the either party.

**SC-2.07 Initial Acceptance of Schedules**

SC-2.07.A.3 Add the following language at the end of Paragraph 2.07.A.3:

4. Contractor shall not imbalance their Schedule of Values nor artificially inflates any element thereof. If required by Owner or Peachtree City - Project Manager, Contractor shall furnish any required documentation to substantiate that the Schedule of Values is balanced and not artificially inflated. Violation of this provision by Contractor may constitute a material breach of this Agreement.

**SC-3.01 Intent**

SC-3.01.C Add the following language at the end of Paragraph 3.01.C:

In the event of a conflict, discrepancy, contradiction, or inconsistency within the Contract Documents and for the resolution of same, the following order of hierarchy and control shall apply and prevail:

- 1) Contract; 2) Addenda; 3) Supplementary General Conditions; 4) General Conditions; 5) Specifications; 6) Drawings; 7) Instruction to Bidders; 8) Invitation to Bid; 9) Sample Forms.

If a conflict, discrepancy, contradiction, or inconsistency occurs within or between the Specifications and the Drawings, resolution shall be controlled by the following:

1. As between figures, dimensions, or numbers given on Drawings and any scaled measurements, the figures, dimensions, or numbers shall govern;
2. As between large scale drawings and small-scale drawings, the larger scale drawings shall govern;
3. As between technical specifications and drawings, the technical specifications shall

govern;

4. Shop Drawings and Submittals: Shop drawings and other submittals from the Contractor, subcontractors, or suppliers do not constitute a part of the Contract Documents;
5. In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Peachtree City - Project Manager's interpretation.

**SC-4.01 Availability of Lands**

SC-4.01.C Add the following new paragraph immediately after Paragraph 4.01.C:

- D. Contractor has received a list of Work areas from Owner where some easements necessary to complete this Project may not have been obtained by Owner at Bid time, and may not be available until an undetermined time during the construction period. Owner will notify Contractor when such easements have been secured and when Contractor may proceed with Work in those areas.
  1. Contractor may request an extension of Contract Times in accordance with Article 10 of the General Conditions if Owner is unable to secure easements within 30 days after the effective date of the Agreement.
  2. Requests for a change in Contract Price for areas that have been identified as unavailable at time of Bid and may impact Contractor's work production will not be considered.

**SC-4.02 Subsurface and Physical Conditions,**

SC-4.02.A Delete Paragraph 4.02.A and replace it in its entirety with:

- A. In the preparation of Drawings and Specifications, Peachtree City - Project Manager or Peachtree City - Project Manager's Consultants relied upon those reports of explorations and tests of subsurface conditions at or contiguous to the Site; and those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities). Copies of reports and drawings itemized below that are not included with Bidding Documents may be examined at Peachtree City Hall during regular business hours.
  1. Report dated March 14, 2016, prepared by Schnabel Engineering, 6445 Shiloh Road, Alpharetta, Georgia, entitled: Subsurface Exploration Data Report – Proposed Piano Key Weir. The "technical data" contained in such report upon which CONTRACTOR may rely is the soil boring logs.
  2. Drawings dated July 10, 2017, prepared by Schnabel Engineering, 6445 Shiloh Road, Alpharetta, Georgia, entitled: Lake Peachtree Spillway Replacement Project, consisting of 66 sheets numbered 01 to 66, inclusive. All of the information in such drawings constitutes "technical data" on which CONTRACTOR may rely.
  3. Drawings dated June 29, 2017, prepared by Integrated Science & Engineering, 1039 Sullivan Road, Newnan, Georgia, entitled Erosion, Sediment & Pollution Plans for Lake Peachtree Spillway Replacement, consisting of 9 sheets numbered C500 to C602. All of the information in such drawings constitutes "technical data" on which CONTRACTOR may rely.

**SC-4.06 Hazardous Environmental Condition at Site**

SC-4.06.A Delete Paragraph 4.06.A and replace it in its entirety with:

- A. In the preparation of Drawings and Specifications, Peachtree City - Project Manager or Peachtree City - Project Manager's Consultants did not rely upon reports of Hazardous Environmental Conditions at the Site, except as noted on Drawings.

**SC- 5.01 Performance, Payment, and Other Bonds**

SC- 5.01.A Delete Paragraph 5.01.A in its entirety and insert the following in its place:

- A. Contractor shall furnish a performance bond in an amount equal to the Contract Price, and a payment bond in the amount of 110% of the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

**SC-5.02 Licensed Sureties and Insurers**

SC-5.02.A Add the following language at the end of Paragraph 5.02.A:

In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State in which the Work is performed and shall have a financial rating not lower than VI and a policyholder's service rating no lower than A- as listed in A.M. Best's Key Rating Guide, current edition. Certificates of insurance shall note A.M. Best's Rating. All bonds and insurance coverages shall be with sureties or insurance companies that are acceptable to OWNER.

**SC-5.03 Certificates of Insurance**

SC-5.03.E Add the following new paragraphs at the end of Paragraph 5.03.E:

- F. The identity of the additional insureds that are to be included on Contractor's insurance policies are:
  - 1. The City of Peachtree City and including all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and their board members, employees, and volunteers.
  - 2. Project Manager - Integrated Science & Engineering : Dan Davis, P.E.
  - 3. Engineering of Record: Schnabel Engineering, Mr. Randy Bass, P.E.
  - 4. Testing Agency: Schnabel Engineering, Mr. Randy Bass, P.E.
  - 5. Environmental Consultant: Corblu Ecology Group, Mr. John Vermont
  - 6. Fayette County and including all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and their board members, employees, and volunteers.

In addition, the Contractor's liability insurance shall include a provision for insurance as required by Contracts so as to include the above-named parties as insureds under such policy.

**SC-5.04 Contractor's Liability Insurance**



SC-5.04 Add the following new paragraph immediately after Paragraph 5.04.B:

- C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
    - a. State: Statutory
    - b. Applicable Federal (i.e., Longshoreman's): Statutory
    - c. Employer's Liability:
      - 1) Each Accident: \$500,000
      - 2) Disease Employee Limit: \$500,000
      - 3) Each Employee: \$500,000
  2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.5 of the General Conditions which shall include Commercial General Liability, Contractual Liability, and Products/Complete Operations Liability, Owners and Contractors Protective Liability, and Personal Injury Liability Insurance covering all operations required to complete the work, including coverage for damage caused by explosion, collapse or structural injury, and damage to underground utilities with the following minimum limits of liability:

<u>Contract Amount</u>	<u>Insurance Liability</u>
\$1,000,000.00 or less	\$1,000,000.00 Combined Single Limit Bodily Injury and Property Damage Liability- each occurrence.
Over \$1,000,000.00	\$5,000,000.00 Combined Single Limit Bodily Injury and Property Damage Liability – each occurrence.

The Products/Completed Operations Liability Insurance shall be provided for a period of at least one year after completion of the work.

The Contractual Liability Insurance Coverage insuring the performance of the contractual obligations assumed by the Contractor by acceptance of this Contract, including specifically, but without limitation thereto, the above-mentioned agreement, included herein

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:  
Comprehensive Automobile Liability Insurance with the following minimum limits of liability:

<u>Contract Amount</u>	<u>Insurance Liability</u>
\$5,000,000.00 or less	\$1,000,000.00 Combined Single Limit Bodily Injury and Property Damage Liability- each occurrence.
Over \$5,000,000.00	\$3,000,000.00 Combined Single Limit Bodily Injury and Property Damage Liability- each occurrence.

This insurance is to apply to all owned, non-owned, and hired automobiles and other vehicles used by the Contractor in the performance of the work.

4. Contractor's General Liability under Paragraphs 5.04.A.3 through A.5 of the General Conditions which shall include Excess or Umbrella Liability (Occurrence Form):

General per contract:

1. Aggregate: \$ 3,000,000.00
  2. Each Occurrence: \$ 3,000,000.00
5. Flood Insurance for Buildings and Contents in an amount equal to the maximum limit of coverage available under the National Flood Insurance Act of 1968.
  6. Marine and Aviation Liability:
    - a. If the project involves work on a waterway, utilizing watercraft or utilizing aircraft to conduct any aerial reconnaissance or survey, then the Contractor or its subcontractors shall evidence liability insurance in the limit of \$10,000,000 for marine liability and \$25,000,000 for aviation liability.

#### **SC-5.06 Property Insurance**

SC-5.06.A Delete Paragraph 5.06.A in its entirety and insert the following in its place:

- A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall:
  1. Include the interests of Owner, Contractor, Subcontractors, Peachtree City - Project Manager, Peachtree City - Project Manager's Consultants and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured listed in Paragraph SC-5.03.E;
  2. Be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;
  3. Include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of Peachtree City - Project Managers and architects);
  4. Cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Peachtree City - Project Manager;
  5. Allow for partial utilization of the Work by Owner;
  6. Include testing and startup; and

7. Be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor and Peachtree City - Project Manager with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.
8. Contractor shall be responsible for any deductible or self-insured retention.
9. The policy will not cover Contractor's or its subcontractor's or supplier's equipment, tools or other property that is not consumed during construction or does not become a part of the Project. Contractor shall bear the expense of any additional policy to cover these items.
10. The policies of insurance required to be purchased and maintained by Contractor in accordance with this Paragraph SC-5.06 shall comply with the requirements of Paragraph 5.06.C of the General Conditions.

SC-5.06.B Delete Paragraph 5.06.B of the General Conditions in its entirety and insert the following in its place:

- B. Contractor shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Peachtree City - Project Manager, Subcontractors and any other individuals or entities identified in the Specific Project Conditions and/or Supplementary Conditions.

SC-5.06.D Supplement Paragraph 5.06.D of the General Conditions as follows:

If deductibles are included in any of the insurance policies described above, Contractor will be responsible for costs not paid because of these deductibles.

SC-5.06.E Delete Paragraph 5.06.E of the General Conditions in its entirety and insert the following in its place:

- E. If Owner requests in writing that other special insurance such as "soft cost" for the protection of the Owner, it will be included in the property insurance policies provided under Paragraph 5.06. Contractor shall, if possible, include such insurance, and the cost thereof will be charged to Owner by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, Contractor shall in writing advise Owner whether or not such other insurance has been procured by Contractor. The Contractor may add "soft cost" coverage for the benefit of the Contractor at the Contractor's expense. If the contractor adds such coverage, the Contractor shall advise the Owner.

#### **SC-5.07 Waiver of Rights**

SC-5.07.A Delete the last sentence of Paragraph 5.07.A of the General Conditions in its entirety and insert the following in its place:

None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Contractor as trustee or otherwise payable under any policy so issued.

SC-5.07.B Delete Paragraph 5.07.B of the General Conditions in its entirety.

SC-5.07.C Amend Paragraph 5.07.C of the General Conditions to read as follows:

With respect to all insurance required from Contractor by the Contract Documents, Contractor waives any and all rights of subrogation against Owner, Peachtree City - Project Manager and each additional named insured. Furthermore, all such insurance,

and any insurance required by law, shall be maintained in full force and effect by Contractor until full and final completion of the Work and until payment therefore by Owner. Nothing contained in the within and foregoing insurance provisions shall in any way limit or release Contractor from any of its duties, obligations or liabilities arising under or relating to the Contract Documents.

SC-5.07 Add the following new paragraph immediately after Paragraph 5.07.C:

- D. Any insurance policy maintained by Contractor covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Owner, Subcontractors, or Peachtree City - Project Manager, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

**SC-5.08 Receipt and Application of Proceeds**

SC-5.08.A In the first sentence of Paragraph 5.08.A amend "... Paragraph 5.06 will be adjusted with Owner and ..." to read "... Paragraph 5.06 will be adjusted with Contractor and ...". The remaining language in Paragraph 5.08.A shall not be altered and remain in effect.

SC-5.08.B Delete Paragraph 5.08.B in its entirety and replace with:

- B. Contractor as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Contractor's exercise of this power. If such objection be made, Contractor as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Contractor as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Contractor as fiduciary shall give bond for the proper performance of such duties.

**SC-6.01 Supervision and Superintendence**

SC-6.01.A Add the following new paragraph immediately after Paragraph 6.01.A:

1. Contractor's resident superintendent shall be dedicated full-time to the project. The superintendent shall have no less than three (3) years experience as a superintendent on one or more projects similar in nature, size and scope of the Project. Contractor shall furnish to Peachtree City - Project Manager a detailed resume setting forth the qualifications of the superintendent prior to their assignment to the Project. The qualifications of the superintendent must be acceptable to Owner.

**SC-6.03 Services, Materials, and Equipment**

SC-6.03.D Add the following paragraph immediately after Paragraph 6.03.C:

- C. Contractor is directed to specification Section "01400 Quality Control" (if provided) to determine what party is responsible for testing laboratory services. Otherwise, refer to "Article 13.03 Tests and Inspections" of the General Conditions.

**SC-6.05 Substitutes and "Or-Equals"**

SC-6.05.C Replace entire paragraph with the following:

*Peachtree City - Project Manager's Evaluation:* Evaluations of substitutions and Or-Equals must be made well in advance of Bid submittal. Peachtree City - Project Manager

will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Peachtree City - Project Manager may require Contractor to furnish additional data about the proposed substitute item. Peachtree City - Project Manager will be the sole judge of acceptability. No "or equal" or substitute will be bid on, ordered, installed or utilized until Peachtree City - Project Manager's review is complete, which will be evidenced by an official Addendum being issued for the Bid. Peachtree City - Project Manager will advise Contractor in writing of any negative determination.

**SC-6.07 Patent Fees and Royalties**

SC-6.07.B Replace first sentence with the following:

To the fullest extent permitted by laws and regulations of the State of Georgia, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

SC-6.07.C Replace first sentence with the following:

To the fullest extent permitted by laws and regulations of the State of Georgia, Contractor shall indemnify and hold harmless Owner and Peachtree City - Project Manager, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

**SC-6.08 Permits**

SC-6.08 Add the following new paragraphs immediately after Paragraph 6.08.A:

B. OWNER has secured or will secure the following permits, approvals and licenses and has paid or will pay any associated charges and fees. Contractor shall pay all inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Any of Peachtree City Fees shall be waived.

1. State Waters - Stream Buffer Variance (expected by September 1, 2017..
2. Land Disturbance Permit issued by Peachtree City.
3. USACOE 404 Permit.

**SC-6.09 Laws and Regulations**

SC-6.09.C Add the following new paragraphs immediately after Paragraph 6.09.C:

D. While not intended to be inclusive of all Laws or Regulations for which Contractor

may be responsible for under Paragraph 6.09, the following Laws or Regulations are included as mandated by statute or for the convenience of Contractor:

1. In accordance with Section 209 of the Elliott-Larsen Civil Rights Act, a Contract to which the State, a political subdivision, or an agency thereof is a party shall contain a covenant by Contractor and his subcontractors not to discriminate against an Employee or Applicant for employment with respect to hire, tenure, conditions, or privileges of employment, or a matter directly or indirectly related to employment because of race, color, religion, national origin or ancestry, age, sex, height, weight, or marital status. Breach of this covenant may be regarded as a material breach of the Contract.
2. Prevailing Wages: Contractor shall pay not less than the prevailing rate of wages in accordance with Code of Georgia 34-4-3.
3. Hours of Labor: Employees that qualify, per code of Georgia 21-2-404, may take two hours off from work to vote in an election.
4. Discrimination: Per Georgia Code 34-1-2, Contractor, Subcontractor, nor any person on its behalf, shall refuse to hire, employ, or license, nor bar or discharge from employment, any individual between the ages of 40 and 70 years, solely upon the grounds of age, when the reasonable demands of the position do not require such an age distinction, provided that individual is qualified physically, mentally, and by training and experience to perform satisfactorily the labor assigned to them or for which they apply.
5. Notification Requirements for Excavations: Prior to blasting or excavating with mechanized excavating equipment, Contractor shall notify, within 72 hours, the Utilities Protection Center per Code of Georgia 25-9-6.
6. Senate Bill 529 is the "Georgia Security and Immigration Compliance Act" of 2006 (Act 457). **Section 2** of SB 529 enacted new work eligibility verification requirements that apply to Georgia's public employers, and the contractors and subcontractors of Georgia's public employers. Under Section 2 of SB 529, public employers, their contractors and subcontractors are required to verify the work eligibility of all newly hired employees through an electronic federal work authorization program. The new requirements became effective on July 1, 2007.

As required under SB 529, the Georgia Department of Labor has promulgated new rules for the implementation of Section 2. The Department added a new Chapter 300-10-1, entitled "Public Employers, Their Contractors and Subcontractors Required to Verify New Employee Work Eligibility Through a Federal Work Authorization Program," to the Rules and Regulations of the State of Georgia. The new rules designate the "**Employment Eligibility Verification (EEV) / Basic Pilot Program**" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security as the electronic federal work authorization program to be utilized for these purposes.

#### **SC-6.11 Use of Site and Other Areas**

SC-6.11.A.3 Add a new paragraph immediately after Paragraph 6.11.A.3:

4. Contractor is responsible to ensure that all activities required to perform the Work are confined to the limits of Owner's property and easements established for the Work. Permanent structures placed outside the limits of Owner's property or defined permanent easements shall be relocated as necessary at no additional change in Contract Price.

SC-6.11.A.4 Add a new paragraph immediately after Paragraph 6.11.A.4:

5. Contractor shall not make any claims for use or storage of materials or equipment on Owner's property unless such charges are approved, in writing, prior to such materials or equipment being stored on such property.

SC-6.11.E Add a new paragraph 6.11.E immediately following Paragraph 6.11.D of the General Conditions:

Barricades and Warning Signs: Contractor shall provide, erect, maintain and finally remove all barricades and detour signs necessary to properly protect and divert traffic. Such barricades and signs shall be illuminated at night. Contractor will be held responsible for all damage to the Work due to failure of the signs and barricades to properly protect the Work from traffic, pedestrians, animals and from all other sources. Construction of all barricades shall be such as acceptable to Owner and any and all governmental agencies and departments having jurisdiction and control over traffic. The "Manual on Uniform Traffic Control Devices" latest edition shall be used as the standard for roadway signage.

### **SC-6.17 Shop Drawings and Samples**

SC-6.17.E Add the following new paragraphs immediately after Paragraph 6.17.E:

- F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required review of an item with no more than three submittals. Peachtree City - Project Manager will record Peachtree City - Project Manager's time for reviewing subsequent submittals of Shop Drawings, samples or other items requiring review and Contractor shall reimburse Owner for Peachtree City - Project Manager's charges for such time.
  1. In the event that Contractor requests a substitution for a previously reviewed item, Contractor shall reimburse Owner for Peachtree City - Project Manager's charges for such time unless the need for such substitution is beyond the control of Contractor.

### **SC-6.21 Delegation of Professional Design Services**

SC-6.21.B Add the following new paragraph immediately after Paragraph 6.21.B:

1. Where Performance Specifications are used, required systems, equipment, and/or materials to be incorporated in the Project are specified in terms of required results, without mandating specific means for achieving the required results. The functional requirements for the systems, equipment, and/or materials are defined together with the operating conditions and/or environment in which they must operate and general standards which must be satisfied. Performance Specifications establish minimum standards that must be met.

SC-6.21.D Add the following new paragraph immediately after Paragraph 6.21.D:

1. Observations or requirements that Peachtree City - Project Manager may communicate to Contractor or others are for clarification only and shall not alter the responsibility of any party nor be interpreted to impose on Owner or Peachtree City - Project Manager any liability to Contractor, subcontractors, suppliers, or manufacturers related to systems, equipment, or materials supplied pursuant to a Performance Specification. Neither Contractor nor anyone claiming rights by virtue of this Contract or any subcontract or order placed hereunder shall seek to recover from Owner or Peachtree City - Project Manager any losses or damages suffered as a result of any deficiency, defect, or performance

problem in any systems, equipment, or materials supplied pursuant to a Performance Specification.

**SC-7.01 Related Work at Site**

**SC-7.02 Coordination**

**SC-6.22 Contractor and Subcontractor License Requirements**

SC-6.22 Add the following new paragraph immediately after Paragraph 6.21:

Contractor and major subcontractors must be licensed in the State of Georgia as appropriate for the work they are performing. License numbers should be included in the Bid Package to the City. In addition, Contractor and all subcontractors shall have appropriate level certifications in Erosion and Sedimentation Control as issued by the Georgia Soil and Water Conservation Commission.

**SC-7.04 Claims Between Contractors**

SC-7.04 Add the following new paragraphs immediately after Paragraph 7.03.C:

SC-7.04 Claims Between Contractors

- A. Should Contractor cause damage to the work or property of any other contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Owner, Peachtree City - Project Manager, or the construction coordinator, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.
- B. Contractor shall, to the fullest extent permitted by Laws and Regulations of the State of Georgia, indemnify and hold harmless Owner, Peachtree City - Project Manager, the construction coordinator and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages (including, but not limited to, fees and charges of Peachtree City - Project Managers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any other contractor against Owner, Peachtree City - Project Manager, Peachtree City - Project Manager's Consultants, or the construction coordinator to the extent said claim is based on or arises out of Contractor's performance of the Work. Should another contractor cause damage to the Work or property of Contractor or should the performance of work by any other contractor at the Site give rise to any other Claim, Contractor shall not institute any action, legal or equitable, against Owner, Peachtree City - Project Manager, or the construction coordinator or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Peachtree City - Project Manager, or the construction coordinator on account of any such damage or Claim.
- C. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of another contractor, and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, Peachtree City - Project Manager, and construction coordinator for any delay, disruption, interference, or hindrance caused by any other contractor. This paragraph does not prevent recovery from Owner, Peachtree City - Project Manager, or



construction coordinator for activities that are their respective responsibilities.

**SC-9.03 Project Representative**

SC-9.03 Add the following new paragraphs immediately after Paragraph 9.03.A:

- B. The Resident Project Representative (RPR) will be a member of the Peachtree City - Project Manager's firm. The responsibilities, authority and limitations of the RPR shall be in accordance with Article 9 of the General Conditions. Additional responsibilities, authority and limitations of the RPR shall be:
1. Review the Work at the Site during the periods as stipulated in the Owner-Peachtree City - Project Manager Agreement, and in accordance with Paragraph 9.02.
  2. Communicate between the Owner, Contractor and Peachtree City - Project Manager.
  3. Retain a copy of shop drawing submittals, testing results, Applications for Payment, Change Orders, Claims, and other correspondence at the Site.
  4. Review Contractor's Application for Payment and Change Orders prior to submission to Peachtree City - Project Manager in accordance with Paragraph 9.06.
  5. Perform the preliminary determination of the actual quantities and classifications of Unit Price Work performed by Contractor for the Peachtree City - Project Manager in accordance with Paragraph 9.07.
  6. RPR will not participate in specialized field or laboratory tests or inspections conducted by others, except as specifically authorized by Peachtree City - Project Manager.

**SC-11.01 Cost of the Work**

SC-11.01.A.5.c Delete Paragraph 11.01.A.5.c in its entirety and insert the following in its place:

- c. Construction Equipment and Machinery:
- 1) Rentals of all construction equipment and machinery, and the parts thereof in accordance with rental agreements approved by Owner with the advice of Peachtree City - Project Manager, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - 2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the Blue Book, Building and Construction (Georgia). An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.

SC-11.01.B.4 Delete Paragraph 11.01.B.4 in its entirety and insert the following in its place:

3. Costs due to the negligence or other action of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

**SC-11.03 Unit Price Work**

SC-11.03.B Delete Paragraph 11.03.B in its entirety and insert the following in its place:

- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Peachtree City - Project Manager subject to the provisions of Paragraph 9.07. Any quantities in excess of the estimate provided by the Contractor in the bid will not be paid by the Owner unless such quantities are approved, in writing, by the Project Manager before such quantities are used in the Project.

SC-11.03.D Delete Paragraph 11.03.D in its entirety and insert the following in its place:

- D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment in the Contract Price under the following conditions:
  1. if the Bid price of a particular item of Unit Price Work amounts to five percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than twenty five percent from the estimated quantity of such item indicated in the Agreement; and
  2. if there is no corresponding adjustment with respect to any other item of Work; and
  3. if Contractor believes that Contractor has incurred additional expense as a result thereof or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

SC-11.03.E Insert the following paragraph as Paragraph 11.03.E in its entirety:

- E. If the Contract is a Lump Sum Contract price, no unit prices will be applicable unless the quantities are in excess of the estimated quantities set forth in the Bid and further provided that such quantities are approved, in writing, by the Project Manager prior to the use of such materials or labor.

**SC-12.01 Change of Contract Price**

SC-12.01.C.2.f Add the following new paragraphs immediately after Paragraph 12.01.C.2.f:

- g. An example of how the procedure works is:

Cost of Work Performed or Furnished by Sub-Subcontractor	\$10,000.00
Sub-Subcontractor's Fee (15%)	\$1,500.00
Total Cost Paid by Subcontractor to Sub-Subcontractor	\$11,500.00
Subcontractor's Fee (5%)	575.00
Total Cost Paid by Contractor to Subcontractor	\$12,075.00
Contractor's Fee (5%)	603.75
Total Cost of Work Plus Fee	\$12,678.75

**SC-12.03 Delays**

SC-12.03.A Add the following sentence at the end of Paragraph 12.03.A:

The shall be no increase in the Contract Price for any delay other than a delay due to acts or neglect of the Owner.

SC-12.03.C Delete Paragraph 12.03.C in its entirety and insert the following in its place:

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, but not in the Contract Price, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

SC-12.03.F Add the following immediately after Paragraph 12.03.E:

Average Number of Days in which precipitation is in excess of 0.10 inches per day is tabulated below for the region in which the project is located. Completion time will not be extended for normal weather conditions. The time for completion as stated in the Contract Documents includes due allowance for calendar days on which work cannot be performed. For the purpose of this Contract, the Contractor agrees that he may expect to lose calendar days due to weather in accordance with the following table:

Jan.	10 days	May	8 days	Sep.	7 days
Feb.	9 days	June	8 days	Oct.	6 days
Mar.	9 days	July	11 days	Nov.	7 days
Apr.	8 days	Aug.	9 days	Dec.	8 days

Also, the Contractor agrees that the measure of extreme weather during the period covered by this Contract shall be the number of days in excess of those shown for each month in the table above, in which precipitation exceeded 0.10 inch and the average temperature failed to exceed 40 degrees F., averaged from the Peachtree City Airport, Georgia. This is the same source of data used to determine normal weather losses. If the total accumulated number of calendar days lost to weather, from the start of work until the completion of project exceeds that total accumulated number to be expected for the same period from the table above, time for completion will be extended by the number of calendar days needed to include the excess number of calendar days lost. Request for extension in contract time shall be done in accordance with the General Conditions.

No change in Contract Sum will be authorized because of adjustments of Contract Time due to Owner's acceptance of Contract Claims for adjustments to Time due to abnormal weather conditions.

**SC-13.04 Uncovering Work**

SC-13.04.D Delete Paragraph 13.04.D in its entirety and insert the following in its place:

D. If the uncovered Work is not found to be defective, and if was not required by Contract Documents to be left uncovered for inspection, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount

or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

**SC- 13.05      Owner May Stop the Work**

SC-13.05.A      Delete Paragraph 13.05.A in its entirety and insert the following in its place:

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them. Contractor shall not be allowed an extension of Contract Time or Contract Price because of such delay.

**SC- 13.06      Correction or Removal of Defective Work**

SC-13.06.C      Insert the following paragraph after Paragraph 13.06.B.

- C. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, no claims for Delay under Paragraph 12.03 shall be permitted. until such defective Work is corrected.

**SC-14.02      Progress Payments**

SC-14.02.A.3      Delete Paragraph 14.02.A.3 in its entirety and insert the following in its place:

3. Owner shall retain ten percent (10%) of the amount of total payment due the Contractor until the Project is at least 50% satisfactorily complete. At the 50% Project completion point, the Owner, with the recommendation of the Peachtree City - Project Manager, finds the work to be satisfactory and if construction is on schedule, maintain the retainage at the previous amount will not retain additional amounts on subsequent payment estimates beyond the 10% on the first 50% of the Project payments. If after discontinuing the additional retainage, the Owner or Peachtree City - Project Manager determines that the work is unsatisfactory or has fallen behind schedule, retainage may be resumed at the previous level. When the Work is Substantially Complete, and upon written notice from Contractor, the retained amount may be further reduced to an amount of 200% of the value of the work remaining for Final Completion as determined by the Peachtree City - Project Manager.

SC-14.02.C.1      Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:

1. Thirty (30) days after presentation of the Application for Payment to Owner with Peachtree City - Project Manager's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor; except when funds with which payments are made are provided by a department or agency of the State or Federal government, in which case payment to Contractor shall be made within fifteen (15) days after Owner receives said funds.
2. If Owner fails to make payment as herein provided, interest will accrue to each such payment that is past due in the amount as allowed per Code of Georgia 13-11-17.
3. Owner has discretion on how payment is made to Contractor when payment becomes due. For example, Owner may send check via U.S. mail.

**SC-16.01      Methods and Procedure**

As an alternative to the dispute resolution process set forth in the General Conditions (mediation followed by litigation), the contract could pair final and binding arbitration with mediation. A discussion of the pros and cons of the arbitration process (and there are many advocates on either side) is beyond the scope of this Guide. Consultation with the Owner's legal counsel is highly recommended. Users should also note that they will need to insert the name of an arbitration agency, such as the American Arbitration Association or the CPR Institute for Dispute Resolution, in SC 16.02.A. The mediation/arbitration option requires the following:

SC-16.01 Delete Paragraph 16.01.C in its entirety and insert the following in its place:

- C. If the Claim is not resolved by mediation, Peachtree City - Project Manager's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
  - 1. elects in writing to demand arbitration of the Claim, pursuant to Paragraph SC 16.02; or
  - 2. agrees with the other party to submit the Claim to another dispute resolution process.

SC-16.02 Add the following new paragraph immediately after Paragraph 16.01:

SC-16.02 Arbitration

- A. All Claims or counterclaims, disputes, or other matters in question between Owner and Contractor arising out of or relating to the Contract Documents or the breach thereof (except for Claims which have been waived by the making or acceptance of final payment as provided by Paragraph 14.09) including but not limited to those not resolved under the provisions of Paragraphs SC 16.01A and 16.01.B shall be decided in the Superior or State Court of Fayette County, Georgia, and by execution of this Agreement both Owner and Contractor consent to jurisdiction and venue in said Court(s).

• END OF SECTION •

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SECTION 00 73 19

DRUG-FREE WORKPLACE CERTIFICATION

The undersigned vendor hereby certifies that it will provide a drug-free workplace program by:

1. Publishing a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the vendor's workplace, and specifying the actions that will be taken against employees for violations of such prohibition;
2. Establishing a continuing drug-free awareness program to inform its employees about:
  - A. The dangers of drug abuse in the work place;
  - B. The vendor's policy of maintaining a drug-free workplace;
  - C. Any available drug counseling, rehabilitation, and employee assistance programs; and
  - D. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
3. Giving all employees engaged in performance of the contract a copy of the statement required by subparagraph (1):
4. Notifying all employees, in writing, of the statement required by subparagraph (1), that as a condition of employment on a covered contract, the employee shall:
  - A. Abide by the terms of the statement; and
  - B. Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than five (5) calendar days after such conviction;
5. Notifying Peachtree City City Hall in writing within ten (10) calendar days after receiving notice under subdivision (4)(A) above, from an employee or otherwise receiving actual notice of such conviction. The notice shall include name and the position title of the employee;
6. Within thirty (30) calendar days after receiving notice under subparagraph (4) of a conviction, taking one or more of the following actions with respect to an employee who is convicted of a drug abuse violation occurring in the workplace:
  - A. Taking appropriate personnel action against such employee, up to and including termination; and/or
  - B. Requiring such employee to satisfactorily participate in and complete a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency; and
7. Making a good faith effort to maintain a drug-free workplace program through implementation of subparagraphs (1) through (6)

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_

Company: \_\_\_\_\_

• END OF SECTION •

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SECTION 00 94 39

FIELD ORDER

No. \_\_\_\_\_

Date of Issuance:	Effective Date:
Project: Lake Peachtree Spillway Replacement Project	Owner's Contract No.: 17-123BPW
Owner: City of Peachtree City	Date of Contract:
Contractor:	Engineer's Project No.: 16C17043.00

**Attention:**

You are hereby directed to promptly execute this Field Order issued in accordance with General Conditions Paragraph 9.04.A, for minor changes in the Work without changes in Contract Price or Contract Times. If you consider that a change in Contract Price or Contract Times is required, please notify the Peachtree City immediately and before proceeding with this Work.

Reference: \_\_\_\_\_ (Specification Section(s)) \_\_\_\_\_ (Drawing(s) / Detail(s))

Description:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attachments:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Receipt Acknowledged by Contractor:**

Peachtree City: \_\_\_\_\_

Date: \_\_\_\_\_

• END OF SECTION •

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SECTION 00 94 49  
WORK CHANGE DIRECTIVE

No. \_\_\_\_\_

Date of Issuance:	Effective Date:
Project: Lake Peachtree Spillway Replacement Project	Owner's Contract No.: 17-123BPW
Owner: City of Peachtree City	Date of Contract:
Contractor:	Engineer's Project No.: 16C17043.00

**Contractor is directed to proceed promptly with the following change(s):**

Item No.	Description

**Attachments (list documents supporting change):**

**Purpose for Work Change Directive:**

Authorization for Work described herein to proceed on the basis of Cost of the Work due to:

- Nonagreement on pricing of proposed change.
- Necessity to expedite Work described herein prior to agreeing to changes on Contract Price and Contract Time.

**Estimated change in Contract Price and Contract Times:**

Contract Price \$ \_\_\_\_\_ (increase/decrease)      Contract Time \_\_\_\_\_ (increase/decrease)  
days

Recommended for Approval by Engineer:	Date
Authorized for Owner by:	Date
Received for Contractor by:	Date
Received by Funding Agency (if applicable):	Date:

**NOTE: Any change which results in an increase in the Contract Price of more than \$20,000.00 must be approved by the City Council of Peachtree City, Georgia to be effective. If not approved by the City Council, Contractor waives the right to such payment unless the same is ratified by the City Council after such work is completed.**

• END OF SECTION •

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SECTION 00 94 63

CHANGE ORDER

No. \_\_\_\_\_

Date of Issuance:	Effective Date:
Project: Lake Peachtree Spillway Replacement Project	City of Peachtree Contract No.: 17-123BPW
Owner: City of Peachtree City	Original Date of Contract:
Contractor:	

**The Contract Documents are modified as follows upon execution of this Change Order:**

Description and Reason Necessary (provide attachments if necessary):

**CHANGE IN CONTRACT PRICE:**

Original Contract Price:	\$ _____
[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____:	\$ _____
Contract Price prior to this Change Order:	\$ _____
[Increase] [Decrease] of this Change Order:	\$ _____
Contract Price incorporating this Change Order:	\$ _____

**CHANGE IN CONTRACT TIMES:**

Original Contract Times:	<input type="checkbox"/> Working days <input type="checkbox"/> Calendar days
Substantial completion (days or date):	_____
Ready for final payment (days or date):	_____
[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____:	
Substantial completion (days):	_____
Ready for final payment (days):	_____
Contract Times prior to this Change Order:	
Substantial completion (days or date):	_____
Ready for final payment (days or date):	_____
[Increase] [Decrease] of this Change Order:	

Substantial completion (days or date): \_\_\_\_\_  
Ready for final payment (days or date): \_\_\_\_\_  
Contract Times with all approved Change Orders:  
Substantial completion (days or date): \_\_\_\_\_  
Ready for final payment (days or date): \_\_\_\_\_

**NOTE: Any increase in the contract days or general conditions shall be included in the change order. No additional sum for general conditions can be added unless reflected in this change order.**

**THE SIGNATURE BY CONTRACTOR BELOW CERTIFIES THAT ALL SUMS TO BE CHARGED FOR THIS CHANGE ORDER HAVE BEEN INCLUDED. CONTRACTOR WAIVES ANY AND ALL CHARGES FOR THE WORK OR THE CONTRACT PRICE REFLECTED IN THIS CHANGE ORDER WHICH ARE NOT INCLUDED HEREIN.**

**APPROVED:**

**ACCEPTED:**

By: \_\_\_\_\_  
Project Manager

By: \_\_\_\_\_  
Contractor (Authorized Signature)

By: \_\_\_\_\_  
Division Director/Chief

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Purchasing Agent

By: \_\_\_\_\_  
Finance Director

By: \_\_\_\_\_  
City Manager

Date: \_\_\_\_\_

**NOTE: Any change which results in an increase in the Contract Price of more than \$20,000.00 must be approved by the City Council of Peachtree City, Georgia to be effective. If not approved by the City Council, Contractor waives the right to such payment unless the same is ratified by the City Council after such work is completed.**

• END OF SECTION •

# DIVISION 1

## GENERAL REQUIREMENTS

### DIVISION 1 - GENERAL REQUIREMENTS

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01010	Summary of the Work
01019	Contract Considerations
01025	Measurement and Payment
01039	Coordination and Meetings
01051	Layout of Work and Quantity Surveys
01061	Project Permits
01100	Construction Sequence
01114	Cleanup and Disposal of Waste Material
01300	Submittals
01400	Quality Control
01500	Construction Facilities and Temporary Controls
01590	Field Office and Sheds
01600	Material and Equipment
01700	Contract Closeout

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SECTION 01010  
SUMMARY OF WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Contract Description.
- B. Work by Owner.
- C. Work Sequence.

1.2 CONTRACT DESCRIPTION

- A. Construction of a new reinforced concrete piano key weir spillway, removal of the existing spillway and associated work items.

1.3 WORK BY OWNER

Not Used.

1.4 CONTRACTOR'S USE OF SITE

- A. Use of Site to allow:
  - 1. Owner to have access.
  - 2. Engineer to have access.
- B. Contractor has use of the site within the limits shown on the Drawings.
- C. Contractor shall be responsible for maintaining the reservoir level at Lake Peachtree. Contractor is not responsible for maintaining the reservoir level at Lake Kedron.

1.5 WORK SEQUENCE

- A. As indicated in Section 01100.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

• END OF SECTION •

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SECTION 01019  
CONTRACT CONSIDERATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cash allowances.
- B. Schedule of values.
- C. Application for payment.
- D. Change procedures.
- E. Measurement and payment - unit prices and lump sums.

1.2 RELATED SECTIONS

- A. Section 01600, Material and Equipment: Product substitutions and options.
- B. Section 01025, Measurement and Payment

1.3 CASH ALLOWANCES

- A. Not Used.

1.4 SCHEDULE OF VALUES

- A. For lump sum bid items Contractor shall develop a schedule of values and submit to Engineer within 14 days after Notice to Proceed.

1.5 APPLICATIONS FOR PAYMENT

- A. Submit one hard copy and one electronic copy of each application on form included in the Contract Documents.
- B. Content and Format: Utilize list of Payment Items and Schedule of Values for tabulating items in each Application for Payment.
- C. Include an updated construction progress schedule with each application for payment.

1.6 CHANGE PROCEDURES

- A. The Engineer will advise in writing of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time.
- B. The Engineer may issue a Proposal Request or Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 7 days of request.
- C. The Contractor may propose changes by submitting a Request for Change to the Engineer, describing the proposed change and its full effect on the Work. Include a statement

- describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by other Contractors. Document any requested substitutions in accordance with Section 01600 - Material and Equipment.
- D. Stipulated Sum/Price Change Order: Shall be based on Proposal Request or Notice of Change (as appropriate) and Contractor's fixed price quotation, or Contractor's request for a Change Order as approved by Engineer.
  - E. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
  - F. Work Change Directive: Engineer may issue a directive, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the change.
  - G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.
  - H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work. The detailed records shall be provided to the Engineer within 24 hours of the work being performed.
  - I. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

#### 1.7 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct an appropriate remedy and/or adjust payment.

#### 1.8 MEASUREMENT AND PAYMENT

- A. Authority: Measurement methods are delineated in the individual specification sections.
- B. Area and Volume Quantities: Contractor shall be responsible for pre- and post-activity surveys used as a basis for measurement. Surveys shall be performed by a registered land surveyor licensed in the state of Georgia. Engineer shall be notified at least 24 hours in advance of surveys for measurement. Compute quantities based on surveyed measurements. Interim Payment Applications may be based on estimated quantities, with final quantities based on survey. The Engineer will review measurements and quantities.
- C. Unit Quantities: Quantities and measurements indicated in the Payment Item Form are for contract purposes only. Quantities and measurements supplied or placed in the Work shall determine payment.

- D. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals, erection, application or installation of an item of the Work, overhead and profit.
- E. Materials Stored on Site: Measurement for payment requires the following:
1. Copies of delivery tickets shall be submitted to the Engineer at the time of delivery to the storage area in order to permit inventory of materials.
  2. An invoice from the supplier shall be furnished to the Engineer for each item or material for which payment is requested.
  3. Contractor is responsible for the security of material stored onsite. If materials are damaged or stolen, Contractor shall replace at no cost to the Owner.
- F. Payment for Materials stored on site but not incorporated in the Work will be equal to the manufacturer's invoiced amount that is acceptable to the Engineer.

PART 2     PRODUCTS

Not Used.

PART 3     EXECUTION

Not Used.

• END OF SECTION •

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SECTION 01025  
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SUMMARY

This section contains procedures for measuring work performed by the contractor and subsequent payment of that work. It also contains descriptions related to measurement and payment.

1.2 SECTION INCLUDES

- A. Description
- B. Unit Price Payment Items
- C. Cash Allowances
- D. Testing and Inspection
- E. Schedule of Values
- F. Application for Payment
- G. Change Procedures
- H. Defect Assessment

1.3 DESCRIPTIONS

- A. The Bid lists each item of the Project for which payment will be made. No payment will be made for any items other than those listed in the Bid.
- B. Required items of work and incidentals necessary for the satisfactory completion of the work which are not specifically listed in the Bid, and which are not specified in this Section to be measured or to be included in one of the items listed in the Bid, shall be considered as incidental to the work. All costs thereof, including Contractor's overhead costs and profit, shall be considered as included in the lump sum or unit prices bid for the various Bid items. The Contractor shall prepare the Bid accordingly.
- C. Work includes furnishing all plant, labor, equipment, tools and materials, which are not furnished by Peachtree City and performing all operations required to complete the work satisfactorily, in place, as specified and as indicated on the Drawings.
- D. Measurement of an item of work will be by the unit indicated in the Bid.
- E. Final payment quantities shall be determined from in-place quantities. The precision of final payment quantities shall match the precision shown for that item in the Bid.
- F. Payment will include all necessary and incidental related work not specified to be included in any other item of work listed in the Bid.
- G. Unless otherwise stated in individual sections of the Specifications or in the Bid, no separate payment will be made for any item of work, materials, parts, equipment, supplies or related items required to perform and complete the work. The costs for all such items required shall be included in the price bid for item of which it is a part.
- H. Payment of lump sum items shall be based upon progress of the Work as developed through proper updating of the construction Schedule. Estimates of percent complete established by

the Peachtree City Project Manager and Contractor shall be the basis by which earned value will be calculated and payments will be authorized.

- I. Payment of unit price items will be made by extending unit prices multiplied by quantities provided and then summing the extended prices to reflect actual work. Such price and payment shall constitute full compensation to the Contractor for furnishing all plant, labor, equipment, tools and materials not furnished by Peachtree City and for performing all operations required to provide to Peachtree City the entire Project, complete in place, as specified and as indicated on the Drawings.
- J. For lump sum contracts, payment of unit price items will only be made for quantities that exceed the schedule of values. In such instance, the quantity must be approved, in writing, by the Project Manager before any unit prices can be charged for such items/quantities.

#### 1.4 LUMP SUM AND UNIT PRICE ITEMS

The following descriptions outline the payment procedures for the various bid items outlined in the bid form (Section 00 41 00).

*Line Item 1. Lump Sum for all Contract Work not Paid by Lump Sum and Unit Prices Below.*

1. Including but not limited to Builders Risk Insurance, Owners/Contractors Protective Insurance, Workers Comprehensive Insurance, Pre-Construction Photographs & Video, Payment & Performance Bonds Permit Fees, Project Management / Scheduling, and other costs not associated with the other items shown in the schedule of values.
2. Payment will be made based on completion of the project may be paid as a percentage of completion of the project if the construction spans more than one pay application.

*Line Item 2. Mobilization and Demobilization. (Specification Section 02000)*

1. Mobilization shall be considered to constitute sixty-five (65) percent of the Contractor's lump sum price for Mobilization and Demobilization. Mobilization will be considered complete after the Contractor has completed the items delineated above and has sufficient manpower and equipment on the job to begin the work in earnest.
2. Demobilization shall be considered to constitute thirty-five (35) percent of the Contractor's lump sum price for Mobilization and Demobilization. Demobilization will be considered complete when all the work is satisfactorily completed and accepted and the site is cleaned to the satisfaction of the Engineer.
3. Payment for Mobilization and Demobilization will be at the above percentages of the contract lump sum price for Payment Item, "Mobilization and Demobilization".
4. The percentages listed above constitute maximum percentages. An individual payment application may be approved for less than the total mobilization or demobilization amount if part of the work is considered, in the sole opinion of the Engineer, to be incomplete. In no case will the total mobilization and demobilization amount be greater than the lump sum price provided by the Contractor on the Bid Form.

*Line Item 3. Construction Facilities and Temporary Controls. (Specification Section 01500)*

1. Payment will be made based upon a lump sum payment identified in the Bid Schedule with the first pay application.

*Line Item 4. Field Office and Sheds. (Specification Section 01590)*



1. Payment will be made based upon a lump sum payment identified in the Bid Schedule with the first pay application.

*Line Item 5. Control of Water: a) Cofferdam System; and b) Misc. Surface and Groundwater. (Specification Section 02100)*

1. Measurement for Control of Water will not be performed but items of work shall be contained on Schedule of Values.
2. Payment will be at the contract lump sum price for Payment Item "Control of Water", as shown on the Bid form and shall constitute full compensation for all labor, equipment, tools and other items necessary and incidental to the completion of the Work. The coffer dam for the new spillway will be a lump sum amount. Payment for the coffer dam will be 65% when completed with the remaining 35% paid when the coffer dam is removed. All other control of water tasks will be another lump sum amount. Payment for all other control of water tasks will be prorated and provided in equal amounts on each monthly progress payment estimate. The number of months used for prorating shall be the number estimated to complete the work as outlined in the Contractor's approved construction schedule. The final month's prorated amount will be provided with the final contract payment. Payment as described will constitute full compensation for completion of the work.

*Line Item 6. Structure Removal. (Specification Section 02050)*

1. Measurement and payment for Structure Removal will be at the contract lump sum for payment item "Structure Removal," and shall constitute full compensation for furnishing all materials, equipment and labor as specified or required herein.
2. Excavation below the existing spillway footprint shall be performed to estimated elevation 764.5 feet (approximately four feet below the existing spillway subgrade and channel interface.) Excavation within the existing spillway footprint to elevation 764.5 feet shall be incidental to Structure Removal.

*Line Item 7. Miscellaneous Metals. (Specification Section 05500)*

1. Metal Fabrications, manufactured, constructed and installed, as described in these Specifications, shall be measured for payment as a lump sum item. Partial payment shall be made in accordance with the submitted Schedule of Values. Payment will be at the contract lump sum price for Payment Item "Miscellaneous Metals", and shall constitute full compensation for furnishing, fabricating, and installing metal items as specified or referenced herein.

*Line Item 8. Instrumentation.*

1. Pay for this item shall include all items required in the construction plans.
2. Payment will be made based on completion of the Project based upon the lump sum identified in the Bid Schedule, and may be paid as a percentage of the Project if this item spans more than one pay application.

*Line Item 9. Erosion and Sedimentation Controls: a) Installation and Removal; and b) Maintenance. (Specification Section 02040)*

1. Installation and removal: Silt fence, haybales, sediment logs, stabilized construction entrance, rock barriers, check dams, temporary seeding, erosion control blanket, and general environmental protection measures installed in accordance with the applicable local, state,

- and federal requirements and according to the Drawings and Specifications shall be measured for payment as a lump sum item. Payment will be at the Contract lump sum price for Payment Item "Erosion and Sediment Control Installation and Removal". Installation shall be considered to constitute eighty (80) percent of the Contractor's lump sum price for Erosion and Sediment Control Installation and Removal. Removal shall be considered to constitute twenty (20) percent of the Contractor's lump sum price for Erosion and Sediment Control Installation and Removal. Payment will be made after the erosion and sediment control measures have been installed/removed and approved by the Engineer.
2. Maintenance: The ongoing maintenance of the erosion and sedimentation control measures shall be paid as a lump sum. Payment will be prorated and provided in equal amounts on each monthly progress payment estimate. The number of months used for prorating shall be the number estimated to complete the work as outlined in the Contractor's approved construction schedule. The final month's prorated amount will be provided with the final contract payment. Payment as described will constitute full compensation for completion of the work. Payment will be at the contract lump sum price for Payment Item "Erosion and Sediment Control Maintenance".
  3. Contractor shall be responsible for erosion protection until permanent turf has been established. Final payment for Erosion and Sediment Control will not be made until a dense stand of grass has been established in accordance with Section 02936-Permanent Turf Establishment, in all areas identified by the Drawings and Specifications, and has been accepted by the Engineer.
  4. No additional payment will be made for the repair or replacement of erosion and sediment control measure once installed.
  5. Any additional erosion control measures required to protect the environment due to the Contractor's activities as determined by the Engineer which is not shown on the Drawings shall not be a payment item. Contractor shall reasonably anticipate all aspects of work that may require additional erosion and sedimentation control not shown on the plans, and consider those items as they develop their bid.

*Line Item 10. Tuff Boom Log Protection. (Specification Section 15850)*

1. TUFFBOOM installed as detailed on the Drawings and these Specifications shall be measured for payment as a lump sum item. Payment for Tuff Boom Log Protection will be at the contract lump sum price for payment item "Tuff Boom Log Protection," and shall constitute full compensation for furnishing all materials, equipment and labor necessary and incidental to the installation of the log and debris barrier as indicated on the Drawings.

*Line Item 11. Sluice Gate, to include pipe, fittings and install. (Specification Section 15100 and 15300)*

1. The Sluice Gate, stem, guides and operator, installed and tested according to the Drawings and Specifications shall be measured for payment as a complete lump sum unit. Payment will be at the contract lump sum price for "Sluice Gates", and will constitute full compensation for furnishing, installing and testing Sluice Gates, anchor bolts, and all appurtenances and fittings as specified herein. Ductile Iron Pipe is also considered incidental to the lump sum item, "Sluice Gates".
2. The quantity of each kind and size pipe will be determined to the nearest foot by measurement of the laid length of pipe along the invert centerline of the conduit. Payment for each kind and size of pipe will be made at the contract price for "Sluice Gate, to include pipe, fittings, install". Such payment will constitute full compensation for furnishing, transporting, and installing the pipe, fittings, couplings, and animal guards complete in place.

*Line Item 12. Clearing, Grubbing, Stripping – Spillway and Primary Work Areas.* (Specification Sections 02111 and 02112)

1. Clearing and grubbing of areas shown on the Drawings will not be measured for payment. Payment will be at the contract lump sum amount for Payment Item, "Clearing and Grubbing", and shall constitute full compensation for all labor, equipment, materials and all other items necessary and incidental to completion of the work.
2. Stripping within the limits shown on the Drawings will not be measured for payment. Payment will be made at the contract lump sum price for Payment Item, "Stripping", and shall constitute full compensation for all labor, equipment, tools, and other items necessary and incidental to the completion of the work.

*Line Item 13. Excavation: a) Common Excavation; b) Rock Excavation; and c) Haul Off Spoils.* (Specification Sections 02202 and 02222)

1. Common Excavation at the spillway site, to the neat lines and grades shown on the Drawings and accomplished according to the Specifications or as directed by the Engineer shall be measured and computed for payment to the nearest cubic yard using the submitted contract surveys. No payment will be made for the excavation required for the installation of any subsurface drains, cutoff walls, and stormwater drainage systems. No payment will be made for any excavation associated with the control of water, to include stream diversion, and erosion and sediment control measures, to include temporary sediment basins and traps. No payment will be made for any excavation associated with the final grading/restoration of staging, stockpile, and spoil areas. Payment for all Common Excavation will be at the contract unit price for Payment Item "Common Excavation", and shall constitute full compensation for Excavation, loading, hauling to stockpile areas and/or disposal in designated spoil areas.
2. Rock Excavation according to the Drawings and Specifications or as directed by the Engineer shall be measured and computed for payment to the nearest cubic yard using the method of average cross-sectional end areas. Payment for Rock Excavation will be at the contract unit price for Payment Item "Rock Excavation", and shall constitute full compensation for Excavation, loading, hauling to stockpile areas and/or disposal in designated spoil areas.
3. Excess excavated materials above what can be placed onsite to the neat line and grades shown on the drawings shall be disposed of offsite. Contractor shall be responsible for locating suitable disposal area and following all local and state requirements in the disposal of the material.

*Line Item 14. Fill: a) Structural Earthfill; b) Non-Structural Earthfill (Spoil Berm); c) Fine Drain Fill; and d) Coarse Drain Fill.* (Specification Section 02201)

1. Earthfill placed according to the Drawings and Specifications, with the exception of Part 1.3.C. of this specification, shall be measured and computed for payment to the nearest cubic yard by utilizing the submitted construction surveys. Payment will be at the contract unit price for Payment Items "Earthfill – Structural Fill" and "Earthfill – Non-Structural Fill" and will constitute full compensation for obtaining, transporting, placing, and compacting the materials as specified herein.
2. The pay limits shall be the measured surface of the foundation when approved for placement of the fill and the specified neat lines of the fill surface. No deduction will be made for subsurface drains or embedded conduits and appurtenances.
3. No payment will be made for any earthfill associated with temporary access roads, parking areas, laydown areas, the control of water, to include coffer dam, erosion and sediment control measures, to include temporary sediment basins and traps.

4. Earthfill required to fill areas that were excavated beyond the neat line and grades of the spillway structure will not be measured as a pay item.
5. Select Fill placed according to the plans and specifications shall be measured and computed for payment to the nearest cubic yard in place using the method of average cross sectional end areas. Measurement of Select Fill shall be made within neat line and grade limits unless approved by the Engineer in writing.
6. Payment for Select Fill will be at the contract unit price for Payment Item, "Coarse Drain Fill" or "Fine Drain Fill", and shall constitute full compensation for furnishing, hauling, placing, spreading and compacting of Select Fill material as specified herein.
7. Where the Engineer directs placement of select fill outside the neat lines shown on the Drawings, the volume of such Select Fill will be included for payment, but only to the extent that the additional Select Fill was not placed to correct an unsuitable condition resulting from the Contractor's improper construction operations as determined by the Engineer.

*Line Item 15. Rip Rap: a) GDOT Type 1; b) GDOT Type 3; c) Recycled Rip Rap; and d) Bedding Stone. (Specification Section 02275)*

1. Riprap placed according to the Drawings and Specifications shall be measured and computed for payment to the nearest Ton by actual weight. For each load of material placed as specified the Contractor shall furnish to the Engineer a statement-of-delivery ticket showing the weight, to the nearest 0.1 ton, of rock in the load. Payment for Riprap will be at the contract unit prices for Payment Items "Riprap - Type 1" and "Riprap - Recycled", and shall constitute full compensation for furnishing, hauling, and placing of Riprap as specified herein.
2. Bedding Stone placed according to the Drawings and Specifications shall be measured and computed for payment to the nearest Ton by actual weight. For each load of material placed as specified the Contractor shall furnish to the Engineer a statement-of-delivery ticket showing the weight, to the nearest 0.1 ton, of rock in the load. Payment for Bedding Stone will be at the contract unit price for Payment Item "Bedding Stone" and shall constitute full compensation for furnishing, hauling, and placing of Bedding Stone as specified herein.
3. Geotextile fabric placed according to the Drawings and Specifications shall be considered incidental to Riprap. No additional payment will be made for Geotextile Fabric unless authorized in writing by the Engineer.

*Line Item 16. Cast-In-Place Concrete: a) Piano Key Concrete; b) Structural Concrete; c) Slab Concrete; and d) Backfill Concrete. (Specification Section 03100, 03200, and 03300)*

1. Formwork: Payment for formwork will be considered incidental to the placement of Cast-In-Place Concrete. No separate payment will be made for Formwork.
2. Steel Reinforcement: Bar and wire mesh reinforcement placed according to the Drawings and Specifications shall be subsidiary to Cast-In-Place Concrete. No separate payment will be made for steel reinforcement.
3. Piano Key Concrete: Computed and measured for payment to the neat lines or pay limits shown on the Drawings. The volume of concrete will be computed to the nearest 0.1 cubic yard. No deduction in volume will be made for chamfers, rounded or beveled edges, or for any void or embedded item that is less than five cubic feet in volume. Payment includes full compensation for all labor, concrete materials, reinforcing steel, equipment, transportation, formwork, falsework, joint fillers, waterstops, dowels, joint sealants, placement accessories, consolidating and leveling, troweling, and curing. Payment will be at the contract unit price for Payment Item "Cast-in-Place Concrete - Piano Key Concrete".
4. Structural Concrete: Computed and measured for payment to the neat lines or pay limits shown on the Drawings. The volume of concrete will be computed to the nearest 0.1 cubic

- yard. No deduction in volume will be made for chamfers, rounded or beveled edges, or for any void or embedded item that is less than five cubic feet in volume. Payment includes full compensation for all labor, concrete materials, reinforcing steel, equipment, transportation, formwork, falsework, joint fillers, waterstops, dowels, joint sealants, placement accessories, consolidating and leveling, troweling, and curing. Payment will be at the contract unit price for Payment Item "Cast-in-Place Concrete – Structural Concrete".
5. Slab Concrete: Computed and measured for payment to the neat lines or pay limits shown on the Drawings. The volume of concrete will be computed to the nearest 0.1 cubic yard. No deduction in volume will be made for chamfers, rounded or beveled edges, or for any void or embedded item that is less than five cubic feet in volume. Payment includes full compensation for all labor, concrete materials, reinforcing steel, equipment, transportation, formwork, falsework, joint fillers, waterstops, dowels, joint sealants, placement accessories, consolidating and leveling, troweling, and curing. Payment will be at the contract unit price for Payment Item "Cast-in-Place Concrete – Slab Concrete".
  6. Backfill Concrete: Computed and measured for payment to the neat lines or pay limits shown on the drawings. The volume of concrete will be computed to the nearest 0.1 cubic yard. No deduction in volume will be made for chamfers, rounded or beveled edges, or for any void or embedded item that is less than five cubic feet in volume. Payment includes full compensation for all labor, concrete materials, equipment, transportation, formwork, falsework, joint fillers, waterstops, dowels, joint sealants, placement accessories, consolidating and leveling, troweling, and curing. Payment will be at the contract unit price for Payment Item "Cast-in-Place Concrete - Backfill Concrete".
  7. The costs and impacts associated with rejected concrete shall be the sole responsibility of the Contractor.

*Line Item 17. PVC Drain Pipes: a) 6-inch Non-Perforated PVC Pipe; and b) 6-inch Perforated PVC Pipe. (Specification Section 02652)*

1. The quantity of pipe will be determined to the nearest foot by measurement of the laid length of pipe along the invert centerline of the conduit. Payment will be made at the contract unit price for "PVC Drain Pipes – Non-perforated pipe" and "PVC Drain Pipes – Perforated pipe". Such payment will constitute full compensation for furnishing, transporting, and installing the pipe, fittings, couplings, concrete cleanout markers, and animal guards complete in place.

*Line Item 18. Concrete Waterproofing. (Specification Section 07162)*

1. Concrete waterproofing within the limits shown on the Drawings or as directed by the Engineer shall be measured for payment to the nearest square foot. Payment will be made at the contract price for Payment Item, "Concrete Waterproofing", and shall constitute full compensation for all labor, equipment, tools, and other items necessary and incidental to the completion of the work.

*Line Item 19. Permanent Stabilization: a) Sodding; and b) Topsoil. (Specification Section 02935, 02936, and 02537)*

1. Topsoil will be obtained from an off site source. Topsoil acceptably placed according to the Specifications and at the locations directed by the Engineer will be measured for payment to the nearest cubic yard. The volume will be computed from the depth of Topsoil placed and compacted and the plan view area covered. Payment will be at the contract unit price for Payment Item "Fill - Topsoil", and shall constitute full compensation for testing, stockpiling, hauling, and placing Topsoil in accordance with the Drawings and Specifications.
2. Sodding installed according to the Drawings and Specifications shall be measured and computed for payment to the nearest plan-view square yard. Payment will be made at the

contract unit price for "Permanent Stabilization - Sodding" and will constitute full compensation for obtaining, transporting, storage, installing, monitoring, and tending (water and maintenance) to until accepted by Engineer. Sixty percent (60%) of the contract unit price for Sod-Fescue will be paid when the work is accomplished. Payment on the remaining forty percent (40%) will not be made until at least 45 days have elapsed since the placement of the sod and at least 95% of the sodded area is viable and alive, as determined by the Engineer. Payment includes preparation of subsoil to include fertilizer placement.

*Line Item 20. Chain Link Fence. (Specification Section 02830)*

1. The length of fence will be measured to the nearest one foot along the fence. Payment will be made at the contract unit price for Payment Item, "Chain Link Fence". Such payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work. Payment for the gate will be based on its length as if it was fencing.

*Line Item 21. Clearing, Grubbing, Leveling, Topsoiling and Sodding the backslope of the dam, remove fence from existing dam crest.*

1. Clearing, grubbing of areas shown on the Drawings for the backslope of the dam, and removal of the fence from the existing dam crest will not be measured for payment. Payment will be at the alternate contract lump sum amount for Payment Item, "Clearing, Grubbing, Leveling, Topsoiling and Sodding the backslope of the dam, remove fence from existing dam crest", and shall constitute full compensation for all labor, equipment, materials and all other items necessary and incidental to completion of the work.
2. Stripping within the limits shown on the Drawings will not be measured for payment. Payment will be made at the contract lump sum price for Payment Item, "Clearing, Grubbing, Leveling, Topsoiling and Sodding the backslope of the dam, remove fence from existing dam crest", and shall constitute full compensation for all labor, equipment, tools, and other items necessary and incidental to the completion of the work.
3. Sodding the backslope of the dam will not be measured for payment. Payment will be made at the contract lump sum price for Payment Item, "Clearing, Grubbing, Leveling, Topsoiling and Sodding the backslope of the dam, remove fence from existing dam crest", and shall constitute full compensation for all labor, equipment, tools, and other items necessary and incidental to the completion of the work.

*Line Item 22. Reinforced-Concrete Parapet.*

1. Construction of the concrete parapet including reinforcement, excavation, forming, backfill, and coloring shall be paid for under the alternate Bid Line Item 22.
2. Payment includes full compensation for all labor, concrete materials, reinforcing steel, equipment, transportation, formwork, falsework, joint fillers, waterstops, dowels, joint sealants, placement accessories, consolidating and leveling, troweling, and curing. Payment will be at the contract unit price for Alternate Payment Item "Reinforced-Concrete Parapet".

1.5 CASH ALLOWANCES

A. General

1. The Contractor shall include in the Bid Total all allowances stated in the Contract Documents if any. These allowances shall cover the net cost of the services provided by a firm selected by Peachtree City. The Contractor's handling costs, labor, overhead, profit and other expenses contemplated for the original allowance shall be included in the items to which they pertain and not in allowances.

2. No payment will be made for nonproductive time on the part of testing personnel due to the Contractor's failure to properly coordinate testing activities with the work schedule or the Contractor's problems with maintaining equipment in good working condition.
  3. No payment shall be provided for services which fail to verify required results.
- B. Should the net cost be more or less than the specified amount of the allowance, the Contract will be adjusted accordingly by change order. The amount of change order will not recognize any changes in handling costs at the site, labor, overhead, profit and other expenses caused by the adjustment to the allowance.
- C. Documentation
1. Submit copies of the invoices with each periodic payment request from the firm providing the services.
  2. Submit results of services provided which verify required results.

## 1.6 TESTING AND INSPECTION

- A. Costs Included in Testing and Inspecting:
1. Cost of engaging testing and inspecting agency.
  2. Execution of tests and inspecting.
  3. Reporting results.
- B. Costs Not Included in Testing and Inspecting Allowance but Included in Contract Sum/Price:
1. Costs of incidental labor and facilities required to assist testing or inspecting agency.
  2. Costs of testing services used by Contractor separate from Contract Document requirements.
  3. Costs of retesting upon failure of previous tests as determined by Architect/Peachtree City Project Manager.
- C. Payment Procedures:
1. Submit one copy of inspecting or testing firm's invoice with next Application for Payment.
  2. Pay invoice upon approval by Peachtree City Project Manager.
- D. Testing performed outside of that allowed in contract will be the responsibility of the Contractor unless the cost for such testing is approved, in writing, by the Project Manager prior to such testing being performed. Furthermore, any testing required due to the Contractor's failure to follow the Contract documents and plans shall be the responsibility of the Contractor.

## 1.7 SCHEDULE OF VALUES

- A. Submit printed schedule on Contractor's standard form or electronic media printout will be considered for this use.
- B. Submit Schedule of Values within 20 days after date established in Notice to Proceed.
- C. Format: Use Table of Contents of this Project Manual. Identify each line item with number and title of major Specification Section. Also identify site mobilization, and bonds and insurance.
- D. Include in each line item amount of allowances as specified in this Section. For unit cost allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.
- E. Include within each line item, direct proportional amount of Contractor's overhead and profit.
- F. Revise schedule to list approved Change Orders with each Application for Payment.

1.8 EXISTING CONDITIONS PHOTOGRAPHS AND VIDEO

- A. Contractor shall provide to Peachtree City complete and detailed photographs and video of entire project site, indicating existing site conditions. Contractor to submit with Schedule of Values.

1.9 APPLICATION FOR PAYMENT

- A. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work
  - 3. Scheduled Values.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Material under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
  - 11. Construction Photographs.
- B. Submittal Procedures
  - 1. Submit three (3) copies of each Application for Payment.
  - 2. Submit and updated construction schedule with each application for Payment.
  - 3. Payment Period: Submit on the 25<sup>th</sup> of each month.
  - 4. Submit with transmittal letter as specified for Submittals in Section 01330.
  - 5. Submit waivers showing that suppliers and sub-contractors have been paid the amount due from the previous invoice.
  - 6. The first application will be processed after Peachtree City agreement with the construction schedule.
- C. Substantiating Data for Progress Payments
  - 1. When the Peachtree City Project Manager requires substantiating data, submit suitable information with a cover letter identifying:
    - a. Project.
    - b. Application for Payment number and date.
    - c. Detailed list of enclosures.
    - d. For stored products:
      - 1) Item number and identification as shown on the Application for Payment.
      - 2) Description of specific material
      - 3) Invoices for stored products
  - 2. Submit one copy of data and cover letter for each copy of the Application for Payment.
  - 3. Maintain an updated set of drawings to be used as record drawings in accordance with Section 01 70 00. Exhibit the updated record drawings for review by the Peachtree City Project Manager.

1.10 CHANGE PROCEDURES

- A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Peachtree City Project Manager of any error, inconsistency, omission, or apparent discrepancy.
- C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for



- liaison with Peachtree City Project Manager; establish procedures for handling queries and clarifications.
1. Use CSI Form 13.2A - Request for Interpretation or Contractor's standard for requesting interpretations.
  2. Peachtree City Project Manager may respond with a direct answer on the Request for Interpretation form.
- D. Peachtree City Project Manager will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions in Section 00 94 39 Field Order.
- E. Peachtree City Project Manager may issue Notice of Change in Section 00 94 49 Work Change Directive including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change. Contractor will prepare and submit estimate within <\_\_7\_\_> days.
- F. Contractor may propose changes by submitting a request for change to Peachtree City Project Manager, describing proposed change and its full effect on the Work. Include a statement describing reason for the change and the effect on Contract Sum/Price and Contract Time with full documentation.
- G. Execution of Change Orders: Peachtree City Project Manager will issue Change Orders for signatures of parties as provided in Conditions of the Contract in Section 00 94 63 Change Order.
- H. Correlation of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
  2. Promptly revise Progress Schedules to reflect change in Contract Time, revise subschedules to adjust times for other items of Work affected by the change, and resubmit.
  3. Promptly enter changes in Record Documents.

#### 1.11 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of Peachtree City Project Manager, it is not practical to remove and replace the Work, Peachtree City Project Manager will direct appropriate remedy or adjust payment as follows:
1. The defective Work may remain, but unit sum/price will be [adjusted to new sum/price] at discretion of Peachtree City Project Manager; or,
  2. Defective Work will be partially repaired according to instructions of Peachtree City Project Manager, and unit sum/price will be [adjusted to new sum/price] at discretion of Peachtree City Project Manager.
  3. Individual Specification Sections may modify these options or may identify specific formula or percentage sum/price reduction.
- C. Authority of Peachtree City Project Manager to assess defects and identify payment adjustments is final.
- D. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:
1. Products wasted or disposed of in a manner that is not acceptable.
  2. Products determined as unacceptable before or after placement.
  3. Products not completely unloaded from transporting vehicle.
  4. Products placed beyond lines and levels of the required Work.
  5. Products remaining on hand after completion of the Work.
  6. Loading, hauling, and disposing of rejected products.

#### 1.12 ADDITIONAL WORK AND EXCAVATION LIMITS

- A. Limits of excavation for measurement for most work are shown on the Drawings, or described in the applicable Specification Sections. Where limits of excavation are not shown on the Drawings, or described in the applicable Specification Sections, the limits of excavation are assumed to be:
  - 1. Excavations shall extend to the base of any structure, or bedding for piping, or to the base of subgrade as shown on the Drawings.
  - 2. Excavation measurement limits will start from the edge of the structure. Excavation in soil will be sloped at 2H:1V unless otherwise noted on the Drawings. Excavation in sound rock may be sloped up to 0.25H:1V when the rock will sustain that slope in a stable condition. Excavation in partially weathered rock will be sloped at 1.5H:1V. Flatter slopes may be utilized by Contractor for safety or operational concerns. However, flatter excavation slopes will not be compensated.
  - 3. Excavation required for construction of the spillway and appurtenant features is to be in accordance with Parts 1.3.A.1 and 1.3.A.2.

#### 1.13 MEASUREMENT OF QUANTITIES

- A. Measurement for excavation or removal of materials will be performed with materials in place before work starts. Measurement will be made from the top of the ground, layer, or existing surface to the top of the next layer, or approved excavation limit.
- B. Measurement for backfilling, placement, or installation of materials will be performed after materials are in place after work is completed. Measurement will be made from the limit of approved excavation lines and final grading as shown on the Drawings or authorized by the Engineer.
- C. Measurement for area computations will be made in the horizontal projection of the actual surface area. No allowances in the measurement for area computations will be made for slopes, undulations, depressions, or any otherwise un-level surfaces.
- D. Measurement of items that are measured by the linear foot will be made in the horizontal projection of the actual base or foundation. No allowances in the measurement for linear foot computations will be made for slopes or any otherwise un-level bases or foundations.

#### 1.14 REGARDING-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from the transporting vehicle.
  - 4. Products placed beyond the lines and levels of the required Work.
  - 5. Products remaining on hand after completion of the Work.
  - 6. Loading, hauling, and disposing of rejected, waste or excess products.

#### PART 2 PRODUCTS

Not Used.

#### PART 3 EXECUTION

Not Used.

#### PART 4 MEASUREMENT AND PAYMENT

Not Used.

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SECTION 01039  
COORDINATION AND MEETINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Field engineering.
- C. Preconstruction meeting.
- D. Progress meetings.
- E. Preparatory meetings
- F. Safety meetings

1.2 RELATED SECTIONS

Not Used

1.3 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.
- C. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.4 FIELD ENGINEERING

- A. Employ a Land Surveyor registered in the State of Georgia and acceptable to Engineer.
- B. Contractor shall locate and protect survey control and reference points.
- C. Control datum for survey is that shown on Contract Drawings.
- D. Verify set-backs and easements; confirm drawing dimensions and elevations.
- E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- F. Submit a copy of site drawing and certificate signed and stamped by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.

1.5 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.

- B. Attendance Required: Owner, Engineer, Contractor, major sub-Contractors.
- C. Agenda:
1. Submission of executed bonds and insurance certificates.
  2. Distribution of Contract Documents.
  3. Submission of list of Subcontractors, schedule of values, and progress schedule.
  4. Designation of personnel representing the parties in Contract, the Land Surveyor, and the Engineer.
  5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
  6. Scheduling.
  7. Use of premises by Owner and Contractor.
  8. Owner's requirements.
  9. Construction facilities and controls provided by Owner.
  10. Temporary utilities provided by Owner.
  11. Survey and project layout.
  12. Security and housekeeping procedures.
  13. Schedules.
  14. Application for payment procedures.
  15. Procedures for testing.
  16. Procedures for maintaining record documents.
  17. Inspection and acceptance of equipment put into service during construction period.
- D. Engineer will record minutes and distribute copies to participants within one week after meeting.
- E. Any discrepancies associated with the meeting minutes shall be brought to the attention of the Engineer, in writing, within 10 business days of the date of the meeting.

1.6 PROGRESS MEETING

- A. Submit agenda items and attend meetings throughout progress of the Work, which meetings shall occur not less than one (1) time every thirty (30) days..
- B. Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner and Engineer, as appropriate to agenda topics for each meeting.
- D. Agenda:
1. Review minutes of previous meetings.
  2. Review of Work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems which impede planned progress.
  5. Review of submittals' schedule and status of submittals.
  6. Review of off-site fabrication and delivery schedules.
  7. Maintenance of progress schedule. Review of catch up schedule if appropriate.
  8. Corrective measures to regain projected schedules.
  9. Planned progress during succeeding work period.
  10. Coordination of projected progress.
  11. Maintenance of quality and work standards.
  12. Effect of proposed changes on progress schedule and coordination.
  13. Other business relating to Work.
  14. Review of Contractor's two week look ahead schedule.
  15. Address all change orders and values thereof.

- E. Engineer will record minutes and distribute copies to participants within one week after meeting.
- F. Any discrepancies associated with the meeting minutes shall be brought to the attention of the Engineer, in writing, within 10 business days of the date of the meeting.

#### 1.7 PREPARATORY MEETINGS

- A. Engineer will provide Contractor a list of Construction activities during the Pre-Construction meeting that will require a preparatory meeting prior to construction of that activity.
- B. Attendance Required: Engineer, Contractor, any subcontractor involved in the planned activity.
- C. Agenda
  1. Reviewed of submittals and RFI's.
  2. Review of specifications.
  3. Sampling and testing requirements.
  4. Review Contractor's means and methods.
  5. Schedule of work.

#### 1.8 SAFETY MEETINGS

- A. Representatives for the Contractor are to meet with the Engineer before the start of construction to discuss the safety program and the implementation of all health and safety standards pertinent to the work under this contract.
- B. A minimum of one "on-the-job" or "toolbox" safety meeting is to be conducted each week by all field supervisors or foremen and attended by mechanics and all construction personnel at the jobsite. The Contractor is to also conduct regularly scheduled supervisory safety meetings at least monthly for all levels of job supervision.

#### PART 2 PRODUCTS

- A. Not Used.

#### PART 3 EXECUTION

- A. Not Used.

• END OF SECTION •

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SECTION 01051

LAYOUT OF WORK AND QUANTITY SURVEYS

PART 1 GENERAL

1.1 SCOPE

- A. This specification section covers the procedures and accuracy requirements for survey services for layout of work and field measurement of work quantities to be determined by surveys.

1.2 REQUIREMENTS INCLUDE

- A. The Contractor shall perform all layout surveys required for the control and completion of the work, all necessary surveys to compute quantities of work performed, and all surveys necessary to generate a complete topographic map of the foundation excavation.
- B. The Owner has established primary control to be used by the Contractor for establishing lines and grades required for the work. Primary control consists of one benchmark in the vicinity of the work. Before beginning work, the Contractor shall check and verify all control points established by the Owner and shall advise the Engineer in writing that the points are acceptable or, if they are not acceptable, the reasons therefore.
- C. The Contractor shall preserve and maintain primary control points until otherwise authorized by the Owner or the Engineer. Primary control points damaged or destroyed by the Contractor prior to authorization may be reestablished by the Engineer, and the expense of reestablishment will be deducted from amounts due, or to become due, the Contractor.
- D. The Contractor shall provide experienced construction surveyors, and survey work shall be under the supervision and direction of a Land Surveyor who is registered in the State of Georgia and has a minimum of 2 years responsible charge of construction similar in nature to that required by this contract. The Contractor shall maintain sufficient qualified personnel to perform required surveying work. All survey work performed by the Contractor shall be subject to field and office review by the Engineer.

1.3 SUBMITTALS

- A. Submittals shall be in accordance with this paragraph and Section 01300: Submittals.
- B. At least 15 days prior to beginning surveying work, the Contractor shall submit, for review, a complete plan for the surveying required to lay out the work, including methods and timetables for establishing lines and grades.
- C. At least 15 days prior to beginning surveying work, the Contractor shall submit, for review, a resume of qualifying experience for the registered Land Surveyor who will be responsible for the supervision and direction of Contractor's survey work. At least 15 days prior to changing such responsible individual, a qualifying experience resume for the new individual shall be submitted for approval.
- D. At least 10 days prior to beginning surveying work, the Contractor shall submit, for review and resolution as required, results of the Contractor's check on the accuracy of Owner-established primary control.

- E. Within 2 days of completing and producing notes for a survey or portion of survey, the Contractor shall submit to the Engineer, for review and filing, a copy of such notes. Within 2 days of completing a field survey book, the Contractor shall submit to the Engineer, for review and filing, a copy of the original field survey book.
- F. Accompanying progress payment requests, the Contractor shall submit, for review, a copy of applicable quantity survey notes and computations and an itemized statement for work performed or placed during the progress period measured on the basis of surveying.
- G. If requested by the Engineer, the Contractor shall submit, for review and filing, a copy of the workday's survey notes at the conclusion of that workday.
- H. All surveys submitted to the Engineer shall be provided in both hard copy and electronic format. The electronic format surveys are to be in such a format that is compatible with AutoCAD 2010 or newer. Contour data shall be provided in polyline format with elevations assigned to each contour and point files shall be included in PNEZD, comma delimited format. All files shall be referenced to the Georgia State Plane West coordinate system. All elevations shall be referenced to the North American Vertical Datum (NAVD) 88.

#### 1.4 LAYOUT OF WORK

- A. From Owner-established primary control point, the Contractor shall establish all lines and grades necessary to control the work, and shall be responsible for all measurements that may be required for execution of the work to the tolerances prescribed in these Specifications and on the Drawings.
- B. The Contractor shall establish, place, and replace as required, such additional stakes, markers, and other controls as may be necessary for control, foundation mapping, intermediate checks, and guidance of construction operations.
- C. Prior to the initiation of any earthwork operations, the Contractor shall provide to the Engineer a field-run topographic survey with 1-foot contour intervals within the limits of clearing and grubbing and/or stripping at the dam site.

#### 1.5 QUANTITY SURVEYS

- A. The Contractor shall perform all original ground surveys as required to depict existing conditions prior to construction and determine final quantities of work for payment. These ground surveys shall be performed after the areas are cleared, grubbed, and stripped of topsoil (if applicable). The Contractor shall perform such surveys and computations as are necessary to determine quantities of work performed or placed during each progress payment period, and shall perform all surveys necessary for the Engineer to determine final quantities of work in place.
- B. The Contractor shall notify the Engineer at least 24 hours before performing a survey and, unless specifically waived in writing, surveys shall be performed in the presence of an authorized representative of the Engineer.

#### 1.6 CONTRACTOR SURVEYS

- A. Surveys required:
  - 1. Alignment staking. – Each 50 feet on tangent; each 25 feet on curves.
  - 2. Slope staking. – Each 50 feet on tangent; each 25 feet on curves; restake every 10 feet in elevation.
  - 3. Periodic benchmarks every 10 vertical feet shall be established outside footprint of dam along the baseline.

4. Structures – Stake out structures; check prior to and during construction.
5. Cross section. – Original, final, and intermediate as required, for structure sites and other locations as necessary for quantity surveys.
6. “Record”. – As required for structures and other features of the work.
7. Permanent Instrumentation – All monuments and benchmarks with elevations and coordinates.

## 1.7 RECORDS

- A. Survey data shall be recorded in accordance with recognized professional surveying standards. Original field notes, computations, and other surveying data shall be recorded in standard survey field books. Notes or data not in accordance with standard formats will be rejected. Illegible notes or data, or erasures on any page of a field book will be considered sufficient cause for rejection of part, or all, of the field book. Therefore, rejection of part, or all, of field book may necessitate resurveying. Corrections by ruling or lining out errors will be satisfactory.

## 1.8 DEGREE OF ACCURACY

- A. Degree of accuracy shall be of an order high enough to satisfy tolerances specified for the work and the following:
  1. Structure and pipe points shall be set within 0.05 foot, except where installation or operation considerations require tighter tolerances.
  2. Cross section points shall be located within 0.1 foot, horizontally and vertically.
  3. Vertical elevation surveys shall set within 0.1 foot.

## 1.9 RELATED SECTIONS

- A. Section 01025: Measurement and Payment
- B. Section 01300: Submittals

## PART 2 PRODUCTS

### 2.1 EQUIPMENT AND MATERIALS

- A. The Contractor shall furnish all equipment and materials including instruments, stakes, spikes, steel pins, flagging, templates, platforms, tools, and other accessories as may be required in laying out any part of the work from the primary control points established by the Engineer and in performing quantity surveys. Instruments shall be accurate and shall be subject to inspection, and any defective instruments, as determined by the Engineer, shall be promptly replaced, repaired, or adjusted as required.

## PART 3 EXECUTION

- A. Not Used.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 MEASUREMENT

- A. All work required in this section will not be measured for payment.

### 4.2 PAYMENT

- A. Compensation to the Contractor for all work required in this section shall be considered incidental to the other items of work listed on the bid form. No separate payment to the Contractor will be made for any of the work required in this section.

• END OF SECTION •

SECTION 01061  
PROJECT PERMITS

PART 1 GENERAL

1.1 SCOPE

- A. Comply with the conditions of all permits issued for this project.

1.2 SUBMITTALS

- A. Submittals shall be in accordance with this section and Section 01300: Submittals.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.1 PROJECT PERMITS

- A. The Owner has obtained or has been approved for applicable permits with the exceptions noted in 3.1.C. The land disturbance permits shall be issued by the local issuing authorities to the Contractor.
- B. Copies of all permits obtained by the Owner are available from the Engineer and shall be displayed on site in Contractor's and Engineer's office.
- C. The Contractor shall obtain all other state and local permits required for the work. Permits required include, but may not be limited to, the following:
  - 1. Notice of Intent (NOI) under National Pollutant Discharge Elimination System (NPDES).
  - 2. Notice of Termination (NOT) under NPDES.

3.2 PROJECT PERMIT COMPLIANCE

- A. The Contractor shall be fully responsible for compliance with all terms of all project permits in the execution of his work.
- B. By submission of his bid, the Contractor acknowledges that he will comply with the terms of the permits in the execution of his work.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. All work required in this section will not be measured for payment.

4.2 PAYMENT

- A. Compensation to the Contractor for all work required in this section shall considered incidental to the other items of work listed on the Bid Form. No separate payment to the Contractor will be made for any of the work required in this section.

• END OF SECTION •

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SECTION 01100  
CONSTRUCTION SEQUENCE

PART 1 GENERAL

1.1 SCOPE

- A. Contractor may propose an alternate construction sequence that may better suit his means and methods. Any modifications to the sequence listed below shall be submitted to the Engineer for approval. The Contractor shall submit his proposed construction sequence within 14 days after receiving Notice to Proceed.
- B. Contractor shall first install erosion and sediment control measures as shown on the Drawings. The Owner will lower Lake Peachtree approximately eight and one-half feet (8 ½ ) feet below the normal pool elevation approximately 5 days before the time the Notice to Proceed is issued. Normal pool elevation of Lake Peachtree is 884.5 feet. The Lake will be lowered to elevation 776.0 feet. Contractor shall then proceed with constructing the coffer dam and the bypass spillway system. Removal of the existing spillway and foundation excavation can proceed once the coffer dam is functioning. After the coffer dam is in place, the lake shall be allowed to raise by two and one-half (2 ½ ) feet to approximate elevation 778.5 feet. After the concrete is placed for the new spillway foundation, the Contractor shall modify the temporary bypass spillway to allow the lake to fill an additional two (2) feet to approximate elevation 780.5 feet.
- C. Lake Kedron will be lowered by approximately two (2) feet for the duration of construction by Fayette County. The Owner will coordinate with Fayette County for this work.

1.2 RELATED SECTIONS

- A. Section 02100: Control of Water
- B. Section 02111: Clearing and Grubbing
- C. Section 02112: Stripping
- D. Section 02201: Earthfill
- E. Section 02202: Select Fill
- F. Section 02222: Excavation
- G. Section 03300: Cast-in-Place-Concrete
- H. Section 15100: Ductile Iron Pipe
- I. Section 15300: Sluice Gate

1.3 EROSION AND SEDIMENT CONTROL

- A. The Contractor shall install the erosion and sediment control measures prior to beginning any excavation, fill placement or other construction at the site. The Contractor shall submit to the Engineer his plan for sequencing of site activities and the installation of erosion and sediment control measures at least 7 days prior to any site disturbance.

1.4 WATER CONTROL

- A. Contractor is responsible for maintaining a dry foundation surface where conventional concrete and earthfill are to be placed. The Contractor is responsible for maintaining the water level to approximately three (3) feet below the ground surface.
- B. Contractor shall implement controls to minimize surface and ground waters from entering the foundation excavation.

1.5 PIANO KEY WEIR CONSTRUCTION

- A. The piano key weir shall be constructed in the sequence indicated on the construction drawings and in the technical specifications.
- B. The piano key weir construction sequence shall be generally as follows:
  - 1. Prepare subgrade in accordance with plans and specifications
  - 2. Construct cutoff walls, drains, and slabs.
  - 3. Construct downstream sloping portion of piano keys, to include ramps and wall sections in accordance with the construction plans.
  - 4. Construct the cantilevered portions the piano keys in accordance with the construction drawings.
  - 5. Construct the remaining portions of the divider walls in accordance with the construction drawings.
  - 6. Construct the upstream ramp sections in accordance with the construction plans.
  - 7. Construct the remaining piano key parapet sections.

PART 2 EXECUTION

- A. Not Used.

PART 3 MEASUREMENT AND PAYMENT

- A. All work contained in this section is considered incidental to the other items listed on the Bid Form. No separate payment will be provided for work related to this section.

• END OF SECTION •



SECTION 01114

CLEANUP AND DISPOSAL OF WASTE MATERIALS

PART 1 GENERAL

1.1 SCOPE

- A. The Contractor shall be responsible for the cleanup and disposal of waste materials and rubbish located within the project limits and that are generated by the Contractor due to his operation. The disposal of waste materials and rubbish shall be in accordance with applicable Federal, State, and local laws and regulations, with applicable requirements of OSHA, Construction Safety and Health Regulations, and with the requirements of this paragraph. Should a conflict exist in the requirements for cleanup and disposal of waste materials, the most stringent requirement shall apply.

1.2 CLEANUP

- A. The Contractor shall keep work and storage areas free from accumulations of waste materials and rubbish, and before completing the work, shall remove all storage facilities, buildings, including concrete footings and slabs, rubbish, unused materials, concrete forms, and other like materials, which are not a part of the permanent work. Contractor shall provide trash receptacles throughout the project site. Rubble and debris resulting from the required excavation activities on site must be disposed of off site or at the approved disposal locations or as otherwise approved by the Owner or Engineer.
- B. Contractor shall provide adequate number of waste receptacles at all locations of work and shall empty them on a regular basis. Trash receptacles shall be emptied a minimum of once per week and as necessary to maintain a clean site. Contractor shall keep all work areas in a neat and clean condition.
- C. Upon completion of the work, and following removal of construction facilities and required cleanup, work areas shall be regraded, reclaimed, grassed, and left in a neat manner conforming to the natural appearance of the landscape and in accordance with the Construction Documents.

1.3 DISPOSAL OF HAZARDOUS MATERIALS

- A. Hazardous materials, as defined by 40 CFR 261.3; Federal Standard No. 313, as amended; or other Federal, State, or local laws or regulations, used by the Contractor or discovered in work or storage areas, shall be disposed of in accordance with these specifications and applicable Federal, State, and local laws and regulations. Waste materials that may be hazardous shall be tested, and the test results shall be submitted to the Engineer for review.
- B. Waste materials known or found to be hazardous shall be disposed of in approved treatment or disposal facilities. Non-Hazardous wastes shall be recycled whenever possible. A copy of the hazardous waste manifest shall be sent to the Engineer and Owner.
- C. Waste materials discovered at the construction site that were on site prior to the Contractor starting work shall immediately be reported to the Engineer. The Engineer will then report to the Owner. If the waste is hazardous, the Engineer or Owner may order delays in the time of performance or changes in the work, or both. If such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with the applicable clauses of the contract. A copy of proof of proper disposal of the material shall be kept on site until completion of work.

#### 1.4 DISPOSAL OF OTHER WASTE MATERIALS

##### A. General

- 1) Waste materials including, but not restricted to, refuse, garbage, sanitary waste, chemical additives, industrial wastes, and oil and other petroleum products, shall be disposed of by the Contractor by removal from the construction area.

##### B. Disposal by burning

- 1) No open burning is allowed.

##### C. Disposal by removal

- 1) Waste materials to be disposed of by removal from the construction area shall be removed prior to completion of the work under these specifications. All materials removed shall become the property of the Contractor. When trash receptacles are full they shall be emptied with the contents disposed in accordance with the requirements of this section.
- 2) Where waste materials are to be dumped, they shall be dumped only at a state approved dumpsite or landfill. The Contractor shall make any necessary arrangements with private parties and county officials pertinent to locations and regulations of such dumping, and shall pay any fees or charges required for such dumping.

#### 1.5 RELATED SECTIONS

A. Section 02111: Site Clearing and Grubbing.

B. Section 02222: Excavation

#### PART 2 PRODUCTS

A. Not used

#### PART 3 EXECUTION

A. Not Used

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 MEASUREMENT

A. All work required in this section will not be measured for payment.

##### 4.2 PAYMENT

A. No separate payment will be made to the Contractor for any of the work required in this section. Compensation shall be included in the prices bid in the Bid Form for other related items.

• END OF SECTION •

SECTION 01300  
SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Submittals of Product Data, Shop Drawings, Samples, Test Reports, Certificates.
- D. Manufacturer's instructions.
- E. Manufacturer's field reports.
- F. Test Reports.
- G. Certificates.
- H. Construction photographs.

1.2 RELATED SECTIONS

- A. Section 01700, Contract Closeout: Contract warranties, bonds, manufacturers' certificates, and closeout submittals.

1.3 REFERENCES

- A. AGC (Associated General Contractors of America) publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal by due date referenced in the individual specification sections.
- B. Sequentially number the transmittal forms. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to Engineer at the business address to be designated. Coordinate submission of related items.
- F. Allow 21 days for each submittal for review, excluding delivery time from and to the Contractor. The Contractor is solely responsible for submitting materials to the Engineer in a timely manner and in accordance with these specifications.
- G. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.

- H. Provide space for Contractor and Engineer review stamps.
- I. When revised for resubmission, identify clearly all changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.

#### 1.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within 20 days after date of Owner-Contractor Agreement.
- B. Revise and resubmit the schedule when:
  - 1. Any work item schedule is not achieved.
  - 2. Monthly and/or with payment application submittals.
- C. Submit revised schedules with Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each major portion of Work or operation, identifying first work day of each week.
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.
- H. Submit a two week look ahead schedule on the first and fifteenth of each month.

#### 1.6 SUBMITTALS OF PRODUCT DATA, SHOP DRAWINGS, OR SAMPLES

- A. Submittals For Review:
  - 1. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.
  - 2. After review, provide copies and distribute in accordance with Submittal Procedures article above and for record documents purposes described in Section 01700 - Contract Closeout.
- B. Submittals For Information:
  - 1. Submitted for the Engineer's knowledge as contract administrator or for the Owner.
- C. Submittals For Project Close-out:
  - 1. Submitted for the Owner's benefit during and after project completion.
- D. Submittal Quantities:
  - 1. Product Data: Submit the number of copies which the Contract requires, plus 2 copies which will be retained by the Engineer and distributed to the Owner.
  - 2. Shop Drawings: Submit two hard copy prints and one electronic PDF file.
  - 3. Samples: Submit quantity as identified in the individual specification sections, or one sample (to be retained by the Engineer) if no quantity is specified.

- E. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- F. After review, distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - Contract Closeout.

#### 1.7 TEST REPORTS

- A. Submit for the Engineer's knowledge as contract administrator or for the Owner, in quantities specified for Product Data.
- B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

#### 1.8 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to the Engineer, and in quantities specified for Product Data.
- B. Indicate that material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate to demonstrate that the product or material meets or exceeds the specified requirements.
- C. Certificates may be recent or previous test results on material or Product, but must be considered acceptable to the Engineer.

#### 1.9 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Provide any manufacturer field reports developed from on-site inspections or work tasks.

#### 1.10 CONSTRUCTION PHOTOGRAPHS

- A. Contractor shall take daily digital photographs of work activities and submit them on a thumb drive with each pay application. Photographs shall be date stamped.

#### PART 2 PRODUCTS

- A. Submit products in accordance with Section 1.6 Above.

#### PART 3 EXECUTION

- A. Not Used.

• END OF SECTION •

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SECTION 01400  
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances.
- C. References and standards.
- D. Inspecting and testing laboratory services.
- E. Manufacturer's field services

1.2 RELATED SECTIONS

- A. Section 01300, Submittals: Submission of manufacturers' instructions and certificates
- B. Section 01600, Material and Equipment: Requirements for material and product quality

1.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Contractor Quality Control
  1. This item shall consist of developing, implementing, and maintaining a quality control system to ensure that the specific quality is achieved for all materials and work performed.
  2. The burden of proof that work performed meets contract requirements and has been performed in a workmanlike manner is the Contractor's.
  3. Inspection is defined as a rigorous examination of construction materials, processes and operations, including testing of materials and examination of manufacturer's certifications as required, to verify that work meets contract requirements and is performed in a workmanlike manner.
  4. The Contractor's Quality Control System is not required to include material testing of concrete, soil, and drain fill, unless the Contractor elects to provide such testing as part of his Quality Control System. The Engineer will provide these quality control tests, and the Engineer shall determine if concrete, soil, and drain fill materials and placement meet project intent.
- B. The Contractor shall designate in writing the person or persons who will serve as those responsible for quality control, herein after referred to as the Contractor's Quality Control supervisor(s).
- C. The Contractor shall comply with manufacturers' instructions, including each step in sequence.
- D. Should the manufacturers' instructions conflict with the Contract Documents, request clarification from the Engineer before proceeding.
- E. The Contractor shall comply with specified standards as the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

- F. The Contractor's Work shall be performed by persons qualified to produce the required and specified quality.
- G. The Contractor shall verify that field measurements are as indicated on the shop drawings or as instructed by the manufacturer.
- H. The Contractor shall secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- I. The Contractor shall meet with the Engineer before any work begins and discuss the Contractor's quality control system. The Engineer and the Contractor shall develop a mutual understanding regarding the quality control system, including procedures for correcting quality control issues.

#### 1.4 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from the Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position properly before securing Products in place.
- D. Perform work within the tolerances specified within the Contract Documents.

#### 1.5 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes and by the Contract Documents.
- B. Conform to reference standards by date of issue current on date of Owner-Contractor Agreement, except where a specific date is established by code.
- C. Obtain copies of standards where required by individual specification sections.
- D. Neither the contractual relationships, duties, nor responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### 1.6 TESTING SERVICES

- A. Owner will appoint, employ and pay for services of a firm to perform testing. The following testing services are required for this project:
  - 1. Section 02201 - Earthfill: Compaction Testing.
  - 2. Section 02202 – Select Fill
  - 3. Section 03300 - Cast-in-Place Concrete: Field Quality Control.
- B. The testing firm will perform tests and other services specified in individual specification sections and as required by the Engineer.
- C. Testing and source quality control may occur on or off the project site.



- D. Reports will be submitted by the testing firm to the Engineer and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. The Contractor shall cooperate with the testing firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
  - 1. Notify Engineer and testing firm a minimum of 24 hours prior to expected time for operations requiring services.
  - 2. Make separate arrangements with testing firm and pay for additional samples and tests required for Contractor's use.
- F. Testing does not relieve Contractor from performing quality Work to contract requirements.
- G. Re-testing required because of non-conformance to specified requirements shall be performed by the same testing firm as instructed by the Engineer. Payment for re-testing will be charged to the Contractor by deducting such testing charges from the Contract Sum/Price.
- H. Unless otherwise required by the Engineer or provided in these Specifications, all defective materials, equipment, and work shall be reworked, repaired, or removed and replaced as required by the Engineer. All such actions necessary to correct defective materials, equipment, or work shall be performed by the Contractor at no additional costs to the Owner. Actions required by the Contractor shall be as described in these Specifications.

#### 1.7 INSPECTION SERVICES

- A. Owner will appoint, employ, and pay for specified services of an independent firm (Engineer) to monitor construction activities.
- B. Reports will be submitted by the Engineer to the Owner on a monthly basis, indicating observations and indicating compliance or non-compliance with the Contract Documents.
- C. Contractor will be notified within 24 hours of a non-compliance concrete test and will be notified immediately of a failed soil density test.
- D. Contractor shall cooperate with Engineer; furnish safe access and assistance by incidental labor as requested.
- E. Monitoring of construction activities does not relieve Contractor from performing Work to contract requirements.
- F. Engineer will perform inspections of excavations. Contractor shall provide access for Engineer's personnel for performing inspections. Contractor shall allow a reasonable period of time in Contractor's schedule for Engineer's inspections.

#### 1.8 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff and personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, and test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer 30 days in advance of required observations. Acceptance of the observer is subject to the approval of the Engineer.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01300 - Submittals, Manufacturers' Field Reports.

PART 2 PRODUCTS

A. Not Used.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.

• END OF SECTION •

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements for Temporary Facilities, to include:
  - 1. Temporary Utilities: Electricity, lighting, heat, ventilation, telephone service, internet service, water, and sanitary facilities.
  - 2. Temporary Controls: Barriers, enclosures and fencing, and protection of the Work.
  - 3. Construction Facilities: Access roads, parking, progress cleaning, project signage, and temporary buildings.
  - 4. Traffic Control: Use of public roads.

1.2 RELATED SECTIONS

- A. Section 01590, Field Office and Sheds
- B. Section 01700, Contract Closeout: Final cleaning

1.3 TEMPORARY ELECTRICITY

- A. Cost: By Contractor; arrange, provide and pay for power service required from utility source.
- B. Complement existing power service capacity and characteristics as required.
- C. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- D. Provide main service disconnect and over-current protection at convenient location.
- E. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.
- B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.
- C. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- D. Maintain lighting and provide routine repairs.

1.5 TELEPHONE SERVICE

- A. Provide, maintain, and pay for telephone service to field office and Engineer's field office at time of project mobilization.

1.6 INTERNET SERVICE

- A. Provide, maintain and pay for security protected, high-speed internet service and wireless

network to field office and Engineer's field office at time of project mobilization.

1.7 TEMPORARY WATER SERVICE

- A. Provide, maintain and pay for suitable quality potable water service and non-potable water source required for construction operations at time of project mobilization.

1.8 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization. Sanitary facility to be located inside of each field office or at outdoor locations submitted to and approved by the Owner.

1.9 WEATHER SERVICE

- A. Provide and maintain a rain gauge capable of reading from 0.1 inches to at least 6 inches. The rain gauge is to be measured and recorded daily and at times when sufficient rainfall has occurred such that the Work is halted. Maintain a daily log of rainfall totals for the duration of the Construction.
- B. Provide and maintain a thermometer suitable for outdoor use. Thermometer shall be capable of recording daily high and low temperatures. Maintain a daily log of high and low temperatures for the duration of the Construction.

1.10 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide protection for trees designated to remain. Replace damaged trees.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- D. The Contractor shall provide a lockable gate off of Kelly Drive at the location shown on the Drawings.
- E. Provide barriers at Trail Closure locations as shown on the Drawings. Provide Detour direction sign at each trail closure location.

1.11 SAFETY FENCING

- A. Construction: Contractor shall, in its discretion, install safety fencing in accordance with applicable State and Federal law and generally accepted standards in the industry.

1.12 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.

1.13 SECURITY

- A. Provide security and facilities to protect Work from unauthorized entry, vandalism, or theft.

1.14 ACCESS ROADS

- A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.
- B. Extend and relocate access roads as Work progress requires. Provide detours as necessary for unimpeded traffic flow.
- C. Existing on-site roads within construction limits may be used for construction traffic.

1.15 PARKING

- A. Provide temporary gravel surface parking areas to accommodate construction personnel.
- B. When site space is not adequate, provide additional off-site parking.
- C. Vehicle parking on existing pavement outside of construction limits is not allowed. The Contractor is responsible for directing all construction personnel away from parking in off-limit areas.
- D. Designate a minimum of four (4) total parking spaces for the Owner and Engineer.

1.16 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas to be free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

1.17 PROJECT IDENTIFICATION

- A. Provide an eight (8) foot wide by six (6) foot high project sign of exterior grade plywood and wood frame construction, painted, with exhibit lettering and Owner logo by professional sign painter or die-cut vinyl, self-adhesive letters, to Engineer's design and colors.
- B. List title of Project, names of Owner, Engineer, Subconsultants, Contractor, and major Subcontractors, and other information determined by Owner. Submit sign design for Owner approval prior to fabrication.
- C. Erect sign on site at a location established by the Engineer.
- D. No other signs are allowed without Owner permission except those required by law.

1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.

1.19 TRAFFIC CONTROL

- A. This item consists of establishing traffic control and maintaining safe, convenient use of public roads and rights-of-way throughout construction at the Construction sites.
- B. All temporary traffic signing, pavement markings, barricades, channelizing devices, detour paving, and other traffic control devices required for maintenance of traffic during construction shall be in accordance with the *Manual of Uniform Traffic Control devices for Streets and Highways, Current Edition*.

- C. This item also includes all necessary cleaning, brooming, and washing of public roads used as access to the site to maintain the roads in a clean manner, free of all dirt or other deleterious materials falling on the road as a result of construction activities and as directed by the engineer and/or Owner.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

- A. Not Used.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. All work and associated costs in this section will not be measured for payment. Work shall be itemized in the Schedule of Values.

4.2 PAYMENT

- A. Payment will be made to the Contractor for any of the work required in this section on a lump sum basis based on items of work listed in Schedule of Values. Lump sum amount shall be included in the bid form.

• END OF SECTION •

SECTION 01590  
FIELD OFFICES AND SHEDS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary field offices and sheds.
- B. Maintenance and cleaning.
- C. Removal.

1.2 RELATED SECTIONS

- A. Section 01010: Summary of the Work
- B. Section 01500: Construction Facilities and Temporary Controls
- C. Section 01600: Material and Equipment

PART 2 PRODUCTS

2.1 MATERIALS, EQUIPMENT, FURNISHINGS

- A. Materials, Equipment, Furnishings: Serviceable, new or used, adequate for required purpose.

2.2 CONSTRUCTION

- A. Portable or mobile buildings, or buildings constructed with floors raised above ground, securely fixed to foundations, with steps and landings at entrance doors.
- B. Construction: Structurally sound, secure, weather tight enclosures for office and storage spaces. Maintain during progress of Work; remove when no longer needed.
- C. Temperature Transmission Resistance of Floors, Walls, and Ceilings: Compatible with occupancy and storage requirements.
- D. Exterior Materials: Weather resistant.
- E. Interior Materials in Offices: Sheet type materials for walls and ceilings, pre-finished or painted; resilient floors and bases.
- F. Lighting for Offices: 50 ft-C at desk top height, exterior lighting at entrance doors.
- G. Fire Extinguishers: Appropriate type fire extinguisher at each office and each storage area.
- H. Interior Materials in Storage Sheds: As required to provide specified conditions for storage of products.

2.3 ENVIRONMENTAL CONTROL

- A. Heating, Cooling, and Ventilating for Offices: Automatic equipment to maintain 68 degrees F heating and 76 degrees F cooling.

- B. Storage Spaces: Heating and ventilation as needed to maintain Products in accordance with Contract Documents; adequate lighting for maintenance and inspection of Products.
- C. Water Heater: Provide with a minimum capacity of 5 gallons.

#### 2.4 CONTRACTOR OFFICE AND FACILITIES

- A. Size: For Contractor's needs and to provide space for project meetings.
- B. Telephone: As specified in Section 01500.
- C. Internet: As specified in Section 01500.
- D. Furnishings in Meeting Area: Conference table and chairs to seat at least ten persons; racks and files for Contract Documents, submittals, and project record documents.
- E. Sanitary Facilities: Restroom that includes toilet and sink with running water. Soap and paper towels are to be available at all times.
- F. Other Furnishings: Contractor's option.
- G. Equipment: Six adjustable band protective helmets for visitors.

#### 2.5 ENGINEER OFFICE

- A. Engineer's office unit shall be at a location approved by the Engineer.
- B. Area: Minimum 160 sq. ft., minimum dimension 8 ft.
- C. Windows: Minimum four, with minimum total area of 10 percent of floor area, with operable sash and insect screens. Locate as close to work site as possible, with views of construction area. Provide Venetian blinds for windows and doors.
- D. Electrical Distribution Panel: Provide 60 amp, 120/208 volt, three phase service entrance connection, grounding, enclosed service switch and branch circuit fused boxes.
- E. Minimum four 110 volt duplex convenience outlets in large office, and two outlets in the end offices. Provide switched fluorescent light fixtures in each office.
- F. Telephone and Internet Service: As specified in Section 01500.
- G. Sanitary Facilities: Indoor Restroom that includes toilet and sink with running water. Soap and paper towels are to be available at all times.
- H. Furnishings:
  1. One desk 60 x 30 inch, with three drawers.
  2. One drafting table 36 x 72 inch, with one equipment drawer and a full width parallel straight edge.
  3. One metal, double-door storage cabinet under table.
  4. Plan rack to hold working Drawings, shop drawings, and record documents.
  5. One standard four-drawer legal-size metal filing cabinet with locks and two keys per lock.
  6. Six linear ft. of metal bookshelves.
  7. One swivel arm chairs.
  8. Two straight chairs.
  9. One drafting table stool.
  10. One tackboard 36 x 30 inch.



11. One waste baskets.
12. One telephone and telephone answering machine.
13. One copier/printer/scanner machine with the following minimum requirements:
  - a) Automatic feed with stationary top.
  - b) Network ready and connected to the wireless network for the sole use of the Engineer as a network printer.
  - c) Capable of copying on 8-½" x 11", 8-½" x 14", and 11" x 17" size paper.
  - d) Collating capability.
  - e) All services and supplies necessary throughout the duration of the contract period.
14. Electric water cooler with bottled water supply having hot and cold spigots, to be continually serviced during contract period, with a 1.5 cubic foot refrigerator.
15. One electric drip, 10-cup capacity coffee maker.
16. One boot brush.
17. One indoor bathroom located within a private room. One utility sink equipped with hot and cold running water.
18. First Aid Kit: A 16-unit first aid kit approved by the American Red Cross. Contents to be replenished as used.
19. One microwave oven.

## 2.6 STORAGE AREAS AND SHEDS

- A. Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products to requirements of Section 01600.
- B. The Engineer's office shall have a lockable storage area for nuclear density testing equipment. Locks and two keys per lock shall be provided by the Contractor.
- C. The Contractor shall supply a smooth concrete pad at a location approved by the Engineer with an area of approximately 25 square feet (5 ft. wide by 5 ft. long by 0.5 ft. thick, min. dimensions) within 10 ft. of the trailer. This pad will be primarily used for conducting soil tests.
- D. The Contractor shall supply a portable concrete cylinder curing container with the following minimum requirements:
  1. Capable of maintaining an internal temperature between 60.0 and 80.0 degrees Fahrenheit. Container shall be capable of maintaining the specified temperature range while containing up to 20 4-inch diameter, 8-inch tall cylinder samples of fresh concrete and being subjected to outside ambient air temperatures. Supplemental heating and cooling of the container will likely be required.
  2. Lockable hinged access hatch with lock and key.
  3. Temperature monitoring device capable of continuous monitoring and recording and storing daily high and low temperatures.
  4. Minimum dimension of 4 feet long by 2 feet wide by 1-½ feet high.
  5. Weather resistant exterior.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Fill and grade sites for temporary structures to provide drainage away from buildings.

### 3.2 INSTALLATION

- A. Install office spaces ready for occupancy within 30 calendar days after Notice to Proceed.
- B. Parking: As specified in Section 01500 – Construction Facilities and Temporary Controls.

C. Employee Residential Occupancy: Not allowed on Owner's property.

3.3 MAINTENANCE AND CLEANING

- A. Weekly janitorial services for offices; periodic cleaning and maintenance for office and storage areas.
- B. Maintain approach walks free of mud, water, and snow.

3.4 REMOVAL

- A. At completion of Work remove buildings, foundations, utility services, and debris. Restore areas to a condition equal to or better than existed before installation of the field office.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. All work and associated costs in this section will not be measured for payment. Work shall be itemized in the Schedule of Values.

4.2 PAYMENT

- A. Payment will be made to the Contractor for any of the work required in this section on a lump sum basis based on items of work listed in Schedule of Values. Lump sum amount shall be included in the bid form.

• END OF SECTION •

SECTION 01600  
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Transportation and handling.
- B. Storage and protection.
- C. Product options.
- D. Substitutions.
- E. Water for construction.

1.2 RELATED SECTIONS

- A. Instructions to Bidders: Product options and substitution procedures.
- B. Section 01400, Quality Control: Product quality monitoring.

1.3 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturers' and suppliers' instructions.
- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.4 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.
- D. For exterior storage of fabricated Products, place on sloped supports above ground.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign or otherwise dissimilar matter.
- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition. Maintaining acceptable condition of Products shall be the sole responsibility of the Contractor.

#### 1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description, subject to approval by the Engineer.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

#### 1.6 SUBSTITUTIONS

- A. Engineer will consider requests for Substitutions only within 30 days after date of Notice to Proceed.
- B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
  1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  2. Will provide the same warranty for the Substitution as for the specified Product.
  3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  4. Waives claims for additional costs or time extension which may subsequently become apparent.
  5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
  1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
  2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of this proof is on proposer.
  3. The Engineer will notify the Contractor in writing of decision to accept or reject request, or to request additional information regarding the request.

#### 1.7 WATER FOR CONSTRUCTION

- A. Water required for dust abatement, earth fill moisture conditioning, and drain fill consolidation may be pumped from the reservoir. Water pumped from the reservoir shall not be used for mixing or curing concrete or other cementitious materials.

### PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

• END OF SECTION •

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SECTION 01700  
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Project record documents.
- D. Operation and maintenance data.
- E. Warranties and bonds.

1.2 RELATED SECTIONS

- A. Section 01500, Construction Facilities and Temporary Controls: Progress cleaning

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Provide Record Drawings.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean site; sweep paved areas, rake clean landscaped surfaces.
- C. Remove waste and surplus materials, rubbish, and construction facilities and properly dispose of in designated areas.

1.5 PROJECT RECORD DOCUMENTS

- A. Record Drawings may also be referred to as "As-Builts" in this and other project documents.
- B. Maintain on site one set of each the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed Shop Drawings, Product Data, and Samples.
  - 6. Manufacturer's instructions for assembly, installation, and adjusting.

- C. Ensure entries are complete and accurate, enabling future reference by Owner.
- D. Store record documents separate from documents used for construction.
- E. Record information concurrent with construction progress. Engineer and Contractor shall review prior to a pay request approval, the completeness of record documents.
- F. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
  - 1. Manufacturer's name and product.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- G. Record Drawings: Legibly mark each item to record actual construction including:
  - 1. Foundation elevations (upstream, downstream, and along spillway) at each full station and at any abrupt change in centerline profile.
  - 2. Diaphragm drain invert elevations and top of drain at each full station and at any abrupt change in profile.
  - 3. Provide site plan indicating the location and identifying markers of drain outlets, cleanouts, settlement monitoring points, and other site instrumentation.
  - 4. Spillway crest elevations, slab joint elevations, top of wall elevations, bridge seat elevations, bridge pier top elevation, foundation elevations, drain invert and outlet elevations.
  - 5. Floating log and debris barrier anchor coordinates and elevations.
  - 6. Field changes of dimension and detail.
  - 7. Changes made by Change Order or Field Order, Request for Information, addenda and submittals.
  - 8. Details not on original Contract drawings.
- H. Use colored pencils or felt tipped pens for marking changes, revisions, additions and deletions to the Record Drawings to show actual installed conditions, as follows:
  - 1. Changes or additions to Work: Red.
  - 2. Deletions: Green.
  - 3. Printed Notation: Blue
- I. Where Shop Drawings more accurately portray Work, record a cross-reference at corresponding locations on Drawings.
- J. Submit final documents to Engineer with claim for final Application for Payment.
- K. Record drawings are to be updated as the work progresses. Engineer will review the record drawings with each payment application to ensure that records are being kept in accordance with the Contract Documents.

#### 1.6 OPERATION AND MAINTENANCE DATA

- A. Submit data bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.



- D. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, in three parts as follows:
  - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
  - 2. Part 2: Operation and maintenance instructions. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    - a. Significant design criteria.
    - b. List of equipment.
    - c. Parts list for each component.
    - d. Operating instructions
    - e. Maintenance instructions for equipment and systems.
  - 3. Part 3: Project documents and certificates, including the following:
    - a. Shop drawings and product data.
    - b. Certificates.
    - c. Originals of warranties and bonds.
- E. Submit one draft copy of completed volume 15 days prior to final inspection. This copy will be reviewed and returned after final inspection with Engineer comments. Revise content of all document sets as required prior to final submission.
- F. Submit two sets of revised final volumes, within 10 days after final inspection.

#### 1.7 WARRANTIES AND BONDS

- A. Provide notarized copies.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

#### PART 2 PRODUCTS

- A. Provide spare parts as supplied by the manufacturer or as directed by the Engineer to be stored in a location designated by the Owner.

#### PART 3 EXECUTION

- A. Not Used.

• END OF SECTION •

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# CONSTRUCTION SPECIFICATIONS

FOR

## Lake Peachtree Spillway Replacement Project

Schnabel Reference No. 16C17043.00  
July 10, 2017

Peachtree City Contract Number 17-123BPW



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# **CONSTRUCTION SPECIFICATIONS**

**For the**

**Lake Peachtree Spillway Replacement Project**  
**Peachtree City, Georgia**

**July 10, 2017**

**Schnabel Reference No. 16C17043.00**

**Owner**

**Peachtree City**  
**151 Willowbend Road**  
**Peachtree City, Georgia 30269**  
**Peachtree City Contract Number 17-123BPW**

**Engineer**

**Schnabel Engineering, LLC**  
**6445 Shiloh Road**  
**Suite A**  
**Alpharetta, Georgia 30005**

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## DIVISION 2

## SITE WORK

### DIVISION 2 - SITE WORK

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02000	Mobilization and Demobilization
02040	Erosion and Sediment Control
02050	Structure Removal
02100	Control of Water
02111	Clearing and Grubbing
02112	Stripping
02201	Earthfill
02202	Select Fill
02209	Geotextile
02222	Excavation
02275	Riprap
02652	Polyvinyl Chloride Pipe
02830	Chain Link Fence
02935	Topsoil
02936	Permanent Turf Establishment
02937	Sodding

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SECTION 02000

MOBILIZATION AND DEMOBILIZATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Mobilization shall include the purchase of contract bonds insurance, and permits; transportation of all personnel, equipment and operating supplies to the site; establishment of offices, buildings, sanitary facilities, and other necessary facilities at the site.

1.2 RELATED SECTIONS

- A. Section 01039, Coordination and Meetings.
- B. Section 01051, Layout of Work and Quantity Surveys.
- C. Section 01114, Cleanup and Disposal of Waste Materials.
- D. Section 01500, Construction Facilities and Temporary Controls.
- E. Section 01590, Field Office and Sheds.
- F. Section 01700, Contract Closeout

1.3 MEASUREMENT FOR PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Provide materials as necessary to complete the items delineated above and referenced in Subsection 1.2 – Related Sections.

PART 3 EXECUTION

3.1 MOBILIZATION

- A. Provide the services and installation of facilities described above and referenced in Subsection 1.2, applicable to mobilization activities.

3.2 DEMOBILIZATION

- A. Remove equipment, supplies, facilities and debris.
- B. Perform final grading of staging, stockpile, and spoil areas to ensure relatively uniform slopes and positive drainage. This work is to be performed prior to the establishment of sodding in these areas.

• END OF SECTION •

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SECTION 02040

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The Work shall consist of furnishing and placing the following Erosion and Sediment Control items as shown on the Contract Drawings or as directed by the Engineer:
  - 1. Haybales, silt fence, sediment logs and similar devices
  - 2. Rock Check Dams
  - 3. Construction Exit Pad
  - 4. Temporary seeding and mulching
  - 5. Diversion ditches and dikes
  - 6. Erosion Control Blanket
  - 7. Sediment Traps
  - 8. Rock Filter Dams
  - 9. Silt Bags
  - 10. Other measures to prevent erosion and sedimentation as may be required by references cited herein or as shown on the Drawings.
- B. This section also includes the excavation, removal and disposal of sediment trapped by the erosion control devices.
- C. The Work shall consist of furnishing all labor, materials, and equipment and performing all work required for the prevention of environmental pollution during and as the result of construction operations under this Contract except for those measures set forth in other sections of these Specifications. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and recreational purposes. The control of environmental pollution requires consideration of air; water and land, and involves noise, dust, solid waste management and management of radiant energy and radioactive materials, as well as other pollutants.

1.2 RELATED SECTIONS

- A. Section 02000, Mobilization and Demobilization
- B. Section 02100, Control of Water
- C. Section 02209, Geotextile
- D. Section 02222, Excavation
- E. Section 02935, Topsoil
- F. Section 02936, Permanent Turf Establishment
- G. Section 02275, Riprap

### 1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

### 1.4 REFERENCES

- A. In order to prevent, and to provide for abatement and control of, any environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, they shall comply with all applicable Federal, State and local laws, and regulations concerning environmental pollution control and abatement, as well as with other specific requirements stated elsewhere in the Contract Documents.
- B. All Erosion and Sediment Control items shall be installed and maintained in accordance with the “Manual For Erosion and Sediment Control in Georgia, 2016 Edition” (Referred to as “**The Handbook**”)

## PART 2 PRODUCTS - MATERIALS

### 2.1 HAYBALES

- A. Haybales shall be made of hay or straw and shall be bound together with wire or plastic cord. Bales shall be anchored into the ground with two stakes per bale.

### 2.2 SILT FENCE

- A. Silt fence shall consist of a two-component barrier system composed of a support fence and an attached soil and erosion control fabric. The support fence is composed of minimum 14 gage woven wire attached to metal posts. The geotextile fabric shall be stapled or wired securely to the support fence. Silt fence shall be Silt Fence with Wire Support as specified in **The Handbook** and as shown on the Drawings or approved equal. Installation shall conform to the details on the Drawings.

### 2.3 CONSTRUCTION EXIT PAD

- A. A Stabilized Construction Exit Pad shall conform to the details at locations shown on the Drawings.
- B. All sections of Specification 02202, Select Fill, relating to submittals, testing, products and execution shall be applicable for coarse aggregate to be placed as the Stabilized Construction Exit Pad.

### 2.4 ROCK CHECK DAM

- A. Rock check dams shall conform to the details shown on the Drawings.

### 2.5 ROCK FILTER DAM

- A. Rock filter dams shall conform to the details shown on the Drawings.

### 2.6 EROSION CONTROL BLANKET

- A. Erosion control blankets shall be Treatment 1 as specified in **The Handbook**. Installation locations shall be as shown on the Drawings, and specified in **The Handbook**.

## 2.7 SEDIMENT TRAP

- A. Sediment traps shall conform to the details as shown on the Drawings. The dimensions and location shown for the traps are approximate and may be adjusted in the field to best fit the topography. Sediment collected in traps shall be removed once 33% of the trap volume is filled.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. The Contractor shall install Erosion and Sediment Control measures prior to any major soil disturbance in accordance with these Specifications and at the locations directed by the Engineer.
- B. The lower edge of the silt fence shall be embedded at least six inches into the ground.
- C. Filter fabric fence will be placed at level grade. Both ends of a fence section will be extended up the slope so that the bottom of the fence shall end at the top of the fence elevation.
- D. Rock check dams shall be installed as shown on the Drawings.
- E. The formation of concentrated flows on the drainage slope above a filter fabric fence or haybale installation is not permitted. If concentrated flows do occur, direct slope stabilization measures must be employed to prevent such conditions.
- F. Filter fabric fences or haybales will not be placed in any area of concentrated flows such as ditches, swales, channels, etc.
- G. Filter fabric fences or haybales will not be used in areas where rock or rocky soils prevent the full and uniform anchoring of the fence toe.
- H. Filter fabric material or haybales will not be placed across the entrance to pipes or culverts and will not be wrapped around the principal spillway structures of sediment traps or basins.
- I. A trench will be plowed or otherwise excavated to the required depth with little, if any, disturbance to the downslope side of the trench. The bottom of the trench and the fence top will be placed on a level grade. When it is necessary to cross small depressions, the trench bottom and fence top edge may deviate slightly from the level grade. Grades in such sections will not exceed one percent (1%), nor will the deviation extend for more than 25 feet.
- J. Support stakes will be driven to the required depth below the existing ground surface, at specified intervals.
- K. Stretch and fasten silt fence fabric to the upslope side of the support stakes (if a reinforced section, fasten reinforcement mesh prior to fastening the fabric).
- L. Where ends of silt fence fabric come together, they will be overlapped, folded and stapled to prevent sediment bypass.
- M. The toe anchor will be backfilled and compacted to a density equal to surrounding soils. If constructing a reinforced section, attach guy wires to support stakes. Provisions should be made for easy loosening and removal of the guy wires to allow for access to perform maintenance work.

- N. Surface water shall be diverted away from excavations by means of diversion ditches and diversion dikes.
- O. Install Erosion Control Blankets where specified on the Drawings and coordinate with Section 02936, Permanent Turf Establishment. Lay fabric smoothly on surface, bury top (or upstream) end of each section in 6-inch deep excavated topsoil trench. Provide 12-inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil. Secure entire fabric at 24-inch intervals with stakes or staples. Secure outside edges and overlaps at 18-inch intervals. Lightly dress slopes with topsoil to ensure close contact between fabric and soil. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges a minimum 6 inches.

### 3.2 GENERAL

- A. The Contractor shall schedule and conduct his operations to minimize erosion of soils and to prevent silting and muddying of the stream through the project site.
- B. Erosion and Sediment Controls must be constructed, stabilized, and functional before site disturbance within the tributary areas of those controls.
- C. Construction of drainage facilities and performance of Work which will contribute to the Control of Erosion and Sedimentation shall be carried out in conjunction with earthwork operations or as soon thereafter as practicable. The area of bare soil exposed at any one time by construction operations shall be kept to a minimum.
- D. Pollutants such as fuels, lubricants, bitumens, raw sewage and other harmful materials shall not be discharged into or near rivers, streams and impoundments or into natural or man-made channels leading thereto. Wash water or waste from concrete mixing operations shall not be allowed to enter live streams.
- E. All applicable regulations of fish and wildlife agencies and statues relating to the prevention and abatement of pollution shall be complied with in the performance of the Contract.
- F. The tires of all vehicles shall be cleaned prior to leaving the site.
- G. The Contractor shall not stockpile equipment, topsoil, materials etc. in otherwise undisturbed areas, and areas indicated for the preservation of existing vegetation.
- H. Erosion and Sediment Control Measures must be implemented prior to, during and after the earth disturbance activity.
- I. Until the site is stabilized, all Erosion and Sediment Control Measures must be maintained properly. Maintenance must include inspections of all erosion and sediment control measures after each runoff event and on a weekly basis. All prevention and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, mulching, and renetting, must be performed immediately.
- J. Any disturbed area on which activity has ceased and which will remain exposed for more than 13 days must be seeded or mulched immediately. Disturbed areas which are not at finished grade and which will be redisturbed within one year may be seeded and mulched with a quick growing temporary seeding mixture and mulch. Disturbed areas which are either at finished grade or will be redisturbed after one year must be seeded and mulched with a permanent seed mixture and mulch.
- K. Hay or straw mulch must be applied at rates of at least 3.0 tons per acre

- L. Should any measures contained within this plan prove incapable of adequately removing sediment from on-site flows prior to discharge or of stabilizing the surface involved, additional measures must be immediately implemented by the contractor to eliminate all such problems.
- M. The Contractor shall at all times perform all work and take such steps required to prevent any destruction to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area which are critical to fish or wildlife. The Contractor shall not discharge or permit discharge into streams or other water sources fuels, oils, bitumens, garbage, sewage, or materials which may be harmful to fish, wildlife, or vegetation, or that may be detrimental to outdoor recreation. All work shall be performed in such a manner that objectionable conditions will not be created in waters through or adjacent to the project areas.
- N. Land and water resources within the work limits and outside the limits of permanent work shall be preserved in their present condition or shall be restored to a condition that will appear to be natural and not distract from the appearance of the project.
- O. Sanitary facilities such as chemical toilets, and sumps, tanks, or barrels used to temporarily store chemical pollutants such as drained lubricating oils, shall be disposed of in accordance with regulations of the Georgia Environmental Protection Division.
- P. All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall ensure safe construction operations at all times. If chemical dust suppressants are applied, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommend application procedures shall be provided to the Engineer 5 work days before the first application.
- Q. Off-site vehicle tracking of dirt, soils, and sediments and the generation of dust shall be minimized or eliminated to the maximum extent practical. Public roads shall be properly cleaned.
- R. Concrete washdown of tools, concrete mixer chutes, hoppers and the rear of vehicles shall be performed at a concrete waste management location at a location approved by the Engineer. Washout of the concrete mixer drum at the construction site is prohibited. Washout area to be cleaned once its capacity is reduced by 50%.
- S. Inspections:
  - 1. Each day when any type of construction activity has taken place at the site, certified personnel provided by the Contractor shall inspect:
    - i. all areas at the site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment;
    - ii. all locations at the site where vehicles enter or exit the site for evidence of off-site sediment tracking; and
    - iii. measure rainfall once each 24 hour period at the site.
  - 2. Certified personnel (provided by the Contractor) shall inspect the following at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm ends after 5:00 PM on any Friday or on any non-working Saturday, non-working Sunday or any non-working Federal holiday in which case the inspection shall be completed by the end of the next business day and/or working day, whichever occurs first):
    - i. disturbed areas of the construction site that have not undergone final stabilization;
    - ii. areas used by the contractor for storage of materials that are exposed to precipitation that have not undergone final stabilization; and

- iii. structural control measures.
  - 3. Erosion and sediment control measures identified in the Drawings applicable to the site shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to the receiving water(s). These inspections must be conducted until a NOT is submitted.
  - 4. Certified personnel (provided by the Contractor) shall inspect at least once per month during the term of this project (i.e., until a NOT is received by DEQ) the areas of the site that have undergone final stabilization. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and the receiving water(s). Erosion and sediment control measures identified in the Drawings shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s).
  - 5. Based on the results of each inspection, the site description and the pollution prevention and control measures identified in the Stormwater Pollution Prevention Control Plan, should be reviewed and corrective measures taken if warranted.
  - 6. A report of each inspection that includes the name(s) of personnel making each inspection, the date(s) of each inspection, major observations relating to the implementation of the Erosion, Sedimentation and Pollution Control Plan, and actions taken in accordance with the permits shall be made and retained at the site or be readily available at a designated alternate location until the entire site or that portion of a construction project that has been phased has undergone final stabilization. Such reports shall identify any incidents of non-compliance. Where the report does not identify any incidents of non-compliance, the report shall contain a certification that the construction site is in compliance with the Erosion, Sedimentation and Pollution Control Plan and permit. The report shall be signed in accordance with NPDES permit.
- U. Records Retention – The Contractor shall retain the following records at the construction site or the records shall be readily available at a designated alternate location from commencement of construction until such time as a NOT is submitted in accordance the NPDES permit:
- 1. A copy of the Notice of Intent submitted;
  - 2. A copy of the Erosion, Sedimentation and Pollution Control Plan;
  - 3. The design professional's report of the results of the inspection conducted;
  - 4. A copy of all monitoring information, results, and reports;
  - 5. A copy of all inspection reports;
  - 6. A copy of all violation summaries and violation summary reports; and
  - 7. Daily rainfall information

### 3.3 TEMPORARY EROSION AND SEDIMENT CONTROL

- A. Topsoil stockpiles shall be stabilized by applying temporary seed. Temporary seeding shall be per the "Georgia Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites".
- B. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2H:1V or flatter.
- C. Temporary Seedings for Critical Areas:

Type of Cover and Species or Mixtures	Seeding Rates in lbs. (pure live seed) per acre	Recommended Seeding Dates
1. Annual ryegrass and Cereal Rye (50/50 mix)	50 - 100	September 1 to February 15



2. Annual Ryegrass	60 - 100	February 16 to April 30
3. German Millet	50	May 1 to August 31

3.4 REMOVAL AND RESTORATION

- A. All temporary measures shall be removed upon completion of the work and the site restored to as nearly original conditions as practicable or to the new lines and grades as shown on the Drawings.

• END OF SECTION •

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SECTION 02050  
STRUCTURE REMOVAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The Work shall consist of the demolition, removal and disposal of existing spillway structure, including any cementitious grouted material beneath the spillway.

1.2 RELATED SECTIONS

- A. Not Used.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 REMOVAL METHODS

- A. The Contractor shall be responsible for compliance with all Federal, State and local laws and regulations relative to disposal by removal, and for obtaining all necessary permits and payment of fees for removal or disposal.
- B. Methods used for the disassembly, removal, disposal and/or replacement of existing spillway structure shall be subject to the approval of the Engineer.
- C. Materials resulting from removal operation shall be appropriately disposed by the Contractor off-site in a landfill in accordance with all state and local regulations and laws. Costs for off-site disposal shall be incidental to the work.
- D. Precautions shall be taken to prevent debris from entering any watercourse.
- E. Earthfill beneath the existing spillway structure may be re-used as compacted fill elsewhere, provided that the materials meet the requirements of Section 02201 – Earthfill, and meet the approval of the Engineer.
- F. Remove earth fill and foundation materials beneath the footprint of the structure to approximate elevation 764.5 feet.

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SECTION 02100  
CONTROL OF WATER

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of the Control of Surface Water and Groundwater as needed to perform the required construction in accordance with the Specifications. It shall include:
  - 1. Building and maintaining groundwater dewatering systems, all necessary temporary impounding works, cofferdams, check dams, channels, ditches, diversions and flumes.
  - 2. Furnishing, installing and operating all necessary pumps, piping and other facilities and equipment.
  - 3. Preparation and submission of a Control of Water Plan.
  - 4. Removing all such temporary works and equipment after they have served their purposes.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals.
- B. Section 02201, Earthfill.
- C. Section 02222, Excavation.
- D. Section 03300, Cast-In-Place Concrete.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. The Contractor shall review available data regarding surface water and groundwater flow and geotechnical conditions at the site before submitting a Control of Water Plan to the Engineer. Data includes, but is not limited to, analyses and studies performed as part of this project.
- B. The Contractor is warned that surface water, groundwater, runoff and other site conditions may be highly variable and difficult to accurately predict. Analyses and evaluations undertaken in connection with the design of improvements were performed to support the project design. These analyses and evaluations may or may not provide satisfactory information to the Contractor for developing a Control of Water Plan. It is the Contractor's sole responsibility to evaluate the applicability of the available information and to obtain or develop additional information as a basis for development of the Contractor's Control of Water Plan.

1.5 SUBMITTALS

- A. Qualifications: personnel responsible for preparation of a Control of Water Plan shall have a minimum of 15 years of experience in the applicable required disciplines (geotechnical, structural, hydraulic, etc.). Submit qualifications of responsible personnel.

- B. Control of Water Plan: The Contractor shall furnish to the Engineer in writing, his complete plan for controlling surface and groundwater, to include maintenance of his proposed diversion and protective works, for review and comment, before beginning the work. The Plan shall include proposed sequencing of control of water measures throughout each phase of construction. The plan shall be prepared and stamped by a professional engineer registered in Georgia. Review of this plan by the Engineer will not relieve the Contractor of his responsibility for completing the work as specified.
- C. Cofferdam designs for the protection of the work associated with the proposed spillways shall be prepared by a Professional Engineer registered in the State of Georgia. Designs shall be submitted to the Engineer for review. Review of the designs by the Engineer will not relieve the Contractor of his responsibility for completing the work as required.

## PART 2 PRODUCTS

- A. Not Used.

## PART 3 EXECUTION

### 3.1 DIVERTING CONCENTRATED FLOW AND OTHER SURFACE WATER

The control and diversion of surface water is the sole responsibility of the Contractor. The drainage area to Lake Peachtree Dam is approximately 19 square miles. The diversion and protective works needed to divert reservoir water shall be capable of storing and/or discharging stormwater runoff from the 25-year, 24-hour duration, rainfall event without water from the reservoir entering the work area.

- A. The Contractor shall build, maintain, and operate cofferdams, channels, flumes, sumps, and other diversion and protective works within the project's defined limits of disturbance needed to divert concentrated flow and other surface water into basins and traps while construction is in progress. The Contractor must satisfy himself that his cofferdam and diversion system is sufficient to reasonably protect his work.
- B. The Contractor shall furnish, install and operate all necessary pumps, well points, piping and other facilities and equipment needed to divert concentrated flow and other surface water through the construction site while construction is in progress. All discharges from water control equipment shall be directed into basins and traps.
- C. After the diversion works have served their purpose, the Contractor shall remove, level, or grade such works to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works. The removal of the diversion facilities shall be subject to the approval of the Engineer. If any sheet piling, structural steel shapes, etc. are driven into the dam or upstream of the dam for the purposes of water control and/or diversion, the members must be cut flush to the ground surface leaving the embedded material in-place.
- D. The Contractor shall maintain an uninterrupted flow of water into the downstream channel at all times during construction. This uninterrupted flow shall be a minimum of 50 gallons per minute. The method and manner in which the flow is to be maintained and measured is to be included in the Control of Water Plan.

### 3.2 DEWATERING THE CONSTRUCTION SITE

- A. The foundation of the structure to be constructed under this Contract shall be dewatered and kept free of standing or running water or muddy conditions as needed for proper execution of the construction work. Dewatering shall be performed to maintain the groundwater a minimum of 3 feet below the working subgrade. Temporary gravel filled trenches below the stilling basin excavation will be permitted to assist in dewatering activities. Dewatering may be performed to maintain the groundwater at a greater depth below the working subgrade at the Contractor's discretion. Dewatering methods that cause a loss of fines from foundation areas will not be permitted.
- B. The Contractor shall build, maintain, operate cofferdams, channels, flumes, sumps; wellpoints, and other diversion and protective works needed to divert or remove water from foundation areas while construction is in progress.
- C. Water pumped or drained from excavations, or any sewers, drains or water courses encountered in the work, shall be disposed of in accordance with an approved water control plan, without injury to adjacent property, the work under construction, or to pavements, roads, and water courses.
- D. No water shall be discharged to sanitary sewers. Sanitary sewage shall be pumped to sanitary sewers or shall be disposed of by a method approved by the Engineer.
- E. After the construction-dewatering site works have served their purpose, the Contractor shall remove, level, or grade such works to present a sightly appearance and to prevent any obstruction to the flow of water or any other interference with the operation of or access to the permanent works. The termination of the dewatering of the construction site works shall be subject to the approval of the Engineer.
- F. Owner will be responsible for initially lowering the Lake Peachtree Reservoir by approximately eight and one-half (8 ½) feet. Contractor is responsible for maintain the lowered lake after the initial lowering. In addition, Owner will be responsible for maintaining Lake Kedron approximately two (2) feet below normal pool. As work progresses, Lake Peachtree is anticipated to be allowed to refill in a staged, controlled manner. Contractor shall provide a diversion spillway that can accommodate the following partial raises of the reservoir:
- Step 1: Lake Peachtree Reservoir lowered by eight and one-half feet, construction pool level approximately 776.0 feet. Construct cofferdam and diversion structure.
  - Step 2: Lake Peachtree Reservoir allowed to raise by 2 feet, construction pool level approximately 778.0 feet. Undercut spillway foundation, replace unsuitable materials to reach structure subgrade, install internal filter drainage system, construct slabs prior to reservoir being elevated to elevation 778.0 feet
  - Step 3: Lake Peachtree Reservoir allowed to raise by 2 feet, construction pool level approximately 780.0 feet. Construct piano key weirs, sidewalls, wingwalls, and all other spillway items prior to reservoir being elevated to elevation 780.0 feet.
- G. Upon completion of all structural concrete members, Earthfill, and other appurtenant structures, remove the coffer dam and allow Lake Peachtree to refill to normal pool level approximately 784.5 feet.
- H. The coffer dam shall be removed by the Contractor after the Engineer has approved the construction of all other applicable work items.

- I. The coffer dam shall be removed following all applicable local, state, and federal regulations and laws. Excess material from the cofferdam removal shall be removed from the site in an appropriate disposal location or used at the site for a purpose approved by the Engineer.

• END OF SECTION •



SECTION 02111

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Areas to be cleared and grubbed are the area adjacent to the existing spillway site, along the downstream slope of dam, to the limits shown on the Drawings and as directed by the Engineer.

1.2 RELATED SECTIONS

- A. Section 01114, Cleanup and disposal of Waste Material
- B. Section 02222, Excavation

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.1 CLEARING AND GRUBBING

- A. Clearing shall consist of the removal and disposal of all trees, logs, brush, snags, bushes, vines, shrubs, decayed stumps, leaves, roots, grasses, weeds, fences, posts, rubbish, and other perishable and objectionable materials. Grubbing shall include the removal and disposal of all stumps, roots, and root clusters shall be grubbed out to a depth of at least two (2) feet below subgrade for concrete structures, one (1) foot below the ground surface at embankment sites and other designated areas, and to the bottom of the rip-rap on the upstream slope. In addition, all stumps, logs, and roots greater than 2 inches shall be removed regardless of depth below subgrade.
- B. The limits of areas to be cleared and grubbed shall be marked by the Contractor using stakes, flags, tree markings or other methods. Trees to be left in place and uninjured will be designated by special markings positioned on the trunks at about 6 feet above the ground surface.

3.2 PROTECTION OF EXISTING VEGETATION

- A. Trees and other woody vegetation designated to remain undisturbed shall be protected from damage throughout the entire construction period. Any damage resulting from the contractor's operations or neglect shall be repaired by the Contractor at no cost to the Owner.
- B. Earthfill, stockpiling of materials, vehicular parking, and excessive foot or vehicular traffic shall not be allowed within the dripline of vegetation designated to remain in place. Vegetation damaged by any of these or similar actions shall be replaced with viable vegetation of the same species.

- C. Any cuts, skins, scrapes, or bruises to the bark of the vegetation shall be carefully trimmed and local nursery accepted procedures used to seal damaged bark.
- D. Any limbs or branches 0.5-inch or large in diameter that are broken, severed, or otherwise seriously damaged during construction shall be cut off at the base of the damaged limb or branch flush with the adjacent limb or tree trunk.

### 3.3 DISPOSAL

- A. The Contractor shall be responsible for compliance with all Federal, State and local laws and regulations relative to disposal by removal, and for obtaining all necessary permits and payment of fees for removal or disposal.
- B. Timber suitable for harvesting shall be the property of the Contractor and removed from the site. Other materials cleared and grubbed shall be mulched or disposed off-site in accordance with all state and local regulations and laws. Costs of off-site disposal, including, but not limited to, permits and fees, shall be incidental to this item of work. No on-site burning is allowed.
- C. Precautions shall be taken to prevent debris from clearing and grubbing operations from entering any watercourse, including high flows.
- D. Material which cannot be disposed of by mulching shall be hauled off-site to an approved solid waste facility.

• END OF SECTION •

SECTION 02112

STRIPPING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of the excavation; removal and stockpiling of all topsoil, organic and other unsuitable matter at the location(s) and to the limits shown on the Drawings.

1.2 RELATED SECTIONS

- A. Section 02111, Clearing and Grubbing
- B. Section 02222, Excavation
- C. Section 02935, Topsoil

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.1 GENERAL

- A. The area(s) designated for stripping shall be stripped to a depth established by the Engineer. In general, however, the stripping depth is estimated to be approximately three (3) to six (6) inches for areas covered by natural growth. The Contractor is to notify the Engineer immediately if stripping depths vary significantly from estimated depths.
- B. Stripped material shall be removed to stockpile areas within the construction limits as shown on the Drawings and as approved by the Engineer, for later use as topsoil. Stockpiles shall be protected from run-off by silt fence, graded to prevent ponding, and shall be temporarily stabilized in accordance with Section 02040 – Erosion and Sediment Control, and the construction plans.
- C. Objectionable materials encountered during the stripping operation shall be removed from the site and disposed of by the Contractor.
- D. The Contractor shall be responsible for compliance with all Federal, State and local laws and regulations relative to disposal by removal, and for obtaining all necessary permits and payment of fees for removal or disposal.

• END OF SECTION •

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SECTION 02201  
EARTHFILL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of the placement of earthfill as shown on the Drawings and specified herein.

1.2 RELATED SECTIONS

- A. Section 02100, Control of Water.
- B. Section 02111, Clearing and Grubbing
- C. Section 02112, Stripping
- D. Section 02222, Excavation.
- E. Section 02936, Permanent Turf Establishment

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 TOLERANCES

- A. Earthfill shall be place to the lines, grades, and elevations as shown on the Drawing. Tolerances shall be as follows:

Elevations: minus 0 inches to plus 2 inches.

Grades: No steeper than shown on Drawings and no more than 1 percent flatter.

1.5 TESTING

- A. Density tests of earthfill will be the responsibility of the Owner. Tests shall be performed in accordance with ASTM D-1556 (or by equivalent methods), except that the volume and moist weight of included rock particles larger than those used in the compaction test method specified for the type of fill shall be determined and deducted from the volume and moist weight of the total sample prior to computation of density.
- B. Moisture contents of earthfill at the time of compaction shall be measured in accordance with ASTM D2216.
- C. During the course of the work the Engineer will perform such tests, or direct tests to be performed, as are required to identify materials, measure compaction characteristics, measure moisture content, and measure density of fill in place. These tests performed by the Engineer will be used to verify that the fills conform to the requirements of the Specifications. Such tests are not intended to provide the Contractor with the information required by him for

the proper execution of the work and their performance shall not relieve the Contractor of the necessity to perform tests for that purpose.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Earthfill materials shall be obtained from required on-site excavations. The selection, blending, routing and disposition of materials in the various fills shall be subject to review by the Engineer.
- B. Fill materials shall not contain sod, brush, roots or other perishable materials. Earthfill shall not contain more than one percent by weight of organics.
- C. Structural earthfill shall be classified as SM, SC, CL, CH, MH, or ML according to the Unified Soil Classification System (ASTM D2487). Fill soils shall not have a liquid limit greater than 80 or a plasticity index greater than 40. The maximum particle size shall not exceed two-thirds of the loose lift thickness.
- D. Non-structural earthfill shall consist of materials which do not meet the requirements for structural earthfill. The location of non-structural earthfill is the on-site spoil area.

## PART 3 EXECUTION

### 3.1 FOUNDATION PREPARATION

- A. Foundations for earthfill shall be stripped to remove vegetation and other unsuitable materials or shall be excavated as specified.
- B. Earth foundation surfaces shall be graded to remove surface irregularities, proofrolled (see Part 3.1.F), and shall be scarified parallel to the axis of the fill to a minimum depth of two inches. The surface materials of the foundation shall be compacted and bonded with the first layer of earthfill as specified for subsequent layers of earthfill.
- C. Earth abutment surfaces shall be free of loose, uncompacted earth in excess of two inches in depth normal to the slope and shall be at such a moisture content that the earthfill can be compacted against them to effect a good bond between the fill and the abutments.
- D. Rock foundation and abutment surfaces shall be cleared of all loose materials by hand or other effective means and shall be free of standing water when fill is placed upon them.
- E. Foundation and abutment surfaces shall not be steeper than one horizontal to one vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the Specifications for Earthfill to be placed upon the foundation.
- F. Outside the limits of the floodplain (no alluvium present), all abutment areas to receive structural fill should be stripped of vegetation as well as topsoil containing significant amounts of organic material or other deleterious material. The areas should then be proofrolled with a heavily loaded tandem-axle dump truck or similar piece of rubber-tired equipment. The proofrolling will serve to densify the exposed soils and to detect any isolated zones of soft or wet soils. Any such soils thus detected should be further compacted in place or removed and replaced with well compacted structural fill. Proofrolling should be performed after a period of dry weather to avoid degrading an otherwise acceptable subgrade. Proofrolling should be observed by the Engineer.

- G. In areas within the floodplain all foundation and embankment surfaces shall be closely examined immediately prior to the placement of all earthfills and backfills. All materials that exhibit drying cracks, slaking, or other evidences of being unstable or unsuitable, shall be removed or reworked by scarification, wetting, and compaction to the affected depths prior to the placement of fill.
- H. Contractor shall dewater all excavations in accordance with Section 02100 – Control of Water, the construction plans, and the Contractor’s Control of Water Plan.

### 3.2 PLACEMENT

- A. Fill shall not be placed until the required excavation and foundation preparation has been completed and the foundation has been inspected by the Engineer. Fill shall not be placed upon a frozen surface, nor shall snow, ice or frozen material be incorporated in the fill. Fill will also not be permitted to be placed in areas exhibiting soft subgrade or areas of standing water.
- B. Fill shall be placed in horizontal layers. The thickness of each layer of structural earthfill before compaction shall be nine (9) inches, or four (4) inches where hand-operated compaction equipment is used. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted. Hand compacted fill, including fill compacted by manually directed power tampers, shall be placed in layers whose thickness before compaction does not exceed four (4) inches.
- C. Fill adjacent to structures shall be placed in a manner which will prevent damage to the structures and will allow the structures to assume the loads from the fill gradually and uniformly. The height of the fill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure.
- D. The distribution of materials throughout each zone shall be such that the less clayey/more coarse grained material is placed near the upstream and downstream limits of retaining wall backfilling, and the fill shall be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material. If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified parallel to the axis of the fill to a depth of not less than two inches before the next layer is placed.
- E. The surfaces of embankments shall be maintained approximately level during construction, except that a crown or cross-slope of not less than two percent shall be maintained to ensure effective drainage, unless otherwise specified.
- F. Embankments shall be constructed in continuous layers from abutment to abutment except where openings to facilitate construction or to allow the passage of stream flow during construction are specifically authorized by the Engineer.
- G. Embankments built at different levels shall be constructed so that the slope of the bonding surfaces between embankment in place and embankment to be placed is not steeper than two feet horizontal to one foot vertical. The bonding surface of the embankment in place shall be scarified, moistened and recompacted when the new fill is placed against it as needed to ensure a good bond with the new fill and to obtain the specified moisture content and density at the junction of the in-place and new fill.
- H. Gutters formed where earth surfaces intersect shall be shaped to form rounded rather than “V” type gutters.

- I. The side slopes of completed embankment work shall be compacted by walking a track type tractor up and/or down the slope until the entire surface is traversed by at least one pass of the tractor tread.

### 3.3 CONTROL OF MOISTURE CONTENT

- A. During placement and compaction of fill, the moisture content of materials being placed and that of the preceding layer shall be maintained between the range specified. The application of water to the fill materials shall be accomplished at the stockpile areas insofar as practicable. Water may be applied by sprinkling the materials after placement of the fill, if necessary. Uniform moisture distribution shall be obtained by discing, blading or other approved methods prior to compaction of the layer. Material that is too wet when deposited on the fill shall either be removed or dried to the specified moisture content prior to compaction.

### 3.4 COMPACTION

- A. Structural earthfill behind retaining walls shall be placed with a moisture content between optimum and four percent above optimum and compacted to a minimum of 95 percent of maximum dry density as determined by the Standard Proctor Compaction Test ASTM D698. Structural earthfill placed beneath the sub-grade of the new spillway shall be placed with a moisture content between optimum and four percent above optimum and compacted to a minimum of 98 percent of maximum dry density as determined by the Modified Proctor Test ASTM D-1557.
- B. Structural earthfill shall be spread in horizontal layers not exceeding nine (9) inches in thickness before compaction. Compaction of all earthfill shall be achieved by a sheepsfoot roller or other acceptable methods approved by the Engineer.
- C. Non-structural earthfill shall meet the requirements of structural earthfill, except that non-structural earthfill shall be spread in horizontal layers not exceeding twelve (12) inches in thickness before compaction, and non-structural earthfill shall be compacted to a minimum of 92% of maximum dry density as determined by ASTM D698 at a moisture content within +/- 2% of optimum moisture.
- D. Fill adjacent to structures shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping, or manually directed power tampers or plate vibrators. Fill to be compacted by hand tamping, or manually directed power tampers or plate vibrators shall be spread in horizontal layers approximately four (4) inches in thickness before compaction. Heavy equipment shall not be operated within three feet of any structure. Vibrating rollers shall not be operated within five feet of any structure. Compaction by means of drop weights operating from a crane or hoist will not be permitted.
- E. The passage of heavy equipment will not be allowed over any conduit until the backfill has been placed above the top surface of the conduit to a height equal to three feet.
- F. Compaction of fill adjacent to structures shall not be started: (1) until the specified design strength has been attained for reinforced-concrete structures; and (2) until 48 hours have elapsed after concrete placement for other structures.

### 3.5 REMOVAL AND PLACEMENT OF DEFECTIVE FILL

- A. Fill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the



requirements of the Specifications shall be reworked to meet the requirement or removed and replaced by acceptable fill at the Contractor's expense. The replacement fill and the foundation, abutment and fill surfaces upon which it is placed shall conform to all requirements of this Specification for foundation preparation, approval, placement, moisture control and compaction.

• END OF SECTION •

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SECTION 02202

SELECT FILL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Select fill materials shall be used as either special backfill, filters, or drains, as specified or as directed by the Engineer.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals.
- B. Section 02222, Excavation.
- C. Section 02275, Riprap.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 SUBMITTALS

- A. The name and location of the source of material.
- B. Samples and test reports of the material, including compaction curves (if applicable) for all materials to be used. Test reports for “Fine Drain Fill” and “Coarse Drain Fill” shall include, at a minimum, ten recent gradations performed by the manufacturer.
- C. Submittals of Select Fill are due 10 days prior to delivery.

1.5 TESTING

- A. During the course of the work the Engineer may perform such tests, or direct tests to be performed, as are required to identify materials, measure compaction characteristics, measure moisture contents, and measure density of fill in place. These tests performed by the Engineer will be used to verify that the fills conform to the requirements of the Specifications. Such tests are not intended to provide the Contractor with the information required by him for the proper execution of the work and their performance shall not relieve the Contractor of the necessity to perform tests for that purpose.
- B. All testing, including field and laboratory services, shall be performed by the Owner.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Select Fill material shall be obtained from off-site borrow areas. The selection, blending, routing and placement of material in the fill shall be subject to approval by the Engineer.

- B. Select Fill material shall contain no sod, brush, roots or other perishable materials. Rock particles larger than the maximum size specified shall be removed prior to compaction of the fill.
- C. Coarse Drain Fill shall meet all the requirements of the latest edition of Georgia Department of Transportation (GDOT) Specification for Aggregates and shall be in conformance with either of the following gradations:
  - 1. GDOT Size No. 89 Stone
- D. Fine Drain Fill shall meet all the requirements of the latest edition of GDOT Specification for aggregates and shall be in conformance with the following gradation:
  - 1. ASTM C-33 Fine Aggregate
- E. Fine Drain Fill shall be natural and not produced from crushing operations.
- F. Select fill shall not be comprised of limestone material or other materials having solutioning or cementing properties.

### PART 3 EXECUTION

#### 3.1 FOUNDATION PREPARATION

- A. Foundations for Select Fill shall be stripped of vegetation and other unsuitable materials or shall be excavated as specified and approved by Engineer.
- B. Foundation surfaces shall not be steeper than one horizontal to one vertical unless otherwise specified.

#### 3.2 PLACEMENT

- A. Select Fill shall not be placed until the required excavation and foundation preparations have been completed and the foundation surfaces have been inspected and approved by the Engineer. Select Fill shall not be placed upon a frozen surface, nor shall snow, ice or frozen material be incorporated in the fill.
- B. Select Fill shall be placed in horizontal layers. The thickness of each layer after compaction shall not exceed nine inches for all Select Fill. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.
- C. Select Fill adjacent to structures shall be placed in a manner which will prevent damage to the structures and will allow the structures to assume the loads from the fill gradually and uniformly.
- D. The distribution of materials shall be essentially uniform, and the fill shall be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material.
- E. Select Fill shall be placed with sufficient care to prevent damage to filter fabric. Filter fabric that is damaged shall be repaired to the satisfaction of the Engineer.
- F. The materials shall be placed in a manner to avoid segregation of particle sizes and to ensure the continuity and integrity of all zones. No foreign materials shall be allowed to become intermixed with or otherwise contaminate the Select Fill materials. Exposed areas of

Select Fill materials placed against existing foundation materials shall be protected from contamination caused by erosion of the existing material.

- G. Traffic shall not be allowed to cross over Select Fill material at random. Equipment crossovers shall be maintained, and the number and location of such crossovers shall be established and approved prior to the beginning of material placement. Each crossover shall be cleaned of all contaminating materials and shall be inspected by the Engineer before additional Select Fill material is placed.
- H. Any Select Fill which may become contaminated with foreign materials shall be removed and replaced, at the Contractor's expense.
- I. The upper surface of drain fill constructed concurrently with adjacent zones of earthfill shall be maintained at a minimum elevation of 1 foot above the upper surface of adjacent earthfill.
- J. Drain fill over and/or around pipe or drain pipe shall be placed in such as manner as to avoid any displacement in line or grade of the pipe.
- K. Placement of drain fill adjacent to concrete structures shall not be commenced until the following item intervals have elapsed following placement of the concrete:

<b>Structure type</b>	<b>Time interval (days)</b>
Vertical or near-vertical wall with earth loading on one side only (retaining walls and counterforts)	14
Walls backfilled on both sides simultaneously	7
Conduits and galleries, coast-in-place (with inside forms in place)	7
(inside forms removed)	14
Conduits, precast, cradled	2
Conduits, precast, bedded	1
Cantilever outlet bents backfilled on both sides simultaneously	3

### 3.3 COMPACTION

- A. Fine Drain Fill shall be compacted to between 60 and 80 percent of relative density as determined by ASTM D-4253 and D-4254.
- B. No compaction will be required for Coarse Drain Fill.

• END OF SECTION •

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SECTION 02209

GEOTEXTILE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of furnishing and placing Geotextile at the locations and to the limits shown on the Drawings or as directed by the Engineer.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals
- B. Section 02202, Select Fill
- C. Section 02275, Riprap
- D. Section 03300, Cast-In-Place Concrete

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

- A. Materials delivered to the site shall be inspected for damage, unloaded and stored with a minimum of handling. Materials shall not be stored directly on the ground. During shipment and storage, Geotextile shall be wrapped in burlap or similar heavy-duty protective covering. The storage area shall be such that the fabric is protected from mud, soil, dust, and debris. Geotextile materials that are not to be installed immediately shall not be stored in direct sunlight.
- B. Materials shall be handled in such a manner as to ensure delivery to the site in sound, undamaged condition.

1.5 SUBMITTALS

- A. The name and test reports of the material.

PART 2 PRODUCTS

2.1 MATERIALS

- A. The Geotextile shall be a nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester, formed into a stable network by needle punching. All fabrics shall be inert to commonly encountered chemicals and hydrocarbons, mildew and rot resistant, insect and rodent resistant, resistant to ultraviolet light and heat exposure, and conform to the physical strength requirements listed in Table 1.
- B. The Geotextile shall provide an Equivalent Opening Size (EOS) no finer than the U.S. Standard Sieve No. 100 and no coarser than the U.S. Standard Sieve No. 50.

Table 1 - Physical Strength Requirements

<u>Physical Properties</u>	<u>Test Procedure</u>	<u>Average Roll Minimum Value (Weakest Principal Direction)</u>
Grab Tensile Strength	ASTM D4632	200 lbs.
Elongation at Failure	ASTM D4632	50%
Trapezoid Tear Strength	ASTM D4533	60 lbs.
Puncture Strength	ASTM D6241	500 lbs.

- C. The seams of the fabric shall be sewn with thread of a material meeting the chemical requirements given above for synthetic yarn or shall be bonded by cementing or by heat. Seams shall be tested in accordance with method ASTM D4884, using 1-inch square jaws and 12 inches per minute constant rate of traverse. The strengths shall be not less than 90% of the required tensile strength (Table 1) of the unaged fabric in any principal direction. Unaged fabric is defined as fabric in the condition received from the manufacturer or distributor.
- D. All brands of synthetic Geotextile and all seams to be used shall be accepted on the following basis. The Contractor shall furnish the Engineer, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the fabric. The mill certificate or affidavit shall attest that the fabric meets the chemical, physical and manufacturing requirements stated in this Specification.
- E. Securing Pins: The pins shall be 3/16-inch by 18-inch long steel bars, pointed at one end and fabricated with a head to retain a steel washer having a minimum outside diameter of 1.5 inches. U-shape staples, 11 gage by 12-inches long and 1 to 1.5 inches wide, are also acceptable.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Geotextile shall be free from defects, rips, holes, deterioration or damage. The prepared foundation shall be relatively smooth, free from obstructions, depressions, debris, low density pockets and protruding rock. Beginning at the toe of the slope, the fabric shall be placed with the long dimension parallel to the slope and shall be laid smooth and free of tension, stress, folds, wrinkles or creases. The strips shall be placed to provide a minimum width of 12 inches of overlap for each joint, unless a larger overlap is recommended by the manufacturer.
- B. Securing pins with washers shall be inserted through both strips of overlapped fabric at no greater than five foot intervals.
- C. Additional pins, regardless of location, shall be installed, as necessary, to prevent any slippage of the Geotextile. The fabric shall be placed so that the upper strip of fabric will overlap the next lower strip. Each securing pin shall be pushed through the fabric until the washer bears against the fabric and secures it firmly to the foundation.
- D. The fabric shall be protected at all times during construction from any damage or contamination by surface run-off. The work shall be scheduled so that the covering of the fabric with a layer of specified material is completed within 30 days after the fabric is placed. Fabric damaged during installation or placement of backfill, or through failure to prevent contamination by



surface run-off or backfill within the specified time limit herein, shall be removed and replaced at the Contractor's expense.

- E. No material shall be dropped on to an uncovered, exposed, or bare geotextile from a height greater than two (2) feet.

• END OF SECTION •

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SECTION 02222

EXCAVATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall include the excavation of earth, sediment, and rock materials at the locations and to the lines and grades shown on the Drawings, and the stockpiling and/or disposal of all materials as specified herein.
- B. Common Excavation shall include all materials not classified as Rock Excavation.
- C. Rock Excavation shall include all material to be excavated which requires: systematic blasting, barring and wedging for removal; boulders or loose rock of one cubic yard or more in volume; and material which cannot be loosened or broken down by equipment having a rated breakout force of at least 45,000 lbs. but not more than 55,000 lbs. Rock teeth shall be replaced when worn by 25%.

1.2 RELATED SECTIONS

- A. Section 02201, Earthfill
- B. Section 02111, Clearing and Grubbing
- C. Section 02112, Stripping
- D. Section 02275, Riprap

1.3 MEASUREMENT FOR PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

3.1 COMMON EXCAVATION

- A. The tolerance for Common Excavation shall be plus or minus three-tenths (0.3) of a foot from the neat lines and grades or as directed by the Engineer. Excavation beyond the approved lines and grades shall be backfilled as directed by the Engineer with approved suitable material and compacted. This work shall be at the Contractor's expense and no payment will be made for over excavation or backfill of over excavated areas.
- B. Where excavation lines are marked as pay lines, the Contractor may cut a flatter slope, subject to approval by the Engineer at no additional payment for Excavation or Earthfill, if he believes that a flatter slope is more appropriate for his operations.
- C. Common Excavation, which yields material that meets the requirements of Section 02201, Earthfill shall be stockpiled for such purposes. Material excavated from the spillway site which is not suitable for use as Earthfill may be used by the Contractor for his own purposes,

with the excess stockpiled in the area on the Drawings and the remainder shall be hauled off site to an acceptable disposal facility.

### 3.2 ROCK EXCAVATION

- A. The tolerance for Rock Excavation shall be plus or minus three-tenths (0.3) of a foot from the lines and grades shown on the Drawings or as directed by the Engineer. Blasting shall not be allowed. Excavation in rock outside the pay lines shall be backfilled with concrete at the direction of the Engineer. This work shall be at the Contractor's expense and no payment will be made for over excavation or backfill concrete.
- B. Rock Excavation materials shall be disposed of in spoil areas shown on the Drawings or in other areas approved by the Engineer.

### 3.3 BORROW AREAS

- A. All material required for the specified earthfills which are not available from spillway excavation shall be obtained from off-site borrow areas located and developed by the Contractor and approved by the Engineer. Suitable materials from these excavations shall be used onsite as earthfill and separated into its own stockpile. Excavated materials shall be placed, spread, and compacted in their final locations as soon as possible following excavation. The Contractor will be permitted to stockpile excavated materials in a temporary stockpile area as shown in the Drawings. The excavated material shall be protected for re-use in a manner that will minimize contamination and moisture absorption, as approved by the Engineer. Stockpiled excavated materials shall meet the soil erosion and sediment control requirements. At the end of the Contract, any excess material in the temporary stockpile area shall be disposed of offsite by the Contractor.

### 3.4 BLASTING

- A. Blasting will not be allowed.

### 3.5 PRE-SPLITTING

- A. Not Used.

### 3.6 SHORING AND BRACING

- A. Excavated surfaces too steep to be safe and stable, if unsupported, shall be supported as necessary to safeguard the work and workmen, to prevent sliding or settling of the adjacent ground, and to avoid damaging existing improvements. The width of the excavation shall be increased, if necessary, to provide space for sheeting, bracing, shoring and other supporting installations. The Contractor shall furnish, place and subsequently remove such supporting installations.

• END OF SECTION •

SECTION 02275

RIPRAP

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of furnishing and placing rock Riprap and bedding stone at the locations and to the dimensions shown on the Drawings.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals.
- B. Section 02201, Earthfill.
- C. Section 02209, Geotextile
- D. Section 02222, Excavation.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. The bulk specific gravity and absorption shall be determined by ASTM C-127. The test for soundness shall be performed according to the procedure for ledge rock in Federal Specification SS-R-406C, Method 203.01. The test for abrasion shall be in accordance with ASTM C-535, except as directed herein.

1.5 ALLOWABLE TOLERANCES

- A. Except as provided below, the rock shall have the following properties:
  - 1. Bulk specific gravity (saturated surface-dry basis) not less than 2.25.
  - 2. Absorption not greater than 2 percent.
  - 3. Soundness; weight loss in five cycles not greater than 10 percent when sodium sulfate is used and 15 percent when magnesium sulfate is used.
  - 4. Abrasion; weight loss after 500 revolutions not greater than 50 percent (using Los Angeles Machine Grading B).

1.6 SUBMITTALS

- A. Submit test data showing material meets requirements of this Specification.

PART 2 PRODUCTS

2.1 MATERIAL

- A. Riprap and Bedding Stone shall be obtained from off-site quarries that meet the specified quality and grading requirements. Individual rock fragments shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. Riprap removed

- from the downstream channel may be stockpiled and re-used for limits of final riprap as shown on the Drawings.
- B. Riprap shall be comprised of angular fragments obtained by blasting. Riprap shall meet the following requirements.
    - 1. Type 1: Riprap shall meet all the requirements of the latest version of GDOT specifications and shall be graded in accordance with GDOT Type 1 Riprap.
    - 2. Type 3: Riprap shall meet all the requirements of the latest version of GDOT specifications and shall be graded in accordance with GDOT Type 3 Riprap.
  - C. Rock that fails to meet the requirements stated in Allowable Tolerances, may be accepted only if similar rock from the same source has been demonstrated to be sound after five years or more of service under conditions of weather, wetting and drying and erosive forces similar to those anticipated for the rock to be installed under this Specification.
  - D. Bedding Stone shall meet all the requirements of the latest version of GDOT specifications for coarse aggregate and shall be graded in accordance with GDOT No.57 and GDOT No. 4 in accordance with the Construction Drawings.
  - E. Recycled riprap from the spillway excavation may be used in the channel downstream of the new spillway upon approval by the Engineer. All organic material must be removed from the recycled riprap.

### PART 3 EXECUTION

#### 3.1 PLACEMENT

- A. The subgrade surface on which the rock riprap, filter, bedding, or geotextile is to be placed shall be cut or filled and graded to the lines and grades shown on the Drawings. When fill to subgrade lines is required, it shall consist of approved material and shall conform to the requirements of the specified class of earthfill. Rock riprap, filter, bedding, or geotextile shall not be placed until the foundation preparation is completed and the subgrade surface has been inspected and approved.
- B. Riprap shall be dumped and graded in a manner to ensure that the large rock fragments are uniformly distributed and that the smaller fragments fill the spaces between the large fragments in such a manner as will result in a compact, uniform layer. Hand placing will be required only to the extent necessary to produce the results specified above.
- C. The Engineer shall have entry to any quarries furnishing the rock under this Contract. The rock delivered to the project site shall be subject to testing by the Engineer for conformance to these Specifications.
- D. Riprap shall be placed in such a manner so as to not damage existing structures, foundations, or other items of Work or adjacent structures. The Contractor shall be responsible for all damages resulting from uncontrolled or otherwise improper placement of Riprap.

• END OF SECTION •

SECTION 02652  
POLYVINYL CHLORIDE PIPE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of furnishing, fabricating, and installing solid wall and perforated PVC pipe and fittings as shown on the Drawings.

1.2 RELATED SECTIONS

- A. Section 02202, Select Fill

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Pipe shall be pressure rated PVC pipe conforming to the requirements of A.W.W.A. Standard C900, Pressure Class 165, for Polyvinyl Chloride (PVC) Pressure Pipe, 4 inches through 12 inches, for Water. The pipe shall be furnished with cast iron equivalent outside diameters.
- B. Fittings shall be compatible with the type of pipe furnished and be of the all bell, rubber ring connecting type with gasket retainer grooves in the inner surfaces of the bells.
- C. Couplings for plain end pipe shall be elastometric gasket couplings where the joint is in earth, sand, or gravel. Solvent cement couplings may be used at joints embedded in concrete.
- D. Welded or fused pipe, fittings, couplings, and elbows will not be permitted.
- E. Perforations, where specified, shall be circular holes, arranged in rows parallel to the axis of the pipe. Perforations shall be approximately 4 inches (102 mm) center-to-center along the rows. Rows shall be arranged in two equal groups in either side of the vertical center line of the pipe, and the total number of rows shall be as shown on the plans. The orientation of the rows shall be as shown on the plans. The spacing of rows between these limits shall be uniform. Holes may appear at the ends of short and random lengths.
- F. No PVC drain pipe shall be exposed upon completion of the work. Only ductile iron drain pipes shall be exposed.

2.2 ANIMAL GUARDS

- A. Animal guards shall be as manufactured by Agri-Drain, or equivalent and as approved by the Engineer.

PART 3 EXECUTION

3.1 HANDLING AND STORAGE

- A. The pipe shall be handled with care to prevent damage and shall not be thrown, dropped, or dragged. Special care shall be taken to avoid impact damage when the pipe must be handled at temperatures of 40°F or less. Pipe shall be stored on a relatively flat surface so that the barrels are evenly supported. Unless the pipe is specially formulated for exposure to ultraviolet radiation, it shall be covered with an opaque material when in outside storage.

### 3.2 LAYING AND BEDDING

- A. Earth, Sand, or Gravel Bedding. The pipe shall be firmly and uniformly bedded in a shaped bedding groove that closely conforms to the bottom of the pipe for a width of at least 60 percent of the pipe width (10 percent of the overall pipe height). Bell holes of ample width and depth shall be excavated at each joint location so that the pipe is uniformly supported along its entire length. Blocking or wedges shall be used to bring the pipe to grade.
- B. The pipe shall be loaded sufficiently during backfilling around the sides to prevent its being lifted from the bedding. Backfill shall be carefully placed and compacted to form a continuous uniform support around the pipe. Pipe shall be backfilled to a minimum cover of one foot on the same day installed.
- C. Pipe Embedded in Concrete. Pipe embedded in concrete shall be securely tied to prevent movement of the pipe during concrete placement. Pipe may be tied to reinforcing steel provided a clear distance of 1 ½ inches is maintained between the pipe and the steel. Pipe, or portions thereof, to be embedded in concrete in the finished work shall be installed prior to placement of the concrete.
- D. Pipe shall be laid to the line and grade shown on the Drawings. Perforated pipe shall be laid with the perforations down and oriented symmetrically about the vertical centerline. Perforations shall be clear of any obstructions when the pipe is laid.
- E. Just before placement, each pipe section shall be inspected to ensure that all foreign material is removed from inside the pipe. The pipe ends and the couplings shall be free of foreign material when assembled. At the completion of a work shift, all open ends of the pipeline shall be temporarily closed off using a suitable cover or plug.

### 3.3 JOINTS

- A. Pipe joints shall be sound and conform to the details shown on the Drawings. Elastometric gasket joints at bell and spigot joints or at couplings shall be thoroughly cleaned and lubricated prior to assembly in accordance with the manufacturer's recommendations.

### 3.4 ANIMAL GUARDS

- A. Animal guards shall be installed at all drain outlets
- B. Installation shall be in accordance with the details shown on the Drawings.

• END OF SECTION •



SECTION 02830  
CHAIN LINK FENCE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of furnishing and installing chain link fencing complete with all posts, braces, gates, and all other appurtenances.

1.2 RELATED SECTIONS

- A. Section 03300, Cast-in-Place Concrete.

1.3 MEASUREMENT FOR PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 SUBMITTALS

- A. Contractor to provide shop drawings to include construction details, material descriptions, dimensions of individual components.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Chain-link fence fabric, fence posts, top rails, braces, gates and accessories shall conform to the requirements of Federal Specification RR-F-191. Types, classes, and materials shall be as follows except as otherwise specified.
  1. The fence fabric shall be supplied with a Class 2b PVC coating 0.4 ounce per square foot. The posts, top rails and accessories shall also be PVC coated with minimum 10 mils thickness over zinc coating to match color of chain link fabric.
  2. The color of the coating shall be black, as described by ASTM F934. All fence components shall be coated.
  3. The fabric core wire shall be 9-gauge with a pattern of 2-inch diamond mesh.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Fence Posts: Unless otherwise specified, line posts shall be placed at intervals of 10 feet measured from center to center of adjacent posts. In determining the post spacing, measurement will be made parallel with the ground surface or concrete wall. Post will be set in the manner shown on the Drawings. Support sleeves for each post shall be installed as shown on the Drawings. All corner posts, end posts, gate posts, and pull posts shall be embedded, braced and trussed as shown on the Drawings.
- B. Wire Fabric: Fencing shall be installed on the side of the posts designated on the Drawings. The fabric shall be stretched taut and securely fastened, by means of the tie clips, to the posts at intervals not exceeding 15 inches and to the top rails and tension wires at intervals not exceeding 2 feet. Care shall be taken to equalize the tension on each side of each post. Fasten ties to wrap a full 360 degrees around post and rails and a minimum of one complete

- diamond of fabric. Twist ends of tie wire three full twists, and cut off protruding ends to preclude untwisting by hand. Tie fabric to line posts at 12 inches on center and to brace and top rails at 24 inches on center.
- C. Tension Wire: Install according to ASTM F567 and ASTM F1916, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with tie wires at maximum spacing of 24 inches on center. Install tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.
  - D. Gates: Install gates according to manufacturers' written instructions, level, plumb and secure and full opening without interference. Adjust hardware for smooth operation. Install latch so padlock will be assessable from both sides of the gate.
  - E. Any damage to the coating shall be repaired in accordance with the manufacturer's recommendations, or the damaged fencing material shall be replaced. The Contractor shall provide the engineer a copy of the manufacturer's recommended repair procedure and materials before correcting damaged coatings.

• END OF SECTION •

SECTION 02935

TOPSOIL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements for preparing, depositing and spreading Topsoil at locations determined by the Engineer.
- B. Topsoil will be placed over the fill placed as backfill behind the spillway retaining walls, on the back slope of the dam that is disturbed and in disturbed areas that require permanent vegetative protection as directed by the Engineer.

1.2 RELATED SECTIONS

- A. Section 02201, Earthfill.
- B. Section 02222, Excavation

1.3 MEASUREMENT FOR PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Material for Topsoiling shall be topsoil selected from an off site source. Topsoil shall consist of natural, friable loam, possessing characteristics of the best soils in the vicinity which produce heavy growth of crops, grass, and other vegetation. It shall be reasonably free from subsoil, clay lumps, grass clumps, stones, roots or similar objects larger than two inches in diameter, brush, objectionable woods or litter, or any other material or substance which may be harmful to plant growth or hindrance to grading, planting or maintenance of operations.
- B. Two samples shall be obtained and analyzed for soil fertility prior to reuse on the site. The soil fertility analysis shall recommend nutrient needs for the topsoil by testing for the following minimum parameters:
  - 1. Percent Organic Matter
  - 2. Soil pH
  - 3. Nitrate Concentration
  - 4. Phosphorus Concentration
  - 5. Calcium Concentration
  - 6. Iron Concentration
  - 7. Cation Exchange Capacity
  - 8. Bulk Density
  - 9. Percent sand, silt, and clay

The results of the soil fertility tests shall be provided to the Owner and the Landscaping Professional one week prior to the start of Permanent Grassing Operations. A meeting between Engineer, Contractor, and Landscaping Professional shall be conducted to discuss any suggested modifications to the permanent grassing specifications prior to permanent grass installation.

- C. Topsoil stockpiles shall be protected from rain, runoff, and all other forms of contamination by means of tarpaulin covering or another method as approved by the Engineer.

### PART 3 EXECUTION

#### 3.1 PROCEDURE

- A. In the areas to be Topsoiled, the Contractor shall complete all grading necessary to bring the surface to the lines indicated on the Drawings and parallel to the proposed finished grade. These areas are to be free from rock or other foreign material of two inches or greater in any dimension. Immediately prior to the placement of Topsoil, the areas shall be loosened by discing or by scarifying to a depth of at least two inches to permit proper bonding of the Topsoil to the ground on which it is placed.
- B. Topsoil shall not be placed until the area to be covered has been leveled, shaped, trimmed, finished and all other construction work in the area has been completed. Topsoil shall not be placed when the ground is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to the proposed planting or to proper grading. Topsoil shall be placed and spread to a depth sufficient such that after natural settlement and rolling with a light roller, the completed work shall conform to the lines, grades and elevations indicated on the Drawings. Unless specified otherwise, the depth of Topsoil after settlement shall be 6 inches minimum. After spreading the Topsoil, all large stiff clods, hard lumps, large rocks, stumps, litter, or other foreign matter shall be raked up and removed from the Topsoil area and disposed of by the Contractor. The area shall then be rolled with a light roller weighing not less than 100 pounds and not over 210 pounds per foot of width with an approved cultipacker.
- C. If soil or weather conditions are unsuitable, the Contractor shall cease Topsoil operations and shall resume operations when conditions permit.

• END OF SECTION •

SECTION 02936

PERMANENT TURF ESTABLISHMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work shall consist of tillage of Topsoil, and the furnishing and placing of limestone and fertilizer for the establishment of permanent turf and maintaining and tending the permanent turf until acceptance. Areas to be prepared for permanent sodding are as follows:
  - 1. All cut, fill and disturbed areas associated with the Work, including, but not limited to, left and right of the new spillway retaining walls, all staging areas, and spoils areas, disturbed areas on the downstream slope of the dam, except as described by 1.1.A.2 in this Specification Section.
  - 2. Areas not requiring Permanent Turf Establishment include disturbed areas that will be covered by the existing normal pool elevation of the reservoir, concrete, or riprap.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals.
- B. Section 02201, Earthfill.
- C. Section 02222, Excavation.
- D. Section 02935, Topsoil.
- E. Section 02937, Sodding

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 DELIVERY, STORAGE, AND HANDLING OF MATERIAL

- A. All limestone shall be furnished in paper bags weighing less than 100 pounds with the name of the material, net weight of contents and the manufacturer's name and guaranteed analysis appearing on each container. Bulk deliveries shall be accompanied by a certificate covering the names, weight and analysis as specified herewith for packaged material.
- B. Fertilizer shall be furnished in paper bags weighing less than 100 pounds each with the name of the material, net weight of contents and the manufacturer's name and guaranteed analysis appearing on each container.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All limestone shall be pulverized; 100 percent shall pass the Number 10 sieve; minimum 90 percent shall pass the Number 20 sieve; and minimum 60 percent shall pass the Number 100 sieve. Agricultural pulverized limestone shall meet one of the following minimum chemical requirements:

1. Type HM-High Magnesium (Dolomite), 21 Percent MgO, 20 percent CaO, 43 percent MgCO<sub>3</sub> and 51 percent CaCO<sub>3</sub>.
  2. Type MO-mixed Oxides (Magnesium) 50 percent MgO + CaO.
- B. The type of fertilizer and approximate application rate required shall be determined by a qualified soil analyst retained by the Contractor based on soil samples provided by the Contractor.

### PART 3 EXECUTION

#### 3.1 PROCEDURE

- A. Limestone shall be applied at the rate specified by the qualified soil analyst referred to in Part 2.1.A above or as recommended by the sod provider.
- B. A commercial fertilizer shall be applied at the rate specified by the qualified soil analyst referred to in Part 2.1.A above.
- C. Lime and fertilizer shall not be mixed together dry or in a hydroseeder for simultaneous application.
- D. When lime and fertilizer have been spread dry, they may be incorporated into the soil in one operation.
- E. Lime and fertilizer shall be applied hydraulically, with a low box-type spreader or hand broadcast. Dry lime and fertilizer shall be well mixed with the soil. Fertilizer placed by the use of a drill shall constitute acceptable mixing. When a hydroseeder is used to apply lime or fertilizer, the soil mixing does not apply.
- F. The Contractor shall be responsible for the establishment of a uniform, dense and sturdy growth of Permanent Turf. Areas of sparse growth shall be resodded at no additional cost to the Owner.
- G. The Contractor shall be responsible for the maintenance and protection of the Permanent Turf until final completion of the project. Maintenance shall include irrigation, fertilization, repairing erosion, and mowing of the Permanent Turf.
- H. Watering Schedule: The Contractor shall water newly installed permanent vegetative cover at a frequency that promotes germination and a dense growth of healthy grass cover.

• END OF SECTION •

SECTION 02937

SODDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparation of subsoil.
- B. Fertilizing.
- C. Sod installation
- D. Maintenance

1.2 RELATED SECTIONS

- A. Section 02201, Earthfill.
- B. Section 02222, Excavation
- C. Section 02936, Permanent Turf Establishment

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. ASPA (American Sod Producers Association) – Guideline Specifications to Sodding.
- B. FS O-F-241 – Fertilizers, Mixed, Commercial.

1.5 DEFINITIONS

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.6 SUBMITTALS AT PROJECT CLOSEOUT

- A. Operation Data: Submit for continuing Owner maintenance.
- B. Maintenance Data: Include maintenance instruction, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.7 QUALITY ASSURANCE

- A. Sod: Minimum age of 6 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
- B. Submit sod certification for grass species and location of sod source.

- C. Sod Producer: Company specializing in sod production and harvesting with minimum five years' experience, and certified by the State of Georgia.
- D. Installer: Must have completed at least two sod installations at commercial developments within the past five years.

#### 1.8 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

#### 1.9 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01600 – Material and Equipment: Transport, handle, store, and protect products.
- B. Deliver sod on pallets or in rolls. Protect exposed roots from dehydration.
- C. Do not deliver more sod than can be laid within 24 hours.

#### 1.10 MAINTENANCE SERVICE

- A. Maintain sodded areas immediately after placement until substantial completion of the project.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Sod: ASPA and VCIA Certified, Field grown cultivated grass sod; type indicated below; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft.
  - 1. Bermuda (recommend varieties as indicated in Handbook)
- B. Fertilizer: FS O-F-241, Type I, Grade A; recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by soil analysis.
- C. Water: Clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass.

#### 2.2 ACCESSORIES

- A. Wood Pegs or Metal Sod Staples: Softwood, sufficient size and length to ensure anchorage of sod on slope.

#### 2.3 HARVESTING SOD

- A. Machine cut sod and load on pallets in accordance with ASPA Guidelines.

#### 2.4 TESTS

- A. Section 01400 – Quality Control



- B. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this section.

#### 3.2 PREPARATION OF SUBSOIL

- A. Prepare subsoil and eliminate uneven areas and low spots.
- B. Maintain lines, levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.
- D. Remove contaminated subsoil.
- E. Scarify areas where sod is to be placed to a minimum depth of 2 inches.

#### 3.3 FERTILIZING

- A. Apply fertilizer and lime in accordance with manufacturer's instructions, or as specified on the plans.
- B. Apply after smooth raking of surface soils and prior to installation of sod.
- C. Apply fertilizer no more than 24 hours before laying sod.
- D. Lightly water to aid the dissipation of fertilizer.

#### 3.4 LAYING OF SOD

- A. Moisten prepared surface immediately prior to laying sod. Sod will not be placed on a frozen subgrade.
- B. Lay sod within 24 hours after harvesting to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces. All sodded areas will be rolled.
- D. Place top elevation of sod 1 inch below adjoining edging.
- E. On slopes 1:2 and steeper, lay sod perpendicular to slope and secure every row with wooded pegs or metal staples at maximum 2 feet on center. Drive pegs or staples flush with soil portion of sod.
- F. Water sodded areas immediately after installation. Saturate soil to a depth of 4 inches below sod.
- G. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

3.5 MAINTENANCE

- A. Mow grass at regular intervals to maintain at a maximum height of 2-½ inches. Do not cut more than 1/3 of grass blade at any one mowing.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming.
- D. Water to prevent grass and soil from drying out.
- E. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- F. Immediately replace sod to areas which show deterioration or bare spots.
- G. Protect sodded areas with warning signs during maintenance period.

● END OF SECTION ●

# DIVISION 3

# CONCRETE

**DIVISION 3 – CONCRETE**

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03100	Concrete Formwork
03200	Steel Reinforcement
03300	Cast-In-Place Concrete

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SECTION 03100  
CONCRETE FORMWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Formwork for cast-in place concrete, with shoring, bracing and anchorage.
- B. Openings for other work.
- C. Form accessories.
- D. Form stripping.

1.2 RELATED SECTIONS

- A. Section 03200, Steel Reinforcement.
- B. Section 03300, Cast-in-Place Concrete.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 318 - Building Code Requirements for Reinforced Concrete.
- C. ACI 347 - Recommended Practice For Concrete Formwork.
- D. ACI 350 – Code Requirements for Environmental Engineering Concrete Structures
- E. PS 1 - Construction and Industrial Plywood.

1.5 DESIGN REQUIREMENTS

- A. Design and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.
- B. The design and construction of concrete formwork is the sole responsibility of the Contractor.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 347.
- B. Design formwork under direct supervision of a Professional Engineer experienced in design of this work and licensed in the State of Georgia.

PART 2 PRODUCTS

2.1 FORM MATERIALS

- A. Forms shall be of wood, plywood, steel or other approved material and shall be mortar tight. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags or other irregularities. Forms shall be coated with a non-staining form oil before being set into place. Care shall be taken to avoid splashing oil on reinforcing steel or existing concrete.

## 2.2 FORMWORK ACCESSORIES

- A. Form Ties: Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one inch without injury to the concrete. Ties designated to break off below the surface of the concrete shall not be used without cones. All internal form support steel shall be positioned to provide minimum clearances as shown on the drawings.
- B. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture.
- C. Corners: Chamfered, rigid plastic or wood strip,  $\frac{3}{4}$  x  $\frac{3}{4}$  inch size; maximum possible lengths.

## PART 3 EXECUTION

### 3.1 EXAMINATION AND PREPARATION

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Drawings. All subgrades shall be approved by the Engineer prior to placing concrete.
- B. Before erection of formwork against rock subgrades, rock surfaces shall be cleaned by air-water cutting, wet sandblasting or wire brush scrubbing, as necessary, and all exposed rock surfaces shall be kept in a wetted condition from the time of exposure continuously through the time of placement of concrete. The method used for continuous wetting shall employ clean water free of injurious amounts of deleterious materials and shall be subject to approval of the Engineer.
- C. Before erection of formwork against soil subgrades, soil surfaces shall be compacted and free of any soft or loose material. Soil shall be damp prior to placing concrete.

### 3.2 ERECTION – FORMWORK

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Obtain approval before framing openings in structural members which are not indicated on Drawings.
- F. All edges that will be exposed to view when the structure is completed shall be chamfered, unless finished with molding tools.

- G. Install void forms in accordance with manufacturer's recommendations. Protect forms from moisture or crushing.
- H. Coordinate this section with other sections of work which require attachment of components to formwork.

### 3.3 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes which are effected by agent.

### 3.4 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in or passing through concrete work. Items to be embedded in the concrete shall be positioned accurately and anchored firmly. Weepholes in walls or slabs shall be formed with nonferrous materials.
- B. Coordinate with work of other sections in forming and placing openings, slots, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.
- C. Install accessories in accordance with manufacturer's instructions, straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- D. Install waterstops in accordance with manufacturer's instructions continuous without displacing reinforcement.
- E. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- F. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

### 3.5 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- C. Prior to placement of concrete, the forms and subgrade shall be free of chips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed.
- D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

### 3.6 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 347, as outlined below.

1. Surfaces subject to high-velocity flow (inside face of spillway sidewalls, upstream face of piano key weirs, inside face of stilling basin sidewalls, end sill) require a Class A formed surface with regard to abrupt irregularities.
2. Surfaces subject to high-velocity flow require a Class B surface with regard to gradual irregularities.
3. Irregularities on surfaces not subject to high-velocity flow shall meet the following requirements.
  - a. Backfilled surfaces                      Class C
  - b. All other surfaces                        Class B

### 3.7 FORM REMOVAL

- A. Forms shall be removed only when the Engineer is present and shall not be removed without his approval. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually. Forms shall not be removed sooner than the following minimum times after the concrete is placed. These periods represent cumulative number of days and fractions of days, not necessarily consecutive, during which the temperature of the air adjacent to the concrete is above 50 degrees F.

<u>Element</u>	<u>Time</u>
Deck slabs - supporting (inside) forms and shoring	7 days
Sides of beams, small structures	24 hours
Columns, walls, spillway risers	
Concrete placement greater than 20 feet in height	3 days
Concrete placement 20 feet in height or less	24 hours
Cradles	24 hours
Slabs on Grade	24 hours

- B. Where forms are removed prior to 7 days age, the age of stripped concrete shall be at least 7 days before any load is applied other than the weight of the column or wall itself and the forms and scaffolds for succeeding lifts.
- C. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- D. Store removed forms in such a manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

• END OF SECTION •



SECTION 03200  
STEEL REINFORCEMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Reinforcing steel bars and wire fabric and accessories for cast-in-place concrete.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals.
- B. Section 03100, Concrete Formwork.
- C. Section 03300, Cast-in-Place Concrete.

1.3 MEASUREMENT FOR PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. ACI 301 – Structural Concrete for Buildings.
- B. ACI 318 – Building Code Requirements for Reinforced Concrete.
- C. ACI 350 – Code Requirements for Environmental Engineering Concrete Structures
- D. ACI SP-66 – American Concrete Institute – Detailing Manual.
- E. ASTM A36 – Carbon Structural Steel.
- F. ASTM A82 – Cold Drawn Steel Wire for Concrete Reinforcement.
- G. ASTM A123 – Zinc (Hot-Dip Galvanizing) Coating on Iron and Steel Products.
- H. ASTM A185 – Welded Steel Wire Fabric for Concrete Reinforcement.
- I. ASTM A615 – Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- J. ASTM A767 – Zinc-Coated (Galvanized) Bars for Concrete Reinforcement.
- K. ASTM A775 – Epoxy-Coated Reinforcing Steel Bars.
- L. ASTM D3963 – Epoxy-Coated Reinforcing Steel.
- M. CRSI – Concrete Reinforcing Steel Institute – Manual of Practice.
- N. CRSI 63 – Recommended Practice For Placing Reinforcing Bars.
- O. CRSI 65 – Recommended Practice For Placing Bar Supports, Specifications and Nomenclature.

## 1.5 SUBMITTALS FOR REVIEW

- A. Section 01300 – Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel, bending and cutting schedules, and supporting and spacing devices.

## 1.6 SUBMITTALS FOR INFORMATION

- A. Section 01300 – Submittals: Procedures for submittals.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Submit certified copies of mill test report of reinforcement materials analysis.

## 1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI 63, 65 and Manual of Practice. Maintain one copy of each document on site.
- B. Provide Engineer with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection.
- C. Welders' Certificates: Submit Manufacturer's Certificates, certifying welders employed on the Work, verifying AWS qualification within the previous 12 months.

## 1.8 DELIVERY AND STORAGE

- A. All reinforcing bars shall be delivered to the job site cut to exact length, bent, securely bundled and tagged with metal tags corresponding to the bar schedules and diagrams.
- B. All bars and welded fabric shall be stored off the ground a minimum height of six inches and protected from mud, mechanical injury, surface deterioration, and moisture.

## PART 2 PRODUCTS

### 2.1 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615, 60 ksi yield grade; deformed billet steel bars, unfinished.
- B. Welded Steel Wire Fabric: ASTM A185 Plain Type; in flat sheets unfinished.
- C. Dowels: ASTM A615, grade 60. Dowels shall be galvanized.

### 2.2 ACCESSORIES

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions. Include load bearing pad on bottom to prevent vapor barrier puncture, where applicable.

### 2.3 FABRICATION

- A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice.
- B. Locate reinforcing splices not indicated on drawings, at point of minimum stress.

### PART 3 EXECUTION

#### 3.1 PLACEMENT

- A. Before reinforcement is placed, the surfaces of the bars and fabric and any metal supports shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease, mud or other coatings or foreign substances. After placement, the reinforcement shall be maintained in a clean condition until it is completely embedded in the concrete.
- B. All placement of steel reinforcing and supports shall conform to the Recommended Practice for Placing Reinforcing Bars, CRSI 59; and the Recommended Practice for Placing Bar Supports, CRSI 63. Reinforcement shall be accurately placed and secured in position in a manner that will prevent its displacement during the placement of concrete. Do not deviate from required position. Accommodate placement of formed openings. Tack welding of bars will not be permitted.
- C. Reinforcement shall not be placed until the prepared site has been inspected by the Engineer. After placement of the reinforcement, concrete shall not be placed until the reinforcement has been inspected by the Engineer. Concrete protection for reinforcement shall be as shown on the drawings. If concreting is delayed for a considerable number of days after reinforcing is placed in position, it shall be protected by covering with canvas or other satisfactory covering, or if directed by the Engineer, shall be painted with a coat of neat cement grout. Any bars or fabric having loose scaly rust shall be cleaned before concrete is placed.
- D. Maintain concrete cover around reinforcing as follows:

Item	Coverage
Walls (exposed to weather, water, or backfill)	2 inches
Footings and Concrete Formed Against Earth	3 inches

- E. Metal chairs, metal hangers, metal spacers and concrete chairs may be used to support the reinforcement. Metal hangers, spacers and ties shall be placed in such a manner that they will not be exposed in the finished concrete surface. The legs of metal chairs that may be exposed at the lower face of slabs or beams shall be galvanized. Precast concrete chairs shall be manufactured of the same class of concrete as that specified for the structure and shall have tie wires securely anchored in the chair or a V-shaped groove at least 3/4 inch in depth molded into the upper surface to receive the steel bar at the point of support. Precast concrete chairs shall be moist at the time concrete is placed.

#### 3.2 FIELD QUALITY CONTROL

- A. Inspect for acceptability and compliance with Contract Documents.

• END OF SECTION •

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SECTION 03300  
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cast-in-place structural concrete and backfill concrete shown on the Drawings.
- B. Waterstop.
- C. Control, expansion and contraction joint devices associated with concrete work.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals.
- B. Section 02100, Control of Water.
- C. Section 03100, Concrete Formwork.
- D. Section 03200, Concrete Reinforcement.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- ASTM C-31 – Making and Curing Concrete Test Specimens in the Field
- ASTM C-33 – Concrete Aggregates
- ASTM C-39 – Compressive Strength of Cylindrical Concrete Specimens
- ASTM C-94 – Ready-Mixed Concrete
- ASTM C-138 – Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
- ASTM C-143 – Slump of Portland Cement Concrete
- ASTM C-150 – Portland Cement
- ASTM C-172 – Sampling Freshly Mixed Concrete
- ASTM C-231 – Air Content of Freshly Mixed Concrete by the Pressure Method
- ASTM C-260 – Air-Entraining Admixtures for Concrete
- ASTM C-289 – Potential Reactivity of Aggregates (Chemical Method)
- ASTM C-309 – Liquid Membrane-Forming Compounds of Curing Concrete
- ASTM C-494 – Chemical Admixtures for Concrete
- ASTM C-994 – Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
- ACI – ACI Manual of Concrete Practice
- ACI 117 – Specifications for Tolerances for Concrete Construction and Materials
- ACI 211.1 – Selecting Proportions for Normal, Heavyweight, and Mass Concrete
- ACI 301 – Specifications for Structural Concrete for Buildings
- ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
- ACI 305R – Hot Weather Concreting
- ACI 306R – Cold Weather Concreting
- ACI 308 – Standard Practice for Curing Concrete

- ACI 318 – Building Code Requirements for Reinforced Concrete  
Concrete Manual, Bureau of Reclamation, U.S. Department of  
the Interior
- ACI 350 – Code Requirements for Environmental Engineering Concrete Structures

## 1.5 SUBMITTALS FOR REVIEW

- A. Section 01300 – Submittals: Procedures for submittals.
- B. Mix Designs: For each specified type of concrete or mortar, the Contractor shall be responsible for the design of the mix. At least thirty (30) days prior to any placement of specific type of concrete or mortar, the Contractor shall furnish the Engineer with a statement of the materials and mix proportions (including admixtures) he intends to use for the specified class of concrete. The statement shall include evidence satisfactory to the Engineer that the materials and proportions selected will produce concrete of the quality, consistency and strength specified. The statement shall include results of mix designs and laboratory tests including:
  - 1. Mix Designation and Identification
  - 2. Mix Proportions Based on SSD Aggregates and 1 c.y.
  - 3. Moisture Content of the Aggregates as used in trials and corrections for the aggregate weights used
  - 4. Specific Gravity and Absorption of the aggregates
  - 5. Admixture Source and Dosage
  - 6. Yield and Wet Unit Weight
  - 7. Strength Results and Unit Weights of Cylinders
  - 8. Strength Requirements – Both the design strength and the required average strength with the applicable ASTM C-94 over design factor
  - 9. Cement and Fly Ash Source
  - 10. Aggregate Source and Gradation
  - 11. Mix Temperature
  - 12. Slump – Design and Actual
  - 13. Air Content – Design and Actual
  - 14. For mixes with a high-range, water reducer present, the slump and air content at 15 to 20 minute time increments

When ready-mixed concrete is furnished, the Contractor shall advise the Engineer of the name of the concrete supplier proposed and the location of the plant or plants at which the concrete will be batched. The Contractor shall also furnish the Engineer, a statement-of-delivery ticket showing the time of loading, the revolution counter reading at the time of loading and the quantities of materials used for each load of concrete. It shall also show available water than can be added and still meet mix design requirements.

- C. Product Data: Provide specification compliance data on admixtures (if specified), joint sealants, and joint devices.
- D. Samples: Submit two, 4 inch long samples of each type of waterstop and control joint devices.
- E. Concrete Placement Plan: Submit a plan detailing approach and schedule for formwork, concrete mix specification and testing, and concrete delivery, placement, curing, protection, and finishing for review and approval by Engineer prior to initiation of concrete work. Plan shall include:
  - 1. Method of determining the location of the limits and elevations for each placement.

2. Overall schedule of concrete placement including sequence and timing of formwork and placement, stripping, finishing and joint construction, for each placement.
  3. Rate of concrete placement for each planned placement.
  4. Conveyance plan, including belts, conveyors, concrete pumps, etc.
  5. Consolidation plan, including specifications of proposed vibratory and other equipment.
  6. Method and materials used to prepare Mass Concrete lift joints.
  7. Curing medium and methods to be used in conformance with applicable standards.
  8. Cold-weather placing plan, including proposed materials, methods and protection and conforming to the requirements of applicable standards.
  9. Hot-weather placing plan, including proposed materials, methods, and protection and conforming to the requirements of applicable standards.
- F. Concrete Placement Drawings: Submit drawings for individual concrete placements. More than one placement may be shown on a drawing.
1. An individual concrete placement is defined as a portion of concrete work placed in one continuous operation between specified lines or joints.
  2. List concrete drawings from which details for placement were obtained.
  3. Show locations, elevation, dimensions, blockouts, openings, recesses, waterstops and finishes.
  4. Show details of items embedded in or associated with placement except reinforcing steel.
  5. Reference related reinforcement drawings associated with placement.
- G. Waterstops:
1. Shop drawings showing locations, sizes, types, joint details and premolded connections.
  2. Manufacturer's product data for waterstops and for joining waterstops.

#### 1.6 SUBMITTALS FOR INFORMATION

- A. Section 01300 – Submittals: Procedures for submittals.
- B. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent Work for joint devices, waterstop, joint sealants and form savers.

#### 1.7 SUBMITTALS AT PROJECT CLOSEOUT

- A. Section 01700 – Contract Closeout: Procedures for submittals.
- B. Accurately record actual locations of embedded utilities and components which are concealed from view. Record elevations of concrete components itemized in Section 01700.

#### 1.8 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301, and maintain one copy of document on site.
- B. Acquire cement from same source for all work, and acquire aggregate from same source for all work.
- C. Conform to ACI 305R when concreting during hot weather.
- D. Conform to ACI 306R when concreting during cold weather.
- E. Field Quality Control – see Subsection 3.13.

#### 1.9 STORAGE, HANDLING AND DELIVERY

- A. Cement shall be stored in such a manner as to be protected from weather, dampness or other destructive agents. Cement that is partially hydrated or otherwise damaged will be rejected.

- B. Aggregates shall be stored or stockpiled in such a manner that separation of coarse and fine particles of each size will be avoided and that various sizes will not become intermixed before proportioning. Methods of handling and transporting aggregates shall be such as to avoid contamination, excessive breakage, segregation or degradation.
- C. All curing compounds shall be delivered to the site of the work in the original container bearing the name of the manufacturer and the brand name. The compound shall be stored in a manner to prevent damage to the containers and to protect water-emulsion types from freezing.
- D. Admixtures shall be prevented from freezing.

## PART 2 PRODUCTS

### 2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I or II, low-alkali - Normal Portland type. Cement used throughout the work shall be uniform in color.
- B. Fine Aggregate: ASTM C33.
- C. Coarse Aggregate: ASTM C33, Size No. 57 Stone.
- D. Water: Clean and not detrimental to concrete free from injurious amounts of oil, salt, acid, alkali, organic matter, or other deleterious substances.

### 2.2 ADMIXTURES

- A. Air Entrainment: ASTM C260. If air-entraining cement is used, any additional air-entraining admixture shall be of the same type as that in the cement.
- B. Chemical: ASTM C494. The type selected shall be determined by the Contractor for his placing conditions and mix design.
- C. Water Reducer and Set Retarders: ASTM C494.
- D. Anti-Washout: ASTM C494 Type S. Euclid EVCON AWA or similar.
- E. Color Additive: ASTM C979

### 2.3 CONCRETE MIXES

- A. Mix Designs: The Contractor shall be responsible for initial mix designs and related testing to the mix designs, which shall conform to the following requirements:
  - 1. All materials used in the work shall be subject to inspection and tests at the batch plant and at the job site.
  - 2. All testing shall be performed in accordance with applicable test references of the American Society for Testing and Materials (ASTM). Laboratories and personnel used by the Contractor for testing and mix designs shall conform with ASTM E 329 and the guidance of the ASTM "Manual of Aggregate and Concrete Testing".
  - 3. Trial batches and compression tests shall be made of a proposed job mix to determine whether the concrete mix is adequate. If so determined, the materials and proportions



stated shall constitute the job mix. After the job mix has been designated, neither the source, character or grading of the aggregates nor the type or brand of cement or admixture shall be changed without prior notice to and approval by the Engineer. Proportion mixes by laboratory trial batch method using materials to be employed on project for each class of concrete required. Prepare test specimens in accordance with ASTM C192 and conduct strength tests in accordance with ASTM C39 as specified in ACI 301.

4. Water-cement ratios of all mixes shall be determined from a water-cement ratio curve plotted from tests run at constant slump of the cement and aggregates used on the job. Mixes shall be run using both the design slump and the maximum slump permitted. In the case of air-entrained concrete, mixes shall be run using both the maximum slump and air content and the design air content and slump. The strength of the mixes at design slump and air content shall meet the specified design strength plus the applicable over design factor as stipulated in ASTM C-94.
  5. All concrete mixes shall be designed using the minimum water possible subject to workability requirements.
- B. The Contractor shall provide production concrete conforming to ASTM C-94, including the applicable overdesign factor of Table 4 for limiting the probability of tests falling below the specified strength ( $f'_c$ ) to one out of every ten tests. The mixes shall conform to the general guidance listed below for each specific use.
- C. Strength requirements are for 28 days of age unless otherwise noted. The Contractor may provide stronger mixes within the guidelines given below that allow higher early strengths if necessary for form removal and to assist his schedule. The Contractor shall be responsible for evaluating his construction loads and controlling his operations so that he does not overload or damage the structure.
- D. The requirements for cast-in-place concrete are as follows:

1. Piano Key Concrete, Class 4500

Specified Design Strength @ 28 days:	4500 psi
Slump (before addition of High-Range Water Reducer):	3 to 4 inches
Slump (after addition of High-Range Reducer):	max. 4 inches
Air Content:	6 percent $\pm$ 1.5
High-Range Water Reducer:	Not permitted on sloped concrete placements
Water Reducer	Not permitted on sloped concrete placements
Maximum Water/Cement Ratio:	0.42
Minimum Cementitious Content (per CY)	535 lbs.

2. Structural Concrete, Class 4500

Specified Design Strength @ 28 days:	4500 psi
Slump (before addition of High-Range Water Reducer):	3 to 5 inches
Slump (after addition of High-Range Reducer):	max. 8 inches
Air Content:	6 percent $\pm$ 1.5

High-Range Water Reducer:	Optional
Water Reducer	Required
Maximum Water/Cement Ratio:	0.42
Minimum Cementitious Content (per CY)	535 lbs.

3. Slab Concrete, Class 4500

Specified Design Strength @ 28 days:	4500 psi
Slump (before addition of High-Range Water Reducer):	3 to 5 inches
Slump (after addition of High-Range Reducer):	max. 8 inches
Air Content:	6 percent $\pm$ 1.5
High-Range Water Reducer:	Optional
Water Reducer	Required
Maximum Water/Cement Ratio:	0.42
Minimum Cementitious Content (per CY)	535 lbs.

4. Backfill Concrete

Specified Design Strength @ 28 Days:	3000 psi
Slump:	2 to 6 inches
Water Reducer:	Required
Air Content:	No requirement
Maximum Water/Cement Ratio:	0.50

- E. When conditions are such that the temperature of the concrete at the time of placement is consistently above 75 degrees F, the Engineer may direct the Contractor to use a water reducing, set-retarding admixture. The cement content shall be the same as that required in the mix without the admixture.
- F. The use of calcium chloride or other accelerators or anti-freeze compounds will not be allowed.
- G. The concrete used in the vertical section of the parapet shall include a color pigment admixture. The color shall be selected by the Owner. Contractor should create mockups for two colors.

2.4 TOLERANCES

- A. The fineness modulus of the fine aggregate shall be not less than 2.3 or more than 3.1, nor vary by more than 0.20 from the value assumed in selecting proportions of the concrete. If this value is exceeded, the fine aggregate is rejected unless suitable adjustments are made in proportions of the fine and coarse aggregate.
- B. Unless otherwise specified, the air content (by volume) of the concrete at the time of placement and at the final placement location shall be from 4.5 to 7.5 percent. If the concrete is pumped, the testing will be performed at the discharge end of the discharge line. The consistency of the concrete shall be such as to allow it to be worked into place without segregation or excessive latency.
- C. The quantities of cement and aggregates in each batch of concrete, as indicated by the scales, shall be within the following percentages of the required batch weights:

Cement – plus or minus one percent  
Aggregates – plus or minus two percent

## 2.5 WATERSTOP

- A. Waterstop shall conform to the details shown on the plans.

## 2.6 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler: ASTM D 994; Preformed expansion joint filler for concrete (Bituminous Type), and shall be one (1) inch thick.

## 2.7 ACCESSORIES

- A. Curing compound shall conform to the requirements of ASTM C309, clear type, either Class A (wax base) or Class B (resin base). If curing compound is used in areas of the spillway which are to receive waterproofing, Contractor shall verify from manufacturer that the curing compound will not negatively impact the waterproofing agent.
- B. Joint Sealant:
1. Provide one of the following products:
    - a. Sikaflex 2c NS EZ Mix, available from Sika Corporation
    - b. Sonolastic NP2, available from BASF Chemical Company
    - c. Dynatrol II, available from Pecora Corporation
  2. Salient Characteristics:
    - a. Conforms to ASTM C 920, Type M, Grade NS, Class 25, Use M.
    - b. Two-part, non-sag, polyurethane elastomeric sealant.
    - c. Concrete gray in color; add color pack if needed.
- C. Backer Rod: Closed-cell polyethylene foam round rods with highly flexible and compressive characteristics. Equal to Dow Chemical "Ethafoam SB," Williams Products "Expand-O-Foam," or Sonneborn Contech "Sonofoam."

## PART 3 EXECUTION

### 3.1 MIXERS AND MIXING

- A. Concrete may be furnished by batch mixing at the site of the work or by ready-mix methods. Batch plants shall conform to the requirements of the applicable State Highway Department or Department of Transportation specifications for automatic proportioning equipment and as specified herein, and shall be previously approved by the State's Highway Department or Department of Transportation.
- B. Mixers shall be capable of thoroughly mixing the concrete ingredients into a uniform mass within the specified mixing time and of discharging the mix without segregation. Each mixer or agitator shall bear a manufacturer's rating plate indicating the rated capacity and recommended speeds of rotation, and shall be operated in accordance with these recommendations.
- C. Concrete shall be uniform and thoroughly mixed when delivered to the work. Variations in slump of more than one inch within a batch will be considered evidence of inadequate mixing and shall be corrected by changing batching procedures, increasing mixing time, changing mixers, or other means. Mixing time shall be within the limits specified below unless the Contractor demonstrates by mixer performance tests that adequate uniformity is obtained by different times of mixing. For this purpose, the testing program and uniformity requirements shall be as set forth in ASTM Designation C-94.

- D. No mixing water in excess of the amount called for by the job mix shall be added to the concrete during mixing or hauling or after arrival at the delivery point.
- E. For concrete mixed at the site of the work with stationary construction mixers, the time of mixing after all cement and aggregates are in the mixer drum shall be not less than 12 minutes. The batch shall be so charged into the mixer that some water will enter in advance of the cement and aggregates and all mixing water shall be introduced into the drum before 3 minutes of the mixing time has elapsed. Controls shall be provided to ensure that the batch cannot be discharged until the required mixing time has elapsed.
- F. When concrete is mixed in a truck mixer loaded to its maximum capacity, the number of revolutions of the drum or blades at mixing speed shall be not less than 70 nor more than 100. If the batch is at least 2 cubic yards less than maximum capacity, the number of revolutions at mixing speed may be reduced to not less than 50. Mixing in excess of 100 revolutions shall be at the speed designated by the manufacturer of the equipment as agitating speed. The mixing operation shall begin within 30 minutes after the cement has been added to the aggregates and the water shall be added during mixing. When mixing is begun during or immediately after charging, a portion of the mixing water shall be added ahead of, or with, the other ingredients.
- G. When concrete is partially mixed at a central plant and the mixing is completed in a truck mixer, the mixing time in the central plant mixer shall be the minimum required to intermingle the ingredients and shall be not less than 30 seconds. The mixing shall be completed in a truck mixer and the number of revolutions of the drum or blades at mixing speed shall be not less than 50 nor more than 100. Mixing in excess of 100 revolutions shall be at the speed designated by the manufacturer of the equipment as agitating speed. The total number of revolutions shall not exceed 300 before discharge of the concrete, unless otherwise specified.
- H. For central-mixed concrete, mixing in the stationary mixer shall meet the same requirements as batch mixing at the site. When an agitator, or truck mixer used as an agitator, transports concrete that has been completely mixed in a stationary mixer, mixing during transportation shall be at the speed designated by the manufacturer of the equipment as agitating speed.
- I. The use of non-agitating equipment to transport concrete to the site of the work will not be permitted.

### 3.2 EXAMINATION

- A. Verify site conditions.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

### 3.3 CONVEYING AND DEPOSITING

- A. Place concrete in accordance with ACI 301.
- B. Concrete shall be delivered to the site and discharged into the forms within 90 minutes after the introduction of the cement to the aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 85 degrees F or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes. The Engineer may allow a longer time, provided the

- setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding admixture. In no case will concrete be accepted for use in the work if the mix temperature before placing exceeds 90 degrees F. In any case, concrete shall be conveyed from the mixer to the forms as rapidly as practicable, by methods that will prevent segregation of the aggregates or loss of mortar. Concrete shall not be dropped more than 5 feet vertically unless suitable equipment is used to prevent segregation.
- C. Concrete shall not be placed until the subgrade, forms and steel reinforcement have been inspected and approved. The Contractor shall have all equipment and materials required for curing available at the site ready for use before placement of concrete begins. No concrete shall be placed except in the presence of the Engineer. The Contractor shall give at least forty-eight (48) hours' notice to the Engineer each time he intends to place concrete. Such notice shall be far enough in advance to give the Engineer adequate time to inspect the subgrade, forms, steel reinforcement and other preparations for compliance with the specifications before concrete is delivered for placing.
  - D. Rock surfaces shall be cleaned of loose rock, soil, mud or other contaminants prior to placement of concrete. Rock surfaces shall be dampened prior to concrete placement.
  - E. The concrete shall be deposited as closely as possible to its final position in the forms and shall be worked into the corners and angles of the forms and around all reinforcement and embedded items in a manner to prevent segregation of aggregates or excessive laitance.
  - F. The depositing of concrete shall be regulated so that the concrete may be consolidated with a minimum of lateral movement. Internal stays and braces, serving temporarily to hold the forms in correct shape and alignment prior to placement of concrete at their locations, shall be removed when the concrete has been placed to an elevation such as to render their service unnecessary.
  - G. Slab concrete shall be placed to design thickness in one continuous layer. Formed concrete shall be placed in horizontal layers not more than 20 inches thick. Hoppers and chutes, pipes or "elephant trunks" shall be used as necessary to prevent splashing of mortar on the forms and reinforcing steel above the layer being placed.
  - H. Successive layers shall be placed at a fast enough rate to prevent the formation of "cold joints". If the surface of a layer of concrete in place sets to the degree that it will not flow and merge with the succeeding layer when vibrated, the Contractor shall discontinue placing concrete and shall make a construction joint according to the procedure specified in Subsection 3.5 of this specification. If placing is discontinued when an incomplete layer is in place, the unfinished end of the layer shall be formed by a vertical bulkhead.
  - I. Prior to placing concrete on drain fill material, the drain fill material shall be covered with a continuous membrane of nonwoven geotextile fabric.

#### 3.4 CONSOLIDATION

- A. Concrete shall be consolidated with internal type mechanical vibrators capable of transmitting vibration to the concrete at frequencies not less than 6000 impulses per minute. A sufficient number of vibrators shall be employed so that, at the required rate of placement, vibration is maintained throughout the entire volume of each layer of concrete and complete compaction is secured. The location, manner and duration of the application of the vibrators shall be such as to secure maximum consolidation of the concrete without causing segregation of the mortar and coarse aggregate, and without causing water or cement paste to flush to the surface.

- B. The Contractor shall provide a sufficient number of vibrators to properly consolidate the concrete immediately after it is placed in the work. Vibration shall be applied in the freshly deposited concrete by slowly inserting and removing the vibrator at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective. The vibrator shall extend into the previously placed layer of fresh concrete, at all points, to ensure effective bond between layers.
- C. Vibration shall not be applied directly to the reinforcement steel or the forms nor to concrete that has hardened to the degree that it does not become plastic when vibrated. The use of vibrators to transport concrete in the forms or conveying equipment will not be permitted. Vibration shall be supplemented by spading and hand tamping as necessary to ensure smooth and dense concrete along form surfaces, in corners, and around embedded items and waterstops.

### 3.5 JOINTS

- A. Construction joints shall be made at the locations shown on the Drawings or at locations approved by the Engineer. Where a feather edge would be produced at a construction joint, as in the top surface of a sloping wall, an insert form shall be used so that the resulting edge thickness on either side of the joint is not less than six inches.
- B. Expansion and contraction joints shall be made only at locations shown on the Drawings. Exposed concrete edges at expansion and contraction joints shall be carefully tooled or chamfered, and the joints shall be free of mortar and concrete. Joint filler shall be left exposed for its full length with clean and true edges.
- C. Expansion joints shall be placed as shown on the Drawings or as directed by the Engineer. Joint surfaces shall be cleaned of all unsatisfactory concrete, form release agents, grease, oil, stains or debris prior to placement of joint filler.
- D. Control joints (when specified) shall be constructed by the insertion of control joint formers in such a manner that the corners of the concrete will not be chipped or broken. The edges of the concrete at the joints shall be finished with an edging tool prior to removal of the top strip.
- E. Preformed expansion joint filler shall be held firmly in the correct position against the form as the concrete is placed.
- F. Apply joint sealant to horizontal and vertical contraction joints that are to be submerged. Comply with manufacturer's instructions.
- G. In walls and columns as each lift is completed, the top surfaces shall be immediately and carefully protected from any condition that might adversely affect the hardening of the concrete.
- H. Steel tying and form construction adjacent to concrete in place shall not be started until the concrete has cured at least 12 hours. Before new concrete is deposited on or against concrete that has hardened, the forms shall be retightened. New concrete shall not be placed until the hardened concrete has cured at least 12 hours.
- I. Surfaces of construction joints shall be cleaned of all unsatisfactory concrete, laitance, coatings, stains, or debris by washing and scrubbing with a wire brush or wire broom or by other means approved by the Engineer. Vertical joints shall be thoroughly moistened immediately prior to placing concrete. Surfaces shall be kept moist for at least one hour prior to placement of new concrete. The new concrete shall be placed directly on the cleaned and washed surface.

- J. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories. Install joint devices in accordance with manufacturer's instructions.
- K. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and waterstop are not disturbed during concrete placement.
- L. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- M. Place concrete continuously between predetermined expansion, control, and construction joints.
- N. Mechanical splices, or, form savers, will be required at a minimum at locations shown on the Drawings. Form savers shall be suitable to provide for full development of reinforcing steel. Provide Lenton standard mechanical splices or approved equal. Submit product data for mechanical splice product to the Engineer for review and approval. Mechanical splices shall be installed in accordance with manufacturer recommendations.

### 3.6 WATERSTOPS

- A. Install all waterstops in accordance with manufacturer's recommendations.
- B. The successful completion of the piano key weir will require multiple types of waterstop. Provide waterstop as indicated on the Drawings.

### 3.7 REMOVAL OF FORMS

- A. Forms shall be removed in accordance with the requirements of Section 03100 - Concrete Formwork.

### 3.8 FINISHING FORMED SURFACES

- A. All concrete surfaces shall be true and even, and shall be free from open or rough spaces, depressions, projections, or other defects in the specified surface finish or alignment. Depressions are measured as the distance from the concrete surface to the edge of a ten-foot long straight edge. Over tolerance depressions or projections will not be allowed to accumulate. Finishing of formed surfaces shall be as specified below and shall be performed immediately upon removal of forms.
- B. Form removal shall be performed sequentially such that completion of finishing operations can be accomplished within four hours of form removal.
- C. Backfilled Surfaces: Repair defective concrete, fill form tie holes and surface depressions deeper than 1 inch, and remove or smooth fins and abrupt projections which exceed 3/4 inch.
- D. Exposed Surfaces: Repair defective concrete, fill all form tie holes, remove projections larger than 1/4 inch, and patch voids larger than 3/4 inch wide or 1/2 inch deep.
- E. All form bolts and ties shall be removed to a depth at least one inch below the surface of the concrete. The cavities produced by form ties and all other holes of similar size and depth shall be thoroughly cleaned and, after the interior surfaces have been kept continuously wet for at least three hours, shall be carefully packed with a dry patching mortar (pre-shrunk) mixed not richer than one part cement to three parts sand.
  - 1. Holes left by form bolts or straps which pass through the wall shall be filled solid with mortar.

2. Patching mortar shall be thoroughly compacted into place to form a dense, well-bonded unit, and the in-place mortar shall be sound and free from shrinkage cracks. All patched areas shall be cured as specified in Subsection 3.10 of this Specification.
- F. All concrete surfaces, except those surfaces which are required to be covered with earth or rock shall be rubbed with a medium coarse carborundum stone using water for lubrication and cleaning. The rubbing shall be started as soon as possible after the forms are removed, patching is finished, and the patching mortar has set thoroughly. Rubbing shall be continued until all form marks, projections and irregularities have been removed and a uniform surface has been obtained. After rubbing is completed, the surface shall be washed to remove loose powder and shall be left free from unsound patches, paste, powder, and objectionable marks.

### 3.9 FINISHING UNFORMED SURFACES

- A. All exposed surfaces of the concrete shall be accurately screeded to grade and then wood float finished immediately after the floated surface has hardened sufficiently to prevent an excess of fine material from being drawn to the surface. Excessive floating or troweling while the concrete is soft will not be permitted. The addition of dry cement or water to the surface of the screeded concrete to expedite finishing will not be allowed. Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.
- B. The top surfaces of all piano key weir walls (not including the radius/half-round) shall receive a heavy broom finish. The irregularities in the finish shall have a maximum amplitude of approximately ¼ inch.

### 3.10 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Concrete shall be prevented from drying for a curing period of at least seven days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period. Moisture shall be maintained by sprinkling, flooding or fog spraying, or by covering with continuously moistened canvas, cloth mats, straw, sand or other approved material. Wood forms left in place during the curing period shall be kept wet. The use of curing compounds on concrete horizontal surfaces will not be permitted.
- C. Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged. Water for curing shall be clean and free from any substance that will cause discoloration of the concrete. Special care shall be given to cold weather curing so as to maintain the required concrete temperature.
- D. In lieu of water curing after patching and repairs are complete, Contractor may apply membrane-forming curing compound to vertical formed concrete surfaces in accordance with manufacturer's recommendation and as per the requirements of the approved Concrete Placement Plan and Construction Drawings.
1. Apply uniformly in a two-coat continuous operation by power spray equipment in accordance with manufacturer's directions.
  2. Recoat areas which are subjected to heavy rainfall within three hours after initial application.
  3. Maintain continuity and repair damage to coating during curing period.



- E. Curing compound shall not be applied to surfaces requiring bond with subsequently placed concrete, such as construction joints, waterstops, reinforcing steel, form savers, and other embedded items.
- F. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete, as per the requirements of the approved Concrete Placement Plan.

### 3.11 CONCRETING IN COLD WEATHER

- A. When the atmospheric temperature is less than 40 degrees F at the time concrete is delivered to the work site, during placement, or at any time during the curing period, perform Work in accordance with ACI 306R – Cold Weather Concreting.
- B. The temperature of the concrete at time of placing shall not be less than 50 degrees F nor more than 90 degrees F. The temperature of neither aggregates nor mixing water shall be more than 100 degrees F just prior to mixing with the cement. No frozen materials nor materials containing ice shall be used.
- C. Methods of insulating, housing and heating concrete shall be utilized to protect the work, in accordance with ACI 306R – Cold Weather Concreting. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than 50 degrees F nor more than 90 degrees F for the duration of the curing period.
- D. When dry heat is used to protect concrete, means of maintaining an ambient humidity of at least 40 percent shall be provided unless the concrete has been coated with curing compound or is covered tightly with an approved impervious material. Concrete damaged by freezing shall be removed and replaced at the Contractor's expense.

### 3.12 CONCRETING IN HOT WEATHER

- A. When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 90 degrees F at the time of delivery at the work site, during placement, or during the first 24 hours after placement, perform Work in accordance with ACI 305R – Hot Weather Concreting.
- B. The Contractor shall maintain the temperature of the concrete below 90 degrees F during mixing, conveying, and placing.
- C. The concrete shall be placed in the work immediately after mixing. Truck mixing shall be delayed until only time enough remains to accomplish it before the concrete is placed.
- D. Exposed concrete surfaces which tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying during the time between placement and finishing, and after finishing.
- E. Finishing of slabs and other exposed surfaces shall be started as soon as the condition of the concrete allows and shall be completed without delay.
- F. Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 24 hours of the curing period, and for the entire curing period unless curing compound is applied as specified below.
- G. Formed surfaces shall be kept completely and continuously wet for the duration of curing period (prior to, during and after form removal) or until curing compound is applied as specified below.

- H. If moist curing is discontinued before the end of the curing, period, curing compound shall be applied immediately, according to manufacturer's recommendations. This does not apply to horizontal concrete surfaces.

### 3.13 FIELD QUALITY CONTROL

- A. Section 01400 – Quality Control.
- B. Provide free access to Work and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to testing firm for review 30 days prior to commencement of Work and in accordance with 01300 - Submittals.
- D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- E. Sampling will be performed in accordance with ASTM C 172, except as noted herein. Tests of a portion of a batch may be made on samples representative of that portion for any of the following purposes:
  - 1. Determining the uniformity of the batch.
  - 2. Checking compliance with requirements for slump, air content, and temperature when the batch is discharged over an extended period of time.
  - 3. When a pump or conveyor is used to transport the concrete, the concrete shall be sampled from the end of the pump hose or conveyor after the concrete has been transported. It is the sole responsibility of the Contractor to provide material adhering to the specified fresh concrete properties as tested from samples obtained at the point of discharge into the Work.
- F. During the progress of the work, a set of four (4) 4" diameter x 8" tall cylinders shall be made for each 50 yards of concrete placed or fraction thereof with at least one set made for each day's placement of concrete. For each set of cylinders, one (1) shall be tested at seven days and three (3) will be tested at 28 days.
- G. Each cylinder will be properly labeled with an identifying mark. Report forms will indicate the mix proportions, air content, water content, slump, batching time, placing time and an adequate description of the location in the structure where the concrete was placed. The making and curing of test cylinders will be in accordance with ASTM C-31. Cylinders will be tested for compressive strength in accordance with ASTM C-39. The test result shall be the average of the strength of the three 28-day specimens, except that if one specimen in the test shows manifest evidence of improper sampling, molding, or testing it shall be discarded and the strengths of the remaining 2 specimens shall be averaged. Should more than one specimen representing a test show such defects, the entire test shall be discarded.
- H. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- I. Slump and air content tests will be made of each batch and/or as frequently as directed as each truck arrives at the placement location. Slump tests will be performed in accordance with requirements of ASTM C-143. Air content tests will be performed in accordance with ASTM C-231 or C-173.

- J Tests for determining the temperature of the freshly mixed concrete will be in accordance with ASTM C-1064.
- K The Contractor shall plan his operations to allow adequate time for all required testing and inspection. The Contractor shall provide facilities necessary to obtain and handle representative samples of materials to be tested and furnish all necessary cooperation and assistance as requested by the Engineer.
- L The Engineer may reject concrete batches for high slump, uncontrolled air entrainment, temperature outside the specified range, poorly mixed concrete or delays. Rejected concrete shall not be used at any location on the project. The costs and impacts associated with rejected concrete are the sole responsibility of the Contractor.
- M The Engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Engineer to inspect materials, equipment and processes and to obtain samples of the concrete. All tests and inspections will be conducted so as not to interfere unnecessarily with the manufacture and delivery of the concrete.

3.14 TOLERANCES AND ACCEPTANCE

- A. Acceptance of the concrete work will be a cumulative acceptance process based upon progressively meeting the requirements of the Contract Documents for: (1) fresh concrete; (2) concrete strength and durability; (3) structure dimensions; and, (4) appearance.
- B. Fresh Concrete: Fresh concrete conforming to the mix and quality requirements of Subsection 2.3, and handled and placed in accordance with this specification, will be considered satisfactory.
- C. Concrete Strength: The average of any three consecutive strength tests shall be equal to or greater than the specified strength. In addition, no individual strength test (average of three cylinders) shall be more than 500 psi below the specified strength. When the number of tests made of any class of concrete total six or less, the average of all the tests shall be equal to or greater than shown in the following table:

No. Of Tests	Required Ave. Strength, $f'_c$
1	0.89
2	0.97
3	1.02
4	1.05
5	1.07
6	1.08

- D. Low Compressive Strength Procedure: In the event that the results of compressive strength testing indicates concrete that has been placed, but does not meet the specified 28-day compressive strength requirement, the following procedure will be used to resolve the discrepancies:
  1. Locations of low-strength concrete will be identified by first determining the location(s) of Work that the failing samples represent.

2. The engineer will assess and determine if the low-strength concrete will be capable of meeting project intent.
  - a. If, at the sole discretion of the Engineer, the low-strength concrete is considered acceptable, a credit will be due to the Owner in the amount of the unit rate of the specific concrete in question, multiplied by the difference of the percent of design strength obtained by the compressive strength samples from 100% of the design strength, multiplied by the volume of concrete represented by the low-strength breaks.
  - b. If, at the sole discretion of the Engineer, the low-strength concrete is considered not acceptable, then the Contractor will be required to remove and replace the defective areas to acceptable quality at no additional cost to the Owner.
  - c. The contractor may elect to core samples of the in-place concrete to perform additional compressive strength testing for conformance with the Project Documents. Prior to coring through any of the Concrete Work, the Contractor shall obtain express written permission from the Engineer by first submitting the location(s) of proposed coring, the depth of the cores, and plans to repair the cored holes in the Work as appropriate. All coring of the structures shall only be performed with the written authorization of the Engineer.
- E Variations from Specified Lines, Grades, and Dimensions: The dimensions of formed members, unless otherwise specified, will be satisfactory if they conform to the requirements of ACI 117, Section 10, as modified by the following:
  1. Cross sectional thickness at any point shall be between -0.25 inches and +0.5 inches.
  2. Slope of all surfaces with respect to the specified plane shall not exceed the following amounts when measured with a 10 foot straightedge.
  3. Vertical deviation shall be no more than 0.2 percent
  4. Horizontal deviation shall be no more than 0.2 %.
- F Variations from Specified Lines, Grades, and Dimensions: The dimensions of formed members, unless otherwise specified, will be satisfactory if they conform to the requirements of ACI 117, Section 10, as modified by the following:
  1. Cross sectional thickness at any point shall be between -0.25 inches and +0.5 inches.
  2. Slope of all surfaces with respect to the specified plane shall not exceed the following amounts when measured with a 10 foot straightedge.
  3. Vertical deviation shall be no more than 0.2 percent
  4. Horizontal deviation shall be no more than 0.2 %.
- F Structure Appearance: The appearance of the concrete will be satisfactory if it meets the requirements of Subsection 3.8.

### 3.15 REMOVAL OR REPAIR

- A Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements. When concrete is honeycombed, damaged or otherwise defective, the Contractor shall remove and replace the structure or structural member containing the defective concrete, or correct or repair the defective parts. The Engineer will determine the required extent of removal, replacement or repair.

- B Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.
- C Prior to starting repair work, the Contractor shall obtain the Engineer's approval of his plan for making the repair. Such approval shall not be considered a waiver of the Engineer's right to require complete removal of defective work if the completed repair does not produce concrete of the required quality and appearance.
- D Repair work shall be performed only when the Engineer is present.
- E Repair of formed surfaces shall be started within 24 hours after removal of the forms. Except as otherwise approved by the Engineer, the appropriate methods described in Chapter VII of the Concrete Manual, (Bureau of Reclamation, U.S. Department of Interior) shall be used. If approved in writing by the Engineer, proprietary compounds for adhesion or as patching ingredients may be used. Such compounds shall be used in accordance with the manufacturer's recommendations.
- F Curing shall be applied to repaired areas immediately after the repairs are completed.
- G All removal and repair shall be performed at the Contractor's expense.

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# DIVISION 5

# METALS

## **DIVISION 5 – METALS**

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05500

Miscellaneous Metals

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SECTION 05500  
MISCELLANEOUS METALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Shop fabricated metal items, including:
  - 1. Trash Guard

1.2 RELATED SECTIONS

- A. Section 01300, Submittals
- B. Section 03300, Cast-in-Place Concrete

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. ASTM A36 - Structural Steel.
- B. ASTM A53 - Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
- C. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- D. ASTM A283 - Carbon Steel Plates, Shapes, and Bars.
- E. ASTM A193 - Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service.
- F. ASTM A276 - Stainless and Heat-Resisting Steel Bars and Shapes.
- G. AWS D1.1 - Structural Welding Code.
- H. AWS A2.0 - Standard Welding Symbols.
- I. ASTM A53 - Steel Pipe.
- J. ASTM A588 - Structural Steel.
- K. ASTM A194 - Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service.
- L. ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.
- M. SSPC - Steel Structures Painting Council.
- N. AISI - Standards for Stainless Steel.
- O. AISC - Code of Standard Practice.

## 1.5 SUBMITTALS

- A. A Schedule of Values shall be submitted with a cost breakdown for each item the contractor elects to invoice for progress payments. The Schedule of Values will be used in determining partial payment for work completed according to these Specifications.
- B. Product data for products used in miscellaneous metal fabrications, including paint products and grout.
- C. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage, locking mechanisms, and accessory items. Provide templates for anchors and bolts specified for installation under other sections.
  - 1. Indicated welded connections using standard AWS A2.0 welding symbols. Indicate net weld length.
- D. Samples representative of materials and finished products as may be requested by Engineer.
- E. Welder certificates signed by Contractor certifying that welders comply with requirements specified under "Quality Assurance" article.

## 1.6 QUALITY ASSURANCE

- A. Like items of equipment provided hereunder, although for different services, shall be the end products of one manufacturer in order to achieve standardization for appearance, operation, maintenance, spare parts, and manufacturer's service.
- B. Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work.
- C. Qualify welding processes and welding operators in accordance with AWS D1.1 "Structural Welding Code – Steel", D1.3 "Structural Welding Code - Sheet Steel", and D1-2 "Structural Welding Code – Aluminum".
  - 1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Preparation for Shipment:
  - 1. Insofar as practical, factory assemble items specified herein.
  - 2. Package and clearly tag parts and assemblies that of necessity are shipped unassembled, in a manner that will protect materials from damage, and facilitate identification and field assembly.
- B. Store items on pallets or shelving in a covered storage area.

## PART 2 PRODUCTS

### 2.1 GENERAL

- A. The use of the manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired only. Other manufacturers' equipment will be considered in accordance with the General Conditions.
- B. Furnish Miscellaneous Items:
1. Miscellaneous metalwork and castings as shown, or as required to secure various parts together and provide a complete installation.
  2. Items specified herein are not intended to be all inclusive. Provide metalwork and castings shown, specified, or which can reasonably be inferred as necessary to complete the project.

## 2.2 MATERIALS

- A. Unless otherwise indicated, materials shall meet the latest issue of ASTM Specifications as follows:

<u>Item</u>	<u>ASTM Specification</u>
Steel Plates Shapes	A36
Steel Pipe	A53 Type S Grade B
Steel Plates	A588, Grade 50
Stainless Steel:	
Bars, Shapes & Plates	A276, Type 304
Bolts	A193, AISI 304
Nuts	A194, AISI 304
Aluminum:	
Rail, Post & Elbow Pipe	B221, Alloy 6061-T6, Anodized Finish
Beams, Shapes, Checkered Plate & Support Bars:	B221, Alloy 6061-T6, Mill Finish
Bar Grating & Toe Boards	B221 Alloy 6063-T6, Mill Finish

- B. Welding Materials: AWS D1.1; type required for materials being welded.
- C. Anchor Bolts: stainless steel, of size and type recommended by manufacturer.

## 2.3 CONNECTIONS

- A. Connections to aluminum shall be aluminum or stainless steel unless otherwise noted. All screws and bolts used for aluminum shall be stainless steel.
- B. Tamper resistant self-tapping screws, where specified, shall be stainless steel TORX screws, or equal. Contractor shall provide Owner with two TORX keys and insert bits.

## 2.4 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.

- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal non-bolted joined members by continuous welds.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

## 2.5 FABRICATION TOLERANCES

- A. Squareness: 1/16 inch maximum difference in diagonal measurements.
- B. Maximum Misalignment of Adjacent Members: 1/16 inch.
- C. Maximum Bow: 1/8 inch in 48 inches.
- D. Maximum Deviation From Plane: 1/16 inch in 48 inches.

## 2.6 WELDING

- A. General:
  - 1. Meet codes for Arc and Gas Welding in Building Construction of the AWS and AISC for techniques of welding employed, appearance, quality of welds made, and the methods of correcting defective work.
  - 2. Welding Surfaces: Free from loose scale, rust, grease, paint, and other foreign material, except mill scale which will withstand vigorous wire brushing may remain.
  - 3. A light film of linseed oil may likewise be disregarded.
  - 4. Do not weld when temperature of base metal is lower than zero degrees F.
  - 5. Finished members shall be true to line and free from twists.
  - 6. Prepare welds and adjacent areas such that there is:
    - a. No undercutting or reverse ridges on the weld bead.
    - b. No sharp peaks or ridges along the weld bead.
  - 7. Grind embedded pieces of electrode or wire flush with adjacent surface of weld bead.
- B. Welding Operators: As specified in PART 1, Article QUALITY ASSURANCE.
- C. Aluminum:
  - 1. Weld with Gas Metal Arch (MIG) or Gas Tungsten Arc (TIG) processes in accordance with manufacturer's written instructions as approved, and in accordance with recommendations of the American Welding Society contained in the Welding Handbook, as last revised.
  - 2. Grind smooth all exposed aluminum welds.
  - 3. No field welding of aluminum will be allowed.

## 2.7 FINISHES - STEEL

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Structural Steel Members: Galvanize after fabrication to ASTM A123.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Field Measurements: Check actual locations of walls, openings, and other construction to which metal fabrications must fit, by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

#### 3.2 PREPARATION

- A. Supply items required to be embedded in concrete with setting templates to appropriate sections.

#### 3.3 INSTALLATION

##### A. General

1. Install items plumb and level where appropriate, accurately fitted, and free from distortion or defects. Temporary bracing shall be placed wherever necessary to resist all loads to which the structure may be subjected, including those applied by the installation and operation of equipment. Such bracing shall be left in place as long as may be necessary for safety. Completed installations shall be rigid, substantial, and neat in appearance.
2. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
3. Perform field welding in accordance with AWS D1.1.
4. Obtain approval prior to site cutting or making adjustments not scheduled.
5. Erect structural steel in accordance with applicable portions of AISC Code of Standard Practice, except as modified.
6. Install commercially manufactured products in accordance with manufacturer's recommendations.
7. Install expansion anchor bolts in concrete no sooner than seven days after concrete placement, at which time the bolts may be tightened to snug only. Full tightening shall not be performed until 28 days after concrete placement.
8. Galvanized items shall not be cut, welded, or drilled after the zinc coating is applied.
9. As erection progresses, the work shall be securely bolted up, or welded, to resist all dead load, wind, and erection stresses. The Contractor shall furnish such installation assisting bolts, nuts, and washers as may be required.
10. For items embedded in concrete, ensure adequate consolidation around anchorages by thorough vibration.

##### B. Aluminum

1. Erection: In accordance with the Aluminum Association Standards and manufacturer's recommendations.
2. Do not remove mill markings from concealed surfaces.
3. Remove inked or painted identification marks on exposed surfaces not otherwise coated after installed material has been inspected.

#### 3.4 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: ½ inch in ten feet.
- B. Maximum Offset From True Alignment: ¼ inch.

#### 3.5 ANCHOR BOLTS

- A. Accurately locate and hold anchor bolts in place with templates at the time concrete is placed.

#### 3.6 CONCRETE ANCHORS

- A. Do not begin installation until concrete or masonry receiving anchors have attained design strength.
- B. Do not install an anchor with its centerline closer than six times its diameter to either an edge of concrete or masonry, or to another anchor, unless specifically shown otherwise.
- C. Install in accordance with manufacturer's written instructions. Use manufacturer's recommended drills and equipment.
- D. Adhesive Anchors: Do not install when temperature of concrete is below 35 degrees F or above 110 degrees F.

#### 3.7 STAINLESS STEEL FASTENERS LUBRICANT (ANTISEIZING)

- A. Apply specified anti-seizing lubricant to threads prior to making up connections.

#### 3.8 ELECTROLYTIC PROTECTION

- A. Aluminum:
  1. Where in contact with dissimilar metals, or embedded in masonry or concrete, protect surfaces with a coat of Kopper's Bitumastic or equal.
  2. Allow paint to dry before installation of the material.
  3. Protect painted surfaces during installation.
  4. Should coating become marred, prepare and touch up per paint manufacturer's written instructions.

• END OF SECTION •

## DIVISION 7

# THERMAL AND MOISTURE PROTECTION

### DIVISION 7 – THERMAL AND MOISTURE PROTECTION

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07162

Concrete Waterproofing

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SECTION 07162  
CONCRETE WATERPROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Waterproofing of existing concrete by surface treatment with hydrophilic crystalline material – Furnish labor, materials, equipment and services as necessary for the supply and application of cementitious waterproofing system to concrete structures as indicated on Drawings and specified herein.
- B. Provide all written materials and site services necessary to complete the installation as specified herein.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete.

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 REFERENCES

- A. ASTM E 329 - Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction; 1998a.
- B. DIN 1048 Part-5: Testing of Hardened Concrete (Water Penetration).
- C. ASTM 1543-02: Standard Test Method for Determining the Penetration of Chloride Ion into Concrete by Ponding
- D. NSF 61 - Drinking Water System Components - Health Effects; 2000a.

1.5 SUBMITTALS

- A. Certificates of Conformance or Compliance: before delivery of the materials a copy of the manufacturer's certificates, attesting that materials meet the requirements specified, shall be submitted to and approved by the contracting officer.
- B. Product Literature: Manufacturer's descriptive product literature shall be submitted and shall consist of detailed specifications, available performance test data, surface preparation instructions and application instructions.
- C. Certified Laboratory Test Reports – Before delivery of materials, copies of the reports of all tests specified herein or in reference publications shall be submitted to and approved by the contracting officer.
- D. Test reports shall be accompanied by certificates from the manufacturer certifying that the previously tested material is of the same type, quality and make as that proposed for this project.

- E. References: Product must have a history of over 10 years of successful use and must be accompanied by a list of job sites of a similar nature.
- F. If curing compound is utilized on areas to receive concrete waterproofing, Contractor shall provide written documentation from Manufacturer that the curing compound will not negatively affect the waterproofing agent.

#### 1.6 QUALITY ASSURANCE

- A. Supply waterproofing and related materials manufactured by Kryton International Inc., 1645 East Kent Avenue, Vancouver BC, V5P 2S8. Tel: (604) 324-8280 or other licensed manufacturing facility.
- B. Installer/Applicator shall be an experienced installer approved by the manufacturer or by a non-approved installer under direct supervision of a manufacturer's representative or an independent materials engineering company.
- C. Prior to installation, hold a meeting of all relevant parties required for successful installation of waterproofing products to verify installation methods and warranty requirements. Relevant parties may include the waterproofing installer, installers of adjacent work or work penetrating waterproofing, manufacturer's representative and project engineer/architect.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged packages bearing the manufacturer's name, brand designation and batch number.
- B. Store materials in a dry storage area to avoid contact with moisture.

#### 1.8 PROJECT CONDITIONS

- A. Install waterproofing products under environmental conditions (temperature, humidity and ventilation) within limits recommended in manufacturer's literature. If project conditions are outside these limits, delay application or take measures to rectify conditions such as temperature controls and windbreaks as required.

#### 1.9 WARRANTY

- A. Provide manufacturer's standard warranty document authorized by manufacturer's representative for 10 year material warranty from date of substantial completion.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURER

- A. Obtain all crystalline waterproofing products from a single source.

#### 2.2 MATERIALS

- A. Concrete Waterproofing System:
  - 1. System Components - Crack repair and surface treatment: – The system shall consist of the cementitious waterproofing slurry KRYSTOL T1 and the cementitious waterproofing slurry KRYSTOL T2, as manufactured by Kryton

- International, Inc, or approved equivalent.
2. Slurry waterproofing materials shall consist of powder containing Portland cement, quartz silica and active ingredients that when mixed with water will promote by chemical process the growth and penetration of insoluble hydration crystals to a minimum depth of four inches from the treated surface.
  3. Grouting materials shall be non-shrink, non-toxic, fast setting and contain crystal promoting chemicals of the same type as the waterproofing slurries.
  4. The waterproofing materials shall not contain chlorides.
  5. The waterproofing materials shall not provide waterproofing by way of hydrophobic ingredients such as oils, stearates, silanes, silicate salts or other hydrophobic treatment. Manufacturer must certify in writing the absence of these materials.
- B. Waterproofing Treatment: Provide installed products that comply with the following, when tested using regular concrete samples made without admixtures, with two 0.05 inch (1 mm) thick coats of waterproofing:
1. Penetration: At least 100mm (4 inches) penetration of crystal material, evidenced by independent microscopic analysis.
  2. Integral Waterproofing – Continued waterproofing performance after removal of surface treatment – verified by independent testing.
  3. Permeability: Reference concrete becomes waterproof with crystalline surface treatment when tested using DIN 1048 Part-5 for direct water penetration at 51m (167 feet) of head pressure.
  4. Resistance to Chloride Ion Penetration – Chloride content at 15mm (2/3 inches) depth below threshold for corrosion in new construction according to guidelines from ACI Committee Report 222R-85 after ponding in a chloride solution for 90 days.
  5. Sulfate Resistance – Treated concrete shows increased resistance to sulfate attack compared to untreated concrete after repeated exposure to a 10% sodium sulfate solution.
  6. Self Sealing – Surface treatment penetrates and seals leaking cracks.
  7. Potable Water Contact Approval: NSF certification for use on structures holding potable water, based on testing in accordance with NSF 61.
- C. Waterproofing: Krystol T1/T2 - Crystalline Waterproofing System, or approved equivalent.

## PART 3 EXECUTION

### 3.1 General

- A. Safety precautions shall conform to the manufacturer's MSDS and all local, State and Federal regulations.
- B. Do not install waterproofing until satisfactory surface preparation has been achieved.
- C. Concrete surfaces must be clean and free of laitance, oil, dirt, paint or other foreign material.
- D. Structural defects such as cracks, faulty construction joints and honeycombing

should be routed out to sound concrete and repaired prior to application.

- E. Concrete surfaces must have an open pore structure for penetration of waterproofing material. Roughen surface by sandblasting or other mechanical method; acid etching not permitted.
  - F. Surface must be thoroughly soaked with clean water to a surface saturated dry condition (SSD). Do not leave standing water.
  - G. Strictly follow manufacturer's published procedures for mixing, application and curing of waterproofing products.
- 3.2 FIELD QUALITY CONTROL
- A. Manufacturer's Site Services: Provide manufacturer's site services consisting of product recommendations and site visits to verify surface preparation and installation procedures when required by manufacturer.
- 3.3 CLEANING AND PROTECTION
- A. Protect waterproofing treatment from damage during construction.
  - B. Do not backfill against waterproofed surfaces for a minimum of 24 hours after installation. Inspect waterproofing treatment for bond and cohesive strength prior to backfilling. When backfilling occurs less than 7 days after installation, use moist backfill material.
  - C. Concrete must be cured a minimum of 28 days before applying paint or other coatings. Surface preparation and application should follow guidelines supplied by the paint/coating's manufacturer.

• END OF SECTION •

# DIVISION 15

## MECHANICAL

### DIVISION 15 – MECHANICAL

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15100	Ductile Iron Pipe
15300	Sluice Gates
15850	Tuff Boom Log Protection

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SECTION 15100  
DUCTILE IRON PIPE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. All requirements relative to ductile iron pipe and fittings for use as internal drain outlet pipes.

1.2 RELATED SECTIONS

- A. Section 02202, Select Fill
- B. Section 02652, Polyvinyl Chloride Pipe
- C. Section 03300, Cast-in-Place Concrete

1.3 MEASUREMENT FOR PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 SHOP DRAWINGS AND DATA

- B. The Contractor shall submit to the Engineer for approval detailed shop drawings and data for all pipe, fittings, joints and specials which he proposes to use in the work. Shop drawings and data shall demonstrate compliance with the provisions of the Drawings and Specifications.

1.5 HANDLING

- A. All ductile iron pipe and fittings shall be handled with padded slings or other appropriate equipment. Cables or chains will not be permitted around the pipe for handling. All pipe shall be placed on suitable storage racks or padding and shall not be rolled on the ground.

PART 2 PRODUCTS

2.1 PIPE AND FITTING DESCRIPTION

- A. Ductile iron pipe and fittings shall be centrifugally cast in one piece in accordance with ANSI A21.51 (AWWA C151). Ductile iron pipe and fittings shall conform with the applicable sections of ANSI A21.50 (AWWA 150), A21.4 (AWWA C104) and ANSI/AWWA C110, except as herein amended or modified.
- B. Ductile iron pipe used for bypass piping is to be Pressure Class 250.

2.2 JOINTS

- A. Pipe joints shall be of the type shown on the conforming to the dimensions and weight of the applicable AWWA Standards. Push on joints shall be U.S. Pipe's "Tyton Joint", American Cast Iron Company's "Fastite Joint" or equal, unless otherwise shown on the Drawings.
- B. All mechanical joints shall be made up in accordance with ANSI A-21.11 (AWWA C 111). All bolts shall be tightened by means of torque wrenches in such a manner that the follower shall be brought up toward the pipe evenly. If effective sealing is not obtained by tightening the bolts

- to the specified torques, the joint shall be disassembled and reassembled after thorough cleaning.
- C. "Fastite" or "Tyton" joint pipe shall be contoured to receive a molded, circular rubber gasket, and plain ends shall have a slight taper to facilitate installation. The jointing shall be done by guiding the plain end into the bell until contact is made with the gasket and exerting sufficient compressive force to drive the joint home until the plain end makes full contact with the base of the bell. Lubricant for the joints shall be furnished by the pipe manufacturer.
  - D. Flanged pipe shall have flanges with long hubs, shop fitted on the threaded end of the pipe in accordance with ANSI A21.15 (AWWA C 115) except as herein amended or modified.
  - E. All flanges shall be faced and drilled to the 125 pound American Standard drilling, unless special drilling is shown, specified or required. Where required, flanges shall be tapped for stud bolts. Flanges shall be accurately faced at right angles to the pipe axis and shall be drilled smooth and true, and covered with coal tar epoxy or otherwise protected against corrosion of flange faces. Flange faces shall be cleaned with wire brushed before installation of the piping.
  - F. In general, flanged joints shall be made up with through bolts of the required size. Study or tap bolts shall be used only where shown or required. Steel bolts and nuts shall be cadmium plated with good and sound, well-fitted threads so that the nuts may be turned freely by hand. Cadmium plating shall be by an approved process with a plate thickness of 0.0003 to 0.0005 inch.
  - G. Gaskets for flanged joints shall be the ring type, of cloth inserted rubber, equal to those manufactured by the U.S. Rubber Company, or the Garlock Packing Company or equal. Gaskets shall be 1/8 inch thick.
  - H. Connecting flanges shall be in proper alignment and no external force shall be used to bring them together. Bolts and gaskets shall be furnished by the installer of piping for joints connecting piping with equipment, as well as for those between pipe and fittings, whether such equipment and piping are furnished by the installer or not.

### 2.3 WALL CASTINGS, SLEEVES AND SPECIAL FITTINGS

- A. Where shown on the Drawings, wall castings shall be provided for ductile iron pipes which pass through the walls of structures below grade. Wall castings shall be provided with integral waterstops. In all other cases, ductile iron pipes which pass through walls or floors of structures shall be installed in sleeves.
- B. Where sleeves are installed in exterior walls of structures or where water or gas tightness is required, the space between the pipe and the sleeve shall be sealed with a modular link type wall seal or caulked with packing and lead on both sides.
- C. Unless otherwise shown, sleeves may be either Class "B" cast iron solid sleeves or may be fabricated from Schedule 40 Wrought Steel Pipe. Sleeves shall have integrally cast or welded water stops on the outside.
- D. Steel wall sleeves installed in walls shall be flush with wall surfaces. Floor sleeves shall have floor and ceiling plates where finished appearance is required. Where no floor plates are required, sleeves shall extend 6 inches above the finished floor.
- E. Special fittings, where required, shall be of an approved design and shall have the same diameters and thickness as standard fittings.



## 2.4 ANCHORS AND TIE RODS

- A. Concrete backing and/or tie rods and concrete anchors for exterior pressure piping shall be provided at all tees, bends and in other locations where shown on the Drawings or directed by the Engineer. Tie rods shall be of mild steel, except where high tensile strength steel is called for on the Drawings.
- B. High tensile steel rods, where required, shall have the maximum yield strength of 70,000 psi. Nuts shall be of the same material as tie rods. All tie rods and nuts installed underground or in contact with water shall be coated with two coats of coal tar pitch preventative coating.

## 2.5 FLEXIBLE COUPLINGS

- A. Not Used.

## PART 3 EXECUTION

### 3.1 FIELD CUTS

- A. Whenever pipe requires cutting to fit into other lines, the work shall be done by means of an abrasive wheel or Wach's saw. Ends shall be cut smooth and at right angles to the axis of the pipe.

### 3.2 INSTALLATION

- A. Except as otherwise specified, all ductile iron pipe shall be installed in accordance with ANSI/AWWA C-600. Great care shall be taken during loading, transportation and unloading to prevent injury to the pipe or coating. Under no circumstances shall pipe be dropped. All pipe and fittings shall be carefully examined before laying and no piece shall be installed which is found to be defective. Any damage to the pipe shall be repaired as directed by the Engineer.
- B. If any defective pipe is discovered after it has been laid, it shall be removed and replaced with a sound pipe in a satisfactory manner by the Contractor, at his own expense.
- C. All pipe and fittings shall be thoroughly cleaned before laying and shall be kept clean until they are used in the completed work and when laid shall conform to the lines and grades shown.
- D. Pipes shall be installed with bell ends in the direction of laying. No pipe shall be laid upon a foundation in which frost exists.
- E. Blocking of pipelines laid in the ground will not be permitted unless pipe is to be laid with concrete cradle or encasement. Open ends of pipes shall be kept plugged with a bulkhead during construction. Sufficient backfill shall be placed or other precautions shall be taken to prevent flotation or movement.

### 3.3 COATING, PAINTING AND LINING

- A. Coating, painting and lining shall be as follows:

Interior Lining: Cement mortar in accordance with AWWA C104.

Exterior Coating: Asphaltic coating approximately one mil in thickness in accordance with AWWA C110, 115, 151, and 153.

SECTION 15100  
16C17043

• END OF SECTION •

DUCTILE IRON PIPE  
15100-4

SECTION 15300

SLUICE GATES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. All requirements relative to furnishing and installing vertically-mounted Sluice Gates designed for un-seating head, and crank operated floor stand operator, in ordinary water supply service.

1.2 RELATED SECTIONS

- A. Section 01300, Submittals
- B. Section 03300, Cast-In-Place Concrete
- C. Section 05500, Metal Fabrication
- D. Section 15100, Ductile Iron Pipe

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 SUBMITTALS

- A. Drawings and Parts Schedule: Submit for approval by the Engineer, Drawings showing the principal dimensions and general construction of, and materials used in all parts of the Sluice Gate and lift mechanism. The Sluice Gate shall be manufactured and furnished in accordance with these Drawings after having been approved by the Engineer. The manufacturer shall also furnish illustrated catalog data and parts schedule in sufficient detail to serve as a guide in assembly and disassembly of the gate and in ordering repair parts.
- B. Affidavit of Compliance: The manufacturer shall provide an affidavit of compliance with all applicable provisions of these Specifications.

1.5 SHIPMENT

- A. The Sluice Gate shall be complete when shipped and the manufacturer shall use all due and customary care in preparing them for shipment to avoid damage in handling or in transit. Particular care shall be taken to see that the parts are completely closed and locked in position before shipment. Parts that are to be embedded in concrete may be shipped separately if requested by the Contractor. Sluice Gates of 24 inches and larger shall be securely bolted or otherwise fastened to skids in such a manner that they may be safely handled.

PART 2 PRODUCTS

2.1 GENERAL

- A. Gates shall be as specified herein and have the characteristics and dimensions shown on the Contract Drawings.

- B. Leakage shall not exceed 0.05 gpm/ft of wetted seal perimeter in seating head and unseating head conditions.
- C. The gate shall utilize self-adjusting seals. Due to the difficulty of accessing gates when they are in service, gates that utilize adjustable wedges, wedging devices or pressure pads are not acceptable.
- D. All structural components of the frame and slide shall be fabricated of stainless steel having a minimum thickness of 1/4-inch and shall have adequate strength to prevent distortion during normal handling, during installation and while in service.
- E. Slide gate frames shall be shipped fully assembled with the invert member welded to the side frames and the slide installed in the frame unless the overall width of the slide gate exceeds 96 inches or the overall height of the slide gate exceed 25 feet.
- F. All welds shall be performed by welders with AWS D1.6 certification.
- G. Finish: Mill finish on stainless steel. Welds shall be sandblasted to remove weld burn and scale. All iron and steel components shall be properly prepared and shop coated with a primer.
- H. Materials:
  - a) Frame Assembly and Retainers – Stainless Steel, Type 304L or 316L, ASTM A240
  - b) Slide and Stiffeners – Stainless Steel, Type 304L or 316L, ASTM A240.
  - c) Stem – Stainless Steel, Type 304 or 316, ASTM A276.
  - d) Anchor Studs – Stainless Steel, Type 316, ASTM A276.
  - e) Fasteners and Nuts – Stainless Steel, Type 316, ASTM F593/F594.
  - f) Invert Seal (Upward Opening Gates Only) – Neoprene or EPDM ASTM D-2000.
  - g) Seat/Seals and Facing – Ultra-High Molecular Weight Polyethylene ASTM D4020.
  - h) Lift Nuts – Bronze ASTM B584.
  - i) Pedestals and Wall Brackets - Stainless Steel, Type 304L or 316L, ASTM A240.
  - j) Operator Housing – Cast aluminum or ductile iron.

## 2.2 FRAME

- A. The frame assembly, including the guide members, invert member and yoke members, shall be constructed of formed stainless steel plate with a minimum thickness of 1/4-inch.
  - 1. Frame design shall allow for embedded mounting, mounting directly to a wall with stainless steel anchor bolts and grout or mounting to a wall thimble with stainless steel mounting studs and a mastic gasket material. Mounting style shall be as shown on the Contract Drawings.
  - 2. All wall mounted or wall thimble mounted gates shall have a flange frame. Flat frame gates are not acceptable.
  - 3. The structural portion of the frame that incorporates the seat/seals shall be formed into a one-piece shape for rigidity. Guide members that consist of two or more bolted structural members are not acceptable. Guide member designs where water loads are transferred through the assembly bolts are specifically not acceptable.
  - 4. Gussets shall be provided as necessary to support the guide members in an unseating head condition. The gussets shall extend to support the outer portion of the guide assembly and shall be positioned to ensure that the load is transferred to the anchor bolts or the wall thimble studs.
  - 5. The frame shall extend to accommodate the entire height of the slide when the slide is in the fully opened position on upward opening gates or downward opening weir gates.
  - 6. On self-contained gates, a yoke shall be provided across the top of the frame. The yoke shall be formed by two structural members affixed to the top of the side frame members to provide a one-piece rigid assembly. The yoke shall be designed to allow removal of the slide. The Yoke shall be sized to withstand normal operating loads as well as the maximum hoist output. The Yoke deflection shall not exceed 1/360 of the gate width or a maximum of 1/4" whichever is less at maximum operating load.
  - 7. A rigid stainless steel invert member shall be provided across the bottom of the opening. The invert member shall be of the flushbottom type on upward opening gates.

8. A rigid stainless steel top seal member shall be provided across the top of the opening on gates designed to cover submerged openings.
9. A rigid stainless steel member shall be provided across the invert of the opening on downward opening weir gates.

### 2.3 SLIDE

- A. The slide and reinforcing stiffeners shall be constructed of stainless steel plate. All structural components shall have a minimum thickness of 1/4-inch.
  1. The slide shall not deflect more than 1/720 of the span or 1/16 inch, whichever is smaller, under the maximum design head.
  2. When the width of the gate opening in feet multiplied by the maximum design head in feet is greater than 80 square feet the portion of the slide member that engages the guide shall be 1/2" thick. When the width of the gate opening in feet multiplied by the maximum design head in feet is greater than 120 square feet, the portion of the slide that engages the guide members shall be of a "thick edge" design. The thick edge portion of the slide shall have a minimum thickness of 2.5 inches.
  3. Reinforcing stiffeners shall be welded to the slide and mounted horizontally. Vertical stiffeners shall be welded on the outside of the horizontal stiffeners for additional reinforcement. When required to maintain proper plate stress and deflection intermediate vertical gussets shall be provided. Appropriate safety factors shall be applied to the ultimate tensile and yield strength of the material.
  4. The stem connector shall be constructed of two angles or plates. The stem connector shall be welded to the slide. A minimum of two bolts shall connect the stem to the stem connector.

### 2.4 SEALS

- A. All gates shall be provided with a self-adjusting seal system to restrict leakage in accordance with the requirements listed in this specification.
  1. All gates shall be equipped with UHMW polyethylene seat/seals to restrict leakage and to prevent metal to metal contact between the frame and slide. Seat contact pressure shall not exceed 600 psi at the design head.
  2. The seat/seals shall extend to accommodate the 1-1/2 x the height of the slide when the slide is in the fully closed or fully opened position.
  3. All upward opening gates shall be provided with a resilient seal to seal the bottom portion of the gate. The seal shall be attached to the invert member or the bottom of the slide and it shall be held in place with stainless steel attachment hardware.
  4. All downward opening weir gates shall be provided with UHMW polyethylene seat/seals across the invert member.
  5. The seal system shall be durable and shall be designed to accommodate high velocities and frequent cycling without loosening or suffering damage.
  6. All seals must be bolted or otherwise mechanically fastened to the frame or slide. Arrangement with seals that are force fit or held in place with adhesives are unacceptable.
  7. The seals shall be mounted so as not to obstruct the water way opening.
  8. Gates that utilize rubber "J" seals or "P" seals are not acceptable.
  9. The seal system shall have been factory tested to confirm negligible wear (less than 0.01") and proper sealing. The factory testing shall consist of an accelerated wear test comprised of a minimum of 25,000 open-close cycles using a well-agitated sand/water mixture to simulate fluidized grit.

### 2.5 STEM

- A. A threaded operating stem shall be utilized to connect the operating mechanism to the slide. On rising stem gates, the threaded portion shall engage the operating nut in the manual

operator or motor actuator. On non-rising stem gates, the threaded portion shall engage the nut on the slide.

1. The threaded portion of the stem shall have a minimum outside diameter of 1-1/2 inches. Stem extension pipes are not acceptable.
2. The stem shall be constructed of solid stainless steel bar for the entire length, the metal having a tensile strength of not less than 75,000 psi.
3. The stem shall be threaded to allow full travel of the slide unless the travel distance is otherwise shown on the Contract Drawings.
4. Maximum L/R ratio for the unsupported part of the stem shall not exceed 200.
5. The operating stem shall be designed to transmit in compression at least 2 times the rated hoist output with an effort of 40 lb on the crank or handwheel. The Euler column formula shall be utilized. Where a hydraulic or electric actuator is used, the stem design load shall not be less than 1.25 times the output thrust of the hydraulic cylinder with a pressure equal to the maximum working pressure of the fluid supply or 1.25 times the output thrust of the electric actuator at the stalled condition..
6. The stem shall be designed to withstand the tension load caused by the application of a 40 lb effort on the crank or handwheel without exceeding 1/5 of the ultimate tensile strength of the stem material.
7. The threaded portion of the stem shall have machine rolled threads of the full Acme type with a 16 microinch finish or better. Stub threads are not acceptable.
8. Stems of more than one section shall be joined by stainless steel or bronze couplings. The coupling shall be bolted to the stems.
9. Stems, on manually operated gates, shall be provided with adjustable stop collars to prevent over closing of the slide.

## 2.6 STEM GUIDES

- A. Stem guide shall be provided when necessary to ensure that the maximum L/R ratio for the unsupported part of the stem is 200 or less.
  1. Stem guide brackets shall be fabricated of stainless steel and shall be outfitted with UHMW or bronze bushings.
  2. Adjustable in two directions.

## WALL THIMBLES

- A. Wall thimbles shall be provided when shown on the Contract Drawings.
  1. The wall thimble depth shall be equal to the thickness of the concrete wall in which the thimble is to be mounted.
  2. Wall thimbles shall be fabricated stainless steel construction of adequate section to withstand all operational and reasonable installation stresses.
  3. Wall thimbles shall be constructed of 1/4-inch minimum thickness stainless steel and the front face shall have a minimum thickness of 1/4-inch.
  4. The fabrication process shall ensure that the wall thimble is square and plumb and the front face is sufficiently flat to provide a proper mounting surface for the gate frame.
  5. The face of the wall thimble shall only be machined if recommended by the gate manufacturer. If the wall thimble is to be machined, the front face shall have a minimum thickness of 1/4-inch after machining.
  6. A water stop shall be welded around the periphery of the thimble. Wall thimbles shall be designed to allow thorough and uniform concrete placement during installation.
  7. Studs and nuts shall be stainless steel. Water stop may be stitch welded.
  8. A suitable gasket or mastic shall be provided to seal between the gate frame and the wall thimble.

## 2.8 MANUAL OPERATORS

- A. Unless otherwise shown on the Drawings, gates shall be operated by a manual handwheel or a manual crank-operated gearbox. The operator shall be mounted on the yoke of self contained gates or on the pedestal of non-self contained gates.
1. The gate manufacturer shall select the proper gear ratio to ensure that the gate can be operated with no more than a 40 lb effort when the gate is in the closed position and experiencing the maximum operating head.
  2. An arrow with the word "OPEN" shall be permanently attached or cast onto the operator to indicate the direction or rotation to open the gate.
  3. Handwheel operators shall be fully enclosed and shall have a cast aluminum housing.
    - a. Handwheel operators shall be provided with a threaded cast bronze lift nut to engage the operating stem.
    - b. Handwheel operators shall be equipped with roller bearings above and below the operating nut.
    - c. Positive mechanical seals shall be provided above and below the operating nut to exclude moisture and dirt and prevent leakage of lubricant out of the hoist.
    - d. The handwheel shall be removable and shall have a minimum diameter of 15 inches.
  4. Crank-operated gearboxes shall be fully enclosed and shall have a cast aluminum or ductile iron housing.
    - a. Gearboxes shall have either single or double gear reduction depending upon the lifting capacity required.
    - b. Gearboxes shall be provided with a threaded cast bronze lift nut to engage the operating stem.
    - c. Bearings shall be provided above and below the flange on the operating nut to support both opening and closing thrusts.
    - d. Gears shall be steel with machined cut teeth designed for smooth operation.
    - e. The pinion shaft shall be stainless steel and shall be supported on ball or tapered roller bearings.
    - f. Positive mechanical seals shall be provided on the operating nut and the pinion shafts to exclude moisture and dirt and prevent leakage of lubricant out of the hoist.
    - g. The crank shall be cast aluminum or cast iron with a revolving nylon grip.
    - h. The crank shall be removable.
  5. All gates having widths in excess of 72 inches and widths greater than twice their height shall be provided with two gearboxes connected by an interconnecting shaft for simultaneous operation.
    - a. Interconnecting shafting shall be constructed of aluminum or stainless steel.
    - b. Flexible couplings shall be provided at each end of the interconnecting shaft. Couplings shall be stainless steel or non-metallic.
    - c. One crank shall be provided to mount on the pinion shaft of one of the gearboxes.
    - d. If the operating assembly is motorized, a stainless steel enclosure shall be provided over the interconnecting shaft to comply with OSHA regulations.
  6. An extended operator system utilizing chain and sprockets shall be furnished by the manufacturer when the centerline of the crank or handwheel, on a non-gearred operator, is located over 48-in above the operating floor. Chain wheels are not acceptable.
    - a. A removable stainless steel or aluminum cover shall be provided to enclose chain and sprockets.
    - b. The extended operator system shall lower the centerline of the pinion shaft to 36-in above the operating floor.
    - c. A handwheel may be utilized in conjunction with a gearbox in lieu of the extended operator system if the centerline of the pinion shaft is 60-in or less above the operating floor.
  7. Pedestals shall be constructed of stainless steel. Aluminum pedestals are not acceptable.
    - a. The pedestal height shall be such that the handwheel or pinion shaft on the crank-operated gearbox is located approximately 36-in above the operating floor.
    - b. Wall brackets shall be used to support floor stands where shown on the Drawings and shall be constructed of stainless steel.
    - c. Wall brackets shall be reinforced to withstand in compression at least two times the rated output of the operator with a 40 lb effort on the crank or handwheel.

- d. The design and detail of the brackets and anchor bolts shall be provided by the gate manufacturer and shall be approved by the ENGINEER. The gate manufacturer shall supply the bracket, anchor bolts and accessories as part of the gate assembly.
- 8. Operators shall be equipped with fracture-resistant clear butyrate or lexan plastic stem covers.
  - a. The top of the stem cover shall be closed.
  - b. The bottom end of the stem cover shall be mounted in a housing or adapter for easy field mounting.
  - c. Stem covers shall be complete with indicator markings to indicate gate position.
- 9. When shown on the Contract Drawings, provide 2 inch square nut, mounted in a floor box, with a non-rising stem.
  - a. The square nut shall be constructed of bronze.
  - b. The floor box shall be constructed of stainless steel or cast iron and shall be set in the concrete floor above the gate as shown.
  - c. Provide one aluminum or stainless steel T-handle wrench for operation.

## 2.9 ANCHOR BOLTS

- A. Anchor bolts shall be provided by the gate manufacturer for mounting the gates and appurtenances.
  - 1. Quantity and location shall be determined by the gate manufacturer.
  - 2. If epoxy type anchor bolts are provided, the gate manufacturer shall provide the studs and nuts.
  - 3. Anchor bolts shall have a minimum diameter of 1/2-inch.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. All work done under this standard shall be subject to inspection and approval by the Engineer. The Engineer shall have access to all places of manufacture where materials are being produced or fabricated, or where tests are being conducted and shall be accorded full facilities for inspection and observation. Any Sluice Gate or part which does not conform to the requirements of this standard shall be made satisfactory or shall be rejected and replaced.

### 3.2 SHOP TESTING

- A. Before final assembly, all seating and wedging surfaces shall be thoroughly cleaned of all foreign materials and final adjustments made. With the gate fully closed, the clearance between seating faces shall be checked with a 0.004 inch thickness gage. If this thickness gage can be inserted between seating faces, wedging devices must be readjusted or the gate slide or gate frame or both remachined, until insertion is no longer possible. In the event of remachining, clearances will again be checked as stated above.
- B. After completion, all seating and wedging surfaces shall be thoroughly cleaned of all foreign materials and final adjustments made. The Sluice Gate shall then be shop operated from the fully closed to the fully open position to verify that the assembly is workable. A shop leakage test meeting the requirements of Subsection 3.4 shall be made when called for by the Engineer's supplemental specifications.

### 3.3 INSTALLATION

- A. It shall be the Contractor's responsibility to handle, store, and install the gate, operating mechanism, stem, stem guides, and accessories in accordance with the manufacturer's Drawings and recommendations. Care shall be taken to avoid warping the gate frame and to



- maintain tolerances between seating faces. All gates, stems, and operators shall be plumbed, shimmed and accurately aligned.
- B. During construction, the surfaces of the gate shall be covered or otherwise protected from concrete spillage, paint, oil and debris. Any damage that occurs to the gate in storage or handling shall be corrected prior to installation of the gate or operation and testing of the gate.
  - C. A mastic or resilient gasket shall be applied between the gate frame and the thimble, in accordance with the recommendation of the gate manufacturer.
  - D. After the entire assembly of manually operated gates has been installed, adjusted and properly lubricated, each slide shall be operated for one complete cycle, open-close-open or close-open-close.
  - E. Prior to final acceptance of the project, Contractor shall verify that the area within a 20' horizontal radius (from the center of the gate) is clear of debris, logs, sticks, stones, or other material which may prevent proper operation of the gate, should it be pulled into the gate opening. Verification shall include dewatering and temporary cessation of stream flow, as determined by the Engineer, as necessary.

#### 3.4 FIELD LEAKAGE TEST

- A. A field leakage test shall be performed by the Contractor after installation of the Sluice Gate. The manufacturer shall be notified of the test in sufficient time to enable him to have a representative present at the test. After all adjustments have been made and the mechanisms properly lubricated, each gate slide shall be run through one complete cycle as a final check on proper operation before starting the leakage test. Seating and unseating head shall be measured from the top surface of the water to the center of the gate.
- B. Under the design un-seating head, the leakage shall not exceed 0.1 gpm per foot of un-seating perimeter.

#### 3.5 INSTALLATION INSTRUCTIONS

- A. The Contractor shall supply the manufacturer's complete installation data, instructions for adjustments and drawings or templates showing the location of anchor bolts.

• END OF SECTION •

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SECTION 15850

TUFF BOOM LOG PROTECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The Work shall consist of providing and installing a floating log and debris barrier, it shall be the TUFFBOOM system as manufactured by Worthington Products Inc. (1-800-899-2977) of Canton, Ohio or an approved equal. This general layout of the work is shown on the Drawings. The logs shall be lettered with "RESTRICTED AREA – KEEP OUT".

1.2 RELATED SECTIONS

- A. Not Used

1.3 MEASUREMENT AND PAYMENT

- A. Measurement and Payment shall be as defined in Section 01025 – Measurement and Payment.

1.4 SUBMITTALS

- A. Drawings and Parts Schedule: Submit for approval by the Engineer, Drawings showing the principal dimensions, general construction, manner of installation, and materials used for the Tuff Boom Log Protection System. Tuff Boom Log Protection shall be manufactured and furnished in accordance with these Drawings after they have been approved by the Engineer.
- B. Affidavit of Compliance: The manufacturer shall provide an affidavit of compliance with all applicable provisions of these Specifications.
- C. Anchorage Design: The manufacture shall provide the layout and design of the anchoring system that allows a reservoir increase of a minimum of eight feet above normal pool and five feet below normal pool.

PART 2 PRODUCTS

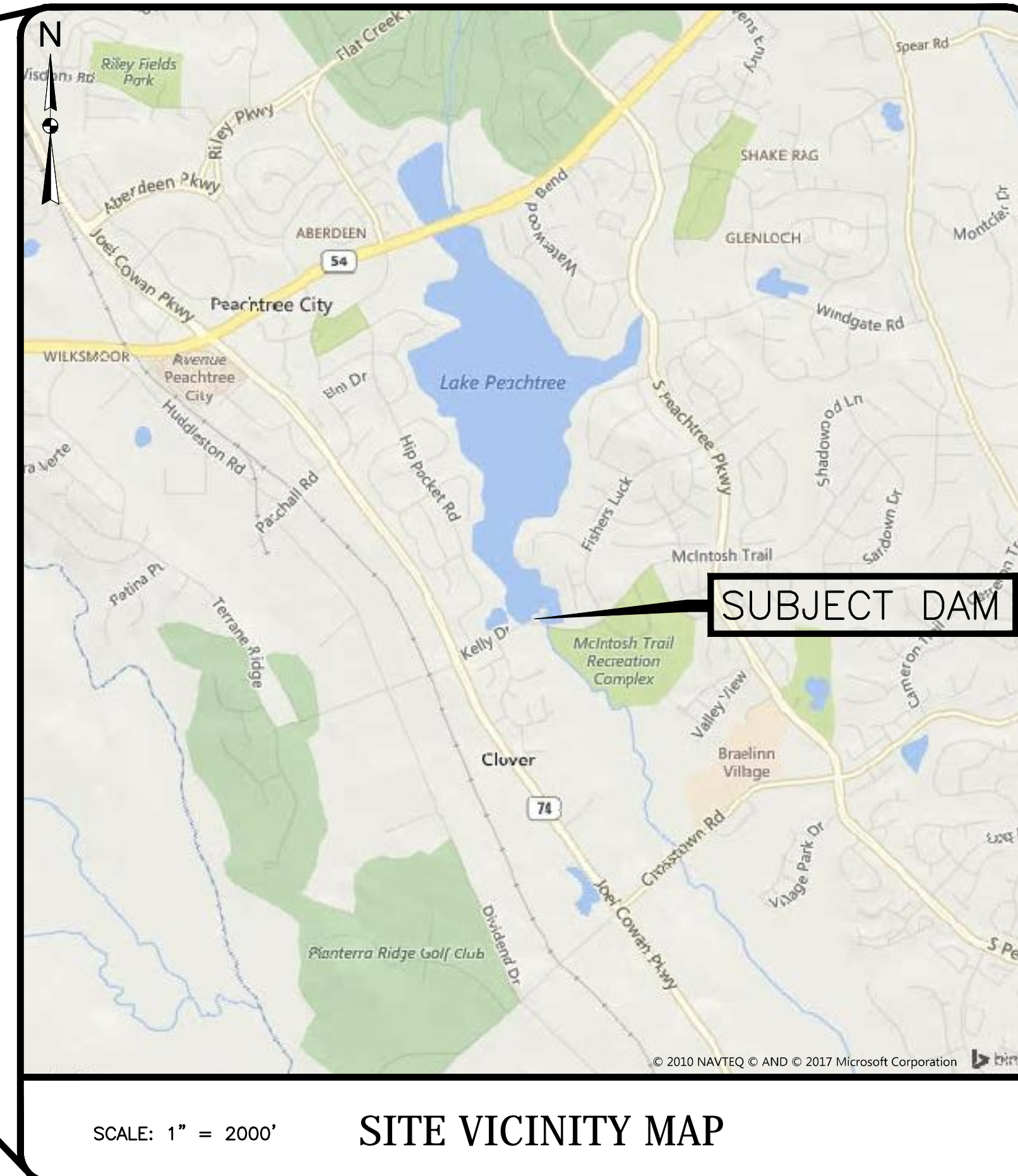
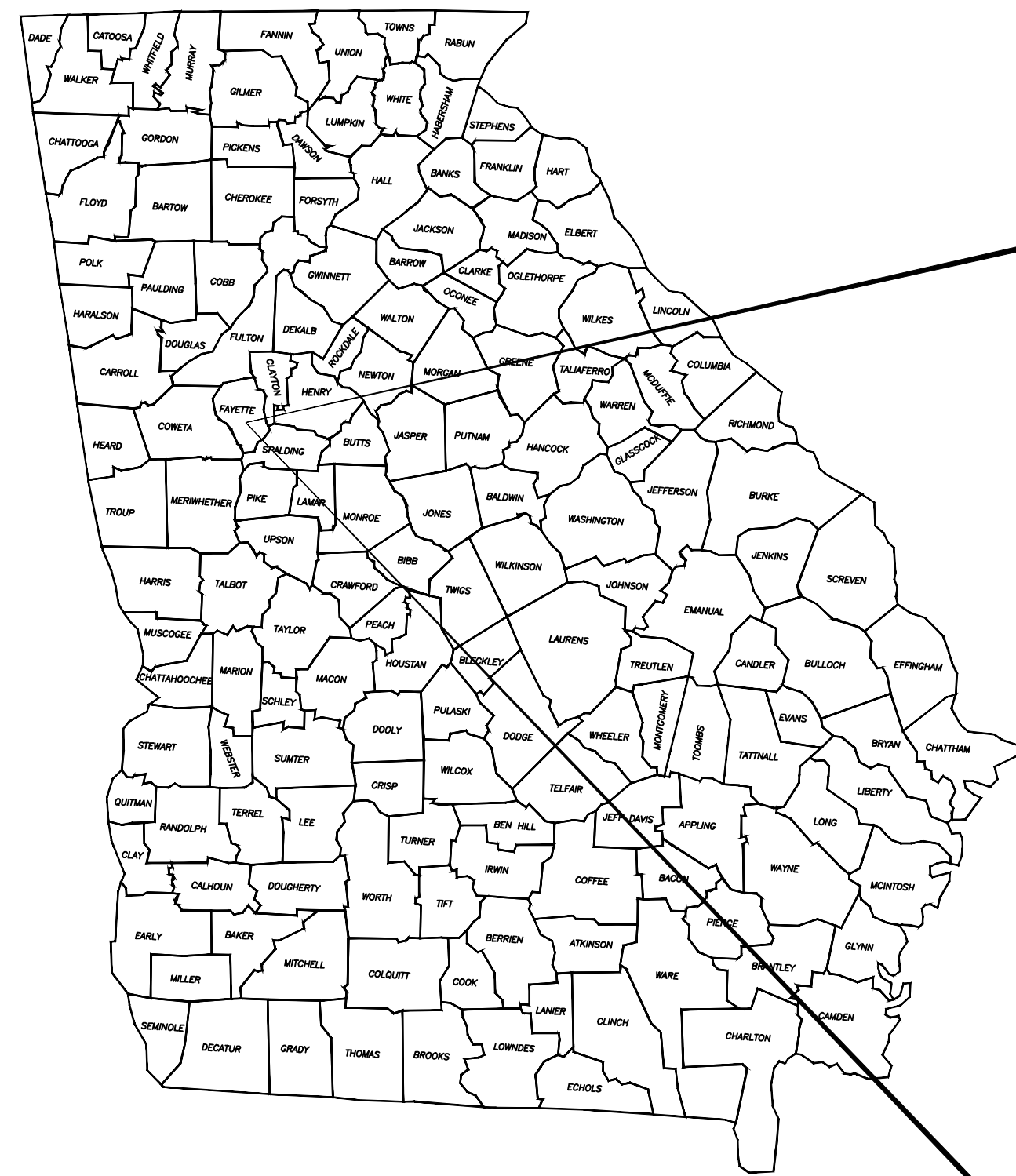
- B. The log and debris barrier shall be the TUFFBOOM system as manufactured by Worthington Products Inc. (1-800-899-2977) of Canton, Ohio or an approved equal. Floatation logs shall be new boom logs not previously used for any other purpose. Floatation logs shall consist of an external encasement, internal foam fill and internal structural steel channel through which all interboom connections are attached. Each floatation log shall be cylindrical in shape and shall include longitudinal ribbing to provide impact strength and load resistance. The nominal diameter shall be 16-inches.
- B. All connection hardware between floatation units shall consist of bottom steel connector plates, load-rated stainless safety shackles and load-rated stainless weldless links. All connection hardware must be of stainless steel construction. The use of non-metallic materials, such as PVC belting, or other materials that can be cut, ripped, torn or are subject to environmental degradation shall not be acceptable.

• END OF SECTION •

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# CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT

FAYETTE COUNTY, GEORGIA  
JULY 10TH, 2017



THE CONTRACTOR SHALL CONDUCT ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL LOCAL, STATE AND FEDERAL RULES AND REGULATIONS.

PLANS PREPARED FOR:  
DAVE BORKOWSKI; CITY ENGINEER

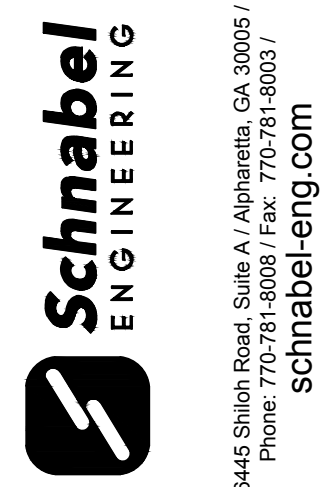
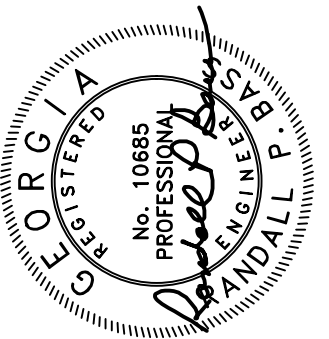
CITY COUNCIL MEMBERS:  
VANESSA FLEISCH  
PHIL PREBOR  
MIKE KING  
KIM LEARNARD  
TERRY ERNST

CITY OF PEACHTREE CITY  
153 WILLOWBEND ROAD  
PEACHTREE CITY, GEORGIA 300269

PEACHTREE CITY CONTRACT NUMBER:  
17-123BPW

PLANS PREPARED BY:  
SCHNABEL ENGINEERING, LLC  
6445 SHILOH ROAD, SUITE A  
ALPHARETTA, GEORGIA 30115

ENGINEER CONTACT:  
RANDALL P. BASS, P.E.  
PHONE: (770) 781-8008  
FAX: (770) 781-8003  
EMAIL: RBASS@schnabel-eng.com



CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

COVER SHEET

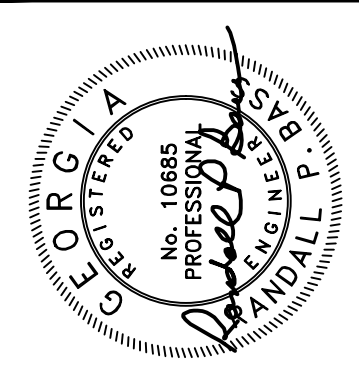

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
1 OF 66

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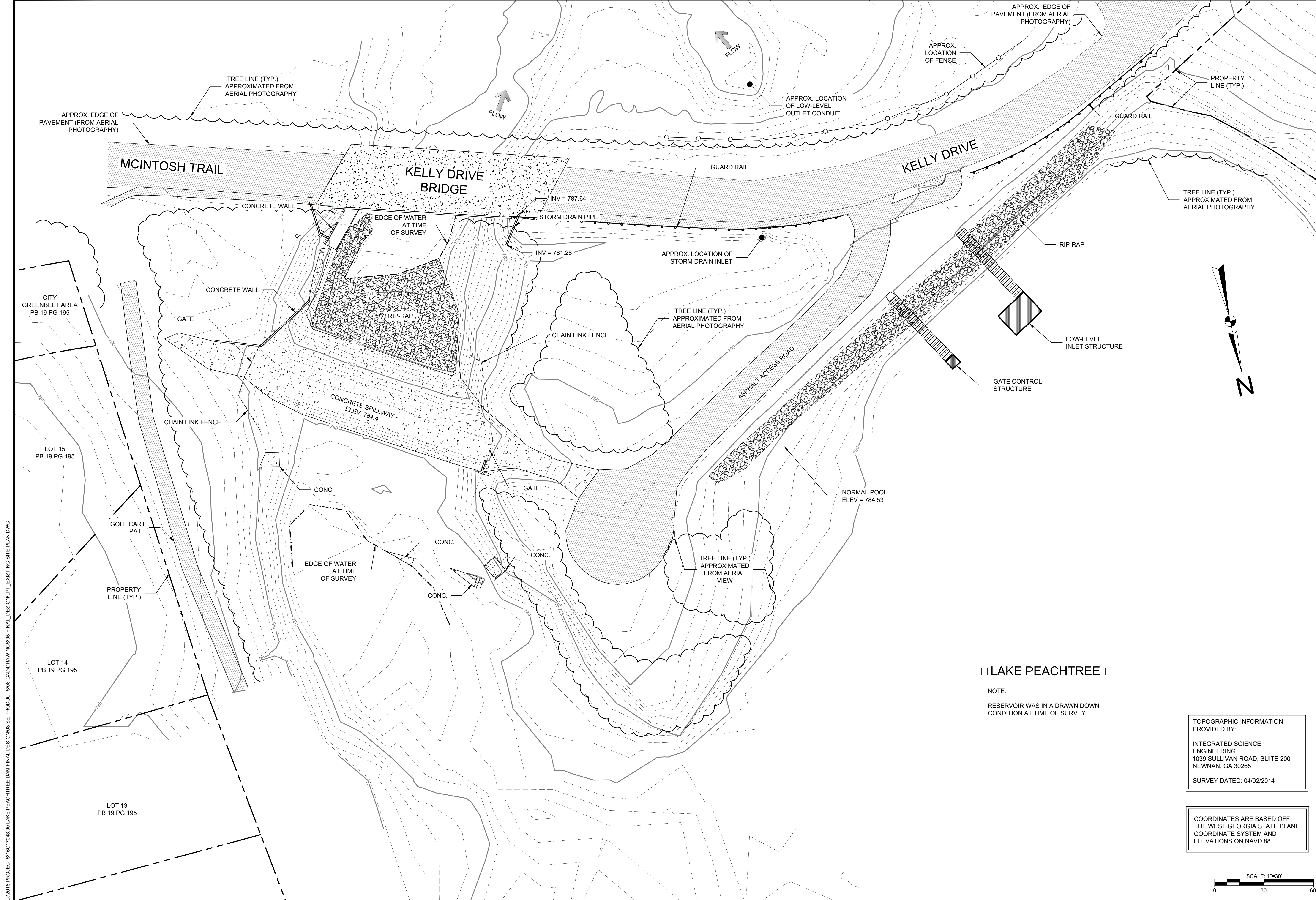
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DRAWN BY: GHB, JSR  
CHECKED BY: RPB, JRC  
RANDALL P. BASS, P.E.  
No. 10885  
PROFESSIONAL ENGINEER  
STATE OF GEORGIA  
DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 10885

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 <p style="font-size: small; margin: 0;">6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com</p>																																													
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA																																													
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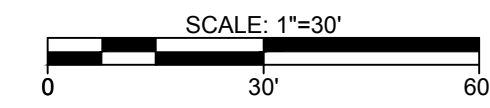
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**LAKE PEACHTREE**

NOTE:  
RESERVOIR WAS IN A DRAWN DOWN CONDITION AT TIME OF SURVEY

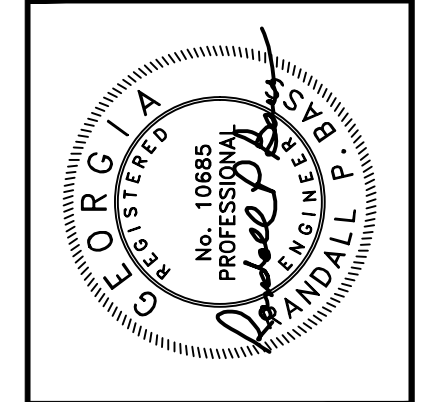
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INTEGRATED SCIENCE ENGINEERING  
1039 SULLIVAN ROAD, SUITE 200  
NEWNAN, GA 30265  
SURVEY DATED: 04/02/2014

COORDINATES ARE BASED OFF THE WEST GEORGIA STATE PLANE COORDINATE SYSTEM AND ELEVATIONS ON NAVD 88.



REV	DESCRIPTION	DATE

CHECKED BY: RPL, JRC  
DRAWN BY: GHB, JSR  
DESIGNED BY: JTD, JC  
**RANDALL P. BASS, P.E.**  
DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 00695



**Schnabel ENGINEERING**  
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
schnabel-eng.com

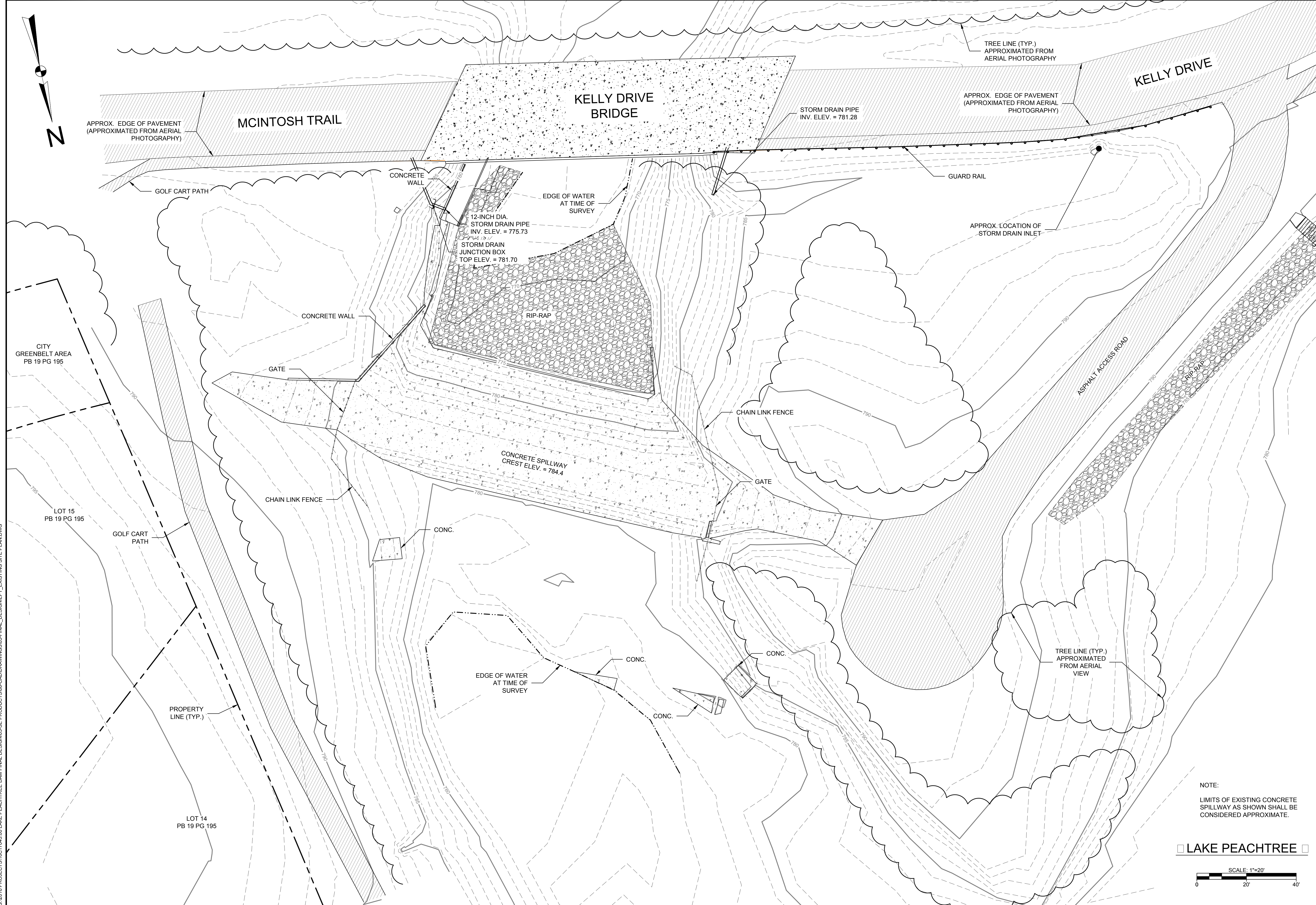
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

**EXISTING CONDITIONS  
OVERALL**

PROJECT: 16C17043.00  
DATE: 07/10/2017  
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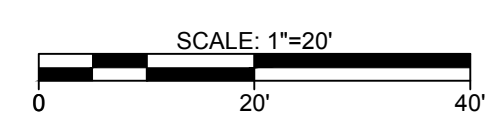
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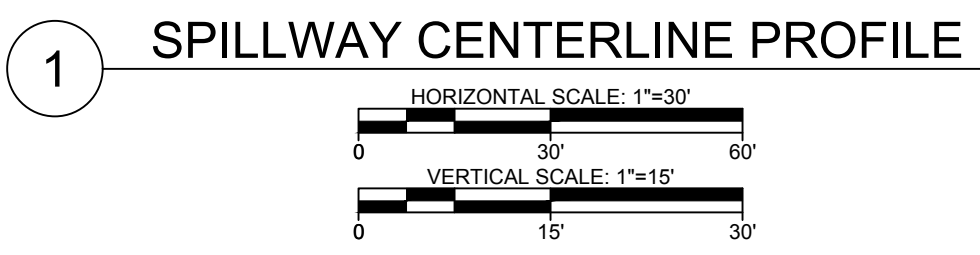
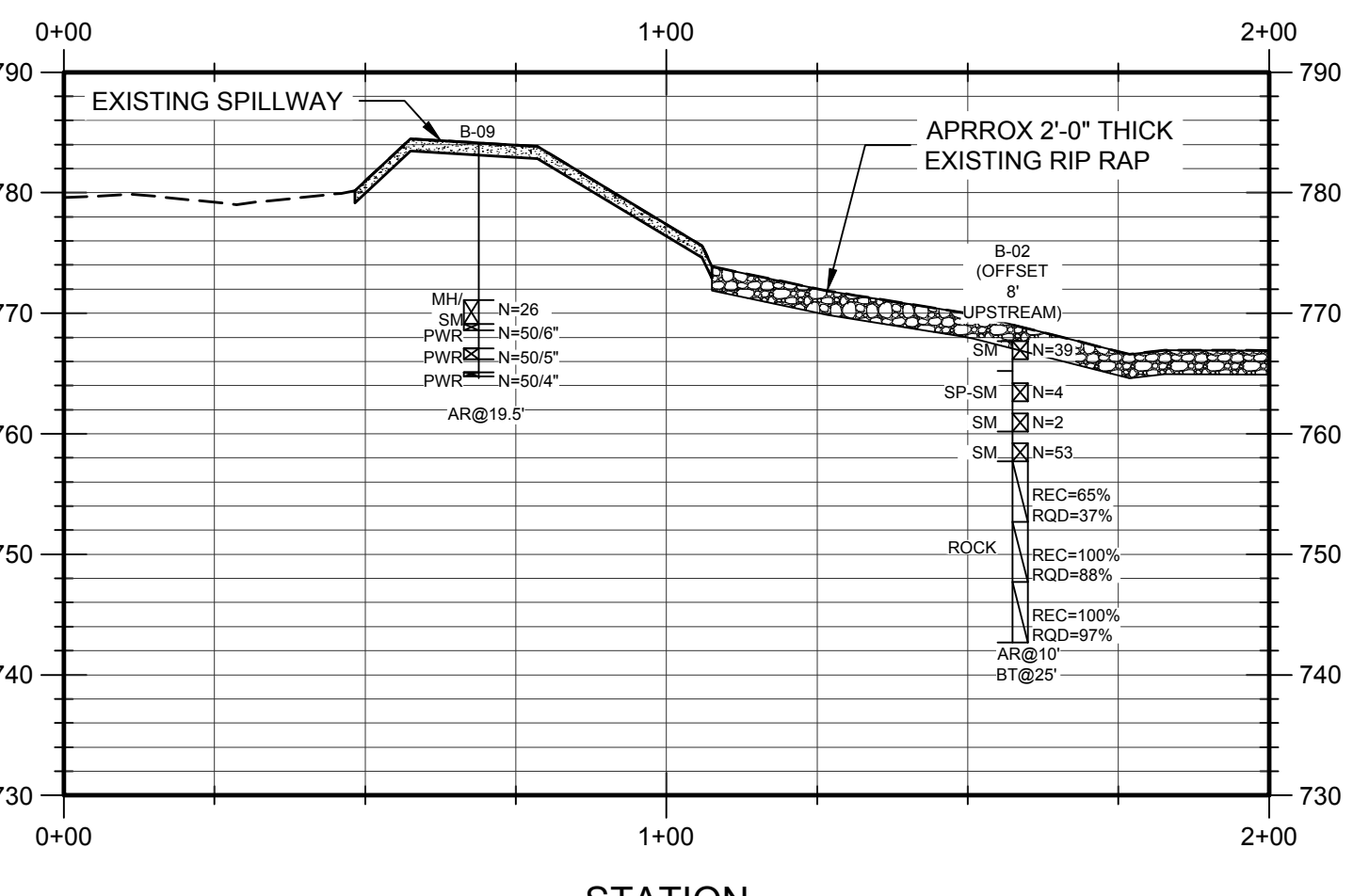
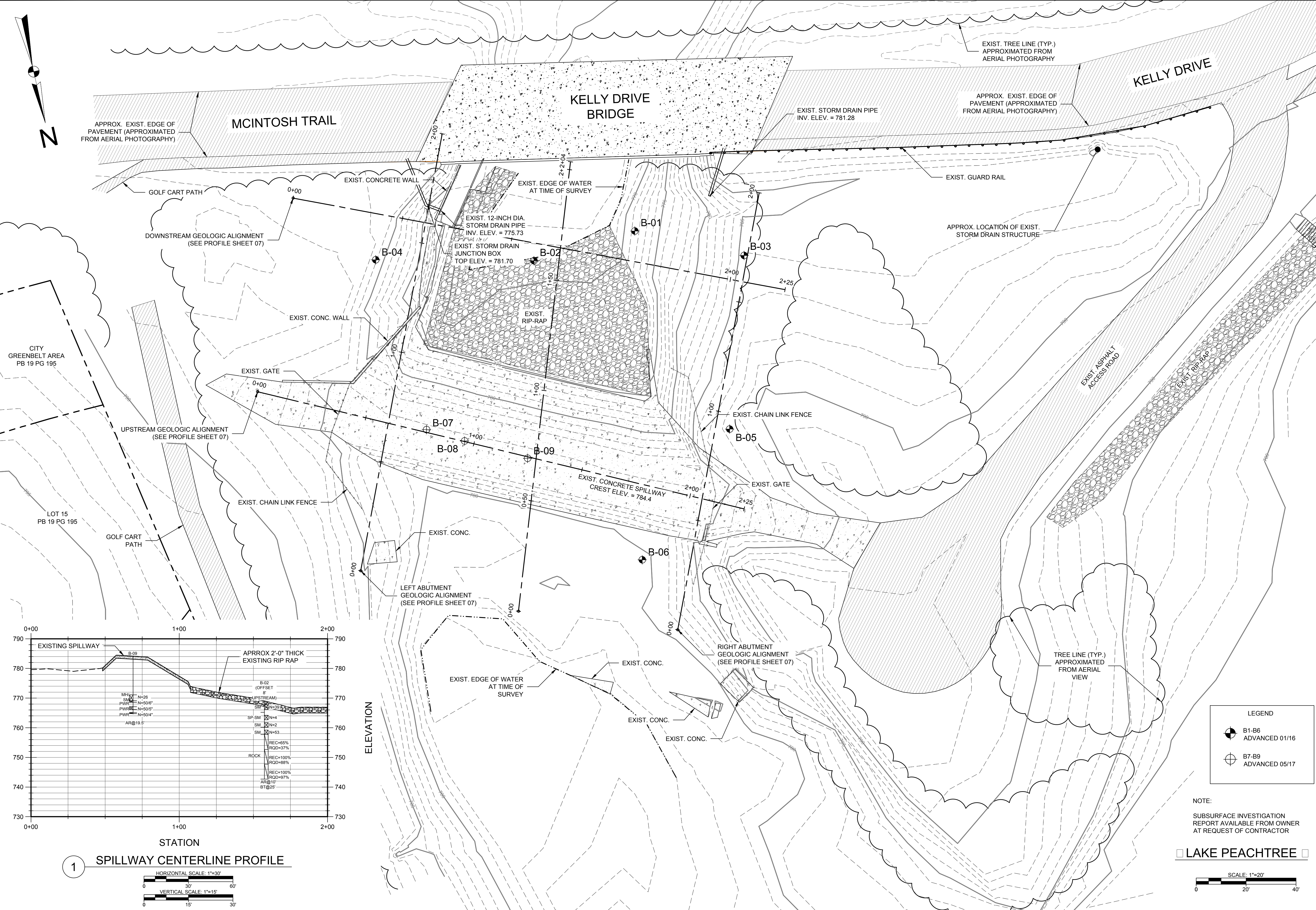
NOTE:  
LIMITS OF EXISTING CONCRETE SPILLWAY AS SHOWN SHALL BE CONSIDERED APPROXIMATE.

LAKE PEACHTREE



CHECKED BY: RPL, JRC DRAWN BY: GHB, JSR DESIGNED BY: JTD, JC		RANDALL P. BASS, P.E.  RANDALL P. BASS GEORGIA PROFESSIONAL ENGINEER NO. 10885	DATE: 07/10/17
			DESCRIPTION:
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET 05 OF 66	
 <b>Schnabel</b> ENGINEERING 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		© Schnabel Engineering 2017 All Rights Reserved	

G:\2016 PROJECTS\16CT1043.00 LAKE PEACHTREE DAM FINAL DESIGN\03.FINAL\CADDRAWINGS\05.FINAL\_DESIGN\1PT\_GEO TECHNICAL EXPLORATION PLAN.DWG

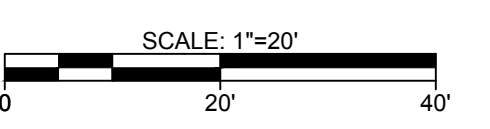


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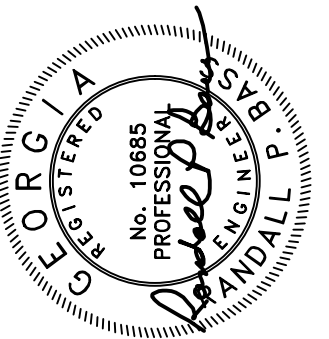
- B1-B6 ADVANCED 01/16
- ⊕ B7-B9 ADVANCED 05/17

NOTE:  
 SUBSURFACE INVESTIGATION REPORT AVAILABLE FROM OWNER AT REQUEST OF CONTRACTOR

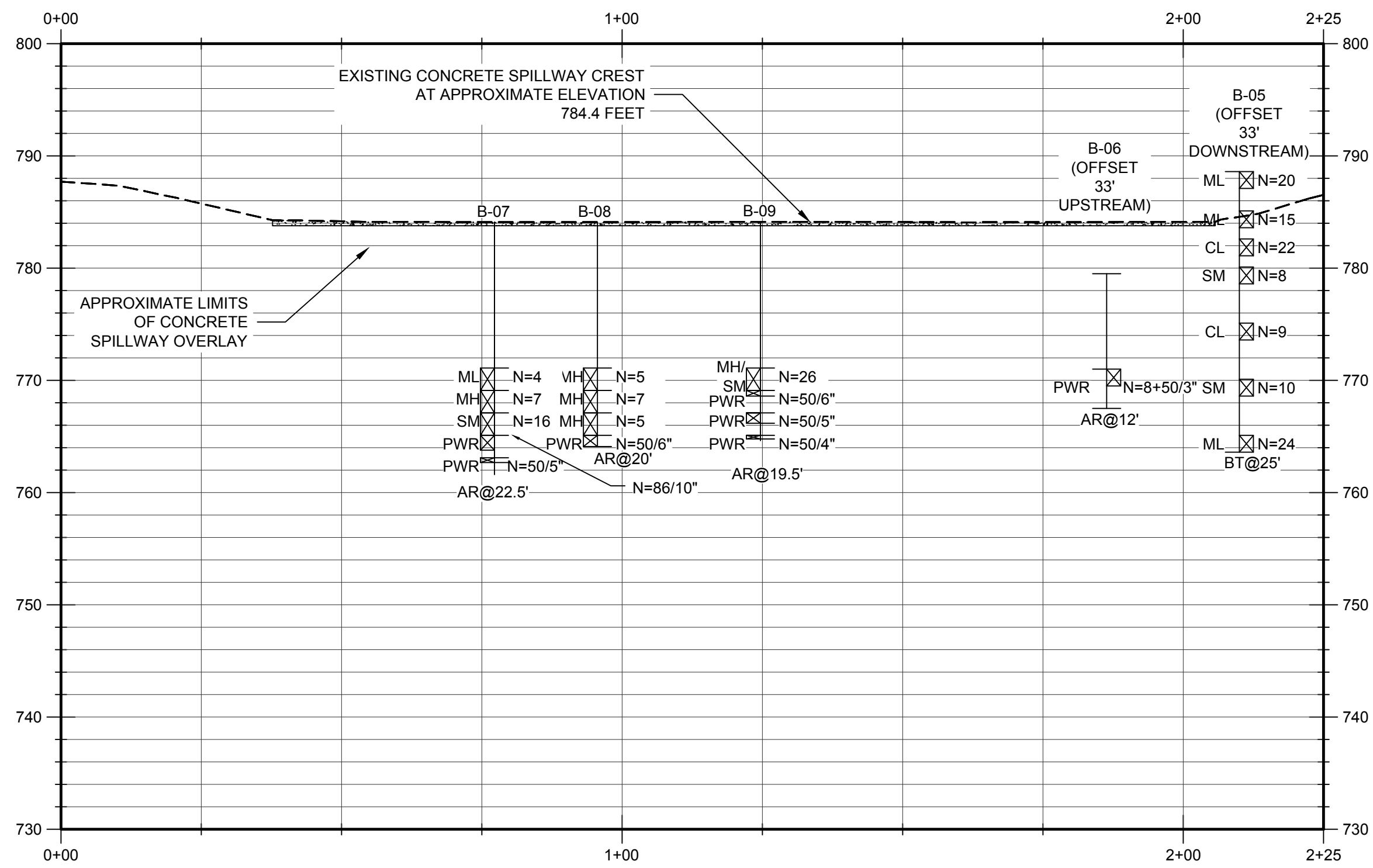
LAKE PEACHTREE



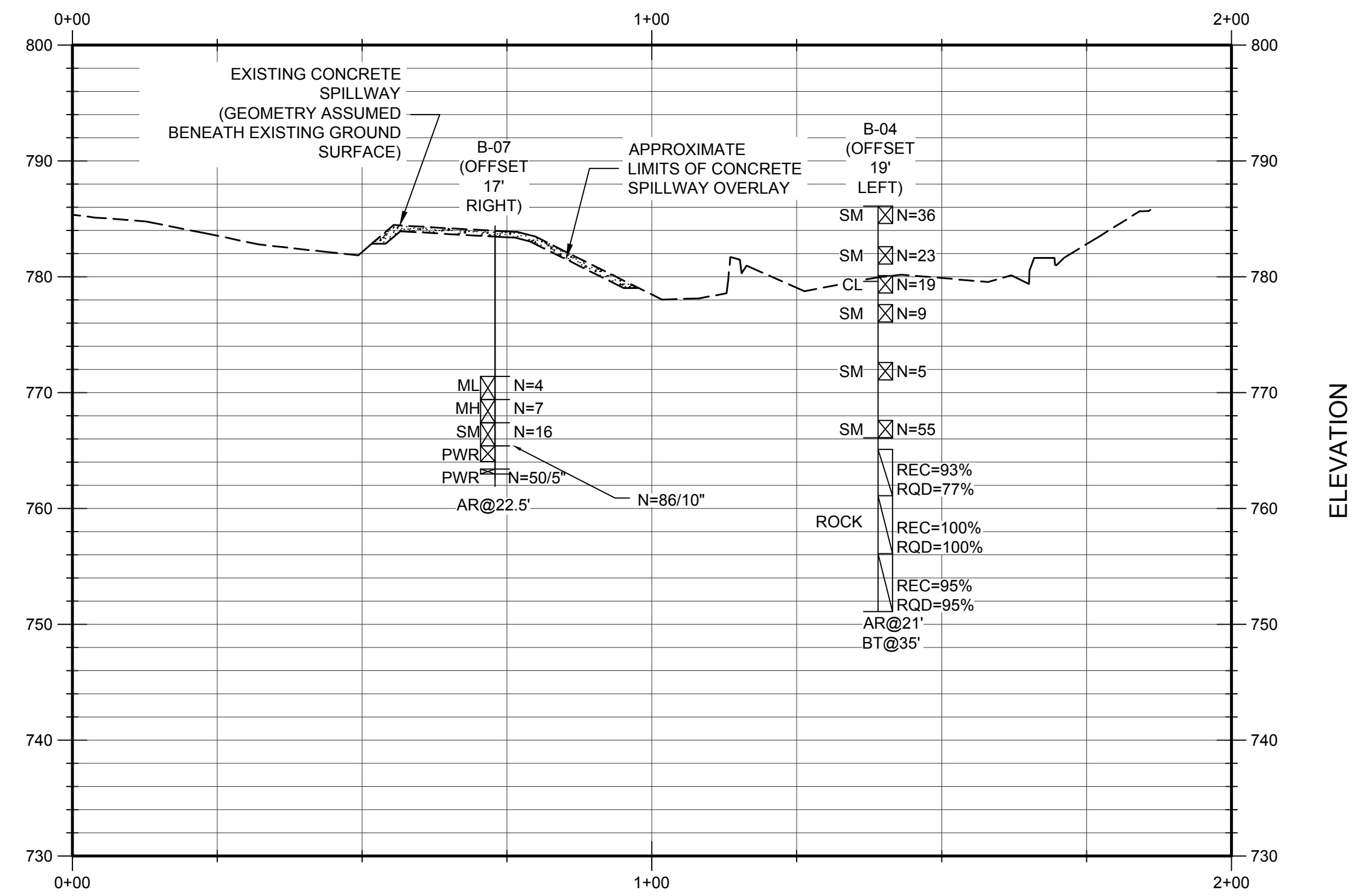
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC	DATE: 07/10/17
DESIGNED BY: <b>RANDALL P. BASS, P.E.</b>			DATE: 07/10/17
DRAWN BY: <i>Randall P. Bass</i>			DATE: 07/10/17
CHECKED BY: RPL, JRC			DATE: 07/10/17
DESCRIPTION: CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA			DATE: 07/10/17
PROJECT: 16C17043.00			DATE: 07/10/2017
SHEET 06 OF 66			DATE: 07/10/2017



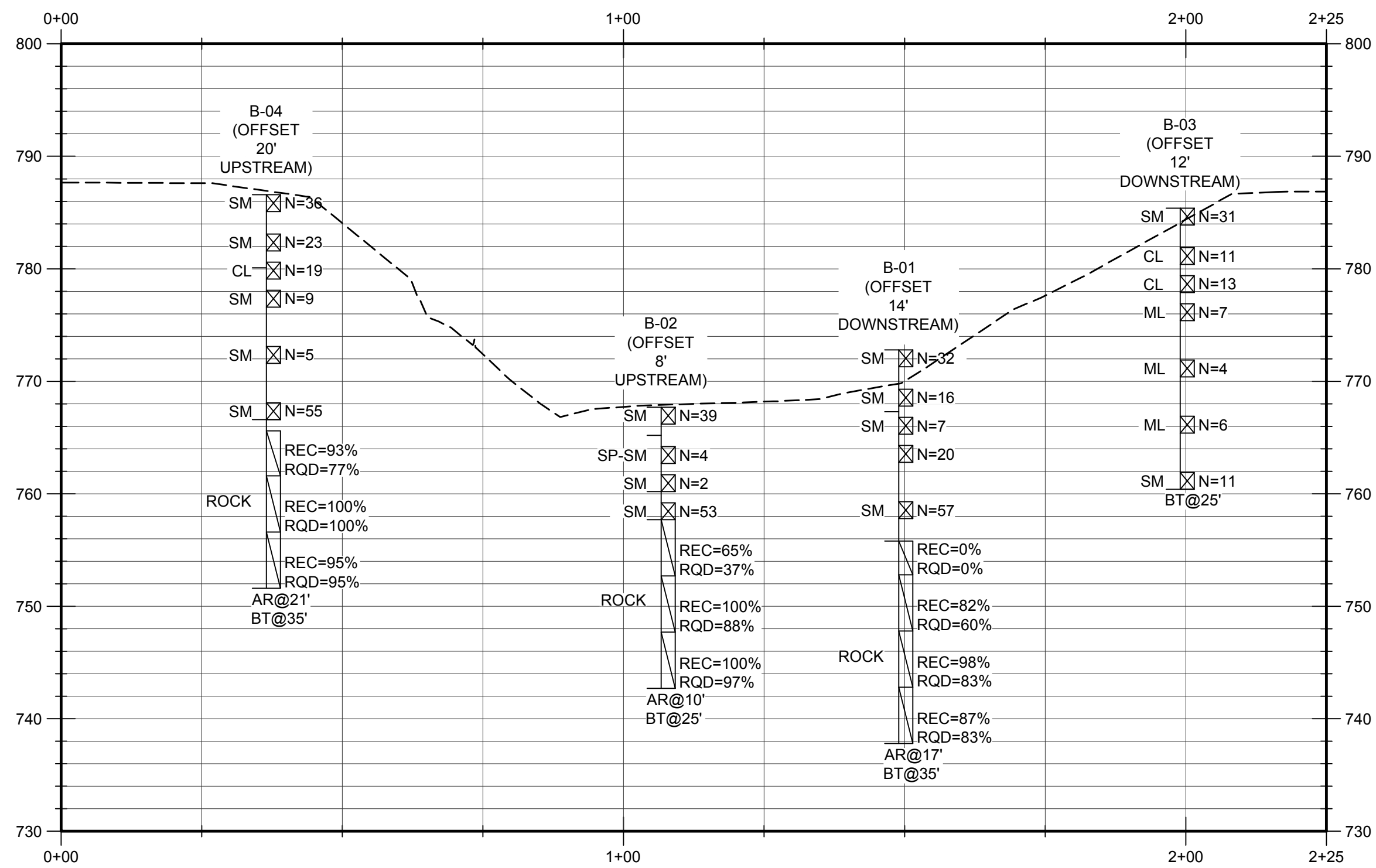
**GEOTECHNICAL EXPLORATION PLAN**



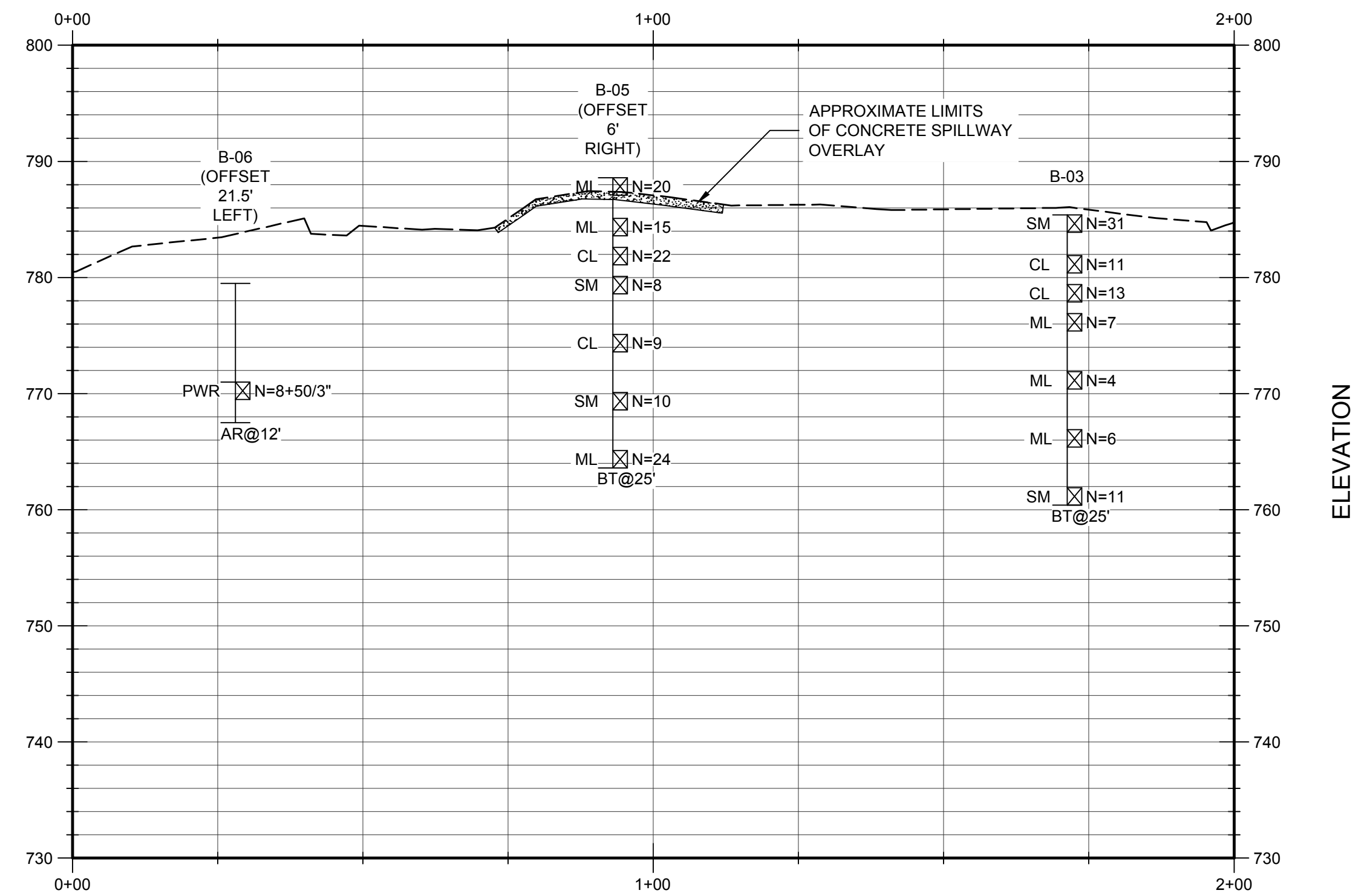
1  
06  
UPSTREAM GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'



3  
06  
LEFT ABUTMENT GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'



2  
06  
DOWNSTREAM GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'



4  
06  
RIGHT ABUTMENT GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'

NOTE:  
THICKNESS OF EXISTING CONCRETE  
SPILLWAY OVERLAY VARIES. CONTRACTOR  
SHALL ANTICIPATE VARIATION DURING  
DEMOLITION

DATE	
DESCRIPTION	
REV	
CHECKED BY:	RPL_JRC
DRAWN BY:	GHB_JSJ
DESIGNED BY:	JTD_JC
<b>RANDALL P. BASS, P.E.</b> <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 071017	
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com	
<b>GEOLOGIC PROFILES</b>	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET 07 OF 66	

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G:\2016 PROJECTS\16C17043\_00 LAKE PEACHTREE DAM FINAL DESIGN\03 SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PT\_TRAIL\_CLOSURE.PLAN.DWG



REV	DESCRIPTION	DATE

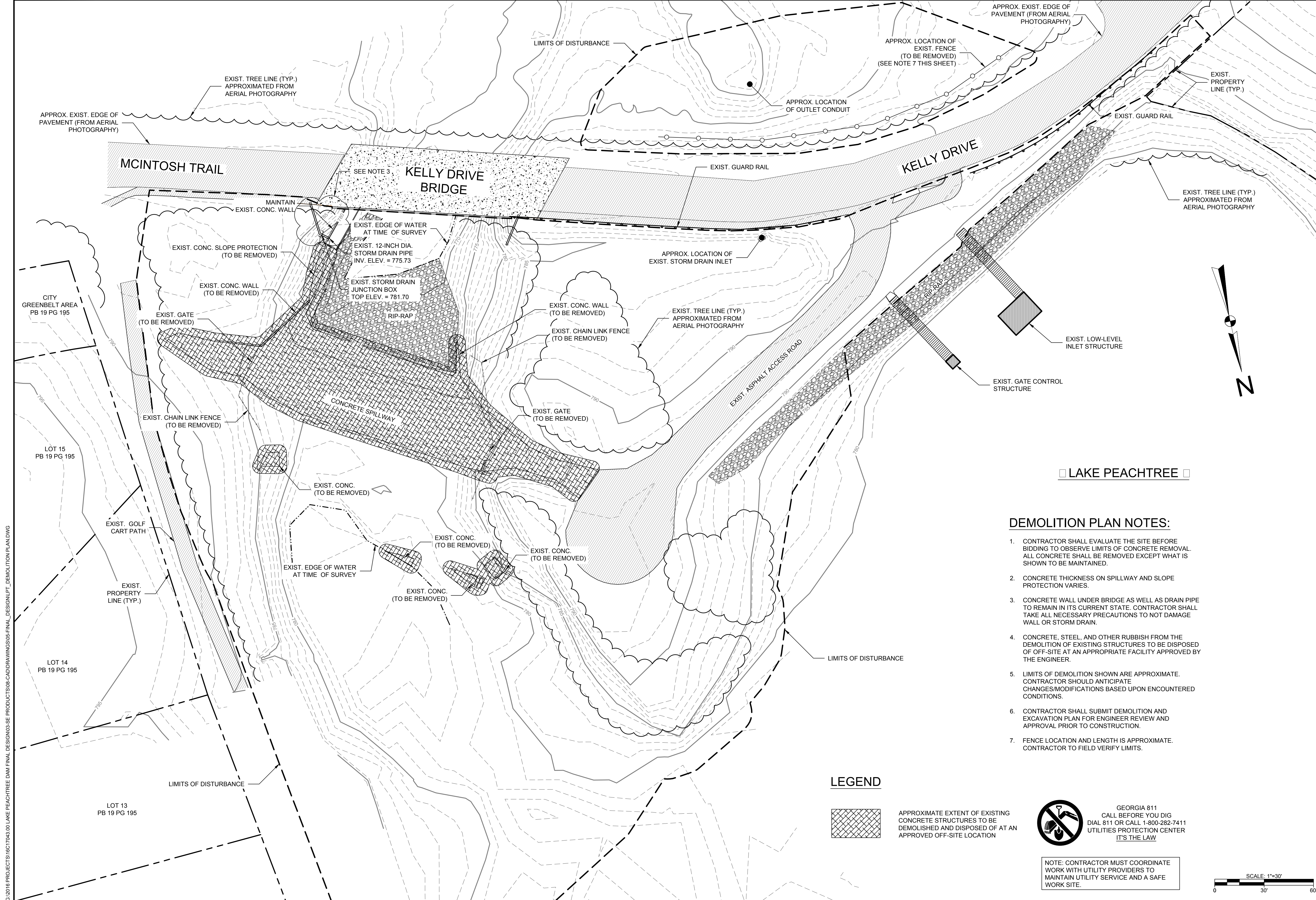
CHECKED BY: RPL\_JRC  
 DRAWN BY: GHB\_JSJ  
 DESIGNED BY: JTD\_JC  
**RANDALL P. BASS, P.E.**  
*Randall P. Bass*  
 GEORGIA PROFESSIONAL ENGINEER NO. 071017



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CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
**TRAIL CLOSURE PLAN**

PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 08 OF 66

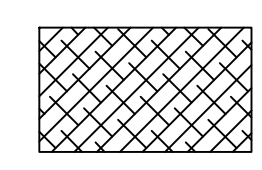


G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL DESIGN\1PT\_DEMOLITION PLAN.DWG

**DEMOLITION PLAN NOTES:**

1. CONTRACTOR SHALL EVALUATE THE SITE BEFORE BIDDING TO OBSERVE LIMITS OF CONCRETE REMOVAL. ALL CONCRETE SHALL BE REMOVED EXCEPT WHAT IS SHOWN TO BE MAINTAINED.
2. CONCRETE THICKNESS ON SPILLWAY AND SLOPE PROTECTION VARIES.
3. CONCRETE WALL UNDER BRIDGE AS WELL AS DRAIN PIPE TO REMAIN IN ITS CURRENT STATE. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO NOT DAMAGE WALL OR STORM DRAIN.
4. CONCRETE, STEEL, AND OTHER RUBBISH FROM THE DEMOLITION OF EXISTING STRUCTURES TO BE DISPOSED OF OFF-SITE AT AN APPROPRIATE FACILITY APPROVED BY THE ENGINEER.
5. LIMITS OF DEMOLITION SHOWN ARE APPROXIMATE. CONTRACTOR SHOULD ANTICIPATE CHANGES/MODIFICATIONS BASED UPON ENCOUNTERED CONDITIONS.
6. CONTRACTOR SHALL SUBMIT DEMOLITION AND EXCAVATION PLAN FOR ENGINEER REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
7. FENCE LOCATION AND LENGTH IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY LIMITS.

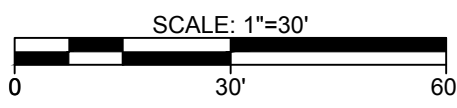
**LEGEND**

 APPROXIMATE EXTENT OF EXISTING CONCRETE STRUCTURES TO BE DEMOLISHED AND DISPOSED OF AT AN APPROVED OFF-SITE LOCATION



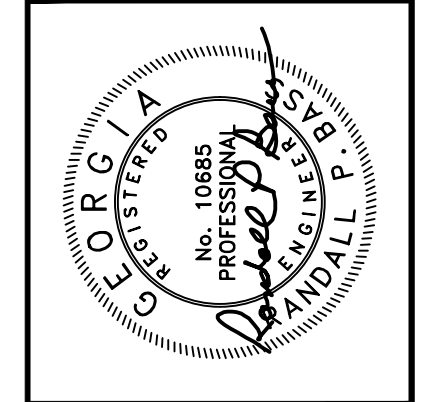
GEORGIA 811  
CALL BEFORE YOU DIG  
DIAL 811 OR CALL 1-800-282-7411  
UTILITIES PROTECTION CENTER  
**IT'S THE LAW**

NOTE: CONTRACTOR MUST COORDINATE WORK WITH UTILITY PROVIDERS TO MAINTAIN UTILITY SERVICE AND A SAFE WORK SITE.



REV	DESCRIPTION	DATE

CHECKED BY: RPL\_JRC  
DRAWN BY: GHB\_JSJR  
DESIGNED BY: JTD\_JC  
**RANDALL P. BASS, P.E.**  
*Randall P. Bass*  
GEORGIA PROFESSIONAL ENGINEER NO. 10685

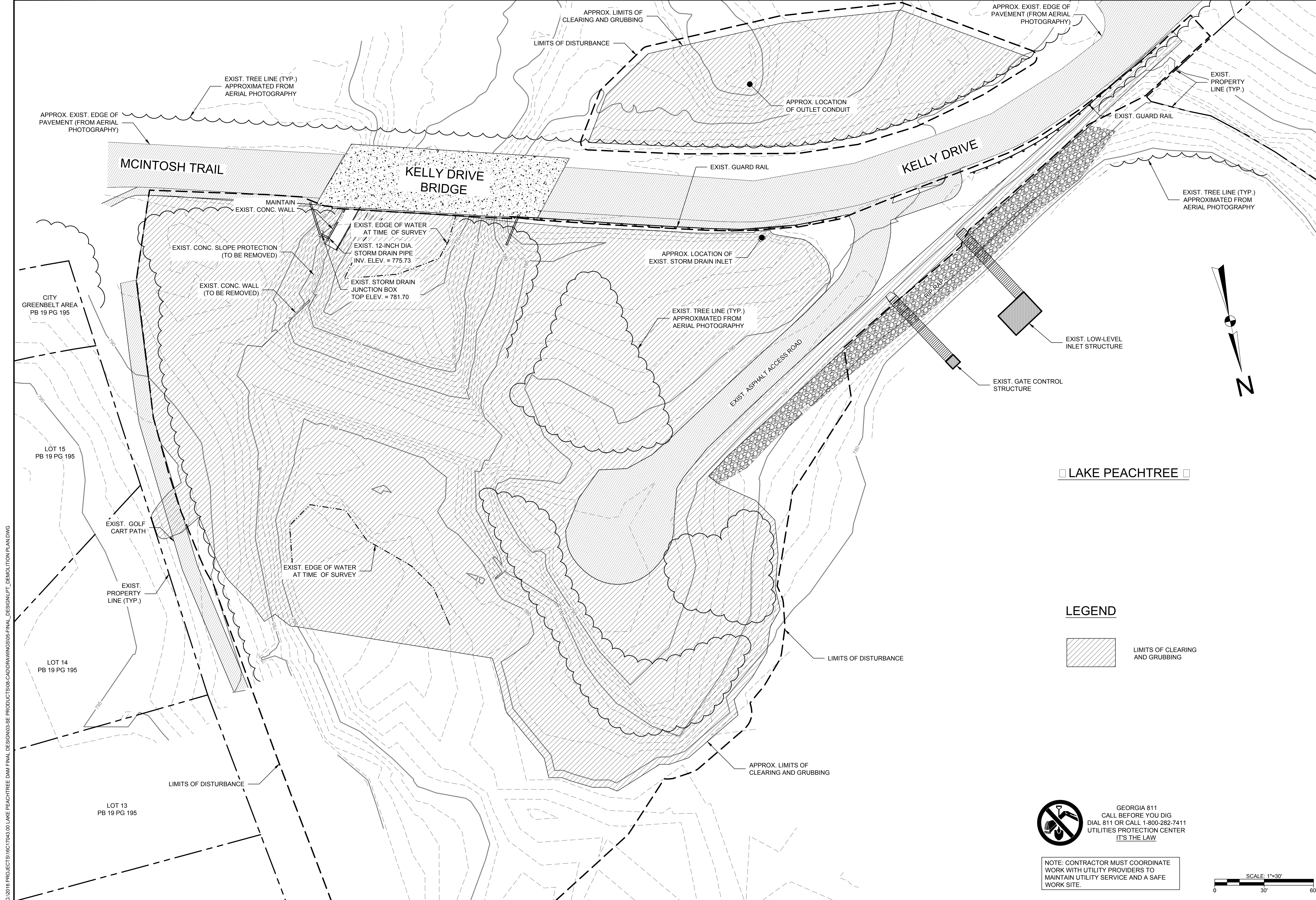


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CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

**DEMOLITION PLAN**

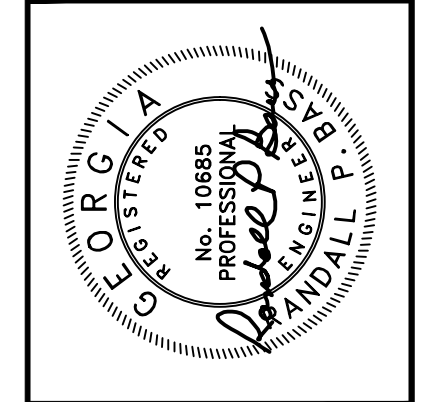
PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
09 OF 66



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REV	DESCRIPTION	DATE

CHECKED BY: RPL, JRC  
 DRAWN BY: GHB, JSR  
 DESIGNED BY: JTD, JC  
**RANDALL P. BASS, P.E.**  
*Randall P. Bass*  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685  
 DATE: 07/10/17



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CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
**CLEARING AND GRUBBING  
 PLAN**

PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 10 OF 66

LAKE PEACHTREE

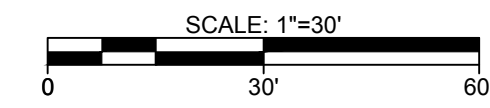
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LIMITS OF CLEARING AND GRUBBING

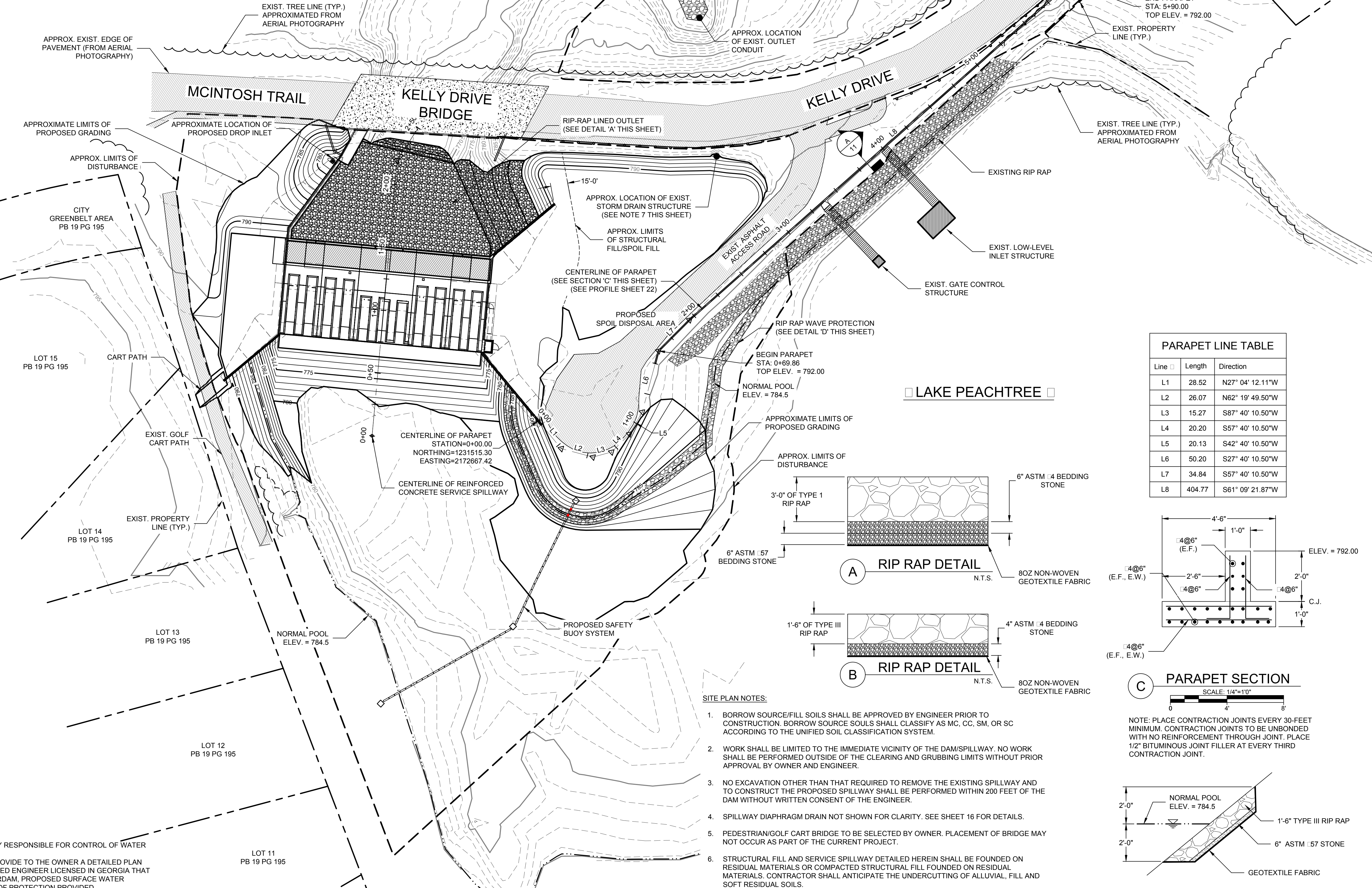
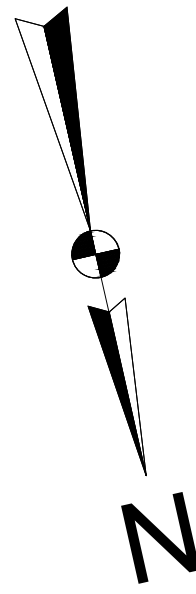


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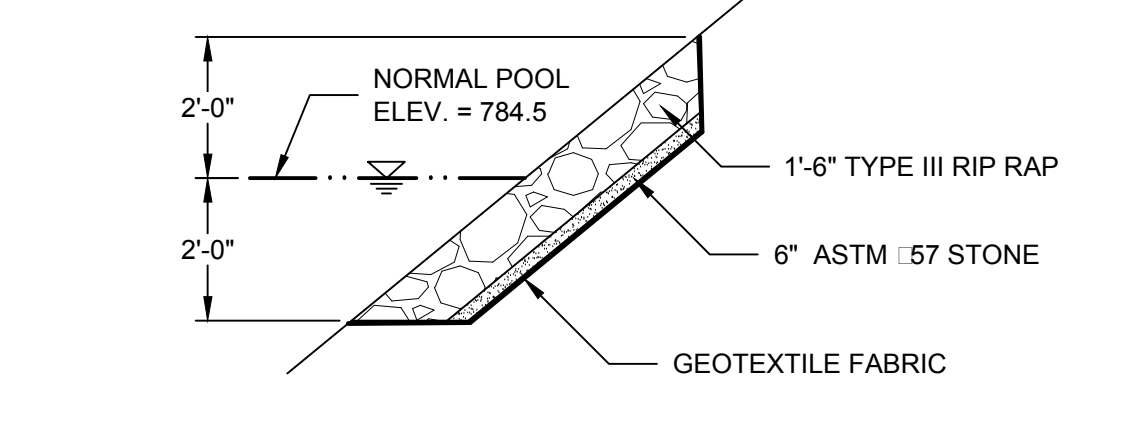
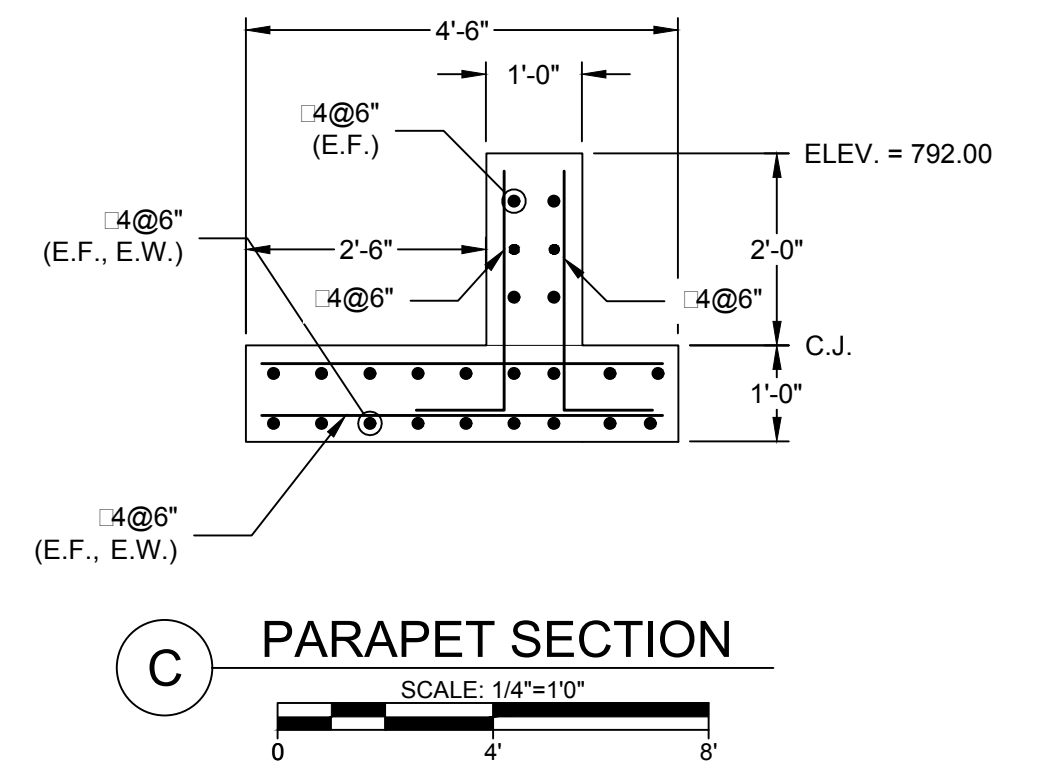
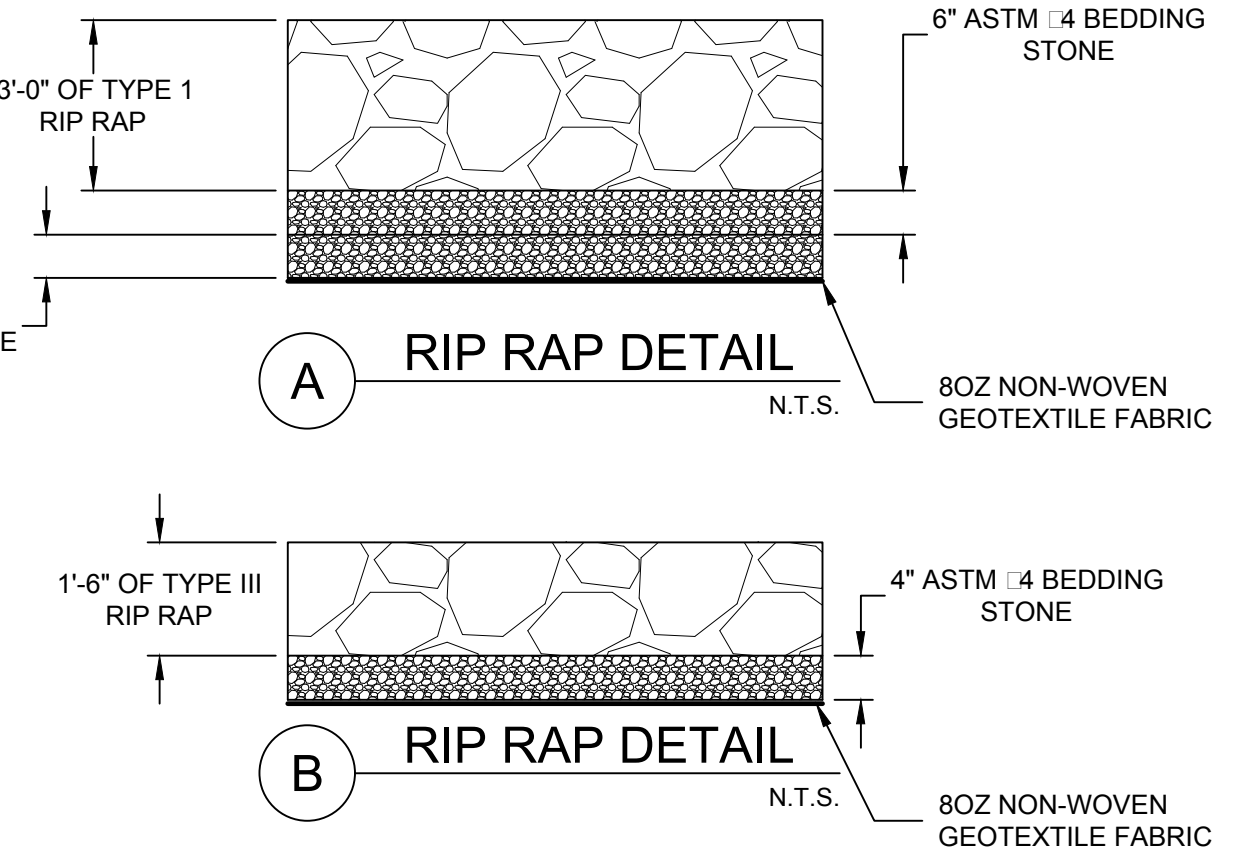
NOTE: CONTRACTOR MUST COORDINATE  
 WORK WITH UTILITY PROVIDERS TO  
 MAINTAIN UTILITY SERVICE AND A SAFE  
 WORK SITE.



HYDROLOGY AND HYDRAULICS SUMMARY TABLE	
NORMAL POOL ELEV.	784.5
100-YR WATER SURFACE ELEV.	789.1
1/2 PMP WATER SURFACE ELEV.	791.4
MIN TOP OF DAM ELEV.	792.0



PARAPET LINE TABLE		
Line	Length	Direction
L1	28.52	N27° 04' 12.11"W
L2	26.07	N62° 19' 49.50"W
L3	15.27	S87° 40' 10.50"W
L4	20.20	S57° 40' 10.50"W
L5	20.13	S42° 40' 10.50"W
L6	50.20	S27° 40' 10.50"W
L7	34.84	S57° 40' 10.50"W
L8	404.77	S61° 09' 21.87"W



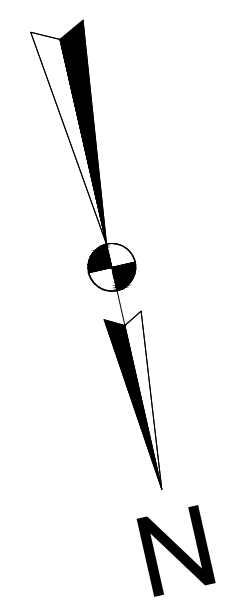
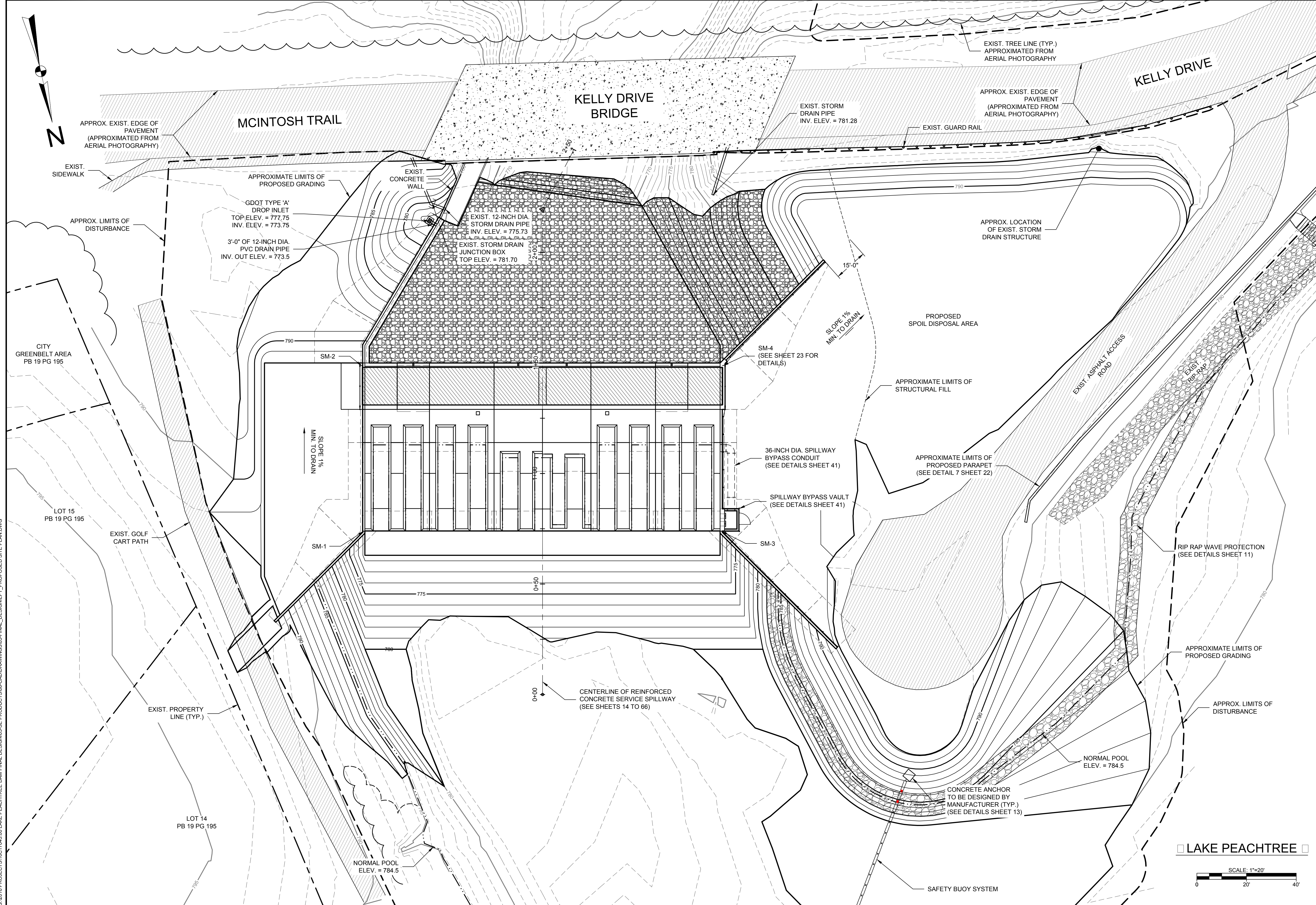
- SITE PLAN NOTES:**
- BORROW SOURCE/FILL SOILS SHALL BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION. BORROW SOURCE SOILS SHALL CLASSIFY AS MC, CC, SM, OR SC ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM.
  - WORK SHALL BE LIMITED TO THE IMMEDIATE VICINITY OF THE DAM/SPILLWAY. NO WORK SHALL BE PERFORMED OUTSIDE OF THE CLEARING AND GRUBBING LIMITS WITHOUT PRIOR APPROVAL BY OWNER AND ENGINEER.
  - NO EXCAVATION OTHER THAN THAT REQUIRED TO REMOVE THE EXISTING SPILLWAY AND TO CONSTRUCT THE PROPOSED SPILLWAY SHALL BE PERFORMED WITHIN 200 FEET OF THE DAM WITHOUT WRITTEN CONSENT OF THE ENGINEER.
  - SPILLWAY DIAPHRAGM DRAIN NOT SHOWN FOR CLARITY. SEE SHEET 16 FOR DETAILS.
  - PEDESTRIAN/GOLF CART BRIDGE TO BE SELECTED BY OWNER. PLACEMENT OF BRIDGE MAY NOT OCCUR AS PART OF THE CURRENT PROJECT.
  - STRUCTURAL FILL AND SERVICE SPILLWAY DETAILED HEREIN SHALL BE FOUNDED ON RESIDUAL MATERIALS OR COMPACTED STRUCTURAL FILL FOUNDED ON RESIDUAL MATERIALS. CONTRACTOR SHALL ANTICIPATE THE UNDERCUTTING OF ALLUVIAL, FILL AND SOFT RESIDUAL SOILS.
  - DROP INLET SHALL BE RAISED TO ACCOMMODATE NEW DRAINAGE PATTERN USING GDOT STANDARDS FOR A BRICK MANHOLE AND USING A TYPE 'C' INLET.
  - CHANNEL TO BE GRADED TO A TRAPEZOIDAL SHAPE WITH A 2.5H:1V SIDE SLOPE. BOTTOM WIDTH TO BE 5-FOOT WIDE. RIP RAP TO EXTEND 20-FEET DOWNSTREAM OF PIPE.

- CONTROL OF WATER NOTES:**
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROL OF WATER
  - CONTRACTOR SHALL PROVIDE TO THE OWNER A DETAILED PLAN PREPARED BY A QUALIFIED ENGINEER LICENSED IN GEORGIA THAT DESCRIBES THE COFFERDAM, PROPOSED SURFACE WATER DIVERSION, AND LEVEL OF PROTECTION PROVIDED.
  - THE OWNER HAS STIPULATED A PHASED LOWERING/RAISING OF LAKE PEACHTREE DURING CONSTRUCTION. DETAILS ARE PROVIDED IN THE PROJECT TECHNICAL SPECIFICATIONS.

DATE	
DESCRIPTION	
REV	
CHECKED BY:	RPL, JRC
DRAWN BY:	GHB, JSR
DESIGNED BY:	JTD, JC
PROJECT:	16C17043.00
DATE:	07/10/2017
SHEET:	11 OF 66
<b>RANDALL P. BASS, P.E.</b> GEORGIA PROFESSIONAL ENGINEER NO. 10885	
<b>PROPOSED SITE PLAN OVERALL</b>	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET: 11 OF 66	

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-FINAL\_DESIGN\PLT\_PROPOSED SITE PLAN.DWG

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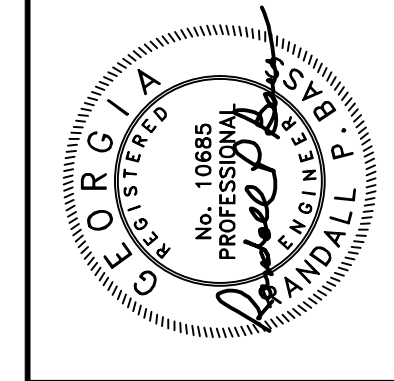
LAKE PEACHTREE

SCALE: 1"=20'

REV	DESCRIPTION	DATE

CHECKED BY: RPL, JRC  
 DRAWN BY: GHB, JSR  
 DESIGNED BY: JTD, JC

**RANDALL P. BASS, P.E.**  
*Randall P. Bass*  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685



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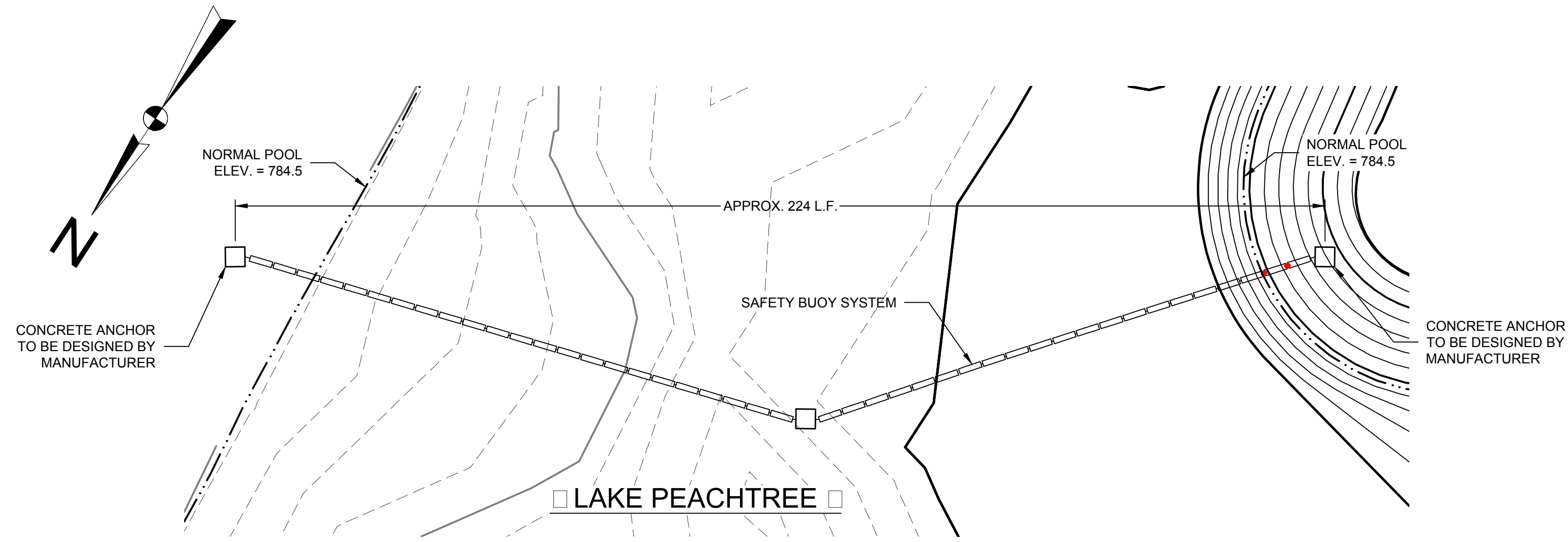
CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

**PROPOSED SITE PLAN  
 SPILLWAY**

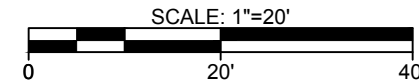
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 12 OF 66



G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_FLOATING\_LOG\_AND\_SAFETY\_BARRIER.DWG

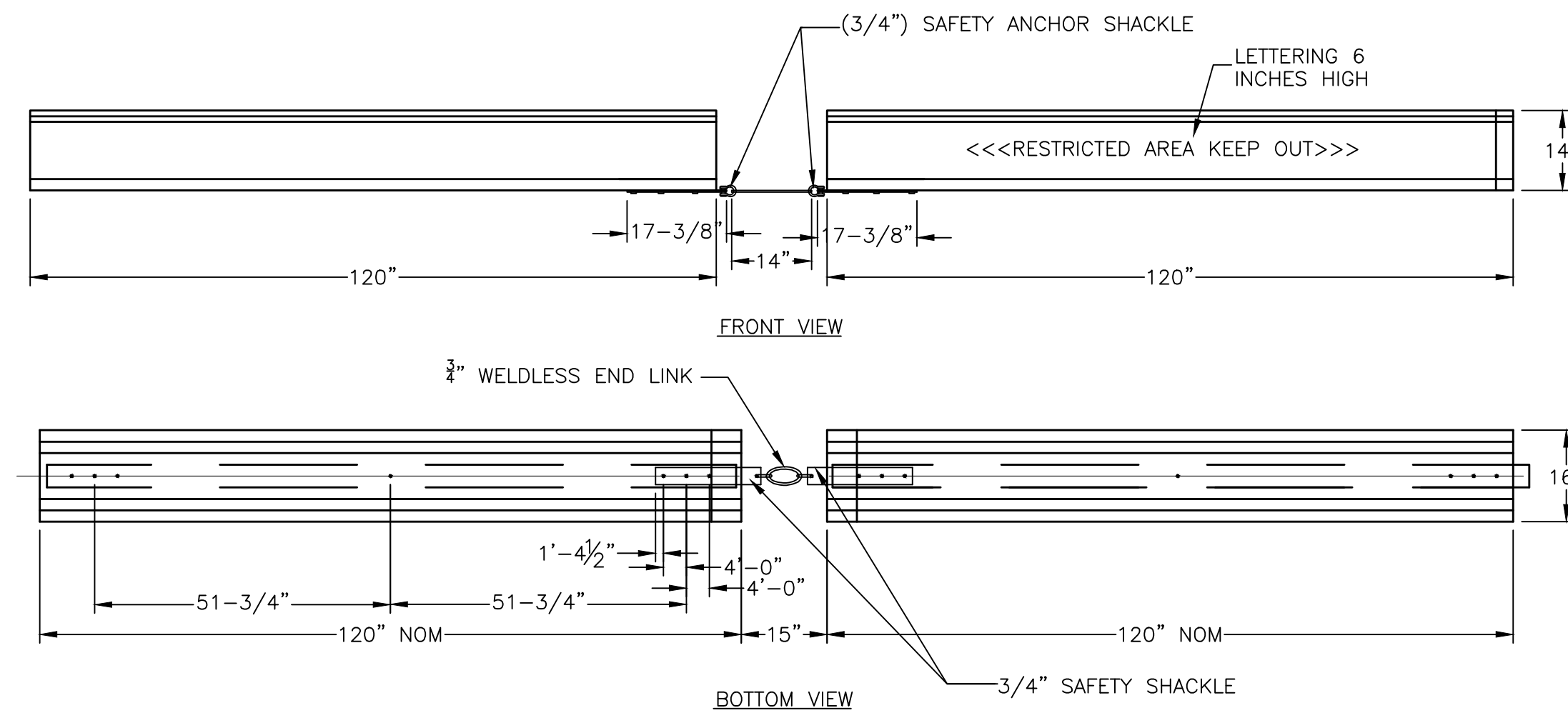


1 SAFETY BUOY SYSTEM LAYOUT PLAN



NOTES:

1. CONTRACTOR SHALL ARRANGE THE BUOYS IN THE GENERAL CONFIGURATION SHOWN ABOVE THE WATER LINE JUST PRIOR TO THE RAISING OF THE RESERVOIR BACK TO THE NORMAL POOL ELEVATION.
2. CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION AND ALL CONNECTIONS.
3. SAFETY BUOY SYSTEM SHALL BE TUFF BOOM BY WORTHINGTON PRODUCTS OR AN APPROVED EQUAL. ALL METAL COMPONENTS SHALL BE HOT DIPPED GALVANIZED
4. BUOY COLOR TO BE SELECTED BY OWNER.
5. ALL HARDWARE SHALL BE HOT DIPPED GALVANIZED.
6. CONTRACTOR SHALL SUBMIT AN ANCHORAGE DESIGN FOR APPROVAL TO THE ENGINEER FOR THE SAFETY BUOY SYSTEM SUCH THAT THE SYSTEM CAN ACCOMMODATE A 10-FOOT RISE IN THE RESERVOIR AND 8 FOOT LOWERING OF NORMAL POOL WITHOUT MANUAL INTERVENTION.
7. LOCATION OF ANCHORS SHALL BE DETERMINED BY DESIGNER OF BUOY SYSTEM.
8. OWNER SHALL SELECT LETTERING FROM MANUFACTURER'S STANDARD OPTIONS.

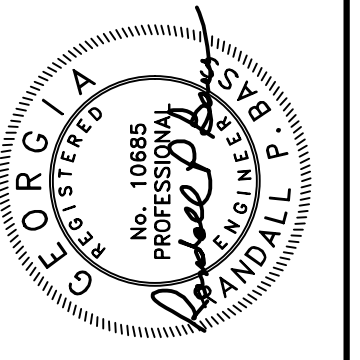


2 TYPICAL SAFETY BUOY DIMENSIONS

N.T.S.

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> No. 10885 PROFESSIONAL ENGINEER GEORGIA DATE: 07/10/17 GEORGIA PROFESSIONAL ENGINEER NO. 10885		



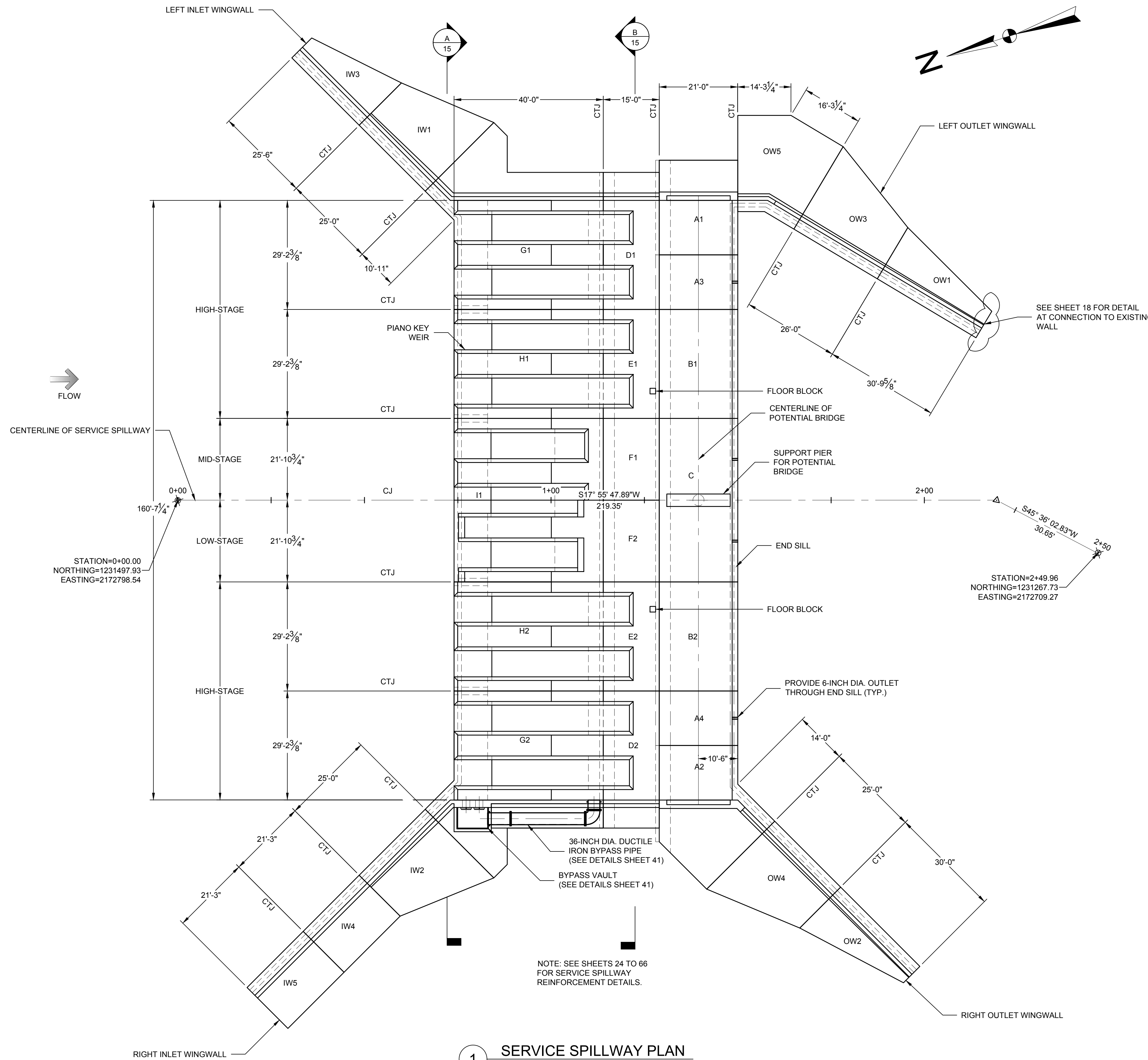
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CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

**SAFETY BUOY SYSTEM  
 DETAILS**

PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 13 OF 66

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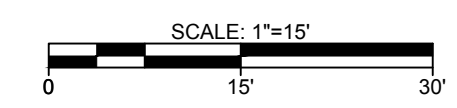
**NOTES:**

1. THIS PLAN SHOWS THE LAYOUT OF THE SERVICE SPILLWAY SLABS. THE SLABS SHALL BE CAST ALTERNATELY IN THE TRANSVERSE DIRECTION.
2. CHAMFER ALL EXPOSED CORNERS 3/4" UNLESS OTHERWISE SHOWN.
3. CHAMFER ALL CONTRACTION JOINTS ON UPSTREAM SIDE OF PIANO KEY WALLS, INSIDE FACE OF SIDEWALL UPSTREAM OF PIANO KEY / SIDEWALL JUNCTION AND SLABS UPSTREAM OF PIANO KEY WALL 1-1/2", UNLESS OTHERWISE SHOWN.
4. NO CHAMFERS REQUIRED ON CONSTRUCTION JOINTS.
5. JOINT SEALANT REQUIRED ON UPSTREAM FACE OF ALL CONTRACTION JOINTS WITH 1-1/2" CHAMFER.
6. SEE SHEET 65 AND 66 FOR WATERSTOP DETAILS.
7. CONTRACTION JOINTS HAVE NO REINFORCING THROUGH THE JOINT AND THE CONCRETE SURFACES ARE UNBONDED.

**CONCRETE SECTIONS:**

- PIANO KEY CONCRETE CONSISTS OF THE CONCRETE PLACED FOR THE CONSTRUCTION OF THE PIANO KEY WALLS AND INLET/OUTLET RAMP SECTIONS.
- SLAB CONCRETE CONSISTS OF THE CONCRETE PLACED FOR THE CONSTRUCTION OF SLABS A1 THROUGH H2 AND THE SLABS ASSOCIATED WITH THE INLET AND OUTLET WINGWALLS.
- STRUCTURAL CONCRETE CONSISTS OF THE CONCRETE PLACED FOR THE CONSTRUCTION OF THE SPILLWAY SIDEWALLS, INLET AND OUTLET WINGWALLS, AND THE BYPASS VAULT WALLS.
- BACKFILL CONCRETE CONSISTS OF THE CONCRETE PLACED FOR THE CONSTRUCTION OF THE BYPASS SPILLWAY PIPE ENCASMENT.

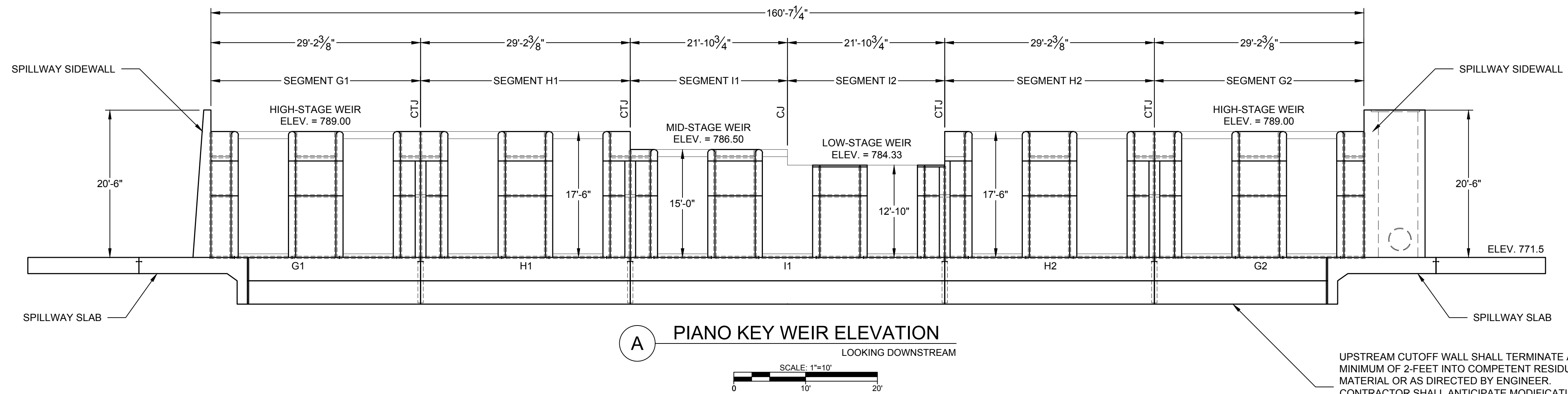
**1 SERVICE SPILLWAY PLAN**



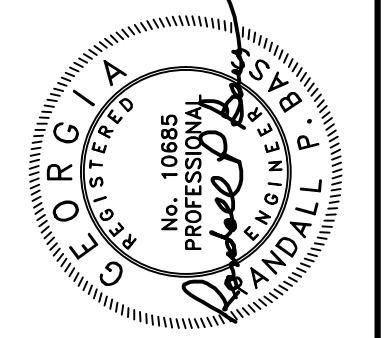
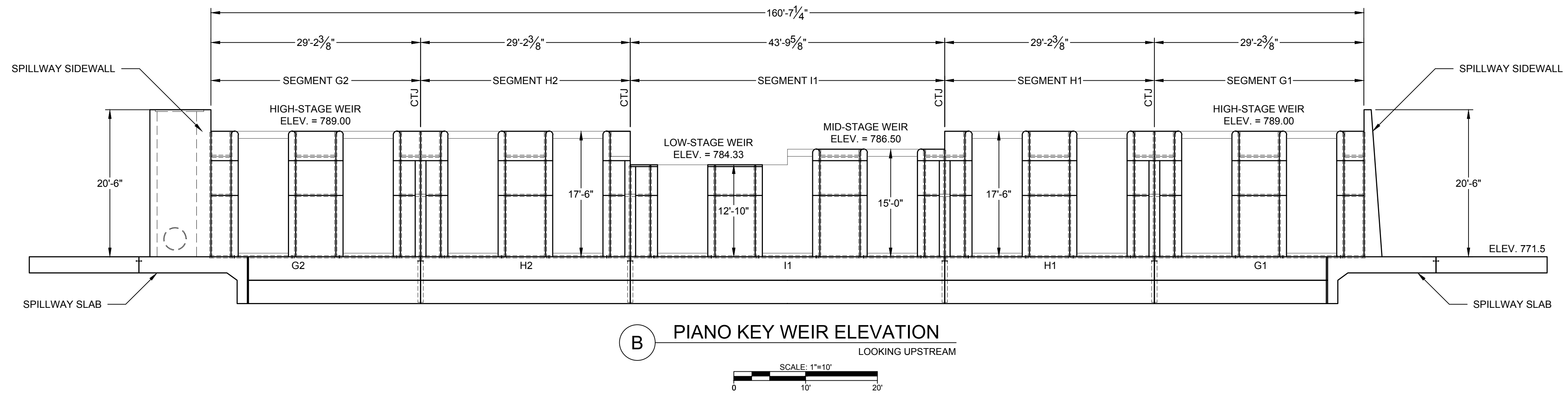
PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 14 OF 66

DESIGNED BY: JTD_JC	DRAWN BY: GHB_JSJR	CHECKED BY: RPL_JRC	RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685						
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA									
<b>SERVICE SPILLWAY LAYOUT                  PLAN</b>									
PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET 14 OF 66									

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UPSTREAM CUTOFF WALL SHALL TERMINATE A MINIMUM OF 2-FEET INTO COMPETENT RESIDUAL MATERIAL OR AS DIRECTED BY ENGINEER. CONTRACTOR SHALL ANTICIPATE MODIFICATIONS TO CUTOFF WALL DIMENSIONS AND REINFORCEMENT.



CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

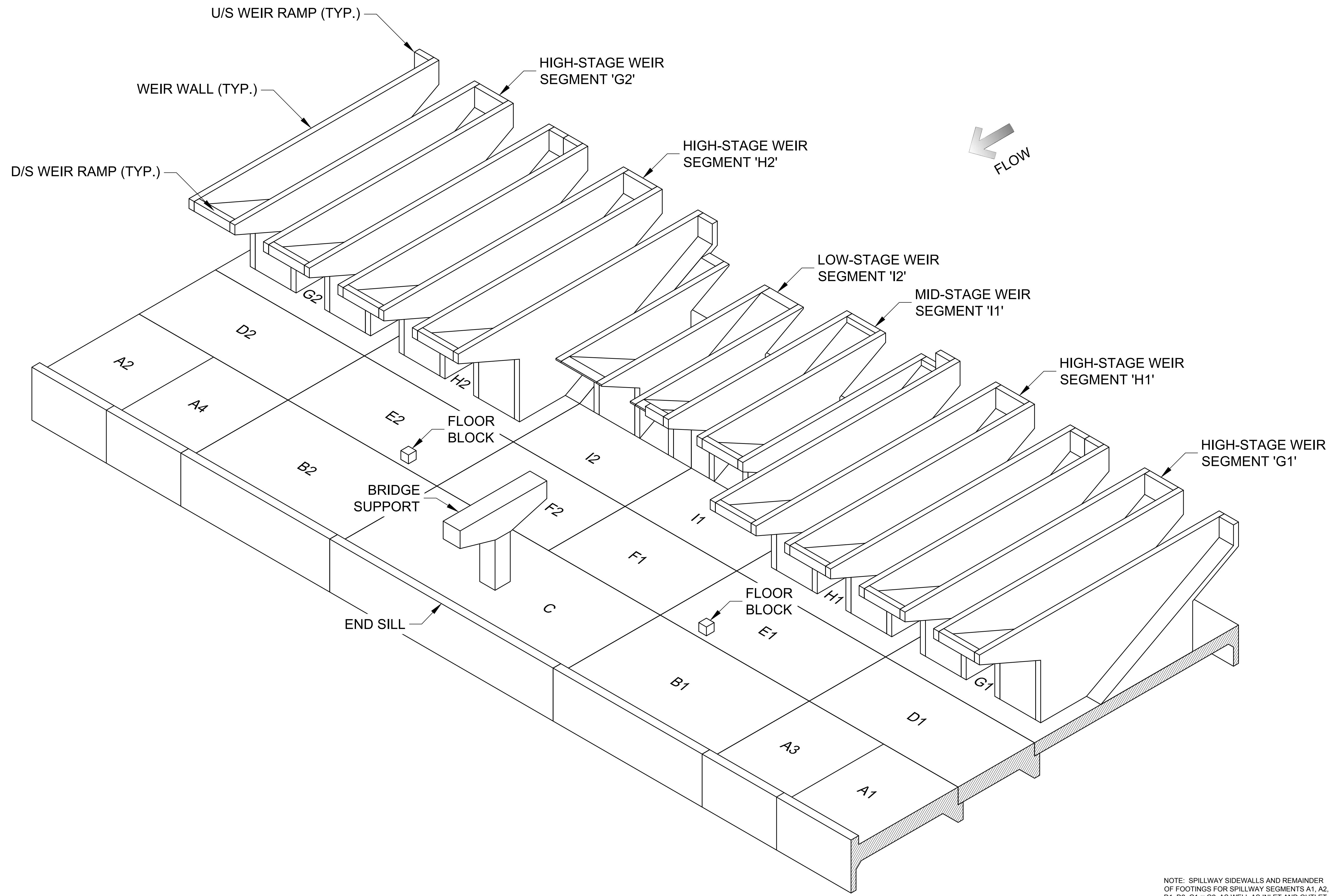
**PIANO KEY WEIR ELEVATION  
VIEWS**

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
15 OF 66

REV	DESCRIPTION	DATE

CHECKED BY: RPB, JRC  
DRAWN BY: GHB, JSR  
DESIGNED BY: JTD, JC


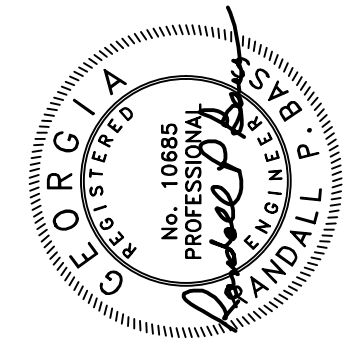
**RANDALL P. BASS, P.E.**  
*Randall P. Bass*  
GEORGIA PROFESSIONAL ENGINEER NO. 10885

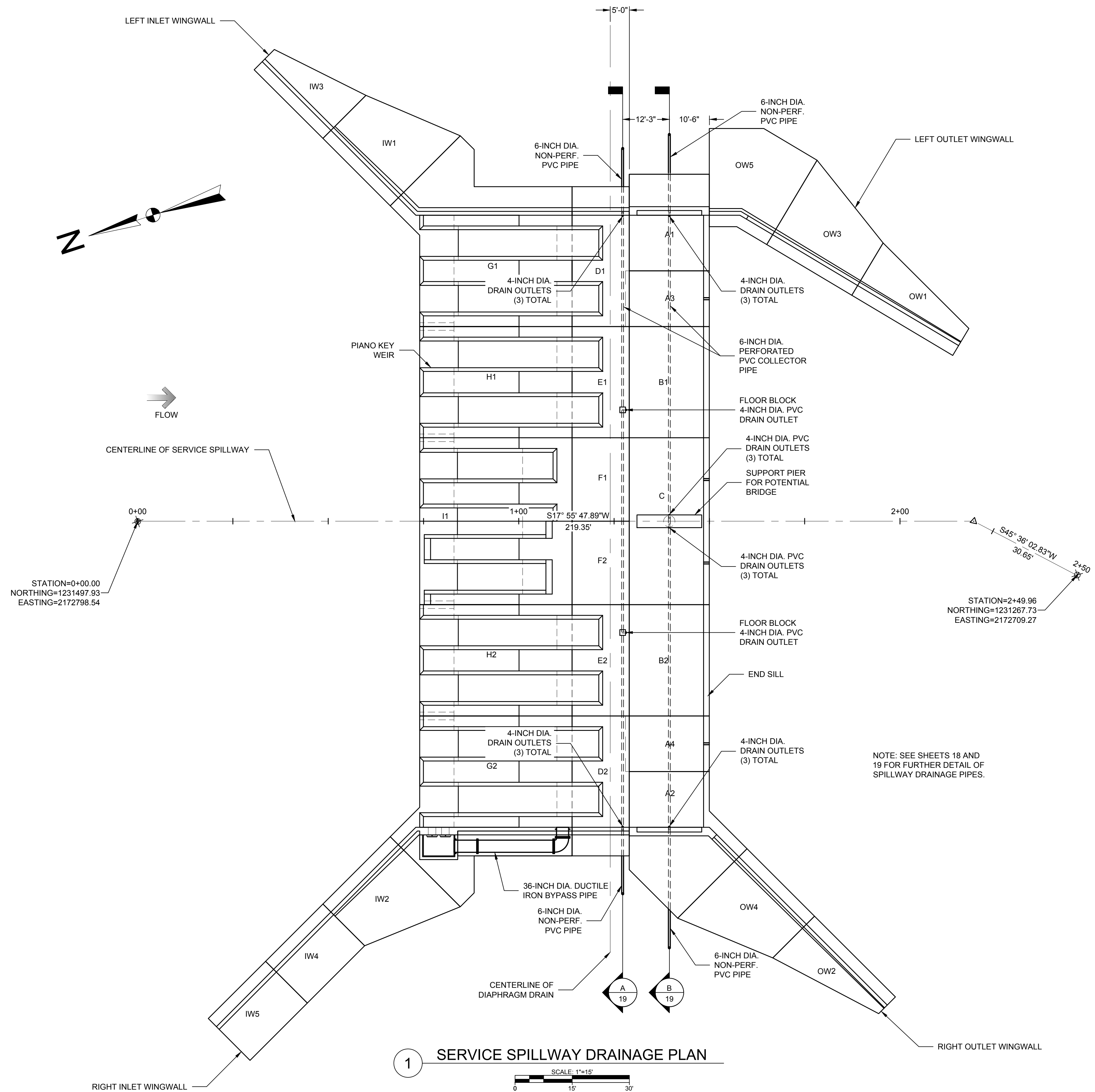


1 ISOMETRIC VIEW OF PIANO KEY WEIR  
N.T.S.

NOTE: SPILLWAY SIDEWALLS AND REMAINDER OF FOOTINGS FOR SPILLWAY SEGMENTS A1, A2, D1, D2, G1, G2, AS WELL AS INLET AND OUTLET WINGWALLS AND FOOTINGS NOT SHOWN FOR CLARITY. SEE SERVICE SPILLWAY LAYOUT PLAN SHEET 14 FOR ENTIRE SPILLWAY LAYOUT.

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_SPILLWAY PLAN AND PROFILE.DWG

PROJECT: 16C17043.00	
DATE: 07/10/2017	
SHEET 16 OF 66	
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / <a href="http://schnabel-eng.com">schnabel-eng.com</a>	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
<b>PIANO KEY WEIR ISOMETRIC VIEW</b>	
DESIGNED BY: JTD, JC	CHECKED BY: RPB, JRC
RANDALL P. BASS, P.E.  <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885	
DATE: 07/10/17	DESCRIPTION:
REV:	DESCRIPTION:

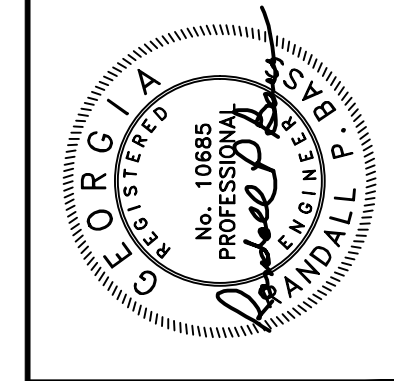


1 SERVICE SPILLWAY DRAINAGE PLAN  
SCALE: 1"=15'

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_SPILLWAY PLAN AND PROFILE.DWG

REV	DESCRIPTION	DATE

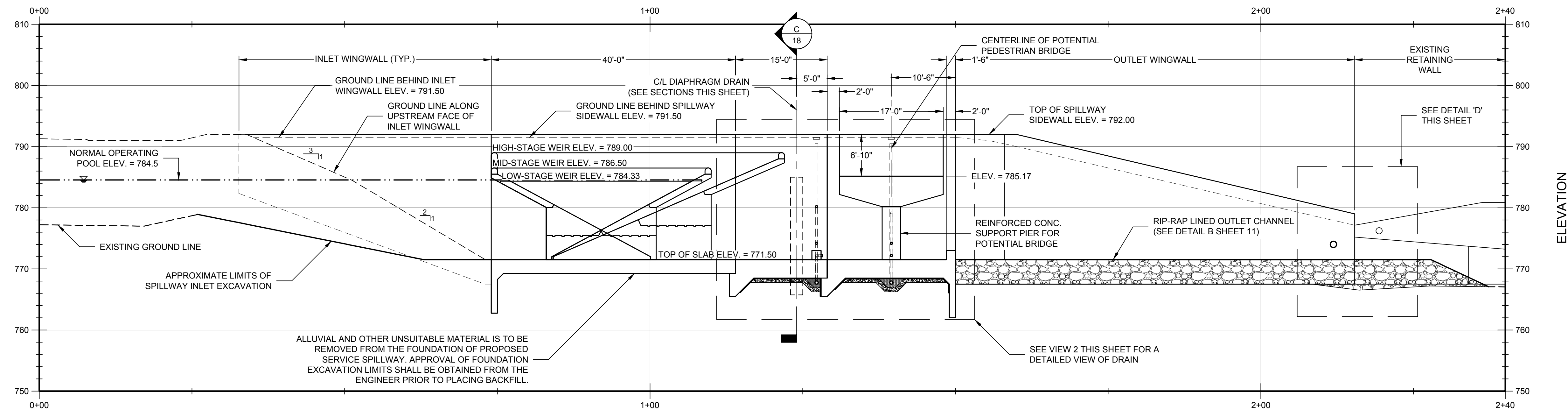
CHECKED BY: RPL\_JRC  
 DRAWN BY: GHB\_JSJ  
 DESIGNED BY: JTD\_JC  
 RANDALL P. BASS, P.E.  
*Randall P. Bass*  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685  
 DATE: 07/10/17



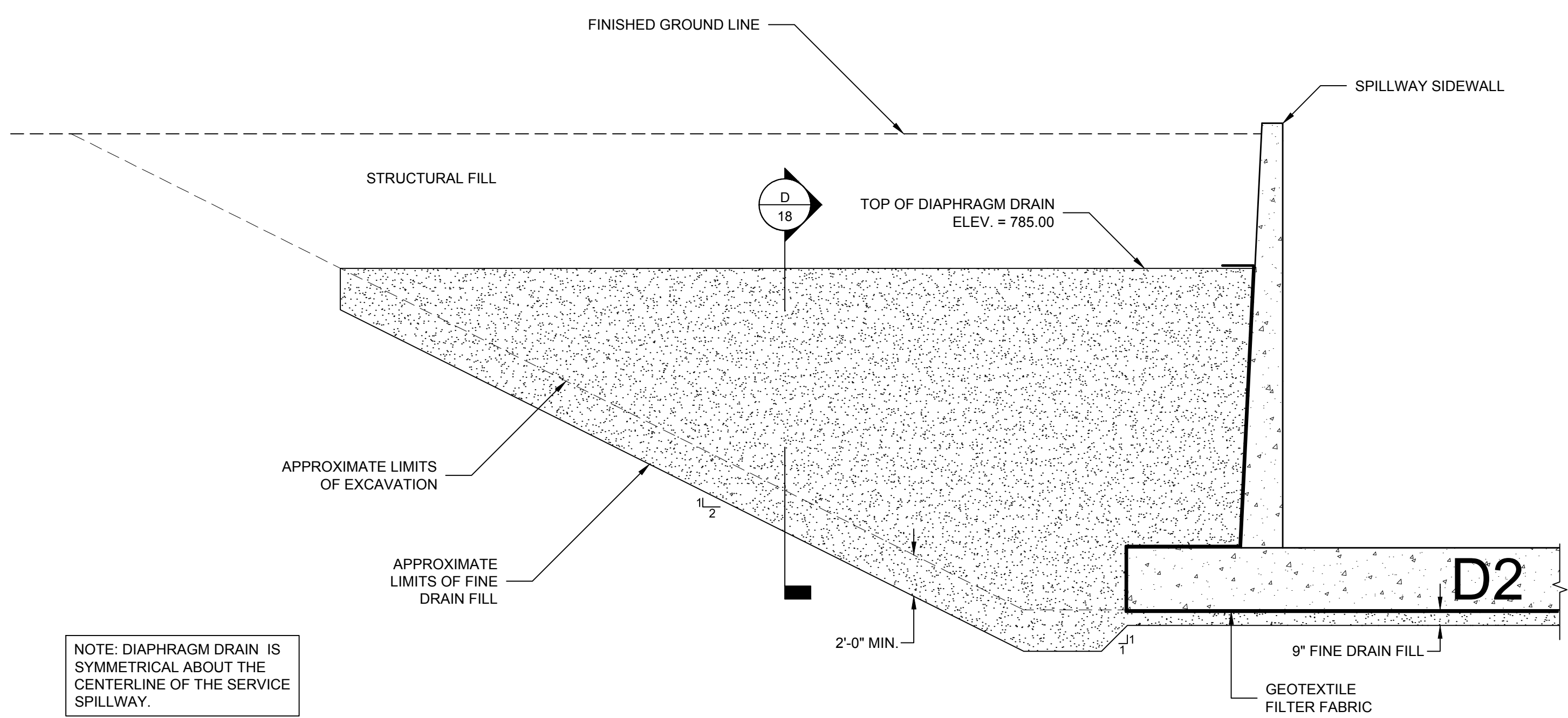
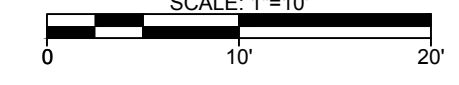
**Schnabel ENGINEERING**  
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 schnabel-eng.com

CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
**SERVICE SPILLWAY  
 DRAINAGE PLAN**

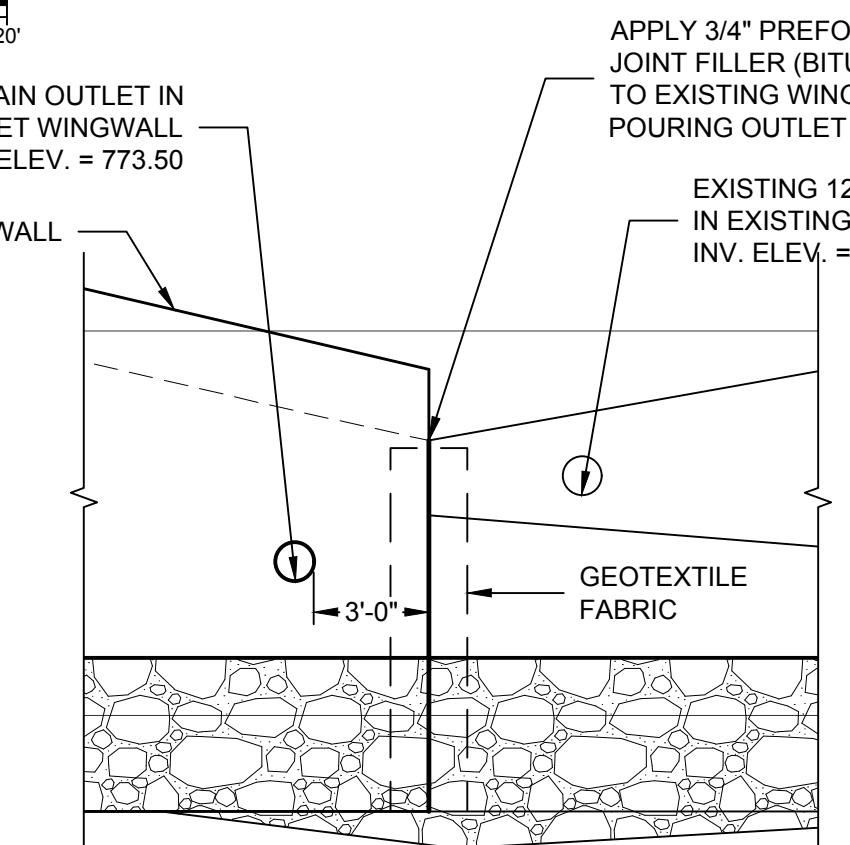
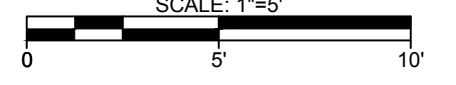
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 17 OF 66



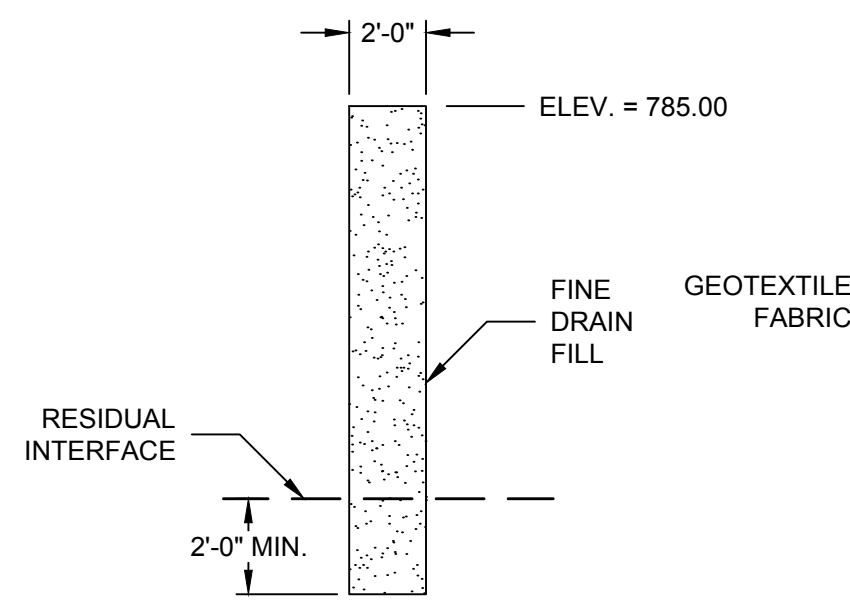
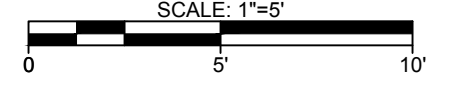
1 PROFILE THROUGH CENTERLINE OF SERVICE SPILLWAY



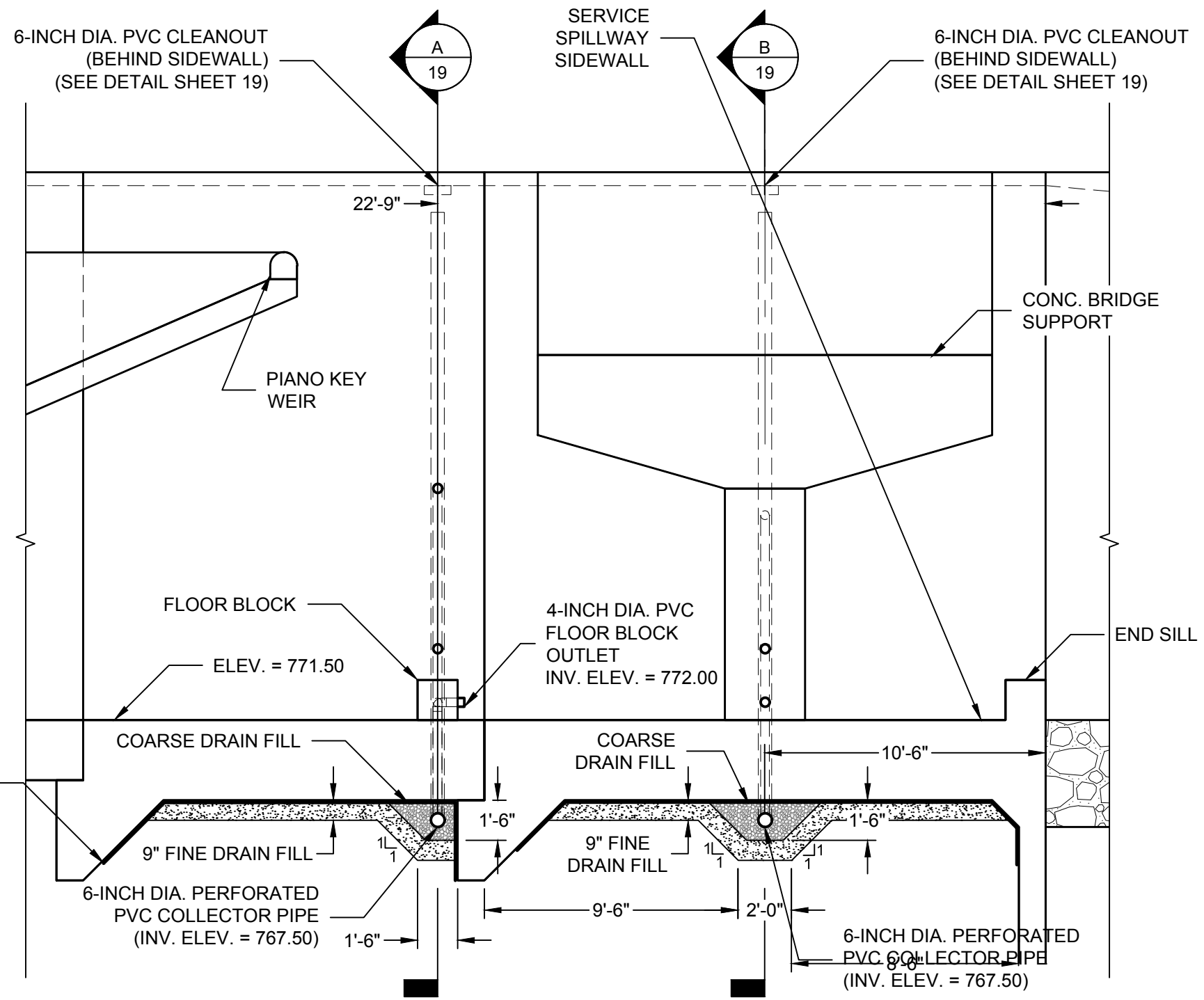
C DIAPHRAGM DRAIN SECTION



D WINGWALL CONNECTION



D DIAPHRAGM DRAIN SECTION



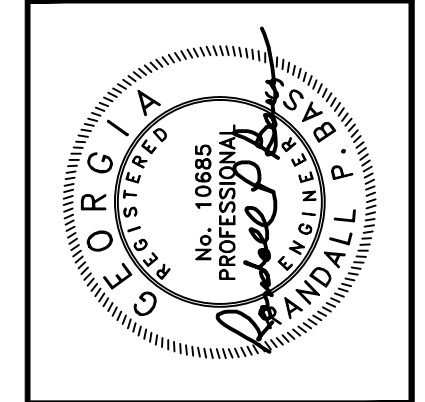
2 SERVICE SPILLWAY DRAINAGE DETAILS



NOTE: DIAPHRAGM DRAIN IS SYMMETRICAL ABOUT THE CENTERLINE OF THE SERVICE SPILLWAY.

DATE	
DESCRIPTION	
REV	

CHECKED BY: RPL, JRC  
 DRAWN BY: GHB, JSR  
 DESIGNED BY: JTD, JC  
 RANDALL P. BASS, P.E.  
 GEORGIA PROFESSIONAL ENGINEER NO. 071017  
 DATE: 07/10/17



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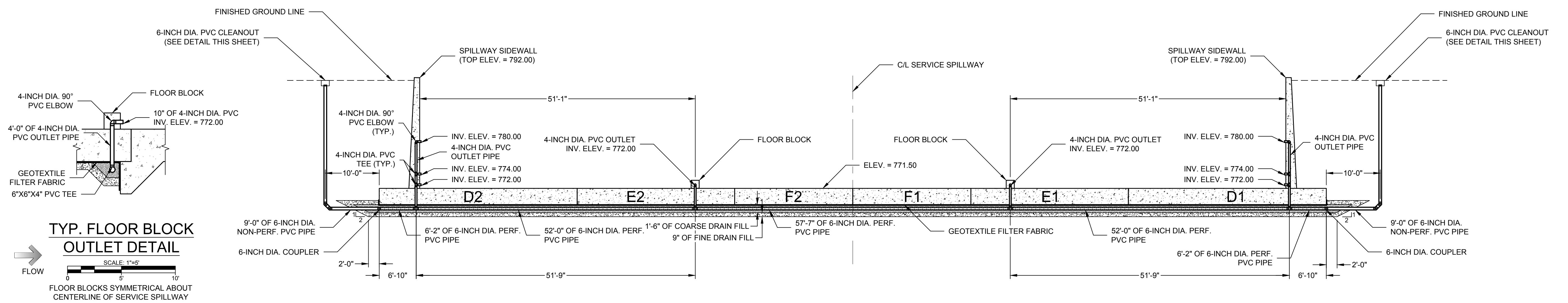
CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

SERVICE SPILLWAY  
 DRAINAGE PROFILE

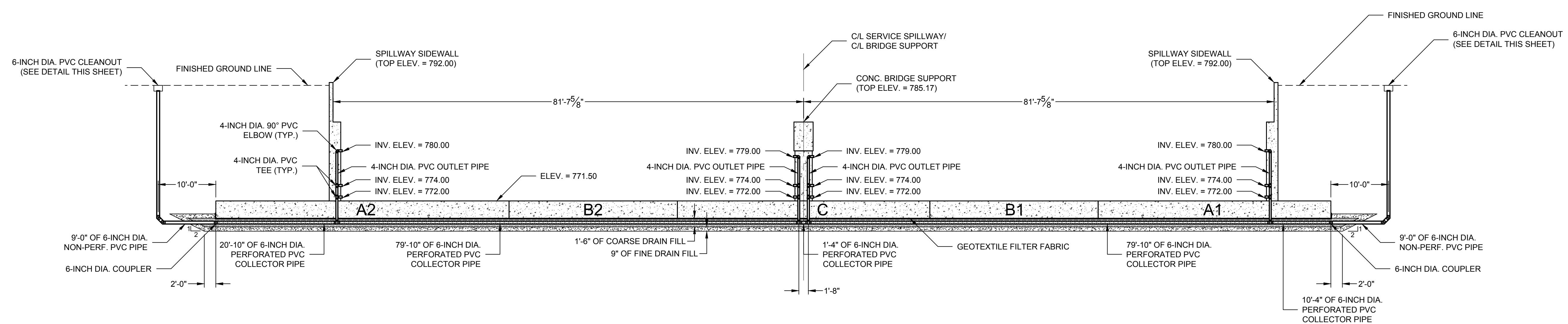
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 18 OF 66

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_SPILLWAY PLAN AND PROFILE.DWG

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\08-CADDRAWINGS\05-FINAL\_DESIGN\17\_SPILLWAY PLAN AND PROFILE.DWG

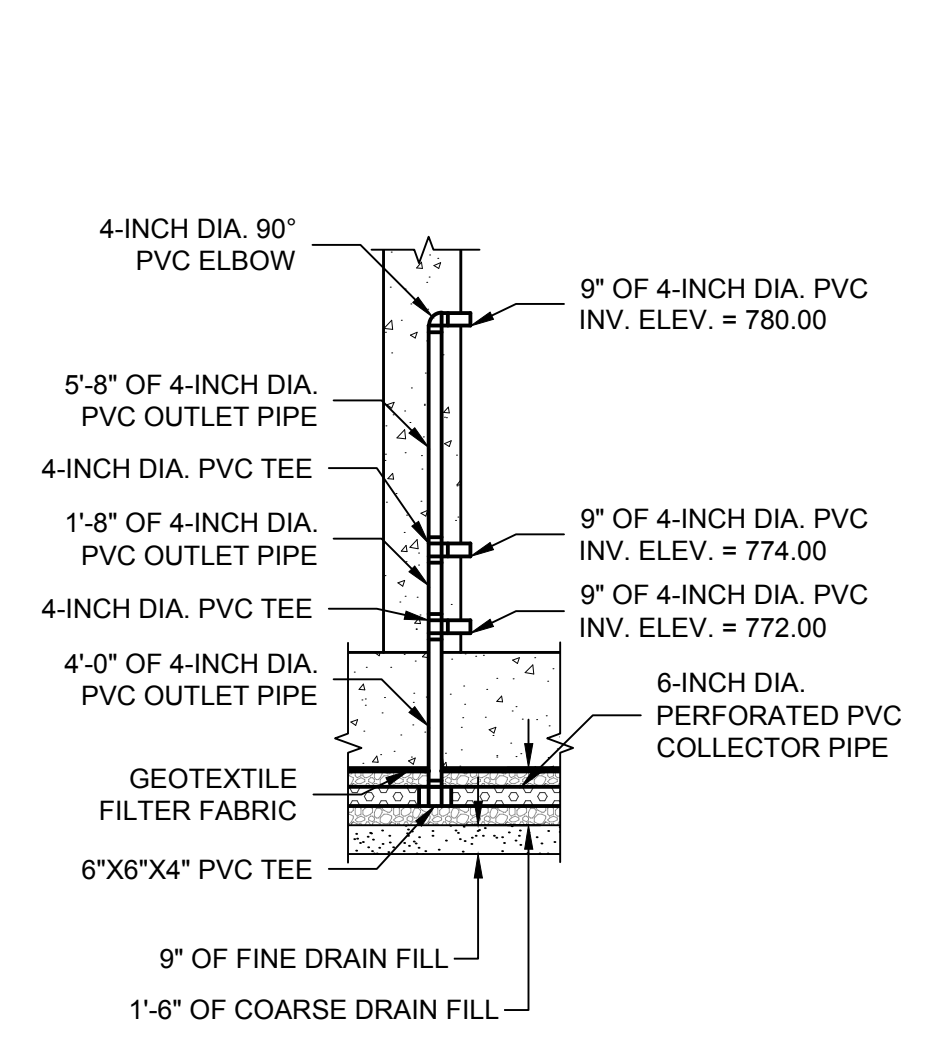


**A**  
17  
**DRAIN SECTION**  
SCALE: 1"=5'  
0 5 10

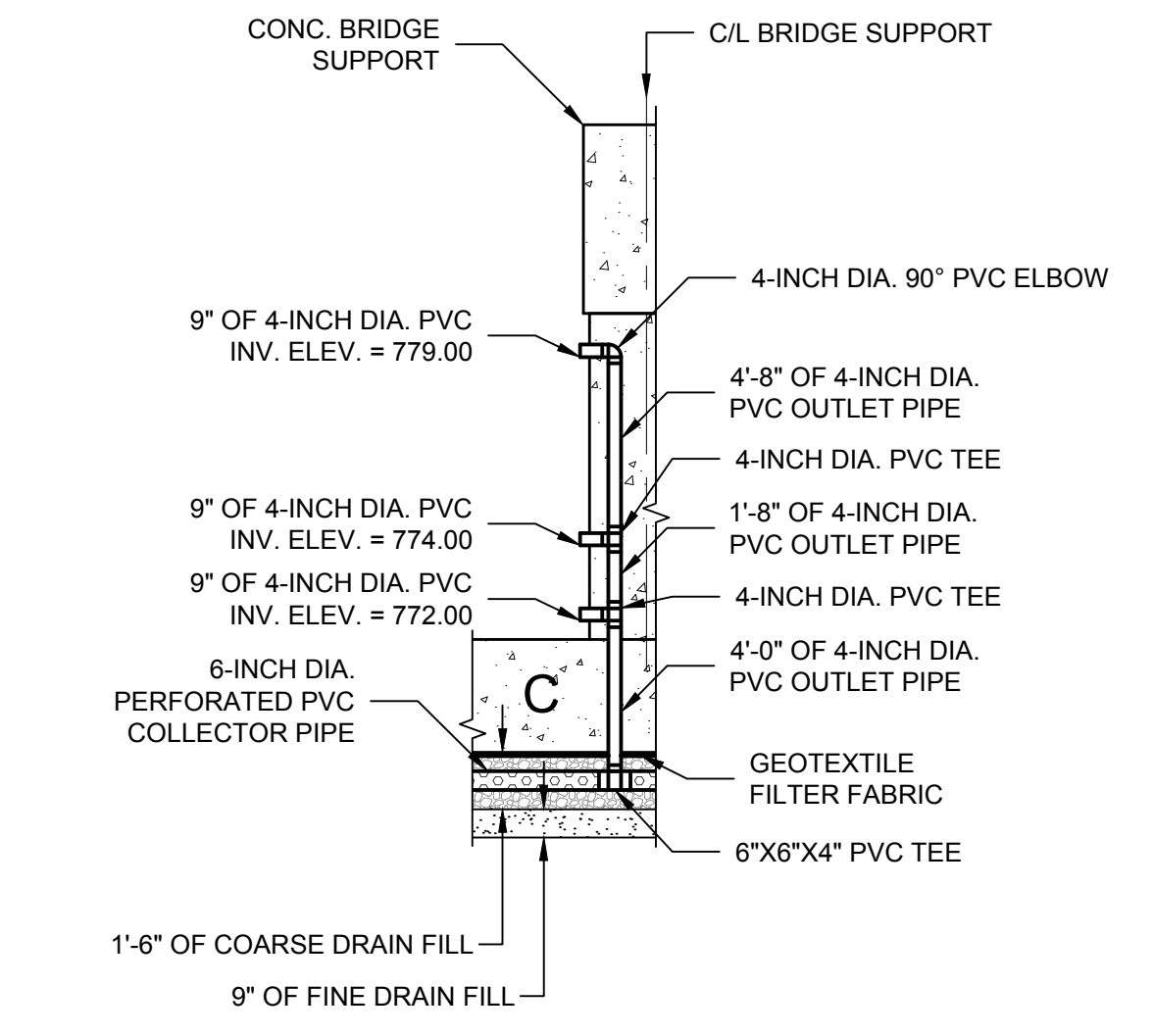


**B**  
17  
**DRAIN SECTION**  
SCALE: 1"=10'  
0 10 20

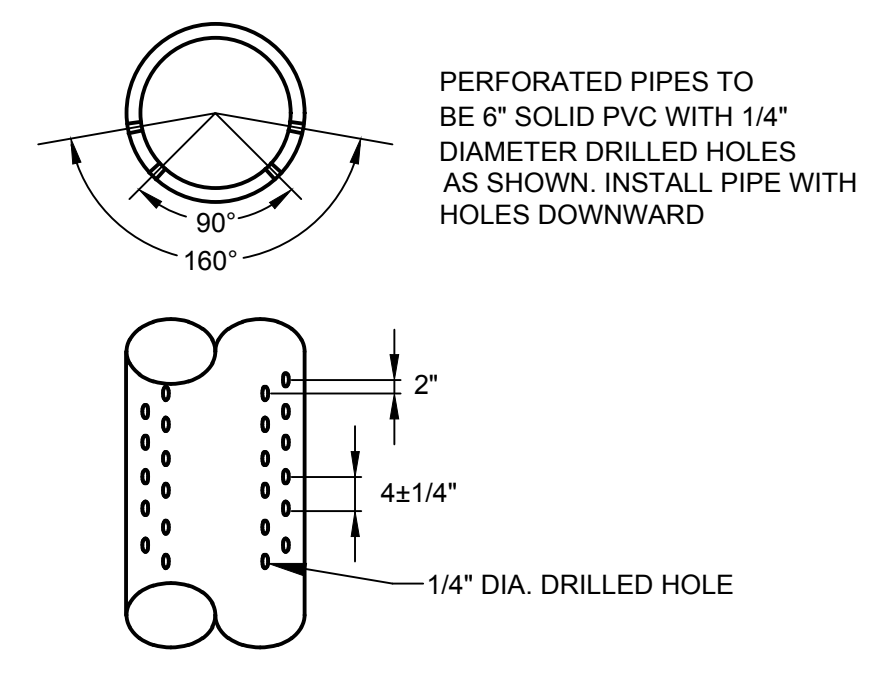
NOTE: INSTALL SMALL ANIMAL GUARDS ON ALL DRAIN PIPE OUTLETS. (I.E. FLOOR BLOCK OUTLETS, SIDEWALL OUTLETS, AND BRIDGE SUPPORT OUTLET LOCATIONS)



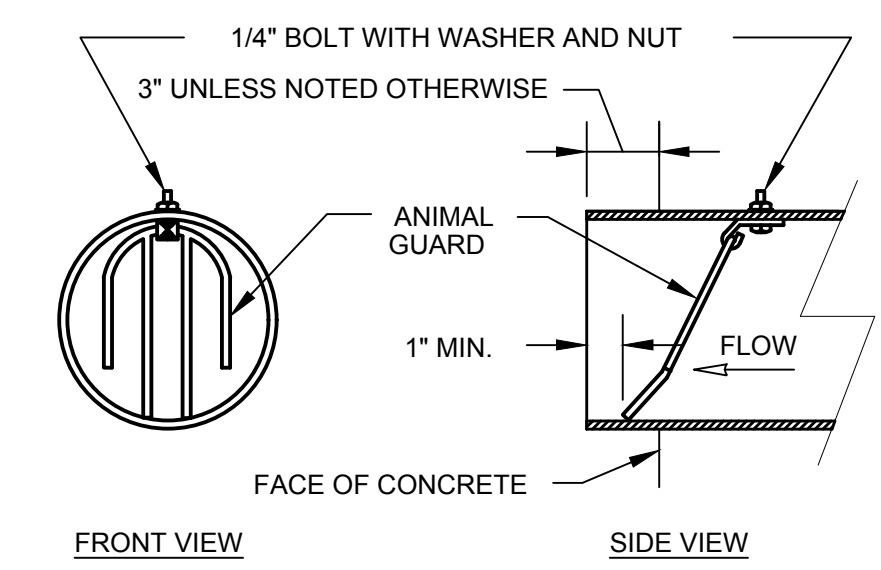
**TYP. SIDEWALL OUTLETS DETAIL**  
SCALE: 1"=5'  
0 5 10  
DRAIN OUTLETS SYMMETRICAL ABOUT CENTERLINE OF SERVICE SPILLWAY



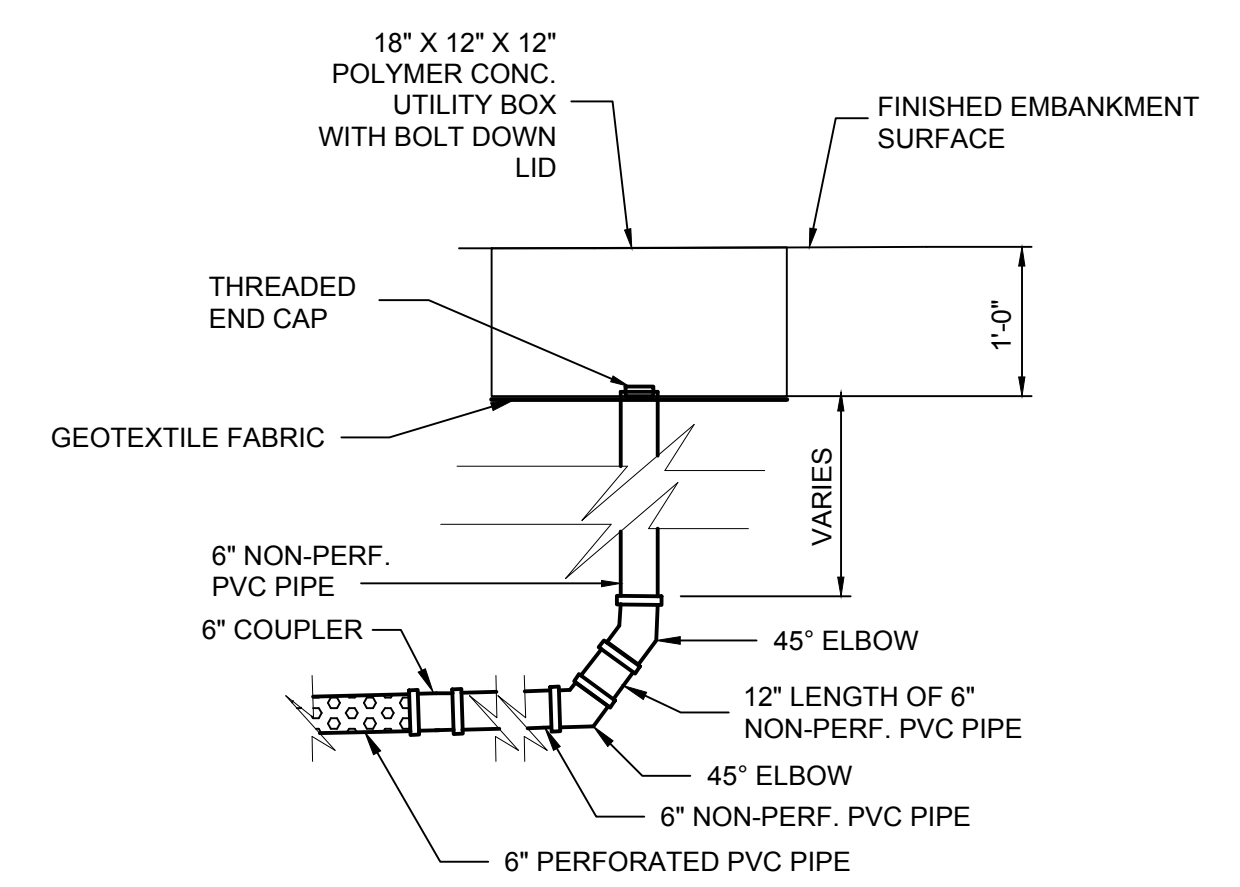
**TYP. BRIDGE SUPPORT OUTLETS DETAIL**  
SCALE: 1"=5'  
0 5 10  
DRAIN OUTLETS SYMMETRICAL ABOUT CENTERLINE OF BRIDGE SUPPORT



**6" PERFORATED PIPE DETAIL**  
N.T.S.

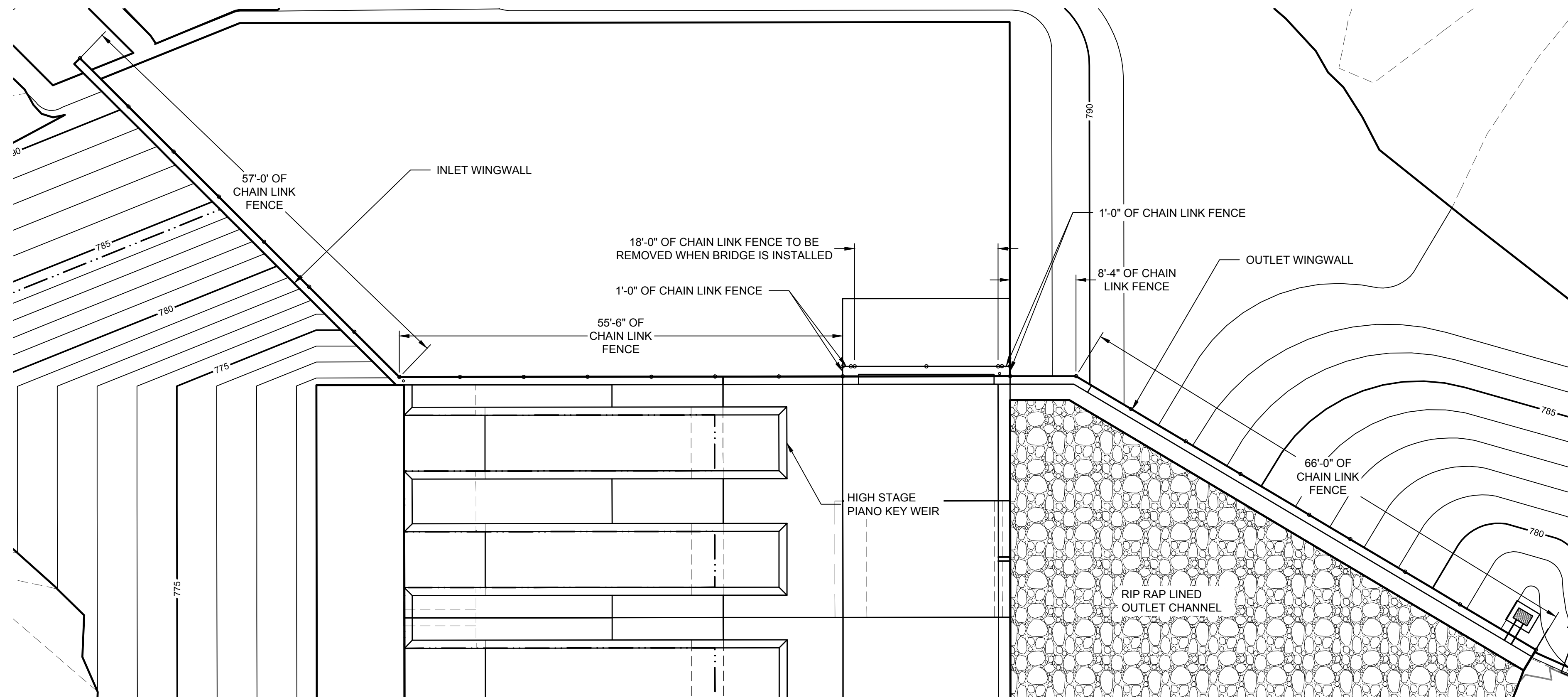


**ANIMAL GUARD DETAIL**  
N.T.S.  
APPROVED MODEL MANUFACTURED BY "AGRI-DRAIN" OR EQUAL (AGRI-DRAIN TELEPHONE NUMBER: 1-800-232-4742)

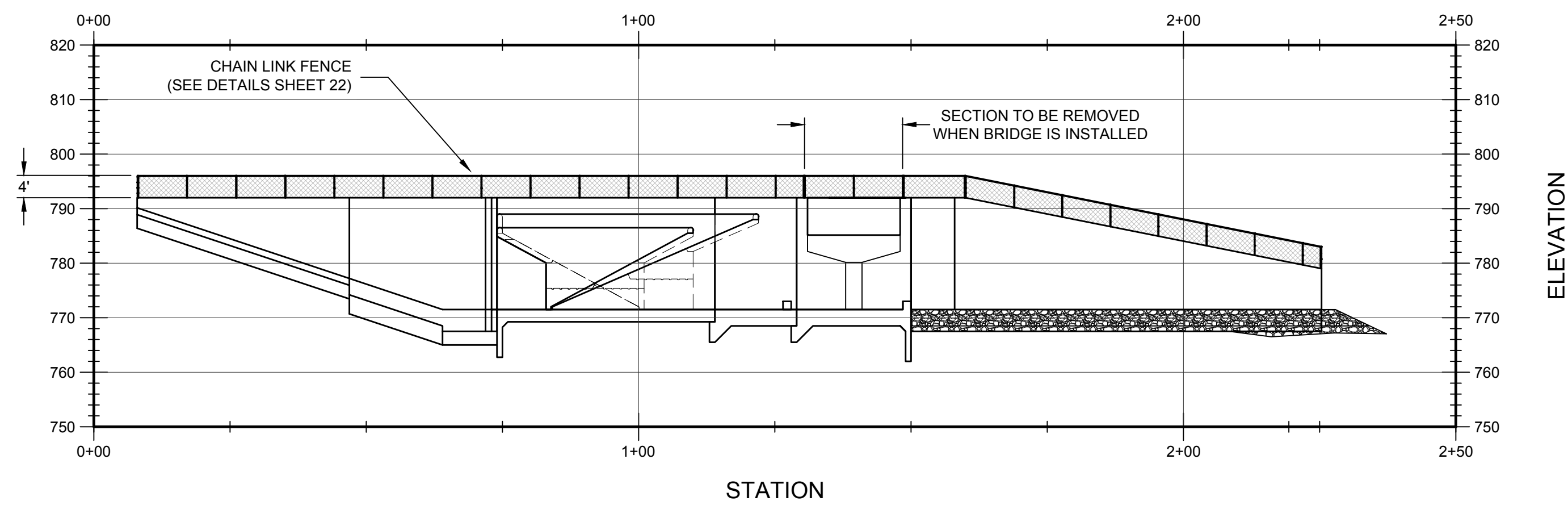


**6" PVC CLEANOUT DETAIL**  
N.T.S.

DATE	
DESCRIPTION	
REV	
CHECKED BY:	RPL, JRC
DESIGNED BY:	JTD, JC
DRAWN BY:	GHB, JSR
PROJECT:	16C17043.00
DATE:	07/10/2017
SHEET:	19 OF 66
DESIGNER:	RANDALL P. BASS, P.E.
DATE:	07/10/17
PROFESSIONAL ENGINEER NO.:	00685
STATE:	GA
ORGANIZATION:	Schnabel ENGINEERING
ADDRESS:	6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com
PROJECT:	CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA
PROJECT:	SERVICE SPILLWAY DRAINAGE DETAILS



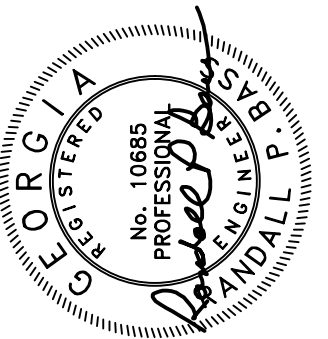


1 SERVICE SPILLWAY FENCING LAYOUT PLAN  
 (LEFT ABUTMENT)  
 SCALE: 1"=10'

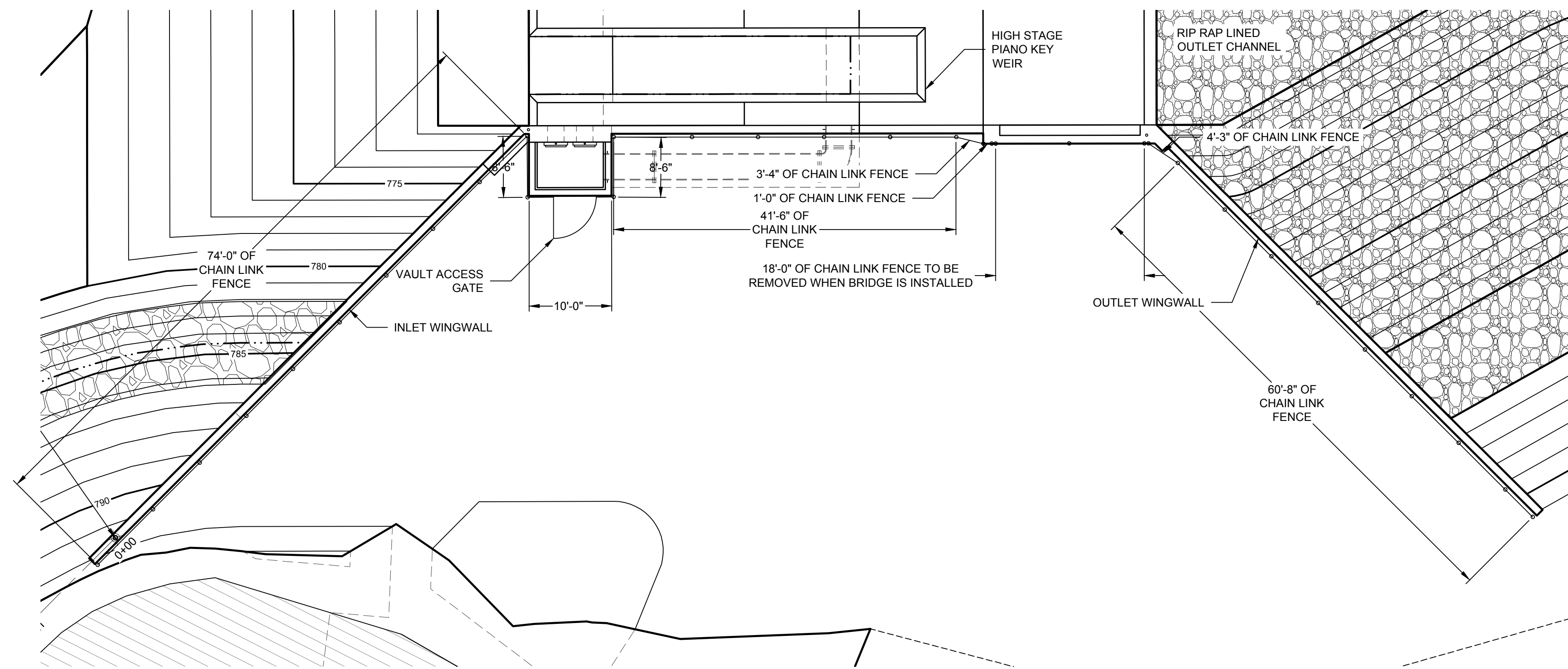


2 SERVICE SPILLWAY FENCING PROFILE  
 (LEFT ABUTMENT)  
 SCALE: 1"=10'

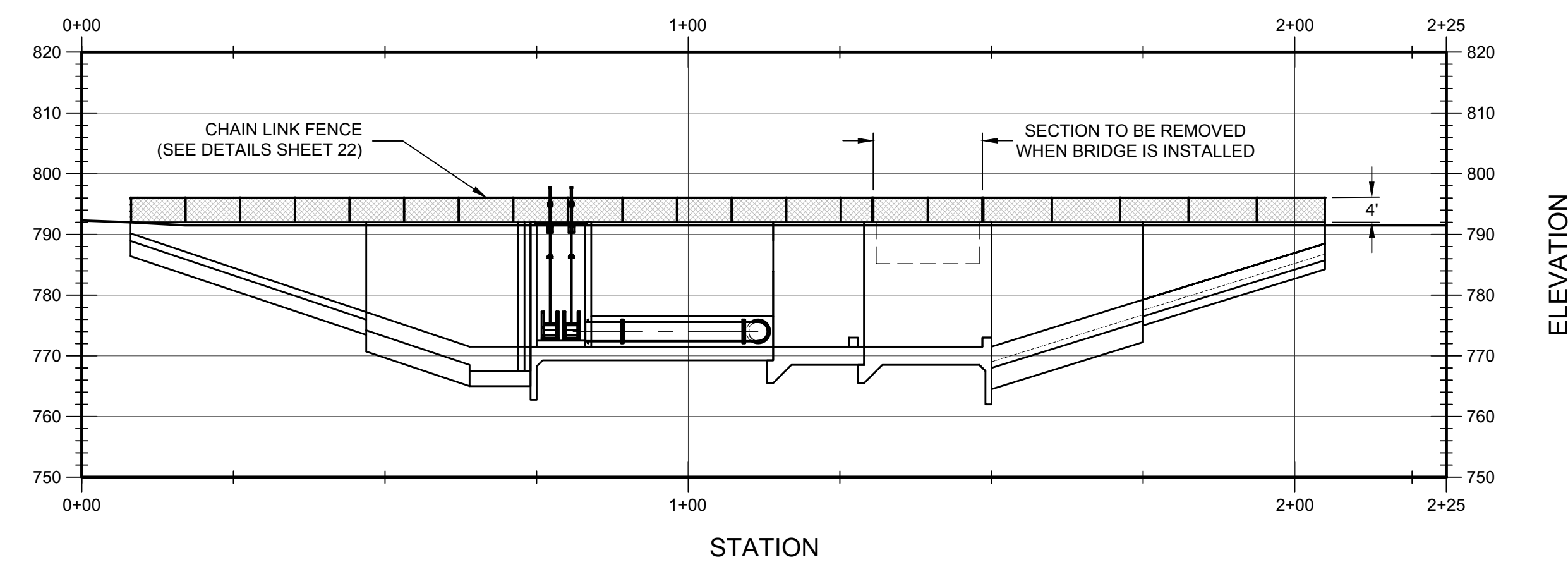
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_PROPOSED SITE PLAN.DWG

PROJECT: 16C17043.00	
DATE: 07/10/2017	
SHEET 20 OF 66	
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CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
<b>SERVICE SPILLWAY FENCING          LAYOUT LEFT SIDE</b>	
DESIGNED BY: JTD, JC	CHECKED BY: RPB, JRC
DRAWN BY: GHB, JSR	RANDALL P. BASS, P.E. 
	
GEORGIA PROFESSIONAL ENGINEER NO. 10685 DATE: 07/10/17	
REV	DESCRIPTION





1 SERVICE SPILLWAY FENCING LAYOUT PLAN (RIGHT ABUTMENT)  
 SCALE: 1"=10'  
 0 10' 20'

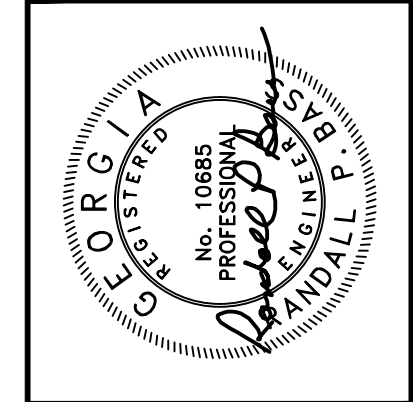


2 SERVICE SPILLWAY FENCING PROFILE (RIGHT ABUTMENT)  
 SCALE: 1"=10'  
 0 10' 20'

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_PROPOSED SITE PLAN.DWG

REV	DESCRIPTION	DATE

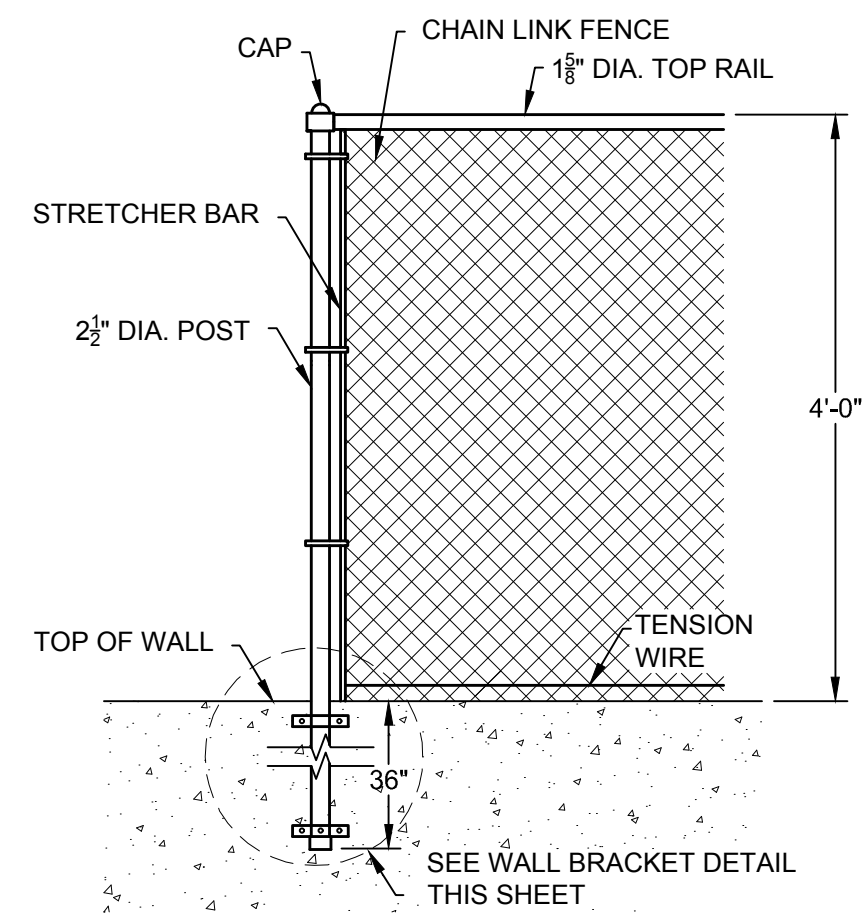
DESIGNED BY: JTD, JC  
 DRAWN BY: GHB, JSR  
 CHECKED BY: RPL, JRC  
 RANDALL P. BASS, P.E.  
 RANDALL P. BASS  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685  
 DATE: 07/10/17



**Schnabel**  
 ENGINEERING  
 6445 Shiloh Road, Suite A, Alpharetta, GA 30005 /  
 Phone: 770-781-8008 / Fax: 770-781-8003 /  
 schnabel-eng.com

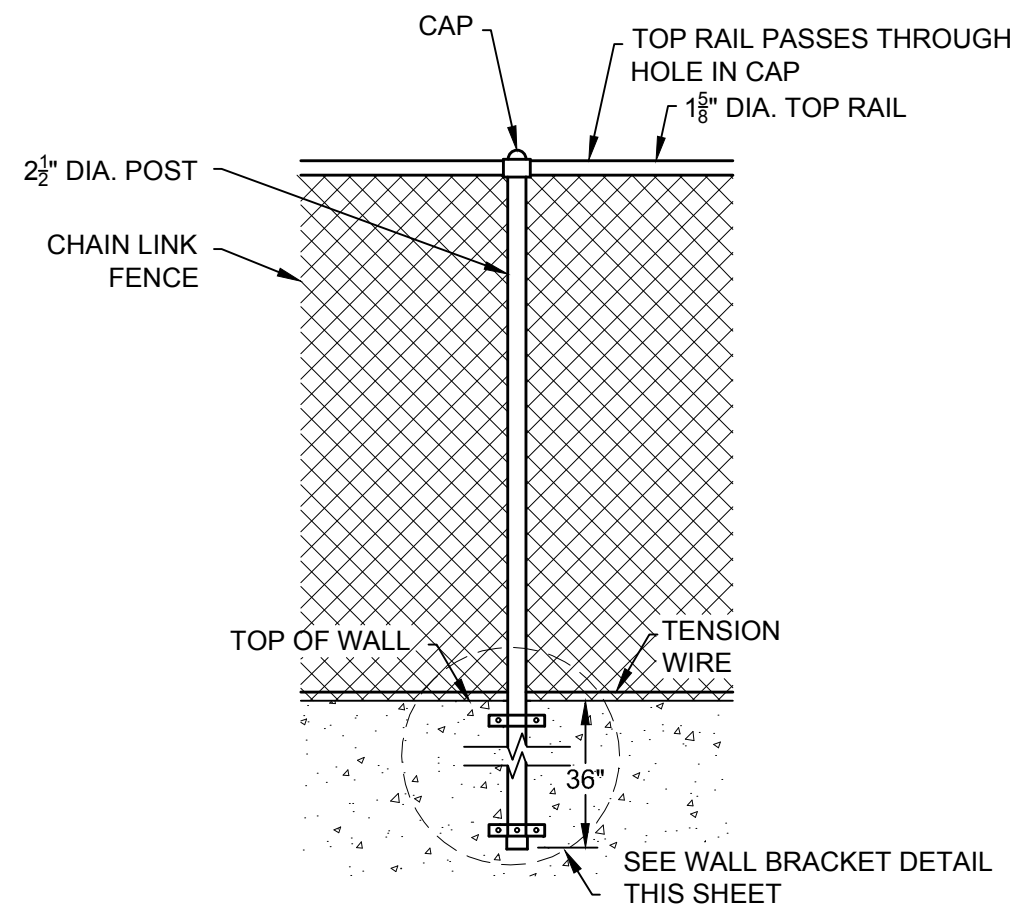
CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
 SERVICE SPILLWAY FENCING  
 LAYOUT RIGHT SIDE

PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 21 OF 66

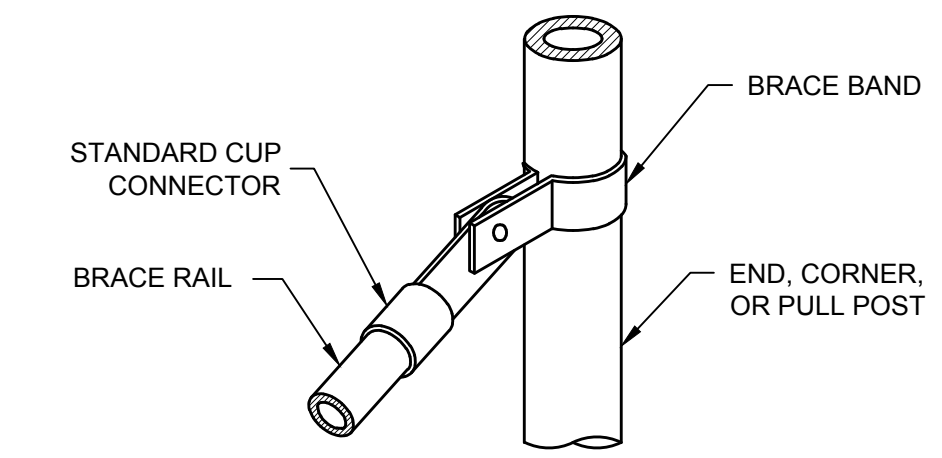


- NOTES:**
1. ALL FENCING AND HARDWARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  2. CHAIN LINK FENCE, RAILS, AND POSTS TO BE PLASTIC COATED.
  3. STRETCHER BARS TO BE USED WITH CORNER OR END POST AT ALL HORIZONTAL OR VERTICAL BENDS.
  4. CHAIN LINK FENCE FABRIC TO BE PLACED ON OUTSIDE OF POST.
  5. REFER TO FENCING SPECIFICATION 02830.

**1 SPILLWAY FENCING - END POST DETAIL**  
N.T.S.



**2 SPILLWAY FENCING - INTERIOR POST DETAIL**  
N.T.S.



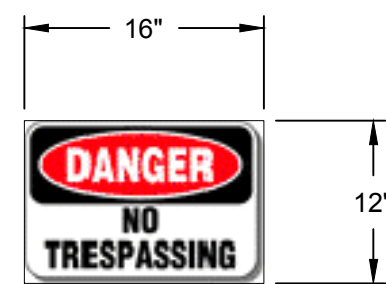
**3 DETAIL OF BRACE CONNECTION**  
N.T.S.

**SIGNS**

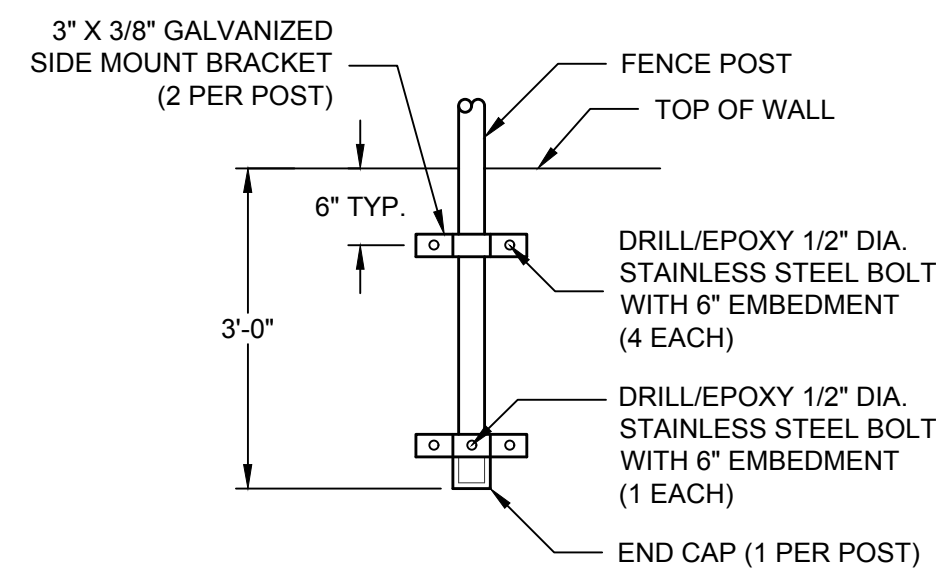
TC42924 - DAM ACCESS ROAD GATE,  
CHUTE SPILLWAY FENCING

**NOTES:**

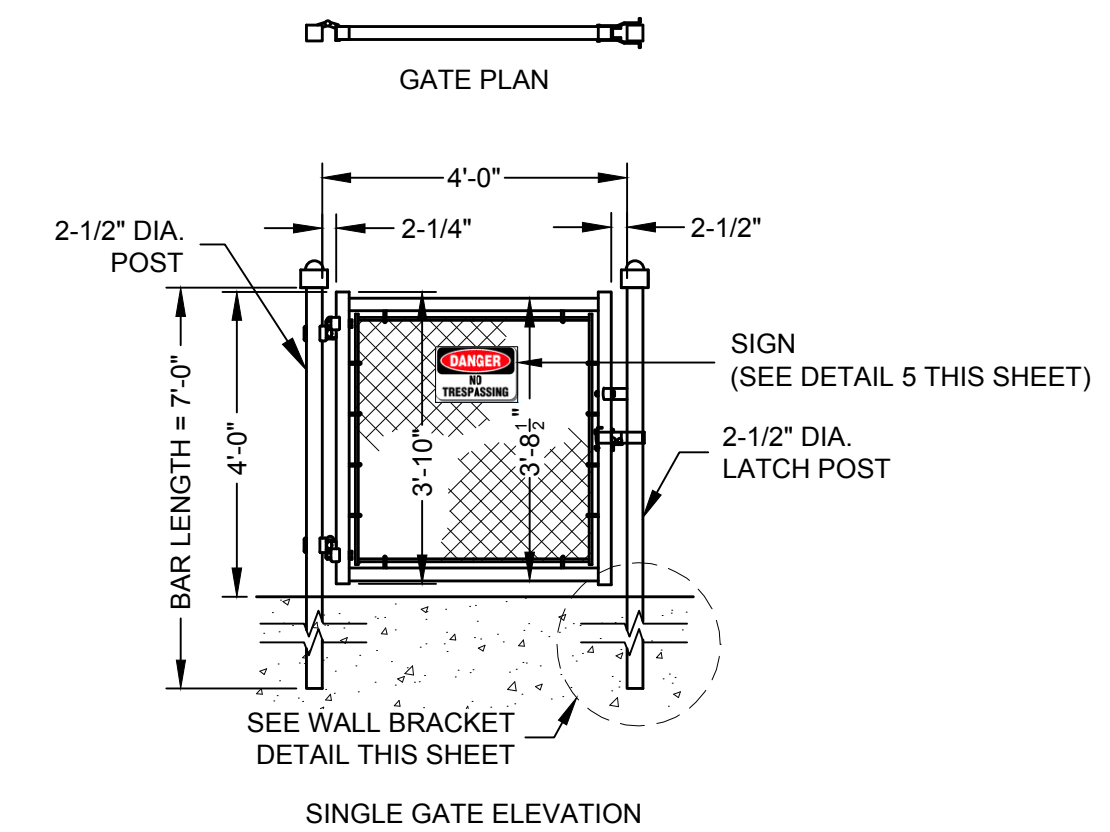
1. SIGNS BY EMEDCO OR APPROVED EQUAL.
2. SIGNS SHALL BE REFLECTIVE ALUMINUM.
3. SIGN SHALL BE CENTERED ON THE GATE WITH TOP OF SIGN 4" FROM TOP OF THE GATE



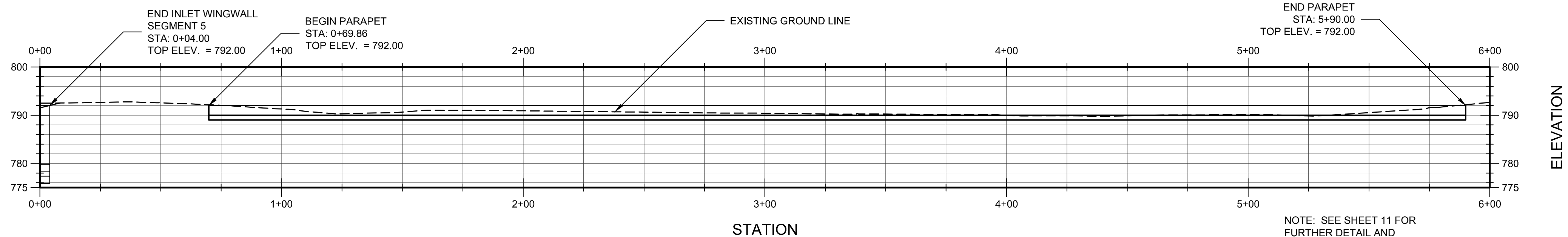
**4 SIGNAGE DETAIL**  
N.T.S.



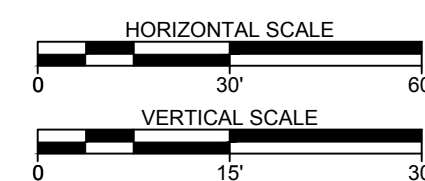
**5 WALL BRACKET DETAIL**  
(MOUNTED TO OUTSIDE FACE OF SPILLWAY SIDEWALL)  
N.T.S.



**6 GATE DETAIL**  
N.T.S.

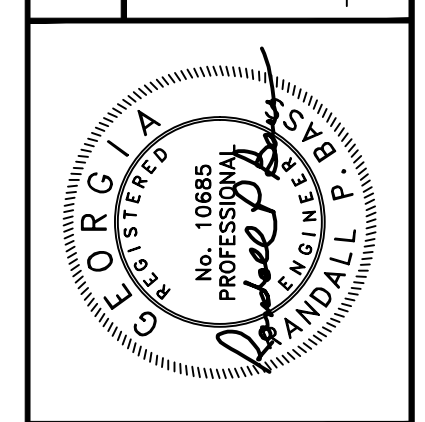


**7 PARAPET PROFILE**



REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685		



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 Phone: 770-781-8008 / Fax: 770-781-8003 /  
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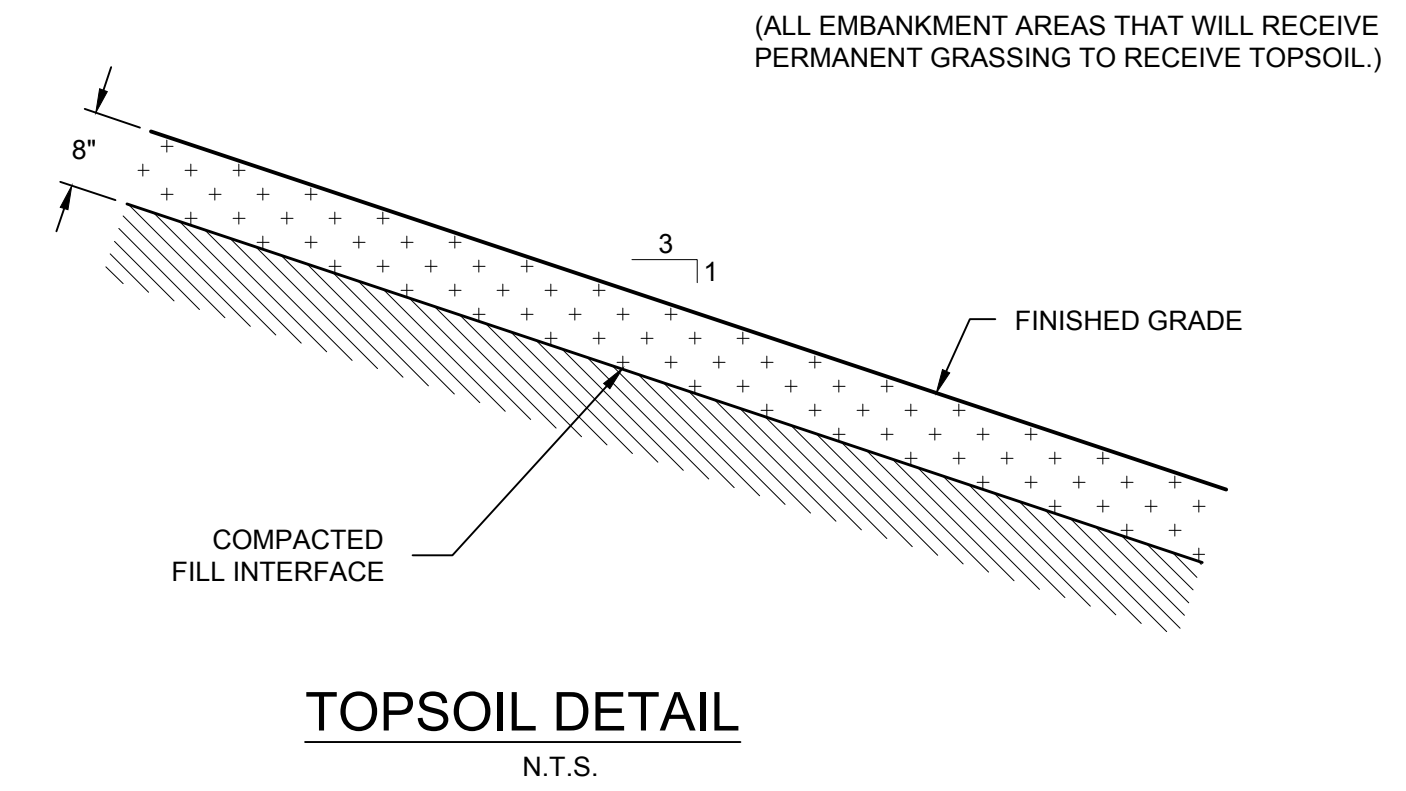
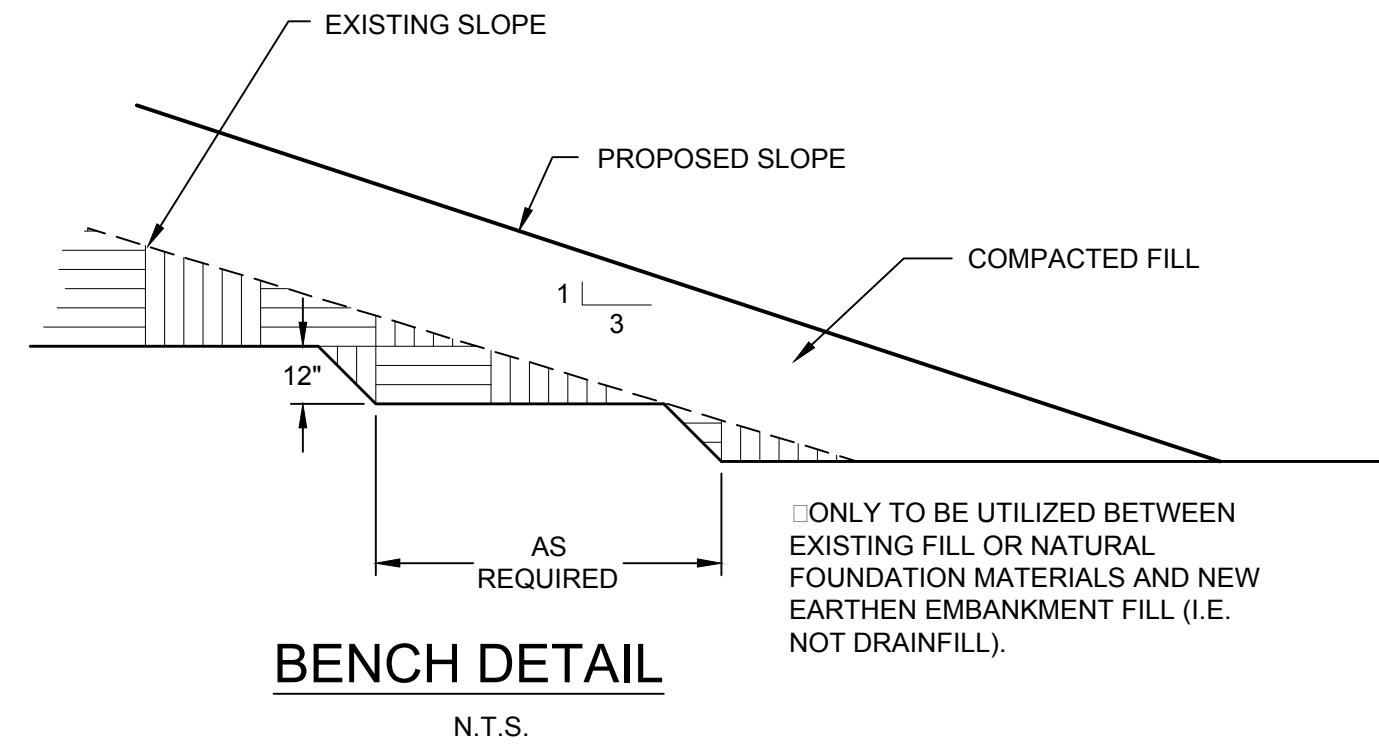
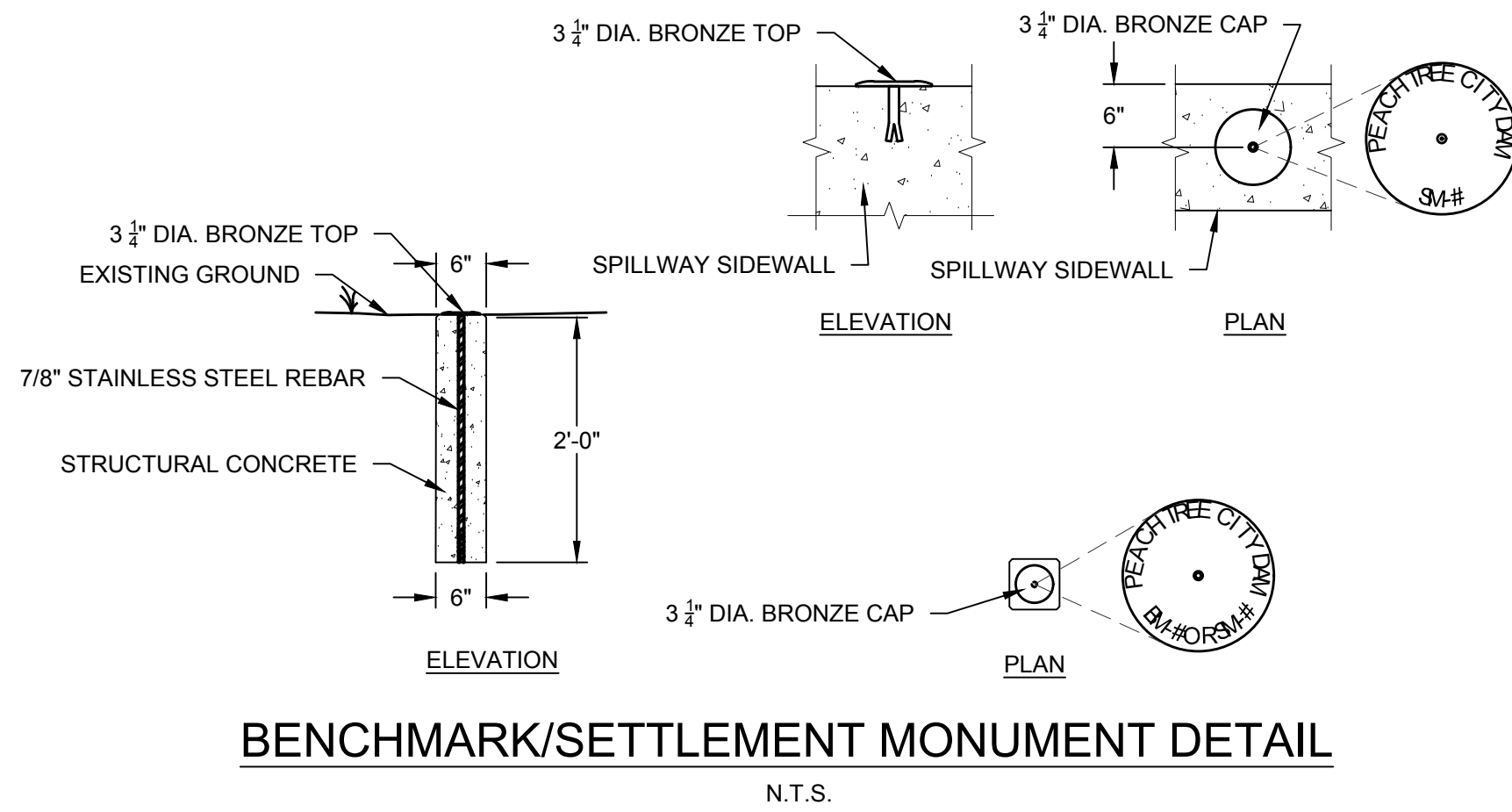
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

**SERVICE SPILLWAY FENCING  
DETAILS**

PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 22 OF 66

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_PROPOSED SITE PLAN.DWG

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\16C17043.00 EMBANKMENT DETAILS.DWG



STRUCTURAL MONITORING LOCATIONS						
Point	Elevation	Northing	Easting	Description	Baseline Station	Offset
SM-1	792.00	1231402.73	2172852.72	STRUCTURAL MONUMENT	0+73.96	80.80L
SM-2	792.00	1231331.35	2172830.51	STRUCTURAL MONUMENT	1+48.71	81.60L
SM-3	792.00	1231452.48	2172698.97	STRUCTURAL MONUMENT	0+73.85	80.80R
SM-4	792.00	1231381.48	2172675.21	STRUCTURAL MONUMENT	1+48.71	81.60R

NOTE: SEE SHEET 10 FOR PLAN LOCATIONS

FILL MATERIALS	STRUCTURAL FILL - COMPACTION REQUIREMENTS						
	UNIFIED CLASS	PERCENT OF MAXIMUM DENSITY	MOISTURE LIMITS PERCENT OPTIMUM		MAXIMUM LAYER THICKNESS IN UNCOMPACTED INCHES	MAX. ROCK SIZE IN INCHES	CONTROL TEST
			FROM	TO			
SANDY SILT	ML	95 (MIN)	OPT.	+4	9	6	ASTM D-698
SILTY SAND	SM	95 (MIN)	OPT.	+4	9	6	ASTM D-698
CLAYEY SAND	SC	95 (MIN)	OPT.	+4	9	6	ASTM D-698
LEAN CLAY	CL	95 (MIN)	OPT.	+4	9	6	ASTM D-698


NOTE:

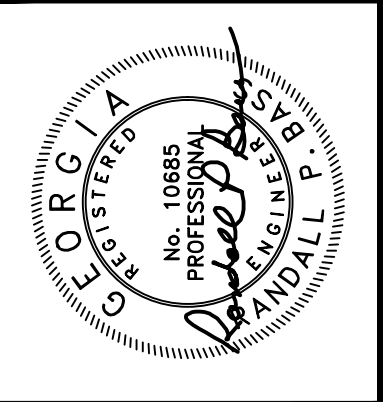
- EXCESS SOILS AND ROCK SHALL BE USED AS NON-STRUCTURAL FILL IN THE AREA DEPICTED AS "SPOIL AREA" ON THE DRAWINGS. THE EXCESS FILL MATERIAL SHALL NOT CONTAIN ORGANICS SUCH AS TREE STUMPS, BRANCHES AND BRUSH. COMPACTION IN DESIGNATED SPOIL AREA SHALL BE A MINIMUM OF 92 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST ASTM D698

FILL MATERIALS	STRUCTURAL FILL - PIANO KEY SUBGRADE COMPACTION REQUIREMENTS						
	UNIFIED CLASS	PERCENT OF MAXIMUM DENSITY	MOISTURE LIMITS PERCENT OPTIMUM		MAXIMUM LAYER THICKNESS IN UNCOMPACTED INCHES	MAX. ROCK SIZE IN INCHES	CONTROL TEST
			FROM	TO			
SANDY SILT	ML	98 (MIN)	OPT.	+4	9	6	ASTM D-1557
SILTY SAND	SM	98 (MIN)	OPT.	+4	9	6	ASTM D-1557
CLAYEY SAND	SC	98 (MIN)	OPT.	+4	9	6	ASTM D-1557
LEAN CLAY	CL	98 (MIN)	OPT.	+4	9	6	ASTM D-1557

NO.	DESCRIPTION	DATE

CHECKED BY: RPB\_JRC  
DRAWN BY: GHB\_JSR  
DESIGNED BY: JTD\_JC

**RANDALL P. BASS, P.E.**  
  
 No. 10885  
 PROFESSIONAL ENGINEER  
 STATE OF GEORGIA  
 LICENSE NO. 10885  
 DATE: 07/10/17

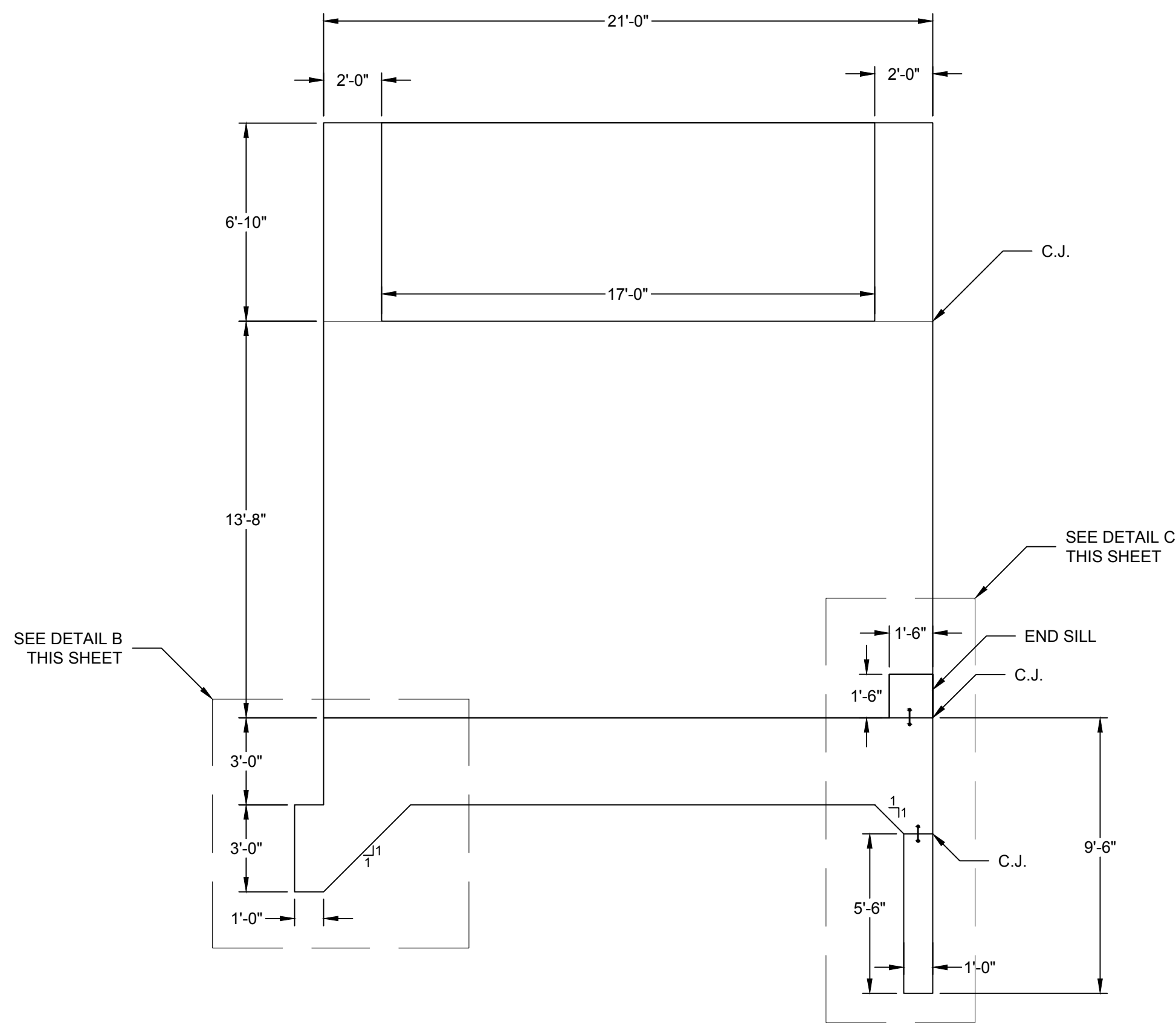


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 Phone: 770-781-8008 / Fax: 770-781-8003 /  
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CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

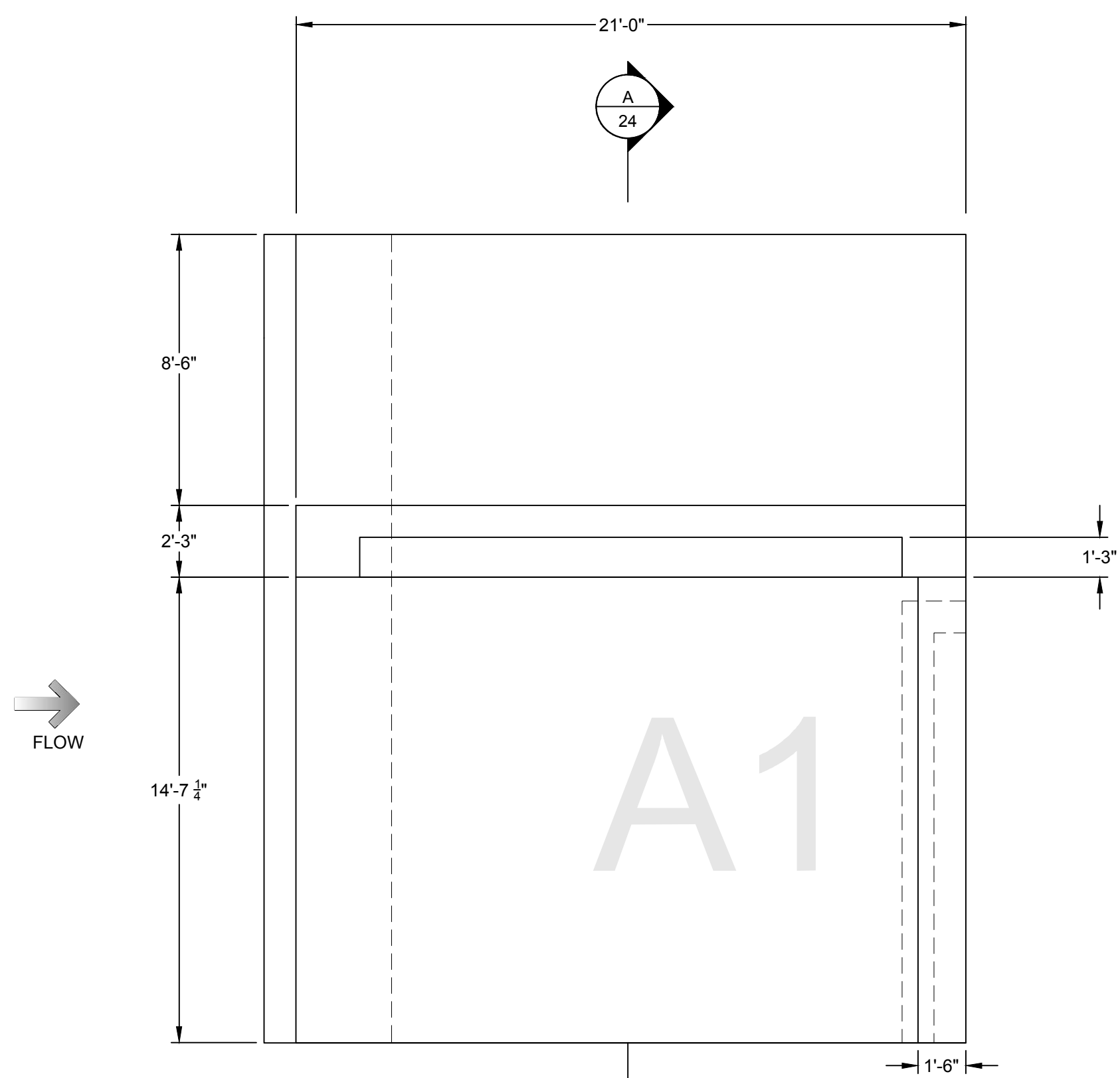
**INSTRUMENTATION AND  
EARTHWORK DETAILS**

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCT\PLT\_DWG



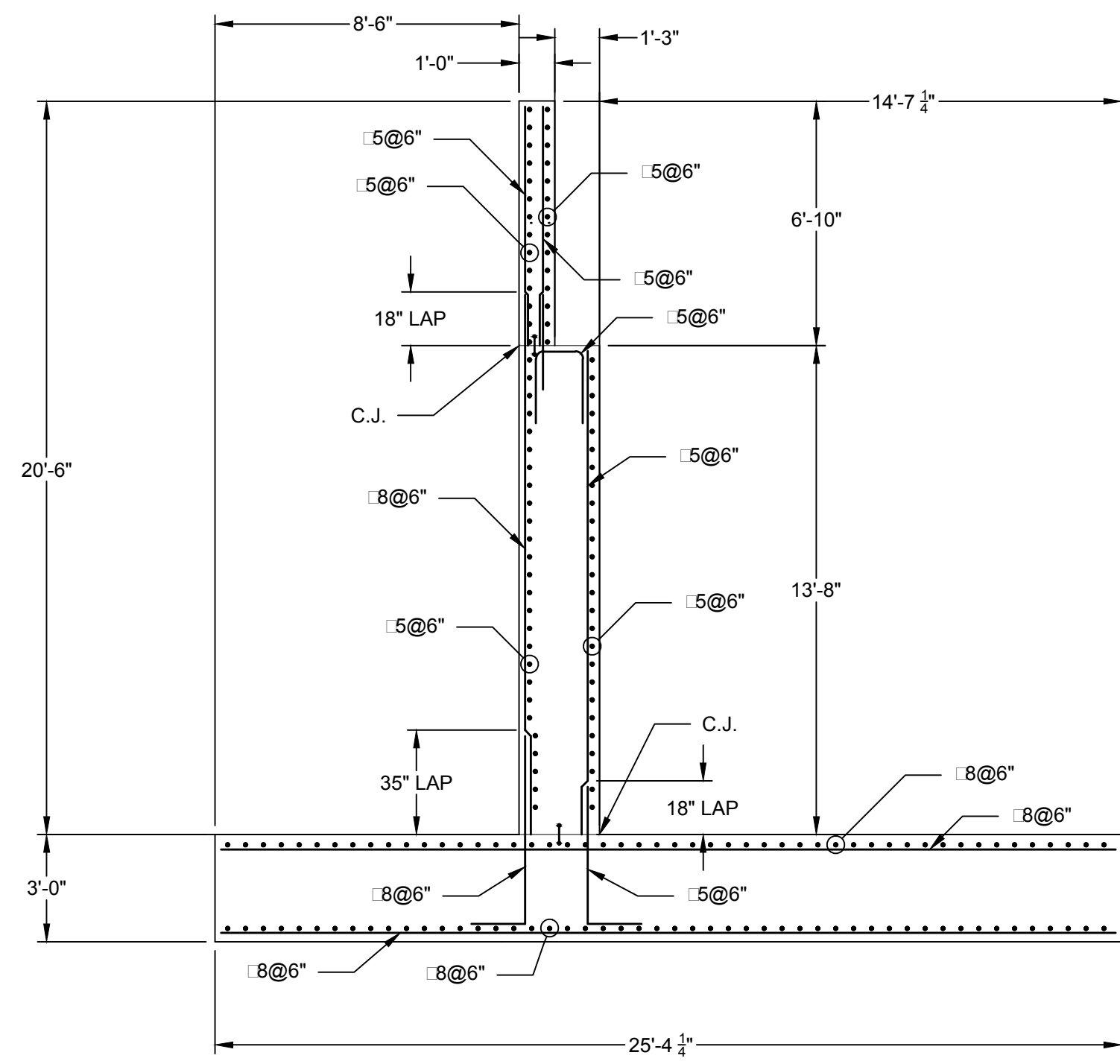
1 SEGMENT A1 SIDEWALL ELEVATION

SCALE: 1/4"=1'0"



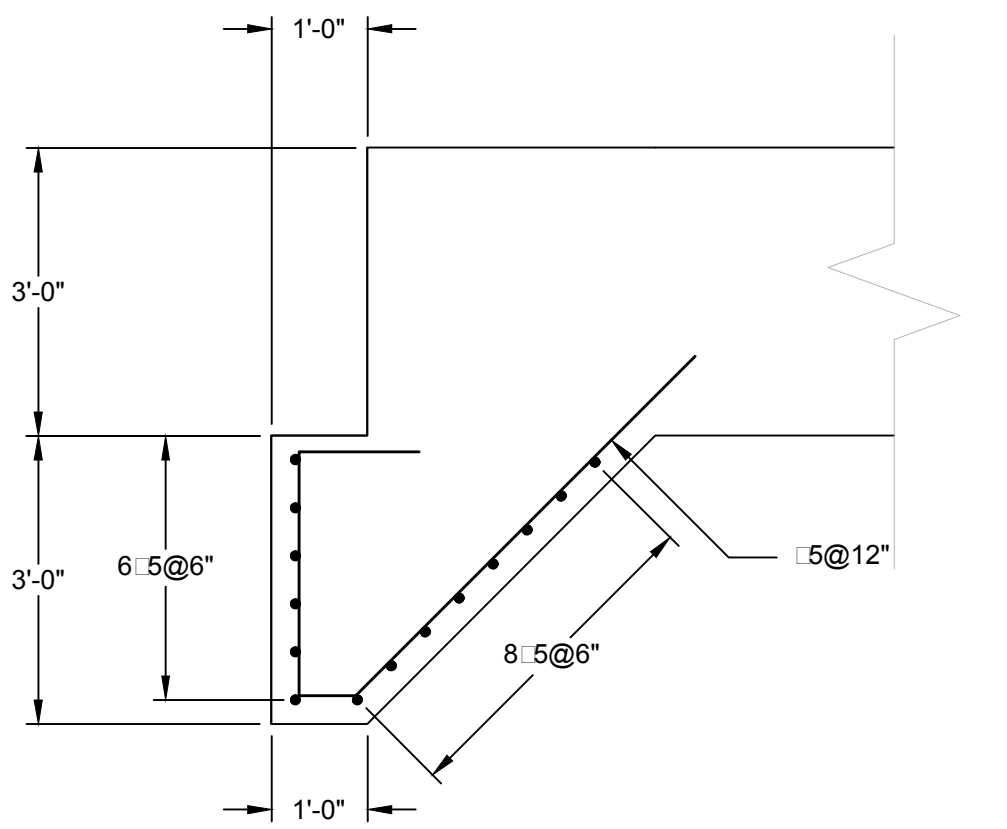
2 SEGMENT A1 SLAB PLAN

SCALE: 1/4"=1'0"



A SEGMENT A1 SECTION

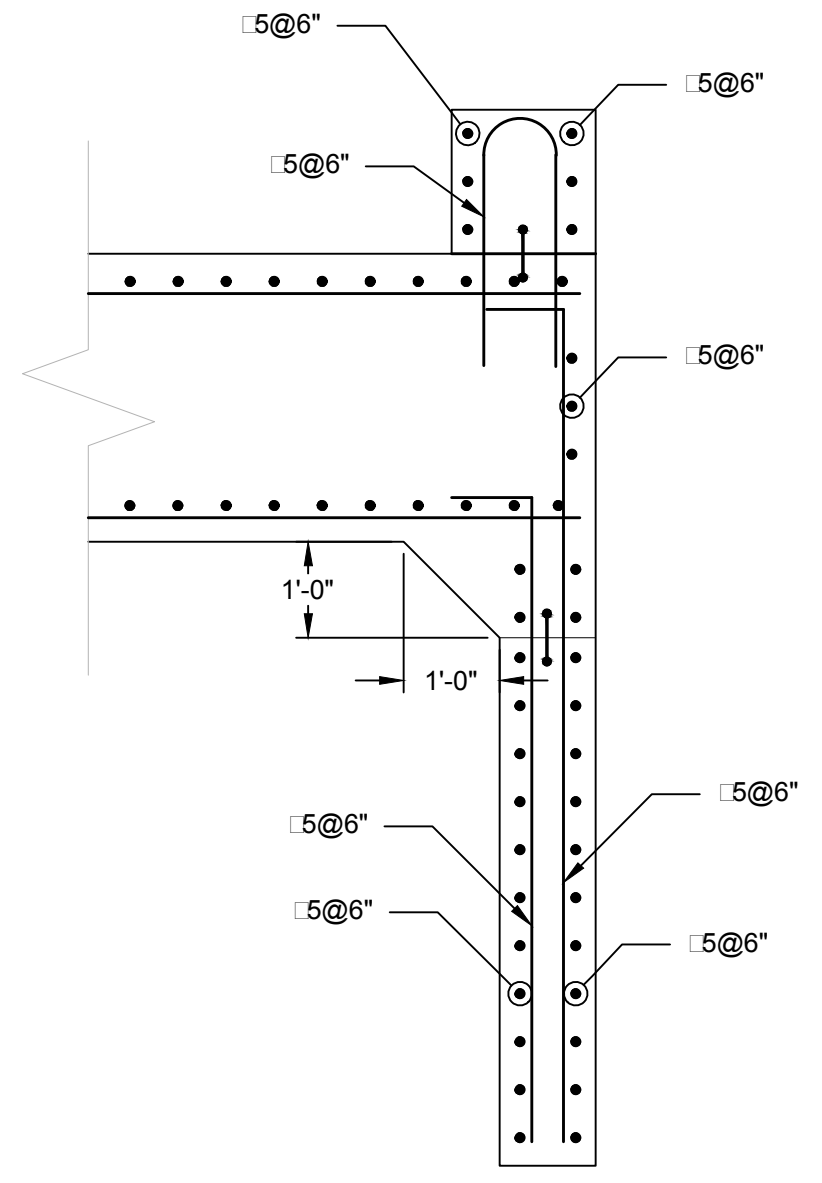
SCALE: 1/4"=1'0"



B CUTOFF WALL DETAIL

SCALE: 1/2"=1'0"

(TYPICAL)



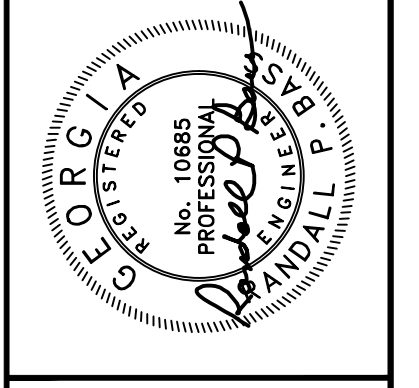
C KEY WALL DETAIL

SCALE: 1/2"=1'0"

(TYPICAL)

REV	DESCRIPTION	DATE

DESIGNED BY: JTD_JC	DRAWN BY: GHB_JSR	CHECKED BY: RPL_JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685		



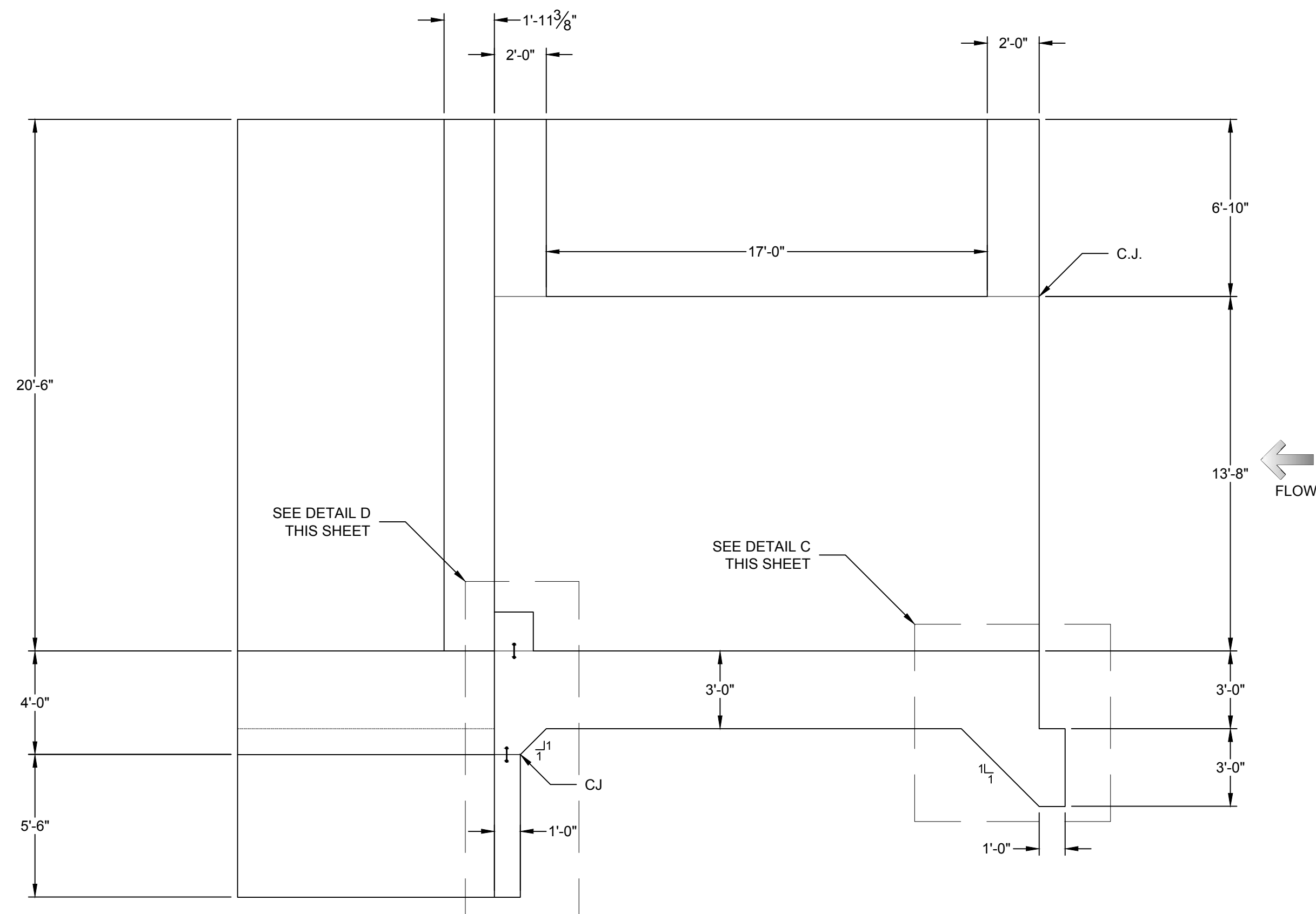
**Schnabel ENGINEERING**

6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
 Phone: 770-781-8008 / Fax: 770-781-8003 /  
[schnabel-eng.com](http://www.schnabel-eng.com)

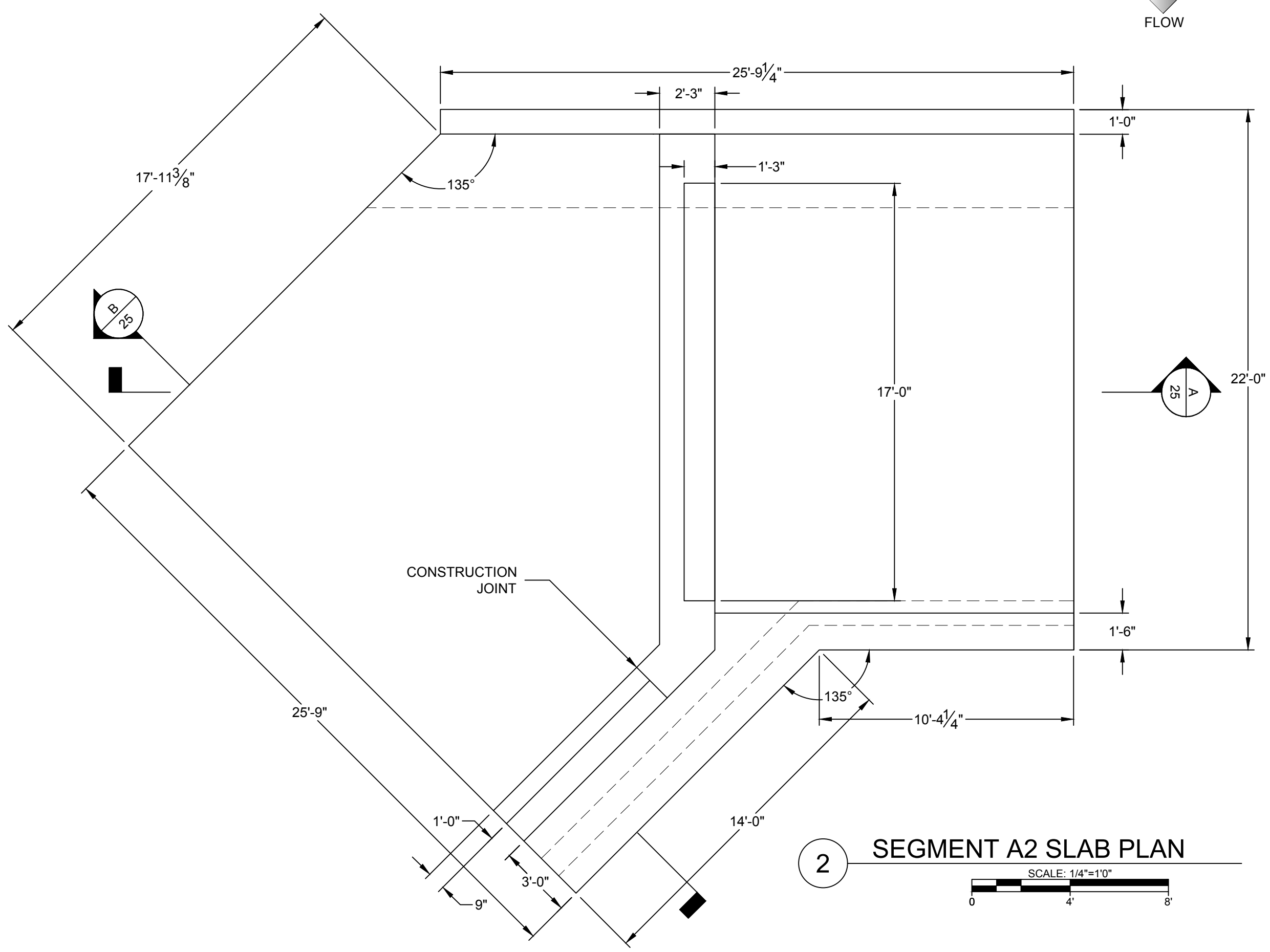
CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

**WALL AND SLAB DETAILS  
 SEGMENT A1**

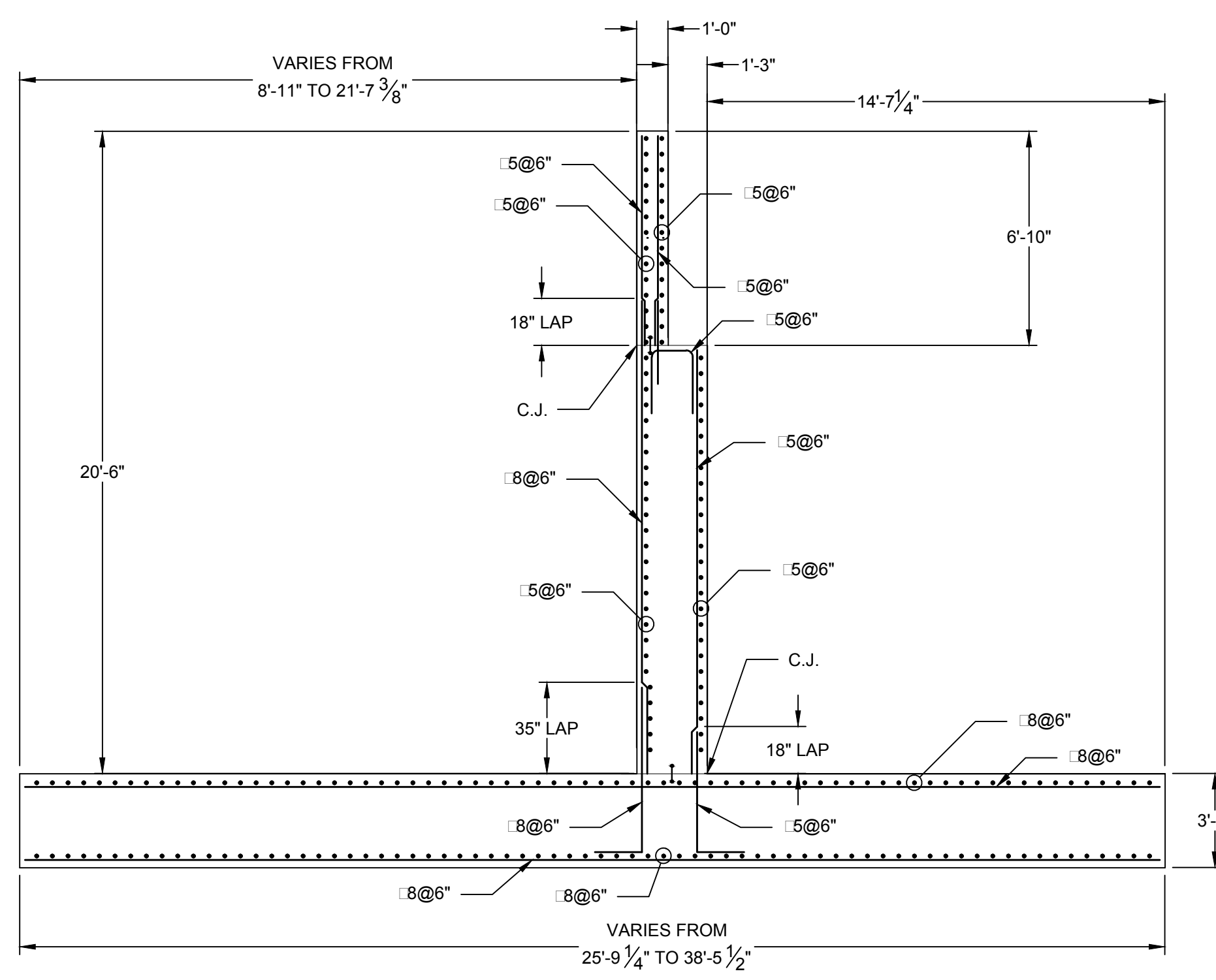
PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 24 OF 66



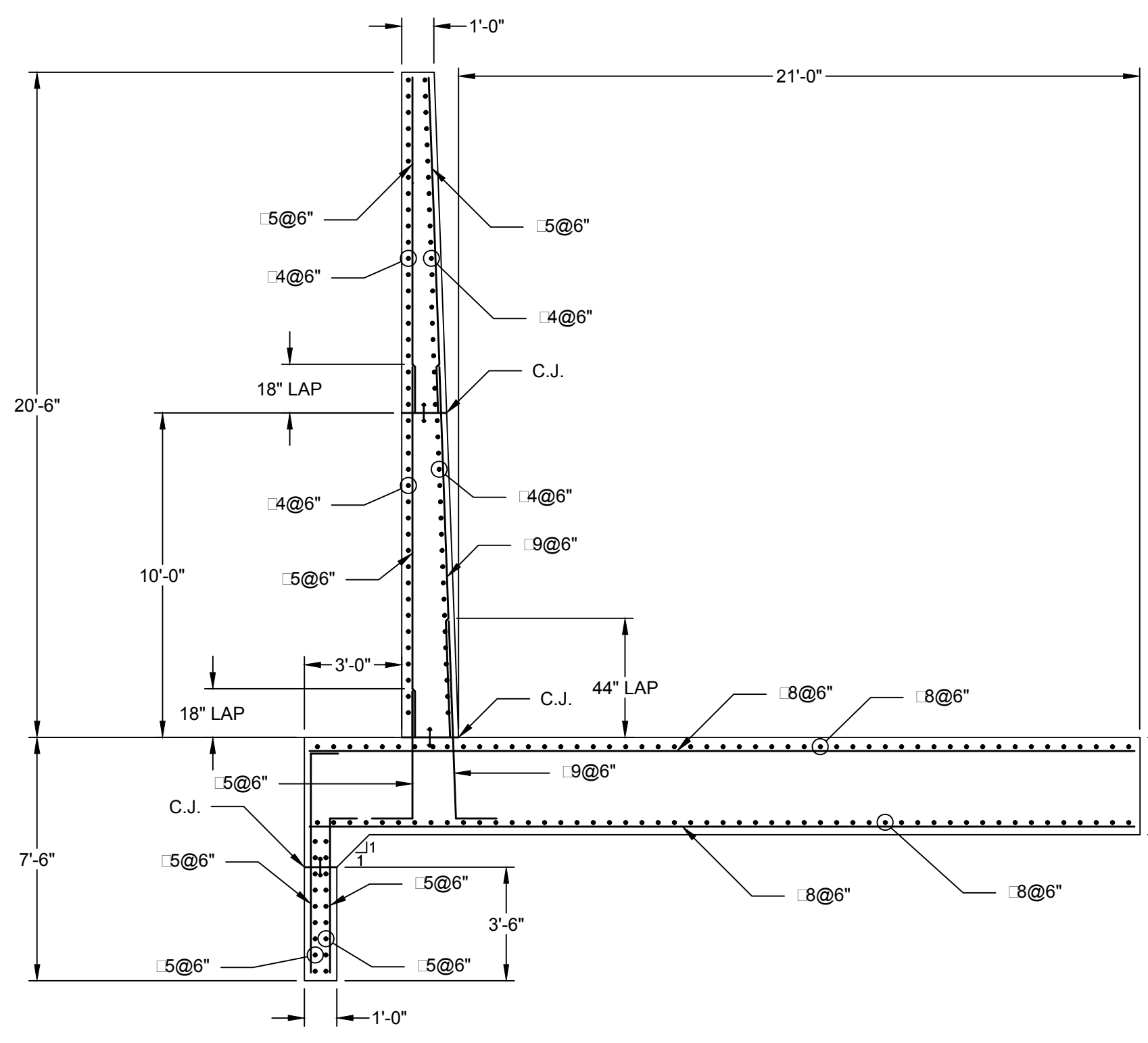
1 SEGMENT A2 SIDEWALL ELEVATION  
SCALE: 1/4"=1'-0"



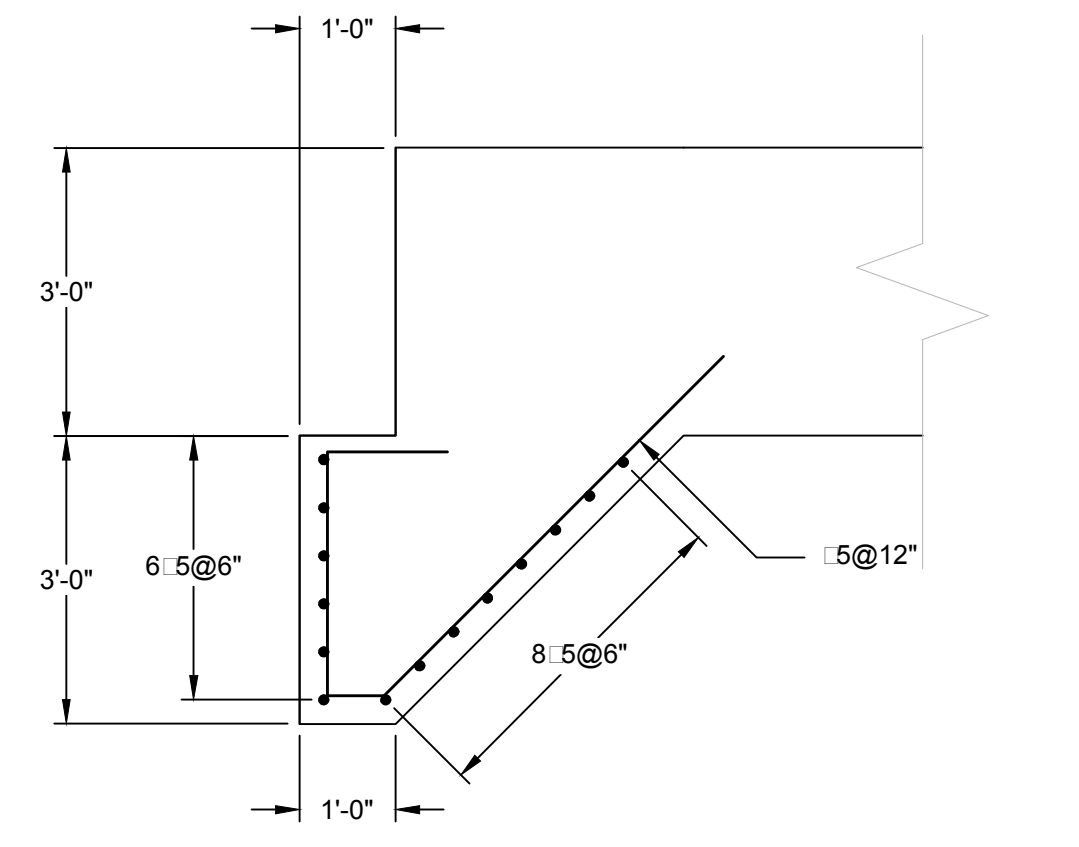
2 SEGMENT A2 SLAB PLAN  
SCALE: 1/4"=1'-0"



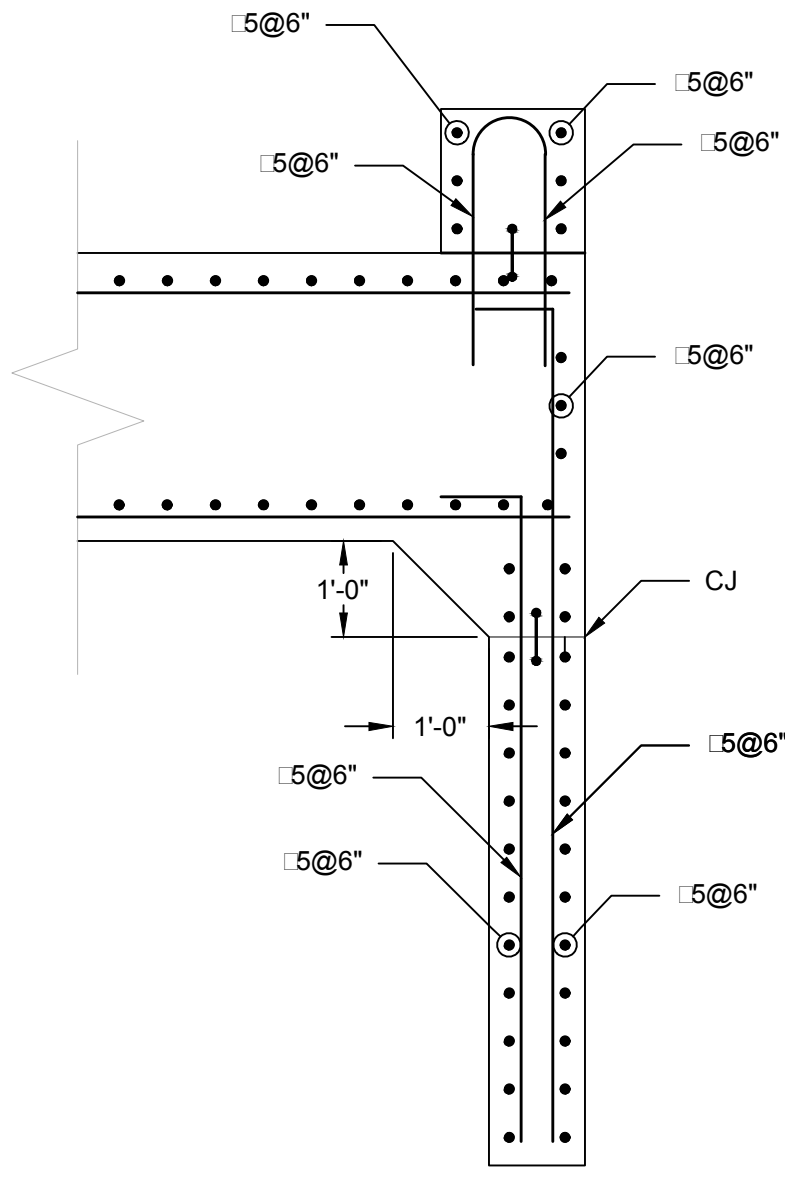
A SEGMENT A2 SECTION  
SCALE: 1/4"=1'-0"



B SEGMENT A2 SECTION  
SCALE: 1/4"=1'-0"



C CUTOFF WALL DETAIL  
SCALE: 1/2"=1'-0"  
(TYPICAL)

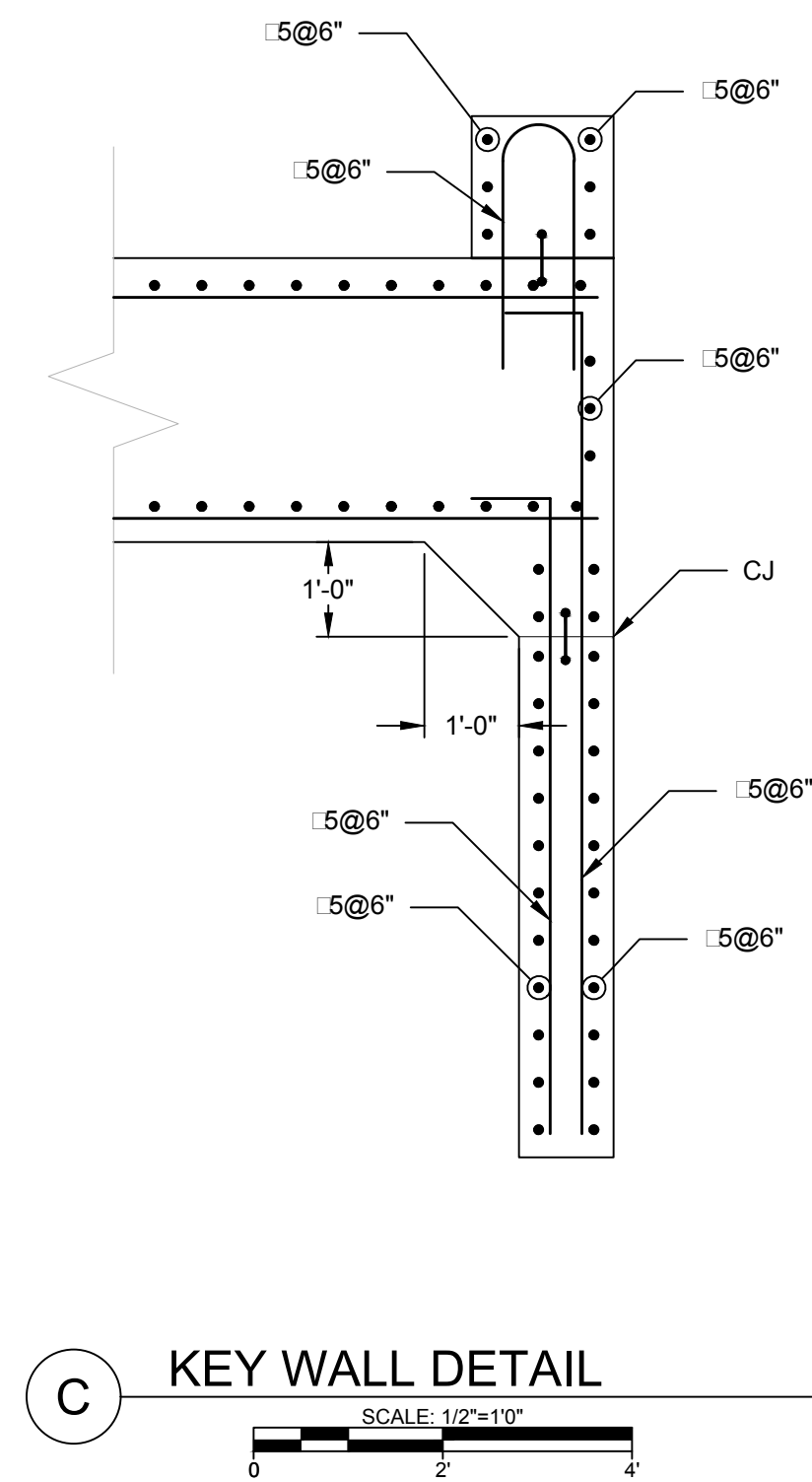
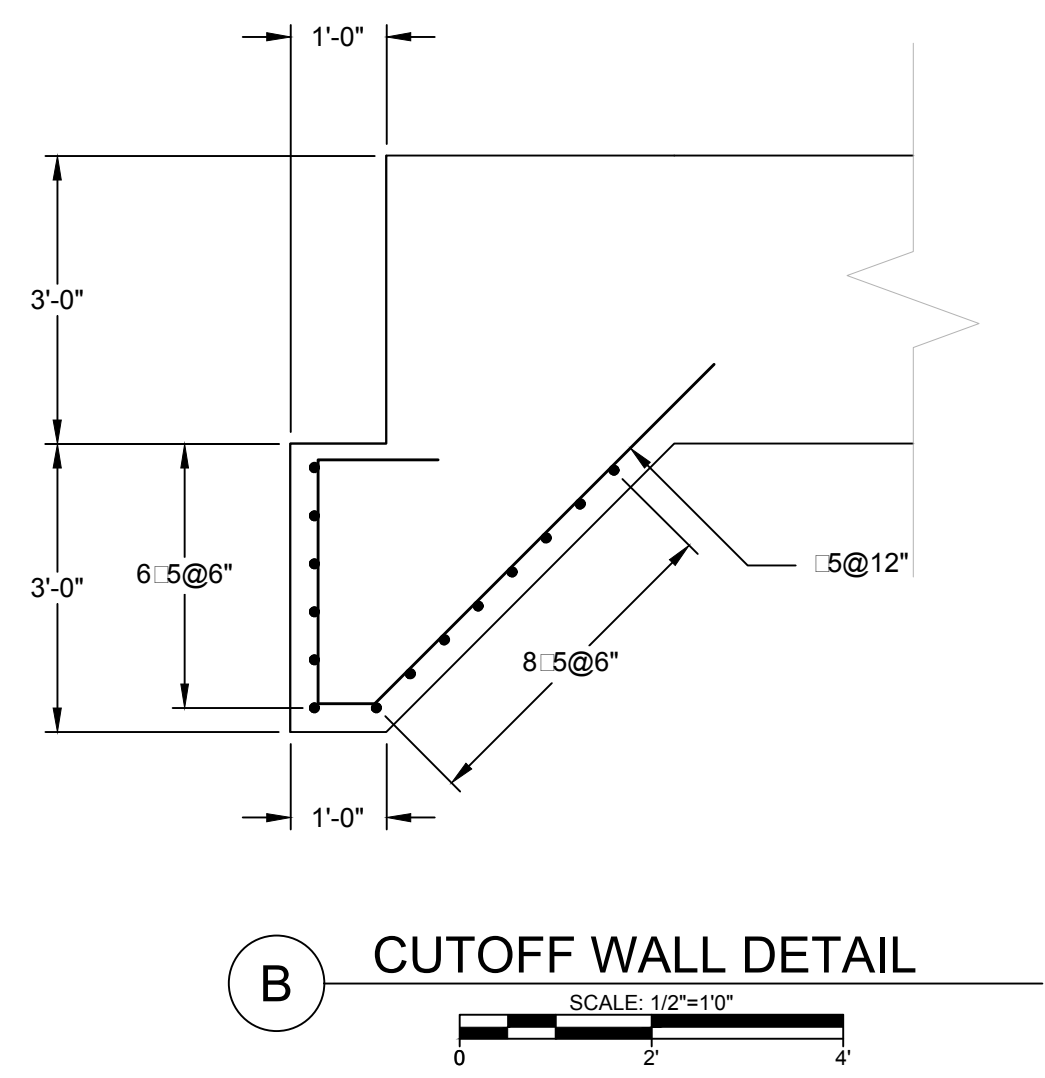
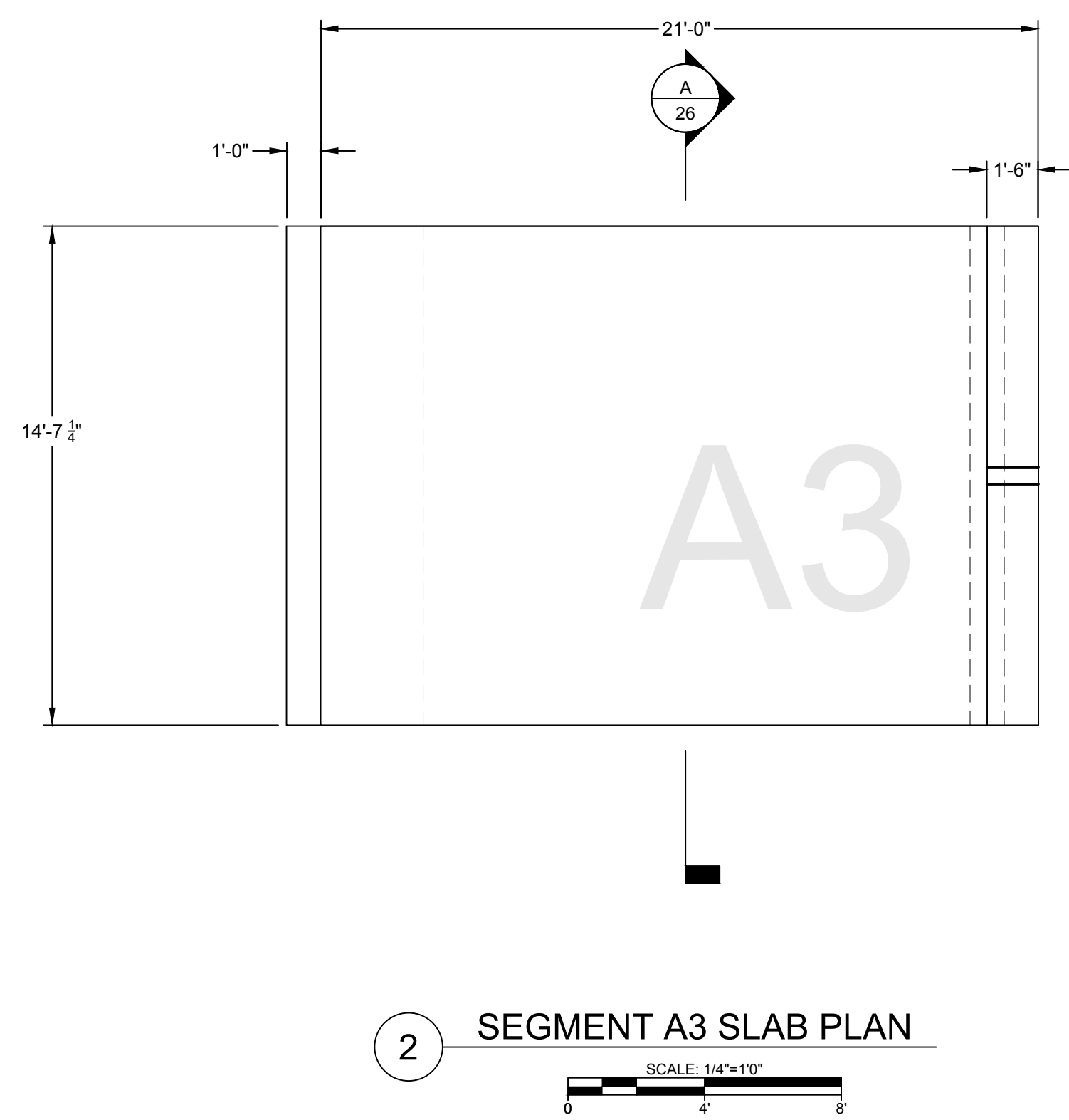
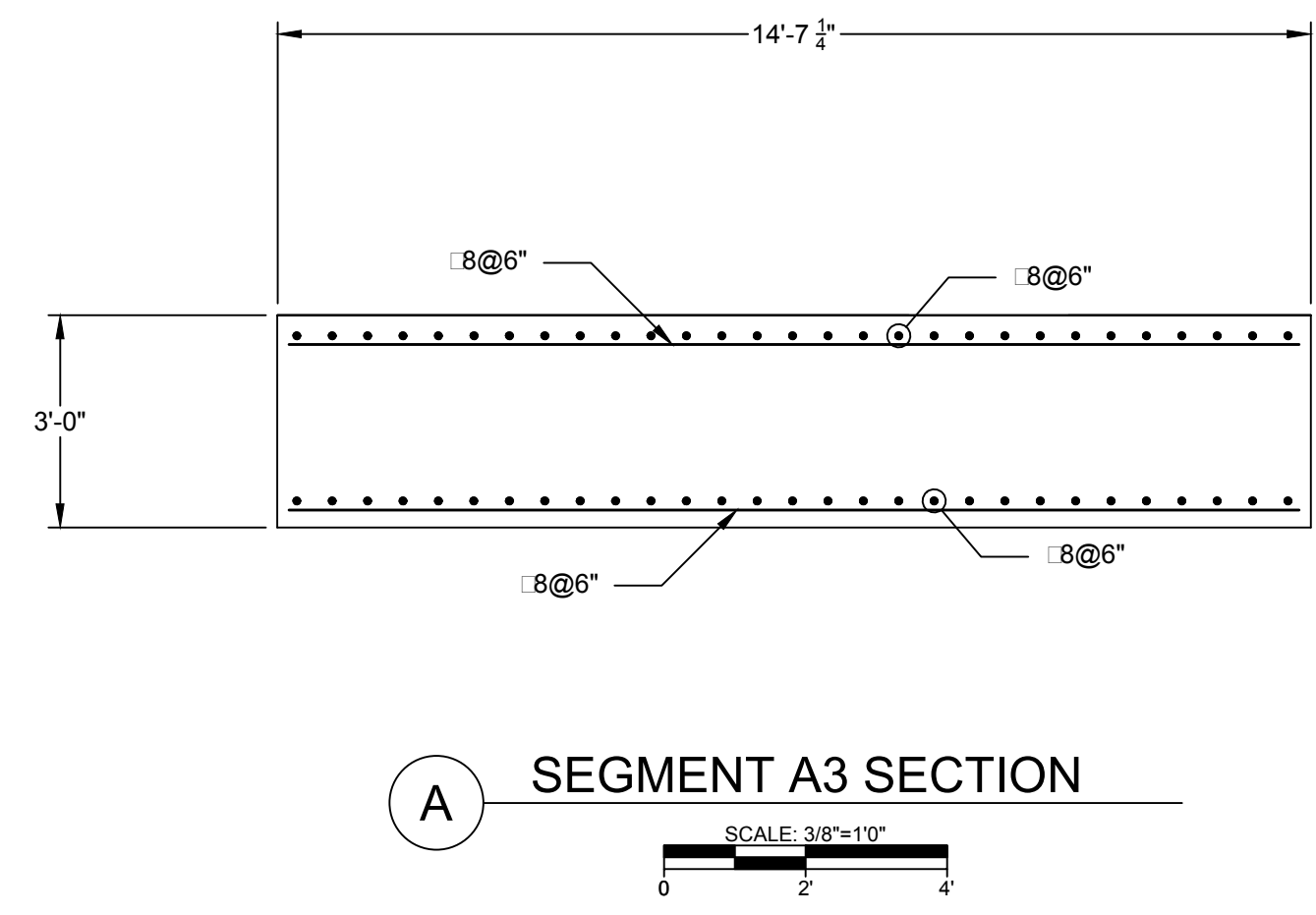
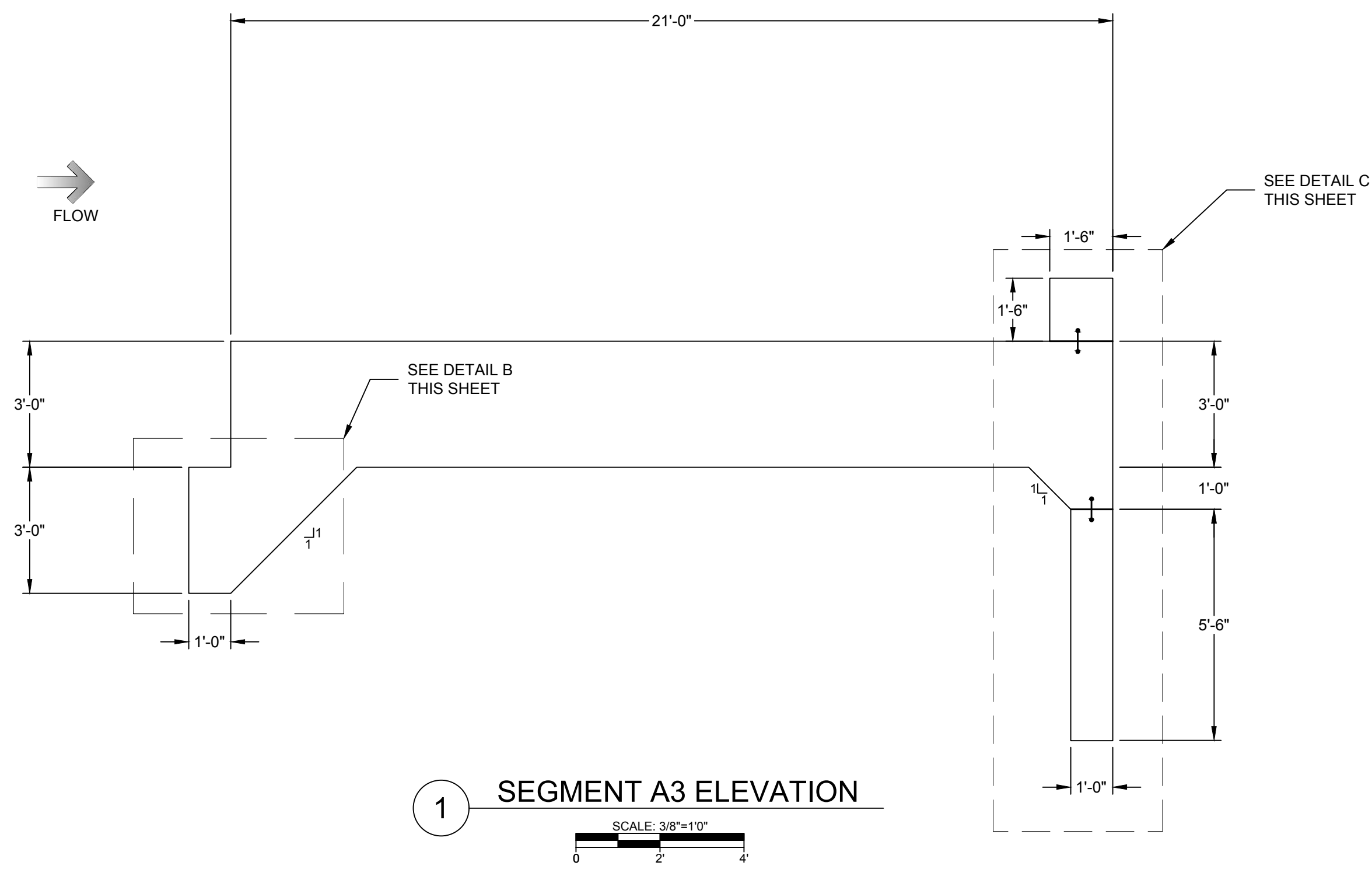


D KEY WALL DETAIL  
SCALE: 1/2"=1'-0"  
(TYPICAL)

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTUREAL.DWG

PROJECT: 16C17043.00	DATE: 07/10/2017
SHEET 25 OF 66	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
WALL AND SLAB DETAILS SEGMENT A2	
DESIGNED BY: JTD_JC	CHECKED BY: RPL_JRC
DRAWN BY: GHB_JSR	DATE: 07/10/17
RANDALL P. BASS, P.E.	
GEORGIA PROFESSIONAL ENGINEER NO. 10685	
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com	

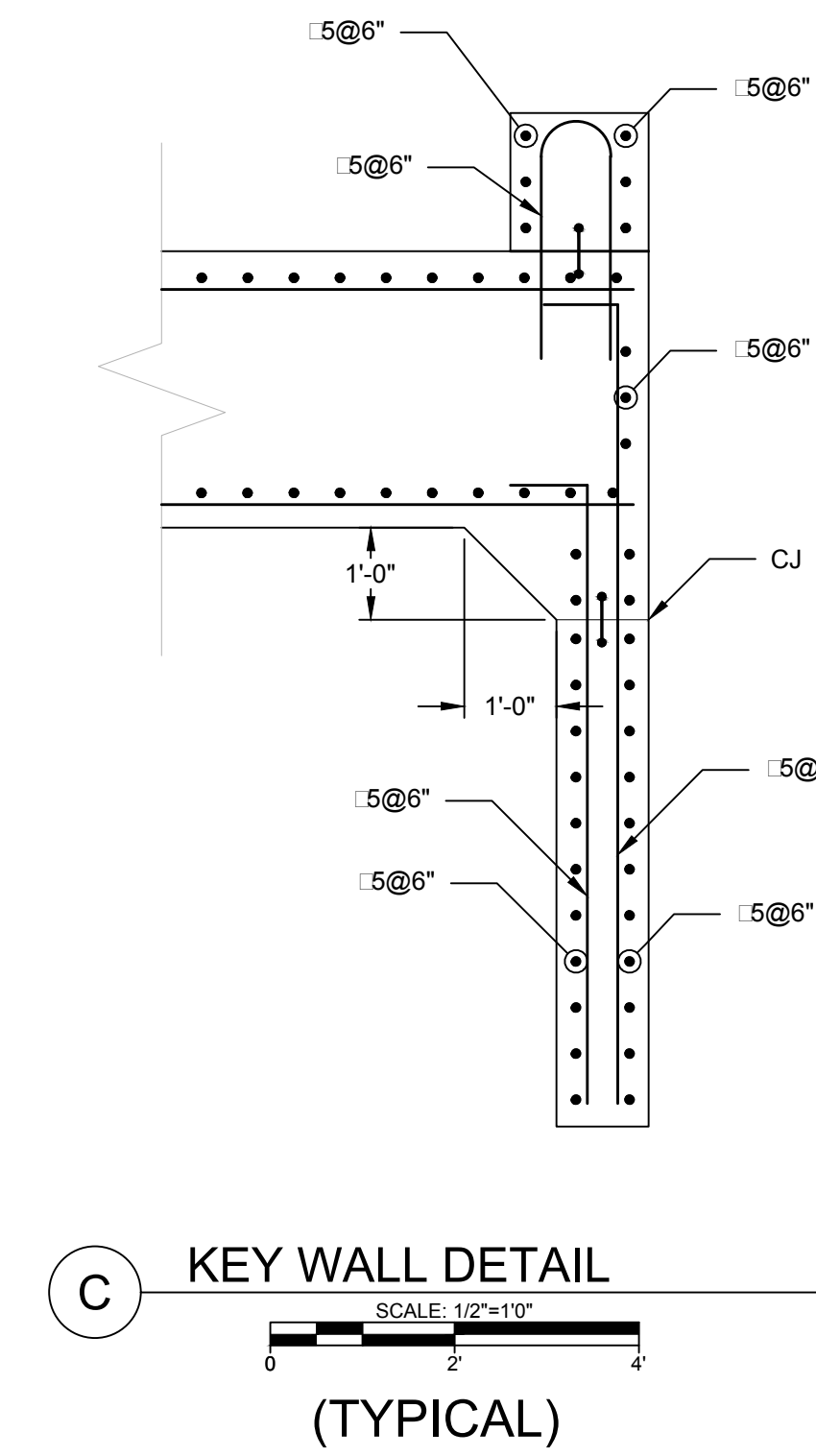
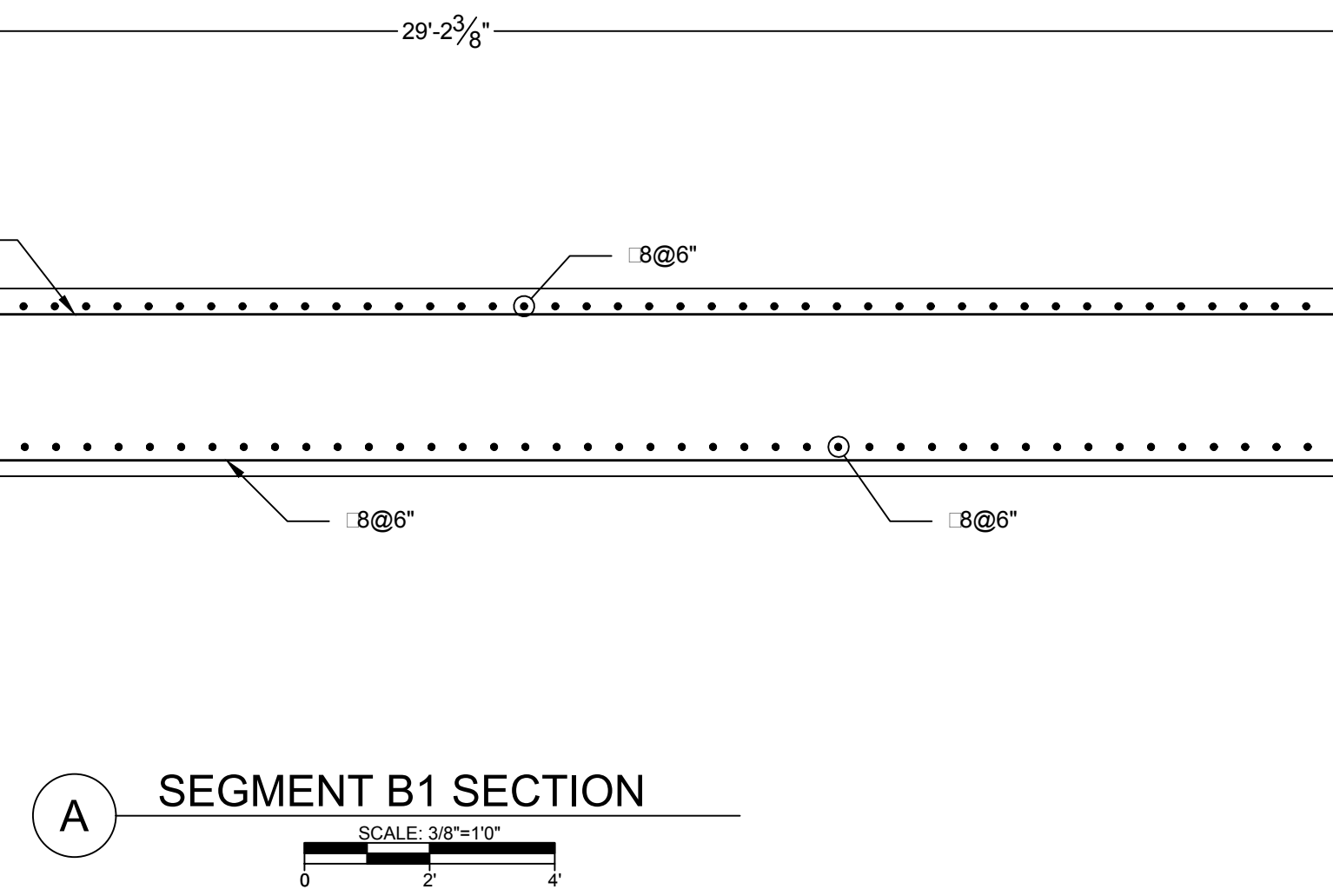
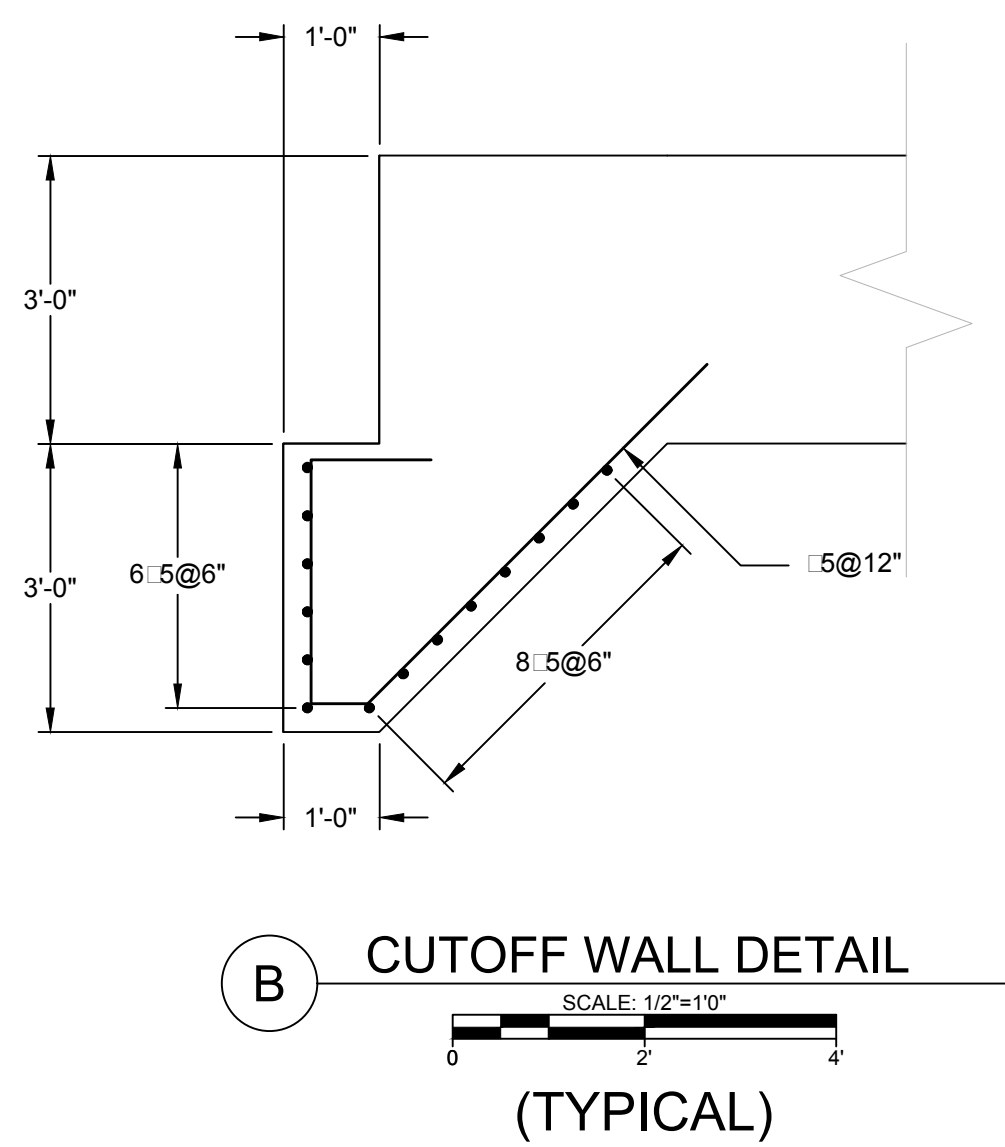
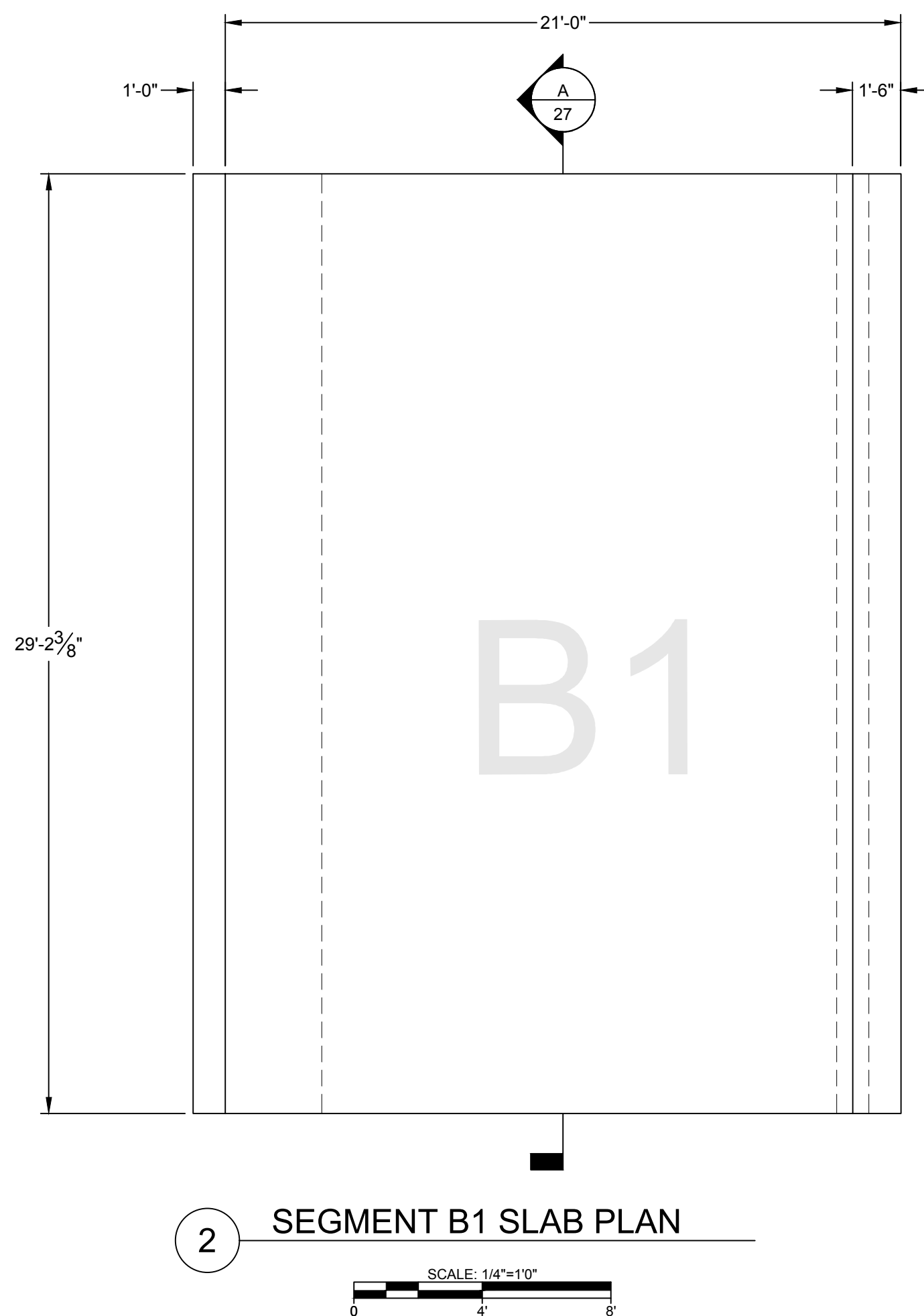
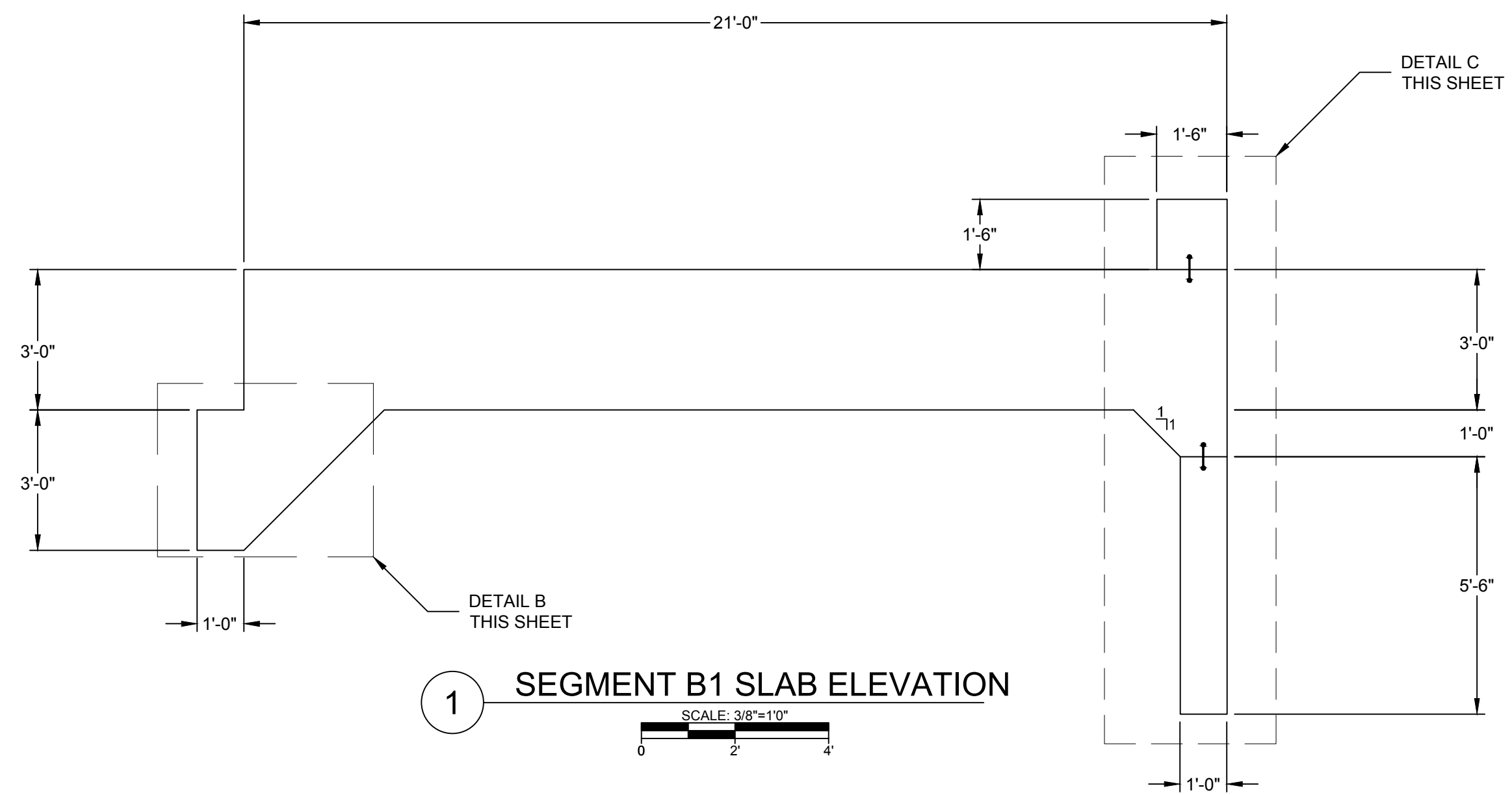
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURAL.DWG



NOTE: SEGMENT A3 □ A4 SIMILAR

PROJECT: 16C17043.00		DATE: 07/10/2017	SHEET: 26 OF 66
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		SLAB DETAILS SEGMENT A3 □ A4	
 Schnabel ENGINEERING 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		 No. 10885 PROFESSIONAL ENGINEER RANDALL P. BASS, P.E.	
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC	DATE: 07/10/17
RANDALL P. BASS, P.E.			REVISIONS
 GEORGIA PROFESSIONAL ENGINEER NO. 10885			DESCRIPTION
			REV
			DATE

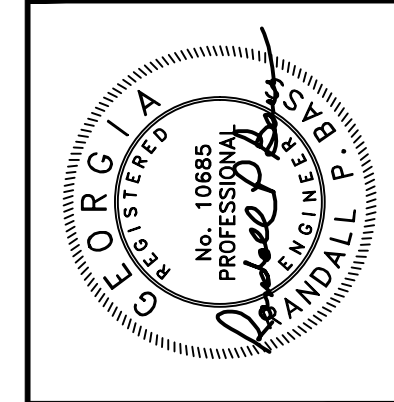
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTUREAL.DWG



NOTE: SEGMENT B1 □ B2 SIMILAR

REV	DESCRIPTION	DATE

DESIGNED BY: JTD\_JC  
DRAWN BY: GHB\_JSJR  
CHECKED BY: RPL\_JRC  
RANDALL P. BASS, P.E.  
DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 10685



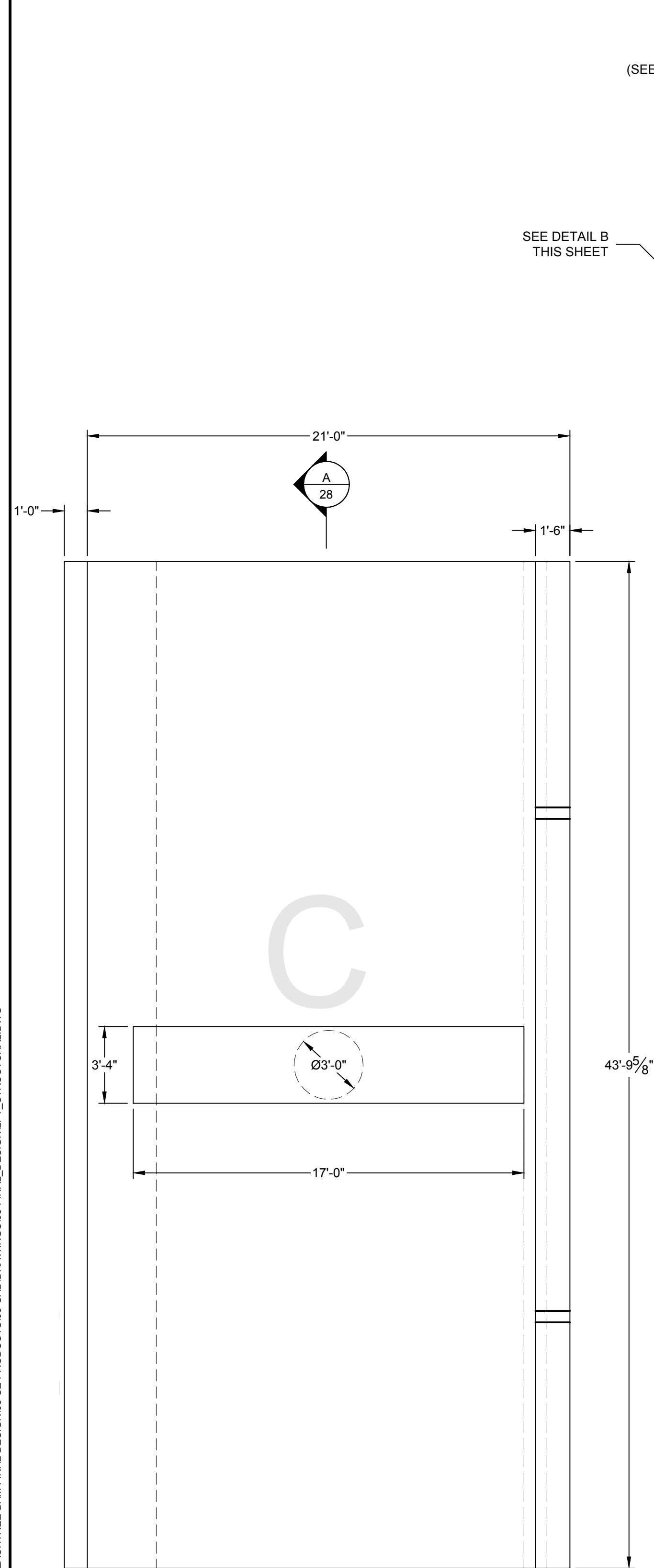
**Schnabel ENGINEERING**  
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
schnabel-eng.com

CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

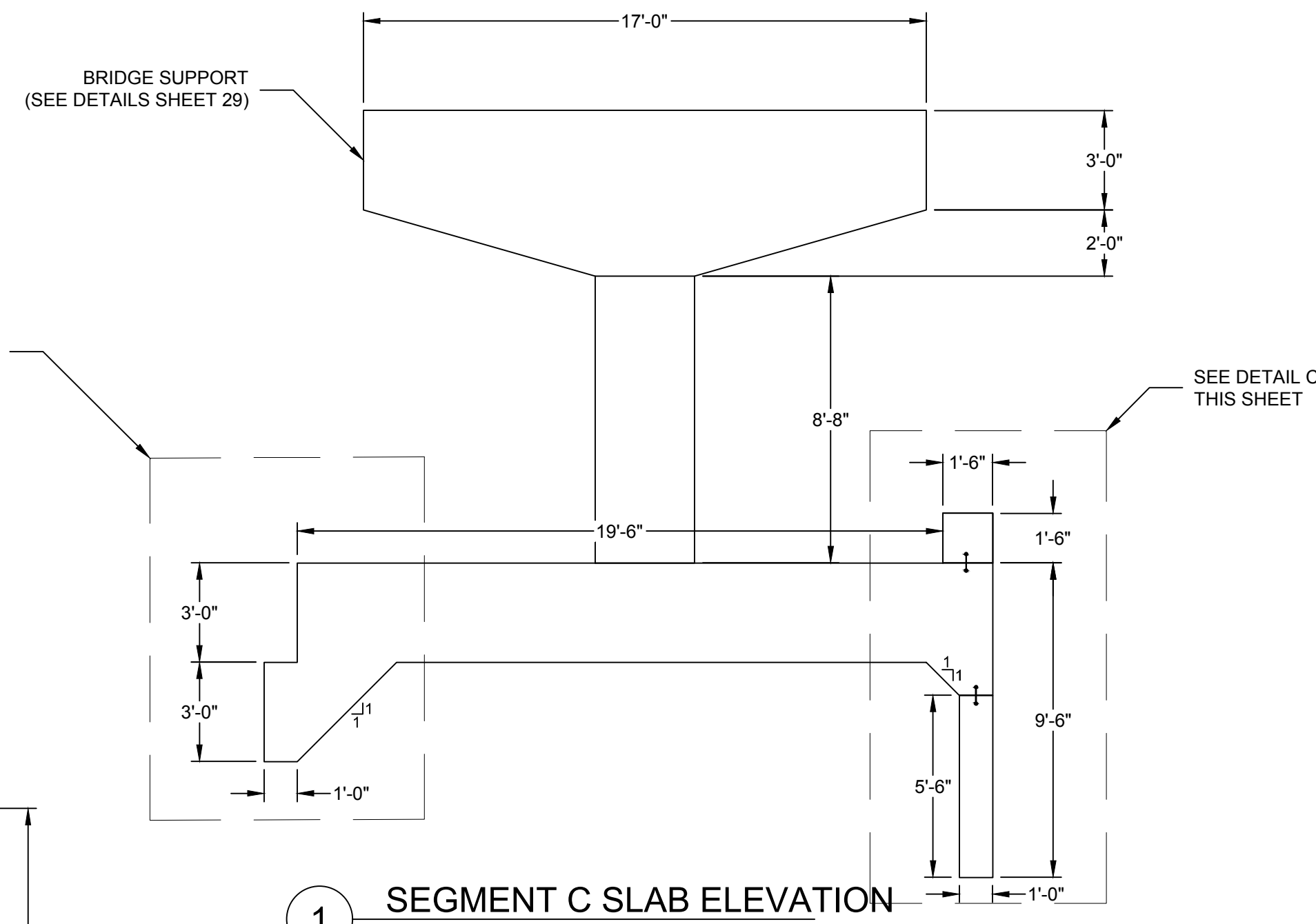
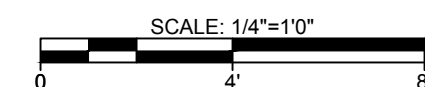
SLAB DETAILS SEGMENT B1

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
27 OF 66

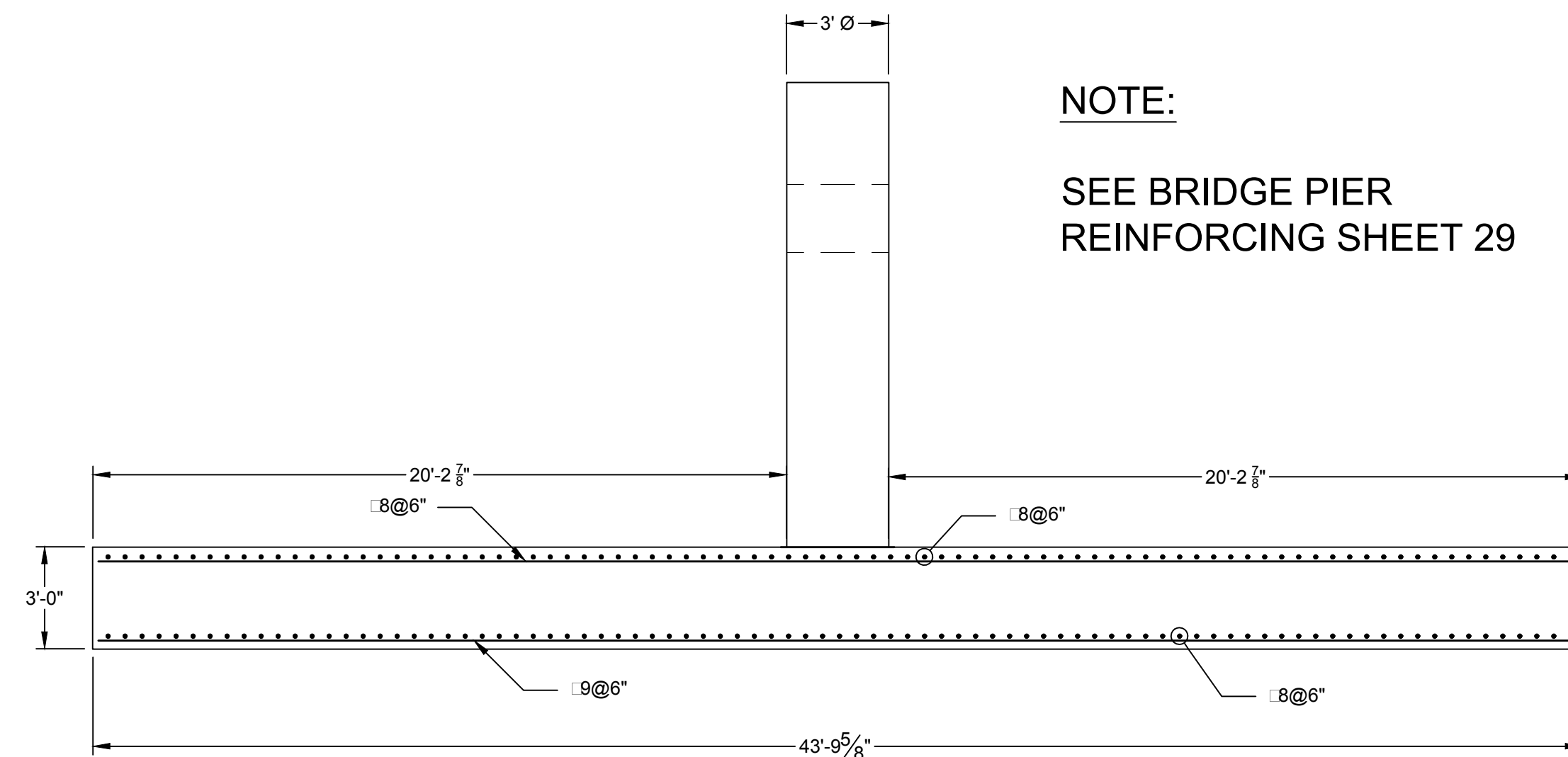
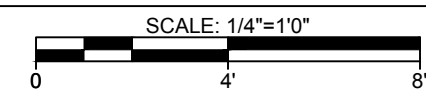
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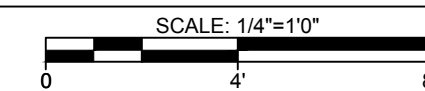
2 SEGMENT C SLAB PLAN



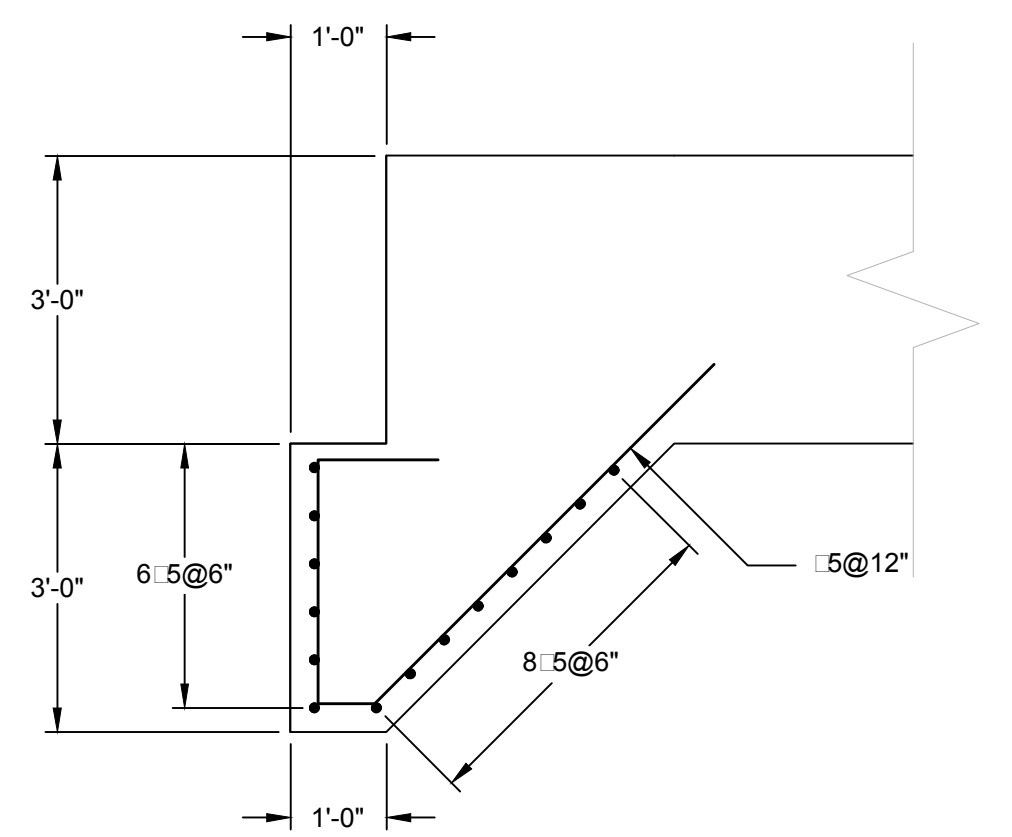
1 SEGMENT C SLAB ELEVATION



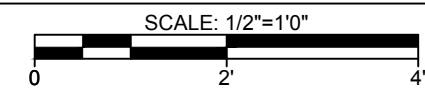
A SEGMENT C SECTION



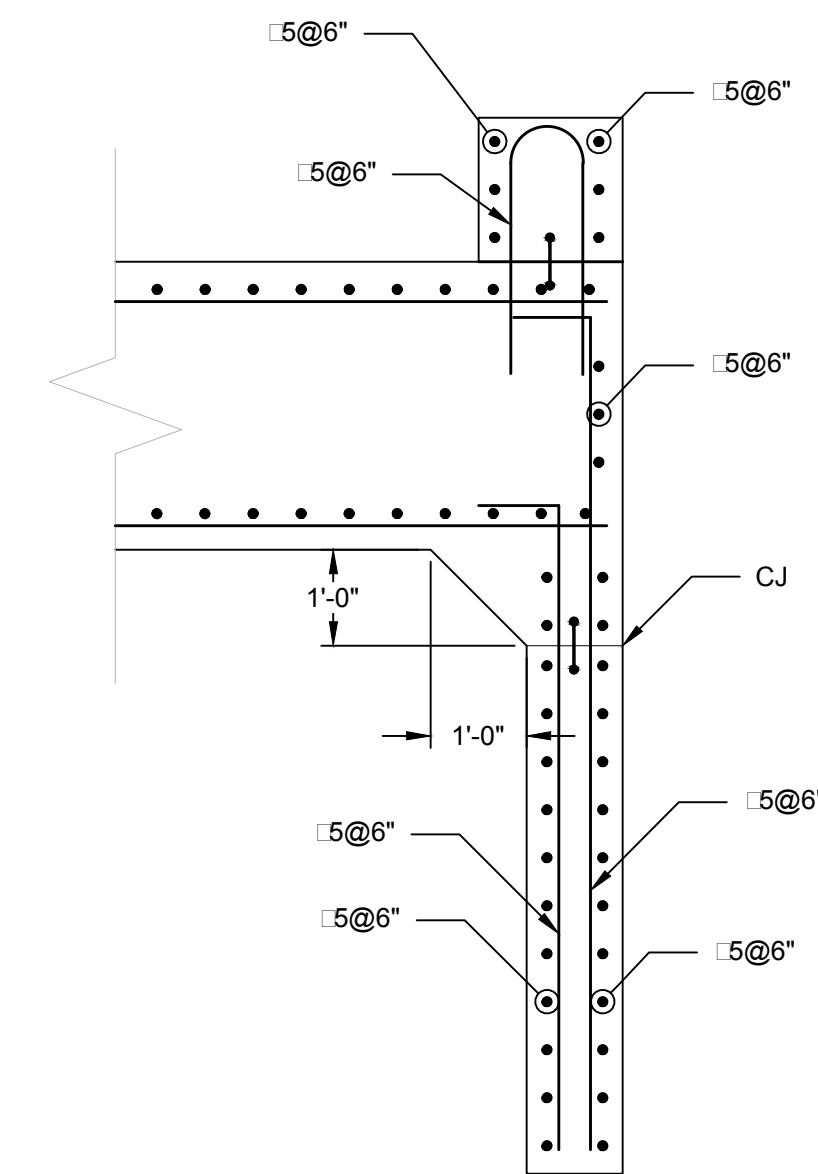
NOTE:  
SEE BRIDGE PIER  
REINFORCING SHEET 29



B CUTOFF WALL DETAIL



(TYPICAL)



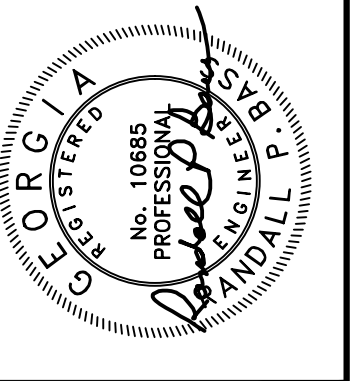
C KEY WALL DETAIL



(TYPICAL)

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685		



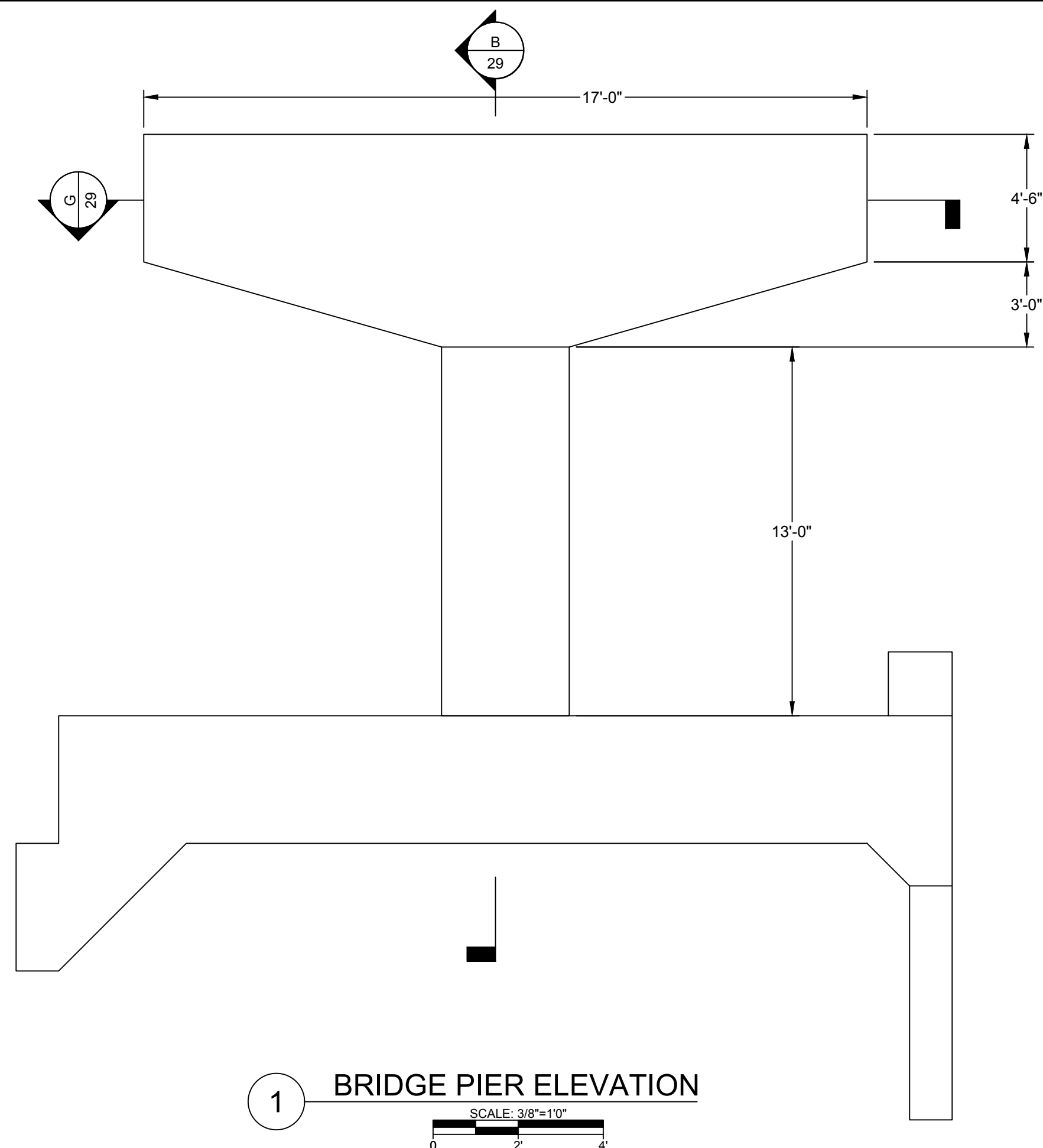
**Schnabel ENGINEERING**  
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
 Phone: 770-781-8008 / Fax: 770-781-8003 /  
 schnabel-eng.com

CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

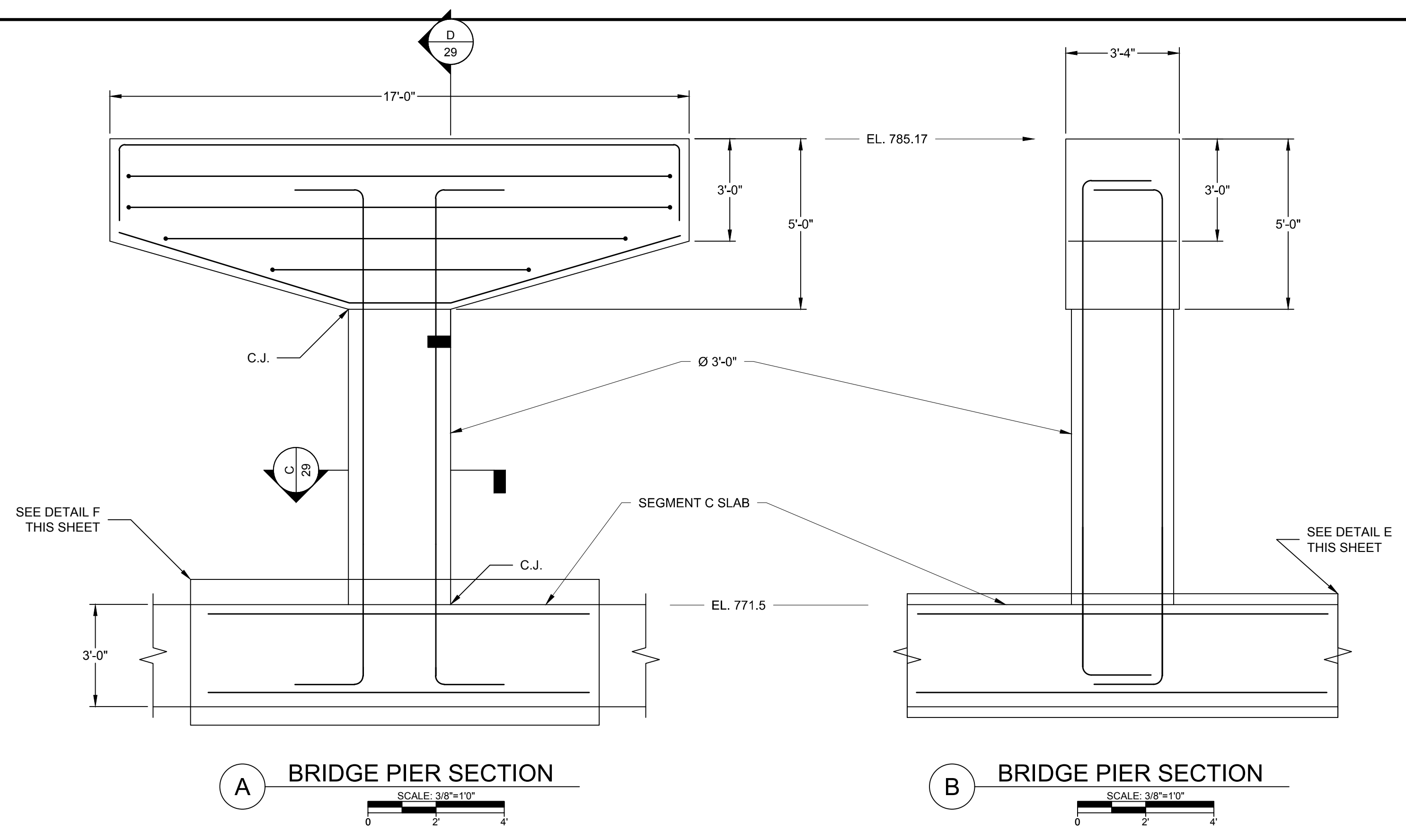
**SLAB DETAILS SEGMENT C**

PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 28 OF 66



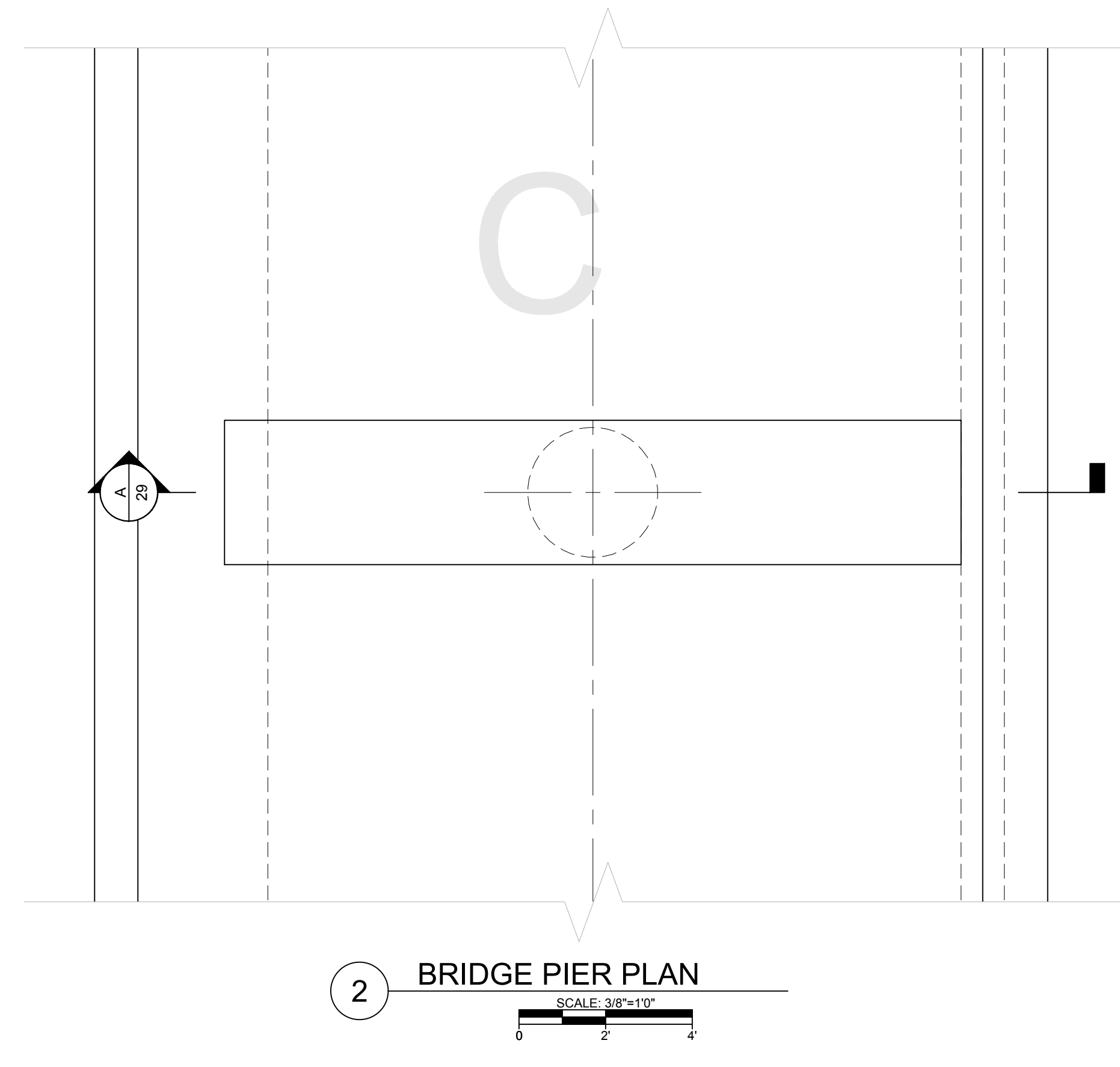


1 BRIDGE PIER ELEVATION  
SCALE: 3/8"=1'0"

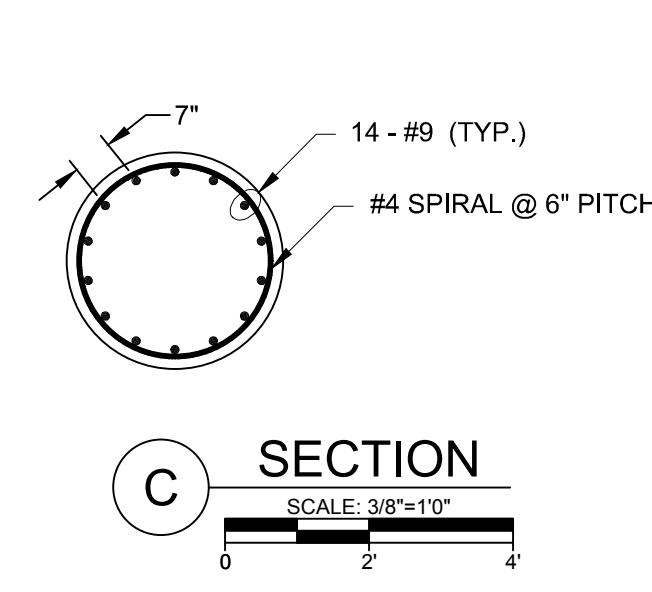


A BRIDGE PIER SECTION  
SCALE: 3/8"=1'0"

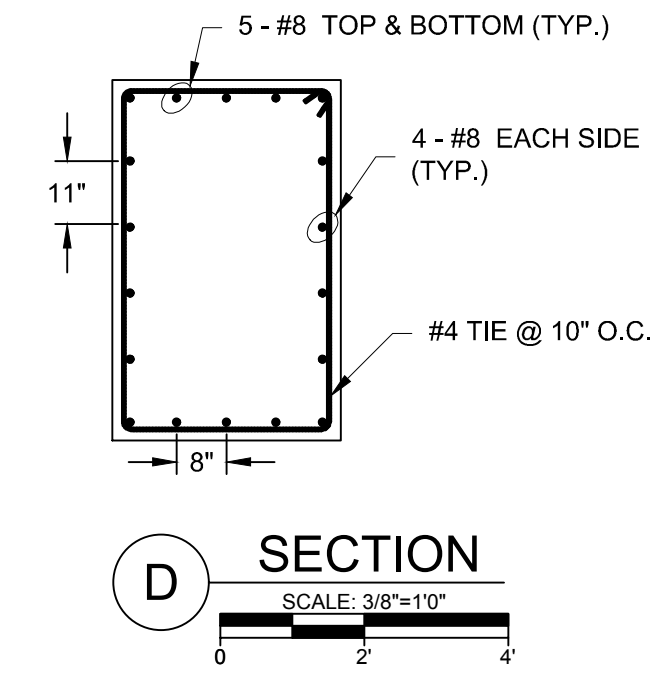
B BRIDGE PIER SECTION  
SCALE: 3/8"=1'0"



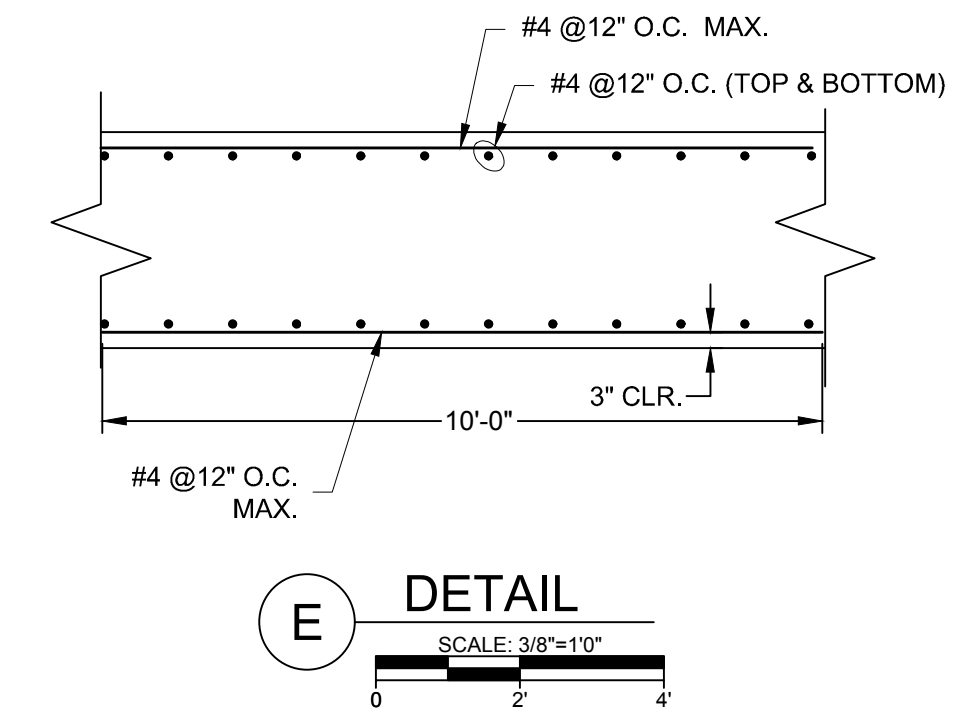
2 BRIDGE PIER PLAN  
SCALE: 3/8"=1'0"



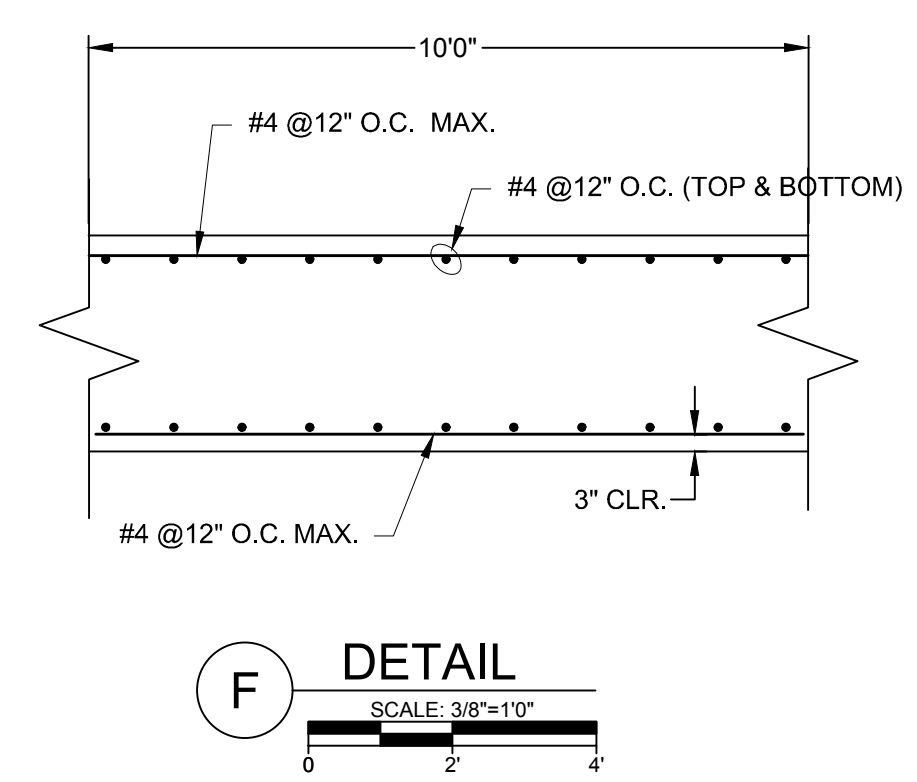
C SECTION  
SCALE: 3/8"=1'0"



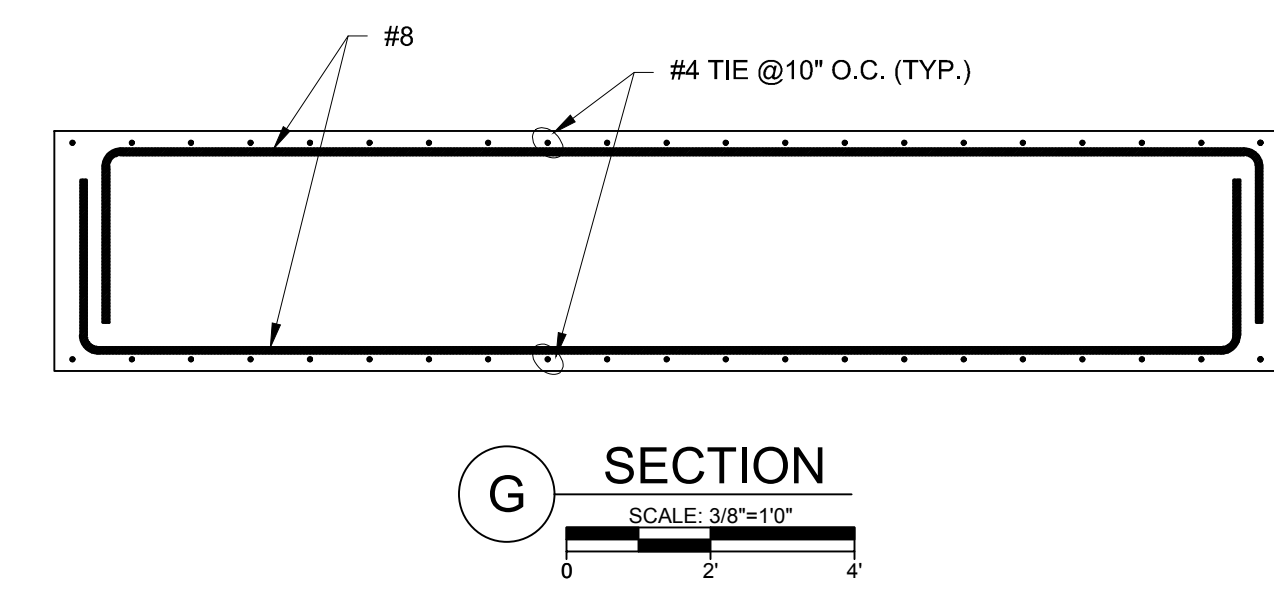
D SECTION  
SCALE: 3/8"=1'0"



E DETAIL  
SCALE: 3/8"=1'0"



F DETAIL  
SCALE: 3/8"=1'0"



G SECTION  
SCALE: 3/8"=1'0"

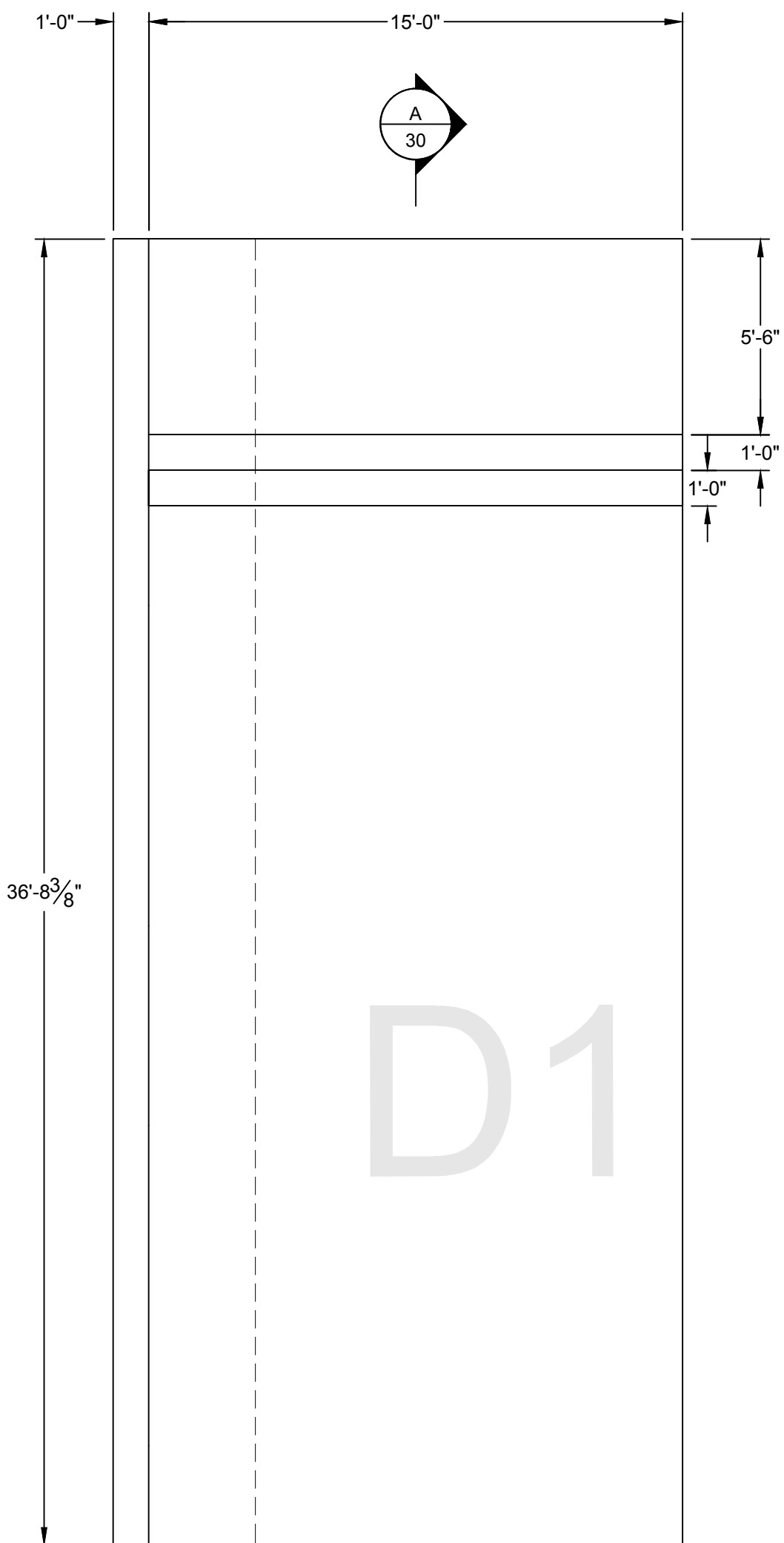
NOTE: DETAIL F  
PROVIDE ADDITIONAL #4 @ 12" O.C. EACH FACE, EACH WAY IN A 10 FOOT BY 10 FOOT GRID CENTERED AROUND THE BRIDGE PIER.

NOTE: DETAIL E  
PROVIDE ADDITIONAL #4 @ 12" O.C. EACH FACE, EACH WAY IN A 10 FOOT BY 10 FOOT GRID CENTERED AROUND THE BRIDGE PIER.

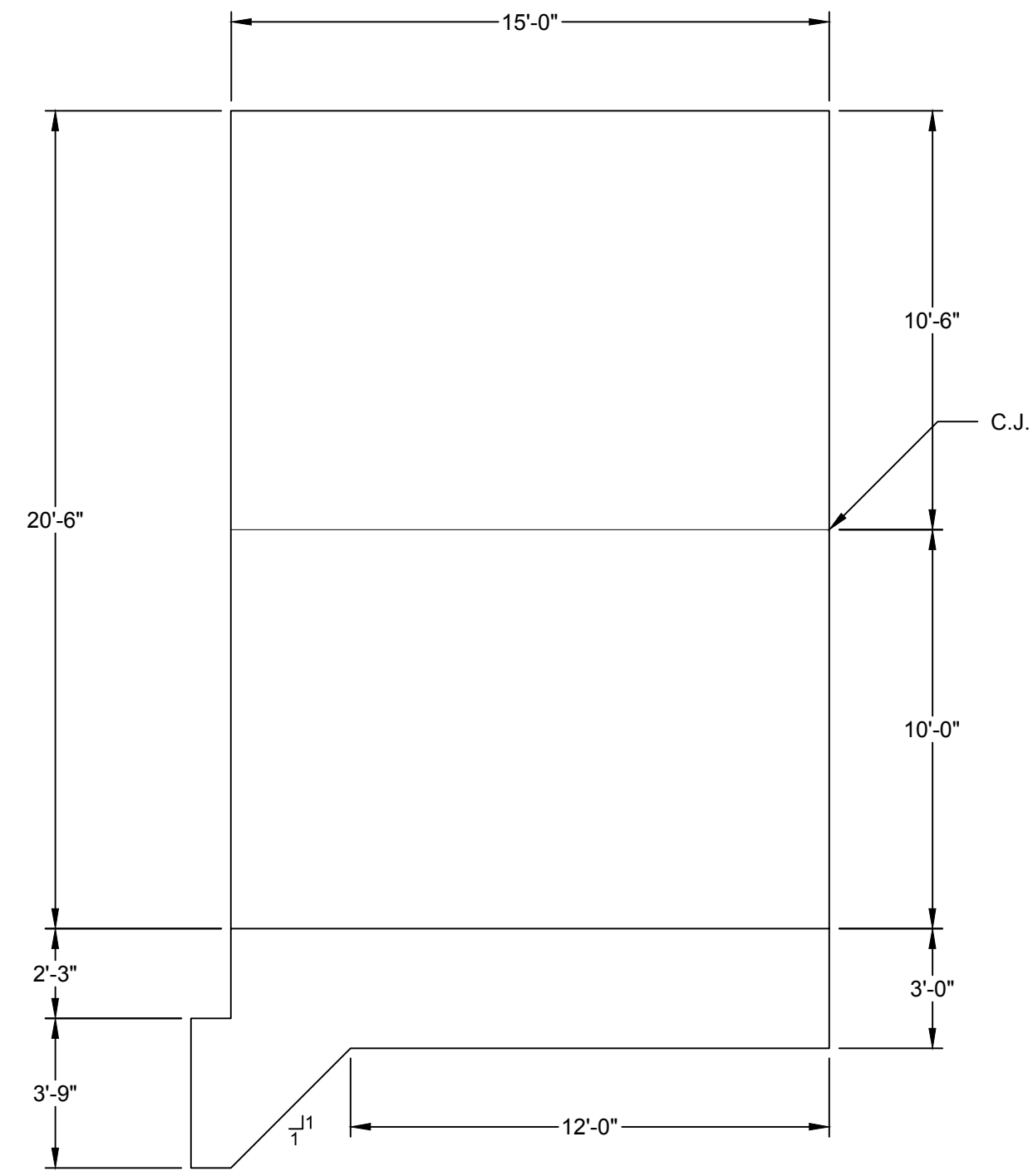
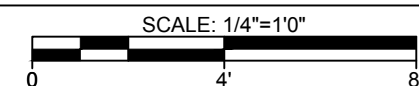
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PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 29 OF 66
<p>CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA</p>		
<p>BRIDGE PIER DETAILS SEGMENT C</p>		
<p>DESIGNED BY: JTD, JIC</p>	<p>DRAWN BY: GHB, JSR</p>	<p>CHECKED BY: RPE, JRC</p>
<p>RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885</p>		
<p>NO. 10885 PROFESSIONAL ENGINEER RANDALL P. BASS</p>		
REV	DESCRIPTION	DATE

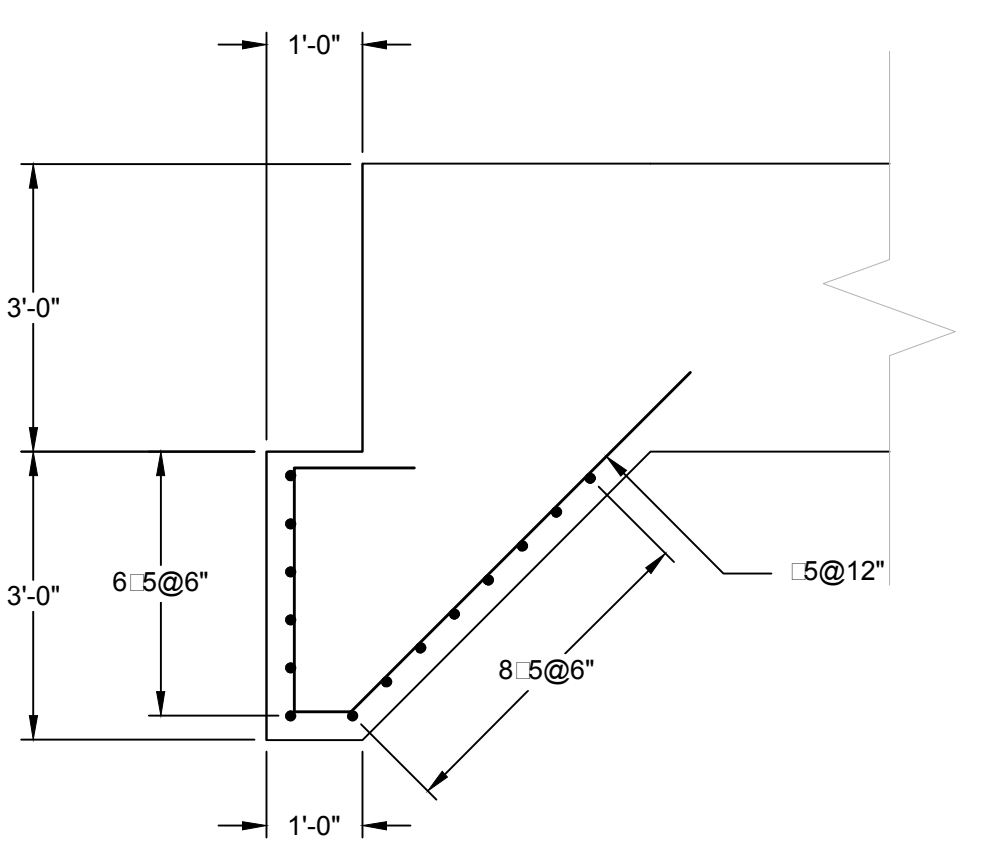
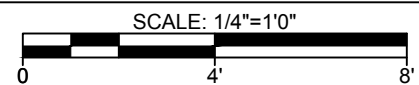
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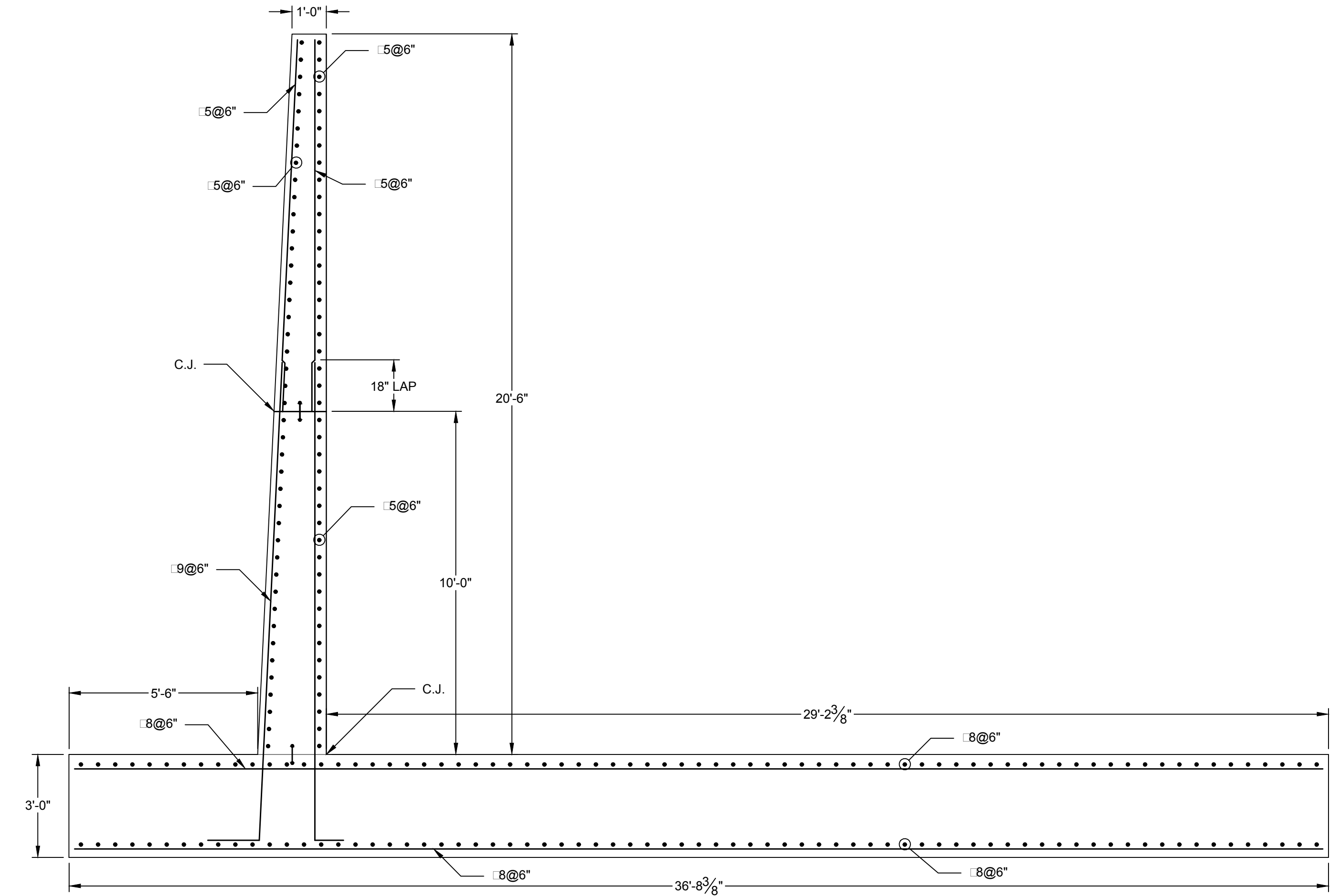
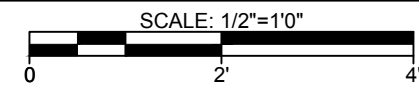
2 SEGMENT D1 SLAB PLAN



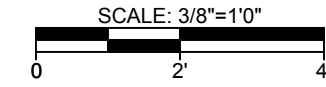
1 SEGMENT D1 SIDEWALL ELEVATION



B CUTOFF WALL DETAIL

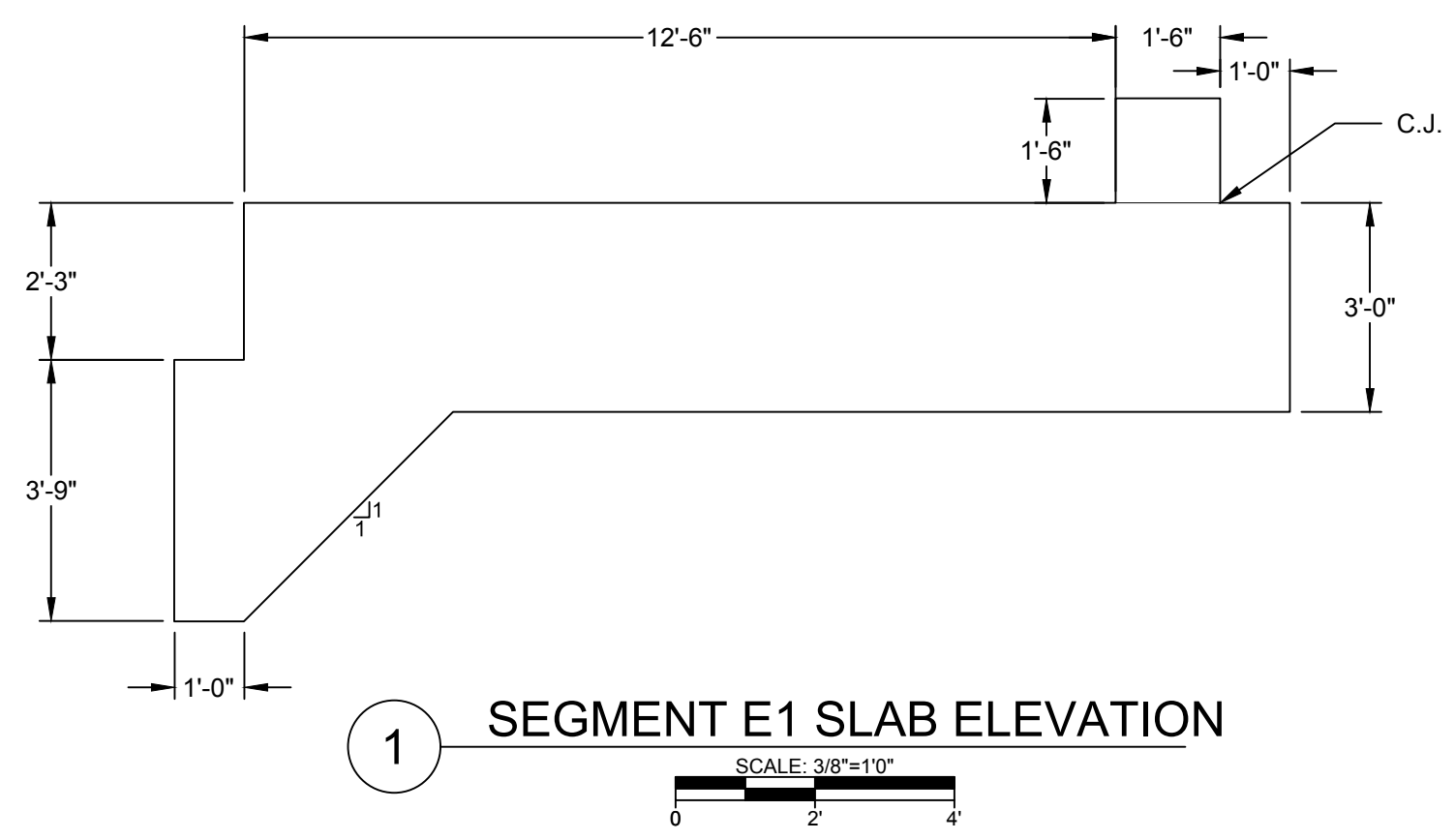


A SEGMENT D1 SECTION



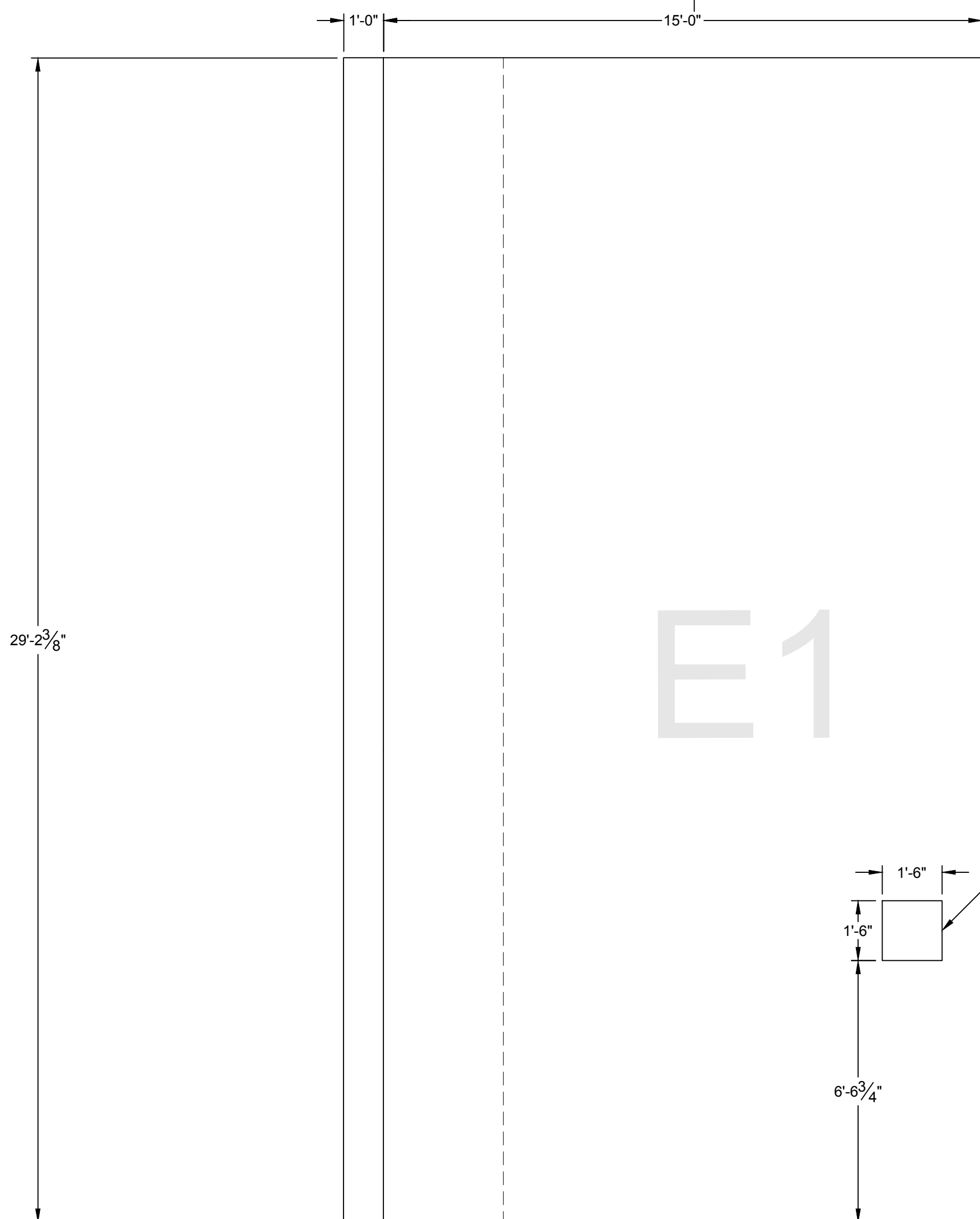
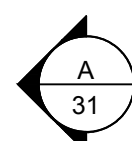
NOTE: SEGMENT D1 □ D2 SIMILAR

PROJECT: 16C17043.00		DATE: 07/10/2017	
SHEET: 30 OF 66		SHEET: 30 OF 66	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		WALL AND SLAB DETAILS SEGMENT D1	
 Schnabel ENGINEERING 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		 No. 10885 PROFESSIONAL ENGINEER RANDALL P. BASS	
DESIGNED BY: JTD_JC	DRAWN BY: GHB_JSR	CHECKED BY: RPL_JRC	DATE: 07/10/17
RANDALL P. BASS, P.E.		GEORGIA PROFESSIONAL ENGINEER NO. 10885	
REV	DESCRIPTION	REV	DESCRIPTION



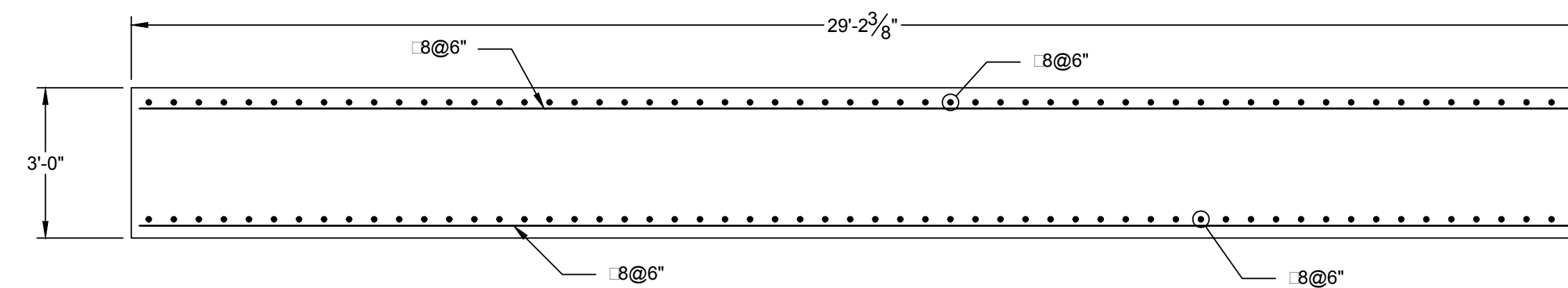
1 SEGMENT E1 SLAB ELEVATION

SCALE: 3/8"=1'-0"



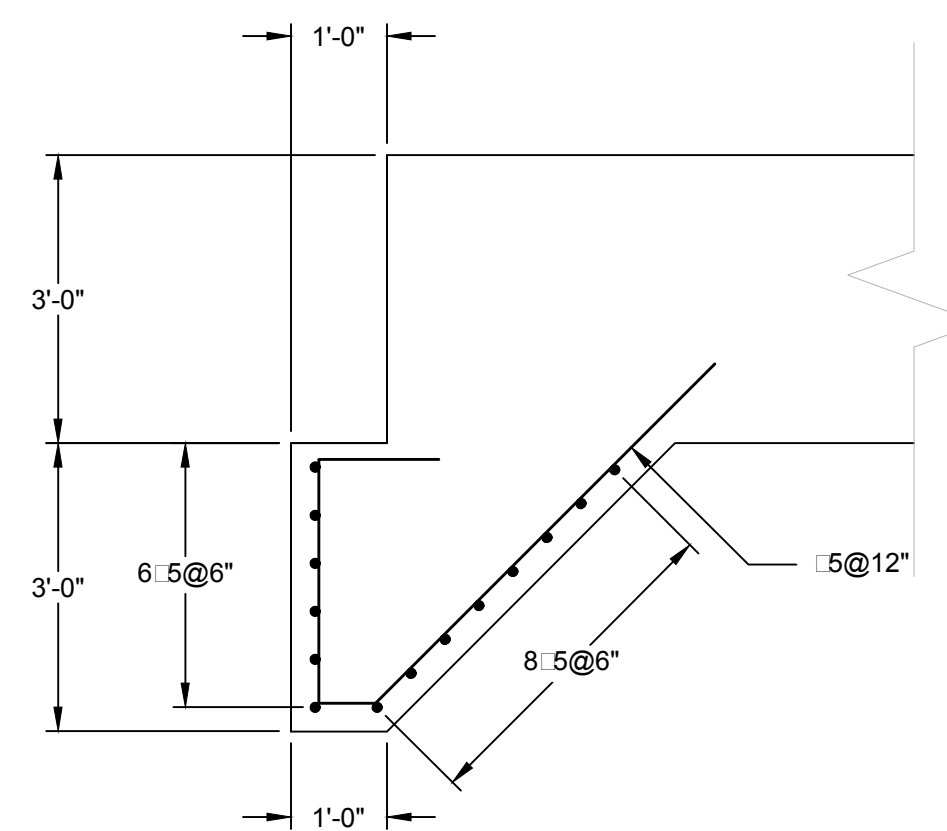
2 SEGMENT E1 SLAB PLAN

SCALE: 3/8"=1'-0"



A SEGMENT E1 SECTION

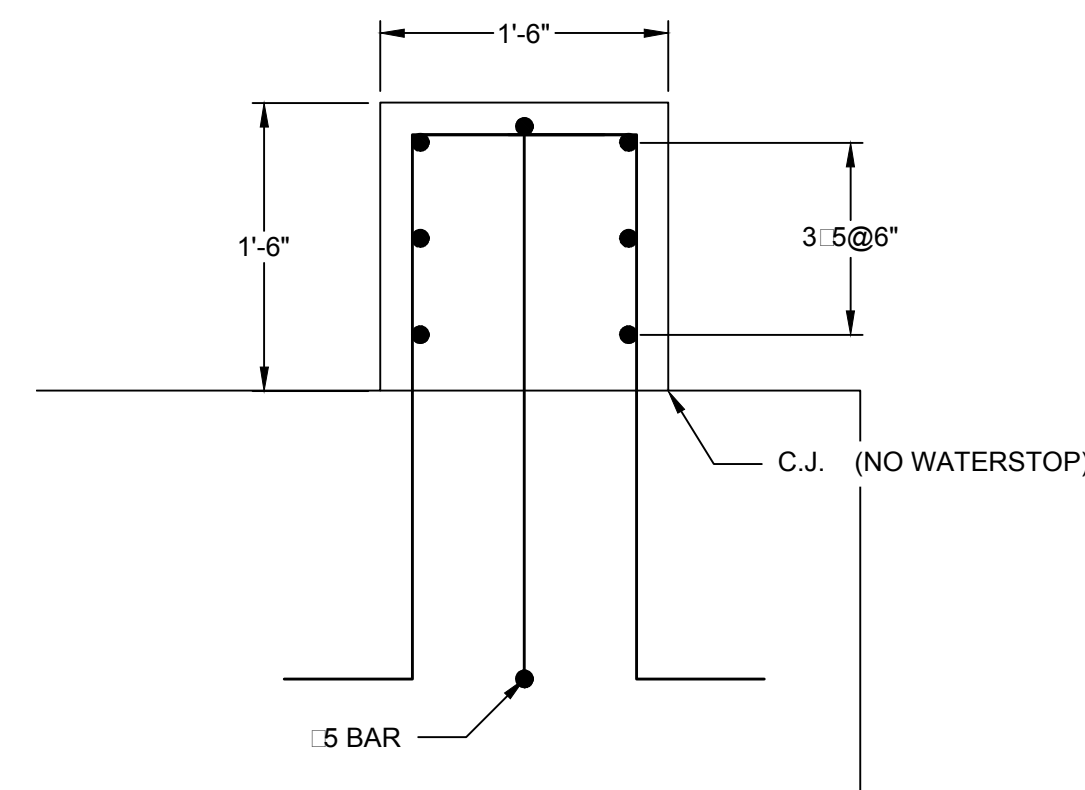
SCALE: 3/8"=1'-0"



B CUTOFF WALL DETAIL

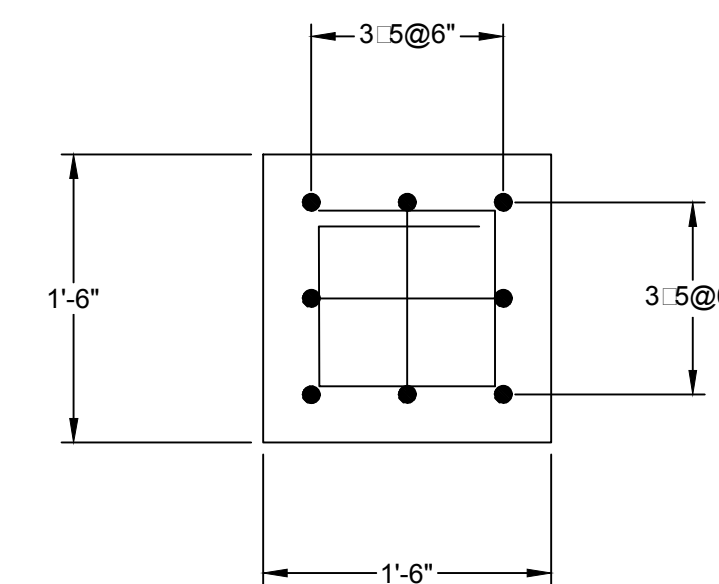
SCALE: 1/2"=1'-0"

(TYPICAL)



C FLOOR BLOCK ELEVATION

SCALE: 1"=1'-0"

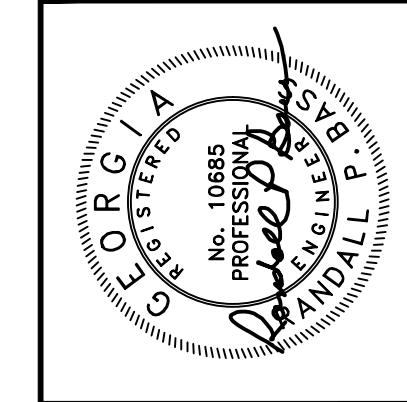


D FLOOR BLOCK PLAN

SCALE: 1"=1'-0"

NOTE: SEGMENT E1 □ E2 SIMILAR


DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685		
DATE:	07/10/17	



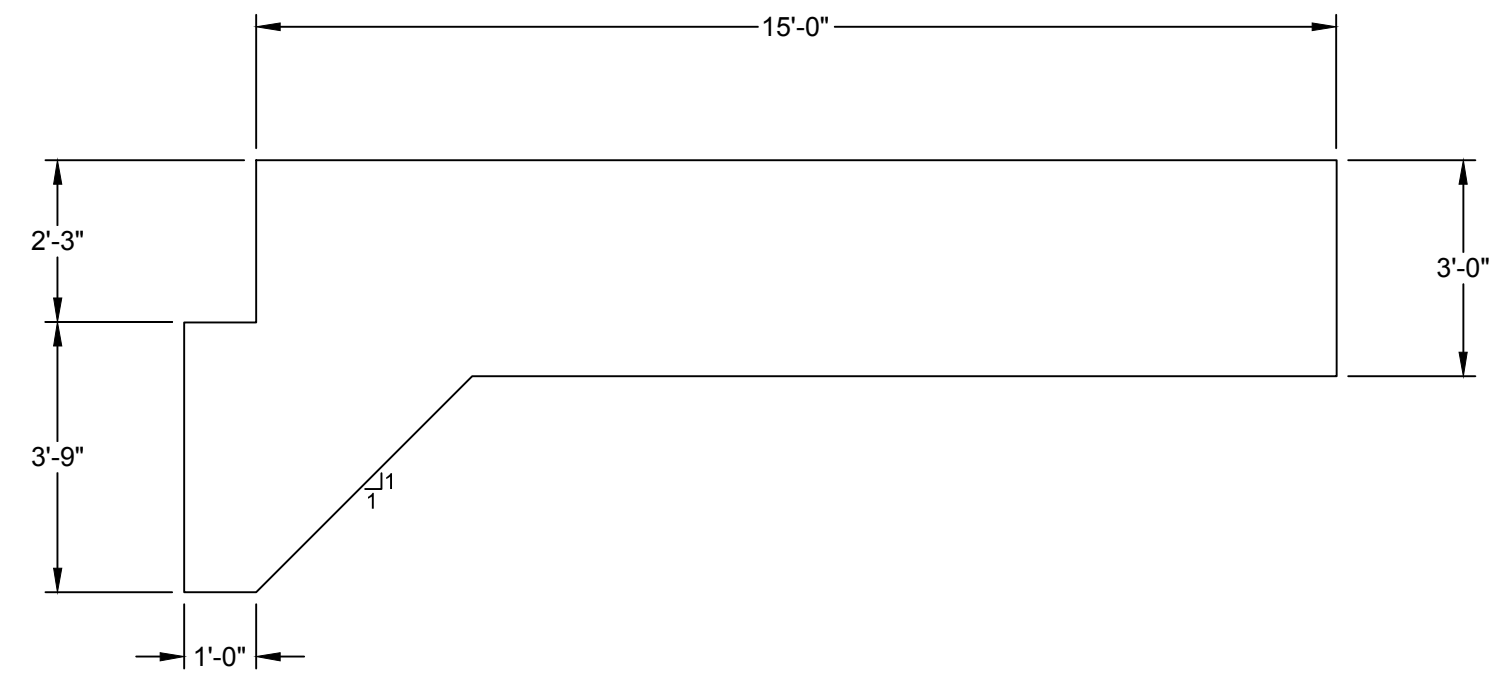
**Schnabel ENGINEERING**  
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
 Phone: 770-781-8008 / Fax: 770-781-8003 /  
 schnabel-eng.com

CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

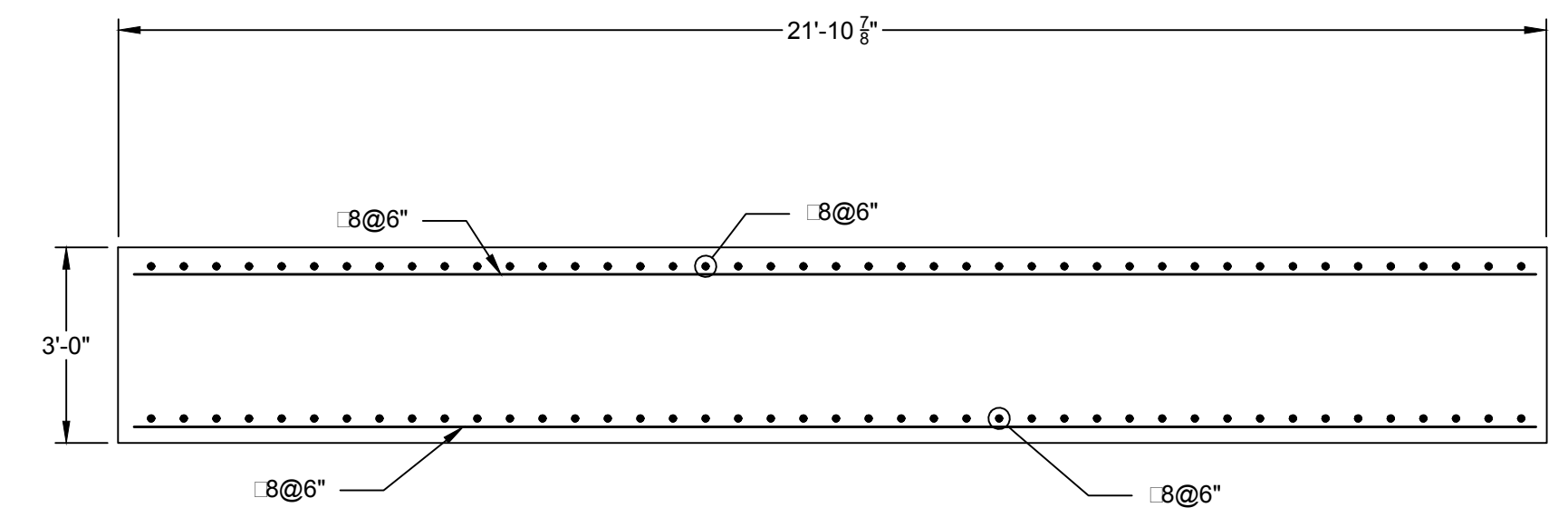
WALL AND SLAB DETAILS  
 SEGMENT E1

PROJECT:	16C17043.00
DATE:	07/10/2017
SHEET	31 OF 66

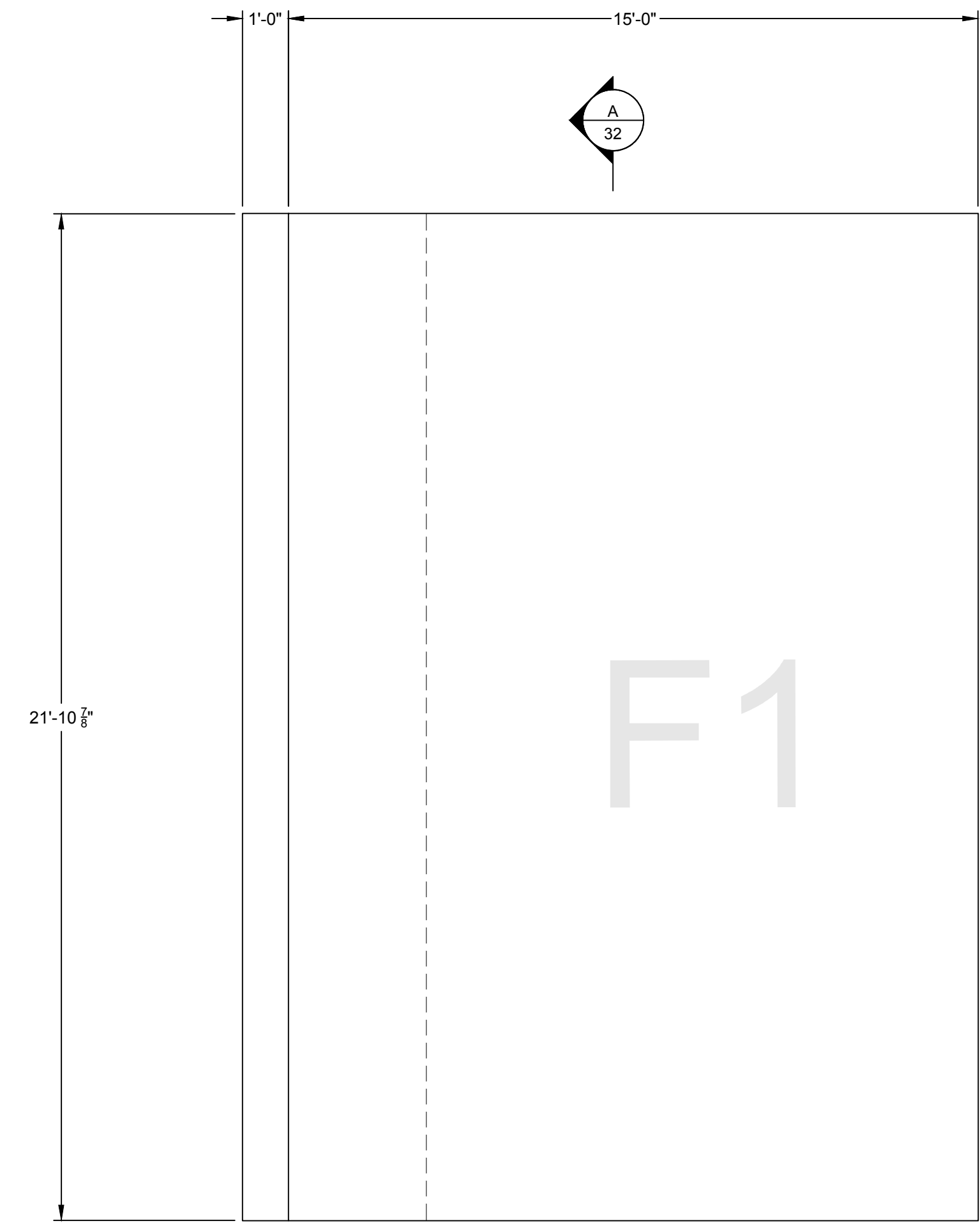
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURAL.DWG



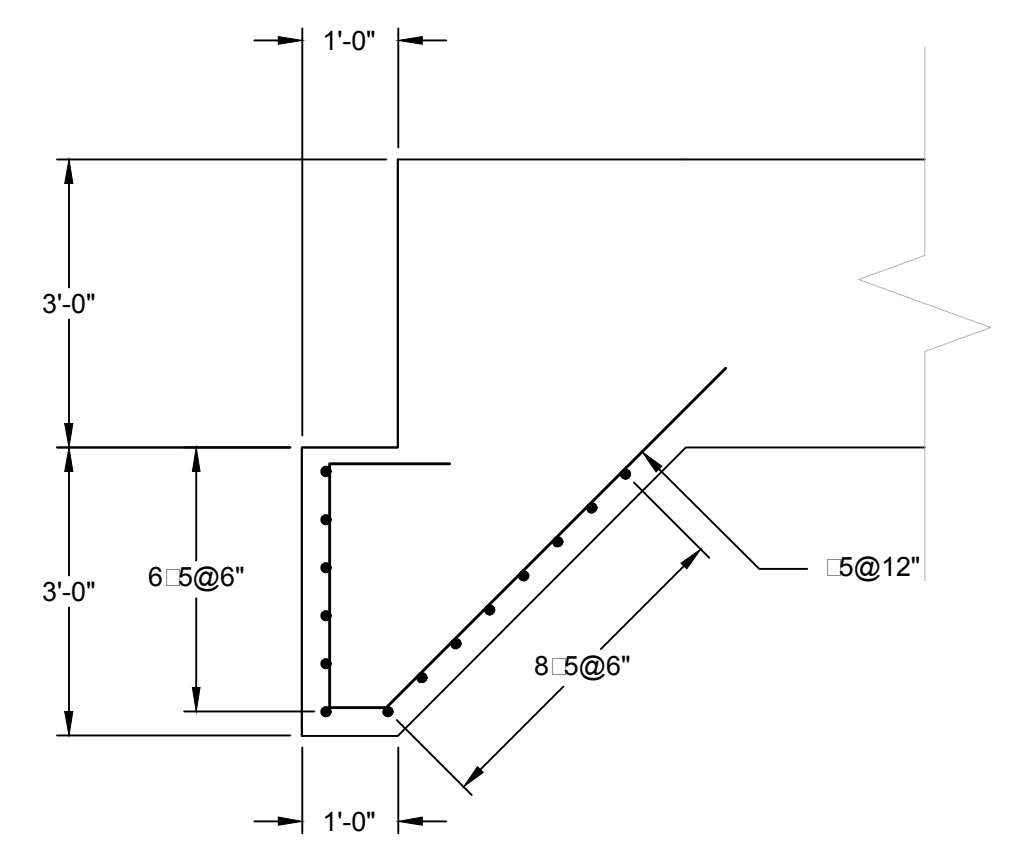
1 SEGMENT F1 SLAB ELEVATION  
SCALE: 3/8"=1'0"  
0 2 4



A SEGMENT F1 SECTION  
SCALE: 3/8"=1'0"  
0 2 4



1 SEGMENT F1 SLAB PLAN  
SCALE: 3/8"=1'0"  
0 2 4

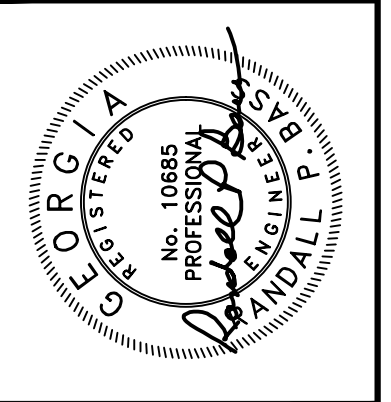


B CUTOFF WALL DETAIL  
SCALE: 1/2"=1'0"  
0 2 4  
(TYPICAL)

NOTE: SEGMENT F1 □ F2 SIMILAR

REV	DESCRIPTION	DATE

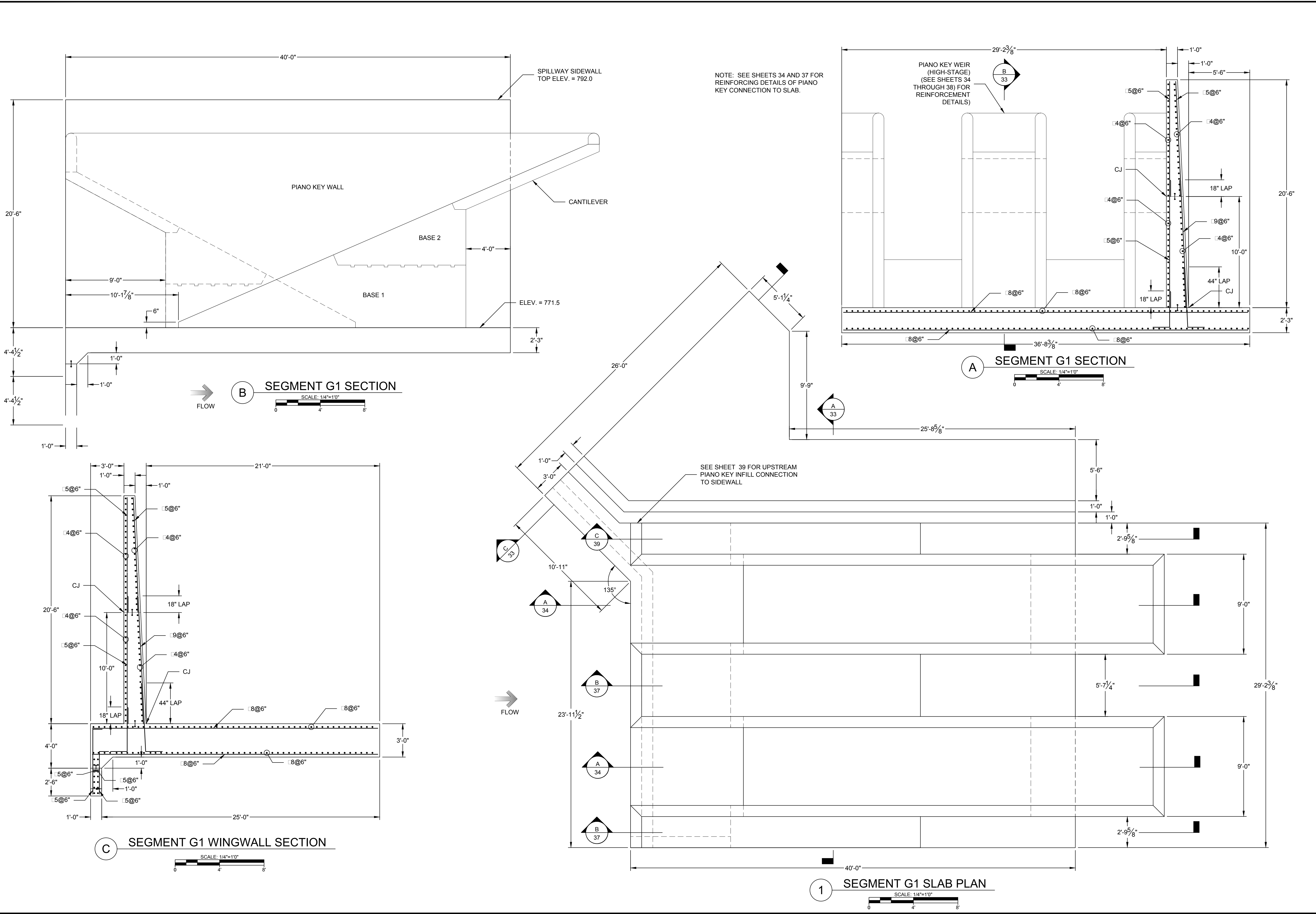
DESIGNED BY: JTD, JIC  
DRAWN BY: GHB, JSR  
CHECKED BY: RPL, JRC  
RANDALL P. BASS, P.E.  
DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 10685



**Schnabel ENGINEERING**  
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
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CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA  
**WALL AND SLAB DETAILS  
SEGMENT F1**

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
32 OF 66



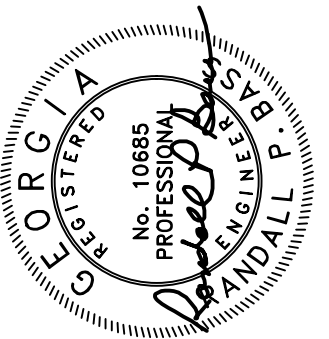
NOTE: SEE SHEETS 34 AND 37 FOR REINFORCING DETAILS OF PIANO KEY CONNECTION TO SLAB.

PIANO KEY WEIR (HIGH-STAGE)  
(SEE SHEETS 34 THROUGH 38) FOR REINFORCING DETAILS)

SEE SHEET 39 FOR UPSTREAM PIANO KEY INFILL CONNECTION TO SIDEWALL

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURAL\_PIANO KEY WEIR.DWG

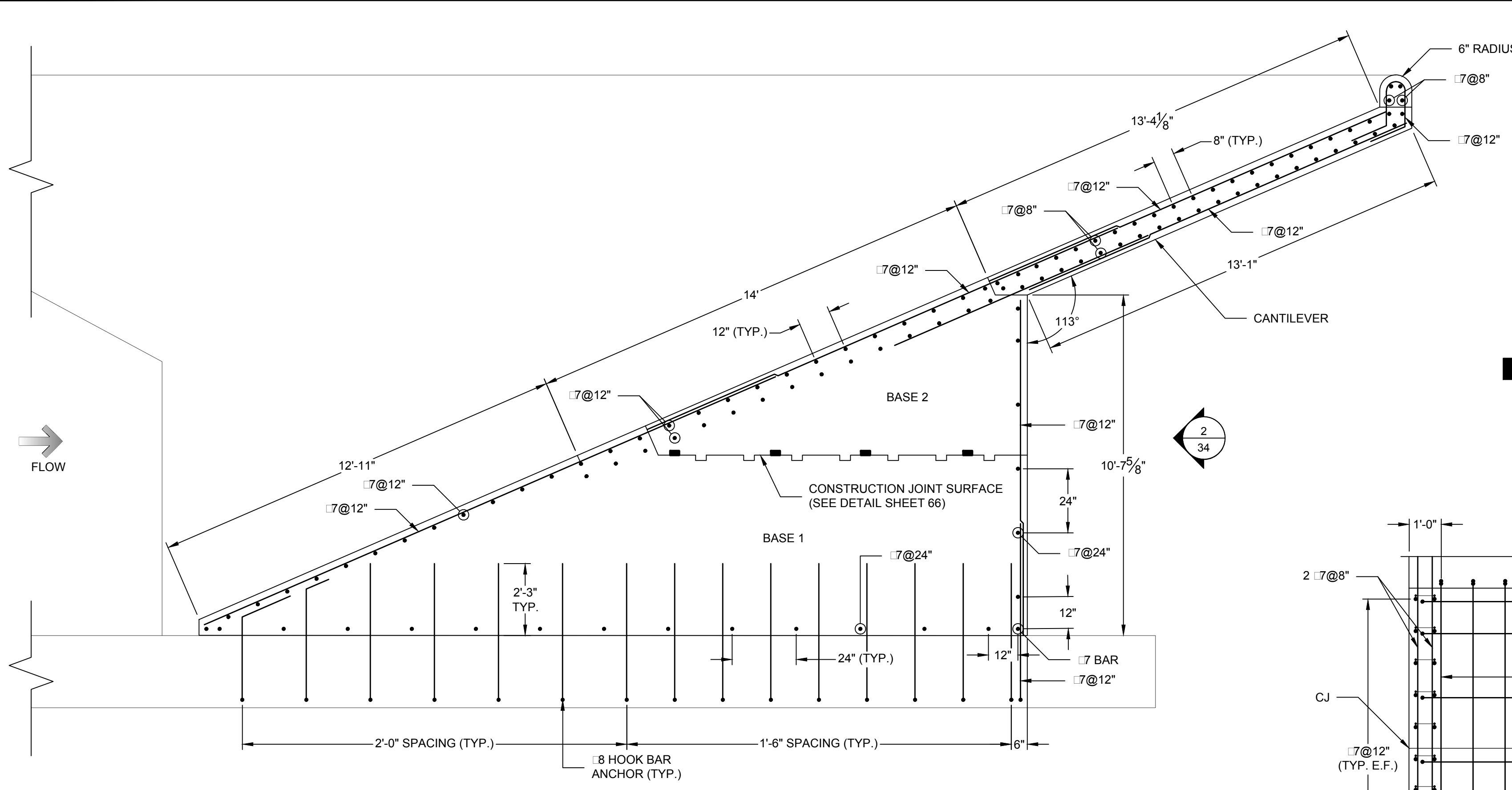
PROJECT: 16C17043.00	DATE: 07/10/2017	DESIGNED BY: JTD, JIC	CHECKED BY: RPL, JRC
SHEET 33 OF 66	DESCRIPTION	DRAWN BY: GHB, JSR	DATE: 07/10/17
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	REV	DESIGNED BY: RANDALL P. BASS, P.E.	GEORGIA PROFESSIONAL ENGINEER NO. 10885
WALL AND SLAB REINFORCEMENT DETAILS SEGMENT G1	DESCRIPTION	<i>Randall P. Bass</i>	DATE: 07/10/17
	REV		DATE



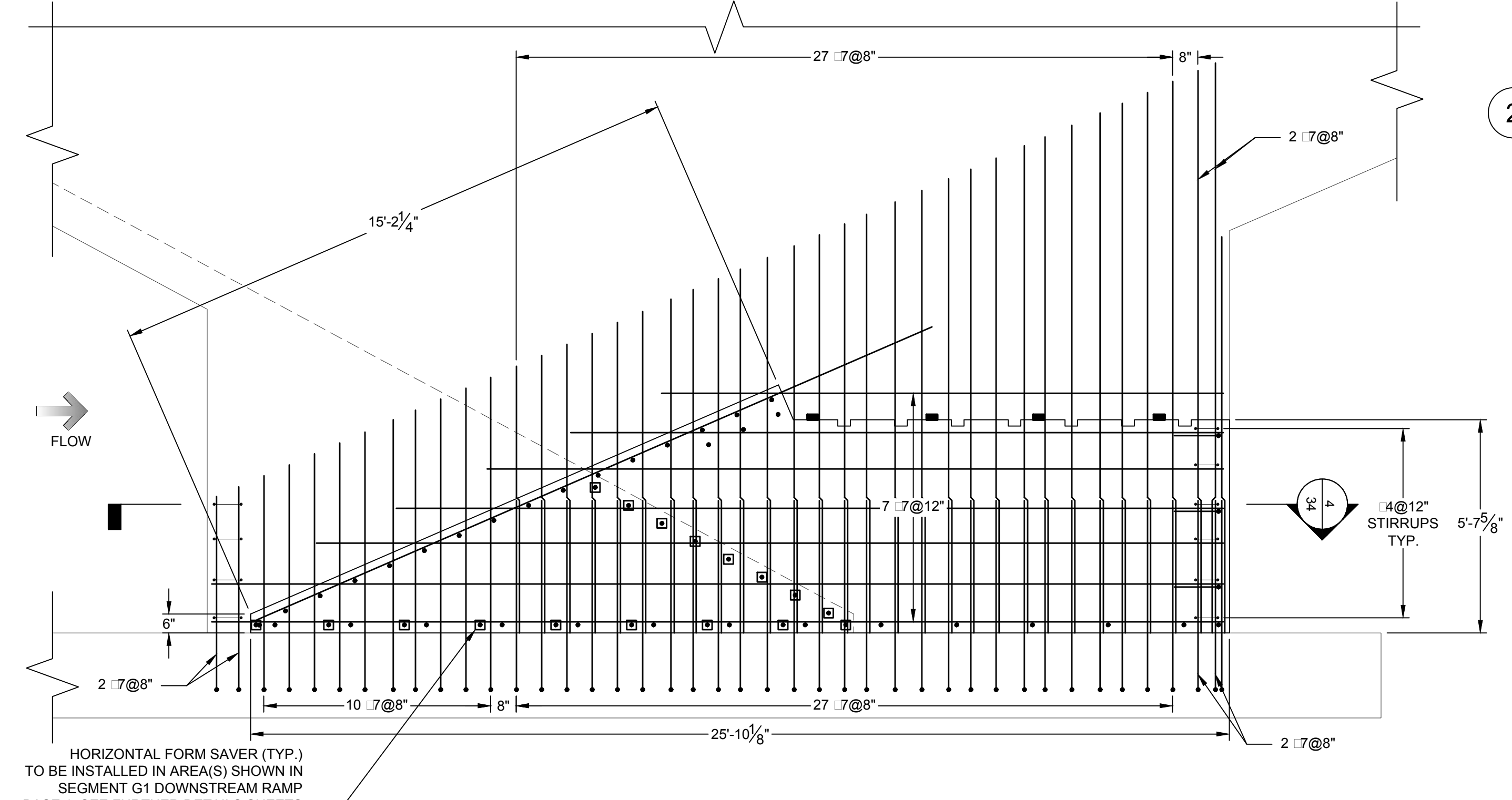
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA  
**WALL AND SLAB  
REINFORCEMENT DETAILS  
SEGMENT G1**

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
33 OF 66

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CAD\DRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURAL\_PIANO\_KEY\_WEIRD.WMG

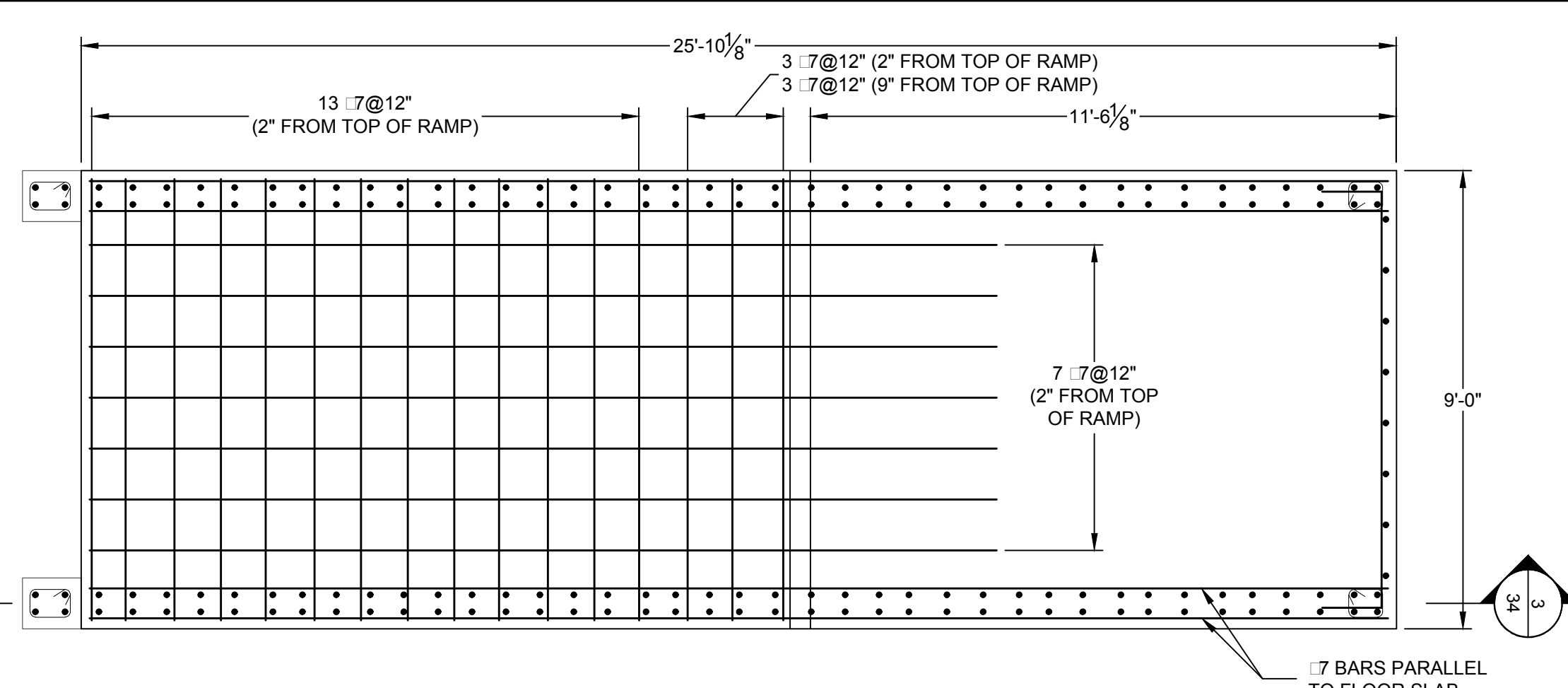


**A** SEGMENT G1 DOWNSTREAM RAMP SECTION  
SCALE: 3/8"=1'-0"



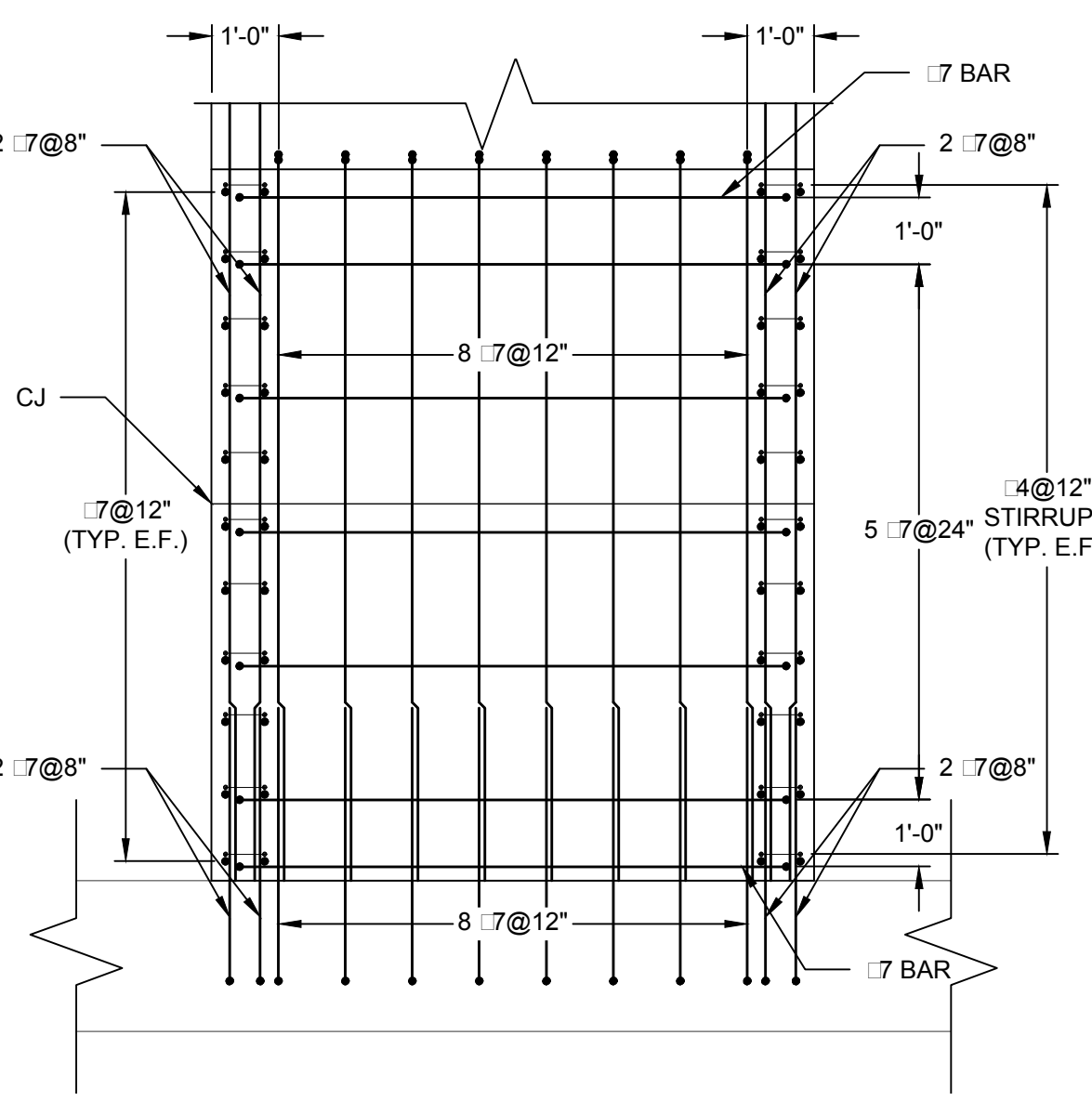
**3** SEGMENT G1 DOWNSTREAM RAMP BASE 1 SECTION  
SCALE: 3/8"=1'-0"

HORIZONTAL FORM SAVER (TYP.) TO BE INSTALLED IN AREA(S) SHOWN IN SEGMENT G1 DOWNSTREAM RAMP BASE 1. SEE FURTHER DETAILS SHEETS 37 AND 38. FORM SAVERS REQUIRED TO STRUCTURALLY TIE SEGMENT G1 DOWNSTREAM RAMP BASE 1 TO SEGMENT G1 INFILL(S).



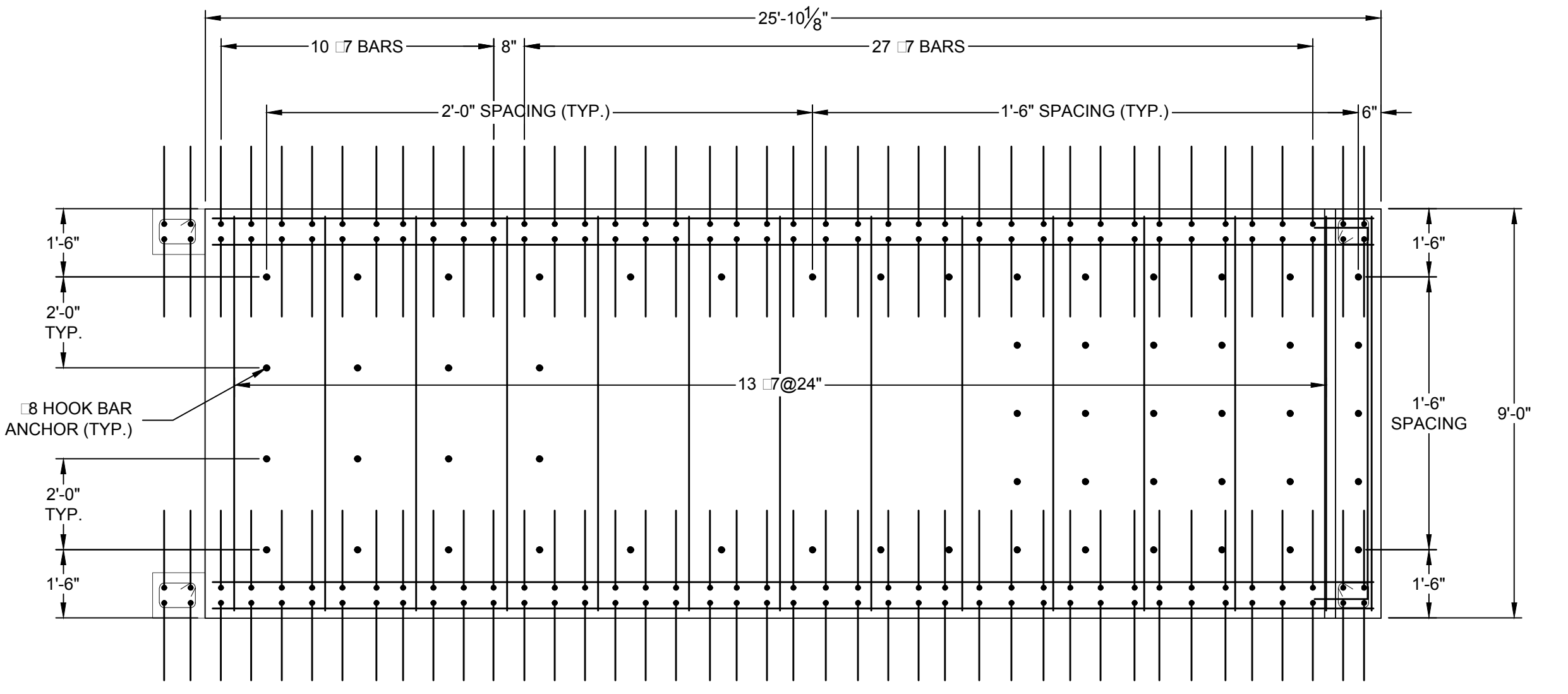
**1** SEGMENT G1 DOWNSTREAM RAMP BASE 1 PLAN  
SCALE: 3/8"=1'-0"

NOTE: FORM SAVERS FOR CONNECTION TO UPSTREAM RAMP NOT SHOWN FOR CLARITY.



**2** SEGMENT G1 DOWNSTREAM RAMP ELEVATION  
SCALE: 3/8"=1'-0"

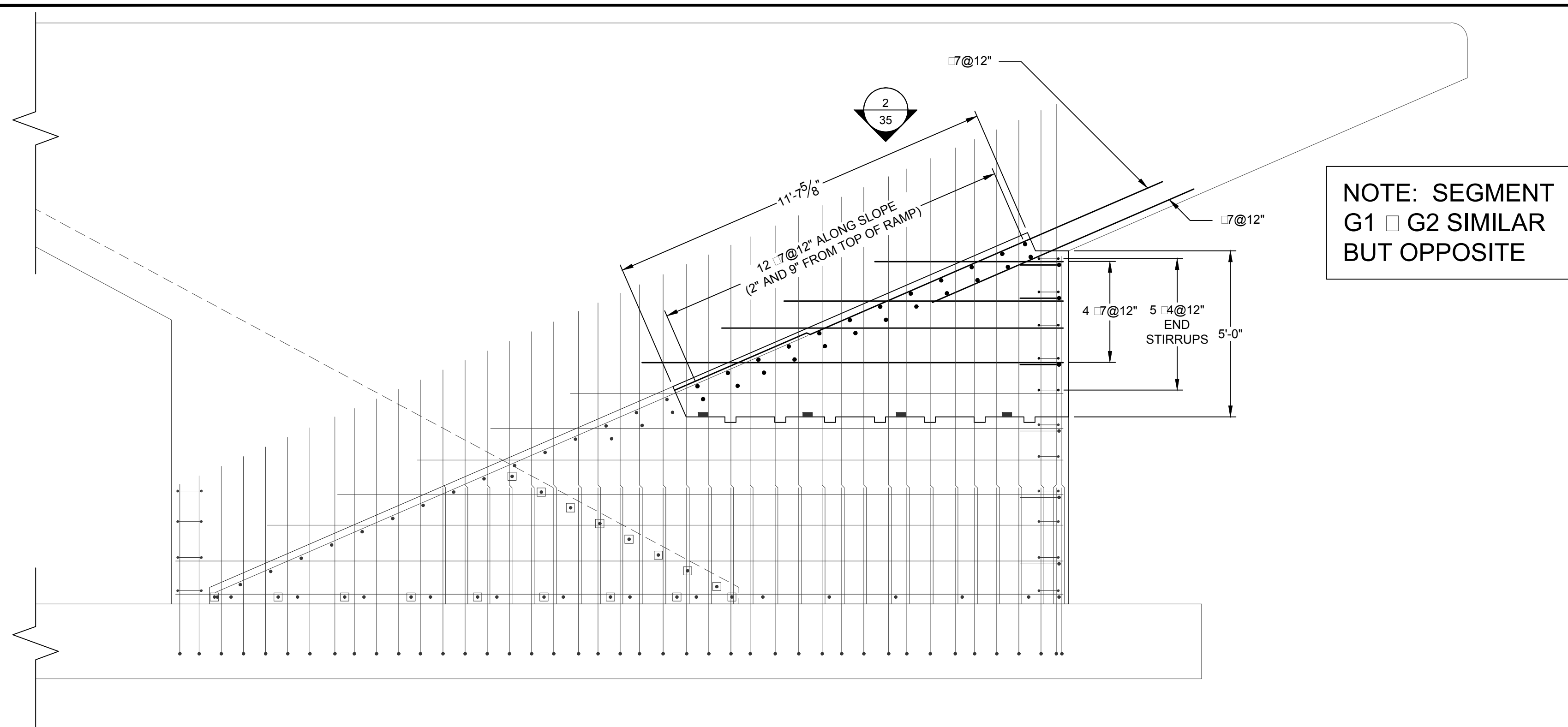
NOTE: SEGMENT G1 □ G2 SIMILAR BUT OPPOSITE



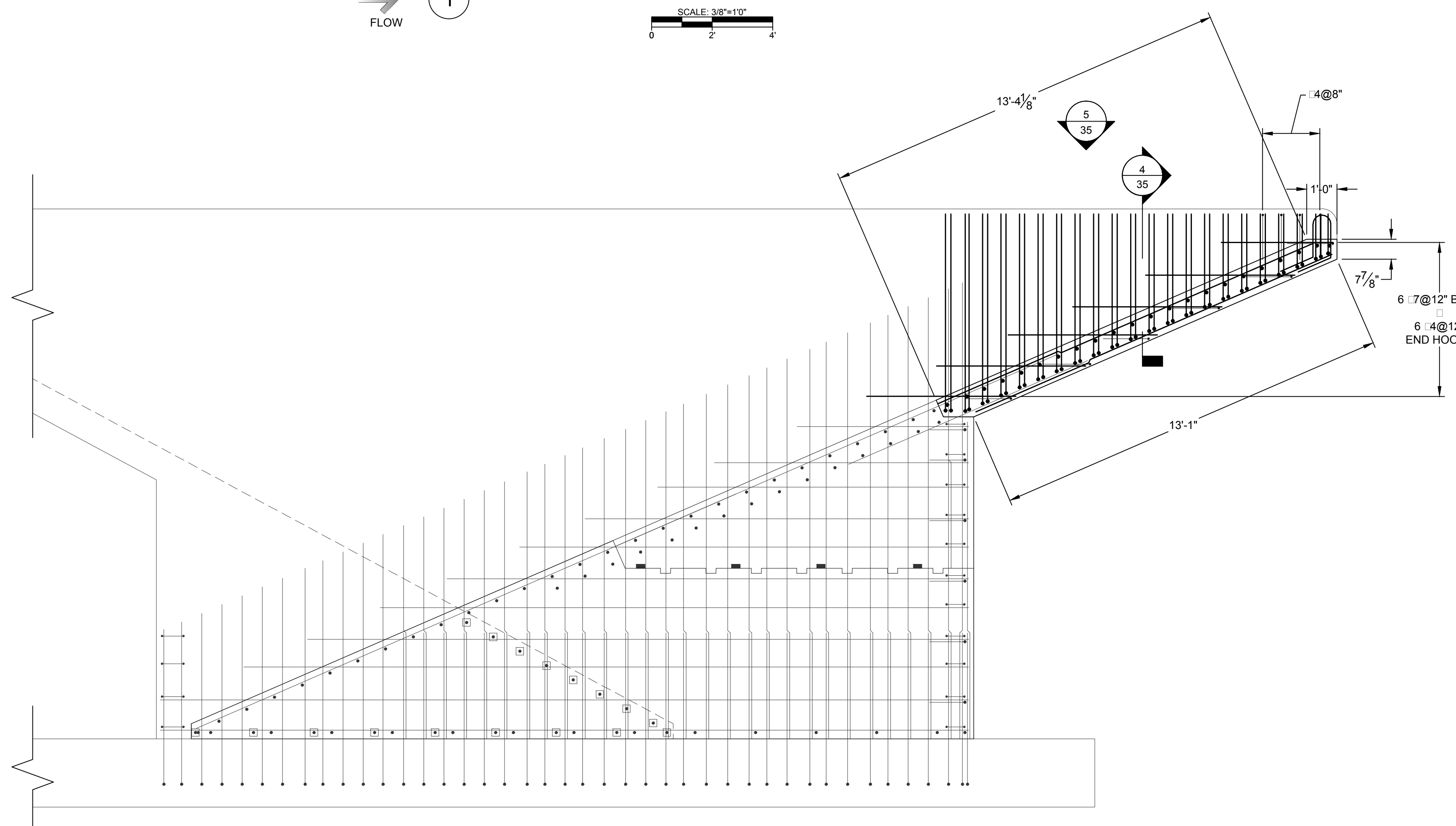
**4** SEGMENT G1 DOWNSTREAM RAMP BASE 1 SECTION  
SCALE: 3/8"=1'-0"

PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 34 OF 66
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		
DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT G1		
DESIGNED BY: JTD_JC	DRAWN BY: GHB_JSR	CHECKED BY: RPL_JRC
RANDALL P. BASS, P.E.		
RANDALL P. BASS GEORGIA PROFESSIONAL ENGINEER NO. 10885 DATE: 07/10/17		
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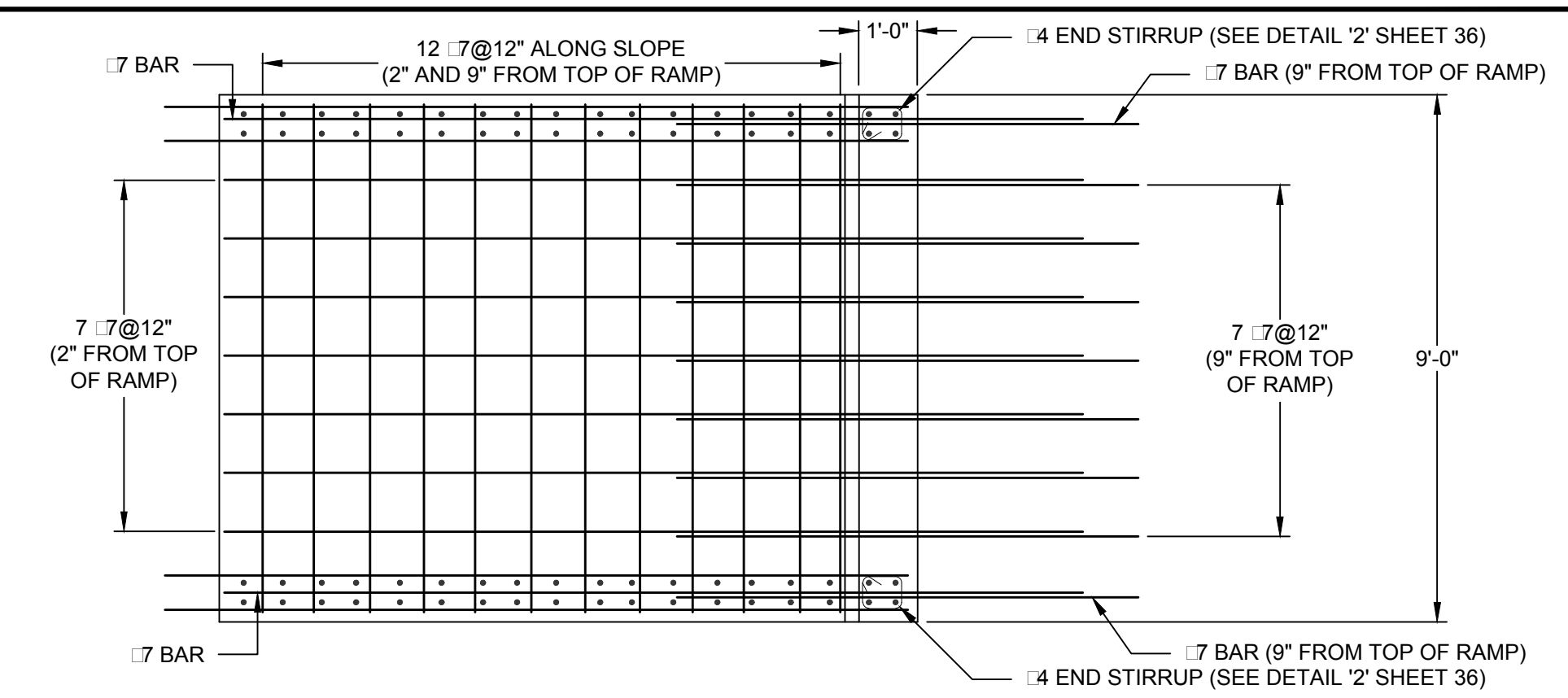
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURAL\_PIANO\_KEY\_WEIRD.WMG



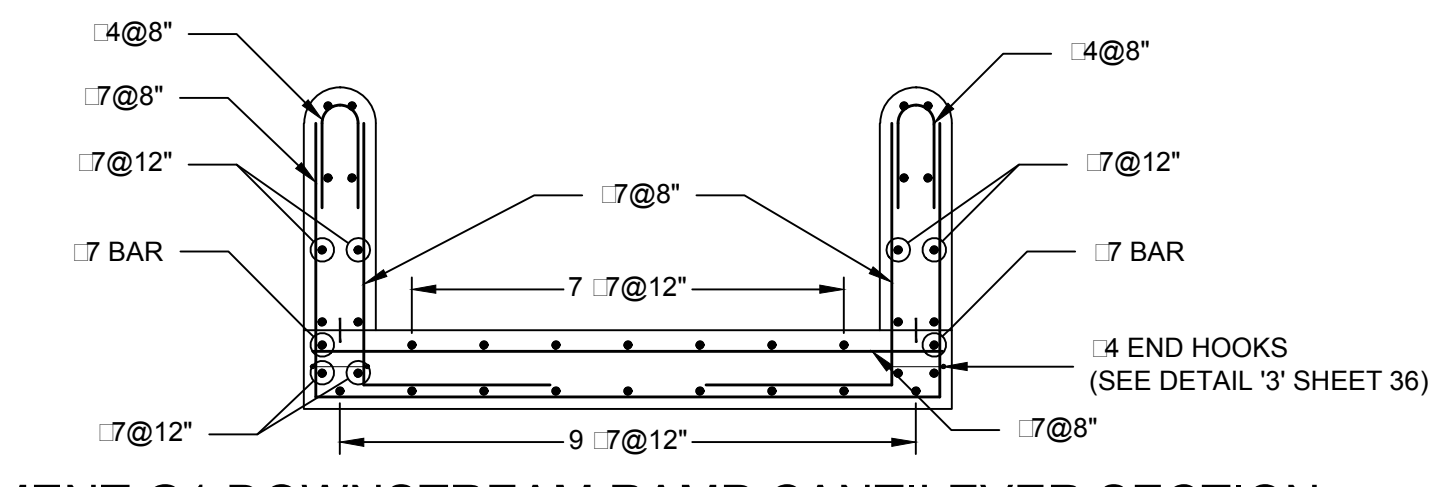
1 SEGMENT G1 DOWNSTREAM RAMP BASE 2  
SCALE: 3/8"=1'0"  
FLOW →



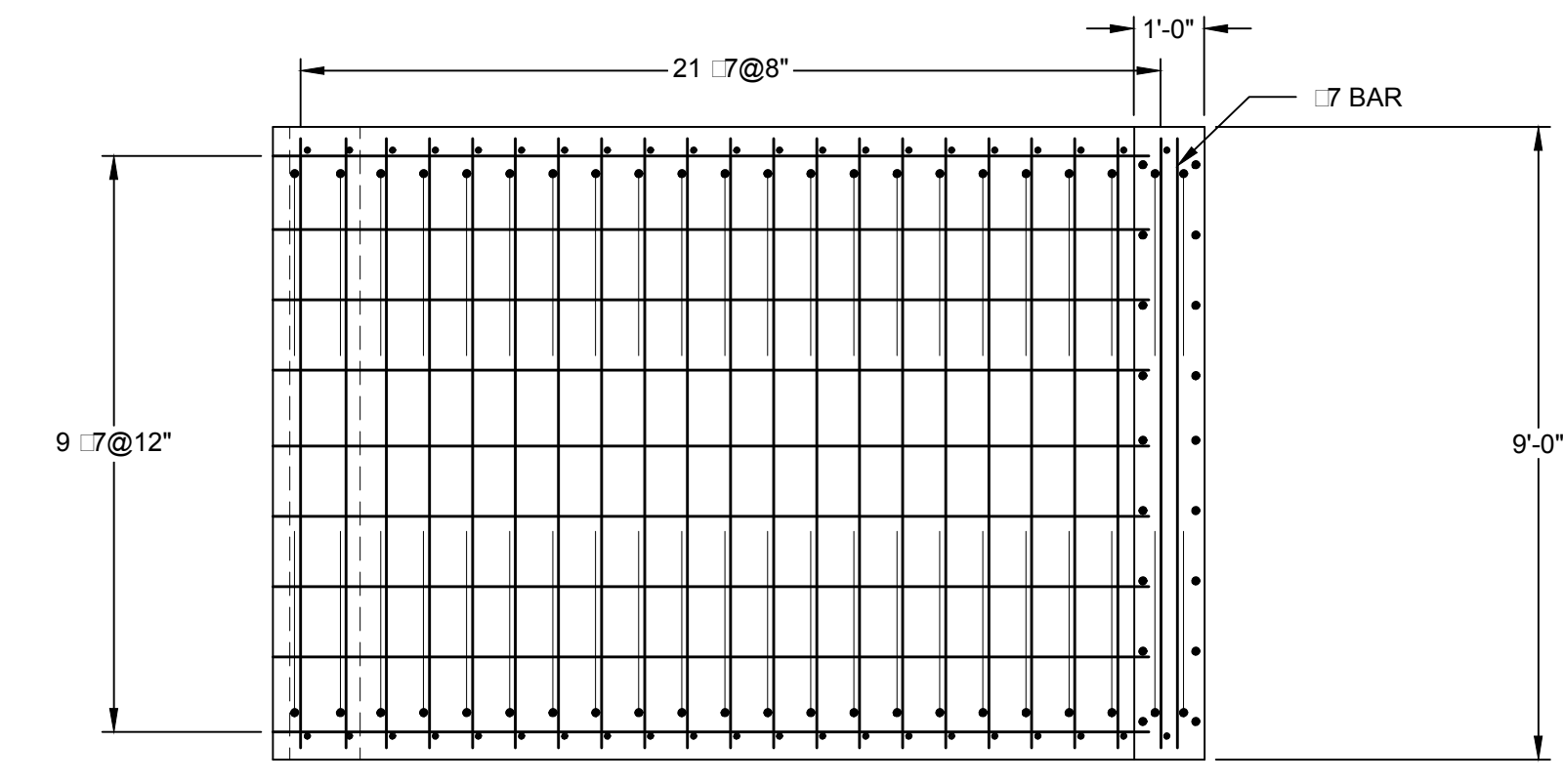
3 SEGMENT G1 DOWNSTREAM RAMP CANTILEVER  
SCALE: 3/8"=1'0"  
FLOW →



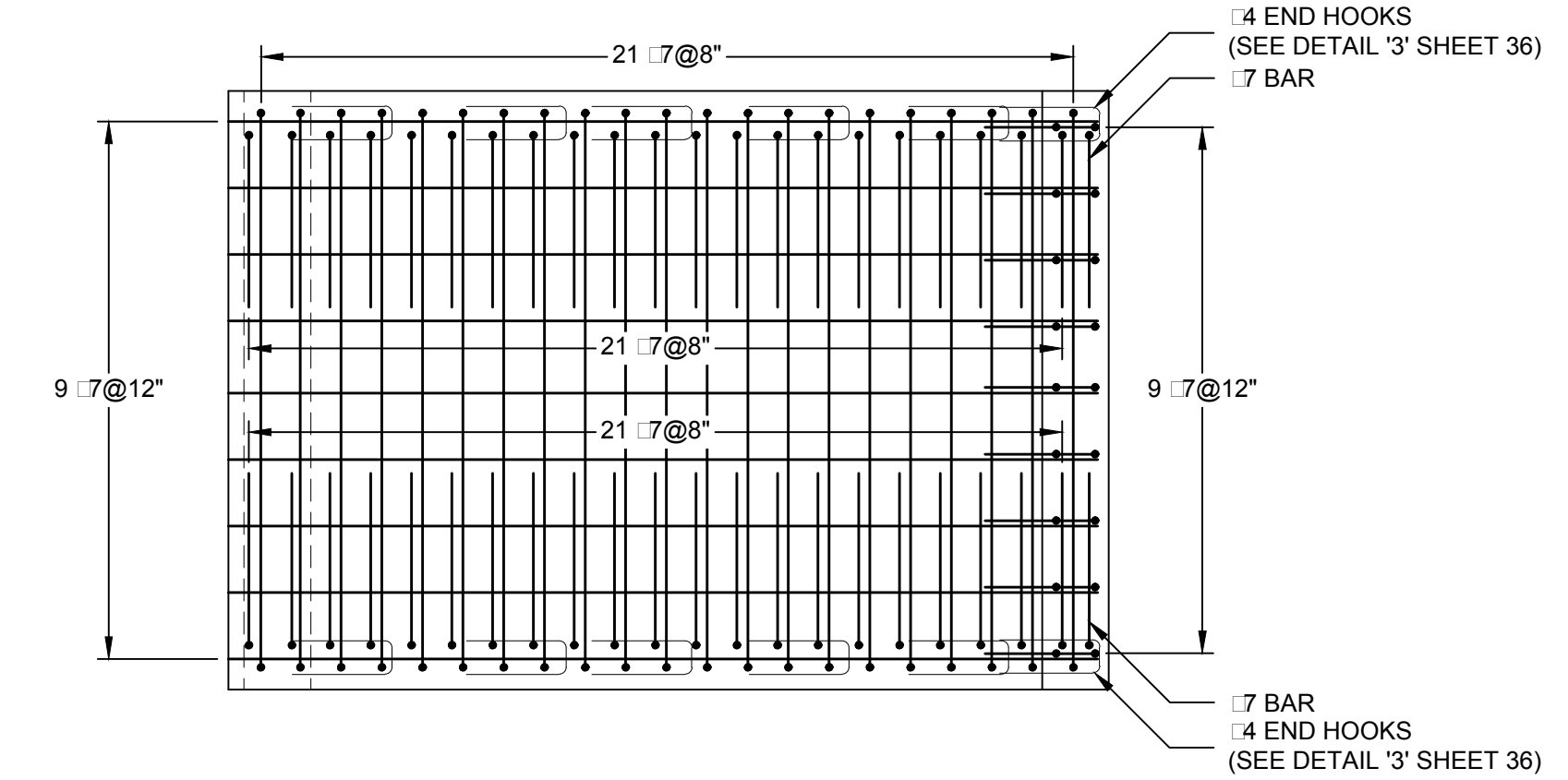
2 SEGMENT G1 DOWNSTREAM RAMP BASE 2 PLAN  
SCALE: 3/8"=1'0"



4 SEGMENT G1 DOWNSTREAM RAMP CANTILEVER SECTION  
SCALE: 3/8"=1'0"



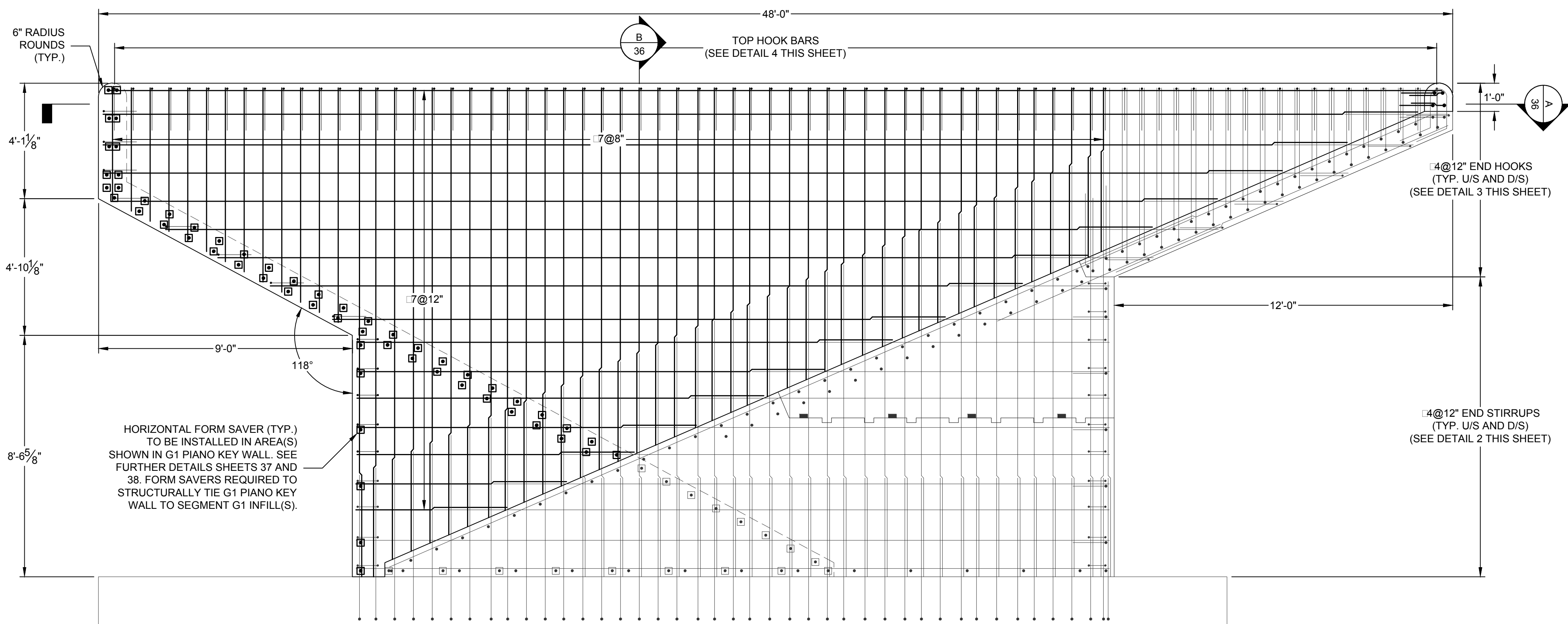
5 SEGMENT G1 DOWNSTREAM RAMP CANTILEVER PLAN  
REINFORCEMENT 2" FROM TOP OF CANTILEVER SLAB  
SCALE: 3/8"=1'0"



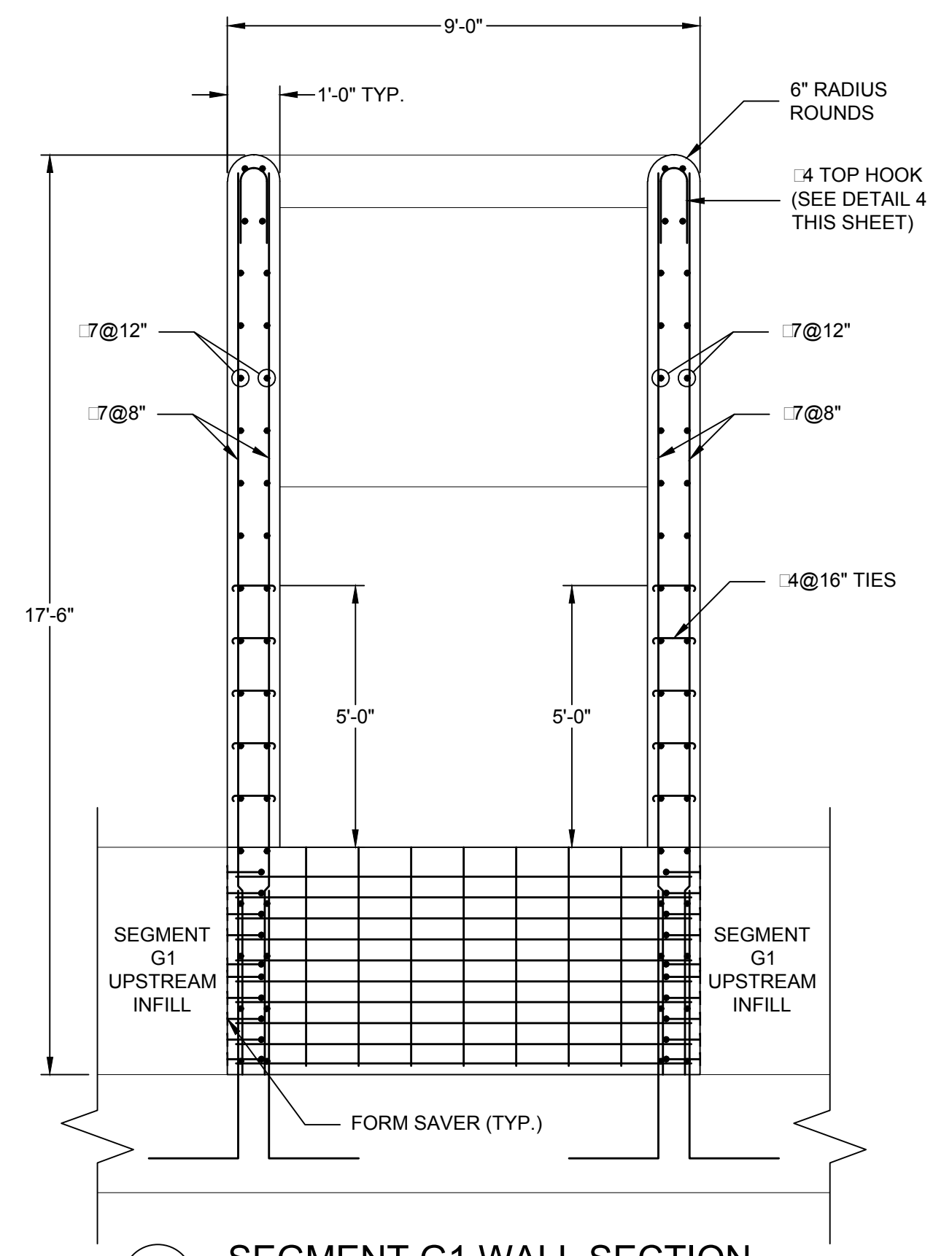
5 SEGMENT G1 DOWNSTREAM RAMP CANTILEVER PLAN  
REINFORCEMENT 2" FROM BOTTOM OF CANTILEVER SLAB  
SCALE: 3/8"=1'0"

CHECKED BY: RPL_JRC		DESIGNED BY: JTD_JC	DRAWN BY: GHB_JSR	DATE: 07/10/17
DESIGNED BY: RPL_JRC				
PROJECT: LAKE PEACHTREE DAM REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		DRAWN BY: GHB_JSR		DATE: 07/10/17
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		DRAWN BY: GHB_JSR		DATE: 07/10/17
DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT G1		DRAWN BY: GHB_JSR		DATE: 07/10/17
PROJECT: 16C17043.00		DRAWN BY: GHB_JSR		DATE: 07/10/17
DATE: 07/10/2017		DRAWN BY: GHB_JSR		DATE: 07/10/17
SHEET 35 OF 66		DRAWN BY: GHB_JSR		DATE: 07/10/17
Schnabel ENGINEERING		DRAWN BY: GHB_JSR		DATE: 07/10/17
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		DRAWN BY: GHB_JSR		DATE: 07/10/17
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		DRAWN BY: GHB_JSR		DATE: 07/10/17
DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT G1		DRAWN BY: GHB_JSR		DATE: 07/10/17
PROJECT: 16C17043.00		DRAWN BY: GHB_JSR		DATE: 07/10/17
DATE: 07/10/2017		DRAWN BY: GHB_JSR		DATE: 07/10/17
SHEET 35 OF 66		DRAWN BY: GHB_JSR		DATE: 07/10/17
Schnabel ENGINEERING		DRAWN BY: GHB_JSR		DATE: 07/10/17
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		DRAWN BY: GHB_JSR		DATE: 07/10/17

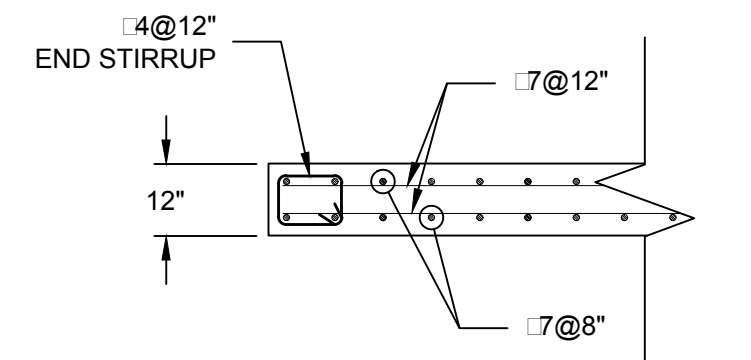
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\16C17043-00-STRUCTURAL\PIANO KEY WEIR.DWG



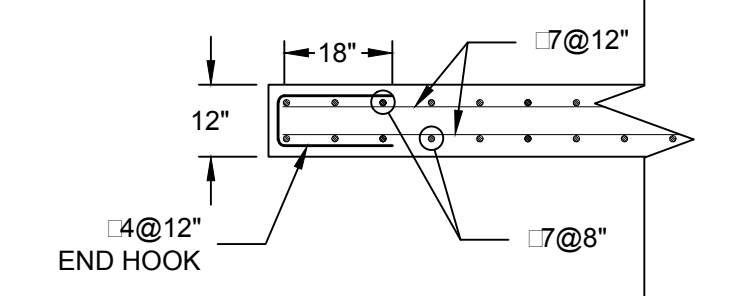
**1** SEGMENT G1 PIANO KEY WEIR WALL  
SCALE: 3/8"=1'-0"  
FLOW



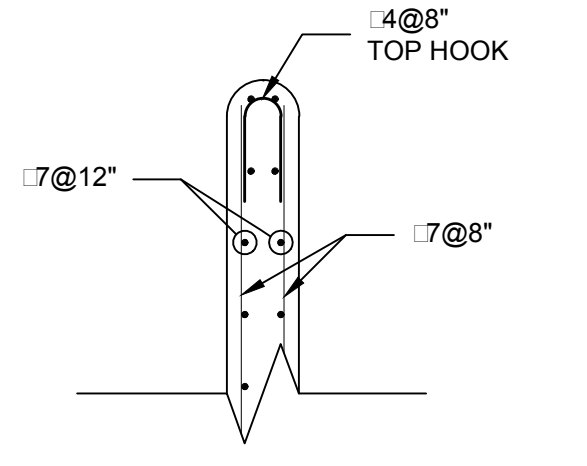
**B** SEGMENT G1 WALL SECTION  
SCALE: 3/8"=1'-0"  
0 2 4



**2** END STIRRUP DETAIL  
SCALE: 3/8"=1'-0"  
0 2 4

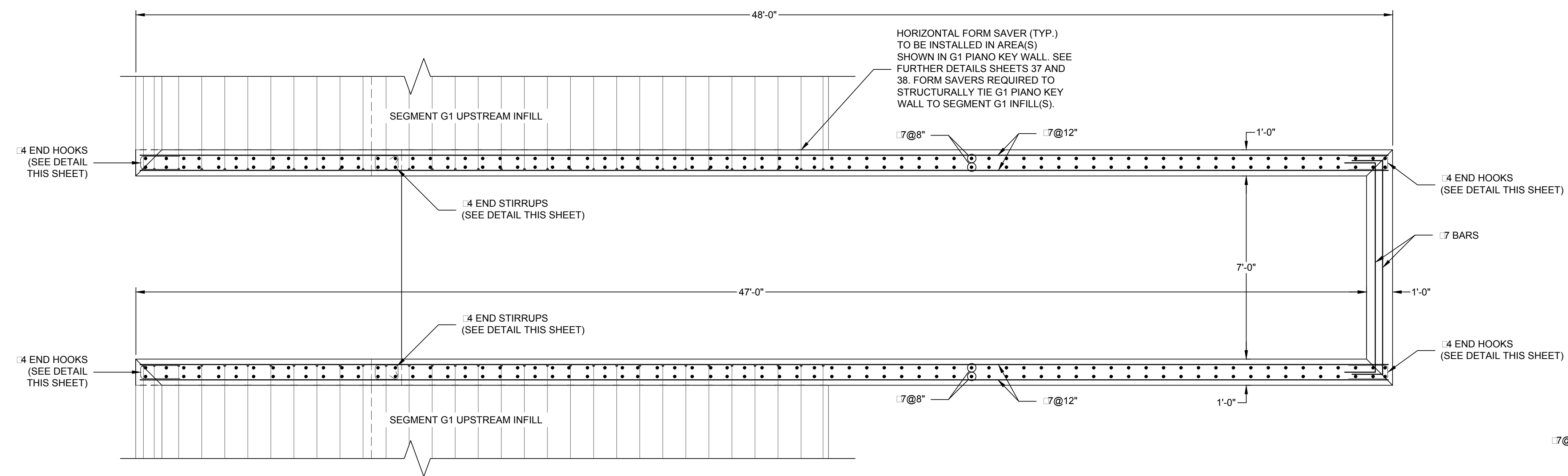


**3** END HOOK DETAIL  
SCALE: 3/8"=1'-0"  
0 2 4



**4** TOP HOOK DETAIL  
HIGH-STAGE AND MID-STAGE WEIR WALLS  
SCALE: 3/8"=1'-0"  
0 2 4

**NOTE: SEGMENT G1 □ G2 SIMILAR BUT OPPOSITE**

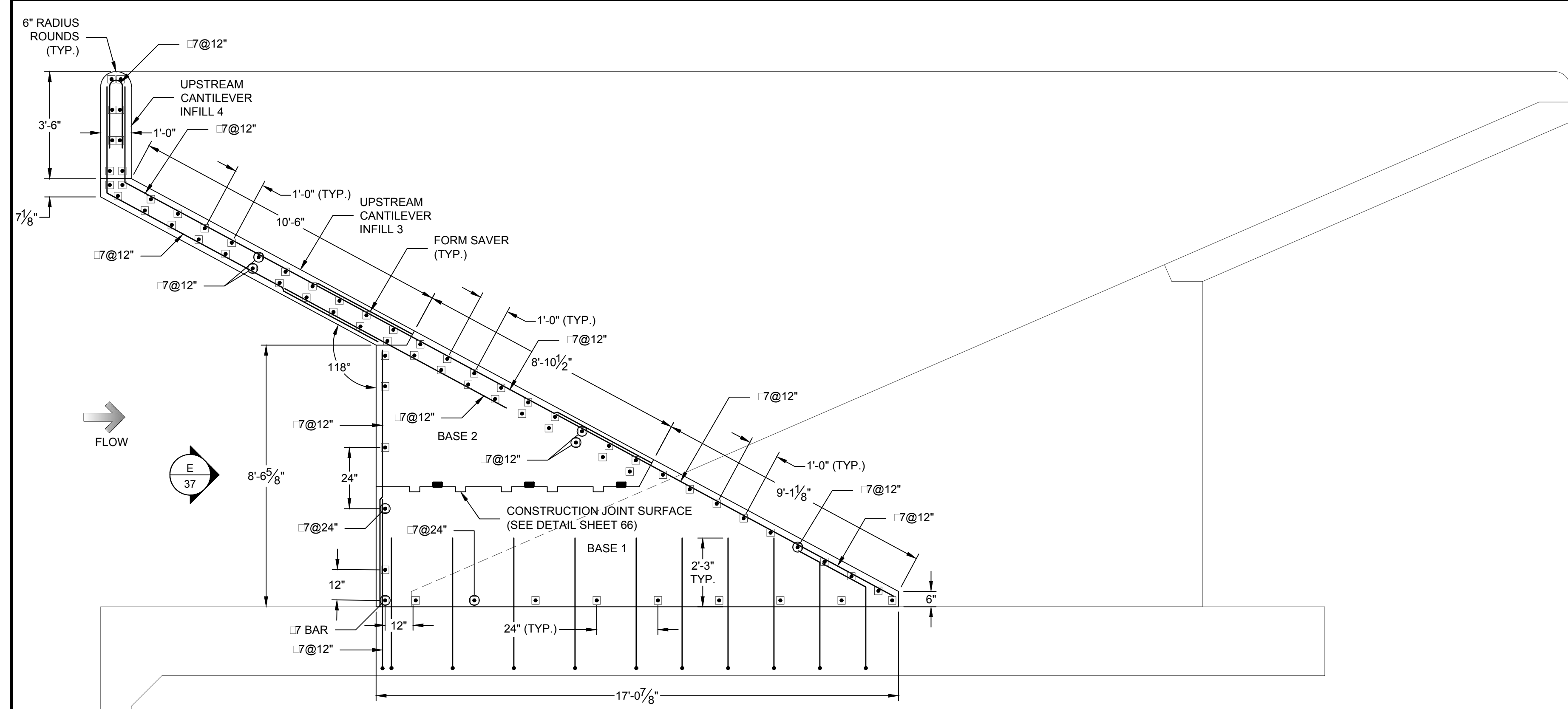


**A** SEGMENT G1 PIANO KEY WEIR WALL SECTION  
SCALE: 3/8"=1'-0"  
FLOW

DATE		DESCRIPTION	REV
CHECKED BY:	RPL_JRC	<b>RANDALL P. BASS, P.E.</b> <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685	
DRAWN BY:	GHB_USR		
DESIGNED BY:	JTD_JC		
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA <b>DOWNSTREAM RAMP          REINFORCEMENT DETAILS          SEGMENT G1</b>			
PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET 36 OF 66			

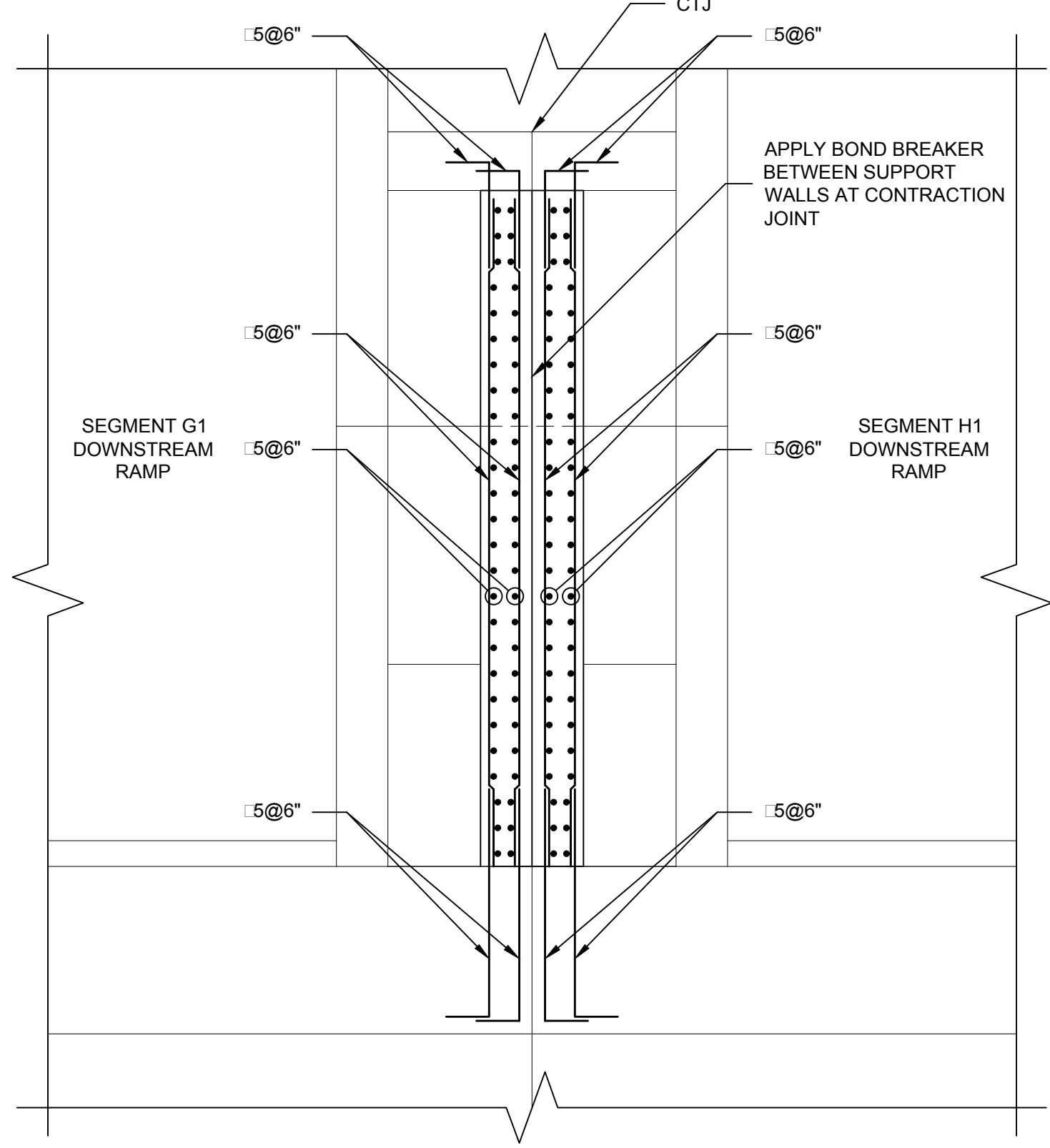


G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CAD\DRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURAL\_PIANO KEY WEIRD.DWG



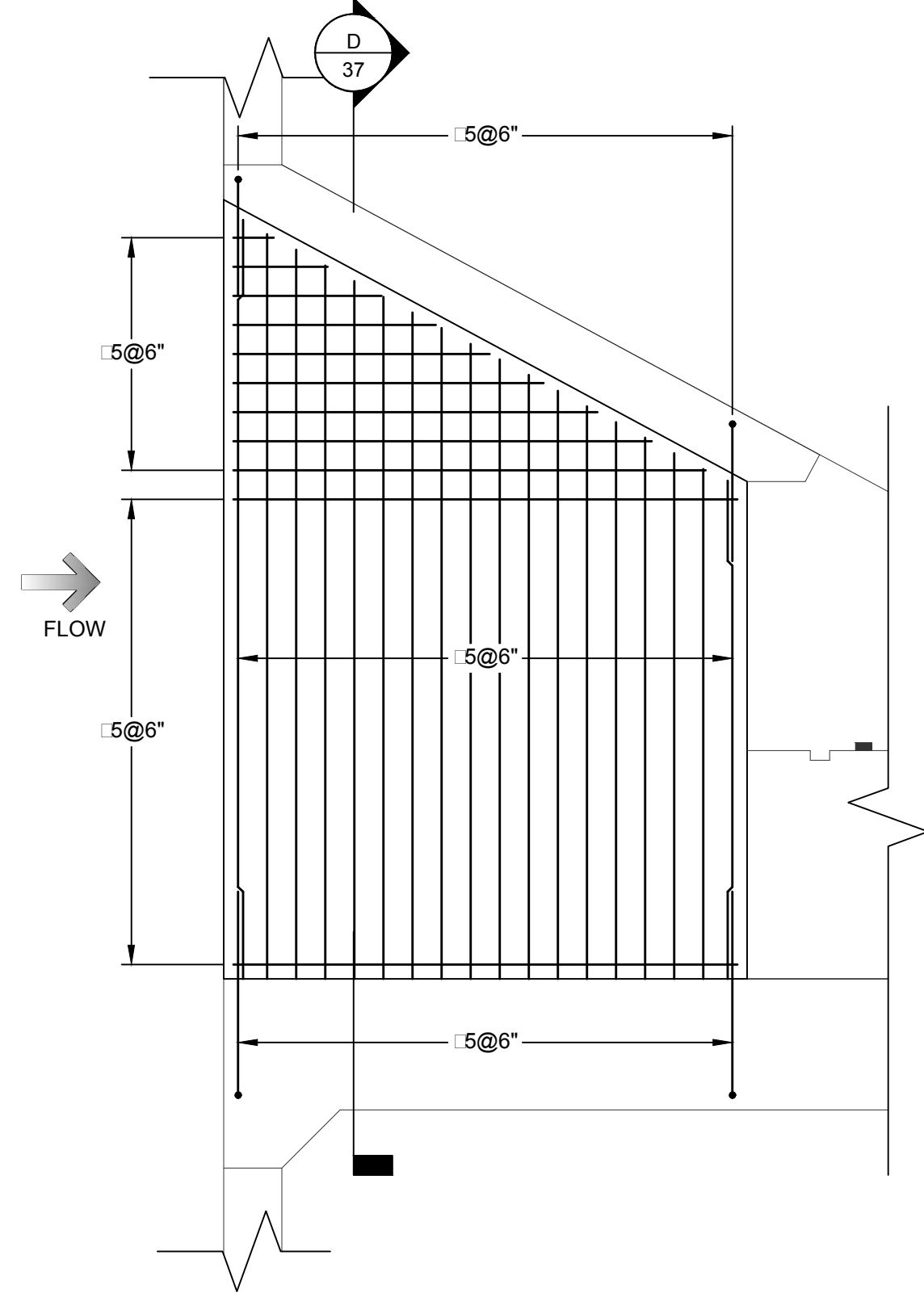
(B) SEGMENT G1 UPSTREAM RAMP INFILL

SCALE: 3/8"=1'0"  
NOTE: WALL AT CONTRACTION JOINT NOT SHOWN FOR CLARITY. SEE DETAILS THIS SHEET.



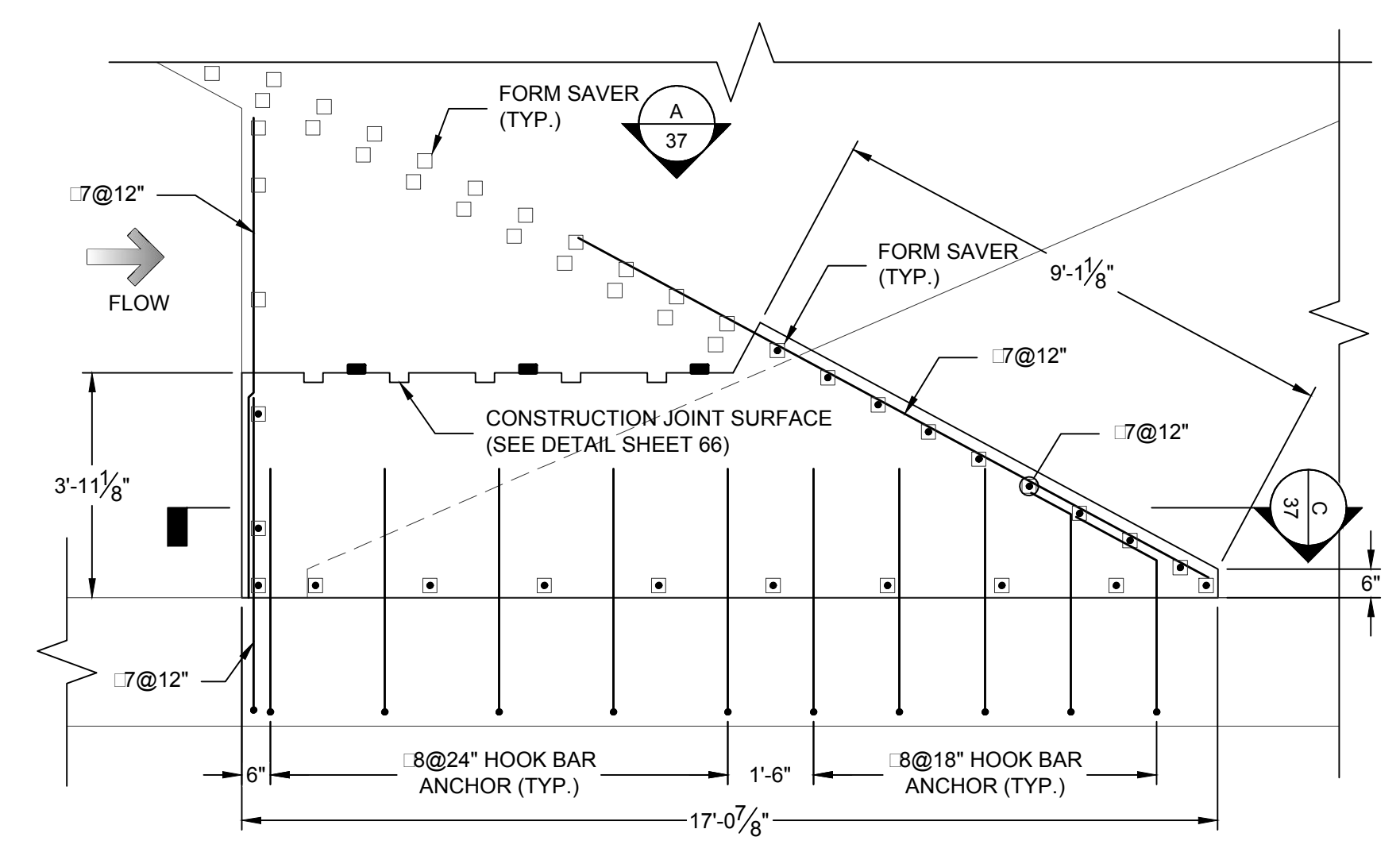
(D) SEGMENT G1 SUPPORT WALL SECTION

SCALE: 3/8"=1'0"



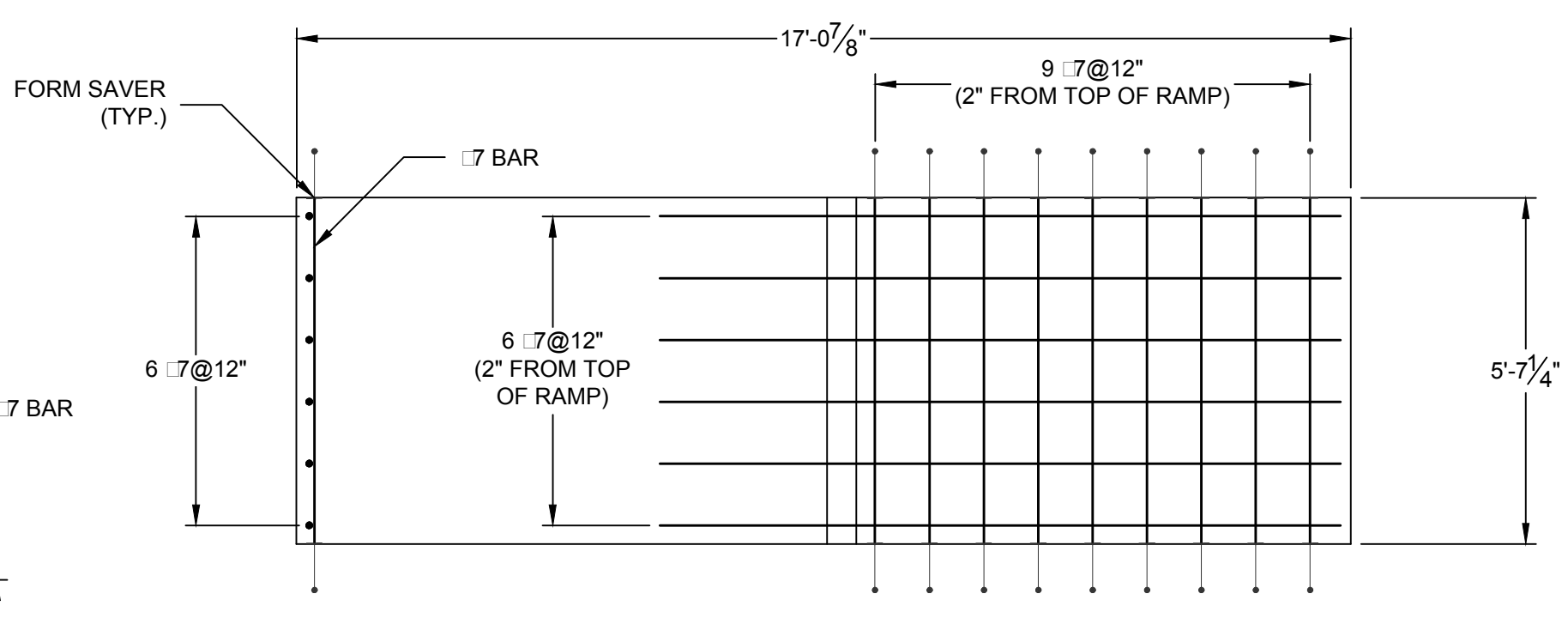
(1) SEGMENT G1 SUPPORT WALL AT CONTRACTION JOINT BETWEEN SEGMENTS G1 AND H1

SCALE: 3/8"=1'0"



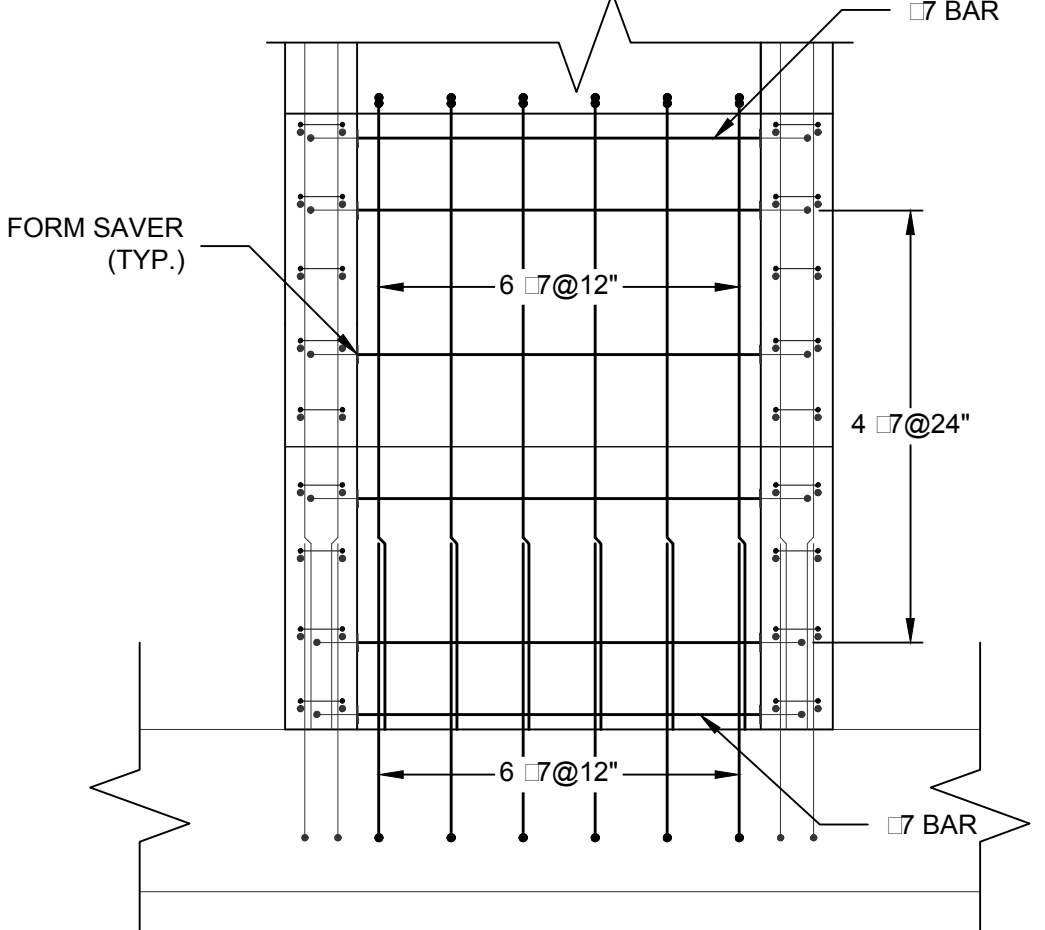
(2) SEGMENT G1 INFILL 1

SCALE: 3/8"=1'0"



(A) SEGMENT G1 INFILL BASE 1 PLAN

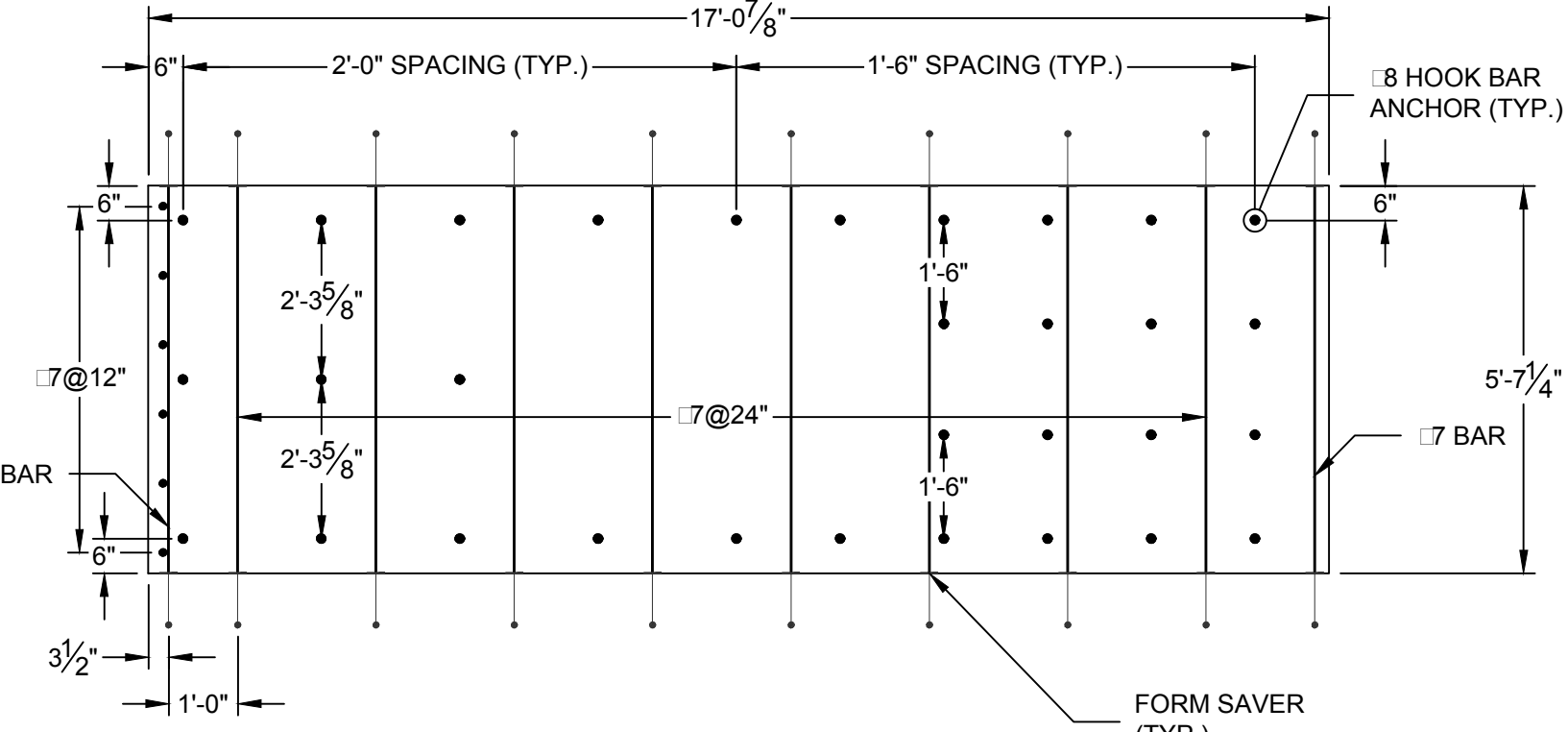
SCALE: 3/8"=1'0"



(E) SEGMENT G1 INFILL BASE ELEVATION

SCALE: 3/8"=1'0"

NOTE: FOR CONTRACTION JOINT BETWEEN PIANO KEY SEGMENTS G1 AND H1, PROVIDE 2-INCHES CLEARANCE FOR REINFORCEMENT EACH SIDE OF JOINT. (G2 AND H2 SIMILAR, BUT OPPOSITE)



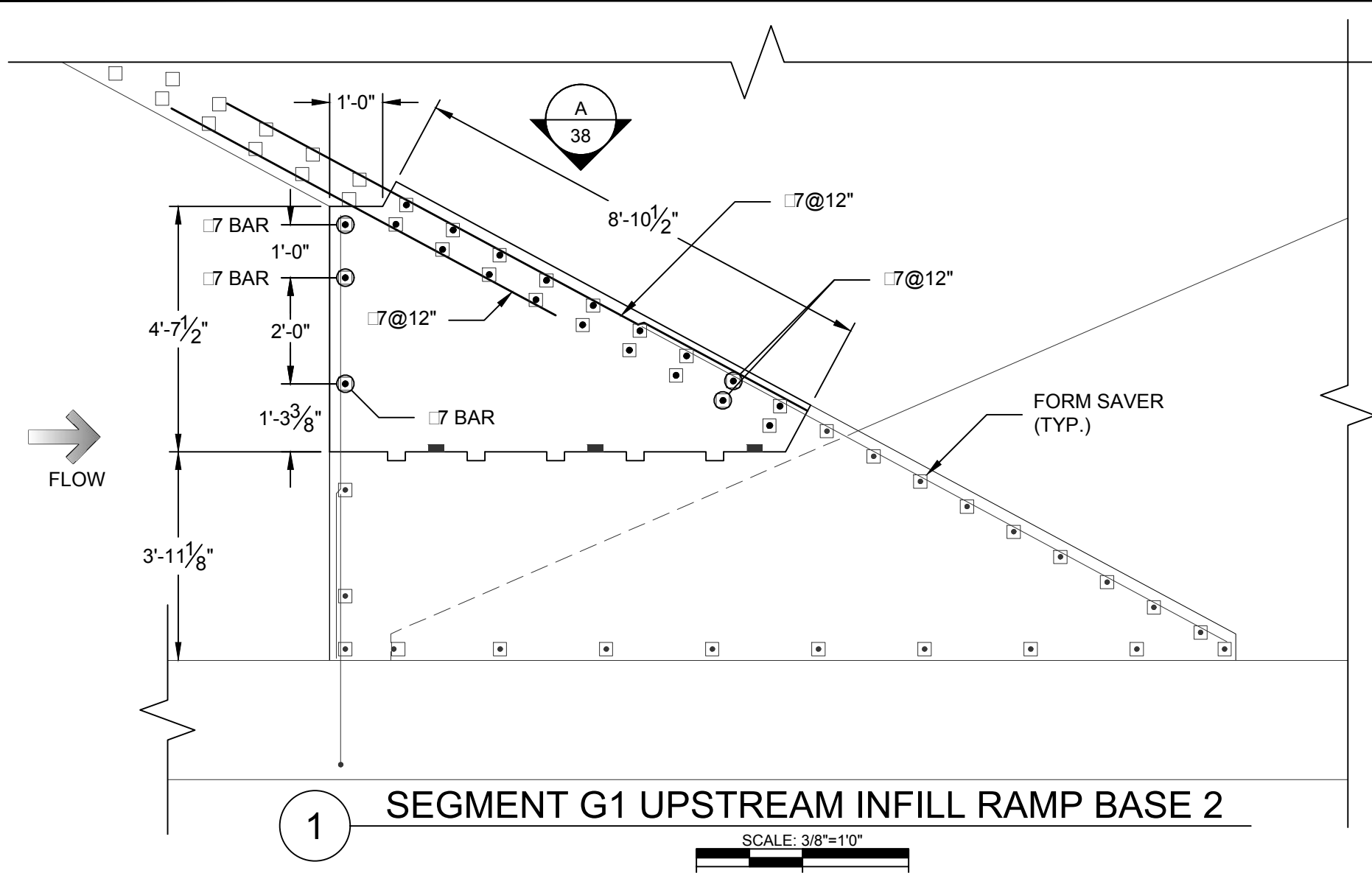
(C) SEGMENT G1 INFILL BASE 1 SECTION

SCALE: 3/8"=1'0"

NOTE: SEGMENT G1 □ G2 SIMILAR BUT OPPOSITE

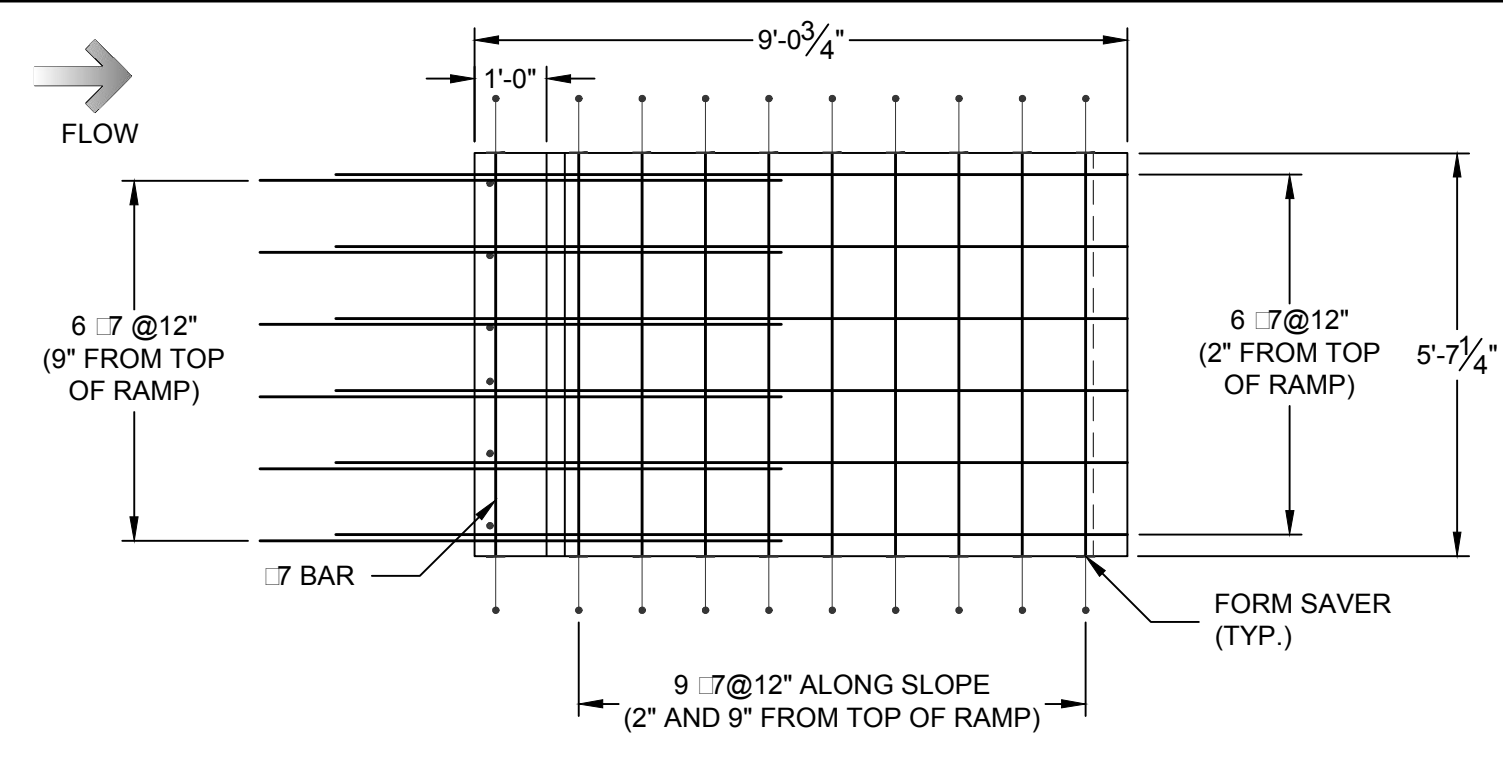
PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 37 OF 66
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		
UPSTREAM RAMP REINFORCEMENT DETAILS SEGMENT G1		
Schnabel ENGINEERING		6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E.		DATE: 07/10/17
Professional Engineer Seal		GEORGIA PROFESSIONAL ENGINEER NO. 10685
DESCRIPTION		REV

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURE\PIANO KEY WEIR.DWG



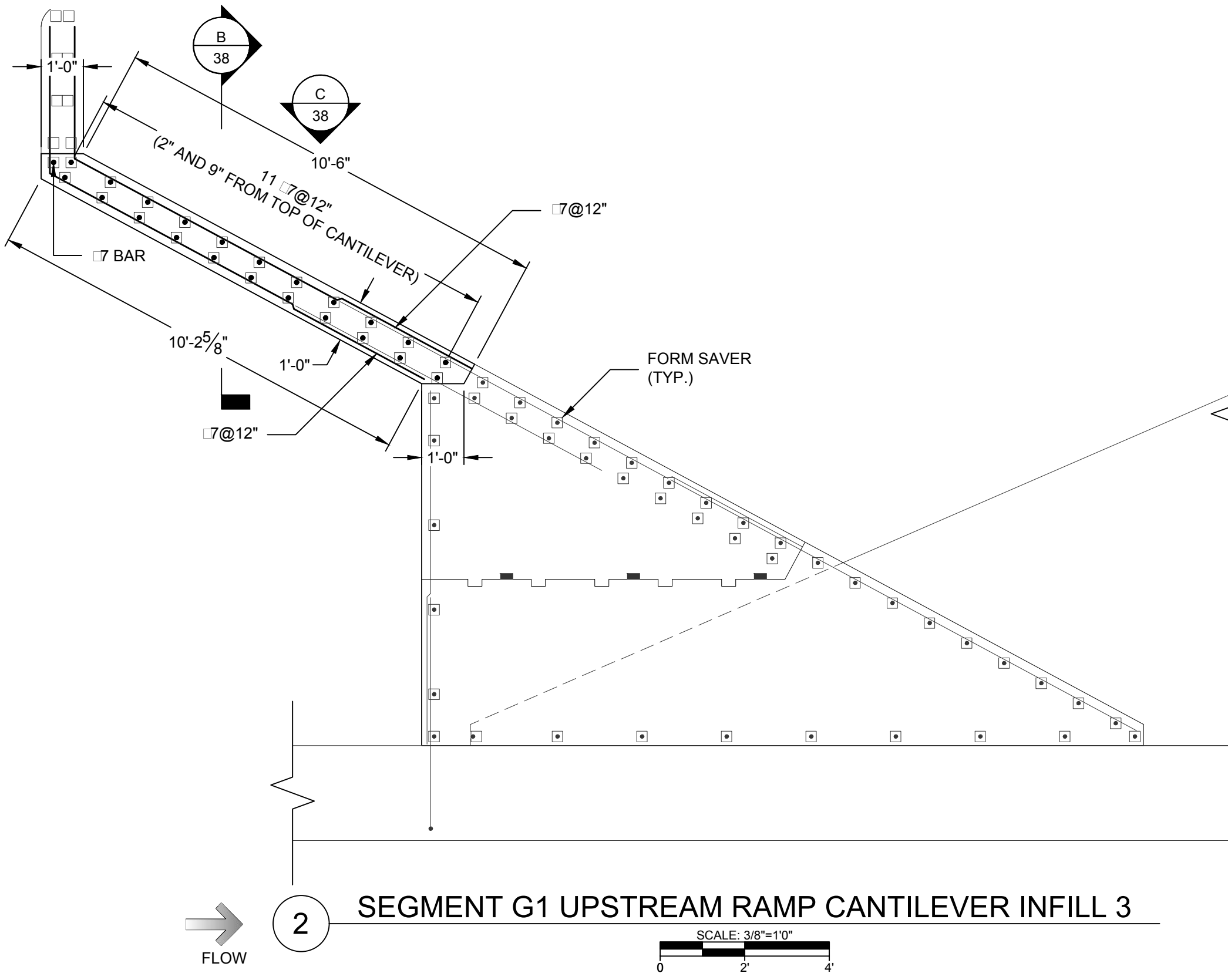
1 SEGMENT G1 UPSTREAM INFILL RAMP BASE 2

SCALE: 3/8"=1'0"



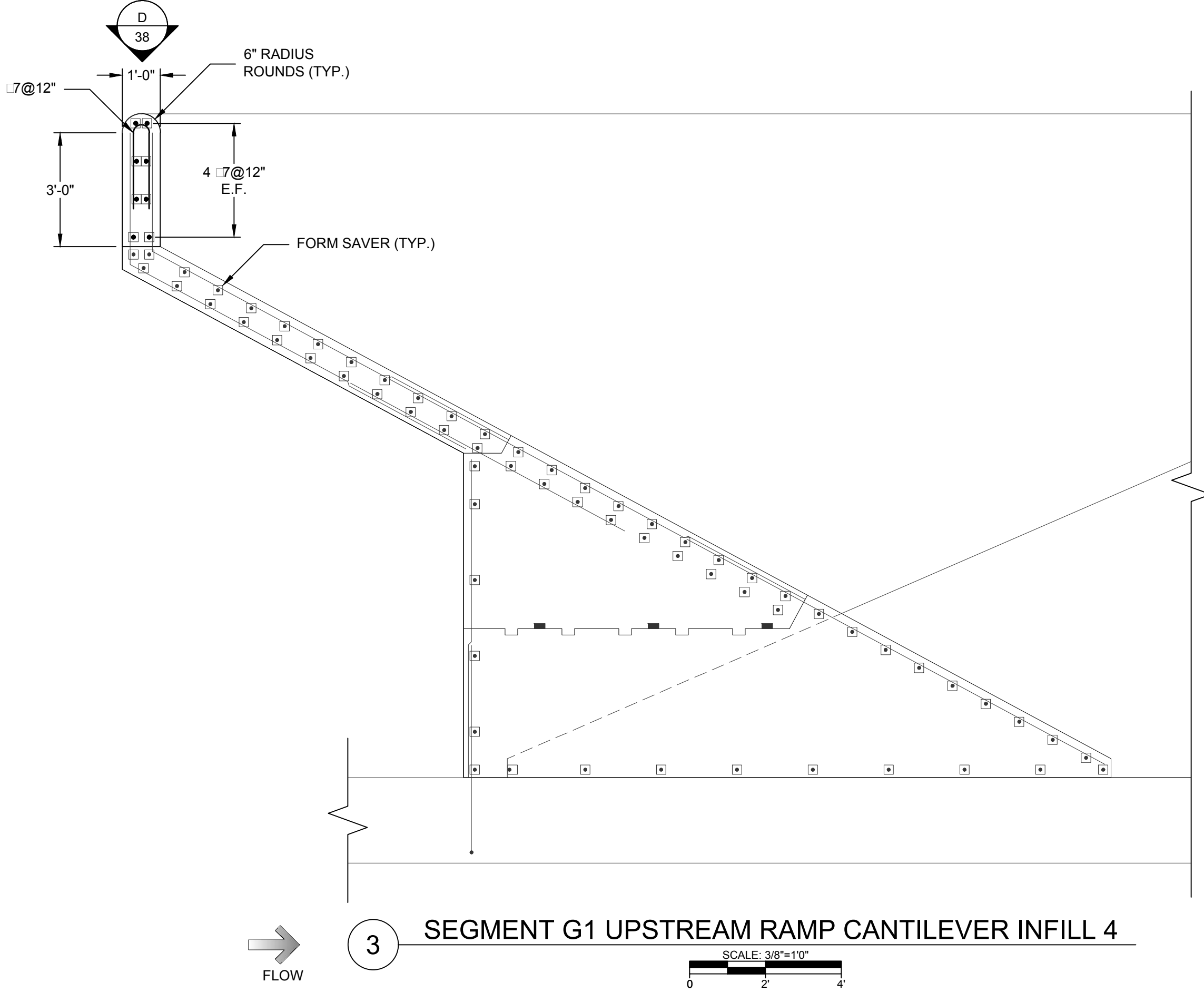
A SEGMENT G1 UPSTREAM INFILL RAMP BASE 2 PLAN

SCALE: 3/8"=1'0"



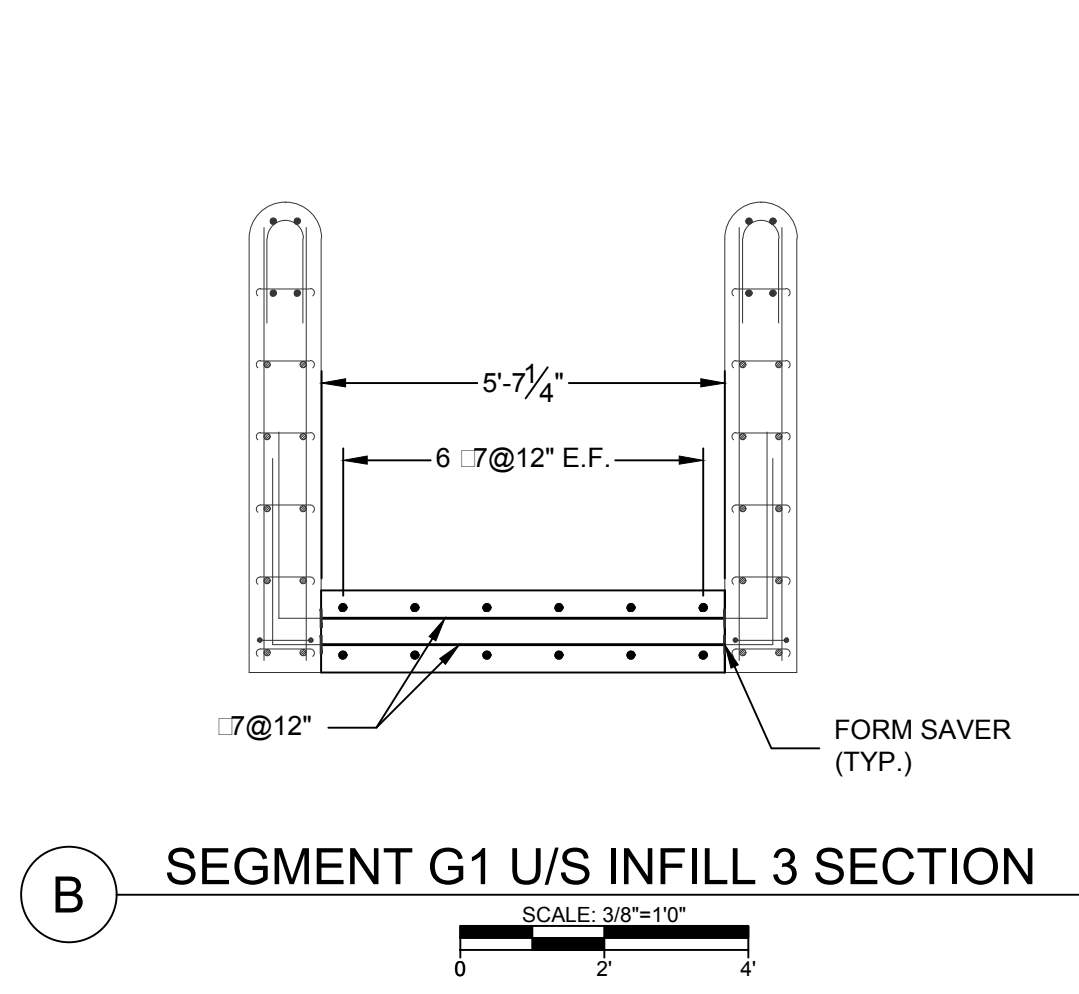
2 SEGMENT G1 UPSTREAM RAMP CANTILEVER INFILL 3

SCALE: 3/8"=1'0"



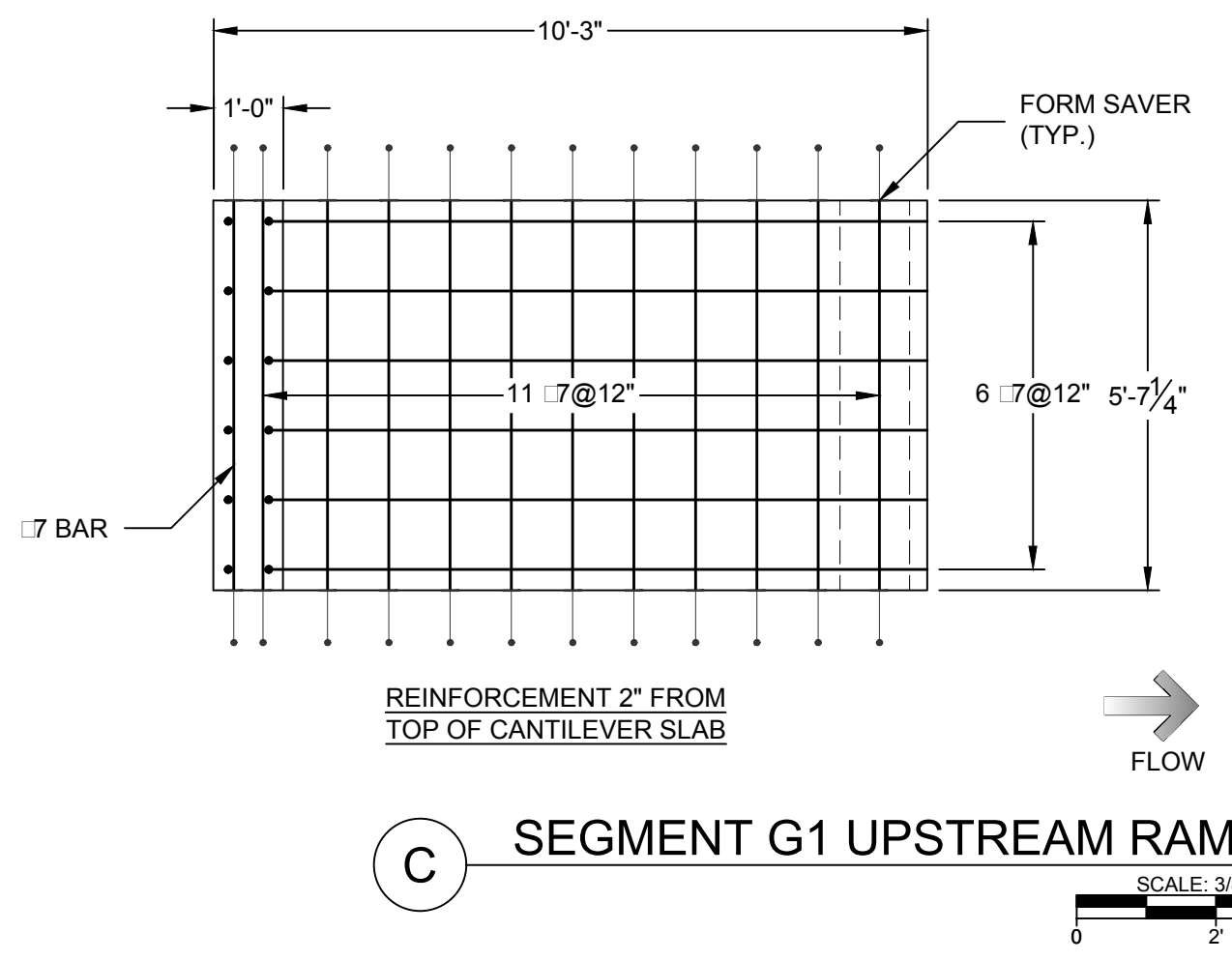
3 SEGMENT G1 UPSTREAM RAMP CANTILEVER INFILL 4

SCALE: 3/8"=1'0"



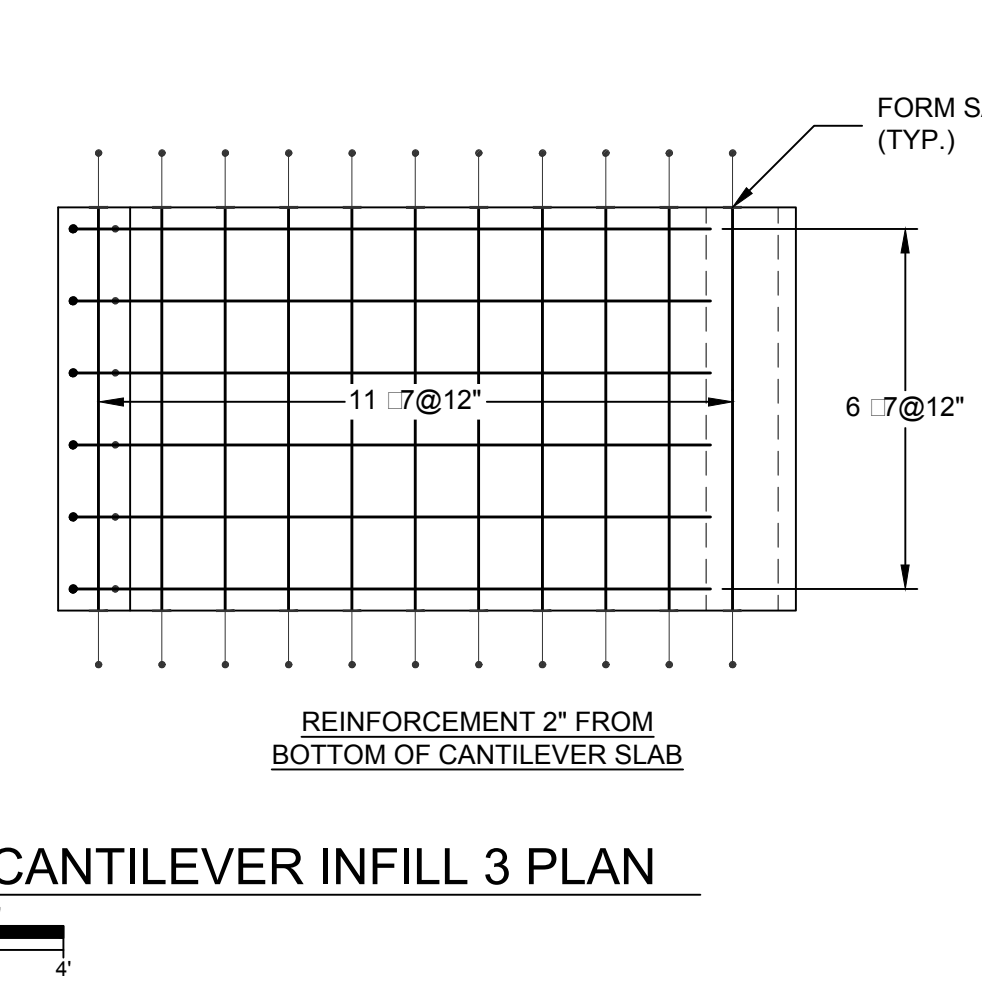
B SEGMENT G1 U/S INFILL 3 SECTION

SCALE: 3/8"=1'0"

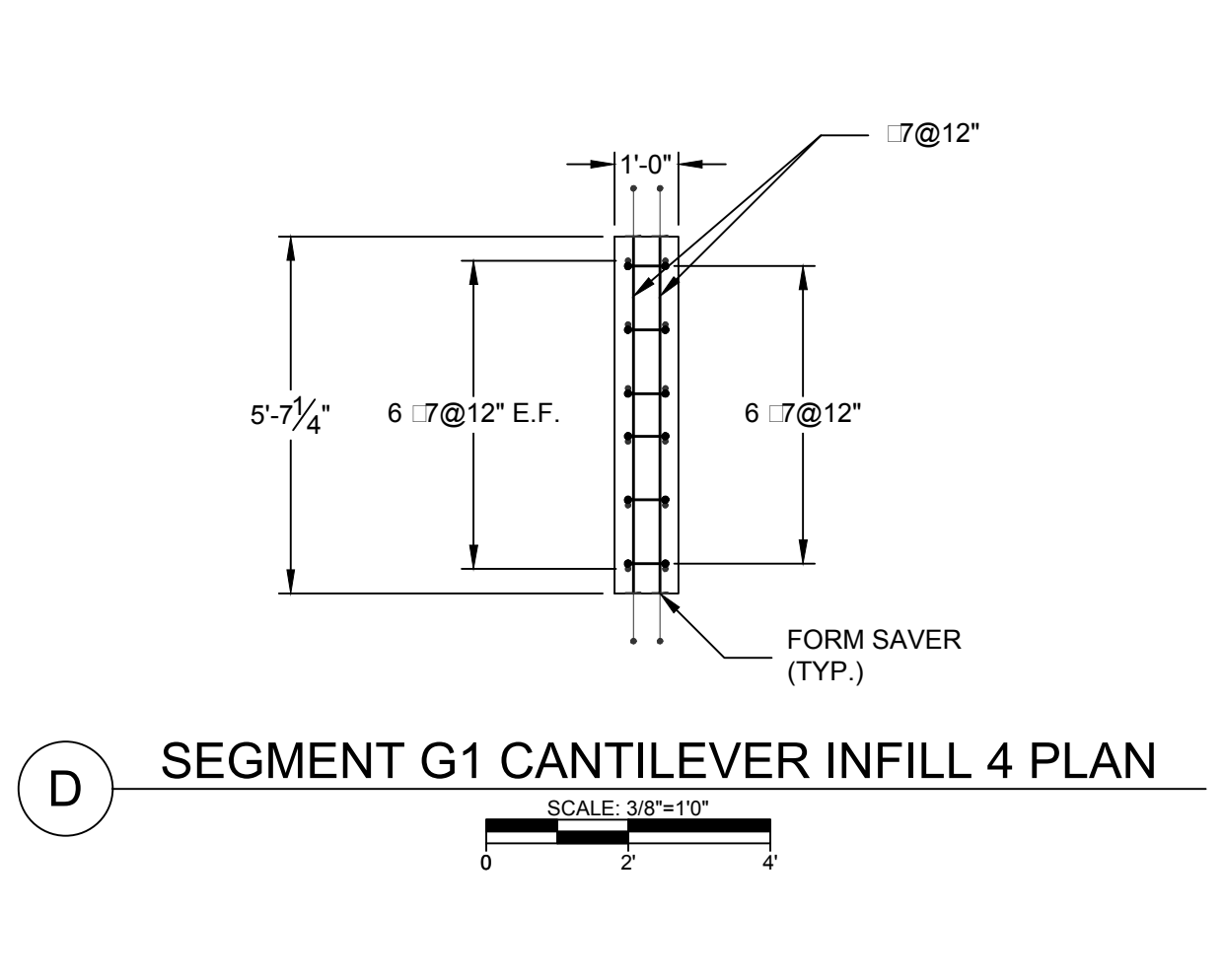


C SEGMENT G1 UPSTREAM RAMP CANTILEVER INFILL 3 PLAN

SCALE: 3/8"=1'0"



C SEGMENT G1 UPSTREAM RAMP CANTILEVER INFILL 3 PLAN



D SEGMENT G1 CANTILEVER INFILL 4 PLAN

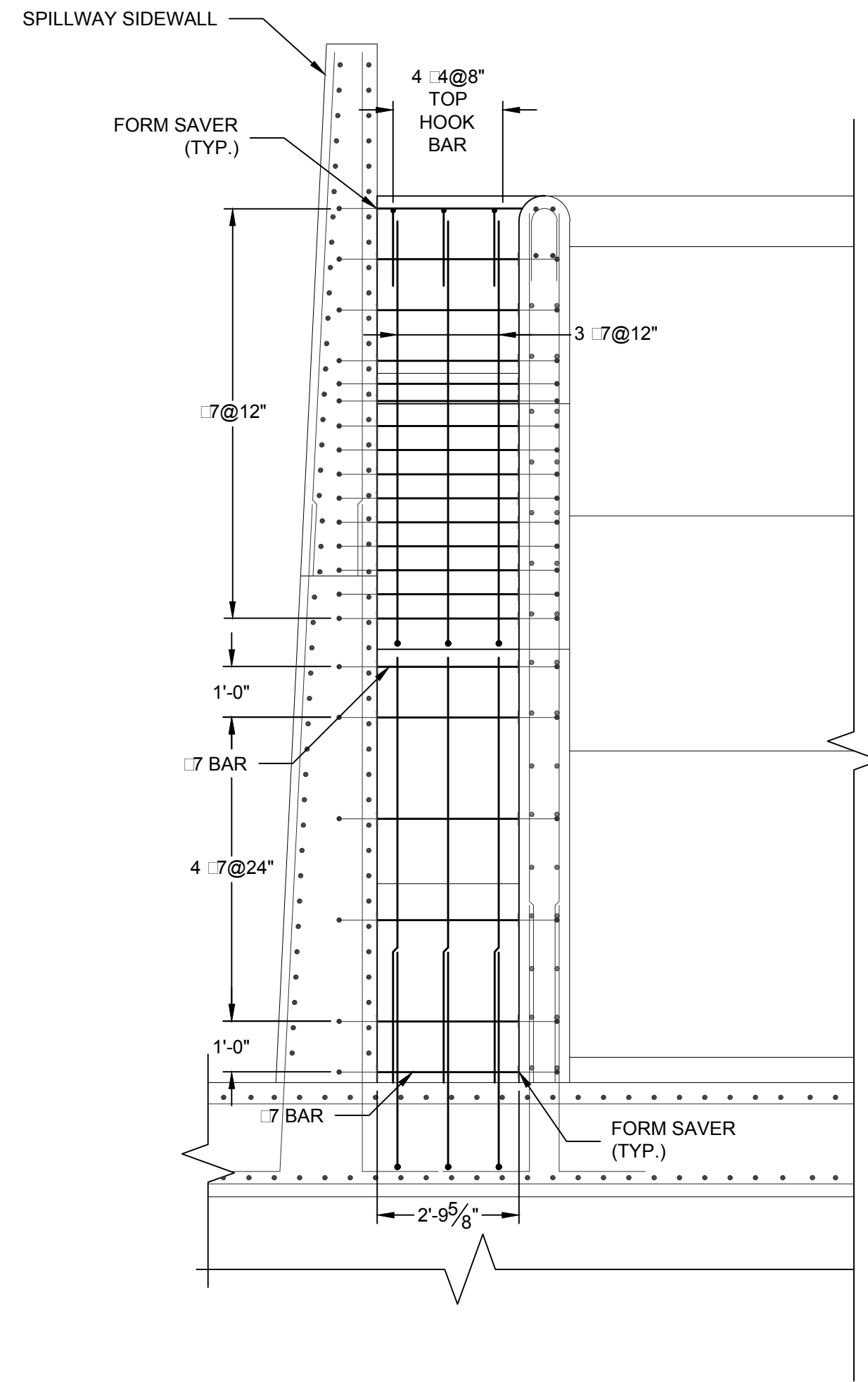
SCALE: 3/8"=1'0"

NOTE: FOR CONTRACTION JOINT BETWEEN PIANO KEY SEGMENTS G1 AND H1, PROVIDE 2-INCHES CLEARANCE FOR REINFORCEMENT EACH SIDE OF JOINT. (G2 AND H2 SIMILAR, BUT OPPOSITE)

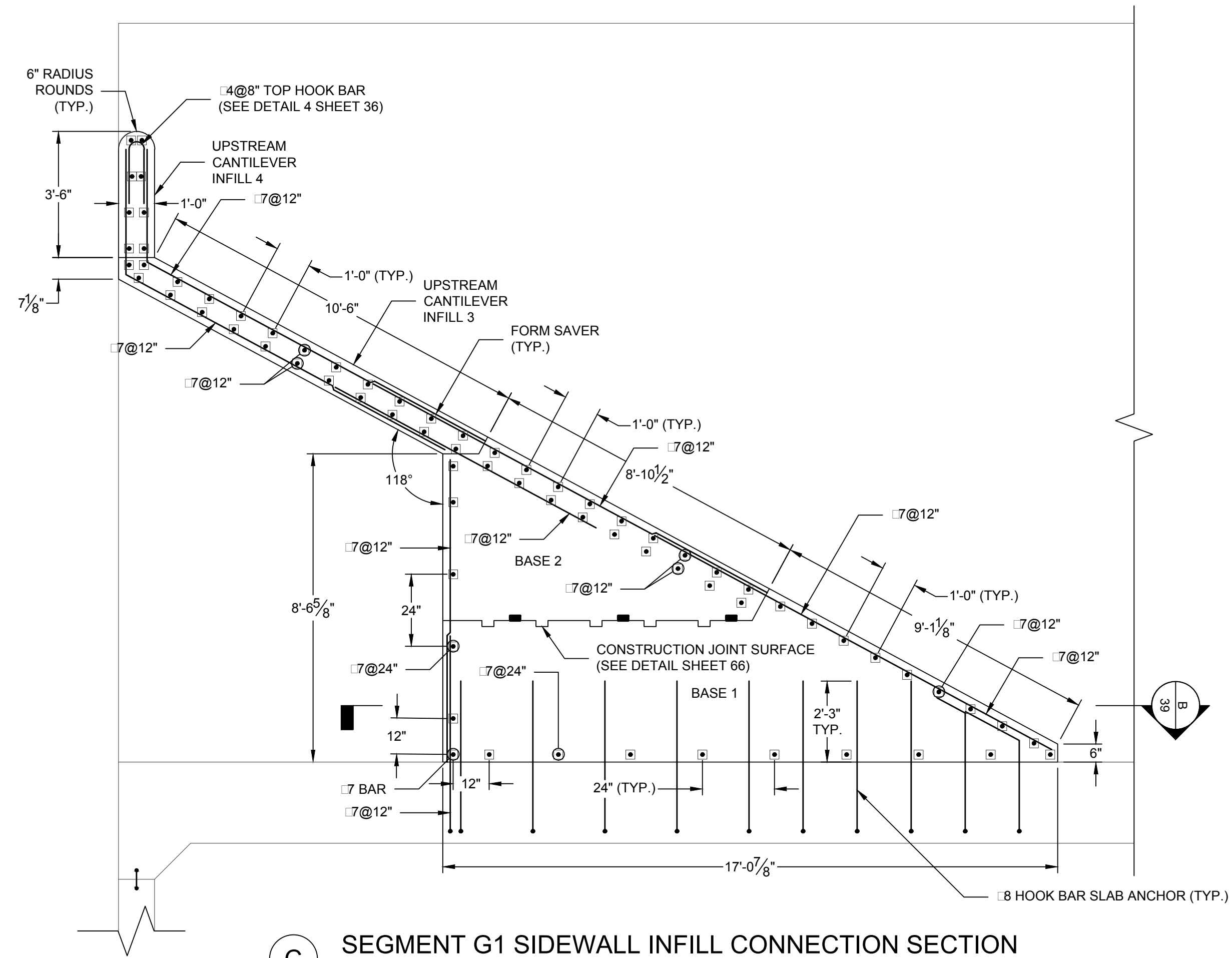
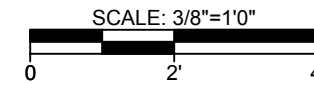
NOTE: SEGMENT G1 □ G2 SIMILAR BUT OPPOSITE

DESIGNED BY:	JTD, JC	CHECKED BY:	RPL, JRC	DATE:	07/10/17
DRAWN BY:	GHB, JSR	RANDALL P. BASS, P.E.			REV:
				DESCRIPTION:	
				REVISIONS:	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA			UPSTREAM RAMP REINFORCEMENT DETAILS SEGMENT G1		
PROJECT: 16C17043.00			DATE: 07/10/2017		
SHEET 38 OF 66			© Schnabel Engineering 2017 All Rights Reserved		

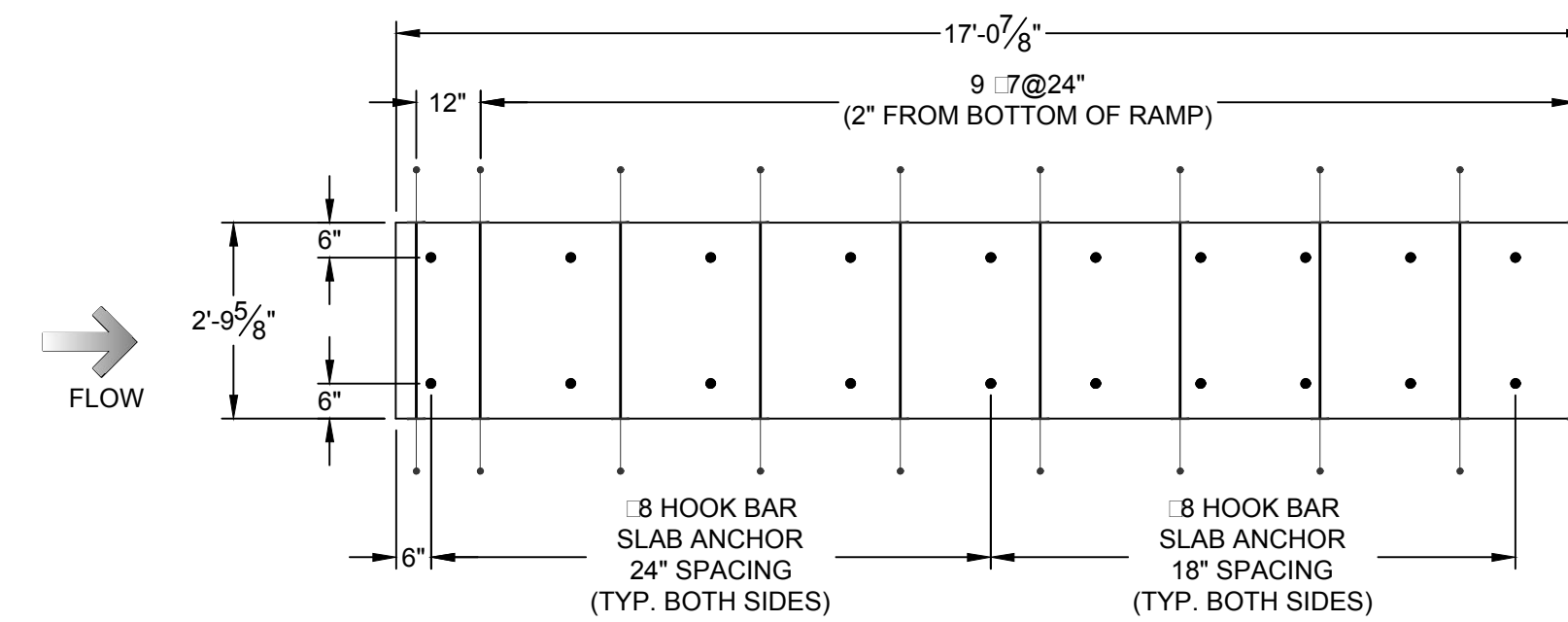
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTUREAL\_PIANO\_KEY\_WEIRD.WMG



**A** SEGMENT G1 SIDEWALL INFILL CONNECTION U/S ELEVATION



**C** SEGMENT G1 SIDEWALL INFILL CONNECTION SECTION

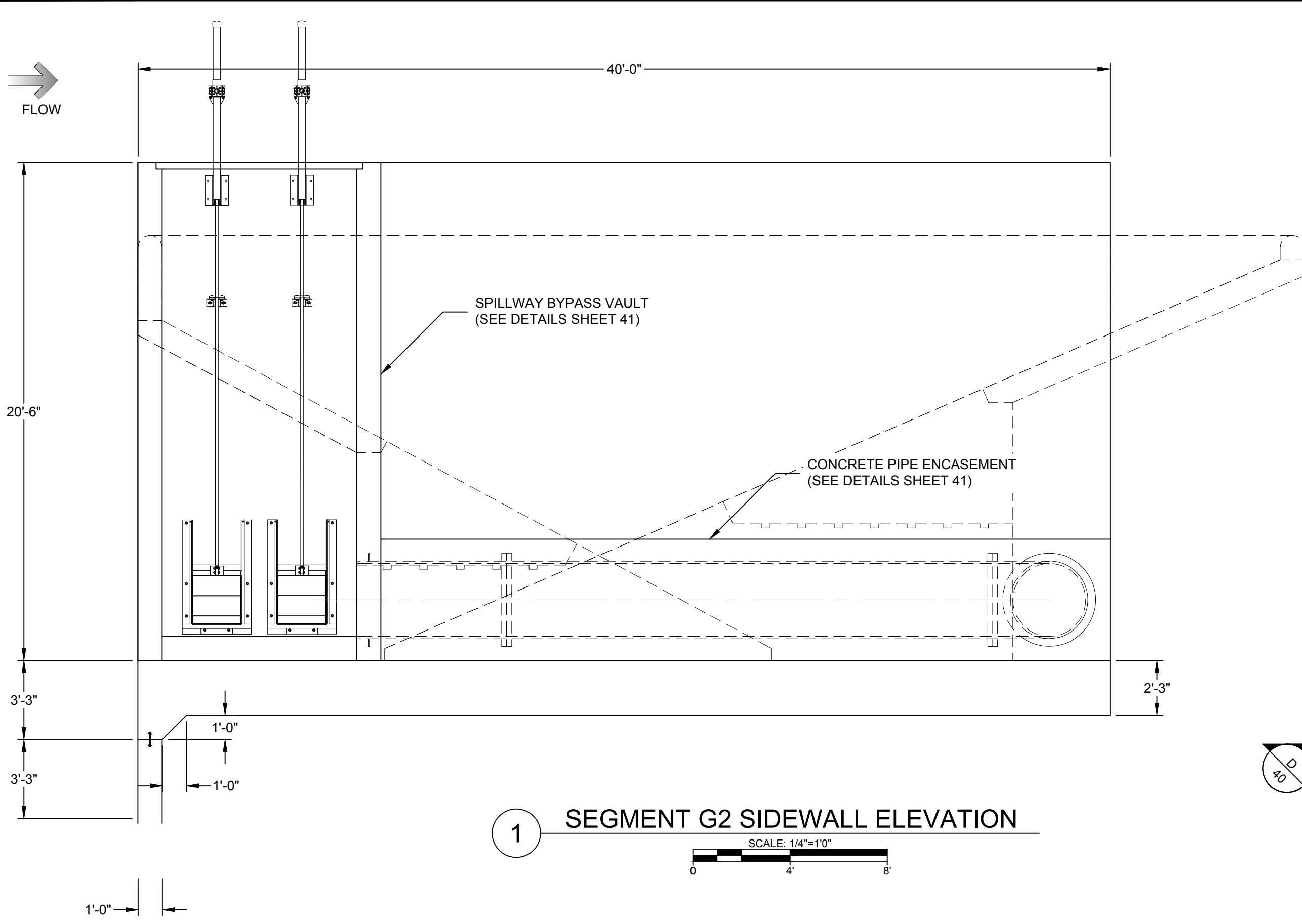


**B** SEGMENT G1 SIDEWALL INFILL SLAB REINFORCEMENT



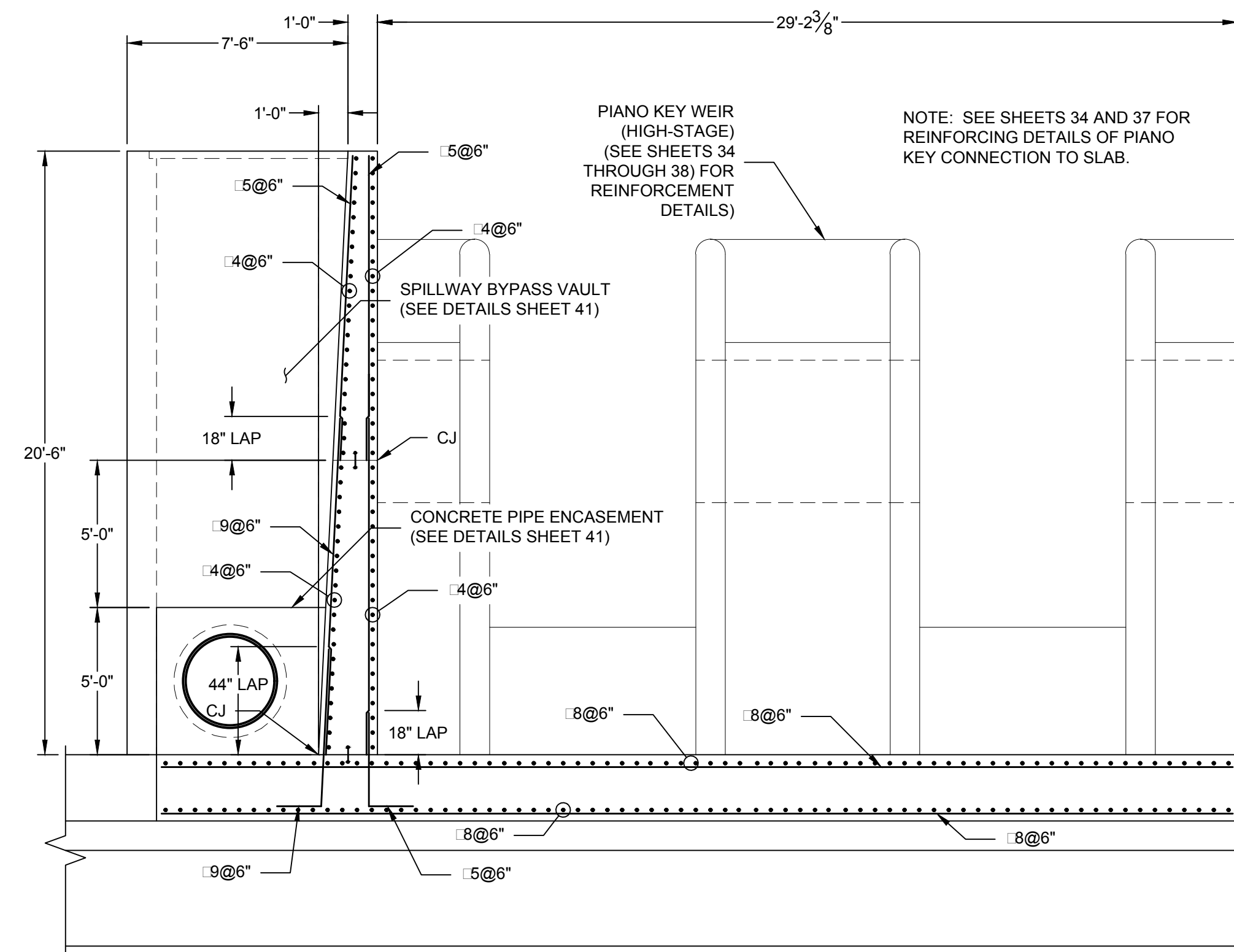
**NOTE: SEGMENT G1 □ G2 SIMILAR BUT OPPOSITE**

CHECKED BY: RPL, JRC DRAWN BY: GHB, JSR DESIGNED BY: JTD, JC		RANDALL P. BASS, P.E.  RANDALL P. BASS GEORGIA PROFESSIONAL ENGINEER NO. 10885	PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET: 39 OF 66
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA			PIANO KEY CONNECTION TO SIDEWALL SEGMENT G1



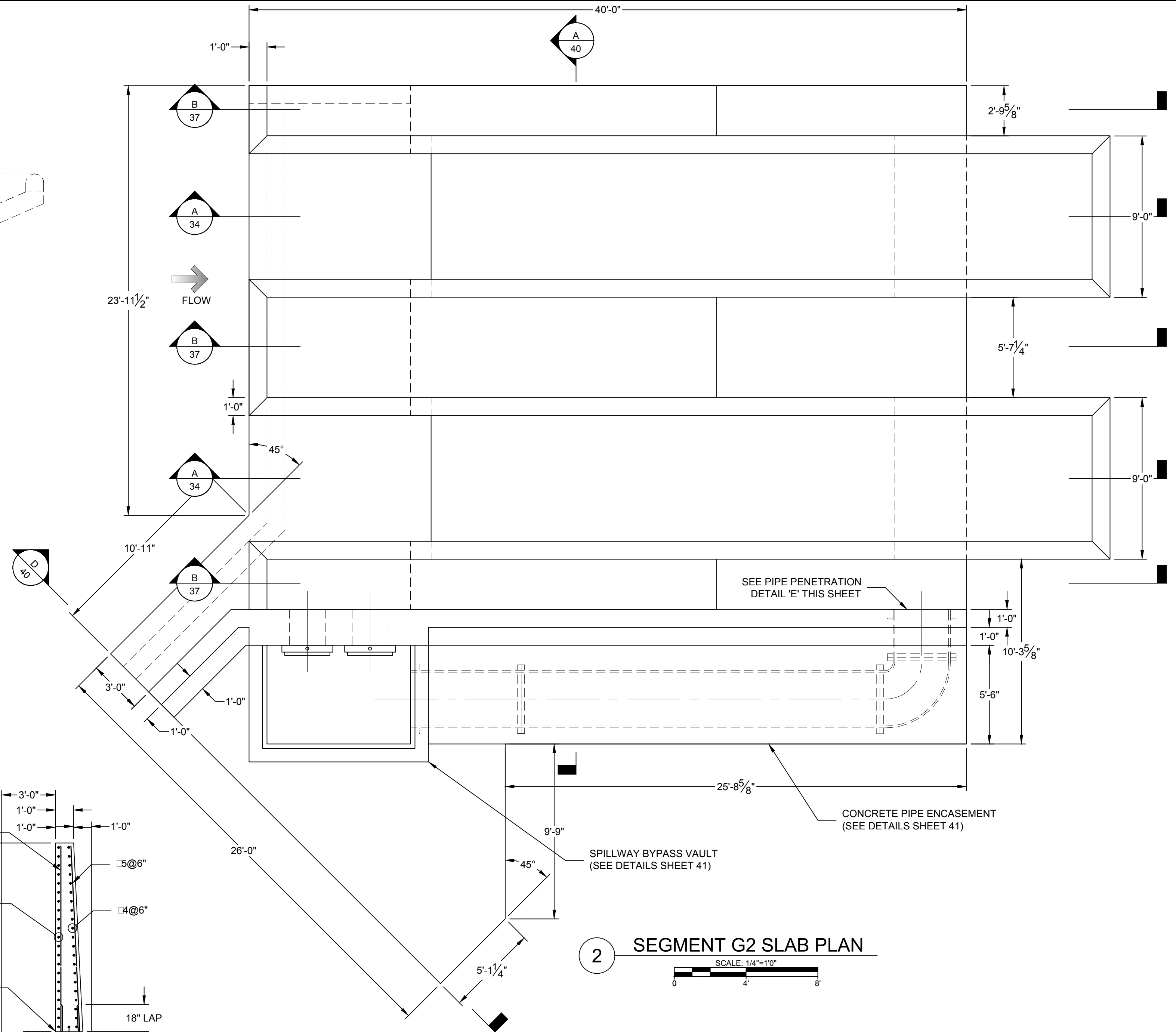
1 SEGMENT G2 SIDEWALL ELEVATION

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



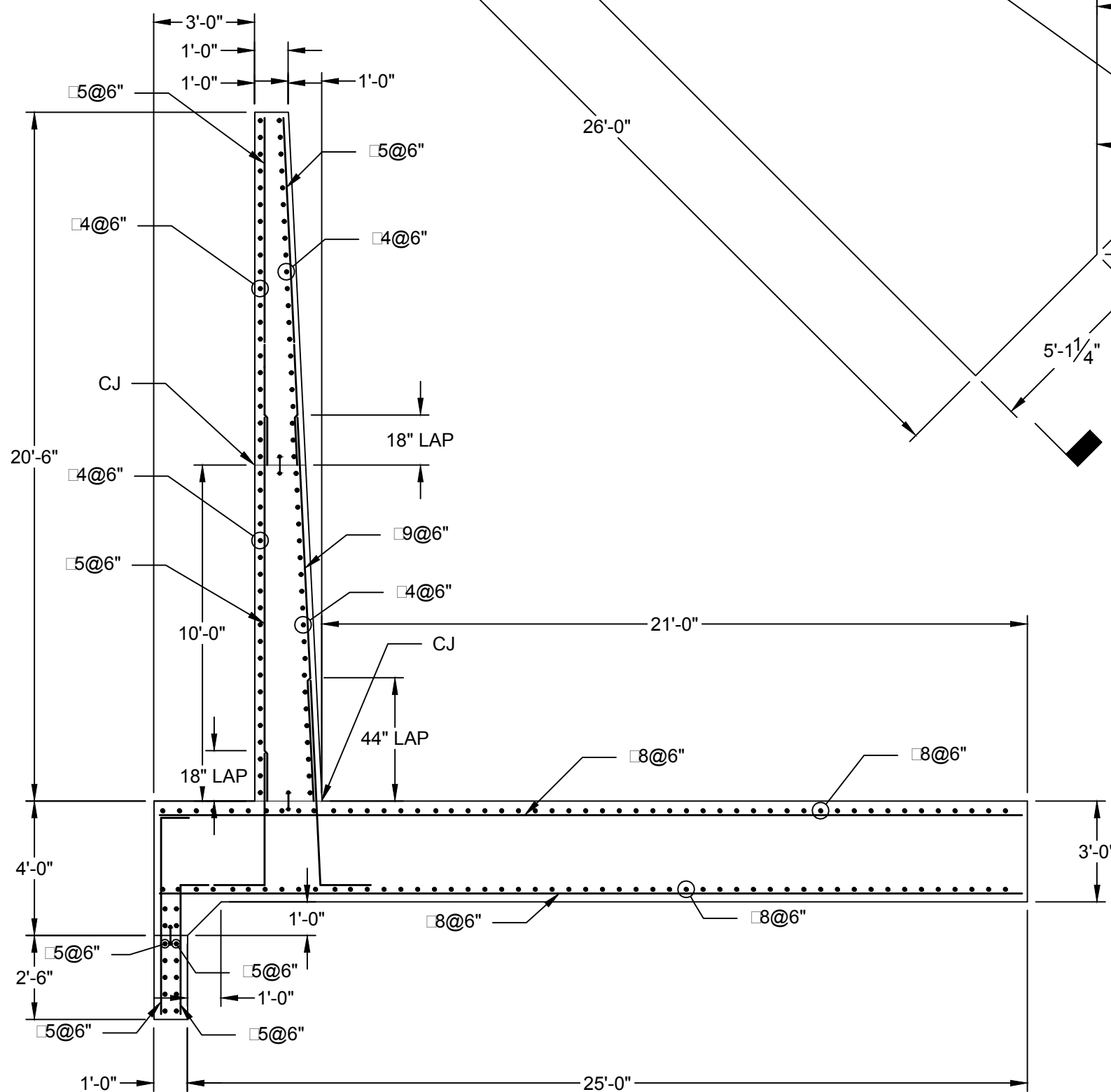
A SEGMENT G2 SECTION

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



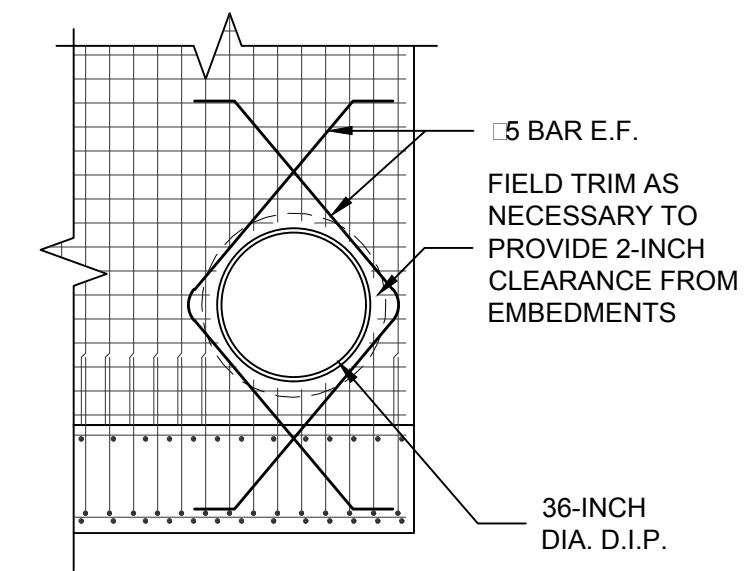
2 SEGMENT G2 SLAB PLAN

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



D SEGMENT G2 SECTION

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



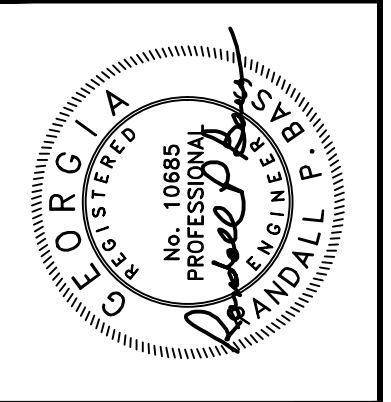
E PIPE PENETRATION DETAIL

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

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-SE PRODUCT\108-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURE\PIANO KEY WEIR.DWG

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JIC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885		



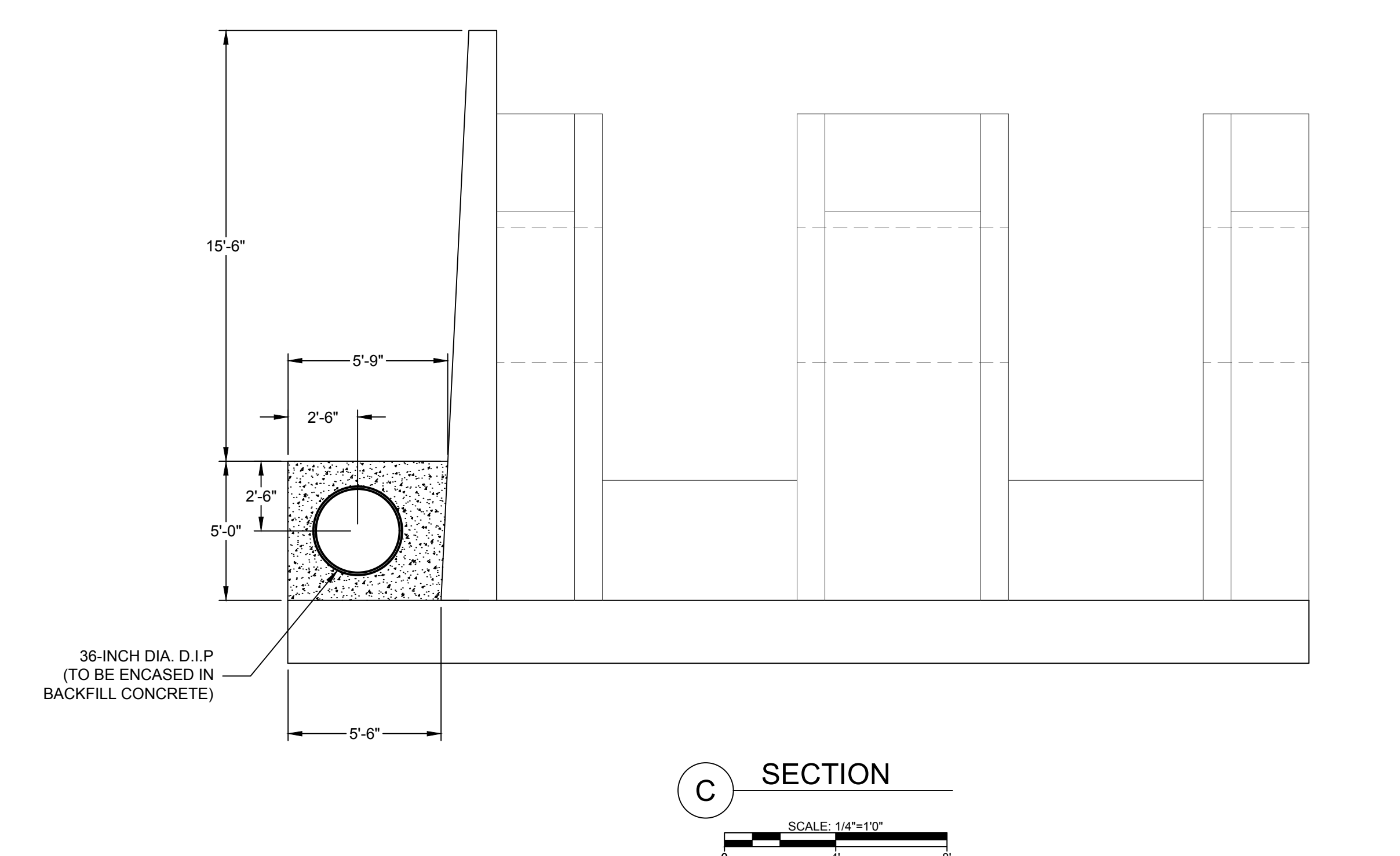
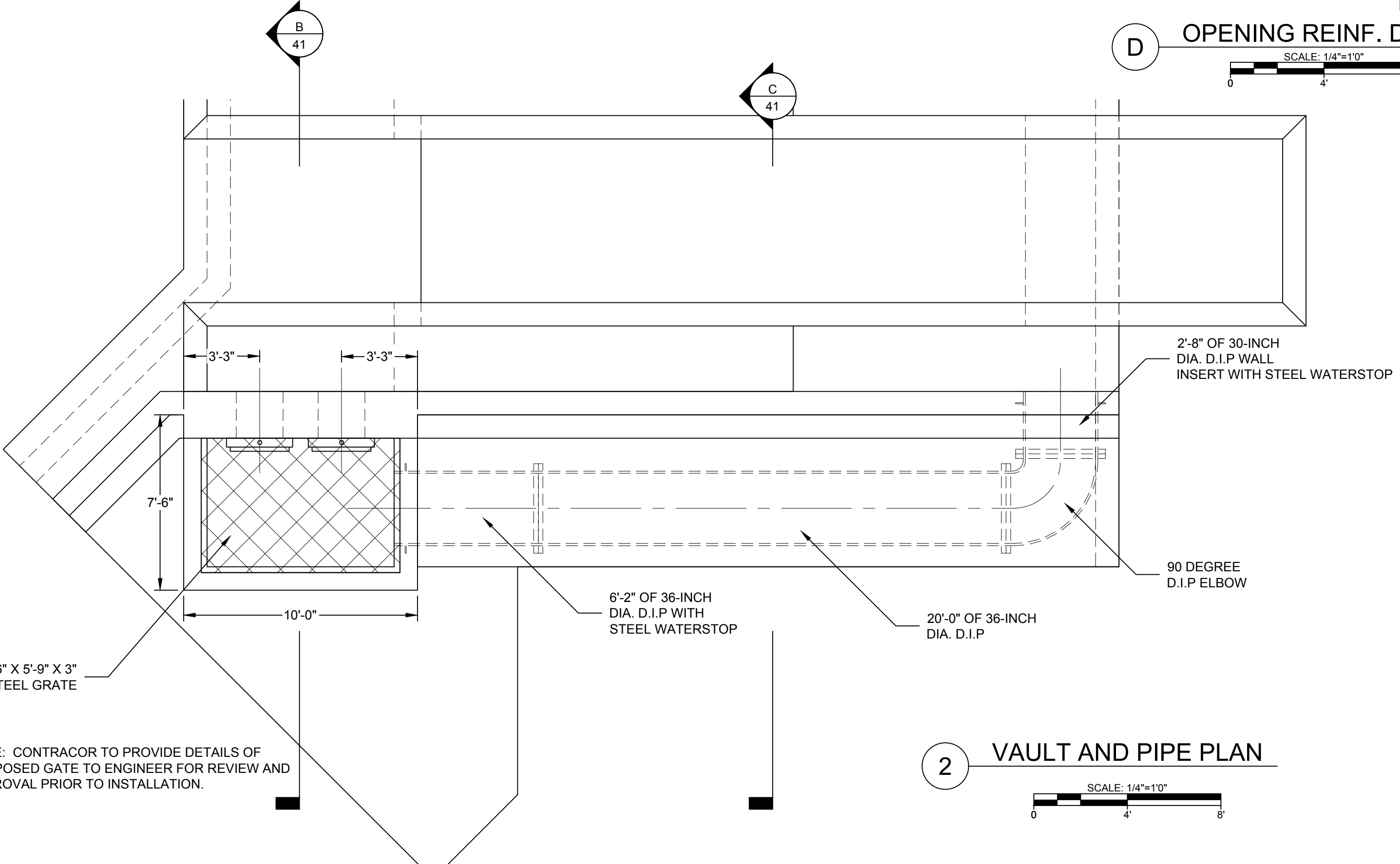
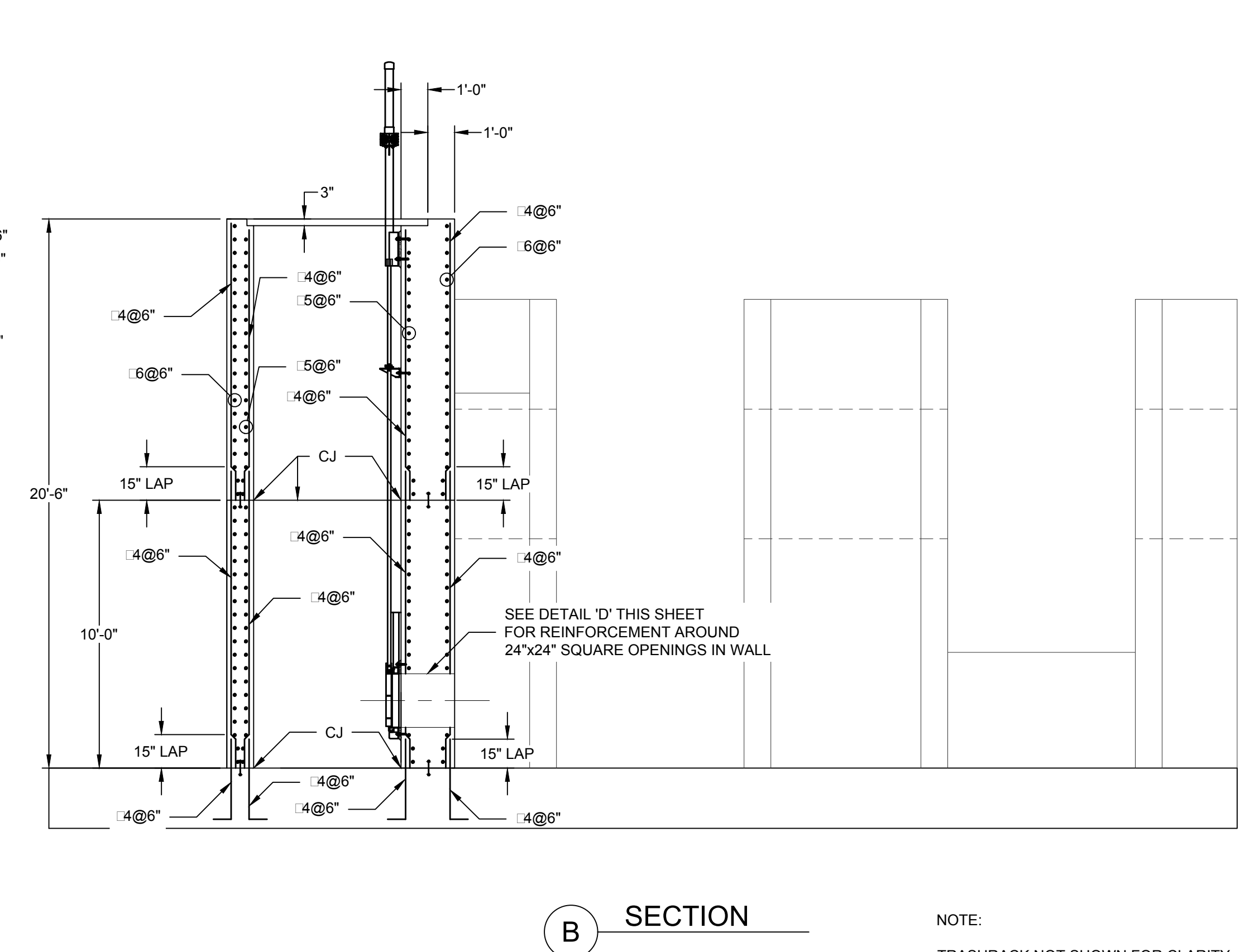
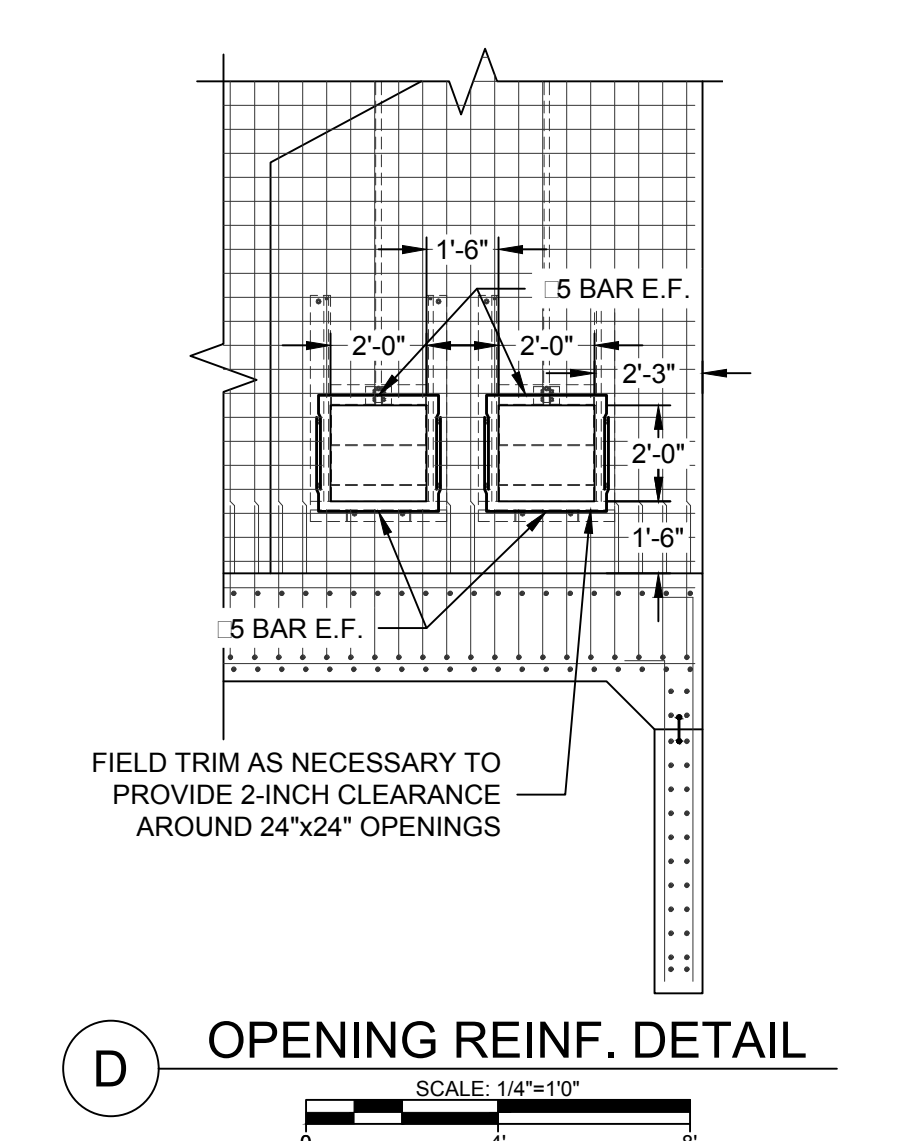
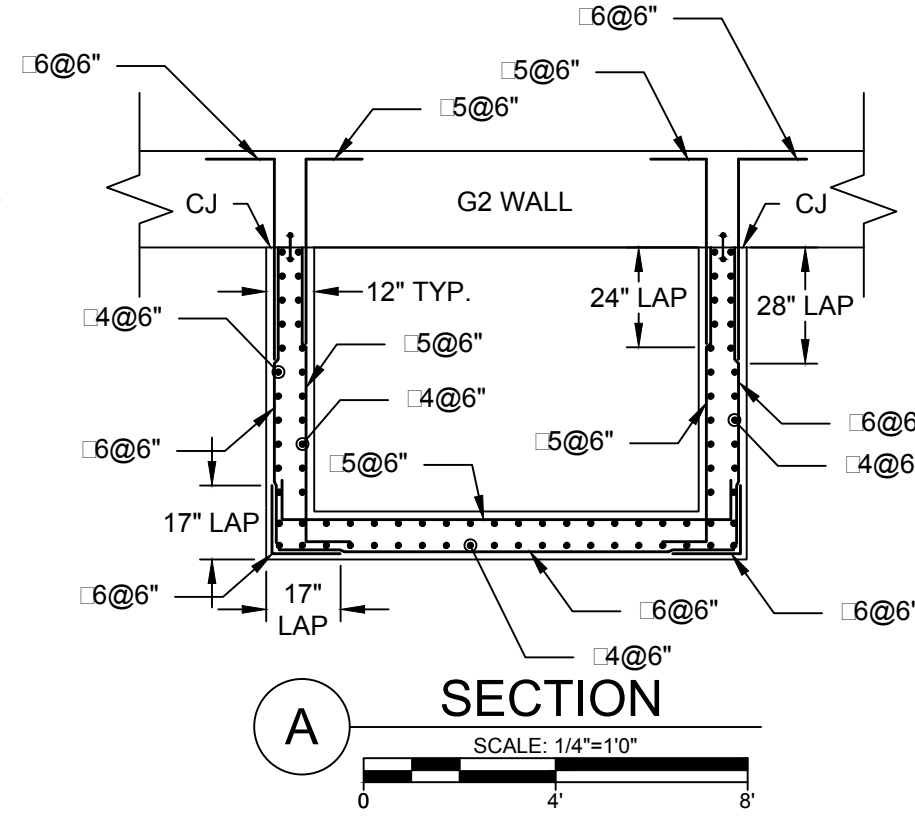
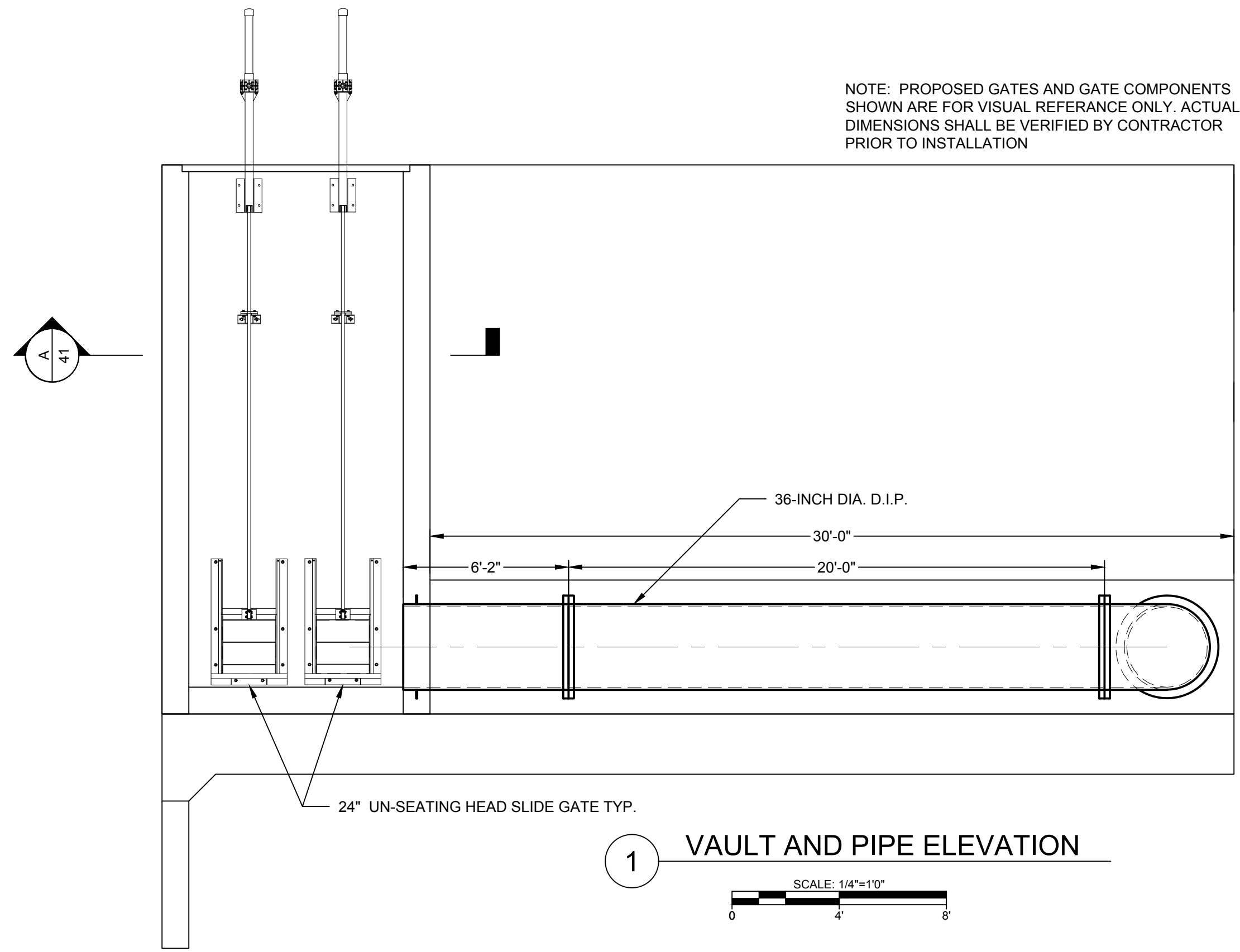
**Schnabel ENGINEERING**  
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
 Phone: 770-781-8008 / Fax: 770-781-8003 /  
 schnabel-eng.com

CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

**WALL AND SLAB  
 REINFORCEMENT DETAILS  
 SEGMENT G2**

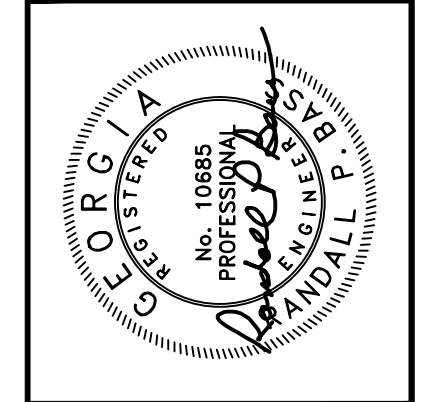
PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 40 OF 66

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\08-CAD\DRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURE\1\_DWG



REV	DESCRIPTION

CHECKED BY: RPL\_JRC  
DRAWN BY: GHB\_JSJ  
DESIGNED BY: JTD\_JC  
RANDALL P. BASS, P.E.  
DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 10685

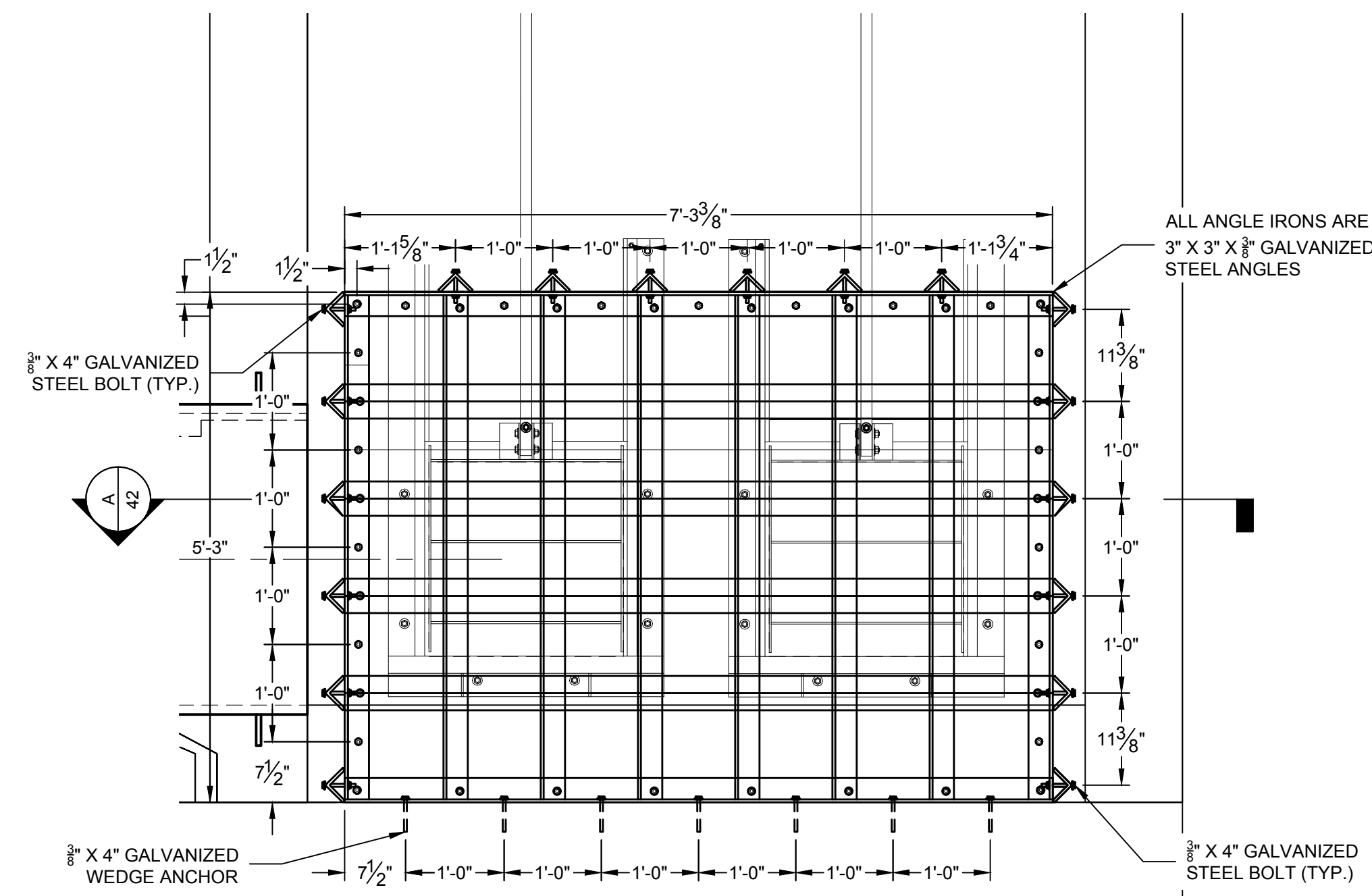


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Phone: 770-781-8008 / Fax: 770-781-8003 /  
schnabel-eng.com

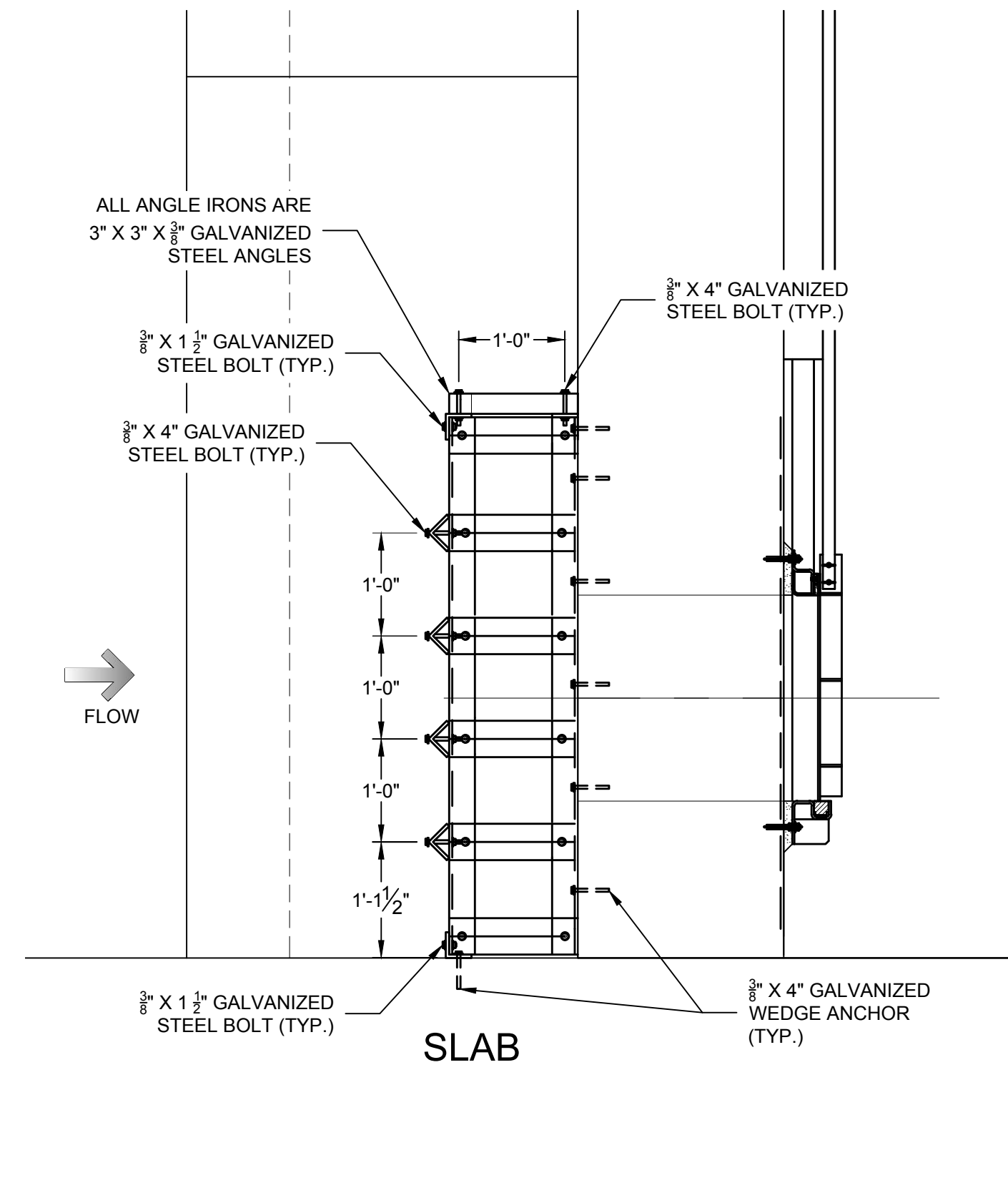
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA  
SPILLWAY BYPASS VAULT  
DETAILS SEGMENT G2

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
41 OF 66

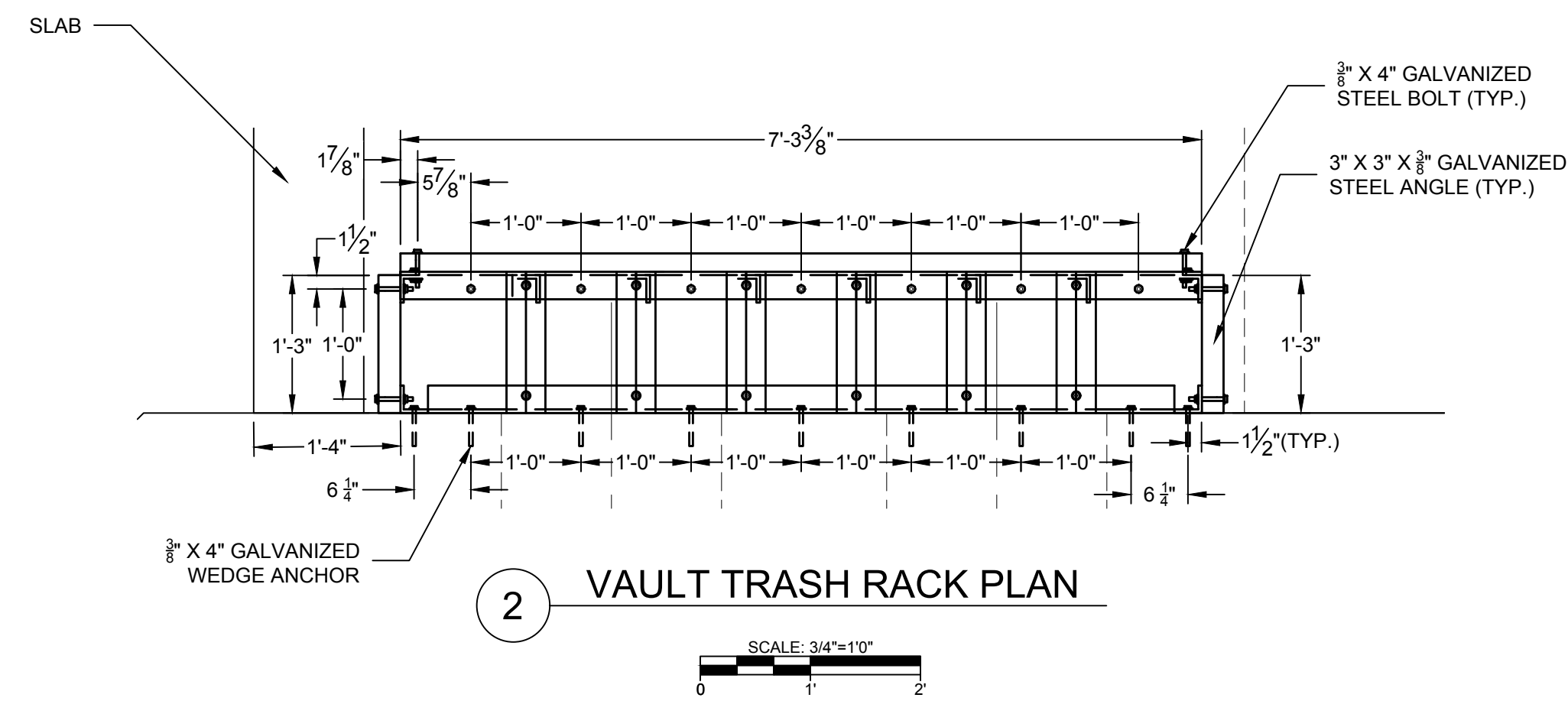
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCT\PLT\_DWG



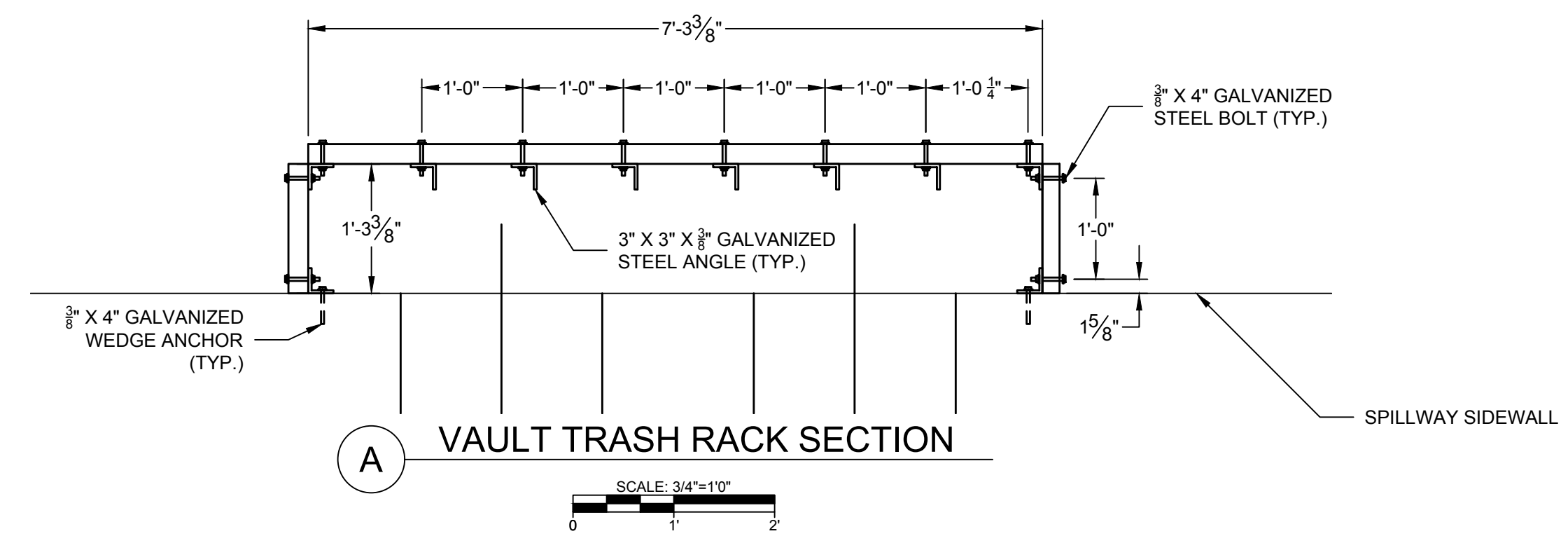
1 VAULT TRASH RACK ELEVATION  
SCALE: 3/4"=1'0"



3 VAULT TRASH RACK PROFILE  
SCALE: 3/4"=1'0"



2 VAULT TRASH RACK PLAN  
SCALE: 3/4"=1'0"



A VAULT TRASH RACK SECTION  
SCALE: 3/4"=1'0"

NOTES:

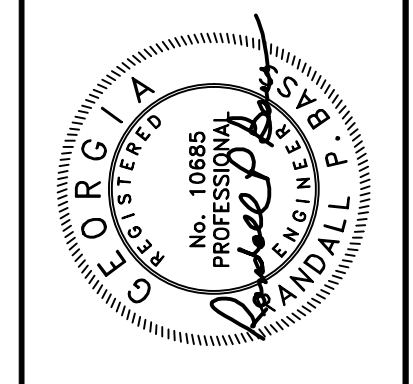
1. CONTRACTOR SHALL PRESENT SHOP DRAWINGS SHOWING PROPOSED BOLT SYSTEM, INCLUDING WASHERS AND TYPE OF BOLTS. LOCKING TYPE WASHERS AND BOLTS SHALL BE USED.

DATE	
DESCRIPTION	
REV	

CHECKED BY: RPL JRC  
DRAWN BY: GHB JSR  
DESIGNED BY: JTD JC

RANDALL P. BASS, P.E.

DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 10885



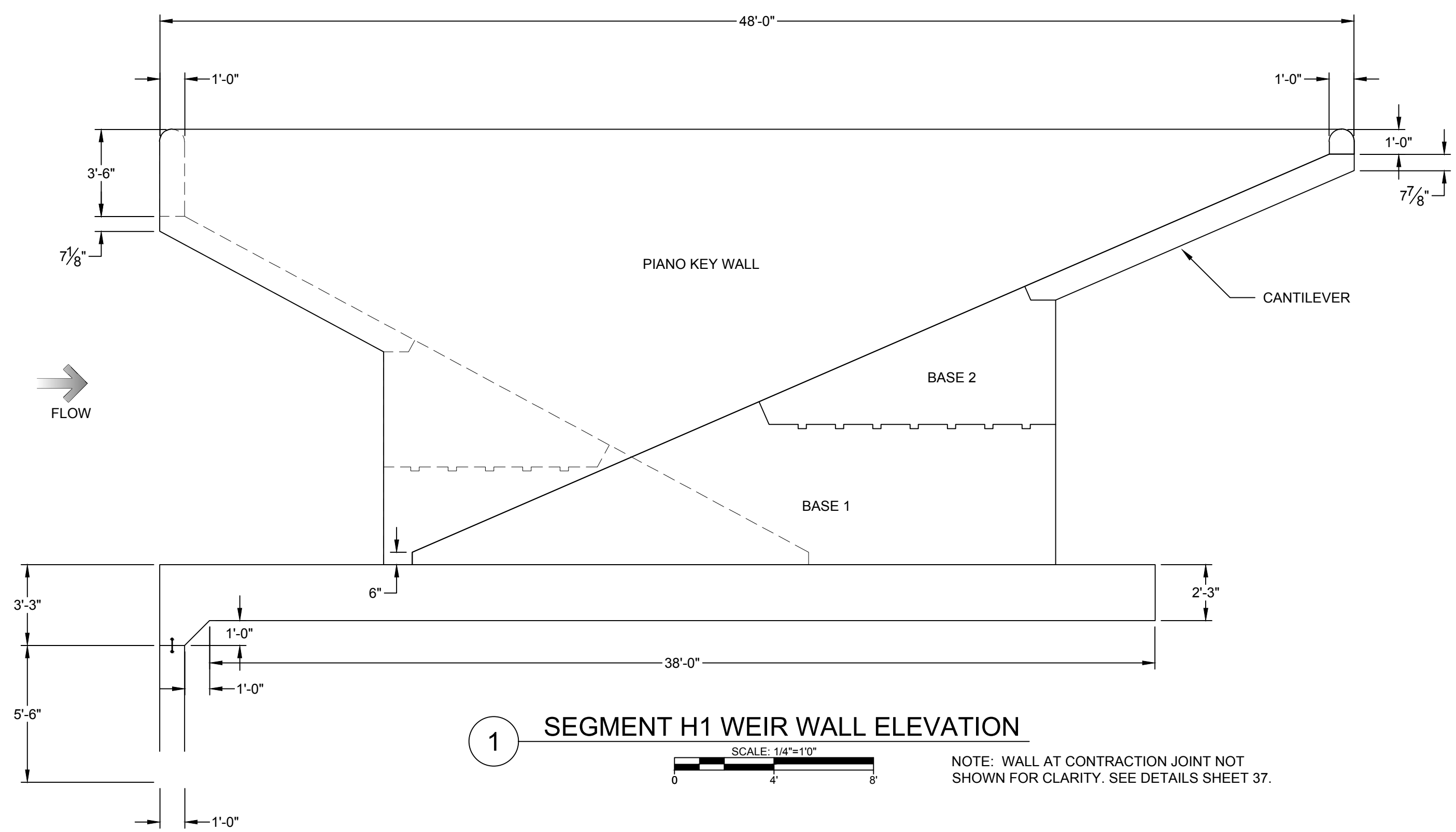
**Schnabel**  
ENGINEERING

6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
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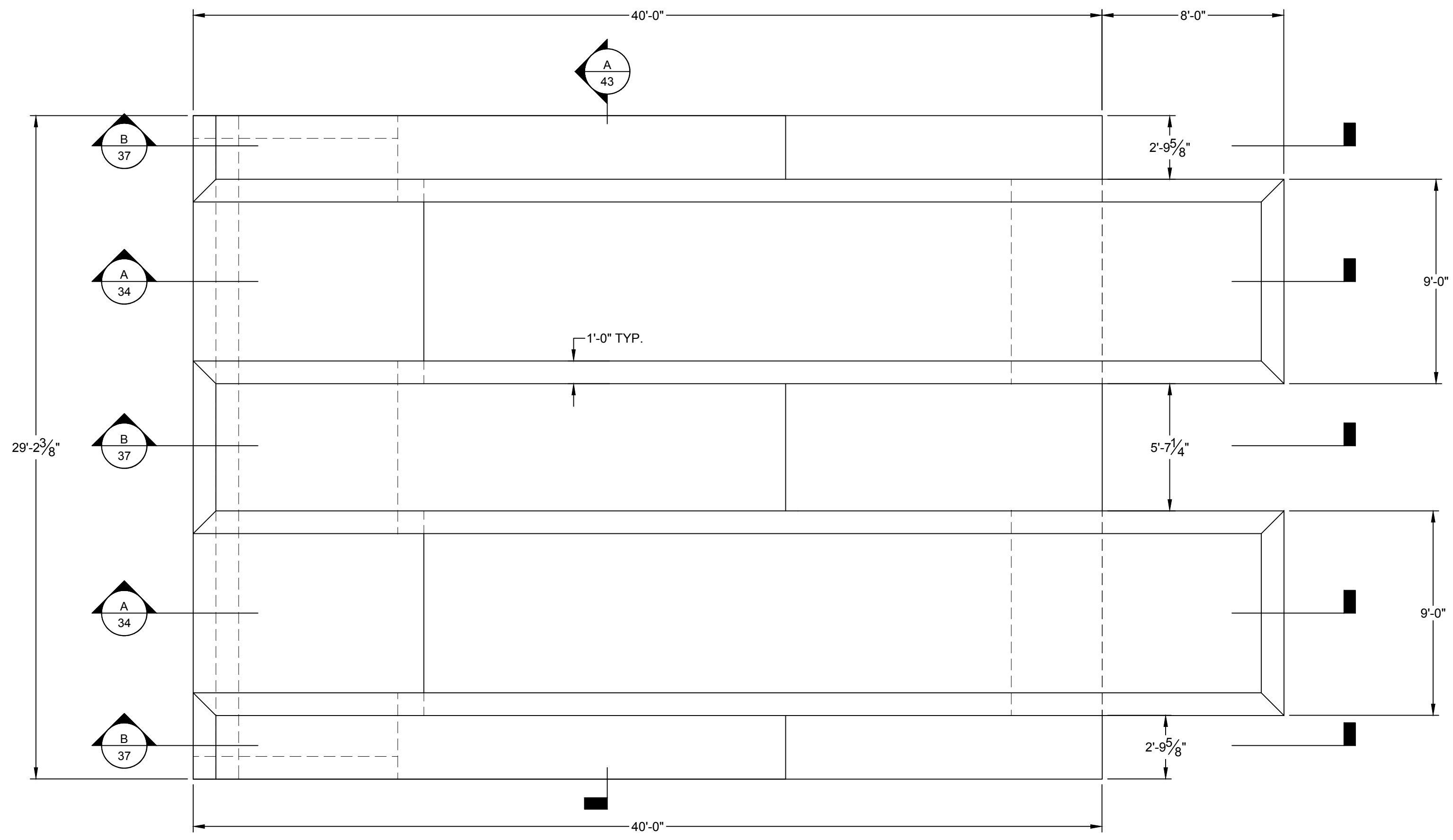
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA  
**SPILLWAY BYPASS VAULT  
TRASH RACK DETAIL**

PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
42 OF 66

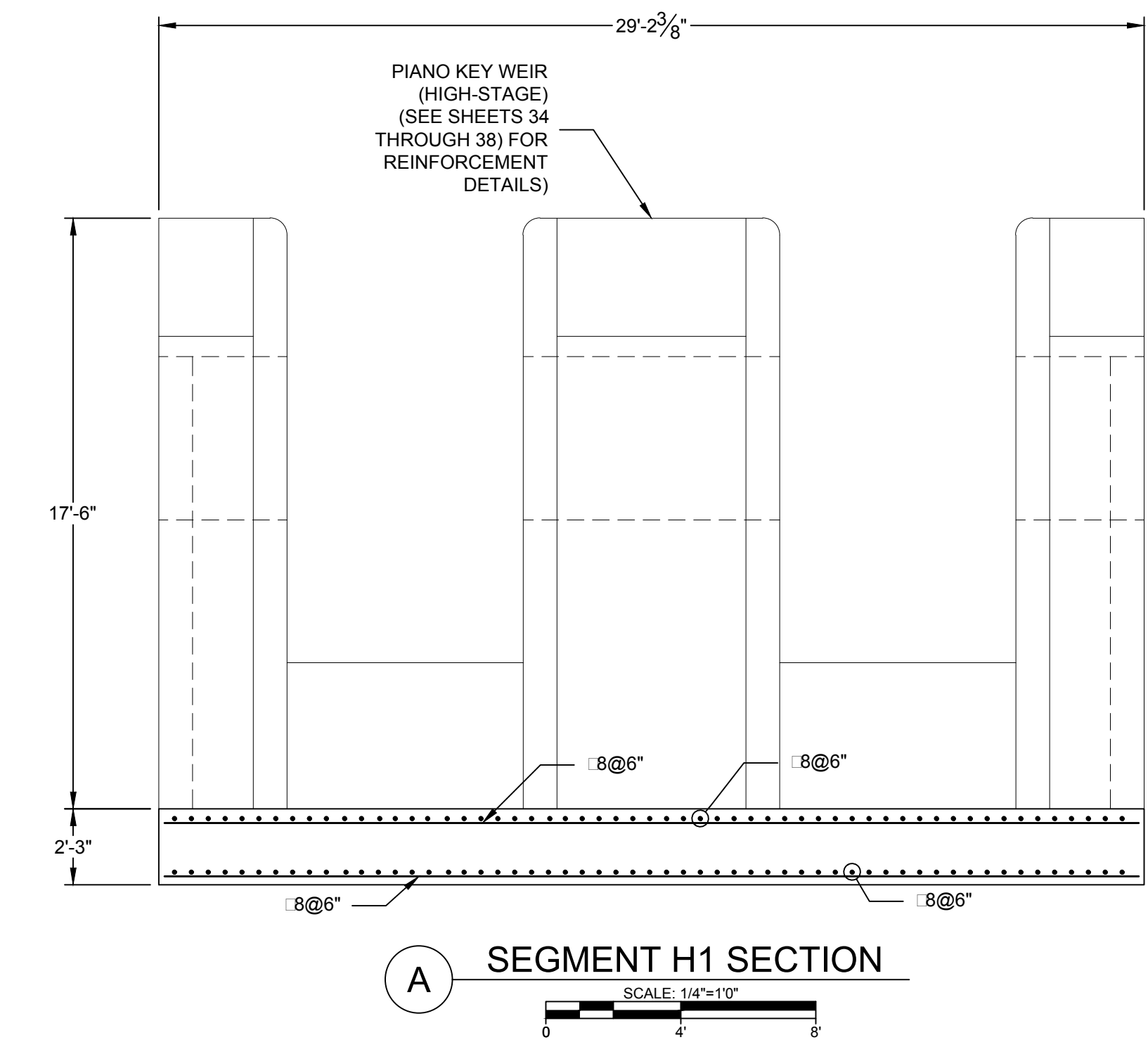
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-SE PRODUCT\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-FINAL DESIGN\16C17043.00 STRUCTURAL\PIANO KEY WEIR.DWG



1 SEGMENT H1 WEIR WALL ELEVATION  
SCALE: 1/4"=1'-0"  
NOTE: WALL AT CONTRACTION JOINT NOT SHOWN FOR CLARITY. SEE DETAILS SHEET 37.



2 SEGMENT H1 SLAB PLAN  
SCALE: 1/4"=1'-0"  
NOTE: SEGMENT H1 H2 SIMILAR

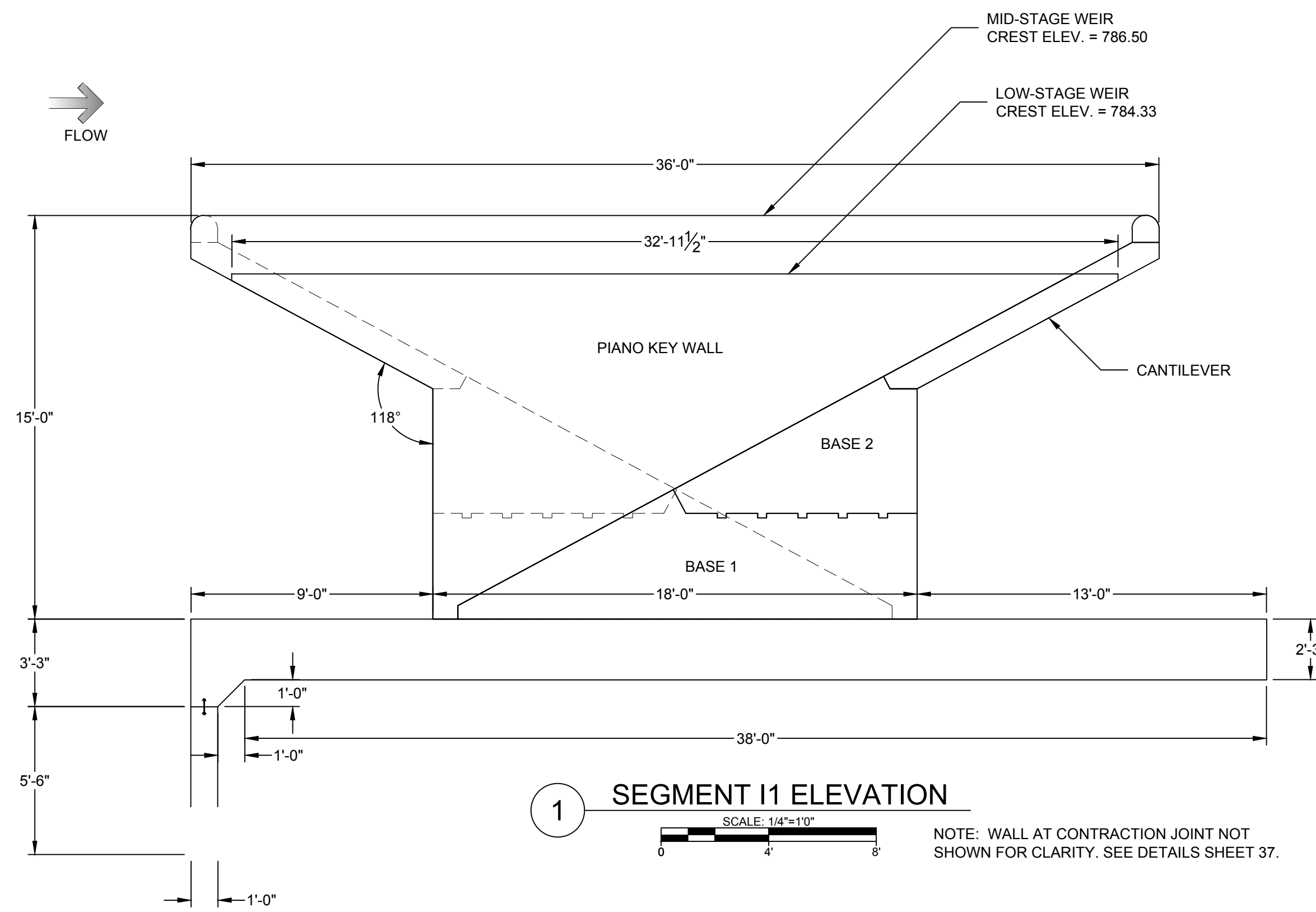


A SEGMENT H1 SECTION  
SCALE: 1/4"=1'-0"

PROJECT: 16C17043.00	DATE: 07/10/2017
DATE:	DESCRIPTION:
REV:	DESCRIPTION:
DESIGNED BY: JTD, JIC	CHECKED BY: RPB, JRC
DRAWN BY: GHB, JSR	DATE: 07/10/17
<b>RANDALL P. BASS, P.E.</b> <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885	
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / <a href="http://schnabel-eng.com">schnabel-eng.com</a>	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
<b>SLAB REINFORCEMENT          DETAILS SEGMENT H1</b>	

NOTE: SEGMENT H1 H2 SIMILAR

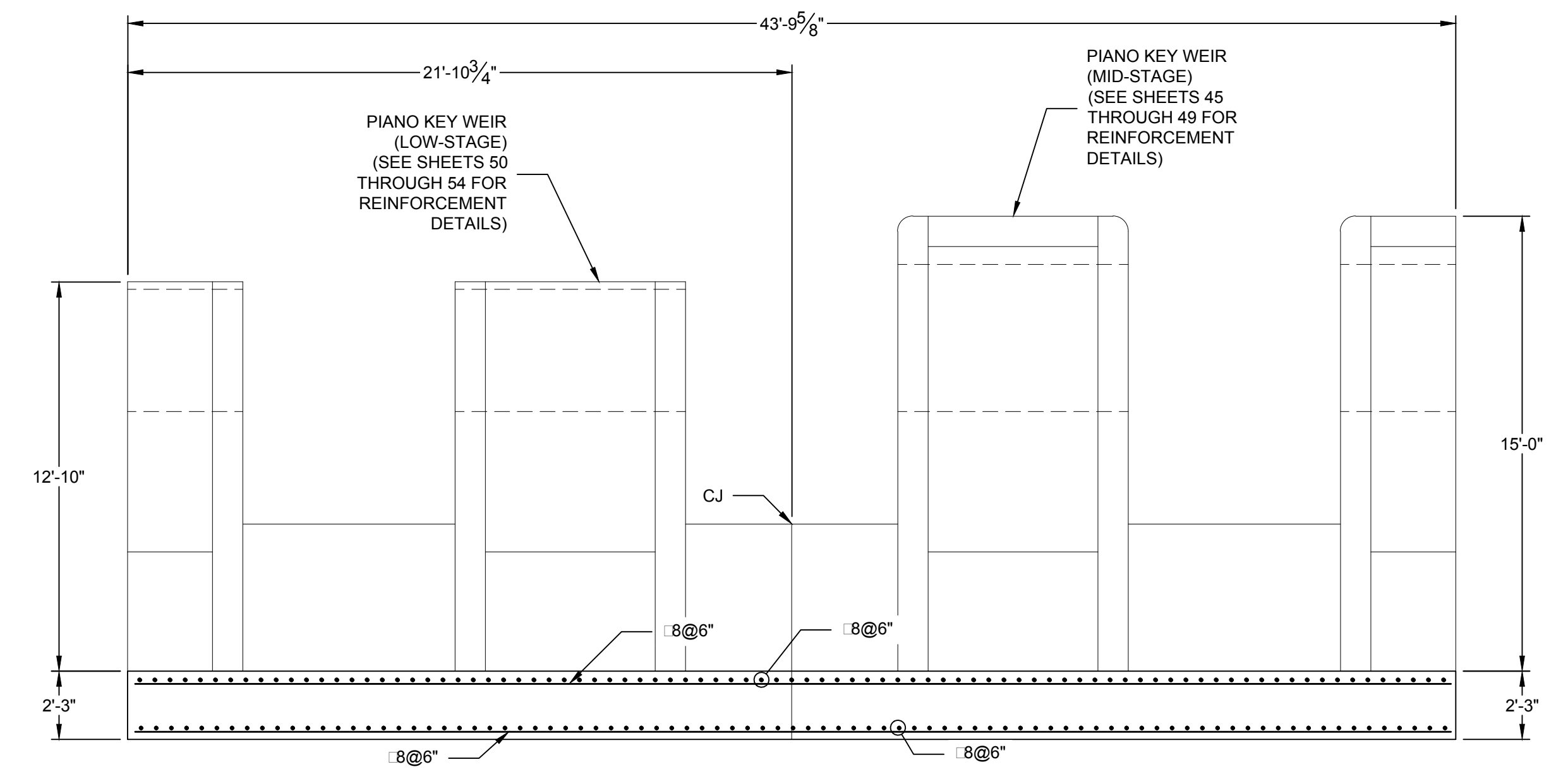
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-SE PRODUCT\16C17043.00 STRUCTURAL\PIANO KEY WEIR.DWG



**1** SEGMENT I1 ELEVATION

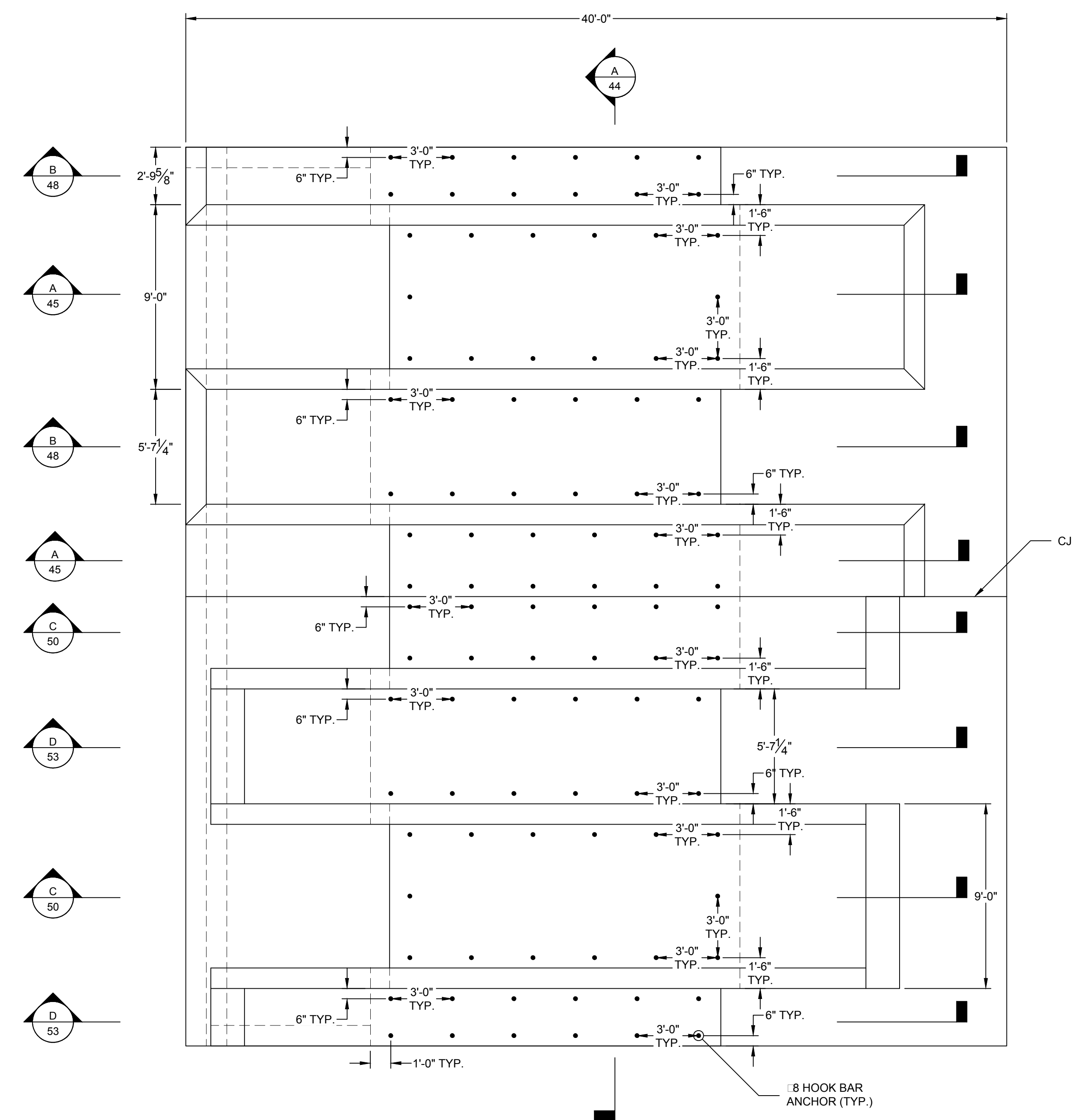
SCALE: 1/4"=1'0"

NOTE: WALL AT CONTRACTION JOINT NOT SHOWN FOR CLARITY. SEE DETAILS SHEET 37.



**A** SEGMENT I1 SECTION

SCALE: 1/4"=1'0"

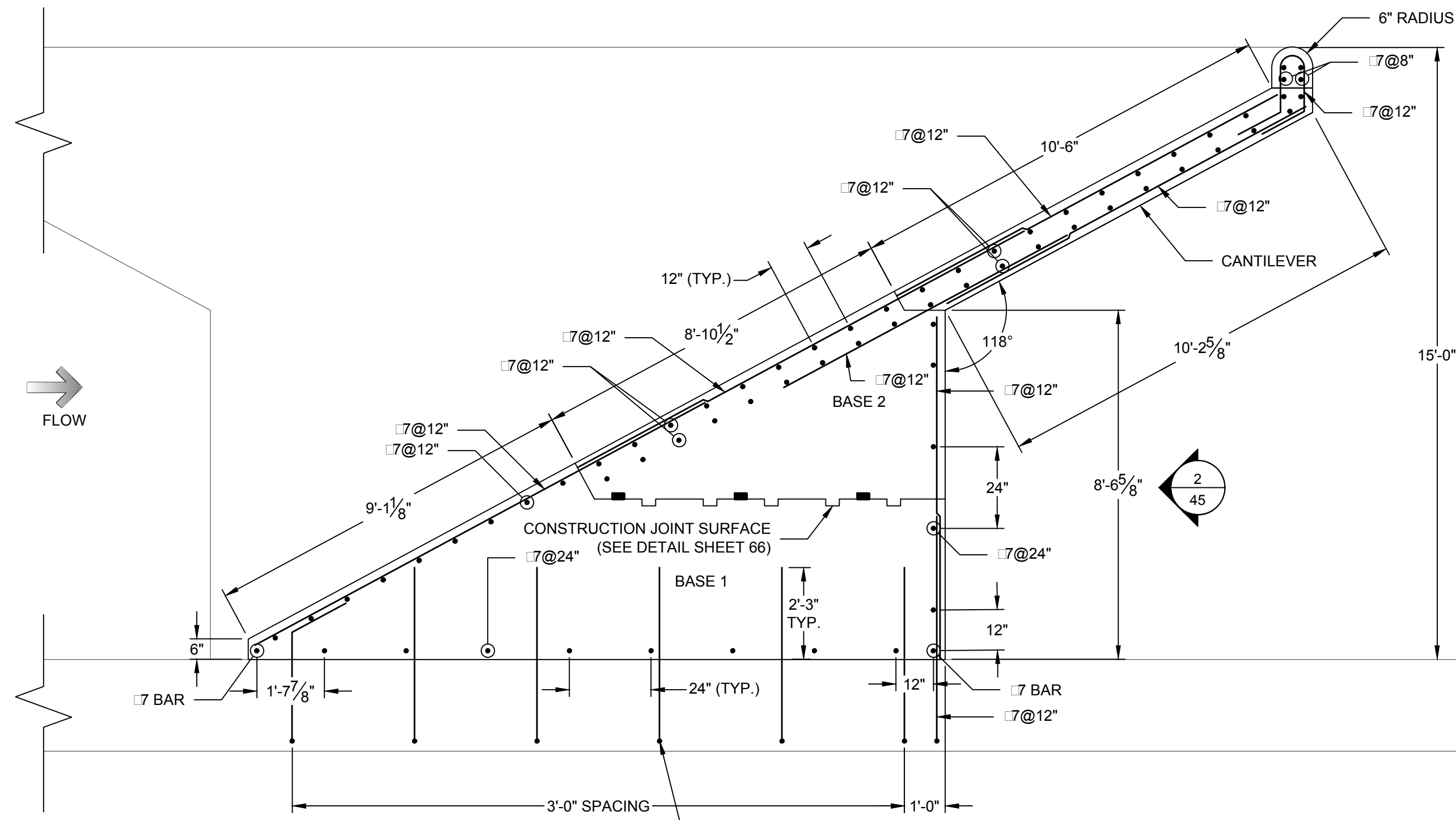


**2** SEGMENT I1 SLAB PLAN

SCALE: 1/4"=1'0"

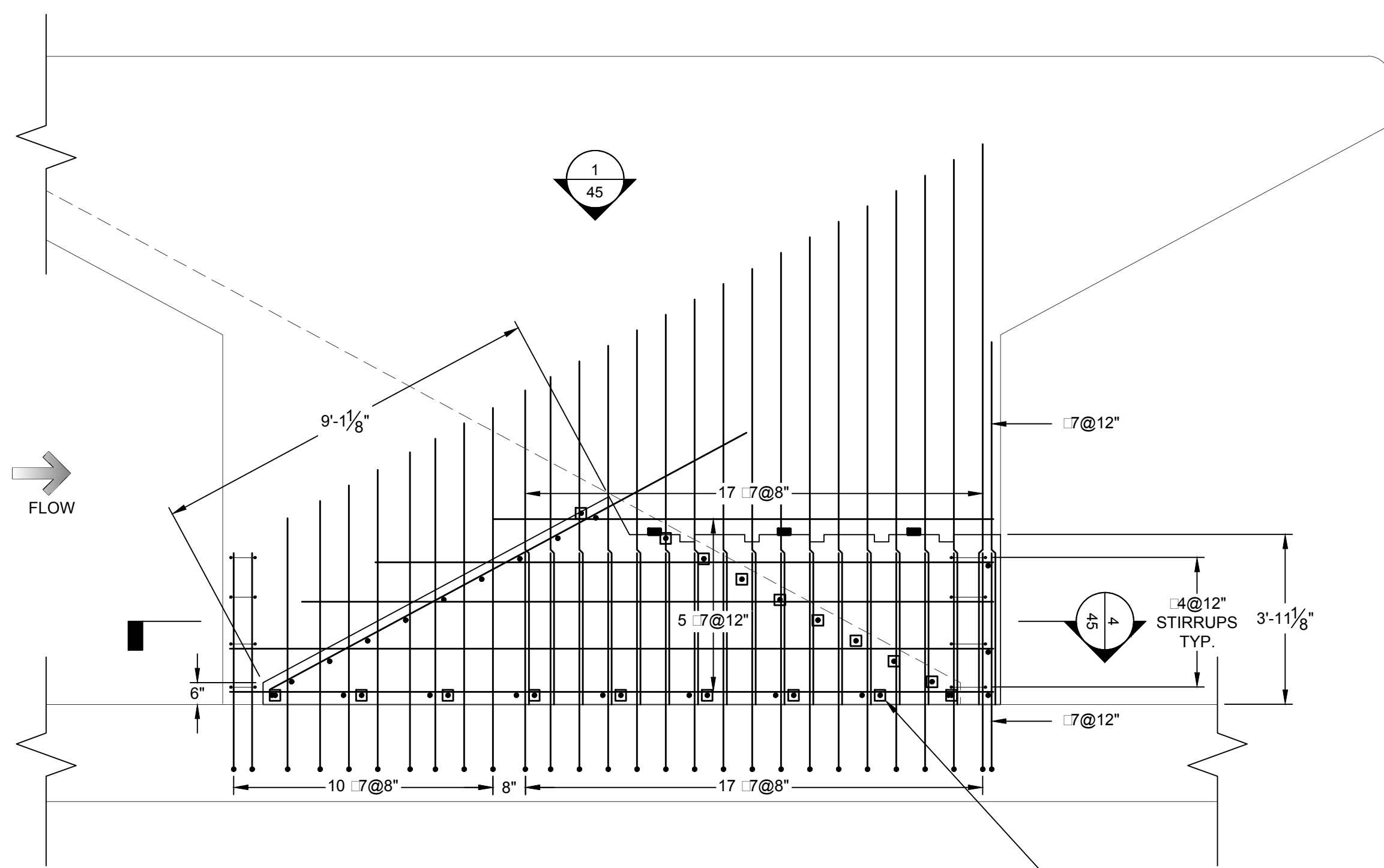
PROJECT: 16C17043.00	DATE: 07/10/2017
SHEET: 44 OF 66	
<p>CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA</p>	
<p><b>Slab Reinforcement Details Segment I1</b></p>	
<p><b>Schnabel</b> ENGINEERING</p> <p>6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com</p>	<p>REGISTERED PROFESSIONAL ENGINEER No. 10685 RANDALL P. BASS, P.E.</p>
<p>DESIGNED BY: JTD, JJC</p> <p>DRAWN BY: GHB, JSR</p> <p>CHECKED BY: RPB, JRC</p>	<p>DATE: 07/10/17</p> <p>GEORGIA PROFESSIONAL ENGINEER NO. 10685</p>
DESCRIPTION	REV





**A** SEGMENT I1 DOWNSTREAM RAMP SECTION

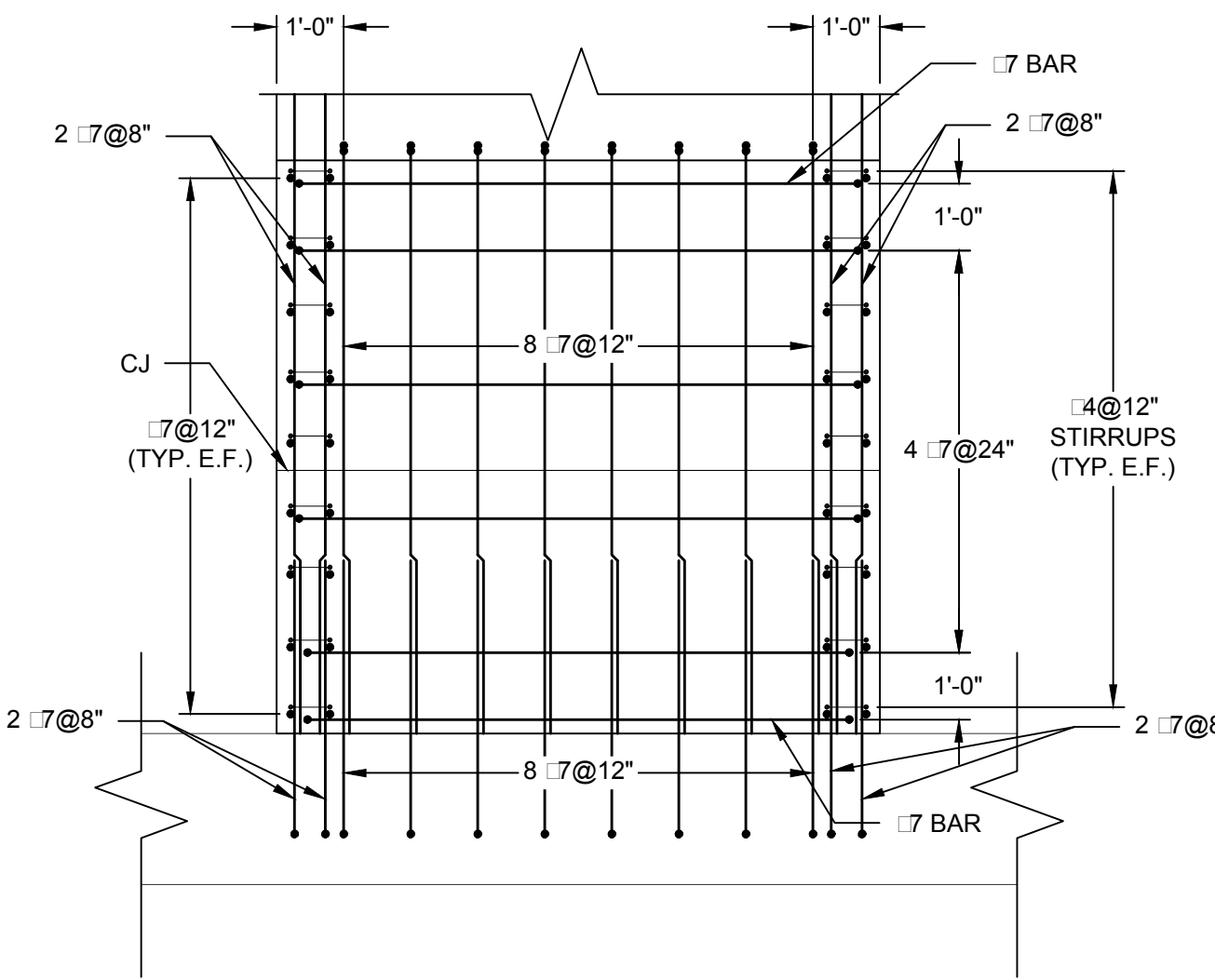
SCALE: 3/8"=1'-0"  
0 2 4



**3** SEGMENT I1 DOWNSTREAM RAMP BASE 1 SECTION

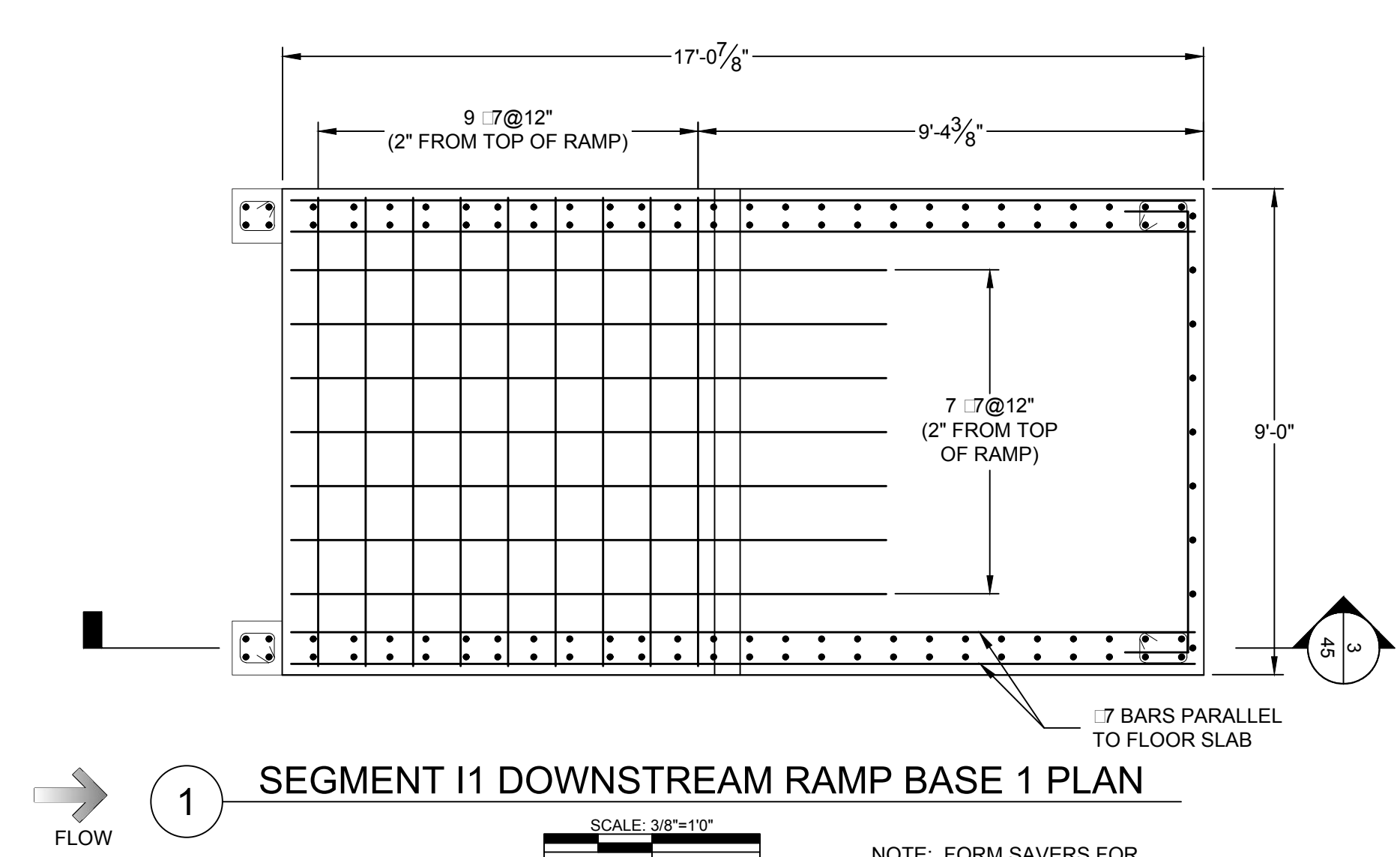
SCALE: 3/8"=1'-0"  
0 2 4

HORIZONTAL FORM SAVER (TYP.) TO BE INSTALLED IN AREA(S) SHOWN IN SEGMENT G1 DOWNSTREAM RAMP BASE 1. SEE FURTHER DETAILS SHEETS 37 AND 38. FORM SAVERS REQUIRED TO STRUCTURALLY TIE SEGMENT G1 DOWNSTREAM RAMP BASE 1 TO SEGMENT G1 INFILL(S).



**2** SEGMENT I1 DOWNSTREAM RAMP ELEVATION

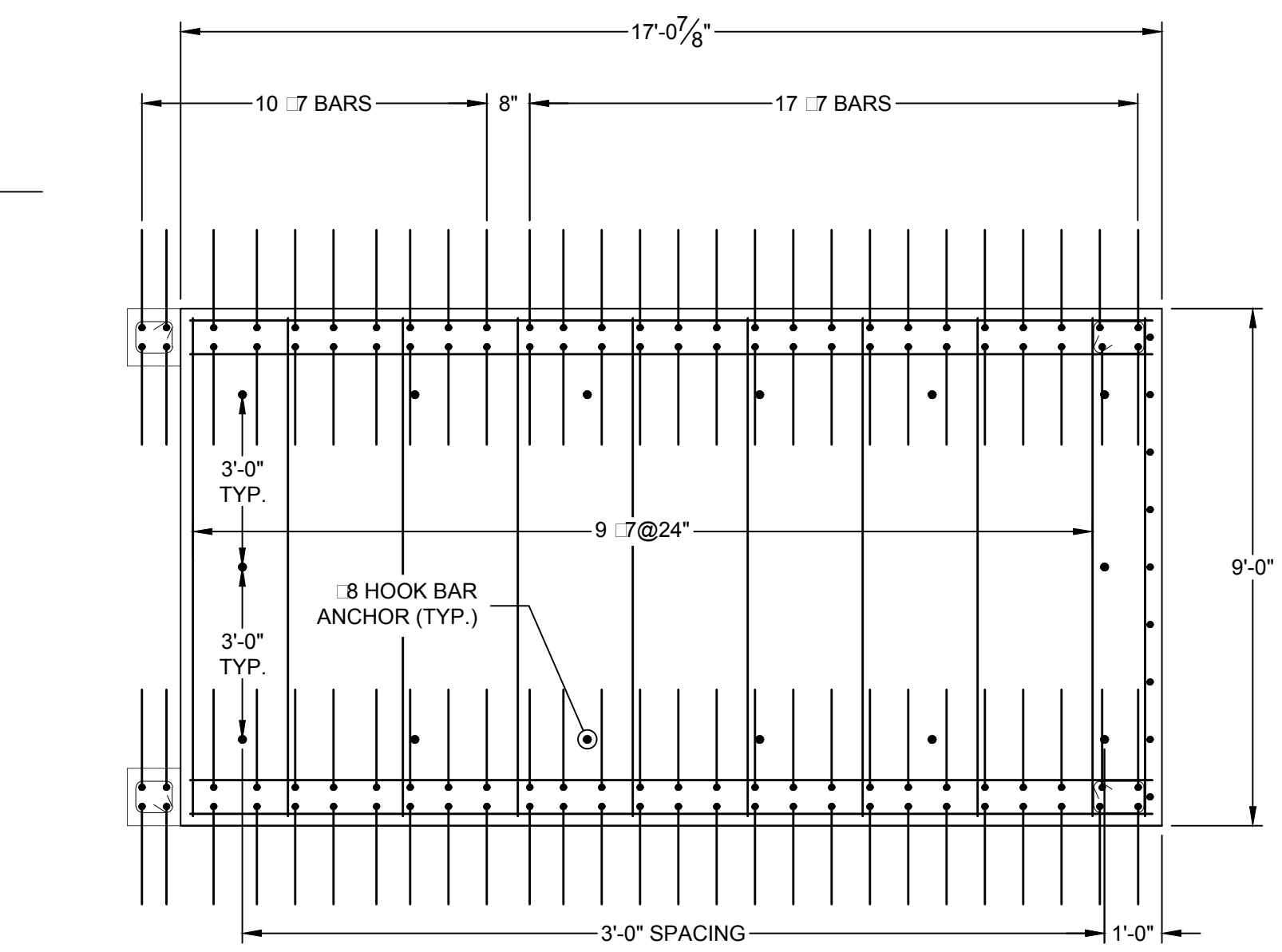
SCALE: 3/8"=1'-0"  
0 2 4



**1** SEGMENT I1 DOWNSTREAM RAMP BASE 1 PLAN

SCALE: 3/8"=1'-0"  
0 2 4

NOTE: FORM SAVERS FOR CONNECTION TO UPSTREAM RAMP NOT SHOWN FOR CLARITY.



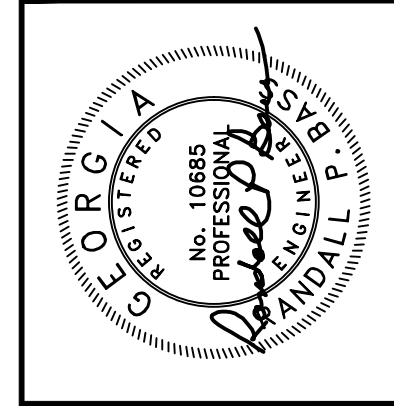
**4** SEGMENT I1 DOWNSTREAM RAMP BASE 1 SECTION

SCALE: 3/8"=1'-0"  
0 2 4

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CAD\DRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTUREAL\_PIANO\_KEY\_WEIRD.WMG

REV	DESCRIPTION	DATE

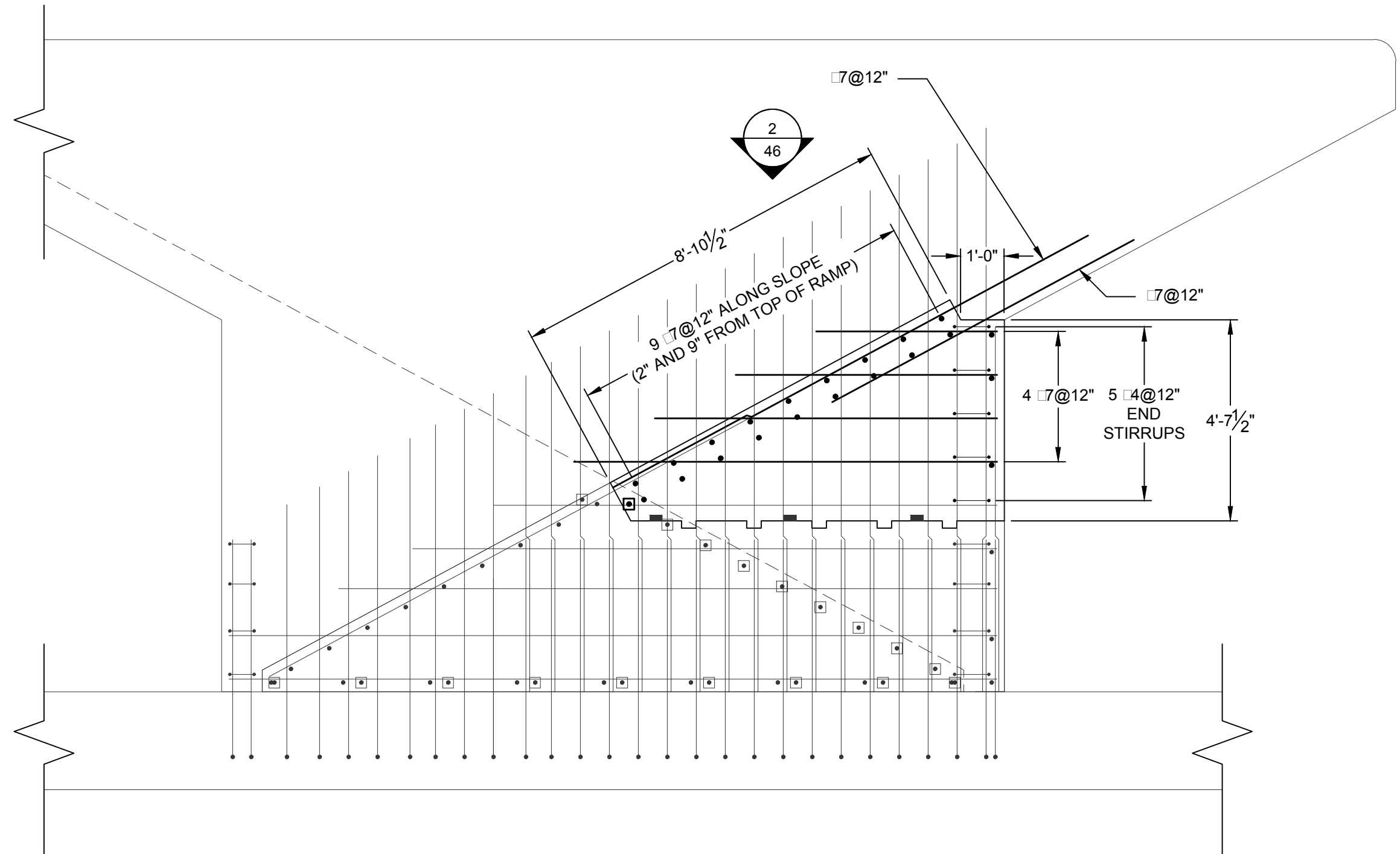
CHECKED BY: RPL\_JRC  
 DRAWN BY: GHB\_JSR  
 DESIGNED BY: JTD\_JC  
 RANDALL P. BASS, P.E.  
 DATE: 07/10/17  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685



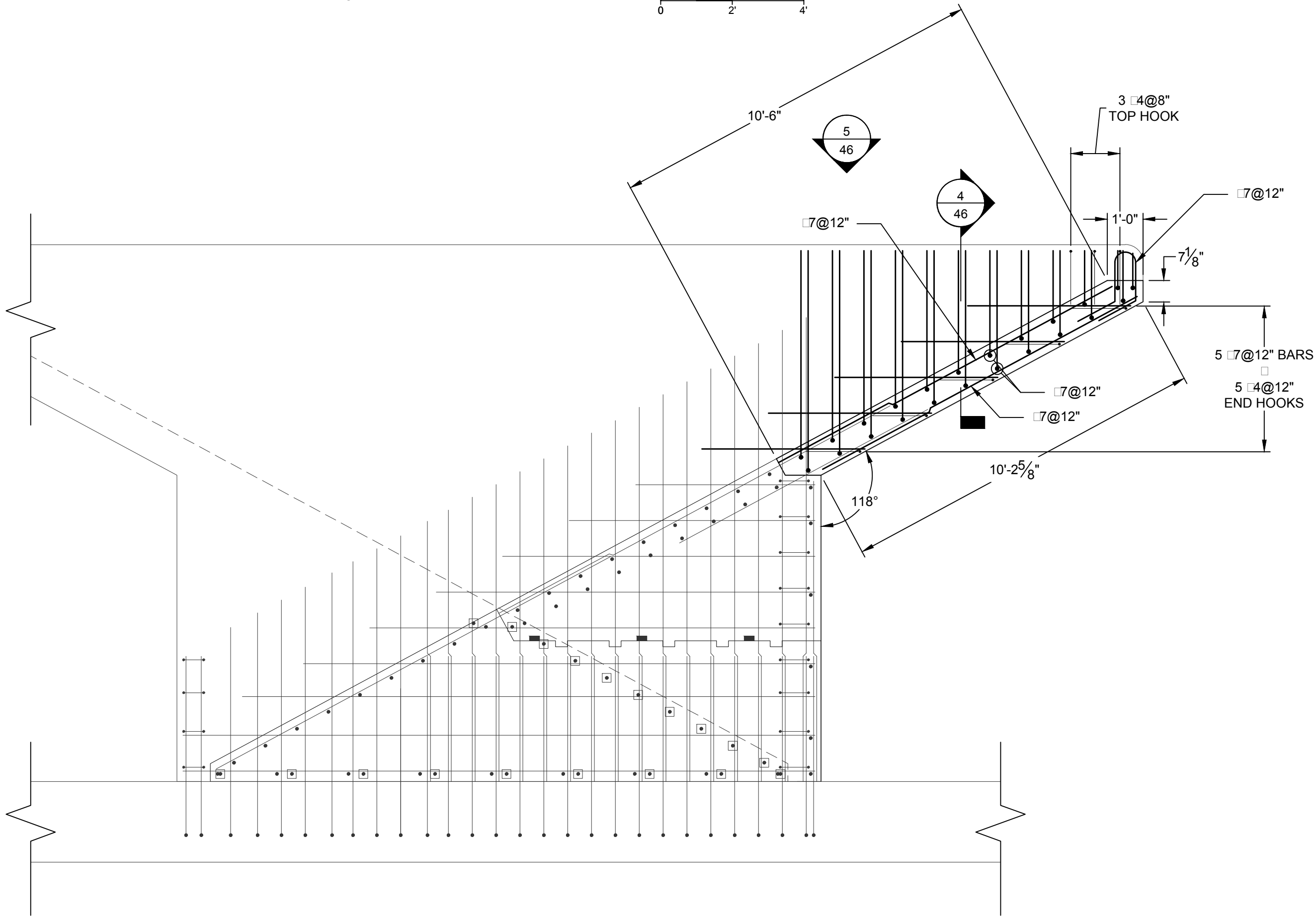
**Schnabel**  
ENGINEERING  
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
 Phone: 770-781-8008 / Fax: 770-781-8003 /  
 schnabel-eng.com

CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
**MID STAGE DOWNSTREAM  
 RAMP REINFORCEMENT  
 DETAILS SEGMENT I1**

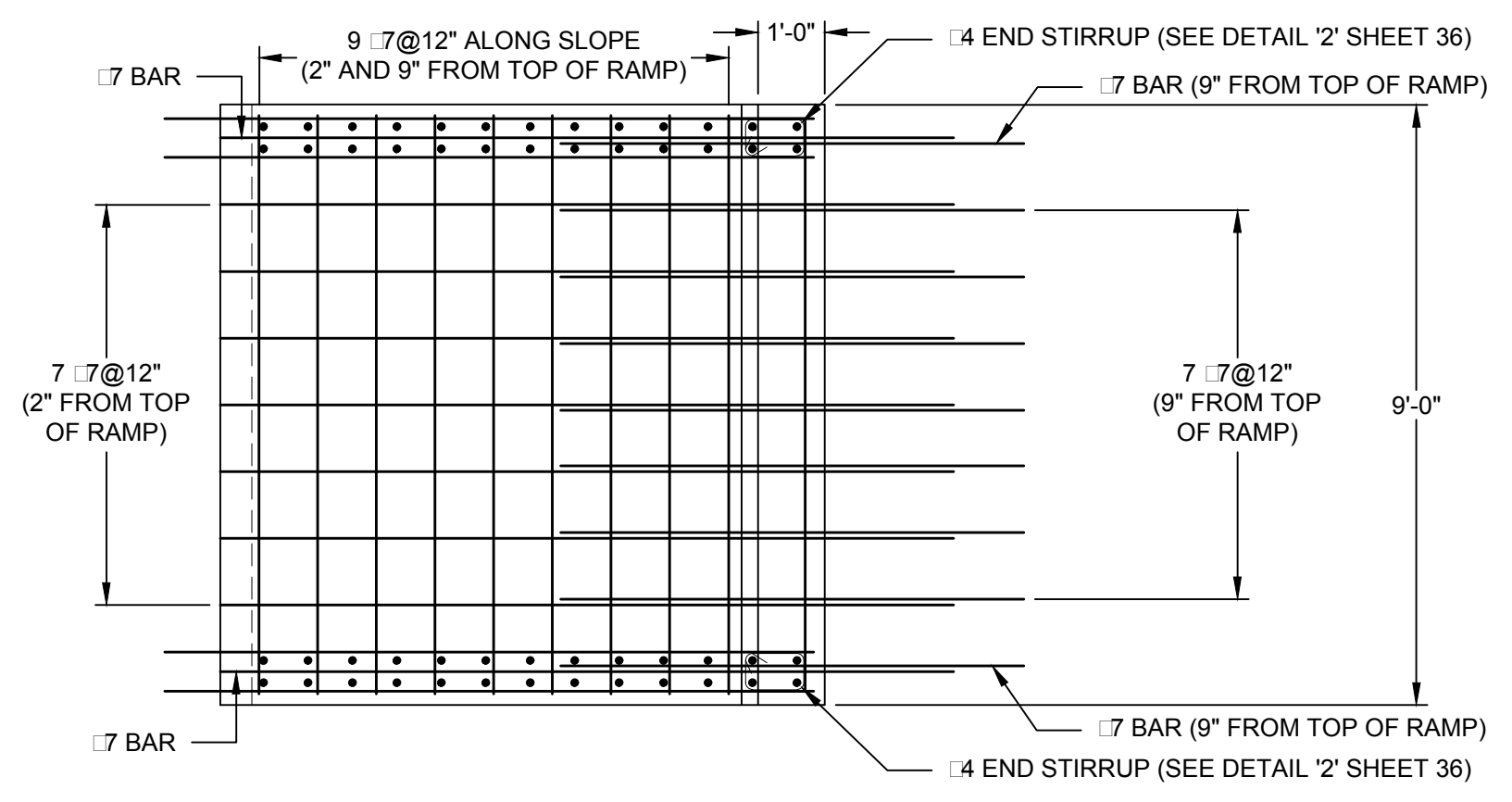
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 45 OF 66



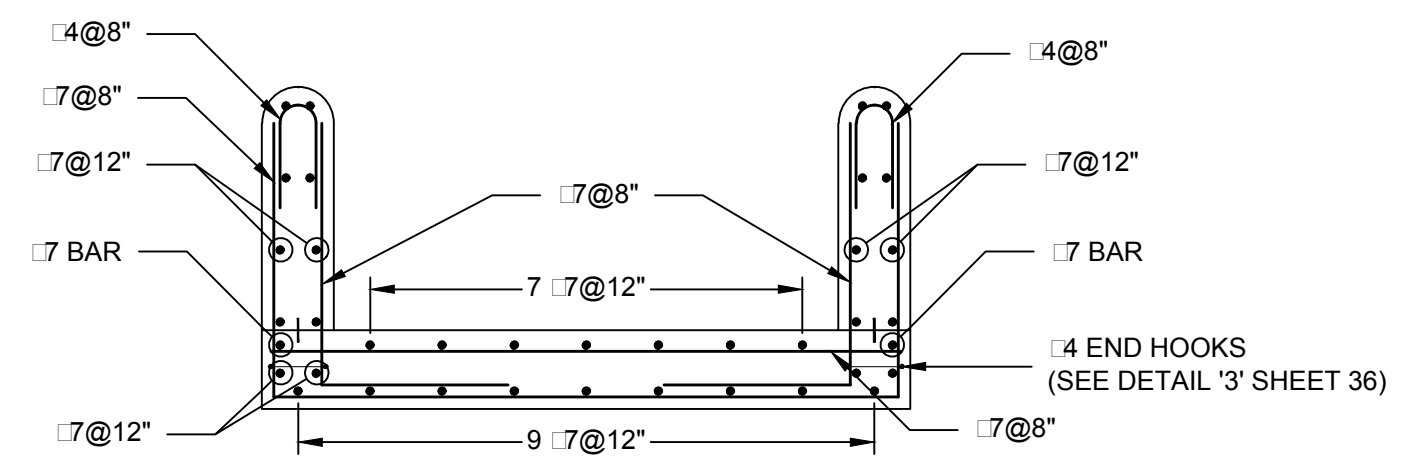
1 SEGMENT I1 DOWNSTREAM RAMP BASE 2  
SCALE: 3/8"=1'0"  
FLOW



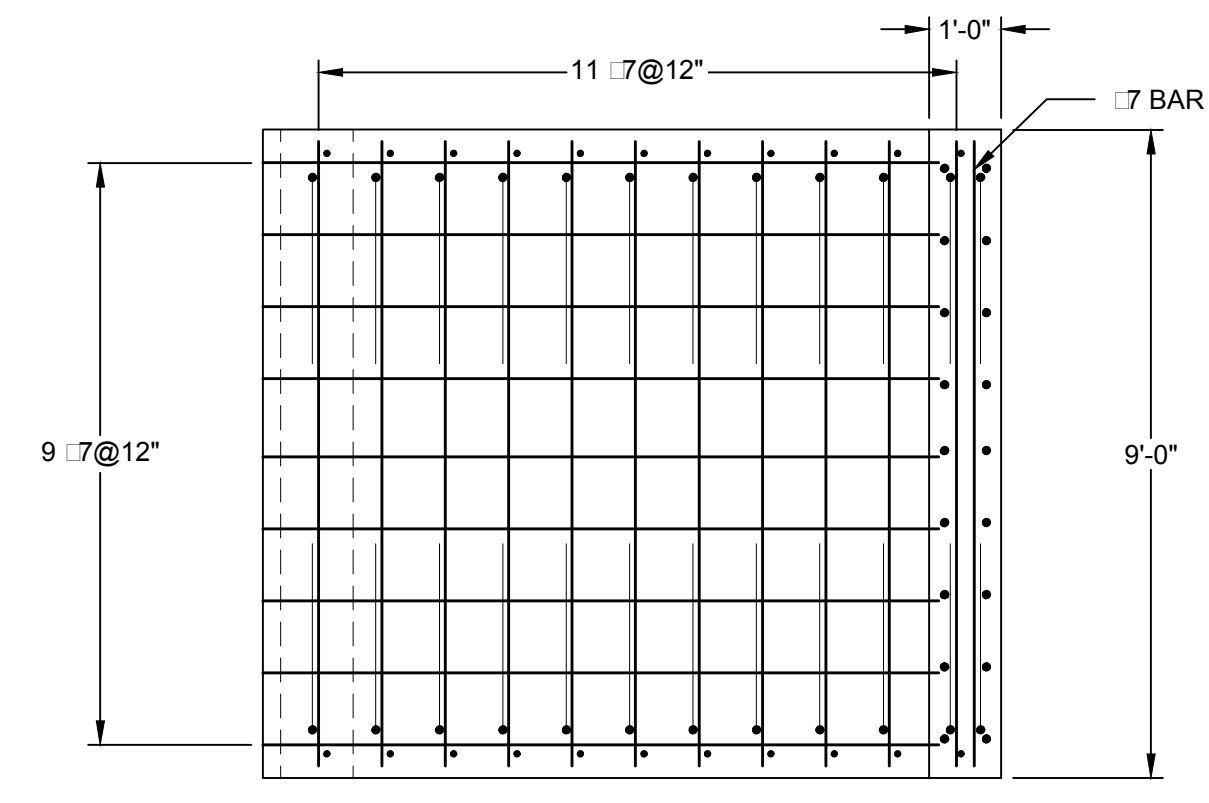
3 SEGMENT I1 DOWNSTREAM RAMP CANTILEVER  
SCALE: 3/8"=1'0"  
FLOW



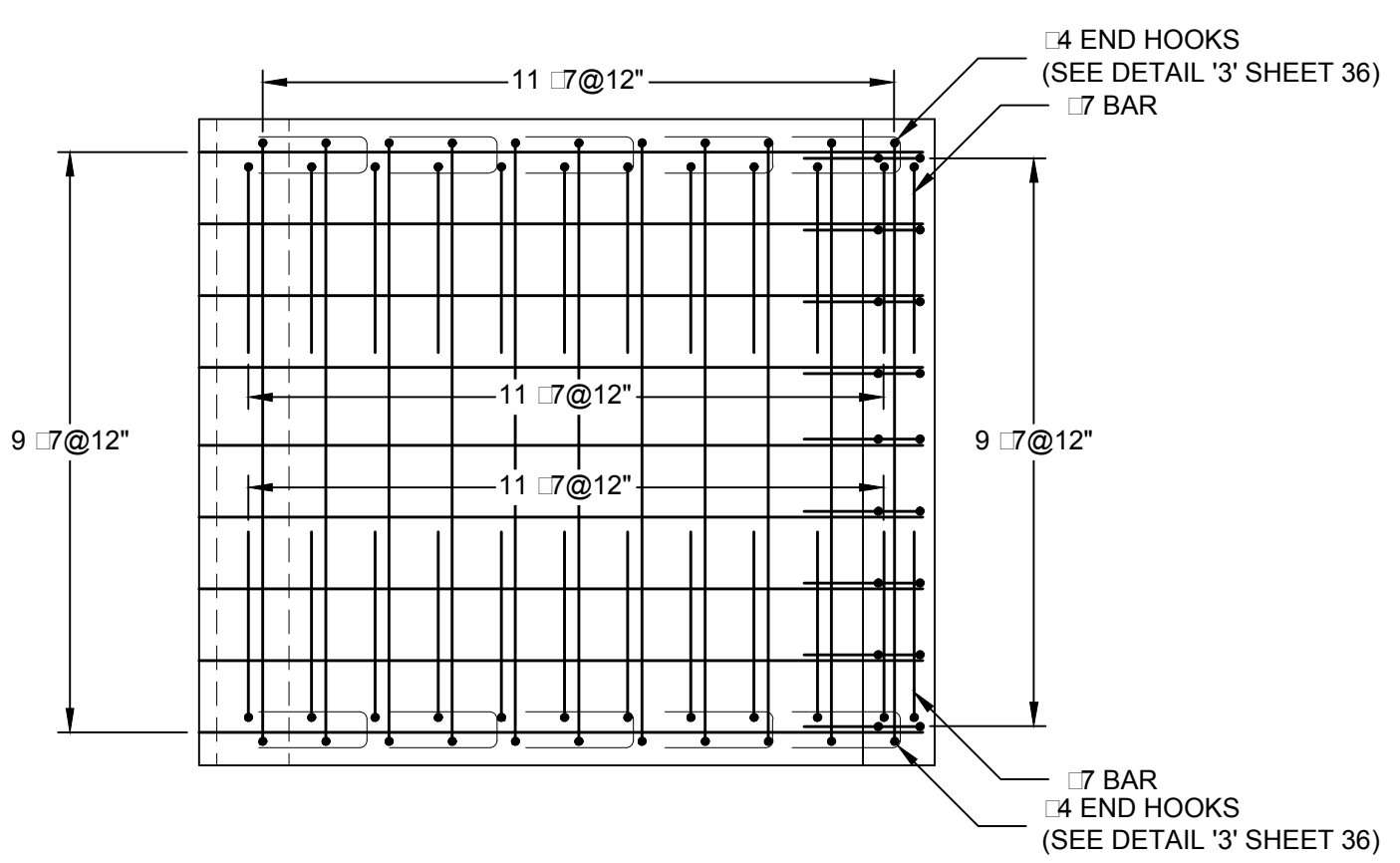
2 SEGMENT I1 DOWNSTREAM RAMP BASE 2 PLAN  
SCALE: 3/8"=1'0"



4 SEGMENT I1 DOWNSTREAM RAMP CANTILEVER SECTION  
SCALE: 3/8"=1'0"



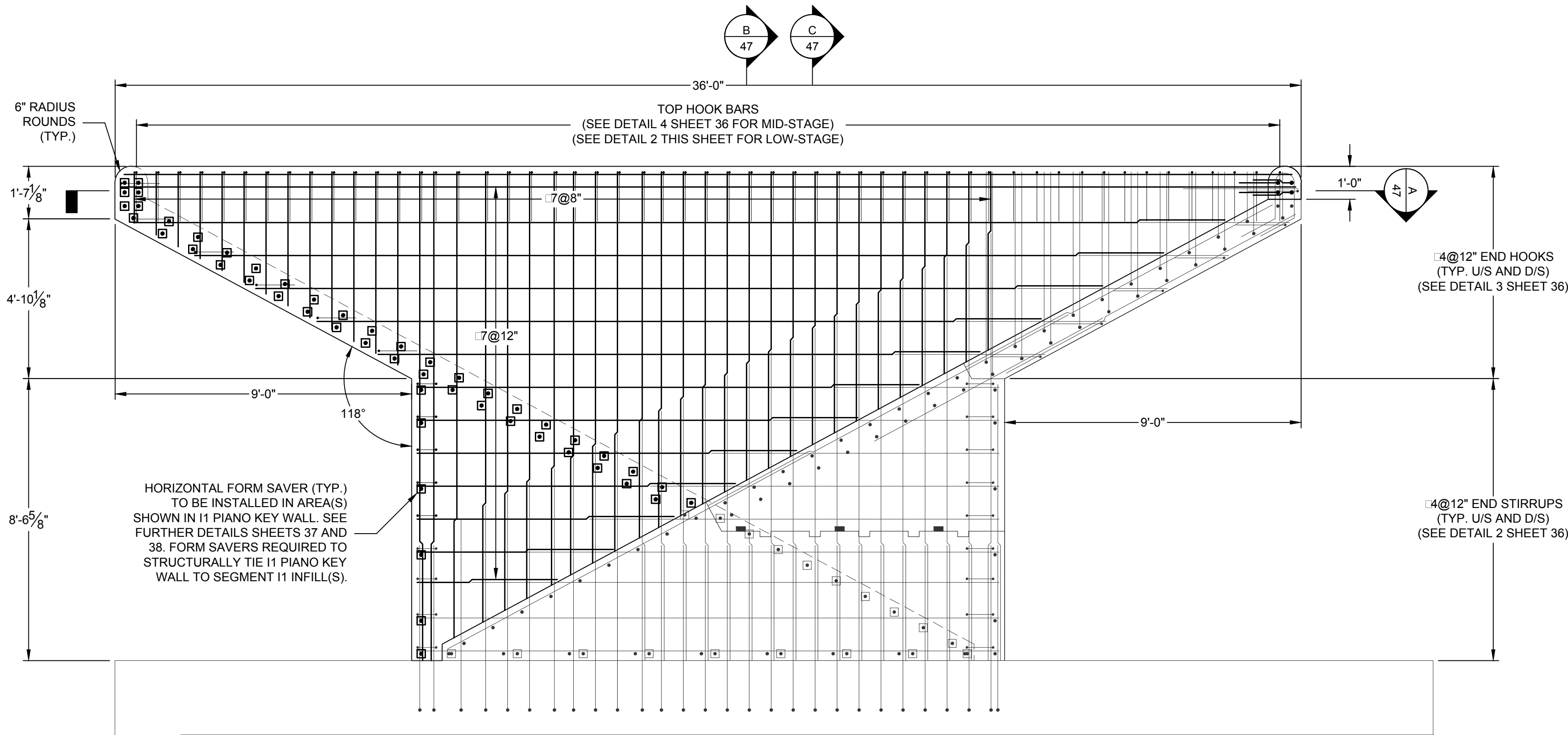
5 SEGMENT I1 DOWNSTREAM RAMP CANTILEVER PLAN  
REINFORCEMENT 2" FROM TOP OF CANTILEVER SLAB  
SCALE: 3/8"=1'0"



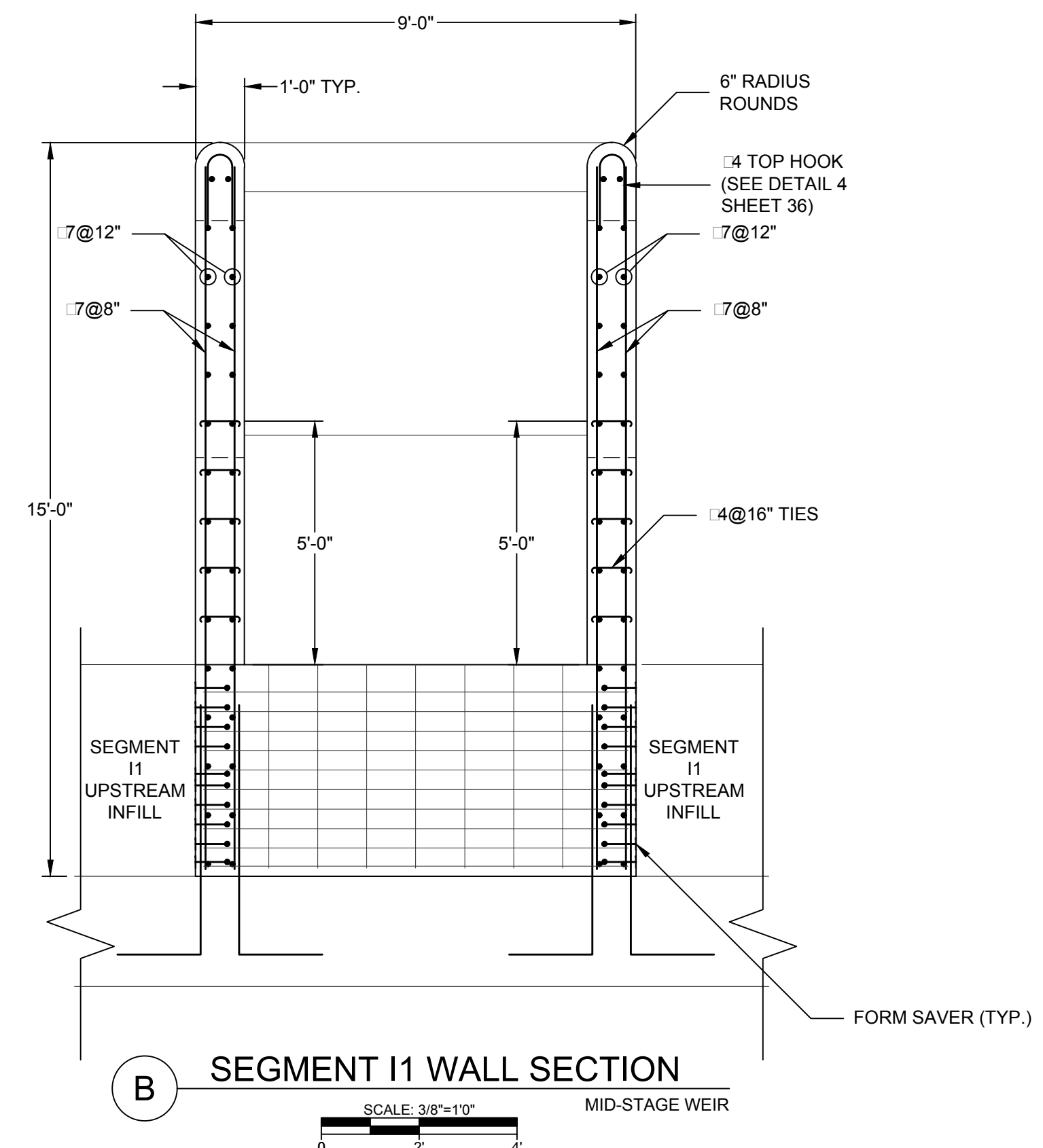
5 SEGMENT I1 DOWNSTREAM RAMP CANTILEVER PLAN  
REINFORCEMENT 2" FROM BOTTOM OF CANTILEVER SLAB  
SCALE: 3/8"=1'0"

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTUREAL\_PIANO\_KEY\_WEIRD.WMG

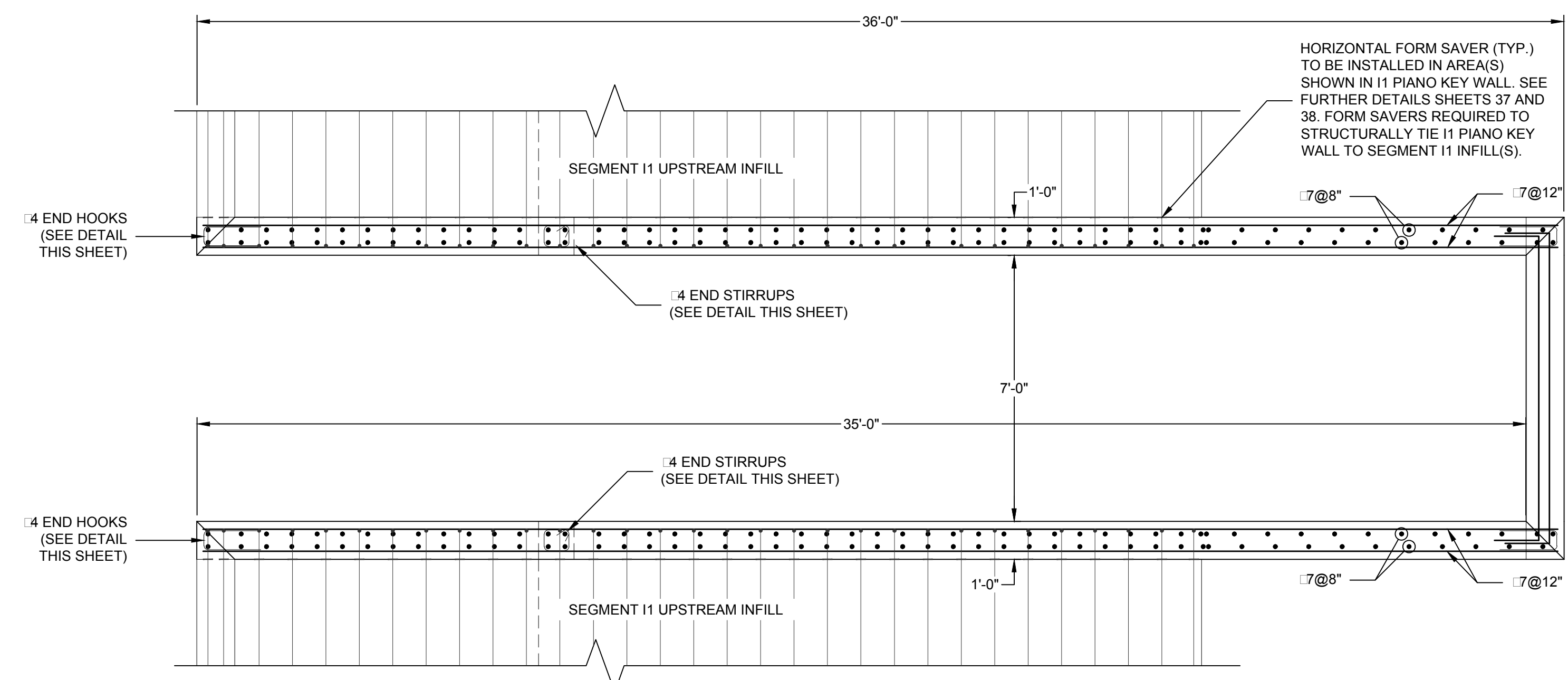
PROJECT: 16C17043.00		DATE: 07/10/2017	
SHEET: 46 OF 66		DESCRIPTION	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		MID STAGE DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1	
 Schnabel ENGINEERING 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		DESIGNED BY: JTD, JC DRAWN BY: GHB, JSR CHECKED BY: RPL, JRC RANDALL P. BASS, P.E.  RANDALL P. BASS, P.E. GEORGIA PROFESSIONAL ENGINEER NO. 10885 DATE: 07/10/17	
REV	DESCRIPTION	DATE	BY



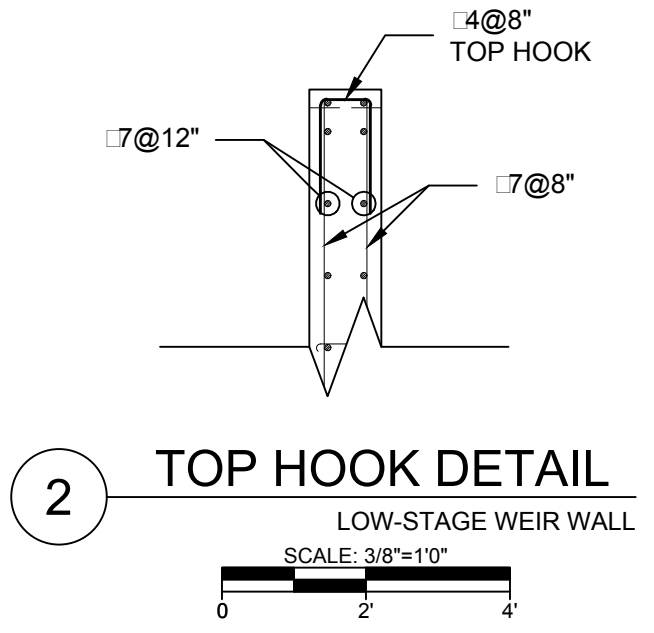
1 SEGMENT I1 PIANO KEY WEIR WALL  
SCALE: 3/8"=1'-0"  
FLOW



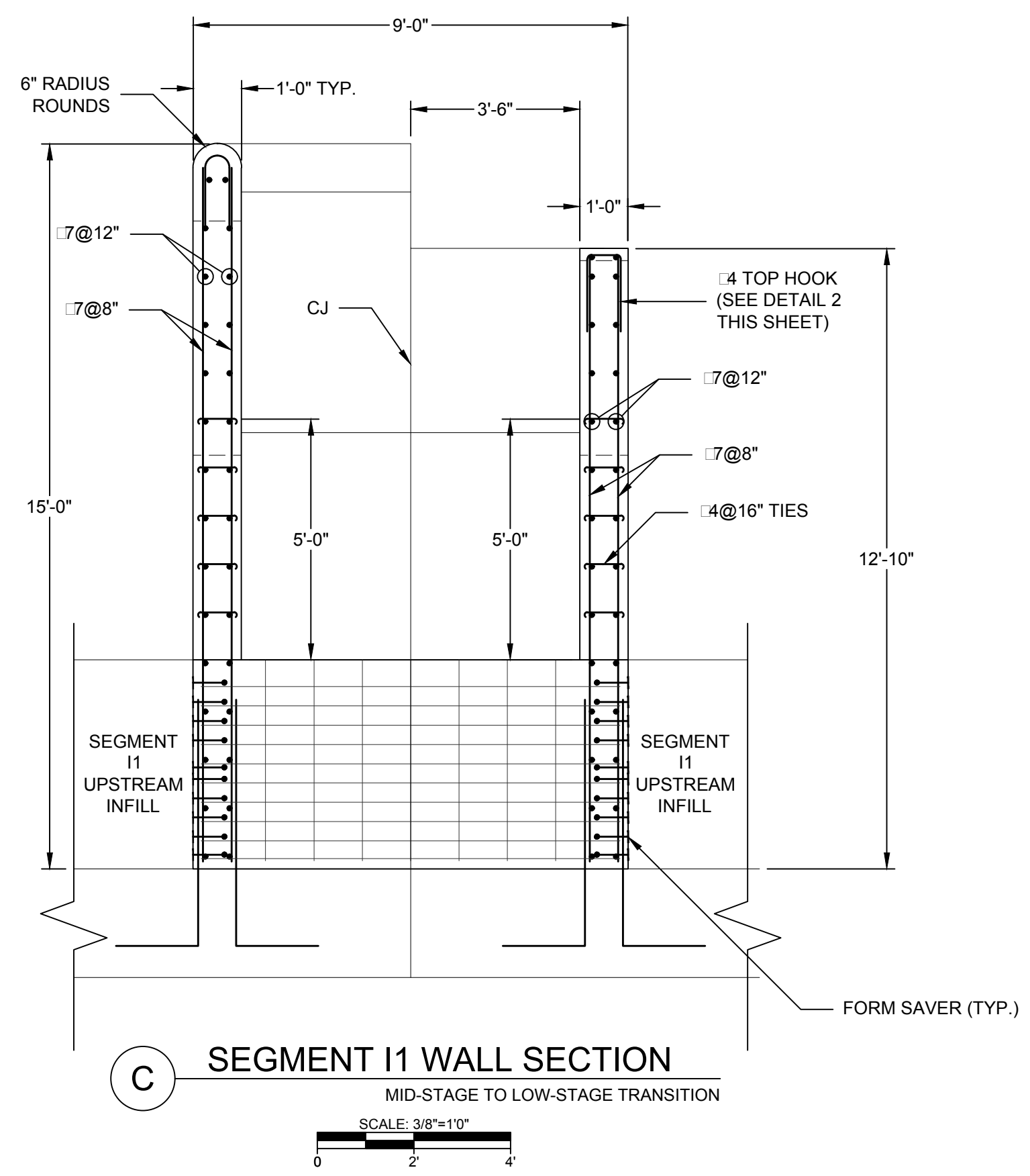
B SEGMENT I1 WALL SECTION  
MID-STAGE WEIR  
SCALE: 3/8"=1'-0"  
FORM SAVER (TYP.)



A SEGMENT I1 PIANO KEY WEIR WALL SECTION  
SCALE: 3/8"=1'-0"  
FLOW



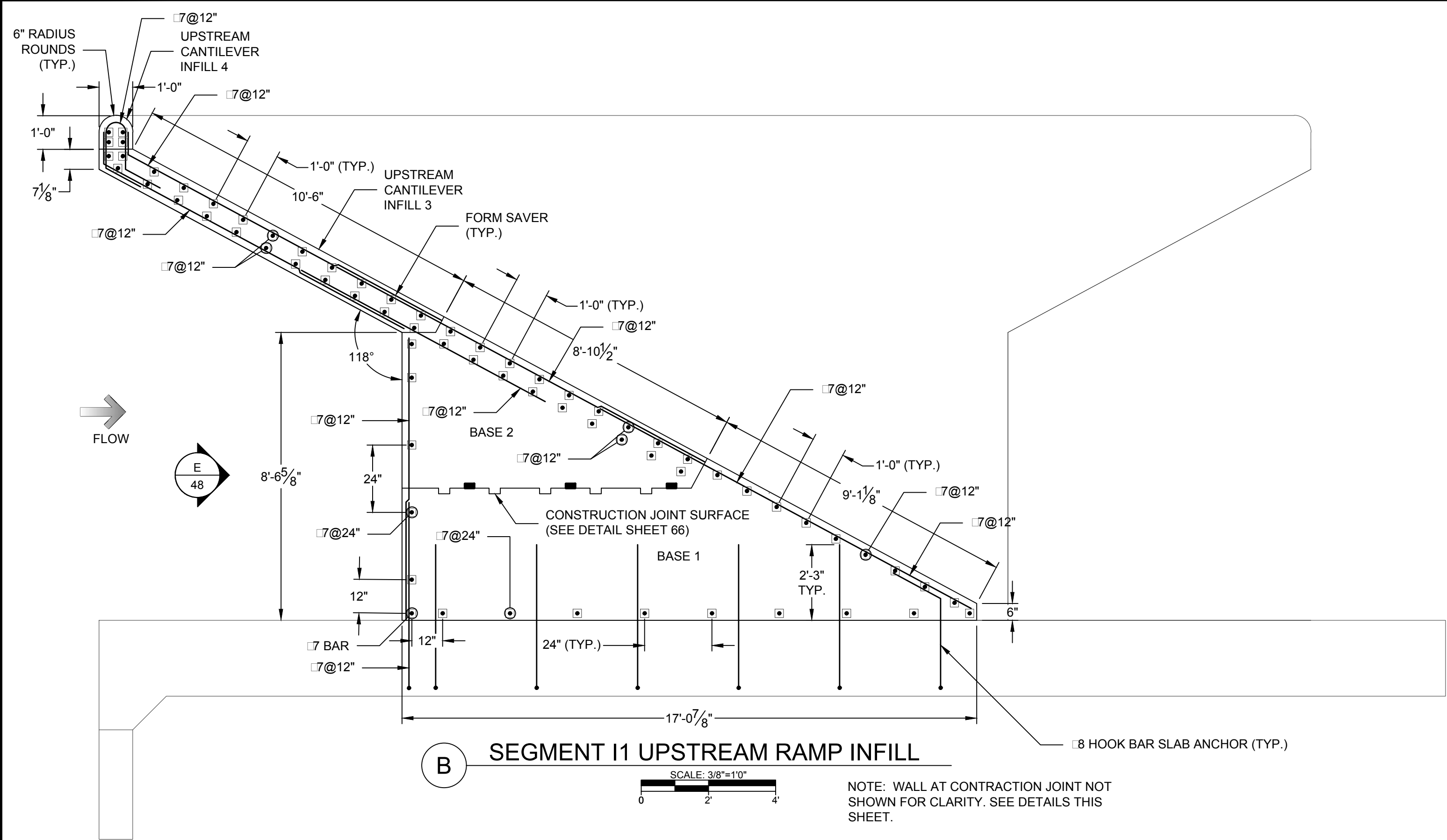
2 TOP HOOK DETAIL  
LOW-STAGE WEIR WALL  
SCALE: 3/8"=1'-0"



C SEGMENT I1 WALL SECTION  
MID-STAGE TO LOW-STAGE TRANSITION  
SCALE: 3/8"=1'-0"  
FORM SAVER (TYP.)

PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 47 OF 66
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		
MID STAGE DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1		
 Schnabel ENGINEERING 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com		
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E.		
		DATE: 07/10/17 GEORGIA PROFESSIONAL ENGINEER NO. 10685
DESCRIPTION	REV	DATE

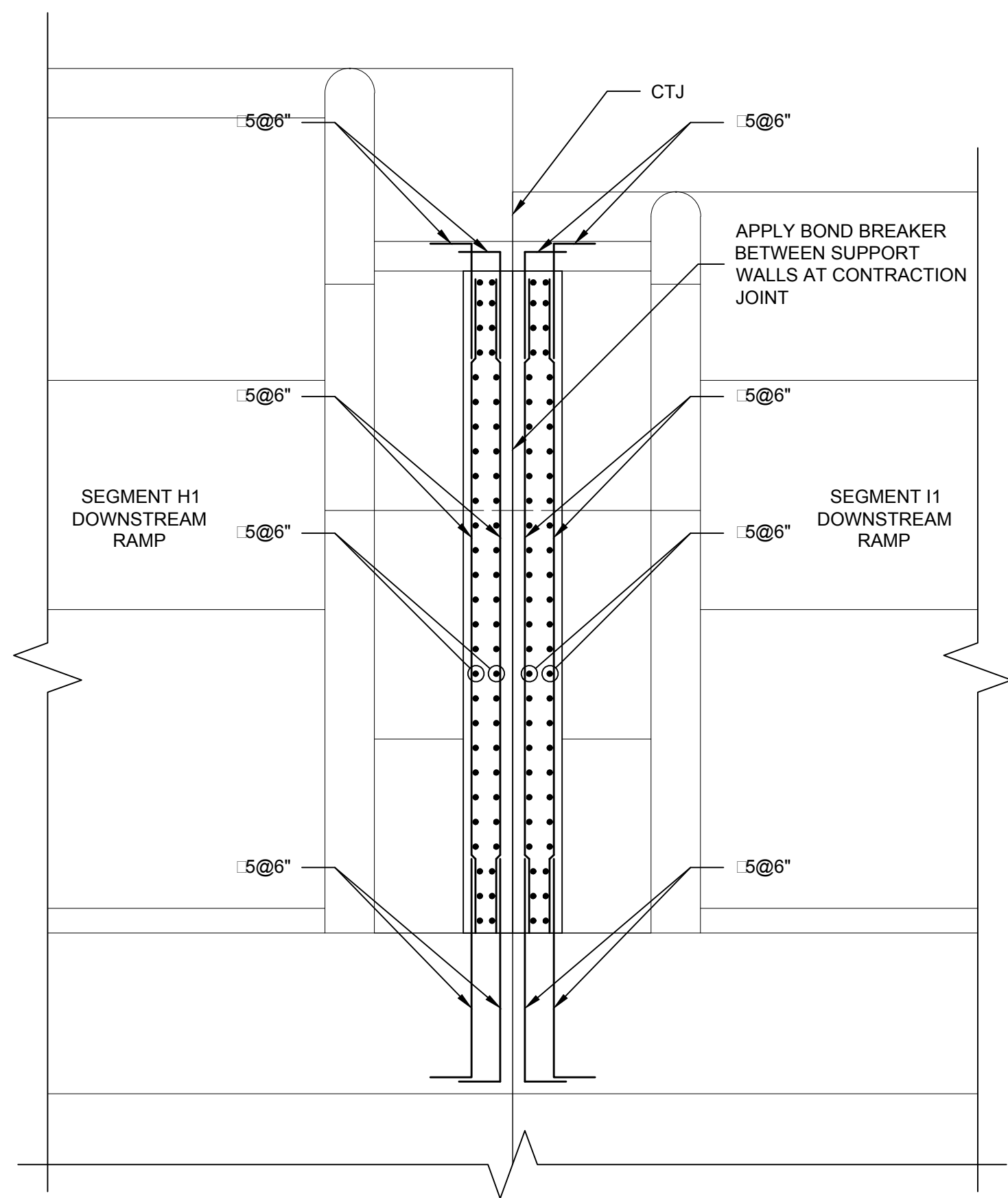
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURAL\_PIANO KEY WEIRD.DWG



**B** SEGMENT I1 UPSTREAM RAMP INFILL

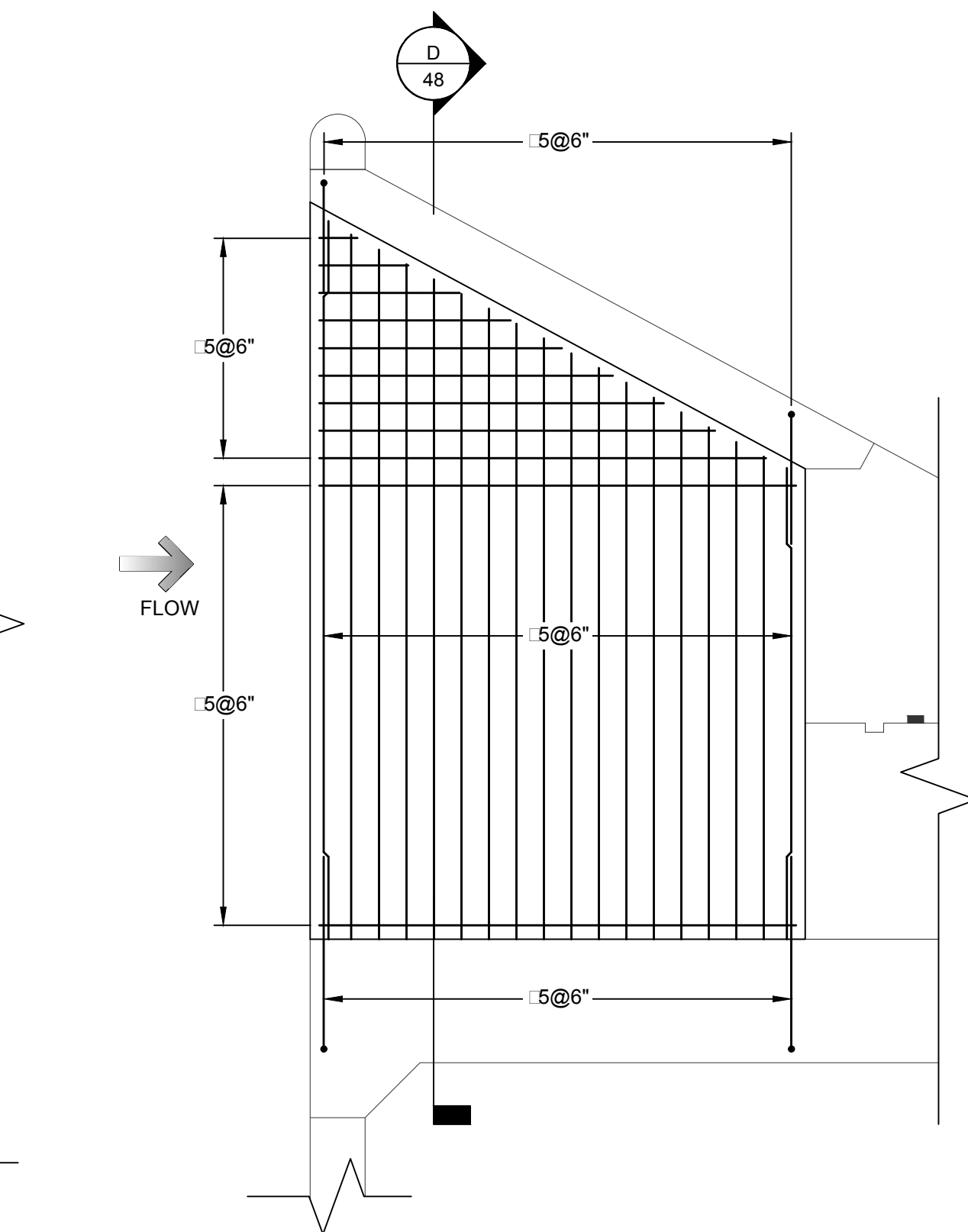
SCALE: 3/8"=1'0"  
0 2 4

NOTE: WALL AT CONTRACTION JOINT NOT SHOWN FOR CLARITY. SEE DETAILS THIS SHEET.



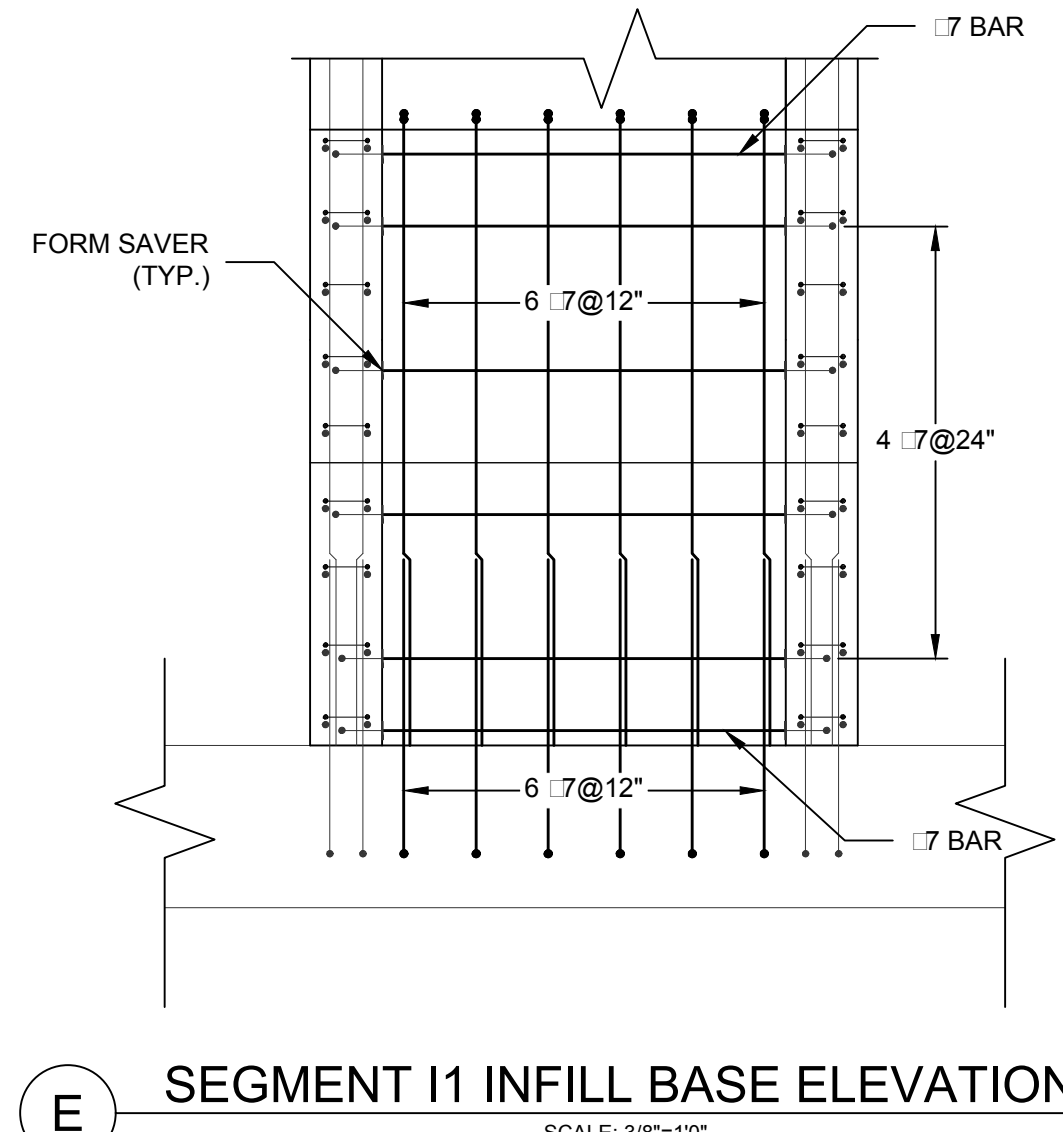
**D** SEGMENT I1 SUPPORT WALL SECTION

SCALE: 3/8"=1'0"  
0 2 4



**1** SEGMENT I1 SUPPORT WALL AT CONTRACTION JOINT BETWEEN SEGMENTS I1 AND H1

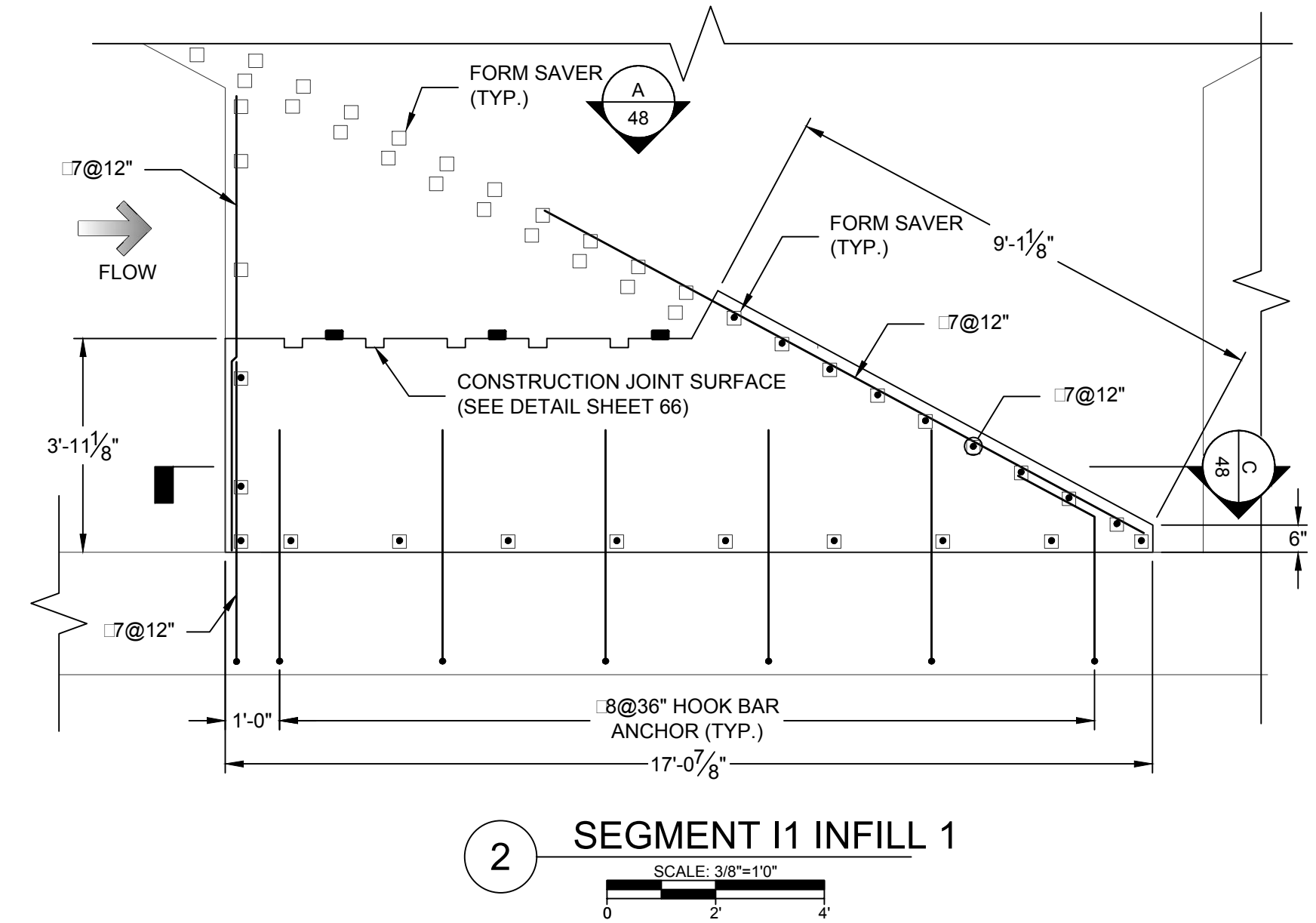
SCALE: 3/8"=1'0"  
0 2 4



**E** SEGMENT I1 INFILL BASE ELEVATION

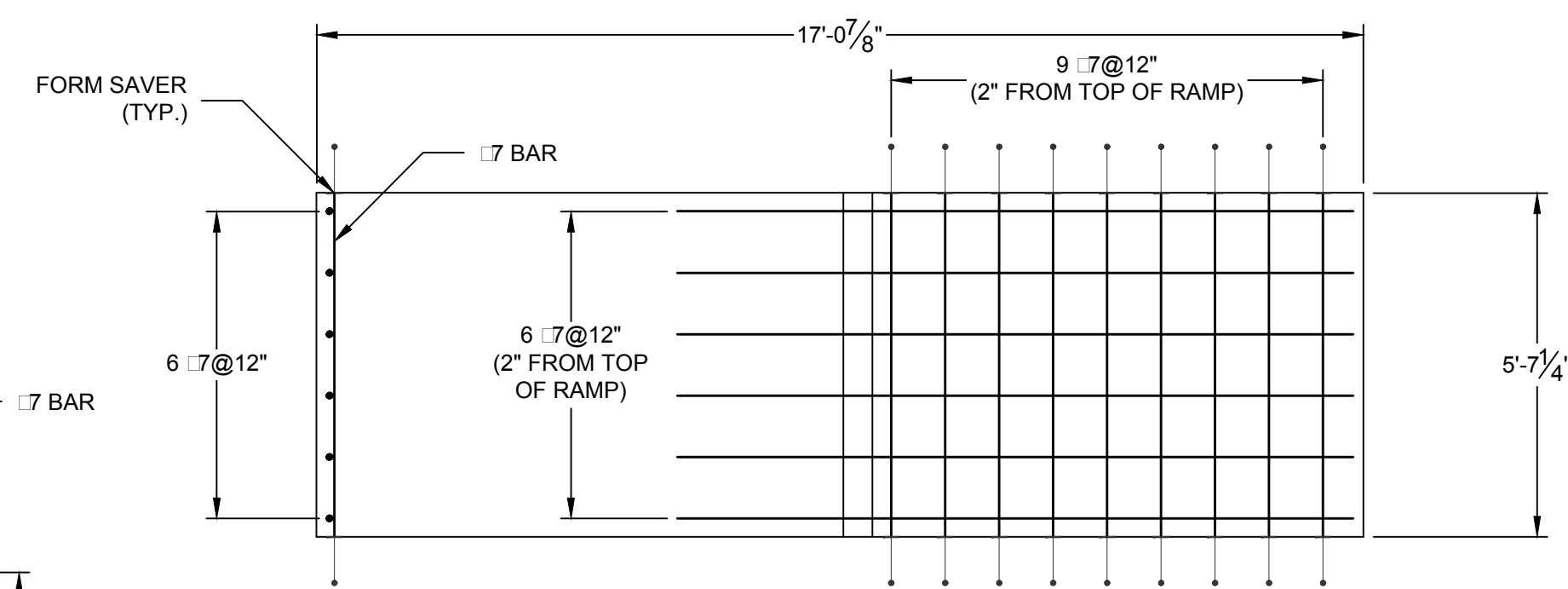
SCALE: 3/8"=1'0"  
0 2 4

NOTE: FOR CONTRACTION JOINT BETWEEN PIANO KEY SEGMENTS I1 AND H1, PROVIDE 2-INCHES CLEARANCE FOR REINFORCEMENT EACH SIDE OF JOINT. (G2 AND H2 SIMILAR, BUT OPPOSITE)



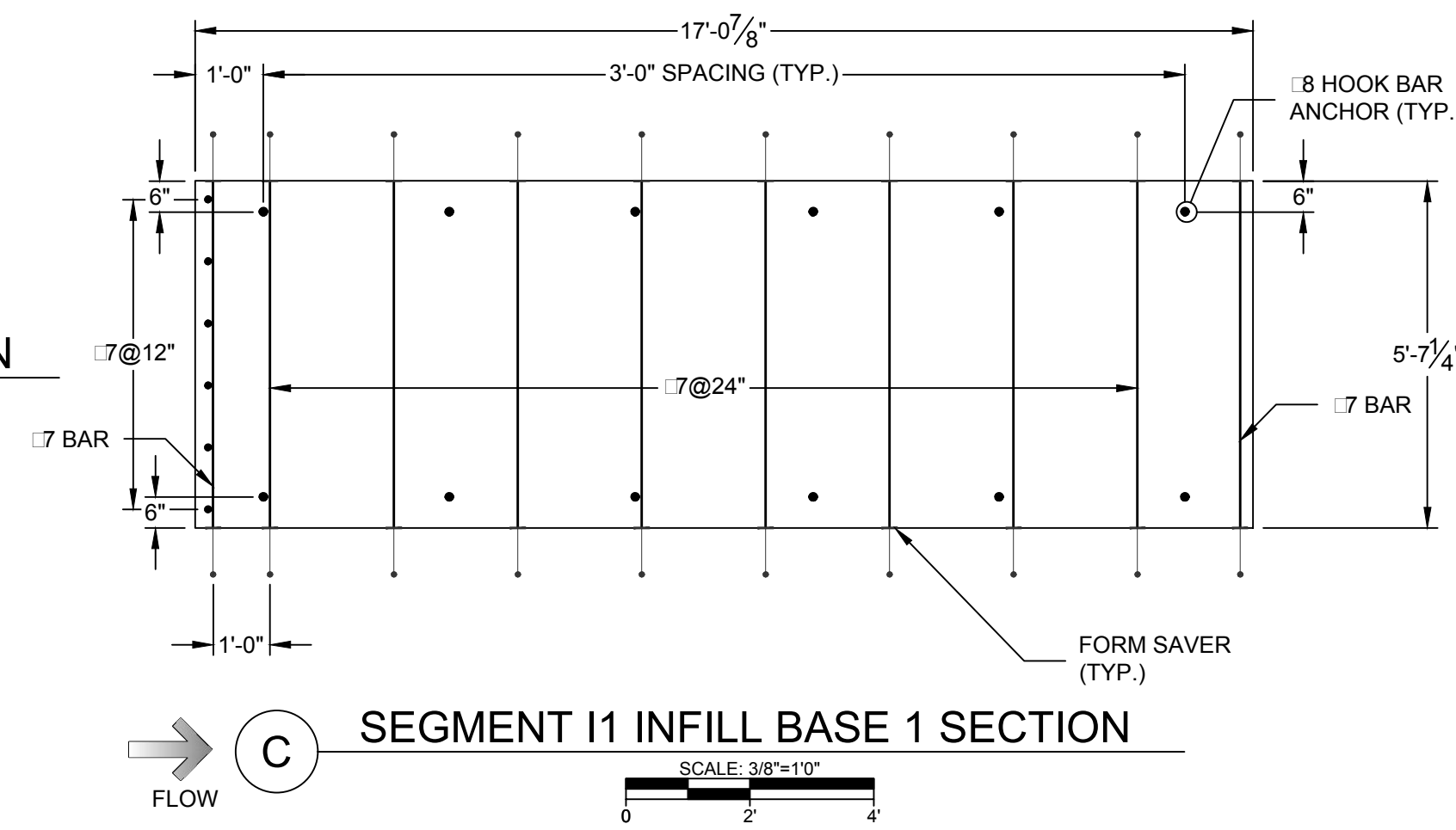
**2** SEGMENT I1 INFILL 1

SCALE: 3/8"=1'0"  
0 2 4



**A** SEGMENT I1 INFILL BASE 1 PLAN


SCALE: 3/8"=1'0"  
0 2 4

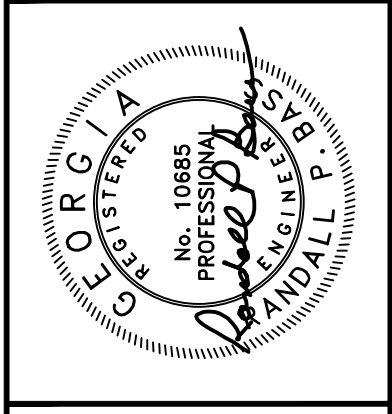


**C** SEGMENT I1 INFILL BASE 1 SECTION

SCALE: 3/8"=1'0"  
0 2 4

NO.	DATE	DESCRIPTION

DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. 		



**Schnabel ENGINEERING**

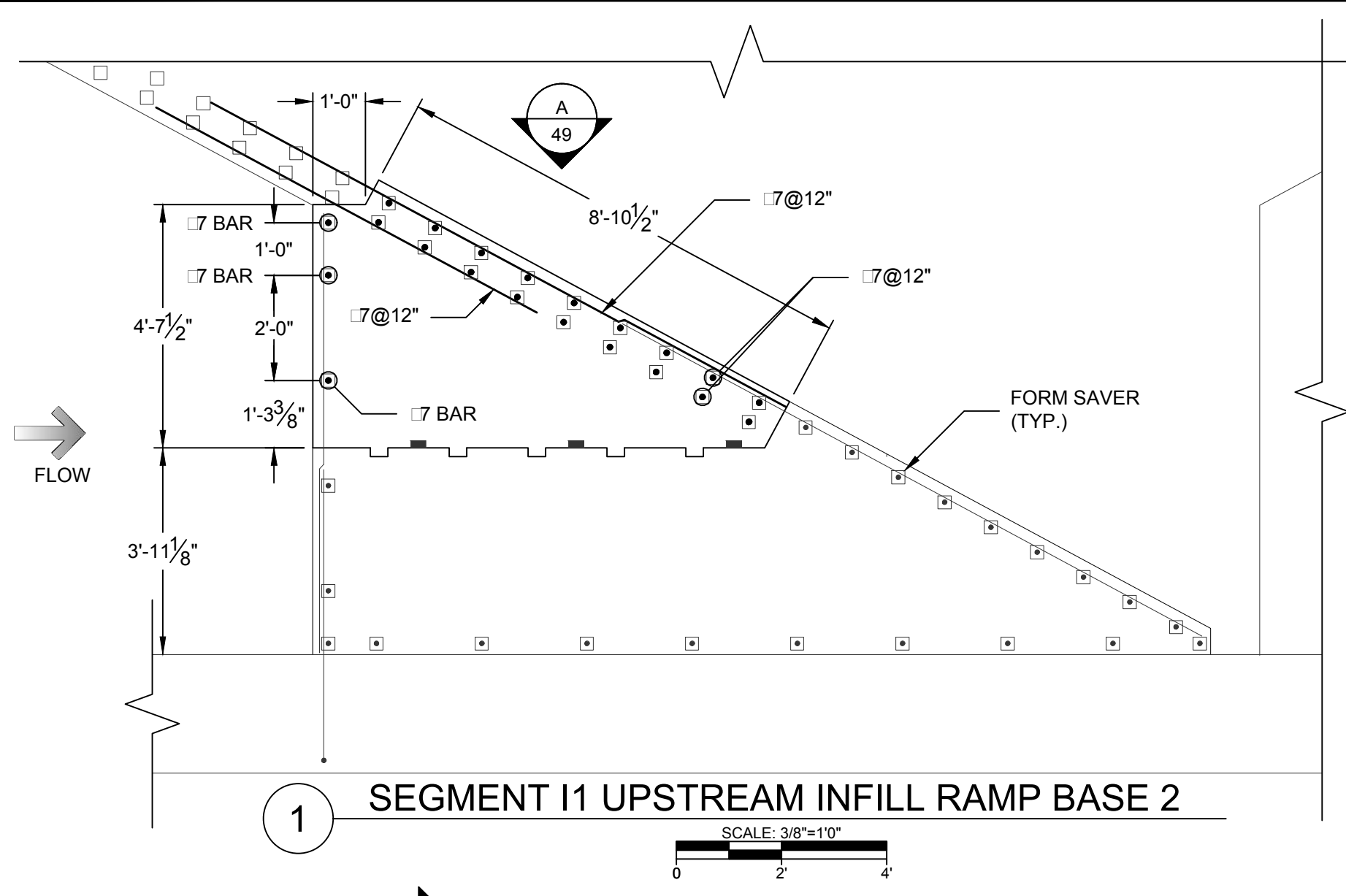
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
schnabel-eng.com

CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

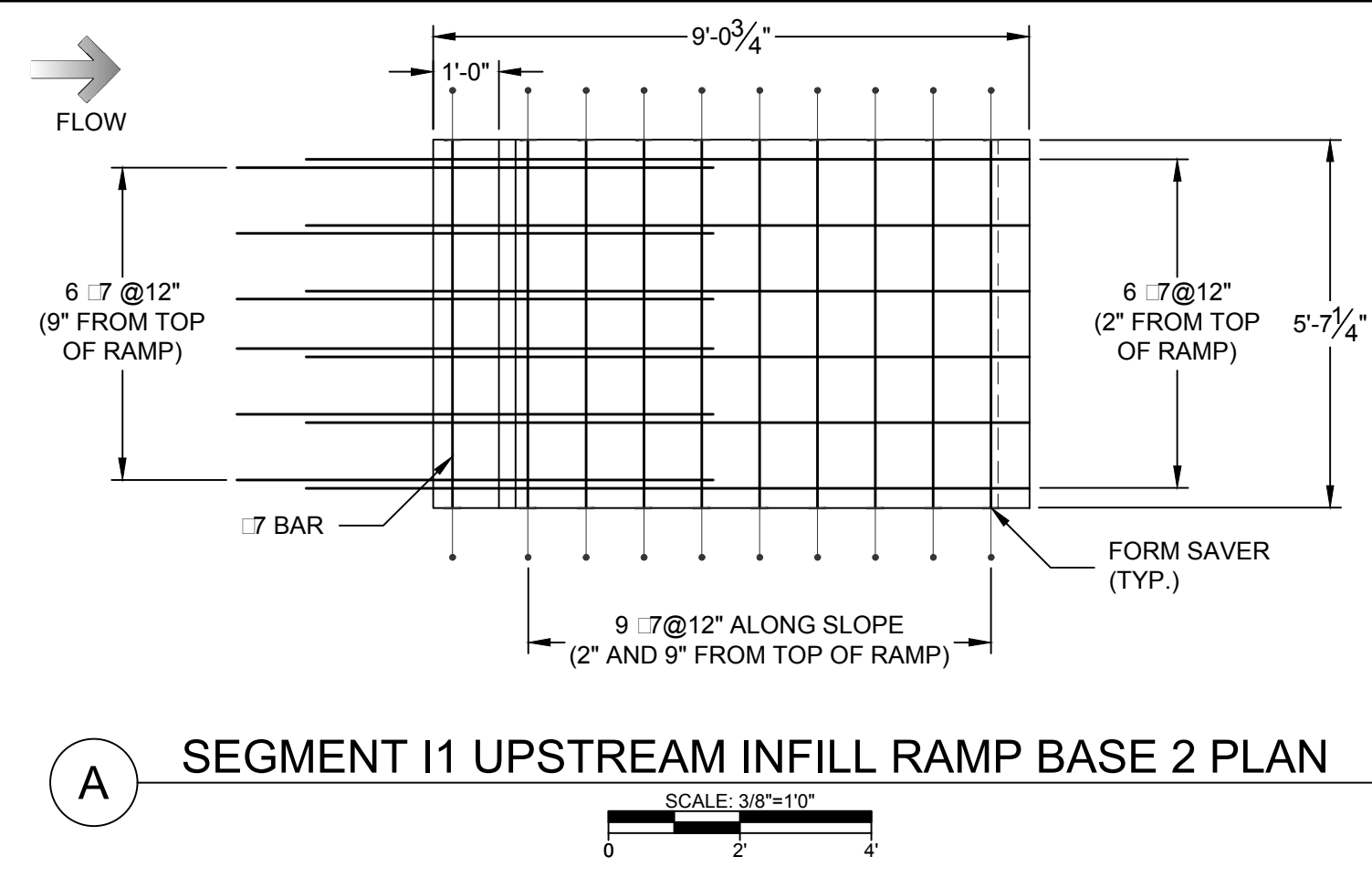
**MID STAGE UPSTREAM RAMP  
REINFORCEMENT DETAILS  
SEGMENT I1**

PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 48 OF 66

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTUREAL\_PIANO KEY WEIRD.WDG

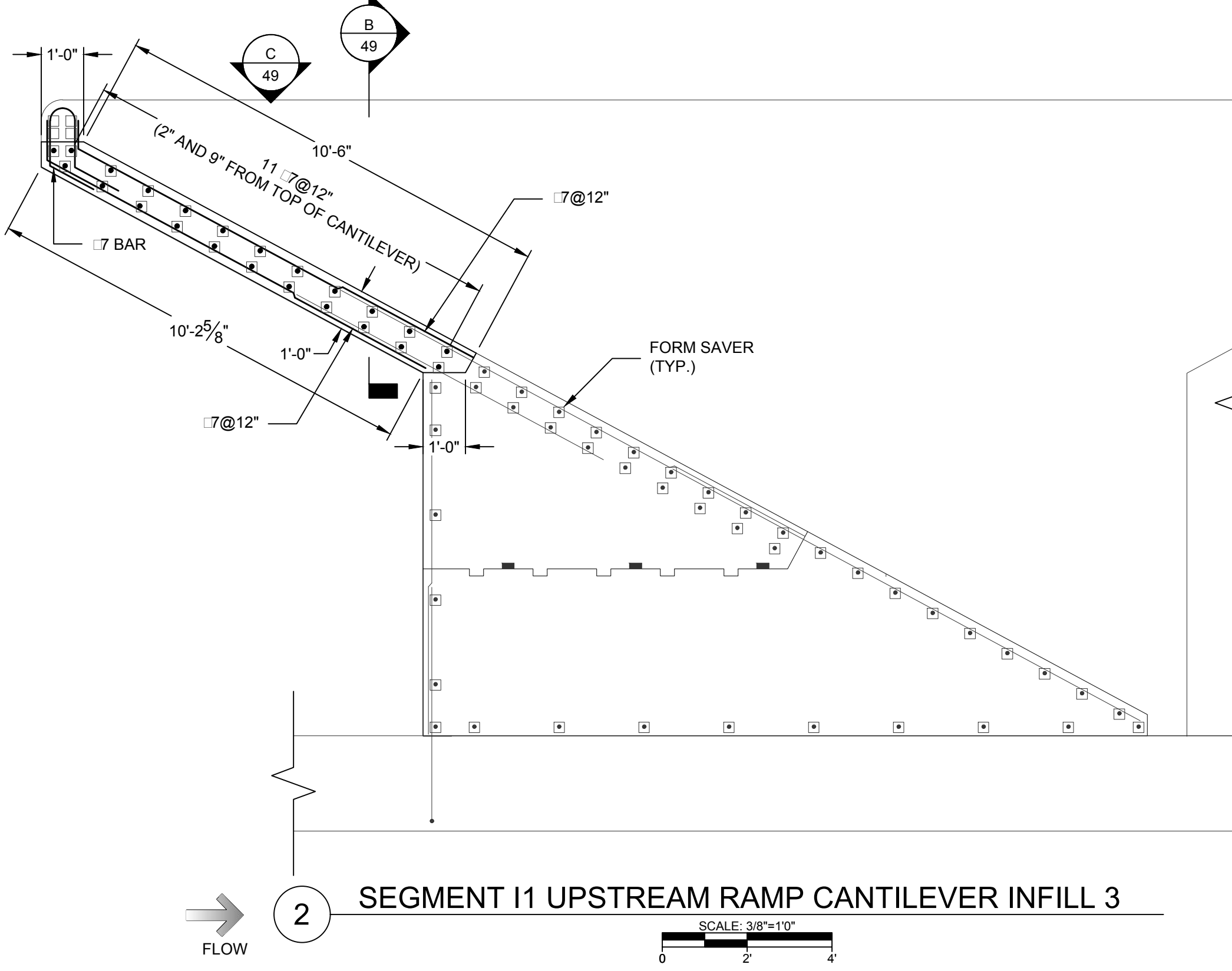


1 SEGMENT 11 UPSTREAM INFILL RAMP BASE 2

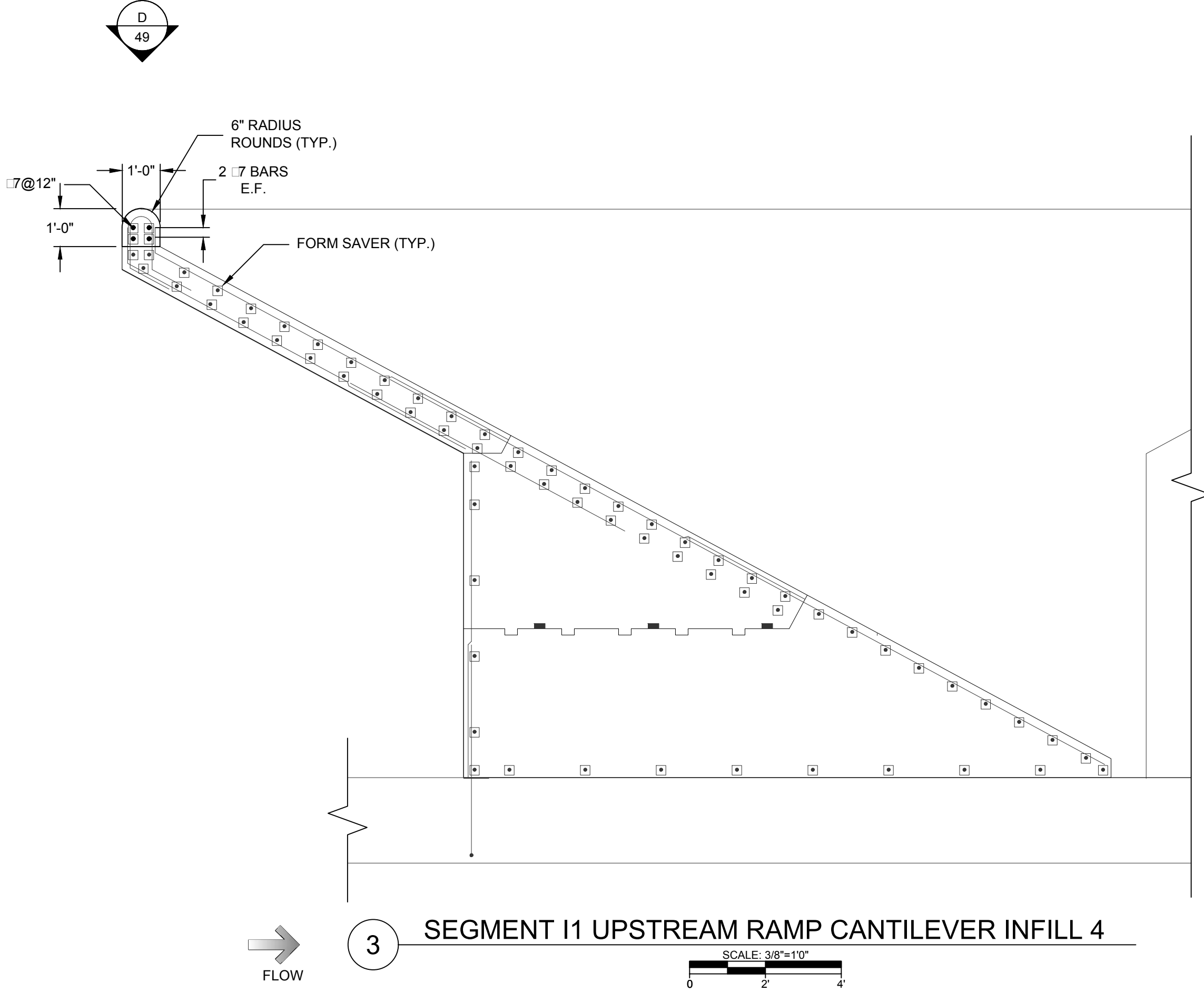


A SEGMENT 11 UPSTREAM INFILL RAMP BASE 2 PLAN

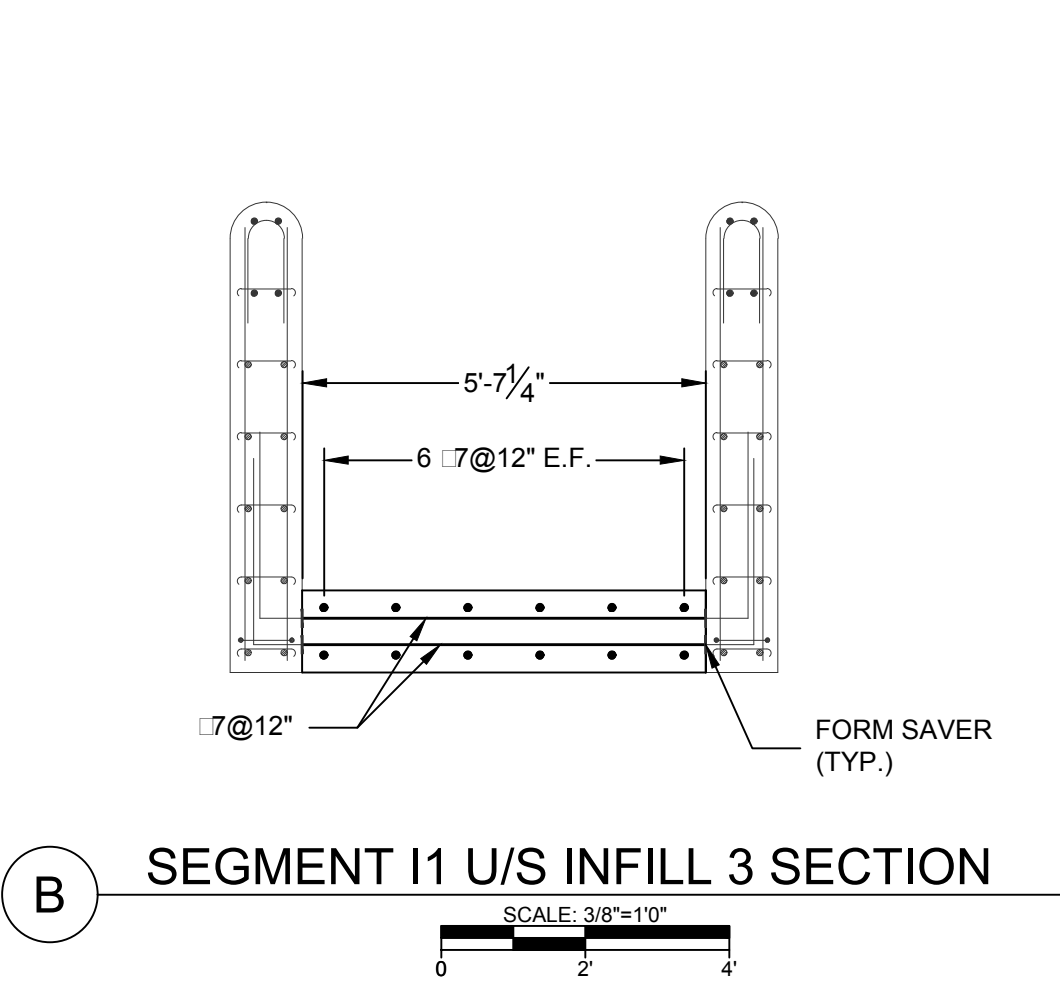
NOTE: FOR CONTRACTION JOINT BETWEEN PIANO KEY SEGMENTS I1 AND H1, PROVIDE 2-INCHES CLEARANCE FOR REINFORCEMENT EACH SIDE OF JOINT.



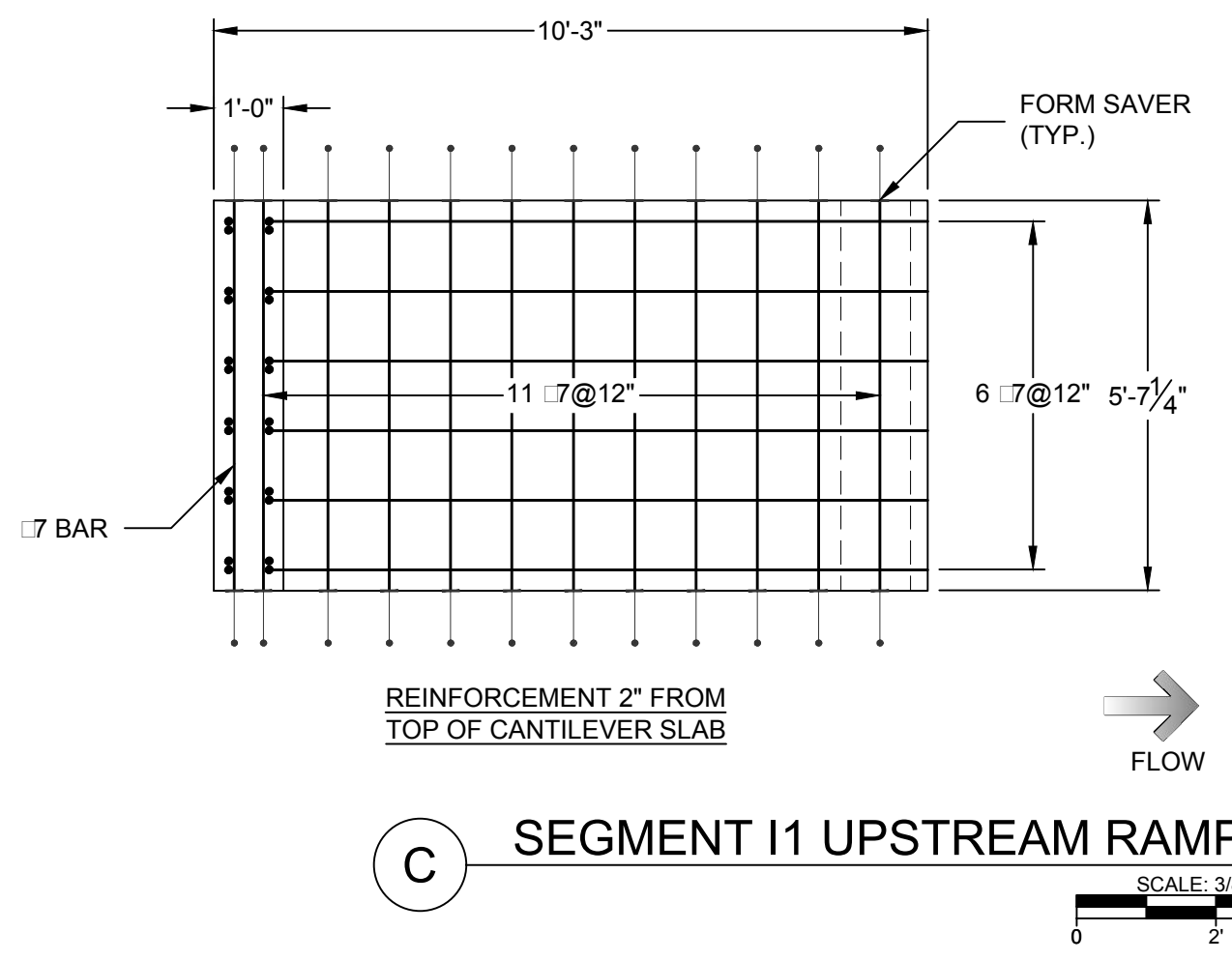
2 SEGMENT 11 UPSTREAM RAMP CANTILEVER INFILL 3



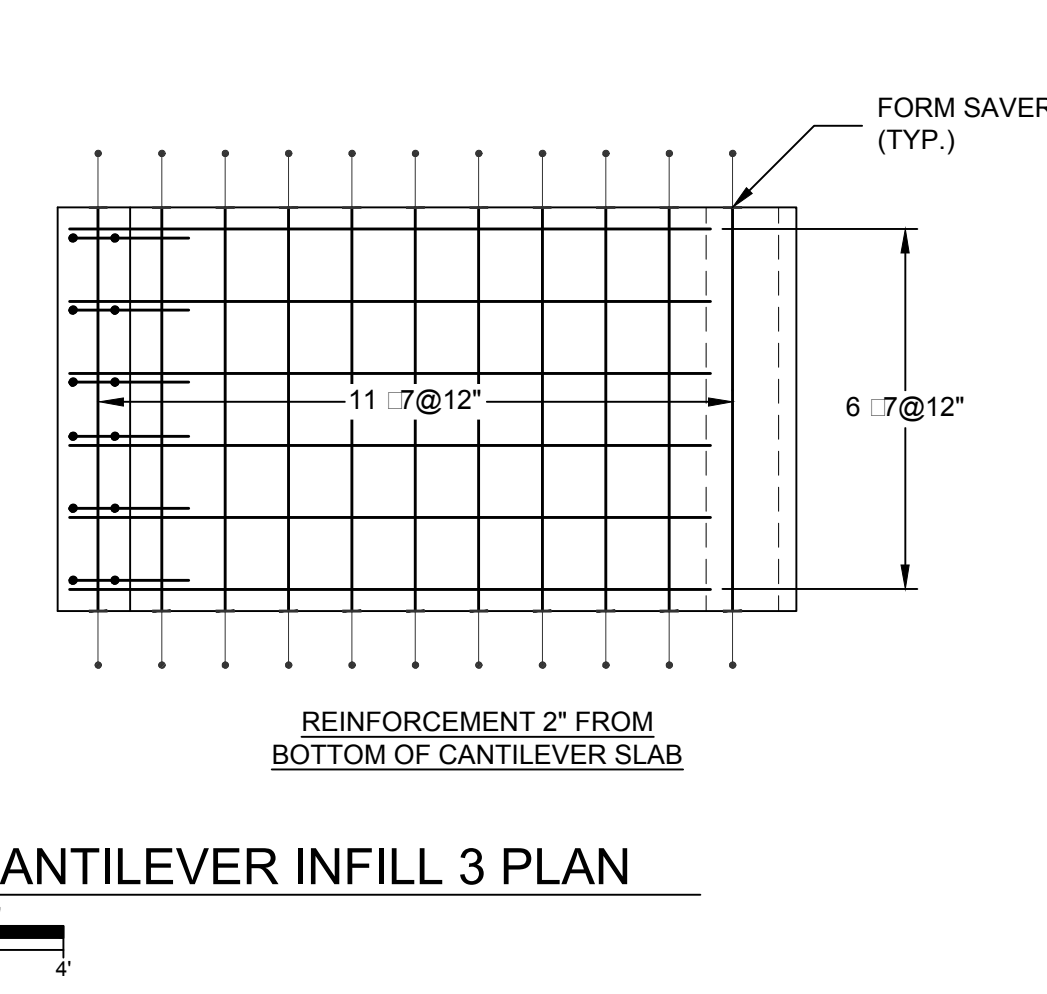
3 SEGMENT 11 UPSTREAM RAMP CANTILEVER INFILL 4



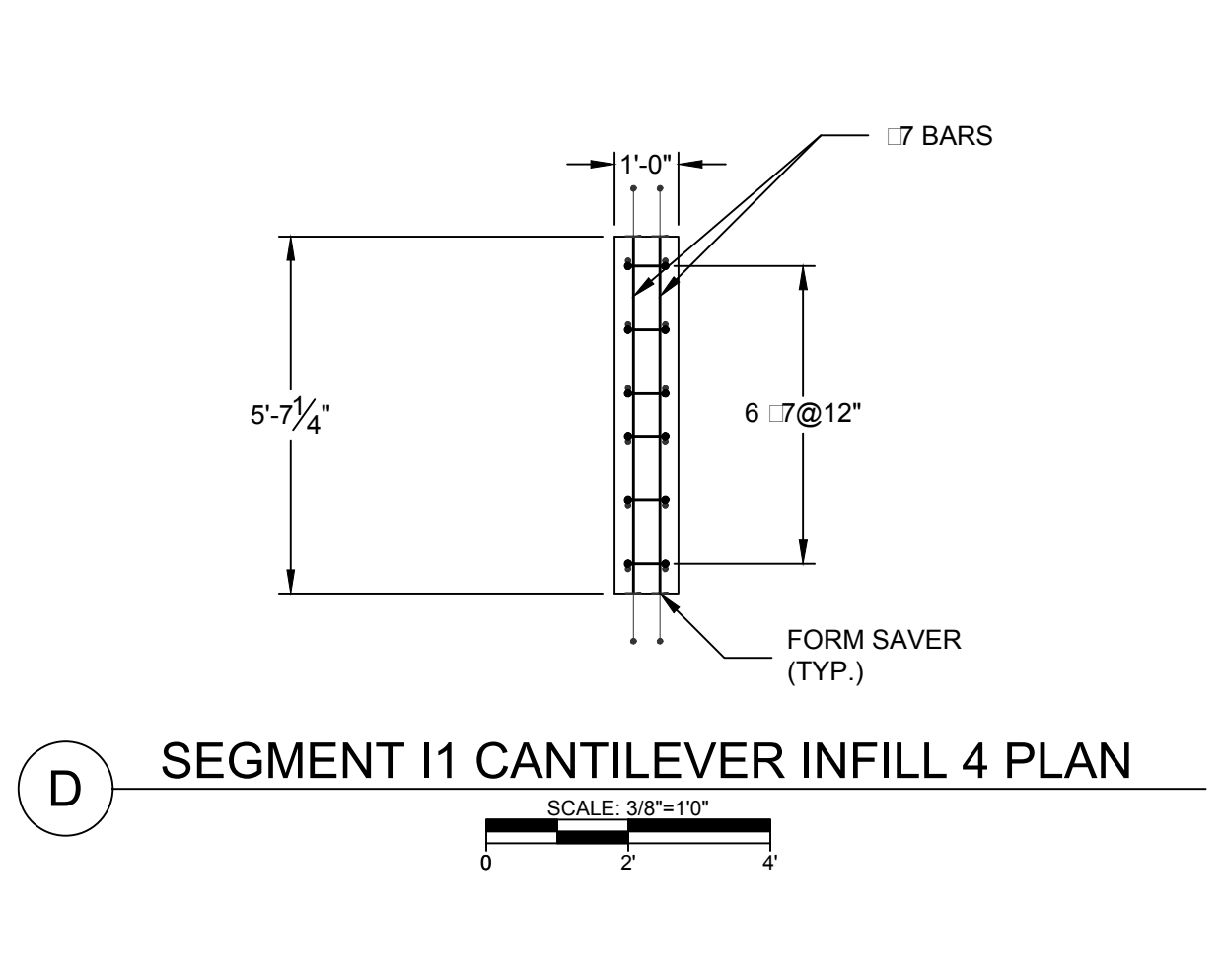
B SEGMENT 11 U/S INFILL 3 SECTION



C SEGMENT 11 UPSTREAM RAMP CANTILEVER INFILL 3 PLAN

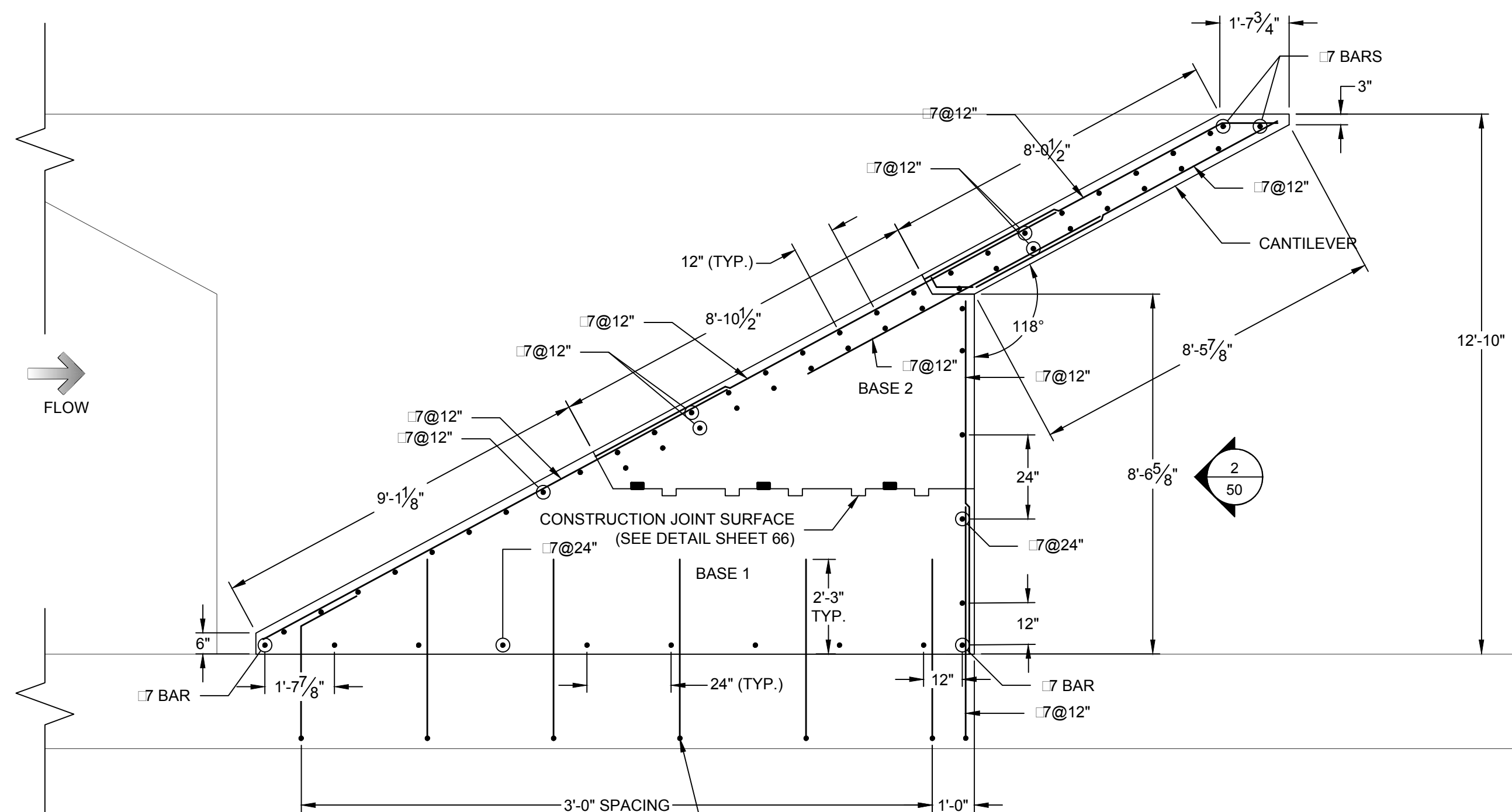


REINFORCEMENT 2" FROM BOTTOM OF CANTILEVER SLAB

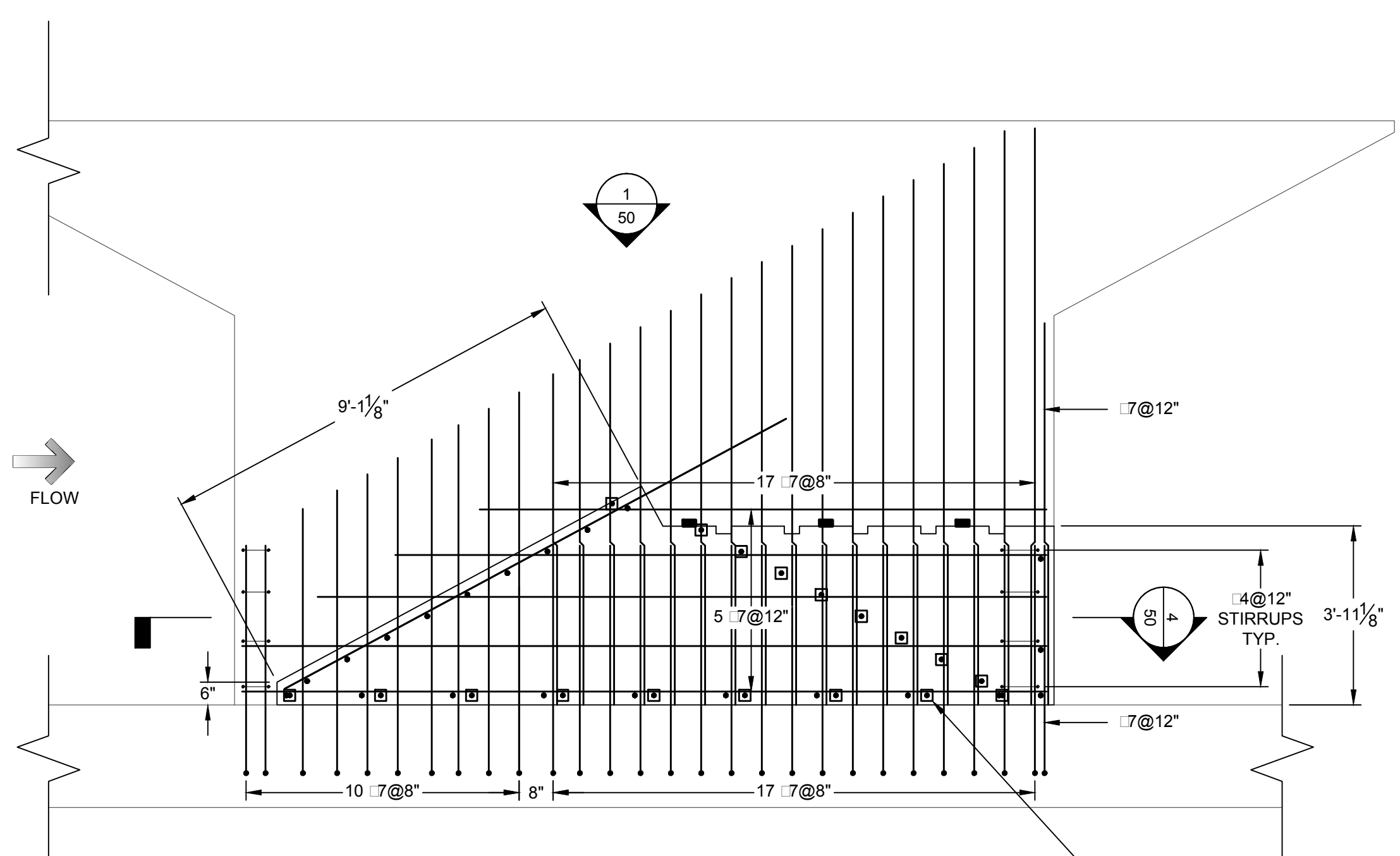


D SEGMENT 11 CANTILEVER INFILL 4 PLAN

PROJECT: 16C17043.00		DATE: 07/10/2017
SHEET: 49 OF 66		REVISIONS:
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA		DESCRIPTION
MID STAGE UPSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1		REV
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
		DATE: 07/10/17
<b>Schnabel ENGINEERING</b> 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / <a href="http://schnabel-eng.com">schnabel-eng.com</a>		RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885

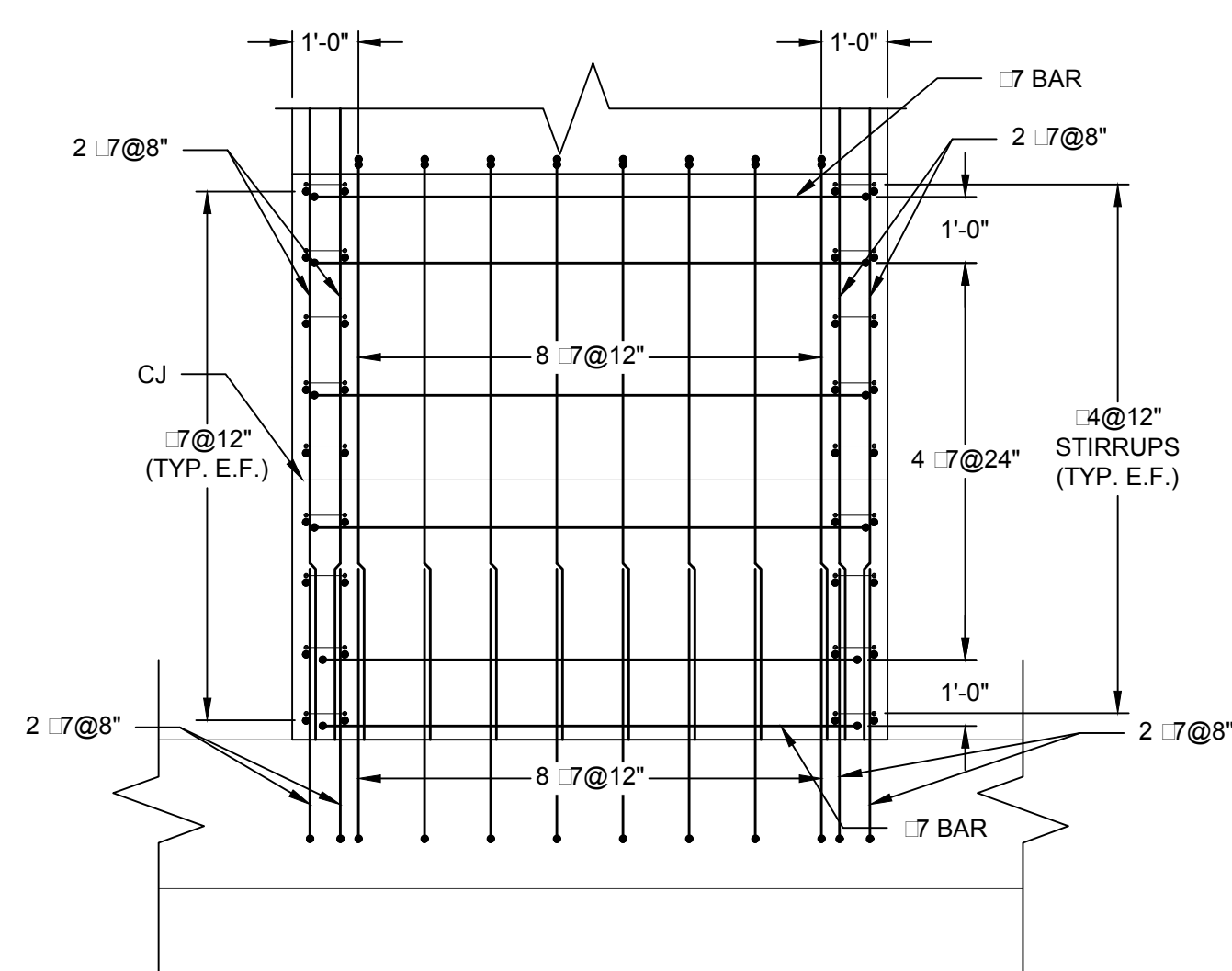


**A** SEGMENT I1 DOWNSTREAM RAMP SECTION  
SCALE: 3/8"=1'-0"

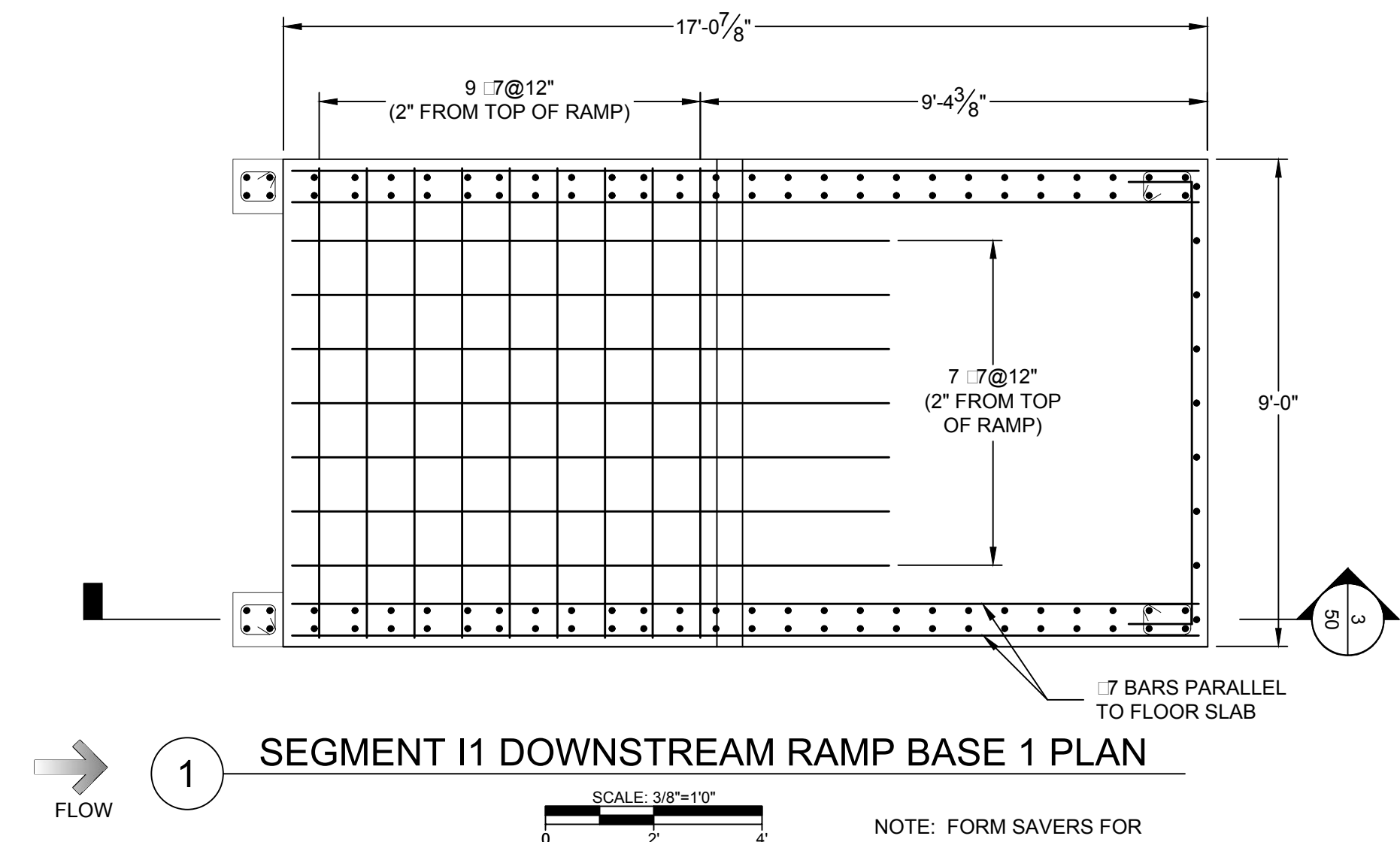


**3** SEGMENT I1 DOWNSTREAM RAMP BASE 1 SECTION  
SCALE: 3/8"=1'-0"

HORIZONTAL FORM SAVER (TYP.) TO BE INSTALLED IN AREA(S) SHOWN IN SEGMENT G1 DOWNSTREAM RAMP BASE 1. SEE FURTHER DETAILS SHEETS 37 AND 38. FORM SAVERS REQUIRED TO STRUCTURALLY TIE SEGMENT G1 DOWNSTREAM RAMP BASE 1 TO SEGMENT G1 INFILL(S).

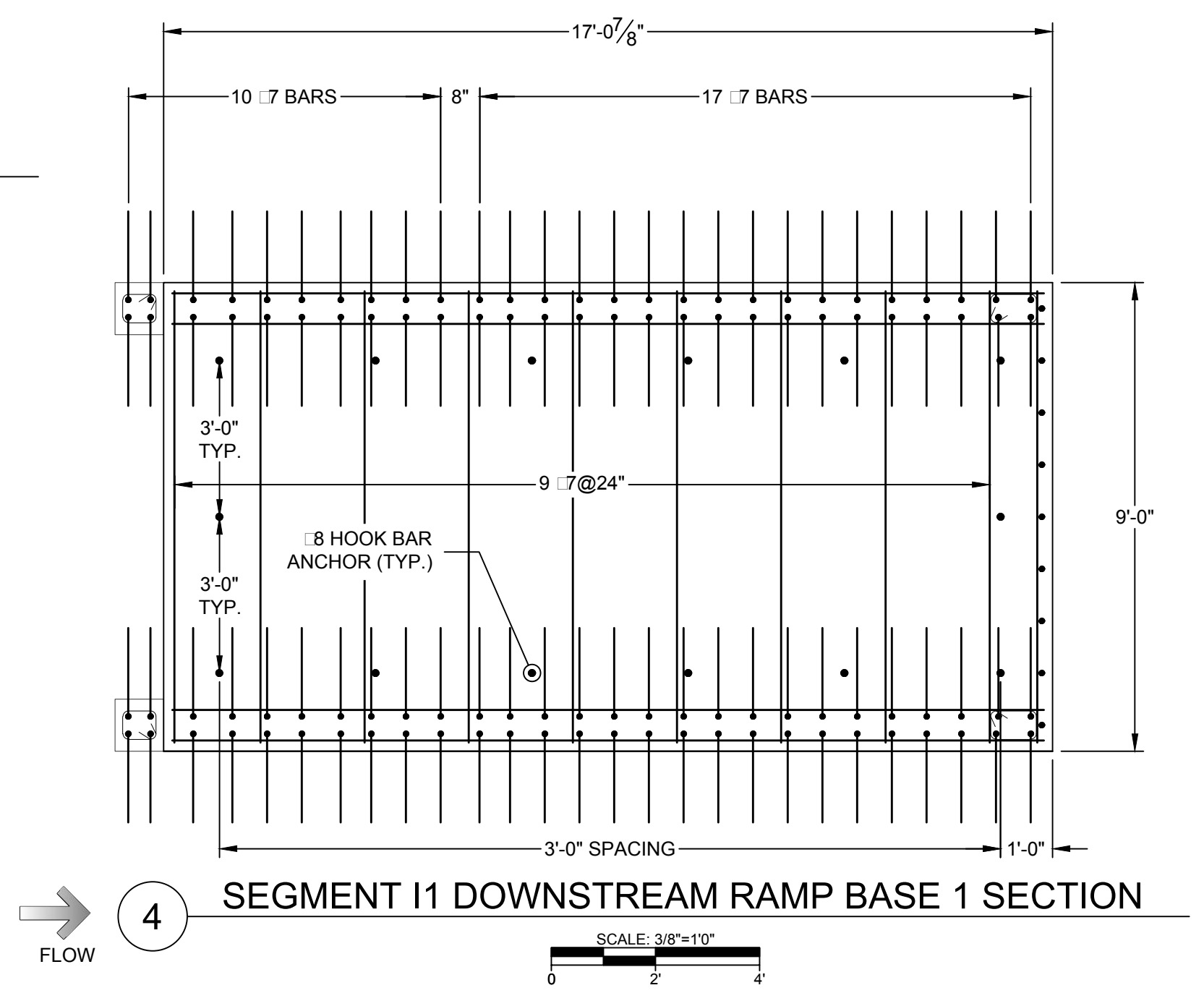


**2** SEGMENT I1 DOWNSTREAM RAMP ELEVATION  
SCALE: 3/8"=1'-0"



**1** SEGMENT I1 DOWNSTREAM RAMP BASE 1 PLAN  
SCALE: 3/8"=1'-0"

NOTE: FORM SAVERS FOR CONNECTION TO UPSTREAM RAMP NOT SHOWN FOR CLARITY.

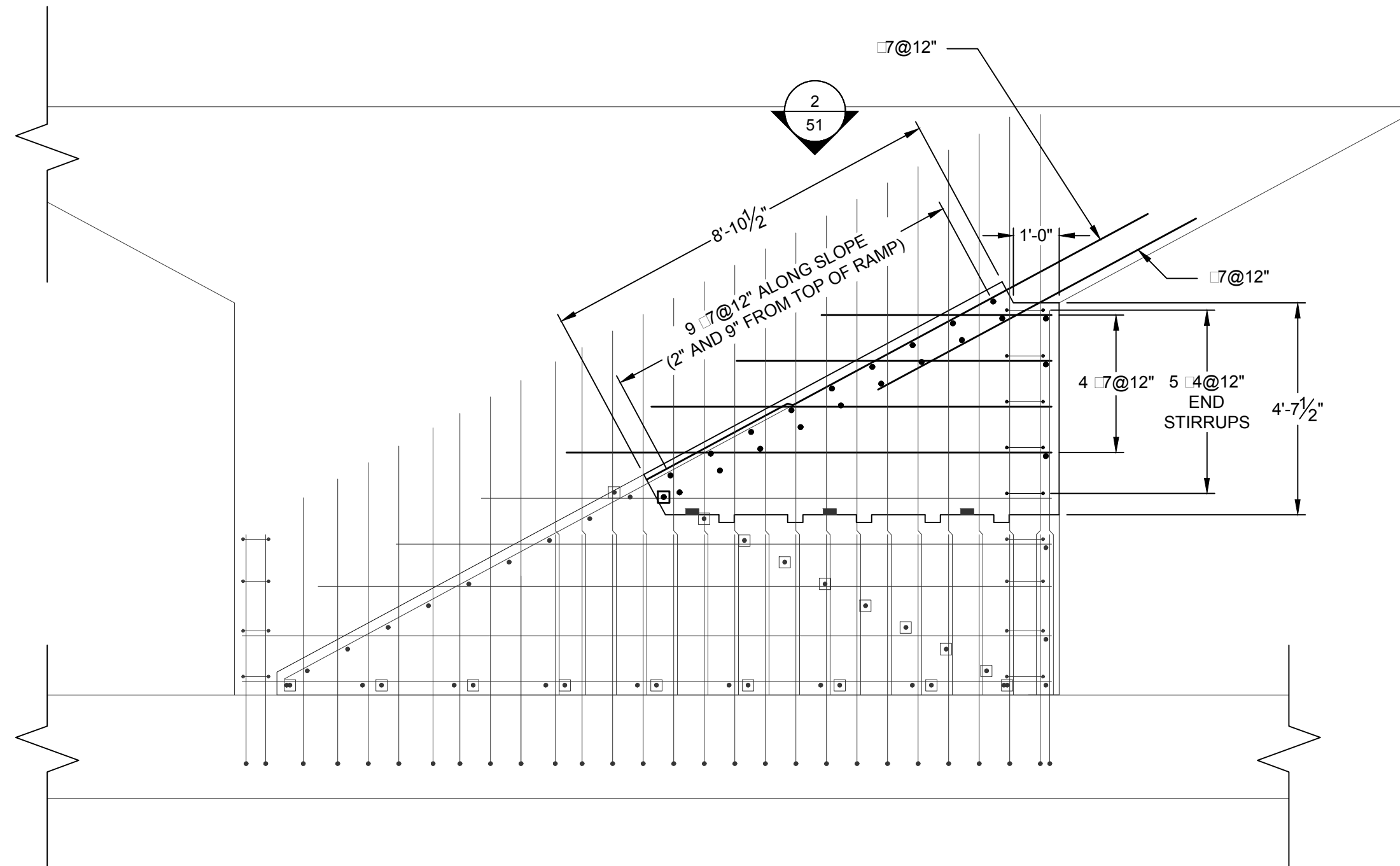


**4** SEGMENT I1 DOWNSTREAM RAMP BASE 1 SECTION  
SCALE: 3/8"=1'-0"

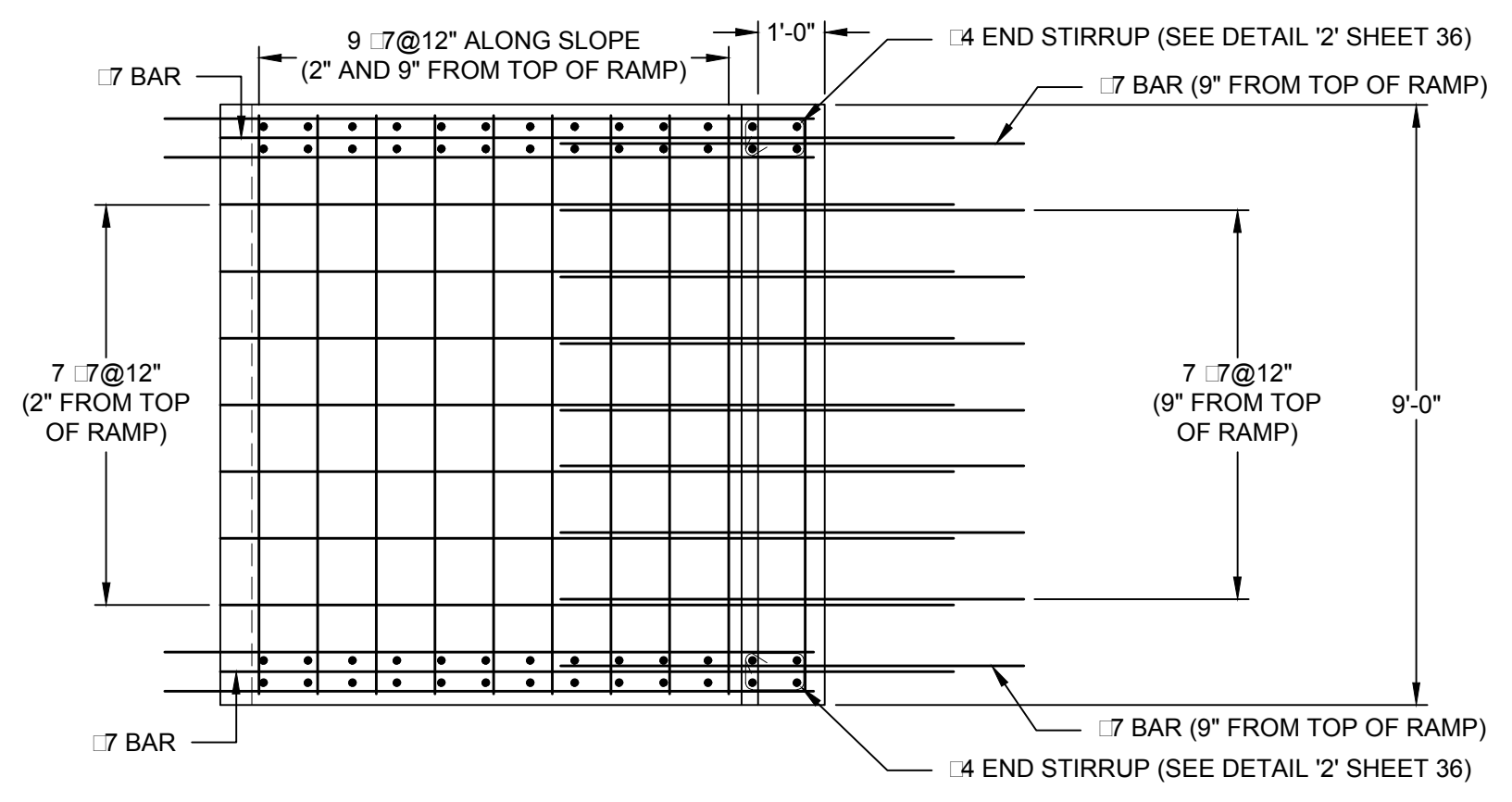
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURAL\PIANO KEY WEIRD.WMG

PROJECT: 16C17043.00	DATE: 07/10/2017
SHEET 50 OF 66	DESCRIPTION
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	LOW STAGE DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1
DESIGNED BY: JTD, JC	CHECKED BY: RPL, JRC
DRAWN BY: GHB, JSR	DATE: 07/10/17
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685	
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com	

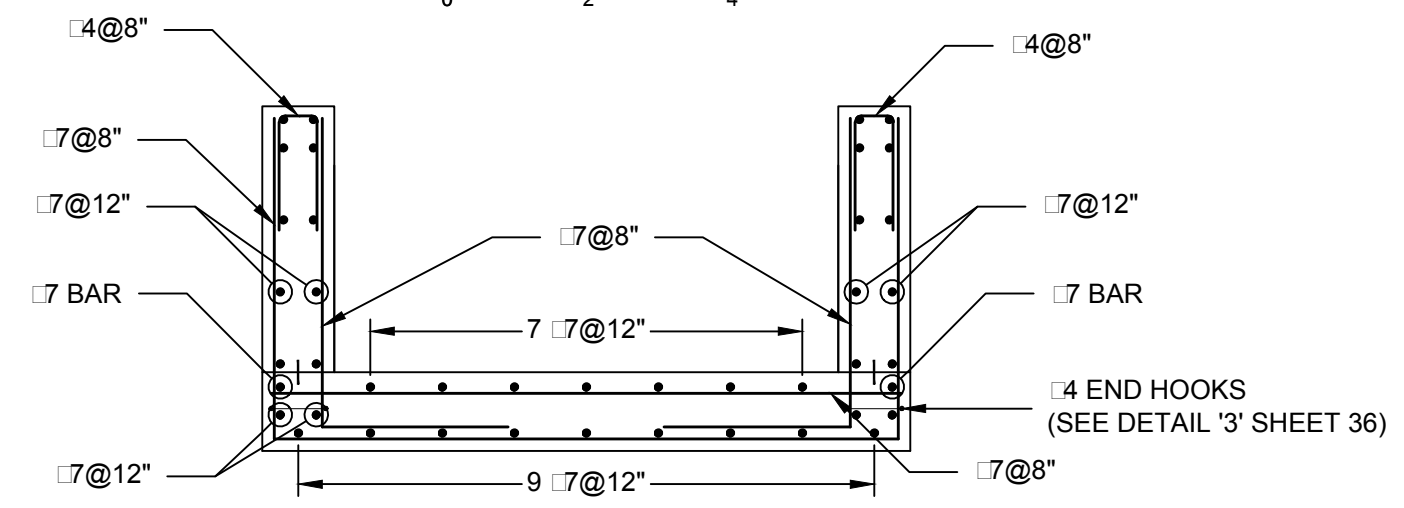
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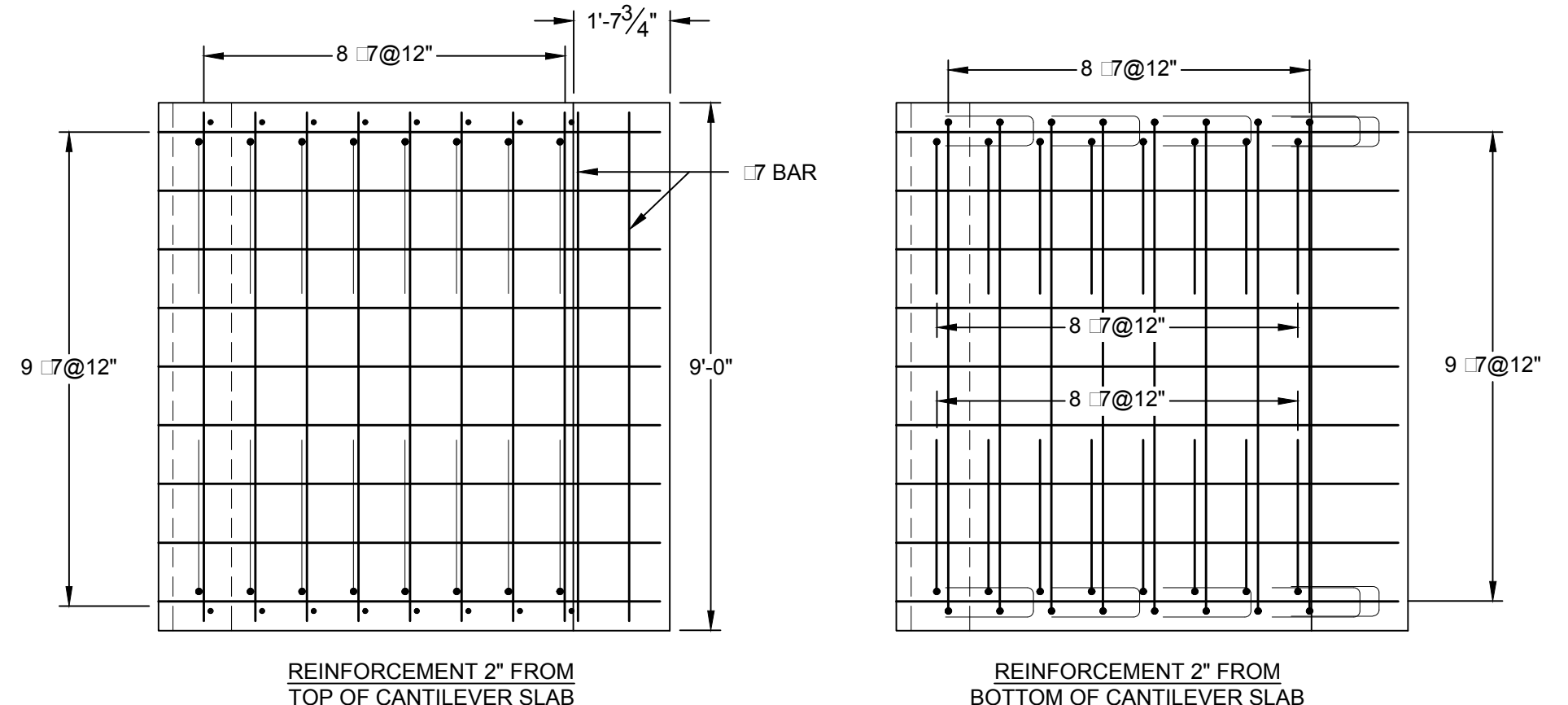
**1** SEGMENT I1 DOWNSTREAM RAMP BASE 2  
SCALE: 3/8"=1'0"  
FLOW



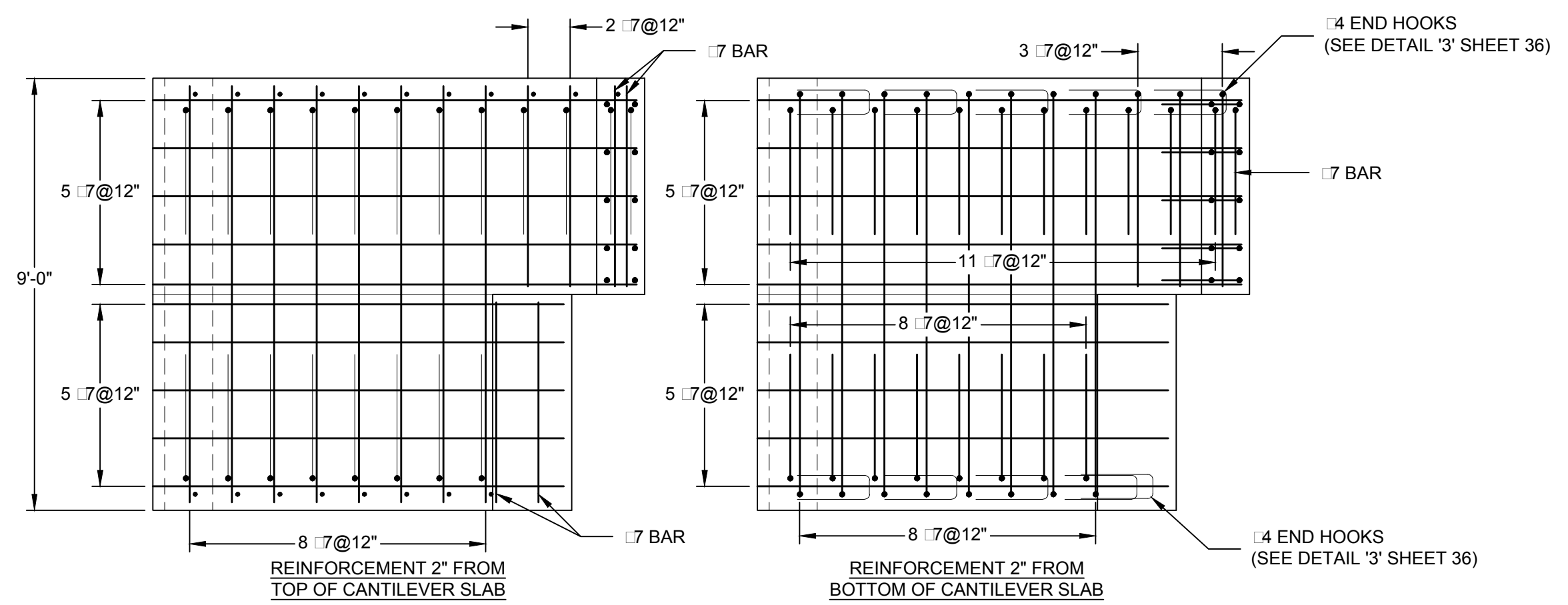
**2** SEGMENT I1 DOWNSTREAM RAMP BASE 2 PLAN  
SCALE: 3/8"=1'0"



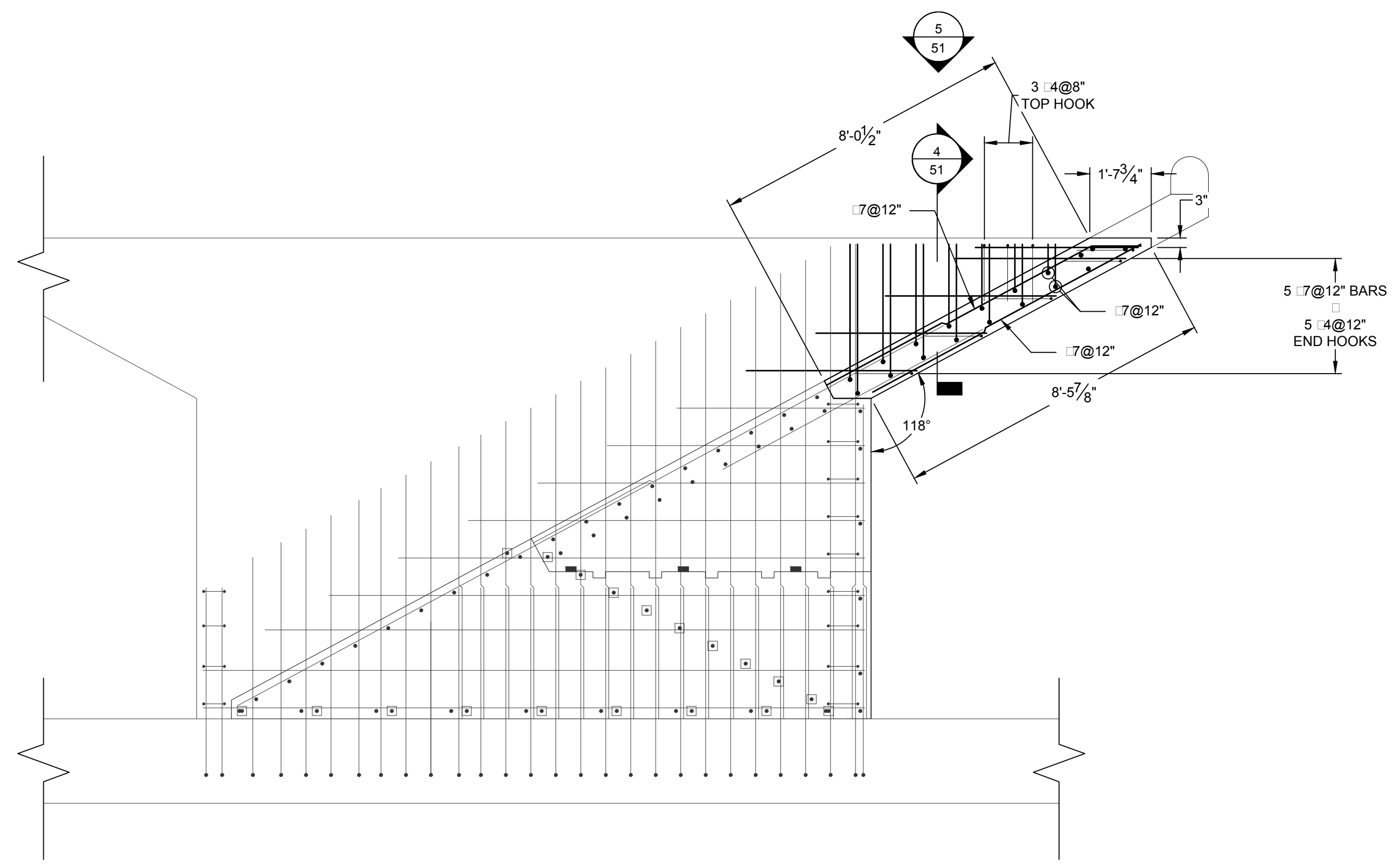
**4** SEGMENT I1 DOWNSTREAM RAMP CANTILEVER SECTION  
SCALE: 3/8"=1'0"



**5** SEGMENT I1 DOWNSTREAM RAMP CANTILEVER PLAN  
SCALE: 3/8"=1'0"  
LOW-STAGE



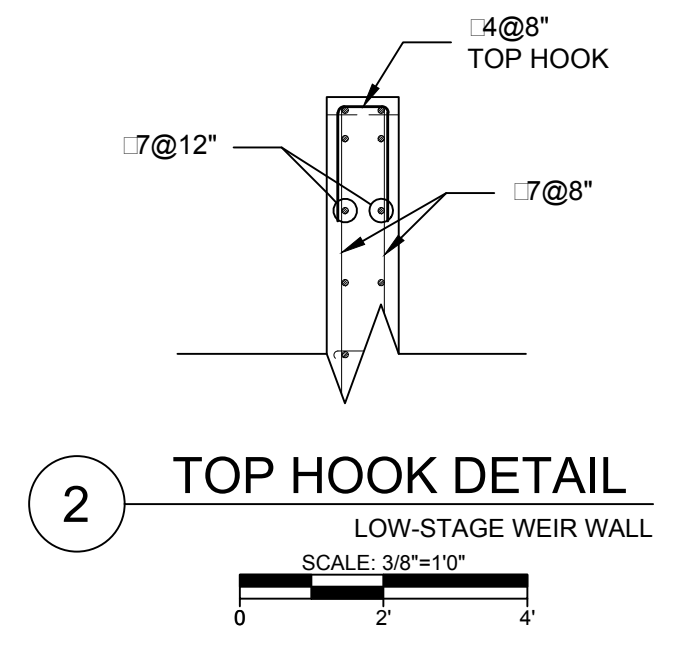
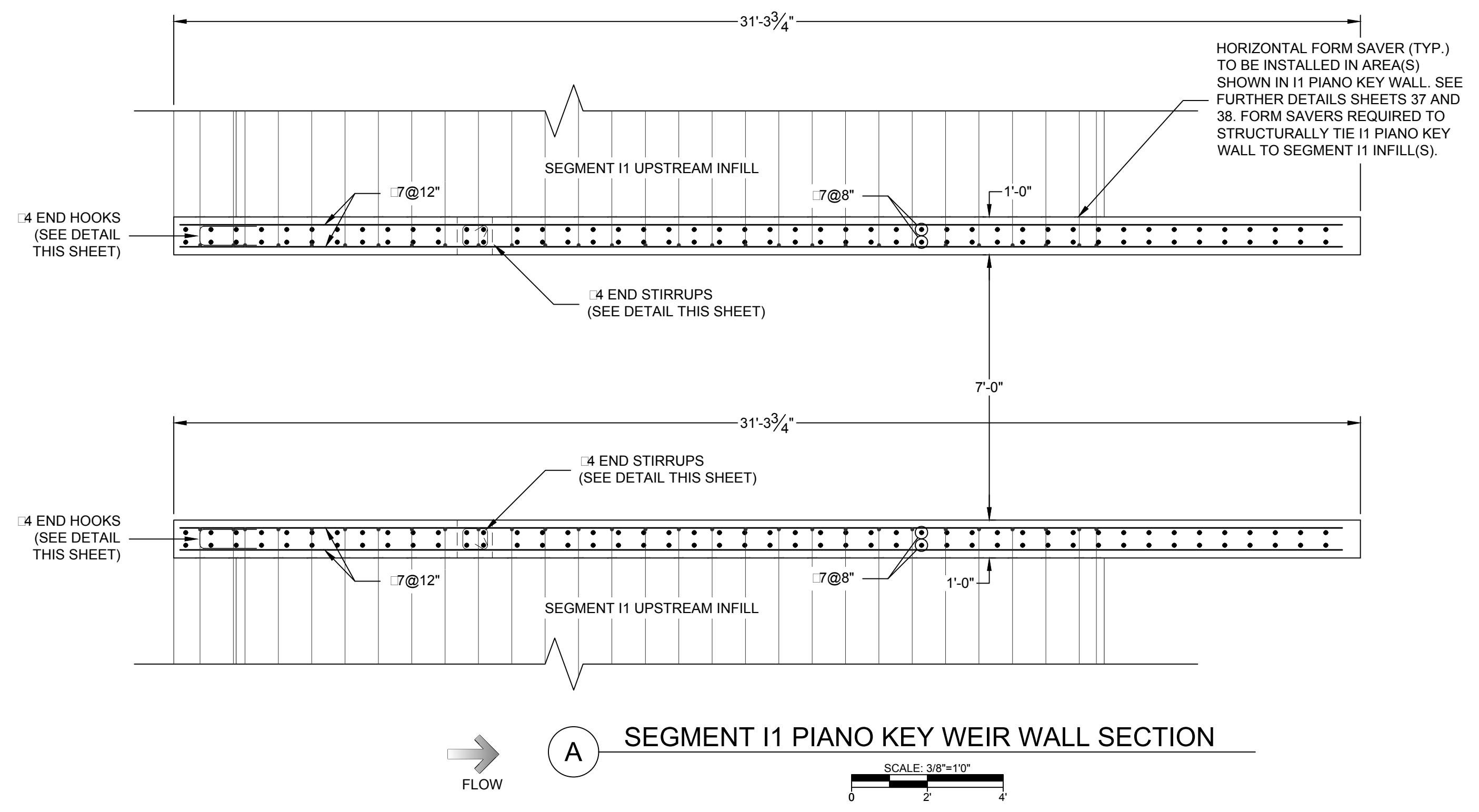
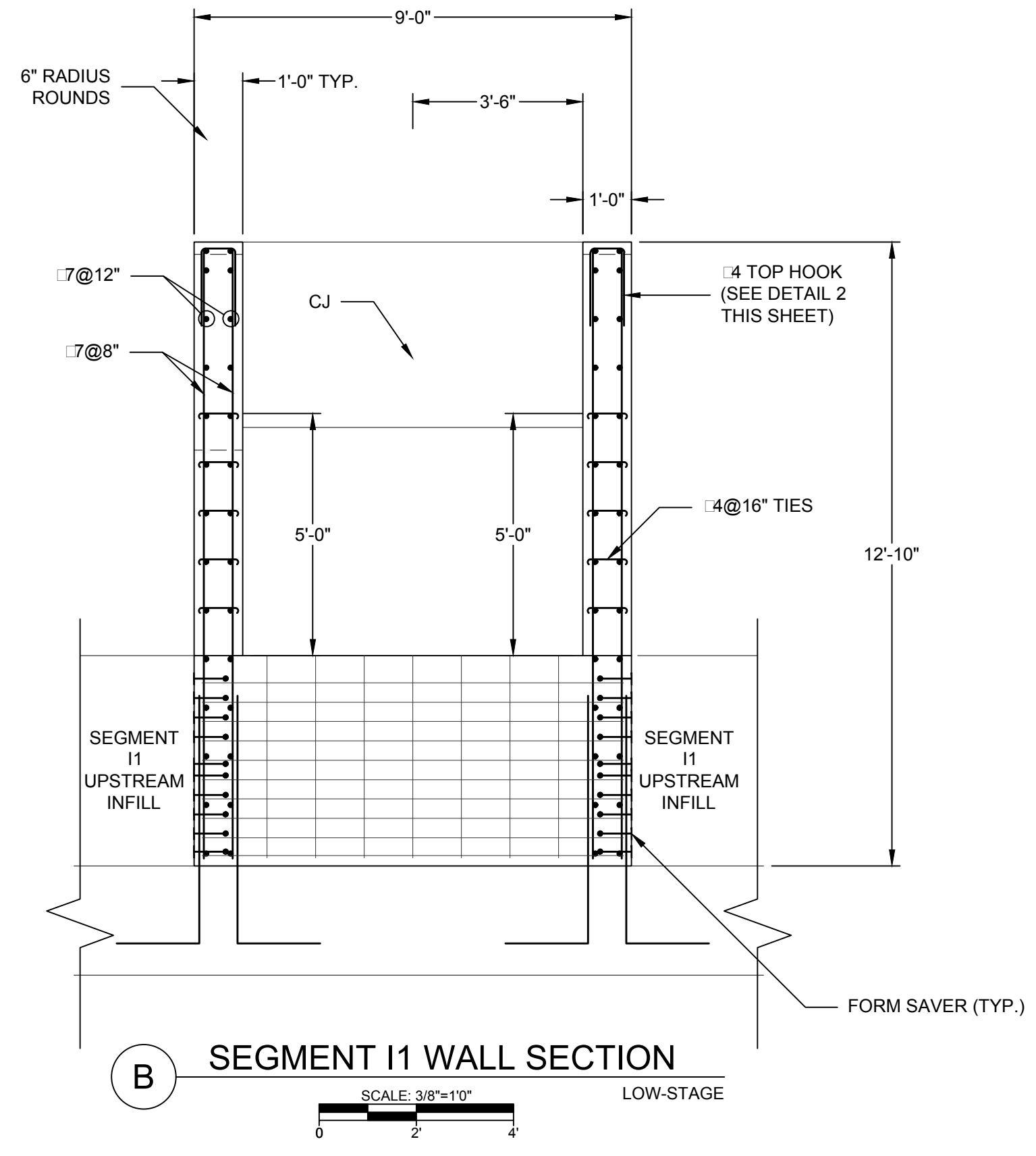
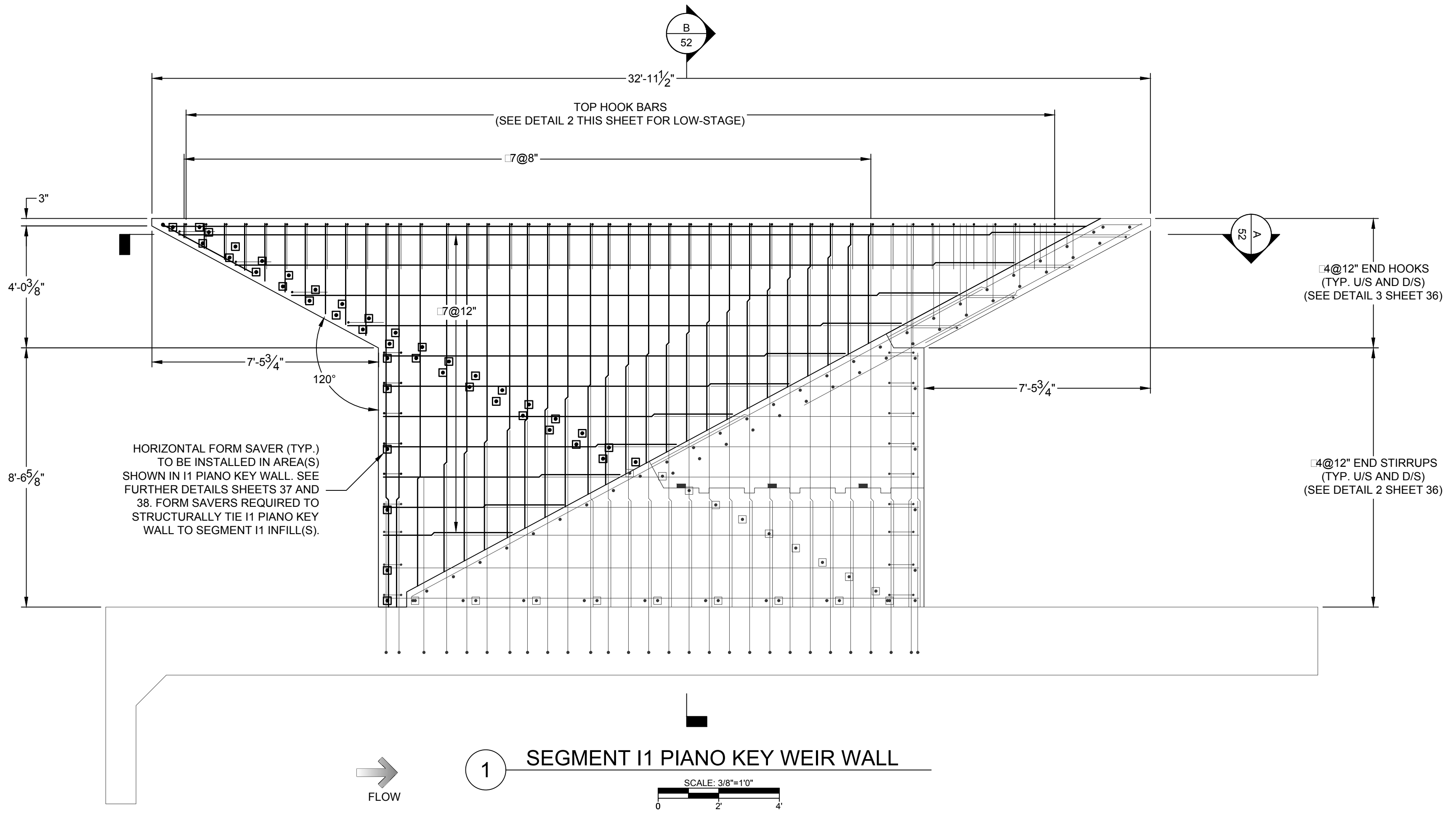
**5** SEGMENT I1 DOWNSTREAM RAMP CANTILEVER PLAN  
SCALE: 3/8"=1'0"  
MID-STAGE TO LOW-STAGE TRANSITION



**3** SEGMENT I1 DOWNSTREAM RAMP CANTILEVER  
SCALE: 3/8"=1'0"  
FLOW

DATE	
DESCRIPTION	
REV	
CHECKED BY:	RPL_JRC
DRAWN BY:	GHB_JSJ
DESIGNED BY:	JTD_JC
<b>RANDALL P. BASS, P.E.</b> <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685	
 6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA <b>LOW STAGE DOWNSTREAM          RAMP REINFORCEMENT          DETAILS SEGMENT I1</b>	
PROJECT: 16C17043.00 DATE: 07/10/2017 SHEET 51 OF 66	

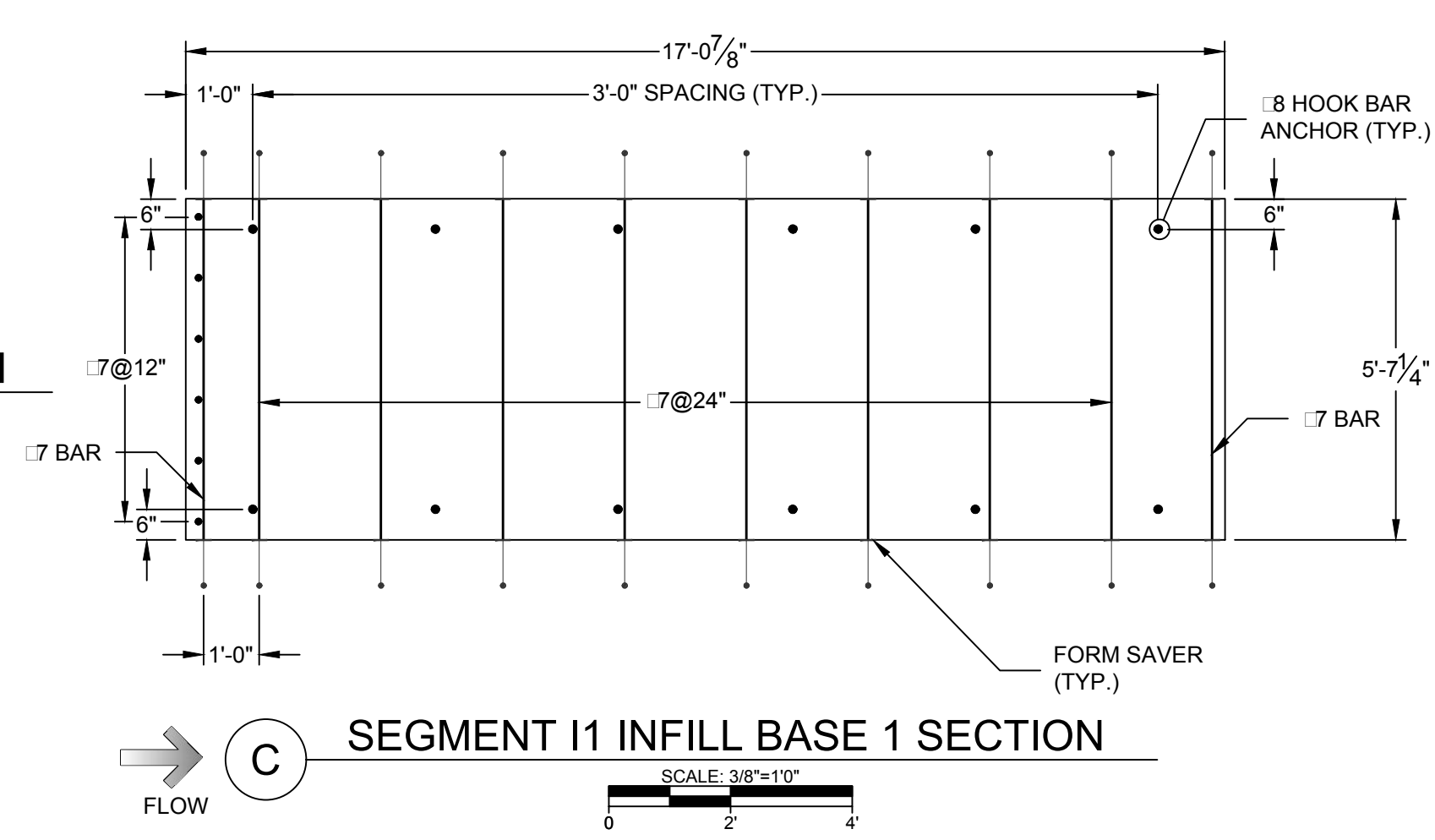
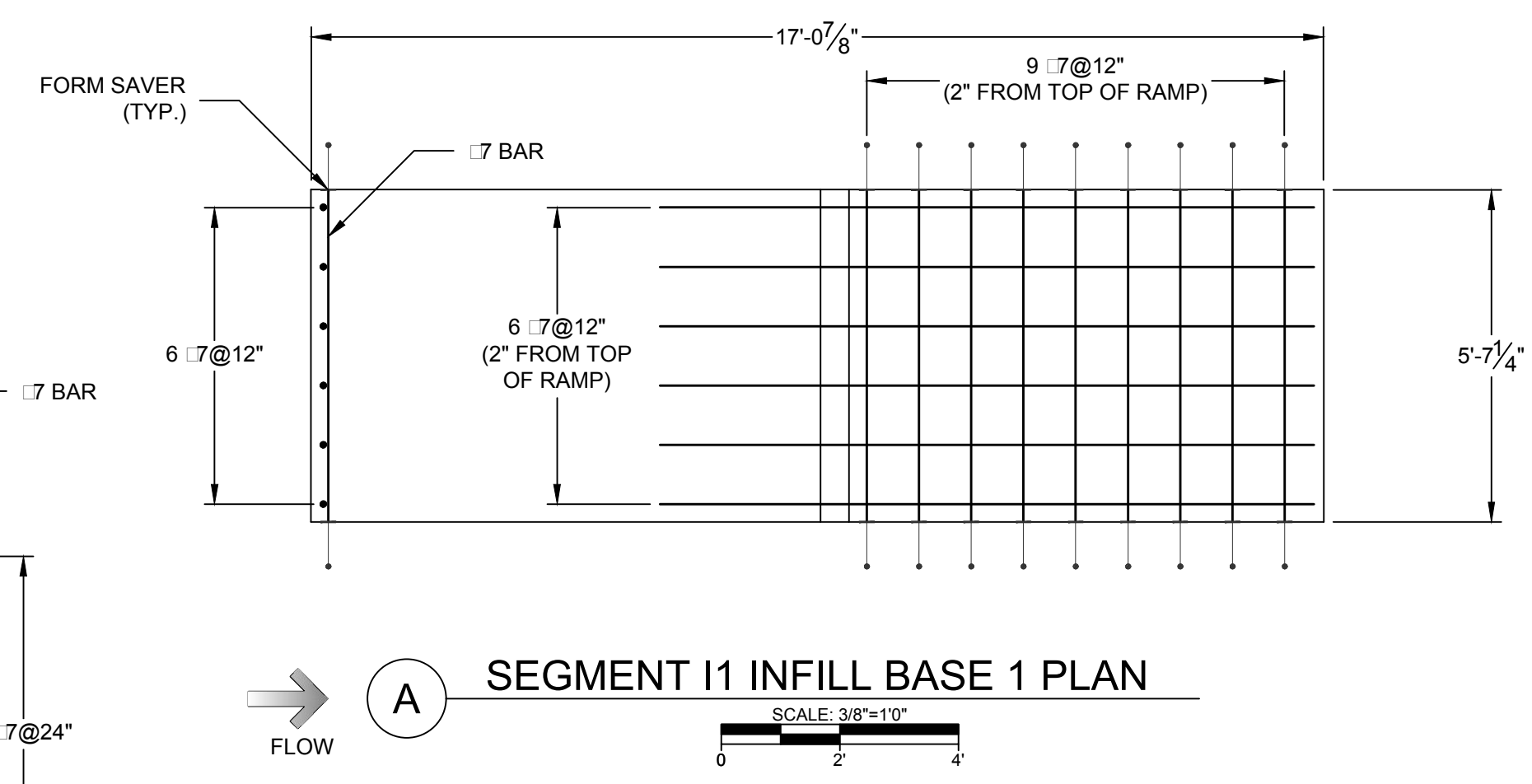
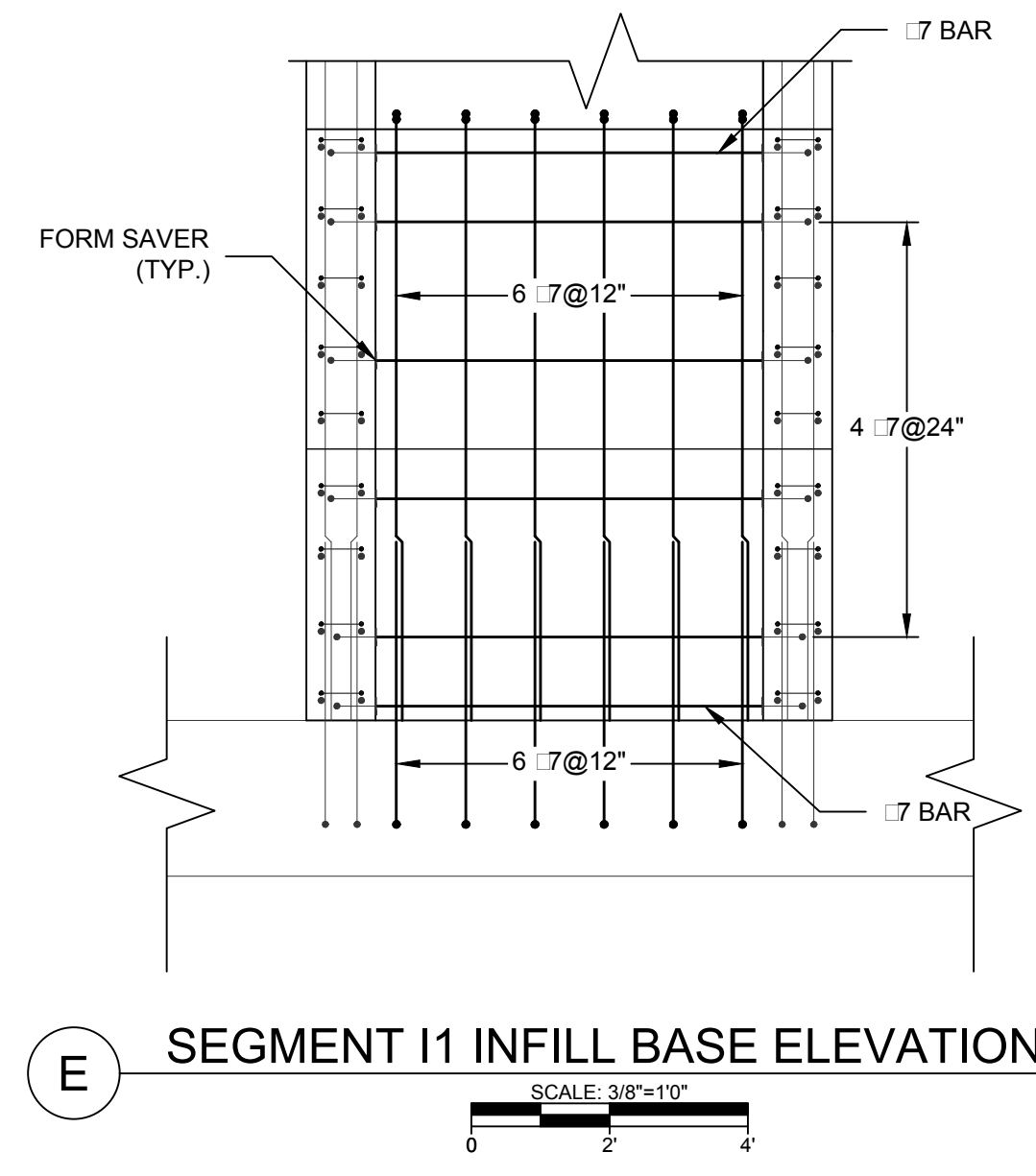
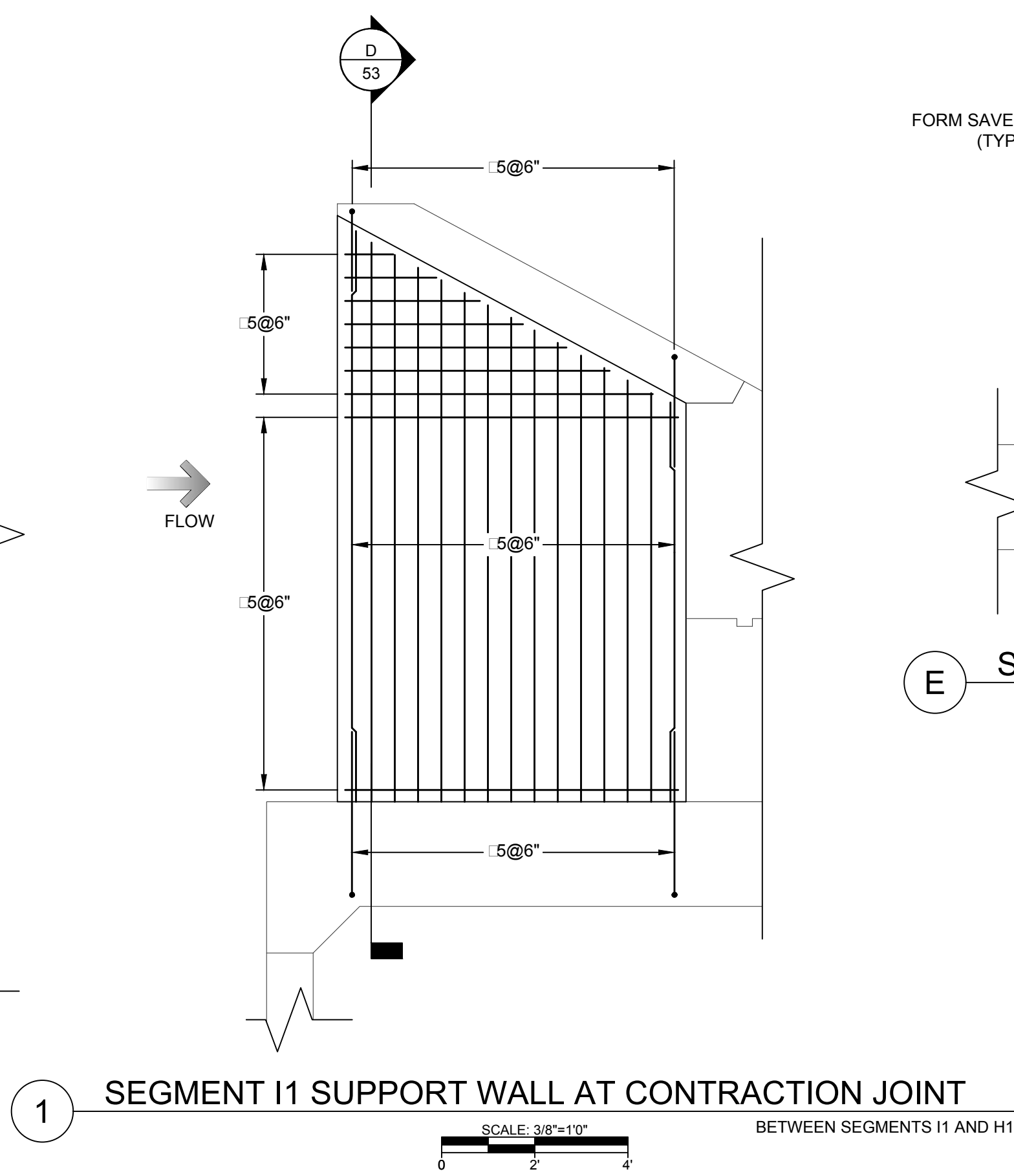
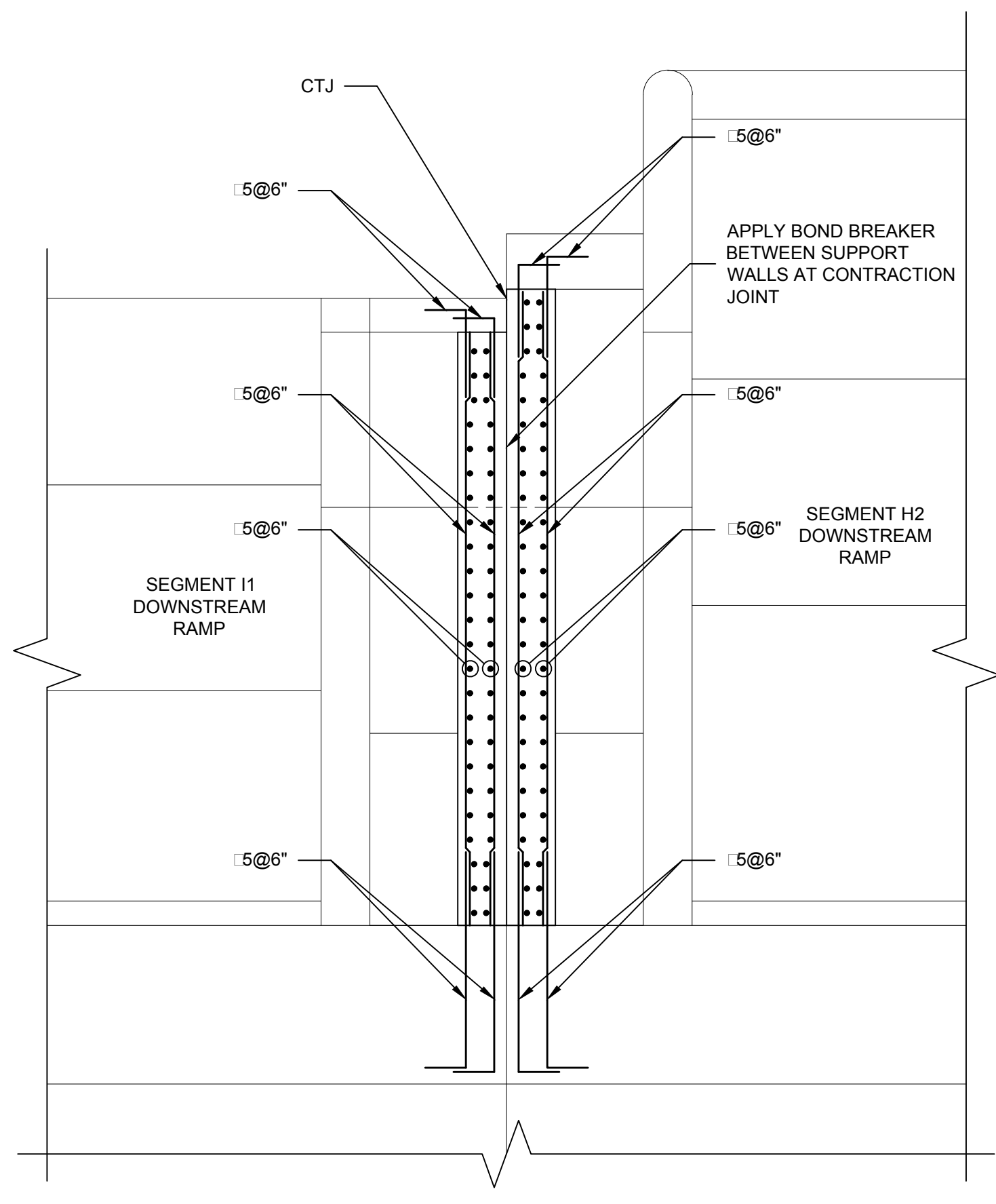
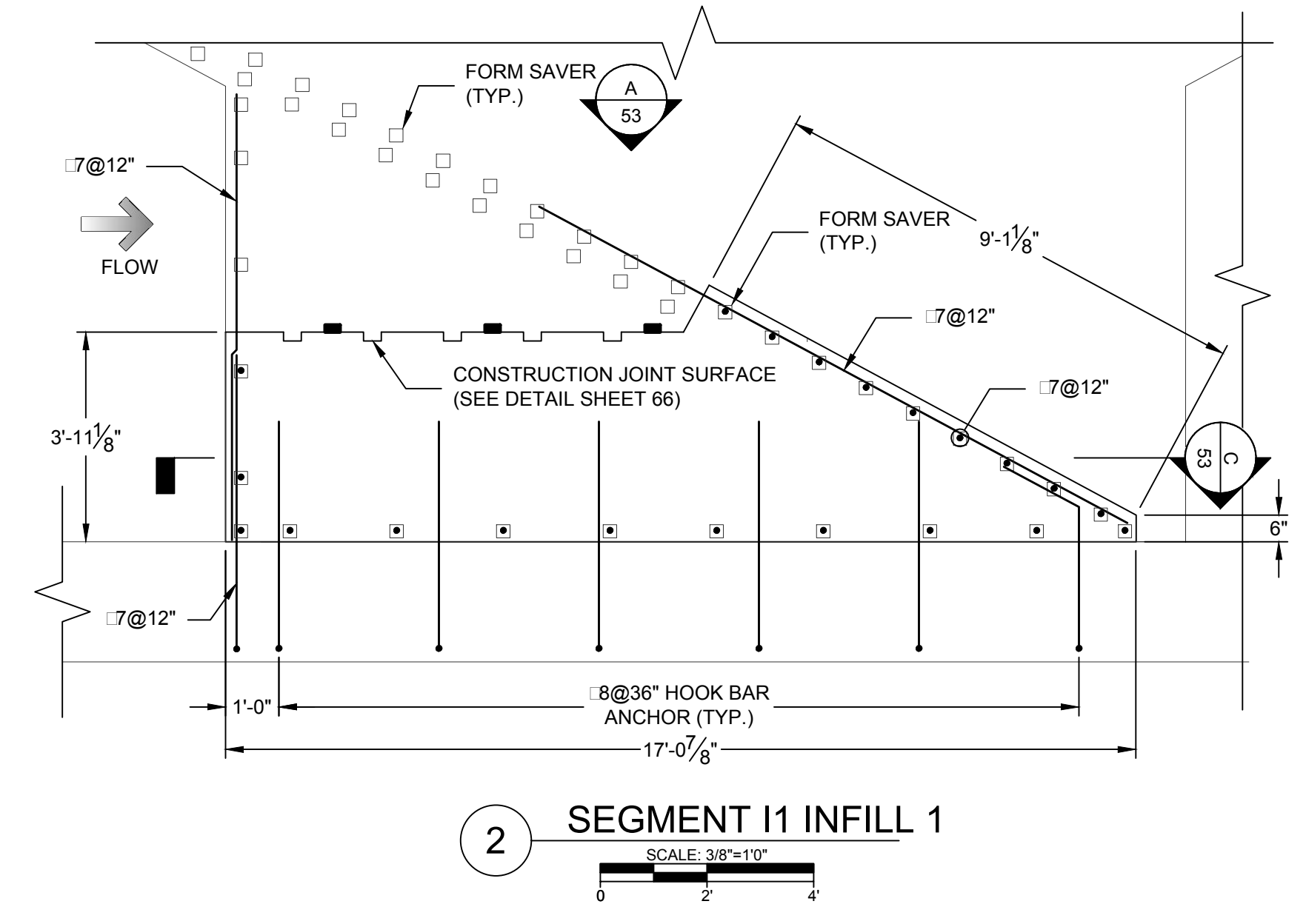
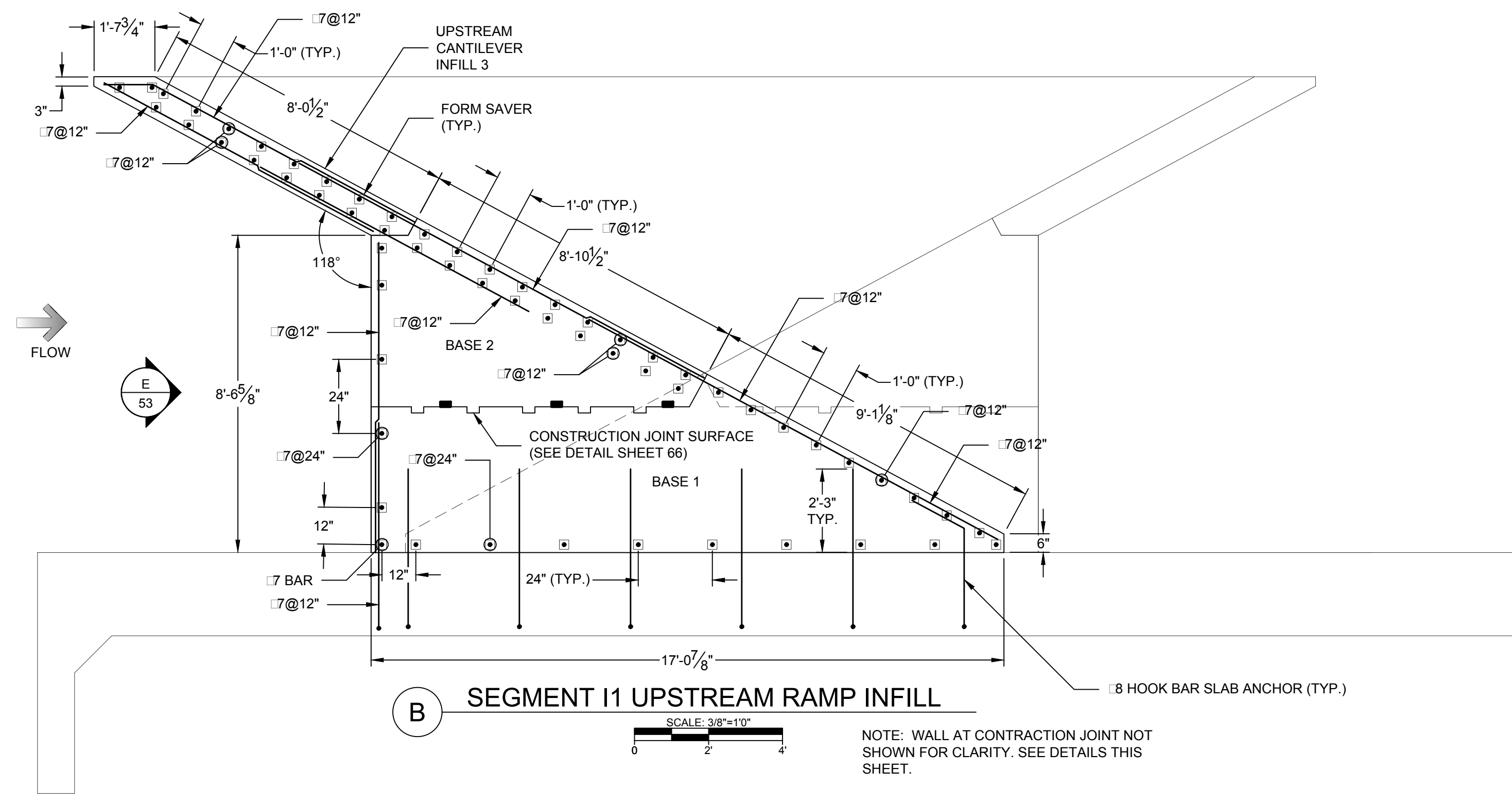
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURAL\_PIANO\_KEY\_WEIR.DWG



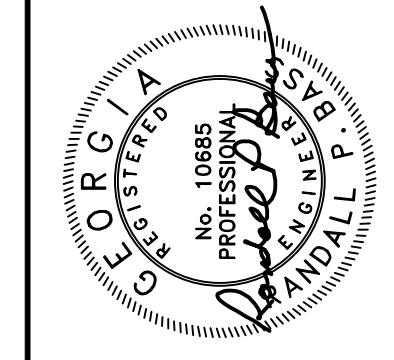
PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 52 OF 66
<p>CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA</p> <p>LOW STAGE DOWNSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1</p>		
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
<p>RANDALL P. BASS, P.E.</p> <p><i>Randall P. Bass</i></p> <p>GEORGIA PROFESSIONAL ENGINEER NO. 10685</p>		
<p>NO. 10685 PROFESSIONAL ENGINEER RANDALL P. BASS</p>		
<p>DATE: 07/10/17</p>		DESCRIPTION
REV		DATE



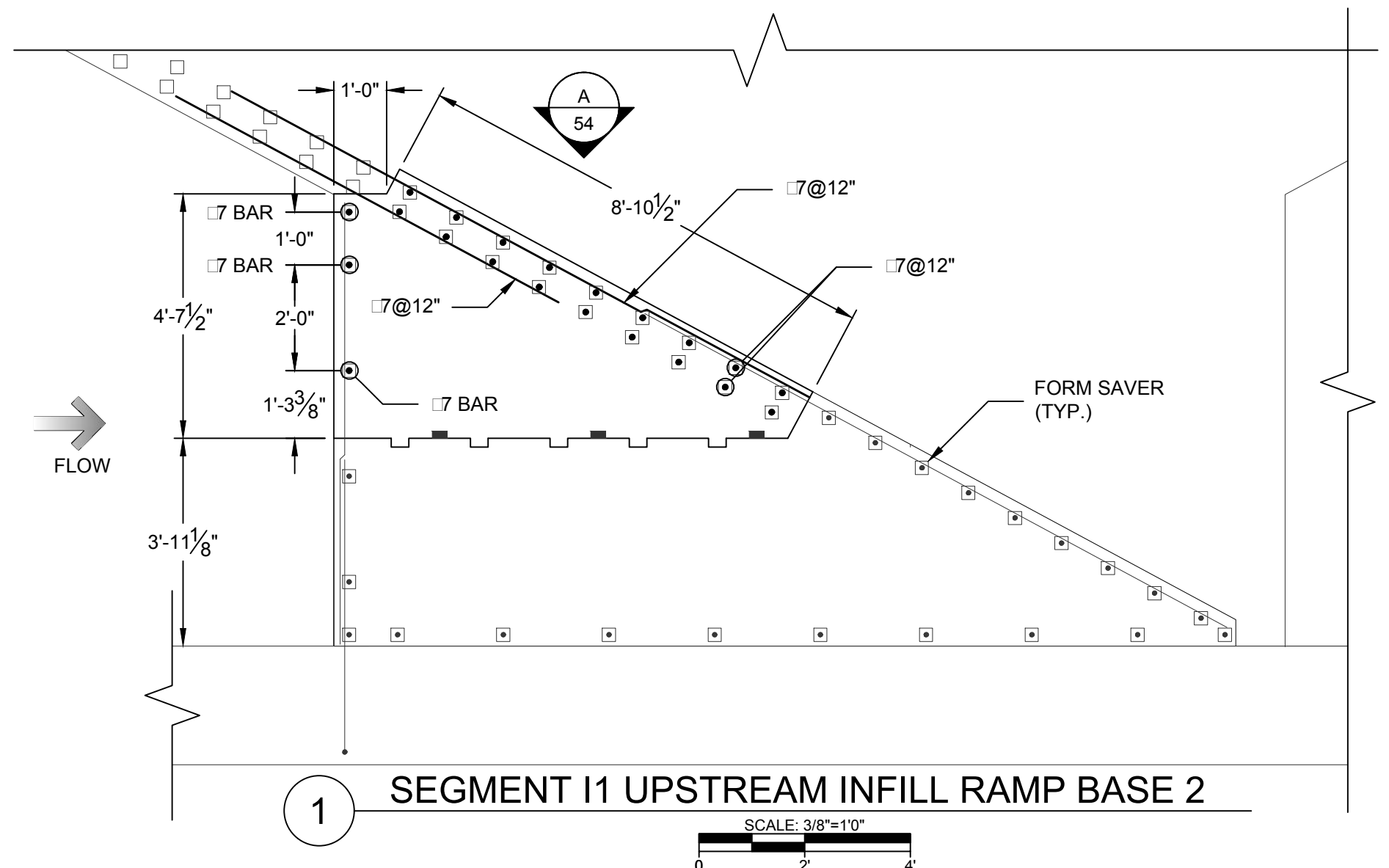
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURAL\_PIANO KEY WEIRD.DWG



PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 53 OF 66
<p>CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA</p> <p><b>LOW STAGE UPSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1</b></p>		
DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
<p>DESIGNED BY: RANDALL P. BASS, P.E.</p> <p><i>Randall P. Bass</i></p> <p>GEORGIA PROFESSIONAL ENGINEER NO. 00685</p>		
<p>DATE: 07/10/17</p>		
<p>DESCRIPTION</p>		
<p>REVISIONS</p>		

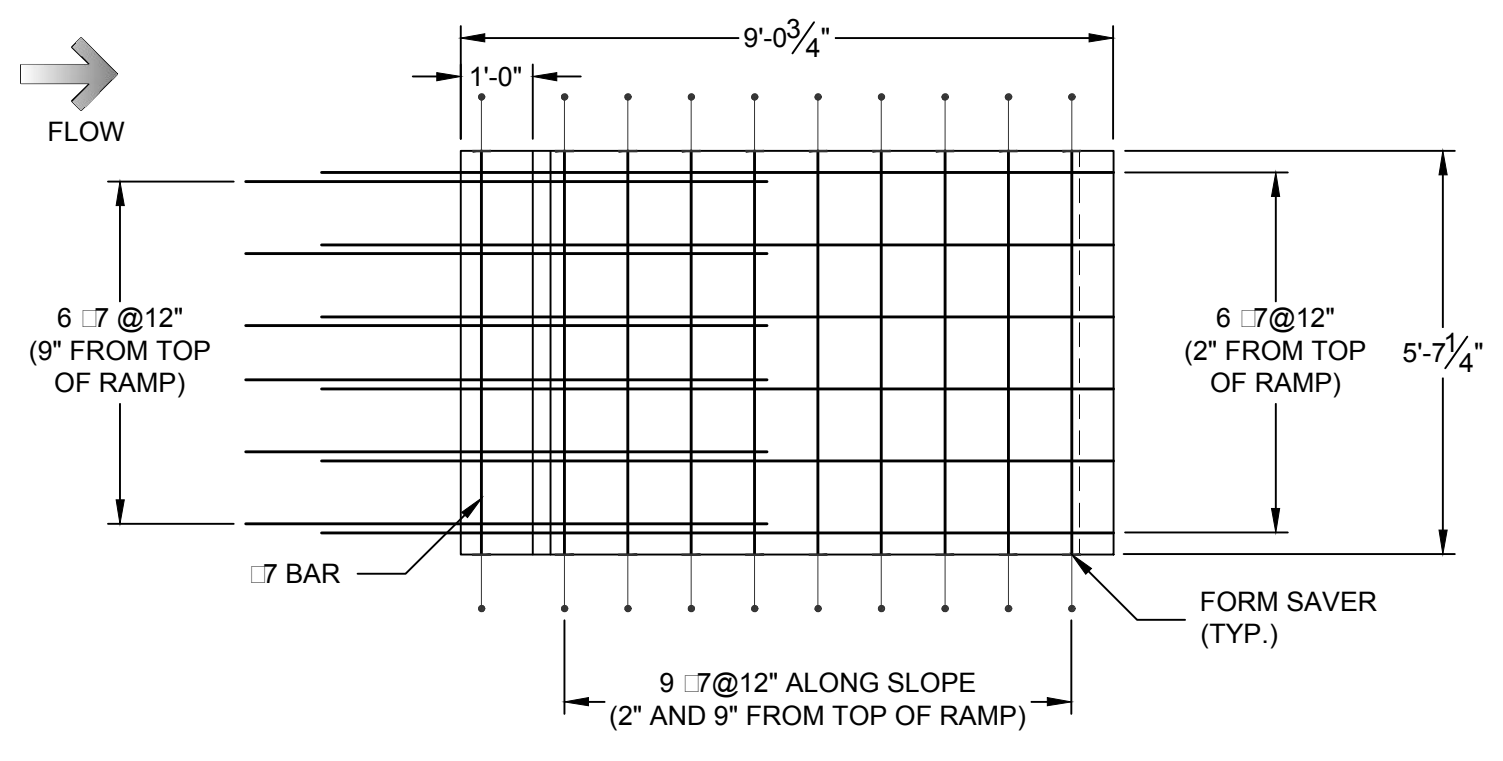


G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTURAL\_PIANO KEY WEIRD.DWG



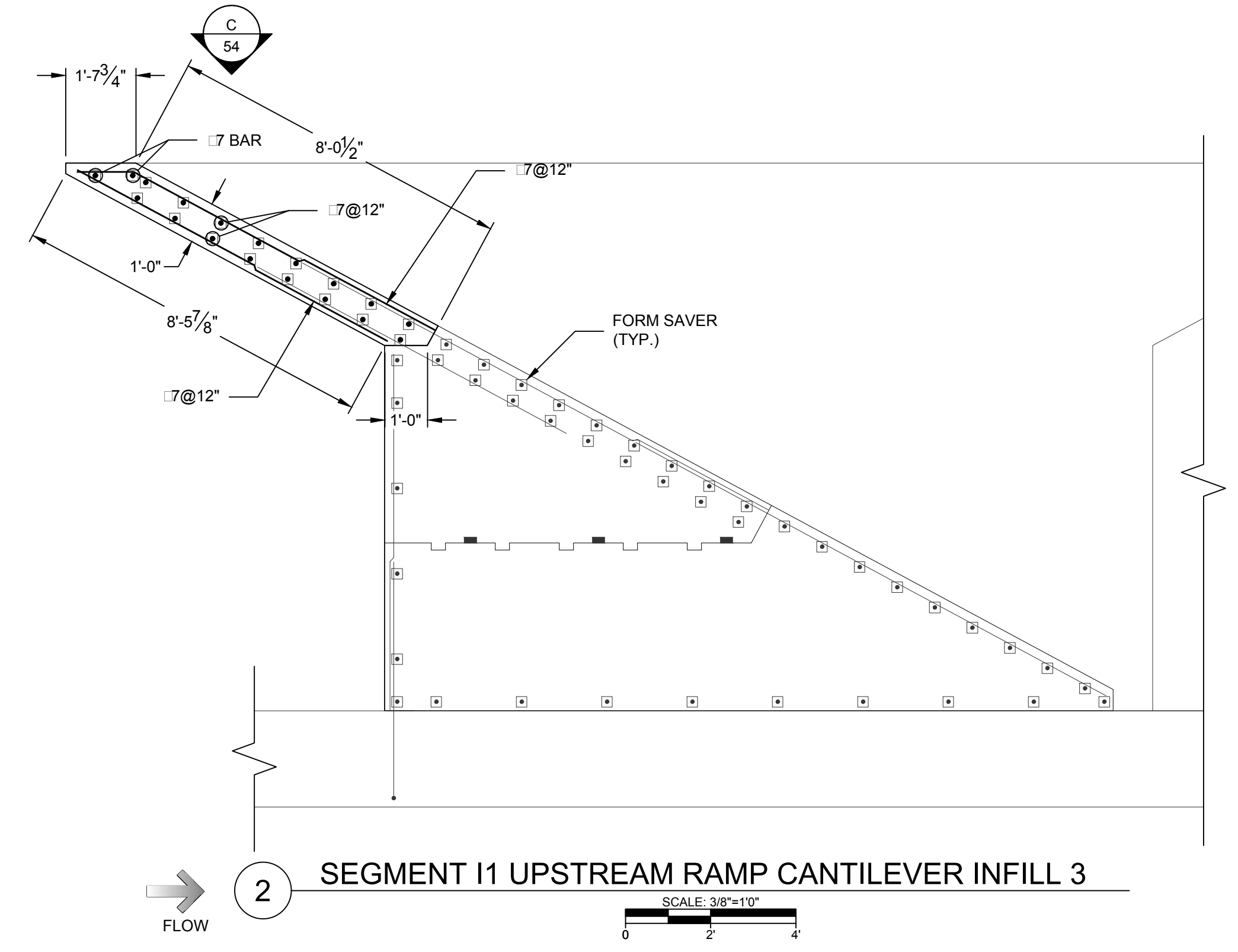
1 SEGMENT 11 UPSTREAM INFILL RAMP BASE 2

SCALE: 3/8"=1'0"  
0 2 4



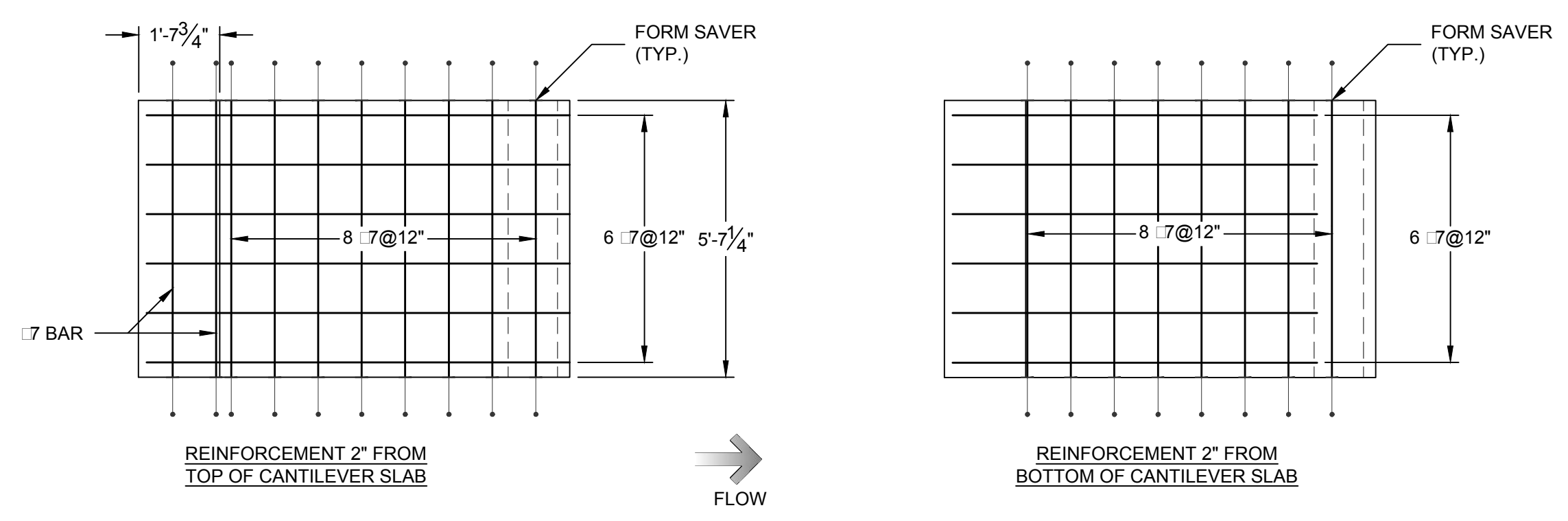
A SEGMENT 11 UPSTREAM INFILL RAMP BASE 2 PLAN

SCALE: 3/8"=1'0"  
0 2 4



2 SEGMENT 11 UPSTREAM RAMP CANTILEVER INFILL 3

SCALE: 3/8"=1'0"  
0 2 4



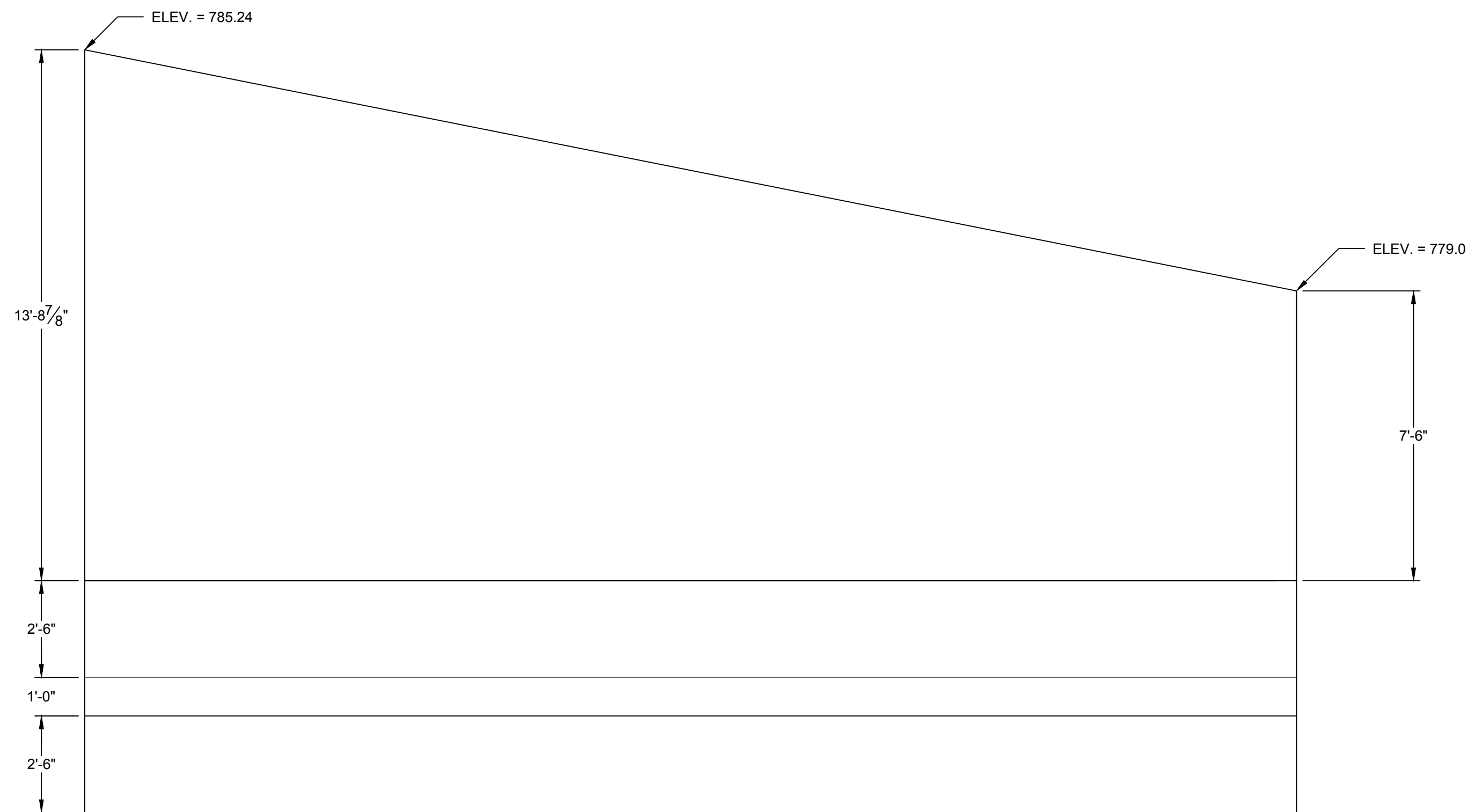
C SEGMENT 11 UPSTREAM RAMP CANTILEVER INFILL 3 PLAN

SCALE: 3/8"=1'0"  
0 2 4

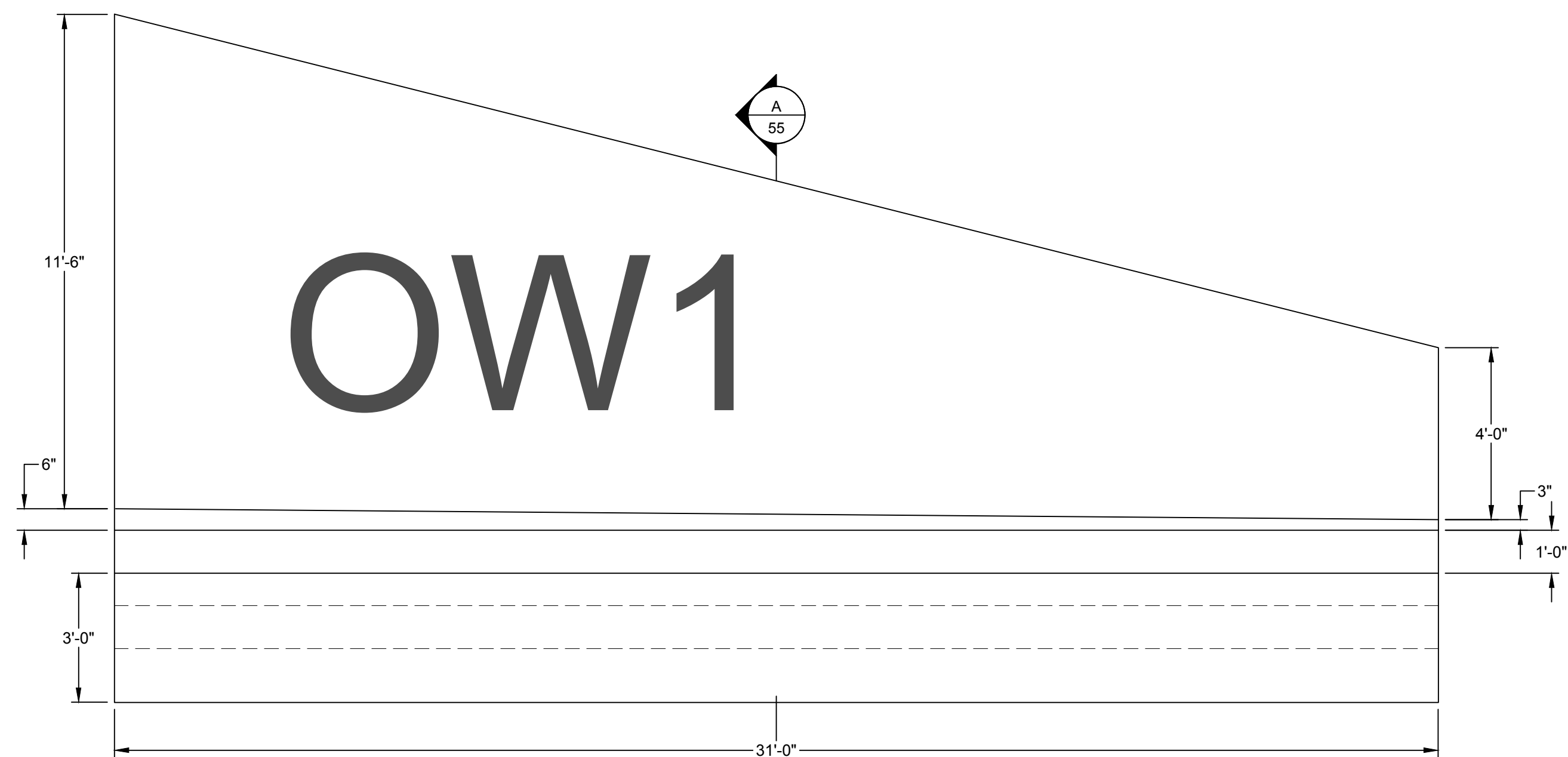
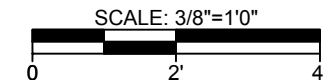
NOTE: FOR CONTRACTION JOINT BETWEEN PIANO KEY SEGMENTS I1 AND H2, PROVIDE 2-INCHES CLEARANCE FOR REINFORCEMENT EACH SIDE OF JOINT.

PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 54 OF 66
<p>CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA</p> <p><b>LOW STAGE UPSTREAM RAMP REINFORCEMENT DETAILS SEGMENT I1</b></p>		
DESIGNED BY: JTD_JC	DRAWN BY: GHB_JSJ	CHECKED BY: RPL_JRC
<p>RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685</p>		
<p>DATE: 07/10/17</p>		
REV	DESCRIPTION	DATE

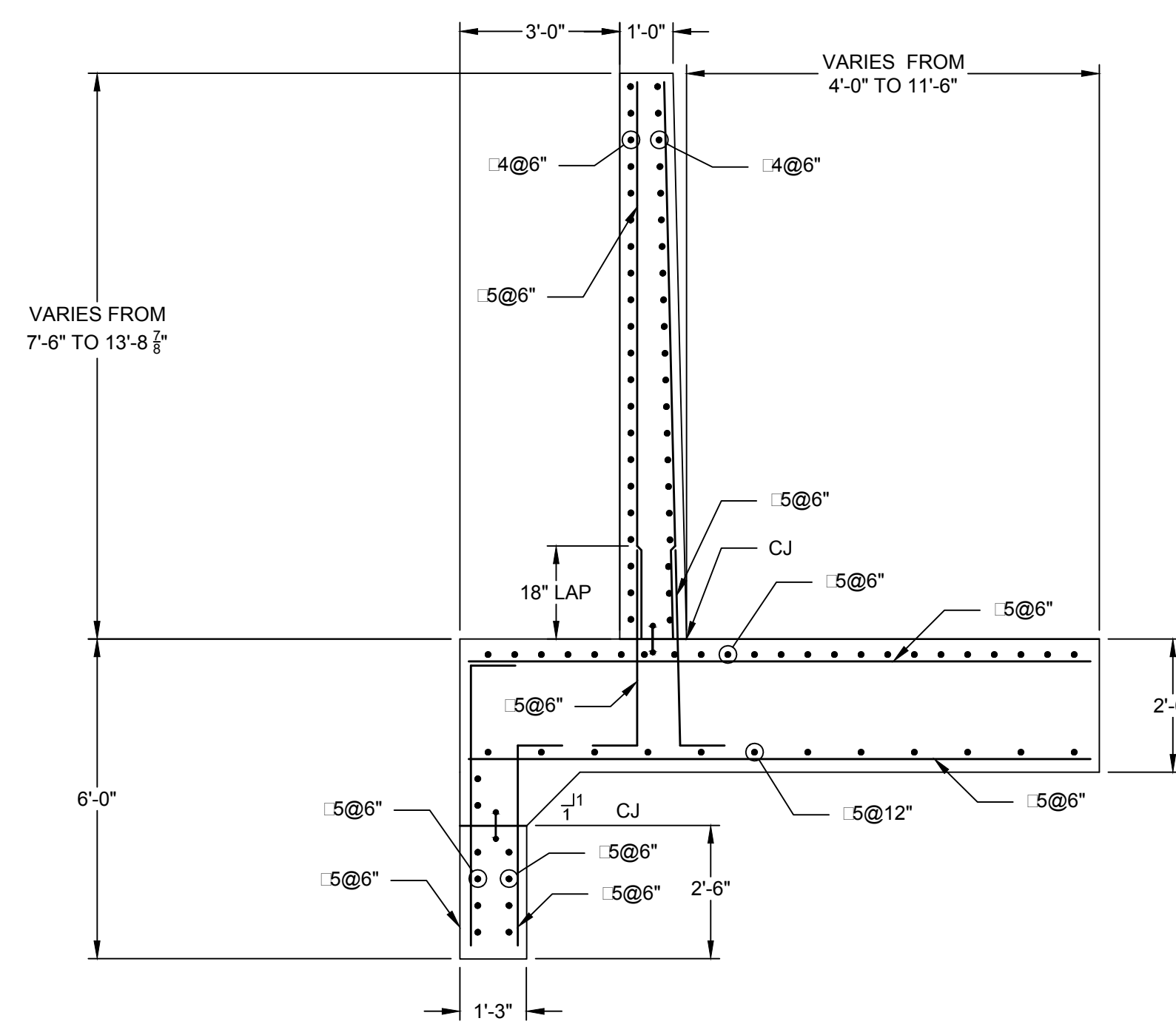
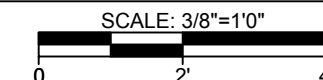




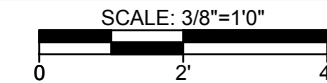
1 SEGMENT OW1 SIDEWALL ELEVATION



2 SEGMENT OW1 SLAB PLAN



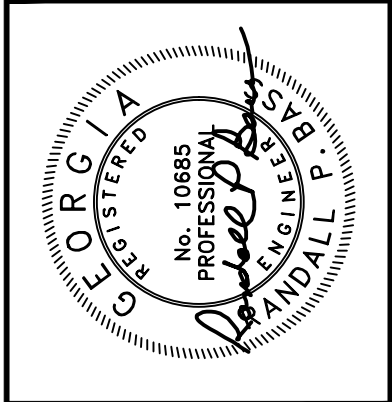
A SEGMENT OW1 SECTION



G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\1PT\_STRUCTUREAL.DWG

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JC	DRAWN BY: GHB, JSR	CHECKED BY: RPL, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10685		



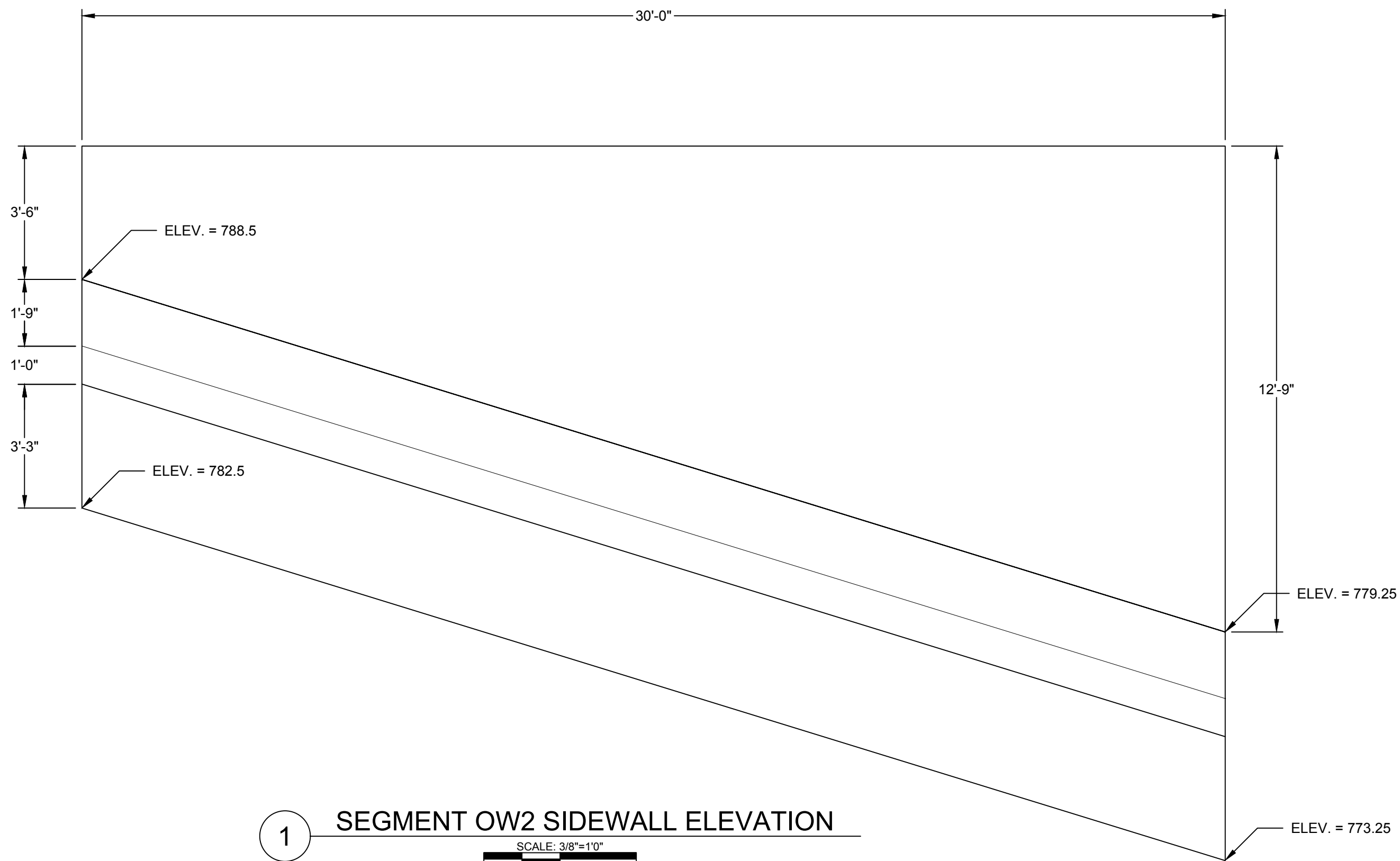
**Schnabel**  
ENGINEERING

6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
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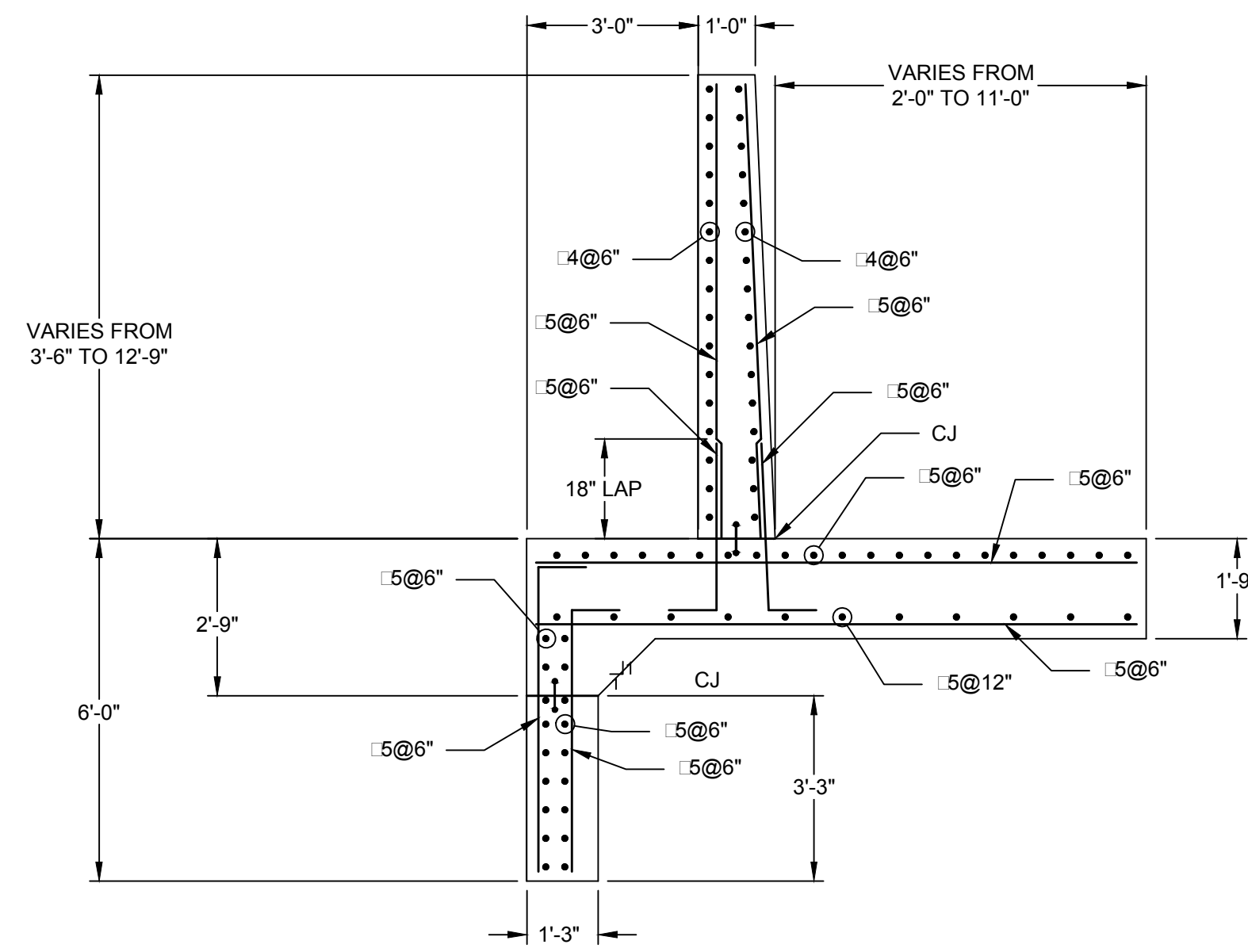
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

WALL AND SLAB DETAILS  
SEGMENT OW1

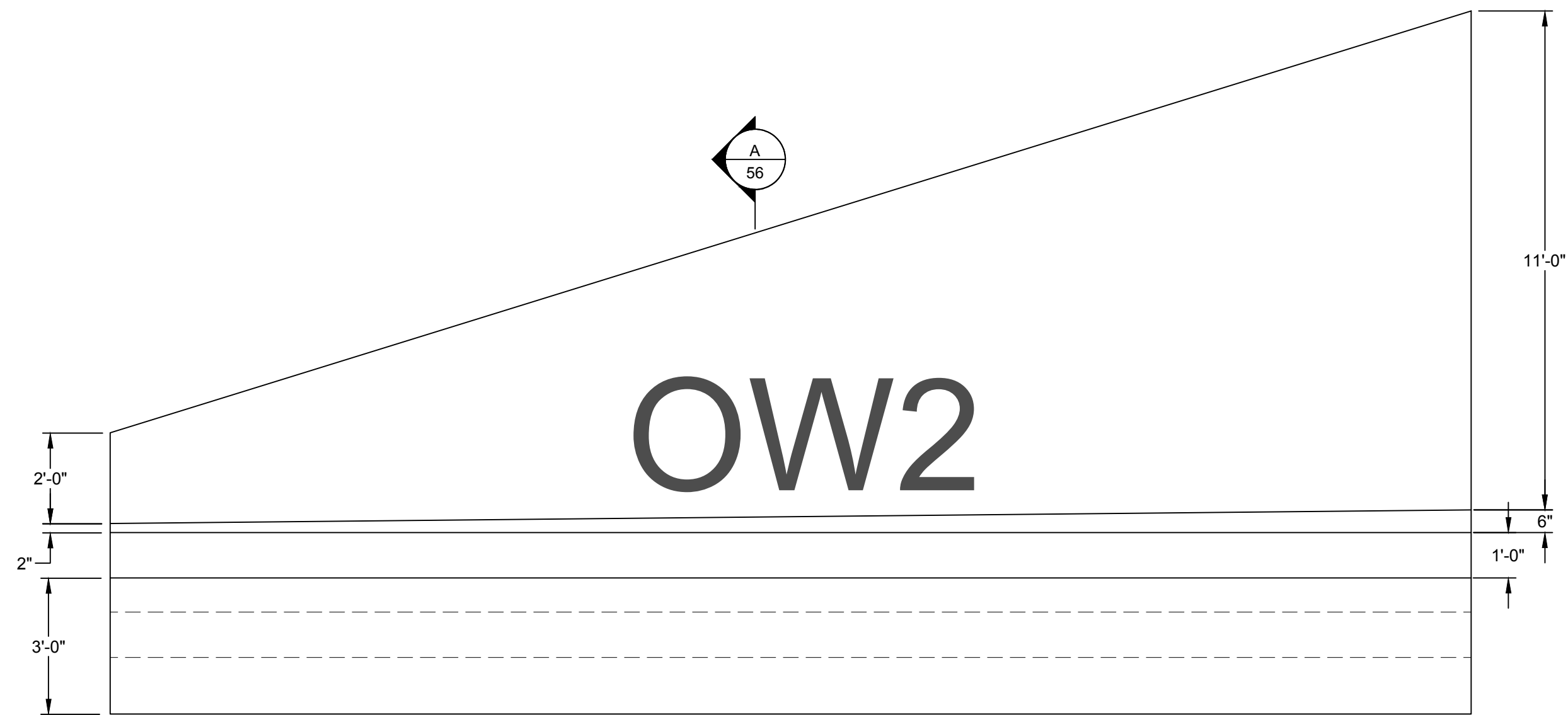
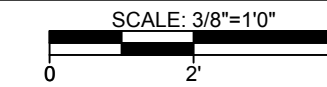
PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 55 OF 66



1 SEGMENT OW2 SIDEWALL ELEVATION



A SEGMENT OW2 SECTION

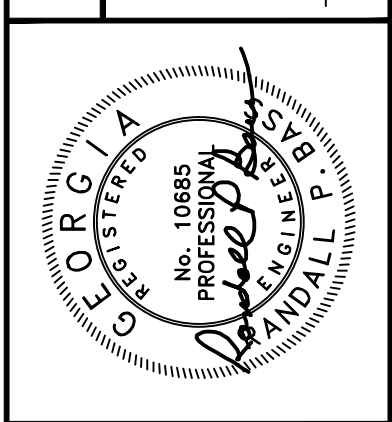


2 SEGMENT OW2 SLAB PLAN



NO.	DESCRIPTION	DATE

DESIGNED BY: JTD, J.C.	CHECKED BY: RPL, JRC	DRAWN BY: GHB, JSR	DATE: 07/10/17
RANDALL P. BASS, P.E. GEORGIA PROFESSIONAL ENGINEER NO. 10685			

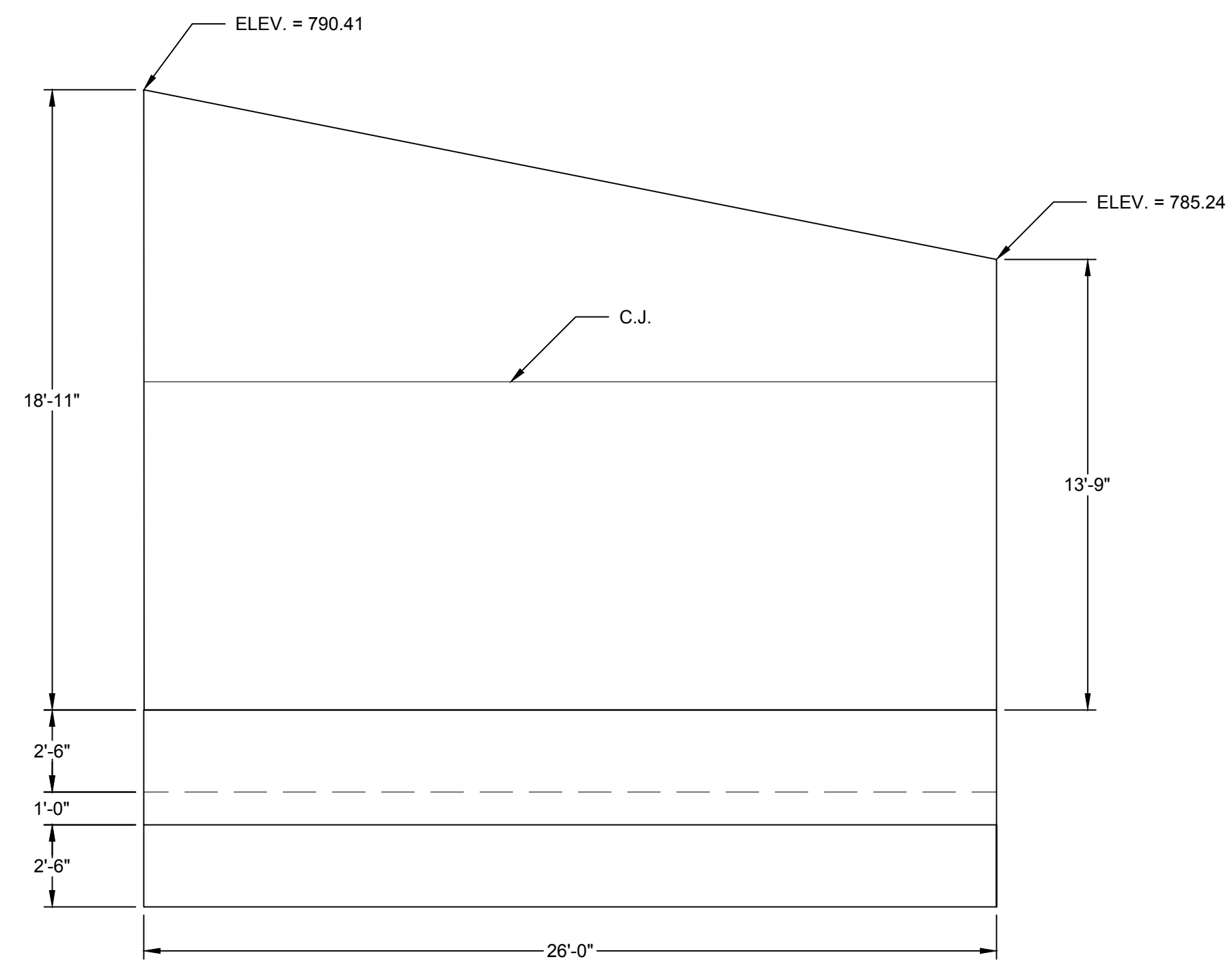


**Schnabel**  
ENGINEERING

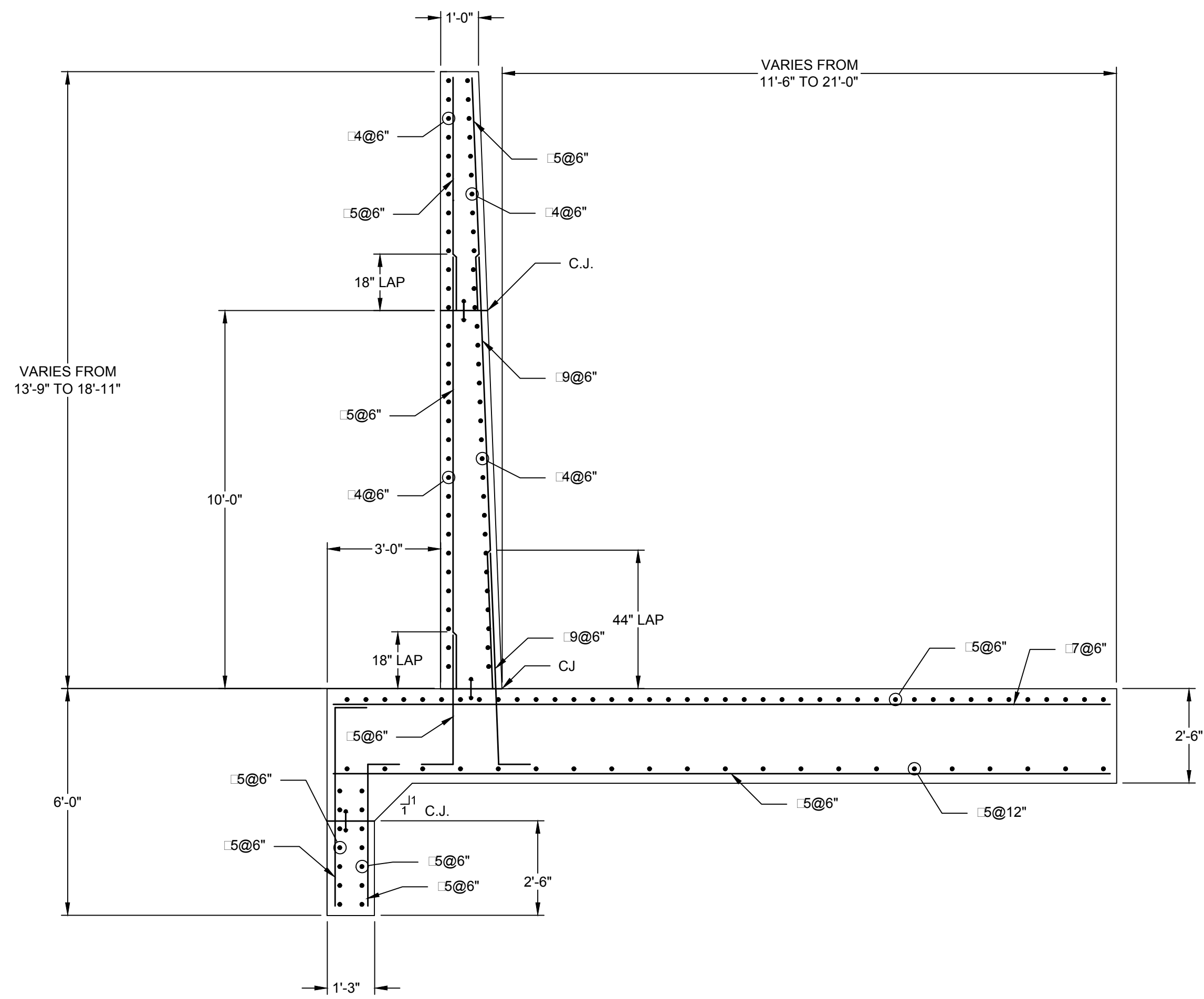
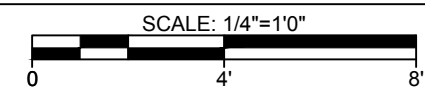
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
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schnabel-eng.com

CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

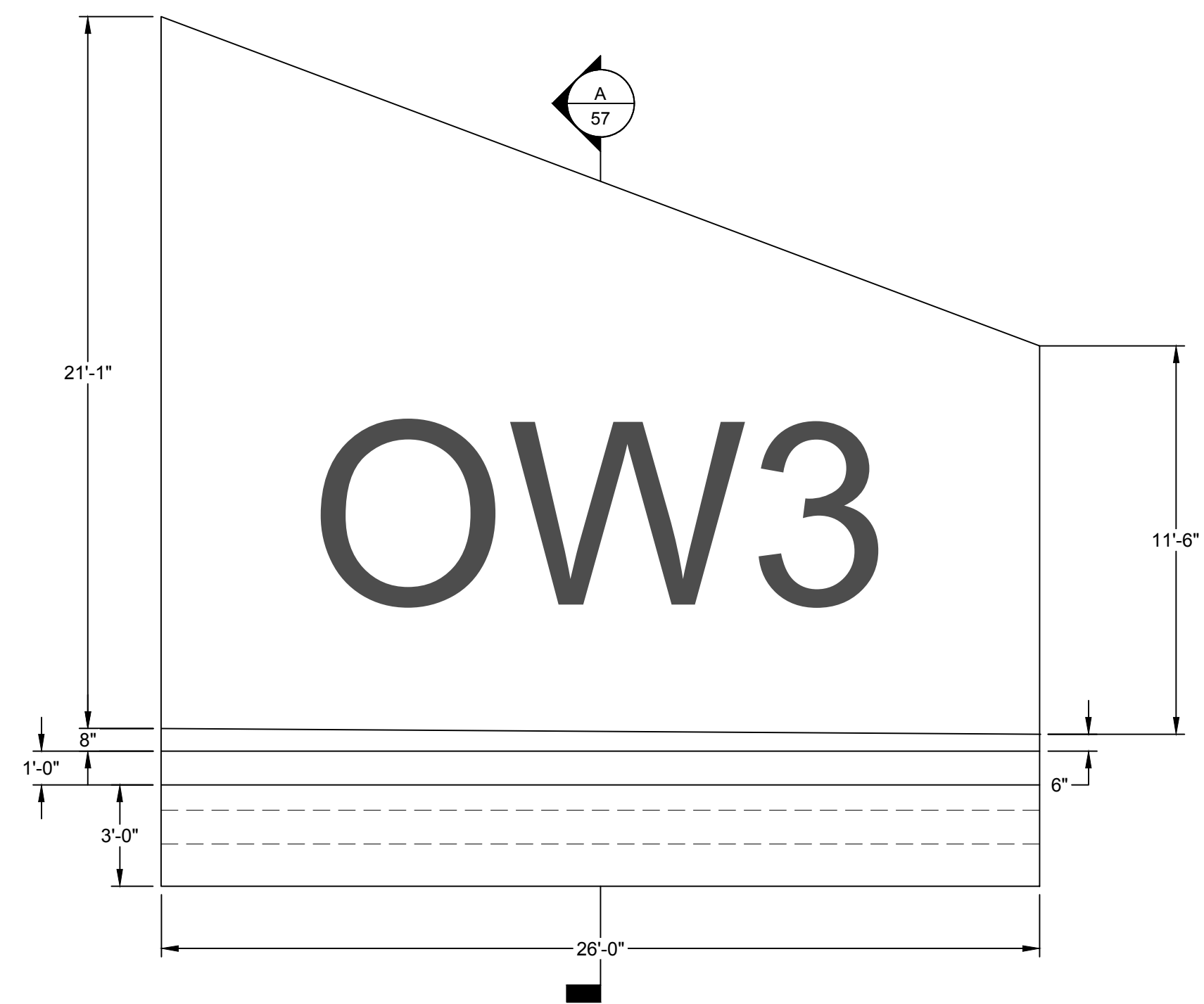
**WALL AND SLAB DETAILS  
SEGMENT OW2**



1 SEGMENT OW3 SIDEWALL ELEVATION



A SEGMENT OW3 SECTION

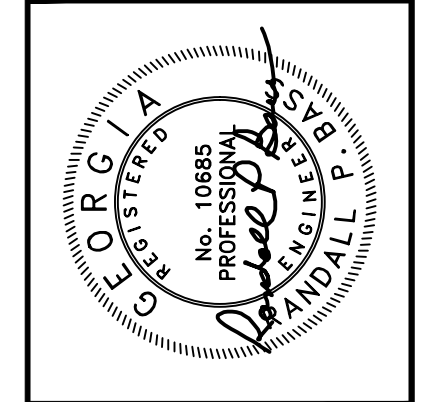


2 SEGMENT OW3 SLAB PLAN

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTUREAL.DWG

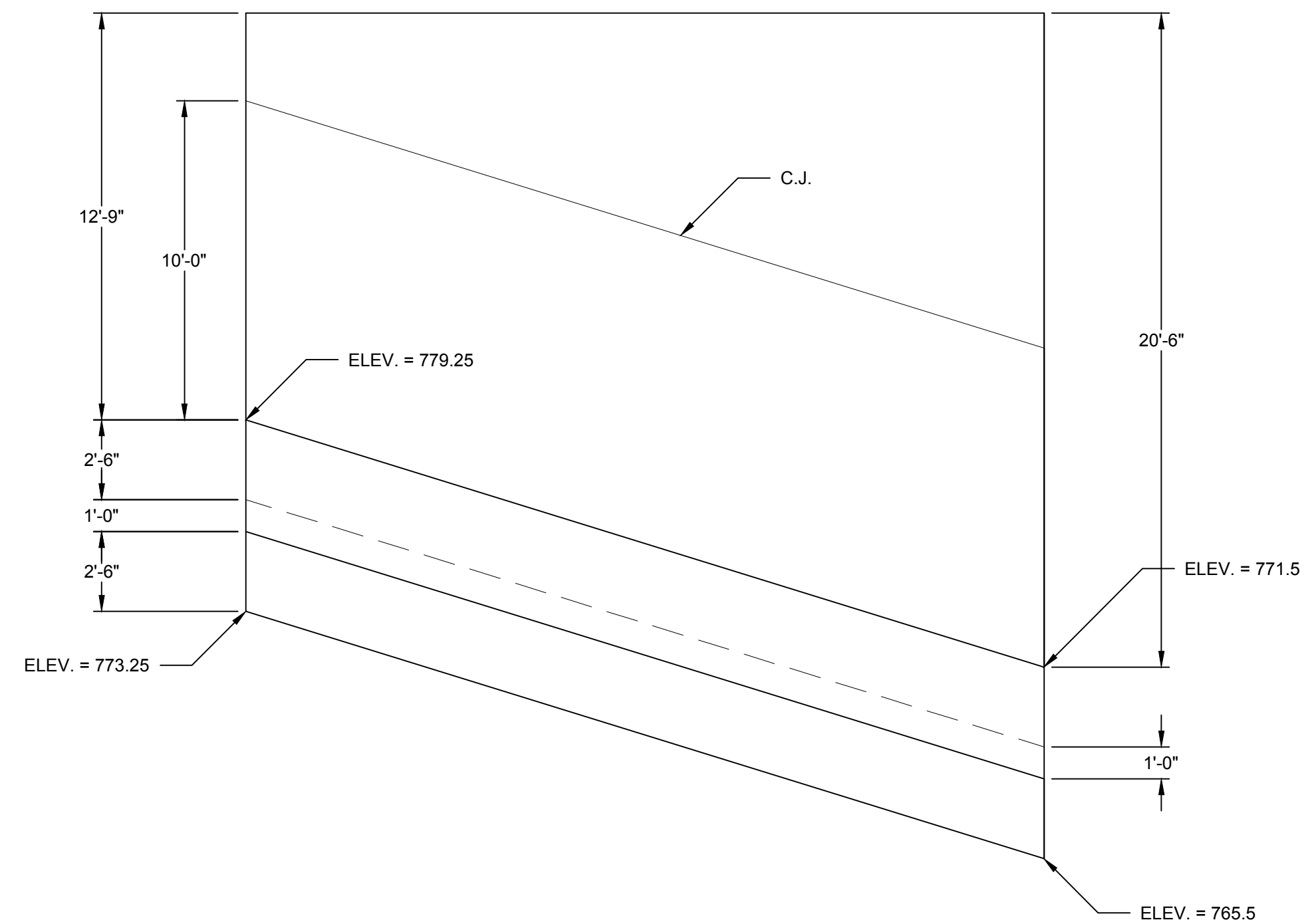
NO.	REV.	DESCRIPTION	DATE

CHECKED BY: RPL\_JRC  
 DRAWN BY: GHB\_JSR  
 DESIGNED BY: JTD\_JC  
 RANDALL P. BASS, P.E.  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685  
 DATE: 07/10/17

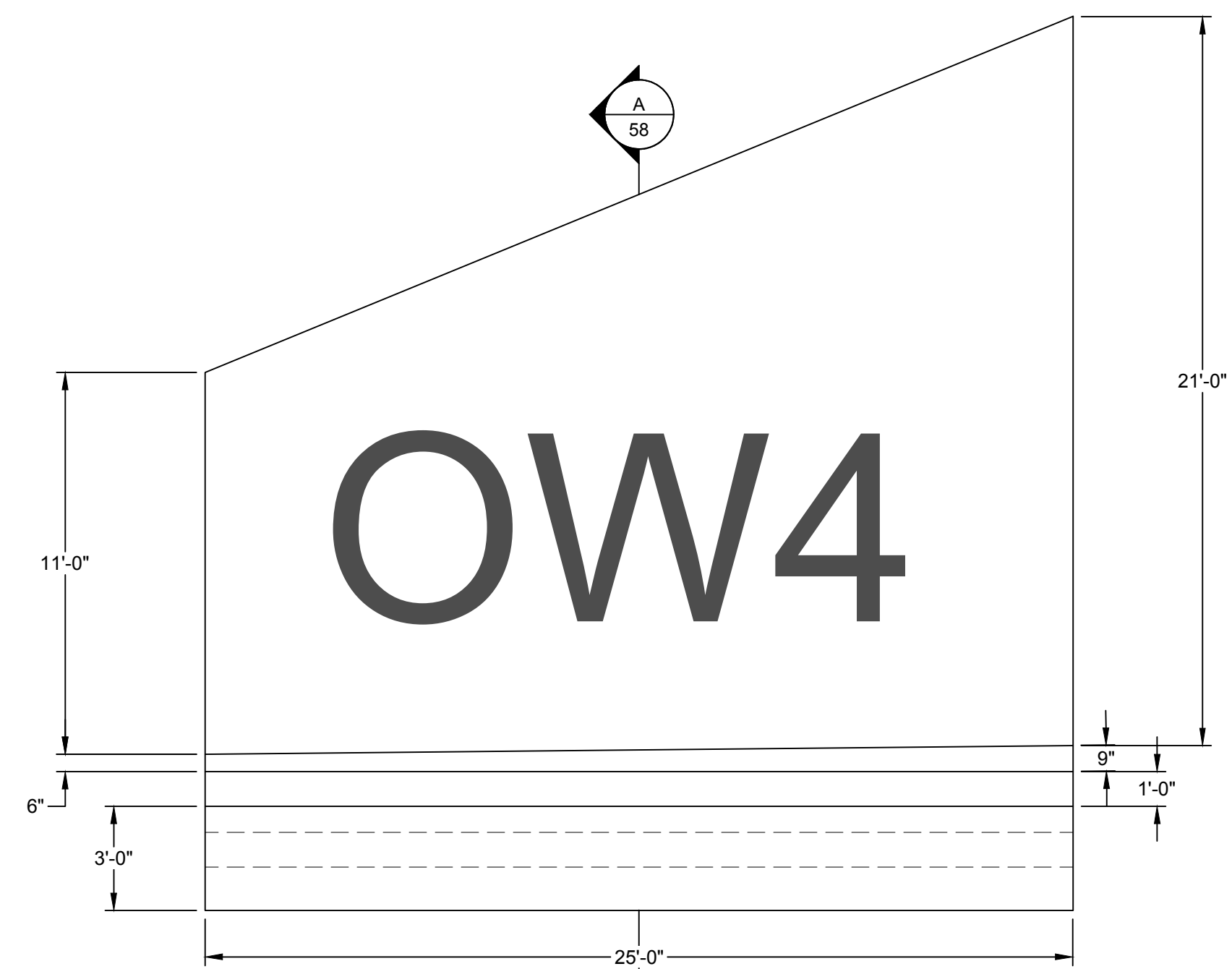
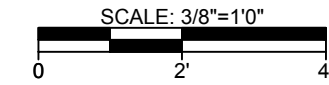


CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
 WALL AND SLAB DETAILS  
 SEGMENT OW3

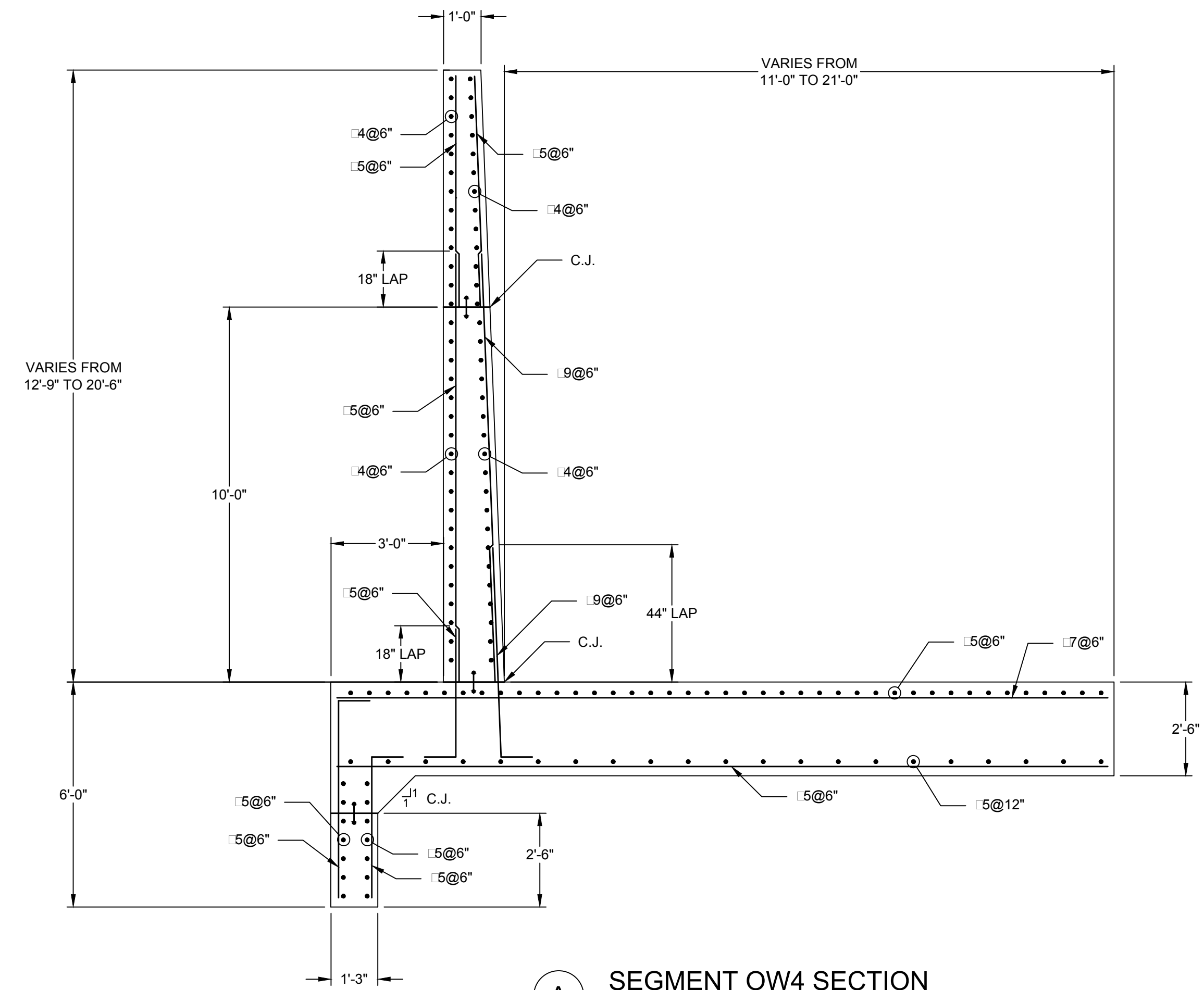
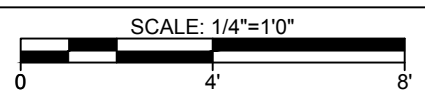
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
 57 OF 66



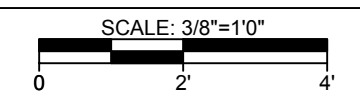
1 SEGMENT OW4 SIDEWALL ELEVATION



2 SEGMENT OW4 SLAB PLAN




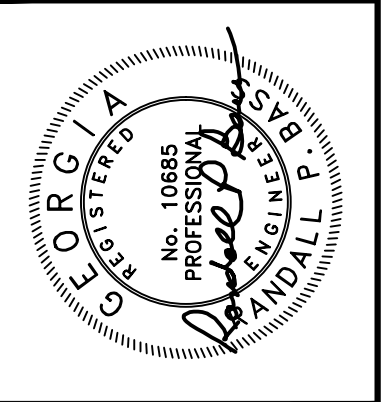
A SEGMENT OW4 SECTION



G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\S08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_STRUCTURE\PLT\_STRUCTURE.DWG

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, J.C.	DRAWN BY: GHB, J.S.R.	CHECKED BY: RPL, J.R.C.
RANDALL P. BASS, P.E.		
		DATE: 07/10/17
GEORGIA PROFESSIONAL ENGINEER NO. 10685		



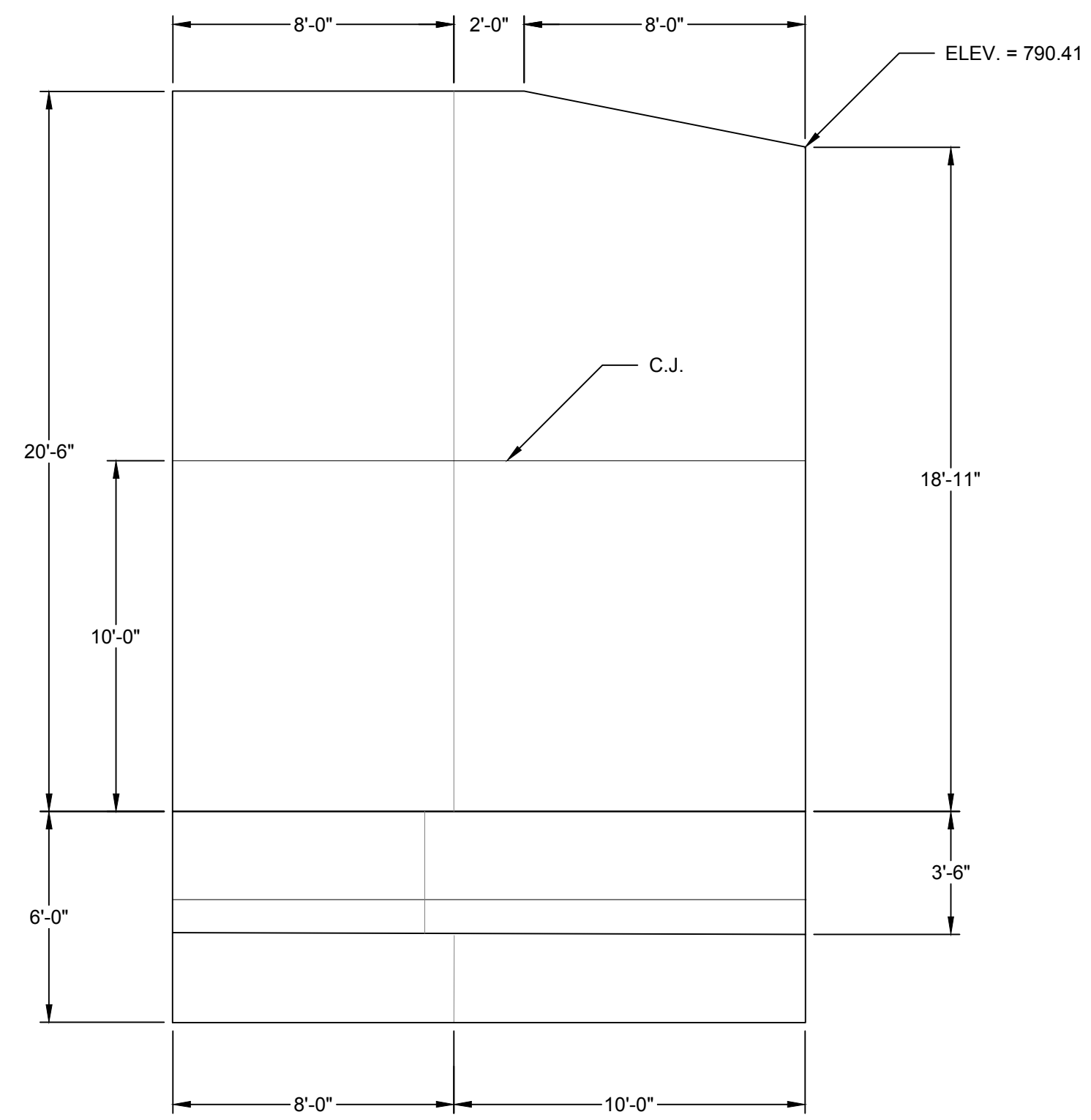
**Schnabel**  
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6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
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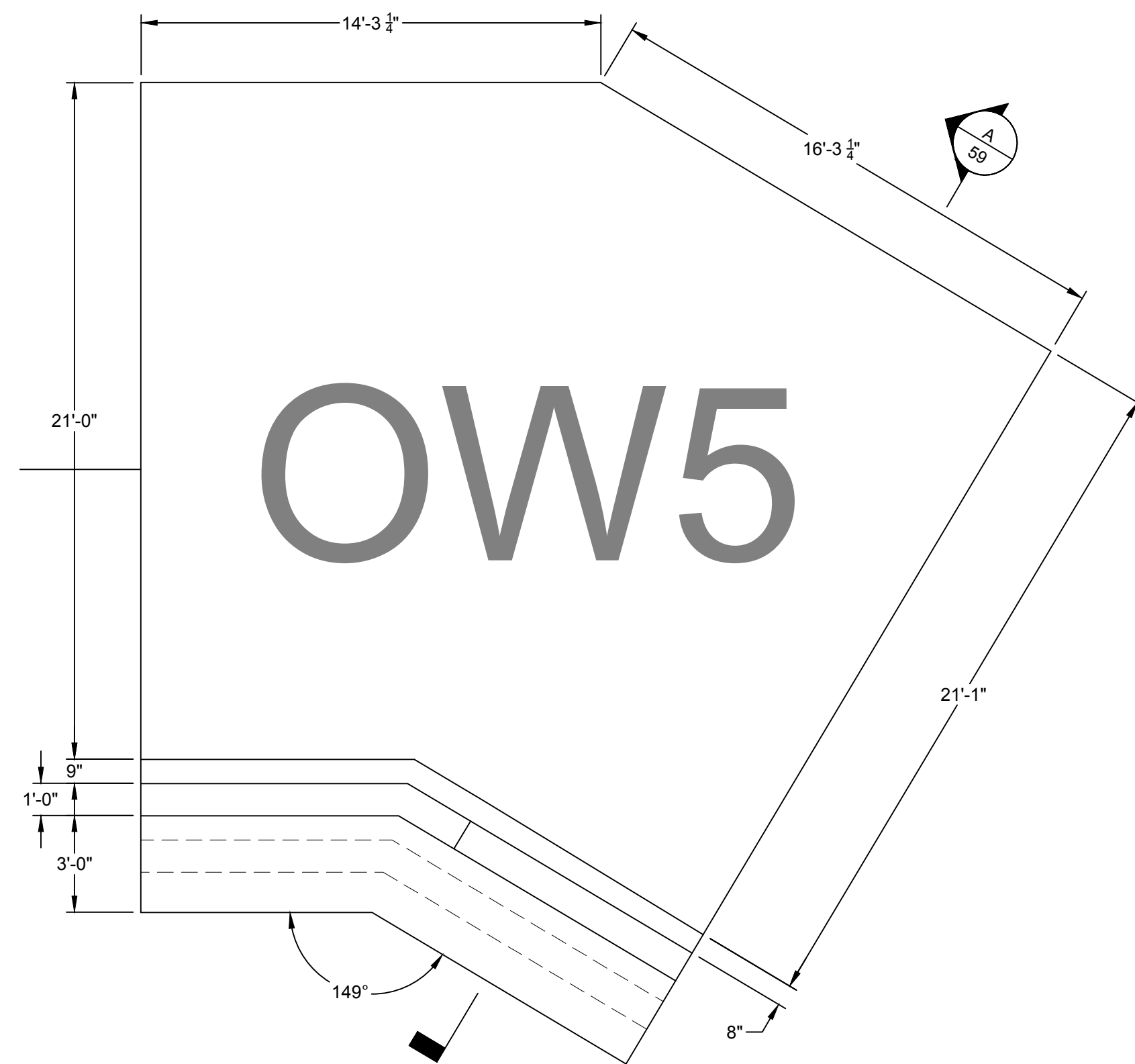
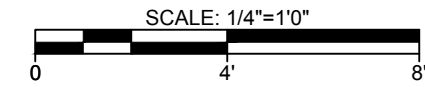
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

**WALL AND SLAB DETAILS  
SEGMENT OW4**

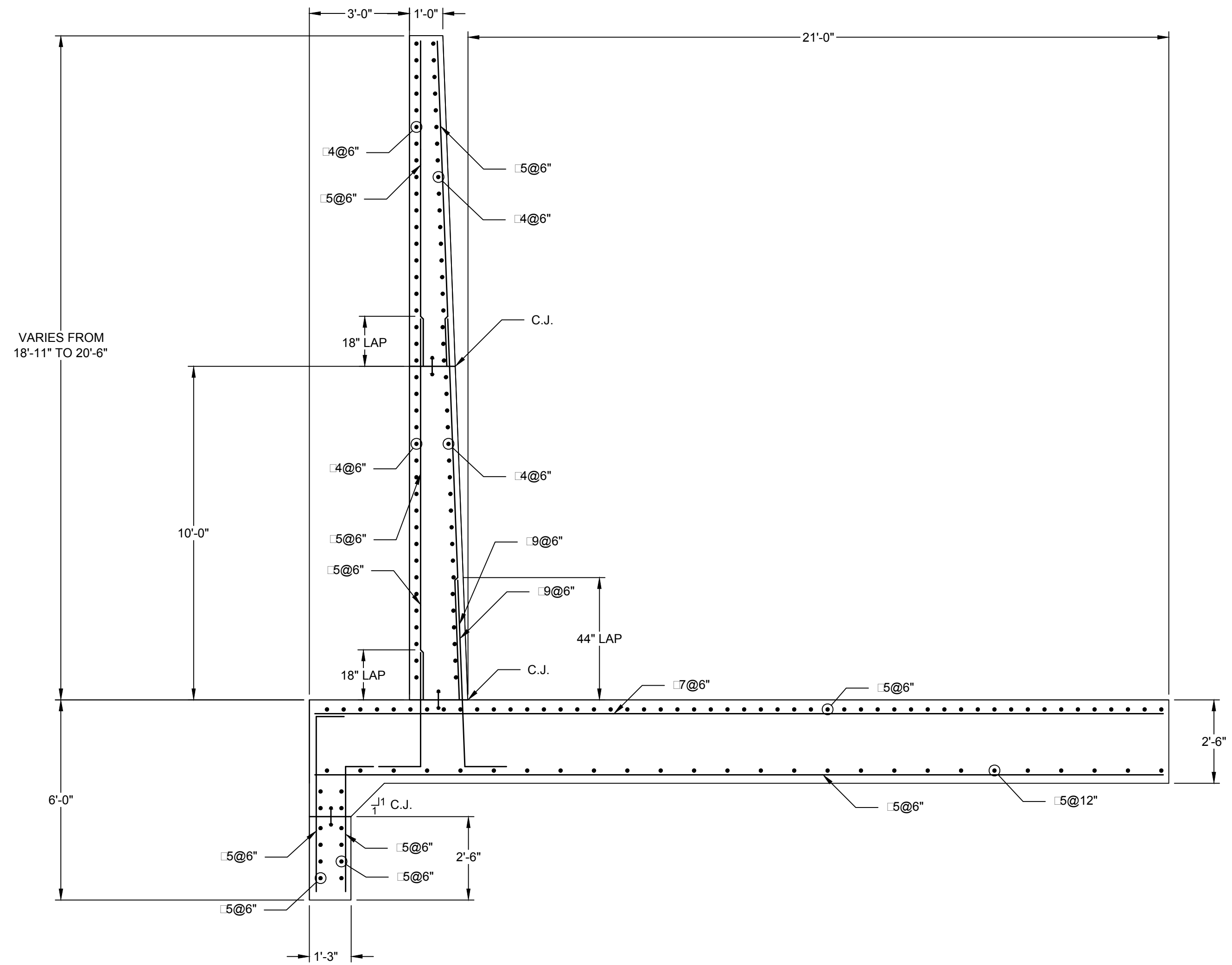
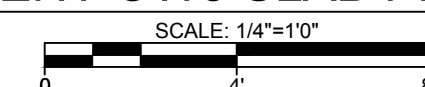
PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 58 OF 66



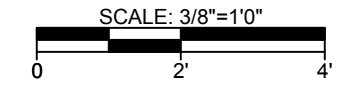
1 SEGMENT OW5 SIDEWALL ELEVATION



2 SEGMENT OW5 SLAB PLAN



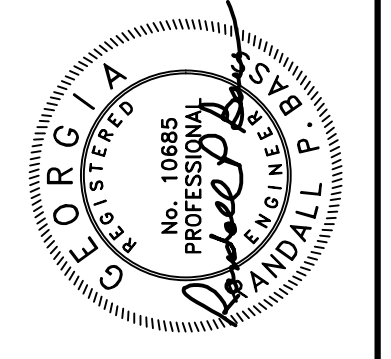
A SEGMENT OW5 SECTION



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REV	DESCRIPTION	DATE

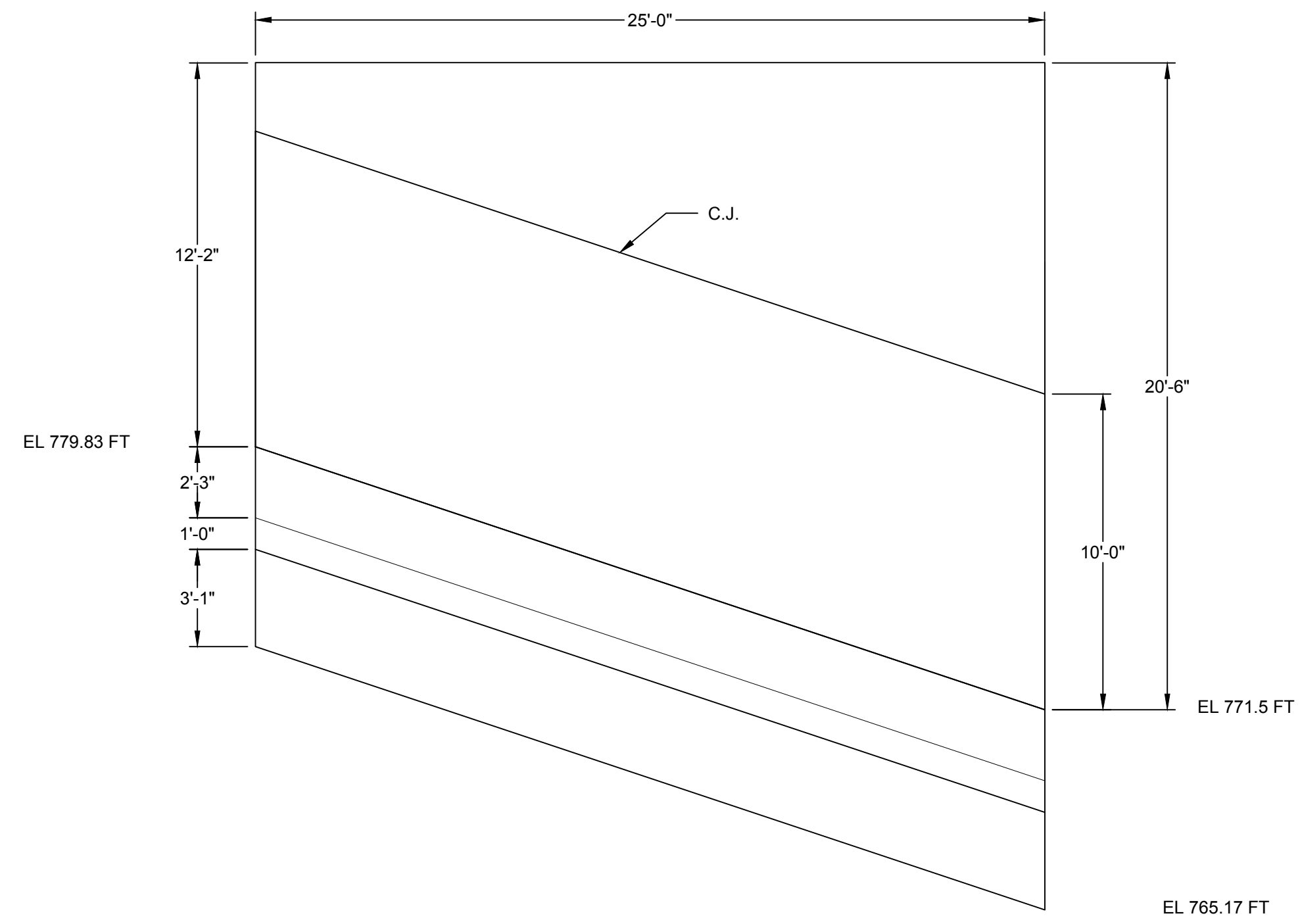
DESIGNED BY: JTD, JC  
 DRAWN BY: GHL, JSR  
 CHECKED BY: RPB, JRC  
**RANDALL P. BASS, P.E.**  
 GEORGIA PROFESSIONAL ENGINEER NO. 10685



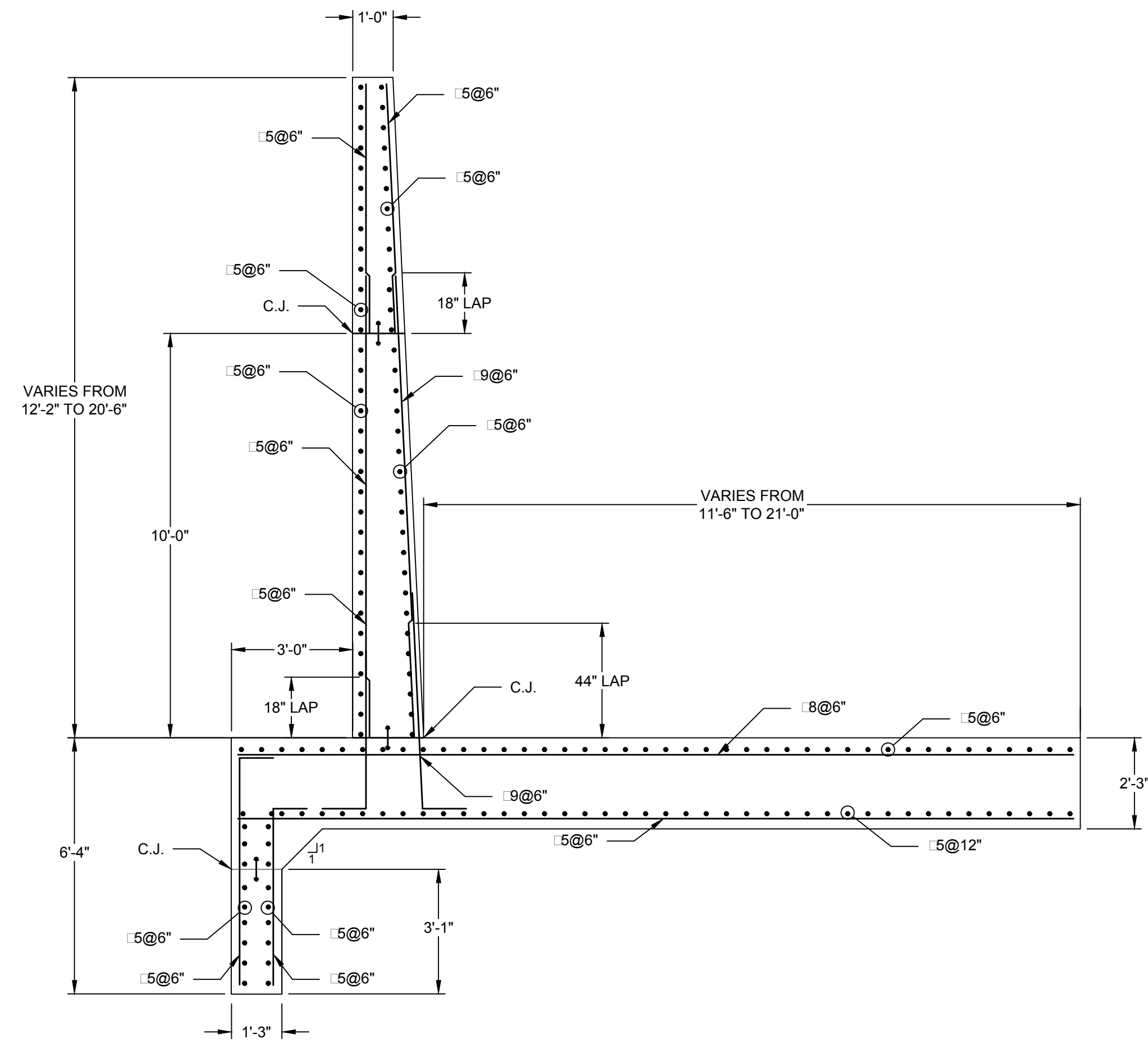
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CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA  
**WALL AND SLAB DETAILS  
 SEGMENT OW5**

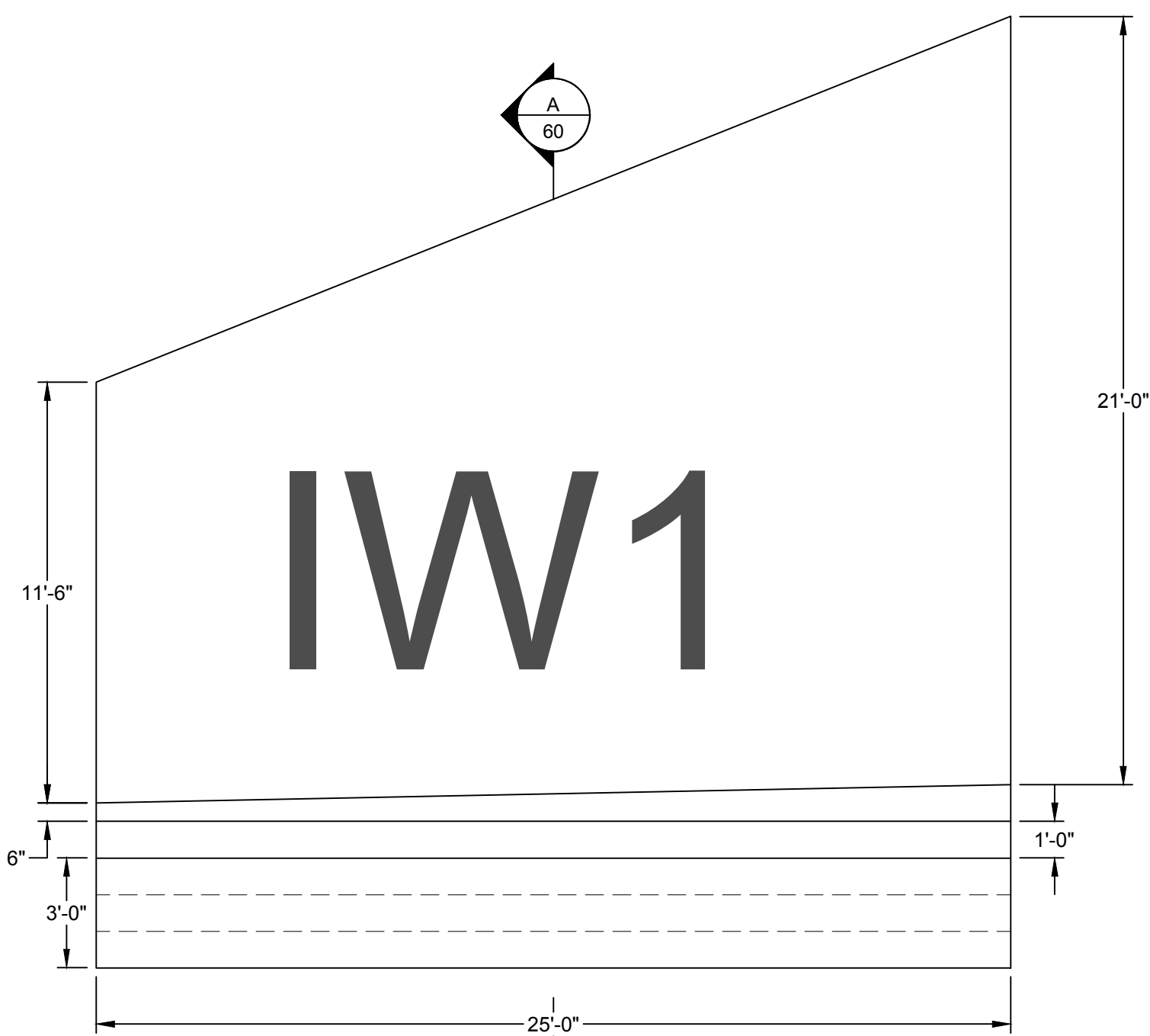
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
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1 SEGMENT IW1 SIDEWALL ELEVATION  
SCALE: 1/4"=1'0"



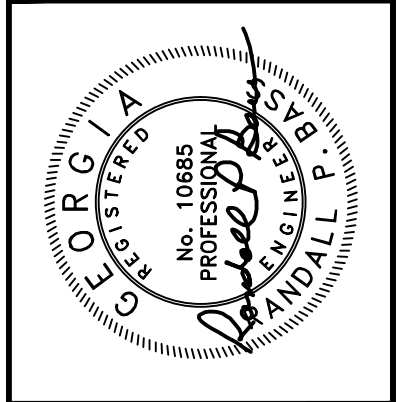
A SEGMENT IW1 SECTION  
SCALE: 3/8"=1'0"



2 SEGMENT IW1 SLAB PLAN  
SCALE: 1/4"=1'0"

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JIC	DRAWN BY: GHB, JSR	CHECKED BY: RPE, JRC
RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885		



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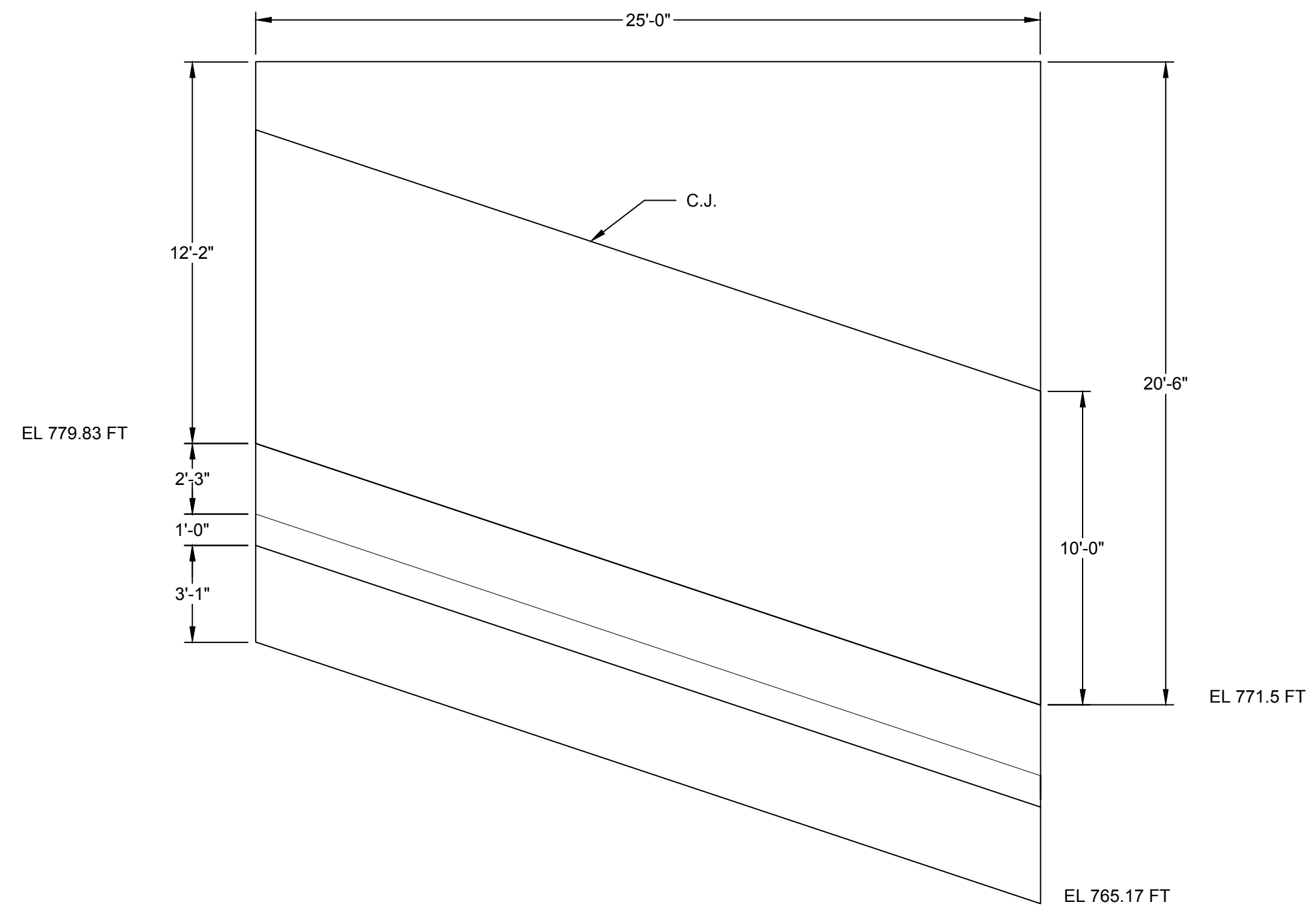
CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

WALL AND SLAB DETAILS  
 SEGMENT IW1

PROJECT: 16C17043.00
DATE: 07/10/2017
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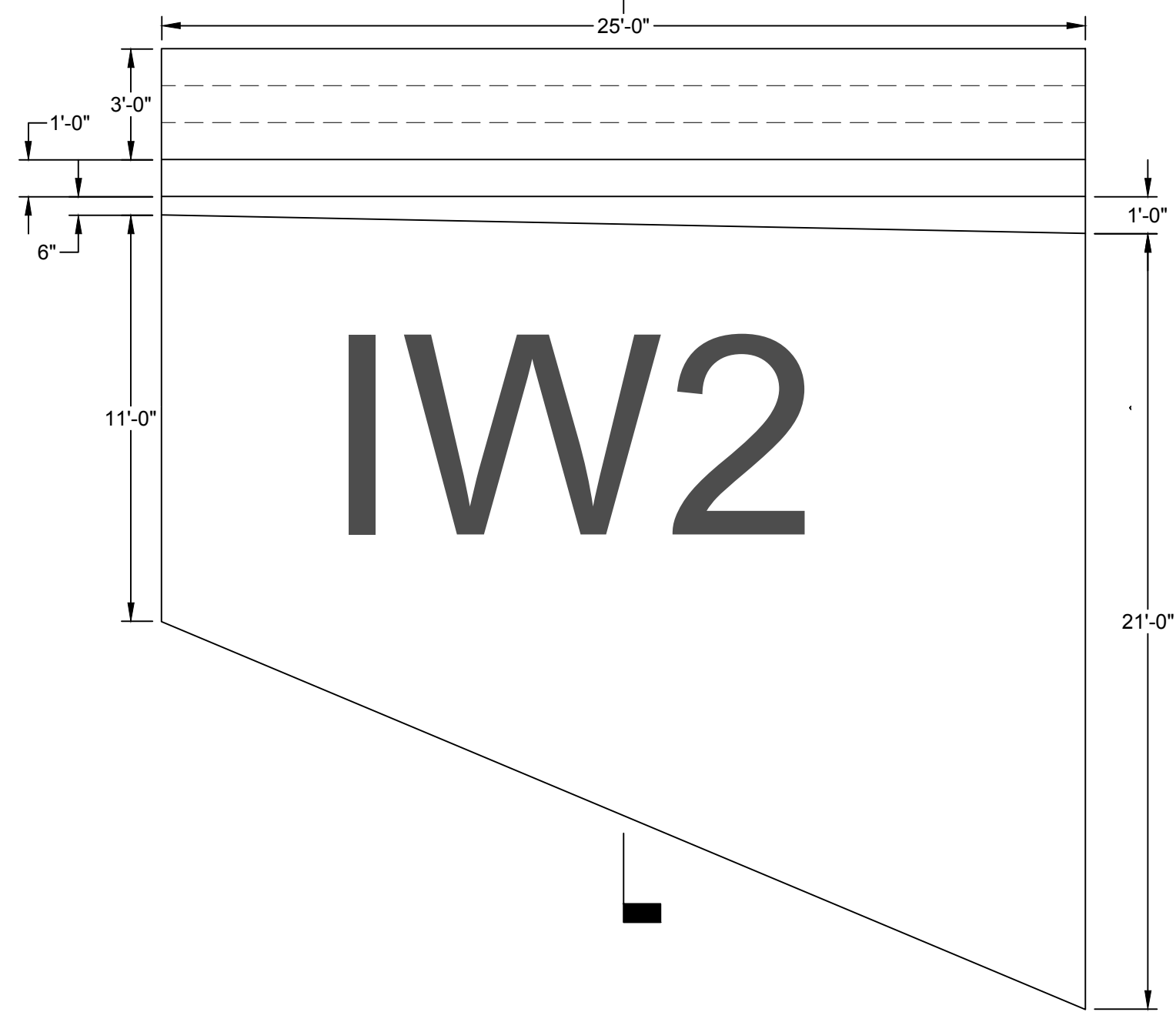
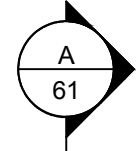


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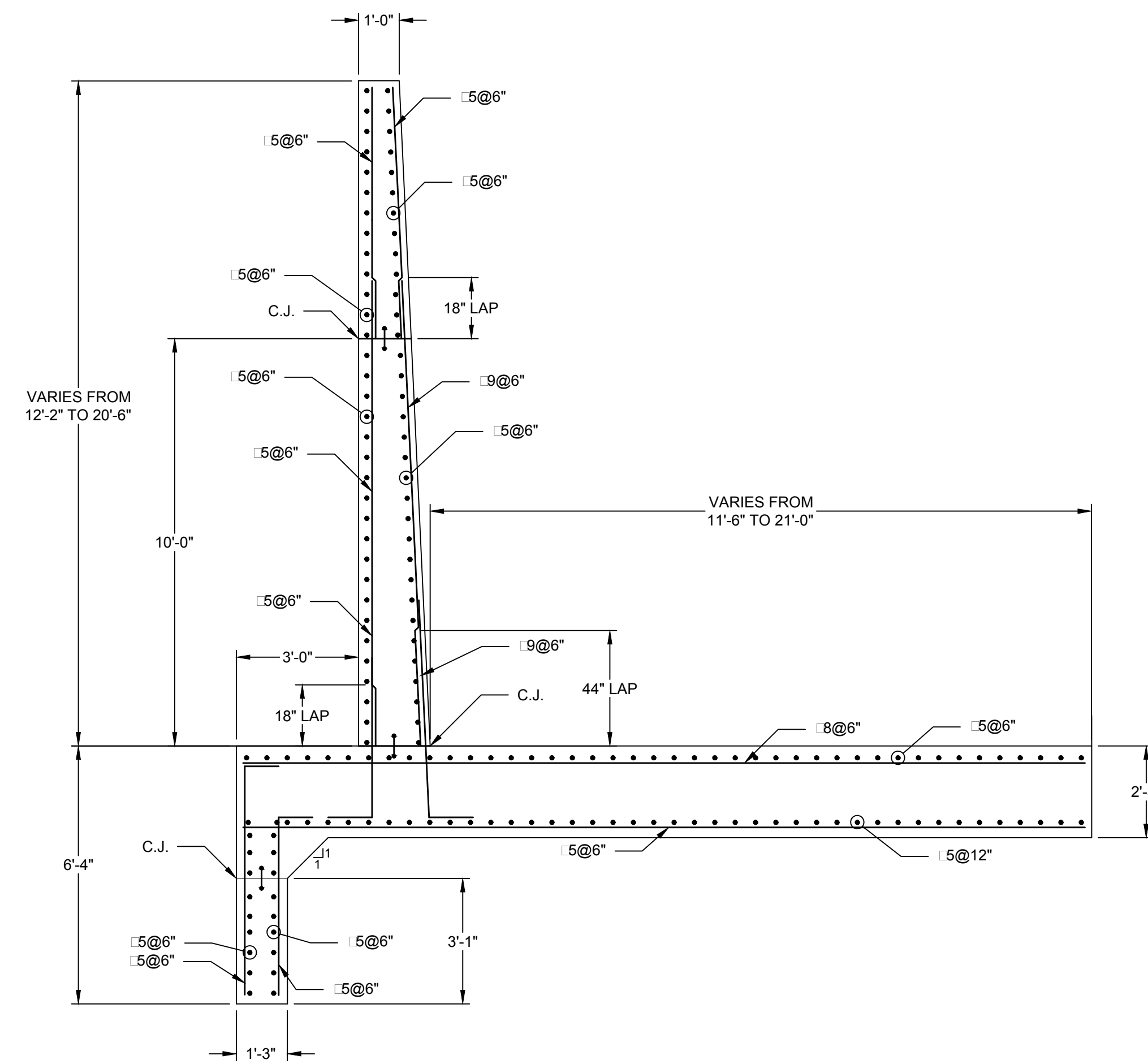
1 SEGMENT IW2 SIDEWALL ELEVATION

SCALE: 3/8"=1'0"



2 SEGMENT IW2 SLAB PLAN

SCALE: 3/8"=1'0"

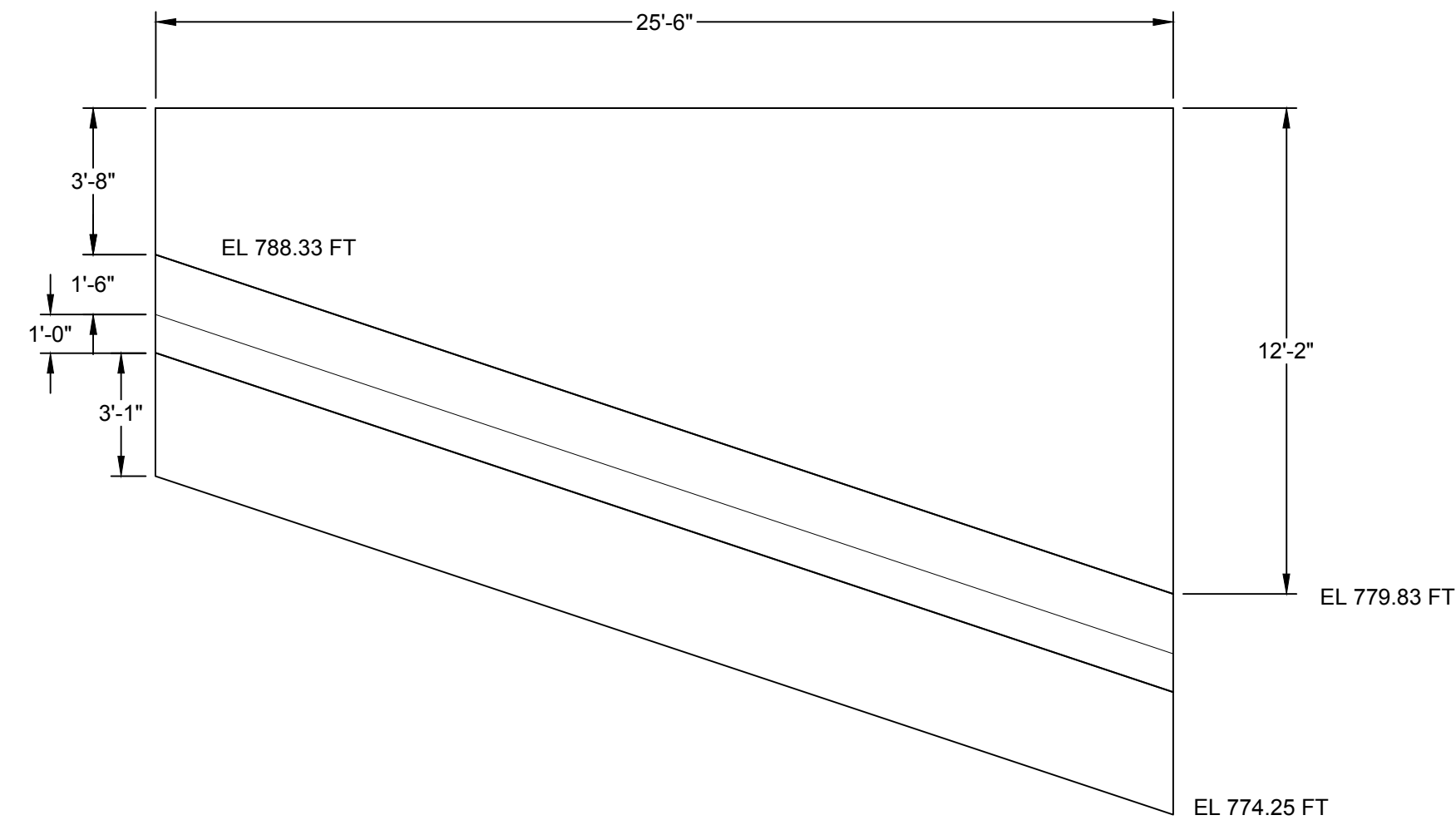


A SEGMENT IW2 SECTION

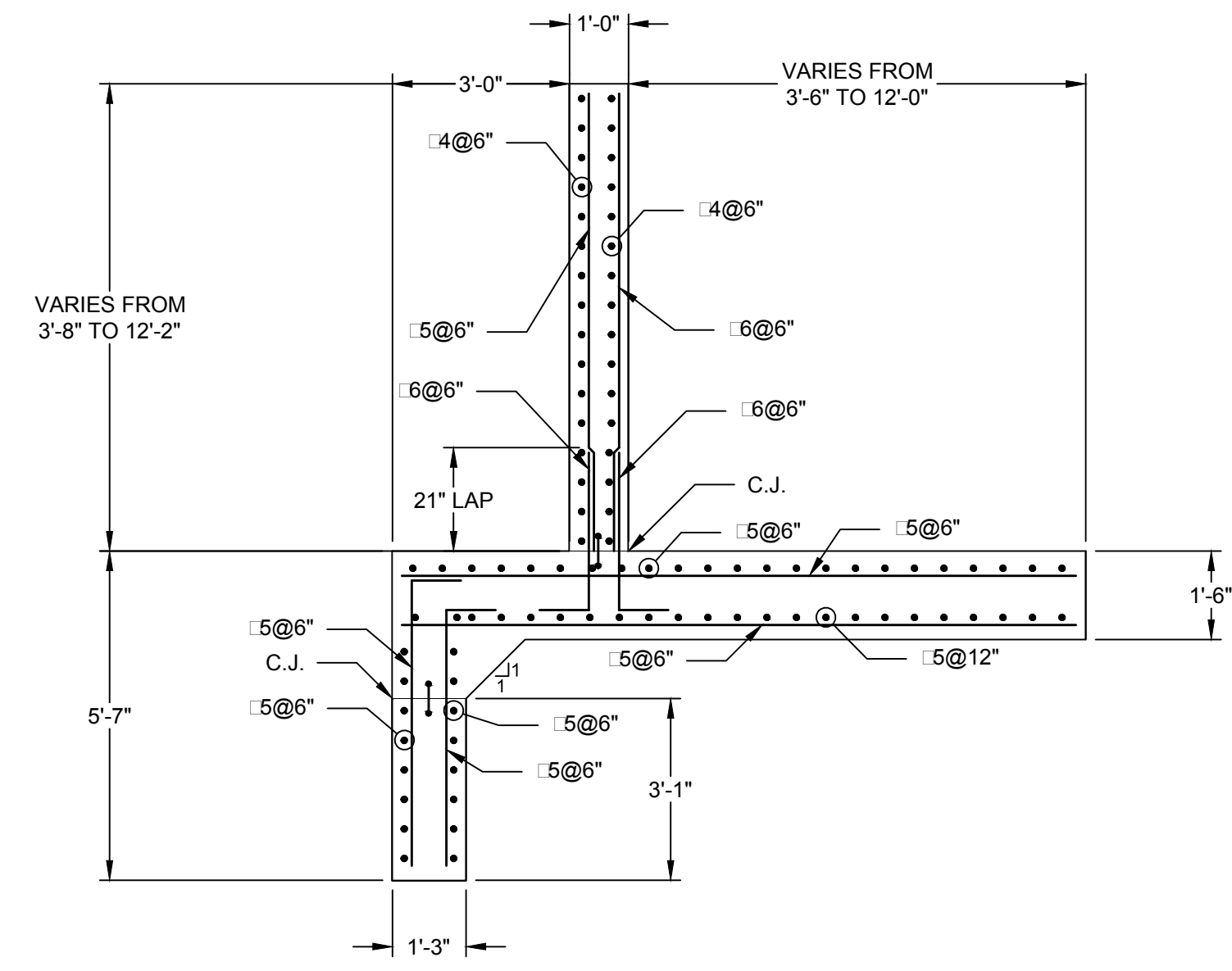
SCALE: 3/8"=1'0"

PROJECT: 16C17043.00		DATE: 07/10/2017		SHEET: 61 OF 66													
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA  WALL AND SLAB DETAILS SEGMENT IW2						DESIGNED BY: JTD, JIC		CHECKED BY: RPL, JRC		DRAWN BY: GHB, JSR		PROJECT ENGINEER: RANDALL P. BASS, P.E.		REV	DESCRIPTION	DATE	
 <b>Schnabel</b> ENGINEERING <small>6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8006 / Fax: 770-781-8003 / schnabel-eng.com</small>																	

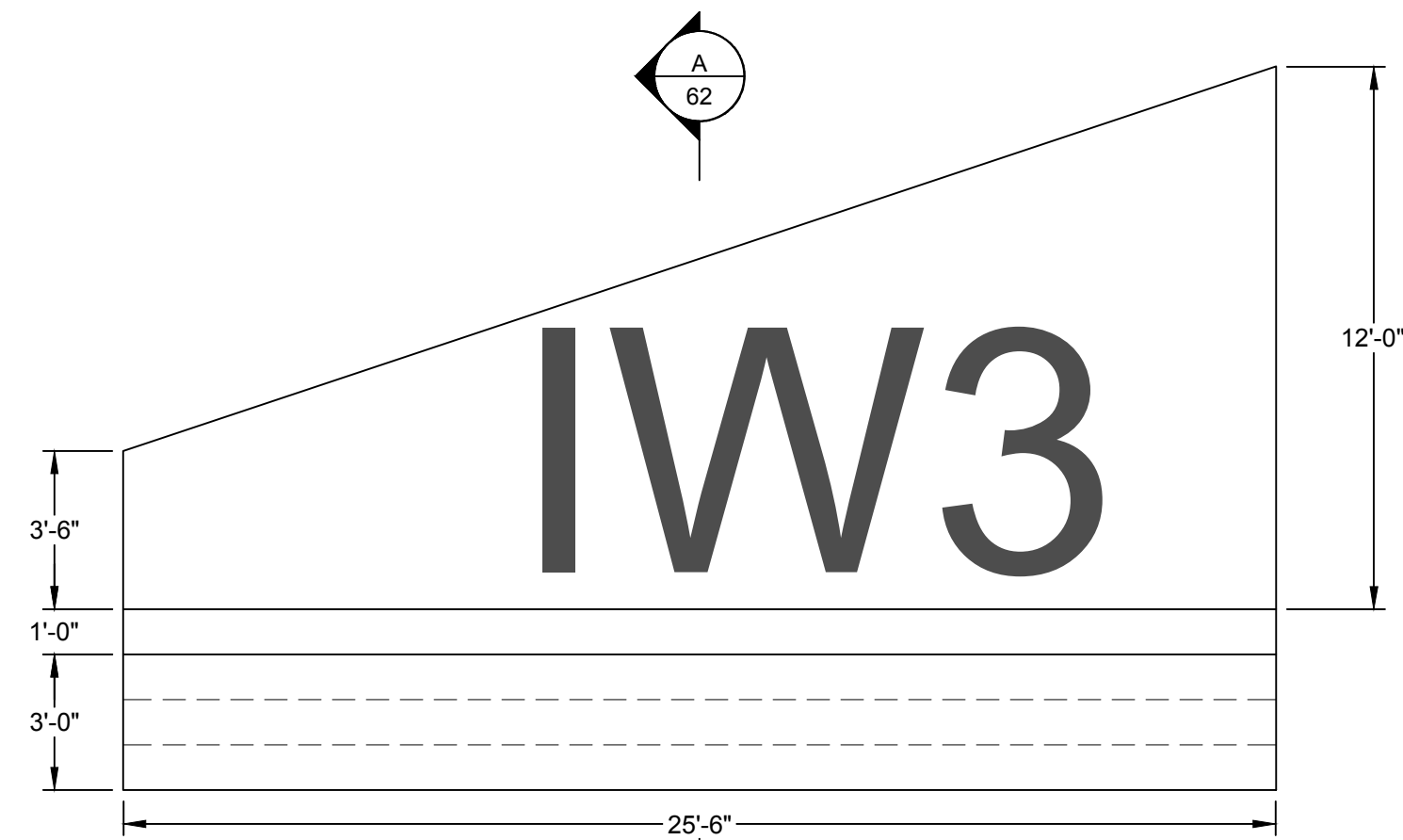
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-SE PRODUCT\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\05-FINAL\_DESIGN\PLT\_STRUCTURE\PLT\_STRUCTURE.DWG



1 SEGMENT IW3 SIDEWALL ELEVATION  
SCALE: 1/4"=10"  
0 4 8



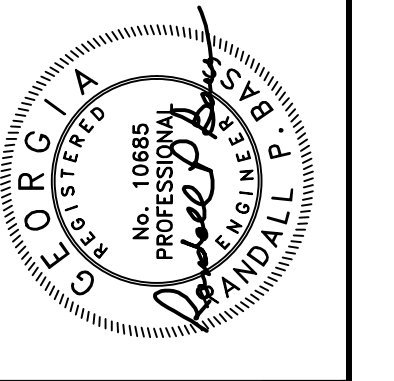
A SEGMENT IW3 SECTION  
SCALE: 3/8"=10"  
0 2 4



2 SEGMENT IW3 SLAB PLAN  
SCALE: 1/4"=10"  
0 4 8

REV	DESCRIPTION	DATE

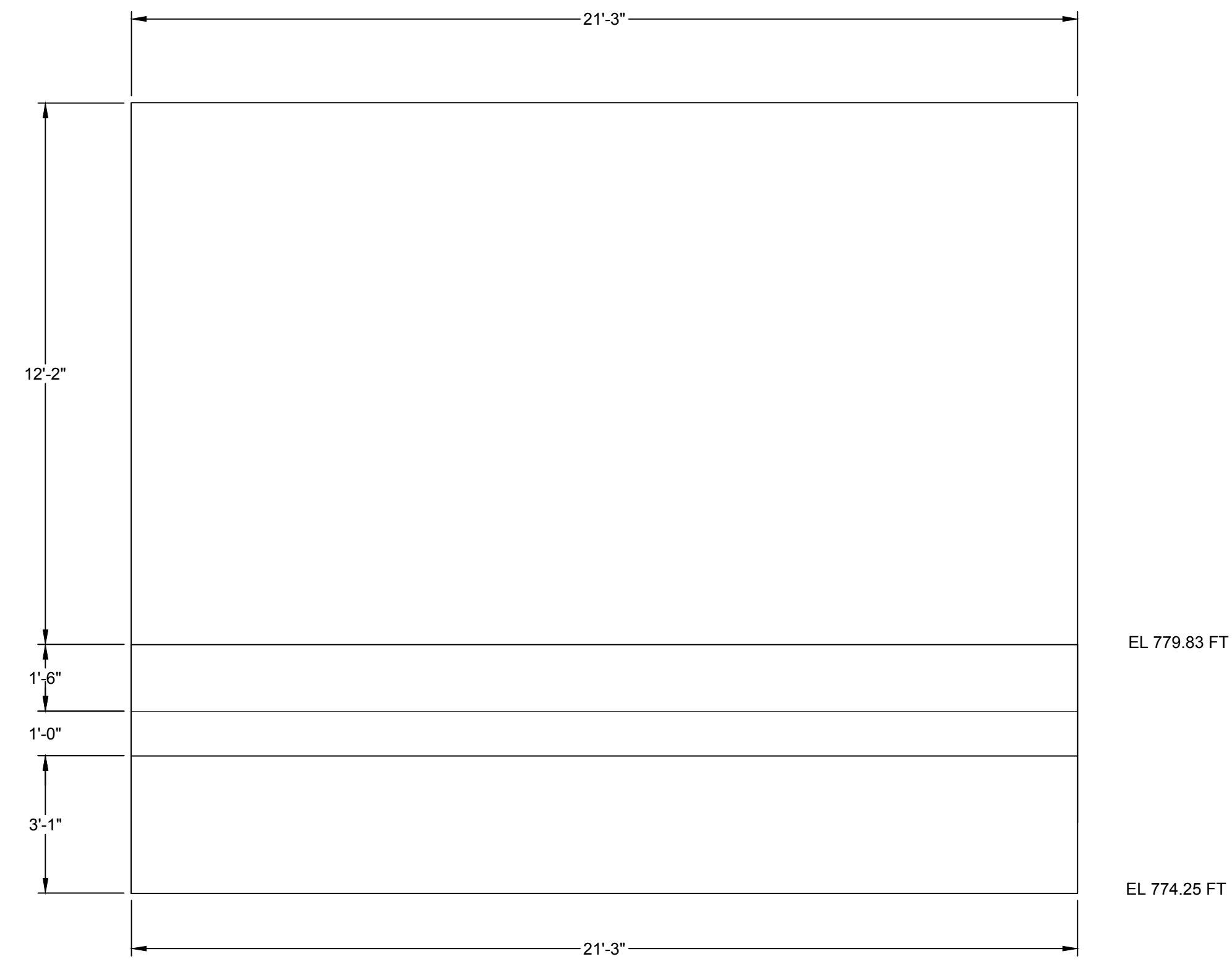
DESIGNED BY: JTD, JIC  
DRAWN BY: GHB, JSR  
CHECKED BY: RPB, JRC  
RANDALL P. BASS, P.E.  
DATE: 07/10/17  
GEORGIA PROFESSIONAL ENGINEER NO. 10885



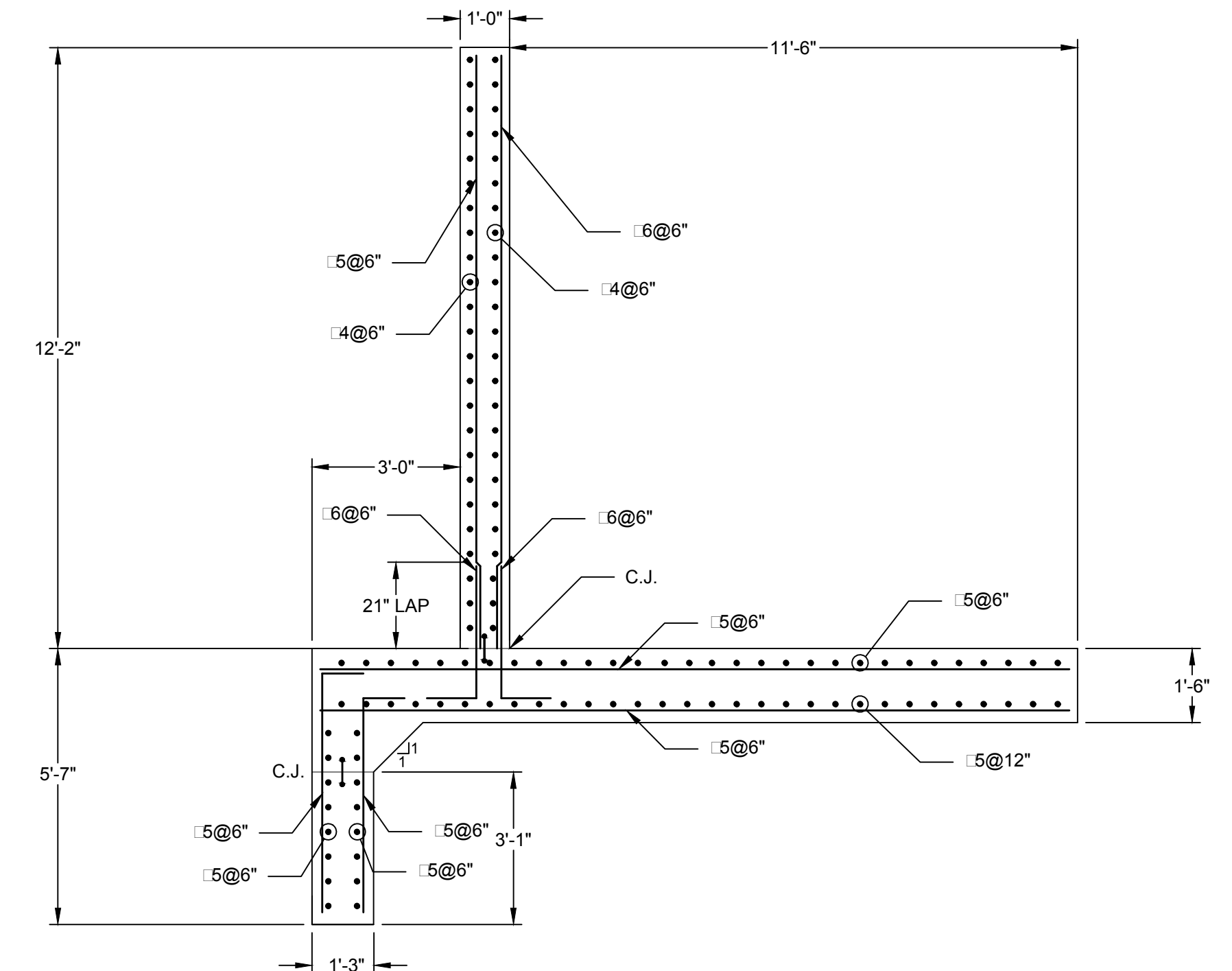
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ENGINEERING  
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CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA  
**WALL AND SLAB DETAILS**  
SEGMENT IW3

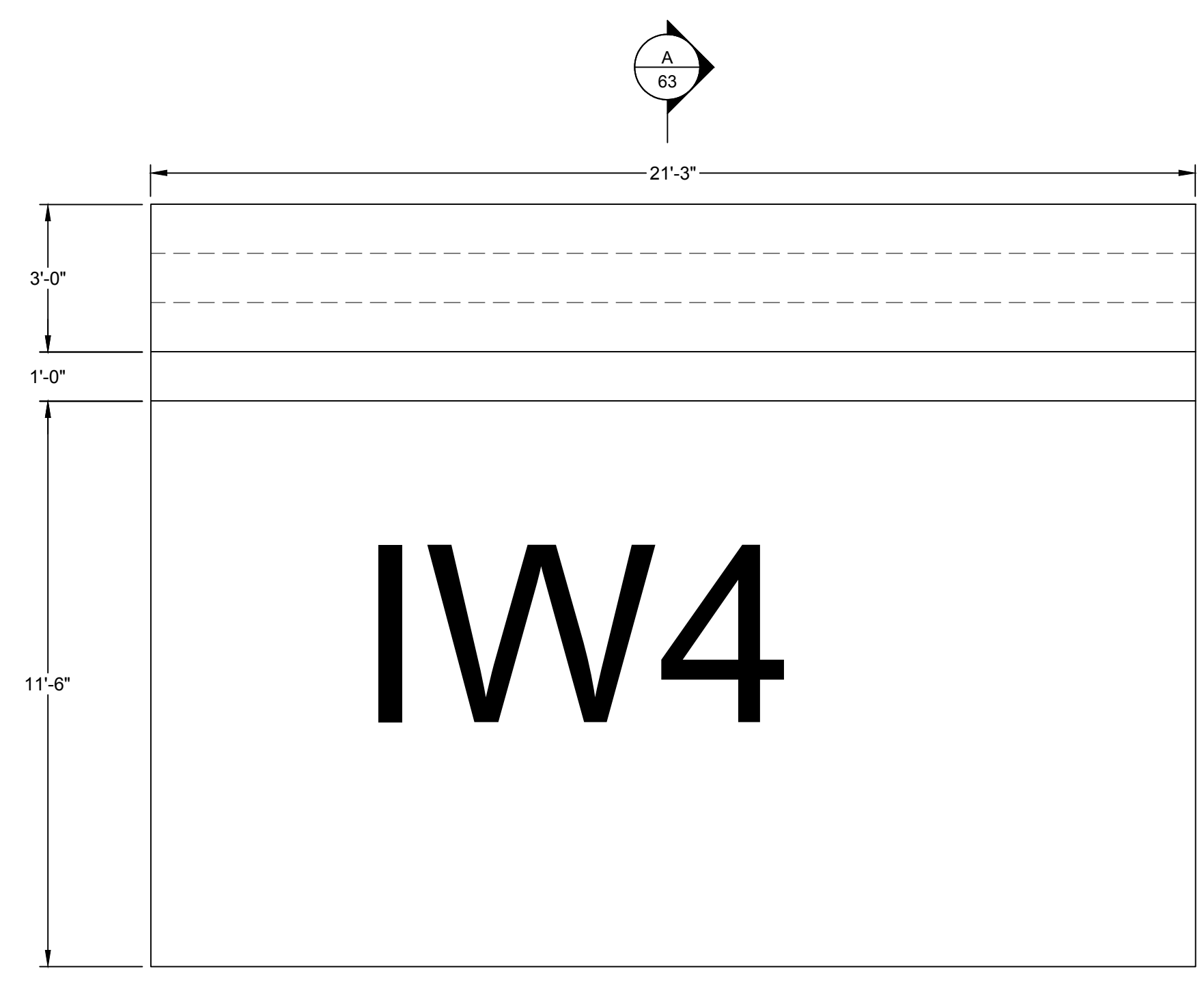
PROJECT: 16C17043.00  
DATE: 07/10/2017  
SHEET  
62 OF 66



1 SEGMENT IW4 SIDEWALL ELEVATION  
SCALE: 3/8"=1'0"



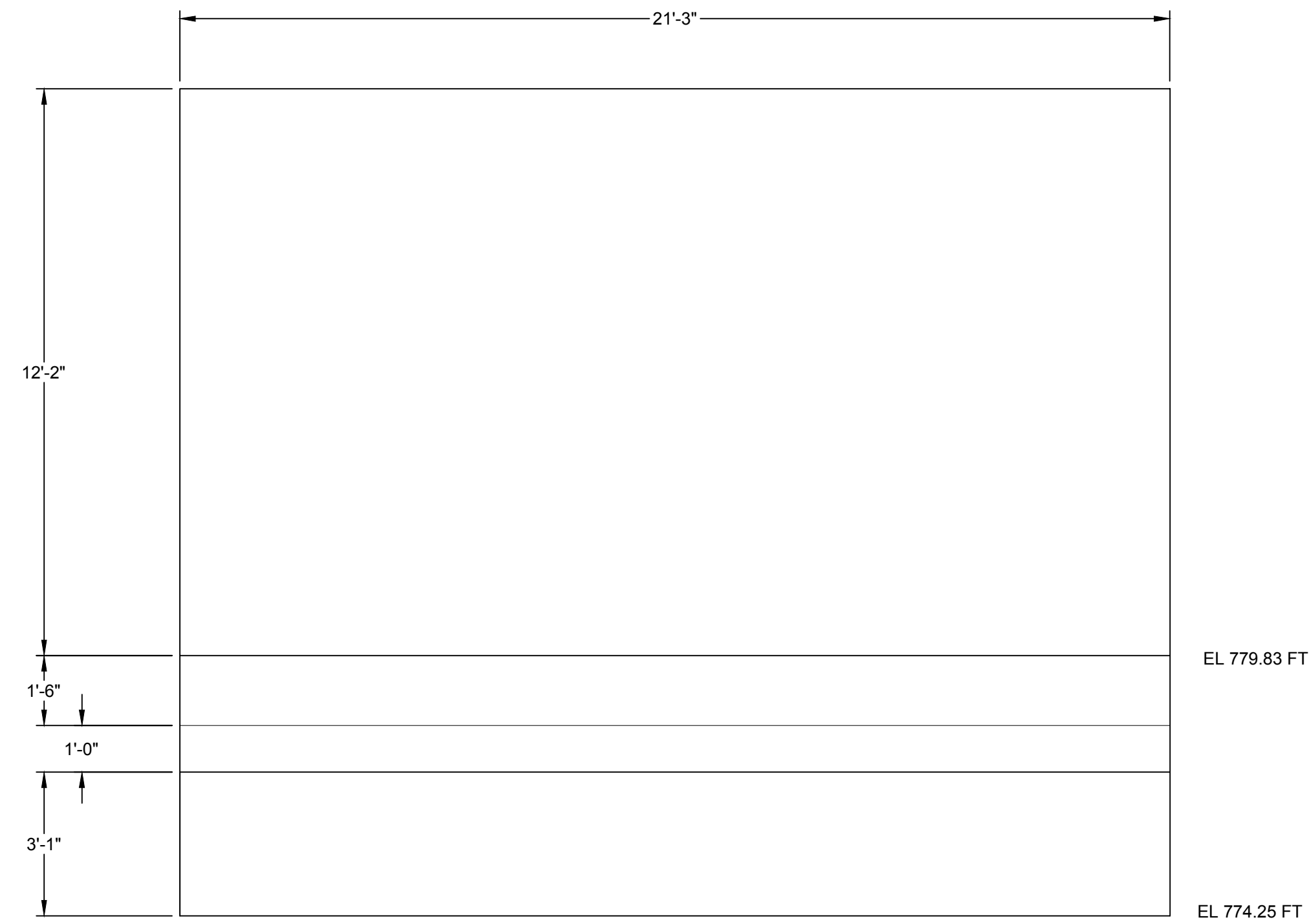
A SEGMENT IW4 SECTION  
SCALE: 3/8"=1'0"



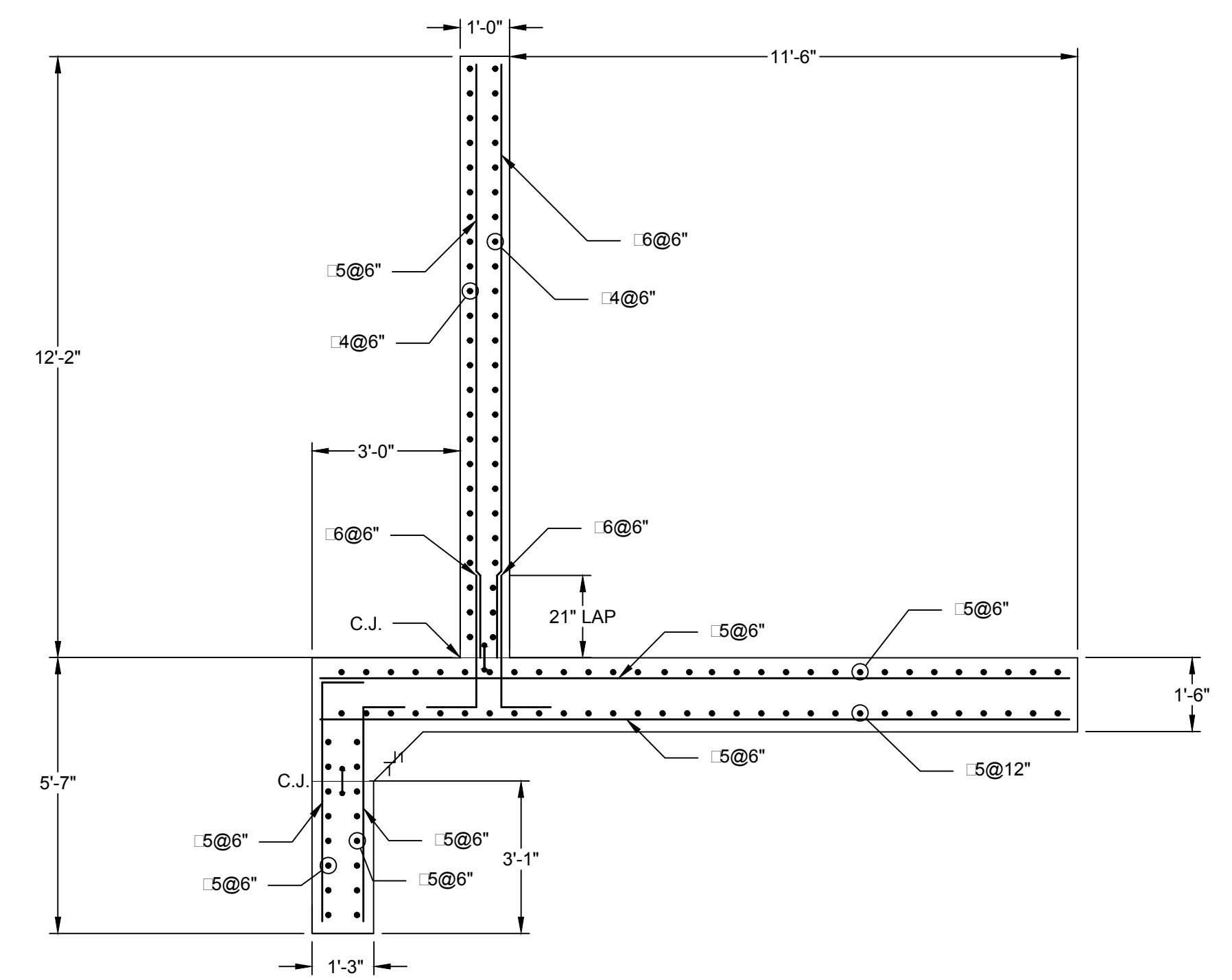
2 SEGMENT IW4 SLAB PLAN  
SCALE: 3/8"=1'0"

PROJECT: 16C17043.00	DATE: 07/10/2017	SHEET: 63 OF 66
<p>CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA</p> <p>WALL AND SLAB DETAILS SEGMENT IW4</p>		
<p><b>Schnabel</b> ENGINEERING</p> <p>6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com</p>		
<p>REGISTERED PROFESSIONAL ENGINEER No. 10885 RANDALL P. BASS, P.E.</p>		
DESIGNED BY: JTD, JIC	DRAWN BY: GHB, JSR	CHECKED BY: RPE, JRC
<p>DATE: 07/10/17 GEORGIA PROFESSIONAL ENGINEER NO. 10885</p>		
REV	DESCRIPTION	DATE

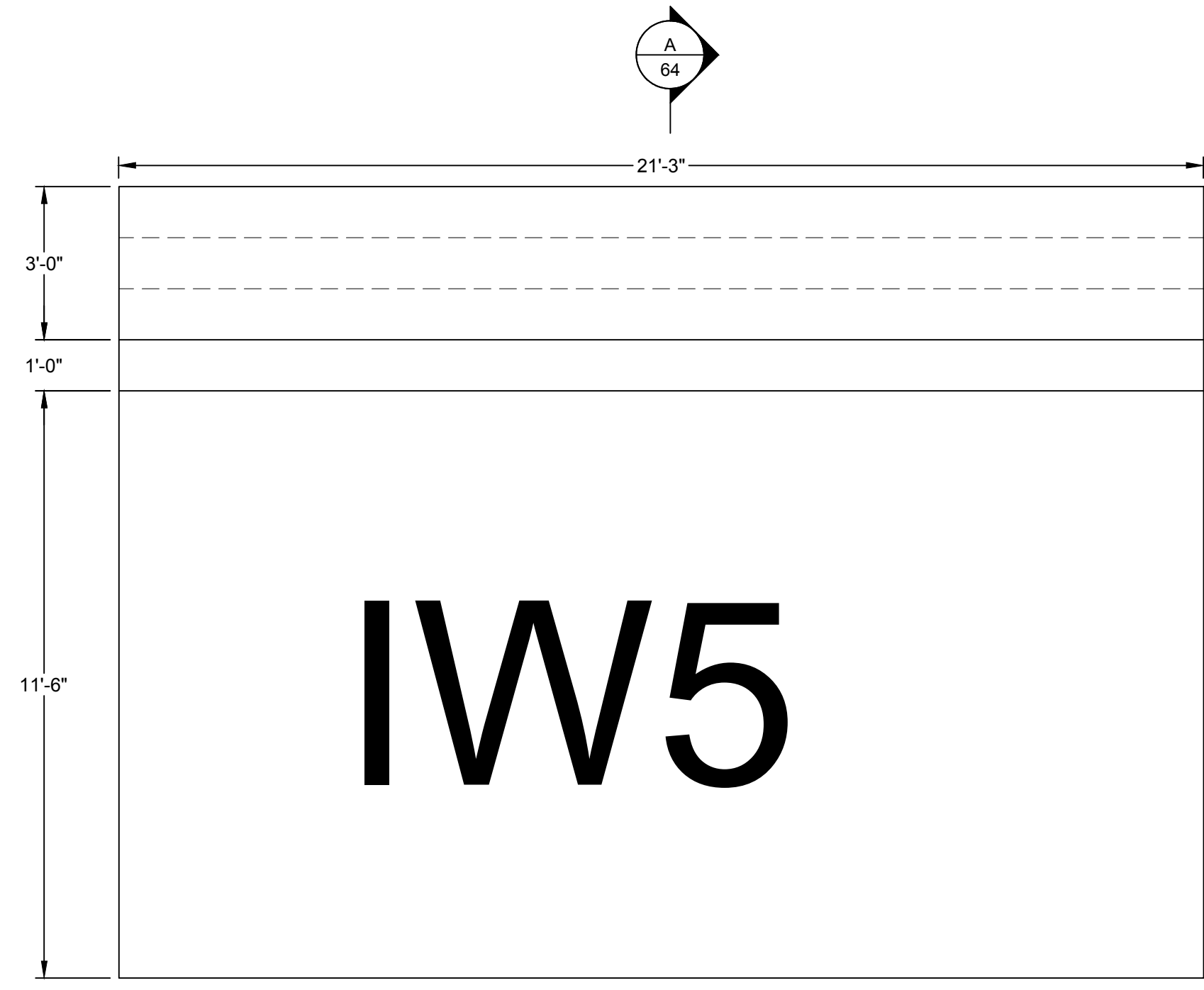
G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\16C17043-00-03-001-STRUCTURAL.DWG



1 SEGMENT IW5 SIDEWALL ELEVATION  
SCALE: 3/8"=1'0"



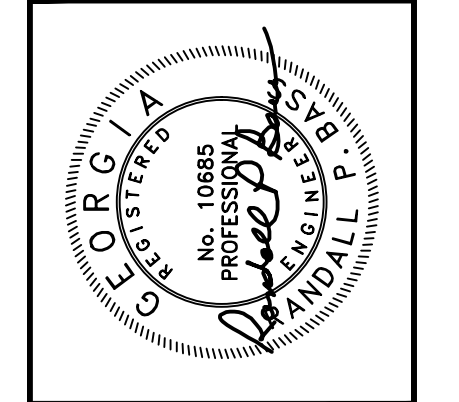
A SEGMENT IW5 SECTION  
SCALE: 3/8"=1'0"



2 SEGMENT IW5 SLAB PLAN  
SCALE: 3/8"=1'0"

REV	DESCRIPTION	DATE

DESIGNED BY: JTD, JIC	CHECKED BY: RPE, JRC	RANDALL P. BASS, P.E. <i>Randall P. Bass</i> GEORGIA PROFESSIONAL ENGINEER NO. 10885
DRAWN BY: GHB, JSR	DATE: 07/10/17	



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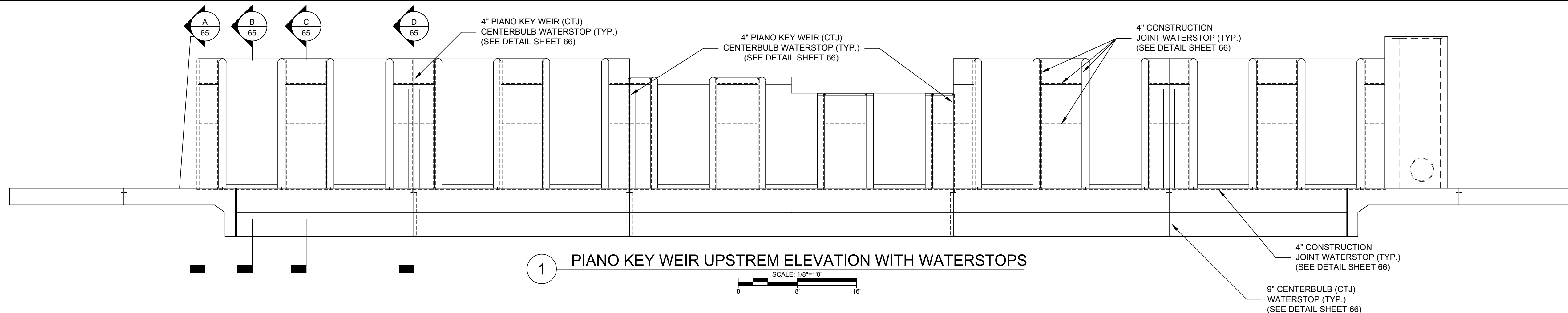
CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

WALL AND SLAB DETAILS  
SEGMENT IW5

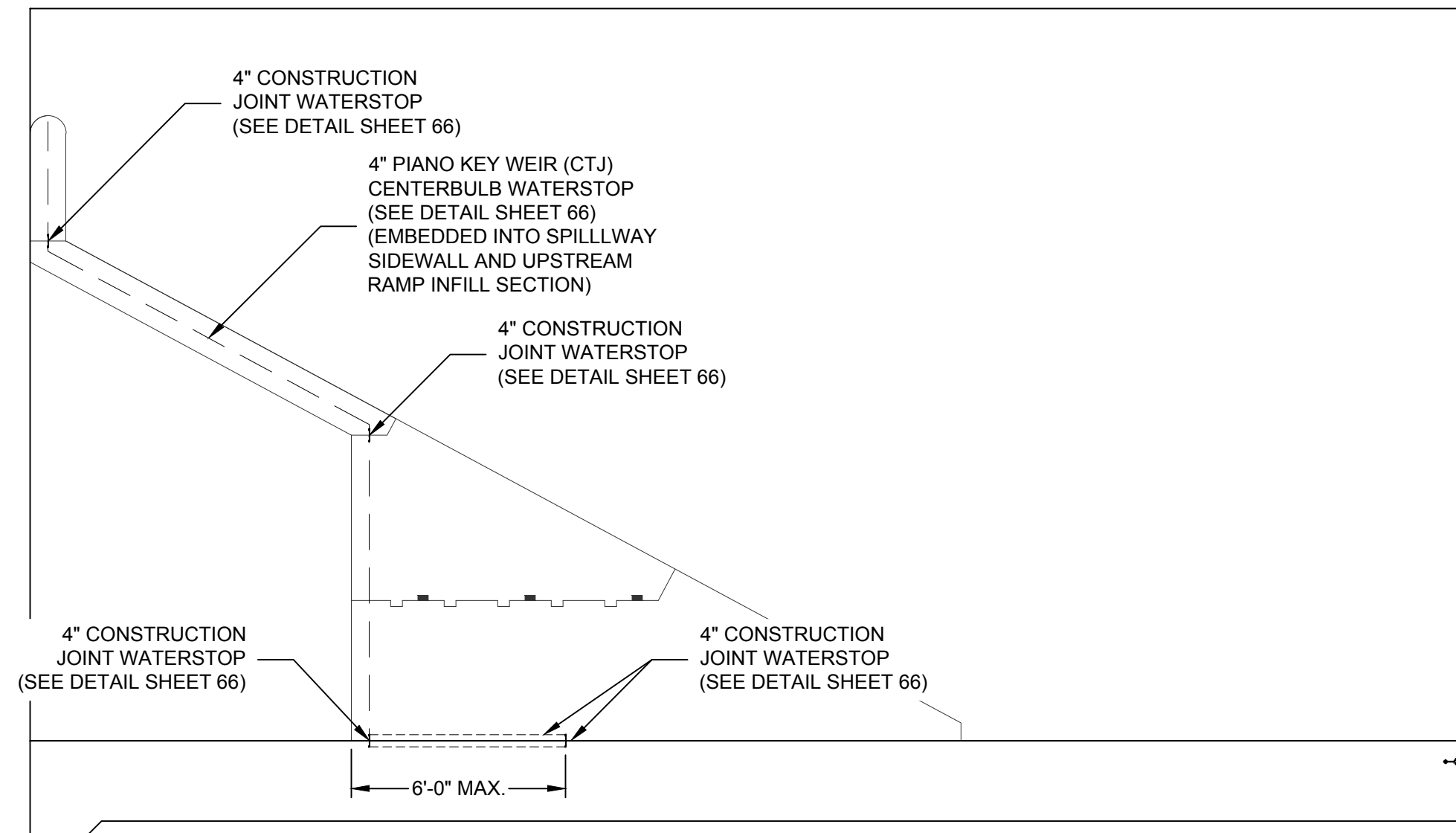
PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 64 OF 66

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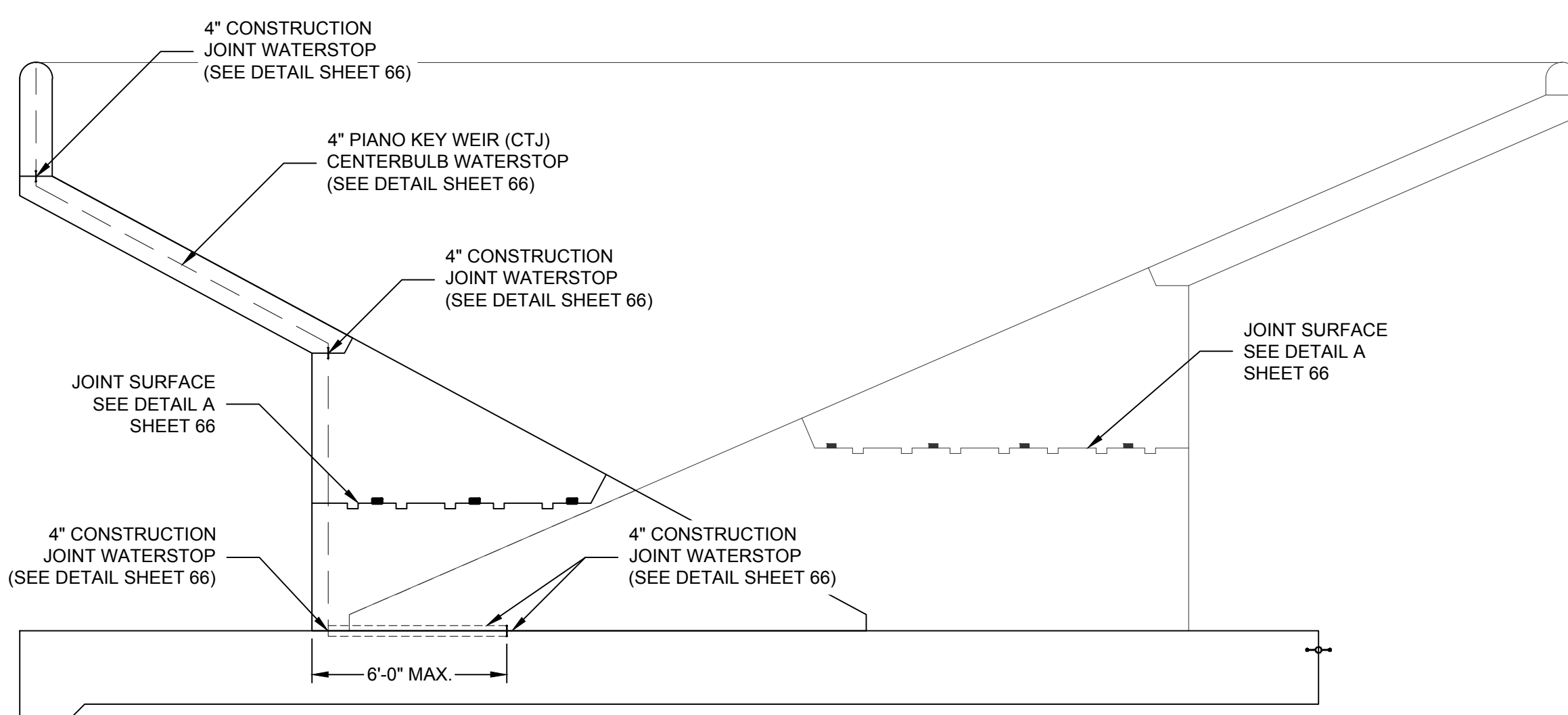
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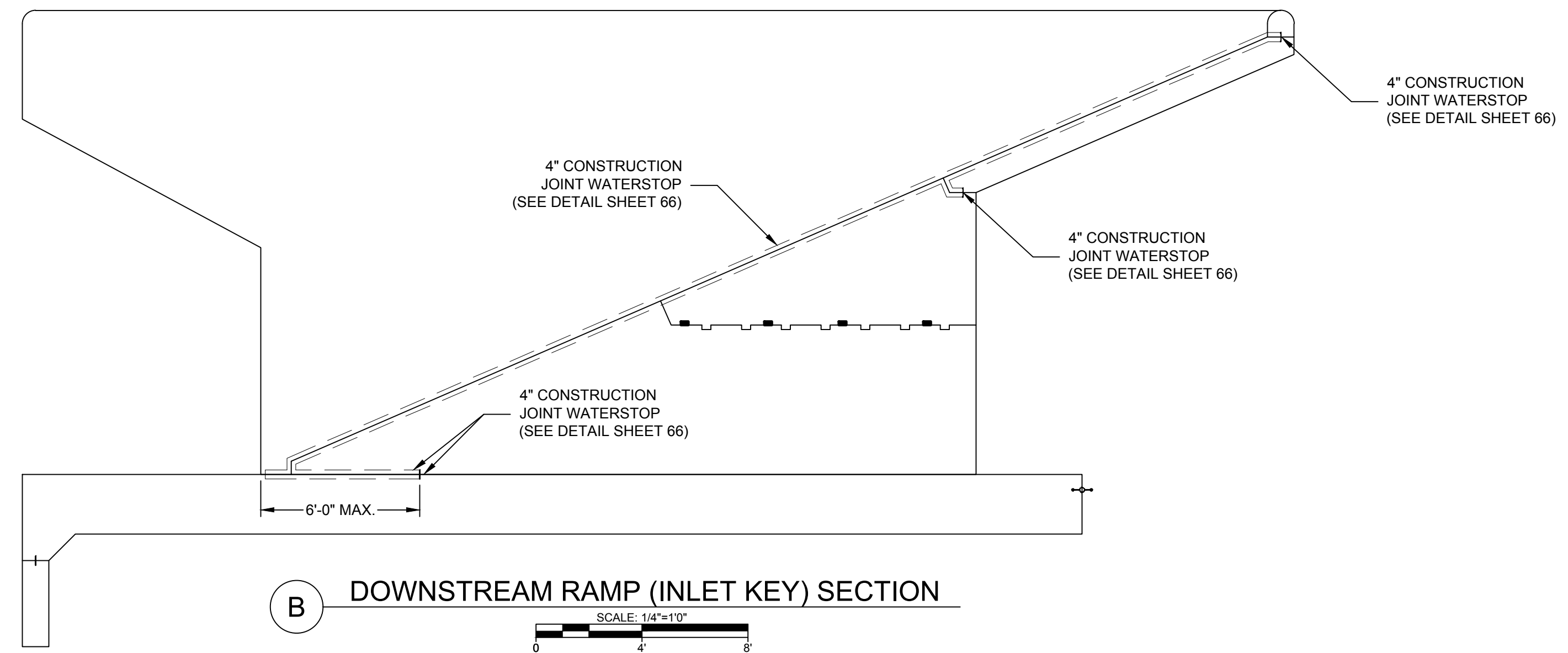
1 PIANO KEY WEIR UPSTREAM ELEVATION WITH WATERSTOPS



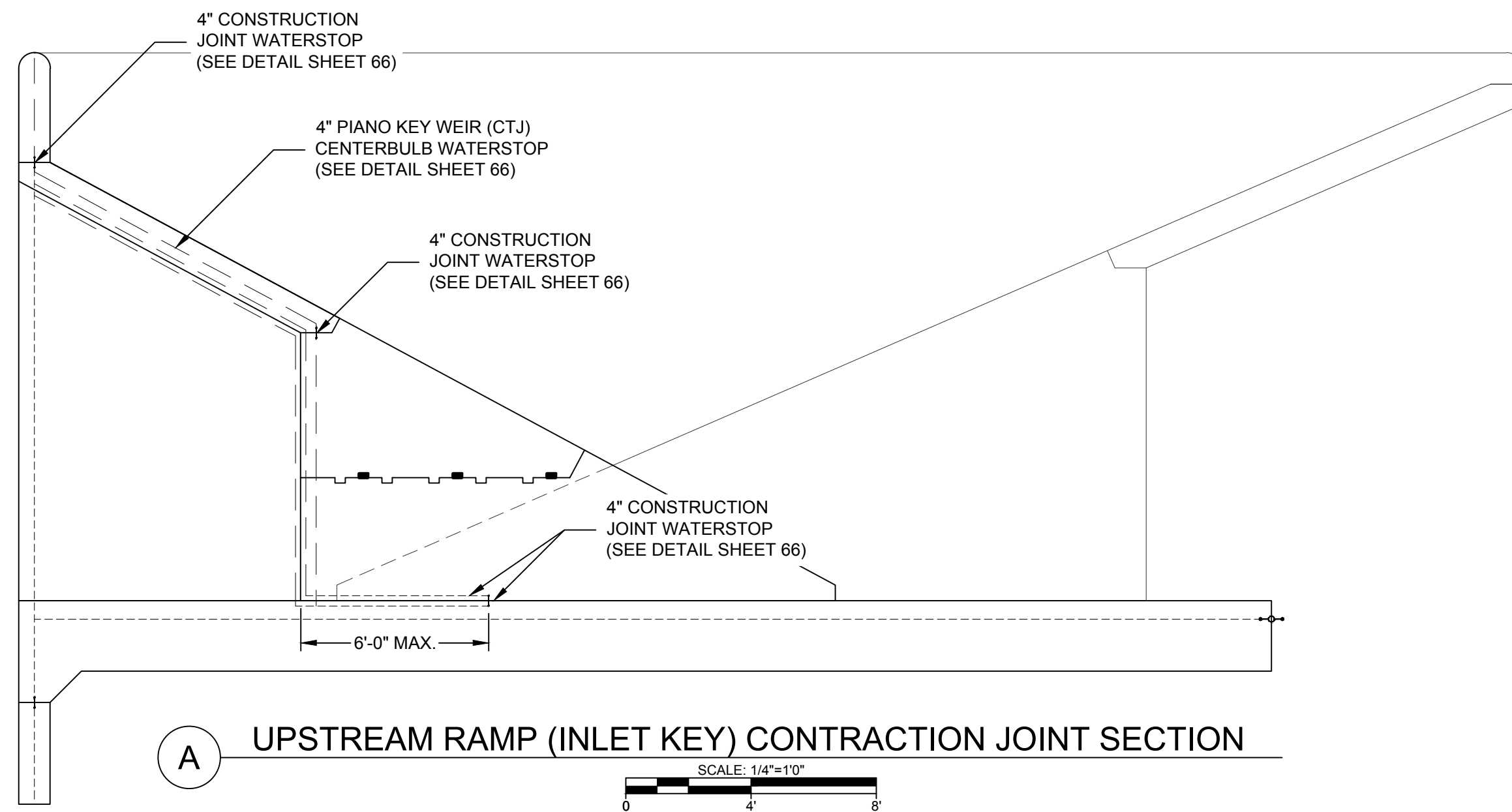
A PIANO KEY WEIR SIDEWALL INTERFACE SECTION



A UPSTREAM RAMP (OUTLET KEY) INFILL SECTION



B DOWNSTREAM RAMP (INLET KEY) SECTION

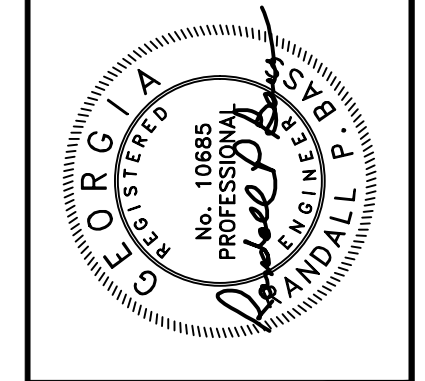


A UPSTREAM RAMP (INLET KEY) CONTRACTION JOINT SECTION

NOTE: WATERSTOP CONFIGURATION AND GEOMETRY TYPICAL ACROSS ALL STAGES AND SEGMENTS.

REV	DESCRIPTION	DATE

CHECKED BY: RPB/KRC  
 DRAWN BY: GHB/SJR  
 DESIGNED BY: JTB/JAC  
**RANDALL P. BASS, P.E.**  
*Randall P. Bass*  
 No. 10885  
 PROFESSIONAL ENGINEER  
 STATE: 07/10/17  
 GEORGIA PROFESSIONAL ENGINEER NO. 10885

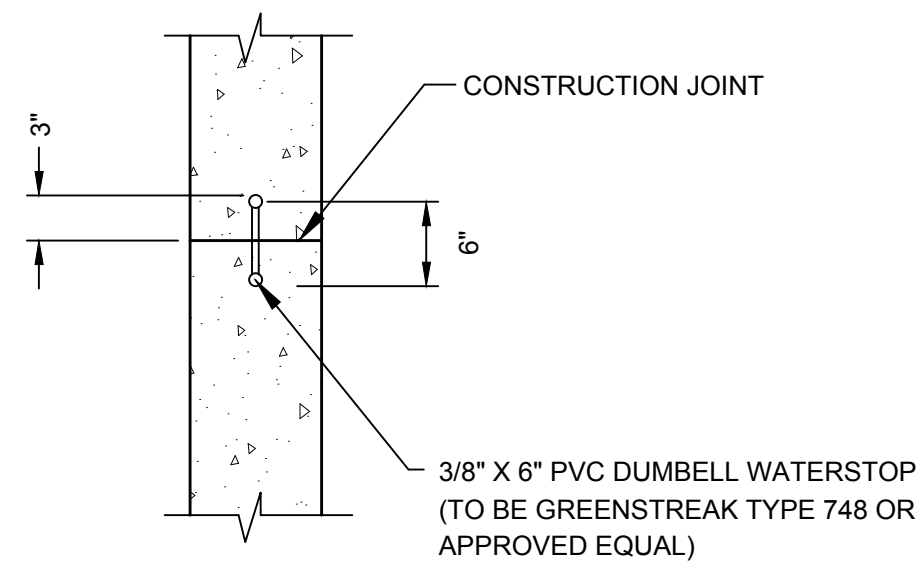


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 Phone: 770-781-8008 / Fax: 770-781-8003 /  
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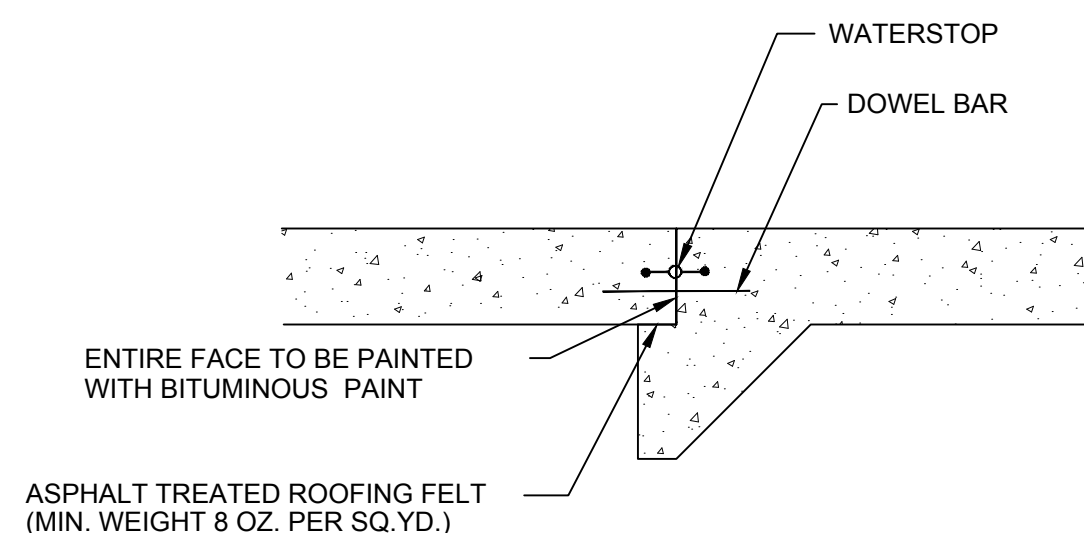
CONSTRUCTION PLANS FOR  
 LAKE PEACHTREE SPILLWAY  
 REPLACEMENT PROJECT  
 PEACHTREE CITY, GEORGIA

**JOINT DETAILS**

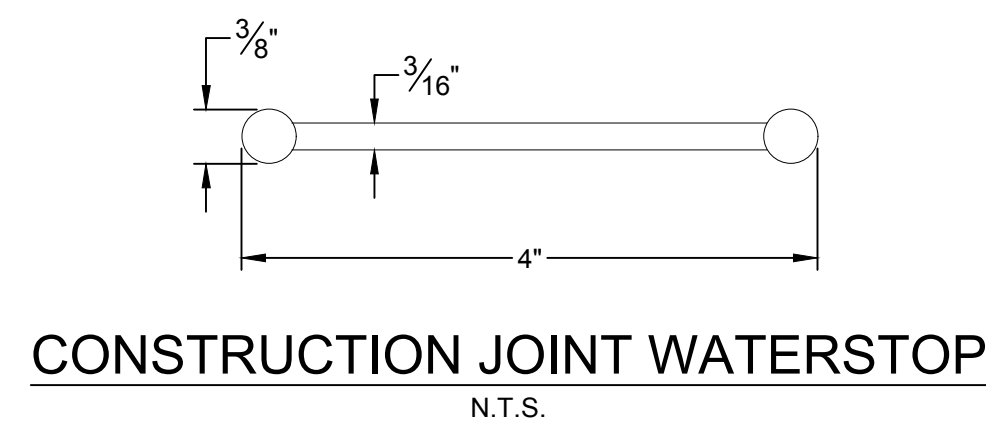
PROJECT: 16C17043.00  
 DATE: 07/10/2017  
 SHEET  
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**SIDEWALL CONSTRUCTION JOINT WATERSTOP**  
N.T.S.

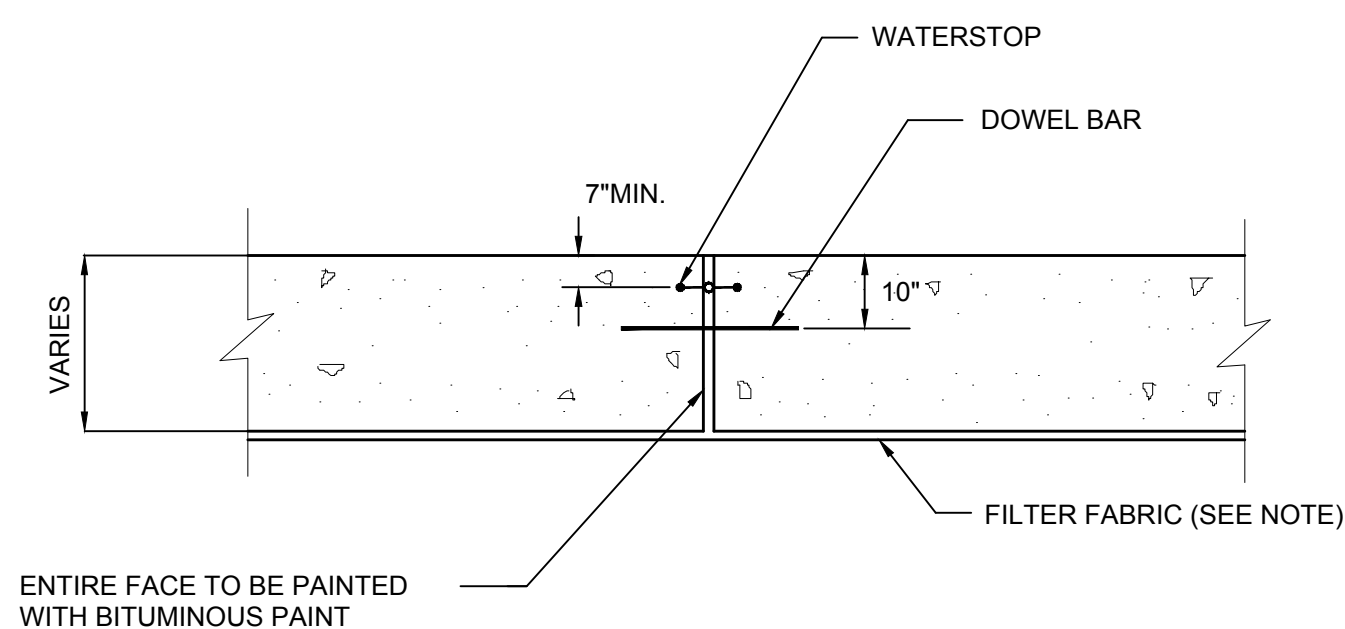


**TRANSVERSE SLAB CONTRACTION JOINT**  
N.T.S.



**CONSTRUCTION JOINT WATERSTOP**  
N.T.S.

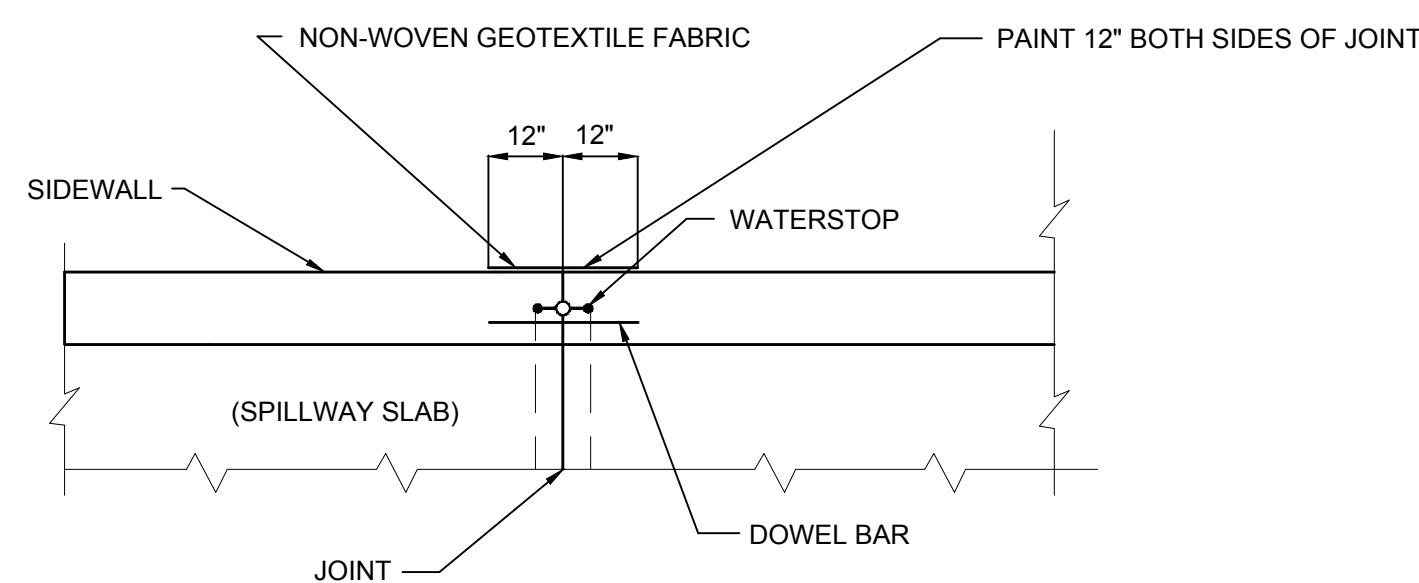
- NOTE:
1. MINIMUM RADIUS OF BENDS AROUND CORNERS SHALL BE 9". AT NO POINT IN BEND, HOWEVER, SHALL WATERSTOP BE CLOSER THAN 2" TO FACE OF CONCRETE.
  2. MAINTAIN A CLEARANCE OF AT LEAST 1" BETWEEN WATERSTOP AND REINFORCING STEEL.
  3. WATERSTOP SHALL BE SIKA  $\square$ 741, OR APPROVED EQUAL.



**LONGITUDINAL SLAB CONTRACTION JOINT**  
N.T.S.

NOTE: FILTER FABRIC CALLED OUT ON THIS SHEET REFERS TO NON-WOVEN, POLYETHYLENE FIBER FILTER FABRIC.

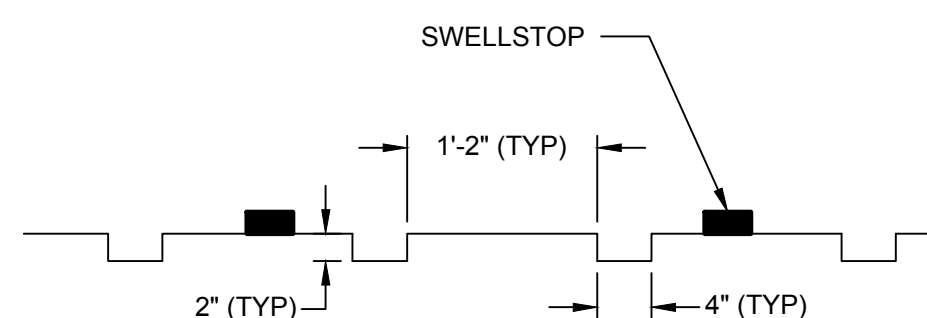
NOTE: BITUMINOUS PAINT AND ROOFING FELT SHOULD BE SUBMITTED TO AND APPROVED BY ENGINEER PRIOR TO PLACEMENT.



**TRANSVERSE SIDEWALL CONTRACTION JOINT**  
N.T.S.

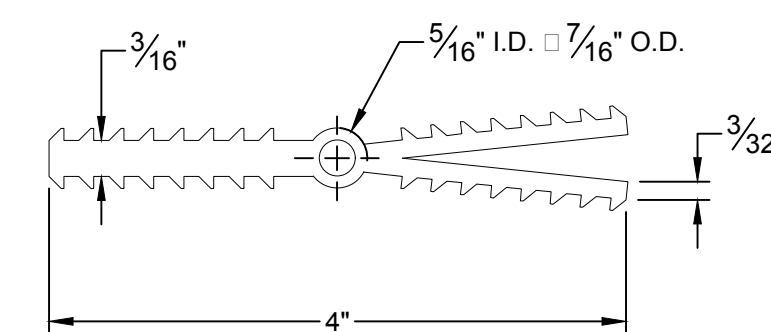
SIDEWALL JOINT NOTES:

1. GEOTEXTILE FABRIC AND BITUMINOUS PAINT USED TO ADHERE FABRIC TO SIDEWALL SHALL EXTEND FROM THE BOTTOM OF THE FOOTING TO THE LEVEL OF THE FINISHED GRADE. ANY FABRIC OR BITUMINOUS PAINT EXPOSED TO VIEW AFTER BACKFILLING OF THE WALLS IS COMPLETED SHALL BE COMPLETELY REMOVED TO THE SATISFACTION OF THE ENGINEER.
2. VERTICAL WATERSTOP IN SIDEWALLS TO EXTEND TO 3" FROM TOP OF SIDEWALL.



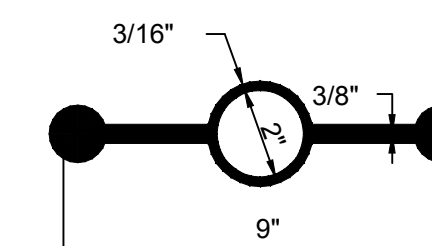
**A JOINT SURFACE DETAIL**  
N.T.S.

NOTE:  
JOINT SURFACE SHALL BE "GREEN CUT" WITH A PRESSURE WASHER HAVING A MINIMUM RATING OF 3000 PSI



**PIANO KEY WIER CONTRACTION JOINT WATERSTOP**  
N.T.S.

- NOTE:
1. WATERSTOP SHALL EXTEND FROM FLOOR INTO SIDEWALLS. MINIMUM RADIUS OF BENDS AROUND CORNERS SHALL BE 9". AT NO POINT IN BEND, HOWEVER, SHALL WATERSTOP BE CLOSER THAN 2" TO FACE OF CONCRETE.
  2. MAINTAIN A CLEARANCE OF AT LEAST 1" BETWEEN WATERSTOP, REINFORCING STEEL, AND DOWEL BARS.
  3. WATERSTOP SHALL BE SIKA  $\square$ 721, OR APPROVED EQUAL.

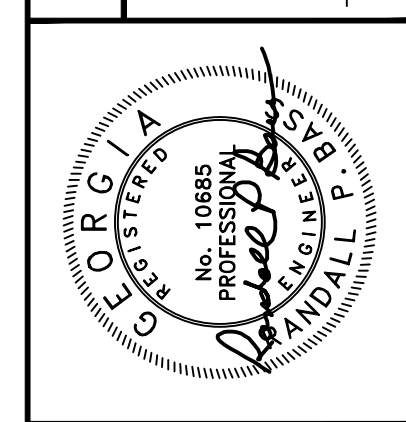


**CONTRACTION JOINT WATERSTOP**  
N.T.S.

- NOTE:
1. WATERSTOP SHALL EXTEND FROM FLOOR INTO SIDEWALLS. MINIMUM RADIUS OF BENDS AROUND CORNERS SHALL BE 9". AT NO POINT IN BEND, HOWEVER, SHALL WATERSTOP BE CLOSER THAN 2" TO FACE OF CONCRETE.
  2. MAINTAIN A CLEARANCE OF AT LEAST 1" BETWEEN WATERSTOP, REINFORCING STEEL, AND DOWEL BARS.
  3. WATERSTOP SHALL BE SIKA  $\square$ 754, OR APPROVED EQUAL.

DATE	
DESCRIPTION	
REV	

CHECKED BY:	RIPKARC
DRAWN BY:	GHBZSR
DESIGNED BY:	JTKJAC
RANDALL P. BASS, P.E.	
DATE: 07/10/17	
GEORGIA PROFESSIONAL ENGINEER NO. 10685	



**Schnabel ENGINEERING**

6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /  
Phone: 770-781-8008 / Fax: 770-781-8003 /  
schnabel-eng.com

CONSTRUCTION PLANS FOR  
LAKE PEACHTREE SPILLWAY  
REPLACEMENT PROJECT  
PEACHTREE CITY, GEORGIA

**JOINT DETAILS**

PROJECT: 16C17043.00
DATE: 07/10/2017
SHEET 66 OF 66

**GENERAL NOTES:**

- OWNER / DEVELOPER:  
  
PEACHTREE CITY  
151 WILLOWBEND RD  
PEACHTREE CITY, GA 30289  
770-487-7657
- ENGINEER/SURVEYOR:  
  
INTEGRATED SCIENCE & ENGINEERING, INC.  
1039 SULLIVAN RD, SUITE 200  
NEWNAN, GA 30265  
CONTACT: DAN DAVIS 678-552-2106

**EROSION, SEDIMENTATION AND POLLUTION CONTROL NOTES:**

- 24-HOUR EROSION CONTROL CONTACT: DAN DAVIS, 678-552-2106 (#4)
- DISTURBED AREA: 4.9 AC.; TOTAL SITE AREA: 4.9 ACRES (#3) (#6)
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES. (#19)
- EROSION CONTROL MEASURES MUST BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE. (#20)
- ALL EROSION CONTROL MEASURES ARE TO CONFORM TO THE STANDARDS SET FORTH IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" 2016 EDITION.
- EROSION CONTROL DEVICES SHALL BE INSTALLED BEFORE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM SHOWN ON THE APPROVED PLANS. IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE DEVELOPER IMMEDIATELY!
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING. (#21)
- SEDIMENT CONTROL MEASURES MUST BE INSTALLED BEFORE CLEARING AND GRADING BEGINS.
- INSPECTIONS BY CERTIFIED PERSONNEL PROVIDED BY PRIMARY PERMITEE AND THE ASSOCIATED RECORDS SHALL BE KEPT ON SITE IN COMPLIANCE WITH NPDES PERMIT NUMBER GAR 100001.
- THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION. (#14)
- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS. (#15)
- AMENDMENTS / REVISIONS TO THE ES&PC PLAN THAT HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL. (#17)
- THE PRIMARY PERMITEE IS REQUIRED KEEP THE ES&PC PLAN UP-TO-DATE.
- NO STATE WATERS ARE PRESENT WITHIN THE DEVELOPABLE AREA OF THIS PROJECT SITE.
- NO WETLANDS ARE PRESENT WITHIN THE DEVELOPABLE AREA OF THIS PROJECT SITE. (#18)
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO STATE WATERS EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- THE ES&PC PLAN IS IN COMPLIANCE WITH ALL CURRENT WASTE DISPOSAL, SANITARY SEWER, AND/OR SEPTIC TANK REGULATIONS.
- ALL SOD PLACED ON SLOPES 3:1 OR STEEPER SHALL BE STAPLED IN A MANNER THAT PREVENTS THE SOD FROM SLIDING.
- NO ALTERNATIVE BMPs WERE USED IN THE DESIGN OF THE ES&PC PLAN.
- NO CONSTRUCTION ACTIVITY WILL DISCHARGE STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT.
- THE PERSON ULTIMATELY RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL PRACTICES ON THIS SITE AND WHO IS TO BE CONTACTED IN THE EVENT OF A STOP WORK ORDER, IS: NAME: MR. DAN DAVIS; PHONE #: 678-552-2106.

<b>#5 Primary Permittee</b> DEVELOPER: PEACHTREE CITY 151 WILLOWBEND RD PEACHTREE CITY, GA 30289 770-487-7657  Contact: NAME: DAVID BORKOWSKI, CITY ENGINEER PHONE: 770-631-2538	<b>Certified Personnel</b> CIVIL ENGINEER: INTEGRATED SCIENCE & ENGINEERING 1039 SULLIVAN ROAD, SUITE 200 NEWNAN, GA 30265  Contact: DAN DAVIS PHONE: 678-552-2106
---	--

**Engineer Certification** (#12) (#13)

"I certify under penalty of law that this plan was prepared after a site visit to the location described herein by myself or my authorized agent, under my supervision.

"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia," (published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAR 100001."

Design professional of record shall inspect the site within 7 days of the construction start. The primary permittee shall notify the design professional of the construction start date prior to that start date.

LAWRENCE H. DAVIS, JR., P.E. #: 19888 GSWCC#: 0000016514 DATE: 7/7/2017

**Permittee Certification**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PERMITEE \_\_\_\_\_ DATE \_\_\_\_\_

**#28 SITEMARK ACTIVITY SCHEDULE (ANTICIPATED START DATE - AUGUST 2017)**

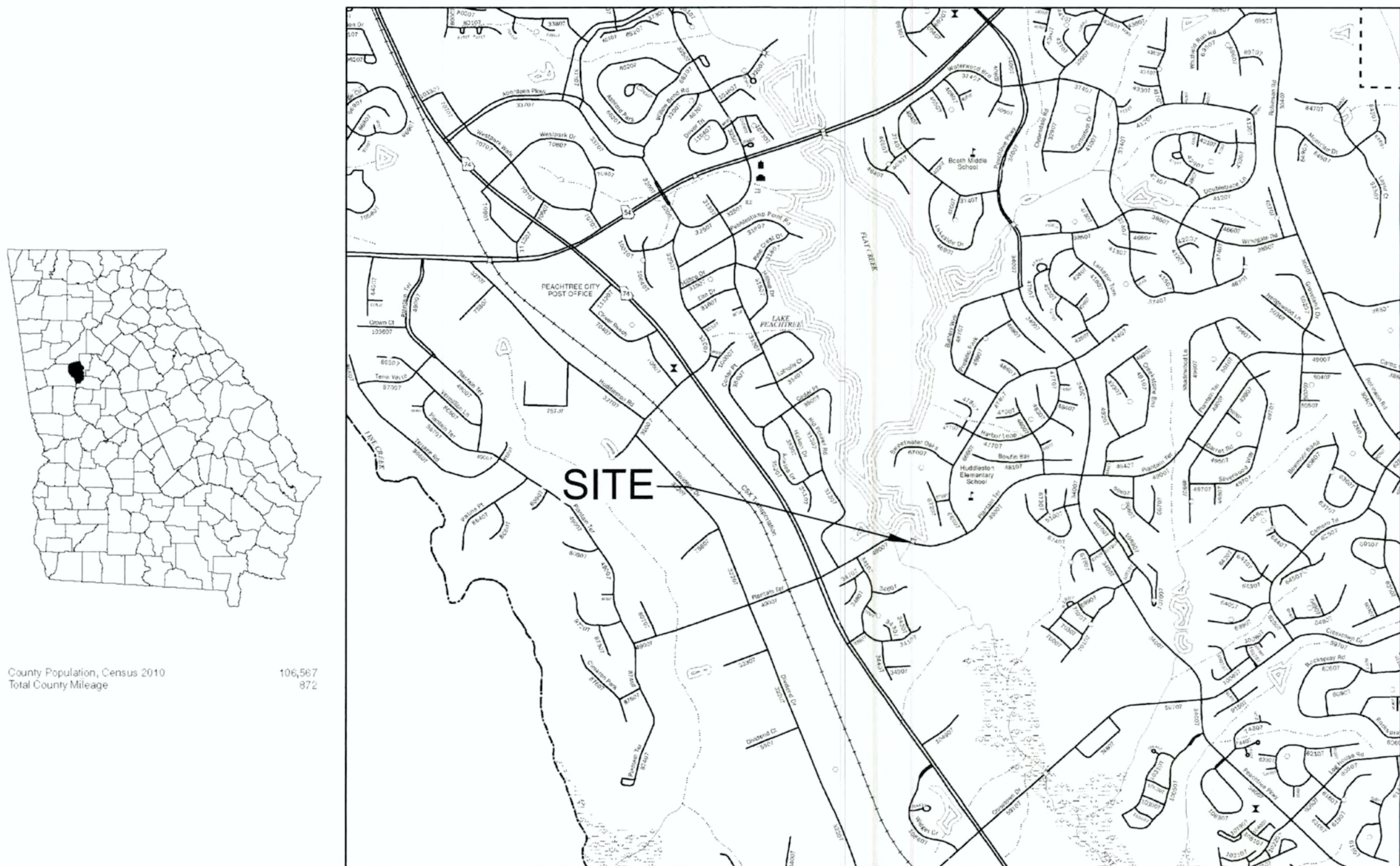
ITEM	MONTH								
	1	2	3	4	5	6	7	8	9
INITIAL EROSION CONTROL INSTALLATION	■								
GRADING/CLEARING COFFERDAM CONST.	■	■							
DEMO			■						
SPILLWAY CONSTRUCTION			■	■	■	■	■	■	■
APPLICATION OF TEMPORARY GRASSING			■	■	■	■	■	■	■
EROS. CONT.			■	■	■	■	■	■	■
MAINTENANCE OF ES&PC BMPs			■	■	■	■	■	■	■
LANDSCAPING								■	■
APPLICATION OF PERMANENT GRASSING								■	■

**SHEET INDEX**

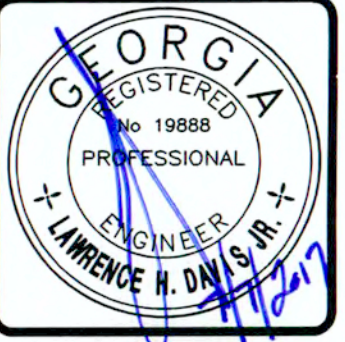
SHEET #	TITLE
C500	ES&PC COVER
C501	EROSION CONTROL NOTES
C502	N.P.D.E.S. CHECKLIST
C510	PHASE I - INITIAL PERIMETER EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN
C520	PHASE II - INTERMEDIATE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN
C530	PHASE III - FINAL PHASE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN
C600	EROSION CONTROL DETAILS
C601	EROSION CONTROL DETAILS
C602	EROSION CONTROL DETAILS

# EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT FAYETTE COUNTY, GEORGIA

VICINITY MAP (10)



NTS



Date	Drawn by	Check by	Design by	Review by	Rev	Description
6/29/2017	SMJ	CKM	LHD	LHD	1	ISSUED FOR PERMIT - NOT FOR CONST
					2	ISSUED FOR PERMIT - NOT FOR CONST
					3	ISSUED FOR PERMIT - NOT FOR CONST

EROSION, SEDIMENT, AND POLLUTION CONTROL PLAN FOR  
**PTC SPILLWAY REPLACEMENT**  
PREPARED FOR  
**PEACHTREE CITY**  
LOCATED IN PEACHTREE CITY, GEORGIA

EROSION & SEDIMENT CONTROL COVER







CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Sd1-NS Sd1-S	SEDIMENT BARRIER		A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS AND POLES, GRAVEL, OR A SEDIMENT FENCE. THE BARRIERS ARE USUALLY TEMPORARY.
St	STORM DRAIN INLET/OUTLET PROTECTION		A PAVED OR SHORT SECTION OF RIPRAP CHANNEL AT THE OUTLET OF A STORM DRAIN SYSTEM PREVENTING EROSION FROM THE CONCENTRATED RUNOFF.
Sd4	TEMPORARY SEDIMENT TRAP		A SMALL TEMPORARY POND THAT DRAINS A DISTURBED AREA SO THAT SEDIMENT CAN SETTLE OUT. THE PRINCIPLE FEATURE DISTINGUISHING A TEMPORARY SEDIMENT TRAP FROM A TEMPORARY SEDIMENT BASIN IS THE LACK OF A PIPE OR RISER.

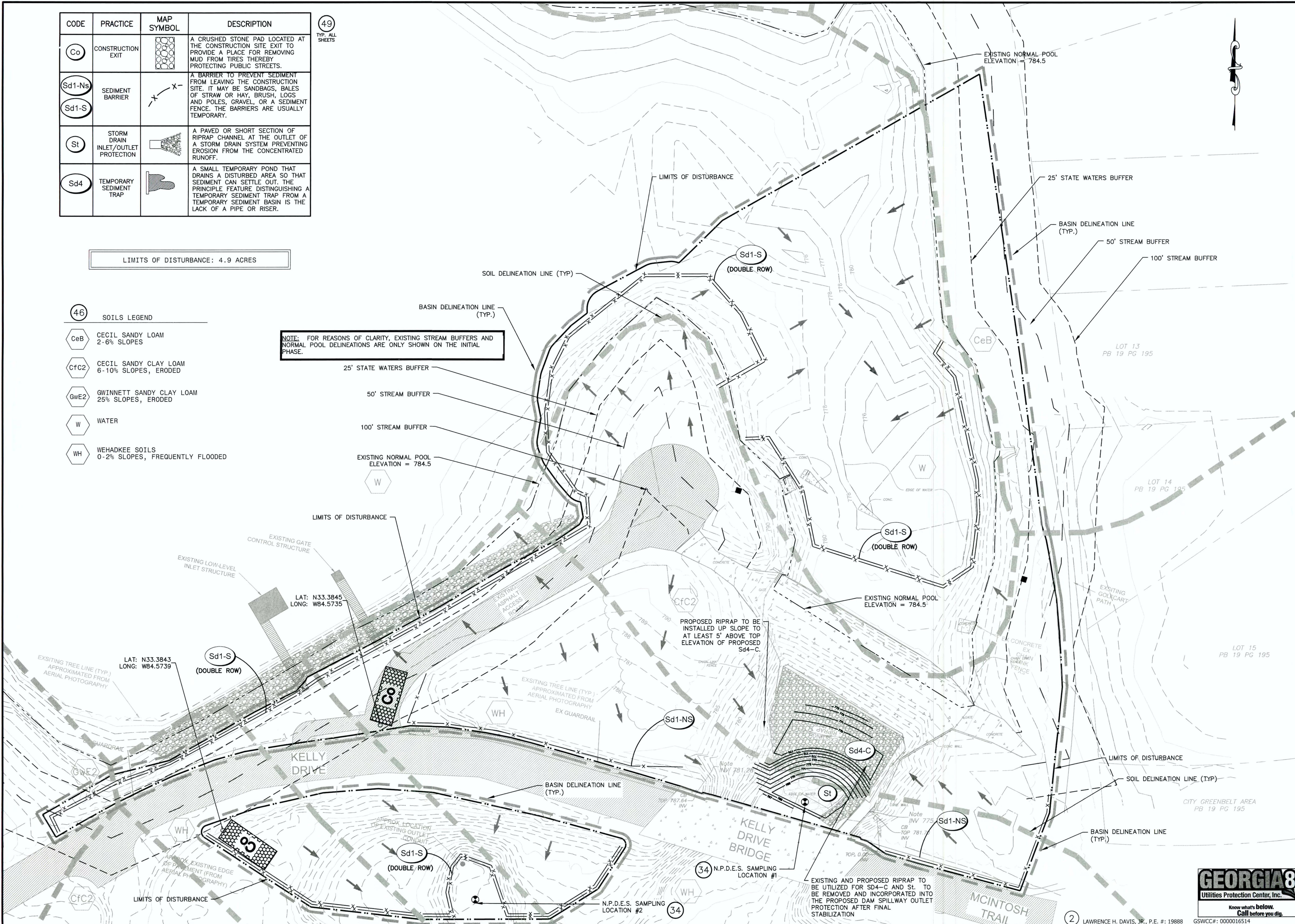
49  
TYP. ALL SHEETS

LIMITS OF DISTURBANCE: 4.9 ACRES

46 SOILS LEGEND

- CECIL SANDY LOAM  
2-6% SLOPES
- CECIL SANDY CLAY LOAM  
6-10% SLOPES, ERODED
- GWINNETT SANDY CLAY LOAM  
25% SLOPES, ERODED
- WATER
- WEHADKEE SOILS  
0-2% SLOPES, FREQUENTLY FLOODED

NOTE: FOR REASONS OF CLARITY, EXISTING STREAM BUFFERS AND NORMAL POOL DELINEATIONS ARE ONLY SHOWN ON THE INITIAL PHASE.



**INTEGRATED Science & Engineering**  
 1000 Peachtree St., Ste. 500, Atlanta, Georgia 30308  
 (404) 525-2100 (FAX) (404) 525-2107  
 ATLANTA/SAVANNAH

**REGISTERED PROFESSIONAL ENGINEER**  
 LAWRENCE H. DAVIS, JR.  
 No. 19888

Check by	Drawn by	Project #	Date	Rev.	Description
CKM	SMJ	1014.1607	6/29/2017	1	ISSUED FOR PERMIT - NOT FOR CONST.
LHD	LHD		5/17/17	2	ISSUED FOR PERMIT - NOT FOR CONST.
			6/29/17	3	ISSUED FOR PERMIT - NOT FOR CONST.

Scale: 1" = 30'

EROSION, SEDIMENT, AND POLLUTION CONTROL PLAN FOR  
**PTC SPILLWAY REPLACEMENT**  
 PREPARED FOR  
**PEACHTREE CITY**  
 LOCATED IN PEACHTREE CITY, GEORGIA

INITIAL EROSION CONTROL PLAN

**GEORGIA811**  
 Utilities Protection Center, Inc.  
 Know what's below. Call before you dig.  
 GSWCC#: 000016514

DRAWING NO. C510

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Sd1-Ns	SEDIMENT BARRIER		A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS AND POLES, GRAVEL, OR A SEDIMENT FENCE. THE BARRIERS ARE USUALLY TEMPORARY.
Sd1-S			
Dn1	TEMPORARY DOWNSTREAM STRUCTURE		A FLEXIBLE CONDUIT OF HEAVY-DUTY PLASTIC OR OTHER MATERIAL DESIGNED TO SAFELY CONDUCT SURFACE RUNOFF DOWN A SLOPE AS A TEMPORARY MEASURE.
St	STORM DRAIN INLET/OUTLET PROTECTION		A PAVED OR SHORT SECTION OF RIPRAP CHANNEL AT THE OUTLET OF A STORM DRAIN SYSTEM PREVENTING EROSION FROM THE CONCENTRATED RUNOFF.
Sd2	INLET SEDIMENT TRAP		AN IMPOUNDING AREA CREATED BY EXCAVATING AROUND A STORM DRAIN DROP INLET. THE EXCAVATED AREA WILL BE FILLED AND STABILIZED ON COMPLETION OF CONSTRUCTION ACTIVITIES.
Sd4	TEMPORARY SEDIMENT TRAP		A SMALL TEMPORARY POND THAT DRAINS A DISTURBED AREA SO THAT SEDIMENT CAN SETTLE OUT. THE PRINCIPLE FEATURE DISTINGUISHING A TEMPORARY SEDIMENT TRAP FROM A TEMPORARY SEDIMENT BASIN IS THE LACK OF A PIPE OR RISER.
Ds1	DISTURBED AREA STABILIZATION (MULCHING ONLY)		ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)		ESTABLISHING A PERMANENT VEGETATIVE COVER SUCH AS TREES, SHRUBS, VINES, GRASSES, OR LEGUMES ON DISTURBED AREAS.
Du	DUST CONTROL ON DISTURBED AREAS		CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITES, ROADWAYS AND SIMILAR SITES.

49  
TYP. ALL SHEETS

48

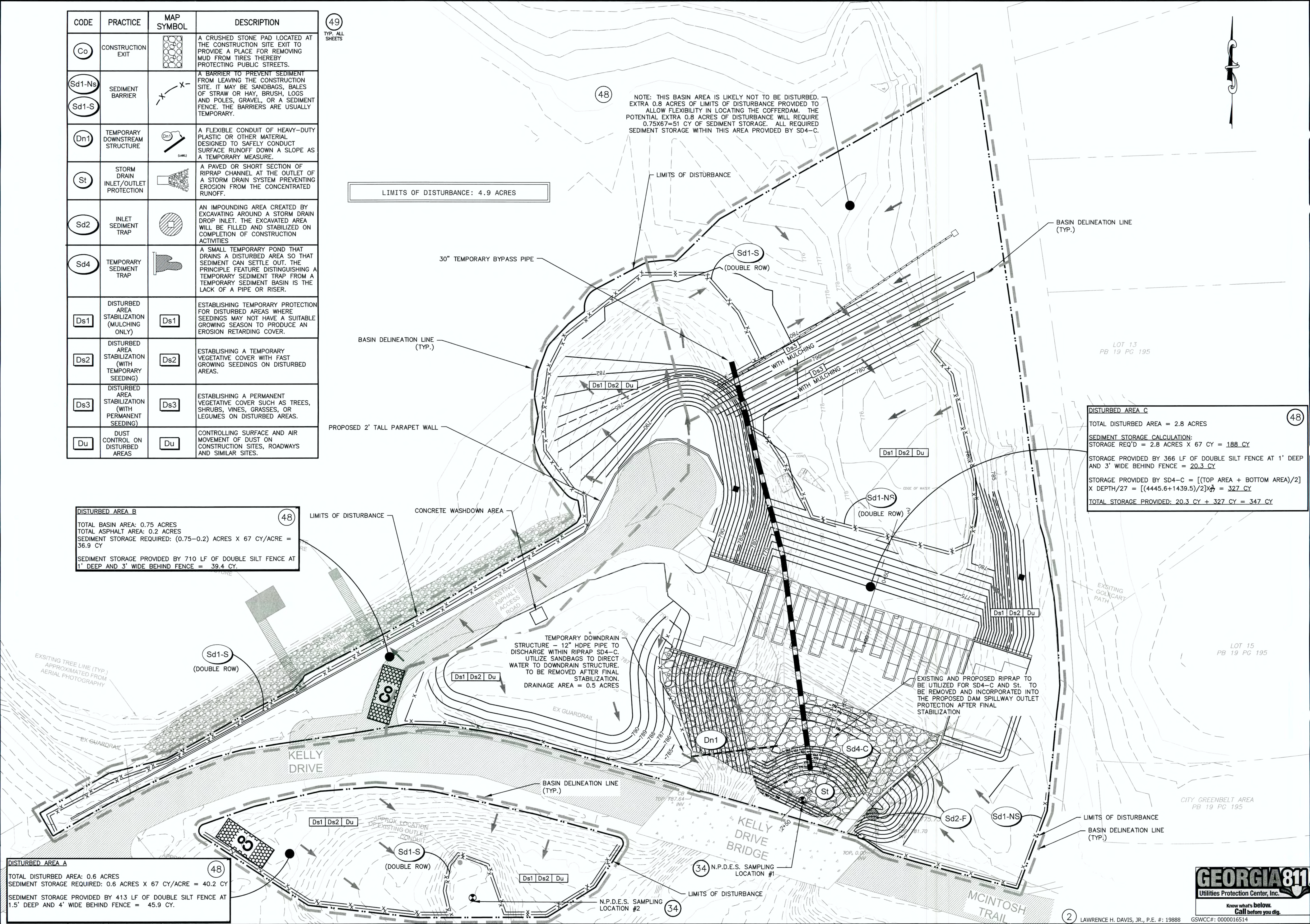
NOTE: THIS BASIN AREA IS LIKELY NOT TO BE DISTURBED. EXTRA 0.8 ACRES OF LIMITS OF DISTURBANCE PROVIDED TO ALLOW FLEXIBILITY IN LOCATING THE COFFERDAM. THE POTENTIAL EXTRA 0.8 ACRES OF DISTURBANCE WILL REQUIRE 0.75x67=51 CY OF SEDIMENT STORAGE. ALL REQUIRED SEDIMENT STORAGE WITHIN THIS AREA PROVIDED BY SD4-C.

LIMITS OF DISTURBANCE: 4.9 ACRES

**DISTURBED AREA C**  
TOTAL DISTURBED AREA = 2.8 ACRES  
**SEDIMENT STORAGE CALCULATION:**  
STORAGE REQ'D = 2.8 ACRES X 67 CY/ACRE = 188 CY  
STORAGE PROVIDED BY 366 LF OF DOUBLE SILT FENCE AT 1' DEEP AND 3' WIDE BEHIND FENCE = 20.3 CY  
STORAGE PROVIDED BY SD4-C =  $[(\text{TOP AREA} + \text{BOTTOM AREA})/2] \times \text{DEPTH}/27 = [(4445.6 + 1439.5)/2] \times 3/27 = 327 \text{ CY}$   
**TOTAL STORAGE PROVIDED: 20.3 CY + 327 CY = 347 CY**

**DISTURBED AREA B**  
TOTAL BASIN AREA: 0.75 ACRES  
TOTAL ASPHALT AREA: 0.2 ACRES  
SEDIMENT STORAGE REQUIRED: (0.75-0.2) ACRES X 67 CY/ACRE = 36.9 CY  
SEDIMENT STORAGE PROVIDED BY 710 LF OF DOUBLE SILT FENCE AT 1' DEEP AND 3' WIDE BEHIND FENCE = 39.4 CY

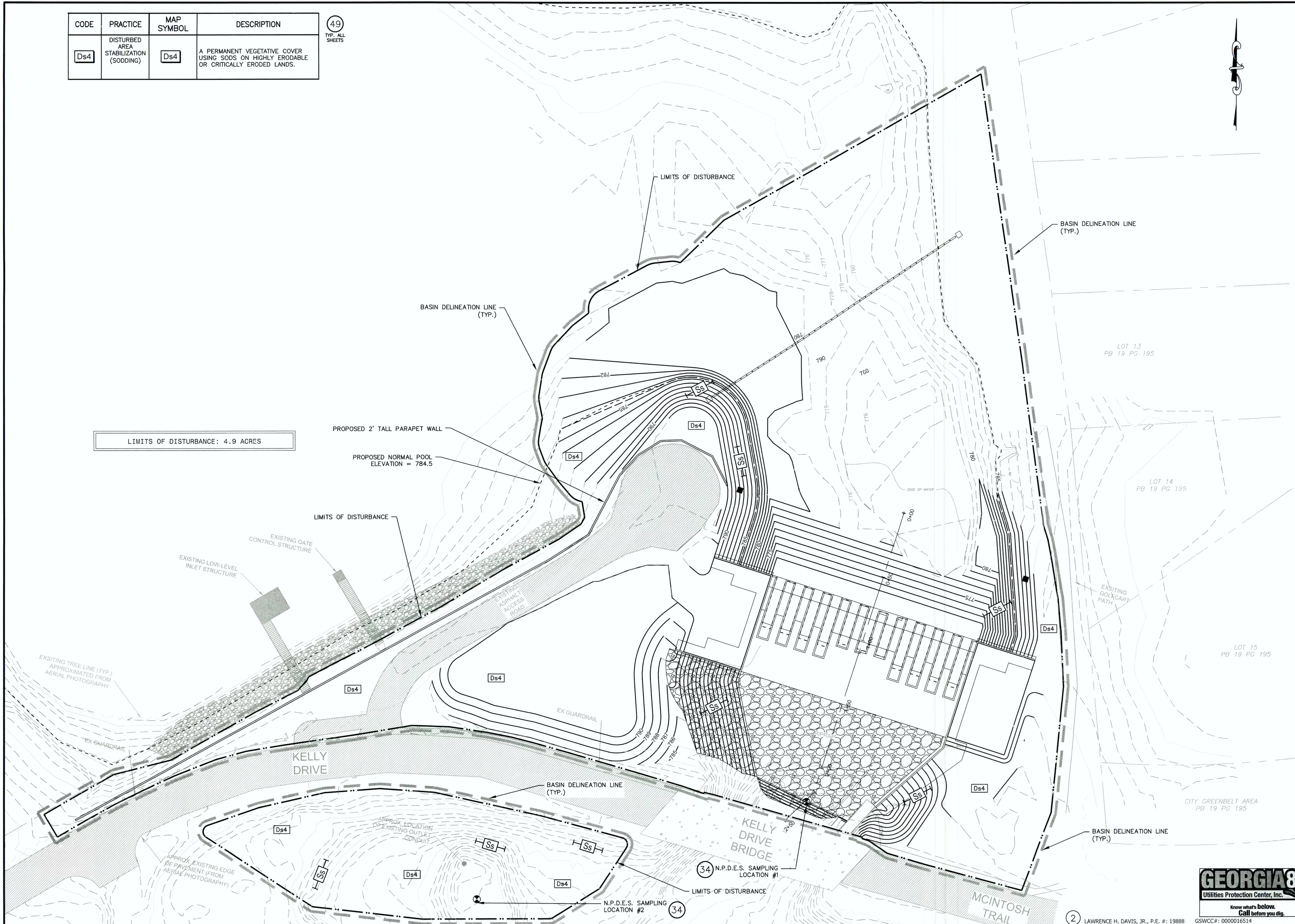
**DISTURBED AREA A**  
TOTAL DISTURBED AREA: 0.6 ACRES  
SEDIMENT STORAGE REQUIRED: 0.6 ACRES X 67 CY/ACRE = 40.2 CY  
SEDIMENT STORAGE PROVIDED BY 413 LF OF DOUBLE SILT FENCE AT 1.5' DEEP AND 4' WIDE BEHIND FENCE = 45.9 CY



Date	Drawn by	Check by	Project No.	Description
02/29/2017	SHU	GCH	1014.1607	PTC SPILLWAY REPLACEMENT
03/16/17	LTD	LTD		
03/16/17	LTD	LTD		
03/16/17	LTD	LTD		
03/16/17	LTD	LTD		
03/16/17	LTD	LTD		

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Ds4	DISTURBED AREA STABILIZATION (SODDING)	Ds4	A PERMANENT VEGETATIVE COVER USING SODS ON HIGHLY ERODABLE OR CRITICALLY ERODED LANDS.

49  
TYP. ALL SHEETS



LIMITS OF DISTURBANCE: 4.9 ACRES



**INTEGRATED**  
Science & Engineering

11038 SULLY ROAD, SUITE 200, NEWNAN, GEORGIA, 30256  
ATLANTA, SAVANNAH

REGISTERED PROFESSIONAL ENGINEER  
No. 19888  
LAWRENCE H. DAVIS, JR.

Rev.	Description	Date
3	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	6/28/17
2	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	6/28/17
1	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	5/17/17

Check by: CQM  
Drawn by: SMJ  
Design by: LHD  
Date: 6/29/2017  
Project #: 10154.1607

Scale: 1" = 30'

EROSION, SEDIMENT, AND POLLUTION CONTROL PLAN FOR  
**PTC SPILLWAY REPLACEMENT**  
PREPARED FOR  
**PEACHTREE CITY**  
LOCATED IN PEACHTREE CITY, GEORGIA

FINAL EROSION CONTROL PLAN

**GEORGIA811**  
Utilities Protection Center, Inc.  
Know what's below.  
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DRAWING NO.  
**C530**

TABLE 1  
SOME PERMANENT PLANT SPECIES, SEEDING RATES, AND PLANTING DATES

SPECIES	RATES PER ACRE	RATES PER 1,000 SQ. FT.	PLANTING DATES BY REGION			REMARKS
			M-L	P	C	
BAHIA, PENSACOLA ALONE OR WITH TEMPORARY COVER WITH OTHER PERENNIALS	60 LBS. 30 LBS.	1.4 LBS. 0.7 LBS.	-	4/1-5/31	3/1-5/31	LOW GROWING SOD PRODUCING; WILL SPREAD INTO BERMUDA LAWNS.
BAHIA, WILMINGTON ALONE OR WITH TEMPORARY COVER WITH OTHER PERENNIALS	60 LBS. 30 LBS.	1.4 LBS. 0.7 LBS.	3/15-5/31	3/1-5/31	-	SAME AS ABOVE.
BERMUDA, COMMON (HULLED SEED) ALONE WITH OTHER PERENNIALS	10 LBS. 6 LBS.	0.2 LB. 0.1 LB.	-	4/1-5/31	3/15-5/31	QUICK COVER; LOW GROWING; SOD FORMING; NEEDS FULL SUN.
BERMUDA, COMMON (UNHULLED SEED) WITH TEMPORARY COVER WITH OTHER PERENNIALS	10 LBS. 6 LBS.	0.2 LB. 0.1 LB.	-	10/15-2/28	11/1-1/31	PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA, SPRIGS COMMON LAWN AND FORAGE HYBRIDS	40 CU. FT. SOD PLUGS 3"x3"	0.9 CU. FT.	4/15-6/15	4/1-6/15	4/1-5/31	1 CU. FT. = 650 SPRIGS; 1 BU. = 1.25 CU. FT. OR 800 SPRIGS
CROWN VETCH WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS.	0.3 LB.	9/1-10/15	9/1-10/15	-	MIX WITH 30 LBS. TALL FESCUE OR 15 LBS. RYE; INOCULATE SEED; PLANT ONLY NORTH OF ATLANTA.
FESCUE, TALL ALONE WITH OTHER PERENNIALS	50 LBS. 30 LBS.	1.1 LBS. 0.7 LB.	3/1-4/1 OR 8/15-9/30	8/15-10/15 OR 2/15-4/15	-	MIX WITH PERENNIAL LESPEDEZAS OR CROWN VETCH; NOT FOR DROUGHTY SOILS OR HEAVY USE AREAS.
LESPEDEZA, SERICEA SCARIFIED	60 LBS.	1.4 LBS.	4/1-5/31	3/15-5/31	3/1-5/15	WIDELY ADAPTED AND LOW MAINTENANCE; TAKES 2-3 YEARS TO ESTABLISH; SEED WITH EL INOCULANT; MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA OR TALL FESCUE.
UNSCARIFIED SEED-BEARING HAY	75 LBS. 3 TONS.	1.7 LBS. 138 LBS.	9/1-2/28 10/1-2/1	9/1-2/28 10/1-2/28	9/1-2/28 9/15-1/15	MIX WITH TALL FESCUE OR WINTER ANNUALS. CUT WHEN SEED IS MATURE BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA, AMBRO VIRGATA OR APPALOW SCARIFIED UNSCARIFIED	60 LBS. 75 LBS.	1.4 LBS. 1.7 LBS.	4/1-5/31 9/1-2/28	3/15-5/31 9/1-2/28	3/1-5/15 9/1-2/28	SPREADING GROWTH WITH HEIGHT OF 18"-24"; GOOD IN URBAN AREA; SLOW TO DEVELOP GOOD STANDS; MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA TALL FESCUE OR WINTER ANNUALS; DO NOT MIX WITH SERICEA LESPEDEZA; INOCULATE SEED WITH EL INOCULANT.
LESPEDEZA, SHRUB (LESPEDEZA BICOLOR OR LESPEDEZA THUMBERGII) PLANTS	3'x3' SPACING		11/1-3/31	11/1-3/15	11/15-2/28	PLANT IN SMALL CLUMPS FOR WILDLIFE FOOD AND COVER.
LOVEGRASS, WEEPING ALONE WITH OTHER PERENNIALS	4 LBS. 2 LBS.	0.1 LB. 0.05 LB.	4/1-5/31	3/15-5/31	3/1-5/31	QUICK COVER; DROUGHT TOLERANT; GROWS WELL WITH SERICEA LESPEDEZA ON ROAD-BANKS AND OTHER STEEP SLOPES; SHORT LIVED.
MAIDENCANE SPRIGS	2'x3' SPACING		2/1-3/31	2/1-3/31	2/1-3/31	FOR VERY WET SITES SUCH AS RIVERBANKS AND SHORELINES. DIG SPRIGS LOCALLY.
PANICGRASS, ATLANTIC COASTAL	20 LBS.	0.5 LB.	-	3/1-4/30	3/1-4/30	GROWS WELL ON COASTAL SAND DUNES; MIX WITH SERICEA LESPEDEZA BUT NOT ON SAND DUNES.
REED CANARY GRASS ALONE WITH OTHER PERENNIALS	50 LBS. 30 LBS.	1.1 LBS. 0.7 LB.	8/15-10/15	9/1-10/15	-	GROW SIMILAR TO TALL FESCUE; FOR WET SITES.
SUNFLOWER, AZTEC MAXIMILLIAN	10 LBS.	0.2 LB.	4/15-5/31	4/15-5/31	4/1-5/31	MIX WITH WEEPING LOVE-GRASS OR OTHER LOW GROWING GRASSES OR LEGUMES.
SWITCHGRASS	20 LBS.	0.4 LB.	4/1-5/31	4/1-5/31	4/1-5/31	FOR STREAMBANK PLANTINGS, DRAINAGE DITCHES, AND WET AREAS.

TABLE 2

SUGGESTED SEEDBED DEPTHS	
SLOPE	SEEDBED DEPTH
3:1 OR FLATTER	1" TO 4" DEPTH
2:1 TO 3:1	4" DEPTH
2:1 OR STEEPER	DEPRESSIONS EVERY 6" TO 8" HAND-DUG, IF NECESSARY

- LIME
- AGRICULTURAL LIME IS REQUIRED AT THE RATE OF 2 TONS PER ACRE.
  - AGRICULTURAL LIME SHALL BE WITHIN THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE.
  - LIME SPREAD BY CONVENTIONAL EQUIPMENT SHALL BE "GROUND LIMESTONE". GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 90% OF THE MATERIAL WILL PASS THROUGH A 10-MESH SIEVE, NOT LESS THAN 50% WILL PASS THROUGH A 50-MESH SIEVE AND NOT LESS THAN 25% WILL PASS THROUGH A 100-MESH SIEVE.
  - AGRICULTURAL LIME SPREAD BY HYDRAULIC SEEDING EQUIPMENT SHALL BE "FINELY GROUND LIMESTONE". FINELY GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 98% OF THE MATERIAL WILL PASS THROUGH A 20-MESH SIEVE AND NOT LESS THAN 70% WILL PASS THROUGH A 100-MESH SIEVE.

TABLE 3

TYPES OF SPECIES	PLANTING YEAR	FERTILIZER (N-P-K)	RATE (LBS./ACRE)	N TOP DRESSING RATE (LBS./ACRE)
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 1000 400	50-100 -- 30
COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 1000 400	0-50 -- --
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 800 400	50-100 50-100 30
WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 1000 400	50 -- --

- RATES ARE FOR BROADCASTED SEED. IF A SEED DRILL IS USED, REDUCE THE RATES BY ONE-HALF.
- PLS IS AN ABBREVIATION OF PURE LIVE SEED.
- CONTRACTOR SHALL USE COASTAL REGION FOR DETERMINATION OF SEED TYPES AND PLANTING DATES.

(51) Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

TABLE 1

SUGGESTED SEEDBED DEPTHS	
SLOPE	SEEDBED DEPTH
3:1 OR FLATTER	LESS THAN 4" DEPTH
2:1 TO 3:1	1" TO 4" DEPTH
2:1 OR STEEPER	DEPRESSIONS EVERY 6" TO 8" HAND-DUG, IF NECESSARY

RE-SEED AREAS WHERE AN ADEQUATE STAND OF TEMPORARY VEGETATION FAILS TO EMERGE OR WHERE A POOR STAND EXISTS.

- UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES.
- SEEDING DATES MAY NEED TO BE ALTERED TO FIT TEMPERATURE VARIATIONS AND LOCAL CONDITIONS.

TABLE 3

FERTILIZER REQUIREMENTS FOR TEMPORARY VEGETATION

TYPE OF SPECIES	PLANTING YEAR	FERTILIZER (N-P-K)	RATE (LBS./ACRE)	N TOP DRESSING RATE (LBS./ACRE)
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 1000 400	50-100 -- 30
COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 1000 400	0-50 -- --
TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500	30
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 800 400	50-100 50-100 30

(51) Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

MULCHING APPLICATION REQUIREMENTS

MATERIAL	RATE	DEPTH
STRAW OR HAY	2-1/2 TON/ACRE	6" TO 10"
GEOTEXTILES, JUTE MATTING, NETTING, ETC.	SEE MANUFACTURER'S RECOMMENDATIONS	---

(51) Ds1 DISTURBED AREA STABILIZATION (WITH MULCH ONLY)

DUST CONTROL

N.T.S.

Du

- PERMANENT METHODS:
- PERMANENT VEGETATION - REFER TO Ds3 (DISTURBED AREA STABILIZATION WITH PERMANENT VEGETATION)
  - TOPSOILING - COVERING THE SURFACE WITH A LESS ERODIBLE SOIL MATERIAL
  - STONE - SURFACE WITH CRUSHED STONE OR COARSE GRAVEL (SEE C- CONSTRUCTION ROAD STABILIZATION)
- TEMPORARY METHODS:
- MULCHES - REFER TO Ds1 (DISTURBED AREA STABILIZATION)
  - VEGETATIVE COVER - REFER TO Ds2 (DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING)
  - TILLAGE - ROUGHEN AND BRING CLODS TO THE SURFACE BY USE OF CHISEL-TYPE PLOWS SPACED ABOUT 1/2 INCHES APART
  - IRRIGATION - SITE SPRINKLED WITH WATER UNTIL WET. REPEAT AS NEEDED
  - BARRIERS - FENCES, HAY BALES, AND CRATE WALLS PLACED AT INTERVALS 15 TIMES THEIR HEIGHT AND PERPENDICULAR TO AIR CURRENTS
  - CALCIUM CHLORIDE - APPLY TO KEEP SURFACE WET. REPEAT AS NEEDED.

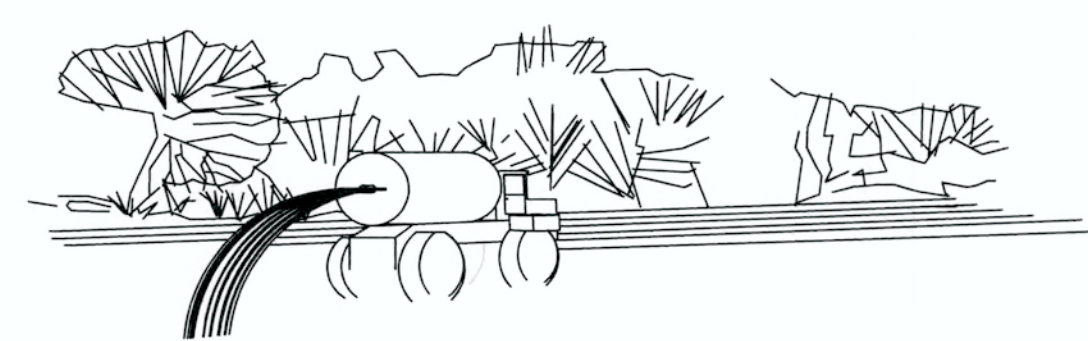


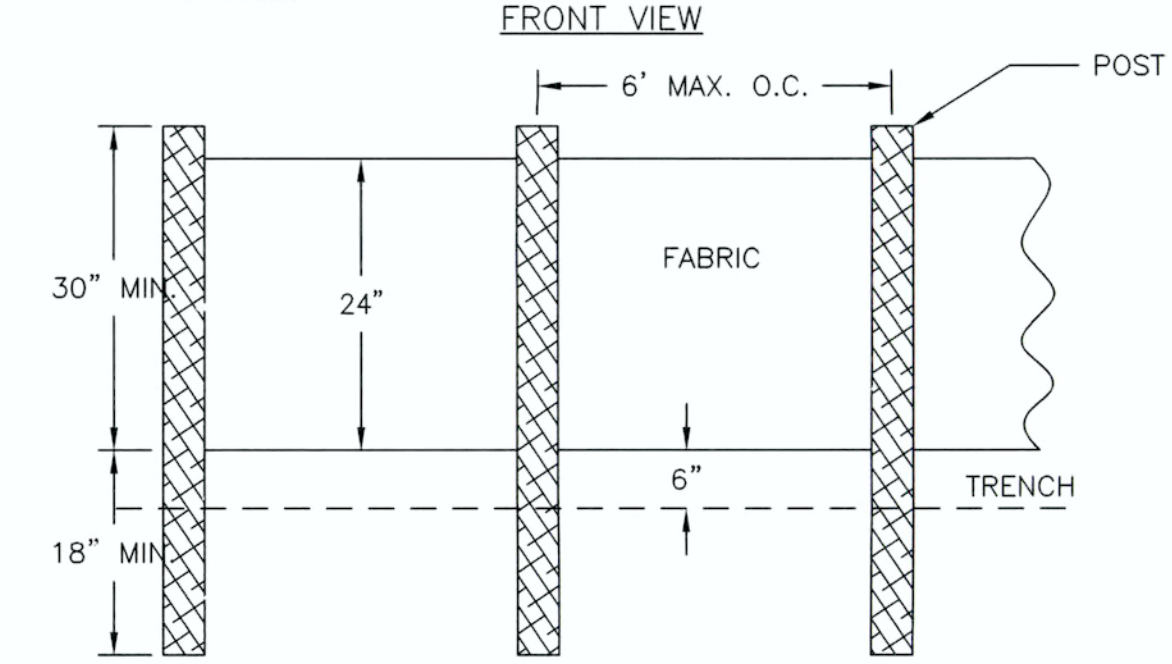
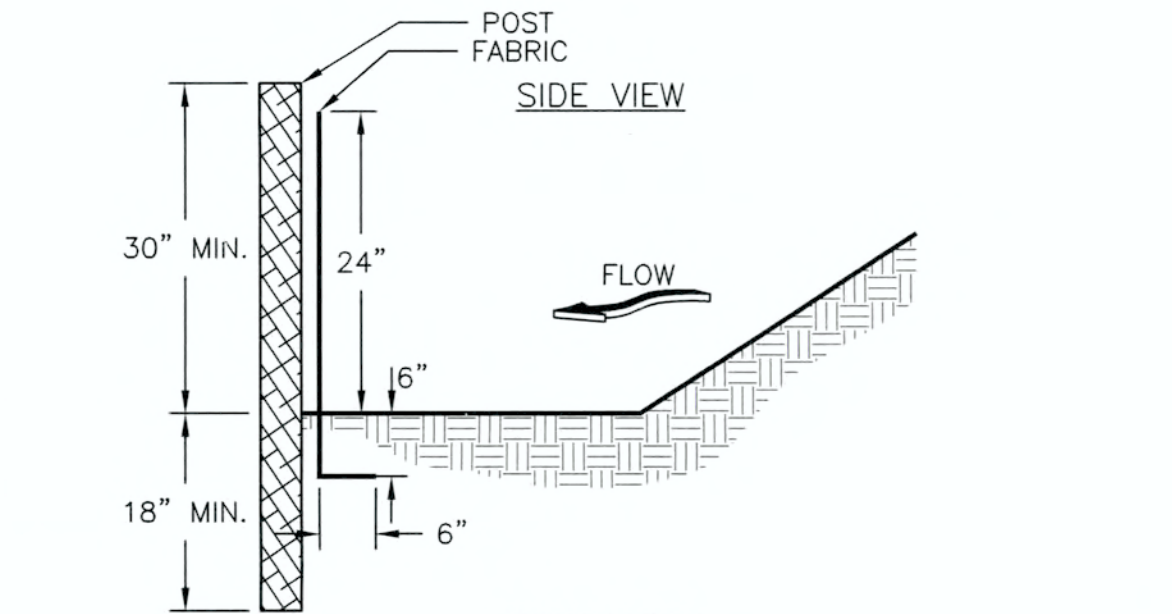
TABLE 2

SPECIES	RATES PER 1,000 SQ. FT.	RATES PER ACRE	PLANTING DATES BY REGION		
			M-L	P	C
RYE (GRAIN)	3.9 LBS.	3 BU	8/15-11/19	9/15-12/1 3/1-4/1	10/1-11/1
RYEGRASS	0.9 LB.	40 LBS.	8/15-11/15	9/1-12/15	9/15-1/1
RYE AND ANNUAL LESPEDEZA	0.6 LB. 0.6 LB.	0.5 BU 24 LBS	3/1-4/1	3/1-4/1	2/1-3/1
WEEPING LOVEGRASS	0.1 LB.	4 LBS.	4/1-6/1	4/1-6/1	3/1-6/1
SUDANGRASS	1.0 LB.	60 LBS.	5/1-8/1	5/1-8/1	4/1-8/1
BROWNTOP MILLET	1.1 LBS.	50 LBS.	4/15-6/15	4/15-7/1	4/15-7/1
WHEAT	4.1 LBS.	3 BU	9/15-12/1	10/1-12/15	10/15-1/1

TABLE 3

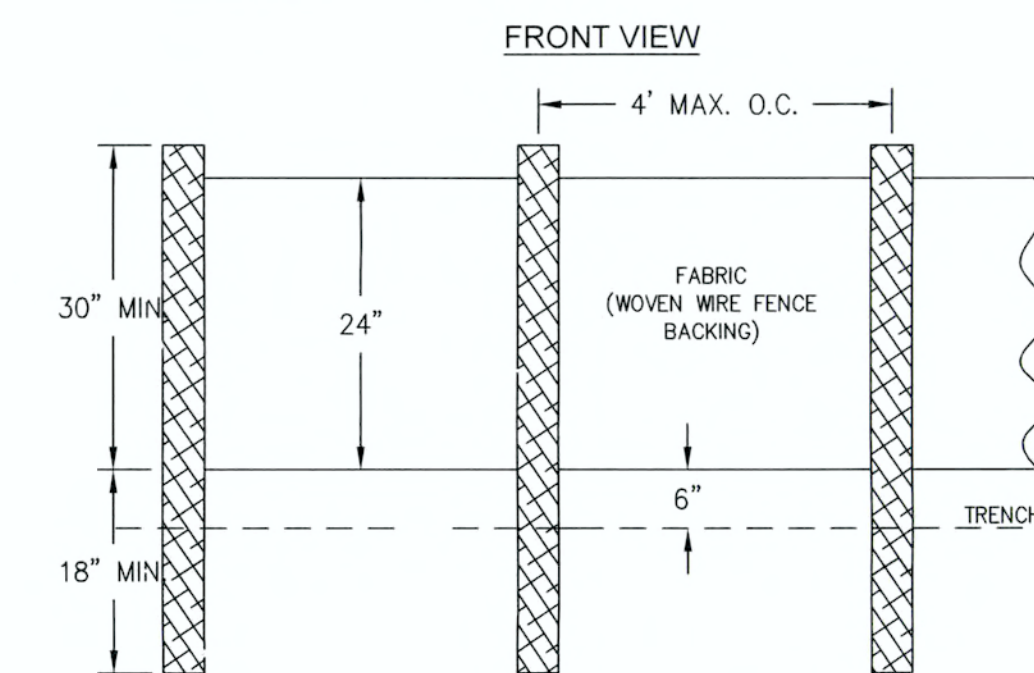
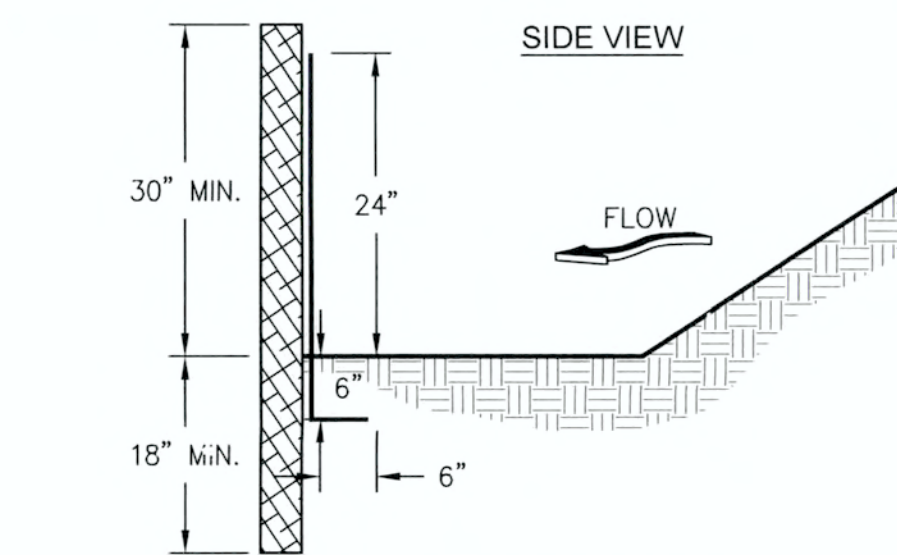
FERTILIZER REQUIREMENTS FOR TEMPORARY VEGETATION

TYPE OF SPECIES	PLANTING YEAR	FERTILIZER (N-P-K)	RATE (LBS./ACRE)	N TOP DRESSING RATE (LBS./ACRE)
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 1000 400	50-100 -- 30
COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 1000 400	0-50 -- --
TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500	30
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 800 400	50-100 50-100 30



- NOTES:
- USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

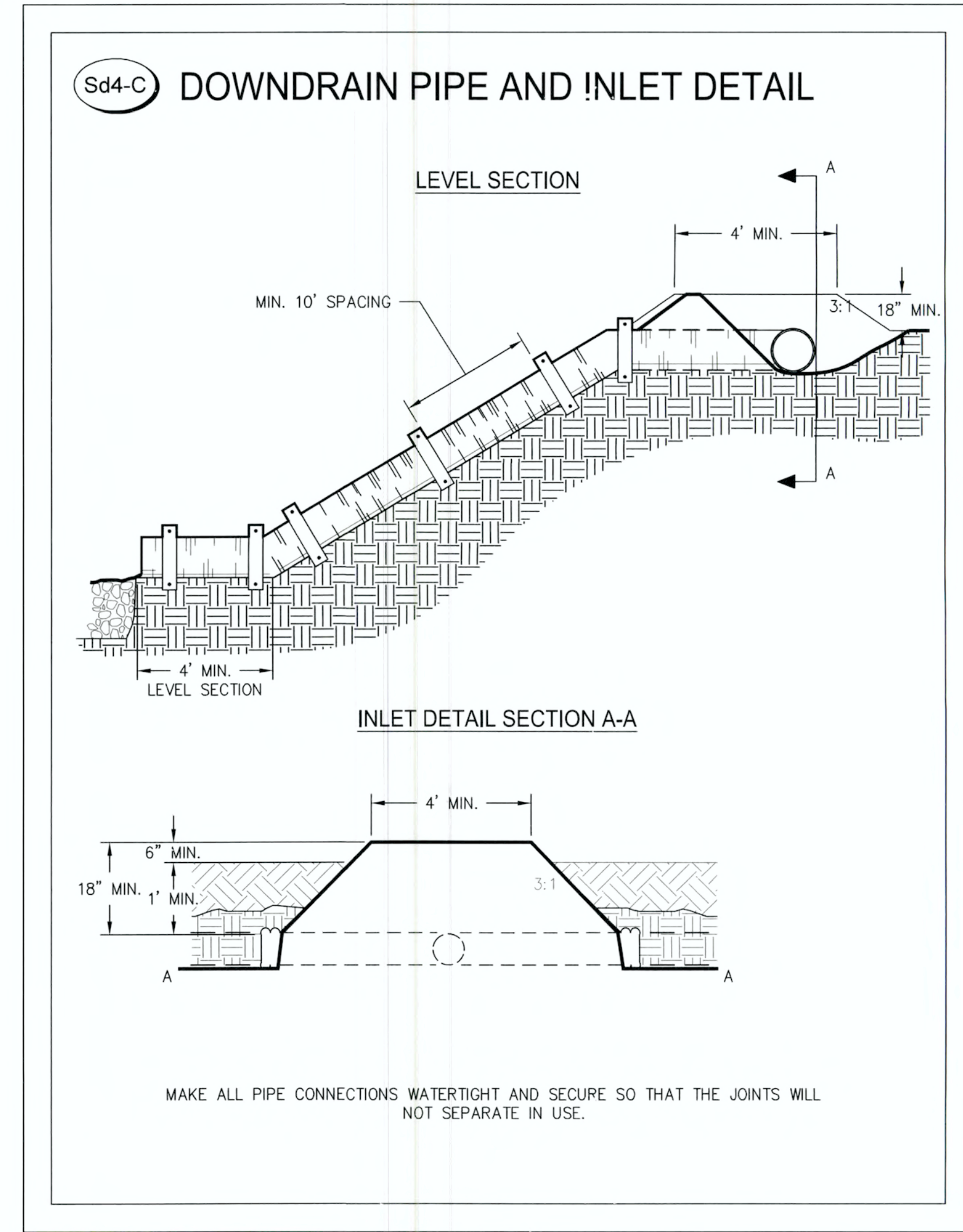
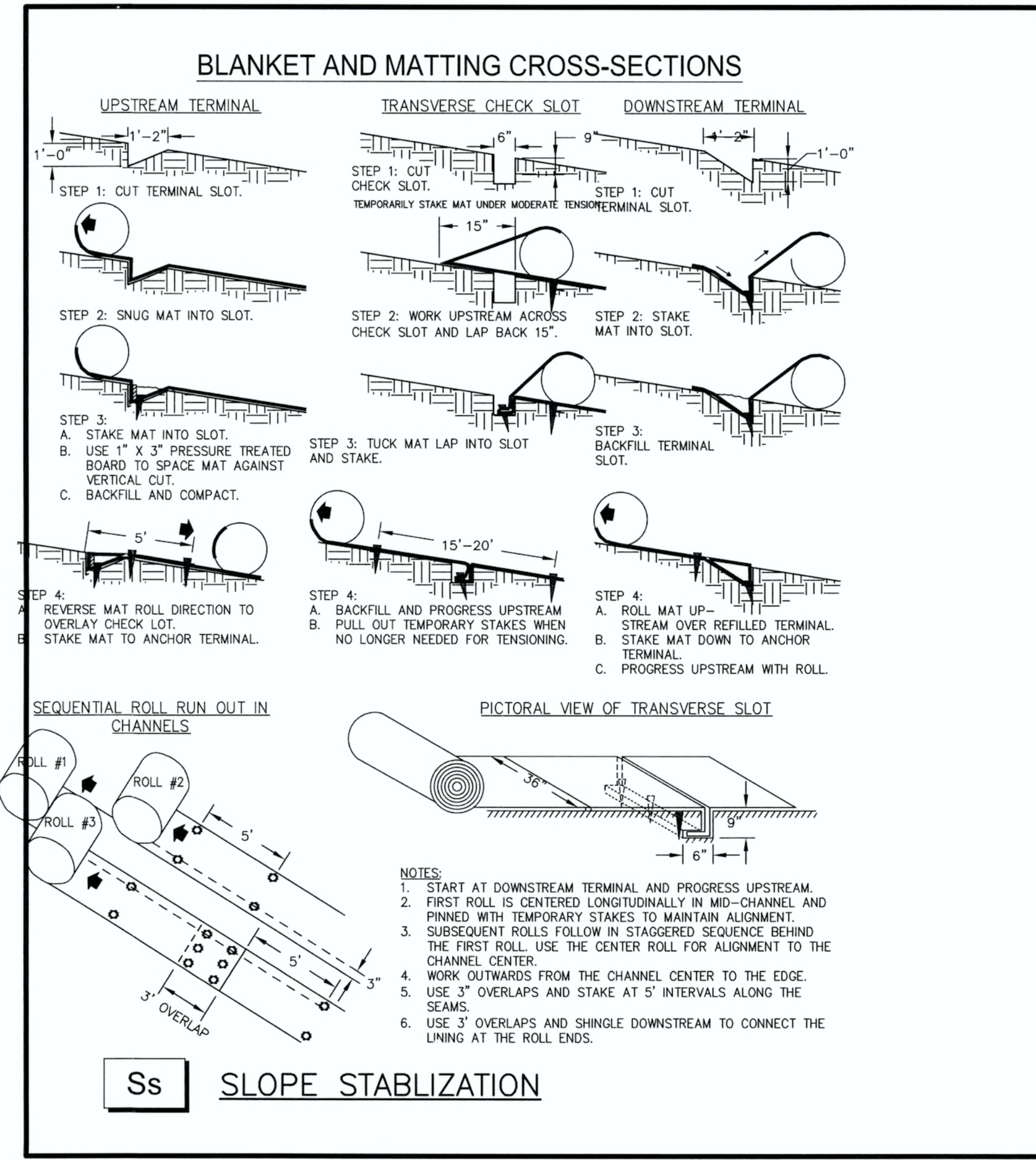
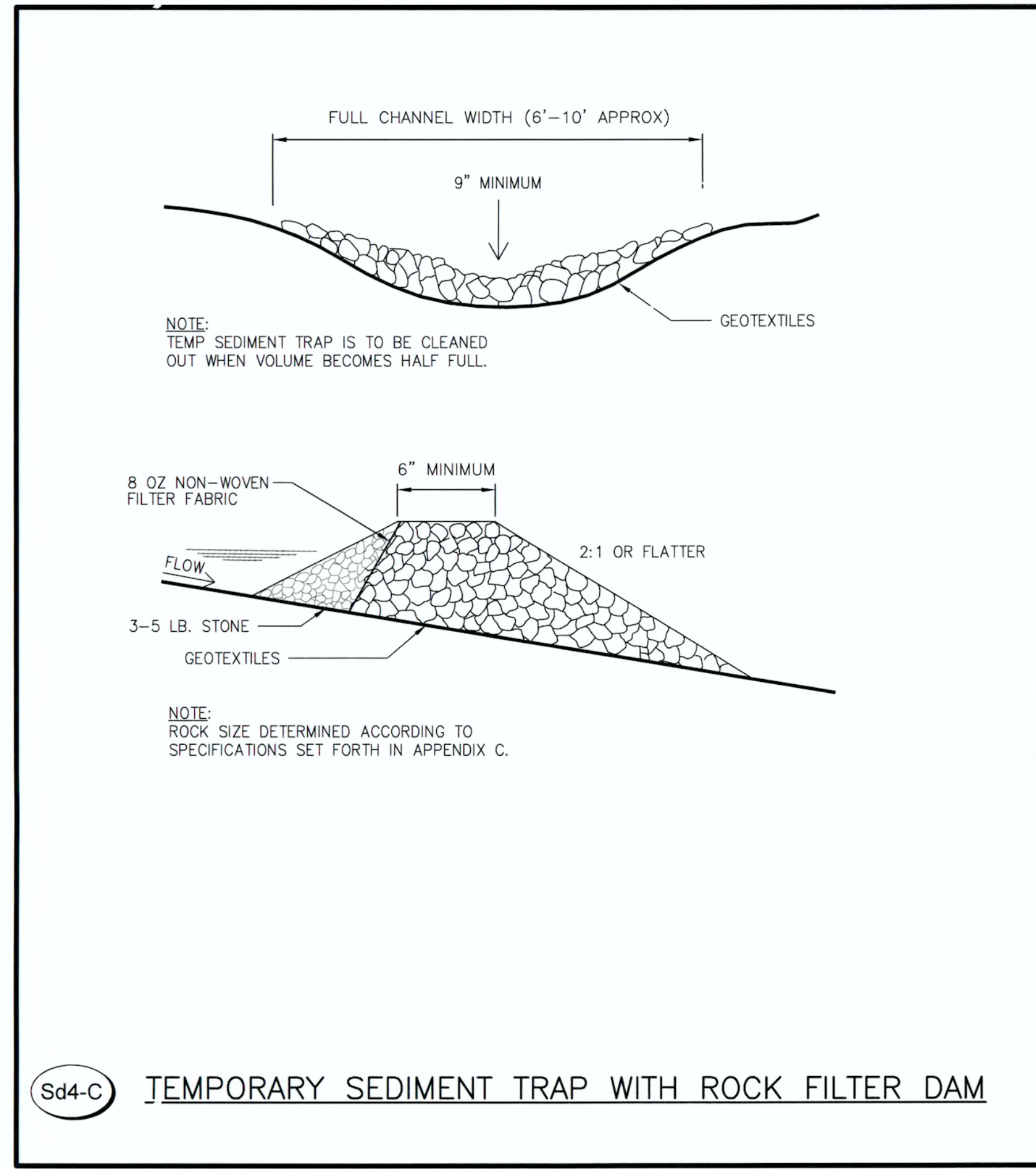
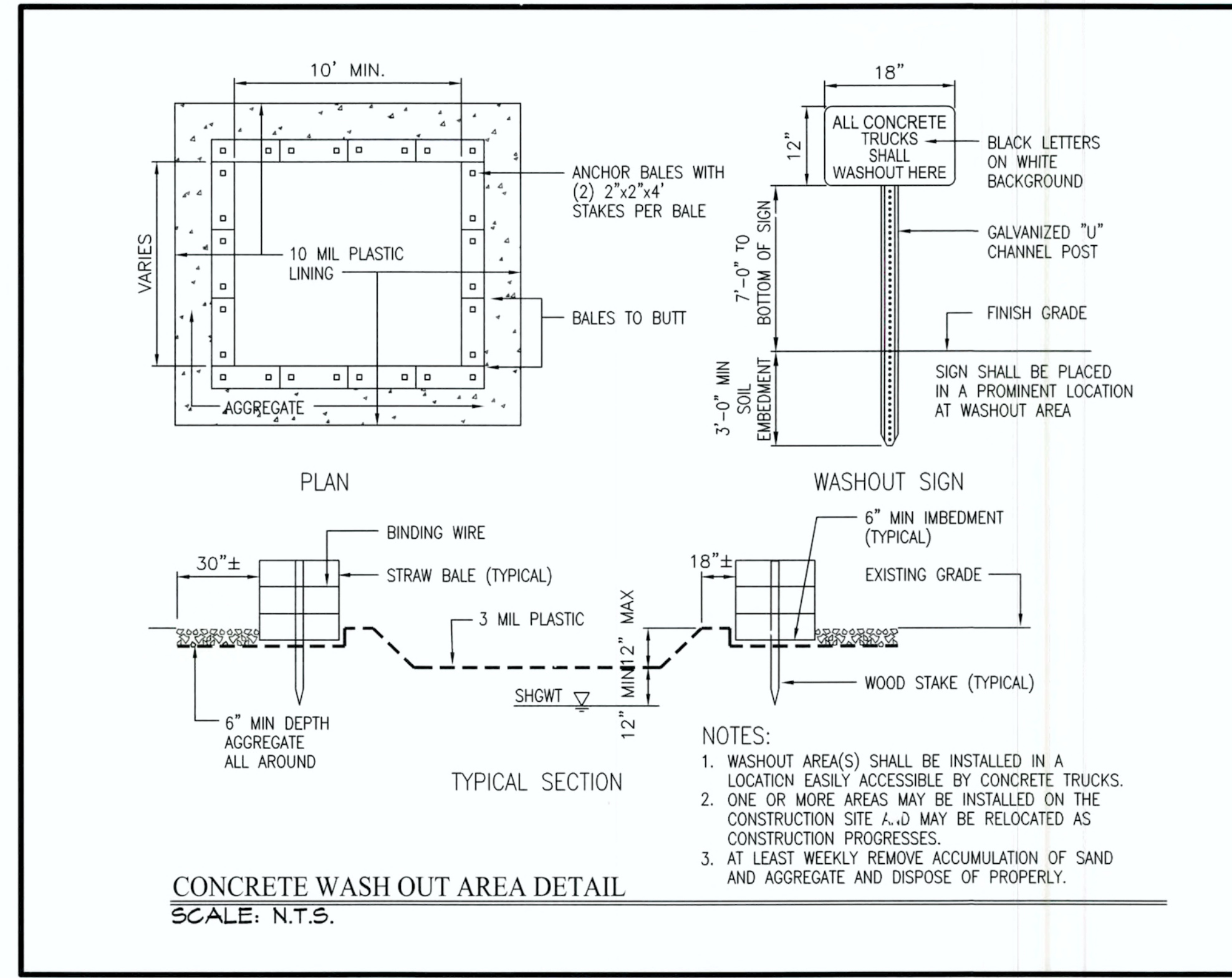
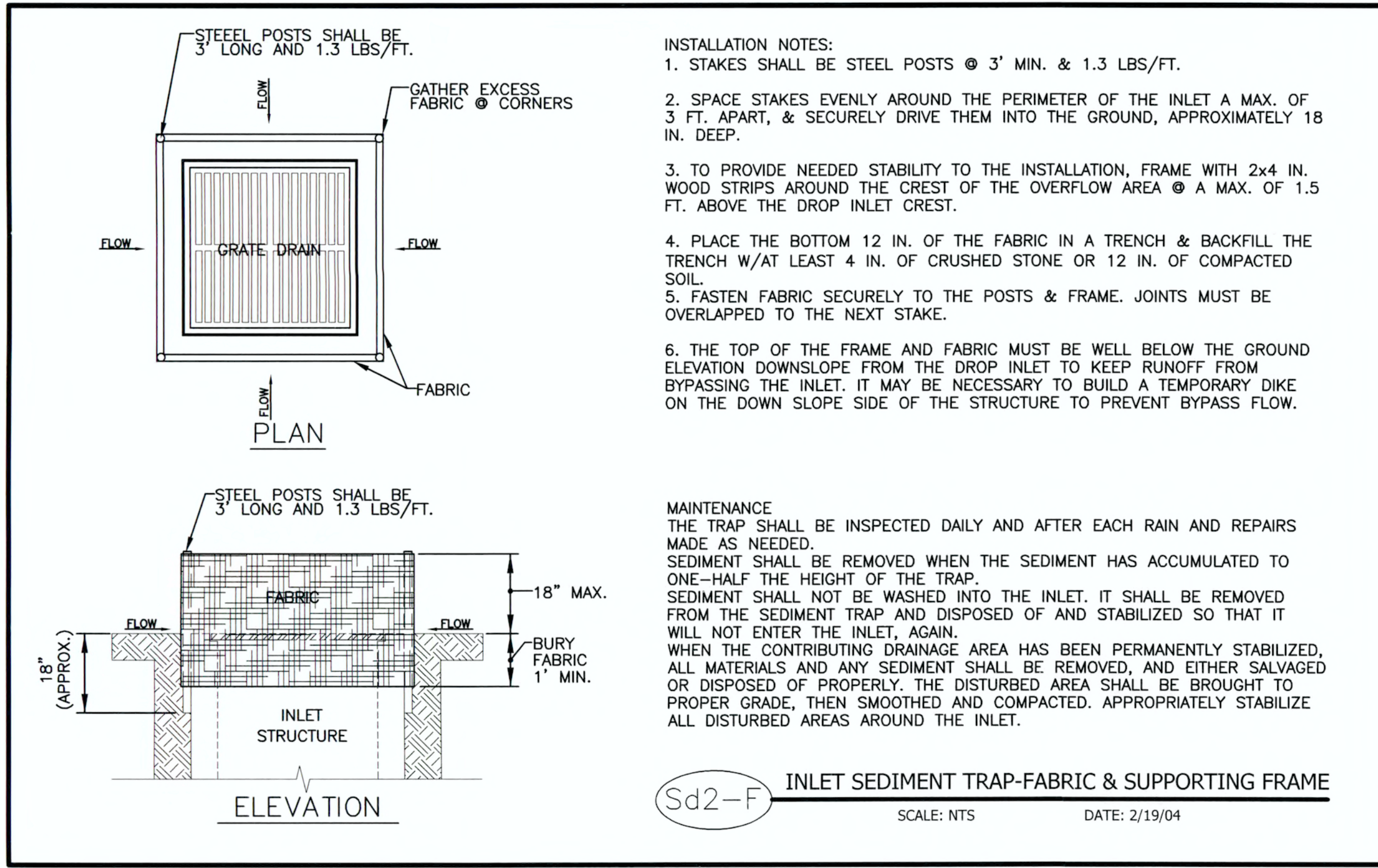
(Sd1-Ns) SILT FENCE - TYPE NON-SENSITIVE



- NOTES:
- USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
  - HEIGHT (\*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

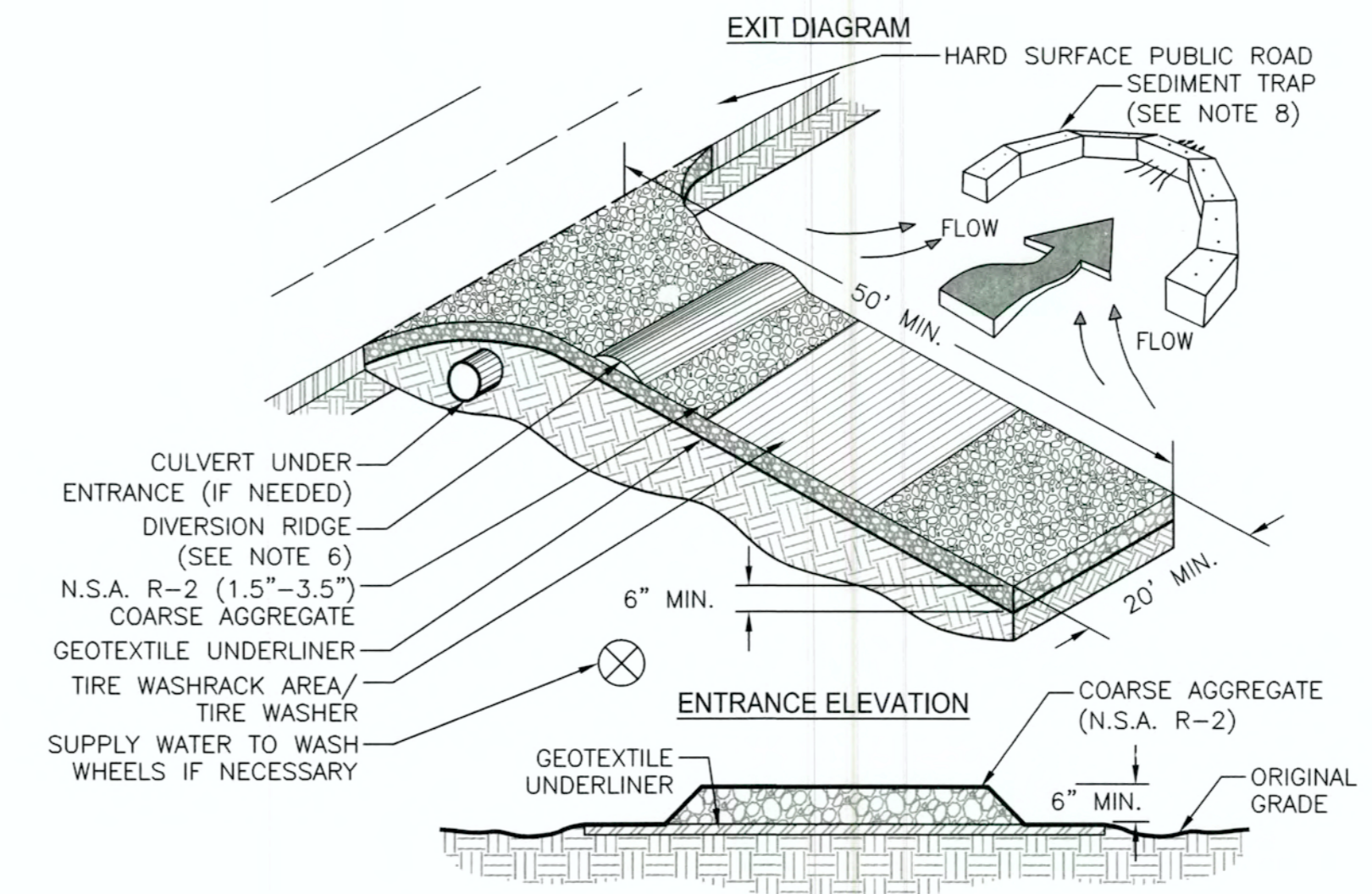
(Sd1-S) SILT FENCE - TYPE SENSITIVE

Rev.	Description	Date	Appr.
3	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	6/28/17	LHD
2	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	6/28/17	LHD
1	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	5/17/17	LHD



Rev.	Description	Date
3	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	6/29/17 LHD
2	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	6/29/17 LHD
1	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	5/17/17 LHD

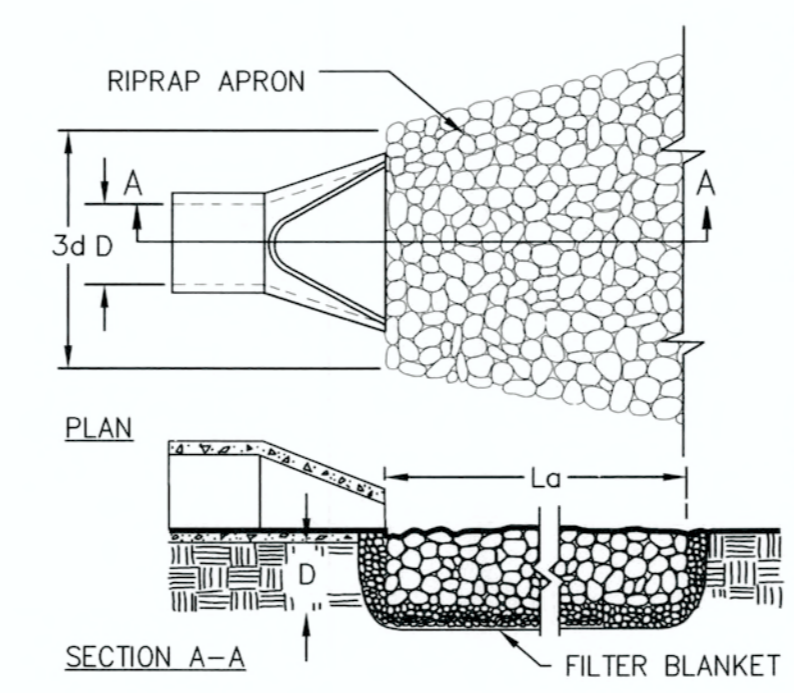
Check by: CCM  
 Review by: LHD  
 Drawn by: SHJ  
 Design by: LHD  
 Date: 6/29/2017  
 Project #: 1014.1607



**CONSTRUCTION EXIT NOTES:**

1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASH RACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASH RACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

**Co CONSTRUCTION EXIT**



- NOTES:**
1.  $L_0$  IS THE LENGTH OF THE RIPRAP APRON.
  2.  $D = 1.5$  TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
  3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
  4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

St-1 - SEE SHEET C-121

1. DIAMETER OF PIPE = 42"  
FLOW RATE = 80 CFS  
VELOCITY = 8.3 FTS  
MAX. TAILWATER AT OUTLET PIPE
2.  $d_{50} = 1.25$  MIN.  
 $D = 1.5 * 1.25 = 1.875$   
 $L_0 = 26$  FT  
 $W_1 = 10.5$  FT  
 $W_2 = 29.5$  FT

45

**St-1 RIPRAP OUTLET PROTECTION**

Rev.	Description	Date	Appr.
3	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	8/29/17	LHD
2	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	8/6/17	LHD
1	ISSUED FOR PERMIT - NOT FOR CONSTRUCTION	5/17/17	LHD

# **SUBSURFACE EXPLORATION DATA REPORT LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT**

**Lake Peachtree Dam  
Peachtree City, Georgia**

Schnabel Reference 16C17043.00  
March 14, 2016  
Revised July 10, 2017

Peachtree City Contract Number 17-123BPW







March 14, 2016  
Revised July 10, 2017

Dan Davis, PE  
President  
Integrated Science and Engineering  
1039 Sullivan Road  
Suite 200  
Newnan, Georgia 30265

**Subject: Schnabel Reference 16C17043.00, Subsurface Exploration Data Report, Proposed Piano Key Weir Spillway, Lake Peachtree Dam, Peachtree City, Georgia**

Dear Mr. Davis:

**SCHNABEL ENGINEERING, LLC** (Schnabel) has completed the authorized subsurface exploration associated with the design and construction of a new three-staged, reinforced-concrete piano key weir spillway at the Lake Peachtree Dam. This report discusses our understanding of the project background, describes our exploratory procedures, and presents a summary of our observations and recommendations for the design and construction of the proposed spillway. Relevant data collected during this exploration is contained in the Appendices of this report.

Please contact us if you have any questions or comments regarding the information presented herein.

Sincerely,

**SCHNABEL ENGINEERING, LLC**

A handwritten signature in blue ink that reads 'J Ryan Collins'.

J Ryan Collins, PE  
Project Engineer

A handwritten signature in blue ink that reads 'Randall P. Bass'.

Randall P. Bass, PE  
Principal

JC:JTD:RPB

**SUBSURFACE EXPLORATION DATA REPORT  
LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT  
LAKE PEACHTREE DAM  
PEACHTREE CITY, GEORGIA**

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**APPENDICES**

**Appendix A: Figures**

- FIGURE A-1: VICINITY MAP**
- FIGURE A-2: BORING LOCATION MAP (REVISED MAY 2017)**
- FIGURE A-3: GEOLOGIC PROFILES (REVISED MAY 2017)**
- FIGURE A-4: GEOLOGIC MAP**
- FIGURE A-5: SEISMIC HAZARD MAP**

**Appendix B: Sampling Procedures and Soil Test Boring Logs**

## **1.0 EXECUTIVE SUMMARY**

The following items summarize the contents of this report. This summary should not be used in lieu of reading the entire report, to include the Appendices.

- The existing Lake Peachtree Dam is an earthen embankment structure that impounds a reservoir having a surface area on the order of 222 acres at a normal pool elevation of 784.5 feet. The reservoir serves as a reserve water supply for Peachtree City and an amenity for the local residents. The dam is located immediately upstream of Kelly Drive / McIntosh Trail in Peachtree City, Georgia.
- The length of the dam, as measured along the crest, is on the order of 500 feet. The height of the dam, as measured from the crest of the embankment to the stream channel is on the order of 24 feet tall.
- The City Council elected to design a new spillway to improve the safety and increase the longevity of the Lake Peachtree Dam and spillway system. After reviewing various spillway alternatives, a three-staged, reinforced-concrete piano key (PK) weir spillway was selected.
- The preliminary or Phase I subsurface exploration consisted of the following:
  - Drilling of six (6) soil test borings varying in depth from 10 to 25 feet, for a total boring footage of approximately 110 feet.
  - Coring of rock in three (3) holes.
  - Each of the borings, to include the portion that was cored, were backfilled with cement-bentonite grout.
  - The Phase I soil test borings were performed in January, 2016.
- The Phase II subsurface exploration consisted of the following:
  - Drilling of three (3) soil test borings varying in depth from 19 to 22 feet, for a total boring footage of approximately 62 feet.
  - Each of the borings, to include the portion that was cored, were backfilled with cement-grout.
  - The Phase II soil test borings were located within the crest of the existing concrete spillway, and were extended into its foundation. The three soil test borings are also located within the footprint of the proposed PK weir spillway.
  - The Phase II soil test borings were performed in May, 2017.
- Fill, generally classifying as Silty Sand or Sandy Silt was encountered in five of the nine borings.
- Alluvium, generally classifying as Poorly Graded Sand with Silt and Silty Sand, was encountered in one of the nine borings.
- Residuum, generally classifying as Silty Sand, Sandy Silt, and Sandy Lean Clay, was encountered in eight of the nine borings.
- Partially Weathered Rock (PWR) was encountered in four of the nine borings.

**Subsurface Exploration Data Report**  
**Dan Davis, PE**

- Rock, defined as refusal to the augering process, was encountered in seven of the nine borings. The remaining two borings terminated in residual materials.
- Measurement of groundwater levels was not performed in the Phase I subsurface exploration due to the lake having been maintained in a drained or drawn down condition to facilitate dredging of the reservoir.

## **2.0 INTRODUCTION**

The Lake Peachtree Dam is an earthen embankment structure that impounds a reservoir having a surface area on the order of 222 acres at a normal pool elevation of 784.5 feet. At the time of the Phase I drilling activities, the lake was in a partially drained or drawn down condition to support the dredging of sediments from the reservoir. The reservoir, known locally as Lake Peachtree, serves as a reserve water supply for Peachtree City and an amenity feature for the local residents.

The embankment has a maximum height, as measured from the crest to the stream channel, on the order of 24 feet and a length, as measured along the crest, on the order of 500 feet. The dam is currently classified as a Category II structure by the Georgia Department of Natural Resources, Safe Dams Program (SDP).

The existing service spillway is located in the left abutment of the dam. The spillway consists of an earthen berm with a concrete overlay which forms a broad crested weir. Flow over the broad crested weir is conveyed into the downstream riprap-lined basin and channel via the concrete overlay/channel. During routine monitoring of the spillway, cracks were observed in the surface of the concrete overlay. Subsequent investigations, performed by others, revealed the presence of voids beneath the concrete overlay within the berm. The documented voids were likely the result of internal erosion or washout of the soils beneath the thin-shell concrete. Based upon the presence of voids beneath the existing structure, efforts to grout the voids were implemented. Though some of the grouting efforts were observed to be effective, the City has elected to construct a new spillway which would meet the requirements for a high-hazard dam (Category I) in Georgia. The purpose of this subsurface exploration is to evaluate the subsurface conditions with respect to potential foundation support and seepage characteristics in the vicinity of the proposed spillway.

### **3.0 DAM SAFETY IN GEORGIA**

On November 6, 1977, the Kelly-Barnes Dam in Toccoa, Georgia, failed during heavy rains causing the loss of 39 lives. As a result of this tragedy, the 1978 Georgia General Assembly passed the Safe Dams Act. This act has been amended several times since it was originally issued.

Currently, the legal requirements concerning dam ownership, construction and maintenance are contained in the Rules for Dam Safety, with the latest revision dated October 26, 1998. The regulation of dams within the state is the responsibility of the Safe Dams Program contained within the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources (DNR).

According to the Rules for Dam Safety, a dam is defined as a water-impounding structure with a height of at least 25 feet, and/or a maximum impoundment volume (measured at the high point of the crest) of at least 100-acre feet. The height-volume criteria is an “either/or” situation in defining a water-impounding structure as a “dam”. The existing Lake Peachtree Dam is considered a “dam”, based on impoundment volume.

If a structure is defined as a “dam” under the law, then the dam can be classified as either a Category I or Category II. A dam is given a Category I classification if dam failure or improper operation would result in the probable loss of human life. The location of residences, schools, commercial facilities and industries within the downstream dam-breach inundation zone usually dictates that a loss-of-life situation exists. If dam failure or improper operation would not result in the probable loss of human life, then the dam would be given a Category II classification. A permit is required from the DNR to construct and operate a proposed new dam classified as a Category I structure. Similarly, a permit is required from the DNR to modify an existing dam classified as a Category I structure.

As indicated in the Introduction, the DNR has classified the existing dam as Category II structure. The intent of this report is to provide a summary of the preliminary subsurface exploration program, in order to better understand the foundation conditions in the vicinity of the existing concrete overlay spillway in support of a new service spillway.

## **4.0 EXPLORATORY PROCEDURES**

### **4.1 Field Exploration**

During the Phase I subsurface exploration, a total of six soil test borings (designated B-01 through B-06) were advanced in the vicinity of the existing spillway. The Phase II subsurface exploration was performed on May 20, 2017. The Phase II subsurface exploration plan consisted of three additional soil test borings which were performed through the existing spillway and into its foundation until auger refusal was reached. Figure A-2 in Appendix A of this report depicts the approximate location of each soil test boring. Phase I soil test boring locations were located in the field by Integrated Science and Engineering, Inc. (ISE). Phase II soil test boring locations were established by Schnabel personnel. Schnabel personnel were present to observe the drilling operations, to log the soils encountered during drilling operations, and to collect soil and rock core samples recovered during the drilling process. Logs representing our interpretation of the materials encountered are contained within Appendix B.

As currently planned, a new spillway will likely be constructed in the vicinity of the existing spillway. The intent of the subsurface evaluation was to estimate the elevation and quality of foundation materials and bedrock, and to visually observe the soil in and around the area of the existing spillway. No laboratory testing was performed as part of the subject evaluation.

The Phase I soil test borings were advanced by a track-mounted all-terrain vehicle (ATV) drill rig using 3 ¼-inch inside diameter hollow stem augers. The Phase II soil test borings were advanced by a track-mounted ATV drill rig using 2 ¼-inch inside diameter hollow stem augers. Disturbed soil samples were obtained at various depths by driving a split-spoon sampler in the bottom of the borehole using a hydraulically driven automatic trip hammer (ATH). With each split-spoon sample recovered, the Standard Penetration Test (SPT) was performed. The blow count that was required to advance the split-spoon was recorded at each soil depth interval. The SPT "N" value is the recorded number of blows from a 140-pound drive hammer falling 30 inches used to drive the split-spoon sampler for the second and third six-inch interval or fraction thereof. We note that no correction of the recorded SPT values were made as part of this phase of work. However, the energy applied to the split-spoon sampler using the ATH is about 33 percent greater than that applied using the safety hammer. The soil test borings were typically terminated at a selected depth or auger refusal, which was assumed to be the top of bedrock. The soil test borings were drilled to depths varying from 10 to 24 feet below existing site grades.

Rock coring was performed in selected borings utilizing HQ size core bit to evaluate the character and quality of material below the elevation of refusal identified during the soil augering process. The percent recovery (REC) and the Rock Quality Designation (RQD) were calculated for the recovered or retrieved rock. The percent recovery is calculated by summing the length of the core recovered and dividing by the drilled interval. RQD is calculated by summing all the rock core pieces four inches or longer, exclusive of mechanical breaks, and dividing by the drilled interval.

Generalized sub-surface profiles were generated based on our observations of the sampled materials and are contained in Appendix A, Figure A-3. We note that the soil test borings depict subsurface conditions only at the specific locations and times indicated. Subsurface conditions, including the material properties of the soil and water levels at other locations, may differ from conditions as reported on the logs with the passage of time. We caution that groundwater levels were not recorded during the Phase I exploration due to the reservoir having been maintained in a drained or drawn down condition to support

**Subsurface Exploration Data Report**  
**Dan Davis, PE**

dredging of the reservoir. The depths and thicknesses of the subsurface strata indicated on the subsurface sections were generalized and interpolated from the soil test boring logs. The transition between materials is most likely more gradual than indicated. These stratification lines should not be used for estimating construction quantities.



## **5.0 GENERAL SITE AND SUBSURFACE CONDITIONS**

### **5.1 Geology**

The Lake Peachtree Dam is located within the Southern Piedmont Physiographic Province of Georgia. Within the greater Atlanta region, there are two major inactive faults that strike northeast to southwest. These faults consist of the more prominent Brevard Fault and the Towaliga Fault. These two fault systems are located in relatively close proximity to the dam site. The Brevard Fault separates the Northern Piedmont Physiographic Province from the Southern Piedmont Physiographic Province. The presence of the Brevard Fault to the north and west of the proposed dam site places the project site within the Southern Piedmont Physiographic Province. The Southern Piedmont Physiographic Province in Georgia is underlain by metamorphic and metamorphosed crystalline bedrock formations.

According to the Geologic Map of Georgia (1976), the site is underlain by “Granite, Undifferentiated” (gr1). The gr1 map unit is surrounded by “Mica Schist/Gneiss/Amphibolite” (pms3a) and “Mica Schist” (pms1). These rock types are not conducive to solution activity typically characterized by the formation of sinkholes or dropouts. Also, these rocks generally provide an acceptable foundation for earthen embankment dams and their associated spillway systems.

#### **5.1.1 Seismic Considerations**

Seismic accelerations for the contiguous United States were revised by the United States Geological Survey (USGS) on behalf of the National Earthquake Hazards Reduction Program (NEHRP) in 2014.

In accordance with Safe Dams guidelines, the seismic acceleration value should be obtained from the most current “Map for Peak Acceleration with a two percent exceedance probability in 50 years” published by the USGS. Based on the National Seismic Hazard Maps – 2014 from the USGS web page, the peak ground acceleration with a two percent exceedance probability in 50 years for the project site was estimated to range from 0.06 to 0.10 g. A copy of the seismic data obtained from the USGS website is contained in Appendix B. We note that based upon the site classification and PGA factor of 1.6, a peak horizontal ground acceleration of 0.12 g is recommended for design of critical structures at this site (i.e. PK weir spillway).

#### **5.1.2 Dam Site Subsurface Soil and Rock Conditions**

The geologic materials observed at the surface and in borings during the subject evaluation were:

- Stratum A - Topsoil/Root Mat – This describes the organic material layer associated with vegetative growth encountered in four of the nine borings. While not measured, the topsoil /root mat was estimated to be on the order of three (3) inches in depth.
- Stratum B - Fill Materials – This describes soil which was placed by the activities of man. Composition can be widely varied and the presence of foreign materials including wood, stone, and other debris is typical. Fill does not tend to exhibit stratification or identifiable structure upon

examination. Fill materials consisting of silty sands and sandy silts were encountered in borings B-01, B-02, B-07, B-08, and B-09, and was observed at depths ranging between two and one-half feet to 19 feet below the existing ground surface. The SPT N-values ranged from four to 39; Gravel likely amplified the blow counts in B-01 and B-02.

- **Stratum C - Alluvium** – This describes soil which was transported by water and refers mainly to floodplain deposits. Alluvial soils may be comprised of cobbles, sands, silts, and clays, with the larger diameter particles typically found at the bottom of the deposit. Alluvium commonly contains organic materials such as twigs, leaves, and roots which were transported with the water and soil from upstream. These materials are typically horizontally bedded. Alluvial soil deposits tend to exhibit low bearing strength, high permeability, and high potential for settlement. Alluvial materials were encountered in boring B-02 below the fill material to a depth of approximately eight feet below the existing ground surface. The SPT N-values ranged from two to four.
- **Stratum D - Residual Soil** – This describes soil which was formed from the in-place physical and chemical weathering of natural bedrock materials. Residual soils in this physiographic province are typically comprised of silty sands and sandy silts, and vary in chemical composition and structure. Gravel or fractured masses of quartz are not uncommon to encounter when evaluating Residual Soils. Residual soils typically exhibit high strength parameters due to their structure and moderate to low permeability due to the gradation of the soil. Residual soils, not classified as Partially Weathered Rock, were encountered in eight of the nine soil borings below either the fill or alluvial material or generally beginning at the ground surface. The SPT N-values ranged from four to 55.
- **Stratum E - Partially Weathered Rock** – This describes residual soil with relic rock texture and a standard penetration resistance (N) value exceeding 100 blows per foot and less than 100 blows per two inches (or less) of penetration. The profiles of PWR and hard rock can be quite irregular and erratic, even over short horizontal distances. Lenses and boulders of hard rock and zones of PWR are commonly present within the soil matrix above the general bedrock level. PWR may be present beneath relatively un-weathered bedrock due to the presence of softer or weaker parent materials. Partially weathered rock was encountered in borings B-06, B-07, B-08 and B-09 at depths varying from eight and one half feet to 20 feet below the existing ground surface. The partially weathered rock transitioned to rock at a depths ranging from approximately 12 feet below the existing ground surface to 22.5 feet below the existing ground surface.
- **Stratum F - Bedrock** - This describes the massive rock formation which the previously described residual soils and partially weathered rock are derived from. The bedrock in the area of Lake Peachtree Dam is generally classified as a granitic. However, zones of other rock types may be present within the project site. Bedrock often provides a suitable foundation for a structural spillway due to its high bearing capacity. Highly fractured bedrock may require additional treatment, such as foundation grouting, to reduce seepage beneath the spillway. The computed Rock Recovery (REC) for the sampled rock ranged from 0% to 100%, with the lowest REC occurring at the top of the rock mass. The computed Rock Quality Designation (RQD) from the sampled rock ranged from 0% to 100%, with the lowest RQD occurring at the top of the rock mass. We note that the low REC and RQD were likely associated with the coring of either dense PWR or weak rock with substantial soil seams.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

Based upon the results of our field exploration activities and subsequent visual examination of the soil and rock samples, we conclude the following:

- The materials located in the proposed footprint of the new spillway are comprised primarily of fill and alluvial materials overlying residual soil/PWR.
- The depth to bedrock from the ground surface varied from approximately 10 feet to approximately 22.5 feet.
- In our opinion, the site appears suitable for the construction of a new spillway assuming that the fill, alluvial, and soft residual soils are removed and the spillway is adequately supported on dense residual material or compacted structural fill founded on dense residual materials. We recommend that the compacted structural fill placed beneath the spillway slabs and sidewall footings be placed to a minimum of 98% of maximum dry density as determined by the modified proctor test, ASTM D1557.

## **7.0 LIMITATIONS**

The analyses and recommendations contained in this report are based on the data obtained from the subsurface exploration. The test borings indicate subsurface conditions only at the specific locations and times, and only to the depths explored. They do not necessarily reflect strata variations that may exist between such locations. The validity of the recommendations is based in part on assumptions made about the stratigraphy made by the geotechnical engineer. Such assumptions may be confirmed only during foundation preparation. If subsurface conditions different from those described are noted during construction, recommendations in this report must be re-evaluated.

We have endeavored to provide the professional services as reported herein in accordance with generally accepted geotechnical engineering practices, and make no warranties; either express or implied, as to the professional services provided in this report.

## **APPENDIX A**

# **FIELD PROCEDURES/SITE LOCATION PLANS/PHOTOGRAPHS**

**FIGURE A-1: VICINITY MAP**

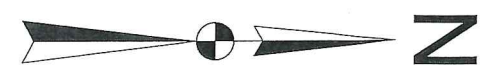
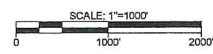
**FIGURE A-2: BORING LOCATION MAP (REVISED MAY 2017)**

**FIGURE A-3: GEOLOGIC PROFILES (REVISED MAY 2017)**

**FIGURE A-4: GEOLOGIC MAP**

**FIGURE A-5: SEISMIC HAZARD MAP**

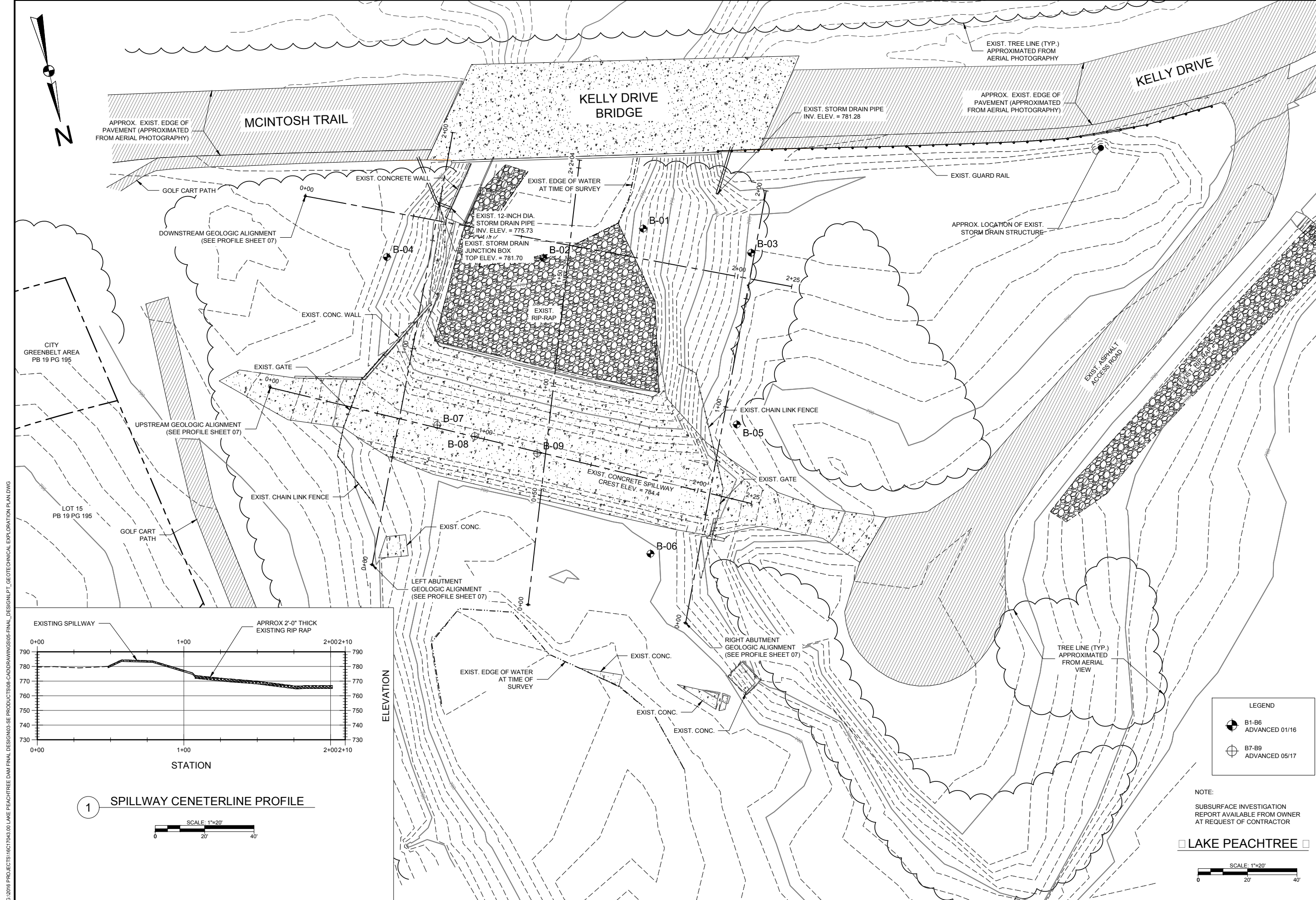
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LAKE PEACHTREE DAM  
SUBSURFACE INVESTIGATION PHASE I  
PEACHTREE CITY, GEORGIA  
PROJECT NO. 15717083.00

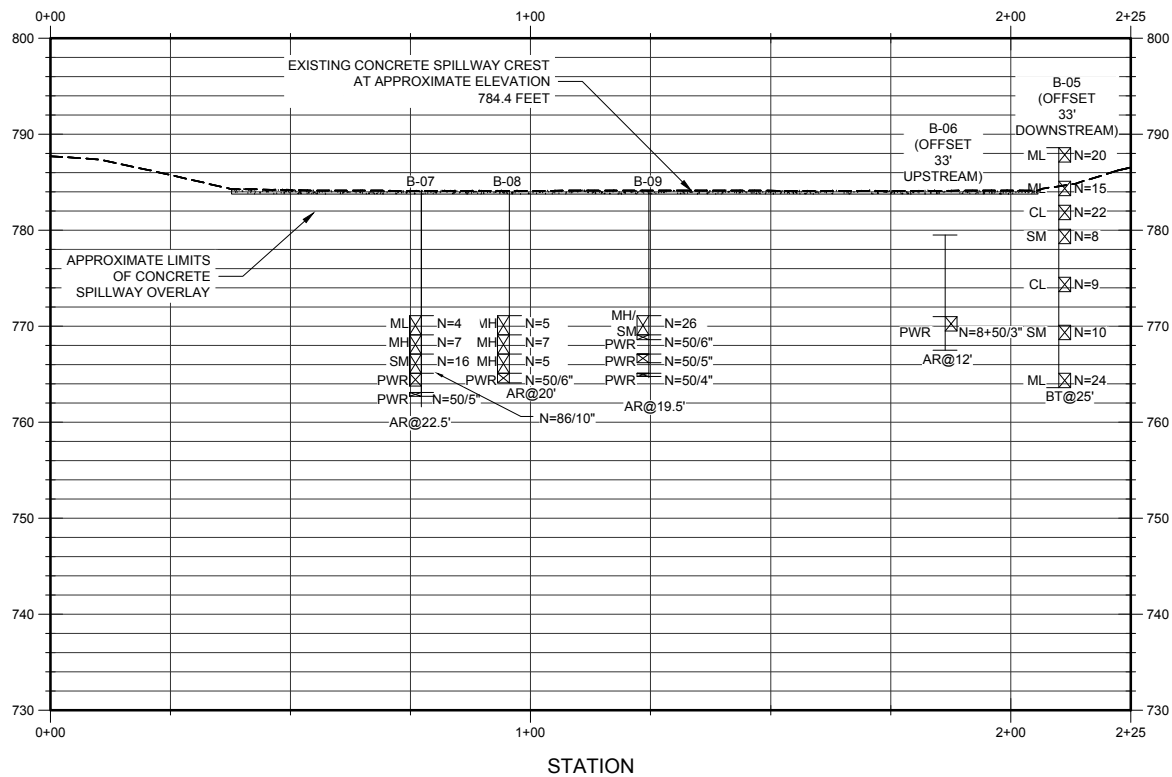
VICINITY MAP

FIGURE A-1

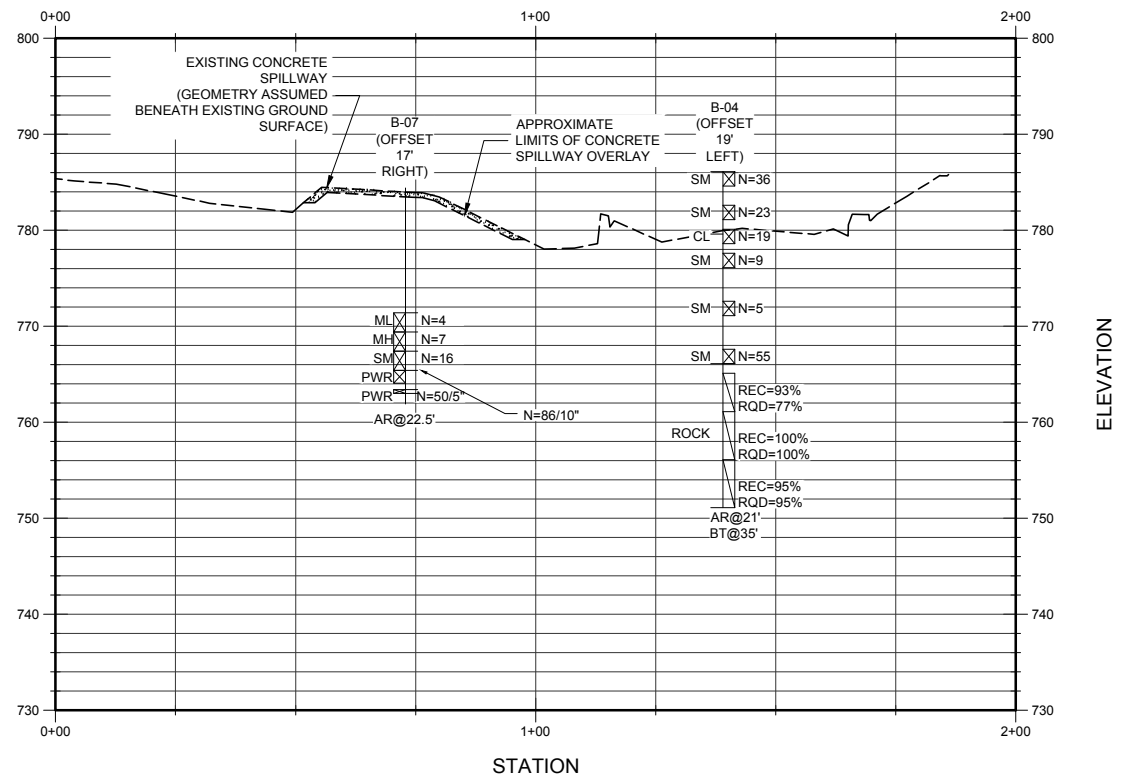


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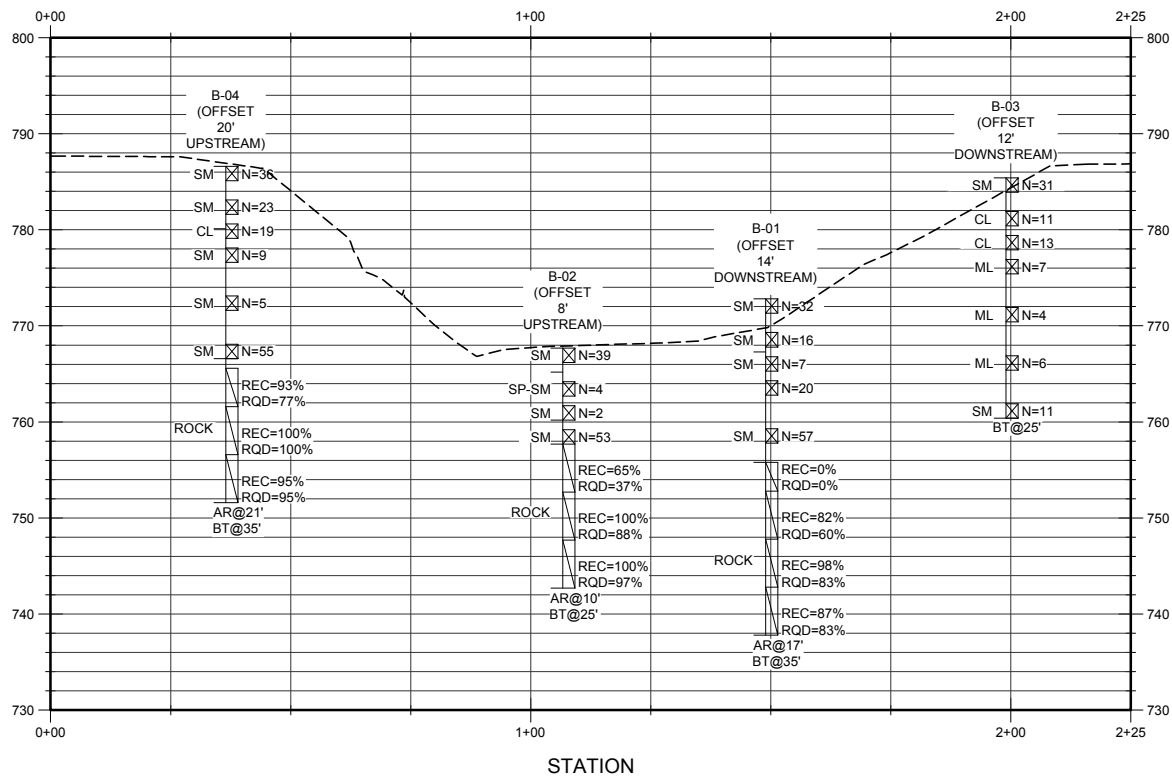
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DESCRIPTION	
REV	
CHECKED BY:	RPL, JRC
DRAWN BY:	GHB, JSR
DESIGNED BY:	JTD, JC
DESIGNED BY:	RANDALL P. BASS, P.E.
DATE:	
GEORGIA PROFESSIONAL ENGINEER NO. 10695	
<b>"PRELIMINARY" FOR REVIEW PURPOSES ONLY</b>	
<b>"PRELIMINARY" FOR REVIEW PURPOSES ONLY</b>	
<b>Schnabel ENGINEERING</b>	
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8006 / Fax: 770-781-8003 / schnabel-eng.com	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
BORING LOCATION MAP	
<b>"PRELIMINARY" FOR REVIEW PURPOSES ONLY</b>	
PROJECT: 16C17043.00	
DATE: JULY 2017	
SHEET A-2	



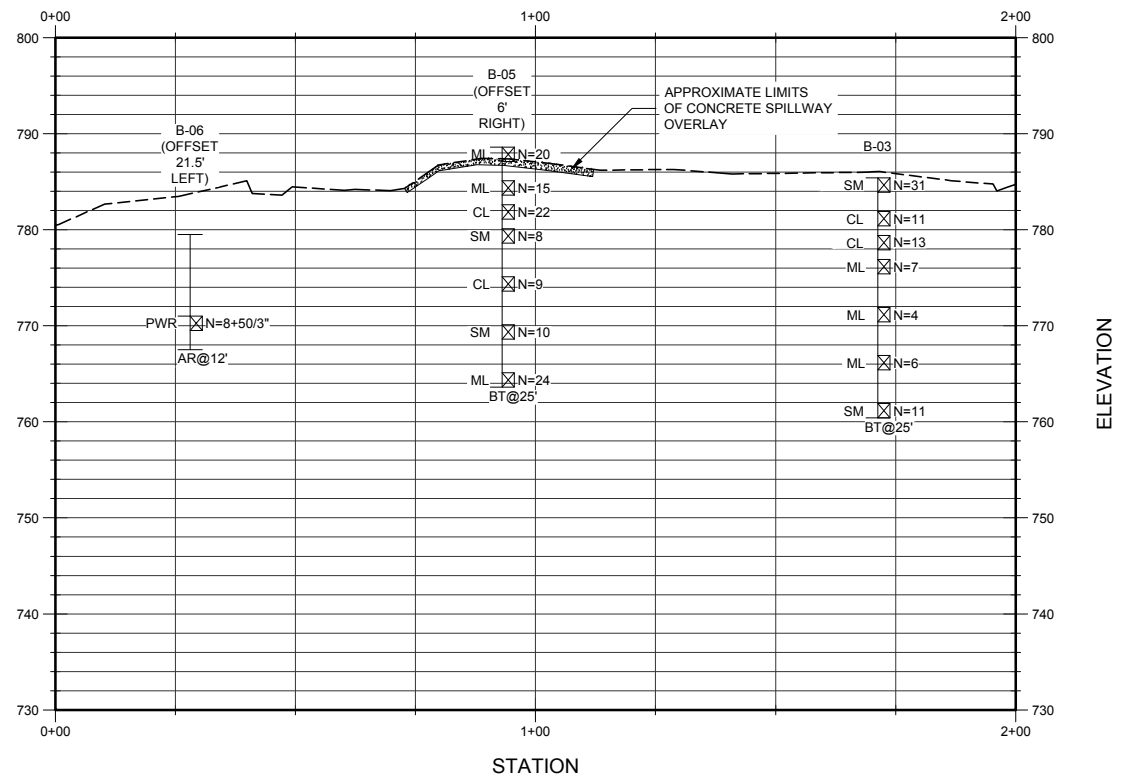
1  
06  
UPSTREAM GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'



3  
06  
LEFT ABUTMENT GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'



2  
06  
DOWNSTREAM GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'



4  
06  
RIGHT ABUTMENT GEOLOGIC PROFILE  
HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=10'

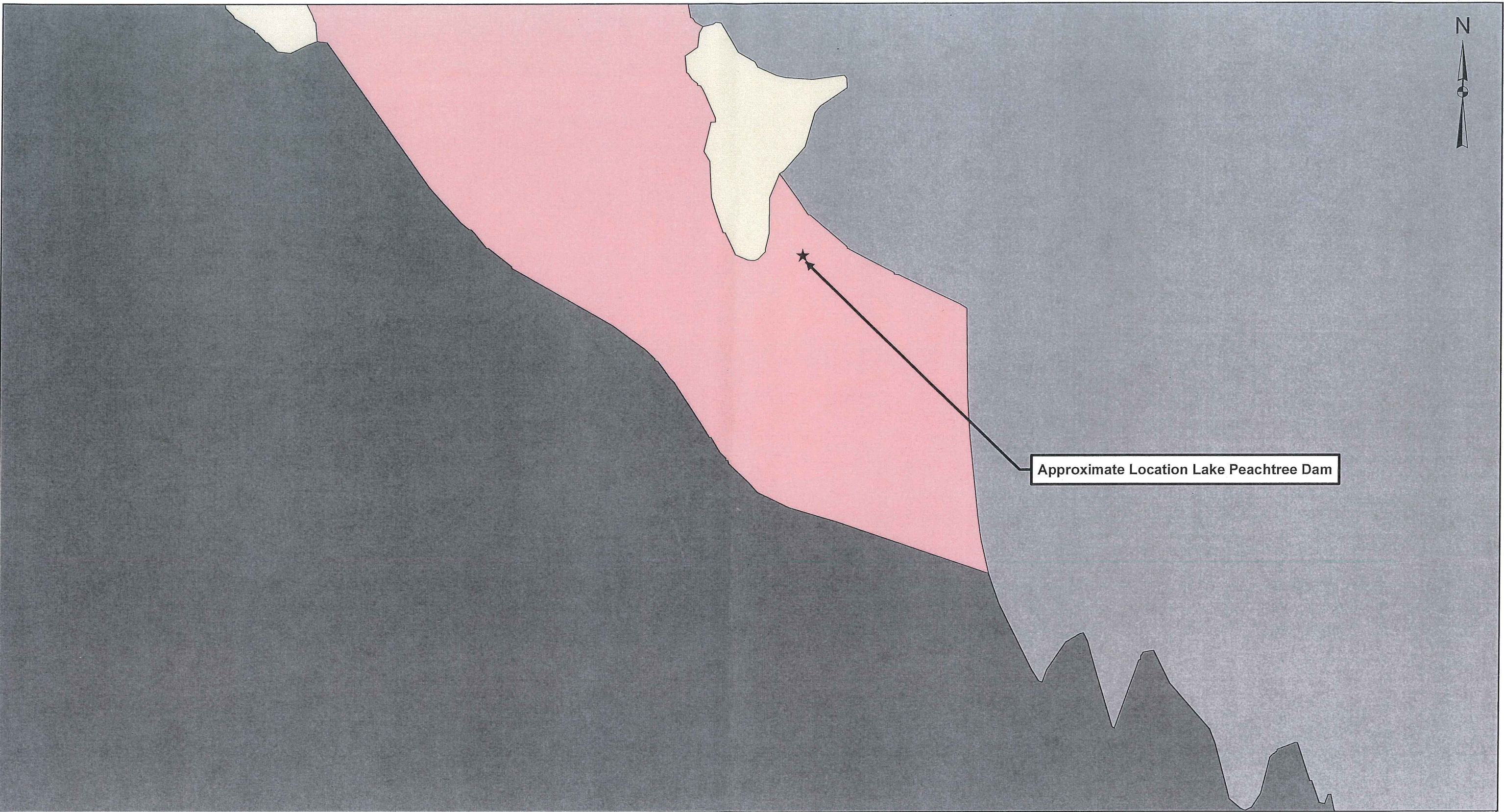
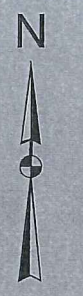
NOTE:  
THICKNESS OF EXISTING CONCRETE SPILLWAY OVERLAY VARIES. CONTRACTOR SHALL ANTICIPATE VARIATION DURING DEMOLITION

DATE	
DESCRIPTION	
REV	
CHECKED BY:	RPL_JRC
DRAWN BY:	GHB_JSR
DESIGNED BY:	JTD_JC
<b>RANDALL P. BASS, P.E.</b> <b>"PRELIMINARY"</b> <b>FOR REVIEW PURPOSES ONLY</b>	
DATE:	
GEORGIA PROFESSIONAL ENGINEER NO. 10685	
<b>"PRELIMINARY"</b> <b>FOR REVIEW</b> <b>PURPOSES</b> <b>ONLY</b>	
6445 Shiloh Road, Suite A / Alpharetta, GA 30005 / Phone: 770-781-8008 / Fax: 770-781-8003 / schnabel-eng.com	
CONSTRUCTION PLANS FOR LAKE PEACHTREE SPILLWAY REPLACEMENT PROJECT PEACHTREE CITY, GEORGIA	
<b>GEOLOGIC PROFILES</b>	
<b>"PRELIMINARY"</b> <b>FOR REVIEW</b> <b>PURPOSES</b> <b>ONLY</b>	
PROJECT: 16C17043.00 DATE: JULY 2017 SHEET A-3	

G:\2016 PROJECTS\16C17043.00 LAKE PEACHTREE DAM FINAL DESIGN\03-SE PRODUCT\03-08-CADDRAWINGS\05-FINAL\_DESIGN\PLT\_GEO\TECHNICAL EXPLORATION PLAN.DWG



dowen



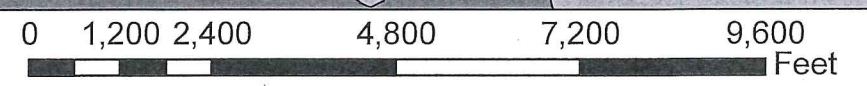
Approximate Location Lake Peachtree Dam

3/14/2016 3:12:52 PM G:\2015 Projects\15717083.00 Lake Peachtree Dam\03-SE Products\07-GIS\03-Maps\LP\_Geologic.mxd

**Legend**

- water
- mica schist (pms1)
- granite undifferentiated (gr1)
- mica schist/ gneiss/ amphibolite (pms3a)

Source: USGS Geologic Map of Georgia, 1976  
Projection: GCS North American 1927



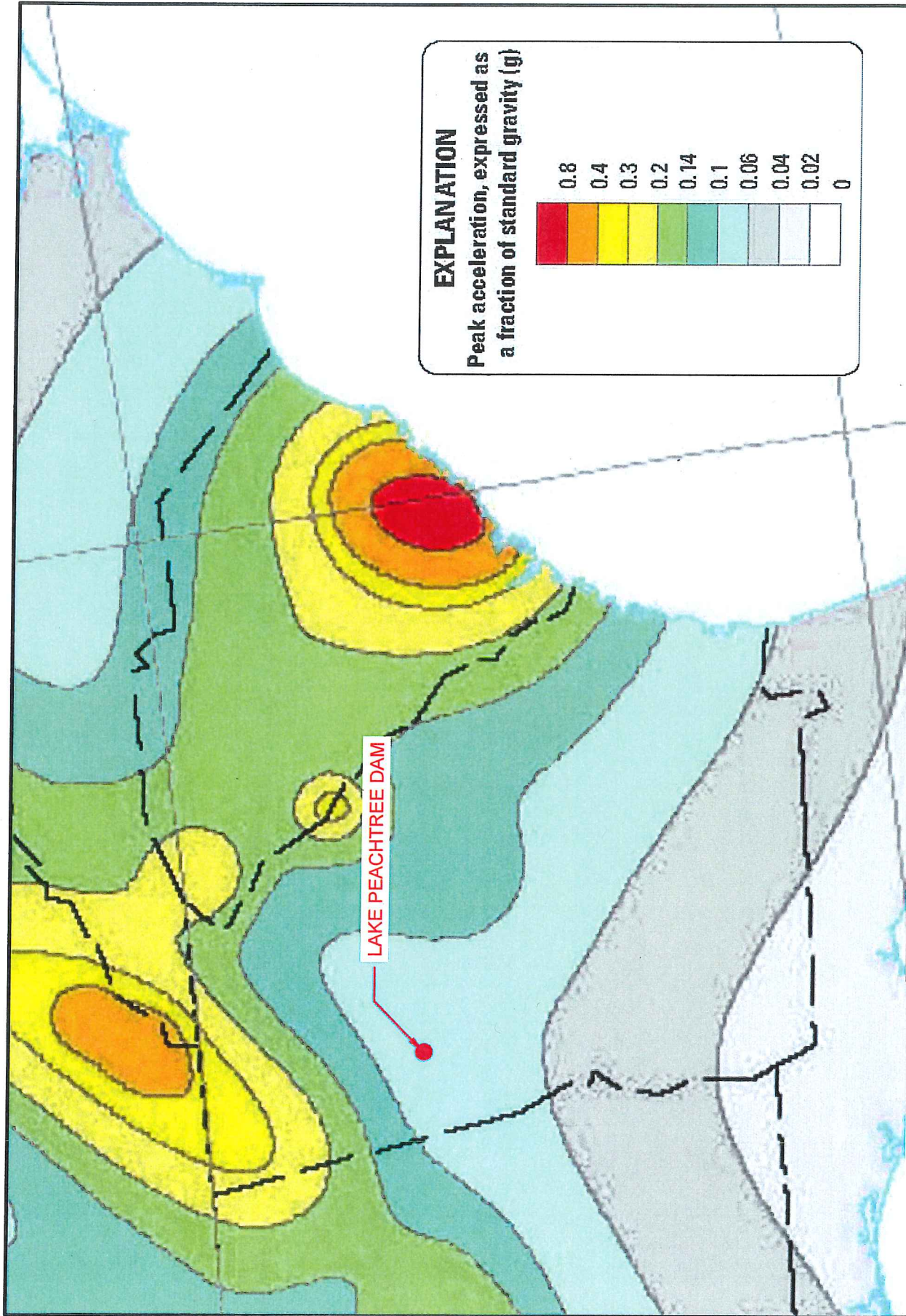
Scale: 1 inch = 2,500 feet



Lake Peachtree Dam  
Peachtree City, Georgia

15717083.00

Figure 4. Geologic Map



LAKE PEACHTREE DAM  
PEACHTREE CITY, GEORGIA  
PROJECT NO. 15717083.00



FIGURE A-5  
SEISMIC HAZARD MAP

**APPENDIX B**

**SAMPLING PROCEDURES AND SOIL TEST BORING  
LOGS**

# **SUBSURFACE EXPLORATION PROCEDURES**

## **Test Borings – Hollow Stem Augers**

The borings are advanced by turning an auger with a center opening of 2¼ or 3¼ inches. Cuttings are brought to the surface by the auger flights. Sampling is performed through the center opening in the hollow stem auger by standard methods after removal of the plug. Usually, no water is introduced into the boring using this procedure.

## **Standard Penetration Test Results**

The Standard Penetration Test (SPT) is performed in the borings at regular depth intervals to collect soil samples. The numbers in the Sampling Data column of the boring logs represent SPT results. Each number represents the blows needed to drive a 2-inch O.D., 1⅝-inch I.D. split-spoon sampler 6 inches, using a 140-pound hammer falling 30 inches. The sampler is typically driven a total of 18 or 24 inches. For Phase II of this project, continuous split-spoon sampling was performed, so the sampler was driven 24 inches. The first 6 inches are considered a seating interval. The total of the number of blows for the second and third 6-inch intervals is the SPT “N value.” The Standard Penetration Test is performed according to ASTM D1586.

The SPT samples were obtained using a hydraulically driven automatic trip hammer (ATH). Most correlations with SPT data are based on N-values collected with a safety hammer. The energy applied to the split-spoon sampler using the ATH is about 33 percent greater than that applied using the safety hammer, resulting in lower N-values. The hammer blows shown on the boring logs are uncorrected for the higher energy. However, we correct SPT N values for the higher energy when using N values in our analyses. The “corrected N values” are indicated on the subsurface profiles/cross-sections contained in Appendix C.

## **Soil Classification Criteria**

The group symbols on the logs represent the Unified Soil Classification System Group Symbols (ASTM D2487) based on visual observation and limited laboratory testing of the samples. Criteria for visual identification of soil samples are included in this appendix. Some variation can be expected between samples visually classified and samples classified in the laboratory.

Disintegrated rock is defined as residual material with SPT N values between 60 blows per foot and refusal. Refusal is defined as an N value of 50 blows for a penetration of one inch or less.

Partially weathered rock (PWR) is defined as residual material with SPT N values between 100 blows per foot and refusal. Refusal is defined as an N value of 50 blows for a penetration of one inch or less.

# GENERAL NOTES FOR SUBSURFACE EXPLORATION LOGS

1. Numbers in sampling data column next to Standard Penetration Test (SPT) symbols indicate blows required to drive a 2-inch O.D., 1½-inch I.D. sampling spoon 6 inches using a 140 pound hammer falling 30 inches. The Standard Penetration Test (SPT) N value is the number of blows required to drive the sampler 12 inches, after a 6 inch seating interval. The Standard Penetration Test is performed in general accordance with ASTM D1586.
2. Visual classification of soil is in accordance with terminology set forth in "Identification of Soil." The ASTM D2487 group symbols (e.g., CL) shown in the classification column are based on visual observations.
3. Estimated water levels indicated on the logs are only estimates from available data and may vary with precipitation, porosity of the soil, site topography, and other factors.
4. Refusal at the surface of rock, boulder, or other obstruction is defined as an SPT resistance of 50 blows for 1 inch or less of penetration.
5. The logs and related information depict subsurface conditions only at the specific locations and at the particular time when drilled or excavated. Soil conditions at other locations may differ from conditions occurring at these locations. Also, the passage of time may result in a change in the subsurface soil and water level conditions at the subsurface exploration location.
6. The stratification lines represent the approximate boundary between soil and rock types as obtained from the subsurface exploration. Some variation may also be expected vertically between samples taken. The soil profile, water level observations and penetration resistances presented on these logs have been made with reasonable care and accuracy and must be considered only an approximate representation of subsurface conditions to be encountered at the particular location.
7. Key to symbols and abbreviations:



S-1, SPT  
5+10+1

Sample No., Standard Penetration Test  
Number of blows in each 6-inch increment



UD-1, UNDIST  
Rec=24", 100%

Sample No., 2" or 3" Undisturbed Tube Sample  
Recovery in inches, Percent Recovery



SH-1, SH  
Rec=24", 100%

Sample No., 2" or 3" Shelby Tube Sample  
Recovery in inches, Percent Recovery



PB-1, PB  
Rec=24", 100%

Sample No., 3" Pitcher Barrel Sample  
Recovery in inches, Percent Recovery



OS-1, OS  
Rec=24", 100%

Sample No., 3" Osterberg Piston Sample  
Recovery in inches, Percent Recovery



CAL-1, CAL  
Rec=18", 100%

Sample No., 3" Split-barrel sampler with rings  
Recovery in inches, Percent Recovery



Run #1, CORE  
Run = 5.0 ft  
REC = 60", 100%  
RQD = 60", 100%

Core No., Rock Core  
Run length in feet  
Recovery in inches, Percent Recovery  
RQD in inches, Percent RQD



S-1, GEOPROBE  
Rec=24", 100%

Sample No., Direct Push Sample  
Recovery in inches, Percent Recovery



S-1, SAMPLE

Sample No., Hand Auger or Test Pit sample

DCP	Dynamic Cone Penetrometer
FID	Flame Ionization Detector Reading (ppm)
GP	Geostick Penetration Reading (inches)
LL	Liquid Limit
MC	Moisture Content (percent)
PID	Photoionization Detector Reading (ppm)
PL	Plastic Limit
PP	Pocket Penetrometer Reading (tsf)
TPH	Total Petroleum Hydrocarbons
%Passing#200	Percent by weight passing a No. 200 Sieve

# IDENTIFICATION OF SOIL

## I. DEFINITION OF SOIL GROUP NAMES (ASTM D2487)

## SYMBOL GROUP NAME

Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels – More than 50% of coarse fraction retained on No. 4 sieve Coarse, ¾" to 3" Fine, No. 4 to ¾"	Clean Gravels Less than 5% fines	GW	WELL GRADED GRAVEL
			GP	POORLY GRADED GRAVEL
		Gravels with fines More than 12% fines	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	Sands – 50% or more of coarse Fraction passes No. 4 sieve Coarse, No. 10 to No. 4 Medium, No. 40 to No. 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	WELL GRADED SAND
			SP	POORLY GRADED SAND
		Sands with fines More than 12% fines	SM	SILTY SAND
			SC	CLAYEY SAND
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays – Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	LEAN CLAY
			ML	SILT
		Organic	OL	ORGANIC CLAY
				ORGANIC SILT
	Silts and Clays – Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	FAT CLAY
			MH	ELASTIC SILT
		Organic	OH	ORGANIC CLAY
				ORGANIC SILT
Highly Organic Soils	Primarily organic matter, dark in color and organic odor	PT	PEAT	

## II. DEFINITION OF SOIL COMPONENT PROPORTIONS (ASTM D2487) Examples

Adjective Form	GRAVELLY SANDY	>30% to <50% coarse grained component in a fine-grained soil	GRAVELLY LEAN CLAY
	CLAYEY SILTY	>12% to <50% fine grained component in a coarse-grained soil	SILTY SAND
"With"	WITH GRAVEL WITH SAND	>15% to <30% coarse grained component in a fine-grained soil	FAT CLAY WITH GRAVEL
	WITH GRAVEL WITH SAND	>15% to <50% coarse grained component in a coarse-grained soil	POORLY GRADED GRAVEL WITH SAND
	WITH SILT WITH CLAY	>5% to <12% fine grained component in a coarse-grained soil	POORLY GRADED SAND WITH SILT

## III. GLOSSARY OF MISCELLANEOUS TERMS

- SYMBOLS** ..... Unified Soil Classification Symbols are shown above as group symbols. A dual symbol “-“ indicates the soil belongs to two groups. A borderline symbol “/” indicates the soil belongs to two possible groups.
- FILL** ..... Man-made deposit containing soil, rock and often foreign matter.
- PROBABLE FILL** ..... Soils which contain no visually detected foreign matter but which are suspect with regard to origin.
- DISINTEGRATED ROCK (DR)** ..... Residual materials with a standard penetration resistance (SPT) between 60 blows per foot and refusal. Refusal is defined as an SPT of 100 blows for 2" or less penetration.
- PARTIALLY WEATHERED ROCK (PWR)** ..... Residual materials with a standard penetration resistance (SPT) between 100 blows per foot and refusal. Refusal is defined as an SPT of 100 blows for 2" or less penetration.
- BOULDERS & COBBLES** ..... Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12-inch size.
- LENSES** ..... 0 to ½-inch seam within a material in a test pit.
- LAYERS** ..... ½ to 12-inch seam within a material in a test pit.
- POCKET** ..... Discontinuous body within a material in a test pit.
- MOISTURE CONDITIONS** ..... Wet, moist or dry to indicate visual appearance of specimen.
- COLOR** ..... Overall color, with modifiers such as light to dark or variation in coloration,